



VICTRIX 50

Wall mounted condensing boilers



VICTRIX 50 is the new wall-mounted central heating condensing boiler. It is pre-arranged for single and cascade operation (up to 3 appliances connected), with the advantage of providing a higher efficiency at lower running costs as condensing technology allows by itself a remarkable high efficiency rating. VICTRIX 50's high output is ideal for single home system and large living areas (single houses, small condominiums and apartment blocks) and for commercial and industrial uses. If a single boiler is installed, an external three-way valve can be connected so as to use it with a separate water tank supplying domestic hot water. A hydraulic manifold can also be connected to boost the circulation in the system, thus making it more versatile and quick to install. When cascade operation is required, several distribution manifolds can be connected by means of threaded ended pipes. The special environmentally friendly conceived burner ensures low pollution emissions (VICTRIX 50 is rated class 5 among the most environmentally friendly boilers as of current European standards).

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SPECIFICATIONS

50 kW (43,000 kcal/h) wall-mounted premixed condensing boiler with open chamber forced draught or sealed chamber forced draught, high efficiency and forced circulation.

Approved for installation in both heating plants and outside of buildings.

Can be used in two configurations:

Open chamber and forced draught (appliance type B₂₃/B₃₃)

- The Boiler is factory assembled in such configuration and does not need any additional kit for such arrangement.

Sealed chamber and forced draught (appliance type C₁₃/C₃₃/C₆₃)

- Installation with vertical or horizontal concentric kits.

The generator consists of:

- fully premix combustion system with stainless steel multi-gas burner, ignition and ionization flame sensing electrodes;
- pneumatic gas valve with double shutter;
- stainless steel primary gas/water exchanger;
- metal sheet combustion chamber, equipped with ceramic side insulation panels;
- flue gas exhaust fan with electronically controlled variable speed;
- condensation disposal circuit including siphon and flexible drain hose;
- hydraulics including: delivery manifold, primary circuit pressure switch, circulation pump with automatic air vent;
- 4 bar safety valve (ISPESL approved), central heating pressure gauge and exhaust funnel;
- over-heating safety thermostat;
- electronics with microprocessor equipped control panel and central heating P.I.D. monitoring flame modulation device modulation range: 10.0 to 50.0 kW - 8,600 to 43,000 kcal/h);

- system delivery probe;
- system return probe;
- delivery temperature factory set within 20 to 85°C;
- CH ignition delay system, antifreeze protection, pump anti-blocking system, chimney-sweep function;
- the boiler operating parameters can be entered and adjusted by means of keys while the status and operating modes are shown on a 4-digit display;
- self diagnostic system with temperature, operation status and error codes digital display;
- IPX5D electrical insulation rating;
- pre-arranged connection for cascade and zone regulator and external probe;
- pre-arranged connection to an external three-way valve for external domestic hot water tank;
- pre-arranged for cascade operation (up to 3 generators);
- pre-arranged for installation of the ISPESL-approved safety tub pipe;
- pre-arranged for installation with Ø 80 mm flue ducting system.

The boiler is supplied with flue sample points, bottom protection grille and gas on-off cock.

Natural gas and L.P.G. fired Class II_{2H3+} appliance. CE marking.

The following model is available:

- **VICTRIX 50 Export code 3.016359**

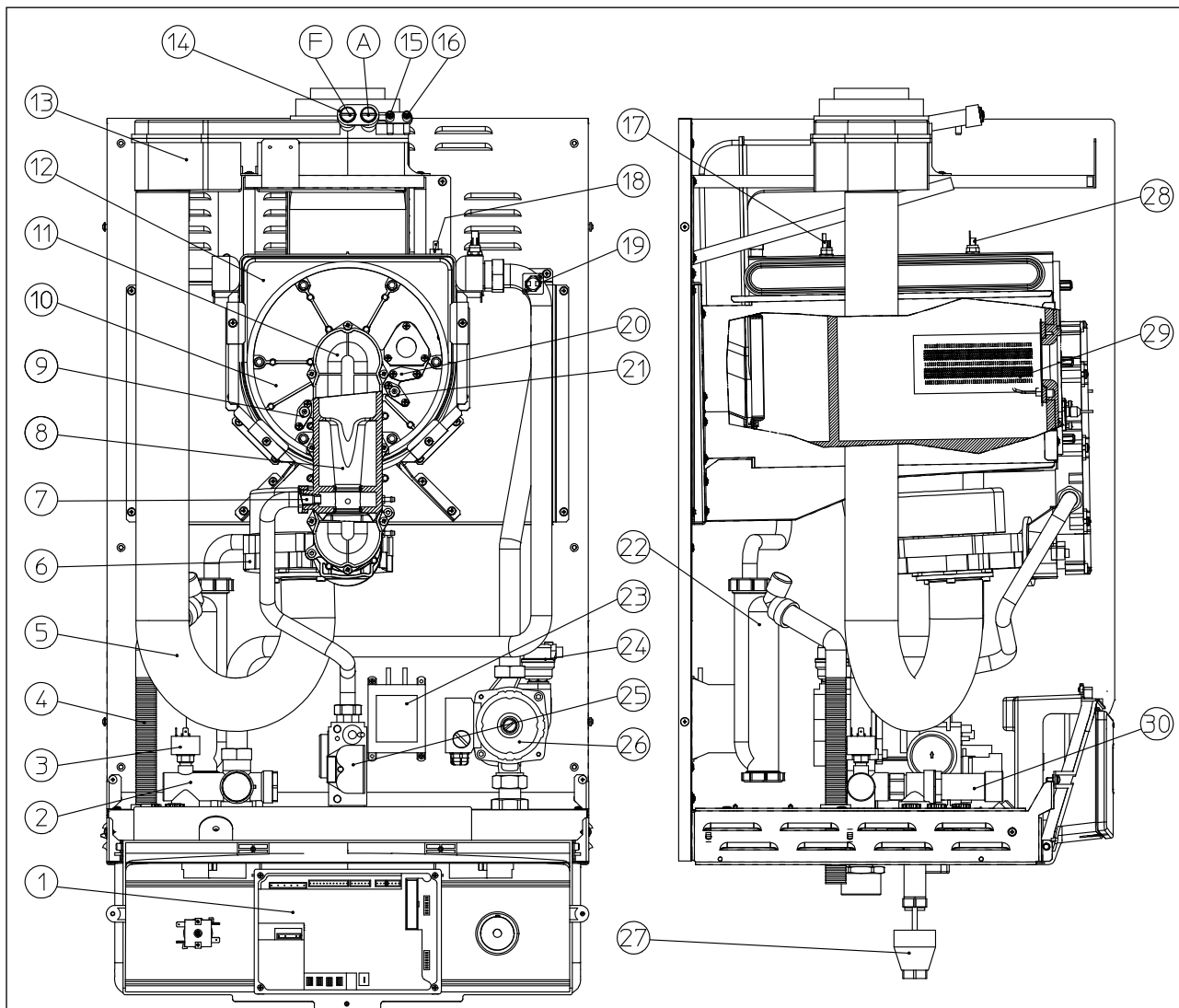
NOTE: to correctly install the boiler employ the "Green series" Immergas air intake/flue exhaust kit designed for VICTRIX 50 boiler in both single and cascade configurations.



VICTRIX 50

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MAIN COMPONENTS



LEGEND:

- | | |
|---|--|
| 1 - P.C.B. | 15 - Positive signal pressure point |
| 2 - Delivery manifold | 16 - Negative signal pressure point |
| 3 - System pressure switch | 17 - System return NTC probe |
| 4 - Condensation drain pipe | 18 - Flue safety thermostat |
| 5 - Air intake pipe | 19 - Overtemperature safety thermostat |
| 6 - Fan | 20 - Dummy electrode |
| 7 - Gas nozzle | 21 - Ignition plug |
| 8 - Venturi | 22 - Condensate syphon |
| 9 - Detection electrode | 23 - Current transformer |
| 10 - Cover of condensing module | 24 - Air vent |
| 11 - Sleeve with Venturi housing | 25 - Gas valve |
| 12 - Condensing module | 26 - Pump |
| 13 - Flue hood | 27 - Drain funnel |
| 14 - Air/flue sample points (air A) - (fumes F) | 28 - System delivery NTC probe |
| | 29 - Burner |
| | 30 - 4-bar safety valve |

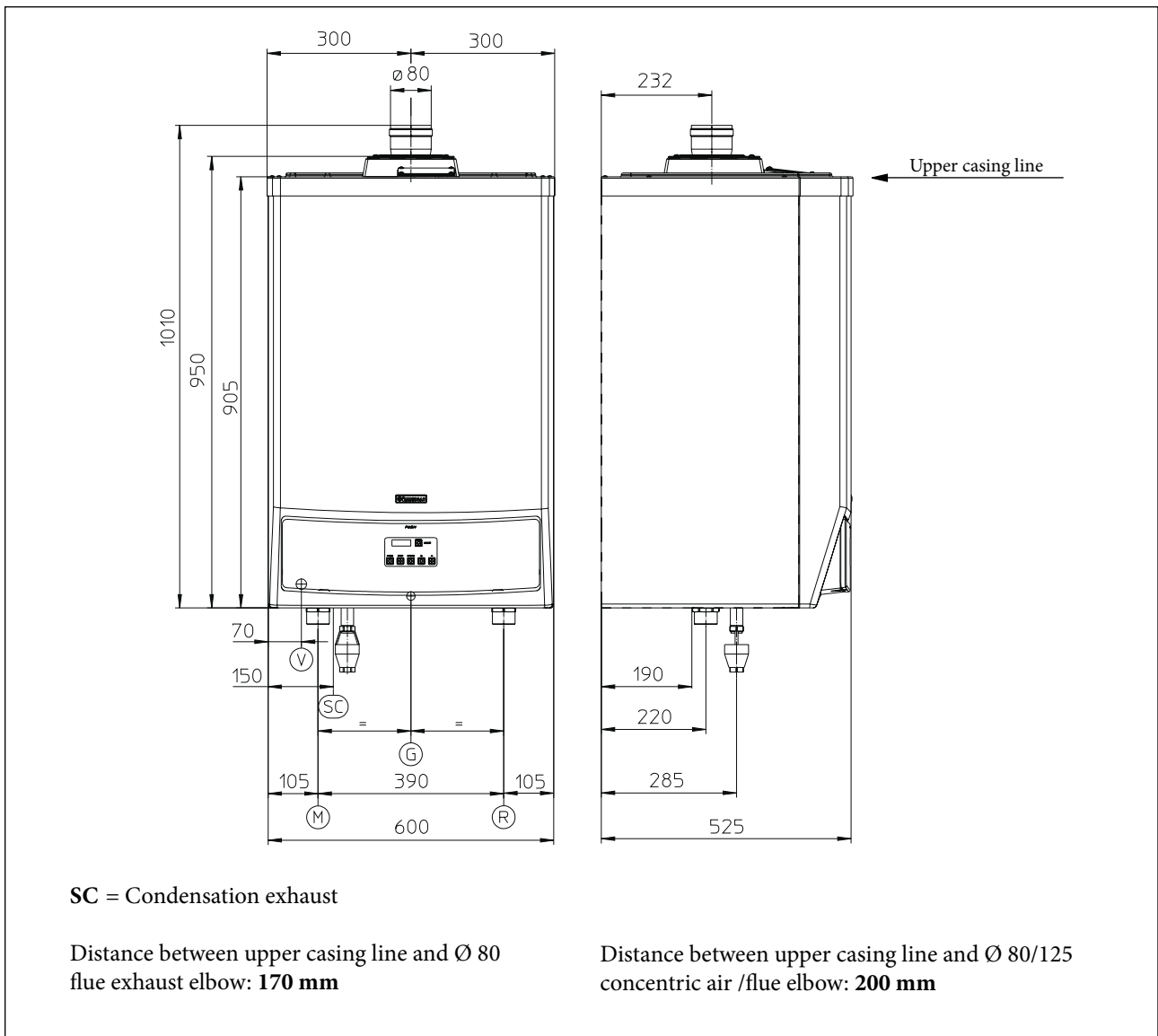


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3 MAIN DIMENSIONS

Model	Height mm	Width mm	Depth mm
VICTRIX 50	950	600	525

3.1 CONNECTIONS

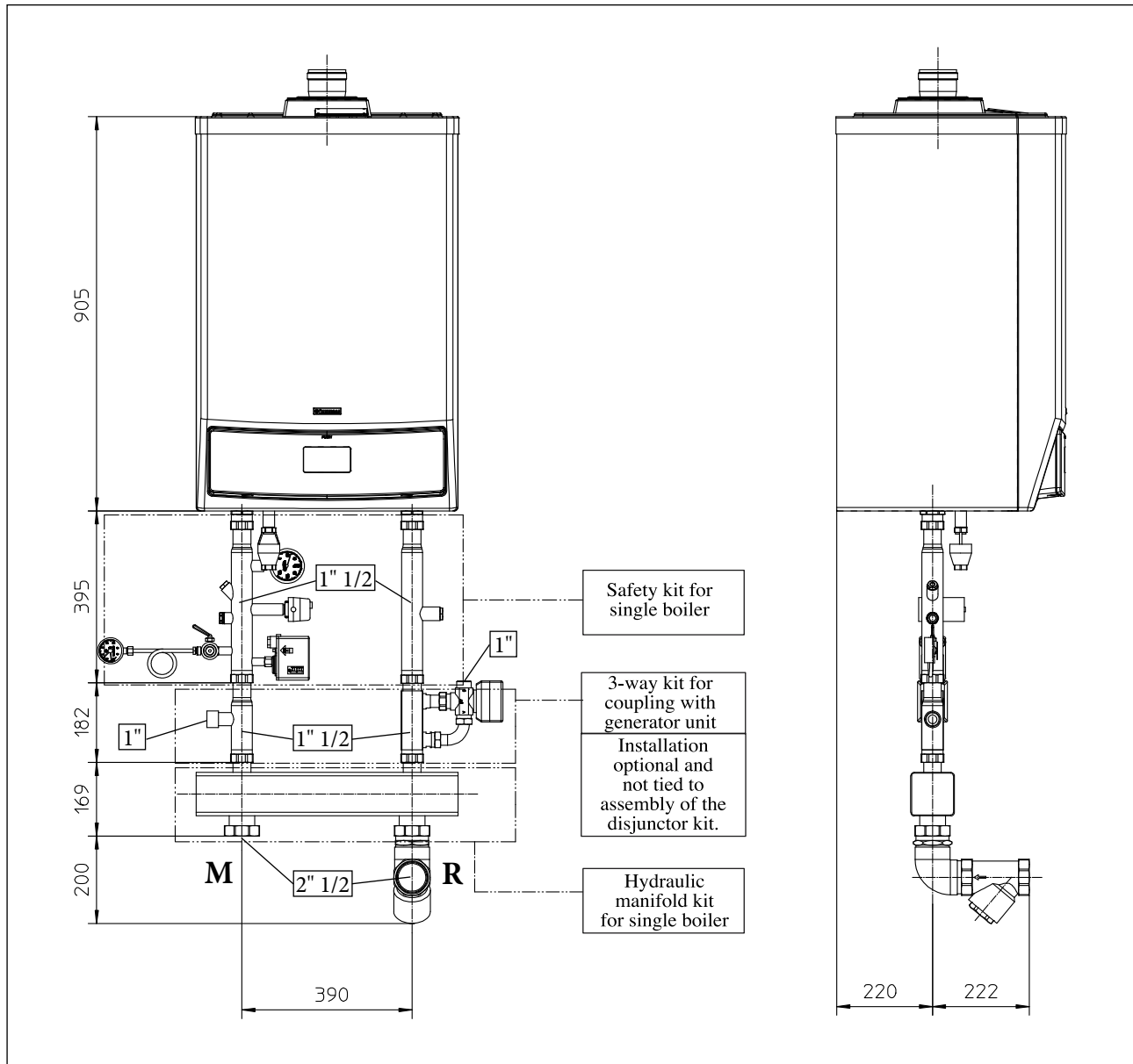


Model	System delivery	System return	Gas supply
VICTRIX 50	M 1" 1/2	R 1" 1/2	G 3/4"



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4 DIMENSIONS AND HYDRAULIC CONNECTIONS (OPTION) IN SINGLE BOILER CONFIGURATION



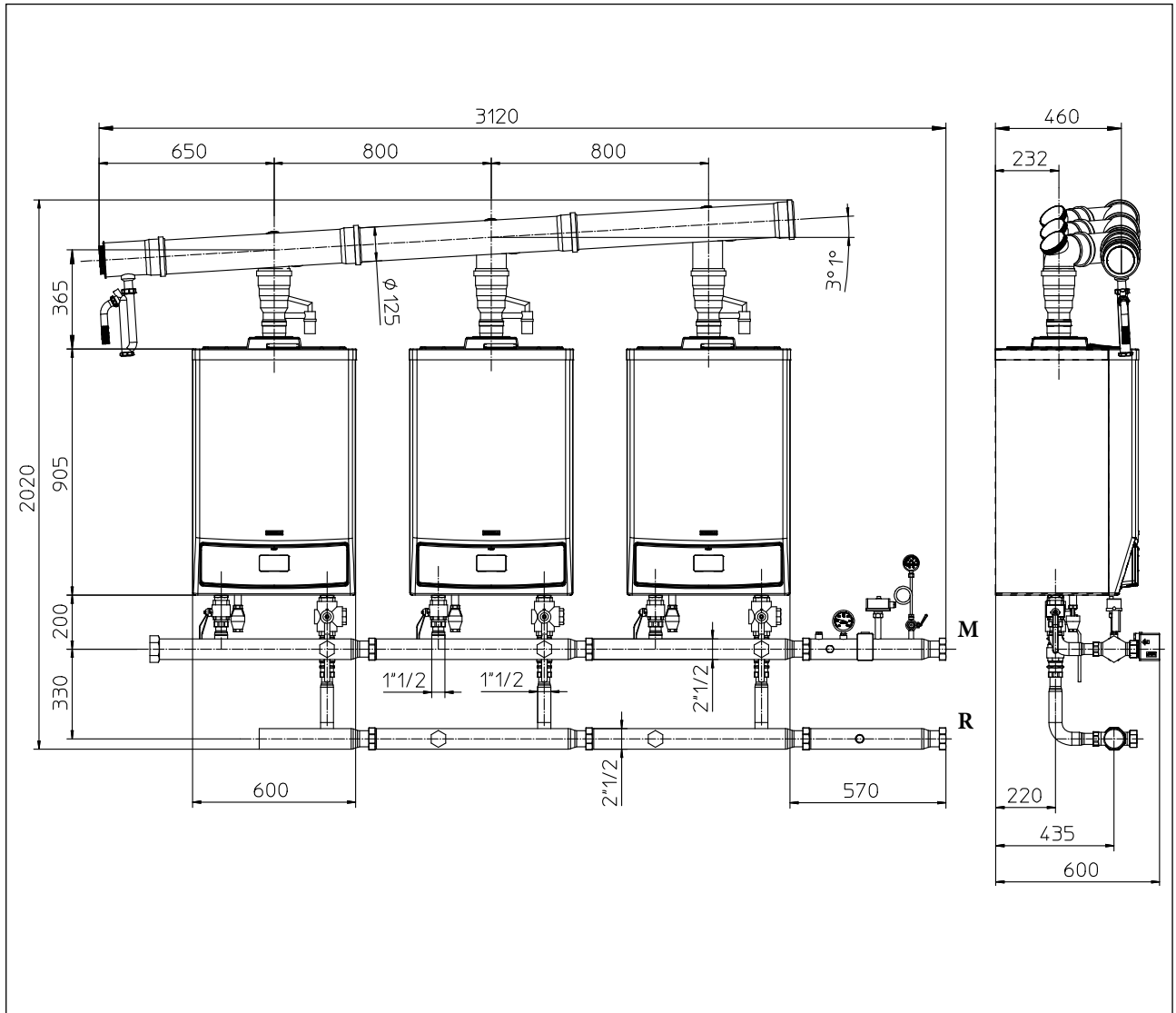
NOTE: Unlike the appliance, ISPEL safety kit and three-way valve kit (electric valve motor) have IPX4D electrical protection rating. When the appliance is to be outdoor installed, such safety devices and components are therefore to be adequately protected. Immergas would not be held responsible should the installer fail to use the original ISPEL-approved devices and kits manufactured by Immergas, or improperly installs them. Critical components of the automatic thermal regulating and blocking switches and of the thermometer (not part of the standard supply provided with the generator) are to be

installed as described in the installation instructions, in compliance with the provisions given in the “R” file. In order to adhere to ISPEL engineering safety issues, an ISPEL-approved pressure gauge is to be added when the Immergas safety kit is installed (as part of the standard supply, the boiler comes already equipped with an ISPEL-approved 4-bar safety valve and drain funnel). System return is factory designed for connection to an expansion vessel.



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5 DIMENSIONS AND HYDRAULIC CONNECTION KIT (OPTION) WITH BOILERS IN CASCADE CONFIGURATION (UP TO THREE APPLIANCES)



NOTE: Unlike the appliance, the ISPEL safety kit has IPX4D electrical protection rating. Should the appliance be outdoor installed, such safety devices must therefore be adequately protected.

Immergas would not be held responsible in case the installer fails to use genuine ISPEL-approved devices and kits manufactured by Immergas, or installs them improperly.

Critical components of the automatic thermal regulating and blocking switches and of the thermometer (not part of the standard supply provided with the generator) are to be installed as described in the installation instructions, in compliance with the provisions given in the “R” file.

In order to adhere to ISPEL engineering safety issues, an ISPEL-approved pressure gauge is to be added when the

Immergas safety kit is installed (as part of the standard supply, the boiler comes already equipped with an ISPEL-approved 4-bar safety valve and drain funnel).

System return is factory designed for connection to an expansion vessel.

A modular generator, which is installed in a cascade configuration and with original Immergas hydraulic manifold kit, must be considered as a single appliance which will have the serial number (factory number) of the generator nearest to the ISPEL safety device.

Hydraulic manifolds are equipped with a check valve installed on the return pipe and system on-off cocks on the delivery and return pipes of each generator.



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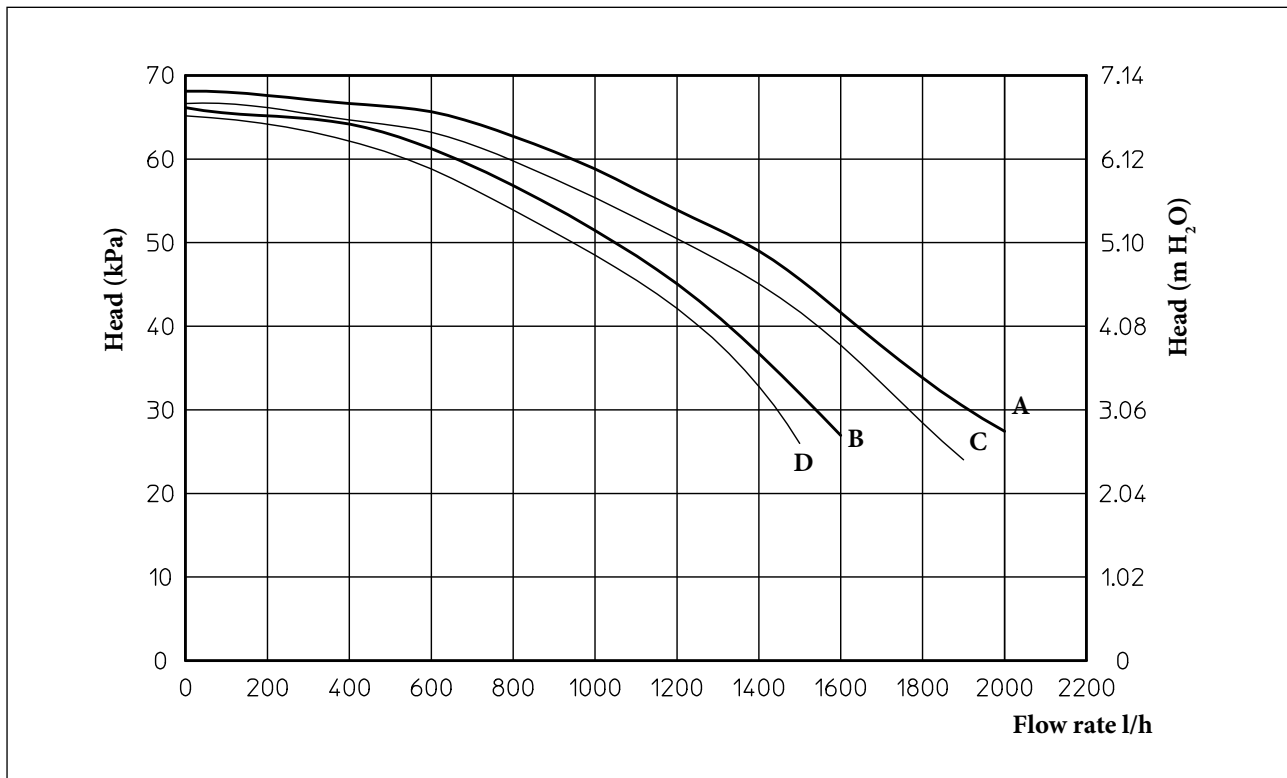
6 PUMP FLOW RATE AND HEAD GRAPH

VICTRIX 50 boilers are supplied with built-in pump equipped with a three-speed electric switch. The pump is single-phase type (230 V - 50 Hz) and already comes equipped from the factory with a condenser.

For top boiler efficiency, in new systems, it is advisable to set the pump to top speed in order to obtain best boiler operation.

6.1 VICTRIX 50 PUMP

GRUNDFOS UPS 15-70 AO H9



- A = Available head at top speed with single boiler
- B = Available head at second speed with single boiler
- C = Available head at top speed with one-way valve for boilers in cascade
- D = Available head at second speed with one-way valve for boilers in cascade



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THERMOREGULATION SYSTEMS (OPTION)

Central heating system.

Single modular generators or cascade installed are in need for an adequate thermoregulation system in order to dialogue with the boiler and meet the most varied operation requirements.

That is VICTRIX 50 generator can be fitted with a range of accessories enabling it to optimize climatic adjustments of the entire system.

In order to sum up all the above, VICTRIX 50 can be installed in two main configuration systems:

- **Cascade** (with the system divided into one or more temperature zones), using the cascade and zone regulator with either the zone controller or modulating ambient thermostat which adjusts temperatures in the individual zones.
- **Single boiler installation** (system divided into zones) using the cascade and zone regulator with either the zone regulator or modulating room thermostat which adjusts heat to individual zones. In case of single heating zone or three way valve kit to be connected, a room thermostat is to be installed.

Domestic Hot Water supply.

Should a boiler be installed on its own or in a cascade system, specific kits are supplied, providing the necessary equipment for external cylinder unit to be connected. Immergas manufactures 200 liter external storage tanks which can be installed in parallel (2 x 200 liter), in order to achieve the most efficient domestic hot water storage capacity. Furthermore by a specific optional kit, 200 liter external storage tank is ready for connection to solar panel system thanks to its standard twin coil heat exchanger.

VICTRIX 50 allows for two different configurations when coupling the system with an external storage tank:

- **3-way valve kit for coupling with separate storage tank unit system (when a single boiler is installed).** Connection to a separate storage tank is implemented by simply replacing the factory provided NTC probe on the storage tank, by the probe included in the 3-way valve kit. In such instance central heating and domestic hot water systems are managed by boiler electronics; no cascade and zone regulator kit is to be installed.
- **Cascade and zone regulator kit.** In such instance the storage tank is managed as a zone, this is obtainable both in single boiler and cascade configuration. In this circumstance the external storage tank unit is managed by a separate storage tank probe kit, which replaces factory provided NTC temperature probe on Immergas storage tank.





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CASCADE AND ZONE REGULATOR (CODE 3.015244)



Cascade and zone regulator allows the End User to control, monitor and program the operating sequence of connected generators.

The regulator can be set-up and programmed By means of parameters ensuring ideal temperature conditions during day and night periods and throughout every day of the week for both central heating and domestic hot water system (when VICTRIX 50 is operated with a water heater). The cascade and zone regulator can be installed flush to the wall by means of an in-wall supporting device.

8.1

SPECIFICATIONS

Electrical connections are implemented via 2 wires at 230V and 1.5 sq. mm in diameter.

2 BUS data cables are to be used in connecting the cascade and zone regulator to the boiler up to 50 meters in length, such onnection allows the device to:

- control up to three zones (2 of which can received mixed temperature adjusted water when necessary) and one zone destined to the external domestic hot water storage tank. Since a maximum of 5 cascade and zone regulators can be installed (of which one only, called Master, will be connected to the boiler P.C.B.), systems with up to a total of 15 zones (among which 10 with mixed temperature when necessary) and 5 external water heater units, can be controlled;
- Set two ambient temperature values, one for daytime (comfort temp.) and one for night time (reduced temp.);
- control temperature of domestic hot water (in accordance to an external water tank);
- select operating mode for central heating and hot water production functions of each individual hydraulic circuit:
 - comfort temperature mode,
 - reduced temperature mode,
 - adjustable antifreeze temperature mode;
- control boiler flow temperature according to the outdoor temperature (following external probe signal), with climatic curve settings;
- obtain information about the system, such as:
 - system temperature,
 - operating mode,
 - metering device data,
 - timer programmed operation,
 - pump operation status,
 - operation and variable input values;
- entering of operating parameters:
 - operating times,
 - system operating modes,
 - domestic hot water,
 - direct circuit, no.1 mixed, no.2 mixed temperature systems,
 - current date and time;
- display of operation malfunctions and their relevant error codes administered by the boiler self-check control system;
- display date, time, day of the week and generator temperature.



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ZONE REGULATOR (CODE 3.015264)



The zone regulator operates exclusively in conjunction with the Cascade and zone regulator. In addition to the functions described for cascade And zone regulator, it allows the End User to be able to instantly verify all the information concerning appliance operation and central heating system. In addition to the above, previously set parameters can be easily remotely modified without having to reach the actual cascade location. Chrono-thermostat which is built into the remote control, allows the system flow temperature to be set accordingly to actual requirements of the area in need for heating, so as to obtain the required room temperature with the utmost precision and, consequently with evident savings in the system running costs. The zone regulator also allows the ambient temperature and effective outdoor temperature to be verified on its display (the latter information only in case of external probe installation). The zone regulator is powered by the cascade and zone regulator via two BUS data cables.

9.1

SPECIFICATIONS

The zone regulator operates exclusively in conjunction with the Two BUS data cables are to be used in connecting a cascade and zone regulator, up to 50 meters in length is allowed. Such connection allows the device to:

- control up to one zone;
- set two room temperature values, daytime (comfort temp.) and night time (reduced temp.);
- control temperature of domestic hot water (when an external water tank is installed);
- select operation in central heating and hot water production modes for each single hydraulic circuit:
 - comfort temperature mode,
 - reduced temperature mode,
 - adjustable antifreeze temperature mode;
- adjust boiler flow temperature according to outdoor temperature (when an external probe is installed), with climatic curve setting;
- check information concerning the system:
 - system temperature,
 - operating mode,
 - data from metering devices,
 - timer program,
 - pump operating status,
 - variable input values and operation;
- enter the working parameters:
 - operating periods,
 - system operating mode,
 - domestic hot water,
 - direct, no.1 mixed, no.2 mixed circuits,
 - current date and time;
- display operating malfunctions and their relevant error codes as induced by the by self check-control system;
- display date, time, day of the week and temperature of the generator.



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MODULATING ROOM THERMOSTAT (CODE 3.015245)



Modulating room thermostat (not a classic technology On/Off model) only operates in conjunction with the cascade and zone regulator and allows the End User to set the room temperature of one of the zones into which the system is divided (both in individual and cascade installation).

The adjusting curve of the ambient temperature in the zone can be modified by means of the cascade and zone regulator itself. The modulating room thermostat is powered by the cascade and zone regulator via two BUS data cables.

10.1

SPECIFICATIONS

Two BUS data cables up to 50 meter long can be implemented in connection to a cascade and zone regulator, such configuration allows the device to:

- management of up to one zone;
- vary the zone ambient temperature;
- select the operating mode for zone central heating function:
 - fixed comfort temperature mode,
 - fixed low temperature mode,
 - operation with the timer programmed modes and times.

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EXTERNAL PROBE (CODE 3.015266)



External probe function is to allow temperature delivered to the system to be automatically adjusted in relation to rising or lowering outdoor temperature, thus adapting the water temperature to the system to suit outdoor temperature variations.

The probe is connected to the boiler's terminal board with a two wire cable. Once connected, it always acts even when a thermoregulation kit is not installed.

When a cascade system is configured, the external probe is to be connected to one boiler only.

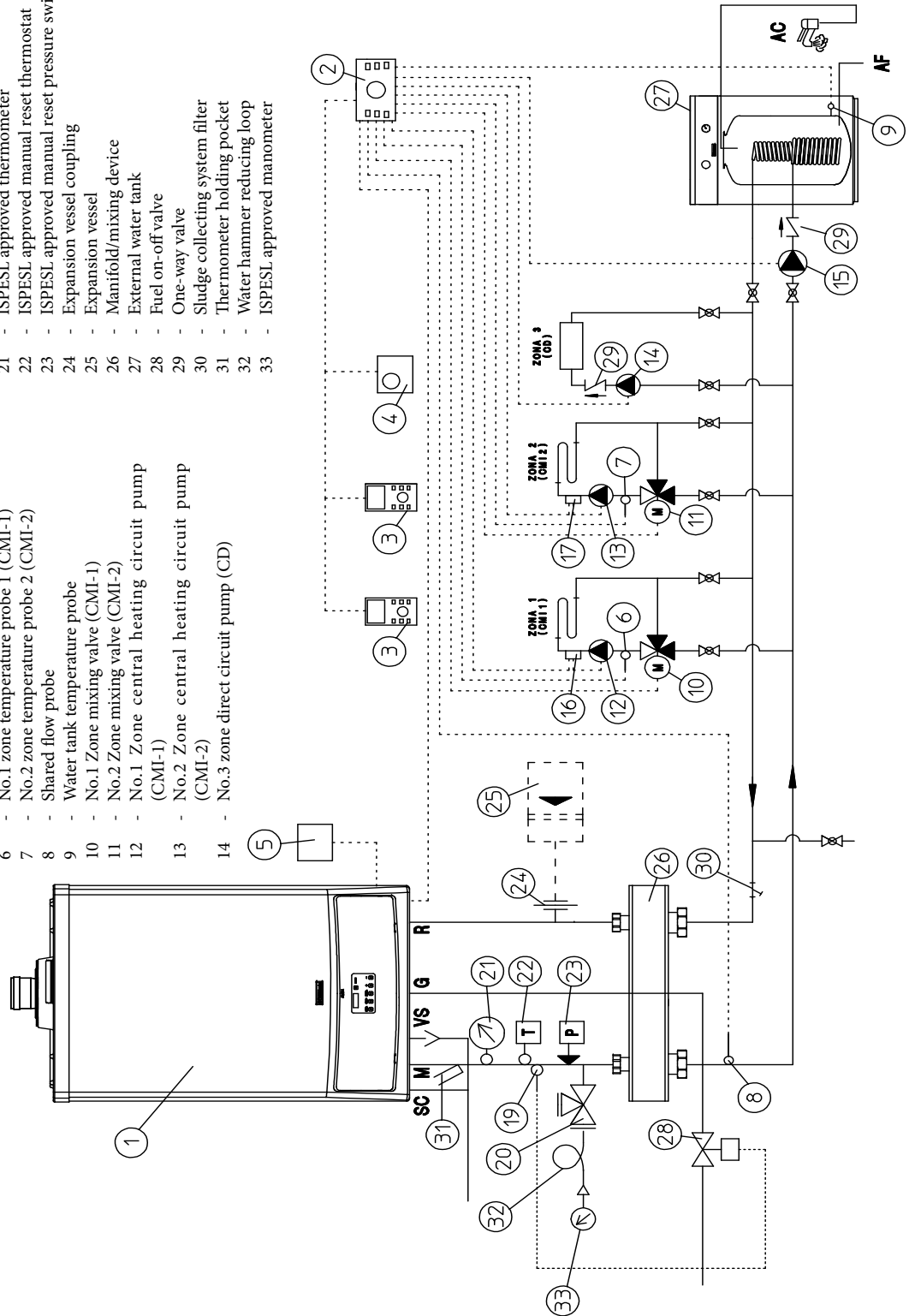


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VICTRIX 50 SINGLE BOILER INSTALLATION SAMPLE

- LEGEND:**
- 1 - VICTRIX 50 generator
 - 2 - Cascade and zone regulator
 - 3 - Zone regulator
 - 4 - Modulating room thermostat
 - 5 - External probe
 - 6 - No.1 zone temperature probe 1 (CMI-1)
 - 7 - No.2 zone temperature probe 2 (CMI-2)
 - 8 - Shared flow probe
 - 9 - Water tank temperature probe
 - 10 - No.1 Zone mixing valve (CMI-1)
 - 11 - No.2 Zone mixing valve (CMI-2)
 - 12 - No.1 Zone central heating circuit pump (CMI-1)
 - 13 - No.2 Zone central heating circuit pump (CMI-2)
 - 14 - No.3 zone direct circuit pump (CD)
 - 15 - Water tank supply pump
 - 16 - No.1 zone safety thermostat (CMI-1)
 - 17 - No.2 zone safety thermostat (CMI-2)
 - 19 - Fuel intercepting valve bulb
 - 20 - ISPEL approved cock equipped with pressure gauge
 - 21 - ISPEL approved thermometer
 - 22 - ISPEL approved manual reset thermostat
 - 23 - ISPEL approved manual reset pressure switch
 - 24 - Expansion vessel coupling
 - 25 - Expansion vessel
 - 26 - Manifold/mixing device
 - 27 - External water tank
 - 28 - Fuel on-off valve
 - 29 - One-way valve
 - 30 - Sludge collecting system filter
 - 31 - Thermometer holding pocket
 - 32 - Water hammer reducing loop
 - 33 - ISPEL approved manometer





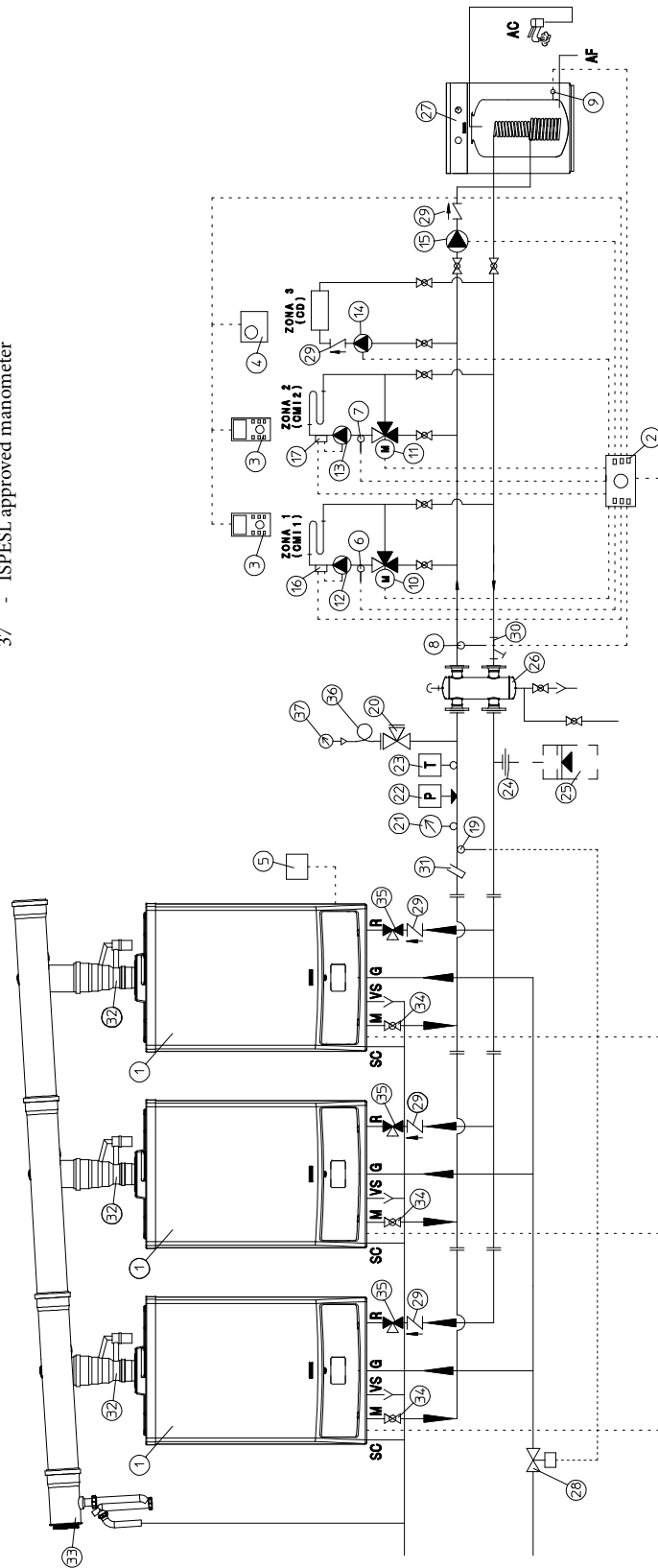
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VICTRIX 50 CASCADE INSTALLATION SAMPLES

LEGEND:

- | | | | |
|----|---|----|---|
| 1 | - VICTRIX 50 generator | 17 | - No.2 zone safety thermostat (CMI-2) |
| 2 | - Cascade and zone regulator | 19 | - On-off fuel valve bulb |
| 3 | - Zone regulator | 20 | - ISPEL approved cock with pressure gauge |
| 4 | - Modulating room thermostat | 21 | - ISPEL approved thermometer |
| 5 | - External probe | 22 | - ISPEL approved manual reset pressure switch |
| 6 | - No.1 zone temperature probe (CMI-1) | 23 | - ISPEL approved manual reset thermostat |
| 7 | - No. 2 zone temperature probe (CMI-2) | 24 | - Expansion vessel coupling |
| 8 | - Shared delivery probe | 25 | - Expansion vessel |
| 9 | - Water tank temperature probe | 26 | - Manifold/mixing device |
| 10 | - No.1 zone mixing valve (CMI-1) | 27 | - External water tank unit |
| 11 | - No. 2 zone mixing valve (CMI-2) | 28 | - Fuel on-off valve |
| 12 | - No.1 zone central heating circuit pump (CMI-1) | 29 | - On-way valve |
| 13 | - No. 2 zone central heating circuit pump (CMI-2) | 30 | - Sludge collecting system filter |
| 14 | - No. 3 zone direct circuit pump (CD) | 31 | - Thermometer holding pocket |
| 15 | - Water tank supply pump | 32 | - Flue stream adjusting device |
| 16 | - No.1 zone safety thermostat (CMI-1) | 33 | - Condensate drain pipe |
| | | 34 | - System on-off cock |
| | | 35 | - Three-way drain cock |
| | | 36 | - Water hammer reducing loop |
| | | 37 | - ISPEL approved manometer |





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WIRING DIAGRAM

OPTIONAL ELECTRIC CONNECTIONS.

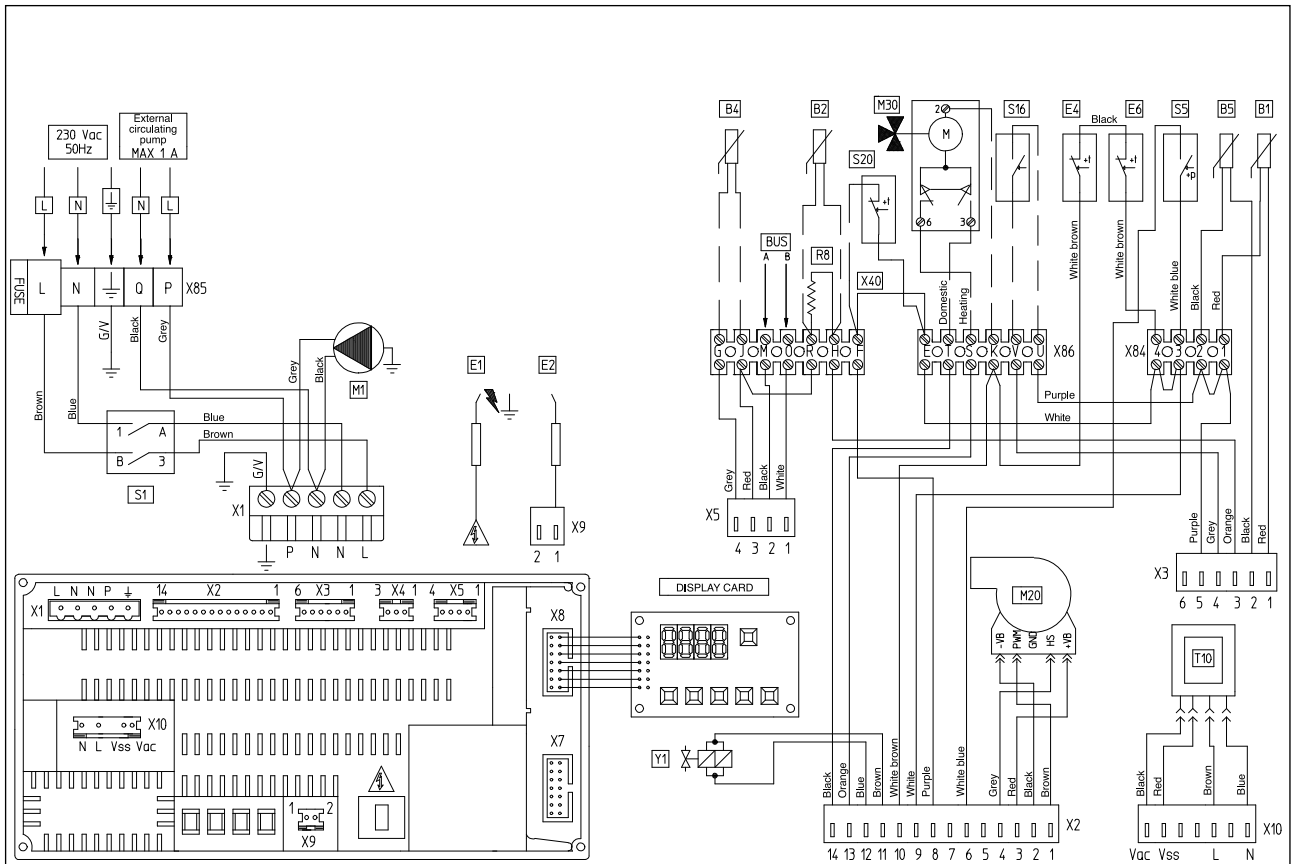
Bus M and O terminals are implemented in order to allow for cascade and zone regulator operation.

The room thermostat (S20) is to be connected to terminals F and E, while eliminating X40 jumper. The external probe (B4) must be connected to G and J terminals.

Domestic hot water probe (B2) is to be connected to terminals R and H, eliminating the resistance (R8).

The three-way valve (M30) is to be connected to terminals T, S and K.

Summer switch (S16) is to be connected to terminals V and U.



LEGEND:

- B1 - Flow probe
- B2 - Domestic hot water probe (option)
- B4 - External temperature probe (option)
- B5 - Return probe
- E1 - Ignition electrode
- E2 - Detection electrode
- E4 - Safety thermostat
- E6 - Flue thermostat
- M1 - Boiler pump
- M20 - Fan

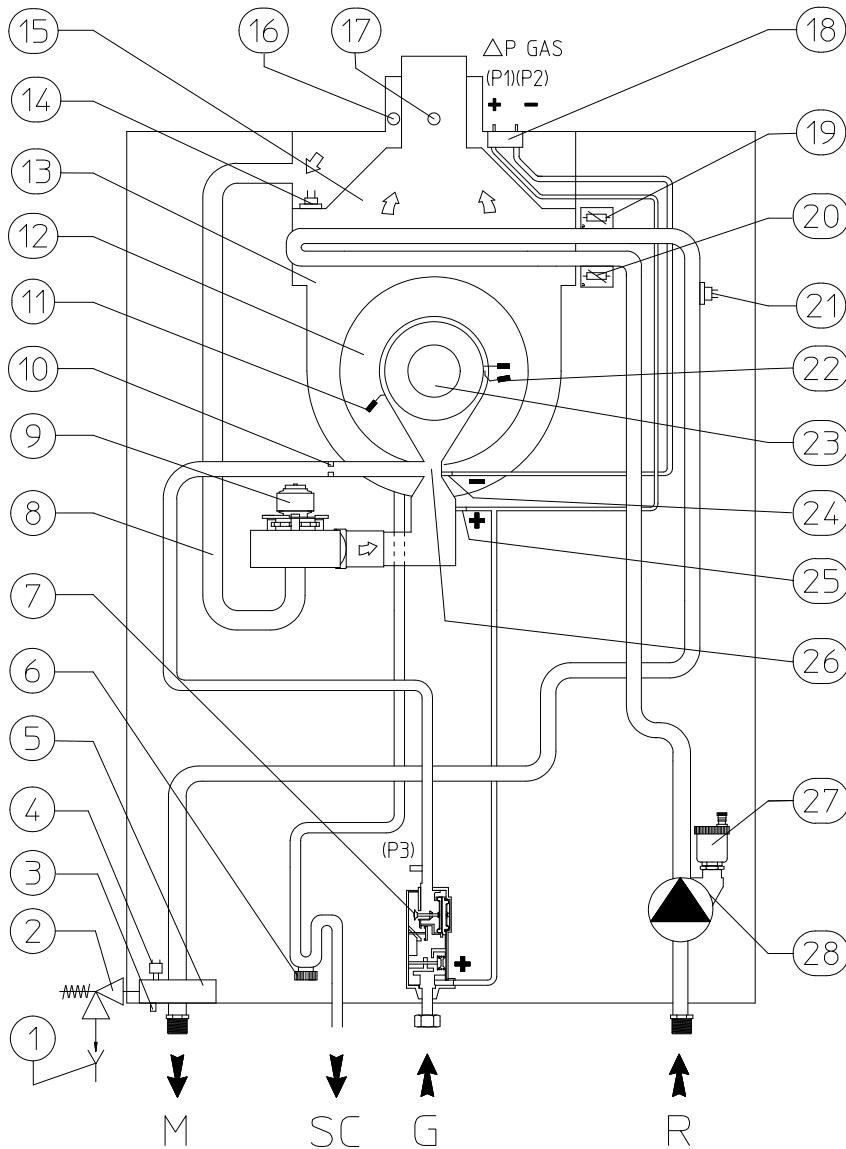
- M30 - Three-way valve (option)
- R8 - Water tank function inhibiting resistance
- S1 - Main switch
- S5 - System pressure micro switch
- S16 - Summer switch (option)
- S20 - Room thermostat (option)
- T10 - Low voltage transformer
- X40 - Room thermostat jumper
- Y1 - Gas valve (24 V DC)



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HYDRAULIC LAYOUT



LEGEND:

- | | |
|---------------------------------------|--------------------------------------|
| 1 - Transparent funnel outlet | 15 - Draught diverter |
| 2 - ISPEL approved 4 bar safety valve | 16 - Air analyzer intake |
| 3 - Boiler unloading valve | 17 - Fumes analyzer intake |
| 4 - Absolute pressure switch | 18 - Δp gas pressure point |
| 5 - Flow manifold | 19 - System delivery adjusting probe |
| 6 - Condensate siphon | 20 - System return adjusting probe |
| 7 - Gas valve | 21 - Overheating safety thermostat |
| 8 - Air intake pipe | 22 - Ignition electrode |
| 9 - Fan | 23 - Burner |
| 10 - Gas nozzle | 24 - Venturi negative signal (P2) |
| 11 - Detection electrode | 25 - Venturi positive signal (P1) |
| 12 - Condensing module cover | 26 - Air/gas Venturi manifold |
| 13 - Condensing module | 27 - Automatic air venting valve |
| 14 - Flue safety thermostat | 28 - Boiler circulator |



VICTRIX 50

“GREEN SERIES” INTAKE/EXHAUST KIT FOR VICTRIX 50

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TYPE OF INSTALLATION

VICTRIX 50 boilers are approved for both indoor and outdoor installation.

VICTRIX 50” boiler leaves the factory in “B₂₃” configuration (open chamber and fan assisted). In order to change boiler configuration to type “C” (sealed chamber and fan assisted draught), dismount the Ø 80 adapter, the plate and the seal on the boiler cover so that the Ø 80/125 kit can be installed.

To correctly install the boiler, use Immergas designed “Green” series air/flue exhaust kit as the materials, components and accessories are specifically designed for such appliance. kits are made out of composite material so as to provide high resistance to corrosion and allow them for fast and efficient installation, and also thanks to their push-in connection mechanism and silicone seals.

Boiler classification varies in relation to the installation type:

Type C Configuration with sealed chamber and fan assisted flue exhaust.

Boiler air/flue system is implemented by using the relative Ø 80/125 concentric kit after removing the Ø 80 adapter, the plate and the seal from the boiler cover.

Air intake and flue exhaust is operated directly from the outside wall of the building.

When a concentric intake/exhaust kit is needed, the following components can be installed:

Horizontal concentric Ø 80/125 kit **Code 3.015242;**

Vertical concentric Ø 80/125 kit **Code 3.015243.**

B₂₃ type configuration with open chamber and fan assisted flue exhaust.

The boiler is installed using the Ø 80 adapter provided with the boiler as part of the standard supply and to which the relevant Ø 80 flue exhaust kit is to be connected.

The air is taken straight from the room where the boiler is installed, while flue is exhausted through a chimney system or straightly outdoor via a flue exhaust system.

The above configuration samples are to remind that boiler air/flue system installation is only to be implemented by means of the following air intake/flue exhaust kits:

Ø 80 horizontal terminal kit for wall exhaust

Code 3.015255;

Ø 80 horizontal kit for chimney flue system exhaust

Code 3.015254;

Ø 80 vertical terminal kit for direct exhaust

Code 3.015256.

When the boiler is single installed, and in the “B₂₃” air/flue configuration, VICTRIX 50 can at any time be coupled with flexible Ø 80 hose pipe system for condensing boilers.

Such installation configuration is particularly suitable for chimneys or chimney systems, which might not be perfectly straight and where a rigid intake/exhaust system could not be feasible for installation.

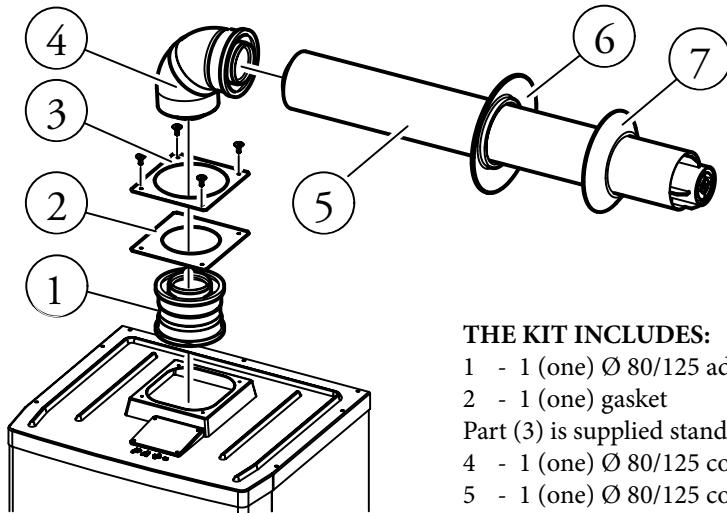
When a cascade installation is implemented, inside a thermal power station, specifically engineered collectors are to be installed for chimney system exhaust, and equipped with one-way devices (locking gates), in order to prevent combustion products to become part in the flue exhaust system of any additional boiler which might be off at that time.



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Ø 80/125 CONCENTRIC HORIZONTAL KIT (CODE 3.015242)

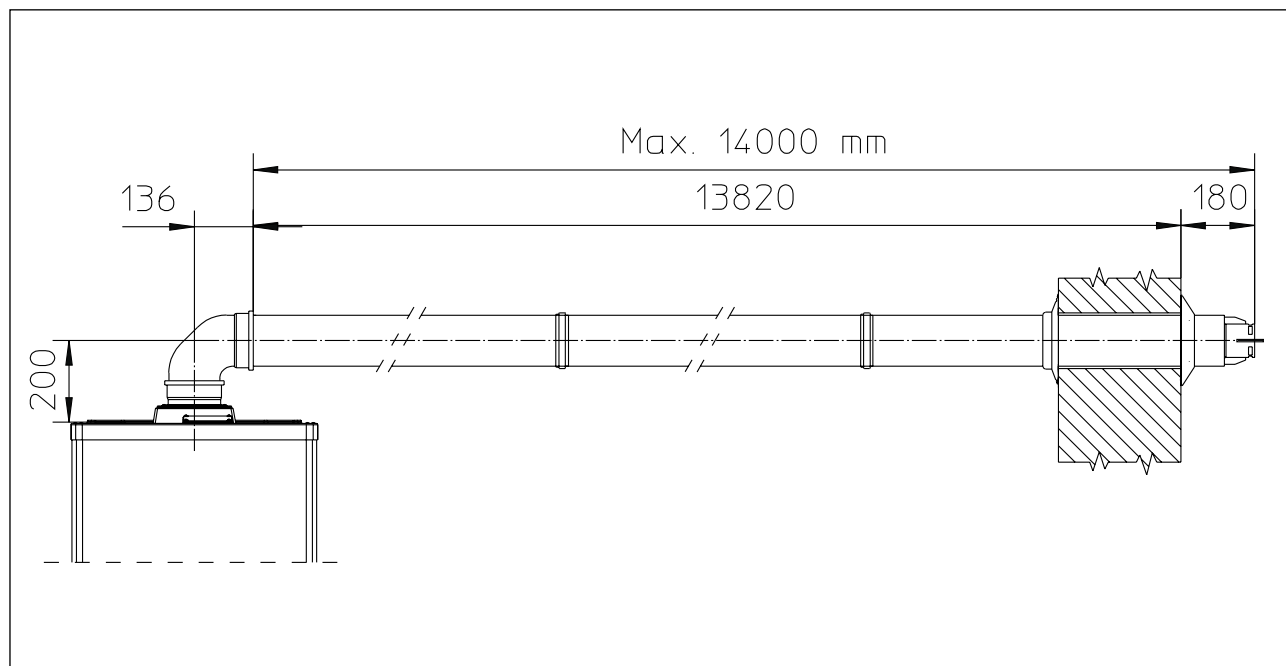


THE KIT INCLUDES:

- 1 - 1 (one) Ø 80/125 adapter
- 2 - 1 (one) gasket
- Part (3) is supplied standard with the boiler
- 4 - 1 (one) Ø 80/125 concentric 87° elbow
- 5 - 1 (one) Ø 80/125 concentric intake/exhaust terminal
- 6 - 1 (one) internal rose
- 7 - 1 (one) external rose

**MAXIMUM AVAILABLE LENGTH OF
Ø 80/125 HORIZONTAL KIT**

Available resistance factor **100**
Horizontal length in meters **14 + the first
 90° elbow**

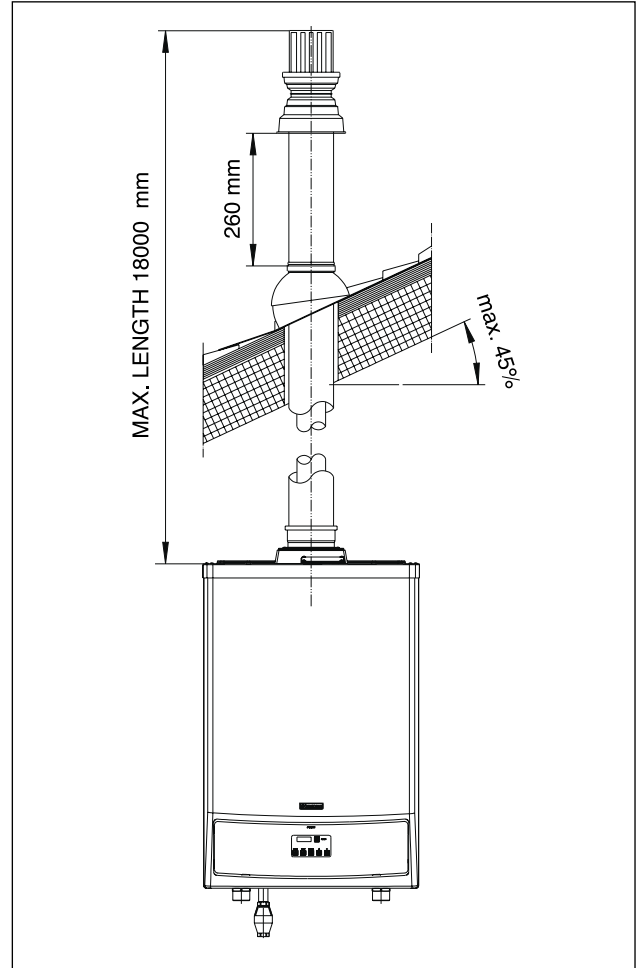
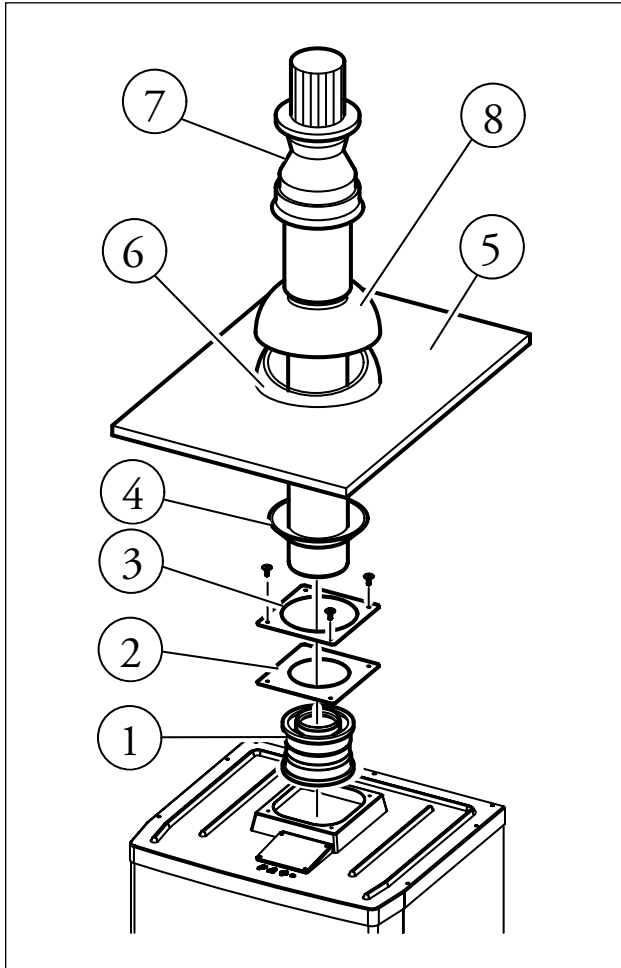




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Ø 80/125 CONCENTRIC VERTICAL KIT (CODE 3.015243)



THE KIT INCLUDES:

- 1 - 1 (one) Ø 80/125 adapter
- 2 - 1 (one) gasket
- Part (3) is supplied standard with the boiler
- 4 - 1 (one) rose
- 5 - 1 (one) aluminium plate
- 6 - 1 (one) fixed half-shell
- 7 - 1 (one) Ø 80/125 concentric int./exh. terminal
- 8 - 1 (one) mobile half-shell

MAXIMUM AVAILABLE LENGTH OF Ø 80/125 VERTICAL KIT

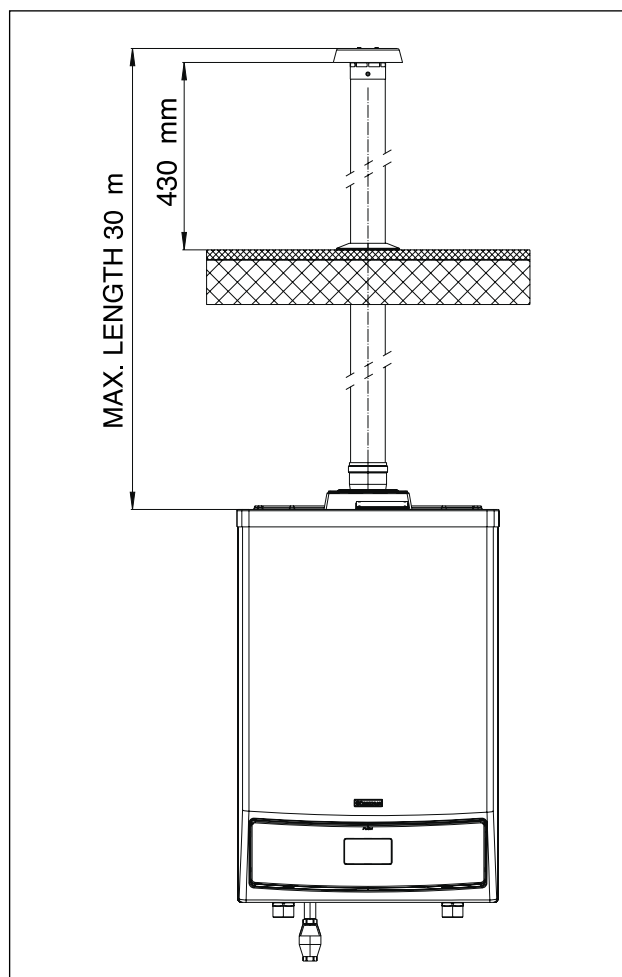
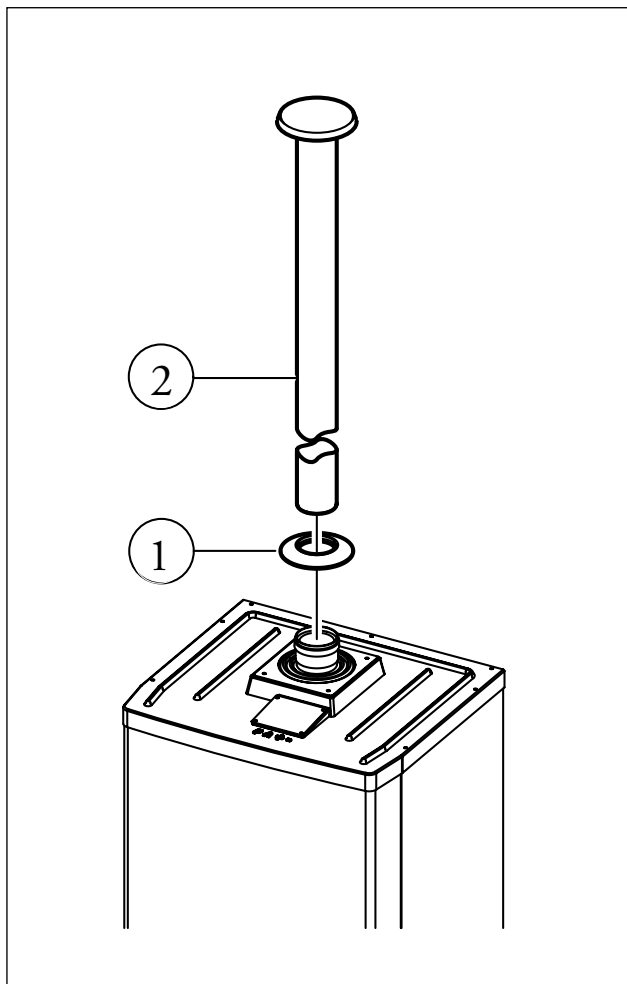
<u>Available resistance factor</u>	100
<u>Vertical length in meters</u>	18



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Ø 80 VERTICAL KIT (CODE 3.015256)



THE KIT INCLUDES:

- 1 - 1 (one) rose
- 2 - 1 (one) Ø 80 exhaust terminal

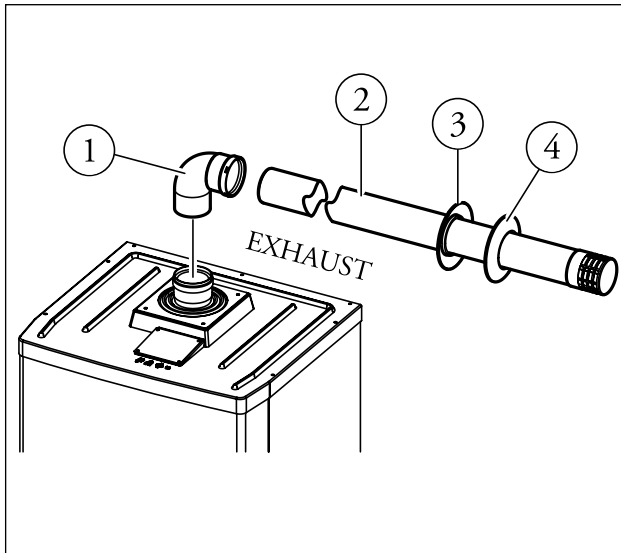
**MAXIMUM AVAILABLE LENGTH OF
Ø 80 VERTICAL KIT**

<u>Available resistance factor</u>	100
<u>Vertical length in meters</u>	30



VICTRIX 50

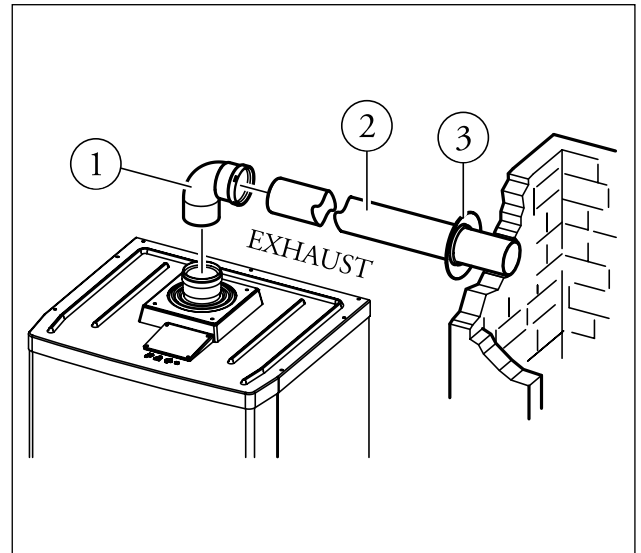
20 Ø 80 HORIZONTAL TERMINAL KIT FOR WALL-MOUNTED FLUE EXHAUST (CODE 3.015255)



THE KIT INCLUDES:

- 1 - 1 (one) 90° Ø 80 elbow
- 2 - 1 (one) Ø 80 exhaust pipe
- 3 - 1 (one) internal rose

20.1 Ø 80 HORIZONTAL TERMINAL KIT FOR CHIMNEY SYSTEM (CODE 3.015254)

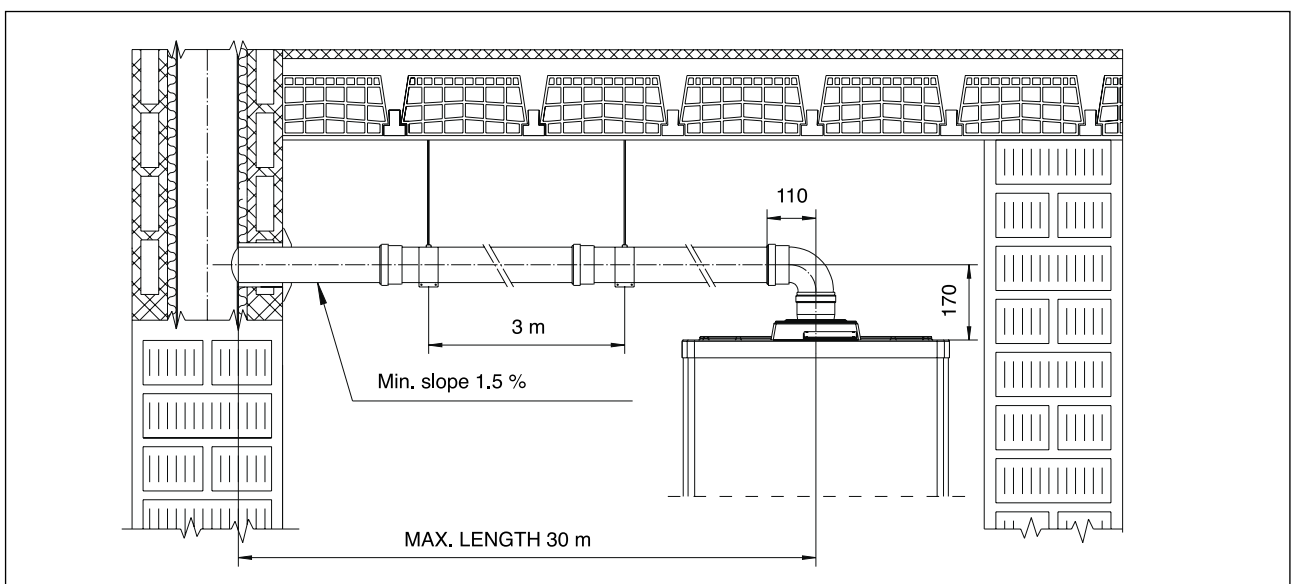


THE KIT INCLUDES:

- 1 - 1 (one) 90° Ø 80 elbow
- 2 - 1 (one) Ø 80 exhaust pipe
- 3 - 1 (one) internal rose
- 4 - 1 (one) external rose

MAXIMUM AVAILABLE LENGTH OF Ø 80 HORIZONTAL WALL DISCHARGING KIT

<u>Available resistance factor</u>	100
<u>Horizontal length in meters</u>	30





VICTRIX 50

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RESISTANCE FACTORS AND EQUIVALENT LENGTHS

Each component of air intake/flue exhaust system reveals a resistance dynamic calculated by means of tests as stated in the following charts. The resistance factor of each individual component cannot be measured by actual unit of measures, as such parameter is measurable function of the temperature of the fluid and, thus it **varies depending on whether the component is installed in the air intake or in the flue exhaust section.**

In addition to the above, each component has a resistance factor corresponding to a the length in meters of same diameter pipe : this is the so-called **“equivalent length”** obtained from the ratio between the relevant resistance factors.

In order to identify the link between such two parameters in the most admissible manner, first, consider an Ø 80 mm 90° elbow as a sample. It shows a 2.6 resistance factor on exhaust. However, when an Ø 80 mm and 1 meter long pipe is taken as reference, it will show a 1.2 resistance factor. The equivalent length “ L_{eq} ” of the considered elbow will therefore to be:

$L_{eq} = 2,6 : 1,2 = 2,1$ m of Ø 80 mm pipe (on the exhaust side).

In brief, the head loss of an Ø 80 mm 90° elbow is the same of a 2.1 m length straight pipe bearing the same diameter (installed on the flue exhaust system).

All boilers have a maximum resistance factor of 100, experimentally calculated.

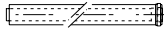
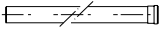
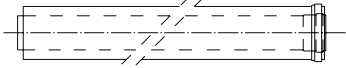
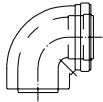

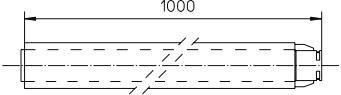
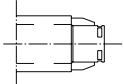
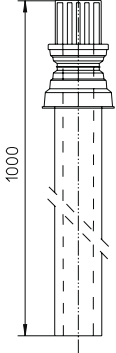
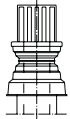
Maximum allowable resistance factor corresponds to the resistance found with the maximum allowable pipe length. All this information allow for calculations to be made in order to ascertain whether the various configurations of the system are feasible. In brief, in order to ensure correct appliance operation, **any air intake/flue exhaust configuration is to have a maximum overall resistance factor of 100.** Therefore such limit is not be exceeded when the resistance actors of the individual components are added together.

Resistance factors and equivalent losses in meters are stated in the catalogue and in relation to:

- “Green series” air/flue system to be used when implementing a combustion air supply pipe and flue exhaust system;
- the components to be installed in implementing an Ø 80 mm hose pipe flexible ducting system for condensing boilers, as further described in this manual (and involving vertical piping system installed for collection and exhaust of combustion residues as well as being able to withstand time and condensation wear and tear, and appropriate for installation in an existing and not perfectly straight chimney/chimney system/pre existing “technical” opening).


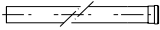
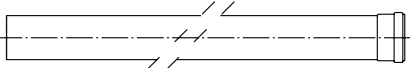
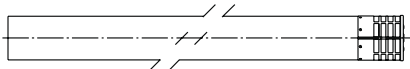
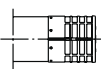
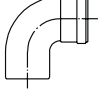

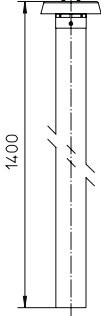


VICTRIX 50

DUCT TYPE	Resistance Factor (R)	Equivalent length in m of Ø 80/125 concentric pipe 	Equivalent length in m of Ø 80 pipe 
Ø 80/125 m 1 concentric pipe 	4.9 Intake and exhaust	1.0 m	4.0 m exhaust
Ø 80/125 90° elbow concentric pipe 	9.5 Intake and exhaust	1.9 m	7.9 m exhaust
Ø 80/125 45° elbow concentric pipe 	6.8 Intake and exhaust	1.4 m	5.6 m exhaust
Complete terminal with Ø 80/125 horizontal concentric intake-exhaust pipe 	26.8 Intake and exhaust	5.5 m	22.3 m exhaust
Ø 80/125 horizontal concentric intake-exhaust terminal 	22.9 Intake and exhaust	4.7 m	19.0 m exhaust
Complete terminal with Ø 80/125 vertical concentric intake-exhaust pipe 	16.7 Intake and exhaust	3.4 m	13.9 m exhaust
Ø 80/125 vertical concentric intake-exhaust terminal 	13.3 Intake and exhaust	2.7 m	11.0 m exhaust



VICTRIX 50

DUCT TYPE	Resistance factor (R)	Equivalent length in m of Ø 80/125 concentric pipe 	Equivalent length in m of Ø 80 pipe 
Ø 80 m 1 pipe 	1.2 exhaust	0.24 m	1.0 m exhaust
Complete terminal with Ø 80 m 1 exhaust pipe 	3.1 exhaust	0.63 m	2.6 m exhaust
Ø 80 exhaust terminal 	1.9 exhaust	0.38 m	1.6 m exhaust
Ø 80 90° elbow 	2.6 exhaust	0.53 m	2.1 m exhaust
Ø 80 45° elbow 	1.6 exhaust	0.32 m	1.3 m exhaust
Complete terminal with Ø 80 vertical exhaust pipe 	3.6 exhaust	0.73 m	3 m exhaust



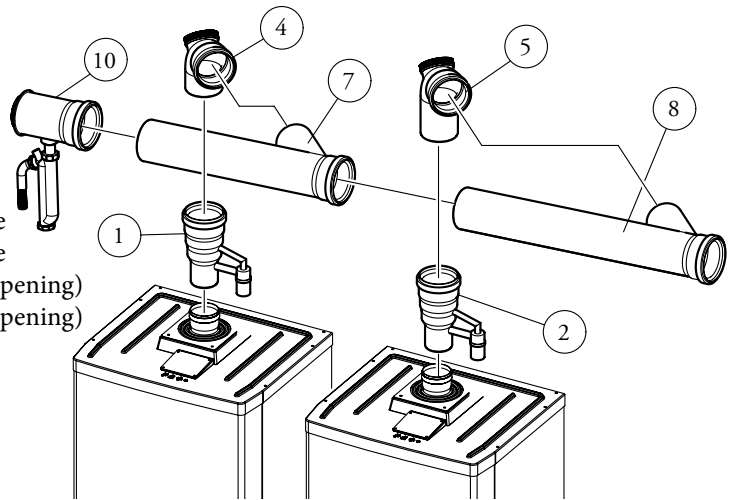
VICTRIX 50

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FLUE EXHAUSTING MANIFOLD KIT AND TWO CASCADE BOILERS INSTALLATION (CODE 3.015240)

THE KIT INCLUDES:

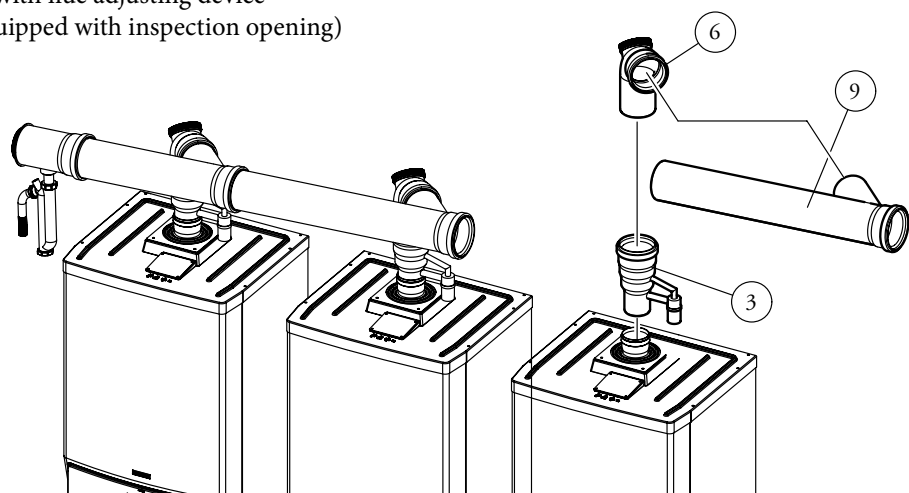
- 1 - 1 (one) stub pipe with flue adjusting device
- 2 - 1 (one) stub pipe with flue adjusting device
- 4 - 1 (one) elbow (equipped with inspection opening)
- 5 - 1 (one) elbow (equipped with inspection opening)
- 7 - 1 (one) short pipe
- 8 - 1 (one) long pipe
- 10 - 1 (one) condensate drain pipe



22.1 FLUE EXHAUST MANIFOLD KIT, TWO CASCADE AND AN ADDITIONAL BOILER INSTALLATION (CODE 3.015241)

THE KIT INCLUDES:

- 3 - 1 (one) stub pipe with flue adjusting device
- 6 - 1 (one) elbow (equipped with inspection opening)
- 9 - 1 (one) long pipe



In order to complete the installation and connect the flue manifold to the chimney, a kit including a 1 m length \varnothing 125 mm extension pipe is to be installed **Cod. 3.016371**.



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Ø 80 HOSE PIPE FLEXIBLE DUCTING SYSTEM

Immergas Ø 80 mm hose pipe flexible ducting system for existing chimney systems comprises a series of components, considered as single kits, which are to be assembled in order to suit specific installation requirements; the system is supplied in a configuration which includes an 87° rising inlet elbow vertically proceeding with the Ø 80 hose pipe and the exhaust terminal. Ducted system pipes can be inspected where it connects to the boiler by means of a factory designed door.

The kit consists of a 12 m long hose pipe, should the pipe result to short, it can be prolonged by joining other units by means of adapters.

Centering spacers with expanding fins are to be added on the hose pipe at every necessary distance in order to ensure that the pipe is straightly shaped and develops following the middle area of the chimney system.

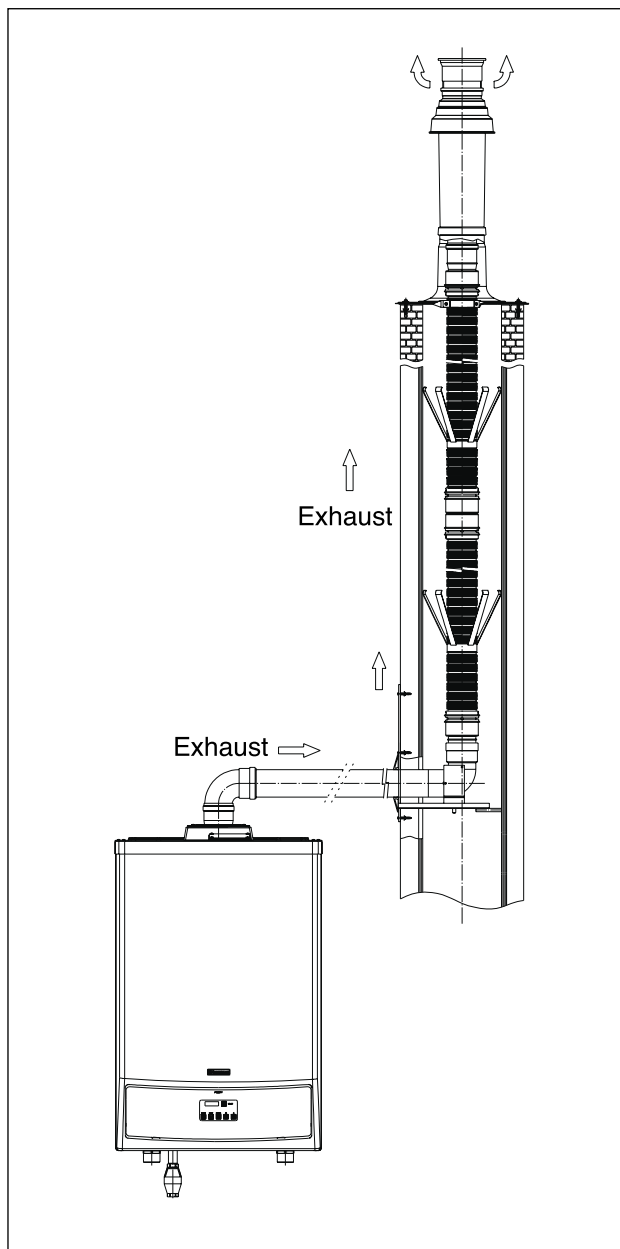
Maximum length that can be covered with such type of piping system is 30 m (approx.).

Calculations of the above mentioned maximum length is obtained considering:

- 1 (one) Ø 80 mm 90° elbow for connection to the boiler (on exhaust);
- 1 m of Ø 80 mm exhaust pipe;
- two direction variations in the vertical developing section;
- the Ø 80 mm supporting elbow;
- the Ø 80/125 vertical terminal kit for such pipe configuration.

Please note that:

- **only one appliance can be installed with such piping system;**
- **the system can only be implemented with condensing appliances.**





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TECHNICAL SPECIFICATIONS

			VICTRIX 50
Maximum nominal heat input		kW (kcal/h)	50.8 (43,655)
Maximum nominal heat output		kW (kcal/h)	50.0 (43,000)
Minimum nominal heat input		kW (kcal/h)	10.4 (8,958)
Minimum nominal heat output		kW (kcal/h)	10.0 (8,600)
100% nominal heat output efficiency (80/60°C)		%	98.5
Efficiency at 30% of load (80/60°C)		%	96,0
100% nominal heat output efficiency (50/30°C)		%	106.0
Efficiency at 30% of load (50/30°C)		%	106,5
100% nominal heat output efficiency (40/30°C)		%	107.0
Efficiency at 30% of load (40/30°C)		%	107.0
Central Heating circuit			
Central heating temperature adjustment		°C	20-85
Maximum central heating working temperature		°C	90
Maximum system working pressure		bar	4.4
Available head with 1000 l/h flow rate		kPa (m H ₂ O)	52.9 (5.4)
Gas supply			
NATURAL GAS (G20)	MIN - MAX	mbar	0.37 - 6.40
	nozzles	N°- ø mm	1 x 7.85
LPG (G30)	MIN - MAX	mbar	0.31 - 5.71
	nozzles	N°- ø mm	1 x 5.70
LPG (G31)	MIN - MAX	mbar	0.38 - 6.81
	nozzles	N°- ø mm	1 x 5.70
Electric power supply		V/Hz	230 - 50
Nominal power absorption		A	0.85
Electric power installed		W	180
Fan power consumption		W	59
Pump power consumption		W	115
Electrical insulation rating	IP		X5D
Storage tank capacity		liters	3.7
Weight of empty boiler		kg	63



VICTRIX 50

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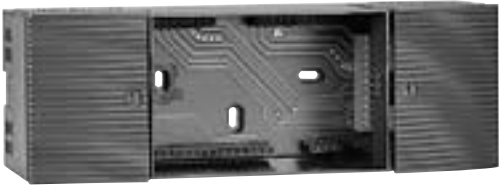






VICTRIX 50 COMBUSTION SPECIFICATIONS

		Nat. gas (G20)	LPG (G30)	LPG (G31)
100% nominal heat output combustion efficiency (80/60°C)	%	98.75	98.75	98.75
Min nominal heat output combustion efficiency (80/60°C)	%	98.4	98.4	98.4
100% nominal heat output useful efficiency (80/60°C)	%	98.5	98.5	98.5
Min nominal heat output useful efficiency (80/60°C)	%	96.0	96.0	96.0
100% nominal heat output useful efficiency (50/30°C)	%	106.0	106.0	106.0
Min nominal heat output useful efficiency (50/30°C)	%	106.5	106.5	106.5
100% nominal heat output useful efficiency (40/30°C)	%	107.0	107.0	107.0
Min nominal heat output useful efficiency (40/30°C)	%	107.0	107.0	107.0
Chimney system losses with burner on (100% Pn) (80/60°C)	%	1.30	1.30	1.30
Chimney system losses with burner on (P min) (80/60°C)	%	1.60	1.60	1.60
Chimney system losses with burner off	%	0.02	0.02	0.02
Casing losses with burner off	%	0.47	0.47	0.47
Casing losses with burner on (100% nominal heat output) (80/60°C)	%	0.20	0.20	0.20
Casing losses with burner on (at reduced heat output) (80/60°C)	%	2.40	2.40	2.40
Flue temperature at Max. nominal heat input	°C	38	40	39
Flue temperature at Min. nominal heat input	°C	30	38	33
Flue flow rate at Max. nominal heat input	kg/h	81	72	82
Flue flow rate at Min. nominal heat input	kg/h	17	15	17
CO ₂ at maximum heat input	%	9.3	12.3	10.5
CO ₂ at minimum heat input	%	9.0	11.7	10.1
CO at maximum heat input	mg/kWh	128	709	159
CO at minimum heat input	mg/kWh	6	10	7
NO _x at maximum heat input	mg/kWh	69	392	132
NO _x at minimum heat input	mg/kWh	28	97	48
Weighted CO	mg/kWh	38	-	-
Weighted NO _x	mg/kWh	55	-	-
NO _x class	-	5	5	5
Fan available head (Min. – Max.)	Pa	50 - 290		

Gas flow rates refer to the Lower Calorific Value (NCV) at 15°C and with 1013 mbar pressure.
Flue temperature refer to 15°C inlet air temperature and 50°C flue exhaust temperature.



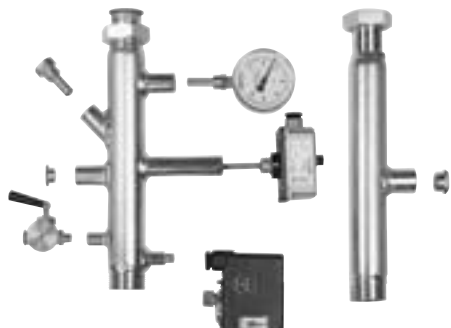
VICTRIX 50

26	OPTIONS
<p data-bbox="336 443 687 506">Cascade and zone regulator kit code 3.015244</p> 	<p data-bbox="943 443 1374 506">Support kit for wall fixing of regulator code 3.015265</p> 
<p data-bbox="408 855 616 918">Zone regulator kit code 3.015264</p> 	<p data-bbox="1054 855 1262 918">External probe kit code 3.015266</p> 
<p data-bbox="328 1267 695 1330">Modulating room thermostat kit code 3.015245</p> 	<p data-bbox="1031 1267 1278 1330">System flow probe kit code 3.015267</p> 
<p data-bbox="240 1680 783 1742">Domestic water probe kit for external water tank code 3.015268</p> 	<p data-bbox="927 1680 1390 1742">Anti-freeze (-15°C) electric resistance kit code 3.015361</p> 

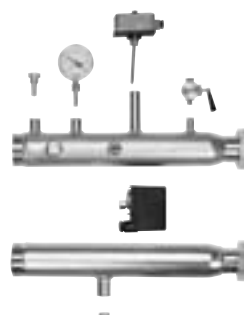


VICTRIX 50

ISPESL stub pipe safety kit for single boiler
code 3.015222



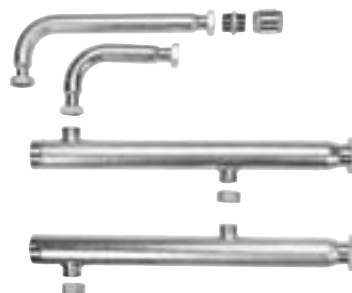
ISPESL stub pipe safety kit for cascade installed boilers
code 3.015227



Hydraulic manifold kit for connection of two boilers in cascade
code 3.015225



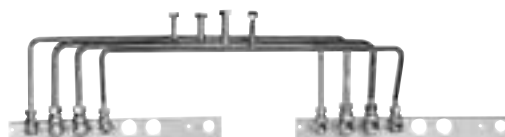
Hydraulic manifold kit for additional boiler in cascade
code 3.015226



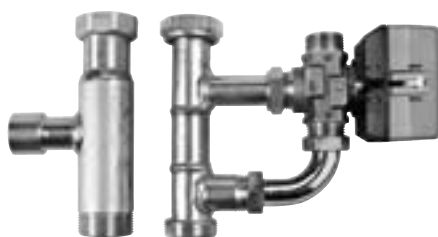
Hydraulic disconnecting kit for single boiler
code 3.015224



Twin UB 200 water tank connection kit
code 3.015273



Three-way valve kit for installation with external water tank
(it includes water tank probe)
(it is not to be installed along with a cascade regulator)
code 3.015223




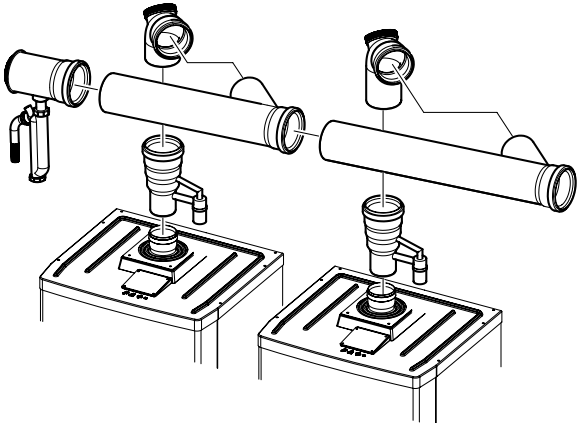
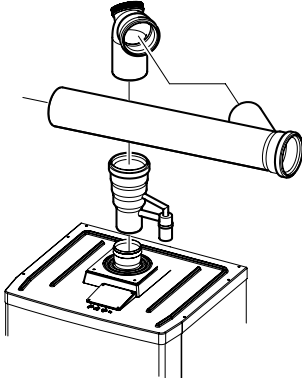


UB 200 and solar panel connection kit
code 3.015150





VICTRIX 50

<p>UB 200 re-circulation kit code 3.015274</p> 	<p>Re-circulation connection kit for in parallel UB 200 installation code 3.015342</p> 
<p>2 meter long, Ø 125 extension pipe kit for flue exhaust collector code 3.015250</p>	<p>Solar panel connection kit for in parallel UB 200 twin installation code 3.015341</p> 
<p>1 meter long, Ø 125 extension pipe kit for flue exhaust collector code 3.016371</p>	
<p>0.5 meter long, Ø 125 extension pipe kit for flue exhaust collector code 3.016370</p>	
<p>Flue exhaust manifold kit with flue adjusting device and two cascade installed boilers code 3.015240</p> 	<p>Flue exhaust manifold kit with flue adjusting device when an additional boiler is added to the cascade code 3.015241</p> 

CERTIFICATO DI ESAME CE DI TIPO

EC TYPE EXAMINATION CERTIFICATE

No. **51B02448**

VISTO L'ESITO DELLE VERIFICHE CONDOTTE IN CONFORMITÀ ALL'ALLEGATO II, PUNTO I,
DEL DPR 15/11/96, N. 661, ATTUAZIONE DELLA DIRETTIVA 90/396/CEE,
SI DICHIARA CHE I SEGUENTI PRODOTTI (MODELLO/TIPO):

*On the basis of our assessment carried out according to Annex II, section I,
of Legislative Decree of 1996/11/15, No. 661, national transposition of the Directive 90/396/EEC,
we hereby certify that the following products (model/type):*

Caldae murali

Wall mounted boilers

Modelli VICTRIX 50, VICTRIX 50 U, VICTRIX 75

Models VICTRIX 50, VICTRIX 50 U, VICTRIX 75

*(ulteriori informazioni sono riportate in allegato)
(for further information see annex)*

CONSTRUITI DA:
Manufactured by:

**IMMERGAS SPA
VIA CISA LIGURE 95
42041 BRESCELLO RE**

SODDISFANO LE DISPOSIZIONI DEL DECRETO SUDDETTO.
Meet the requirements of the aforementioned national legislation.

QUESTO CERTIFICATO DI ESAME CE DI TIPO È RILASCIATO DA IMQ S.P.A. QUALE
ORGANISMO NOTIFICATO PER LA DIRETTIVA 90/396/CEE.
IL NUMERO IDENTIFICATIVO DELL'IMQ S.P.A. QUALE ORGANISMO NOTIFICATO È **0051**

*This EC Type Examination Certificate is issued by IMQ S.p.A. as Notified Body for the Directive 90/396/EEC.
Notified Body notified to European Commission under number: 0051*

2007-08-07

DATA

IMQ S.p.A.

VIA QUINTILIANO 41 - 20138 MILANO

IL PRESENTE CERTIFICATO ANNULLA E SOSTITUISCE IL PRECEDENTE DEL
This Certificate cancels and replaces the previous one of

2006-10-12