



## The Price of Safety in Plant Sanitation

Pick Heaters has been providing liquid process heating solutions that use direct steam injection for more than 75 years. Direct steam injection offers unique benefits for heating water or water miscible liquids for numerous food plant applications. It is used wherever an immediate supply of precisely controlled hot water is required, such as sanitation, batch filling, blanchers, clean-in-place, and freezer defrost. Pick also has a sanitary design that can be used for in-line product cooking, the first direct steam injection sanitary heater to earn 3-A Sanitary Standards certification.

Our customers face challenges from many angles. There are ongoing food safety issues, as well as concerns over food borne illnesses. Energy savings and efficiencies directly affect profitability. Maintenance costs have always been important. Recently there has been a heightened concern for the safety of plant personnel. While the application of the Pick Heater can offer benefits in all of these areas, satisfying the concern for operator safety in plant sanitation is prominent.

The biggest concern in regard to plant sanitation is that customers need a reliable yet safe supply of hot water. They need water at a precise temperature to satisfy sanitation standards. At the same time, they cannot afford water temperature to exceed set point, resulting in a concern for their operator's safety. They want confidence that their hot water system will provide a safe,

reliable source of precisely controlled hot water, regardless of demand.

Safety has become a problem, or risk, at the hose point of use. One of the more common methods for supplying hot water for sanitation has been the use of individual steam/water mixing stations, or tees, located at each hose station. While these units offer the responsiveness of steam injection heating, they can pose a serious safety risk. Mixing tees require a minimum water supply pressure to operate properly. An internal valve serves to prevent live steam, or overheated water, to exit the hose station should there be a loss in water pressure. This mechanism often sticks due to hard water scaling, which creates a situation where operators have been scalded or injured. It's not a question of whether or not this happens, but when it happens.



**Pick Variable Flow Heater**

In addition, water temperature is controlled individually at each hose station. This makes it susceptible to operators unnecessarily tampering with the

temperature set point. There is a common misconception that the higher the temperature, the better — this isn't the case. Rather it is inefficient and a serious potential safety concern. Water that is too hot is a waste of energy, but water that is not hot enough won't get the job done or meet sanitation standards.

Pick Heaters developed the Variable Flow Heater with plant washdown in mind. It is designed to serve as a single, central water heating system that can be isolated from operators and use points. The heater can handle the wide range of water flow rates required throughout the facility. It features a low-head pump that maintains proper water velocity during low loads, while maintaining tight temperature control regardless of demand. It can respond to frequent start-stop situations and still deliver accurately controlled hot water, on demand. Temperature overrides can be put in place preventing any possibility of overheated water from reaching any of the points of use.

After a customer has experienced problems with point-of-use mixing tees, going with another steam injection heating method can be a hard sell. Both mixing tees and the Pick Variable Flow Heater are considered steam injection water heaters, but that is where the similarity ends. Once the customer understands that the Pick heater is being applied as a utility, they see the difference. The Pick heating system can be located well away from worker locations.

They get all the benefits of steam injection heating but with operator safety foremost in mind.

Equipment cost for a Pick Variable Flow Heater is typically the same as the cost of replacing four mixing stations. However, it also eliminates the costs associated with running steam and condensate return lines to all the plant drops. The steam line terminates at the Pick Heater, as a result eliminating live steam at the point of use. Beyond equipment costs, what value can you put on the price tag for personnel safety and reducing the potential liability?

The matter of safety isn't going away. The objective is to continue to identify potential safety problems for customers and to offer solutions. While direct steam injection water heating is the best method, its proper application is key to having a dependable and safe, plant wide hot water sanitation system. Once customers understand the hazards of point-of-use mixing tees, the upgrade to a Pick central hot water system is the obvious answer.

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