

Optimum cleaning



On stand 5085 at MACH 2008, Amsonic, in collaboration with UK distribution agent LTS Envirosafe, will be giving show visitors the opportunity to discuss component cleaning systems and the benefits of hydrocarbon technologies.

Offering a wide range of water-based and solvent-based ultrasonic cleaning units, all Amsonic systems are equipped with modern PC technology and integrated hot air or vacuum drying facilities. Of particular interest to MACH visitors will be the new Amsonic 4000 precision cleaning system, based on hydrocarbon or modified alcohol. It enables cleaning under atmospheric pressure, considerably improving ultrasonic efficiency.

Also destined to be a crowd pleaser is the new fully automatic 4100/4200 cleaning system that cleans parts and reduces labour, giving the end user considerable cost and productivity benefits. Already installed at renowned subcontract automotive manufacturer Technoturn, the Amsonic 4100/4200 already has an enviable reputation across Europe.

When Technoturn CEO Fred Moser started to implement CNC machines for nonstop production over ten years ago, it led to strong growth. The subsequent higher output led to a significant

reduction in part cleaning problems, specifically concerning precision turned parts that were oil and swarf filled.

Technoturn director David McIlwain looked for an efficient, fast (6 to 12 minutes on average), economical and environmentally friendly cleaning machine that would have practically no solvent consumption, and would keep parts free of swarf even in recess holes. The solution was the 4100 equipment, which is currently distributed in the UK by LTS EnviroSAFE and achieves low solvent consumption through distillation. The Amsonic 4100 is the result of applied research aimed at eliminating chlorinated solvents.

“Previously, we were cleaning parts manually with trichloroethylene,” said Mr McIlwain. “The Amsonic 4100 machine cleans the production over the weekend and is finished by Monday morning. Our customers get clean parts and we save manpower. The productivity and efficiency of the 4100 machine is exceptionally high.”

The single chamber compact Amsonic 4100 uses isoparaffin, a non-chlorinated hydrocarbon solvent (A3 type) that has improved the cleaning quality, when compared with trichloroethylene. The system operates under a fully enclosed vacuum process that conducts immersion cleaning in hot solvent (under vacuum over the flashpoint), with ultrasonics and micro filtration followed by the vapour phase and vacuum drying. Its isolated nature means that it remains completely safe.

The 4100 concept uses the combination of high temperature and high solvency power of A3 type isoparaffin to optimise its oil dissolving power. Continuous distillation saves solvent and guarantees a constant cleaning quality, separating oils from the solvent. The machine has one enclosed cleaning chamber which is served by two solvent storage tanks, one for pre-cleaning and one for final cleaning. The advantage is that clean solvent is always available from the clean tank.



Distillation quality allows the same solvent to be kept for a number of years, and allows use of smaller tanks. No stabilisers are needed because the Isoparaffin can not become acidic. Basket movement varies in speed and mode: static; oscillating; or rotating. The basket is chosen with the optimum mesh size, in order to separate the swarf from the parts. The user friendly process control includes 99 programmes.

Solvent temperature can be varied for specific applications to improve the dissolving of the soilings, while cleaning quality allows for further processes like plating; CVD and PVD coating; welding; heat treatment or gluing to be conducted.



According to Mr McIlwain, the advantages are numerous: “With the previous system there were issues regarding trichloroethylene, but now it has been eliminated. Customer satisfaction is now greater. The Amsonic 4100 has greatly improved the whole quality of our cleaning process.” Following such a positive experience with the Amsonic 4100 at Hastings, Technoturn has recently purchased a second machine for its manufacturing facility at Rugby.