Micra 2

23 E

24 SE

Quick guide

Technical Data

Installation, adjusting
and maintenance instructions

User instructions

Hermann®

GAS BOILERS

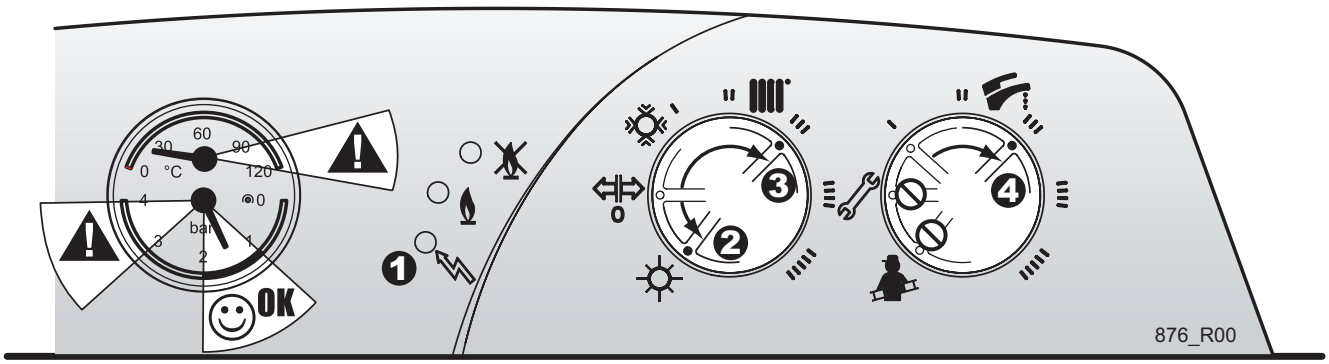
QUICK GUIDE

Dear Customer,

we have intentionally inserted the **Quick Guide** at the beginning of the booklet in order to let you use your boiler immediately.

This Quick Guide: 1) implicates that the boiler has already been subdued to the First Ignition and it has been prepared to the functioning and all the conditions for the correct functioning have been satisfied, the correct system pressure and the hydric, gas and electrical supply included; 2) could be partially not valid in case of optional kits.

1) As first open the control panel lid and move the left knob on **0 -** ⇦|⇨. Switch on (position "I") the switch which gives voltage to the boiler and which is usually installed on the wall near the boiler. The green led is intermittent.



2) **It is SUMMER** and/or you don't want to switch the heating on: turn the left knob on the symbol ☼ ("SUMMER" position). The green led is constantly on.

3) **It's WINTER** and/or you want to **switch the heating on:**

- turn the left knob beyond the symbol ☼ ("WINTER" sector). The scale from I to III determines the temperature of the heating system. Regulate it on III: in the chapter "User instructions" you will find suggestions to regulate the heating temperature on the base of the climate and other factors, improving the comfort. The green led is constantly on.
- regulate the room temperature that you wish on the room thermostat according to the Instructions of your manufacturer: the system will start heating the rooms and the room thermostat will regulate the temperature as set up by you.

4) Regulate the Domestic Hot Water temperature, turning the right knob along the scale from I to III. Bring it as first to III; in the chapter "User instructions" you will find suggestions to regulate the domestic hot water and to improve the comfort.

5) Now your boiler is already functioning and it will turn on automatically for any heat request.

6) Do not forget to read the chapters "Warnings" and "User instructions" where you will find , in addition to other important information for your Safety, the details connected to the controls and the leds, and the useful instructions to solve rapidly (and if possible without expenses) the simplest problems.

We thank you for the choice of

Hermann®

GAS BOILERS

INDEX

WARNINGS

ATTENTION

(for forced draught models)

FOR DIAPHRAGM POSITIONING, CAREFULLY READ THE FLUE SYSTEMS INSTRUCTIONS IN THE "INSTALLATION" CHAPTER.

IMPORTANT

THE FIRST IGNITION OF THE BOILER MUST BE EXECUTED BY AN AUTHORIZED TECHNICIAN ACCORDING TO THE LAW 46/90.

Assigning all the operations for the first ignition to a Hermann Authorized Service Center the particular and exclusive Hermann Conventional Warranty is activated. For further information consult the coupon which you can find in the boiler's documents envelope.

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for the technician and for the user

SYMBOLS USED IN THIS HANDBOOK:

DANGER: All warnings preceded by this symbol MUST be carefully respected so as to avoid any accident of mechanical (e.g. wounds or contusions) or general origin.

DANGER: All warnings preceded by this symbol MUST be carefully respected so as to avoid any accident of ELECTRICAL origin (fulguration).

DANGER: All warnings preceded by this symbol MUST be carefully respected so as to avoid any accident of THERMIC origin (scalds).

Attention: All warnings preceded by this symbol MUST be carefully respected so as to avoid any disfunctioning and/or damage to the appliance or other objects.

MANUFACTURER DECLARATION

Hermann boilers have obtained the CE certification (DM dtd. April 2nd 1998, Law 10/91, art. 32) and meet minimum efficiency requirements, both at normal and 30% load, provided by DPR 412/93 (according to Law 10/91, art. 4, sub-section 4). They are in conformity with following Directives: Directive on appliances burning gaseous fuels (90/396), Directive on electro-magnetic compatibility (CE 89/336), Efficiency Directive (CE 92/42), Low Voltage Directive (CE 73/23), and relevant modifications.

The instructions manual is an essential and complementary part of the product and it is supplied together with the boiler.

Carefully read the manual, achieving all important information for a safe installation, use and servicing.

— **Carefully keep the manual for any further consultation you may need.**

— **The installation must be carried out by a qualified technician, in accordance with manufacturer instructions and with the relevant requirements of the current issue.**

— **A qualified technician is a person with a specific technical competence in the field of the heating appliances for domestic use and domestic hot water production, as indicated by the Law *[ID of Your National rule, if any, regarding Technicians competence]*.**

— **User can ONLY make those operations that are specifically described in the "Quick guide" or "User instructions" sections.**

— **The manufacturer has no contractual and extra-contractual responsibility for any damage arising from wrong installation, wrong use and non-observance of current laws and instructions given by the manufacturer himself.**

— ***Important:*** *this gas boiler is used to heat the water at a temperature lower than the boiling one, at atmospheric pressure; it must be connected to an heating system and/or to a domestic hot water system, in accordance with its features and power.*

— **Packing items (cartons, nails, plastic bags and so on) must not be left within children easy reach, as they are potentially dangerous.**

— **Before any cleaning or servicing operation, switch off the main electrical switch of the heating system and/or any other suitable switch providing electrical disconnection of the gas boiler.**

— **In case of fault and/or bad operation of the appliance, disconnect it immediately and do not try to repair it by yourselves.**

Boiler servicing and repair must be carried out exclusively by ***[HERMANN Authorized Servicing Centres] [qualified technicians]***, which will use original spare parts. Strictly observe the above requirement, avoiding any risk of compromising the appliance safety.

— If the appliance should be definitively disconnected, remove or cut off any potential dangerous item.

— When selling the appliance or leaving it installed after a removal, make always sure that the instructions manual is close to the boiler for the future use of new owners and/or installers.

— This appliance must be used for its clearly recommended utilization only. Any other utilization must be considered dangerous and incorrect.

— It is strictly forbidden to use the appliance for different purposes than the specified ones.

— This appliance must be installed exclusively to wall.

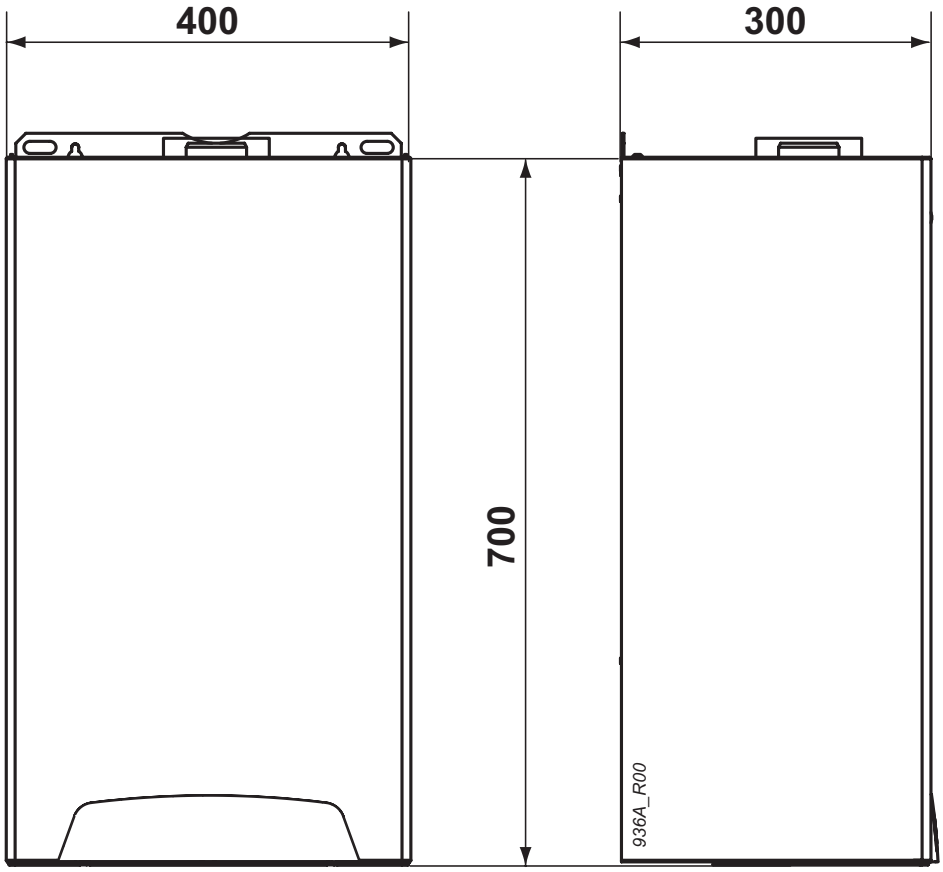
TECHNICAL DATA

TECHNICAL DATA	U.M.	MICRA 2 23 E		MICRA 2 24 SE	
CE certification	n°	0694 BN 3710		0694 BN 3710	
Class		II$_{2H3+}$		II$_{2H3+}$	
Type		B11/BS		B22 - C12 - C32 - C42 C52 - C62 - C82	
Gas type		G20	G30 / G31	G20	G30 / G31
Max heat input (Hi)	kW	25.6	25.6	25.6	25.6
Min heat input (Hi)	kW	10.5	10.5	10.5	10.5
Max heat output (Hi)	kW	23.0	23.0	23.9	23.9
Min heat output (Hi)	kW	9.0	9.0	9.1	9.1
NO_x Class		2	1	3	2
Weighted NO_x	mg/kWh	163.9	278	128	187
CO at nominal input	ppm	23	20.5	19	27
CO_2 at nominal input	%	4.8	5.6	6.7	7.8
EFFICIENCY					
Nominal efficiency	%	90.6		93.2	
Efficiency at 30% load	%	87.9		90.4	
HEATING					
Temperature selection range (min÷max)	°C	35÷78		35÷78	
Expansion vessel	l	8		8	
Expansion vessel pressure	bar	1		1	
Max working pressure	bar	3		3	
Max system temperature	°C	83		83	
HOT WATER					
Flow rate at 25°C temperature rise	l/min	13.2		13.7	
Flow rate at 30°C temperature rise	l/min	11.0		11.4	
Min water flow	l/min	3		3	
Max supply pressure	bar	6		6	
Min supply pressure (for priority pressure switch activation)	bar	0.8		0.8	
Temperature selection range (min÷max)	°C	30÷55		30÷55	
ELECTRICAL DATA					
Voltage / frequency	V / Hz	230/50		230/50	
Power consumption (VAP = with high capacity fan)	W	110		142 (162 VAP)	
Level of protection		IP X4D		IP X4D	
DIMENSIONS					
Width - Height - Depth	mm	*Refer to "DIMENSIONS" diagram*			
Weight	kg	31		36	
CONNECTIONS (S=Outlet)					
Heating flow / return	Inch	¾"		¾"	
Domestic Water inlet / outlet	Inch	½"		½"	
Gas connection to the boiler	Inch	¾"		¾"	
Gas connection to the gas cock of standard connection kit	Inch	½"		½"	
Flue products outlet Ø	mm	130			
Coaxial flue products outlet / air inlet Ø	mm			100/60	
Coaxial flue length (horizontal) min/max	m			0.5÷4	
Coaxial flue length (vertical) min/max	m			1÷5	
Separate flue products outlet / air inlet Ø	mm			80	
Separate flue length min/max	m			2÷30 (max S=20)	
Separate flue length min/max with **high capacity fan**	m			31÷60 (max S=40)	
Separate flue length with pipes-split min/max	m			2÷14 (max S=13)	
GAS SUPPLY PRESSURE					
Gas type		**G20**	**G30 / G31**	**G20**	**G30 / G31**
Nominal pressure	mbar	20	29 / 37	20	29 / 37
Injectors number		13	13	13	13
Injectors diameter	Ø 1/100mm	120	75 / 75	120	75 / 75
GAS CONSUMPTION					
Qmax	mc/h	2.71		2.71	
	kg/h		2.01 / 1.98		2.01 / 1.98
Qmin	mc/h	1.11		1.11	
	kg/h		0.83 / 0.81		0.83 / 0.81

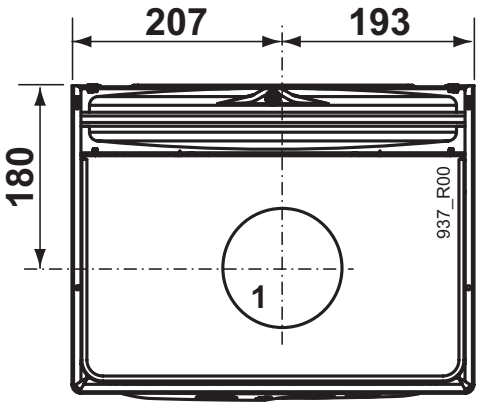
for the technician

DIMENSIONS

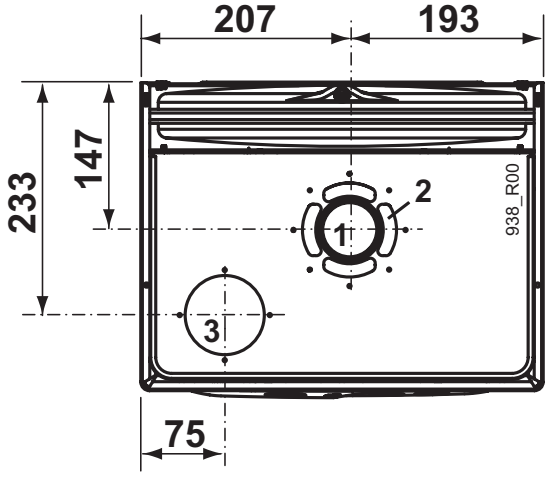
MICRA 2
E - SE



MICRA 2
E



MICRA 2
SE



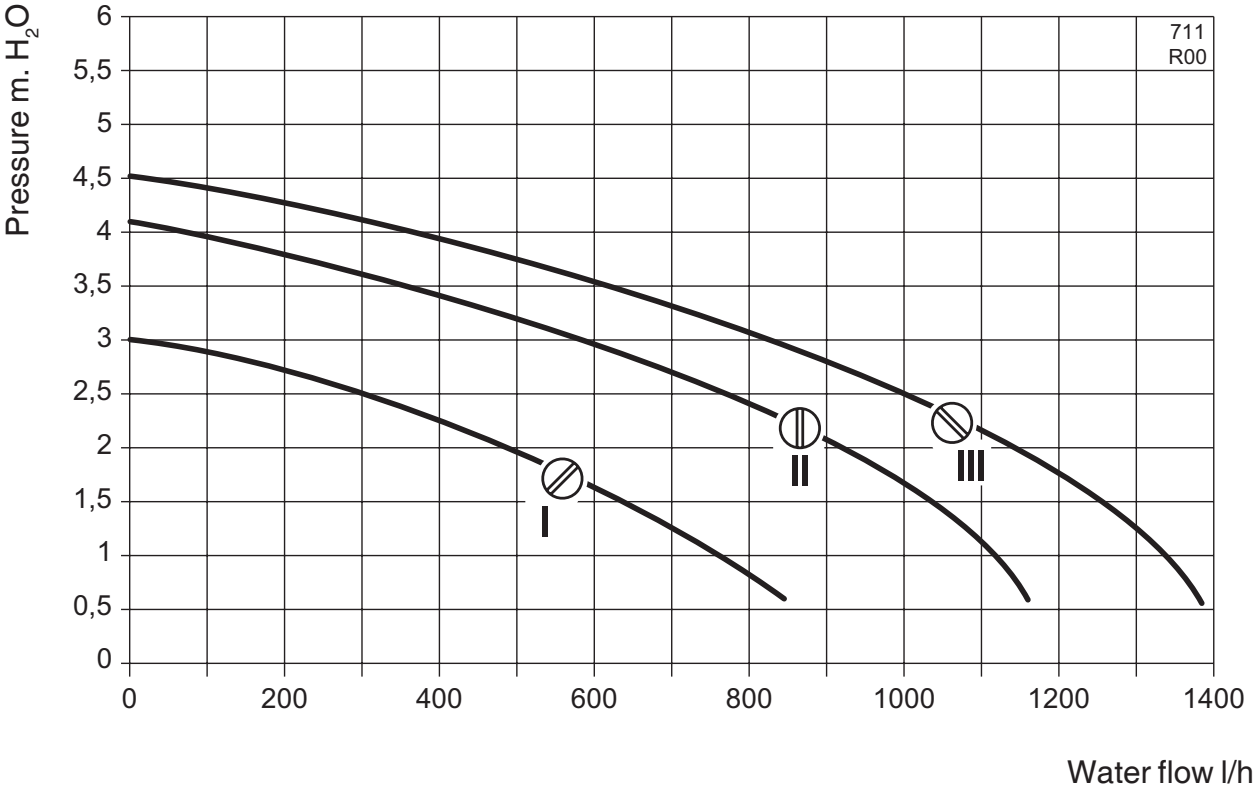
1 Flue products outlet

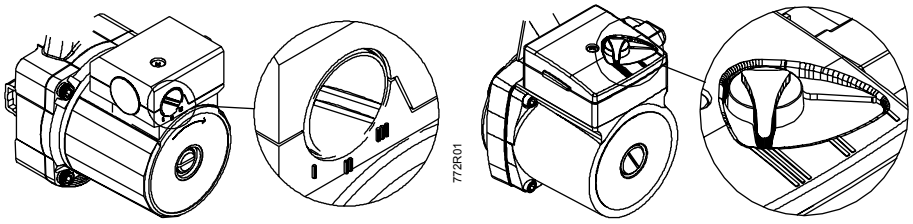
2 Air inlet for coaxial system

3 Air inlet for separate system

for the technician

AVAILABLE PUMP CAPACITY
Model MICRA 2 23 E / 24 SE
with selector in speed position I, II, III (automatic by-pass, not disconnectable)





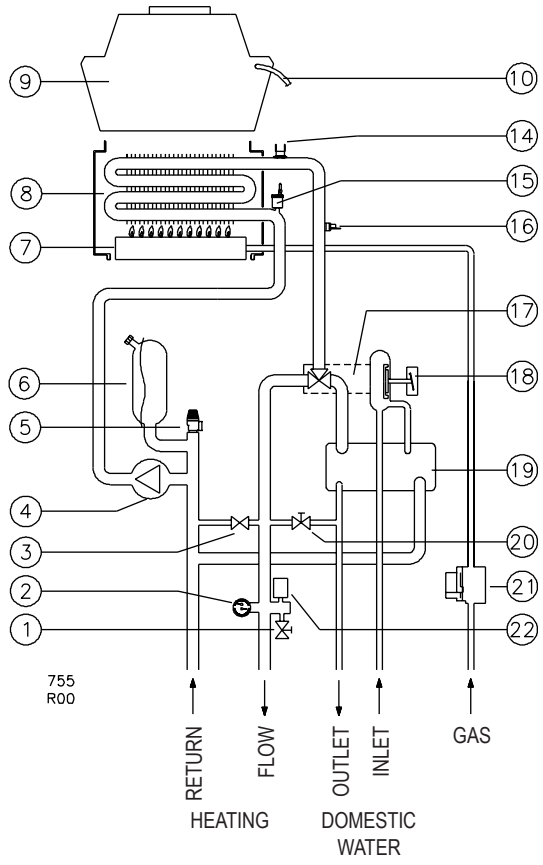
for the technician

BOILER SCHEMATIC

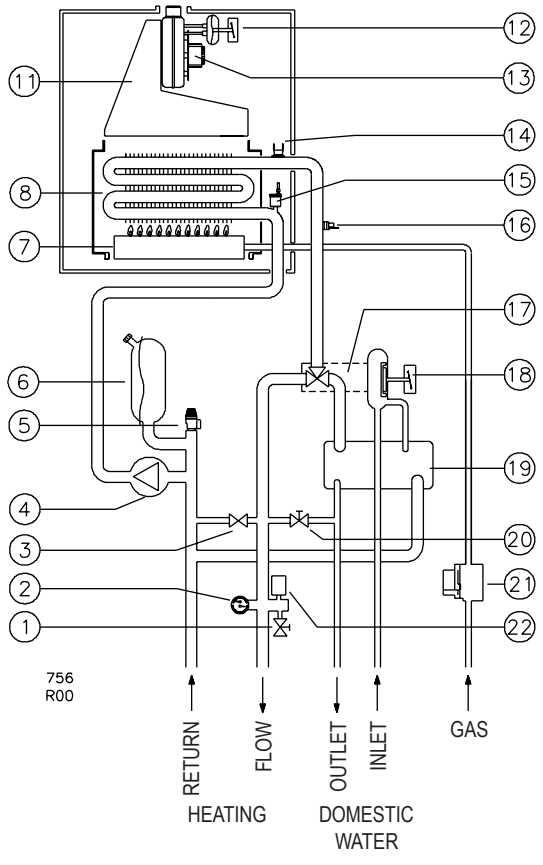
WARNING: This scheme is made for information only. To make boiler hydraulic connection either use fixing jig or the drawing inserted in the section "Installation" or the "Dimensions" drawing.

1 Drain valve
2 Heating thermometer + gauge
3 By-pass
4 Pump
5 Heating system safety valve 3 bar
6 Expansion vessel
7 Burner
8 Primary heat exchanger
9 Flue hood *("E" models)*
10 Flue thermostat *("E" models)*
11 Flue hood *("SE" models)*
12 Flue pressure switch *("SE" models)*
13 Fan *("SE" models)*
14 Safety thermostat
15 Venting device
16 NTC temperature sensor
17 Hydraulic 3-way valve
18 Priority pressure switch
19 Domestic exchanger
20 Filling valve
21 Gas valve
22 Loss of water switch

MICRA 2 E



MICRA 2 SE



INSTALLATION

Safety laws and rules referred to technicians assigned to boilers installation

Place here all necessary advices according to national rules about WORK SAFETY

Law number XXXX

"Actuation of 89/391/CEE; 89/655/CEE, 90/296/CEE, 90/934/CEE, 90/679/CEE, (work safety)"

Law number XXXX

"Actuation of 89/686/CEE (21 Dec 1989)"

Other Law number XXXX (if any)

"Other Law title and/or brief description"

Directives

"Directive title and/or brief description"

Always proceed with caution when handling the boiler and carrying out installation/maintenance work as metal parts may cause injuries such as cuts and abrasions. Wear gloves while doing the above mentioned operations.

Laws and rules referred to boilers installation

Place here all necessary advices according to national rules about BOILER INSTALLATION

Law number XXXX

"Law title and/or brief description"

Boiler location

INSTALLATION ROOM

When having an heat ouput lower than 35 kw (about 30000 Kcal/h), particular features for the installation room are not required. Shortly, all installation rules assuring a safe and regular gas boiler operation, must be strictly respected.

Place here all necessary advices according to national rules about:
- Installation room requirements
- Limitations in power and/or number of boilers and other appliances in the same room

Law number XXXX

"Law title and/or brief description"

ROOM VENTILATION (mod. MICRA 2 E – natural draught)

When a natural draught boiler is installed, permanent ventilation of the installation room is mandatory and extremely important. Ventilation must be made and sized in accordance with Laws and Rules in force.

INSTALLATION IN ROOMS WHERE TEMPERATURE CAN DROP DOWN TO 0°C:

When the installation place does not guarantee an adequate repair against atmospheric agents, the gas boiler must be completely protected through an adequate coverage as a safety measure against the above agents.

Thanks to its antifreeze system, inner components could never reach a temperature lower than 5°C. This system is activated when the boiler is supplied by the electrical and gas lines, provided that the pressure in the heating system is correct. On request, it is possible to install an antifreeze electrical resistance device on the domestic exchanger, so as to protect boiler even in case of gas lack.

In case of boiler installation in rooms where temperature can drop down to 0°, it is advisable to protect the heating circuit with an antifreeze liquid. See also "System filling" and "Boiler inactivity".

This appliance is not suitable for outdoor installation.

Boiler hanging

with standard connection kit

REMARK: A re-utilizable metal jig can be ordered separately, so as to facilitate connections and fixing points positioning (when the standard connection kit is used). If the standard connection kit is not used, refer to the following "without standard connection kit" paragraph for the position of the connections directly on the boiler.

Remark: MICRA 2 can be installed directly to replace a MICRA 23 or a HABITAT, without any modification to the position of hydraulic connections and fixing points.

— Consider gas boiler size and sufficient clearances [C] for servicing/repair. It is recommended: 50mm on both lateral sides and 300 mm on lower side;

— To fix the boiler with wallplugs ("stud" type with nut), center the relevant wall holes as regards to [A] points. To hang it with open hooks, place hooks in correspondence with [B] points.

— Using the jig or respecting the measures indicated in the figure, fix up electrical connections and all ducts for heating flow and return, cold water, hot water and gas.

— Hang the boiler to the wallplugs or hooks, using the holes ([A] for the wallplugs and [B] for the open hooks).

— **Remove the plastic caps** from the boiler connections prior to connecting boiler to the pipework.

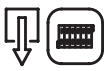
REMARK: To facilitate boiler connection, it is possible to remove temporarily the lower grid, unscrewing its fixing screws.

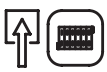
— As far as air inlet and flue outlet ducts are concerned (forced draught models), please refer to "Flue systems" paragraph, where measures are referred to the upper edge of boiler's body [D].

Gas (1/2")


Hot water OUTLET (1/2") **(A)**


Cold water INLET (1/2") **(A)**

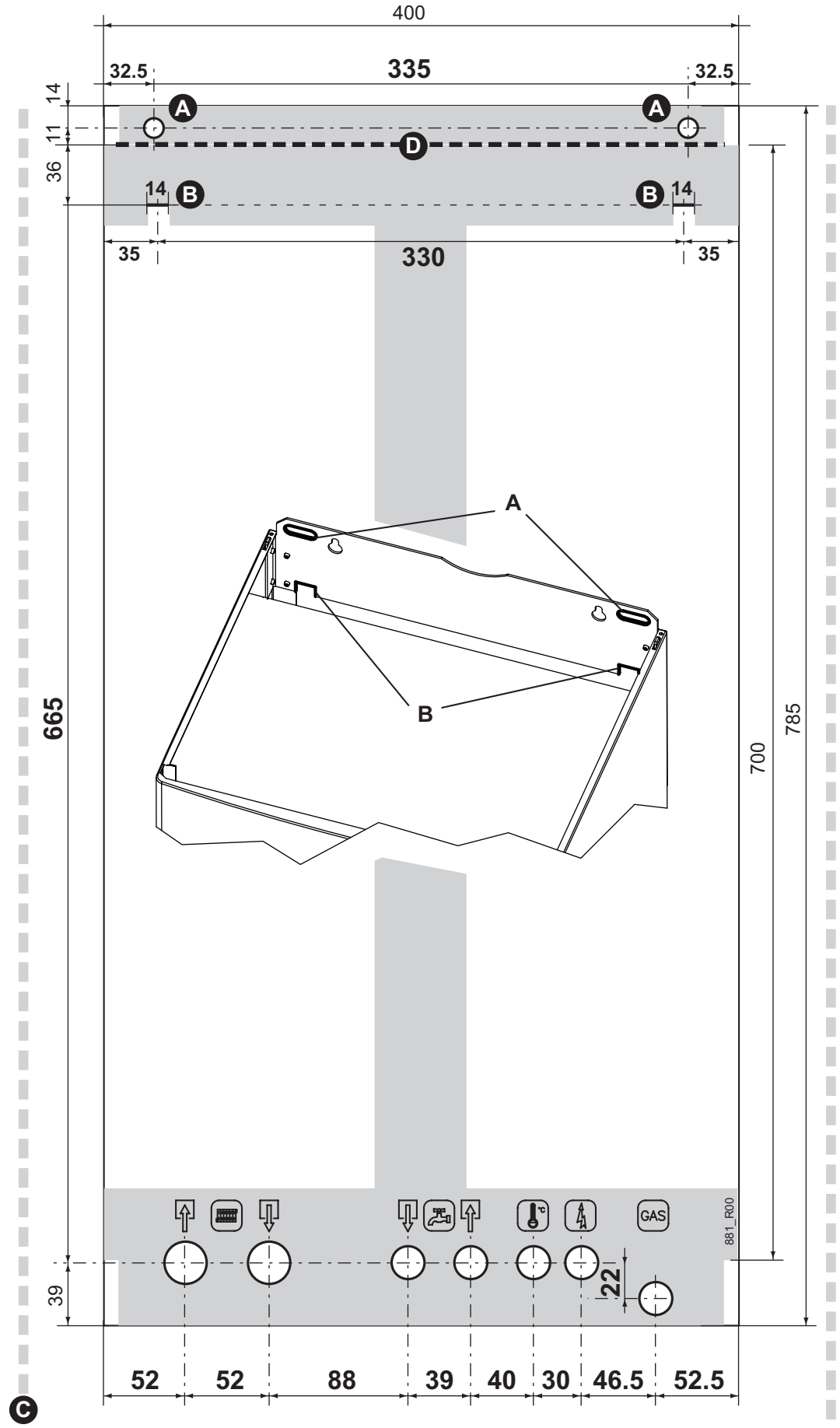

Heating FLOW (3/4")


Heating RETURN (3/4")

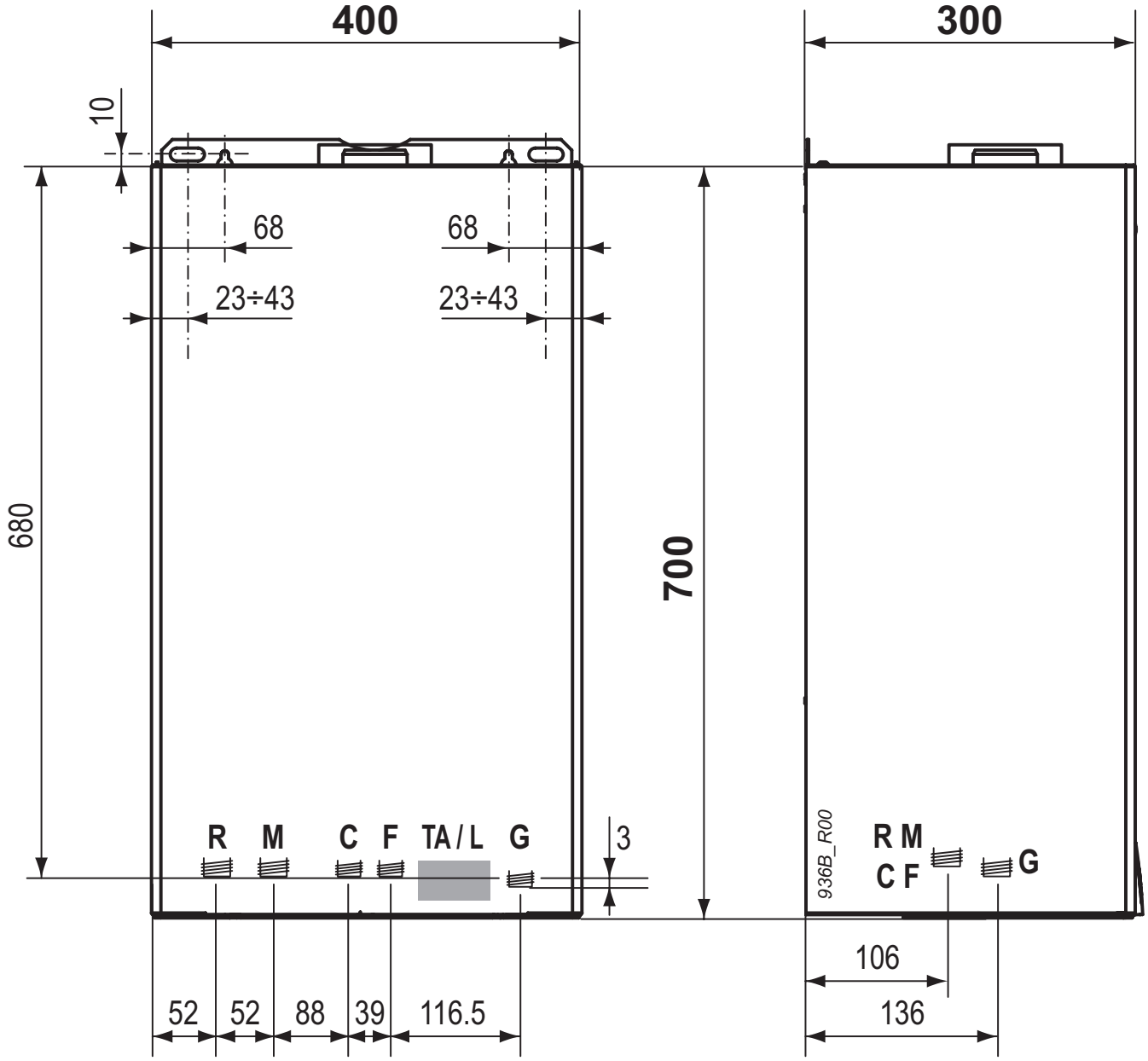

Electrical power supply


Room thermostat

(A) *Cold Water Inlet* and *Hot Water Outlet* connections are NOT SUITABLE for hemp, teflon strip or similar. it is MANDATORY to use connection pipes provided with revolving flange and plain gasket of suitable material, tightening them properly and not excessively.


400
335
32.5
32.5
14
11
36
A
A
D
B
B
14
14
35
330
35
A
B
665
700
785
GAS
881_R00
39
22
52
52
88
39
40
30
46.5
52.5
C

without standard connection kit



R Heating return (3/4")
M Heating flow (3/4")
C Hot water outlet (1/2") **(A)**
F Cold water inlet (1/2") **(A)**
TA / L Zone for electrical power supply and room thermostat connections
G Gas (3/4")

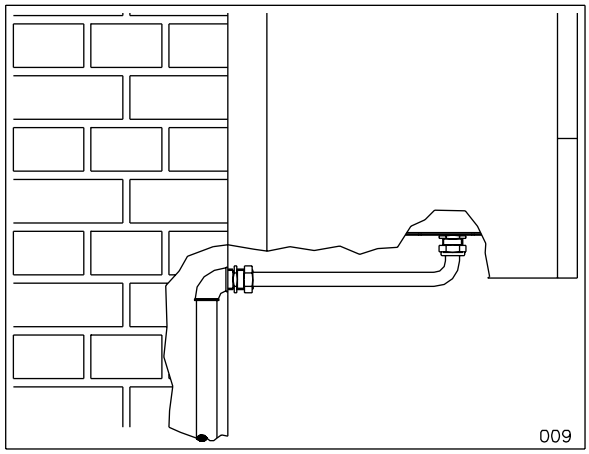
(A) *Cold Water Inlet* and *Hot Water Outlet* connections are NOT SUITABLE for hemp, teflon strip or similar. it is MANDATORY to use connection pipes provided with revolving flange and plain gasket of suitable material, tightening them properly and not excessively.

for the technician

Notes

Hydraulic connections

CONNECTION EXEMPLE



ADVICES AND SUGGESTIONS TO AVOID VIBRATIONS AND NOISES IN THE SYSTEM

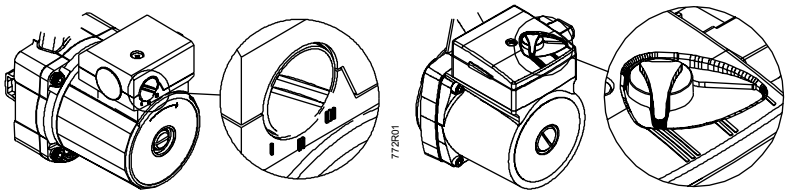
— Do not use pipes with reduced diameters;

— Do not use bends with small radius and reductions of important sections;

— **It is recommended an hot washing of the system** in order to purge the pipes and the radiators from impurities (in particular oils and fats) that **could damage the pump.**

PUMP'S SPEED

The pump has a selector which allows to reduce the speed, so as to reduce the noise produced by the too rapid circulation of the liquids in too small heating systems.



DOMESTIC WATER SUPPLY

The pressure of entrance cold water inlet pressure must be lower than 6 bar. Furthermore, for an optimal boiler functioning, water pressure should be more than 1 bar. A lower pressure could make difficult to restore correctly the pressure of 1 bar in the heating system, and reduce the flow od hot water available from the boiler.

In case of stronger pressure it is necessary to install a PRESSURE REDUCER upstream the boiler.

The cleaning frequency of the DHW heat exchanger depends on the water supply hardness. Besides, the presence of solid residuals or impurities in the water (for example in case of new systems) could compromise the correct functioning of the boiler.

However, it is possible to install suitable water treatment device, depending on the water features.

HEATING SYSTEM

— Considering that during boiler operation, the water inside the heating system increases its pressure, make sure that its maximum value does not exceed the maximum hydraulic pressure indicated on the technical data.

— Connect the safety evacuation ducts of the boiler to an evacuation funnel. If safety valves are not connected to an evacuation device, their intervention could flood the room. Hermann cannot be held responsible for any damage arising from that situation.

Make sure that the hydraulic and heating systems ducts are not used as earth connections of the electrical system. They are absolutely NOT SUITABLE for such a use.

System filling

Once all system connections have been carried out, proceed with system filling. This operation should be made with caution, respecting the following steps:

— Open the radiators venting devices;

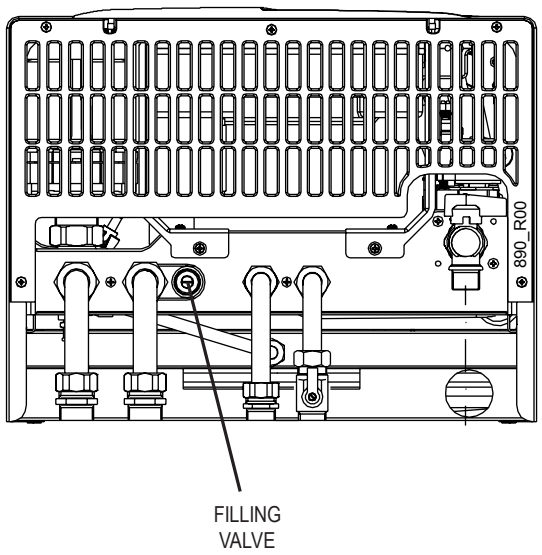
— Gradually open the water supply valve (see figure “Boiler bottom view”), checking the correct functioning of automatic venting devices, eventually installed;

— Close the radiators venting devices as soon as water flows;

— Make sure that pressure gauge reaches the optimal value of 1÷1.5 bar (minimum: 0.5 bar);

— Close the water supply valve and bleed each radiator;

BOILER BOTTOM VIEW



In case the boiler is installed in rooms where temperature can drop down to 0°C, it is advisable to fill up the system with an anti-frost liquid.

Gas connection

Boiler installation must be carried out from a qualified technician, [as indicated by the Law XXXXX] because an incorrect installation can cause damages to people, animals or things, for which the manufacturer cannot be held responsible.

Verify what follows:

a) cleaning of all system gas pipes in order to avoid the presence of residual combustion products that could compromise the correct boiler functioning;

b) gas line and ramp conformity with laws and rules actually in force (Laws UNI-CIG 7129/01 and 7131/99 – DM 12/04/96);

c) internal and external tightness of the gas system and connections;

d) supply pipe must have a section greater than or equal to the boiler one;

e) supply gas must correspond to the one for which the boiler has been regulated; otherwise, call [an HERMANN Servicing Centre] [a qualified technician] for gas conversion;

f) an interception valve must be installed upstream the appliance;

Open the meter valve and purge the air that is inside the system pipes (including all the appliances).

While connecting gas inlet pipe of the boiler to the pipe coming from gas network, it is MANDATORY to insert a TIGHT GASKET, whose dimensions and material must be adequate. Connection is NOT suitable for hemp, teflon strip or similar materials.

Using LPG, it is absolutely necessary to install a pressure reducer upstream the boiler.

Due to various installation possibilities, the gas cock supplied with Standard Connections Kit for MICRA 2 boilers has a simple male Ø ½" connection, facing the rear of the boiler. No gas pipes are supplied.

Electrical connections

The link of the room thermostat works with a **safety extra low voltage (SELV);** connect it to the **voltage free terminals** of the room thermostat/cronothermostat. **On NO account must any electrical voltage be applied to these terminals.**

The boiler must be connected to an electrical line of 230V-50Hz, respecting the polarities L-N (Live-Neutral) and the earth connection.

PLACE UPSTREAM THE BOILER A BIPOLAR SWITCH in accordance with the rules actually in force.

For the general electrical supply of the appliance, the use of adaptors, multiple taps and extensions is not allowed.

If the supply cable must be replaced, use one of the following wire types: H05VVF or H05-VVH2-F. **It is mandatory the earth connection in accordance with the rules actually in force.** To replace the cable, release the cable fastener placed on the frame of the hydraulic connections, open the back cover of the control panel and disconnect it from the terminals. Install the new cable working in the reverse way. When connecting the cable to the boiler, it's IMPORTANT:

— to leave the Earth wire about 2 cm longer than Live and Neutral wires;

— to lock tha cable in the cable fastener placed on the frame of the hydraulic connections.

Electrical safety of the appliance is only achieved when it is well connected to an efficient earthing system, executed as indicated by the safety rules actually in force.

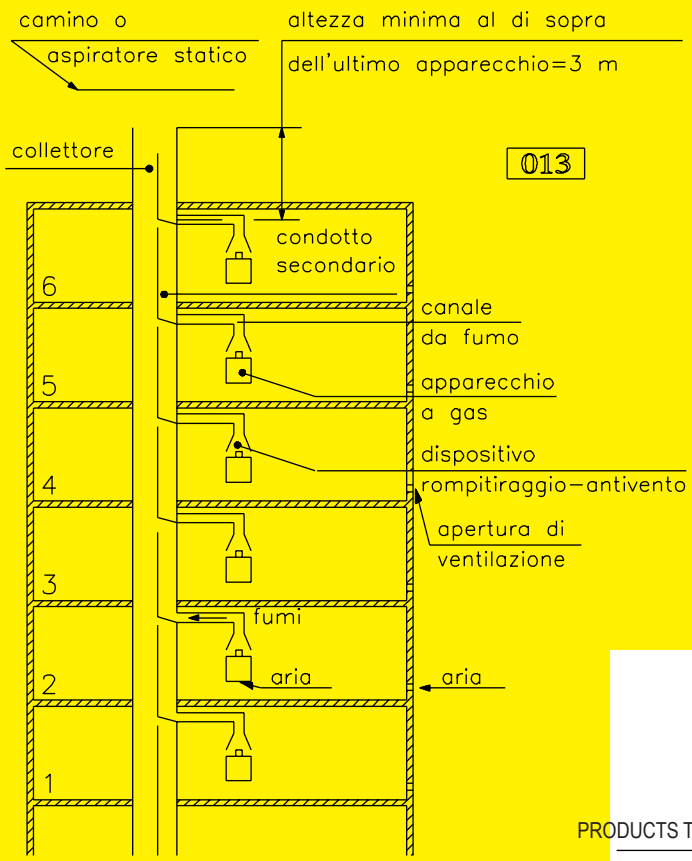
A qualified technician must check that the electrical system is in line with the maximum power allowed by the boiler, indicated on the data plate, with particular attention to the cables section.

Remark: HERMANN Ltd. declines any responsibility for damages to persons, animals or things caused by the non-connection of the boiler earthing and by failure to comply with the rules.

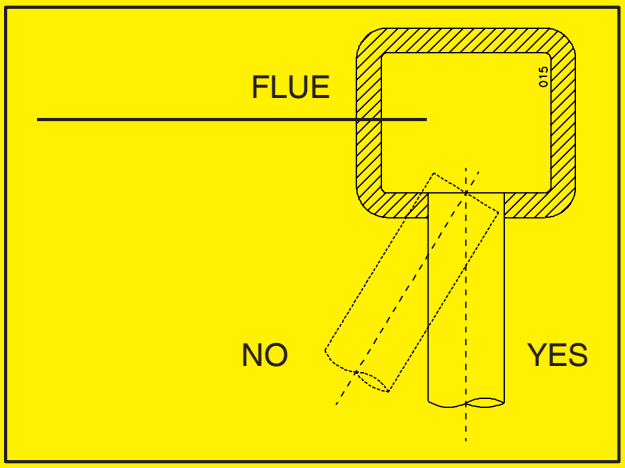
Chimney connections
MICRA 2 E (natural draught)

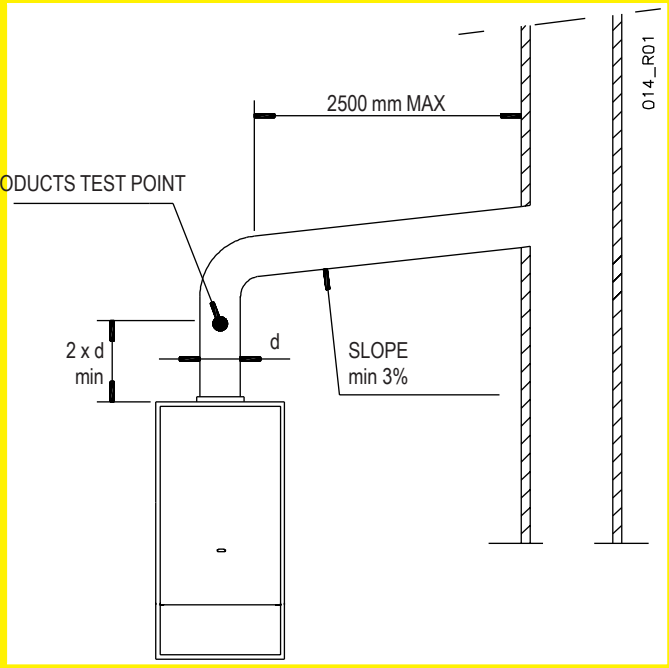
Place here all necessary advices according to national rules about CHIMNEY CONNECTIONS of OPEN chamber boilers

— The boiler has been tested with a test chimney lenght of 1 meter.



These diagrams are to explain the most important ITALIAN laws concerning chimney connections (for EXEMPLE purpose only)



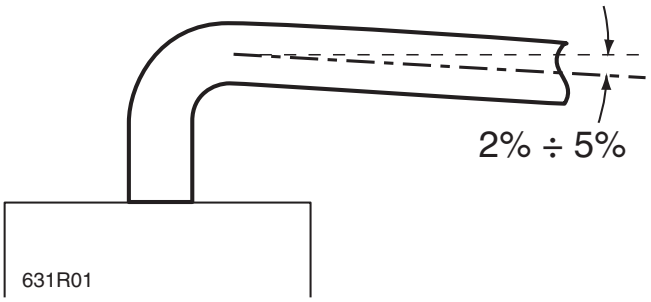


for the technician

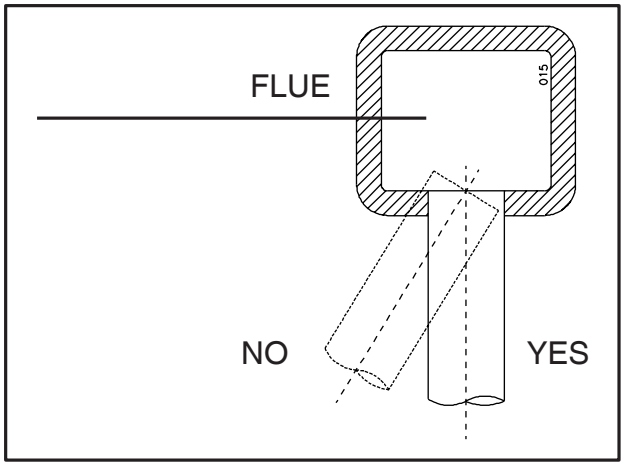
Chimney connections
MICRA 2 SE (forced draught)

NOTE ON FLUE INSTALLATION

When fitting air inlet and flue outlet horizontal ducts, it is necessary to make sure there is a slope of 2÷5% downwards from the boiler to the outside (see diagram). This is essential to guarantee correct boiler operation and reliability. Air inlet and flue outlet terminals should be protected by suitable approved flue accessories, to avoid environmental elements penetration.



Place here all necessary advices according to national rules about CHIMNEY CONNECTIONS of sealed chamber boilers



for the technician

In case of evacuation to wall, the positions indicated in the following drawing and table must be respected:

Positioning of flue terminals for forced draught boilers, depending on their heat input

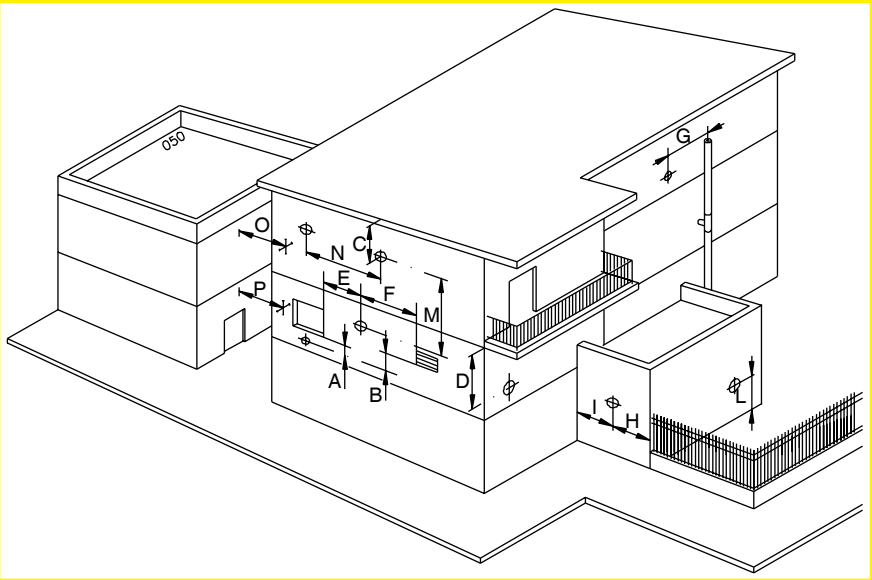
Terminal positioning	Distances	Appliances		
		from 4 kW * to 7 kW mm min.	from 7 kW to 16 kW mm min.	from 16 kW to 35 kW mm min.
Under a window	A	300	500	600
Under an air vent	B	300	500	600
Under a gutter	C	300	300	300
Under a balcony **	D	300	300	300
From an adjacent window	E	400	400	400
From an adjacent air vent	F	600	600	600
From vertical or horizontal evacuation pipes***	G	300	300	300
From a corner of the building	H	300	300	300
From a recess of the building	I	300	300	300
From the ground or from another floor	L	400 ◆	1500 ◆	2500
Between two terminals vertically	M	500	1000	1500
Between two terminals horizontally	N	500	800	1000
From a surface facing another surface, having no openings or terminals within a distance of 3 mts. from the evacuation hole	O	1500	1800	2000
As above, but with openings or terminals within a distance of 3 mts. from the evacuation hole	P	2500	2800	3000

* *Appliances with an heat input lower than 4 Kw are not subjected to any limitation for the terminals positioning, except for the points O and P.*

** *The terminals under a practicable balcony must be positioned in such a way that the total flue run, from the terminal outlet to its own outlet from the external balcony perimeter, included the height of the eventual protection banisters, is no lower than 2000 mm.*

*** *In the terminal positioning, it will be necessary to keep distances not inferior to 500 mm. in case of close proximity to materials sensible to the combustion products action (e.g., plastic gutters and downpipes, wood projections and so on), unless adequate measures of protection have been adopted.*

◆ *The terminals must be designed in such a way that the combustion products flow is as much as possible ascensional and protected from the temperature effects.*



for the technician

High capacity fan
MICRA 2 24 SE

For **MICRA 2 24 SE** (forced draught) it is possible to install, on request, an “high capacity fan”, allowing an higher length of separate flue systems (see table):

Separate flue products outlet / air inlet Ø	mm	80
Separate flue length	m	30 (max 20 outlet)
Separate flue length with high capacity fan	m	60 (max 40 outlet)

ASSEMBLING INSTRUCTIONS

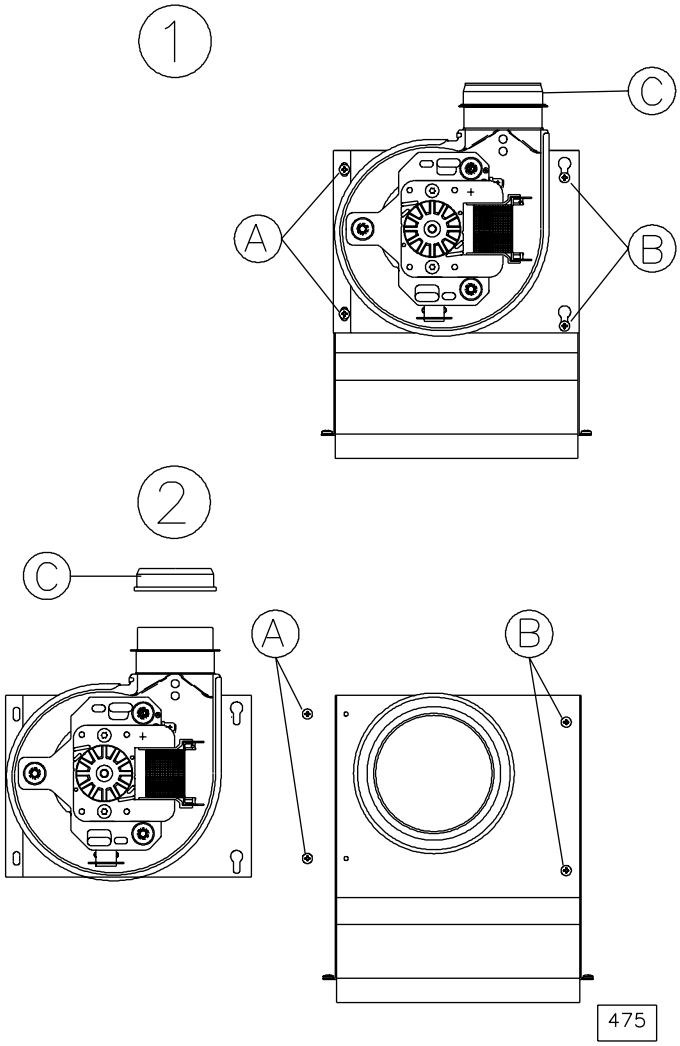
It is advisable to install the high capacity fan, before flue kit, avoiding any possible hindrance during assembling operations.

Provide electrical disconnection of the gas boiler and remove the sealed chamber closing;

1. Take off screws A, loosen screws B (it is not necessary to take off screws B, being the fan bracket provided with button-holes) and remove the standard fan, disconnecting its cables for electrical supply; remove the flue pressure sensor.
2. Remove gasket C from standard fan and insert it on high capacity fan; install the flue pressure sensor, respecting its previous position.

Install the high capacity fan, connect the cables for electrical supply, tighten screws B and reinsert screws A.

Reassemble the sealed chamber closing.

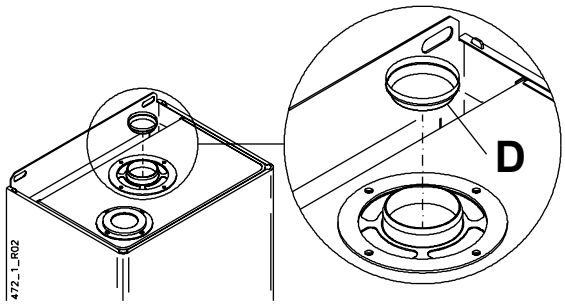


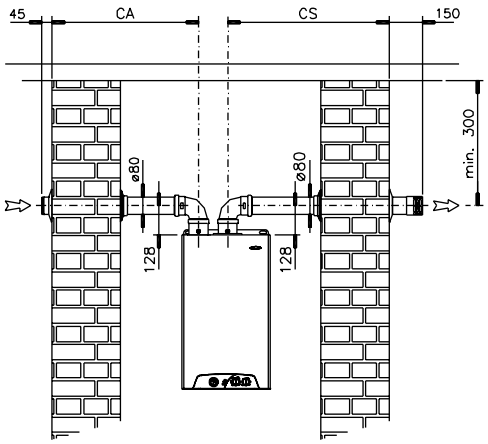
for the technician

Flue systems
MICRA 2 SE

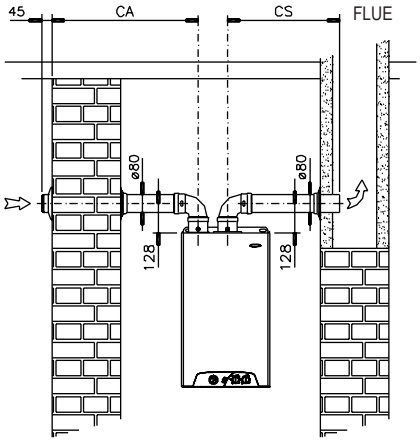
AIR INLET AND PRODUCTS OUTLET THROUGH SEPARATE PIPES

Attention: see table and, if required, install the diaphragm **"D"** as indicated in the figure besides (any additional 90° bend = 0.5 linear meters, 45° bend = 0.25 meters).

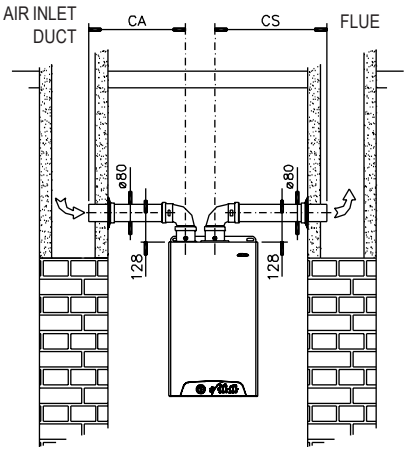




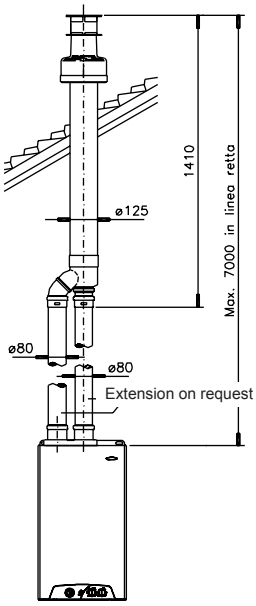
AIR INLET AND PRODUCTS OUTLET THROUGH WALL



AIR INLET THROUGH WALL PRODUCTS OUTLET TO FLUE



AIR INLET THROUGH DUCT PRODUCTS OUTLET TO FLUE

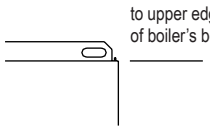


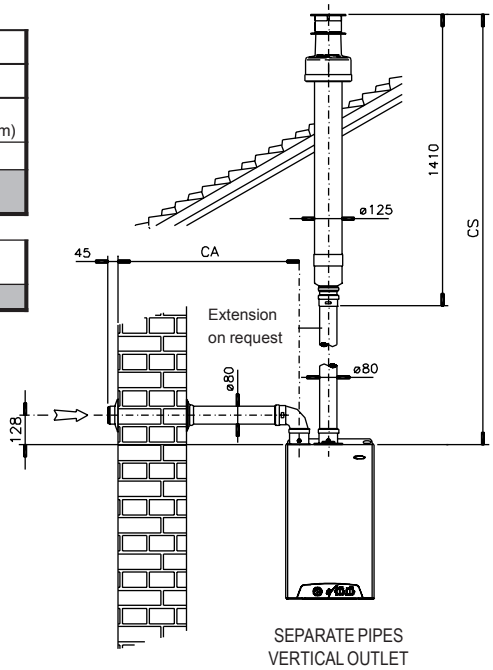
SEPARATE PIPES WITH PIPES-SPLIT VERTICAL OUTLET/INLET

Model	Ø80mm separated ducts			
	CA+CS min÷max (m)	CS max (m)	Diaphragm	
			diameter (mm)	up to CA+CS (m)
24 SE	2÷30	20	(a)	8
24 SE with high capacity fan	31÷60	40	NO	

	Ø80mm ducts with Pipes Splitter on coaxial connection			
24 SE	2÷14	13	NO	

(a) use the diaphragm supplied with the boiler.





SEPARATE PIPES VERTICAL OUTLET

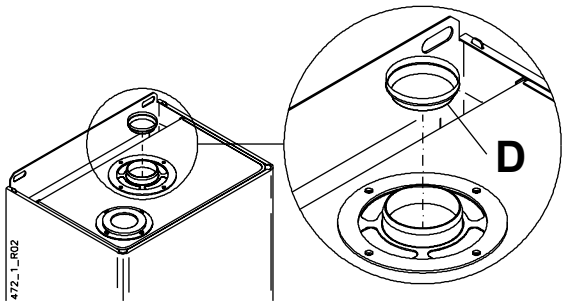
882_R01

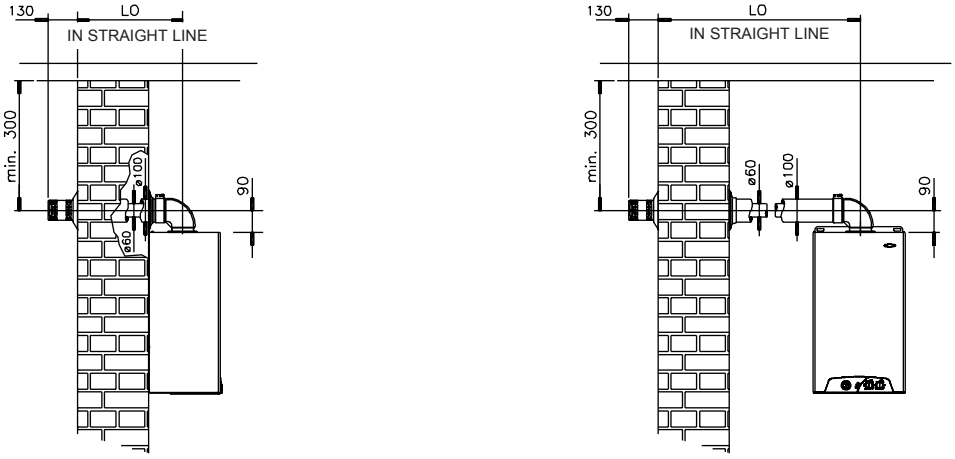
for the technician

Flue systems
MICRA 2 SE

AIR INLET AND PRODUCTS OUTLET THROUGH COAXIAL SYSTEM

Attention: see table and, if required, install the diaphragm **"D"** as indicated in the figure besides (any additional 90° bend = 1 linear meter, 45° bend = 0.5 meters).

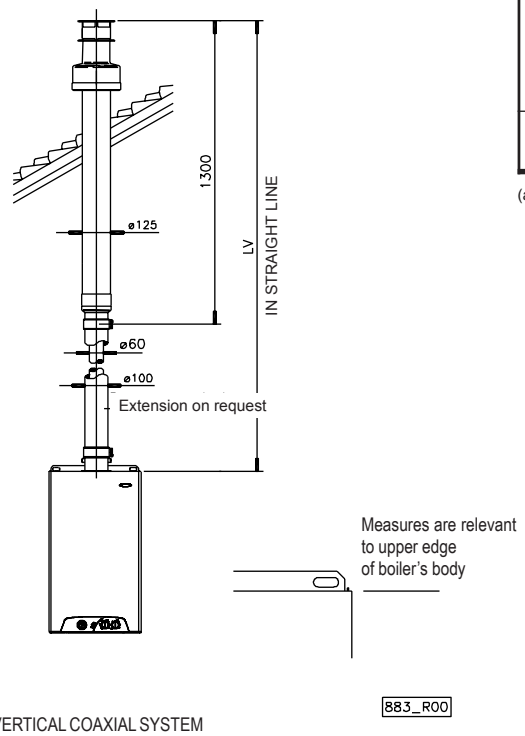




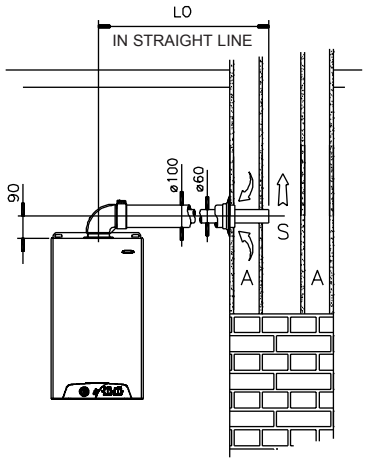
HORIZONTAL COAXIAL SYSTEM

Model	Ø 60/100 coaxial system			
	LO min÷max (m)	LV min÷max (m)	Diaphragm	
			diameter (mm)	up to LO or LV (m)
24 SE	0.5÷4	1÷5	44 (b) (a)	1 1÷2

(a) use the diaphragm supplied with the boiler. (b) available on request.



VERTICAL COAXIAL SYSTEM



HORIZONTAL COAXIAL SYSTEM
AIR INLET AND PRODUCTS OUTLET
THROUGH COAXIAL DUCT/FLUE

for the technician

Notes

REGULATION AND SERVICING

ATTENTION: the operations described below must be carried out only by qualified personnel [authorized by HERMANN].

When regulation/measuring is over, remember to tighten pressure tapping point screws and ALWAYS check for gas leaks!

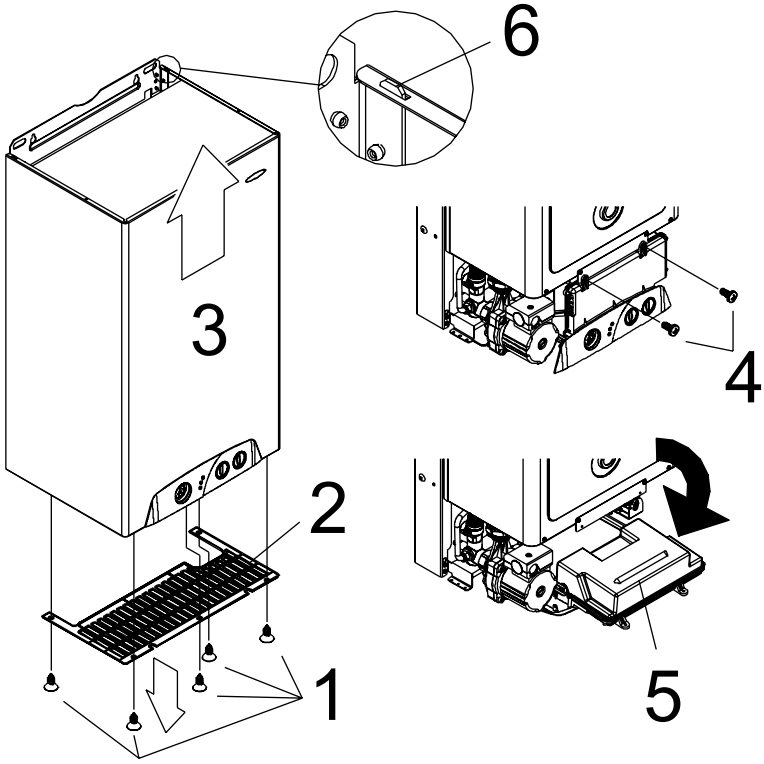
Before boiler ignition, verify that pump is not blocked due to its inactivity: unscrew the plug located in the middle of the cap to gain access to the rotor shaft, and turn it manually using a screwdriver or another suitable tool.

During the first ignition of the brand new boiler, it is necessary that burner works for at least 30 minutes, before performing combustion checks. During this time, the fumes of the eventual residual manufacturing materials are produced, and they could alter the measured values.

Remark: the knob on control panel has the position that is used during factory test only. It has no use with regard to first ignition, servicing or regulation. For information use only, we explain that this position activates the gas boiler, further to a request of hot water, at the minimum output set for this function.

Access to the regulation devices

1. Unscrew the screws [1] and remove the lower grid [2];
2. Push the casing [3] upwards and remove it;
3. Unscrew the two screws [4] and overturn downwards the control panel [5];
4. After the regulations, close the boiler repeating everything in the other sense, carefully hooking the casing to the tongues [6].



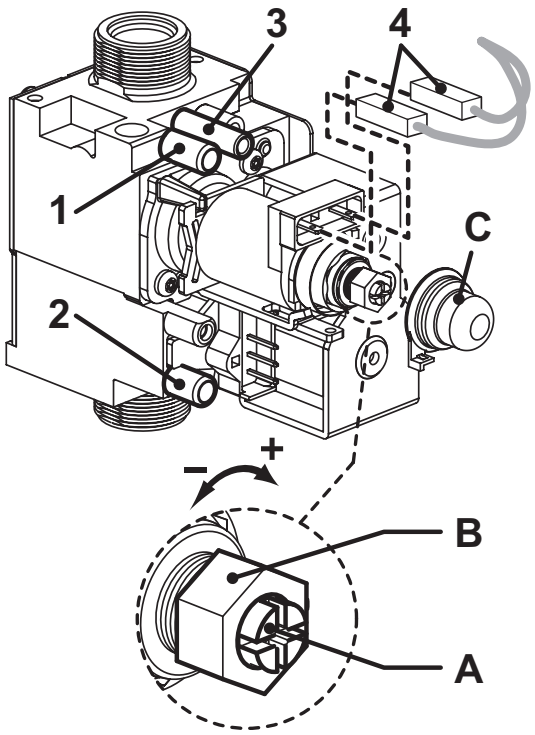
for the technician

Preliminary GAS checkings

All boilers are tested and factory set during manufacture; however, it is advisable to check that the gas type and the burner pressures are correct. On the contrary, follow the procedures described in this section.

To make burner pressures checking, insert pressure gauge sensors in the gas valve pressure tapping points (see figure).

Remark: In order to check that pressure and gas input are enough to guarantee the correct functioning of the appliance , make measurements while burner is on.



1 = Pressure tapping point for gas outlet
2 = Pressure tapping point for gas inlet
3 = Vent (mod. SE)

Gas valve pressure regulation (MAX-MIN)

— Loosen (2-3 turns) the screw of pressure tapping point for gas outlet [1] of the gas valve and insert the manometer sensor. In the “SE” models unthread from the “Vent” [3] the silicon tube coming from the sealed chamber;

— Activate the boiler to its maximum output not modulated, using the “Chimney-sweeper” function. Proceed as it follows:

- Supply the boiler and turn the Summer/Winter knob to Summer position ;
- Provide that room thermostat contact is closed (activated) or open an hot water tap (the heat produced by the boiler will be drained consequently);
- Turn the Hot Water knob to the position Chimney-sweeper and wait (about 5 seconds) that green lamp flashes with short lightnings. When this occurs, turn the Hot Water knob on the scale from I to IIIII. The burner ignites at the maximum output not modulated;

— verify that the measured pressure corresponds to the MAX value indicated in the table, with regard to the boiler model and gas type;

Model		Natural gas G20		Buthane G30		Propane G31	
		mbar	mm w.g.	mbar	mm w.g.	mbar	mm w.g.
MICRA 2 23 E	MAX pressure	12.3	125	27.5	281	35.0	357
	MIN pressure	2.2	22	4.8	49	4.8	49
MICRA 2 24 SE	MAX pressure	13.1	134	27.4	279	35.2	359
	MIN pressure	2.1	21	4.5	46	4.5	46

— extract one of the connectors [4] that supply the modulation coil; verify that the measured pressure corresponds to the MIN value indicated in the table, with regard to the boiler model and gas type;

— reinsert the connector [4];

— if it is necessary to adjust the regulation, proceed as it follows, referring to the figure:

- take off the protection cap [C];
- adjust MAX pressure acting on the nut [B] (10 mm). Turn clockwise to increase pressure, counterclockwise to decrease pressure;
- extract again one of the connectors [4];
- adjust MIN pressure acting on the screw [A] (with a 4 mm screwdriver), paying attention not to contemporarily move the nut [B]. Turn clockwise to increase pressure, counterclockwise to decrease pressure;
- reinsert the connector [4] and check that MAX pressure is not changed;
- mount the cap [C];

Important: lock the adjustment device after any setting operation.

— For the “SE” models reinsert the tube in the “Vent” [3] of the gas valve. ATTENTION:after this operation, the value measured by the manometer could decrease due to pressure compensation. This fact is normal and does not require any change of the regulation;

— Screw the pressure tapping point screw for gas outlet [1] and verify that there is no gas leak.

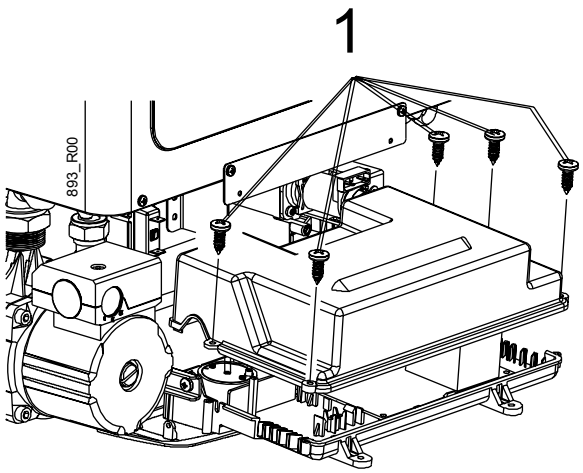
— To switch off the burner, turn the Summer/Winter knob to the **“0”** position.

Gaining access to the main PCB

To gain access to the main PCB:

disconnect the electrical power supply to the boiler;

— unscrew the screws [1] and take off the back cover of the control panel.



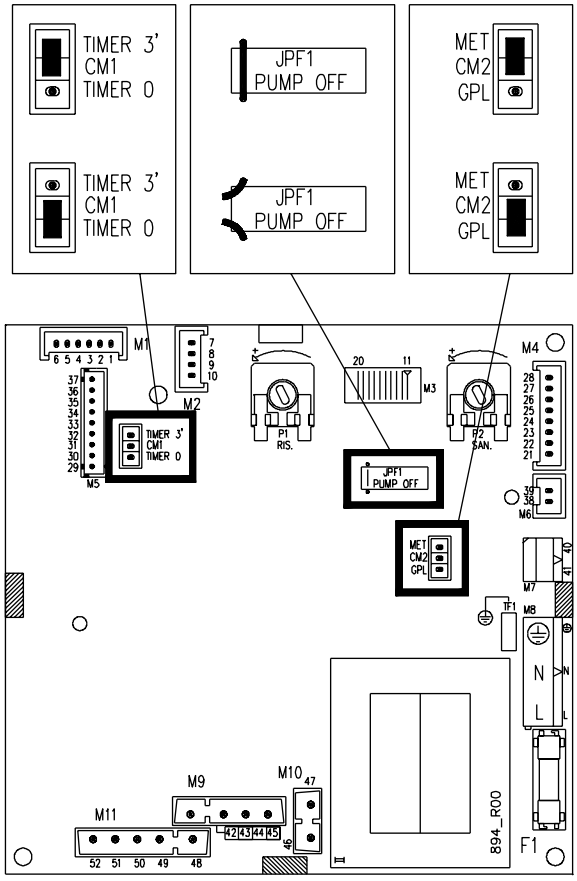
for the technician

ELECTRONIC settings

The “MICRA 2” models are equipped with a digital PCB that can automatically manage ignition, slow opening, modulation and output in the heating function.

Disconnect the power supply before approaching the jumpers. Restore the power supply only after you have closed the back cover of the control panel.

Any intervention on jumpers, if made when the electrical supply is present, don’t have effect or have unpredictable effets, and eventually damage the PCB.



It is possible to modify the following parameters:

Re-ignition delay - jumper CM1

Normal delay *(factory set)* – leave the jumper on **TIMER 3’**: in the heating function, when the set temperature is reached, the burner will switch off and could re-ignite, in case of a new heating request, only after a delay of 3 minutes.

Zero delay – move the jumper to **TIMER O**: in the heating function, when the set temperature is reached, the burner will switch off and could re-ignite immediately in case of a new heating request (e.g. for systems with fan coil units).

Type of gas - jumper CM2

Attention: gas type changing requires other regulations and operations on the burner (see “Changing gas type” section) and it is not limited to jumper moving.

Natural gas (G20) – jumper on **MET**

Buthane (G30) or **Propane (G31)** – jumper on **GPL**

Factory set depends from the type of gas for which the gas boiler is arranged.

Pump operation – jumper to be cut JPF1

Normal operation (factory set) – **do not cut** the jumper

Excluded operation – cut the jumper. During the heating function, the pump is not activated. Use this function with external pumps only. The pump will be activated in all other circumstances, e.g. for post-circulation (if present) or for anti-freezing or anti-lockout functions.

Changing Gas type

ATTENTION: the operations described below must be carried out only by qualified personnel [authorized from HERMANN Ltd].

For gas conversion, use the nozzles supplied by boiler manufacturer only.

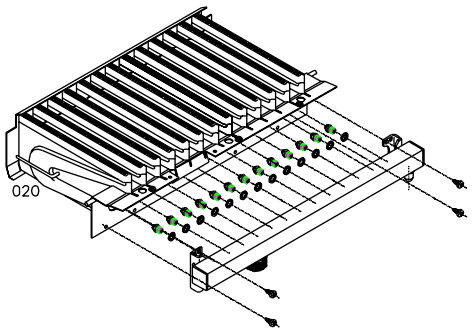
Using LPG, it is absolutely necessary to install a pressure reducer upstream the boiler.

1. Disconnect the boiler from the electrical supply.
2. gain access to the main PCB and move the jumper CM2 to the suitable gas position:

   MET for **Natural gas (G20),**

   GPL for **Buthane (G30)** or **Propane (G31)**
3. Check that pressure and gas input are enough to guarantee the correct functioning of the appliance.
4. On “SE” models, open sealed combustion chamber.
5. Remove pipe between gas valve and injectors bar.
6. Remove injectors bar and replace the nozzles with the ones suitable for the available gas type, using a 7 mm. spanner (see figure “BURNER”). Reassemble injectors bar and pipe, replacing gaskets. Check, with burner ON, that there are no gas leaks. On “SE” models, close sealed combustion chamber;

BURNER



MODEL	Nozzles quantity	Natural Gas nozzles Ø 1/100mm	L.P.G. nozzles Ø 1/100mm
MICRA 2 23 E	13	120	75
MICRA 2 24 SE	13	120	75

7. Check, with burner ON, that there are no gas leaks and that the pressure upstream the boiler is:

   Natural gas: min.17 – max. 25 mbar

   Buthane: min. 25 – max 35 mbar

   Propane: min. 25 – max 37 mbar
8. Repeat the gas valve MAX-MIN pressure regulation, carefully following the instructions described in the previous pages.
9. Check that there are no gas leaks.
10. apply the sticker indicating the type of gas (supplied with the kit) on the suitable area on “WARNING” label inside the boiler.

Combustion check

The boiler has the “chimney-sweeper” function, forcing burner ignition at the maximum output not modulated. This function allows more reliable measurements of those obtained when the gas boiler is activated through the room thermostat or hot water demands.

— Prepare the instruments for combustion checking;

— activate the “chimney-sweeper” function, following this simple procedure, studied to avoid accidental activations of the user;

- supply the boiler and turn the Summer/Winter knob to Summer position ;
- provide that room thermostat contact is closed (activated) or open an hot water tap (the heat produced by the boiler will be drained consequently);
- turn the Hot Water knob to the position chimney-sweeper and wait (about 5 seconds) that green lamp flashes with short lightnings. When this occurs, turn the Hot Water knob on the scale from I to IIIII. The burner ignites at the maximum output not modulated;

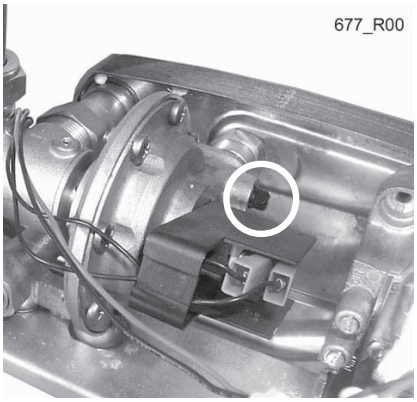
— make checkings and measurements;

— switch off the burner, by turning the Summer/Winter knob to the **“0”** position. The green lamp flashes with long lightnings.

Remark: the burner will switch off automatically when reaching the maximum temperature, and in any case after 15 minutes.

Hydraulic section

DOMESTIC HOT WATER FLOW ADJUSTMENT



The boiler is checked and adjusted prior to leaving the factory. However, after installation, it is advisable to check the settings. To carry out adjustments, proceed as follows:

— Open a domestic hot water tap to maximum flow position.

— Hold a water flow gauge under the tap.

— Adjust water flow to the required flow rate, acting on the adjustment screw of the priority pressure sensor (see figure).

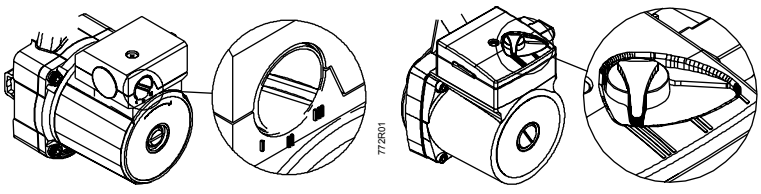
PUMP’S SPEED

The pump has a selector which allows to reduce the speed, so as to reduce the noise produced by the too rapid circulation of the liquids in too small heating systems.

III = Maximum Speed (Firm Set up)

II = Medium Speed

I = Minimum Speed



for the technician

Warnings for servicing

All servicing operations and gas conversions MUST BE CARRIED OUT BY QUALIFIED TECHNICIANS, in accordance with the Law n°46 dtd. 05 March 1990 and with the rules UNI-CIG 7129/01 and 7131/99 and revisions. Moreover, in accordance with art.11 section 4 D.P.R. 412/93 and revisions, SERVICING operations must be carried out, at least once a year, *by [HERMANN?] AUTHORIZED SERVICING CENTRES*, **and must be written in the appliance booklet, as indicated by the laws UNI and CEI presently in force.**

At the end of each heating period, it is necessary to call a qualified technician to check the boiler, in order to keep the system perfectly efficient.

A careful servicing is always a guarantee of safety and saving.

Normally, it will be necessary to execute the following operations:

— Remove any possible oxidization from burners and electrodes;

— Scale exchangers;

— Check integrity and stability of the ceramic fibre coverings in the combustion chamber and proceed eventually to substitution;

— Check boiler ignition, switching off and operation;

— Check water and gas connections tightness;

— Check gas consumption at the minimum and maximum output;

— Verify that safety devices are correctly working;

— Verify correct functioning of control and adjusting devices;

— Verify periodically good working and efficiency of the combustion product evacuation ducts and/or devices;

— In case of works or servicing of the structures placed near above mentioned ducts and /or devices and their accessories, switch off the boiler;

— Do not leave any inflammable tanks and/or substances in the installation room;

— Do not clean the room where boiler is installed, while it is working.

— Clean casing with soapy water only. Do not clean casing, other painted or plastic surfaces with thinner.

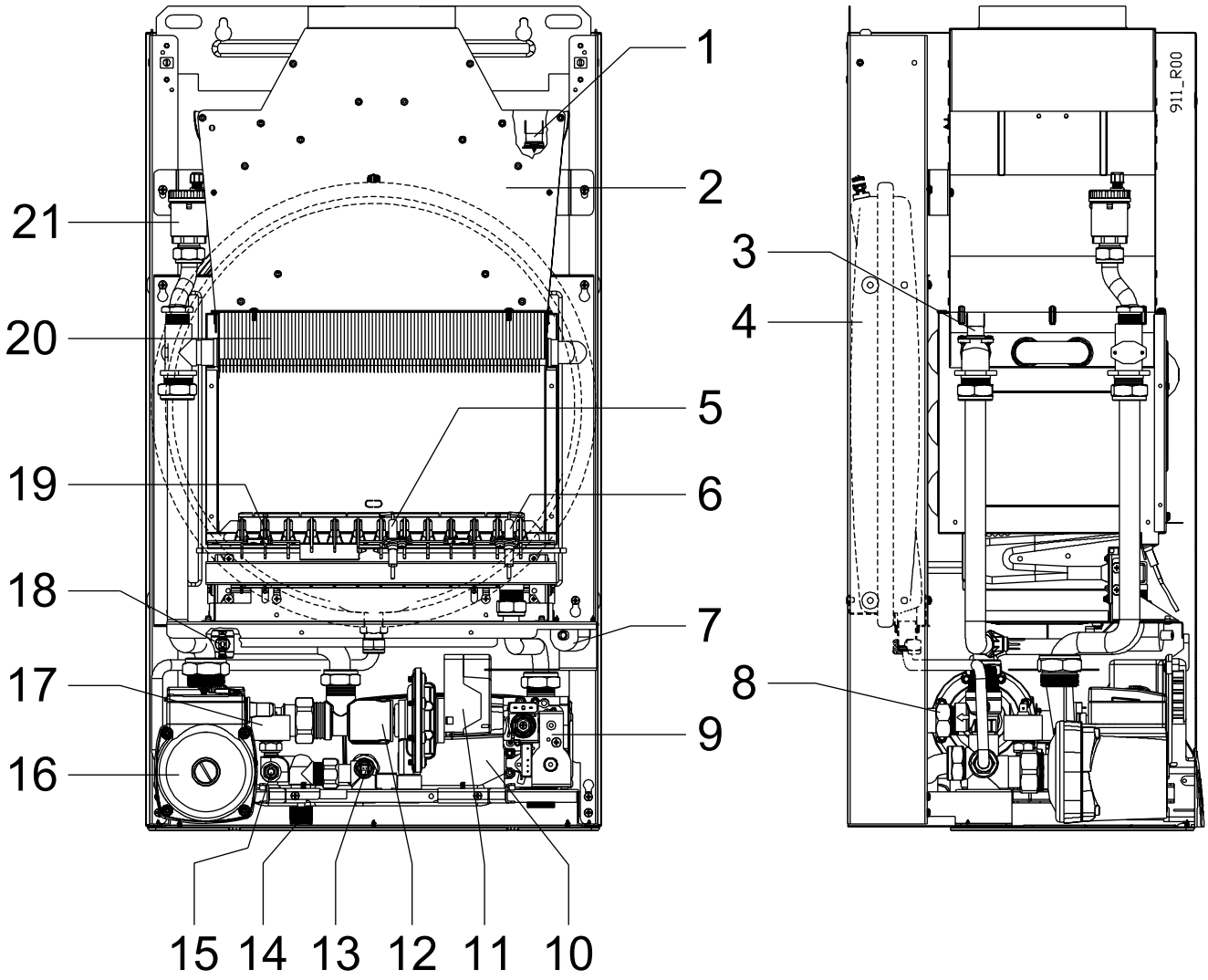
— In any case of parts replacement, it is mandatory to use HERMANN original spare parts.

HERMANN declines any responsibility in case of non-original spare parts utilization.

Once all servicing operations have been carried out, it is mandatory to write a report for the user, that should indicate state of the appliance, servicing interventions and eventual advices and prescriptions.

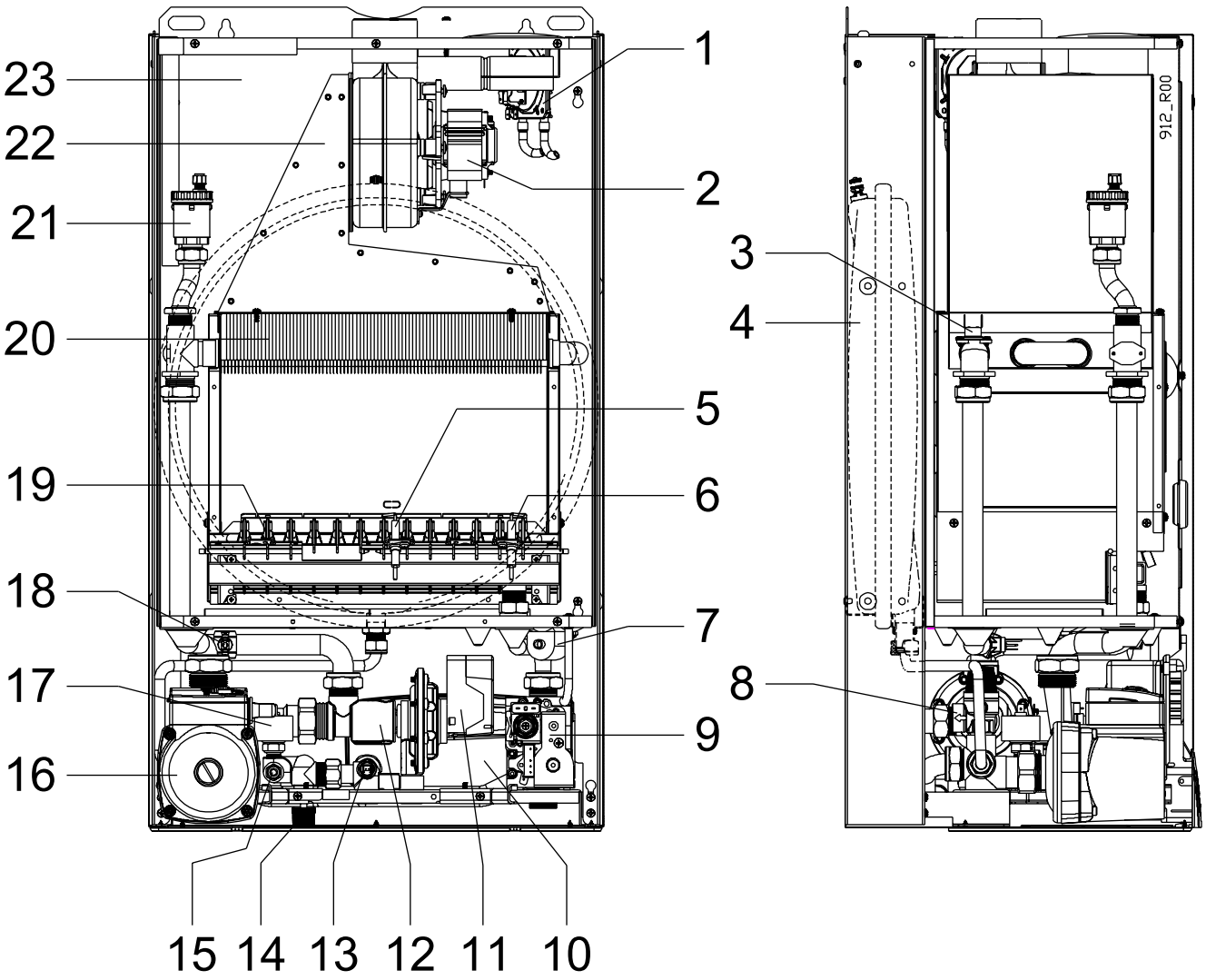
Notes

Components of the gas boiler
MICRA 2 23 E



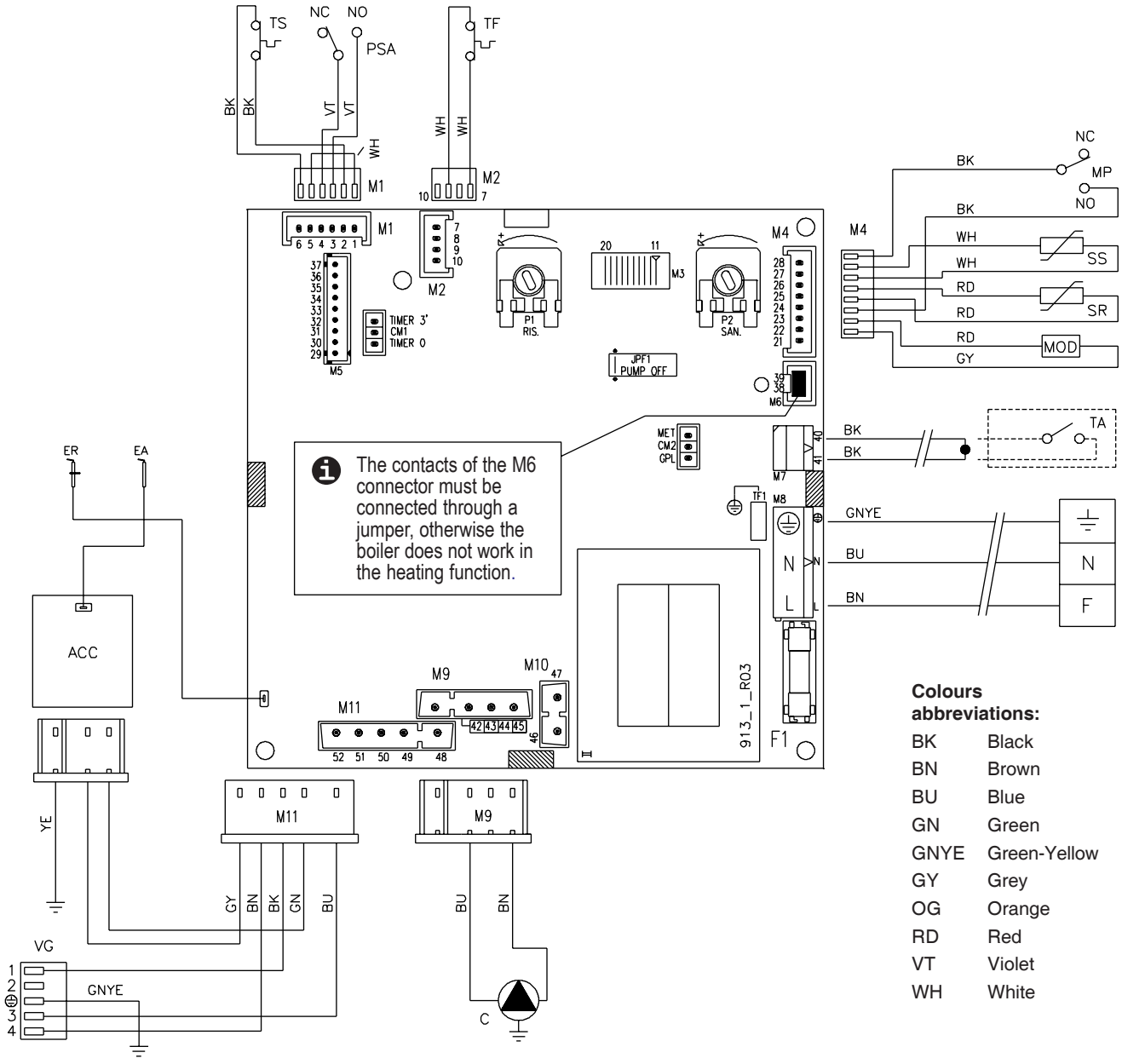
1 Flue thermostat
2 Flue hood
3 Safety thermostat for max. water temperature
4 Expansion vessel
5 Flame sense electrode
6 Ignition electrode
7 Electronic igniter
8 Safety valve 3 bar
9 Gas valve
10 DHW exchanger
11 Priority pressure switch
12 Hydraulic 3-way valve
13 DHW temperature sensor
14 Filling valve
15 Drain valve
16 Pump
17 Loss of water pressure switch
18 Heating circuit temperature sensor
19 Burner
20 Primary exchanger
21 Automatic venting device

Components of the gas boiler
MICRA 2 24 SE



1 Flue pressure switch
2 Fan
3 Safety thermostat for max. water temperature
4 Expansion vessel
5 Flame sense electrode
6 Ignition electrode
7 Electronic igniter
8 Safety valve 3 bar
9 Gas valve
10 DHW exchanger
11 Priority pressure switch
12 Hydraulic 3-way valve
13 DHW temperature sensor
14 Filling valve
15 Drain valve
16 Pump
17 Loss of water pressure switch
18 Heating circuit temperature sensor
19 Burner
20 Primary exchanger
21 Automatic venting device
22 Flue hood
23 Sealed chamber

Electric diagram for MICRA 2 23 E



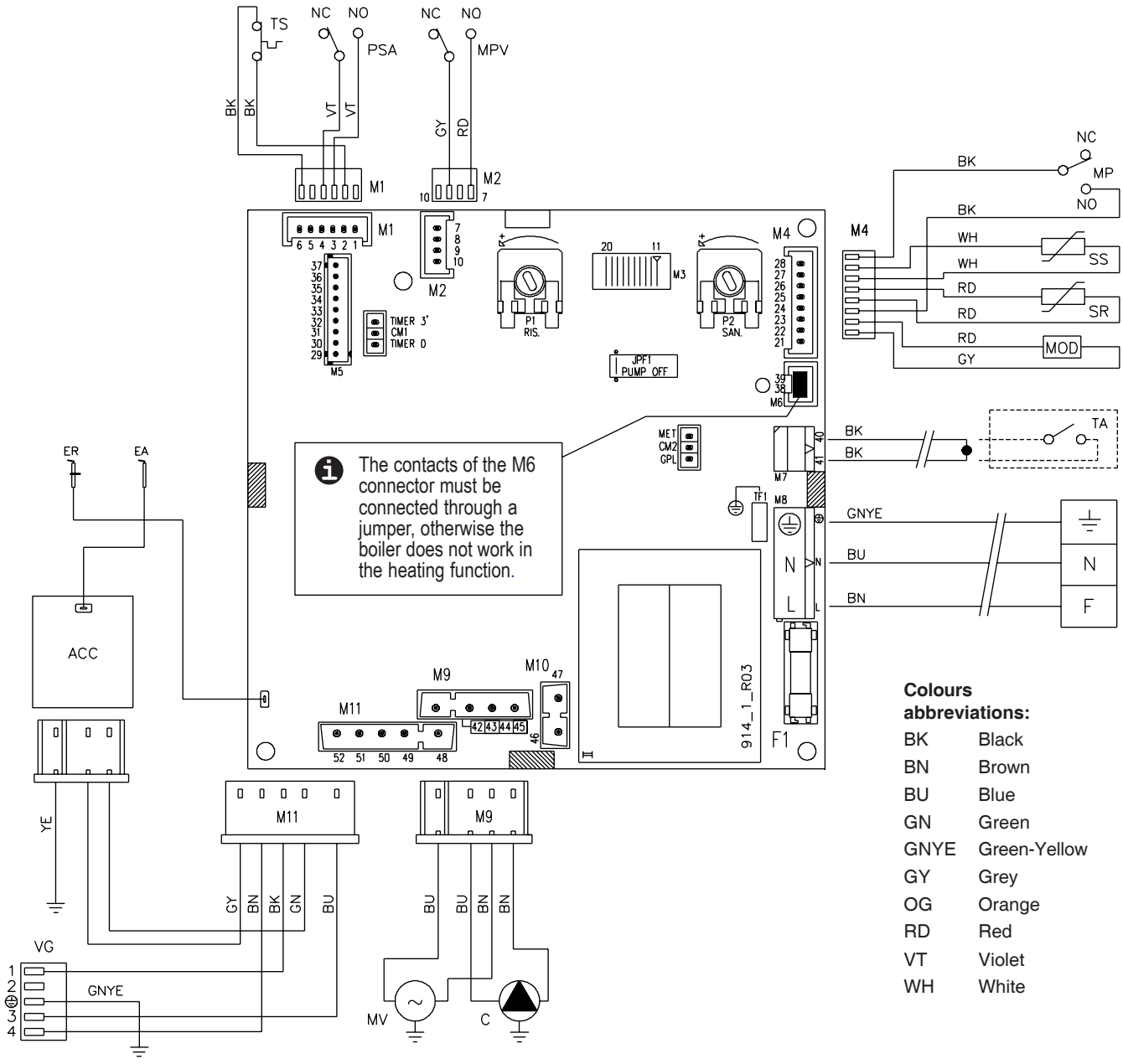
Colours abbreviations:

BK	Black
BN	Brown
BU	Blue
GN	Green
GNYE	Green-Yellow
GY	Grey
OG	Orange
RD	Red
VT	Violet
WH	White

for the technician

- ACC Electronic igniter
- C Pump
- EA Ignition electrode
- ER Flame sense electrode
- F1 Fuse (2 A)
- MOD Modulator
- MF Priority pressure switch
- PSA Low water pressure switch (contact NO closed = in pressure)
- SR NTC sensor, heating
- SS NTC sensor, DHW
- TA Voltage-free Contact for Room Thermostat or Cronothermostat (for trade) (safety extra low voltage SELV)
- TF Flue thermostat
- TS Safety thermostat
- VG Gas valve (coils)

Electric diagram for MICRA 2 24 SE



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ACC	Electronic igniter
C	Pump
EA	Ignition electrode
ER	Flame sense electrode
F1	Fuse (2 A)
MOD	Modulator
MF	Priority pressure switch
MPV	Flue pressure switch
MV	Fan motor
PSA	Low water pressure switch (contact NO closed = in pressure)
SR	NTC sensor, heating
SS	NTC sensor, DHW
TA	Voltage-free Contact for Room Thermostat or Cronothermostat (for trade) (safety extra low voltage SELV)
TS	Safety thermostat
VG	Gas valve (coils)

USER INSTRUCTIONS

Warnings for first starting up

The first starting up must be done by a professionally qualified staff (for example the SERVICE CENTERS authorized by HERMANN).

Gas conversion from a specific gas (natural gas or LPG) to another gas, can be made also when the gas boiler is already installed, but only by a qualified technician. The technician will check that:

a) the label technical data of the gas boiler correspond to those of the gas, water and electrical supply lines;

b) the main burner regulation is compatible with the gas boiler output;

c) the chimney works correctly, expelling the combustion products;

d) the air supply and the combustion products evacuation work correctly, in accordance with the requirements in force;

e) the conditions for a correct ventilation are guaranteed, also when the gas boiler is located inside a furniture.

Useful advices

WARNING for "E" models: The boiler is fitted with a safety thermostat for chimney draught, operating in case of combustion products return in the installation room. This device must be always in function, because a combustion products return can cause chronic or acute intoxications with danger of death. If the thermostat must be replaced, use the original spare part only. In case of repeated interventions of the device, check that the Flue Products Outlet System is efficient and made according to the laws in force (see examples in paragraph "Chimney connections").

WARNING for "SE" models: The boiler is fitted with a safety flue pressure switch. This device must be always in function. In case of repeated interventions, call a qualified technician. If the pressure switch must be replaced, use the original spare part only. In case of repeated interventions of the device, check that the Air Flue Products Inlet/ Outlet System is efficient and made according to the laws in force (see examples in paragraph "Chimney connections" and "Flue systems").

INSTALLATION AND SERVICING

All installation, servicing and gas conversion operations MUST BE CARRIED OUT BY QUALIFIED TECHNICIANS authorized by Law n. 46 dtd March 5th, 1990 and in accordance with UNI-CIG 7129/01 and 7131/99 requirements and revisions.

Moreover, in accordance with art.11 section 4 of DPR 412/93 and revisions, boiler MAINTENANCE operations must be made at least once a year and following manufacturer's specifications and UNI and CEI rules in force.

APPLIANCE BOOKLET OR CENTRAL PLANT BOOKLET

All appliances, even those installed before August 1st, 1994, must have an appliance booklet (for outputs less or equal 35 kW) or a central plant booklet (for outputs more than 35 kW). All ordinary and special servicing operations and combustion checkings must be written on the booklet, together with the name of the person responsible for servicing.

COMBUSTION CHECKING

Combustion checking is made with a control of the boiler efficiency; this checking must be carried out only by a person with the requirements of the Law 46/90. Boilers that, after the checking, will have efficiency rates lower than the ones required and not changeable with suitable adjustments, must be replaced.

BOILER OPERATION AND SERVICING

The user (owner or tenant of the flat where the boiler is installed) or the administrator of the block of flats (in case of a central heating system) are responsible for the appliance operation and servicing; they can both transfer the responsibility of the servicing and eventually of the operation to another person, which must have the requirements indicated by the Law 46/90. Even if the user or the administrator decide to assume personally this responsibility, ordinary servicing of the warm air heater and combustion checkings must be carried out by a qualified technician.

Warnings

In case of gas smell:

a) **do not press electrical switches, use the telephone or other objects that can provoke sparks;**

b) **open immediately the windows and the doors in order to cleanse the room air;**

c) **close the gas supply taps;**

d) **call a qualified technician.**

Do not obstruct the ventilation openings of the gas boiler room, in order to avoid possible dangerous situations as the creation of poisonous or explosive mixtures.

When the boiler is off for a long period see the Paragraph “Inactivity of the Boiler” for the necessary precautions about the electrical supply, the gas supply and the protection against freezing.

Controls and indicators

1 Termometer (°C)

- It indicates the temperature of the water sent to the heating system. This temperature is influenced by the knob position [6].

2 Pressure gauge (bar)

- It indicates the pressure of the water in the heating system. For a correct functioning, the system pressure, COLD-measured, must be between 0,5 and 1,5 bar (optimal value: 1÷1,5 bar).
- A correct pressure is important for the system good operation.
- In case of inferior pressures, reset the correct pressure (see “System Pressure” section). If the pressure should decrease under 0,5 bar, the boiler will stop working.

3 Lamp (electric supply)

OFF: the boiler is without electric supply. The main supply switch (outside the boiler) could be switched off or there could be a lack of mains voltage. It is not possible to execute any function of the boiler, included the anti-freezing and anti-lockout functions.

ON: the boiler is working, ready to ignite the burner to supply heating and/or hot water.

NORMAL FLASHING: STAND-BY: the boiler is supplied but the Summer/Winter knob [6] is in position “0”. The boiler does not execute the main functions, but the anti-freezing and anti-lockout functions only (for details see “Boiler Inactivity”).

FLASHING WITH SHORT LIGHTNINGS: It has been activated accidentally the chimney-sweeper function (that is for the technician use only).

Exclude the Chimney-sweeper function, turning the Hot Water knob [7] between “I” and “IIIII” and momentarily move the knob [6] to **0 -** , then move it [6] again to its previous position.

4 Lamp (burner)

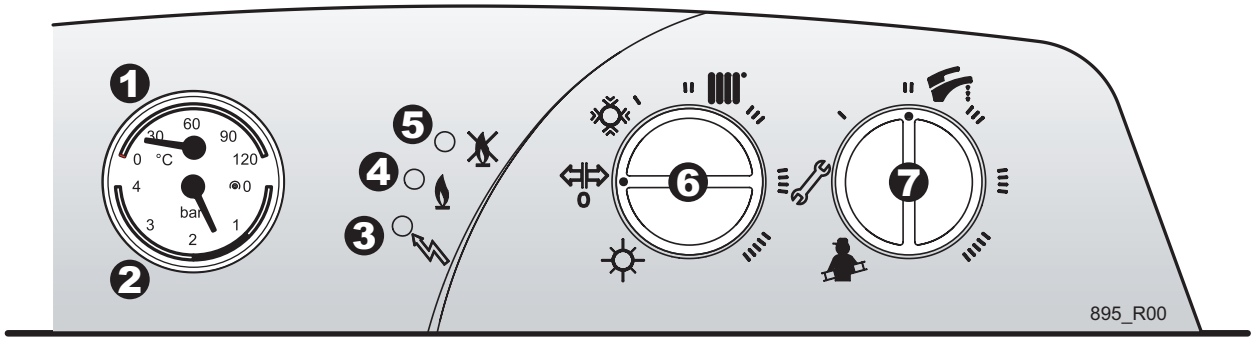
OFF: the burner is switched off (there is no flame).

ON: the burner is switched on (the flame is present).

5 Lamp (lockout)

OFF: the functioning is regular.

ON or FLASHING: the boiler is locked for a problem or a malfunctioning. See “Alarms” section.



6 "Summer/Winter" knob

0 - ⇦|⇨ (STAND-BY)

- When the knob is in this position, the boiler does not execute the main functions, but the anti-freezing and anti-lockout functions only (for details see "Boiler Inactivity").
- Use also this position to unlock the boiler after a problem or a malfunctioning. See "Alarms" section for details.

In case of a long period of absence of the user and/or boiler inactivity, see the "Boiler Inactivity" section for the necessary precautions concerning electric supply, gas supply and anti-freezing function.

SUMMER – In this position the boiler heats the water for the taps only. When opening an hot water tap, the burner ignites and, after a brief time (1), the hot water flows from the tap.

(1) the time depends also from the features of the external system

WINTER – In this position the boiler heats the water for the taps, as in Summer mode. Moreover, it provides heating for the rooms.

The scale from I to IIIII, starting from the symbol determines the heating system temperature .

- If you make a continuous use of the heating system, regulate the knob to obtain the desired room temperature;
- If you make a discontinuous use of the heating system, the temperature will be set through a room thermostat (or preferably through a chrono-thermostat). In this case, we suggest to regulate the knob in order to reach soon the set temperature value, avoiding the overheating of the rooms.

In both cases the optimal regulation must be found considering the climatic zone, the year period and the heat insulation of the flat.

We remind you that rooms temperature must be regulated through a room thermostat with two temperature levels. This is required with the DPR 26 August 1993 n° 412 and further modifications.

7 "Hot Water" knob

- The scale from I to IIIII, indicated with this symbol, determines the temperature of the hot water produced by the boiler.

· Consider that, due to heat losses all over the tubes, it is necessary a certain time before the temperature becomes stable at the tap exit, therefore the best evaluation is during a shower or a bath.

· With this type of boiler, it is suggested to regulate the knob to obtain a comfortable temperature with a drawing of hot water only or a mix with a small quantity of cold water. Avoid maximum values if not strictly necessary, because they would oblige to mix the water with a big quantity of cold water.

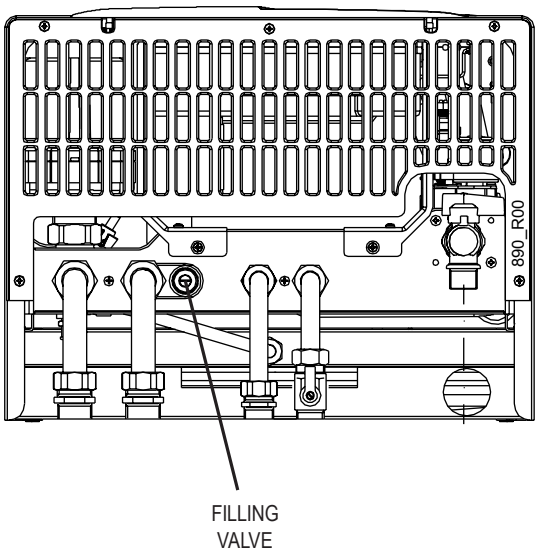
ATTENTION: the positions and are for the use of technicians only. Do not move the knob to these positions, because there could be a malfunctioning. If this will occur accidentally, move immediately the knob on the scale from I to IIIII.

System pressure

Make sure that the system pressure in a cold state is always between 0.5÷1.5 bar (optimal pressure: 1÷1.5 bar). If pressure is lower, open the filling valve (see figure) till it reaches a maximum value of 1,5 bar; this value is checked with the pressure gauge (item 2 in previous Control Panel figure).

A cold-measured pressure too high could cause the water discharge from the 3 bar safety valve, after the heating of the system.

BOILER BOTTOM VIEW



Alarms

If the red lockout lamp is on or flashes, it signals an **alarm**, a **lockout** or a **malfunctioning.**

Regular FLASHING:

— **one of the inner temperature sensors is fault.** Call a qualified technician for repairing.

FLASHING with short lightnings:

— **the "Hot Water" knob [7] is in a position reserved to the technician: or .** Move the knob in a position through the scale from I to IIIII.

ON - it signals problems that can be normally solved by the user:

— The boiler has been **just installed**, or **works** have been made **on the gas pipes**.

It is normal that the boiler goes repeatedly in Lock Out when the Inlet Gas is mixed with air. This impedes the correct ignition and then provokes the Lock out. In the conditions described above, it is necessary to repeat more times the ignition of the boiler turning the SUMMER/WINTER Knob in the Unlock Position until the red lamp turns off.

— **The water pressure**, shown by the gauge in the control panel, **is not sufficient** (0,5 bar or lower).

Restore the correct pressure (optimal pressure: **1÷1,5 bar at cold system**) opening the inlet tap (see "System pressure" paragraph). Do not restore the pressure with hot system, because when the system gets cold the pressure decreases.

Consider that the pressure, in normal conditions, should not decrease. If this happens, there is probably a loss in the heating system. Sometimes the loss is so small that it doesn't leave evident signs, but with the progress of the time it can cause the decreasing of the pressure.

Also the opening of the manual venting taps of radiators (intentional or unintentional) makes the pressure decrease. Check that this doesn't happen.

— the boiler has an overheating and the Safety Thermostat has triggered;

Turn the SUMMER/WINTER Knob in the Unlock ⇦|⇨ Position until the red lamp turns off (or eventually for a longer period to make the boiler cool), then bring again the knob in the desired position (Summer ☼ or Winter ☼). If necessary, wait and try again for few times. If the lockout persists or reappears, call the Servicing Centre.

— the burner hasn't regularly switched on or the flame has suddenly turned off; incorrect combustion.

Restore the service turning the SUMMER/WINTER knob in the Unlock ⇦|⇨ Position until the red lamp turns off. In case of frequent Locks:

- Call a technician to check the combustion and verify that the burner is clean and in good conditions;

Moreover, for "SE" models with Sealed Combustion Chamber:

- Check that the Inlet/Outlet Ducts and the respective terminals are clean and in good condition, and that there are no leaks. During the Installation Process it is necessary to respect the prescriptions included in the national and local regulations and laws, in addition to the slopes and measurement included in the paragraphs "Chimney connections" and "Flue systems".

***Note for the TECHNICIAN**: The burner flame is not detected by the control electronics because it has not turned on or it has suddenly turned off, or it has detached from the burner, because of an incorrect combustion. This can be due, in example, to combustion product reflowing into inlet duct, leaks in inlet/ outlet ducts or errors in sizing of ducts (ducts length above or below the allowed, and/or wrong use of restrictor on boiler's outlet).*

— the device which signals the wrong Flue Outlet has intervened;

Exceptionally the cause can be a strong wind gust. Turn the SUMMER/WINTER knob in the Unlock ⇦|⇨ Position until the red lamp turns off, then move the knob to the desired position (Summer ☼ or Winter ☼). If necessary, wait and try again for few times. In case of frequents lockouts:

- Call a technician to check the efficiency of chimney and Inlet/Outlet ducts.
- Call a technician to check the efficiency of the control device of fumes flow.

Moreover, for E models (natural draught):

- Check that the outlet which communicates with the outdoor, compulsory according to the law, is not obstructed by pieces of furniture against the wall or by other objects. *It is however normal that the outlet is realized behind a radiator.* The outlet must be of the dimension prescribed by the law and must be cleaned inside: some types have an anti-insects net which could have been dirtied by dust or by spider's webs. Call a Qualified Technician when it is necessary.
- If in the room where the boiler is installed there are mantelpieces, stoves, coal stoves or similar, fans for the Air Outlet, such as wall fans, aspiring cowls for cooking boards with outlet pipe, let the technician check that the inlet is correctly OVERSIZED or that there are the ADDITIONAL Inlets as prescribed by the laws in force, because, otherwise, these devices interfere with the evacuation of the Boiler's Flue.

Both RED and YELLOW lamps ON:

— unexpected flame. This means that the control electronic has detected the flame on the burner when this one should be off:

- the flame is effectively on, due to a gas valve malfuncion;
- otherwise the problem may be located on the control electronic, that detects the flame although it is off.

Restore the service turning the SUMMER/WINTER knob in the Unlock ⇦|⇨ Position until the red lamp turns off, or wait for the automatic reset (within 5 minutes). In case of frequent Locks, call the Service Centre.

Boiler inactivity

The effects of the periods of inactivity can be relevant in particular situations such as in flats used only for some months per year, most of all in cold places.

The user will have to decide to put the boiler in the **SAFETY LOCK OUT state** disconnecting all the supplies, or to **leave it in stand-by and use the Anti Freezing Function**. In general it is better to use the SAFETY LOCK OUT. When there is the possibility of freezing it is convenient to chose between the advantages and the disadvantages of the SAFETY LOCK OUT and of the Stand By/ Anti Freezing Way.

SAFETY LOCK OUT

— Turn off the general switch on the Electrical Supply Line of the Boiler;

— Close the Gas Tap;

When it is expected that the temperature is going to decrease under 0°C and the system doesn't include the Anti Freezing Function, empty the heating system totally, or fill it with an Anti Freezing Solution.

Notice that if it had been necessary to restore the pressure (because of possible loss) in an heating system already filled with an Anti freezing solution, the concentration of the system could have decreased and it could not guarantee the Anti freezing Protection.

REMARK: the boiler is equipped with a system which protects the main components from the exceptional cases of LOCK OUT, due to the inactivity in presence of water and scale. The Anti Lock out System can't work during the Safety Lock Out Process, because of the lack of electrical supply.

Before boiler re-ignition, call a technician to check if the burner is locked due to boiler inactivity (for the technician: unscrew the plug in the middle of the cap to gain access to the rotor shaft and turn it using a screwdriver or another suitable tool).

STAND-BY AND ANTI FREEZING/ANTI LOCK OUT FUNCTION

The boiler is equipped with an Anti freezing System which provides the ignition of the boiler whenever the temperature of the water in the heating circuit inside the boiler decreases under 5°C and which provides the turning off when the temperature reaches 30°C. In order to activate the Anti Freezing Function:

- electrical power supply MUST be ON;
- boiler must be left in stand-by mode (Summer/Winter knob on 0, green lamp flashing);
- the gas must be left open;
- system pressure must be correct (1÷1.5 bar in a cold state, minimum 0.5 bar)

In case of lack of gas, the burner won't turn on and the boiler will go in LOCK OUT state (red lamp on or flashing). Nevertheless the pump will work, making the water circulate in the system and reducing in this way the possibility of freezing. **It is available, on demand, an Anti freezing Electrical resistance kit which must be installed on the secondary exchanger to protect the boiler also in case of lack of gas.**

Moreover, the boiler in stand-by activates periodically the main internal components to prevent the exceptional cases of Lock out due to the inactivity in presence of water and scale. This happens also if the boiler goes in Lock Out state (red lamp on or flashing) provided that the pressure in the heating system is correct.

Note: if you want to use the "room anti-freeze" function that is often available in common room thermostats or chronothermostats, it is necessary to leave the boiler in Winter mode and NOT in stand-by.

Incidental not functioning

THE BURNER DOESN'T TURN ON

— If the room thermostat is installed, check that this is regulated with an higher temperature in respect of that of the place where it is installed;

— check that there is electrical supply and that the Summer/Winter Knob isn't on 0 (stand-by) but on SUMMER or WINTER . The GREEN lamp must be constantly ON (see details in the paragraph "Controls and Indicators");

— if the Lock Out red lamp is on or flashing, see the paragraph "Alarms";

— check on the gauge that the boiler pressure is correct (1÷1.5 bar in a **cold** state) or at least not lower than 0.5 bar;

— consult the notes of the "Electrical Diagram" Section.

SHORTAGE OF DOMESTIC HOT WATER PRODUCTION

— check that knob is not set on a too low value or to the position;

— call a qualified technician to check gas valve regulation;

— call a qualified technician to check, and eventually clean, d.h.w. exchanger.

Remark: where the water hardness value is too high, it is suggested the installation of a softening device, in order to prevent the limestone precipitation; this operation avoids a frequent cleaning of the coil.

Do not try to repair the gas boiler by yourself.

For any intervention on the electrical, hydraulic or gas circuit exclusively call a qualified technician.

The gas boilers must be fitted with original accessories only.

HERMANN Ltd. is not responsible for damages caused by the incorrect, wrong or unreasonable use of non-original materials.

User warnings

— Check frequently water pressure on the hydrometer and verify that, **when the system is cold,** water pressure values are in line with the manufacturer instructions.

— If water pressure is frequently dropping down, call a qualified technician to repair possible leakages in the system.

— If the boiler is off for a very long period, see the Paragraph “Inactivity of the Boiler” for the necessary precautions about the electrical supply, the gas supply and the protection against freezing.

Do not touch the heated surfaces of the boiler, as the doors, the flue, the chimney pipe, etc., also after the boiler operation because, for a certain time, these surfaces are oveheated. Any contact with them can cause dangerous scalds. It is then forbidden to let children or inexperienced people be close to the boiler, during its operation.

— Do not expose the wall hung gas boiler to water vapours directly coming from gas cookers/ hobs.

— Do not wet the gas boiler with water or other liquids sprinklings.

— Do not put any object on the gas boiler.

— The gas boiler utilization is forbidden to children and to inexperienced people.

— If the gas boiler is going to be definitively unused, call a qualified technician to carry out all required operations, checking in particular disconnection of gas, water and electrical supplies.

— **Only on “E” models** (natural draught): the installation of aspirators, fireplaces or similar appliances in the boiler room (and in adjacent rooms in case of indirect ventilation), must be made in compliance with all specific safety rules and laws (for example by augmenting the dimensions of ventilation openings), even in case of modifications or additions.

INSTRUCTIONS MANUAL

Make sure that the present manual is ALWAYS with the boiler, for any consultation of the user and servicing personnel.

HERMANN CONVENTIONAL GUARANTEE CONDITIONS

Hermann offers to the customer a particular and exclusive CONVENTIONAL GUARANTEE, which is automatically activated asking the First Ignition to a Hermann Authorized Service Center. The conditions of the HERMANN CONVENTIONAL GUARANTEE don’t prejudge nor invalidate the rights indicated by the European Rule 1999/44/CE actuated with Italian Laws by the Decree 02 Februar 2002 N°24 of which the User is the Owner.

Hermann®

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