

Dual-Cool Cast Heater

Arguably the most important part in the design of a heat and liquid cooled Cast-In Heater is the cooling tube itself, since cooling tube failures usually occur before heating element failures. Our testing has shown that Incoloy® tubing performs best with exposed cooling tube extensions under these harsh conditions, versus stainless steel tubing. Incoloy® is also less susceptible to carbide precipitation, a product of the thermal shock of repetitive heat/cool cycling, that produces internal stress corrosion cracking, a common failure for cooling tubes.



Traditionally, liquid cooled cast heaters are manufactured with a single-pass, 1/2" cool tube, however certain processes require greater cooling capacity and/or when waste elimination (machine downtime, product through-put, personnel downtime, etc.) is critical.

- Dual cool tubes can be used one at a time so when the primary line clogs or fails you can disconnect and reconnect to the secondary and "new/unobstructed" line.
- Dual cool tubes can be used at the same time which will increase cooling over a larger surface area. When doing, keep in mind two things...
 - First, the water capacity (pressure/g.p.m.) will need to increase/decrease accordingly with the size of the cool tube. For example, if you modified cooling tube diameter from 1/2" to 5/8", without adjusting your water flow, you will flow 20% less water through the larger tubing, effectively decreasing the surface area coverage and shorten the life of cool tube as it now is more susceptible to clogging. The opposite of this is true as well.
 - Second, ensure the physical size of the heater will allow for a larger diameter tube. As cooling tubes are wrapped in even "passes (# of serpentine curves in the heater)" there may not be enough room to justify a larger diameter. For example, if you currently have a 1/2" tube that has 6 passes and would like to increase it to a 5/8" tube that can only fit 4 passes. You would be better off sticking with the 1/2" tubing allowing for greater coverage of the surface area.