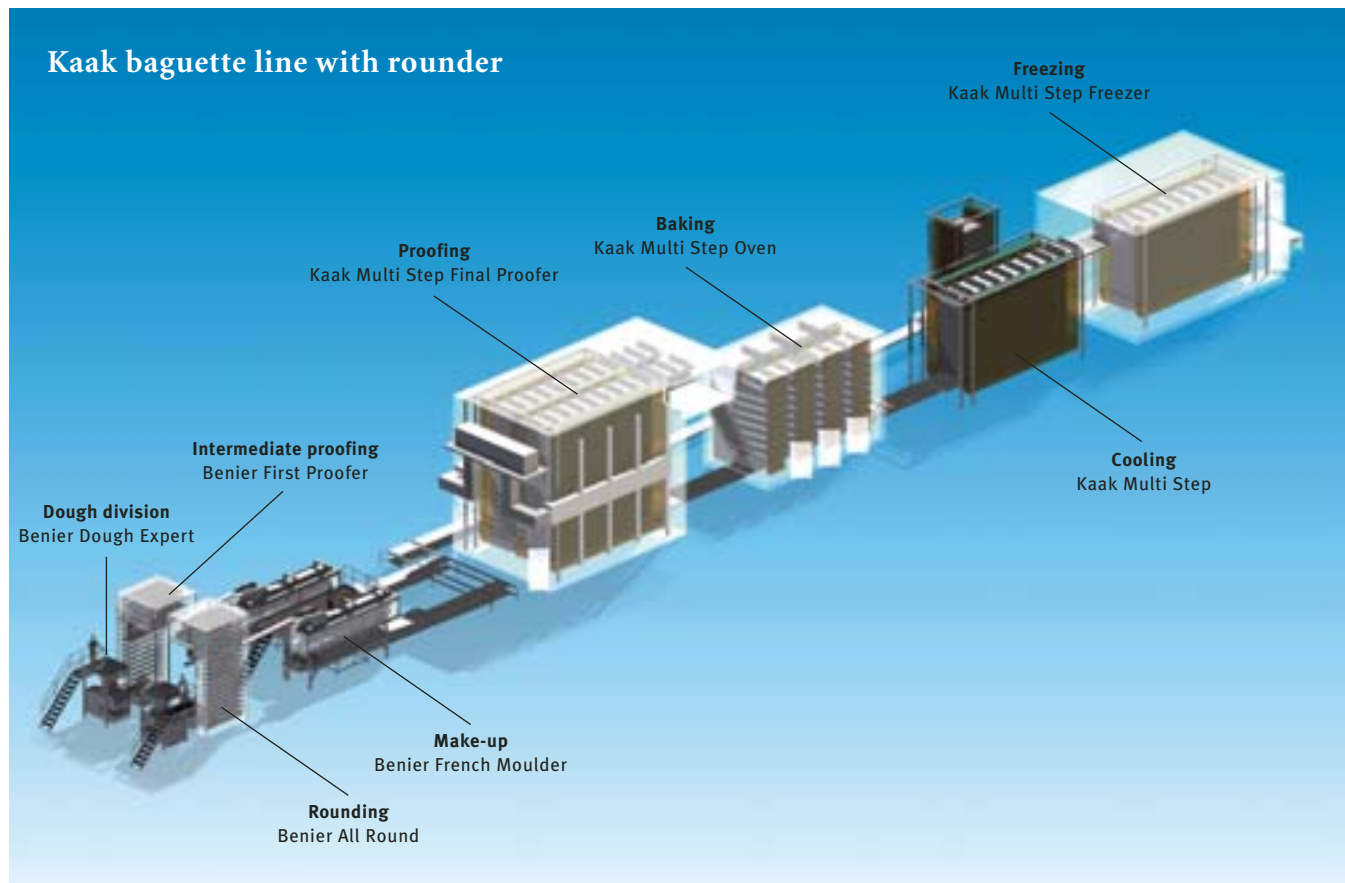


# Efficient baking

KAAK IS OFFERING A COMPLETE SOLUTION FOR THE INDUSTRIAL PRODUCTION OF BAGUETTES, FEATURING THE NEW MULTI STEP OVEN



**+** The demand for frozen baked goods continues to boom. In particular, par-baked rolls and baguettes are on the increase. According to Aart Jan Hartman (Kaak Group, Terborg, The Netherlands), industrially produced baguettes (baked and par-baked) have been displaying continuous strong growth on the entire European market for baked goods (especially if you look towards the East). This includes baguettes baked in moulds as well as traditional, so called artisan baguettes.

Kaak is expanding its product range in this segment. The company now offers complete lines, which more than likely will also feature this summer the newly developed Sans Boulage (without rounder) baguette plant by Benier. The Kaak line can process wheat dough with a hydration of up to 65%. The make-up includes an optional rounding step. The dough pieces are sheeted three times in a three-stage process including respective resting phases. This prevents, to a large extent, the dough contracting again.

Up until now, Kaak's baguette line has been equipped with a Daub oven, but now it can be supplied with a new oven developed by Kaak: the Multi Step oven. The idea for this oven originated approximately 10 years ago when the first one was put into production. The oven features the typical solid design that Kaak is renowned for.

Trays (1600 or 2000 mm) with the products on them are moved stepwise through the paternoster type oven which is heated with gas. The motors that Kaak uses for the transfer of the trays are less prone to interferences than compressed air cylinders and therefore the trays' movement is much smoother, reports Hartman.

The oven has four baking zones. The first two zones are equipped with one or two burners, the other two zones have one burner each. Two channels for the heating gas are arranged in each baking zone and on each level. The distribution of heat in the oven follows a new design and is thus patent-protected. It ensures a uniform flow of hot air over the entire width of the tray as well as over the entire stack of trays in the elevator. Each channel has a circulation fan to ensure that the hot air in the heating gas channel and the oven is distributed as uniformly as possible. The conical design of the channels prevents pressure differences in the system. The hot air flow is reversible and changes at intervals which can be set individually. This means that hot air is blown over the trays alternately from the left to right, but always over the width of the fillet. This method contributes to a uniform distribution of heat over each tray. The oven has an extremely consistent baking performance and is very energy efficient.

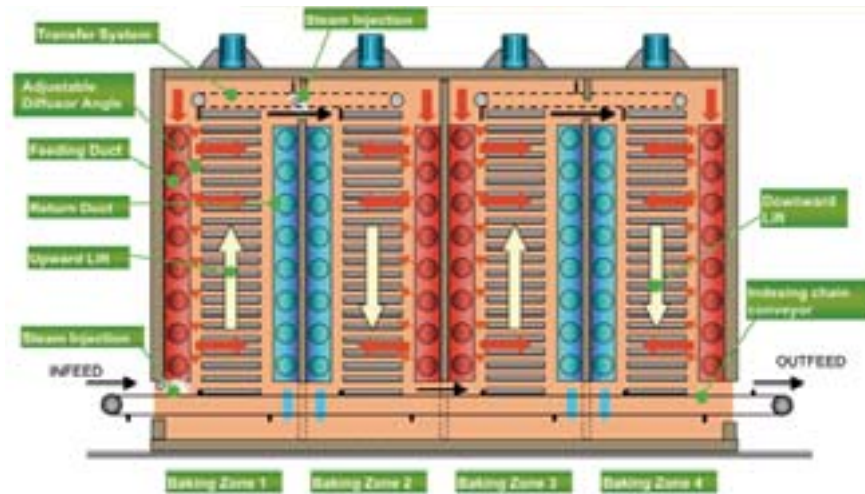
Steam is introduced into the oven at two different locations. This contributes to an evenly developed bloom and reduces the split-off. The first steam injection is immediately after the in-feed and is responsible for proper development of the bloom and the shine of the crust. The second introduction of vapor is at the end of the first baking zone. With this, the developers intend to counteract the split-off occurring after baking. The amount of steam injected is controlled via humidity measurement inside the baking chamber. According to Hartman, Kaak is applying dew point measurements for this.

As in the upstream proofer, the number of motors, slides, etc. are kept as low as possible to avoid possible interferences and to ensure smooth movement of the stacks of trays that are to be transported up and down.

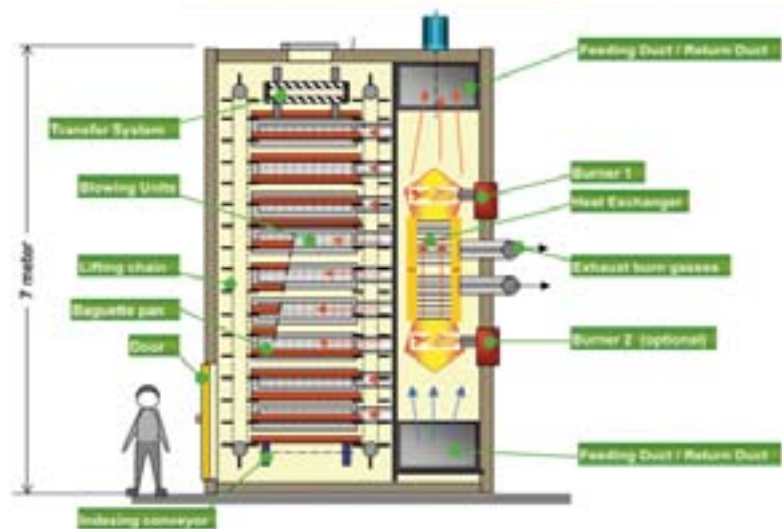
Downstream of the oven are a cooling section and a freezer, which both also operate according to the Kaak Multi Step principle. The cooler can be optionally supplied within a housing unit. The lines are designed for tray sizes of 800x1600 mm and 800x2000 mm. Up until now, plants with a maximum performance of 8,000 baguettes per hour have been delivered. Production plants with an hourly performance of 12,000 pieces are already in the pipeline. Investment into a Kaak line provides the following advantages according to Hartman: high availability, energy saving features, guaranteed line performance and high efficiency.

Kaak has already set-up several lines in Spain and France. According to Hartman, next to toast lines and lines for unmoulded baked goods, baguette lines are, today, the strongest growing market segment for the Kaak Group. +++

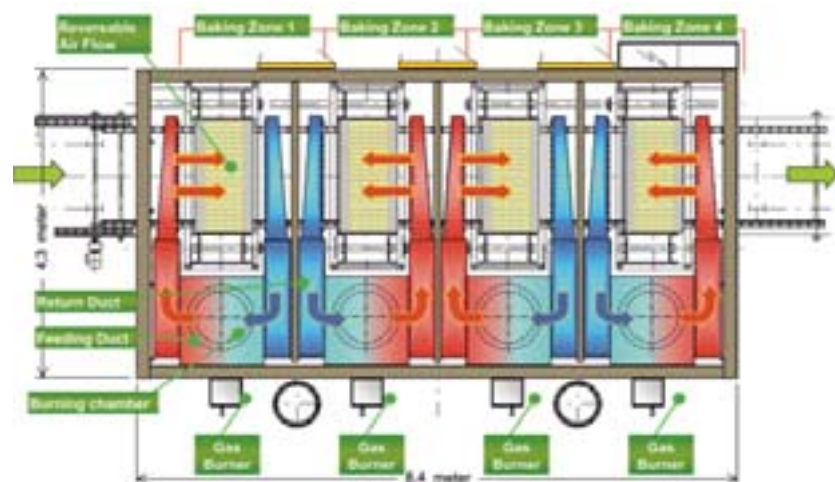
## Kaak Multi Step oven



Side view



Front view



Top view