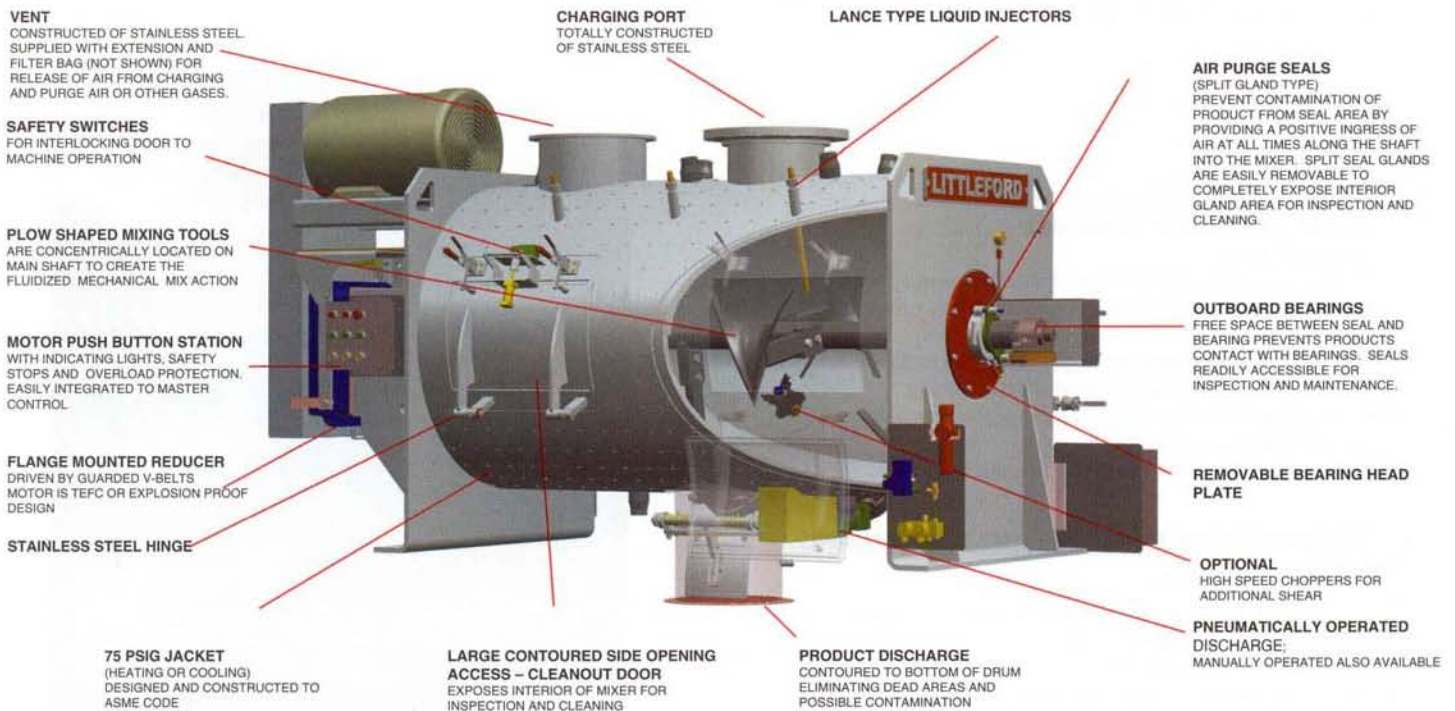


## INSTALLATION REPORT NO. 113

Published as a service to the Pharmaceutical processing industries by Littleford Day, Inc.

### FKM Batch Mixer Gives Pharmaceutical Manufacturer Better Consistency; Saves Money



A horizontal, plow-type mixer with chopper blades enables a pharmaceutical plant, requiring sanitary processing conditions, to blend the trace amounts of minor ingredients into a 200-lb batch formulation in five minutes. The product has better consistency than previously achieved using another type of mixer in an operation that required 20 to 30 minutes.

Currently, the unit is operating in a batch process, but eventually a tubular conveyor system will automatically feed into the charging inlets for a semi-continuous operation.

Fast mixing speeds can be attributed in part to plow-shaped mixing tools. The action of the plows "individualizes" the particles of the mix and thus exposes tremendous surface area for liquid absorption.

**Littleford Day**  
*Where Processing Ideas Become Reality*

#### Littleford Day, Inc.

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The gentle blending action of the plows is supplemented by two 10-hp chopper assemblies equipped with special multiple chopper blades. When activated, these choppers rotate at 3600 rpm introducing high impact and shear. The high speed blending choppers not only enhance the basic mixing action, but quickly disperse minor ingredients.

Interior and all product contact surfaces of the mixer are 304 stainless steel, meeting FDA regulations required at the plant. The main and chopper shaft seals are air purge type maintaining an ingress of air along the shafts at all times. Air seals eliminate product degradation and cross contamination.

After use, the mixer can be washed by partially filling with water and operating the plows and choppers. Optional large clean-out doors, positioned at the front center of the mixer and hinged at the bottom, provide easy access to the inside.

## THE LITTLEFORD DAY PROCESS DEVELOPMENT AND TESTING PROGRAM

For pharmaceutical new product development, formula changes, processing challenges, efficiency requirements or regulatory compliance, the Littleford Day Process Development and Testing Program will help you find the best processing solutions. A visit to our Process Development and Testing Center allows your company to quantitatively test and analyze program results before making a large investment in Capital equipment.

- The expertly trained engineers, chemists and technologists who facilitate your tests understand the specific processing requirements of the Pharmaceutical Industry.
- Our full line of processing equipment is available for your testing needs:
  - Mixers, Dryers, Reactors, Granulators, Intensive Mixer/Coolers
  - Filtering and Vacuum Drying Systems
- We draw on extensive pharmaceutical process testing experience, including:
  - Testing feasibility of distributive and dispersive mixing of heat sensitive products.
  - Determining process cycle times and process steps.
  - Assisting the customer in formula and process enhancements.
  - Testing feasibility of consecutive dry blending, granulation and vacuum drying in a single Littleford Day processing unit.
- Pre/Post mixing and engineering reviews will define objectives and benchmark the results of testing.
- A detailed, confidential report will provide a comprehensive analysis of test results.
- Testing can typically be completed in one day.

## LITTLEFORD DAY TRIAL DEMONSTRATION AND RENTAL PROGRAM

For testing pharmaceutical processes in your own manufacturing environment, rent a Littleford Day trial demonstration Mixer or Dryer. Our Trial Demonstration Program allows our company to determine and witness in-house the advantages of the Littleford Day technology.



## LITTLEFORD DAY PHARMACEUTICAL LABORATORY AND PILOT PLANT EQUIPMENT

For research and development, product formulation, quality control, or direct production scale-up needs, your company can purchase Littleford Day pharmaceutical Processing equipment in a laboratory or pilot plant size. Built to the same design and manufacturing standards as our full-size processing equipment, our laboratory-size equipment will meet the most stringent of pharmaceutical process requirements while yielding the highest degrees of accuracy and quality. All Littleford Day lab units are free-standing in design, and can be equipped with any features available on larger pharmaceutical processing units.



For a free brochure or a detailed discussion, contact us at:

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