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MARCH 2017 | SPECIAL ISSUE

## A PRE-SHOW PLANNER INCLUDING:

- Exhibitor Guide, Floor Plan and Events
- The Conference at ProFood Tech Program
- Keynote Speech by NFL Star Peyton Manning

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- Dry Processing Solutions
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# BULK BAG FILLER SPEEDS PACKAGING AT RICE MILL

Load cells send signals to the PLC, which automatically stops the flow of rice by closing the dome valve when the bag reaches its target weight.



Operator attaches bag loops to retractable bag hooks that suspend the bag during filling.

Photo courtesy of Flexicon

**A**CCORDING TO THE U.S. department of Agriculture, the total 2012 U.S. rice harvest is estimated at 196.3 million hundredweight (8.9 million metric tons). The majority of this crop comes from six states – Arkansas, California, Louisiana, Mississippi, Missouri and Texas – an estimated 47.3 million hundredweight (2.1 million metric tons), with about 24 percent coming from Louisiana.

Because the Louisiana harvest takes place primarily over two months, it puts a huge demand on the area's processing capacity. Any delay in moving the processed rice to market can result in severe cash flow

problems for growers. To deal with this peak demand, Kennedy Rice, one of the largest growers in Louisiana, constructed a new rice processing facility to convert freshly harvested and dried grain, known as rough rice, into polished white rice ready for sale to customers.

Opened in 2012 with the capacity to process up to 3 million hundredweight (136,000 metric tons) of rough rice per year, the facility took about two years to build and cost over \$10 million. The Kennedy rice mill fills orders as they are received rather than stockpiling polished white rice in a warehouse. Ninety-five percent of the finished product is shipped in bulk by rail or barge, but a growing amount of it is packaged in 2000 lb (907 kg) bulk bags which the company fills using a Twin-Centerpost bulk bag filler from Flexicon Corporation.

"We usually try to complete bulk bag orders two to three days in advance. The bulk bag filler is located in the warehouse, so filled bags do not need to be moved until they are ready to be shipped," says Marley Oldham, plant manager.

"Since we only recently began offering polished white rice in bulk bags, they account for a small percentage of our total production," explains Oldham. "We expect demand to increase significantly, however, and our bulk bag filler is designed to meet our future requirements."

The polished white rice to be packaged in bulk bags is aspirated to remove dust particles before being fed into an 80 in. (203 cm) high, 82 cu ft (2.3 cu m) capacity hopper mounted above the bulk bag filler. The rice flows from the hopper through a dome valve and 10 in. dia (25.4 cm) flexible downspouting into the bulk bag suspended above the deck of the Model BFL-CFHW-X Twin-Centerpost bulk bag filler.



Once the operator connects the bag and pushes “start,” a PLC automates the filling process, closing the dome valve when the bag reaches its target weight.

Photo courtesy of Flexicon

## Designed for automatic operation

Plant air inflates the 50 in. (127 cm) high bag for filling while an inflatable collar on the fill head holds and seals the bag spout. A filtered air vent at the fill head assures dust-free delivery of material to the bulk bag while providing a simple way to allow displaced air to exit the bag. Except for manually connecting the bag spout to the inflatable collar, the process is automated by a programmable logic controller (PLC). Load cells beneath the pallet deck send signals to the PLC, which automatically stops the flow of rice by closing the dome valve when the bag reaches its target weight.

The operator only needs to pull the bag spout off

the inflatable collar and tie it closed. The filled bag and pallet are removed by forklift. “Connecting, filling and disconnecting a bag takes only about three minutes altogether,” says Oldham.

“This new facility has created over 20 permanent local jobs,” says Elton Kennedy, who along with his daughter, Meryl, oversaw design and construction of the mill. “It also gives regional producers another outlet for their rice crops with lower transportation costs and a faster return on their investment.”

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