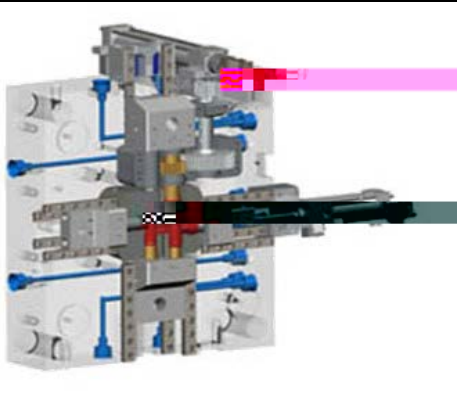




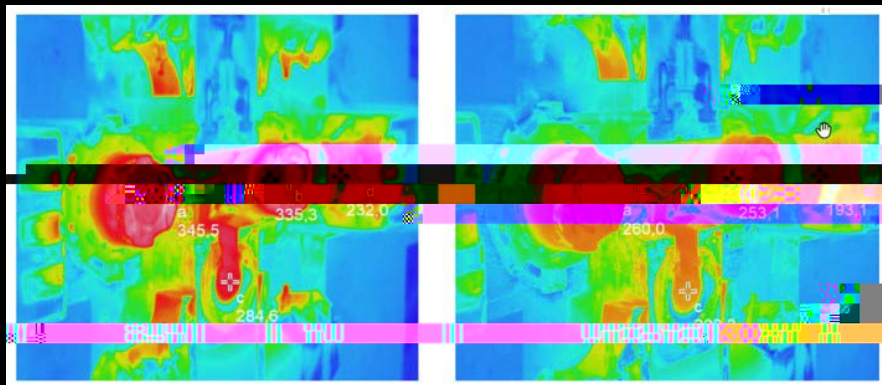
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a booster station for control air pressures of up to 8 bar; Wollin also offers retrofit solutions for this.

When the spraying tool is moved into the die, the two die halves are blown out at high pressure. The masking tool, which is adapted to the die and equipped with DDV nozzles, ensures uniform release agent application du-

ring spraying. Patented dosing nozzles are used for micro-spraying, which are offered with different dosing volumes so that a suitable release film is achieved for each part of the die.

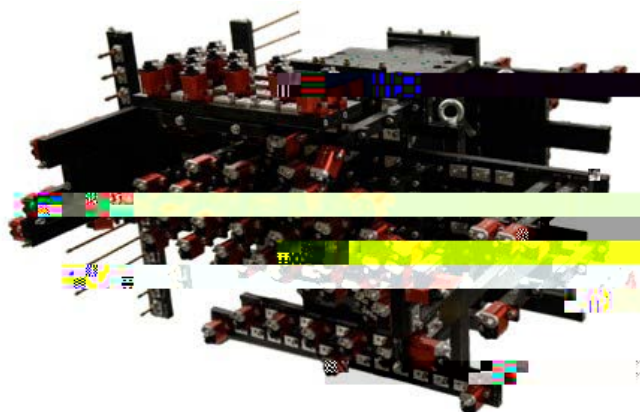


Fig.3 -Mask spray tool.

Experience shows that the release agent concentrates available on the market have excellent flow properties, so that even areas of the die that are difficult to reach receive sufficient release agent. The release agent is applied in a pulse by which the release agent in a chamber of the spray nozzle is sprayed into the die under high pressure in very fine atomized form. The air pressure must not be set too high so that the release agent is sprayed onto the die and does not evaporate without effect. Contrary to initial assumptions, ionization of the release agent and die is not only not necessary, but in many cases rather a hindrance. Due to the course of the field lines, most of the release agent is deposited in the foremost area of the die.

Due to the fine atomization of the release agent, there is practically no Leidenfrost effect with microspraying. Another advantage of applying only the amount of release agent required for the release effect is that only very small amounts of substances are measured in the air.

Afterblowing after spraying is unnecessary, since no excess water was sprayed. The formation of cracks due to thermal shock during conventional spraying is avoided, resulting in a significant extension of the die service life.

#### QUALITY

The lack of water during spraying enables a more even distribution of the release agent in the die, which contributes to a

significant improvement in part quality. The surface and the microstructure become significantly more homogeneous, practically no blowholes are formed, and porosity is reduced to a minimum.

#### ENVIRONMENTAL ASPECT

Significant savings can be achieved through the contemporary form of spraying using EcoSpray. Today, awareness of environmentally compatible and resource-saving production is greater than ever. The aluminum industry already has a major advantage here thanks to the very good recyclability of die castings. However, the classic casting process has a not inconsiderable impact on the environment, which is also reflected in the costs. These include the energy costs incurred by cooling and reheating the dies, and the enormous consumption of water and compressed air during spraying.

With microspraying, on the other hand, only very small quantities of the release agent are evaporated, no fresh water is required and, crucially, no waste water is produced. The consumption of energy-intensive compressed air is reduced enormously.

This makes the die casting process much better in terms of its climate footprint.

Wollin Eco Spray savings:

Acronimo

COST FACTORS

The environmental impact of the process also has the benefits with reduced energy consumption, reduced die temperatures and the reduction in just-in-time inventory. The air is very clean and the financial savings are significant. The costs for the lease agent are very low. In addition,

Oil pan for automotive industry

Water based medium

EcoSpray with concentrate

Cost Savings total / year

197.000,- €