

GLASS MOULD CLEANING WITH ULTRASONICS - QUESTIONS AND ANSWERS

How does ultrasonic cleaning work?

Ultrasonic cleaning is combination of mechanical and chemical action. The cleaning mechanics is based on strong cavitation in cleaning fluid. The cavitation - violent implosion of microscopic vacuum bubbles - is produced by high-frequency vibrations of piezo ceramic ultrasonic transducers. Loosened dirt layer is dissolved in surrounding cleaning fluid.

What materials can be cleaned with ultrasonics?

Ultrasonics can be used to clean almost any hard material - metals, ceramics, glass, hard plastics and so on. It is not suitable for soft materials as they absorb ultrasonics and damp cavitation.

Typical mould materials like silicone bronze and grey iron can be cleaned with ultrasonics.

What cleaning chemistry is used in mould cleaning?

Glass mould cleaning is a combination process using both alkaline and acidic chemistry. Alkaline detergents effectively remove release agent and graphite. Rust and oxide layers can be removed with acidic detergent.

How can rusting of grey iron be prevented?

Use of rust inhibitor in last hot rinse tank provides sufficient temporary corrosion protection for corroding materials.

Can ultrasonic cleaning damage the moulds?

Basically not. However, cleaning time of grey iron blank moulds in the acidic tank should be reduced to a minimum to prevent chemical corrosion.

How does ultrasonic cleaning save costs?

In many ways. First, energy consumption compared to running a sand blaster is much lower.

Second, manual handling of heavy mould parts is widely eliminated. This leads to reduced labour cost and safer work environment. Customers have even reported about reduced medical claims.

Third, mould life is extended as no abrasive media is used, enabling more production cycles per mould.

Fourth, quality of end product is improved with less rejects. Mould surface remains smoother, and edges and ornaments retain their original shape.

Fifth, savings in glass mass consumption as moulds remain in their original tolerances.

Can ultrasonic cleaning unclog pin vents?

Yes. Customers have reached up to 95% unclogging.

What is payback time of an automatic mould cleaning line?

Payback time depends on several variables like cost of labour, energy, water, and materials. Likewise, plant production and capacity are major factors.

Customers have reported 1,5 - 2 years' payback times.

