

MANUFACTURERS



Instruction and IE  
warning book

# VICTRIX PRO EXPORT INSTALLATION IN CASCADE



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# 1 INSTALLATION RECOMMENDATIONS

For the correct installation of Victrix Pro Export boilers it is necessary to read the instructions and warnings booklets referring to the specific models (ex: Victrix Pro 35-55 Export and Victrix Pro 80-100-120 Export) as well as comply with the applicable technical legislation and pertaining standards.

This document integrates the instructions and warnings booklets for Victrix Pro models (35-55 Export and 80-100-120 Export), for the part referring to the cascade installation diagrams.

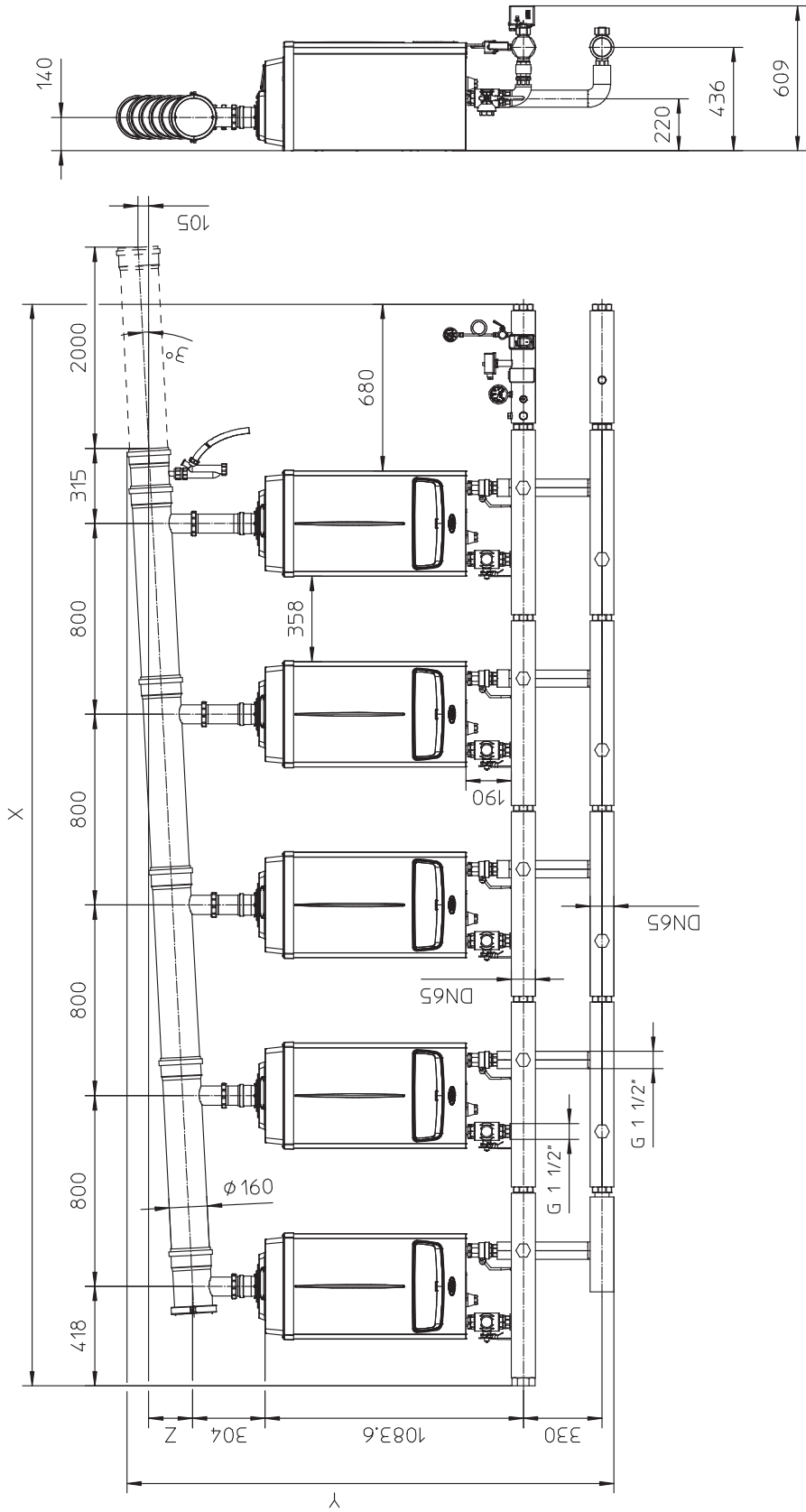
It is necessary to observe the hydraulic diagrams provided in point 4, as well as the indications regarding the maximum number of appliances that comprise the cascade.

## 1.1 FIRST START-UP.

To install boilers correctly in cascade, it is necessary to perform the following operations:

- Comply with the installation instructions for the specific boiler, as set forth in the instructions and warnings booklets furnished with the appliance.
- Choose a suitable location for installation.
- Ensure that ventilation in the room is set up according to the law.
- Install the flue systems correctly.
- Use the kits supplied by Immergas according to the instructions set forth herein and in the relative instructions sheets.
- Ensure that all of the safety devices are installed, according to the law, and refer to the installation diagrams provided, by way of example, in the following paragraphs.
- Ensure that the fuel check valve has the correct diameter and operating temperature of  $96\text{ }^{\circ}\text{C} \pm 3^{\circ}\text{C}$ .
- Set up the electrical connection of the boilers as shown in the relative electrical diagrams.
- Set the boiler address according to installation.
- Calibrate the number of fan revolutions, parameter "P26".
- Ensure that the boiler operating parameters are set correctly according to the boiler instructions manual.

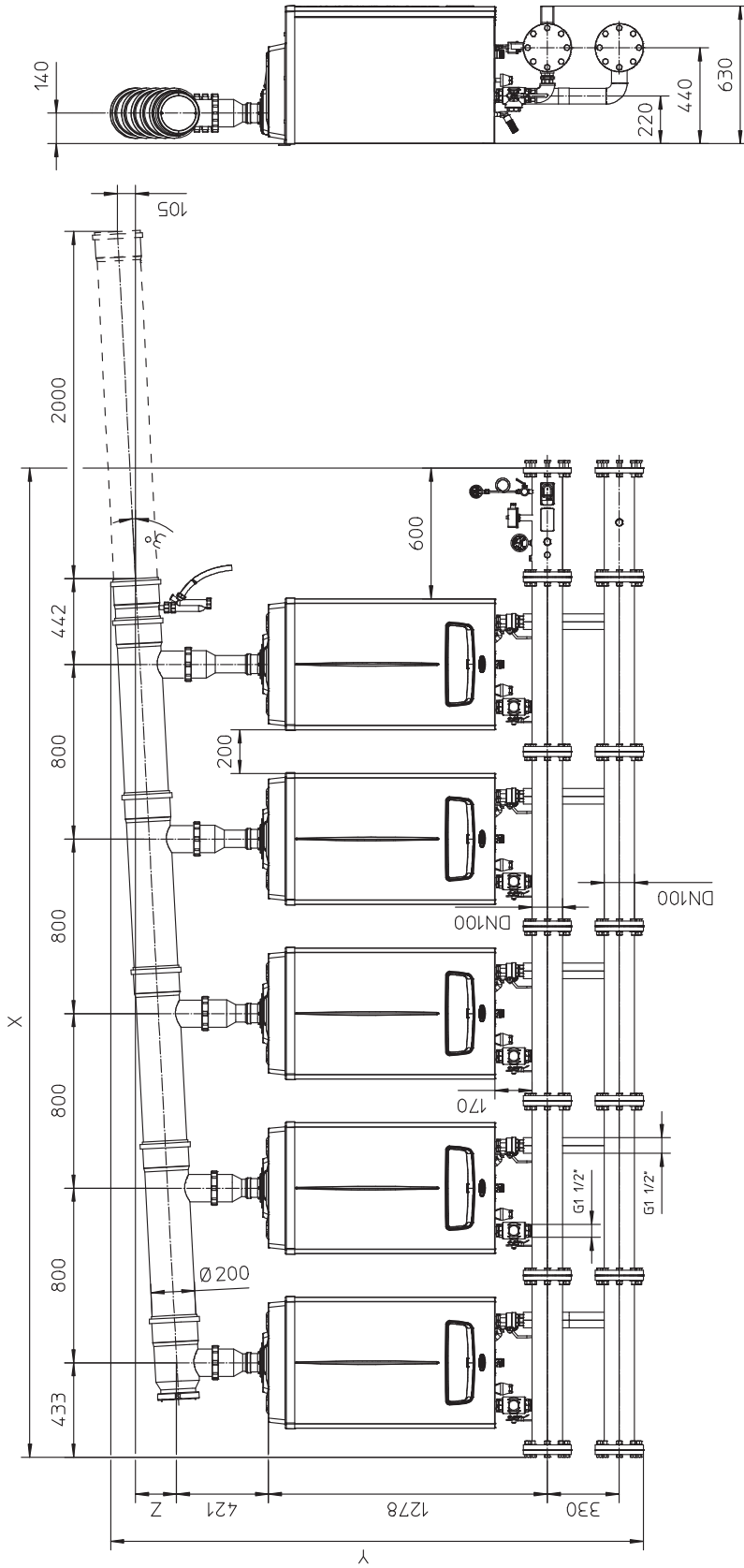
1.2 INSTALLATION CLEARANCES  
VICTRIX PRO 35-55 EXPORT.



Variable	No. of Boilers				
	2	3	4	5	
X	2120 mm	2920 mm	3720 mm	4520 mm	
Y	1919 mm	1960 mm	2001 mm	2042 mm	
Z	42 mm	84 mm	126 mm	168 mm	

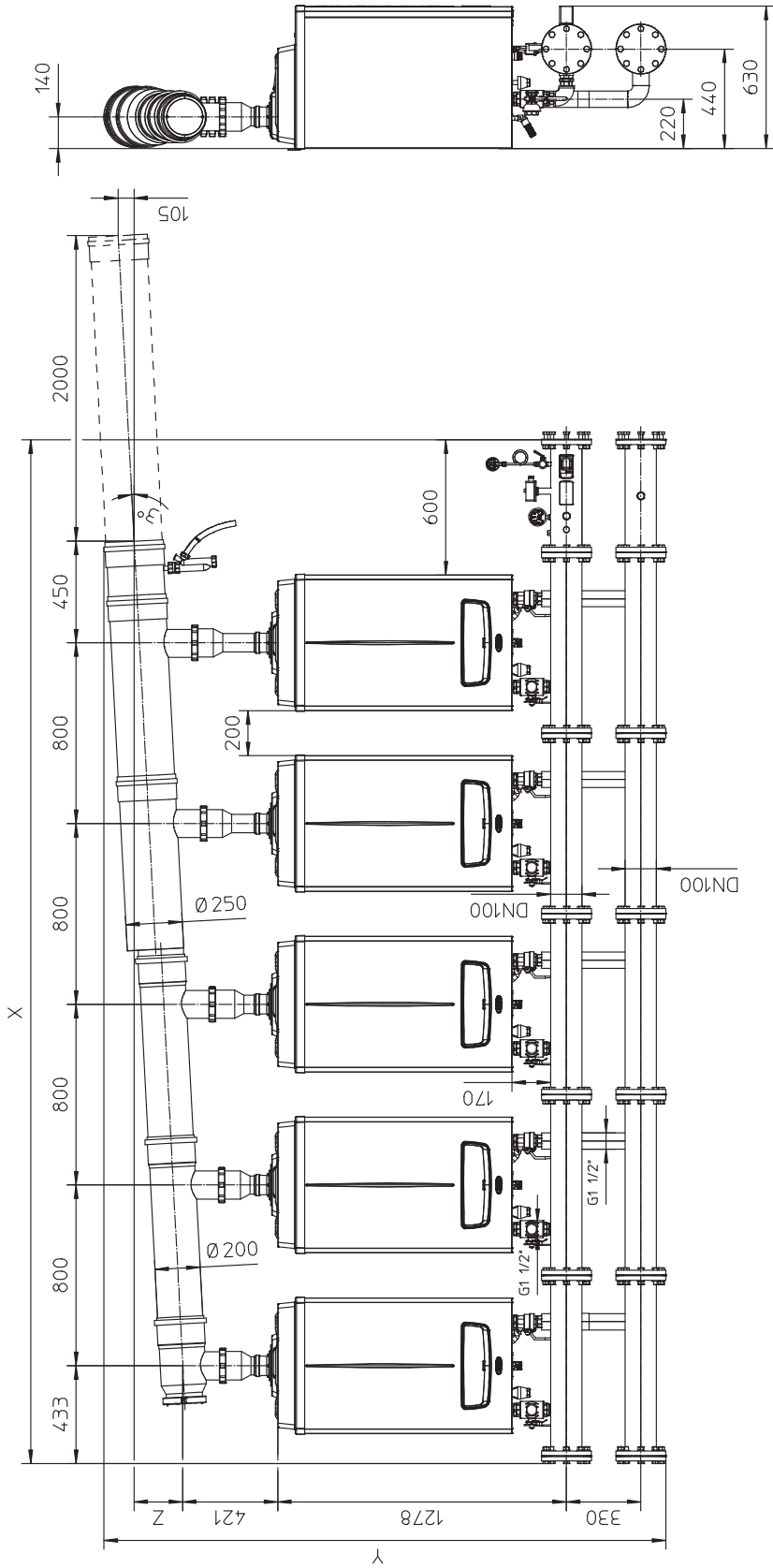
1-1

1.3 INSTALLATION CLEARANCES  
VICTRIX PRO 80 EXPORT.



Variable	No. of Boilers				
	2	3	4	5	
X	2133 mm	2933 mm	3733 mm	4533 mm	
Y	2316 mm	2358 mm	2400 mm	2442 mm	
Z	62 mm	104 mm	146 mm	188 mm	

1.4 INSTALLATION CLEARANCES  
VICTRIX PRO 100-120 EXPORT.



Variable	No. of Boilers				
	2	3	4	5	
X	2133 mm	2933 mm	3733 mm	4533 mm	
Y	2316 mm	2358 mm	2446 mm	2488 mm	
Z	62 mm	104 mm	173 mm	215 mm	

## 2 DEFINITION OF CASCADE

Victrix Pro Export boilers are set up for installation in homogeneous cascade, and it is therefore possible to place between 2 and 5 boilers of the same output, in cascade.

Also, based on the installed output, it is necessary to correctly install the flue system.

The following tables provide the parameters to correctly set up the boilers and flue system.

Victrix Pro 35 Export

	2 Victrix Pro 35 Export	3 Victrix Pro 35 Export	4 Victrix Pro 35 Export	5 Victrix Pro 35 Export
Nominal heat input (kW)	69.8	104.7	139.6	174.5
Flue diameter (mm)	Ø 160			
Residual head at the ends of the cascade (Pa)	11.4	9	6	3
Parameter "P26" Min Fan Speed (rpm)	1300			

Victrix Pro 55 Export

	2 Victrix Pro 55 Export	3 Victrix Pro 55 Export	4 Victrix Pro 55 Export	5 Victrix Pro 55 Export
Nominal heat input (kW)	102.6	153.9	205.2	256.5
Flue diameter (mm)	Ø 160			
Residual head at the ends of the cascade (Pa)	24	20	15	5
Parameter "P26" Min Fan Speed (rpm)	1500			

Victrix Pro 80 Export

	2 Victrix Pro 80 Export	3 Victrix Pro 80 Export	4 Victrix Pro 80 Export	5 Victrix Pro 80 Export
Nominal heat input (kW)	150.6	225.9	301.2	376.5
Flue diameter (mm)	Ø 200			
Residual head at the ends of the cascade (Pa)	19	17	11	5
Parameter "P26" Min Fan Speed (rpm)	1450			

Victrix Pro 100 Export

	2 Victrix Pro 100 Export	3 Victrix Pro 100 Export	4 Victrix Pro 100 Export	5 Victrix Pro 100 Export
Nominal heat input (kW)	184.6	276.9	369.2	461.5
Flue diameter (mm)	Ø 200	Ø 200	Ø 250	Ø 250
Residual head at the ends of the cascade (Pa)	14	12	6	3
Parameter "P26" Min Fan Speed (rpm)	1400			

Victrix Pro 120 Export

	2 Victrix Pro 120 Export	3 Victrix Pro 120 Export	4 Victrix Pro 120 Export	5 Victrix Pro 120 Export
Nominal heat input (kW)	228.2	342.3	456.4	570.5
Flue diameter (mm)	Ø 200	Ø 200	Ø 250	Ø 250
Residual head at the ends of the cascade (Pa)	19	15	9.5	5
Parameter "P26" Min Fan Speed (rpm)	1550			

**Attention:** for any missing data referring to the individual boiler model, and in terms of all of the operations that need to be carried out on the boiler control panel, refer to the relative instructions booklet.

**N.B.:** the residual head includes 2 metres of flue system at the end of the cascade. The chimney/ducted pipe which collects the flue gas coming from the flue manifold, is sized under pressure or vacuum. If you wish to operate with a pressurised chimney/ducted pipe, the value of the residual head at the ends of the cascade - set forth in the table - represents the maximum head loss that

the flue system must have to guarantee correct operation of all generators, in the various operating conditions.

# 3 FLUE INSTALLATION

## 3.1 INSTALLATION RECOMMENDATIONS.

For correct assembly of the kit, the following indications must be considered:

- the boilers must be positioned on the same horizontal line;
- the exhaust manifold must have a minimum inclination of 3°;
- the drain for the condensation water produced by the appliances must flow out according to the legislation in force, based on the installed output;

**N.B.:** check and if necessary regulate the heating capacity of each individual appliance (see heat output regulations par. in the boiler instructions manual).

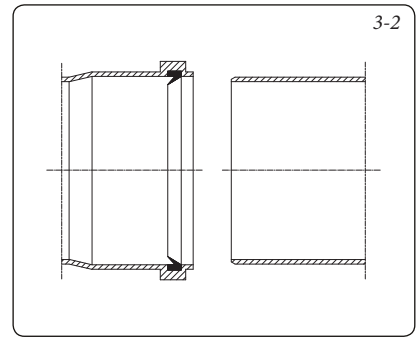
**N.B.:** before mounting it, ensure that the gaskets are in the correct position (see Fig. 2) and lubricate them with the paste supplied with the kit.

**Condensate drain.** To drain the condensate produced by the appliance, it is necessary to connect it by acid condensate-resistant pipes, using the drain trap (8). The connection must be set up so as to prevent the liquid in it from freezing. Before appliance start-up, ensure that the condensate can be correctly removed. Also, comply with national and local regulations on discharging waste waters.

**N.B.:** the “green series” manifold cannot be installed externally without suitable protection against UV rays and other effects of the weather.

## 3.2 FLUE EXHAUST MANIFOLD KIT ASSEMBLY.

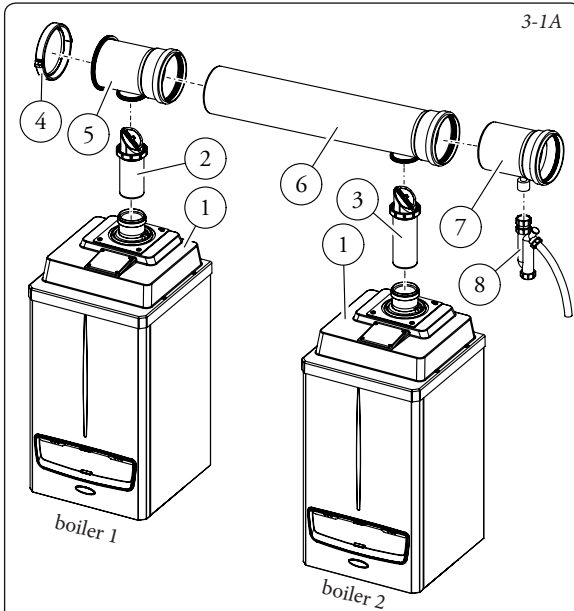
Install the stub pipes with flue adjusting devices (2) and (3) on the flanges of each individual boiler (1), all the way, being sure to adjust the direction of the clapet valve correctly.



Connect the manifold of the first boiler (5) to the relative stub pipe (2), and then couple the boiler connection manifold (6) to the manifold (5) and secure it to the stub pipe (3) by the relative ring nut.

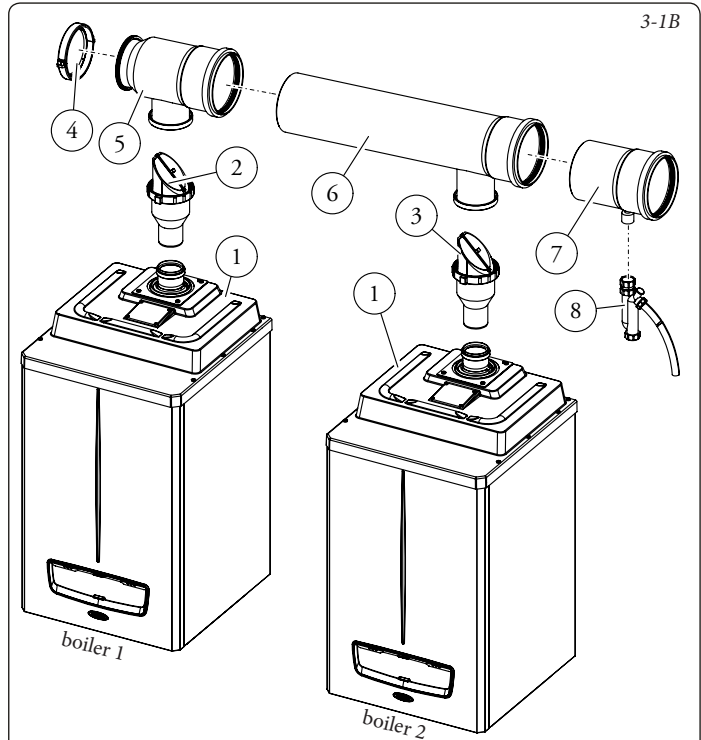
Connect the manifold with condensate drain (7) to the manifold (6).

Now connect the condensate drain trap (8).



**Composition of flue exhaust manifold kit Ø 160 for Victrix Pro 35-55 Export:**

Ref.	Qty	Description
2	1	Vertical stud pipe with clapet valve for first boiler connection Ø 80
3	1	Vertical stud pipe with clapet valve for second boiler connection Ø 80
4	1	Smoke duct closing cap Ø 160
5	1	First boiler connection manifold Ø 160
6	1	Second boiler connection manifold Ø 160
7	1	Manifold with condensate drain Ø 160
8	1	Condensate drain trap



**Composition of flue exhaust manifold kit Ø 200 for Victrix Pro 80-100-120 Export:**

Ref.	Qty	Description
2	1	Vertical stud pipe with clapet valve for first boiler connection Ø 125
3	1	Vertical stud pipe with clapet valve for second boiler connection Ø 125
4	1	Smoke duct closing cap Ø 200
5	1	First boiler connection manifold Ø 200
6	1	Second boiler connection manifold Ø 200
7	1	Manifold with condensate drain Ø 200
8	1	Condensate drain trap



**3.3 ASSEMBLY OF ADDITIONAL BOILER MANIFOLD KIT FOR VICTRIX PRO 35-55 EXPORT AND 80 EXPORT.**

The extension kit makes it possible to complete cascade installation, and you must have one for each boiler being connected (max of 5 boilers

in cascade).

Cut the stud pipes (10) as shown in the figure, based on boiler position.

Then, couple the stud pipes (10) to the boiler (1), all the way on, being sure to adjust the direction

of the clapet valve correctly.

Connect the additional boiler manifolds (9) to the relative stud pipes (10).

Connect the manifold with condensate drain (7) to the manifold (9).

Now connect the condensate drain trap (8).

3-3A

**Composition of additional boiler manifold kit Ø 160 for Victrix Pro 35-55 Export:**

Ref.	Qty	Description
9	1	Additional boiler connection manifold
10	1	Vertical stud pipe with clapet valve for additional boiler connection

3-3B

**Composition of additional boiler manifold kit Ø 200 for Victrix Pro 80 Export:**

Ref.	Qty	Description
9	1	Additional boiler connection manifold Ø 200
10	1	Vertical stud pipe with clapet valve for additional boiler connection Ø 125

**3.4 ASSEMBLY OF ADDITIONAL BOILER MANIFOLD KIT FOR VICTRIX PRO 100-120 EXPORT.**

The extension kits make it possible to complete cascade installation, and you must have one for each boiler being connected, according to figure 3-3C (max of 5 boilers in cascade).

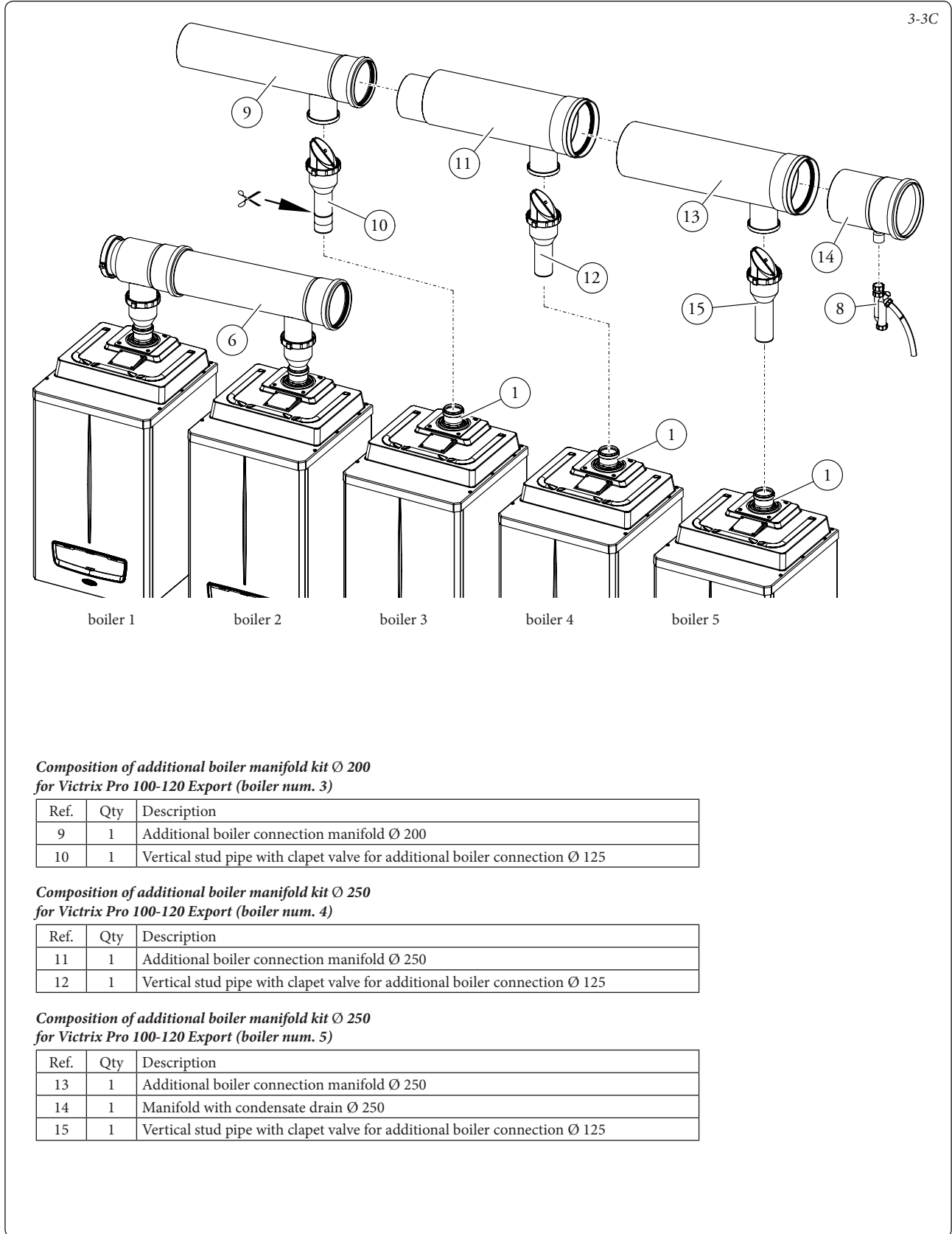
Cut the stud pipe (10) as shown in figure. Then, couple the stud pipe (10) to the boiler (1), all the way on, being sure to adjust the direction of the clapet valve correctly.

Then, couple stud pipes (12) and (15) being sure to adjust the direction of the clapet valve correctly.

Connect the additional boiler manifolds (9, 11 and 13) to the relative stud pipes (10, 12 and 15).

Connect the manifold with condensate drain (14) to the manifold (13).

Now connect the condensate drain trap (8).



**Composition of additional boiler manifold kit Ø 200 for Victrix Pro 100-120 Export (boiler num. 3)**

Ref.	Qty	Description
9	1	Additional boiler connection manifold Ø 200
10	1	Vertical stud pipe with clapet valve for additional boiler connection Ø 125

**Composition of additional boiler manifold kit Ø 250 for Victrix Pro 100-120 Export (boiler num. 4)**

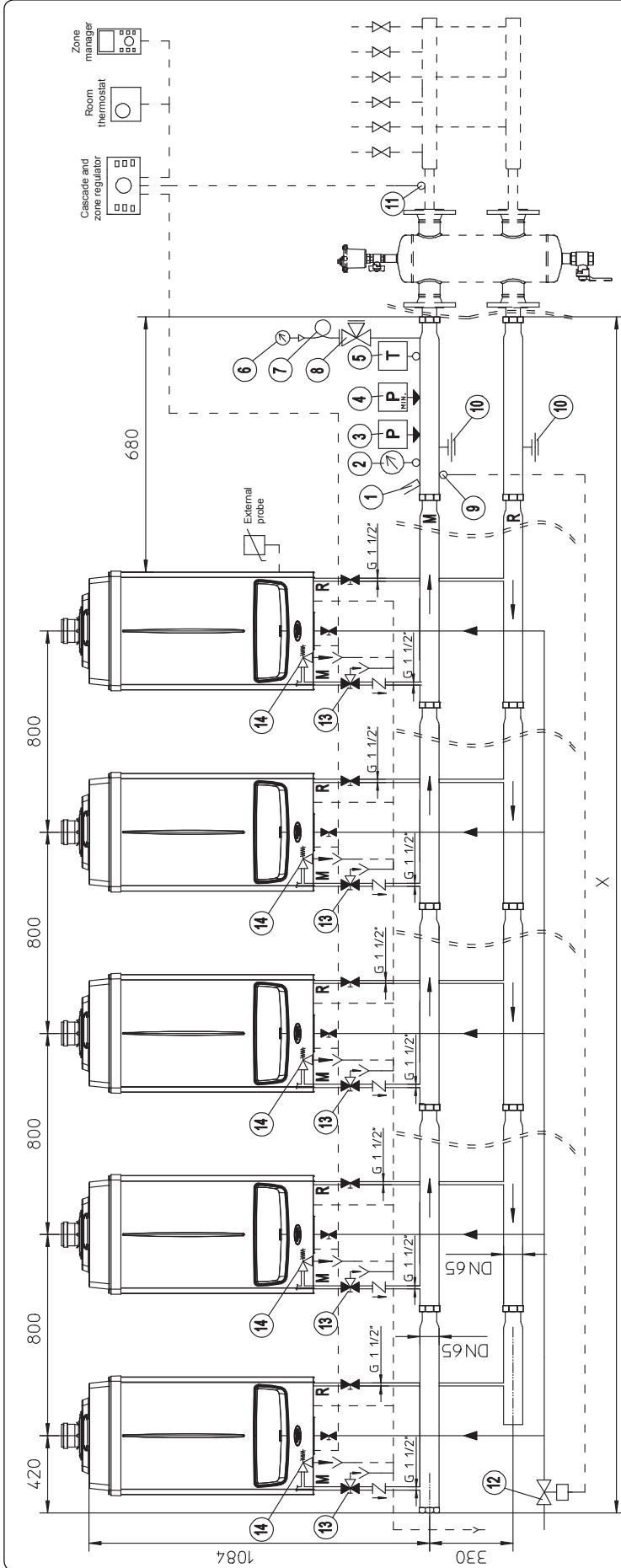
Ref.	Qty	Description
11	1	Additional boiler connection manifold Ø 250
12	1	Vertical stud pipe with clapet valve for additional boiler connection Ø 125

**Composition of additional boiler manifold kit Ø 250 for Victrix Pro 100-120 Export (boiler num. 5)**

Ref.	Qty	Description
13	1	Additional boiler connection manifold Ø 250
14	1	Manifold with condensate drain Ø 250
15	1	Vertical stud pipe with clapet valve for additional boiler connection Ø 125

# 4 INSTALLATION DIAGRAMS

## 4.1 DIAGRAM FOR VICTRIX PRO 35-55 EXPORT VERSION.



Installation diagram  
Wall-mounted boilers in cascade for up to 5 boilers in line or back-to-back.

Brand: IMMERGAS

Series: VICTRIX PRO Export

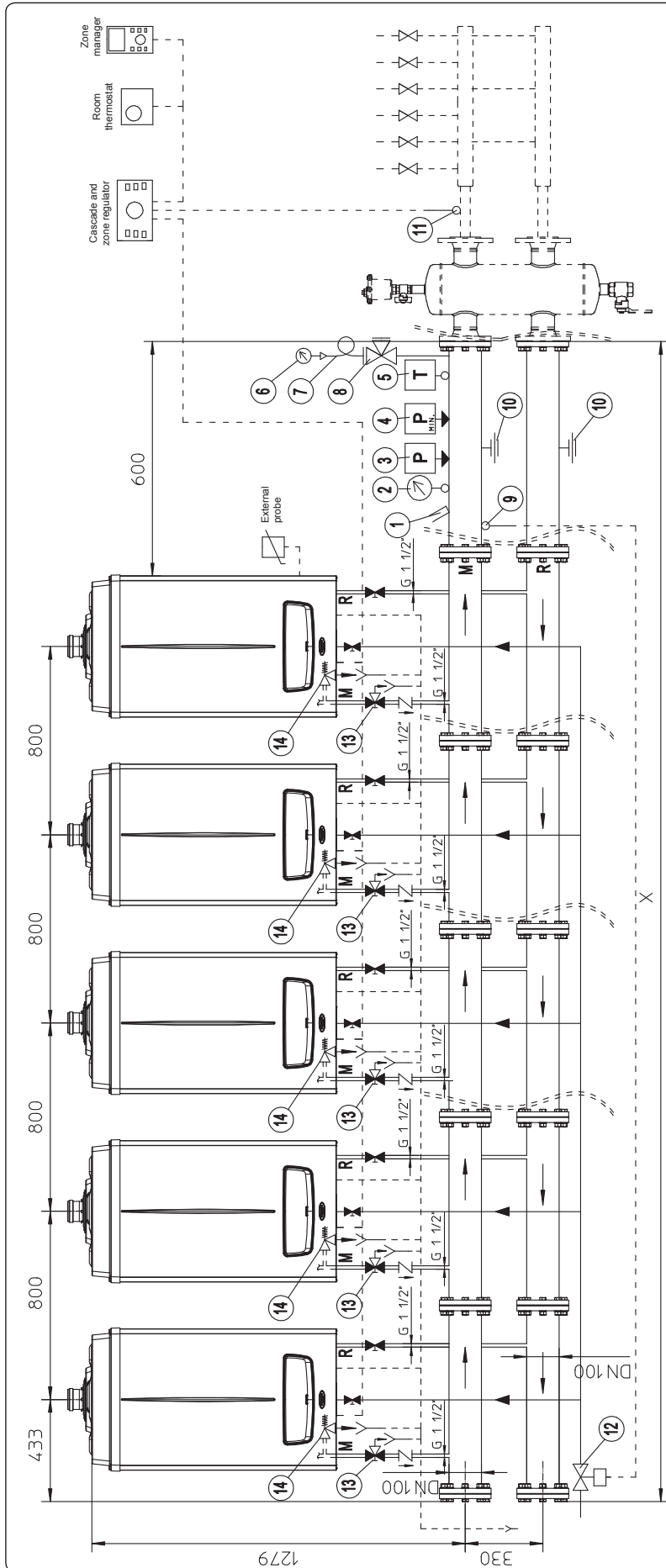
- Key:
- 1 - Manometer pocket
  - 2 - Thermometer
  - 3 - Manual reset pressure switch
  - 4 - Manual reset minimum pressure switch
  - 5 - Manual reset thermostat
  - 6 - Radial manometer
  - 7 - Damper coil
  - 8 - Manometer-holder cock
  - 9 - Probe for fuel shut-off valve bulb
  - 10 - Attachment for expansion vessel
  - 11 - Common flow probe
  - 12 - Fuel shut-off valve
  - 13 - 3-way ball valve
  - 14 - 4 bar safety valve

Num. of boilers	Value of "X" (mm)
2	2120
3	2920
4	3720
5	4520

Model	Boiler output (kW)	Minimum num. boilers	Maximum num. boilers	Minimum overall heat output (kW)	Maximum overall heat output (kW)
Victrix Pro 35 Export	34.0	2	5	68.0	170.0
Victrix Pro 55 Export	49.9	2	5	99.8	249.5

4-1

4.2 DIAGRAM FOR VICTRIX PRO 80-100-120 EXPORT.



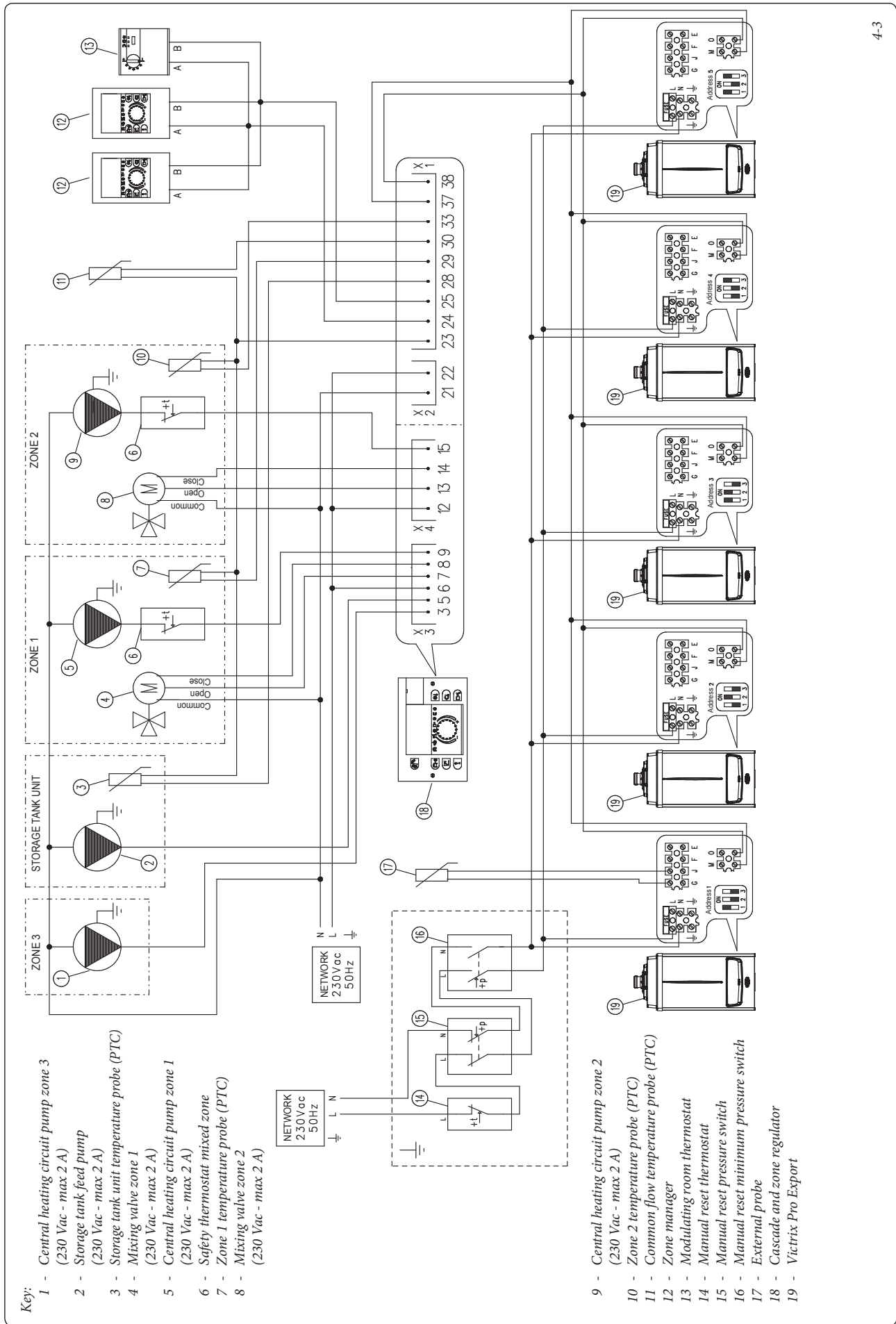
Installation diagram  
Wall-mounted boilers in cascade for up to 5 boilers in line or back-to-back.

Brand: IMMERGAS  
Series: VICTRIX PRO Export

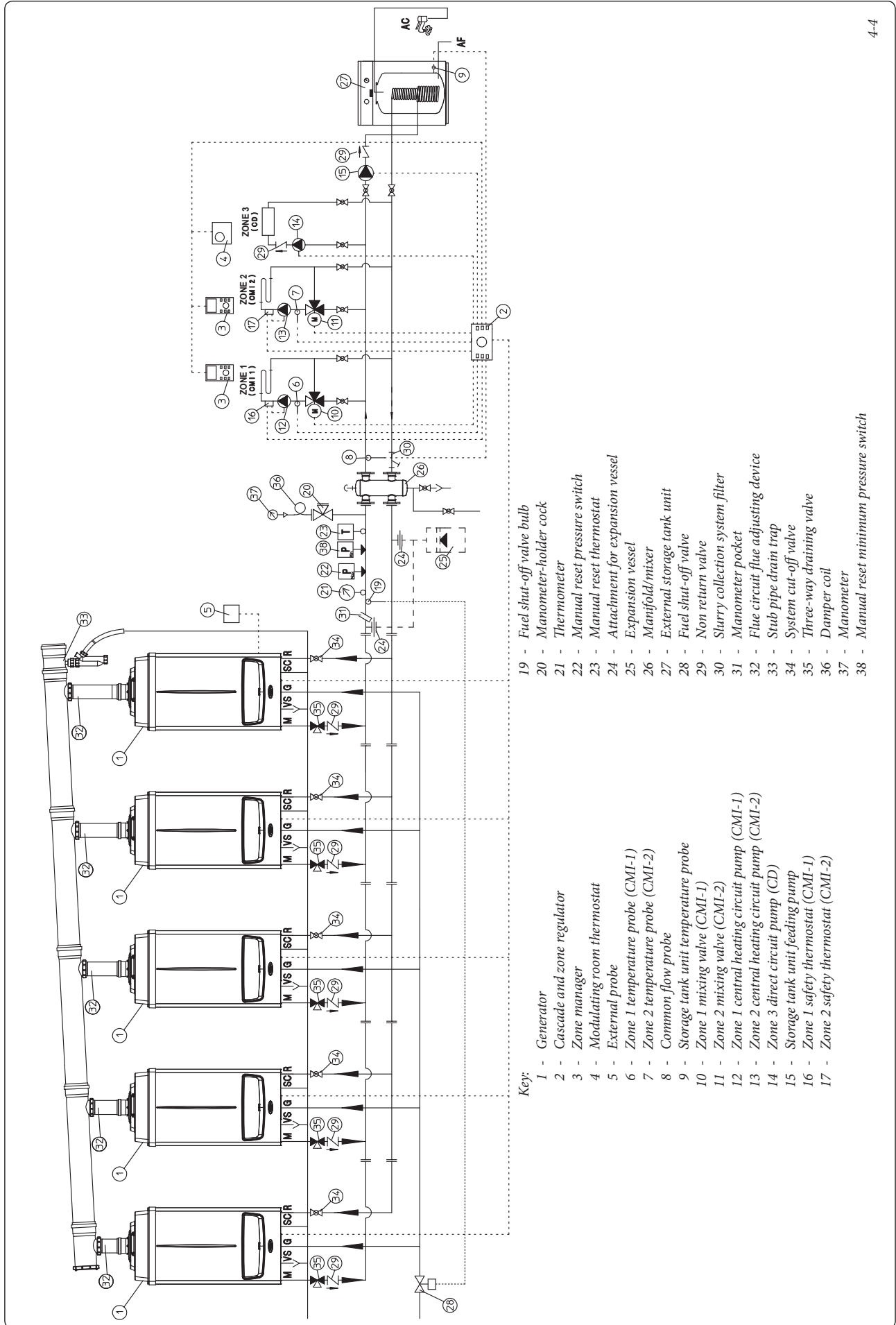
- Key:
- 1 - Manometer pocket
  - 2 - Thermometer
  - 3 - Manual reset pressure switch
  - 4 - Manual reset minimum pressure switch
  - 5 - Manual reset thermostat
  - 6 - Radial manometer
  - 7 - Damper coil
  - 8 - Manometer-holder cock
  - 9 - Probe for fuel shut-off valve bulb
  - 10 - Attachment for expansion vessel
  - 11 - Common flow probe
  - 12 - Fuel shut-off valve
  - 13 - 3-way ball valve
  - 14 - 4 bar safety valve

Num. of boilers	Value of "X" (mm)
2	2133
3	2933
4	3733
5	4533

Model	Power output (kW)	Minimum num. boilers	Maximum num. boilers	Minimum overall heat output (kW)	Maximum overall heat output (kW)
Victrix Pro 80 Export	73.0	2	5	146.0	365.0
Victrix Pro 100 Export	90.0	2	5	180.0	450.0
Victrix Pro 120 Export	111.0	2	5	222.0	555.0



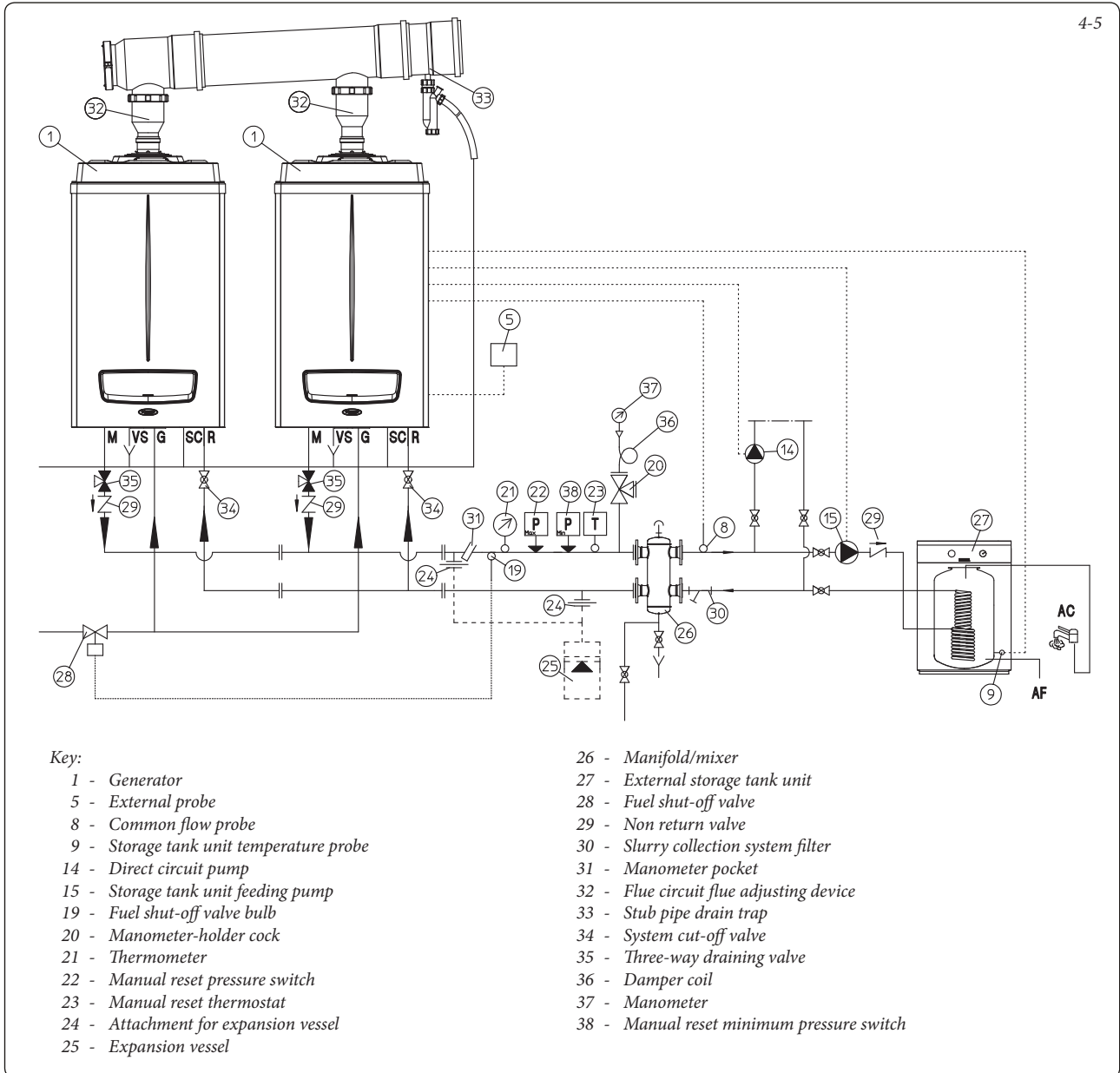
4.4 INSTALLATION EXAMPLES OF BOILER IN CASCADE.



**4.5 INSTALLATION EXAMPLES OF  
VICTRIX PRO EXPORT IN SIMPLE  
CASCADE.**

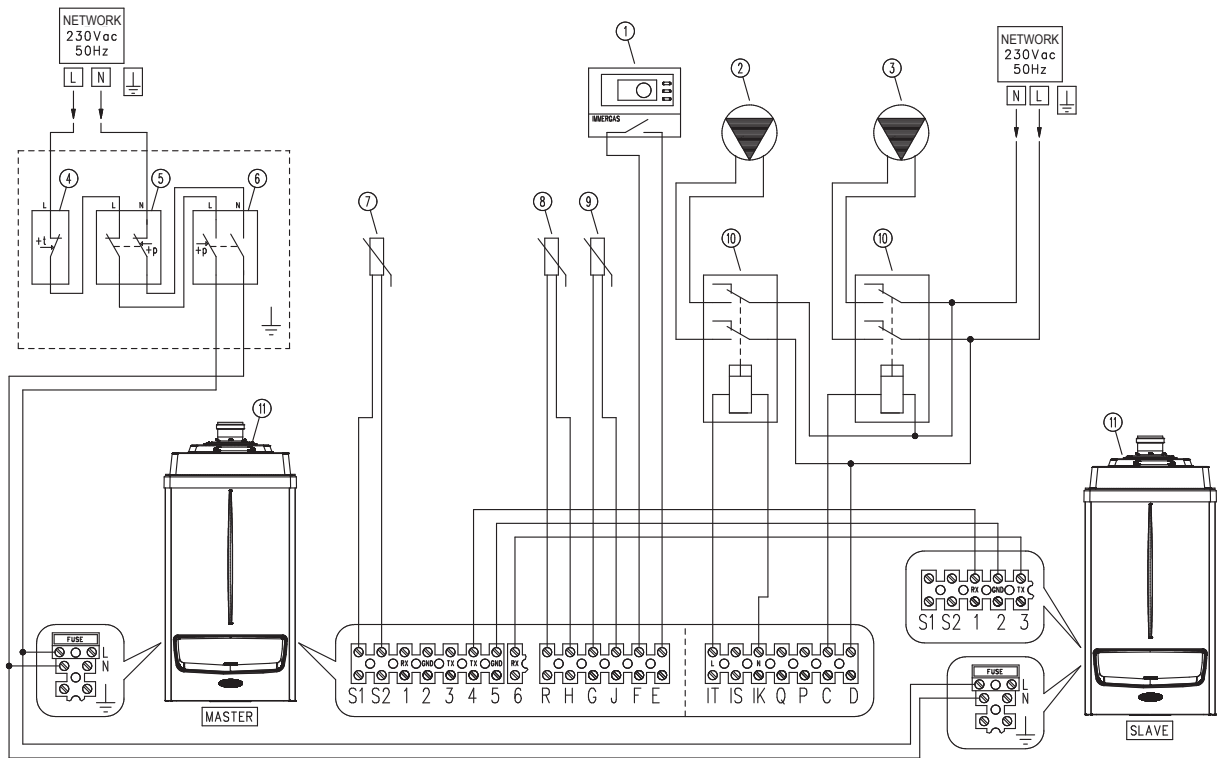
requirements. Set up the connection as shown in the diagram below and configure the boilers according to their instructions manuals.

By directly electrically connecting two boilers (max 2 boilers with the same output), it is possible to create a "simple cascade". The two boilers turn on alternatively based on the plant's



**4.6 ELECTRICAL DIAGRAM FOR  
VICTRIX PRO EXPORT IN SIMPLE  
CASCADE WITH DOMESTIC HOT  
WATER.**

4-6



**Key:**

- 1 - On / Off Room thermostat
- 2 - Storage tank unit feeding pump (230 Vac)
- 3 - Heating circuit pump (230 Vac)
- 4 - Manual reset thermostat
- 5 - Manual reset pressure switch
- 6 - Manual reset minimum pressure switch
- 7 - External probe (NTC)
- 8 - Storage tank unit temperature probe (NTC)
- 9 - Common flow temperature probe
- 10 - External relay (230 Vac)
- 11 - Boiler

On the BUS connection (1 ÷ 6 terminals): cable diameter 3 ÷ 7 mm, cable section 0.5 ÷ 1.5 sqmm, maximum length 3 m.

The probes (ref. 7 ÷ 9) must be connected to the master boiler, cable diameter 3 ÷ 7 mm, cable section 0.5 ÷ 1.5 mmq.

Terminals "IT" and "IK" max voltage of 230 Vac and max current of 1A.

Terminals "C" and "D" dry contact with max voltage of 230 Vac max current of 1 A.



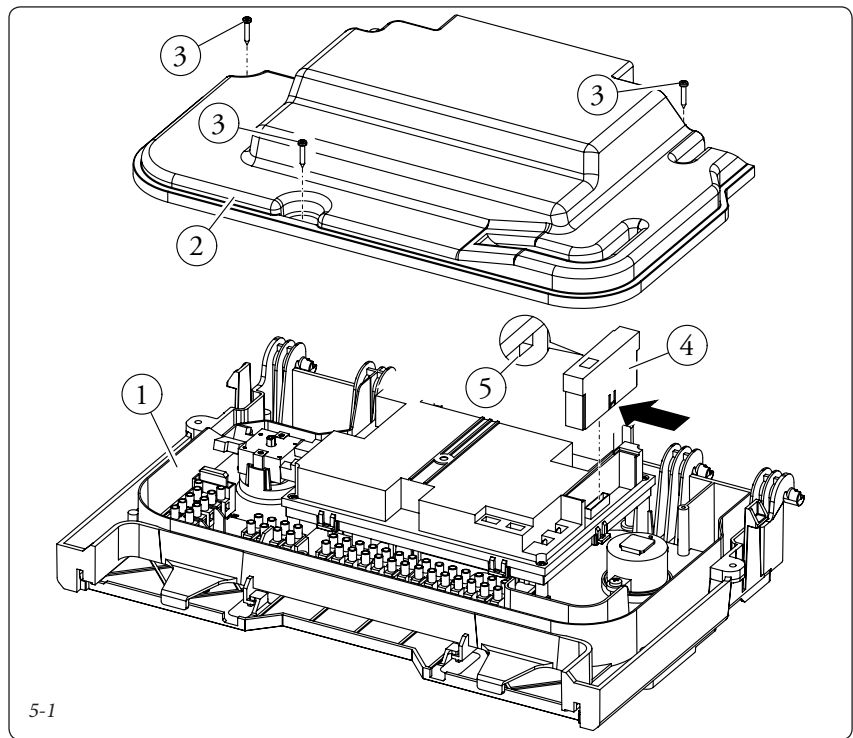
## 5 SETTING THE BOILER ADDRESS.

Once the electrical connection has been carried out, the address needs to be set on the communication board (4) of each single boiler by setting the address according to the following indications.

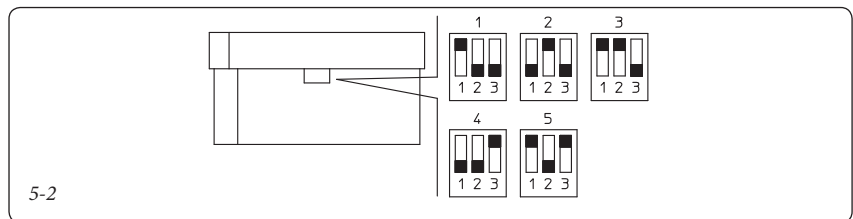
Open the boiler control panel (1) (ensuring that power to the boiler has been disconnected first), by unscrewing screws (3) and opening the cover (2).

Remove the communication board (4), by pressing on the clip to release it from its seat.

The switches (5) used to set the boiler addresses are on the opposite side (Fig. 5-2).



5-1



5-2





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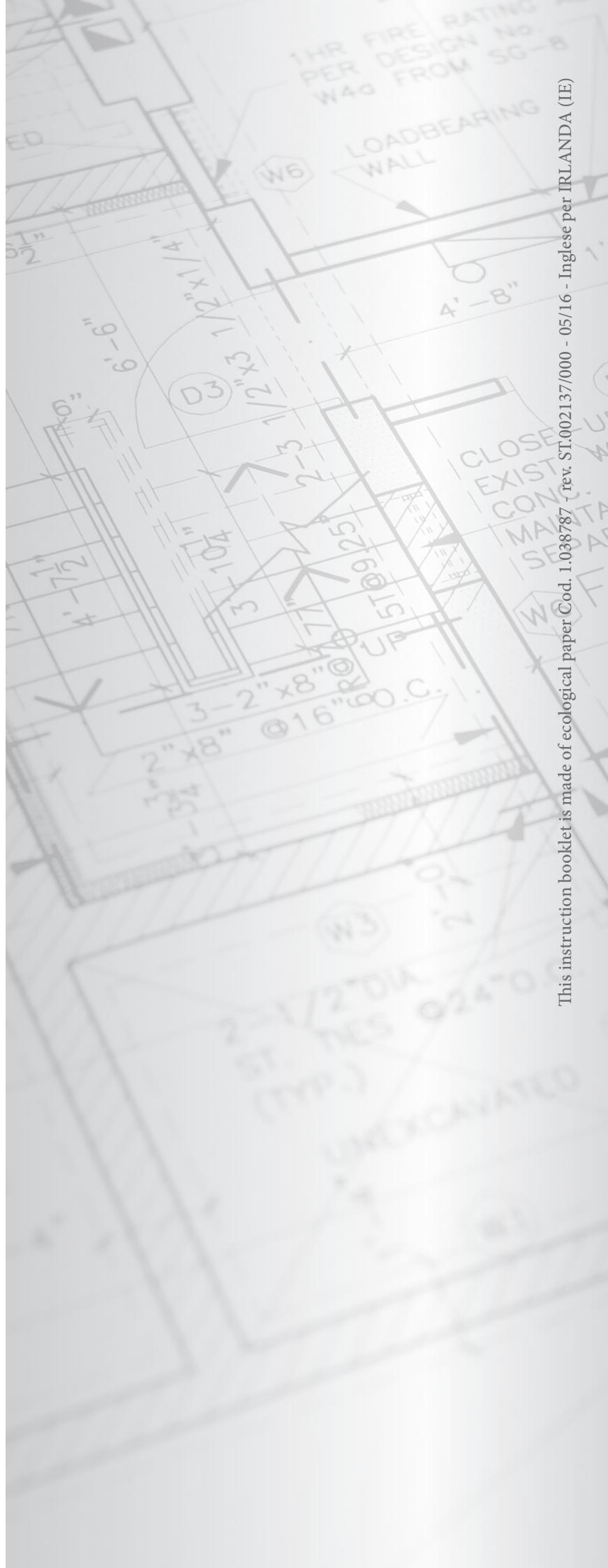
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