SERVICE MANUAL

STG7 P GAS FIRED ROTISSERIE OVEN

MODELS

Programmable controls STG7 P

Gas types **G20/25**
G31

Model STG7 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.

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Versions		
Version	Issue date dd/mm/yy	Remarks
02/2009	01/02/2009	First release.
02/2013	01/02/2013	Adjusting power changed. blower added in electrical compartment.
04/2013	01/04/2013	Adjusting power changed on pages 23 to 29. Trouble shooting adjusted.
05/2013	01/05/2013	Adjusting power changed on pages 23 to 29.
05/2014	01/05/2014	Changes in gas block, adjusting of power, troubleshooting and textual changes.

INDEX

GENERAL TECHNICAL DATA

This manual covers the STG 7 P gas fired rotisserie ovens suitable for G 20/25 (natural gas) and G 31 (Propane).

- STG 7 – Oven with seven spits (28 to 35 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

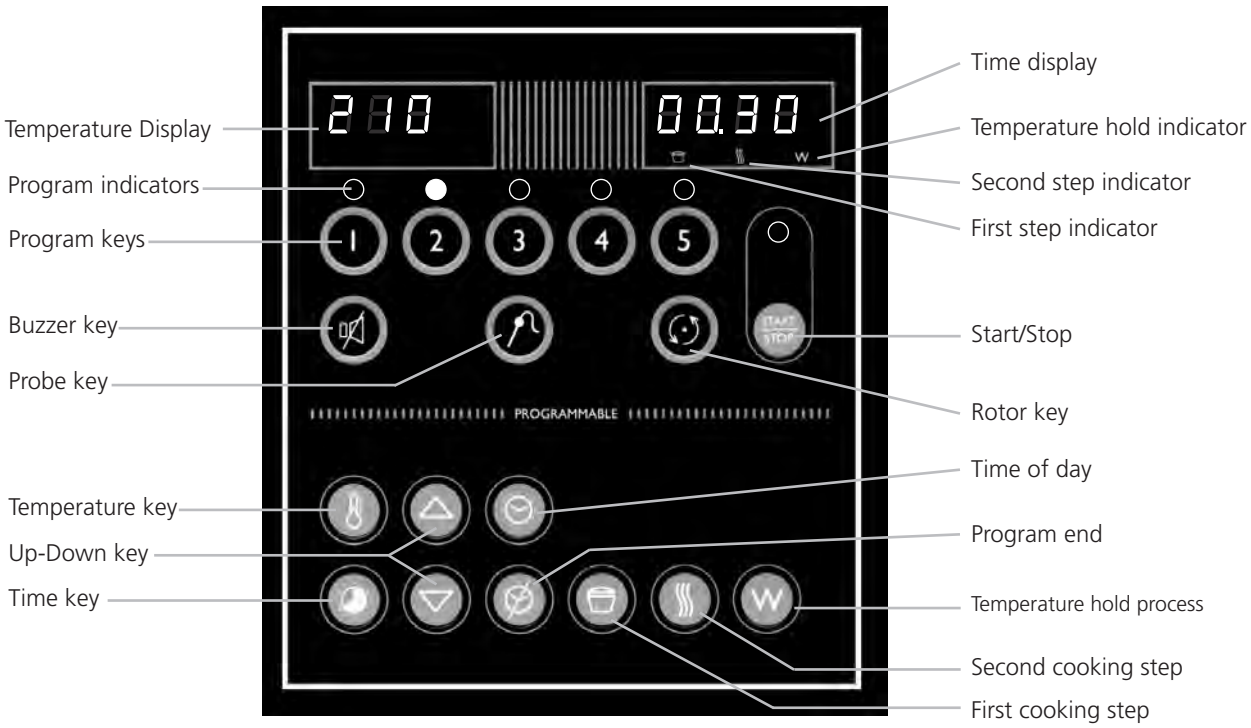
Type	**STG 7**
Power (W)	345
Gas power (KW)	14.5
Fuses needed with power connection 230 V, 1N ~50…60 Hz (1 phase with zero)	1x 10 A
Standard plug from factory single pole	16A
Net weight (kg)	204
Gross weight (kg)	230
Height (mm)	1025
Width (mm)	985
Depth (mm)	850

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

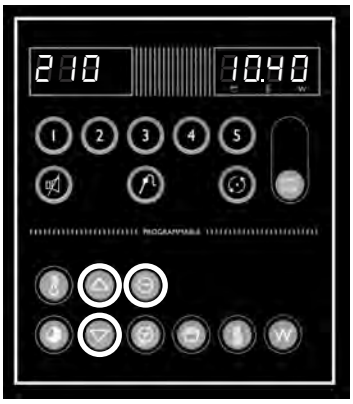
DISPLAY AND KEYS



SETTING THE STG

When the main switch is tuned to “1” the display lights up and the rotisserie is ON.

SETTING ACTUAL TIME

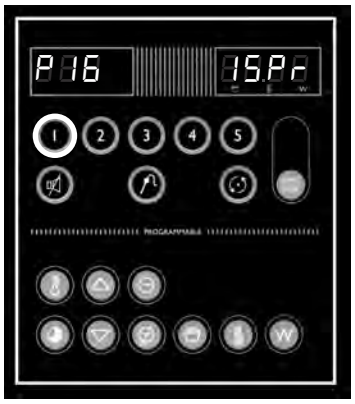


Press and hold *Time of day* key

Press *Up* or *Down* key

Release *Time of day* key

15 PROGRAMS

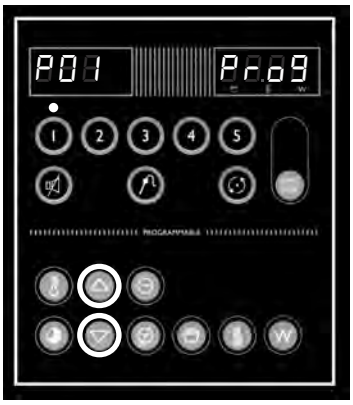


After the unit is switched-on the time display indicates: 15PR

Key 1:
1x = program 01
2x = program 06
3x = program 11

Key 2:
1x = program 02
2x = program 07
3x = program 12

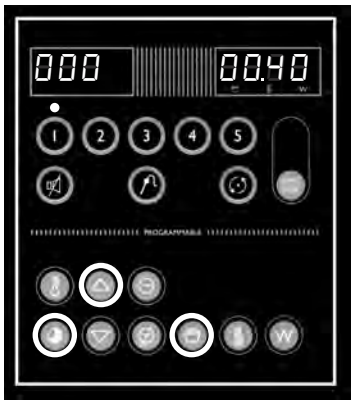
ENTERING A PROGRAM



Select Program number

Press both *Up* and *Down* keys during 2 seconds

FIRST COOKING STEP (TIME)



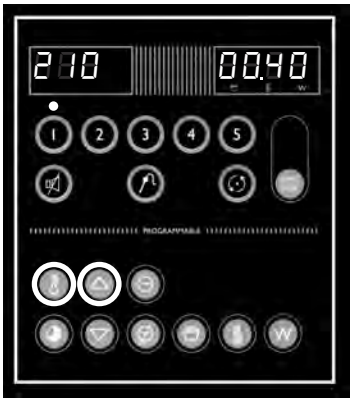
Press *Cooking process* key

Cooking symbol lights up

Press and hold the *Time* key

Press *Up* or *Down* key

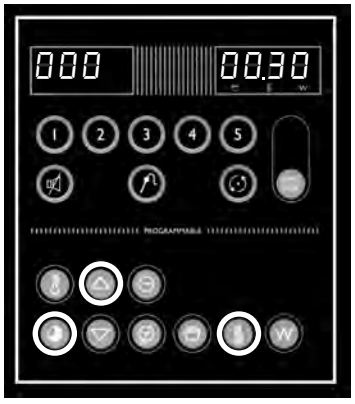
FIRST COOKING STEP (TEMP.)



Press and hold the *Temperature* key

Press *Up* or *Down* key

SECOND COOKING STEP (TIME)



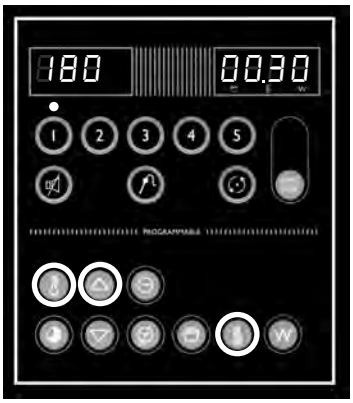
Press *Grilling process* key

Grilling symbol lights up

Press and hold the *Time* key

Press *Up* or *Down* key

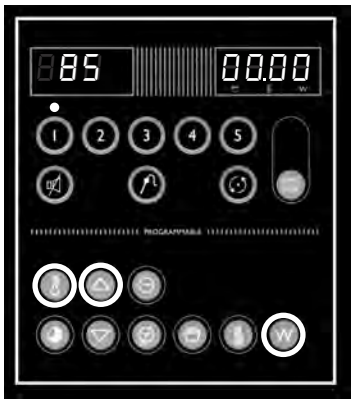
SECOND COOKING STEP (TEMP.)



Press and hold *Temperature* key

Press *Up* or *Down* key

TEMPERATURE HOLD



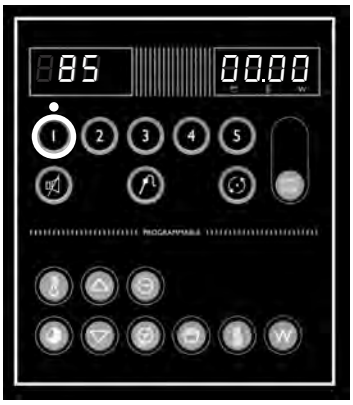
Press *Temperature Hold process* key

Temperature Hold symbol lights up

Press and hold the *Temperature* key

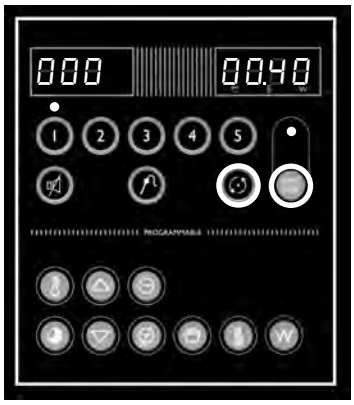
Press *Up* or *Down* key

LOADING PROGRAM



Press program number to load pre-set values

PROGRAM START & LOADING



Press *Start* / *Stop* key

On indicator lights up

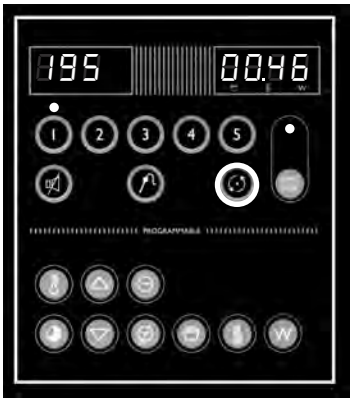
Press *Rotor* key to start turning the rotor

Press *Rotor* key again to stop

Load the rotisserie with products

OPTIONAL SETTINGS

INTERRUPTING ACTIVE PROGRAM



Press *Rotor* key

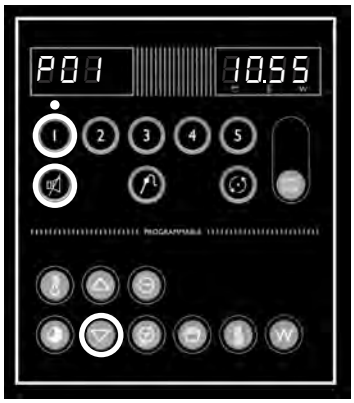
Heaters and front lamp switch off

Rotor stops

On indicator is blinking

Process time in hold

SET ADDITIONAL BUZZER SIGNAL

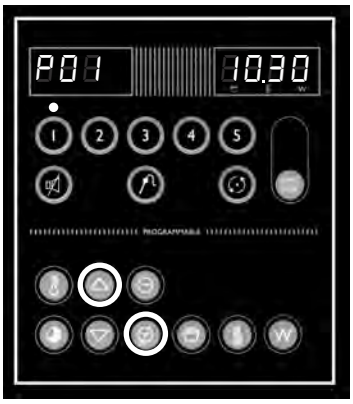


Select a pre-defined program

Press and hold *Buzzer* key

Press *Down* key

SET PROGRAM END TIME

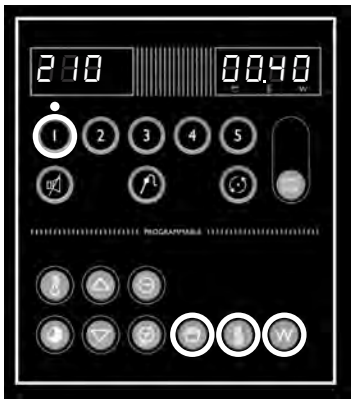


Select a pre-defined program

Press and hold the *Program end* key

Press *Up* key

DISPLAY SET TIME & TEMPERATURE



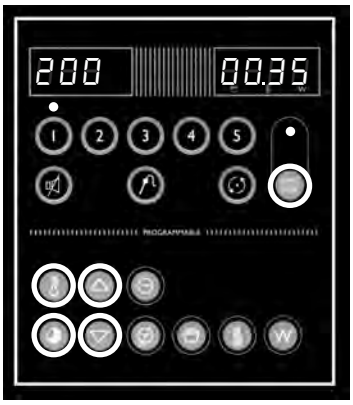
Select a pre-defined program

Press Cooking, Grilling or Temperature hold key

No time indication for Temperature hold

Visible during process or program selection

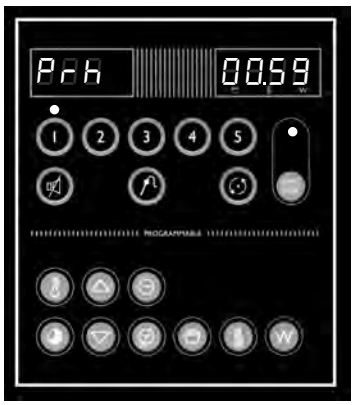
ADJUSTING ACTIVE PROGRAM



Press and hold Temperature or Time key

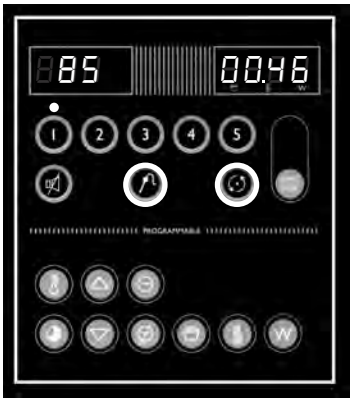
Adjust temperature or time with Up or Down key

PREHEAT INDICATION



Under 40°C (104°F) the display shows PRH

TEMPERATURE PROBE (OPTIONAL)



Press the *Rotor* key

Insert the probe in the meat up to the core

Press *Temperature sensor* key; after 20 seconds the temperature reading switches off

INDICATIONS DURING PROCESS

- Process indicators shows actual process. After completion indicator switches off
- Time display shows remaining program time which is the sum of the remaining cooking and grilling time
- Temperature display indicates actual temperature in the grill. Under 40°C(104°F) the display shows PRH (preheat)When remaining time reaches 0, the process indicators and the On-indicatorswitches off

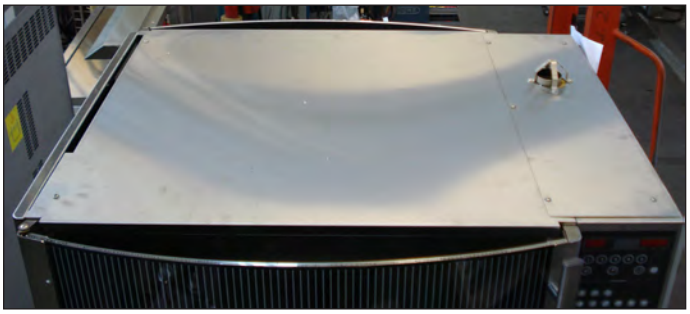
REMOVAL AND REPLACEMENT OF PARTS FOR THE STG7 P GAS

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

TOP COVER



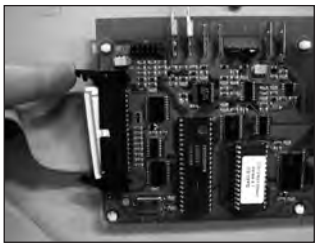
1. Remove the left side panel according prior procedure.
2. Remove the screws securing both large and small top covers.
3. Remove the small cover.
4. Remove the large top cover. (Lift at left side and remove to the left).
5. Reverse the procedure to install.

KNOB

1. Remove cover plate on the knob with a small screw driver.
2. Loosen the screw inside the knob.
3. Remove the knob with ring.
4. Reverse the procedure to install.

Note: check that the ring behind the knob is in the right position and runs free from the panel.

OPERATING PANEL

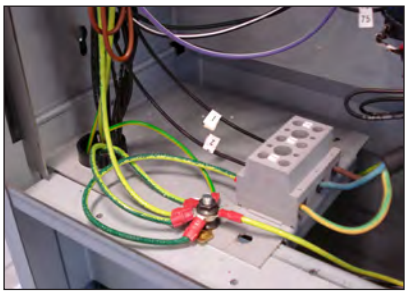


1. Remove the right side panel according prior procedure.
2. Remove the knob according prior procedure.
3. Remove the screw that secures the panel.
4. Remove the 2 bolts on the backside of the operating panel.
5. Remove the screws that secure the meat probe holder and remove the holder (if supplied).
6. Remove the flatcable on the power section.
7. Remove the clip on the back, top left side that secures panel and frame.
8. Remove the operating panel.
9. Reverse the procedure to install.

TUMBLE SWITCH RESET

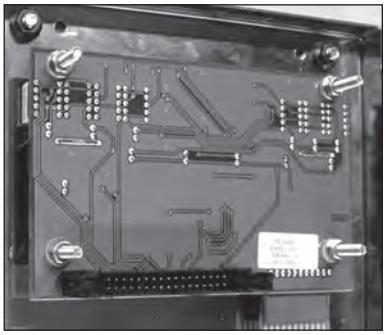
1. Remove the right side panel according prior procedure.
2. Remove the wiring.
3. Remove the switch by pushing the clamps with a screw driver.
4. Reverse the procedure to install.

ELECTRIC PANEL



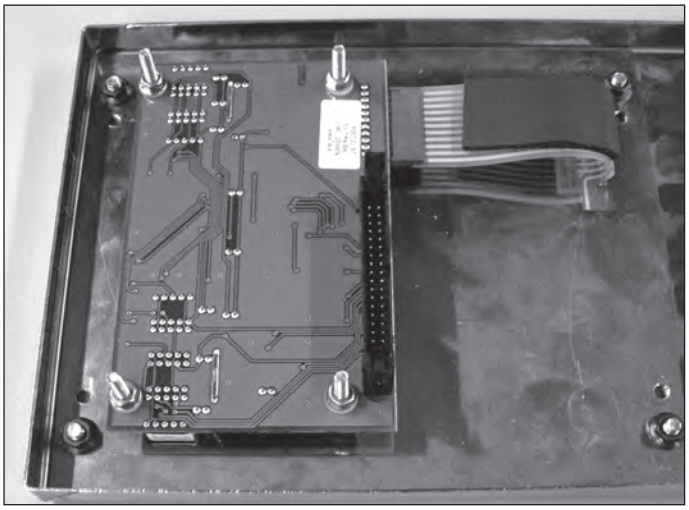
1. Remove the operating panel according prior procedure.
2. Remove on the front side the screws that secure the panel.
3. Remove on the inside bottom of the electric panel the bolt and nuts.
4. Disconnect the wiring.
5. Slide the electrical panel backwards.
6. Reverse the procedure to install.

DISPLAY



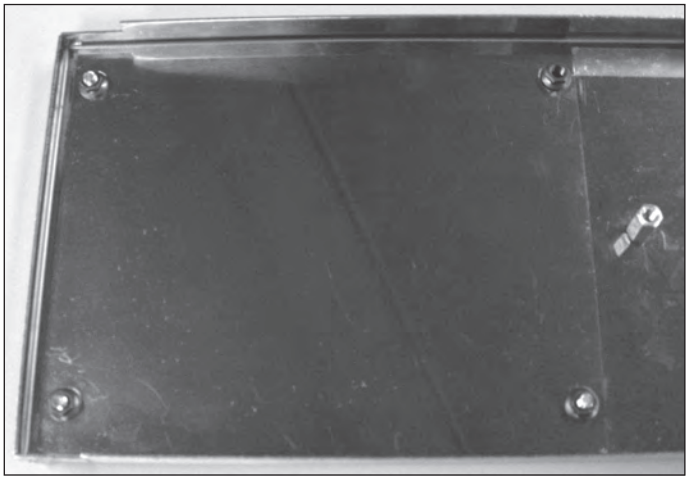
1. Remove the right side panel according prior procedure.
2. Disconnect the flatcable on the display.
3. Remove the clip on the back, top left side that secures panel and frame.
4. Remove the nuts and washers on the backside of the display and remove the metal cover.
5. Remove the nuts and plastic rings that secure the board and remove the board. Do not forget to disconnect the blue connector on the board.
6. Reverse the procedure to install.

PANEL AND KEYPAD ASSEMBLY



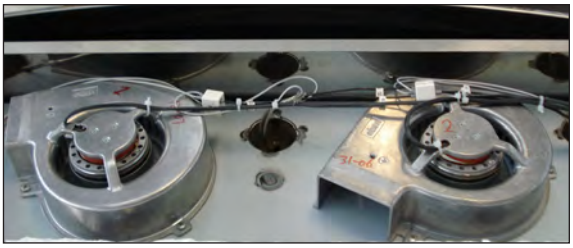
1. Remove the operating panel according prior procedure.
2. 2. Remove the display according prior procedure.
3. Remove the nuts that secure the keypad and remove the keypad.
4. Reverse the procedure to install.

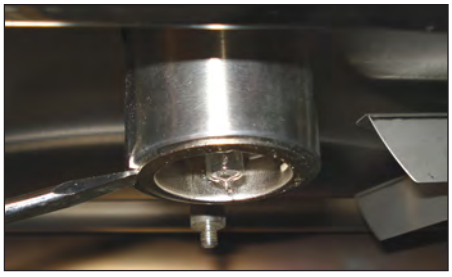
NAMEPANEL



1. Remove the operating panel according prior procedure.
2. Remove the 4 nuts that secure the panel and remove panel.
3. Reverse the procedure to install.

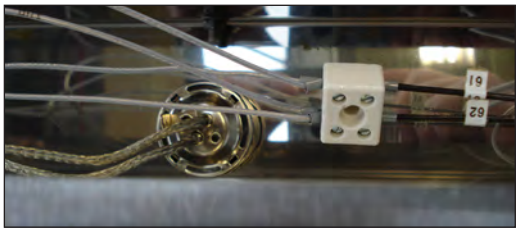
HALOGEN LAMP HOLDER (CUSTOMER SIDE)





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)



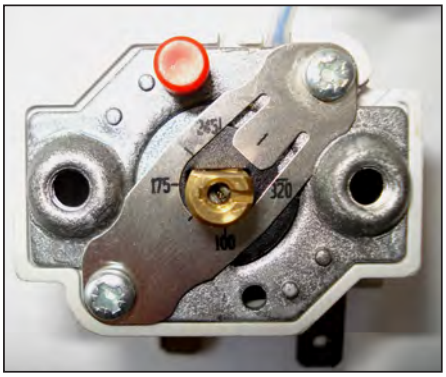
1. Remove the top cover according prior procedure.
2. Remove the wiring of the lamp on the connector.
3. Remove the glass and lamp from the lamp holder. Turning direction of glass in counter clockwise.
4. Remove the holder. You have to deform the holder to take it out.
5. Insert a new holder and click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

POWER SECTION

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

Note: When installing new board, ensure that JP3 and JP4 on new board are set the same as on the old board.

SAFETY THERMOSTAT (RESET)



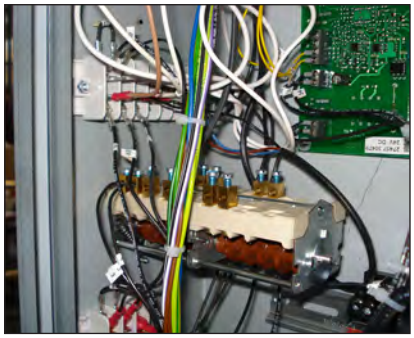
1. Remove the rotor and the right side panel according prior procedure.
2. Remove the bolts that secure the air guide plate and remove this plate. Lower the plate in vertical position and lift it out of the hinge pins.
3. Remove the thermostat-probe from the clip in the oven and guide it outside through 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).

MAIN SWITCH

1. Remove the operating panel according prior procedure.
2. Loosen the screws on the electric panel that secure the switch.
3. Remove the switch and disconnect the wiring.
4. Reverse the procedure to install.

Note: The old version main switch is used until serial number 100059446.



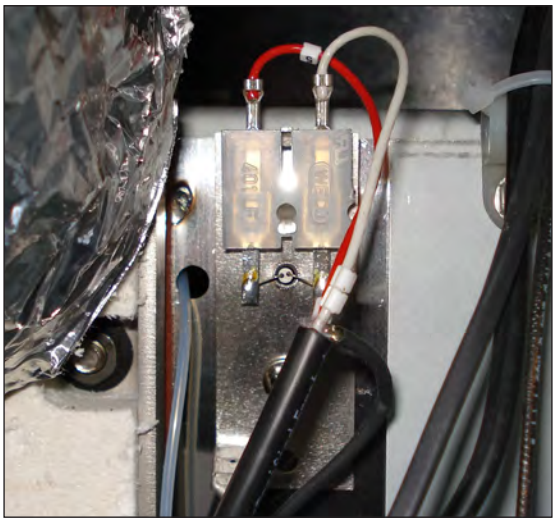
Old version main switch

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 1.5 uF. Check the direction of rotation of the motor (clockwise) and change the wiring if necessary.

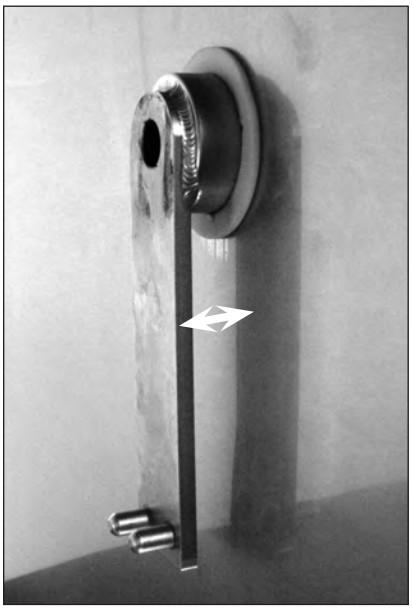
PT500 SENSOR



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.

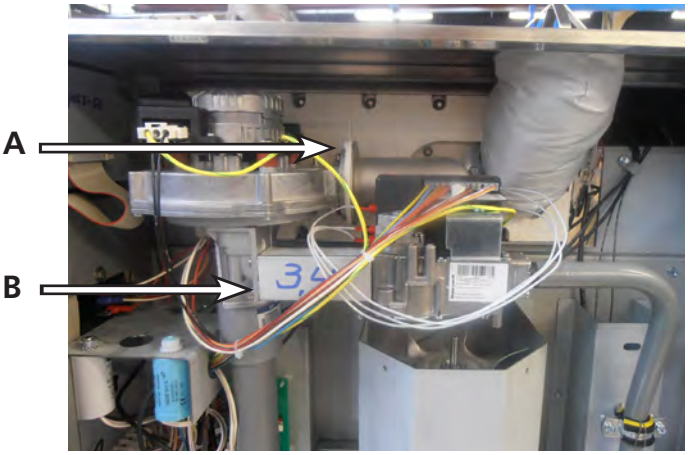
DRIVE MOTOR



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.

GAS MIXTURE BLOWER



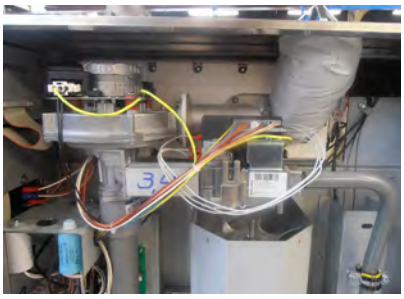
1. Remove the right side panel and small top cover plate according prior procedures.
2. Remove the wiring from the top of the gas mixture blower
3. Remove the silencer.
4. Remove the 4 nuts from the air inlet (A) and the 4 long screws from the gas mixture blower (B) and remove the gas mixture blower.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

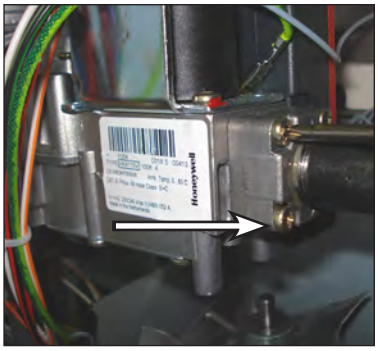
Note: When replacing the air inlet see to it that the text is visible from the right hand side.

GAS BURNER SAFETY CONTROL

1. Remove the right side panel according prior procedure.
2. Remove the wiring from the control.
3. Remove the screw that secures the control and remove the control by lifting it upwards.
4. Reverse the procedure to install.

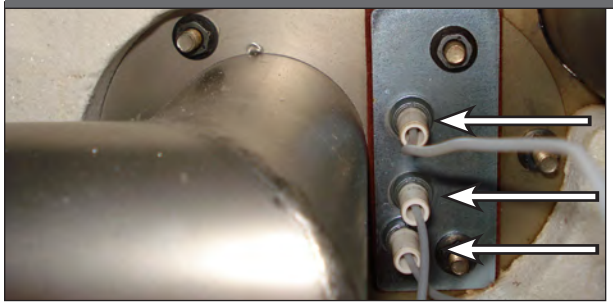
GAS CONTROL BLOCK

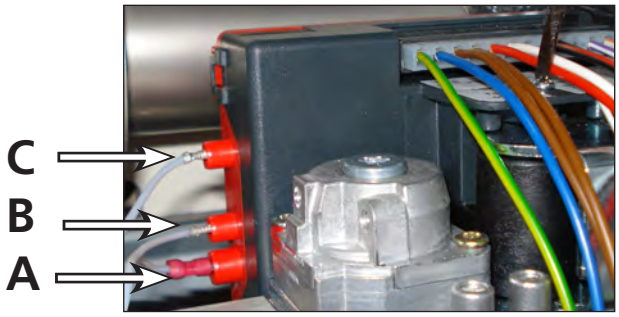




1. Remove the right side panel and the gas burner safety control according prior procedures.
2. Remove the 4 long screws from the gas mixture blower.
3. Remove the wiring.
4. Remove the screws from the pipe clamps.
5. Remove the screws that secure the flange to the block and remove the control block.
6. Reverse the procedure to install.

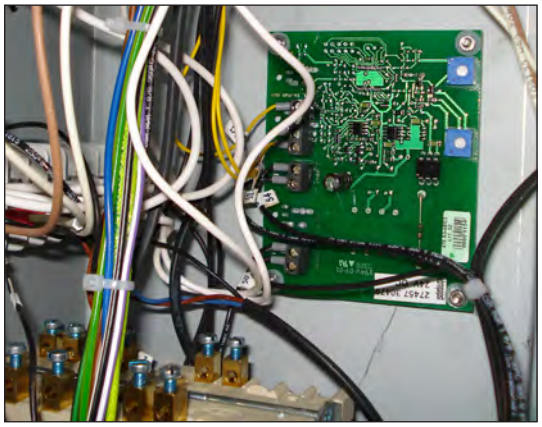
IGNITION/IONIZATION SET





1. Remove the right side panel according prior procedure.
2. Remove the wiring from the set on the gas burner safety control.
3. Remove the nuts that secure the set and remove the set. Check the gasket and replace if necessary.
4. Reverse the procedure to install.
5. Connect A to A , B to B and C to C. , the fastons for B and C are the same,(2.8 mm) the faston for A is bigger (4.8 mm)

BOARD SPEED CONTROL BLOWER



1. Remove the right side panel according prior procedure.
2. Remove the screws that secure the board and remove the board.
3. Reverse the procedure to install.

Note: *See page 29 for adjustment of speed regulation.*

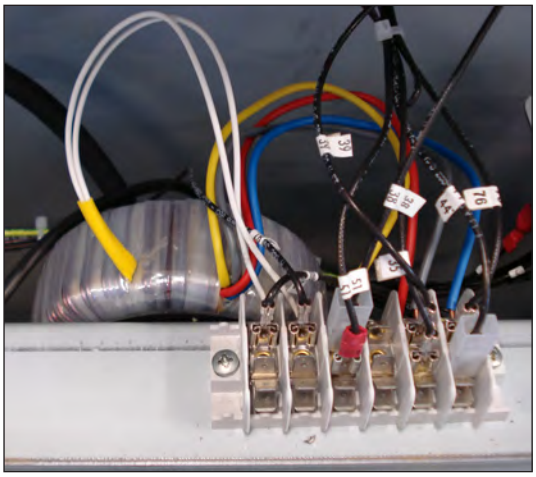
RELAY AND BASE RELAY

1. Remove the right side panel according prior procedure.
2. Remove wiring of relay.
3. Slide base from rail.
4. Reverse the procedure to install.

RECTIFIER

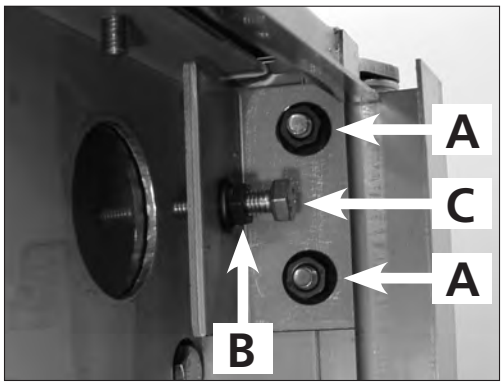
1. Remove the right side panel according prior procedure.
2. Remove the wiring of the rectifier.
3. Remove the nut that secures the rectifier and remove the rectifier.
4. Reverse the procedure to install.

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.

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. Lift the inside door upward out of the hinges and place on a table.
2. Remove the nuts and rings on the profiles of the door.
3. Remove the profiles from the glass.
4. Mount the profiles on the new glass. Do not forget the teflon rings of 2 mm inside the holes.
5. Mount the cap nuts and rings. Place the door in the hinges.

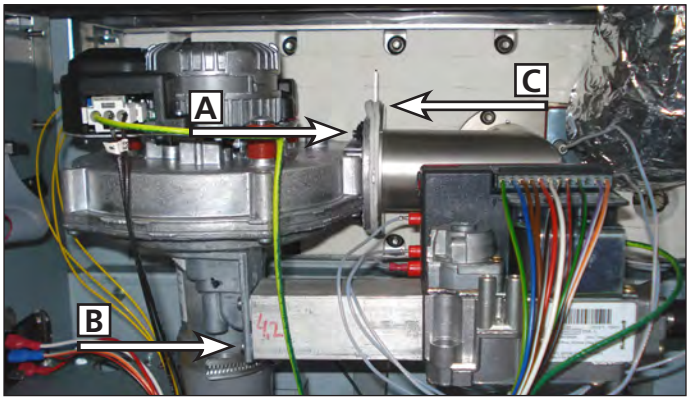
Note: Tightening of nuts max. 6 Nm.

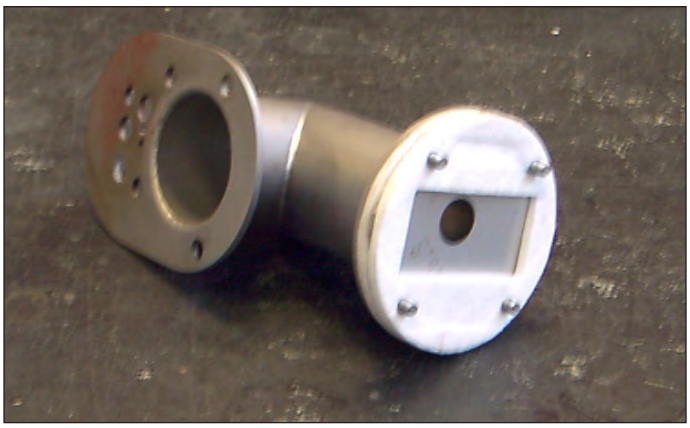
DOOR OUTSIDE

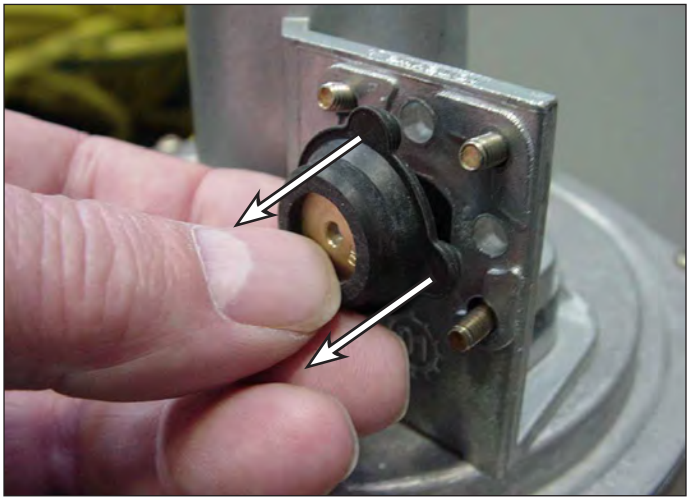
1. Lift the inner door out of the hinges and lay this aside.
2. Remove the left side panel according prior procedure.
3. Remove the 2 nuts behind the upper hinge and loosen the locknut according prior procedure. The door must be closed.
4. Hold the door on both sides and move this towards yourself, before 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. 6 Nm.*

CHANGING AN ORIFICE AND AIR INLET





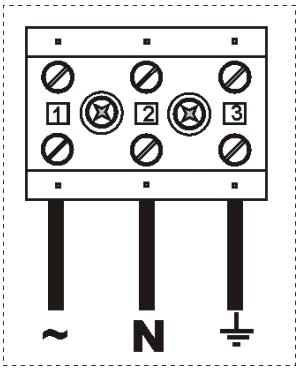


1. Remove the right side panel and replace the indication plate for the new gas.
2. Remove the wiring from the top of the gas mixture blower. Remove the silencer.
3. Remove the four nuts from the air inlet (A) and the 4 long screws from the gas mixture blower (B). Remove the gas mixture blower.
4. Remove the gasket and air inlet from the coupling tube and replace the air inlet (text visible from right hand side (C)).
5. Take the rubber holder with the orifice plate out of the metal where it is positioned by 2 rubber notches, which fit in the holes of the plate.
6. Carefully replace the orifice disc by a disc with the desired opening. Put the rubber holder against the plate. See to it that the notches fit in the opening. Bring the parts in position and mount the 4 long screws and nuts.
7. Replace the silencer and connect the wiring.
8. Check for tied fitting with help of soapy water or spray.

G20/25: orifice is 4.2 mm (1/6”). Air inlet is 18.1 mm (3/4”).
G 31: orifice is 3.4 mm (1/7”). Air inlet is 16.5 mm (2/3”).
G 30: orifice is 3.0 mm (1/8”). Air inlet is 20.0 mm (4/5”).

WORKING OF GAS FIRED ROTISSERIE

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



After switching the main switch on, the gas mixture blower starts to run in high speed. This is to ensure that there is no gas left in the heat exchanger and that the heat exchanger is clean. Also after ending of a grilling process the blower will keep on turning.

After selection of a program and pressing the start/stop key the transformer is activated by relay X18 on the power board. The transformer reduces the voltage to 12V AC for the lighting and 24V AC for the rectifier. Via the rectifier we have a 31V DC voltage on the speed regulation board, which takes over the low speed (16V DC) of the blower. At the same time relay X12 activates the contact 9/10 on the burner control. The burner control now activates the following functions: Gas valve is activated, the spark plug is activated and will ignite a number of times and the ionisation is activated. (The blower still runs on low speed to create a rich gas/air mixture for easy and fast ignition).

After ignition/burning of the gas/air mixture and measuring of the correct ionisation voltage in the burner control, relay K1 will be activated by the burner control and contact K1/1 comes in and on the speed regulation board this 24V AC signal activates the high speed of the blower (24-26V DC for Natural gas and 21-23V DC for Propane.

The PT 500 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 within 15 seconds the burner control will close the gas valve and activates the red indication lamp on the reset switch. By pressing this switch once, the process will start again.

Note: See also separate instructions of the speed regulation board. 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 32. 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.

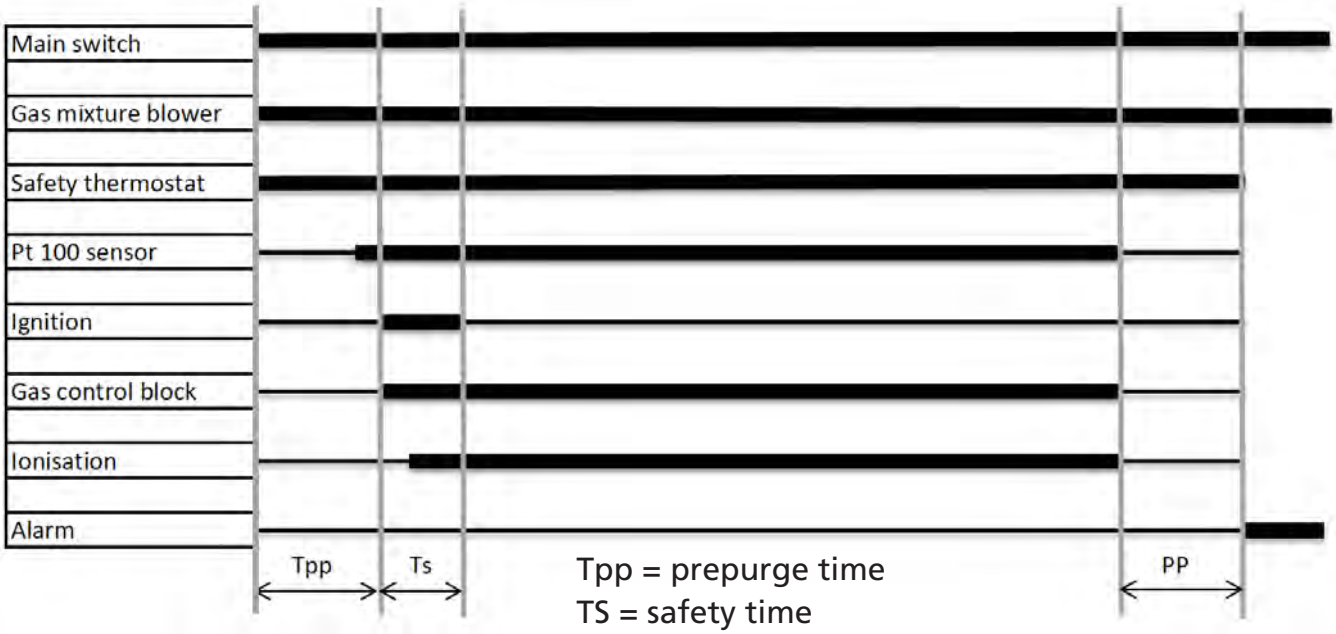
GAS TECHNICAL DATA

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	1,1 - 0,88 - 2.4	1,51	0,718 - 0,044
G25	25 - 10 - 0,31	17 - 7 - 0,25 30 - 12 - 0,43	1,4 - 1,01 - 3.1	1,71	0,833 - 0,052
G30	37 - 15 - 0,54	25 - 10 - 0,36 55 - 22 - 0,80	1,1 - 0,24 - 2.6	0,42	2,701 - 0,168
G31	37 - 15 - 0,54	25 - 10 - 0,36 55 - 22 - 0,36	1,1 - 0,32 - 2.6	0,55	2,011 - 0,128
LPG	37 - 15 - 0,54	25 - 10 - 0,36 55 - 22 - 0,36	0,8 - 0,30 - 1,7	0,50	1,560 - 0,098

Gas type	Orifice mm - inch	Air inlet mm - inch	Power KW - BTU
G20	4,2 - 1/6	18,1 - 17/24	14.5 - 49.500
G25	4,2 - 1/6	18,1 - 17/24	14.5 - 49.500
G30	3,0 - 1/8	20,0 - 3/4	14.5 - 49.500
G31	3,4 - 1/7	16,5 - 5/8	14.5 - 49.500
LPG	3,4 - 1/7	16,5 - 5/8	14.5 - 49.500

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

ELECTRICAL TESTS AND SERVICE PROCEDURES

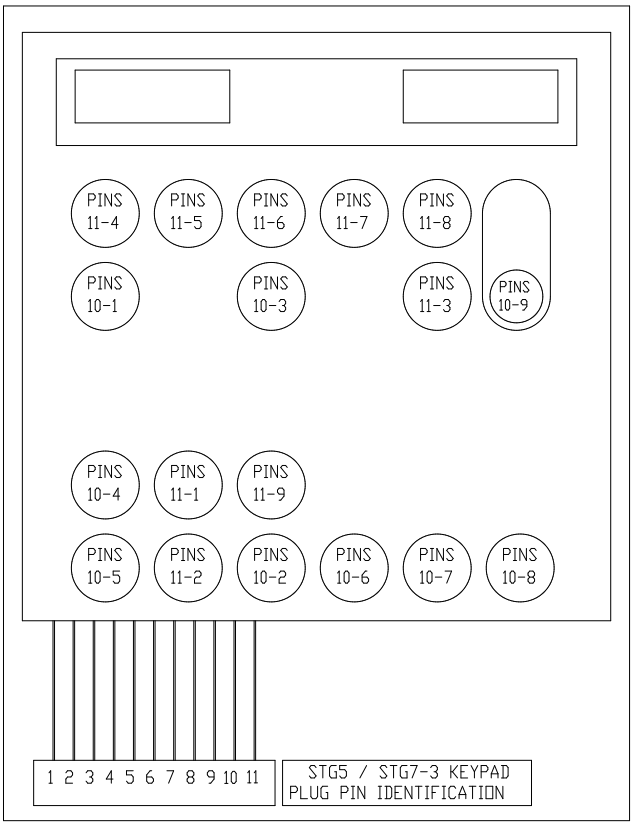
WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

PT500 SENSOR TEST

Temperature		Resistance
°F	°C	± 5 Ohms
60	16	531
70	21	541
80	27	553
90	32	562
100	38	574
125	52	601
150	65	626
200	94	681
250	121	732
350	177	837
450	233	940

1. Remove the right side panel according prior procedure.
2. Remove the wiring from the sensor.
3. Connect a temperature sensor to the probe for comparison.
4. Test the probe with an Ohmmeter.

KEYPAD TEST



1. Remove the instrument panel according prior procedure.
2. Remove the display according prior procedure.
3. Remove the nuts that secure the panel with foil and remove panel.
4. Use a multimeter to test. Connect the measuring pins to the cable plug pins for each key to be tested as indicated in the diagram. You can set the multimeter on a beep signal or set it on resistance measuring. Press the key to be tested and the meter should give a beep signal or indicates a resistance less than 200 Ohms.

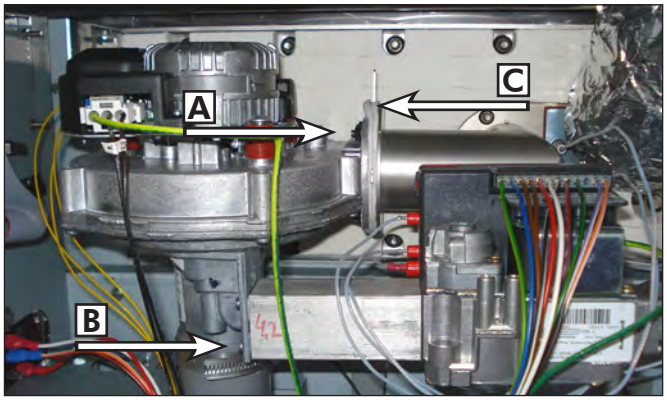
DRIVE MOTOR, BLOWER AND TRANSFORMER TEST

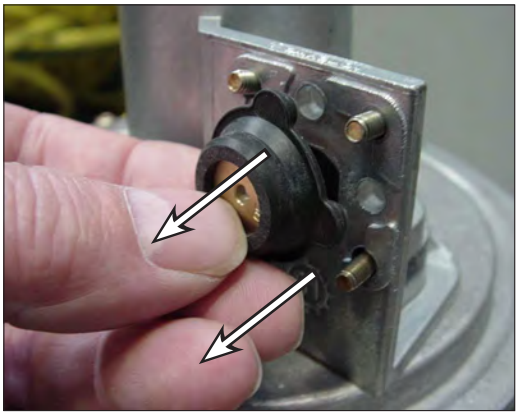
Note: *When testing the resistance remove the wiring.*

Type	Description	Voltage	Resistance Ω
STG 7	Drive motor	230	Between white A and white wire ~ 234 Between white A and brown wire ~ 117 Between white and brown wire ~ 117
STG 7	Blower rotisserie	230	Between brown and black wire ~ 500 Between blue and brown wire ~ 310 Between blue and black wire ~ 190
STG 7	Transformer	230/12	Between white and white wire ~9 Between white and other colors infinite Between yellow and red wire ~0,5 Between grey and blue wire ~0,5 Between yellow and grey infinite Between yellow and blue wire infinite Between grey and red wire infinite Between red and blue wire infinite

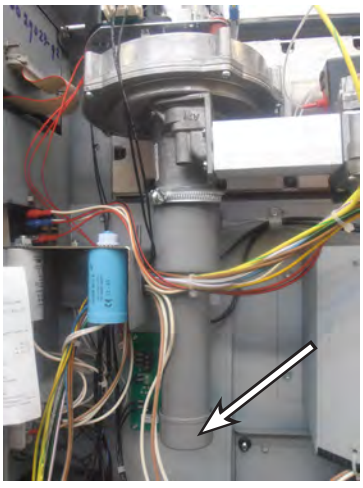
INSTRUCTION FOR CONVERTING TO ANOTHER TYPE OF GAS

1. Changing the orifice and air inlet





1. Remove the right side panel and replace the indication plate for the new gas.
2. Remove the wiring from the top of the gas mixture blower. Remove the silencer.
3. Remove the four nuts from the air inlet (A) and the 4 long screws from the gas mixture blower (B). Remove the gas mixture blower.
4. Remove the gasket and air inlet from the coupling tube and replace the air inlet (text visible from right hand side (C)).
5. Take the rubber holder with the orifice plate out of the metal where it is positioned by 2 rubber notches, which fit in the holes of the plate.
6. Carefully replace the orifice disc by a disc with the desired opening. Put the rubber holder against the plate. See to it that the notches fit in the opening. Bring the parts in position and mount the 4 long screws and nuts.
7. Replace the silencer and connect the wiring.
8. Check for tied fitting with help of soapy water or spray.



Air suction cap

G20/25: orifice is 4.2 mm (1/6”). Air inlet is 18.1 mm (3/4”).
G 31: orifice is 3.4 mm (1/7”). Air inlet is 16.5 mm (2/3”).
G 30: orifice is 3.0 mm (1/8”). Air inlet is 20.0 mm (4/5”).

Note 1: Only for Butane Place air suction cap over plastic tube. This cap has a hole of 16 mm.

Note 2: For Butane stick the enclosed sticker on the right hand side panel.

2. Adjusting of the power for different types of gas

Warning: **Adjusting of the power is only allowed by a skilled installer and in exceptional cases when toxic measuring devices and flow meters are available. For more information see installation manual.**

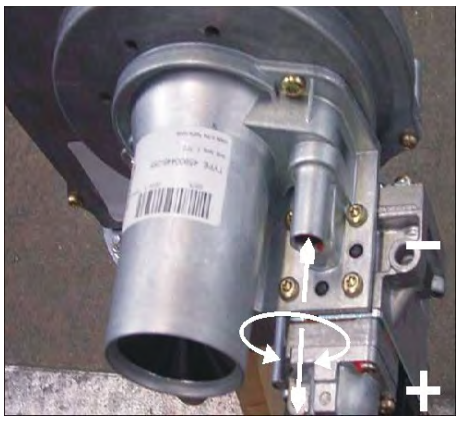
When a total re-adjustment of the power is necessary then turn the setting screw al the way in, to its end position, by turning it in clockwise direction. Then turn the setting screw open:

Natural gas: for **4** full turns (360°) turning in counter clockwise direction. Now start the rotisserie and measure the high speed adjustment on the speed control board, see next page. After the temperature has reached about 150 °C (300°F) measure the toxicity of the exhaust air on top. For values see the last page.

Propane gas: for **3.5** full turns (360°) turning in counter clockwise direction. Now start the rotisserie and measure the high speed adjustment on the speed control board, see next page. After the temperature has reached about 150 °C (300°F) measure the toxicity of the exhaust air on top. For values see the last page.

LP gas (mixture should contain at least 50% Propane): for **2.5** full turns (360°) turning in counter clockwise direction. For continuation see Propane gas.

Butane gas: for **1 1/4** full turns (360°) turning in counter clockwise direction. For continuation see Propane gas.



Note 1: You can decrease or increase or the CO2 value by turning the setting screw in steps of a quarter turn.
Clockwise to decrease the CO2 value.
Counter clockwise to increase the CO2 value.
Total deviation cannot be more than half a turn!

Note 2: During and after the adjustment you have to check the gas consumption/flow by means of a flow meter.

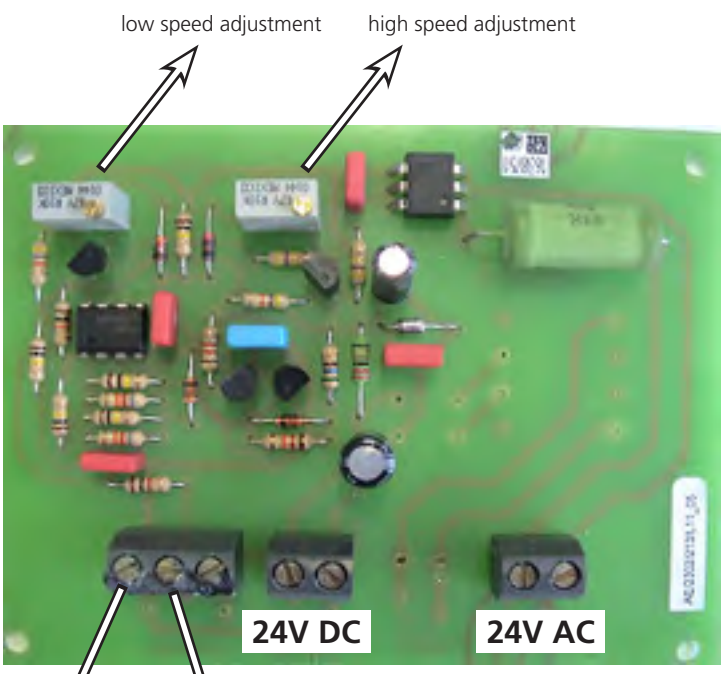
Note 3: You can decrease or increase the gas consump tion/flow by turning the high speed potentiometer in steps of 1V.
Clockwise to increase gas consumption/flow.
Counter clockwise to decrease the gas consumption/flow.
Total deviation cannot be more than 2 Volts!

Note 4: You can decrease or increase the gas consump tion/flow by turning the setting screw in steps of a quarter turn.
Clockwise to increase gas consumption/flow.
Counter clockwise to decrease the gas consumption/flow. If you change the gas consumption/flow in this way you have to do this together with the high speed potentiometer in steps of 1V in opposit way. This in order to keep the balance in the CO2 value. After this change you always have to measure the toxicity and adjust if necessary.

3. Adjustment of board for speed/power regulation

The rotisserie starts up with low speed turning of the gas mixture blower. This low speed is adjusted with the potentiometer on the top side of the board. This tension should be around 16V DC and has to be measured on the top connections.

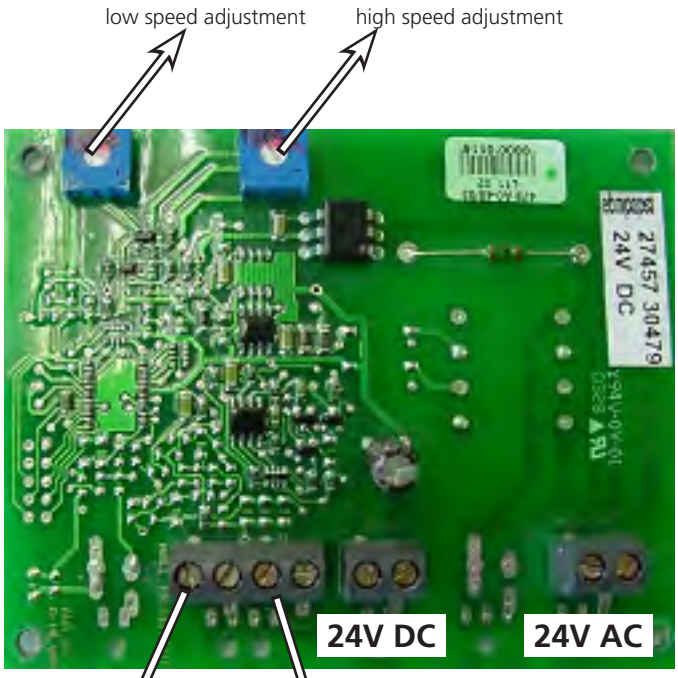
For this adjustment you only have about 2-3 seconds. If the time is too short then start the unit up again.



Board A

\- +

Measure on these contacts:
Natural gas: 16 volt for low speed and 22-24 volt for high speed.
Propane gas: 16 volt for low speed and 20-22 volt for high speed.



Board B

Measure on these contacts:
Natural gas: 16 volt for low speed and 22-24 volt for high speed.
Propane gas: 16 volt for low speed and 20-22 volt for high speed.

After ignition, when the gas is burning, the gas mixture blower switches to high speed and maximum power.

With the potentiometer on the bottom side you can adjust the power/gas consumption and with that also the high speed. This tension should be:

22-24V DC for natural gas.

20-22V DC for Propane gas.

23,6-23,8V DC for Butane gas.

and has to be measured also on the top connections.

Note: The tension for the highest speed is the same as the supply voltage of 31V! After this it has no use turning the potentiometer up.

Instructions for measuring low and high speed.

1. Select a program and press the start key.
2. Now you can measure the low speed voltage of 16 Volts for the blower.
3. Once the burner is on the Honeywell burner control generates the signal for the blower to switch to high speed. Now you can measure the Voltage for the high speed.

4. Measuring exhaust gas

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 as indicated in example of Natural gas measurement:

Testo 330-1LL			
V1.21		01297080	
100035026		G 20	
06.04.2007		12:42:13	
Fuel:		Natural gas	
O2 ref.:		3.0%	
CO2 max:		11.7%	
5.2	%	Oxigen	
8.8	%	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 20/25 between 8.8 - 9.2%
CO2% G 30 and 31 between 10.2 - 10.6%
Exhaust gas between 698 - 788 °F (370 - 420 °C)

Gas consumption.

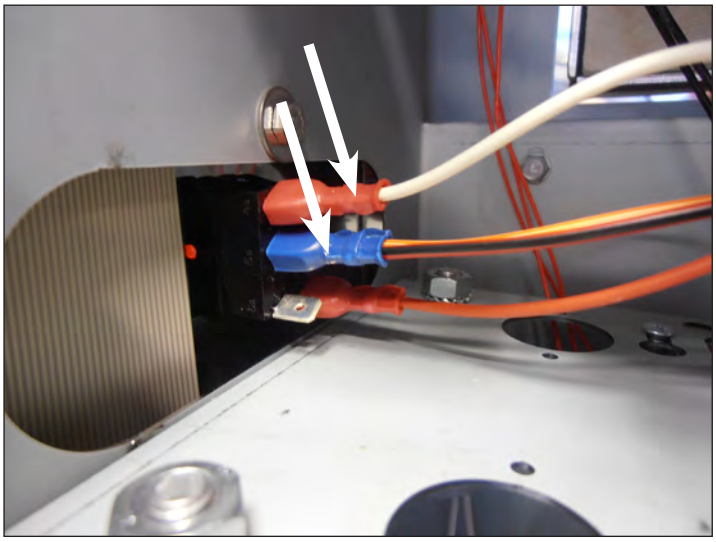
G 20 (Natural gas)	0.89 cfm	(1.51 m3/h)
G 25 (Natural gas)	1.01 cfm	(1.71 m3/h)
G 31 (Propane)	0.32 cfm	(0.55 m3/h)
LP gas	0.30 cfm	(0.50 m3/h)

LP gas should contain at least 50% Propane!

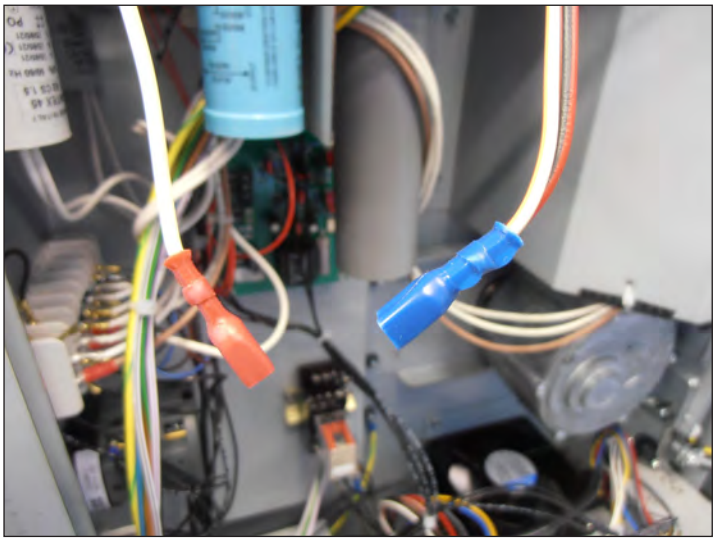
G 30 (Butane)	0.25 cfm	(0.42 m3/h)

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 (3-5 seconds) connecting both the white and orrange/white - red/black wires together. In this way you can perform a test and do a check up on the reset switch.



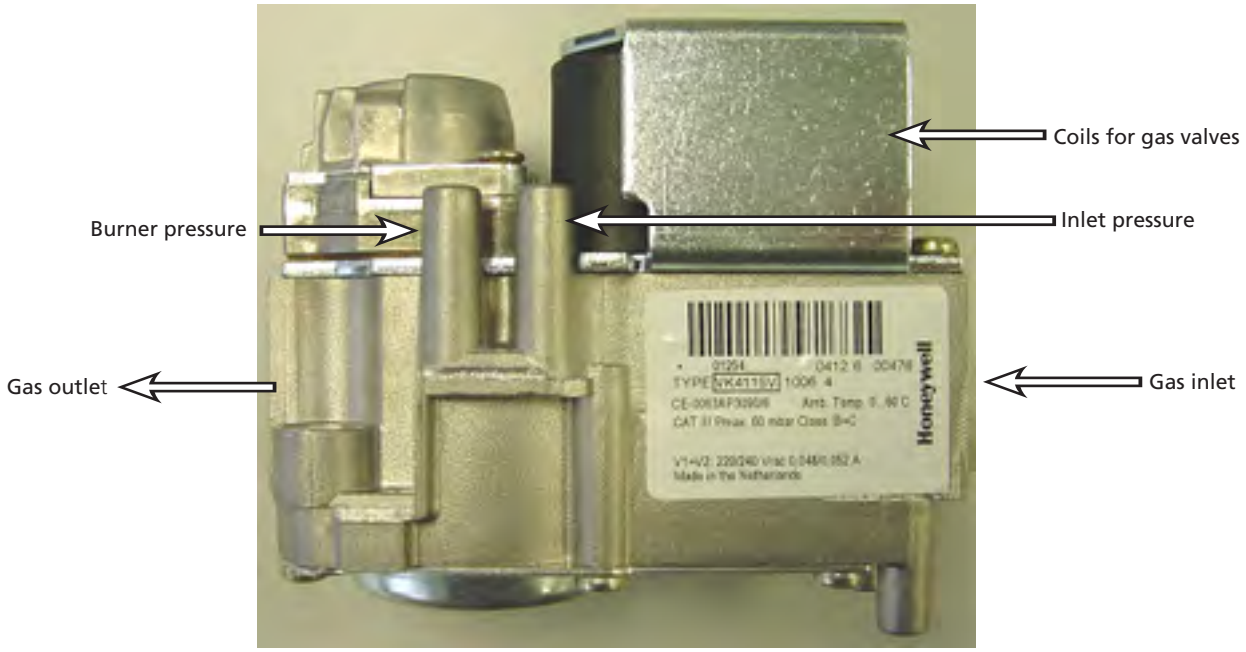
1. Remove these 2 wires from the reset switch.



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

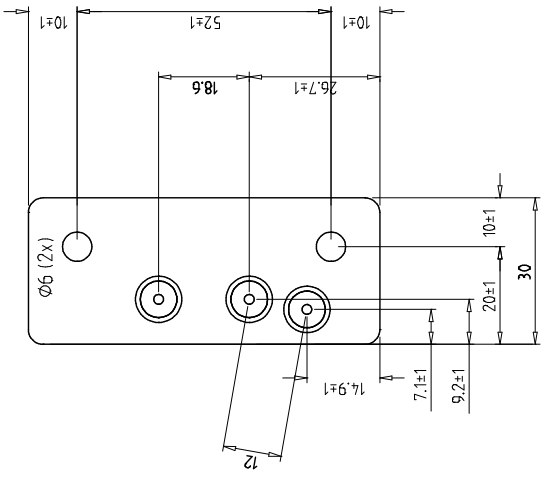
GAS BLOCK HONEYWELL TYPE VK4115V

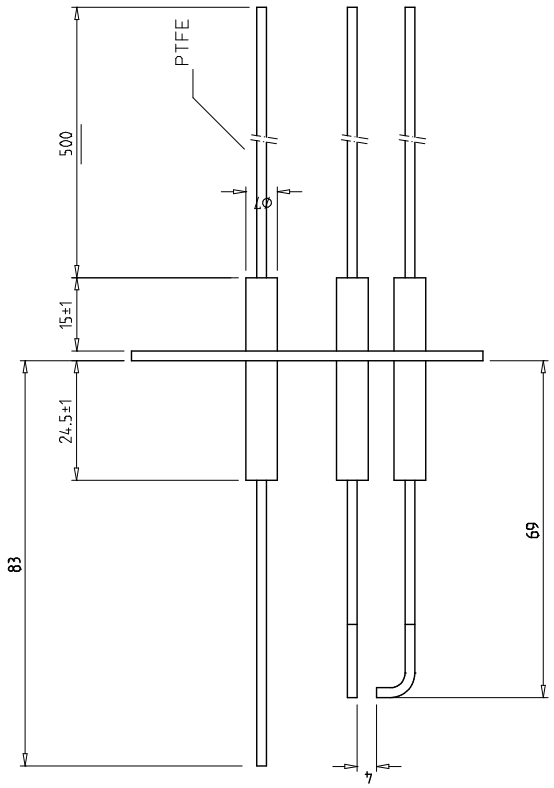
Gas inlet: Inlet of gas after gas pressure reduction valve (max. 55 mbar or 22”H2O) pressure depending of gas type. See table on page 24).
Gas outlet: Outlet of gas into gas mixture blower.
Coils: 2 Coils for the gas valves.
Inlet pressure: Measuring tube for gas pressure after the reduction valve. In order to measure loosen screw on inside of tube.
Outlet or burner pressure: Measuring tube (during opertion) of gas going into gas mixture blower. In order to measure loosen screw on inside of tube.

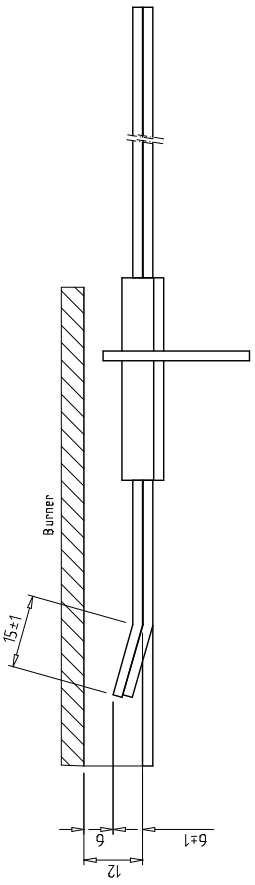


Measuring notes:
1. Inlet pressure: During operation you measure the pressure of the setting of the reduction valve.
2. Outlet pressure: During operation you measure a pressure of zero.
You can use this measuring point also to check if the gas valves are opening. When you start up the machine and the 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







Ionisation current ~20 mA

materiaal:		aant.:	pos.	benaming			onderdeel nr.:
afm. grondstof:		Revisie:	0		order nr.:		
afknipmaat:	x	Rev.dat.:	19-4-2007		aantal:		
gewicht:		oppervlak:		m^2	per	product	order

bestemd voor: STG

7

Eurogrill

benaming: Ignition/ionisation set

bedrijfsknowhow, ingenieurswerken en horecagroepinstallaties

fri-jado

Fri-jado b.v.
Oude Kerkstraat 2, Etten-Leur
Postbus 560, 4870 AN Etten-leur
Telefoon: 076-5085400
Fax: 076-5085444
E-Mail: fri-jado@planet

getekend: T.Aarts

gecontr.:

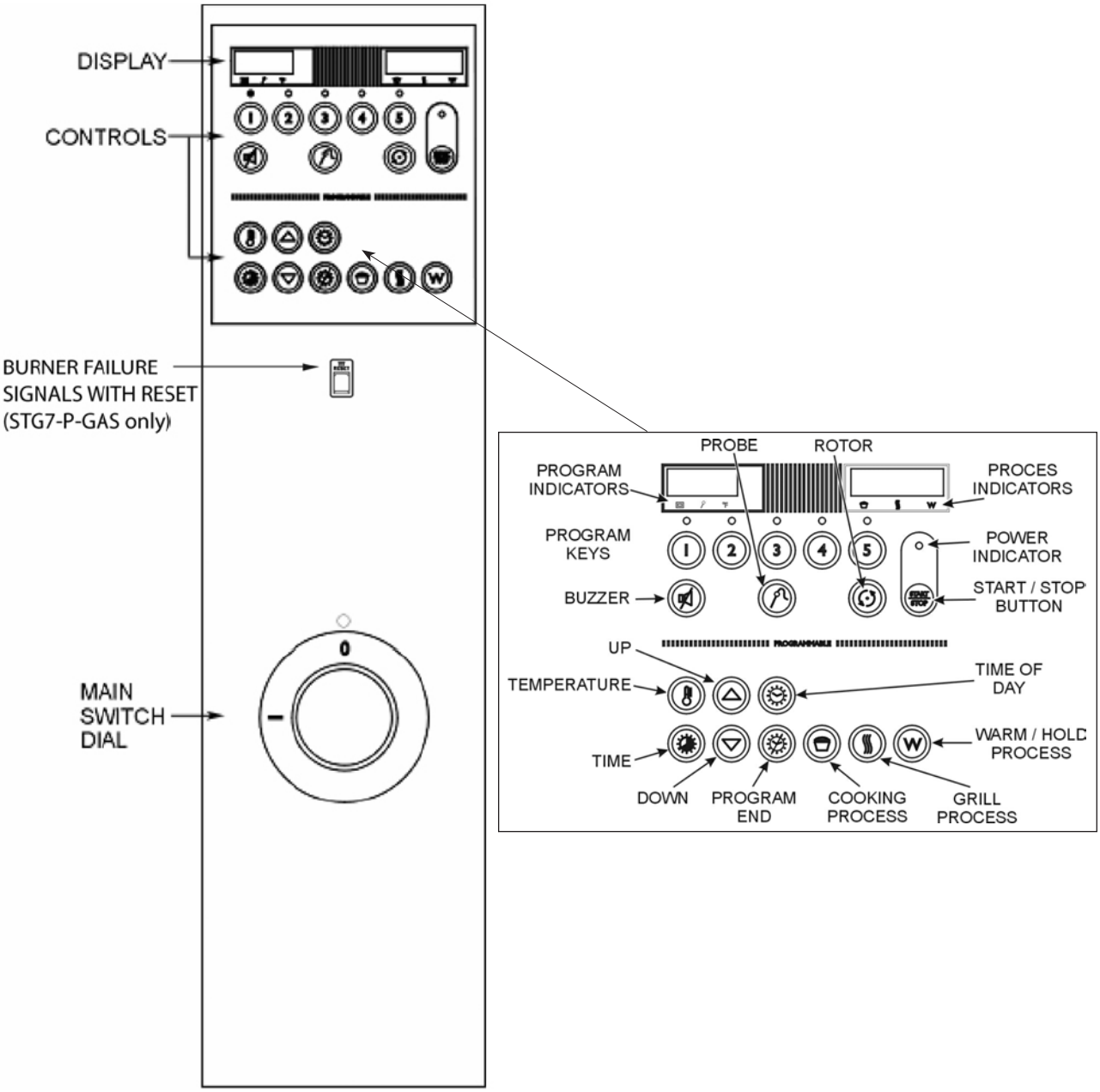
datum: 22-08-02

schaal: 1:1

formaat: A3

tekening nr.: 9172200

CONTROL LOCATION



TROUBLESHOOTING FOR THE STG7 P GAS ROTISSERIES

Symptom	Possible causes
No power to oven controls.	1. Main breaker open. 2. Fuse F1 burned. 3. Main switch malfunction. 4. Security thermostat tripped. 5. 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 in program mode.	1. Capacitor malfunction. 2. Wiring loose. 3. Main switch malfunction. 4. Motor malfunction.
Drive motor stops and runs again after a certain period.	1. Thermal protection activated (105°C). This shuts off after the temperature is below 105°C. Check cooling of motor.
Blower motor does not run.	1. Capacitor malfunction. 2. Wiring loose. 3. Motor inoperative.
Blower motor stops and runs again after a certain period.	1. Thermal protection activated (150°C). This shuts off after the temperature is below 150°C. Check cooling of blower.
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-500-sensor malfunction. 5. PT-500-sensor not in right position. 6. Dirty fan guard or fan blade(s).
Oven temperature does not reach desired temperature in program mode.	1. PT-500-sensor malfunction. 2. PT-500-sensor not in right position. 3. Electronic control inoperative.
No display and/or keypad does not function.	1. Main breaker open. 2. Loose flat cable from display to electronic control. 3. Fuse F4 (63mA) burned. 4. Display and/or electronic control malfunction. 5. Keypad malfunction.

Symptom	Possible causes
Count down clock does not count down during cooking process.	1. Christal of real time clock is broken. Change power board.
No ignition.	1. Check polarity of plug. 2. Gas burner safety control malfunction. 3. Distance of 4 mm between ignition pins is 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. Wiring loose.
Reset light is burning continuous.	1. Reset switch malfunction. See also page 31.
Plopping/exploding sound when igniting.	1. Machine not suitable for the connected gas. Check composition of the gas and gas indication on the the indication plate. 2. Decrease the low speed Voltage on the speed regulation board.
Whistling sound during burning of gas.	1. Slightly reduce the setting screw and increase the high speed Voltage on the speed regulation board.
Burner switches on and off intermittently during operation	1. Reset switch malfunction. 2. Adjustment of ionisation pin. 3. Gas pressure too low (under 13 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. Security thermostat tripped. Reset this thermostat with the red button on the thermostat. 6. Wiring ionization pin.
Gas mixture blower only runs in high speed.	1. Speed regulation board malfunction. 2. Rectifier malfunction. 3. Gas burner safety control malfunction. 4. Wiring loose.

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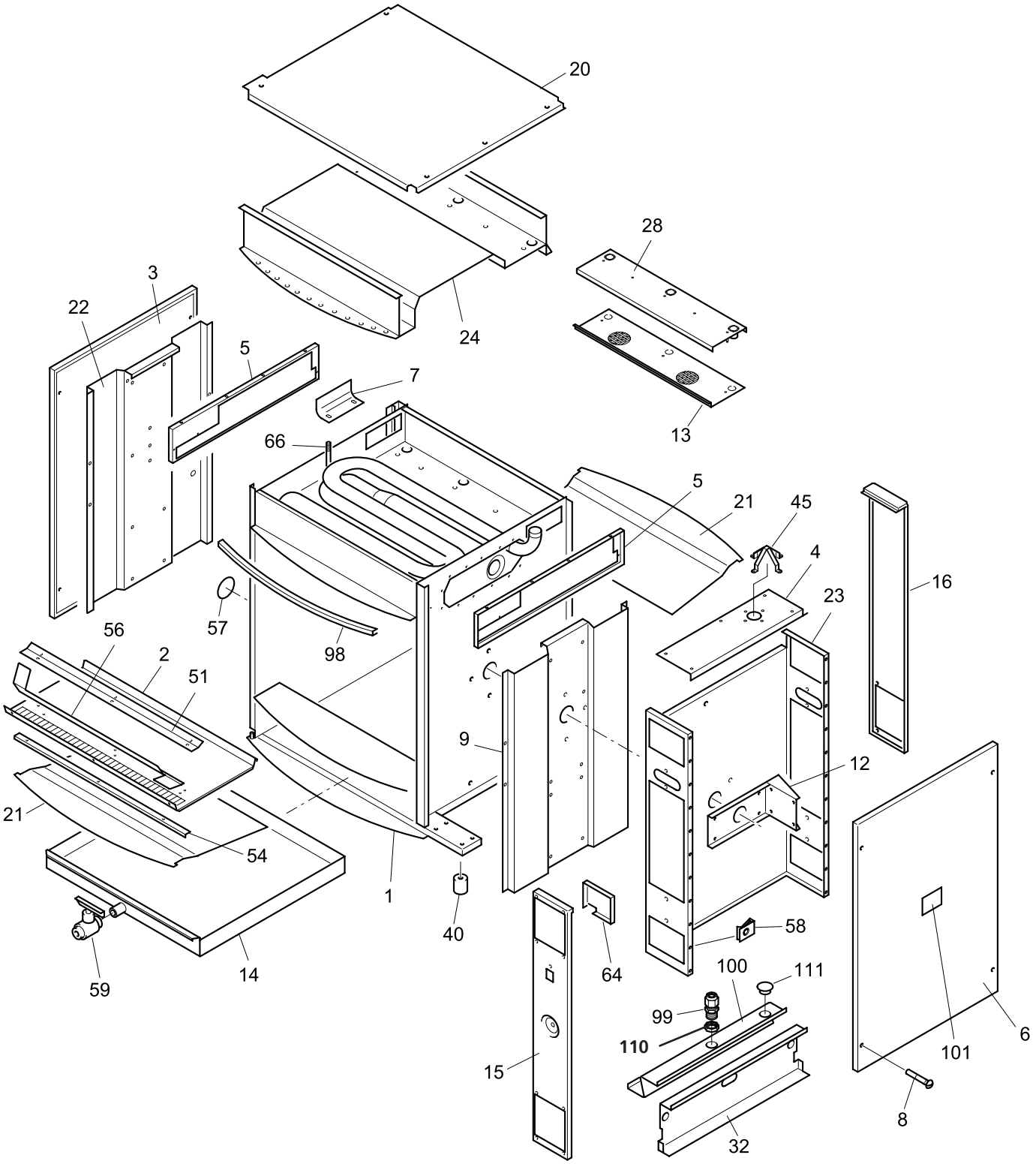
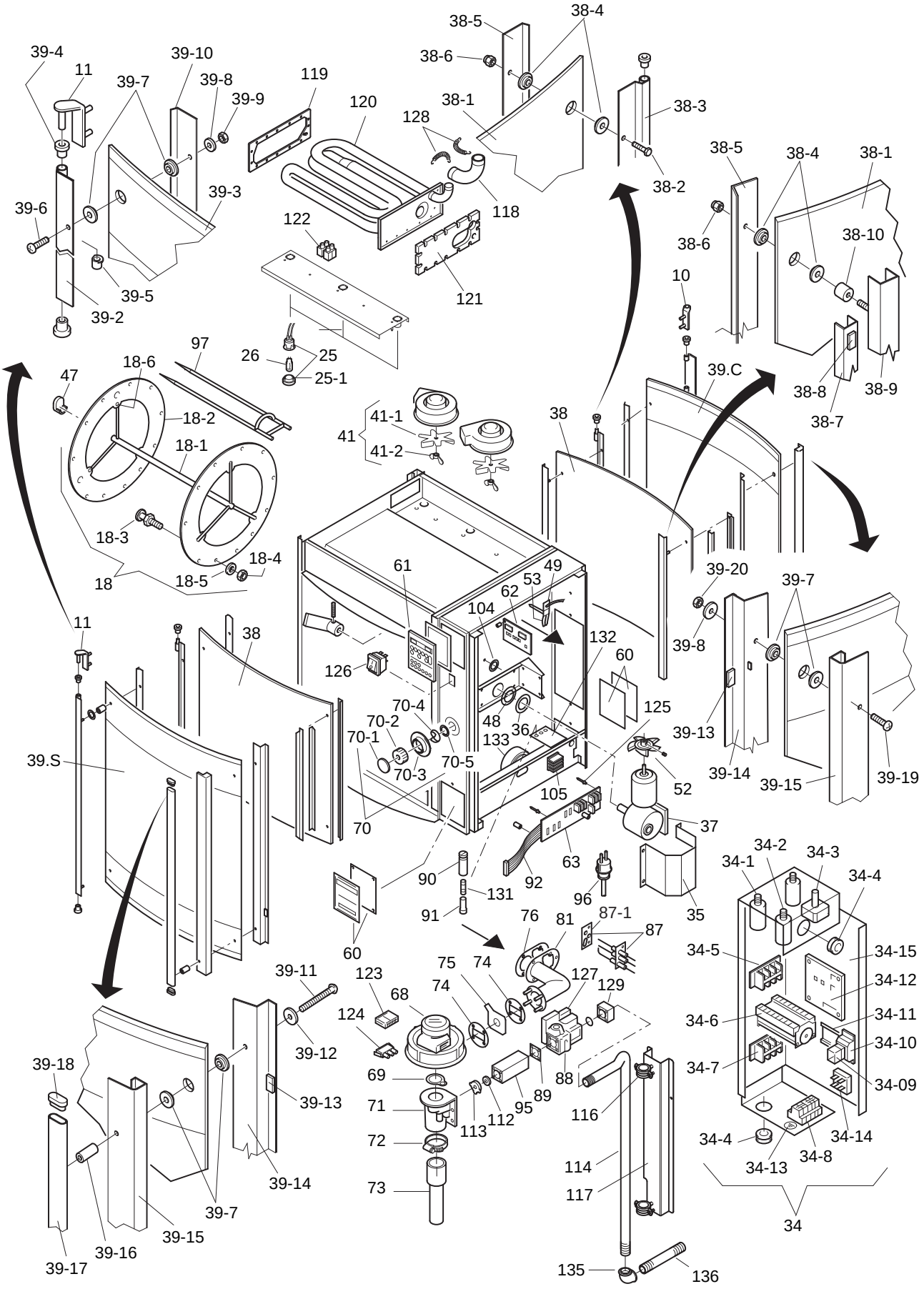
EXPLODED VIEWS & PARTLISTS

STG7 P GAS - SHEET IRON WORK



Item	Qty.	Part number	Description
1	1	.....	Frame, ass.
2	1	9174416	Plate, air guide
3	1	9170419	Side panel, left
4	1	9174447	Cover, removable
5	2	9170523	Side panel, top
6	1	9170531	Side panel, right
7	1	9174408	Plate, air guide
8	8	4288322	Screw M5 x 10, SS socket button head
9	1	9170567	Reinforcement, side plate, right
12	1	9170444	Support, gear motor
13	1	9170566	Air guide plate
14	1	9170451	Drawer
15	1	9174682	Operation panel
16	1	9174031	Panel, customer side
20	1	9174045	Cap, top
21	2	9174010	Bottom plate, stainless steel
22	1	9174431	Reinforcement, side plate, left
23	1	9174429	Cover plate, machine components
24	1	9170573	Ceiling
28	1	9170568	Mounting plate, blowers
32	1	9174034	Mounting plate
40	4	9171125	Leg, rubber
45	1	9174485	Cover, exhaust
51	1	9174436	Fastening profile
54	1	9174417	Profile, air guide
56	1	9174427	Profile, air guide
57	4	9112430	Washer, insulation support
58	8	9172053	Nut
59	1	9171008	Drain-tap with handle
64	1	9174146	Protection plate, electric components
66	1	9174446	Bracket, heat exchanger
98	2	9172116	Sealing profile, Silicon L= 71 cm
99	1	9222076	Strain relief M20
100	1	9174140	Spark catcher
101	1	9123439	Indication plate
110	1	9222077	Connector M20
111	1	9171116	Grommet

STG7 P GAS - COMPONENTS



Item	Qty.	Part number	Description
10	1	9170426	Hinge, right
11	1	9170427	Hinge, left
18	1	9170055	Rotorset, ass. stainless steel
18-1	1	9070272	Rotor shaft, ass.
18-2	2	9174351	Rotor disc 3 mm
18-3	14	9172169	Support pin
18-4	14	4312271	Nut M8
18-5	14	0142056	Spring washer M8
18-6	12	4288231	Tensilock bolt M5x10
25	6	**9171135S**	Lamp holder, incl. glass
25A	6	9171078	Lamp holder, incl. glass (till serial number 100043535)
25-1	6	9171136	Glass lampholder
25-1A	6	9171126	Glass lampholder (till serial number 100043535)
26	6	3701052	Lamp 20W, 12V/300°C
33	2	9112210	Mounting plate, lamp holder
34	1	9173052	Electric panel, ass.
34-1	2	9110030	Capacitor 1,5 mF
34-2	1	9077102	Capacitor 3 mF
34-3	1	3500037	Thermostat with reset, 100-320°C
34-4	2	9070840	Grommet
34-5	1	8033659	Connecting block, 9-pol.
34-6	1	9171140	Main switch
34-6A	1	9172328	Main switch (till serial number 100059446)
34-6B	1	9172056	Main switch (till serial number 100035859)
34-7	1	9040722	Connection block 3-pole
34-8	1	9172371	Connecting block, Phoenix
34-8A	1	9044564	Connecting block, 1,2,3 (till serial number 100061300)
34-9	1	6390128	Relay 230V, MY4
34-10	1	9171086	Leg, relay
34-11	1	9077088	Rail
34-12	1	9171109	Board, speedcontrol blower
34-13	1	0166555	Earth symbol
34-14	1	9171089	Rectifier
34-15	1	9174108	Electric panel
35	1	9174161	Protection support
36	1	9110797	Sealring, drive bearing
37	1	9173004	Gear motor, complete with drive arm
38	2	**9179852S**	Door inside, ass.
38-1	2	9172001	Glass, inner
38-2	4	0211520	Bolt M5 x 12 ss hexagon head
38-3	2	9170423	Hinge profile
38-4	16	3702341	Flange bush, PTFE 2 mm
38-5	4	9174029	Cover profile, inner glass
38-6	8	4285408	Nut, M5
38-7	2	9174027	Profile
38-8	20	9070141	Magnet block
38-9	2	9174026	Holder, magnet
38-10	4	9172081	Spacing pin

Item	Qty.	Part number	Description
39.S	1	**9179850S**	Door service side, ass.
39-2	1	9170422	Hinge profile
39-3	1	9172079	Protection profile
39-4	2	9172054	Brass bearing 8 mm
39-5	2	9172122	Brass bearing 8 mm, adjusted
39-6	2	4288321	Screw M5 x 16, SS socket button head
39-7	8	3702342	Flange bush, PTFE 3 mm
39-8	2	4311110	Washer
39-9	2	0144359	Nut, self locking M5
39-10	1	9174022	Mounting profile, hinge side
39-11	2	4288320	Screw M5x45 SS
39-12	2	9174680	Washer
39-13	12	9070141	Magnet block
39-14	1	9174025	Fastening, door handle
39-15	1	9170454	Profile, magnet
39-16	2	9172300	Spacing pin
39-17	1	9174131	Door handle
39-18	2	9171014	Plug, door handle
39.C	1	**9179851S**	Door customer side, ass.
39-2	1	9170422	Hinge profile
39-3	1	9172079	Protection profile
39-4	2	9172054	Brass bearing 8 mm
39-5	2	9172122	Brass bearing 8 mm, adjusted
39-6	2	4288321	Screw M5 x 16, SS socket button head
39-7	8	3702342	Flange bush, PTFE 3 mm
39-8	2	4311110	Washer
39-9	2	0144359	Nut, self locking M5
39-10	1	9174022	Mounting profile, hinge side
39-13	12	9070141	Magnet block
39-14	1	9174025	Fastening, door handle
39-15	1	9170454	Profile, magnet
39-19	2	4288321	Screw M5 x 16 , ss socket button head
39-20	2	0144359	Nut, self locking M5
41	2	9140027	Blower
41-1	2	9141934	Fanblade
41-2	2	9073150	Wingnut, left hand threaded
47	1	9172063	Steel bearing, 14 mm
48	1	9073131	Sealing ring
49	1	9070094	Temperature sensor
52	1	2000072	Fanblade, gearmotor
53	1	9044140	Sensor cable
60	2	9172040	Name plate Fri-jado, foil + back-plate
61	1	9172045	Keypad + backplate
62	1	9110242	Display
63	1	9110276	Power section
68	1	9171090	Gas mixture blower

Item	Qty.	Part number	Description
69	1		See item 71
70	1	9173017	Main power knob assembly
70-1	1	9172049	Cover, knob
70-2	1	9172021	Control knob, grey
70-3	1	9172037	Back plate, main switch 0-1
70-4	1	9172052	Locking ring, knob
70-5	1	9110802	Plug, TG
71	1	9171094	Venturi tube, incl. gasket item 69.
72	1	0156712	Clamp, tube 50-65
73	1	9170050	Silencer
74	2	9172184	Gasket, burner, Fiberfrax 4 mm
75	1	9174497	Air inlet G 20/25
75	1	9174491	Air inlet G 31
76	1	9172183	Gasket, Fiberfrax 4 mm
77	1	3500031	Blower
78	1	9294200	Mounting plate, blower
81	1	9170587	Coupling tube
87	1	**9172200S**	Ignition/ionization set
87-1	1	9292108	Gasket, ignition set
88	1	9171093	Gas control block
89	1	9172266	Gasket, gas control block, Viton 1 mm
90	1	9110026	Fuse holder
91	1	9110025	Fuse housing
92	1	9172113	Flatcable, 34-pol. (P)
95	1	9172179	Connecting piece
96	1	9091383	Connecting cable with plug
97	7	9172153	Meatfork STG 7 (8mm)

Item	Qty.	Part number	Description
104	3	9171018	Plug
105	1	9151010	Connecting block
112	1	9174498	Orifice 4,2 mm (G20/25)
112	1	9174492	Orifice 3,4 mm (G31)
113	1	9171099	Holder, orifice
114	1	9173071	Gas tube 1/2”
116	2	2650267	Pipe Clamp 14/20
117	1	9175230	Mounting profile
118	1	9292107	Insulation exhaust pipe
119	1	9292103	Gasket, Kerasil 4 mm
120	1	9170588	Heat exchanger + burner
121	1	9174484	Insulation plate
122	4	2300121	Connecting block, ceramic
123	1	9171111	Connector 5-pole
124	1	6501445	Connector 3-pole
125	8	9110028	Spacing pin
126	1	9171057	Reset switch
127	1	9171079	Gas burner safety control
128	2	9291018	Spring for insulation exhaust pipe
129	1	9171092	Flange + gasket
131	1	9171120	Fuse 5x20, ceramic T10A
132	1	9174400	Fuse holder plate
133	1	9171049	Ring core transformer
135	1	9171053	Knee joint 1/2”
136	1	9173077	Pipe nipple, 1/2” L=130 mm

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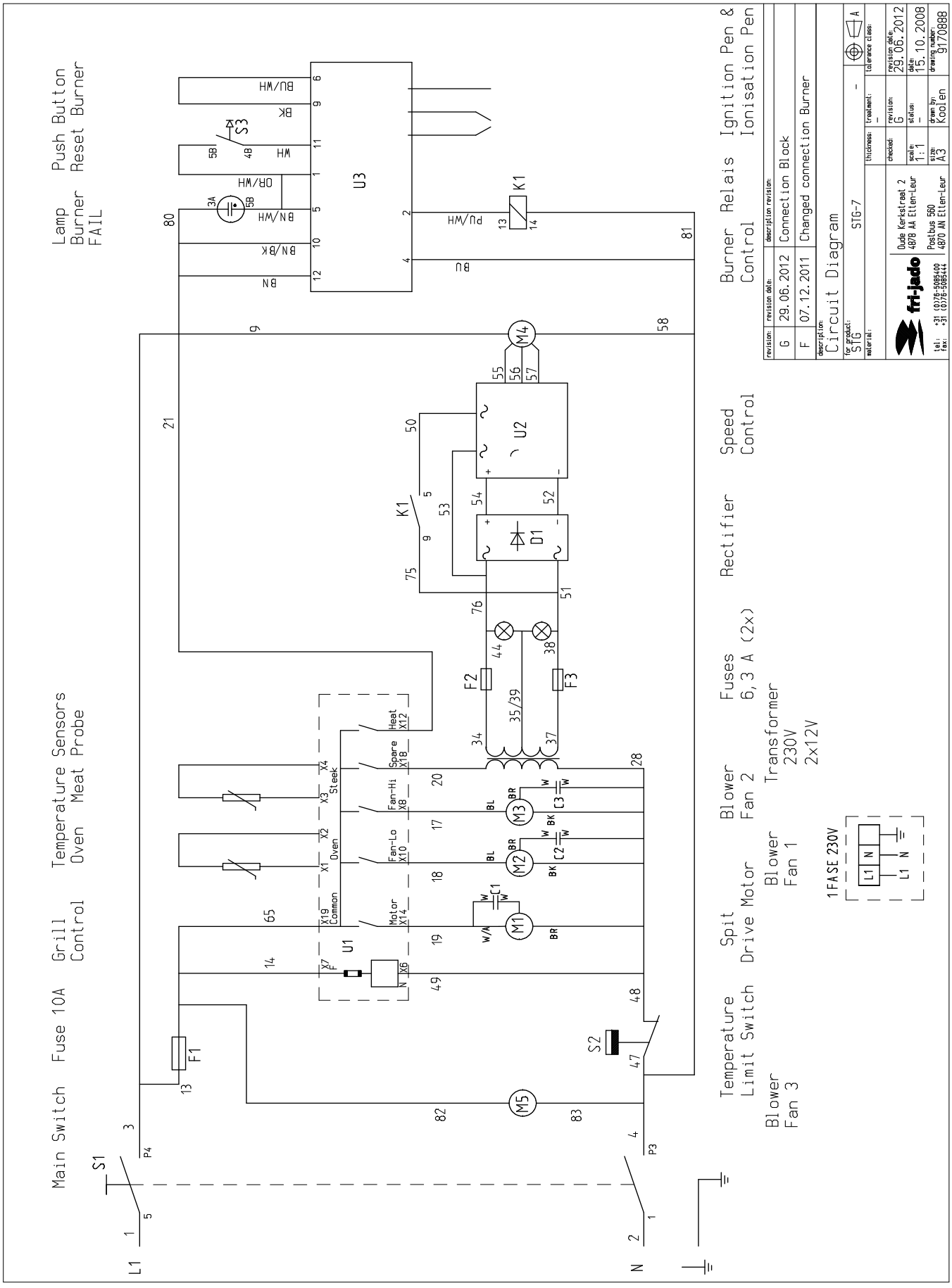
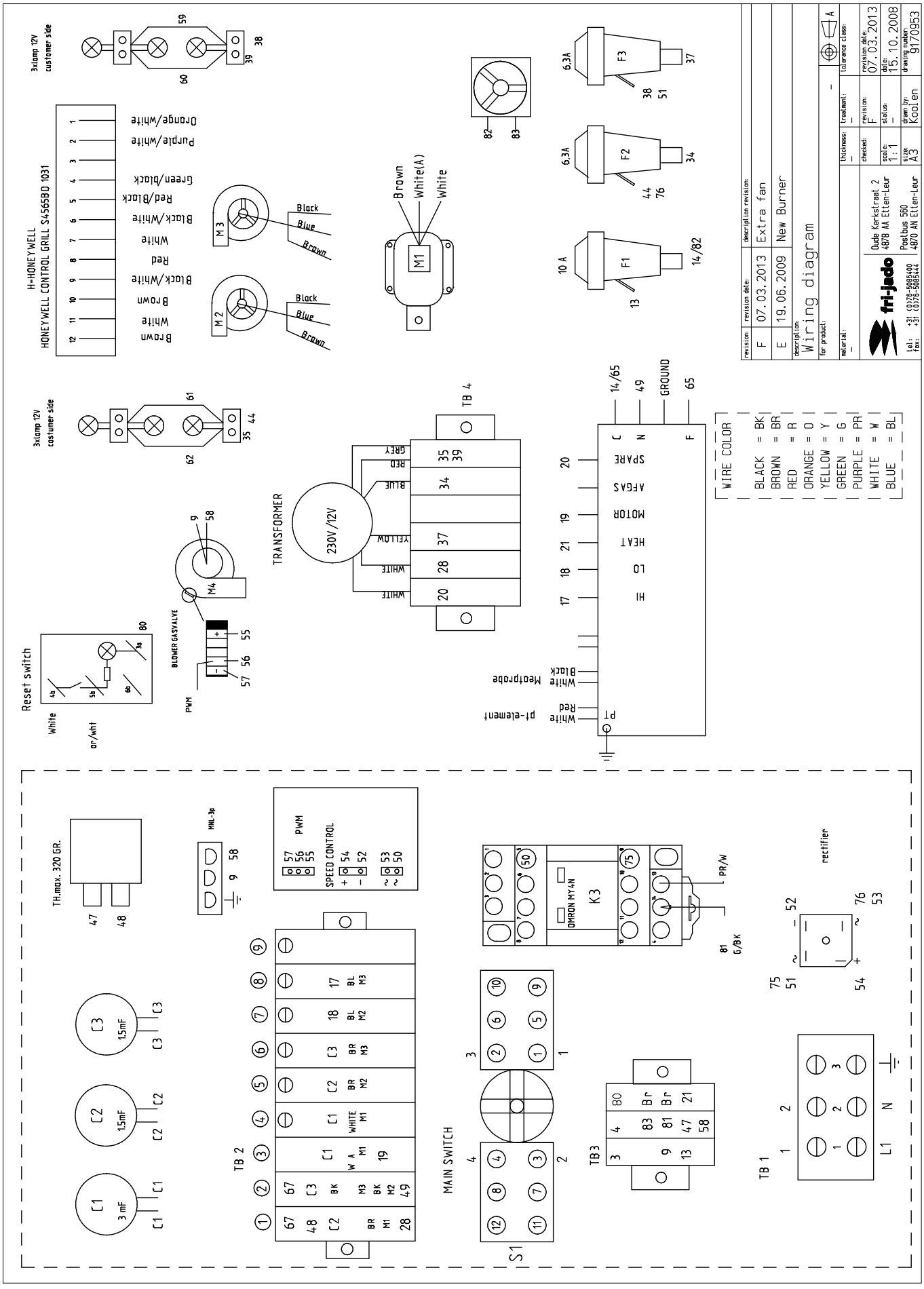
ELECTRICAL DIAGRAMS

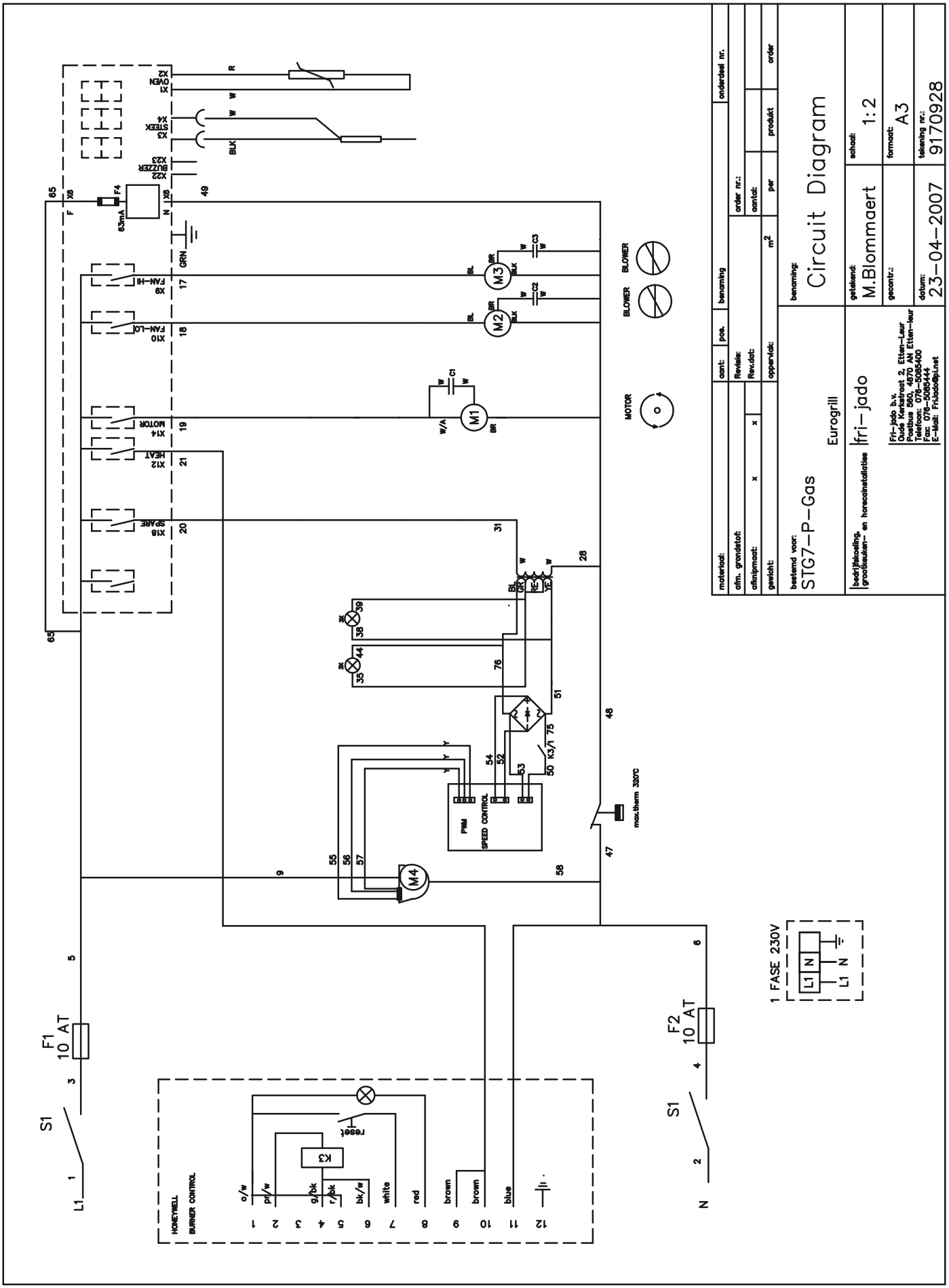
STG7 P GAS - CIRCUIT DIAGRAM



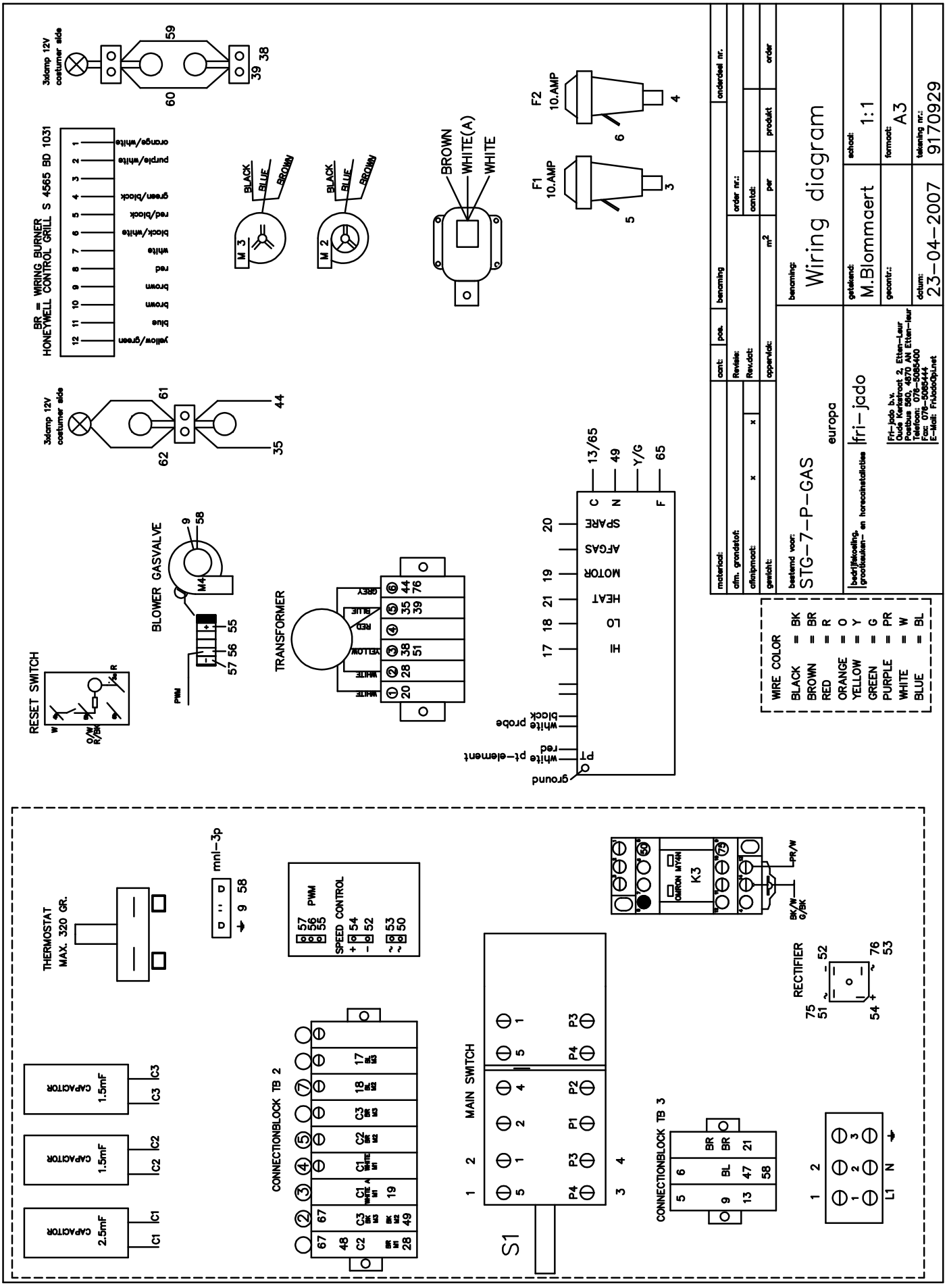
STG7 P GAS - WIRING DIAGRAM



STG7 P GAS - CIRCUIT DIAGRAM (FROM 01-04-2007 TILL 01-02-2009)



STG7 P GAS - WIRING DIAGRAM (FROM 01-04-2007 TILL 01-02-2009)



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