

# ASEPTIC PASTE HEATING



## SUMMARY

#### **Goals:**

- Decrease vibration & hammering
- Decrease burn-on to extend or eliminate cleaning cycles
- Achieve more precise
  temperature control

#### Accomplishments:

- Eliminated burn-on (up to 4 weeks with no deposits or burn-on)
- Eliminated steam hammer in heating system and downstream piping
- Minimized high frequency vibration
- Consistent temperature control during feed-forward production
- Flow turndown exceeded 2:1 without a change in stable operation
- Pressure swings up to 100 psi [6.89 bar] during divert mode to feedforward transition had no effect on heater stability

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400 Pilot Court | Waukesha, WI 53188 (262) 548-8900 | (800) 952-0121 A long-time customer was looking for a solution to their struggles packaging tomato paste into aseptic containers. During the long 14-week season, the Solaris heating system ran well, optimizing performance to provide a quality product and a stable operation. The Solaris was customized to meet the unique demands of heating both hot and cold paste of 28-35% NTSS. This successful solution incorporated a custom Solaris heater built into a supply manifold and steam conditioning system for a 4 in [DN100] aseptic paste line.

### SYSTEM OPERATING RANGES 4" AND 6" SYSTEMS

Fluid: Flow Rate:

Inlet Temperature: Discharge Temperature: Temperature Rise for a Single Heater: Steam Supply Pressure: Hot and Cold-Break Paste 60-300 GPM [14-68 m<sup>3</sup>/hr] (turn down in configured system is 2:1) 180-195°F [82-91°C] 212-218°F [100-103°C]

Minimum 17°F (9°C), Maximum 38°F (21°C) 175-300 PSIG [12-21 barg]

### SOLUTION

A season of trials resulted in a system package designed for either 4 or 6 in [DN100 or DN150] aseptic paste lines.

The solution includes custom Solaris heaters in either single or dual pass with a frame constructed of welded square tubing with feet to anchor into concrete plus schedule 40 piping and flanged connections at the inlet and outlet. The steam line includes a drip leg and steam trapping to ensure a dry steam supply. Isolation and check valves prevent paste from backing up into the steam line. An additional steam conditioning system will be provided with a pressure control loop and culinary filter if necessary. The system is also supplied with wiring to allow flexibility in control systems unless existing temperature and pressure transmitters can be used.