



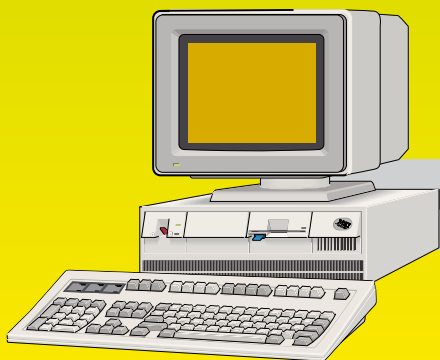
# KORNFEIL

*Baking  
ovens*

MODERN BAKERY TECHNOLOGY



K - COMPUTER 0 - 1 - 10 - 777 - 0 - 7 - 0 - 1 -----



**CENTRAL DECK OVEN CONTROL**

## Central computer control of deck oven operation

## K - computer

It is a logical acme of baking process automation with the maintained quality of bread and bakery products baking in KORNFEIL deck ovens. The advantages of bread and bakery product baking in deck ovens are widely known to the general baking public: dough charging right on hot ceramic baking plates, perfect fermenting on the enclosed deck and creation of a unique baking atmosphere for rising to the proper volume and leavening of very thin dough. The only handicap – a higher labour consumption – was removed by ASISTENT charging units KORNFEIL has been manufacturing for many years. The ever increasing market requirements for the quality of bread sold have an indirect impact on the bakery equipment structure and the requirement to install complete sets of deck ovens with the least labour consumption keeping the traditional advantages of deck ovens. For this purpose, KORNFEIL developed a central control system named K-computer.

## VARIANT rack ovens 12-22 m<sup>2</sup>

Deck ovens for central computer control are equipped with standard pneumatic control of deck door opening and draw-off flaps. The specifically installed set of sensors and detectors collects all data necessary for the central control. The ovens are equipped with standard WEISHAUBT gas or oil burners and flue gas and steam can be brought to the ECOblock for waste heat recovery and oven running perfection.



Name	No. of racks/height		Deck size	Baking area
VARIANT 12	4/160	1 circuit	1800 × 1600 mm	12 m <sup>2</sup>
VARIANT 12	4/160	2 circuits	1800 × 1600 mm	12 m <sup>2</sup>
VARIANT 12/5	5/200	1 circuit	1200 × 2000 mm	12 m <sup>2</sup>
VARIANT 12/5	5/160	2 circuits	1200 × 2000 mm	12 m <sup>2</sup>
VARIANT 15	4/160	1 circuit	1800 × 2000 mm	15 m <sup>2</sup>
VARIANT 15	4/160	2 circuits	1800 × 2000 mm	15 m <sup>2</sup>
VARIANT 15	5/200	1 circuit	1800 × 1600 mm	15 m <sup>2</sup>
VARIANT 18/5	5/200	1 circuit	1800 × 2000 mm	18 m <sup>2</sup>
VARIANT 22/6	6/200	2 circuits	1800 × 2000 mm	22 m <sup>2</sup>



## Charging and take-off ASISTENTcom unit

This unit ensures full deck oven servicing – both dough charging into the decks and taking finished products off. The design and safe travel in the safety zone permits fast charging into and taking out of the decks. Contactless position sensors ensure fast and accurate movement and servicing of many deck ovens.

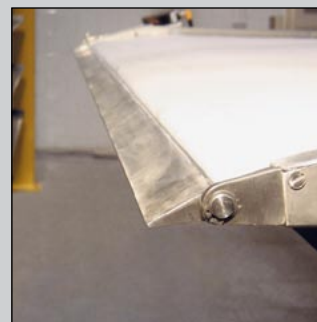
Given the usual baking time of bread of standard weights (500-1200 g), ASISTENTcom is capable to service up to 5 six-deck ovens VARIANT 22. When baking smaller pieces of bread (50-500 g) right on ceramic baking plates, ASISTENTcom has to be equipped with a special take-off bar and the output should be designed according to the baking time and the dough weight.

Selected finished products move either to the take-off table AS-02 or to the cooling modular belt conveyer. The servicing ASISTENTcom units are optionally supplied with a dampening bar or a folding take-off bar.



### Dampening bar

Necessary accessory equipment of the servicing ASISTENTcom unit. Serves for perfect dampening of intended products. Dampening intensity both after dough charging into the rack and before finished product taking off can be set up in the program.



### Folding take-off bar

Optional accessory equipment of the servicing ASISTENTcom unit. Serves especially for taking off rolls that tend to roll due to their shape. The bar automatically folds to the functional position before taking off small bakery products.

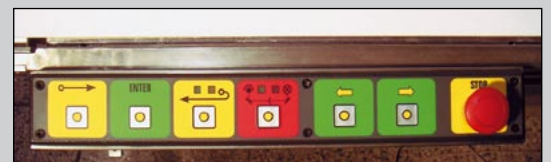


### Handling table AS-01com

Serves for comfortable turning the dough out of bread baskets, marking, notching or sprinkling. Enables fast transfer of dough to the charging unit and into the rack oven. As part of a continual dough-preparing line, the table serves for cyclic transfer of dough from the continual proofer to the ASISTENTcom handling unit. The confirming panel is on the side of the table.

### Dampening table

Serves as a suitable alternative for dampening bar installation. The plastic belt enables more intense dough dampening. It is installed between the handling table AS-01com and the charging unit ASISTENTcom.





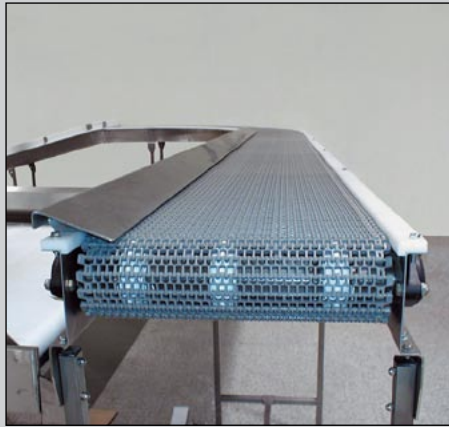
### Take-off table AS-02com

Serves for baked bread transfer and quick ASISTENTcom charging unit emptying. Automatic shifting of bread to the table edge makes it possible to take the baked bread off quickly at a comfortable level for the operator. Bread is placed into the trolley or crates. The table AS-02com can be adjusted to small bakery products that fall right into crates.



### Cooling belt conveyer MPC

Serves for baked bread transport to the shipping section and for partial cooling. The modular belt permits stepless belt rising, descending and turning. The start, stop and starting-up speed are controlled from the central control panel.



### Spiral chute

Terminal equipment of the belt conveyer in the shipping section serving for continuous chute of baked bread from the transport level of +2.00 m to the rotating take-off table +0.85 m high.



### Take-off belt



### Rotating take-off table

Serves for comfortable taking of baked bread. It is manufactured and supplied in different diameters according to the oven type in the system and the bread batch size.



### Central control panel

The central control panel consists of a colour touch screen connected with the central computerised control and memory unit located in the main switchboard that controls all equipment and accessories listed below:

- Deck ovens VARIANT
- ASISTENTcom handling unit
- Handling table AS-01
- Dampening table
- Cooling belt conveyer
- Take-off table AS-02
- Rotating take-off table
- Take-off belt
- Box and continual proofers, if necessary

The unique K-VAR software developed by KORNFEIL for baking in deck ovens and central control of all peripheral equipment takes into account all specific characteristics of gas-fired deck ovens. The software permits a balanced operation of WEISHAUPT heating burners and control of all oven functions for the best quality of bakery products. Apart from control and safety elements, the software enables to adjust and store the following functions:

- Baking time
- Baking temperature
- Baking curve
- Steam dose
- Proofing time
- Steam flap opening and closing
- Automatic rack door opening and closing
- Ventilation of space in front of racks
- Automatic dough charging
- Automatic product take-off
- Selection of rack for charging and take-off
- Dough dampening before charging
- Baked bread dampening before take-off
- Belt conveyer operation
- Rotating take-off table operation
- Take-off belt operation
- Charging table AS01 operation
- Take-off table AS02 operation
- Box or continual proofer function

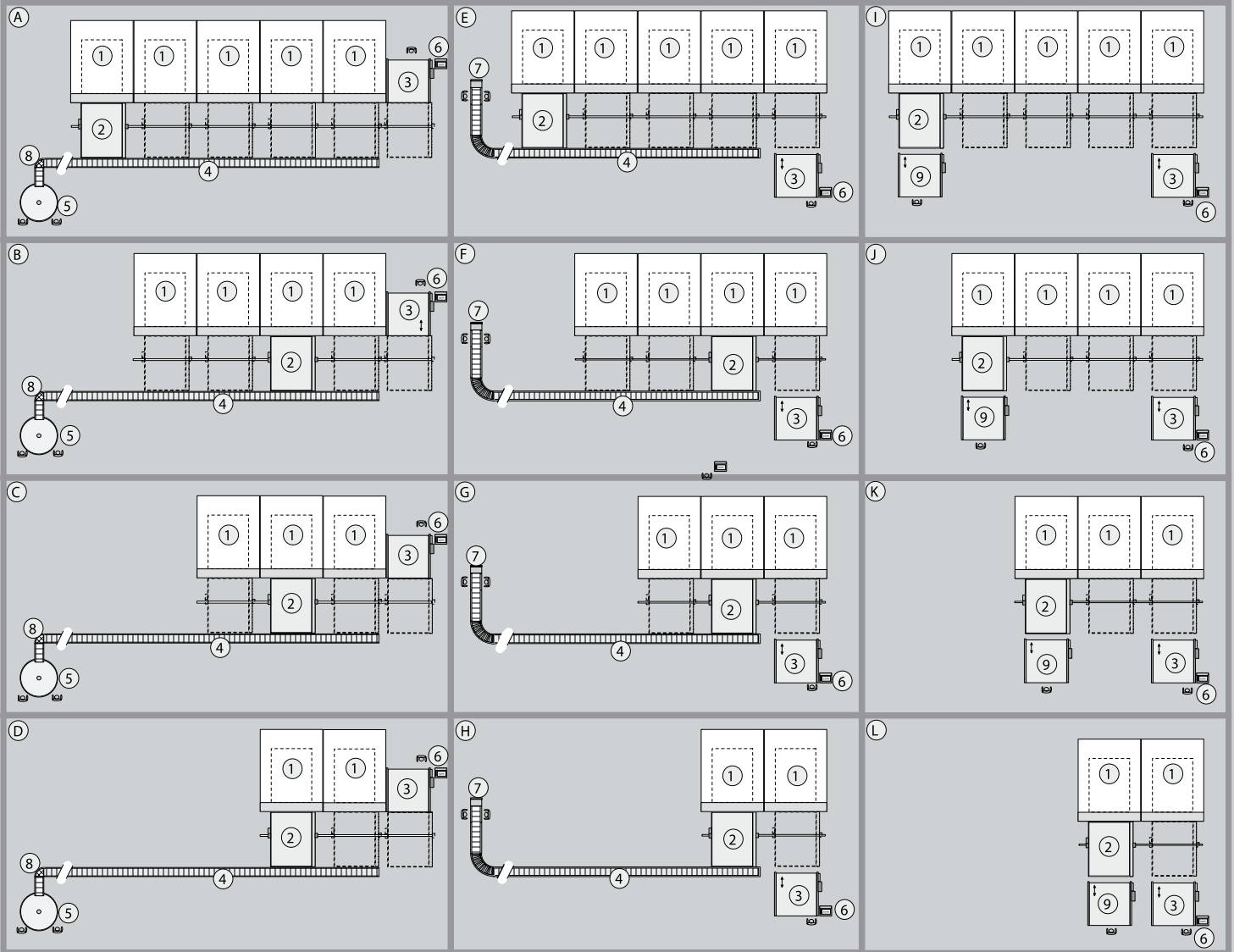


Combinations of these set-up functions constitute baking programs for specific bakery products. The software allows setting up and storing up to 99 baking programs. The programs are divided into two groups: preparatory (warming-up) and baking programs. The level of access rights for the program set up and control permits that the baking program may only be changed by authorized persons. In the course of the baking program, certain functions may be adjusted and changed to the level of access rights set up for particular people. Service functions are also grouped by authorization level. Some functions are accessible only to KORNFEIL service and assembly personnel. The system is connected with the servicing firm and some preset values can be adjusted to the operator's requirements. The software permits terminal communication of the control panel with a standard PC so that new programs can be created in the quiet of the office, outside the bakehouse operation. Baking process archiving is an essential function necessary for echo check and adherence to standards and requirements for food-processing industry.

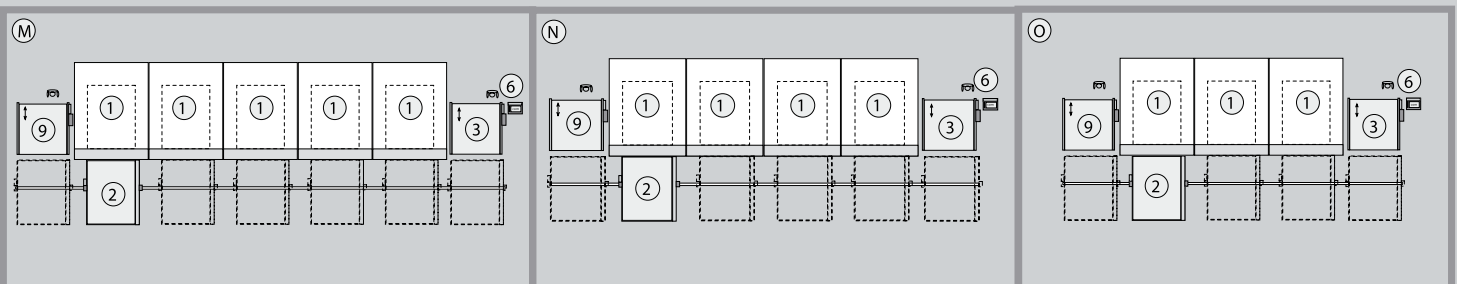
# ALTERNATIVES OF DECK OVEN CENTRAL CONTROL K-computer ARRANGEMENT

Belt conveyor of bread to shipment section A-H

Manual bread take-off and transport to shipment I-O



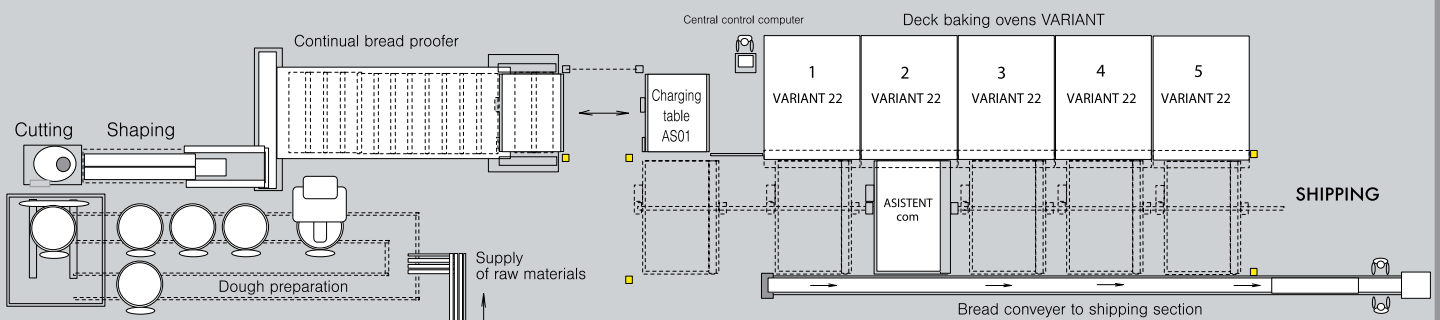
- ① KORNFEL deck oven
- ② ASISTENTcom charging unit
- ③ Handling table AS01
- ④ Belt conveyor for bread
- ⑤ Rotating take-off table
- ⑦ Take-off belt
- ⑧ Spiral chute
- ⑨ Take-off table AS02
- ⑥ Central control panel



## BREAD BAKING LINE

Output: 1300 kg/hr

K-computer



# Why central control K-computer by KORNFEIL?

- First-class bread baking in deck ovens with minimum labour consumption
- Baking of different bread types in different ovens in the set
- Operation of the number of ovens as required by the shipping section
- Minimum power consumption in relation to the baking area and output





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