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Packaging Start-Up/ NP_Foodservice

Automated pack line aids successful company launch

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Organic cereal processor carefully selects bag f/f/s, cup-filling, and case-packing equipment to optimize new plant efficiencies.

NP Food Service Sales, LLC, St. Charles, IL, is a new company specializing in the production of single-serve and bulk packs of organic cereals for the foodservice industry. The company started operations at its St. Charles packaging facility on July 1, 2005. There it packages "Nature's Path" brand organic cereals in 28-g to 62-g (1-oz to 2.12-oz) single-serve bags, 935-g to 1500-g (22-oz to 53-oz) bulk bags, and 55-g (2-oz) single-serve cups. These cereals range in density—including various flake products, puff ball products, and several granolas. Some of the cereals also contain fruit components that are added during the packaging process.

To package single-serve and bulk bags, NP uses a multilayer structure that includes a layer of biaxially oriented polypropylene. Supplied by Form Plastics Co. (www.formplastics.com),

the 140-gauge material includes graphics that are rotogravure-printed in 8 colors.

The polypropylene thermoformed single-serve cups, also from Form Plastics, are delivered to NP pre-labeled with 8-color, rotogravure-printed paper labels. They're accompanied by a supply of pre-cut, 8-color, rotogravure-printed, heat-seal membrane lids that are polyester-based.

Both the bag lines and the cup line were designed by Integrated Packaging Systems (www.intpkgsys.com). The line-control programming was done by Jemco Controls (www.jemco-inc.com). And equipment installations were accomplished by Davis Mechanical Erectors (440/763-9300).

V/f/s bag versatility

NP president Mitch Hallgren says: "After reviewing available vertical form/fill/seal packaging equipment options, we selected two Mercury machines from Matrix Packaging Machinery (www.matrixpm.com) for use in tandem with two 14-head Model AMD-314D combination weigh scales from Yamato (www.yamatocorp.com) for the single-serve bag and bulk bag packaging lines. The broad range of capabilities and changeover flexibility of the Matrix Mercury vertical form/fill/seal packaging machines allow us to maintain consistent product quality across various bag sizes."

For its bulk-bagged cereals, NP is using a larger forming tube on one of the Matrix Mercury lines, coupled with the Yamato AMD-314-D scale, set up for multiple dumps.

Hallgren adds, "Since we purchased this equipment, the overall high level of customer service that Matrix provided—both from field technicians and office staff—has reinforced the decision that we made. We currently operate two of the Matrix Mercury vertical form/fill/seal bagging machines in St. Charles, and we have plans to expand to five of these machines as product demand increases."

The Mercury machines are operating consistently at packaging rates of 90 to 105 bpm, depending on cereal density and bag size, according to Hallgren. He reports: "Changeovers are smooth and efficient, usually taking about 8 to 10 minutes, resulting in minimal downtime."

Field technicians from Matrix set up the Mercury machines, provided on-site training, and assisted in start-up of the bagging lines. Hallgren notes, "We also took advantage of the in-depth training that Matrix offered at their facility in Saukville, WI. Matrix has a classroom facility with operating machines for hands-on training."

The automated bagging lines also incorporate tote handling, vibratory conveyor infeed equipment, and Tiger twin-head scales from Weighpack Systems, Inc. (www.weighpack.com) to dispense and control the flow of various fruit components over the cereal prior to entering the Yamato scale. The bags are monitored by a combination checkweigher/metal detector manufactured by Anritsu Corp. (www.anritsu.co.jp).

Cup operations

To handle the cups of single-serve cereal, NP selected a fully automated filling line featuring a Holmatic PR-4 fill/seal machine manufactured by IWKA Packaging Technologies (www.packt.com). As Hallgren explains, the PR-4 works in tandem with an ADW-324MD 24-bucket weigh scale, also from Yamato, for consistent production of 55-g cereal cups at speeds of 160 cpm.

The infeed tote dumper, bucket elevator, scale feed conveyor, and the two programmable mass-flow systems for adding and controlling the flow of the various fruit components to the cereal cups as they progress to the scale were all designed and manufactured by FMC-Allen Systems

(www.fmctechnologies.com). A vacuum conveyor discharges the filled and sealed cups to a checkweigher manufactured by Hi-Speed Checkweigher Co., Inc. (www.hispeedcheckweigher.com), and then to a Model 1310 ink-jet coding system from Videojet Technologies Inc. (www.videojet.com). A high-speed Anritsu metal detector completes the line. From the metal detector the cups are channeled to the case-packing stations via a conveyor system constructed by Mechanical Design (www.mechanicaldesigngroup.net).

Casing stations

NP uses case-erecting equipment from Wexxar Packaging Machinery (www.wexxar.com) for both its bagged and cup-packed cereals. The corrugated cases are manually loaded.

The cases of cups then are routed via an out-feed conveyor also constructed by Mechanical Design to a tape-sealing station where they are securely closed using a top taper from 3M Packaging Systems (www.3m.com/packaging). Filled cases of bagged cereals are closed using a Model 252 top taper from Belcor Industries, Inc. (www.belcor.com). Coding of all the cases is performed by a Marsh Video Jet Patrimon Plus coding system from Videojet Technologies Inc.

NP Food Service Sales currently distributes its cereal products throughout the United States and is also developing markets in Mexico and Chile through a cooperative agreement with companies in those markets.



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