

Why Ritemp™?

Ritemp is a process for material contact surface temperature regulation in injection moulding, offering faster cycle times, and delivering better dimensional stability of parts in both individual impression and part consistency in multi-impression moulds.

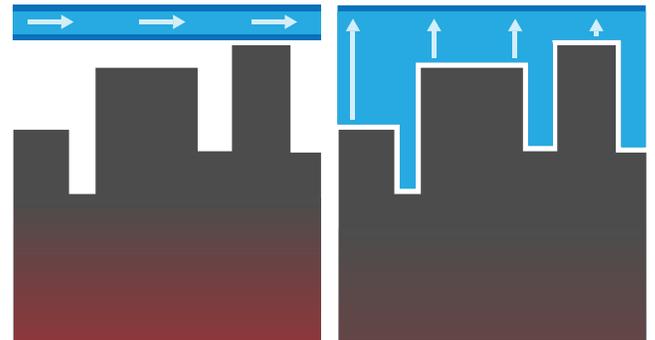
1 Physics of latent heat of evaporation

For every 1 gram of water evaporated, 540 cal/deg C of heat is absorbed using latent heat of vaporisation. Most other cooling methods rely on turbulent flow of water, where water absorbs only 1 cal/gram/deg C. Therefore, Ritemp enables a significantly more efficient cooling process to occur in the mould, inserts, and even hot-half.



2 Chambers, not channels

The Ritemp system enables the design of more complex part geometries. Cooling chambers are machined to follow the geometry of the moulding surface, creating even steel thickness between the product and the cooling chamber. This increases the wetted surface area resulting in even shrinkage and good dimensional stability at the fastest possible cycle time.



3 Removes heat in two stages

Ritemp cooling removes heat in two stages: First, rapid and even heat removal from the heated surfaces occurs through the latent heat of vaporization. Secondly, heat is removed from the mould using an efficient heat exchanger over the whole cycle.



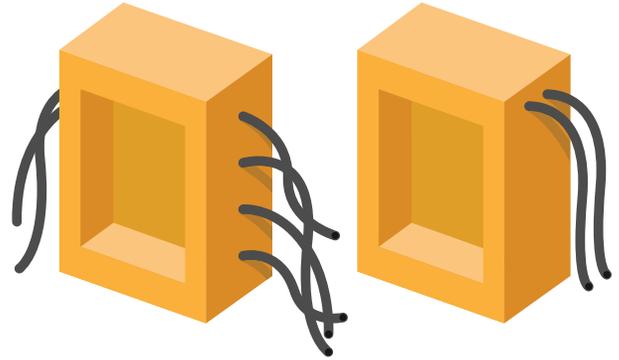
Implementation is easy

Ritemp prepared moulds can be manufactured with complex geometries using traditional machining techniques. Direct metal laser sintering can also be utilized.

A Ritemp mould operates on a standard injection-moulding machine with no interfacing required, and a simple controller to regulate cooling water supply. Machine operator's need little training to use a Ritemp mould and can gain the benefits quickly and effectively.

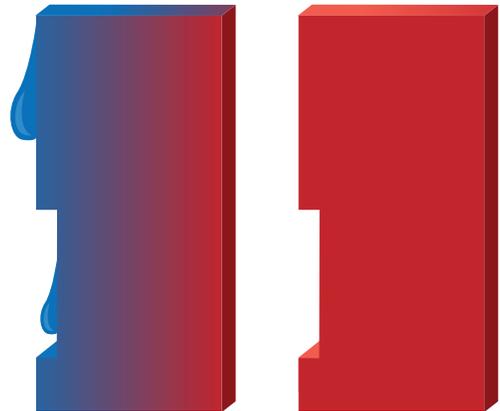
4 Reduces external water circuits

A mould normally requiring 40-50 external circuits and around 400L/min can be reduced to 2 or 4 circuits at 50L/min. Thus saving set-up time and the pumping of water.



5 Moulds do not condensate

Ritemp cooling does not pump cold chiller water directly on the core and cavity steel. The chamber environment is stable at set temperature.



6 Closed loop system

The Ritemp controller regulates the flow of coolant from the chiller (or tower) based on the heat dissipation generated during the cycle. This means that external water only flows when required. A reduction of 60-85% water use is common when compared against conventionally cooled moulds.

