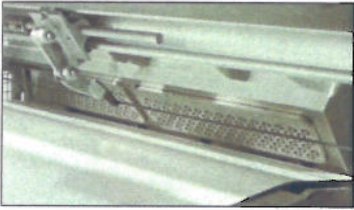


Low pressure extrusion



LOW pressure extrusion is gaining popularity among manufacturers as the health trend gains further momentum. Originally developed for pretzel and other bread snack production,

low pressure extruders are designed to process dough at a much lower operating pressure than that of medium and high-pressure extrusion systems, to minimise physical and chemical damage to the dough.

US equipment manufacturer Reading Bakery Systems (RBS) has pioneered many of the technological developments in low pressure extrusion and has incorporated several new features into its trademark LP Extruder during the last 12 months.

“We recently introduced the use of a feed roll system designed to ‘force-feed’ the dough from the fill hopper to the main extrusion screws with what we refer to as a dough pre-feed system,” says John Eshelman, director of pretzel and snack machinery sales.

Although the pre-feed option has been around from a couple of years it has been re-engineered recently in order to make the whole process more efficient. “These design improvements now allow for reduced dough ‘slip’ during the extrusion process, as well as improved piece-weight accuracy. In addition to these process improvements, the newer design also makes the machine far more user friendly for disassembly and sanitation procedures,” he says.

Prior to the introduction of this system, the LP Extruder was really only capable of extruding wheat-based snack products. Adding dough pre-feed equipment to a standard low-pressure extruder now allows for the production of wheat, corn and potato-based snacks – or any combination of all three. Eshelman adds: “The dough pre-feed system is a unique feature for producing snacks that do not contain gluten such as potato and corn-based products. Without the pre-feed, these types of formulations would simply bridge in the feed hopper and would never make it to the main extrusion screws.”

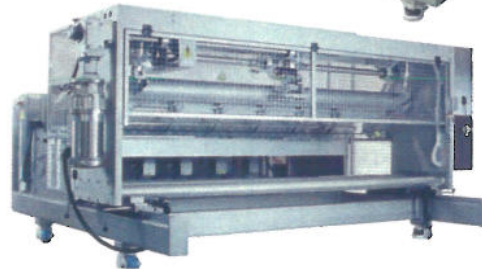
RBS has also expanded its range of die shape cutters with the D1621 and D1622 for small flat cracker production. “The low pressure method for processing flat crackers is a lot more cost effective than sheeting in terms of initial investment as well as downtime as they require less maintenance and cleaning,” says Eshelman. “Flat cracker extrusion dies are fairly new on a low pressure extruder. Crackers are typically made on sheeting lines, which is a very expensive way of doing it.

Utilising low pressure extrusion for flat cracker production is not necessarily a replacement for traditional sheeted and laminated cracker equipment; however, it does provide added flexibility for an extruded snack production line.”

Many of these new developments have been ‘borrowed’ from high pressure extrusion technology, says Eshelman. “We are always looking for ways to streamline and improve our machinery: from the dough flow characteristics through to the forming die, to minimise pressure and shear resolve. So we adapt high pressure principles to the low pressure

process to make it more efficient.”

Adapting Forced Flow Finished (FFF) technology for low-pressure extrusion, where brand new dies are ‘polished’ by pumping abrasive putty through them prior to installation, is another first for RBS. This treatment to the forming dies offers several advantages including reduced extrusion pressure and dough shear during the extrusion process. The process can also reduce product breakage at the end of the oven. ■



Reading Bakery Systems says low pressure extrusion is growing in popularity

Reading Bakery Systems' 800mm wide low pressure extruder and forming dies used for fried extruded snacks.

