

Simpl-Seal® v. RF/Sonic/Heat SPEED



How does "SPEED" differ, based on sealing method?

A better measure than raw speed is pace. The question that should be asked is, "Can the steps needed for package sealing match the pace of assembly?"

A continuous two-foot wide conveyor (common with Simpl-Seal) that moves packages through the UV light tunnel at thirty feet per minute is predictably the fastest packaging step in any clamshell or blister assembly/sealing system. Speed potential for average-size packages is hundreds of seals per minute (10,000/hr). This somewhat startling speed potential is important to pace. It means that any assembly pace can be matched by sealing.

Speed (pace) is vital to automation (See Technology Gap). Automation, just like manual systems, can only go as fast as the slowest activity. And speed of sealing is the Achilles Heal of Simpl-Seal's predecessors.

How so?

Assume the "set pace" of sealing is every six seconds. Also assume the average assembly rate is every six seconds. One is not faster than the other. The pace of each is well-matched to the pace of the other. Further, faster sealing would not produce more assembly.

Unfortunately, assembly is not a constant six-second pace. Factually, assembly is probably an average of one package every 5-7 seconds. And, on a 7 second assembly, sealing waits idle for a second. But, on a 5 second assembly, sealing cannot go faster the 6 seconds, so assembly "waits." In this common scenario, production average is one completed unit every 6.5 seconds.

Here is where the value of Simpl-Seal's speed is first recognized.

When the pace of assembly is between 5 and 7 seconds, there is no "6-second rule" to slow down 5-second assembly. Sealing does not have to wait. So, with Simpl-Seal, the pace is one completed unit every 6 seconds.

The difference is just a half-second. But, when seen over the span of week's production on a one-shift production line, the difference adds up... 8% more units are produced. Over a year's period, this is four weeks of production.

When the sealer is cycle-time limited, nothing short of adding production hours can produce more units. With Simpl-Seal's sealing, however, an extra person on the assembly line may decrease assembly time to 5 seconds and Simpl-Seal can handle the added volume. Or, perhaps, automation is added and assembly's pace is increased to one unit every four seconds. The only way predecessor sealing can deal with this is to add another sealer and the people to run it. Simpl-Seal, on the other hand, absorbs the increased volume.

Assume that assembly could produce one assembled unit every ½ second. To equal this performance, would require 12 predecessor sealers... but only one Simpl-Seal sealer.

SPEED – What does it mean?

What Simpl-Seal's speed does, really, is absorb the peaks of production to level out the valleys... something predecessor machinery was never engineered to do. And, Simpl-Seal also handles the occasional need for increased production. Again, something that predecessor machinery was never engineered to do.

The last speed issue to be discussed is automation. Modern automation pays for itself by subtracting saved labor from machinery cost. If there is more labor saved than machinery costs, then automation is a good deal.

Assume that assembly automation has a monthly cost of \$4,000. And assume that four employees work full time to run a predecessor machine at the 6.5 second pace (see above). Automation will only regain the lost half-percent... nothing more. Why? because the sealer limits production's potential. It will not matter that automation's assembly potential is one unit every four seconds.

With predecessor sealers, assume one of the previous employees is retained to keep automation's hoppers full and oversee the operation. This means three, \$15/hour employees (\$10,000/month) will be saved at a cost of \$4,000 and production will run for 48 weeks.

Compare this to Simpl-Seal's ability to handle the increased assembly (one every three seconds). And, because the pace is doubled, two workers are required to keep automation's hoppers full. Now, \$6,700 will be saved at a cost of \$4,000. However, production will run for 24 weeks.

The ROI for predecessor systems is just over 150% return on capital. For Simpl-Seal it is just under 300% return.

The BIGGEST problem with predecessor sealing is getting assembled and closed units into the press. This problem dooms productivity. To overcome this problem, most automated predecessor sealers do all the assembly in an open press. This means that a problem with denesting of the blister/clamshell or product insertion or package closure will stop production, completely. But, with Simpl-Seal, since assembly is on a production conveyor, a failing operation may be manually performed until the failure is remedied. Production may slow, but it need not stop.

So, what is the point of all this?

Speed is modestly important to manual systems, but speed means everything to automation.

Without speed, major labor dollars are wasted. With speed, production's pace can run at peak... automation's or manual labor's peak.