

# Power mixer

THE POWER ROLL SYSTEM PM 75D BY EMIL KEMPER IS AN AUTOMATED SYSTEM FOR FLEXIBLE PRODUCTION OF DOUGH WITH SHORT RESTING TIMES



++ figure 1

+ The Power Roll System offered by Emil Kemper GmbH, Rietberg, Germany, consists of two Kemper Power Mixers PM 75D with automatic bottom discharge (the system can be optionally equipped with one or three mixers), a bowl transport and a control cabinet for the dough mixing plant. The automated dough system, with its double spiral tools provides for a short mixing time and therefore a high throughput, while still having a small footprint. Including bowl lifter, the entire equipment is 4.5 m long and 2.3 m wide. The maximum dough quantity that can be produced in one mixer is 720 kg per hour. "The total cycle time is 10 minutes for each mixer", explains Michael Imming, Product Manager and Master Baker at Kemper. This calculation is based on a raw material in-feed time of 1-2 minutes, although the time for filling the bowls is dependent on the silo performance. Minor components can be added at any time via the bowl cover which is a divided protective hood. Depending on recipe and dough, the mixing time is 5-6 minutes. Stainless steel double spiral tools are used for mixing and kneading. "The bowl is driven via timing belts. This ensures a quiet and safe mixing process with low wear on the power-driven parts," explains Michael Imming.

The large bottom opening, with a diameter of 35 cm, allows the emptying of the mixer within 30-45 seconds. The closure is pivot-mounted and can be moved pneumatically. This allows for a fast, gentle and fully automatic mixer discharge to the subsequent dough transport equipment.

In total the production of six batches per hour is possible; the batch size is about 120 kg of dough.

"Fully automatic dough production is possible in combination with a dough conveying plant," explains Michael Imming. The system can be used to feed mono-lines. However, a big advantage of this equipment is its flexibility. This way, many different types of wheat-containing dough can be produced, for example, in order to feed different roll plants.

Soft dough with a large proportion of rye cannot be processed as it cannot be discharged without a mechanical conveying device. Dough for a mixed rye bread (70:30) can be produced in this mixer. For wheat dough, the processing limit is a hydration of 45-75% (depending on the flour quality).

## Conveying of dough

A bowl is used for the dough transport. Via a traveling wagon, driven by a pneumatic cylinder, the dough is transported to the bowl tipping device HK 200. Here, the Master Baker points out the extreme stability of the equipment that is used for lifting and dumping the retractable dough bowls. Power reserves which are available at all times ensure a uniform lifting process and proper functioning independent of the filling quantity in the bowl. The lifting capacity is 1,000 kg. The machine designers also placed much emphasis on a space-saving column-type construction which allows the emptying of the bowl on the left or right side.

Technical features		
Models:		75
		2-speed mixer
Input rating [kW]	Spiral	~ 12 / 20
	Bowl	1.1
Fuse protection (at 400 V, 50 Hz) [Amp]		50
rpm [1/min]	Spiral	110 / 220
	Bowl	12
Frequency [Hz]	Spiral	50 or 60, resp.
	Bowl	50 or 60, resp.

A protective housing with access doors secured by limit switches prevents possible accidents. The doors are fastened to a stainless steel frame.

The touch panel is located at an ergonomic height in the door of the control cabinet. Individual programs can be entered via a color monitor. Furthermore, as an option, batch recording is possible. The program memory is large enough to store 99 programs.

Currently, the machine can only be cleaned to a limited extent with water. In future, many bakery machines will be equipped with a significantly better splash-water protection. "Then, it will be possible to use a higher water pressure for cleaning as is already common in the meat industry", reports Michael Imming. +++

++ figure 1

The large bottom opening allows the emptying of the mixer within 30-45 seconds

++ figure 2

The designers have placed much emphasis on a high hourly capacity and a small footprint



++ figure 2

# TROMP PIZZA LINES

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- \*Automatic base infeed

