Compact fs

GAS FLOOR STANDING BOILERS

- *compact size: only 35 cm width*
- *cast – iron heat exchanger*
- *continuous electronic flame modulation*
- *self – check automatic control system*
- *double Central Heating temperature range*
- *remote programmer and outdoor probe option*

Compact FS

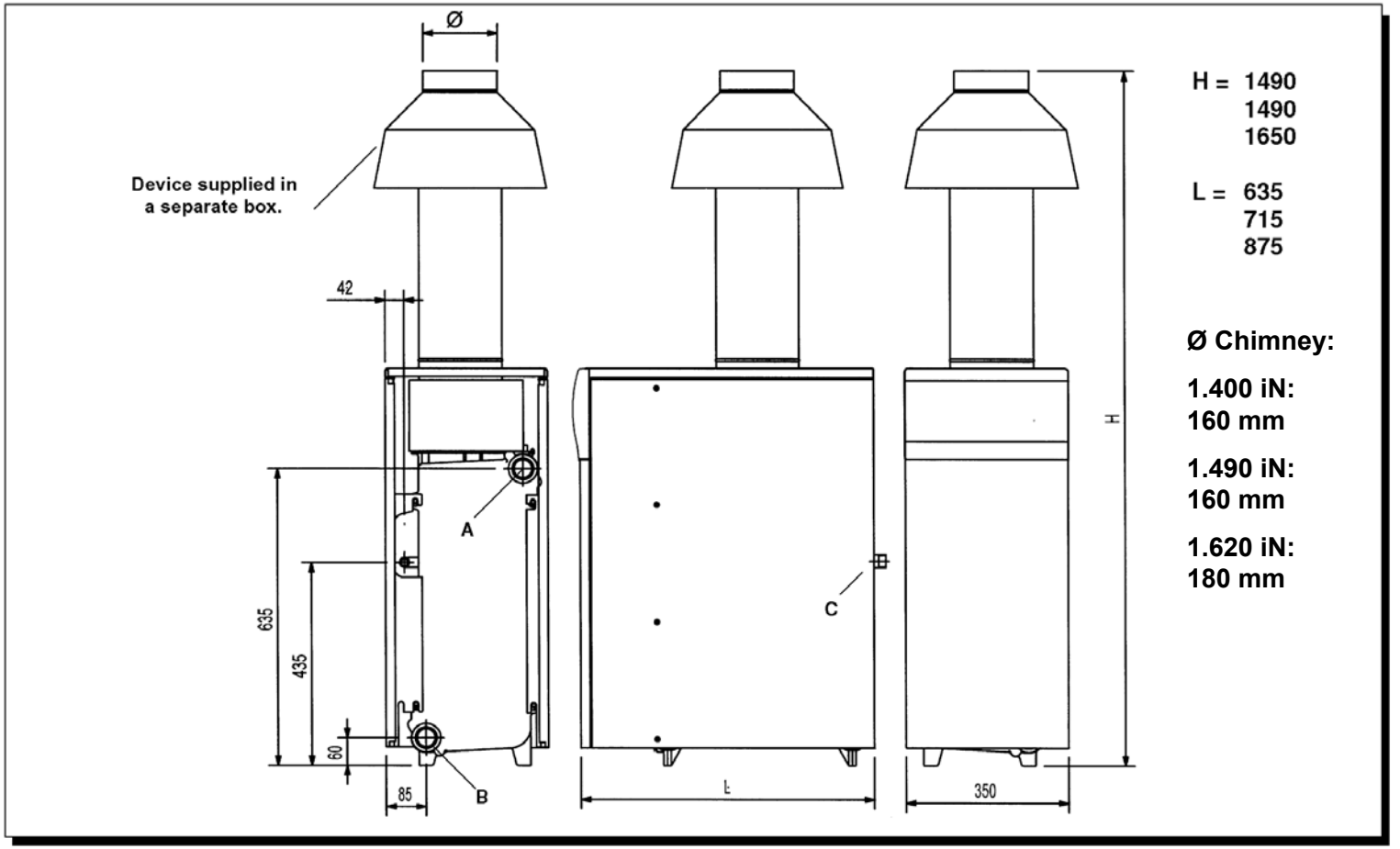
GAS FLOOR STANDING BOILERS

Heating Only and Conventional Flue

Range of models:

Compact FS 1.400 iN – 40 kW (6 elements)
Compact FS 1.490 iN – 49 kW (7 elements)
Compact FS 1.620 iN – 62 kW (9 elements)

DIMENSIONS (mm)



A - Heating Flow: 1 1/4” f

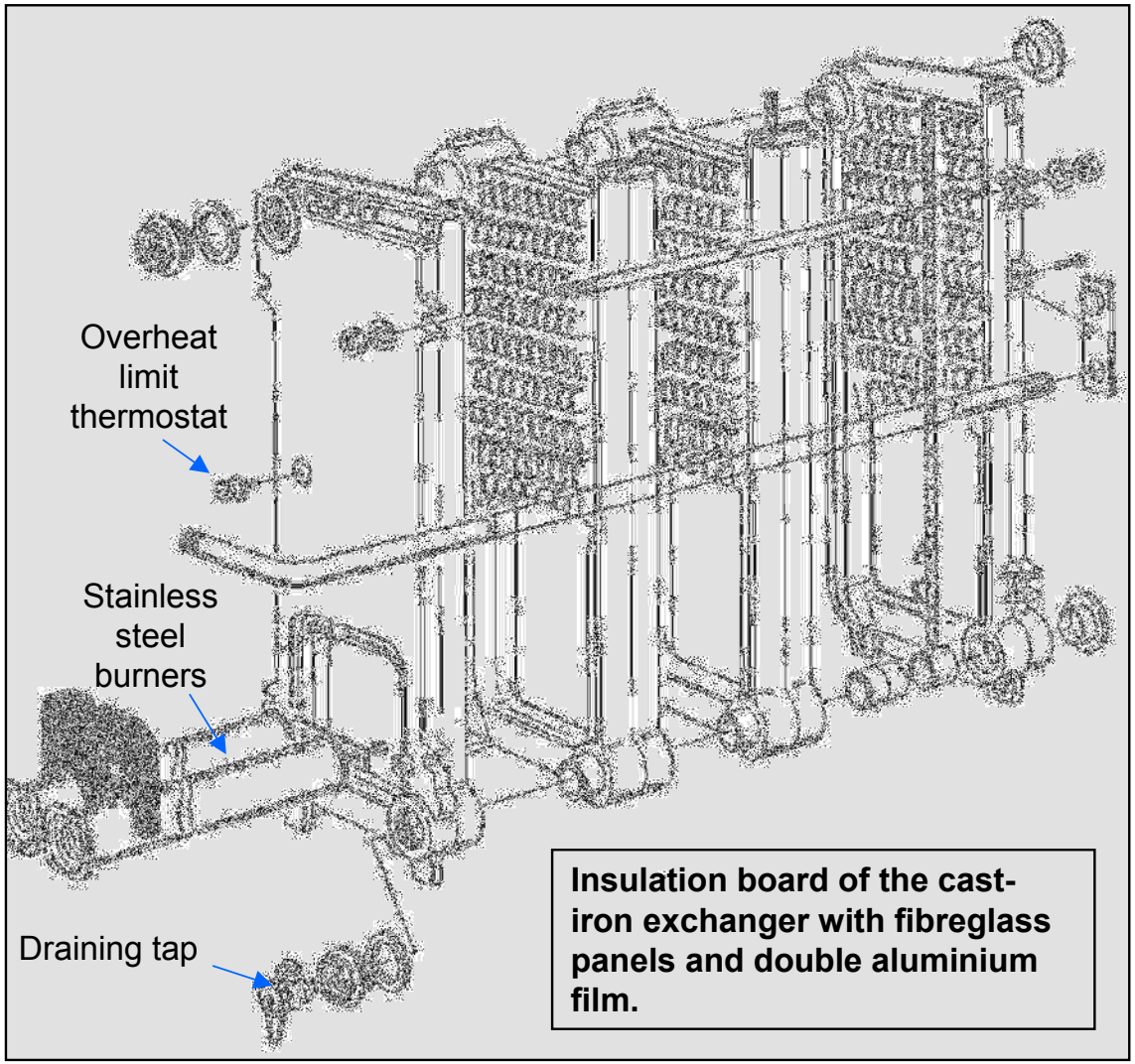
B - Heating Return: 1 1/4 f

C - Gas Connection: 3/4” m

CAST-IRON EXCHANGER

Water contents

6 elements:	**17,4 l**
7 elements:	**20,2 l**
9 elements:	**25,8 l**



Insulation board of the cast-iron exchanger with fibreglass panels and double aluminium film.

TECHNICAL DETAILS

Compact fs

- Electronic flame modulation
- Gradual automatic ignition (soft light)
- Gas valve with double coils and modulating device
- Stainless steel burners
- Connection to DHW cylinder option
- Heating-mode timer option on the control panel
- Electronic temperature control by NTC probe

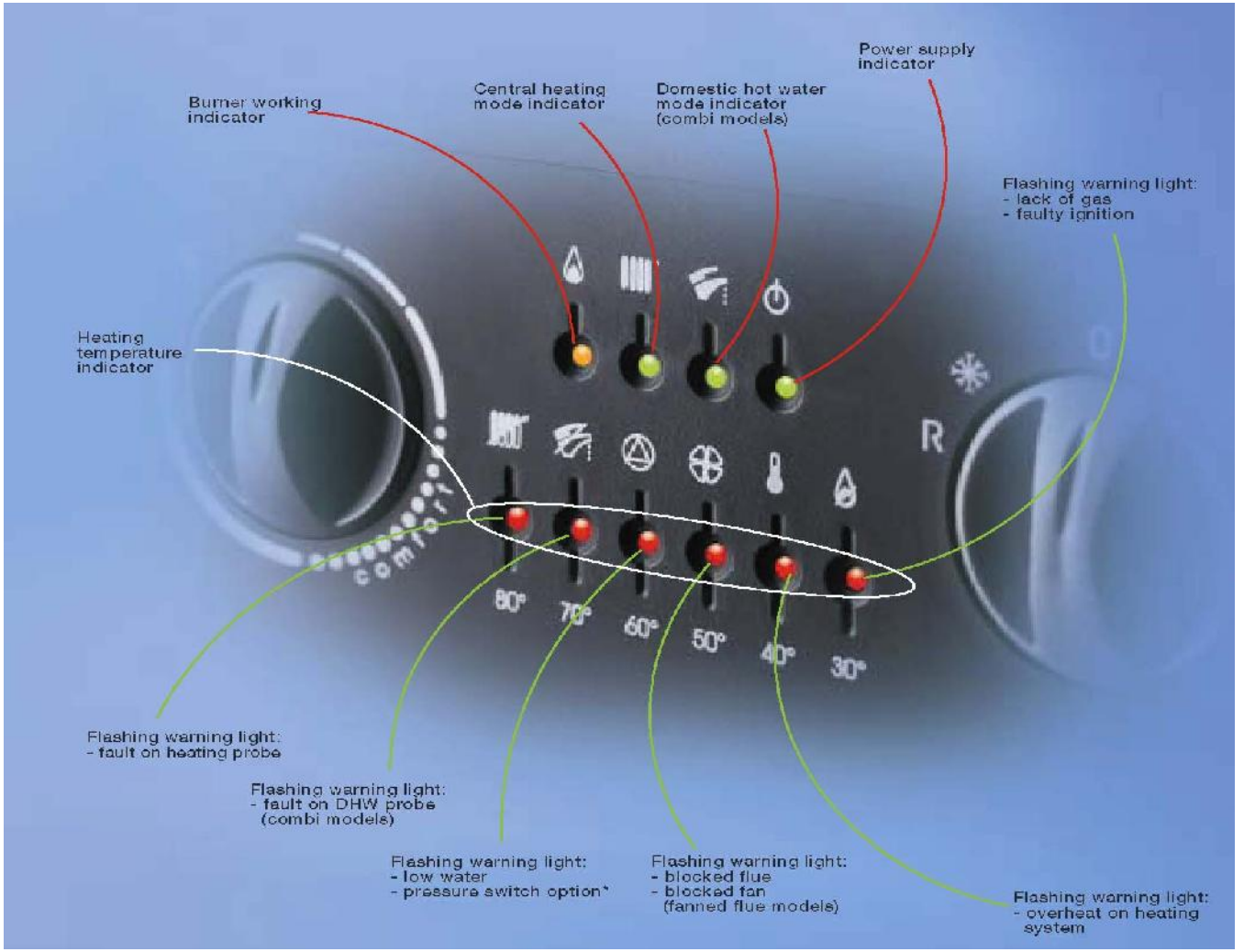
		1.400 iN	1.490 iN	1.620 iN
Max Output	kW	40	48,7	62,2
Min. Output	kW	20,6	24,5	31,6
Max Water Pressure	bar	3		
Type of gas		natural gas or LPG		
Flue temperature G20	°C	120	136	122
Power supply	W	15		
Weight	kg	150	174	224

CONTROL AND SAFETY DEVICES

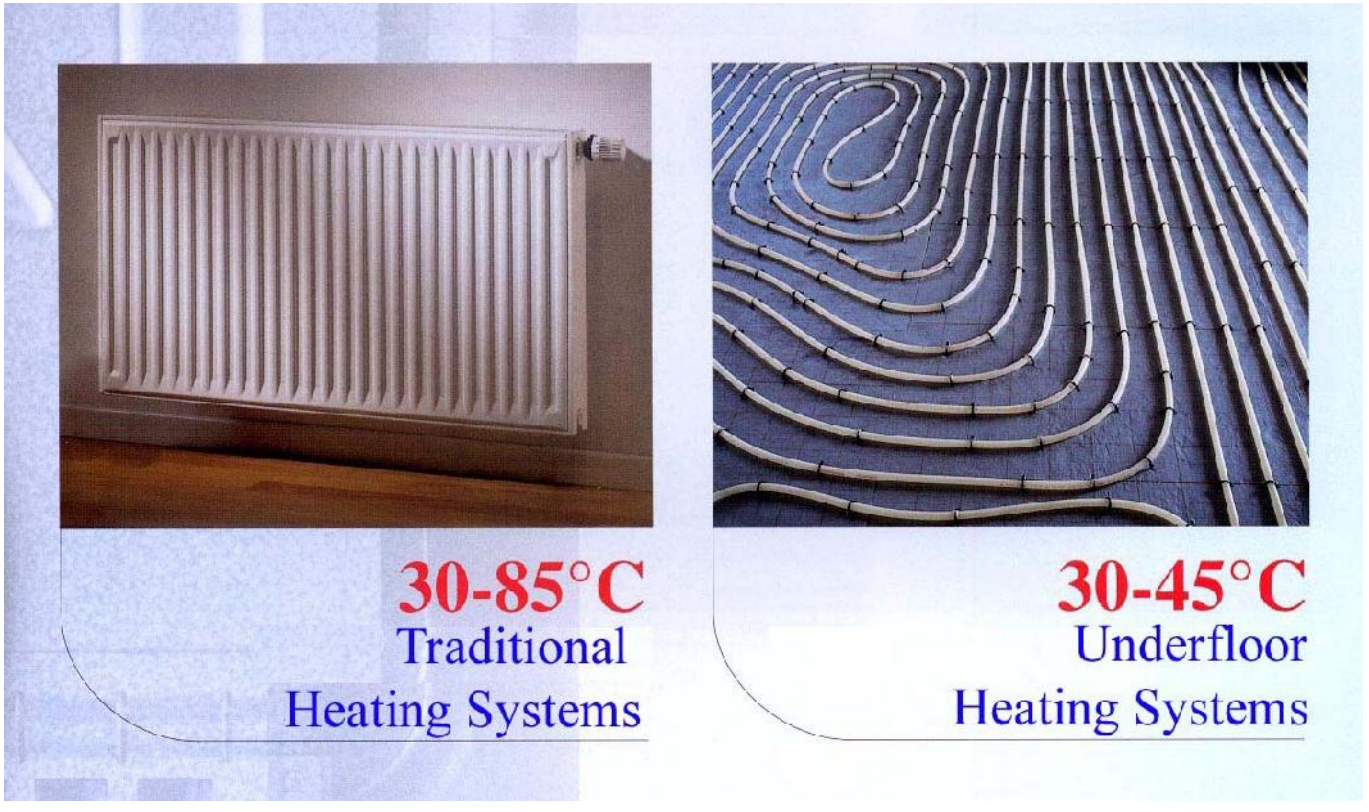
Compact fs

- Central Heating temperature regulation device: from 30° to 85 °C
- Domestic Hot Water temperature regulation device: from 5 to 65°C (storage tank control)
- Flue thermostat to ensure safe discharge of flue products
- Safety thermostat to prevent boiler overheating in case of regulation devices anomaly
- Gas pressure switch (1.620 iN model): stop the gas supply in case of low pressure.
- Pump post-circulation: 3 minutes after the room thermostat switching off
- Anti-frost protection: both for Central Heating circuit and DHW circuit (storage tank)
- System to prevent pump sticking operating every 24 hours
- Antilegionella function (in case of storage tank installation)
- Radio interference filtering system 92/31/CEE
- Protection against solid and liquid: IPX4D

SELF-CHECK: EASY AND IMMEDIATE CONTROLS



DOUBLE TEMPERATURE RANGE

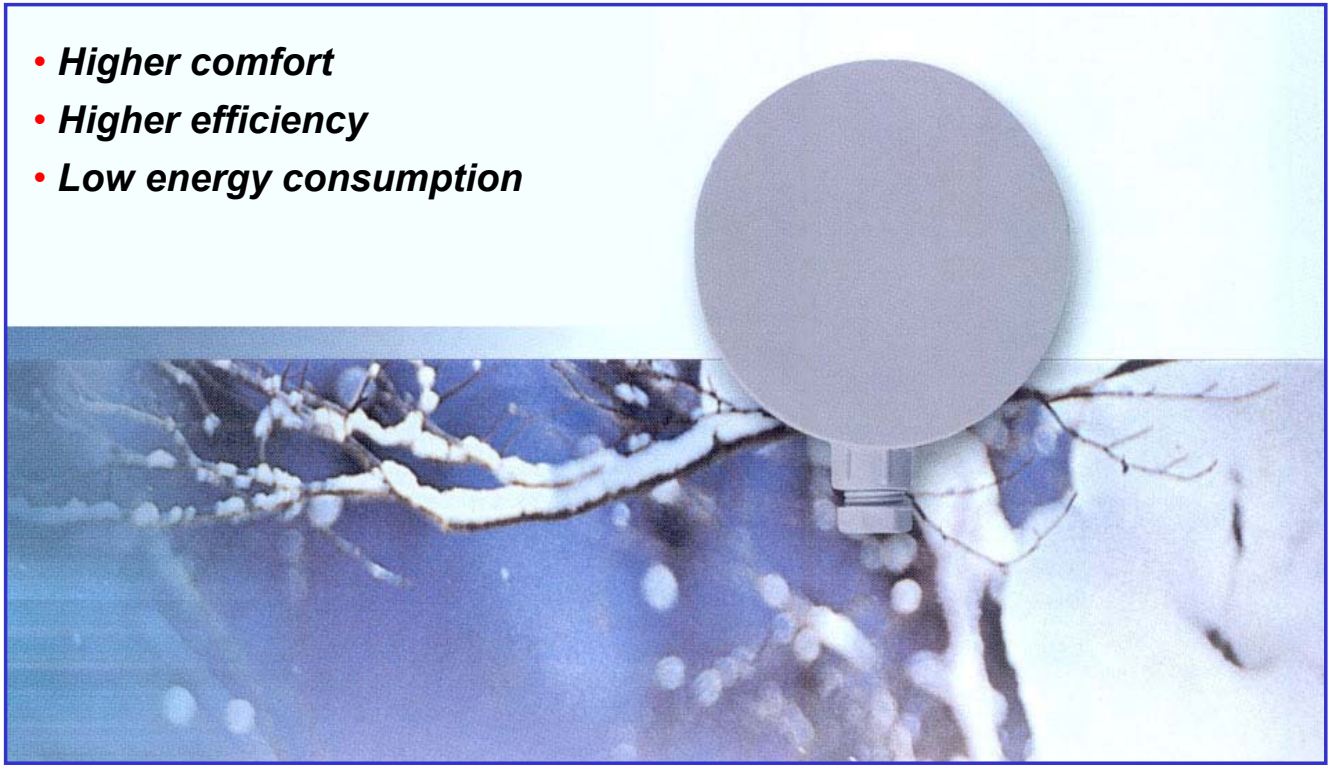


FLEXIBILITY

Compact FS are designed for the operation both in High Temperature Systems and Low Temperature Systems.

OUTDOOR PROBE

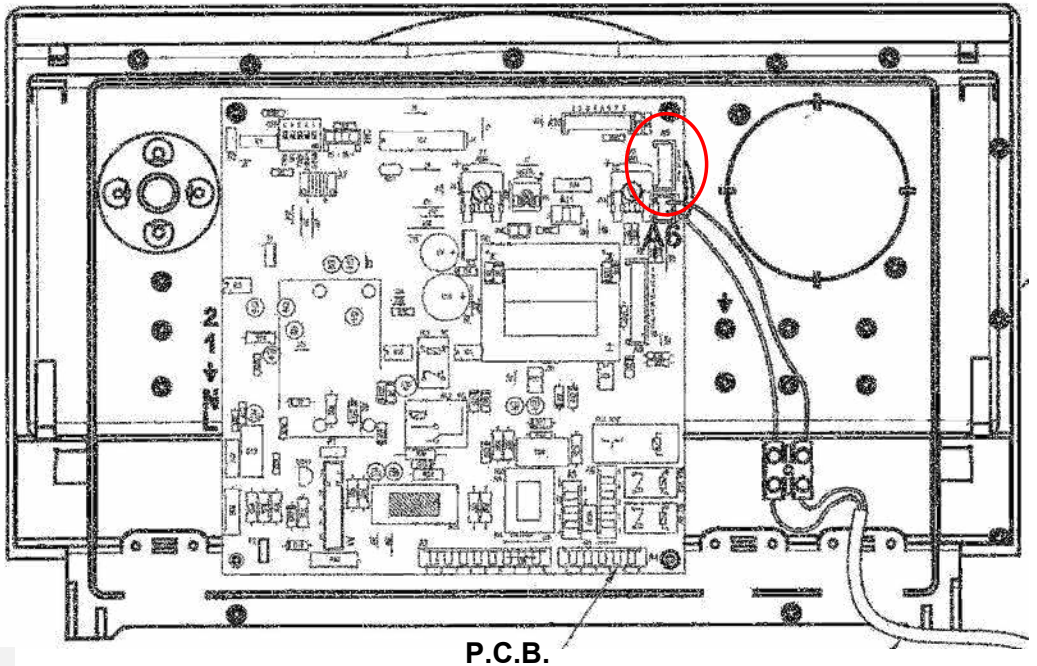
- ***Higher comfort***
- ***Higher efficiency***
- ***Low energy consumption***



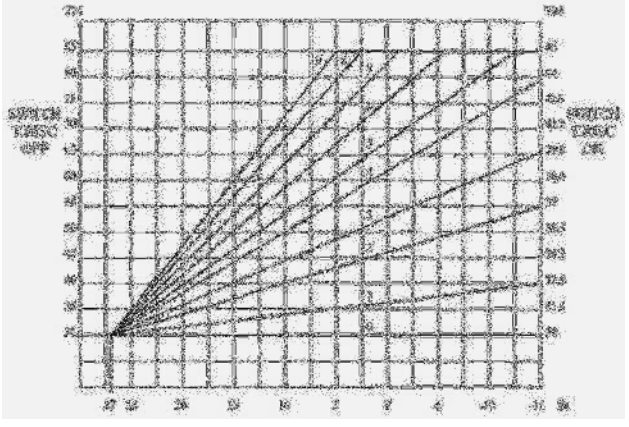
The main advantages of the regulation made using the **outdoor probe** are:
- the central heating water temperature is adjusted according to the real outdoor temperature;
- when there is a sudden change of weather, this regulation is able to react quicker than a boiler controlled only by the room thermostat;
- more economical heating: the water entering the heating system has the lowest temperature, necessary under the given conditions, this reduces heat losses in the piping.

OUTDOOR PROBE CONNECTION

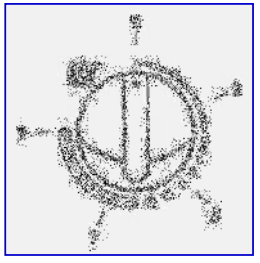
Compact FS boilers are prearranged for the connection of an outdoor probe (available as optional)



P.C.B.



After the connection of the outdoor probe, the Heating System temperature knob adjusts the Kt curve



TM = Heating flow temperature
Te = External temperature

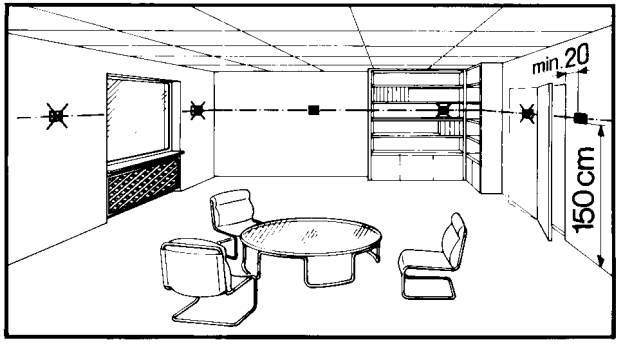
REMOTE PROGRAMMER -QAA 73-

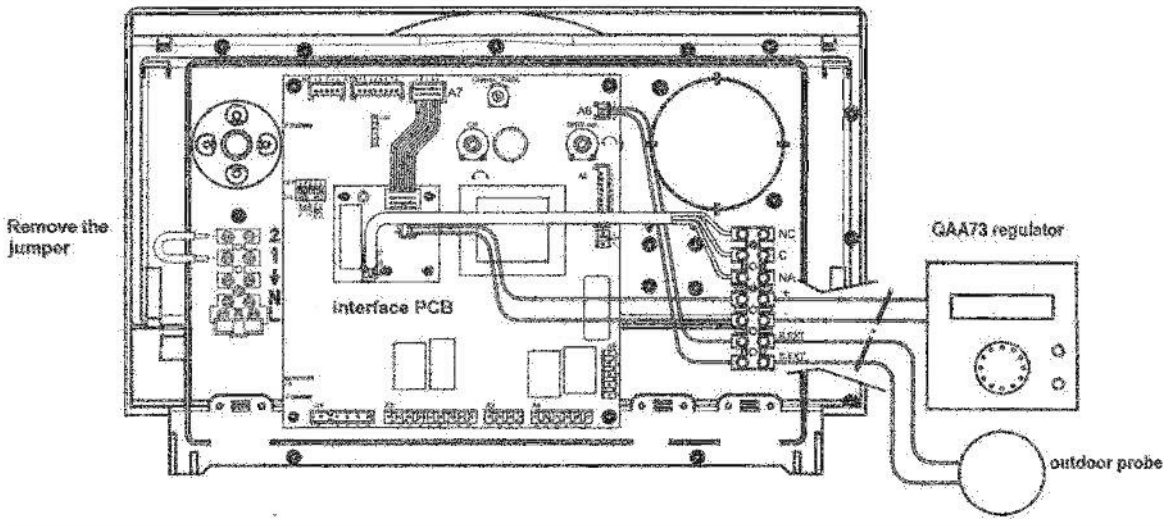
The QAA73 is a digital multi-functional room unit for one or two heating circuits and DHW control.

Communication between QAA73 and boiler is via OpenTherm bus protocol, through an interface PCB.

Special functions:

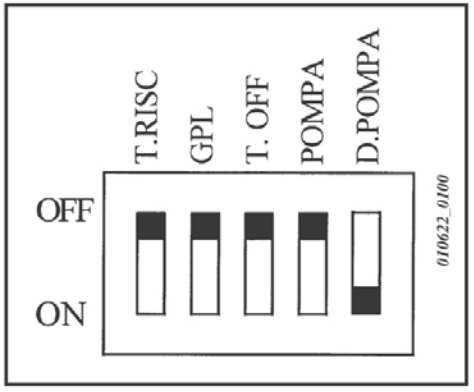
- remote controller with boiler parameter regulation;
- automatic elaboration of the Heating flow water temperature;
- room thermostat and timer;
- self-diagnosis: signalling and description up to 13 anomalies;
- display of boiler's parameters, like room temperature and external temperature, DHW and Central Heating water temperature.





WESTEN
Quality heat

PCB SETTING



WITH THE SWITCH IN THE *OFF* POSITION :

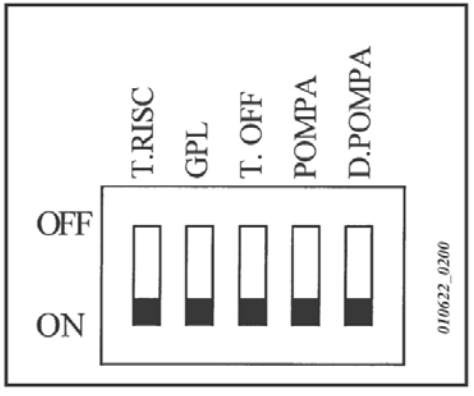
T.RISC. Boiler heating temperature range 30 ÷85°C

GPL Operation with Natural Gas

T-OFF 3 minute of stand-by time (anti-cycling function)

POMPA 3 minutes of pump post-circulation after the room thermostat switching off

D.POMPA always in the ON position



WITH THE SWITCH IN THE *ON* POSITION :

T.RISC. Boiler heating temperature range 30 ÷45°C

GPL Operation with L.P.G.

T-OFF 10’ minute of stand-by time

POMPA 4 hours of pump post-circulation after the room thermostat switching off

NB: make sure that electrical power supply has been disconnected before making any setting.

Main components: FLUE THERMOSTAT

In case of safety operation of the flue thermostat (due to flue duct obstructed or draught failure), the burner switches-off in safety position.

In this condition, the boiler will stop and the respective neon will blink.

To restart the boiler, rotate the main knob on R position after solving the cause of the problem.

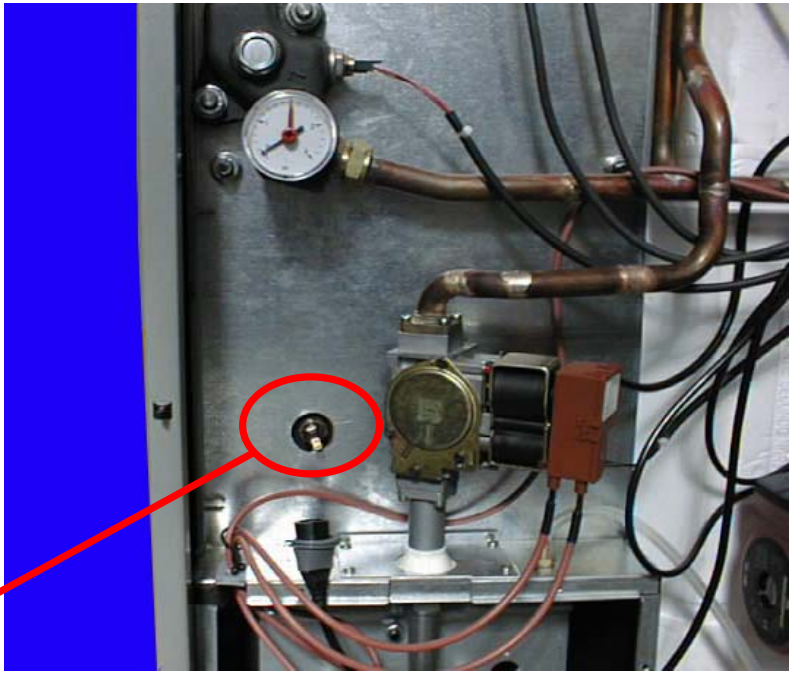
- Normally Closed contacts (230 V)
- Opening Temperature: 70 ± 3,5°C
- Closing Temperature: T < 53 ± 4°C

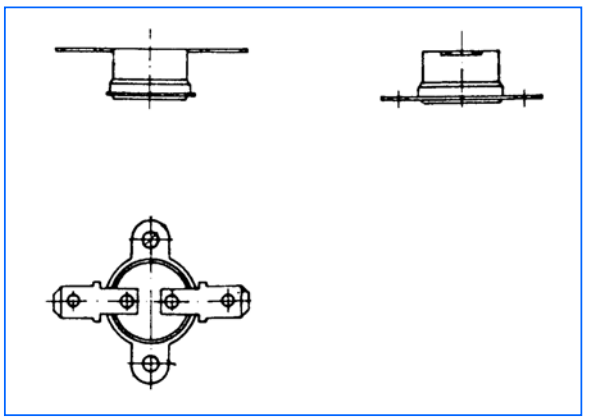
Main components: SAFETY THERMOSTAT

In case of safety operation of this thermostat (e.g. due to failure of regulation devices), the burner switches–off in safety position.

In this condition, the boiler will stop and the respective neon will blink.

To restart the boiler, rotate the main knob on R position after solving the cause of the problem.

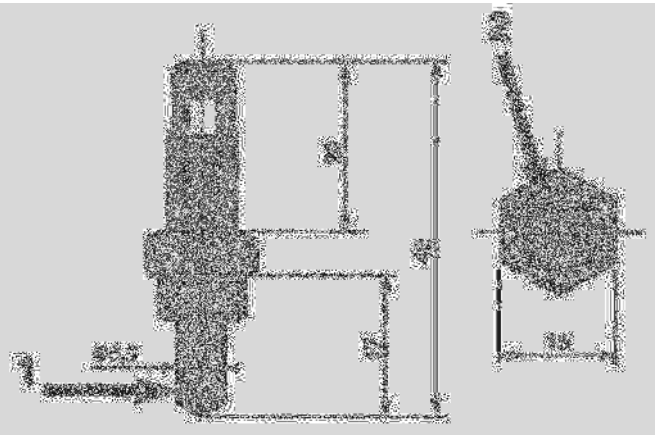




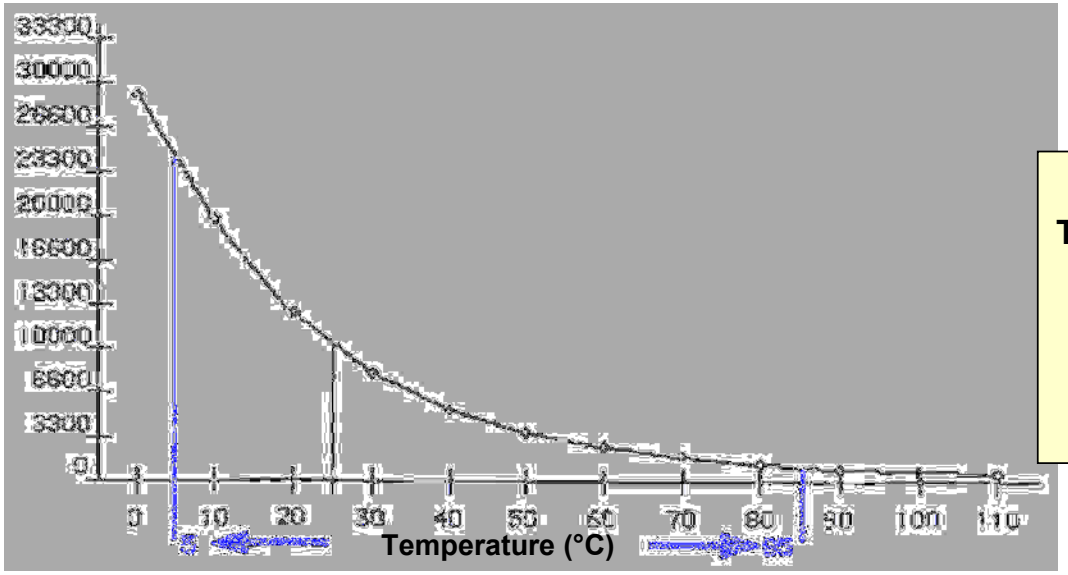
- Normally closed contacts (230 V)
- Cut – Off Temperature: 95 ± 3,5°C
- Return to normal position: T < 83 ± 4°C

Main components: NTC PROBE

NTC probe positioned in the Heating Circuit



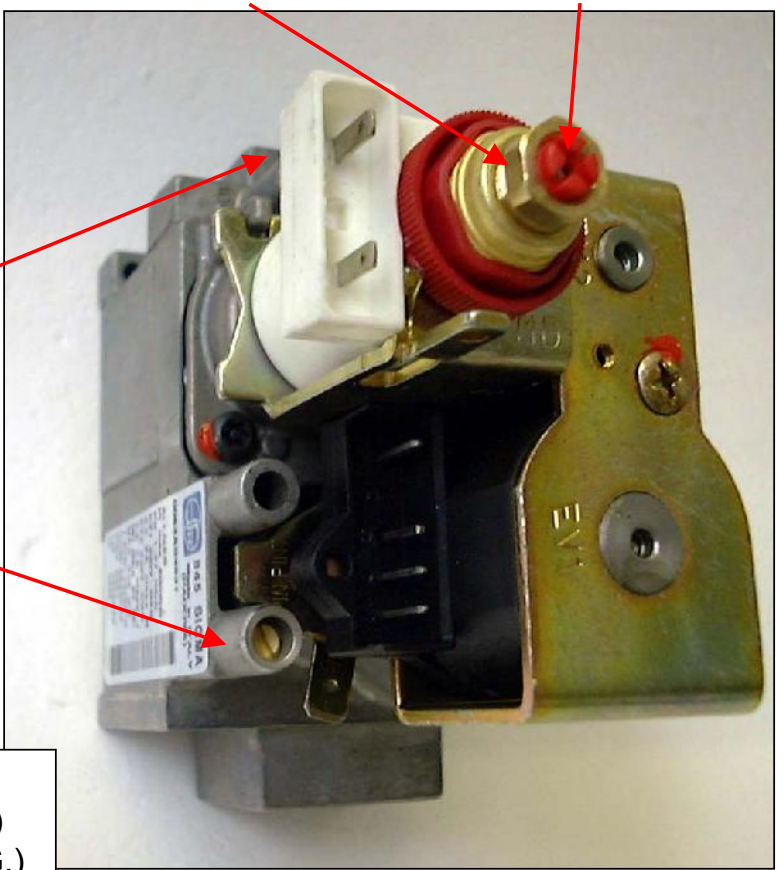
1. Sensor body
2. Electric connection



Some values of the NTC probe	
Temperature	**Resistance (±1%)**
0 °C	**28270 Ohm**
25 °C	**10000 Ohm**
45 °C	**4913 Ohm**
90 °C	**1266 Ohm**

Main components: GAS VALVE

SIT SIGMA 845



COILS ELECTRIC SUPPLY: 230 V ac
(Electric coils connected in parallel)
Max.supply gas pressure: 60 mbar

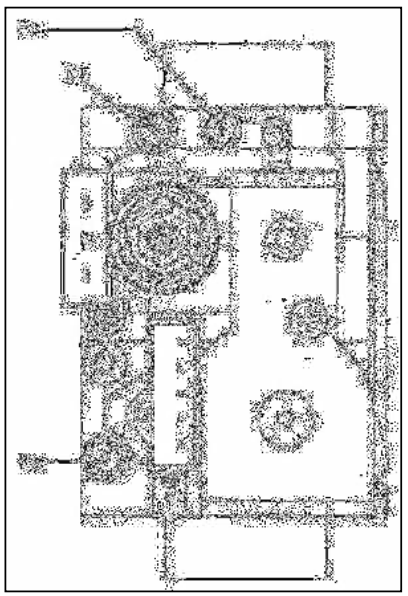
MODULATOR ELECTRIC FEATURES :

- Modulating Coil Ohmic Resistance:	20 Ohm (T=25°C)
- Voltage to the Modulator:	max 4,5 V dc (N.G.)
	max 7 V dc (LPG)
- Electric Current with Natural Gas:	30 - 230 mA dc
- Electric Current with L.P.G.:	45 - 310 mA dc

GAS VALVE ADJUSTMENT

Adjustment of the nominal output (P.max)

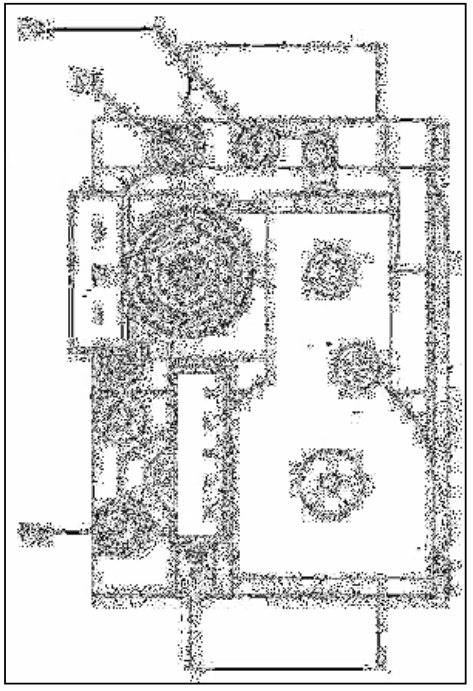
- Connect the positive pressure intake of a differential manometer to the gas valve pressure intake (Pb).
- Open the gas tap and rotate the selector knob to Winter position.
- Ensure that maximum heating demand is set;
- Remove the modulator plastic cover and adjust the brass screw nut to obtain the pressure value as specified in the instruction manual of the boiler.
- Check that the dynamic pressure measured at the pressure intake (Pa) is correct.



GAS VALVE ADJUSTMENT

Adjustment of the minimum gas pressure (P.min)

- Disconnect a modulator wire and adjust the red screw to reach the pressure value as specified in the instruction manual if the boiler.
- Connect the cable again.
- Fit the modulator cover and seal its fixing screw.



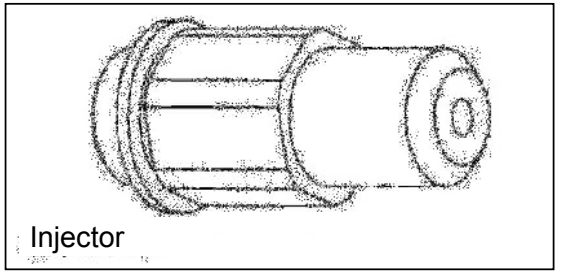
GAS CONVERSION

1) Replace the burner injectors

2) Change the modulator voltage on the PCB

3) Adjust Nominal and Minimum gas pressures as written in the instruction manual of the boiler

4) For 1.620 iN only, adjust the gas pressure switch: 13 mbar for natural gas, 20 mbar for butane and 25 mbar for propane



Main components: SPARK GENERATOR

Sit 504 NAC

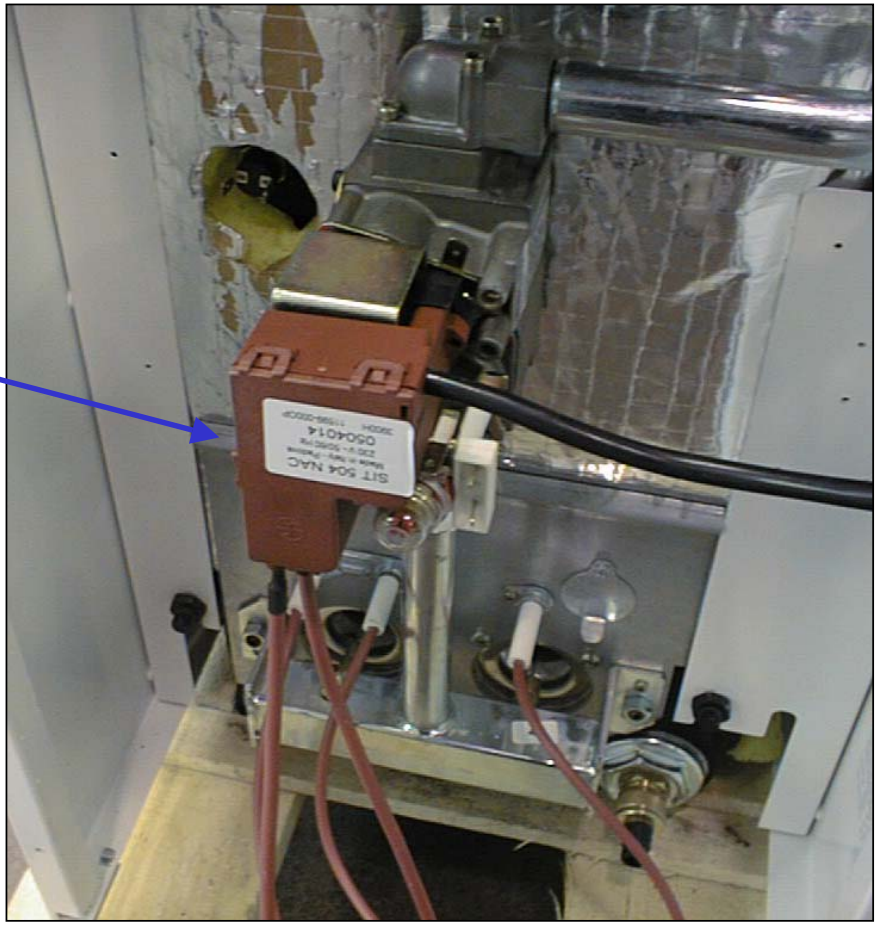
Technical Details:

Voltage: 230V ac - 50 Hz

Flashover voltage: 15 kV

Frequency of discharge: 10 ± 5 Hz

Room Temperature : -20 … 100 °C

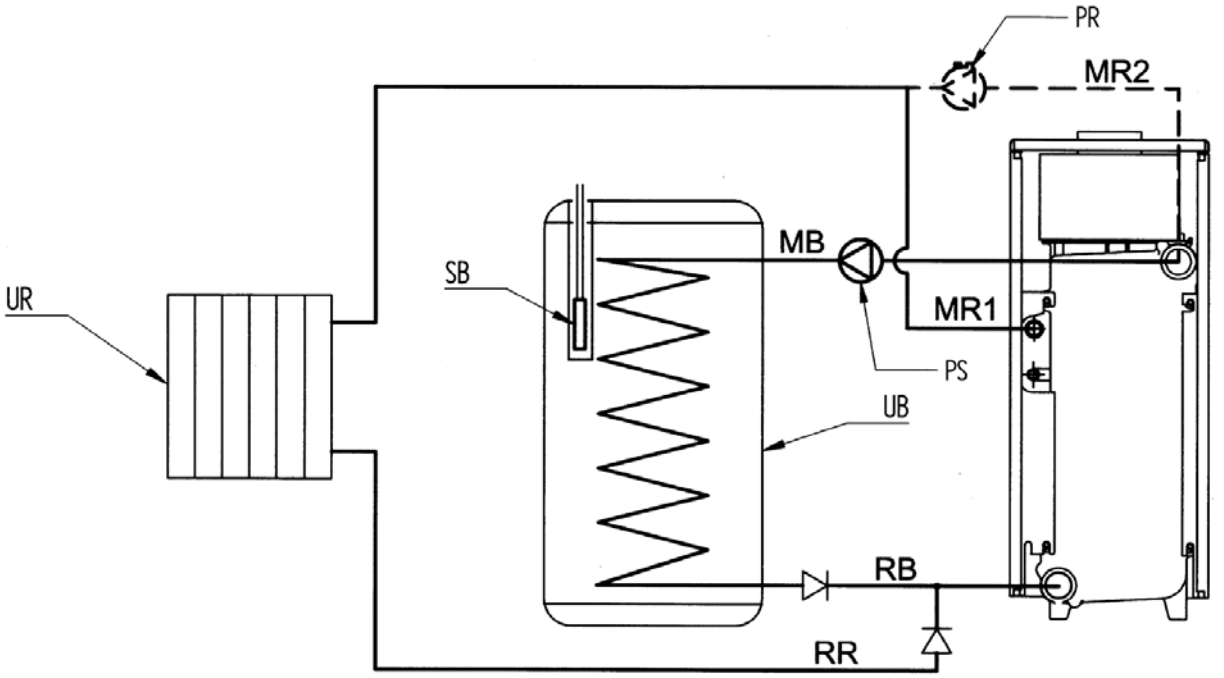


STORAGE FS 80 – STORAGE FS 120

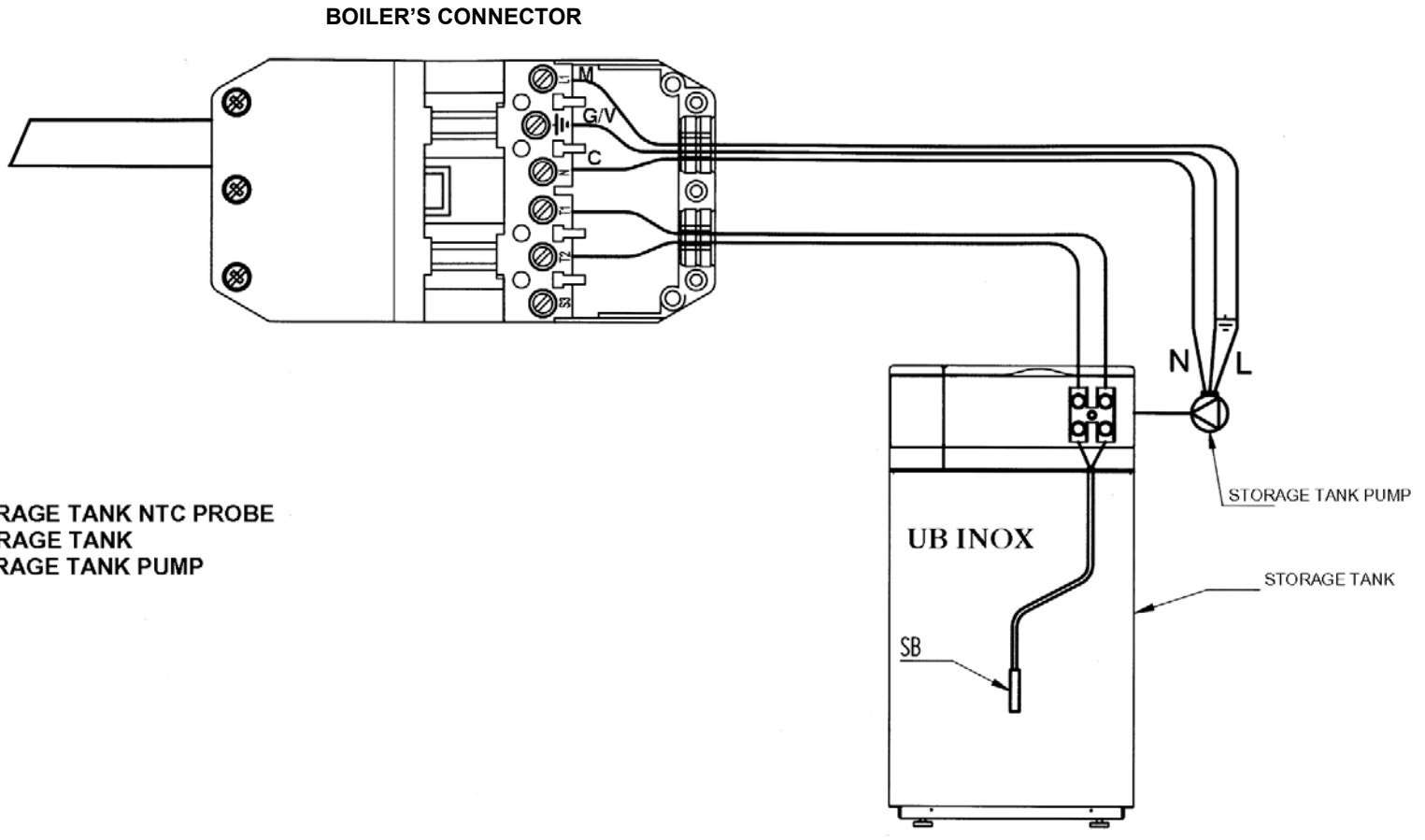
Description	FS 80	FS 120
Maximum heat output kW (kcal/h)	34 (29.000)	
Capacity (l)	80	120
DHW maximum pressure (bar)	8	8
DHW temperature regulation (°C)	5-65	5-65
DHW flow rate with ΔT35°C (l/min)	12	14
Height (mm)	850	850
Width (mm)	450	600
Depth (mm)	600	600
Weight (kg)	50	62

STORAGE TANK HYDRAULIC CONNECTION

KEY:
UB - STORAGE TANK
UR - HEATING SYSTEM
PS -STORAGE TANK PUMP
PR - CENTRAL HEATING PUMP
SB - STORAGE TANK NTC PROBE
MR1 - HEATING FLOW ("i" MODELS)
MR2 - HEATING FLOW ("iN" MODELS)
RR - HEATING RETURN
MB - STORAGE TANK FLOW
RB - STORAGE TANK RETURN



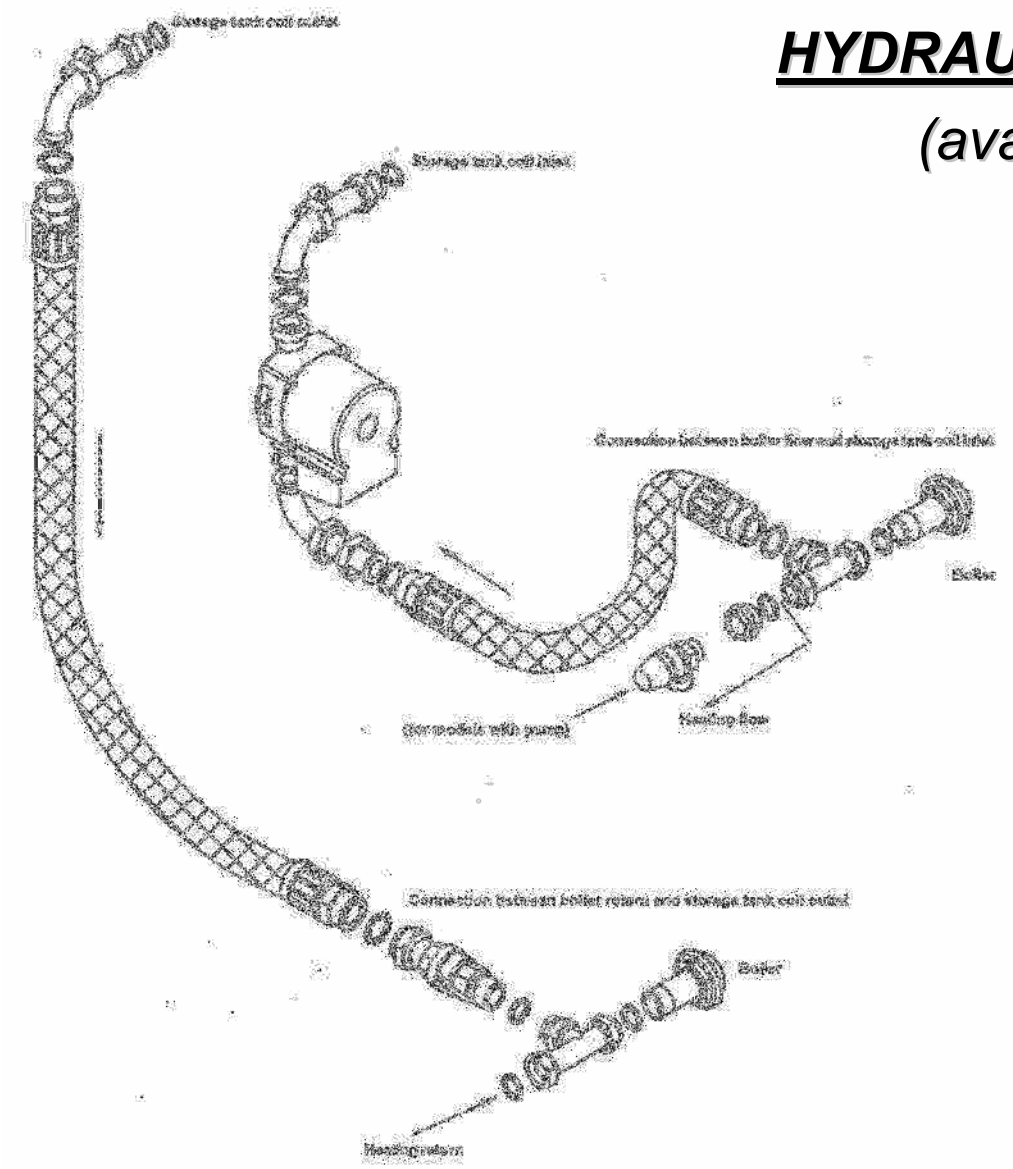
STORAGE TANK ELECTRICAL CONNECTION



SB - STORAGE TANK NTC PROBE
UB - STORAGE TANK
PS - STORAGE TANK PUMP

HYDRAULIC CONNECTION KIT

(available as optional)

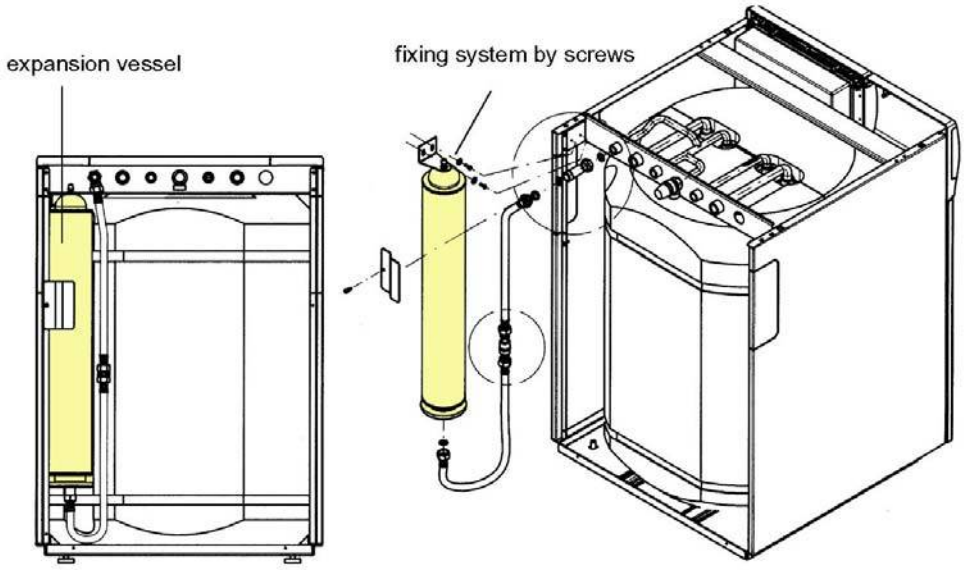


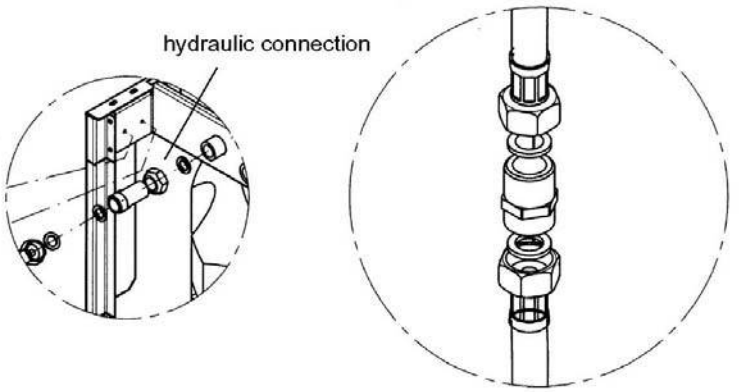
WESTEN

Quality heat

DHW EXPANSION VESSEL

(available as optional)





The installation of the DHW expansion vessel (4 litres of capacity) is necessary when there is a dripping of the safety valve. This dripping could be due to one of the following causes:

-the pressure of the waterworks is higher than 4 bar;

-on the mains water is installed a no-return valve;

-the cold water circuit is not enough for the expansion of the water present in the boiler.