OPERATOR'S HANDBOOK

DT 25 Floor Standing Drill

Warren Machine Tools Ltd

Warco House, Fisher Lane, Chiddingfold,Surrey GU84TD

Tel: 01428 682929 Fax: 01428 685870

E-mail: warco@warco.co.uk

Web：www.warco.co.uk

Contents

Preface

Thank you for purchasing our **AUTO-FEED DRILLING Machine**. This model is suitable for ferrous and non-ferrous metals drilling , reaming and boring with in diameter 16mm (model JZB-16) and 25mm (model JZB-25) or small. It is widely used in machine works, hardware, instruments and gauge industries and repair shops for single piece or gross production.

Before you use them, please read the operation manual carefully for correct operation and maintenance. It is beneficial to keep your machine work in good conditions.

The machine has good performance and is easy to be operated; it can assist you to different kinds of missions.

II. Main technical parameters

Items	JZB—16	JZB-25A	JZB-25(L)	JZB-25AL
Max Drilling Diameter (mm)	ϕ16	ϕ25		
Max Spindle Travel (mm)	100	130		
Spindle inner taper	MT.2	MT.3		
Spindle Speed (r/min)	290 400 520 860 1650 2000	230 360 500 900 1650 2160		
Size of Working Table (mm)	270×300 ϕ320	ϕ420	330×380	ϕ420
Size of Base surface (mm)	245×245	330×320		
Diameter of column (mm)	ϕ85	ϕ102		
Distance from spindle nose to working table (mm)	25～425	110~700		
Distance from spindle nose to base surface (mm)	510～975	1045~1175		
Distance from Spindle center line to the surface of column (mm)	180	230		
Up-down distance of working table (mm)	400	590		
*Motor	750W	1500W		
Coolant pump			40W 6L/min	
Net Weight (kg)	108	190	260	
Overall Size (cm)	68×39×105	84×45.9×176		

- You can choose the voltage and frequency for motor.
- JZB-25L/JZB-25AL equipped with coolant system. JZB-25A\JZB-25AL is equipped with the circle working table, JZB-25(L) is equipped with the square working table.

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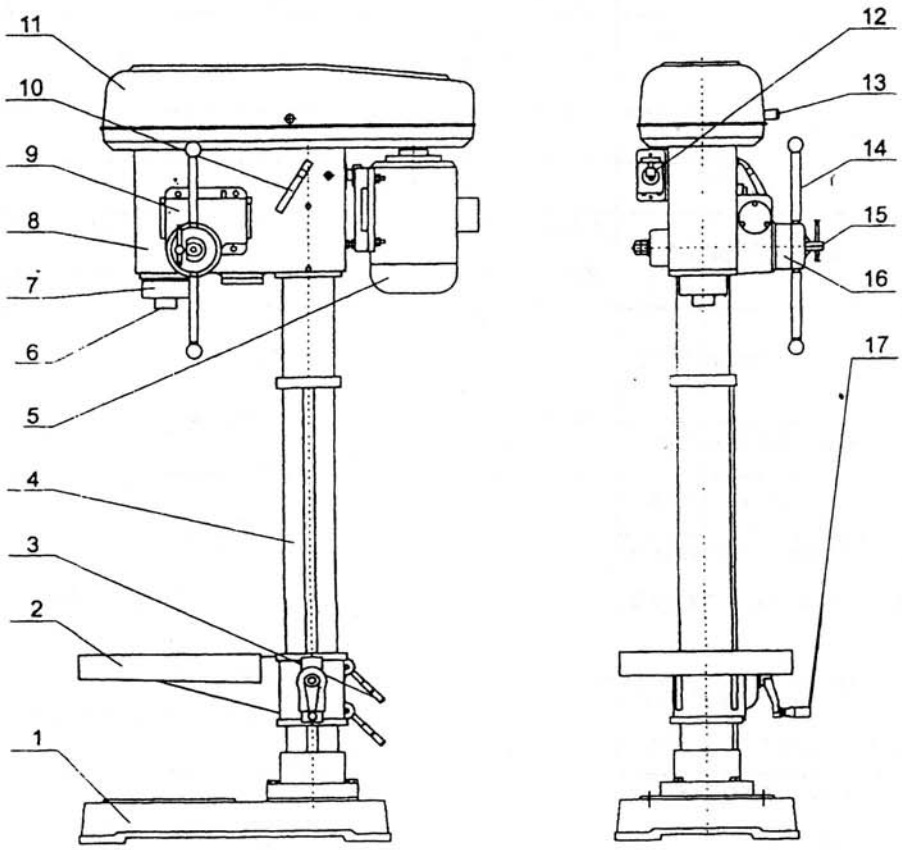


Figure I: Machine Figure and Main Parts Name

Mail Parts Name

Number	Parts Name	Number	Parts Name
1	Base table	10	Tension handle
2	Working Table	11	cover
3	Lock screw	12	switch
4	column	13	knob
5	motor	14	Feeding handle
6	spindle	15	locker
7	Spindle sleeve	16	dial
8	body	17	Elevating hand
9	Feeding box		

IV. Operation principle of machine

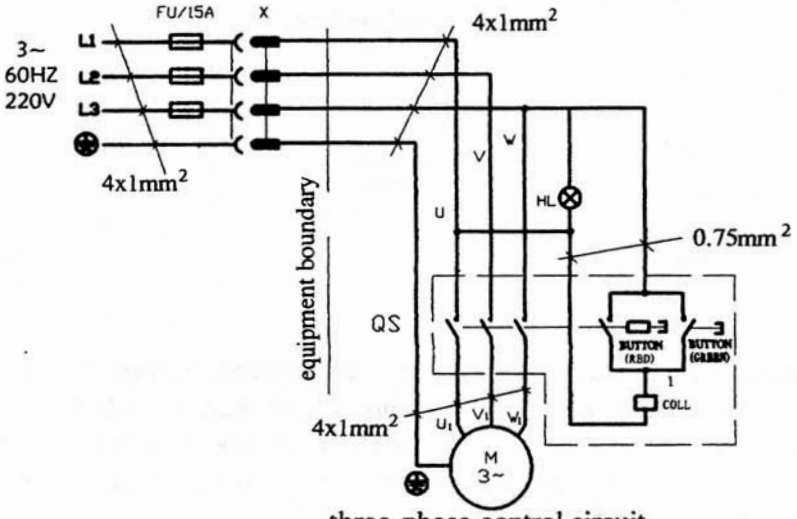
4.1 Transmission system

4.1.1 Main transmission system :The transmission system is the motor which drive middle pulley and spindle pulley by V-belt, : pindle pulley drive the spindle rotate by spindle taper sleeve. The spindle has six gear speeds by adjust the V-belt position on the wheel.

4.1.2 Feed transmission system: The spindle feeding have two methods, manual feed and auto feed. The manual feed is rotate the gear wheel axle by rotating the elevating handle, pass gear axle, gear wheel device of sleeve to reach the spindle feed. The auto feed is rotate the feeding wheel by spindle pulley, pass one step turbo, one step gear wheel, two step turbo to make spindle auto-feed.

4.2 Electric system

The machine's electric system is composed of a motor, a switch and connection cable; JZB-25A(C) extra including a coolant pump, a rotates switch, the switch control the main motor M1 , the coolant pump will start work when the main motor turn to on and rotated switch at "ON"



three-phase control circuit

Figure 2

The machine has 2.4 meters powerlines, you'd better use outlet wire and plug, connect the machine and the power. For safety, the outlet connect the earth is tighten, and it's equip the protection when the there is short circuit.

When turn on the power, push down the Green button "ON", checking the spindle is clockwise rotating direction(as figure3).As 3-phase motor,if the spindle counterclockwise rotates, you can shut down the power, change two of the three line of the outlet or plug, then change the spindle rotating direction.

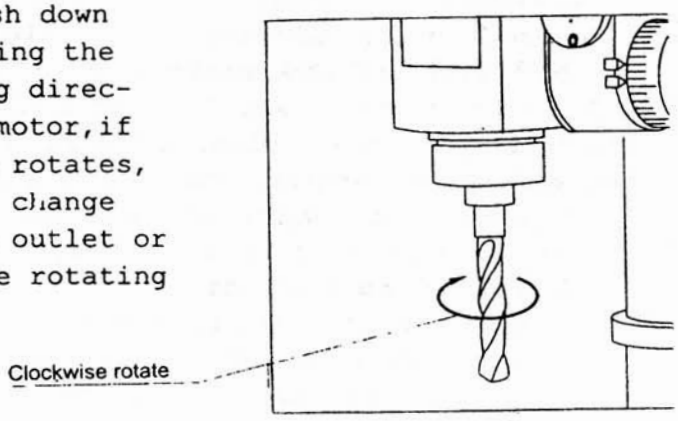


Figure 3

V. Adjustment and Operation

At first, put the machine on the plane or table normally, the machine needn't to be firmed on the earth, but, if you work frequency or with the big works, suggested firm the firming screw to avoid the accident. The two hole which before column 4 on base 1 can equip the firming screw.

5.1 Install and uninstall the drill chuck.

Clean the spindle, drill chuck interior, cone surface and chuck shaft surface, the chuck shaft with plane end plug into the spindle hole, the other end with the drill chuck, use the hammer hit the drill chuck below side, to the chuck is firmly(figure 4)

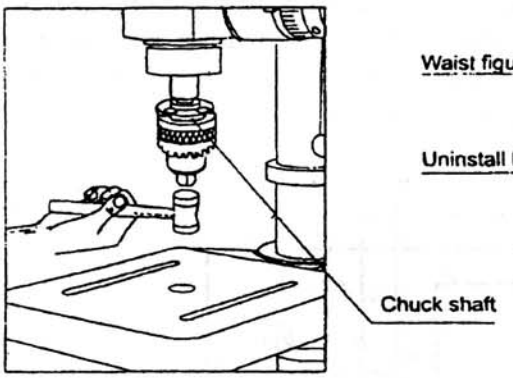


Figure 4

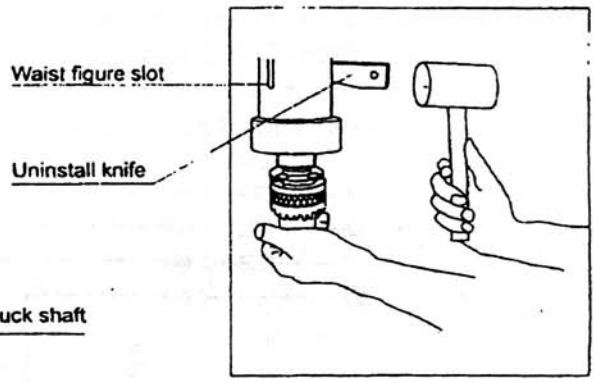


Figure 5

Uninstall the drill chuck, you can rotate down spindle and sleeve, plug the uninstall knife into the waist figure slot the sleeve side, uninstall the chuck shaft and drill chuck(figure 5). Mustn't knock the drill chuck, to avoid affect the machine precision.

5.2 Install drill

A. Little drill clamped with drill chuck, should place drill chuck positive.

B. Model JZB-16 machine, the spindle interior cone hole is MT.2, and Morse 2 chuck shaft can connect on spindle directly.

C. Model JZB-25(A C)machine, the spindle interior cone hole is MT.3, and Morse 3 chuck shaft can connect on spindle on spindle directly, Morse 2 should add taper adapter sleeve, then connect the spindle.

5.3 Tighten the workpiece

To avoid workpiece and clamp move to affect the works quality, and the drill power is too high, the handle can't catch workpiece so injure the worker and machine. When operating the table is clamped tighten on the column , the workpiece and clamp place the table, two long slot can be use bolt to firm workpiece.

5.4 Use the cool oil

The cool oil is benefit for the drill, prove the work precision and place plane. When you work the big hole, big feeding amount, work deep hole and hard work, you can use the corresponding cool oil, user can

purchase our cool device for machine.

5.5 Elevating, rotating and clamping the table

The machine have square table and circle table two model as figure6, loosen the lock screw, the table rotate the column 360° , switch the elevation handle, the table move and down, if equip the circle table, loosen the lock screw 2, the circle table rotate the axle 360° ., adjust the table to just position, clamp the lock screw.

For elevating the machine's performance, the body is fixed on the column, neither up and down nor rotating.

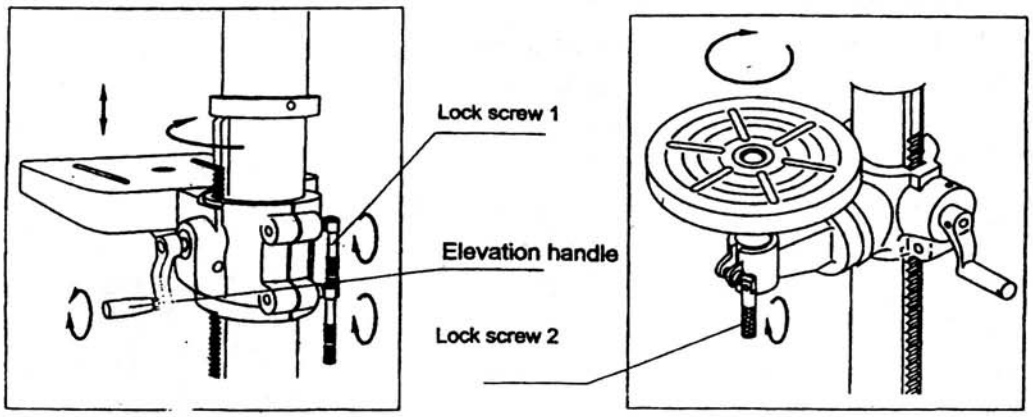


Figure 6

5.6 Change the spindle rotating speed

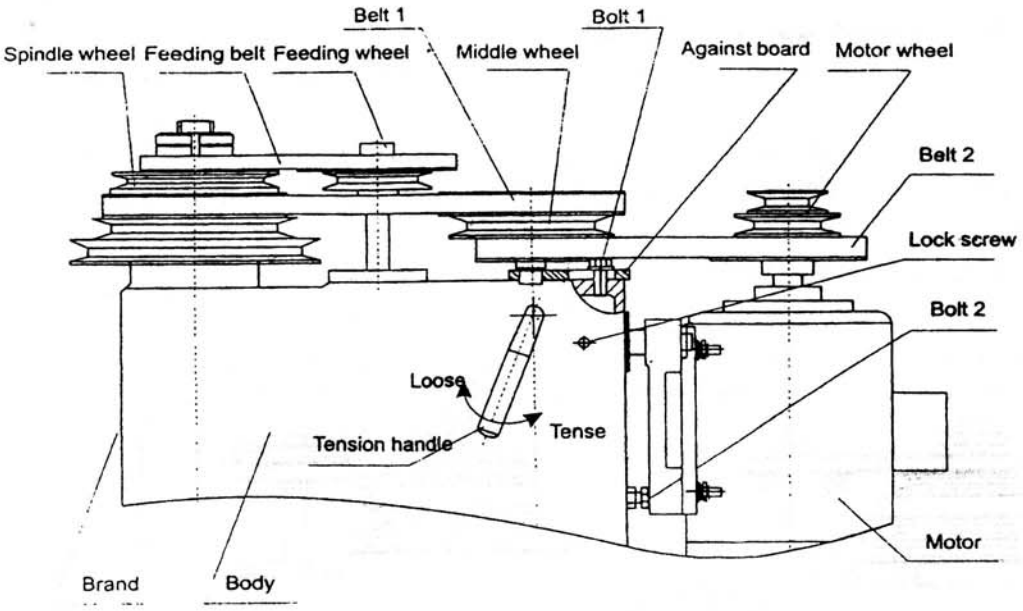


Figure 7

As figure 7, change the spindle speed accord with change the belt the position on the spindle wheel, middle wheel, motor wheel. To change speed, shut off power, over the upper cover, loose two lock screw (each one in body side) and 2-bolt on the against board, switch the tension hand, loose the belt accord to the plane sign, put the belt to the right position, push the tension handle to tension direction, make the belt tension fit, switch the bolt 1 lock screw tighten, adjust bolt 2, to make its head against the body back, then tighten the nut on the bolt 2.

After adjusting, cover the cover and operate the machine.

5.7 Manual feed and auto feed

This machine have two feed device mar change way is easy, as figure 8, the hanc manual feed, and pull the handle out right a is auto feed, when it lie auto feed position, you pull the handle to the left (inner) vertical position, the feed is stop.

When the depth drilling, the drill move to the purpose depth, and it`s can return manual feed, the spindle auto return to origin position.

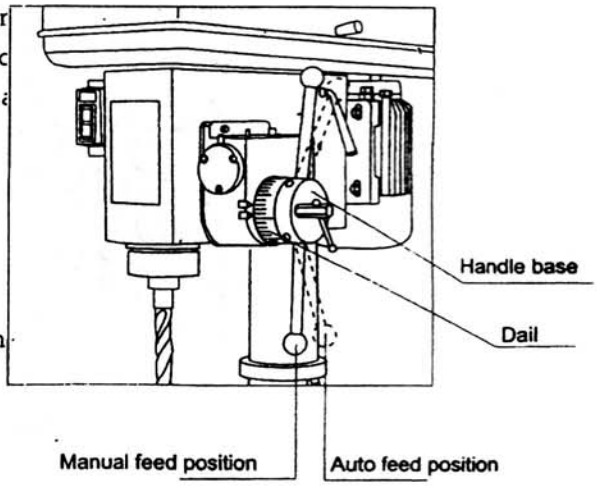


Figure 8

***Use the auto feeding with the spindle clockwise rotate.**

5.8 Change speed as auto feed

JZB-16 provide four kinds auto feed speed and JZB-25 is three kinds for user.

According to changing feed belt`s position on spindle wheel, it`s can reach 0.10mm/r, 0.25mm/r two feed amount as figure 9A, and then, the give belt of model JZB-16 is equipped "O-500", "A-600", them is on machine when leave factory.

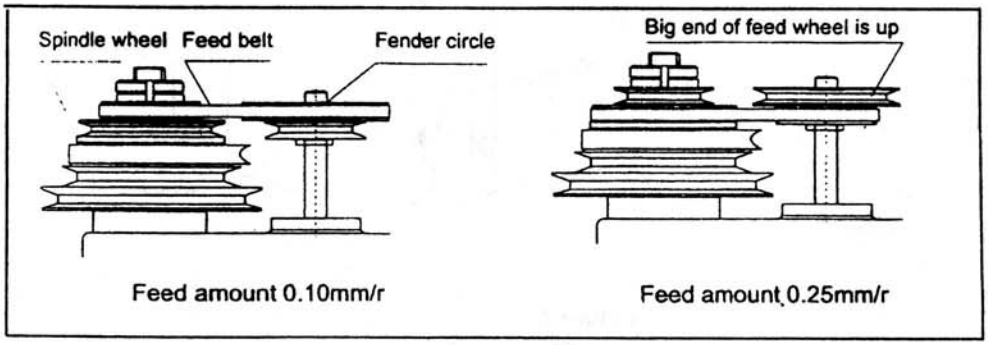


Figure 9A

Model JZB-16machine can provide 0.14mm/r or 0.17mm/r two kinds feed amount, by changing the giving wheel` s position on the machine. At first pick the nut on the giving wheel, then pull the wheel out, turn it over and pull it in , and then equip the nut, adjust the position as figure 9B, it`s can gets 0.14mm/r、0.17mm/r two kinds give amount. The feed belt is diameter Φ8×138 and diameter Φ8×164 circle rubber belt on machine.

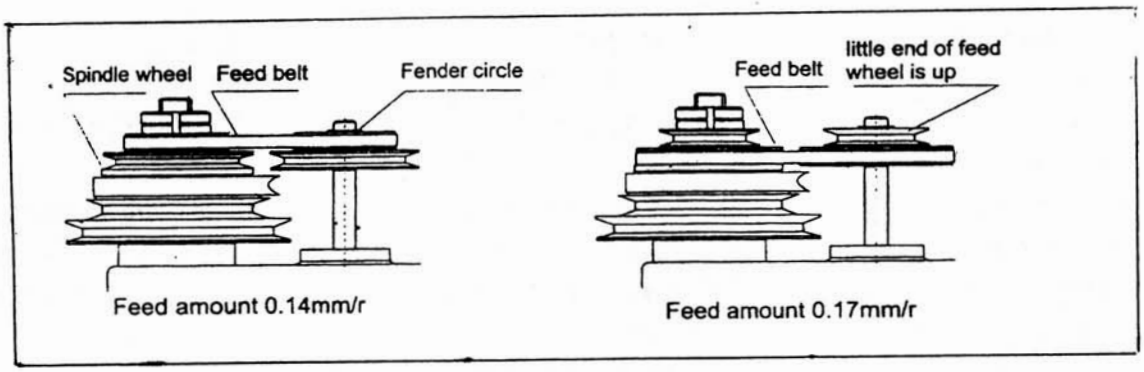


Figure 9B

Model JZB-25machine provide 0.16mm/r feed amount, you should use the given wheel B and feed belt A-660 in accessory box.

Pick out A-660 feed belt, loose the screw under the feed wheel, and pick out feed wheel, as figure 9C, pull on the feed wheel B, ring tighten the screw, and pull on the A-660.

As auto feed, the feeding amount is considered by work considered bywork condition (workpiece material, hardness, diameter of drilling,precision, cool condition etc) . Table2 lists the relation among diameter of drill, spindle rotate speed and feed amount reference for user.

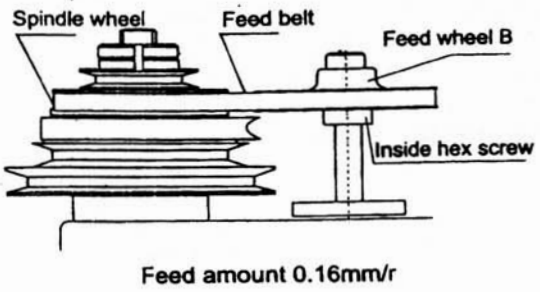


Figure 9C

Table 2

table of relation among drill`s diameter、spindle speed and auto feed capacity

rotate speed / feed amount / hole diameter	JZB-16						rotate speed / feed amount / hole diameter	JZB-25					
	290	400	520	860	1650	2000		230	360	500	900	1650	2160
16	0.25	0.25					25	0.25	0.16				
14	0.25	0.25	0.25				22	0.25	0.25				
12		0.25	0.17				18		0.25	0.25			
10		0.17	0.17	0.17			14		0.25	0.16			
8			0.17	0.17			12			0.16	0.16		
6			0.14	0.14	0.10		10			0.16	0.16		
5				0.14	0.10		8				0.10	0.10	
4				0.14	0.10	0.10	6				0.10	0.10	0.10
3					0.10	0.10	5					0.10	0.10

* **The amount list in the table is the max feed amount for special condition.**
* **To avoid the feed gear wore, you don`t operate the machine as the top spindle rotate speed and max feed amount**

5.9 The fixed depth drilling

It`s easy to precision control the depth in gross production, the machine is equipped with the fixed depth device (figure 10、figure11), when making the hole duct (don`t use the depth device) you should loosen the locker.

Before using the fixed drilling, you must adjust the fixed depth device under the conditions that the spindle is stop. The way is :

1) Rotate the handle to make the spindle down to the drill reach the workpiece surface.

2) Rotate the dial to align the zero scale with depth drilling amount. For example, the drill depth is 30mm, you`ll align the zero scale with the auto feeding on the machine, use the different giving method. You`ll align the opposite zero scale.

3) Adjust the dial to the correction position, wrench the locker tighten clockwise.

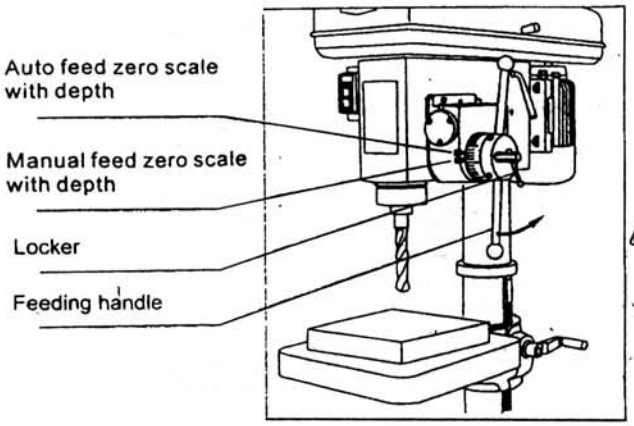


Figure 10

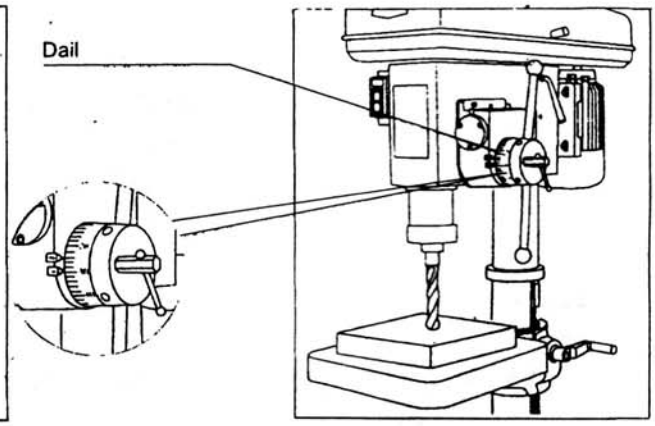


Figure11

5.10 protect of overload auto feeding

to avoid as overload work leads to device trouble, affect the machine using life, the machine is fix the overload device in feed wheel, figure 12, when the drilling work is over the machine`s load, the device is going to work, to make the feeding wheel and feeding axle sliding, so protect the machine, and this time, you`ll hear the `kata`, `kata` sound. If it`s happen the condition you`ll reduce the auto feeding amount or lower the spindle rotate speed.

Normal, the overload device is adjusted to the optimization, you needn`t adjust it. After a period of using, if the feeding strength is not enough or the protect device work not to reach the load, you should adjust it. When the feeding strength isn`t enough, clockwise rotate a little, figure 11 adjust screw (right and left each one) .otherwise, counterclockwise rotate it a little. You can

not adjusted a lot, if it's too tight, the overload device will not work, whereas, it can not pass the feeding strength, if it is too loose.

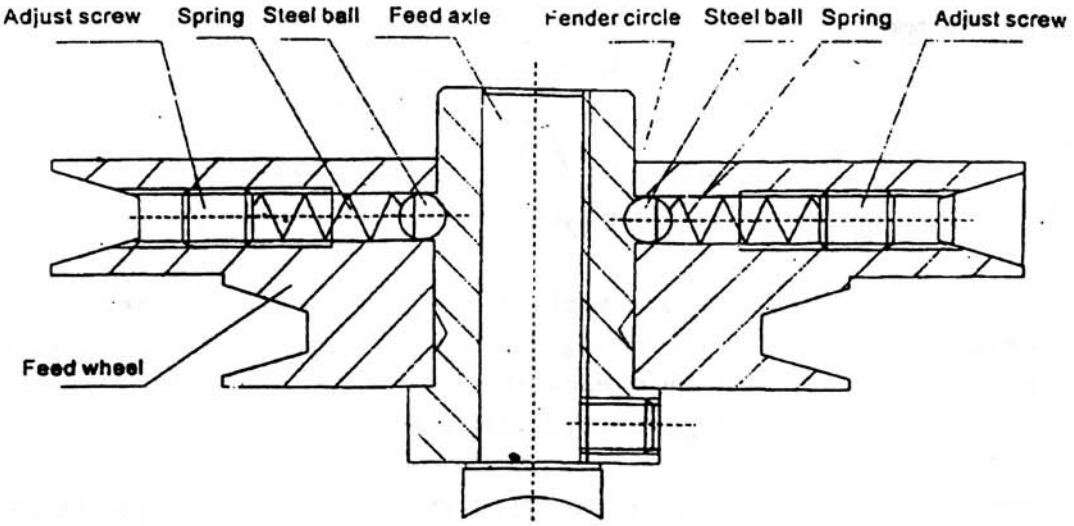


Figure 12

VI.The maintenance of machine

6.1 The lubrication of main mesh position, see table3. lubrication position and parts name see figure13 and figure14.

Note: when you add the oil to one step turbo in body, you can directly add oil with oil cup and by sight hole of head side (the hole cover can be open by tool, after adding the oil you must cover the dirt into the body).

The lubrication request of the main mesh position (Table 3)

Content / Position	Oil kind	Amount	Time
Cup oil	Lithnim lubricate	4-5 times	once each day
spring cap oil cup	machine oil	8-10 drops	once each day
taper joint	special white oil	4-5 times	once each 3 day
sleeve surface	machine oil	3-4 times	once each day

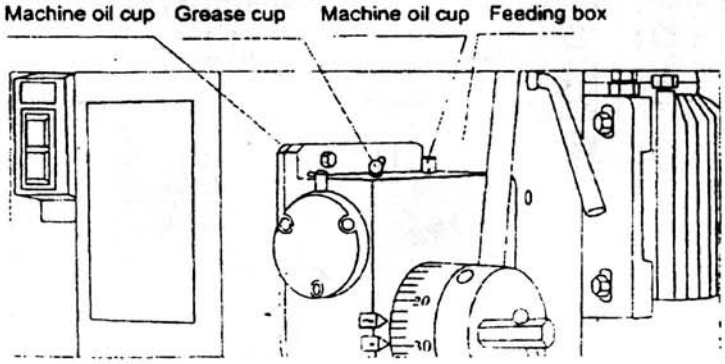


Figure 13

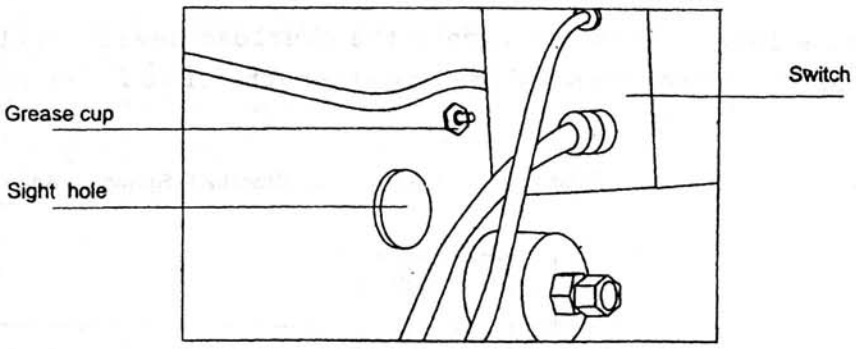


Figure 13

6.2Clean working table and surface of standing column, then smear them with machine oil every day. when you work one year, you should uninstall the machine and clean and maintenance to prove the machine function so provide perfecter precision.

6.3 bearing

after a period of use, if you find the bearing is noisy, it is mean the bearing is worn, which need to change. The position of bearing as figure14, the model and amount see table4.

Table 4

Number	Bearing name	Site	JZB-16		JZB-25		Amount
			Model	Size	Model	Size	
1	Deep groove ball bearing	Spline taper sleeve	6206-Z	30×62×16	6009-Z	45×75×16	2
2	Deep groove ball bearing	Spindle sleeve	6004-Z	20×42×12	6006-Z	30×55×13	1
3	Ball thrust bearing	Spindle sleeve	51105	25×42×11	51107	35×52×12	1
4	Deep groove ball bearing	Spindle sleeve	6205-Z	25×52×15	6207-Z	35×72×17	1
5	Deep groove ball bearing	Middle wheel	6003-2Z	17×35×10	6203-2Z	17×40×12	2
6	Deep groove ball bearing	One step turbo	6003-2Z	17×35×10	6004-2Z	20×42×12	1
7	Deep groove ball bearing	One step turbo	6002-2Z	15×32×9	6004-2Z	20×42×12	1
8	Ball thrust bearing	Cone gear wheel	51102	15×28×9	51102	15×28×9	1

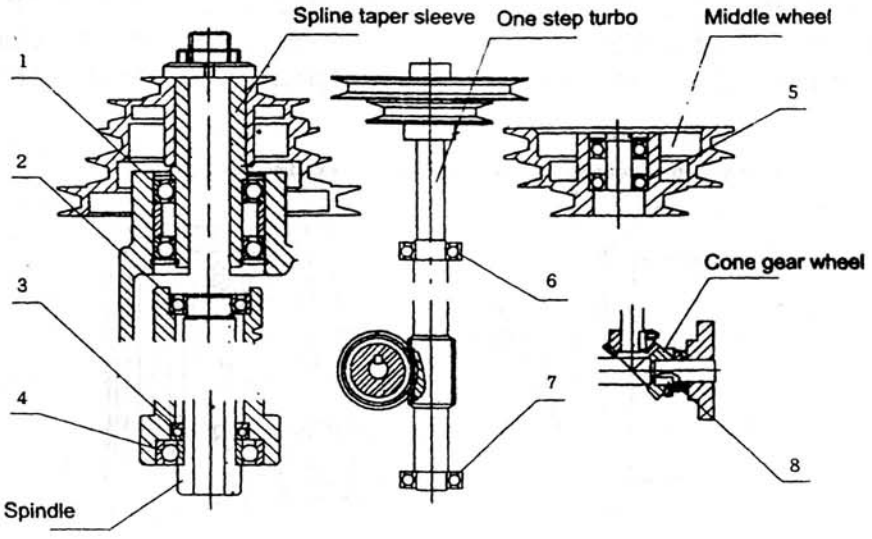


Figure **14**

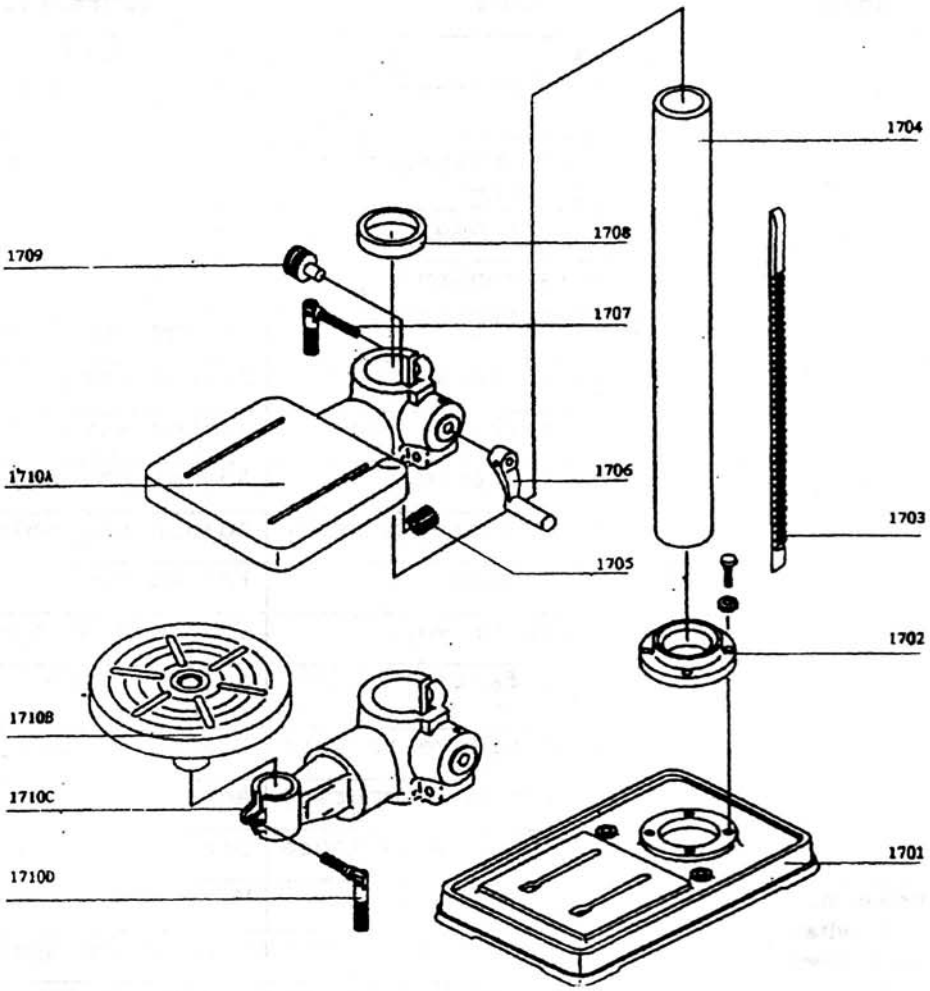
Ⅶ. Trouble shooting

trouble and correction

trouble	cause	correction
Motor not run	Wire broken	Change wire
	Bad plug	Change plugs
	Motor is too hot, the protection device is working	Wait for the motor to cool itself
	Power switch is bad	Change power switch
	Motor wire is abnormal	Fasten screw
	The fuse was melt	Change the fuse
Noisy motor	Motor screw is loose	Fasten screw
	Motor stick screw is loose	Fasten screw
	Belt is too fastened	Adjust the belt
	Base bolt do not fasten the body	Adjust the bolt
	Screw nut is loose	Fasten nut
Noisy spindle	Bearing is bad or worn	Change bearings
	V-belt is too fasten	Adjust the belt's tension
	Spindle taper sleeve is worn	Change spindle
	Bad lubrication or impurity	Add oil or clean
	Screw nut on spindle is loose	Disassemble and fix
Spindle not smooth when up and down	Surface is not smooth	Maintain it or change
	Turbination spring is broken	Change the spring
Drill shaking	Three hands of drill chuck are worn	Change drill chuck
	Three hands do not clamp evenly	Reinstall drill
	Inner cone surface damaged	Change spindle
	Connecting rod cone damaged	Change connecting rod
Don t work	Turbo gear is worn	Change worm wheel
	Overload protection device is bad	Adjust spring tension
	Pawl clutch's gear is worn	Change the pawl
	Feed belt is slide	Change belt
Work depth is not correct	Dial locker is loosen	Fasten the locker
	Dial locker screw is distorted	Change it or repair it
	Gear wheel or sleeve gear is worn	Change it

appendix

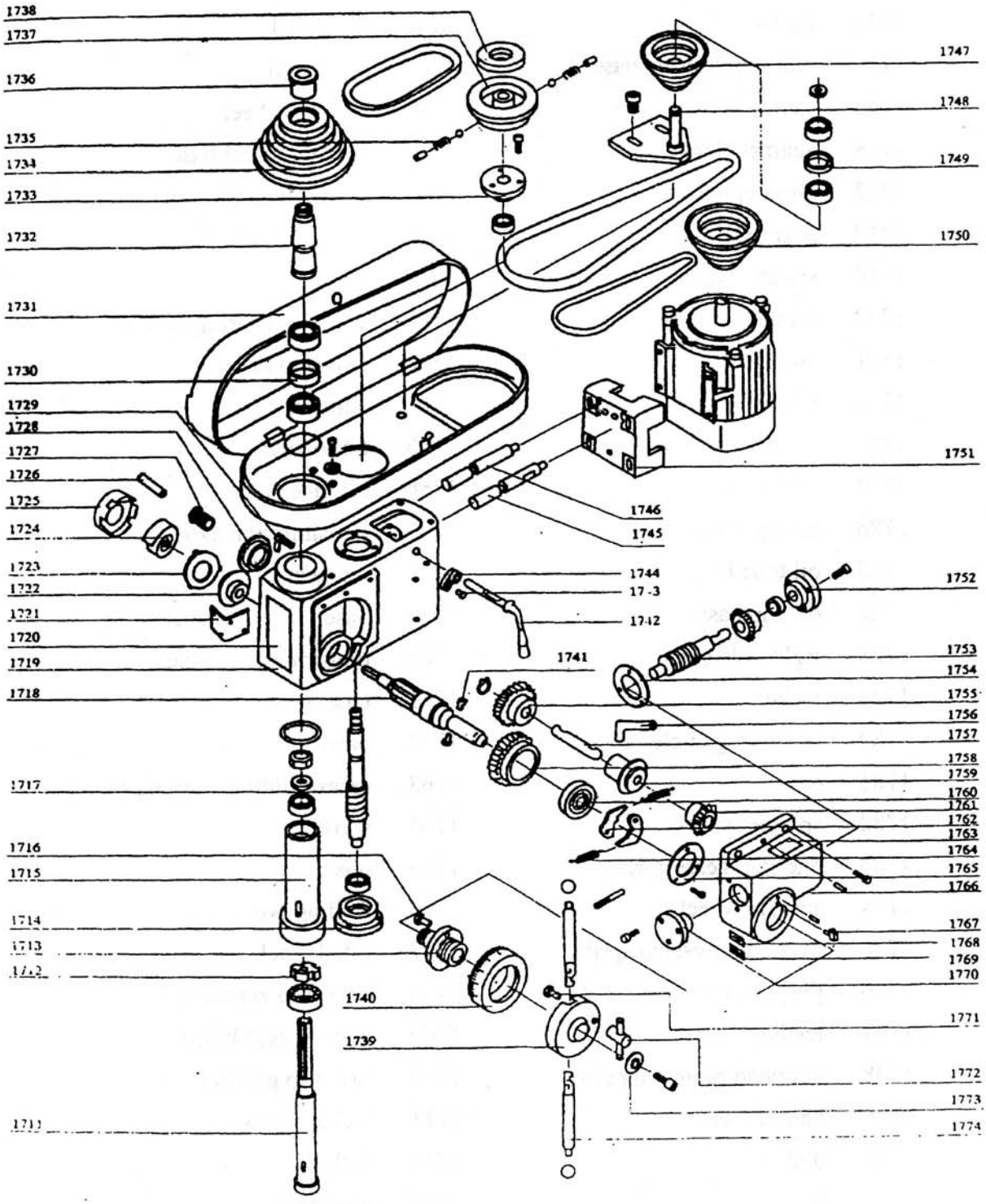
PARTS LIST FOR MODLE JZB-16/25



NO.	NAME	NO.	NAME
1701	base	1708	fender circle
1702	column base	1709	screw bolt
1703	gear	1710A	square table
1704	column base	1710B	circle table
1705	bevel wheel	1710C	brace
1706	elevating handle	1710D	lock screw2
1707	lock screw 1		

appendix I

PARTS LIST FOR MODLE JZB-16/25



NO.	NAME
1711	the spindle
1712	circle nut
1713	thruster
1714	one step bearing base
1715	sleeve
1716	against block
1717	one step turbo
1718	gear axle
1719	spindle box
1720	prooduct brade
1721	switch base
1722	gear axle base
1723	spring cap
1724	worm spring
1725	spring cover
1726	oil tube B
1727	oil cup base
1728	sight hole cap
1729	locker
1730	seperating circle
1731	cover
1732	spindle wheel
1733	one step gearing base
1734	spindle wheel
1735	overload pressing spring
1736	pressing nut
1737	feeding wheel
1738	overload protection circle
1739	handle base
1740	dial
1741	key
1742	tension handle

NO	NAME
1743	curve shaft melt
1744	curve shaft
1745	fix bolt I
1746	fix bolt II
1747	middle wheel
1748	middle wheel base
1749	middle wheel fender circle
1750	motor wheel
1751	motor base
1752	two step bearing base A
1753	two step turbo
1754	adjuster
1755	turbo gear
1756	oil tube A
1757	transimission axle
1758	big gear
1759	base
1760	transimission plane
1761	taper gear
1762	pawl
1763	grease adding warning brand
1764	spring
1765	board
1766	feeding box
1767	tilted block
1768	auto feed zero brand
1769	manual zero brand
1770	two step gearing base
1771	locker screw
1772	locker
1773	washer
1774	handle

JZB-16 JZB-25	Packing List			
Wooden Size: (L×W×H)			JZB-16 83×47×115cm JZB-25 95×45×186cm	
Gross Weight Net weight			JZB-16 118/105Kg JZB-25 272/247Kg	

NO	Description	Specification		Amount	Remark
		JZB-16	JZB-25(A、L)		
1	Auto-feeding Machine	JZB-16	JZB-25(A、L)	1	
2	V-Belt	0500 A686 A889	A600 A670 B965 B711	1	Fixed in the machine (except A660)
3	Wench drill chuck	ϕ 16 mm		1	Fixed in the machine
4	Drill chuck key			1	Installed in the accessories box
5	Tapered bar	MT2-B18	MT3-B18	1	Fixed in the machine
6	Tapered sleeve	———	MT.3-MT.2	1	Installed in the accessories box
7	wedge			1	Installed in the accessories box
8	Feeding wheel device	———	0.16mm/r	1	Installed in the accessories box
9	Circle rubber belt	Ø8×120 Ø8×146	———	1/each	Installed in the accessories box
11	Operation manual			1	At file packet
13	Packing List				At file packet