

High Performance Tool Heating

Using Induction Heating to pre-heat Conform Tooling has always been an attractive way to achieve high start temperatures quickly and efficiently.

This is relatively simple if the Die Chamber is in air, however, when the Die Chamber is placed in the Extrusion Shoe magnetic fields interact with the mass of the shoe and Conform Machine frame resulting in a loss of heating effect in the Die Chamber and unwanted heat being generated in the Shoe.

BWE has solved this problem by using flux conductors, made from special magnetic alloy, to route the magnetic fields around the outside of the Induction Coil. The result is a high efficiency heater assembly that fits into a shoe pocket only slightly enlarged compared to the pocket size required for a cartridge heating system.

Using mains frequency to energise the Work Coil eliminates skin effects that could cause delicate parts of the tooling to overheat, and reduces the cost of the power supply.

The PLC controlled Power Supply includes automatic sensing to ensure that the Work Coil cannot be energised without a Die Chamber being present and PID control to ensure response and stability. Operation can be from the in-built Local Control Station or the system can be integrated with the Conform Control System.

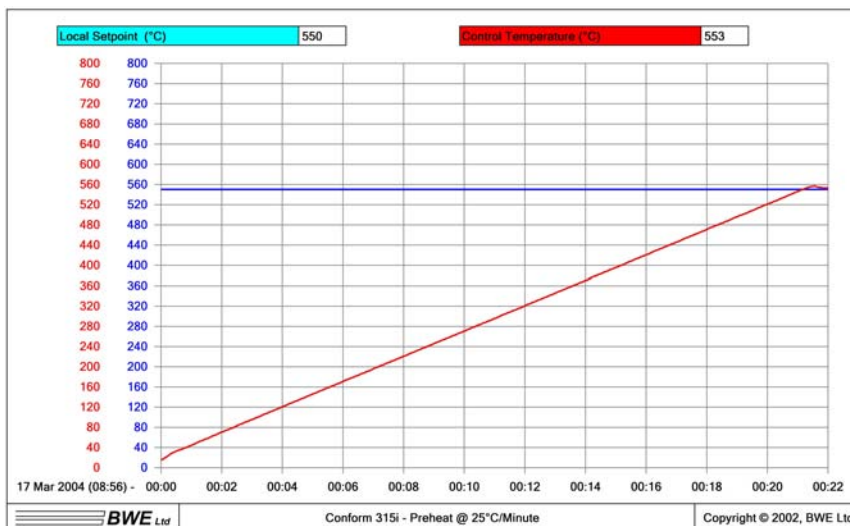
The Power Supply incorporates a self-contained semi-sealed cooling system with a heat exchanger that connects to the Conform machine cooling water supply. Water cooled cables are used to carry both power and cooling water to the Work Coil.

The rate of heating is controlled so that the whole Tooling Assembly is given time to heat evenly without risk of distortion. The pre-heat rate is typically set to 25°C/Minute resulting in a pre-heat time of **20 minutes to 500°C**.



Heater Assembly

International Patents Applied For



Features

- Very Rapid Preheating.
- Higher Start Temperatures.
- Controlled Heat Rate.
- No Skin Effect.
- Automatic Chamber Sensing.
- Improves Plant Up-Time.
- Reduces Running Costs.

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