SERVICE MANUAL

TDR 7 P GAS FIRED ROTISSERIE OVEN

MODELS

Programmable controls TDR 7 P

Gas types:
Natural Gas G20/25
Propane G31
(Butane G30)

Model TDR 8 P Gas

- NOTICE -

This manual is prepared for the use of trained Service Technicians and should not be used by those not properly qualified. If you have attended a training for this product, you may be qualified to perform all the procedures in this manual.

This manual is not intended to be all encompassing. If you have not attended training for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained technician.

fri-jado

USA

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Versions		
Version	Issue date dd/mm/yy	Remarks
10/2013	01/10/2013	First release.
01/2014	01/01/2014	Added reset and small textual changes. Exploded views and electric diagrams changed.
03/2014	01/03/2014	Working of rotisserie changed. Error 55 explanation. Small other changes.
11/2014	01/11/2014	New errors, various updates.
01/2015	01/01/2015	Working adjusted. Gas block part numbers adjusted. Small other changes.

INDEX

GENERAL TECHNICAL DATA

This manual covers the TDR 7 P gas fired rotisserie ovens suitable for Natural gas G 20/25 and Propane G 31.

- TDR 7 – Oven with 8 spits (32 to 40 chickens) or 7 baskets (28 chickens).

All of the information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing.

TECHNICAL DATA

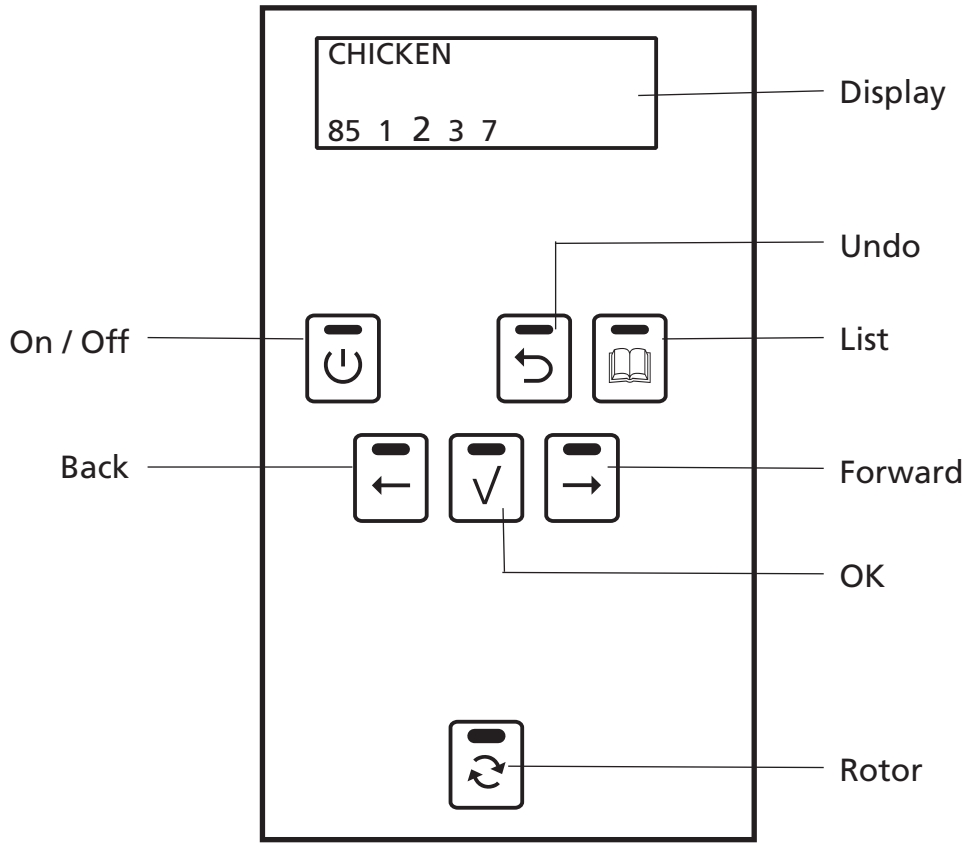
Type	**TDR 7 Gas**	
Gas power (BTU - KW)	55.000 - 15.9	
Electrical Power (W)	345	
Fuses needed with power connection 115 V, 1 ~50…60 Hz (1 phase with zero)	1x 15 A	
Standard plug from factory single pole	NEMA 5-15	
Net weight	208 kg	459 lbs
Gross weight	233 kg	514 lbs
Height	1050 mm	42 3/4”
Width	995 mm	39 3/16”
Depth	830 mm	32 5/8”

Tools

- Standard set of tools.
- Metric wrenches, sockets and hex socket key wrenches.
- Multi-meter.
- AC current clamp tester.
- Temperature tester.
- Insulation value tester (Megger).
- Toxicity meter.
- Gas pressure meter.
- Gas consumption/flow meter.
- Field Service Grounding Kit.

PROGRAMMING INSTRUCTIONS FOR THE TDR 7 P GAS

OPERATING PANEL



Key	Function
On / Off	Switching the unit On / Off
Undo	Go back to previous menu
List	Recipe / programming modus
Forward	One step ahead in setting
Rotor	Positioning of the rotor
OK	Acknowledge a function or change
Back	One step back in setting

OPERATION

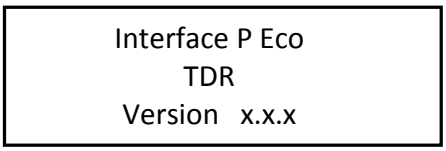
5. OPERATION

Buttons are lit when functional.

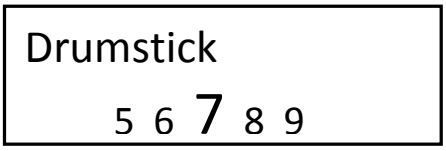
5.1. Operation of the rotisserie

1. Press Start.

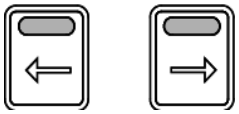
2. Display shows Fri-Jado logo.



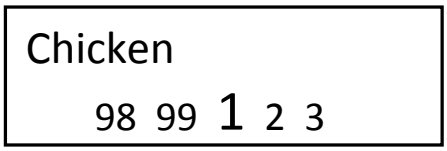
3. Display shows software version.



4. Display shows latest cooking program.

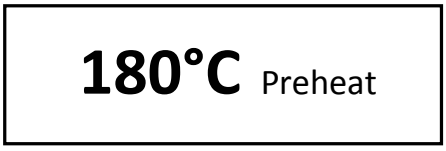


5. Use the arrow buttons for program selection.



6. Display shows selected program.

7. Confirm the selected program.



8. Display shows pre-heat (only when pre-heat is defined).

LOAD
or START

9. Pre-heat ready
(unit returns a sound signal).
Note: press OK or open the door to stop the signal.

Display shows the next step of the program.

Note: Screen 9 and 11 alternate each 5 seconds.

10. When loading: press the rotor button to turn the rotor.

Did you empty
The fat tray?

11. After loading, close the door.
A reminder to empty the fat tray appears.

12. Press OK to confirm.

180°C 0:59

13. Display show programmed temperature and time (hour : min).

14. (Optional) Press OK button for the actual temperature and time (shows about 2 seconds).

1 Chicken
230°C P123 0:60

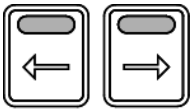
15. During the last minute the time blinks.

1 Chicken
230°C P123 0:55

16. Display show the remaining time, the interval is 5 seconds.


UNLOAD

17. Open the door.

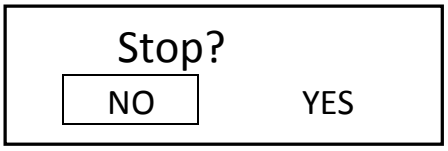
Measure Core Temp.	18. A reminder to measure the core temperature appears. **Note:** Screen 17 and 18 alternate every 5 seconds.
2 Chicken :00 Add time?	19. (Optional, visible for 5 min.) request for additional time (minutes) after opening the door. **Note:** Add time is only available when activated in the service menu.
	20. (Optional) press right arrow for one minute increase, press left arrow for one minute decrease. When activated program continues at step 13.
 UNLOAD	21. Program ready, open door.
	22. Press the rotor button to rotate the rotor.
	23. Close the door (if required clean the unit).
Chicken 98 99 1 2 3	24. Display shows the last operated program.

OPERATION OPTIONS

5.2. Operation options

5.2.1. To end a running program.

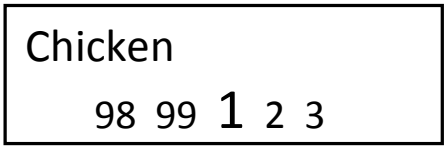
1. Press and hold start for 3 seconds.



2. Make a choice with the arrow buttons.

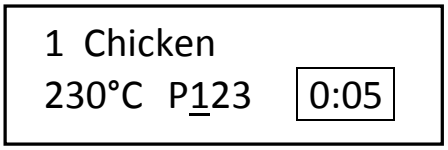
   Note: Select NO to abort ending the program.

3. Confirm the selection.
   (Within 5 seconds).



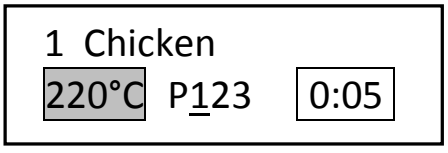
4. Display shows the last operated program.

5.2.2. Check the actual temperature



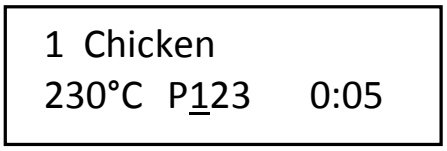
1. For example: Check the current temperature in
   program 1 Chicken, step 1.

2. Press the OK button.

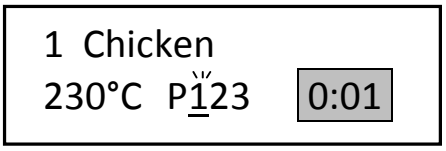


3. The display shows during 3 seconds the actual temperature.

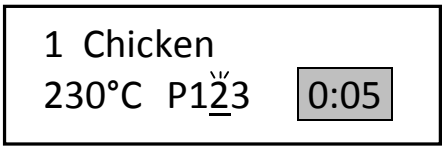
5.2.3. Check the remaining time in a program



1. Use the arrow buttons to show the remaining time pro step.

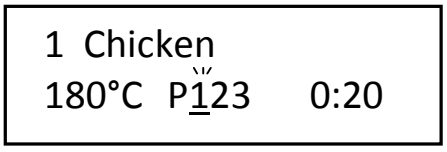


2. Time left at step 1 (first digit blinks).



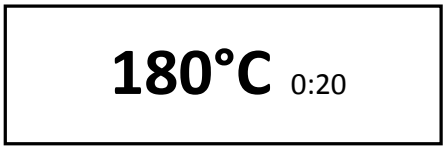
3. Time left at step 2 (second digit blinks).

5.2.4. Show all actual program information



1. Display shows actual program. (step one is active).

2. Press List button.



3. Display shows the programmed temperature and time.

4. Press List button again for additional information.

P	180		0:07	3	230	0:05	0:05
1	180	0:20	0:20	H	085	0:10	0:10
2	210	0:10	0:10	C	+ 00:00:00		

5. Display shows the programmed steps and remaining times in one overview.

(Step – temperature – program time – actual time)

P: Preheat
1-3: Program step
H: Holding
C: Cook correction

6. Press the OK button to update the screen
   (automatically refreshed every 15 seconds).

7. Press List button to go back.

1 Chicken
180°C P123 0:20

8. Display returns to the original operating display.

5.2.5. Eco function

1 Chicken	ECO
180°C P123	0:20

Optional: only available when activated in the service menu.

In the ECO mode the accumulated heat in the cavity will be used to cook the product.
Depending on the settings, the product and program an energy saving of 5% can be achieved.

5.2.6. Cook correction

180°C 0:20

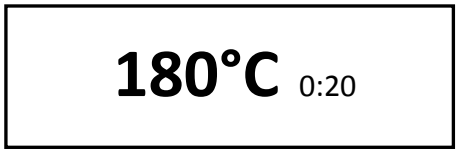
Optional: only available when activated in the service menu.

Cook correction: Depending on the load of products the cooking time will be automatically adjusted.

The first cook is the reference cook and will be used to fix the correct parameters.

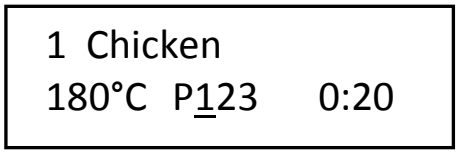
The activation of the cook correction is NOT visible in this display.

5.2.7. Display information



1. Display shows the programmed temperature and time.

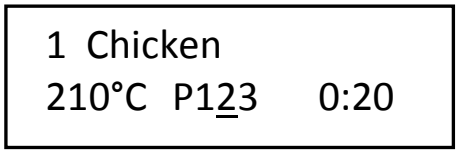
2. Press the list button.



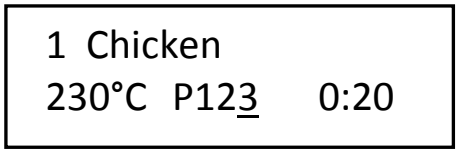
3. Display shows after 3 seconds cooking step + temperature + time.

   Note: the current cooking step is underlined.

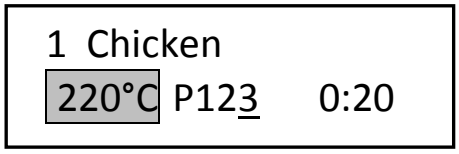
4. Use arrow button for next screen.



5. Cooking step 1 is finished, sound signal is returned.
   Display shows next cooking step + temperature + time.

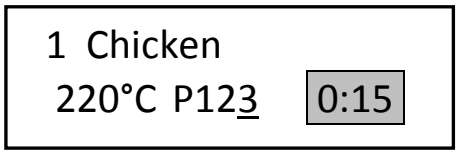


6. Cooking step 2 is finished, sound signal is returned.
   Display shows next cooking step + temperature + time.



7. Display shows the actual temperature

   Note: the actual temperature blinks.



8. Display shows the remaining time.

   Note: the remaining time blinks, after 5 seconds the original display is shown again.

PROGRAMMING

6. MANAGER MENU

6.1. Manager menu items

Programming	**Parameters**	**Change pin**
New	Pre-Heat	**Clock**
Edit	Preheat temperature	**Transfer**
Delete	Holding	**Version**
Copy	Holding temperature	**USB**
	Cook correction*	Reading recipes
	Eco function*	Store recipes
	Language	
	Big digits	
	Sound preheat	
	Sound step	
	Sound done	

* Only visible when selected in the service menu.

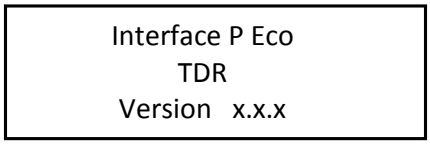
6.2. Programming the rotisserie

Possible programming steps:

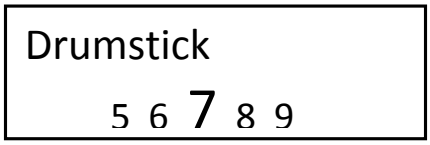
- Preheat
- Step 1
- Step 2
- Step 3
- Holding

1. Start the unit.

2. Logo appears.



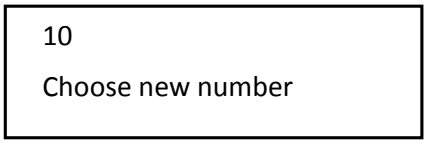
3. Unit information appears.



4. Last used program appears.

5. Press the list button.

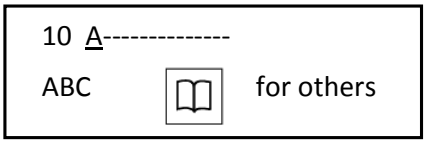
Pin 0 - - - Give User PIN code	6. Enter the User PIN code. **Note:** the original PIN code is 1111. The operator can change the User PIN code.
	7. Use the arrow button to enter the PIN code.
Pin 1 - - - Give User PIN code	8. Press the arrow right button to change the first digit.
	9. Press the OK button to confirm.
Pin * 0 - - Give User PIN code	10. The next digit is activated. Change as required using the arrow button. Confirm with the OK button. Repeat for the other digits.
MANAGER MENU USB [Programming] Para.	11. Manager menu is activated. Use the arrow buttons to toggle between the sub menu's.
	12. Select "Programming" and Press the OK button to confirm.
RECIPES [NEW] EDIT	13. Use the arrow buttons to select a new or existing recipe.
	14. Press the OK button to confirm.



15. The first available number is shown.

    Note: use the arrow right button to select the next available number.

16. Press the OK button to confirm.

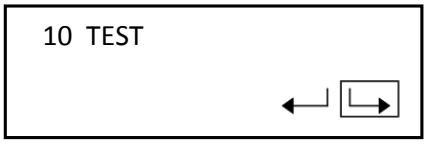


17. Enter the recipe name.

    Use the arrow button to change the character.

    Note: ABC can be changed with the use of the list button into lower / higher case or special characters.

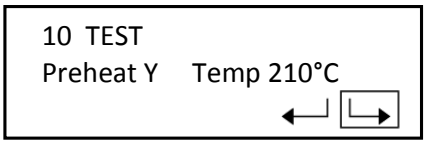
18. Press the OK button to confirm.



19. The new recipe name is shown

    Note:
    To change the name of the recipe use the back arrow button and press the OK button.

20. Press the OK button to confirm.



21. Set the preheat function and temperature (default set on 210 °C / 425°F). Press the left arrow button and the OK button to change the pre-heat setting.

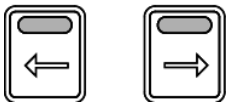
    Note: Pre-heat is only available when activated in the parameter list.

    Preheat functions:
    Y: Yes
    N: No
    C: Continuously

22. Press the OK button to confirm.

```
10  Step 1
Temp 1 - - °C
```

23. Set the “step 1” temperature.
    Starting with the first digit.



24. Use the arrow buttons to
    increase/decrease the value of the
    selected digit.

25. Press the OK button to confirm.

```
10  Step 1
Temp 21 - °C
```

26. Set the second digit.

27. Press the OK button to confirm.

```
10  Step 1
Temp 215 °C
```

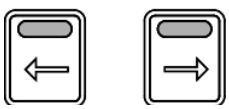
28. Set the third digit.

29. Press the OK button to confirm.

```
10  Step 1
Temp 215 °C  Time  1 - -
```

30. Set the “step 1” time.
    Starting with the first digit.

Note:
Enter the time in minutes.



31. Use the arrow buttons to
    increase/decrease the value of the
    selected digit.

32. Press the OK button to confirm.

```
10  Step 1
Temp 215 °C  Time  21 -
```

33. Set the second digit.

34. Press the OK button to confirm.

```
10  Step 1
Temp 215 °C  Time  210
```

35. Set the last digit.

36. Press the OK button to confirm.

```
10  Step 1
Temp 215 °C  Time  210
                  ←┘ └→ √
```

37. The Step is now completed.

    Select the right arrow and press the OK button to go to the next step.
    Select the left arrow button and press the OK button to go back to the last setting.
    Select the √ and press the OK button to finish programming.

```
10  Step 2
Temp 215 °C
```

38. Program the next step (when required). See step 1 for the procedure.

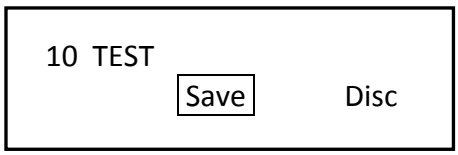
```
10  Holding
Temp 85 °C  Time  999
                  ←┘ √
```

39. After step 3 or when entering no time at step 2 (or 3) the holding step will appear. Set the temperature and time as required.

    Note:
    Set the time to 999 for continuous operating.

    Only available when activated (refer to section 6.3).

40. When ready programming press the OK button to confirm.



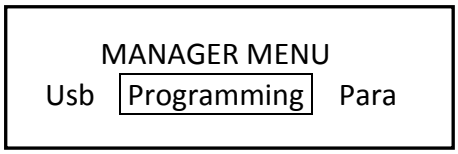
41. Save the finished programs.

    Note: if the program is not saved all changes are lost!

42. Press the OK button to confirm.

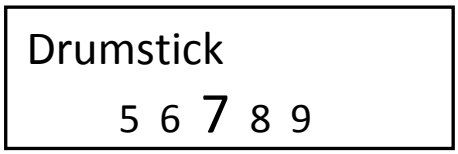
43. The screen returns to the RECIPES menu.

44. Press back to enter the manager menu.



45. Manager menu appears.

46. Press back to enter the user menu.



47. The last program used is shown.

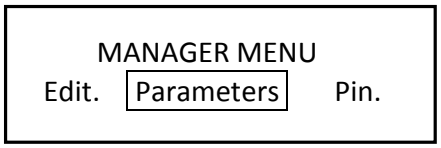
MANAGER MENU: PARAMETERS

6.3. Programming parameters

1. Press the list button.

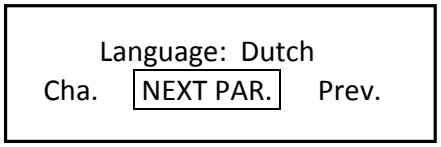
2. Enter your user PIN code.

3. Press the OK button to confirm.

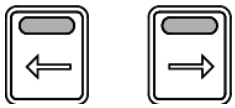


4. Press the arrow buttons to select Parameters.

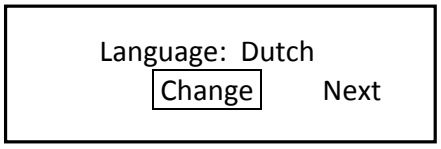
5. Press the OK button to confirm.



6. Press the arrow buttons to select Change or Previous.

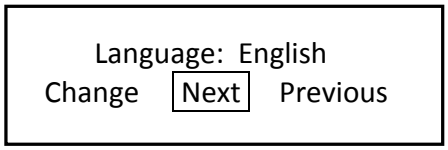


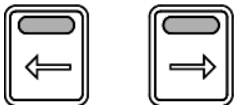
Press the OK button to select the next parameter.

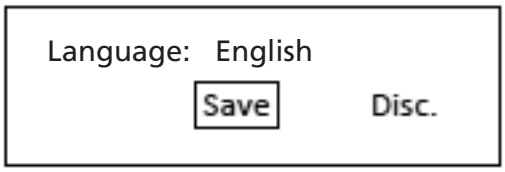


7. To change the language, select Change.

8. Press the OK button to change.







9. Use the arrow buttons to select Change, Next or Previous.

   Press back to enter the manager menu.

10. Use the arrow buttons to select Save and press the OK button to confirm. This is valid for software version V1.04-09 or higher.
Note: when you select the Undo key the changes will not be saved and you go back to step 4.

10a. Untill software version V1.03.10 you had to press the undo key to go to save.

11. Use the arrow buttons to select the other settings:

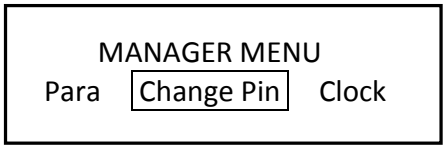
Big Digits	YES/NO:	Default set at YES
Sound preheat	Sound T1-T3 Volume 1-4	Default set at T1 Default set at 2
Sound Step	Sound T1-T3 Volume 1-4	Default set at T2 Default set at 1
Sound Done	Sound T1-T3 Volume 1-4	Default set at T3 Default set at 3
Preheat	YES/NO:	Default set at NO
Preheat Temperature	50-250 °C (122-482 °F)	Default set at 210°C (410°F)
Holding	YES/NO:	Default set at YES
Holding Temperature	50-250 °C (122-482 °F)	Default set at 85°C (185°F)
Cook correction	YES/NO:	Default set at YES
Eco function	YES/NO:	Default set at YES

Press back to enter the manager menu.

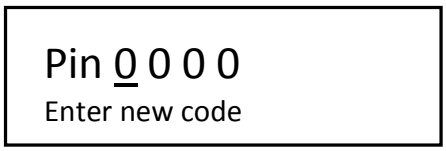
Press (again) back to enter the user menu.

MANAGER MENU: CHANGE PINCODE

6.4. Change pin code

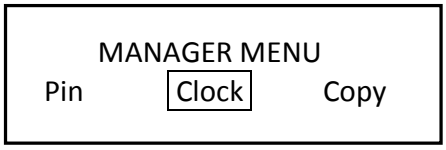


1. Manager menu.
2. Select Change Pin.
3. Press the OK button.

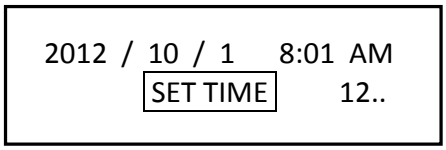


4. Enter the new pin code.
5. Press the OK button.

6.5. Clock

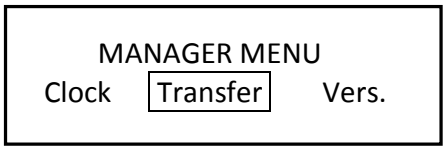


1. Manager menu.
2. Select Clock.
3. Press the OK button.

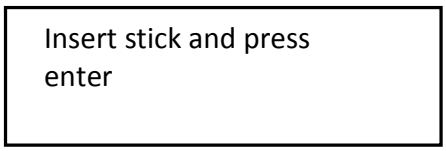


4. Set the correct date and time.
5. Press the OK button.

6.6. Transfer

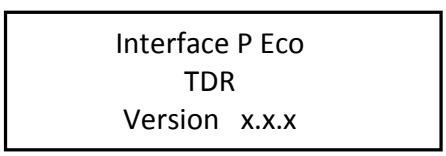


1. Manager menu.
2. Select Transfer.
3. Press the OK button.



4. Insert stick and press OK.

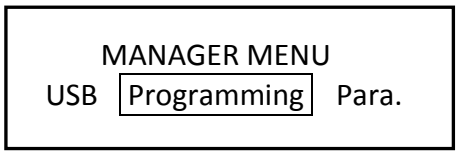
6.7. Version



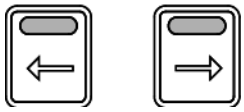
1. Display shows software version.

OPTIONS MANAGER MENU: USB

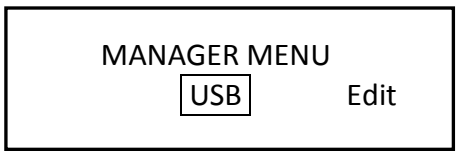
6.8. USB



1. Manager menu.

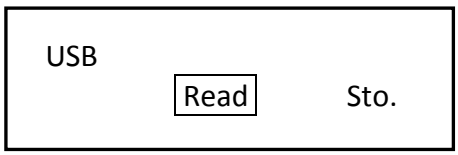


2. Use the arrow buttons to select the USB function.



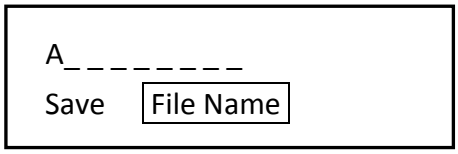
3. Screen shows the USB function. Place the USB stick into the USB-slot.

4. Press the OK button to confirm.

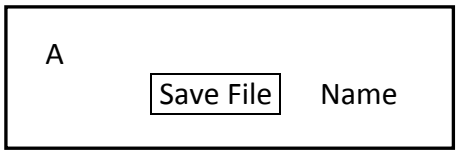


5. Use the arrow buttons to select Read to exchange an existing program or STORE to save a program.

Option STORE:



6. Enter the file name by using the arrow buttons and OK button.



7. Select Save.

8. Press the OK button to confirm.

Note: When reading new programs all existing programs will be deleted.

THE AUTOMATIC COOK CORRECTION

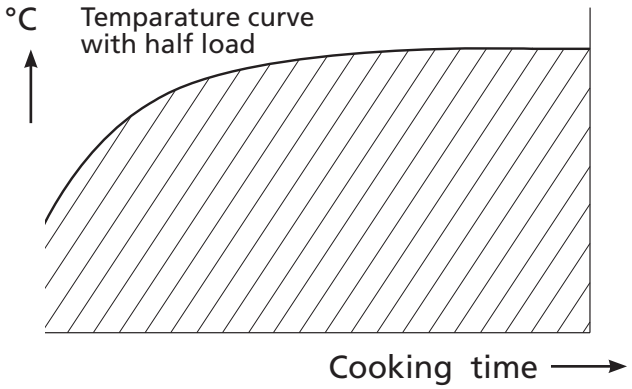
The automatic cook correction facility will automaticly add or deduct time to the pro grammed cooking time in order to have constant cooking quality.

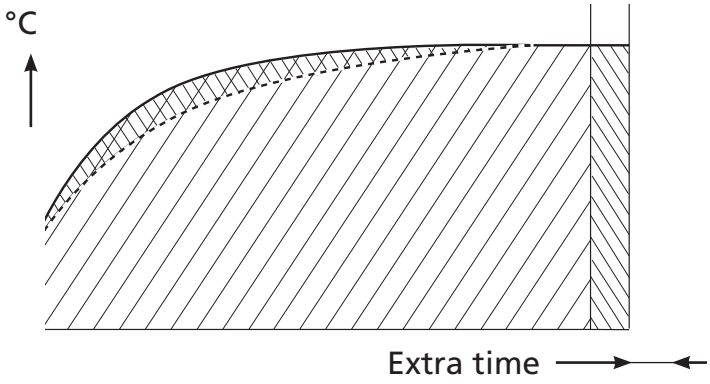
After programming a new program, the first cooking process will be the “learning” process. It is recommended to do the first cook with a half load.

The program calculates the surface from the diagram below the curved line. (temperature * time). The result is the so called heat num ber. This heat number is stored into the cook ing program.

All further cooking programs will try to get the same heat number.

The second diagram shows an example with full load. It takes more time for the unit to reach the programmed cooking temperature. See dashed line. The surface above the dashed line represents the missing part of the heat number. The cook correction will put this miss ing part behind the normal cooking time. Therefore extra time is added in order to reach the desired heat number.
It is also possible that time is deducted in case a smaller load has been put into the oven.





Time will be added in case of:
A bigger load.
A colder load. (straight from the freezer)
A lower gas quality.
Somebody opened the door.

Time will be deducted in case of:
A smaller load.
A warmer load. (defrosted)
A higher gas quality.

Note 1:
In case the time or temperature will be changed in the cooking program, the heat number will be adapted with this amount.

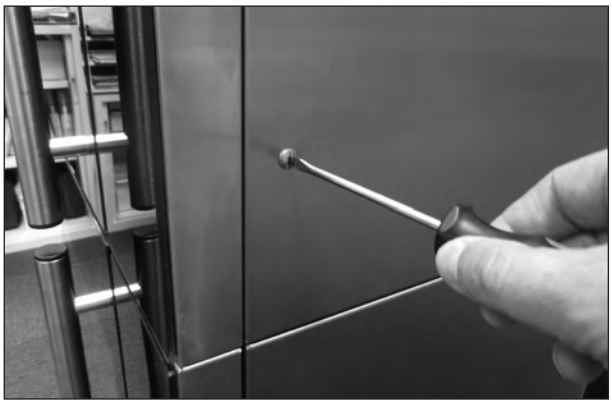
Note 2: Only if you delete a program or change the name the “learning”process starts again from the beginning.

The heat number is stored in the cooking program. In case such a program is copied and stored in another rotisserie, the heat number goes with it.
It is possible that in case the program has changed a lot, the cook correction is not able to perform well anymore. In that case the program has to be deleted and repro grammed with the good parameters.
It is possible to disable this cook cor rection feature in the service parameters. See “parameter listings” -> “cook correction”.

REMOVAL AND REPLACEMENT OF PARTS FOR THE TDR 7

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

RIGHT OR LEFT SIDE PANEL



1. Remove the cross head screws that secure the panel to the frame.
2. Remove the panel.
3. Reverse the procedure to install.

TOP COVER

1. Remove the right side panel according prior procedure.
2. Remove the screws securing both large and small top covers.
3. Remove the top cover. (Lift at right side and remove to the left).
4. Reverse the procedure to install.

OPERATING PANEL (GENERAL)

1. Remove the right side panel according prior procedures
2. Remove the bolt, nut and ring on the top side on the backside of the operating panel.
3. Pull the panel away from the top side.
4. Remove the flatcables and earth cable from the CPU board on the backside.
5. Remove the panel.
6. Reverse the procedure to install.

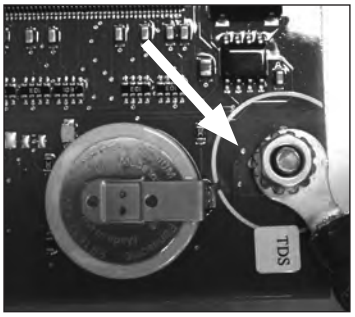
TUMBLE SWITCH RESET

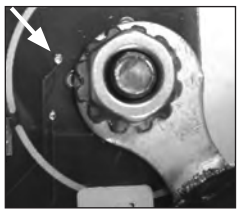
1. Remove the right side panel and operating panel according prior procedures.
2. Remove the wiring.
3. Remove the switch by pushing the clamps, on the inside, with a screw driver.
4. Reverse the procedure to install.

ELECTRIC PANEL

1. Remove the right side panel and operating panel according prior procedures.
2. Disconnect the wiring.
3. Remove on the front side the 2 screws and on the inside the nut that secure the panel.
4. Remove on the inside bottom of the electric panel the bolt and nuts.
5. Slide the electric panel backwards to remove this.
6. Reverse the procedure to install.

OPERATING PANEL, GLASS + BACKPLATE + KEYPAD



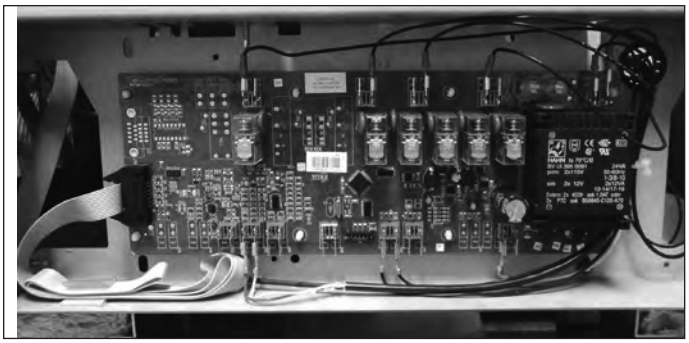


1. Remove the right hand panel according prior procedure.
2. Remove the operating panel according prior procedure.
3. Remove the USB connection, the reset switch and the red indication light.
4. Remove the 4 nuts and rings on the CPU board and remove the board.
5. Reverse the procedure to install.

Note 1: *For connection flatcable of the keypads see CPU board on page 28.*

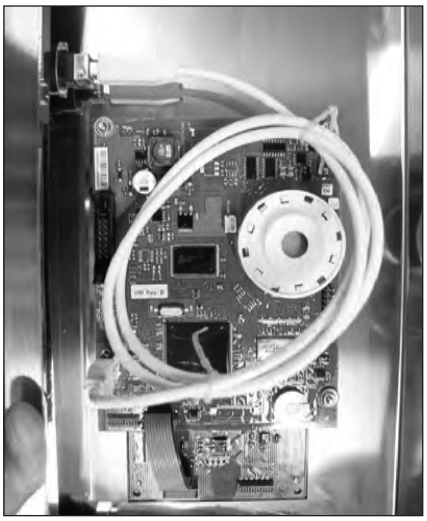
Note 2: *For older units with earth wire in right hand bottom corner. Take care that the ring terminal doesn't make contact with with the solder point (see arrow) .Otherwise the illumination of the display and keys can be out.*

POWER AND I/O BOARD



1. Remove the right side panel according prior procedure.
2. Disconnect the wiring and flatcable on the board.
3. Remove the board from the clips by pinching the clips.
4. Reverse the procedure to install.

CPU BOARD

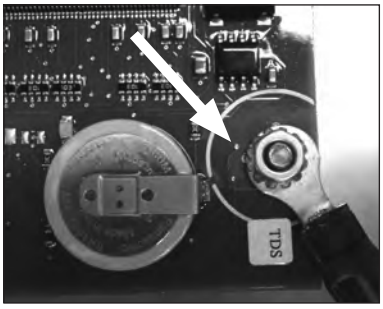


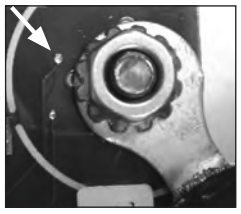
Before changing the CPU board and display be sure to download (with a USB stick) or write down the grilling programs and the parame ters.

1. Remove the right side panel according prior procedure.
2. Remove the operating panel according prior procedure.
3. Remove the 4 nuts and rings on the CPU board and remove the board.
4. Reverse the procedure to install.
5. Read the grilling programs and parameters from the USB stick to the CPU board.

Note 1: *Flatcable keypad must be connected to connector "Touchpanel 1" on CPU board.*

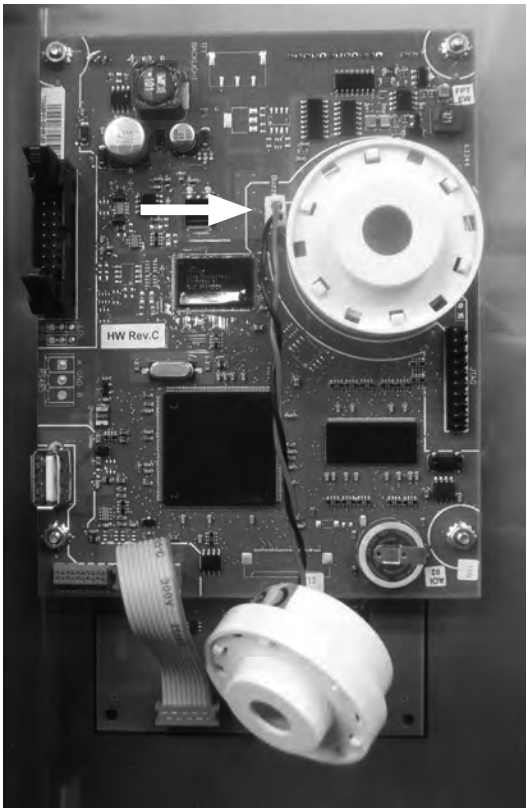
Note 2: *"Touchpanel 2" is flatcable connection for the rotor switch keypad on customer side.*





Note 3: *For older units with earth wire in right hand bottom corner. Take care that the ring terminal doesn't make contact with with the solder point (see arrow) .Otherwise the illumination of the display and keys can be out.*

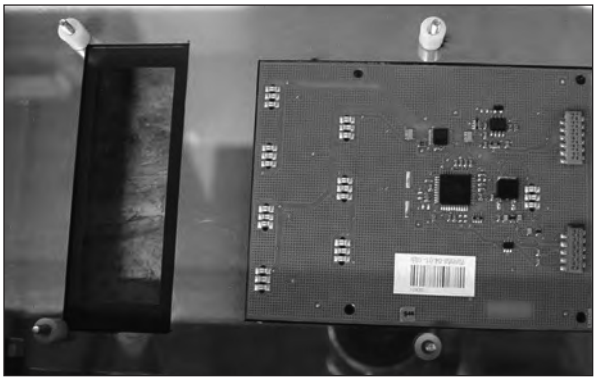
REPLACING OF BROKEN BUZZER



1. Remove the right side panel according prior procedure.
2. Remove the operating panel according prior procedure.
3. Stick connector of new buzzer in plug next to the existing broken buzzer (see white arrow).
4. Reverse the procedure to install.

Note: *buzzer can dangle loosely without any problem.*

KEYPAD

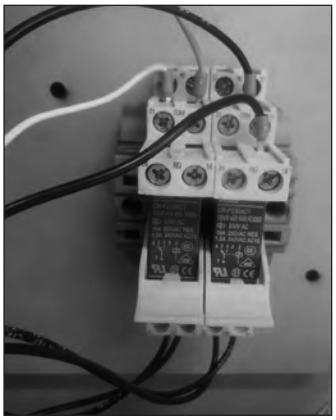


1. Remove the right side panel, the operating panel and the CPU board according prior procedures.
2. Remove the keypad and degrease the surface of the glass.
3. Glue the new keypad on its place with the red connectors on the bottom side.
4. Reverse the procedure to install.

Note 1: *For connection flatcable of the key pads see CPU board on page 28.*

Note 2: *When the keypad is on the panel on customer side you need a long extended flatcable for connection to the CPU board.*

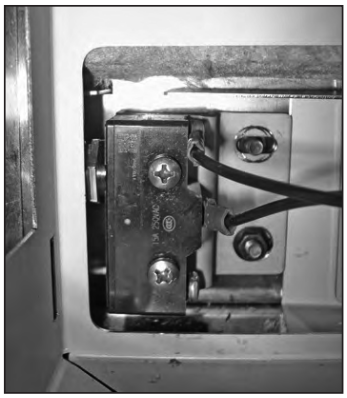
RELAY



1. Remove the right side panel according prior procedure.
2. Loosen the clamp handle.
3. Gently remove the relay.
4. Reverse the procedure to install.

Note: *When placing a relay be sure the connecting pins are in place.*

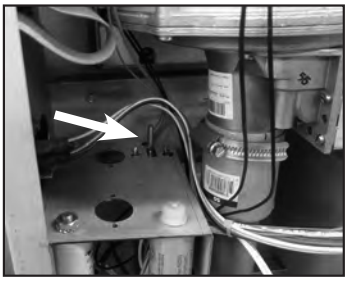
DOOR SWITCH



1. Remove the right side panel and the operation panel according prior procedures.
2. Remove the 2 screws that secure the switch and remove the switch.
2. Disconnect the wiring of the switch.
4. Reverse the procedure to install.

Note: *The contact pin of the switch must run free through the chassis.*

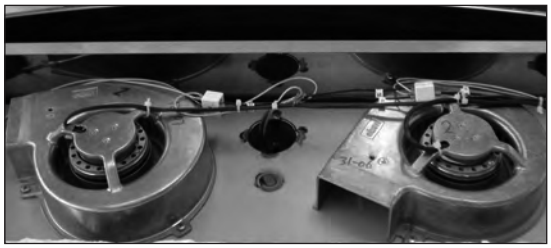
SAFETY THERMOSTAT

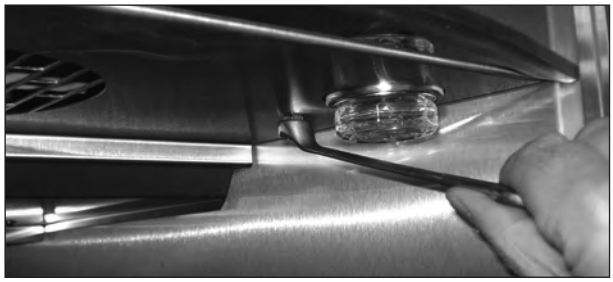


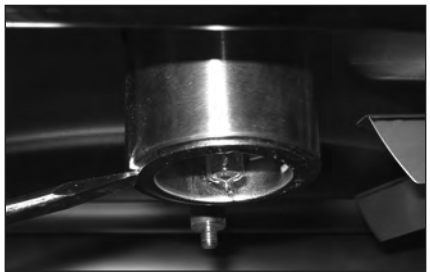
1. Remove the rotor and the right side panel according prior procedure.
2. Remove the bolts that secure the air guide plate and remove this plate. Lower the plate in vertical position and lift it out of the hinge pins.
3. Remove the thermostat-probe from the clip in the oven and guide it outside through the opening in the side wall.
4. Disconnect the wiring on the thermostat.
5. Remove the screws on the electric panel that secure the thermostat and remove the thermostat.
6. Reverse the procedure to install.

Note: *Set the new thermostat to its maximum position by turning it clockwise (320°C/608°F).*

HALOGEN LAMP HOLDER (CUSTOMER SIDE)

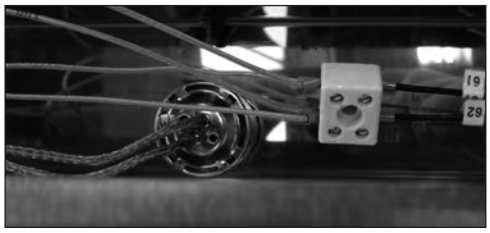






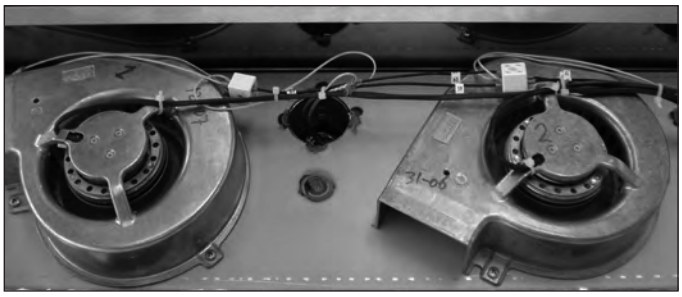
1. Remove the top cover according prior procedure.
2. Remove the wiring of the lamp on the connector.
3. Remove the cap nuts that secure the air suction plate and remove this plate.
4. Remove the glass and lamp from the lamp holder. Turning direction of glass in counter clockwise.
5. Remove the holder. You have to deform the holder to take it out.
6. Insert a new holder and click this in.
7. Reverse the procedure to install.

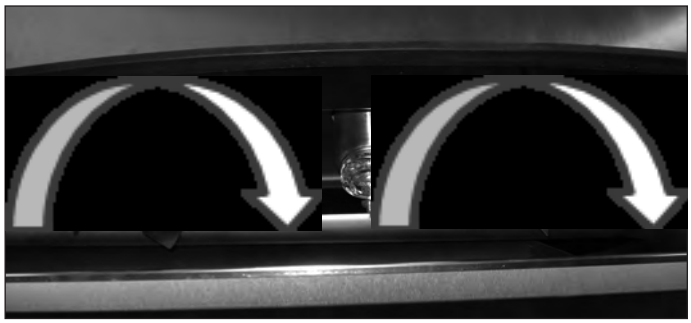
HALOGEN LAMP HOLDER (SERVICE SIDE)



1. Remove the top cover according prior procedure.
2. Remove the wiring of the lamp on the connector.
3. Remove the glass and lamp from the lamp holder. Turning direction of glass is counter clockwise.
4. Remove the holder. You have to deform the holder to take it out.
5. Insert a new holder and click this in.
6. Reverse the procedure to install.

BLOWER MOTOR





1. Remove the right side panel, the top cover and the air suction plate according prior procedures.
2. Remove the wing nut on the fan blade and remove fan blade. (Left handed threads).
3. Disconnect wiring of the motor.
4. Remove the screws that secure the motor and remove the motor.
5. Reverse the procedure to install.

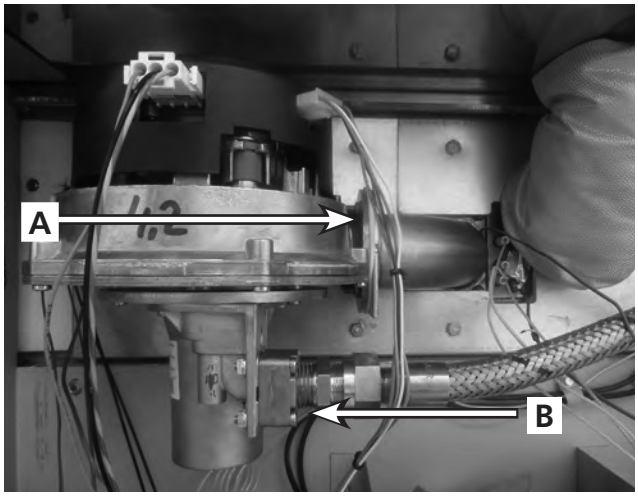
Note: *The blowers are equipped with a capacitor of 1.5uF. Check the direction of rotation of the motor (clockwise, see arrows) and change the wiring if necessary.*

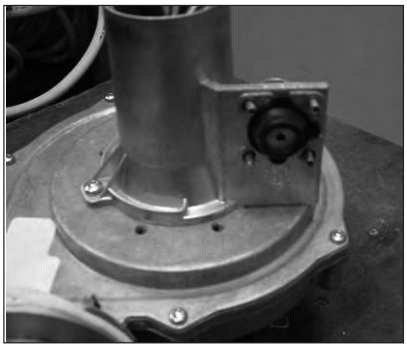
PT 1000 SENSOR

1. Remove the right side panel according prior procedure.
2. Disconnect the wiring of the sensor.
3. Remove the screw that secures the sensor and remove the sensor.
4. Reverse the procedure to install.

Note: *The wiring cable is an insulated cable with an earthing screen.*

GAS MIXTURE BLOWER

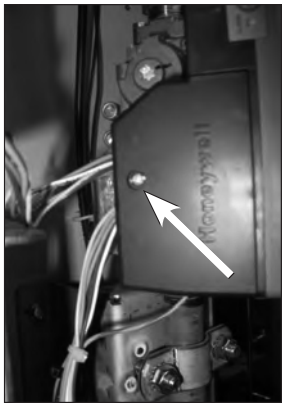




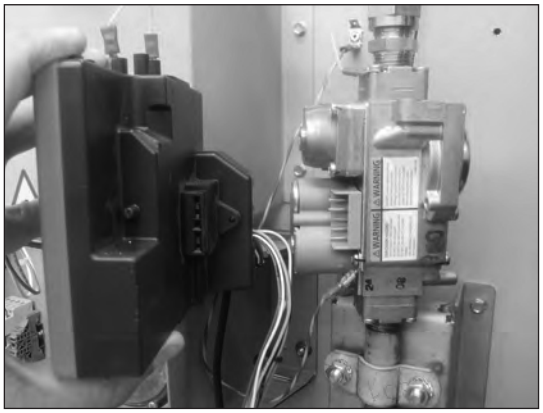
1. Remove the right side panel and small top cover plate according prior procedures.
2. Remove the wiring from the top of the gas mixture blower
3. Remove the silencer.
4. Remove the 4 nuts from the air inlet (A) and the 4 bolts with nuts from the gas inlet (B) and remove the gas mixture blower.
5. Remove the screws that secure the venturi to the blower and remove the blower.
6. Reverse the procedure to install.

GAS BURNER SAFETY CONTROL

1. Remove the right side panel according prior procedure.
2. Remove the screw that secures the burner control on the gas block and remove the burner control by sliding it to the left.
3. Remove the screw that secures the plastic cover (see arrow) and remove this cover.
4. Remove the wiring from the burner control.
5. Reverse the procedure to install.

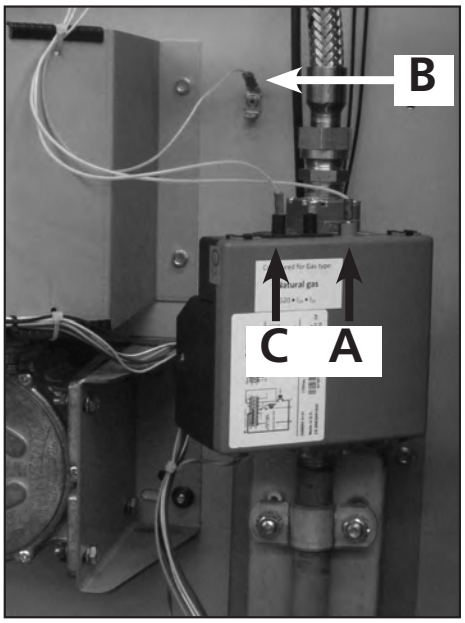


GAS CONTROL BLOCK

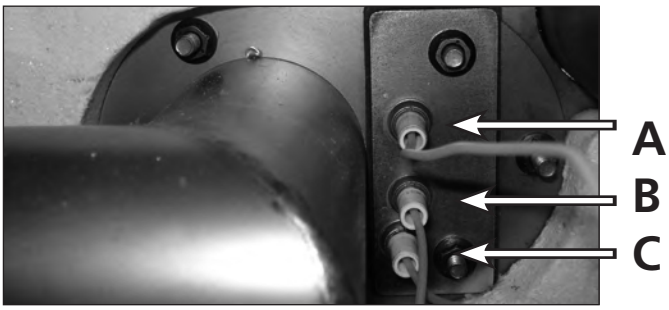


1. Remove the right side panel and the gas burner safety control according prior procedures.
2. Remove the nuts from the pipe clamps to create some clearance.
3. Remove the 4 screws on the top and bottom flange from the gas control block.
4. Remove the wiring.
5. Reverse the procedure to install.

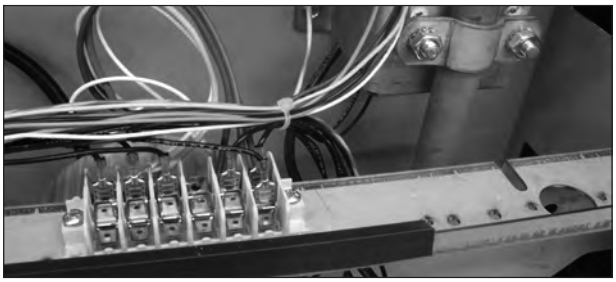
IGNITION/IONIZATION SET



1. Remove the right side panel and small top cover plate according prior procedures.
2. Remove the insulation around the exhaust pipe.
3. Remove the wiring from the set on the gas burner safety control C and A and from the earthing B.
4. Remove the nuts that secure the set and remove the set. Replace the gasket.
5. Reverse the procedure to install.
6. Connect A to A , B to B and C to C. The faston for A is 4.8 mm or 3/16". The faston for C is 2.8 mm or 7/64".

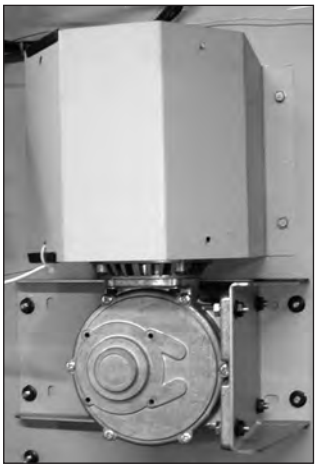


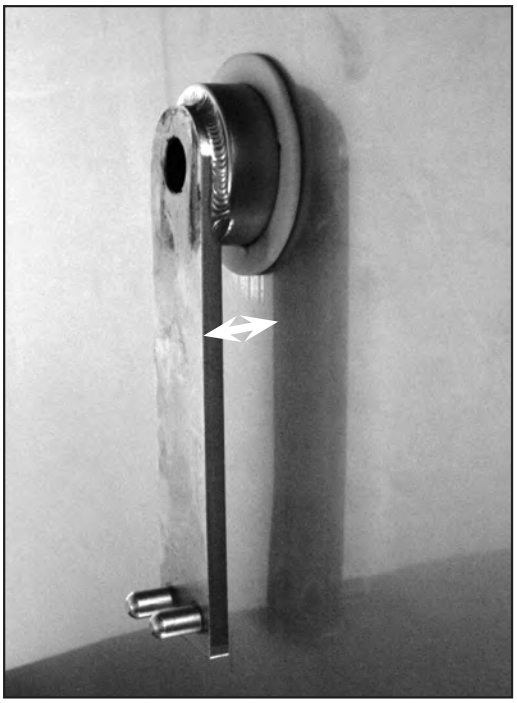
RING CORE TRANSFORMER



1. Remove the right side panel according prior procedure.
2. Remove the wiring from the transformer.
3. Remove the screw and nut that secure the transformer and remove the transformer.
4. Reverse the procedure to install.

DRIVE MOTOR

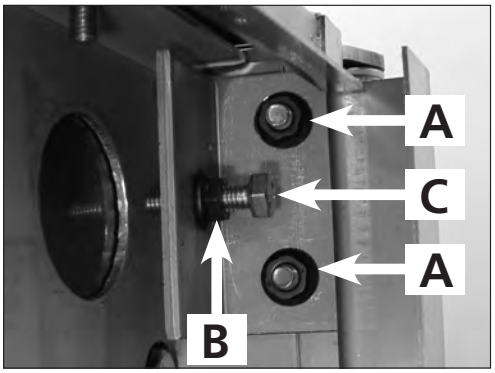




1. Remove the right side panel and rotor discs according prior procedure.
2. Disconnect the wiring of the motor. Check where the wire, marked A is connected.
3. Remove the screws that secure the fan cover and remove the cover.
4. Set the drive arm in a position vertical downwards. This can be done electrically by pushing the rotor key or manually by turning the fan blade by hand.
5. Note down how far the drive arm sticks out from the inner wall (see white arrow).
6. Mark the position of the motor on the support and the support on the side wall with a marker.
7. Remove the bolts that secure the motor and the nuts that secure the motor support and remove the motor.
8. Check the white Teflon ring. Replace this if necessary.
9. Check the position of the red gasket between motor support and the side wall. Replace this if necessary.
10. Install the fan blade of the old motor on the new motor.
11. Reverse the procedure to install.

Note: *Always make a test run of 15 minutes on maximum temperature to insure the motor is well mounted and adjusted and turns parallel to the side wall.*

DOOR ADJUSTMENT (LEFT SIDE)



1. Remove the left side panel according prior procedure.
2. Loosen the nuts A of the upper hinge. The door must be closed.
3. Loosen the locknut B and adjust the bolt C in or out to adjust the door.
4. Tighten the nuts of the hinge and mount the left-hand panel.

DOOR GLASS INSIDE

1. Separate the inside door from the outside door.
2. Lift the inside door upward out of the hinges.
3. Place the new door in the hinges.
4. Close the inside door on the outside door.

Note: *Tightening of nuts max. 8 Nm. or 5.9 lbf.ft*

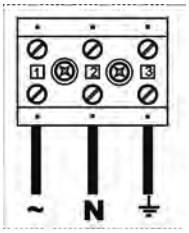
DOOR OUTSIDE

1. Lift the inner door out of the hinges and lay this aside.
2. Remove the left side panel according prior procedure.
3. Remove the 2 nuts behind the upper hinge and loosen the locknut according prior procedure. The door must be closed.
4. Hold the door on both sides and move this towards yourself, before lifting it out of the hinge on the bottom side. See to it that the washers stay on the hinge.
   Also remove the top hinge.
5. Place the top hinge on the new door.
6. Place the new door on the hinge on the bottom side and push the 2 studs on the top hinge through the openings on the top side and screw the nuts on it .
7. Adjust the door according prior procedure.

Note: *Tightening of nuts max. 8 Nm. or 5.9 lbf.ft*

WORKING OF THE GAS FIRED ROTISSERIE

After plugging the unit in always first check the proper polarity for good ignition.



After starting the rotisserie up with the on/off key the reset will light up. First press this switch for 2 seconds till the light is out. Also the gas mixture blower will turn in very low speed regulated by the burner control. The continuous power on the gas mixture blower is activated by contact X13 on the Power and I/O board which activates relay K2.

After selection of a program and pressing the OK key the PT 1000 temperature sensor measures a temperature below the set temperature and this will activate relay K1 by contact X9 on the Power and I/O board. Relay K1 activates the burner control sequence. This sequence is as follows:
- Activating of low speed of the gas mixture blower to create a rich gas/air mixture for easy and fast ignition.
- Activating of spark plug (max. 5 seconds).
- Activating/opening of the gas valve.
- Activating of the ionisation (measuring of a low Amperage (~35mA) between ionisation pin and burner bed).
- Activating the high speed of the gas mixture blower when the gas is burning and the ionisation measuring is OK.

Note: *If the speed of the gas mixture blower is not within 5% of the adjusted speed in the burner control there will be no ignition and the red indication light on the reset switch will light up. In this case the blower has to be replaced.*

The PT 1000 temperature sensor now takes care of the temperature regulation of the oven, by switching the burner control on and off.

If there is no ignition/burning of the gas/air mixture after 5 seconds of ignition there will be a pause of 5 seconds and after this the ignition sequence will start up for maximum 2 times. If there is still no burning of the gas the burner control will close the gas valve and activates the red indication lamp on the reset switch. By pressing the rest switch for 2 seconds the sequence will start up again.

After ending of a grilling process the gas mixture blower will keep on turning for 9 minutes on an adjusted speed, regulated by the burner control to ensure that there is no gas left in the heat exchanger and is clean. After this 9 minutes the gas mixture blower will turn continuous in very low speed.
After intermediate stopping (door open) of the program or when the program is stopped the gas mixture blower will run also for 9 minutes.

Note: *Gas supply pressure should be between 15 and 50 mbar, depending on the gas type. See table on next page.*
Pressure over 60 mbar will damage the gas block. You can check the pressure on the gas block, see page 42. Valves on the gas block can be checked by holding your hand on it, or by holding a steel object on the coil. This will be magnetic after switching in.

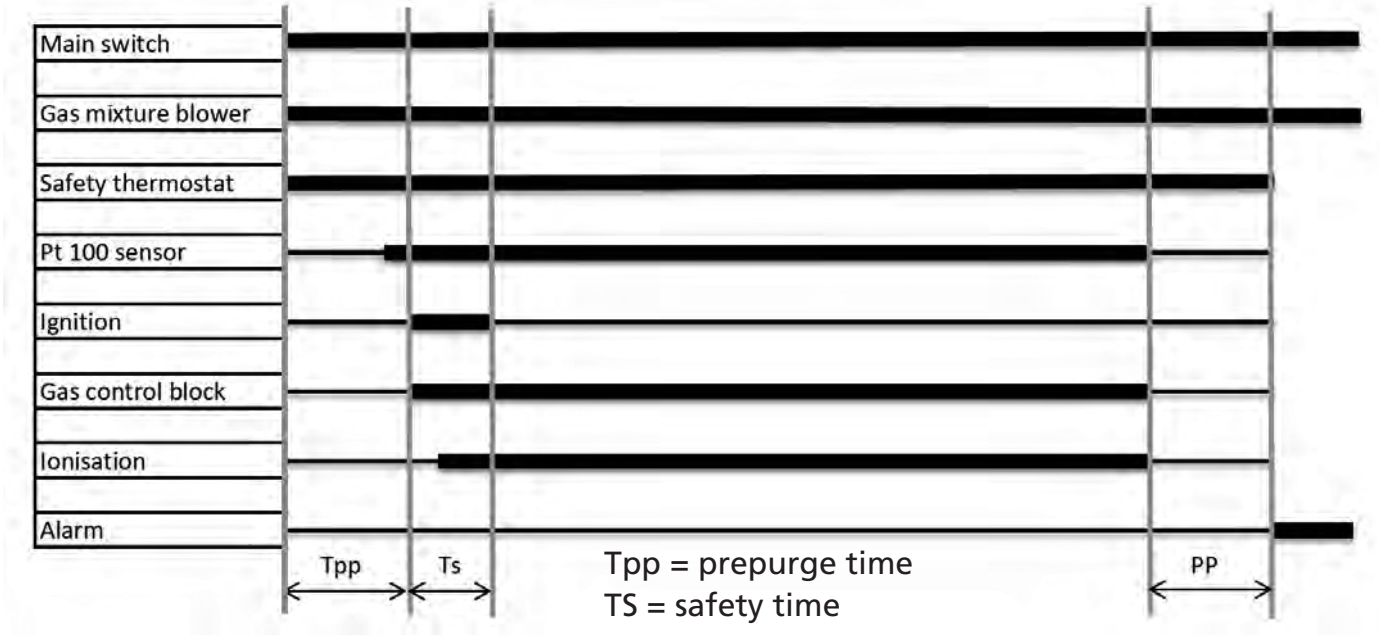
GAS TECHNICAL DATA

Gas type	Inlet pressure mbar - inch wc - PSI	min pressure (Qn-Hi) max pressure (Qn-Hi) mbar - inch wc - PSI	Consumption kg - cfm - LBS	Consumption m3/h	Specific density kg/m3 - lb/cf
G20	20 - 8 - 0,3	17 - 7 - 0,25 25 - 10 - 0,36	1,0 - 0,80 - 2.2	1,37	0,718 - 0,044
G31	37 - 15 - 0,54	25 - 10 - 0,36 55 - 22 - 0,36	1,0 - 0,29 - 2.2	0,49	2,011 - 0,128

Gas type	Orifice mm - inch	Air inlet mm - inch	Power KW - BTU
G20	4,2 - 1/6	18,1 - 17/24	14.7 - 50.000
G31	3,2 - 1/8	18,1 - 17/24	14.7 - 50.000

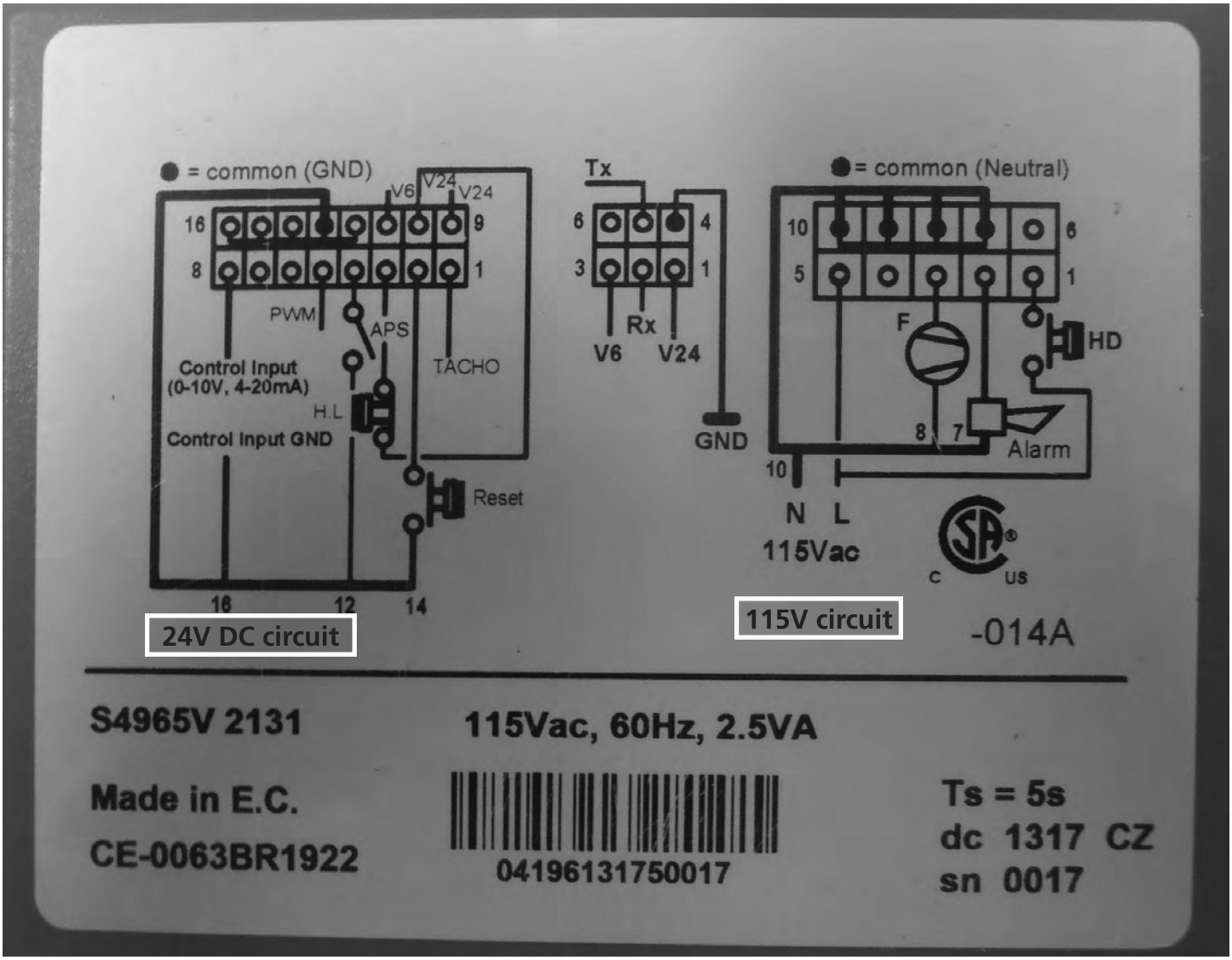
Qn = power (inlet)
Hi = inferior caloric value
LPG should contain at least 50% Propane!

TIMING DIAGRAM GAS BURNER SAFETY CONTROL



Tpp = prepurge time
TS = safety time
PP = post purge

STICKER ON GAS BURNER SAFETY CONTROL



24V circuit:

Tacho (nr.1) = White wire to speed regulation gas mixture blower.
Reset (nr.2) = Brown wire to reset knob on side wall.
High limit (nr.3) = Yellow wire to high limit thermostat.
APS (nr.4) = Not connected.
PWM (nr.5) = Black wire to speed regulation gas mixture blower.
BL (nr.9) = Blue wire to speed regulation gas mixture blower.
O (nr.10) = Orange wire to high limit thermostat.
GR (nr.13) = Grey wire to speed regulation gas mixture blower.

115 V circuit:

HD (nr. 1) = White wire to relay K1. On/off regulation by PT sensor
Alarm (nr. 2) = Brown wire to red external alarm indication on side wall and alarm indication on burner safety control.
F (nr.3) = Grey wire to stand-by speed of gas mixture blower.
Burn on (nr.4) = Not connected.
L (nr.5) = Orange wire for live connection 115V.
Nr. 7 to 10 = Black-blue- red-yellow wires for neutral.

ELECTRICAL TESTS AND SERVICE PROCEDURES

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

PT1000 SENSOR TEST

Temperature		Resistance Ω
°F	°C	± 5 Ohms
32	0	1000
60	16	1062
70	21	1082
80	27	1106
90	32	1124
100	38	1148
125	52	1202
150	65	1252
200	94	1362
250	121	1464
350	177	1674
450	233	1880

Note: *When testing the resistance of the sensor remove the wiring. Refer to the removal and replacement part of the manual on how to do this.*

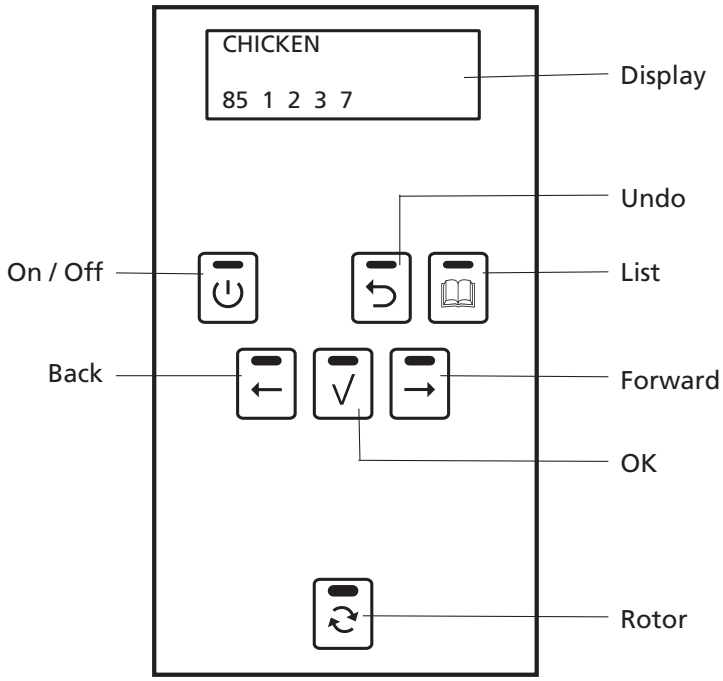
1. Remove the wiring from the sensor.
2. Connect a temperature sensor to the probe for comparison.
3. Test the probe with an Ohmmeter.

DRIVE MOTOR, BLOWER AND TRANSFORMER TEST

Note: *When testing the resistance remove the wiring.*

Type	Description	Voltage	Resistance Ω
TDR 8	Drive motor	208	Between white A and white wire ~ 234 Between white A and brown wire ~ 117 Between white and brown wire ~ 117
TDR 8	Blower rotisserie	208	Between blue and brown wire ~ 310 Between blue and black wire ~ 190 Between brown and black wire ~ 500
TDR 8	Transformer	230/12	Between white and white wire ~9 Between yellow and red wire ~0.5 Between grey and blue wire ~0.5 Between all other color combinations infinite
TDR 8	Transformer	115/230	Between pink and black wire ~1.6 Between white and brown wire ~1.6 Between yellow and red wire ~1.6 Between grey and blue wire ~1.6 Between all other color combinations infinite

CONTROL LOCATION



Key	Function
On / Off	Switching the unit On / Off
Undo	Go back to previous menu
List	Recipe / programming modus
Forward	One step ahead in setting
Rotor	Switching the rotor on
OK	Acknowledge a function or change
Back	One step back in setting

ERROR CODES ON DISPLAY

Error 11: Full contact between wires of PT sensor. Temp. indication on display doesn't go up.
Error 33: No connection between wires of PT sensor. Temp. indication on display 317°C/602°F.
Error 55: Heating malfunction. Temperature rise in °C/minute of the PT sensor during cooking of the products is under the minimum value as indicated in parameter "Temp. grad." See also the parameterlist on page 57 and explanation on page 52.
Error 77: If the expected heat number is more than 20% lower than the stored heat number in the cooking program. This error does not result in a complete shut down of the rotisserie, but is stored in the fault messages in the service menu.
Error 88: If the expected heat number is more than 20% higher than the stored heat number in the cooking program. This error does not result in a complete shut down of the rotisserie, but is stored in the fault messages in the service menu.

App. Error: - Parameter file cannot be openend when switching the TDR on.
- Failure during loading of parameters or programs.
- Communication failure keypad and CPU.

For explanation and solving of the errors see general troubleshooting list on page 58.

GAS BLOCK HONEYWELL TYPE VK4115V - 2029

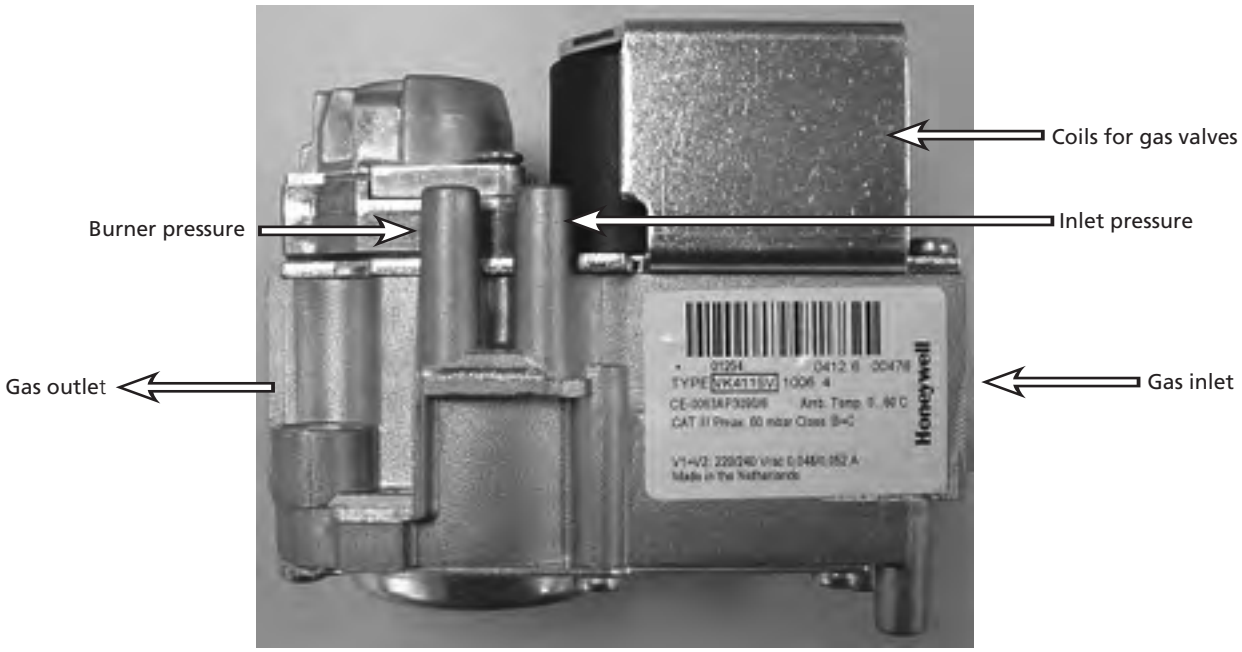
Gas inlet: Inlet of gas after gas pressure reduction valve (max. 22" H2O). Pressure depending of gas type (see table on page 38).

Gas outlet: Outlet of gas into gas mixture blower.

Coils: 2 Coils for the gas valves.

Inlet pressure: Measuring tube (during operation) for gas pressure after reduction valve. In order to measure loosen the screw on inside of tube.

Outlet or burner pressure: Measuring tube of gas going into gas mixture blower. In order to measure loosen the screw on inside of tube.



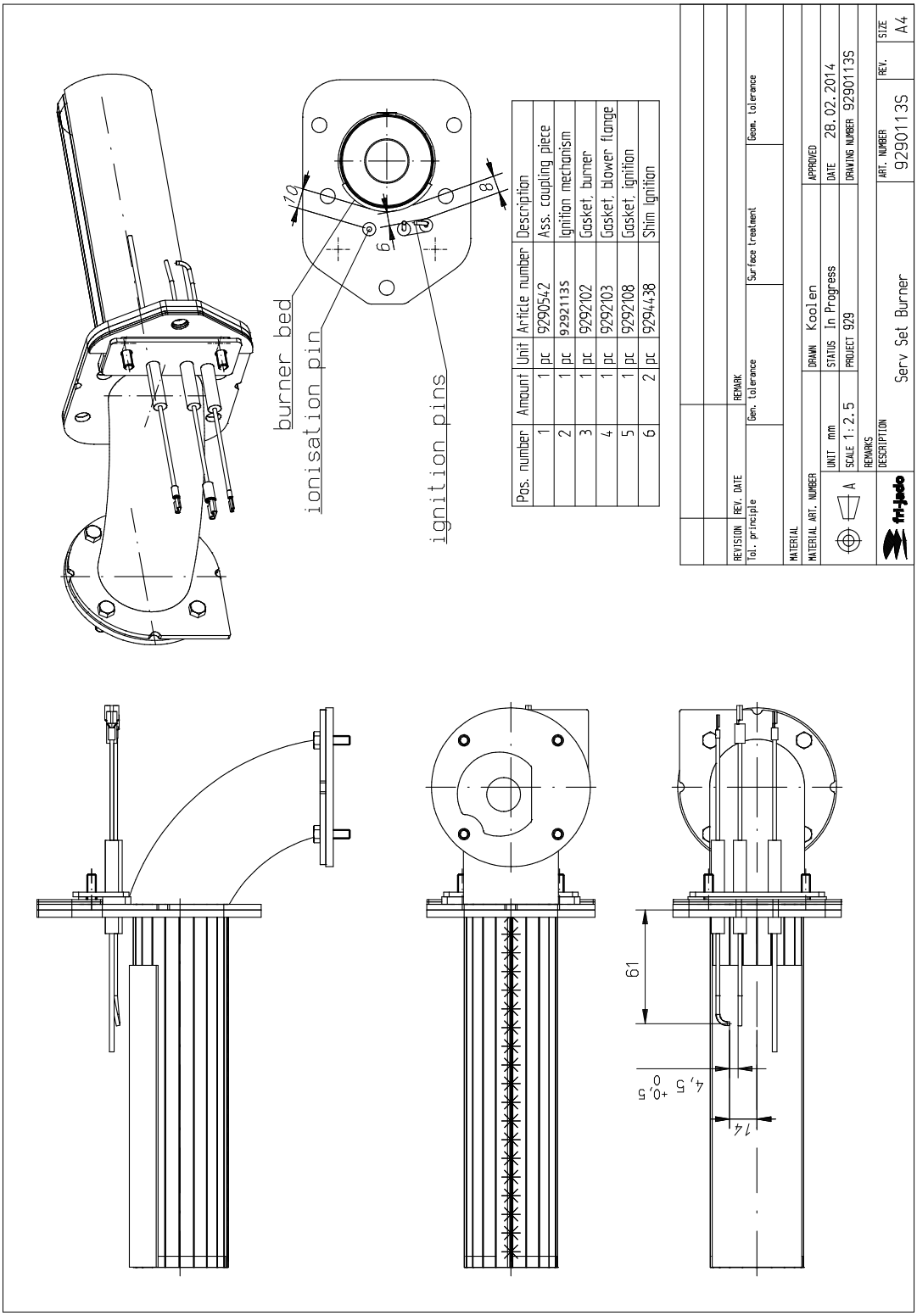
Measuring notes:

1. Inlet pressure: During operation you measure the pressure of the setting of the reduction valve.
2. Outlet pressure: During operation you measure a pressure of zero.

You can use this measuring point also to check if the gas valves are opening. When you start up the machine and the valve is not openend yet you measure a underpressure due to the suction of the gas mixture blower and this pressure will be zero when the valve is opened.

IGNITION/IONIZATION SET

When placing a new ignition/ionization set or for checking the adjustment of this set see drawing below. Here you can find the distance between the spark plug and the distance between the ignition pins and the burner bed and the distance between the ionisation pin and the burner bed.



Pos. number	Amount	Unit	Article number	Description
1	1	pc	9290542	Ass. coupling piece
2	1	pc	92921135	Ignition mechanism
3	1	pc	9292102	Gasket, burner
4	1	pc	9292103	Gasket, blower flange
5	1	pc	9292108	Gasket, ignition
6	2	pc	9294438	Shim ignition

REVISION | REV. | DATE | REMARK
Tol. principle | Gen. tolerance | Surface treatment | Geom. tolerance
MATERIAL
MATERIAL ART. NUMBER | DRAWN Koolen | APPROVED
UNIT mm | STATUS In Progress | DATE 28.02.2014
SCALE 1:2.5 | PROJECT 929 | DRAWING NUMBER 92901135
REMARKS
DESCRIPTION: Serv Set Burner | ART. NUMBER 92901135 | REV. | SIZE A4

Important dimensions:

6 and 8 mm = distance between ignition pins and burner bed.
10 mm = distance between ionisation pin and burner bed.
4.5 mm = distance between the two ignition pins.

Important dimensions:

4.5 mm = 1/6″ 8 mm = 1/3″
6 mm = 1/4″ 10 mm = 2/5″

TEMPORARY BRIDGING OF RESET SWITCH

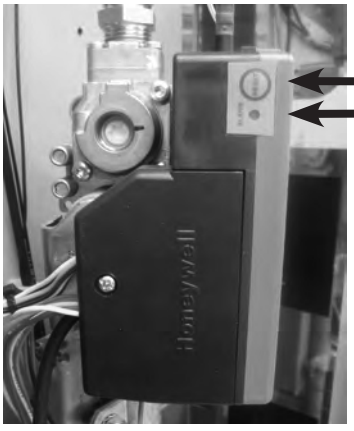
For testing of the system, when reset switch could be malfunctioning, it is possible to bridge the reset switch by temporary, for 2 seconds, connecting both the grey and brown wires together. In this way you can perform a test and do a check up on the reset switch.

1. Remove the 2 grey and brown wires from the reset switch.

2. Connect these 2 jacks together with a separate wire.
3. Start a program and disconnect the 2 jacks.

RESETTING OF GAS BURNER SAFETY CONTROL

For testing of the system, when reset switch could be malfunctioning, it is possible to make a reset direct on the gas burner safety control. In this way you can perform a test and do a check up on the reset switch.



1. Remove right hand panel according prior procedure.
2. Press the reset knob.
3. Start a program.

FLUE GAS ANALYSER

With the flue gas analyser you can measure the exhaust gas on the rotisserie for toxicity. With the use of a Testo 330-1LL you get the following measurements:

Testo 330-1LL			
V1.21		01297080	
100035026		G 20	
06.03.2014		11:42:13	
Fuel:		Natural gas	
O2 ref.:		3.0%	
CO2 max:		9.1%	
5.2	%	Oxigen	
9.0	%	CO2	
1.33		Lambda	
5	ppm	CO	
0.01		GI	
26.7	%	qR	
73		efficiency	
130	°F	dew point	54°C
713	°F	Exhaust gas temp.	378°C
74	°F	Ambient temp.	23°C

The 2 most important values are the CO2 percentage and the exhaust gas temperature.
CO2% G 20 between 8.7 - 8.9%
CO2% G 31 between 10.8 - 11.0%
CO2% LP: 50 % Propane - 50 % Butane 11.9 - 12.1%
CO2% LP: 60 % Propane - 40 % Butane 11.7 - 11.9%
CO2% LP: 70 % Propane - 30 % Butane 11.4 - 11.6%
CO2% LP: 80 % Propane - 20 % Butane 11.4 - 11.6%
CO2% LP: 90 % Propane - 10 % Butane 11.7 - 11.9%
CO2% LP: 60 % Propane - 40 % Butane 11.3 - 11.5%

CO max value 500 ppm

Exhaust gas between 698 - 788 °F (370 - 420 °C)

GAS CONSUMPTION

With a flow meter you can measure the gas consumption/flow. See table on page 38. To get an accurat consumption you have to do a measurement of 3-5 minutes. During this period the rotisserie the rotisserie may not turn off.

MAINTENANCE GAS PROCESSING

The customer should have the gas rotisserie periodically checked by a skilled technician according local, state or national regulations.

First remove the right side panel according procedure in removal and replacement of parts.

- Check for gas leaks and/or bad connections of the gas supply inside and outside.
- Check the gas burner and the ignition/ionisation set.
- Check the adjustment of the ignition/ionistation set.
- Check all gaskets.
- Check the inlet pressure and re-adjust if necessary. For the correct value, see table page 10.
- Check the consumption of the gas, see table on page 38.
- Measure the exhaust gas with a flue gas analyzer, see page 45.
- Check the electrical supply.
- Check the software version.
- Make a test run.

PARAMETER LISTING TDR P

INTRODUCTION

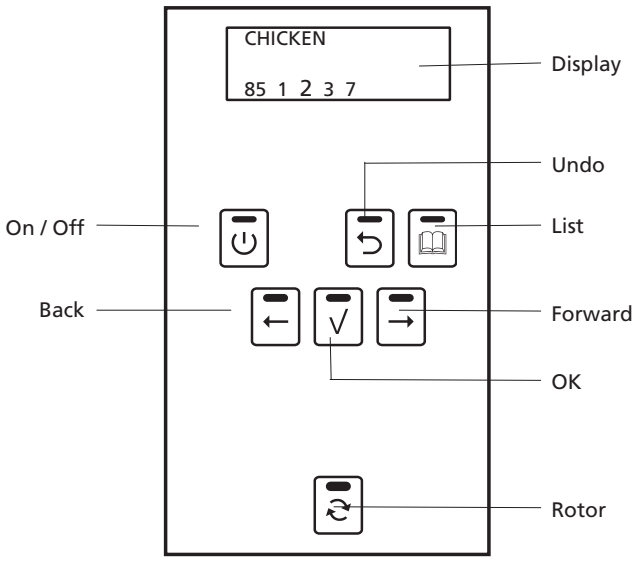
This chapter contains an explanation and listing of the parameters for the P-control system of the TDR. The first section contains explanations for every parameter. The sections after that contain instructions and a parameter table for the TDR P.

The P-control system has 2 seperate parameter sections, one titled “Manager” and one titled “Service”. The manager parameters are protected with a standard password “1111”. The manager can also protect this with his own 4-digits password.
The service section is only accesible for qualified service technicians.

The start up screen lists general information such as software version number, model name and Fri-Jado company logo.

Please make sure you read the paragraph titled “adapting parameters” before changing parameters. It contains some important information concerning the programming of the parameters.

REACHING THE PARAMETER MENUS



To reach the Manager parameter menu, press the “list” key and enter with the standard password **“1111”** (if not protected by a specific Manager password).

To reach the Service menu press and hold the “UNDO” key for 5 seconds and enter with the password “**4878**”. This only can be reached in the standby position of the rotisserie.

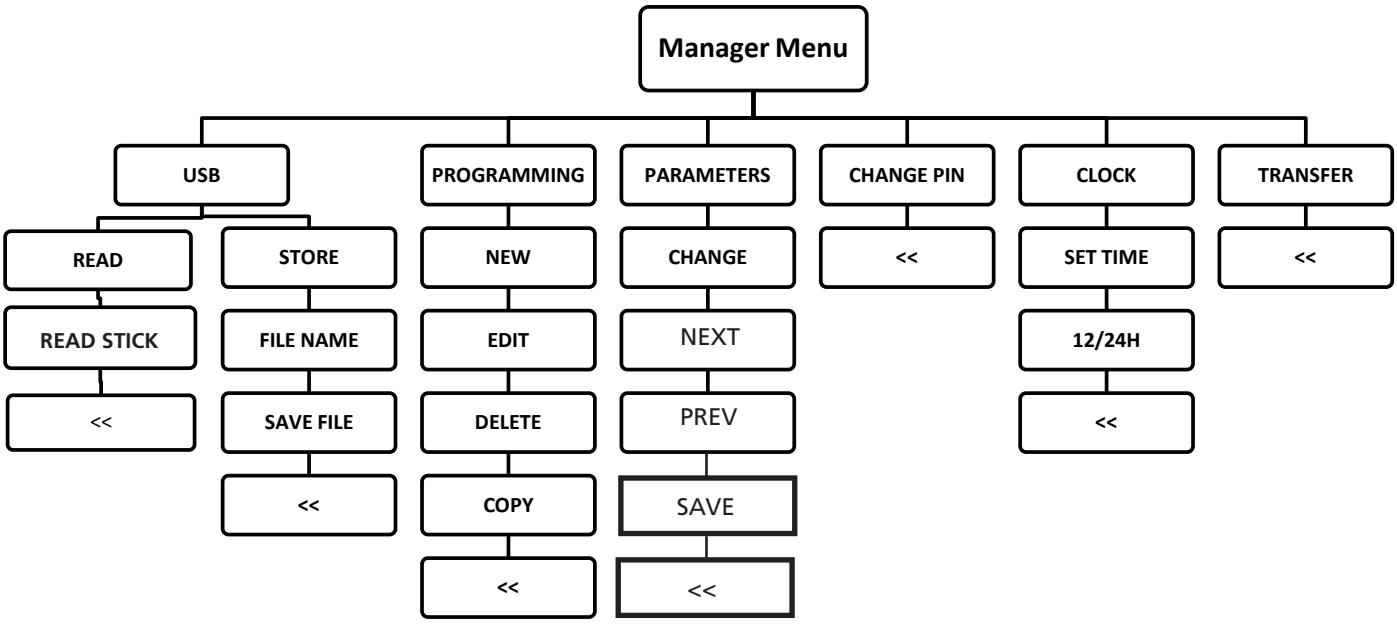
To leave a section use the UNDO key.

Note: *The service section is by default protected with a default password* ***“4878”****.*

Note: *The manager section can be protected by a seperate password, this password can be set inside the manager menu. It is possible to read this password through the service menu in the user pin parameter.*

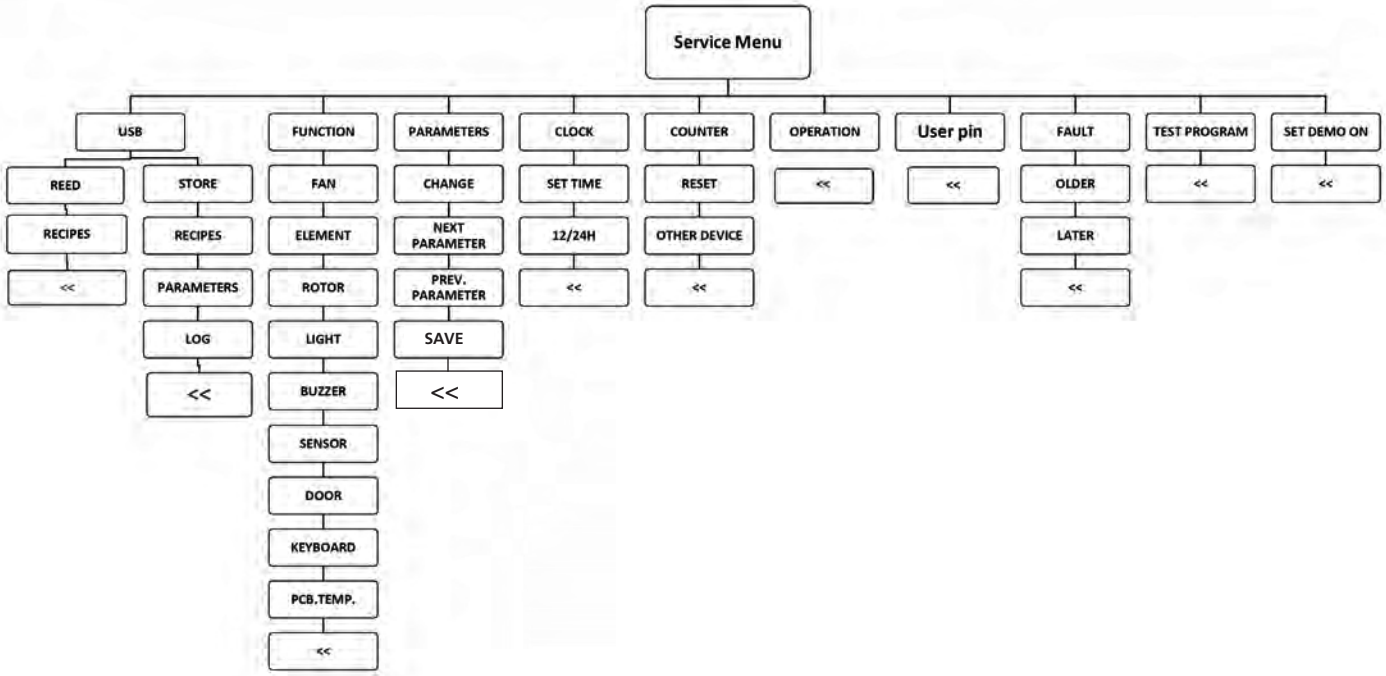
OPTIONS MANAGER MENU

To enter the manager menu press and hold the List key. The manager section can be protected by a seperate password. The standard number is **"1111"**, This password can be changed inside the manager menu.



OPTIONS SERVICE MENU

To enter the service menu press and hold the UNDO key for 5 seconds. The service section is by default protected with a default password of **"4878"**.



MANAGER MENU - DESCRIPTION OF THE SUBMENUS

Menu section: Manager menu	
Parameter	**Description**
USB	In this menu you can read recipies from the USB stick to the CPU board, or store programs from the CPU to the USB stick.
Programming	In this menu you can process the cooking programs. You can make a new program or edit, delete or copy an existing program.
Parameters	In this menu you can view or change all manager parameters. Note: when changing a parameter in this manager menu, this will automatically be changed also in the service menu. For an overview of the parameters see parameter list manager menu.
Change pin	In this menu you can change the manager pincode.
Clock	In this menu you can set the time and the time format (12/24h clock).
Transfer	In this menu you can store log data on the USB stick. These are 2 separate files. One with a error overview and the second with all parameter settings.

Parameter list Manager menu	
Parameter	**Description**
Language	This parameter allows the setting of the language of the different texts used by the unit. Note that some texts may not yet have an updated translation.
Big digits	This parameter allows to choose for big digits on the display during preheat, cooking and hold cycle.
Preheat allowed	This parameter allows the enabeling of preheating before a recipe. If “yes” is selected, every program can have a preheat step included, you have a choice in this. If “no” is selected preheating is not possible, even if there is a program with a preheat step.
Holding allowed	This parameter allows the enabeling of a warm hold step at the end of the grilling step(s). If “yes” is selected every program can have a holding step included, you have a choice in this. If “no” is selected holding is not possible, even if there is a program with a holding step.
Preheat temperature	This parameter allows the programming of a general preheat temperature. Note: this preheat temperature is suggested and can be overwritten in the programs.
Holding temperature	This parameter allows the programming of a general holding temperature. Note: this holding temperature is suggested and can be overwritten in the programs.
Sound preheat T1	This parameter allows to set an alarm sound at the end of the preheat step. You can choose 3 different sounds (T1-T2-T3) and the level of the sound (up to 4 white blocks) or no sound (no white block).
Sound step T2	This parameter allows to set an alarm sound at the end of the first grilling step. You can choose 3 different sounds (T1-T2-T3) and the level of the sound (up to 4 white blocks) or no sound (no white block).
Sound done T3	This parameter allows to set an alarm sound at the end of the grilling step(s). You can choose 3 different sounds (T1-T2-T3) and the level of the sound (up to 4 white blocks) or no sound (no white block).

SERVICE MENU - DESCRIPTION OF THE SUBMENUS

Menu section: Service menu	
Parameter	**Description**
USB	In this menu you can read recIpies from the USB stick to the CPU board. And you can store recipies, parameters and LOG data to the USB stick.
Function	This menu allows access to the I/O test screen, Through this, several inputs and outputs of the machine can be monitored and toggled.
Parameters	In this menu you can view or change all service parameters. Note: when changing a parameter in this service menu, this will automatically be changed also in the manager menu. For an overview of the parameters see parameter list service menu.
Clock	In this menu you can set the time and the time format (12/24h clock).
Counter	In this menu you can view the total working hours of the fan, gearbox and heaters. After re-palcing one of these parts you have to set the counter on zero again.
Operation	In this menu you can view the total hours of operation. This value is not resettable.
User pin	In this menu you can view the current set pincode. This code can only be viewed and not changed.
Fault	In this menu you can view all occurred errors and, if applied, in what cooking program.
Test program	In this menu you can start a test program. This fixed program has one cooking step of 250°C/482°F for 20 minutes and a holding program of 85°C/185°F and 10 minutes.
Set demo on	In this menu you can set the machine into a demonstration mode. In demonstration mode the machine will not turn the heating elements on and will simulate the machine heating up only through software.

Parameter list Service menu	
Parameter	**Description**
Language	This parameter allows the setting of the language of the different texts used by the unit. Note that some texts may not yet have an updated translation.
Big digits	This parameter allows to choose for big digits on the display during preheat, cooking and hold cycle.
Preheat allowed	This parameter allows the enabeling of preheating before a recipe. If “yes” is selected, every program can have a preheat step included, you have a choice in this. If “no” is selected preheating is not possible, even if there is a program with a preheat step.
Holding allowed	This parameter allows the enabeling of a warm hold step at the end of the grilling step(s). If “yes” is selected every program can have a holding step included, you have a choice in this. If “no” is selected holding is not possible, even if there is a program with a holding step.
Preheat temperature	This parameter allows the programming of a general preheat temperature. Note: this preheat temperature is suggested and can be overwritten in the programs.
Holding temperature	This parameter allows the programming of a general holding temperature. Note: this holding temperature is suggested and can be overwritten in the programs.
Sound preheat T1	This parameter allows to set an alarm sound at the end of the preheat step. You can choose 3 different sounds (T1-T2-T3) and the level of the sound (up to 4 white blocks) or no sound (no white block).
Sound step T2	This parameter allows to set an alarm sound at the end of the first grilling step. You can choose 3 different sounds (T1-T2-T3) and the level of the sound (up to 4 white blocks) or no sound (no white block).
Sound done T3	This parameter allows to set an alarm sound at the end of the grilling step(s). You can choose 3 different sounds (T1-T2-T3) and the level of the sound (up to 4 white blocks) or no sound (no white block).
Temp. unit	This parameter allows the switching between showing degrees either in Celcius (°C) or Fahrenheit (°F). Changing the parameter affects all values directly and no restart of the machine is required.

Parameter list Service menu	
Parameter	**Description**
Ecocook allowed	This parameter alows the ecocook to be activated or not. Ecocook on yes means that the accumulated heat in the cavity will be used to cook the product and to save energy. Heating elements will not be activated during the last period of the last grilling step.
Ecocook var.	This parameter alows to set the variable of the ecocook. Var. adjustable from 1 to 9. This is the percentage of the total cooking time.
Boost allowed	This parameter allows to add extra cooking time at the end of the grilling cycle. If set on “yes” you can add extra time in minutes.
User PIN in use	This parameter allows free access to the Manager menu if set on “no”. Or protected access by means of a pin code if set on “yes”. If set on “no” there is no pin code protection for the Manager menu and you have free access to this menu. If set on “yes”the standard Manager pin code is “1111”, but can also be changed to another pin code. Note: Always set the pincode back on “yes” after work has ended.
Lights out	This parameter allows the lights to be shut off during opening of the door during stand by position. If set on “no”the lights will go on for 20 seconds.
key beep	This parameter allows to set a beep sound when a key is touched. If set on “off” the beep sound will be off.
Temp. offset	This parameter allows to set an offset in the temp. regulation. For example: if temp. is set on 200°C/390°F and offset on -20°C/-36°F the software regulates the temp. on 220°C/428°F, so a real higher operating temp. The actual temperature is indicating 36°F lower than it really is. The set temperature of 390°F will be indicated on the display. Offset can be adjusted on ± 49,9°C/99.9°F.
Cook correction allowed	This parameter allows a cooking time that automatically will be adjusted depending on the load of products. The first cook is the reference cook and will be used to fix the correct parameters. The activation of the cook correction is not visible in the display.
Key sens	This parameter allows the adjustment of the sensitivity of the keys. Sensitivity is highest on value 1 and lowest on 9.
Temp. grad.	This parameter allows the setting of the minimal temperature rise, in °C or °F/minute, of the PT sensor during the preheat, cooking and hold steps until maximal 150°C / 302°F. Measuring only starts after 5 minutes in these steps and the actual temperature in the cabinet is at least 30 °C/54°F lower than the set temperature. Measuring takes place every 2 minutes and when the temperature rise is lower during 5 consecutive measurements than the setting of this parameter, an “error 55” will be indicated and the machine switches off.
Second display	This parameter allows the setting of the display on customer side. 0 = Second display has only the rotor function in stand by position. 1 = Second display has only limited functions like viewing during cooking proces. 2 = As 1 + possibility of selection of programs and starting. 3 = Not in use.
Thermistor	This parameter alows the activation of an error on the clixon inside the blower motor. If set on “yes” the clixon is connected, by relay K3, to the input of the CPU board and stops the blower and rotisserie when overheating and indicates an error 66. If set on “no” the clixon is not activated.

Notes:

- After parameter changes have been made in both Manager or Service menu, you have to press the undo key to go to save and press OK key to confirm.
- When parameters, that are both in Manager and Service menu, are changed in one menu they will be also adjusted in the other menu.
- When preheat allowed or holding allowed is set on zero, no preheat or holding will take place even if this is programmed in a recipe.
- When preheat is set in the Manager or Service menu and the recipe itself has no prehat programmed, there will be no preheat in the cooking cycle.
- It is not possible to program only a preheat or hold step, without a cooking step.
- The countdown of the last minute in the cooking cycle is displayed in seconds.

ADAPTING PARAMETERS

The P-control system utilises a large set of parameters, of these parameters a select group is open to customization. This meaning these parameters can be adjusted to offer functionality more fitting to the intended purpose of the unit.

The manager parameters are open to modification. It is however important to know before-hand what a parameter does before changing it, a detailed description of all parameters can be found earlier in this chapter.

Generally speaking all Service parameters are considered important and should not deviate from the value as listed in the parameter lists found in this document.

When changing the critical service parameters beyond the value listed in this document Fri-Jado cannot guarantee that the unit will function as to be expected.

LOADING SOFTWARE

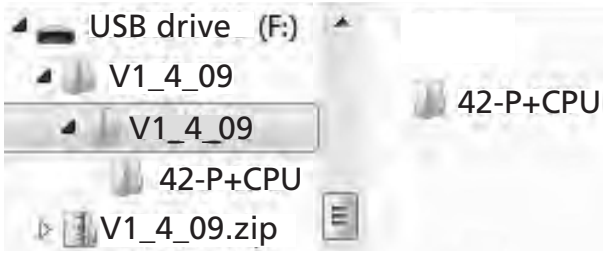
Software can only be loaded to the CPU board by means of a memory stick. The download is always done out of a folder called "42-P+CPU" (see also explanation updating system software below). This folder has to be placed direct on the memory stick and cannot be placed in another folder, otherwise it will not work. That means only one folder "42-P+CPU" can be placed direct on the memory stick. **How to read the software version see also operation on page 8.**

To load new software from a memory stick to the CPU board is as follows:

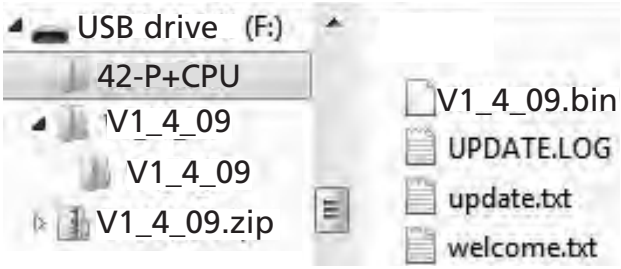
1. Pull the plug out of the socket or switch off the mains supply.
2. Place memory stick in the side wall.
3. Put the plug in the socket ore switch on the mains supply. Now the new software will be loaded inside the CPU board.
4. You will be asked to remove the stick and when done the unit switches on. (the existing parameters will remain).

Updating system software (firmware). Only in case the unit has older software!!
This software, supplied by Fri-Jado comes in a "zip" file with the version number of the software, for example "V1_4_09.zip". The file needs to be copied on a USB stick. (disk "USB drive (F:)" in the example).
After unpacking it, the folder named "42-P+CPU" needs to be moved or copied to the root of the USB stick as shown below.

After unpacking.



Move the "42-P+CPU" folder to the root.



READ AND STORE RECIPES IN MANAGER MENU

Recipies can be read and stored from both the Manager menu and the Service menu.

Recipies can only be read to, or stored from the CPU board by means of a memory stick. The transfer is always done out of a folder called "Programs". This folder has to be placed direct on the memory stick and cannot be placed in another folder, otherwise it will not work. If the folder called "Programs"doesn't exist on the memory stick, this folder will be created automatically while storing. The folder can contain several files with programs. The name of a file may exist of maximum 8 characters, otherwise it will not be read or stored.
When reading a new program to the CPU board the old program will be deleted. So it's adviseable to store the old program first on your memory stick. **How to read and store recepes see also USB on page 24.**

To read a program from a memory stick to the CPU board is done as follows:
1. Place the memory stick and go to the manager menu choose "USB" and confirm with OK.
2. Go to "read" and confirm with "OK".
3. Go to "read stick" and confirm with "OK".
4. Choose file name, with "other file", and confirm with "OK".
5. Now go to "read file" and confirm with "OK".

Now the new program will be loaded inside the CPU board.

To store programs from the CPU board to the memory stick is done as follows:
1. Place the memory stick and go to the manager menu choose "USB" and confirm with "OK".
2. Go to "store" and confirm with "OK".
3. Now choose a file name and confirm with "OK".
4. Go to "save file" and confirm with "OK".

Now the program will be written on the memory stick.

Notes:
- When the message "files not found" is indicated on the display try to reset the machine by pulling the plug out for 5 seconds.
- The name of a file may not exist of more than 8 characters and can't have a space between the characters. Check this in the program list on the memory stick.
- It is not allowed to have a open line in the recipie list. Remove the open line and try again.
- If the reset doesn't work try to load the software again.
- All recipe names must have the extension .csv.

READ AND STORE RECIPIES AND PARAMETERS IN SERVICE MENU

Recipies can be read and stored from both the Manager menu and the Service menu.

Recipies can only be read to, or stored from the CPU board by means of a memory stick. The transfer is always done out of a folder called "Programs". This folder has to be placed direct on the memory stick and cannot be placed in another folder, otherwise it will not work. If the folder called "Programs"doesn't exist on the memory stick, this folder will be created automatically while storing. The folder can contain several files with programs. The name of a program file may exist of maximum 8 characters and can't have a space between the characters, otherwise it will not be read or stored.
When reading a new program to the CPU board the old program will be deleted. So it's adviseable to store the old program first on your memory stick.

To read a recipe program from a memory stick to the CPU board is done as follows:
1. Place the memory stick and go to the Service menu (pincode 4878), choose "USB" and confirm with OK.
2. Go to "read" and confirm with "OK".
3. Choose "recipies"and confirm with "OK".
4. Go to "read stick" and confirm with "OK".
5. Choose file name, with "other file", and confirm with "OK".
6. Now go to "read file" and confirm with "OK".

Now the new program will be loaded inside the CPU board.

To store recipe programs from the CPU board to the memory stick is done as follows:
1. Place the memory stick and go to the Service menu (pincode 4878) choose "USB" and confirm with "OK".
2. Go to "store" and confirm with "OK".
3. Choose "recipies"and confirm with "OK".
4. Now choose a file name and confirm with "OK".
5. Go to "save file" and confirm with "OK".

Now the program will be written on the memory stick.

Notes:
- When the message "files not found" is indicated on the display try to reset the machine by pulling the plug out for 5 seconds.
- The name of a file may not exist of more than 8 characters and can't have a space between the characters. Check this in the program file on the memory stick.
- It is not allowed to have a open line in the recipie list. Remove the open line and try again.
- If the reset doesn't work try to load the software again.
- All recipe names must have the extension .csv.

Parameters can only be read to, or stored from the CPU board by means of a memory stick. The transfer is always done out of a folder called “PARAMS”. This folder has to be placed direct on the memory stick and cannot be placed in another folder, otherwise it will not work. If the folder called “PARAMS”doesn’t exist on the memory stick, this folder will be created automatically while storing. The folder can contain several parameter files. The name of a file may exist of maximum 8 characters and can’t have a space between the characters, otherwise it will not be read or stored.
When reading a new parameter file to the CPU board the old parameters will be deleted. So it’s adviseable to store the old program first on your memory stick.

To read a parameter list from a memory stick to the CPU board is done as follows:
1. Place the memory stick and go to the service menu (pincode 4878), choose “USB” and confirm with OK.
2. Go to “read” and confirm with “OK”.
3. Choose “parameters”and confirm with “OK”.
4. Go to “read stick” and confirm with “OK”.
5. Choose file name, with “other file”, and confirm with “OK”.
6. Now go to “read file” and confirm with “OK”.

Now the new parameters will be loaded inside the CPU board.

To store parameters from the CPU board to the memory stick is done as follows:
1. Place the memory stick and go to the Service menu (pincode 4878) choose “USB” and confirm with “OK”.
2. Go to “store” and confirm with “OK”.
3. Choose “parameters”and confirm with “OK”.
4. Now choose a file name and confirm with “OK”.
5. Go to “save file” and confirm with “OK”.

Now the parameters will be written on the memory stick.

Notes:
- When the message “files not found” is indicated on the display try to reset the machine by pulling the plug out for 5 seconds.
- The name of a parameter file may not exist of more than 8 characters and can’t have a space between the characters.
- Check if there is a folder on the memory stick with the name “parameters”.
- If it still doesn’t work try to load the software again.
- All parameter name files must have the extension .csv.

PARAMETER LIST P

Parameters P Gas software version 1.04.09 **USA**				
Level 1	Level 2	Level 3	Default	Possibilities
Information			1.04.09	software version
Manager			1111	
	Preheat allowed		yes	yes - no
	Preheat temp		425	50 - 250°C / 122 - 482°F
	Holding allowed		no	yes - no
	Holding temp		160	50 - 250°C / 122 - 482°F
	Cook Correction [1]		yes	yes - no
	Eco function [2]		no	yes - no
	Language		English	English - Nederlands - Deutsch - Francais - Espanol - Russian
	Big Digits		yes	yes - no
	Sound preheat		T1, ■■■■	T1 - T2 - T3
	Sound step		T3, ■□□□	T1 - T2 - T3
	Sound done		T1, ■■■■	T1 - T2 - T3
Service			4878	
	Preheat allowed		yes	yes - no
	Preheat temp		425	50 - 250°C / 122 - 482°F
	Holding allowed		no	yes - no
	Holding temp		160	50 - 250°C / 122 - 482°F
	Cook corr. Option		yes	yes - no
	Cook corr. factor		3	1 - 6
	Ecocook option		no	yes - no
	Ecocook var		6	1 - 9
	Language		English	English - Nederlands - Deutsch - Francais - Espanol - Russian
	Big Digits		yes	yes - no
	Sound preheat		T1, ■■■■	T1 - T2 - T3
	Sound step		T3, ■□□□	T1 - T2 - T3
	Sound done		T1, ■■■■	T1 - T2 - T3
	Temp unit		°F	°C - °F
	Boost allowed		yes	yes - no
	User pin in use		yes	yes - no
	Lights out		yes	yes - no
	Key beep		yes	yes - no
	Temp offset		0	-50 - +50°C or -100-+100°F
	Key sense		7	1 - 11
	Temp grad[3]		3	0 - 19 0 = disable error 55
	Second Display		0	0-1-2-3
	Thermistor[4]		no	yes - no

[1] Only visible when "Cook Corr. option" in Service Menu is set on "yes"

[2] Only visible when "Ecocook option" in Service Menu is set on "yes"

[3] If set to "0" then the error 55 function is not active.

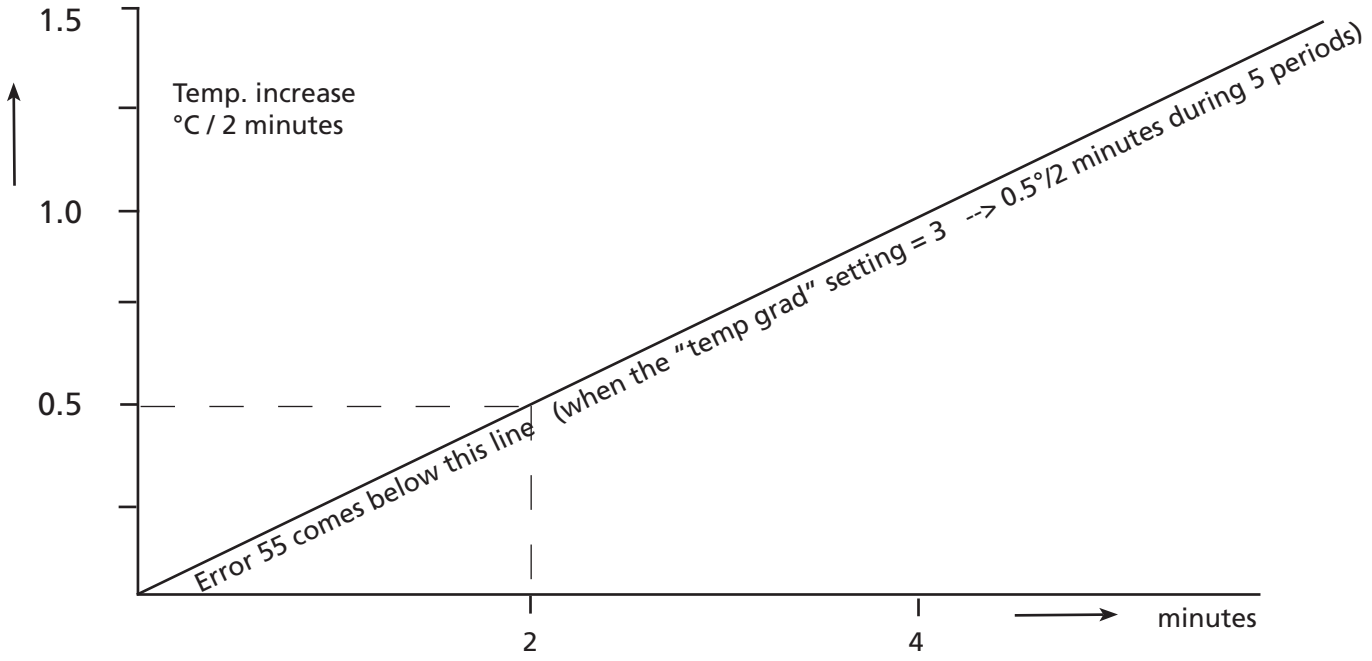
[4] Has to be set on "no" for gas rotisseries.

TROUBLESHOOTING FOR THE TDR 7 GAS ROTISSERIES

Symptom	Possible causes
No power to oven controls.	1. Main breaker open. 2. Fuse F1 or F2 burned. 3. Fuse (125 mA) on power and I/O board burned. 4. Wiring loose.
Main fuse or breaker blows.	1. Wiring incorrectly. 2. Drive motor, blower or contactor switch shorted. 3. Wiring shorted.
Drive motor does not run during cook cycle.	1. Capacitor malfunction. 2. Power and I/O board malfunction. Also check relay X12. 3. Motor malfunction. 4. Wiring loose.
Drive motor stops and runs again after a certain period.	1. Thermal protection activated (105°C / 221°F). This shuts off after the temperature is below 105°C / 221°F.
Blower motor does not run.	1. Capacitor malfunction. 2. Motor inoperative. 3. Power and I/O board malfunction. Also check relay X6. 4. Wiring loose.
Blower motor stops and runs again after a certain period.	1. Thermal protection activated (150°C / 302°F). This shuts off after the temperature is below 150°C / 302°C.
Oven temperature differs from temperature setting in program mode.	1. Safety thermostat malfunction. 2. Blower motor(s) inoperative (turning direction?) 3. Electronic control inoperative. 4. PT-1000-sensor malfunction. 5. Dirty fan guard or fan blade(s).
Oven temperature does not reach desired temperature during cook cycle.	1. Safety thermostat malfunction. 2. PT-1000-sensor malfunction. 3. Electronic control inoperative. 4. Contactor inoperative.
No display and/or keypad does not function.	1. Main breaker open. 2. Remove plug out of socket and connect plug again (reset of key sensitivity). 3. Loose flat cable from CPU/display to power and I/O board. 4. Fuse (125 mA) on power and I/O board burned. 5. Power and I/O board malfunction. 6. Loose flatcable from CPU/display to keypad. 7. Keypad malfunction. Check also the adhesive of the keypad. 8. Earth wire on CPU board makes contact with the solder point on the board (see CPU board page 28).
Blue LED light On/Off key is fading in and out. Keypad does not function.	1. Flatcable from keypad on the operation panel is connected incorrectly. Must be connected to “Touchpanel 1” connector of CPU board (see CPU board page 28).
No ignition / no spark (reset light is burning).	1. Check polarity of plug. 2. Gas burner safety control malfunction. 3. Distance (4 mm) between ignition pins not in order. 4. Wiring loose.
No ignition of the gas in the burner (reset light is burning).	1. Reset switch malfunction. 2. Gas supply closed. 3. Gas block malfunction. 4. Gas burner safety control malfunction. 5. Burner control measures wrong speed of gas mixture blower (change blower). Also see working on page 37. 6. Wiring loose.

Symptom	Possible causes
No ignition of the gas in the burner (reset light is **not** burning).	1. Reset switch malfunction. 2. Reset light on operation panel broken. 3. Reset on gas control block is on. Press this to reset. See page 44. 4. Gas burner safety control malfunction. 5. Wiring loose.
Reset light is burning continuous.	1. Safety thermostat tripped. Check the adjustment of thermostat. 2. Too many resets made (more than 4 and also red indication on burner control is flashing). Pull the plug out and in again. 3. Reset switch malfunction. See also page 44.
Burner switches on and off intermittently during operation.	1. Reset switch malfunction. 2. Adjustment of ionisation pin. 3. Gas pressure too low (under 15 mbar). 4. Gas burner safety control malfunction.
Gas ignites in burner but cuts off after a short time. (reset light is burning).	1. Ionization pin malfunction. 2. Adjustment of ionization pin. 3. Loose wiring of ionization pin. 4. Gas burner safety control malfunction.
Burner stops during operation.	1. Gas supply blocked. 2. Adjustment of ionization pin. 3. Ionization pin malfunction. 4. Gas burner safety control malfunction. 5. Safety thermostat tripped. Check the adjustment of thermostat. 6. Wiring ionization pin.
Gas mixture blower only runs in high speed.	1. Gas burner safety control malfunction. 2. Gas mixture blower malfunction. 3. Wiring loose.
Error 11.	1. PT sensor malfunction. 2. Wiring PT sensor shortened.
Error 33.	1. PT sensor malfunction. 2. Wiring PT sensor loose.
Error 55. **See also extra explanation on next page.**	1. P.T. sensor malfunction. 2. Parameter setting of “temp.grad” is not on value 3. (see page 52). 3. Setting of temp. in cooking program is too high (solved in software version V11.03.07 and higher). Load latest software. 4. Safety thermostat malfunction.
Error 77. **See also extra explanation on page 41.**	1. Check heat number in cooking program. 2. Cooking program malfunction. Erase program, create new program, run a reference batch and run a second batch for verification.
Error 88. **See also extra explanation on page 41.**	1. Check heat number in cooking program. 2. Heating element malfunction. 3. Cooking program malfunction. Erase program, create new program, run a reference batch and run a second batch for verification.
Application error. A: No standard screen when switching on. B: APP. error on screen.	A1. Make a complete reset by pulling out the plug for 1 sec. A2. CPU board malfunction. B1. Memory stick failure. B2. Load latest software version. (solved in V11.03.08 or higher).

ERROR 55 EXPLANATION



Note: 1. Measuring starts 5 minutes after beginning of a heating step.
2. Duration is 5 periods of 2 minutes.
3. Measuring stops at 150°C/302°F or when temp. in cabinet is < 30°C than the set temperature.

Necessary line currents:
TDR8 with neutral 3x 16A. Without neutral 3x 27A.
TDR5 with neutral 3x 8,5A. Without neutral 3x 14A.

Possible cause	Caused by	Explanation	Solution
Energy supply problem	Safety thermostat	Not adjusted to it's maximum	Fully turn clock-wise (cw)
		Broken thermostat.	Replace thermostat
	Broken temperature sensor	Sensor gives a wrong value	Replace sensor
	Wrong setting of "temp grad" parameter	Default setting is 3, --> 0.5° per 2 minutes	Check setting
Too much energy absorption	Products are stuffed with a very humid substance		Put "temp grad"setting on 2 or 1.

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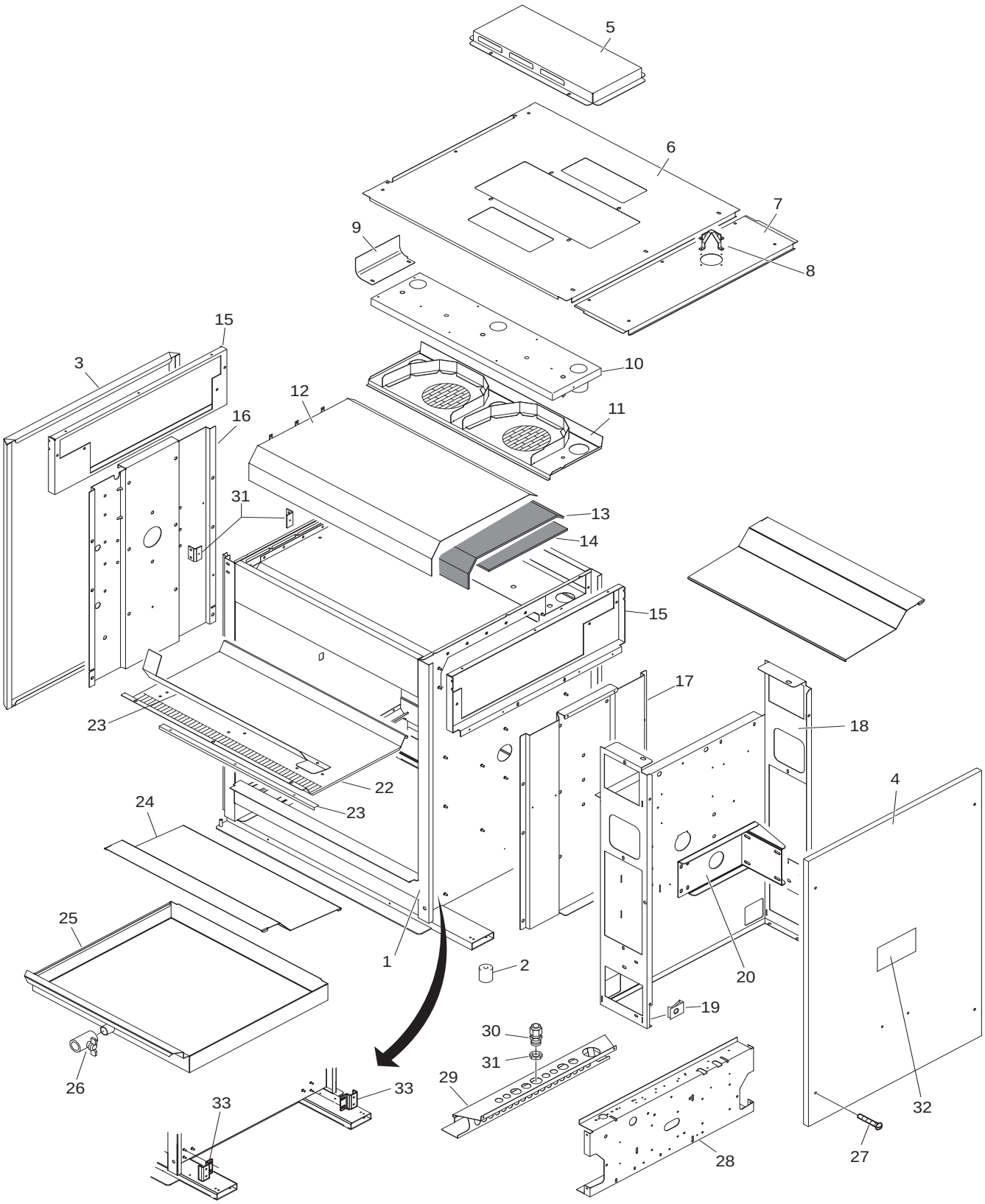
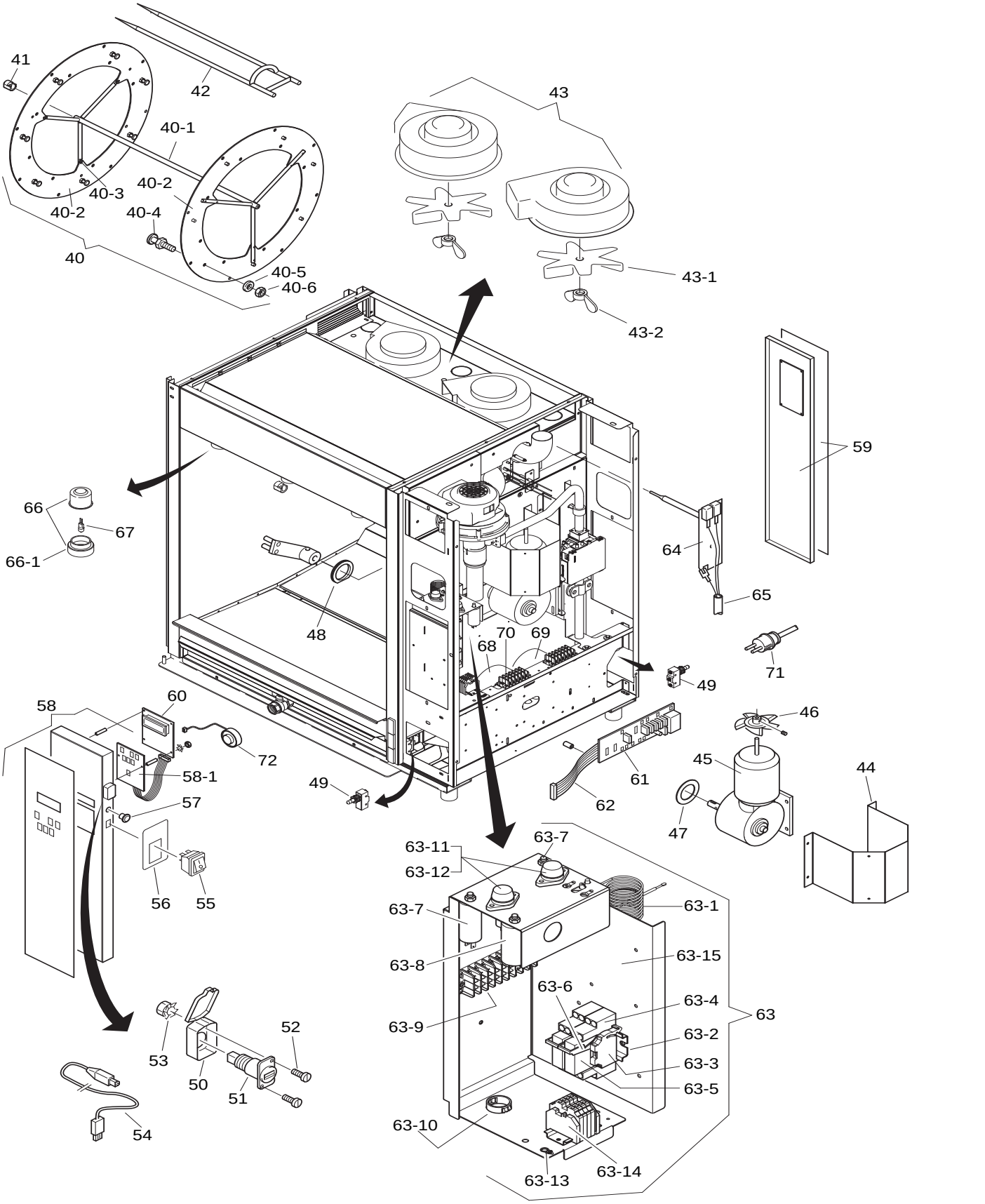
EXPLODED VIEWS & PARTLISTS

TDR 7 P GAS - SHEET METAL WORK



Item	Part number	Qty.	Description
1	.....	1	Frame, ass.
2	9171125	4	Leg, rubber 50 mm
3	9294180	1	Side panel, left
4	9294018	1	Side panel, right
5	9294160	1	Top cover
6	9294032	1	Top plate
7	9294422	1	Cover, removeable
8	9174485	1	Cover, exhaust
9	9174408	1	Plate, air guide
10	9170568	1	Mounting plate, blowers
11	9290528	1	Air guide plate
12	9294485	1	Cover, top
13	9292118	1	Insulation top, large
14	9292119	1	Insulation top, small
15	9294404	2	Reinforcement, top plate
16	9294405	1	Reinforcement, side plate, left
17	9294406	1	Reinforcement, side plate,right
18	9294415	1	Cover plate, machine components
19	9172053	8	Nut M5
20	9170444	1	Support, gear motor
21	9294479	1	Air guide plate
22	9174417	1	Plate, air guide
23	9174427	1	Plate, air guide
24	9294014	8	Bottom plate, stainless steel
25	9290405	1	Drawer
26	9171008	1	Drain-tap with handle
27	4288322	8	Screw M5x10
28	9294025	1	Mounting plate
29	9294019	1	Spark catcher
30	9222076	1	Strain relief M20
31	9222077	1	Connector M20
32	9124034	1	Indication plate
33	9294065	2	Bracket, door switch
34	9174154	2	Adjusting bracket

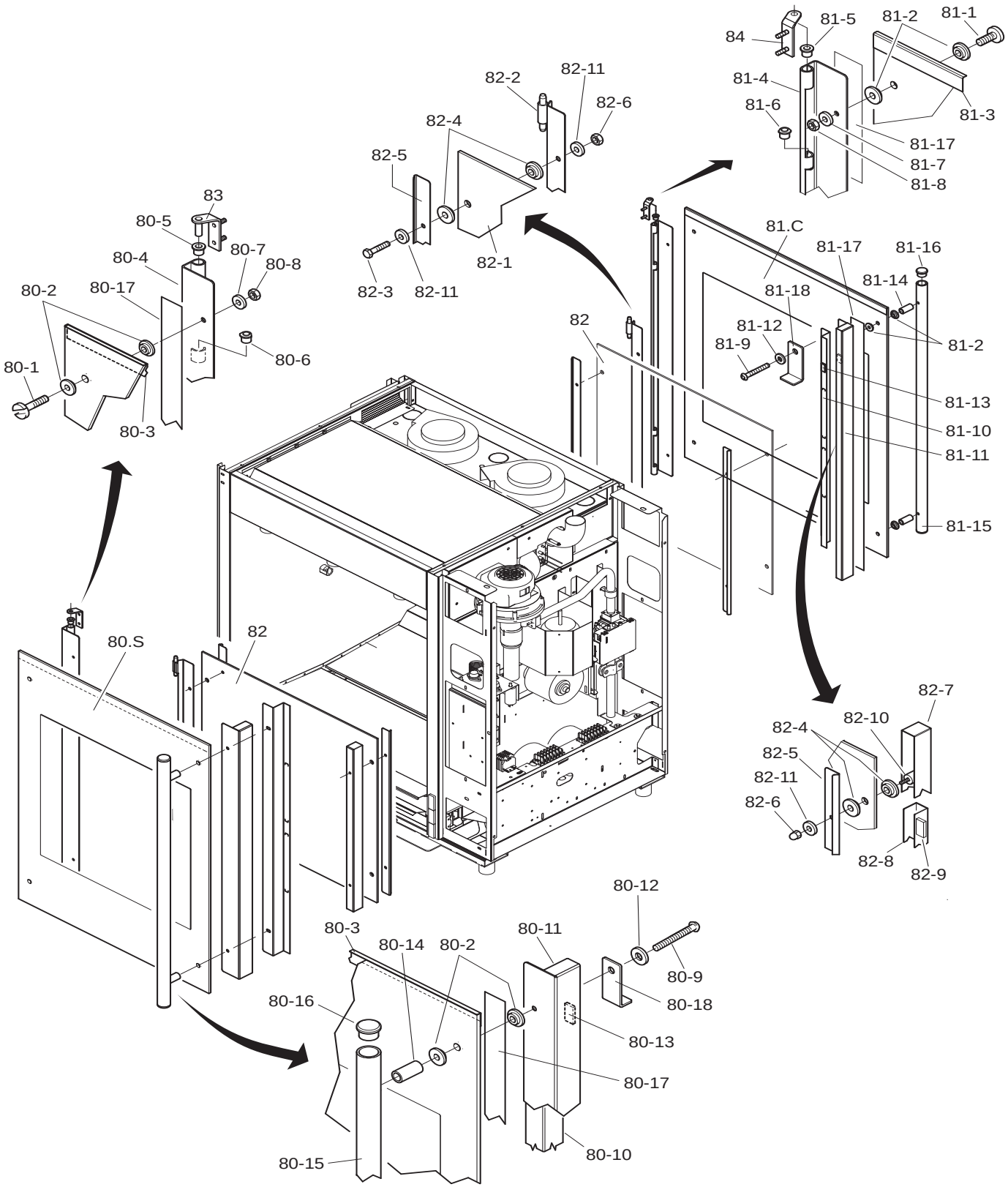
TDR 7 P GAS - ELECTRICAL PARTS



Item	Part number	Qty.	Description
40	9172274	1	Rotorset ass., stainless steel
40-1	9070272	1	Rotor shaft
40-2	9174623	2	Rotor disc 3 mm
40-3	4288231	12	Tensilock bolt M5 x 10
40-4	9172169	14	Support pin
40-5	0142056	14	Spring washer M8
40-6	0141547	14	Nut M8
41	9172063	1	Steel bearing 14 mm
42	9172153	8	Meatfork 8 mm SS
43	9140027	2	Blower
43-1	9141934	2	Fan blade
43-2	9073150	2	Wing nut, left hand threaded
44	9174161	1	Protection support
45	**9293002S**	1	Gear motor, complete with drive head
46	2000072	1	Fanblade Ø 150 mm, gearmotor
47	9110797	1	Sealring, drive head
48	9073131	1	Sealing ring, Teflon
49	**3701233S**	2	Door switch
50	9291010	1	Cover USB adapte
51	9291011	1	USB adapter
52	0141050	2	Screw M3x10
53	4285010	2	Nut M3
54	9291012	1	USB cable
55	9291024	1	Reset switch
56	9123417	1	Sticker, reset
57	9291025	1	Signal light, red
58	9298542	1	Operation panel, Glass + backplate + keypad with flatcable
58-1	9292041	1	Keypad + flatcable
59	9298531	1	Back panel, ass. Glass + backplate
60	**9292040S**	1	CPU board + LCD
61	9192202	1	Power & I/O board
62	9172314	1	Flatcable 14 pins

Item	Part number	Qty.	Description
63	9290219	1	Electric panel, ass.
63-1	9040970	1	Safety thermostat 100-320°C
63-2	9077088	2	Rail
63-3	9191222	2	End cap
63-4	9261032	2	Socket
63-5	9261031	2	Relay
63-6	9261030	2	Clamp
63-7	9110030	2	Capacitor 1.5 uF
63-8	9077101	1	Capacitor 2.5 uF
63-9	8033659	1	Connecting block 9-pole
63-10	9070840	1	Grommet
63-11	9044213	2	Fuse SC3, 300V
63-12	9044205	2	Fuse holder
63-13	0166555	1	Earth symbol
63-14	9172371	1	Connecting block, ass.
63-15	9294416	1	Panel
64	9172310	1	Temperature sensor PT 1000
65	9044140	1	Sensor cable
66	**9171135S**	6	Lamp holder, incl. glass
66-1	9171136	6	Glass lamp holder
67	3701052	6	Lamp 20W, 12V/300°C
68	9171049	1	Ring core transformer, secundair 2x12V
69	9171056	1	Ring core transformer, 115V / 230V
70	9151010	2	Connecting block 6-pole
71	9088796	1	Connecting cable with plug Nema 15-50P
72	9172362	1	Buzzer 12V

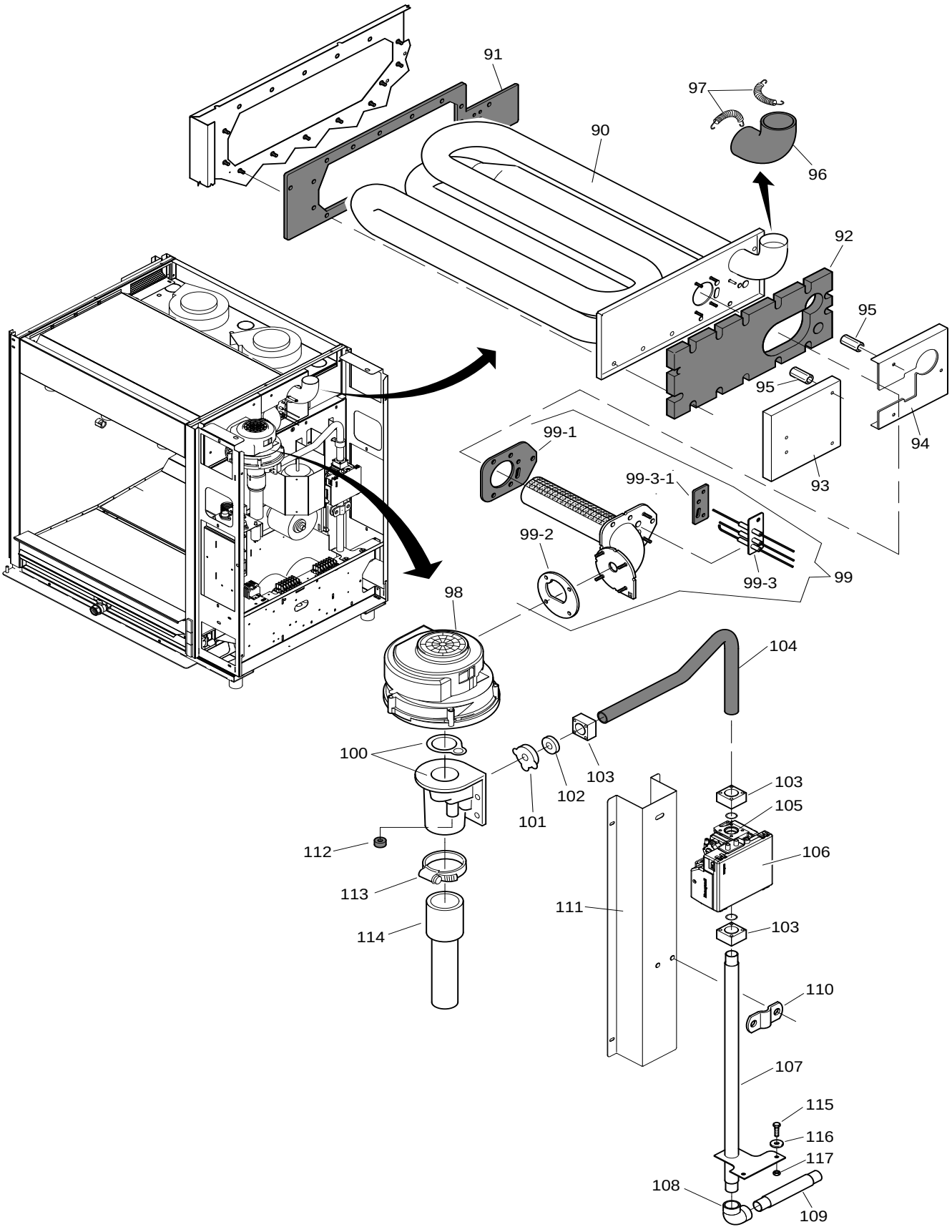
TDR 7 P GAS - DOORS



Item	Part number	Qty.	Description
80.S	**9298510S**	1	Door service side, ass.
80-1	4280558	2	Screw M5 x 16 SS
80-2	3702342	8	Flange bush, PTFE 3 mm
80-3	9294049	1	Protection profile
80-4	9294048	1	Hinge profile
80-5	9172054	2	Brass bearing 8 mm
80-6	9172122	2	Brass bearing 8 mm, adjusted
80-7	4311110	2	Washer M5
80-8	0144359	2	Nut M5, self locking
80-9	4288320	2	Screw M5 x 50 SS
80-10	9294035	1	Fastening, door handle
80-11	9294034	1	Magnet holder profile
80-12	9174680	2	Washer
80-13	9070141	12	Magnet block
80-14	9293010	2	Spacing pin
80-15	9293008	1	Door handle
80-16	2103209	2	Plug, door handle
80-17	4302141	2	Tape 20 x 0.8
80-18	9294229	1	Blocking bracket
81.C	**9298513S**	1	Door customer side, ass.
81-1	4280558	2	Screw M5 x 16 SS
81-2	3702342	8	Flange bush, PTFE 3 mm
81-3	9294049	1	Protection profile
81-4	9294048	1	Hinge profile
81-5	9172054	2	Brass bearing 8 mm
81-6	9172122	2	Brass bearing 8 mm, adjusted
81-7	4311110	2	Washer M5
81-8	0144359	2	Nut M5, self locking
81-9	4288059	2	Bolt M5 x 50 SS
81-9A	4288320	2	Screw, pan head M5 x 50 SS (till ser.nr. 100068523)
81-10	9294035	1	Fastening, door handle
81-11	9294034	1	Magnet holder profile
81-12	9174680	2	Washer
81-13	9070141	12	Magnet block
81-14	9293010	2	Spacing pin
81-15	9293008	1	Door handle
81-16	2103209	2	Plug, door handle
81-17	4302141	2	Tape 20 x 0.8
81-18	9294229	1	Blocking bracket

Item	Part number	Qty.	Description
82	**9298512S**	2	Door inside, ass.
82-2	9290406	2	Hinge profile
82-3	9191050	4	Bolt M5 x 18 SS
82-4	3702341	16	Flange bush, PTFE 2 mm
82-5	9294037	4	Cover profile
82-6	0142315	8	Nut M5 SS
82-7	9294038	2	Holder, magnet
82-8	9294039	2	Profile
82-9	9070141	20	Magnet block
82-10	9172291	4	Spacing pin
82-11	9174680	12	Washer
83	9290409	1	Hinge, left
84	9290410	1	Hinge, right

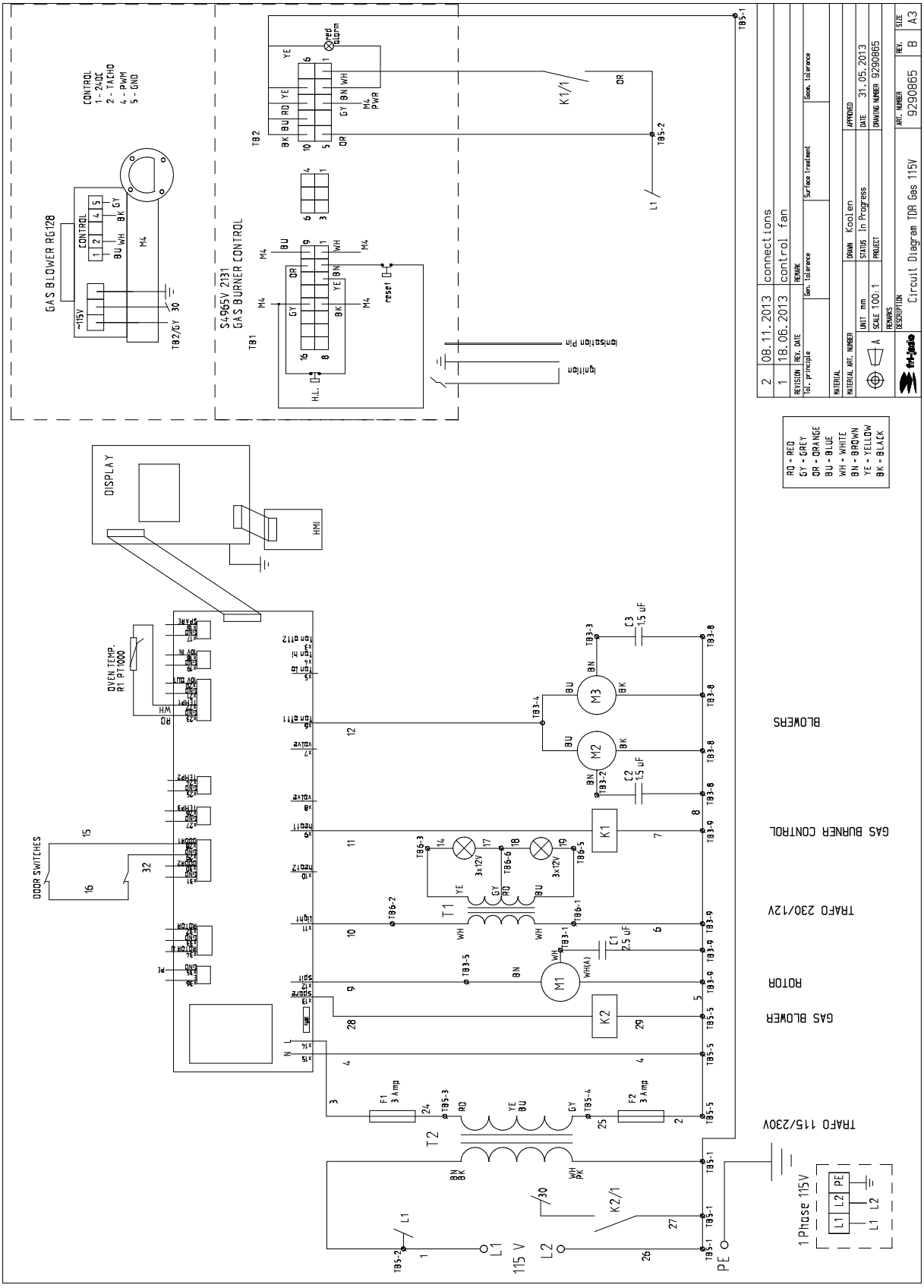
TDR 7 P GAS - GAS PARTS



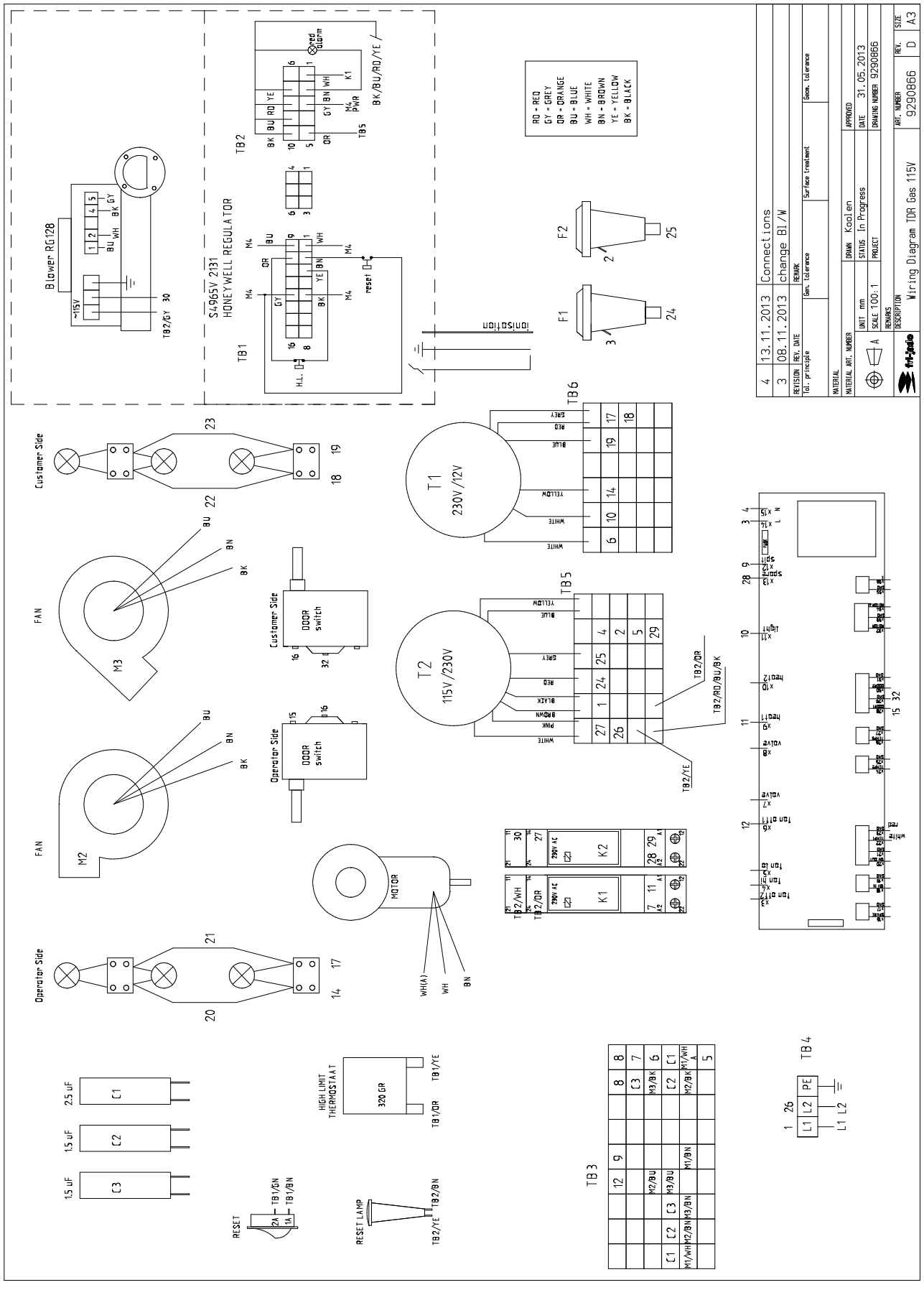
Item	Part number	Qty.	Description
90	9290550	1	Heat exchanger
91	9292106	1	Insulation, heat exchanger
92	9292109	1	Insulation board, heat exchanger
93	9290221	1	Insulation + sheet left ass.
94	9290222	1	Insulation + sheet right ass.
95	9070793	7	3d nut M6
96	9292107	1	Insulation exhaust pipe
97	9291018	2	Spring for insulation exhaust pipe
98	9291030	1	Gas mixture blower, 115V
99	**9290113S**	1	Coupling piece, universal + ignition set, ass.
99-1	9292102	1	Gasket for coupling piece
99-2	9292103	1	Gasket, blower flange
99-3	**9292113S**	1	Ignition/ionisation set , incl. gasket
99-3-1	9292108	1	Gasket, ignition set
100	9171094	1	Venturi tube, incl. gasket
101	9171099	1	Holder, orifice
102	9174498	1	Orifice 4,2 mm (G20/25)
102	9292128	1	Orifice 3,2 mm (G31)
103	9171092	3	Flange + gasket
104	9292120	1	Gas hose with coupling 1/2"
105	**9291032S**	1	Gas control block, 115V **Natural gas**
105	**9291035S**		Gas control block, 115V **Propane gas**
106	**9293044S**	1	Gas burner safety control, 115V **Natural gas (G20)**
106	**9293049S**	1	Gas burner safety control, 115V **Propane and LP gas**
107	9290551	1	Gas tube 1/2" with clamp plate
108	9171053	1	Knee joint 1/2"
109	9173072	1	Gas tube 1/2" - 1/2"NPT
110	9291029	2	Bracket for tube
111	9294482	1	Mounting plate for gas tube
112	9293046	1	Safety plug, adjustment screw
113		1	Clamp, tube ....
114		1	Silencer
115	4288231	2	Tensilock bolt M5 x 10
116	0210150	2	Washer M5
117	9087570	2	Tensilock nut M5

ELECTRICAL DIAGRAMS

CIRCUIT DIAGRAM TDR 7 P GAS



WIRING DIAGRAM TDR 7 P GAS



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