

A close-up photograph of a laser cleaning process. A bright, intense yellow-orange laser beam is directed at a dark, cylindrical metal mold component. The point of contact is glowing with heat and light. The background is a soft, out-of-focus blue and grey.

Laser Mould Cleaner **AiMC-1000**

The new industry standard
for cleaning glass moulds



LASER MOULD CLEANING

At its core, the AiMC-1000 is the integrated design of a high-intensity laser cleaner combined with robotic automation, delivered in a 20ft container.

Manufacturers are looking for cost-saving measures, which the AiMC-1000 delivers. Not only in the reduction of cleaning and mould replacement costs but over large production volumes, the savings on glass used can be significant. It also allows manufacturers to move to a fully automated plant.

It is estimated that the return on investment for this system is between 12 to 18 months for an averaged sized plant.

AiMC Specifications

Mould Data	
Height	30 - 400 mm
Diameter	80 - 220 mm
Weight	30 kg max
Input Type	Trolley
Throughput	900 per day*
Control System	
Central processor	Siemens IPC
Software	
Auto Path Generation	Yes
3D Scanning	Yes
Remote Viewing	Via PTZ camera
Language	English (translation available)
Robots	
Handling	ABB IRB4600-60
Laser	ABB IRB4600-45
Laser	
Type	1000 W
Cooling	Water-cooled optic and source
Power	380 - 415 V 3 phase + N
Operating Temperature	5 - 40 °C
System	
Noise	60 dB max (outside)
Standard Footprint	20 ft container + 1.5 m at front (see schematic diagram)
Warranty #	
Laser Source	12 months
Third party Items	Manufacturers warranty
Workmanship	24 months

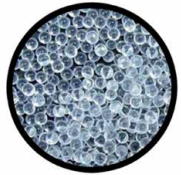
* Based on an average mould size and cleanliness.

Terms and conditions apply.

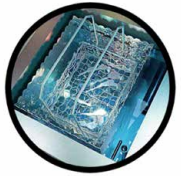
The Situation

The current process allows surface contamination to build up, leading to potential quality issues with the final product and requires regular removal and maintenance.

Current methods of contaminant removal:



Bead Blasting



Ultra Sonic (often using chemicals)



Dry Ice Blasting

Current methods of contaminant removal include bead blasting, ultrasonic (often using chemicals) or dry ice blasting, followed by a manual process to hand polish and re-machine the moulds to remove surface imperfections caused by the physical cleaning.

Estimates show that large manufacturers scrap up to \$1 mil AUD worth of moulds per year as a result of these cleaning methods.

The Solution

The Automation Innovation robotic cell, designated AiMC-1000, delivers superior results via a safer, chemical-free, repeatable mould cleaning process currently unattainable using conventional techniques.

It utilises a high-intensity laser light to clean the surface of the images, ensuring that only the surface contaminant is removed with minimal damage to the parent mould material.

Cost Savings

- Reduction in labour costs
- Ability to work 24/7
- No additional materials or chemicals required
- Increase daily volume
- Lower replacement costs

Reduce OH&S Impacts

- Reduce manual holding
- Noxious fumes contained
- Eliminated need for shot blasting media
- Chemical Free

Quality Improvements

- Consistency and repeatability
- Logos remain crisp and clear
- Mould growth eliminated

And it is a turnkey solution with easy installation at any site globally, with low overheads and power requirements and has industry 4.0 integration and reporting.



**We bring you the best
in laser technology.**

Laser cleaning offers a greener, safer and more efficient surface cleaning alternative. We work hard to reach that goal by developing new technologies and challenging existing surface cleaning methods.

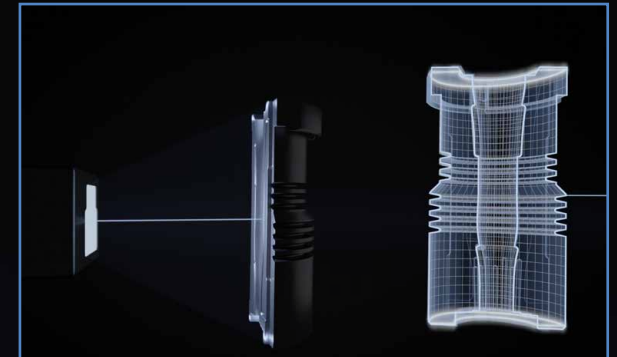
3d Mould Scanner

AiMC-1000 utilises state of the art 3-D scanning technology with patented software algorithms that have been jointly developed with Siemens.

Mould specifications and design subtleties can be set by CAD and live-scan data and cleaning parameters can be customised. By manipulating the laser characteristics the amount of material removed can be controlled with extreme precision. Contaminants are vapourised from cavities and channels, leaving no residue. It can also penetrate into the smallest surface details and pin-sized vent holes. Safety, reliability and consistency are of paramount importance, so visual, proximity and analog sensors, high-speed dependable communications and state of the art controls are the fundamental building blocks.

Optional artificial intelligence capabilities:

Data is scanned for each mould cleaning process around the world, this data is then delivered to the cloud, where it goes through an AI processor. Using this data, the algorithm becomes more refined and smarter each time. That data then goes out of the cloud to other machines across the network, ensuring the very highest of standards. This process is entirely autonomous and future proof, allowing for Industry 4.0 integration and reporting.



Key Benefits

- No polishing
- No waste
- Minimal Labours costs
- 24/7 run time
- No chemicals/consumables
- Extended life span of mould
- Reduce manual handling
- Eliminate the need for bead/sand-blasting material
- Quality improvements
- Consistency and repeatability
- Logos remain crisp and clear
- Mould growth eliminated
- Rapid installation
- Low power requirements
- System linked with mould management platforms
- Industry 4.0 integration
- Remote monitoring
- Low maintenance
- Ease of use



Cost Saving



Reduced OH&S impacts



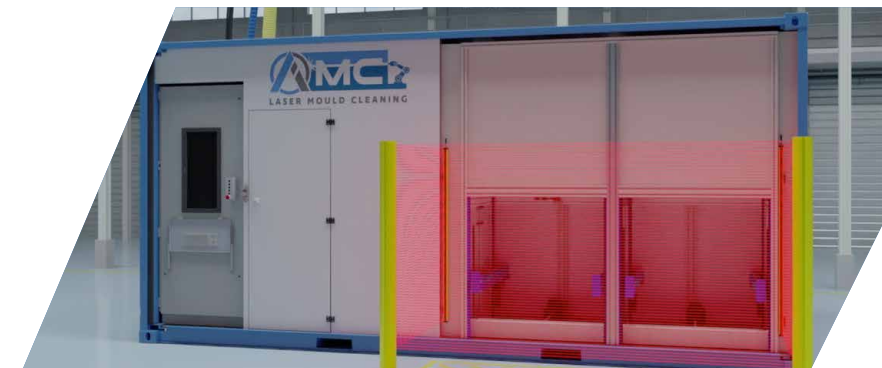
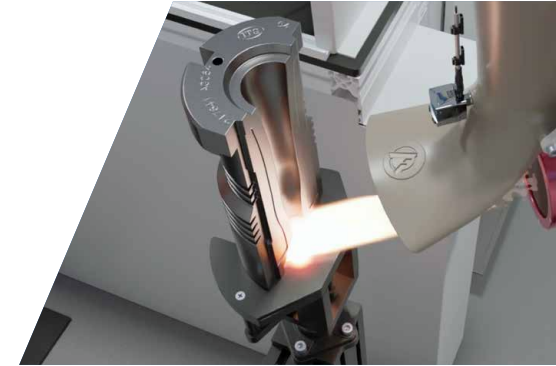
Quality improvements



Turnkey Solution

The system is currently protected by a provisional global patent.

For more information about the AIMC 1000, please contact Automation Innovation





Contact us today for a free trial of laser mould cleaning.

Please contact:

Office: +61 (3) 9771 7920
Email: sales@automationinnovation.com.au
Website: www.automationinnovation.com.au

   /automationinnovation



automationinnovation.com.au