

# Development S-Series

MicroThermics® research systems match production thermal processes, so your product can go from the lab to production in one step. By rapidly producing accurate iterations of products, and substantially reducing your time to market, our systems make your research more cost effective than any other method. Our S-Series, steam heated, UHT/HTST (Ultra High Temperature and High Temperature Short Time) processors are attractive to researchers looking to create products ranging from juices and milk to gravies and puddings. In addition to HTST and UHT processing, they can perform hot filling and other continuous cooking processes. These processors are simple to operate, extremely flexible, and have an extensive upgrade path to support your R&D as it expands. By accurately simulating the whole production process, we eliminate the major cause of wasted time and money: failed plant trials.

In short, an investment in a MicroThermics' system saves valuable time and money.

## Capabilities: Flow 0.8-4 liters/min.

### Process Ranges

Model	Preheater	Final Heater**	Viscosity Range	Hold Times (sec.)*
HTST-1S	to 250° F (121°C)	NA	Low to medium	3, 6, 12, 18, 24, 30, 36
UHT/HTST-DHW	to 250° F (121°C)	170°-305°F (76°-152°C)	Low to medium	3, 6, 12, 18, 24, 30, 36
UHT/HTST-HVW	to 250° F (121°C)	170°-305°F (76°-152°C)	High raw and final	6, 30, 60, 90, 120
UHT/HTST-HVHW	to 250° F (121°C)	170°-305°F (76°-152°C)	Medium raw/High final	6, 30, 60, 60, 120

\*Custom Times Available \*\* Temperature range for water heat final heater shown

### Processes- Batches as small as 1 liter

- UHT Processing:
  - Aseptic Processing
  - Extended Shelf Life (ESL)
- Ultra Pasteurization
- HTST Pasteurization
- Starch Hydration
- Continuous Cooking
- Hot Filling
- Hot Filling with hold
- and More

### Products- Model Dependent

- Milk and Flavored Milks
- Nutritional Supplements
- Fruit Concentrates
- Enteral Feeds
- Juices, Teas and Coffee
- Juices with pulp
- Broths
- Fruit Concentrates
- Apple Sauce, Yogurts
- Gravies/Cheese Sauces
- Puddings and More!

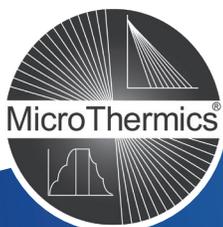
## Features and Options

### Features (partial list)

- PLC Control and Data Acquisition
- Sanitary Design
- Simple Operation
- Dual Product Inlet
- Vari-Speed Product Pump:
  - Adjustable flow rate and hold times
- Five Hold Tubes
- Product Cooler
- Back Pressure Valve
- Jumper Panel
- Homogenizer Set-Up (HV and HVH)
- Laboratory Bench Enclosure w/sink

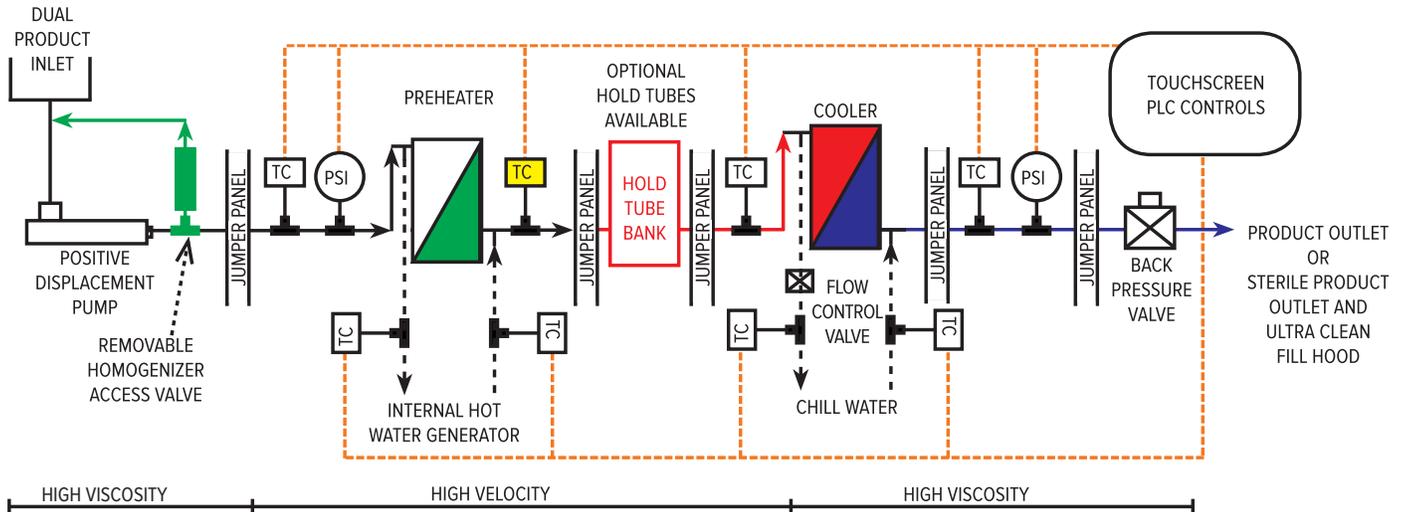
### Options (partial list)

- Added Hold Tubes and Coolers
- Added Temperature/Pressure Sensors
- Alternate Heat Exchangers (i.e. plates)
- Automatic Filling Control
- CE or NRTL marking
- Clean-Fill Hood/Sterile Product Outlet
- Enhanced PLC Control/Data Logging
- In-Line Homogenization
- Run Dry Protection and Mix Tanks
- Steam Injection Process Module
- Steam Generators, Water Chillers
- Spare Parts, Tool Kit, and More!

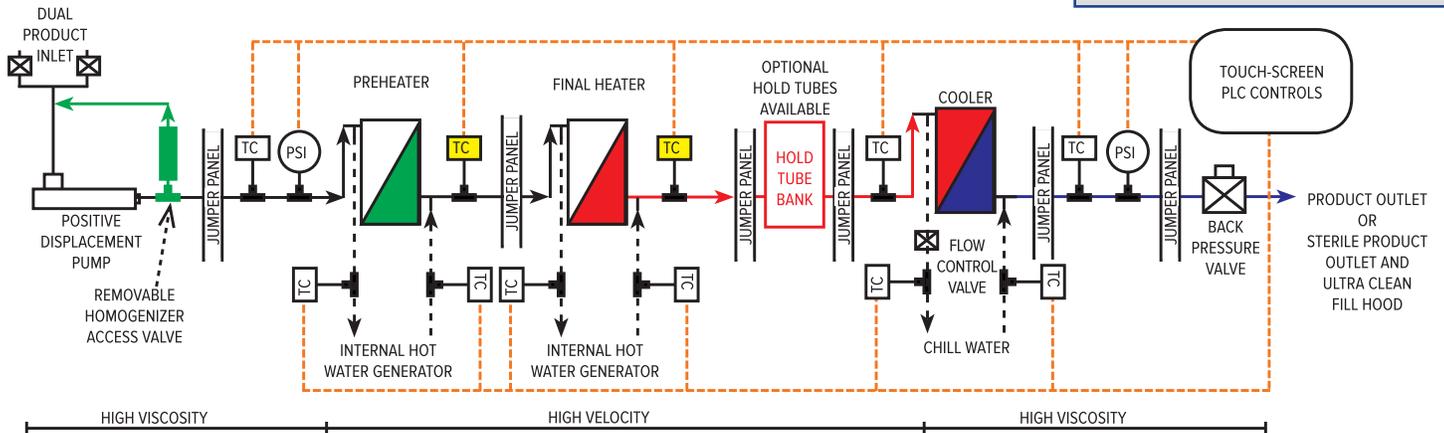
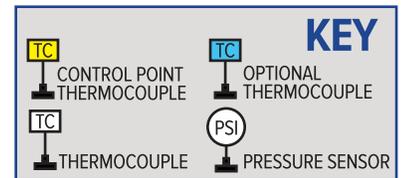


EASY, AFFORDABLE, PROCESS ACCURACY!

# Overall Flow Diagrams (Steam Hot Water Heaters)



## UHT/HTSTLab-25 HVHW HTST Process (Single Heater)



## UHT/HTSTLab-25 HVHW UHT or HTST Process (Two Heater)

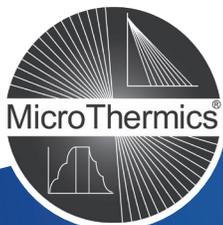
### Physical Requirements

#### Utilities

- City Water
- Cooling Water
- Steam: 80 PSI (5.6 bar) clean dry steam
- Electrical: 1Ø, 110/220 Volt
- Air: 18-20 PSI, Clean, Dry Air
- Drainage: standard 1.5-2" drain

#### Dimensions

- Bench Top Height: 38" (.97 M)
- Bench Top Depth: 32" (.85 M)
- Length: 70" (1.8 M)
- Height: 68" (1.74 M)



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