

CorePlate Adapt

TECHNICAL DATASHEET

Description

Self-adaptable smart heater that heats any shape tool only where the heat is needed. For composite production with varying tool shapes and sizes up to 220 °C (428 °F). The ultimate combination of efficiency and versatility. Integrate cooling in the tool or add a cooling plate for rapid cycles.

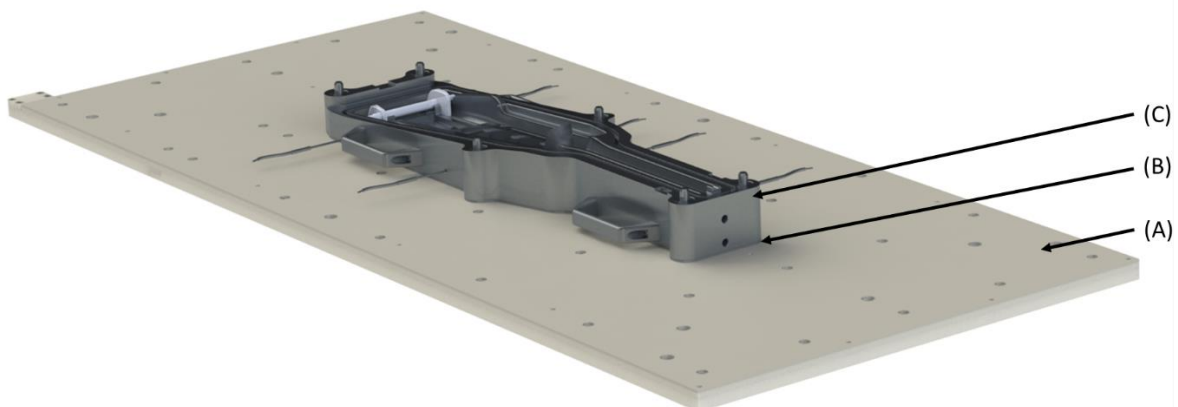


Overview

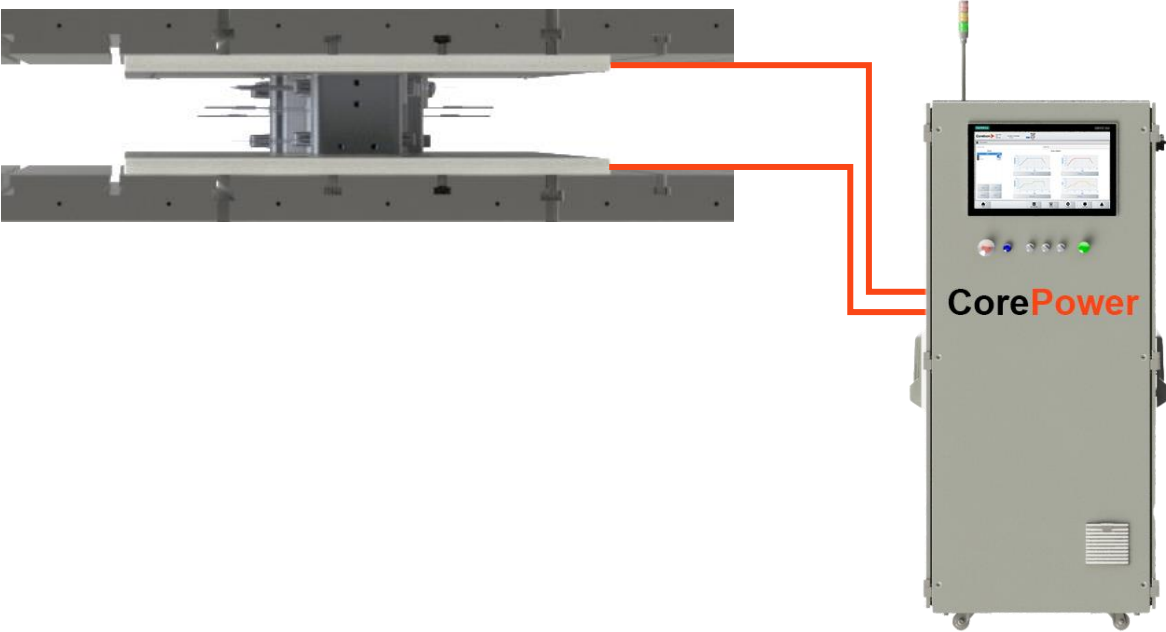
- **Temperature Range:** Up to 220 °C
- **Heat Rate:** Up to 50 °C/min
- **Integration Capability:** Integration into press
- **Mold Material:** Aluminum
- **Part Materials:** Epoxy, PA12, PP, SAN, LPET and more
- **Molding Process:** RTM, Compression molding, bladder molding
- **Size:** Custom

Product function

CorePlate Adapt 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 sheet (B). **Due to the unique inductor design, heat is only generated where the mold is located.** The heat is then conducted into the aluminum mold (C) which further enhances the temperature uniformity. For cooling, the mold can be provided with integrated cooling channels or separate cooling plates can be placed in direct contact with the mold.

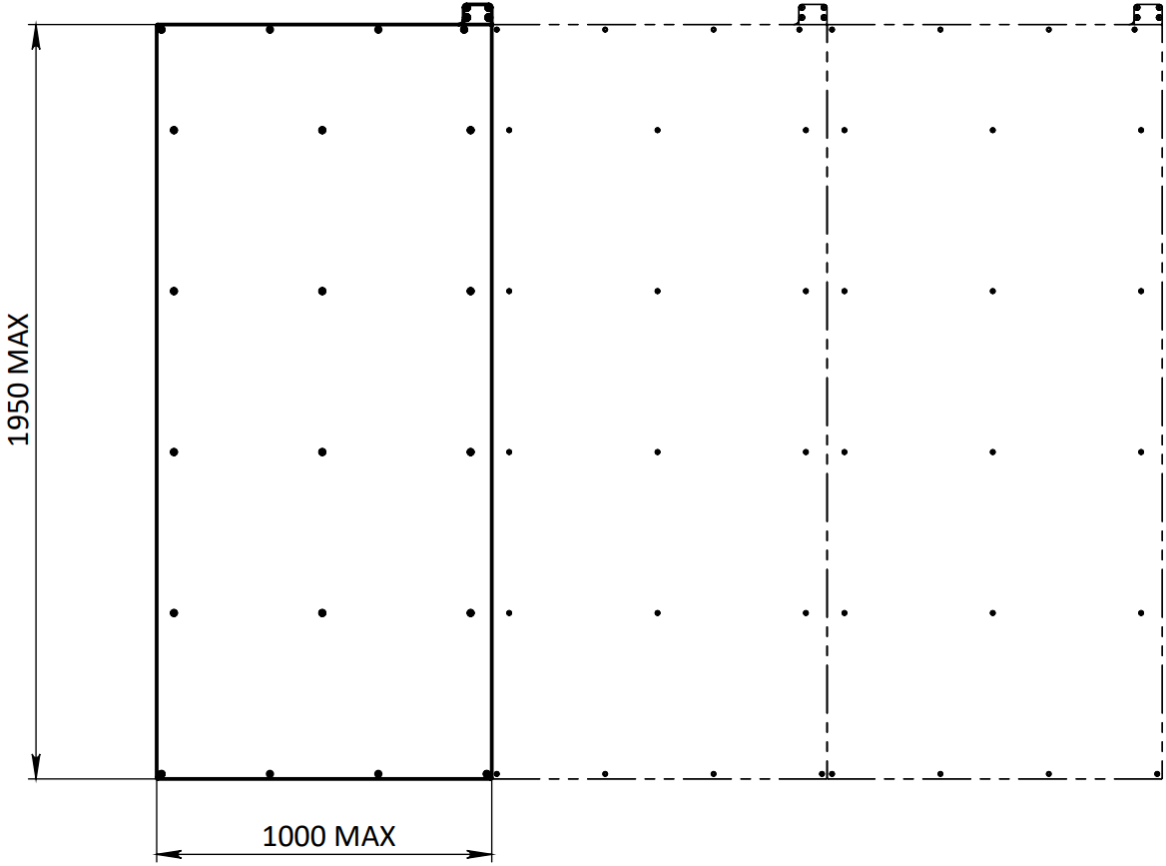


Scan the QR-code to download a digital version of this technical datasheet.
It is also available for download at <https://corebon.com/our-solutions/heated-plates/>



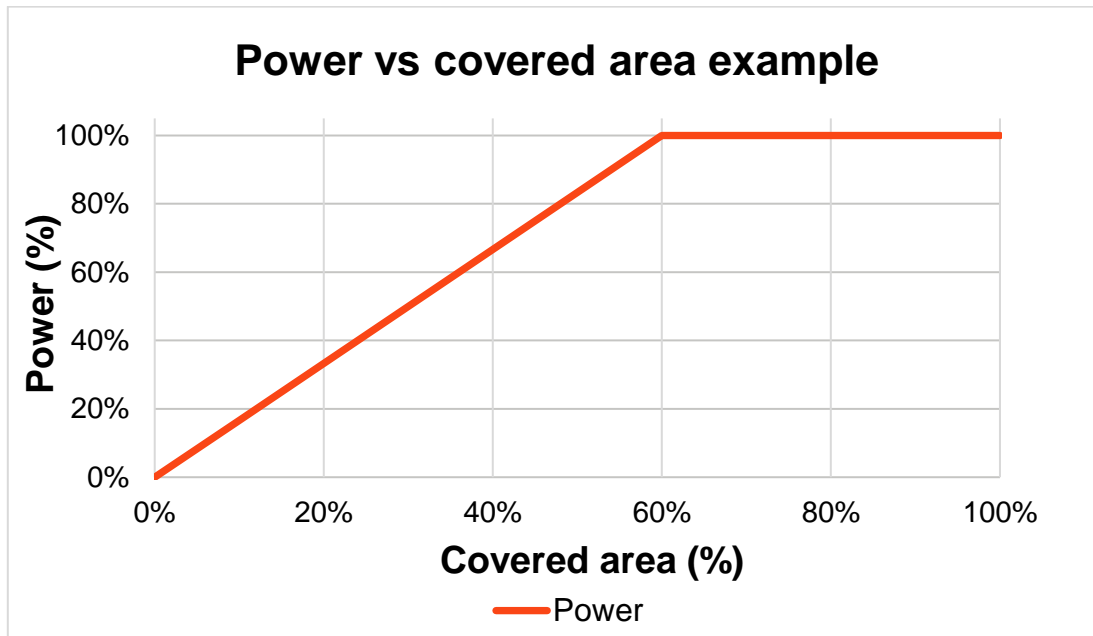
Sizes

CorePlate Adapt is provided in custom sizes with a maximum of 1000x2000 mm. The plates can be placed side by side to accommodate large geometries.



Power vs. covered area

Full power is given from around 60% to 100% covered area. When the heated area is less than that, the output power decreases.



System integration

For press attachment, a custom bolt pattern can be provided, with some restrictions to avoid interference with the inductor.

The CorePlate Adapt 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.

Option: Spring-loaded ball rollers can be added for easier loading and unloading of molds in the press.

Thermocouple sensors

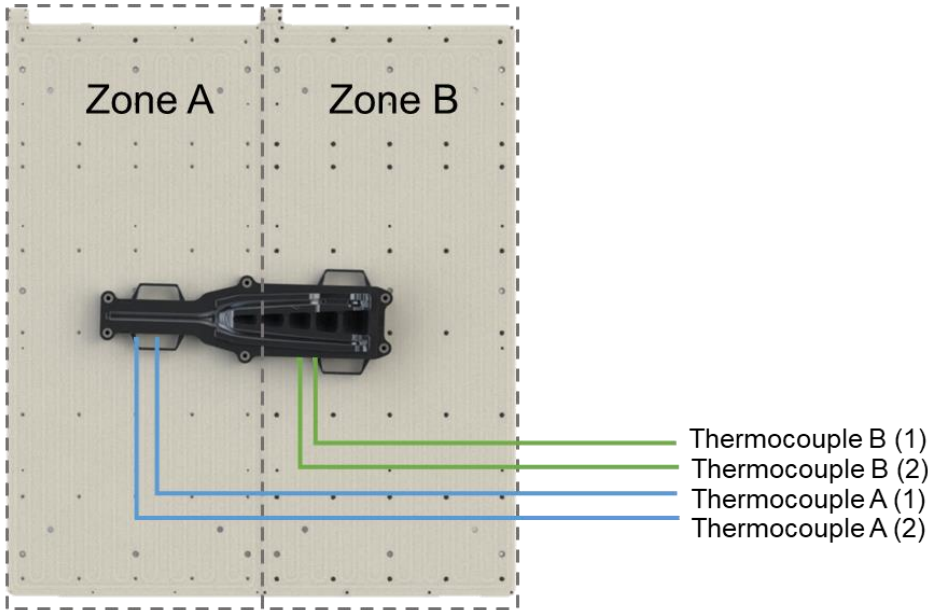
The CorePower system feeds power to the inductors based on the feedback data from thermocouple sensors attached to the molds. For safety reasons, two sensors are always connected for redundancy if one sensor fails.

Examples of suitable sensors are shown in the picture below.



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

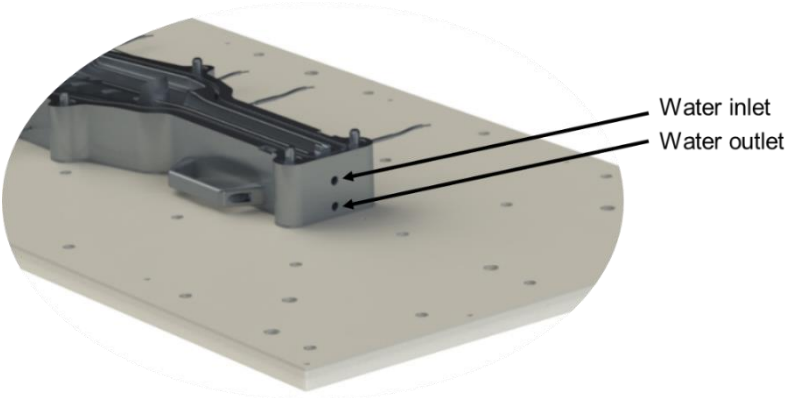
For multiple zones, sensors are integrated in the tool for all the zones used, see picture below.



Cooling

Cooling can be applied as either 1) integrated in mold or 2) separate cooling plates.

The picture below shows 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.



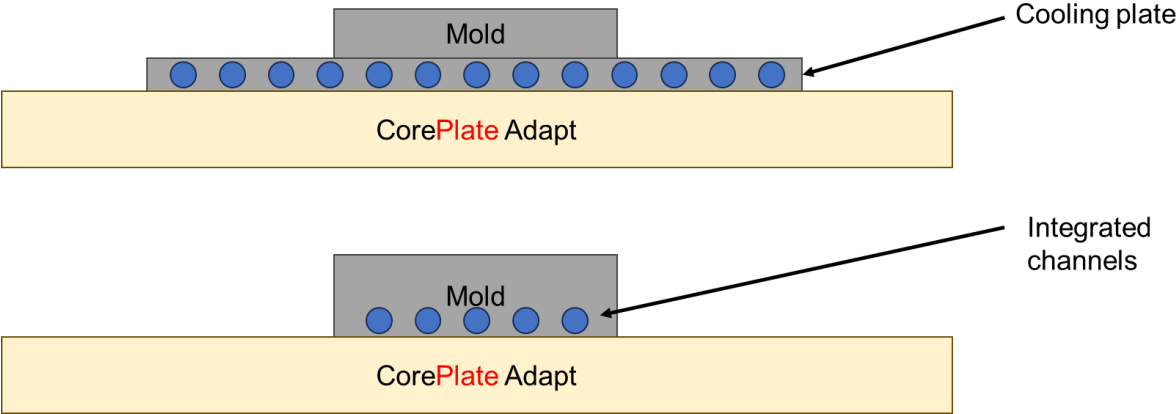


Figure: Schematic picture of a) cooling plate b) integrated cooling in mold

CorePlate Adapt Specifications and requirements		
Heating power		Up to 7.5 kW or 15 kW per plate
Size of heated area		Where the mold is placed
Maximum temperature		220 °C
Heat-up rate		Up to 50 °C/min. Contact Corebon to get heat-up rates for specific molds.
Tool/mold material		Aluminum with a steel sheet attached facing the CorePlate Adapt
Thermocouple type		K
Infrastructure for CorePower system		
Power supply	Frequency	50 – 60 Hz
	Voltage	380 – 480 V
	Phase	3 Ø