

The Parts Are the Wrong Temperature!

I HAVE MANY STORIES and one of my favorites is a fascinating lesson in listening. Several years ago, while touring a customer's facility, I kept overhearing telephone conversations that seemed to be related. One of my customer's customers was upset because the belt for their bucket elevator had to be replaced for the second time. The machine was supposedly fitted with a high-temperature conveyor belt and suddenly it was going down. The scramble was on to review the sales orders and shipping papers. The paperwork proved that, in fact, a high-temperature bucket conveyor belt was on the machine. A little later I overheard two employees talking about the crazy thing the operator had reported. The machine operator said the parts were not coming out of the machine at the right temperature. That's when I thought "I'm staying around for a while. This is getting really interesting."

My customer's staff quickly figured out the problem and shared their findings with me.

So. What was happening? The machine had been operating for some time very successfully. Then a new media supplier approached the purchasing agent, offering longer life media. Since the company was consuming a large amount of media each month, this sounded promising so the purchasing agent bought the alternate brand. He was going to save the company a lot of money. Dreams of receiving the company "Hero Badge" danced in his mind. His daydream, however, didn't materialize in the real world.

After adding new media into the machine, the maintenance person noticed he had to readjust the belt on the bucket elevator. Not just once, but frequently. He also reported the media hopper seemed to be a lot hotter than usual. The operator then reported to the maintenance person that the parts were not as hot when coming out of the machine. Have you already figured out what was going on?

When regular hardness media was substituted for the original high-hardness media, the shot peening process was changed. The high-hardness media made the proper "dents" in the component. This denting creates friction and heats



the component. Life is good. Substitute regular hardness shot and what happens? This softer media, upon hitting the component, doesn't make the same size dent. In fact, the media, being too soft, changes its shape instead of changing the surface of the component.

Oops. Changing the shape of media causes friction and friction causes heat. So now we know why the media hopper is hotter than usual. Now we can understand why the elevator belt was stressed. But what about the comments from the machine operator? He was correct. The parts were not coming out of the machine at the right temperature. The heat generated from the collision of the new media and component now shifted from the component to the media and the shot-peened components were cooler.

What Did I Learn about Listening?

1. The operator understands his machine, like a mother understands her babies. One of the best resources for troubleshooting a process problem is the machine operator. Listen to what he has to say.
 2. You can learn the most useful things while eavesdropping.
- The moral of the story: Ask purchasing to request approval before changing media vendors or products. This particular change affected the entire shot peening process and cost the company money due to downtime. ●