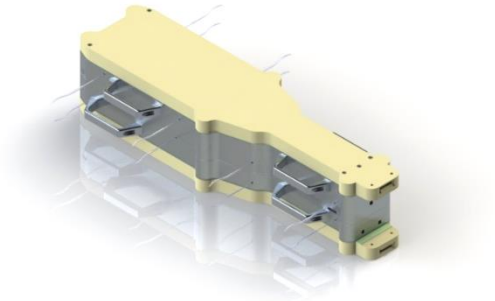
CorePlate Tailor

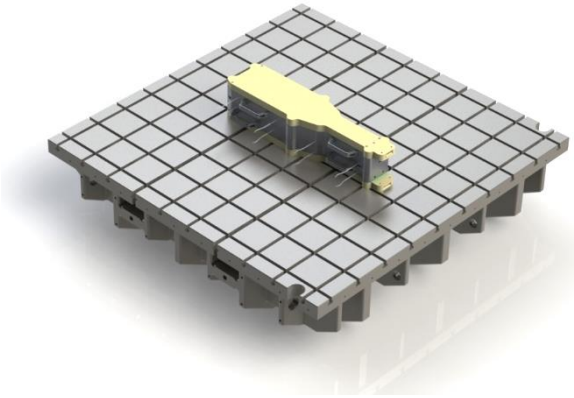
TECHNICAL DATASHEET

Description

Elevate your manufacturing efficiency with a custom heating solution designed for performance, setting the standard for temperature control and speed. Ideal for high-volume production with aluminum and steel molds.

Experience a robust and efficient solution for your volume production with inductors tailored for your specific molds.



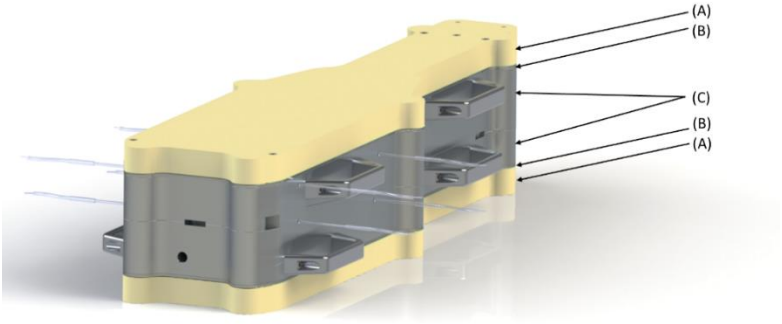


Overview

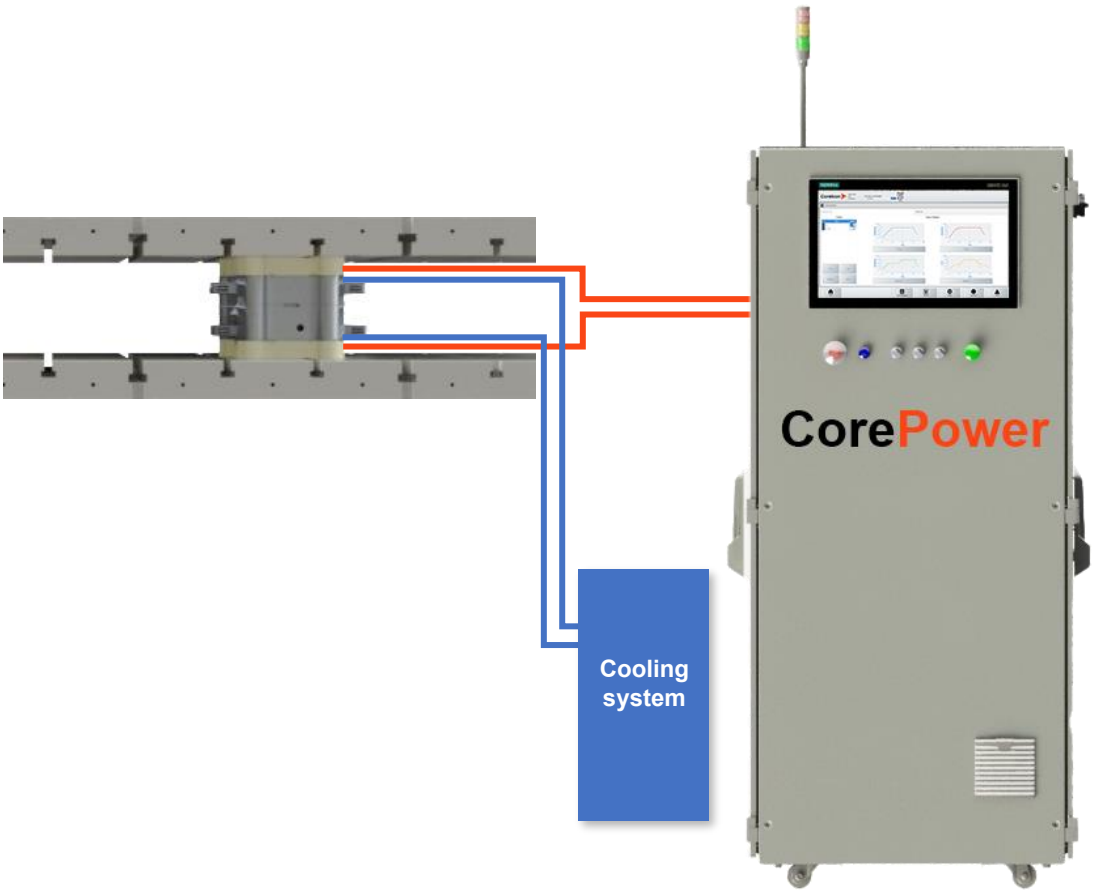
- **Heated Area:** Inductor customized to mold geometry
- **Integration Capability:** Integration into press or clamping systems
- **Temperature Range:** Up to 220 °C (higher temperature available on request)
- **Heat Rate:** Up to 100 °C/min
- **Mold Material:** Aluminum, steel
- **Part Materials:** PA6, PA12, PP, SAN, LPET, Epoxy, and many more
- **Molding Processes:** RTM, Compression Molding, Bladder Molding

Product function

CorePlate Tailor is combined with a CorePower system to convert power from the main grid and control the temperature generated in the mold. The inductor (A) employs Corebon's proprietary induction heating technology to achieve uniform heating of the steel or aluminum mold (C). If aluminum molds are used, a steel sheet is attached to the backside of the mold for the induction heating to be generated in this sheet (B). The inductor design is customized to achieve optimal performance for each specific mold. For cooling, the mold can be provided with integrated cooling channels or separate cooling plates can be placed in direct contact with the mold.



Scan the QR-code to download a digital version of this technical datasheet.
It is also available for download at https://corebon.com/our-solutions/heated-plates/



System integration

Adapter plates are custom-built for press attachments. Other types of clamping mechanisms are possible upon request.

The CorePlate Tailor is connected to a specifically configured CorePower system for power and temperature control. These systems are available in a wide range to handle different sizes and heat rate requirements.

Heat rates

Heat rates will depend on multiple parameters:

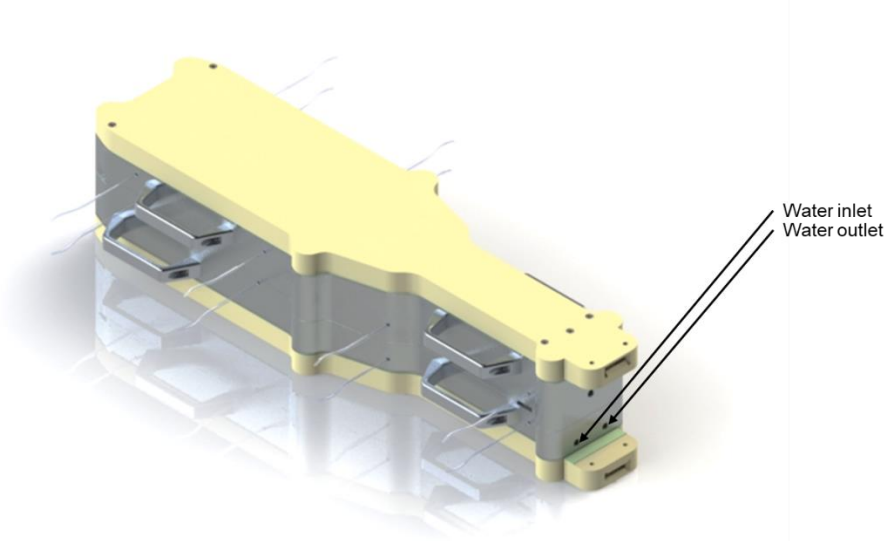
- **Available power**
- **Mold geometry:** The cavity geometry will heavily influence the maximum achievable heat rate with maintained temperature uniformity. The inductor will be specifically designed, simulated, and tuned to achieve uniform temperature as fast as possible.
- **Mold weight**
- **Mold material:** aluminum or steel

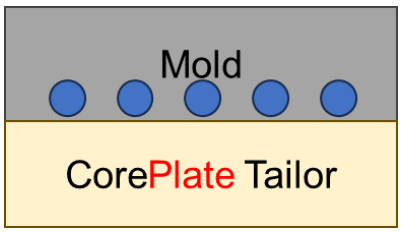
Contact Corebon to get the expected heat rate on your specific mold geometry.

Cooling

Cooling can be integrated into the mold.

The pictures below show an example where the mold has integrated cooling channels. These channels can be customized to the mold geometry with different channel configurations such as serial, parallel, or a combination of the two.





Thermocouple sensors

The CorePower system feeds power to the inductors based on the feedback data from thermocouple sensors attached to the molds. For safety reasons, two sensors are always connected for redundancy if one sensor fails.

Generally, the system can handle any thermocouple type (K, J…).

Examples of suitable sensors are shown in the pictures below.

CorePlate Tailor Specification and requirements		
Heating power		Custom
Maximum pressure		100 bar
Maximum temperature		220 °C[1]
Heat rate		Up to 100 °C/min
Cooling rate		Up to 120 °C/min[2]
Recommended cooling media settings		Liquid/air mix: Liquid pressure 5 bar Air pressure 4 bar
Coolant		Distilled water with 25% glycol
Mold material allowed		Aluminum, steel
Infrastructure for CorePower system		
Power supply	Frequency	50 – 60 Hz
	Voltage	380 – 480 V
	Phase	3 Ø

[1] Higher temperature available on request.
[2] Cooling rate is highly dependent on mold weight and cooling system.