

**Inline Static Mixer Simplifies
Process & Reduces Cost for Yogurt
Manufacturer**



CASE STUDY 263

The increasing popularity of yogurt in recent years-requiring greater production capacity and efficiency-has brought about a need to “re-think” just how best to feed raw materials into mixing and blending systems, and into filling machines.



Initially, in most European and U.S. plants, the mixing of milk, yogurt culture, and additives was essentially a hand-batching process. This required many large and expensive containers, and a considerable labor force.

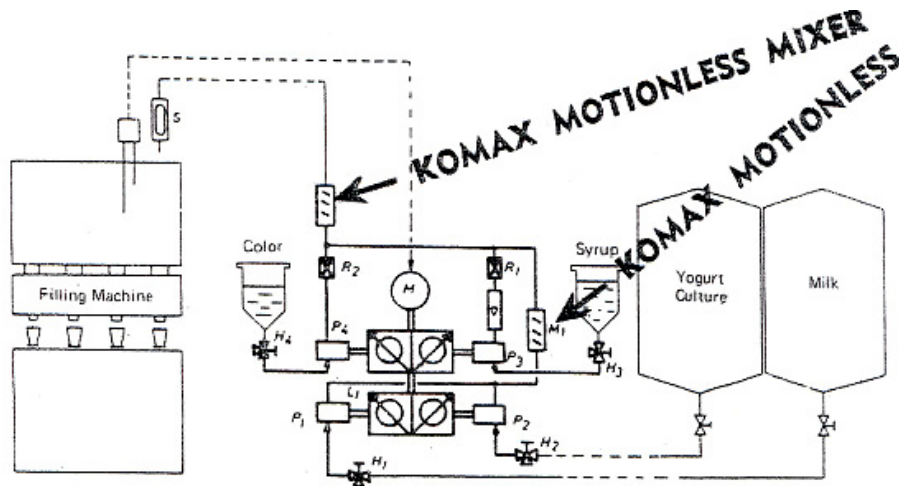
Now, by incorporating in-line static mixers and metering pumps to blend various liquids, the mixing process can be conducted on a continuous or semi-continuous basis, including automated production. Flavoring and fruit additives can be mixed with a high level of consistency into the yogurt with no tank settling issues.

This new concept saves time and labor, reduces space requirements, and achieves control over the yogurt production process. The in-line mixing system not only minimizes waste, but also assures exact measurement of ingredients for consistent product quality.



After long pre-tests at Milchof Herne, Herne, West Germany, using metering pumps and Komax static mixers for continuous manufacture of yogurt, this plant was run for six months in shift work-producing up to approximately 1300 liters of yogurt milk/hr.

Accompanying diagram and caption explain the workings of this plant, which controls all metering and mixing functions.



The test plant operated very satisfactorily, to the extent that the batch process was abandoned. The following clear advantages were gained:

- 1) Consistent high quality due to consistent mixing and metering of the components and sanitary design (the milk flow is in a totally enclosed system after the multi-use tank; the unit is CIP cleaned and sterilized);
- 2) Saving in operating costs achieved due to compact construction and space saving (the preparation tanks, each of 600 liters capacity, were no longer used, and were replaced by one or two multi-use containers which also were cleaned-in-place);
- 3) Saving in materials due to high metering accuracy; (individual components can be adjusted while plant is running, and a change to a different type is possible without any waste of time, and with minimum loss of material);
- 4) Minuscule losses due to breakdown of filling machine (maximum 5-10 liters filling of the filler hopper);
- 5) Saving in personnel costs (other use of the person who previously operated the batch plant).

