



Commercial Kitchen Equipment Parts

RATIONAL ICOMBI

Rational ICOMBI service-manual

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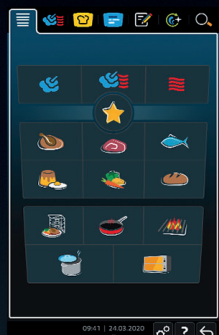
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SERVICE REFERENCE iCombi Pro

On/Off switch



iCombi Pro



Settings
Service level

	WiFi connected / LAN disconnected
	no WiFi connection working
	LAN connected
	no LAN connection working
	Unit connected with ConnectedCooking
	Unit registered in ConnectedCooking, but not connected
	Demo mode active
	Energy optimisation active
	USB device was detected

FUNCTION LEVEL

MyDisplay- Password RAdmin

Service level

Unit data, hotline, self-test, calibration,
Service level password **TECLEVEL**,

SERVICE LEVEL

	Basic settings	Unit-specific settings and calibration. To apply the values, switch the unit off and on again.
	Notification centre	Service errors that are not assigned to a specific module.
	Running times	...scheduled in future versions.
	Component replacement	
	Diagnosis	Serial numbers of components, board temperatures.
	Software	Software versions/hardware revisions on components.
	Service error	Service history for module errors.
	Running times	...scheduled in future versions.
	Diagnosis	Real-time data: All sensors and actuators of the module are checked for their current status.
	Module test	Short programme for detecting errors in the steam system, such as problems with steam saturation.
	Function test	Test of all components of the corresponding module.
	Volume measurement	...scheduled in future versions.
	Service error	...see "heating steam"
	Running times	
	Diagnosis	
	Function test	
	Motor position	Motors can be newly positioned after one or more motors have been replaced.
	Service error	...see "heating steam"
	Running times	
	Diagnosis	
	Function test	
	Calibration values	...scheduled in future versions.
	Service error	...see "heating steam"
	Running times	
	Diagnosis	
	Module test	A short programme (10-15 min) to reset iCareSystem errors. Start after the cause of the error has been rectified.
	Function test	...see "heating steam"
	Service error	...see "heating steam"
	Running times	
	Gas parameters	Gas speeds, CO2 values and gas type change.
	Flue gas analysis	Start of the flue gas analysis for all burners.

REPLACING THE BOARD

- > Unit disconnected from mains voltage
- > Remove the micro SD card
- > Replace the board
- > Insert the micro SD card
- > Switch on the unit
- > iCombi Pro Display visible
- > Unit installs software backup from micro SD card to the board
- > Update unit with the latest software



#87.01.757

CALIBRATION/Self-TEST

The calibration values are determined after installation during the self-test and during the calibration and stored on the SD card and the board.

On-site calibration is necessary when replacing:

Pressure sensor P1, B4 thermocouple moisture, fan wheel, micro SD card and circuit board together, use of different hinging racks, installation of new air baffle, installation of hoods or Combi-Duo, customer complaints with uneven cooking results, subsequent relocation
A self-test is necessary for new installations.

Start conditions:

Cooking cabinet sensor B1, control sensor B2, moisture sensor B4: < 40°C
In order to achieve the best possible calibration values, a closed GN container should be inserted 20 mm deep with the open side down in the middle in front of each fan wheel.

After a successful self-test, a **flue gas analysis** must be carried out for gas units!

CALIBRATION ERRORS

The following calibration errors can occur during the self-test or a manual calibration:

(**Error step** | **Error code**)

(1|2) B1 too hot (1|4) B2 too hot (1|8) B4 too hot
> Combination of error codes is possible!

(2|1) Differential pressure too low (2|2) Differential pressure too high
> Check P1 (fault or not connected)

(4|1), (10|1), (15|1) determined calibration value too small
(4|2), (10|2), (15|2) determined calibration value too large
> Check hose (changed, water in hose, P1 faulty)

Timeout: Timeout in calibration step

> z.B.: Cooking cabinet door open, heating register/SSR fault
Calibration step 20: Calibration has been successfully completed

The most common gas errors are:

(**Hot air above** | **Steam** | **Hot air below**)

(19 | 29 | 39) Burner goes out 5 times during the burning phase
(22 | 32 | 42) Unsuccessful ignition process (5x)
(20 | 30 | 40) Fan speed deviation from setpoint too high

SERVICE MESSAGES

Service	Check and replace if necessary
10	SC pump, Combi water box, pump-off hose
11	Level electrode, CDS sensor flow rate, I/O board
12	CDS sensor
13	Change level electrode
14	Level electrode, water conductivity
16	Software update of the board
17	Inform RATIONAL; use Recovery Software
19	Change SD card
20.x	Thermocouple break, x = sensor; -1 cooking cabinet B1; -2 control valve B2; -4 = moisture B4; -8 = steam generator B5
23	SSR steam
24	SSR hot air
25	Fan wheels not running/no increase in performance at the fan motor when water jet hits: Check the water supply, pressure, hoses, CDS sensor, position of GN conductors and mobile oven racks
26	Ball valve does not open; test in the function test, replace if necessary
27	Ball valve does not close; test in the function test, replace if necessary
28.x	Thermoelement, x= sensor: -1: Steam generator B5 too hot (>170°C); -2: Cooking cabinet B1 too hot (>350°C); -3: Cooking cabinet B1 too cold (<2°C)
29	Board temperature too high: Check the air filter, cooling fan and seal on the control panel
30	Moisture control error; differential pressure sensor P1
31.xx	Thermoelement core temperature B3; x= error type: -1: Cooking cabinet core temperature sensor fault; -2: Cooking cabinet core temperature sensor emergency mode 11/12: USB core temperature 1 fault/emergency mode 21/22: USB core temperature 2 fault/emergency mode
32.x	Ignition box, x= error – burner branch number: Close gas tap; only replace the ignition box if gas errors 33, 36, 39 or 42 have occurred more than 5 times
33.x	Gas burner error; x= error – burner branch number: Gas tap, gas valve or control of ignition box to gas valve
34.xx	Bus signal missing: -1 motor above; -2 motor middle; -4 motor below; -8 pump board; -16 I/O power supply; -32 ignition box; -400 bus complete failure
35	UltraVent®: Bus signal / internal communication
35.x	UltraVent error: -1 voltage missing; -2 filter detection faulty; -3 thermocouple control fault; -4 Thermocouple motor protection defective; -5/6 dirt in the filter (advance warning/immediate replacement); -7 filter not inserted/no differential pressure is measured
36	Differential pressure sensor fault (no signal output of 0.5V; check 12V at P1); P1 must be installed horizontally

37	Climate control malfunction: Check hose connections
38	Potentiometer operating modes fault
39	Potentiometer cooking cabinet temperature fault
40	Check the care pump (M18) in the function test (note: Y4 is activated at the same time, run the rinsing programme)
41	Steam injection function: Check solenoid valve Y3, humidification nozzle and pipe for calcification; CDS does not measure pulses; Reset errors by successfully running the rinsing programme
42.x	Solenoid valve x does not open: -1: Charging Y1; -2: Control Y2; -3 steaming Y3; -4 Care Y4; -5 climate Y5 / Y15; -6 CleanJet Y14
43.x	Solenoid valve x does not close: -1: Charging Y1; -2: Control Y2; -3 steaming Y3; -4 Care Y4; -5 climate Y5 / Y15; -6 CleanJet Y14
44	Steam heating fault or insufficient;
46.x	SC pump (M4); x= error type: -1: fault; -2: Output too low
47.x	Waste water pump (M15); -1: fault; -2: Output too low
48.x	Circulation pump (M17); -1: fault; -2: Output too low
49.x	Care pump (M18) ; x= error type: -1: fault; -2: Output too low.
50	Real time clock (date and time)
51	Check battery, replace if necessary
52	LED cooking cabinet lighting: -1 LED left; -2 LED right
55	Fan motor above, hot air heating
56	Fan motor below, hot air heating
57	Fan motor middle, hot air heating
60	Ignition box not initialised or not quickly – Error in the speed signal from the circuit board to the fan burner; Switch unit off and on, use SD Recovery Software if necessary.
63	Check water connection to the unit
70.x	Cooling fan: -1 failed; -2 other errors
71.x	Power supply: -1: Voltage; -2: Undervoltage
72	eSTB for HL or steam: Flash code on eSTB – error
73.x	Error due to overtemperature at: -1 motor above; -2 motor below; -4 motor middle; -8 ignition box (cleaning board new); -16 cleaning board (I/O power supply new); -32 I/O power supply (ignition box new);
75	Internal bus interface (I2C)

76.xx	-1: Limited voltage; -2: Internal inspection failed; -3: wrong voltage setting; -4: Too many channels; -5: Wrong channels; -6: wrong time; -7: Hardware error
110	SC pump fault while Carechemie is in the steam generator
120	Level electrode without signal while Carechemie is in the steam generator;
121	Additional function when operating the unit without water: Note on filling water in the control box

DIAGNOSTIC LED CONTROL COMPUTER

Ethernet activity 2 LEDs (green, yellow)	
Green LED: at 100Mbit from 10Mbit	Yellow LED: off: no connection on: not connected Blinking: connected & active
Malfunction: 1 LED (red)	
Voltage display: 1 LED (green): 12V voltage input	

DIAGNOSTIC LED ESTB (3 LEDS A, B,C)

Diagnostic LED eSTB A15/A16 (3LEDs A, B, C)

Step 1 (8s): LED A: steam generator or LED C: Hot air; Step 2 (1s): LED A, B, C

	Sensor not connected	
	Sensor short circuit	
	Outside the logical area	
	High temperature	

After solving the problem: Reset eSTL, press the reset button for three seconds.

DIAGNOSTIC LED I/O POWER SUPPLY

Diagnostic LED I/O power supply A10 red LED (rear side)

Code 1		Error voltage
Code 2		Communication error with STM32
Code 3		Fault capacitive button
Code 4		Wrong connection detection high limit
Code 5		Wrong connection detection low limit
Code 6		Mains frequency not recognised
Code 7		Self-test failed
Code 8		reserved

2 seconds
Break

Beware of electric shock, even when the unit is switched off:

I/O power supply (A10), pump board (A13), eSTB (A15/A16) and solenoid valve block



Commercial Kitchen Equipment Parts

Find more Rational equipment resources at

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Need parts or service?

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