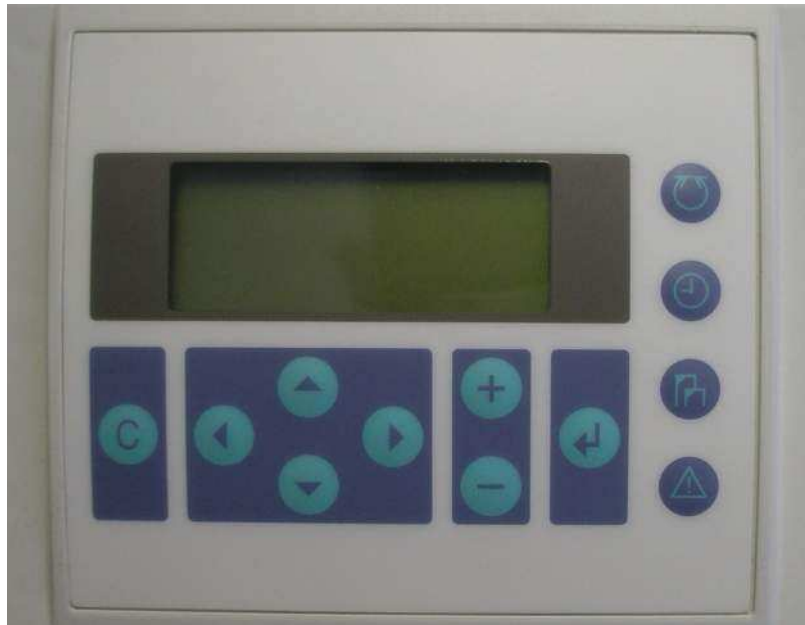


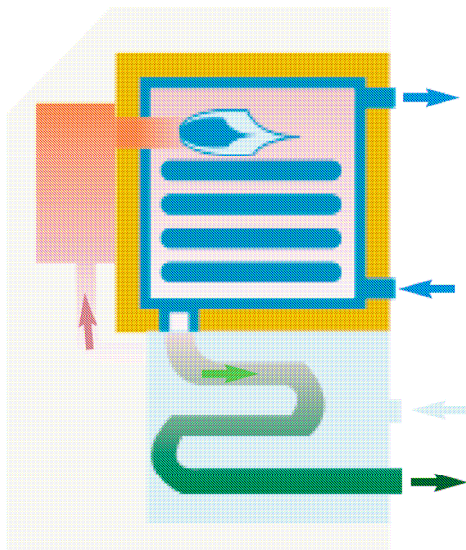
User Manual



PO Box 11 Ashton Under Lyne OL6 7TR
+44. (0) 161 621 5960 Fax +44. (0) 161 621 5966
info@atlantic2000.co.uk
www.atlanticboilers.com

CONTENTS

□	CONTROL STRATEGY GENERAL RULES.....	P3
•	Variable temperature.....	P3
•	Constant temperature.....	P4
□	PARAMETERS FOR THE BOILER STRATEGY.....	P5
□	HOW TO SET TIME AND DATE.....	P8
□	HOW TO ADJUST THE FLOW TEMPERATURE.....	P10
□	SERVICE OF THE BOILER.....	P13
□	FAULT FINDING CHART.....	P14
□	NOMENCLATURE.....	P16
□	SPARE PART LIST.....	P22

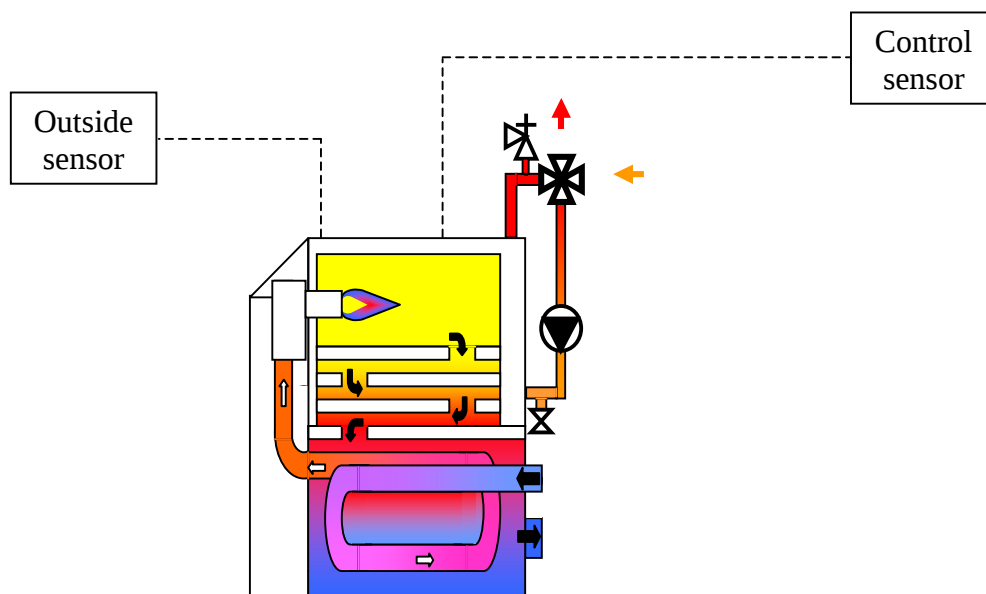


The New Generation Condensing Boiler has two distinct heat exchangers, the first of developed quality steel design and the second of high grade plastic design. The flue gases leave the first heat exchanger at temperatures below 90°C, and are then extracted from the second condensing heat exchanger at temperatures always below 50°C. For combustion air entry temperatures below 30°C, efficiencies are obtained which always exceed 92% up to 99%. These conditions apply throughout the year in the United Kingdom.

CONTROL STRATEGY GENERAL RULES

- Control Strategy: Variable temperature (Weather compensation)

The 4-way valve controls the flow temperature to the heating system. Once the boiler is enabled (if that is the case) at full load requirement, the 4-way valve is fully opened. All the heat generated is then sent to the system. In the eventuality of a return water temperature below 60°C the 4-way valve function will be overridden in order to protect the boiler against corrosive condensation occurring inside the main heat exchanger. Once the return temperature requirement is satisfied, the weather compensation takes over control of the 4-way valve. The flow temperature to the heating system is set in the controller according to the outside temperature and heating curve. The boiler will achieve the required flow temperature (for example: outside temperature is 0°C, the required temperature is 82°C; outside temperature is 20°C, the required temperature is 20°C) at the control sensor location (usually in the low loss header or the balancing & sedimentation vessel) The burner starts and stops according to the boiler flow & return. Once enabled, the boiler is totally independent and looks after itself.

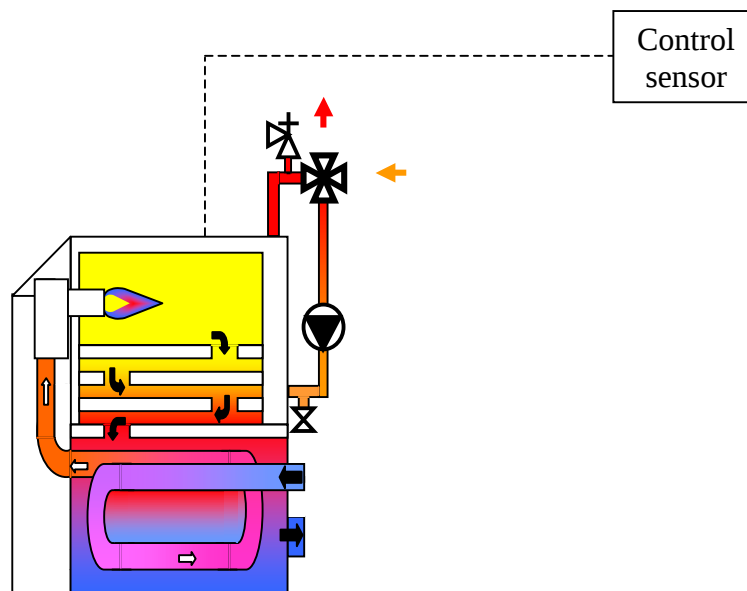


BMS Controls

The Boiler can be supplied with a built-in BMS facility with 2 volt-free contacts. One is used to enable the boiler and the other is a common fault signal. The BMS sequences the boiler using the enable signal facility. When enabled, each boiler uses its own controller to satisfy the heat requirements. Consequently allowance should be made for one control sensor per boiler to be installed in the low loss header or balancing & sedimentation vessel (supplied with the boiler, pocket sensor N31)

- Control Strategy: Constant temperature

The 4-way valve controls the flow temperature to the heating system. Once the boiler is enabled (if this is the case) at full load requirement, the 4-way valve is fully opened. All the heat generated is then sent to the system. In the eventuality of a return water temperature below 60°C, the 4-way valve function will be overridden in order to protect the boiler against corrosive condensation occurring inside the main heat exchanger. Once the return temperature requirement is satisfied, the constant temperature management takes over control of the 4-way valve. The flow temperature is set using the potentiometre (N10). The boiler will achieve the required temperature at the control sensor location (usually in the low loss header or balancing & sedimentation vessel). The burner start and stops according to the boiler flow & return temperature. Once enable, the boiler is totally independent and looks after itself.



BMS Controls

The Boiler can be supplied with a built-in BMS facility with 2 volt-free contacts. One is used to enable the boiler and the other is a common fault signal. The BMS sequence the boiler using the enable signal facility. When enabled, each boiler use its own controller to satisfy the heat requirements. Consequently allowance should be made to install one control sensor per boiler in a low loss header or balancing & sedimentation vessel (supplied with the boiler, pocket sensor N31).

With a cascade of boilers (controlled by the BMS) serving a low loss header or balancing & sedimentation vessel, with a special order, the constant flow temperature can be set to each boiler from the BMS using a 0-10V signal.

PARAMETERS FOR THE BOILER STRATEGY

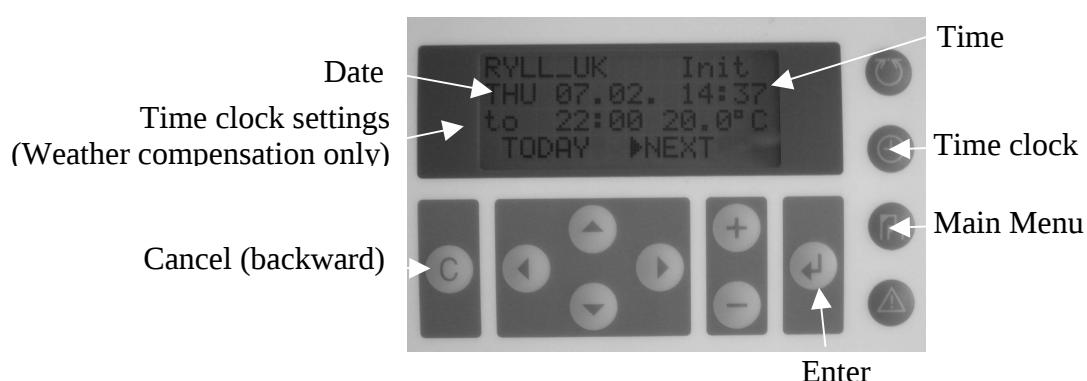
The R series boiler comes with a Honeywell controller, which supervises the boiler strategy.

The front display is mainly for use of the Specialist Engineer, nevertheless general information on the boiler settings can be easily read.

A password is required to change the settings, but all the parameters use in the control strategy can easily be checked.



When the power is switched on the main display will show "POWER FAILURE" (fig1), to show the general main display, press **C**. The top right hand side of the display shows "INIT". This means that the boiler is going through a checking sequence (diverting valve closing)



General Display

After 5-10 minutes "RUN" will appear in the top right hand side corner, the shunt pump will start and the boiler will be ready to fire.

Different parameters can be checked.

To access the parameters, press **rh** as shown on

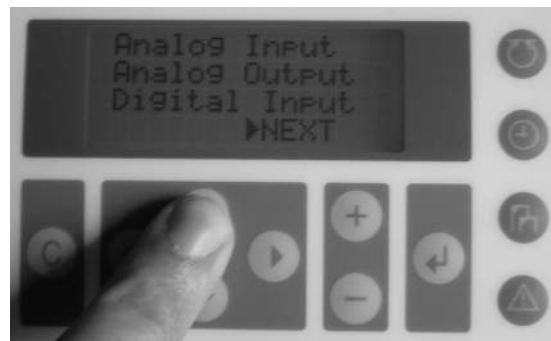


Then press  as shown.



Page 1 with the 3 first categories of the menu will appear

- Analog Input
- Analog Output
- Digital Input



To access one category of the page 1 menu, position the arrow in front of the selected category using  &  and then press 

To access the other Menu category on page 2-3-4..., position the arrow in front of "NEXT" and then press  once for page 2, twice for page 3....

Each menu category contains a number of parameters. For example in "ANALOG INPUT" you can find the following parameters:

- | | |
|-------------------|---|
| • DHW_TEMP | Domestic hot water sensor temperature |
| • HTG1_TEMP | Boiler control sensor temperature
(compare P2, variable temperature) |
| • BAL_VESSEL_TEM | Boiler control sensor temperature
(compare P2, constant temperature) |
| • BOILER_FLOW_TEM | Internal boiler flow temperature |
| • BOILER_RET_TEM | Internal boiler return temperature |

You can select one of the parameters by moving the arrow in front of the chosen parameter using  & , then press  to display the value of the parameter

For example, should you wish to see the internal boiler flow temperature the display will show:



To come back 1 step backward, press  once. To come back to the main display, press  until the main display is shown.

Below is a table of the most important parameters that can be checked by the user:

Parameter	Parameter name (controller)	Menu location
Boiler flow temperature (internal)	boiler_flow_temp	Analog Input
Boiler return temperature (internal)	boiler_return	Analog Input
Boiler flow temperature sent from boiler to sytem (strapped or pocket sensor) constant temperature startegy (cf p2)	bal_vessel_temp	Analog Input
Boiler flow temperature sent from boiler to sytem (strapped or pocket sensor) variable temperature strategy (cf p2)	HTG1_temp	Analog Input
DHW temperature (if controlled by the boiler)	DHW_temp	Analog Input
Outside temperature (outside sensor)	outside_temp	Analog Input
Boiler flow temperature, sent from boiler to sytem, set point, constant temperature strategy (accurate reading of potentiometer)	bsv_set_point	Analog Input
Boiler flow temperature, sent from boiler to sytem, set point, variable temperature strategy (accurate reading of potentiometer)	HTG1_set_point	Analog Input
DHW temperature set point (if controlled by the boiler)	DHW_set_point	Pseudo Analog
Boiler shunt pump	shunt_pump	Digital Output
DHW pump (if controlled by the boiler, domestic use only)	primary_pump	Digital Output
HC1 pump (if controlled by the boiler, domestic use only)	HTG1_pump	Digital Output

HOW TO SET TIME AND DATE

To set the time and date:

- Press 
- Press 
- Press 
- Use  &  to display the number “3” and then press 



- Use  &  to display the number “3” and then press 
- Use  &  to display the number “3” and then press 
- Use  &  to display the number “3” and then press 
- The word “CHANGE” appears in the bottom left corner
- Press 
- The menu of the time clock is now displayed with the following category:

- System Time
- Daily
- Weekly
- Annual



- Move the arrow in front of “SYSTEM TIME” using  & 
- Press 
- The following display is now shown



- Move the arrow in front of “DATE/TIME” using  & 
- Press 
- The following display is now shown, move the arrow up and down using  &  in front of the date or the time and then press  to select and use  &  to adjust it .



- The screen will show “MANUAL TIME SYNC”, press 
- To come back 1 step backward, press  once. To come back to the main display, press  until the main display is shown.

HOW TO ADJUST THE FLOW TEMPERATURE

- Constant temperature control (compare p2):

To adjust the flow temperature from the boiler, use the knob. An accurate reading of the temperature can be read on the display under the following parameter: “BAL_VESSEL_SETPOINT” (see table p5). The boiler will maintain the temperature at the point where the control sensor is installed (usually inside the balancing vessel).



- Variable temperature control, weather compensation (compare p2):

When this option is chosen, the boiler will adjust the flow temperature (from boiler to system) according to the outside temperature read by the controller by the outside sensor. The outside sensor reads the outside temperature, the controller uses a heating curve to adjust the system flow temperature in order to achieve a nominal room temperature (pre-set @ 20°C from 06:00AM to 10:00PM for Ryll_UK program). This room temperature can be read on the general display. The time clock also has a pre-set night set-back which means that during the night the flow temperature to the system will be slightly lower (pre-set @ 15°C from 10:00PM to 06:00AM for Ryll_UK program). Those temperatures can be altered in order to achieve a lower or higher system flow temperature.



Should the temperature in the building be too warm or too cold, you can adjust the flow temperature by increasing or decreasing the nominal room temperature.

To adjust the room temperature:

- Press 
- Press 
- Press 
- The blinking number “5” appears

- Use  &  to display the number “3” and then press 
- Use  &  to display the number “3” and then press 
- Use  &  to display the number “3” and then press 
- Use  &  to display the number “3” and then press 
- The word “CHANGE” appears in the bottom left corner
- Press 
- The menu of the time clock is now displayed with the following category:

- System Time
- Daily
- Weekly
- Annual



- Move the arrow in front of “DAILY” using  &  then press 
- Press 
- Move the arrow in front of “MODIFY” and then press 
- The following menu appears:

There are 3 different time clock programs:

- ❖ Ryll_UK
- ❖ Ryll_UK_weekend
- ❖ Ryll_UK_Friday



Ryll_UK programme is used for Mondays, Tuesdays, Wednesdays and Thursdays

Ryll_UK_weekend programme is used for Saturdays and Sundays

Ryll_UK_Friday programme is used for Fridays

Those programmes all vary in term of night set back duration (from 10:00PM to 06:00AM for Ryll_UK, from 10:00PM to 08:00AM for Ryll_UK_weekend) and in term of controls for DHW pump, heating pump, shunt pump, DHW temperature...

To adjust the room temperature, you need to access the time clock programme, for example, should you want to change the time the night-set back ends, just access Ryll_UK programme, the following screen appears



- Move the arrow in front of “06:00 room_tem” and then press 
- The following display will appear, this means that from 6:00AM the room temperature is set @ 20°C. Should you want to change the time or increase the temperature move the arrow  &  in front of the date or the time and then press  to select and use  &  to adjust it . Repeat the procedure to change the time and temperature during the day. Should you wish to keep the same room temperature night & day please set any “room-tem” to the same settings
- The above procedure shows how to adjust the room temperature (and consequently the flow temperature for the “RYLL_UK” program should you wish the change to be valid for all day of the week, repeat the procedure in the “Ryll_UK_weekend” and “Ryll_UK_Friday” programs.



Should any clarification be required, please contact ATLANTIC:

0161 621 5960

SERVICE OF THE BOILER

Atlantic advises that the R series is serviced

- ❖ Every year or every 2500 to 3000 hours run (whichever comes first) for gas or LPG fired boilers
- ❖ Every six-months or every 1500 to 2000 hours run (whichever comes first) for oil, kerosene or rapeseed oil fired boilers

To check the hours run:

- From main display
- Press 
- Press 
- Press 
- Move the arrow down in front of "HOURS RUN" using  &  and press 
- Move the arrow down in front of "BURNER_LOW" using  & 
- Press 
- The following display appears and give the number of hours for which the burner has been firing since commissioning



FAULT FINDING CHART

Indication		Likely cause & possible remedy	
A	Nothing happen at switch on	A1	Check the main switch is on (N1)
		A2	Check mains power on the boiler
		A3	Check boiler fuses (N2)
		A4	Check all gasses valves are turned on
		A5	Check that oil supply is turned on
		A6	Check the firevalves (if installed)
		A7	Check the transformer (N30)
B	Switch is on but fuse keeps on blowing	B1	Check the shunt pump (N9) for overload
		B2	Check the DHW pump overload (if controlled with the boiler)
		B3	Check Heating pump overload (if controlled with the boiler)
		B4	Check the secondary DHW pump overload (if controlled with the boiler)
		B5	Disconnect the fan plugs (N3), replace the fuse and reconnect it. Should the fuse blow again, please ring Atlantic.
		B6	Check the limit stats (N18,19,21) (no live on earth connection)
		B7	Check the pressure board (N8) disconnect the pressure board power supply plug (N37), replace the fuse and reconnect it. Should the fuse blow again, please ring Atlantic.
		B8	Check the burner, disconnect the burner plug (N5), replace the fuse and reconnect it. Should the fuse blow again, please ring Atlantic.
		B9	Check the boiler diverting valve (N7), (disconnect terminal 6 & 7 or 9 & 10 on X1 control box (N27), replace the fuse and reconnect it. Should the fuse blow again, please ring Atlantic.
C	Boiler is switched on, burner is running, boiler is warm, but system is cold	C1	Check that all the system pumps are running, valves are open and strainers are clean.
		C2	If boiler is running at constant temperature, check that the potentiometre (N10) is set correctly. Precise adjustment can be done using the display : (Analog Input, "Bsv set point")
		C3	Check the enable signal if boiler enable by BMS (terminal 11 or 13 on X1 control box)
		C4	Check the control sensor (terminal 12 & 14 on X1 control box)
		C5	Check that the temperature on the honeywell controller is relevant (Analog Input, "Bal vessel temp" or "Htg1 temp")
		C6	Check the diverting valve for any failure and manually move it
		C7	Cool down the boiler and check that the boiler flow & return temperature (Analog Input, "Boiler_flow_temp" & "Boiler_return_temp" are rising simultaneous, if not check the boiler shunt pump (N9)
D	Display shows "Comb_fault"	D1	Press the pressure reset button (N11)
		D2	Check the flue ways for any obstructions, clear if necessary.
		D3	Check that the condensate drain (N15) is on the "operation position"
		D4	Check that the flue is not filled with condensate
		D5	Check that there are no obstructions to condensate drain
		D6	Check that the condensing heat exchanger (N12) is filled with water
		D7	Check that the extracting fan(s) (N13) have correct rotation (anti clock-wise)
		D8	Check the pressure board fuse (N14)
		D9	Check the fan plug (N3)
		D10	Check that the silicone tube is clear and connected to P2 on the pressure switch (N16) and the combustion chamber
		D11	Check that all connections on the pressure board (N8) are tight
		D12	Check that the main heat exchanger (N20) is clean, if not contact Atlantic or service the boiler.
		D13	Check that the pressure in the combustion chamber is -0.25mbar using an analyser and the inspection point (N17), if not contact Atlantic

E	Display shows "Burner_fault" and burner locked out	E1	Reset the burner and if fault occur again then:
		E2	Check that the fuel supply is sound
		E3	Check that the burner combustion air supply pipe is not obstructed (N4)
		E4	Check that there is no recirculation from flue gases into fresh air supply (balanced flue)
		E5	Check that the boiler combustion air supply pipe is not obstructed (N6)
		E6	Check that the flue is installed according to the clean air act (contact Atlantic if necessary)
		E7	Refer to burner manual
F	Display shows "Limit_100_fault"	F1	Wait until boiler temperature fall and then remove the cap and reset the 100°C high-limit stat (N18) if problems occurs again before warming then change the high limit stat
		F2	Check that all the system pumps are running, valves are open and strainers are clean.
		F3	Check for air locks in the boiler
		F4	Check that the shunt pump have correct rotation (N9)
		F5	Check that the shunt pump (N9) is running on speed II or III
G	Display shows "Limit_95_fault"	G1	Wait until boiler temperature fall and then remove the cap and reset the 95°C high-limit stat (N19) if problems occurs again before warming then change the high-limit stat
		G2	Check that the main heat exchanger (N20) is clean, if not contact Atlantic or service the boiler.
H	Display shows "Limit_98_fault" (Boilers above 300kW)	H1	Wait until boiler temperature fall and then remove the cap and reset the 98°C high-limit stat (N19) if problems occurs again before warming then change the high limit stat
		H2	Check that all the system pumps are running, valves are open and strainers are clean.
		H3	Check for air locks in the boiler
		H4	Check that the shunt pump have correct rotation (N9)
		H5	Check that the shunt pump (N9) is running on speed II or III
I	Leak on the bottom part of the mild steel heat exchanger	I1	Condensing occurring in the mild steel heat exchanger, failure of back-end protection, check the diverting valve (N7) (stuck or fail)

NOMENCLATURE

N1	Main Switch
N2	Boiler fuse
N3	Fan Plug
N4	Pre heated air pipe
N5	Burner plug
N6	Fresh air inlet
N7	Diverting valve
N8	Pressure board
N9	Shunt pump
N10	Potentiometre
N11	Pressure reset button
N12	Condensing Heat exchanger
N13	Fan
N14	Pressure board fuse
N15	Condensate drain
N16	Pressure switch
N17	Inspection point
N18	High limit stat 100
N19	High limit stat 95
N20	Main heat exchanger
N21	High limit stat 98
N22	Boiler flow sensor
N23	Boiler return sensor
N24	Neutralizer
N25	DHW flow
N26	DHW return
N27	X1 control panel
N28	XL40 Honeywell Display
N29	High limit stat lamp alarm
N30	Transformer
N31	Boiler pocket sensor (control)
N32	Boiler strapped sensor (control)
N33	Flue gas test point
N34	Plastic plate
N35	Condensing exchanger front cover
N36	Cleaning panel
N37	Pressure board power supply
N38	Boiler flow
N39	Boiler return
N40	Flue connection
N41	High limit stat reset
N42	Drain
N43	Safety valve
N44	Handle
N45	Outside sensor



Boiler sensor

Pressure switch



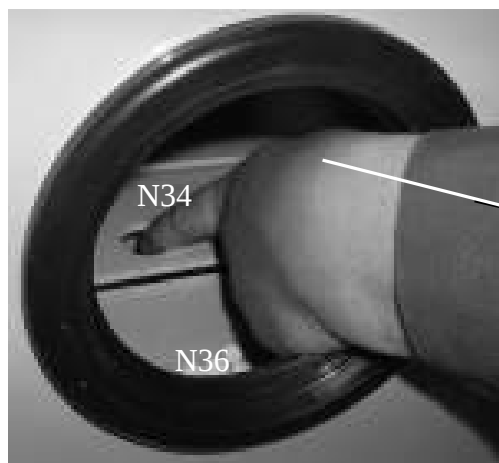
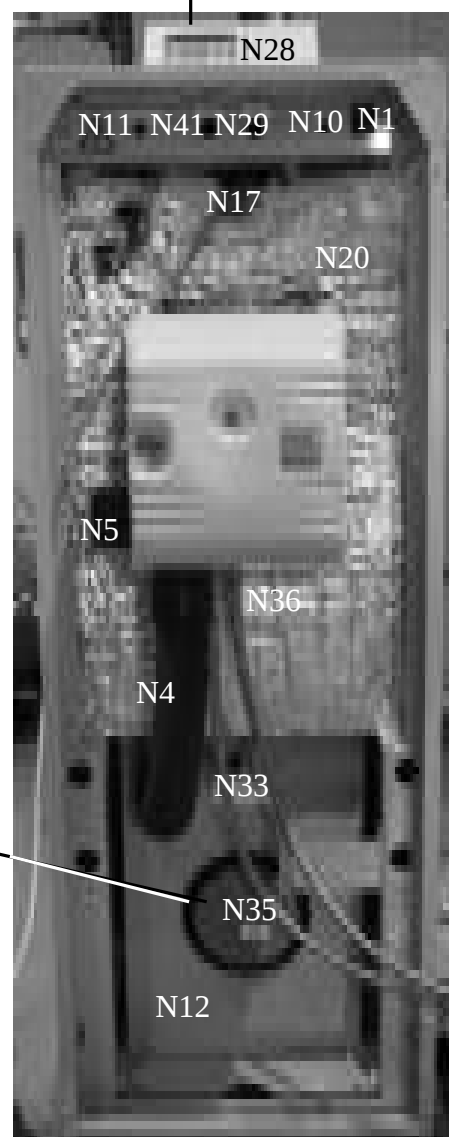
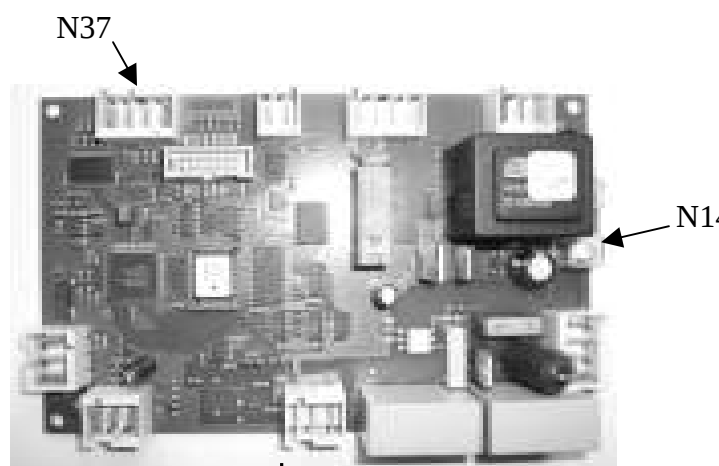
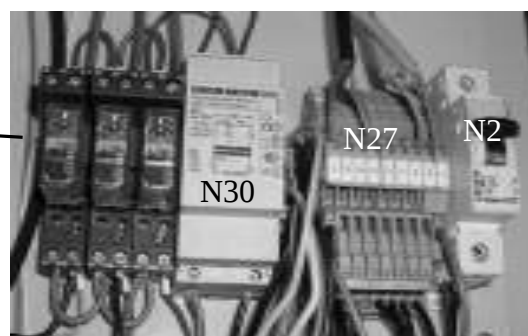
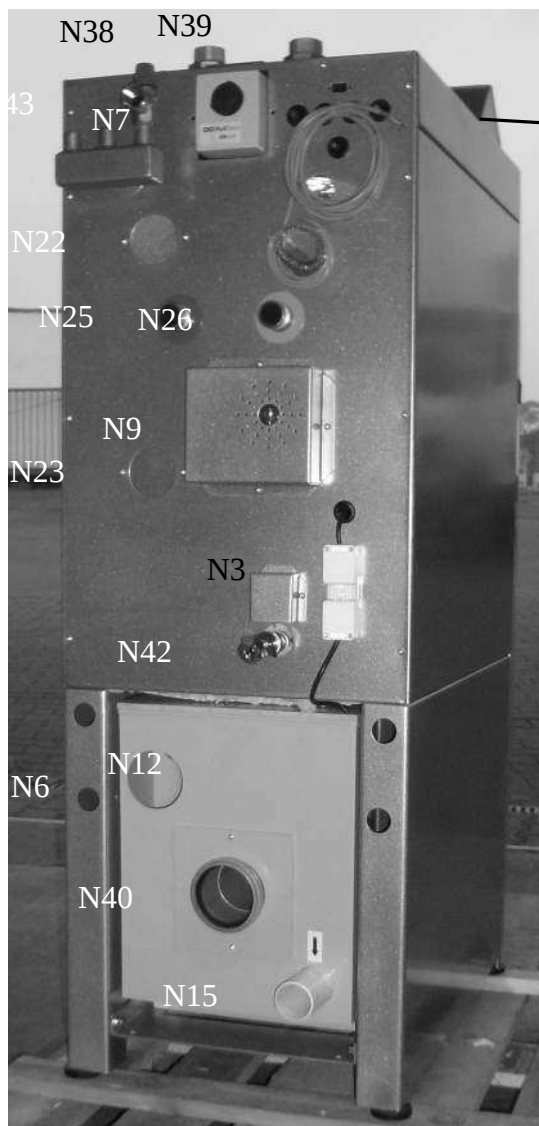
Strapped sensor

Outside sensor

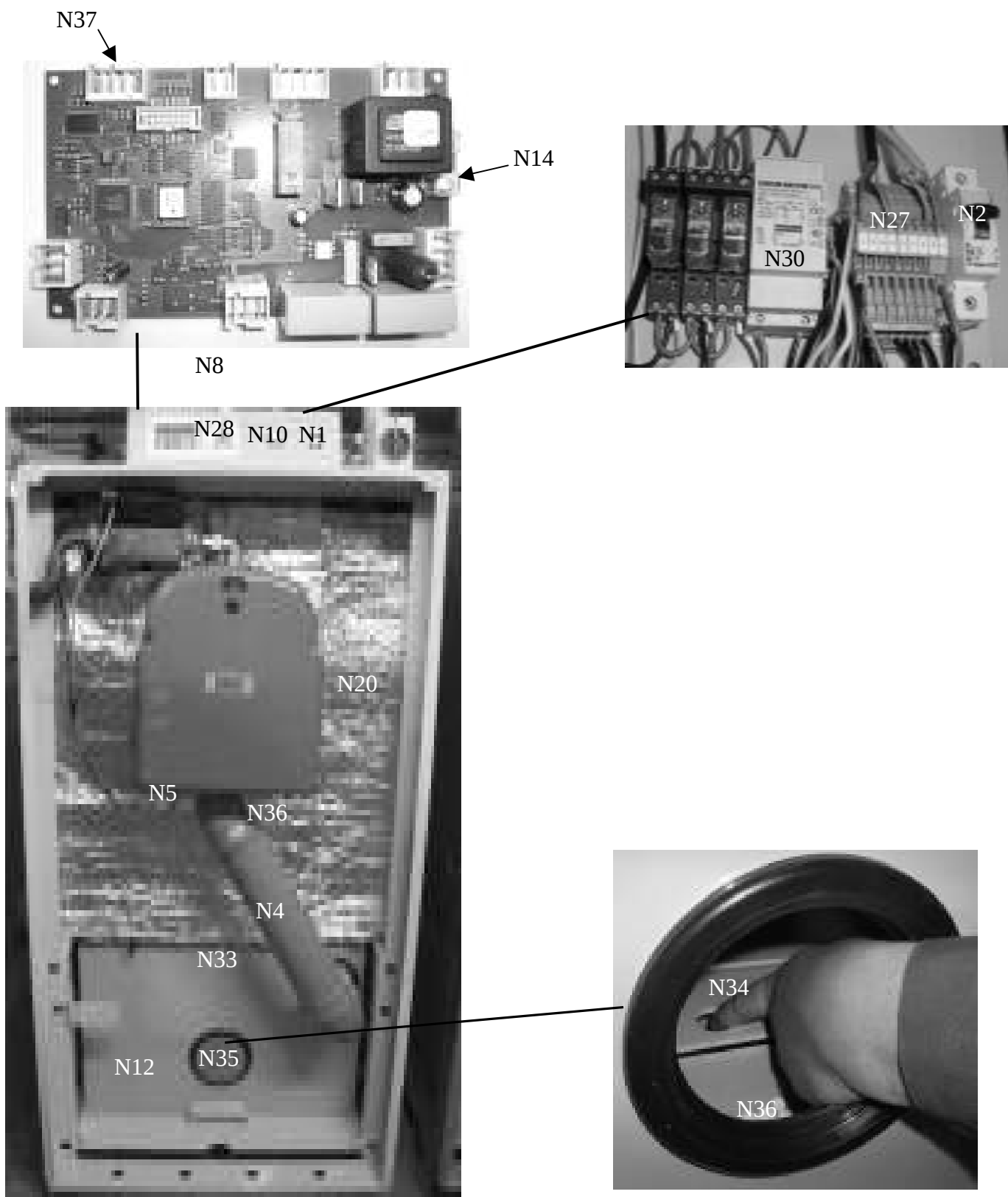


Handle

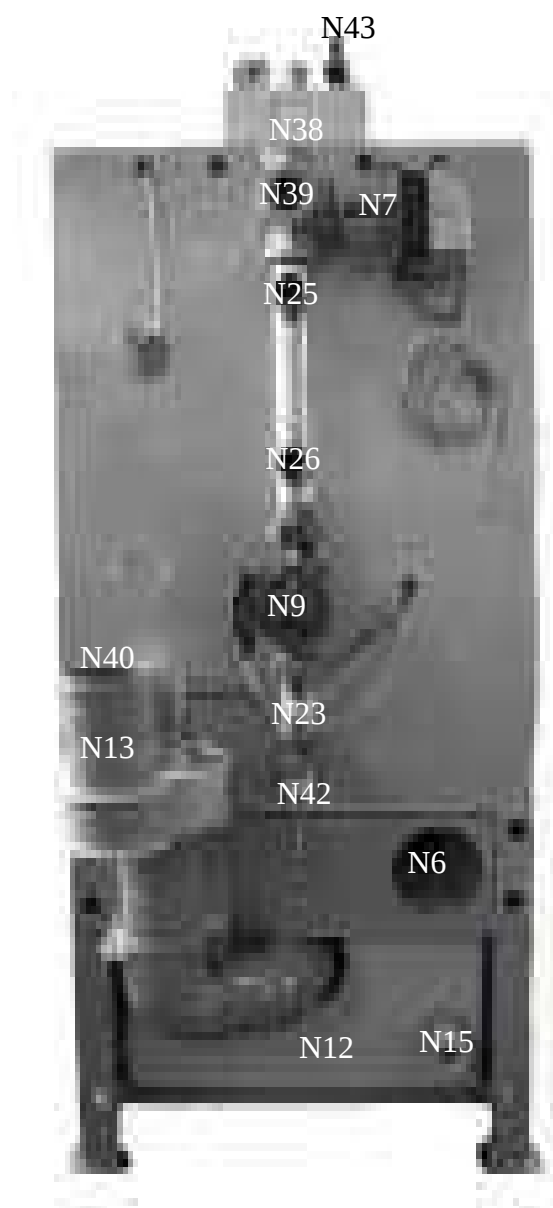




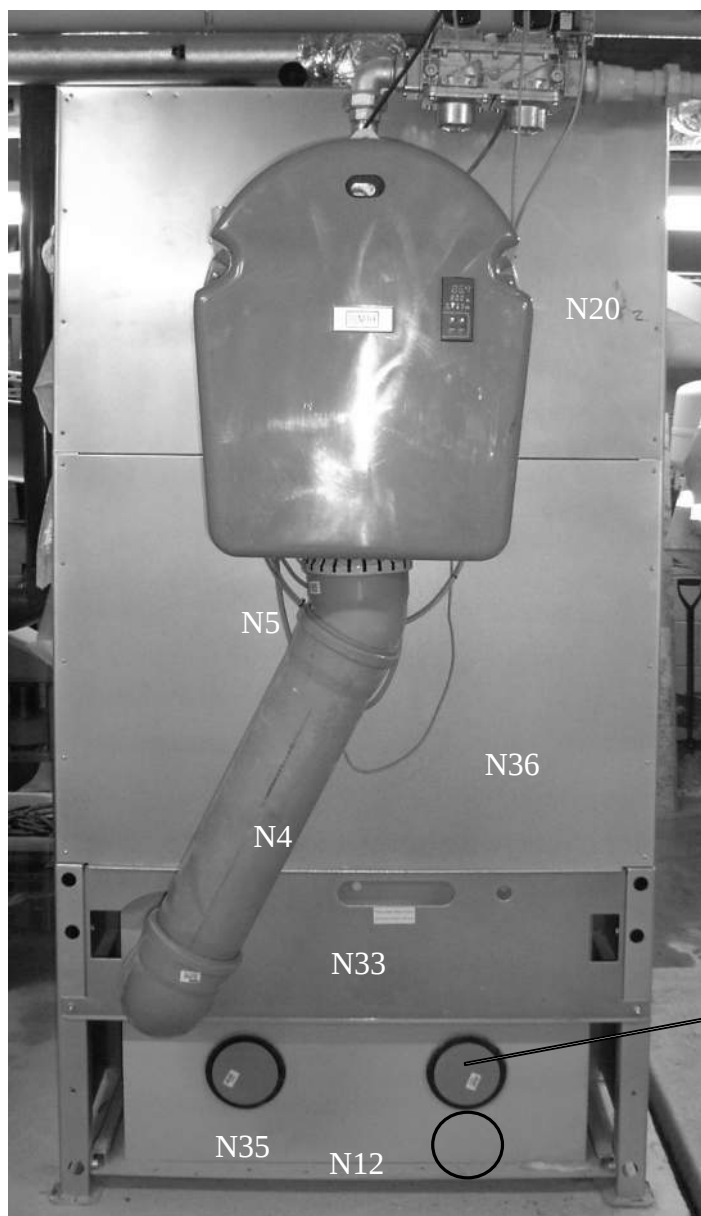
R22/22; R22/40; R22/60



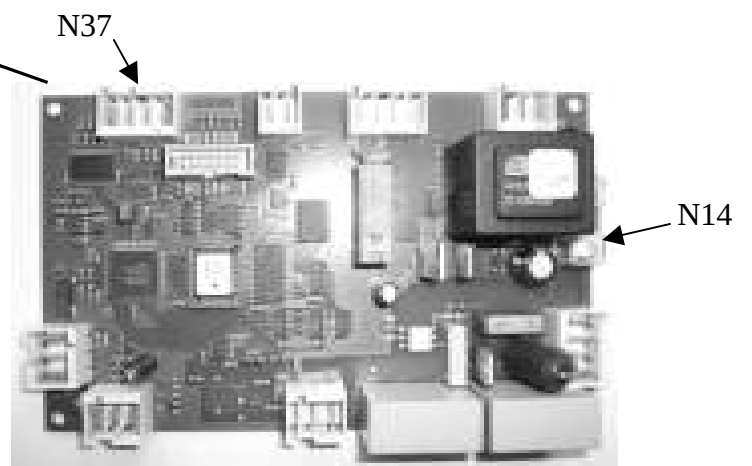
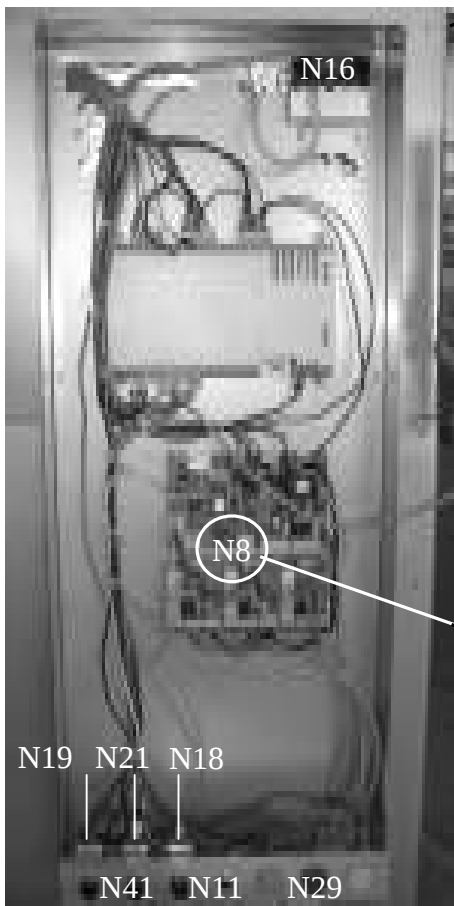
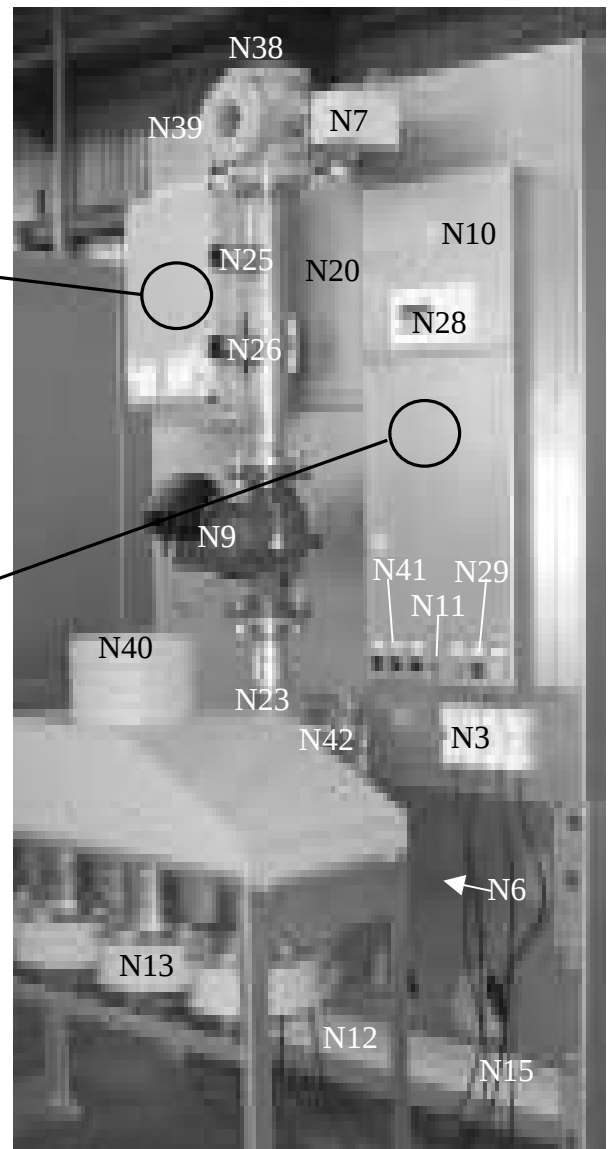
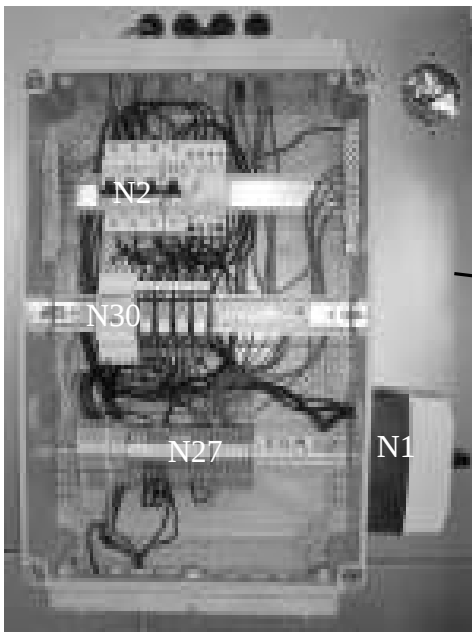
R22/90; R22/150 front view



R22/90; R22/150 back view



R22/300; R22/303; R22/400; R22/500 front view



R22/300; R22/303; R22/400; R22/500 back view

SPARE PART LIST

Part	Part number
Main fan Pressure Board (N8)	25814
Extra fan Pressure Board (above 150 kW)	25815
Fan 93 W DN 100 (N13)	25816
Pressure switch (N16)	25817
Honeywell controller XL 40	25818
Honeywell display (N28)	25819
Honeywell cable from display to control box	25820
Pocket sensor (N22 & N23 & N31)	25821
Strapped sensor (N32)	25822
Boiler outside sensor	25823
100°C High-limit stat (N18)	25824
98°C High-limit stat (N21)	25825
95°C High-limit stat (N19)	25826
Diverting valve motor (above 90 kW)	25827
Diverting valve motor (below 90 kW)	25828
1/2" safety valve	25829
High-limit stat lamp (N29)	25830
Flue gas test point cap	25831
Silicone tube 80cm	25832
Transformer (N30)	25833
R22/22 shunt pump (N9) UPS 25-40	25834
R22/40 shunt pump (N9) UPS 25-60	25835
R22/60 shunt pump (N9) UPS 25-60	25836
R22/90 shunt pump (N9) UPS 32-80	25837
R22/150 shunt pump (N9) UPS 40-60	25838
R22/150X shunt pump (N9) UPS 40-60	25839
R22/300 shunt pump (N9) UPS 50-60/2F	25840
R22/303 compact shunt pump (N9) UPS 50-60/2F	25841
R22/400 and R22/500 shunt pump (N9) UPS 65-120F	25842
R22/22, R22/40 and R22/60 diverting valve (N20) 1"	25843
R22/90 diverting valve (N20) 1"	25844
R22/150 and R22/150X diverting valve (N20) DN 50	25845
R22/300 and R22/300 compact diverting valve (N20) DN 65	25846
R22/400 and R22/500 diverting valve (N20) DN 80	25847