

MURELLE EQUIPE 100 - 150 ErP

(PACK OF 2-3 MURELLE HE 50 R ErP)

INSTALLATION AND SERVICING INSTRUCTIONS



**ENSURE THAT THESE
INSTRUCTIONS ARE LEFT
FOR THE USER AFTER
COMPLETION OF THE
BENCHMARK SECTION**

**PLEASE READ THE
IMPORTANT NOTICE
WITHIN THIS GUIDE
REGARDING YOUR BOILER
WARRANTY**



SAFE HANDLING

This boiler may require 2 or more operatives to move it into its installation site, remove it from its packaging and during movement into its installation location. Manoeuvring the boiler may include the use of a sack truck and involve lifting pushing and pulling.

Caution should be exercised during these operations.

Operatives should be knowledgeable in handling techniques when performing these tasks and the following precautions should be considered:

- Grip the boiler at the base
- Be physically capable
- Use personal protective equipment as appropriate e.g. gloves, safety footwear.

During all manoeuvres and handling actions, every attempt should be made to ensure the following unless unavoidable and/or the weight is light.

- Keep back straight
- Avoid twisting at the waist
- Always grip with the palm of the hand
- Keep load as close to the body as possible
- Always use assistance

WARNING

Caution should be exercised when performing any work on this appliance.

Protective gloves and safety glasses are recommended.

- Avoid direct contact with sharp edges.
- Avoid contact with any hot surfaces.

NOTICE

Please be aware that due to the wet testing of the appliance, there may be some residual water in the hydraulic circuit.

- Protect any surfaces, carpets or floorings.
- Use a suitable container to catch any water that escapes when removing the protective caps from the connections.



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Important Information

IT IS A STATUTORY REQUIREMENT THAT ALL GAS APPLIANCES ARE INSTALLED BY COMPETENT PERSONS, IN ACCORDANCE WITH THE GAS SAFETY (INSTALLATION AND USE) REGULATIONS (CURRENT EDITION). The manufacturer's instructions must not be taken as overriding any statutory requirements, and failure to comply with these regulations may lead to prosecution.

No modifications to the appliance should be made unless they are fully approved by the manufacturer.

GAS LEAKS: DO NOT OPERATE ANY ELECTRICAL SWITCH, OR USE A NAKED FLAME. TURN OFF THE GAS SUPPLY AND VENTILATE THE AREA BY OPENING DOORS AND WINDOWS contact the gas emergency service on 0800111999.

Please refer to commissioning instructions for filling in the checklist at the back of this installation guide.

Note: All Gas Safe registered installers carry a ID Card.

You can check your installer is Gas Safe Registered by calling 0800 408 5577

IMPORTANT

Prior to switching on the boiler for the first time, check the following:

- Make sure that there are no liquids or inflammable materials in the immediate vicinity of the boiler.
- Make sure that the electrical connections have been made correctly and that the earth wire is connected to a good earthing system.
- Ensure that tightness and let by test have been conducted, including the internal gas pipe work.
- Make sure that the boiler is set for operation for the type of gas supplied.
- Check that the flue pipe for the outlet of the products of the combustion is unobstructed and has been properly installed.
- Make sure that any isolation valves are open.
- Make sure that the system is filled with water and is thoroughly vented.
- Check that the circulating pump is not jammed.
- Purge the gas supply pipe work.
- Ensure that the checklist is filled in when the commissioning has been completed.

All descriptions and illustrations provided in this manual have been carefully prepared but we reserve the right to make changes and improvements in our products that may affect the accuracy of the information contained in this manual.

1 DESCRIPTION

1.1 INTRODUCTION

This manual is for the construction maintenance and operation of a modular unit composed of multiple premixed condensation boilers in the “**MURELLE EQUIPE 100 ErP**” and “**MURELLE EQUIPE 150 ErP**” series linked in sequence/cascade independently of one another.

MURELLE EQUIPE 100 ErP

- Boilers and Mounting Frames and He-

aders code 9001101

- Low Loss Header Connection Kit code 8101534
- Low Loss Header code 8101550
- Cascade Flue code 9000100

MURELLE EQUIPE 150 ErP

- Boilers and Mounting Frames and Headers code 9001151
- Low Loss Header Connection Kit code 8101534
- Low Loss Header code 8101550

- Cascade Flue code 9000150

VENTILATION,
for guidance see APPENDIX 2.

1.2 DIMENSIONS (fig. 1)

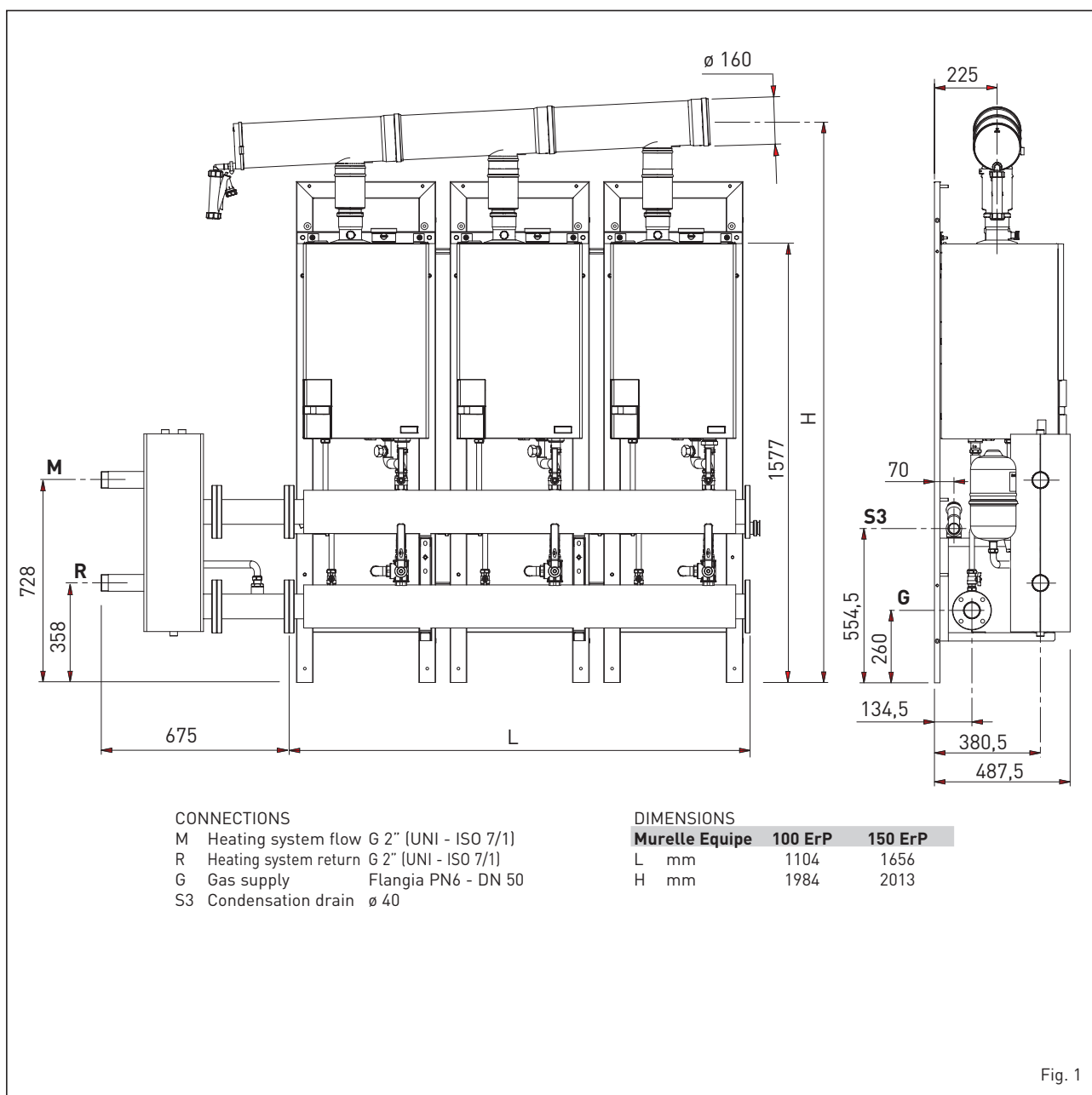


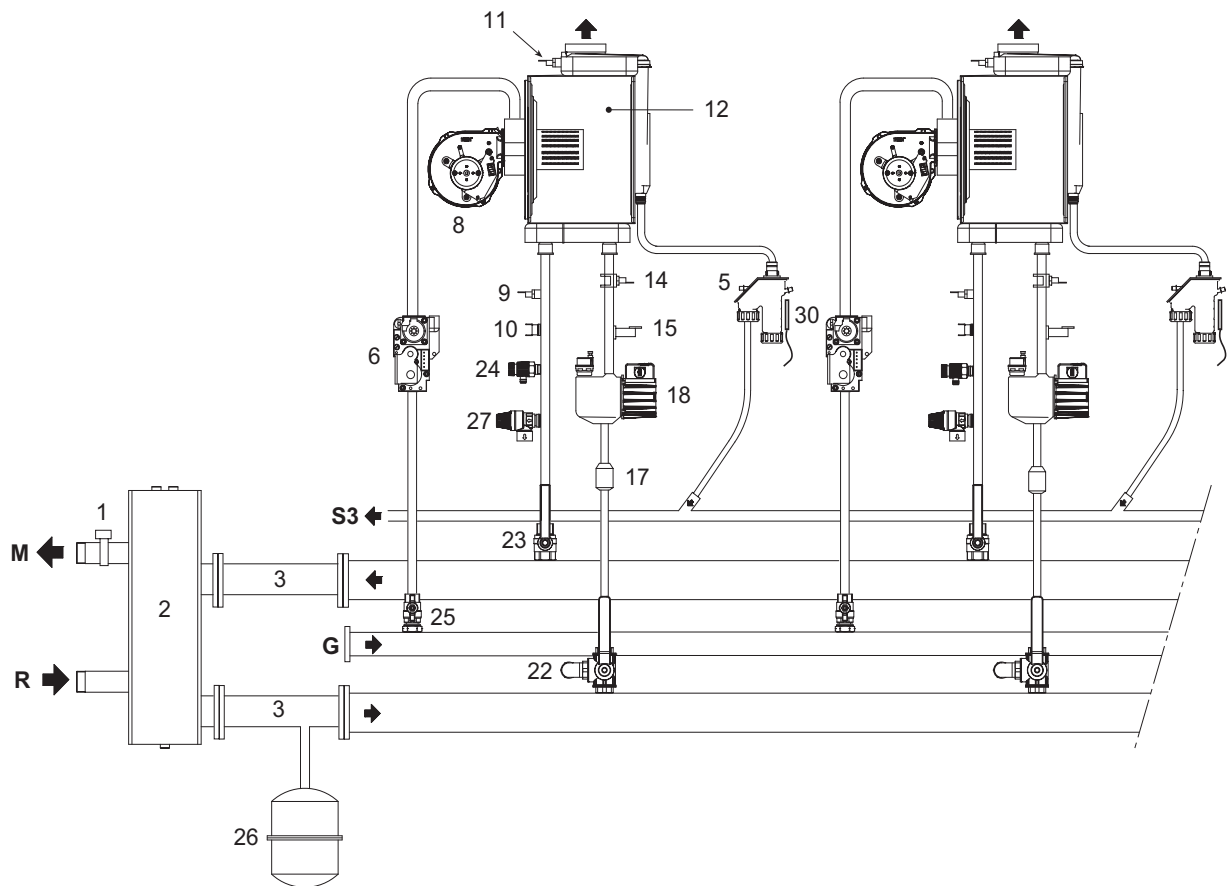
Fig. 1

1.3 TECHNICAL DATA

		MURELLE EQUIPE 100 ErP	MURELLE EQUIPE 150 ErP
Heat output			
Nominal (80-60°C) (Pn max)	kW	93,6 [2 x 46,8]	140,4 [3 x 46,8]
Nominal (50-30°C) (Pn max)	kW	102,4 [2 x 51,2]	153,6 [3 x 51,2]
Min (80-60°C) (Pn min)	kW	9,3	9,3
Min (50-30°C) (Pn min)	kW	10,5	10,5
Heat input (*)			
Nominal (Qn max - Qnw max)	kW	96,0 [2 x 48,0]	144,0 [3 x 48,0]
Min (Qn min - Qnw min)	kW	9,6	9,6
Min-max useable yield (80-60°C)	%	96,9/97,5	96,9/97,5
Min-max useable yield (50-30°C)	%	109,0/106,7	109,0/106,7
Useful yield at 30% (40-30°C)	%	108,6	108,5
Losses to arrest to 50°C (EN 15502)	W	352	528
Heating units MURELLE HE 50 R ErP			
	n°	2	3
Electrical supply and frequency			
	V-Hz	230-50	230-50
Power absorbed (Qn max)	W	282 [2 x 141]	423 [3 x 141]
Power absorbed (Qn min)	W	93	98
Power absorbed pump high efficiency	W	150 [2 x 75]	225 [3 x 75]
Degree of electric protection			
		IP X4D	IP X4D
Energy efficiency			
Seasonal energy efficiency class of the heating system		A	A
Seasonal energy efficiency of the heating system	%	93	93
Sound power of the heating system	dB (A)	---	---
Setting range single module	°C	20/80	20/80
Water content of modules	l	25,5	43,7
Max. operating pressure (PMS)	bar (kPa)	3,5 [343]	3,5 [343]
Max. operating temperature (T max)	°C	85	85
Flue gas temperature at Nominal capacity (80-60°C)	°C	85	85
Flue gas temperature at Minimum capacity (80-60°C)	°C	70	70
Flue gas temperature at Nominal capacity (50-30°C)	°C	52	52
Flue gas temperature at Minimum capacity (50-30°C)	°C	45	45
Max/min flow rate of flue gases	g/s	4,17/44,44	4,17/66,67
CO2 at Nominal/Minimum capacity (G20)	%	9,5/9,2	9,5/9,2
CO2 at Nominal/Minimum capacity (G31)	%	10,0/10,3	10,0/10,3
NOx measured (EN 15502 - 1:2015)	mg/kWh	20	20
Max. pressure at flue gas release manifold	Pa	160	160
PIN number			
		1312CM5613	
Category			
		II2H3P	
Type			
		B23-B53-B23P-B53P-C13-C33-C43-C53-C83	
NOx emission class (EN 15502 - 1:2015)			
		6 (< 56 mg/kWh)	
Main gas nozzles single module			
Number of nozzles	n°	1	1
Nozzle diameter (G20)	ø mm	7,5	7,5
Nozzle diameter (G31)	ø mm	5,5	5,5
Consumption at nominal/min. power			
Nominal (G20)	m³st/h	10,30 [2 x 5,15]	15,45 [3 x 5,15]
Minimum (G20)	m³st/h	1,01	1,01
Nominal (G31)	kg/h	7,46 [2 x 3,73]	11,19 [3 x 3,73]
Minimum (G31)	kg/h	0,75	0,75
Gas supply pressure			
(G20)	mbar (kPa)	20 [1,96]	20 [1,96]
(G31 - Propane)	mbar (kPa)	37 [3,63]	37 [3,63]

(*) Heat input of the heating system measured using lower heating value (LHV)

1.4 HYDRAULIC CIRCUIT



KEY

- 1 Cascade heating flow sensor (SMC)
- 2 Low Loss Header
- 3 Low Loss Header Connection Kit
- 5 Condensation drain trap
- 6 Gas valve
- 7 ---
- 8 Fan
- 9 Heating flow sensor (SM)
- 10 95°C safety thermostat
- 11 Flue sensor (SF)
- 12 Primary exchanger
- 14 Heating return sensor (SR)
- 15 Water pressure transducer
- 17 Non return valve
- 18 Pump high efficiency
- 19 ---

- 20 ---
- 21 ---
- 22 Three-way drain valve
- 23 Heating system cock
- 24 Condensation drain trap single module
- 25 Gas cock
- 26 8 litre expansion vessel (supplied with connection kit)
- 27 3,5 bar safety valve
- 29 ---
- 30 ---

CONNECTIONS

- M Heating system flow
- R Heating system return
- G Gas
- S3 Condensation drain

1.5 LOAD LOSS IN HYDRAULIC SEPARATOR SUPPLIED UPON REQUEST IN KITS CODE 8101550 (fig. 3)

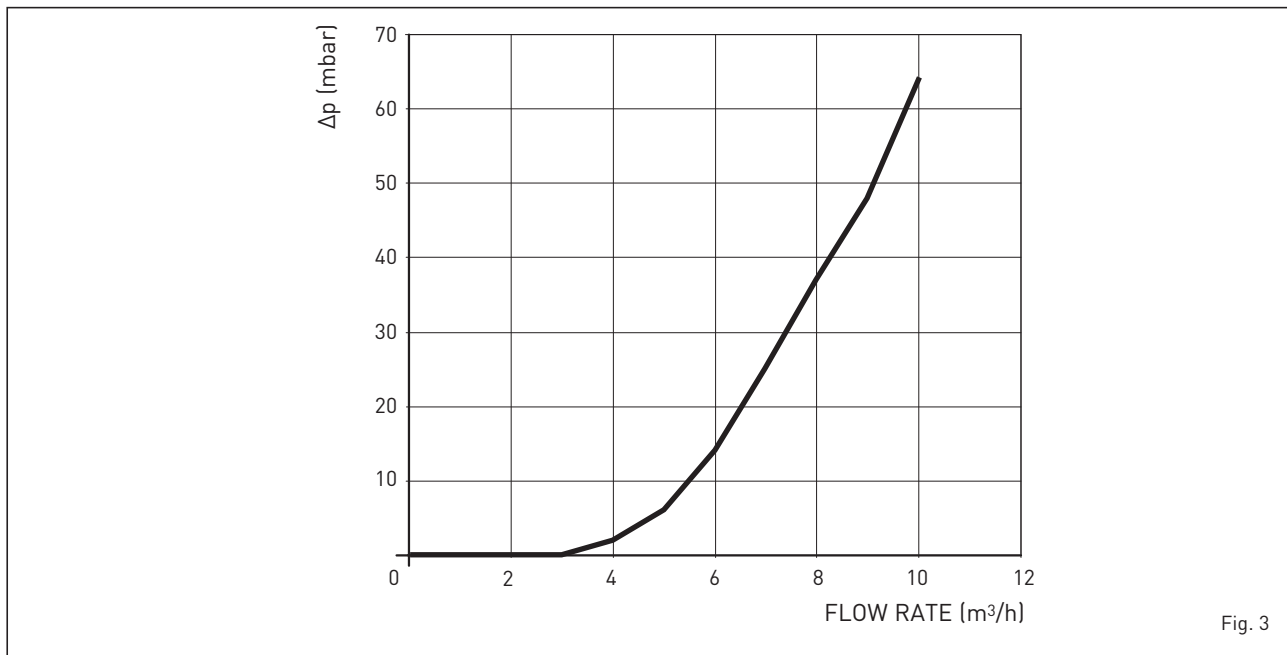


Fig. 3

1.6 TECHNICAL DATA PLATE (fig. 3/a)

Fonderie SIME S.p.A.
Legnago - VR (Italy) - Tel. +39 0442 631111

MODEL _____ SERIAL NUMBER _____ YEAR OF CONSTRUCTION _____ WATER CONTENT IN BOILER _____ HEAT INPUT MAX _____ HEAT OUTPUT MAX (80-60°C) _____ HEAT OUTPUT MAX (50-30°C) _____ MAX OPERATING PRESSURE _____ CONTENTS D.H.W. _____ HEAT INPUT MAX D.H.W. _____ MAX OPERATING PRESSURE D.H.W. _____ D.H.W. FLOW RATE _____ POWER SUPPLY _____ MAX POWER ABSORBED _____ COUNTRIES OF DESTINATION _____ CATEGORY _____	TYPE _____ CODE _____ PIN NUMBER _____ DIRECTIVE OF REFERENCE _____ CE 1312 HEAT INPUT MIN _____ HEAT OUTPUT MIN (80-60°C) _____ HEAT OUTPUT MIN (50-30°C) _____ MAX OPERATING PRESSURE _____ HEAT INPUT MIN D.H.W. _____ MAX OPERATING PRESSURE D.H.W. _____ ELECTRICAL PROTECTION GRADE _____ NOx CLASS _____ CODE GAS COUNCIL NUMBER (UK) _____ CERTIFICATION WRAS (UK) _____ TYPE OF GAS _____ GAS SUPPLY PRESSURE _____ CLASSIFICATIONS _____
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MADE IN ITALY

1.7 INTERFACE WITH OTHER ELECTRONIC DEVICES OPTIONAL

The electronic boiler board is prepared for the application of the following electronic devices to be requested separately:

- Remote control SIME HOME code 8092280/81
- thermoregulator RVS code 8092255

- MIXED ZONE kit code 8092252
- INSOL kit code 8092254
- RS-485 kit code 8092244 which allows to MODBUS communication cascade boilers
- Additional casing board code 8092236 when you connect MIXED ZONE or INSOL board.

All devices are supplied with instructions

for installation and use.

For the configuration of devices SIME HOME e RVS with electronic boiler board set **PAR 10**.

To access the installer parameters see section **6 (RS-485 board for cascade management)**.

1.8 CONTENTS OF KIT (cod. 5193650 MURELLE EQUIPE 100 ErP - cod. 5193651 MURELLE EQUIPE 150 ErP (fig. 4)

- N° 2 frame kit code 6294800 with screws TE M8 x 75 for **"MURELLE EQUIPE 100 ErP"**.
- N° 3 frame kit code 6294800 with screws TE M8 x 75 for **"MURELLE EQUIPE 150 ErP"**.

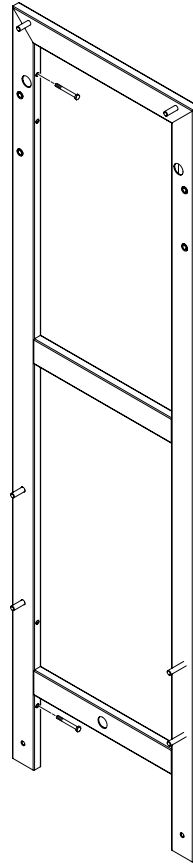


Fig. 4/a

- N° 2 support brackets boiler code 6073324 with screws TE M8 x 16 for **"MURELLE EQUIPE 100 ErP"**.
- N° 3 support brackets boiler code 6073324 with screws TE M8 x 16 per **"MURELLE EQUIPE 150 ErP"**.

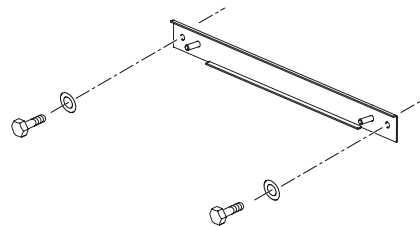


Fig. 4/b

- N° 2 shelf kit code 6294811 with washers and nuts M10.

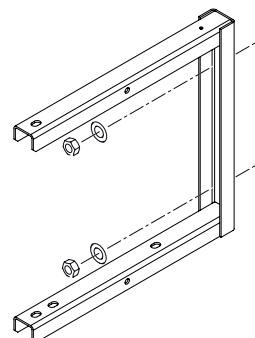


Fig. 4/c

- N° 2 flow/return manifold kit code 6291954 coated in polyurethane with flanges, seal and M16 fixing screws for **"MURELLE EQUIPE 100 ErP"**.
- N° 2 flow/return manifold kit code 6291955 coated in polyurethane with flanges, seal and M16 fixing screws for **"MURELLE EQUIPE 150 ErP"**.

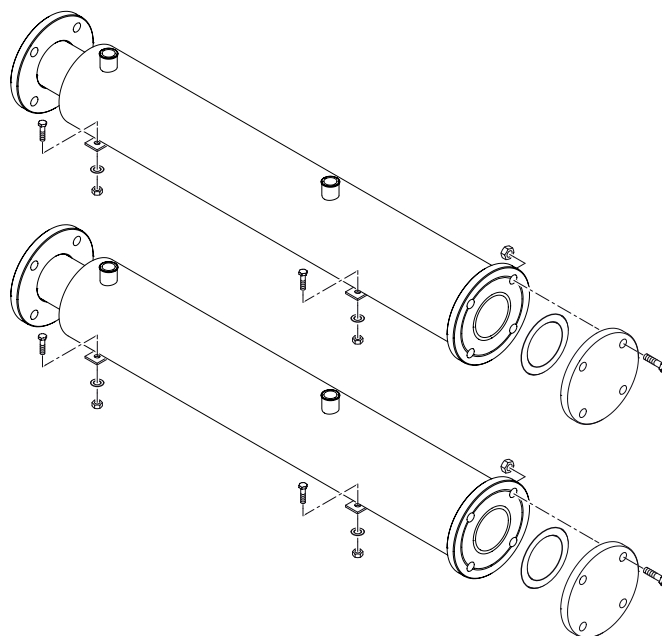


Fig. 4/d

- N° 1 gas collector **"MURELLE EQUIPE 100 ErP"** code 6286330 with nuts, M12 fixing screws and flange.
- N° 1 gas collector **"MURELLE EQUIPE 150 ErP"** code 6286331 with nuts, M12 fixing screws and flange.

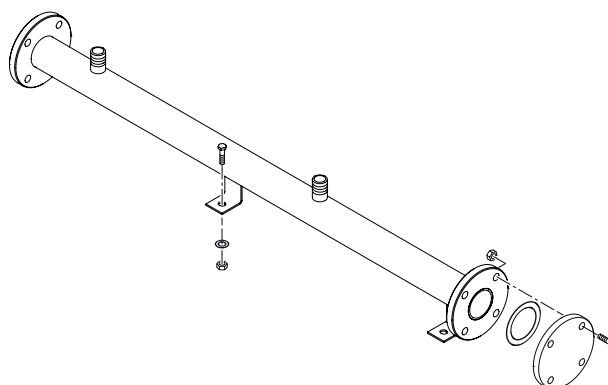


Fig. 4/e

- N° 1 condensation drain manifold kits for **"MURELLE EQUIPE 100 ErP"** consisting of 2 pipe connection, 2 pipe e 1 cap. The manifold is supplied with brackets, nuts and M8 screws.
- N° 1 condensation drain manifold kits for **"MURELLE EQUIPE 150 ErP"** consisting of 3 pipe connection, 3 pipe e 1 cap. The manifold is supplied with brackets, nuts and M8 screws.

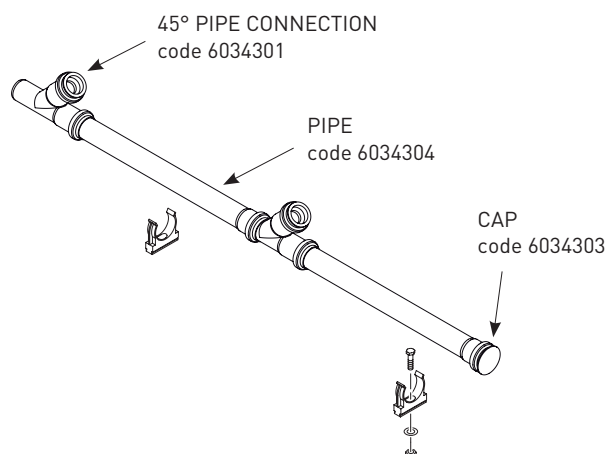
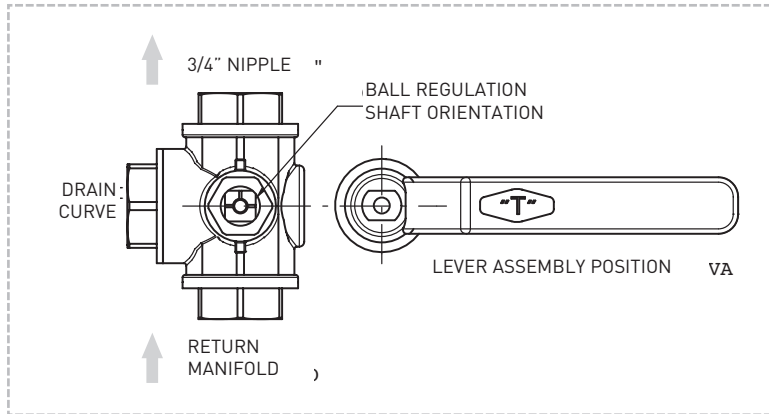


Fig. 4/f

- N° 2 three-way flow/return and gas cock kits, connecting pipes, 3/4" nipple, non-return valve and seals for the connection of two modules "MURELLE EQUIPE 100 ErP".
- N° 3 three-way flow/return and gas cock kits, connecting pipes, 3/4" nipple, non-return valve and seals for the connection of three modules "MURELLE EQUIPE 150 ErP".

CAUTION: Before assembling three-way drain valve, orient the ball regulation lever as shown in the figure.



M Heating system flow
R Heating system return
G Gas supply
M2 Tank flow

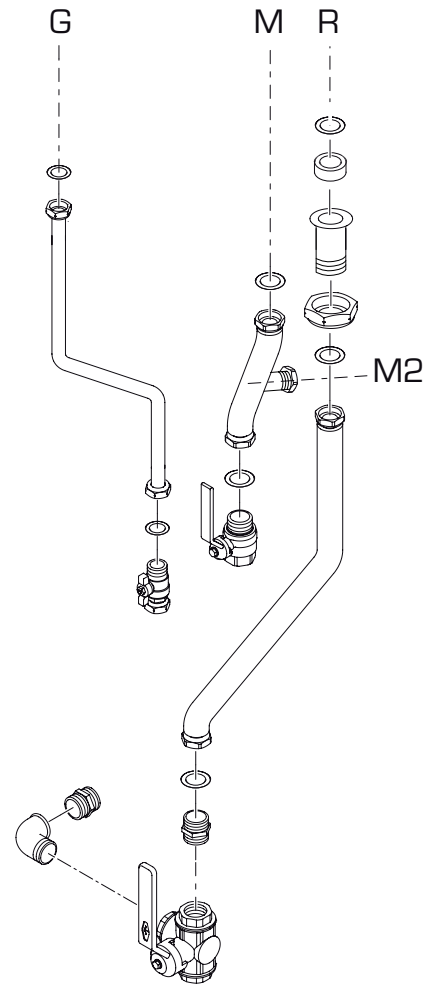


Fig. 4/g

- N° 1 sensor kit code 8092250 with external sensor (SE), cascade heating flow sensor (SMC) and RS-485 board connection cable.

NOTE: Section 5 show the electrical connection for the sensors.

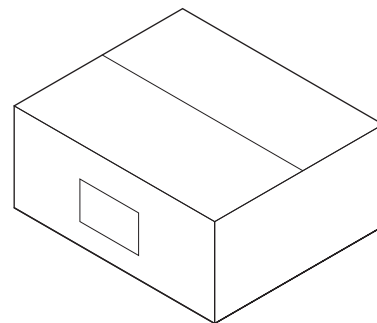
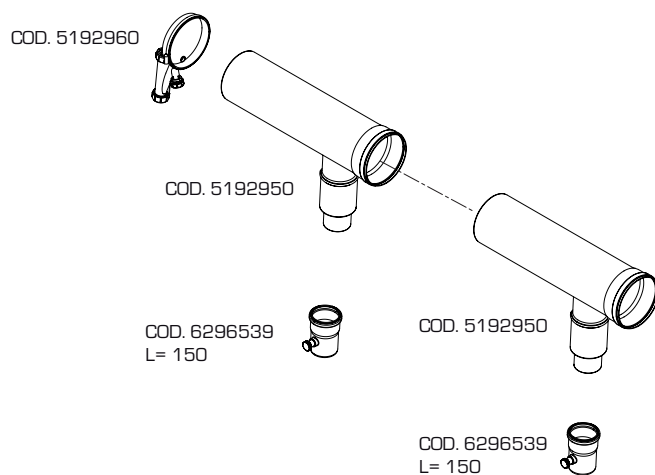


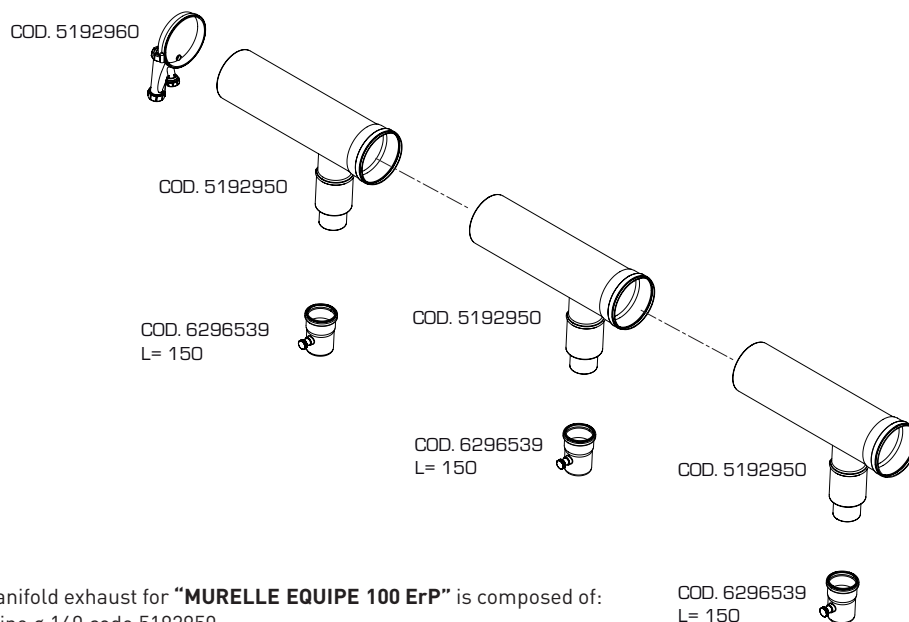
Fig. 4/h

1.9 COMPOSITION KIT MANIFOLD EXHAUST (fig. 5)

MURELLE EQUIPE 100 ErP



MURELLE EQUIPE 150 ErP



- Kit manifold exhaust for “MURELLE EQUIPE 100 ErP” is composed of:
N. 2 pipe $\varnothing$ 160 code 5192950
N. 2 extension L. 150 $\varnothing$ 80 code 6296539
N. 1 manifold tap code 5192960.
- Kit manifold exhaust for “MURELLE EQUIPE 150 ErP” is composed of:
N. 3 pipe $\varnothing$ 160 code 5192950
N. 3 extension L. 150 $\varnothing$ 80 code 6296539
N. 1 manifold tap code 5192960.

CAUTION: Use silicone grease to ease the connection of the flue components.

Fig. 5

1.10 LOW LOSS HEADER CONNECTION KIT (fig. 6)

- N° 2 flanged heating system flow/return stub pipes complete with expansion vessel 8 liters code 6245108, connection pipe code 6227661, gaskets and nipple.

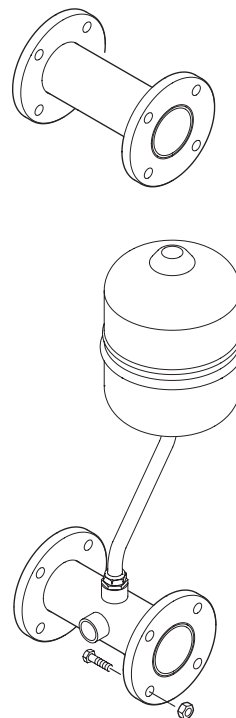


Fig. 6

1.11 LOW LOSS HEADER code 8101550 (order separately) (fig. 7)

- N° 1 Hydraulic separator with seals, nuts and M16 screws.

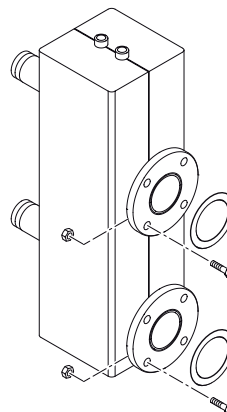
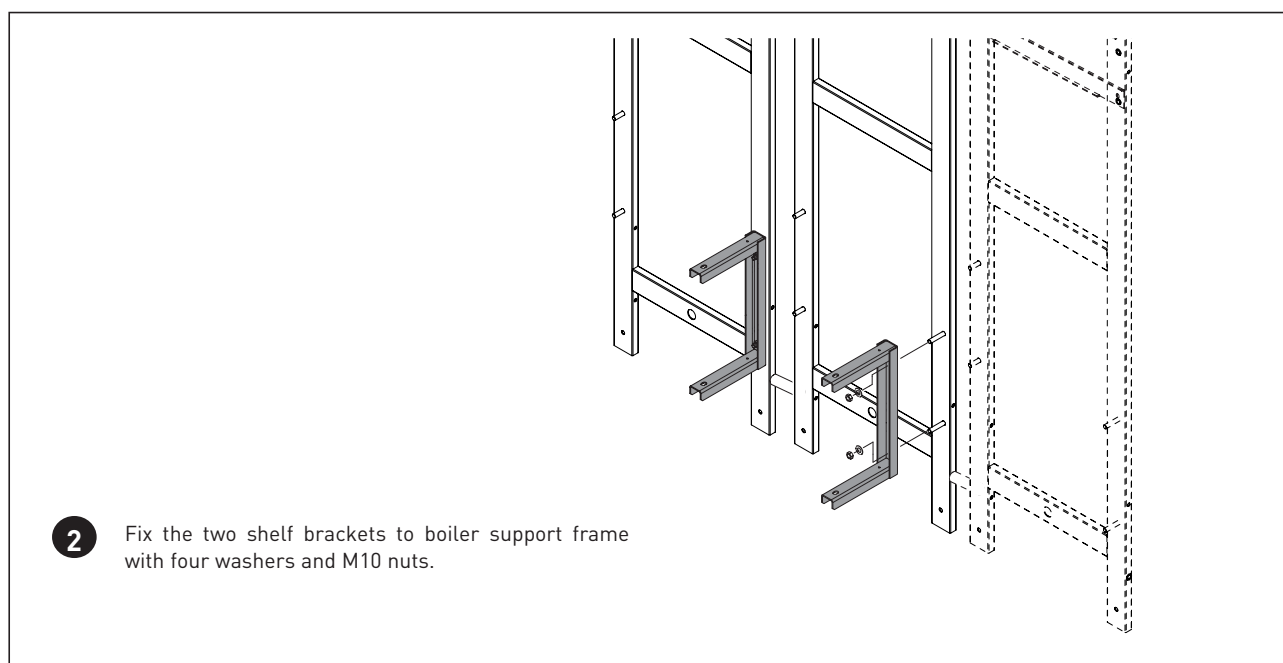
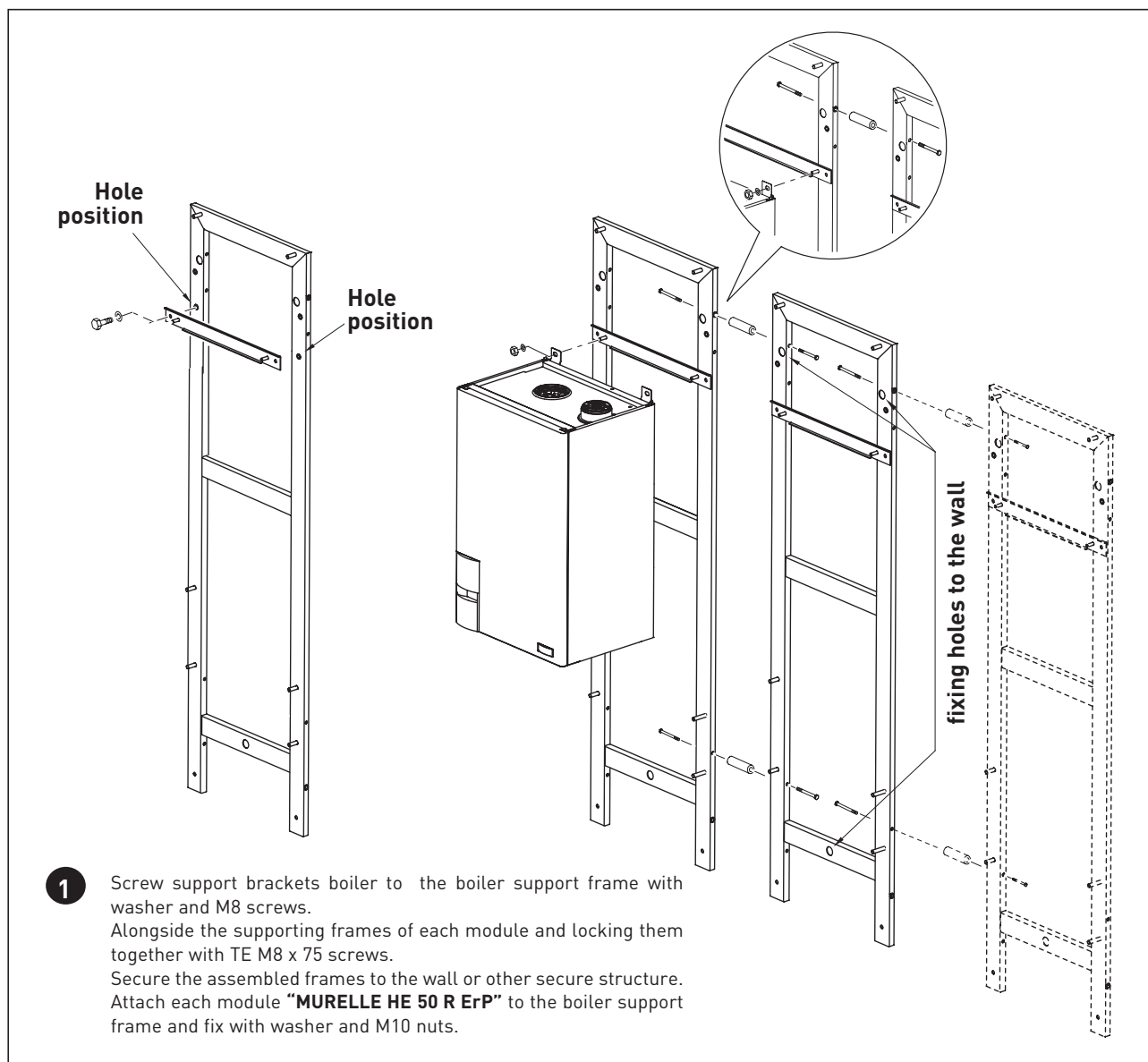


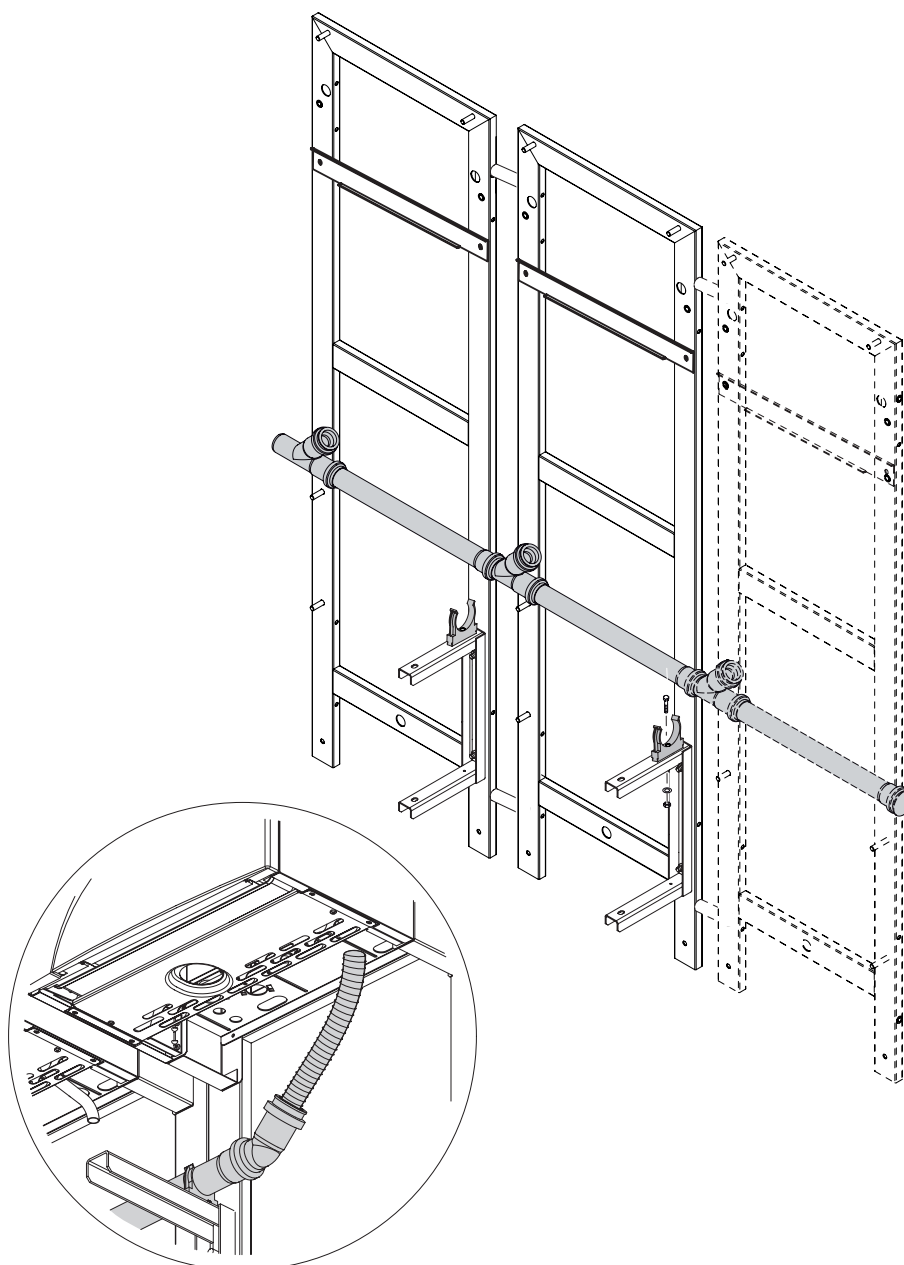
Fig. 7

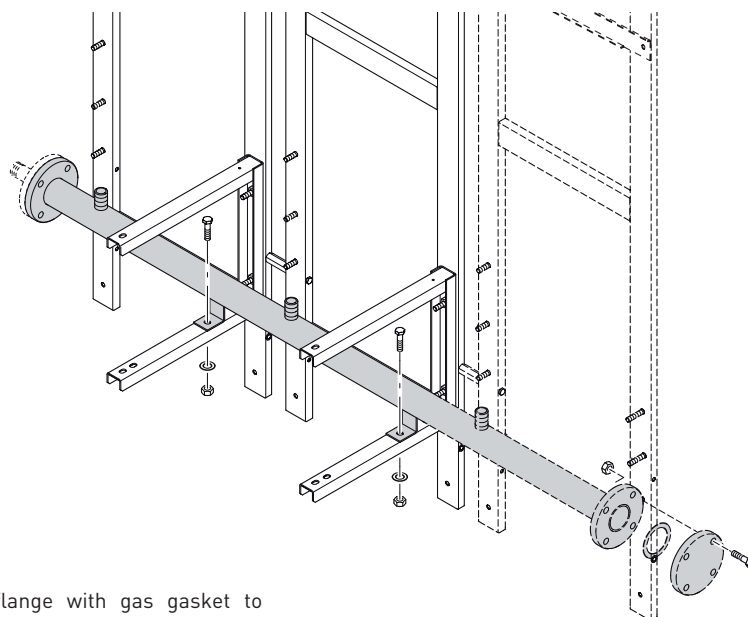
2 ASSEMBLING THE BOILER SUPPORT FRAME



3 FITTING CONNECTIONS AND CONDENSATE DRAIN

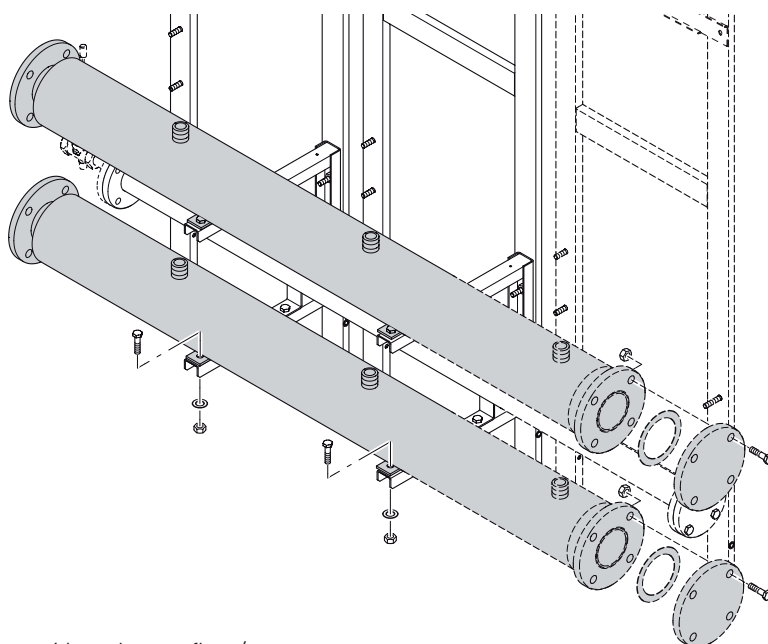
- 1 Mount the condensation drain manifold brackets with screws, washer and M5 nuts.
Insert the condensation drain manifold in those brackets.
Connect the each condensate boiler drain trap to the condensation drain manifold.





- 2** Assemble the blank flange with gas gasket to manifold with screws and M12 nuts. Secure the gas header with screws, washers and M8 nuts.

CAUTION: The fuel shut-off valve is not provided.



- 3** Install blind flanges with gaskets to flow / return manifold with screws and M12 nuts. Fix the flow / return manifold in its support with screws, washers and M16 nuts.

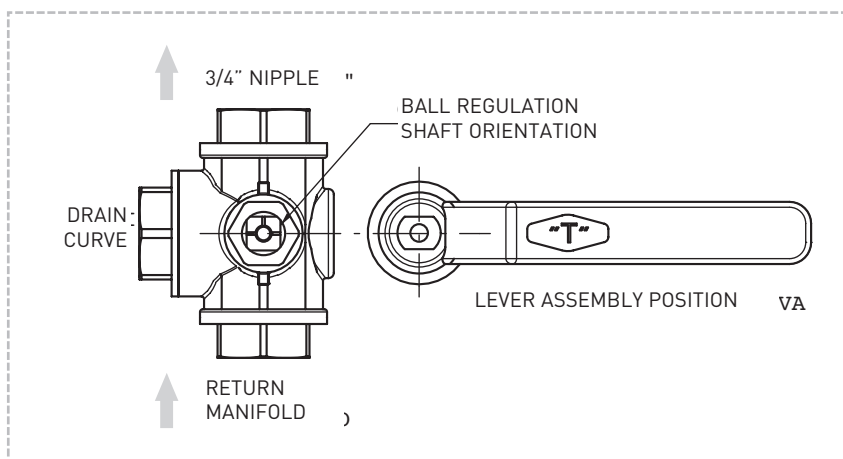
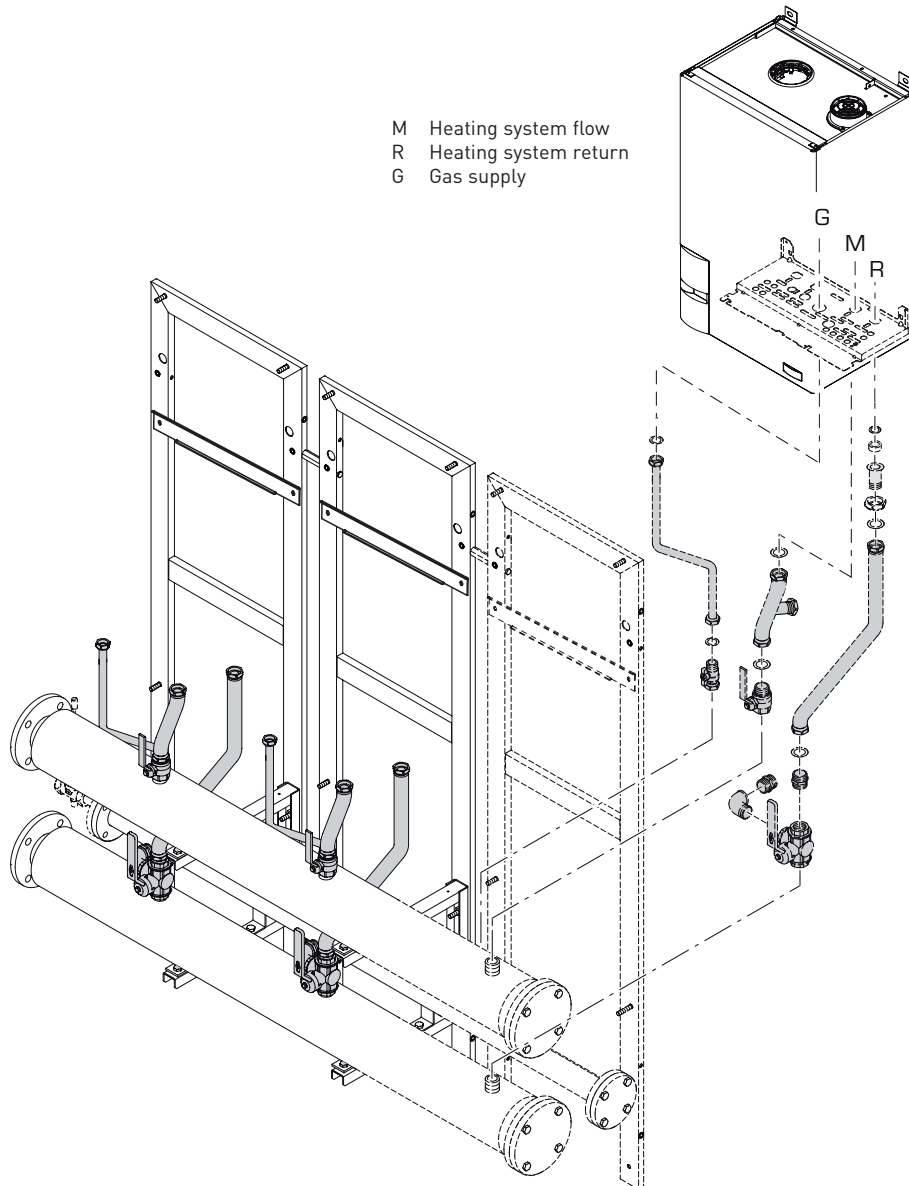
4

Install:

- three-way flow/return valve
- gas cock
- non-return valve

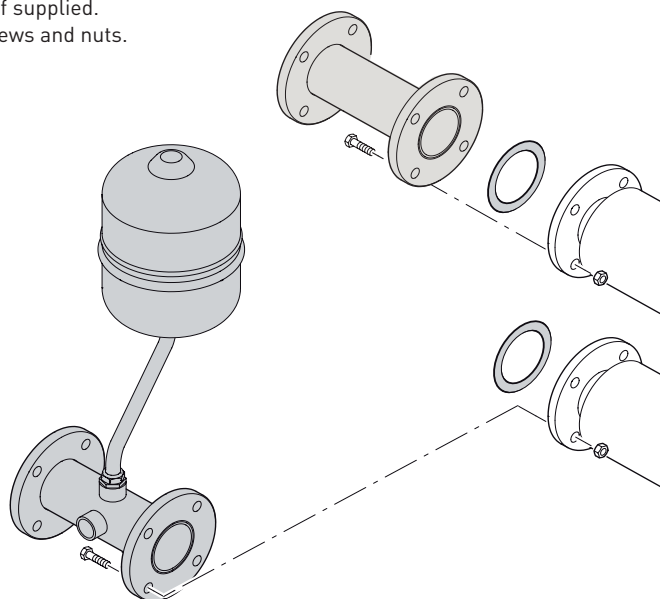
to the respective manifolds and install the pipes to the connections of the boiler with the respective seals.

CAUTION: Before assembling three-way drain valve, orient the ball regulation lever as shown in the figure.



5

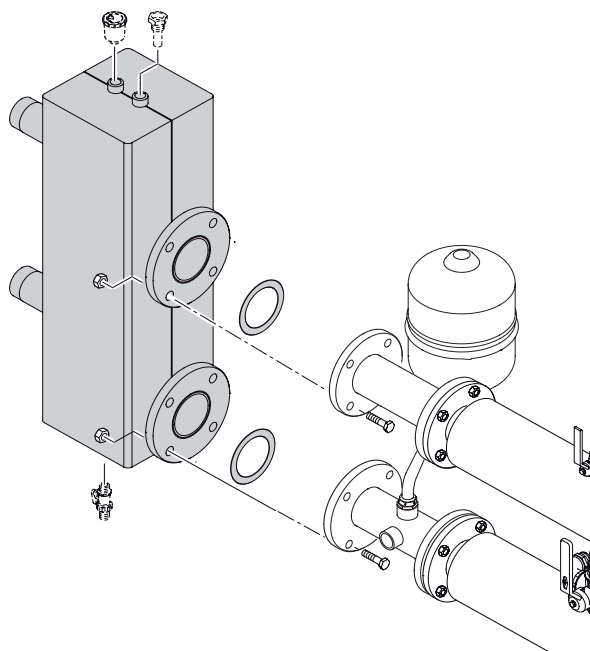
Connection of the hydraulic separator, if supplied.
Assemble with seals and M12 fixing screws and nuts.



6

Connection of the hydraulic separator, if supplied.
Assemble with seals and M16 fixing screws and nuts.

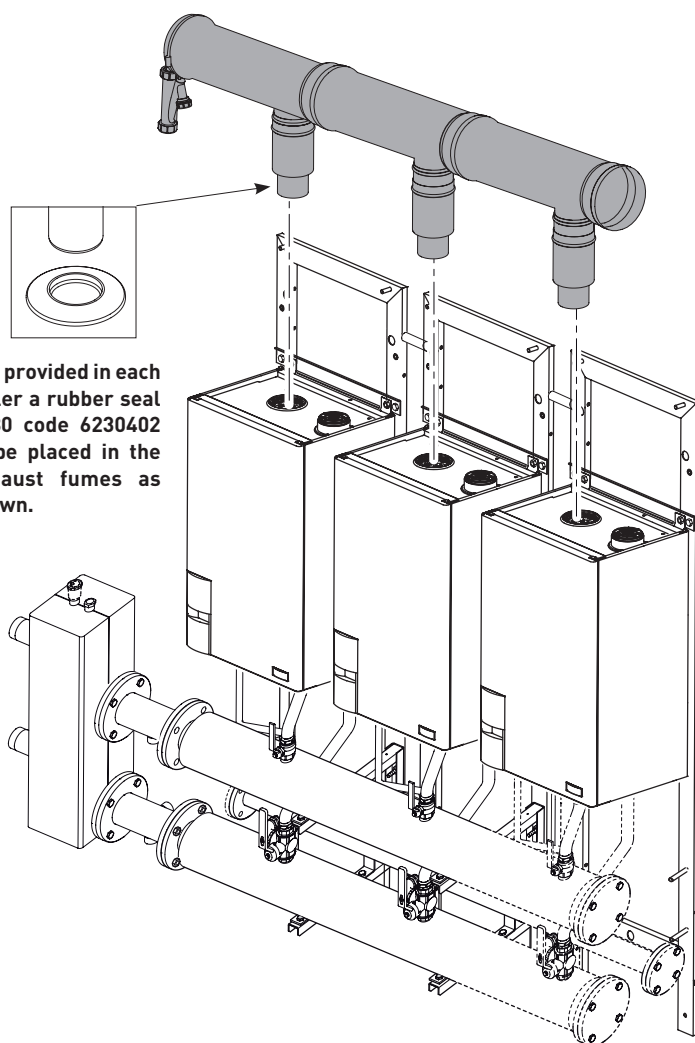
CAUTION: Assemble the air vent valve, the drain valve and sleeve 1/2 " (not supplied) in the position as shown in figure.



4 CASCADE FLUE

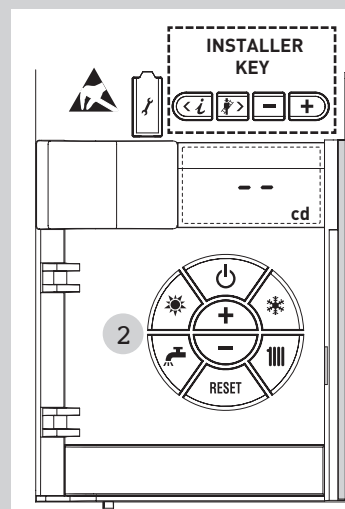
- 1 Assemble the cascade flue as shown. use silicone grease to ease connection of the components
The flue can be orientated to the left or the right, but always must fall to the condensate drain.

It is provided in each boiler a rubber seal Ø 80 code 6230402 to be placed in the exhaust fumes as shown.



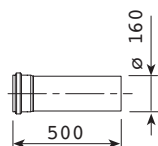
When boilers are used with a cascade flue PAR 1 on each boiler must be reset.
On natural gas PAR 1 = 6
On LPG PAR 1 = 14

Parameter 1 will be displayed. Change the value using the and .
The standard display returns automatically after 60 seconds, or by pressing one of the control keys.

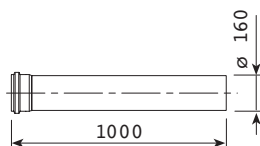


AVAILABLE AS OPTIONAL, THE FOLLOWING Ø 160 POLYPROPYLENE EXHAUST FUMES ACCESSORIES

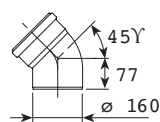
Extension L. 500
code 8102522



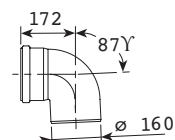
Extension L. 1000
code 8102523



Extension 45° MF
code 8102520



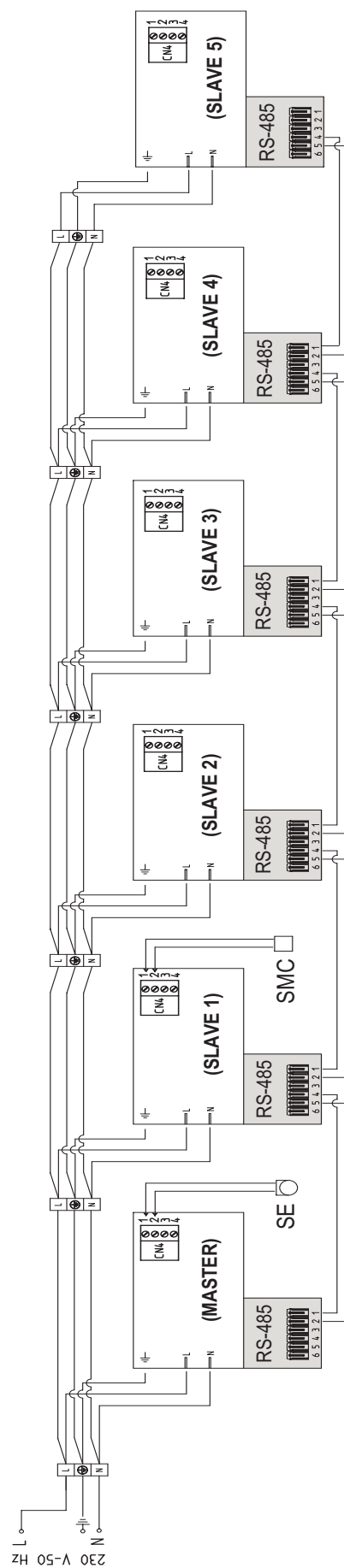
90° Bend MF
code 8102521



5 CASCADE CONNECTION

- 1 Connect the RS 485 boards as shown.

Connect the external temperature sensor (SE) to **MASTER** boiler and heating flow sensor (SMC) to **SLAVE 1**.



6 CASCADE MANAGEMENT

After connecting in cascade the boilers must be configured.
One boiler must be assigned as the master and others as slaves.
To do this PAR 15 on each boiler must be reset.

On each boiler press any key to wake up the display. Then press simultaneously the and the buttons for 5 seconds until the display is as shown.



Press the key until PAR 15 is shown in the bottom right hand corner.

Using the and keys reset the value accordingly.

On the MASTER set PAR 15 = 0

On the first SLAVE set PAR 15 = 1

*Second SLAVE set PAR 15 = 2 ,

To confirm the setting press

*CASCADE WITH MORE THAN TWO BOILERS

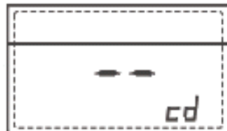
When more than two boilers are connected in cascade, it is essential that the OEM parameter on the “Master” boiler is reset to coincide with the number of boilers in the cascade.

This must be done after setting PAR 15 on the designated Master boiler to “0”

On the “Master” boiler press any key to wake up the display. Then press simultaneously the and the buttons for 5 seconds until the display is as shown.



Then press again, simultaneously, the and the buttons for 2 seconds until the display shows.



Next press, in the order shown .
The display will be as shown.

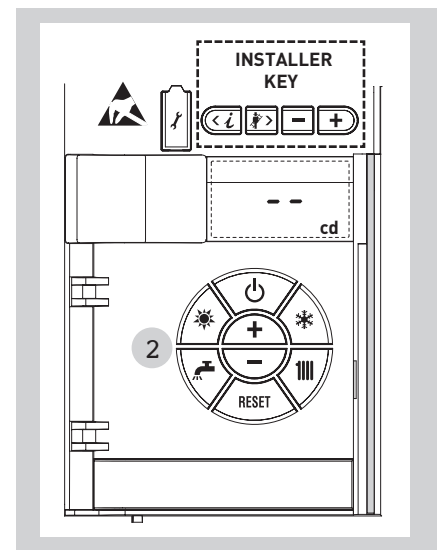


Press the button, and the display will show



Use the and buttons to set the number of boilers in the cascade.

Then press to confirm the settings.



SERVICE RECORD

It is recommended that your heating system is serviced regularly and that the appropriate Service Interval Record is completed.

Service Provider

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions. Always use the manufacturer's specified spare part when replacing controls.

SERVICE 01		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 02		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 03		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 04		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 05		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 06		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 07		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 08		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 09		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

SERVICE 10		Date:	
Engineer name:			
Company name:			
Telephone No:			
Gas safe register No:			
Record:	At max. rate:	CO ppm	AND CO ₂ %
	At min. rate: (Where Possible)	CO ppm	AND CO ₂ %
Comments:			
Signature			

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

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INSTALLATION CHECKLIST

SINGLE BOILER INSTALLATION

PAR 14 (See section 2.6.6) When BMS input used, and input is 10v, the required flow temperature = °C Set value of PAR 14

BOILERS INSTALLED IN CASCADE

ALL BOILERS IN THE CASCADE

PAR 15 (see fig 4/b) The cascade address must be set in each boiler in the cascade, denoting the master and each slave (Master = 0)

	Boiler 1	Boiler 2	Boiler 3	Boiler 4	Boiler 5	Boiler 6
Set value of PAR 15						

PAR 1 (see section 2.2.2) When installed with a cascade flue, incorporating a clappet(non return) valve, PAR 1 must be set accordingly on each boiler in the cascade

	Boiler 1	Boiler 2	Boiler 3	Boiler 4	Boiler 5	Boiler 6
Set value of PAR 1						

MASTER BOILER

OEM A1 (see section 2.2.2) When the number of boilers in the cascade is greater than two, the OEM A1 on the MASTER boiler (boiler with PAR 15=0), must be set to the same value as the number of boilers in the cascade. This can only be done after PAR 15 has been set.

Number of boilers in cascade
 Set value of OEMA1 on boiler number

PAR 14 (See section 2.6.6) When BMS input used, and input is 10v, the required flow temperature = °C Set value of PAR 14 on the master boiler

Commissioning Checklist for Boilers in Cascade

This checklist is for guidance only, and is not a full installation safety check

Address _____

 Engineer _____

	1	2	3	4	5	6	7	8
Satisfactory visual check of flue Y/N								
Flue within allowable length and correctly terminated Y/N								
Confirm Tightness of installation pipework downstream of Isolating valve using leak detection fluid Y/N								
Check tightness of all valves Y/N								
Carryout ignition test of boiler with gas isolated to ensure boiler fails safe Y/N								
Turn on gas supply to boiler and isolate main burner(disconnect gas valve) and ensure boiler goes to lockout Y/N								
Reset boiler lockout and retry, ensuring boiler again locks out Y/N								
Reconnect gas valve, reset boiler lockout, and ensure boiler lights and is stable Y/N								
Test safety devices Y/N								
Safety stat(TS) - Disconnect - the boiler locks out Y/N								

	Boiler 1		Boiler 2		Boiler 3		Boiler 4		Boiler 5		Boiler 6		Boiler 7		Boiler 8	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Flue analysis																
Boiler Output																
CO ppm																
CO2 %																
Ratio																
Boiler size																
Serial Number																
Completed By																
Date																

INDUSTRY GUIDANCE FOR INSTALLERS ON CONDENSATE

DRAINAGE PIPE INSTALLATION

This guidance is endorsed by HHIC members.

1. BACKGROUND

During recent winters the UK has experienced prolonged spells of extremely cold weather - down to minus 20°C and below in many areas. This resulted in a significant increase in the number of calls to boiler manufacturers and heating engineers from householders with condensing (high efficiency) boilers where the condensate drainage pipe had frozen and become blocked with ice, causing the boiler to shut down. In the vast majority of cases such problems occur where the condensate drainage pipe is located externally to the building for some part of its length.

British Standards, Building Regulations etc. currently allow condensate drainage pipes to be run either internally or externally, or a combination of these. These documents give guidance on how to install the pipes in order to reduce the possibility of freezing. However this guidance may not be sufficient to prevent freezing in extreme conditions - with widespread and prolonged very low temperatures.

In view of the possibility that UK weather patterns will show more “extremes” in future due to the effects of global climate change, the following guidance updates previous recommendations on condensate drainage pipe installation. All other technical requirements for condensate drain installation given in British Standard BS 6798:2009, or in boiler manufacturers’ installation instructions should still be followed.

2. REVISED GUIDANCE ON CONDENSATE DRAINAGE PIPE INSTALLATION

Where a new or replacement boiler is being installed, access to an internal “gravity discharge” termination should be one of the main factors considered when determining potential boiler locations, so that the condensate drainage pipe can be terminated as recommended below. On an existing installation, the guidance below should also be followed if work is carried out to “upgrade” the condensate drainage system to reduce the risk of freezing in extreme conditions.

Internal condensate drainage pipework must be a minimum of 19mm ID (typically 22mm OD) plastic pipe and this should “fall” at least 45 mm per metre away from the boiler, taking the shortest practicable route to the termination point.

In order to minimise the risk of freezing during prolonged very cold spells, one of the following methods of terminating condensate drainage pipe should be adopted -

2.1 INTERNAL TERMINATION:

Wherever possible, the condensate drainage pipe should be terminated at a suitable internal foul water discharge point such as (a) an internal soil and vent stack or (b) an internal kitchen or bathroom waste pipe, washing machine waste pipe etc. A suitable permanent connection to the foul waste pipe should be used. Figures 1, 2(a), 2(b) show appropriate connection methods.

The possibility of waste pipes freezing downstream of the connection point should be considered when determining a suitable connection point - e.g. a slightly longer pipe run to an internal soil stack may be preferable to a shorter run connecting into a kitchen waste pipe discharging directly through the wall to an external drain.

Where "gravity discharge" to an internal termination is not physically possible (e.g. the discharge point is above the appliance location, or access is obstructed by a doorway), or where very long internal pipe runs would be required to reach a suitable discharge point, the following measures may be adopted -

2.2 USE OF A CONDENSATE PUMP (TO AN INTERNAL TERMINATION):

Condensate can be removed using a proprietary condensate pump, of a specification recommended by the boiler or pump manufacturer.

The pump outlet should discharge to a suitable internal foul water discharge point, such as (a) an internal soil and vent stack or (b) an internal kitchen or bathroom waste pipe, washing machine waste pipe etc. Figure 3 shows a typical connection method.

A suitable permanent connection to the foul waste pipe should be used and the manufacturer's detailed installation instructions for the pump should be followed.

2.3 EXTERNAL TERMINATION:

The use of an externally-run condensate drainage pipe, terminating at a suitable foul water discharge point or purpose-designed soakaway, may be also be considered; however if this termination method is chosen then the following measures should be adopted -

The pipe should be run internally as far as possible before going externally and the pipe diameter should be increased to a minimum of 30mm ID (typically 32mm OD) before it passes through the wall.

The external run should be kept as short as possible, taking the most direct and "most vertical" route possible to the discharge point, with no horizontal sections in which condensate might collect.

The external pipe should be insulated using suitable waterproof and weatherproof insulation ("Class O" pipe insulation is suitable for this purpose) .

The use of fittings, elbows etc should be kept to a minimum and any internal “burrs” on cut pipework should be removed so that the internal pipe section is as smooth as possible.

The customer/householder should be advised that even with the above measures this type of installation could freeze, and that if this were to occur then boiler shutdown could result, requiring remedial action - possibly involving a chargeable engineer call-out.

Where there are likely to be extremes of temperature or wind-chill, the use of a proprietary trace-heating system for external condensate drainage pipework, incorporating an external frost thermostat, should therefore be considered. If such a system is used then the installation instructions of the trace heating manufacturer and any specific recommendations regarding pipe diameter, insulation, etc. should be followed. All other relevant guidance on condensate drainage pipe installation should also be followed.

Other cold weather protection methods approved or endorsed by boiler manufacturers and/or service organisations may be adopted if these are considered suitable by the parties involved.

If an external soil/vent stack is used as the external termination then the connection method shown in Figure 4 should be used, together with the measures on insulation etc. as described above and shown in the diagram.

When a rain water downpipe is used as the termination (**NB** only permissible if this downpipe passes to a combined foul and rainwater drainage system) an air break must be installed between the condensate drainage pipe and the downpipe to avoid reverse flow of rainwater into the boiler should the downpipe itself become flooded or frozen. Figure 5 shows a suitable connection method.

Where the condensate drainage pipe is terminated over an open foul drain or gully, the pipe should terminate below the grating level, but above water level, in order to minimise “wind chill” at the open end. Pipe drainage will be improved if the end is cut at 45° as opposed to a straight cut. The use of a drain cover (such as those used to prevent blockage by leaves) may offer further protection from wind chill. Figure 6 shows a suitable connection method.

Where the condensate drain pipe terminates in a purpose-designed soakaway (see BS 6798:2009 or boiler installation manual for soakaway design requirements) any above-ground section of condensate drainage pipe should be run and insulated as described above. Figure 7 shows a suitable connection method.

3. UNHEATED INTERNAL AREAS:

Internal condensate drainage pipes run in unheated areas such as lofts, basements and garages should be treated as external pipe.



NOTES

The Benchmark Commissioning Checklist should be completed as required to record details of the condensate drainage pipe installation.

Where an external condensate drainage pipe is installed, the customer should be made aware of the risks and consequences of its freezing and offered the option to fit trace heating (or other measures approved by the boiler manufacturer or service organisation).

Separate guidance has been published for householders on remedial actions which can be taken if a condensate drainage pipe freezes. This may result in requests for alteration to condensate drainage pipework, in which case the guidance above should be followed.

In some instances (e.g. where an elderly person's heating needs to be reinstated as an emergency measure) condensate drainage pipes may have been cut in order to bypass any blockage and allow re-ignition of the boiler, with condensate being collected in a suitable container as a temporary solution.

While not unsafe, this is not recommended practice and if such action has been taken then the condensate drainage pipe must be reinstated as soon as possible, using the above guidance to reduce risk of freezing in future.

Figure 1 – Connection of condensate drainage pipe to internal soil and vent stack

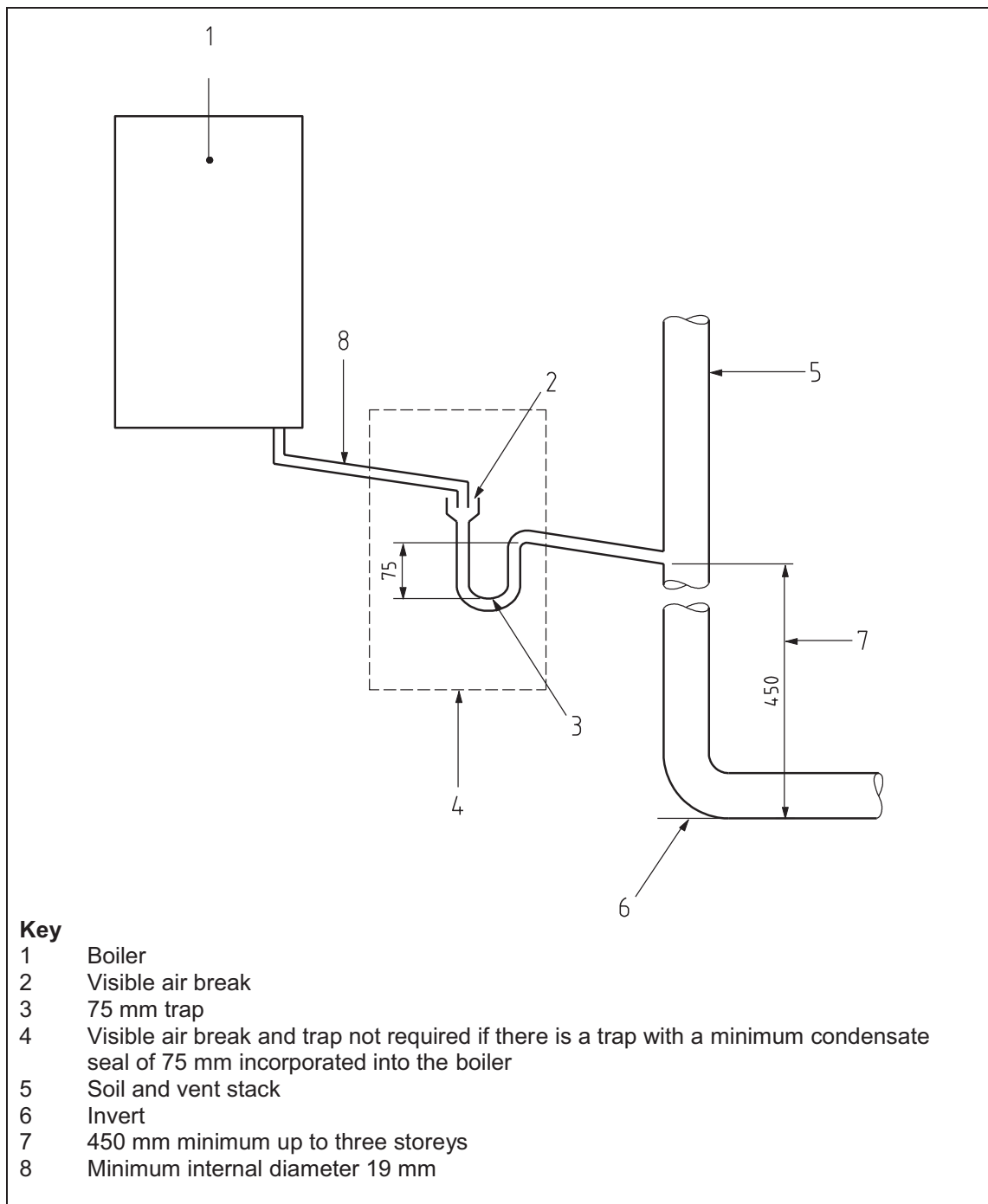


Figure 2(a) – Connection of a condensate drainage pipe downstream of a sink, basin, bath or shower waste trap

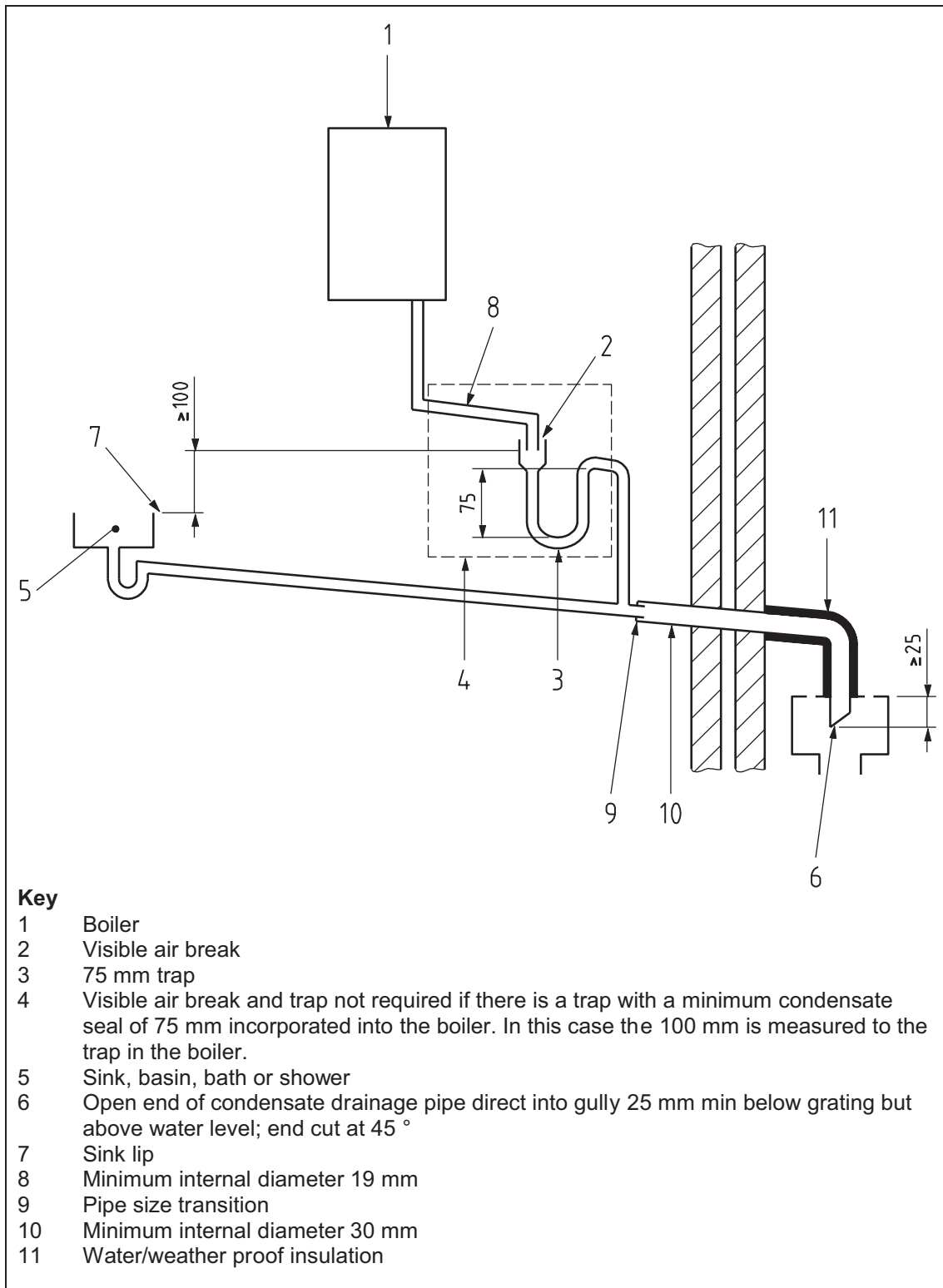


Figure 2(b) – Connection of a condensate drainage pipe upstream of a sink, basin, bath or shower waste trap

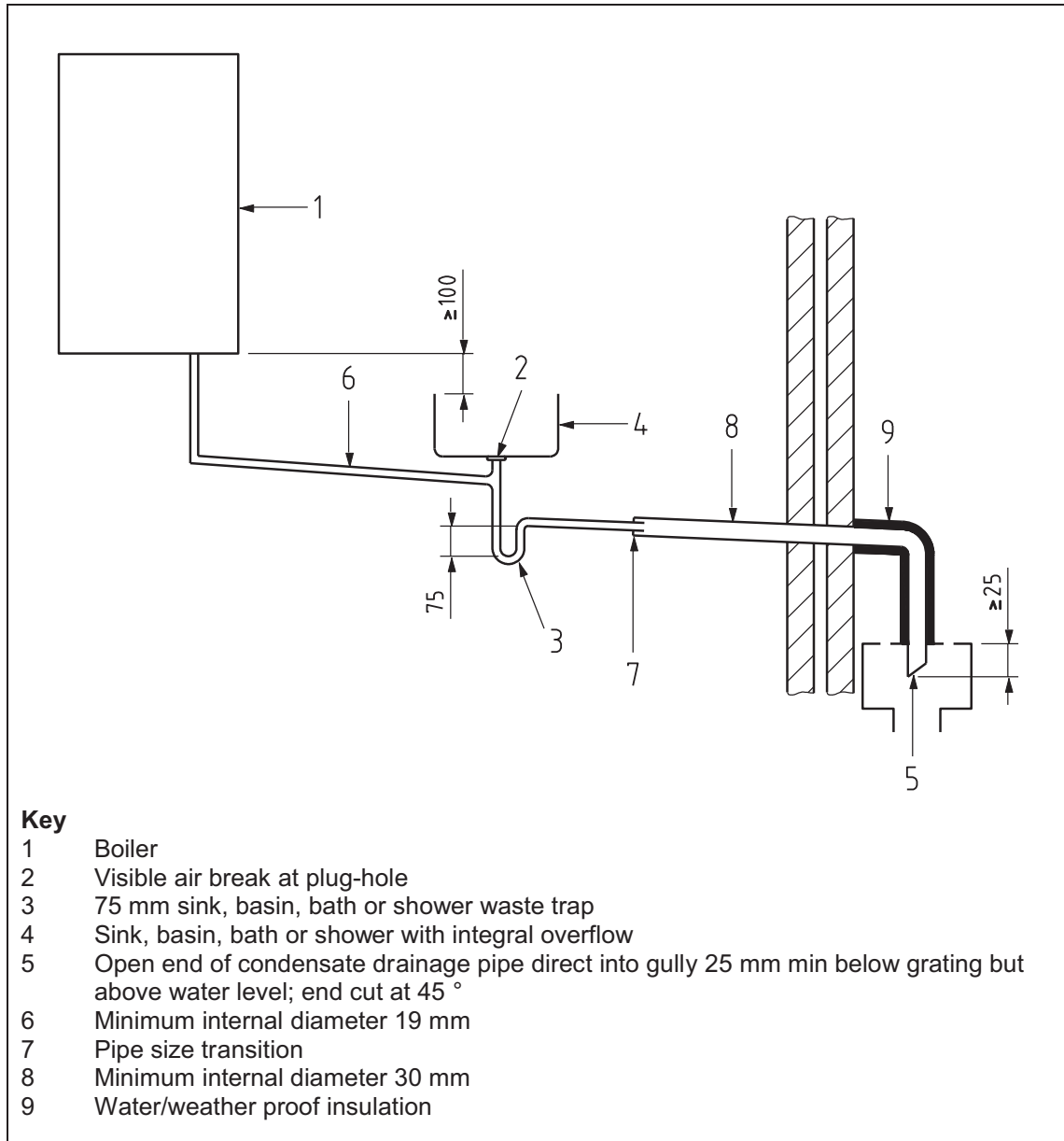
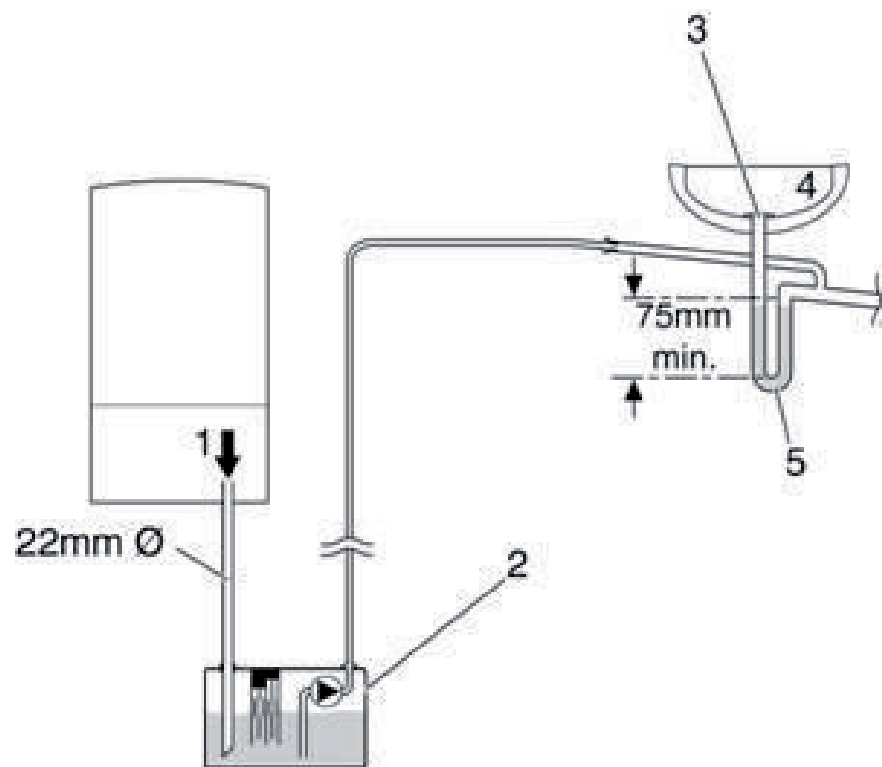


Figure 3 – Connection of a condensate pump - typical method (NB manufacturer's detailed instructions should be followed).



Key

- 1 Condensate discharge from boiler.
- 2 Condensate pump
- 3 Visible air break at plug hole.
- 4 Sink or basin with integrated overflow.
- 5 75mm sink waste trap.

Figure 4 – Connection of condensate drainage pipe to external soil and vent stack

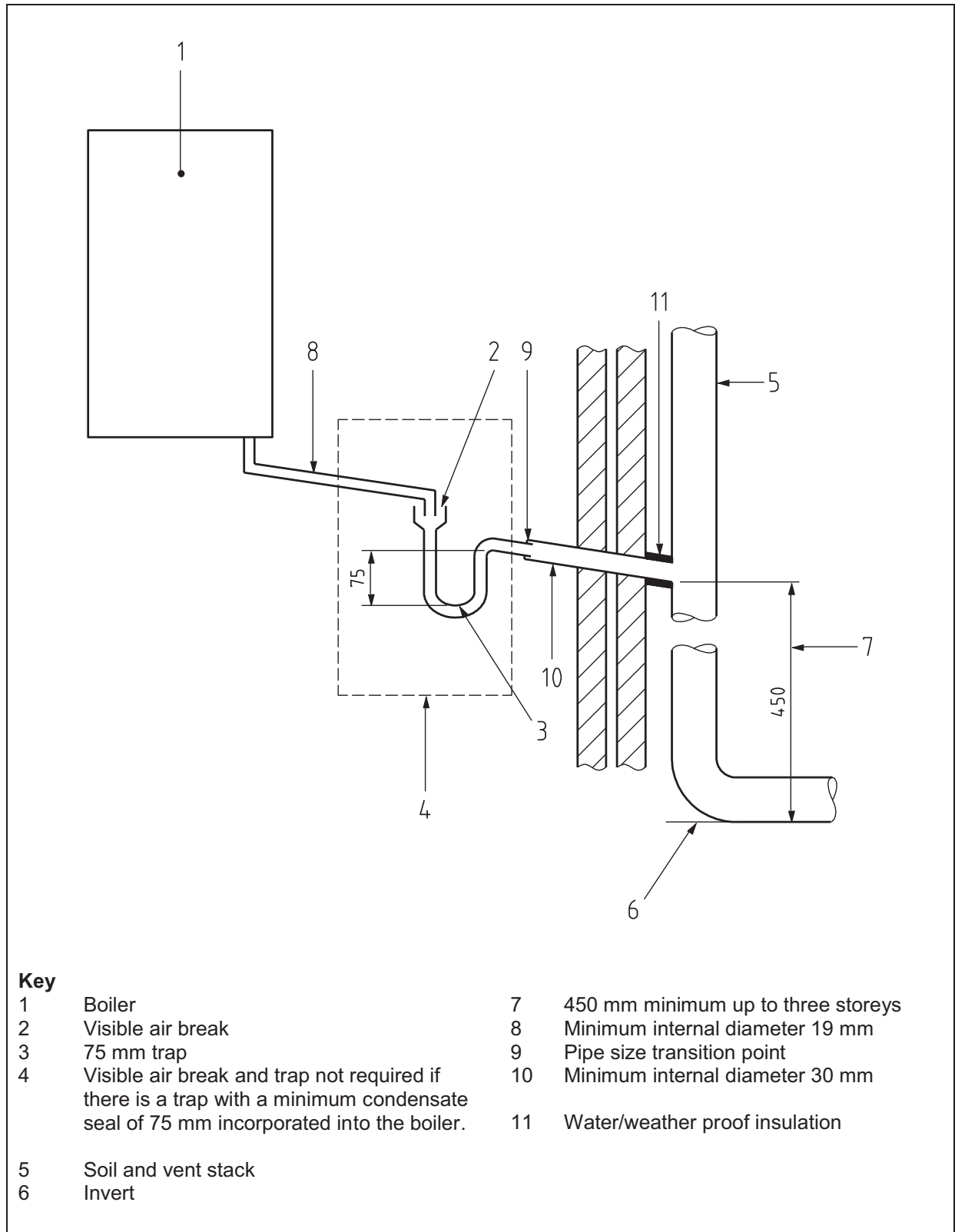


Figure 5 – External termination to rainwater downpipe (NB only combined foul/rainwater drain)

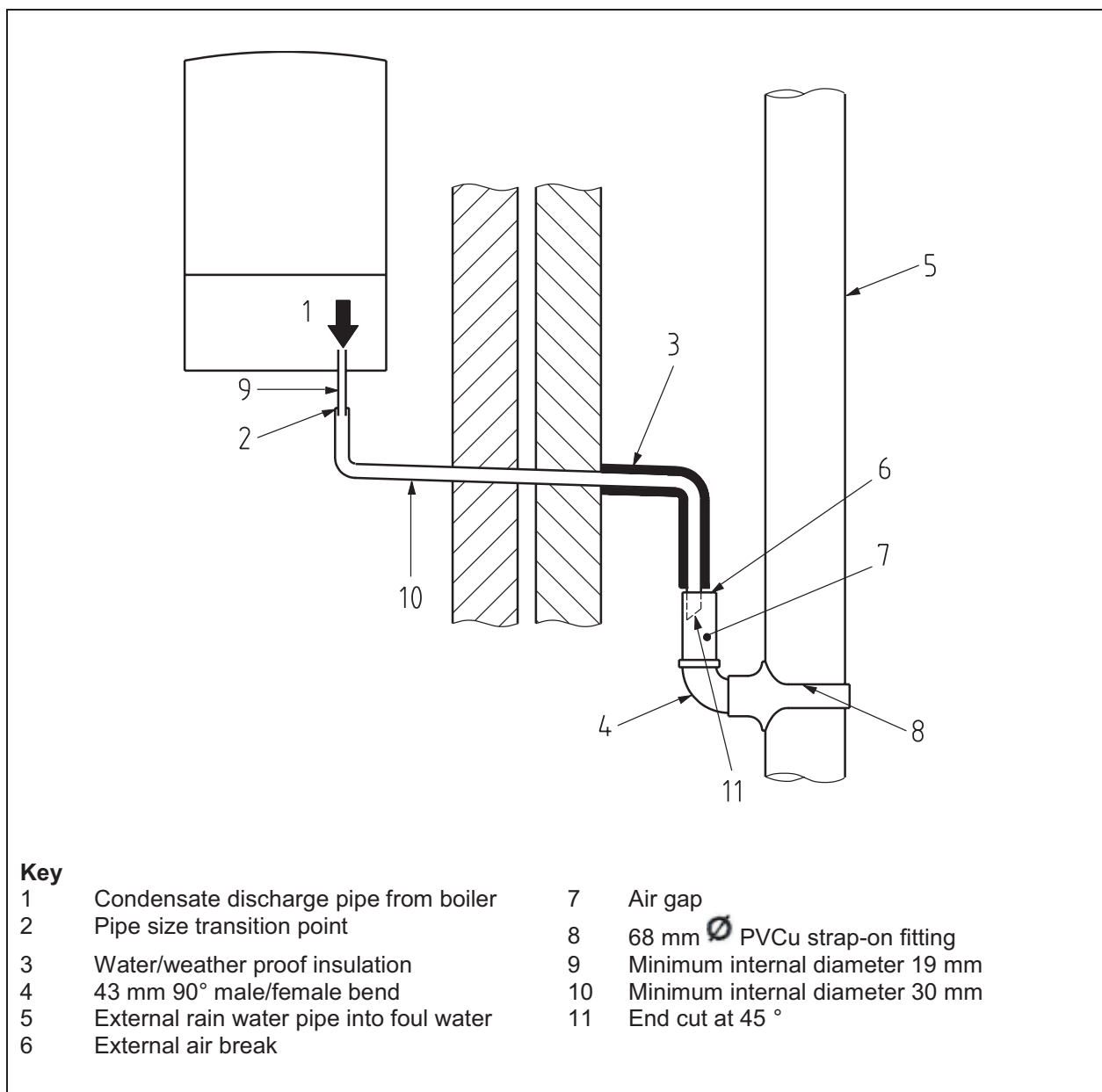


Figure 6 – External drain, gully or rainwater hopper

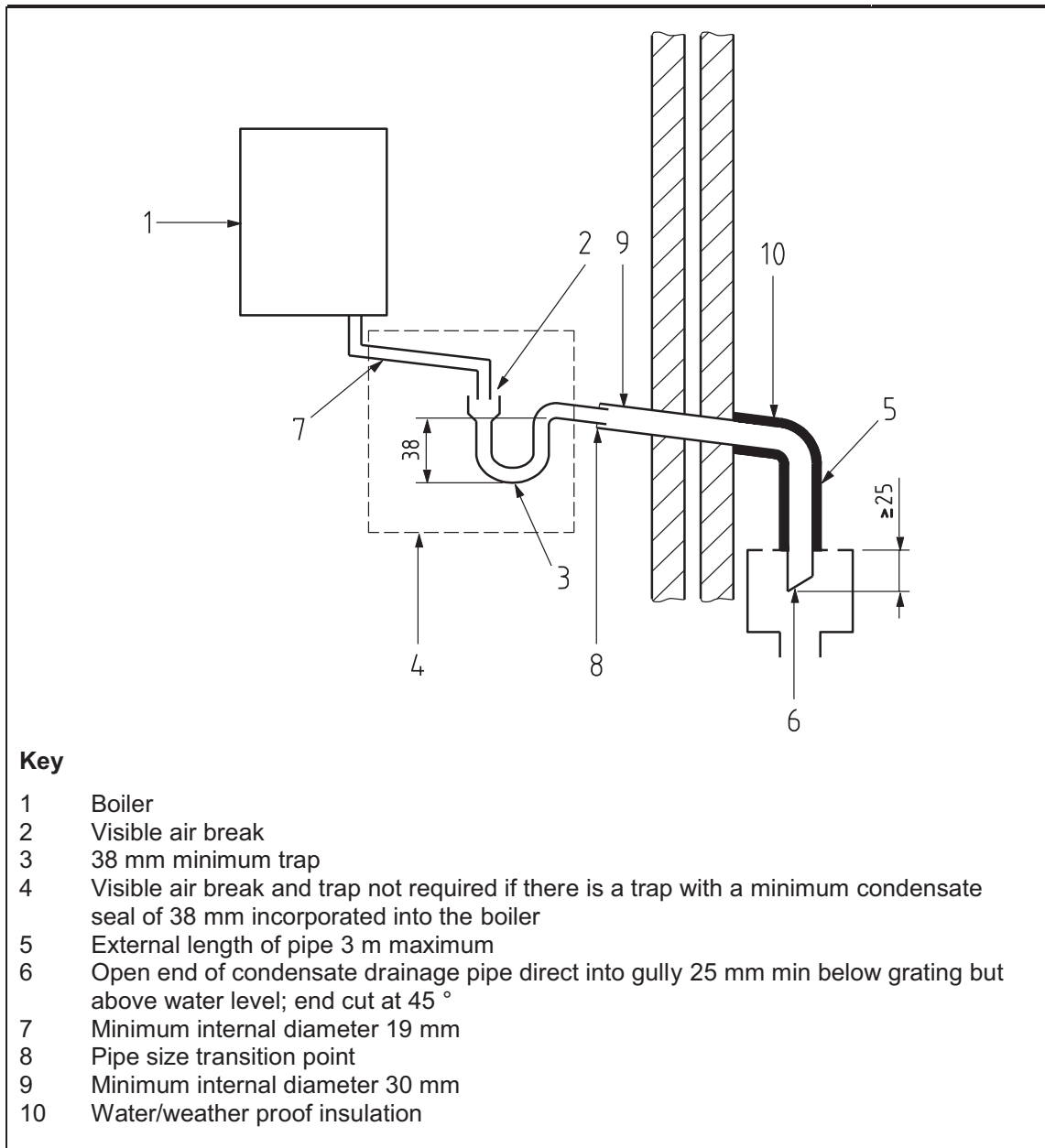
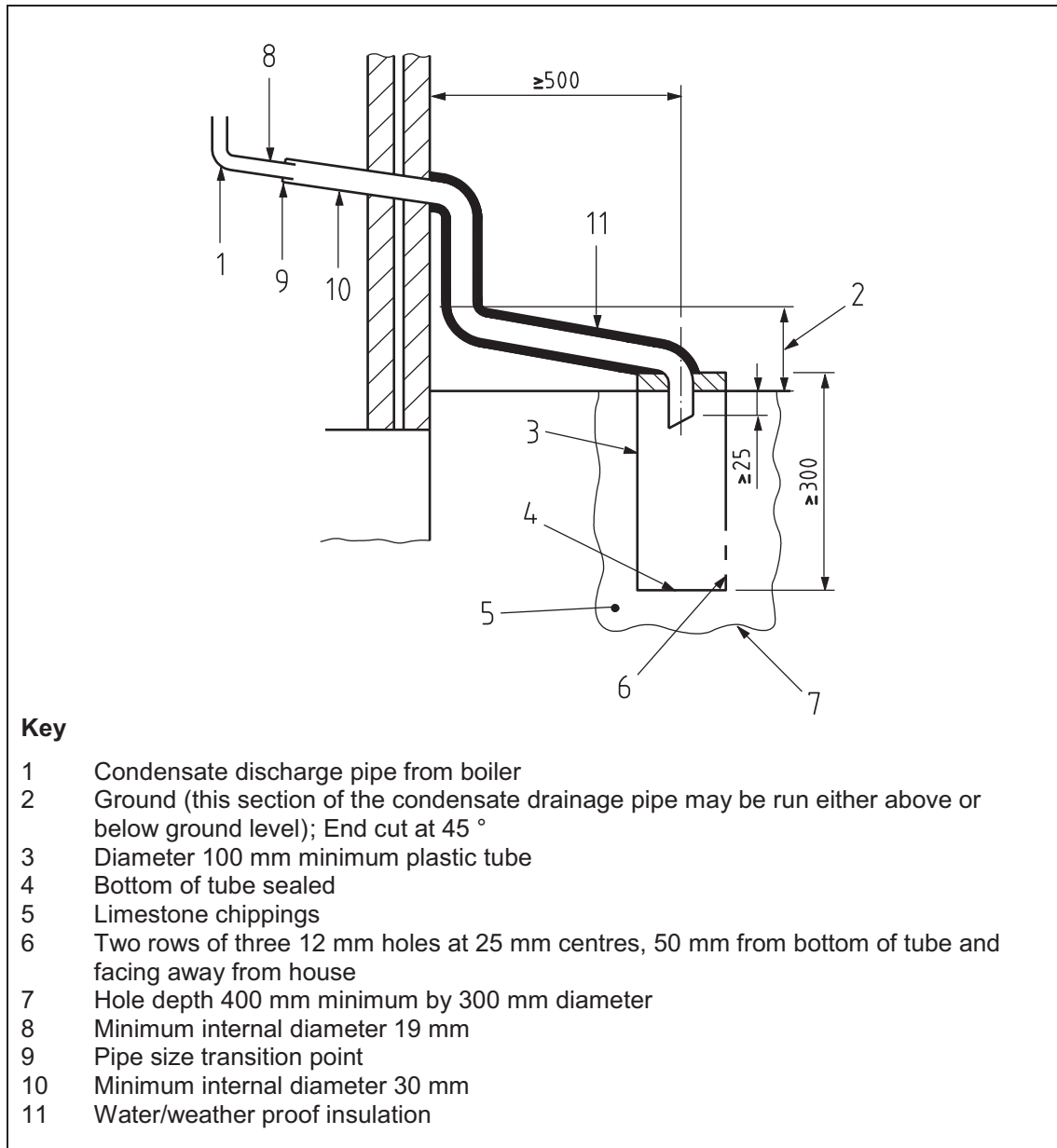


Figure 7 – Example of a purpose-made soakaway



8 APPENDIX 2 (VENTILATION GUIDENCE)

Ventilation Requirements for “Murelle Equipe 100 - 150 ErP” Cascade

BS6644:2005 requires the temperatures in the room or compartment not to exceed certain levels:

25°C up to 100 mm from floor level

32°C 1500 mm above floor level

40°C 100 mm from ceiling level

The following provided for guidance only, and assumes the ventilation air is taken directly from outside. The size of the vents may need to be increased in respect of other appliances installed in the same area, and seasonal use. Take care that the position of low level vents would not be subject to adverse weather conditions, i.e. flooding.

When installed as a class B appliance (opened flue, not room sealed).

Installed in a room

High level, within 15% of room height from the ceiling = 2 cm² per Kw net heat input (Nominal)

Low Level, low as possible within G20 - 1000 mm G31 - 250 mm = 4 cm² per Kw net heat input (Nominal)

Each model requirement for their net heat input is:

Murelle Equipe Cascade				
100 ErP	High	192 cm ²	Low	384 cm ²
150 ErP	High	288 cm ²	Low	576 cm ²

Installed in a compartment or enclosure

High level, within 15% of room height from the ceiling = 5 cm² per Kw net heat input (Nominal)

Low Level, low as possible within G20 - 1000 mm G31 - 250 mm = 10 cm² per Kw net heat input (Nominal)

Each model requirement for their net heat input is:

Murelle Equipe Cascade				
100 ErP	High	480 cm ²	Low	960 cm ²
150 ErP	High	720 cm ²	Low	1440 cm ²

When installed as a class C appliance (room sealed)

Installed in a room

High level, within 15% of room height from the ceiling = 2 cm² per Kw net heat input (Nominal)

Low Level, low as possible within G20 - 1000 mm G31 - 250 mm = 2 cm² per Kw net heat input (Nominal)

Each model requirement for their net heat input is:

Murelle Equipe Cascade				
100 ErP	High	192 cm ²	Low	192 cm ²
150 ErP	High	288 cm ²	Low	288 cm ²

Installed in a compartment or enclosure

High level, within 15% of room height from the ceiling = 5 cm² per Kw net heat input (Nominal)

Low Level, low as possible within G20 - 1000 mm G31 - 250 mm = 5 cm² per Kw net heat input (Nominal)

Each model requirement for their net heat input is:

Murelle Equipe Cascade				
100 ErP	High	480 cm ²	Low	480 cm ²
150 ErP	High	720 cm ²	Low	720 cm ²

9 PRODUCT DETAILS

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Murelle Equipe	100 ErP	150 ErP
Classe efficienza energetica stagionale riscaldamento Clase de eficiencia energética estacional en calefacción Classe de eficiência energética do aquecimento ambiente sazonal C.H. energy efficiency class		
Potenza termica (kW) Potencia térmica (kW) Potência calorífica (kW) Heat output (kW)	93	140
Consumo annuo di energia riscaldamento (GJ) Consumo anual de energía en calefacción (GJ) Consumo anual de energia para aquecimento (GJ) C.H. annual energy consumption (GJ)	160	232
Efficienza energetica stagionale riscaldamento (%) Eficiencia energética estacional en calefacción (%) Eficiência energética do aquecimento sazonal (%) C.H. seasonal energy efficiency (%)	93	93
Potenza sonora dB(A) Potencia sonora dB(A) Potência sonora dB(A) Sound power dB(A)	--	--
Specifiche precauzioni da adottare al momento del montaggio, dell'installazione o della manutenzione dell'apparecchio sono contenute all'interno del manuale istruzioni della caldaia En el manual de instrucciones de la caldera se indican las precauciones específicas que se deben adoptar durante el montaje, la instalación o el mantenimiento del aparato Precauções específicas a tomar no momento da montagem, instalação ou manutenção do aparelho estão contidas no manual de instruções do aquecedor Specific precautionary measures to be adopted at the time of assembly, installation or maintenance of the equipment are contained in the boiler instruction manual Conforme all'allegato IV (punto 1) del regolamento delegato (UE) N° 811/2013 che integra la Direttiva 2010/30/UE Con arreglo al anexo IV (punto 1) del Reglamento Delegado (UE) N° 811/2013 que completa la Directiva 2010/30/UE Em conformidade com o anexo IV (ponto 1) do regulamento delegado (UE) N.º 811/2013 que complementa a Diretiva 2010/30/UE Conforming to Annex IV (item 1) of the Delegated Regulations (EU) No. 811/2013 which supplements Directive 2010/30/EU		

10 ANNEX AA.1

Murelle Equipe 100 ErP (code 8111213)

Informazioni da fornire per le caldaie per il riscaldamento d'ambiente e le caldaie miste Información obligatoria para calderas de calefacción de espacios y calderas mixtas Informações a fornecer para aquecedores de ambiente com caldeira e aquecedores combinados com caldeira Information requirements for boiler space heaters, boiler combination heaters							
Modello / Modelos / Modelos / Model:				MURELLE EQUIPE 100 ErP			
Caldaia a condensazione / Caldera de condensación: Caldeira de condensação / Condensing boiler:				Yes			
Caldaia a bassa temperatura / Caldera de baja temperatura: Caldeira de baixa temperatura / Low-temperature boiler:				Yes			
Caldaia di tipo B11/ Caldera de tipo B11/ Caldeira B11 / B11 boiler:				No			
Apparecchio di cogenerazione per il riscaldamento d'ambiente: Equipo de cogeneración para calefacción de espacios: Aquecedor de ambiente com cogeração: Cogenerator space heater:				No	Munito di un apparecchio di riscaldamento supplementare: Equipado con un aparato de calefacción suplementario: Equipado com aquecedor complementar: Equipped with a supplementary heater:		No
Apparecchio di riscaldamento misto / Equipo de calefacción mixto: Aquecedor combinado / Combunation heater:				No			
Elemento / Elemento Elemento / item	Symbol	Value	Unit	Elemento / Elemento Elemento / item	Symbol	Value	Unit
Potenza termica nominale Potencia térmica nominal Potência calorífica nominal Nominal heat output for space heating	P _n	93	kW	Efficienza energetica stagionale del riscaldamento d'ambiente Eficiencia energética estacional de calefacción Eficiência energética do aquecimento ambiente sazonal Seasonal space heating energy efficiency	η _s	93	%
Per le caldaie per il riscaldamento d'ambiente e le caldaie miste: potenza termica utile Para calderas de calefacción de espacios y calderas mixtas: potencia térmica útil Aquecedores de ambiente com caldeira e aquecedores combinados equipados com caldeira: energia calorífica útil For boiler space heaters and boiler combination heaters: useful heat output				Per le caldaie per il riscaldamento d'ambiente e le caldaie miste: efficienza utile Para calderas de calefacción de espacios y calderas mixtas: eficiencia útil Aquecedores de ambiente com caldeira e aquecedores combinados equipados com caldeira: eficiência útil For boiler space heaters and boiler combination heaters: useful efficiency			
Alla potenza termica nominale e a un regime ad alta temperatura ^a A potencia calorífica nominal y régimen de alta temperatura ^a À potência calorífica nominal e em regime de alta temperatura ^a At nominal heat output and high-temperature regime ^a	P ₄	93,4	kW	Alla potenza termica nominale e a un regime ad alta temperatura (*) A potencia calorífica nominal y régimen de alta temperatura (*) À potência calorífica nominal e em regime de alta temperatura (*) At nominal heat output and high-temperature regime (*)	η ₄	87,6	%
Al 30% della potenza termica nominale e a un regime a bassa temperatura ^b A 30% de potencia calorífica nominal y régimen de baja temperatura ^b A 30% da potência calorífica nominal e em regime de baixa temperatura ^b At 30% of nominal heat output and low-temperature regime ^b	P ₁	28,0	kW	Al 30% della potenza termica nominale e a un regime a bassa temperatura (*) A 30% de potencia calorífica nominal y régimen de baja temperatura (*) A 30% da potência calorífica nominal e em regime de baixa temperatura (*) At 30% of nominal heat output and low-temperature regime (*)	η ₁	97,7	%
Consumo ausiliario di elettricità / Consumos eléctricos auxiliares Consumos elétricos auxiliares / Auxiliary electricity consumption				Altri elementi / Otros elementos Outros elementos / Other items			
A pieno carico A plena carga Em plena carga At full load	e _{l max}	0,192	kW	Dispersione termica in standbay Dispersión térmica en stand-by Perdas de calor em modo de vigília Standby heat loss	Pstby	0,352	kW
A carico parziale A carga parcial Em carga parcial At part load	e _{l min}	0,035	kW	Consumo energetico del bruciatore di accensione Consumo energético del quemador de encendido Consumo de energia do queimador de ignição Ignition burner power consumption	Pign	0	kW
In modo standby / En modo de espera Em modo de vigília / In standby mode	PSB	0,009	kW	Emissioni di NOx / Emisiones de Nox Emissões de Nox / Emission of nitrogen oxides	NOx	20	mg/kWh
Per gli apparecchi di riscaldamento misto / Para los calefactores combinados / Aquecedores combinados / For combination heaters:							
Profilo di carico dichiarato Perfil de carga declarado Perfil de carga declarado / Declared load profile	--			Efficienza energetica di riscaldamento dell'acqua Eficiencia energética de caldeo de agua Eficiência energética do aquecimento de água Water heating energy efficiency	η _{wh}	--	%
Consumo quotidiano di energia Consumo diario de electricidad Consumo diário de eletricidade Daily electricity consumption	Q _{elec}	--	kWh	Consumo quotidiano di combustibile Consumo diario de combustible Consumo diário de combustível Daily fuel consumption	Q _{fuel}	--	kWh
Recapiti / Datos de contacto Elementos de contacto / Contact details		Fonderie Sime S.p.A. Via Garbo 27, 37045 Legnago (VR) ITALIA					
a. Regime ad alta temperatura: temperatura di ritorno di 60°C all'entrata e 80°C di temperatura di fruizione all'uscita dell'apparecchio b. Bassa temperatura: temperatura di ritorno (all'entrata della caldaia) per le caldaie a condensazione 30°C, per le caldaie a bassa temperatura 37°C e per le altre caldaie 50°C a. Régimen de alta temperatura: temperatura de retorno de 60°C a la entrada y 80°C de temperatura de alimentación a la salida del aparato. b. Baja temperatura: temperatura de retorno (a la entrada de la caldera) de 30°C para las calderas de condensación, de 37°C para las calderas de baja temperatura y de 50°C para las demás calderas. a. Regime de alta temperatura: temperatura de retorno de 60°C à entrada do aquecedor e temperatura de alimentação de 80°C à saída do aquecedor. b. Baixa temperatura: temperatura de retorno de 30°C para as caldeiras de condensação, 37°C para as caldeiras de baixa temperatura e 50°C para os outros aquecedores (à entrada do aquecedor). a. High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet. b. Low-temperature regime means for condensig boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature.							
(*) Dati di rendimento calcolati con potere calorifico superiore H _s / Datos de rendimiento calculado con el valor calorífico superior H _s Os valores do desempenho calculados com valor calorífico superior H _s / Performance data calculated with gross calorific value H _s							

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Murelle Equipe 150 ErP (code 8111214)

Informazioni da fornire per le caldaie per il riscaldamento d'ambiente e le caldaie miste Información obligatoria para calderas de calefacción de espacios y calderas mixtas Informações a fornecer para aquecedores de ambiente com caldeira e aquecedores combinados com caldeira Information requirements for boiler space heaters, boiler combination heaters							
Modello / Modelos / Modelos / Model:				MURELLE EQUIPE 150 ErP			
Caldaia a condensazione / Caldera de condensación: Caldeira de condensação / Condensing boiler:				Yes			
Caldaia a bassa temperatura / Caldera de baja temperatura: Caldeira de baixa temperatura / Low-temperature boiler:				Yes			
Caldaia di tipo B11/ Caldera de tipo B11/ Caldeira B11 / B11 boiler:				No			
Apparecchio di cogenerazione per il riscaldamento d'ambiente: Equipo de cogeneración para calefacción de espacios: Aquecedor de ambiente com cogeração: Cogenerator space heater:				No	Munito di un apparecchio di riscaldamento supplementare: Equipado con un aparato de calefacción suplementario: Equipado com aquecedor complementar: Equipped with a supplementary heater:		
Apparecchio di riscaldamento misto / Equipo de calefacción mixto: Aquecedor combinado / Combunation heater:				No			
Elemento / Elemento Elemento / item	Symbol	Value	Unit	Elemento / Elemento Elemento / item	Symbol	Value	Unit
Potenza termica nominale Potencia térmica nominal Potência calorífica nominal Nominal heat output for space heating	P _n	140	kW	Efficienza energetica stagionale del riscaldamento d'ambiente Eficiencia energética estacional de calefacción Eficiência energética do aquecimento ambiente sazonal Seasonal space heating energy efficiency	η _s	93	%
Per le caldaie per il riscaldamento d'ambiente e le caldaie miste: potenza termica utile Para calderas de calefacción de espacios y calderas mixtas: potencia térmica útil Aquecedores de ambiente com caldeira e aquecedores combinados equipados com caldeira: energia calorífica útil For boiler space heaters and boiler combination heaters: useful heat output				Per le caldaie per il riscaldamento d'ambiente e le caldaie miste: efficienza utile Para calderas de calefacción de espacios y calderas mixtas: eficiencia útil Aquecedores de ambiente com caldeira e aquecedores combinados equipados com caldeira: eficiência útil For boiler space heaters and boiler combination heaters: useful efficiency			
Alla potenza termica nominale e a un regime ad alta temperatura ^a A potencia calorífica nominal y régimen de alta temperatura ^a À potência calorífica nominal e em regime de alta temperatura ^a At nominal heat output and high-temperature regime ^a	P ₄	140,1	kW	Alla potenza termica nominale e a un regime ad alta temperatura (*) A potencia calorífica nominal y régimen de alta temperatura (*) À potência calorífica nominal e em regime de alta temperatura (*) At nominal heat output and high-temperature regime (*)	η ₄	87,6	%
Al 30% della potenza termica nominale e a un regime a bassa temperatura ^b A 30% de potencia calorífica nominal y régimen de baja temperatura ^b A 30% da potência calorífica nominal e em regime de baixa temperatura ^b At 30% of nominal heat output and low-temperature regime ^b	P ₁	42,0	kW	Al 30% della potenza termica nominale e a un regime a bassa temperatura (*) A 30% de potencia calorífica nominal y régimen de baja temperatura (*) A 30% da potência calorífica nominal e em regime de baixa temperatura (*) At 30% of nominal heat output and low-temperature regime (*)	η ₁	97,7	%
Consumo ausiliario di elettricità / Consumos eléctricos auxiliares Consumos elétricos auxiliares / Auxiliary electricity consumption				Altri elementi / Otros elementos Outros elementos / Other items			
A pieno carico A plena carga Em plena carga At full load	e _{l max}	0,288	kW	Dispersione termica in standbay Dispersión térmica en stand-by Perdas de calor em modo de vigília Standby heat loss	Pstby	0,528	kW
A carico parziale A carga parcial Em carga parcial At part load	e _{l min}	0,047	kW	Consumo energetico del bruciatore di accensione Consumo energético del quemador de encendido Consumo de energia do queimador de ignição Ignition burner power consumption	Pign	0	kW
In modo standby / En modo de espera Em modo de vigília / In standby mode	PSB	0,013	kW	Emissioni di NOx / Emisiones de Nox Emissões de Nox / Emission of nitrogen oxides	NOx	20	mg/kWh
Per gli apparecchi di riscaldamento misto / Para los calefactores combinados / Aquecedores combinados / For combination heaters:							
Profilo di carico dichiarato Perfil de carga declarado Perfil de carga declarado / Declared load profile	--			Efficienza energetica di riscaldamento dell'acqua Eficiencia energética de caldeo de agua Eficiência energética do aquecimento de água Water heating energy efficiency	η _{wh}	--	%
Consumo quotidiano di energia Consumo diario de electricidad Consumo diário de eletricidade Daily electricity consumption	Qelec	--	kWh	Consumo quotidiano di combustibile Consumo diario de combustible Consumo diário de combustível Daily fuel consumption	Qfuel	--	kWh
Recapiti / Datos de contacto Elementos de contacto / Contact details		Fonderie Sime S.p.A. Via Garbo 27, 37045 Legnago (VR) ITALIA					
a. Regime ad alta temperatura: temperatura di ritorno di 60°C all'entrata e 80°C di temperatura di fruizione all'uscita dell'apparecchio b. Basso temperatura: temperatura di ritorno (all'entrata della caldaia) per le caldaie a condensazione 30°C, per le caldaie a bassa temperatura 37°C e per le altre caldaie 50°C a. Régimen de alta temperatura: temperatura de retorno de 60°C a la entrada y 80°C de temperatura de alimentación a la salida del aparato. b. Baja temperatura: temperatura de retorno (a la entrada de la caldera) de 30°C para las calderas de condensación, de 37°C para las calderas de baja temperatura y de 50°C para las demás calderas. a. Regime de alta temperatura: temperatura de retorno de 60°C à entrada do aquecedor e temperatura de alimentação de 80°C à saída do aquecedor. b. Baixa temperatura: temperatura de retorno de 30°C para as caldeiras de condensação, 37°C para as caldeiras de baixa temperatura e 50°C para os outros aquecedores (à entrada do aquecedor). a. High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet. b. Low-temperature regime means for condensig boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature.							
(*) Dati di rendimento calcolati con potere calorifico superiore H _s / Datos de rendimiento calculado con el valor calorífico superior H _s Os valores do desempenho calculados com valor calorífico superior H _s / Performance data calculated with gross calorific value H _s							

IT
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NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTES

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