

Combi-Oven

MODELS 1.06, 1.10, 2.10
Installation & Operation Manual



Fresh ideas in foodservice equipment

Warranty Information

LIMITED ONE YEAR WARRANTY

BKI (The "Company") warrants to the original purchaser that at time of shipment from the Company factory, this equipment will be free from defect in materials and workmanship. Written notice of a claim under this warranty must be received by the Company within ONE YEAR from the date of installation, but no longer than ONE YEAR AND THREE MONTHS from date of shipment from the factory. Defective conditions caused by abnormal use or misuse, lack of or improper maintenance, damage by third parties, alterations by unauthorized personnel, acts of God, failure to follow installation and/or operating instructions, or any other events beyond the reasonable control of the Company will NOT be covered under this warranty. The obligation of the Company under this warranty shall be limited to repairing or replacing (at the option of the Company) any part, with the exception of lamps, fuses, and glass (which are not covered under warranty), which is found defective in the reasonable opinion of the Company. Any part found defective by the Company will be repaired or replaced without charge F.O.B. factory, Simpsonville, South Carolina or F.O.B. authorized BKI Distributor. The Company and/or its authorized representatives will assume the normal replacement labor expense for the defective part for the period of the warranty as stated above, excluding travel and/or other expenses incidental to the replacement of the defective part, where replacement work is performed during standard business hours and not subject to overtime, holiday rates, and/or any additional fees. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR LOSS OF USE, LOSS OF REVENUE OR LOSS OF PRODUCT OR PROFIT OR FOR INDIRECT OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO, FOOD SPOILAGE OR PRODUCT LOSS. WARRANTY DOES NOT COVER GLASS BREAKAGE. THE ABOVE WARRANTY IS EXCLUSIVE AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE EXCLUDED INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

REPLACEMENT PARTS

Any appliance replacement part, with the exception of lamps, fuses, and glass, which proves to be defective in material or workmanship within ninety (90) days of installation will be replaced without charge F.O.B. Factory, Simpsonville, SC or F.O.B. authorized BKI Distributor. The user shall have the responsibility and expense of removing and returning the defective part to the Company as well as the cost of reinstalling the replacement or repaired part.

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Introduction

We congratulate you on your new BKI Combi.

By the purchase of a BKI Combi, you now possess one of the market's leading oven products for professional kitchens. All BKI Combis are currently subjected to intensive product development that ensures that the products are always based on the latest technology as well as the most modern and energy-saving techniques of preparation.

Moreover, the products from BKI are up-to-date with the latest development/technology as regards:

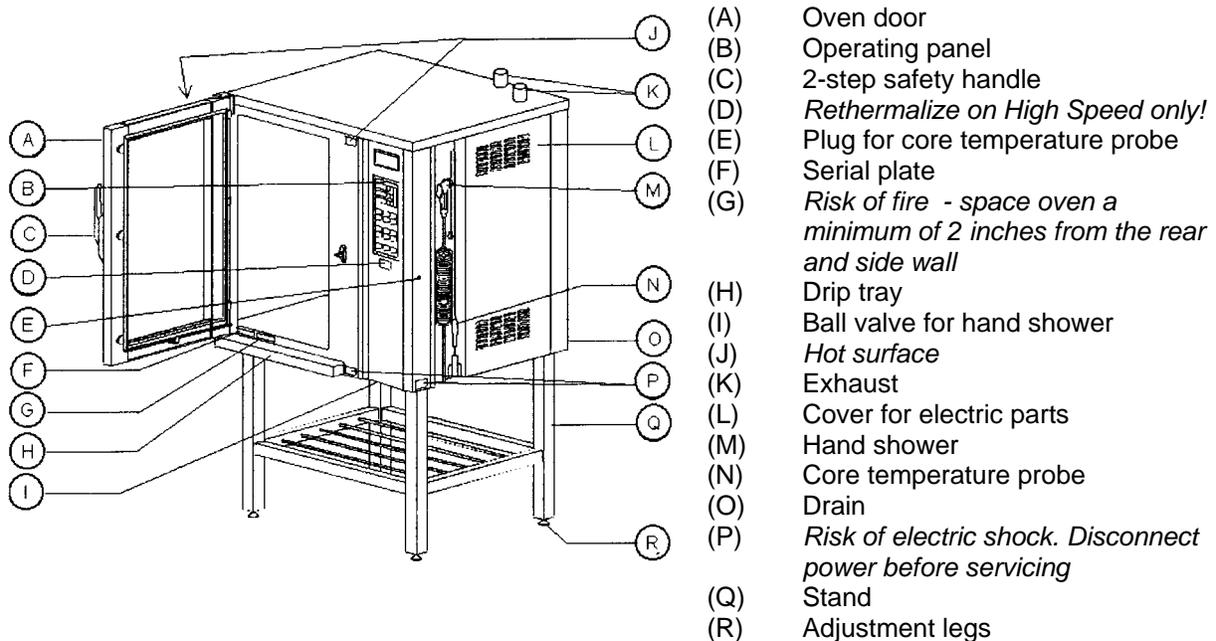
- ERGONOMICS AND SAFETY
- SIMPLE AND LOGICAL OPERATION
- EASY-TO-OPERATE DESIGN
- RELIABILITY AND SERVICE

To ensure our customers an optimum and reliable product, prior to dispatch, all BKI Combis have passed through an extensive test programme in which all functions are subjected to a continuous and extreme load.

Before use and to make the best use of the many facilities and advanced technique of the BKI Combi, it is important that you are aware of working ranges and possibilities of application of the steamer. We thus recommend you study the user's manual thoroughly before using the steamer. By this, you can - as a user - make sure that you achieve optimum cooking results through appropriate and safe operation. By going through the user's manual, you will save time

Description

Refer to illustration below for a description of the unit.



Safety Precautions

Always follow recommended safety precautions listed in this manual. Below is the safety alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury or property damage.



Safety Signs and Messages

The following Safety signs and messages are placed in this manual to provide instructions and identify specific areas where potential hazards exist and special precautions should be taken. Know and understand the meaning of these instructions, signs, and messages. Damage to the equipment, death or serious injury to you or other persons may result if these messages are not followed.

	This message indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	This message indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
	This message indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	This message is used when special information, instructions or identification are required relating to procedures, equipment, tools, capacities and other special data.

Specific Precautions

	Risk Of Electric Shock Disconnect Power Before Servicing
	For Continued Protection Against Risk Of Fire And Electric Shock, Replace With Fuses Of Same Rating
	Rethermalize on High Speed only!
	Hot surface can cause severe burns. Do not touch.
	Replace Oven Halogen Lamps with 12V, 20W maximum

Operation

General

The combination of circulating hot air and steam is the basic principle in the modern combi steamer. The BKI Combi is supplied with a high-powered fan motor ensuring an optimum circulation. This gives a number of advantages when preparing different products.

To achieve the optimum use of the oven there are some plain general principles and working techniques during the day's work that we recommend. If these general tips are followed, the result will in most cases be better final products.

Pre-heating

One of the most important basic rules in using the modern oven is PREHEATING. Generally, the oven should be pre-heated for ALL TASKS. Leaving out the pre-heating may cause a reduced end product and extra long process time. To make the best of the properties of the oven, pre-heating should become a natural routine in the day's work.

Pre-heating is particularly important at the start of the workday when the oven is cold.

We also recommend extra pre-heating when the oven has maximum loading or when preparing chilled and frozen products.

In the above cases, we recommend that the oven is pre-heated for approx. 10-15 min. in the desired operating mode- perhaps at a temperature 86 - 104°F above the operating temperature (does not apply to STEAMING and PROOFING).

For PREHEATING in other situations, see description under each operating mode.

Loading and unloading

After pre-heating, the oven is ready for loading with products. The products are to be placed in the containers so that the air can circulate freely around them.

To achieve an optimum air circulation we recommend that you always start placing canteens or baking sheets in the rack from the centre and then upwards and downwards by turns. Generally, canteens, baking sheets etc. are to be regularly dispersed in the rack.

Avoid temperature decline!

When loading, we suggest that the oven door be open for the shortest possible time to avoid a major temperature decline in the oven compartment.

 **WARNING** Hot surface can cause severe burns. Do not touch.

After the preparation, the products are to be unloaded from the oven. You have to be cautious as the oven compartment in most cases contains steam.

Safety

As an extra precaution, the oven door is provided with a specially designed 2-step safety handle which ensures that the oven door cannot be opened in one movement. Upon activating the handle into the first step, the oven will automatically switch off and an automatic motor brake suspends the fan. The oven door should remain in this step for a few seconds and in doing so, much of the steam will escape the oven compartment and thereby reduce the scalding risk of the staff. The oven door can then be re-

opened by activating the handle again and the products can be unloaded either by hand or with a trolley for racks.

Applying air exhaust

The BKI Combi (with CVC or S controllers) has an open exhaust system. This means that the oven is provided with a direct air exhaust that can be opened and closed automatically.

The air exhaust removes humidity and steam from the oven compartment quickly and efficiently. This gives a dry heat in the oven compartment which may be used for browning and grilling steaks, omelet etc.

To obtain a crisp pastry the air exhaust is very useful in connection with baking. When baking dough products, we recommend CONVECTION with open exhaust e.g. for the latter half of the baking process.

Manual humidity/steam pulsing

The BKI Combi with CVC or S controller has manual humidity steam pulsing capability.

By activating the appropriate key, the oven compartment is supplied with humidity/steam. This will go on continuously as long as the key is activated.

The manual humidity pulsing is used for a quick admission of steam into the oven compartment immediately after loading. The humidity pulsing can be applied for all operating modes.

As an example, when baking dough products in CONVECTION we recommend humidity pulsing for the first approx. 10-15 seconds of the baking process. This gives a shiny and crisp surface to the baked products.

As for roasting, the manual steam is very effective for closing the pores of the meat quickly and effectively. This has the effect of keeping the humidity in the meat and the finished result becomes juicier.

Using the Fan

The BKI Combi with CVC or S controller has fan speed selection capability.

The basic principle of the modern combi steamer is the circulating air and steam. In most working processes, it is optimum that air and steam circulate at the highest possible speed - that is high fan speed. However, in some processes a lower air circulation provides a better result. It is possible manually to change between high and low fan speed with the appropriate key.

HIGH fan speed should - as a principal rule - be used for CONVECTION and COMBI STEAMING modes.

When baking light products e.g. meringue and chou (cream puff) and when preparing omelette and soufflé you may use low speed. By this, you avoid that light baking products "blow off the sheet" or that omelette/soufflé batter has an uneven thickness.

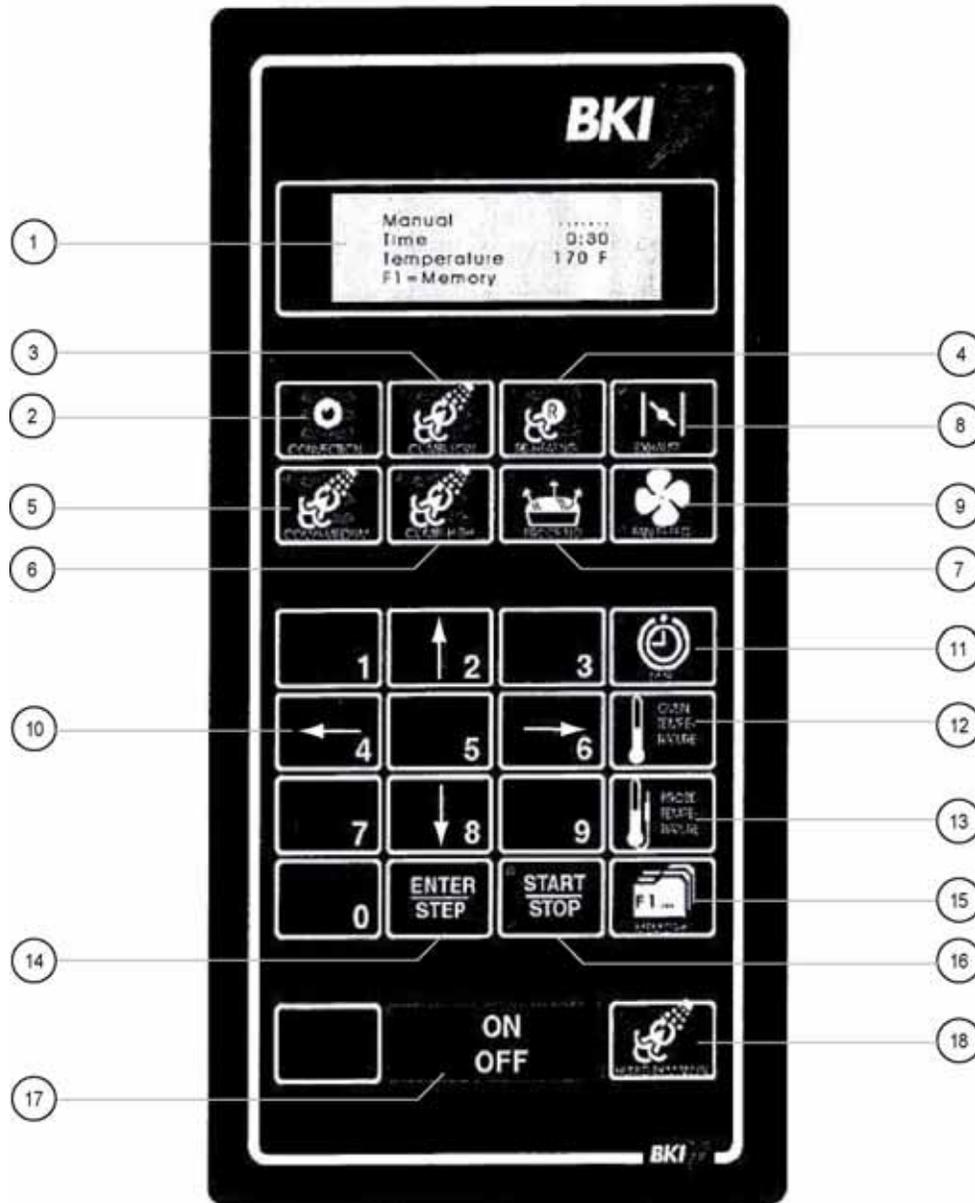
LOW fan speed should - as a principal rule - be used for the PROVING mode that is a rather sensitive preparation process.

Any time during the preparation, you can change between high and low fan speed.

CVC Controller Operation

Controls and Indicators

Refer to the figure and table below for an explanation of controls and indicators.



Item #	Description	Function
1	Time, Core Temperature, Oven Temperature and Diagnostic Message Display	<p>Time Display - Upon setting of time, display (1) will show the time requested. The remaining period is indicated during programme performance.</p> <p>Core Temperature Display - In this display, the set core temperature is indicated upon connection of core temperature control.</p> <p>Oven Temperature Display - This display shows the set oven compartment temperature. The light diode in the upper left corner (12) is lit when the heating elements of the oven are connected.</p> <p>Diagnostic Message Display - The Combi is supplied with an automatic diagnostic system. When a defect occurs, a message will appear in the bottom line of the display</p>
2	CONVECTION key	<p>The CONVECTION operating mode is selected by pushing key (2).</p> <p>Automatically, the oven is set to start on the pre-selected values of this mode. These pre-selected values can be changed according to wishes, needs and experiences, see (14).</p> <p>The values of time (11), oven temperature (12) and e.g. core temperature (13) are adjusted. The speed of the fan motor (9) can also be set and the exhaust opened/closed (8). You can now start the oven by pressing key (16).</p> <p>The selection range of the oven compartment temperature is 68-482°F.</p>
3	COMBI STEAMING, low key	<p>In this mode, it is possible to select low humidity pulsing.</p> <p>Automatically, the oven is set to start on the pre-selected values of COMBI STEAMING. These pre-selected values can be changed according to wishes, needs and experiences. See key (14).</p> <p>The values of time (11), oven temperature (12) and e.g. core temperature (13) are adjusted. The speed of the fan motor (9) can also be set and the exhaust opened/closed (8). You can then start the oven by pushing key (14).</p> <p>The selection range of the oven compartment temperature is 68-482°F.</p>

Item #	Description	Function
4	REHEATING key	<p>The REHEATING operating mode is selected by touching key (4).</p> <p>The oven is automatically set to start on the pre-selected values of this mode. These pre-selected values can be changed according to wishes, needs and experiences. See key (14).</p> <p>The values of time (11), oven temperature (12) and e.g. core temperature are adjusted. In the same way, the speed of the fan motor (9) can be set and the exhaust opened/closed (8).</p> <p>You can now start the oven by pressing key (16).</p> <p>The selection range of the oven compartment temperature is 230-320°F.</p>
5	COMBI STEAMING, medium key	<p>In this mode, it is possible to select medium humidity pulsing.</p> <p>Automatically, the oven is set to start on the pre-selected values of COMBI STEAMING. These pre-selected values can be changed according to wishes, needs and experiences. See key (14).</p> <p>The values of time (11), oven temperature (12) and e.g. core temperature (13) are adjusted. The speed of the fan motor (9) can also be set and the exhaust opened/closed (8). You can then start the oven by pushing key (14).</p> <p>The selection range of the oven compartment temperature is 68-482°F.</p>
6	COMBI STEAMING, high key	<p>In this mode, it is possible to select high humidity pulsing.</p> <p>Automatically, the oven is set to start on the pre-selected values of COMBI STEAMING. These pre-selected values can be changed according to wishes, needs and experiences. See key (14).</p> <p>The values of time (11), oven temperature (12) and e.g. core temperature (13) are adjusted. The speed of the fan motor (9) can also be set and the exhaust opened/closed (8). You can then start the oven by pushing key (14).</p> <p>The selection range of the oven compartment temperature is 68-482°F.</p>
7	PROOFING key	<p>The PROOFING operating mode is selected by touching key (7)</p> <p>Automatically, the oven is set to start on the pre-selected values of this mode. These pre-selected values can be changed according to wishes, needs and experiences. See key (14).</p> <p>The values of time (11) and oven temperature (12) are adjusted. In the same way, the speed of the fan motor (9) is set and the exhaust opened/closed (8).</p> <p>You can now start the oven by pressing key (16).</p> <p>The selection range of the oven compartment temperature is 68-104°F.</p>

Item #	Description	Function								
8	Exhaust key	<p>By pressing key (8), you can open (the light diode is on) and close (the light diode is off) the exhaust from the oven room.</p> <p>The exhaust can be opened and closed any time during the programme performance. Concerning use of open and closed exhaust respectively, please refer to the tables and the paragraphs of the individual cooking modes.</p>								
9	Fan Speed key	<p>The fan of the oven can be set on two different rates of fan speed:</p> <ul style="list-style-type: none"> • HIGH (the upper light diode is lit) • LOW (the lower light diode is lit) <p>Normally, the fan speed is high but you can change it anytime during the programme performance. Concerning use of high and low speed respectively please refer to the tables of preparing various products and the paragraphs of the individual cooking modes.</p>								
10	Numeric keys	The required values for time, oven temperature and core temperature are set with the keys (10).								
11	Time Function key	<p>The time requested is set by activating key (11) and display (1) will flash. Now, the time can be set with the keys(10).The time range is 1 min. to 99 hours and 59min. After time setting, you push key (14) again.</p> <p>When the set time has run out the oven will automatically switch off and an alarm will buzz.</p> <p>The set time may be changed during the entire programme performance.</p>								
12	Oven Temperature Function key	<p>The oven compartment temperature requested is set by touching key (12) and display (1) will then start flashing. The oven compartment temperature can now be set with the keys (10). After setting the oven compartment temperature, push key (14) again.</p> <p>The setting range of the oven compartment temperature:</p> <table style="width: 100%; border: none;"> <tr> <td>CONVECTION</td> <td style="text-align: right;">68-482°F</td> </tr> <tr> <td>COMBISTEAMING</td> <td style="text-align: right;">68-482°F</td> </tr> <tr> <td>REHEATING</td> <td style="text-align: right;">230 - 320°F</td> </tr> <tr> <td>PROOFING</td> <td style="text-align: right;">68-104°F</td> </tr> </table> <p>The selected oven compartment temperature may be changed any time during programme performance.</p>	CONVECTION	68-482°F	COMBISTEAMING	68-482°F	REHEATING	230 - 320°F	PROOFING	68-104°F
CONVECTION	68-482°F									
COMBISTEAMING	68-482°F									
REHEATING	230 - 320°F									
PROOFING	68-104°F									
13	Probe Temperature Function key	<p>When the core temperature control is on, the core temperature can be adjusted by pushing key (13). Display (1) will then flash and the core temperature can be set with the keys (10). After setting the value, push key (14) again.</p> <p>Automatically, the oven will switch off and an alarm will signal when the set core temperature has been reached.</p> <p>The setting range of the core temperature is 68 - 210°F.</p>								

Item #	Description	Function
14	Receipt key (Memory)	This key has two functions: <ul style="list-style-type: none"> • Storing settings in the memory function (see key (15)) • Storing changes of pre-selected values of Operating modes(2)-(7).
15	Memory Function key (F1)	Beyond the permanent operating modes, the BKI Combi oven contains a memory function, in which it is possible to store up to 199 extra programmes. You change from manual operation to memory function by pushing key (15). To change between the 199 programmes you touch key (15) until the number of programme required appears.
16	START/STOP key	The programme performance is switched on and off by touching key (16).
17	ON/OFF key	The oven is switched on and off by pushing key (17). All displays and light diodes will light up for a moment indicating that all functions are automatically tested before start. The oven will always start up in manual operation and the CONVECTION mode.
18	Manual Humidity Pulsing	Pressing key (18), humidity/steam is added into the oven compartment as long as the key is activated.

Features

Some of the features of the computer control:

- 4-line display; 2 lines are used for menu headings
- Adjustable contrast and background light
- Choice between small letters and capital letters
- Display that always shows how many steps (max. 6) are contained in a menu and which step is being performed at the moment.
- Menu numbers that can be retrieved either by pressing the number directly via the F1 key or by "rolling" forwards or backwards in the menus with the arrow keys (2 and 8).
- Automatic cooling down to steaming temperature from, for instance, roasting temperature. At the same time, the exhaust will open automatically.
- Automatic control of
 - Breaking of phase (fuses)
 - Correct direction of rotation of fan motor
 - All temperature sensors
 - Inductive sensor
 - Automatic emptying of steam generator at least once a day
- If an error occurs, a message will show in the display. The control distinguishes between two types of errors:
 - Serious errors, ie the oven cannot start or it stops during operation
 - Minor errors, ie the oven can still run.

- With the function key F1, another 10 functions are available.

Press F1 once (1) Retrieve menu number
 (2) Store changed menu
 (3) Correct menu text

Press F1 twice (1) Store manual program
 (2) Find vacant menu
 (3) Delete menu/step

Press F1 3 times (1) Retrieve original menu
 (2) Contrast adjustment
 (3) Choose language
 (4) Change pre-set values

How to Operate

Start-Up

The oven always starts in the manual menu with the CONVECTION mode automatically selected.

Manual Operation

Pressing START/STOP activates this function. The pilot lamps change from red to green to indicate that the function is active.

Changing operating mode, time, etc.

If another operating mode than CONVECTION is required, this must be selected before selecting time, temperature, etc. If not, these settings will be deleted by the pre-selected values of the new operating mode.

Before starting or during program performance, you can change time, temperature, core temperature, exhaust and fan speed as you wish.

Time, temperature and core temperature is selected by pressing the function key in question, and the text in the display will flash. Changes can now be made by pressing the keys. Confirm with ENTER-STEP.

The exhaust is open when the pilot lamp is on. High fan speed is indicated by the upper pilot lamp, low fan speed by the lower pilot lamp.

Timer

The computer control can also operate as a timer (countdown). This is indicated by both pilot lamps being off. Now all other functions but the time are disconnected. When the time runs out, an alarm will sound and the oven will continue in the next step.

Extending a program

To extend a program by another step, press ENTER-STEP and the vacant step is ready for programming.

General Procedure

1. Choose one of the six operating modes as step I.
2. Adjust the values for time, temperature and core temperature, if necessary. Perhaps, change the settings for fan and exhaust.
3. Proceed to the next step or start the oven program.

Programming

Retrieving a Menu

Press F1 once and select the 1st line that reads "Retrieve menu number". Press the desired menu number and conclude by pressing ENTER-STEP.

or

Press 2 (arrow upwards) and a new menu appears. If the key is kept activated, the menus roll forward - if key 8 is activated, they roll backward.

NOTE: Use menu No 0 (between 199 and 1) only if you wish to run the oven manually.

Store changed menu

This function is used to store any changes that may have been made in one of the menus I - 199. A program menu can be changed before, during or after its performance without affecting the original menu. If you wish to store a change permanently, use the function "Store changed menu" as follows: Press F1 once, press 2 and conclude with ENTER-STEP.

Correct menu text

This function offers the possibility of constructing or changing a menu heading.

Press F1 once, press 3 and by means of the keys 2, 4, 6 and 8, you can "write" in the display.

Visualize a cylinder with letters and figures which can be rolled forwards and backwards by pressing keys 2 (forwards) and 8 (backwards).

With keys 4 and 6, the cursor can be moved to the right and to the left.

With the key "7", you can change between capital letters and small letters.

With the key "0", you can delete a character.

Conclude with ENTER-STEP.

Store manual program

This function is used to set up a new menu.

Enter your program into the MANUAL menu (No 0). Select the function "Store manual program" by pressing F1 twice and pressing 1. The computer control will automatically stop at the first vacant menu. Accept this menu or press the desired number followed by ENTER-STEP.

If there are no vacant menus, delete an existing one (see below).

When the menu number has been chosen, conclude by writing the menu text as described above ("Correct menu text") and pressing ENTER-STEP.

Find vacant menu

This function finds the first vacant menu. Press F1 twice, press 2 and the display shows a vacant menu number. Conclude by pressing ENTER-STEP.

Delete menu/step

With this function, you delete either the last step or the entire menu. Push F1 twice, press 3 and conclude by pressing ENTER-STEP.

Retrieve original menu

With this function, you retrieve a copy of the original menus I - 199 which are pre-programmed in the control. These original menus cannot be changed. Changes can only be made after entering into "Store manual menu". Press F1 three times, press I and conclude by pressing ENTER-STEP.

Contrast adjustment

This function allows you to adjust background light and contrast in the display.

Press F1 three times, press 2 and the adjustment is made with keys 2 (lighter) and 8 (darker).

The background light is adjustable with keys 1 (lighter) and 8 (darker).

Conclude by pressing FI.

Select language

Press F1 three times, press 3 and conclude by pressing ENTER-STEP.

Change pre-selected values

Every time one of the six operating modes (CONVECTION, COMBI, etc.) are selected, each will appear with pre-selected values for temperature, time, maybe probe temperature, fan, and exhaust.

These values can be changed.

Select "Change preselected values" by pressing F1 three times and pressing 4. Enter the new/changed values and conclude by pressing ENTER-STEP.

Using the Temperature Probe

To be able to use the many advantages/qualities of the modern combi oven to a full extent, as standard, the Combi steamers from BKI are all equipped with digital core temperature control.

With the application of core temperature control and probe to match, the core temperature in the products can be measured very exactly with which the optimum combination of time and temperature can be obtained. In practice, this gives a reduced weight loss/shrinkage and makes uniform preparation possible and thereby a high quality product.

Because of operation, cleaning and service, the probe is connected on the outside of the oven.

Operation

1. The oven is set on the operating mode required and time/manual time control, temperature etc. are set. When set on manual time control, the oven will automatically switch off when the set core temperature has been reached. If a time has been set at the same time as core temperature the oven will switch off at the function to be reached first-time or core temperature.
2. The plug of the core temperature probe is inserted in the outlet on the front panel of the oven.
3. The probe is placed with the point in the middle of the thickest part of the product. The oven door is closed and the door gasket will shut tight around the wire. Alternatively, the probe can with advantage be placed in e.g. the joint at a separate worktable before placing it in the oven. Correct placing of probe is herewith made simpler and easier and the risk of burn/scalding upon touching of the hot oven is reduced considerably.
4. After pressing key (13), display (1) will flash and the core temperature required can be set with keys (10). To accept the set core temperature, you press key (14) again. Automatically, the oven will switch off when the set time is obtained.

Keeping warm function

As a special feature, the core temperature control includes a specific keeping warm function. When the set core temperature is reached the heating elements will automatically be disconnected. The special keeping warm function will hereafter see to the maintenance of the reached core temperature in the joint by connecting the heating elements again when the core temperature drops by 35.6°F below the set temperature. When the set core temperature is reached again, the core temperature is retained as long as required.

Pre-heating

By application of core temperature control, the oven should be pre-heated in standard ways.

Application

Core temperature can with advantage be applied for:

- Roasting incl. long-term roasting
- Reheating
- Steaming
- Forced steaming
- Preparation of sous-vide/Vacuum products

Long-term roasting

Long-term roasting in a BKI Combi is a gentle roasting process in which the used roasting temperatures are often reduced by more than 50% compared to standard temperature. With considerably reduced temperature and extended time, the meat becomes extra tender and juicy during this kind of roasting. The shrinkage is also reduced considerably.

During long-term roasting e.g. below 212°F, it will often be unnecessary to add steam/humidity as the evaporation has already been reduced to a minimum. To reduce evaporation further, if any, low fan speed can be used with advantage.

Long-term roasting/ core temperature control

To be able to regulate/control and subsequently maintain the set core temperature, it is a great advantage applying core temperature control during long-term roasting. This obtains optimum roasting every time.

Advantages

- Obtaining of optimum core temperature in the products.
- Uniform products from time to time - even for products of different sizes.
- Shrinkage is reduced considerably as each degree, which goes beyond the optimum core temperature, means weight loss.
- Reduced energy consumption.

Suggestions and tips

- Probe to be placed in the middle of the thickest part of the product for measurement of the core temperature.
- To obtain a uniform core temperature during simultaneous preparation of products of different sizes the probe is first placed in the smallest product.
- In many cases, humidity/steam addition is not required during long-term roasting below 212°F.
- Low fan speed may be applied for long-term roasting to

Recommended values for core temperature control

Product	Level of Preparation	Core Temperature
Pork		
Ham	Well-done	167°F
Ham	Under-done	149-154°F
Boiled ham	Juicy	147-154°F
Cured saddle. of pork		149-158°F
Cured saddle of pork, cold		131-140°F
Loin	Under-done	149-158°F
Loin	Well-done	158-167°F
Shank	Well-done	176-185°F
Shoulder of pork	Well-done	167°F
Rib	Well-done	149°F
Baked ham	Well-done	149-158°F
Beef		
Fillet	Medium	131-140°F
Roast beef	Medium	131-140°F
Joint of beef	Well-done	185-194°F
Boiled beef	Well-done	176-185°F
Veal		
Saddle of veal	Under-done	149-158°F
Leg of veal	Well-done	167-176°F
Shoulder of veal	Well-done	167-176°F
Brisket of veal	Well-done	167-172°F
Mutton		
Saddle of lamb	Under-done	158-185°F
Saddle of lamb	Well-done	176°F
Lamb		
Lamb	Well-done	174-185°F
Poultry		
Chicken		185°F
Goose		167-176°F
Goose		194-197°F
Turkey, duck		176-185°F
Paste, pate etc.		
Paste		161-165°F
Terrine		140-158°F
Foie gras (Pate de foie gras)		113°F
Fish		
Salmon		131 °F
Pike		140°F
Fish pate		149°F

Convection Mode

In this operating mode the products are prepared in constantly circulating hot air. The high-powered fan ensures an optimum air distribution in the oven compartment. An optimum transfer of calories/energy to the products is obtained this way. The temperature can infinitely be set within a range of 68-482°F. Manually, humidity can be added by activating key (18).

Operation

By activating key (17), the oven will automatically startup in CONVECTION mode with the pre-selected values of time, temperature etc. If the oven is set on a different operating mode you choose CONVECTION by activating key (2). Correction of the time required is made with key (11), adjustment with keys (10) and end with (14). The temperature is corrected by touching key (12), then adjusted with the keys (10) and ended with (14).

Pre-heating

Generally, the oven is pre-heated for approx. 5-10 minutes in CONVECTION mode. Concerning use of a cold oven and maximum loading of oven compartment please refer to the paragraphs under the heading of GENERAL.

Application

The CONVECTION mode can be applied for:

- Roasting
- Grilling
- Baking
- Gratinating
- Breeding

The mode can be applied alone or in combination with other modes. Below, you will find examples of combination possibilities with other operating modes:

- CONVENTION + COMBI STEAMING, low or medium + CONVENTION
The preparation is started in CONVECTION to close the pores on the surface of the joint. You then change to COMBI STEAMING, low or medium, and by this the actual roasting process is accomplished with minimum shrinkage. Finally, the joint is browned in CONVECTION to make the surface crisp.
- COMBISTEAMING, high + COMBI STEAMING, low or medium + CONVENTION
The initial steaming in COMBI STEAMING,high, closes the pores of the meat. You then roast in COMBI STEAMING, low or, medium, and finally the joint is browned in CONVECTION. This process is very common for e.g. joints that have to be juicy as well as crackled (e.g. roast pork).

Manual humidity pulsing

According to wishes/needs, injection steam can be added with key (18) e.g. to close the pores of the meat or to make a crisp surface during baking.

Advantages

- **Shorter roasting time**
- **Lower temperature**
- **Even temperature in the entire oven compartment**

As the circulating hot air yields a quicker and more efficient addition of calories the roasting time is considerably reduced compared to the traditional baking or roasting ovens with e.g. bottom heat and top heat. Generally, the preparation requires lower temperature and combined with the possibility of adding steam the shrinkage loss is substantially reduced. The effective air distribution ensures that the maximum

variation of temperature in the oven compartment will be +/- 35.6°F. This gives relatively consistent baking and roasting results without regard to placement of the products in the oven.

Suggestions and tips

- Roasting time

The roasting time depends a lot on quality and size of the meat.

Roasting time per cm. meat thickness is 10-12 minutes.

For non-breaded joints, the roasting time is shorter than that of breaded joints.

When preparing frozen products, the roasting time will obviously be extended and the oven should be pre-heated up to a higher temperature.

- Roasting temperature

The larger the joint, the lower the temperature.

The longer the preparation time, the lower the temperature.

By using these two basic rules, the shrinkage is reduced and the finished joint becomes juicier. Oil or fat (lard or the like) is to be added to the surface of dry meat.

- Loading of oven

The air has to circulate freely around the products to reach an optimum roasting result. If the products touch one another, the roasting time will be extended and the surfaces of contact will not brown.

For e.g. very large joints, we recommend the use of containers and for small joints, the use of grill trays is recommended as the air circulation around the products is better. By placing the meat on a grill tray, the meat juice for gravy is intercepted in a container below the grill tray.

- Baking

CONVECTION mode as well as COMBI STEAMING mode can be applied for baking. However, the selection of mode depends on the type of batter to be baked.

The BKI Combi has built-in facilities which particularly gives the oven professional baking qualities:

- **Manual humidity pulsing (18)** - The key is activated after loading the pre-heated oven and yields the baking products a humid surface resulting in a crisp and golden crust.
- **Direct air exhaust (8)** - The direct air exhaust removes surplus of humidity from the oven compartment and provides crisper pastry.
- **2-speedfan (9)** - The fan can be set on 2 different rates of fan speed. Generally, high fan speed is applied for maximum air circulation. To minimize the air influence during proving of dough products and during baking of light products low fan speed is used.

- Baking sheets/trays

Generally and particularly for baking of batter products, e.g. Danish Pastry, baking sheets are applied. For baking of certain types of breakfast rolls, perforated baking sheets are used. Trays are suitable for pre-baked flutes/baguettes and toasting.

Combi Steaming (Low and Medium) Mode

The combi steaming mode is - as the name indicates - a mode offering all the preparation advantages that a combination of hot air and steam can yield. The combination of a constantly circulating hot air and steam surrounding the products from all sides makes a very intensive and effective preparation possible. The most important advantages are short roasting - or baking time, optimum taste - and colour development and reduced shrinkage during roasting.

The temperature can infinitely be set within the range of 68 -482°F.

In the combi steaming mode, the injection steam system is applied, which - in low and medium - is ideal for roasting and baking. The steam is produced through nozzle-injected water to be dispersed over the heating elements.

Variable humidity/steam pulsing

As certain types of products require varying steam quantities the combi steaming mode from BKI offers 3 different steam quantities. The 3 steps of steam pulsing are:

- Low, key (3): Steam impulse every 12 sec.
- Medium, key (5): Steam impulse every 5 sec.
- High, key (6): Steam impulse every second.

Operation

COMBI STEAMING, low and medium, is selected with keys (3 and 5). The pre-selected values for time, temperature etc. will appear. Correction of the time required is made by pressing key (11), adjustment with keys (10) and end with key (14). The temperature is corrected with (12) and adjustment with (10).

Pre-heating

Generally, the oven is pre-heated for approx. 5-10 min. in COMBI STEAMING mode.

Concerning use of a cold oven and a maximum loading of the oven compartment, please refer to the paragraph Pre-heating on page 4.

Application

COMBI STEAMING is applied for:

- Roasting
- Baking
- Glazing
- Gratinating
- Reheating

Which one of the 3 humidity/steam settings to choose will to a large extent depend on type of product, quality and extent of preparation. The best results are reached by experimenting with different products. By this, you can leave your individual mark on the preparation.

Below, you will therefore only find some general lines.

Low humidity/steampulsing:

- Combi baking of e.g. buns
- Combi steaming of e.g. poultry
- Reheating (e.g. Cook & Chill)
- Glazing
- Gratinating

Medium humidity/steam pulsing:

- Combi roasting of e.g. beef
- Reheating of chilled and deep-frozen dishes (e.g. Cook & Chill)
- Glazing
- Gratinating

High humidity/steam pulsing.

- Steaming of vegetables and potatoes
- Reheating (e.g. Cook & Chill)
- Baking e.g. liver paste etc.

COMBI STEAMING mode can be applied alone or in combination with other operating modes. Below, you will find examples of combination possibilities with other modes.

- **CONVENTION + COMBI STEAMING, low or medium + CONVENTION**
The preparation is started in CONVECTION to close the pores on the surface of the joint. You then change to COMBI STEAMING, low or medium, where the actual roasting process is accomplished with minimum shrinkage. Finally, the joint is browned in CONVECTION, if necessary with open air exhaust (8) to make the surface crisp.
- **COMBI STEAMING, high + COMBI STEAMING, low or medium + CONVENTION**
The working process is initiated with steaming which closes the pores. You then change to COMBI STEAMING, low or medium, where the actual roasting process is accomplished. Finally, the joint is browned - as above - in CONVECTION, if necessary with open air exhaust (8) to make the surface crisp.
- **COMBI STEAMING, high + CONVENTION + COMBI STEAMING, low or medium**
When preparing stuffing dishes as e.g. pates and pastes we recommend initiating the preparation gently with low temperature steaming. You then prepare the dish in CONVECTION and COMBI STEAMING by turns. By this, a crisp - and not too dry - surface is obtained.

Long-term roasting

The COMBI STEAMING mode can with advantage be applied for long-term roasting (see the paragraph of PROBE TEMPERATURE).

Advantages

- By an initial steaming of the joint with injection steam, the pores on the surface of the meat are closed immediately and hereby proteins and meat juice are prevented from seeping out of the meat.
- The special construction of the oven compartment yields optimum heat distribution and ensures hereby entirely uniform roasting and baking.
- During combi roasting by use of the injection steam system, shrinkage loss is reduced by up to 50%.
- The BKI Combi makes a variation in humidity/steam pulsing at 3 different levels - adjusted to the individual product - possible.
- As COMBI STEAMING adds humidity/steam during the roasting process the roasting result becomes juicier and the surface crisper.

Suggestions and tips

- The roasting time depends a lot on the quality and the size of the meat. The roasting time per cm. meat thickness is 10-12 minutes.
- Deep-frozen products require extra time of preparation and the oven has to be pre-heated to a higher temperature.
- The joints should be placed so that air can circulate freely around them. If the joints touch one another, the roasting time will be extended and the surfaces of contact will not brown.
- For very large joints, the use of containers is recommended and for small joints, pork chops, danish beef etc., we recommend use of grill trays.
- By the use of grill trays, the meat juice for gravy is intercepted upon placing a container at the bottom of the rack.
- Use of core temperature control for large joints and long-term roasting produces more exact control of the roasting process and security of a good and uniform quality of the end product.
- Reheating of deep-frozen ready-prepared dishes in COMBI STEAMING can be performed with medium humidity/steam pulsing and at a temperature of approx. 266°F. This reduces the reheating time considerably compared to reheating in CONVECTION mode. The products will have no incrustation on the surface as they are prepared with steam.

Combi Steaming (High) Mode

Combi steaming, high, is - like low and medium – a combination of hot air and steam. In combi steaming, high, 3, the injection steam system is applied, in which the steam is produced through nozzle-injected water to be dispersed over the heating elements every second. This steam contains sufficient energy for perfect steaming of e.g. potatoes, vegetables, fish etc.

When steaming in COMBI STEAMING, high, the temperature should normally be set at 221 °F

The temperature can infinitely be set within the range of 68 - 428°F

Operation

COMBI STEAMING, high, is selected by activating key (6). The pre-selected values of time, temperature etc. will appear. Correction of the time required is made with key (11), adjustment with keys (10) and end with (14). The temperature is corrected by touching key (12), then adjusted with (10). End by pressing (14).

Pre-heating

Generally, the oven is pre-heated for approx. 5-10 minutes in COMBI STEAMING mode.

Concerning pre-heating of a cold oven and maximum loading of oven compartment, please refer to the paragraph Pre-heating under the heading of GENERAL.

Application

The COMBI STEAMING, high, mode can be applied for:

- Steaming
- Blanching
- Roasting
- Pre-heating
- Baking of e.g. liver paste etc.

COMBI STEAMING, high, can be applied alone or in combination with other modes. Below, you will find examples of combination possibilities with other operating modes:

- **COMBISTEAMING, high + COMBI STEAMING, low or medium + CONVECTION**
The working process is initiated with steaming in COMBI STEAMING, high, which closes the pores. You then change to COMBI STEAMING, medium or low, where the actual roasting process is accomplished. Finally, the joint is browned - as above - in CONVECTION, if necessary with open air exhaust (8) to make the surface crisp. This preparation is very useful for e.g. roast pork with crackling.

Advantages

- Shorter steaming time compared to traditional steaming in a pot.
- The aroma and flavour additives of the products are retained to a far larger extent than steaming in a pot.
- The important vitamins and food substances are maintained in the product and in this way the unique taste of the food stuffs are preserved.
- The consistency/structure of the product is retained. At the same time, the vegetables in particular maintain an appetizing and fresh colour which altogether make the end products more delicious.
- Different products can be prepared simultaneously, e.g. fish and vegetables, as flavour additives are not transferred from one product to another during steaming.

Suggestions and tips

- During steaming in COMBISTEAMING, high, the temperature is to be set at 208°F.
- When steaming tender vegetables e.g. broccoli, cauliflower, beans etc., we recommend low fan speed. Please refer to table for preparation of vegetables.
- Always use perforated containers for steaming wherever possible.
- Deep-frozen vegetables taken directly from the freezer can be steamed without de-frosting. It is important that the vegetables are not frozen together in a block.
- Vegetables should only be steamed till they are crisp as they will continue to steam a period after being removed from the oven.

Reheating Mode



Rethermalize on High Speed only!

As standard, the BKI Combis are provided with a special reheating mode for ready- and partly prepared dishes - either as portions on plates or as courses on large dishes or in bowls.

To avoid drying of the products and condensed moisture on the plate/dish the reheating is performed with a combination of steam and hot air. Via the electronically controlled reheating process, a gentle and perfect preparation is obtained.

The temperature can infinitely be set within a range of 230 - 320°F.

Operation

REHEATING is selected by activating key (4) and the pre-selected values for time, temperature etc. will appear. Correction of the required time is made by pushing key (11), adjustment with keys (10) and end with key (14). The temperatures is adjusted by pressing key (12) and set with keys (10). End by pressing (14)

Pre-heating

Generally, the oven is pre-heated for approx. 5-10 minutes in REHEATING mode with the required oven compartment temperature. Concerning use of a cold oven and maximum loading of the oven compartment, please refer to the paragraph Pre-heating on page 4.

Application

The regenerating mode is applied for non-condensated and gentle reheating of pre-prepared courses on plates, platters or in a bowl.

For e.g. banquets, the different products can be prepared and dished up in good time before serving and thereby make the preparation and the serving quicker and more efficient without reducing the quality.

Advantages

- Reheating is very gentle and with electronic control of steam pulsing adapted to the specific demands which are made on reheating pre-prepared foodstuffs on plates. In this way, the end result will be non-condensated and there will be no drying of the products.
- Quick, efficient and flexible serving of hot meals - for large banquets also.
- This working method makes it possible to prepare and complete much of the meals in good time beforehand and reduce the working stress in the kitchen.

Suggestions and tips

Generally, concerning reheating it is difficult to state standard time and temperature for different products/courses. Many elements may influence the end result e.g.:

- Type of product and quality
- Preparation extent of the products
- Core temperature of the products
- Number of plates, bowls and dishes in the oven
- Loading height of plates, bowls and dishes

It is therefore important to make experiments with the individual products/courses and by this obtain a relevant empirical basis. In practice, measuring of the core temperature with a core temperature probe can be very useful. A correct serving temperature is of decisive importance to a good result.

- The reheating time will typically be within the range of 5-8 minutes and the temperature typically within the range of 266-284°F.
- The larger the products, the longer time.
- Uniform courses give the best result.
- Do not place plates or bowls too close. The air has to circulate freely around the products.
- By application of potatoes in courses, the best result is obtained with fried or roasted potatoes.



Rethermalize on High Speed only!

Proofing Mode

The BKL Combi is equipped with a specific proofing mode to ensure an optimum utilization of the professional baking qualities of the oven. This means that the oven can be used as an actual proofer.

The proofing operating mode is applied for rising of all sorts of dough products e.g. white buns, flutes/baguettes etc.

Proofing is a process changing the compact dough to a light and porous mass that is a condition to achieve evenly proofed bread with pores of equal size all over the bread. Correctly proofed bread gives the best baking result.

In the proofing mode from BKL, the electronics provide correctly adapted air humidity.

Depending on the type of bread, the optimum proofing temperature will be approx. 93-100°F. The electronic temperature control in the BKL Combi ensures that the set temperature is maintained very closely. This is especially important in PROOFING as the dough products are very sensitive to fluctuations of temperature.

Operation

PROOFING is selected by pressing key (7) and the pre-selected values for time, temperature etc. will then appear. Correction of the time required is made by pushing key (11), adjustment with keys (10) and end with key (14). Wishes for correction of temperature, if any, are made by touching key (12), adjustment with keys (10) and end with key (14).

Pre-heating

In PROOFING, the oven is pre-heated for approx. 5 minutes at the required proofing temperature.

PROOFING of dough bread can with advantage be undertaken as one of the first tasks in the day when the oven is relatively cold. If the oven has already been applied at high temperatures for e.g. roasting the heat is accumulated in the oven cabinet resulting in a extended time of cool in cooling down (93 -100°F).

Manual humidity/steam pulsing

Upon starting of proofing mode, the oven compartment will continuously be supplied with steam for the first seconds. Generally, at the beginning of the proofing process dough products are to be supplied with just as much extra humidity that they become "wet" in the surface. Alternatively, this can be controlled by looking at the lowest half of the oven glass where humidity is to be produced at the same time whereupon the correct amount of steam is present.

If no result is reached with the automatic extra steam addition at the beginning- as above-you can manually add extra steam/ humidity by touching key (18).

Advantages

- Contrary to traditional proofing in a tempered oven, the BKL Combi proofing mode provides the ideal conditions of correct rising of dough products through a carefully controlled temperature and air humidity.
- The baking result is considerably better and the bread becomes nice, easier to digest and with optimum development of taste.

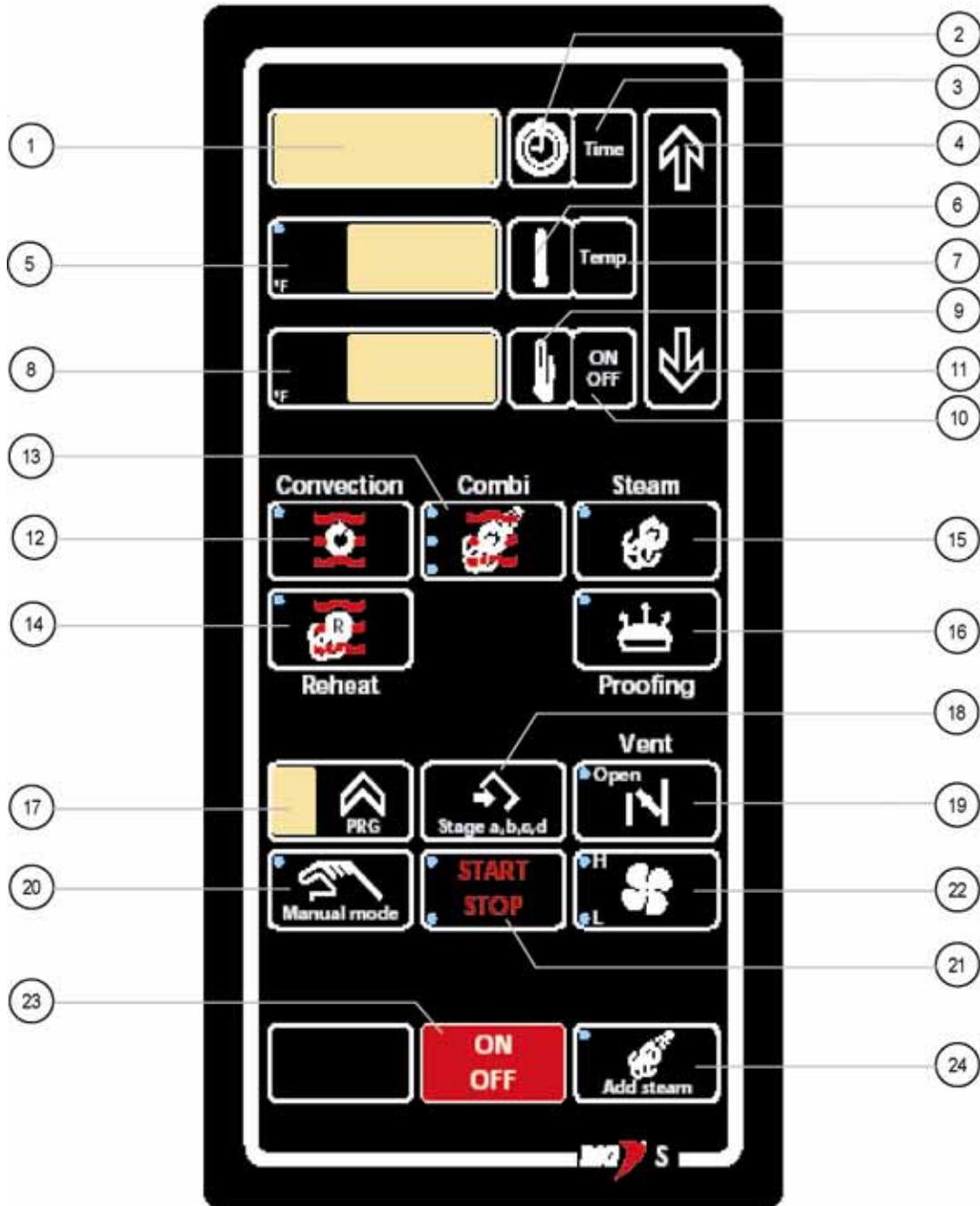
Suggestions and tips

- The dough should only be proofed approx. 80% before baking. If not, the dough will collapse a little at the beginning of the baking.
- The proofed dough is removed from the oven while this is pre-heated to baking temperature.
- The dough is not to be exposed to cold draught or other shock treatment. Covering may be recommended.
- Avoid opening the oven door during the actual proofing process as this may have a negative effect on temperature and air humidity.

S Controller Operation

Controls and Indicators

Refer to the figure and table below for an explanation of controls and indicators.



Item #	Description	Function
1	Time Display	The time remaining is displayed, while the program is running. If any operational defects occur, an error code appears in the time display.
2	Time Programming key	The time can be set from 1 min. to 23 hours and 59 min. When the time has run out, the steamer automatically stops and an alarm sounds. The pre-set time can also be changed while the program is running. To set the time, press key (2), press the up/down arrow keys (4, 11) until the desired time value is reached then press key (2) again to enable this value.
3	Time Clear key	Press this key to clear the current time value.
4	Up arrow key	Use this key in combination with keys 2, 6, and 9 to increase time and temperature values.
5	Chamber Temperature Display	This display shows the pre-set temperature. The control lamp in the left-hand corner lights while the heating elements are active. See (7) for checking of temperature in oven chamber.
6	Temperature Programming key	The temperature range depends on the operating mode chosen: HOT AIR 68 - 482 °F COMBI STEAMING 68 - 482 °F REGENERATING 230 - 320 °F PROVING 68 - 104 °F The temperature can be changed any time during the program. To set the temperature, press key (6), press the up/down arrow keys (4, 11) until the desired temperature value is reached then press key (6) again to enable this value.
7	Oven Temperature Check key	You can check the actual temperature any time by pressing (7). The actual temperature is shown as long as the key is pushed.
8	Core Temperature Display	When the core temperature is activated, this is indicated in the display. When the steamer is off, the pre-set core temperature is shown; when the steamer is on, the actual core temperature is shown.
9	Core Temperature Programming key	The core temperature can be set between 68 and 210°F. To set the temperature, press key (10), press key (9), press the up/down arrow keys (4, 11) until the desired temperature value is reached then press key (9) again to enable this value.
10	Core Temperature ON/OFF	Activate and deactivate the core temperature by pressing (10).
11	Down arrow key	Use this key in combination with keys 2, 6, and 9 to decrease time and temperature values.
12	Convection operating mode key	Activate the Convection operating mode by pressing (12). The oven is automatically set to the pre-selected value. For changing the pre-setting, see (18). Activate the mode by pressing (21).
13	Combi-Steaming (low, medium and high) operating mode key	This key allows you to choose 1 of 3 Combi-Steaming operating modes. Press key 13 until the desired mode is reached. One illuminated LED indicates the low mode selection. Two illuminated LEDs indicate medium mode selection. Three illuminated LEDs indicate high mode selection. Activate the mode by pressing (21).
14	Reheat mode key	Activate the Reheat operating mode by pressing (14). The oven is automatically set to the pre-selected value. For changing the pre-setting, see (18). Activate the mode by pressing (21).
15	Steam mode key	Activate the Steam operating mode by pressing (15). The oven is automatically set to the pre-selected value. For changing the pre-setting, see (18). Activate the mode by pressing (21).

Item #	Description	Function
16	Proofing mode key	Activate the Proofing operating mode by pressing (16). The oven is automatically set to the pre-selected value. For changing the pre-setting, see (18). Activate the mode by pressing (21).
17	Programs keys	Besides the operating modes, the oven contains a memory function that offers the possibility of entering up to 10 programs, each holding up to 4 process steps. To change between the 10 programs, press key (17) until the desired program number appears. Activate the program by pressing (21).
18	Storage key	This key stores operating mode changes and program changes.
19	Vent key	<p>Open the exhaust by pressing key (19). Control lamp on = open / control lamp off = closed.</p> <p>The exhaust can be opened and closed any time during the cooking process.</p> <p>The exhaust is used to remove humidity and steam from the oven chamber leaving a dry heat which can be used for the browning and grilling of roasts, omelet's, etc.</p> <p>The exhaust is also used to give a crispy surface to baked products. We recommend that dough products be baked with the exhaust open during the last part of the baking process.</p>
20	Manual key	<p>This key indicates manual operation.</p> <p>The control lamp in key (20) lights when the steamer is set to manual operation. Key (20) is also used for alarm/door opening in the memory function.</p>
21	Start/Stop key	This key starts and stops Operating modes and Programs.
22	Fan key	This key allows you to activate/deactivate the fan and choose the fans speed. Press key (22) until the desired fan mode is reached. The upper LED illuminates to indicate high-speed selection. The lower LED illuminates to indicate low-speed selection.
23	Oven ON/OFF key	<p>Switch the unit on and off by pressing key (23). Before the unit starts, all functions are automatically tested, and, consequently, all displays and control lamps light up for approx. 2 seconds.</p> <p>The unit always starts in the manual and Convection modes.</p>
24	Humidity Pulsing key	<p>By activating key (24), humidity/steam is added to the oven chamber. The humidity pulsing continues as long as the key is activated.</p> <p>Manual humidity pulsing is used to add steam to the oven chamber at the beginning of a program. Humidity pulsing can be used in all operating modes.</p> <p>When baking, for instance, dough products in the Convection mode, we recommend that you add humidity during the first 10 or 15 seconds of the baking process to ensure that the products have a crisp and golden surface.</p> <p>When roasting, manual steam injection is a very efficient way of closing the pores of the meat thus ensuring that the meat retains its moisture and stays juicy.</p>

How to Operate

Start-Up

The oven always starts in the manual and CONVECTION mode automatically selected.

Setting of time, temperature in oven chamber and core temperature

1. Press the key of the desired function (12 – 16).
2. Press the key of time (2), of oven temperature (6) or of core temperature (9). The figure flashes.
3. Set the values with the arrow keys (4) (11).
 - One push on the key = one unit
 - Continuous pushing = quick setting
4. When the value has been set, the time, for instance, flashes for a few seconds, after which the setting is automatically 'locked'.

BUT: By pressing time again, the setting is locked at once.

For simultaneous setting of temperature (6), press the symbol while the time is flashing. The time is 'locked' and the temperature flashes. Use the arrow keys and repeat the procedure.

The same applies to the setting of core temperature (9); however, this function should first be activated with the ON/OFF key.

Changing pre-selected settings

1. Set the steamer at the desired operating mode (12) - (16).
2. Adjust the settings for time (2), oven chamber temperature (6) and perhaps core temperature (9). Furthermore, the fan speed (22) can be set and the exhaust opened or closed (19).
3. Store the new setting by pressing key (18). Press the key until a short signal sounds (approx. 5 sec.).

Programming

Creating a program

1. First, press key (17) until the desired program number appears in the display.
2. Then press (18) and A appears.
3. Choose operating mode, for instance Convection or STEAM.
4. Set the time, temperature and perhaps the core temperature.
5. To continue to the next step, press key (18) again. B appears and you choose the operating mode and set the time, temperature and perhaps the core temperature.
6. To continue to C, press key (18) again, and repeat the procedure.
7. When the program is complete wait till the program number appears flashing in the small display (17) and store the program by pressing (18) for approx. 5 seconds. You will hear a beep, and the flashing stops. Now the program has been "locked" and the only thing that remains to be done is starting the oven by pressing key (21). When the program is "locked", the small dot next to the number will indicate, by flashing, how many steps have been entered.

Deleting a program

Delete the program by pressing key (17) until the program number to be deleted appears. Press key (18) until the last step is shown - C, for instance. Press the key showing which operating mode is in use at the moment (steaming, combi steaming or hot air). The display goes out for one or two seconds. Then press key (18) to go to B and repeat the procedure. Then go to A.

Note: You should delete programs backwards

Timer function

To activate the timer, press in a vacant step. If an operating mode has been entered in the step, you can delete it by pressing the key of this operating mode for one second. Set the time as usual. Thus, only the time will be activated in this step – not the heat or the fan. This facility will typically be used in step A when a postponed program start is required.

Alarm signal between steps

If the oven is required to give out a signal when a step is completed, press key (20) at the desired step. The control lamp lights. An alarm signal is heard, and the steamer stops. This is very useful if different types of products are prepared in the oven at the same time and some are ready before others. This can also be used as a preheating step before the products are placed in the oven. The oven automatically continues to the next step when the door is closed; it is therefore not necessary to press key (21).

Return to manual operation

To return to manual operation, press (20) when the program number is shown in the display.

Using the Temperature Probe**Operation**

1. Select the desired operating mode and set the time/manual time control, temperature, etc. When set to manual time control, the steamer will automatically stop when the desired core temperature is reached. If the time has been set at the same time as the core temperature, the steamer will stop at whichever setting is reached first – time or core temperature.
2. Insert the core temperature probe in the outlet on the front panel.
3. Place the point of the core temperature probe in the middle of the thickest part of the product. Close the door, the sealing will fit tightly round the wire.
4. Switch on the core temperature control by pressing the ON/OFF key (10). By pressing key (9), the display will flash and the desired core temperature can be set with the arrows (4) and (11). To accept the core temperature setting, press key (9) again. The steamer stops automatically when the desired core temperature is reached.

Application

It is advantageous to use core temperature control for the following modes of preparation:

- Roasting, incl. long-term roasting
- Regenerating/reheating
- Steaming
- Forced steaming
- Preparation of sous-vide/vacuum-packed products

Advantages of core temperature control

- As a special feature, the core temperature control of unit contains a keeping-warm function. When the core temperature is reached, the heating elements are automatically disconnected. The keeping-warm function will then maintain the core temperature in the product by activating the heating elements when the core temperature drops to 35.6 °F below the core temperature set. When the original core temperature is restored, the heating elements are disconnected. In this way, the desired core temperature can be maintained as long as needed.
- Optimum core temperature in the products
- Uniform products every time – even for different sizes of product.
- Shrinkage is considerably reduced as every degree below the optimum core temperature means that the product loses weight.
- Reduced energy consumption.

Long-term roasting

Long-term roasting in a BKI Combi unit is a particularly gentle roasting process during which the roasting temperatures are often reduced by more than 50% as compared to normal roasting. Because of the lower temperature and prolonged roasting time, the meat becomes particularly tender and juicy, and shrinkage is considerably reduced. During long-term roasting – below 212 °F, for instance – it is often unnecessary to add steam/humidity, as evaporation is already reduced to a minimum.

Long-term roasting / core temperature control

To be able to control/check and subsequently maintain the desired core temperature, it is of great advantage to use core temperature control during long-term roasting. This will produce by far the best result every time.

Convection Mode

Use

The Convection operating mode can be used for:

- Roasting
- Grilling
- Baking
- Gratinating
- Roasting of breaded products

Advantages of circulating hot air:

- Shorter roasting time
- Lower temperature
- Even temperature in the entire oven chamber

The circulating hot air gives a faster and more efficient supply of heat and reduces the roasting/baking time considerably as compared to traditional roasting and baking ovens. The larger the roast, the lower the temperature.) If you apply these two rules of The longer the cooking time, the lesser the shrinkage) thumb, the roast becomes juicier.

In general, all individual products (pieces of chicken, steak, etc.) require preheating at a higher temperature and roasting (baking) with the exhaust open.

Direct exhaust (8)

The direct exhaust removes surplus humidity from the oven chamber and gives crispier products. Open the exhaust during the second half of the baking/roasting time.

2 fan speeds (9)

The steamer has two different fan speeds. Usually, high fan speed is used for maximum circulation of air. Low fan speed is used to minimize the effect of the air during the proving and baking of light products.

Combi-Steaming Mode

Use

COMBI STEAMING is used for:

- Roasting
- Steaming
- Baking
- Glazing
- Gratinating
- Reheating (for instance, 'cook & chill')

Which humidity to choose depends very much on the type, quality and level of preparation of the product. The best results are achieved by trial and error. This allows you to leave your mark on the preparation. For the most common tasks, for instance baking of liver paste and roasting of large roasts, haunches, fillets and saddles, use low or middle humidity pulsing. For braising, use high humidity pulsing.

Economy steaming program

High humidity pulsing is very suitable as an economy-steaming program for the steaming of small portions of, for instance, vegetables and potatoes requiring considerably less energy than STEAMING. Use a temperature of 208°F and high humidity pulsing.

Advantages of COMBI STEAMING

- If the roast is steamed with injection steam at the start, the pores will close immediately preventing the meat juice from disappearing.
- In COMBI STEAMING, the shrinkage is reduced by up to 30 – 35%.
- Ideal for long-term roasting
- Deep-frozen, ready-prepared dishes can be reheated in COMBI STEAMING at approx. 266 °F using medium humidity/steam pulsing. This reduces the heating time considerably as compared to reheating in the HOT AIR mode. No crust forms on the products, as the preparation is done with steam.

Reheating Mode

Use

The reheating/regenerating program can be used for gentle reheating of pre-prepared food on plates, dishes or in bowls, without condensed water forming on the plate. At banquets, for instance, the various products can be prepared and arranged well in advance of the serving without compromising the quality.

Advantages

- Quick, efficient and flexible serving of hot courses – also at large banquets.
- By using this working method, the workload in the kitchen will be reduced.

Many factors may influence the end result, for instance:-

- The type and quality of the products
- The number of plates, bowls, etc. in the oven
- The height of the food on the plates and dishes and in the bowls

It is therefore important that you proceed by trial and error with each individual product/dish. In practice, measuring the core temperature with the core temperature probe can be a great help.

- The reheating time will typically be between 5 and 8 minutes and the temperature between 266 and 284 °F.
- The larger the products, the longer the reheating time.
- Similar courses on all plates produce the best result.
- Do not place plates and bowls too close to each other in the oven. There should be some space between the products to allow the air to circulate freely around the products.
- It is best to reheat containers filled with for instance gravy, porridge or rice, at high humidity and 248 °F.

Steam Mode

Use

This Steam program provides moist heat at a temperature of 212° F. It can be used for:

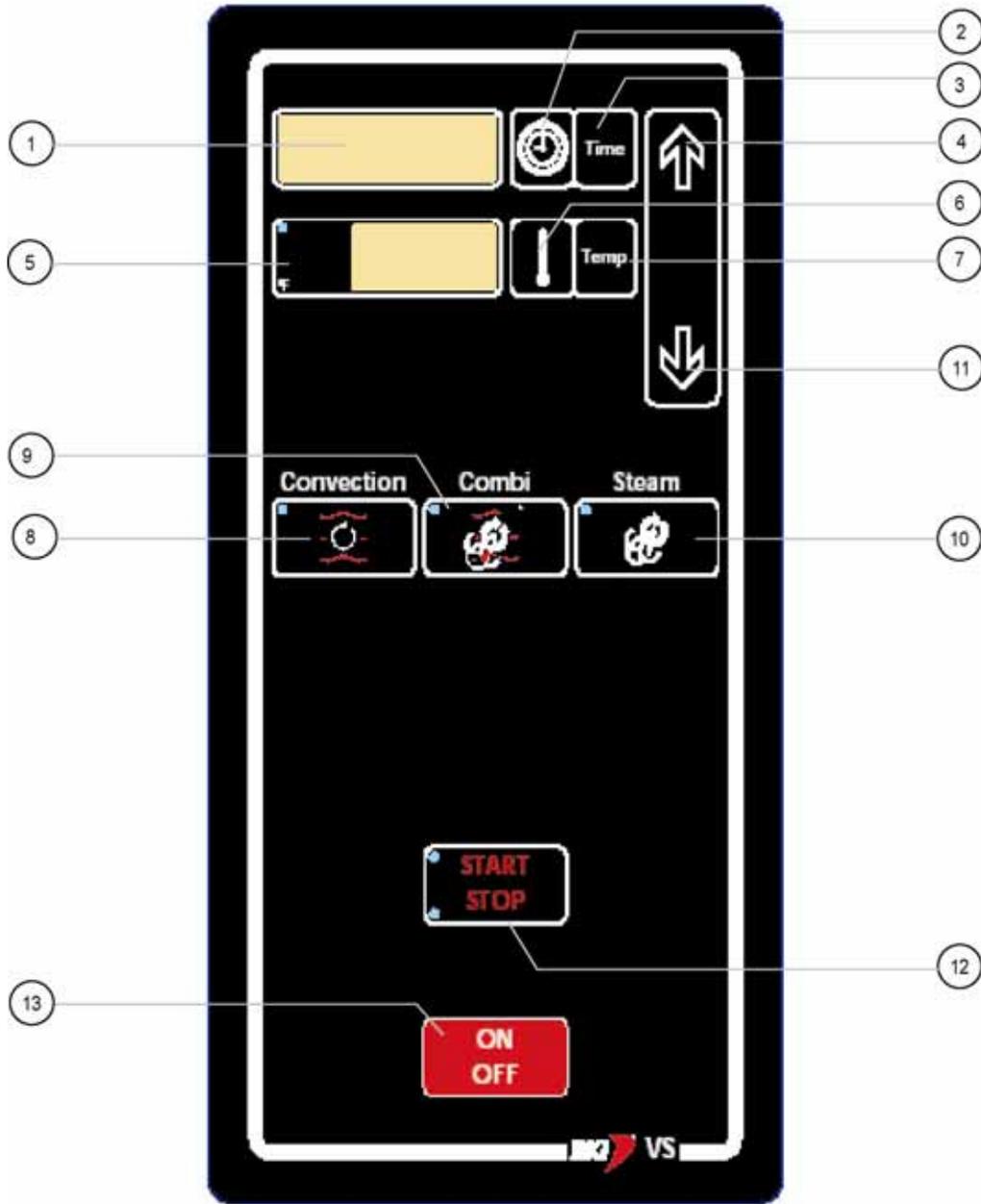
- Steaming
- Stewing
- Blanching
- Poaching
- Simmering
- Soaking
- Thawing

Advantages

- Extremely short preheating time
- Excellent food consistency
- Conserves nutrients, color
- No added fats or oils
- Cook different products at same time with no taste transfer
- Can be partially unloaded for serving convenience
- No need to boil water in pots

VS Controller Operation

Controls and Indicators



Item #	Description	Function
1	Time Display	The time remaining is displayed, while the program is running. If any operational defects occur, an error code appears in the time display.
2	Time Programming key	The time can be set from 1 min. to 23 hours and 59 min. When the time has run out, the steamer automatically stops and an alarm sounds. The pre-set time can also be changed while the program is running. To set the time, press key (2), press the up/down arrow keys (4, 11) until the desired time value is reached then press key (2) again to enable this value.
3	Time Clear key	Press this key to clear the current time value.

Item #	Description	Function
4	Up arrow key	Use this key in combination with keys 2 and 6 to increase time and temperature values.
5	Chamber Temperature Display	This display shows the pre-set temperature. The control lamp in the left-hand corner lights while the heating elements are active. See (7) for checking of temperature in oven chamber.
6	Temperature Programming key	The temperature can be changed any time during the program. To set the temperature, press key (6), press the up/down arrow keys (4, 11) until the desired temperature value is reached then press key (6) again to enable this value.
7	Oven Temperature Check key	You can check the actual temperature any time by pressing (7). The actual temperature is shown as long as the key is pushed.
8	Convection operating mode key	Choose the Convection operating mode by pressing (8). The oven is automatically set to the pre-selected value. Activate the mode by pressing (12).
9	Combi-Steam operating mode key	This key allows you to choose the Combi-Steam operating mode. Press key 9 to select the mode. Activate the mode by pressing (12).
10	Steam mode key	Choose the Steam operating mode by pressing (10). The oven is automatically set to the pre-selected value. Activate the mode by pressing (12).
11	Down arrow key	Use this key in combination with keys 2 and 6 to decrease time and temperature values.
12	Start/Stop key	This key starts and stops Operating modes.
13	Oven ON/OFF key	Switch the unit on and off by pressing key (13). Before the unit starts, all functions are automatically tested, and, consequently, all displays and control lamps light up for approx. 2 seconds. The unit always starts in the Convection mode.

How to Operate

Start-Up

The oven always starts in the CONVECTION mode automatically selected.

Setting of time, temperature in oven chamber

1. Press the key of the desired function (8-10).
2. Press the key of time (2), of oven temperature (6). The figure flashes.
3. Set the values with the arrow keys (4) (11).
 - One push on the key = one unit
 - Continuous pushing = quick setting
4. When the value has been set, the time, for instance, flashes for a few seconds, after which the setting is automatically 'locked'.

BUT: By pressing time again, the setting is locked at once.

For simultaneous setting of temperature (6), press the symbol while the time is flashing. The time is 'locked' and the temperature flashes. Use the arrow keys and repeat the procedure.

Convection Mode

Use

The Convection operating mode can be used for:

- Roasting
- Grilling
- Baking
- Gratinating
- Roasting of breaded products

Advantages of circulating hot air:

- Shorter roasting time
- Lower temperature
- Even temperature in the entire oven chamber

The circulating hot air gives a faster and more efficient supply of heat and reduces the roasting/baking time considerably as compared to traditional roasting and baking ovens. The larger the roast, the lower the temperature.) If you apply these two rules of The longer the cooking time, the lesser the shrinkage) thumb, the roast becomes juicier.

In general, all individual products (pieces of chicken, steak, etc.) require preheating at a higher temperature and roasting (baking) with the exhaust open.

Combi-Steaming Mode

Use

COMBI STEAMING is used for:

- Roasting
- Steaming
- Baking
- Glazing
- Gratinating
- Reheating (for instance, 'cook & chill')

Which humidity to choose depends very much on the type, quality and level of preparation of the product. The best results are achieved by trial and error. This allows you to leave your mark on the preparation. For the most common tasks, for instance baking of liver paste and roasting of large roasts, haunches, fillets and saddles, use low or middle humidity pulsing. For braising, use high humidity pulsing.

Economy steaming program

High humidity pulsing is very suitable as an economy-steaming program for the steaming of small portions of, for instance, vegetables and potatoes requiring considerably less energy than STEAMING. Use a temperature of 208°F and high humidity pulsing.

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Steam Mode

Use

This Steam program provides moist heat at a temperature of 212° F. It can be used for:

- Steaming
- Stewing
- Blanching
- Poaching
- Simmering
- Soaking
- Thawing

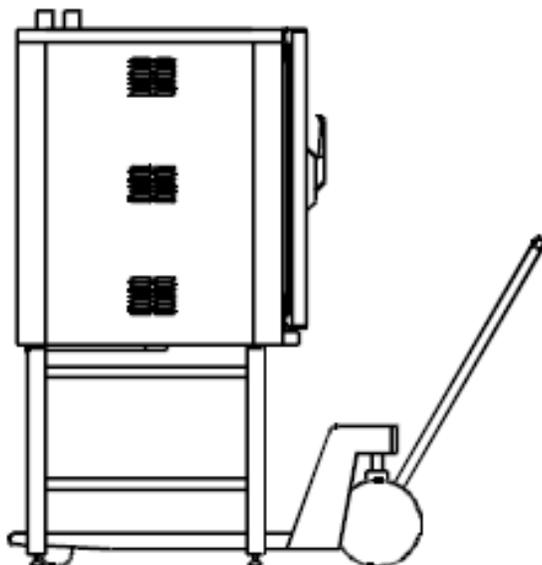
Advantages

- Extremely short preheating time
- Excellent food consistency
- Conserves nutrients, color
- No added fats or oils
- Cook different products at same time with no taste transfer
- Can be partially unloaded for serving convenience
- No need to boil water in pots

Installation

Unpacking the Oven

The oven is best handled while in its wrapping. Use a lifting trolley whenever possible. Introduce the lifting trolley under the lower cross tube of the stand and place a couple of wooden blocks between the cross tube and the lifting trolley.



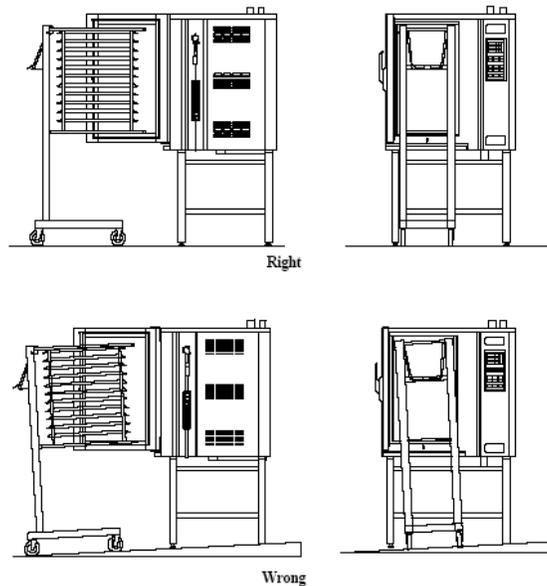
To achieve the best possible balance, introduce the lifting trolley from the front of the oven or from the motor side. Note that the oven can be lifted off the stand. Remove the original packaging from the oven. Do not remove the foil that covers the surfaces until the oven has been installed, as the surfaces are vulnerable to sharp objects such as tools, once the foil has been removed. Remove all protecting parts that secure the racks in the oven compartment.

NOTICE

The packing must be destroyed in accordance with the rules and regulations covering the disposal of rubbish in your country. Information on the packaging material can be obtained from our technical department.

Positioning of oven

To ensure that the oven functions correctly when installed, it should be placed upright and level (horizontally). This is measured at the front edge and side edge of the roof, and adjustment is made by means of the adjusting screws on the stand or on the legs of table models. The height of the oven can also be adjusted to fit the trolley for rack.



The oven should be placed at least 2 inches from the rear wall and the distance between the sides of the oven and the nearest wall or piece of furniture, etc. should be at least 4 inches. This is to ensure the necessary flow of cooling air to the oven. Strong sources of heat such as frying pans, fryers, etc. should not be placed near the oven, especially not on its right side; otherwise the warranty may cease to apply.

Water Connection

As standard, the BKI Combi has one water connection. To facilitate cleaning and service, the oven should be connected with an approved flexible 1/2" hose and the permanent installations should be fitted with a stop-tap for the water supply to the oven.

Before connecting the oven to water, flush the water tubes thoroughly. Then fit the dirt filter and connect the oven.

Water Requirements

Hardness:	max. 3 dH
Conductivity:	min. 75 microsiemens
Water pressure	min. 1.5 bar (150 kP), max.6.0 bar (600 kP).
Water pressure Combi Clean:	min. 2.5 bar dynamic pressure (CombiClean activated)
Water temperature:	max. 20°C
Chloride concentration:	max. 100 mg/litre

If the feeder is connected to the water distribution system with a flexible hose, this hose should be VA approved.

CAUTION

A reversed osmosis plant must not be connected to ovens with a steam generator as this may cause problems with respect to the registration of the water level in the steam generator.

CAUTION

An authorized plumber in accordance with existing rules and regulations **MUST** carry out the water connection.

NOTICE

Clogged up water filters and dirt in solenoid valves are not covered by the warranty.

Alternatively, the oven can be supplied with two water connections (optional equipment):

1. for raw water for condensation nozzle (cold water)
2. for nozzle in oven cabinet and steam generator. Must meet the requirements made on water for drain connection, however, the water temperature must not exceed 140°F.

Exhaust

The BKI Combis are equipped with an open/direct exhaust system that removes surplus humidity from the oven compartment. The exhaust system has electrically or manually operated air exhaust.

The vent pipe can be connected to a ventilating system. In this case, a special extraction funnel is fitted to avoid suction directly from the oven compartment. This extraction funnel can be ordered from BKI.

If an extraction hood is installed in the ceiling above the oven, it should project 50 cm over the front of the oven. The suction effect should be 400 - 800m³/h.

The ventilation motor can be controlled directly from the oven. This means that the ventilation starts when a program is started and runs for 5 minutes after the program is finished.

Electrical Connection

An authorized electrician in accordance with existing rules and regulations must carry out the electrical connection.

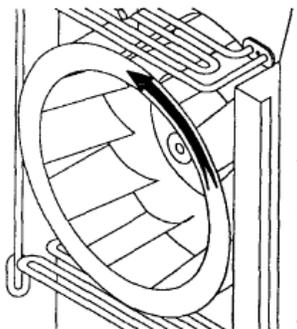
There is a wiring diagram in the motor room.

Locate an **approved plug outlet** or a contact breaker close to the oven so that the oven can be disconnected during repair and installation. The breaker must be able to cut off all poles with a length of break of at least 3 mm. To facilitate cleaning and service, use an approved flexible connection cable, type H05RN-F.

The oven may leak 1 mA current per kW.

CAUTION

After connection, check that the fan rotates in the right direction, i.e. COUNTER-CLOCKWISE.



If the fan rotates in the wrong direction, the oven does not operate correctly, which may cause damage to the oven.

NOTICE

The warranty does not cover incorrect connection.

Knock out openings for supply connection

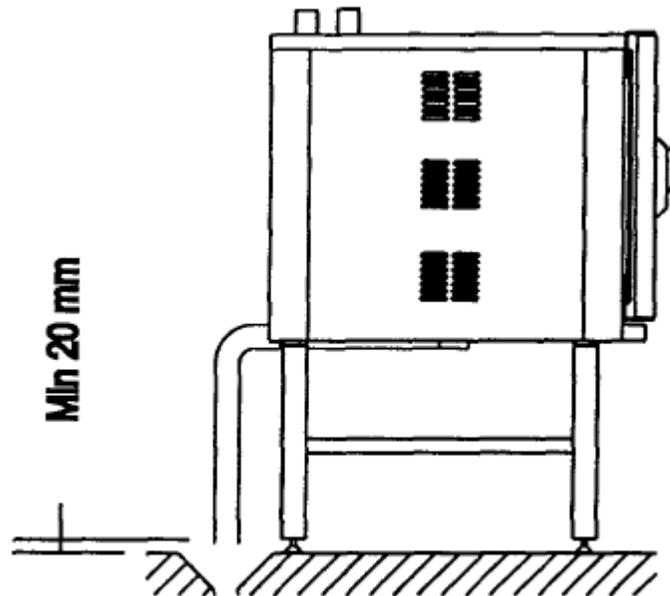
Open type	Thread Size	Amps	Cable	Size / opening
2.10 - 2.14	1 1/2	70	2 AWG	50.0 mm
1.16	1 1/4	56	4 AWG	43.7 mm
1.10	1	42	6 AWG	34.5 mm
1.06	3/4	22	10 AWG	27.8 mm

Drain Connection

As standard, The BKI Combi is equipped with a drain system that removes surplus water from the oven compartment. Water may occur when steam is used in the oven and when the oven is cleaned.

CAUTION

An authorized plumber must carry out connection. The oven **must** be connected to an open drain and the connection **must** end at least 20 mm above the outlet grating or funnel.



The drain must never end directly under the oven. The drain tube must be of stainless steel, have a diameter of at least 38 mm and a fall of at least 3° or 5%.

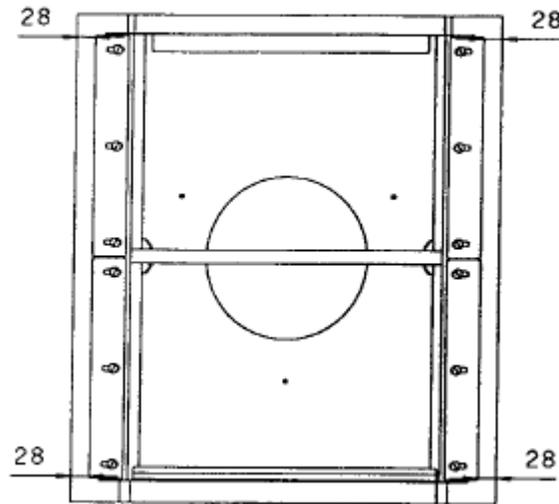
CAUTION

Never connect directly to a water trap so as to avoid obnoxious smells, bacteria and possibly low pressure, suction or overflow.

Adjusting Flaps

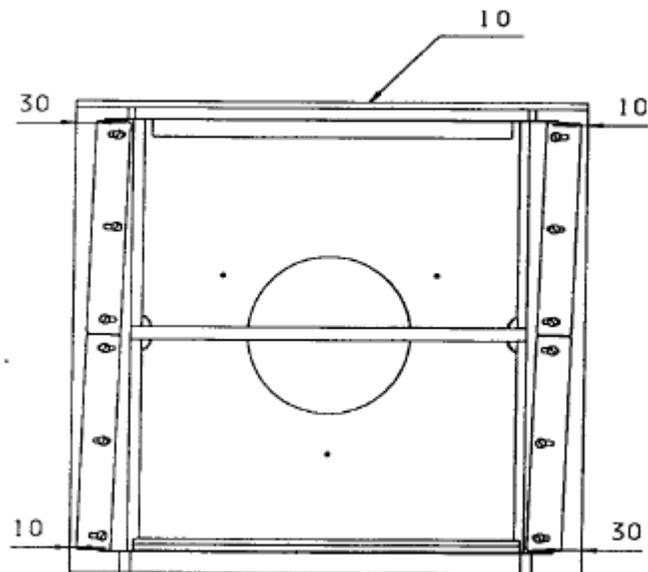
The flaps can be adjusted individually to achieve a uniform baking result. Experience shows that the following basic setting produces the best result in the vast majority of cases Air gap setting in mm:

Type 1.06 and 1.10



Type 2.10

For types 2.10 we recommend that a 10 mm rail be fitted at the top (part no. O 11.588).



Setting System Options for CVC Controller

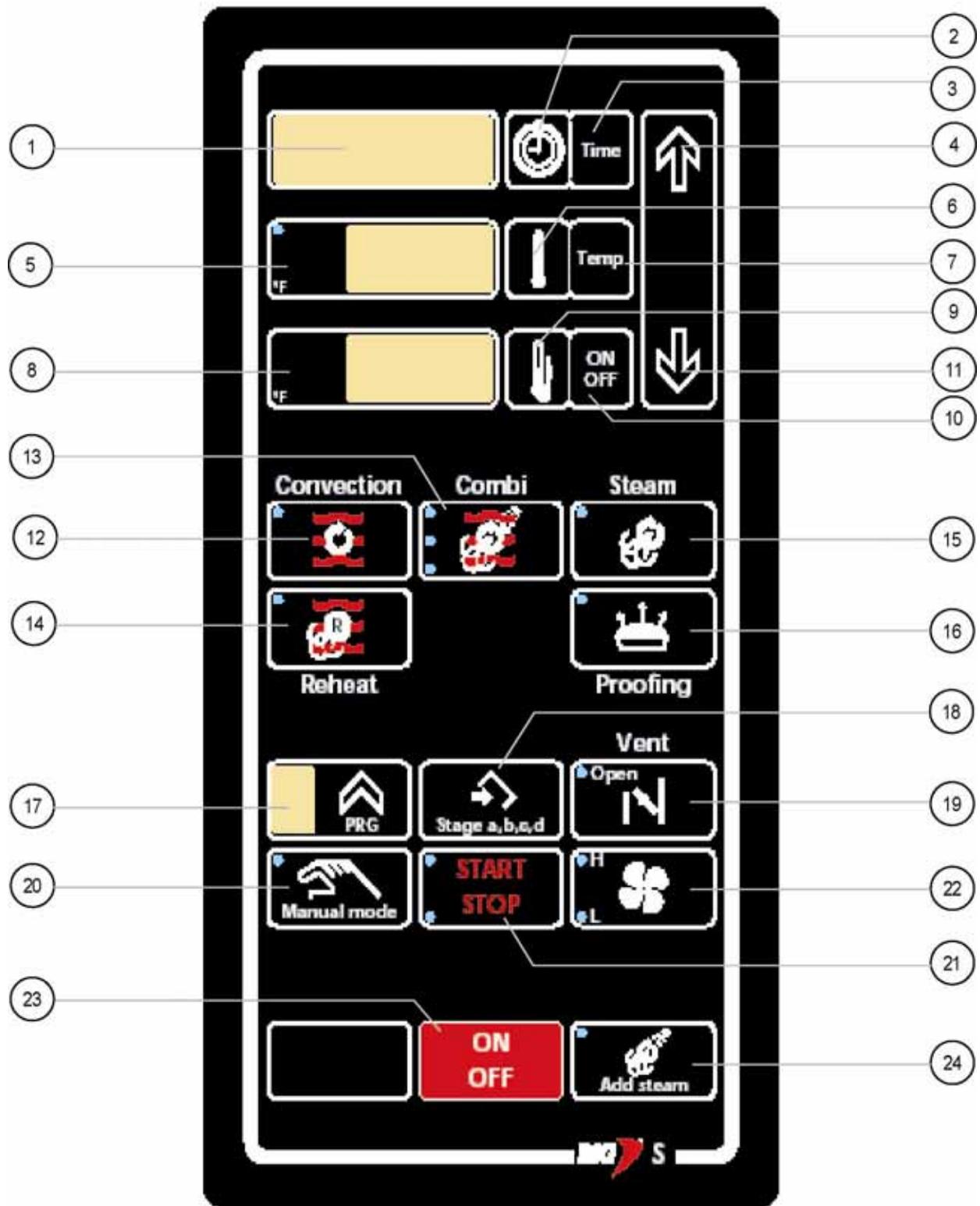
System options are set through Engineering menus. To access these menus press and hold the F1 key while pressing the START/STOP key. A list of menu commands will appear in the display. To see additional menu commands press F1. To return to the main display, press the ENTER/STEP key. To select a command, access it's menu then press the numeric key associated with the command. Upon selecting a command, its options will be displayed. To select/activate and navigate the command options use the keys specified on the display. Return to the Engineering menu by pressing F1. The following table lists the command options that need to be set to enable proper operation of the BKI Combi.

CVC Controller System Settings

Menu Command	Option Settings
1 = TEST FUNCTION	Only used to troubleshoot oven.
2 = ENCODE OVEN TYPE	2 = Autorestart
3 = SELECT LANGUAGE	4 = GB
2 = Adjust PT100 sensors	The values are factory set by the manufacturer. Consult manufacturer before adjusting.
3 = Set Restart Time	Leave as is
1 = Oven Light ON/OFF	1 = Oven light 5min.
2 = Phase Test	OFF
3 = Transfer all menus	Enter = OK
1 = Setup	Oven type (2 = CVC) Temperature mode (2 = Fahrenheit) Keyboard (2 = BKI) Special mode (1 = Normal) Fan (1= Single direction) Language (4 = GB)
2 = Motor Alarm	OFF
3 = Cleaning mode	1 = Normal 2 step
1 = Access Code	OFF
2 = Warm up in step 1	Normal 6 step
3 = Condensation ON/OFF	Leave as is
4 = Show empty tray	Leave as is

Setting System Options for S Controller

Refer to the figure below as necessary while using this section.



Start-Up Window

When the computer is switched on, it checks all control lamps and segments to make sure that they work. Figures appear in the displays:

- The time display shows how U1 is set.
- The temperature display shows the current EPROM version.
- The display for core temperature shows whether the computer includes CombiClean (0 = without CC, 1 = with CC).

Accessing the Set-Up Mode

Select the set-up mode by pressing key (4) and key (2) simultaneously for 5 sec. U1 appears in the time display. Shift to the next setting (max. U5) by pressing key (2). The set-up mode can be interrupted/closed any time by pressing key (18).

U1: Selecting Automatic Restart, Oven Model And Voltage

Automatic restart

1 or 0 is shown in the time display (1).

0 = The oven will not restart a program that has been interrupted because of power cut.

1 = The oven will restart a program that has been interrupted because of power cut.

Shift by pressing key (3).

Oven model

A digit between 1 and 6 is shown in the program display (17).

1 = CM, 2 = CV, 3 = BM, 4 = ST, 5=S, 6=VS

Shift by pressing (17).

Voltage

1 or 2 is shown in the core temperature display (8).

1 = Voltage with 0

2 = Voltage without 0

Shift by pressing the core temperature key (9).

U2: Selecting Interior Light

When the program display (17) shows 5, the interior light is automatically switched off after 5 min.

When the program display (17) shows 0, the interior light will shine continuously.

When the program display (17) shows 6, the interior light is automatically switched off after 5 min. In addition, the light in the oven door is switched off after 3 sec. when the door is opened.

When the program display (17) shows 1, the oven light will shine continuously. In addition, the light in the oven door is turned off after 3 sec. when the door is opened.

Settings 1 and 6 are very useful on ovens with oven light in the door in order to avoid blinding while the door is open.

Shift by pressing (17).

U3: Adjusting Temperature Sensors (Pt-100)

The digit of the sensor in use is shown in the program display (17).

1 = oven chamber, 2 = probe, 3 = steam generator, 4 = condensation

Change the digit by pressing the program key (17).

The current temperature is shown in the temperature display (5).

The set point is shown in the core temperature display (8)

Standard set point = 100, which can be adjusted downwards to 80 and upwards to 120 with the arrow keys.

Each temperature sensor can be adjusted/corrected by approx. +/-10°C, i.e. the temperature changes in steps of 0.5°C.

The core temperature display holds only 2 digits, consequently 80 = 80, 00 = 100 and 20 = 120.

U4: Selecting Pre-Set/Current Temperature, CombiClean, Additional Detergent, Showdisplay And Printer

Pre-set/current temperature

1 or 0 is shown in the time display (1).

0 = Pre-set temperature (standard)

1 = Current temperature during operation

Shift by pressing (3).

CombiClean

The oven size is shown in the temperature display (5).

You change between oven sizes by pressing the temperature key (7).

Additional Detergent

If the oven chamber is not properly clean when the cleaning program is completed, it is possible to add additional detergent.

Press the key for manual humidity (24) until the control lamp is turned on. "Additional detergent" is now active.

Note that the programs are prolonged by 5 minutes + the detergent phase.

If the control lamp is off, this function is off.

Demo mode

It is possible to select a demo mode in which the oven rinses only.

Press the exhaust key (19) until the control lamp is turned on.

Showdisplay

Press (17) until the display shows 1.

The control lamps in (23) and (22) flash to indicate that the keys are active.

By pressing (23), you reserve memory in the showdisplay for the 16 programs.

With (22), you enter a start text for each program. However, this is usually not necessary, as the showdisplay is ready for use on delivery.

If you have deleted or ruined a program, press (9) and select the program you have just ruined and then to enter the start text again.

Note that there should be at least 20 characters in the program on the showdisplay in order for the start text to be transferred.

Note! When the showdisplay is active, the printer cannot be used.

Printer

Press (17), until the display shows 0. The printer output is thus activated.

Press (18) to enter the start-up menu.

Press (20) for 5 seconds. The time display now shows PR*nt, "Yes" in the temperature display and "No" in the display for core temperature probe.

Press (6).

The printer output is now activated.

To switch off the printer output, press (9)

Note! When the showdisplay is active, the printer cannot be used.

U5: Selecting Phase Sequence Test And Reversing

Phase sequence test

Phase sequence test is usually always active.

This alarm can be deactivated in the case of installation for demonstration purposes in order to avoid error code 15.

The temperature display shows either ON or OFF. ON and OFF are selected by pressing (6).

Reversing

In the reversing function, it is possible to set the time before reversing as well as the time of the interval.

Change between 0, 1 and 2 by pressing (17).

0 = "Reversing" is switched off and the time is not shown (standard)

1 = "Reversing" is switched on and error code 5 "Fan too hot" works reversely because the thermo-switch of the motor used is open and closes when the temperature is too high.

2 = "Reversing" is switched off and error code 5 "Fan too hot" works as usual, i.e. the thermo-switch is closed and opens when the temperature is too high.

The time during which the fan is running is shown in the time display (1) and is set between 10 and 99 with the arrow keys (4, 11). Each step corresponds to 2 seconds, it is therefore possible to set the time of the intervals between 20 and 198 seconds (standard is 50 = 100 seconds). The time of the interval is shown in the core temperature display (8) and is set with the core temperature key (9) and the core temperature ON/OFF key (10).

The time can be set between 1 and 30 seconds (standard = 10 seconds).

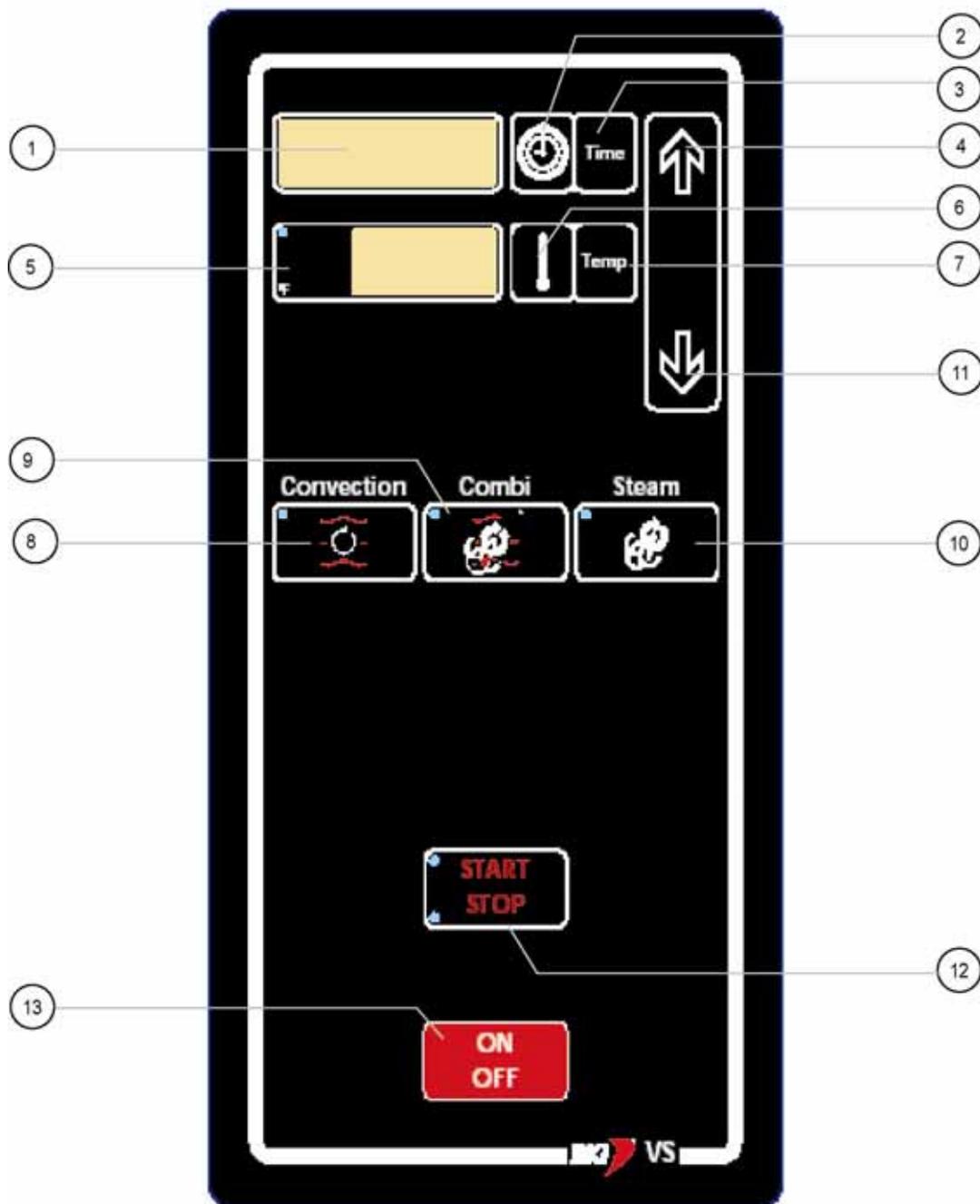
S Controller System Settings

Set-Up Mode	Settings
U1	Automatic restart (1) Voltage (1) Oven Model (5)
U2	Interior light (5)
U3	Leave as is
U4	Pre-set/current temperature (1) CombiClean (select your oven size)* Additional Detergent (press manual humidity key until lamp turns on)* Printer (Not applicable)
U5	Phase Sequence Test (OFF) Reversing (2)

* - Only with CombiClean models.

Setting System Options for VS Controller

Refer to the figure below as necessary while using this section.



Start-Up Window

When the computer is switched on, it checks all control lamps and segments to make sure that they work. Figures appear in the displays:

- The time display shows how U1 is set.
- The temperature display shows the current EPROM version.

Accessing the Set-Up Mode

Select the set-up mode by pressing key (4) and key (2) simultaneously for 5 sec. U1 appears in the time display. Shift to the next setting (max. U5) by pressing key (2). The set-up mode can be interrupted/closed any time by pressing key (12).

U1: Selecting Automatic Restart

Automatic restart

1 or 0 is shown in the time display (1).

0 = The oven will not restart a program that has been interrupted because of power cut.

1 = The oven will restart a program that has been interrupted because of power cut.

Shift by pressing key (3).

U4: Selecting Pre-Set/Current Temperature

Pre-set/current temperature

1 or 0 is shown in the time display (1).

0 = Pre-set temperature (standard)

1 = Current temperature during operation

Shift by pressing (3).

U5: Selecting Phase Sequence Test And Reversing

Phase sequence test

Phase sequence test is usually always active.

This alarm can be deactivated in the case of installation for demonstration purposes in order to avoid error code 15.

The temperature display shows either ON or OFF. ON and OFF are selected by pressing (6).

VS Controller System Settings

Set-Up Mode	Settings
U1	Automatic restart (1)
U2	Not Used
U3	Not Used
U4	Pre-set/current temperature (1)
U5	Phase Sequence Test (OFF)

Initial Checks and Adjustments

Upon completion of the installation, perform the following to ensure proper operation of the oven.

Category	Activity	Date Performed
Oven exterior	<ul style="list-style-type: none"> • Check that the oven has suffered no transport damages (dents, scratches, etc.) • Check/adjust height and check that the oven is placed level (horizontally) 	
Connections	<ul style="list-style-type: none"> • Check for correct water connection <ul style="list-style-type: none"> ○ open water supply ○ check for leaks ○ close water supply ○ check and clean dirt filter ○ reopen water supply ○ check hand shower and stop tap (under the oven) • Check correct electrical connection • Check correct drain connection <ul style="list-style-type: none"> ○ check correct mounting of drip tray ○ check correct fall of hose from drip tray, and examine for leaks • Check correct exhaust connection • Clean the oven • Apply the steel oil which is delivered with the oven 	
Oven compartment	<ul style="list-style-type: none"> • Check the direction of rotation of the fan • Check that the filter housing is mounted correctly • Check interior light • Clean the oven 	
Operating panel	<ul style="list-style-type: none"> • Check and adjust, if necessary, each of the pre-set values • Heat up the oven to 482°F for approx. 5 min. 	

Maintenance

Scheduled Maintenance

Category	Perform	Activity
Entire Unit	Daily	Cleaning (Refer to cleaning procedure)
Oven exterior	Annually	<ul style="list-style-type: none"> • Oven door <ul style="list-style-type: none"> ○ check that hinges are firmly fixed and that the oven door is fitted straight in relation to the oven ○ check door sealing for cracks ○ check/adjust 2-step door handle ○ check/adjust inductive sensor/door switch • Exhaust plug/vacuum valve <ul style="list-style-type: none"> ○ Check for leaks ○ Check for/remove scale deposits
Connections	Annually	<ul style="list-style-type: none"> • Water connection <ul style="list-style-type: none"> ○ check for leaks ○ check and clean dirt filter ○ check hand shower and stop tap (under the oven) • Electric connection <ul style="list-style-type: none"> ○ check for irregularities • Exhaust <ul style="list-style-type: none"> ○ check/adjust exhaust plate and motor
Oven compartment	Annually	<ul style="list-style-type: none"> • Check that the fan has been correctly fixed and that it rotates freely • Check/adjust filter housing and flaps • Check interior light • Check/adjust rack and trolley for rack to ensure that the height of the oven is correct • Check nozzle for correct dispersion • Heating elements <ul style="list-style-type: none"> ○ check gaskets ○ check/tighten heating elements ○ start the oven, activate the mode HOT AIR for a couple of seconds, then turn off the oven and check that all heating elements are lukewarm
Operating panel	Annually	<ul style="list-style-type: none"> • Test each program for a short period • Check temperature <ul style="list-style-type: none"> ○ set the oven at HOT AIR, 338°F ○ set the oven at STEAMING, 212°F ○ check the oven temperature with a digital thermometer that has been thoroughly tested and approved.

Category	Perform	Activity
Under the oven	Annually	<ul style="list-style-type: none"> • Solenoid valves <ul style="list-style-type: none"> ○ check hoses ○ clean solenoid valves ○ check that solenoid valves close • Check/test drain pump • Drain <ul style="list-style-type: none"> ○ check for leaks in drain system ○ check that drain system is not blocked ○ Check condensation nozzle in drain tube • Drip-tray system <ul style="list-style-type: none"> ○ check/adjust drip-tray springs ○ check drain basin and hose from drip tray ○ check correct fall of hose ○ check passage in hose (clean out hose, if necessary)
In motor compartment	Annually	<ul style="list-style-type: none"> • Heating elements for oven compartment <ul style="list-style-type: none"> ○ check insulation for leaks ○ check for electric leakage ("megges") ○ check load distribution on phases • Steam generator <ul style="list-style-type: none"> ○ check for leaks ○ check for electric leakage in heating elements ("megges") ○ check load distribution (idling) on phases ○ check rubber gaskets at heating elements ○ check/tighten heating elements ○ check/adjust level sensors ○ descale steam generator • Check/tighten copper tube connections • Check/tighten all electric connections • Contactors <ul style="list-style-type: none"> ○ check that there are no bad connections ○ check that all components are firmly fixed • Check/test motor for damper in air exhaust • Fan motor <ul style="list-style-type: none"> ○ check that the motor is firmly fixed ○ check direction of rotation ○ check gasket at motor shaft

Cleaning

The construction of the BKI Combi makes it very easy to clean. The oven compartment is all-welded in stainless steel and accordingly splash proof. You will find the easy-to-use hand shower with flexible hose very suitable for interior cleaning.

The door gasket at the oven door can easily be removed which ensures a quick and efficient cleaning around it

The flat front panel also makes the exterior cleaning quick and efficient.

1. Interior cleaning

Manual Method

- Always clean the oven when it is cold or cool the oven compartment down to below 140°F.
- Add mild or strong oven detergent (according to requirement) with a soft brush to the sides of the oven compartment, rack etc. Protect your face and hands as the oven detergent may be caustic.
- Leave the oven detergent for approx. 5-10 min.
- With the MULTI STEAMING mode, the oven is set to steam for approximately 10 min. at 194°F.
- Flush the oven compartment with the hand shower.
- Check that the water can pass freely through the drain. The grating that comes with the oven is to be placed over the drain hole inside the oven.

Integrated Cleaning Program (CVC and S Controllers only)

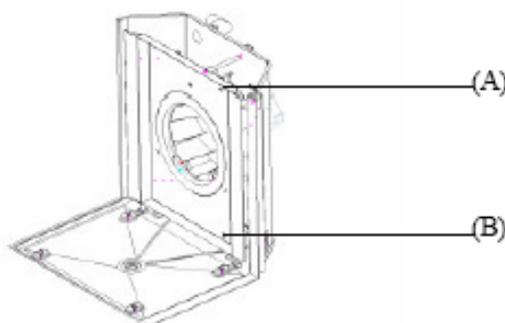
- Choose the cleaning program ("198" for CVC controller and "C" for S controller). The display says "CLEA".
- Press "START".
- Apply an oven detergent with a soft brush or a sprayer when the alarm sounds and the display says "SOAP".
- Close the oven door.
- When the alarm sounds and the display says "AQUA", rinse the oven chamber with the hand shower.



Never use high-pressure cleaner. Never spray water directly on heating elements behind the filter housing.

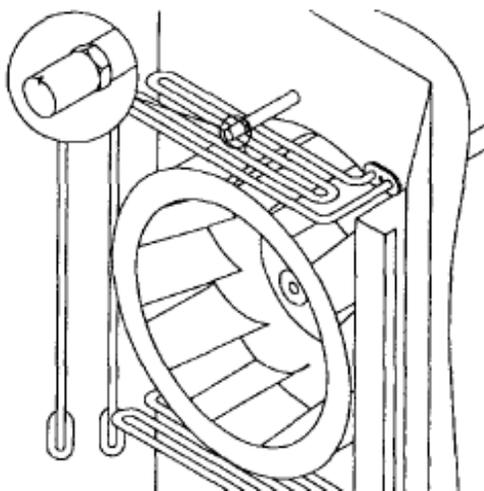
2. Cleaning behind filter housing

For a more thorough cleaning of the oven compartment, the filter housing is removed so that it is possible to clean at the fan and the heating elements. You loosen the 2 screws (A) and (B) on the filter housing. The filter housing is demounted by lifting it up till it is clear of the bottom pin and then tipping it.



3. Cleaning of Nozzle

The water nozzle can be dismantled and cleaned according to needs. The easiest way of cleaning the nozzle is by soaking it in scale remover for approx. 6-8 hours. When remounting the nozzle, note that the small notch will turn upwards, see the figure below.



4. Exterior Cleaning

The oven cabinet is washed with soapy water and then dried with a soft and moist cloth. After drying, steel oil is to be added (refer to directions on the packing). Note! The exterior of the oven is never to be flushed with water hose or high-pressure cleaner which may damage the electronic components.

Troubleshooting

Error Codes

The BKI Combi ovens have an automatic error detecting system. In the event of malfunctioning of the oven or faulty connection, error codes (for S or VS controller) or messages (for CVC controller) appear in the display. This means that any defects are specified immediately and can be remedied quickly and efficiently, which again means fewer interruptions of operation and thus fewer service calls. The following list of error codes provides you with a brief description of each error code and an indication as to how the fault can be remedied.

Error Code Number	Error Message	Possible Cause	Remedy
1	Program switch defective	The program switch has been turned beyond stop position.	Replace computer.
3	Faulty connection		Reconnect terminals 2 and 21 in plug S2.
4	Oven chamber above 305°C	The temperature circuit breaker for the oven compartment has gone. The oven cannot be operated until the defect has been remedied.	Reconnect the thermostat that is located in a hollow under the oven on the left-hand side of the front panel, by pressing the red button gently. Note that the thermostat may be disconnected during transport.

Error Code Number	Error Message	Possible Cause	Remedy
5	Fan is hot (The temperature circuit breaker in the fan motor has gone.)	<ul style="list-style-type: none"> • Breaking of phase / fuses • Fan blocked by incorrectly fitted filter housing • Fan rotating in the wrong direction <p>The oven cannot be operated until the defect has been remedied.</p>	Check fuses in switchboard. Check that the filter housing has been correctly fitted on the pins. Let the oven cool for approx. 20-30 min., then restart it. Check that the direction of rotation of the fan is counter-clockwise (looking at the fan from inside the oven compartment).
6	Drain temperature above 75 °C (The drain temperature is normally kept below 60°C by means of the built-in condensation nozzle. If the drain temperature exceeds 75 °C for more than 5 min., error code 6 will appear for a short moment at the beginning and at the end of the operating mode.)	Dirt in solenoid valve, nozzle or dirt filter, hot water connected or defective sensor for condensation. The oven can be operated even if the defect is not remedied.	Check that the oven is connected to cold water. Clean solenoid valve, nozzle or filter.
7	Oven sensor defective	The temperature sensor in the oven chamber is defective. The oven cannot be operated until the defect has been remedied.	Replace sensor.
8	Core temperature probe defective or wrongly fitted	Probe is not fitted in socket. Probe defective, socket for probe defective or short-circuited (due to water or fat). The program cannot be used until the defect has been remedied.	Check that the probe is correctly fitted or clean the socket.
9	Temperature sensor in steam generator defective (The program cannot be used until the defect has been remedied. However, programs that do not require the use of the steam generator can still be used.)		Replace heating element with sensor.

Error Code Number	Error Message	Possible Cause	Remedy
10	Condensation sensor defective (The oven can still be operated even if the defect is not remedied. However, the temperature in the drain will exceed 60°C and the defect should therefore be remedied as soon as possible.)		Replace sensor.
11	Water shortage in steam generator (The maximum water level in the steam generator has not been reached after 2 minutes of filling.)	Solenoid valve or dirt filter clogged, water supply blocked or water pressure too low (min. 1.5 bar). The program cannot be used until the defect has been remedied.	Clean solenoid valve or dirt filter. Check the water supply to the oven. Check that the water pressure is min. 1.5 bar.
13	Temperature in steam generator above 130 °C (The temperature of the upper heating element in the steam generator is above 130°C.)	Water shortage in steam generator or scale on heating elements. The program cannot be used until the defect has been remedied.	Stop the oven for approx. 5 min., then resume the program that was interrupted.
14	Breaking of phase	One or more phases in the power transmission to the oven is lacking, possibly due to a defective fuse. The program cannot be used until the defect has been remedied.	Check switchboard. Replace defective fuses, if any.
15	Incorrect phase sequence	<ul style="list-style-type: none"> Fan rotates in the wrong direction. 2 phases in the electric installation have been exchanged by mistake. The oven cannot be operated until the defect has been remedied.	Change about the 2 phases in the electric installation. Let the oven cool for 20-30 min., then restart it. Check that the direction of rotation of the fan is counter-clockwise (looking at the fan from inside the oven chamber).
16	Wiring defect at door switch	Wire for door switch short-circuited or interrupted. Cancel the message by pressing any key - reappears when the oven is restarted. The oven can be operated even if the defect is not remedied.	Replace door switch.

Test Functions

Certain Combi functions can be tested via the controller. This section explains how to access these functions and details what functions are available for each type of controller.

Accessing Test Functions with CVC Controller

To access the Test Function command, press and hold the F1 key while pressing the START/STOP key. A menu will appear showing the Test Functions command. Simply press the numeric 1 key to execute this command. The Test Functions display will appear and allow you to select/activate and navigate all the test functions. Return to the Test Function command by pressing F1. To return to the main display, press the ENTER/STEP key.

Accessing Test Functions with S Controller

To access the Test Functions press the up arrow key and the Time keys simultaneously for 5 sec. The time display shows the Test Function number (ex. dd 1). Navigate the functions by pressing the up and down arrow keys. The test functions can be interrupted/switched off any time by pressing the Storage key. The output can be switched on and off constantly by pressing the ON/OFF key, or you can switch the output on and off by pressing the Manual key.

List of Test Functions

Number	Description	Controller without this feature	Comments
dd: 1	Oven heat		Can only be active when the fan is on
dd: 2	Steam generator heat	S, CVC	Can only be activated if there is water in the generator
dd: 3	Fan low		
dd: 4	Fan high		
dd: 5	Motor brake		To be active for max. 5 sec. only
dd: 6	Injection valve		
dd: 7	Flooding valve	S, CVC	
dd: 8	Drain pump	S, CVC	
dd: 9	Condensation valve		
dd: 10	Damper motor		
dd: 11	Exhaust		Works only if an external unit has been connected
dd: 12	Special Function		
dd: 13	Buzzer		Loud continuous sound when ON/OFF is activated
dd: 14	Interior light		
dd: 15	Oven sensor		Shows °C or Err if a defect occurs
dd: 16	Core temperature sensor		Shows °C or Err if a defect occurs (core temperature probe missing)
dd: 17	Steam generator sensor	S, CVC	Shows °C if Err if a defect occurs

Number	Description	Controller without this feature	Comments
dd: 18	Condensation sensor		Shows °C or Err if defect occurs
dd: 19	Motor Speed		
dd: 20	Oven door		Shows a symbol for door open or closed and Err if a defect occurs. Can be initialized by pressing exhaust key if door is closed and oven sensor normal
dd: 21	Water level in steam generator	S, CVC	Shows water level below min. and max. Temperature key: water in) CM and Core temperature key: water out) ST
dd: 22	Thermal cutout, 305°C		ON appears if OK, OFF if interrupted or a wiring defect has occurred
dd: 23	Thermal cutout, fan motor		ON appears if OK, OFF if interrupted or a wiring defect has occurred
dd: 24	Contacts in damper motor		ON appears when the contacts are connected and OFF if interrupted

Replacement

Changing halogen lamps in oven compartment



Replace Oven Halogen Lamps with 12V, 20W maximum.

Remove the lamp glass by means of a screwdriver. Always use halogen lamps specially made for BKI Combis. Never touch the lamp without first protecting your fingers with gloves or a piece of cloth.



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