

Gefond at Euroguss 2024

Hall 9 stand 330

Gefond for a long life industry
A DIGITAL AND SUSTAINABLE VISION OF THE MODERN
FOUNDRY

16 - 18 June 2024, Euroguss 2024, Nuremberg Germany

At Euroguss 2024, Gefond presents solutions for optimising the die-casting process through temperature control and predictive maintenance, and celebrates 30 years since its founding.

The entire range of HPDC by Gefond control units, the new products and Perpetuo, the predictive maintenance software, will be presented at Euroguss from 16 to 18 January at the Gefond stand 330/Hall 9

How to make the process more controlled?

Thanks to the HPDC by Gefond range of temperature control units, we are able to **achieve a better result through process control. HPDC by Gefond designs efficient, environmentally friendly, integrated and complete solutions for the diecasting industry, guaranteeing improved quality and reduced energy consumption.**

We present three cases of three different types: Wollin MicroSpraying with Greencasting pressurized water multi-circuit controllers; gravity produced component testing with Greenshell in New Olef; jetcooling technology with Greenjet 50.

The range of thermoregulators and innovations will be presented at Euroguss 2024 Jan. 16-18 at the Gefond booth 330/Hall 9.

On Jan. 15 at the plenary session on die casting, organized by BDGuss Federal Association of the German Foundry Industry at the Nuremberg Exhibition Center, **Daniele Sagone, sales technician of HPDC by Gefond, will present "The new frontier of temperature control in foundry: energy saving, process optimization, and predictive maintenance."**

Greencasting: Wollin MicroSpraying and thermoregulation.

Given Gefond's experience in optimizing die casting processes on both the thermoregulation and spraying sides, and having experimented with these

processes in several foundries, we arrived at some strategic considerations for improving processes and being more competitive in the market.

In all use cases, we have seen that the combination of **Wollin spraying machine** (particularly with Ecospray technology) - **Greencasting Hpdc thermoregulation control unit** succeeds in best optimizing the process.

The use of release agents for MicroSpray technology, such as oils and concentrates, changes the melter's approach to the spraying process. Whereas previously the focus was on cooling the mold with spraying, now the focus is on using it solely for the main purpose for which it is done: to allow the casting to come off the mold.

To get the maximum results for the use of this technology, it is necessary: microdosing the product: nozzle **accuracy** and **repeatability** are critical. The removing heat by **thermoregulation**, as this is no longer subtracted by the evaporation of the water-based release agent.

Wollin offers two different technologies for MicroSpraying application.

The first type of EcoSpray DD / DDV nozzles (volumetric nozzle) is used in static applications (needs a mask spraying tool in most cases). It requires a preliminary study of the mold thermal since the amount of heat removed from the release agent is zero.

The second type of EcoSpray FSD nozzles (fine spray nozzle) is used in dynamic applications (does not require a mask spraying tool), with the ability to move the spray head within the mold area. It also requires prior evaluation of the mold thermal but less stringent, as water-based products can be used that allow a small cooling effect.

Hpdc control unit by Gefond combined with MicroSpraying.

Gefond offers the ideal solution to combine with this type of spraying: the Greencasting Hpdc by Gefond pressurized water multi-circuit controllers.

Thanks to the possibility of having differentiated cooling for up to 30 circuits and a large heat exchange capacity, the Greencasting control unit allows to manage and dispose of the amounts of heat involved in the case of MicroSpraying.

In this way we arrive at a correct and homogeneous mold temperature before spraying.

Our Greencasting control units, in order to increase heat transfer compared to conventional thermal control units, use a pulse working method. In this way, **the flow from laminar becomes turbulent, thus increasing the heat transfer coefficient by 30%.**

The simulation performed showed these results.

Greenshell: test on component produced in gravity at customer New Olef, gravity and low-pressure foundry of MCA industries group

The customer had a concentrated shrinkage porosity problem in a specific area (a dowel). The mold's temperature control circuits were manifesting a sharp drop in flow rate a few days after cleaning in addition to pockets of vapor obstructing normal flow.

Thanks to our Greenshell control unit with 4-bar working pressure and closed and filtered circuit between the mold and the machine, **the scrap rate went down from 25% and stabilized below 5%.**

Greenjet 50: new technology for jetcooling

Based on the new requirements of foundries, we developed a new Jetcooling control unit for microchannel cooling.

Starting from customers' needs, we modified some operating parameters and added some functions: the working pressure is now adjustable from 7 to 19 bar, we introduced direct reading of the flow rate of each individual circuit (on time), circuit leakage testing at each cycle, and Microsiemens reading of circulating water with alarm for exceeding threshold. It also does not require sophisticated filtration. Greenjet 50 is prepared for predictive maintenance with Perpetuo software.

Gefond's challenge is to keep pace with change. Gefond, through its innovative technical solutions, supports the trends in the manufacturing industry as it prepares to meet the challenges of the sector.

Gefond's vision for a long life industry focuses on the values of sustainability, for a more environmentally friendly production process, and digitisation, to take care of plants from a predictive perspective.

Perpetuo is the intuitive and easy-to-use artificial intelligence software for predictive maintenance, capable of communicating with any machine and peripheral device in the diecasting plant, anywhere in the world.

THE NUMBERS OF PREDICTIVE MAINTENANCE

- 35% REDUCTION IN MACHINE DOWNTIME

+ 15% EXTENSION OF PLANT LIFE

+ 16% INCREASE IN PRODUCTION

+

0% ENERGY SAVING

+

Leveraging Artificial Intelligence models, Perpetuo transforms collected data into useful information for predictive maintenance of mechanical, electrical, hydraulic and pneumatic parts subject to wear or failure. Perpetuo is an indispensable tool

that can support companies not only in managing day-to-day maintenance activities, but also in their strategic development vision.

Perpetuo addresses **both machinery owners and manufacturers**. OEMs need to transform their business models from selling machinery exclusively to providing services. With Perpetuo they can optimise customer service and gain a better understanding of how their equipment works. With Perpetuo, machine owners can take care of their machinery, optimise the production process, reduce costs and energy consumption.

Perpetuo will also be present on the stands of **Wollin, Agrati AEE, Tecnopres and Meccanica Pi.erre**.

These manufacturers will be presenting at Euroguss 2024 their machinery linked to Perpetuo predictive maintenance software, a project of Gefond for a long life industry.

Note to editors:

At Euroguss Gefond celebrates 30 years since its foundation in 1994.

Gefond represents leading suppliers in the diecasting sector and distributes technologically advanced systems for light alloy foundries. In particular, it represents the following brands in Italy: temperature control units (HPDC by Gefond), spruing machines (WOLLIN and AED), dosing furnaces (FOUNDRY4), crucible furnaces (MMP), crucibles (Morgan), melting furnaces (KROWN), latest generation laser markers (LASERAX), adiabatic coolers to replace evaporative towers (FRIGEL). In 2018 development of Perpetuo predictive maintenance software begins. In 2020 Gefond acquires the patent and know-how and starts its own production to be closer to customer needs. Gefond's challenge is to keep up with change by trying to anticipate it, to support trends in the manufacturing industry with innovative technical solutions, focusing on digitalisation and sustainability; to expand the service offering; to push on training to increase productivity. Gefond's strategic vision is embodied in five divisions: Gefond Products, Gefond Software, Gefond Technology, Gefond Academy, Gefond Service.

www.gefond.it

www.perpetuo.gefond.it

www.hpdc.it

