

# A gentle pedant

MECATHERM WILL PRESENT A NEW DOUGH DIVIDER CAPABLE OF BEING INTEGRATED INTO A PROCESSING LINE AT IBA 2006



**+** The unit will combine two features up to now irreconcilable, namely to handle pre-proofed, soft doughs with care and to divide them with high accuracy.

It is an old dilemma of the bakery trade. When processing “soft” doughs which are doughs with a high hydration and a batch proofing time of one or two hours, one has to decide what is more important in dough division: precise weight or gentle handling of the dough. Classical piston dividers where the dough is pressed into a chamber for volumetric measurement destroy with their powerful impact a part of the features gained by the long batch proofing time, but the weight deviations are kept small, only one to two per cent. On the other hand, when letting the dough flow on a belt and cutting it with blades into pieces of almost the same size, the weight deviations increase by a power of 10, but the gas bubbles inside the dough remain almost intact.

Mecatherm S.A., Barembach, Alsace, has recently stirred up interest with a new oven plant whose principle follows the traditional

craft of baguette baking with strong bottom heat and will introduce a new dough divider at iba. This machine also combines classical technology and modern techniques and thus revives traditional quality concepts just like the oven did.

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 trial lines. Its provisional name “multipiston” refers to the principle of using many dividing chambers. At the beginning of July, the machine must prove its suitability in a practical test on a baguette line.

# Supply Chain

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 portioning hopper has a width of more than two meters – the dimensions can vary depending on the requirements of the line that the hopper is to be integrated into – and has relatively steep walls. The bottom is movable and is about 10 centimeters in width. 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 achieve 5,000 pieces.

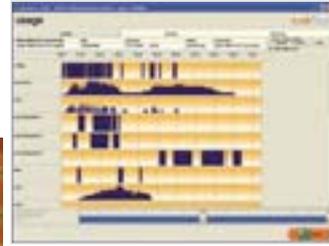
According to Zorn, "It works as in the good old days when dough was divided manually. The doughs have more tension and the shape of the dough pieces is uniform so that a rounder is not required any more. The pieces can right away go on to further processing, e.g. to the sheeter."

One decisive parameter for using this type of dough divider is the flowability 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.

The dough divider by Mecatherm is attractive because of the gentle handling of the fermented dough, its flexibility in terms of different weight classes and its relative high precision. It is also easy to access and to clean and the number of electronic parts has been reduced to a minimum. +++

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