

The battle of the systems

FOLLOWING THE INCREASING USE OF DOUGH BAND PLANTS FOR BREAD PRODUCTION IN THE PAST YEARS, THE MANUFACTURERS OF PISTON DIVIDERS HAVE UPGRADED THEIR EQUIPMENT. ALL DOUGH DIVIDERS ON TODAY'S MARKET OPERATE GENTLY AND PRECISELY



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Tra Divider by
Mecatherm

Mecatherm S.A. from Barembach, Alsace, has chosen a different approach to solve the problems. Commenting on the new machine, CEO Bernard Zorn said: "We want to maintain the structure of the dough. Even at a hydration of 70 %, two hours batch proofing time and piece weights between 200 and 800 g, we strive to reduce the weight deviations to less than 5 %. Further requirements in the development specifications for the new dough divider were: sturdy machine, quick product change-over, high hygiene standard and a performance between 3,000 and 5,000 pieces per hour. And we did it." The prototype has already passed the tests on the company's own pilot lines. Its provisional name "Multipiston" refers to the principle of using many dividing chambers. Since July, the machine has provided its suitability in a practical test on a baguette line.

Many dividing chambers have the advantage that acceptable hourly capacities of 3,000 or 5,000 pieces can be achieved easily. The dough is supplied from the dough make-up area via belt or bowl lifter/dumper to a pre-portioning unit. This unit places dough pieces weighing between four and five kilograms into the actual portioning hopper without squashing or dragging the dough. The pieces are placed in an overlapping manner in several layers in the hopper thus providing the capacity needed within the next 20 to 30 minutes, for processing.

The actual portioning hopper has a width of more than 2 m – depending on the individual requirements of the line in which it is to be integrated – has relatively steep side walls and a 10 cm wide bottom that can be moved. Underneath the bottom there is the actual measuring chamber in which the dough can be divided into up to 36 pieces. When the bottom of the hopper opens, the measuring chamber moves towards the dough which flows into the chamber by gravity only. A slight counter pressure makes sure that the chamber is completely filled when the hopper closes again. It is then that pneumatically traveling dividing blades make sure that the two meter long dough strand is cut into individual parts which are then passed on to the transport belt. The size of these dough pieces is variable. It all depends on how many blades have been used for the dividing process. The average requirement might be between 200 and 800 gram per piece. Mecatherm has designed the first prototype for an hourly performance of 3,000 pieces. The next machine will process 5,000 pieces.

According to Zorn, “It works as in the good old days when dough was divided manually. The dough pieces have more tension and the shape is uniform so that a rounder is no longer required. The pieces can right away go on to further processing, e.g. to the sheeter. One decisive parameter for using this type of dough divider is the flow ability of the dough. To prevent the dough from sticking to the hopper and divider, oil is applied at certain intervals, usually no more than once every hour, depending on the dough to be processed.” +++