

MC PCB SEPARATOR

Operation Manual (Model: S-D601)



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Preface

Three sets of round blade type "V" slot sub-board machine on the sub-board quality has been further improved, especially for PCB substrate and aluminum substrate, after the split with very flat without deformation, not twist, edge smooth, each small division . So that the stress generated is small during the cutting process .

"Customer first, quality first" is the purpose of our Company, we continue to improve product quality and improve product performance to meet user needs, and we attach importance to after-sales service, users are welcome to make valuable advice.

Precautions:

- * Before using this machine, please read this book carefully, it will make your machine safe and smooth operation.
- * In any case, do not remove the protective plate and guide plate around the blade to avoid danger.
- * This unit is designed only for V-CUT circuit boards, and should not be used for other purposes.
- * When operating this machine, should not wear loose clothes, long hair should be tied, to avoid being involved in the machine.

1. The main features:

1, the circuit board cut by the six blades to complete, up and down two pcs as a group, constitute a cutting unit. Respectively, A, B, C, three groups. The entire cutting process is divided into three stages, A group of blades first cut the circuit board 40%, then B blade cut again 40% through the groove which was ran over by the A blade before , and finally by the C group blade cutting the left 20% and repair light, because each time the amount of cutting is very small, compare to traditional one ,the stress generated during cutting process has decreased more than 80%, making the edge of the circuit board be very smooth, the board is good and not Alice.

2, due to the reason of multiple cutting , the cutting process is very smooth, greatly improving the positioning ability of the V-CUT slot , even if the V-CUT slot is very shallow circuit board, there will not be the situation of V-CUT slot out from the guide knife , avoiding bad.

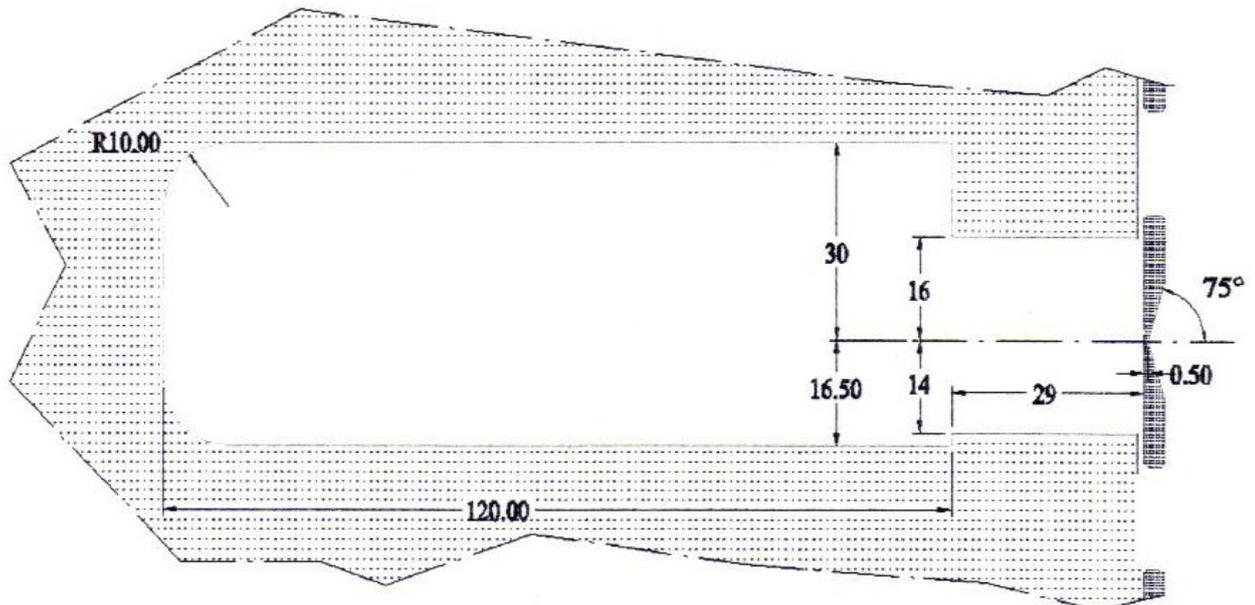
3, due to the small cutting force of the blade, using the import Japan high-speed steel materials, blade durability greatly improved, blade life can be one year or more, reducing the use of cost.

4. All cutting blades are calibrated with a dual frequency laser interferometer to ensure that the knife can be cut accurately in the slot cut by the front knife. Tip jitter is less than 0.02mm. To ensure the perfect cutting quality.

2. Technology specs:

Max separating board length	No limit
Thickness	0.5~3mm
Speed	0-400mm/s
Blade material	Japan SKH9 HSS
Power	220V/50HZ, 60W
PCB material	Aluminum ,copper,FR1~4,fiber glass
Dimension	800mm(L)*380mm(W)*240(H)
The overall size of the inlet / outlet tray	2600mm(L)*380mm(W)*240(H)
Weight	40kg

V-CUT slot around the parts of the restrictions: V-cut slot on the right side of the width is not limited, the left is not more than 120mm, the specific size of the following figure.



In contrast to the above figure, make sure that the part does not touch the blade or the rack

3.Preparation of the machine before installation and use

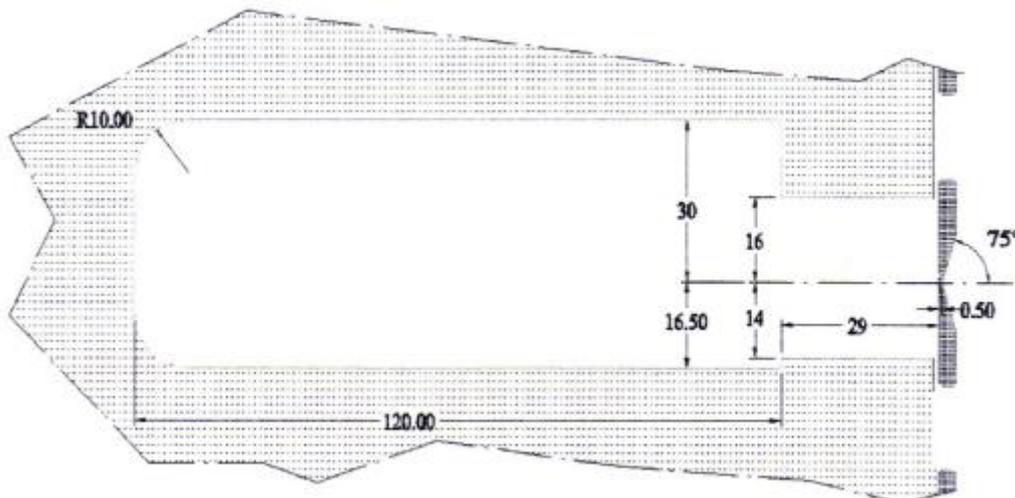
- 1, check the contents of the box, including the following parts: host machine(1pcs), outside pallets(1pcs), discharge pallet(1pcs), power line(1pcs), Allen wrench (1pcs).
- 2, remove the machine bag, placed in a flat and strong workstations, from the power outlet should not be too far.
- 3, in order to prevent electrostatic damage to the parts on the circuit board, the machine should be grounded, if the power outlet inside the ground is reliable and effective, when the machine is powered on the ground.
- 4, wipe the machine blade on the anti-rust grease.
- 5, according to the attached page (Figure 1) machine installation shown, place the machine. Install the outer pallet and tighten the three pcs fixing screws. In general, the height of the outer pallet is about 1mm lower than that the main guide blade tip. After fixing the outer pallet, twist the two adjustable feet on the outside of the outer pallet to provide reliable support on the outside of the outer pallet. And then as shown in the figure, the outlet tray with a screw hole on the right side of the outer tray, tighten the three fixed screws, and then adjust the pallet on the adjustable foot

height, so that the same high.



4. Machine adjustment and operation

1, to confirm the circuit board parts will not be collided with the body, the machine relevant size like below picture, the circuit board component height should not exceed the scope of the icon.



2, the upper guide knife position adjustment page (Figure 2)

The board be properly fed into the machine along the V-slot on the board, depending on the correct upper plate height adjustment, if too high, the circuit board can not correctly follow the V-cut Slot into the machine and the cutting circuit board will jump out from the V-cut slot, resulting in damage to the circuit board or blade; if too low, it is difficult to move the circuit board, and hard to send into the machine, affecting efficiency. So before use, should be based on the thickness of the board and the depth of the V-groove depth, adjust the upper guide knife position, the method is as follows:

Turn off the machine power, remove the circuit board which need to be splitted, flat it on the outer pallet. Place the board's V-cut slot on the main guide blade and push

the board into the direction of machine internal cutting blade until it touches a round blade. Loosen the fixed knob of upper guide blade , which makes it easy to adjust the upper guide blade . The upper guide blade be adjusted to the appropriate height, then the V-groove on the circuit board is stucked by both the upper and lower guide blade , can be correct orientation, and will not sprang to the left and right, but can be flexible sliding along the guide plate.

3, blade spacing adjustment (Figure 2)

After Circuit board is put into the machine internal along the guide plate, Whether it can be neatly separated by the blade and sub-plate process and minimize the stress, depending on the appropriate spacing of A, B, C the three groups upper and lower blades. Therefore, the blade spacing should be adjusted according to the thickness and material of the split circuit board. In order to achieve the best results. The basic principles of adjustment are as follows:

The A group of blades first cut the 30% to 50% residual thickness of the circuit board , then B blade cut again to complete 30% to 40% of the cutting amount by over the groove which was cut by the A group of blades , and finally by the C group blade cutting the left 10% ~ 20% of the amount of cutting and dressing smooth.

4、 When the blade pitch is adjusted, measure the spacing between the two blades with the feeler, and compare the difference with our target values and calculate the difference. When adjusting, loosen the holder fixed screw to adjust the adjustable screw of the blade height which is on the height scale plate and adjust the blade height . Turn the blade height adjustment screw clockwise to raise the height of the upper blade. Rotate counterclockwise to raise the height of the lower blade. Scale on each small grid scale 0.01mm, a large grid is 0.1mm, the screw screwed the corresponding grid number, the blade is floating up and down the corresponding height. After finishing the adjustment, tighten the blade holder fixing screw. Then, manually put the circuit board along the guide board into the machine for test cut, If the circuit board is not separated, the blade height should be lowered.

5. Separating speed adjustment (Figure 2)

After the above adjustment work is completed, manually send the circuit board along the guide board into the machine to try to split, if the split effect is ideal, you

can open the machine power switch, the blade will turn up, automatically send the board into the machine to cut, the machine separating speed is divided into 1-4 total of 4 files, the corresponding delivery board speed were 80,120,200,300 mm / s, the user can work according to the habit and process requirements, adjust the separating board speed.

6、 Blade replacement:

After prolonged use of the machine, if the blade is damaged, please according to below method to replace.

A) Raise the upper blade by 0.5 mm as described in point 3 above.

B) Loosen the blade fixing screw on the inside of the blade , remove it completely, and then tighten the screw back to the original screw hole 2-3 turns. Gently tap the screw head, you can remove the blade (including the central axis) completely. Remove all the adjustment pads of the blade shaft, set on the new blade, and replace it according to the reverse order of disassembly. When the blade is in place, check that the tip of the blade with the other original blade to see if their tips are aligned or not , and if it is missing, remove the blade and increase or decrease the number of tabs until aligned with the original blade tip. After alignment, tighten the blade fixing screw.

5.The routine maintenance of the machine

Maintenance of the machine in the use of the work is quite simple, just keep the machine itself clean, and regularly on the upper and lower blades, up and down the steering plate can be coated with anti-rust oil. Specify the person responsible for the operation and maintenance, in order to ensure the accuracy of the machine, do not in the temperature is too high or too low to use or save.

Figure 1 machine installation diagram

