CES waterquality.com
A monthly communication with news, technical tips, and special features

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Q & A Heaters and Flow

Q. My pool company installed a heating system, and the health department now says that our circulating pump is not producing the proper "required" flow. What should we do?

A. Heating systems use heat exchangers that cause restriction of flow and higher total dynamic head (TDH). Pool pumps flow lower GPM's at a higher TDH - guaranteed. If the flow becomes lower than required, the DOH has the authority to close your pool until the problem is corrected. DOH codes state, "Heater shall not prevent the attainment of the required turnover rate", so your installing contractor should correct the problem if they replaced a system that complied. If the installation is new, the DOH codes requires, "A sketch of any proposed heater installation including valves, thermometer, pipe sizes, and material specifications shall be submitted to the department and permitted prior to installation". This will allow the DOH to verify that your existing pump can handle the added restrictions and still attain required flow. If your pool flow is low, don't fret. Your contractor can install a booster pump that activates when the heater turns on, and the pool piping can be restored to comply with the DOH codes. Ask your CES rep, or call tech services for more details.

Tech Tips - Heating 101

Maintaining your pool and spa at an acceptable temperature may be one of your most important tasks. Doing it within a budget is a challenging task.

Heat Pumps or Gas?

The most popular heaters are Heat Pumps and Gas (propane or natural). Heat Pumps are high efficiency units that take heat out of the air (air-to-water) or ground water (water-to-water) to heat or cool the pool. They run on electricity, and produce $4.00-6.00 of heat for every dollar of electricity spent. They have a relatively high installation cost, and require more attention to chemistry control. Why? Since the heaters work by "exchanging" heat from a hot (freon) gas to cold pool water, if the water were corrosive enough to break through the thin heat exchanger wall it would quickly penetrate the compressor and cause major damage.

Gas heaters use fossil fuel burning in a burner tray (similar to your barbeque grill) to heat the pool/spa water in pipes overhead. These heaters are less expensive to install, but only produce 60-89 cents of heat for each dollar of gas purchased. Fluctuating prices during heating season pose a major threat to your "fixed" heating budget. Gas heaters come in two types: atmospheric or sealed combustion systems. The name of the game for gas heaters is EFFICIENCY. That means an 89% efficient heater will consume almost 30% less gas (money) than a 60% efficient system... to produce the same pool temperature.

Ever seen steam rising from your pool? That harmless steam represents big heating dollars. Why? When pool water evaporates from wind influence, a big variation between water and air temperatures, or passing over a waterfall/water feature, huge amounts of energy (heat) are used (lost) transferring the water from iquid to gas. That heat comes from the surrounding water, making it colder. You can save over 60% of your annual heating costs by seasonal covering of the pool with an insulated pool cover. Some pools cannot be covered due their irregular shape, high surface winds, or round-the-clock use. The Florida DOH codes also require that pools using covers be "closed" to the public when a cover is in use.

If you or your organization are tired of spending lots of money on pool heating, there are several things you can do: (1) Replace the thermostat. Many inexpensive thermostats hold pools many degrees hotter than necessary. Install a digital thermostat, or connect the heating system to your Strantrol System5 for tighter, digital control. (2) Have your gas heater or heat pump checked for proper operation. Use monitoring thermometers on the inlet and outlet piping to verify your heater is receiving the correct amount of water. This will protect your design heating efficiency. (3) Maintain a moderate temperature .Every degree above 80°F costs you 10% more to maintain - do you really need an 89°F pool? You could lower to a comfortable 82°F and save lots of money. (4) Replace aging systems with more efficient models. An old heater may have you in the poor house. You can often replace the heater with a more efficient model and recover the costs within 1-2 seasons.

New Products Lochinvar Heaters

Lochinvar, the US leader in high-efficiency boiler systems since 1918, offers a line of state-of-the-art pool heaters with great heating savings through innovative design and new technologies. While most heaters use atmospheric venting, relying on available air to provide proper combustion, Lochinvar uses an blower-equipped sealed combustion chamber which meters a precise amount of air for higher efficiency and prevention of dangerous down-drafts. The unique "Hot Surface Ignition" eliminates problematic pilot lights and allows for 100% safety shutdown. The stainless steel burners provides long life, while the unique intertwined "Copper-fin" tubes increase heat transfer WITHOUT the use of normally problematic seals and gaskets. There's an air proving switch, space-age "Loch-Heat" ceramic tile combustion chamber, and built-in air and pressure switches for additional safety. Larger units are equipped with integrated booster pumps.They are stackable, and are equipped with digital controls and 6 integrated power venting options. They are 89% efficient to save you thousands of dollars, are reasonably priced, and come with a 2-year warranty (3 years on heat exchanger). Call your CES sales rep for more information.

Free Heating Analysis

CES has assisted thousands of customers in lowering their heating cost by conducting a heat-cost analysis. CES offers the US Dept. of Energy study or the heralded FSEC computerized analysis that pinpoints your heating cost using LP, Natural, Heat Pumps, pool covers, windbreaks, and enclosures. Please send us your pool size, type of heater, pool temperature, and cost of fuel, and we will produce a bound report that identifies potential areas of savings. Call your Sales Rep or Fayme at extension 108 for more information.