

Coventry based Kraft and Bauer (K&B) offers a new perspective on safety via a range of microprocessor controlled fire extinguishing systems that have particular applications within machine tools and larger networked machine shop installations.

# What price safety?

A typical machine shop set up with the CO2 bottles mounted for immediate response



**YOU** might be tempted to ask whether most modern day machines arrive with extinguisher systems already installed. 'Indeed they do' explains K&B UK managing director Louise Boraston - 'and a high proportion are ours'. Worldwide, Kraft and Bauer claims to install some 2,500 extinguishing systems every year and such leading names as Tornos and Walter fit their systems as standard on their machines, although the system can be adapted to fit any machine design.

Whilst the majority of Kraft and Bauer's sales are made directly to large German and Swiss machine tool builders/importers (there are over 18,000 systems installed in Germany alone) K&B is starting to supply more and more systems to UK machine tool companies and dealers as well as directly to UK end users. Louise Boraston sees the home market as a source with huge potential and there are already over 200 'known' UK machines being protected by fire security systems supplied by K&B UK - a number that is growing all the time.

However, rather than simply looking to UK based machine tool builders for sales growth, K&B UK also concentrates on servicing, maintenance and ensuring production management is aware of its fire safety

obligations - and even more importantly - the catastrophic effects that extinguisher neglect can lead too. As Louise Boraston stresses: 'The risk for fire - particularly where oil based grinding lubricants are in use or when machining volatile work piece materials - is a reality. Further, the operation of lean manufacturing environments where lights out machining increasingly predominates, necessitates much greater vigilance in maintaining fire detection and extinguishing equipment. It's all very well when things are running well but what happens when things go wrong? That's when good housekeeping in the form of a well and regularly maintained system comes into its own.'

Experience of the parent company working with the German Health and Safety executive provides categorical evidence that fires in machine tools - particularly grinding machines - have the potential for catastrophic damage. And it's not just the machine that could be written off. 'Modern factories tend to have low roofs, which are heavily lagged' she adds. 'If a fire erupts in the machining envelope it looks for a source of air and that invariably comes through the mist extraction system. In turn that can very rapidly turn into a small chimney creating a vortex effect





**Kraft and Bauer UK  
managing director  
Louise Boraston with a fire  
protection shutter.**

with the flames easily reaching the roof and this has the potential for catastrophe for the whole factory to erupt in fire. We are not scare mongering; this has happened.

'Sadly many companies believe they are safe as they have comprehensive insurance policies but often these are invalid unless adequate fire prevention systems are installed and maintained correctly. Even if companies can claim under insurance policies to replace machines damaged by fire, many engineers forget to take into account that there are not many customers that can wait for new replacement production machines to be made available and will go off and find someone else who can make their product for them. Therefore management needs to ask - will their customers still be there when months down the line, production is finally able to re-commence? The loss of a machine may or may not cause companies to close down; the loss of customers almost certainly will.'

#### So what's on offer to eliminate fire risk?

Automatic fire detection in the machine can be offered by either Infra Red (IR) radiation detectors and Ultra Violet (UV) sensors as well as the most basic of the usual temperature based systems. Both the K&B IR and UV systems conform to EU safety regulations DIN EN 13478:2002 and DIN 14497. The first line of protection is taken care of by UV systems, which offer a detection/reaction time of under a second and are predominantly fitted to turning machines. IR systems - offering a still impressive detection time of 3 seconds - are preferred for grinding applications being unaffected by oil. UV radiation systems can also be adjusted to prevent them being activated by exterior intervention such as camera flashlights or fluorescent lights strobing when turned on.

In addition to the first line of fire detection via IR/UV detectors, all K&B systems are also fitted with an automatic secondary system involving conventional heat detectors installed in the cabinet and which can be set for

temperatures between 70 C and 90 C. Most importantly, they are positioned adjacent to the mist extraction point. Finally, as a third means of detection/activation, machine operators play a role, both in detecting and manually activating emergency switch buttons that are also a standard K&B fitment.

Apart from mandatory annual services, after a fire it is vital to have the extinguisher system checked and replenished. As standard, CO2 (or Argon) bottles may be fitted in capacities from 2Kg to 50Kg with, on the very largest machines, more than one bottle often installed for optimum protection. 'If there has been a fire, machine shop management has to be fully aware of the ongoing responsibility to replenish the extinguisher system. Often engineering firms fail to take into account the effect of a single fire and after the trauma of a fire - however big or small - some assume that the detecting and extinguishing system will simply work again without checking. At the very least bottles must be replaced and the system re-set.'

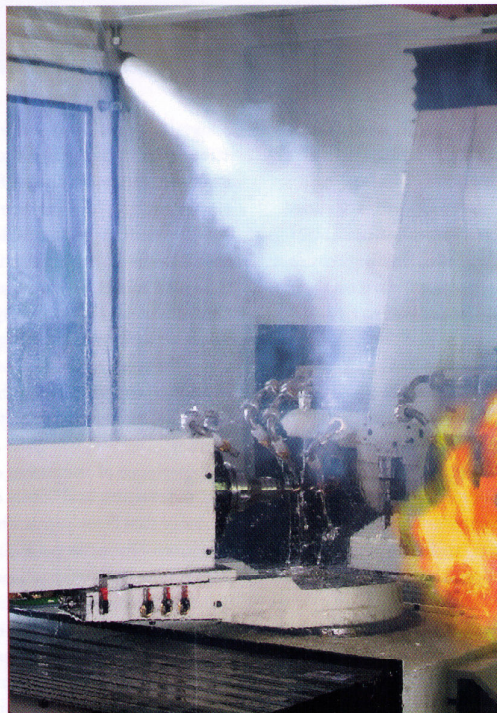
Mention was made earlier of mist extraction systems acting in the manner of a chimney if fire breaks out. To counter this effect, Kraft and Bauer has developed a simple to fit but highly effective fire protection shutter which is integrated into the mist extractor tube. At the first signs of explosion or fire, the shutter automatically closes and consequently isolates the machine from the filtering system and prevents flames forcing up the extraction tube. 'It acts as a double fail-safe,' explains Louise Boraston. 'Not only does it contain the fire in the machine but it also ensures that the main extinguisher system can automatically and rapidly act to put out the fire in a safe environment.'

Typical of the successes being made to supply the UK machine tool industry with the latest fire prevention technology is the addition of Earlsdon Technology Ltd as a K&B customer. Earlsdon, also based in Coventry, specialises in the design and manufacture of custom-built machine tools for the aerospace, automotive and high volume parts industries. With all machines offering fully automated loading and unloading, the Earlsdon range includes special purpose automated lathes, grinding machines and fillet rolling machines.

As Earlsdon's managing director Simon West explains he has been impressed with the K&B products and the service. 'Because pretty much all our output is custom built it is often the customer who specifies the detection and extinguisher systems. However, we are currently in the process of building three lathes and three drilling and broaching machines that are going to work on titanium machining which can be very volatile workpiece material. 'The customer asked us to specify the extinguisher system and after researching the market we opted for Kraft and Bauer because they offer systems that have been developed and are proven on machine tools. Kraft and Bauer clearly know what they are talking about and have a like-minded approach to ourselves. We have been impressed with them.'

Louise Boraston leaves a final thought. 'A typical Kraft and Bauer installation will cost a fraction of the purchase price of a modern machine tool. In relation to the potential for damage to the machine and the factory this is a very small price to pay. You have peace of mind, you are meeting your health and safety and other legal responsibilities, protecting your valuable machine tools and therefore your business,' she concludes.

[www.kraftandbauer.co.uk](http://www.kraftandbauer.co.uk)



**The Kraft and Bauer Ultra  
Violet detector  
responds in under a  
second**