WHAT WOULD AN INVESTMENT IN LASER TECHNOLOGY BRING YOU?

For years, the use of laser technology has been growing in all industrial sectors. At the request of numerous actors in the rubber and polymer injection industry, the use of this technology to clean injection and compression molds has been developed.

Laser has the advantage of being a reliable, quick, safe, and eco-friendly solution with a quick return on investment:

- Time savings on cleaning operations
- Automation of cleaning operations
- Possibility of cleaning molds while hot
- No additional consumables
- Low maintenance requirements of the machine
WHAT ARE THE OTHER TECHNOLOGIES IN USE CURRENTLY?

- **Ultra-sonic cleaning**

  This is the most widely used method in several sectors to clean or sterilize equipment. The process strips off undesired material in a non-aggressive manner. However, it is very costly and polluting. It requires the use of chemical additives (anti-grease agents, concentrated detergents, anti-corrosives, deoxidizers, etc.) This method presents risks to the health of the worker and for the environment; according to the REACH program as well as regulation of Persistent Organic Pollutants (POP), businesses are obliged to register and recycle these polluting substances. This also makes ultra-sonic cleaning quite expensive.

  The use of ultrasonic cleaning also negatively impacts the user’s production, because the process is time-consuming, requiring several steps: 1) creation of a high-frequency wave, 2) fluctuations between high pressure and low pressure, 3) appearance of miniscule bubbles during the low pressure periods, known as cavitation, and 4) implosion of these bubbles upon contact with submerged surfaces during high pressure periods. Additionally, some molds must be taken apart to allow them to be cleaned in this manner, in particular molds with valves. Moreover, this process **can only be used on cooled molds**. Your production will only restart after the mold has been cooled, cleaned, and reheated once more. At the end of cleaning, it is also necessary to plan **time for the mold to dry**.

  *Laser requires very little time to prepare (5 minutes after turning on the machine, you will be ready to clean your molds, both hot and cold).*

  *Laser technology is a quicker, more eco-friendly, and more cost-effective solution because laser cleaning requires no chemical consumables and filters all residue via a vacuum equipped with an active carbon filter.*
Projection cleaning

Several different materials can be projected onto an injection mold in order to clean them: peach pit, dry ice, etc. This process may boast a low initial cost, but it requires costly consumables that are difficult to stock, and it is extremely loud.

Unlike laser technology, peach pit projection can alter the shape of the molds after prolonged use, and the material used can rest in the imprints of the molds. Production time is lengthened because the mold must be cleaned of all remaining specks of the abrasive product used. This technology is slow and, just as with ultrasonic cleaning, it only works with cooled molds. This equipment is operated manually, which results in higher labor costs compared to a machine like LASELEC’s laser cleaning machine, which is entirely automated.

The latest evolution of the projection technique is the use of dry ice, which is not abrasive; nevertheless, prolonged use of dry ice results in heavy humidity which can lead to the oxidation of molds. This process is also very noisy (over 105 decibels), and therefore requires the use of hearing protection equipment.

Investment in a LASELEC laser cleaning system would therefore quickly pay for itself by eliminating the various costs tied to project-based cleaning (labor costs, consumables, logistics, etc.)

Laser technology is substantially quieter. With a sound level of 76 decibels, LASELEC’s MLC 500 can be used near production lines.

The MLC500 is mobile. Mounted on wheels, it can be easily transported to the point of use within a workshop.
OPERATING PRINCIPLE OF LASELEC'S LASER MOLD CLEANING MACHINE

Cleaning injection and compression molds by laser with a LASELEC machine is the best option for the rubber and polymers industry: cost effective, simple to use, rapid, effective, and ecological.

- More cost-effective in terms of consumables, the MLC 500 laser mold cleaning solution provides the best return on investment.

- The simplicity of the machine comes from its automatic programming. Beginning with a CAD file of the mold, the machine will program the trajectory of the laser. Moreover, the use of the software is very intuitive for the operator.

- The speed of the laser head allows it to move up to 50mm per second. This allows for accelerated cleaning, and even preventative cleaning before build-up occurs.

- Users gain production time and reduce downtime thanks to the system’s ability to clean injection molds while they are hot.

- The effectiveness of LASELEC’s laser technology is greater than that of projection cleaning, thanks to the rotation of the laser head, which allows for a wider and more precise cleaning action. Laser can clean horizontal, vertical, and slanted surfaces.

- Best choice for the environment: cleaning injection molds with laser is a pollution-free process. The residues removed by laser are vacuumed and filtered with an active carbon filter, which also eliminates odors.
MLC 500 LASER MOLD CLEANING
AN INNOVATIVE AND EFFECTIVE SOLUTION

Cleaning molds with laser technology can improve the productivity of your workshop.

The high speed of LASELEC’S MLC 500 allows you to reduce the number of identical molds, eliminating the need to have a set of molds in production and another in the cleaning stage. Laser allows you to reduce the time necessary to restart production after cleaning because the temperature of a mold drops only slightly during cleaning. After cleaning the mold, the production equipment will regain the proper temperature much quicker than after a cleaning process requiring complete cooling of the molds.

Laser cleaning does not require the attention of an operator during the cleaning operation.

LASELEC’s MLC 500 machine does not need any additives to function.

Therefore, the use of laser technology reduces labor, consumables and logistical costs of mold cleaning.


