FAQ's

What kind of burr can the sPINner remove?

I am constantly being asked, "What kind of burr will the sPINner remove?" The standard answer is "a light burr". This answer leaves a lot of room for interpretation. What is a light burr to some will be a heavy burr to others.

The rule of "Thumb":

In order to form an initial evaluation if the sPINner will work on a particular part try the rule of "thumb". As a general rule, if you can take a fingernail and remove the burr, the part has a good chance of testing well in the sPINner. Burrs heavier than this will tend to roll and flatten, but not be removed during the process. While this is not universally true, it should give you and the customer some idea of what to expect. Of course this test will be difficult if you are trying to consult with the customer to remove ID burrs.

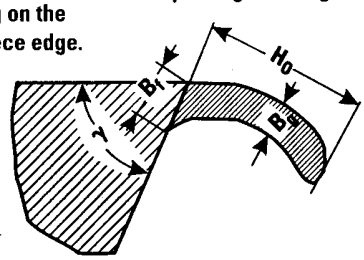
A quick lesson on burrs:

Below is a drawing of a cross-section of a burr on a part. From the drawing you can see some main areas we will be concerned with; the part itself (parent metal), the burr thickness at root, burr thickness, and burr height.

Burr Nomenclature

Characterization of burrs generated by grinding on the workpiece edge.

B_f Burr Thickness at Root
B_g Burr Thickness in burr
H_0 Burr Height
γ Angle on edge of the workpiece



A lighter burr can be loosely defined as a burr with a thin thickness at root. As the amount of material holding the burr to the parent metal increases, a more aggressive deburring action is required to remove the burr. Using this definition it is possible to have burrs that are tall, yet are "lighter" by our definition because

the thickness at the root is small, however the burr height is taller. Burrs of this type are good candidates for the sPINner. An example of short, yet heavy burrs are the ridges created from drilling. When a drill breaks through a part a ridge is pushed up around the hole like a small volcano. While this ridge can be short in burr height, the thickness at burr root is wide. Often this material is more a part of the parent metal than the burr. These burrs will not be good candidates for the sPINner as a very aggressive deburring action is required to remove these burrs.

Another factor to weigh in this process is the material itself. More brittle materials will tend to have the burr break away from the part (parent metal) making the sPINner a good option. Softer or more malleable material will tend to have the burr roll and flatten. Softer materials need to have a thinner thickness at root to be good candidates for the sPINner.

While this may sound confusing, it is important to keep it simple to the customer. If you feel a part is a reasonable candidate for the sPINner, send the part in for testing. Please use good judgment (and the rule of "Thumb") to help you determine what may test well. This will make you more confident in the results and the customer more comfortable with your advise.

What materials are best for the sPINner?

While all material will work in the sPINner, our experience has shown some work better that others. Aluminum, brass, and beryllium copper all are very good materials for the sPINner. We have also had success with stainless steels and titanium. Although with stainless and titanium the burr thickness at root must be thin enough for the burr to be removed instead of rolled as these materials are more pliable than some other materials.

What about magnetic materials?

While magnetic materials will work in the sPINner, there are several limitations to be aware of. First, magnetic parts will "stick" to the bottom of the container. This means only a single layer of parts can be run at a time. Also, because the pins will tend to stick to the parts, ID burrs in magnetic parts will not be good candidates. This is not to say magnetic parts will not work in the sPINner. All Techniks collets go through the sPINner to remove grinding burrs.

What about residual magnetism?

The sPINner can de-magnetize (de-gauss) magnetic material. This is accomplished by re-starting the machine after a cycle. Once the magnets are spinning, simply pick-up the container and all the contents of the container will be de-magnetized.

How many parts can be run at a time in the sPINner? How large of a part can be run in the sPINner?

These two questions go hand in hand. Parts may be run as long as they will fit in the containers (now up to 18" diameter). If running parts of this size, only one

part can be run a time. The larger the parts, the fewer that can be run at a time. In order to determine a maximum load for a container testing is required. First, start by placing a single layer of parts on the bottom of the container (along with the media and solution). Begin a cycle. As the sPINner is running it makes a “whirlpool” in the container. Begin adding a part at a time until the motion of the whirlpool is diminished. At this point, the maximum number of parts have been added for effective deburring.

How full can the container be filled with parts, media, and solution?

Let’s begin with the media. Only enough media to cover the bottom of the container is required. For the container on the EHD-728/766 this is about 1/3 of a kilogram container. For the EHD-750CL, about 3 kilograms of media are required. The previous section talks about how many parts may be placed in the container. Just enough water and soap solution to just cover the parts is required. The soap solution should be diluted about 1/50 or 1/100 so only a little bit is added to the water.

What industries are good candidates for the sPINner?

The successes with the sPINner have crossed many different industries. The sPINner is not “industry specific” as much as “burr specific” (as mentioned in the first section). Some industries do tend to produce smaller parts with lighter burrs that are good candidates for this technology.