

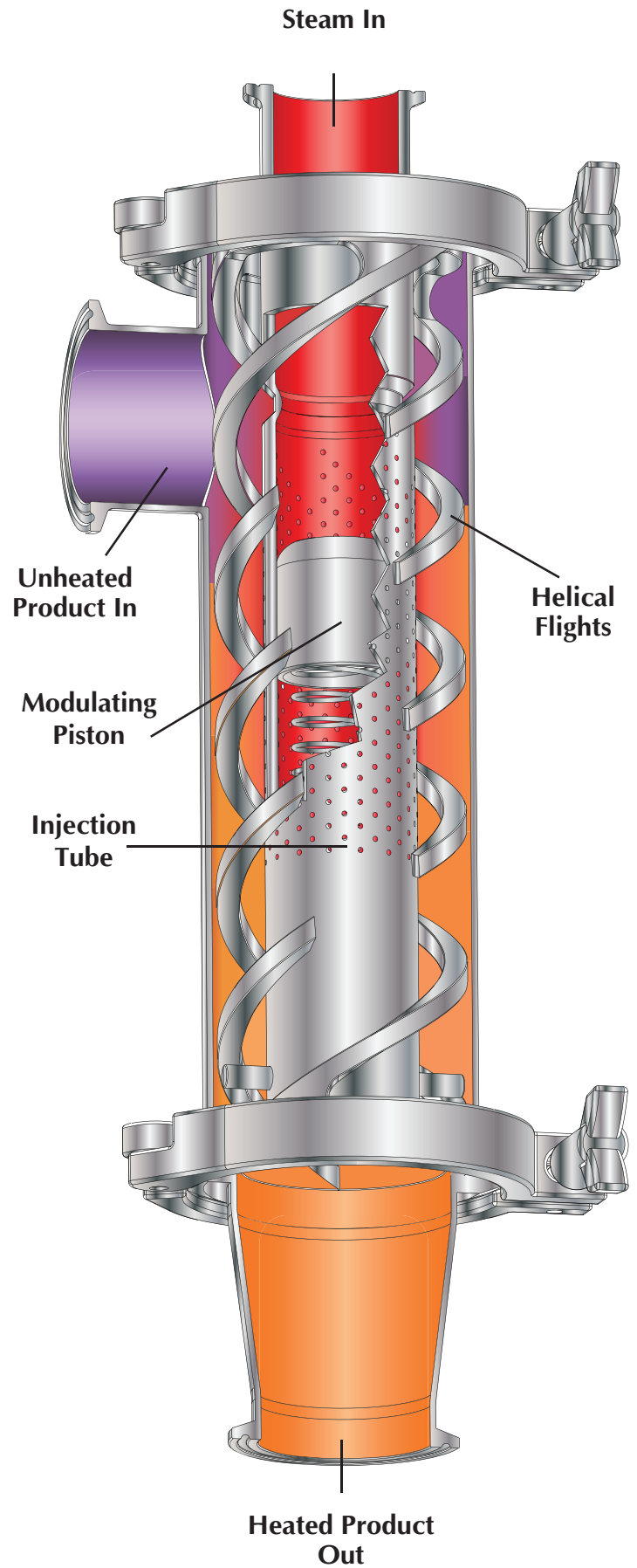
DEPENDABLE AND PRECISE PROCESS  
HEATING SOLUTIONS SINCE 1945



***pick***<sup>®</sup>  
*heaters inc.*

**SANITARY DIRECT STEAM  
INJECTION SYSTEMS**

# How it Functions



# SC Sanitary Design

## How It Works...

Pick SC Sanitary Direct Steam Injection System can be used to heat/cook any water-miscible liquid or slurry instantly on a continuous, straight-through basis. It can also handle pumpable slurries containing bite-size pieces such as salsas or stews.

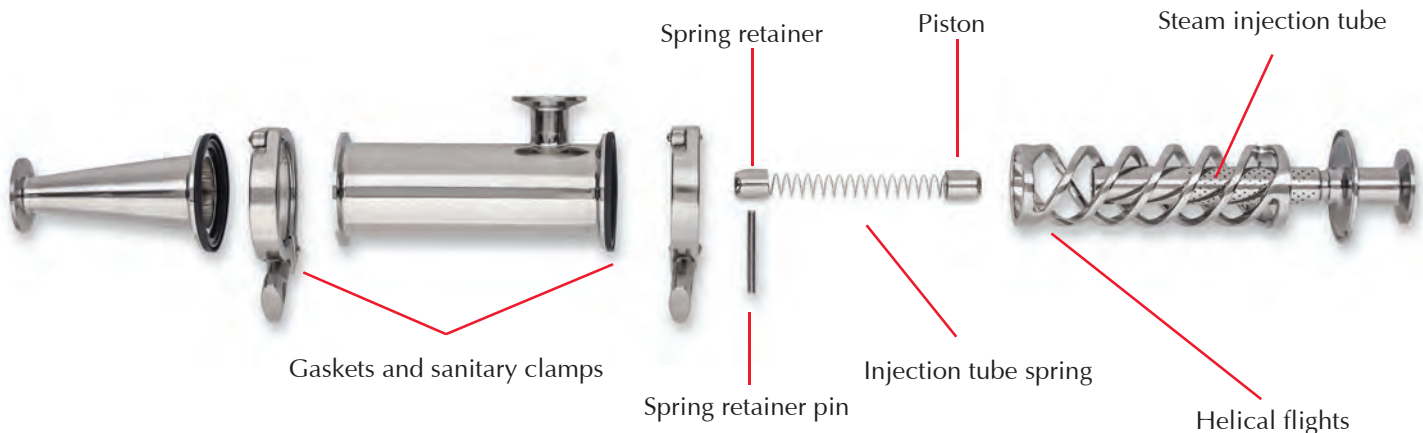
The Pick Sanitary Heater is the only DSI system that achieves instant set point temperatures and provides thorough cooking of products like starches. Intimate and gentle blending of steam and product are ensured by the system's unique, low-velocity, variable orifice steam injector and helical flights. This eliminates the shear and product degradation commonly associated with sonic-velocity venturi systems.

The Pick System works by injecting steam into the product through hundreds of small orifices. Fine "bubbles" of steam are instantly absorbed by the product, resulting in 100% heat transfer. This eliminates the inherent process inefficiencies and maintenance headaches of traditional batch cooking. Pick Sanitary DSI Systems allow in-line heating, with precise temperature control and 100% energy efficiency.

Pick SC Sanitary DSI Systems are available with complete instrumentation as well as components to produce culinary steam.

## Sanitary Construction with 3-A Certification and Easy Disassembly for Cleaning

The Pick Sanitary Heater meets 3-A sanitary requirements for regulatory compliance with food and dairy applications. All product surfaces are 316L Stainless Steel with #4/Dairy (30 Ra) sanitary polish. Tri-clamp® connections are standard, and other connections are available upon request. The entire unit disassembles in seconds for routine inspection and cleaning.





# Why Choose Pick?

## In-Line Cooking

Pick Sanitary Heaters eliminate slow batch processing. Heat, cook or sterilize on a continuous, straight-through basis. The Pick Heater processes higher volumes of quality product in less time than any other heating method.

## Cost Efficient

Pick Sanitary DSI saves you money every step of the way, from initial installation through everyday processing. Compared to complicated, maintenance intensive heat exchangers or kettles, Pick Systems cost far less to purchase and install. Operationally, nothing could be more efficient. With 100% heat transfer, Pick's energy savings are obvious. It is a great way to reduce product cost without sacrificing product quality.

## Non-Shearing Action

Helical flights inside the heater body allow a generous, unobstructed flow path for liquids and slurries. Because the process is non-shearing, slurries containing bite-sized pieces can be heated without damage to texture or consistency. Product integrity is maintained, cooking is thorough and fast, and blending is uniform.

## Precise Temperature Control

Pick's precise temperature control assures exceptional product quality. With Pick Sanitary DSI, quality control problems common to jacketed kettle cooking or sparging are virtually eliminated. In addition, a separate steam control valve eliminates stem packing leakage and possible product contamination.

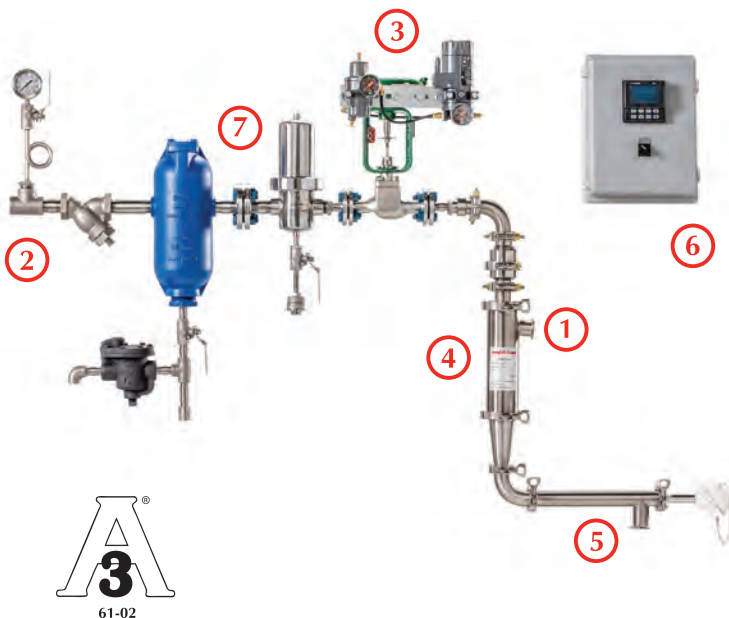
## Quiet, Efficient Operation

Pick's unique variable orifice injector eliminates harmful vibration and steam hammer. Operation is smooth and quiet with a low product-side pressure drop.

## Easy Installation and Maintenance

The Pick DSI unit can be delivered to you complete and ready to install. Simply connect the system to your steam and product piping and start heating. In comparison to competitive methods, the Pick Heater requires very little effort to clean and maintain. The unit can be easily disassembled in minutes for routine cleaning. Nothing could be simpler, or faster to maintain.

## How the Pick "Sanitary" Heater Works:



1. Liquid or slurry to be heated enters here.
2. Steam enters here.
3. Control valve regulates steam flow.
4. Steam and product mix thoroughly within the heater body.
5. Heated product outlet.
6. Temperature controller.
7. Optional separator & filter for culinary steam.

The Pick Sanitary DSI unit forms the heart of a complete yet simple system to heat, cook or sterilize. All components are provided by Pick, and components can be customized to precise customer needs.



# Packaged Systems



## Pilot Scale

Pick can package a compact Sanitary System for use in the laboratory or pilot operations. These engineered turnkey systems generally utilize Pick's smallest heater, the SC-2. This heater is rated for steam capacities up to 150 lb/hr (68 kg/hr), and liquid flows as low as ½ GPM (1.9 LPM).

The system includes everything you need to explore the advantages of in-line heating in your facility, with your product formulation. Packages may include a pre-cook slurry tank, product pump, flash chamber, electronic controls and sensors, automated valves, and all associated piping.

While standard lab/pilot packages are available, Pick would be happy to custom engineer one for your exact requirements.

## SC HEATER CAPACITIES

Model Number		SC2	SC7	SC10	SC25	SC50	SC75	SC100
Steam Flow Capacity	Lb/hr	150	700	1,250	2,500	5,000	7,500	10,000
	Kg/hr	68	320	565	1,130	2,260	3,390	4,520
Liquid Minimum Port Size (in.)		½	1	1	1½	2	3	3
Liquid Maximum Port Size (in.)		1½	2	2½	3	4	6	6



## Production Scale

Pick has experience designing production scale DSI Systems in a wide variety of food and pharmaceutical plants. These designs are customized to meet specific processing requirements, available utilities and space constraints. Pick Sanitary DSI Heaters can deliver steam flow capacities up to 10,000 lb/hr (4536 kg/hr). Depending on the product and temperature rise, this can translate to 200 gallons per minute or more of finished product.

Pick DSI Systems are compact and extremely easy to install. They can be easily adapted to existing production lines, and require only a steam source and plant air for the steam control valve.

Pick engineers will be happy to review your production requirements and design a system perfect for your needs.

# Applications

## Heat, Cook, Sterilize or Pasteurize Products In-line

### Food and Pharmaceutical Industries

Pick Sanitary DSI can be used in virtually any segment of the food and pharmaceutical industries that process liquids or slurries, including those containing bite-size pieces.

Common applications include:

- Baby Foods
- Soy Products
- Apple Sauce
- Cheese
- Beer
- Starch Candy
- Pie Fillings
- Rice Cereal
- Ketchup
- Puddings
- Salsa & Hot Sauce
- CIP Solutions
- Biowaste Inactivation

## CIP Systems

The Pick Sanitary DSI Heater can be piped directly into your CIP loop to instantly bring the process up to the required temperature. The system's 100% heat transfer reduces your energy costs, while its low-maintenance design helps keep your CIP system running trouble-free.

## Nitrogen Injection

Nitrogen injection is used to help prevent rancidity in products such as whipped butter, mayonnaise, peanut butter and edible oils. By displacing dissolved oxygen, the nitrogen not only extends shelf life but also increases product volume and enhances product texture. The Pick Sanitary Heater is ideal for nitrogen injection, ensuring thorough mixing and consistent product quality. The unit is easier to clean than traditional sparging rings.



## **The First, and Still the Best**

In 1945, Pick Heaters developed and patented a unique concept of direct steam injection heating. It was the first step in what was to become a continuous flow of refinements and innovation. Today, the originator is still the leader. Only Pick offers a unique combination of simple design, compact size, low maintenance, and incredible energy efficiency.

## **The Right Products**

Our products continue to evolve as we develop new technologies to meet the changing needs of the markets and applications we serve. In addition to our instantaneous and highly efficient SC Sanitary Heaters we offer Industrial Heaters, BX Slurry Heaters, Desuperheaters and complete Packaged Systems tailor-engineered to customers' unique requirements.

## **The Best People**

Combine this with the knowledge, experience and dedication of Pick's people, and your choice is simple. We're committed to providing the best customer support before and after the sale with a team of factory sales engineers that are recognized experts in the industry. They're ready to put that expertise to work for you.

## **A Global Presence**

Pick is there when you need us, with factory-trained representatives throughout North and South America as well as in Europe and the Far East. That means you get the highest caliber technical consultation on your needs, plus quickly accessible service after the sale...no matter where you call home.



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