

# Q-JET™ Direct Steam Injection (DSI) Mixing Jet Cookers



Achieve cooking temperature quickly, for a thorough mix and complete chemical reaction

## OVERVIEW

ProFlow's Q-Jet™ Direct Steam Injection (DSI) Mixing Jet Cookers use tightly controlled direct steam injection to pressure cook a variety of liquids, including industrial slurries like starch, polyvinyl alcohol, and cellulose derivatives. Q-Jet cookers are also ideal for various continuous-process food applications like sauces and gravies and heated cleaning solutions for tank washing systems.

Designed using ProFlow's patented Dual Dynamic Controls, the Q-Jet Mixing Jet Cookers incorporate a linear valve stem actuator and a micrometer-adjustable mixing tube. Within the mixing tube, the liquid or slurry combines with steam, accelerating to high velocity. As it passes through the mixing tube, the liquid or slurry further speeds up and disperses, hydrates, and expands. As it passes through the mixing tube, it undergoes high shear mixing. It then gels, hydrates, and passes out of the Q-Jet Mixing Jet Cooker into a retention tube or vessel.

This process optimizes steam flow, ensuring a quiet, thorough cooking process and high-output quality.



**Precisely controlled steam injection** ensures fast, complete, efficient cooking process



**An easy-to-adjust mixing tube** lets you adjust the mixing tube relative to steam flow and slurry feed while you cook, stopping steam hammer before it leads to costly maintenance.



**The highly energy efficient system** uses 100% of BTUs of the incoming steam, eliminating wasted steam.



**Fully customizable to specific requirements,** the Q-Jet Mixing Jet Cookers can be adapted to any pipe layout or steam supply angle.

# ProFlow Q-Jet Mixing Jet Cookers are Customized to Meet the Needs a Diverse Range of Applications

Every ProFlow Q-Jet Mixing Jet Cooker is specifically sized for each application. ProFlow considers the flow rate of the process, the initial temperature of the fluid, and the physical properties of the process, and then calculates the amount of steam required. This allows us to correctly size the diameter of the orifice, so it lets the optimal amount of steam that is required into the process.

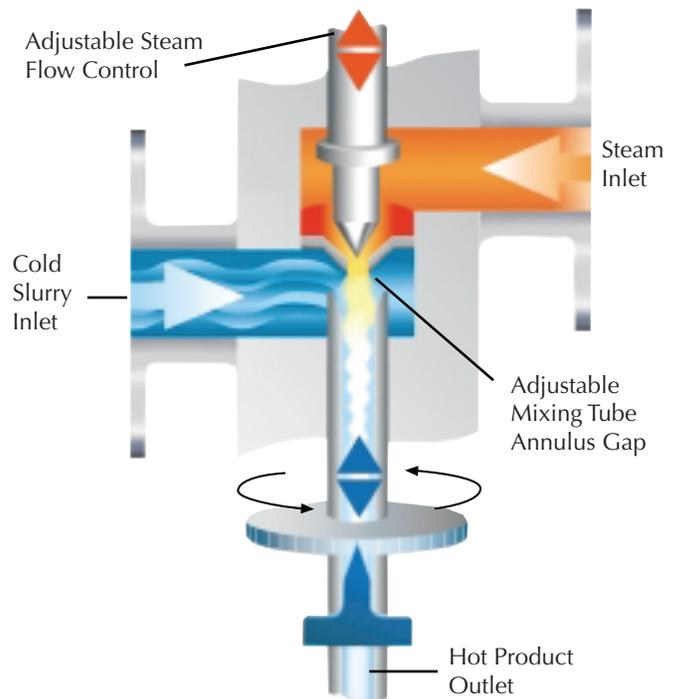
The user-friendly design of the ProFlow Q-Jet Mixing Jet Cooker allows the mixing tube to be adjusted during the cooking process. One of the most significant challenges of any steam-flow application is steam hammering, which can be deafeningly loud and powerful enough to shake the floor, damage the cooker, and impact other processes in a facility. By adjusting the mixing during the cooking process, it is possible to prevent steam hammering before it becomes problematic.

Q-Jet's micrometer-adjustable mixing tube features a simple dial that allows users to quickly adjust the mixing tube relative to steam flow and slurry feed. This makes it easy to adjust the mixing tubes as required when slurry materials or production rates change.

## FEATURES

- Standard process line sizes range from 0.5" to 6"
- Q-Jet Mixing Jet Cookers adapt to diverse processing needs
- High-durability seals promote extended maintenance-free performance
- 316 Stainless Steel construction provides high reserve strength and corrosion resistance
- Hastelloy wetted parts available

U.S. Patent No. 5820259, 5743638  
Foreign Patents Applied For



## ABOUT PROFLOW

ProFlow specializes in fluid handling systems and solutions serving critical applications in a variety of industries, including pulp and paper, chemical, biopharmaceuticals, personal care, and other industrial markets in more than 30 countries worldwide.

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