

Precision due to optimal cleaning

EgaClean - Amsonic's hydrocarbon technology is the result of applied research into the replacement of toxic, chlorinated solvents. Below is a successful case study of how this system has been implemented in the UK.

Technoturn is a company based in Hastings (England) that has been producing precision turned parts for 10 years. In 1998 the company made its first move into CNC manufacture, when the CEO saw an article in a magazine about a company that was operating 24/7 unmanned, he thought: "Why can't we do that here" ?

Ongoing investment in CNC machines allowed for a rapid development and an increased production capacity. But this increased production brought its own problems, especially concerning

the cleaning of the parts. So David McIlwain, Technoturn's Managing Director, looked at the market for an efficient, productive, labour saving and environmentally friendly cleaning solution.

The answer was a fully automatic **Amsonic EgaClean 4100** cleaning machine. "Until now, the parts have been cleaned manually with trichloroethylene. With the new cleaning machine, the weekend's production can be cleaned by Monday instead of Tuesday afternoon. Our customers get cleaner products that are environmentally friendly and we get a quicker, cleaner and fully controllable process that is much less labour intensive. The **EgaClean's** productivity and efficiency are extraordinarily high" says McIlwain.

The **EgaClean** single chamber cleaning machine uses Isoparaffin, a non-chlorinated All solvent. The cleaning quality has been increased compared to the manual cleaning with trichloroethylene.

The EgaClean process consists of the following steps:

- ◆ Immersion cleaning with hot solvent (above the flashpoint) with ultrasonics and micro filtration.
- ◆ Vapour phase.
- ◆ Vacuum drying.

Technical data:

- ◆ Cycle time: 7-14 min.
- ◆ Basket weight: up to 50 kg.
- ◆ Basket movement: Rotating, oscillation, static.
- ◆ External dimensions: 2560 x 1335 x 2050mm (B x L x H).
- ◆ Concentration of C in mg/m²: 10.8.
- ◆ Hydrocarbon film in Nm: 13.8.
- ◆ PC control with process documentation, visualisation of the machine and modem connection.



Cleaned parts.

Pollution in mg C	0.032
Pollution in mg C/m ²	10.8
Hydrocarbon film in nanometers	13.8



EGAclean 4100 in use at Technoturn.

A new generation of cleaning equipment

The *Amsonic's EGAclean* concept uses the Isoparaffin's (class AIII) high temperature to increase its dissolving effect on oils and greases. The continuous distillation saves solvent and guarantees a consistently high cleaning quality. The progressive elimination of chlorine additives in cutting oils and their replacement by other additives that are not compatible with chlorinated solvents shows the efficiency of AIII solvents compared to tri- or perchloroethylene.

It only remains to say that the hydrocarbon nano-film on cleaned parts is a perfect protection against corrosion for approx. four weeks. Plating, welding, gluing, heat treatment, physical vapour deposition (PVD) and CVD coating are amongst the most common working following an *EgaClean* cleaning process.



Amsonic AG
 Zürichstrasse 3
 CH-2504 Biel-Bienne
 Tel. +41 32 344 35 00
 Fax +41 32 344 35 01
 www.amsonic.com
 info@amsonic.com

Specification of costs:

Cleaning costs	0.041 m /kg
Productivity	approx. 200-300kg/h
Basket dimensions	520 x 320 x 200 mm
Yearly consumption	200 litres of Isoparaffin (Distillation sump is burnt in cement factories)
Emissions in the air	1.7 kg VOC per year
Yearly power consumption	approx. 17'000 kWh

