

Digital Display Precision Cutting Machine

Instruction Manual

CATALOG

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1. Main purpose and scope of application

This machine is a new model developed to adapt to the development of aluminum-plastic doors and windows processing industry; this machine is simple to operate, reliable performance, advanced technology, easy to maintain; this machine is mainly used for the processing of aluminum doors and windows, curtain walls, the tool uses hard The alloy tooth saw blade has high cutting speed, high productivity, and high processing accuracy; the two saw heads can work independently or at the same time, and can cut out the required length and the angle of both ends of the profile at one time.

2. Technical specifications and parameters

Power source: three-phase four-wire 380V 60HZ

Sawhead motor: power 2×3 KW speed 2800r/min

Air consumption: 60L/min

Cutting length: MAX 4200mm MIN: 500mm

Sawing width: MAX 150mm

Cutting height: MAX 300mm

Cutting angle: 45° 90°

Feeding speed: 0~3m/min

Saw blade specifications: $\varnothing 550\text{mm} \times 4.4\text{mm} \times \varnothing 30\text{mm}$ Z=120

3. Product structure overview

3.1 Features

There are two saw heads on the bed of the machine; the left saw head is fixed and fixed on the bed with screws, and the right saw head can be moved on the circular guide by the handle and can be locked in the desired position; it is installed on the bed Scale indicator.

An operation console is installed in front of the bed, and electrical control components are installed on the operation console. After the work piece is placed on the workbench, as long as the operator presses the button

according to the operation rules, the machine completes the work piece positioning, pressing, cutting, tool return, loosening and other processes.

3.2 Main structure

The machine is mainly composed of main parts such as left saw head, right saw head, bed body, supporting frame and working table.

3.2.1 Saw head

The left saw head is a fixed head, and the right saw head moves left and right on the circular guide rail with the carriage. There is a linear motion pair between the carriage and the guide rail. The saw head moves left and right briskly and flexibly, ensuring the stability of the movement. The feeding of the saw blade is completed by a double-acting gas-liquid damping cylinder, and its pneumatic control system has the function of stepless speed regulation. According to the processing needs, the feed and return speed can be adjusted so that it has the function of slow feed and fast return.

3.2.2 Machine frame

It is made of low carbon steel rectangular steel pipe welded, and after welding, it is treated with aging to ensure the rigidity and stability of the bed.

3.2.3 Workbench

The fixed worktable and the left head are installed together, and the movable worktable can move horizontally on the guide rail with the carriage.

3.2.3 Supporting rack

The intermediate support rack and the rear support rack are automatically telescopic, which meets the needs of cutting profiles and saves space.

4. Product system description

4.1 Pneumatic control system

The pneumatic control system of the machine tool is composed of four parts:

- (1) Sawhead air intake damping cylinder;
- (2) Workpiece pressing cylinder;
- (3) Angle swing cylinder;

(4) Guard lifting cylinder; Air source is made of rubber The pipe is introduced into the inlet of the air source processor of the machine tool, and is distributed to each gas supply point through an internal pipeline. The working principle is briefly described as follows:

4.1.1 Feeding movement of saw head

The solenoid valve is switched on after being energized, compressed air enters the rear chamber of the intake air damping cylinder to advance the saw head; the solenoid valve is powered off, the two-position five-way solenoid valve is reset, and compressed air enters The front cavity of the gas-liquid damping cylinder retracts the saw head.

4.1.2 Work piece compaction

Work piece compaction is achieved through the cylinder. After the solenoid valve is energized, the two-position five-way solenoid valve is reversed. Compressed air enters the single-acting cylinder to compact the work piece; when the cutting is completed, the saw blade returns When the saw head touches the travel switch, the solenoid valve is de-energized, the direction is changed, and the cylinder is pressed to loosen. At this point, the entire process is complete.

4.1.3 Shield lifting

The lifting of the shield is synchronized with the feed of the saw head, the shield falls when the saw blade is in motion, and the shield is raised when the saw blade returns.

4.1.4 Saw blade angle swing

Through the selection button on the operation panel, the angle swing solenoid valve is energized, and the angle swing cylinder operates to make the saw blade reach the required angle.

5. Transportation and storage

The machine tool should be prevented from violent bumps, slipping and overturning during transportation. Before leaving the factory and when it is not used for a long time, the equipment should be cleaned, the lubricating oil

(grease) should be applied, and the plastic protective cover should be covered to prevent For dust and rust prevention work, see 8 Maintenance and Maintenance.

6. Installation and commissioning

The machine tool is moved to the user's place of use and unpacked for inspection. If there is no transportation damage, the machine tool can be moved to the installation position using a moving tool.

6.1 Installation conditions and installation methods

6.1.1 Should be installed on the hard and flat concrete floor in the plant.

6.1.2 The environment should be dry, free of dust, no corrosive gas, and the temperature should be 10~40°C.

6.1.3 Support the six leveling bases on the machine bed legs, level the machine, tighten the lock nuts of the adjustment bolts, and remove the fixing plates and racks used to fix the machine head.

6.2 Connect power

Three-phase four-wire 380V 60Hz AC

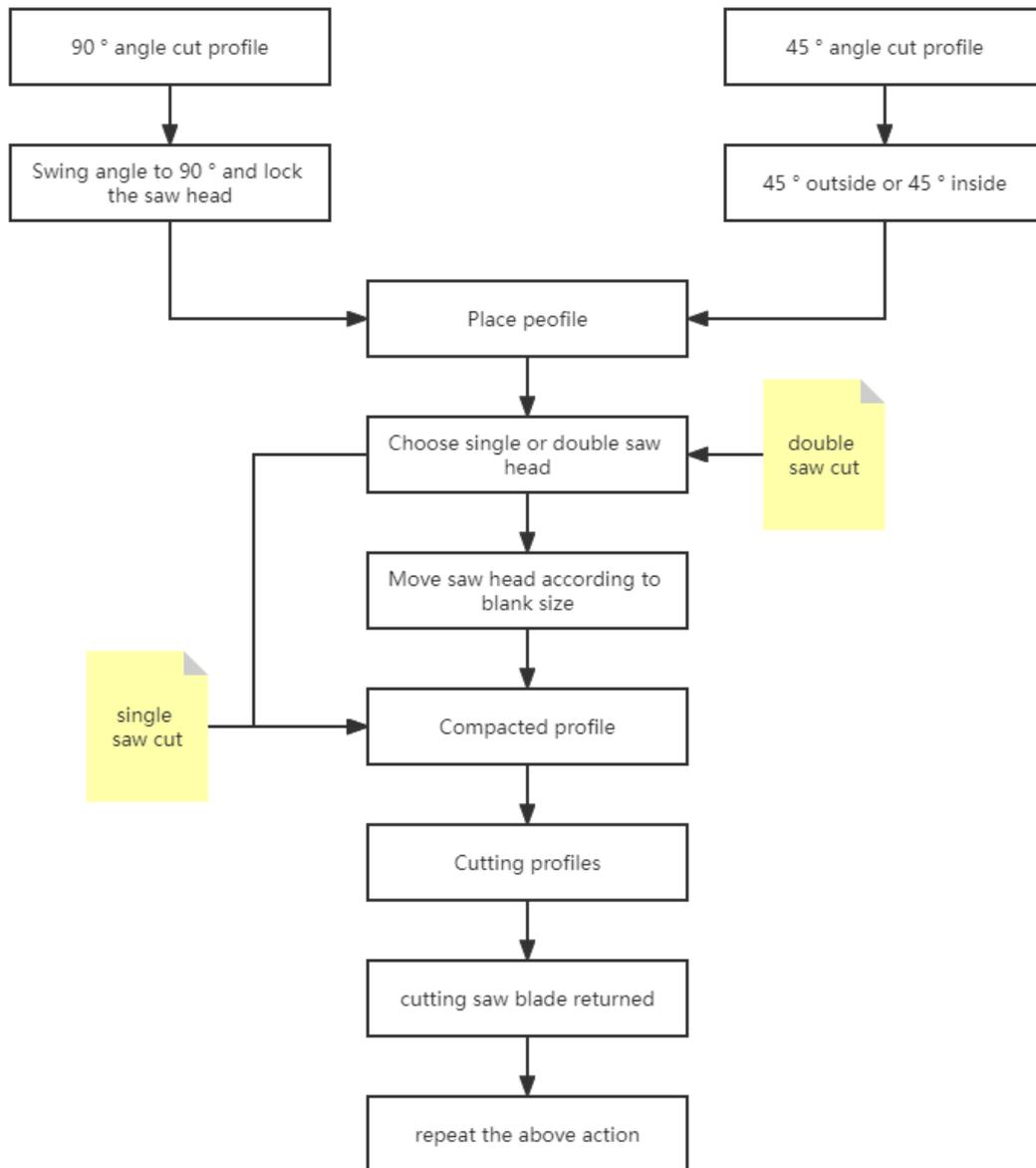
6.3 Ground

The bed of the machine tool must be grounded. The grounding wire is a yellow-green two-color wire. Its cross-sectional area is not less than 2.5 mm². After grounding, the resistance between the fuselage and the main grounding point should be less than 0.1 ohm.

6.4 Breathing

Working pressure 0.5 MPa ~ 0.8 MPa, connect the air source to the connector of the air source processor and check the pneumatic system for leaks.

7. Use and operation



7.1 Adjustment before operation

7.1.1 Adjust the position of the compression cylinder

Place the profile on the working surface of the machine, adjust the compression cylinder of the two saw heads to the most suitable position for pressing the work piece, and then fix the compression cylinder.

7.1.2 Adjustment of saw blade feed speed

During the commissioning process, if the feed speed of the saw blade is not suitable, you can adjust the speed control joint of the working cylinder to

increase or decrease the feed speed to obtain the required feed speed.

7.1.3 Cutting angle adjustment

After the machine tool has been adjusted according to the above items, and the test is carried out for 30 minutes, if there is no abnormal phenomenon, the following debugging can be carried out.

7.1.3.1 90° angle adjustment (the blade extends perpendicular to the work surface)

The machine tools are all tested and tested before they leave the company. Here, you can directly cut a profile to check whether the 90° angle of the sawing surface meets the requirements. The initial angle of machine tool cutting is set to 90° with an error of $\pm 10'$. If it does not meet the requirements, the bolts on the limit stop can be adjusted, and the sawing measurement can be repeated to make it meet the requirements. Then tighten the nut on it.

7.1.3.2 45° angle adjustment (the angle between saw blade extension and worktable is 45°)

Loosen the locking handle on the worktable, turn the angle selector switch to the 45° position, the swing angle cylinder is ventilated, and lock the handle after the 45° angle is in place. After sawing the profile, check whether it meets the requirements (the error is $\pm 10'$). If it does not meet the requirements, you can adjust the bolts on the limit stop and repeat the sawing measurement to make it meet the requirements. Then tighten the nut on it and tighten the locking handle.

Note:

After the angle adjustment is completed, the handle must be locked, and the angle selection switch should be adjusted to the middle position to prevent the solenoid valve coil from being energized for a long time to shorten the service life!

7.1.4 Work piece length adjustment

After the cutting angle is adjusted, the cutting length of the workpiece should be adjusted. Pull the handle to drive the right machine head to move along the circular guide rail, and at the same time look at the scale pointer (digital display saw to see the display) to make the right machine head to the accurate position, the length of the scale indicates the length of the short side of the workpiece. When minor adjustment is required, tighten the brake adjustable handle and turn the fine adjustment handle to the required size.

7.2 Operation:

After adjusting the sawing angle and the length of the workpiece, press the "saw start" button. After the saw head motor runs smoothly, install the profile, press the "clamp" button, clamp the profile, and then press the "work advance" button , The saw blade will cut the profile evenly. After the processing is completed, you can press the "Saw Stop" button. In extreme cases, you can press the "Emergency Stop" button to turn off the power supply. Any other buttons cannot work, which protects the machine tool from damage.

When the "Saw Selection" switch is set to the "Left" or "Right" position, the "Left" or "Right" saw head can work independently. If it is set to the "Double" position, the left and right saw heads can be operated at the same time.

After one shift, turn off the machine power (switch on the electrical box).

8. Maintenance and care

8.1 The cylindrical guide rail of the bed is lubricated with No. 40 mechanical oil in summer and No. 30 mechanical oil in winter, which is lubricated once per shift.

8.2 Lubricating oil should be frequently injected into the front and back supports and other movable parts of the revolving frame.

8.3 Adjustment of air source processor (water filter, pressure gauge, lubricator).

The water separator air filter is often drained and cleaned once a week; the

pressure gauge is adjusted from 0.5 MPa to 0.8 MPa; the oil mist device is filled with No. 20 mechanical oil, and a certain oil level is guaranteed, and the oil amount is adjusted to about three drops per minute.

8.4 Cleanup after use

The machine tool should be kept clean frequently. After each work shift, the chips should be removed in time, the dust on the surface of the guide rail and the machine tool should be wiped off, and the exposed surface of the round guide rail should be lubricated and evenly applied.

9. Common faults and solution

9.1 After the air compressor and the machine tool are started, if the pressure of the pressure regulating valve does not reach the working pressure, first check whether the compressed air output by the air compressor reaches the working pressure, and if it reaches the working pressure, then check whether the spring of the pressure regulating valve is broken or Whether the pipeline is leaking, so that it can be replaced in time.

9.2 During the processing of the profile, if the saw head retracts after the cutting and the compression cylinder has not been loosened, check whether the travel switch has been touched and whether there is a fault.

9.3 When no oil dripping occurs during the operation of the oil mist device, check whether the inlet flow rate is reduced and whether the oil needle hole is blocked by dust.