

UK

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

MURELLE EQUIPE 220-660

(PACK OF 2-6 MURELLE HE 110 R)



*Installation and
servicing instructions*



Please read the Important Notice within
this guide regarding your boiler warranty

 **sime**[®]

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.



CONTENTS

1	MODULAR SYSTEM DESCRIPTION	page	4
2	FRAME ASSEMBLY OF SINGLE MODULE SUPPORT	page	16
3	FITTING CONNECTION AND CONDENSATE DRAIN	page	18
4	CASCADE FLUE	page	23
5	CASCADE CONNECTION	page	24
6	CASCADE MANAGEMENT	page	25
7	APPENDIX (GUIDANCE HHIC)	pag.	29
8	APPENDIX 2 (VENTILATION GUIDENCE)	pag.	41

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.

1 MODULAR SYSTEM 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 220-660** series linked in sequence/cascade independently of one another.

The packages are provided with the following codes:

- **MURELLE EQUIPE 220**

Boilers and Mounting Frames and Headers code 9001220

Low Loss Header Connection Kit code 8101532

Low Loss Header code 8101552

Cascade Flue code 9000220

- **MURELLE EQUIPE 330**

Boilers and Mounting Frames and Headers code 9001330

Low Loss Header Connection Kit code 8101532

Low Loss Header code 8101552

Cascade Flue code 9000330

- **MURELLE EQUIPE 440**

Boilers and Mounting Frames and Headers code 9001440

Low Loss Header Connection Kit code 8101533

Low Loss Header code 8101553

Cascade Flue code 9000440

- **MURELLE EQUIPE 550**

Boilers and Mounting Frames and Headers code 9001550

Low Loss Header Connection Kit code 8101533

Low Loss Header code 8101553

Cascade Flue code 9000550

- **MURELLE EQUIPE 660**

Boilers and Mounting Frames and Headers code 9001660

Low Loss Header Connection Kit code 8101533

Low Loss Header code 8101553

Cascade Flue code 9000660

VENTILATION, for guidance see APPENDIX 2.

1.2 DIMENSIONS AND FITTINGS

Note: The low loss header and flue can be positioned to exit at either the left or right hand side.

1.2.1 MURELLE EQUIPE 220-330 (fig. 1/a)

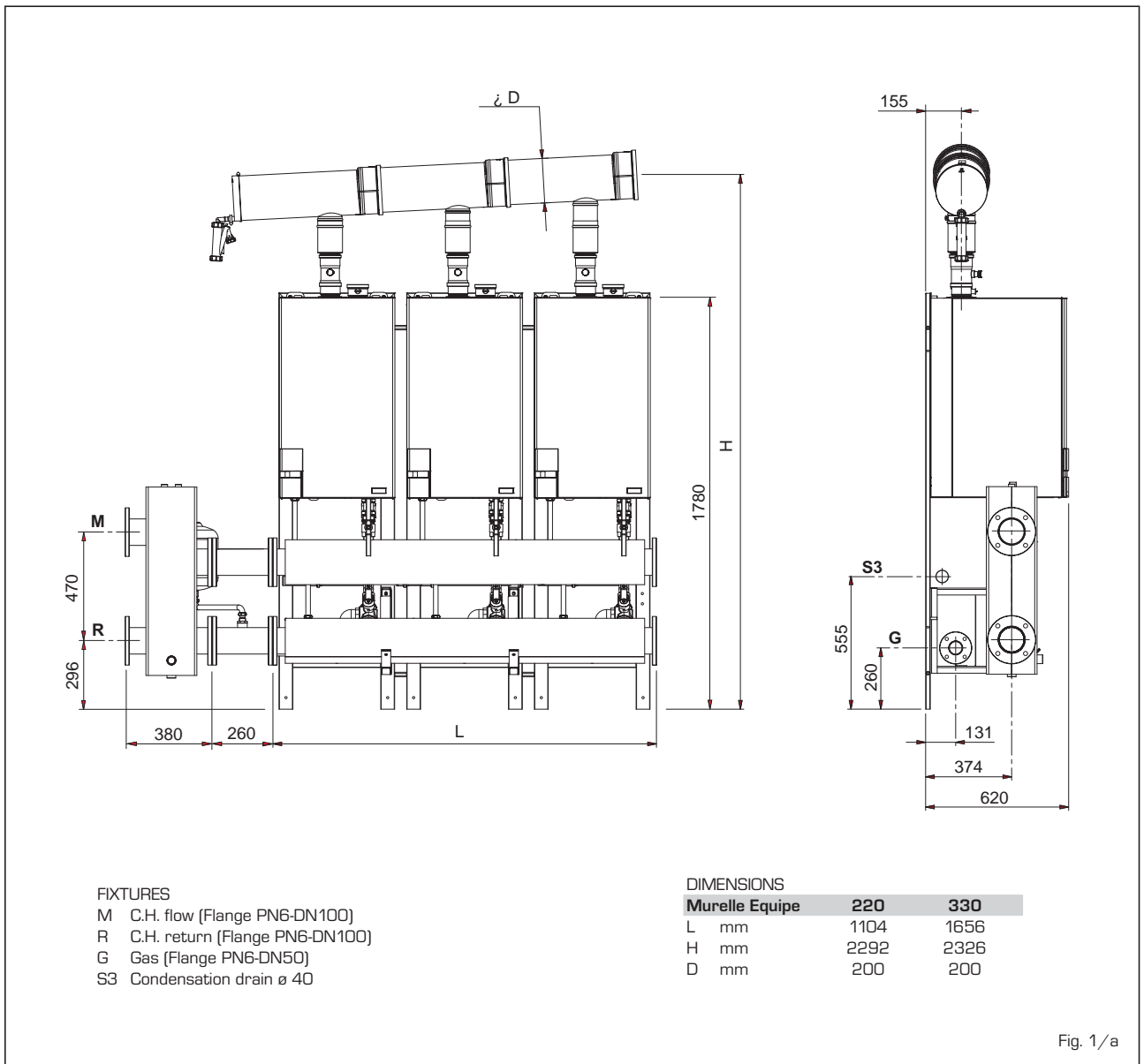
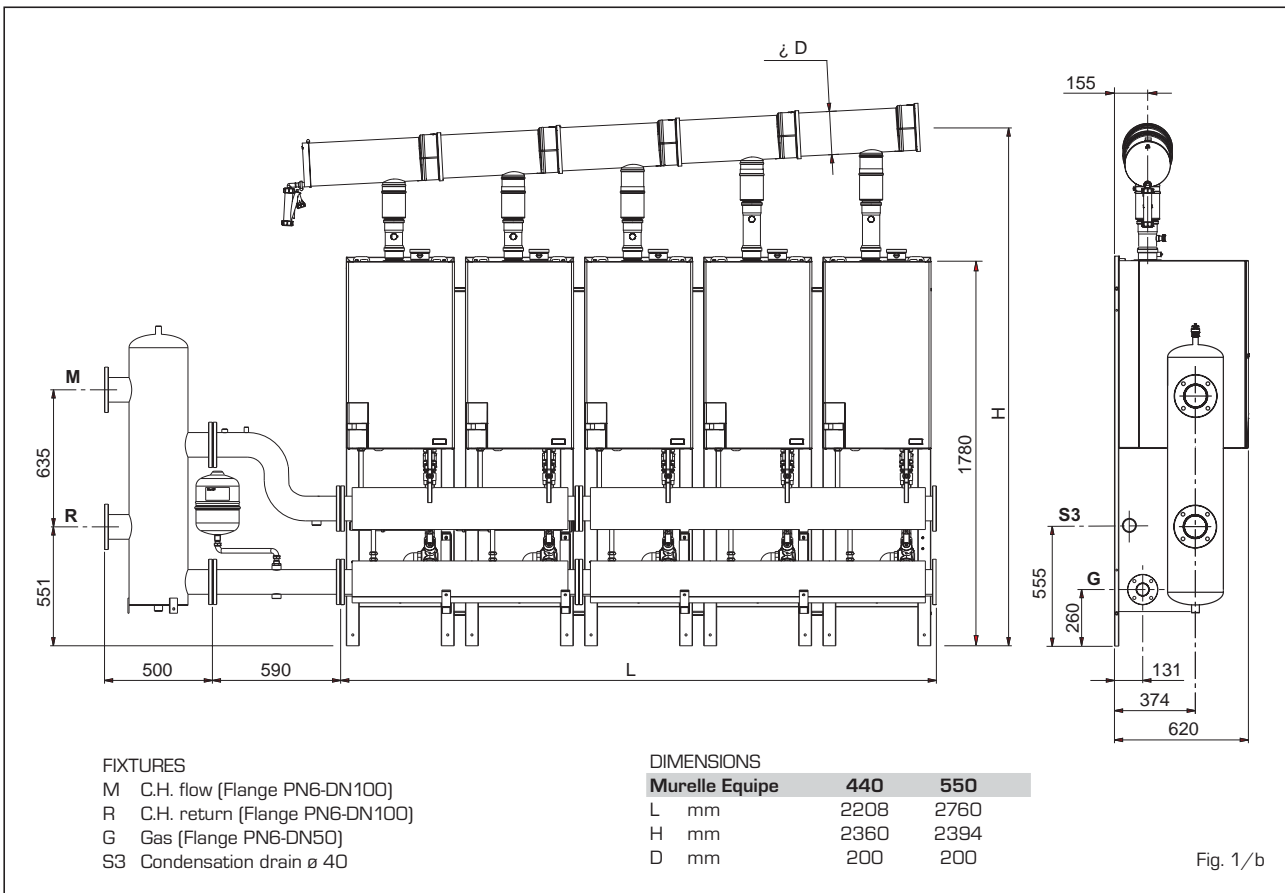
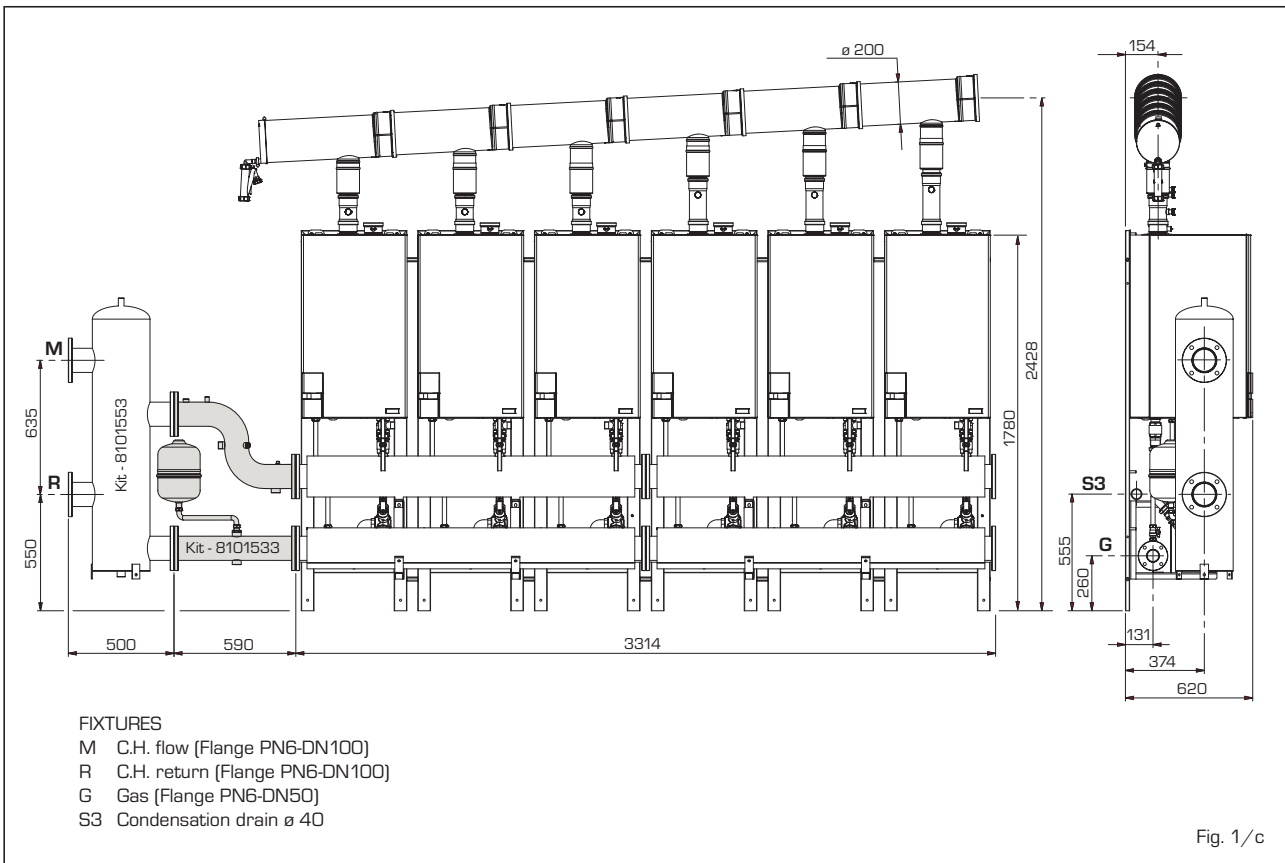


Fig. 1/a

1.2.2 MURELLE EQUIPE 440-550 (fig. 1/b)



1.2.3 MURELLE EQUIPE 660 (fig. 1/c)



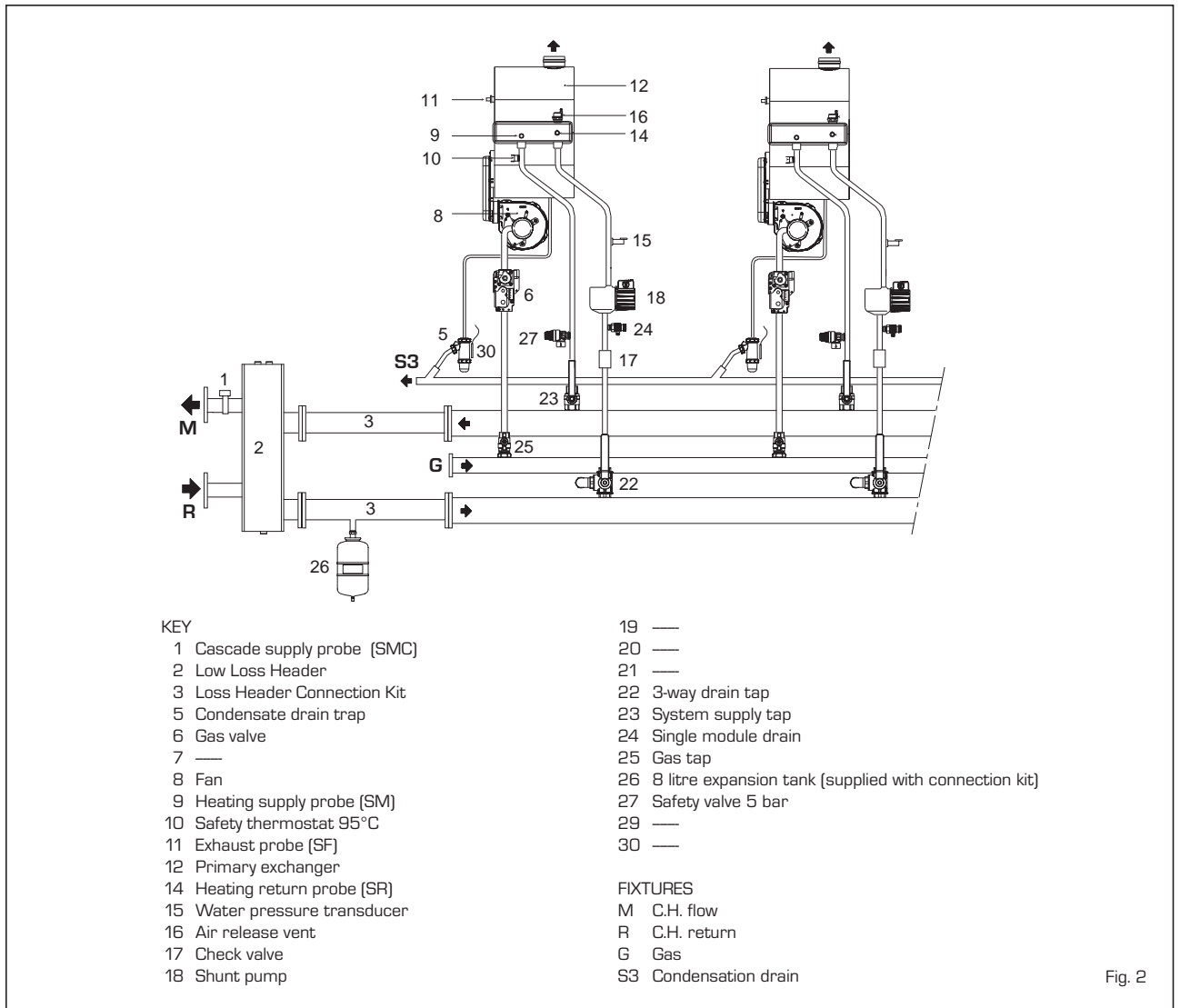
1.3 TECHNICAL SPECIFICATIONS MURELLE EQUIPE 220-550

MURELLE EQUIPE		220	330	440	550
Heat output					
Nominal (80-60°C)	kW	211.2 (2 x 105.6)	316.8 (3 x 105.6)	422.4 (4 x 105.6)	528.0 (5 x 105.6)
Nominal (50-30°C)	kW	229.2 (6 x 114.6)	343.8 (3 x 114.6)	458.4 (4 x 114.6)	573.0 (2 x 114.6)
Minimum (80-60°C)	kW	21.1	21.1	21.1	21.1
Minimum (50-30°C)	kW	23.6	23.6	23.6	23.6
Nominal heat input					
Nominal heat input	kW	218.0 (2 x 108.0)	324.0 (3 x 108.0)	432.0 (4 x 108.0)	540.0 (5 x 108.0)
Minimum heat input					
Minimum heat input	kW	21.6	21.6	21.6	21.6
Min/max operating yield (80-60°C)					
Min/max operating yield (80-60°C)	%	97.7/97.8	97.7/97.8	97.7/97.8	97.7/97.8
Min/max operating yield (50-30°C)					
Min/max operating yield (50-30°C)	%	109.1/106.1	109.1/106.1	109.1/106.1	109.1/106.1
Operating yield at 30% (40-30°C)					
Operating yield at 30% (40-30°C)	%	105.6	105.6	105.6	105.6
Energy yield markings (CEE 92/42)					
Energy yield markings (CEE 92/42)		★★★★	★★★★	★★★★	★★★★
Losses after shutdown to 50°C (EN 483)					
Losses after shutdown to 50°C (EN 483)	W	252 (2 x 126)	378 (3 x 126)	504 (4 x 126)	630 (5 x 126)
MURELLE HE 110 R generators					
MURELLE HE 110 R generators	n°	2	3	4	5
Feeding tension					
Feeding tension	VHz	230-50	230-50	230-50	230-50
Absorbed power consumption					
Absorbed power consumption	W	618 (2 x 309)	927 (3 x 309)	1236 (4 x 309)	1545 (5 x 309)
Electrical protection grade					
Electrical protection grade		IPX4D	IPX4D	IPX4D	IPX4D
Single module temperature regulation					
Single module temperature regulation	°C	20/80	20/80	20/80	20/80
Water content modules					
Water content modules	l	16.4 (2 x 8.2)	24.6 (3 x 8.2)	32.8 (4 x 8.2)	41.0 (5 x 8.2)
Max operating pressure					
Max operating pressure	bar	5	5	5	5
Max operating temperature					
Max operating temperature	°C	85	85	85	85
Exhaust temperature at max flow rate (80-60°C)					
Exhaust temperature at max flow rate (80-60°C)	°C	86.2	86.2	86.2	86.2
Exhaust temperature at min flow rate (80-60°C)					
Exhaust temperature at min flow rate (80-60°C)	°C	74.6	74.6	74.6	74.6
Exhaust temperature at max flow rate (50-30°C)					
Exhaust temperature at max flow rate (50-30°C)	°C	61.6	61.6	61.6	61.6
Exhaust temperature at min flow rate (50-30°C)					
Exhaust temperature at min flow rate (50-30°C)	°C	49.2	49.2	49.2	49.2
Smokes flow min/max					
Smokes flow min/max	g/s	37/372	37/558	37/744	37/930
CO₂ at min/max flow rate (G20)					
CO ₂ at min/max flow rate (G20)	%	9.0/9.0	9.0/9.0	9.0/9.0	9.0/9.0
CO₂ at min/max flow rate (G31)					
CO ₂ at min/max flow rate (G31)	%	10.2/10.2	10.2/10.2	10.2/10.2	10.2/10.2
Max. output pressure fumes manifold					
Max. output pressure fumes manifold	Pa	375	375	375	375
Max. pressure independent fumes					
Max. pressure independent fumes	Pa	428	428	428	428
CE certification					
CE certification	n°	1312CM5614			
Category					
Category		II ₂ H ₃ P			
Type					
Type		B23-53/B23P-53P/C13-33-43-53-83			
NO_x class					
NO _x class		5 (< 30 mg/kWh)			
Nozzle					
Number					
Number	n°	1	1	1	1
Nozzle diameter G20					
Nozzle diameter G20	ø	12.4	12.4	12.4	12.4
Nozzle diameter G31					
Nozzle diameter G31	ø	8.2	8.2	8.2	8.2
Consumption at nominal/minimum output					
Nominal G20					
Nominal G20	m ³ /h	22.84 (2 x 11.42)	34.26 (3 x 11.42)	45.68 (4 x 11.42)	57.10 (5 x 11.42)
Minimum G20					
Minimum G20	m ³ /h	2.28	2.28	2.28	2.28
Nominal G31					
Nominal G31	kg/h	16.76 (2 x 8.38)	25.14 (3 x 8.38)	33.52 (4 x 8.38)	41.90 (5 x 8.38)
Minimum G31					
Minimum G31	kg/h	1.68	1.68	1.68	1.68
Supply pressure					
G20					
G20	mbar	20	20	20	20
G31					
G31	mbar	37	37	37	37

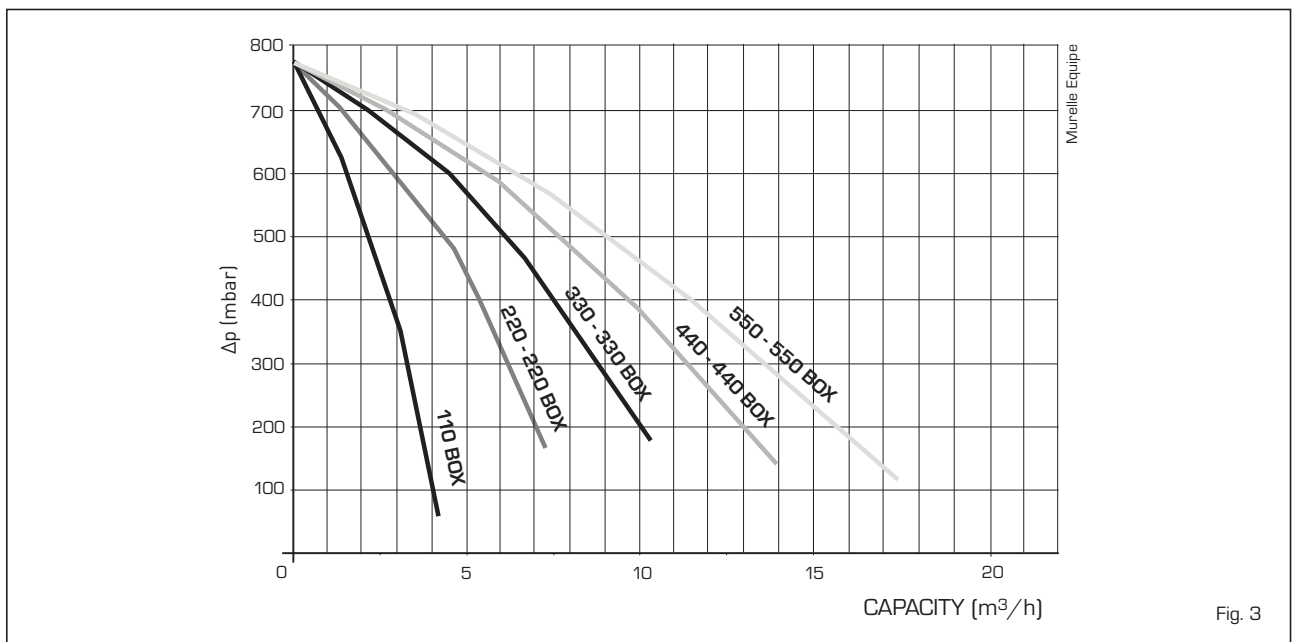
1.4 TECHNICAL SPECIFICATIONS MURELLE EQUIPE 660

MURELLE EQUIPE		660
Heat output		
Nominal (80-60°C)	kW	633.6 (6 x 105.6)
Nominal (50-30°C)	kW	687.6 (6 x 114.6)
Minimum (80-60°C)	kW	21.1
Minimum (50-30°C)	kW	23.6
Nominal heat input		
	kW	648.0 (6 x 108.0)
Minimum heat input		
	kW	21.6
Min/max operating yield (80-60°C)		
	%	97.7/97.8
Min/max operating yield (50-30°C)		
	%	109.1/106.1
Operating yield at 30% (40-30°C)		
	%	105.6
Energy yield markings (CEE 92/42)		
		★★★★
Losses after shutdown to 50°C (EN 483)		
	W	756 (6 x 126)
MURELLE HE 110 R generators		
	n°	6
Feeding tension		
	V-Hz	230-50
Absorbed power consumption		
	W	1854 (6 x 309)
Electrical protection grade		
		IPX4D
Single module temperature regulation		
	°C	20/80
Water content modules		
	l	49.2 (6 x 8.2)
Max operating pressure		
	bar	5
Max operating temperature		
	°C	85
Exhaust temperature at max flow rate (80-60°C)		
	°C	86.2
Exhaust temperature at min flow rate (80-60°C)		
	°C	74.6
Exhaust temperature at max flow rate (50-30°C)		
	°C	61.6
Exhaust temperature at min flow rate (50-30°C)		
	°C	49.2
Smokes flow min/max		
	g/s	37/1116
CO₂ at min/max flow rate (G20)		
	%	9.0/9.0
CO₂ at min/max flow rate (G31)		
	%	10.2/10.2
Max. output pressure fumes manifold		
	Pa	375
Max. pressure independent fumes		
	Pa	428
CE certification		
	n°	1312CM5614
Category		
		II ₂ H ₃ P
Type		
		B23-53/B23P-53P/C13-33-43-53-83
NO_x class		
		5 (< 30 mg/kWh)
Nozzle		
Number	n°	1
Nozzle diameter G20	∅	12.4
Nozzle diameter G31	∅	8.2
Consumption at nominal/minimum output		
Nominal G20	m ³ /h	68.52 (6 x 11.42)
Minimum G20	m ³ /h	2.28
Nominal G31	kg/h	50.28 (6 x 8.38)
Minimum G31	kg/h	1.68
Supply pressure		
G20	mbar	20
G31	mbar	37

1.5 HYDRAULIC CIRCUIT (fig. 2)



1.6 AVAILABLE PREVALENCE TO THE SYSTEM, COLLECTORS DELIVERY AND SUPPLY FITTINGS MURELLE EQUIPE 220-550 (fig. 3)



**1.7 AVAILABLE PREVALENCE TO THE SYSTEM, COLLECTORS DELIVERY AND SUPPLY FITTINGS
MURELLE EQUIPE 660 (fig. 3/a)**

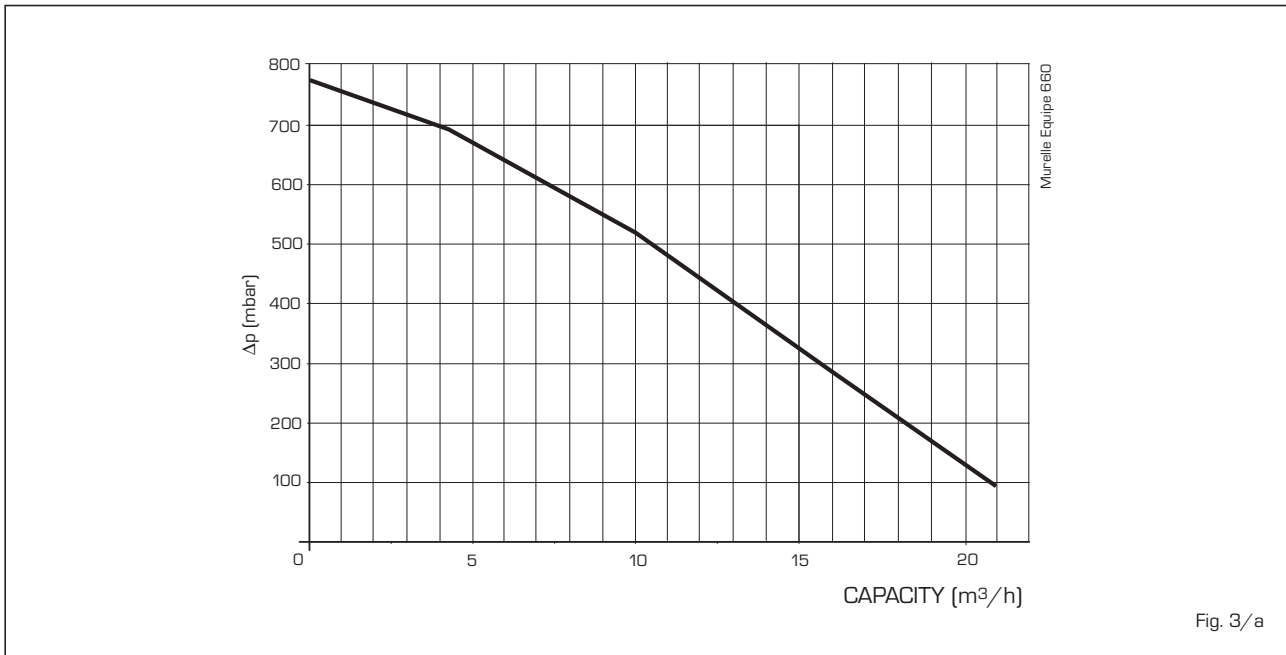


Fig. 3/a

1.8 PRESSURE DROPS OF THE HYDRAULIC COMPENSATOR SUPPLIED UPON REQUEST WITH KIT CODE 8101553 (fig. 4)

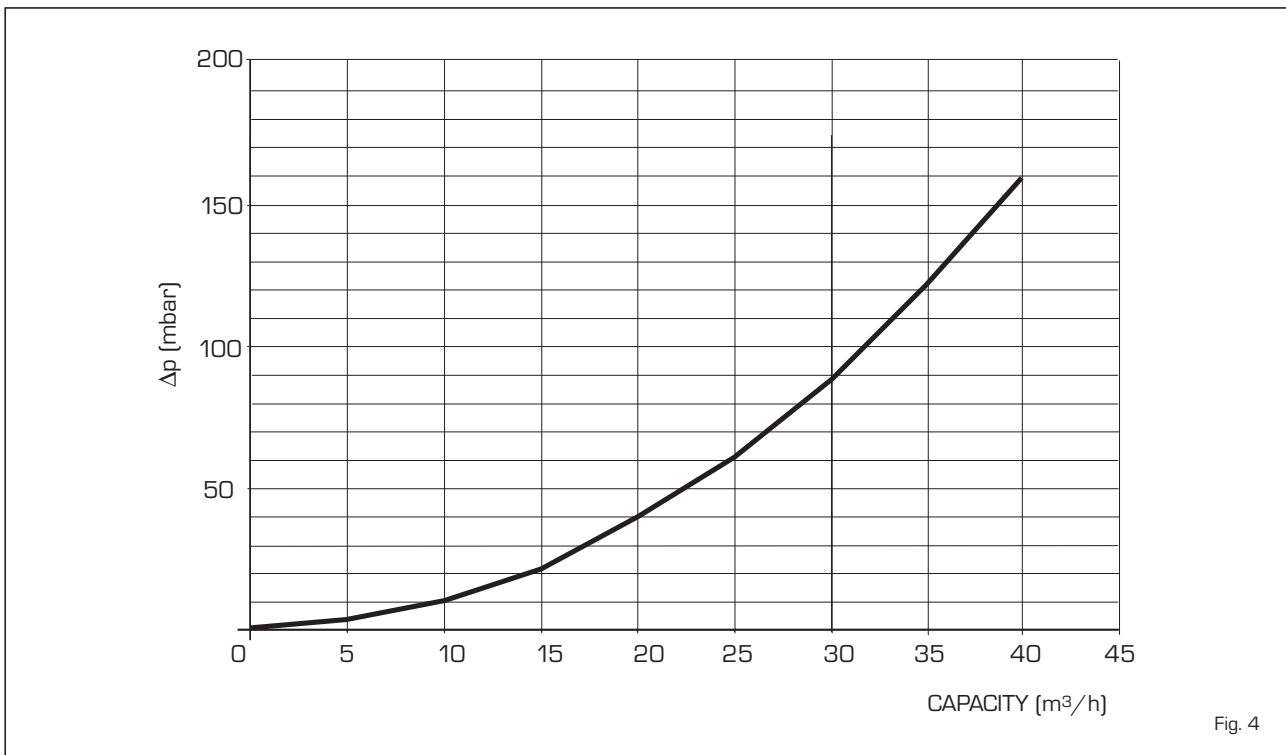


Fig. 4

**1.9 INTERFACE WITH OTHER
ELECTRONIC DEVICES
OPTIONAL**

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

- climate regulator CR 53 code 80922227
- remote control CR 73 code 8092226

- 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 CR 53, CR 73 e RVS with electronic boiler board set **PAR 10**.

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

1.10 COMPOSITION OF THE KIT (fig. 5)

- N. 2 frames code 6294800 (**MURELLE EQUIPE 220**)
- N. 3 frames code 6294800 (**MURELLE EQUIPE 330**)
- N. 4 frames code 6294800 (**MURELLE EQUIPE 440**)
- N. 5 frames code 6294800 (**MURELLE EQUIPE 550**)
- N. 6 frames code 6294800 (**MURELLE EQUIPE 660**)

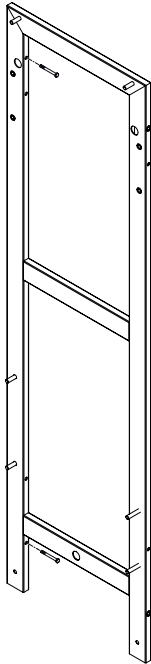


Fig. 5/a

- N. 2 collector support brackets code 62948111 (**MURELLE EQUIPE 220-330**)
- N. 4 collector support brackets code 62948111 (**MURELLE EQUIPE 440-550-660**)

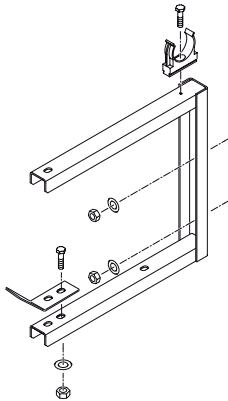


Fig. 5/b

- N. 2 polyurethane coated delivery/return collectors code 6291940 with gasket and M12 fixing screws and N. 1 gas collectors code 6286330 (**MURELLE EQUIPE 220**)
- N. 2 polyurethane coated delivery/return collectors code 6291941 with gasket and M12 fixing screws and N. 1 gas collectors code 6286331 (**MURELLE EQUIPE 330**)
- N. 4 polyurethane coated delivery/return collectors code 6291940 with gasket and M12 fixing screws and N. 2 gas collectors code 6286330 (**MURELLE EQUIPE 440**)
- N. 2 polyurethane coated delivery/return collectors code 6291940 + N. 2 polyurethane coated delivery/return collectors code 6291941 with gasket and M12 fixing screws, N. 2 gas collectors code 6286330 + N. 1 gas collectors code 6286331 (**MURELLE EQUIPE 550**)
- N. 4 polyurethane coated delivery/return collectors code 6291941 with gasket and M12 fixing screws and N. 2 gas collectors code 6286331 (**MURELLE EQUIPE 660**)

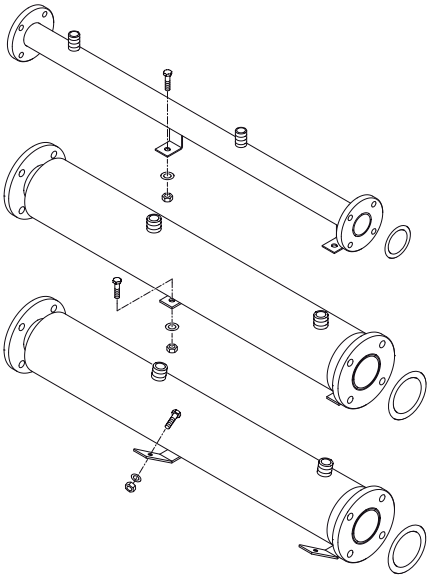


Fig. 5/c

- N. 1 blind flange PN6 DN 50 for gas collector with gasket and fixing screws, code 6105150
- N. 2 blind flanges PN6 DN 100 for system delivery/return collectors with gasket and fixing screws, code 6105155

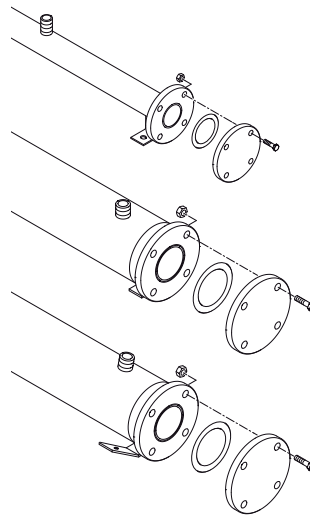


Fig. 5/d

- N. 1 condensate drain collector consisting of 2 fittings, 2 tubes and 1 cap. Moreover, the collector is supplied with brackets, nuts and M8 fixing screws (**MURELLE EQUIPE 220**)
- N. 1 condensate drain collector consisting of 3 fittings, 3 tubes and 1 cap. Moreover, the collector is supplied with brackets, nuts and M8 fixing screws (**MURELLE EQUIPE 330**)
- N. 1 condensate drain collector consisting of 4 fittings, 4 tubes and 1 cap. Moreover, the collector is supplied with brackets, nuts and M8 fixing screws (**MURELLE EQUIPE 440**)
- N. 1 condensate drain collector consisting of 5 fittings, 5 tubes and 1 cap. Moreover, the collector is supplied with brackets, nuts and M8 fixing screws (**MURELLE EQUIPE 550**)
- N. 1 condensate drain collector consisting of 6 fittings, 6 tubes and 1 cap. Moreover, the collector is supplied with brackets, nuts and M8 fixing screws (**MURELLE EQUIPE 660**)

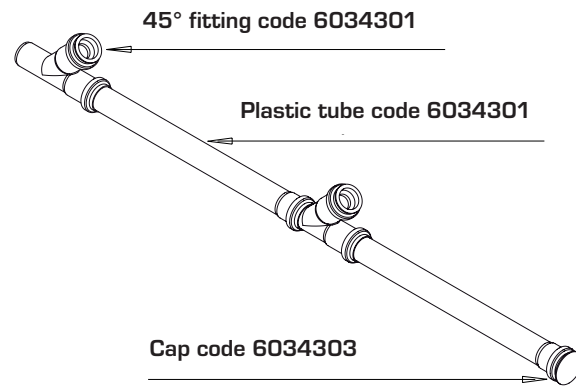


Fig. 5/e

- N. 2 kit of three-way/gas delivery/return cocks with connection tubes, nipple 1", check valve and gaskets (**MURELLE EQUIPE 220**)
- N. 3 kit of three-way/gas delivery/return cocks with connection tubes, nipple 1", check valve and gaskets (**MURELLE EQUIPE 330**)
- N. 4 kit of three-way/gas delivery/return cocks with connection tubes, nipple 1", check valve and gaskets (**MURELLE EQUIPE 440**)
- N. 5 kit of three-way/gas delivery/return cocks with connection tubes, nipple 1", check valve and gaskets (**MURELLE EQUIPE 550**)
- N. 6 kit of three-way/gas delivery/return cocks with connection tubes, nipple 1", check valve and gaskets (**MURELLE EQUIPE 660**)

CAUTION: Before assembling the three-way drain cocks, direct the ball regulator shaft as indicated in the figure.

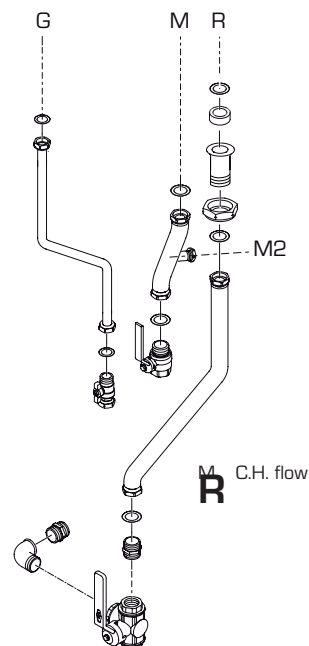
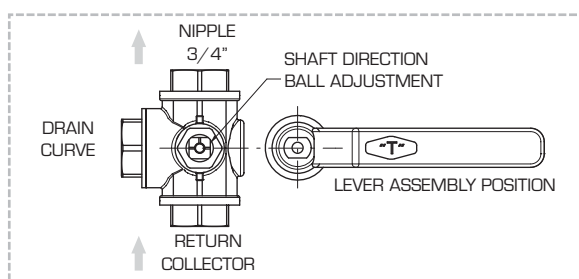
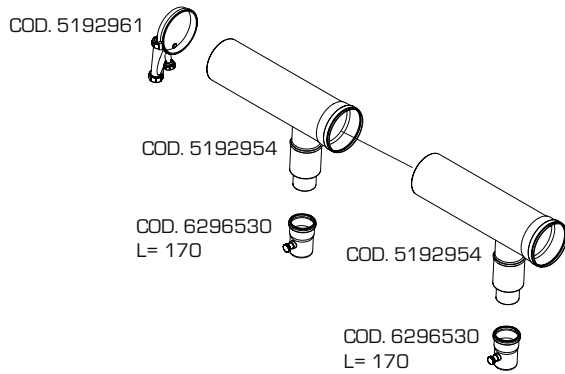


Fig. 5/f

MURELLE EQUIPE 220



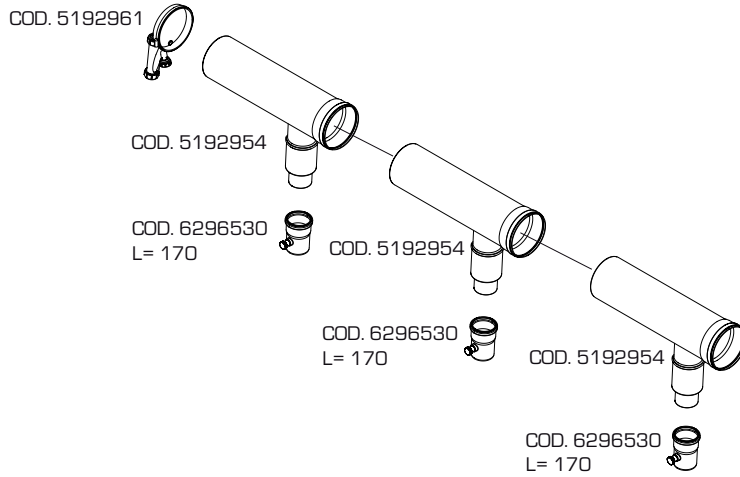
- **MURELLE EQUIPE 220** fume exhaust unit consisting of:
N. 2 \varnothing 200 collectors code 5192954
N. 2 L. 170 \varnothing 80 extensions code 6296530
N. 1 collector closure code 5192961

- **MURELLE EQUIPE 330** fume exhaust unit consisting of:
N. 3 \varnothing 200 collectors code 5192954
N. 3 L. 170 \varnothing 80 extensions code 6296530
N. 1 collector closure code 5192961

- **MURELLE EQUIPE 440** fume exhaust unit consisting of:
N. 4 \varnothing 200 collectors code 5192954
N. 3 L. 170 \varnothing 80 extensions code 6296530
N. 1 L. 250 \varnothing 80 extensions code 6296513
N. 1 collector closure code 5192961

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

MURELLE EQUIPE 330



MURELLE EQUIPE 440

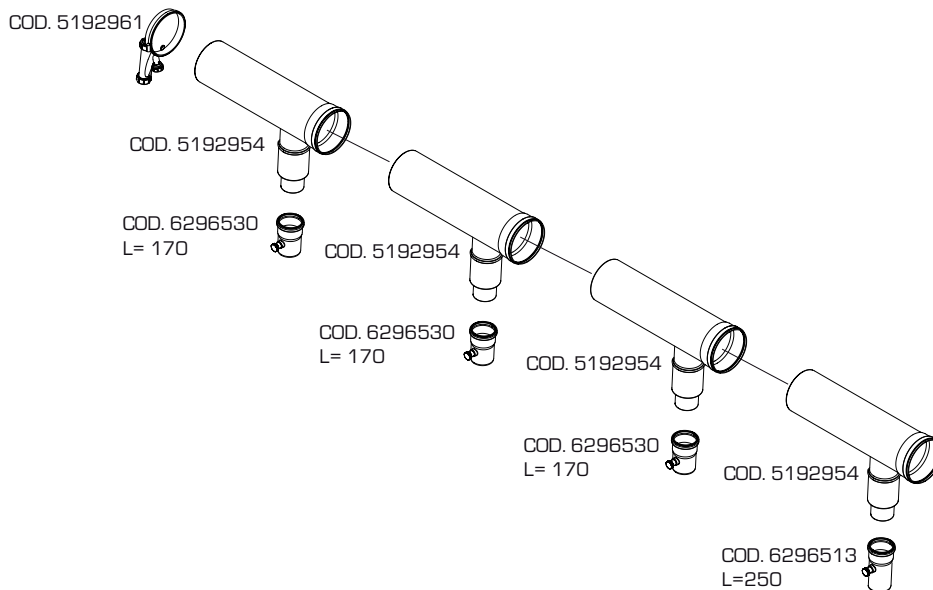
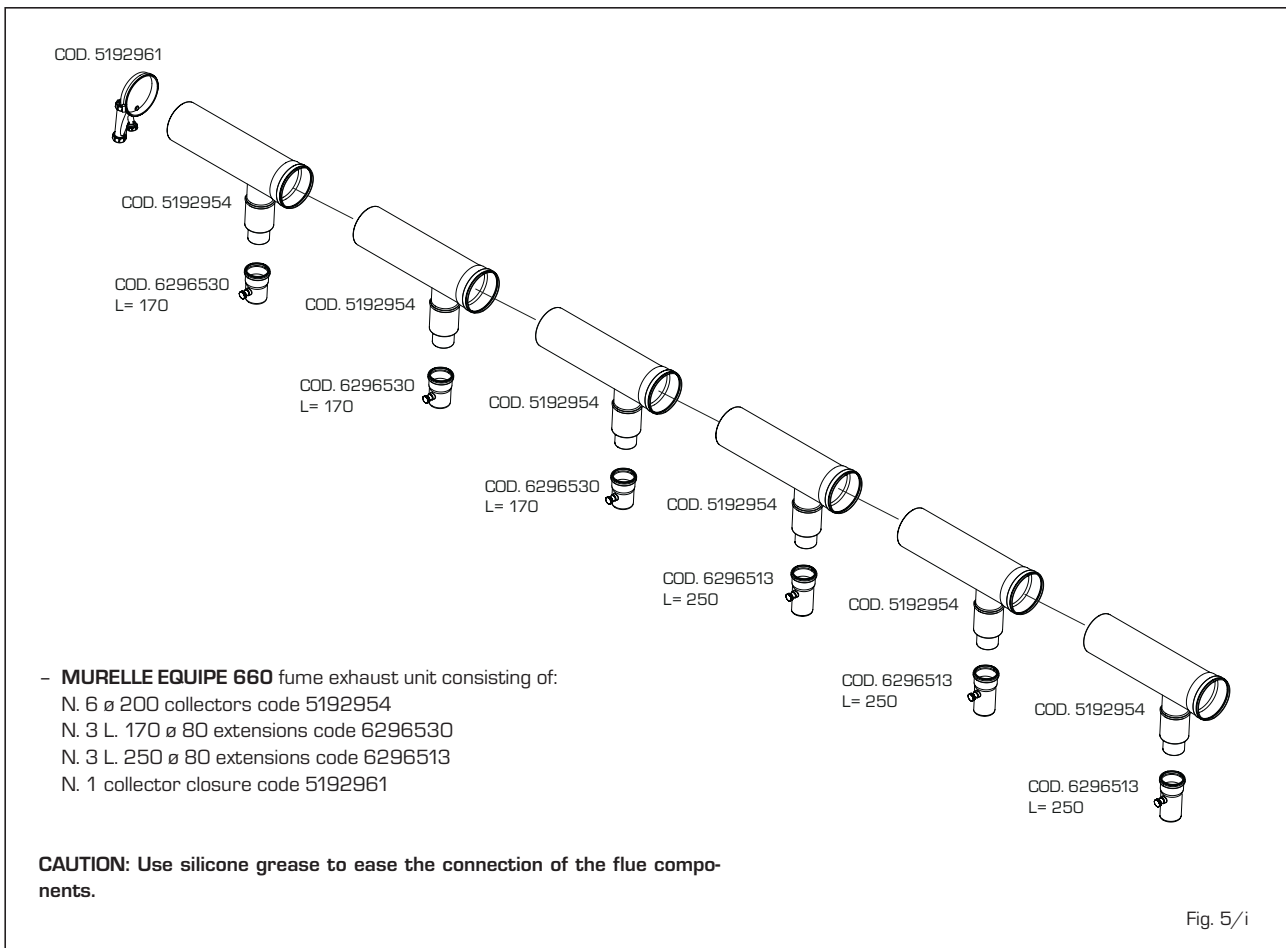
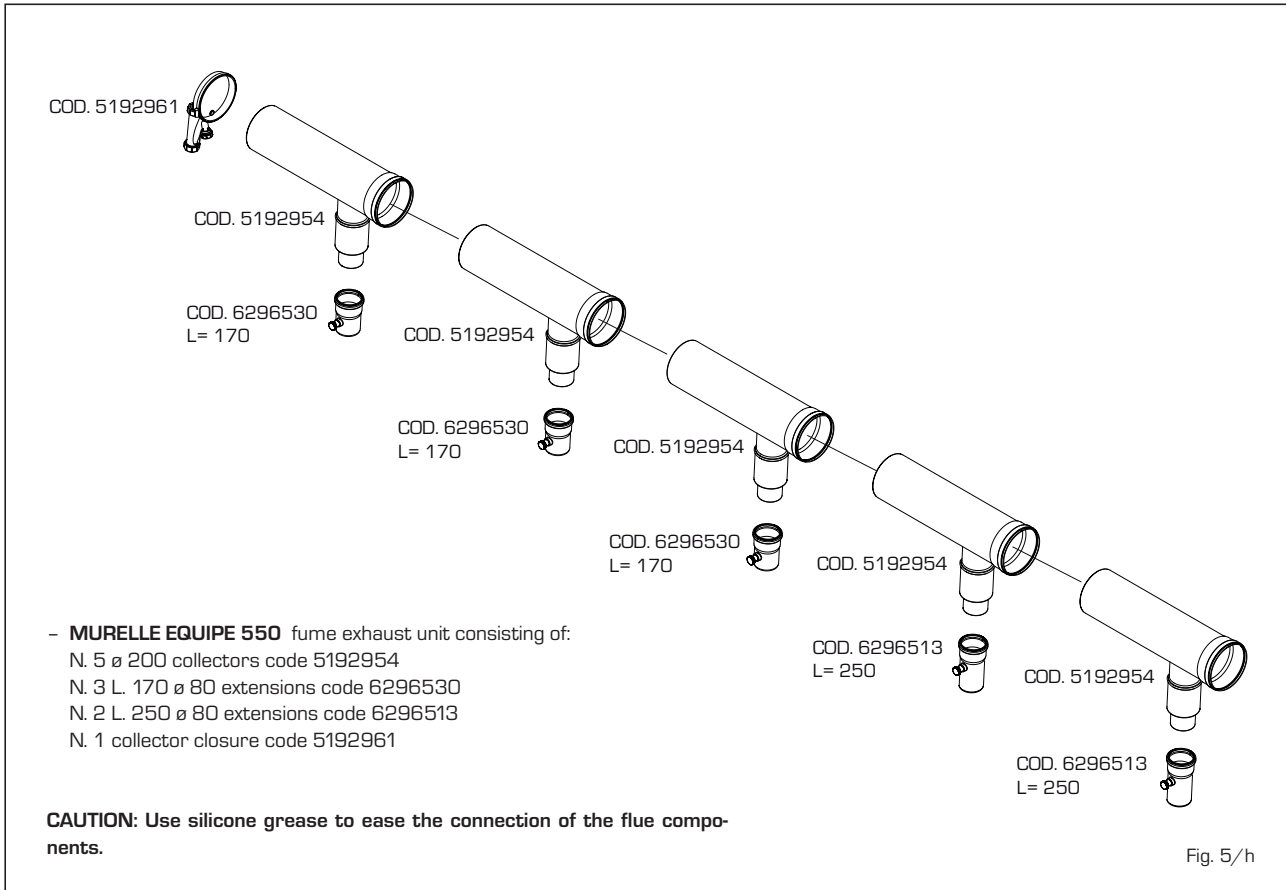


Fig. 5/g



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

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

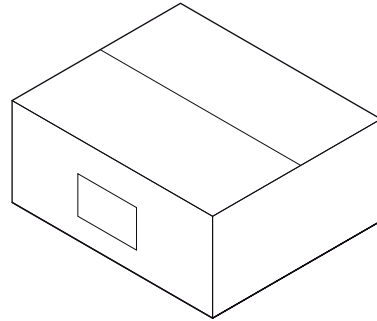


Fig. 5/1

**1.11 KIT CODE 8101532 MURELLE EQUIPE 220-330
(to be requested separately) (fig. 6)**

- N. 1 kit with collector delivery/return tube, code 6291968, 8 litres expansion vessel, code 6245108, expansion vessel connection tube, code 6227661, reduced nipple 1" - 3/4", code 2040252, gaskets, nuts and M16 fixing screws

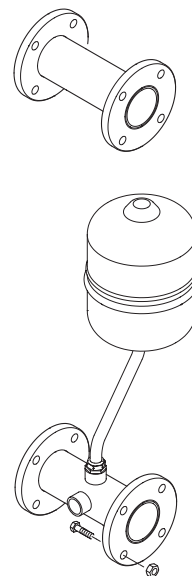


Fig. 6

1.12 KIT CODE 8101533 MURELLE EQUIPE 440-550-660
 (to be requested separately) (fig. 7)

- N. 1 kit with collector delivery tube, code 6291969, collector return tube, code 6291971, 8 litres expansion vessel, code 6245108, expansion vessel connection tube, code 6227661, reduced nipple 1" - 3/4", code 2040252, gaskets, nuts and M16 fixing screws

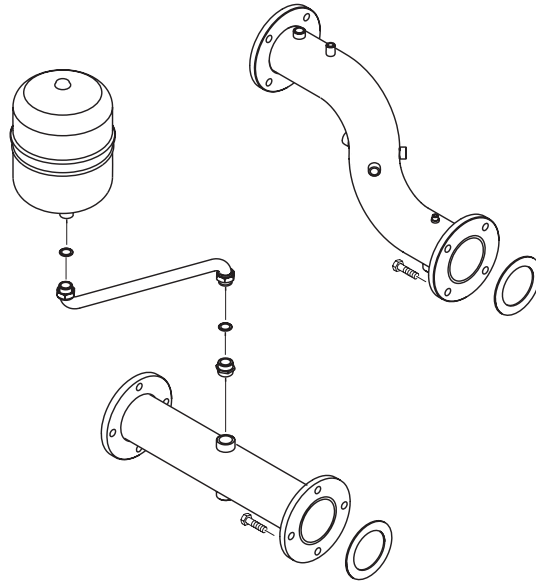


Fig. 7

1.13 CODE 8101552 MURELLE EQUIPE 220-330 (to be requested separately) (fig. 8)

- N. 1 hydraulic compressor with gaskets, nuts and M16 fixing screws

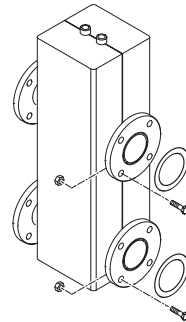


Fig. 8

1.14 CODE 8101553 MURELLE EQUIPE 440-550-660 (to be requested separately) (fig. 9)

- N. 1 hydraulic compressor with gaskets, nuts and M16 fixing screws

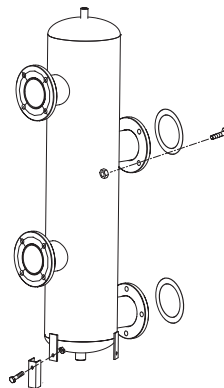
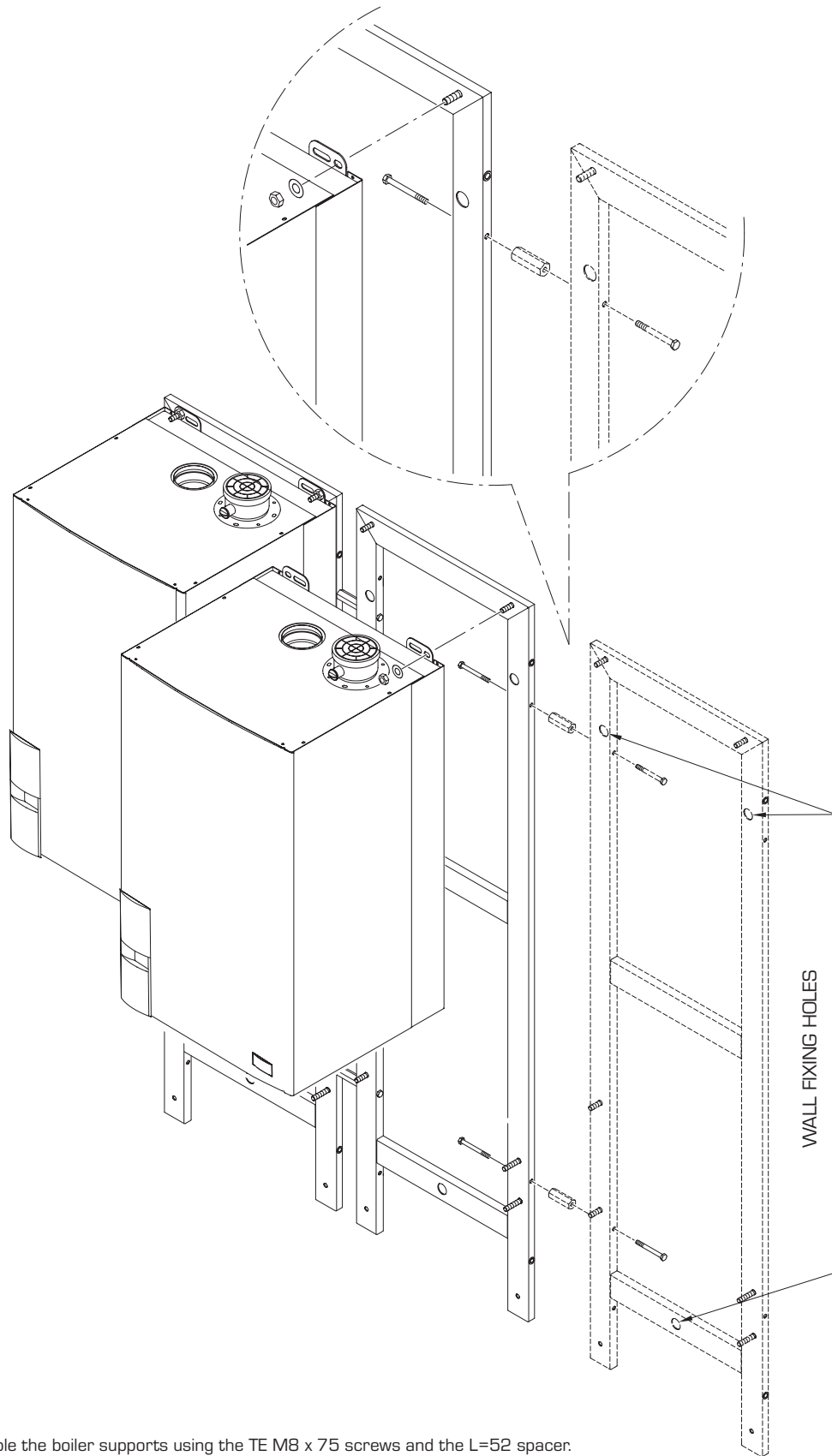
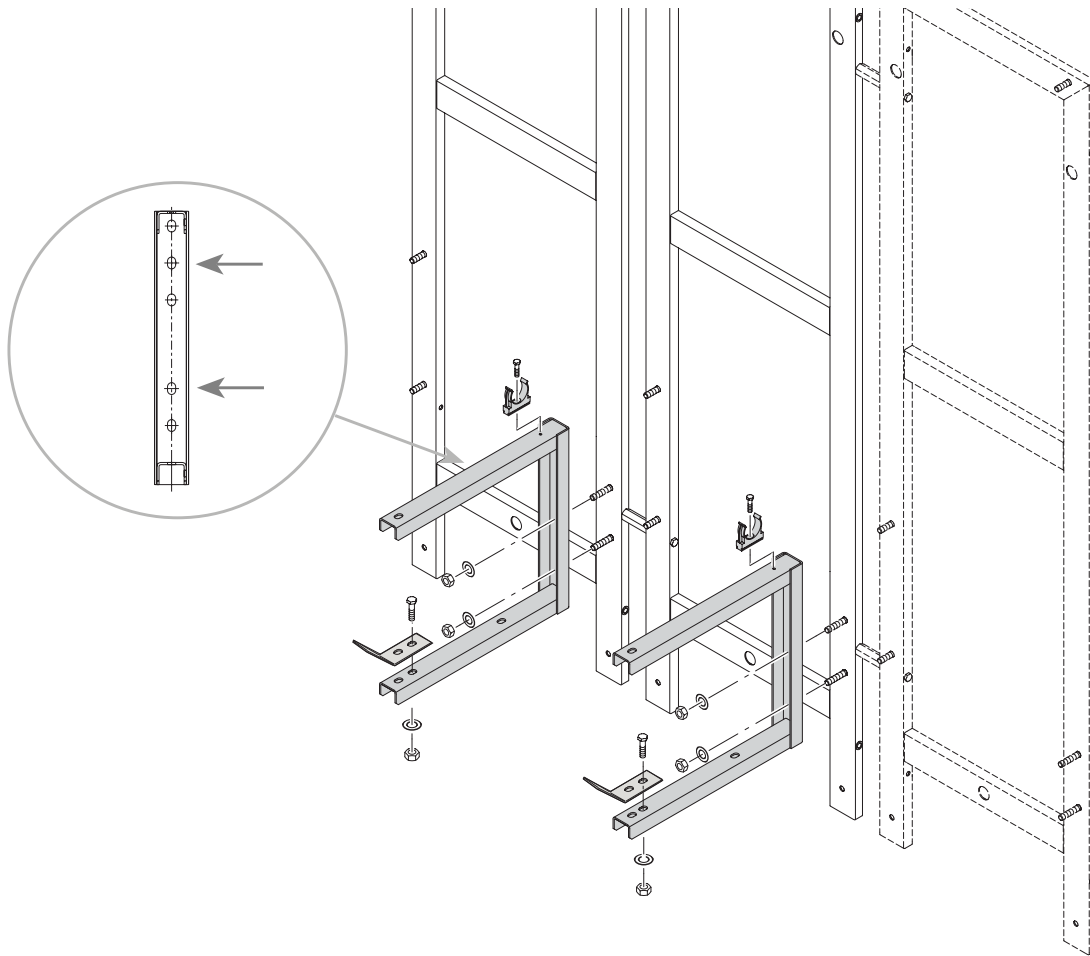


Fig. 9

2 FRAME ASSEMBLY OF SINGLE MODULE SUPPORT



- 1 Assemble the boiler supports using the TE M8 x 75 screws and the L=52 spacer. Secure the assembled frames to the wall or other secure structure.

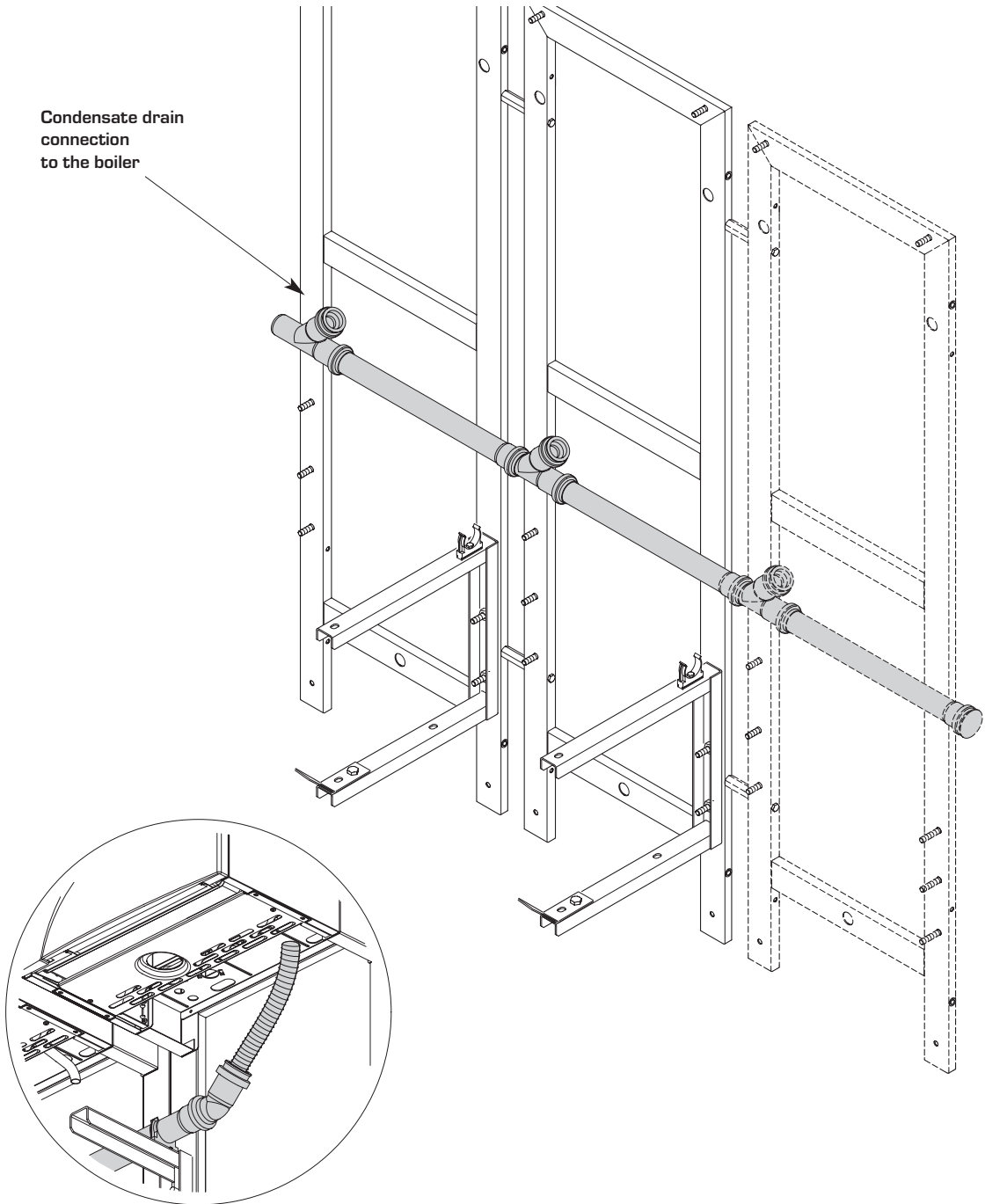


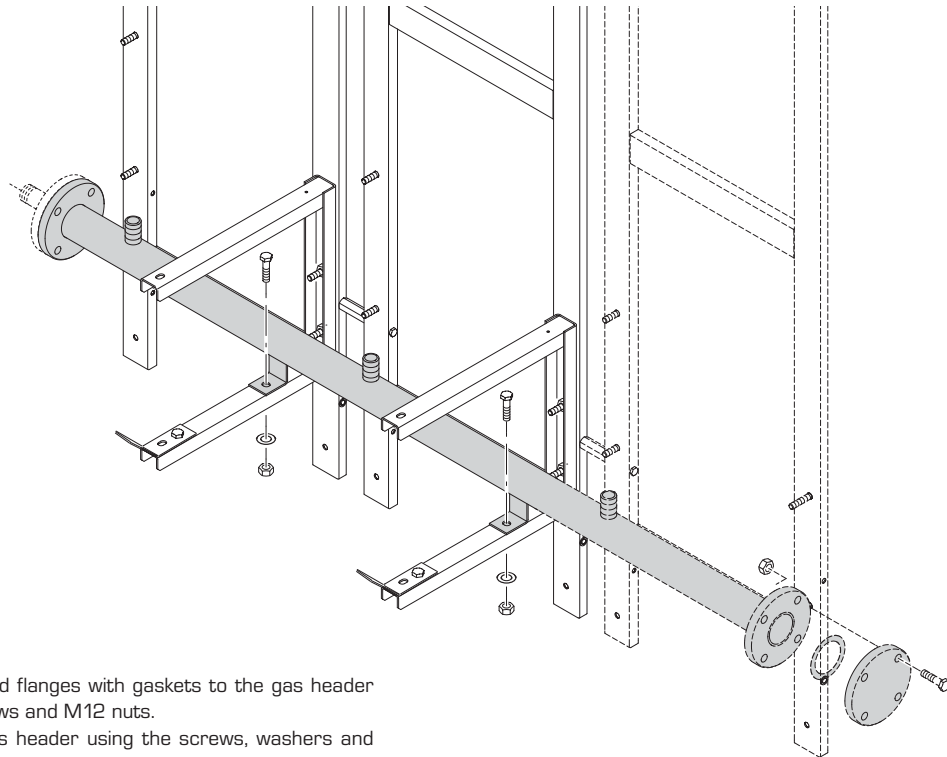
- 2** Mount the collector supporting brackets, fastening them to the frame using the washers and M10 nuts.
 The position where to place the washer and bracket blocking nut is indicated by two arrows in correspondence with the frame studs to be used.
 Mount the supports of the condensate drain collector, fastening them to the supporting brackets, using the M5 screws.

3 FITTING CONNECTION AND CONDENSATE DRAIN

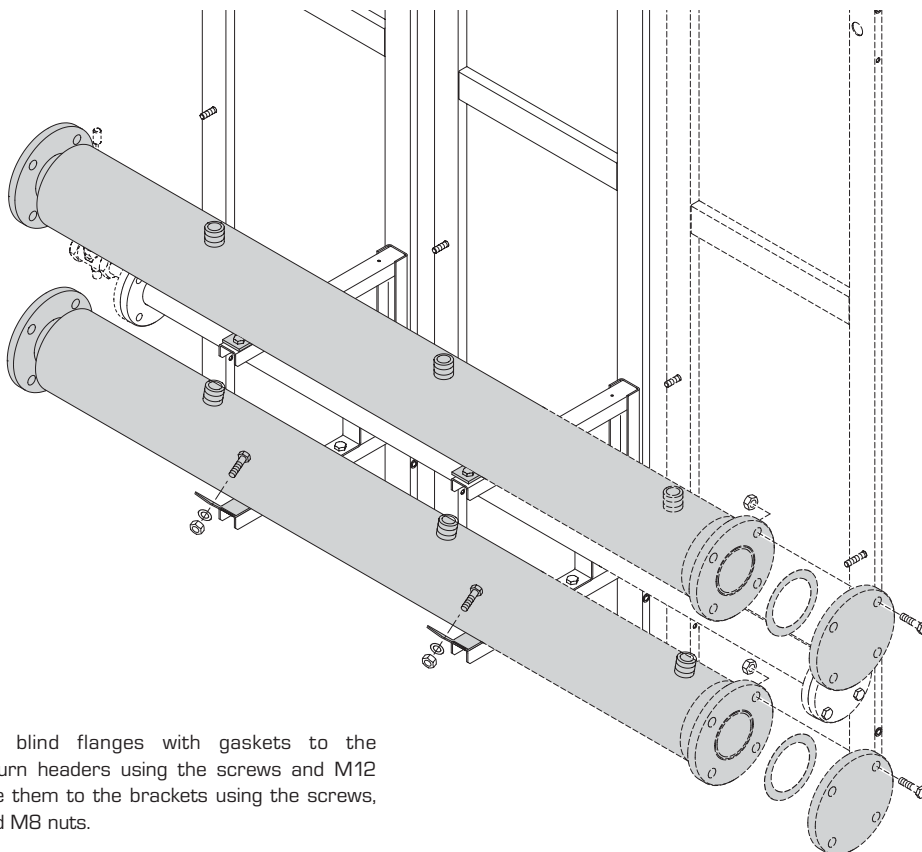
- 1 Place the condensate drain collector inside the appropriate support.
Connect the condensate drain of each module to the collector.

Condensate drain
connection
to the boiler



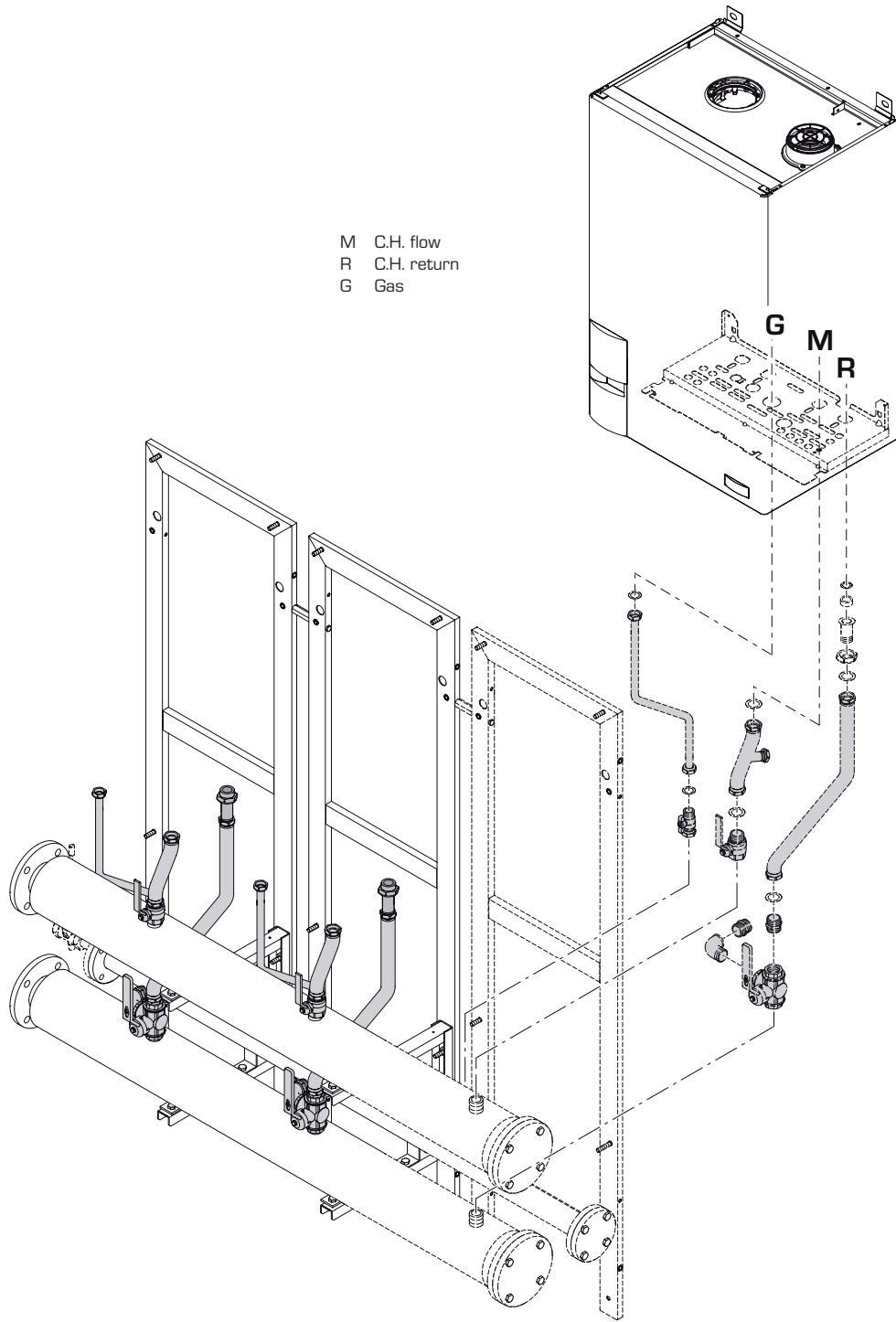


- 2** Mount the blind flanges with gaskets to the gas header using the screws and M12 nuts. Secure the gas header using the screws, washers and M8 nuts.



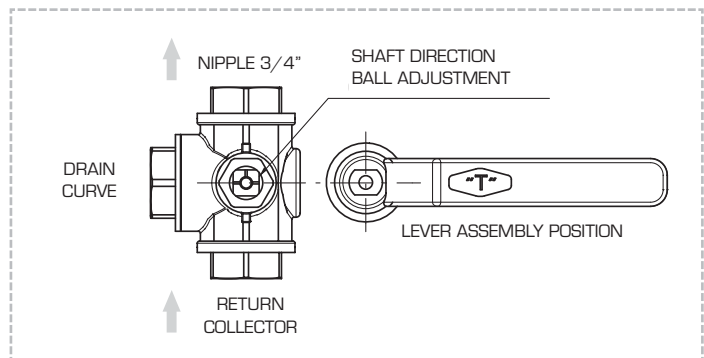
- 3** Mount the blind flanges with gaskets to the delivery/return headers using the screws and M12 nuts. Secure them to the brackets using the screws, washers and M8 nuts.

M C.H. flow
 R C.H. return
 G Gas



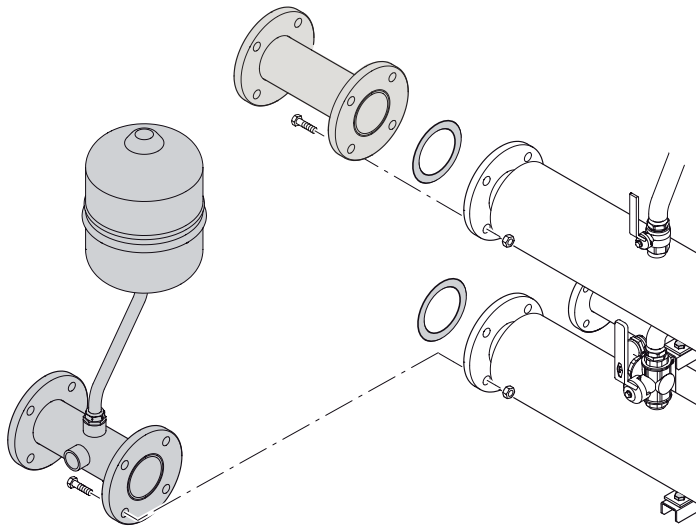
4 Mount the series of three-way drain cocks and the system delivery/gas cocks to the relative collectors and connect the tubes to the fittings of the boiler using the respective gaskets.

CAUTION: Before assembling the three-way drain cocks, reposition the ball regulator shaft as indicated in the figure.

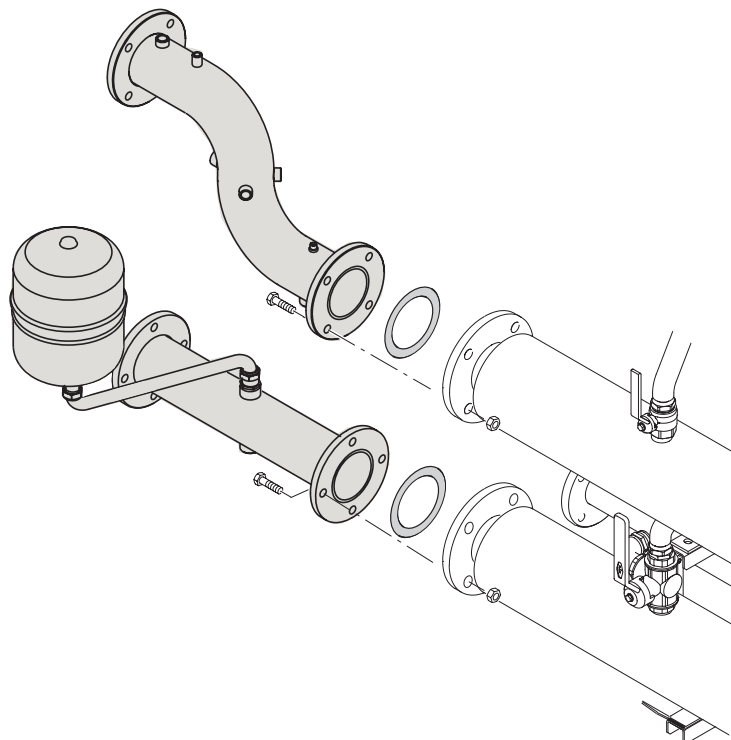


- 5** Low Loss Header connection kit (to be requested separately).
Use the gaskets with screws and M16 fixing nuts for the assembly.

MURELLE EQUIPE 220-330

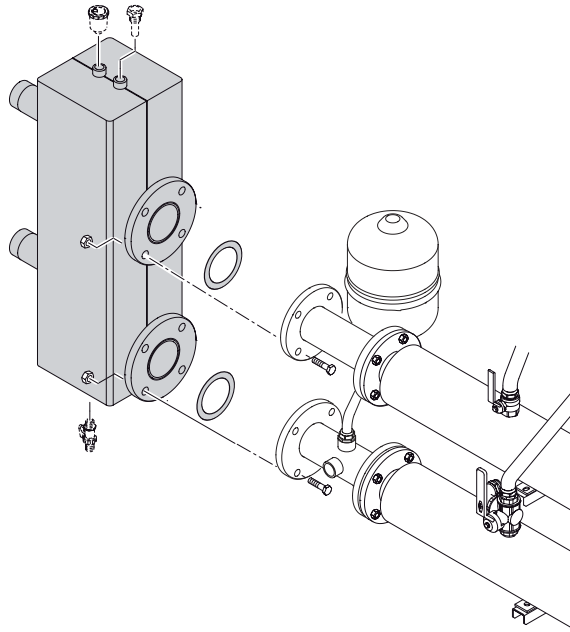


MURELLE EQUIPE 440-550-660

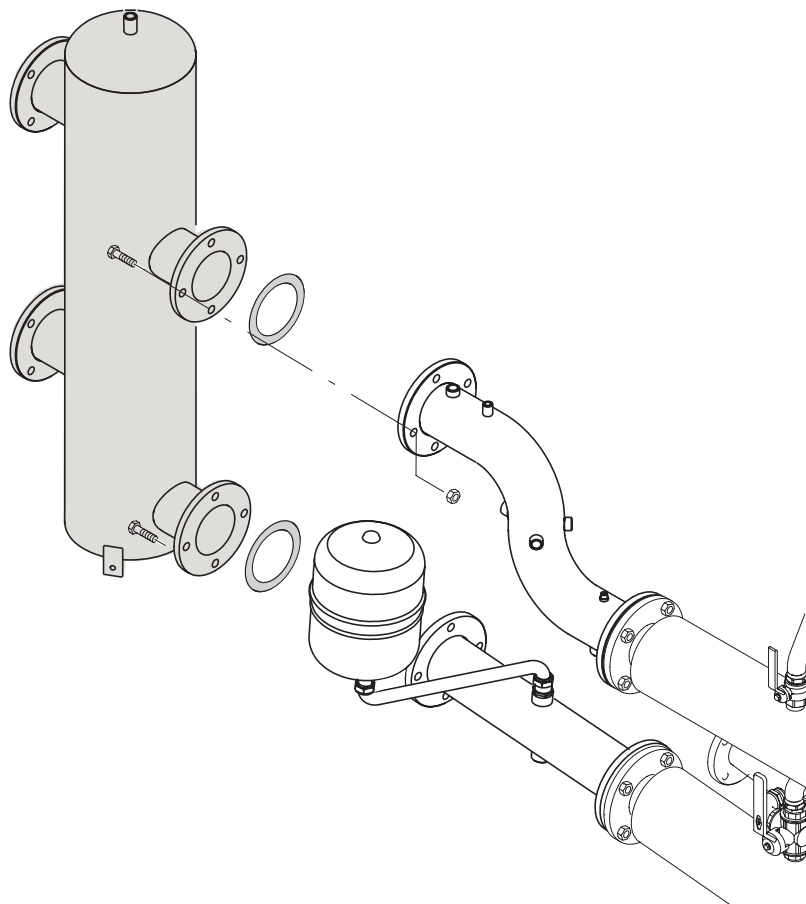


- 6** Low Loss Header (to be requested separately).
Use the gaskets and fasten it to the connection outlets using the screws and M16 nuts provided.

MURELLE EQUIPE 220-330



MURELLE EQUIPE 440-550-660

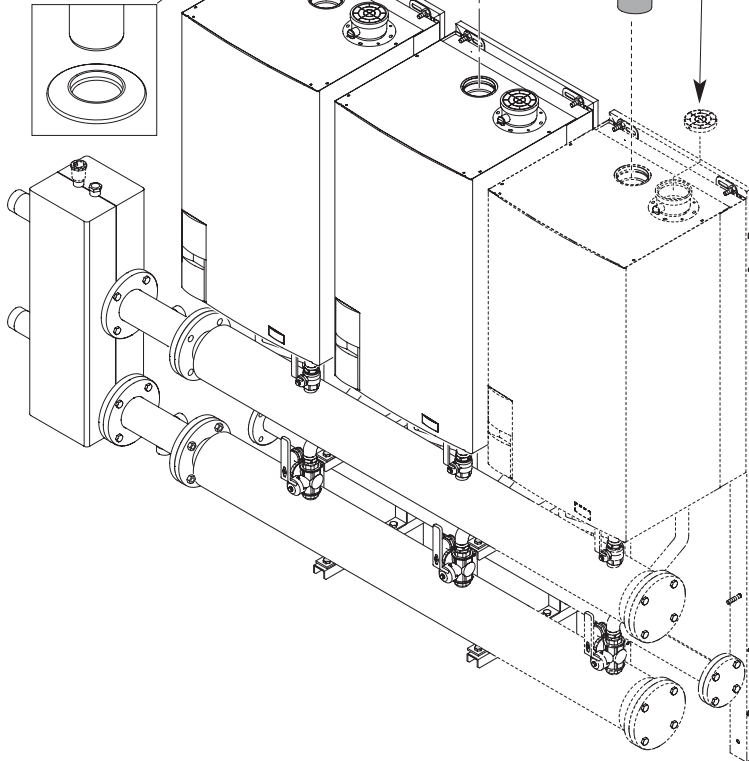


4 CASCADE FLUE

- 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.

CAUTION: The boiler becomes a C-type appliance when the intake terminal is removed from the flange and the intake is connected.
In these cases, use $\varnothing 80$ polypropylene accessories, authorised and customised by SIME (refer to the instruction manual provided with the boiler).

Provided with each boiler there is a $\varnothing 80$ rubber gasket to be placed inside the fume exhaust unit, as shown in the figure.



When boilers are used with a cascade flue PAR 1 on each boiler must be reset.

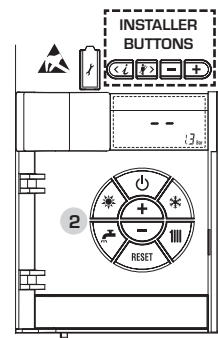
On natural gas PAR 1 = 8

On LPG PAR 1 = 16

To access the INST parameters and configure PAR 9, press the INSTALLER BUTTONS (◀ and ▶) simultaneously for 2 seconds.

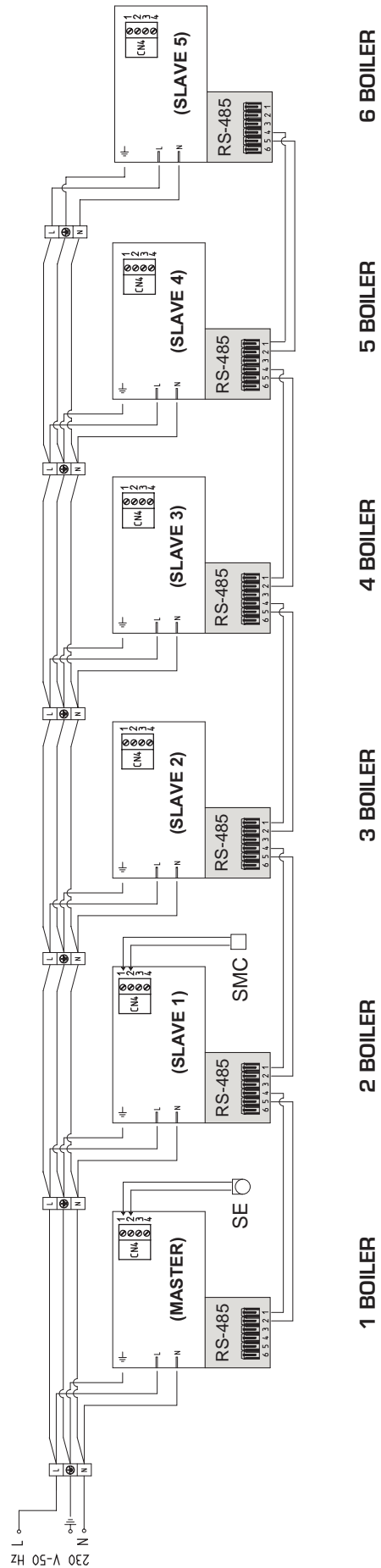
Parameter 1 will be displayed. Change the values use the buttons (◻ and ◻).

After 60 seconds, the INST parameters will be exited automatically or by pressing one of the command buttons (2), except the RESET.



5 CASCADE CONNECTION

- 1** Connect the RS 485 boards as shown.
The external temperature sensor (SE) must be connected to the **MASTER** module and the cascade delivery sensor (SMC) to the **SLAVE 1** module.



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 , Third SLAVE = 3, Fourth SLAVE = 4, and Fifth = 5.

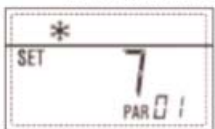
To confirm the setting press

*CASCADE WITH MORE THAN TWO BOILERS

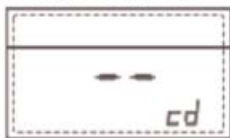
When more than two boilers are connected in cascade, it is essential that the OEM parameter on the “Master” boiler is reset to coincide with the number of boilers in the cascade.

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.



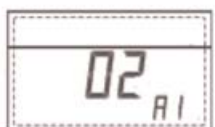
Then press again, simultaneously, the and the buttons for 2 seconds until the display shows.



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

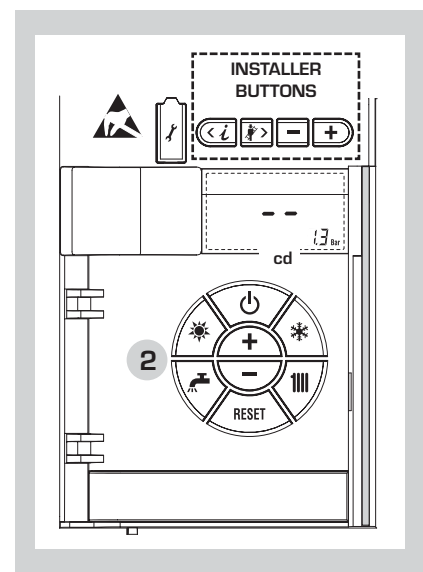


Press the button, and the display will show



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. This is also a condition of any extended warranty offered.

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 1

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 2

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 3

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 4

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 5

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 6

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Operative ID No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 7

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 8

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 9

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

Service 10

Date: _____

Engineer Name: _____

Company Name: _____

Telephone No. _____

Gas Safe Register No. _____

Comments CO: _____ CO2: _____ RATIO: _____

Signature: _____

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																

Commissioning Checklist for Murelle HE 110 R Single Boilers and Boilers in Cascade

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

Address _____ Commissioning Engineer _____ Date _____

Signature _____

All Systems

Has the system been flushed and cleaned in accordance with BS7593 and manufactureres recommendations? YES

What system cleanser was used? _____

What inhibitor was used? _____ Quantity _____ Litres

	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								

Flue analysis Boiler Output	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
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 (located at the back of the boiler installation manual) 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

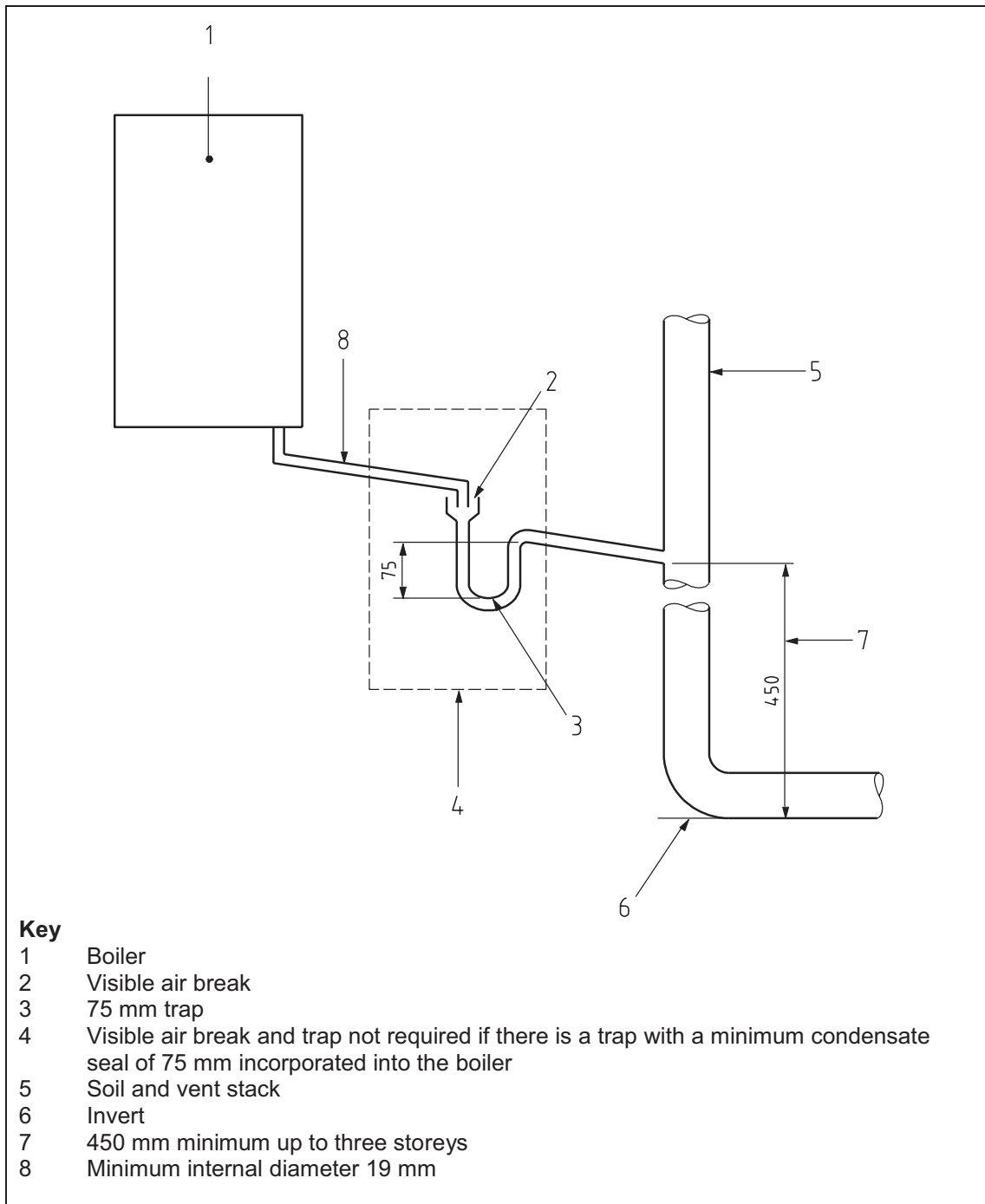


Figure 2(a) – Connection of a condensate drainage pipe downstream of a sink, basin, bath or shower waste trap

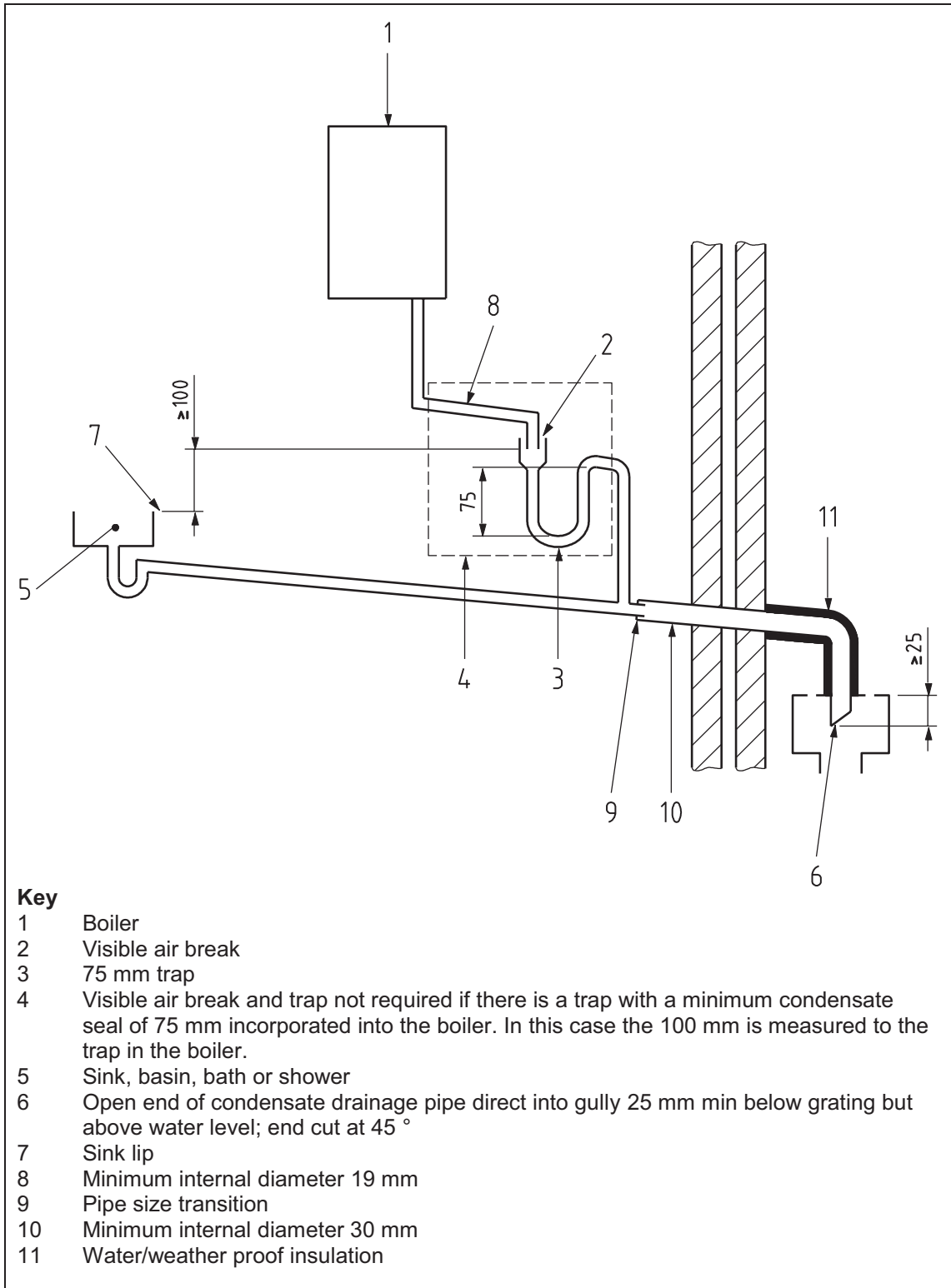


Figure 2(b) – Connection of a condensate drainage pipe upstream of a sink, basin, bath or shower waste trap

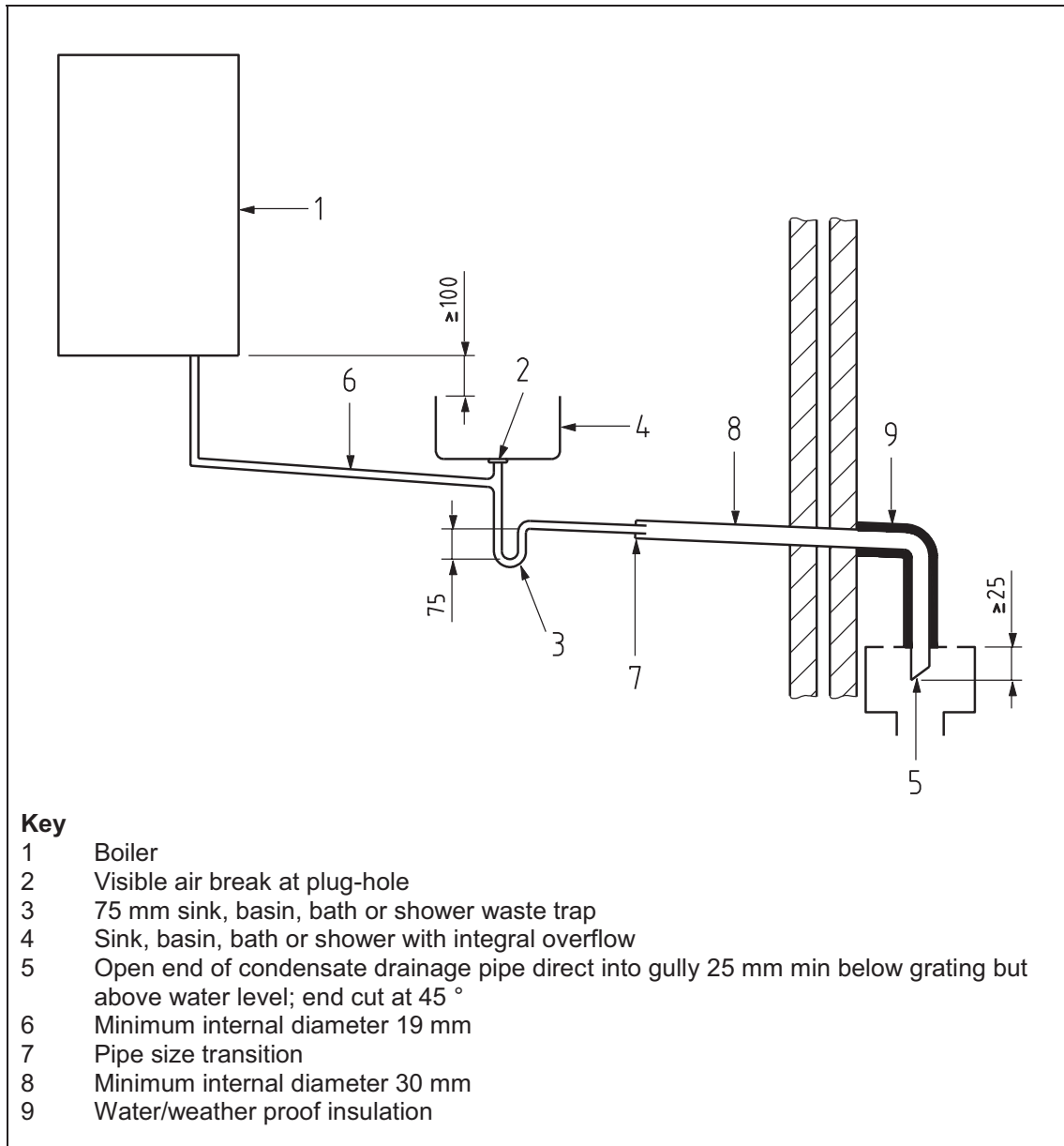


Figure 3 – Connection of a condensate pump - typical method (NB manufacturer’s detailed instructions should be followed).

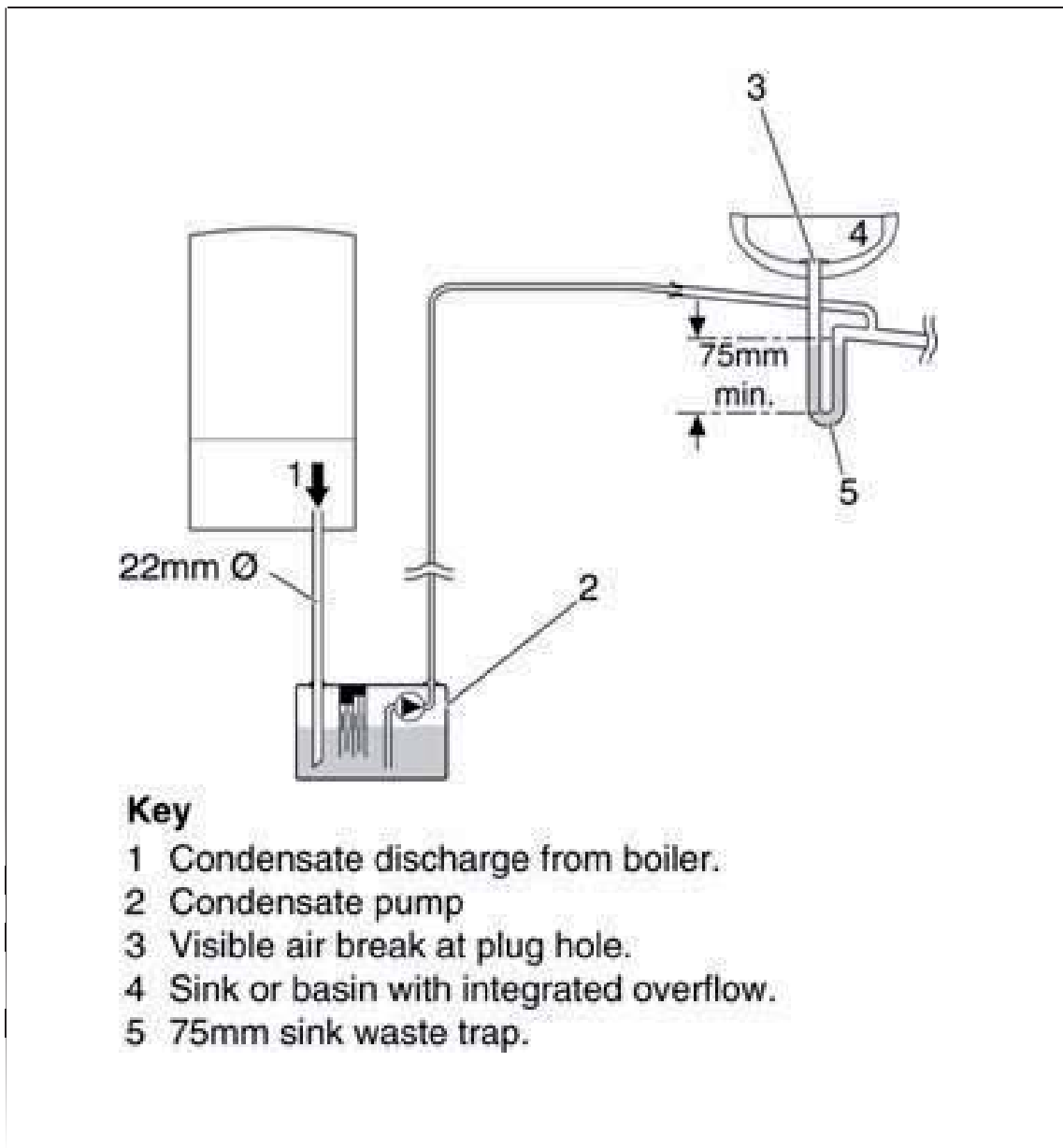


Figure 4 – Connection of condensate drainage pipe to external soil and vent stack

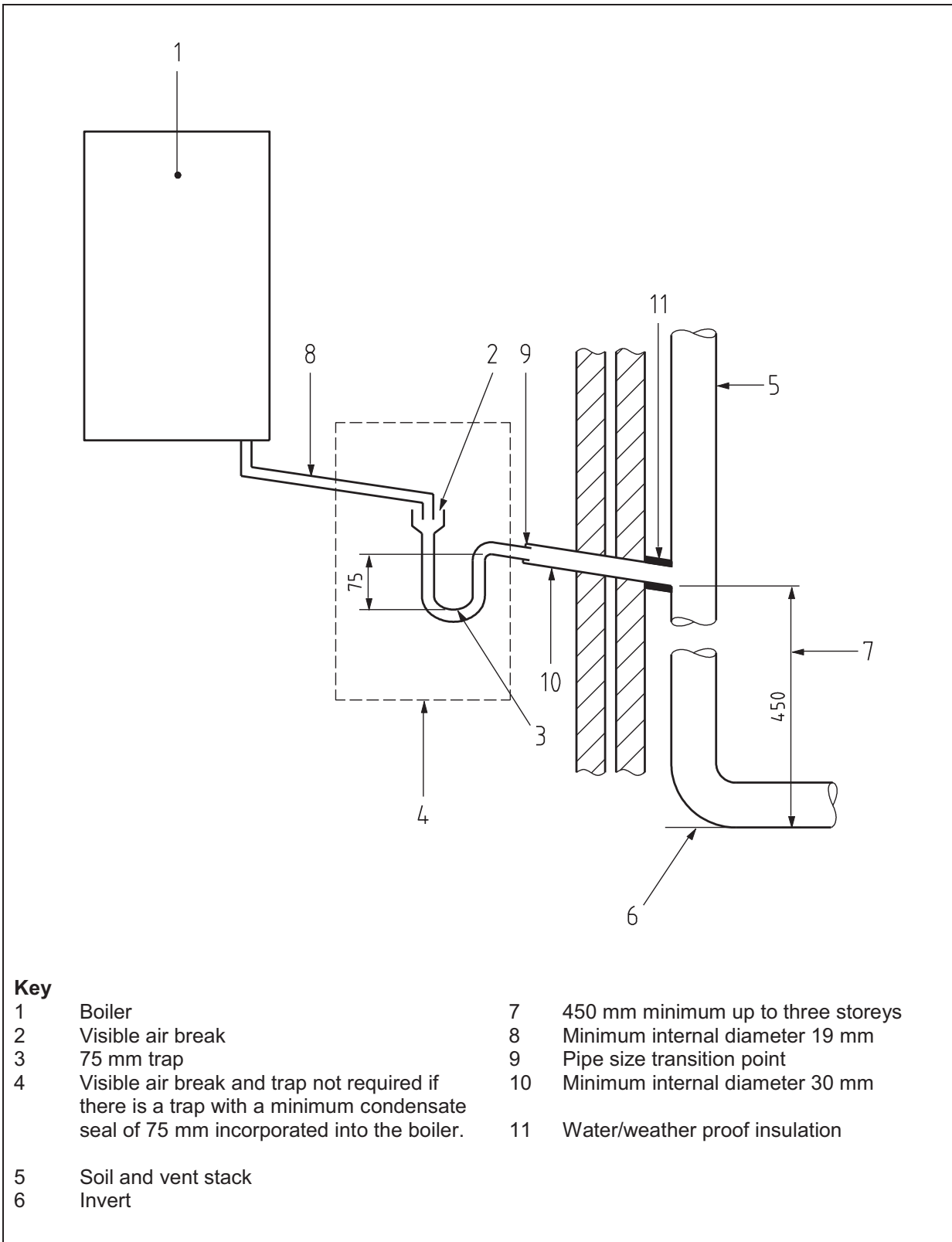


Figure 5 – External termination to rainwater downpipe (NB only combined foul/rainwater drain)

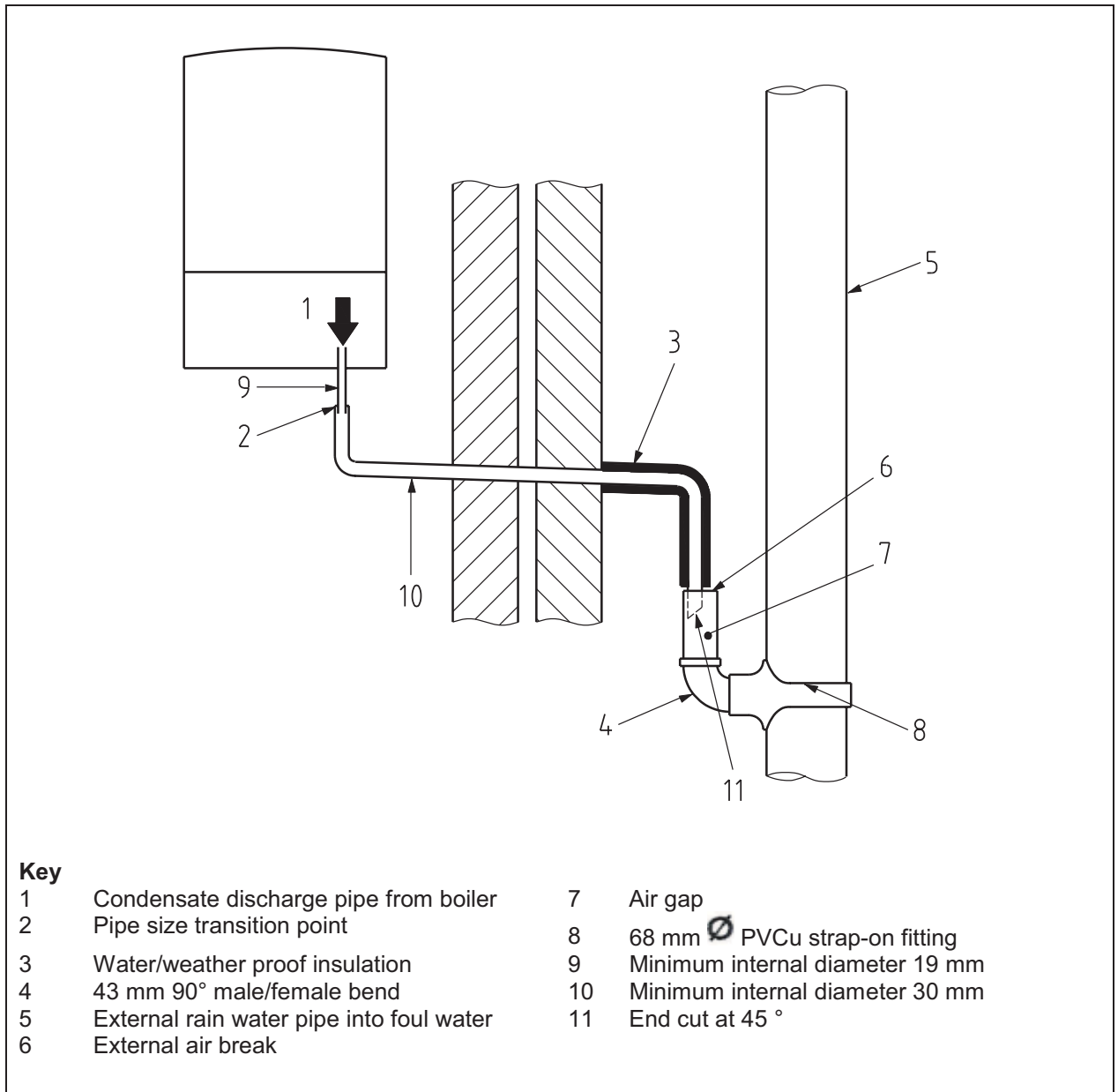


Figure 6 – External drain, gully or rainwater hopper

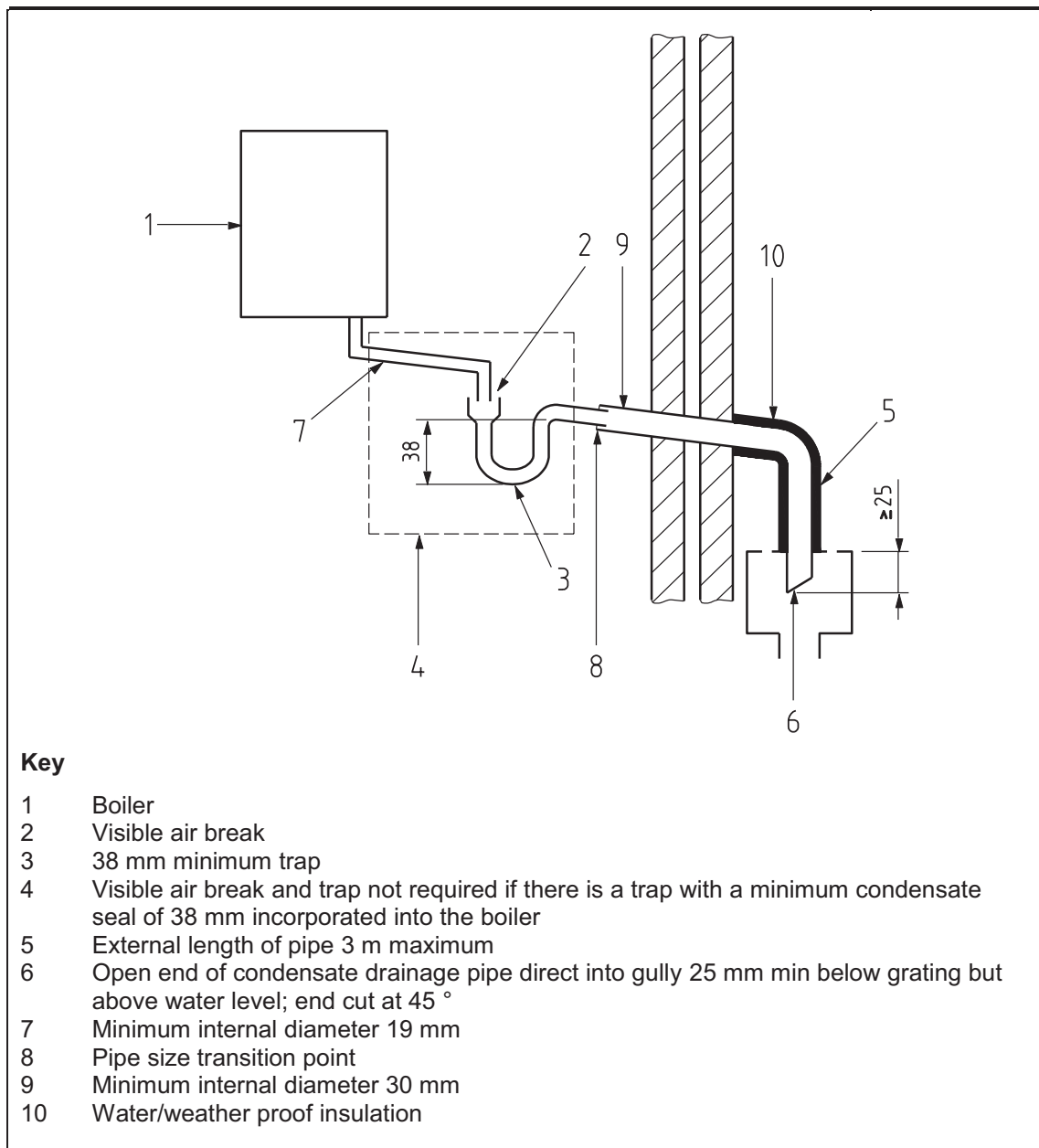
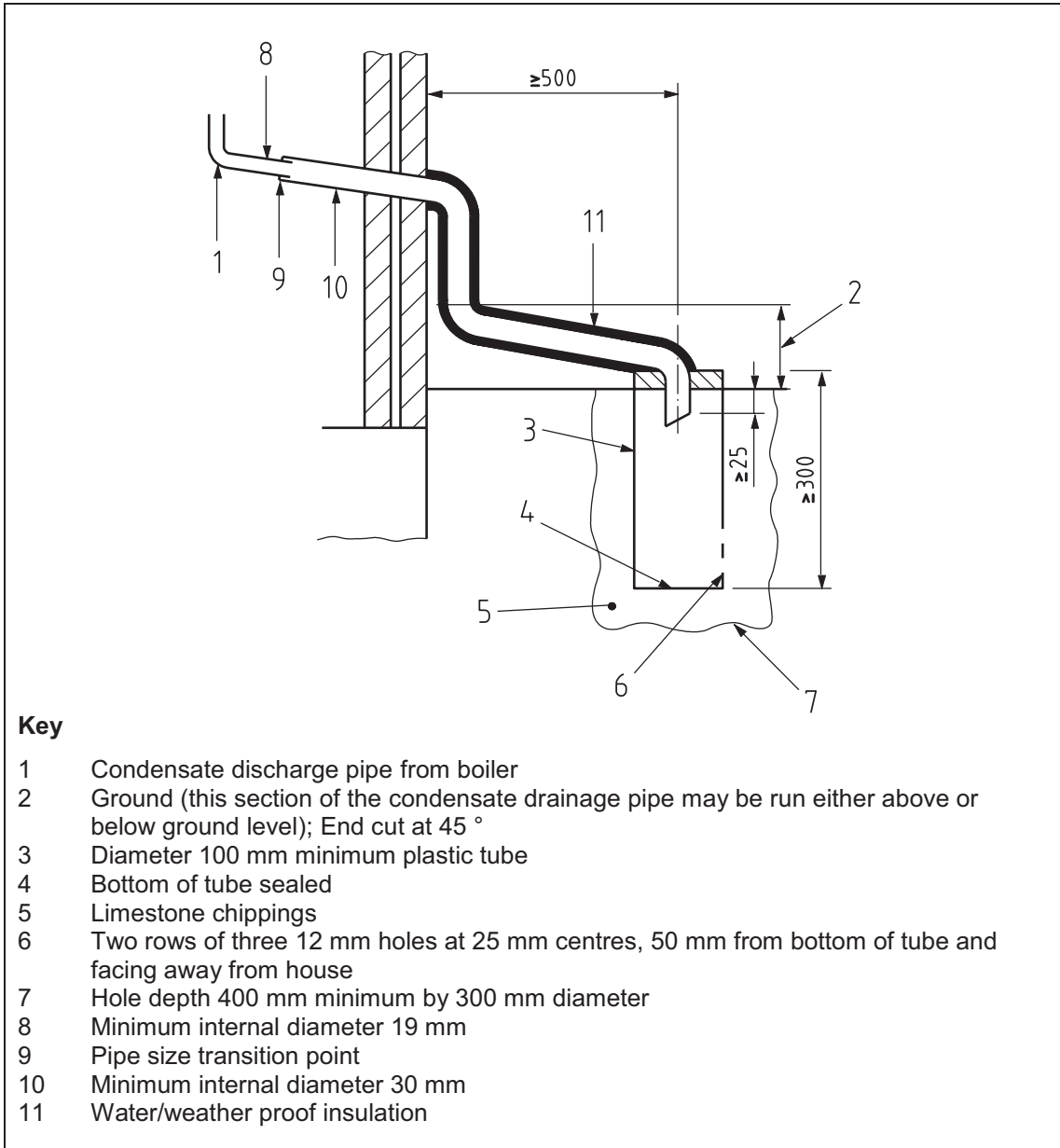


Figure 7 – Example of a purpose-made soakaway



8 APPENDIX 2 (VENTILATION GUIDANCE)

Ventilation Requirements for Murelle Equipe 220 – 660 Cascade

This information is provided for guidance only

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				
220	high	436 cm ²	low	872 cm ²
330	high	648 cm ²	low	1296 cm ²
440	high	846 cm ²	low	1728 cm ²
550	high	1080 cm ²	low	2160 cm ²
660	high	1296 cm ²	low	2592 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				
220	high	1090 cm ²	low	2180 cm ²
330	high	1620 cm ²	low	3240 cm ²
440	high	2160 cm ²	low	4320 cm ²
550	high	2700 cm ²	low	5400 cm ²
660	high	3240 cm ²	low	6480 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				
220	high	436 cm ²	low	436 cm ²
330	high	648 cm ²	low	648 cm ²
440	high	846 cm ²	low	846 cm ²
550	high	1080 cm ²	low	1080 cm ²
660	high	1296 cm ²	low	1296 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				
220	high	1090 cm ²	low	1090 cm ²
330	high	1620 cm ²	low	1620 cm ²
440	high	2160 cm ²	low	2160 cm ²
550	high	2700 cm ²	low	2700 cm ²
660	high	3240 cm ²	low	3240 cm ²

NOTES



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