



WALL HUNG BOILERS

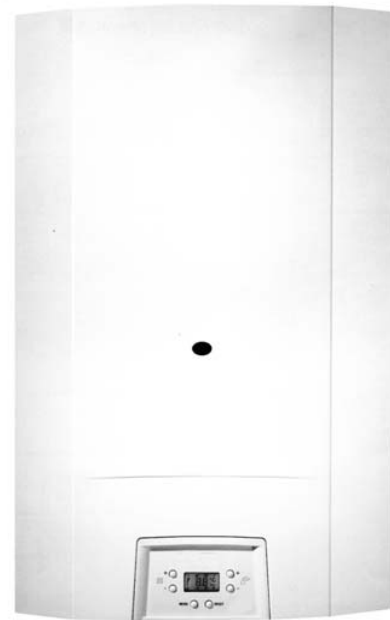
INSTRUCTIONS MANUAL

To be used for
INSTALLATION, USE AND MAINTENANCE

CONDENSING BOILERS

SOLAR C 25
SOLAR C 31

SOLAR SYSTEM C 25
SOLAR SYSTEM C 31



IMPORTANT

This installation must be carried out by an authorised Corgi Engineer

GENERAL RULES

This instruction book is an integral and essential part of our product and it is delivered together with our boiler.

Read carefully the information about safety, installation and maintenance that are shown in it. The boiler installation is to be carried out by qualified Corgi Registered Engineer.

IMPORTANT: this boiler is designed to warm water at a lower temperature than 100 deg C at an atmospheric pressure; it has to be installed to a heating system and to a water supply system suitable for its capacity and duty.

This boiler to be used for the purpose it was designed for. Every other kind of use, has to be considered improper and dangerous. The manufacturer is not to be considered responsible for possible damages caused by any, improper and unreasonable use. -Isolate the boiler from its supply before doing any kind of service operation.

Do not obstruct boiler aspiration or dissipation grills.

Isolate the boiler if there is any damage or malfunctioning. All repairs must be carried out by an authorized service operation centre, such as British gas or CORGI registered personnel, using only original approved spare parts.

In order to achieve the highest boiler efficiency and for its correct functioning it is important to follow the manufacturer's instructions.

If you decide not to use the boiler for any considerable time, it is advisable to isolate any gas and water connections.

Don't wet the boiler with water or with other liquid substances.

Don't put other items on the surface of the heater.

Before starting every kind of service operation which forces the burner dismantling or the opening of inspection holes you have to isolate electrical and gas supply.

If there are any chimney service operations turn the boiler off. After having finished the operation you should call your qualified personnel and check the status of safety valves.

Do not clean the heater with inflammable substances.

Do not leave or store inflammable substances near the boiler. (paper, paints, thinners etc.)

The electrical safety of the heater is assured only if it is correctly earthed.

Your engineer must control the state of the wiring; if there are any problems the manufacturer is not responsible for damages caused by a non correct earth installation.

Ensure your electrical supply capacity is adequate for the boiler with regards to the electrical supply to the boiler you cannot use adapters, multiple plugs and extensions. The use of electrical items implies the careful observation of fundamental rules such as:

1 Do not touch the boiler with wet hands; **2** Do not tear electrical cables; **3** Do not allow children or to use the heater.

All maintenance operations and replacement parts must be done using only original spare parts.

Use only flue gas ducts and electric accessories that have been supplied by Manufacturer

Make sure that the drain is properly connected. The manufacturer is not responsible of any food contamination due to incorrect installation of safety valves and condensate drain. No pipes have should be used as earth.

Please ensure:

1 The correct functioning of the gas inlet system;

2 The correct gas capacity is the one required by the boiler power;

3 That the type of gas used is that the heater was designed for.

4 That the gas supply pressure is within the required values of the heater.

5 That the gas inlet system is correct and has all the required safety features which are required by law.

If You smell gas Do not turn electrical switches on. Open all windows and doors, extinguish any naked flames, close all gas cocks and call your gas supply company.

Note: due to the high efficiency of the boilers a plume of steam will form at the flue outlet during the operation.

It is UK law that the fitting of the appliance and any controls to the appliance may only be carried out by a competent engineer in accordance with the Gas Safety (installation and use) regulations 1998.

Flue systems must not be modified in any way other than as described in the fitting instructions. Any misuse or unauthorized modifications to the appliance, flue or associated components and systems could invalidate the warranty. The manufacturer accepts no responsibility arising from any such actions, excluding statutory rights.

All gas appliances must be installed by competent qualified engineer, **CORGI-certified personnel** in accordance with the following recommendations:

Gas Safety Standards (Installation and Use) Regulations 1994 (as amended).

All relevant Building Regulations issued by the Department of the Environment.

Building Standards (Scotland)(Consolidation) Regulations issued by the Scottish Development Department.

Model and local Water Undertaking Byelaws.

Current IEE Wiring Regulations and IEE Earthing Regulations.

Health and Safety Document No. 635 "Electricity Standards in the Workplace 1989"

The Installation should also be in accordance with the following **British Standard Codes of Practice:**

BS 5540:1:1990 Flues

BS 5540:2:1989 Air supply

BS 5449: 1990 Forced circulation of hot water systems

BS 5546: 1990 Installation of hot water supplies for domestic purposes

BS 6700: 1987 Design, installation, testing and maintenance of services supplying water

BS 6798:1987 Installation of gas fired hot water boilers

BS 6891:1989 Gas installation

BS 7593:1992 Code of practice for treatment of water in heating systems

Failure to install appliances correctly could lead to prosecution. It is in your interest and that of safety to ensure that the law is complied with. **Important** the Benchmark logbook must be completed by the installer and must include his CORGI registration number to confirm that the boiler has been installed, commissioned, and serviced in accordance with the manufacturer's instructions.

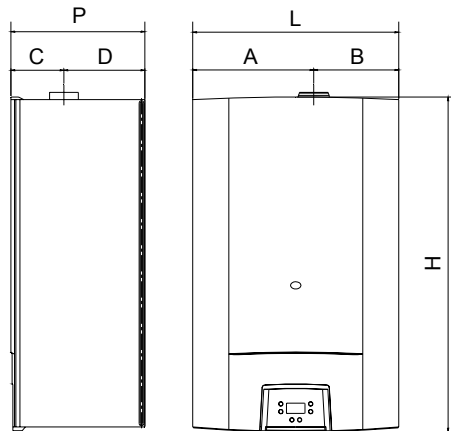
Important ; The completed benchmark Log Book will be required in the event of any request for warranty work and may also be required by the local Building control Inspector.

1	TECHNICAL DATA	3
1.1	DIMENSIONS	3
1.2	HYDRAULIC SCHEME	3
1.3	AVAILABLE HEAD	3
1.4	GENERAL LAYOUT OF THE MAIN COMPONENTS	4
1.5	TECHNICAL DATA	5
1.6	ELECTRICAL SCHEME	6
1.7	TIMER ELECTRICAL SCHEME	7
1.8	“S” PLANT	8
1.9	“Y” PLANT	9
2	INSTALLATION INSTRUCTIONS	10
2.1	DIFFERENT VENTING OPTIONS	10
2.1.1	DIFFERENT VENTING OPTIONS - FLUE VENTING	10
2.1.2	LENGTH OF FLUE GAS DUCT: SOLAR/SOLAR SYSTEM C 25	11
2.1.3	LENGTH OF FLUE GAS DUCT: SOLAR/SOLAR SYSTEM C 31	12
2.2	BOILER POSITIONING	13
2.3	HYDRAULIC CONNECTIONS	14
2.4	ELECTRIC CONNECTIONS	14
2.5	COMMISSIONING	15
2.6	SETTING OF CONTROL PANEL	16
2.7	ADJUSTMENT INSTRUCTIONS: MAXIMUM AND MINIMUM HEAT OUTPUT	17
2.8	SLOW IGNITION AND HEAT OUTPUT ADJUSTMENT	17
2.9	DIFFERENT GASES	18
2.10	INJECTORS PRESSURE TABLE: SOLAR COMBI /SOLAR SYSTEM C 25	18
2.11	INJECTORS PRESSURE TABLE: SOLAR COMBI / SOLAR SYSTEM C 31	19
2.12	TECHNICAL FAULT FINDING For Corgi Registered Engineers only	20
3	MAINTENANCE INSTRUCTIONS	25
3.1	INTRODUCTION	25
3.2	PUMP SETTING	25
4	USER INSTRUCTIONS	26
4.1	CONTROL PANEL	26
4.2	IGNITION	27
4.3	SUMMER MODE	27
4.4	WINTER MODE	27
4.5	BREAK DOWN SIGNALS	27
4.6	TEMPORARILY TURNING BOILER OFF	27
4.7	LONG TERM SHUT DOWN	27
4.8	SUGGESTIONS	27
4.9	FAULT FINDING	28
5	EXPLODED VIEWS AND PARTS LISTS	29

1 TECHNICAL DATA

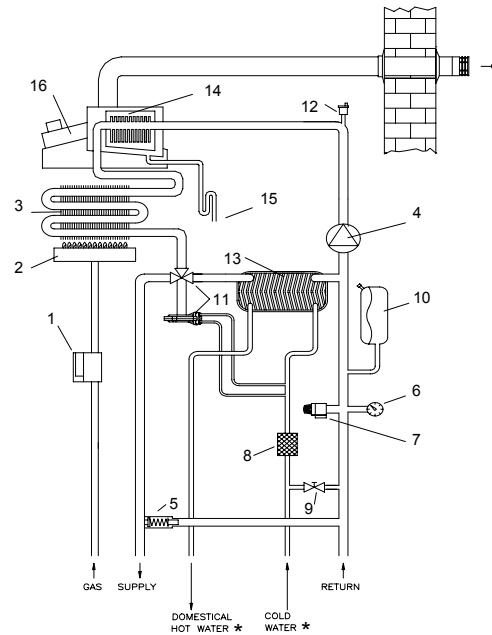
1.1 DIMENSIONS

L	H	P	A	B	C	D
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
400	720	300	200	200	182	118



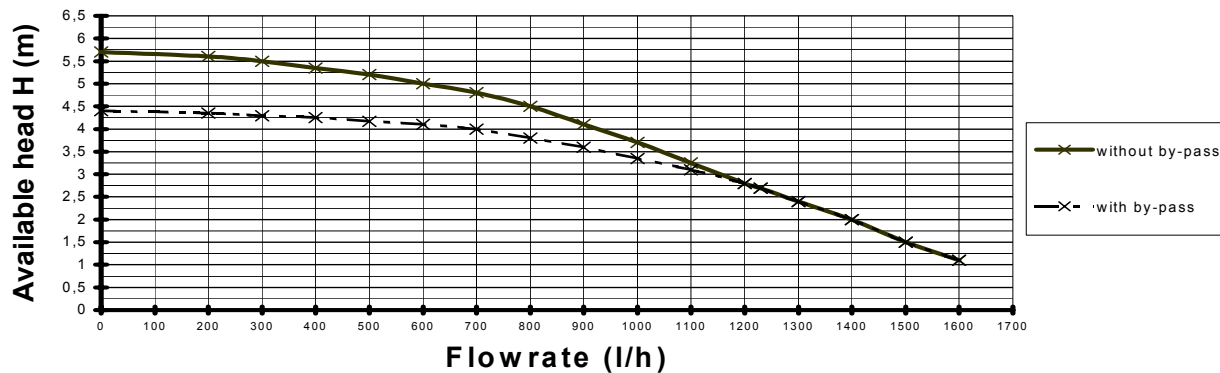
1.2 HYDRAULIC SCHEME

- 1 - gas valve
- 2 - burner
- 3 - primary exchanger
- 4 - pump
- 5 - bypass supply
- 6 - pressure gauge
- 7 - safety valve (set to 3 bar)
- 8 - filter*
- 9 - Supply charge (not for U.K. market)
- 10 - expansion vessel
- 11 - valve in 3-way*
- 12 - valve of discharging air
- 13 - DHW exchanger*
- 14 - condensing exchanger
- 15 - condensing trap
- 16 - Fan

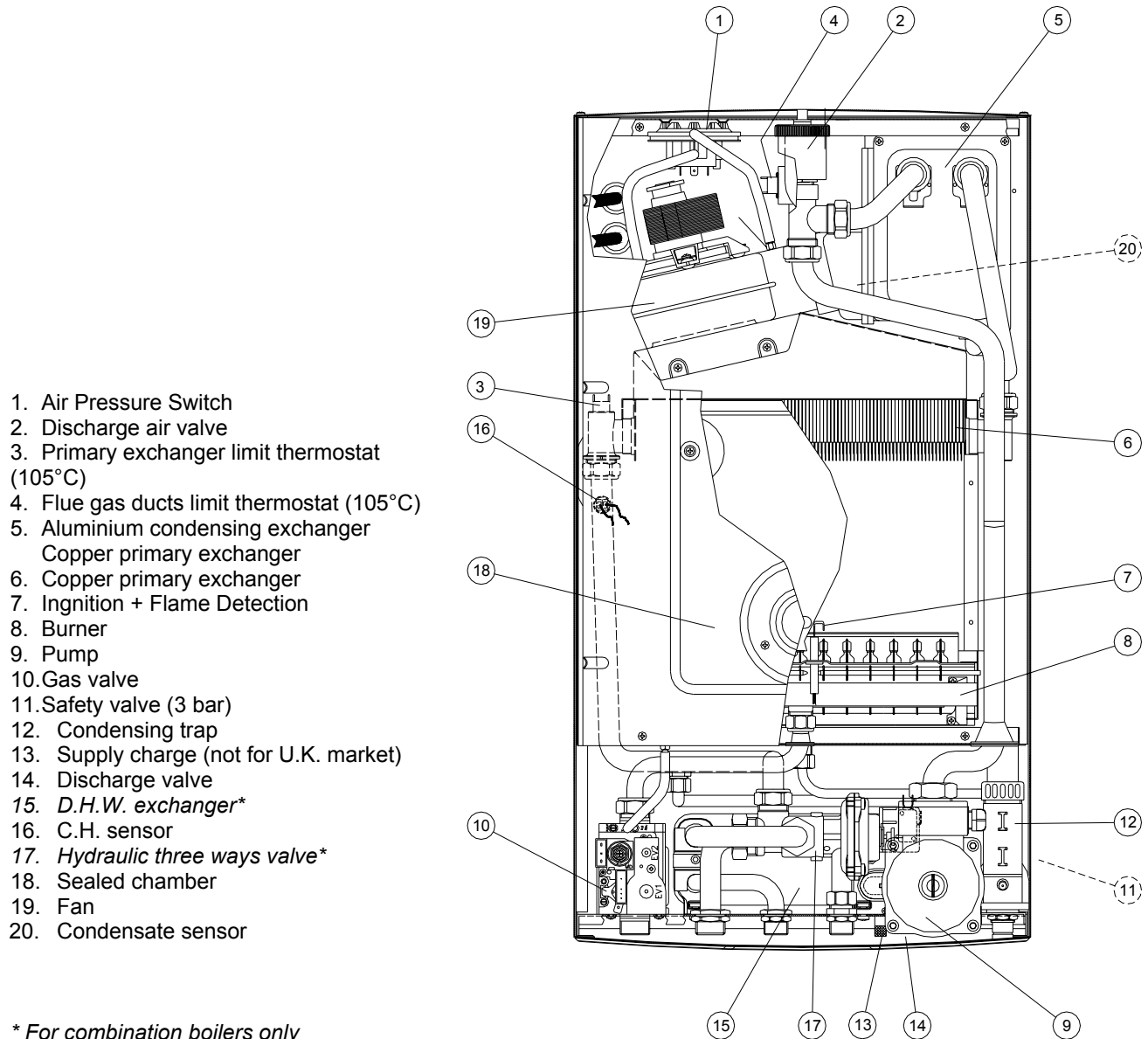


* For combination boilers only

1.3 AVAILABLE HEAD



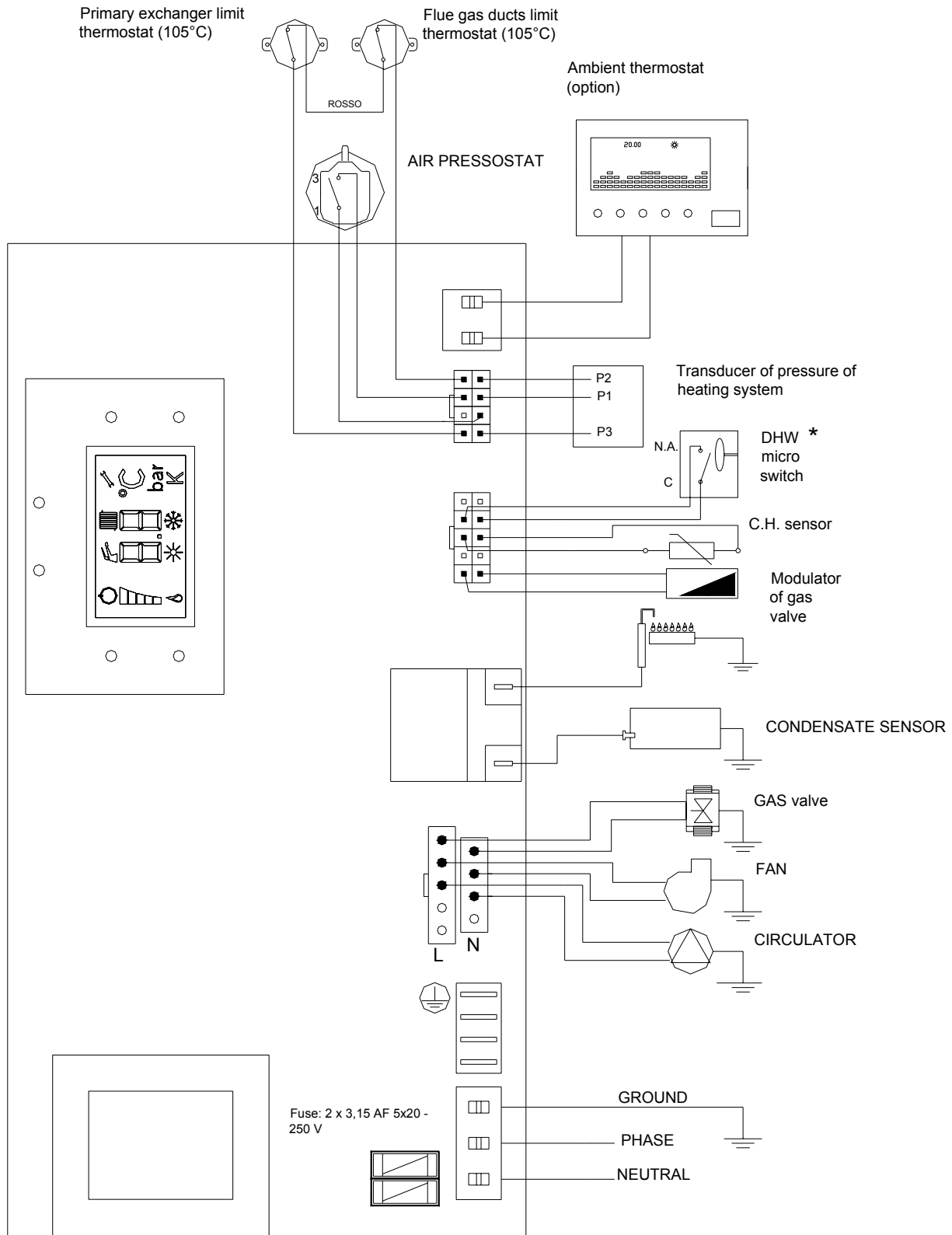
1.4 GENERAL LAYOUT OF THE MAIN COMPONENTS



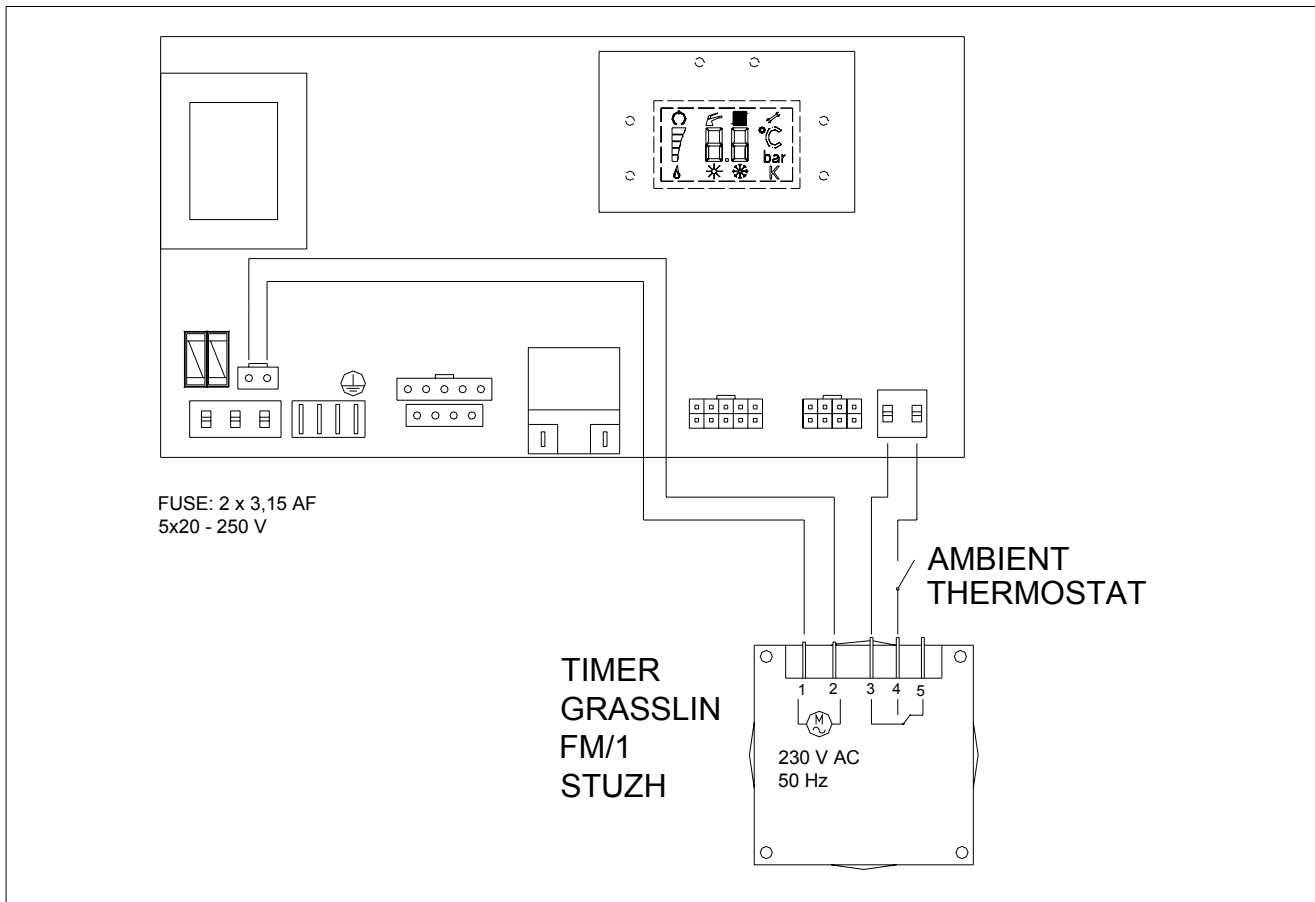
1.5 TECHNICAL DATA

	Size	SOLAR COMBI SOLAR SYSTEM C 25	SOLAR COMBI SOLAR SYSTEM C 31
Nominal Heat Input to net calorific value (H _i) referred (80 °C /60 °C)	kW	25	31
Minimum Heat Input to net calorific value (H _i) referred (80 °C /60 °C)	kW	10,5	12,4
Nominal Heat Output (80 °C/60 °C)	kW	24,4	30,2
Nominal Heat Output Condensing (50 °C/30 °C)	kW	26,9	33,3
Minimum Heat Output (80 °C/60 °C)	kW	10,1	11,9
Minimum Heat Output Condensing (50 °C/30 °C)	kW	10,7	12,6
Efficiency Rendimento (80 °C/60 °C)	%	97,6	97,5
Partial Load efficiency (30 % of P _n)	%	108,7	107,9
Nominal Heat Input (P _n) gas flowrate			
Natural gas G20 (2E+)	m ³ /h	2,643	3,278
Natural gas G25 (2ELL)	m ³ /h	3,0745	3,812
LPG G30 (3+)	kg/h	1,970	2,443
LPG G31 (3P)	kg/h	1,941	2,406
Net gas pressure			
Natural gas G20 (2E+)	mbar	20/25	20/25
Natural gas G25 (2ELL)	mbar	20	20
GPL G30 (3+)	mbar	29	29
LPG G31 (3P)	mbar	37	37
P _n flue gas temperature (80 °C / 60 °C)	°C	70	74
P _n flue gas temperature (50 °C / 30 °C)	°C	47	51
CO ₂ (G20)	%	8	8
NO _x (according par 6.2.2 of EN 483)	mg/kWh	190 (classe 2)	190 (classe 2)
Losses of heat to the chimney with burner ignited	%	2,8	3,0
Losses of heat to the chimney with burner not ignited	%	0,2	0,1
Losses of heat to the cover (ΔT = 50 °C)	%	0,5	0,5
Flue gas flow rate	Nm ³ /h	42,09	53,03
CENTRAL HEATING			
C.H. Minimum Set point	°C	35	35
C.H. Maximum Set point	°C	90	90
Volume of water in the boiler	l	1,2	1,2
Volume of water of the expansion vessel	l	7,5	7,5
Pressure of the expansion vessel	bar	0,7	0,7
Least pressure in the primary circuit	bar	0,4	0,4
Maximum pressure in the primary circuit	bar	3	3
Maximum content of heating water	l	150	150
Available head at 1000 l/h of flow rate	mbar	230	330
DOMESTICAL HOT WATER (for combination boilers only)			
Minimum set point	°C	30	30
Maximum set point	°C	60	60
Production continuous warm water (T = 25 °C)	l/min	14	17,3
Production continuous warm water (T = 35 °C)	l/min	10	12,4
Water Volume(T = 30 °C during the first 10 minutes)	l	116,6	144,3
Minimum flow	l/min	2,5	2,5
Maximum pressure	bar	8	8
Minimum pressure	bar	0,5	0,5
Voltage	l	----	----
Frequency	V/Hz	230/50	230/50
Absorbed electric power	W	150	150
CONNECTION			
Flow connection C.H.	Inch	3/4"	3/4"
Flow connection D.H.W.*	Inch	1/2"	1/2"
Gas connection	Inch	3/4"	3/4"
Height	mm	720	720
Depth	mm	300	300
Width	mm	400	400
LENGHT OF FLUE GAS DUCTS			
Ø 60 x 100 mm coaxial	m	4	4
Ø 80 mm doubled	m	30	30
Ø 60 mm doubled	m	----	----
Weight	kg	43	43
Degree of protection	IP	X4D	X4D
CE certification		0068 ★★★★★	0068 ★★★★★

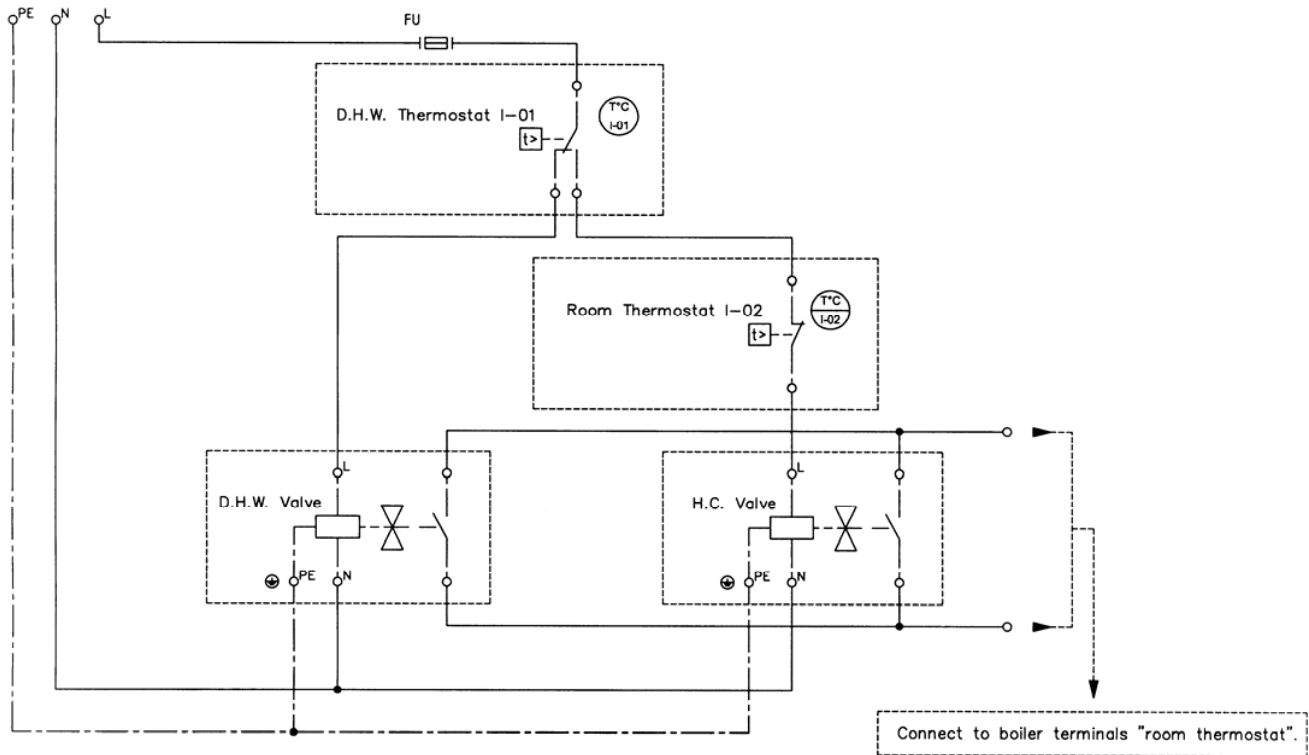
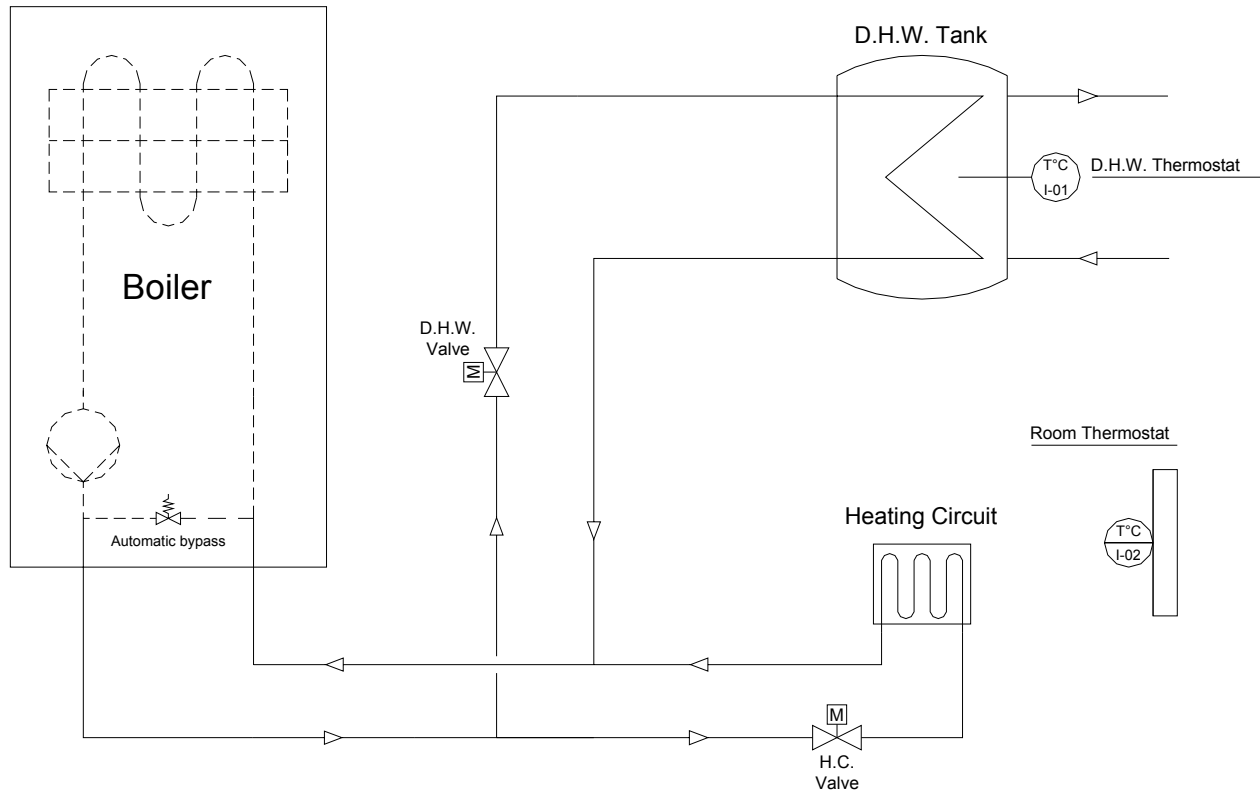
1.6 ELECTRICAL SCHEME



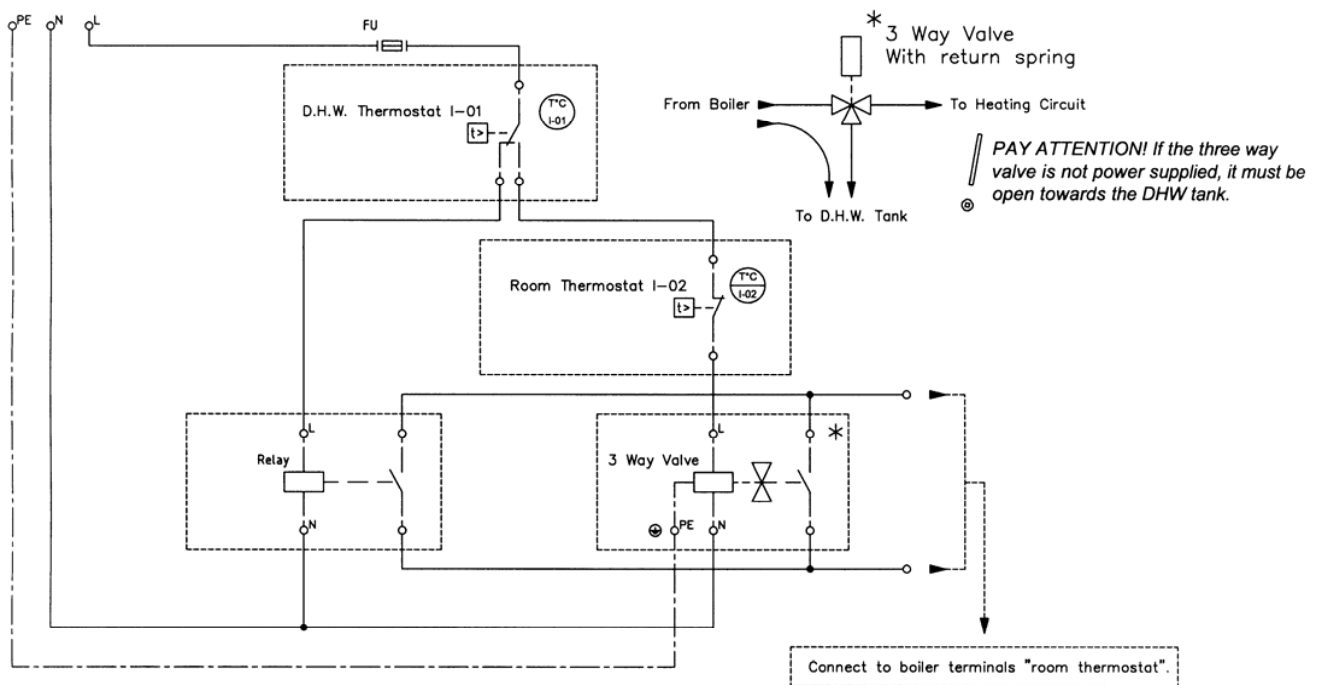
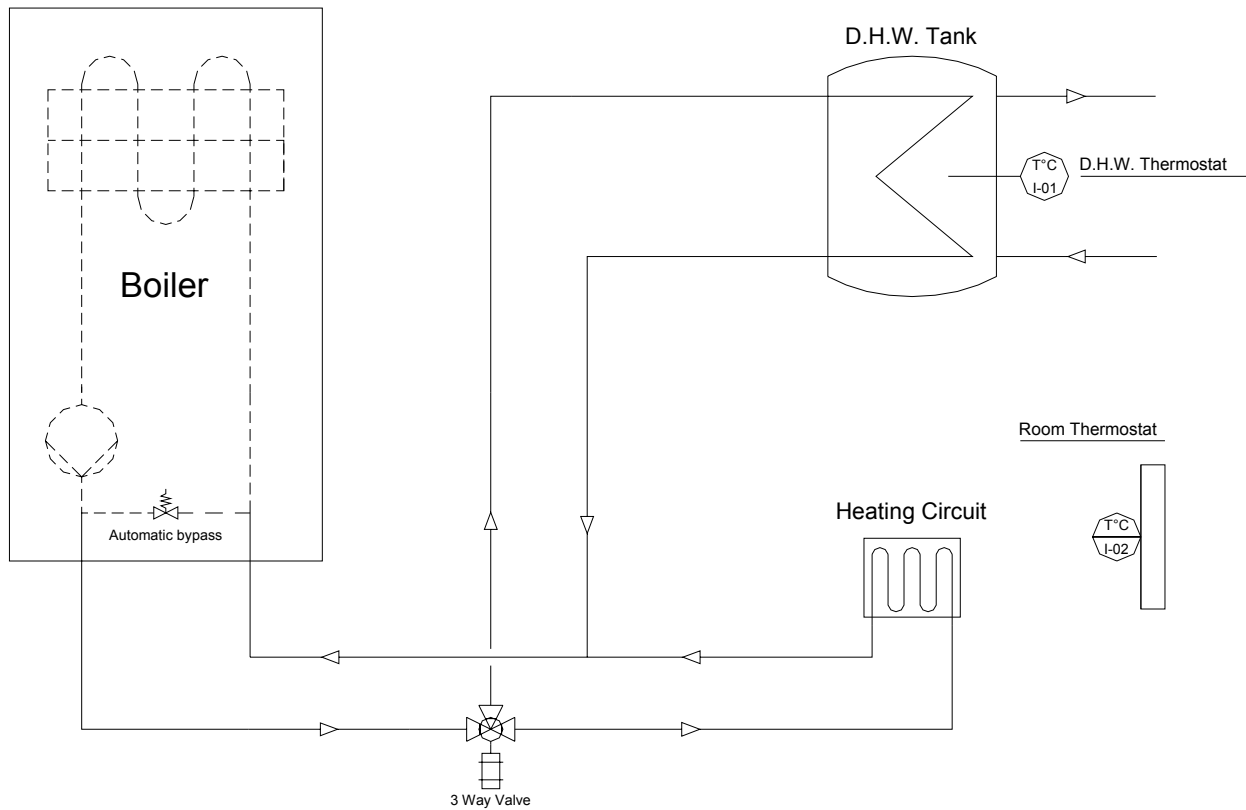
1.7 TIMER ELECTRICAL SCHEME (only for U.K. market)



1.8 "S" PLANT



1.9 "Y" PLANT



2 INSTALLATION INSTRUCTIONS

2.1 DIFFERENT VENTING OPTIONS

Sealed chamber heaters do not require particular characteristic for set-up and installation; combustion air is drawn from the outside of the property, therefore the boiler does not need air ventilation from the room where the boiler is sited. We suggest you to follow all the present regulations.

Take particular attention to discharge and aspiration unions in order to avoid combustion product leakage. Use only original spare parts.

The boiler has to be connected to coaxial flue or twin pipe flue that must discharge to the outside. Without them the boiler must not be allowed to work.

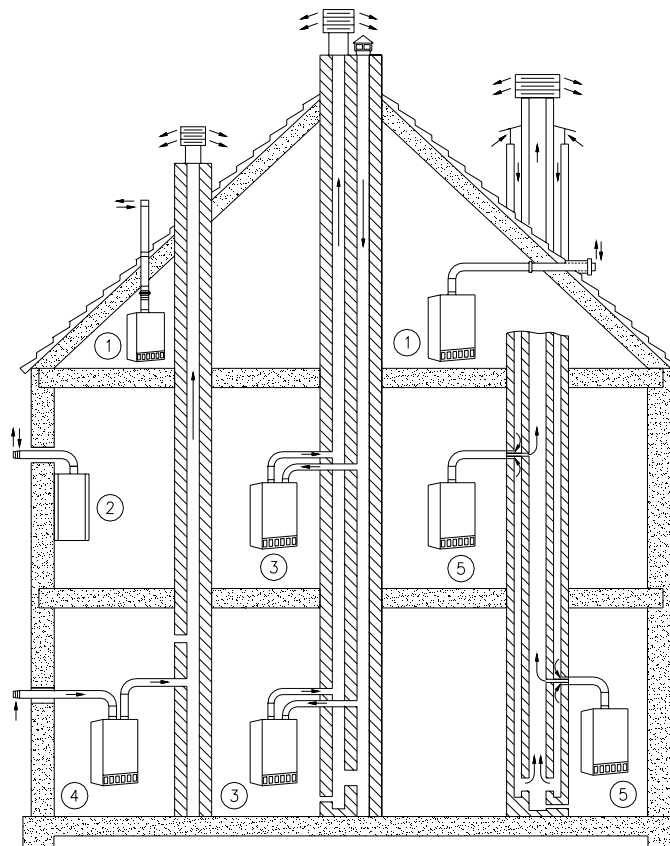
For condensing boilers you must use only original accessories.

The manufacturer have also a polypropylene version of flue gas ducts with resistance to the temperature of 120°C in continuous regime.

The MANUFACTURER is not responsible for any variation to the recommendations contained in this manual and especially those related to the flue.

2.1.1 DIFFERENT VENTING OPTIONS - FLUE VENTING

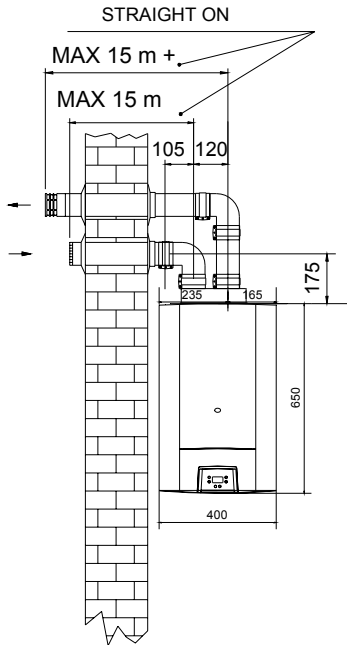
1. Coaxial vent through the roof
2. Coaxial through the wall
3. Split type venting between two chimney
4. Split type, discharge into a chimney, fresh air from outdoor wall
5. Coaxial, connection with coaxial chimney



CAUTION! - Follow local regulations concerning draught terminals location from windows and doors.

Note: due to the high efficiency of these boilers a plume of water vapour will form at the flue terminal during the operation.

2.1.2 LENGTH OF FLUE GAS DUCT: SOLAR/SOLAR SYSTEM C 25



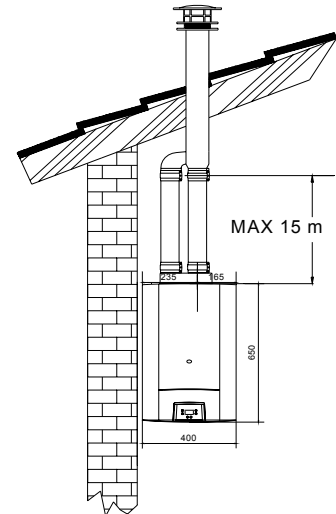
SPLIT FLUE Ø 80 mm

N.B.: The flue and aspiration duct length has not to exceed 30 m.

For flue lengths of less than 2.0M you must fit a Ø 42 mm restrictor in the vertical adaptor connection

For every added 90° elbow the maximum allowable length is to be reduced by 2 m.

The pipes of aspiration and unloading must be climbed on upward with inclination of 3° so that the condensing product flows into the boiler rather than to the outside.



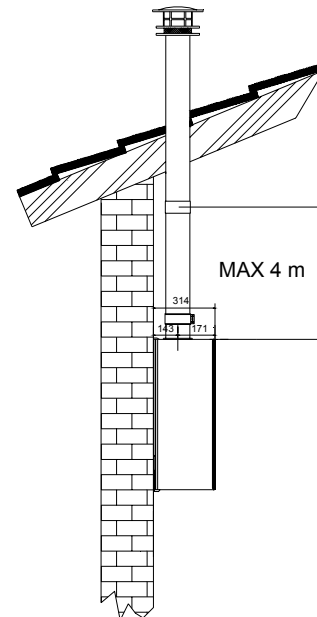
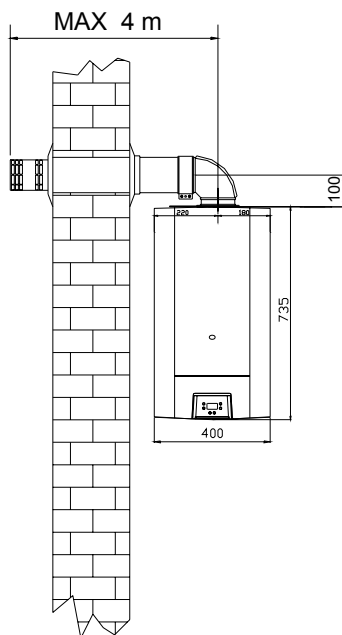
COAXIAL FLUE Ø 60 x 100 mm

N.B.: The allowed length of coaxial flue ducts is by a minimum 0,5 meters to a maximum of 4 meters.

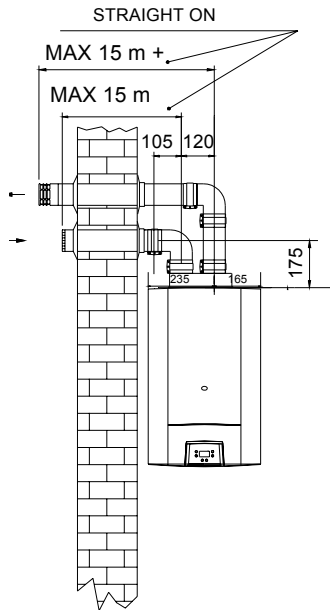
For flue lengths of less than 2.0M you must fit a Ø 42 mm restrictor in the vertical adaptor connection

The intake and flue discharge pipes should be fitted with a slight tilt outwards and downwards (Figure on right).

The pipes of aspiration and unloading must be climbed on upward with inclination of 3° so that the condensing product flows into the boiler rather than to the outside.



2.1.3 LENGTH OF FLUE GAS DUCT: SOLAR/SOLAR SYSTEM C 31



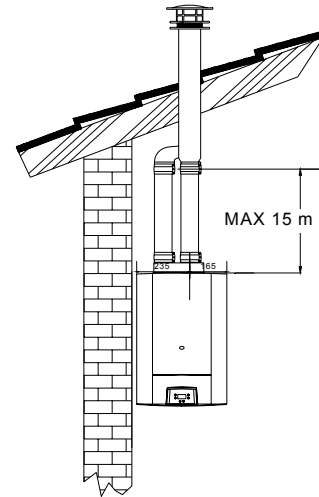
SPLIT FLUE Ø 80 mm

N.B.: The flue and aspiration duct length has not to exceed 30 m.

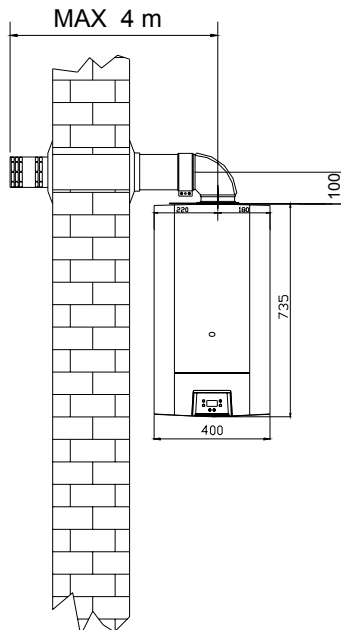
For flue lengths of less than 2.0M you must fit a Ø 42 mm restrictor in the vertical adaptor connection

For every added 90° elbow the maximum permitted length must be reduced by 2 m.

The pipes of aspiration and unloading must be climbed on upward with inclination of 3° so that the condensing product flows into the boiler rather than to the outside.



COAXIAL FLUE Ø 60 x 100 mm



N.B.: The allowed length of coaxial flue ducts is by a minimum 0,5 meters to a maximum of 4 meters.

For flue lengths of less than 2.0M you must fit a Ø 42 mm restrictor in the vertical adaptor connection

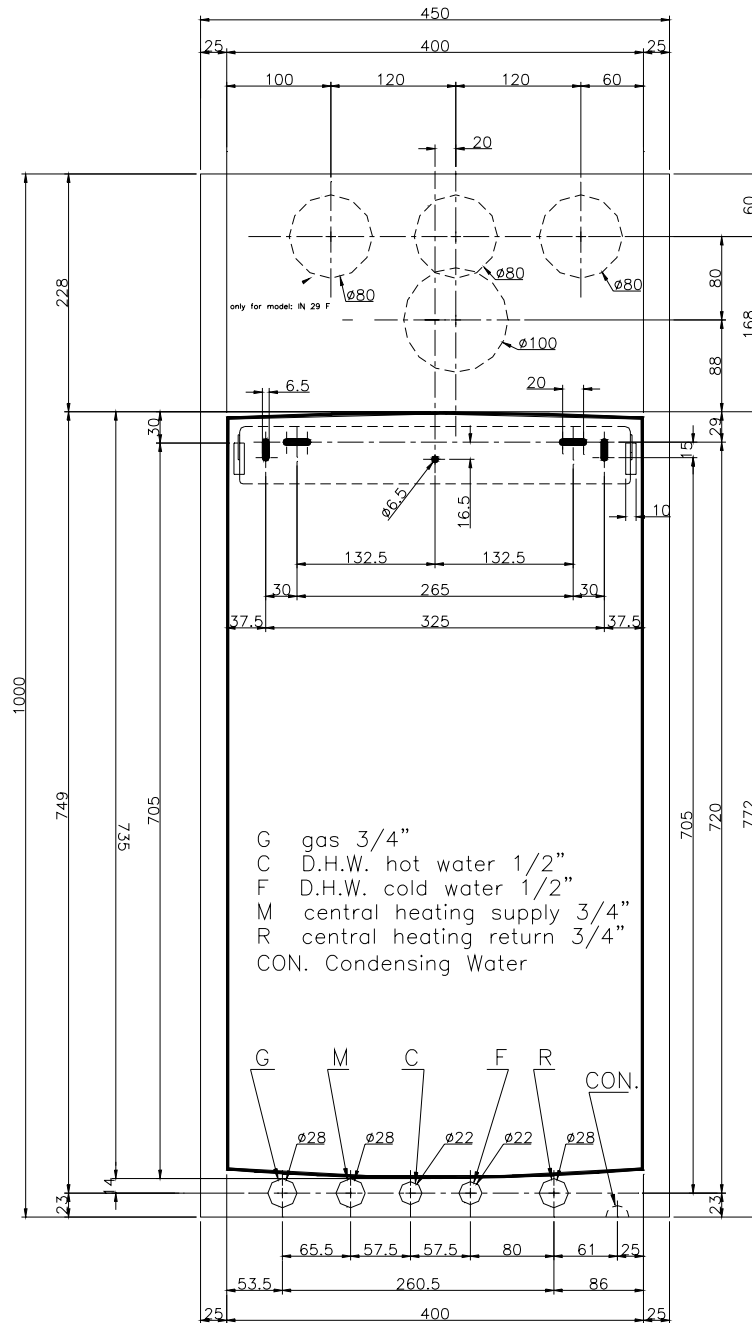
The intake and flue discharge pipes should be fitted with a slight tilt outwards and downwards. Fig on right

The pipes of aspiration and unloading must be climbed on upward with inclination of 3° so that the condensing product flows into the boiler rather than to the outside.

2.2 BOILER POSITIONING

Follow these instructions:

- Having considered the boiler dimensions, fix the dimensions template to the wall in the desired position.
- Drill the holes in the desired position for the boiler hanging bracket, and flue duct as required.
- Position all terminal pipes such as cold and hot water pipes, system inlet and return pipes, gas pipes and electrical cables as indicated by the template.
- Hang the boiler onto the hanging bracket once positioning of the bracket is confirmed.
- For the hydraulic connections screw iron-copper joints together with previously set connections. Cut and position pipes according to the distance between boiler joints and iron-copper connections that are placed on the wall;
- tighten them firmly and confirm that all joints are sound.
- *N.B.: please, remember to remove any plastic coverings.*



* C and F: for combination boilers only

2.3 HYDRAULIC CONNECTIONS

Domestic Hot Water (for combination boilers only)

The incoming water pressure must not exceed 6 bar with a minimum of 1 bar. In case of higher pressures a pressure reducing valve (PRV) must be installed. Supply water flow rate influences the cleaning frequency of the heat exchangers. **It is the installers responsibility to add adequate water treatment depending upon water characteristics.**

System loading

Slowly open the supply charge valve to reach about 1 bar system pressure, which can be viewed through the pressure gauge situated on the fascia panel. Close the supply charge valve once reached.

Bleed the radiators using proper manual valves.

When the system is cold set the system pressure to 1 bar.

In case the installation of the boiler is where the temperature environment can go down below 0°C, we recommend you fill the heating system with antifreeze solution.

We advise you to use solutions of glycole already diluted to avoid the risk of uncontrolled dilutions.

ETHILIC GLYCOLE (%)	FREEZING TEMPERATURE (°C)
6	0,00
10	-3,90
15	-6,10
20	-8,90
25	-11,70
30	-15,60
40	-23,40
50	-35,50

Suggestions and advice to avoid system vibrations and noises.

- avoid the use of pipes with reduced diameters;
- avoid the use of bends with reduced radius;
- It is recommended to **hot flush the system**, order to eliminate all the impurities coming from pipes and radiators - particularly oil and fat substances - which might damage the circulating pump.

UNDERFLOOR HEATING

The minimum flow temperature is 35°C but in order to avoid frequent on-offs of the boiler we suggest to set the temperature at at least 45°C: with floor heating we suggest to use a mixing valve to control the temperature

SOLAR PANELS

For the use of solar panels on the system, checks, evaluating the following parameters must be carried out: plant layout, kind of fluid and setting parameters.

CONDENSATE DRAIN

Connection to the condensate trap spigot which has an Ø of 21,3 mm connection is by (1/2") plastic pipe to the outlet of the syphon, this requires, an O-Ring (Ø inner 15,80 mm e Ø thick 2,40 mm) must be fitted.

2.4 ELECTRIC CONNECTIONS

The boiler is set to work with a 230V / 50Hz single-phase supply.

There is also an external cable for the room thermostat. Connect the thermostat **after having removed the jumper** on the AC cable terminal. (ATTENTION: *the AC connection works by net tension; therefore, you should use plastic models or if they are made with metal casing you should connect them to an efficient earth system*).

The boiler connection has to be protected by means of a 2 pole isolator and a proper fuse (1A).

The appliance has to be connected to an efficient earth system.

Follow present local regulations about safety.

Remark: Note the live and neutral position: an inversion of these two positions could result in a failure of the ignition circuit.

Remark: Manufacturer declines any responsibility for damages to persons, animals or things caused by the lack of a proper earth system connection and local regulation attention.

2.5 COMMISSIONING

The boiler must be commissioned according UK law regarding all gas appliances.

Make sure the gas pipe is not too long in length causing lack of pressure. See minimum & maximum gas pressure requirements.

Before commissioning check that the characteristics of the distributed gas are equal, to those on the data label of the boiler

Insert a tap/valve between the gas supply and the boiler.

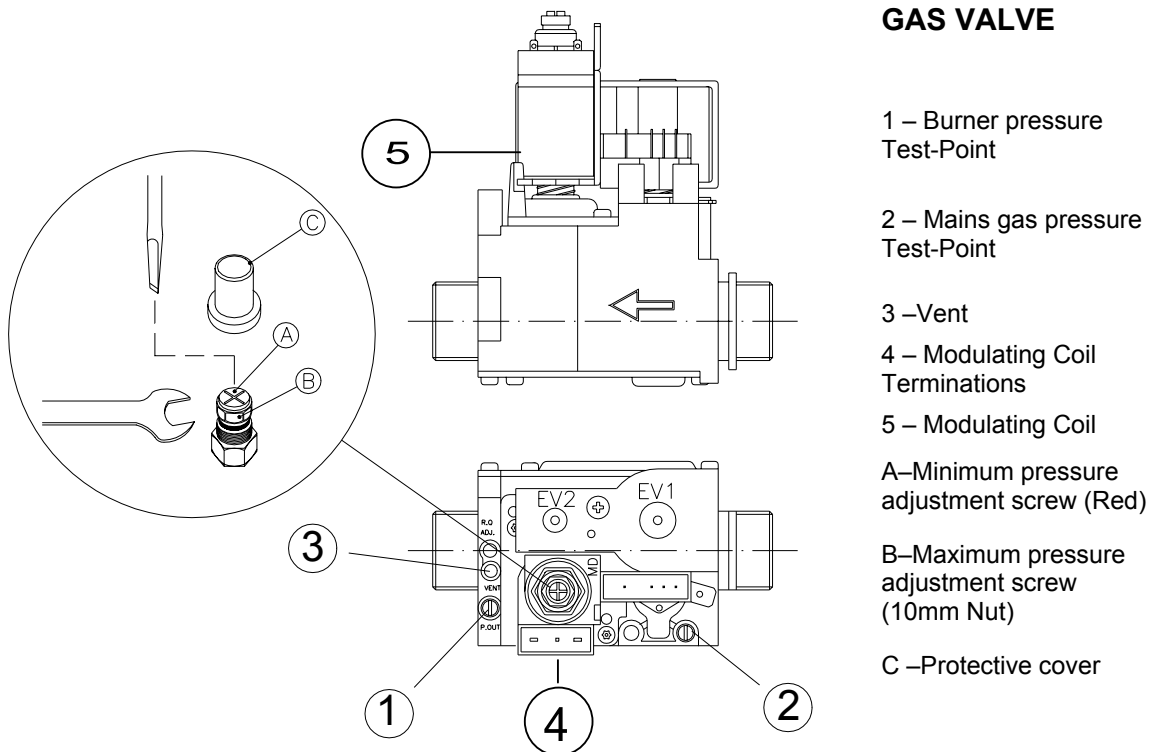
Open doors and windows and avoid the presence of naked flames.

Remove all air from the system.

Before lighting the boiler check there are no gas leaks by smell and observing the gas meter so it does not move over 15 minutes.

Verify that all joints are sealed in the gas line by using a soap solution or equivalent product to check the leaks.

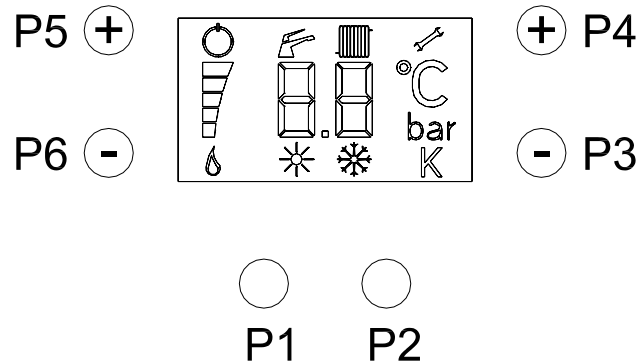
CAUTION!: when using LPG it may be necessary to install a reducing valve



To set-up the gas pressures to the burner, to insert the probes of the manometer into the available pressure test points on the gas valve (see fig.).

N.B. check that the pressure and the flow of the gas are enough to guarantee the correct operation of the boiler.

2.6 SETTING OF CONTROL PANEL



There are 4 normal modes of operation:

A) Normal :

Boiler Operation, - flow temperature, gas modulation and flame detection.

Alarm function is in section 4.9.

B) To View the Boiler's Set Point Parameters:

By pushing **P1+P2 for 3 seconds**. You can view in the following order:

- Heating supply temperature
- Domestic hot water temperature* ---- For Combination Boilers only
- Boiler system water pressure
- Output during ignition.
- Maximum Heat Output

C) Setting the Boiler Parameters

By pressing **P1+P2 for 6 seconds**. You can view alternatively the figures regarding the following parameter's, and their current value

adjustment available are as follows

P1 = power to ignition	(0 – 99% of range available)
P2 = power to heating	(0 – 99% of range available)
P3 = anti cycling timer to max 10 minutes	(0 – 99% of the 10 minute range)
P4 = not available	
P5 = off = nat gas / on = LPG	
P6 = not available	

Pressing the keys **P3 and P4** it is possible to view in sequence the parameters which can be changed.

By using the keys **P5 and P6** = it is possible to modify their value.

By Pressing **P3+P4** you can exit **without saving any changes**.

By Pressing P2 for 5 seconds you exit the menu and you save the changes.

The available parameters are:

D) History Log Alarm.

By pressing **P1+P2 for 9 seconds**. You can view alternatively the number of alarms

By pressing **P3+P4** you exit off the function.

By pressing **P2 for 5 seconds** you can delete the historical log alarm.

2.7 ADJUSTMENT INSTRUCTIONS: MAXIMUM AND MINIMUM HEAT OUTPUT

The boilers are pre set in the factory for the gas type showing on the data plate.

Check the min/max pressure setting. This is important due to the gas supply pressure varying by country. To Check and correct the gas pressure proceed in the following way.

- Insert a manometer for the gas at the point " 1";
- Turn on the boiler and open the hot tap fully ;

MAXIMUM HEAT OUTPUT ADJUSTMENT

1. Turn on the boiler and open the hot tap fully;
2. Remove the hood of protection" C" (see fig. section 2.5);
3. Adjust the maximum pressure acting on the nut " B" with the aid of a 10 mm spanner ; rotating clockwise the pressure increases, rotating counter clockwise the pressure decreases;

MINIMUM HEAT OUTPUT ADJUSTMENT

1. Set the boiler on "**Winter**" position (see section 4.1);
2. Ensure any room thermostat is calling for heat;
3. Set heating regulation to maximum;
4. Set heating power to maximum (see section 4.1).
5. Rotate the red screw "A." To reach the minimum pressure as per the table in section 2.10 (clockwise it increases, counter clockwise it decreases);
6. Replace the hood of protection" C."
7. All the values to set-up the heating power for the boiler are in section 2.10
8. Open the hot tap fully to verify the pressure of the maximum heat.

Remember always to tight the junctions after the use and to check the seal.

2.8 SLOW IGNITION AND HEAT OUTPUT ADJUSTMENT

SLOW IGNITION ADJUSTMENT

The boiler is delivered already set to the following values:

NATURAL GAS = 30 mm H₂O

LPG = 80 mm H₂O

Follow these instructions if you have to change these values:

- open the domestic water to its maximum level and turn the boiler off;
- turn the boiler on;
- check the pressure of the gas to the burner during the cycle of ignition (the pressure remains low until you can see the flame).
- Press for 6 sec **P1** and **P2** and see c) "Parameters setting" (See section 2.6)
Set P2 as you need.
 - To reset the value of slow ignition you need to turn off the boiler, to again act on the parameters and to remake ignition verifying the attainment value of desired pressure.

ATTENTION: the slow ignition time for its adjustment is 5 seconds after which the nozzle pressure will increase or decrease according to the need. If a further change is needed repeat this operation by turning the boiler on and off.

OUTPUT HEAT ADJUSTMENT

The maximum heating output has to be adjusted according to system needs.

Gas pressure values are shown at section 2.10 in the table "INJECTORS PRESSURE TABLE".

For the adjustment of the burner gas pressure follow these indications:

- Set the boiler to "**Winter**" mode;
- Ensure any room thermostat is calling for heat;
- **Press for 6 sec P1 and P2 and see c) "Parameters setting" (See section 2.6)**
Set P1 as you need.

N.B.: Wait about 10 seconds to allow the pressure stabilisation after the slow ignition.

2.9 DIFFERENT GASES

The boiler can operate on Natural Gas or LPG. To switch from one gas type to the other follow the following instructions:

Transformation from Natural Gas to LPG gas

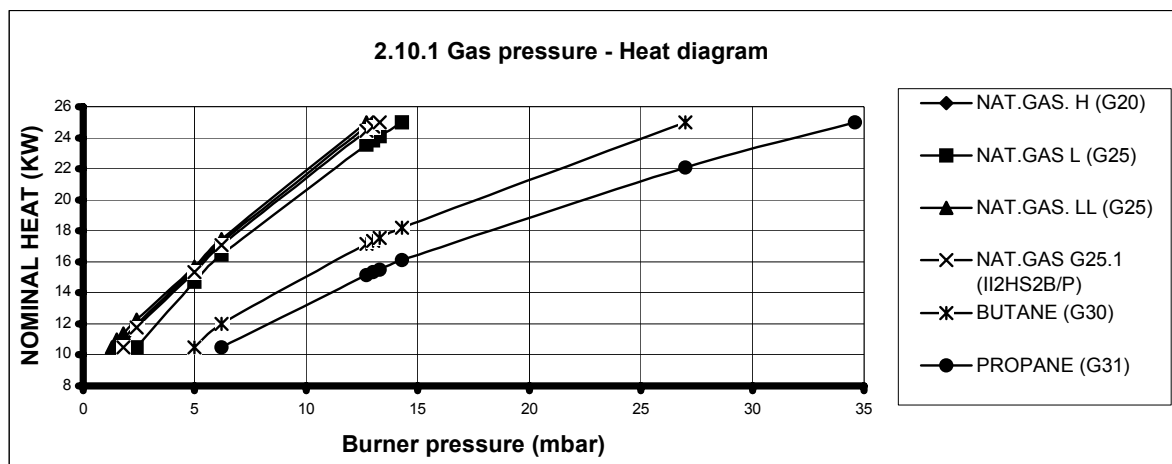
- replace burner injectors
- change the **JP1** jumper position and set it to “**LPG**” position (see the electrical scheme);
- adjust MIN/MAX pressure levels keeping in mind the above instructions;
- as far as the injectors diameters and the burner gas pressure are concerned, see the above table;
- after this operation seal the valve regulator.

LPG to Natural Gas

- replace burner injectors;
 - change the **JP1** jumper position and set it to “**NATURAL GAS**” position (see the electrical scheme);
 - adjust MIN/MAX pressure levels keeping in mind the above shown instructions;
 - as far as the injector diameters and the burner gas pressure are concerned, see the above table;
- after this operation seal the valve regulator

2.10 INJECTORS PRESSURE TABLE: SOLAR COMBI /SOLAR SYSTEM C 25

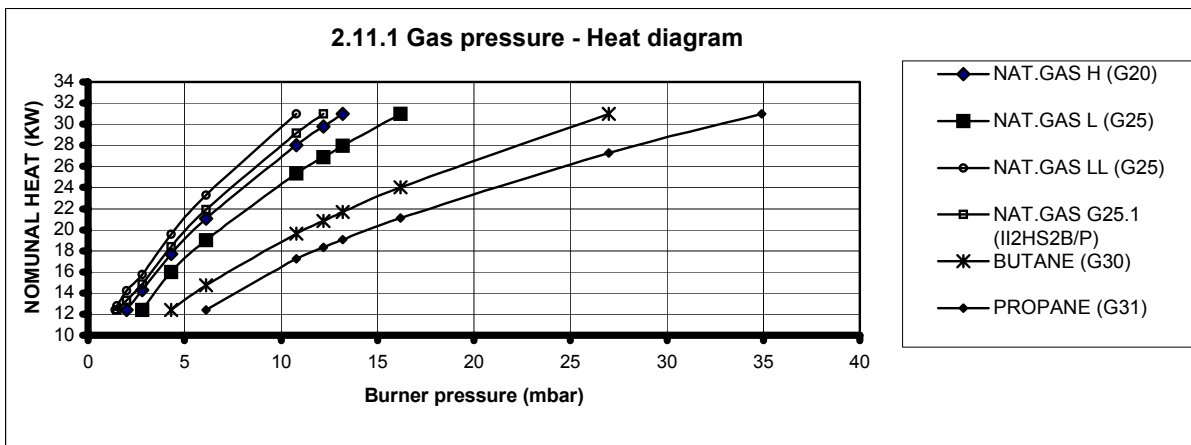
TYPE OF GAS	Inlet pressure		Injectors diameters		Gas diaph.	Burner pressure	
	P.C.I	Inlet pressure	Quantity	Ø	Ø	Min. Heat = 10,5 KW	Qnom. = 25 KW
	MJ/m3	mbar	n°	mm	mm	mbar	mbar
NAT.GAS G20 (2H+)	34,02	20	13	1,20	5,5	1,5	11,3
NAT.GAS G25 (2H+)	29,25	25	13	1,20	5,5	2,4	14,3
NAT.GAS G25 (2LL)	29,25	20	13	1,30	-----	1,3	12,7
NAT.GAS G25.1 (2HS3B/P)	29,21	25	13	1,30	-----	1,8	13,3
BUTANE G30	116,09	28/30	13	0,72	-----	5	27
PROPANE G31	88	37	13	0,72	-----	6,2	34,6



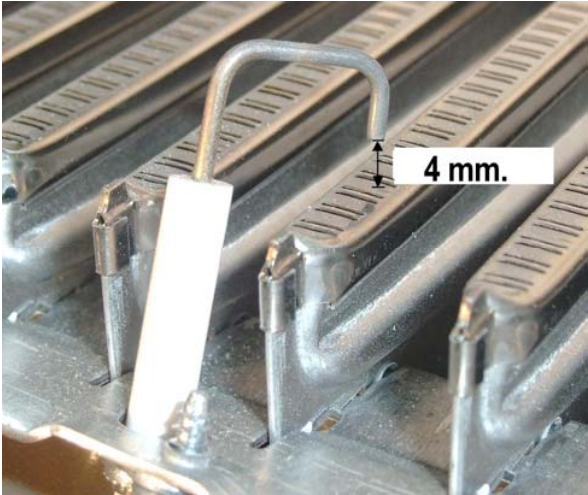
2.11 INJECTORS PRESSURE TABLE: SOLAR COMBI / SOLAR SYSTEM C 31

TYPE OF GAS	Injectors diameters		Diafr. Gas*		Gas diapg h.		
	P.C.I	Inlet pressure	Quantity	Ø	Ø	Min. Heat = 12,4 KW	Qnom. = 31 KW
	MJ/m3	mbar	n°	mm	mm	mbar	mbar
NAT.GAS G20 (2H+)	34,02	20	13	1,30	6,5	2	13,2
NAT.GAS G25 (2H+)	29,25	25	13	1,30	6,5	2,8	16,2
NAT.GAS G25 (2LL)	29,25	20	13	1,45	-----	1,4	10,8
NAT.GAS G25.1 (2HS3B/P)	29,21	25	13	1,45	-----	1,5	12,2
BUTANE G30	116,09	28/30	13	0,8	-----	4,3	27
PROPANE G31	88	37	13	0,8	-----	6,1	34,9

* Only for France and Belgium



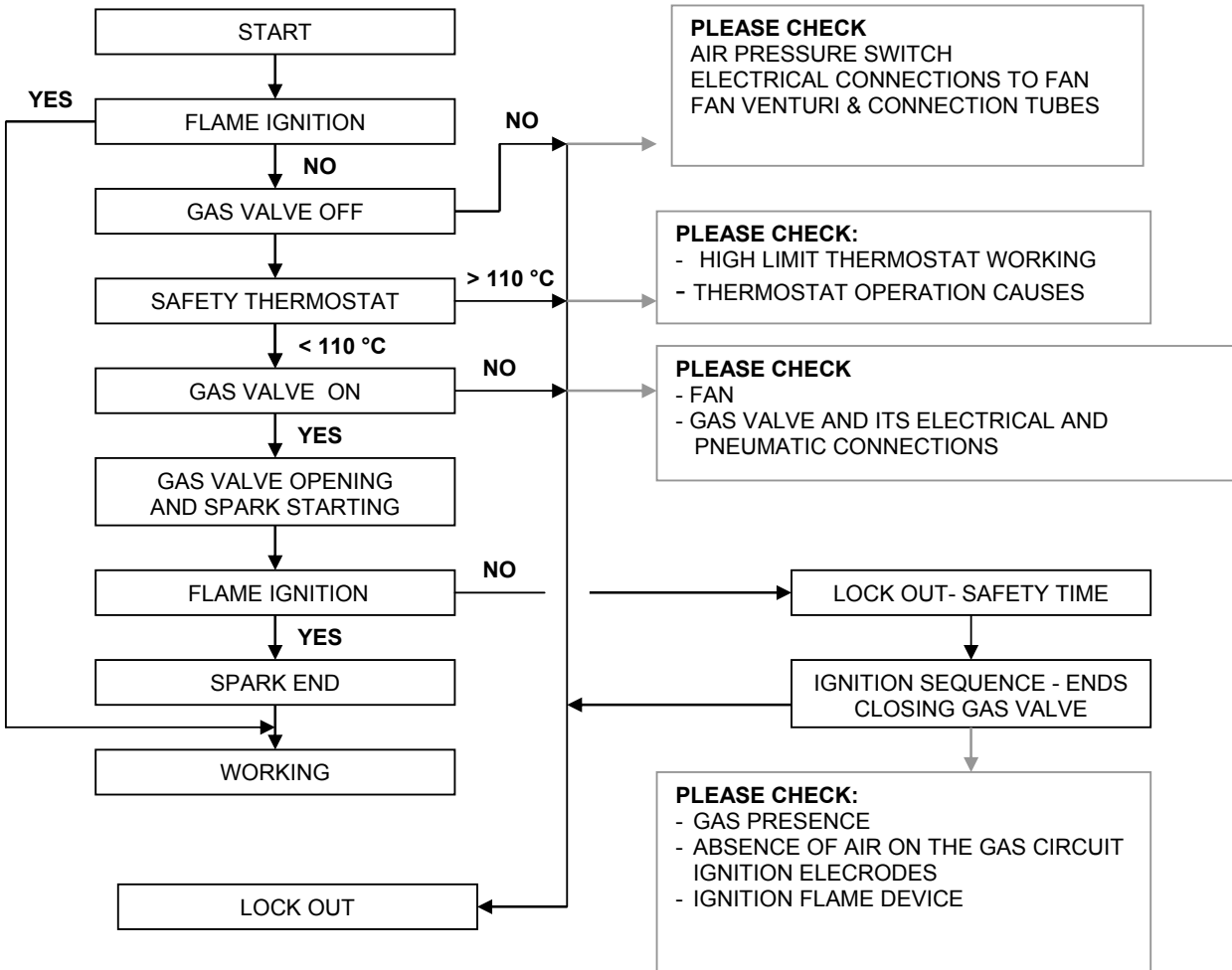
2.12 TECHNICAL FAULT FINDING For Corgi Registered Engineers only

1 THE BURNER FLAME DOES NOT IGNITE	
POSSIBLE CAUSES	CHECK - REMEDY
<p>A - The water temperature is higher than that of the hot water adjustment thermostat;</p> <p>B - The gas cock is closed;</p> <p>C - Boiler Lockout;</p> <p>D - Lack of the ignition electrode sparkle</p> <p>E - Lack of flame;</p> <p>F - Air in the gas pipe system;</p> <p>G - The safety thermostat has operated;</p> <p>H - There is low system pressure.</p>	<p>A - Increase the hot water adjustment thermostat to a higher setting;</p> <p>B - Open gas cock;</p> <p>C - Reset it;</p> <p>D - Please check: High limit thermostat working Air pressure switch Ignition electrodes Ignition electrodes cable Ignition flame device</p> <p>E - Please check: Ignition electrodes Ignition electrodes cable Gas presence Absence of air on the gas circuit Please check power supply to gas valve Gas valve opening</p> <p>F - Ensure that the gas lines have been fully purged of all air</p> <p>G - Please check: Circulation pump for blockage or necessary adjustment</p> <p>H - Recharge the System using the main filling tap.</p>
2 VIOLENT IGNITION	
POSSIBLE CAUSES	CHECK - REMEDY
<p>A - Flame instability;</p> <p>B - Insufficient gas flow;</p> <p>C - Incorrectly placed ignition electrodes.</p>	<p>A - Please check: Absence of air on the gas circuit</p> <p>B - Please check: Incoming gas pressure at the gas meter The pipe size of gas supply to the boiler Dirt in gas line</p> <p>C - The distance between ignition electrode and burner must be 4 mm.</p>
	

3 SMELL GAS	
POSSIBLE CAUSES	CHECK - REMEDY
A - Gas system leakage (of both the internal and external pipe system).	A - Close the main gas cock and check the pipe system
4 BOILER CONDENSATION	
POSSIBLE CAUSES	CHECK - REMEDY
A - The boiler temperature is too low.	A - Adjust the boiler thermostat to an higher temperature.
5 COLD RADIATORS IN WINTER	
POSSIBLE CAUSES	CHECK - REMEDY
A - The selector is to "SUMMER" position; B - The room thermostat is not working or it has been adjusted to a too low temperature; C - Closed radiator system; D - Malfunctioning three way valve.	A - Reset it to "WINTER" position; B - Turn the room thermostat on and set an higher temperature; C - Open system or radiators valves; D - Please check: The DHW micro switch must be open when DHW is not required If necessary replace: The switch The internal diaphragm of the valve The internal spring of the valve
6 DOMESTIC WARM WATER LITTLE PRODUCTION*	
POSSIBLE CAUSES	CHECK - REMEDY
A - The domestic thermostat temperature is too low; B - Too much hot water being drawn off; C - The burner gas adjustment is not	A - Increase in the domestic thermostat temperature; B - Partially close the hot water regulator valve; C - Please set / check the minimum – maximum gas pressures (see page 15)
7 FLAME RECTIFICATION PROBLEMS	
POSSIBLE CAUSES	CHECK - REMEDY
A - The condensate sensor causes the boiler to stop	A - Please check that the condensate trap is not blocked or frozen and that all condensate is freely escaping to the selected drain as any build up of condensate will send the sensor which is attached to the condensate exchanger to earth

* For combination boilers only

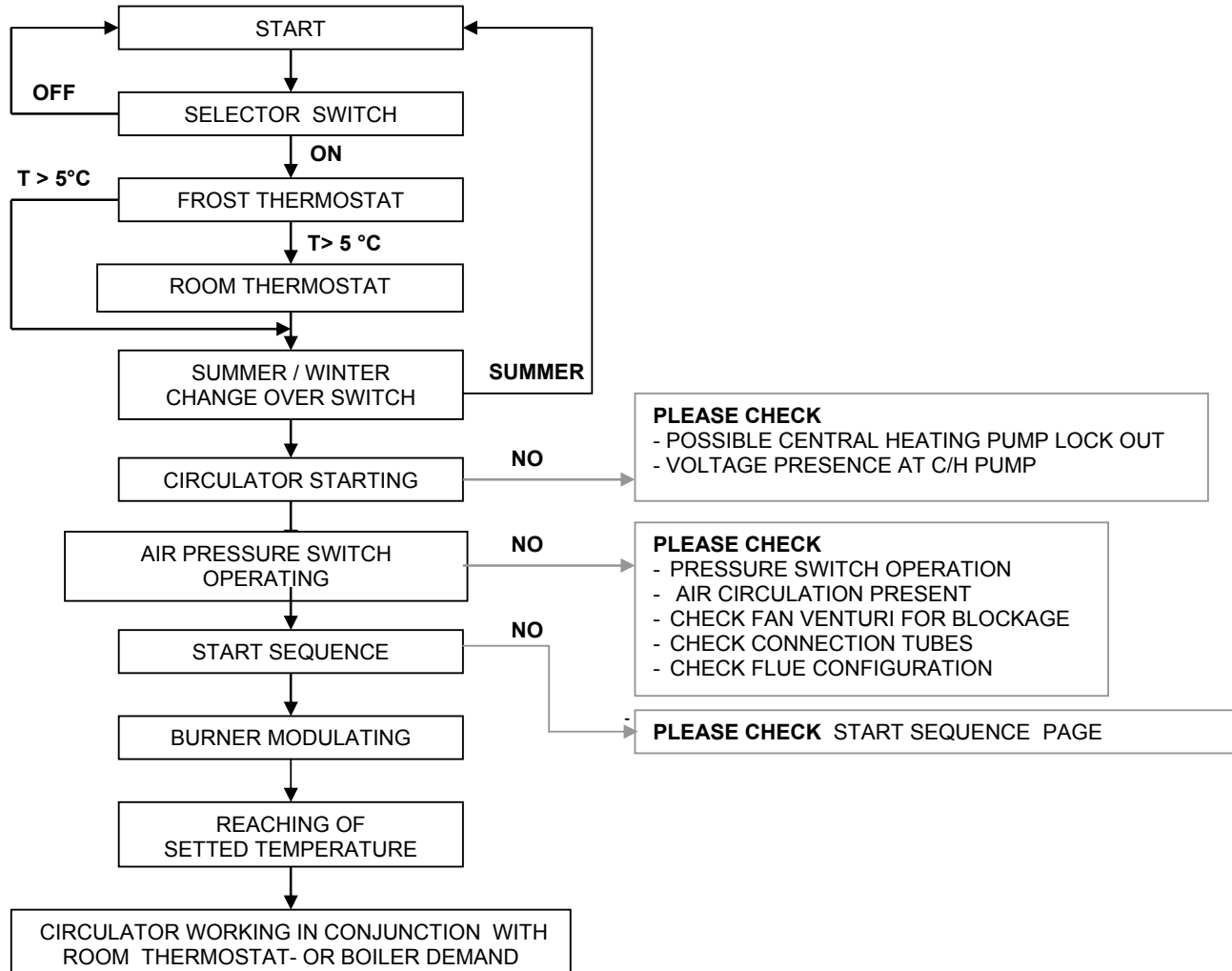
START SEQUENCE



THE ABOVE CHECK/ FAULT FINDING SHOULD ONLY BE PERFORMED BY A **CORGI REGISTERED ENGINEER**.

IN THE EVENT OF A REQUEST FOR AN IN WARRANTY SERVICE CALL TO RECTIFY A MANUFACTURING FAULT, THIS WILL REQUIRE IN THE FIRST INSTANCE, RELEVANT INFORMATION WHICH IS CONTAINED IN YOUR **BENCHMARK LOGBOOK**, WHICH WILL HAVE BEEN COMPLETED BY YOUR REGISTERED INSTALLER UPON INSTALLATION

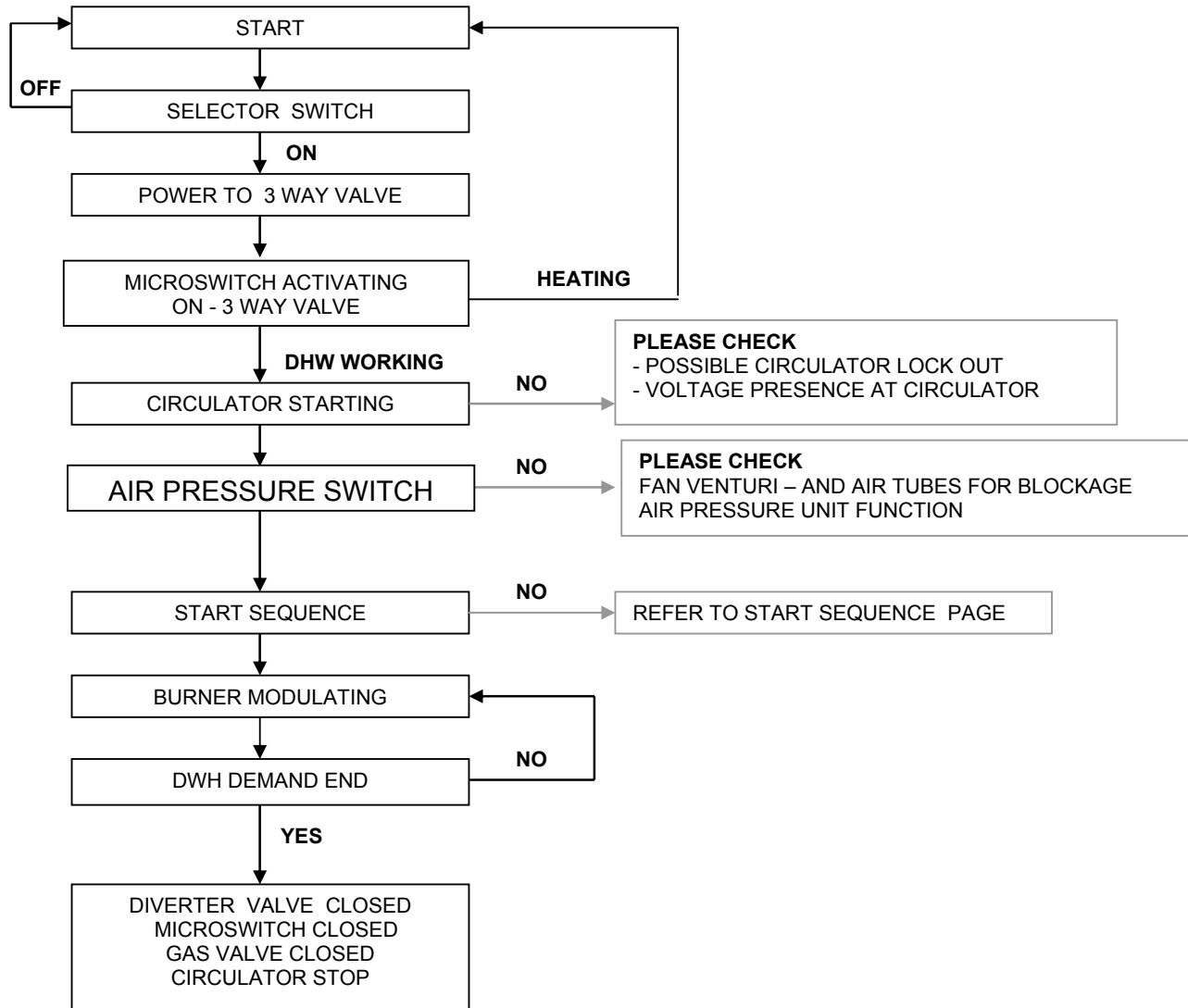
CENTRAL HEATING DEMAND



THE ABOVE CHECK/ FAULT FINDING SHOULD ONLY BE PERFORMED BY A **CORGI REGISTERED ENGINEER**.

IN THE EVENT OF A REQUEST FOR AN IN WARRANTY SERVICE CALL TO RECTIFY A MANUFACTURERING FAULT, THIS WILL REQUIRE IN THE FIRST INSTANCE, RELEVANT INFORMATION WHICH IS CONTAINED IN YOUR **BENCHMARK LOGBOOK**, WHICH WILL HAVE BEEN COMPLETED BY YOUR REGISTERED INSTALLER UPON INSTALLATION

DOMESTIC HOT WATER DEMAND



THE ABOVE CHECK/ FAULT FINDING SHOULD ONLY BE PERFORMED BY A **CORGI REGISTERED ENGINEER**.

IN THE EVENT OF A REQUEST FOR AN IN WARRANTY SERVICE CALL TO RECTIFY A MANUFACTURERING FAULT, THIS WILL REQUIRE IN THE FIRST INSTANCE, RELEVENT INFORMATION WHICH IS CONTAINED IN YOUR **BENCHMARK LOGBOOK**, WHICH WILL HAVE BEEN COMPLETED BY YOUR REGISTERED INSTALLER UPON INSTALLATION

3 MAINTENANCE INSTRUCTIONS

3.1 INTRODUCTION

All maintenance operations have to be carried out by **Corgi Registered Engineer**. MAINTENANCE operations must be carried out at least once a year and according to UK Building regulations.

Prior to winter it is advisable to make sure the boiler is working correctly. This must be done by a **Corgi Registered Engineer** to ensure the correct operation of the boiler.

Annual Maintenance Check List:

- verify the exchanger is clean and clear;
- verify the burner is clean and clear;
- verify the hydraulic system pressure;
- verify the correct operation of the expansion vessel is working;
- verify the correct functioning of adjustment and safety thermostats;
- verify the cleaning and integrity of sensor and ignition electrodes;
- ensure the pump operate correctly;
- ensure there are no water leaks and no flue leaks;
- check and adjust gas burner pressure;
- check and adjust the combustion output;
- check the emission levels of CO, CO₂ and NO_x;
- in the event that the boiler needs a spare part, **only** an original spare part, as supplied by the Manufacturer. should be used

The Manufacturer denies any liability concerning any damage caused by the installation of a non original spare part.

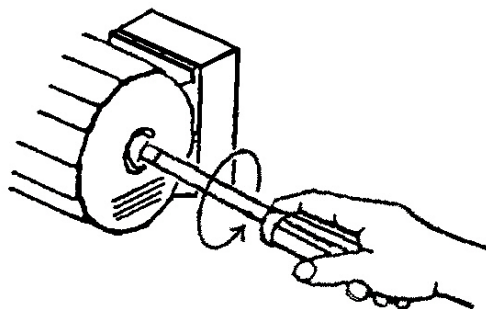
ATTENTION: this boiler has a safety thermostat linked to the flue which starts to work when there is any combustion product coming back. This safety feature must never to be linked out. If combustion products come back, they can cause severe intoxications with even death risks.

ATTENTION: after any boiler service regarding the gas pipe system and flue system it is absolutely essential to ensure that joints are securely sealed and that there are no gas or flue leaks.

3.2 PUMP SETTING

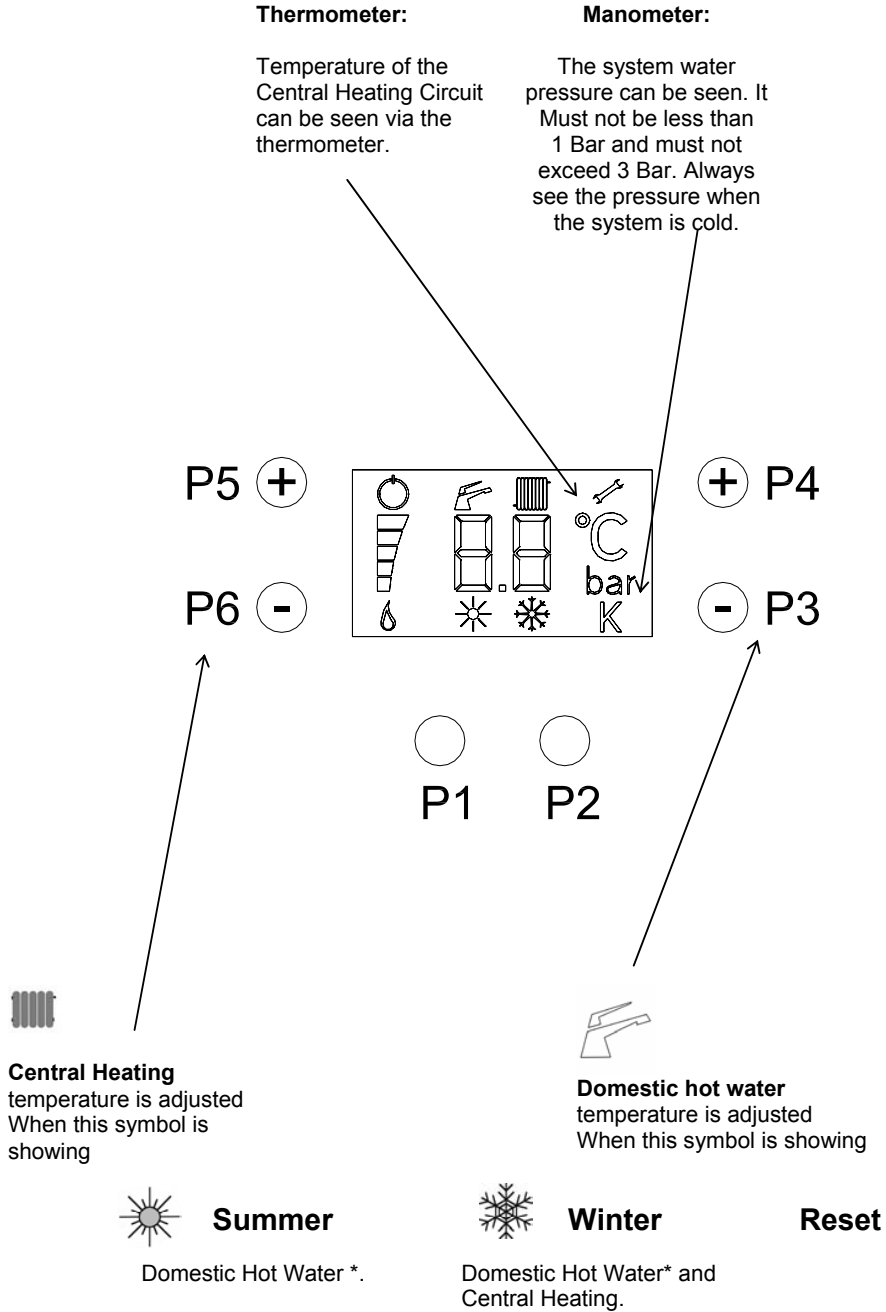
When the boiler is new or after a long standstill period it is not unusual for the circulator to lock. This is easily rectified as follows:

- unscrew and remove the pump cap;
 - insert the screwdriver and turn it to set the pump;
- replace the cap.



4 USER INSTRUCTIONS

4.1 CONTROL PANEL



* For combination boilers only

4.2 IGNITION

Open the manual gas supply valve, located outside of the boiler. Set to the **SUMMER** or **WINTER** position: the boiler should ignite automatically. If the boiler does not ignite you will see a failure in the display.

4.3 SUMMER MODE

For Domestic Hot Water only.

Set MENU to SUMMER position. Set the domestic water temperature adjustment to the desired setting. The domestic hot water production is activated.

4.4 WINTER MODE

For heat and domestic hot water.

Set MENU to WINTER position. Set the heating temperature adjustment to the desired setting. Room thermostat will keep the desired value.

4.5 BREAK DOWN SIGNALS

CODE	DESCRIPTION
01	LOCKOUT due to not ignition/condensate sensor
02	Failure of heating system pressure
04	Failure of heating sensor
06	LOCKOUT due to high temperature/ exceeding of flue gas temperature
08	Air pressure failure
09	No water circulation

4.6 TEMPORARILY TURNING BOILER OFF

You can achieve it by means of:

- the room thermostat ;
- the MENU on the instrument panel;

4.7 LONG TERM SHUT DOWN

If the boiler is to remain off for a long period of time, close the gas cock to the boiler. Turn of the flow and return isolating valves on the boiler ,and drain down the boiler in order to protect it from freezing up. Before re starting up the boiler re-connect all pipework and open the necessary isolating valves to the boiler, also manually turn the rotating part of the circulator pump in case it has locked/sized.

4.8 SUGGESTIONS

Once a year the boiler should be cleaned and checked to make sure that all components are working properly.

Do not adjust the gas valve, this is to be done only by a Corgi registered engineer.

If there is a lockout, turn knob to reset position. If the problem happens often, call a Corgi registered engineer.

The condensing section of this boiler must not be modified or closed.

After a long period of inactivity verify the presence of water in the condensing trap after about 10 minutes of the boiler starting up the condensate water should then start to discharge.

If this doesn't happen, please call a **Corgi registered engineer**.

4.9 FAULT FINDING

1 THE BURNER FLAME DOES NOT IGNITE	
POSSIBLE CAUSES	CHECK - REMEDY
A - The water temperature is higher than that of the hot water adjustment thermostat; B - The gas cock is closed; C - Boiler Lockout ; D - Lack of flame E - Lack of the ignition electrode sparkle; F - Air in the pipe system; G - The safety thermostat has operated; H - There is low system pressure.	A - Increase the hot water adjustment thermostat to a higher setting; B - Open gas cock; C - Reset it; D - Please contact your Corgi reg. installer E - Please contact your Corgi reg. installer F - Repeat the ignition procedure G - Please contact your Corgi reg. installer H - Recharge the System using the main filling tap.
2 VIOLENT IGNITION	
POSSIBLE CAUSES	CHECK - REMEDY
A - Flame instability; B - Insufficient gas flow; C - Incorrectly placed ignition electrodes.	A - Please contact your Corgi reg. installer B - Please contact your Corgi reg. installer C - Please contact your Corgi reg. installer
3 SMELL OF GAS	
POSSIBLE CAUSES	CHECK - REMEDY
A - Gas system leakage (of both the internal and external pipe system).	A - Close the main gas cock and cal your corgi registered installer
4 BOILER CONDENSATION	
POSSIBLE CAUSES	CHECK - REMEDY
A - The boiler temperature is too low.	A - Adjust the boiler thermostat to an higher temperature.
5 COLD RADIATORS IN WINTER	
POSSIBLE CAUSES	CHECK - REMEDY
A - The selector is to "SUMMER" position; B - The room thermostat is not working or it has been adjusted to a too low temperature; C - Closed radiator system; D - Malfunctioning three way valve	A - Bring it to "WINTER" position; B - Turn the room thermostat on and set an higher temperature; C - Open system or radiators valves; D - Please contact your Corgi reg. installer
6 DOMESTIC HOT WATER TEMPERATURE INSUFFICIENT *	
POSSIBLE CAUSES	CHECK - REMEDY
A - The domestic thermostat temperature is too low; B - Too much hot water being drawn off; C - The burner gas adjustment is not	A - Increase in the domestic thermostat temperature; B - Partially close the hot water regulator valve; C - Please contact your Corgi reg. installer

* For combination boilers only

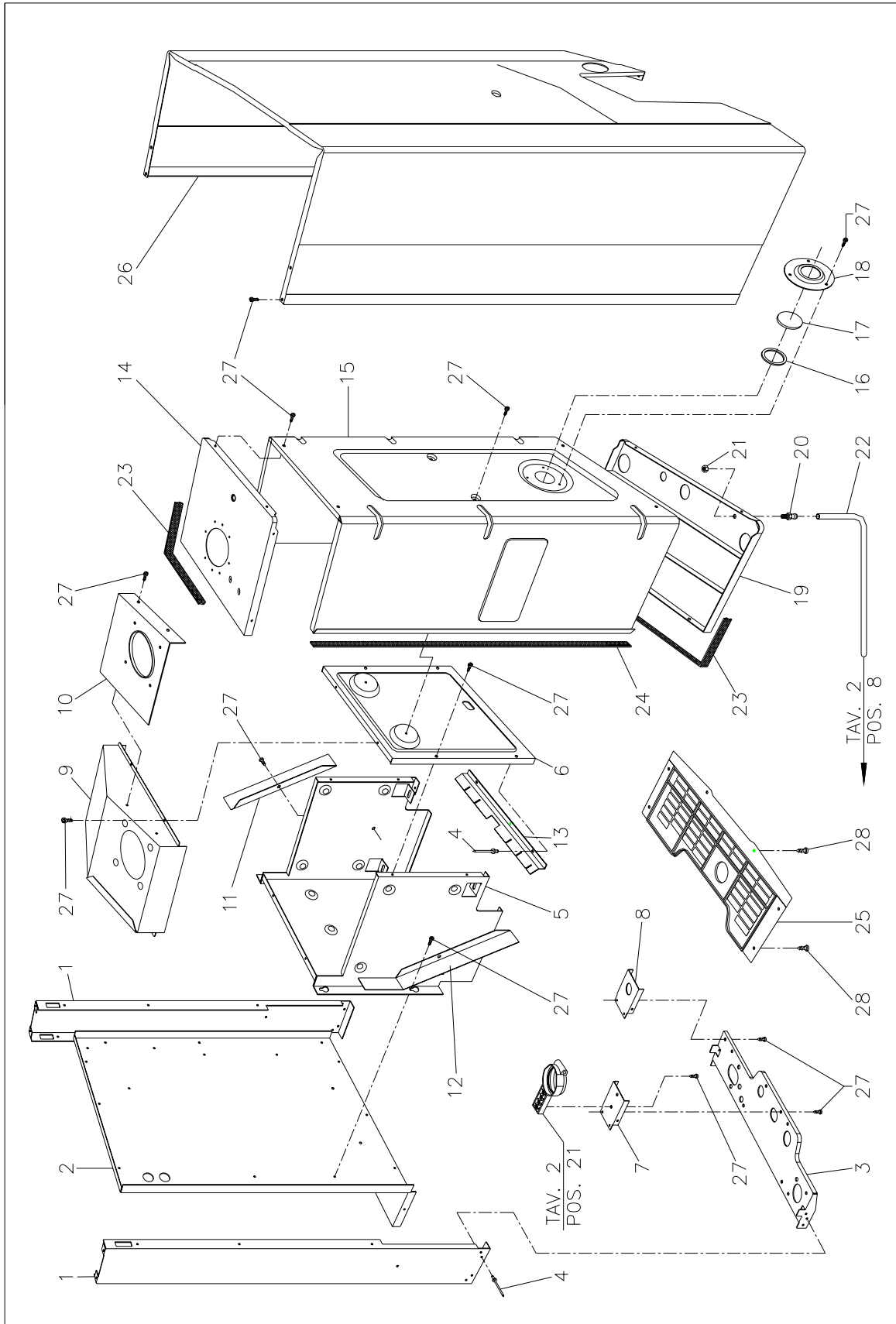
NOTE TO END USERS

Request's for an in warranty service call will require you to provide information contained within the BENCHMARK LOG BOOK .This must have been completed by your CORGI

REGISTERED installer upon installation, and left with the boiler for safe keeping.

5 EXPLODED VIEWS AND PARTS LISTS

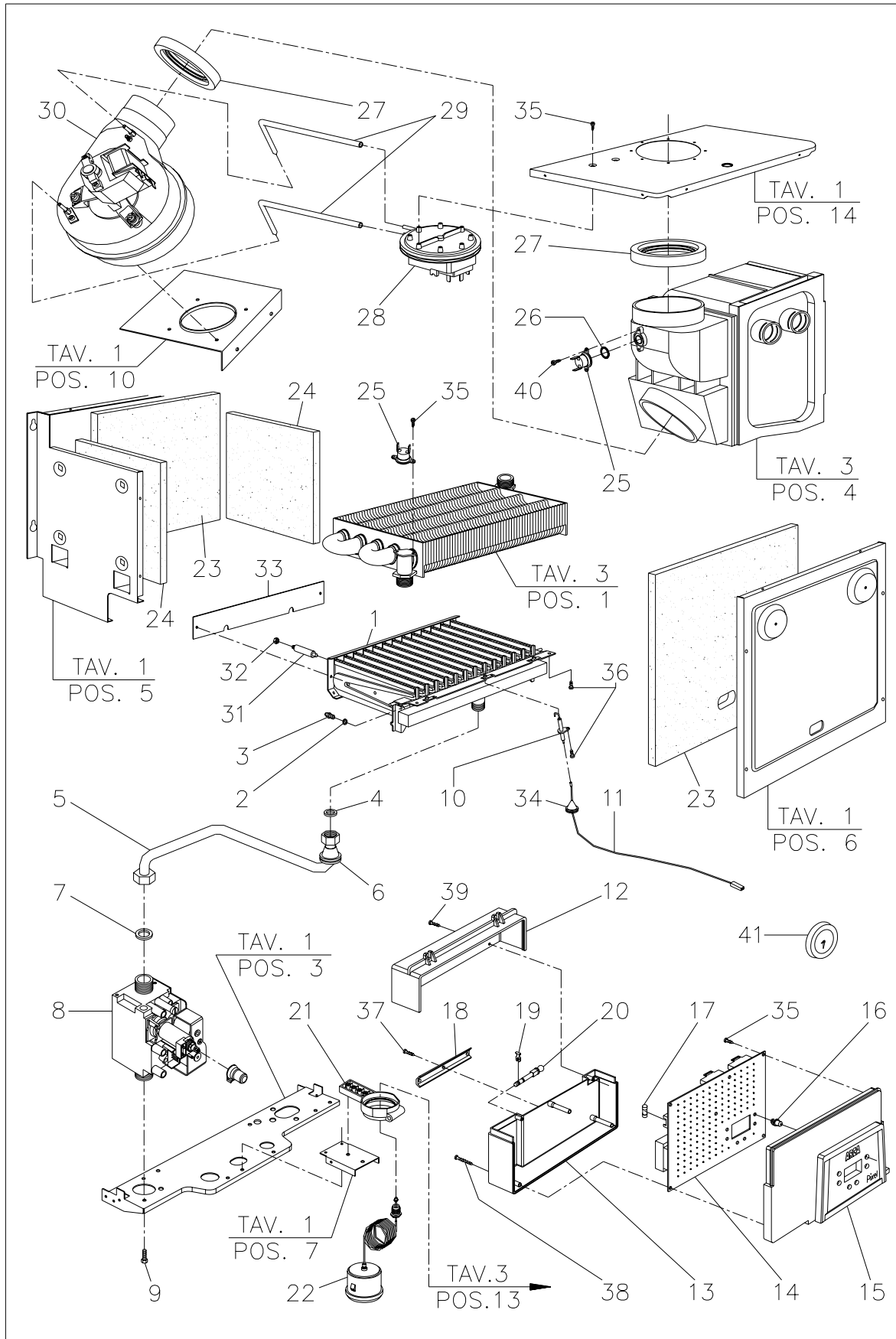
TAV 1



LIST TAV. 1

POS.	CODE	DESCRIPTION
1	ACPIA00P	CASING SUPPORT SIDE L/R
2	ACPSC00P	CASING SUPPORT BACK PANEL
3	ACLSG0P2	SUPPORT LOWER OUTLET PIPES
4	10020090	ALUMINIUM RIVET \varnothing 3x6
5	ACCCOP1S	COMBUSTION CHAMBER COMPLETE
6	ACCCC1P2	COVER FRONT COMBUSTION CHAMBER
7	ACLSC00P	PLATE SUPPORT CONTROL PANEL
8	ACLSS00P	PLATE SUPPORT SYPHONE
9	ACCVS00P	HOOD COMBUSTION CHAMBER
10	ACLFV00P	PLATE FAN MOUNTING
11	ACPDY00P	MOUNTING PLATE RIGHT
12	ACPSX01P	MOUNTING PLATE LEFT
13	ACLAC00P	COMBUSTION CHAMBER FRONT MOUNTING PLATE LEFT
14	ACPAS25P	PLATE TOP SEALED CHAMBER (SOLAR C25)
14A	ACPAS32P	PLATE TOP SEALED CHAMBER (SOLAR C31)
15	ACOP7P2	COVER TOP SEALED CHAMBER
16	ACGSI03P	GASKET WINDOW SILICON 50,5x41x2
17	ACVTS01P	COMBUSTION CHAMBER WINDOW
18	ACFLG2P1	WINDOW FLANGE
19	ACPAI00P	PLATE BOTTOM COMBUSTION CHAMBER
20	ACRAM1P1	CONNECTOR PIPE EQUALIZING GAS VALVE
21	10031051	NUT HEXAGONAL ZINC. M5
22	ACTSI02P	TUBE SILICON \varnothing 4x7
23	ACNEO01P	SEAL NEOPRENE ADHESIVE 15x2
24	ACNEO02P	SEAL NEOPRENE ADHESIVE 15x3
25	ACGRI00P	PANEL BOTTOM
26	ACLMB0PR	BOILER CASING PAINTED (with hole for clock-programmer – only for U.K. market)
26	ACLMB0PR	BOILER CASING PAINTED (without hole for clock-programmer – except for U.K. market)
27	ACVIT01P	SCREW ST 4,2x9,5
28	10040655	SCREW ST 4,2x13

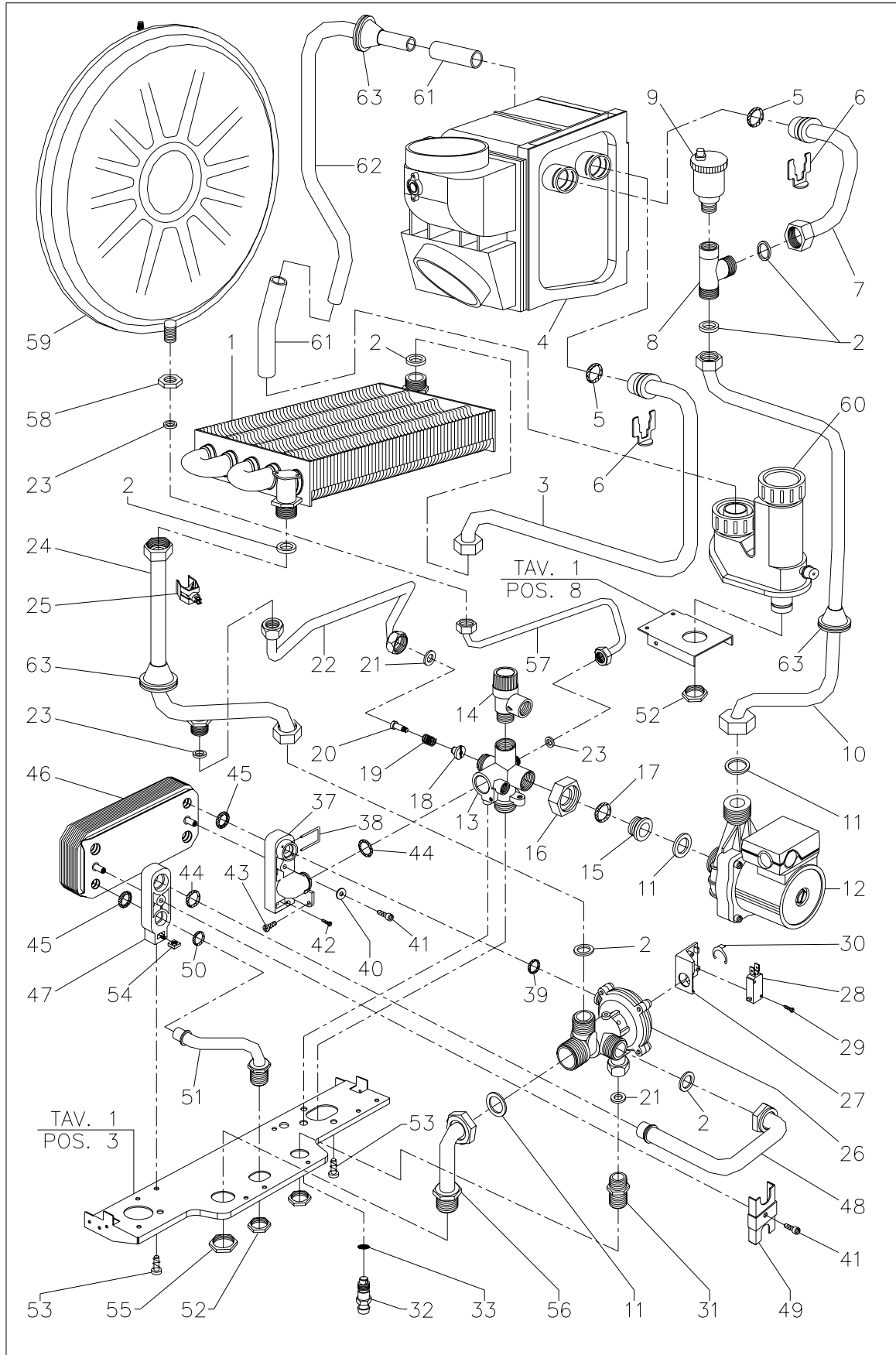
TAV 2



LIST TAV. 2

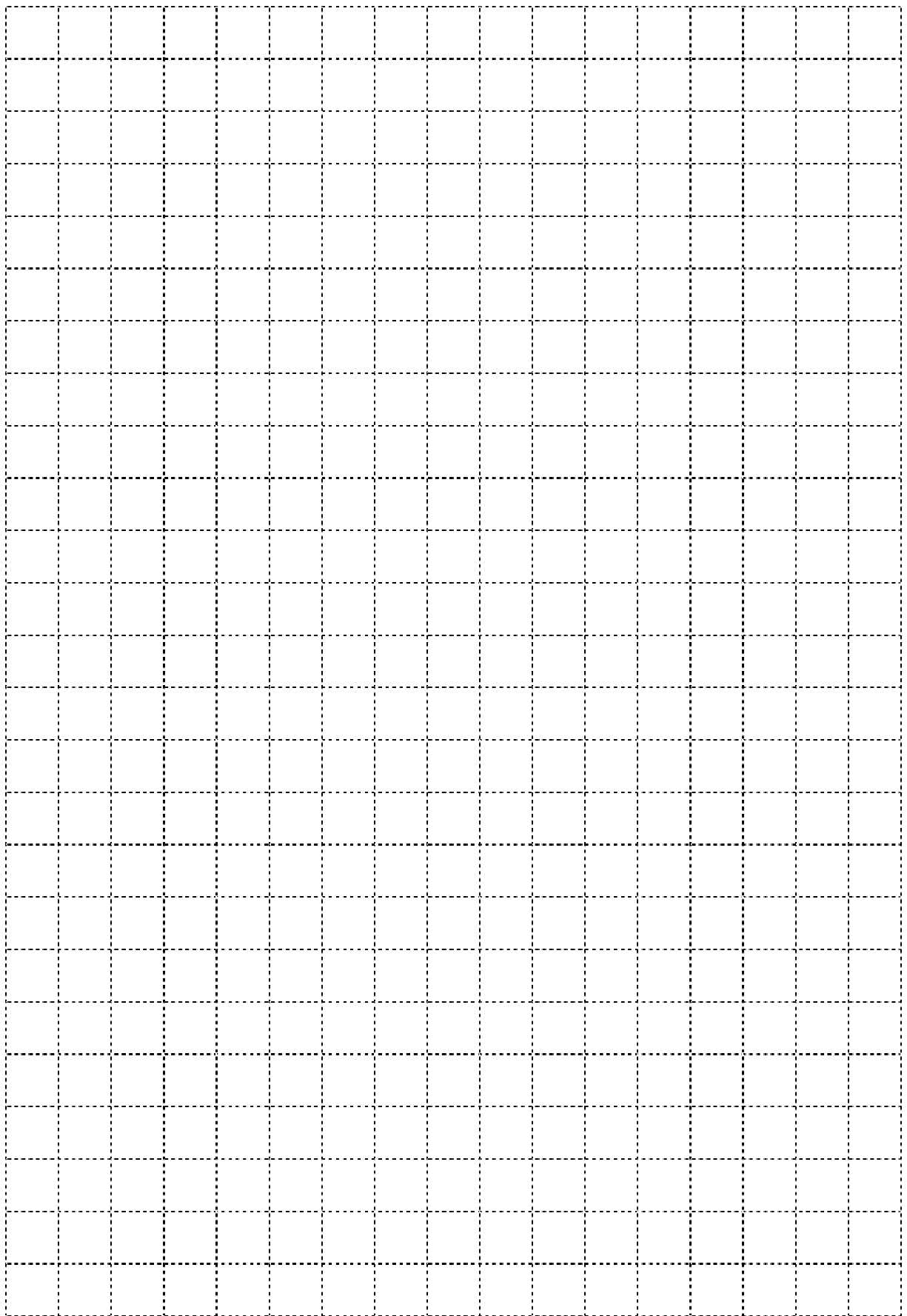
POS.	CODE	DESCRIPTION
1	ACBRUW6P	BURNER NG 13 JET SIZE 1,20 (SOLAR C25)
1A	ACBRUW10	BURNER LPG 13 JET SIZE 0,72 (SOLAR C25)
1B	ACBRUW8P	BURNER NG 13 JET SIZE 1,30 (SOLAR C31)
1C	ACBRUW9P	BURNER LPG 13 JET SIZE 0,80 (SOLAR C31)
2	ACGUG00P	GASKET JET
3	ACUGE20P	JET NG 1.20 (SOLAR C25)
3A	ACUGE72P	JET LPG 0.72 (SOLAR C25)
3B	ACUGE30P	JET NG 1,30 (SOLAR C31)
3C	ACUGE80P	JET LPG 0,80 (SOLAR C31)
4	18050045	GASKET 1/2"X2mm
5	ACTUB17P	PIPE ø14mm GAS VALVE - BURNER
6	ACPSI03P	SEAL SILICON ø8 x 28
7	50000820	GASKET 3/4" X2mm
8	ACVAL02P	GAS VALVE "845 SIGMA"
9	ACVIT12P	SCREW M4x6
10	ACELE03P	ELECTRODE IGNITION & FLAME RECOGNITION
11	ACCAV4P1	CABLE ELECTRODE (WITH SUPPRESSOR RESISTOR)
12	ACCHI01P	UPPER COVER REAR CONTROL PANEL
13	ACCHI90P	LOWER COVER REAR CONTROL PANEL
14	ACSCH00P	PC BOARD WITH DISPLAY
15	ACCRU00P	CONTROL PANEL
16	ACPUL00P	BUTTON CONTROL PANEL
17	ACFUS01P	FUSE 2A 5x20
18	ACSFC00P	CABLE SUPPORT
19	ACANE00P	CONTROL PANEL RING
20	ACPRN00P	CONTROL PANEL LAMP
21	ACSSC00P	MANUAL PRESSURE GAUGE RETAINING BRACKET
22	ACTDS00P	PRESSURE GAUGE
23	ACICC01P	INSULATION FRONT & REAR 288x217x10
24	ACICC02P	INSULATION ON SIDE 169x198x10
25	ACTER01P	THERMOSTAT OVER HEAT KLIXON 105°C
26	ACORI09P	O-RING R9 (10,5 x 2,7) EP 851 FOR CLIXON KLIXON
27	ACGSI01P	FLEXIBLE COLLAR FAN OUTLET
28	ACPRS01P	AIR PRESSURE SWITCH
29	10020500	TUBE SILICON ø5x9
30	ACVNT25P	FAN (SOLAR C25)
30A	ACVNT31P	FAN (SOLAR C31)
31	ACSBRO1P	BURNER SUPPORT
32	ACDAE05P	NUT HEXAGONAL M4
33	ACLPB00P	REAR BURNER PLATE
34	ACPSI01P	SEAL SILICON CONICAL ø14x21
35	ACVIT03P	SCREW 3,5x6,4
36	ACVIT01P	SCREW 4,2x9,5
37	ACVIT15P	SCREW. 3,5x13
38	ACVIT00P	SCREW 3x35
39	ACVIT93P	SCREW. 3,5x13
40	ACVIT13P	SCREW M3 x 6 UNI 7683
41	ACOTR00P	CLOCK-PROGRAMMER (only for U.K. market)

TAV. 3



LIST TAV. 3

POS.	CODE	DESCRIPTION
1	ACSCA10P	HEAT EXCHANGER 5 TUBES WATER/GAS
2	50000820	GASKET 3/4" X 2 mm
3	ACTUB11P	PIPE CONNECTION 18 mm HE-CONDENSER
4	ACSCAC0P	CONDENSER
4A	ACNEO00P	NEOPRENE STICK INSIDE CONDENSER
4B	ACLIC31P	INNER CONDENSER ALUMINIUM PLATE
5	ACORI13P	O RING R13 (16,9 x 2,7) EP851
6	ACMOL10P	SPRING RETAINING CONDENSER PIPE
7	ACTUB14P	CONNECTING PIPE 18 mm CONDENSER TO "T" CONNECTOR
8	ACRAC4P1	"T" CONNECTOR MALE 3/4"-3/4" FEMALE 1/2"
9	ACVAL04P	AUTOMATIC AIR VENT 1/2"
10	ACTUB10P	CONNECTING PIPE 18 mm "T" CONNECTOR TO PUMP
11	18050140	GASKET 1" X 2
12	ACCIR06P	PUMP m. 6 12H
13	ACFDR00P	PRESSURE RELIEF/PUMP MANIFOLD
14	ACVAL00P	PRESSURE AND RELIEF SAFET VALVE M-F 3 bar 1/2"
15	ACSUP10P	BRASS PUMP SUPPORT
16	ACGIR00P	UNION NUT
17	ACORI01P	O RING 18x2 mm EP851 PRESSURE RELIEF
18	ACBYP00P	BY - PASS VENT
19	ACMOL91P	BY - PASS SPRING
20	ACVIT90P	BRASS SCREW M3 BY - PASS
21	18050045	GASKET 1/2" x 2 mm
22	ACTUB13P	BY PASS PIPE Ø 10 mm
23	50000465	GASKET 3/8" X. 2 mm
24	ACTUB12P	PIPE Ø 18 mm HEAT EXCHANGER TO 3 WAYS VALVES
25	ACSON2P2	SENSORE + PIPE SECURING SPRING Ø 14 mm
26	ACVAL31P	HYDRAULIC VALVE
27	ACSTM31P	BRACKET
28	ACMIC1P1	MICROSWITCH - HYDRAULIC VALVE
29	10040401	SCREW 2.9 x 16
30	ACPIA1P1	SPRING/CLIP KL12
31	ACNIP01P	BRASS NIPPLE 1/2"
32	ACAST01P	DRAIN TAP"
33	ACORI02P	O RING DRAIN TAP 106
37	ACBRI00P	SPACING BLOCK RETURN
38	ACMOL00P	CLIP/SPRING HYDRAULIC VALVE
39	ACORI31P	O-RING R10 (12.1 x 2.7) EP851
40	ACROS00P	WASHER 5.3 x 14 x 1 UNI 1739
41	ACVIT02P	STAINLESS STEEL SOCKET HEAD SCREW M5 x 12
42	ACVIT91P	SCREW 2.9 x 13 UNI 6955
43	ACVIT04P	CROSS HEAD SCREW M4 x 10 UNI 7687
44	ACORI14P	O-RING R14 (18.4 x 2.7) EP851
45	ACORI3P1	O-RING R15 EP851 PLATE HEAT EXCHANGER
46	ACSCA00P	PLATE HEAT EXCHANGER 12 PLATES (SOLAR C25)
46A	ACSCA149	PLATE HEAT EXCHANGER 12 PLATES (SOLAR C31)
47	ACBMA00P	SPACING BLOCK FLOW
48	ACTUB93P	PIPE Ø 18 mm. FLOW TO HEAT EXCHANGER
49	ACLFT00P	PIPE FLANGE
50	ACORI11P	O-RING R11 (13,6 x 2,7) EP851
51	ACTUB94P	PIPE Ø 14 mm. FLOW DHW
52	ACCD A02P	LOCK NUT 1/2" KEY. 24
53	ACVIT06P	CROSS HEAD SCREW M6x10 UNI 7687
54	ACDAE06P	NUT M6 UNI 5596
55	ACCD A01P	LOCK NUT 3/4" KEY 30
56	ACTUB92P	PIPE Ø 18 mm FLOW HEATING CIRCUIT
57	ACTUB29P	CONNECTING PIPE Ø 18 mm. TO EXPANSION VESSEL
58	ACCD A03P	LOCK NUT 3/8 KEY 23
59	ACVES00P	EXPANSION VESSEL 7 LI TRES
60	ACSRC00P	SYPHON CONDENSATE CONTAINER
61	ACTVT00P	PVC CONDENSATE DRAIN TUBE Ø 16 mm X 22
62	ACTSS01P	ALLUMINIUM CONDENSATE DRAIN PIPE
63	ACPSI02P	CONICAL SEAL 14 x 38





DECLARATION OF CONFORMITY

The undersigned Emanuela Lucchini managing director of the ICI CALDAIE SPA. with registered office - Italy

declares

that the boilers
SOLAR C 25, SOLAR SYSTEM C 25
SOLAR C 31, SOLAR SYSTEM C 31

Manufactured by:

ICI CALDAIE SPA
Via Giovanni Pascoli, 38, 37059 Campagnola di Zevio (Verona) - ITALIA

Are produced in conformity with the following European Directive:

90/396/CEE (Gas Appliance Directive)
92/42/CEE (Useful output Directive)
73/23/CEE (Low Voltage Directive)
89/336/CEE (Electromagnetic noise Directive)
EN 677/2000 (Condensing Boiler Directive)

ICI CALDAIE S.p.A.
Direttore Generale
Emanuela Lucchini

A handwritten signature in black ink, appearing to read 'Emanuela Lucchini', is written over the printed name.



alta tecnologia del calore

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Pictures, descriptions and data are not binding on ICI CALDAIE Ltd.