Amperage

Control it and you will reduce machine wear damage and lower media and energy costs

by Dave Eggleston

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In this article, we will look at the cost savings that can be achieved when the wheel blast cleaning process is controlled.

Abrasive blast cleaning machine designers and builders know that a high percentage of shot thrown by each wheel will miss the target. Historically, builders compensated for the problem by placing "wear parts or plates" at these critical locations. If not for this, blasted holes would appear within a few weeks of operation. Replacement parts and plates are costly to purchase and time consuming to replace. Any procedure or product that lessens the frequency of replacing these costly wear parts is very welcome in the industry.

I recently paid a visit to an Electrical Engineer at an automotive aluminum block foundry in Windsor, Canada. We were discussing their need to control their blast cleaning processes and he shared with me the machine's manual. The manual states, "To obtain full wheel efficiency, the ammeter should always show a full load reading during the blast cycle." I contend that the objective is not full wheel efficiency, but optimum cleaning using the least amount of shot possible. Over-blasting and using the same blast cycle for all parts have been the prevailing technology for years. Fortunately, competition from air blast machine manufacturers has convinced wheel blast manufacturers that controlling the process is not only possible, but mandatory. There are several wheel machine designers that build machines that offer process control while optimizing the wheel machine's energy efficiency. Engineers, like our associate in Canada, are now looking for ways to improve the quality and reduce costs and maintenance time on their present blast cleaning equipment. Gaining process control on these older machines is achievable and the cost outlays would be paid back within a short amount of time.

MagnaValves and amperage controllers from Electronics Inc. save energy and costs. It stands to reason that if you can use the least amount of shot possible to get the cleaning level you need, your machines will receive that much less wear. A controller also makes it easy for operators to document and repeat good set-ups so there is less temptation to use the same blast cycles on products that could be cleaned in much less time and with much less shot.

MagnaValves, like the LP-24, are designed to be easily retrofitted on older machines and are specified on new machine designs worldwide. ●

MagnaValve®

The MagnaValve® is manufactured by Electronics Inc. For more information on our complete line of MagnaValves, please contact us.

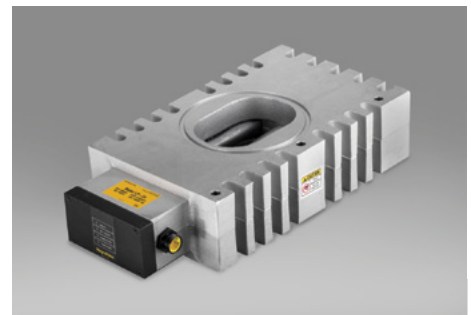**1-800-832-5653 or 1-574-256-5001**
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The LP-24 MagnaValve® is a normally closed magnetic valve that regulates the flow of steel shot and grit in wheel blast machines. The LP-24 is low maintenance — it has no moving parts so there are no parts to wear or break and it is completely sealed to prevent media dust from entering the valve. The LP-24 has rare earth permanent magnets for normally closed operation and an electromagnet for controlling shot flow rates. With power applied, the magnetic field is neutralized and shot is allowed to flow through the valve. When no power is applied to the MagnaValve, the permanent magnets stop all flow. If the power is interrupted for any reason, the permanent magnets securely hold the shot, thereby virtually eliminating shot leakage.

For an automatic closed-loop operation, an EI AC-24 Controller (sold separately) will detect the current load on the wheel motor and regulate the flow of media to the LP-24. This closed-loop system will provide accurate and repeatable flow rates over a 400 - 2000 lb/min (181 - 907 kg/min) range.

AC-24 Controller