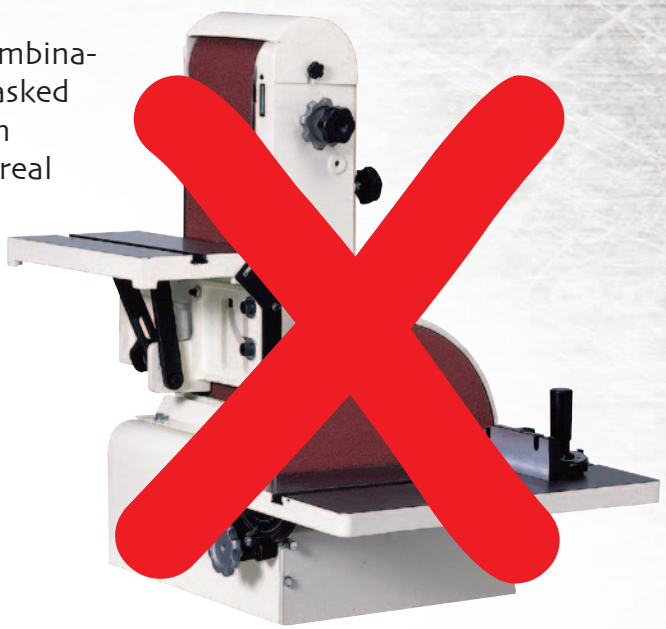
So, What's the Difference–

Why Combination Sanders Don't Spark our Interest



Every tradeshow that Burr King does we are asked for a combination belt sander and disc sander. Several times a day we get asked this question when we work a tradeshow. The simple solution may be for Burr King to produce a combination unit, but the real answer may better help you understand why Burr King has elected to not have a similar machine in their product line.

So what is the difference?
Everyone is selling a combination unit, why don't we?

There are three things that are important in selecting the proper machine for your application.

1. Belt Speed
2. Horse Power
3. The ability to apply force

If you take away any one of these three things you are no longer grinding, <u>you are sanding</u>.

#1. The combination belt and disc sanders are just that, they are sanders. And one difference between a belt sander and a belt grinder is speed. A "sander" is not well suited for metal applications. Most often the combination unit runs only a few thousand surface feet per minute. A grinder will run upwards of 8,000 surface feet per minute. Abrasive manufactures like 3M and Norton understand this and are constantly engineering belts that perform to their full potential at the higher S.F.P.M.

There are several factors why the combination units don't operate their belts at the proper speed.

a. For a belt to run at the proper speed for grinding you need to have a motor and spindle speed that will exceed 3,500 rpm. If you try to turn a disc at anywhere near this speed, you have created a machine that far exceeds a safe recommended rpm. So the solution is to place a 1725 rpm or slower motor on the machine to allow the user to safely use the disc. Doing this makes the belt S.F.P.M. less then optimal.

b. Poor quality construction of the major components of the sanders produces vibration when a combination unit runs at higher rpm. Burr King's contact wheels are balance and machined out of heat treated billet aluminum. Most combination units don't even offer a contact wheel.

#2. The combination units also typically feature a smaller horsepower motor. You already know that horsepower is one of the functions to effectively remove material. Manufactures of combination units often use low quality motors that do not have sufficient horsepower. These motors are inexpensive and use lesser quality components and produce less torque. For this reason Burr King uses high quality industrial grade motors from manufactures like Baldor and Leeson.

#3. Grinding or sanding against a hard platen is great if you need to square an edge, but grinding against a rubber contact wheel, is something Burr King calls the "Velvet Touch." Grinding against a platen requires even more horsepower since you are pinching the belt between the platen and the work piece.
There are several different contact wheel options that are available for a Burr King grinder, choose a soft wheel for delicate grinding or polishing, or a hard serrated contact wheel that will remove metal quickly producing less heat. Grinding against the contact wheel also allows the operator to apply more pressure to remove material.
A platen will produce chatter and affect the overall quality. And if you are using a combination sander as soon as you touch a sharp surface to the belt working against the platen and apply force, you run the risk of tearing the belt. This too is a function of speed. When your abrasive belt runs at the proper speed you reduce the risk of damage to the belt and yourself.

Safety is another factor when choosing your machine. The combination units need to be guarded in such a way that if someone is using the belt the disc is covered completely and vise-versa. Units that are produced with similar guarding are often modified to defeat the safety intent. Doing this in an industrial environment may lead to fines and injury.

There are many reasons that Burr King does not produce a combination unit. We have only outlined a few of the reasons. Burr King offers disc grinders and belt grinders, the combination units we will leave for others that are less concerned with the overall quality of their machines.

The Model 760 Three Wheel Belt Grinder

The Model 12 Disc Grinder

About Burr King Manufacturing:

Founded in 1951, Burr King Manufacturing provides industrial grade machines, intended for use on metals, woods, composites, plastic, rubber, stone, fiberglass and other materials.
Burr King's headquarters are located in Warsaw, MO.