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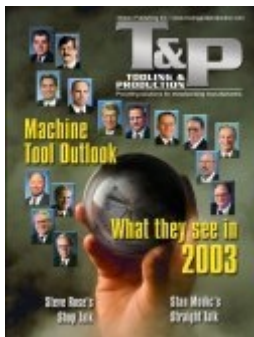
## SHOP TALK

# Challenges of unmanned machining – part 2

With Steve Rose

Last month we began a discussion about unmanned machining. Have you left your machine to run unmanned yet?

I doubt you were convinced that easily. The decision to operate with unmanned machines is a serious one. There are a number of factors involved in leaving a machine tool running with little or no supervision. Last month we reviewed a tool monitoring system to detect tool breakage and avoid machine crashes. Another useful tool for expanding the possibilities of unmanned machining is a fire suppression system.



When cutting metal, strong forces, friction and heat are employed. If you are cutting in an oil-based medium, the threat of a single spark can be extreme. Fire is a constant worry whether the machine is manned or unmanned.

A small fire can ruin your machine. An uncontrolled fire can endanger your business, building, and countless lives.

Although the risk of a fire is great, a fire suppression system can reduce some of the risk. A fire suppression system detects a temperature increase and releases an agent to smother the flames.

One such system is from Firetrace International, Scottsdale, AZ. Firetrace products have been used in machine tools and other enclosed areas around the world.

The Firetrace unit looks like a fire extinguisher with small tubes attached. These tubes run from the cylinder throughout the machine to specific locations vulnerable to heat, sparks, and fire. In a machine tool, these areas would include the contact points of the tools and the stock.

The contents of the cylinder depend on the conditions and environment in which the fire threat exists. The suppressant is specific to the use.

The tubing is designed to burst, releasing the suppressing agent, when a specific temperature

is reached. The agent acts immediately on the flames to eliminate the fire.

This type of system can be useful for any small, enclosed area susceptible to fire. As a tool for running an operation with reduced man-power, a fire suppression system can be invaluable.

Other types of fire suppression systems are designed to combat the first outbreak of fire and then provide additional suppression ability for any redundant, or secondary flairs ups.

Fire suppression systems like the ones described here can be helpful, but they are not foolproof. Fire can break out in many areas on a shop, not just in the machine. Electrical and chemical conditions can also cause a fire in a manufacturing facility.



Fire is a risk in many types of machinery. One instance in which a fire proved quite damaging occurred about four years ago. A large gearing company, with many CNC and manual machines experienced a fire in a grinding machine. The fire broke out during first shift, when more than 130 employees were working.

The machine was not running unmanned. Authorities were alerted almost immediately and the building was evacuated promptly. Imagine the destruction that may have occurred if the shop had been minimally or completely unmanned. The company has now fitted a complete fire suppression system to the machine.

The threat of a destructive fire is very real, no matter how many people are working in the shop. It is an added burden if you wish to operate with less human intervention. Be careful not to be lulled into a false sense of security by any type of fire suppression system. Like other tools, fire suppression systems are not a quick fix, but they are a good way to add another layer of protection for your staff and equipment.

As you continue to think about running an unmanned shift, think about the fire risks and how you can combat them. Next month, we'll look at tooling strategies for your machine tool when running unmanned.

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