



1500 International Dr. Traverse City, MI 49686
Phone: 231.946.2931 Fax: 231.946.0128 email: information@optitemp.com

What should plastics processors know about the latest technology offered in chillers?

OptiTemp Offers a Cheater-Combined Chiller and Heater in One Package

Combination Heating & Cooling Units (OTR Chiller from Opti Temp)

Chillers are now available as combination heating/cooling units, which can be used both as a mold temperature controller and a water chiller. These are especially useful on all electric machines where there is no hydraulic circuit that needs to be cooled. These chillers are air-condensed, and can operate throughout a very wide temperature range (up to 190°F). Therefore when going from materials that utilize cold chilled water temperatures to those engineering materials that utilize high temperatures, it is not necessary to disconnect the chiller and install a mold temperature controller in the system. It is only necessary to change the temperature desired on the unit's temperature controller. These units also feature excellent temperature stability (+/- .2°) and can operate from zero load to full load without cycling the compressor. The older technology in water chillers required that the chillers could only operate from 50% load to full load without cycling the compressor. When these chillers operate below 50% capacity the compressor will cycle on and off causing temperature instability, and reduced compressor life.

When processors will be running many different types of materials needing widely different temperatures they should consider a chiller/heater combination unit. This makes changeover extremely simple and fast. It is only necessary to input the desired temperature in the controls, and the unit will either heat or cool automatically, whatever is necessary to provide the correct temperature to the mold.

Point of use devices

Where molders already have an existing central chilled water system, there is a trend now to utilizing "end of use point" devices at each mold. Most molders now realize the importance of having proper flow and temperature at each mold in order to achieve optimum production. They can spend many hours adjusting the flow in each circuit of the mold in order to be sure that the pressure, flow, temperature to the mold are the proper parameters for optimum production. If they then add additional molding machine on the system or disconnect one, it will change the flow characteristics at all of the other machines on the system. Therefore the mold that they have just spent time setting up for proper flow, pressure, temperature, etc., will no longer be operating under those set up conditions. The typical "direct injection" mold temperature control units and the typical "closed circuit" mold temperature control units still utilize the central system fluid in most cases to circulate through the mold. The quality of the fluid in the central system is normally not controlled adequately. This poorer quality fluid will frequently cause corrosion and scale build up in the cooling passages of the mold, reducing heat transfer and increasing cycle time much like the use of glycol will reduce heat transfer, and increase cycle time.

Central cooling water systems have fixed water quality, and fixed temperature pressure and flow capabilities. Therefore whenever a change is made in one part of the system it will change the flow and pressure at other parts of the system. An isolator/heat exchanger device such as that manufactured by OPTI TEMP INC., will isolate the individual molds from the central system so that the fluid quality, flow, pressure, temperature can be controlled separately at each mold.