LESSONS LEARNED

FROM A CAREER IN MOTION CONTROL

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QUESTION: What are the most common challenges faced by maintenance professionals?

ANSWER: Generally, I talk to a lot of maintenance managers who are concerned about where their budget is allocated and getting the most "bang for the buck." They're trying to do more with less, and often need to estimate maintenance budgets more than 18 months in advance.

QUESTION: What is the one thing I should do regularly to keep my machines up and running?

ANSWER: Develop a routine schedule for key items like rotational gear (pumps and motors); replace filters and watch for leaks. If oil is leaking, then contaminants can affect performance. So it's critical to monitor oil cleanliness results.

QUESTION: What are the advantages of partnering with an outside motion control expert versus a DIY (do it yourself) approach?

ANSWER: Working with an OEM ensures you'll always use the right parts and benefit from solid advice on preventative maintenance schedules. Also, an outside specialist can train your in-house maintenance team to work smarter. That way, you can improve your troubleshooting and spot technical issues most maintenance people don't know to look for.

QUESTION: What is the value of preventative maintenance?

ANSWER: Controlling your uptime. Since all equipment needs maintenance, you're far better off taking a planned outage to prevent problems rather than being caught off-guard with an outage that could last several weeks. By taking proactive steps to mitigate problems, you'll stay on a schedule of your choosing.

QUESTION: What's the best way to evaluate a potential technical support partner?

ANSWER: Ask a few key questions, including: How well do they know your equipment? Do they have access to technical drawings and repair manuals? Can they help train your staff so you can handle routine preventative maintenance yourself in the future?

QUESTION: What is the advantage of an exchange program for replacement products?

ANSWER: The biggest advantage is that you know the equipment is in stock and ready to go, rather than face long turnaround times for repair. Moog, for example, can ship product before an outage begins to ensure uptime.

QUESTION: How does hands-on training benefit my maintenance team?

ANSWER: We consider hands-on training to include a mix of classroom theory and review of drawings and manuals…and, of course, actually working on equipment to perform various tasks with a skilled instructor. The key difference is that this type of training takes place in a "non-hostile" environment. That is, when the maintenance team is NOT fighting a fire and can sit and learn something new—without being pulled into another fire.

QUESTION: What can an OEM bring to the table versus other service providers?

ANSWER: Several items come to mind: First, only an OEM can provide data such as drawings and manuals. Secondly, they have specialized knowledge and expertise that others don't. For example, when our field teams are in the office they also handle incoming technical calls and emails from customers. So they've seen and heard it all.

Finally, safety is very important. Years ago, in fact, a power gen customer called with an issue about a steam actuator that was frozen. He wanted to remove a nut holding the failsafe spring to release the tension, which was about 30,000 lbs of force. Thankfully, we talked him out of it because that level of force would've easily taken somebody's arm off.

QUESTION: How does OEM technical support benefit my team?

ANSWER: Access to information is the key. Sometimes, a question could be simple. Like, "What are the port connection fittings for pressure and return on a gas valve assembly for power gen?" We could simply send drawings to help the customer get up and running. Sometimes, however, the question could be much more complex. As a result, a mix of manuals, documentation and technical tips are required to solve the problem. Again, experience is critical.

QUESTION: How does failure analysis help me work smarter?

ANSWER: Where do I start! The benefit of failure analysis is to get to the root of a technical problem via highly detailed photographs or rigorous elemental analysis. A picture is worth a thousand words, so you can imagine how a highly magnified photo of a corroded flexure sleeve could be the result of moisture in the hydraulic fluid and the acidity being too high. Or perhaps we find something lodged in the first stage of the valve. At Moog, we can send the item to our materials lab for extensive analysis using high-tech equipment right out of the show "CSI."

Our SEM scanning electron microscope can capture the tiniest surface abrasion or embrittlement. We also have a Fourier Transform Infrared Spectrometer which is used to detect organic materials like solvents, oils or fibers, and then "fingerprint" the compound so we know exactly what it is. This type of specialized analysis is useful to resolve problems like contamination in the HPU.

QUESTION: Why should I pay more for OEM repairs when I could probably get cheaper repairs from an unauthorized repair house (URH)?

ANSWER: Think of it this way: You may indeed find a cheaper price from a URH. However, that same part will need many more repairs over the next one or two years and will ultimately cost you more.

We once had a power gen customer call us and request a same-day service on a repair. We quickly looked up all the possible parts that could be required and advised a price. Of course it was a Friday and I asked where they were located so we could anticipate the arrival of their products. He told us they had already sent their corporate jet with the valves to our office! They were so desperate and frustrated with their URH and the downtime that they had to resort to desperate measures. Fortunately, we fixed all the valves that evening and the customer's jet returned with like-new product and got back to business immediately. Talk about pressure!

QUESTION: What should maintenance pros know about the Internet of Things (IoT) and how it will affect their machines?

ANSWER: While the IoT is relatively new, the thought of having a predictive LED or light turn on to say it's time to service the machine is really a neat idea. We're developing simple devices that would monitor a system for heat, pressure, current or load. So when an issue arises, the customer could immediately engage the OEM online for service. It's definitely the next big thing and Moog is on top of it.

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