

TreGì N-NK

EN INSTALLER, TECHNICAL ASSISTANCE SERVICE AND USER MANUAL

RIELLO

CONFORMITY

RIELLO TreGi boilers conform to:

- Directive 92/42/EEC on efficiency requirements
- Electromagnetic Compatibility Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC



RANGE

MODEL	CODE
TreGi 3 N	4040719
TreGi 4 N	4040720
TreGi 5 N	4040721
TreGi 6 N	4040722
TreGi 7 N	4040723
TreGi 8 N	4040724
TreGi 9 N	4040725
TreGi 10 N	4040726
TreGi 3/100 NK	20101201
TreGi 4/100 NK	20101202
TreGi 5/100 NK	20101203
TreGi 6/100 NK	20101204
TreGi 7/100 NK	20101205
TreGi 8/100 NK	20101206
TreGi 3/60 NK	20101199
TreGi 4/60 NK	20101200

ACCESSORIES

For a complete list of accessories and details of their compatibility, refer to the Catalogue.



Dear Customer,

Thank you for choosing a **RIELLO TreGì**, boiler, a modern, high quality and high efficiency product that will assure you maximum comfort over a long period, with high reliability and safety. Arrange for the boiler to be serviced regularly by an authorised **RIELLO** Technical Assistance Centre. Their personnel are specially trained to keep your boiler efficient and cheap to run. Technical Assistance Centres also stock any original spare parts that might be required.

This instruction manual contains important instructions and precautions that must be observed to ensure the trouble-free installation and efficient functioning of your **RIELLO TreGì** boiler.

Please accept our renewed thanks for your purchase.

Riello S.p.A.

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The following symbols are used in this manual:











CAUTION = Indicates actions that require caution and adequate preparation



STOP = Identifies actions that you MUST NOT do












1 GENERAL

1.1 General safety information

-  The boiler is delivered in a single crate. Check that the appliance is complete and undamaged as soon as you receive it. Report any discrepancies or damage to the **RIELLO** dealer who sold it.
-  This **TreGi** boiler must be installed by a legally qualified installer. On completion of the installation, the installer must issue the owner with a declaration of conformity confirming that the installation has been completed to the highest standards in compliance with the instructions provided by **RIELLO** in this instruction manual, and that it conforms to all applicable laws and standards.
-  The boiler must only be used for the purpose specified by **RIELLO** and for which it is designed. The manufacturer declines all responsibility, contractual or other, for damage to property or injury to persons or animals caused by improper installation, adjustment, maintenance or use.
-  If you notice any water leaking from the boiler, shut off the water supply and notify your local **RIELLO** Technical Assistance Centre or a qualified heating engineer immediately.
-  Periodically check that working pressure in the heating circuit is **over 1 bar** but below the maximum limit specified for the appliance. If this is not the case, contact **RIELLO** Technical Assistance Service or a professionally qualified heating engineer.
-  If the boiler is not going to be used for an extended period of time, perform at least the following operations:
 - Turn the appliance's main function selector to position (I) "Off"
 - Turn the main power switch OFF
 - Close the fuel cock and heating circuit water cock
 - Drain the central heating circuit if there is any risk of freezing.
-  The boiler must be serviced at least once a year.
-  This instruction manual is an integral part of the boiler. It must be kept safe and must ALWAYS accompany the boiler, even if it is sold to another owner or transferred to another user or to another installation. If you damage or lose this manual, order a replacement immediately from your local **RIELLO** Technical Assistance Centre.

1.2 Precautions

The operation of any appliance that uses fuel, electrical power and water demands that a number of fundamental safety precautions be respected. In particular:

-  Do not allow children or infirm persons to operate this **TreGi** boiler unsupervised.
-  Do not operate any electrical devices or equipment, including switches or domestic appliances, etc., if you can smell fuel or fumes. If you detect any suspicious smells:
 - Ventilate the room by opening all doors and windows;
 - Close the fuel shut-off cock;
 - Report the fault immediately to the **RIELLO** Technical Assistance Service or a professionally qualified heating engineer.
-  Do not touch the boiler while barefoot or wet.
-  Never clean or service the boiler without first disconnecting it from the mains electricity supply by turning the main power switch off and turning the main function selector to OFF (I).
-  Do not tamper with or adjust the safety or control devices without prior authorisation and instructions from the boiler's manufacturer.
-  Never pull, disconnect, or twist the electrical cables coming from the boiler even if it is disconnected from the mains electricity supply.
-  Do not obstruct or restrict the vents in the room where the boiler is installed. Adequate ventilation is essential for correct combustion.
-  Do not expose the boiler to the elements. Do not install the boiler outdoors. It is not designed to work outdoors and is not fitted with the necessary automatic frost protection systems to do so.
-  Do not switch the boiler off if outdoor temperature drops below ZERO (risk of freezing).
-  Do not store flammable substances or packaging in the room where the boiler is installed.
-  Do not dispose of packaging material into the environment, or leave it within the reach of children, since it can become a potential hazard. Dispose of packaging material in compliance with applicable legislation.

1.3 Product description

TreGì RIELLO cast iron boilers are high efficiency, triple flue pass boilers with a horizontal combustion chamber for central heating only (**TreGì N**) or for central heating and domestic hot water production when equipped with a 100 or 60 litre vitrified storage cylinder (**TreGì NK**).

The most important technical features of these boilers are:

- The combustion chamber and heat exchange system are specially designed and shaped to achieve the best possible volume ratio
- Only top quality materials, including special MB18C cast iron, are used to ensure a long working life.

The boiler body is thoroughly insulated with a layer of high density glass wool.

The boiler's front door can be opened completely to facilitate the inspection, maintenance and cleaning of internal parts and to speed up servicing in general.

If equipped with an optional total shutdown control card **TreGì RIELLO**, models apply total shutdown logic and save energy by starting up only when a domestic hot water tap is opened:

- **TreGì N** models only start up if the heating system requests heat (i.e. when the room thermostat switches the heating on);
- When the Summer/Winter selector is set to Summer mode **TreGì NK**, models apply total shutdown logic and save energy by starting up only when a domestic hot water tap is opened.

Both types of boiler have an overtemperature dispersal function to disperse the heat left by thermal inertia.

1.4 Identification

Boilers are identified by two plates:

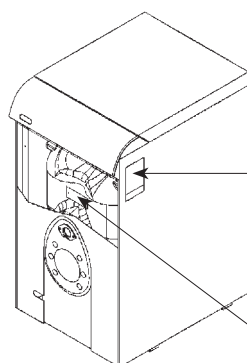
- **Data plate**

This lists the technical specifications and performance of the product.

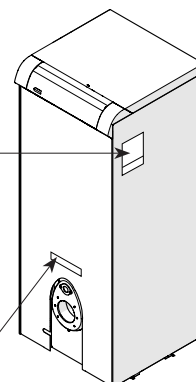
- **Serial number plate**







This is located on the boiler body and specifies the serial number, model, working pressure and rated heat input.

TreGì N



TreGì NK





RIELLO				RIELLO S.p.A. Via San Pioale Rallo 7 37045 Lagnago (VR) - ITALY		10676760E			
Mod.									
Cod.									
N°								/	
PAISE DI DESTINAZIONE/PAIS DE DESTINATION/BESTIMMUNGSLAND/VON BESTIMMUNG									
CONFORMITE' DICOMUNITA'LE/RENNSTUF/IBRABESTITP									
100/100/100									
IP								European Directive 92/42/EEC:	
V-Hz		W						$\eta =$	
		Qn(min)=		kW		kW		D= l/min	
				kW		kW			
		Pn(min)=		kW		kW			
		Qn(max)=		kW		kW			
		Pn(max)=		kW		kW			
		Pms=		bar		T=		°C	




RIELLO				10676760E		CE	
RIELLO S.p.A. Via San Pioale Rallo 7 37045 Lagnago (VR) - ITALY							
Mod.							
Cod.							
N°							
	Qn(max)	kW					
	Pn(max)	kW					
	Pms	bar					

! If these plates or any other means of clearly identifying the product are defaced, removed or lost, proper installation and servicing may be rendered difficult.

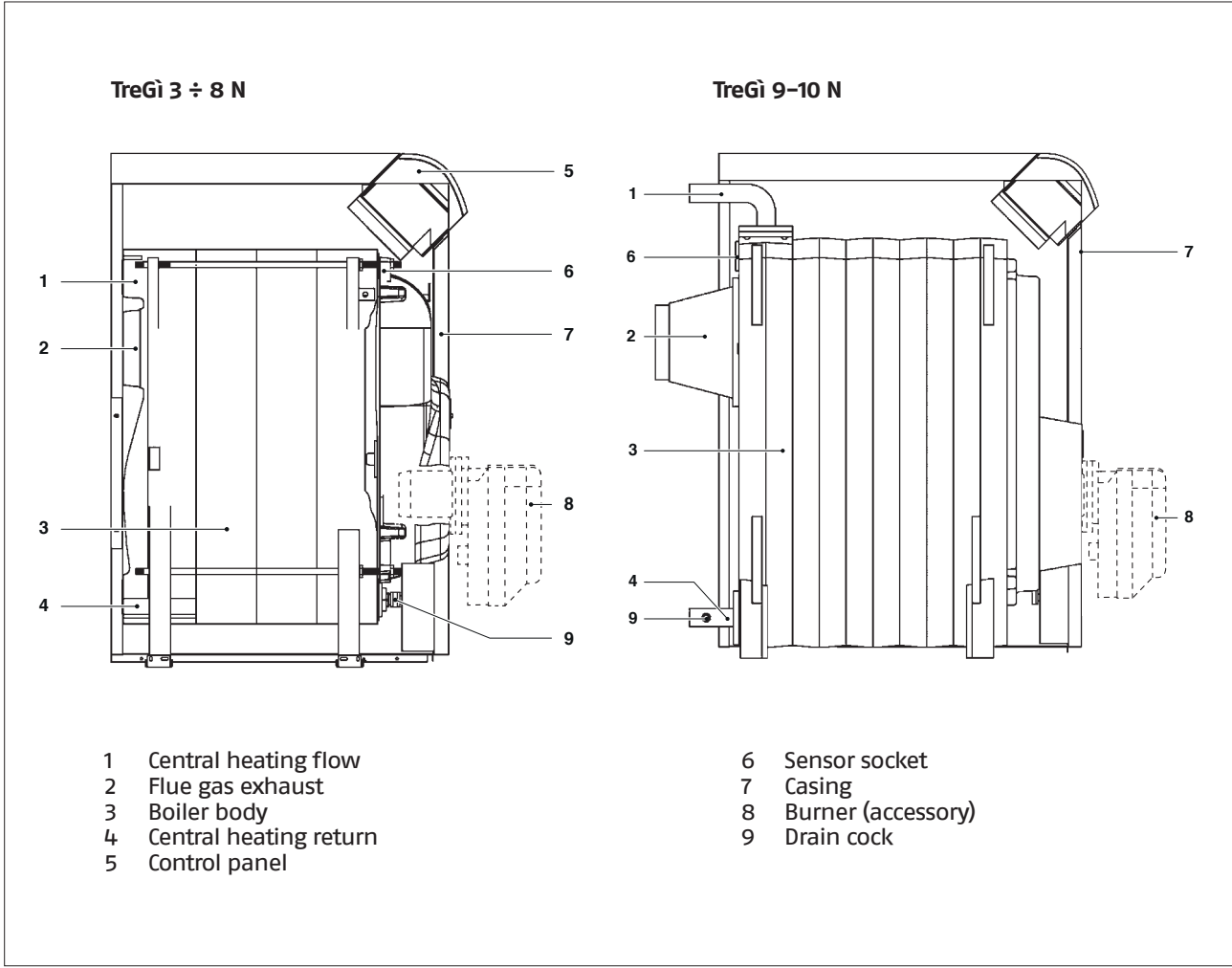
1.5 Data plate

	DHW system
	Central heating system
Qn	Rated heat input
Pn	Rated useful heat output
IP	Index of protection
Pmw	Maximum working pressure DHW system
Pms	Maximum working pressure central heating system
T	Temperature
η	Efficiency
D	Specific flow rate

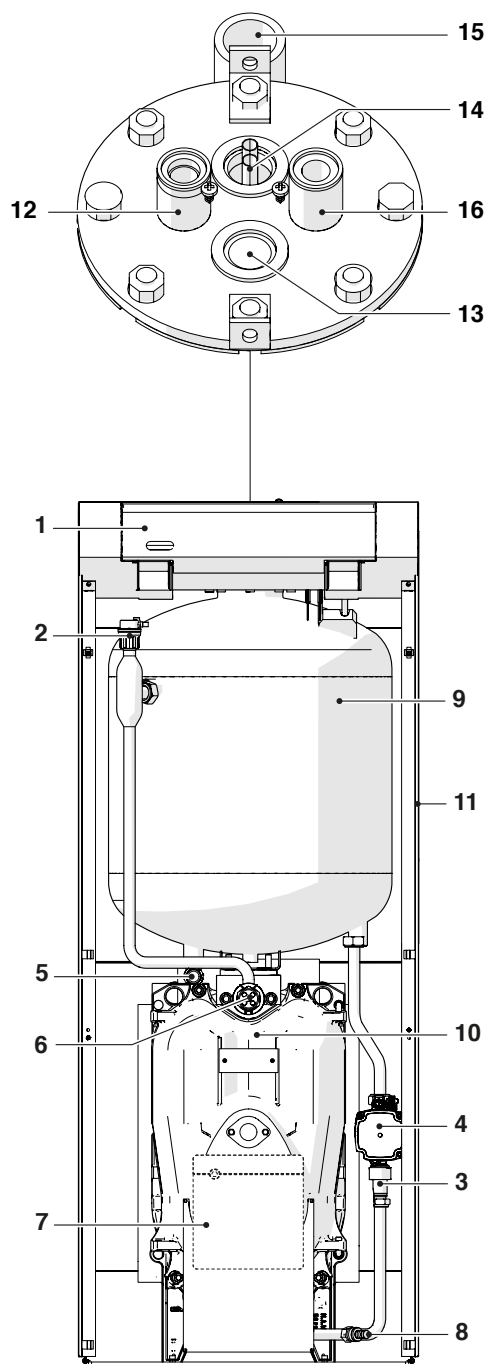
RIELLO	
RIELLO S.p.A. Via Ing. Pilade Rielo 7 37045 Legnago (VR) - ITALY	
Mod.	
Cod.	
N°	
Qn(max)	kW
Pn(max)	kW
Pms	bar

RIELLO		T067771GE			
RIELLO S.p.A. Via Ing. Pilade Rielo 7 37045 Legnago (VR) - ITALY					
Mod.					
Cod.					
N°					
Paese di destinazione/ Country of destination/ Pays de destination/ Bestimmungsland/ Land von bestemmung: Combustibile/ Fuel/ Combustible/ Brennstoff/ Brandstoff:					
Tipo/ Type/ Type/ Typ:					
Categoria apparecchi/ Device category/ Catégorie d'appareils/ Gerätebauart/ Categorie apparat:					
IP					
V-Hz		W			
		Qn(min)=	kW		
		Pn(min)=	kW		
		Qn(max)=	kW		
		Pn(max)=	kW		
 Pmw= bar T= °C				D= l/min	
 Pms= bar T= °C					

1.6 System layout

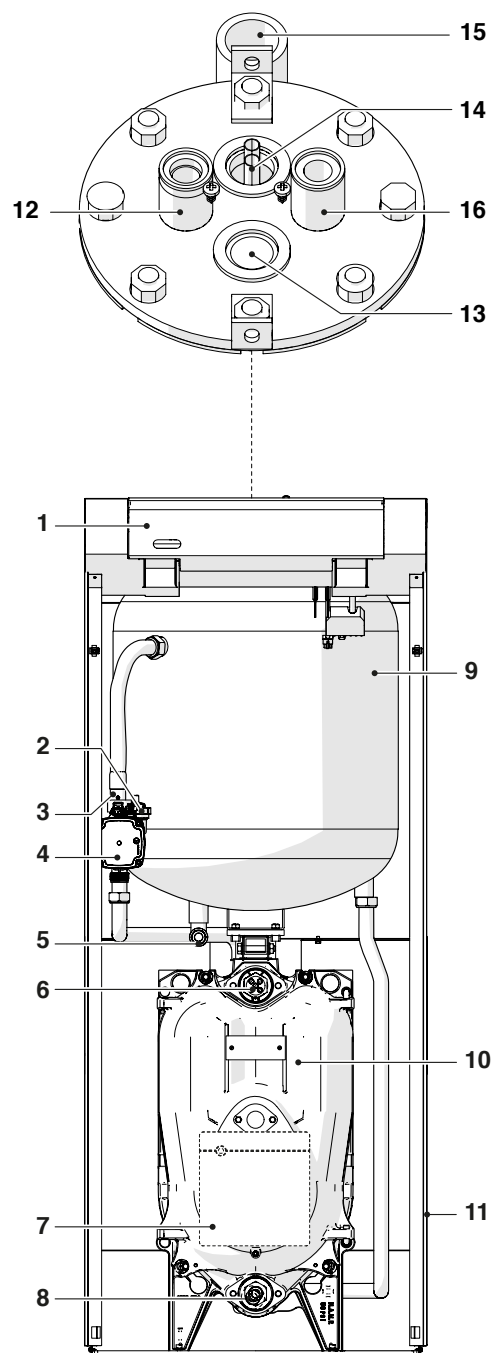


TreGi 3/100 - 4/100 NK



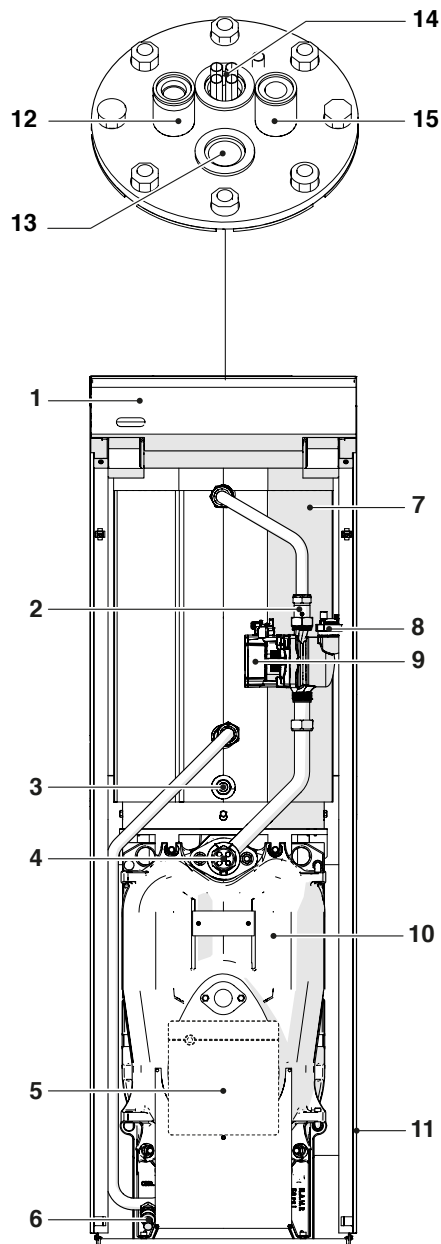
- 1 Control panel
- 2 Automatic vent valve
- 3 Non-return valve
- 4 Storage cylinder pump
- 5 Storage cylinder drain cock
- 6 Boiler sensor socket
- 7 Burner (accessory)
- 8 CH drain cock

TreGi 5/100 ÷ 8/100 NK



- 9 Storage cylinder (100 l)
- 10 Boiler body
- 11 Casing
- 12 Domestic cold water inlet
- 13 Magnesium anode
- 14 Storage cylinder sensor socket
- 15 Domestic hot water recirculation
- 16 Domestic hot water outlet


TreGì 3/60 - 4/60 NK



- 1 Control panel
- 2 Non-return valve
- 3 Storage cylinder drain cock
- 4 Boiler sensor socket
- 5 Burner (accessory)
- 6 CH drain cock
- 7 Storage cylinder (60 l)
- 8 Automatic vent valve
- 9 Storage cylinder pump
- 10 Boiler body
- 11 Casing
- 12 Domestic hot water outlet
- 13 Magnesium anode
- 14 Storage cylinder sensor socket
- 15 Domestic cold water inlet

1.7 Technical specifications

DESCRIPTION		MODEL TreGi N								
		3	4	5	6	7	8	9	10	
Fuel		Gas / Gasolio								
Rated heat input	Minimum	16,3	27,2	36,0	46,1	55,0	63,0	-	-	kW
	Maximum	26,5	34,8	44,3	53,1	62,0	70,0	80,0	92,0	kW
Rated useful heat output P _n	Minimum	14,9	25,0	33,0	42,3	50,0	57,6	-	-	kW
	Maximum	23,9	31,5	40,2	48,2	56,2	63,8	72,5	83,5	kW
Rendimento utile a P _n	Minimum	91,4	91,9	91,7	91,8	90,9	91,4	-	-	%
	Maximum	90,2	90,5	90,7	90,8	90,6	91,1	90,63	90,76	%
Useful efficiency at 30% max. P _n		90,9	91,3	91,6	92,0	91,8	92,0	90,3	90,5	%
Constant pressure drop		2,3	1,8	1,3	1,2	1,0	0,9	0,78	0,70	%
Flue gas temperature (ΔT)		> 140						196	202	°C
Maximum flue gas flow rate (gas/oil)		0,010	0,013	0,017	0,020	0,024	0,027	0,033	0,037	kg/s
Furnace pressure	Minimum	0,03	0,12	0,17	0,26	0,33	0,47	-	-	mbar
	Maximum	0,10	0,17	0,26	0,36	0,42	0,60	0,23	0,28	mbar
Furnace volume		16	22	28	34	40	46	49	57	dm ³
Total volume of flue gas side		22	31	39	47	55	63	-	-	dm ³
Total surface area for heat exchange		0,93	1,30	1,67	2,04	2,41	2,78	2,61	3,00	m ²
Volumetric heat load		1656	1582	1582	1562	1550	1522	1632	1614	kW/m ³
Specific heat load		25,7	24,2	24,1	23,6	23,3	22,9	27,8	27,8	kW/m ²
Maximum working pressure		4								bar
Safety thermostat trip temperature		110								°C
Maximum working temperature		82								°C
Minimum admissible water return temperature		35						40		°C
Pressure drop ΔT 10°C		4	6	10	14	20	26	29	34	mbar
Pressure drop ΔT 20°C		1,2	1,6	2,5	3,5	5,0	7,0	8,0	9,0	mbar
Water capacity		13,7	17,2	20,7	24,2	27,7	31,2	42,0	47,0	l
Turbulators		5	5	2	2	-	-	4	4	n°
Index of protection		X0D								IP

 The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue gas exhaust.

 Values obtained with **RIELLO** Modelli GULLIVER RG burners with CO₂ = 12,5% and GULLIVER BS burners with CO₂ = 9,5%.

DESCRIPTION		MODEL TreGì NK								
		3/100	4/100	5/100	6/100	7/100	8/100	3/60	4/60	
Fuel		Gas / Gasolio								
Heat input at furnace	Minimum	16,3	27,2	36,0	46,1	55,0	63,0	16,3	27,2	kW
	Maximum	26,5	34,8	44,3	53,1	62,0	70,0	26,5	34,8	kW
Rated useful heat output P _n	Minimum	14,9	25,0	33,0	42,3	50,0	57,6	14,9	25,0	kW
	Maximum	23,9	31,5	40,2	48,2	56,2	63,8	23,9	31,5	kW
Useful efficiency at P _n	Minimum	91,4	91,9	91,7	91,8	90,9	91,4	91,4	91,9	%
	Maximum	90,2	90,5	90,7	90,8	90,6	91,1	90,2	90,5	%
Useful efficiency at 30% max. P _n		90,9	91,3	91,6	92,0	91,8	92,0	90,9	91,3	%
Constant pressure drop		2,3	1,8	1,3	1,2	1,0	0,9	2,3	1,8	%
Flue gas temperature (ΔT)		> 140								°C
Maximum flue gas flow rate (gas/oil)		0,010	0,013	0,017	0,020	0,024	0,027	0,010	0,013	Kg/s
CO ₂ (gas/oil)		9,5/12,5								%
Furnace pressure	Minimum	0,03	0,12	0,17	0,26	0,33	0,47	0,03	0,12	mbar
	Maximum	0,10	0,17	0,26	0,36	0,42	0,60	0,10	0,17	mbar
Furnace volume		16	22	28	34	40	46	16	22	dm ³
Total volume of flue gas side		22	31	39	47	55	63	22	31	dm ³
Total surface area for heat exchange		0,93	1,30	1,67	2,04	2,41	2,78	0,93	1,30	m ²
Volumetric heat load		1656	1582	1582	1562	1550	1522	1656	1582	kW/m ³
Specific heat load		25,7	24,2	24,1	23,6	23,3	22,9	25,7	24,2	kW/m ²
Maximum working pressure		4								bar
Safety thermostat trip temperature		110								°C
Maximum working temperature		82								°C
Minimum admissible water return temperature		35								°C
Pressure drop ΔT 10°C		4	6	10	14	20	26	4	6	mbar
Pressure drop ΔT 20°C		1,2	1,6	2,5	3,5	5,0	7,0	1,2	1,6	mbar
Water capacity		13,7	17,2	20,7	24,2	27,7	31,2	13,7	17,2	l
Turbulators		5	5	2	2	-	-	5	5	n°
Index of protection		X0D								IP

⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue gas exhaust.

⚠ Values obtained with **RIELLO** GULLIVER RG burners with CO₂ = 12,5% and GULLIVER BS burners with CO₂ = 9,5%.

STORAGE CYLINDER CHARACTERISTICS		MODEL TreGì NK								
		3/100	4/100	5/100	6/100	7/100	8/100	3/60	4/60	
Storage cylinder type		Vetrificato								
Cylinder layout		Verticale								
Heat exchanger layout		Verticale								
Power consumption		23,8	31,3	31,3	31,3	31,3	31,3	23,2	30,9	kW
Storage cylinder capacity		100						60		l
Coil water capacity		6,9						6,6		l
Heat exchanger surface area		1,10						1,01		m ²
Domestic hot water production with ΔT 35°C		585	770	770	770	770	770	570	760	l/h
Water draw in 10' with storage cylinder at 48°C (*)		160	170	185	185	185	185	115	125	l
Water draw in 10' with storage cylinder at 60°C (*)		210	230	230	230	230	230	140	150	l
Replenishment time with ΔT 35°C		14	10	11	11	11	11	12	10	min
Maximum working pressure 7 bar		7								bar

(*) Inlet water temperature 13°C; average outlet temperature 43°C

- Performance obtained with fill pump at maximum speed.

1.8 Pump

TECHNICAL SPECIFICATIONS

DESCRIPTION	ERP ready 2015	
Electrical consumption	53	W
EEl Part 3 (*)	$\leq 0,20$	
P L,Avg (**)	≤ 24	W
Minimum pressure at pump suction inlet	0,5	bar

(*) Energy efficiency index according to ERP 2015 (Commission regulations 641/2009 and 622/2012)

(**) Average annual electricity consumption according to ERP 2015 (Commission regulations 641/2009 and 622/2012)

ADJUSTING THE PUMP

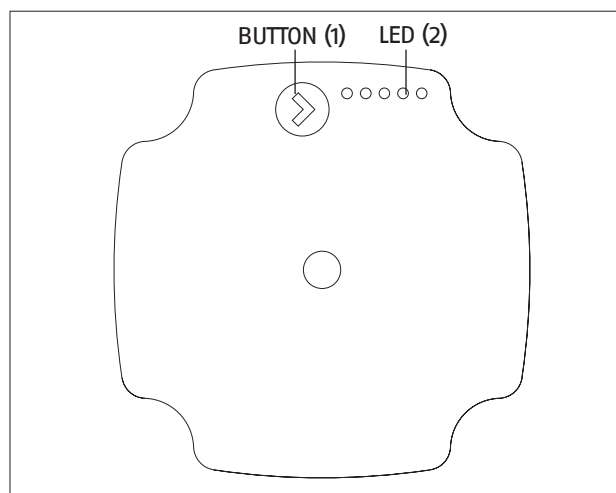
The boiler's pump is ErP 2015 Ready, and suitable for use in central heating only/domestic hot water applications. The pump can be controlled by an external PWM signal and has 4 different pressure curves for central heating applications.

When controlled by a PWM signal, pump speed varies according to the frequency of the incoming PWM signal, modulating head/flow rate on the basis of the selected curve.

In the absence of a PWM signal, the pump runs at full speed and delivers the head/flow rate determined by the selected curve. Each curve is characterised by a maximum head expressed in metres.

User interface

The user interface features one button (1), one red/green LED (2) and four yellow LEDs.

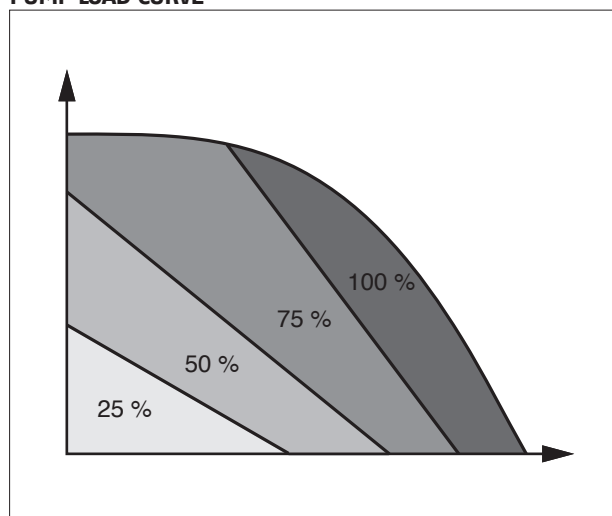


Via this interface, users can access:

- Functioning (performance display) mode. Pump performance is displayed during functioning as a % of current draw with respect to rated load. Alarm conditions can be seen from the colour of LED (2).
- Setting mode. Setting mode is accessed by pressing the button (1), and is used to select the pump curve.

Display	Meaning	% power
LED 1 flashing green	Stand-by (only with PWM control)	0
LED 1 green and LED 2 yellow, both lit	Low load	0-25
LED 1 green and LEDs 2, 3 yellow, all lit	Low-medium load	25-50
LED 1 green, LEDs 2, 3, 4 yellow, all lit	Medium-high load	50-75
LED 1 green, LEDs 2, 3, 4, 5 yellow, all lit	High load	75-100

PUMP LOAD CURVE



Functioning mode

A) Performance display

When the pump is functioning, LED 1 is green. The four yellow LEDs indicate the instantaneous power draw as shown in the table above. In functioning mode, all active LEDs are lit (not flashing) to differentiate this condition from setting mode. If the pump is stopped by the external control signal, LED 1 flashes green.

B) Alarm display

If the pump detects one or more alarm conditions, LED 1 changes from green to red. When an alarm is active, the LEDs indicate the type of alarm as shown in the following table. If more than one alarm is active at the same time, the LEDs only show the alarm condition with the highest priority. Alarm priority follows the order of the table.

When no alarm is active, the user interface automatically displays pump performance.

Display	Meaning	Function	Action
LED 1 red and LED 5 yellow, both lit	The pump rotor is blocked.	The pump automatically attempts to start every 1.5 seconds.	Wait or check that the pump rotor is free to rotate.
LED 1 red and LED 4 yellow, both lit	Supply voltage too low.	Indication only. The pump continues to function.	Check the voltage of the power supply.
LED 1 red and LED 3 yellow, both lit	Electronic controller error.	The pump has stopped because supply voltage is too low or because an error has occurred in the internal electronic controller.	Check the voltage of the power supply or replace the pump.

Setting mode

A) Setting display

To switch from performance display to setting display, press button (1). The LEDs show the current setting. See the following table for the meaning of the LED display. Setting display mode shows the type of pump control or the currently selected pump curve. Settings cannot be changed in performance display mode. After 2 seconds, the display returns to performance display mode.

If LED 1 is red, it indicates that an alarm is active or that the pump is being controlled by an external (PWM) signal.

LEDs 2 and 3 show the type of internal control while LEDs 4 and 5 show the currently selected curve (1, 2, 3 or 4). All these LEDs are yellow in colour.

	LED 1	LED 2	LED 3	LED 4	LED 5
PWM A	Red	ON	-	-	-
Curve 1 (4 m)			-	-	-
Curve 2 (5m)			-	ON	-
Curve 3 (6m)			-	ON	ON
Curve 4 (7m)			-	-	ON

B) Button lock function

The button lock function serves to prevent improper use or accidental changes to pump settings.

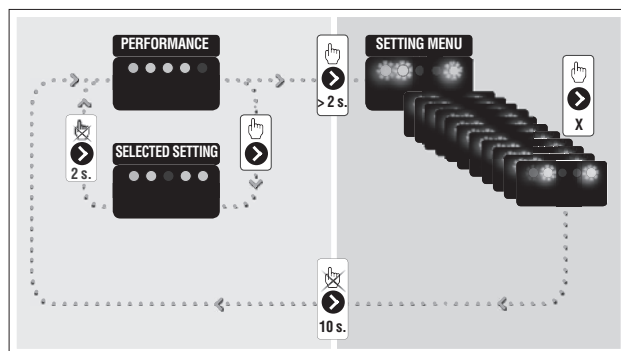
When the button lock is active, pressing the button has no effect. This prevents users from accidentally accessing setting mode while allowing them to use setting display mode.

Press and hold the button for more than 10 seconds, to activate / deactivate the button lock.

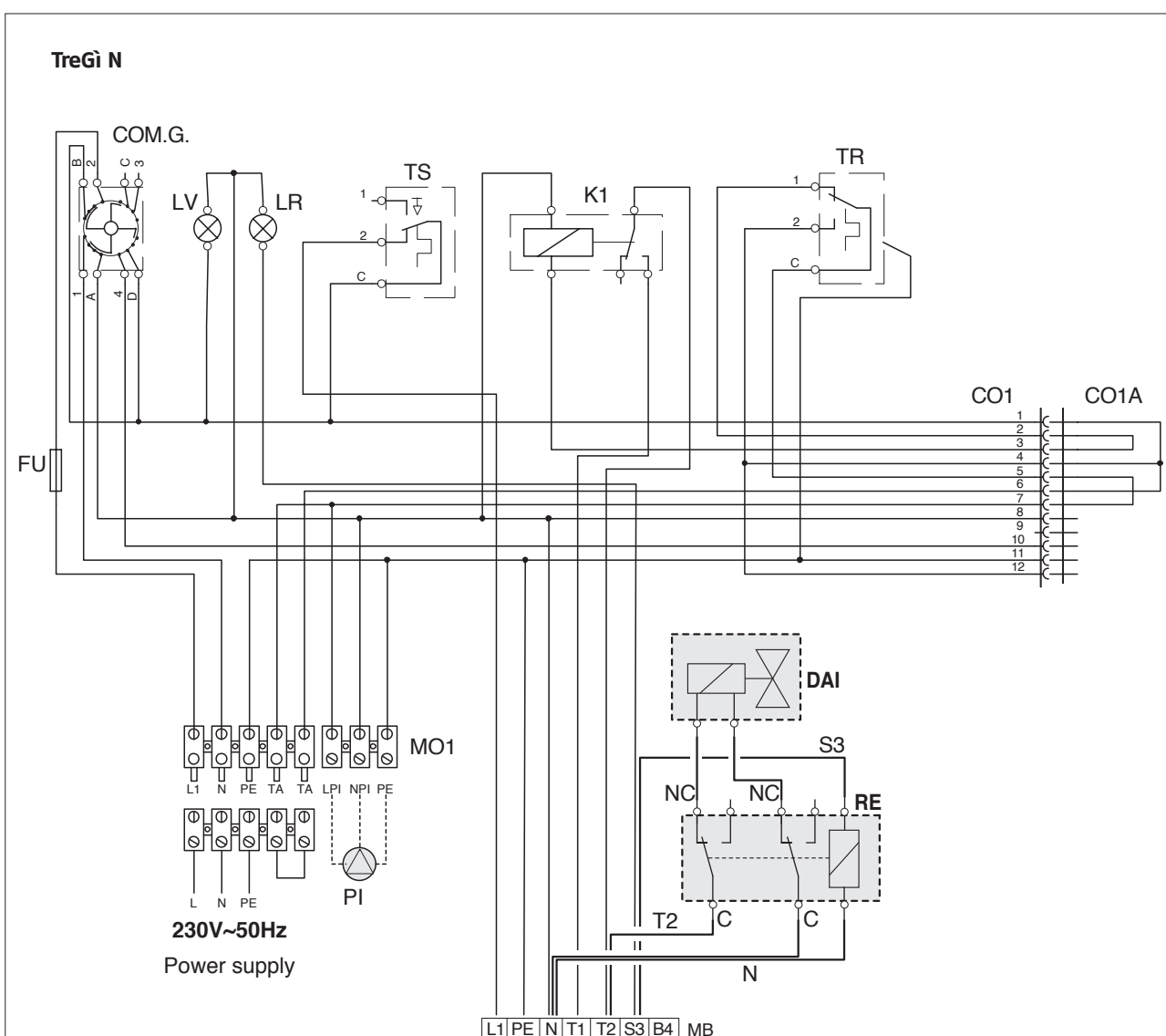
When the button is held down for 10 seconds, all the LEDs except the red LED flash for one second to indicate that the button lock function has been activated/deactivated.

C) Setting mode

To access setting mode, press and hold the button (1) for between 2 and 10 seconds. The button lock must be deactivated in order to change settings. Available settings are displayed in a pre-defined sequence that is repeated every time the button is briefly pressed and released. If the button is not pressed for over 10 seconds, the pump exits setting mode and returns to performance display mode. The last settings made are saved in memory. See the table above for the meanings of the LED sequences.



1.9 Functional wiring diagram

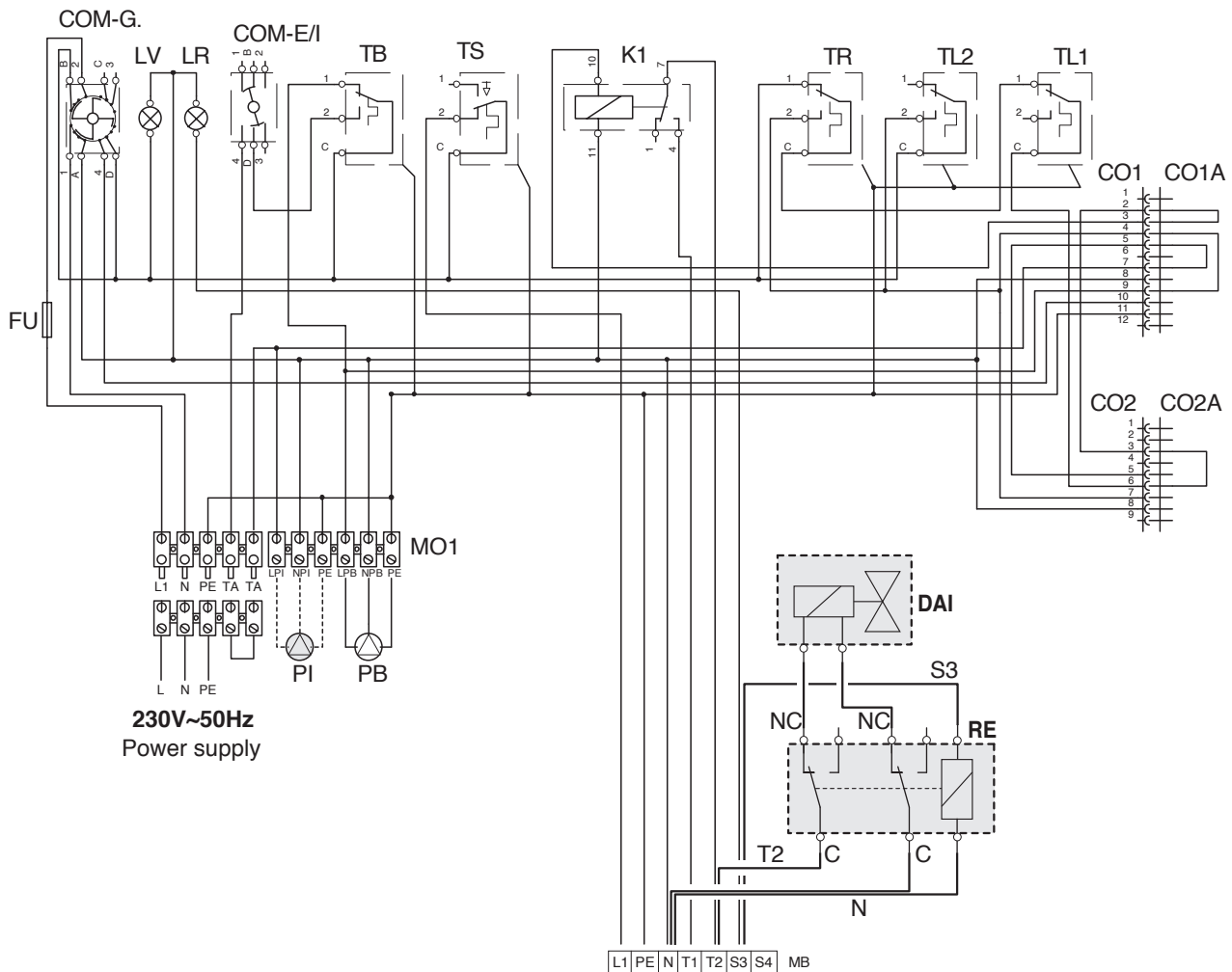


- | | |
|----------|--------------------------------------------|
| COM.G. | 4 position function selector |
| LV | Mains power indicator |
| LR | Burner lockout indicator |
| TS | Safety thermostat (110°C 0/-6) (*) |
| TR | Boiler control thermostat (33-82°C ±3) (*) |
| FU | Mains power fuse 6.3 A-T |
| C01-C01A | Multi-connectors |
| M01 | Terminal strip |
| MB | 7 pin burner connector |
| PI | Central heating pump (not supplied) |

DAI	Automatic shut-off device (not supplied; only where required). The automatic shut-off device (DAI) and the relay (RE) must be suitable for a 230 VAC power supply..
RE	Relay (not supplied)

(*) Homologated

TreGì NK



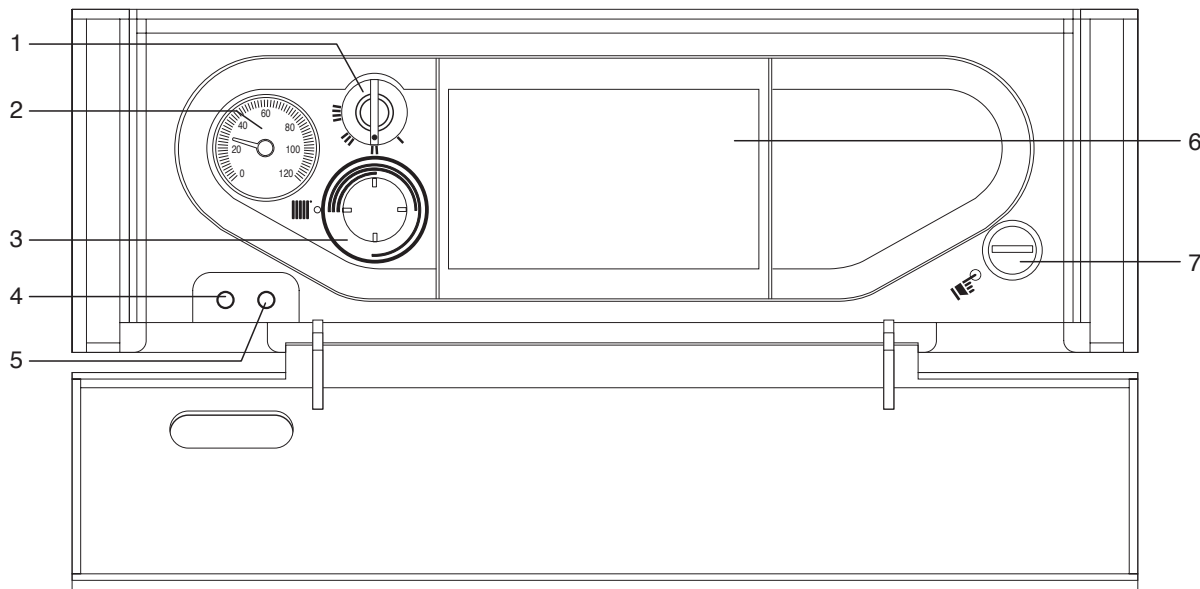
- COM.E/I Summer/Winter selector
 COM.G. 4 position function selector
 FU Mains power fuse 6.3 A-T
 LR Burner lockout indicator
 LV Mains power indicator
 CO1-CO1A Multi-connectors
 CO2-CO2A Multi-connectors
 M01 Terminal strip
 MB 7 pin burner connector
 TB Storage cylinder thermostat (0-70°C ±3)
 TL1 Maximum temperature thermostat (82°C)
 TL2 Overtemperature dispersal thermostat (90°C)
 TR Boiler control thermostat (33-82°C ±3) (*)
 TS Safety thermostat (110°C 0/-6) (*)
 PI Central heating pump (not supplied)
 PB Storage cylinder pump



- DAI Automatic shut-off device (not supplied; only where required). The automatic shut-off device (DAI) and the relay (RE) must be suitable for a 230 VAC power supply..
 RE Relay (not supplied)

(*) Homologated

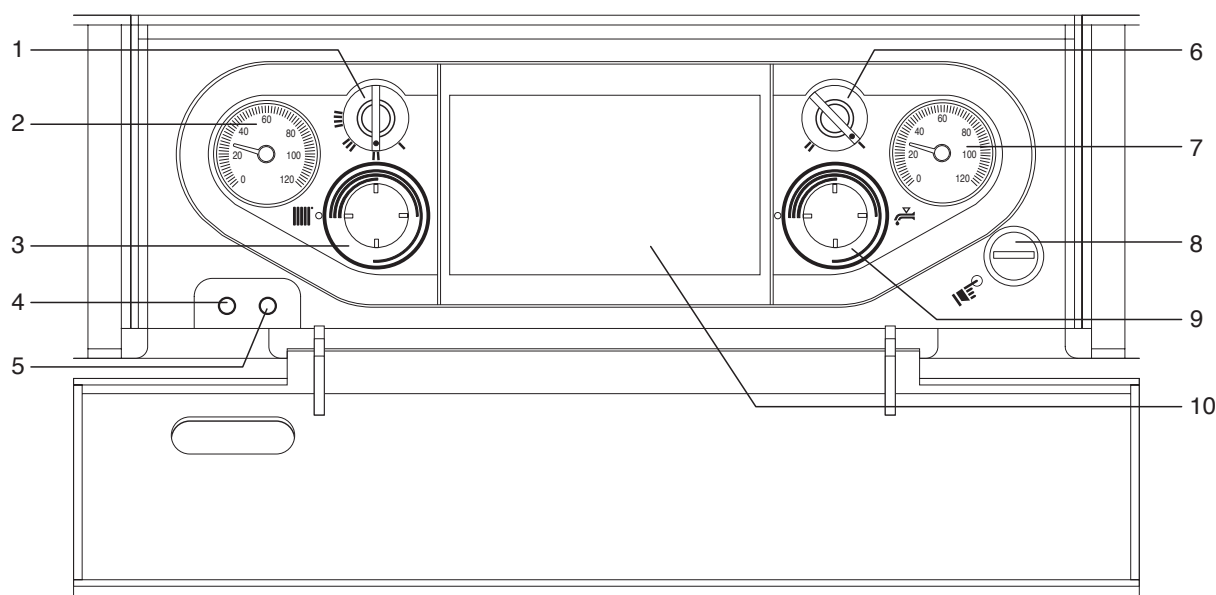
1.10 Control panel





TreGi N



- 1 - **Function selector**
 - I Off
 - II On
 - III On
 - IIII Automatic mode (only active with temperature control kit installed)
- 2 - **Boiler temperature gauge**
Displays the temperature of the central heating water.
- 3 - **Boiler thermostat** 
Allows you to set the temperature of the central heating water.
- 4 - **Electrical power indicator (green)**
Lights to show that the boiler is receiving electrical power.
- 5 - **Burner lockout indicator (red)**
Lights to show that the burner lockout has tripped.
- 6 - **Function indicators**
- 7 - **Manual reset for safety thermostat** 
Allows you to reset the boiler if the safety thermostat trips.
Unscrew the protective cover to access the reset button.

TreGi NK



- 1 - **Function selector**
 - I Off
 - II On
 - III On
 - IIII Automatic mode (only active with temperature control kit installed)
- 2 - **Boiler temperature gauge**
Displays the temperature of the central heating water
- 3 - **Boiler thermostat** 
Allows you to set the temperature of the central heating water.
- 4 - **Electrical power indicator (green)**
Lights to show that the boiler is receiving electrical power.
- 5 - **Burner lockout indicator (red)**
Lights to show that the burner lockout has tripped.
- 6 - **Summer (I) / Winter (II) selector**
- 7 - **Storage cylinder temperature gauge** 
Displays the temperature of the domestic hot water.
- 8 - **Manual reset for safety thermostat** 
Allows you to reset the boiler if the safety thermostat trips.
Unscrew the protective cover to access the reset button.
- 9 - **Storage cylinder thermostat** 
Allows you to set the temperature of the domestic hot water.
- 10 - **Function indicators**

1.11 Recommended burners



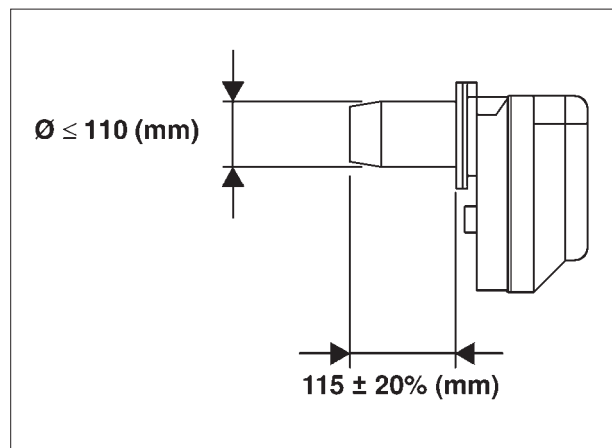
See the instruction manual provided with the burner for further information on:

- Burner installation
- Electrical connections
- Burner adjustments.

IMPORTANT

If you are installing a new boiler but re-using an old burner, always perform the following checks:

- Make sure that the performance of the old burner is adequate for the requirements of the boiler
- Make sure that the length and diameter of the burner's blast tube are suitable for the boiler's combustion chamber..

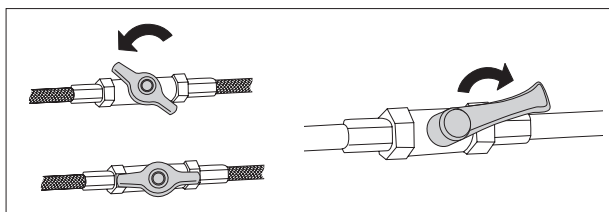


2 USER – SYSTEM MANAGER

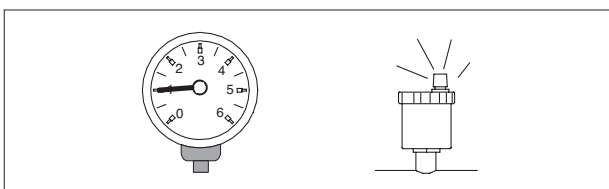
2.1 Start up

Have **RIELLO's** Technical Assistance Service start-up your **TreGi** boiler for the first time. Once this has been done, the boiler can be left to function automatically. Under certain circumstances, such as after long periods of disuse, the service engineer responsible for the boiler may need to re-start it without involving the Technical Assistance Service. To do so, perform the following checks and operations:

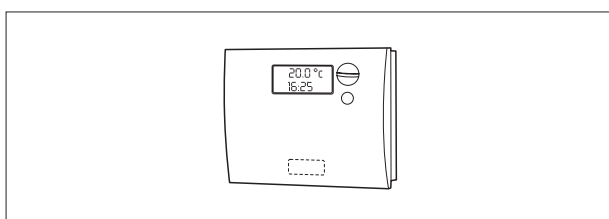
- Check that the gas cock and heating water cock are open



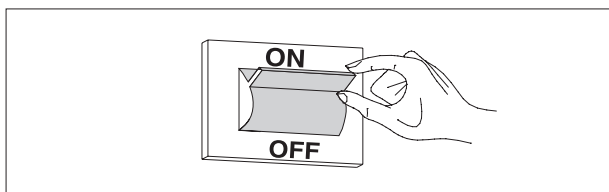
- While the system is still cold, check that working pressure in the heating circuit is **over 1 bar** but below the maximum limit specified for the boiler. If this is not the case, contact **RIELLO's** Technical Assistance Service



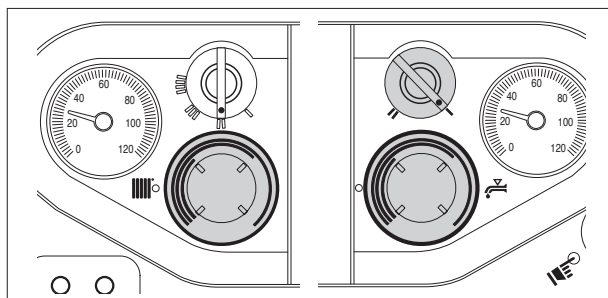
- Set the room thermostat to the required temperature (~20 °C) or, if the system has a timer, make sure that this is switched "On" and adjusted to the required temperature (~20 °C)



- Turn the system's main power switch ON



- Adjust the boiler and storage cylinder thermostats (**NK** models) to about the middle of the section with three lines



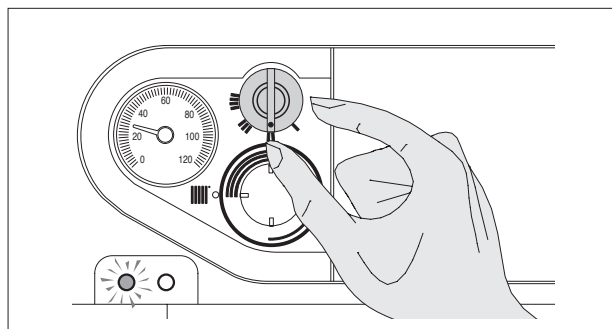
- Turn the function selector to ON (II) and make sure that the green power indicator lights

The burner should now ignite and remain in operation until the set temperature is reached.

If any ignition faults or malfunctions occur, the burner performs a 'LOCKOUT SHUTDOWN'. This is shown by the red button light on the burner and by the warning light on the control panel.

⚠ If a "LOCKOUT SHUTDOWN" occurs, wait about 30 seconds before resetting the burner.

To reset the burner, press the red button light on the burner. The complete ignition cycle will be repeated up to the ignition of the flame.



This operation can be repeated 2-3 times at the most, at intervals of at least one minute. If the problem persists after that, call **RIELLO's** Technical Assistance Service.

2.2 Temporary shutdown

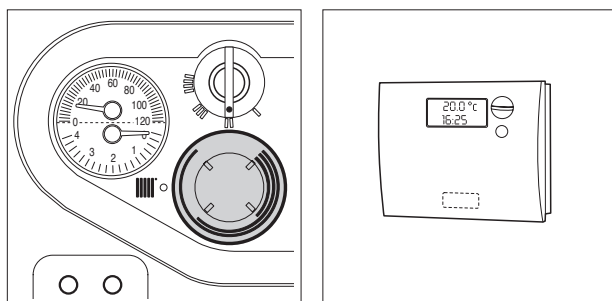
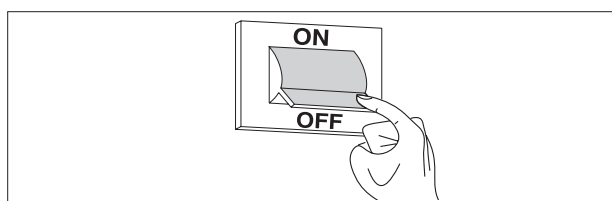
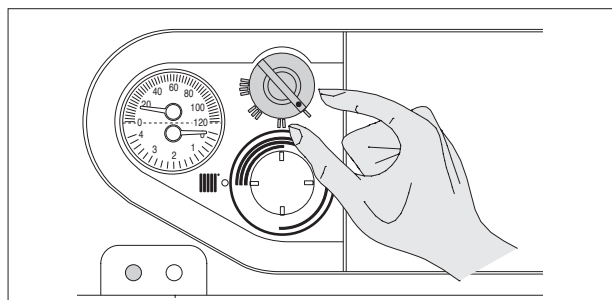
If you are going to be away for a short period of time like a weekend or a short holiday, etc., and outdoor temperatures are above ZERO, proceed as follows:

- Turn the function selector to OFF (I) and make sure that the green power indicator goes out
- Turn the system's main power switch OFF

⚠ Do NOT perform this procedure if outdoor temperatures might fall below ZERO (risk of freezing).

In that case proceed as follows:

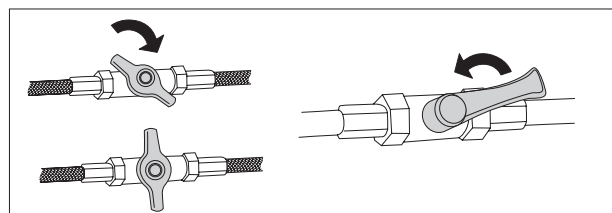
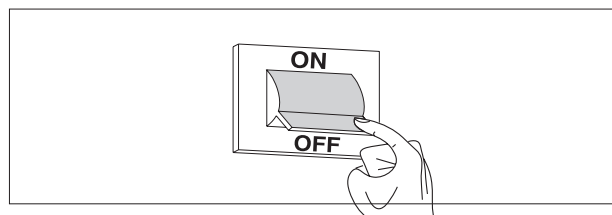
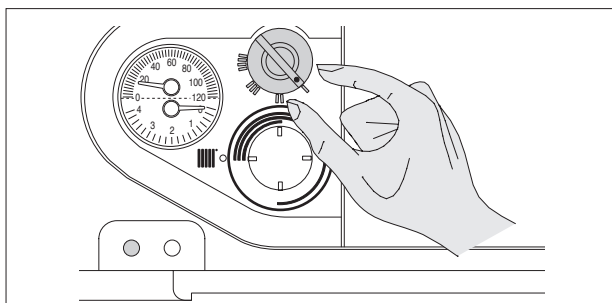
- Adjust the boiler thermostat to about the middle of the section with one line
- Adjust the room thermostat to about 10°C.



2.3 Preparing for extended periods of disuse

If the boiler is not going to be used for an extended period of time, perform the following operations:

- Turn the function selector to OFF (I) and make sure that the green power indicator goes out
- Turn the system's main power switch OFF
- Close the fuel cock and heating circuit water cock
- Drain the central heating circuit if there is any risk of freezing.



⚠ Contact **RIELLO's** Technical Assistance Service if you encounter any problems in completing the above procedure.

2.4 Cleaning

Use a cloth damped in soapy water to clean the boiler's external casing.
To remove stubborn marks, use a cloth damped in a 50% mix of water and denatured alcohol or a suitable cleaning product.
Carefully dry the boiler after cleaning.

⚠ The combustion chamber and flues must be cleaned periodically by **RIELLO's** Technical Assistance Service or by a qualified heating engineer (see "4.7 Cleaning the boiler" page 43)

⊖ Do not use abrasive products, petrol or triethylene.

⊖ Never clean the boiler without first disconnecting it from the mains electricity supply by turning the main power switch and the function selector OFF.

2.5 Maintenance

Please remember that in compliance with Italian laws, THE PERSON RESPONSIBLE FOR SYSTEM MANAGEMENT MUST ENSURE THAT PROFESSIONALLY QUALIFIED PERSONNEL UNDERTAKE PERIODIC MAINTENANCE AND COMBUSTION EFFICIENCY MEASUREMENTS.

RIELLO 's Technical Assistance Service is qualified to satisfy these legal requirements and can also provide useful information on MAINTENANCE PROGRAMMES designed to guarantee:

- greater safety
- compliance with applicable legislation
- freedom from the risk of fines in the event of spot check.

2.6 Useful information

Seller:.....
 Mr.:
 Address:
 Tel.:

Installer:.....
 Mr.:
 Address:
 Tel.:

Servizio Tecnico di Assistenza:
 Mr.:
 Address:
 Tel.:

Date	Work done

Fuel oil supplier:
 Mr.:
 Address:
 Tel.:

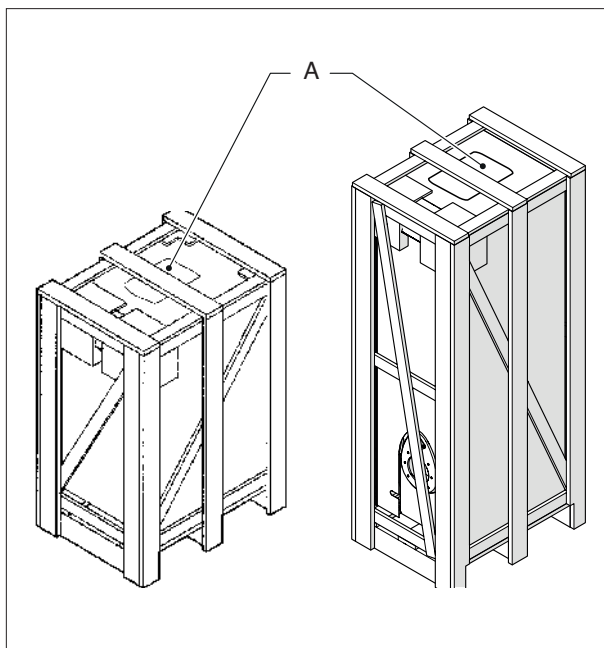
Date	Quantity supplied	Date	Quantity supplied	Date	Quantity supplied	Date	Quantity supplied

3 INSTALLER

3.1 Unpacking the product

RIELLO TreGì boilers 3 ÷ 10 N, and **TreGì 3 – 4 NK** are delivered in a robust wooden crate and are further protected by PVC wrapping. The document bag (A) is located under the top panel of the casing and contains:

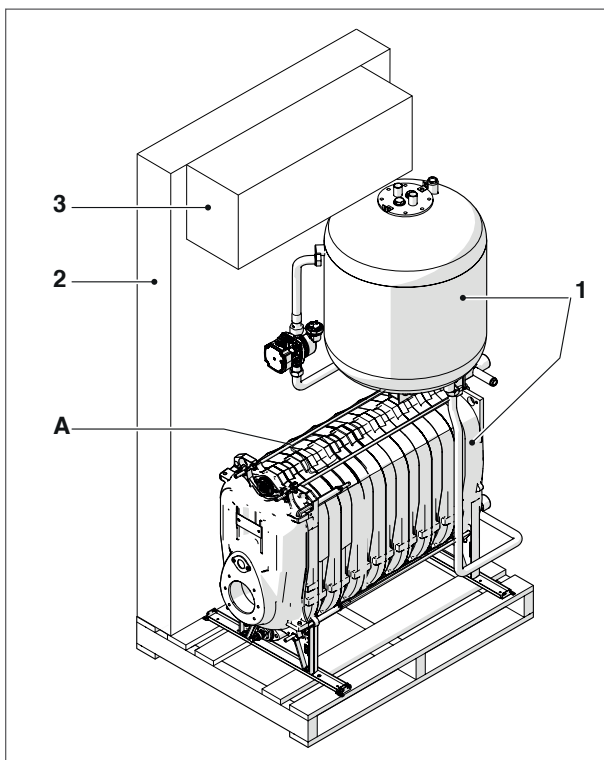
- Instruction manual
- System service booklet (only for **TreGì 3 – 4 N**)
- Warranty certificate
- Spare parts catalogue
- Bar code labels.



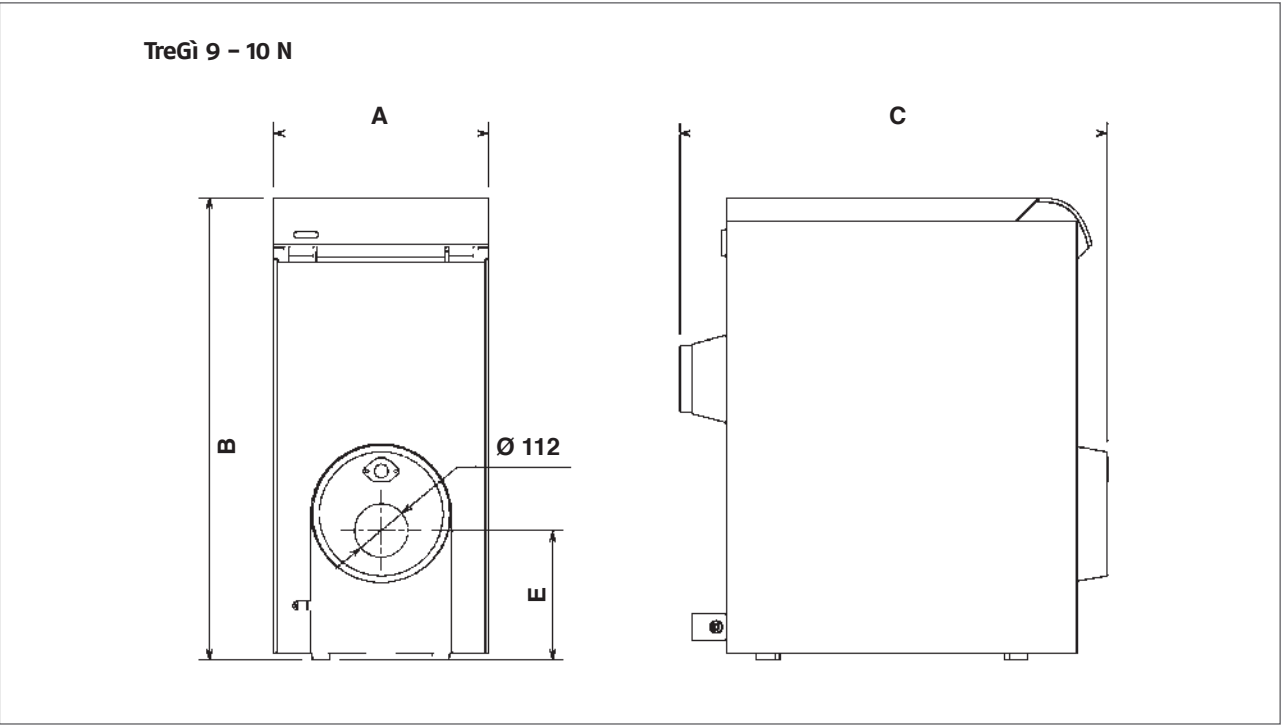
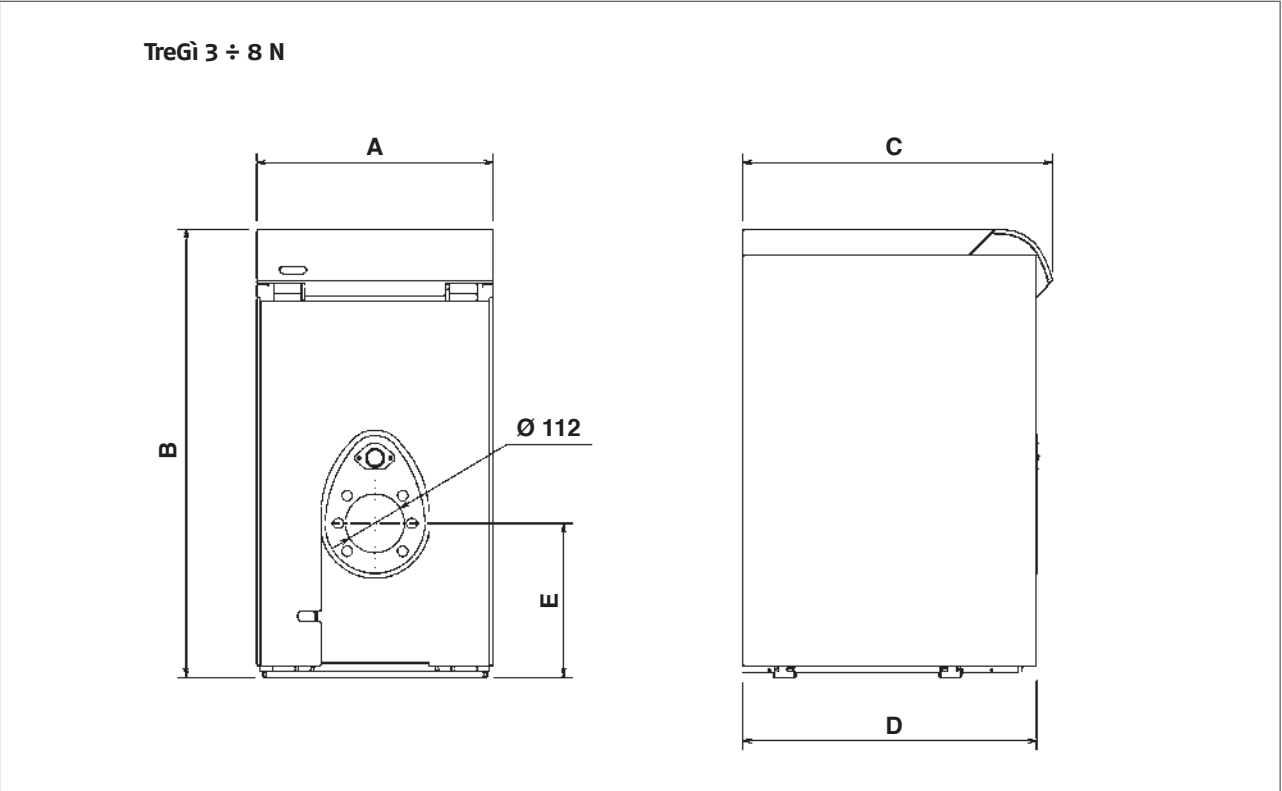
RIELLO TreGì 5/100 ÷ 8/100 NK boilers are delivered in 3 boxes on a single pallet and are further protected by a nylon film:

- 1 **The BOILER BODY box**, to which the documentation envelope (A) is attached, also contains:
 - Instruction manual
 - Warranty certificate
 - Spare parts catalogue
 - Data plate
 - Bar code labels
 - Electrical connections (for the T1-T2 connectors on the burner).
- 2 **The CASING box** contains the accessories and fasteners for assembling and insulating the boiler body.
- 3 **CONTROL PANEL.**

⚠ The instruction manual is an integral part of the boiler. Once located, read it thoroughly and keep it safe.

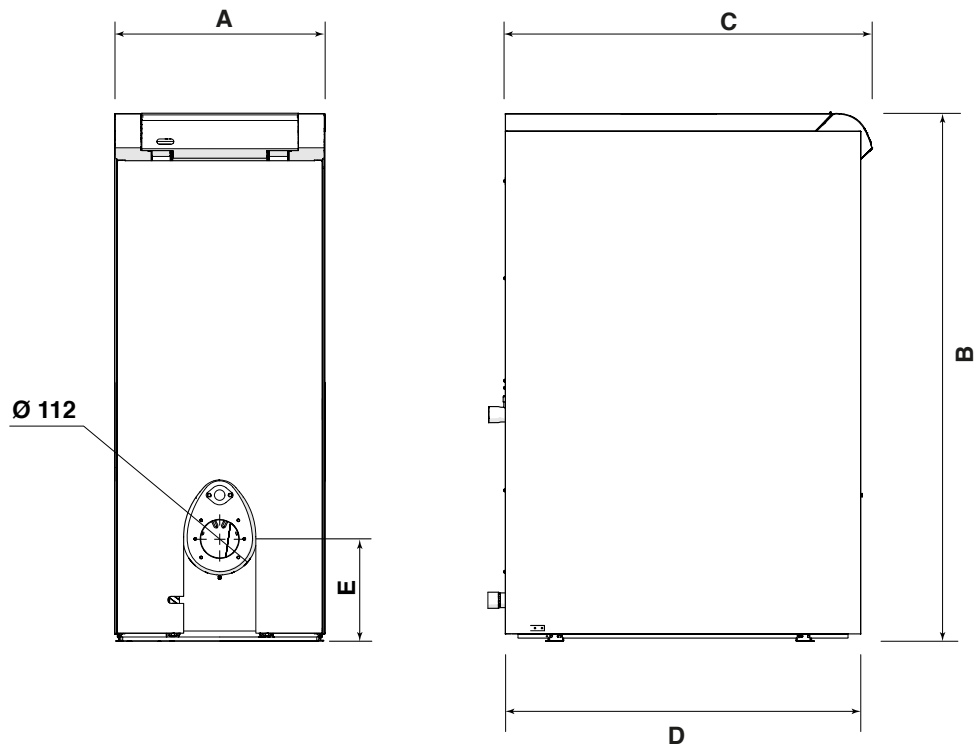


3.2 Overall dimensions and weights



DESCRIPTION	MODEL TreGì N								
	3	4	5	6	7	8	9	10	
A - Width	450								mm
B - Height	850						965		mm
C - Overall depth	490	590	690	790	890	990	995	1095	mm
D - Depth	460	560	660	760	860	960	-	-	mm
E	290						276		mm
Net weight	122	147	171	196	219	244	267	297	Kg

TreGì NK



DESCRIPTION	MODEL TreGi NK								
	3/100	4/100	5/100	6/100	7/100	8/100	3/60	4/60	
A - Width	600						450		mm
B - Height	1470		1510				1470		mm
C - Overall depth	580		690	790	890	990	580		mm
D - Depth	550		660	760	860	960	550		mm
E	290								mm
Net weight	165	205	232	264	286	306	170	200	Kg

3.3 Handling

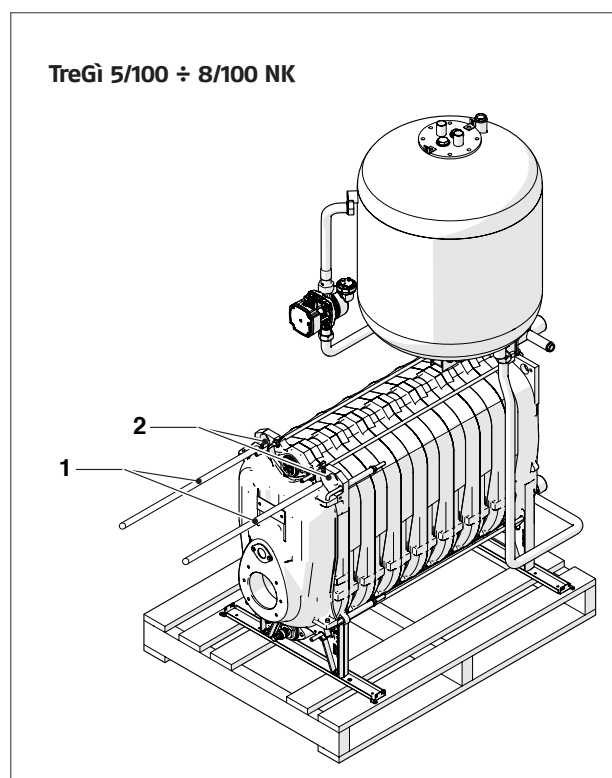
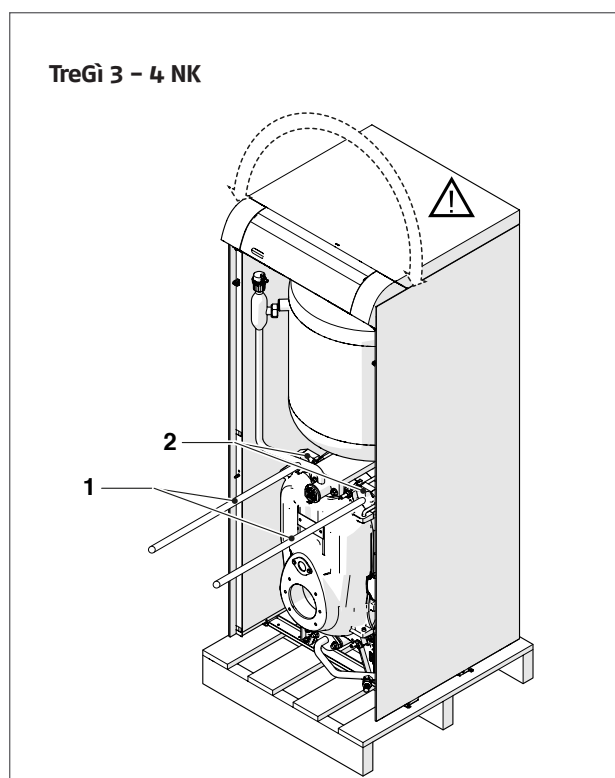
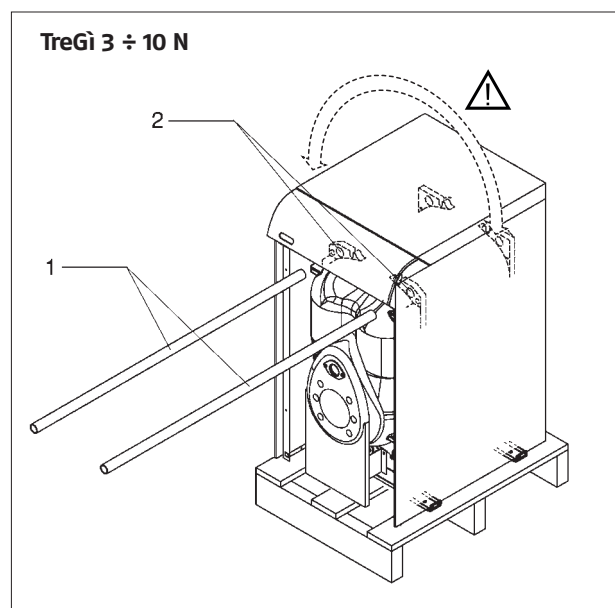
Once you have removed the outer packaging, proceed as follows to unpack and handle the boiler:

- Remove the screws fixing the boiler to the pallet.
- Remove the front panel
- Lift the boiler by inserting two 3/4" diameter pipes (1) through the lifting holes (2) in the boiler body.

⚠ Wear suitable personal protective equipment and use suitable safety devices.

⚠ Be careful to the oscillations when lifting the boiler.

⊘ Do not dispose of packaging material into the environment, or leave it within the reach of children, since it can be a potential hazard. Dispose of packaging material in compliance with applicable legislation



3.4 Place of installation

TreGi N – NK boilers from size 5 to 10 must be installed in dedicated boiler rooms.
The boiler room must have adequately sized vents, and must comply with applicable laws and standards .

⚠ When installing the boiler, allow sufficient space around it to access all safety and control devices and to permit easy maintenance.

⚠ If the specific weight of the gas supply to the burner is greater than the specific weight of air, install all electrical parts at least 500 mm above floor level.

⊖ Do not install the boiler outdoors. It is not designed to work outdoors and is not fitted with the necessary automatic anti-frost systems to do so.

3.5 Installation in older systems and systems requiring modernisation

When installing these boilers in old systems or systems requiring modernisation, always perform the following checks:

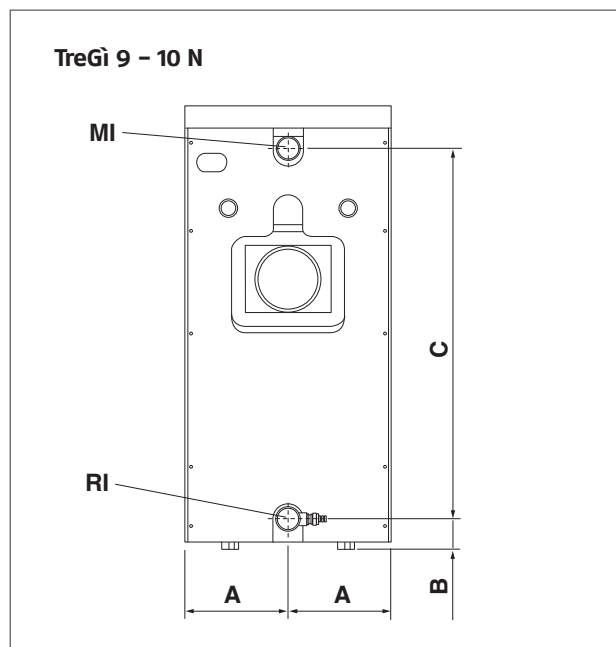
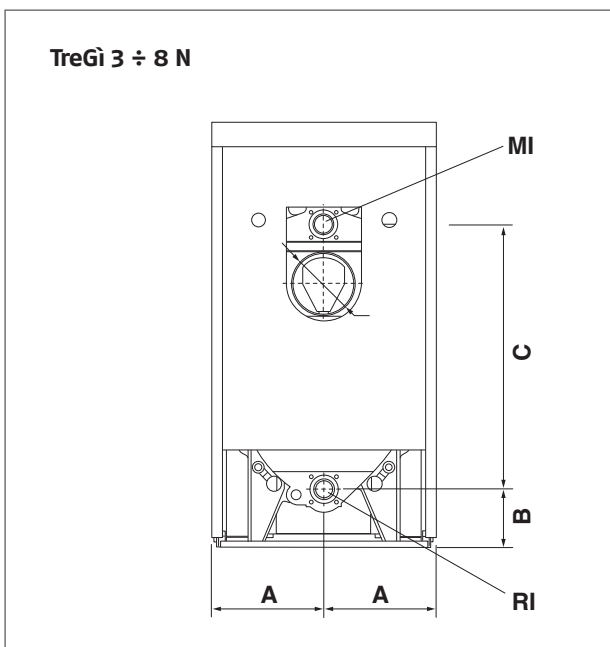
- Make sure that the stack is able to withstand the temperature of the combustion gases and that it has been designed and made in compliance with applicable standards. The stack must also be as straight as possible, sealed, insulated and not blocked or choked.
- Make sure that the electrical system has been installed by a qualified electrician in compliance with applicable standards.
- Make sure that the oil feed line and any oil storage

ge cylinder are made and installed in compliance with applicable standards.

- Make sure that the expansion vessels are big enough to contain the volume generated by thermal expansion.
- Make sure that flow rate, head and direction of flow of the pumps are suitable and correct.
- Make sure that the circuit has been flushed out to remove all sludge and lime scale, and has been vented and seal tested.
- Make sure that a suitable water treatment system is installed if the quality of the supply/recirculation water so demands. (See "Schematic diagram – central heating – TreGi N" page 29).

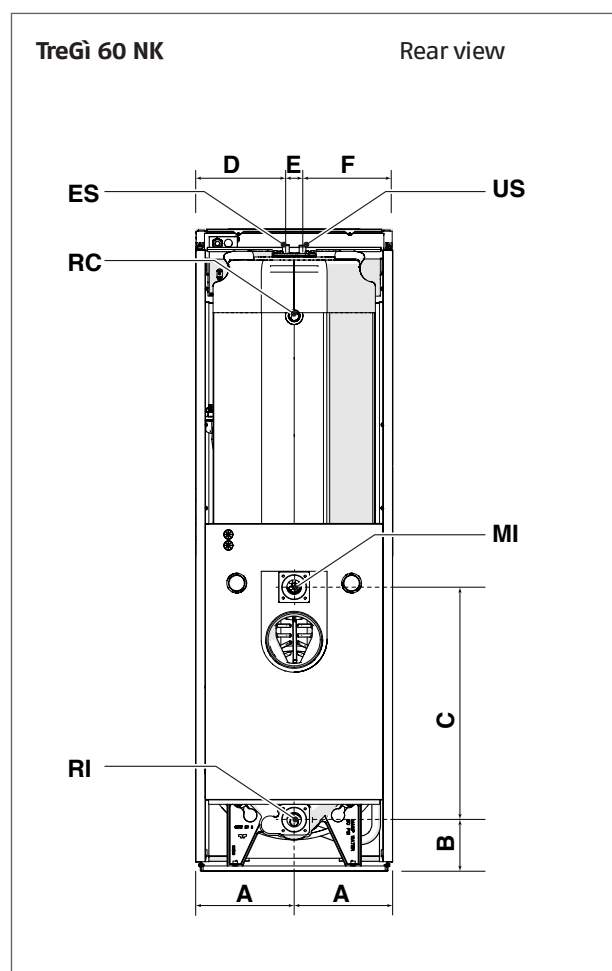
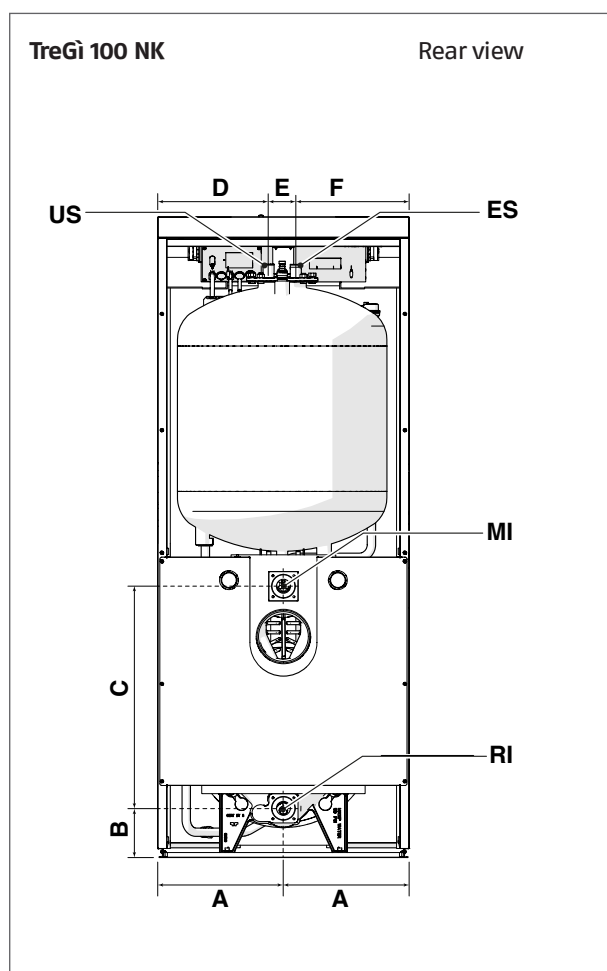
3.6 Water connections

TreGi N boilers are designed and made for use in central heating installations, but can also be used for domestic hot water production if connected to suitable systems. Water fittings are as specified in the following table:



DESCRIPTION	MODEL TreGi N								
	3	4	5	6	7	8	9	10	
A	225								mm
B	117						65		mm
C	530						815		mm
MI (CH flow)	1"1/4 F						1"1/2 F		Ø
RI (CH return)	1"1/4 F						1"1/2 F		Ø

TreGì NK boilers are designed and made for use in central heating installations and for domestic hot water production. Water fittings are as specified below:



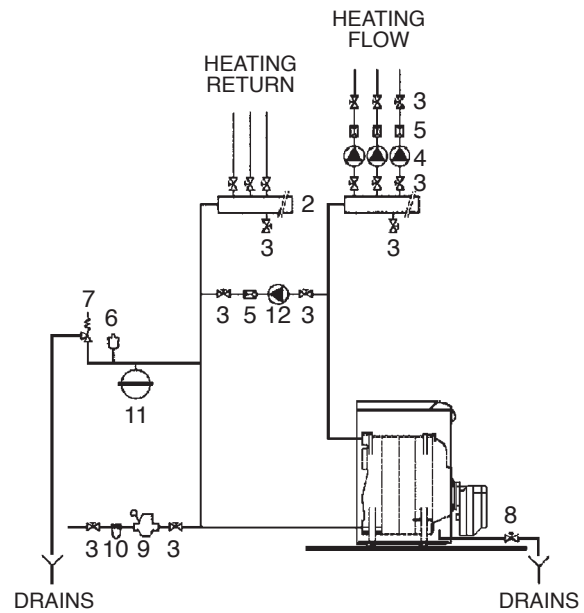
DESCRIPTION	MODEL TreGi NK								
	3/100	4/100	5/100	6/100	7/100	8/100	3/60	4/60	
A	300						225		mm
B	117								mm
C	530								mm
D	267						189		mm
E	65								mm
F	267						189		mm
MI (CH flow)	1"1/4 F								Ø
RI (CH return)	1"1/4 F								Ø
US (DHW outlet)	3/4" M								Ø
RC (DHW recirculation)	3/4" F								Ø
ES (domestic cold water inlet)	3/4" M								Ø

IMPORTANT

To avoid damage to the boiler, while the burner is functioning there must be a minimum water flow rate of about 25 % maximum flow rate with $\Delta T = 10^\circ\text{C}$. Use a suitable recirculation pump if necessary. Water return temperature in continuous service must be $>40^\circ\text{C}$.

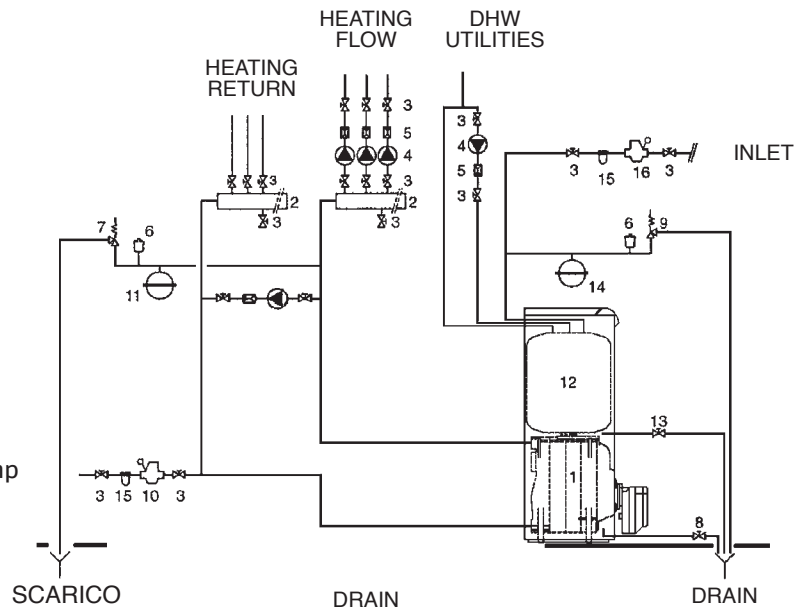
Schematic diagram – central heating – Tregi N

- 1 Boiler
- 2 Central heating manifolds
- 3 Disconnect valves
- 4 Pumps
- 5 Non-return valves
- 6 Automatic vent valve
- 7 Boiler safety valve
- 8 Boiler drain cock
- 9 System filling cock
- 10 Softener filter
- 11 CH expansion vessel
- 12 Condensate prevention pump



Schematic diagram – central heating and domestic hot water production – TreGi NK

- 1 Boiler
- 2 Central heating manifolds
- 3 Disconnect valves
- 4 Pumps
- 5 Non-return valves
- 6 Automatic vent valve
- 7 Boiler safety valve
- 8 Boiler drain cock
- 9 Storage cylinder safety valve
- 10 System filling cock
- 11 CH expansion vessel
- 12 Storage cylinder
- 13 Storage cylinder drain cock
- 14 DHW expansion vessel
- 15 Softener filter
- 16 Pressure reducer
- 17 Condensate prevention pump



The domestic hot water circuit must include an expansion vessel of adequate capacity as well as a safety valve (max 6 bar), connected directly to the storage cylinder.

! The choice of system components and the method of their installation are left up to the heating engineer installing the system. Installers must use their expertise to ensure proper installation and functioning in compliance with all applicable legislation.

! Circuits filled with anti-freeze must be fitted with water disconnectors.

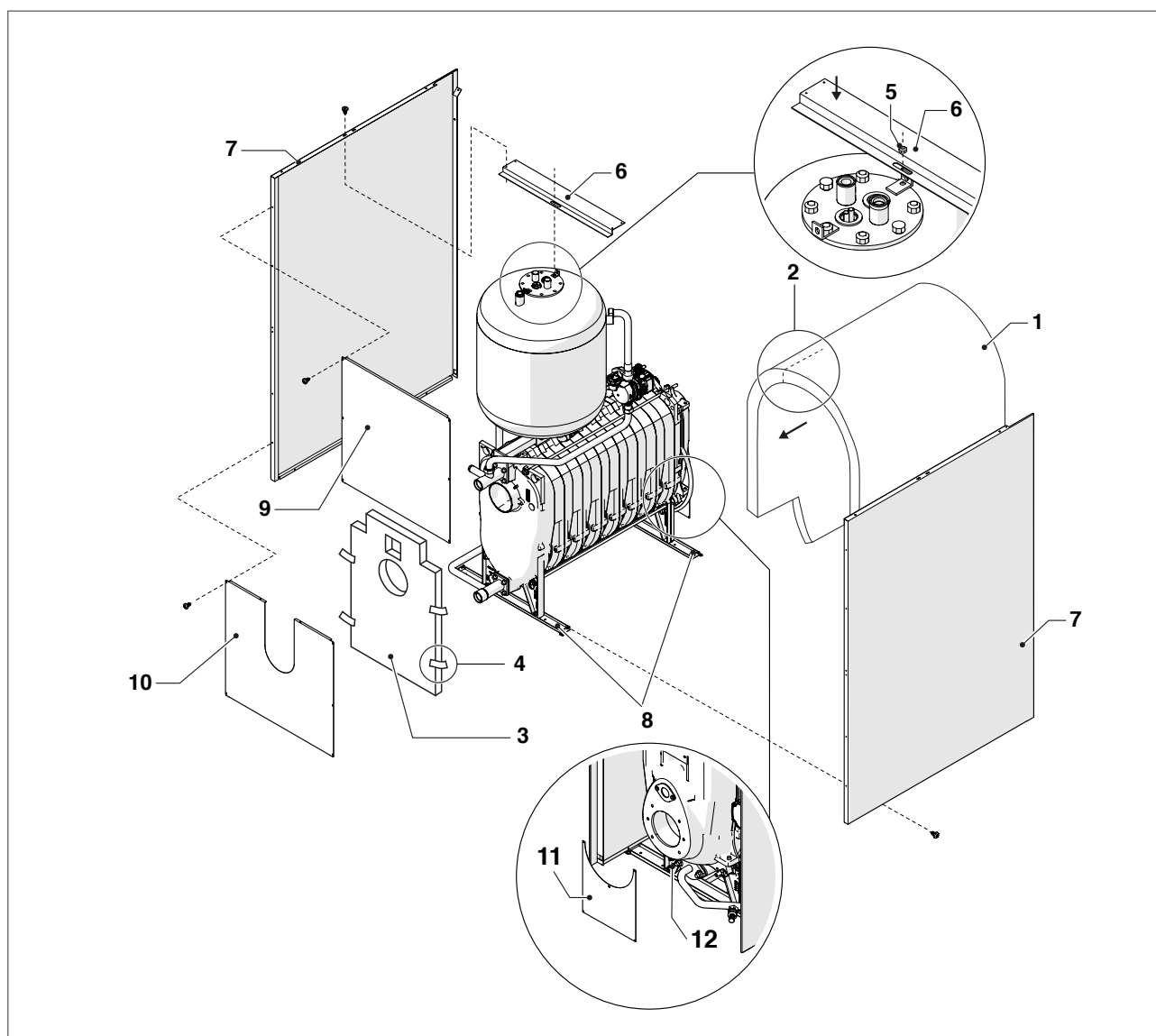
! If needed, water supplies and recovery circuits must be conditioned by suitable treatment systems. See the table for applicable reference values.

REFERENCE VALUES	
PH	6-8
Electrical conductivity	below 200 $\mu\text{s}/\text{cm}$ (25°C)
Chlorine ions	below 50 ppm
Sulphuric acid ions	below 50 ppm
Total iron	below 0,3 ppm
Alkalinity M	below 50 ppm
Total hardness	below 35°F
Sulphur ions	none
Ammonia ions	none
Silicon ions	below 30 ppm

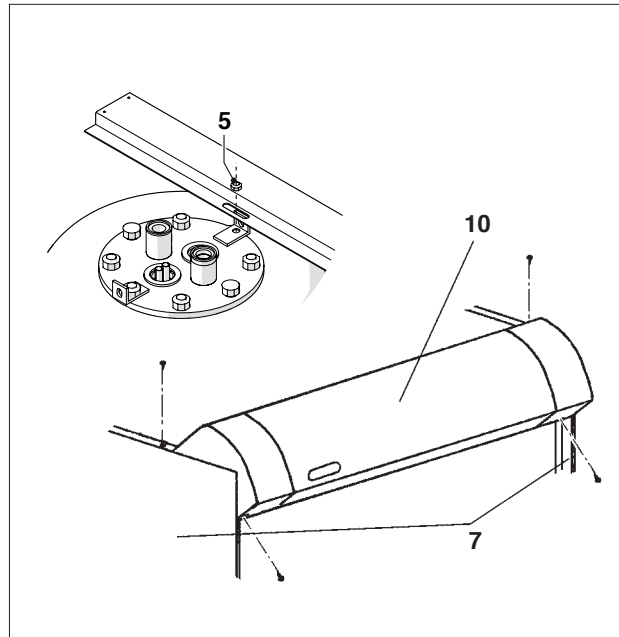
3.7 Fitting the casing panels

MODELS TreGi 5/100 ÷ 8/100 NK

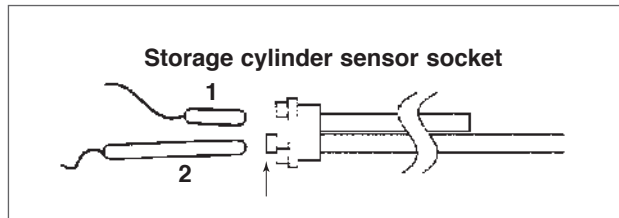
- Remove the boiler body casing panels and insulation from the cardboard packing
- Fit the insulation (1) around the boiler body, taking care to position the slit (2) at the rear.
- Fit the insulation (3) to the rear of the boiler body, and fix it in place with the adhesive aluminium foil tape (4) supplied with the casing.
- Remove the top nut (5) from the storage cylinder flange and fit the casing support bracket (6)
- Replace the nut (5) on the flange but do not tighten yet.
- Fix the side panels (7) to the bracket (6) and base (8) using the screws provided.
- Fit the rear panels (9) and (10) and fix them in place with the screws provided.
- Fit the front panel (11) to the bracket (12) using one of the burnished screws provided.



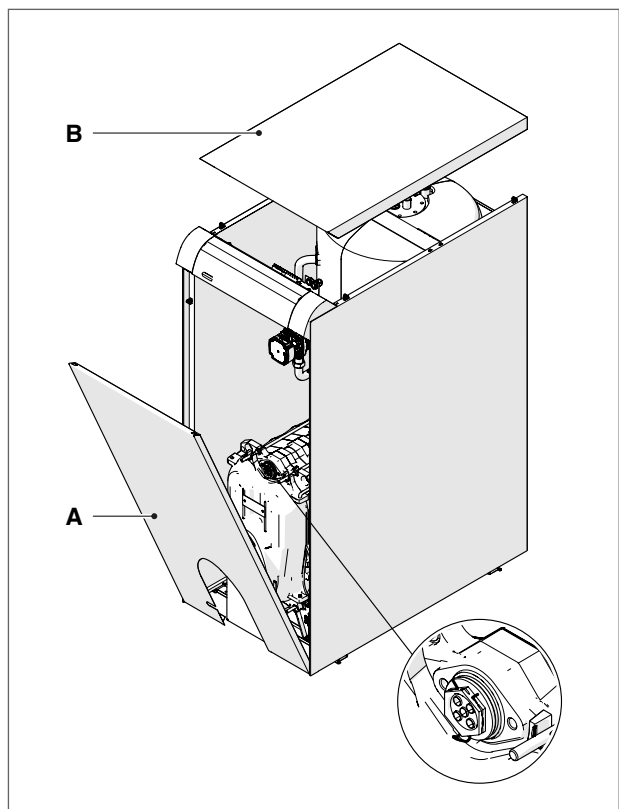
- Fit the control panel (10) to the side panels (7) using four of the burnished self-tapping screws provided
- Make sure that the side panels and control panel line up correctly, then tighten the nut (5) on the storage cylinder flange



- Push the domestic hot water temperature sensor (1) into the shorter sensor holder and the TB storage cylinder thermostat (2) into the longer sensor holder. Take care to push the sensors all the way into their sockets. The socket for the TB thermostat sensor has a raised lip above the surface of the cap



- Push the bulbs of the temperature gauge and TR thermostat all the way into the sockets (C) on the boiler
- Make the necessary electrical connections and then fit the front and top panels (A) and (B).



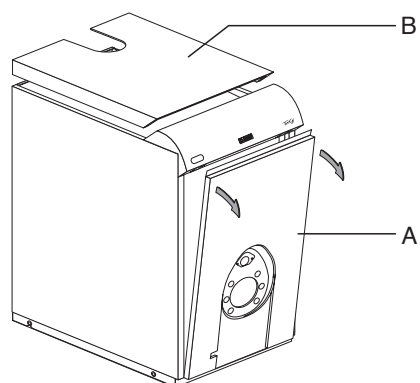
3.8 Wiring

RIELLO TreGi boilers must be connected to the terminal strip inside the control panel (see "1.9 Functional wiring diagram" page 14). This must be done by the heating engineer or a qualified electrician.

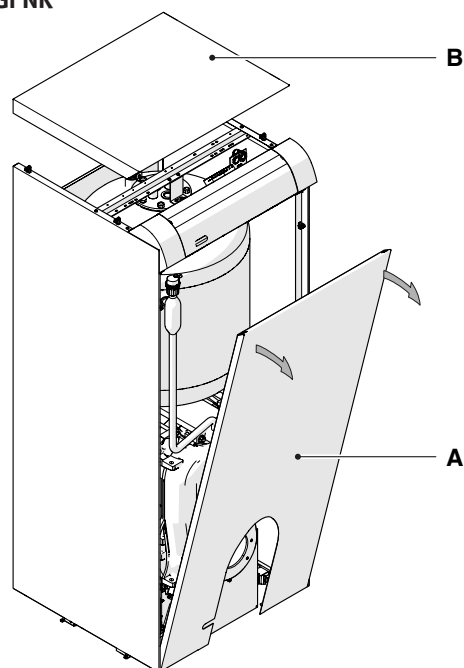
Proceed as follows to access the control panel terminal strip:

- Remove the front and top panels (A) and (B)

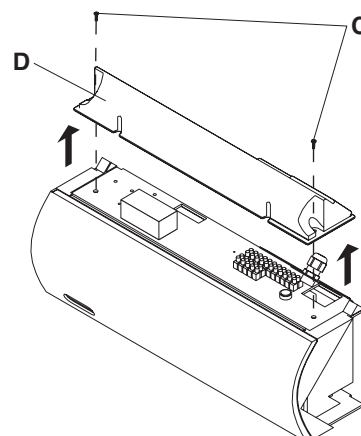
TreGi N



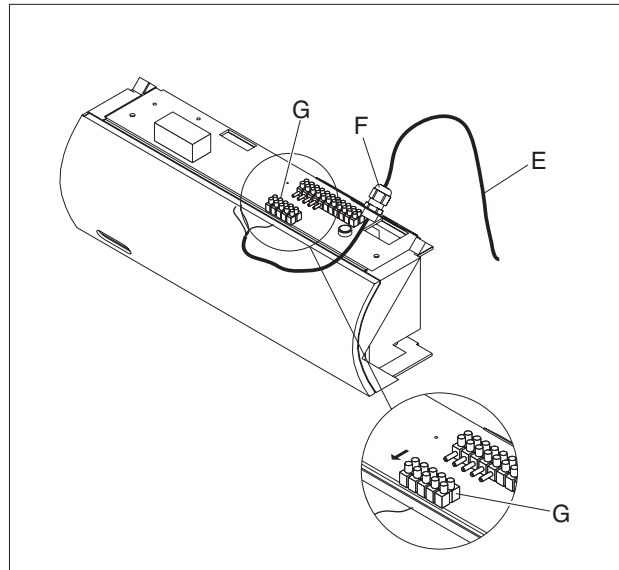
TreGi NK



- Unscrew the screws (C) and remove the cover (D).



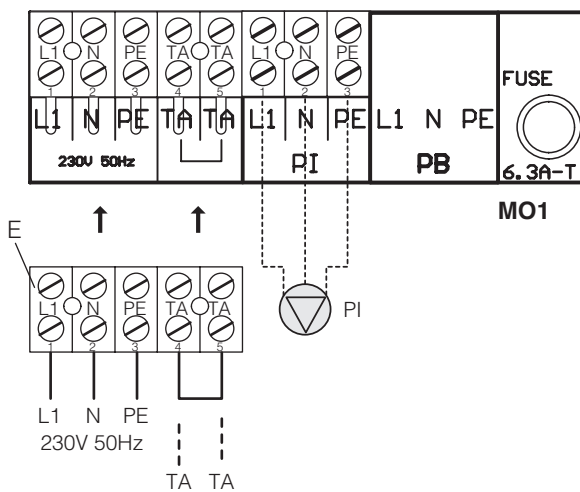
- Route the power cable (E) through the cable clamp (F) and fix it in place
- Access the terminal strip (G)



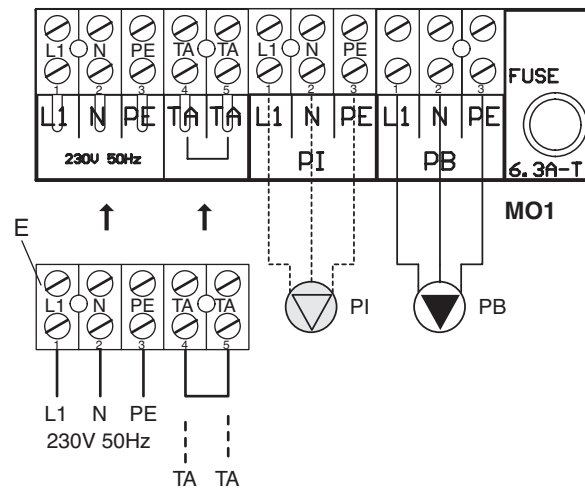
- Make the electrical connections as shown in the following diagrams

Connections to be made by the heating engineer – control panel terminal strip

TreGì N



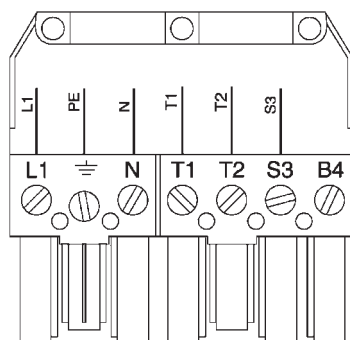
TreGì NK



- L1 Live
- N Neutral
- PE Earth/ground
- TA Room thermostat
- PI Central heating pump (not supplied)
- PB Storage cylinder pump

⚠ The jumper (TA-TA) must be removed from the terminal strip E in order to connect up the room thermostat

Electrical connections to be made by the heating engineer – burner



MB: Connect up the 7 pin connector supplied with the burner.

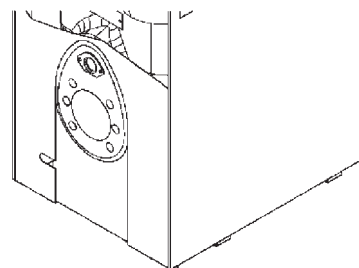
NOTE

Route the burner connection cable out of the casing through the slot (1).

On completion of the electrical connections, replace all removed components in the opposite order.

Automatic shut-off device (DAI)
(not supplied; only where required)

- Connect up the automatic shut-off device (DAI) as shown in the wiring diagram on "1.9 Functional wiring diagram" page 14. This ensure that fuel only passes when the burner is functioning.



The following instructions are mandatory:

- 1 Use a multi-pole magnetic thermal trip switch and disconnector conforming to IEC-EN standards (with a contact gap of at least 3 mm);
- 2 Respect the L (Phase) – N (Neutral) polarity. Keep the ground wire about 2 cm longer than the power wires.
- 3 Use cables with a cross section of 1.5 mm² or more, complete with end terminals;
- 4 Always refer to the electrical wiring diagrams in this manual when performing any electrical work.
- 5 Make sure the appliance is connected to an effective ground.



It is strictly forbidden to use fuel and/or water pipes to ground the appliance.



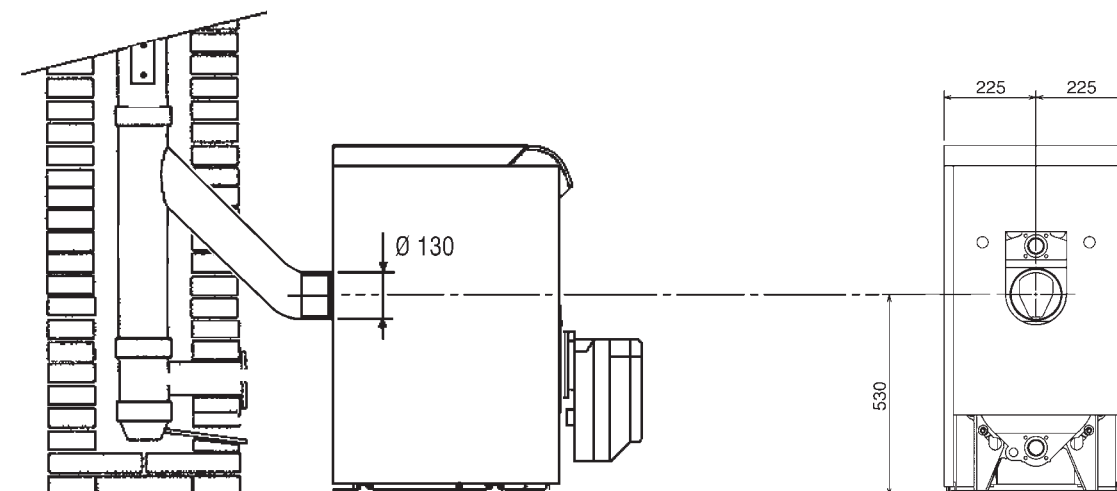
The power supply and room thermostat cables must not run near hot surfaces (outlet pipes).

The manufacturer cannot accept any liability for damage caused by failure to earth the appliance or comply with the wiring diagrams.

3.9 Combustion gas exhaust

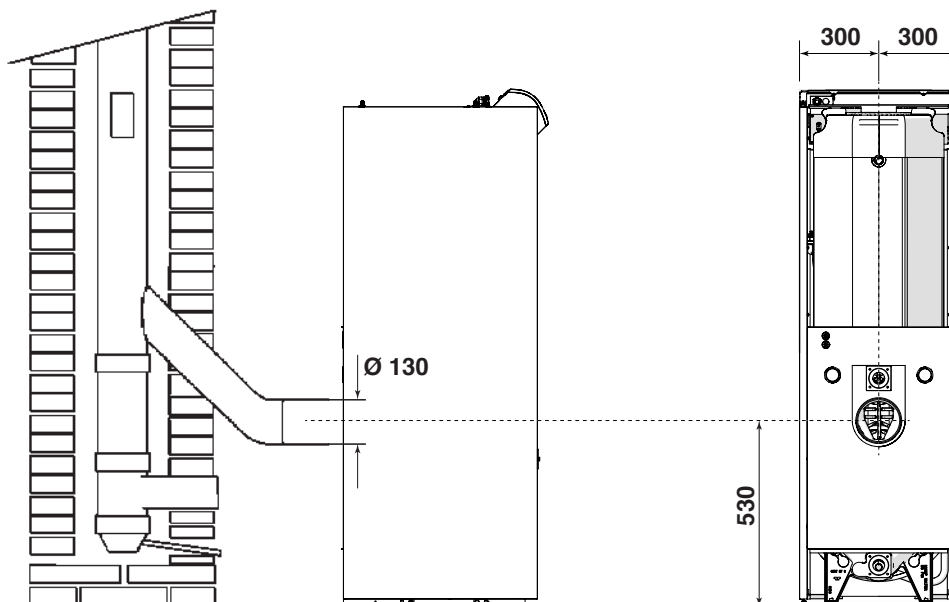
The flue gas exhaust and its connection to the stack must be made in compliance with applicable laws and standards, using heat resistant, condensate resistant and stress resistant rigid pipe and sealed joints.

TreGì N



DESCRIPTION	MODEL TreGì N								
	3	4	5	6	7	8	9	10	
Ø - D	130	130	130	130	130	130	180	180	mm

TreGì NK



⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue gas exhaust.

⚠ Inadequate or badly dimensioned stacks and exhausts can increase combustion noise, cause condensation problems and affect combustion parameters.

⚠ Uninsulated flue pipes are potentially dangerous and can cause burns.

⚠ Joints must be sealed using materials capable of withstanding temperatures of at least 250°C (e.g. filler, mastic or silicone based sealant).

3.10 Filling and emptying the system

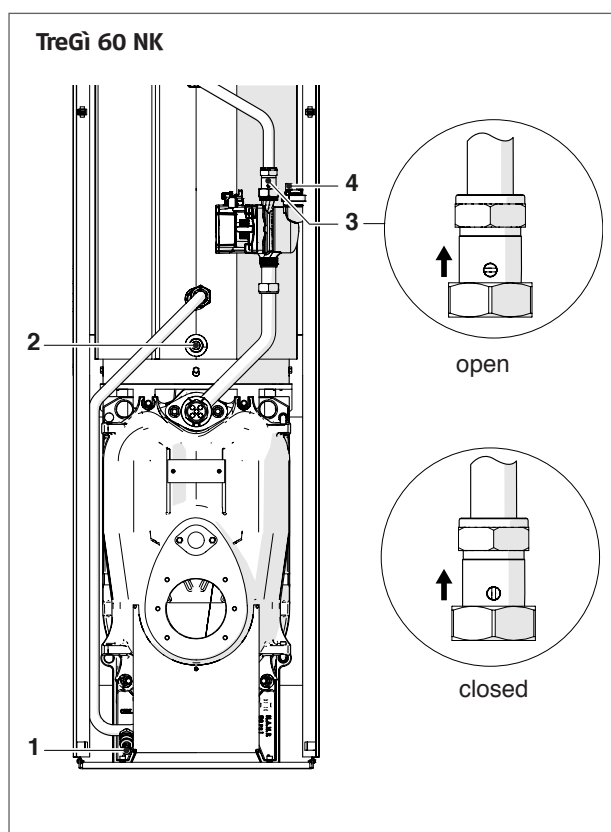
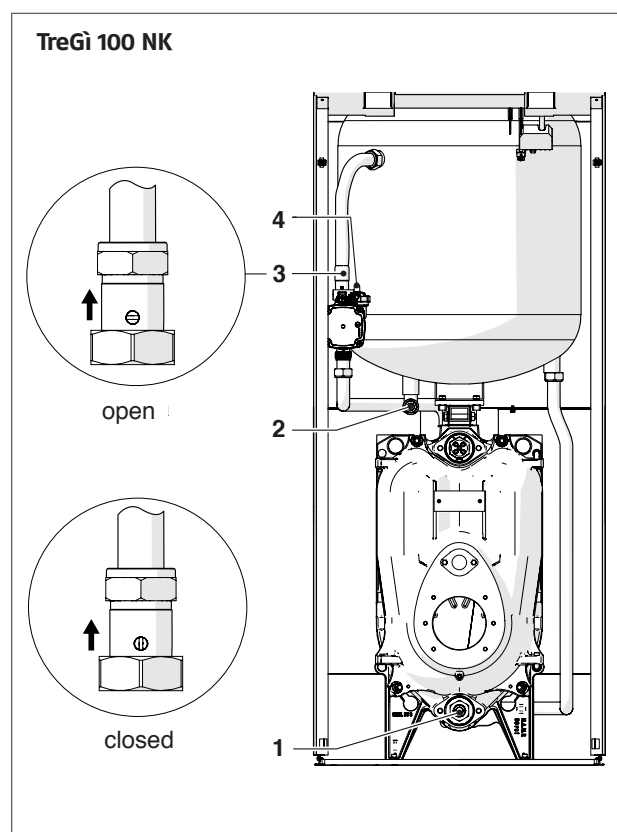
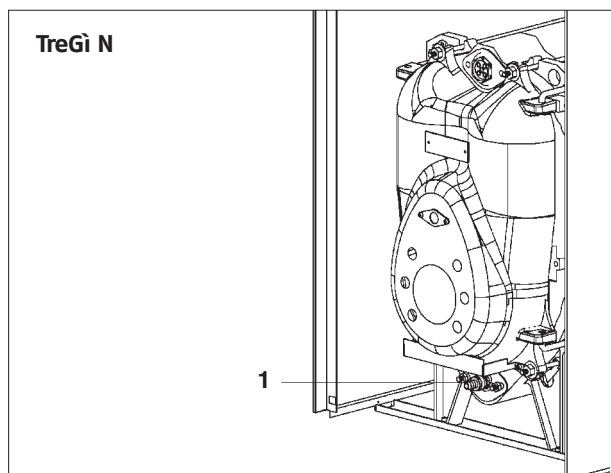
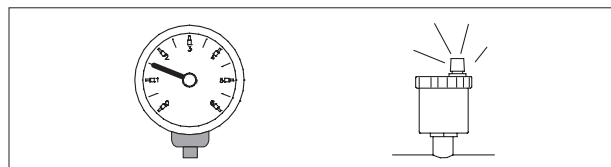
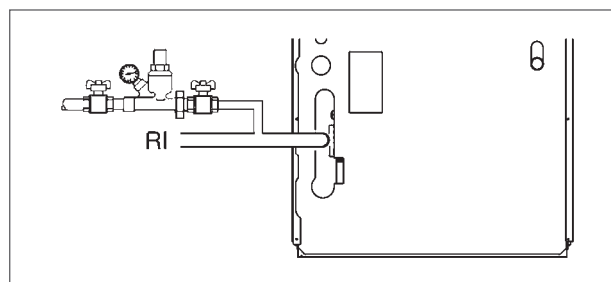
RIELLO TreGì boilers must be fitted with a central heating circuit filling system connected to the boiler return line.

FILLING THE SYSTEM

- Make sure that the central heating drain cock (1) and storage cylinder drain cock (2) (**NK** models) are closed before you start filling the system
- Open the non-return valve (3) to facilitate filling (the slot in the screw must be perpendicular to the direction of flow)
- Open the shut-off cocks for the water circuit
- Slowly fill the system to a cold pressure of **1,5 bar**
- Close all previously opened valves including the non-return valve (3) (**NK** models) (the slot in the screw must be parallel to the direction of flow).

NOTE

The system is de-aerated automatically through the automatic vent valve (4) (**NK** models).



EMPTYING THE SYSTEM

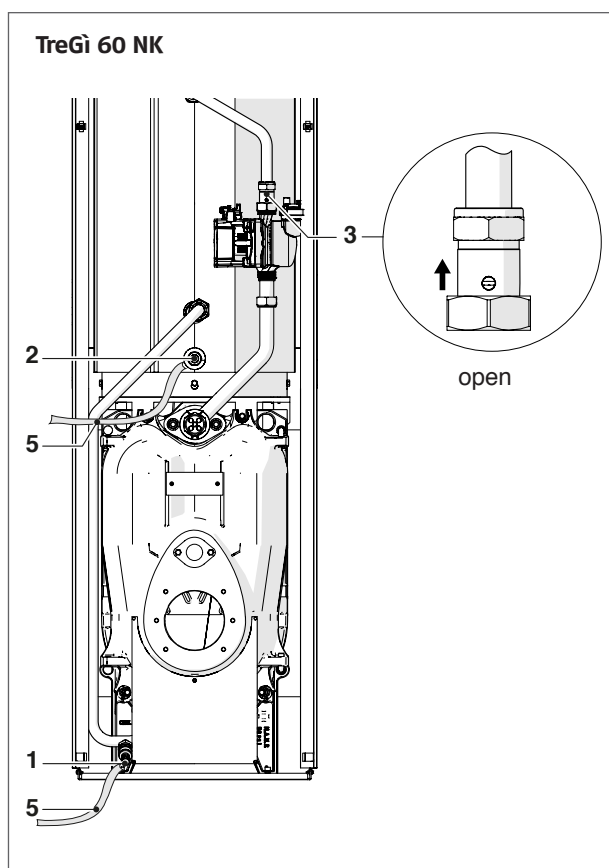
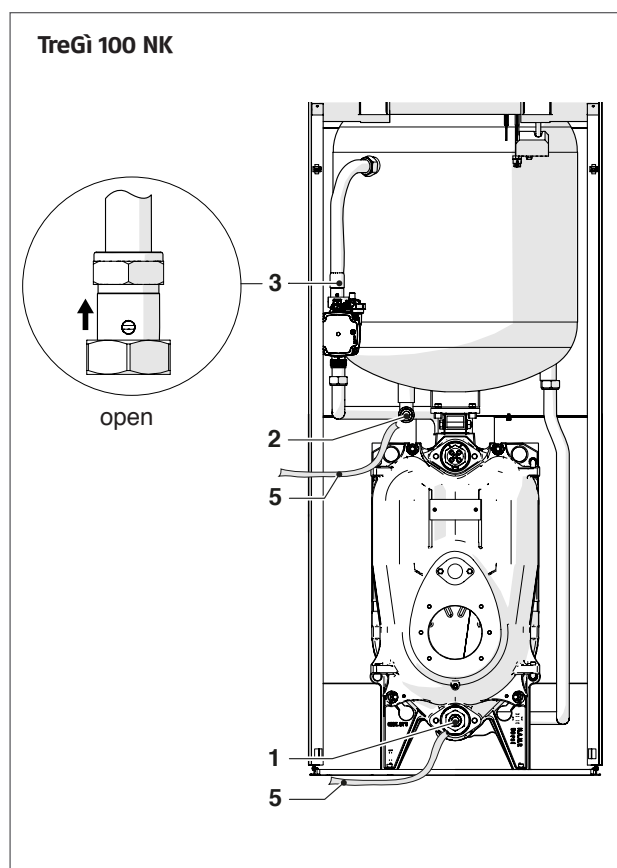
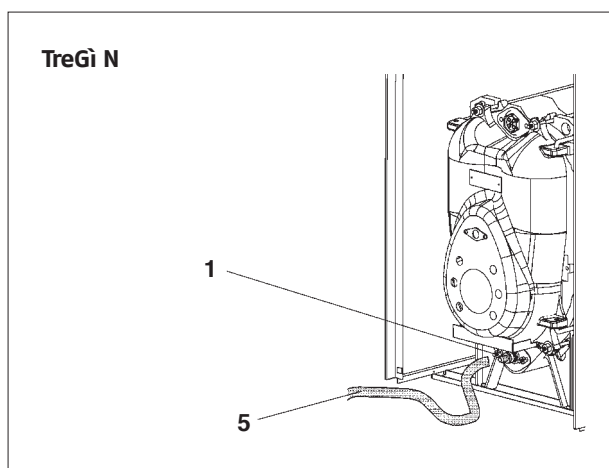
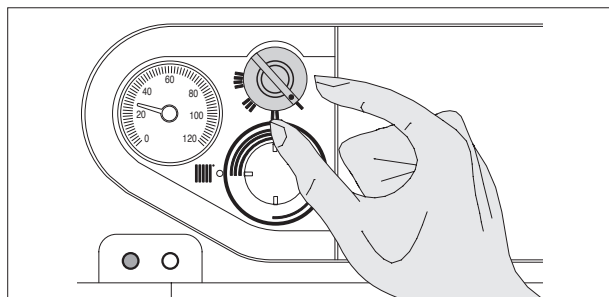
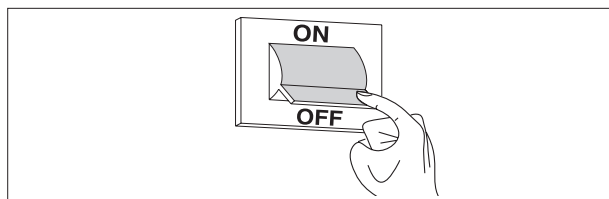
Switch the electricity supply OFF at the system's main switch and turn the control panel function selector to OFF (I) before starting to empty the boiler or storage cylinder.

- Close the shut-off cocks for the water circuit
- Connect plastic hoses (5) to the hose unions on the boiler drain cock (1) and/or storage cylinder drain cock (2) (NK models).

NOTE

Open the non-return valve (3) to facilitate emptying (the slot in the screw must be perpendicular to the direction of flow).

Open a hot water tap to facilitate emptying.

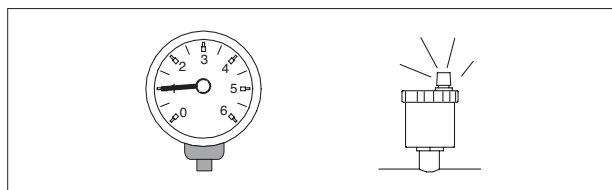
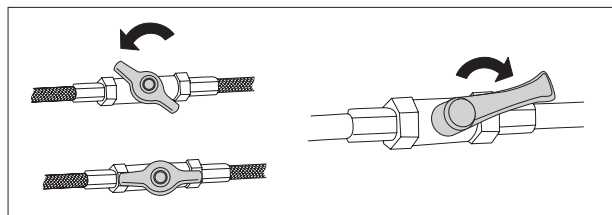


4 TECHNICAL ASSISTANCE SERVICE

4.1 Preparing for first start-up

It is essential to perform the following checks before starting up or testing the functioning of **RIELLO TreGi** boiler. In particular:

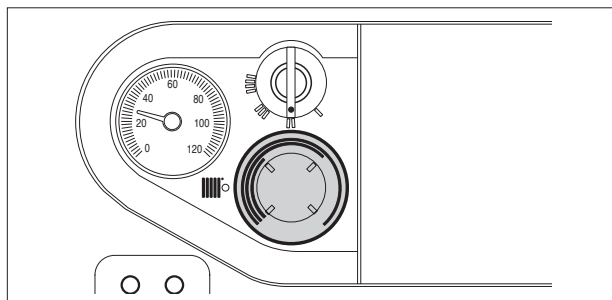
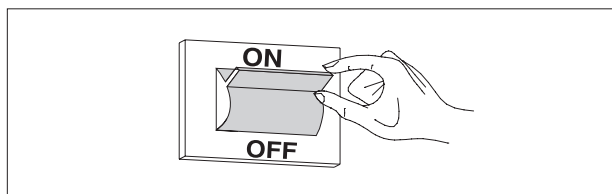
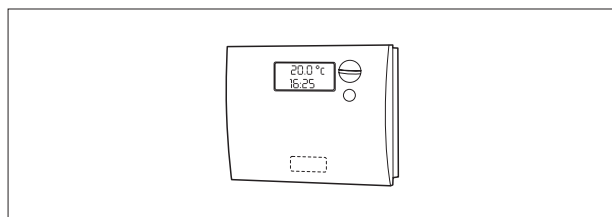
- Check that the fuel shut-off cock and heating system shut-off cock are open
- Check that the water pressure gauge shows a pressure **over 1 bar** with the system cold. Check also that the water circuit is properly de-aerated
- Check that the expansion vessel is correctly pre-charged
- Check that the electrical connections have been made correctly
- Check that the flue gas exhaust and stack have been correctly installed and connected.



4.2 Initial start-up

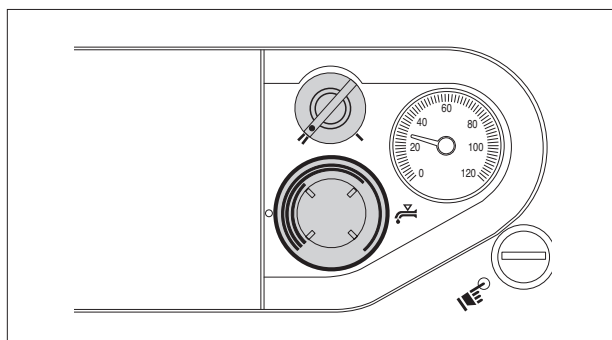
Once you have completed all the preparatory steps, proceed as follows to start up the boiler for the first time:

- Set the room thermostat to the required temperature (~20 °C) or, if the system has a timer, make sure that this is switched "On" and adjusted to the required temperature (~20 °C)
- Turn the system's main power switch ON
- Adjust the boiler thermostat to about the middle of the section with three lines.



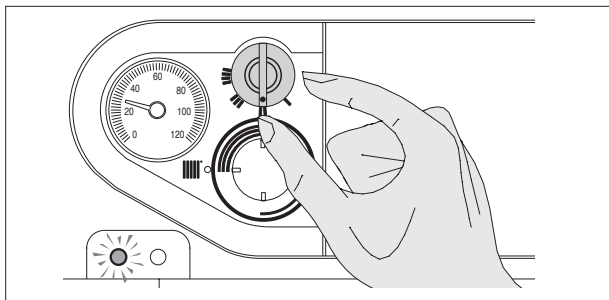
ONLY FOR TreGi NK MODELS

- Adjust the boiler and storage cylinder thermostats to about the middle of the section with three lines
- Turn the Summer/Winter selector to (II) Winter.



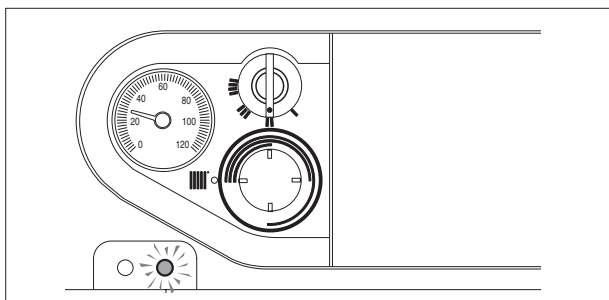
- Turn the function selector to ON (II) and make sure that the green power indicator lights.

RIELLO TreGì boiler will now start up and the burner will remain lit until the set temperature is reached

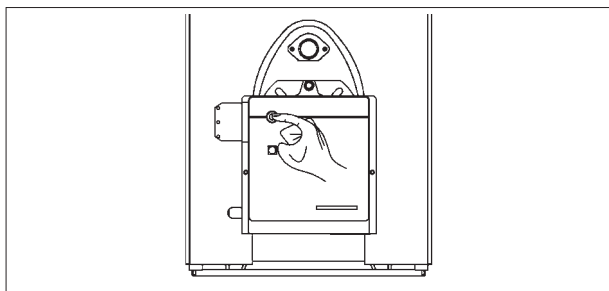


If any ignition faults or malfunctions occur, the burner performs a 'LOCKOUT SHUTDOWN'. This is shown by the red button light on the burner and by the warning light on the control panel.

! If a "LOCKOUT SHUTDOWN" occurs, wait about 30 seconds before resetting the burner.



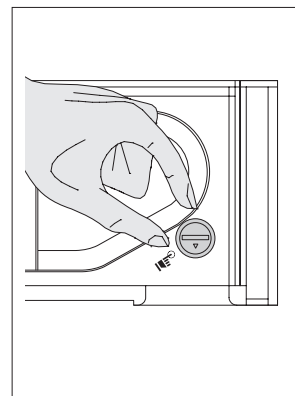
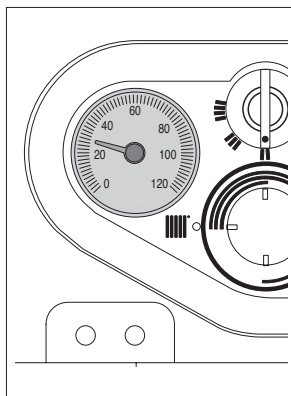
To reset the burner, press the red button light on the burner. The complete ignition cycle will be repeated up to the ignition of the flame.



! No warning signal is given if the safety thermostat trips, but the fact that it has tripped can be seen from the boiler temperature gauge ($T > 110^{\circ}\text{C}$).

Proceed as follows to reset the safety thermostat:

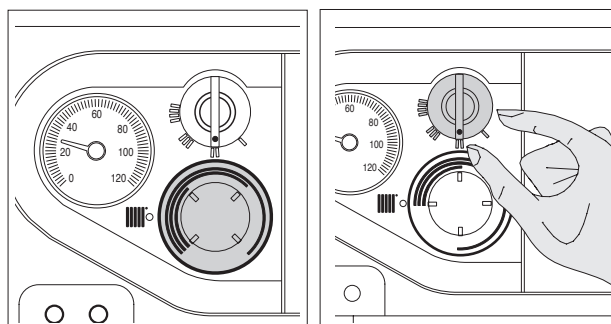
- Wait until boiler temperature falls below 80°C
- Remove the safety thermostat cover.
- Press the manual reset button.
- The complete ignition cycle will be repeated up to the ignition of the flame.



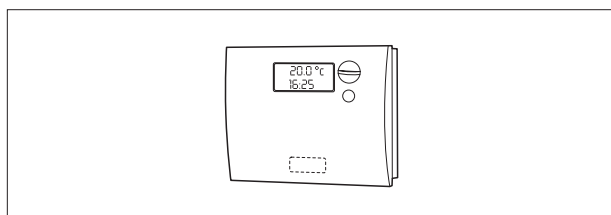
4.3 Checks during and after initial start-up

Once the boiler has started up, make sure that it shuts down and re-starts properly when the following actions are taken:

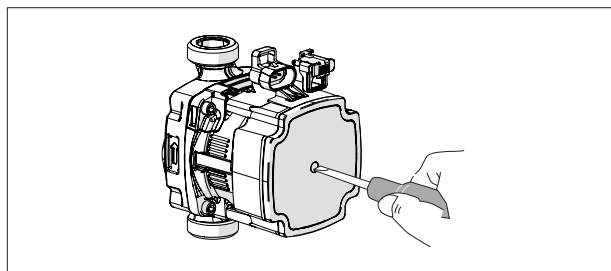
- The boiler thermostat setting is changed
- The function selector is moved from position (II) to (I) and back



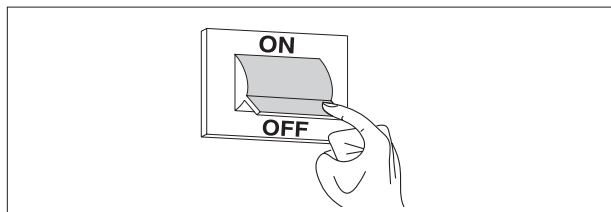
- The room thermostat or timer setting is changed.



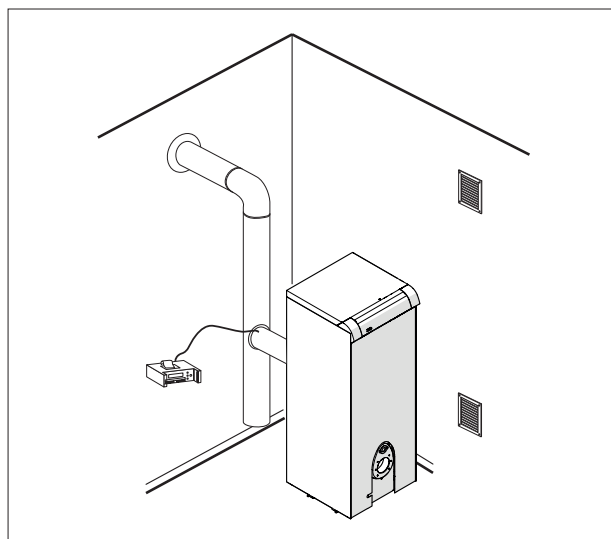
Make sure that the pump is free and rotates in the right direction.



Turn the main power switch OFF and make sure that the boiler shuts down completely.



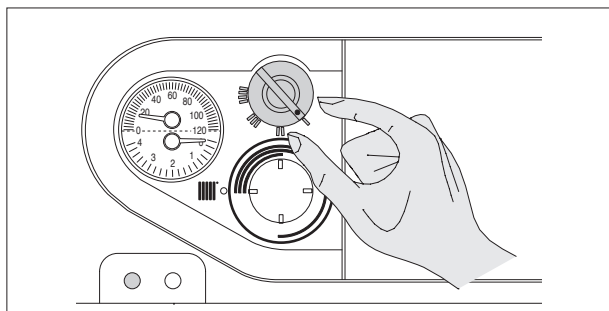
Provided all the above conditions are satisfied, start the boiler up again, then analyse the combustion fumes.



4.4 Temporary shutdown

If you are going to be away for a short period of time like a weekend or a short holiday, etc., and outdoor temperatures are above ZERO, proceed as follows:

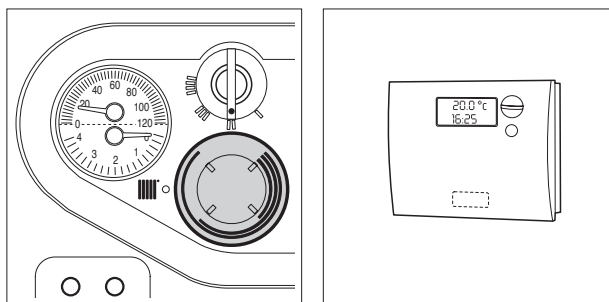
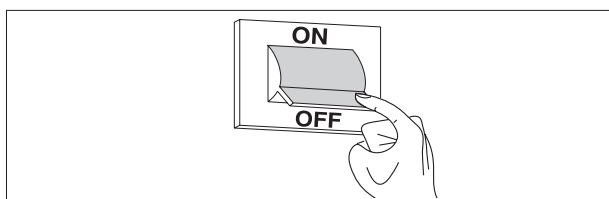
- Turn the function selector to OFF (I) and make sure that the green power indicator goes out



⚠ Do NOT perform this procedure if outdoor temperature might fall below ZERO (risk of freezing)

Then proceed as follows:

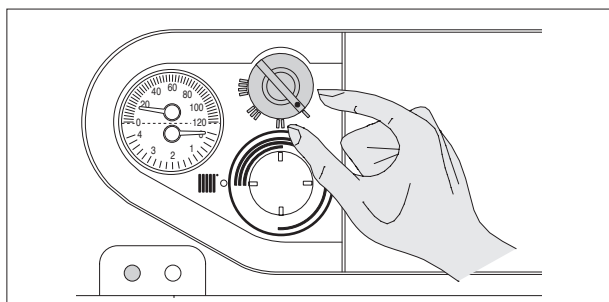
- Adjust the boiler thermostat to about the middle of the section with one line
- Adjust the room thermostat to about 10°C.



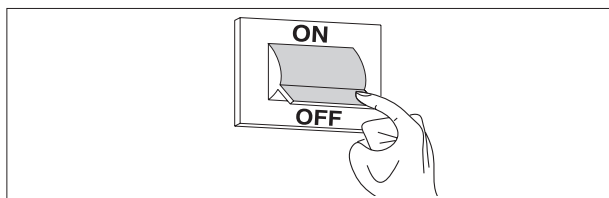
4.5 Preparing for extended periods of disuse

If the boiler is not going to be used for an extended period of time, perform the following operations:

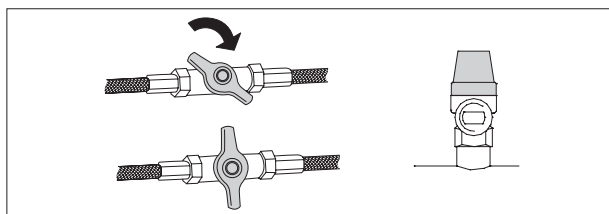
- Turn the function selector to OFF (I) and make sure that the green power indicator goes out



- Turn the system's main power switch OFF



- Close the fuel cock and heating circuit water cock.

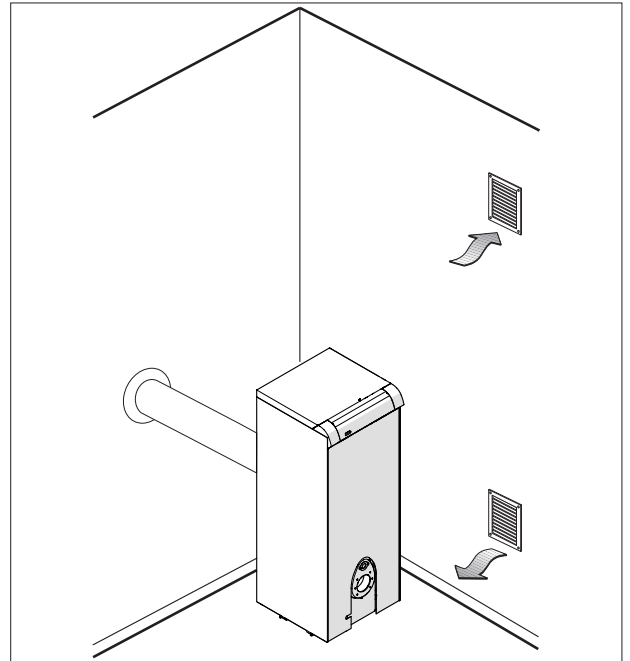


⚠ Drain the central heating circuit if there is any risk of freezing.

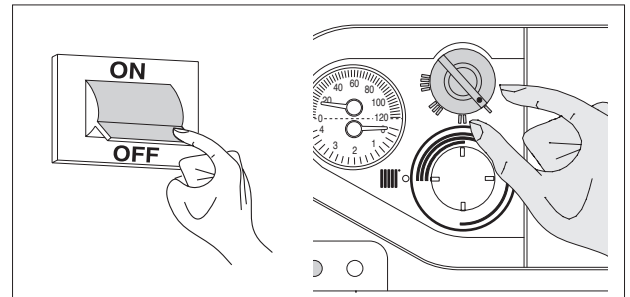
4.6 Maintenance

Regular maintenance is a legal requirement. In Italy it is required by Presidential Decree 412 of the 26th August 1993. It is also essential for the safety, efficiency and durability of the boiler. Proper maintenance keeps consumption and emissions down, and ensures that the boiler continues to operate reliably over time. Have your boiler serviced either by **RIELLO** 's Technical Assistance Service or by a qualified heating engineer.

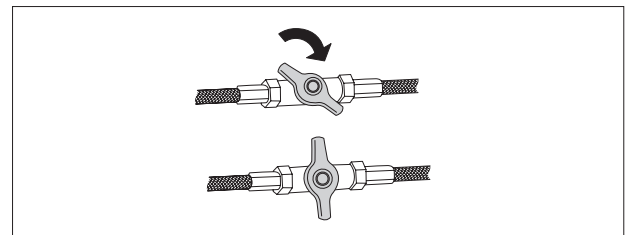
Analyse the combustion fumes before commencing any maintenance. The results of fume analysis can give a clear idea of what servicing or repairs are needed.



- Turn the system's main power switch OFF



- Close all the gas cocks.



4.7 Cleaning the boiler

Clean the boiler and remove any carbon deposits from the surfaces of the heat exchanger **at least once a year**. This not only extends the boiler's working life, but also keeps it efficient in terms of heat output and consumption.

Perform the following operations before beginning any cleaning:

- Switch the electricity supply OFF at the system's main switch and turn the control panel function selector to OFF (I)
- Close the fuel shut-off cocks.

External

Clean the outside of the boiler with a soft cloth damped in soapy water. To remove stubborn marks, use a cloth damped in a 50% mix of water and denatured alcohol or a suitable cleaning product. Carefully dry the boiler after cleaning.

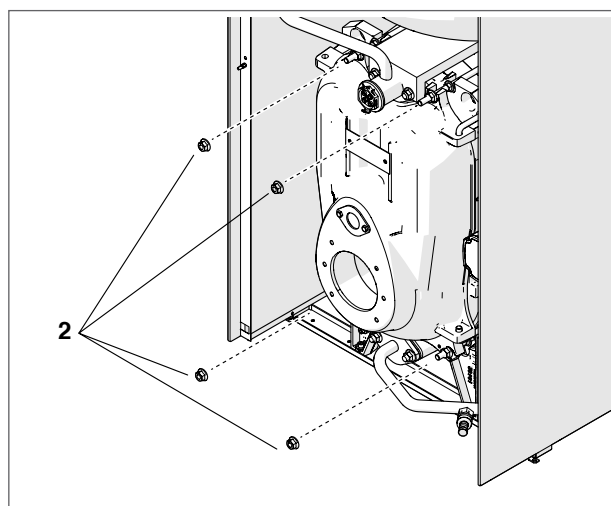
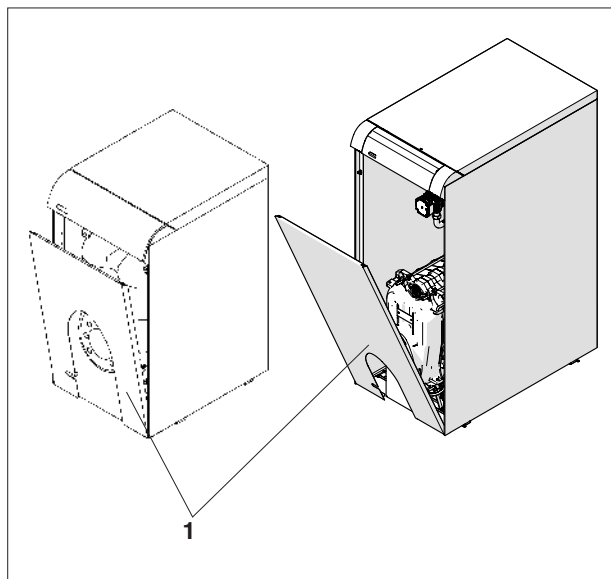


Do not use abrasive products, petrol or triethylene.

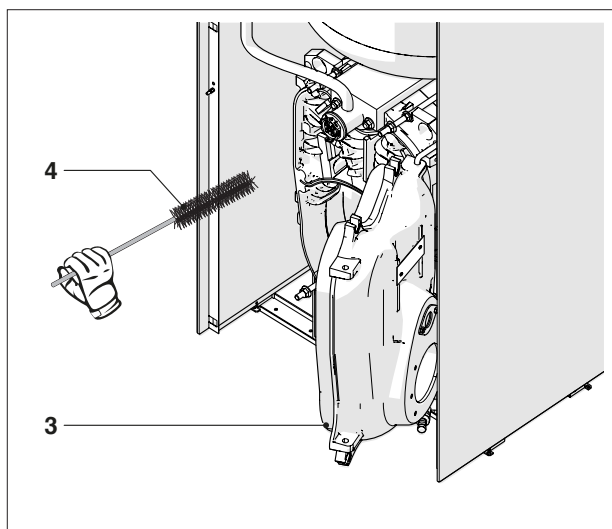
Internal

Proceed as follows to access the internal parts of the boiler:

- Remove the burner, following the instructions provided in the burner's own instruction manual
- Remove the front panel (1)
- Remove the four door fixing nuts (2)



- Open the door (3) and remove the turbulators (if fitted) from the flue gas pipes
- Use a flue brush (4) or other suitable tool to clean inside the combustion chamber and the flue gas pipes.
- Remove any dislodged soot.



On completion of cleaning, replace the turbulators inside the flue gas pipes, and reverse the steps given above to replace all other components.

4.8 Cleaning the storage cylinder

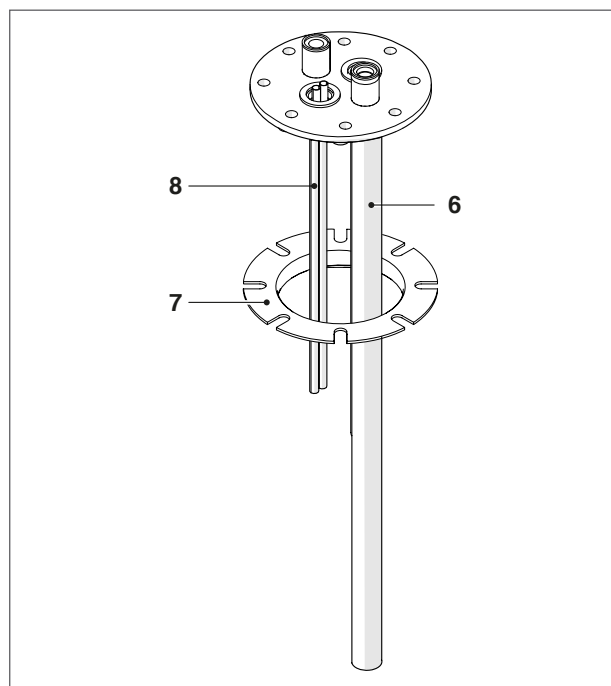
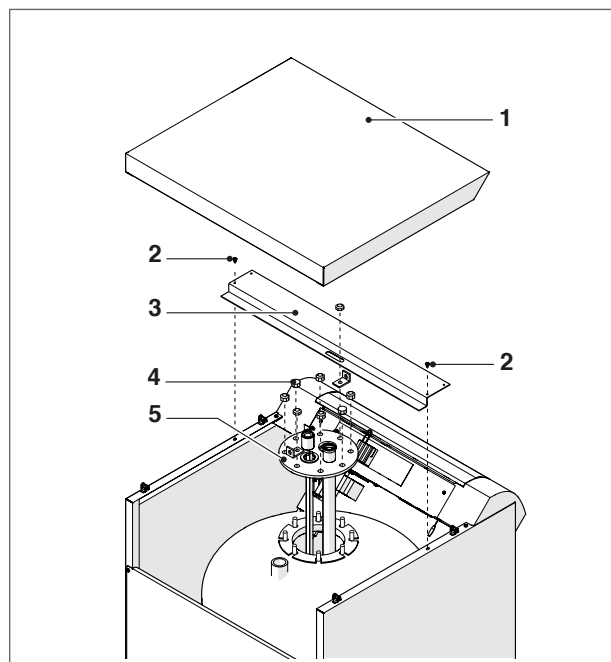
ONLY FOR TreGì NK MODELS

The storage cylinder should be serviced once a year to check the condition of the internal parts and the magnesium anode, as well as for cleaning purposes.

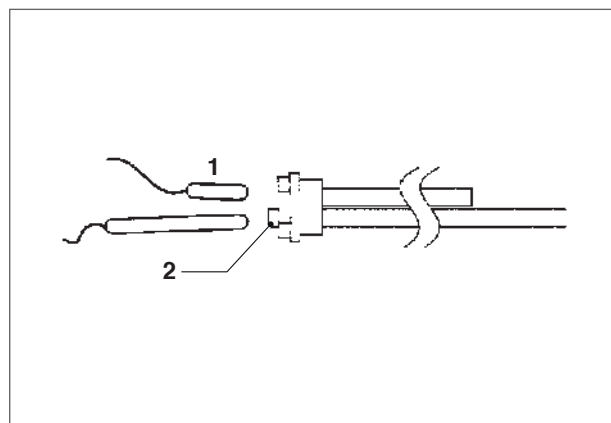
Perform the following operations before beginning any cleaning:

- Remove the top panel (1)
- Close the shut-off cocks for the domestic hot water circuit
- Connect a plastic hose to the hose union and empty the storage cylinder through the storage cylinder drain cock
- Pull the sensors out of their sockets
- Remove the screws (2) fixing the bracket (3) to the casing
- Remove the screws (4) fixing the flange (5) in place, and remove the flange
- Clean inside the domestic hot water cylinder and remove any residues through the access hole
- Check the magnesium anode (6) for wear and replace it if necessary
- Check the condition of the seal (7)
- Check the condition of the sensor holders (8).

Replace all removed components in the opposite order.



Push the domestic hot water temperature sensor (1) into the shorter sensor holder and the TB storage cylinder thermostat (2) into the longer sensor holder. Take care to push the sensors all the way into their sockets. The socket for the TB thermostat sensor has a raised lip above the surface of the cap.



NOTE

Tighten the fixing nuts, proceeding diagonally around the flange to apply pressure uniformly around the seal.

4.9 Troubleshooting

FAULT	CAUSE	SOLUTION
The boiler becomes dirty very quickly	Burner badly adjusted	- Check the adjustment of the burner (perform flue gas analysis)
	Blockage in stack	- Clean the flue gas pipes and stack
	Burner air intake dirty	- Clean the burner air intake
The boiler does not reach its temperature setpoint	Boiler dirty	- Clean the flue gas pipes
	Insufficient air/fuel flow to burner	- Check and adjust the burner
	Control thermostat problem	- Check the functioning of the thermostat - Check the temperature setting
The boiler enters temperature safety lockout	Control thermostat problem	- Check the functioning of the thermostat - Check the temperature setting - Check the electrical wiring - Check the sensors
	No water supply	- Check the circuit pressure - Check the vent valve
The boiler has reached the set temperature but the radiators are still cold	Air in the circuit	- Bleed the circuit
	Pump malfunctioning	- Check/unseize the pump
	Problem with minimum temp. thermostat (if present)	- Check the temperature setting
There is a smell of fumes	Fumes escaping into the air	- Clean the boiler body - Clean the flue gas pipes - Check the seals between the boiler head and the flue gas box - Check that the boiler, flue pipes and flue gas exhaust stack are all properly sealed
The safety valve keeps opening	Circuit pressure too high	- Check the circuit pressure - Check pressure reducer functioning - Check pressure reducer setting
	Problem with heating system expansion vessel	- Check the efficiency of the expansion vessel

ONLY FOR TREGÌ NK MODELS

FAULT	CAUSE	SOLUTION
The storage cylinder safety valve keeps opening	Storage cylinder safety valve problem	- Check valve setting and efficiency
	DHW circuit pressure too high	- Check DHW circuit pressure
	DHW expansion vessel problem	- Check the efficiency of the expansion vessel
The DHW pump is not working	DHW pump problem	- Check/unseize the pump - Check the electrical connection between the pump and the control panel
	Storage cylinder temperature sensor problem	- Check the positioning of the storage cylinder temperature sensor
Reduced supply of domestic hot water	Pressure in DHW circuit too high	- Fit a pressure limiter
	Limescale or deposits in storage cylinder	- Check and clean as necessary
		- Check the setting of the storage cylinder thermostat

RIELLO

RIELLO S.p.A.

37045 Legnago (VR)

Tel. 0442630111 - Fax 044222378 - www.riello.it

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