Flow Control for an Older Machine

DAVE BARKLEY, the Shot Peening Training Director with Electronics Inc. (EI), occasionally gets questions on EI products from his students. He recently received an inquiry from a Senior Product Engineer with an aerospace company in Singapore. The company was told during an audit that they need media flow measurement on their shot peening machine. They were using Model 50 MagnaValves on a 25-year-old Pangborn machine. They asked Dave to recommend a Model 500 (the 500-P or 500-24) and a controller. The following is Dave’s response—it may be helpful to others wanting to upgrade an older machine.

“The key thing to consider is that EI’s AC products are meant to run on 120 Vac 60 Hz. A transformer is typically used to obtain the required voltage; however, a transformer does not change the AC frequency. Singapore’s electrical system supplies power with the AC frequency of 50 Hz. Electronic circuits, designed for 60 Hz operations, run warmer when supplied with 50 Hz. This may cause the FC controller to overheat since the flow monitoring feature has more electronic circuitry than the Model 50 valves you are currently using. The ambient heat in your shop may intensify the issue.”

“Several years ago, EI switched to the 24 Vdc power standard for their international customers that have power sources different than those in the US. Since 24 Vdc power supplies are common, it should be a simple addition if your control panel doesn’t already have one. With this in mind, EI recommends a valve and controller from the 24 Vdc product line. Specifically, we suggest a 500-24 MagnaValve and a FC-24 controller for complete media control on your machine. These products also have more features and are less expensive than their 120 Vac counterparts.”

“Please note: The flow monitoring feature requires more room inside the 500-24 MagnaValve and the valve is 2” (50.8 mm) taller than your current valve. You should explore the modifications necessary to fit them on your machine. If you choose the 24 Vdc products, please refer to their manuals for total amperage requirements when selecting a 24 Vdc power supply, or to confirm the amperage availability of an existing supply.”

“I hope this helps with your selection and upgrade. I will be in Singapore, as I am every July, to conduct our annual training seminar and can visit if desired,” added Dave.