GB
IE

IMPORTANT

FOLLOW COMMISSIONING INSTRUCTIONS
OBSERVE THE WARRANTY CONDITIONS
READ THE WHOLE MANUAL CAREFULLY
NO SAFETY DISCHARGE TO BE REDUCED IN SIZE.
CONDENSE TO BE 32 mm PVC

SERVICING

Commissioning
Gas conversion
Maintenance
Operating faults
Options
Parts lists

THI 10-50 C

THI 10-35 SEP

TECHNICAL INSTRUCTIONS

GEMINOX BOILERS

High technology heating

T30.36295.02

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I - COMMISSIONING

1 - PROTECTION OF THE INSTALLATION

Note : Our technical personnel, who will visit when the boiler has been installed to arrange for its final commissioning and calibration, do not perform the role of inspector and/or approval officer for the system. Its compliance with standards and instructions remains the exclusive responsibility of the installation company.

Geminox insists the use of the following heating system water conditioning products:

- **BIONIBAL corrosion inhibitor (or equivalent products),**
- **BIONIBAGEL antifreeze and corrosion inhibitor (or equivalent products).**

BIONIBAL

1.1 - Bionibal

_____ is a biocide, traceable corrosion inhibitor specially designed to protect multi-metal heating circuits.

Through its efficient means of acting against all types of corrosion and all types of bacteria, BIONIBAL:

- Prevents the formation of rust and metallic sludge,
- Prevents the formation of algae and bacteria sludge,
- Also suitable for under-floor heating systems,
- Prevents hydrogen build up,
- Contains an internal marker so that doses can be easily controlled.

BIONIBAL DOSAGE:

- Without under-floor heating: or connection using reinforced polyethylene type pipes:
  1% (0.5 l of BIONIBAL for 50 l of water).
- With under-floor heating or radiators connected in reinforced polyethylene type pipes:
  2% (1 l of BIONIBAL for 50 l of water).

1.2 - Bionibagel

BIONIBAGEL is the antifreeze version of BIONIBAL.

Antifreeze, with glycol monopropylene base, corrosion inhibitor, biocide, traceable.

In addition to the characteristics of BIONIBAL, it protects the installation from frost for residences that are not inhabited all the year round or that are in the coldest regions.

BIONIBAGEL DOSAGE:

The number of litres of BIONIBAGEL to put in the circuit depends on the volume of your installation and the extreme temperature of your region.

Protection limit temperature	Installation capacity (litres)			
	50	100	150	200
- 5°C	7	15	22	30
- 10°C	12	25	37	50
- 15°C	17	35	50	70
- 20°C	20	40	60	80
- 30°C	22	45	67	90

1.3 - Products equivalent to Bionibal or Bionibagel

Scrupulously refer to the recommended use and implementation of the manufacturer's products.

Important warning

Bionibal or Bionibagel must only be put in a clean installation that has been checked. It is therefore imperative to fill the entire system one or more times with clean water as required. In some cases, the system may need washing by a suitable product:

Example:

- **In a new installation: To detect any leaks and eliminate any traces of welding, weld solder or other residues.**
- **On an old installation: To eliminate any trace of sludge and other products in the radiators, under-floor heating system and the boiler.**

Bionibal or Bionibagel will not clean dirt or corrosion left behind from the installation, it is not sufficient to believe that adding our chemicals will clean the system. The system should be clean and then our chemicals will keep it clean.

2 - FILLING THE INSTALLATION WITH WATER

- The installation will have to be rinsed before the boiler is filled with water.
- To ensure proper boiler bleeding during the installation's filling stage:
  - Filling the DHW tank for the THI 10-50 C models + DHW production system:
    . Fill the tank with water by using the safety control box of the installation, taking care to open a hot water tap,
    . After filling, check that the tank access flap is tightened correctly.
  - Filling the installation :
    . Open the heating flow/return isolation valves,
    . Open the cold water inlet valve,
    . Fill the installation slowly (to make degassing easier) by using the valve of the filling system,
    . check the leaktightness of the circuit,
    . Bleed the entire installation, particularly the radiators. Continue to fill the system until a pressure of approximately 1.5 bar is reached,

      To read the pressure:
      1) *Switch on the boiler*
      2) *Press the info key twice*
      3) *The value of the pressure is shown on the display*

    . turn off the filling valve.

3 - GAS SUPPLY

- Open the gas cock (item. 2, fig. 43 to fig. 45 - page 41 to page 42- chapter IV - INSTALLATION - SERVICING MANUAL).
- Carefully bleed the gas piping. If the installation is new, the bleed evacuates the air that is contained in the piping so that the boiler has an adequate fuel.

  The presence of air in the gas prevents the ignition of the burner and leads to safety shut-down by the flame monitoring unit.

  This is the case both with a natural gas and a LPG new installation. With a LPG installation the storage tank must also be bled properly before commissioning.

  The external discharge of the gas bleed must be carried out with all necessary safety measures.
- Check the tightness of the connectors and the airtightness of the gas circuit using a foaming product or a water column pressure gauge.

4 - FLOW RATE OF THE SEP VERSION

THI 10-35 SEP is equipped with a flow limiter to provide 16 l/min at 2.5 bars.

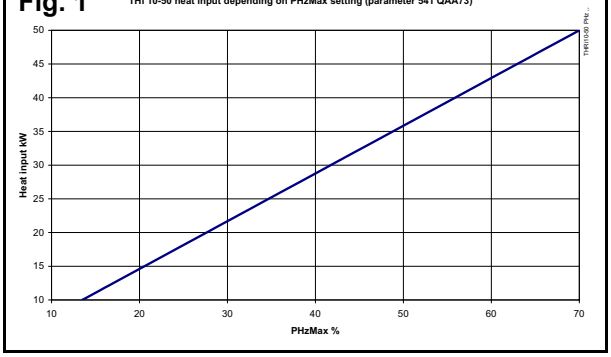
5 - SETTING THE MAXIMUM POWER IN HEATING MODE

The maximum power of the boiler in heating mode can be limited. This operation requires modification of the PHz parameter in the boiler's LMU management unit.

Access to the PHz parameter is possible via the QAA 73 ambient temperature sensor (line 541).

The PHz value should be selected by following the diagram below. Adapting the boiler's maximum heating power to the maximum power of the installation helps avoid heavy loads during reheating phases and thus reduces the maximum sound output of the boiler.

Fig. 1 THi 10-50 heat input depending on PHzMax setting (parameter 541 QAA73)



6 - VERIFICATIONS PRIOR TO COMMISSIONING

- Ensure that the installation has been issued with a certificate of conformity granted by an approved organisation (according to the installation standards),
- Check that the boiler is adequately adapted to the gas used and that there are no gas leaks.
- Check that the boiler is filled with water and under pressure (1.5 bar) and there are no leaks,

Never let the pressure drop below 1 bar.

- Check that the electrical connections of the boiler are correct: 230 V, 50 Hz, earth connection compliant, polarities correct,
- Check that the combustion products outlet is correctly assembled, that there are no leaks and no obstruction,
- Check that the heating system ventilations are not obstructed,
- Check that the condensate siphons of the flues are filled with water,
- Check that the condensate outlet is connected properly and there are no leaks.
- Check the system is totally cleaned and had been cleaned and flushed in accordance with BS 7593. Failure to do this may invalidate the warranty.

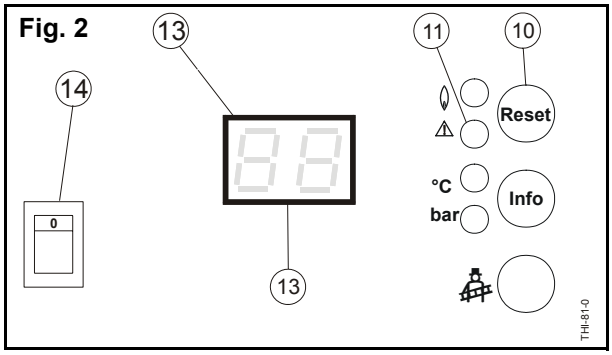
7 - USER INFORMATION

The heating engineer must inform the user about the unit's operating mode. In particular the user must be informed about the function and the operation of the safety systems and the need for regular servicing by a qualified person.

8 - COMMISSIONING

- Check that all the water stop valves and the gas cock are open,
- Activate the boiler's external electrical circuit-breaker,
- Press button (14) to ON (Button illuminated).

Fig. 2



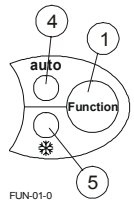
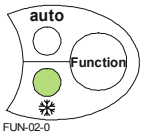
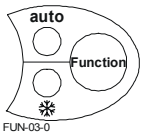
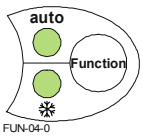
- The following references will appear one after the other on the boiler control panel display (13),

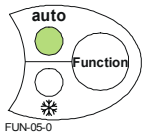
For this example, this means that it is the version 3.00 of the LMU management unit and version 1.01 of the control interface.

When starting up the boiler, the LMU management unit recognises all the accessories connected (sensors, mixing valve, pumps, etc.) and automatically checks the values and settings according to the type of installation.

If a problem occurs, the LED "alarm signal" (11) is on (red):

- Press RESET (10) to reset the boiler,
- If the alarm persists, consult the list of operating faults in chapter IV - OPERATING FAULTS - page 17 - SERVICING MANUAL.

Display	Description	Consequences according to type of installation
 FUN-01-0	"Function" key (1) gives access to 3 operating modes by pressing: - auto mode: LED (4) on - winter mode: LED (5) on - summer mode: LED (4) and (5) off	
 FUN-02-0	LED (5) on / LED (4) off: **Winter mode** The boiler provides heating and domestic hot water	- *Basic boiler model (without outside sensor and room sensor)* • Auto mode is inaccessible . The heating and hot water temperatures are set manually by using the boiler potentiometers. - *Boiler with outside sensor only* • Auto mode is not activated, . Heating operates continually except if there is a request for hot water, . The hot water temperature is set manually on the boiler potentiometer. - *Boiler with outside sensor and room sensor* • The heating and hot water temperatures are set via the room sensor QAA73.
 FUN-03-0	LED (4 and 5) off: **Summer mode** The boiler provides domestic hot water only	- *Basic boiler model (without outside sensor and room sensor)* • Auto mode is inaccessible . The hot water temperature is set manually by using the boiler potentiometers. - *Boiler with outside sensor only* • Auto mode is not activated, . The hot water temperature is set manually on the boiler potentiometer. - *Boiler with outside sensor and room sensor* • The hot water temperature Is set via the room sensor QAA73.
 FUN-04-0	LED (4 and 5) on: **Auto winter mode** The boiler provides heating and domestic hot water	**Auto mode is active:** - *Boiler with outside sensor only* • The heating starts up automatically and only when the average outside temperature computed by the LMU is below 19°C. • The hot water temperature is set manually on the boiler potentiometer. - *Boiler with outside sensor and room sensor* • The heating starts up automatically and only when the average outside temperature computed by the LMU is below 19°C. • The heating and hot water temperatures are set via the room sensor QAA73.

Display	Description	Consequences according to type of installation
	LED (4) on / LED (5) off: **Auto summer mode** The boiler provides domestic hot water only	**Auto mode is active:** - *Boiler with outside sensor only* • The heating stops automatically and only when the average outside temperature computed by the LMU is below 19°C. • The hot water temperature is set manually on the boiler potentiometer. - *Boiler with outside sensor and room sensor* • The heating stops automatically and only when the average outside temperature computed by the LMU is below 19°C. • The hot water temperatures are set via the room sensor QAA73.

9 - FLAME SETTING

- After switching the boiler on:
- Check the flame control by disconnecting the ionizing electrode:
- The boiler goes into safety mode after two ignition attempts (display  and )

10 - COMBUSTION PRODUCT CHECKING

The boiler is preset in the factory to operate with natural gas H (G20).

If the gas type is changes at the first commissioning, check the combustion products according to the procedure described in section 2 - page 4 - chapter IV - OPERATING FAULTS - page 17 - SERVICING MANUAL.

11 - ASSEMBLING THE COVER

After the commissioning and performing all the checks, put back the front panel of the boiler.

- fit the front panel (G) to the frame of the boiler and support it with the two latch (F),
- connect the terminal of the earth wire (O) positioned in the boiler to the tab on the front panel (G),
- shut the front panel using the two latch (F) on the top of the boiler,
- lock the 4 latches (F) using the 4 screws (E).

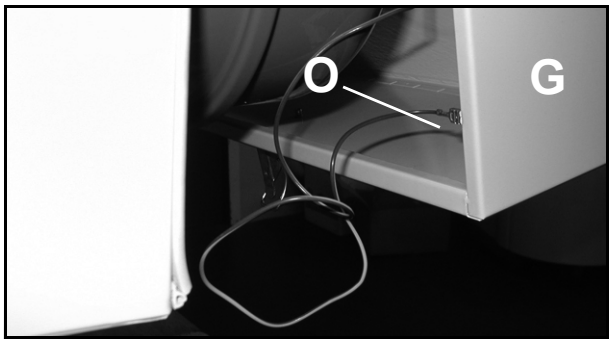
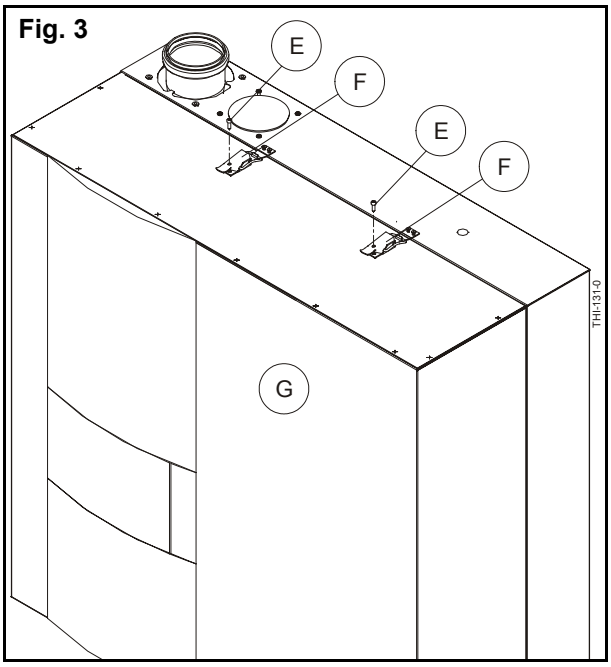


Fig. 3



Check that the boiler is properly adapted to the gas used, otherwise change the gas.

1 - GAS CONVERSION (THI 10-50 C ONLY)

This operation must be carried out by a qualified person equipped with a calibrated combustion analyser.

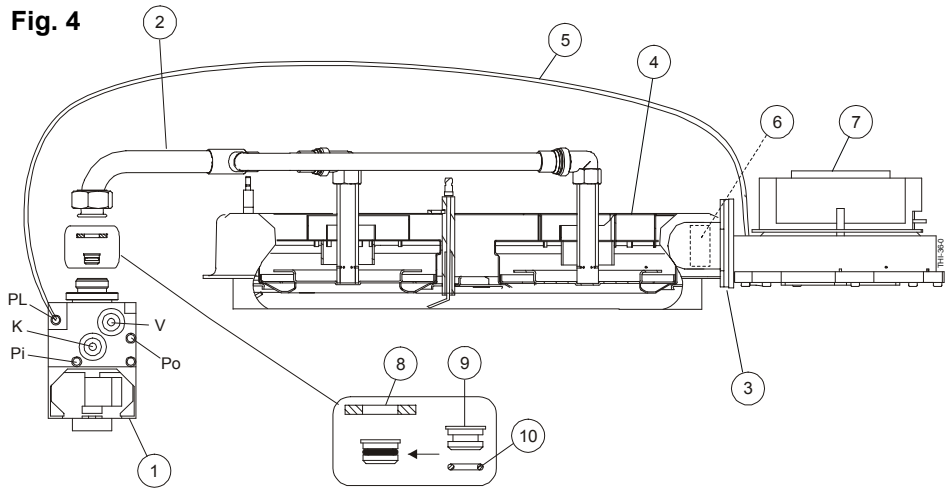
Prior to any servicing cut the electrical and gas supplies.

The boiler is preset in the factory for natural gas H (G20) 20 mbar.

When changing the gas, the "gas setting" label that is in the gas conversion set must be fixed on the inside of the boiler so as to indicate the new setting.

Check the gas circuit for leak tightness after each intervention on the boiler.

Fig. 4



1) *Gas unit*
2) *Gas pipe*
3) *Flange Burner/fan*
4) *Burner*
5) *Air/Gas servo-control*
6) *Brass air reducer*
7) *Fan*
8) *Flat seal*
9) *Gas reducer*
10) *Gas reducer o-ring*

1.1 - Conversion from Natural Gas to Propane

- Conversion to propane (G31) requires the gas conversion set (ref : V07.31651)
- *Refer to the installation instructions of the gas conversion set*

1.2 - Conversion from Propane to Natural gas

Air inlet of burner :

- Gently separate the fan (7) from the burner (4) at the level of the flange (3),
- Take off the air reducer (6) into the air inlet sleeve of the burner,
- Gently refit the fan (7) together with its joint to the burner flange (3).

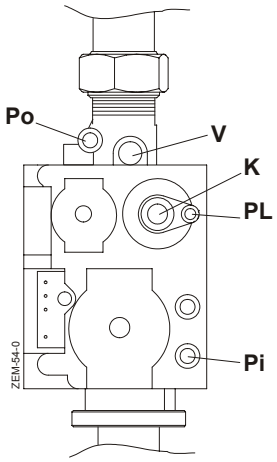
Gas valve outlet:

- Remove the nut securing the gas tube (2) to the gas valve (1),
- Take off the propane gas reducer (9) and o-ring (10) at the outlet of the gas valve (1),
- Fit the gas tube/gas valve assembly and check that the flat joint (8) is fitted correctly,
- Check that between the gas tube (2) and gas valve (1) is gas-tight (burner on) by using a foaming product,
- Check the CO2/CO rate (refer setting table section 2.2 - page 12 - chapter II - GAS CONVERSION - SERVICING MANUAL).

2 - GAS/CO_2/CO/NO_X FLOW CONTROL AND SERVICE PRESSURE CONTROL

Fig. 5

GAS VALVE
SIEMENS/LANDIS
ref : VGU87A0236



P_i = Network gas pressure
Natural gas H (G20) : 20 mbar,
Propane (G31) : 37 mbar.

P_o = Outlet gas pressure to the burner.

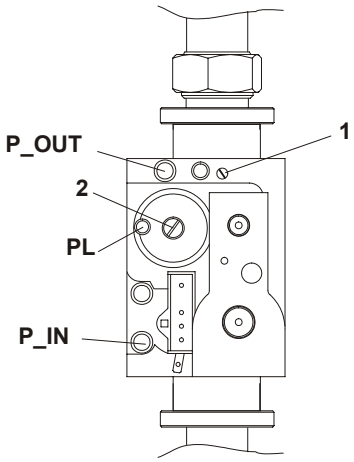
PL = Air pressure control (fan/gas valve)

V = Adjust the slope of the characteristic of the air/gas ratio only when the burner **is at high rate.** This setting is carried out in the factory for natural gas type H (G20). This means that the pressure Po can be changed to obtain the required gas flow (section 2.2 - page 12 - chapter II - GAS CONVERSION - SERVICING MANUAL).

Screw to increase the gas flow

K = Adjust the parallel shift of the characteristic of the air/gas ratio only when the burner **is at low rate**. This screw is pre-set in the factory. Its setting must not be normally modified even for changing gas. If however an adjustment is required, it may be carried out with a low scale pressure gauge 0-10 mmCE, and a CO2, CO analyser. **Screw to increase the gas flow**.

GAS VALVE
SIT
ref : 848 SIGMA



P_IN =Network gas pressure
Natural gas H (G20) : 20 mbar,
Propane (G31) : 37 mbar.

P_OUT = Outlet gas pressure to the burner.

PL = Air pressure control (fan/gas valve)

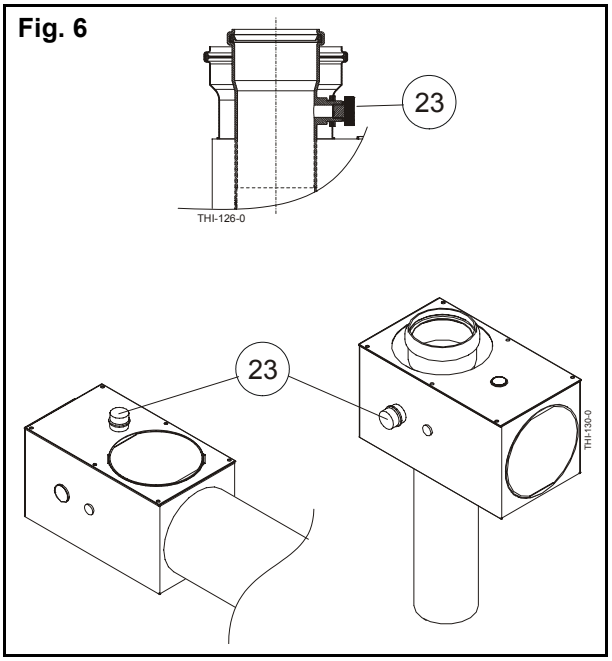
1 = Adjust the slope of the characteristic of the air/gas ratio only when the burner **is at high rate**. This setting is carried out in the factory for natural gas type H (G20). This means that the pressure "P_OUT" can be changed to obtain the required gas flow . (section 2.2 - page 12 - chapter II - GAS CONVERSION - SERVICING MANUAL).

Screw to descrease the gas flow

2 = Adjust the parallel shift of the characteristic of the air/gas ratio only when the burner **is at low rate.** This screw is pre-set in the factory. Its setting must not be normally modified even for changing gas. If however an adjustment is required, it may be carried out with a low scale pressure gauge 0-10 mmCE, and a CO2, CO analyser

To modify the setting, if it is required, take off the protection screw, and **screw to increase the gas flow**. When the adjustments are realized, reset the protection screw.

Fig. 6



B_{23} chimney flue:

- Combustion control is carried out after making a hole on the combustion product outlet system external and directly at the boiler outlet (with the boiler unit assembled). This opening must be closed again after checking.

C_{13} - C_{33} balanced flue:

- Combustion control is carried out through the opening (23) provided for this purpose after the cap is removed. This opening must be closed again after checking.

2.1 - Surveillance procedure

- To commission the burner:
  - Activate the regulator shut-down function - service key (6) (section 3.11 - page 19 - chapter III - OPERATION - INSTALLATION MANUAL) :
    . the code [8 1] [0 0] flashes on the display screen (13),
- Gradually position the d.h.w. potentiometer (3) to the maximum on the right:
  - the burner switches to max. rate,
- Gradually move the **V or 1** adjustment screw of the gas unit (fig. 5 - page 10 - SERVICING MANUAL) to obtain a stable flame.
- Check the CO_2/CO ratio (see setting table section 2.2 - page 12 - chapter II - GAS CONVERSION - SERVICING MANUAL),
- Set the d.h.w. potentiometer (3) to the maximum on the left:
  - the burner switches to the minimum rate,
- Check the CO_2/CO ratio (see setting table section 2.2 - page 12 - chapter II - GAS CONVERSION - SERVICING MANUAL),
- If necessary:
  - adjust screw **K or 2** (fig. 5 - page 10 - SERVICING MANUAL) (tightening and untightening increases and decreases gas flow).

Before starting the minimum rate setting (V or 1 and K or 2 screws), wait for a stable CO_2/CO analyser read-out. Repeat switching from the minimum rate to the maximum rate several times to ensure that the setting has been done properly.

- to return to normal operation, press on the sweep key (rep. 6) for 3 seconds then release it.

Note:

- Remember to reposition the d.h.w. potentiometer (3) to its initial value to return to the required d.h.w. setting.

2.2 - Setting table

Models			THI 10-50	THI 10-35 SEP	
Burner type			**X07.36237**		
Heat output	30/50 °C 60/80 °C	kW kW	10,7/52,6 9,7/48,7	10,7/36,0 9,7/33,1	
			Heating	Heating	D.H.W
Heat input		kW	10,0/50,0	10,0/35,0	10,0/50,0
∅ Gas reducer	Nat. gas H Propane	mm mm	- 6,40	- -	
∅ Air reducer	Nat. gas H Propane	mm mm	- 31	- -	
Gas flow (15 °C 1013 mbar)	Nat. gas H Propane	m^3/h kg/h	1,06/5,29 0,78/3,88	1,06/3,70 -	1,06/5,29 -
Gas pressure P_o / P_OUT (Gas unit to burner)		mbar	0,25/2,4		
Air pressure servo-system (PL)		Pa	40/630		
CO_2 Emission	Nat. gas H Propane	% %	8,0-8,5/9,0-9,5 10,0-10,5/10,5-11,0	8,0-8,5/9,0-9,5 -	
CO Emission	Nat. gas H Propane	ppm ppm	0/20 0/40	0/20 -	

- Combustion product evacuation outlet back pressure: 0 mmCE.
- **P_o / P_OUT** = Gas pressure at the gas valve regulator outlet.
- **PL** = Servo-system air pressure (Fan/gas unit).
- The Po / P_OUT and PL values may be more or less high according to whether back pressure is greater or smaller.

III - MAINTENANCE

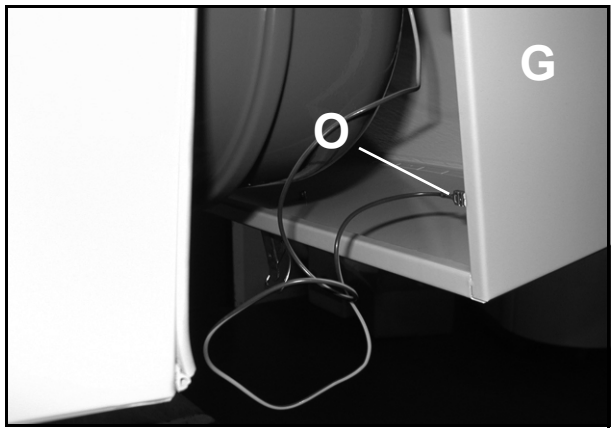
The annual inspection of the boiler and of the combustion product outlet is compulsory and validates the warranty. It must be carried out by a qualified person.

Spare parts must be ordered by using the references listed in chapter VI - PARTS LISTS - page 27 - SERVICING MANUAL, and specifying the type and serial number of each part.

Before any servicing, cut the power supply. Close the gas inlet of the boiler and the isolation valves if required.

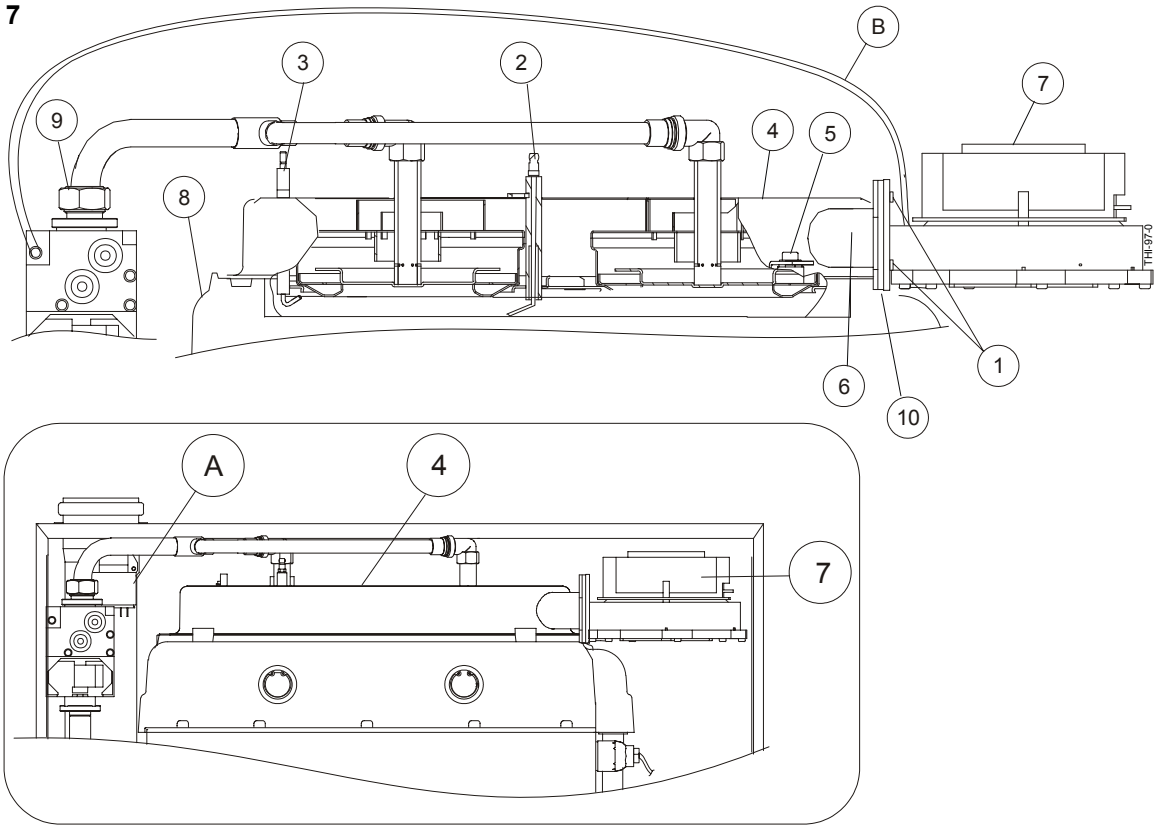
If the boiler is removed, provide a port at the end of the gas piping.

Remove the front panel (item G) from the boiler and disconnect the earth wire (item O).



1 - SERVICING THE FAN AND THE BURNER

Fig. 7



Check the state of the ventilator and the burner and clean them if necessary (following their service instructions).

Disassembling the burner/fan unit:

- Disconnect the electrical connections of the burner/fan unit:
  - remove the 2 terminals of the cables connecting the ignition electrode (item. 3) to the ignition transformer (rep. A,
  - removal the terminal of the cable connecting the ionization electrode (item. 2) to the X2-05 terminal of the control panel,
  - removal at the fan (item. 7):
    . of the connector of the power cable from the fan,
    . of the connector of the PWM signal from the fan,
- disconnect the air/gas control (item B) from the gas valve

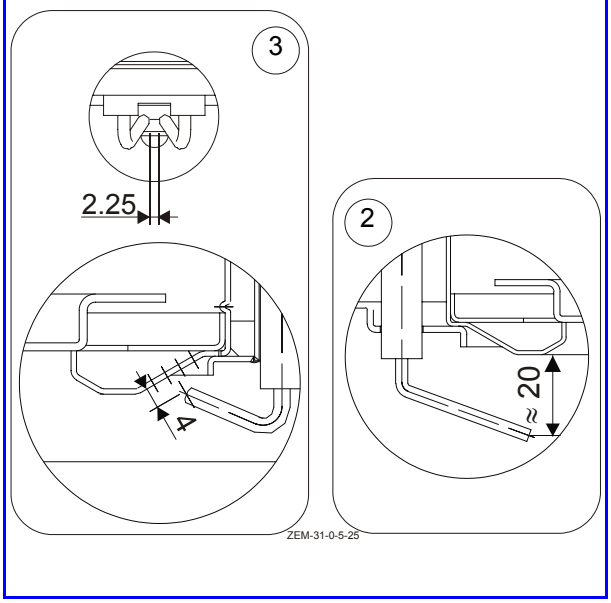
Disassembling the fan:

- Unscrew the four screws (1) fixing the fan (7) to the burner's air sleeve (6),
- Clean the fan (item. 7) using a domestic vacuum cleaner by placing the suction device over the air inlet and outlet successively.

Cleaning the burner:

- Unscrew the four screws fixing (5) the burner (4) to the boiler shell (8),
- Disassemble the nut (9),
- Clean the burner (4) using a domestic vacuum cleaner by placing the suction device over the air inlet and the gas inlet successively,
- Check the ignition electrodes (3) and the ionisation electrodes (2).

Fig. 8



When reassembly the burner/fan unit:

- Replace the seal at the nut (item. 9) and check the airtightness of the gas,
- when refitting the fan on the burner :
  - check the correct positioning of the fan/burner gasket (item. 10),
  - check the airtightness of the gasket and replace it if necessary.
- check airtightness at the burner and boiler shell levels,

2 - SERVICING THE HEAT EXCHANGER OF THE BOILER SHELL

- The heat exchanger must be cleaned once the burner has been disassembled (section 1 - page 13 - chapter III - MAINTENANCE - SERVICING MANUAL).
- Sprinkle the heat exchanger with water. The water is evacuated through the condensate evacuation siphon,
- when reassembling the burner onto the boiler shell check the correct positioning of the gasket.

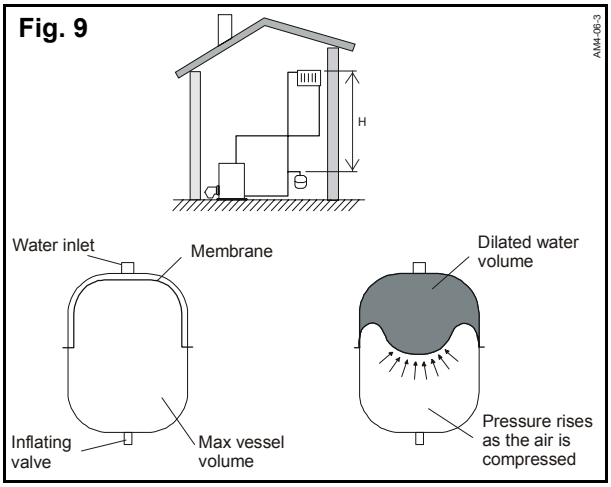
3 - CHECKING ACCESSORIES

- Check that the safety and control devices (3 bar safety valve, air bleed, safety control box, etc.) are operating properly.
- Clean the condensate drain siphon and then fill it with water.
- Also check that neither the installation nor the boiler present any water or fuel leaks (leaks may produce a risk for safety and shorten the lifespan).
- When it is frequently necessary to add water to maintain pressure in the installation, even though no leaks have been discovered, perform an expansion vessel check (section 4 - page 15 - chapter III - MAINTENANCE - SERVICING MANUAL).

4 - EXPANSION VESSEL PRE-INFLATION PRESSURE CHECK

- Drop the pressure in the heating installation by opening the drain cock or the safety valve (pressure gauge reading under 0.5 bar).
- Check the pressure in the expansion vessel and if necessary bring it back up to pressure, or replace it if the membrane is punctured (water present in the inflating valve).
- To optimise the efficiency of the vessel:
  - adjust its pre-inflation pressure in line with the installation. It must correspond to the static height of the installation (H) expressed in bars (height between the highest point of the installation and the expansion vessel, with 10 metres = 1 bar),
  - adjust the filling pressure of the installation to a value of over 0.2 bar above the pre-inflation pressure of the vessel (after totally bleeding the air from the installation).

Fig. 9



5 - COMBUSTION PRODUCT CONDUITS (FLUE)

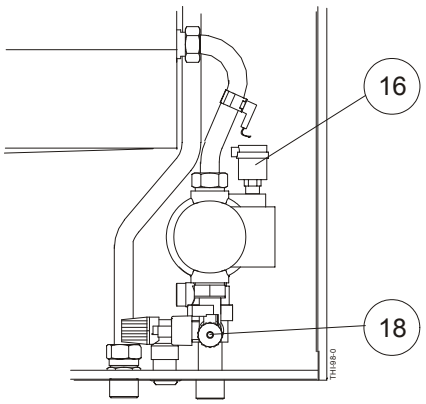
- Check the combustion product evacuation conduit and the air inlet conduit at least once a year (airtightness of the parts that may be disassembled - conduits not obstructed).

6 - DRAINING

- Cut the power supply,
- turn off the gas cock,
- turn off the heating flow/return valves (if they are fitted),
- connect the drain valve (18) to the sewage system,
- open the drain valve.

Ensure that the air bleed (16) is open, as soon as the pressure gauge indicates a zero pressure to allow air to enter the boiler shell.

Fig. 10



7 - SENSOR RESISTANCES

The resistance of the sensors must be measured after they have been disconnected from the control panel.

	Resistance values of the sensors
Temperature	**Heating outlet sensor Boiler return sensor Flue gas sensor**
0.00 °C	32624
10.00 °C	19897
15.00 °C	15711
20.00 °C	12493
25.00 °C	10000
30.00 °C	8056
40.00 °C	5324
50.00 °C	3599
60.00 °C	2483
70.00 °C	1748

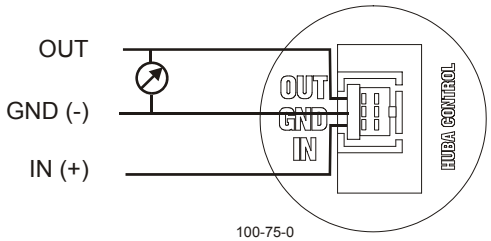
	Resistance values of the sensors
Temperature	**Heating outlet sensor Boiler return sensor Flue gas sensor**
80.00 °C	1252
90.00 °C	912

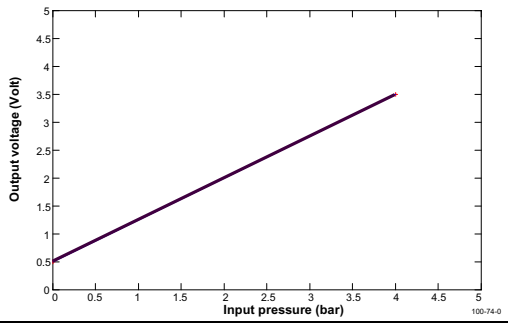
	Resistance values of the sensors
Temperature	**Outside sensor**
-20.00 °C	7578
-15.00 °C	5861
-10.00 °C	4574
-5.00 °C	3600
0.00 °C	2857
5.00 °C	2284
10.00 °C	1840
15.00 °C	1492
20.00 °C	1218

8 - PRESSURE SENSOR

The output voltage on the water pressure sensor is measured between the terminals GND (-) and OUT.

Fig. 11

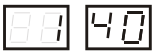
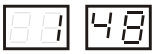




IV - OPERATING FAULTS

1 - OPERATING FAULTS LIST

Display A0	Description	Solution
10	Outside sensor fault	Check that the sensor is correctly fitted and connected
20	Boiler sensor 1 fault	Check that the sensor is correctly fitted and connected
28	Flue gas detector fault	Check that the sensor is correctly fitted and connected
32	Flow sensor 2 fault	Check that the sensor is correctly fitted and connected
40	Return sensor 1 fault	Check that the sensor is correctly fitted and connected
50	Domestic hot water sensor 1 fault	Check that the sensor is correctly fitted and connected
61	Room device 1 faulty	Check the boiler connections
62	Room device 1 error or radio clock error	Check compatibility of the room device or clock
78	Water pressure sensor fault	Check the connections of the pressure sensor
81	Short-circuit on LPB or no voltage	Check the wiring
82	Two identical addresses on the LPB	Check the addressing
91	Loss of data in the EEPROM	Change the LMU
92	Component fault in the LMU	Change the LMU
H 00	Two master clocks (only one normally), programming problem	Check parameter 96 of the QAA73 (only one device can have the message “QAA73”)
H 05	Maintenance alarm	Check the maintenance code value, QAA 73 setting 726 (section 2 -page 19 - chapter IV - OPERATING FAULTS - SERVICING MANUAL)
H 10	STB (boiler overheating safety) activated	Check that shunt X3-01 is present and whether the installation water flow is sufficient (circulating pump, isolation valve, etc.)
H 11	Response of the safety thermostat	Check whether the installation water flow is sufficient (circulating pump, isolation valve, etc.)
H 13	Flue gas alarm displayed (problem of the flue gas temperature being too high)	Check whether the boiler is not on thermal overload or that the exchanger is not clogged
H 17	Water pressure too high	Check and adjust the pressure level if necessary with P < 4 bar
H 18	Water pressure too low	Check and adjust the pressure level if necessary with P > 0.4 bar

Display A0	Description	Solution
	Flame failure while the boiler is operating	Check and adjust the gas valve, check the ionisation electrode and the connections, possible live-neutral inversion of the transformer supply
	Poor air supply	Check the ventilator and the air inlet
	Maximum flue gas temperature exceeded	Check whether the boiler is not on thermal overload or that the exchanger is not clogged
	Safety device activated	Check that shunt X10-03 is present and that the wires are properly connected
	No flame formed after the safety time period	Check that the gas reaches the boiler (Pi), check the condition of the gas valve, if there is a major adjustment fault on the gas valve, check the condition of the transformer, cables, ignition electrode, ionisation current value
	Segment number or unauthorised addressing on LPB or LMU	Check the addressing consistency
	Incompatibility between the LMU and LPB	Check the addressing consistency
	New LMU configuration	Check the b0 internal code
	LMU setting error	Check the b0 internal code
	The boiler is blocked	Press Reset to clear the message
	Violation of the plausibility criteria (STB related criteria)	Check the value of the criteria related to the boiler overheating security
	The minimum speed threshold of the fan is not reached	Check the wiring of the fan and LMU, ensure that the fan is turning correctly
	The maximum speed threshold of the fan is exceeded	Check the mains supply and the fan cable connections
	The service function is active	-
	The regulator shut-down function is active	-
	The boiler is in setting mode	This appears after one or more settings are loaded either by the QAA73 or by the PC TOOL. This means that a reset is necessary to validate the new setting(s) and for the boiler to return to normal operating.
	Modem function is active	-
	"Controlled screed drying" function is active	-

Note :

- The **last 5 working faults** are accessible through the QAA 73, from LMU version 3.00, lines 728 / 729 / 730 / 731 / 732. The last saved fault code is displayed at line 728.

2 - MAINTENANCE

Maintenance alarms can be automatically triggered, indicating that maintenance jobs are due. The following reasons for maintenance alarms can be delivered:

- Interval of burner hours run since last regular service visit exceeded.
- Interval of the number of startups since last regular service visit exceeded.
- Number of months since last regular service visit exceeded.

The alarm displayed is always the maintenance alarm that occurred first.

There is no storage for the maintenance alarms since all pending alarms can be checked at any time via the counter readings or the relevant parameters.

2.1 - Maintenance alarm

If a maintenance alarm occurs, an error code "105 maintenance" appears on the dipslay of the boiler and / or room unit.

This code does not give precise information on maintenance but is only a general maintenance note.

These maintenance alarms are a priority lower than that of the error codes to ensure the error codes prevail.

The maintenance alarm is sent until the enduser has acknowledged the message or the heating engineer has rectified the fault.

2.2 - Maintenance code

The maintenance alarm does not provide detailed information about the reason for the fault. Details can be displayed using parameter "WartungsCode" (QAA 73 setting : 726).

Le maintenance code can also be viewed on the display of the boiler (b0).

2.3 - Coding of maintenance alarms

Maintenance alarm	Maintenance code	Internal error code b0	Meaning
–	0	–	No maintenance alarm
105	1	560	Burner hours run
105	2	561	Startups
105	3	562	Months-service

2.4 - General activation of maintenance alarms

Parameter "WartungsEinstellungen" (QAA 73 setting : 630) permits or suppresses the generation of maintenance alarms.

The subdivision of parameter "WartungsEinstellungen" by bit is shown in the following table :

Bit0	1 = general activation of maintenance alarms
Bit1	1 = single reset of hours run maintenance alarm
Bit2	1 = single reset of startup maintenance alarm
Bit3	1 = single reset of months- service maintenance alarm
Bit6	1 = total reset for all maintenance alarms

2.5 - Activation of the individual maintenance alarm

Every cause can be individually activated or deactivated by entering the associated limits.

- ***Burner hours run :***

  Burner hours run maintenance is activated by setting parameter "BetrStdWartGrenz" (QAA 73 setting : 625) to a value other than "0".

  This value represents the target number of hours run. When this limit is reached, a maintenance alarm will be delivered (interval since last service visit).

- ***Number of startups:***

  Startup maintenance is activated by setting parameter "InbetrSetzWartGrenze" (QAA 73 setting : 626) to a value other than "0".

  This value represents the target number of startups. When this limit is reached, a maintenance alarm will be delivered (interval since last service visit).

- ***Months (service):***

  Service maintenance is activated by setting parameter "MonatWartGrenze" (QAA 73 setting : 627) to a value other than "0".

  This value represents the target number of months. When this limit is reached, a maintenance alarm will be delivered (interval since last service unit).

Note :

- The month counter is only active when the device is connected to power.

2.6 - Acknowledgement of maintenance alarms

The acknowledgement sets the internal error code "b0" and the fault statut message to "0", but the maintenance code still gives the precise reason for the maintenance alarm.

2.6.1 - Acknowledgement via QAA 73

For the parameter "WartungsQuittierung" (QAA 73 setting : 629) (defaut value: 0), to acknowledge the maintenance alarm the heating engineer (or the enduser) enters the value of "1".

If no repetition is required, all maintenance alarms after this acknowledgement will be locked, even if other reasons for maintenance occur. In that case, parameter "WartungsQuittierung" remains constantly at 1.

2.6.2 - Activation of the repetition after acknowledgement

If required, a timer (duration of repetition) can be started, that is, the maintenance alarm will reappear on the display after a certain period of time. An acknowledgement can also be made then. This period of time starts after each acknowledgement.

The repetition can be set via parameter «WartungsRepetitionsDauer» (QAA 73 setting 633).

Contents of parameter «WartungsRepetitionsDauer» is the desired period of time (in days) until the maintenance alarm appears again.

If a value other than «0» is entered there, a repetition is made within the entered duration of the repetition time.

During this period of time, no more maintenance alarms will appear, even if other reasons for maintenance occur.

2.7 - Resetting the maintenance alarms

Resetting can take place at any time, and after acknowledgement or during the repetition sequence.

A reset can be made in 1 of 2 ways:

- ***Total reset :***

  Here, all maintenance alarms can be reset at the same time. If, in parameter «WartungsEinstellungen» (QAA 73 setting 630), «1» is entered, all maintenance counters will be set to «0» when the parameter is saved.

  The maintenance counters of the hours run, startups and months maintenance alarms will be newly started.

- ***Individual resert of a certain maintenance alarm :***

  Individual maintenance alarms can also be reset. In that case, parameter «WartungsEinstellungen» (QAA 73 setting : 630) will again be addressed bit by bit.

  There is a bit available for each maintenance alarm via which this maintenance alarm can be reset (section 2.4 - page 19 - chapter IV - OPERATING FAULTS - SERVICING MANUAL). It is thus possible to also reset other reasons for maintenance although they have not yet occurred.

When resetting the maintenance alarm, the maintenance code and the internal error code (b0) will automatically also be reset.

Note : Only the QAA 73 can the maintenance alarms be activated, the reasons for the maintenance alarms be checked and a reset via parameter be made.

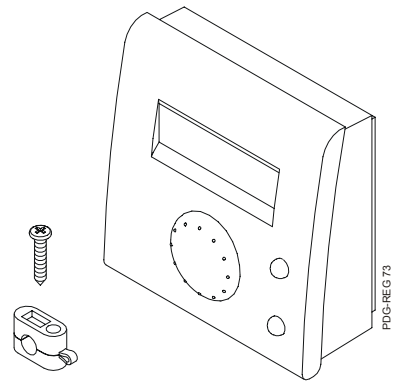
V - OPTIONS

1 - SET-UP TAKING ROOM TEMPERATURE INTO ACCOUNT (REG 73)

The REG 73 is a multifunctional digital room sensor for one or two heating circuits and for the control of domestic hot water.

Refer to the kit installation instructions.

Fig. 12



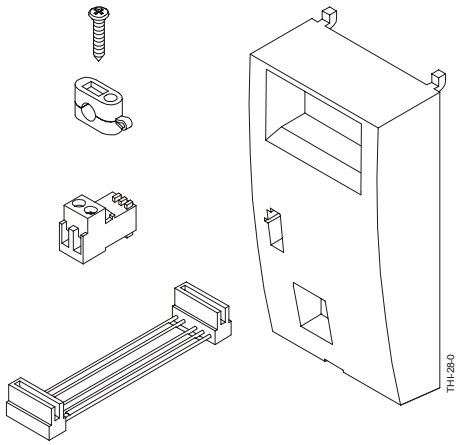
2 - CLIP-IN LPB KIT (REG 130)

The LPB communication clip-in kit is used to connect the LMU control unit to different units or accessories of the type:

- RVA 46: zone regulator
- RVA 47: cascade regulator
- + others (distance management etc.)

Refer to kit installation instructions.

Fig. 13

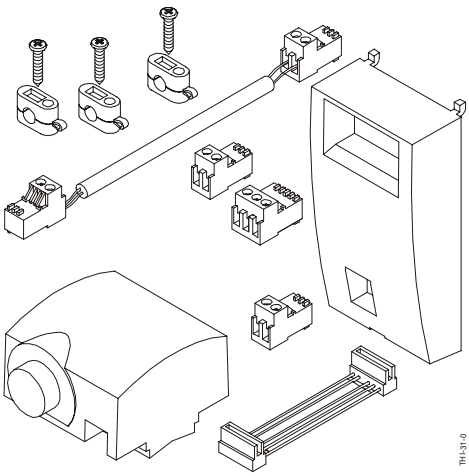


3 - SECONDARY CIRCUIT CLIP-IN KIT

The secondary circuit clip-in kit is used when a second heating circuit is connected to the boiler. It allows the communication between the boiler's LMU control unit and the various accessories of the secondary circuit.

Refer to kit installation instructions.

Fig. 14



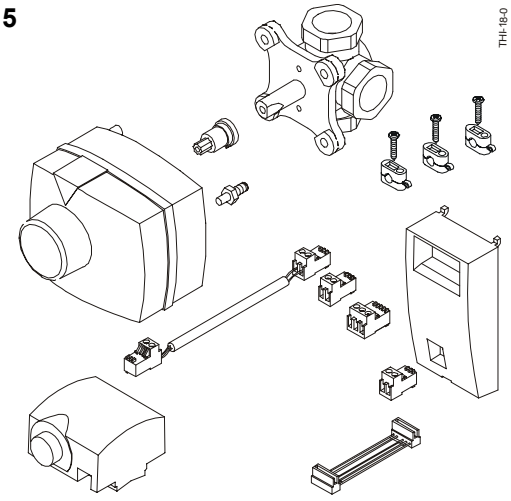
4 - DOUBLE CIRCUIT KIT (REG 125) - (THI 10-35 SEP)

The double circuit kit is used whenever a second heating circuit is connected to the boiler:

- The 2nd circuit clip-in ensures communication between the boiler's LMU management unit; the 2nd circuit pump control and also the mixing valve motor (accessories supplied with the kit).

Refer to kit installation instructions.

Fig. 15



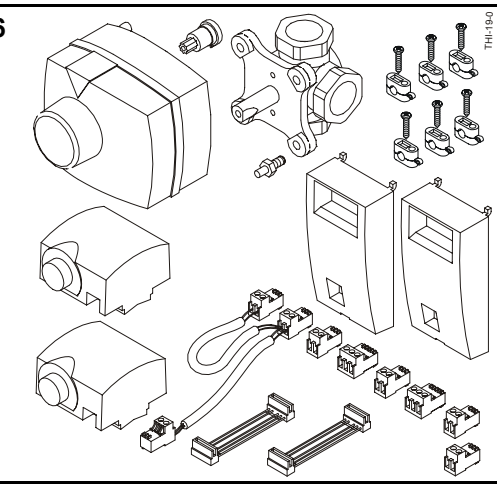
5 - DOUBLE CIRCUIT KIT (REG 146) - (THI 10-50 C)

The double circuit kit is used whenever a second heating circuit is connected to the boiler:

- The 2nd circuit clip-in ensures communication between the boiler's LMU management unit; the 2nd circuit pump control and also the mixer valve motor (accessories supplied with the kit).
- The clip-in relay allowing a 1st circuit pump (Q8-CC1) to work in parallel and to regulate the outlet temperature of the installation.

Refer to kit installation instructions.

Fig. 16



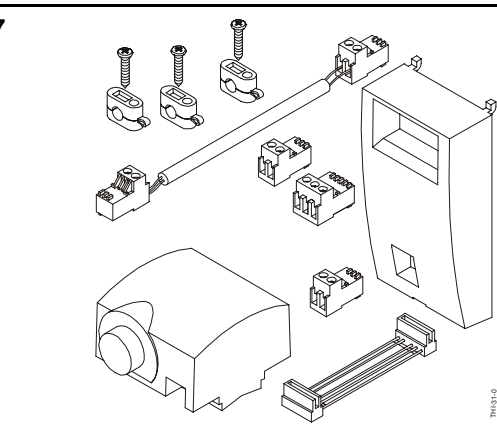
6 - PROGRAMMABLE RELAY CLIP-IN KIT (REG 127)

The programmable relay clip-in kit (sensor inlet) enables:

- a 2nd heating pump to be controlled in parallel with the boiler pump in the case of operation using a header.
- with the flow sensor positioned at the outlet of the header, the heating outlet can be controlled after the header.
- an external safety gas solenoid to be connected,
- an alarm to be connected.

Refer to kit installation instructions.

Fig. 17



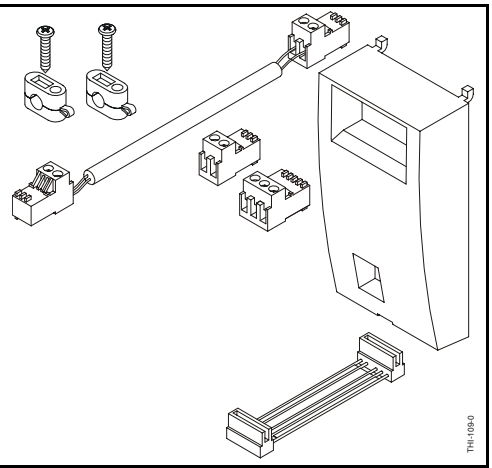
7 - PROGRAMMABLE RELAY CLIP-IN KIT (WITHOUT SENSOR) (REG 134)

The programmable relay clip-in kit (without sensor) enables, for example:

- a domestic hot water circulation pump to be controlled,
- an outside gas safety solenoid valve to be connected.

Refer to the assembly instructions for the kit.

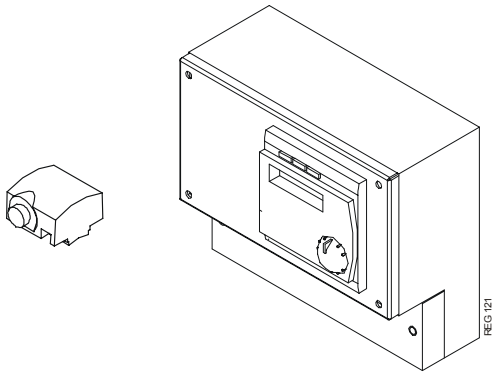
Fig. 18



8 - CONTROL UNIT ZHTI 46 (REG 129)

The control unit ZHTi 46 enables an additional heating circuit to be controlled. (Required from 3 heating circuits - refer to technical specifications of the ZHTi 46).

Fig. 19



9 - CONTROL UNIT ZHTI 47 (REG 128)

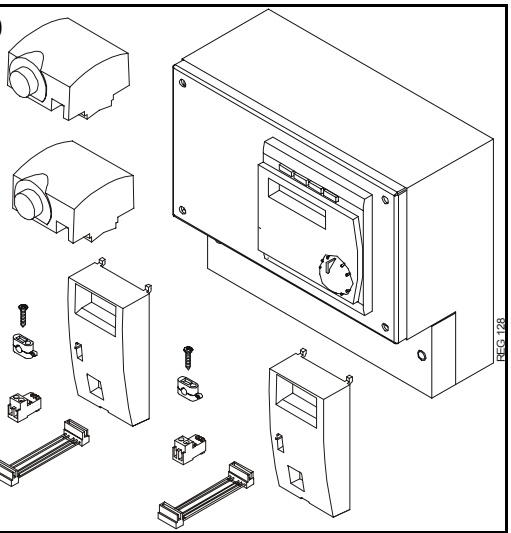
The control unit ZHTi 47 manages 2 cascading boilers.

Note:

- For multiple boiler management, use clip-in kits LBP (130).

Refer to ZHTi 47 technical specifications.

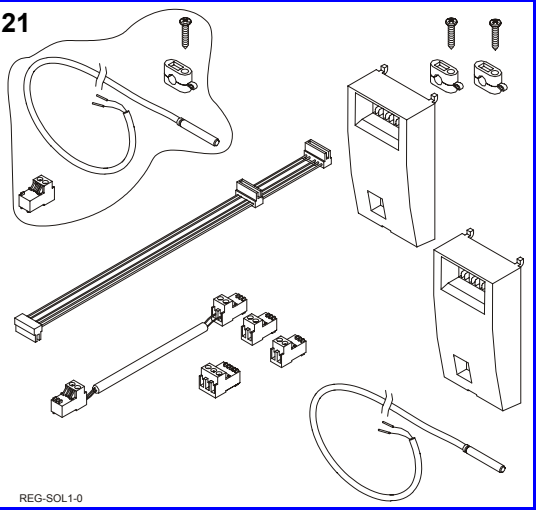
Fig. 20



10 - SOLAR HEATING CONTROL KIT (REG 152)

The solar heating control kit is intended for type C THI boilers that have a solar tank. It is used to control the production of domestic hot water by solar panels.

Fig. 21

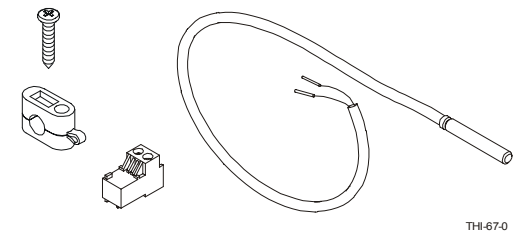


11 - DHW SENSOR KIT

The DHW sensor kit allows the connection of the domestic hot water sensor to the hot water heater at the boiler control unit.

Refer to kit installation instructions.

Fig. 22

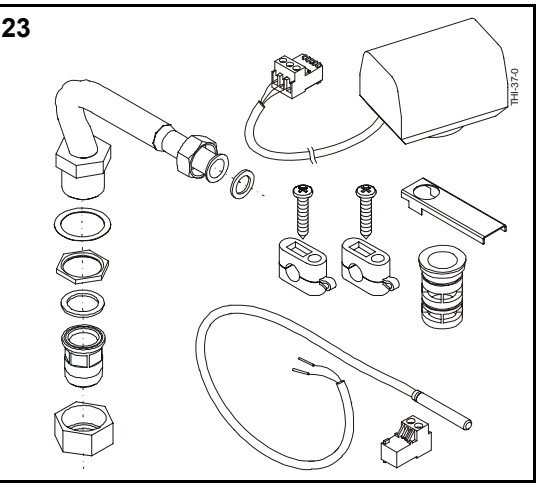


12 - SELECTOR VALVE KIT FOR CONNECTING THI..C/BS

The selector valve kit allows the connection of a central heating only type boiler to a domestic hot water heater.

Refer to kit installation instructions.

Fig. 23



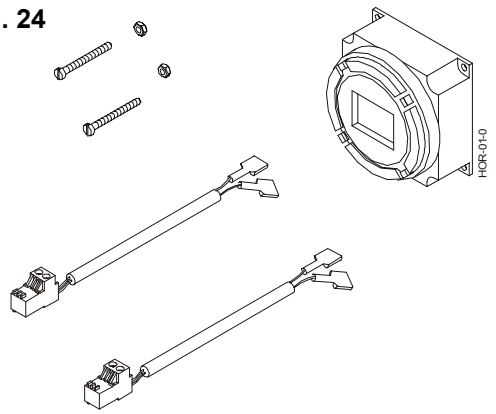
13- TIMER KIT

The timer kit is fitted to the boiler's control panel and controls an installation only possessing one heating circuit.

Fitting a clip-in to the boiler's LMU management unit will not work with this timer.

Refer to kit installation instructions.

Fig. 24



14- BS TYPE DOMESTIC HOT WATER PRODUCTION SYSTEM

BS domestic hot water production systems can produce hot water when the installation contains a boiler that only operates for heating.

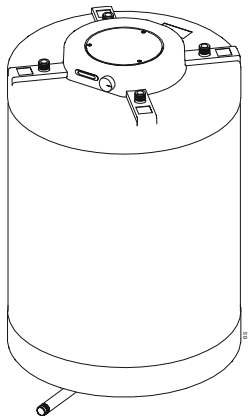
The capacity of the BS systems varies with the model chosen.

- BS 100: 100 litres / BS 200: 200 litres
- BS 150: 150 litres / BS 300: 300 litres

Note:

- The selector valve kit is necessary for connecting BS systems to ZEM..C boilers.

Fig. 25



15- BIONIBAL/BIONIBAGEL

Fig. 26

BIONIBAGEL 10 litres

Fig. 27

BIONIBAL 1 litre

Fig. 28

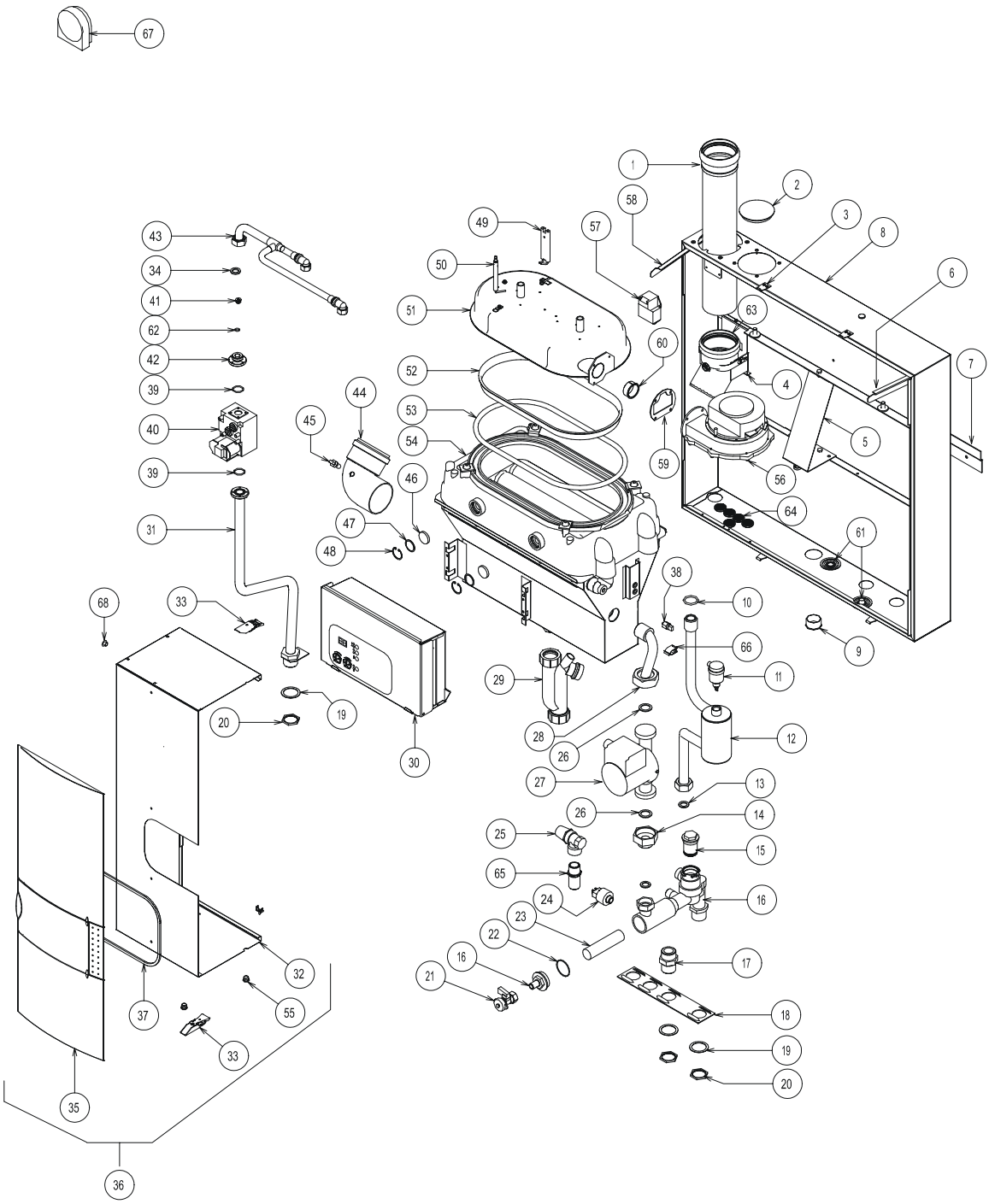
BIONIBAL 30 litres

16- CONDENSATE LIFT PUMP

The condensate lift pump is used to raise the condensate extraction level for a direct outlet to the exterior. It is used for boilers installed in a basement.

Fig. 29

THI 10-50 C

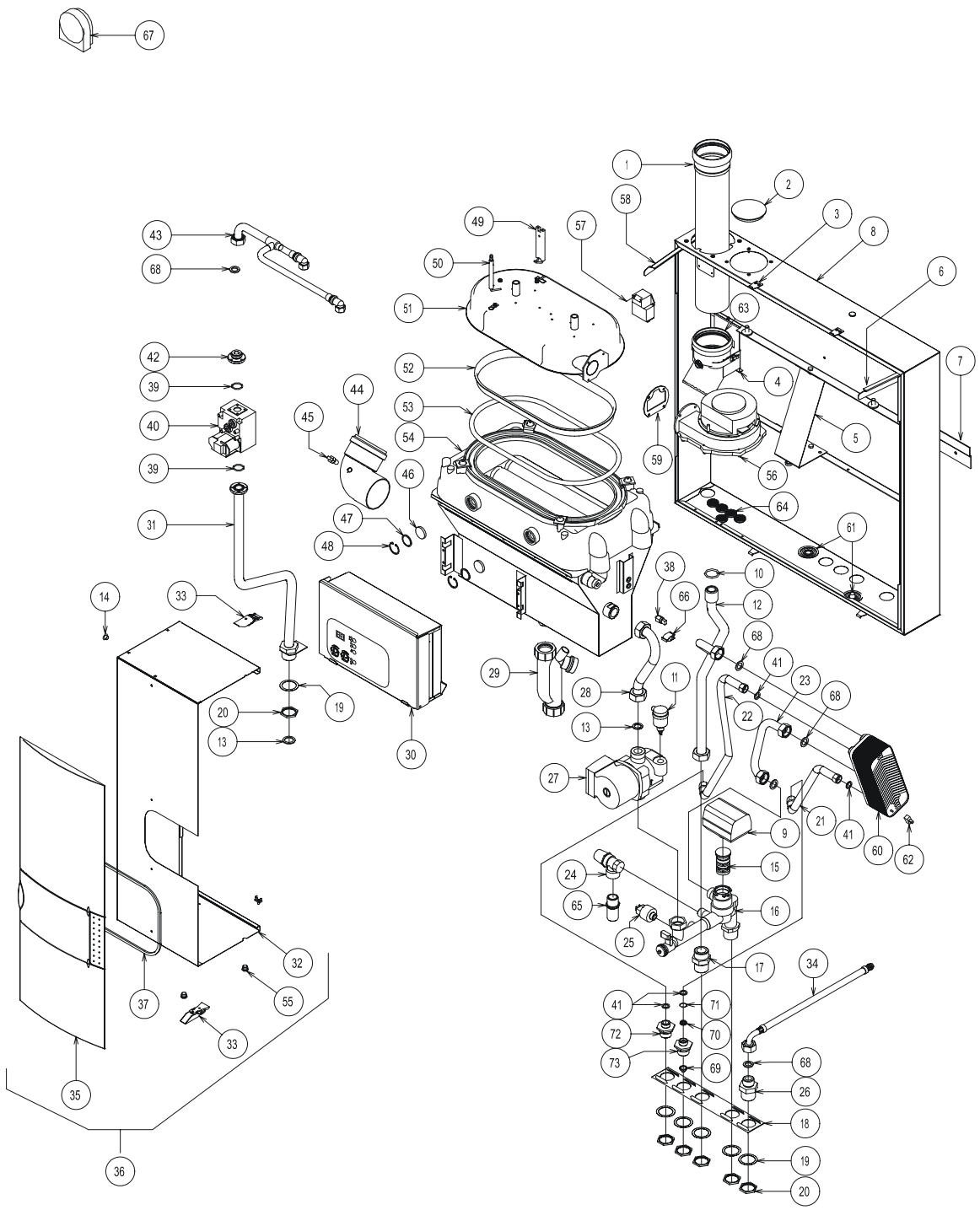


PLTIC4,3120

Rep.	Reference	Description
1	N40.16810	REDUCED FLUE OUTLET PIPE F75/M80 L360
2	A00.23624	PE CAP N152 BPF 3-1/2
3	Y00.14139	FASTENING HOOK
4	Y00.10807	FIXING SYSTEM FOR FLUE PIPE
5	Y00.13849	BACK STOP PLATE FOR MZ (3355X80,4X1,5)
6	Y00.18233	RIGHT HAND CONSOLE (269,4X25X1,5)
7	V07.31963	WALL FASTENING ; 10-50 MODEL
8	Y90.33470	CHASSIS ; EQUIPPED THI 10-50
9	A00.24109	ORANGE CAP D. 34,7 EZ-16
10	E00.01005	O' RING DIA DIA 29,32 X 3,6
11	L90.24635	AUTOMATIC AIR VALVE WATTS WITH ISOLATED VALVE
12	U00.19465	HEATING FLOW PIPE GREY THRC
13	E20.03889	SEALING AFM34D 30X21X3
14	W07.32303	OUTSIDE SENSOR .QAC34/101 THRI
15	H30.24159	MESSING CAP 28X52 + 2 O'RING
16	U90.28983	HEATING RETURN UNIT
17	I20.21441	MESSING SEALED CONNECTION "OLIVE" 22/1
18	V00.23999	STOP PLATE FOR HEATING AND DHW
19	V00.21491	PROTECTING RING 1
20	I20.21452	MESSING LOCK NUT 1
21	K50.24473	DRAIN COCK / RETURN UNIT
22	E00.24496	SEALING / O'RING INT. D. 39,45
23	L40.24495	STAINLESS STEEL FILTER / HEATING RETURN
24	L50.35152	PRESSURE SENSOR HUBA TYPE 505.91540
24	V90.35156	REPLACEMENT SET OF IMIT SENSOR BY HUBA SENSOR
25	L90.24178	SAFETY VALVE
26	L20.31471	SENSOR T7335D1024B
27	L30.33738	CIRCULATING PUMP GRUNDFOS UPS15-70/130 AO S3
28	U00.19252	SUMP INLET THRC/S GREY
29	A20.23655	SIPHONIC TRAP WITH PIPE 650 MM
30	W07.31562	CONTROL BOX PROGRAMMED THRI/THI 10-50C (DT)
31	U07.31500	GAS INLET; EQUIPPED; 1/10 - 5/25 MODEL
32	Y90.35965	WHITE COVER THRI S/10-50C
33	T25.31875	FIXING PART; UPPER COVER
34	E20.03890	SEALING AFM34 D 24X17X3
35	H20.32834	FRONTPANEL GREY
36	Y07.32843	COVER + FRONTPANEL
37	V07.32114	RING FOR BOILER COVER L685
38	L20.31470	SENSOR TASSERON NTC SENSOR M5 TSA-TYPE
39	L10.10607	HONEYWELL O'RING 22 X 2,5
40	V90.33616	WIRED SIT GAS VALVE SET
40	V90.37322	GAS VALVE SIEMENS VGU 87
41	I20.31604	GAS REDUCER
42	L10.33774	FLANGE G 3/4" FOR SIT VALVE
43	U07.31563	GAS INLET; COMPLETE BURNER ; 10-50C MODEL
44	U07.31498	90° ELBOW ; D.80 DRILLED
45	L20.31496	SENSOR TASSERON NTC SENSOR D10X20 10K
46	T20.00582	SIGHTGLASS PYREX D.30X5
47	B59.00692	STAINLESS STEEL WASHER 30,4X25,5X0,3
48	T40.01051	INSIDE CIRCLIPS D.30 YELLOW BICHROMATE
49	L00.16673	IGNITION ELECTRODE SHORT 74,5 AV CABLE
50	L00.12950	IONISATION PROBE (SHORT 20)
51	X00.24278	BURNER SET NG/LPG FOR THR 10-50 C
52	X00.32003	BURNER RING; REMOVABLE
53	F00.26573	GLASS BRAID RING D. 12 LG. 1070

Rep.	Reference	Description
54	V07.33783	STAINLESS STEEL BOILER SHELL THRI/THI/THISION10-50
55	A00.03141	COLORLESS PLASTIC CAP
56	C50.31464	FAN MVL-EBM RG 128/1300-3612
57	C90.31466	IGNITION TRANSFORMER ANSTOSS ZAG 2XV 01/10
58	Y00.18234	LEFT HAND CONSOLE (269,4X25X1,5)
59	E20.35446	RING FOR THE FAN
60	I20.22440	MESSING AIR REDUCER D. 310 LP 16 (POUR REGLAGE PROPANE G 31)
61	E20.23654	EXTENSIBLE SEALING D. 18 / RED SILICONE
62	E00.03424	NITRILE O'RING D. 8 X 2 80 SHORE
63	U00.20366	ELBOW D. 80 45°
64	C91.03071	WIRE CARRIER
65	I20.13579	BRASS NIPPLE MAL3/4-MAL3/4(LONG)
66	A00.19059	PLASTIC STOPPER MAL 9 WHITE
*	A00.28827	PLASTIC CAP MALE 1/4
*	C09.31469	CABLE WITH RECTIFIER VDU GAS VALVE
*	C09.33608	CABLE 0.960.401+CONNECT. GAS VALVE SIT 848 SIGMA
*	E00.10822	EPDM LIP SEAL D. 80 75 SHORE
*	E10.12503	EPDM STICKING SEAL PIPE 6/9 LENGTH 18
*	E20.24399	GASKET DN 80; BLACK FOR PART NUMBER U00.12053 AND U00.20366
*	I30.31973	STOP TECHNYL D.20X19
*	U00.03505	FIXING BRACKET FOR BURNER MZ/THR
*	U00.08190	VERSILIC PIPE 6X10 LENGTH 800MM
*	U00.18996	FLEXIBLE PIPE 4X8 LG 800 MM GAS UNIT
*	V00.24191	MOUNTING KEY; HONEYWELL
*	V07.31651	GAS CONVERSION SET GN/GP
*	X00.05193	FIXING BRACKET FOR IONISATION PROBE
*	X90.30472	IGNITION ANGLE WITH SCREW

THI 10-35 SEP



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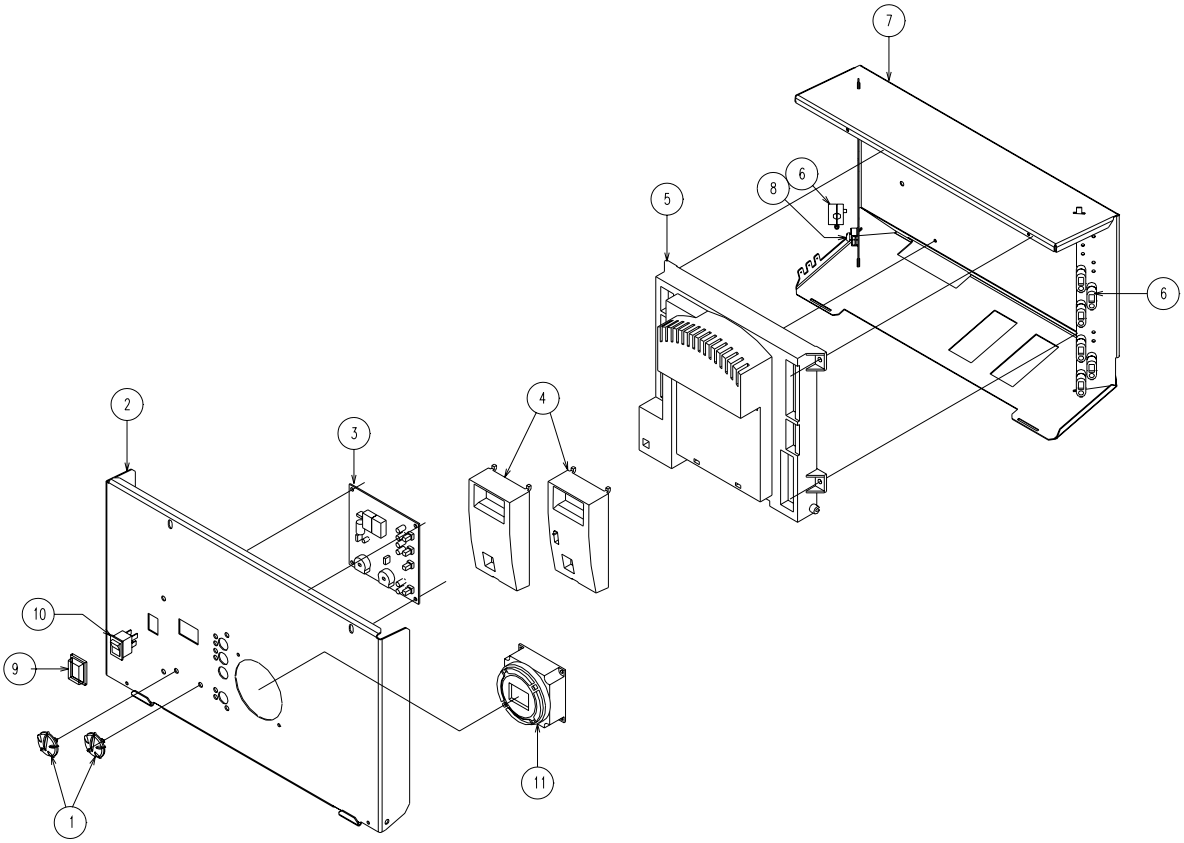
Rep.	Reference	Designation
1	N40.10637	PP. PIPE D.80 LENGTH 445
2	A00.23624	PE CAP N152 BPF 3-1/2
3	Y00.14139	FASTENING HOOK
4	Y00.10807	FIXING SYSTEM FOR FLUE PIPE
5	Y00.13849	BACK STOP PLATE FOR MZ (3355X80,4X1,5)
6	Y00.18233	RIGHT HAND CONSOLE (269,4X25X1,5)
7	V07.31963	WALL FASTENING ; 10-50 MODEL
8	Y90.33470	CHASSIS ; EQUIPPED THI 10-50
9	W07.31704	MOTOR; SELECTIVE VALVE WITH CABLE
10	E00.01005	O' RING DIA DIA 29,32 X 3,6
11	L90.24635	AUTOMATIC AIR VALVE WATTS WITH ISOLATED VALVE
12	U07.34049	HEATING FLOW; GREY; THRI SEP
13	E20.03889	SEALING AFM34D 30X21X3
14	A00.19059	PLASTIC STOPPER MAL 9 WHITE
15	V90.33015	SELECTOR VALVE KIT
16	U90.28983	HEATING RETURN UNIT
17	I20.21441	MESSING SEALED CONNECTION "OLIVE" 22/1
18	V00.23999	STOP PLATE FOR HEATING AND DHW
19	V00.21491	PROTECTING RING 1
20	I20.21452	MESSING LOCK NUT 1
21	O00.32983	RIGHT FLEXIBLE PIPE NU 1/2 LG 350
22	O00.32984	RIGHT FLEXIBLE PIPE NU 1/2 LG 550
23	U07.32871	PRIMARY OUTLET PIPE
24	L50.35152	PRESSURE SENSOR HUBA TYPE 505.91540
24	V90.35156	REPLACEMENT SET OF IMIT SENSOR BY HUBA SENSOR
25	L90.24178	SAFETY VALVE
26	I20.33459	CONNECTION 1'' -3/4''
27	L30.33738	CIRCULATING PUMP GRUNDFOS UPS15-70/130 AO S3
28	U00.19252	SUMP INLET THRC/S GREY
29	A20.23655	SIPHONIC TRAP WITH PIPE 650 MM
30	W07.36930	CONTROL BOX ; WIRED ; PROGRAMMED
31	U07.31500	GAS INLET; EQUIPPED; 1/10 - 5/25 MODEL
32	Y90.35965	WHITE COVER THRI S/10-50C
33	T25.31875	FIXING PART; UPPER COVER
34	O00.20679	STAINLESS STEEL FLEXIBLE PIPE MALE 1/4 WITH ELBOW
35	H20.32834	FRONTPANEL GREY
36	Y07.32843	COVER + FRONTPANEL
37	V07.32114	RING FOR BOILER COVER L685
38	L20.31470	SENSOR TASSERON NTC SENSOR M5 TSA-TYPE
39	L10.10607	HONEYWELL O'RING 22 X 2,5
40	V90.33616	WIRED SIT GAS VALVE SET
41	E20.06892	SEAL AFM34 D. 18,6 X 12 2 MM THICKNESS
42	L10.33774	FLANGE G 3/4" FOR SIT VALVE
43	U07.31563	GAS INLET; COMPLETE BURNER ; 10-50C MODEL
44	U07.31498	90° ELBOW ; D.80 DRILLED
45	L20.31496	SENSOR TASSERON NTC SENSOR D10X20 10K
46	T20.00582	SIGHTGLASS PYREX D.30X5
47	B59.00692	STAINLESS STEEL WASHER 30,4X25,5X0,3
48	T40.01051	INSIDE CIRCLIPS D.30 YELLOW BICHROMATE
49	L00.16673	IGNITION ELECTRODE SHORT 74,5 AV CABLE
50	L00.12950	IONISATION PROBE (SHORT 20)
51	X00.24278	BURNER SET NG/LPG FOR THR 10-50 C
52	X00.32003	BURNER RING; REMOVABLE
53	F00.26573	GLASS BRAID RING D. 12 LG. 1070
54	V07.33783	STAINLESS STEEL BOILER SHELL THRI/THI/THISION10-50

Rep.	Reference	Designation
55	A00.03141	COLORLESS PLASTIC CAP
56	C50.31464	FAN MVL-EBM RG 128/1300-3612
57	C90.31466	IGNITION TRANSFORMER ANSTOSS ZAG 2XV 01/10
58	Y00.18234	LEFT HAND CONSOLE (269,4X25X1,5)
59	E20.35446	RING FOR THE FAN
60	I20.22440	MESSING AIR REDUCER D. 310 LP 16 (POUR REGLAGE PROPANE G 31)
60	V07.35762	PLATE HEAT EXCHANGER 35KW
61	E20.23654	EXTENSIBLE SEALING D. 18 / RED SILICONE
62	L20.32178	SURFACE TEMP. SENSOR T7335D1073B
63	U00.20366	ELBOW D. 80 45°
64	C91.03071	WIRE CARRIER
65	I20.13579	BRASS NIPPLE MAL3/4-MAL3/4(LONG)
66	L20.31471	SENSOR T7335D1024B
67	W07.32303	OUTSIDE SENSOR .QAC34/101 THRI
68	E20.03890	SEALING AFM34 D 24X17X3
69	L40.32888	DOMESTICCOLDWATERFILTERSTAINLESSSTEEL D. 18,5 EXT
70	L50.35756	FLOW LIMITER 16 L / MN
71	T40.32887	COPPER SEALING D.16 INT
72	K20.23797	3/4"-1/2 " CONNECTION ; BRASS
73	K20.32885	CONNECTION ; BRASS 3/4-1/2
74	I20.33459	CONNECTION 1'' -3/4''
*	A00.28827	PLASTIC CAP MALE 1/4
*	C09.33608	CABLE 0.960.401+CONNECT. GAS VALVE SIT 848 SIGMA
*	E00.10822	EPDM LIP SEAL D. 80 75 SHORE
*	E10.12503	EPDM STICKING SEAL PIPE 6/9 LENGTH 18
*	E20.03901	SEALING QUALITY AFM34 D.11X4X3
*	E20.24399	GASKET DN 80; BLACK POUR LES RÉFÉRENCES (U00.12053) ET (U00.20366)
*	I30.31973	STOP TECHNYL D.20X19
*	U00.03505	FIXING BRACKET FOR BURNER MZ/THR
*	U00.08190	VERSILIC PIPE 6X10 LENGTH 800MM
*	U00.18996	FLEXIBLE PIPE 4X8 LG 800 MM GAS UNIT
*	V00.24191	MOUNTING KEY; HONEYWELL
*	X00.05193	FIXING BRACKET FOR IONISATION PROBE
*	X90.30472	IGNITION ANGLE WITH SCREW

CONTROL BOX



PLW0731542

Rep.	Reference	Designation
1	H20.31449	CONTROL BUTTON
2	Y07.31525	CONTROL PANEL + STICKER
3	W07.31892	INTERFACE; EQUIPPED; AGU2.303A136
4	L20.31476	COMMUNICATION MODULE CLIP-IN LPB (VOIR OPTION W07.30832)
4	L20.31477	MODULE CIRCUIT 2 CLIP-IN (VOIR OPTION W07.30833)
4	L20.31499	SUB-MODULE RELAIS CLIP-IN AGU2.511A109 (VOIR OPTION W07.30515)
5	L20.36214	ELECTRONIC CONTROL UNIT LMU64.010D136 V3.03
6	A90.27098	CABLE GRIP D=6,5 MM BLACK
6	C91.38454	CABLE FASTENING TWIST LOCK
7	Y07.31507	ELECTR. BOX
8	C19.32006	SCREW EARTH CONNECTION
9	C20.12490	TIGHT CAP FOR SWITCH
10	C20.12487	BIPOLAR SWITCH; BLACK/LIGHTNING/GREEN
11	L25.17432	TIMER GRASSLIN 230 V FM - DIGI20
*	C09.31469	CABLE WITH RECTIFIER VDU GAS VALVE
*	C09.33608	CABLE 0.960.401+CONNECT. GAS VALVE SIT 848 SIGMA
*	C09.37989	IONISATION CABLE Ø 2,5 LG 1020 MM
*	C09.37989	IONISATION CABLE Ø 2,5 LG 1020 MM
*	C90.31497	COVER KEY-TOP 4X4 THISION
*	W07.31478	WIRING OF THE CONTROL BOX
*	W07.31479	WIRING OF THE CONTROL BOX; 10-50 MODEL
*	W07.31492	CONNECTING CABLE LG LMU64/AGU2
*	W07.31508	ELECTR. CONTROL BOX + WIRING 2-13 THISION
*	W07.31542	ELECTRICAL TERMINAL BOX
*	W07.31558	ELECTR. CONTROL PANEL + WIRING 0,9-9 THISION
*	W07.31562	CONTROL BOX PROGRAMMED THRI/THI 10-50C (DT)
*	W07.32380	CONTROL BOX ; WIRED ; PROGRAMMED THI 5-25 S DT
*	W07.32381	CONTROL BOX ; WIRED ; PROGRAMMED THI 2-13 M 75 DT
*	W07.32382	CONTROL BOX; WIRED; PROGRAMMED THI 5-25 M75 DT
*	W07.32899	CONTROL BOX ; WIRED ; PROGRAMMED THRI5-25SEP(DT)
*	W07.32995	WIRING - TIMER THRI
*	W07.34114	WIRED PROGRAMMED BOX THI 5-25/28 SEP GB/DK
*	W07.34211	CONTROL BOX, PROGRAMMED, WIRED
*	W07.34228	WIRED, PROGRAMM. CONTROL BOX THRI 5-25 M75H DC
*	W07.34974	PROGRAMMED ; CONTROL BOX WIRING
*	W07.35261	CONTROL BOX ; PROGRAMMED WIRING THI 2-17
*	W07.35314	PROGRAMMED CONTROL BOX ; WIRING 2-17 B120
*	W07.35319	PROGRAMMED CONTROL BOX ; WIRING 2-17 B120 DC
*	W07.36535	WIRED & PROGRAMMED CONTROL BOX THI 5-25 B120 GB
*	W07.36536	WIRED & PROGRAMMED CONTROL BOX THI 5-25 B120 DC
*	W07.36930	CONTROL BOX ; WIRED ; PROGRAMMED
*	W07.37986	SUPPLY CABLE 230V THRI
*	W07.37991	CABLE TRANSFORMER+MASS THRI BURNER
*	W07.37992	SWITCH CABLE THRI
*	W07.37995	FAN CABLE THRI
*	W07.37996	FAN CABLE THRI
*	W07.37998	MASS CABLE THRI COVER
*	W07.38000	SENSORS CONNECTION THRI
*	W07.38001	CABLE PWM FOR THRI FAN
*	W07.38002	FAN PWM CABLE THRI 10-50C
*	W07.38004	SENSORS CONNECTION THRI 10-50 C
*	W07.38379	FAN CABLE THRI/THISION/THI 10-50
*	W09.37943	WIRING DHW SENSOR ZEM B120/SEP/M50