

# PUMP TEST FOR A FULL SEASON OF TOMATO PASTE CONCENTRATE PRODUCTION

## PUMP CASE STUDY

### UNILEVER

Stockton, California

Pump Testing

### CUSTOMER APPLICATION AND KEY CHALLENGES

Unilever is one of the world's leading food, home and personal care product companies with over 100 worldwide locations. They have over 400 brands of products recognizable throughout the globe including Ben & Jerrys, Hellmann's, Lipton, Popsicle, Ragu, Skippy and Wish-Bone to name only a few in the food industry.

Unilever tomatoes are grown in the Sacramento and San Joaquin valleys with a large processing plant in Stockton, CA. The plant was using rotary lobe pumps in which some had to be rebuilt during the production cycle or totally rebuilt at the end of the production season.

Tomatoes can be a very abrasive medium for a pump, causing considerable wear that eventually results in pump failures. Rebuilding pumps during the production cycle causes unwarranted downtime, robbing the processing plant maximum use of its capabilities and adversely affecting the ROI.



Unilever harvests tomatoes from their Sacramento and San Joaquin Valley fields

### THE R.F. MACDONALD CO. ANALYSIS & SOLUTION

In June, 2011 Bornemann Pumps supplied Unilever with a twin screw sanitary food pump under an agreement between the customer and Bornemann Pumps for testing in pumping tomato paste concentrate. The special testing agreement required the Bornemann SLH-180 model twin screw pump to run for the entire processing season. After pumping the tomato paste for approximately five months without a failure or noticeable wear, Bornemann performed the disassembly and subsequent tear-down of the SLH pump.

Even in the abrasive production process of pumping tomato paste concentrate for a full season, the SLH-180 revealed no wear or any type of mechanical problem, which also included the mechanical seals.



The Bornemann SLH-180 pump installed in the processing plant

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PARTS

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## ABOUT THE BORNEMANN SLH PUMPS

The Bornemann twin screw pumps provide the pumping and cleaning with one pump, minimizing maintenance and providing the highest availability.

The pumped fluid flows through the screws in an axial direction. Therefore, the pump imparts very low shear and little pulsation to viscous and shear-sensitive products. As a result, SLH pumps are well suited for fluids with high or low viscosity, with lubricating or non-lubricating properties, and fluids containing some solids.

The entrance geometry of the suction chamber is modified to accommodate the particular fluid properties of the product, thus allowing the pump to handle applications with liquid, lumpy and abrasive fluids.

The SLH Pump can be easily adapted to the user's requirements according to the viscosity, temperatures, working pressures, speed and other customer criteria.

**Even in the abrasive production process of pumping tomato paste concentrate for a full season, the Bornemann SLH-180 revealed no wear or any type of mechanical problem, including the mechanical seals.**



Various component parts of the pump after a full production season show no noticeable wear:

Top Left: No noticeable wear to liner

Bottom Left: Twin screws still look great

Top Right: Mechanical seals

Bottom Right: Mechanical seal face