



Figure 2: Temperature control unit with heat exchanger

heat exchanger and holds the temperature of the oil constant at the set-point value selected at the controller. An external temperature sensor is located at the block for measuring the temperature and sends it to the controller in the temperature control unit.

- The temperature control unit is also equipped with a plate heat exchanger, i.e. the cooling water circuit for the unit and the circuit for the circulating water in the external heat exchanger are separated from one another.

Advantages and targeted improvements

The primary advantage is the very high accuracy (geometry and dimensional accuracy) of the cylinder bores and the reproducibility of the production.

The customer no longer suffers from the problem of thermal oil oxidization and the associated expense of down time, maintenance and purchase cost of the thermal oil.

Furthermore, heat-up time was reduced from 1.5 to approximately 0.75 hours, a reduction of 50 %, resulting in a higher processing capacity.

Jon Waghorn, Business Unit Manager of Perfect Bore Ltd., states: "We experience significant cost saving during initial heat-up time and block change, and most importantly a consistent dimensional quality through accurate temperature control, a new 140 °C/ 285 °F project is currently being planned."

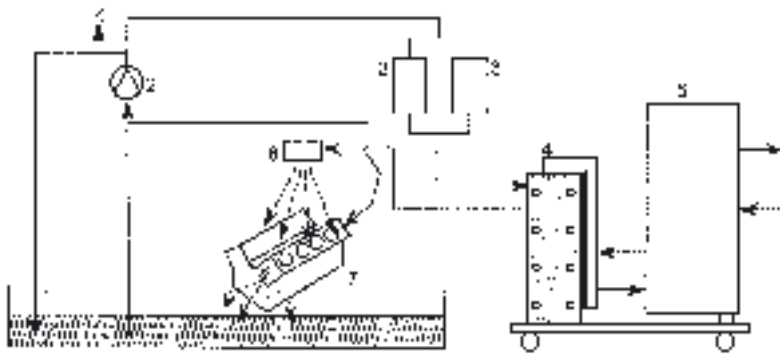


Figure 3: Method of operation

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|------------------|----------------------------|
| 1 Oil sump | 5 Temperature control unit |
| 2 Pump | 6 Honing head |
| 3 Filter | 7 Motor block |
| 4 Heat exchanger | |