

SINGLE TEMPERATURE CONTROL FOR INJECTION MOLDS



HOT WATER MEDIA COMPARED TO OIL MEDIA

1. Water is easier to change and to dispose of than oil. *SINGLE TEMPERATURE CONTROLLERS*
2. Water is much more desirable for use in clean room environments. Oil can contaminate products.
3. At 200 deg C, thermal conductivity for oil is 0.107 watts per meter, and for water is 0.667 watts per meter. This means that water provides 5 times better heat transfer. The benefit is faster mold heating and cooling, which will provide significant improvement in the time it takes for mold changes.
4. Specific heat capacity is 4.48 for water and 2.22 for oil, meaning that water holds more energy than oil. The benefit is that for a water media, a smaller footprint unit can be used.
5. Viscosity of oil is 0.840 and the viscosity of water is 0.136. The benefit is that lower viscosity requires less energy to pump water through the mold.
6. If pressurized hot oil is discharged, it coats whatever it lands on, plus there is a risk of skin contact and scalding. If hot water from a Single Temperature Control unit is discharged, it vaporizes and immediately drops its temperature.
7. If oil is spilled during mold changes, wherever it is spilled becomes slippery, and needs to be cleaned up. If water is spilled, it is much easier to clean up.
8. Oil is flammable, and there have been instances where it has caused fires. For example oil rated for 450 deg F operation and an auto ignition temperature of 625 deg F could ignite if it makes contact with a 700 deg F barrel.



9. Changing to water only requires flushing the oil, cleaning out the residue, and connecting to the Single Temperature Control Unit.

OIL PAN RESIDUE

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