

POROUS BURNER TECHNOLOGY
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 **promeos**[®]
HEATELLIGENCE



m.pot & heatdock

Our mobile furnace bodies increase
material and energy efficiency!

PROCESS – R.EVOLUTION

Refilling unnecessary

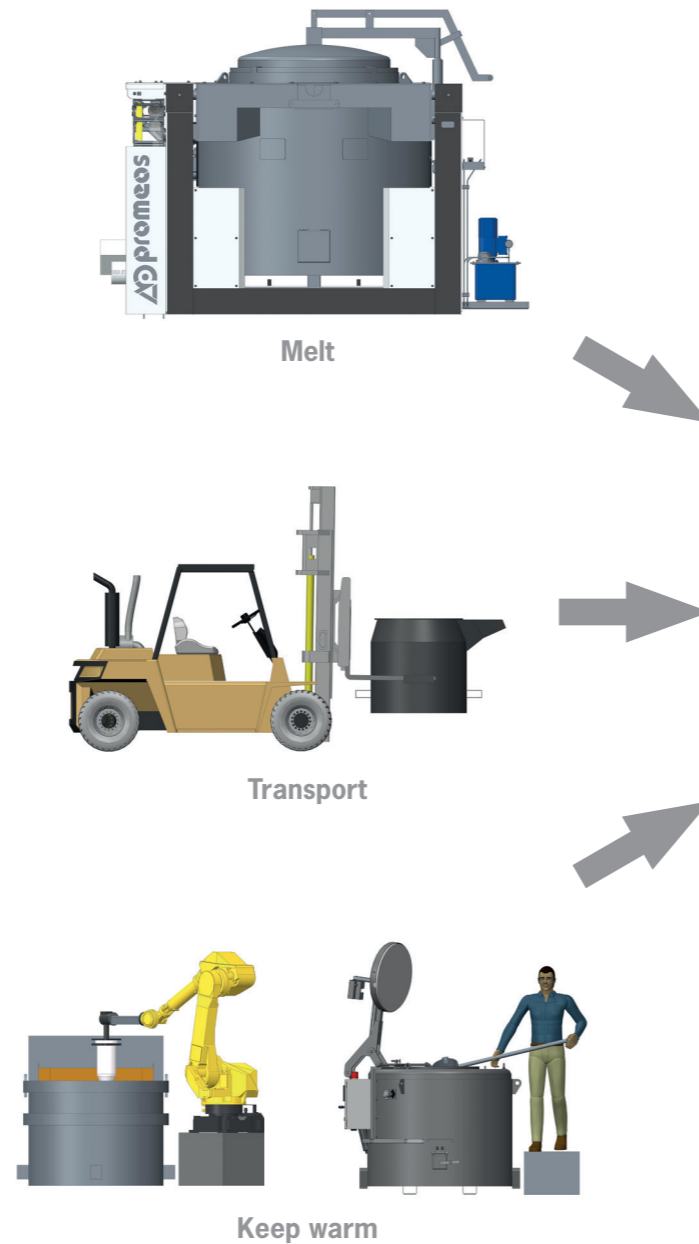
promeos® has set itself the goal of improving the (thermal) processes of its customers with its products. In foundries, this means following the material flow and ensuring optimal temperature control of the materials to be processed along the entire process chain. For this reason, the promeos® product portfolio offers innovative heating solutions for all areas of the foundry, from the raw material to the finished product.

The quality of the cast product depends crucially on the material quality (purity, homogeneity, alloy) and thus on its "journey through the foundry", i.e. its "process biography". The following therefore applies if possible: Avoid refilling! Each refilling process not only costs valuable energy, it also deteriorates the material quality.

The m.pot, promeos® makes refilling unnecessary!

Based on the promeos®-patented flameless burner technology, the functions of melting, transporting and dosing / keeping warm are combined in a single process.

With the development of m.pot and heatdock within the framework of promeos® coordinated research project ETAL succeeded in significantly reducing the required primary energy consumption and thus the emitted pollutants across the entire process chain of light metal casting. At the same time, both casting quality and manufacturing flexibility are significantly increased.



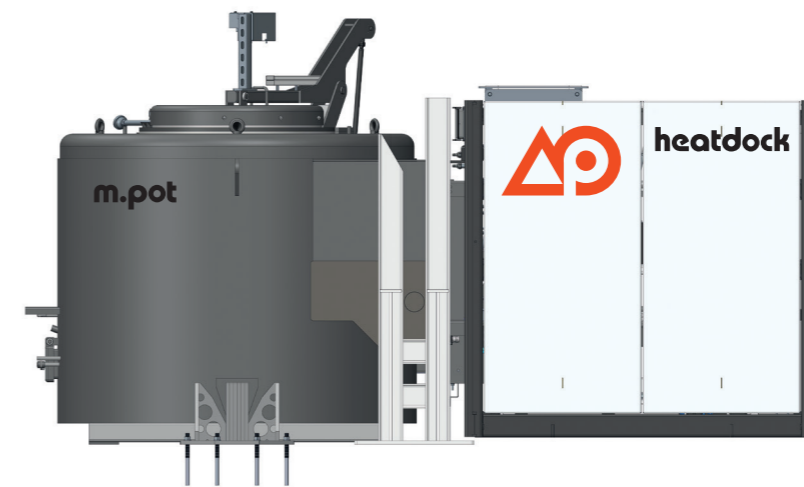
PRODUCT – INNOVATION

m.pot and heatdock - two that go together

m.pot and heatdock combine the functions of the melting furnace, transport pan and dosing or scooping furnace into a single system. The heat energy provided in highly integrated heating stations (heatdocks) is given to mobile furnace

bodies (m.pots), which are transported directly to the value-adding casting stations and replace the holding furnaces that were previously used there.

"Warmth on demand" for "melt to go" - SIMPLE. IMAGINED. MADE.

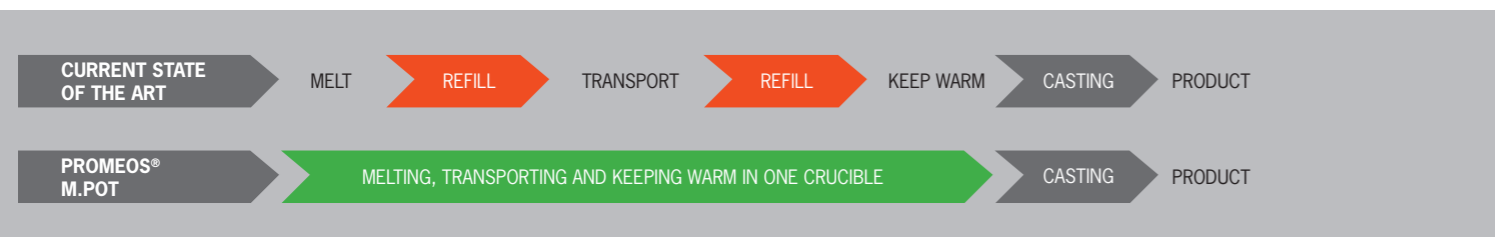


Gas heat in electrical quality

promeos® "Gas heat in electrical quality" combines the control-related advantages of electrical heating with the ecological and economic advantages of gas burners. The flameless flue gas heat generated by the premixing of gas and air causes uniform heating of the furnace body without "hot spots" and thus extends the life of the crucible. In addition, the reduced flow velocity of the exhaust gas prevents erosion and thus allows the use of light insulation materials. This means that

less mass has to be heated when heating and the furnace is much better insulated. The fact that promeos® technology neither gives off particulate dust nor noteworthy exhaust gas emissions should also be noted quietly here - as quiet as our products: <75 dB are a matter of course for us.

Evolution through integration - LESS EFFORT for MORE QUALITY.



OPTIMIZED PROCESSES - HEAT RECOVERY

Use of waste heat from the melting shop to preheat the next melting furnace (m.pot)

A further increase in efficiency is achieved by recycling and reuse of the high-temperature waste heat generated in the process for preheating the charge.

This is made possible by a double docking station (heattwin) with an additional preheating position. This means that you can melt in one m.pot and preheat it in a second m.pot using the waste heat.



ONE STEP AHEAD – PIONEERING TECHNOLOGY

Digitization of the overall process

The m.pot has a programmable logic controller (PLC) for data acquisition, which communicates with the system controller via WLAN and exchanges data on fill level, melt temperature, furnace temperature and lid position. By coding the m.pots, the system control system always knows where which furnace body is docked or whether it is on the transport route. Thanks to an uninterruptible power supply (UPS), this is also possible when the crucible is being transported, i.e. is not docked to one of the heatdocks. For the first time, the entire metal supply process can be seamlessly represented using intelligently networked data.

In addition to increasing the output quality, the digitization of the overall process is the starting point for a fully automated mode of operation for m.pots, i.e. the melt supply.

A variety of operational relationships and an assessment of the associated energetic state can be derived from data acquisition and processing. The capacity of the devices and process steps are optimally coordinated with one another via value stream analysis using a calculation tool. This data can also be used for production planning.

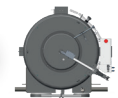
Transparent data enable a differentiated calculation of the manufacturing costs and thus gives the foundry a significant competitive advantage. The plant engineering system can be expanded with additional functions, such as callable instructions, derivable statistics and alarms. Intelligent maintenance that improves plant availability and extends service life becomes feasible.

PROMEOS® PRESENTS – THE FOUNDRY 5.0

The digitized foundry 4.0 is being further developed into the foundry 5.0, in terms of process technology. m.pot and heatdock show the way to the fully automatic melt supply: modular, highly flexible, demand-controlled, energy-efficient, uniquely low in emissions and low-noise and scalable as required - "Melt to go" and "melting on demand".

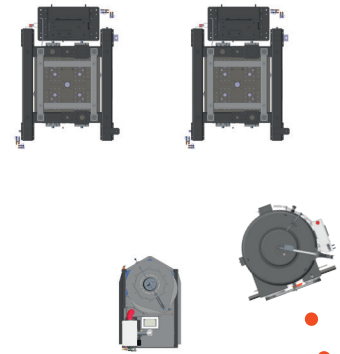


m.pot side view

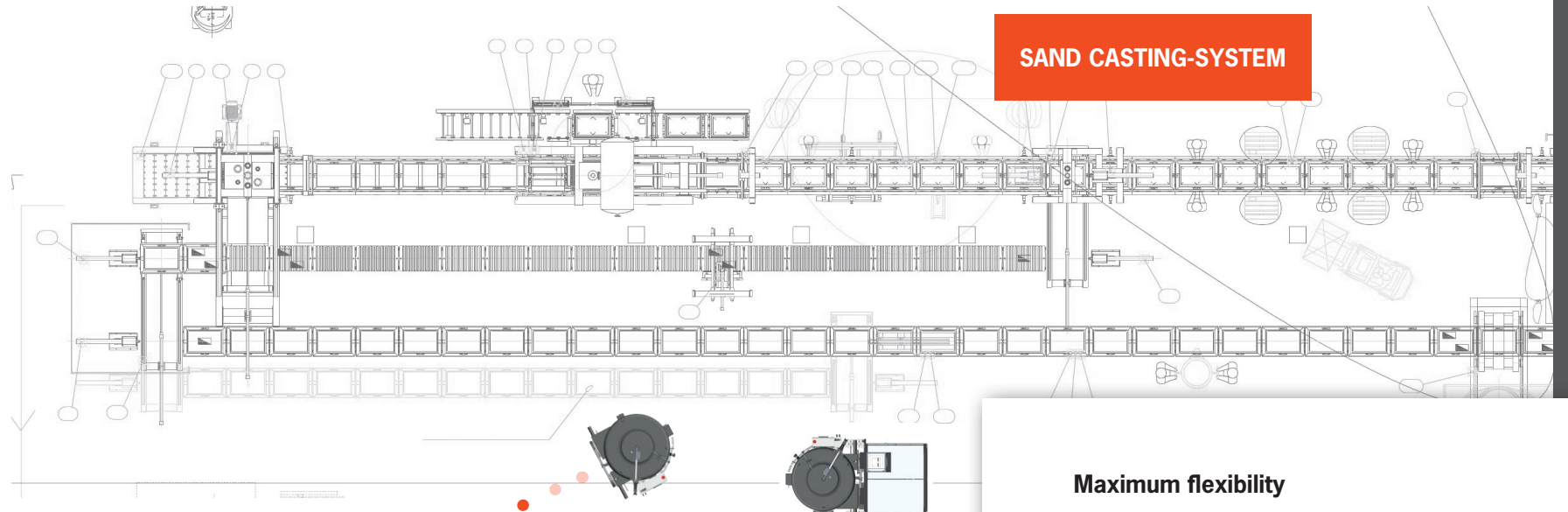


m.pot
Top view
(Reduced)

PERMANENT MOLD CASTING SYSTEM

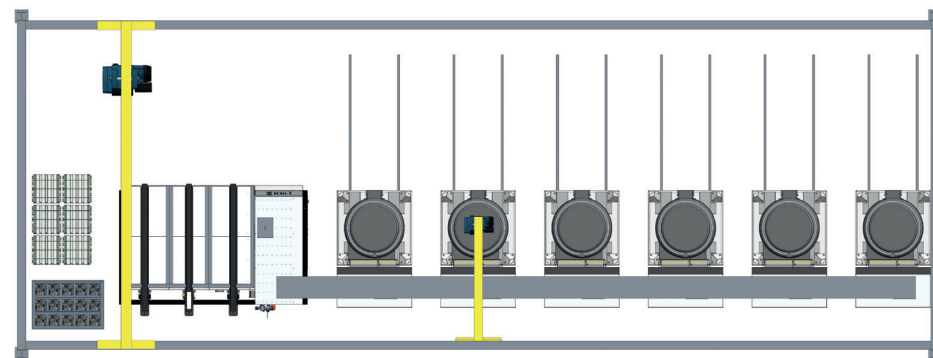


SAND CASTING-SYSTEM



Maximum flexibility

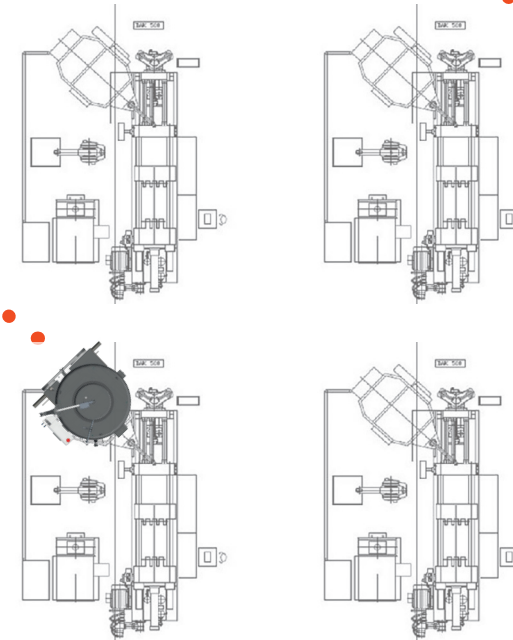
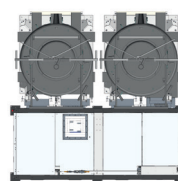
The m.pot can be quickly replaced by another if there is damage to the crucible. If a heatdock should not be available, the m.pot gets the heat at another "heat filling station". Production downtime due to furnace shutdown is a thing of the past with m.pot and heatdock!



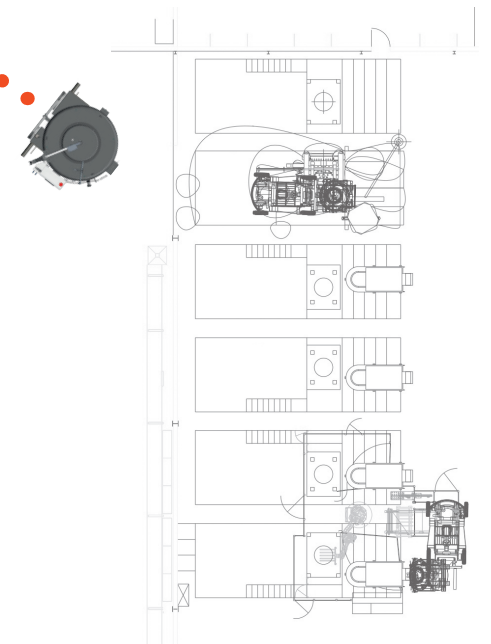
MATERIAL STORAGE AND CHARGING

MELTING OPERATION

- Automatic charging
- Refining / impellers
- Heat recovery



DIECAST-SYSTEM



LOW PRESSURE CASTING SYSTEM

We have a great number of clients worldwide.
Please find an excerpt of our references below:

