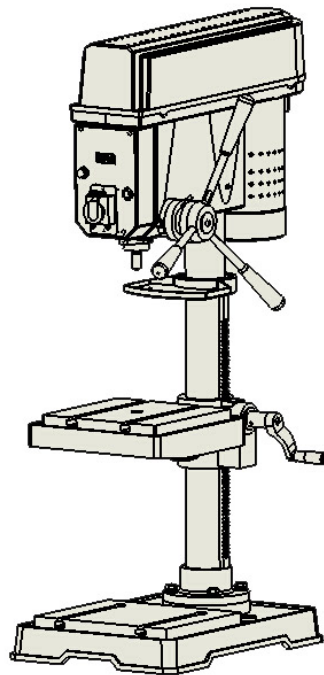


Instruction Manual

DP-16

Multi-function Drilling Tapping Machine



Please keep this instruction manual for future reference

Thank you for choosing our products, you will get our thoughtful and comprehensive after-sales service.

You will have a new and satisfying experience and operational fun of our products.

Note: After reading this manual before, please do not install and operate the machine in order to avoid machine damage and personal injury.

Please read the instruction and use it as required.

We wish you have a safety and pleasant use experience of the machine.

Warning:

- 1 only unplug the power plug, the machine is completely power off. Just turn off the emergency stop power switch, the machine is still charged, this time can not touch the machine with electrical parts.
2. If spindles do not rotate, please do not carry on speed regulating operation. otherwise may damage machine.
- 3 If machines in power-saving state, do not allow speed adjustment, replacement machine spare parts, drill chuck and drill bit etc..

16 Different Advantage Features:

1. Three-phase motors, Single-phase power cable, it is not only easy electrical connection, but also have large power of the machine.
2. RE brushless direct-drive motor, torque, long life, energy noise.
3. The overload power protection, to avoid danger.
4. Mechanical constant power variable speed, it is make the work speed. better detailed
- 5 Electric button speed adjustment, quick and convenient .**
6. The machine head take carbon fiber composite materials with high strength, good toughness, impact resistance, aging resistance.
- 7.the machine has high precision spindle (0.005mm) with heavy drill chuck, it can be high-precision drilling
8. digital display spindle speed can be showing on LED screen, the user can getting the exact speed during working.
- 9.the depth speed can be exact shown on LED screen. It is can precise control the processing of depth.
10. The laser positioning, to avoid repeating the same workpiece positioning.
11. The energy-saving device, avoid idling machine itself, energy saving, easy to operate.
12. Double insulation design with emergency stop switches, weak power control, it is make the machine has high security during operation.
13. The belt has automatic tensioning itself, it is make the belt running in the best condition, do not always tight leash.
14. The machine spindle hole, that we take polymer composite ,it will not wear shaking within a decade.
15. Drilling, tapping a key conversion.
- 16 Any travel tapping, Limited depth tapping, workpiece holding tapping with foot switch, three function for selection.

Technical Specifications

- Voltage / frequency: 220V/50HZ/1PH
- Max.Tapping Capacity(steel): M12
- Max.Tapping Capacity (iron):M16
- Max.Drilling Capacity:16mm
- Max distance – chuck to worktable: 435mm
- Max distance – chuck to base:635mm
- Spindle travel: 85mm
- Speed:260-1800RPM
- Motor: 750W
- Spindle taper:B18/ 0.5-16mm
- Drill capacity:16mm
- Table size: 280X280mm
- Column diameter:72mm
- Base size:245X285mm
- G..W/N.W:61KGS/56KG

Safety Information

Before operating this unit, you must pay special attention to the safety notices

given bellow.

Electrical

- 1.Electrical repairs must only be carried out by a qualified or suitably trained person
- 2.We strongly advise that access to the interior of the unit be restricted to trained personnel only and that operating the unit with the covers removed be avoided
3. The unit must be correctly installed(See “Installation”).
- 4 Machines can only access 220V + 5%, 50HZ power line. The load current of wire and switch should more than 5A.
5. Operator foot pad should be over 2mm thick rubber pad or over 2cm thick dry wood and other insulation material plate
- 6 Maintenance machine must take off the power plug. If only turn off the power switch of the machine, the machine electric device is still charged, touch the electrical parts can be dangerous.

Safety rules for drilling

- 1.Caution: This drilling machine is intended for use only with drill bits. The use of other accessories may be hazardous. Make sure they are suitable and safe for use with your drill.
2. Correct drilling speed: Before use the machine, the proper speed should be considered factors: the type of material, the size of the hole, the quality of cut desired and the quality required of the drilling.. the large hole need low speed. And the hard material also need low speed..(can refer to the relevant regulations and standards).

- 3 When drilling material use clamps to hold the work piece, To avoid injury, the work piece should never be held with bare hands. Not allowed to wear gloves to use machine.
4. The work piece must be clamped firmly down against the table to prevent it from turning. If the piece is of irregular shape and cannot be laid flat on the table, it should be securely blocked and clamped.
- 5 Remove key from chuck after adjustment.
6. Ensure that all times the work area is well lit.
7. Secure the base of the drill to the work bench or work table before using the drilling machine if the work piece is heavy or large and likely to cause the drill to tip over, use additional supports as appropriate under and around the work piece.
8. Always switch off the machine and isolate from the main power supply before adjustment and repair.

General safety rules

1. Keep all guards in place and in full working order.
2. Keep work area clean and tidy. Cluttered areas and benches invite accidents.
3. Do not use in damp or wet conditions, or expose the drill press to rain.
4. Keep children away, all visitors should be kept at a safe distance from the working area.
5. Do not force the tool or attachment to do a job for which it was not designed.
6. Use the right tool. It will do the job better and safer at the rate for which it was designed.
7. Wear proper clothing: No loose clothing, gloves neckties, rings, bracelets or other jewelry as these may be caught in moving parts. Non-slip footwear is also recommended. Wear protective covering to contain long hair.
8. Always wear safety glasses.
9. Do not over reach. Keep proper footing and balance at all times.
10. To keep the machine in good condition and keep good working habits..
11. Disconnect from the main power supply before servicing and when changing accessories such drill bits.
12. Never stand on the machine as serious injury could occur if the machine is tipped or if the cutting tool is unintentionally contacted.
13. Check for damaged parts. Before using the drill press, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function, check for alignment of moving parts, binding of moving parts, breakage of parts, mountings, or any other condition that may affect the machine's operation, A guard or any other part that is damaged should be immediately replaced.
14. Never leave drill running unattended. Turn the power off. Do not leave tool until the machine has come to a complete stop.

Installation and Operation

Remove all components from packaging. According to the packing list inventory of all machine parts, accessories and documents. The packing list shown must be consistent with the actual packing, If there is missing, please contact the dealer for missing parts, pls do not be casually looking for the replacement of parts for assembly, in order to avoid trouble.

Assembly

Step 1 Remove all components from packaging, and clean oil first.

Step 2 Put the column in the base and let the two hole in the top of column turn to the left, an other one hole turn to the right; then tighten column to base . Figure 1

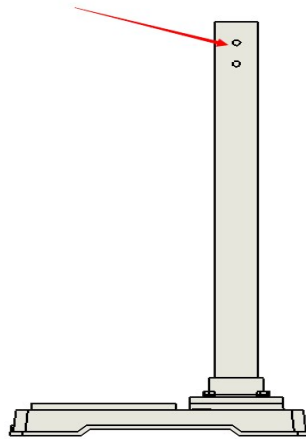


Figure 1

Step 3 Pick up the table and seat, the rack teeth facing outward, toothless large end up, along the rack groove wear to the seat support and then tighten. Figure 2

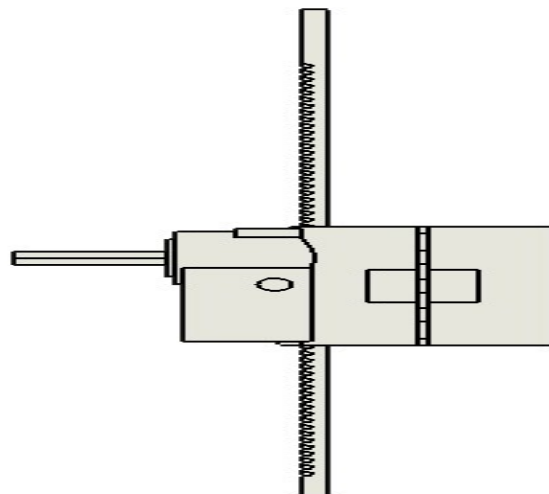


Figure 2

Step 4 The bench seat and a rack attached to the column together, and insert the bottom end of the rack into the groove inside the upper end of the column plate. Figure 3

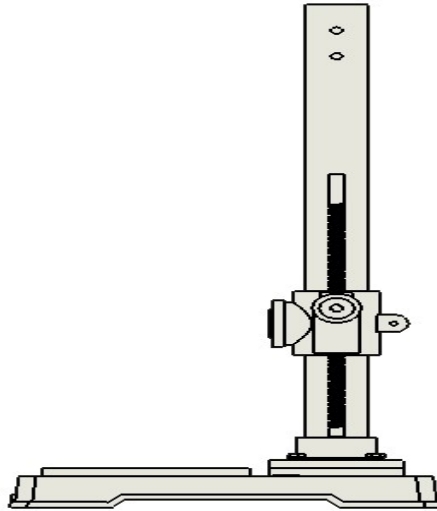


Figure 3

Step 5 The tool tray with holes facing up and security on the column, put the tooth rack upper inserted into the end of the lower tool tray grooves. Figure 4

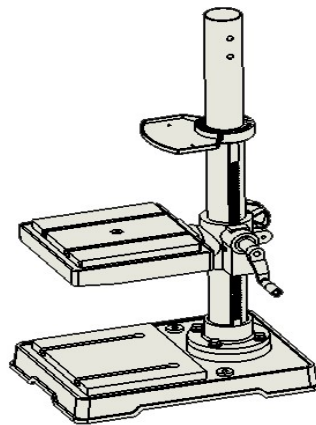


Figure 4

Step 6 Put the head attached to the column. turning left and right and press the head down,, make sure that the column has been inserted into the top of the nose, and there is no gap between the column and the head.. Figure 5

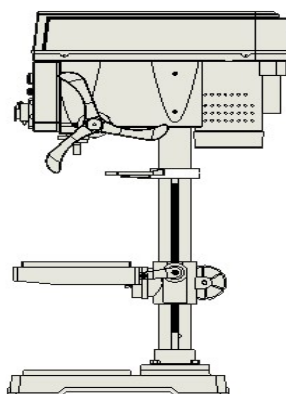


Figure 5

Step 7 First need the machine head positioning. Light shaking machine head, by positioning holes on the column can be seen through the opposite side of the head positioning hole (see opposite the light coming through, if you do not see the light coming through, you need to rotate the head, and slowly positioning until the light came through). . Keeping the head does not move, respectively, with two tapered head screws M5 * 8 screwed to the lower head positioning holes, one on each side, with a tapered head screws 2 M5 * 12 head is screwed to the upper positioning holes, one on each side It can be a little tight. Figure 6

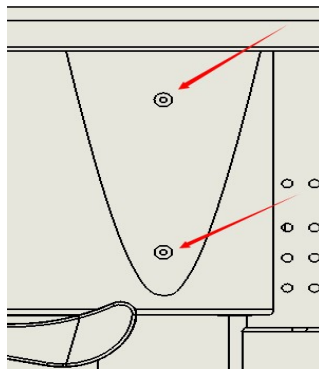


Figure 6

Step 8 In the case of keeping the head immobile, tighten the 7 fastening screws near the column .

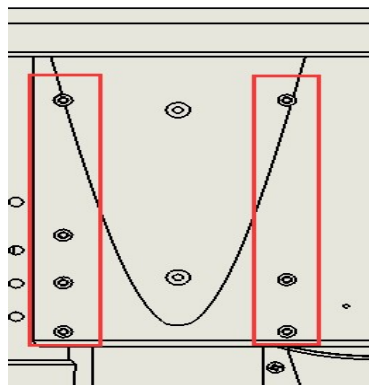


Figure 7

Step 9 Tighten the fixing screws on each side of the head. Figure 8

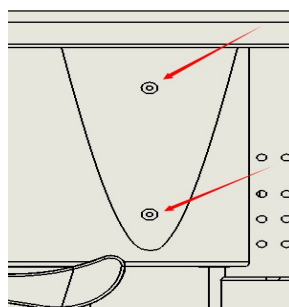


Figure 8

Step 10 Put the three handles into the handle seat holes and use a wrench to tighten Figure 9

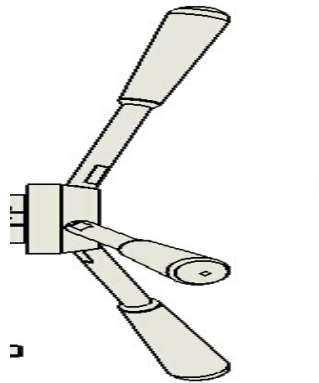


Figure 9

Step 11 Press, the lift handle to the gear shaft, and then push, pull, turn the lifting handle, let the lift handle hole aligned with the lifting gear holes, can see through from one end to the other end and put the spring pin, hit into the hole, make the outer end is flush with the lifting handle shaft. Figure 10

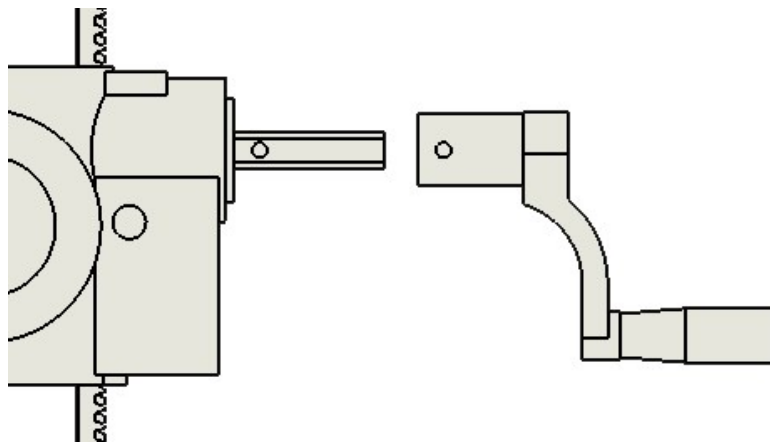


Figure 10

Step 12 Put hand wheel clamp pad screwed to the support clamp hole, securely tighten and then fixed the worktable . Figure 11

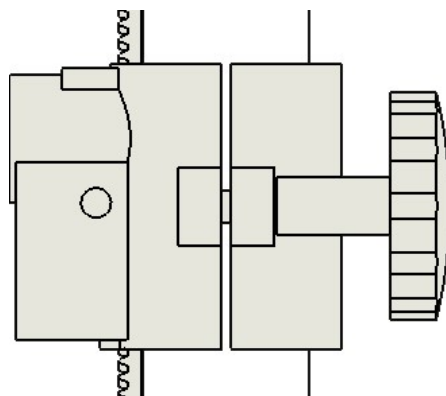


Figure 11

Step 13

First clean spindle taper end, and then clean, the drill chuck inside hole. Install the drill chuck to the end of spindle taper. The 3 holes of drill chuck and 3 holes of chuck clamp must be positive, put on the screw then tighten. In the process, it should be take feed handle to make the drill chuck near to the work table, in order to drill chuck taper surface and spindle taper surface firmly. Note: don't screw too tight, so as to avoid tension plate deformation.

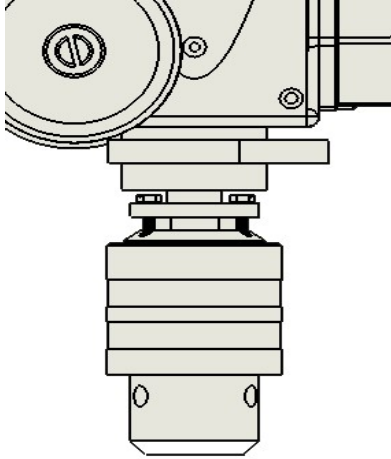


Figure 12

Step 14 Release the positioning knob on the dial. .Figure 13

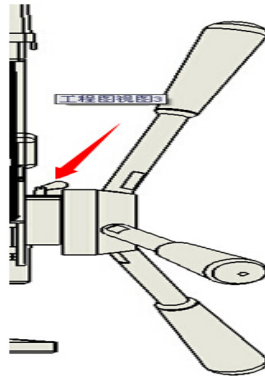


Figure 13

Step 15 Comprehensive inspection. if the machine head is fixed firmly, all moving parts are flexible, and the entire machine without defects wear as well. For questions, should be excluded in time, if hard solveded , please call the dealer for help.

Adjust the worktable angle: (as if need to tilt the worktable)

Step 1 loosen the connecting bolt between the worktable and the support.

Step 2. Use a wrench to clockwise tighten the bolts which next pin nut, pull out the pin.

Step 3. Move the table, turning left and right, adjust to the desired angle, let the arrow aim to the bench seat neck scale.

Step 4. Use a wrench to tighten the bolts connecting the table and seat.

Step 5 when work table recovery level, the pin nut back a few buttons, enter the pin hole, and tighten the connecting bolt. Figure 14

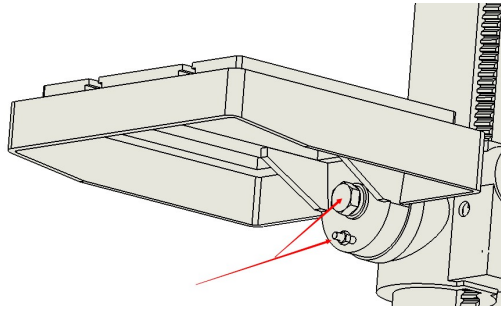


Figure 14

Adjust the work table to move up and down.

Step 1. Release the red locking hand wheel on the table seat.

Step 2. Lift the handle to reach the desired height.

Step 3. Tighten the lock handwheel, it can work.

Adjust the gap between the sleeve and the hole

When the gap is too large, the sleeves swaying in the hole, when the gap is too small, the movement of the sleeve maybe obstruction. At this time appropriate elastic sleeve on both sides of the four screws (Figure 15) can eliminate the defects mentioned above. During adjustment you can adjust a screw first, if no effect, then increase adjustment of another screw, you can adjust 4 screw one by one, so that getting the right gap.

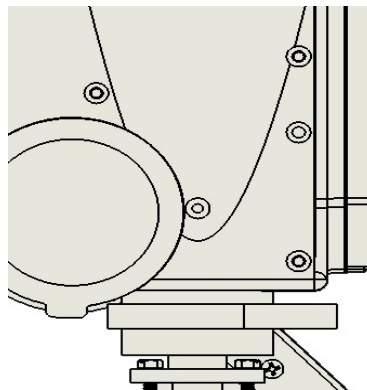


Figure 15

Warning:

1 Only take off the power plug, the machine is completely power off. Just turn off the emergency stop power switch, the machine is still charged, to avoid damage, pls, do not allow touch the movement part.

2. If machine spindles do not running, please do not carry on speed regulating operation.

otherwise may damage machine.

3 If machines in power-saving state, only for drilling operation, do not allow speed adjustment, replacement machine spare parts, drill chuck and drill bit etc..otherwise may cause damage.

Operation Panel(Figure 16)

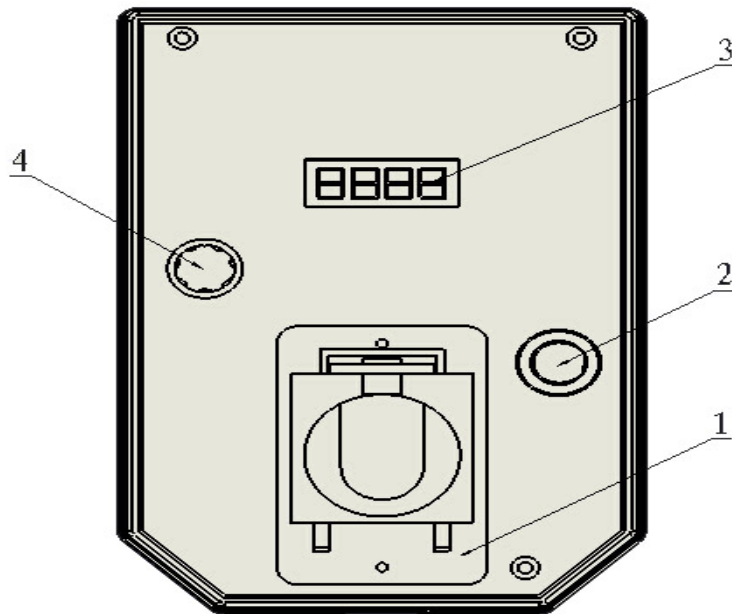


Figure 16

Operation panel

1 Main motor magnetic switch:

A. main power switch.

B. If the switch is in power off state, the machine is charged, only take off the power plug, the machine is completely power off, should be make sure the machine and the main power switch completely separated advance if for machine maintenance and replacement parts

C. Normally, push down the red circle cover, emergency stop switch is fully open, press **green/red** button for opening and closing operation. In case of emergency, usable hand, elbow, knee, shoulder any part of the body touch red circle cover switch to turn off the machine, so that we call it “emergency stop switch.”

D. When the network power is off, the machine will stop working. When power is coming again, the machine will not start, you must restart the power switch.

2. Drill & tapping switch: conversion drilling or tapping.

3. Speed digital display: display spindle speed.

4. Main motor speed button: this button to change the main motor speed.

Turn On The Machine

Step 1: turn the emergency stop switch (Figure 16 1). The red circle cover is pushed down along with the direction of the arrow.

Step 2 press the green button "1", the machine begins running. If the machine does not work at this time, check if the plug is connected to the power supply. Energy saving switch is in power saving state, if it is, should press the energy-saving switch to keep the machines in the normal state.

Turn off the machine

Press the power switch red "o" button, which turn off.

In case of emergency, usable hands, legs, shoulders and other any part of the body touch red circle cover switch to turn off the machine, No need to use finger to press the red button "O" to stop machine (Fig. 16 1).

Speed Adjustment:

WARNING: If the machine is not running not for speed adjustment, otherwise it will damage the machine.

Step 1 determine the working speed according to the differences hole size and materials.

Step 2 push speed control button (high) (Figure 16 5), the spindle speed increases; push speed control buttons (low) (Figure 16 4) the spindle speed is reduced.

Step 3 Adjustment the speed to the desired speed.

Note: that the speed of the digital display will delay a second to display the exact speed. At the highest and lowest speed (260 to 1800RPM), pls do not exceed adjust the speed, so as to avoid damage to the machine. At work, it is necessary to adjust the speed to working speed, rather than idling speed.

Speed adjustment can be freely during working, do not allow stop machine for speed adjustment.

Depth Gauge Using Of Operation (Figure sixteen 3):

Step1. Press the depth gauge on the display panel on / off button to turn on the display depth scale.

Step 2. Press Inch / metric conversion button on the display, to achieve the required standard. (mm or inches)

Step 3. Move the feed handle, make the drill bit to the workpiece.

Step 4. Press the button on the screen is cleared, the display shows zero.

Step 5. Start drilling, the display shows the actual drilling depth, drilling until the end.

For Ultra Low Speed Adjustment:

When using the speed buttons to adjust the bench spindle speed, the lowest speed may not reach your request, at this time turn the main motor speed button (Figure sixteen 9) a lower spindle speed can reach your speed requirements. But beware: the speed which adjusted with speed knob is constant power speed, the speed which get it from the main motor speed control knob is constant torque speed, not a constant power speed. **Generally, do not do the minimum speed Unless tapping M12 screw.**

Speed Digital Display (Figure 16 2):

Left /Right press speed digital switch (Figure sixteen, 8), you can open and close speed digital display. we

strong advice do not turn off the speed screen. So that easy to see actual spindle speed, no-load speed and working speed of the machine is not the same speed. Speed should be adjusted on an actual operating speed. No-load speed is usually higher than the operating speed.

Note: When production a batch of the same workpiece to avoid duplication of positioning or when the workpiece a hand can not moved it , you can use laser positioning (Figure sixteen 7).

Using Laser Positioning:

Step 1 Press the "I" direction of the laser position switch, open laser, let the red cross line shine to the work table .

Step 2. Place the workpiece on the table, pulled down the feed handle and hand moving the workpiece enable drill tip aligning to the position of the workpiece to be drilled.

Step 3. Release the feed handle, hand pulled the laser head let the red cross line aim to the workpiece position to be drilled, positioning is completed, then drilling.

Step 4. When the second workpiece is being processing, just artifacts drilling position and a laser cross the center line coincidence they can be boring, no longer pulling the feed lever with a drill tip positioning again.

Step 5 when drilling big holes, that a hand can not move the workpiece, you can use both hands to move the big workpiece to the drilling position close to the bit position, then move feeding handle with a drill tip pointing to the workpiece. Then move the laser head of the laser beam is coincident with the tip of the drill tip. Loosen feed handle, hands move the workpiece to the laser cross center line, then can carry on the drill hole.

Use Energy Saving Device:

When ready to begin drilling on the workpiece, turning on machine ,put the energy switch to energy-saving position(Figure sixteen 6), the machine in power state but not be idling, only move the feed handle the machine will running. After finished the drilling work, pls put the energy-saving switch in normal statement, and never allow the machine in stop position especially in power-saving statement. the One is unable to open machine regularly, the two is to bring danger.

Warning:

When machine in power-saving statement, machine is not running but still in charged, Only slightly move the feed lever the machine will running. to avoid damage, pls, do not allow touch the movement part . replacement machine spare parts, drill chuck and dill bit etc.

Drilling Tapping Conversion:

Note: The machine can not only drilling but also be tapping, it can also be positive in any position and travel.

A. The drilling function converts Tapping function:

Step 1 The drilling and tapping switch (Figure sixteen 8) turn to the tapping position, the machine can be positive and reverse.

Step 2 Loosen the positioning knob on the dial (Figure 17)

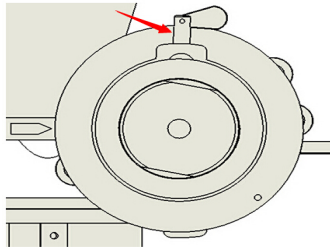


Figure 17

Step 3. First counter-clockwise rotation the dial to the end, there is a Rectangle hole under the machine head , put the $\phi 3$ pin inser to the dial positioning hole by hand. (Figure 17)

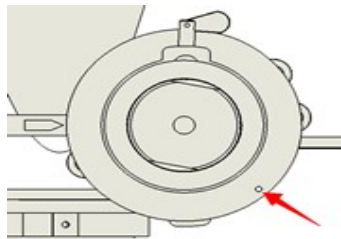


Figure 18

Step 4 Loosen the fastening Screw on the feed seat, let the feed handle have a certain empty space so that the machine can be positive and reverse running.

Special note: Only arbitrary tapping need to loosen the fasten screw on feed handle seat so that the feed handle have 2 ~ 3mm space,, other functions need to tighten the fastening screw, no need certain empty space anymore.

B. The tapping function converts drilling functions:

Step 1 Turn to the drilling and tapping switch to the drilling position, the machine will be positive running

Step 2 if no need to set limited depth function during drilling, the positioning knob on the dial can still be in the release state.

Step 3. Pull out the $\phi 3$ positioning pin into the tool disc jack, if no need to set limited depth ,this pin can not pull out.

Step 4. Tighten the fastening screw on the handle seat.

Note: In this state, just press the drilling and tapping switch, take out and insert the $\phi 3$ positioning pins can be easy achieved drilling or tapping conversion functions, do not perform other operations.

Using The Drilling Limited Operation:

Note: when the machine is drilled to the limited depth, no longer moves down again.

Step 1 Take off the tapping depth ring, loosen the limited knob from the dial and the limit screw should take out from dial at the sametime.

Step 2 Turn the dial so that make the arrow of the scale aim to the limited depth. Note: the limited depth should be the drill bit touch to the workpiece high plus the height of hole drilling itself.

Step 3 Tighten the positioning knob, then drilling, if reach the limited drilling depth, the machine will not moves down again.

Step 4 Users can used with scale to set of depth. This is more accurate.

Tapping Workpiece With Foot Switch

Step 1. Turn to the drilling and tapping switch to the (Figure sixteen 8) "tapping" position.

Step 2. Turn to the foot limit switch (Figure sixteen 6) to "foot" position.

Step 3. Pedaling and release the foot switch can be positive and reverse running. the workpiece can be hand tapping operation

Set Limit Tapping Operation:

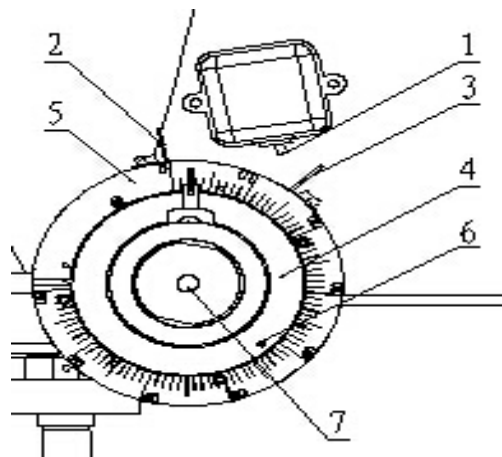


Figure 19

Note:

1. Toggle Switch
2. Left Reed (left orientation film)
3. Right Reed (right orientation film)
4. Dial
5. The depth-ring
6. $\Phi 3$ pin hole
7. Handle seat fastening screws

Step 1. Turn tapping conversion switch to "tapping" position (Figure sixteen 8).

Step 2. Turn to the foot limit switch (Figure sixteen 6) to " limit depth" position.

Step 3. Loosen the dial screw and pull out the $\phi 3$ pin under the dial , so that the dial can be freely rotated around the axis (Figure 20).

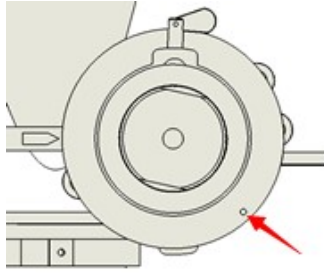


Figure 20

Step 4 Turn the Toggle Switches to the right.(Figure 21)

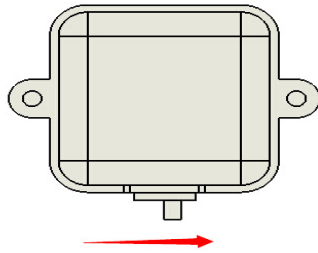


Figure 21

Step 5. Clockwise turn the dial, let the depth ring "o" position aim to the toggle switch. (Fig. 22).

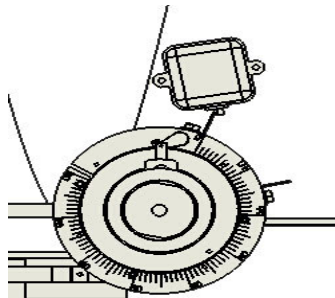


Figure 22

Step 6. Clockwise turn the dial and make left reed close to toggle switch, also tighten dial fastening handbar, Let dial and shaft is firmly combined (Figure 23).

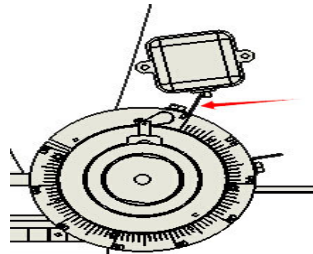
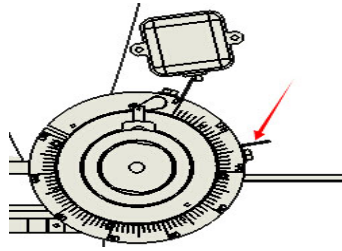


Figure 23

Step 7. Release the right positioning Right Reed, then slide positioning piece to the desired mark, then tighten (Figure 24). The required scale number should be tap awl touching down to the workpiece plus tapping depth.



Step 8 Test try tapping , if the setting limit depth has little bit error, and then move the right positioning reed to adjustable slightly.

Free Tapping Conversion To Limit Tapping

Step 1 Pull out the $\phi 3$ limit pin.

Step 2. Clockwise turn graduated disc and make the depth ring "0" aim to the toggle switch, the left reed will turn the toggle switch to the right, and then tighten fastening handlbar.

Step 3 Adjust the right reed to the desired position (The required depth should be tap awl touching down to the workpiece plus tapping depth.).

Step 4 Turn to the foot limit switch (Figure sixteen 6) to " limit depth" position.

Limit Tapping Conversion To Free Tapping

Step 1. Loosen the fastening knob on the dial.

Step 2 counterwise turn the dial until it is blocked.

Step 3 Put the $\phi 3$ limit pin insert into the positioning dial hole.

Step 4 Set the foot switch to the pedal position.

Step 5 loosen the fastening screws on the handle seat, so that the feed handle has an empty space of 5mm.

Convert Other Operation Functions:

1, When not using the depth setting Drilling, the deep ring may have been mounted on top, it is does not affect other operations. But should loosen the positioning spring and rotation to 90° degree then tighten. In order to avoid going on other operations.

2. When do not setting limit depth-drilling, please loosen the dial fastening knob.

3. If going on free tapping, please put the $\phi 3$ pin inser into the lower dial rectangle positioning hole ,then loosen the fastening knob on the dial.

Installation And Replace Belt

Unloading belt

Step 1. Drill Machine speed adjusted around to 1000 rpm then stop. open the belt cover.

Step 2. Hands wrenched upward big belt wheel. then compression spring; " another person move the belt to the other direction. (Fig. 26)

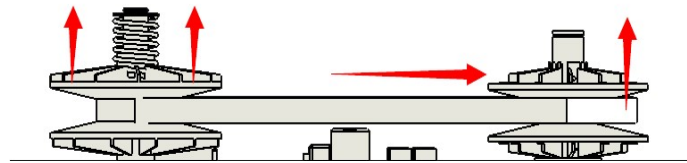


Figure 25

Step 3. Turn the other end of the small wheel, take out the belt from middle of the wheel .Remove the belt (Fig 27)

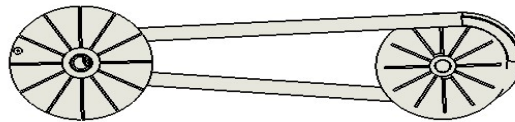


Figure 26

Loading Belt

Step 1. One person to trigger up the big belt wheel and another person put the new belt fitted to the middle of the two wheels, And pulling tighten the belt as much as possible to the other end (Figure 28).

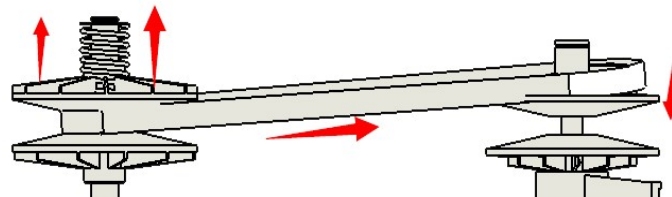


Figure 27

Sep 2 Rotate the other end of the small wheel, put the belt into the middle of the belt groove. Then installation is complete.....(Figure29)

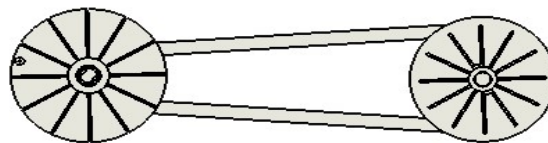


Figure 28

MAINTENANCE

Lubrication

All of the ball bearings are packed with grease at the factory. They require no further lubrication.

2. Do not open the machine. if the machine breakdown, it is should be maintained by professional personnel.

3 when the belt wear serious, should be replaced with a belt.

Trouble shooting

1 Drill bit burns:

- Incorrect speed -- Change speed
- Chips not coming out of hole - Retract drill bit frequently to clear chips
- Dull drill bit --- Sharpen drill bit.
- Feeding too faster -- Use low speed
- Not lubricated --- Lubricate drill bit.

2 Drill leads off...hole not round

- Hard grain in wood or lengths of --- Sharpen drill bit correctly cutting lips and/or angles not equal
- worktable out of level -- adjustment table to the horizontal position, check whether the pin is out.
- the iron piece under table -- clean chips under the workpiece

3 Work pieces turns loose from hand

- Work piece pinching drill bit or excessive feed pressure --Support work piece or clamp it
- Feeding too faster -- slow down speed
- Dull drill bit - - Sharpen drill bit.

4 Excessive drill bit run out or wobble

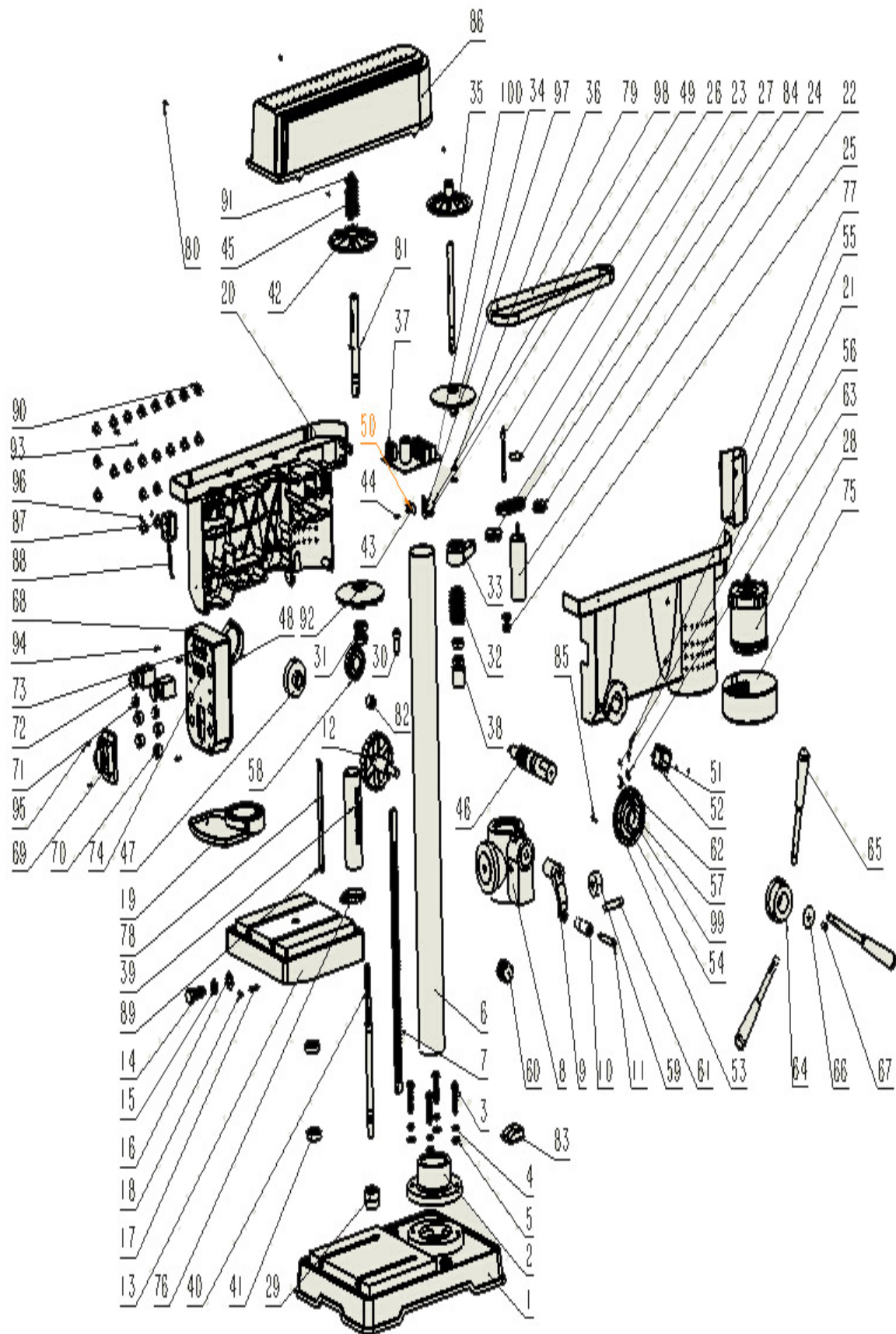
- Bent drill bit --- Use a straight drill bit
- loosen drill chuck--- tightening drill chuck

5 Drill bit tumbling in workpiece

Spindle taper end dirt -- clean dirt and then install the drill chuck.

The drill chuck install to the spindle is not positive ---Use with spindle collide

Exploded drawing



Parts List

Part no.	Description	Q'ty	Part no.	Description	Q'ty
1	Base	1	28	Main Motor	1
2	Column seat	1	29	Drive block	1
3	M12X45screw	4	30	Laser head	4
4	M12 spring pad	4	31	Bearing 6002	2
5	M12 flat pad	4	32	Big Spring	1
6	Column	1	33	Bearing seat	1
7	Column Rack	1	34	Small belt wheel (lower)	1
8	Intensify sets	1	35	Small belt wheel (upper)	1
9	Crank	1	36	Spindle Collar	3
10	Crank handle	1	37	Circuit board	1
11	M8X70 screw	1	38	Bearing 6904	2
12	Intensify handle	1	39	Spindle	1
13	worktable	1	40	Transmission shaft	1
14	M16X45 screw	1	41	Bearing 6023	2
15	M16 spring washer	1	42	Big Belt wheel (upper)	1
16	M16 flat washer	1	43	Induction block	1
17	Worktable pin M5X35 screw	1	44	M5 washer	1
18	M5 screw Nut	1	45	Small spring	1
19	Tool tray	1	46	Gear shaft	1
20	Right machine body	1	47	Volute spring seat	1
21	Left machine body	1	48	Volute spring coverl	1
22	Adjustable speed motor	1	49	Sensor seat	1
23	Timing Belt wheel washer	1	50	Sensor	1
24	Small timing Belt wheel	1	51	Toggle Switch box	1
25	Bearing 608	1	52	Toggle Switch	1
26	Speed spindle	2	53	Set deep ring	2
27	Big belt wheel	1	54	Dial	1

Part no.	Description	Q'ty	Part no.	Description	Q'ty
55	L-type starter button	1	78	Depth gauge	1
56	M4 X8 bolt	2	79	Drive belt	1
57	M4 nut	2	80	ST 3X12 Self-tapping screw	4
58	Vortex Spring	1	81	Spring Cylindrical pin	4
59	Turbine	1	82	Footswitch seat	1
60	Worm	1	83	Foot Switch	1
61	Turboshaft	1	84	Belt	1
62	Left paddles	1	85	Set deep ring pin	1
63	Right paddles	1	86	Belt cover	1
64	Ring	1	87	Power Box	1
65	Handle seat	1	88	Power cable	1
66	Handlebar washer	1	89	ST 3X12 Self-tapping screw	
67	Handleseat fastening bolt	1	90	ST4X24 Self-tapping screw	
68	Electrical box	1	91	pindle axis clamp	
69	Safety switch	1	92	large pulley (lower)	
70	Rocker Switch	5	93	M4 washer	
71	Speed adjust Switch	1	94	ST 4 X10 Self-tapping screw	
72	Speed button	1	95	ST5X5 Self-tapping screw	
73	Depth Display	2	96	ST3X8 Self-tapping screw	
74	Speed display	1	97	ST3X0 Self-tapping screw	
75	Main motor cover	1	98	M3 washer	
76	Depth gauge seat	1	99	ST3X20 Self-tapping screw	
77	Speed motor cover	1	100	ST4X8 Self-tapping screw	