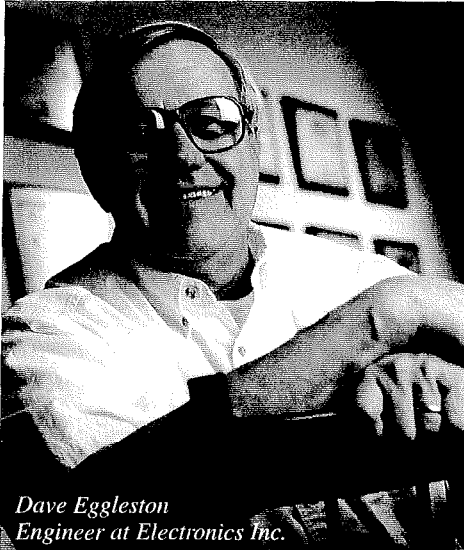


Shot

Control the flow, control the costs

by Dave Eggleston



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This is the second in a series of articles that address the value and benefits of using shot flow control valves on abrasive blast cleaning machines. In my first article (Spring, 2004 issue of *The Shot Peener*), I demonstrated how shot flow control valves save money by reducing energy costs. It's obvious that when you can produce the same result while expending less energy, you will also be using less shot. Cut energy use by 40% and you'll cut media use by 40%. This is particularly important because stainless steel cut wire shot can cost \$5000 to \$6000/ton. A typical plant may use 50 ton/year or more.

The purpose of my articles is to prove that you will save money, in several ways, with MagnaValves®. The first article identified how to save thousands of dollars/year in electrical energy by using MagnaValves to control shot flow (in actuality reducing the amount of shot used). MagnaValves work with cast steel shot and grit, cut wire shot and stainless steel cut wire shot. The MagnaValve, unlike any other shot metering device, has no moving parts and works by modulating magnetism. This unique device is designed normally closed. That is, with power removed, the valve is closed and no

shot can flow. The MagnaValve, with its controller, is cost-effective and viable for simple to complex cleaning applications.

With the MagnaValve, a custom shot flow program can be created for each product or product type. Most abrasive blast cleaning machines have 40 to 60 horsepower (HP) wheel motors with variable speed wheels and MagnaValves. As we know, any larger HP motor can be run with reduced load by partially closing the MagnaValve and a substantial amount of money can be saved (reducing the electrical energy required) by a large HP (75 or greater) motor.

Many of the machines built in the last 50 years with large wheel motors (75, 100, 125 HP) are still in the field. These machines are easily retrofitted with MagnaValves and 100 HP can be reduced in load to 60 HP. As a result, not only is the electrical energy reduced by 40%, but the amount of shot used is also reduced by 40%. This is very significant because many companies consume in excess of \$50,000 of shot/per year. Shot can cost from \$450/ton to \$6000/ton.... a very expensive consumable.

By installing MagnaValves on a machine, 20, 30, 40, even 50% reductions in shot usage are easily accomplished. (Remember, under-cleaning is preferred to over-cleaning. So savings can be 5% of usage (a \$2500/year savings based on using \$50,000 shot per year), 10% of usage (\$5000/year) or 20% (\$10,000/year) again based on savings in HP and shot.

Therefore, continuing the theme of saving money, a 40% reduction in shot use could yield \$20,000/year in savings minimum. Couple this savings with the \$25,000 plus from energy savings (as shown in the Spring *Shot Peener*), and now we can begin to see the true potential of shot flow control on your bottom line.

More fireworks in the next article.

Environment

There is more than a financial benefit to controlling shot flow — less shot means less dust in the work environment and less abrasive in our landfills.

The Shot Peener staff had the privilege of touring the Honeywell Aircraft Landing Systems (ALS) shot peening facility last year. We were impressed with cleanliness of the work area. Honeywell ALS uses two air peening machines, equipped with MagnaValves, and conditioned cut wire shot. Conditioned cut wire makes the shot peening process very clean.

MagnaValves and cut wire shot are ideal together and complement each others' ability to reduce media consumption and equipment maintenance (more on that in a future article).