The change of squeegee pressure has a significant impact on printing. Too small pressure will make the solder paste unable to effectively reach the bottom of the stencil opening and not be well deposited on the pad. Too much pressure will cause tin The paste is printed too thin and can even damage the stencil.

The ideal state is to just scrape the solder paste from the surface of the stencil. In addition, the hardness of the scraper will also affect the thickness of the solder paste. A squeegee that is too soft (urethane squeegee) will dent the solder paste, and a harder squeegee or metal squeegee is recommended for fine-pitch printing.

The parameters of the squeegee include the material, thickness and width of the squeegee, the elasticity of the squeegee relative to the blade holder, and the angle of the squeegee to the steel mesh, etc. These parameters all affect the distribution of solder paste to varying degrees. When the angle of the squeegee relative to the stencil is 60°-65°, the quality of solder paste printing is the best.

The relationship between the opening size and the direction of the squeegee should be considered while printing. The traditional printing method of solder paste is that the squeegee runs at a 90° angle along the x or y direction of the stencil. As a result, the amount of solder paste on different directions of the device openings is different. It has been verified by experiments that when the length of the opening is parallel to the direction of the squeegee, the thickness of the solder paste is about 60% larger than that when the two are perpendicular. The squeegee is printed in the direction of 45°, which can significantly improve the unbalance of solder paste in the opening direction of different stencils, and at the same time, it can reduce the damage of the squeegee to the openings of fine-pitch stencils.

Empirical formula for SGY Metal SQG squeegee blade pressure

When using a shore screen printing squeegee with a hardness of 80-85, initially apply 1kg of pressure per 50mm of squeegee length.

For example. A 300mm squeegee applies a pressure of 6kg. Gradually reducing the pressure until the solder paste begins to remain on the template and cannot be scraped cleanly, and then increase the pressure by 1kg. Between the time when the solder paste is not clean and when the scraper sinks into the wire hole to dig out the solder paste, there should be an acceptable range of 1-2kg to achieve a good screen printing effect.

How to calculate the blade pressure according to the blade length, please refer to DEK metal squeegee

Here we caculate approximate squeegee blade pressure reference.

200MM 4-6KG

250MM 4-6KG

300MM 5-7KG

350MM 6-8KG

400MM 7-9KG

500MM 8-10KG

If the scraper is new, the pressure can be smaller, if the scraper is old, it can be larger

Moreover.Too many external factors such as whether the squeegee is installed and the printing height will affect the printing solder paste (the steel plate should be scraped clean and the printing quality should be guaranteed)