Installation, Use and Maintenance Manual for model

R1K 34

Premix condensing system boiler

only heating

CE 0476

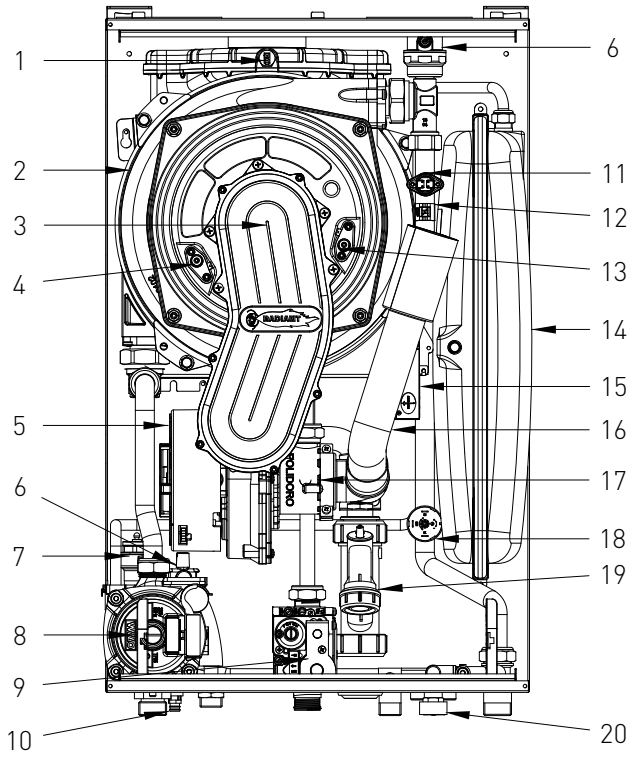
R1K 34 - RAD - ING - Manuale - 1510.1_ErP

2.2.8. TECHNICAL DATA

Model		**R1K 34**
CE certification	no.	0476CQ0134
Gas category		II2H3B/P
Discharge type	type	B23p-B33-C13-C33-C43-C53-C63-C83-C93
Energy efficiency 92/42 CEE	no. stars	4
Energy efficiency EN13203-1	no. stars	-
Maximum nominal heat capacity in heating circuit	kW	34
Minimum nominal heat capacity in heating circuit	kW	4.1
Useful thermal power - 60/80°C	kW	33.35
Minimum useful thermal power - 60/80°C	kW	3.94
Useful thermal power - 30/50°C	kW	36.19
Performance at 100% Pn - 60/80°C	%	98.08
Performance at 30% Pn - return 47°C	%	102.14
Performance at 30% Pn - return 30°C	%	108.57
Performance at 100% Pn - 30/50°C	%	106.43
Maximum combustion Performance	%	97.6
Fumes temperature at nominal heat capacity	°C	71.93
CO_2 at nominal heat capacity	%	9.6
CO_2 at minimum heat capacity	%	8.84
CO_2 at nominal heat capacity - G30	%	11.55
CO_2 at minimum heat capacity - G30	%	10.8
CO_2 at nominal heat capacity - G31	%	10.32
CO_2 at minimum heat capacity - G31	%	9.89
CO at nominal heat capacity	ppm	165
Fumes mass at nominal heat capacity	g/s	14.96
Fumes mass at minimum heat capacity	g/s	1.88
NOx class	class	5
Heating circuit		
Adjustable heating temperature	°C	30-80 / 25-45
Maximum operating temperature for heating circuit	°C	95
Maximum operating pressure for heating circuit	bar	3
Minimum operating pressure for heating circuit	bar	0.3
Capacity of the system expansion vessel	litres	8
Dimensional characteristics		
Width	mm	410
Depth	mm	330
Height	mm	642
Gross weight	Kg	40
Water connections		
Flow	Ø	3/4"
Cold water	Ø	1/2"
Gas	Ø	3/4"

Return	Ø	3/4"
Fume exhaust fittings		
Maximum electric fan pressure available	Pa	90.7
Max discharge length Ø80/125 - Hor Co-ax	m	10
Max discharge length Ø80/80 - Hor Split	m	15+15
Max discharge length Ø80/125 - Vert Co-ax	m	10
Electrical specifications		
Voltage-frequency	V/Hz	220-230/50
Max Absorbed Power	W	78
Insulation rate	IP	X5D
Gas supply		
Nominal supply pressure - G20	mbar	20
Heating Max. fan speed - G20	Hz	186
Heating Min. fan speed - G20	Hz	45
Fuel consumption - G20	m^3/h	3.60
Nominal Supply pressure - G30	mbar	28-30
Heating Max. fan speed - G30	Hz	176
Heating Min. fan speed - G30	Hz	45
Fuel consumption - G30	kg/h	2.68
Nominal Supply pressure - G31	mbar	37
Heating Max. fan speed - G31	Hz	184
Heating Min. fan speed - G31	Hz	45
Fuel consumption - G31	kg/h	2.64

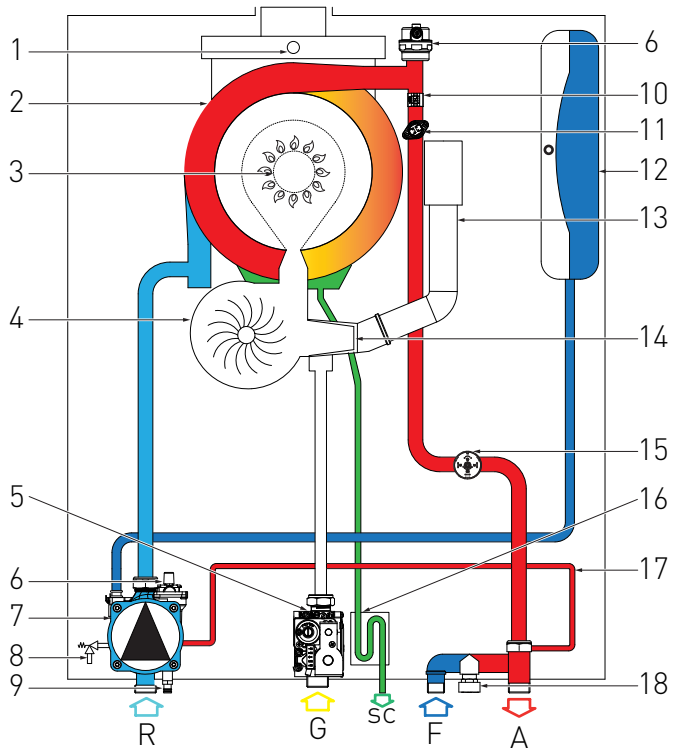
2.2.9. TECHNICAL ASSEMBLY



KEY

1. FUMES SAFETY THERMOFUSE
2. HEAT EXCHANGER
3. BURNER UNIT
4. DETECTION ELECTRODE
5. ELECTRIC FAN
6. AIR RELIEF VALVE
7. SAFETY VALVE 3 bar
8. CIRCULATOR
9. GAS VALVE
10. SYSTEM DRAINING TAP
11. SAFETY THERMOSTAT
12. HEATING PROBE
13. LIGHT UP ELECTRODE
14. EXPANSION TANK
15. START-UP TRANSFORMER
16. AIR SUCTION TUBE
17. PROPORTIONAL VENTURI
18. WATER PRESSURE SWITCH
19. CONDENSATE COLLECTION SIPHON
20. SYSTEM FILLING TAP

2.2.10. HYDRAULIC BOARD



KEY

R. HEATING RETURN
G. GAS INLET
SC. CONDENSATE DRAIN
F. COLD WATER INLET
A. HEATING FORWARD

1. FUMES SAFETY THERMOFUSE
2. HEAT EXCHANGER
3. BURNER UNIT
4. ELECTRIC FAN
5. GAS VALVE
6. AIR RELIEF VALVE
7. CIRCULATOR
8. SAFETY VALVE 3 bar
9. SYSTEM DRAINING TAP
10. HEATING PROBE
11. SAFETY THERMOSTAT
12. EXPANSION TANK
13. AIR SUCTION TUBE
14. PROPORTIONAL VENTURI
15. WATER PRESSURE SWITCH
16. CONDENSATE COLLECTION SIPHON
17. BY-PASS
18. SYSTEM FILLING TAP

3.1. USE

3.1.1. GENERAL USE WARNINGS

WARNING

Before starting the boiler the User must make sure that the First start-up certificate has the stamp of the technical Support Centre proving the testing and the first start-up of the boiler.

WARNING

To validate the warranty, the boiler must be started by a technical Support Centre authorized by RADIANT no later than 30 days from the date of installation.

WARNING

In order to take advantage of the guarantee provided by the manufacturer, the customer should carefully and exclusively observe the instructions given in the USER section of the manual.

ATTENTION

This machine may be used only for the purpose for which it has been designed: heat water to a temperature below boiling point at atmospheric pressure. Any other use is considered wrong and dangerous. The manufacturer is excluded from any contractual or out of contract responsibility for damage caused to people, animals or property due to incorrect use.

DANGER

The boiler should not be used by persons (including children) with reduced physical, sensory or mental capacities or without suitable knowledge or experience unless they are instructed on the device use or monitored by a person responsible for their safety.

DANGER

DO NOT obstruct the air vents of the location in which the gas device is installed to prevent the formation of toxic explosive mixes.

DANGER

If you sense a gas odour in the location in which the boiler is installed, proceed as follows:

› DO NOT use electrical switches, the telephone or any other device that might generate electrical discharges or sparks;

› Immediately open all doors and windows to create an air exchange that can quickly clean the location;

› Close the gas valves;

› Request immediate intervention of qualified staff.

DANGER

The use of the electrical power boiler implies respecting some fundamental rules such as:

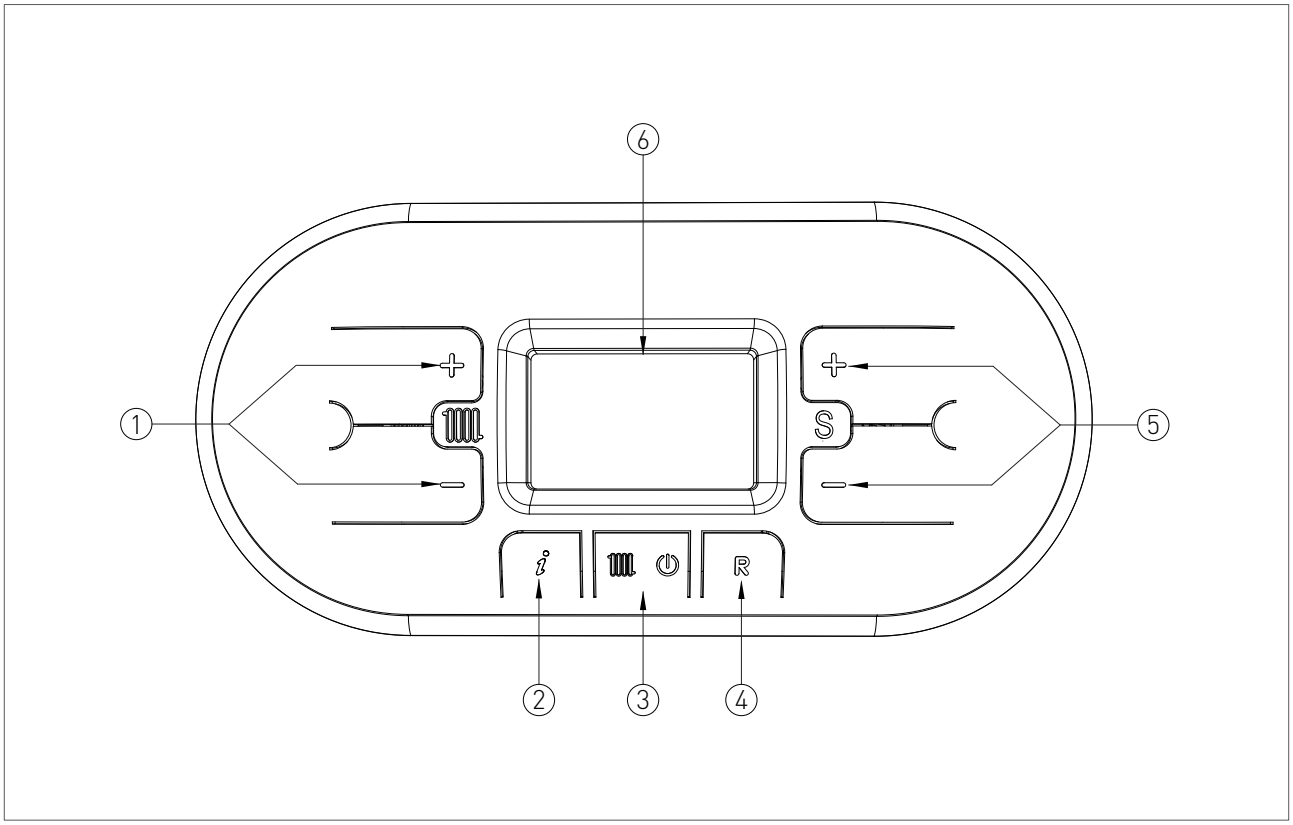
› DO NOT touch the device with wet and/or humid parts and/or with bare feet;

› DO NOT pull the electrical cables;

› DO NOT leave the device exposed to atmospheric agents (rain, sun, etc.) unless specifically intended;

› in case of cable damage, turn off the device and contact qualified professional staff to replace it.

3.1.2. CONTROL PANEL



KEY

1. HEATING TEMPERATURE ADJUSTMENT KEYS.

2. INFO KEY: PRESS ONCE TO VIEW THE TEMPERATURES AND OTHER INFORMATION (see chapter 'INFO MENU DISPLAY) - HOLD FOR 5 SECONDS, IN OFF OPERATING MODE, TO VIEW THE LAST 5 FAULTS.

3. OPERATING MODE SELECTION KEY: ONLY HEATING / OFF.

4. RESET KEY: FAULTS RESET - CHIMNEY SWEEP FUNCTION ACTIVATION (HOLD FOR 7 SECONDS).

5. VALUE OF THE PARAMETERS ADJUSTMENT KEY / HOLD THE KEYS AT THE SAME TIME FOR 5 SECONDS TO ACTIVATE DISPLAY BACK LIGHT FOR 10 MINUTES.

6. DISPLAY

3.1.3. DISPLAY ICONS

KEY

1. INDICATION OF PARAMETER NUMBER OR DISPLAYED INFO CODE
2. PARAMETERS PROGRAMMING FUNCTION ACTIVE
3. SIGNALLING CONNECTED SOLAR BOARD / SOLAR COLLECTOR TEMPERATURE DISPLAY (d5)
4. SOLAR PUMP ACTIVE
5. BOILER LOWER TEMPERATURE DISPLAY (d6) / BOILER UPPER TEMPERATURE DISPLAY (d7)
6. EXTERNAL PROBE INSTALLED / EXTERNAL PROBE TEMPERATURE (d1)
7. TEMPERATURE DISPLAY / SET POINT / PARAMETER VALUE
8. OPEN THERM COMMUNICATION PRESENT (REMOTE CONTROL / AREA CONTROL UNIT)
9. INSUFFICIENT SYSTEM WATER PRESSURE SIGNALLING
10. FLAME PRESENT SIGNALLING / IT ALSO INDICATES, ON 3 PERCENTAGE LEVELS, THE MODULATING POWER LEVEL OF THE BOILER (fig.2)
11. ERROR DISPLAY THAT CAN BE RESET
12. OFF OPERATING MODE
13. ERROR DISPLAY THAT CAN NOT BE RESET
14. OPERATION IN HEATING MODE ENABLED

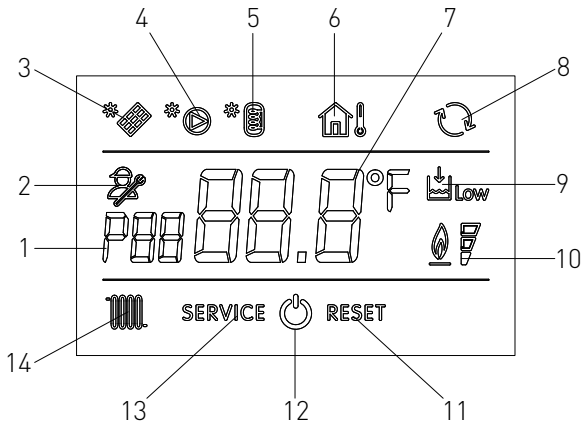


fig. 1

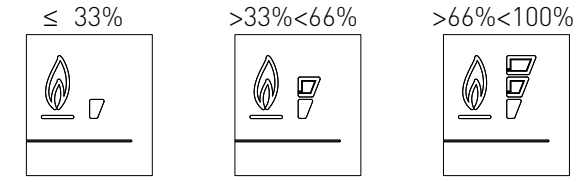


fig. 2

USER

3 Icone del display_solo risc_MIAH4_EN

3.1.4. INFO MENU DISPLAY DATA

To view the boiler data from info menu you just have to press the INFO 'ⓘ' key. The info code will be displayed on the left side of the screen and its relative value will be displayed on the centre of the screen. Use keys '⊕' and '⊖' of the heating circuit to scroll through the list of displayed data. To exit display mode press the INFO 'ⓘ' key.

LIST OF DISPLAYED DATA

INFO CODE	ICON	DESCRIPTION
d0		DOMESTIC CIRCUIT PROBE TEMPERATURE
d1		EXTERNAL PROBE TEMPERATURE
d2		FAN SPEED
d3		BOTTOM AREA PROBE TEMPERATURE [IF AREA BOARD INSTALLED]
d4		RETURN PROBE TEMPERATURE
d5		SOLAR COLLECTOR TEMPERATURE [IF SOLAR BOARD INSTALLED] (SCS)
d6		SOLAR BOILER TEMPERATURE (BOTTOM) [IF SOLAR BOARD INSTALLED] (SBSI)
d7		SOLAR BOILER TEMPERATURE (TOP) [IF SOLAR BOARD INSTALLED] (SBSS)
d8		SOLAR COLLECTOR PROBE TEMPERATURE 2 [IF SOLAR BOARD INSTALLED] (SCS2)
d9		EXTRA SOLAR BOILER TEMPERATURE [IF SOLAR BOARD INSTALLED] (SBS3)

3.1.5. START-UP

Before starting the boiler make sure that it is powered and that the gas tap below the boiler is open.

To start the boiler press the function key '' and select the desired operating mode. If the symbol is displayed fixed, it means that the function was activated.

3.1.6. OPERATING MODE

ONLY HEATING MODE

In this mode the boiler meets only the demands of heating.

To switch the boiler to ONLY HEATING operating mode, press the function key '', the symbol '' will appear fixed on the display, indicating that the function is enabled.

Whenever heating energy is needed to heat the rooms the automatic start-up system will start the burner; this is indicated by displaying the symbol '' blinking.

ADJUSTING THE HEATING TEMPERATURE

You can adjust the temperature using keys '' and '' of the heating circuit :

- press key '' to decrease the temperature.
- press key '' to increase the temperature.

The heating temperature adjustment field ranges from 30 °C to 80 °C (25 °C – 45 °C for floor systems).

OFF MODE

In this mode the boiler no longer meets the heating demands, the anti-freeze and pump anti-locking systems still remain active.

To switch the boiler to OFF operating mode, press the function key '', the symbol '' will appear fixed on the display, indicating that the function is enabled (for non condensing models will appear the message 'OFF').

If the boiler was previously running, it will be turned off and the post-ventilation and post-circulation functions will be enabled.

If you have to deactivate the boiler for a long period of time, proceed as follows:

› contact the Technical support centre that will empty the water system, where no anti-freeze is intended, and will cut off the power, water and gas supply.

› Or leave the boiler in OFF operating mode keeping active the electrical and gas supplies so that the anti-freeze function may activate.

USER

3.1.7. INFORMATIONAL NOTE ON ANTI-FREEZE FUNCTION

The boiler is protected against freezing thanks to the electronic board preparation with functions that start the burner and heat the concerned parts when their temperature goes below the minimum pre-set values.

WARNING
This function is available only if:

- the boiler is powered;
- the gas supply is open;
- the pressure of the system is proper;
- the boiler is not blocked.

3.1.8. SYSTEM FILLING

To restore the water pressure inside the system open the loading tap "R" (fig. 1) and make sure using pressure gauge "M" (fig. 1), that the system pressure reaches 1.2 bar (see fig. 2).

After performing this operation, make sure that the loading tap "R" (fig. 1) is properly closed.

After the water pressure reset the boiler will automatically perform a 2 minutes system relief cycle. Throughout this function the display will show the code "F33". The boiler can work normally only after completing the operation.

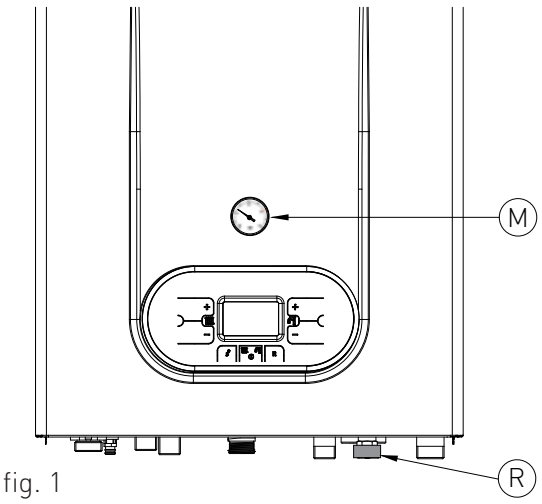


fig. 1

fig. 2

3.1.9. FAULT SIGNALLING CODES

The boiler might signal some faults by displaying a code. Below you have a list of the codes and of the operations to be performed in order to unlock the boiler.

CODE	ICON	FAULT	INTERVENTION
E01	RESET	***FLAME BLOCK***	MAKE SURE THAT THE BOILER AND CONTACTOR GAS VALVES ARE OPEN.
			PRESS THE RESET "Ⓡ" BUTTON ON THE CONTROL PANEL TO RESET THE FAULT, AS SOON AS THE ERROR CODE DISAPPEARS FROM THE DISPLAY, THE BOILER WILL START AUTOMATICALLY.
			IF THE BLOCK PERSISTS CONTACT THE TECHNICAL SUPPORT CENTRE.
E02	RESET	***SAFETY THERMOSTAT (95 °C)***	PRESS THE RESET "Ⓡ" BUTTON ON THE CONTROL PANEL TO RESET THE FAULT, AS SOON AS THE ERROR CODE DISAPPEARS FROM THE DISPLAY, THE BOILER WILL START AUTOMATICALLY.
			IF THE BLOCK PERSISTS CONTACT THE TECHNICAL SUPPORT CENTRE.
E03	RESET	***FUMES SAFETY THERMOFUSE (102 °C)***	CONTACT THE TECHNICAL SUPPORT CENTRE.
E04	Low	***WATER MISSING IN THE SYSTEM***	IF THE SYSTEM PRESSURE IS BELOW 1.2 BAR, FILL THE SYSTEM AS DESCRIBED IN CHAPTER "SYSTEM FILLING".
			IF THE BLOCK PERSISTS CONTACT THE TECHNICAL SUPPORT CENTRE.
E05	SERVICE	***HEATING PROBE***	CONTACT THE TECHNICAL SUPPORT CENTRE.
E15	SERVICE	***RETURN PROBE***	CONTACT THE TECHNICAL SUPPORT CENTRE.
E16	SERVICE	***ELECTRIC FAN***	CONTACT THE TECHNICAL SUPPORT CENTRE.
E18	SERVICE	***INSUFFICIENT CIRCULATION***	CONTACT THE TECHNICAL SUPPORT CENTRE.
E21	SERVICE	***GENERAL INTERNAL BOARD ERROR***	CUT OFF THE POWER SUPPLY FROM THE MAIN SWITCH AND THEN RESTORE IT, AS SOON AS THE ERROR CODE DISAPPEARS, THE BOILER WILL RESTART AUTOMATICALLY.
			IF THE BLOCK PERSISTS CONTACT THE TECHNICAL SUPPORT CENTRE.

CODE	ICON	FAULT	INTERVENTION
E22	**SERVICE**	***PARAMETERS REQUEST PROGRAMMING***	CUT OFF THE POWER SUPPLY FROM THE MAIN SWITCH AND THEN RESTORE IT, AS SOON AS THE ERROR CODE DISAPPEARS, THE BOILER WILL RESTART AUTOMATICALLY. IF THE BLOCK PERSISTS CONTACT THE TECHNICAL SUPPORT CENTRE.
E35	**RESET**	***RESIDUAL FLAME***	PRESS THE RESET "Ⓡ" BUTTON ON THE CONTROL PANEL TO RESET THE FAULT, AS SOON AS THE ERROR CODE DISAPPEARS FROM THE DISPLAY, THE BOILER WILL START AUTOMATICALLY.
E40	**SERVICE**	***SUPPLY VOLTAGE***	CONTACT THE TECHNICAL SUPPORT CENTRE.

3.1.11. MAINTENANCE

To ensure proper boiler safety and efficiency, please contact RADIANT technical support network to check the device every year.

An accurate maintenance should improve system management.

3.1.12. COVER CLEANING

Clean the cover of the device using a wet cloth and come neutral soap.

WARNING

DO NOT use abrasive or powder detergents as they might damage the plastic cover and control elements.

3.1.13. DISPOSAL

The boiler and all its accessories must be differentiated, suitably disposed of in accordance with the standards in force.

The use of the symbol WEEE (Waste Electrical and Electronic Equipment) shows that this product can not be dismantled as domestic waste. Proper dismantle of this product helps preventing potentially negative consequences on human health and environment.