How to chose suitable silicone pad?

Pads are a formulation of a silicone base material, silicone oil, and a catalyst. The amount of oil determines how hard the finished pad will be. The more oil, the softer the pad. Manufacturers can have anywhere from a few dozen to a couple of hundred shapes and sizes of pads in varying hardness.

Size, shape and hardness are the three most important considerations in choosing a pad for a given application. Size is determined by the size of the image to be printed, and by the size of the machine. Measuring the image diagonally, the pad should be 20% larger to prevent image distortion. The machine needs to be able to compress the pad far enough to pick up and transfer the entire image in an even motion. In addition, the pad must not interfere with the ink cup or other parts, and it must not roll off the edges of the cliché during image pick up.

The shape of the part determines the shape of the pad. There are three basic shapes from which all standard pads are derived (with the exception of rotary pads.) The three basic shapes of conical, rectangular, and roof-shaped are illustrated to the right.

There are many variations of each of these three basic shapes. To determining which pad works best for a specific application have your supplier test print your parts for you.

Once you have the correct pad you need to concern yourself with setting the proper compression and correctly locating the pad.

Compression should always be set for the minimum amount necessary to pick up and transfer the image. Over compression causes excessive pad wear as well as poor transfer efficiency.

In set-up, the pad should be located so that its point is not in the image area when the image is picked up. The point is the first place a zero degree angle will be created during compression. Having the point in the image can result in a void in the printed image in that location. It is helpful to keep a record of set-down point and machine compression settings if you're going to run a job frequently, so as to expedite machine set-up.

Hardness is the last of the three main considerations in choosing a pad. Hardness comes into play for three main reasons. First, the same pad of two different hardness requires different amounts of energy to compress the same distance. A given machine may not be able to compress the harder of the two.

Second, a hard pad may damage the part you wish to print, thus limiting you to pads of a lower durometer.

Third, textured surfaces are more successfully printed using harder pads. (Some textures are very difficult or impossible to print regardless of what pad you use.)