

# FlexFusion® ELECTRIC PLATINUM COMBI



Serviceinstructions

Model
FPE-615
FPE- <b>621</b>
FPE- <b>115</b>
FPE- <b>121</b>
FPE- <b>215</b>
FPE- <b>221</b>
Software V1.91

FM08-997B



Henny Penny Corporation P.O.Box 60 Eaton,OH 45320 USA

Phone +1 937 456-8400 Fax +1 937 456-8402

Toll free in USA Phone +1 937 417-8417 Fax +1 937 417-8434

www.hennypenny.com



1 Password overview	. 7
2 Introduction 2.1 About this manual 2.2 Warranty	. 8 8 8
3 Safety instructions	. 9
4 Description of operation 4.1 DynaSteam 4.2 WaveClean	10 10 11
5 Opening and closing the unit         5.1 Control panel         Opening the control panel         Closing the control panel         5.2 Side wall         Removing the side wall         Attaching the side wall	<ul> <li><b>13</b></li> <li>13</li> <li>13</li> <li><b>14</b></li> <li>14</li> <li>14</li> </ul>
6 Component overview 6.1 Operating panel / control 6.2 Left side (615, 621, 115, 121) 6.3 Right side (615, 621, 115, 121) 6.4 Left side (215, 221) 6.5 Right side (215, 221)	15 15 16 18 19 20
<ul> <li>7 Service menu - appliance test</li> <li>7.1 Service menu</li> <li>7.2 Appliance information</li></ul>	21 21 22 22 24 27 29
<ul> <li>7.7 100°C + core temperature calibration</li></ul>	30 35 36 36 37 37 37
<ul> <li>7.14 Exporting log data</li> <li>7.15 Software update</li> <li>7.16 Importing additional content</li> <li>7.17 Restoring data</li> </ul>	38 39 39 39

7.18 Backing up data	40
7.19 Water filter maintenance	41
7.20 Importing contact data	41
7.21 Setting units	42
7.22 Backup relay	42
7.23 Settings parameters	44
7.24 Backing up the SD card	46
7.25 Restoring the SD card	46
7.26 Background lighting	47
7.27 Hour meter	47
8 Status overview direct access	48
9 Software	49
9.1 Software update	49
9.2 Importing additional content	51
9.3 Importing the manufacturer's cookbook	53
10 Trade show mode	54
11 Electronics	55
11.1 Overview of the controller	55
11.2 Control board	56
11.2.1 Layout of the control board	56
11.2.2 Configuration of the control board	57
11.3 Safety overview	59
12 Fault messages & troubleshooting	61
12.1 Symbols for errors	61
12.2 Emergency operation	62
12.3 Temperature sensor area	63
Cooking chamber sensor faulty (694,695)	63
Upper cooking chamber sensor faulty (696, 728)	64
Lower cooking chamber sensor faulty (697, 729)	65
Core temperature sensor fault (699, 700)	66
Internal core temperature sensor faulty (714, 716)	67
External core temperature sensor fault (715, 717)	
	67
Vapour sensor fault (710)	67 68
Vapour sensor fault (710)	67 68 69
Vapour sensor fault (710) Waste trap temperature very high (SOF_ID20, ID21) Risk of frost (TMP_ID72, MMI_ID51)	67 68 69 69
Vapour sensor fault (710) Waste trap temperature very high (SOF_ID20, ID21) Risk of frost (TMP_ID72, MMI_ID51) Cooking chamber temperature too high (ID18, ID73)	67 68 69 69 70
Vapour sensor fault (710) Waste trap temperature very high (SOF_ID20, ID21) Risk of frost (TMP_ID72, MMI_ID51) Cooking chamber temperature too high (ID18, ID73) <b>12.4 Motor area</b>	67 68 69 69 70 <b>71</b> 71
Vapour sensor fault (710) Waste trap temperature very high (SOF_ID20, ID21) Risk of frost (TMP_ID72, MMI_ID51) Cooking chamber temperature too high (ID18, ID73) <b>12.4 Motor area</b> Overview	67 68 69 69 70 <b>71</b> 71 71
Vapour sensor fault (710)	67 68 69 69 70 <b>71</b> 71 73 75

Upper fan faulty (1615, 1617)	75
Upper fan faulty (703, 705)	76
Upper and lower fan faulty (707, 708)	77
Lower fan faulty (1616, 1618)	78
Lower fan faulty (704, 706)	79
Fan fault (FAN_ID23)	80
Fault in upper fan (FAN_ID24)	80
Fault in lower fan (FAN_ID25)	81
Motor system faulty (FAN_ID27)	82
12.5 Water area	83
Water pressure too low (709)	83
The water pressure is too low, cleaning is paused	85
12.6 Electronics / control area	86
Increased temperature of the electronics (MMI_ID53, MMI_ID54)	86
Excessive temperature of the electronics (MMI_ID50)	88
Accessing external EEPROM failed (SOF_ID12)	90
CAN connection faulty	90
5001: Software update failed	90
5007: Not enough storage space for software update	90
5008: No new version found	91
5009: The application could not be started. Application will be restarted	91
5010: Application could not be started. Restore configuration backup?	92
5013: Application could not be restored	92
5027: The application could not be started. Perform a software update	93
The battery of the MMI must be replaced (1478)	93
Device was restarted after a power failure	94
Door is open. Cooking program was stopped	94
13 Wiring diagram	96





## **1** Password overview

Range	Password	Description	Described in
Service menu incl. $CO_2$ Gas calibration	1967	Service range for authorized service technicians.	Service instructions
Installation / commissioning	2100	Setting all basic parameters (for example time / date).	Installation instructions
$\rm CO_2$ gas calibration	999	Verification and calibration of exhaust emissions. Only for energy type - gas.	Service manual Installation manual
Network settings	2000	Input network addressing. Only for units with touchscreen control.	Installation instructions
Basic settings / user	111	Setting of basic values for the user, functions, software update.	Operating instructions
Lockscreen	369	Deactivating the lockscreen in cooking mode. Only for units with touchscreen control.	Operating instructions
Trade show mode	888	Activation / deactivation for exhibition mode.	Service instructions



## **2** Introduction

## 2.1 About this manual

This service manual contains information needed by the service technician for professional and correct fault isolation, repair and maintenance of the unit. The service technician must also observe the contents of the installation instructions and the user manual.

- **Target group** Target group for this service manual is qualified personnel who are familiar with the technical functioning and operation of the unit and have been trained to work on electrical units.
  - **Figures** All figures in this service manual are intended as examples. Discrepancies can arise between this and the actual unit.

**Spare parts** To ensure the reliability of the unit and the individual components, it is essential that only genuine OEM parts be used. Spare parts can be identified exactly with the aid of the online database.

## 2.2 Warranty

The warranty is void and safety is no longer assured in the event of:

- Modifications or technical changes to the unit,
- Improper use,
- Incorrect startup, operation or maintenance of the unit,
- Problems resulting from failure to observe these instructions.



## **3 Safety instructions**

For servicing tasks, the service technician must be familiar with and observe regional regulations.

In addition, the notes in the service manual must be observed.

	Danger to life due to electric current
	$\checkmark$ Disconnect power prior to performing gas and electrical work.
	<ul> <li>Disconnect unit from the mains supply and secure it against restart.</li> </ul>
	Check to ensure absence of voltage.
	Risk of fatal injury from gas
EL BAROER	$\checkmark$ Disconnect the unit from gas supply prior to performing gas installation
	tasks.



## **4** Description of operation

**Overview** 

## 4.1 DynaSteam

- a Steaming appliance with pressure switch
- d Reduction
- b Magnetic valve water vapor elimination
- e Water supply pipe
- c Heat exchanger (up to approx. 50°degrees)
- **Description**
  - The electronics control the DynaSteam steaming appliance. They regulate the water quantity for generating steam. DynaSteam guarantees, regardless of the water pressure, the precise supply of the required quantity of water. The prerequisite for this is a customer-supplied water flow pressure between 2 and 6 bar. The water pressure is monitored using a pressure switch.
    - The DynaSteam steaming appliance cannot be calibrated and is completely electronically controlled.
    - The heat exchange heats the water in advance up to 50°C. The heat from the exhaust pipe is used for this.
    - The water comes through the water supply pipe to the fan impeller in the cooking chamber. The fan impeller creates small water drops, which evaporate in the hot oven atmosphere. The water evaporates in the cooking chamber and on the fan impeller. The tapering of the hose stabilizes the water flow of the pulsing steaming unit.

FM08-997B



## 4.2 WaveClean

#### **Functional overview**



- a Magnetic valve K12
- b Pump G16

c Pump G24

The following purification stages are available on the fully automatic cleaning WaveClean:

- Short: duration of about one hour
- Normal: duration about two hours
- Extra: duration approximately three hours

**Description** 1. Testing the cooking chamber temperature.

- $\rightarrow$  Automatic cooling of the cooking chamber, if > 55°C.
- 2. Inserting the WaveClean cartridge.
- 3. Water exchange of siphon content by the siphon pump G24 and solenoid valve K12.
- 4. Circulation of water by means of pump G16. Thus pre-cleaning of the cooking chamber. Then anew siphon water exchange.
  - $\rightarrow$  The heater heats the oven to 55°C.
- 5. Start cleaning.
  - → Fan motor and WaveClean pump G16 active.
  - ightarrow Heating active. Heating the cooking chamber to about 70°C.
  - → The first layer of wax melts in the WaveClean cartridge. The cleaner falls into the cooking chamber and mixes with water.
  - → The fan motor operates in both directions of rotation and at different speeds.
  - → The cleaning phase duration depends on the selected program.



	<ol> <li>A new water exchange of siphon content by means of the sip pump G24 and solenoid valve K12.</li> <li>Start of rinsing</li> </ol>	ohon
	$\rightarrow$ Identical to step 5 (cleaning).	
	⇒ Differences: Heating of the cooking chamber to 92°C. Th second layer of wax melts in the WaveClean cartridge. The rinse agent drops into the cooking chamber and mixes w water.	e he ith
	<ul> <li>→ Final rinse to bring the pH value to the normal level.</li> <li>8. In the programs "normal" and "extra" additional drying of the interior occurs by means of hot air.</li> </ul>	
	<ol><li>Finally, an indicator for withdrawing the WaveClean cartridge appears, and has to be confirmed.</li></ol>	3
INFORMATION	Despite different cleaning durations, all cleaning steps require the same amount of water.	
	During the cleaning process about 3 liters of water are provided by the s	steam-
	ing unit into the oven.	
WaveClean termina	n	
INFORMATION	WaveClean forced rinsing	
	The WaveClean forced rinse is automatically started by the operator in a	case of
	failure or premature termination. The duration is 12 minutes. An entry is	made
	into the HACCP and in the diagnostic memory.	

## 5 Opening and closing the unit

## 5.1 Control panel



Image: Opening the control panel

- Lock (cam) b Operating panel
- c Hex key

а

b Operating part

#### **Opening the control panel**

- 1. Insert hex key (5 mm ) into screw and turn it clockwise.
  - $\hookrightarrow$  The operating panel is now unlocked.
  - $\hookrightarrow$  The operating panel pops up automatically.
- 2. Withdraw the hex key.

#### **Closing the control panel**

NOTICE	Damage due to vapor / moisture
	There should be no gap between the control panel and housing.
	1. Press and hold operating panel on the left.
	→ Repeat as many times as necessary.
	→ The operating panel snaps in audibly.
	ightarrow The operating panel is secured against unauthorized opening.



## 5.2 Side wall



Image: A Sizes 6.x and 10.x; B Size 20.x

#### Removing the side wall

- 1. Unscrew the screws in the side wall.
- 2. Pull the bottom edge of the side wall forwards.
- 3. Remove the side wall.

#### Attaching the side wall

NOTICE	<ul><li>Risk of property damage from leaky housing</li><li>Check seals when attaching the housing parts.</li><li>Replace damaged seals.</li></ul>
	<ol> <li>Insert top edge of side wall.</li> <li>Carefully push the bottom of the side wall inward.</li> <li>Secure the bottom of the side panel with screws.</li> <li>Check that the side wall is in contact with the unit on all sides.</li> </ol>





## **6** Component overview

## 6.1 Operating panel / control



Image: Touch operating panel area - FKE/ FKG

- A1 Control board
- A3 Digital memory
- B15 Reed contact switch
- E1 Insert with LED lighting
- SD SD card

- A2 Operating panel
- B1 Core temperature sensor
- B20 Loudspeaker
- S0 On / Off switch



## 6.2 Left side (615, 621, 115, 121)



Image: FGE/ FPE UL - left side



- B4 Vapor sensor
- B11 Safety temperature limiter
- B14 Pressure switch
- F1.1 Fuse, 6 A, slow-blow
- F21 Fuse, 60 A (only on 220)
- F23 Fuse, 60 A (only on 220)
- G7 Cooling fan
- G24 Drain pump
- K20 DynaSteam unit
- M10 Fan motor
- Q2 Solid-state relay (SSR), 100 A
- T1 Transformer (supply)
- X1 Power connection terminal

- B5 Moisture sensor (until 01/2022)
- B13 Thermal switch 50°C
- F1 Fuse, 6 A, slow-blow
- F4 Fuse, 6 A, slow-blow
- F22 Fuse, 60 A (only on 220)
- F24 Fuse, 60 A (only on 220)
- G16 Circulation pump
- K12 Solenoid valve (steam)
- M8 Lift magnet
- Q1 Main contactor
- Q3 Solid-state relay (SSR), 100 A
- T10 Power pack for fan motor



## 6.3 Right side (615, 621, 115, 121)



Image: FKE/ FKG - View of right side

- B2 Cooking chamber sensors
- E3 Cooking chamber light



## 6.4 Left side (215, 221)



B4 = vapor sensor B5 = moisture sensor (until 01/2022) B11 = safety temperature limiter B12 = safety temperature limiter B13 = thermal switch 50°C B14 = pressure switch F1 = 10A slow-blow fuse F2 = 10A slow-blow fuse F4 = 6.3A slow-blow fuse F21-F23 = fuse G7 = cooling fan (180 x 180 mm) $G8 = cooling fan (180 \times 180 mm)$ G16 = circulation pump G24 = drain pump K12 = magnetic valve vapor K20 = DynaSteam unit with pressure switch K21 = DynaSteam unit without pressure switch M8 = lift magnet M10 = fan motor M20 = Fan motor Q1 = Main contactor Q2 = Solid state relay (SSR), top Q3 = Solid state relay (SSR), top Q4 = Solid state relay (SSR), bottom Q5 = Solid state relay (SSR), bottom R1 = Filter T1 = Transformer supply T10 = Power supply unit for fan motor (top) T20 = Power supply unit for fan motor (bottom) X1 = Mains connection terminal

FM08-997B

FKG - View of left side



## 6.5 Right side (215, 221)



FKE/ FKG – View of right side

- B2 = To cooking chamber sensor
- B3 = Bottom cooking chamber sensor
- E3 = Cooking chamber light
- E4 = Cooking chamber light



## 7 Service menu - appliance test

## 7.1 Service menu

The service area permits functional testing of individual components, adjustment of basic settings and updating of the software.

#### Calling up the service level

#### Calling up the Service menu



### **INFORMATION**

The password for the service menu is 1967

#### Service menu overview

- **Selecting a menu element**  $\rightarrow$  Display of the menu elements in the left area.
  - $\rightarrow$  Page change by swiping upward/downward.
  - $\rightarrow$  Select menu element by touching.



## 7.2 Appliance information

#### **Overview**

Description Display of the appliance-specific information

- → Software version
- $\rightarrow$  Cookbook version
- $\rightarrow$  Unit configuration
- → Serial number
- → Date of last CombiDoctor diagnosis.
- $\rightarrow$  Contact data

#### Overview



Exiting the appliance Touch the *Back* field. information

## 7.3 Status information

Status 1 Heating circuit



- PWM Heat requirement in %.
- POS Performance optimization system (option).
  - B3 Lower chamber sensor. Only present in 20.x floor-mounted appliances.



Status 2 Climate control, fan

JJ,	1	Device functions				11
×es.		Status 2 - Climate	control, fan			par
Outputs X31 (24V DC)		Inputs X31 (24V D	Temperatu	re sensor [	"C]	
K20/K30: DynaStear	1.1	B14: Pressure s	witch	B2: Cooking	chamber 1	25.9
K21/K31: DynaStear	m 2			B3:Cook.zor	e2 (below)	
Outputs X17 (230V)		Dynasteam		85: Moisture		-
K08: Solenoid M8		Steaming	0.0 i/h			
Outputs X12 (230V)						
K06: Replacement r	elay	Cooking chamber	fan	LR	TICI	PIWI
Outputs X32 (24V DC)		M10: Motor 1	- rpm		26	0
Q2/Q2-4: PWM1	0%	M20: Motor 2	rpm	0.0	-	
Q3/Q3-5: PWM2	0%					

- B14 Pressure switch on the DynaSteam unit
- PWM Heat requirement in %.
- M20 Bottom fan motor. Only present in 20.x floor-mounted appliances.
  - B3 Bottom cooking chamber sensor. Only present in 20.x floor-mounted appliances.

#### Status 3 WaveClean



- K04 Magnetic valve for water vapor elimination & siphon filling
- B15 Reed contact switch
- B14 Pressure switch on the DynaSteam unit
- B3 Bottom cooking chamber sensor. Only present in 20.x pedestal unit

### Status 4 Miscellaneous

$\Delta \triangleleft I$	Device functions					11
	Status 4 - C	other	_			-
Outputs X14 (pot.)	Inputs X21 (24V DC)	Temperature se	nsor ["C	1		
K11: Cooling fan G7	B15: Door contact	B2: Cooking char	nber 1		- 0	25.9
Outputs X13 (pot.) / X16	Inputs X22	B3:Cook.zone2 (I	(wolse			
K10: Hood/lower level fai	r Reserve	B4: Vapour				26.9
K09: Lower level fan I / r	Inputs X23	85: Moisture				
Outputs X1 (18V AC)	Reserve	B6: Sous-vide set	nsor			
K15: Light E10/E11	Outputs X12 (230V)	B10: Control syst	em		28.4	28.6
Outputs X15 (pot.)	K03: Reserve	B1: CT internal	25.8	25.4	25.2	25.1
K13: Reserve	K06: Replacement rel	87: CT external	-			

- K10 Activation for optional condensation hood
- B15 Reed contact switch
- K03, K07 Not in use
- K13, K14 Not in use
  - B3 Bottom cooking chamber sensor. Only present in 20.x pedestal unit



## 7.4 CombiDoctor

#### Description

The CombiDoctor offers an automatic check of the climate control system and WaveClean automatic cleaning. The tests are possible individually or as overall test. For instructions on performing, see the touchscreen.



Image: Select CombiDoctor test

#### **CombiDoctorStart**

- **Selecting a program**  $\rightarrow$  Select a program by adjusting the roller.
- **Starting the program**  $\rightarrow$  Touch the "START" field.
  - **Evaluation**  $\rightarrow$  The test result appears on the touchscreen.
    - $\hookrightarrow$  Entry in HACCP memory.

#### Description of the test steps

#### Step 1 (test door contact)

- 1. Open cooking chamber door and close again.
  - $\hookrightarrow$  If test successful, proceed with the next test step.
  - If the door is not recognized as having been opened and closed again within the specified time (60 seconds), the test is not passed.

#### Step 2 (prepare for WaveClean)

- 1. Preparation for WaveClean test.
  - Automatic water exchange via the siphon pump and the solenoid valve for steam elimination.



#### Step 3 (heat output)

- 1. Check of heat output.
  - ightarrow Display switches to green = test successful.
  - ightarrow Display switches to red = test not successful.
- → Check of on-site voltage supply.
- → Check of heating element
- → Check of solid-state relay
- → Check of internal fuse for load circuit (depends on unit version).

#### Step 4 (steam generation)

- 1. Check of DynaSteam<sup>2</sup> steam generation.
  - $\hookrightarrow$  Display switches to green = test successful.
  - $\rightarrow$  Display switches to red = test not successful.
- $\hookrightarrow$  Ensure that water is being supplied on-site.
- → Check of DynaSteam steaming.
- $\hookrightarrow$  Check of water supply pipe for calcification.

#### Step 5 (steam reduction)

- 1. Check of steam reduction (lift magnet).
  - ightarrow Display switches to green = test successful.
  - ightarrow Display switches to red = test not successful.
- → Check of lift magnet via relay test. A fault is present on the component or the control board. Check associated fuses.

#### Step 6 (WaveClean circulation pump)

- 1. Check of WaveClean circulation pump.
  - $\rightarrow$  Display switches to green = test successful.
  - → Display switches to red = test not successful. Test 7 and 8 are not evaluated.
- → Check of circulation pump via relay test. A fault is present on the component or the control board. Check the fuse on the control board.

#### Step 7 (water supply to WaveClean)

- 1. Check of solenoid valve for steam elimination.
  - $\rightarrow$  Display switches to green = test successful.
  - ightarrow Display switches to red = test not successful.
- $\hookrightarrow$  Ensure that water is being supplied on-site.
- → Check of solenoid valve via relay test. A fault is present on the component or the control board. Check the fuse on the control board.



#### Step 8 (WaveClean siphon pump)

- 1. Check of WaveClean siphon pump.
  - $\rightarrow$  Display switches to green = test successful.
  - $\rightarrow$  Display switches to red = test not successful.
- → Check of siphon pump via relay test. A fault is present on the component or the control board. Check the fuse on the control board.

#### Step 9 (temperature control)

- 1. Check of temperature control.
  - Solution → The temperature in the cooking chamber must reach 140 °C (284 °F) within the time specified.
  - $\rightarrow$  Display switches to green = test successful.
  - $\rightarrow$  Display switches to red = test not successful.
- $\hookrightarrow$  Check region around cooking chamber sensor for soiling.
- $\hookrightarrow$  Check temperatures via calibration in the service menu.
- $\rightarrow$  If necessary, replace cooking chamber sensor or control board.

## 7.5 Relay test

### Overview



Image: Relay test page 1

к10	K14	K17
External extractor hood / Lower-level fan on/off	1	Recirculation pump
К11	K15	K18
Cooler fan	Cooking chamber light	Steaming unit
K13	K16	

Image: Relay test page 2

Relay overview

Relay	Connect or	No.	Description	Info
K1	X10	2	Main contactor Q1	208V AC
K1	X11	1	LOA A ( <i>not in use</i> )	208V AC
K2	X11	2	LOA B ( <i>not in use</i> )	208V AC
К3			Magnetic valve rinse manual ( <i>not in use</i> )	208V AC
K4	X12	3	Magnetic valve for water vapor elimination K12	208V AC
K5	X12	4	Siphon pump G24	208V AC
K6	X12	5	Backup relay K6	208V AC
K7			Not in use	
K8	X17	1	Lift magnet fresh air M8	208V AC
К9			Fan Junior Direction left / right ( <i>not in use</i> )	
K10	X13	1/2	Control for condensation hood	
K10			Fan Junior on/off ( <i>not in use</i> )	



Relay	Connect or	No.	Description	Info
K11	X14	2	Cooling fan G7	208V AC
K13			Not in use	
K14			Not in use	
K15	X1	2	Cooking chamber light	10.7V AC
K16	X9	1/2	Supply for control panel (MMI)	24V DC
K17	X12	1	Circulation pump G16 (only when cooking cabinet door is closed)	208V AC
K18	X31	1 -4	Steaming unit (switched directly, not via relay)	24V DC

## Description

The test permits separate activation of various functions.

- Testing the relay.
- Testing of individual components.

## Activating/deactivating a function

Activating a function	$\rightarrow$ Press the button for the area to test.
	$\hookrightarrow$ The function is active.
	ightarrow The button for the selected function is highlighted in green.
Deactivating a function	$\rightarrow$ Press the button highlighted in green to deactivate the selection.
	$\hookrightarrow$ The function is now inactive.
	$\hookrightarrow$ The button is now highlighted in gray.
INFORMATION	Several functions can be activated simultaneously.

FM08-997B



## 7.6 WaveClean Test

## Description

	<ul> <li>→ WaveClean test program for function check.</li> <li>→ Circulation pump</li> <li>→ Siphon pump</li> <li>→ Magnetic valve for water filling</li> <li>→ Door seal / leak tightness in door area.</li> </ul>
INFORMATION	The test is used exclusively for functional testing and not to clean the cooking chamber.
Starting the test	
	<ul> <li>→ Press the "START" button.</li> <li>→ Checking of the cooking chamber temperature.</li> <li>→ Automatic cooling off of the cooking chamber if &gt; 70 °C (158 °F).</li> <li>→ Rinse and fill up siphon.</li> <li>→ Draining by pump G24.</li> <li>→ Filling by magnetic valve K12.</li> <li>→ Circulation and heating.</li> <li>→ The circulation pump G16 is switched on.</li> <li>→ Heating of the cooking chamber to 55 °C (131 °F).</li> <li>→ Rinse DynaSteam and siphon</li> <li>→ The valve for steaming is energized.</li> <li>→ Another water change from the siphon.</li> </ul>
Ending the test	
	<ul> <li>An abortion is possible at any time.</li> <li>→ Tap the "Stopp" button.</li> <li>→ Automatic rinsing of the siphon.</li> </ul>



## 7.7 100°C + core temperature calibration

#### Description

**Description** → Calibration for cooking chamber sensor and core temperature sensor.

→ Testing the calibration.

ightarrow Performing the calibration.

The cooking chamber sensor and core temperature sensor calibration is performed in one step.

#### **INFORMATION**

The units are factory calibrated. Recalibration is required only in exceptional cases.



Green = temperature in valid calibration range



### **Check calibration**

	Check calibration - tabletop unit 6.x / 10.x
Prerequisite	Calibrated digital temperature measurement device.
	The temperature in the cooking chamber is < 100°C.
	<ul> <li>→ Fix internal core temperature sensor and temperature sensor of external measurement device in the cooking chamber.</li> <li>→ Use a grill rack for this.</li> </ul>
	Point the sensor tips upward in order to prevent measurement errors.
Checking the calibration	$\rightarrow$ Touch the "START" field.
	$\hookrightarrow$ The cooking chamber is heated up to 100°C.
	$\hookrightarrow$ Display of the current temperature on the touch screen.
	→ Wait until the cooking chamber temperature on the touch screen indicates 100°C (± 1°C).
	Compare displayed cooking chamber temperature with temperature of external measurement device.
	The external measurement device must display a temperature between 99°C – 99.5°C.
	$\rightarrow$ If the value is within the range, end checking.
	$\hookrightarrow$ Touch the "STOP" field.
	$\rightarrow$ If the value is outside of the range, calibration must be done.
	Continue with calibration (see " Calibrating the cooking chamber sensor - tabletop unit 6.x / 10.x", Page 33).
	Check calibration - pedestal unit 20.x
	Two-chamber appliances (20.x) are equipped with two cooking chamber sen-
	sors.
Separation of the two chambers required	
	A separation into two regions (chambers) is required for temperature measure-
INFURMATION	ments. This can be achieved, for instance, by placing a baking sheet on the
	middle shelf of the tray trolley.



Prerequisite	Two calibrated digital measurement devices or two-channel
	measurement device.

The temperature in the cooking chamber is < 100°C.

- → Fix the temperature sensor of the two external measurement devices in the middle of the top and bottom chambers in the cooking chamber respectively. Fix the core temperature sensor in the middle of the bottom chamber.
  - $\hookrightarrow$  Use a grill rack for this.
  - → Point the sensor tips upward in order to prevent measurement errors.

#### **Checking the calibration** $\rightarrow$ Touch the "START" field.

- $\rightarrow$  The cooking chamber is heated up to 100°C.
- $\hookrightarrow$  Display of the current temperature on the touch screen.
- → Wait until the cooking chamber temperature indicates 100°C (± 1°C).
  - → Compare displayed cooking chamber temperature with temperature of external measurement device.
  - → The external measurement device for the cooking chamber 1 top must display a temperature between 99°C 99.5°C.
- $\rightarrow$  Touch the "Cooking chamber 1" field
  - → Switch to cooking chamber 2 bottom
  - → The field changes to "Cooking chamber 2"
  - Solution → The external measurement device must display a temperature between 99°C 99.5°C.
- $\rightarrow$  If the values are within the range, end checking.
  - $\rightarrow$  Touch the "STOP" field.
- → If one of the values is outside of the range, calibration must be done.
  - → Continue with calibration (see " Calibrating the cooking chamber sensor - pedestal unit 20.x", Page 33).

## Calibrate cooking chamber sensor

Prerequisite	Calibrating the cooking chamber sensor - tabletop unit 6.x / 10.x $\rightarrow$ Execute <i>Check calibration</i> and do not switch appliance off.
	→ Temperature display on the touch screen indicates 100 °C (212 °F).
Calibration	$\rightarrow$ Adjust offset value by adjusting the roller.
	└→ Let 10 minutes adjustment time elapse.
	→ The external measurement device must display a temperature between 99 °C (210,2 °F) – 99,5 °C (211,1 °F).
	ightarrow If necessary, adjust offset value again.
	$\rightarrow$ If the value is within the range, save calibration.
Saving the calibration	$\rightarrow$ Touch "Save offset" field.
	Saving of set value.
Canceling the calibration	$\rightarrow$ Touch the "STOP" field.
	ightarrow The calibration ends.
Exiting the calibration Storing the calibration on SD card	Touch the <i>Back</i> field. $\rightarrow$ Also save data on internal SD card.

#### Calibrating the cooking chamber sensor - pedestal unit 20.x

INFORMATION	Two-chamber appliances (20.x) are equipped with two cooking chamber sen- sors.
Separation of the tv chambers require	vo ed
INFORMATION	A separation into two regions (chambers) is required for temperature measure- ments. This can be achieved, for instance, by placing a baking sheet on the middle shelf of the tray trolley.
Prerequisi Calibratio	<ul> <li>te → Execute Check calibration and do not switch appliance off.</li> <li>→ Cooking chamber 1 and cooking chamber 2 indicate 100°C.</li> <li>On → Adjust offset value by adjusting the roller.</li> <li>→ Change between the values of the top and bottom chamber with the field "Cooking chamber 1" / "Cooking chamber 2"</li> <li>→ Let 10 minutes adjustment time elapse.</li> <li>→ The external measurement devices must display a temperature between 99°C - 99.5°C.</li> <li>→ If necessary, adjust offset again.</li> <li>→ Let 10 minutes adjustment time elapse.</li> <li>→ If the value is within the range, save calibration.</li> </ul>

Saving the calibration	→ Touch "Save offset" field.
	$\hookrightarrow$ Saving of set value.
	→ Automatic calibration of core temperature sensor.
Canceling the calibration	$\rightarrow$ Touch the "STOP" field.
	$\hookrightarrow$ The calibration ends.
Exiting the calibration	$\rightarrow$ Tap the field <i>Back</i> .
Storing the calibration on	$\rightarrow$ Save data additionally on internal SD card.
SD card	



## 7.8 DynaSteam test

#### Description

INFORMATION	Dual-chamber units (20.x) have two Dy control. The specified quantity of water naSteam test for each chamber separa	naSteam steaming units with parallel refers to one chamber. Perform Dy- tely.
Description	The DynaSteam test allows a func Calibration is not possible / neces	ction test of DynaSteam steaming. sary.
Terequisit	→ Left hooking-in point or tray	trolley removed.
	$\hookrightarrow$ Air baffle in the cooking cha	amber unlocked and unfolded.
	DynaSteam Test	DynaSteam Test

			<b>Mini</b>	
		0	3	
0 0 0		1	4	0
1 1 1		2	5	1

Image: Overview of DynaSteam test

#### Starting the test

- $\rightarrow$  Touch "Initialization" field.
  - $\hookrightarrow$  Automatic pre-rinse.
  - $\hookrightarrow$  Field changes to "START".
- $\rightarrow$  Set water quantity using the rollers.
- $\rightarrow$  Touch the "START" field.
  - $\hookrightarrow$  Energize solenoid valve for steaming.
  - → The water comes runs from the water supply pipe into the cooking chamber.

#### Check the water quantity

Collect the water from the supply pipe with a measuring container.

- $\rightarrow$  Starting water test.
  - → After the predetermined amount of water has gone through, activation stops automatically.
- → Compare amount of water with the set value. A deviation of +-10% is within tolerance.



## 7.9 Emptying the water

#### Description

Water drainage removes water residue from the unit to prevent frost damage during transport and idle period.

Prerequisite

- $\rightarrow$  Both water connections are connected to compressed air.
  - $\hookrightarrow$  The pressure may not exceed 6 bar.
  - $\rightarrow$  The cooking chamber temperature is < 130°C.



Image: Overview

#### Running a program

**Start drain water**  $\rightarrow$  Touch the "START" field.

- $\hookrightarrow$  Start of the automatic water drainage.
- ⇒ Display of the cooking chamber temperature and remaining time.
- Canceling the water  $\rightarrow$  Touch the "STOPP" field. drainage

#### 7.10 Data and time



- $\rightarrow$  Tap the value to be changed.
- $\rightarrow$  Use the number block to set the desired values by tapping.
- $\rightarrow$  Tap the "OK" field.
  - $\hookrightarrow$  Changes saved.

FM08-997B


# 7.11 Installation height



Image: Overview

Setting the set-up height	$\rightarrow$ Set the set-up height by adjusting the rollers.
	$\rightarrow$ Tap the "OK" field.
	→ Changes saved.
Canceling the selection	$\rightarrow$ Tap the "Back" field.

# 7.12 Audio settings



Image: Overview

Setting the volume $\rightarrow$  Use the slider to set the desired volume. $\rightarrow$  Tap the "OK" field. $\rightarrow$  Changes saved.Canceling the selection $\rightarrow$  Tap the "Back" field.

# 7.13 Select signal tones

- **Set signal tones**  $\rightarrow$  Set the profile by adjusting the rollers.
  - $\rightarrow$  Tap the "OK" field.
    - $\hookrightarrow$  Changes saved.
- **Canceling the selection**  $\rightarrow$  Tap the "Back" field.

# 7.14 Exporting log data

# Description

Log data export to an external USB flash drive. The function is only required after consultation.

# Exporting log data

- $\rightarrow$  Perform according to instructions on the touchscreen.
- $\rightarrow$  Press the *Confirm* button.
  - $\hookrightarrow$  Log data export begins.

# 7.15 Software update

#### Description

 $\rightarrow$  Update of the software via the USB interface. Sounds, cookbooks, help texts and videos are not part of the software update. INFORMATION These require importing via "Importing additional content". Performing the update  $\rightarrow$  Perform according to instructions on the touchscreen and software description.  $\rightarrow$  Tap the "OK" field.  $\rightarrow$  Update begins.  $\rightarrow$  A confirmation then appears on the touchscreen. 7.16 Importing additional content Description Import of additional content (sounds, videos, graphics, help texts). Import is absolutely essential after the operating panel has been replaced. INFORMATION Importing content Import of the additional contents via the USB interface. See also chapter Importing additional content. 7.17 Restoring data Description Import function of parameters stored on the SD card. Importing is required after the operating panel or control board have been re-**INFORMATION** placed. Importing data Prerequisite Service menu is displayed → Press the "Restore data" button.  $\rightarrow$  Press the *Confirm* button.  $\rightarrow$  Restore data from the SD card.  $\rightarrow$  A confirmation then appears on the touchscreen.  $\rightarrow$  Tap the "OK" button.

# 7.18 Backing up data

# Description

Backup function for parameters (for example, customer settings, calibration values). Saving data on the internal SD card and USB stick (if plugged in).

#### Backing up data

Prerequisite Service menu is displayed

- $\rightarrow$  Tap the "Backup data" button.
- $\rightarrow$  Press the *Confirm* button.
  - $\rightarrow$  Backup data on the SD card.
  - $\hookrightarrow$  A confirmation then appears on the touchscreen.
- $\rightarrow$  Tap the "OK" button.

# 7.19 Water filter maintenance

#### Description

With use of a water filter on the soft water connection of the unit, a maintenance note may appear after the stored flow quantity has been reached.

For this, the appropriate filter capacity must be determined and entered.

#### Prerequisite •

- The water filter supplies only one combi steamer.
  - Only the soft water connection is connected to the filter.



Image: Overview

#### Entering the water quantity

- $\rightarrow$  Use the number block to set the desired value.
- $\rightarrow$  Tap the "OK" button.
  - $\hookrightarrow$  Changes saved.

# 7.20 Importing contact data

#### Description

Import of service contact data. This data can be accessed by the operator under "Equipment information".

#### Preparing the data

Perform according to instructions on the touchscreen.

- → Create the file "ContactData.txt" with favorite text editor on the computer.
- $\rightarrow$  Open the file on the computer.
- $\rightarrow$  Enter contact data distributed over 6 text lines.
- → Save file on a USB flash drive.
  - $\hookrightarrow$  The file must be stored in the folder "FCImport".

#### Importing data

 $\rightarrow$  Perform according to instructions on the touchscreen.

- $\rightarrow$  Press the *Confirm* button.
  - $\rightarrow$  Import the created contact data.
  - $\hookrightarrow$  A confirmation then appears on the touchscreen.

# 7.21 Setting units

#### Overview



#### Changing values

- 1. Select the desired temperature and volume.
- 2. Tap the "OK" button.

# 7.22 Backup relay

Description	
	The control board has a spare relay, which allows alternative use in case of a relay failure. This is only possible with the listed relays.
Locate defective relay	
	$\rightarrow$ Call relay test in the service menu.
	Perform relay test. Locate defective relay by examining the output voltage at the corresponding outputs on the control circuit board.
Occupying the spare relay	
	$\rightarrow$ Do rewiring according to the table.
	Example: When using it for K8 (lift magnet M8), rewire line from connector X17.1 to X12.5.
INFORMATION	n case of changes to the wiring, label or deposit note in the unit.

# Assigning the backup relay

 $\rightarrow$  Select the defective relay by means of the roller.



 $\rightarrow$  Tap the "OK" field.

 $\hookrightarrow$  Changes saved.

#### **Relay overview**

#### **Relay overview**

Relay	Connect or	No.	Description	Instruction
K1	X10	2	Main contactor Q1	Reconnect the line from X10.2 to X12.5 and to assign a reserve relay to it.
K4	X12	3	Magnetic valve for water vapor elimination K12	Reconnect the line from X12.3 to X12.5 and to assign a reserve relay to it.
K5	X12	4	Siphon pump G24	Reconnect the line from X12.4 to X12.5 and to assign a reserve relay to it.
K6	X12	5	Backup relay K6	Reconnect the line from X12.5 to X12.5 and to assign a reserve relay to it.
K8	X17	1	Lift magnet fresh air M8	Reconnect the line from X17.1 to X12.5 and to assign a reserve relay to it.
K17	X12	1	Circulating pump G16	Reconnect the line from X12.1 to X12.5 and to assign a reserve relay to it.

# **Restore original condition**

After changing the control board the original state is restored. Thus, the backup relay is not used unnecessarily.

- $\rightarrow$  Establish the original condition of the wiring (from X12. 5 to Xx).
- $\rightarrow$  Calling up the "Backup relay" in the Service menu.
- $\rightarrow$  Select "OFF" using the roller.
  - $\hookrightarrow$  The backup relay is deactivated.
- $\rightarrow$  Tap the "OK" field.
  - → Changes saved.



# 7.23 Settings parameters

# Description

- $\rightarrow$  Querying and setting additional parameters.

# Image: Overview

# **Selecting parameters**

- $\rightarrow$  Selecting parameters by adjusting the caster.
- $\rightarrow$  Tap the "Read" button.
  - $\rightarrow$  Display of set parameters.

#### **Changing parameters**

- $\rightarrow$  Use the number block to set the desired value.
- $\rightarrow$  Tap the "Write" button.
  - $\hookrightarrow$  Changes saved.

# Parameter overview

No.	Basic setting	Standard worth	Adjustment range	Explanation
7	User menu password	111	0 - 300	Password for the user menu (basic settings)
16	Cooking chamber 1 temperature offset (upper sensor on 20.x pedestal units)		-9.9 - +9.9°K	Ability to retrieve the saved temperature offset values. The can also be changed and saved. The calibration function in the Service menu is
17	Cooking chamber 2 temperature offset (lower sensor on 20.x pedestal units)		-9.9 - +9.9°K	used for calibration!
18	Sous vide temperature offset		-9.9 - +9.9°K	
21	Internal core temperature offset, sensor 1		-9.9 - +9.9°K	
22	Internal core temperature offset, sensor 2		-9.9 - +9.9°K	
23	Internal core temperature offset, sensor 3		-9.9 - +9.9°K	
24	Internal core temperature offset, sensor 4		-9.9 - +9.9°K	
25	External core temperature offset, sensor 1		-9.9 - +9.9°K	Ability to retrieve the saved temperature offset values. The can also be changed and saved.
26	External core temperature offset, sensor 2		-9.9 - +9.9°K	The calibration function in the Service menu is used for calibration!
27	External core temperature offset, sensor 3		-9.9 - +9.9°K	
28	External core temperature offset, sensor 4		-9.9 - +9.9°K	
45	Generator mode	0	0 = Off 1 = On	Only when using generators on ships.
48	Steam elimination mode	1	0 = Low 1 = Normal 2 = High	"Low" setting: Minimum water consumption, but higher condensate temperature and greater steam volume. "High" setting: Maximum water consumption, but lower condensate temperature and smaller steam volume.
49	Controls the cooking chamber lamp when opening the cooking chamber door	0	0-60 seconds	
50	Controls the cooking chamber lamp when closing the cooking chamber door	1	0-60 seconds	
602	Maximum power outage duration for a warm start	100 s	90 – 600 seconds	Time within which the cooking program will continue after interruption of the power supply.
607	Ready to Cook active	1	0 = Off 1 = On	With value "0" Ready2Cook is permanently deactivated.
609	Interval for saving the temperatures in the HACCP log	120 s	1 – 180 seconds	

No.	Basic setting	Standard worth	Adjustment range	Explanation
618	Ready to Cook – Finished message interval	60 s	0 – 300 seconds	Reminder interval after reaching the Ready2Cook temperature
624	SES status	1	0 = Off 1 = On	When the value is "0", the SES function is permanently deactivated.
625	Minimum duration of cooking program for SES	6 min.	4-6 minutes	If the overall duration of a cooking program is less than this value, the SES does not run.
655	Limitations for Arabic	0	0 = Off 1 = On	When the value is "1", no cooking programs for pork are displayed
662	Lock screen active	0	0 = Off 1 = On	Display of Lock Screen menu item
674	Auto-start	0	0 = No autostart 1= Direct favorites 2=Always	Automatic start of a cooking program after selection from AutoChef / Favorite
678	Scanner button available	1	0 = Hidden 1= Visible	Display of scanner function in the title bar.
695	PIN for operation lock	369	0 – 99999	
726	Cleaning reminder	1800	0 = Off 1800 = On	Activation / deactivation of the WaveClean cleaning reminder

# 7.24 Backing up the SD card

# Description

Export the data from the internal SD card and external USB stick.

# Backing up data

Perform according to instructions on the touchscreen.

- $\rightarrow$  Tap the *OK* button.
  - $\hookrightarrow$  Back-up of the data.
  - ightarrow A confirmation then appears on the touchscreen.
- $\rightarrow$  Tap the *OK* button.

# 7.25 Restoring the SD card

# Description

Import the data from a backup of the SD card from a USB stick. Required after replacing the SD card.

# **Restoring data**

Perform according to instructions on the touchscreen.

- $\rightarrow$  Press the *Confirm* button.
  - ightarrow Restoring of the data from the SD card.

FM08-997B



 $\rightarrow$  Tap the "OK" button.

 $\rightarrow$  Automatic restart of the software.

# 7.26 Background lighting

Changing the brightness of<br/>the touchscreen1. Select the desired brightness.the touchscreen2. Tap the "OK" field.

#### 7.27 Hour meter

**Description** Display of hour meters, service life, cleaning use and consumption. The arrow keys in the upper region are used to switch between the pages.

This region is currently undergoing further development. At the moment, data backup is not yet possible.



# 8 Status overview direct access

# 8.1 Description

Direct access allows display of all processes and temperatures during operation.

# INFORMATION

The status overview is intended only for the service technician.



a Hidden field for access to status overview

# 8.2 Opening the status overview

- $\rightarrow$  Tap the invisible field three times quickly.
  - $\hookrightarrow$  This changes the display to the status overview.

# 8.3 Exiting the status overview

- $\rightarrow$  Tap the *Back* button.
  - $\hookrightarrow$  Change to the display of the cooking process.



# 9 Software

# 9.1 Software update

# Preparing the USB stick

#### Prerequisite USB stick.

Maximum size 64 GB, formatting FAT (standard).

The disk should be empty if possible.

Current software update. The update is provided as packed ZIP file.

- 1. Open and download Zip file and unzip. In general, the unzipped folder is in the same directory as the previously compressed one.
- 2. Copy unzipped folder "MMIUpdate" to the USB stick.
  - $\hookrightarrow$  The folder contains the update files
  - $\hookrightarrow$  The files have the extensions ".ugl", ".ugln" and .ugls.
  - → For example "018400.ugl", "018400.ugln" and "018400.ugls" (software update V1.84).



# Updating the software

- 1. Insert the USB stick
- 2. Switch the appliance on.
- 3. Tap the "Unit functions" field.

→ Display menu *Unit functions*.

- 4. Tap the "Unit settings" field.
  - $\hookrightarrow$  Display window *PIN*.
- 5. Enter password "1967" and tap field Confirm.
- $\hookrightarrow$  Display from service area
- 6. Select the "Software update" field in the left menu area by swiping.
- 7. Tap the "Software Update" field.
- 8. Tap the "OK" field.

 $\hookrightarrow$  The update begins.

- $\hookrightarrow$  Finally, a confirmation appears on the touchscreen.
- 9. Tap the "OK" field.
  - $\hookrightarrow$  The software restarts automatically.



INFORMATION	The update can take up to 15 minutes. The software is restarted several times. Do not switch unit off.
INFORMATION	After the update, a blue screen may appear and the software does not start. In this case, switch the unit off and then back on. In rare cases, this may happen again.
INFORMATION	Sounds, cookbooks, help texts and videos are not part of the software update. For this purpose, the additional content must be imported.

# 9.2 Importing additional content

# Description

**Description** The additional content includes the following files:

- Pictures for AutoChef
- Help information
- Sound files

Import of additional content (sounds, videos, graphics, help texts).

# INFORMATION

Import is absolutely essential after the operating panel has been replaced.

# Preparing the USB stick

#### Prerequisite USB stick.

Maximum size 64 GB. FAT formatting (default).

The disk should be empty if possible.

Current additional content. The update is provided as packed ZIP file.

- 1. Open and download Zip file and unzip. In general, the unzipped folder is in the same directory as the previously compressed one.
- 2. Copy the unzipped folder "MMIContent" to the USB stick.
  - In the folder there are other subfolders. This may not be changed.



# Importing additional content

- 1. Insert the USB stick
- 2. Switch the appliance on.
- 3. Tap the "Unit functions" field.
  - → Display menu *Unit functions*.
- 4. Tap the "Unit settings" field.
  - → Display window *PIN*.
- 5. Enter password "1967" and tap field Confirm.
- $\hookrightarrow$  Display from service area
- 6. Select the "Import additional content" field in the left menu area by swiping.



- 7. Tap the "Import additional contents" field.
- 8. Tap the "OK" field.
  - $\hookrightarrow$  The data is imported.
  - $\rightarrow$  Finally, a confirmation appears on the touchscreen.
- 9. Tap the "OK" field.

# 9.3 Importing the manufacturer's cookbook

# Preparing the USB stick



a Update file

b FCImport folder

#### Prerequisite USB stick.

Maximum size 64 GB. FAT formatting (default).

The disk should be empty if possible.

Current additional content. The update is provided as packed ZIP file.

- 1. Open and download Zip file and unzip. In general, the unzipped folder is in the same directory as the previously compressed one.
- 2. Copy the unzipped folder "FCImport" to the USB stick.
  - → There can be subfolders in the folder. The directory structure must not be changed.

#### Import cookbook

- 1. Insert the USB stick
- 2. Switch the appliance on.
- 3. Tap the "Unit functions" field.
  - $\mapsto$  Display menu *Unit functions*.
- 4. Tap the "Unit settings" field.
  - → Display window *PIN*.
- 5. Enter password "1967" and tap field Confirm.
- $\hookrightarrow$  Display from service area
- 6. Select the "Import manufacturer cookbook" field in the left menu area by swiping.
- 7. Tap the "Import manufacturer cookbook" field.
- 8. Tap the "OK" field.
  - $\hookrightarrow$  The data is imported.
  - $\hookrightarrow$  Finally, a confirmation appears on the touchscreen.
- 9. Tap the "OK" field.
- 10. Perform unit restart via button On Off.



# 10 Trade show mode

- **Description** Trade show mode allows appliance operation for demonstration purposes.
- **Prerequisite** A single-phase power supply is required for operation.
  - $\rightarrow$  Appliance is connected on L1 and N.
    - → See also installation instructions.

#### Calling up the selection



- $\rightarrow$  Switch appliance on "I"
- $\rightarrow$  Touch the "Appliance functions" field.
  - → Display of *Appliance functions* menu.
- $\rightarrow$  Touch "Settings" field. → Display of *PIN* window.

→ Display of *Trade show* menu.



Switching trade show mode



- $\rightarrow$  Touch the "Trade show mode is off" field.
  - $\rightarrow$  Automatic restart of the software.
  - $\rightarrow$  Appliance is in trade show mode
- $\rightarrow$  The active trade show mode is indicated on the screen.



#### Switching off trade show mode



- $\rightarrow$  Call up the *Trade show mode* menu.
- $\rightarrow$  Touch the "Trade show mode is on" field.
  - → Automatic restart of the software.
  - $\rightarrow$  Appliance is normal operation.



# **11 Electronics**

# 11.1 Overview of the controller



Legend	
--------	--

A1	Control board	A2	Operating panel
M10	(Upper) fan motor	M20	Lower fan motor (215, 221 only)
T1	Transformer	T10	Upper) electronic ignition
T20	Lower electronic ignition (215, 221 only)	X8	Digital key



# 11.2 Control board

# 11.2.1 Layout of the control board



FM08-997B



# 11.2.2 Configuration of the control board

Connector X1	No.	Description		
	1	Input 10.7 V AC for lighting		
	2			
	3/4	Power supply I/O board 18V AC		
Connector X2	Not in	use		
Connector X3	Not in	use		
Connector X4	Not in	use		
Connector X5	CAN I	bus cable to motor M1 (for 215, 221 for upper	motor)	
Connector X6	CAN I	bus cable to lower motor M2 (215, 221 pedes	tal units only)	
Connector X7	MMI communication			
Connector X8	Digital key contains device-specific information.			
Connector X9 (24V DC)	No.	Description		
	1/2	Supply for control panel (MMI)		
Connector X10 (208V AC)	No.	Description		
	1	Supply voltage for relay		
	2	Output K1, main contactor Q1		
	3	-		
	4/5	Ν		

Connector X11 Not in use

Connector X12 (208V AC)

No.	Description
1	Output K17, WaveClean pump G16
2	-
3	Output K4, solenoid valve K12
4	Output K5, siphon pump G24
5	Output K6, backup relay
6	-
7	Ν

# free) optional

Connector X13 (potential- Control for condensation hood via K10

Plug X14 (floating)

Connector X15 / X16 Not in use

No.	Description
1	Input K11, cooling fan G7 (208V AC)
2	Output K11, cooling fan G7 (208V AC)



#### Electronics



Connector X32 (24V DC)

No.	Description
1/2	Output SSR 1
3/4	Output SSR 2

Connector X35 Not in use

Button The buttons have no function and are intended for internal use.



# 11.3 Safety overview

# Overview

Overview





# Legend

Legend	A1	Control board	A2	Operating panel
	B0	Thermoswitch 158°F NC	B11	(Upper) cooking chamber STL
	B12	Lower cooking chamber STL (only 215,221)	B13	Thermoswitch 122°F NO
	E	Cooking chamber light	F	Fuse
	G7	Cooling fan	G8	Cooling fan (only 215,221)
	G16	WaveClean pump	G24	Siphon pump
	K6	Backup relay	K12	Magnetic valve extinguishing
	M8	Lift magnet	M10	(Upper) fan motor
	M20	Lower fan motor (only 215,221)	Q1	Main contactor
	T1	Transformer	T10	Upper) electronic ignition
	T20	Lower electronic ignition (only 215,221)		



# 12 Fault messages & troubleshooting

# 12.1 Symbols for errors

For some errors, an additional symbol appears in the title bar.

If the exact error is not known, switch the unit off and then back on. In the event of an error, the exact error will appear in the display.

Display on the left touchscreen	Description
	Cooking sensor defective. Unit in emergency mode Emergency operation.
$\langle \! \mathcal{D} \!$	Core temperature sensor defective,
$\bigotimes$	Fan fault. Operation no longer possible. Switch the unit off and then back on.



# 12.2 Emergency operation

# Description

D	escription	In order to allows limited use in case of error, the appliance has various emergency programs. Emergency operation is activated automatically and displayed. After elimination of the error indicated, the controller switches back into regular operation automatically. A reset is not necessary.
INFORMATIO	N	Emergency programs handle the limited further operation of the appliance until

#### **Overview**

Error	Description
Upper chamber sensor faulty.	Measurement of the cooking chamber temperature is done exclusively by the bottom cooking chamber sensor.
Lower chamber sensor faulty.	Measurement of the cooking chamber temperature is done exclusively by the top cooking chamber sensor.
Vapour sensor defective	The software controls the water vapor elimination. This results in higher water consumption.
Internal core temperature sensor faulty. Cooking program was canceled. Cooking program can be restarted after changing to external core temperature sensor.	The core temperature sensor is deactivated.
External core temperature sensor faulty. Cooking program was canceled. Cooking program can be restarted after changing to internal core temperature sensor.	

servicing. Deviating cooking results and temperature deviations are possible.



# 12.3 Temperature sensor area

#### Cooking chamber sensor faulty (694,695)

#### Description

Emergency operation is activated automatically and displayed. The core temperature sensor takes over the function of the cooking chamber sensor. Cooking program with core temperature sensor is no longer available.





# Upper cooking chamber sensor faulty (696, 728)

#### Description

Emergency operation is activated automatically and displayed. Measurement of the cooking chamber temperature is done exclusively by the bottom cooking chamber sensor.

Check contacting from cooking chamber sensor to control board A1 X25. Error eliminated?		
Remove existing cooking chamber sensor f	from the co	ontrol board A1 X25 and plug in new cooking
chamber sensor. Error eliminated?		
↓ No		Yes
Replace control board.		Replace cooking chamber sensor.



#### Lower cooking chamber sensor faulty (697, 729)

#### Description

Emergency operation is activated automatically and displayed. Measurement of the cooking chamber temperature is done exclusively by the top cooking chamber sensor.

#### Troubleshooting



Alternatively, disconnect top cooking chamber sensor from A1 X25 for test purposes and connect to A1 X26 to see if the error "migrates".





# Core temperature sensor fault (699, 700)

#### Description

The core temperature function is no longer available.





#### Internal core temperature sensor faulty (714, 716)

#### Description

The internal core temperature sensor in the cooking chamber is deactivated.

#### Troubleshooting

Identical to "Core temperature sensor fault" (see " Troubleshooting", Page 66).

#### External core temperature sensor fault (715, 717)

#### Description

The external core temperature sensor is deactivated.





# Vapour sensor fault (710)

#### Description

In the event of an error, emergency operation is activated and displayed automatically. The software controls steam elimination. In this case, increased water consumption may result.

Check contacting from cooking chambe	er sensor to control board A1 X27. Error eliminated?
Remove connector of existing vapor sense	sor from control board A1 X27 and plug in new vapor
sensor	r. Error eliminated?
No	Yes
Replace control board.	Replace vapor sensor.



#### Waste trap temperature very high (SOF\_ID20, ID21)

#### Description

Description	The temperature in the siphon is >100°C. The water vapor sensor B4
	is used for the measurement.

**Prerequisite** Water supply available on-site at both water connections.

- **Troubleshooting**  $\rightarrow$  Update software to version 1.71 or higher. As of this version the fault is ignored.
  - → Fill the siphon with 2 liters of water from inside the cooking chamber.
  - → Check the solenoid valve for steam elimination K12 via the relay test.
  - → Perform the WaveClean test.

#### Troubleshooting

- → Update software to version 1.71 or higher. As of this version the fault is ignored.
- → Fill the siphon with 2 liters of water from inside the cooking chamber.
- → Check the solenoid valve for steam elimination K12 via the relay test.
- $\rightarrow$  Perform the WaveClean test.

#### Risk of frost (TMP\_ID72, MMI\_ID51)

#### Description

The unit is not ready for use. The temperature sensor on the control board is measuring a temperature of  $<0^{\circ}$ C.

- $\rightarrow$  Increase the room temperature and switch on unit again.
- $\rightarrow$  Change location of the unit.



#### Cooking chamber temperature too high (ID18, ID73)

#### Description

The measured temperature in the cooking chamber is outside the allowable range of more than 310°C. The unit is no longer operational until the cooking chamber cools down. The measurement is taken by the cooking chamber sensor and core temperature sensor.





# 12.4 Motor area

# **Marning: electric shock! Danger of death!** When working on the power board, make sure that energized parts are exposed. Work on these components during operation and up to 3 minutes after enabling is not allows. Even if the motor is stopped and the appliance is de-energized, the connection terminals and components can conducted dangerous voltage!

# Overview



#### Tabletop unit 615, 621, 115, 121

Image: Motor system 615,620,115, 120 tabletop unit

- A1 Control board
- B1 Safety temperature limiter
- 1
- F3 Fuse on control board, 3.15 A, slow-blow
- K1 Relay on control board A1
- T10 Power supply unit for motor

- B0 Thermal switch 158°F
- F4 Fuse 6 A, slow-blow
- F4. 1
- F4 Fuse 6 A, slow-blow
- M1 Fan motor 0





Pedestal unit 215, 221

Image: Motor system 215, 221 pedestal unit

A1	Control board	B0	
B1	Safety temperature limiter	B1	;
1		2	(
F4	Fuse 6 A, slow-blow	F5	I
F4.		F5.	
1		1	
F3	Fuse on control board, 3.15 A, slow-blow	F4	l
K1	Relay on control board A1	M1	
		0	
M2 0	Fan motor (bottom)	T10	I
T20	Power supply unit for motor		

unit for motor (bottom)

- Thermal switch 158°F
- Safety temperature limiter (only
- on 215/ 220 pedestal units
- Fuse 6 A, slow-blow
- - Fuse 6 A, slow-blow
  - Fan motor (top)
- Power supply unit for motor (top)


## Fan faulty or temperature limiter tripped (702)

## Description

The control board A1 does not receive any response via the CAN bus cable from fan motor M10. There is an error in the safety circuit or fan area.









## Fan faulty. Cooking program was cancelled (701)

## Description

**Description** The control board A1 does not receive any response via the CAN bus cable from fan motor M10 when the fan is active.

#### Troubleshooting

See "Fan faulty or temperature limiter tripped (702)"

## Upper fan faulty (1615, 1617)

#### Description

The control board A1 does not receive any response via the CAN bus cable from the top fan motor M10.



## Troubleshooting



## Upper fan faulty (703, 705)

## Description

The control board A1 does not receive any response via the CAN bus cable from the top fan motor M10.

## Troubleshooting

Update the software to version 1.91 or higher.



## Upper and lower fan faulty (707, 708)

## Description

The control board A1 does not receive any feedback via the CAN bus cable from the upper and lower fan motor M10/ M20. There is a fault in the safety circuit. The main contactor Q1 is not activated.

## Troubleshooting



a replacement relay or replace the control board.



## Lower fan faulty (1616, 1618)

#### Description

The control board A1 does not receive any response via the CAN bus cable from the lower fan motor M20. There is an error in the safety circuit or fan area.





## Lower fan faulty (704, 706)

## Description

The control board A1 does not receive any response via the CAN bus cable from the lower fan motor M20. There is an error in the safety circuit or fan area.

## Troubleshooting

Update the software to version 1.91 or higher.



## Fan fault (FAN\_ID23)

#### Description

The control board A1 does not receive any response regarding speed from fan motor M10. There is either a problem with the 320 V voltage supply from the power board or a fault in the fan.

## Troubleshooting

Before starting troubleshooting, check the software version on the unit. This should be version 1.91 or higher. For older versions, carry out an update in advance.



## Fault in upper fan (FAN\_ID24)

## Description

The control board A1 does not receive any response regarding speed from upper fan motor M10. There is either a problem with the 320 V voltage supply from the power board or a fault in the fan.

## Troubleshooting

See "FAN\_ID23: Fan fault: Try restarting".



## Fault in lower fan (FAN\_ID25)

## Description

The control board A1 does not receive any response regarding speed from lower fan motor M20. There is either a problem with the 320 V voltage supply from the power board or a fault in the fan.

## Troubleshooting

See "FAN\_ID23: Fan fault: Try restarting".



## Motor system faulty (FAN\_ID27)

## Description

The error message is generated when the control board receives a too low or no speed from the motor control. After unit restart via "ON/ OFF" the error is reset. A new query is made at the start of the cooking program.





# 12.5 Water area

## Water pressure too low (709)

a Pressure switch
b Sieve

## Troubleshooting

Overview

The water pressure at the water connection must be at least 2 bar.



## Fault messages & troubleshooting





## The water pressure is too low, cleaning is paused

## Description

This fault message is displayed if the pressure switch registered a water pressure that is too low during WaveClean. The program is stopped until the water pressure is sufficiently high again.

## Troubleshooting

Ensure customer-supplied water supply on the soft water connection of unit. The supply pressure on the water connection must be at least 2 bar. If the fault occurs sporadically, check the on-site water pressure while observing nearby water consumers.



# 12.6 Electronics / control area

## Increased temperature of the electronics (MMI\_ID53, MMI\_ID54)

## Description

## MMI\_ID53:

The temperature sensor on the control board is measuring a temperature of >65°C (149°F). The current cooking program is continued.

## MMI\_ID54:

The temperature sensor on the control board is measuring a temperature of >78°C (172°F). The current cooking program is continued.









# Excessive temperature of the electronics (MMI\_ID50)

## Description

The temperature sensor on the control board is measuring a temperature of >80°C (176°F). The unit is no longer operational until it cools down.









## Accessing external EEPROM failed (SOF\_ID12)

## Description

It is not possible to access the digital key (EEPROM).

#### Troubleshooting

- → Make sure that the digital key is oriented correctly and inserted fully. The side with the hole must point to the sensor connections.
- $\rightarrow$  Control board defective.
- $\rightarrow$  Digital key defective.

## **CAN** connection faulty

#### Description

There is a communication fault between the operating panel and control panel. In addition, temperature sensor and fan fault messages appear on the touchscreen.

## Troubleshooting

- → Replace communication cable between operating panel and control panel circuit board.
- → Replace control board.
- $\rightarrow$  Replace operating panel.

## 5001: Software update failed

#### Description

It is not possible to update the software because it was not found.

#### Troubleshooting

- → Check the contents of the USB stick.
  - → Correct update available (suitable for the device)
  - → Update unpacked and copied. See also installation instructions or service instructions.
- $\rightarrow$  Check the function and contacting of the USB stick.
- $\rightarrow$  Use a different USB stick

## 5007: Not enough storage space for software update

## Description

The internal memory is full. The current version will be restarted. The cause can be faulty data import (additional content).

## Troubleshooting

- → Replace operating panel. Alternatively, continue to operate with the current software.
- $\rightarrow$  Send the operating pane to the manufacturer for repair.

## 5008: No new version found

#### Description

The following causes generate the message:

USB stick not recognized or not present

Required content not present on the USB stick or saved incorrectly.

The software version on the unit is newer than that on the USB stick.

## Troubleshooting

- $\rightarrow$  Check content and structure of the USB stick.
- $\rightarrow$  Ensure that the USB interface is functioning properly.
  - $\hookrightarrow$  On USB sticks with an LED, the LED must be on.
  - → Check communication, e.g. by exporting HACCP data
- → Use a different USB stick

If the message appears after a software update, confirm by pressing "OK". In individual cases, this may be required several times.

## 5009: The application could not be started. Application will be restarted.

#### Description

The software does not boot. There is a fault in the communication or the software is damaged.

#### Troubleshooting

- → Confirm the message with "OK".
  - $\hookrightarrow$  The software is restarted.
- → The error may appear twice. Repeat the procedure. If the error continues to appear, proceed as described in the troubleshooting guide.

Troubleshooting takes place by disconnecting individual CAN bus connections. Other error messages are generated in the process. The decisive factor is that the original message "5009 or 5010" is no longer displayed.





## 5010: Application could not be started. Restore configuration backup?

## Description

Starting the software is not possible because of an error. The system will attempt to restore the configuration.

## Troubleshooting

- $\rightarrow$  Confirm message. An automatic restore starts.
- $\rightarrow$  Next, update the software.
- → If the error continues to appear, the operating panel needs to be replaced.

## 5013: Application could not be restored

## Description

Starting the software is not possible because of an error. The system will attempt to restore the configuration.

## Troubleshooting

 $\rightarrow$  Confirm message. An automatic restore starts.



- $\rightarrow$  Next, update the software.
- → If the error continues to appear, the operating panel needs to be replaced.

## 5027: The application could not be started. Perform a software update

#### Description

The software does not boot. There is a software error.

## Troubleshooting

Perform a software update.

- $\rightarrow$  Switch off the unit
- $\rightarrow$  Insert prepared USB stick.
- $\rightarrow$  Switch on the unit.
- $\rightarrow$  Follow the instructions on the screen. Confirm this with OK.

## The battery of the MMI must be replaced (1478)

#### Description

The date and time are lost after the unit is switched on or they reset. HACCP and log data are no longer saved in a form that can be evaluated.

Replacement requires disassembly of the operating unit.

INFORMATION	Battery type				
	Required battery: Button cell CR1220 3 V.				
Changing the batter Setting the date/time	<ul> <li>y → De-energizing the unit</li> <li>→ Removing the control unit</li> <li>→ Detaching lines to the operating unit</li> <li>→ Remove rear cover from touchscreen. This requires removing the four fastening screws.</li> <li>→ Change the battery.</li> <li>→ Reassembly is carried out in reverse order.</li> <li>e → Restoring the power supply</li> <li>→ Set the date and time in the basic settings or service menu.</li> </ul>				
INFORMATION	After replacing the battery, it is mandatory to set the date/time. Otherwise, the error message will continue to appear when the unit is switched on. When the unit is switched on for the first time after replacement, the error message appears because the date/time has not yet been set.				

## Device was restarted after a power failure

#### Description

The message appears after an interruption of the supply voltage during an active cooking program.

#### Troubleshooting

- → Ensure that the appliance has not been switched off using the "On/Off" switch when the cooking program is active. In this case, the control is disconnected from power, which is interpreted by the software as a power failure. Stop the cooking program before switching the unit off.
- $\rightarrow$  Make sure that the customer's supply voltage is reliable.
- → Check that the "On/Off" switch functions properly and is in the correct position.
  - $\rightarrow$  The switch must be fastened securely.
  - → The switch is available separately.
- → Check the electrical connections and screw connections in the area of the mains connection terminal, transformer and power line to the control board.
- $\rightarrow$  Replace control board. It supplies voltage to the operating panel.
- $\rightarrow$  Replace transformer.
- $\rightarrow$  Replace operating panel.

## Door is open. Cooking program was stopped

#### Description

During fault-free operation, this message appears if the cooking chamber door is opened during an active cooking program. If the message is displayed with a closed cooking chamber door, there is an error on the reed contact switch or door magnet.

## Overview



FM08-997B





# 13 Wiring diagram













Benennung	MKN Nr. MKN	Bezeichnung	Description	Sicherung auf Platine	Bemerkung Comment	
enomination	no.		·	Fuse on board	-	
A1	10013404	Steuerplatine	Control pcb			
	10014258	Bedienpanel (Platinum)	Operation panel (Platinum)	F2		
A2	10014257	Bedienpanel (Gold)	Operation panel (Gold)	F2		
	10016232	Bedienpanel FPDE	Operation panel FPDE			
A4	10021815	Räucherbox	Smoker box		Option Smoker	
B0	10014580	Thermoschalter 70 °C aus	Thermoswitch 70 °C off	_		
	10013578	Kerntemperaturfühler	Core temperature probe	_	nur/only 6.X/10.X	
B1	10013579	Kerntemperaturfuhler	Core temperature probe		nur/only 20.X	
	10013515	Kerntemperaturfuhler	Core temperature probe		nur/only Gold 6.X/10.X	
D2/D2	10013510	Corroumfübler	Cohinet probe		R2 pur/ophy 20 X	
DZ/D3	10013520	Wrason-Temperaturfühler	Drain probe		BS hul/only 20.X	
B4	10013521	Wrasen-Temperaturfühler	Drain probe		nur/only 0.X/10.X	
B6	10013517	Sous Vide Temperaturfühler	Sous Vide temperature probe		Option	
B7	10013518	Kerntemperaturfühler (extern)	Core temperature probe (external)		Option	
	202806	Sicherheitstemperaturbegrenzer 320 °C	Safety limit switch 320 °C		B12 nur/oply 20 X	
B11/B12	202805	Sicherheitstemperaturbegrenzer 310 °C	Safety limit switch 310 °C		nur/only 6.X	
B13	202746	Thermoschalter 50 °C ein	Thermoswitch 50 °C on			
B14	202601	Druckschalter 2 A	Pressure switch 2 A			
B15	10013771	Reedkontaktschalter	Reed contact switch			
<b>E4</b>	574175	RHK 13.2KW 240V MIT LITZE	HEATING ELEMENT 13.2KW 240V WIRE		6.1	
E1	574179	RHK 22.8KW 240V MIT LITZE	HEATING ELEMENT 22.8KW 240V WIRE		6.2	
E1/E2	574203	RHK 20.4KW 240V MIT LITZE	HEATING ELEMENT 20.4KW 240V WIRE		10.1/20.1	
E1/E2	574178	RHK 36KW 240V MIT LITZE	HEATING ELEMENT 36KW 240V WIRE		10.2/20.2	
E3/E4	203679	Halogenlampe 12V 20W	Halogen bulb 12V 20W			
L3/L4	203678	Lampenfassung	Lamp socket			
F1.1/F2/F2.1/ F4/F4.1	202644	Sicherung Fein 6A Träge	Fuse Fine 6A Slow		F2 nur/only 20.X	
1-F2/F3/F5	203742	Sicherung 3,15 A Träge; 20 x 5 mm	Fuse 3,15 A ; 20 x 5 mm			
F21-24	202642	Sicherung 60A	Europ 60A		nur/only 10.2/20.2	
F31-34	202042	Sicherung 60A	Fuse 60A		nur/only 20.2	
G7/G8	202607	Kühllüfter115 V; 180x180 mm	Cooling fan 115 V; 180x180 mm		nur/only 20.X	
G7	203819	Kühllüfter 230 V;119x119 mm	Cooling fan; 230 V;119x119 mm		6.X/10.X	
G16/G24	203825	Pumpe 230 V; 50 Hz	Pump 230 V; 50 Hz	F3		
010/024	203826	Pumpe 230 V; 60 Hz	Pump 230 V; 60 Hz	F3		
G40	10029938	Pumpe 200-240V 50/60Hz	Pump 200-240V 50/60Hz		Option Grease col.	
K12	201192	Magnetventil	Solenoid valve	F3	Option Opposit	
K12/K41	10030668	2-tach Magnetventil	double Solenoid valve	+3	Option Grease col.	
K20/K21	203831	Beschwadungseinneit o. Druckschalter	Water steaming unit w/o pressure switch		without waveClean	
1640	203832	Beschwadungseinneit m. Druckschalter	water steaming unit w pressure switch		Option Crosses col	
N4U	10013772	Hubmagnet 220 V AC	Lift magnet 220 V AC	E	Option Grease col.	
M10/M20	10013/72	Motor	Liit magnet 230 V AC	61	M20 pur/oply 20 X	
	10014003	Schütz 80 A 230 V	Contactor 80 A 230 V	F3	$001 \times 61/62/101$	
01	10014026	Schütz 130 A, 230 V	Contactor 130 A 230 V	F3	only 10 2/20 1	
Sec.	10014595	Schütz 198 A 230V	Contactor 198 A 230 V	F3	only 20.2	
	203668	Halbleiterrelais 100 A: 4 - 32 V	Solid state relay (SSR) 100 A: 4 - 32 V	10	0111y 20.2	
Q2-Q5	202609	Halbleiterrelais 125 A: 4 - 32 V	Solid state relay (SSR) 125 A: 4 - 32 V		only 10.2 / 20.2	
Q6	202801	Relais 8A 250V	Relais 8A 250V		Option Smoker	
<u> </u>	10011580	RC-Kombination	RC-Combination		only 6.1 / 6.2 / 10.1	
RC1	10013671	RC-Kombination	RC-Combination			
S0	10014588	Schalter Ein/Aus	Switch On/Off			
T1	10013658	Steuertrafo 100 VA	Transformer 100 VA			
T10/T20	10014664	Leistungsplatine für Motor	Power pcb for motor		T20 nur/only 20.x	
X1		Netzensehlussklemme	Main aunaly terminal		,,,	

D	G40 geändert	23.02.22	woy		Datum	Name					
С	G40 hinzu	20.05.21	woy	Gez.	23.04.21	WOY	$\wedge$	Benennung			
								WIRING DIAGRAM FPE/FGE	/FPDE 3PE	AC 208.	-240V
В	RB geändert	05.03.19	woy	Gepr.				Zeichnungsnummer		Maßst.	Seite/n
A	RB hinzu	21.06.18	woy	Frei.			KN	10014280-0PS06WD			6 / 6
In.	Änderung	Datum	Name	Norn	1: DIN 81	346		Ers. f.:	Ers. d.:		

C

0

E

F

D



Henny Penny Corporation P.O.Box 60 Eaton,OH 45320 USA

Phone +1 937 456-8400 Fax +1 937 456-8402

Toll free in USA Phone +1 937 417-8417 Fax +1 937 417-8434



Henny Penny Corp., Eaton, Ohio 45320, Revised 12/12/2024

www.hennypenny.com