Profile Industries Says: "Seeing Is Believing"

The Missing Link

Separating round shapes from non-round shapes—that's the job of Profile Industries' Spiral Separators. The separators remove and collect the preferred round media from non-round, broken or cracked media. Profile's products separate metal abrasives, metal shot, ceramic beads, glass beads and more.

Electronics Inc. (EI) recently added a Profile separator to their in-house training facility. The EI staff likes the separator so much that they realized spiral separators were a missing link in the EI workshop's coverage on media control. Dave Barkley, Director of EI's Education Division, asked Profile to demonstrate the product at the U.S. Workshop and Trade Show in October. Steve DeJong, Profile's Sales Manager, designed banners, packed a microscope, separator and media, and headed to St. Louis.

Show and Tell

Profile has done a good job of building a worldwide customer network, but sales weren't reaching their full potential in North America. In Europe, OEMs sell a separator as part of the shot peening system. In the U.S., shot peening facilities are more likely to discard media rather than reclaim the good media with a separator.

The trade show was the first time Steve demonstrated the product to a large number of people at once. "Every time I ran media through the separator, people would come to my booth," Steve said. "When people ran their hands through the round media after it's been through the separator and looked at it in a microscope, they understood what a separator does," he added.

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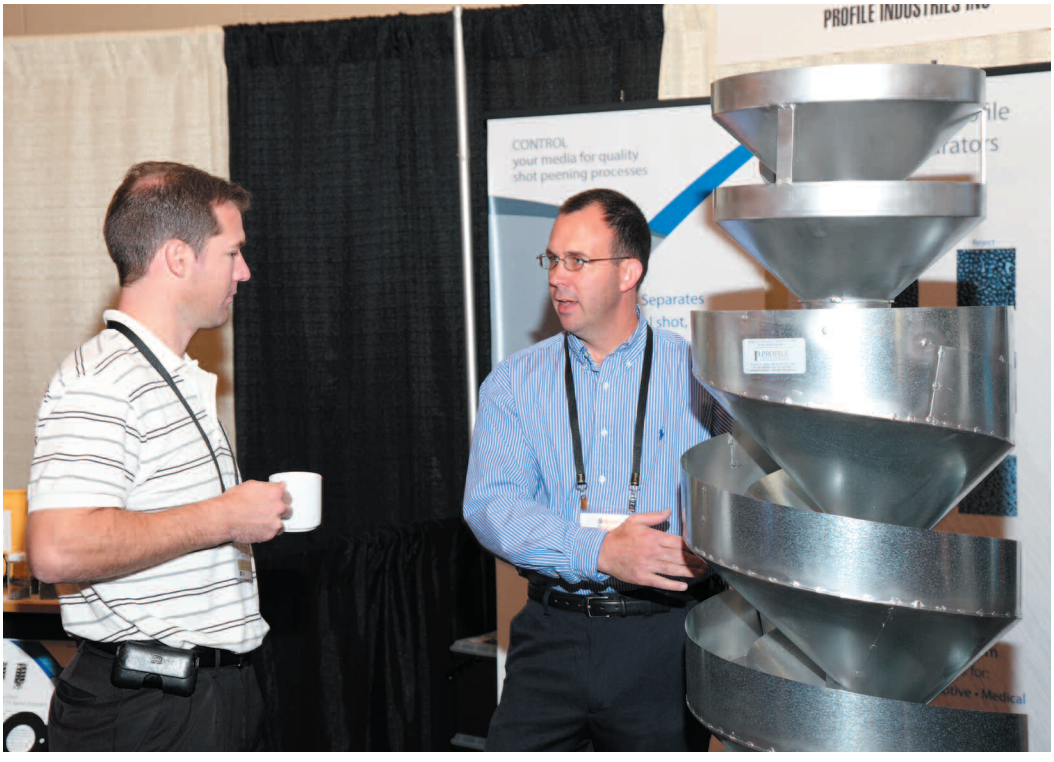

Steve DeJong demonstrates the Profile spiral separator at his workshop booth.

Kathy Levy is the owner of InfoProse and works as a technical writer and marketing consultant

Steve projects 12 sales from the trade show with prospects for many more, including a major aircraft manufacturer that has 20 machines with Sweco size classifiers, but not one spiral separator. That might be changing soon.

An OEM told Steve that they like separators but can't use them in facilities with noise-reduction regulations. This conversation gave Steve the chance to explain that Profile can build soundproof enclosures. (Profile also builds custom configurations for unique media applications, including fine particle media.)

Another opportunity for Steve was face-to-face time with customers that weren't using their separator correctly. "Spiral separators always work the same. It's the media flow that's inconsistent," he says. A single-spiral separator can handle up to 1,000 lbs. of media an hour (roughly 10% of the total media flow). If a machine throws more than 10,000 lbs. of media an hour, more than one separator is needed. When the separator is flooded with too much media, the rounds will go down the discharge chute with the non-rounds. Also, if the machine operator tries to run a high mix of non-rounds to rounds at a high flow rate, the separator will be less efficient. However, when a facility is in compliance with AMS 2430 that requires 90% or more round media in the mix, this issue should be rare. "If the client sends us a media sample for a lab analysis, we can resolve the media-flow problem. Usually, with some adjustments, the separator will work unless the customer has changed to a different size of media," said Steve.

Shaping Up to a Bright Future

"The separator was the hit of the workshop," says Dave Barkley. "People love to see how things work and we appreciate that Steve demonstrated the separator at his booth and during our media class." Steve is looking ahead to workshops in Canada and Mexico and Profile is on track to increasing sales in North America and beyond. ●

How a Spiral Separator Works

Spiral separation is a straight-forward process that's dependent on laws of physics and a precisely designed piece of equipment. Material to be separated is discharged onto a banked metal flight, which is spirally wound around a central shaft. As the material flows down the banked surface, its speed increases, and centrifugal force carries it toward the outer edge of the flight. Round materials achieve a velocity sufficient to carry them over the outer edge of the flighting, but non-round and less dense material are unable to reach the edge. They continue to travel downward and ultimately exit separately at the bottom.

The central flight of the separator must have the correct degree of pitch and be the proper length and depth to provide optimum results. Inner flights are built from either galvanized or stainless steel to eliminate buildup of static and magnetism during operation. The other components of the machines are made from welded galvanized steel which increases their ability to withstand high levels of heat and vibration and contributes to their longevity. A separator is easy to connect to shot peening equipment by either direct feed or hopper feed.

Why Shape Matters

Quality shot peening requires control over four elements of the process: Media, Intensity, Coverage and Equipment. Spiral separators are integral to media control because media must be predominately round. Broken and misshapen media can damage parts and initiate cracks.

Profile has standard and customized single and double spiral separators and the equipment configuration depends on the size and weight of the media. Customers are encouraged to send media samples to Profile for free lab analysis so that Profile can recommend the correct separator.

Five Cost-Cutting Benefits of a Spiral Separator

1 Reduces media consumption
Used media is recycled for extended media life. Profile is developing a Return on Investment Calculator to help customers see how quickly a separator pays for itself in reduced media costs. (Media manufacturers also depend on separators as an economical and effective way to prepare media for sale. Electronics Inc. uses their Profile separator to prepare media for MagnaValve testing.)

2 Protects expensive parts from damage
Broken media can damage parts upon impact. The expense of a separator is minimal in comparison to damaged components.

3 Limits wear to machine parts
Broken media creates more wear on hoses, nozzles, blast wheels, cabinet walls, screen separators and dust collection systems than round media.

4 No downtime, no maintenance
Separators have no moving parts—no downtime or maintenance—and are made from galvanized steel to withstand heat and vibration.

5 Zero energy consumption
Gravity, not a motor, is the operational force on a separator so it doesn't depend on expensive energy. And, fortunately, no government has found a way to tax gravity.