

ENERWA PLUS 2530C
ENERWA PLUS 3035C
ENERWA PLUS 3540C
ENERWA PLUS 4240C
ENERWA PLUS 4543C

**CONDENSING COMBI BOILERS
INSTALLATION & SERVICE MANUAL**

Code Of Practice

For the installation, commissioning and servicing of domestic heating and hot water products

Benchmark places responsibilities on both manufacturers and installers.* The purpose is to ensure that customers** are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturer's instructions by competent persons and that it meets the requirements of the appropriate Building Regulations. Installers are required to carry out work in accordance with the following:

Standards of Work

- Be competent and qualified to undertake the work required.
- Install, commission, service and use products in accordance with the manufacturer's instructions provided.
- Ensure that where there is responsibility for design work, the installation is correctly sized and fit for purpose.
- Meet the requirements of the appropriate Building Regulations. Where this involves notifiable work be a member of a Competent Persons Scheme or confirm that the customer has notified Local Authority Building Control (LABC), prior to work commencing.
- Complete all relevant sections of the Benchmark Checklist/Service Record when carrying out commissioning or servicing of a product or system.
- Ensure that the product or system is left in a safe condition and, whenever possible, in good working order.
- Highlight to the customer any remedial or improvement work identified during the course of commissioning or servicing work.
- Refer to the manufacturer's helpline where assistance is needed.
- Report product faults and concerns to the manufacturer in a timely manner.

Customer Service

- Show the customer any identity card that is relevant to the work being carried out prior to commencement or on request.
- Give a full and clear explanation/demonstration of the product or system and its operation to the customer.
- Hand over the manufacturer's instructions, including the Benchmark Checklist, to the customer on completion of an installation.
- Obtain the customer's signature, on the Benchmark Checklist, to confirm satisfactory demonstration and receipt of manufacturer's instructions.
- Advise the customer that regular product servicing is needed, in line with manufacturers' recommendations, to ensure that safety and efficiency is maintained.
- Respond promptly to calls from a customer following completion of work, providing advice and assistance by phone and, if necessary, visiting the customer.
- Rectify any installation problems at no cost to the customer during the installer's guarantee period.



*The use of the word "installer" is not limited to installation itself and covers those carrying out installation, commissioning and/or servicing of heating and hot water products, or the use of supporting products (such as water treatment or test equipment).

**Customer includes householders, landlords and tenants.

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The Benchmark Scheme

Warmhaus is a licensed member of the Benchmark Scheme which aims to improve the standards of installation and commissioning of domestic heating and hot water systems in the UK and to encourage regular servicing to optimise safety, efficiency and performance.

Benchmark is managed and promoted by the Heating and Hotwater Industry Council.
For more information visit www.centralheating.co.uk

Please ensure that the installer has fully completed the Benchmark Checklist in the use and maintenance section of the installation instructions supplied with the product and that you have signed it to say that you have received a full and clear explanation of its operation.

The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England and Wales).

All installations must be notified to Local Area Building Control either directly or through a Competent Persons Scheme.

A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the Benchmark Checklist.

This product should be serviced regularly to optimise its safety, efficiency and performance.

The service engineer should complete the relevant Service Record on the Benchmark Checklist after each service.

The Benchmark Checklist may be required in the event of any warranty work and as supporting documentation relating to home improvements in the optional documents section of the Home Information Pack

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1. INTRODUCTION


1.1. Boiler Description


The Enerwa Plus combination boiler is a high-performance wall mounted energy efficient unit providing heat for wet central heating systems.


The latest Electronic Gas Adaptive System and Full Premix feature detects the gas quality instantaneously and keeps the combustion quality constant. It provides up to (*) 97,5% net efficiency and excellent energy savings. (*) Please see ErP Data Table.


 **DANGER**
This safety warning indicates that severe and life-threatening personal injury will occur.

 **WARNING**
This safety warning indicates that severe and life-threatening personal injury may occur.

 **ATTENTION**
This safety warning indicates that moderate personal injury may occur.

 **RISK OF ELECTRIC SHOCK**
This safety warning indicates "DANGER Risk of Electric Shock".

 **CAUTION**
This icon indicates that damage could occur to products and materials.

 **INFORMATION**
This image indicates information you should read and adhere to for the correct installation of our appliances.

Abbreviations:

PRV	Pressure Relief Valve
NG	Natural Gas
LPG	Liquid Propane Gas
kW	Kilowatts
CH	Central Heating
DHW	Domestic Hot Water
LHS	Left Hand Side
RHS	Right Hand Side
Mbar	Millibar
ECV	Emergency Control Valve
LCD	Liquid Crystal Display
FGA	Flue Gas Analyser
LDF	Leak Detection Fluid

1.2. Safety Instructions:



Please read these instructions fully before installing the appliance:

- These instructions are specific to the model illustrated on the front cover and detailed in the technical data section of this manual and must not be used for any other Warmhaus models.
- This appliance must only be installed by a competent Gas Safe registered engineer and if in Ireland an RGI (Registered Gas Installer) and failure to adhere to this could lead to prosecution.
- These installation instructions only apply to GB and IE and must be adhered to with the exception of all statutory regulations.
- These appliances are CE certified for safety and performance and therefore must in no way be altered or have any device or controls fitted unless it is approved in this document or in writing from Warmhaus.
- The intended use for this appliance is to heat water and supply DHW in domestic premises.
- Always refer to the appliance data badge for correct specifications and ensure the boiler is operating within the safety settings outlined by Warmhaus.
- Do not modify our flue system, and always use only the Warmhaus approved flue with this appliance.
- Ensure Warmhaus original flue components including seals and gaskets are used for the installation of this appliance.
- The installation of the appliance and controls must be done in accordance to the current Gas Safety (Installation and Use) Regulations.

If you smell gas:

- Do not create flames or sparks, do not operate electric switches or unplug any appliances.
- Do not use telephones or operate any doorbells.
- Turn off the gas supply at the gas meter or an appropriate emergency control valve.
- Open doors and windows in the property and advise any neighbouring properties to adhere to 1,2 and 4.
- Call the National Gas Emergency Service – 0800111999, or in Ireland 1850 20 50 50.
- Prevent people from entering the property.
- For LPG contact the number for the supplier given on the side of the gas tank.

If you see any damage to the boiler flue or have a carbon monoxide detector and the warning noise sounds:

- Turn off the appliance.
- Open doors and windows.
- Leave the property and prevent anybody entering.
- Contact either your installer or the Emergency Gas Supplier – 080011199, or in Ireland 1850 20 50 50.
- Do not use until the issue is identified and the appropriate rectifications have been carried out.

Electrical work must be carried out by a qualified electrician and in accordance to all I.E.E and current statutory regulations.

When maintaining a Warmhaus boiler you must only use original and approved Warmhaus spare parts.



ATTENTION

- Do not store any combustible materials within the immediate vicinity of the appliance or any corrosive chemicals that can damage the appliance.
- Always follow the current Health & Safety guidance and advice for manual handling when lifting the appliance.
- When lifting the appliance always use the appropriate PPE as per the current guidance in your or industry standard Health & Safety policy.
- Dispose of all the appliance packaging as per your local waste disposal guidance and obligations.
- This appliance contains NO asbestos or any material that have contravened the COSHH regulations.
- Take care when handling any sharp edges on the boiler and safety gloves must be worn.
- Warmhaus boilers are equipped with a diagnostic capability by means of displaying error codes if the boiler fails to operate correctly, if your boiler displays an error code please refer to your user manual and arrange professional assistance where advised.
- Before operating your Warmhaus boiler please read the instructions supplied with the boiler.
- For installation of this appliance in Ireland the following regulations must always be followed:
 - ECTI - National rules for electrical installations
 - Irish Standard IS 10101:2020.
 - IS813-2017 - Domestic Gas Installations

Where no specific instructions are given in this technical manual reference should be made to the relevant British Standard codes of practice:

BS7074:1

Code of practice for domestic and hot water supply

BS6891

Installation of low-pressure gas pipe work up to 28 mm (R1)

BS5546

Installation of gas hot water supplies for domestic purposes

EN12828

Central heating for domestic premises

BS5440:1

Flues and ventilation for gas appliances of rated heating not exceeding 70 kW (net): Flues

BS5440:2

Flues and ventilation for gas appliances of rated heating not exceeding 70 kW (net): Air Supply

BS7593

Treatment of water in domestic hot water central heating systems

BS6798

Installation of gas fired boilers of rated input up to 70 kW (net)

BS7671

IET Wiring Regulations



WARMHAUS A.Ş. reserves the right to make all kinds of technical and commercial amendments without giving information and rejects all responsibilities depending on misspelling.

1.3. Technical Specification

TECHNICAL SPECIFICATION	Unit	Enerwa Plus 2530C		Enerwa Plus 3035C		Enerwa Plus 3540C		Enerwa Plus 4240C		Enerwa Plus 4543C	
GC Number		47-786-08 (ver.1.0)		47-786-10 (ver.1.0)		47-786-12 (ver.1.0)		???		???	
Maximum DHW Heat Input	kW	31.5		35		38.8		39.5		42.5	
Maximum CH Heat Input (net)	kW	24.2		28.7		33.7		39.25		42.5	
Minimum Heat Input (net)	kW	3.5		3.75		4.35		7.2		7.2	
Heating Circuit		G20	G31	G20	G31	G20	G31	G20	G31	G20	G31
Maximum Heat Output (80/60 °C)	Pn	23.7	23.7	28.0	28.1	33.02	33.02	38.2	38.2	41.4	41.3
Minimum Heat Output (80/60 °C)	Pn	3	2.5	3.5	3.45	4.1	4.1	7	7	6.95	6.95
Maximum Heat Output (50/30 °C)	Pnc	25	25	30	28.63	35.5	35.5	41.68	40.70	45.1	44.0
Minimum Heat Output (50/30 °C)	Pnc	3.6	2.9	3.90	3.59	4.60	4.60	7.6	7.5	7.6	7.5
Maximum Pressure	bar	3		3		3		3		3	
Minimum Pressure	bar	0.5		0.5		0.5		0.5		0.5	
Expansion Vessel Water Capacity	Litres	8		10		10		12		12	
Expansion Vessel Pre-Charge	bar	1		1		1		1		1	
Maximum Water Capacity in System [HT (80/60 °C) / LT (50/30 °C)]	Litres	(40-120) / (75-200)		(80-180) / (150-380)		(80-180) / (150-380)		(80-180) / (150-380)		(80-180) / (150-380)	
CH Temperature Adjustment	°C	25-80		25-80		25-80		25-80		25-80	
DHW Circuit		G20	G31	G20	G31	G20	G31	G20	G31	G20	G31
Domestic Hot Water flow rate (ΔT 35 °C)	l/min	12.7		14.5		16.9		15.7		16.9	
Maximum Water Pressure	bar	10		10		10		10		10	
Minimum Flow Rate for Boiler Activation	Litres	1.5		1.5		1.5		1.5		1.5	
DHW Temperature Adjustment	°C	35-60		35-60		35-60		35-60		35-60	
Combustion Specification		G20	G31	G20	G31	G20	G31	G20	G31	G20	G31
Gas Rate - Max	m ³ /h	2.38	0.92	3.05	1.18	4.12	1.30	4.00	1.61	4.19	1.66
Gas Rate - Min	m ³ /h	0.37	0.11	0.39	0.14	0.43	0.16	0.7	0.27	0.72	0.28
CO ₂ - Maximum Power (Auto Calibration Only)	%	8.7 - 9.2	10 - 10.5	8.7 - 9.2	10 - 10.5	8.7 - 9.2	10 - 10.5	8.8 - 9.2	10 - 10.5	8.8 - 9.2	10 - 10.5
CO ₂ - Minimum Power (Auto Calibration Only)	%	8.6 - 9.4	10 - 10.5	8.7 - 9.4	10 - 10.5	8.8 - 9.3	10 - 10.5	8.8 - 9.2	10 - 10.5	8.8 - 9.2	10 - 10.5
CO ₂ - Ignition Power (Auto Calibration Only)	%	8.8 - 9.3	10 - 10.5	8.7 - 9.2	10 - 10.5	8.8 - 9.2	10 - 10.5	8.8 - 9.2	10 - 10.5	8.8 - 9.2	10 - 10.5
Minimum inlet dynamic Gas Pressure	mbar	14.00	37.00	14.00	37.00	14.00	37.00	14.00	37.00	14.00	37.00
Weighted value of NO _x (GCV)	mg/kWh	20	31	41	49	34	53	25	50	27	53
Electrical Specification											
Power Supply	V	240		240		240		240		240	
External Supply Fuse Rating	A	3		3		3		3		3	
Internal Supply Fuse Rating	A	3.15		3.15		3.15		3.15		3.15	
Electricity Consumption	W	95		104		115		115		115	
Index Protection	IP	IPX5D		IPX5D		IPX5D		IPX5D		IPX5D	
Electrical Power Supply Frequency	Hz	50		50		50		50		50	
General											
Flow Connection	mm	22		22		22		22		22	
DHW Connection	mm	15		15		15		15		15	
Gas Connection	mm	22		22		22		22		22	
Cold Inlet Connection	mm	15		15		15		15		15	
Return Connection	mm	22		22		22		22		22	
Condensate Connection	mm	21.5		21.5		21.5		21.5		21.5	
PRV Connection - Copper	mm	15		15		15		15		15	
Dimensions (H x W x D)	mm	725 x 420 x 288		725 x 420 x 288		725 x 420 x 288		725 x 420 x 385		725 x 420 x 385	
Net Weight	kg	32.5		33.7		34.5		37.5		38.0	
Packaged Weight	kg	34.7		35.9		36.7		39.5		40.0	
Clearances Above Casing	mm	200		200		200		200		200	
Clearances Below Casing	mm	300		300		300		300		300	
Clearances Front - Operational	mm	5		5		5		5		5	
Clearances Front - Servicing	mm	450		450		450		450		450	
Clearances Right Hand Side	mm	25		25		25		25		25	
Clearances Left Hand Side	mm	25		25		25		25		25	
Sound Level	db	52		54		50		58		58	
NO _x Classification	Class	6		6		6		6		6	

1.4. Product Identification

Enerwa Plus 2530C—GC 47-786-08 (ver 1.0)

Enerwa Plus 3035C—GC 47-786-10 (ver 1.0)

Enerwa Plus 3540C—GC 47-786-12 (ver 1.0)

Enerwa Plus 4240C—GC (ver 1.0)

Enerwa Plus 4543C—GC (ver 1.0)

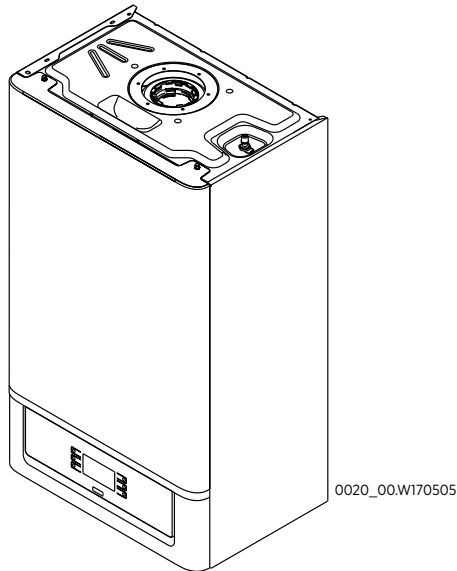


Figure 1.1. Enerwa Plus

1.5. Regulations

- Current Gas Safety (Installation and Use) Regulations
- Building Regulations
- IET Regulations
- Local Water By-laws

It is a legal requirement in Ireland that all gas appliances must be installed by a competent registered gas engineer, such as Gas Safe and installed in accordance with all current Gas Safety Regulations.

Failure to install this appliance correctly and safely could lead to prosecution.

This appliance must be installed in accordance with and comply fully to the current Gas Safety Regulations, IET Regulations, Building Regulations and local water By-laws.

Building Regulations Part L1A2013 - (new build dwellings)

If the installation of our boiler is in a new build property or in an existing property and it is a first-time installation then the heating system must fully conform to all current building regulations Part L1A.

This can be an exception for a single-story open plan dwelling where the living area is more than 70% of the useable floor area, in this case this zone can be controlled and treated as a single zone.

Individual TRVs can be used on the system also.

For dwellings with a floor area over 150 m², a separate time and temperature control for each individual zone is required.

TRVs should also be installed in a minimum of sleeping areas and as best practice on all radiators with the exception of the room or area where the room thermostat is installed.

Building Regulations Part L1B 2010 - existing dwellings

Where an appliance replacement is to be installed onto an existing heating system it is not mandatory to zone for an example the ground floor and 1st floor. To ensure compliance it is sufficient to install an external control configuration that complies to the current Boiler Plus e.g. Smart stat, Boiler Plus compliant room/programmable room stat.

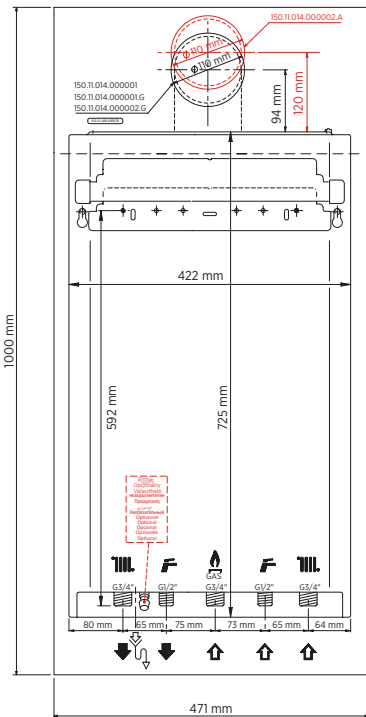
TRVs should also be installed in a minimum of sleeping areas and as best practice on all radiators with the exception of the room or area where the room thermostat is installed.

2. PRE-INSTALLATION

2.1. Packing Contents

The Warmhaus Boiler is supplied in a box which contains the materials listed below:

- I. Installation Scheme (Figure 2.1)
- II. User's Guide (Figure 2.2)
- IV. Hanger Plate (Figure 2.3)
- V. Mounting Pipe Kit (Figure 2.4)
- VI. External Control Relay (Figure 2.5)



0021_03.W170525

Figure 2.1. Installation scheme



Figure 2.2. Combi Installation & Service Manual



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Figure 2.4. Mounting Pipe Kit



0024_00.W160714

Figure 2.3. Hanger plate

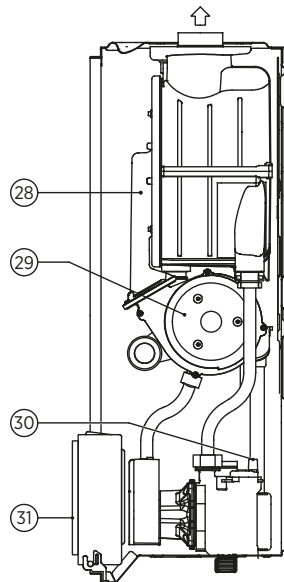
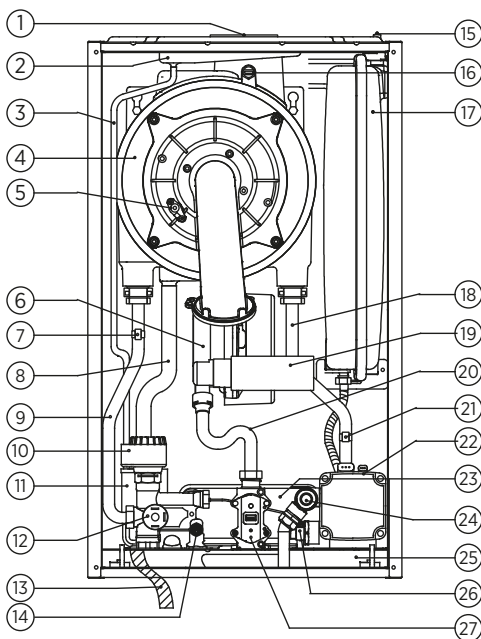


Figure 2.5. External Control Relay



Do not leave packing materials (plastic, nylon, bags, etc.) at places to be reached by children for preventing any dangers for suffocation.

2.2. Appliance Overview



0025_00.WUK210331

1. Flue Outlet
2. Flue Condensation Pan
3. Condensation Water Discharge Hose
4. Main Heat Exchanger
5. Ignition Electrode
6. Air gas Mixing Unit (AGM)
7. CH NTC Sensor
8. Condensation Water Discharge Hose
9. Radiator Outlet (Flow) Pipe
10. Three Way Motorized Valve
11. Condensation Water Trap (Siphon)
12. Low Pressure Sensor
13. Condensate Discharge Hose
14. DHW NTC Sensor
15. Expansion Tank Air Valve
16. Flue Gas NTC Sensor
17. Expansion Vessel
18. Radiator Inlet (Return) Pipe
19. Slicer
20. Gas Inlet Pipe
21. CH Return NTC Sensor
22. Pump
23. DHW Plate Heat Exchanger
24. 3 Bar Safety Valve
25. Manometer
26. Tap Water Flow Sensor
27. Gas Valve
28. Heat Exchanger Door
29. Fan
30. Automatic Air Relief Valve
31. Control Panel

Figure 2.6. Parts Comprising The Combination Boiler (Enerwa Plus 2530C, Enerwa Plus 3035C, Enerwa Plus 3540C)

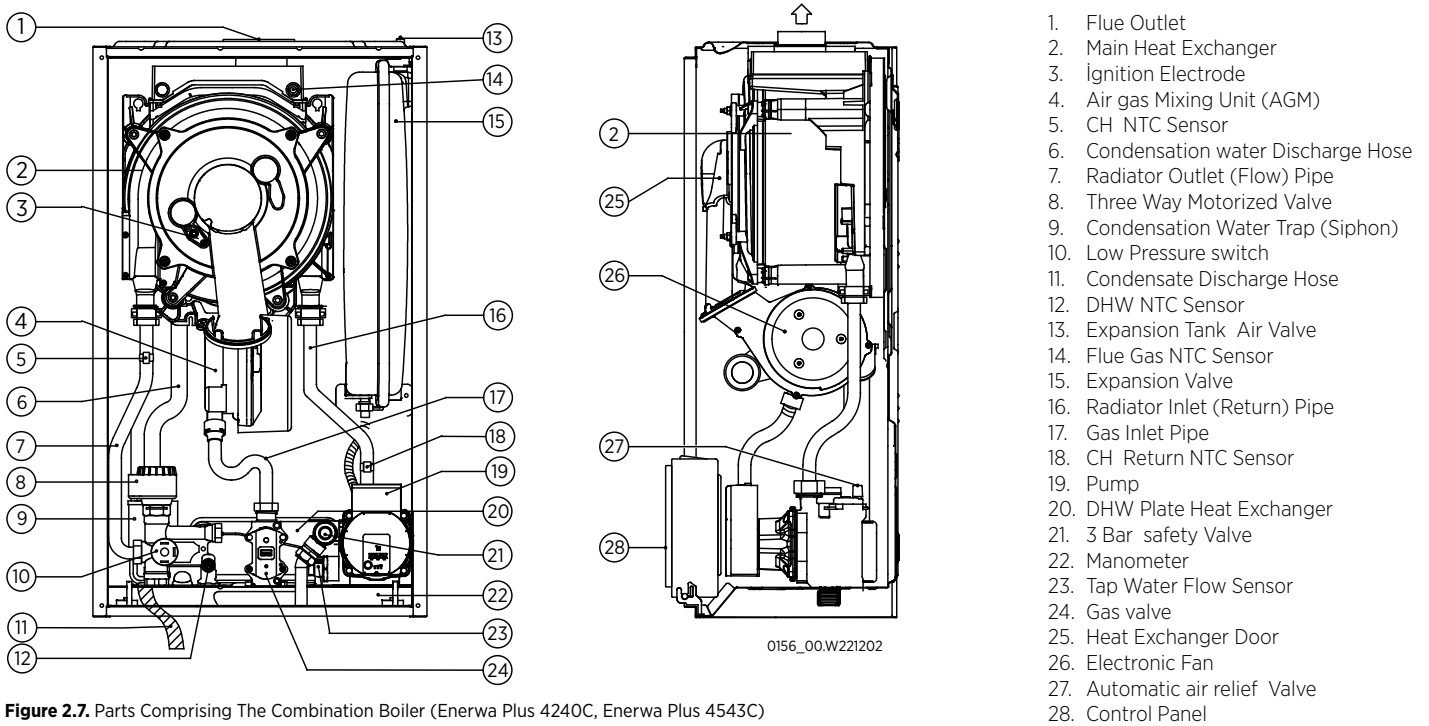


Figure 2.7. Parts Comprising The Combination Boiler (Enerwa Plus 4240C, Enerwa Plus 4543C)

2.3. Location of Boiler / Clearance



The boiler must be installed on a flat fixed surface which is suitable to support the weight of the boiler and any ancillaries that maybe required for the Installation. Service and maintenance should also be considered when choosing the location of the boiler unit. The boiler must not be installed outside. Please follow the below installation points.

D: 288 mm (Enerwa Plus 2530C, 3035C, 3540C)

D: 385 mm (Enerwa Plus 2530C, 3035C, 3540C)

Boiler Height : 725 mm
 Boiler Width: 420 mm
 Flue Centre: 208 mm
 (from left side of boiler to flue center)

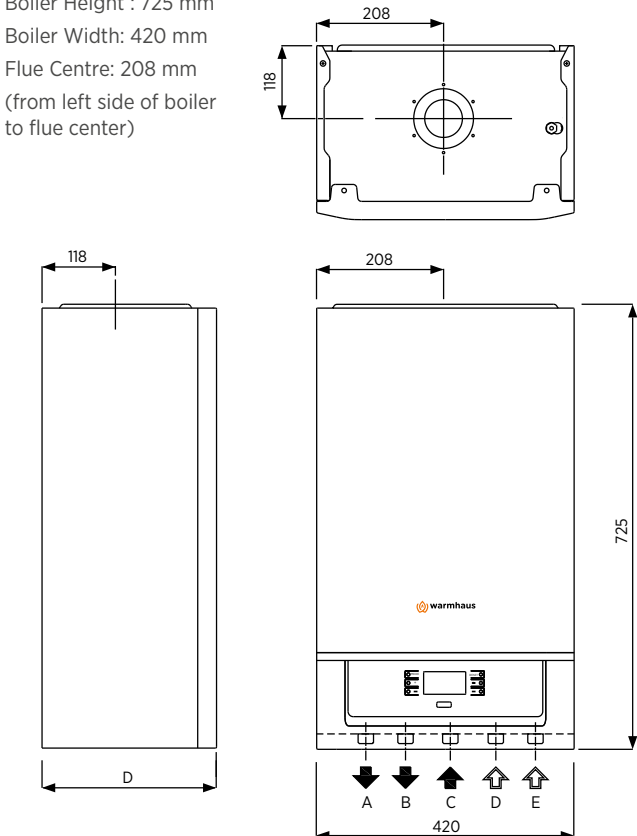


Figure 2.8. Boiler Dimensions

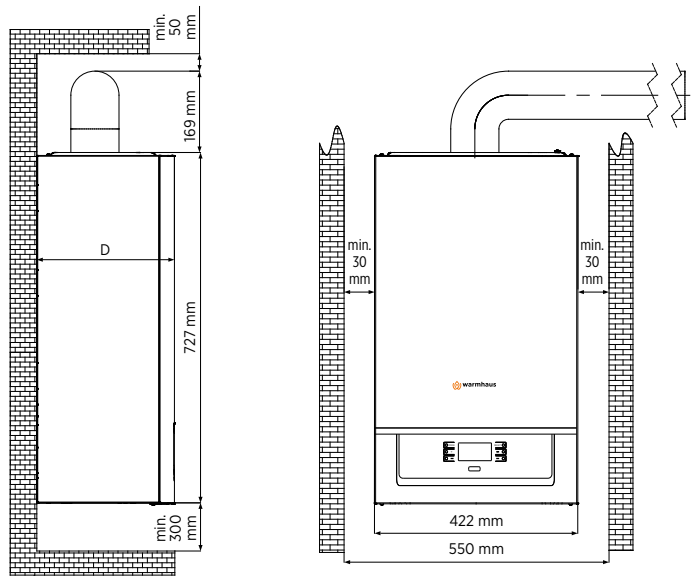
- **Frost protection:** Our boiler has a built in frost protection for the system water contained within the boiler only, so provisions need to be installed to protect the system pipe work in unheated areas.
- **Accessible:** The boiler must be installed in a well lit location that is suitable for engineers to carry out maintenance on the appliance and for the customer to safely adjust any controls on the boiler. All roof space installations should comply to BS5410 part 1 – roof space installations.
- **Storage:** Do not store any flammable materials around the location of the boiler or chemicals of any kind.

Installations in rooms containing baths or showers

Warmhaus Enerwa Plus Combi Boiler has an IPX5D rating

Any switch or appliance external controls using mains electricity should not be in reach of any person using a bath or shower.

All installations must be in accordance with all the current regulations and latest amendments of the IET wiring regulations (**BS7671**) or in Ireland **Irish Standard IS 10101:2020**



Clearances:

- | | |
|----------------|----------------|
| Above : 219 mm | Below : 300 mm |
| Left : 30 mm | Right : 30 mm |

Figure 2.9. Boiler Services & Clearances

2.4. System Requirements



INFORMATION

The installation of this appliance must take into consideration all prevailing regulations and codes of practice and the data in this manual.

This instruction manual and the below standards must be adhered to throughout the installation

Building Regulations.

Gas Safety Regulations.

British Standards.

Water Supply Regulations,

Irish Standards

2.4.1. General



INFORMATION

The system must be to a minimum standard that meets all relevant criteria and regulations at the time of the installation of this appliance.

All external components must be able to withstand a working pressure of 3 bar and a working flow temperature of 100 °C.

The system must be free of any leaks and in a suitable working condition for the connection of a new appliance.

2.5. Water SUPPLY (only for Combi Boiler)



INFORMATION

Appliance use in hard water areas:

In normal operating conditions there is no need to provide any water treatment to prevent any limescale formation this is because the maximum temperature of the DHW heat exchanger is monitored and limited by electronic control.

In areas where the water exceeds 200 ppm it is advised that a scale prevention should be installed, and you should contact your local water authority for advice and guidance.

Installations that have non-return or backflow valves fitted on the cold mains should have a mini expansion vessel fitted between the valve and the appliance.

2.6. Gas Supply



INFORMATION

The gas installation should be in accordance with the relevant standards. In GB this is BS 6891 (NG). In IE this is the current edition of IS 813 Domestic Gas Installations.

The boiler must be installed on a supply from a governed gas meter.

The connection to the appliance is a 22mm copper tail located at the rear of the gas service cock.

Ensure that the pipework from the meter to the appliance is of adequate size, and the demands of any other gas appliances in the property are taken into consideration. Do not use pipes of a smaller diameter than the boiler gas connection (22mm) UNLESS the stated gas rate can be achieved with pipe of lesser diameter and with all other gas appliances operating at maximum rate.

Purging of any pipe work and the appliance must be carried out as outlined in BS 6891.

2.6.1. By-pass



INFORMATION

The boiler incorporates a bypass by utilizing the primary circuit on the DHW plate heat exchanger and uses this method as an integral bypass system and therefore does not require as standard an external bypass fitted to the system.

2.6.2. Ventilation



INFORMATION

The boiler does not require any additional ventilation and when installed in a cupboard or compartment the boiler operates at an adequate temperature without the requirement for additional ventilation. BS 5440: Part 2 refers to this in detail.

2.6.3. Primary system cleaning

Debris in the existing heating system can cause damage to the boiler unit and cause efficiency issues and even void the appliance warranty if the correct cleaning has not been carried out.

2.7. Electric Supply



RISK OF ELECTRIC SHOCK

This appliance must be earthed.

This appliance must not be connected to a three-phase supply.

External wiring must be correctly earthed, polarised and in accordance with relevant regulations/rules. In GB this is the current IEE Wiring Regulations., in IE this is Irish Standard IS 10101:2020

The mains supply is 230V - 50Hz fused at 3A.

Important:

The method of connection to the electricity supply must facilitate complete electrical isolation of the appliance.

Connection may be via a fused double-pole isolator with a contact separation of at least 3mm in all poles and servicing the boiler and system controls only, alternatively the connection can be made via a fused 3 pin plug to an un-switched shuttered socket both complying to BS1363

When working on the boiler the electricity must always be isolated and the correct method of safe isolation must always be followed.

Any external controls connected to the boiler must have at minimum and valid CE approval and be suitable for connection to the boiler.

Please ensure the correct RCD is fitted the circuit where the boiler is connected electrically, due to the low energy DC modulating pump fitted inside the boiler.

If you plan to replace the cable supplied with the boiler for the electrical connection, please ensure the replacement cable meets the current standard and it is the correct size and has the correct heat rating.

2.8. PRV Discharge



ATTENTION

The safety discharge pipe must be installed with a minimum pipe size diameter of 15mm and be in copper or an other suitable material that can withstand PRV discharge temperatures and pressures that comply with BS 5254 or BS EN 1451.

The PRV discharge terminal must terminate away from any electrical hazards and terminate where it cannot cause injury to person, it should terminate with a bend to face the external surface or into a suitable drain point.

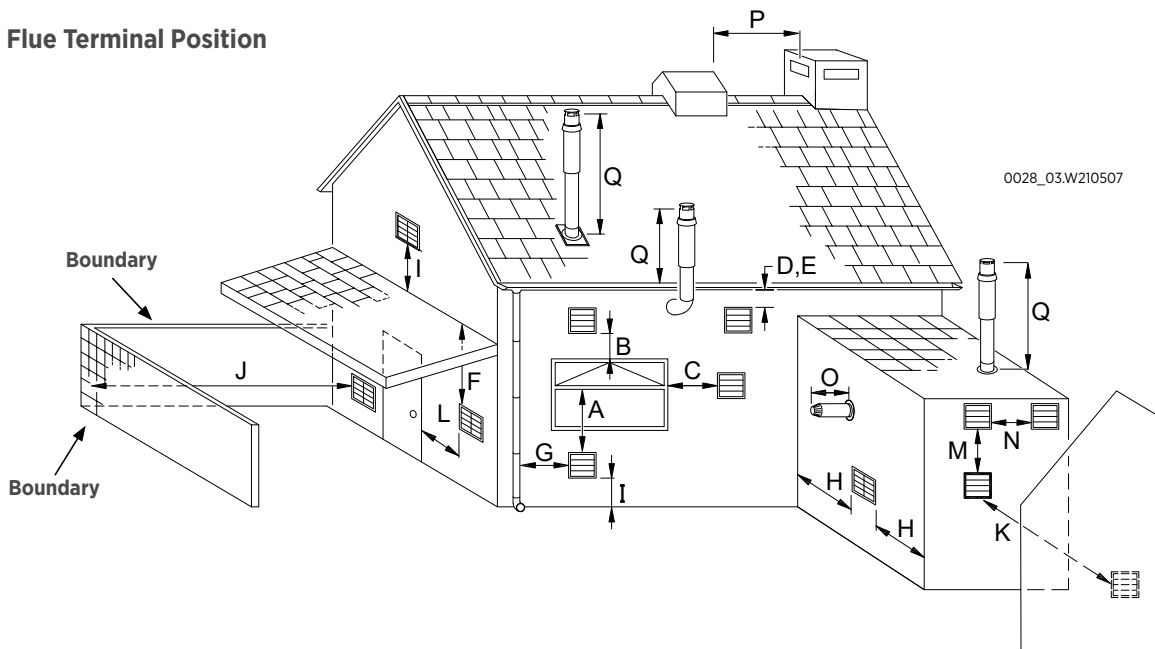
The PRV discharge can be installed into a waste pipe system and all installations should follow the guidance of BS 6798 sections 6.

Due to maintenance of the PRV we require our copper connection pipe to be connected to the external PRV pipe work by means of a compression joint so that in all installations maintenance will be achievable without the need to cut and re-join copper pipe work.

Where PRV terminations are not possible to visually see e.g. directly into a waste pipe connection, then a tundish must be fitted so that and water drips leaking from the PRV can be visually seen and the appropriate action taken.

Care should also be taken when planning the termination of the PRV due to the possibility of a slow and steady drip can discharge from the terminal and if not correctly sited leave the possibility of water freezing when hitting ground causing an extreme hazard if the frozen water is in the path of a walk way.

2.9. Flue Terminal Position



A	Below an opening	300
B	Above an opening	300
C	Horizontally to an opening	300
D'	Below gutters, soil pipes or drainpipes	25 (75) mm
E'	Below Eaves	25 (200) mm
F'	Below balcony or car port roof	25 (300) mm
G'	From a vertical drainpipe or soil pipe	25 (150) mm
H'	From an internal or external corner or to a boundary alongside the terminal	25 (300) mm
I	Above ground, roof or balcony level	300
J	From a surface or a boundary facing terminal	600
K	From a terminal facing the terminal	1200
L	From an opening in the car port into the building	1200
M	Vertically from a terminal on the same wall	1500
N	Horizontally from a terminal on the same wall	300
O	From the wall on which the terminal is mounted	50 mm
P	From a structure on the roof	N/A
Q	Above the highest point of intersection with the roof	300

Figure 2.10. Peripheral Distances of Flue Output Connections

⁽¹⁾ Only ONE 25mm clearance is allowed per installation. If one of the dimensions D, E, F, G or H is 25mm then the remainder MUST be as shown in brackets, in accordance with B.S.5440-1.

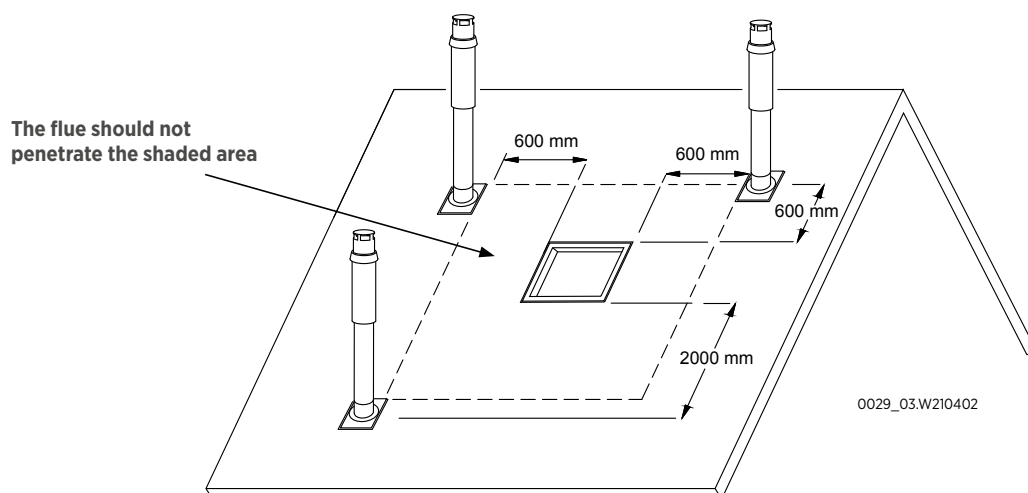


Figure 2.11. Terminals adjacent to windows or openings on pitched and flat roofs

3. INSTALLATION

3.1. Unpacking Appliance



ATTENTION

Our appliance may require 2 people when lifting the boiler to the installation site and throughout the installation process when lifting and positioning is carried out.

Installers should be knowledgeable in safe handling techniques and pay attention and follow all Health & Safety policies put in place by their company.

Carefully unpack the boiler unit from it's box and remove the unit from the polystyrene packaging and dispose of the boiler packaging to comply with your local waste management guidance.

3.2. Appliance Position



ATTENTION

The surface where the boiler is to be mounted must be flat and rigid and be able to withstand the appliance total installation weight.

Care should be taken on the appliance position and location to ensure the correct standards are met for the following:

- Flue terminal position and access to flue joints.
- Condensate discharge.
- PRV discharge and termination.

A visual inspection should be carried out to ensure when positioning the appliance any drilling of the mounting bracket or pipe clips will damage any electric cables or pipes.

3.3. Wall Mounting Template

Please ensure you mount the template level before drilling any holes and ensure you are drilling the correct holes as per the template guidance.

The wall mounting template should be fixed to the desired position on the surface where the boiler is to be installed, after fixing the template please set the flue guide on the template to match your desired flue position. Drilling of the fixing holes for the mounting bracket can also be done as per the guidance on the wall mounting template.

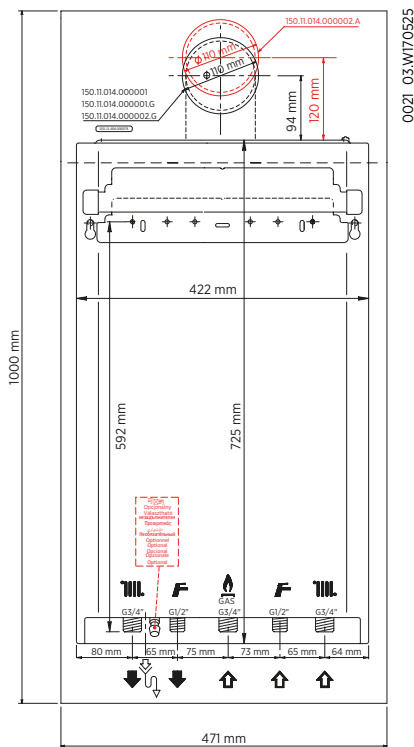


Figure 3.1. Installation Scheme

The template also displays the pipe centers and correct pipe work layout for the correct installation of the boiler pipe work.

3.4. Preparing the Wall – Drill Flue Hole



ATTENTION

When drilling the flue hole ensure that any falling masonry debris will not cause an injury to person or damage to property, please make sure both surfaces when drilled are flat and free of debris.

We recommend using a 117 mm core drill attachment to drill the flue hole, this will give you some tolerance if required when positioning the flue.

3.5. Installing Mounting Bracket



INFORMATION

We suggest when drilling the holes for the mounting brackets you drill holes that can accommodate 7.5 mm / 8 mm plastic raw plugs and that the minimum fixing screws are No 10 x 50mm and ensure when the mounting bracket is fixed it is level.

Ensure you make a minimum of 2 fixing points to be drilled to ensure correct fixing of our mounting bracket.

Please ensure the mounting bracket is fixed in the correct orientation with the two hanging points facing in an upwards direction.

3.6. Hanging The Boiler

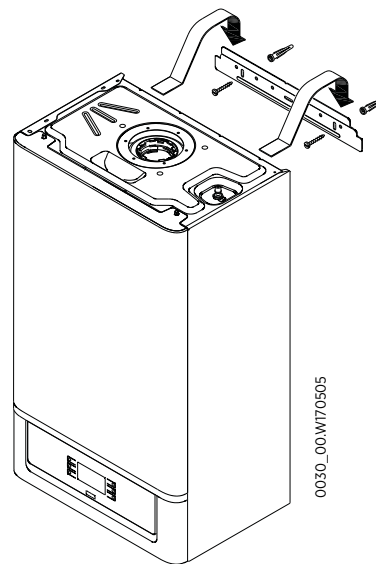


INFORMATION

Ensure that all the plastic safety plugs are removed from the CH and DHW (for combi boilers only) inlet and outlet connections at the bottom of the boiler.

Note that the boiler may contain some residual water when the plugs are removed so care should be taken for this.

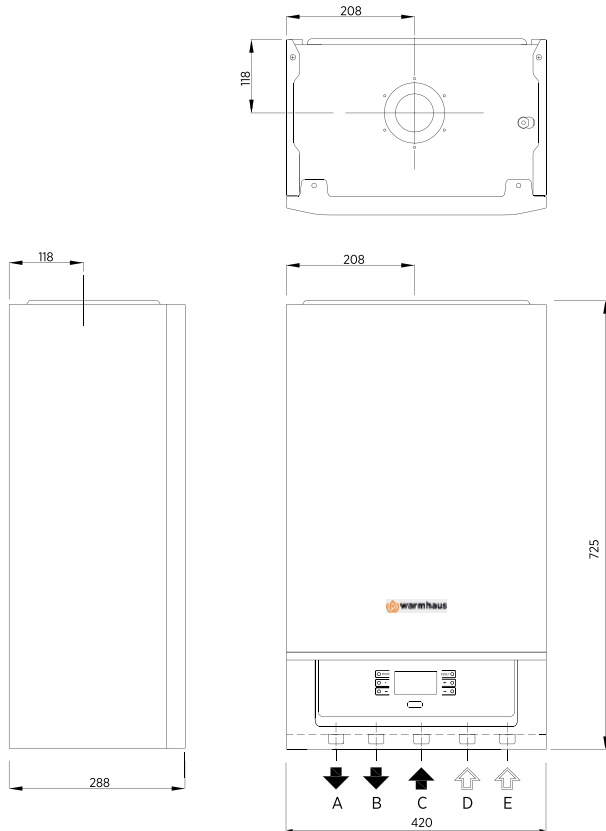
Taking all lifting techniques into consideration lift the boiler and locate it over the two fixing tabs at either side of the mounting bracket.



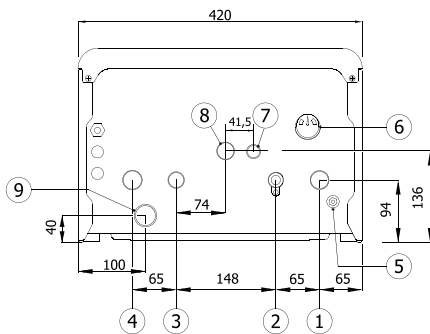
Make sure the boiler is correctly located on the mounting bracket and that the boiler is level and straight.

Figure 3.2. Wall Mounting Bracket Installation

3.7. Appliance Connections

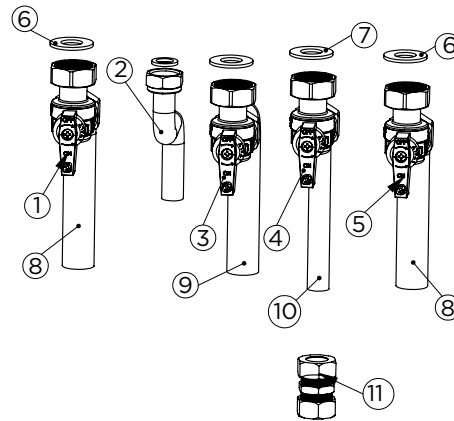
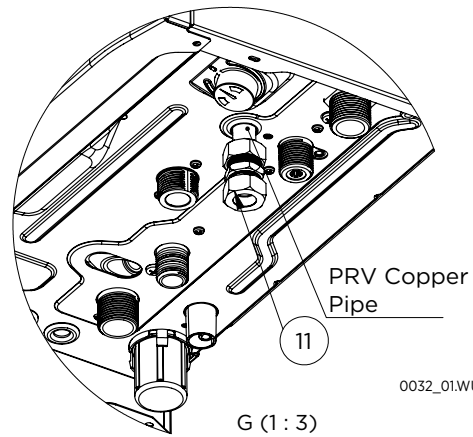


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1. Central Heating Return (CH-3/4" thread)
2. Domestic Hot Water Inlet (DHW-1/2" thread)
3. Domestic Hot Water Outlet (DHW-1/2" thread)
4. Central Heating Flow (CH-3/4" thread)
5. Drain Point
6. Manometer
7. Pressure Relief Valve Outlet
8. Gas Inlet
9. Condensate Drain (Ø24 mm)

Figure 3.2. Dimensions & Connections



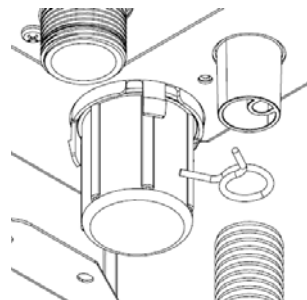
- | | |
|------------------------------------|-------------------------------|
| 1. CH Flow Valve (Red) 1 pcs. | 7. Gasket 1/2 " 3 pcs. |
| 2. DHW Outlet Elbow 1 pcs. | 8. CH Flow/Return Pipe 2 pcs. |
| 3. Gas Inlet Valve (Yellow) 1 pcs. | 9. Gas Inlet Pipe 1 pcs. |
| 4. DHW Inlet Valve (Blue) 1 pcs. | 10. DHW Inlet Pipe 1 pcs. |
| 5. CH Return Valve (Blue) 1 pcs. | 11. Compression Fitting |
| 6. Gasket 3/4 " 3 pcs. | |

Figure 3.3. Mounting kit

The Warmhaus Enerwa boiler is supplied with a hardware pack containing isolation valves and a DHW connector pipe for the installer to connect to the boiler unit.

The hardware pack supplied is:

PRV – 15 mm copper stub pipe – THIS CONNECTION SHOULD BE MADE BY A SUITABLE COMPRESSION TYPE FITTING.



The condensate connection is made with a flexible hose supplied with the boiler as per the above image

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Figure 3.4. Condensate hose connection

3.8. Filling Appliance & Adding Inhibitor

Filling Loop Connection

When filling there may be a slight water leak from the air vent therefore electrical connections should be protected.

The Filling-Loop Kit is not included in the package.

It must be outsourced by the customer.



ATTENTION

Do not adjust the system pressure if the boiler unit is hot, we suggest that the boiler temperature is shown as below 40 degree's on the boiler display screen before adjusting the pressure.

Ensure the system has been cleaned following the guidance of BS 7593 and that all existing and installation debris is removed.

The primary heating circuit must not be filled with artificially or salt based softened water it must be filled with an untreated cold supply from the cold water main.

The filling loop must be WRAS approved and not be a permanent installation (see below image)

If there is an additional expansion vessel fitted on the circuit, please ensure the charge pressure is the same as the boiler vessel (0.75 bar).

If the filling loop is located away from the boiler then ensure a pressure gauge is located next to the filling loop to ensure correct filling pressure.

The filling loop should always be removed, and suitable caps fitted to the valves after filling the system has been carried out.

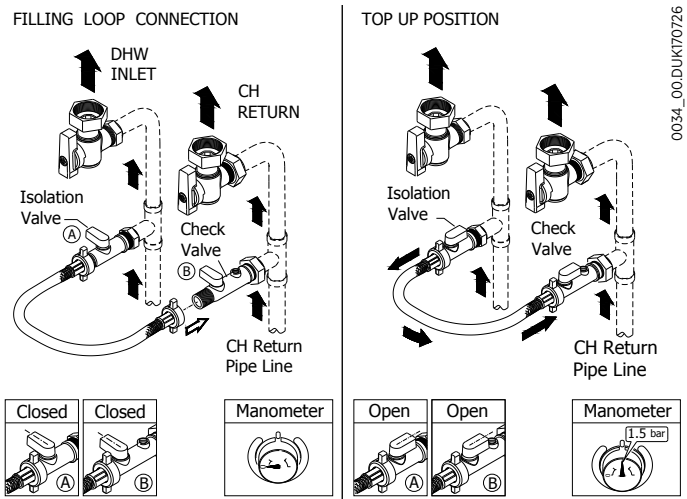


Figure 3.6. Filling-Loop Kit connection

Filling Loop Connection

1. Remove the dust cap and connect to flexible hose to the check valve securely.
2. Slowly turn the both valves to the Open position until the pressure gauge reads between 1.2 and 1.5 bar.
3. Turn the both valves slowly to the Close position and check the pressure in between 1.2 and 1.5 bar if pressure less than 1.2 bar then.
4. Slowly turn the both valves to the Open position until the pressure gauge reads between 1.2 and 1.5 bar.
5. Turn the both valves slowly to the Close position and disconnected the flexible hose from the check valve.
6. Fit the dust cap to the open and make sure no water leakage from valves or caps.

NOTE: If loss of pressure problem persists you must contact your installer or service company.

Adding Inhibitor



CAUTION

The inhibitor used in the system with your Warmhaus boiler must not cause damage to any materials within the boiler e.g. stainless steel, copper, brass and any other composite material.

If the boiler is installed in areas such as leisure accommodation, then the inhibitor must incorporate an anti-freeze solution or the anti-freeze solution can be added separately but must be suitable for the boiler materials as above.

We advise that the PH level of the system water should be between 6 -8 and any chemicals added must not change this.

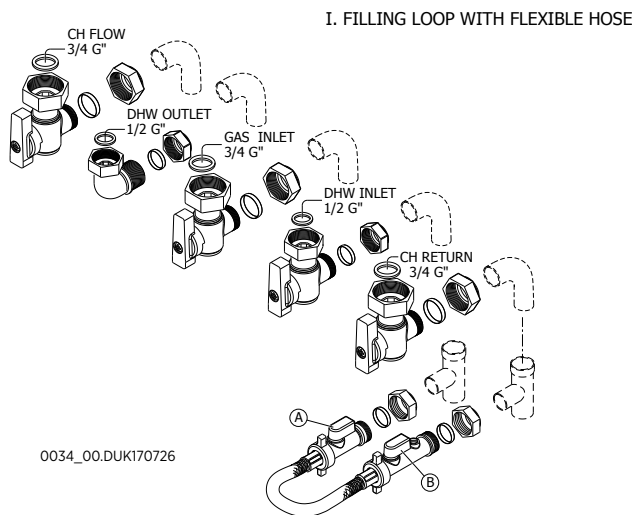
When the inhibitor is added please record this with a label (if the inhibitor manufacturer supplied this) or with a suitable method so that the installation date can be monitored for service.

Inhibitor levels should be monitored and checked on service/maintenance visits to confirm the system has the correct dosage.

Always add the specified dosage given by the inhibitor manufacturer and do not mix inhibitors by different manufacturers.

Caution should be taken when disposing of all containers from the inhibitor after installation.

If there is any doubt on the suitability of the inhibitor you wish to use then please consult Warmhaus technical before adding to the system.



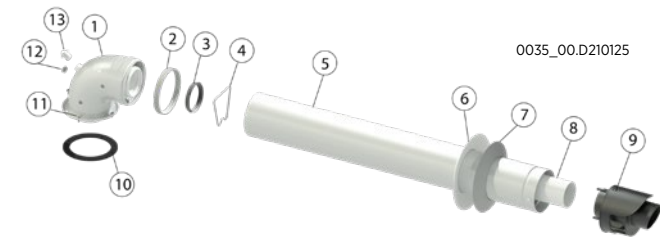
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Figure 3.5. Filling-Loop Kit

3.9. Installation with Horizontal Flue Sets

Connecting Horizontal Concentric Flue Set to the System Boiler, (original diameter DN 60/100 mm)

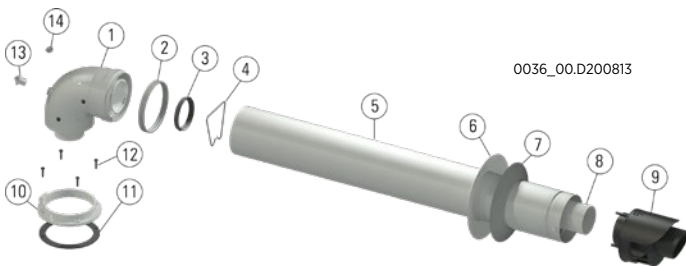
Since your boiler is hermetic model, it takes air from exterior and discharges exhaust gases created as the result of burning through the same flue group. In order to prevent emission of excessively harmful exhaust gases, flue usage and installation is very important, therefore warnings should be taken into consideration when flue connections are being performed.



- | | |
|------------------------|--------------------------------|
| 1. 90° Elbow | 8. Internal Flue Pipe |
| 2. Ø100 Sealing Gasket | 9. Grill |
| 3. Ø60 Sealing Gasket | 10. Neoprene Gasket |
| 4. Centralizer | 11. Screws |
| 5. External Flue Pipe | 12. Inspection Cap (Fresh Air) |
| 6. Internal Wall Plate | 13. Inspection Cap (Gas) |
| 7. External Wall Plate | |

- Loosen the Flange Gasket Screw (6) and remove it from the elbow (1)
- Put the Neoprene Sealing Gasket (7) under the flange and secure it with 4 screws (6 and see Picture A)
- Place the flue elbow (90°) (1) press down and tighten the screw (6) to secure the flue elbow (see picture B)
- Fit the outer and inner wall flanges (13-14) on the terminal pipe (12)
- Connect flue to the boiler, positioning the seals correctly (picture C). Seal the flue into the wall with silicone or sand + cement and cover with Wall Seals provided.

Figure 3.7. Fixed flange connection concentric flue kit



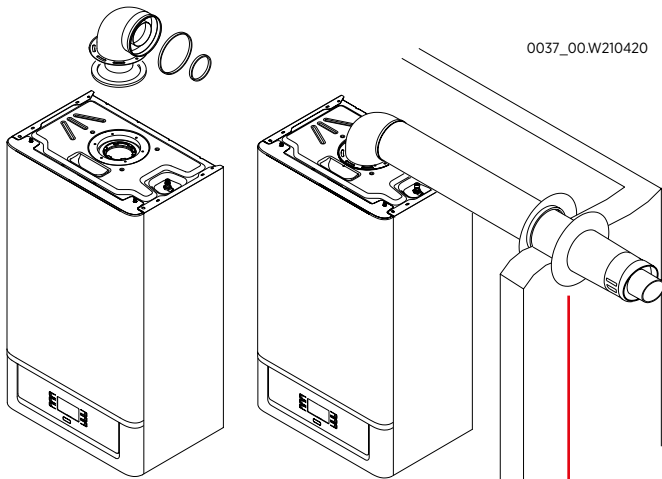
- | | |
|-------------------------------|-------------------------|
| 1. 90° elbow | 9. Ø60 Sealing Gasket |
| 2. Inspection Cap (Gas) | 10. Centralizer |
| 3. Inspection Cap (Fresh Air) | 11. Internal Flue Pipe |
| 4. Screws | 12. Internal Flue Pipe |
| 5. Flange Gasket | 13. Internal Wall Plate |
| 6. Flange Gasket Screw | 14. External Wall Plate |
| 7. Neoprene Gasket | 15. Grill |
| 8. Ø100 Sealing Gasket | |

Figure 3.8. Discrete flange connection concentric flue kit,

3.10. Installing the Flue System

Apply a suitable lubricant to the sealing joints before connecting any flue products and ensure the horizontal flue terminal is installed level without a slope.

The flue pipe must be sealed internally and externally with the wall seals supplied.



Installation of flue set pieces.

Figure 3.9. Concentric flue kit wall output.

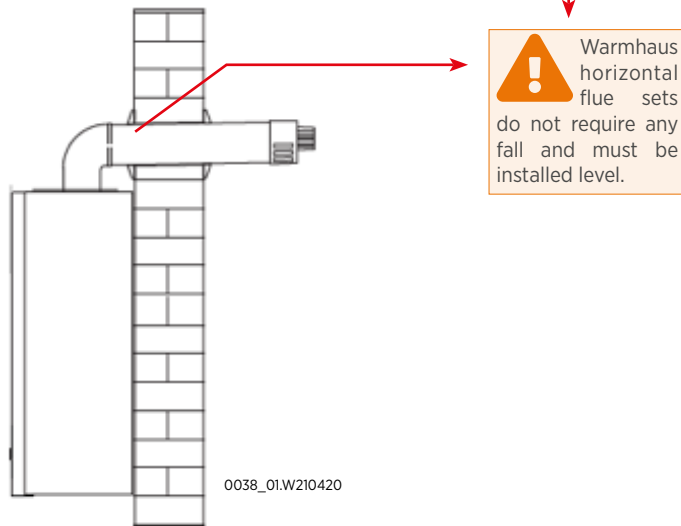


Figure 3.10. Installation of the Flue Kit without slope

During installation please ensure that all flue extensions are installed with a slope back to the boiler between 1.5 degree and 3 degrees. Also ensure the pipe is supported every 1 meter and change in direction

60/100 mm Concentric flue systems information

Only approved Warmhaus flue systems can be connected to our appliance and no other flues have been tested or approved to work with any Warmhaus appliances – see below our list of standard products:

Concealed Flue Configurations

Where our Warmhaus flue system is to be installed in concealed locations provisions must be made for inspection and service requirements.

- Minimum 300 mm square inspection hatches must be fitted.
- The inspection hatch edge must not be fitted more than 1.5 meters away from a flue joint
- Inspection hatches should be fitted at every change of direction.

Flue Data

60/100mm Concentric flue systems information

Warmhaus flue pipe technical specification:

Horizontal Termination:

- Maximum length = 10 meters including the bend or adaptor connected directly to the boiler.
- Additional horizontal flue pipes should always be installed with a 1.5° to 3° fall from the terminal to allow condensate to run back to the boiler (1.5° = 25 mm per meter).
- Effective flue length for the following:

Elbow	Equivalent To Straight Length
45 Degree	0.5 meter
90 Degree	1.0 meter

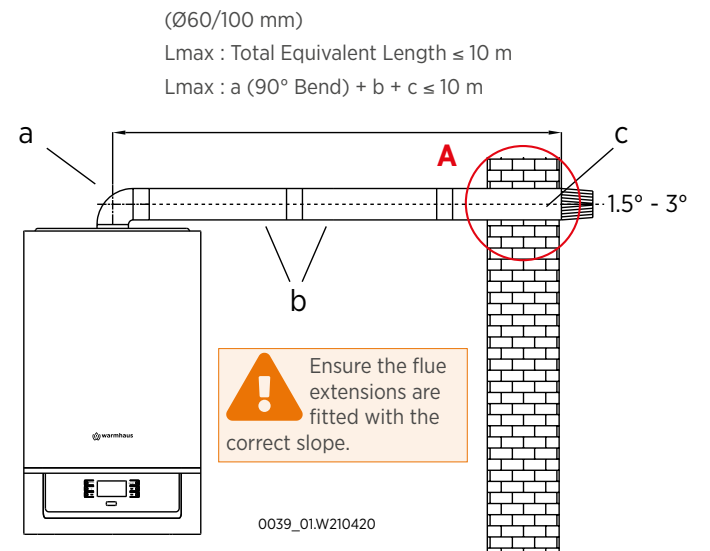


Figure 3.11. Single 90° bended sample flue installation

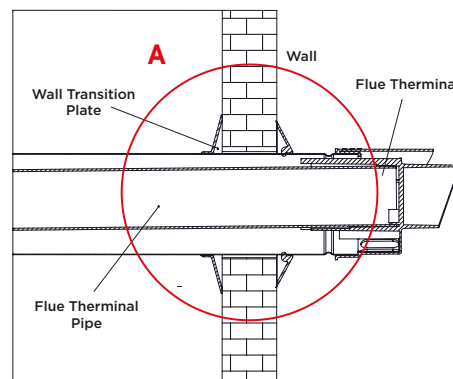
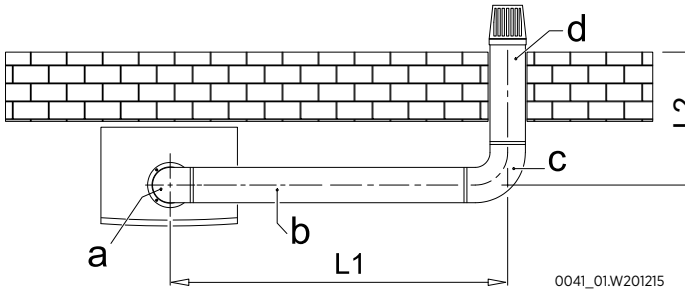


Figure 3.12. Transition detail of the horizontal flue kit through the wall

Total equivalent length ≤ 10 m

$$a (90^\circ \text{ Elbow}) + b + c (90^\circ \text{ Elbow}) + d \leq 10 \text{ m}$$

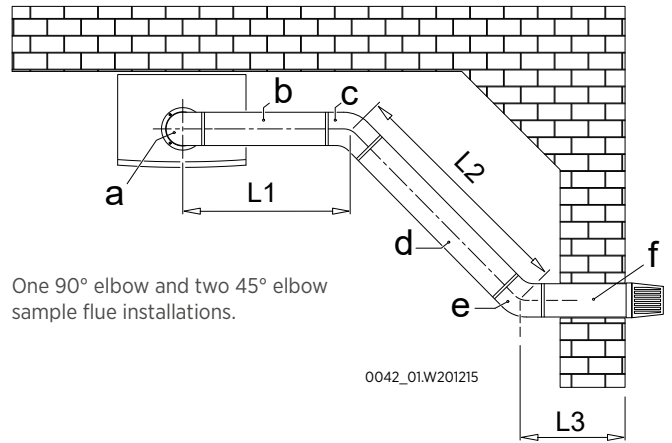


- a- Standard Flue Set Elbow (90°)
- b- Flue Extension Pipe
- c- Additional 90° Elbow = 1 m
- d- Standard Flue Set Pipe

Figure 3.13. Two 90° elbow sample flue installations

Total equivalent length ≤ 10 m

$$a (90^\circ \text{ Elbow}) + b + c (45^\circ \text{ Elbow}) + d + e (45^\circ \text{ Elbow}) + f \leq 10 \text{ m}$$



One 90° elbow and two 45° elbow sample flue installations.

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Total length of hermetic flue set should not exceed 10 m with single elbow horizontally. Also, this total length reduces by 1 m with every 90° elbows or two 45° elbows. Maximum 3 pieces of 90° elbow can be used.

- a- Standard Flue Set Elbow (90°)
- b- Flue Extension Pipe (L1)
- c- Additional 45° Elbow = 0,5 m
- d- Standard Flue Set Pipe (L2)
- e- Additional 45° Elbow = 0,5 m
- f- Standard Flue Set Pipe (L3)

Figure 3.14. Single 90° and two 45° elbow sample flue installations

3.11. Installation with Vertical Flue Sets (Ø60/100 mm)

Your Warmhaus boiler can also be installed with a vertical flue system that can terminate on both flat and pitched roofs, vertical flue installations must not exceed 11 m in total.

Apply a suitable lubricant to the sealing joints before connecting any flue products and ensure the vertical flue terminal is installed level without a slope.

The vertical flue terminal can be fitted to both flat and pitched surfaces.

Flue Data



WARNING

Warmhaus flue pipe technical specification:

Vertical Termination:

- Maximum length = 11 meters including the bend or adaptor connected directly to the boiler.
- Effective flue length for the following:

Elbow	Equivalent To Straight Length
45 Degree	0.5 meter
90 Degree	1.0 meter

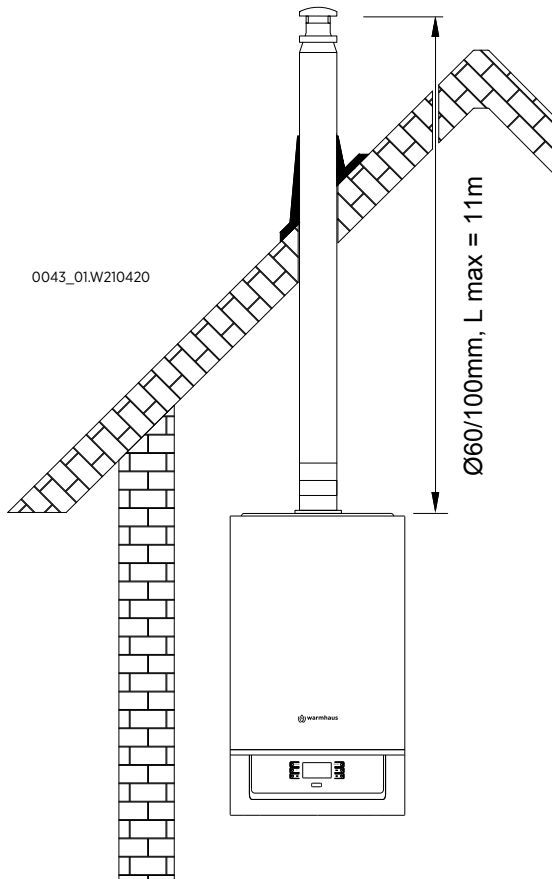


Figure 3.15. Vertical flue set installation

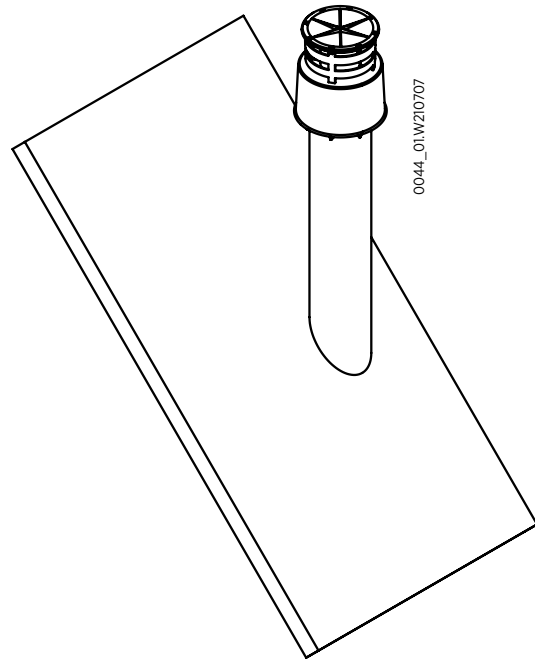


Figure 3.16. Waste gas vertical outlet chimney set and Pitched Roof Outlet Tile part installation for Roof

INFORMATION: The vertical flue terminal can be fitted to both flat and pitched surfaces.

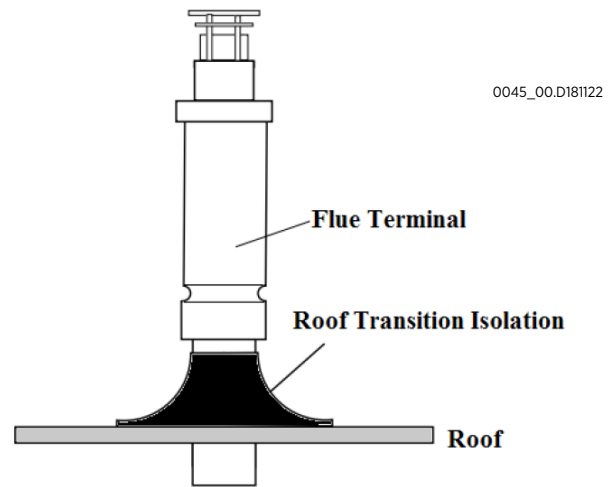
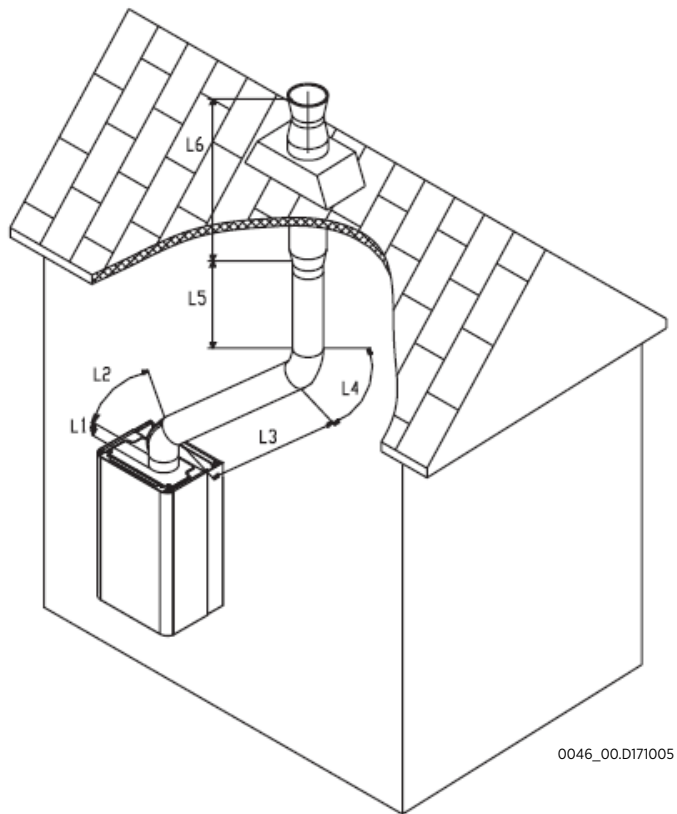


Figure 3.17. Waste gas vertical outlet flue set Roof insulation and flue transition part



0046_00.D171005

Figure 3.18. Vertical flue set installation application.

Implementation:

L1 = 0.3 m

L2 = 0.5 m. (45° elbow equivalent length)

L3 = 2.0 m.

L4 = 0.5 m. (45° elbow equivalent length)

L5 = 1.0 m.

L6 = 1.5 m.

L Total = 6.3 m.







6.3 m. \leq Lmax = 11 m.

Correct in implementation.

3.12. Concentric Flue Kits For Condensing Boilers (Ø60/100 mm)

	Product Name	Product Code
 <p>0047_03.D210120</p>	<p>(Ø60/100) Condensing Concentric Horizontal Flue Set</p> <p>$L_{\text{Horizontal}} = L_{\text{From the center of the elbow}} + L_{\text{Terminal}}$</p> <p>$L_{\text{Total}} = 115 + 790 = 905 \text{ mm}$</p>	15311014000002 (White)
 <p>0048_03.D210120</p>	<p>(Ø60-100) Condensing Vertical Flue Set with Adapter</p> <p>$L = [L_{\text{Term}} + L_{\text{Extpipe}} + L_{\text{Adapter}} = 1000 + 500 + 145] = 1645 \text{ mm}$</p> <p>Extension Parts: (Ø60/100) Condensing Flue Extension, $L_{\text{Extpipe}} = 500 \text{ mm}$, (Ø60/100) Condensing Vertical Adapter, $L_{\text{Adapt}} = 145 \text{ mm}$</p>	15311660600013 (Black-White)
 <p>0049_03.D210120</p>	<p>(Ø60/100) Condensing Flue Extension</p> <p>$L = 500 \text{ mm}$</p>	15311660600014 (White)
 <p>0050_03.D210120</p>	<p>(Ø60/100) Condensing Flue Extension</p> <p>$L = 1000 \text{ mm}$</p>	15311660600015 (White)
 <p>0051_03.D210120</p>	<p>(Ø60/100) Condensing Flue Extension</p> <p>$L = 2000 \text{ mm}$</p>	15311660600016 (White)
 <p>0052_03.D210120</p>	<p>(Ø60/100) Condensing</p> <p>45° Elbow</p>	15311660600017 (White)
 <p>0053_03.D210120</p>	<p>(Ø60/100) Condensing</p> <p>90° Elbow $L = 170 \text{ mm}$</p>	15311660600018 (White)
 <p>0054_03.D210120</p>	<p>(Ø60/100) Condensing</p> <p>Vertical Adapter</p> <p>$L = 130 \text{ mm}$</p>	15311660600019 (White)
<p>Flat Roof Outlet Part</p> <p>15311660600124</p>  <p>0055_00.D210120</p>	<p>Pitched Roof Outlet Tile A = 500 x 500 mm</p> <p>15311660600125</p>  <p>0057_00.D210120</p>	  <p>0057_00.D210120</p>

3.13. Plume Displacement Kits Ø60 mm

	Product Name	Specification	Product Code
 0058_01.D210120	Plume Displacement Terminal Kit	With 1 m Extension Pipe, Elbow(87°), Plume Terminal and Bracket	15311660600031
 0059_01.D210120	Plume Displacement Kit Elbow	87°	15311660600032
 0060_01.D210120	Plume Displacement Kit Elbow	45°	15311660600033
 0061_01.D210120	Plume Terminal	87°	15311660600034
 0062_01.D210120	Flue Pipe Support Bracket		15311660600035
 0063_01.D210120	Plume Displacement Kit Extension 1000 mm		15311660600036

3.14. Recommendations of Plume Kit Installation

NOTE: Due to the nature of the boiler a plume of water vapour will be discharged from the flue. This should be taken into account when siting the flue terminal.

1. The following guidelines indicate the general requirements for siting balanced flue terminals. For GB recommendations are given in BS 5440 Pt 1. For IE recommendations are given in the current edition of I.S. 813 "Domestic Gas Installations".
2. If the terminal discharges onto a pathway or passageway, check that combustion products will not cause a nuisance and that the terminal will not obstruct the passageway.
3. If a terminal is less than 2 metres above a balcony, above ground or above a flat roof to which people have access, then a suitable terminal guard must be provided.

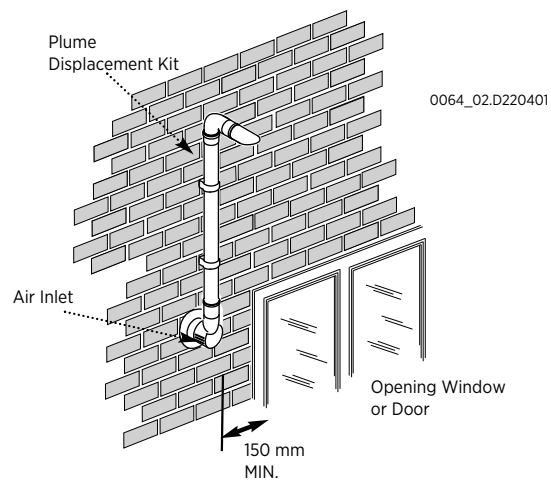


Figure 3.19. Installation Position of Plume Displacement Set to Window or Door

IMPORTANT:
• The terminal position must ensure the safe and nuisance - free dispersal of combustion products.

IMPORTANT: If fitting a Plume Displacement Flue Kit, the air inlet must be a minimum of 150 mm from any opening windows or doors.

3.15. Condensate Connection

Internal Condensate Pipe Discharge Termination

BUILDING REGULATIONS AUG/2020

0065_00.WUK200821

Figure 3.20. Connection of a condensate discharge pipe downstream of a sink, basin, bath or shower waste trap.

- 1 - Boiler
- 2 - Visible air break
- 3 - 75 mm trap
- 4 - Visible air break and trap not required if there is a trap with a minimum condensate seal of 75 mm incorporated in the boiler in this case the 100mm is measured to the trap in the boiler.
- 5 - Sink, basin, bath or shower.
- 6 - Open end of condensate discharge pipe direct into gully 25mm min below grating but above water level: end cut at 45 degree.
- 7 - Sink lip
- 8 - Minimum internal diameter 19mm
- 9 - Pipe size transition
- 10 - Minimum internal diameter 30mm
- 11 - Water/Weatherproof insulation
- 12 - Drain cover / leaf guard

Internal Condensate Pipe Discharge Termination

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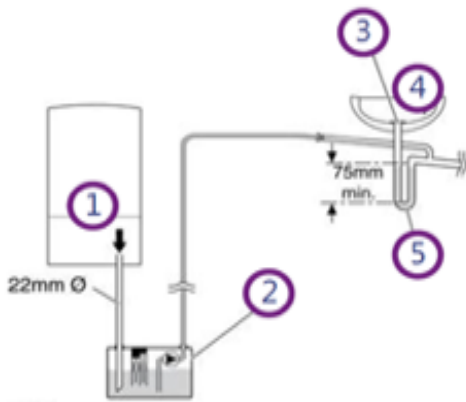
Figure 3.21. External termination to rainwater downpipe (NB only combined foul/rainwater drain)

Connection of a condensate discharge pipe up-stream of a sink, basin, bath or shower waste trap.

- 1 - Boiler
- 2 - Visible air break at plug hole – alternative connection can be below sink trap
- 3 - 75 mm sink, basin, bath or shower waste trap
- 4 - Sink, basin, bath or shower with integral overflow
- 5 - Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 °
- 6 - Minimum internal diameter 19 mm
- 7 - Pipe size transition
- 8 - Minimum internal diameter 30 mm
- 9 - Water/weatherproof insulation
- 10 - Fit drain cover/leaf guard

Internal Condensate Pipe Discharge Termination

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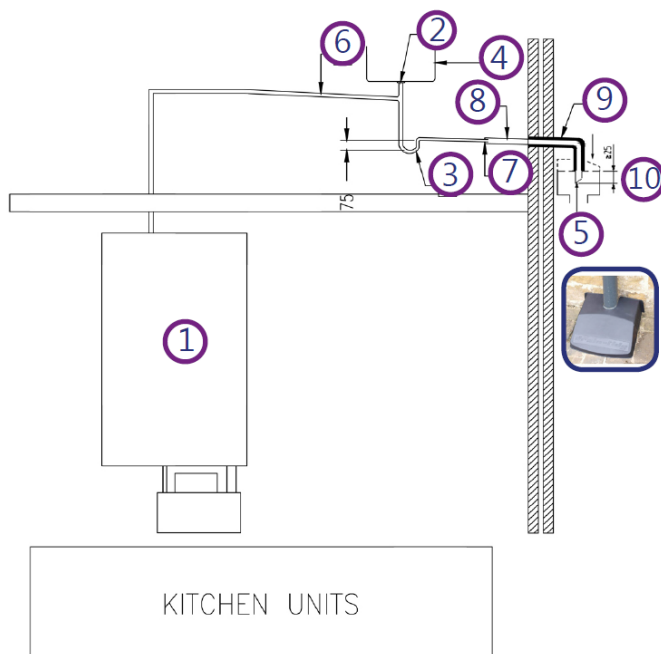
- 1 - Condensate discharge from boiler
- 2 - Condensate pump
- 3 - Visible air break at plug hole
- 4 - Sink or basin with integrated overflow
- 5 - 75mm sink waste trap

Note - Any external pipe work should be insulated, pipe cut at 45 degrees and a drain/ leaf guard fitted.

Figure 3.22. Connection of a condensate pump - typical method.

Internal Condensate Pipe Discharge Termination

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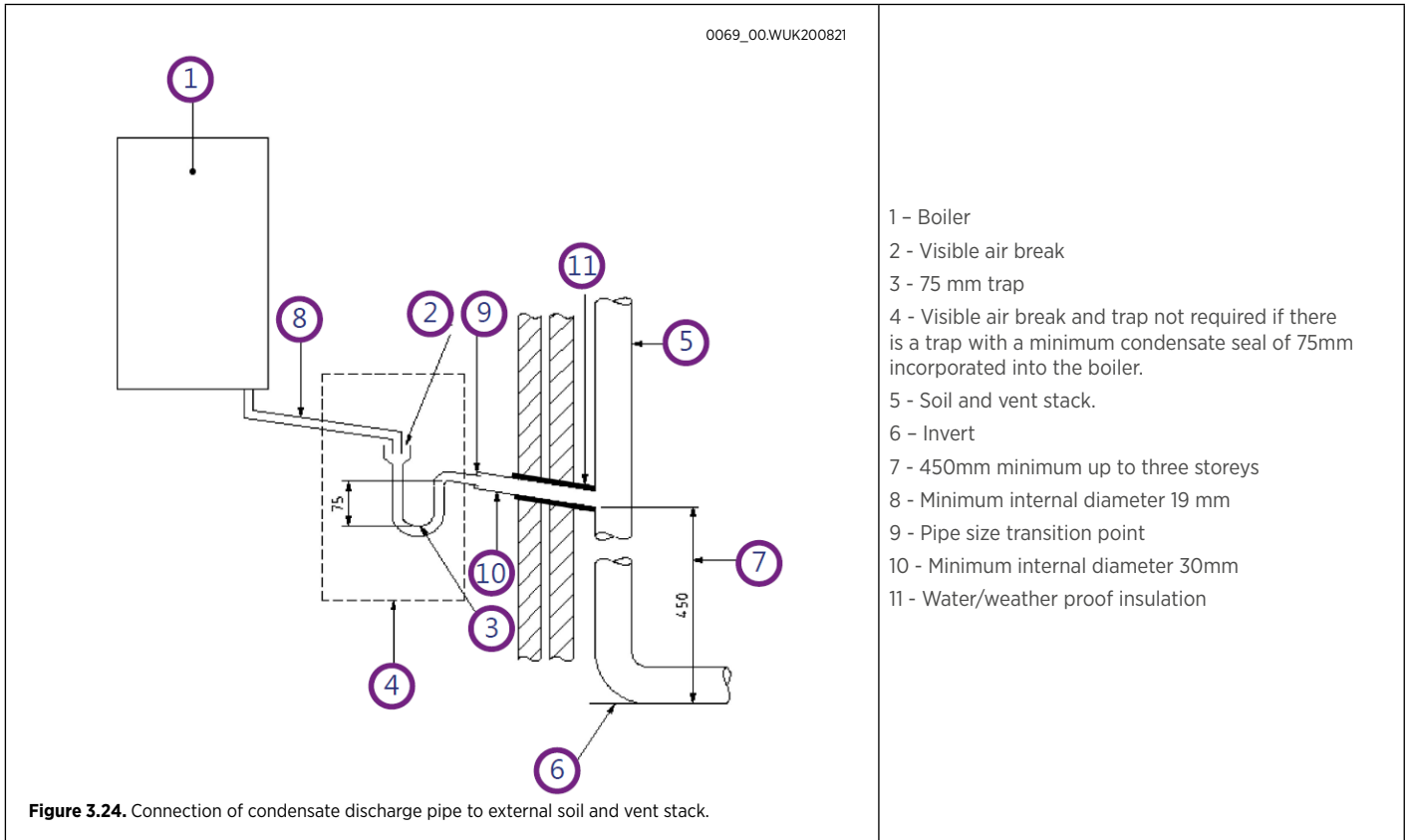


- 1 - Boiler
- 2 - Visible air break at plug hole
- 3 - 75 mm sink, basin, bath or shower waste trap
- 4 - Sink, basin, bath or shower with integral overflow.
- 5 - Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 ° Note - the maximum external condensate discharge length is 3 metres.
- 6 - Minimum internal diameter 19 mm
- 7 - Pipe size transition
- 8 - Minimum internal diameter 30 mm
- 9 - Water/weatherproof insulation
- 10 - Fit drain cover/leaf guard

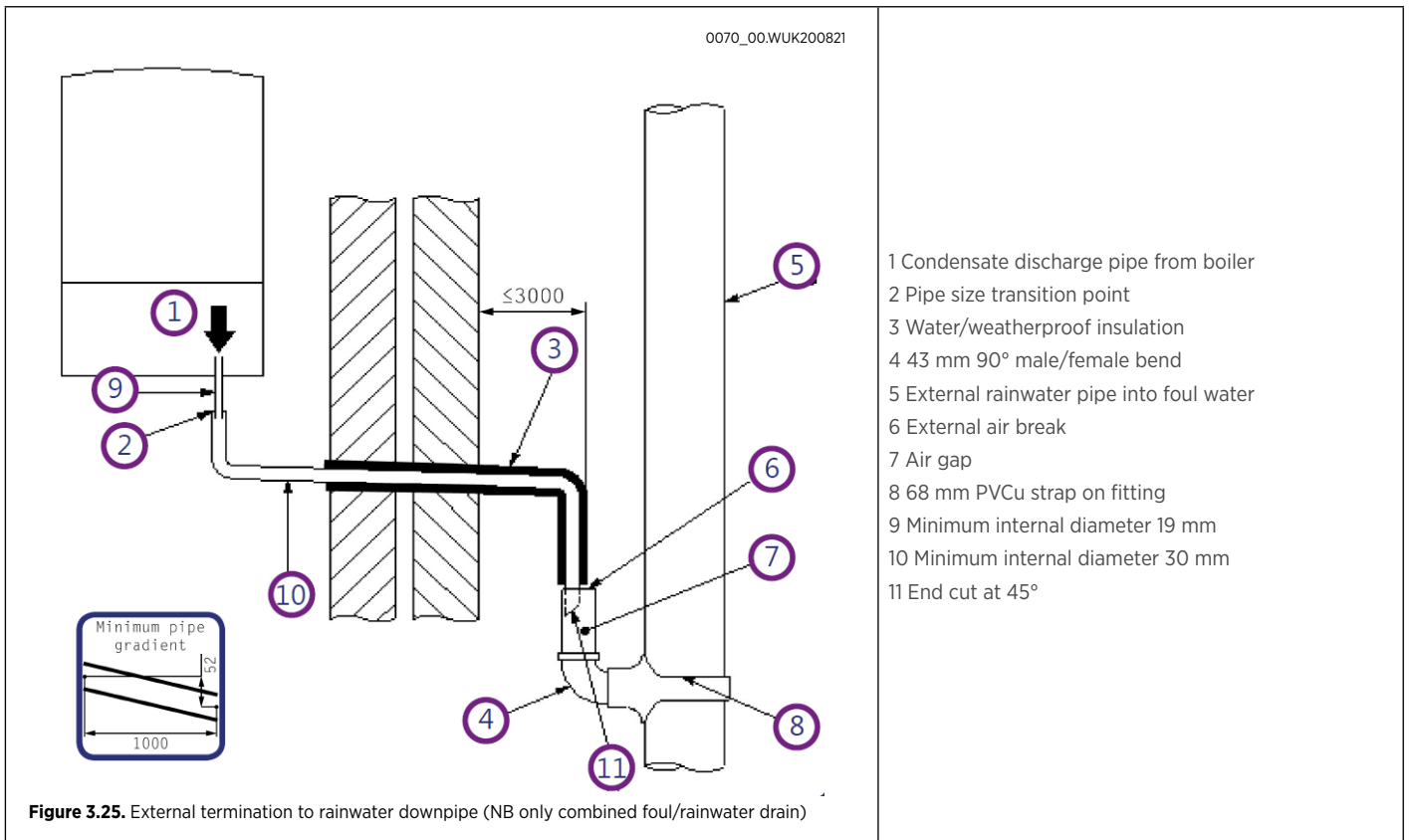
Note - Any external pipe work should be insulated, pipe cut at 45 degrees and a drain/ leaf guard fitted.

Figure 3.23. Connection of a condensate pump - typical method.

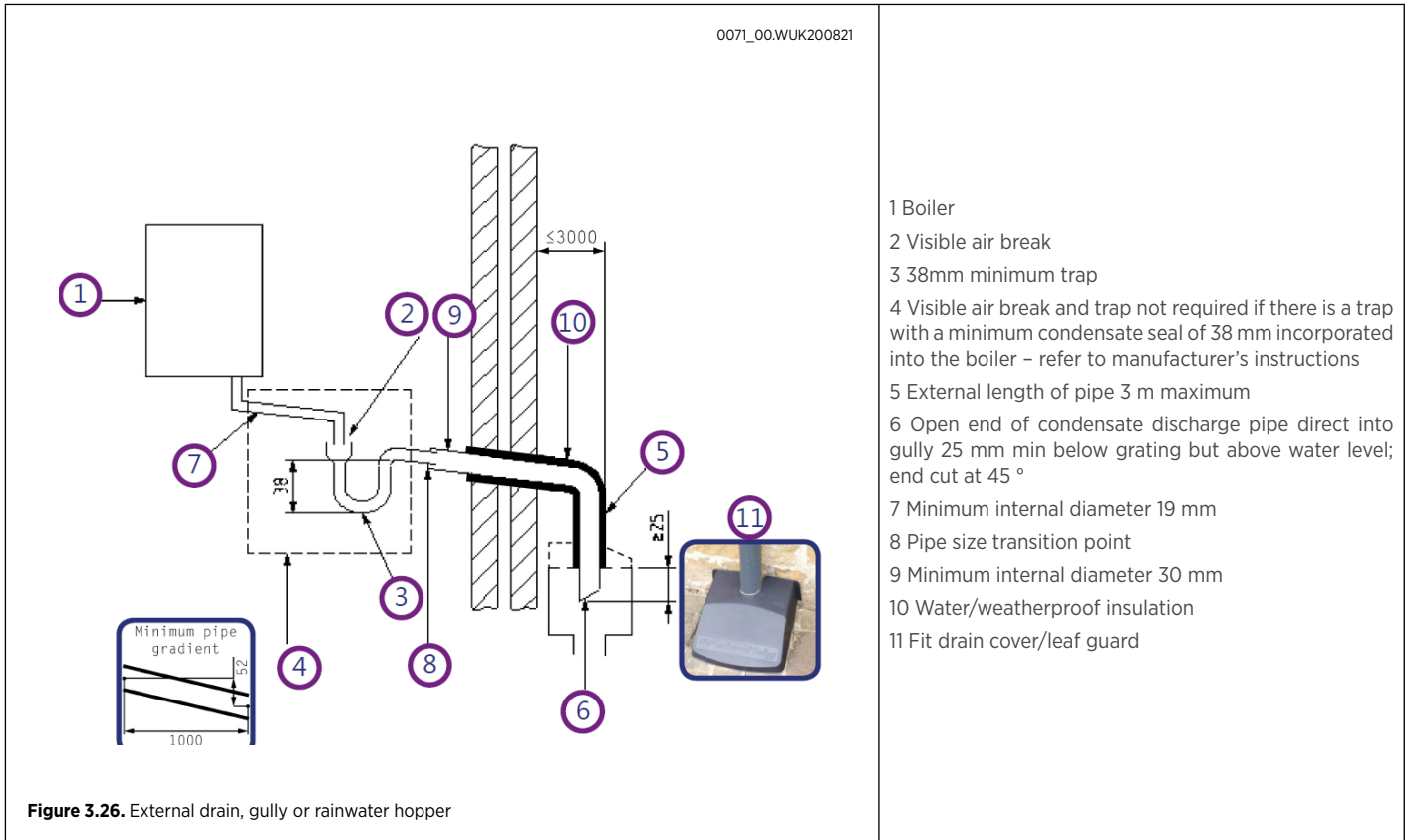
External Connections



External Connections

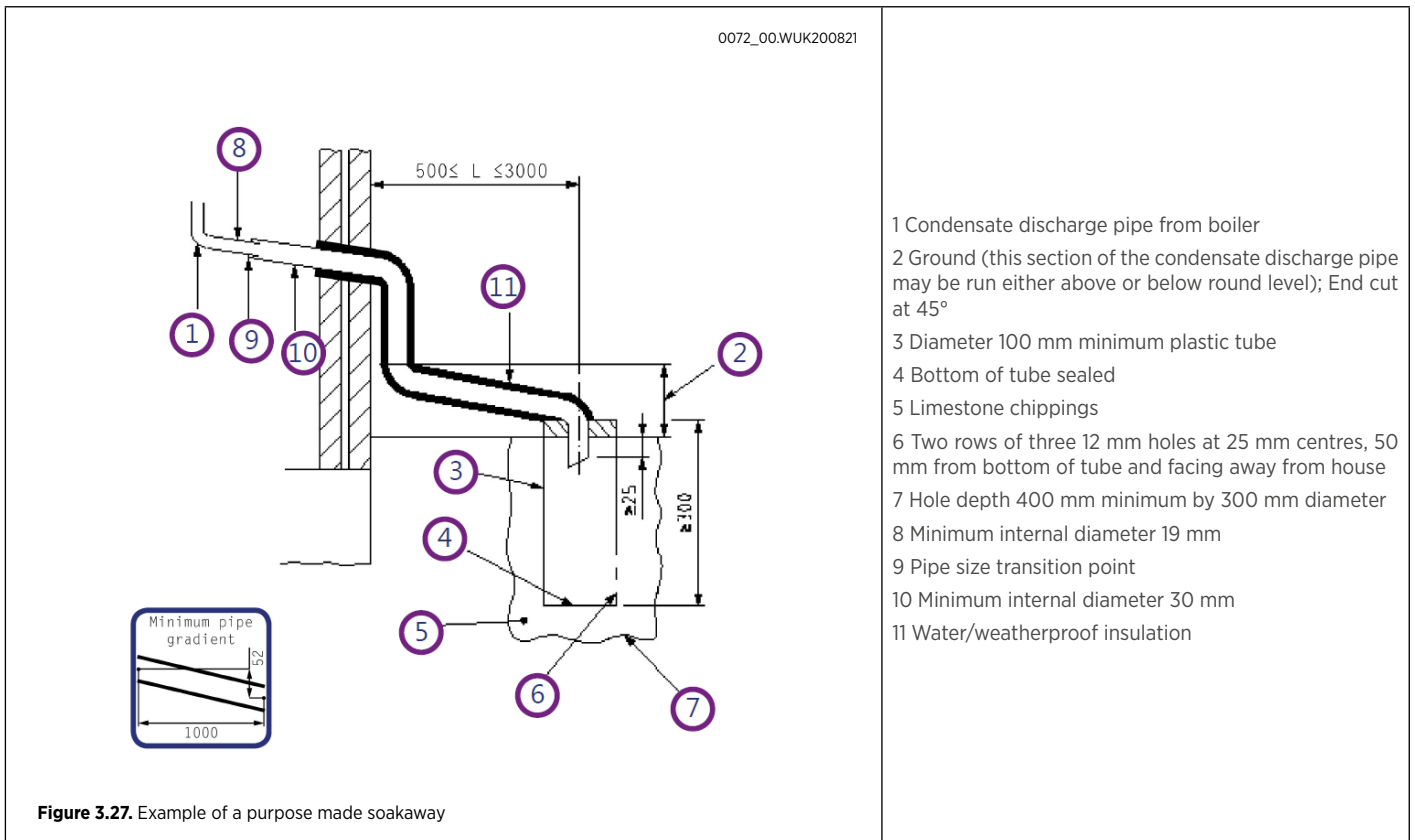


External Connections



- 1 Boiler
- 2 Visible air break
- 3 38mm minimum trap
- 4 Visible air break and trap not required if there is a trap with a minimum condensate seal of 38 mm incorporated into the boiler – refer to manufacturer’s instructions
- 5 External length of pipe 3 m maximum
- 6 Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 °
- 7 Minimum internal diameter 19 mm
- 8 Pipe size transition point
- 9 Minimum internal diameter 30 mm
- 10 Water/weatherproof insulation
- 11 Fit drain cover/leaf guard

Internal Condensate Pipe Discharge Termination



- 1 Condensate discharge pipe from boiler
- 2 Ground (this section of the condensate discharge pipe may be run either above or below ground level); End cut at 45°
- 3 Diameter 100 mm minimum plastic tube
- 4 Bottom of tube sealed
- 5 Limestone chippings
- 6 Two rows of three 12 mm holes at 25 mm centres, 50 mm from bottom of tube and facing away from house
- 7 Hole depth 400 mm minimum by 300 mm diameter
- 8 Minimum internal diameter 19 mm
- 9 Pipe size transition point
- 10 Minimum internal diameter 30 mm
- 11 Water/weatherproof insulation

3.16. Enerwa Plus Combi Boiler Wiring Diagram

Wiring Diagram



RISK OF ELECTRIC SHOCK

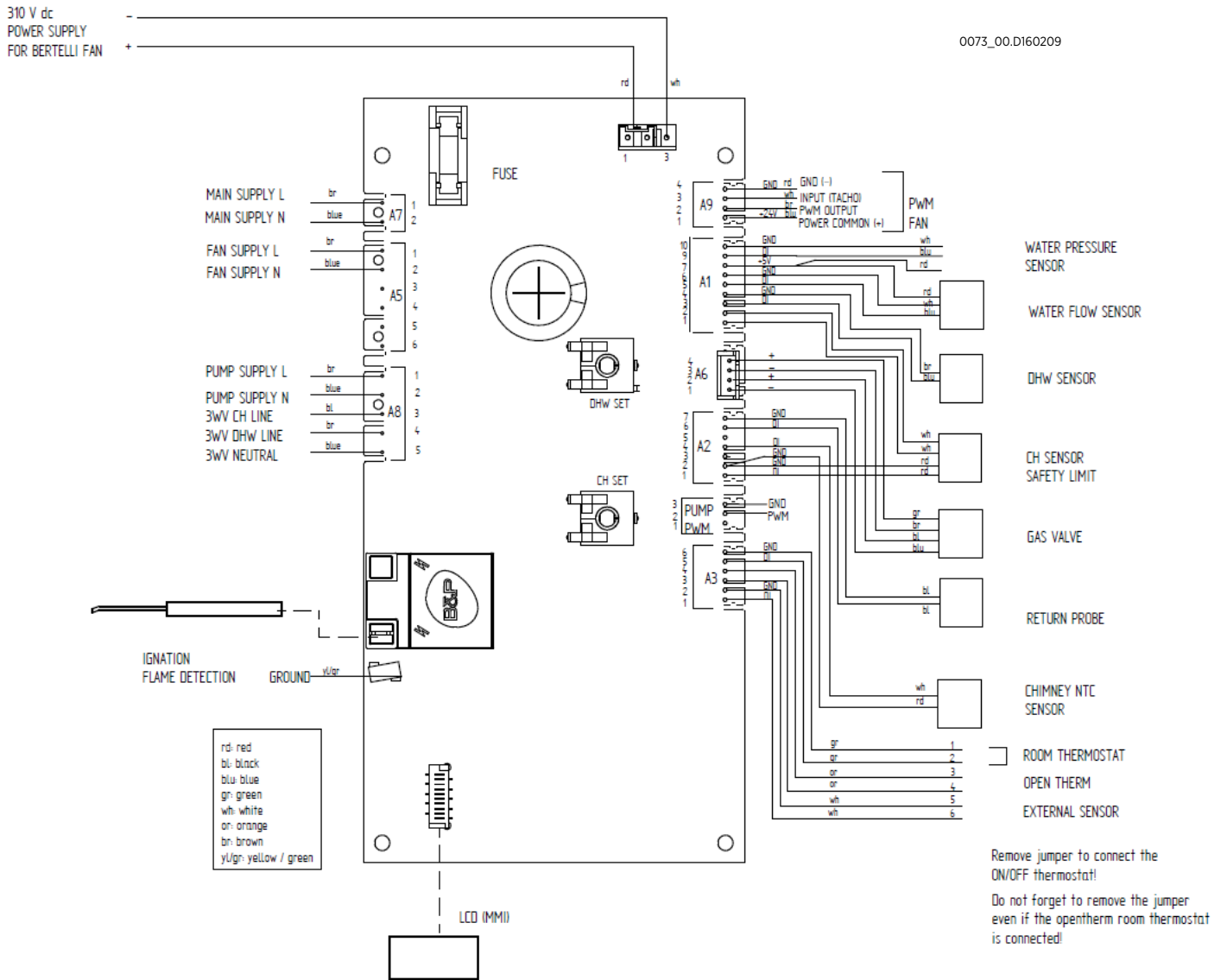


Figure 3.28. Wiring diagram

3.16.1. External Control Connection / Low Voltage Installation

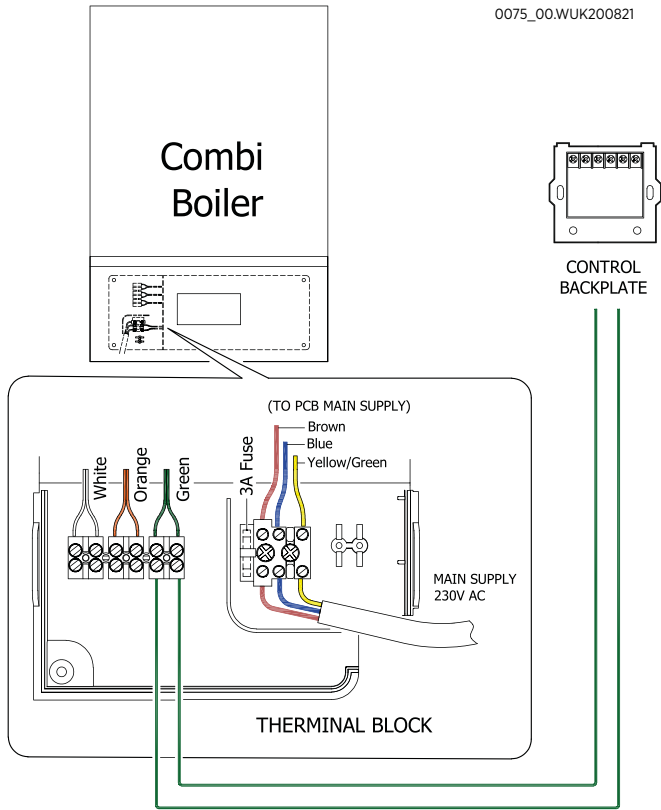


Figure 3.29. External Control Connection / Low Voltage Installation

THE GREEN CONNECTIONS ON OUR TERMINAL CONNECTOR ARE LOW VOLTAGE AND 240V MUST NOT BE CONNECTED TO THESE.

If your external controls have a 240 V output then please use our 240 V relay connector.

To connect your low voltage external control, remove the green link wire and connect your two external control cables to the two green wires on the terminal connector.

3.16.2. External Control Connection / High Voltage (240 V) Installation

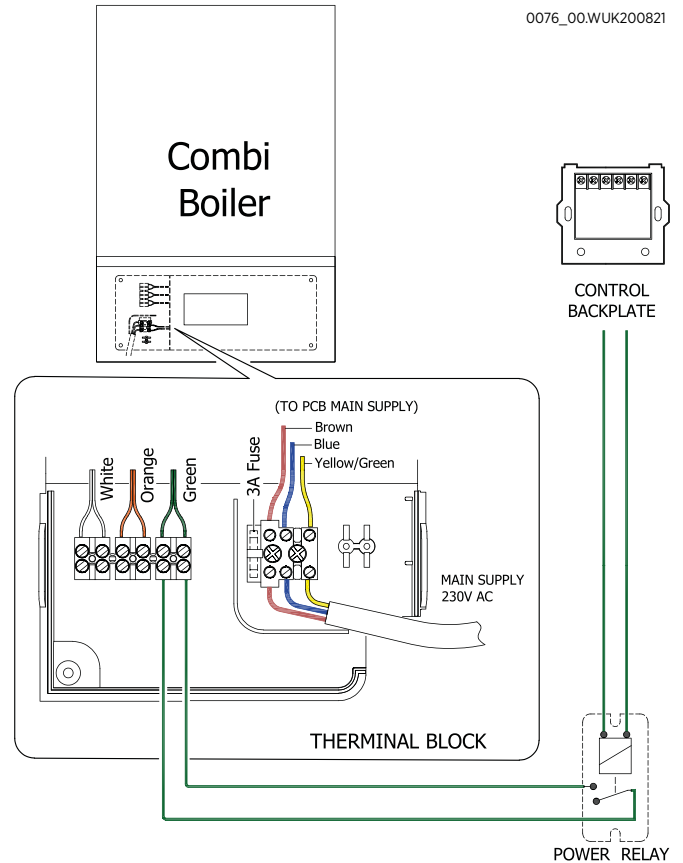


Figure 3.30. External Control Connection / High Voltage (240 V) Installation with Relay

To connect your 240 V external control, remove the green link wire on the boiler terminal connector and connect your two external control cables onto the power relay LIVE and NEUTRAL connectors supplied with the power relay.

Then connect the two LOW VOLTAGE cables connected to the power relay to the green wires on the terminal connector.

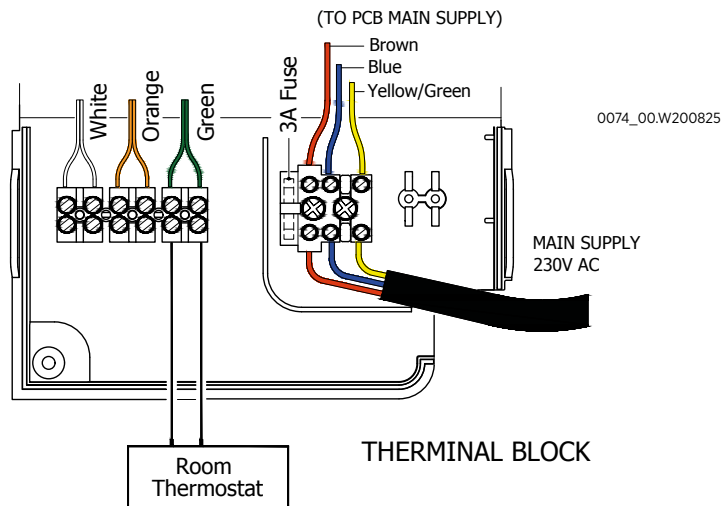
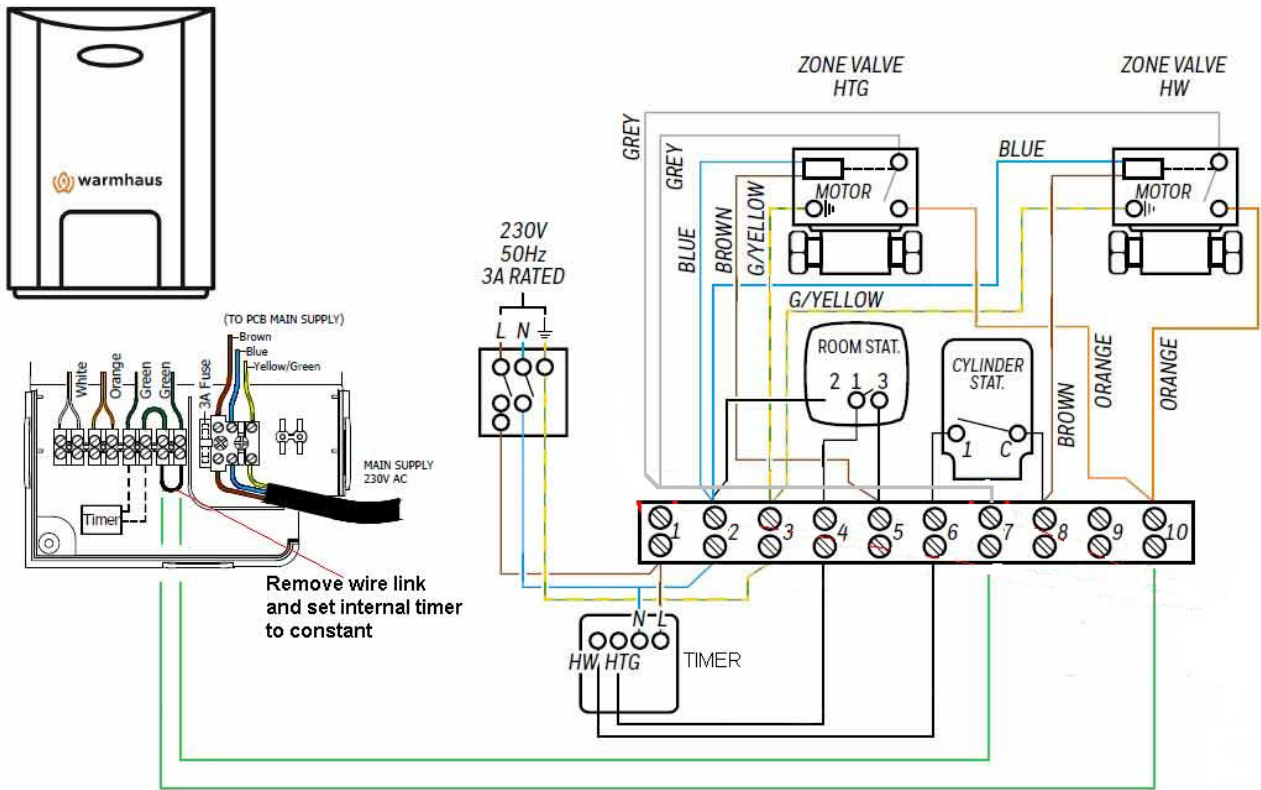


Figure 3.31. External Control Connection / Low Voltage area and room thermostat installation.

3.16.3. External Control Connection / SPlan Wiring Diagram



RISK OF ELECTRIC SHOCK



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Figure 3.32. External Control Connection / SPlan Wiring Diagram

BOILER WITHOUT TIMER MODEL

SPLAN Wiring Guide:

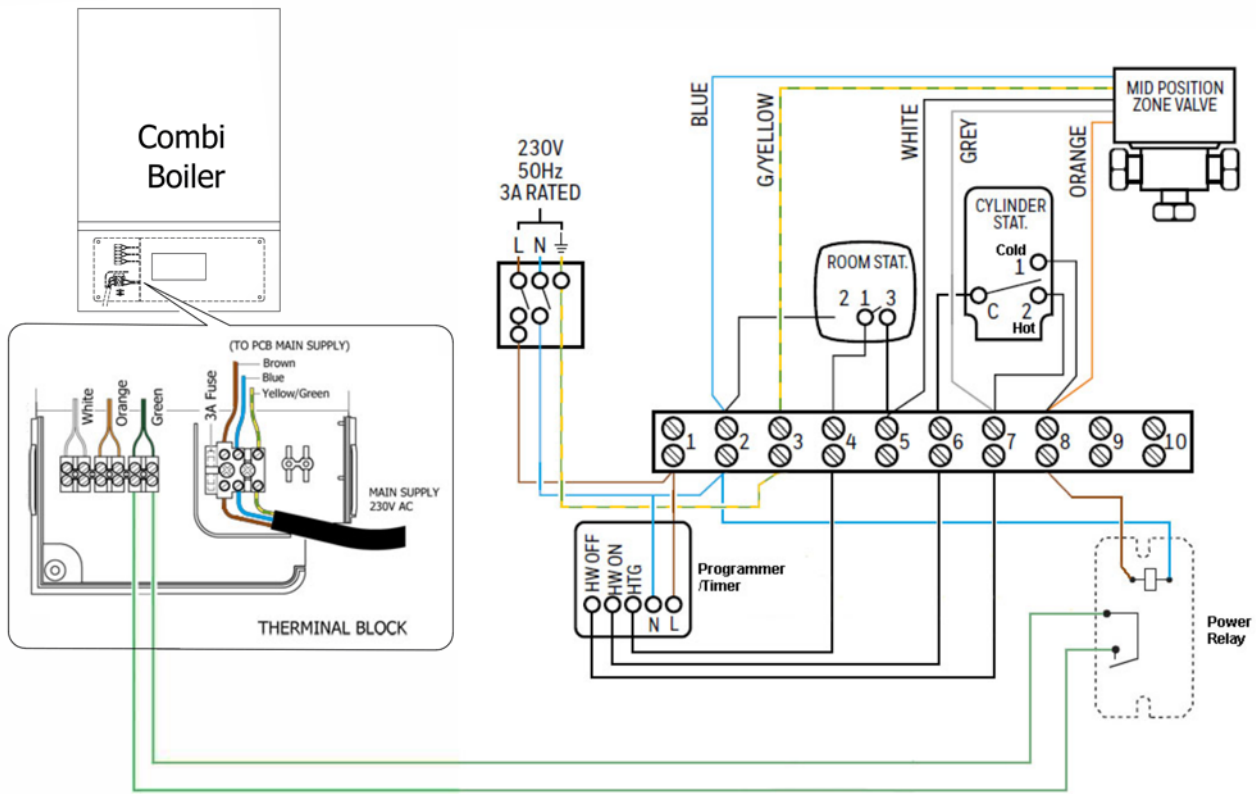
The Warmhaus Enerwa Plus boiler must have clean contact connections and must not have mains voltage connected to the room stat connections on our terminal connector, therefore if the system configuration is an SPLAN please follow the above image to ensure that 240v voltage will not be applied to the room stat connections on the boiler.

Number 7 on the above image of the wiring center terminal strip is for illustration purposes and any empty terminal strip can be used for this wiring adjustment.

3.16.4. External Control Connection / YPlan Wiring Diagram



RISK OF ELECTRIC SHOCK



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Figure 3.33. External Control Connection / YPlan Wiring Diagram

BOILER WITHOUT TIMER MODEL


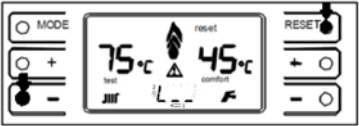



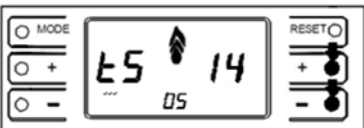

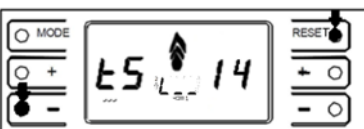


YPLAN Wiring Guide:

The Warmhaus Enerwa Plus boiler must have clean contact connections and must not have voltage connected to the room stat position on our terminal connector, therefore if the system configuration is a YPLAN you must connect the relay supplied with our boiler as per the above image to provide a switching method of taking mains 240v switched live supply from the zone valve and supplying the room stat connection from the relay output as clean contacts voltage free.

4. COMMISSIONING

4.1. Display Function

4.1.1. SET Transparent Parameters Menu (TSP)

SET Transparent Parameters Menu (TSP)		
Designation: Enerwa Plus wall-hung boilers		
Object	Type-model / Technical data	
Procedure setting or checking TsP parameters	Enerwa Plus Combi Boiler	
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons and valid for only condensing boiler. Attention: The parameters as indicated DO NOT CHANGE should not be adjusted / touched by any official document supplied by Warmhaus R&D.
1		Press the RESET and CH (-) button simultaneously
2		Wait until the approval circle complete on the LCD and release buttons
3		The screen will appear tSP - Parameter=01 - Value=0 Attention: Do not change this parameter
4		From this moment toggle CH (+) to increase or CH (-) to decrease any parameter aimed to be changed
5		Ones you reach the parameter aimed to be changed, Change the parameter VALUE by using the DHW (+) or DHW (-) buttons
6		Push the RESET button to save the adjusted value. Wait until the approval circle complete on the LCD and release button.
7		To exit the TSP menu push the RESET and CH (-) simultaneously.
8		Wait until the approval circle complete on the LCD and release buttons. In this way EXIT the TsP Menu
9		Attention: If parameter P14 set as 5 for Au-To calibration, if the electricity cut OFF / ON - OR wait longer time than 3 minute the P14 will be reset automatically to=0 so please make calibration just after exit of TsP

4.1.2. Changing The Boiler Type : Combination Boiler to System Boiler

In order to convert from Combi boiler to System boiler, please select the system from the parameter list below according to the P01 parameter.

4.1.3. Parameters (Changing The Boiler Type, CH & DHW Power, Pre Heat switch off Temperature, CH post Circulation Time.....)

Transparent Parameters Menu (TSP)					
Designation :		All Warmhaus Wallhung Boilers			
Object		Type-model(s)			
Burner Control Transparent Parameter List		Enerwa Plus Combi Boiler			
Parameter no.	Parameter	Value Field	Enerwa Plus 24N Default	Enerwa Plus 28 Default	Enerwa Plus 33 Default
P01(*)	Hydraulic system	0 - 3	0	0	0
	0 = Instantaneous (Combi Boiler Only)				
	1 = System Boiler with DHW storage tank (ON/OFF Thermostat controlled)				
	2 = System Boiler with DHW storage tank (NTC Sensor controlled)				
	3 = Heat Only (System Boiler-Only CH without DHW)				
P02	Gas type	0 - 1	0 = NG 1 = LPG	0 = NG 1 = LPG	0 = NG 1 = LPG
	0 = Natural gas				
	1 = LPG				
P03	DHW inlet configuration	0 - 2	1	1	1
	0 = Flow switch				
	1 = Flow meter				
	2 = Flow meter AND W/O DHW Sensor Algorithm				
P04	KT coefficient for regulation with EXT probe	4 - 90	30	30	30
P05	Anti fast cycles time (value 1 = 1 minute)	0 - 10 min	3	3	3
P06	Maximum CH power	0 % - 100 %	N/A	N/A	N/A
P07	Ignition heating ramp time (value 1 = 10 seconds)	0 - 80	60	60	60
P08	Maximum CH power	P10 - 100 %	80	80	82
P09	Maximum DHW power	P10 - 100 %	100	100	100
P10	Minimum power	0 % - P09	0	0	0
P11	CH Minimum temperature setpoint value (°C)	20 °C - P12	25	25	25
P12	CH Maximum temperature setpoint value (°C)	P11 - 85 °C	80	80	80
P13	DHW maximum temperature setpoint value (°C)	35 °C - 65 °C	60	60	60
P14	Type of calibration	0 - 20	0	0	0
	0 = Manuel calibration / ma - nu				
	5 = Auto calibration / Au - To				

(*) For conversion from combi boiler to system boiler change the parameter P1=0 to P1=3

Transparent Parameters Menu (TSP)					
Designation :		All Warmhaus Wallhung Boilers			
Object			Type-model(s)		
Burner Control Transparent Parameter List			Enerwa Plus Combi Boiler		
Parameter no.	Parameter	Value Field	Enerwa Plus 24N Default	Enerwa Plus 28 Default	Enerwa Plus 33 Default
P15	Boiler Power Output	0 - 8	5	1	2
	0 = 24 kw - Only use this value for serial number 17092800045 or less, if serial number is above 17092800045 please choose value 5.				
	1 = 28 kw				
	2 = 33 kw				
	3 = 50 kw				
	4 = 65kw				
	5 = 24n kw - New Burner				
	6 = Not Used				
	7 = Not Used				
	8 = Not Used				
	CALIBRATION MUST BE CARRIED OUT IF P15 IS CHANGED!				
P16	Combustion configuration - DO NOT CHANGE !	0 - 1	N/A	N/A	N/A
	0 = Closed combustion chamber with combustion control				
	1 = Open combustion chamber with flue thermostat				
P17	Climatic zone selection	1..81	34	34	34
P18	CH comfort selection;	0 - 2	0	0	0
	0 = Eco (if the Pre Heat will be used in the boiler Eco should be SET on the TsP.)				
	1 = Comfort (if this adjusted on TsP, then Pre Heat Function is will not work)				
	2 = Disable				
P19	Exhaust measurement configuration	0 -1	1	1	1
	0 = Flue thermostad				
	1 = Flue NTC				
P20	Minimum value for DHW setpoint (°C)	35 °C - 50 °C	35	35	35
P21	Low temperature zone selection	0 -1	0	0	0
	0 = Low temperature disabled				
	1 = Low temperature enabled / Max CH temperature 47°C				
P22	Flues gas pipe length (value 1 = 1 meter)	1 - 10	1	1	1
P23	Cycling time pump activation - cold zone (value 1 = 1 minute)	1 - 10	0	0	0
P24	Push button child lock protection	0 -1	0	0	0
	0 = Child lock disabled				
	1 = Child lock enabled				
P25	Altitude loss compansation parameter (value x 100 meters)	0 - 20	0	0	0
P26	Water hammer delay (value 1 = 1 second)	0 - 3	0	0	0
P27	Pre Heat switch off temperature	30 - 75	55	55	55
P28	LCD back light activation time (value 1 = 1 second)	0 - 120	45	45	45
P30	Ignition power	0 - 40	N/A	N/A	N/A

Transparent Parameters Menu (TSP)					
Designation :		All Warmhaus Wallhung Boilers			
Object			Type-model(s)		
Burner Control Transparent Parameter List			Enerwa Plus Combi Boiler		
Parameter no.	Parameter	Value Field	Enerwa Plus 24N Default	Enerwa Plus 28 Default	Enerwa Plus 33 Default
P31	Ignition Fan Speed (P31 x 25 rpm)	80 - 160	140 = NG	140 = NG	140 = NG
	(For boiler with serial number 17092800045 or earlier please use: 144 = NG and 144 = LPG)				
	CALIBRATION MUST BE CARRIED OUT IF P31 IS CHANGED!		140 = LPG	128 = LPG	128 = LPG
P32	Maximum Power Fan Speed (P32 x 25 + 2000 rpm)	P33 - 255	212 = NG	210 = NG	228 = NG
	(For boiler with serial number 17092800045 or earlier please use: 224 = NG and 212 = LPG)				
	CALIBRATION MUST BE CARRIED OUT IF P32 IS CHANGED!		204 = LPG	200 = LPG	220 = LPG
P33	Minimum Power Fan Speed (P33 x 25 rpm)	30 - 60	38 = NG	43 = NG	44 = NG
	(For boiler with serial number 17092800045 or earlier please use: 40 = NG and 40 = LPG)				
	CALIBRATION MUST BE CARRIED OUT IF P33 IS CHANGED!		37 = LPG	41 = LPG	42 = LPG
P34	Pump PWM Max speed	30-100			
P35	Pump PWM Min speed	30-P34			
P36	F49 Offset	0 - 100	50	50	50
P37	Configuration Aux probe	3 - 3	3	3	3
	3 = Return temperature NTC				
P38	Antifreezing activation temperature (°C)	0 - (+10 °C)	5	5	5
P39	CH post circulation time (value 1 = 10 seconds)	0 - 99 sec x 10	18	18	18
P40	Delay in the activation of CH ignition after DHW request (value 1 = 10 seconds, if Preheat adjusted time = value / 2	0 - 60 sec x 10	12	12	12
P41	Sanitary modulation with Fluxmeter	0 - 1	0	0	0
	0 = Disconnected				
	1 = Connected				
P42	DHW Preheat function configuration (Please check P18 first)	0 - 1	0	0	0
	0 = Pre heat OFF / PrE - OFF				
	1 = Pre heat ON / PrE - On				
P43	Delay of DHW activation with solar config. (value 1 = 1 second)	0 - 30 sec	0	0	0
P44	Pressure switch selection	0 - 2	1	1	1
	0 = Water pressure switch				
	1 = Water pressure sensor - Alarm Level > 2,8 Bars 2 = Water pressure sensor - Alarm Level > 3,8 Bars				
P45	Antilegionella function (storage tank only)	54 / 55 - 80	54	54	54
	54 = Disabled				
P46	Modulating pump speed selection (optional)	0 - 1	1	1	1
	0 = No modulation				
	1 = Automatic modulation in range of %66 - %100				
P47	Delta temperature CH flow and return for pump modulation	10 - 40	20	20	20

Transparent Parameters Menu (TSP)					
Designation :		All Warmhaus Wallhung Boilers			
Object			Type-model(s)		
Burner Control Transparent Parameter List			Enerwa Plus Combi Boiler		
Parameter no.	Parameter	Value Field	Enerwa Plus 24N Default	Enerwa Plus 28 Default	Enerwa Plus 33 Default
P48	Pump configuration	0 - 1	0	0	0
	0 = Intermittent				
	1 = Continuous				
P49	OEM Menu Enabled (P49 = 49 enable read/write of following parameters)	0 - 99	0	0	0
P50	Relay configuration 1 LC27	0 - 8	0	0	0
	0 = Not used				
	1 = Remote alarm normally open				
	2 = Remote alarm normally close				
	3 = Zone valve				
	4 = Automatic refill valve				
	5 = Not used				
	6 = Recirculation pump				
	7 = Zone valve with OT				
8 = Not used					
P51	Relay configuration 1 LC27	0 - 8	0	0	0
	0 = Not used				
	1 = Remote alarm normally open				
	2 = Remote alarm normally close				
	3 = Zone valve				
	4 = Automatic refill valve				
	5 = Not used				
	6 = Recirculation pump				
	7 = Zone valve with OT				
8 = Not used					
P52	Automatic water refill	0 - 1	0	0	0
	0 = Not present				
	1 = Present				
P53	Parameter perc combustion	0 - 30	N/A	N/A	N/A
P54	Fluxmeter value for DHW request activation (= value / 10 (liter / minute)	10-40 / 10 (lt/min)	15	15	15
P55	DHW post ventilation time (value 1 = 10 seconds)	1 - 30 sec x 10	3	3	3
P56	DHW post circulation time (value 1 = 1 second)	0 - 100	30	30	30
P57	Flue clapet configuration	0% - 10%	0	0	0
P58	Offset fan ignition phase	0 - 20	N/A	N/A	N/A
P59	Offset Fan Low NOx	0 - 40	N/A	N/A	N/A
P60	Offset CH turning off after ignition	0 - 20	0	0	0
P61	Exhaust temperature alarm (°C)	20 °C - 150 °C	105	105	105

Transparent Parameters Menu (TSP)					
Designation :		All Warmhaus Wallhung Boilers			
Object			Type-model(s)		
Burner Control Transparent Parameter List			Enerwa Plus Combi Boiler		
Parameter no.	Parameter	Value Field	Enerwa Plus 24N Default	Enerwa Plus 28 Default	Enerwa Plus 33 Default
P62	Low Noise (B&P parameter)	0 - 1	0	0	0
	Please CUT OFF the GAS to change this parameter				
P63	Delay in zone valve activation (value 1 = 10 seconds)	0 - 99	0	0	0
P64	Fan supply reduction @min power (up to180Vac)	0 - 15	N/A	N/A	N/A
P65	Fan selection (not use)	0 - 6	0	1	1
	0 = EBM				
	1 = B&P				
	2 = Not used 3 - 6 = Not used				
P66	DHW water flow restrictor selection	0 - 4	0	0	0
	0 = No flow regulator present				
	1 = flow regulator present 2 - 4 = Not used				
P67	Button configuration selection;	0 - 1	0	0	0
	0 = Push button only				
	1 = Turning knobs with push button				
P68	B&P paramter 1 - DO NOT CHANGE	0 - 255	63	63	63
P69	B&P paramter 1 - DO NOT CHANGE	0 - 255	1	1	1
P80	Delta TCH (slope on CH for check pump blockage) (0 = disable)	0 - 20	5	5	5
	0 = Disabled				
	Value = Temperature increase °C / per second				
P81	Maximum CH temperature for burner switch off function (0 = disable)	0 - 150	0	0	0
P82	Delta temperature between CH Flow & Return (0 = disable)	0 - 50	0	0	0
P83	Service maintainace counter (Value = months) (0 = Disable)	0...255	0	0	0
P98	Reset TSP to default value	0 - 1	0	0	0
P99	Reset OEM to default value	0 - 1	0	0	0

Parameter Information



WARNING

When accessing the parameter menu it is vital that you are only accessing and changing values that are valid and intended for use by an installer or service engineer e.g. gas type, system config type or pre-heat values and other installation related parameters (FOR A FULL LIST OF APPROVED VALUES PLEASE CONTACT WARMHAUS TECHNICAL – 02071646233, or Heat Merchants Customer Services at 0906 442300)

When changing a parameter value you must always check the effect of this on the operation of the boiler and fully check the combustion of the appliance to ensure the boiler is operating safely.

Some parameters are serial number specific and so the serial number must always be checked against the data written in the parameter tables.

In some cases when a parameter value is changed the boiler will display an error code e.g. parameter 2 is the gas type if it is changed from either NG to LPG or LPG to NG then the boiler will display E62 which is ensuring you run a combustion calibration for safety reasons to combat against changing the value by error and to ensure the combustion has been altered and set up with the correct fuel.

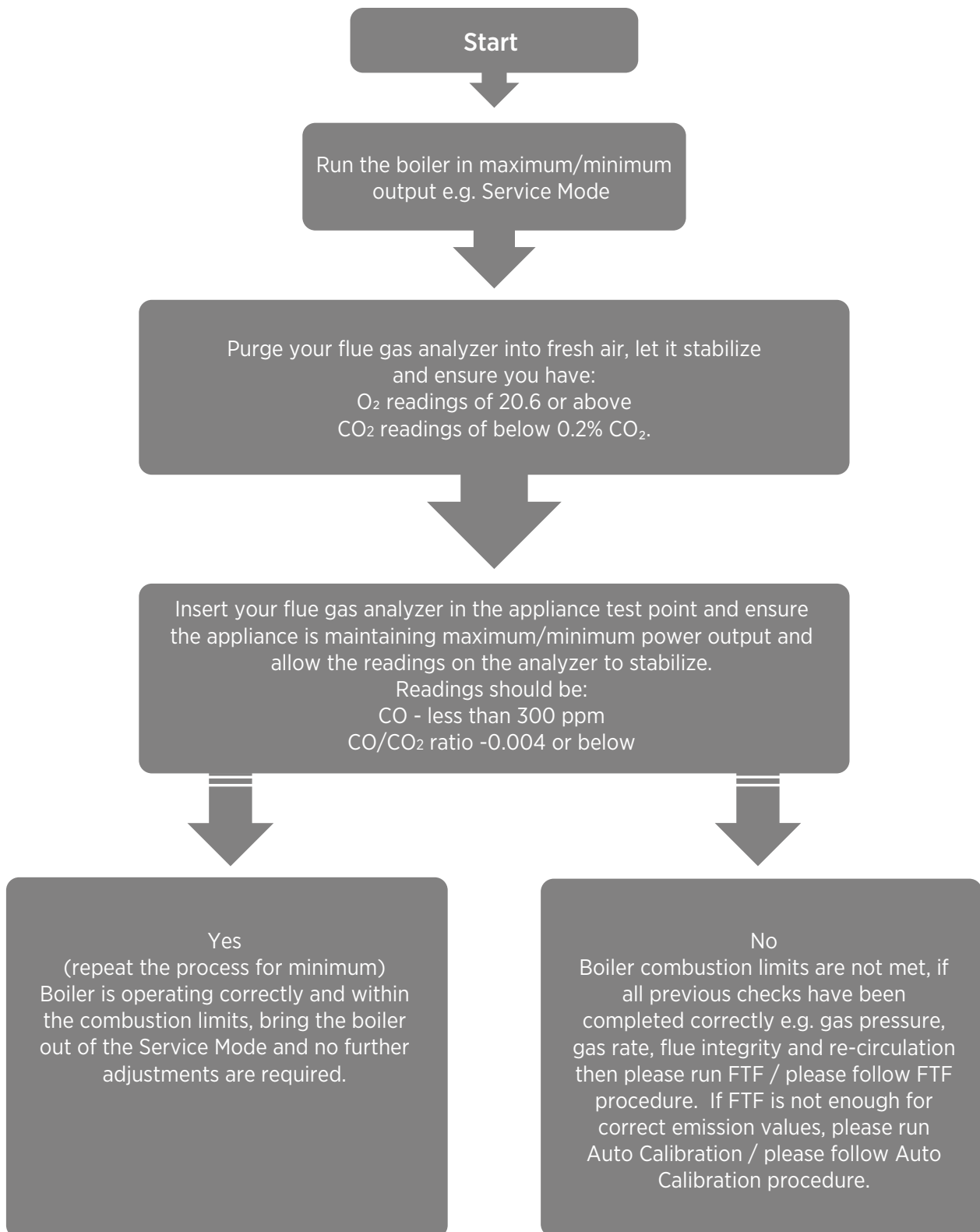
4.2. Service Mode

Service Mode		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure service mode		Enerwa Plus Combi Boiler - IE granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorised persons and valid for only condensing boiler. Attention: Serviceman time out is 30 minute.
1		Press the RESET and MODE button simultaneously. Attention: Make sure the all radiator valves are opened and during serviceman mode if boiler can reach the maximum CH limit temperature otherwise process will interrupt. Make sure boiler frontal casing is totally closed and sealing of the boiler body is secured during serviceman mode.
2		Wait until the approval circle complete on the LCD and release buttons.
3		When the approval circle is completed the "LO" (minimum power) will be displayed on the screen. Wait 45 seconds to be stable.
4		For "HI" (maximum power) combustion menu push and hold the DHW (+) button.
5		The "HI" will be displayed on the screen. Wait 45 seconds to be stable.
6		When the serviceman mode measurements are complete, then Press the RESET and MODE button simultaneously.
7		Wait until the approval circle complete on the LCD and release buttons. In this way EXIT the serviceman mode.

4.3. CO/CO₂ Combustion Check



CAUTION



4.4. Calibration

4.4.1. Auto Calibration



ATTENTION: This procedure must only be carried by a competent Gas Safe registered engineer and if in Ireland an RGI (Registered Gas Installer)

Make sure there is no demand on the boiler before starting the auto calibration and the front cover is fitted!

Step 1: Press the reset and CH - buttons together and wait for the approval circle to complete, TS will be displayed on the LHS of the boiler LCD and O1 on the RHS. Press the CH + button until the number on the RHS reads 14, you will then have OO displayed in the middle of the screen. Press the DHW + button until you reach 05 and then press the reset button until the approval circle completes.

Step 2: Press the reset and CH - buttons together and wait for the approval circle to complete, the boiler should now be in the standby mode, then press the reset and mode buttons together and wait until the approval circle is complete then let go and within 3 seconds press the CH - button firmly.

Step 3: The boiler will now enter the test mode and will carry out several

functions, when the boiler is ready for adjustment it will display P00 and a setpoint number e.g. 35, at this stage you can insert your FGA into the boiler and wait to stabilize then using the table below check to see if the CO₂ or O₂ is within the tolerances stated.

Step 4: If the readings are out of the tolerance then adjust the setpoint using the DHW + or - buttons to increase or decrease the setpoint number to change the CO₂ or O₂ values, once the readings are within the tolerance press the CH + button and remove the FGA, the boiler will now make some tests and when it is ready for adjustment it will display P01 and a setpoint number.

Step 5: Again as above insert your FGA and check the readings to see if they are within tolerance, if they require adjustment please follow the above procedure and when the readings are within the tolerance press the CH + button and remove the FGA.



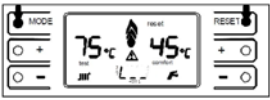
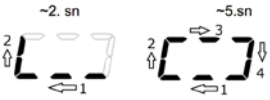
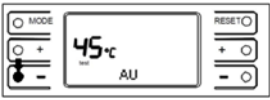
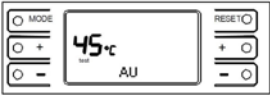
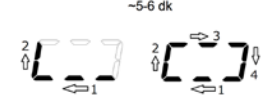
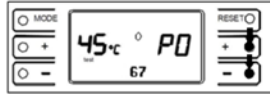
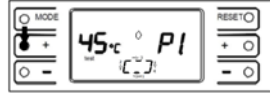
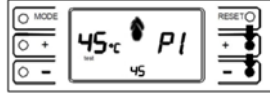
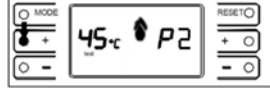
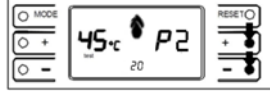

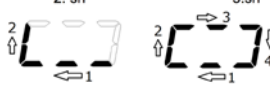
Step 6: The boiler will now carry out some tests and when it is ready for adjustment it will display P02 and again a setpoint number, now insert your FGA and check the readings are within tolerance in the below table, follow the instructions in Step 4 to adjust the readings.

Step 7: When the readings are ok press the Mode button to exit the AUTO calibration mode and the boiler will return back to the standby display.


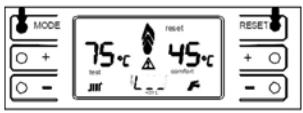

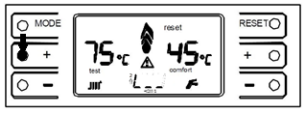
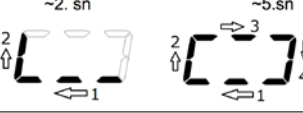
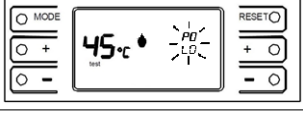
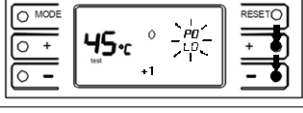



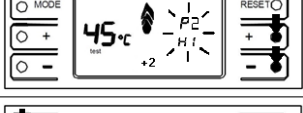
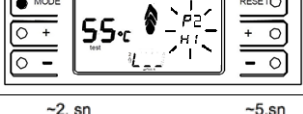

Enerwa Plus Combi Boiler Combustion & Calibration Values for NATURAL GAS G20		Natural Gas - G 20 (20 mbar)			
		CO ₂ (%)	O ₂ (%)	CO (ppm)	NO _x (ppm)
Maximum Power= P02= HI	Nominal Value	9.0	5.1	105	26
	Permitted Tolerance Value	8.8 - 9.2	4.7 - 5.2	90 -120	24-27
Ignition Power= P01	Nominal Value	9.0	5.1	40	17
	Permitted Tolerance Value	8.8 - 9.2	4.7 - 5.2	35 - 50	13-19
Minimum Power=P00=LO	Nominal Value	9.0	5.1	3	13
	Permitted Tolerance Value	8.8 - 9.2	4.7 - 5.2	0-10	12-15

Enerwa Plus Combi Boiler Combustion & Calibration Values for LPG G31		LPG - G 31 (37 mbar)			
		CO ₂ (%)	O ₂ (%)	CO (ppm)	NO _x (ppm)
Maximum Power= P02= HI	Nominal Value	10.4	5.3	160	15
	Permitted Tolerance Value	10.0 - 10.5	5.0 - 5.9	120-170	14-25
Ignition Power= P01	Nominal Value	10.4	5.2	65	15
	Permitted Tolerance Value	10.5 - 10.0	5.0 - 5.9	45-80	10-20
Minimum Power=P00=LO	Nominal Value	10.3	5.3	6	13
	Permitted Tolerance Value	10.0 - 10.5	5.0 - 5.9	0-10	8-15










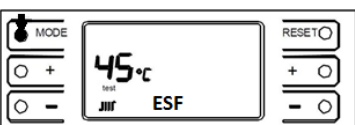
4.4.2. Auto Calibration



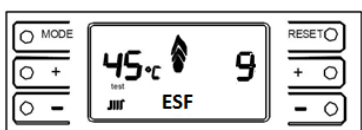

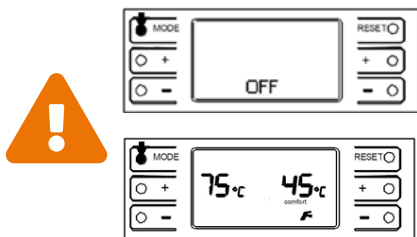
Auto Calibration		
Designation: Enerwa Plus wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure Au-To Calibration		Enerwa Plus Combi Boiler - IE granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons and valid for only condensing boiler. Attention: The parameters as indicated DO NOT CHANGE should not be adjusted / touched by any official document supplied by Warmhaus R&D. Attention: Set boiler to SUMMER Mode and complete Au-To Calibration within 30 minute because time out is 30 Minute.
1		Attention: Before auto calibration change & adjust P14=5 in the TSP menu. Attention: After adjusting the P14=5, in any case like lack of voltage or over run the time more than 3 minutes the P14 value will be change automatically to "0".
2		Press the RESET and MODE button simultaneously. Attention: Make sure the all radiator valves are opened and during calibration if boiler cannot reach the maximum CH limit temperature otherwise calibration process will interrupt. Make sure boiler frontal casing is totally closed and sealing of the boiler body is secured during calibration.
3		Wait until the approval circle complete on the LCD and release buttons.
4		JUST AFTER RELEASE BUTTONS then Press the CH (-) button within 3 seconds.
5		On the screen "AU -TO" will be displayed and the boiler will try to make ignition attempts. Do not change gas pressure OR touch to the boiler on this stage!
6		Flame occurrence then boiler will try to determine the size of the flame and make a special cycle to self adaptation. Do not press any key during this time.
7		The boiler will be stable within 3-5 minutes after P0 AND set flame correction is displayed on the screen. (P0=MINIMUM POWER). To increase the CO ₂ value press the DHW (-) button OR to decrease the CO ₂ value press the DHW (+) button. Attention: Do not exceed calibration tolerance limits according to Combustion set document.
8		After adjusting the P0 value, keep pushing the CH (+) button until the circle complete on the screen then release to go P1 (IGNITION POWER) "P1" ignition will be displayed on the screen. Then wait 45 seconds for stabilization.
9		The boiler will be stable within 3-5 minutes after P1 AND set flame correction is displayed on the screen. (P1=IGNITION POWER). To increase the CO ₂ value press the DHW (-) button OR to decrease the CO ₂ value press the DHW (+) button. Attention: Do not exceed calibration tolerance limits according to Combustion set document.
10		After adjusting the P1 value, keep pushing the CH (+) button until the circle complete on the screen then release to go P2 (MAXIMUM POWER) "P2" Maximum power will be displayed on the screen. Then wait 45 seconds for stabilization.
11		The boiler will be stable within 45 seconds after P2 AND set flame correction is displayed on the screen. (P2=MAXIMUM POWER). To increase the CO ₂ value press the DHW (-) button OR to decrease the CO ₂ value press the DHW (+) button. Attention: Do not exceed calibration tolerance limits according to Combustion set document.
12		To exit the "AU-TO" calibration push and hold the RESET and MODE button simultaneously.
13		Wait until the approval circle complete on the LCD and release buttons.

4.4.3. FTF Function


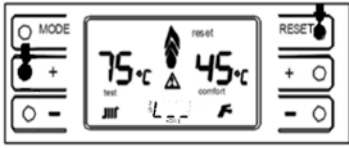

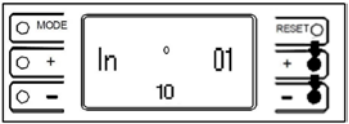

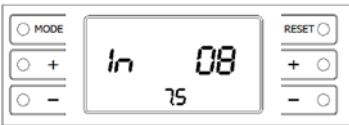
FTF (Fine Tuning Function)		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure Manual Calibration		Enerwa Plus Combi Boiler - IE
granted by Warmhaus R&D		
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorised persons and valid for only condensing boiler. Attention: Calibration range is between +3 and -3. Attention: Set boiler to SUMMER Mode and complete Manuel Calibration within 30 minute because time out is 30 Minute.
1		Press the RESET and MODE button simultaneously. Attention: Make sure the all radiator valves are opened and during calibration if boiler can not reach the maximum CH limit temperature otherwise calibration process will interrupt. Make sure boiler frontal casing is totally closed and sealing of the boiler body is secured during calibration.
2		Wait until the approval circle complete on the LCD and release buttons.
3		JUST AFTER RELEASE BUTTONS then Press and hold the CH (+) button within 10 seconds.
4		Wait until the approval circle complete on the LCD and release buttons.
5		"On the right screen ""P0 and Lo"" will be displayed and the boiler will ignite. Do not change gas pressure OR touch to the boiler on this stage! Flame occurrence then boiler will try to determine the size of the flame and make a special cycle to self adaptation. Do not press any key during this time."
6		"The boiler will be stable within 3-5 minutes after P0 AND set flame correction is displayed on the screen. (P0=MINIMUM POWER). To increase the CO2 value press the DHW (+) button OR to decrease the CO2 value press the DHW (-) button. Attention: Calibration range is between +3 and -7. "
7		After adjusting the P0 value, keep pushing the CH (+) button until the circle complete on the screen then release to go P1 (IGNITION POWER) "P1" and "IG" ignition will be displayed on the screen. Then wait 60 seconds for stabilization.
8		"The boiler will be stable within 60 seconds after P1 AND set flame correction is displayed on the screen. (P1=IGNITION POWER). To increase the CO2 value press the DHW (+) button OR to decrease the CO2 value press the DHW (-) button. Attention: Calibration range is between +3 and -7. "
9		After adjusting the P1 value, keep pushing the CH (+) button until the circle complete on the screen then release to go P2 (MAXIMUM POWER) "P2" and "Hi" Maximum power will be displayed (flashing) on the screen. Then wait 60 seconds for stabilization.
10		"The boiler will be stable within 60 seconds after P2 AND set flame correction is displayed on the screen. (P2=MAXIMUM POWER). To increase the CO2 value press the DHW (+) button OR to decrease the CO2 value press the DHW (-) button. Attention: Calibration range is between +3 and -7. "
11		To exit the "FTF" calibration push and hold MODE button.
12		Wait until the approval circle complete on the LCD and release MODE button. Manual Calibration procedure has been completed.

4.4.4. ESF (Easy Start up Function)



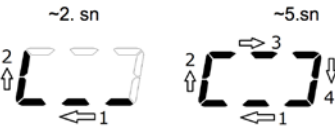

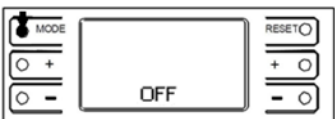
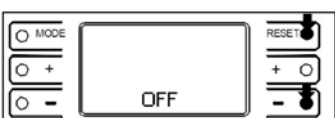
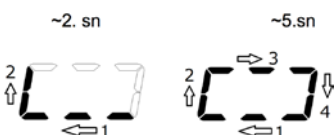

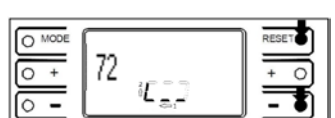
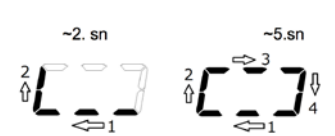
ESF (Easy Start up Function)		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	
ESF (Easy Start up Function)		Enerwa Plus Combi Boiler - IE
Pos No	Operation	Description GB
1		Attention: This procedure must be applied by authorised persons. Attention: During this function make sure the boiler water pressure is OK and automatic air vent cap is open. During operation if water pressure reduces then fill full the water to the installation by using filling tap or loop.
2		Attention: The boiler should be in OFF mode Attention: Make sure the all radiator valves are opened and during calibration if boiler can not reach the maximum CH limit temperature otherwise calibration process will interrupt. Please ensure the boiler front cover is fitted and secured during this calibration process.
3		Attention: If the Open Therm (OT) thermostat is connected to the boiler, before starting the ESF be sure that: • OT thermostat is in winter mode • No heat demand via OT thermostat (set temp < room temp)
4		First of all press the MODE button to select switch "OFF" the boiler. MODE order is WINTER - SUMMER - OFF circle
5		Wait until the approval circle complete on the LCD and release buttons.
6		Be sure that the "OFF" is displayed on the screen. If not press again the "MODE" and repeat the step above Until OFF symbol shown on the screen.
7		The boiler should be OFF.
8		To start the ESF function, Push and hold the RESET button.
9		Wait until the approval circle complete on the LCD and release buttons.
10		JUST AFTER RELEASE BUTTONS then Press the MODE button within 3 seconds. If the MODE is not pressed within 3 seconds the boiler will turn to the OFF state.

ESF (Easy Start up Function)		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object		Type-model / Technical data
ESF (Easy Start up Function)		Enerwa Plus Combi Boiler - IE
Pos No	Operation	Description GB
11		<p>On the screen "ESF" will be displayed and the boiler will try to make ignition attempts. Attention: The function is performed automatically. Do not change gas pressure OR touch to the boiler on this stage!</p>
12		<p>After the first ignition the boiler will go to the ignition point and the burner will switch OFF. The number "10" will be displayed on the right side of the LCD.</p>
13		<p>After the first ignition it will count down from 10 to 0 The burner will be switched ON and OFF for 10 cycles. ON Time:20sec; OFF time: 15sec After each switch OFF the counting value will be decreased by 1.</p>
14		<p>When "0" is reached the function stops, and the boiler exit from the ESF automatically.</p>
15		<p>Check and return the boiler to the correct mode e.g. winter, summer or off.</p>


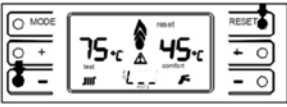
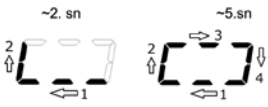


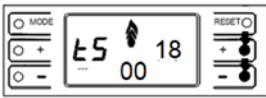
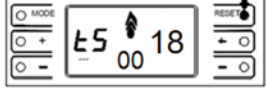
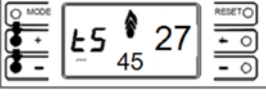
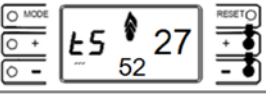
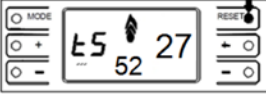
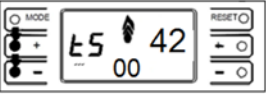
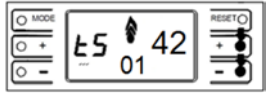


4.5. Information Menu Access

Info Menu		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure Info Menu		Enerwa Plus Combi Boiler - IE
		granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons.
1		Press the RESET and CH (+) button simultaneously.
2		Wait until the approval circle complete on the LCD and release buttons.
3		Now you are in the "Info" menu. Toggle the values by pressing DHW (+) OR DHW (-) buttons. You can not change the values displayed in the "info" menu. From this moment by toggle DHW (+) you can check following Informations: Last 10 Failure (Error) codes - Information by reading some real values – Counters Menu
4		From AL 0 to AL9 show last 10 Error code that boiler had previously. Error code shown after the AL code (ie. When you see AL0 on the screen wait 1-2 sec the error code will show like E06.)
5		INFO MENU=In X value shows following information In1=SW version In2=Display of external probe temperature, if connected, °C In3=Display of CH Flow probe temperature, °C In4=Display flue probe temperature, °C In5=Display of DHW probe temperature, °C In6=Display of CH Return probe temperature, °C In7=Display of real heating temperature SET, °C In8=Display of actual power level, % In9=Display of Flow-meter actual value, Lt / per-minute In10=Display of water pressure value (on PLUS models ONLY), Bars In11=Actual Fan Speed, RPMx100


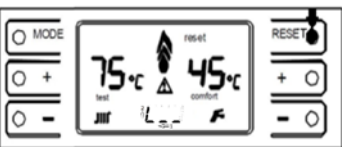
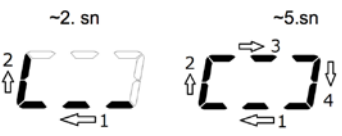
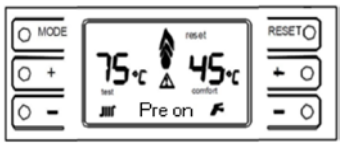

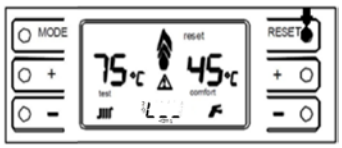
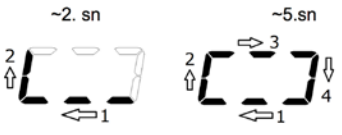
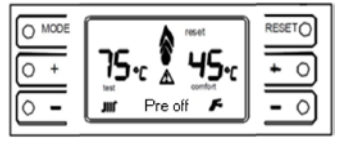
4.6. Deaeration Mode

Deaeration MODE		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure Deaeration Function		Enerwa Plus Combi Boiler - IE granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons. Attention: During this function make sure the boiler water pressure is OK and automatic air vent cap is open. During operation if water pressure reduces then fill full the water to the installation by using filling tap or loop.
1		First of all press the MODE button to select switch "OFF" the boiler. MODE order is WINTER - SUMMER - OFF circle
2		Wait until the approval circle complete on the LCD and release buttons.
3		Be sure that the "OFF" is displayed on the screen. If not press again the "MODE" and repeat the step above Until OFF symbol shown on the screen.
4		The boiler should be OFF.
5		Push the RESET and DHW (-) button simultaneously.
6		Wait until the approval circle complete on the LCD and release buttons.
7		The "Air" will be displayed on the screen. Boiler will start the Deaeration function. During this function pump and 3-way valve are activated/deactivated in order to have deaeration of the hydraulic plant. This function ends pushing again RESET for circle time OR at the end of deaeration time 12 minutes. (counter show on the screen 72 x 10 sn=12 min)
8		To exit the "Air" function, push and hold the RESET and DHW (-) button simultaneously OR wait 12 minutes for time out.
9		Wait until the approval circle complete on the LCD and release buttons.

4.7. Enerwa Plus Combi Boiler Wall-Hung Boilers DHW Preheat Mode

DHW Preheat Mode		
Designation: Enerwa Plus wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure DHW Preheat Mode	Enerwa Plus	granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons.
1		Press the RESET and CH (-) button simultaneously.
2		Wait until the approval circle complete on the LCD and release buttons
3		The screen will appear tSP - Parameter=01 - Value=0 Attention: Do not change this parameter
4		From this moment toggle CH (+) to increase to find P18
5		Ones you reach the parameter P18, Change the parameter VALUE by using the DHW (+) or DHW (-) buttons. Set the P18=0. This is preparation for Preheat function.
6		Push the RESET button to save the adjusted value. Wait until the approval circle complete on the LCD and release button.
7		From this moment toggle CH (+) to increase to find P27
8		Ones you reach the parameter P27 to change the parameter VALUE by using the DHW (+) or DHW (-) buttons. Set the P27=52 (if DHW inlet temperature is colder than 12 °C then you can set the P27=55). This is preparation for Preheat function.
9		Push the RESET button to save the adjusted value. Wait until the approval circle complete on the LCD and release button.
10		From this moment toggle CH (+) to increase to find P42
11		Ones you reach the parameter P42 to change the parameter VALUE by using the DHW (+) or DHW (-) buttons. Set the P42=1, this will allow the preheat Enabled
12		To exit the TSP menu push the RESET and CH (-) simultaneously.
13		Wait until the approval circle complete on the LCD and release buttons. Pre heat will enable first request of DHW.

4.8. Enerwa Plus Combi Boiler wall-hung boilers DHW preheat mode shortcut

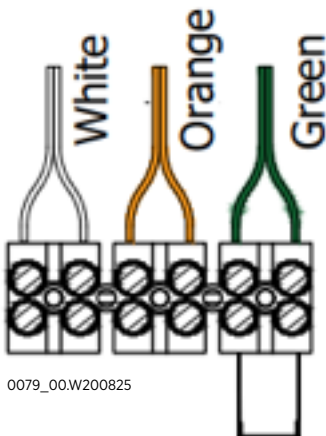
DHW Preheat Mode Short Cut		
Designation: Enerwa Plus wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure DHW Preheat Mode		Enerwa Plus
		granted by Warmhaus R&D
Pos No	Operation	Description GB
0		If the preheat adjustments has been done by service technician then it's possible to ACTIVATE via buttons by user.
1		When the boiler on WINTER or SUMMER mode then, push the RESET button to enable the Preheat. (There should be no Error code present on the screen)
2		Wait until the approval circle complete on the LCD and release buttons.
3		"Pre - ON" will be displayed on the screen. Preheat function is enabled.
4		If the preheat adjustments has been done by service technician then it's possible to DEACTIVATE via buttons by user.
5		When the boiler on WINTER or SUMMER mode then, push the RESET button to enable the Preheat. (There should be no Error code present on the screen)
6		Wait until the approval circle complete on the LCD and release buttons.
7		"Pre - OFF" will be displayed on the screen. Preheat function is disabled.

4.9. Pre-Commissioning Checklist



CAUTION

- Ensure all service pipes including the heating pipe work is correctly installed and leak free.
- Ensure all isolation valves connected under the boiler are in the fully open position
- Inspect the gas information on the boiler data badge and ensure that the gas supply connected to the boiler can deliver the working requirements and that the gas supply has been correctly purged before lighting the boiler.
- Check the digital pressure reading on the boiler display screen and ensure it is between 1.0 – 1.5 bar when the boiler is cold, and the system has been bled of all excess air.
- Make sure the system and boiler are leak free from any water leakage.
- Ensure that the PRV is correctly connected to the boiler and that all pipe work and termination is installed correctly.
- Ensure the condense pipe work is connected to the boiler correctly and that the pipe work and terminal is fully connected and leak free from any water leakage.
- Check all electrical connections are connected to a 240v ac 50Hz supply with suitable isolation.
- Ensure the appliance is fully and correctly earthed.
- Check that the electric supply polarity is correct.
- Check that all external control connections are correct and that 240v ac has not been connected directly to the external control connection point located on the connection terminal block



THIS LINK MUST BE REMOVED AND CONNECTED TO A VOLTAGE FREE EXTERNAL CONTROL

Figure 4.1. External Control Connection to Terminal Block

- Ensure all flue connections are correctly made and the flue system is correctly supported.
- Any flue joints need to be fully accessible to comply with the latest regulations regarding flues in voids.
- Check and make sure the flue holes are sealed both internal and external.
- Ensure the gas supply is free from any gas leakage and that the ECV is fully open.
- Check that the system has been correctly flushed and that a system inhibitor has been added at the correct dosage.
- Ensure that the appliance is protected by an external 3 amp fuse on the incoming mains electric supply.
- If an external expansion vessel is installed please ensure the pre charge is the same as the pre charge pressure of the expansion vessel located inside the boiler.

FLUE INTEGRITY / RE-CIRCULATION CHECK



ATTENTION

Ensure that all flue joints are correctly made and sealed and check the flue is suitably supported as per the manufacturer's instructions.

Inspect the terminal position and ensure there is no obstruction and make sure the flue is sealed through both sides of the wall and if vertically installed through the roof space.

Purge your FGA into fresh air and take a note of the O₂, CO₂ and CO reading when successfully purged.

The boiler front cover **MUST** be correctly fitted and in place when carrying out this check.

Operate the boiler in maximum output by either running a DHW tap or put the boiler into service mode (please see page 38 for instructions).

Remove the air inlet test point on the flue elbow or adaptor and insert your FGA, the O₂, CO₂ and CO reading whilst the boiler is in operation should read the same as it did when purged into fresh air, once this is ok and complete insert the cap back into the elbow or adaptor.

Please ensure that the flue is adequately supported at the correct distances stated in the flue data section of this manual and that all flue extensions are installed with a 3% slope back to the boiler unit.

If the boiler is installed with just the horizontal flue terminal and no flue accessories then the boiler does not require the horizontal flue terminal to have a 3% slope back to the boiler as the horizontal terminal has this built in so please ensure it is installed level.

4.10. Checking Inlet Gas Pressure



ATTENTION

Isolate the appliance at the electrical supply point and turn the gas isolation valve off. This is located under the boiler.

Drop down the boiler front control panel and connect a suitable pressure gauge to the inlet test point on the gas valve.

Open the gas isolation valve and switch the appliance back on from the electrical supply point – caution should be taken as the cables around the boiler front control panel maybe live.

Put the boiler into service mode by pressing both Mode and Reset buttons together until the circle completes and the boiler display panel will show "Lo" press the DHW + button and hold briefly. When released the display panel will show "Hi", let the appliance settle in high mode for a minimum of 2 minutes and then check your pressure gauge and check to see if the dynamic pressure corresponds with the boiler minimum dynamic gas pressure as illustrated on the technical data in this manual.

After checking the pressure press both the Mode and Re-set buttons until the circle completes and the boiler will revert to the standby display. Isolate the power supply to the boiler, close the gas isolation valve and remove the pressure gauge from the inlet test point on the gas valve. Ensure the test point screw is tight and turn on the gas isolation valve and with a suitable LDF test the point for leakage.

Re-assemble the front control panel and boiler cover then switch the power supply to the boiler back on.

4.11. Testing For Gas Leaks During Use



CAUTION

Using a suitable and certified LDF and taking extreme caution that the LDF solution does not come into contact with any electrical wiring or components test all gas joints with the appliance operating in full power by operating a DHW tap.

Turn off the appliance at the electrical isolation point and clean up any residue LDF.

4.12. Check Gas Rate



CAUTION

The gas rate should be taken at the meter supplying the boiler and a visual inspection of the gas meter should be carried out before commencing to ensure it meets all relevant and current regulations and requirements.

The gas rate must be carried out in accordance to the current gas working practices.

Turn off any other gas appliances connected to the gas meter to which the boiler is directly connected, Turn the boiler to maximum (see Service Mode) and operate for approximately 10 mins to allow the appliance to warm up and for any expansion of the burner to take place (if you have issues with excess temperature in the boiler running the DHW outlet with a minimum of 12l/min will assist with this issue (for combi boilers)).

Carry out a gas rate and ensure you follow the gas rating procedure as per the current Domestic Gas Safety legislation and requirements, once the gas rate is complete instruct the boiler to exit the Service Mode (see Service Mode).

Please refer to the technical table in the boiler manual to confirm the correct gas rate.

Ensure you retain the details of the gas rate to record them in the appropriate section of the Benchmark documentation.

For smart meter installations please follow the instructions from the meter supplier for the correct usage of the display menu.

Gas Rate Info



CAUTION

It is very important to ensure the boiler gas rate is correct as this will determine how much gas is being burnt and how much heat is released from the boiler.

This is important with regards the efficiency and safe operation of the boiler.

When carrying out a gas rate, if you are using an App based calculator to determine the figures please ensure it is a valid calculator and is from a trusted source.

Warmhaus advise you check the data shown on the calculator routinely by carrying out a gas rate as per the current gas working practices manually and compare the figures.

If the App calculator is proven to be accurate and can be used as a trusted source then Warmhaus will be happy to accept the results given by this method.

When comparing the gas rate data from your test please use the DHW figures on the data badge or the stated gas rate in the technical data chart is this manual as the reference and not the CH data.

For any additional technical data regarding this test please call Warmhaus technical on 020 7164 6233

4.13. Circulation Pump Rotation



CAUTION

Please manually rotate the impeller on the circulating pump inside the boiler before turning on the power supply to the boiler to ensure pump is not seized.

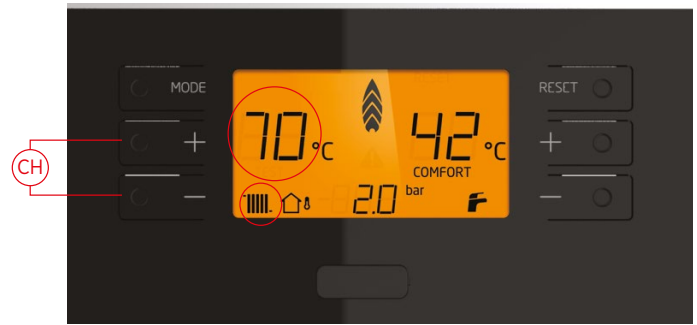
Display Functions in Standby



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Figure 4.2. Display OFF

Setting Flow Temperature



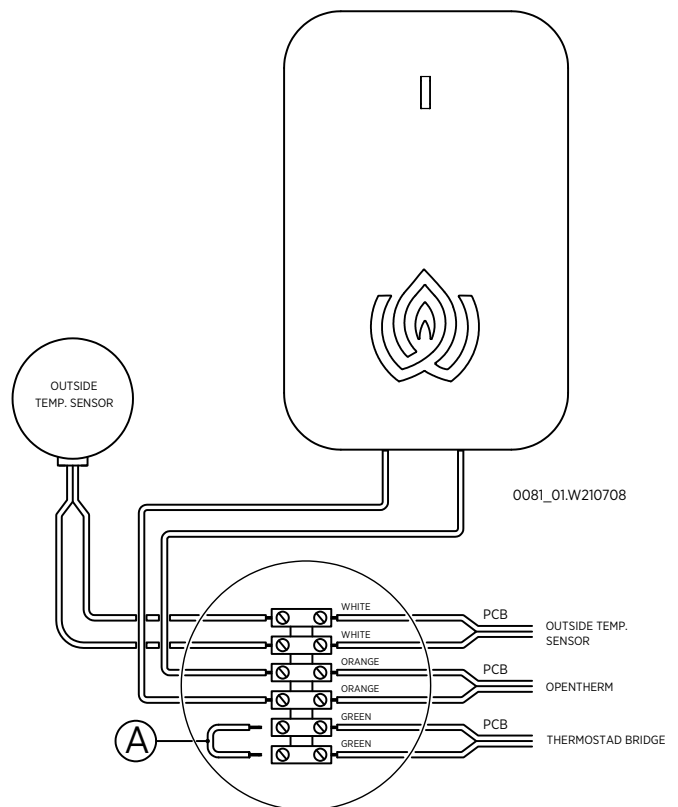
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Figure 4.3. Setting Flow Temperature

When the system boiler is started, a flame modulation symbol is seen at the middle section of the screen. At that position, you can increase and decrease the temperature with CH temperature adjustment buttons between 35 - 80 °C. The screen lights up when buttons are pressed and °C symbol flashes besides the CH temperature value.

4.14. Setting Up the External Controls


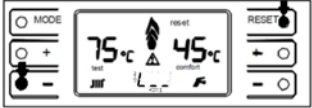







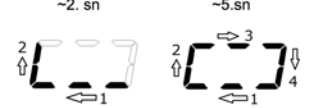

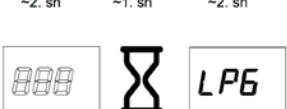
Ensure all wiring for the external controls are connected to the boiler and the external control as per the manufacturer's instructions and ensure that the settings are adjusted to the customer's requirements.




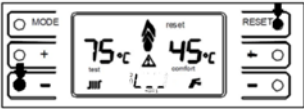





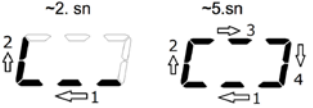




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Figure 4.4. Connection of external controls

4.15. Gas conversion from NG (G20) to LPG (G31)

Gas conversion from NG (G20) to LPG (G31)		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure Gas Conversion from Natural gas to LPG		Enerwa Plus Combi Boiler
		granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons and valid for only condensing boiler. Attention: Gas inlet pressure must be 37 mbar for LPG (G31) Attention: Do not ever change gas inlet pressure during calibration or after calibration
1		Press the RESET and CH (-) button simultaneously.
2		Wait until the approval circle complete on the LCD and release buttons
3		The screen will appear tSP - Parameter=01 - Value=0 Attention: do not change this parameter
4		From this moment toggle CH (+) to increase reach the Parameter P02 aimed to be changed.
5		Ones you reach the parameter aimed to be changed, change the parameter VALUE by using the DHW (+) and set P02=1.
6		“Push the RESET button to save the adjusted value. Wait until the approval circle complete on the LCD and release button.”
7		Wait until the approval circle complete on the LCD and release button.
8		To exit the TSP menu push the RESET and CH (-) simultaneously.
9		Wait until the approval circle complete on the LCD and release buttons. In this way EXIT the TsP Menu.
10		Switch off the boiler from fuse wait 20 seconds. Switch on the boiler from fuse
11		Just after boiler switched on first boiler power will appear on the LCD as 24,28 or 33 then after the gas type adjusted will appear as LPG=G31

4.16. Gas conversion from LPG (G31) to NG (G20)

Gas conversion from LPG (G31) to NG (G20)		
Designation: Enerwa Plus Combi Boiler wall-hung boilers		
Object	Type-model / Technical data	Mark (s) of conformity
Procedure Gas Conversion from LPG to Natural gas		Enerwa Plus Combi Boiler - IE granted by Warmhaus R&D
Pos No	Operation	Description GB
0		Attention: This procedure must be applied by authorized persons and valid for only condensing boiler. Attention: Gas inlet pressure must be 20 mbar for Natural gas (G20). Attention: Do not ever change gas inlet pressure during calibration or after calibration.
1		Press the RESET and CH (-) button simultaneously.
2		Wait until the approval circle complete on the LCD and release buttons
3		The screen will appear tSP - Parameter=01 - Value=0 Attention: Do not change this parameter
4		From this moment toggle CH (+) to increase reach the Parameter P02 aimed to be changed.
5		Ones you reach the parameter aimed to be changed, change the parameter VALUE by using the DHW (-) and set P02=0.
6		Push the RESET button to save the adjusted value. Wait until the approval circle complete on the LCD and release button.
7		Wait until the approval circle complete on the LCD and release button.
8		To exit the TSP menu push the RESET and CH (-) simultaneously.
9		Wait until the approval circle complete on the LCD and release buttons. In this way EXIT the TsP Menu.
10		Switch off the boiler from fuse. Wait 20 seconds. Switch on the boiler from fuse.
11		Just after boiler switched on first boiler power will appear on the LCD as then after the gas type adjusted will appear as LPG=G31

5. SERVICING & PART REPLACEMENT

5.1. Replacement of Components - First Stage



CAUTION

- Isolate the boiler from the electric supply isolation point
- Carry out electrical safe isolation to the current standard set by the local regulator
- Turn off the gas supply by using the gas isolation valve located under the boiler (yellow handle)

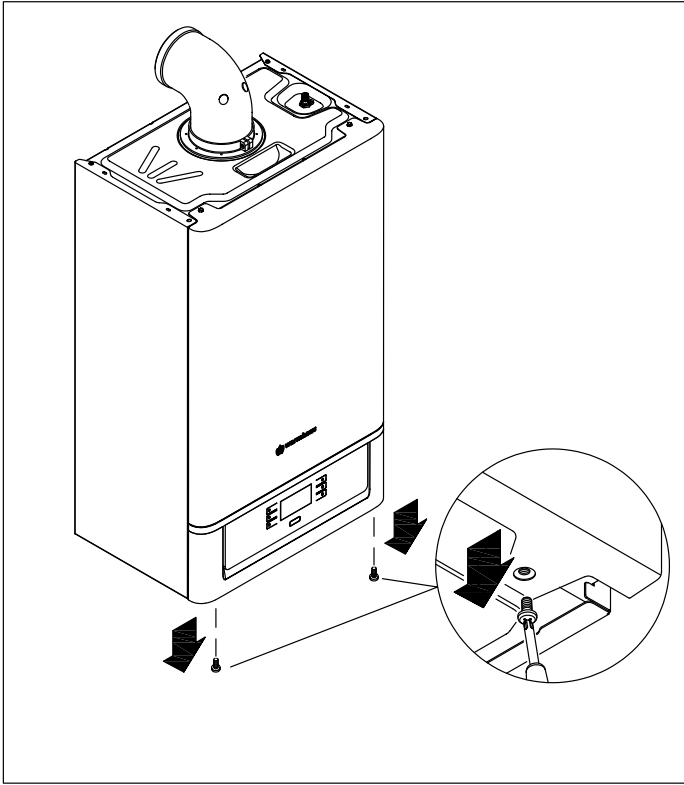


Figure 5.1. Removing the boiler front cover

5.2. Replacement of Components - Final Stage



CAUTION

After replacing any internal component or any component that requires the front casing removal please follow all gas safety legislation set by your local governing gas body or regulator for essential checks when working on a gas appliance and Warmhaus require that you carry out the following checks as well as your industry required safety checks e.g. 26/9 checks.

- Appliance gas tightness test/test disturbed joints with LDF
- Gas rate (where at all possible)
- Combustion Check
- Ensure the correct fitting of the front casing
- Flue inspection

5.3. Draining The Boiler / CH Circuit



CAUTION

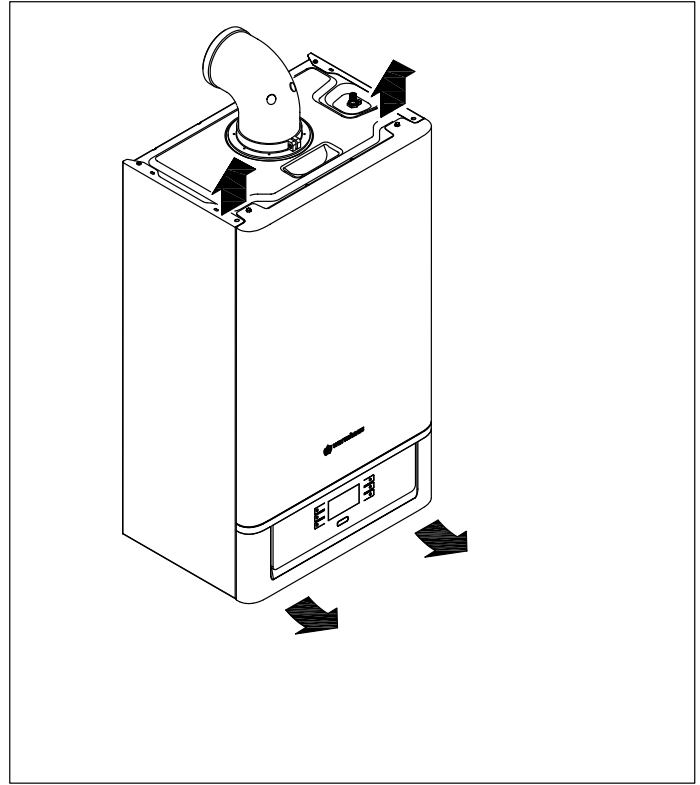
Isolate the boiler from the electric supply isolation point.

Carry out electrical safe isolation to the current standard set by the local regulator.

Isolate the CH flow and return isolation valves located under the boiler.

Ensure the auto air vent cap is open

- Remove the boiler front cover by unscrewing the 2 x self-tapping screws located under the boiler at the front section.
- Release the retaining latch situated on the left-hand side of the front control fascia.
- Gently drop down the front panel fascia into the service position.
- Always ensure caution not to damage any electric cable or connections whilst working on the boiler.



0082_00.W210120

Connect a suitable hose to the boiler drain point located at the rear of the pump under the boiler.

Ensure your drain hose is located in a suitable location for the water in the boiler to drain safely

Open the boiler drain point and release the heating system water until the boiler is fully drained.

When required close the drain point, remove the hose and re-fill the boiler and run Deaeration mode.

5.4. Draining The Boiler / DHW Circuit (only for combi boilers)



CAUTION

Isolate the boiler from the electric supply isolation point.

Carry out electrical safe isolation to the current standard set by the local regulator.

Isolate the cold-water inlet isolation valve located under the boiler.

Open the lowest DHW tap or outlet and very slightly loosen the DHW connection nut under the boiler and a hissing sound should be heard allowing the water in the DHW circuit to exist the boiler through the open outlet.

When required close the DHW outlet and check the disturbed gasket on the DHW connection nut and replace if required, tighten the DHW connection nut under the boiler.

5.5. Flue Thermistor Replacement



CAUTION

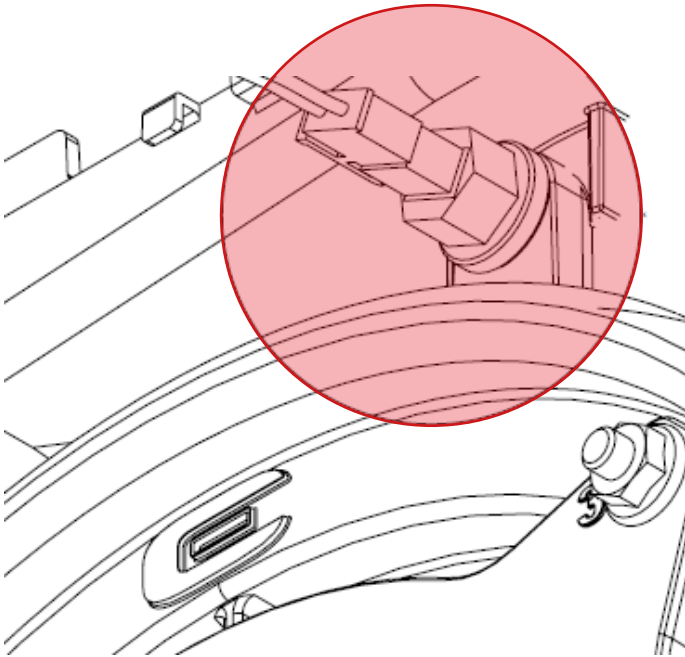


Figure 5.2. Flue Thermistor

0083_00.W210424

Please follow the steps listed in replacement of components FIRST STAGE. Disconnect the electrical lead from the flue thermistor. Rotate the thermistor anti-clockwise and pull the thermistor gently away from its housing.

Insert the new thermistor into the housing and rotate it clockwise and gently push the thermistor back into place.

Reconnect the thermistor lead and ensure it has made good contact and correctly located.

Please follow the step listed in replacement of components FINAL STAGE.

5.6. Ignition Electrode Replacement



CAUTION

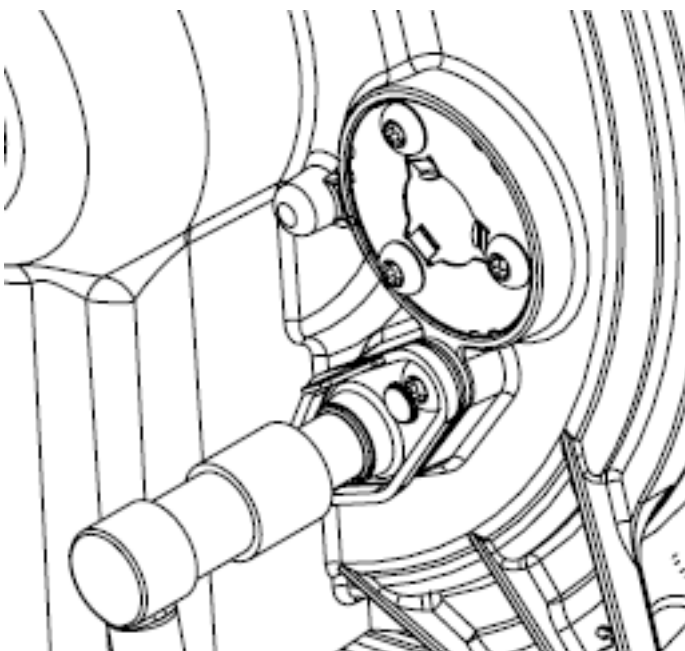


Figure 5.3. Ignition Electrode

0084_00.W210424

Please follow the steps listed in replacement of components FIRST STAGE

1. Unplug the ignition lead from the electrode.
2. Remove the earth lead from the ignition electrode.
3. Remove the burner.
4. Remove the 2 screws holding the ignition electrode to the combustion chamber.
5. Remove the electrode.
6. Fit the new ignition electrode, using a new gasket.
7. Ensure the correct distances are maintained between the electrode and burner.
8. Reassemble in reverse order.

Please follow the step listed in replacement of components FINAL STAGE.

5.7. Nozzle Replacement



CAUTION

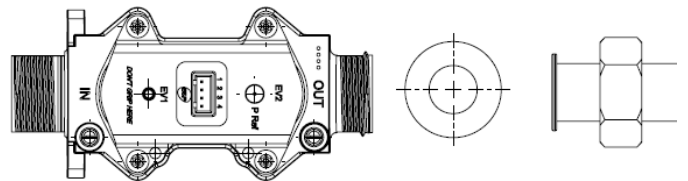


Figure 5.4. Gas Valve & Nozzle

0085_00.W210424

Please follow the steps listed in replacement of components FIRST STAGE

1. Disconnect the electrical leads from the fan.
2. Remove the clip securing the flexible gas pipe to the venturi and remove the gas pipe from the venturi.
3. Loosen the union nut on the outlet of the gas valve and remove the flexible gas pipe from the boiler.
4. Ensure the code on the new nozzle is the correct code to work with your appliance.
5. Discard the old injector and install the new nozzle.
6. Reassemble the above parts in reverse order.
7. Restore the gas and electric supply to the boiler.

Please follow the step listed in replacement of components FINAL STAGE.

5.8. FLOW & RETURN TEMPERATURE SENSOR Replacement

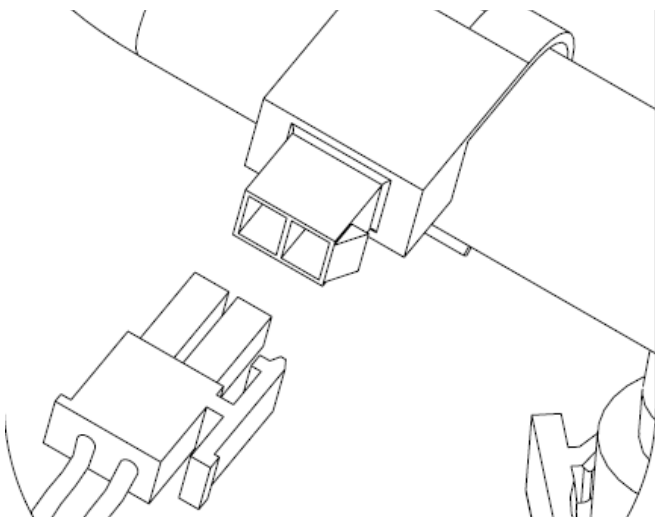


Figure 5.5. The Flow or Return Temperature Sensor Unit.

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Please follow the steps listed in replacement of components FIRST STAGE

1. Disconnect the sensor lead from the flow or return thermistor unit.
2. Unclip and remove the flow or return thermistor from the pipe work and withdraw the sensor from the boiler.
3. Re-fit the thermistor to the pipe work and ensure it is securely clipped and in good contact with the pipe work and located into the locator tab.
4. Re-connect the thermistor lead to the thermistor.

Please follow the step listed in replacement of components FINAL STAGE.

5.9. Interface PCB Replacement



Please follow the steps listed in replacement of components – FIRST STAGE

1. Remove the main PCB,
2. Remove the 4 screws retaining the PCB of display posts.
3. Fit the new PCB.
4. Reassemble in reverse order.
5. Please follow the step listed in replacement of components FINAL STAGE.
6. Check operation of the boiler.

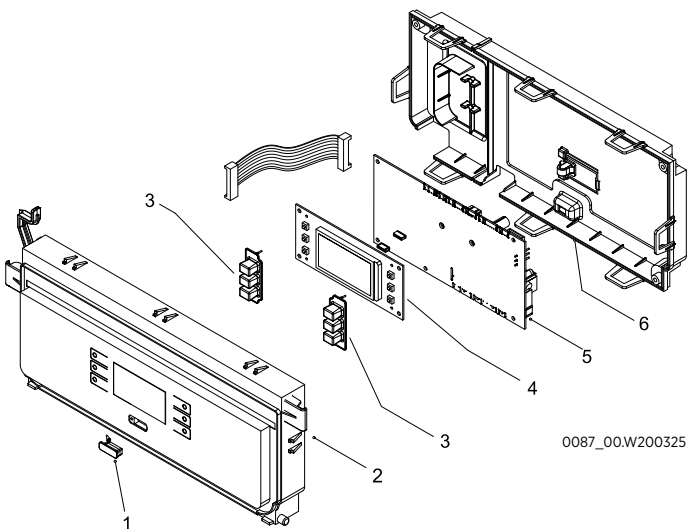


Figure 5.6. Enerwa Plus control panel

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5.10. Main PCB Replacement



Please follow the steps listed in replacement of components – FIRST STAGE

1. Carefully remove the 8 retaining clips and remove the control box cover.
2. Remove the 2 screws that secure the PCB.
3. Gently spread the two side retaining clips and lift the PCB upwards ensuring it clears the four corner locating posts.
4. Unplug all electrical connections from the PCB and make a note of where each connection is located (wiring diagram can be used in reference for connection locations)
5. If the EEPROM on the existing PCB is in good working order it maybe be transferred to the new PCB, however the following checks must be carried out to ensure they match the default settings in the parameter list.
6. Check P15 value on the parameter list
7. Check P22 value on the parameter list
8. Check P44 value on the parameter list
9. Check P46 value on the parameter list
10. If you wish to use the new EEPROM supplied with the new PCB then the above checks must also be carried out.
11. Re-connect all electrical connections to the PCB ensuring they are connected correctly.
12. Install the PCB in reverse order as the above instructions 3,2,1.
13. When power is restored to the boiler and a new EEPROM has been used the boiler LCD will display E62 error code.
14. To clear the error code you must run Auto Calibration.

Please follow the step listed in replacement of components FINAL STAGE.

5.11. 3-Way Inner Kit Replacement - TOP



Please follow the steps listed in replacement of components – FIRST STAGE

1. Refer to the Draining the Boiler CH circuit section
2. Remove the diverter valve actuator and place safely within the boiler.
3. Unscrew the top brass connection nut and withdraw the 3 way valve inner cartridge upwards and out of the boiler.
4. Ensure the brass manifold is clean.
5. Screw the new 3 way valve inner cartridge into the brass manifold ensuring the spindle connects and fits into the bottom O-ring, tighten the cartridge.
6. Re-pressurize the boiler and bleed all excess air.
7. Re-connect the diverter valve actuator.

Please follow the step listed in replacement of components FINAL STAGE.

5.12. Pump Head Replacement



Please follow the steps listed in replacement of components – FIRST STAGE

1. Refer to the Draining the Boiler CH circuit section.
2. Disconnect the electrical connector plugs from the pump.
3. Remove the 4 x screws securing the pump head.
4. Remove the pump head and ensure the pump head housing is clean.
5. Install the new pump head and secure the 4 x pump head securing screws.
6. Reconnect the electrical connector plugs to the pump.
7. Re-pressurize the boiler and bleed all excess air.

Please follow the step listed in replacement of components FINAL STAGE.

5.13. Outlet Manifold Replacement



CAUTION

Please follow the steps listed in replacement of components – FIRST STAGE

1. Refer to the Draining the Boiler CH and DHW circuit section
2. Remove the diverter valve actuator and place safely within the boiler.
3. Remove the flow pipe from the outlet manifold
4. Disconnect the CH flow and DHW isolation valve connections from underneath the boiler
5. Remove the LHS plate heat exchanger securing screw
6. Remove the outlet manifold securing screw at the bottom of the boiler and lift the manifold up and out of the boiler
7. Fit the new outlet manifold in reverse order
8. Re-pressurize the boiler and bleed all excess air.
9. Re-connect the diverter valve actuator.

Please follow the step listed in replacement of components FINAL STAGE.

5.14. Water Pressure Sensor Replacement



CAUTION

Please follow the steps listed in replacement of components – FIRST STAGE.

1. Refer to draining the boiler CH circuit section.
2. Remove the electrical connector from the water pressure sensor and unscrew the sensor from the housing.
3. Ensure the housing is clean and replace the gasket if required.
4. Fit the new water pressure sensor and re-connect the electrical connector.
5. Re-pressurize the boiler and bleed all excess air.

Please follow the step listed in replacement of components FINAL STAGE.

5.15. 3 Bar Safety Valve Replacement



CAUTION

Please follow the steps listed in replacement of components – FIRST STAGE.

1. Refer to the Draining the Boiler CH circuit section
2. Release the set screw holding in the PRV.
3. Undo the connection from the PRV to the copper stub pipe
4. Gently pull the PRV forward away from the boiler to remove.
5. Ensure the new PRV sealing O-ring is free from damage and is suitably greased.
6. Push the PRV into the hydraulic housing and ensure it correctly locates.
7. Tighten up the set screw and check the fiber gasket for the copper stub pipe is in good condition, if not replace and re-connect the PRV copper stub pipe back to the PRV.
8. Check the PRV terminal (if possible) has not been affected by the PRV replacement.
9. Re-pressurize the boiler and bleed all excess air.

Please follow the step listed in replacement of components FINAL STAGE.

5.16. DHW Flow Sensor Replacement (for combi boilers only)



CAUTION

Please follow the steps listed in replacement of components – FIRST STAGE.

1. Carefully lift off the DHW sensor.
2. Remove the electrical connection.
3. Transfer the electrical connection to the new sensor.
4. Clip the new sensor back into place.

Please follow the step listed in replacement of components FINAL STAGE.

5.17. DHW Plate Heat Exchanger Replacement (for combi boilers only)



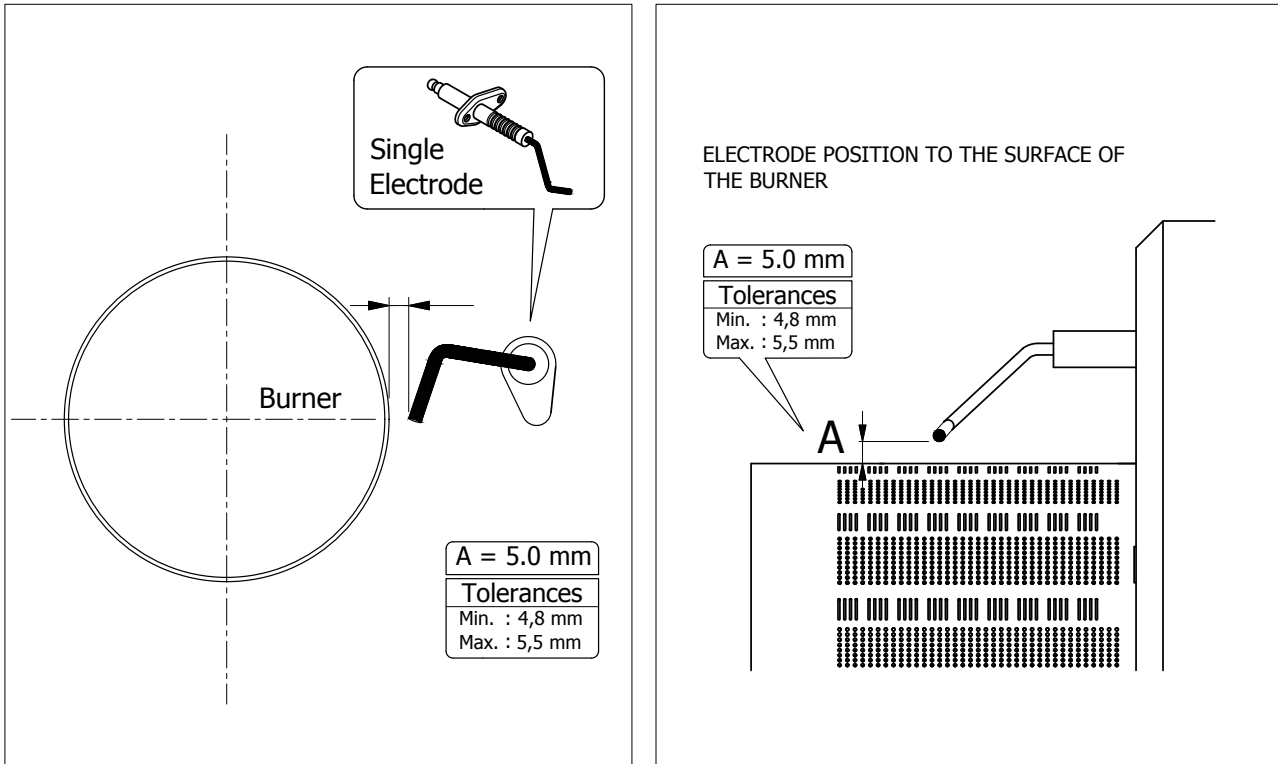
CAUTION

Please follow the steps listed in replacement of components – FIRST STAGE.

1. Refer to Draining the Boiler CH circuit and DHW circuit.
2. Remove the 2 x Allen screws securing the plate heat exchanger to the boiler manifold.
3. Carefully push back the plate heat exchanger and lift clear of the boiler, ensure suitable protection to the electrics due to any dripping water from the plate heat exchanger.
4. Replace the O-ring seals and lift the plate heat exchanger back into the boiler.
5. The mounting pins are offset to ensure the correct installation of the plate heat exchanger.
6. Tighten up the 2 x Allen key screws and refill the boiler, then test for leaks.

Please follow the step listed in replacement of components FINAL STAGE.

5.18. Electrode Positioning For 24, 28, 33 kW & Single Elektrode



Attention 1: IF electrode changed OR re-calibrated; THEN performing Au-TO or MA-NU calibration mandatory.
Attention 2: Electrode must be replaced with ONLY Original Warmhaus Part

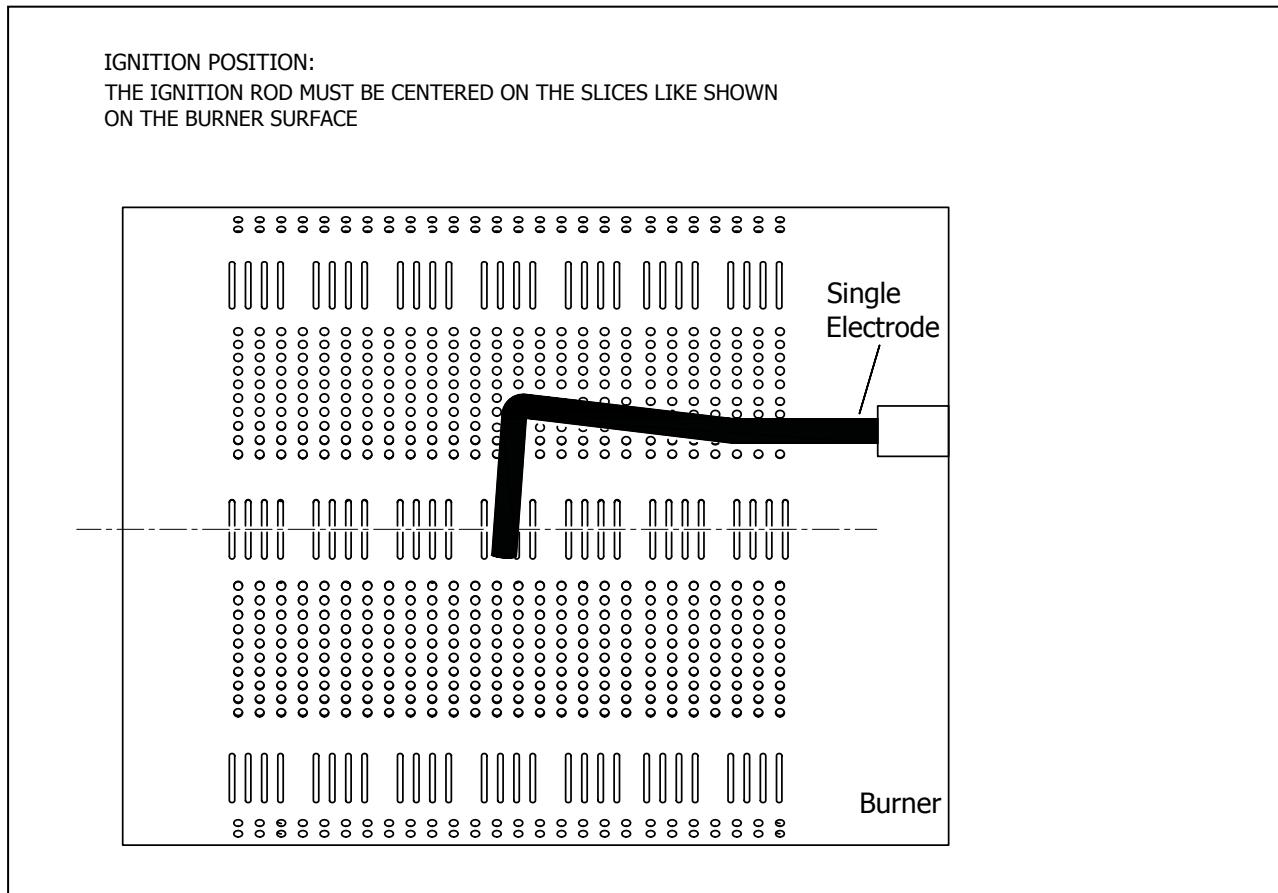


Figure 5.7. Enerwa Plus Electrode Positioning [24_28_33 kW]

0088_00.W170326

6. FAULT FINDING & SOLUTIONS



INFORMATION

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 01	Intervention of exhaust Thermostat	Boiler does not work, E01 error code flashing on the screen	Flue Sensor faulty	1-) Call for authorized service 2-) Check probe resistance if it's out of tolerance replace NTC 3-) Check cabling and connectors between double NTC and board 4-) Reset & Restart boiler
E 02	Low pressure in the CH system	Boiler does not work, E02 error code flashing on the screen	Water pressure in the boiler is too low Tsp. Parameter wrongly settled"	1-) Fill the boiler to a pressure of 1.0 – 1.5 bar cold 2-) Check the pressure on the LCD and the manual pressure gauge. 3-) If problem persist call for authorized service 4-) Check Tsp. parameter P44 as default value for boiler 5-) Reset & Restart boiler
E 03	High water pressure in the system	Boiler does not work, E03 error code flashing on the screen	High Water pressure in the boiler higher than > 2,8 bar	1-) Drain the boiler water until 1,0 -1,5 bar cold 2-) Check if the system pressure 1,0 - 1,5 bar from the manometer located right & bottom of the boiler 3-) If problem persist call authorized service 4-) Check expansion vessel preset charge, should be 0.75 bar.
E 04	DHW sensor faulty	Boiler does not work on DHW mode but still work on Central heating mode, E04 error code flashing on the screen	Domestic heating water temperature sensor faulty	1-) Call for authorized service 2-) Check intermittent contacts or open contacts on harness carefully 3-) Check DHW sensor resistance if it's out of tolerance replace NTC 4-) Check cabling and connectors between double NTC and board 5-) Reset & Restart boiler
E 05	Central heating FLOW temperature sensor faulty	Boiler does not work, E05 error code flashing on the screen	Central heating FLOW temperature sensor faulty	1-) Call for authorized service 2-) Check intermittent contacts or open contacts on harness carefully 3-) Check Central heating temperature sensor resistance if it's out of tolerance replace NTC 4-) Check cabling and connectors between double NTC and board 5-) Reset & Restart boiler
E 06	No ignition	Boiler does not work, E06 error code flashing on the screen	Gas supply failure	1-) RESET boiler - check if problem resolved 2-) Check if other gas devices if they are working 3-) Check if main gas supply valve is open or not 4-) Check if boiler gas supply valve below the boiler is open or not 5-) RESET boiler check if problem resolved 6-) Call for authorized service 7-) Check gas supply pressure must be 17-20 Mbar. Gas pressure must be in between on this value while boiler on operational. 8-) Check earth connector between PCB and earth connector 9-) Check the flue is correct 10-) Check any problems on the ignition electrode, (like condensation, rust etc.), and control positioning of the electrode, if electrode position is wrong calibrate electrode. 11-) Check burner is clean if not clean it with plastic brush 12-) Check for condensation on the cabling AND/OR on board 13-) Check earth connection between board and electrode 14-) Check if electrode ignites directly on burner or not. If there is current leak replace electrode cable 15-) Check PCB and replace if required 16-) Check gas valve and replace if required
E 07	Safety thermostat intervention	Boiler does not work E07 error code flashing on the screen	Lack of water on the system Pump blockage Pump failure Pump harness Installation blockage	1-) RESET boiler first to check if problem is resolved 2-) Check boiler central heating valves are open if they are closed open all of the valves 3-) Check all radiator valves are open if they are closed open the valves—a minimum 3 meters ?? of radiator must be open 4-) RESET boiler and check if problem resolved 5-) Call for authorized service 6-) Check Pump operation and if the pump circulation through the heat exchanger is sufficient 7-) Check intermittent contacts on harness carefully. Check the pump and PWM cable, pump main supply connector, pump main connector, measure voltage from connectors 8-) Check if there is air in the heat exchanger or system, remove air if any by activating the Deareation mode 9-) Check heat exchanger water path 10-) Reset & restart boiler

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 08	Flame circuit failure	False flame signal from combustion or electrode	Aging or rust on the electrode Electrode position Cabling disconnections Water blockage on syphon Electronic board	1-) Call for authorized service 2-) Check any problems on the ionization electrode, (like condensation, rust etc.), and control positioning of the electrode, if electrode position wrong calibrate electrode 3-) Check for condensation on the cabling AND/OR on board 4-) Check earth connection between board and electrode 5-) Check electrode cabling between board and electrode 6-) Check syphoned against ??? water blockage 7-) Perform Auto calibration - if fault persists replace board, but use original service key from the board dismantled to keep original parameters and calibration points. perform calibration Attention: ??? Missing text??
E 09	No water circulation in the system	Boiler does not work E09 error code flashing on the screen	Lack of water on the system Pump blockage Pump failure Pump harness Installation blockage	1-) RESET boiler and check if problem resolved 2-) Check boiler central heating valves are open if they are closed open all valves 3-) Check all radiator valves are open if they are closed open of the valves— a minimum 3 radiators must be open 4-) RESET boiler and check if ok 6-) Check Pump operation to check if the pump circulation through the heat exchanger is sufficient 7-) Check intermittent contacts on harness carefully, check pump and PWM cable, pump main supply connector and pump main connector, measure voltage from connectors 8-) Check if there is air in the heat exchanger or system, remove air and activate Deaeration mode 9-) Check heat exchanger water path 10-) Reset & restart boiler
E 10	Central heating temperature RETURN sensor faulty	Boiler does not work E10 error code flashing on the screen	Central heating RETURN temperature sensor faulty	1-) Call for authorized service 2-) Check intermittent contacts or open contacts on harness carefully 3-) Check RETURN Central heating temperature sensor resistance according to Section 2.28 if it's out of tolerance replace NTC 4-) Check cabling and connectors between RETURN NTC and board 5-) Reset & restart boiler
E 11	Gas valve modulator disconnected	Boiler does not work E11 error code flashing on the screen	Gas valve harness	1-) Call for authorized service 2-) Check gas valve cabling between board and gas valve
E 12	DHW temperature Probe, in storage tank mode, fault	Boiler does not work E12 error code flashing on the screen	Domestic heating water temperature sensor in storage tank faulty	1-) Check intermittent contacts or open contacts on harness carefully 2-) Check Domestic heating (hot?) water temperature sensor resistance 3-) Check cabling and connectors between NTC and board 4-) Reset & restart boiler
E 13	Exhaust temperature probe over-temperature alarm	Boiler does not work, E13 error code flashing on the screen	> Over temperature flue gas outlet value > 105 °C	1-) Call for authorised service at first 2-) Check Pump operation if the pump circuation through the heat exchanger is enough 3-) Check intermittent contacts on harness carefully specially Pump and PWM cable 4-) Check if there is air on the heat exchanger, remove air 5-) Check heat exchanger water path againts clogging 6-) Installation water path againts clogging 7-) Reset & Restart boiler
E 14	Exhaust (FLUE) temperature probe fault	Boiler does not work, E14 error code flashing on the screen	> Central heating FLUE temperature sensor faulty	1-) Call for authorised service at first 2-) Check intermittent contacts or open contacts on harness carefully 3-) Check FLUE temperature sensor resistance if its out of tolerance replace NTC 3-) Check cabling and connectors between FLUE NTC and board 4-) Reset & Restart boiler
E 15	Fan failure (feedback/ supply)	Boiler does not work, E15 error code flashing on the screen	> Fan harness	1-) Call for authorised service at first 2-) Check intermittent contacts or open contacts on harness carefully on fan main supply, if main supply not connected then fan will not operate and boiler will not ignite 3-) Check intermittent contacts or open contacts on harness carefully on fan PWM connection, if PWM connection not connected then fan will work at %100 capacity 4-) Reset & Restart boiler
E 16	Central heating temperature RETURN sensor faulty	Boiler does not work, E10 error code flashing on the screen	> Central heating RETURN temperature sensor faulty	1-) Call for authorised service at first 2-) Check intermittent contacts or open contacts on harness carefully 3-) Check RETURN Central heating temperature sensor resistance if its out of tolerance replace NTC 4-) Check cabling and connectors between RETURN NTC and board 5-) Reset & Restart boiler
E 17	Temperature difference between FLOW and LIMIT NTC (Double Heating Probe) faulty	FLOW and LIMIT sensor (DOUBLE NTC) malfunction	> FLOW and LIMIT Sensor (double NTC) faulty	1-) Call for authorised service at first 2-) Check CH temperature probe resistance (double CH NTC probe is used as high temperature limit device) if its out of tolerance replace double NTC 3-) Check cabling and connectors between double NTC and board 4-) Reset & Restart boiler

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 19	Water flow selection with water flow meter input reading	Lack of domestic heating water on request	Wrong parameters settled on TsP menu	1-) Call for authorised service at first 2-) Only authorised service must adjust TsP Parameter P01=0 with default value
E 20	CH Overtemperature, Temperature Central Heating > TSP 81 value °C	Boiler does not work, E81 error code flashing on the screen	> Lack of water on the system > Pump blockage > Pump failure > Pump harness > Installation blockage	1-) RESET boiler at first check if problem removed 2-) Check boiler central heating valves are open if they are closed open of all 3-) Check all radiator valves are open if they are closed open of all minimum 3 meters of radiator must be open 4-) RESET boiler and check if problem removed 5-) Call for authorised service at first 6-) Check Pump operation if the pump circulation through the heat exchanger is enough 7-) Check intermittent contacts on harness carefully specially Pump and PWM cable and specially pump main supply connector and specially pump main connector, measure voltage from connectors 8-) Check if there is air on the heat exchanger or system, remove air if any to do that activate deaeration mode. 9-) Check heat exchanger water path against clogging 10-) Installation water path against clogging 11-) Reset & Restart boiler
E 21	Delta Temperature Central Heating flow and Return > TSP 82 value °C	Boiler does not work, E21 error code flashing on the screen	> Lack of water on the system > Pump blockage > Pump failure > Pump harness > Installation blockage	1-) RESET boiler at first check if problem removed 2-) Check all radiator valves are open if they are closed open of all minimum 3 meters of radiator must be open 3-) RESET boiler and check if problem removed 4-) Call for authorised service at first 5-) Check Pump operation if the pump circulation through the heat exchanger is enough 6-) Check intermittent contacts on harness carefully specially Pump and PWM cable and specially pump main supply connector and specially pump main connector, measure voltage from connectors 7-) Check if there is air on the heat exchanger or system, remove air if any to do that activate deaeration mode. 8-) Check heat exchanger water path against clogging 9-) Installation water path against clogging 10-) Reset & Restart boiler
E 28	Maximum allowed consecutive lock-out reset reached	Usable RESET number reached.	Too many consecutive lock-out failures (followed by reset) due to other possible causes	1-) Removing power supply reset will be allowed 2-) Check the root cause of Error code to solve 3-) If fault still persists call for authorised service
E 37	Low voltage anomaly	Boiler does not work, E37 error code flashing on the screen	Low voltage < 165 VAC +/- 5% on the supply network operation mode OR During Au-TO calibration mode < 182 VAC +/- 5%	1-) Call for Electrical supply network provider 2-) Error will remove if supply voltage > 170 VAC +/- 5% 3-) If you see this E37 during calibration calibration can not be complete unless supply voltage > 188 VAC +/- 5%
E 40	Wrong network frequency survey	Boiler does not work, E40 error code flashing on the screen	Wrong frequency survey out of tolerance 50 Hz +/- 5% on the supply network	1-) Call for Electrical supply network provider 2-) Error will remove if supply frequency 50 Hz +/- 5%
E 41	Loose of flame more than 6 successive times	Boiler does not work, E41 error code flashing on the screen	> Too many domestic heat water request in short period (1 min) > Low gas pressure	1-) Call for authorised service at first 2-) Check intermittent contacts on harness carefully 3-) Check gas supply pressure must be 20-17 mbar. Gas pressure must be in between on this values while boiler on operational 4-) Check wrong flue OR flue gas blockage 5-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 6-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control positioning of the electrode, if electrode position wrong calibrate electrode. 7-) Check if the heat exchanger coils clogged or not 8-) Check for condensation on the cabling AND/OR on board 9-) Check earth connection between board and electrode 10-) Check electrode labeling between board and electrode 11-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 12-) Perform Au-To calibration. 13-) if not successful. Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used also adjust P15 related to the default value of boiler power and Perform Au-To calibration. 14-) if not successful replace gas valve, and Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 42	Buttons anomaly	Boiler does not work, E42 error code flashing on the screen	Wrong parameters settled on TsP menu	1-) Call For service 2-) Service must adjust TsP Parameter P67 with default value 3-) Check button pads or switches are functional 4-) if not successful. Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used also adjust P15 related to the default value of boiler power and Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 43	Opentherm communication error	Boiler does not work, E43 error code flashing on the screen after 1 minute of communication error	Opentherm line disconnected	1-) Remove energy from boiler and re energised E43 will be removed and boiler & buttons will get back to functional 2-) Replace the room unit batteries with the fresh ones and reset from room unit 3-) Check cabling between boiler and room thermostat unit and re connect if any disconnection, if connection set up successfully then connection symbol will be activated on the screen 4-) Call for authorised service to re connect opentherm connection
rE 44	Cumulated intermittent ignition without reaching burner ignition.	Boiler does not work, E44 error code flashing on the screen	"> Intermittent contacts on harness > Hammer effect on water net > Too many request from in short time from out side room units or thermostat bridge etc."	1-) Call For service 2-) Check for domestic heating water net this problem generally generated by installation root cause water hammer effect. To eliminate this adjust P26=2 or 3 on TsP Menu 3-) Check intermittent contacts on harness carefully 4-) Check room unit or thermostat bridge against too many request in short time
E 62	Calibration request	Boiler does not work, E62 error code flashing on the screen	"> Calibration not done > Replacing board but not service key from the board dismantled > Service key damaged or disconnected > Updating Software (probable)"	1-) Call For service 2-) Check TsP default values before calibration specially P15, P31, P32, P33 2-) Perform Auto Calibration. Attention: Only authorised service must perform Au-To calibration
E 72	Delta T heating at ignition not occurred	Boiler does not work, E72 error code flashing on the screen	> FLOW OR RETURN Sensor not on position	1-) Call for authorised service at first 2-) Check RETURN and FLOW sensor on position.
E 74	Second CH temperature Probe faulty	Boiler does not work, E74 error code flashing on the screen	> FLOW and LIMIT Sensor (double NTC) faulty	1-) Call for authorised service at first 2-) Check CH temperature probe resistance (double CH NTC probe is used as high temperature limit device) if its out of tolerance replace double NTC 3-) Check cabling and connectors between double NTC and board 4-) Reset & Restart boiler
E 77	Absolute current values reached	Boiler does not work, E77 error code flashing on the screen	> Gas inlet pressure > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Cabeling disconnections > Combustion calibration > Electronic board > Gas valve failiure	1-) Call for authorised service at first 2-) Check gas supply pressure must be 20-17 mbar. Gas pressure must be in between on this values while boiler on operational 3-) Check wrong flue OR flue gas blockage 4-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 5-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate electrode. 6-) Check if the heat exchanger coils clogged or not 7-) Check for condensation on the cabling AND/OR on board 8-) Check earth connection between board and electrode 9-) Check electrode cabling between board and electrode 10-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 11-) Perform Auto Calibration. 12-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 related to the default value of boiler power and perform Au-To calibration. 13-) If not successfull replace gas valve, and Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 78	Max regulation current value reached	Boiler does not work, E78 error code flashing on the screen	> Gas inlet pressure > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Cabeling disconnections > Combustion calibration > Electronic board > Gas valve failiure	1-) Call for authorised service at first 2-) Check gas supply pressure must be 20-17 mbar. Gas pressure must be in between on this values while boiler on operational 3-) Check wrong flue OR flue gas blockage 4-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 5-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate electrode. 6-) Check if the heat exchanger coils clogged or not 7-) Check for condensation on the cabling AND/OR on board 8-) Check earth connection between board and electrode 9-) Check electrode cabling between board and electrode 10-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 11-) Perform Auto Calibration. 12-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 related to the default value of boiler power and perform Au-To calibration. 13-) if not successfull replace valve, and Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 79	Min regulation current value reached	Boiler does not work, E79 error code flashing on the screen	<ul style="list-style-type: none"> > Gas inlet pressure > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Cabeling disconnections > Combustion calibration > Electronic board > Gas valve failiure 	<p>1-) Call for authorised service at first 2-) Check gas supply pressure must be 20-17 mbar. Gas pressure must be in between on this values while boiler on operational 3-) Check combustion CO₂ or O₂ values on HI and LO mode at sweeper mode. 4-) Check wrong flue OR flue gas blockage 5-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 6-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate electrode. 7-) Check if the heat exchanger coils clogged or not 8-) Check for condensation on the cabling AND/OR on board 9-) Check earth connection between board and electrode 10-) Check electrode cabeling between board and electrode 11-) Perform Auto Calibration. 12-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 releated to the default value of boiler power and perform Au-To calibration. 13-) if not successfull replace gas valve, and Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration</p>
E 80	Problem on electronic gas valve driver	<ul style="list-style-type: none"> > Electronic board > Gas valve failiure 	<ul style="list-style-type: none"> > Electronic board > Gas valve failiure 	<p>1-) Call for authorised service at first 2-) Check gas valve cabeling between board and gas valve 3-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 releated to the default value of boiler power and perform Au-To calibration. 4-) if not successfull replace gas valve, and Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration</p>
E 81	Lock-out for combustion problem at starting (1)	Boiler does not work, E81 error code flashing on the screen	<ul style="list-style-type: none"> > Strong flue blokage > Combustion problem > Wrong flue > Gas inlet pressure > Aging or rust on the electrode > Recirculation on fluegas path > Electrode position > Combustion calibration 	<p>1-) Call for authorised service at first 2-) Check wrong flue OR strong flue gas blockage 3-) Check gas supply pressure must be 20-17 mBar. Gas pressure must be in between on this values while boiler on operational 4-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 5-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 6-) Check combustion CO₂ or O₂ values on HI and LO mode at sweeper mode. 7-) Perform Auto Calibration. Attention: Only authorised service must perform Au-To calibration</p>
E 82	Lock-out for combustion problem on Lawa / Lawa Plus models	Boiler does not work, E82 error code flashing on the screen	<ul style="list-style-type: none"> > Recirculation on fluegas path > Blokage on flue or wrong flue > Combustion calibration 	<p>1-) If there is strong wind (ie.wind storm) wait until the wind storm stop then RESET the boiler 2-) IF problem persist Call for authorised service 3-) Check wrong flue OR flue gas blockage 4-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 5-) Activate service man menu and dis activate to remove half power mode 6-) IF problem still persist then perform Auto Calibration. Attention: Only authorised service must perform Au-To calibration</p>
E 83	Temporary bad combustion fault problem on Lawa / Lawa Plus models	Boiler does not work, E83 error code flashing on the screen	<ul style="list-style-type: none"> > Recirculation on fluegas path > Blokage on flue or wrong flue > Combustion calibration 	<p>1-) If there is strong wind (ie.wind storm) wait until the wind storm stop then RESET the boiler 2-) IF problem persist Call for authorised service 3-) Check wrong flue OR flue gas blockage 4-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 5-) Activate service man menu and dis activate to remove half power mode 6-) IF problem still persist then perform Auto Calibration. Attention: Only authorised service must perform Au-To calibration</p>
E 84	Capacity reduction for detected (supposed) low gas inlet pressure	Boiler does not work, E84 error code flashing on the screen	<ul style="list-style-type: none"> > Gas inlet pressure > Combustion problem 	<p>1-) If there is strong wind (ie.wind storm) wait until the wind storm stop then RESET the boiler 2-) IF problem persist Call for authorised service 3-) Check gas supply pressure must be 20-17 mbar. Gas pressure must be in between on this values while boiler on operational 4-) Check combustion CO₂ or O₂ values on HI and LO mode at sweeper mode. 5-) Perform Auto Calibration, IF combustion values are out of tolerances measured one step before Attention: Only authorised service must perform Au-To calibration</p>
E 87	Problem on electronic gas valve circuit	Boiler does not work, E87 error code flashing on the screen	<ul style="list-style-type: none"> > Cabeling disconnections > Gas valve failiure 	<p>1-) Call for authorised service at first 2-) Check gas valve cabeling between board and gas valve 3-) Measure gas valve coil resistances according to manual if gas valve coils out of tolerance, then replace gas valve, and perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration</p>

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 88	Fault of electronic gas valve managing circuit	Boiler does not work, E88 error code flashing on the screen	<ul style="list-style-type: none"> > Cabeling disconnections > Gas valve failiure 	1-) Call for authorised service at first 2-) Check gas valve cabeling between board and gas valve 3-) Measure gas valve coil resistances according to manual if gas valve coils out of tolerance, then replace gas valve 4-) Always perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 89	Problem on combustion feedback signal	Boiler does not work, E89 error code flashing on the screen	<ul style="list-style-type: none"> > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Cabeling disconnections > Combustion calibration > Electronic board > Gas valve failiure 	1-) Call for authorised service at first 2-) Check wrong flue OR flue gas blockage 3-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 4-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 5-) Check for condensation on the cabling AND/OR on board 6-) Check earth connection between board and electrode 7-) Check electrode cabeling between board and electrode 8-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 9-) Perform Auto Calibration. 10-) if not successfull replace gas valve, and perform Au-To calibration. 11-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 releated to the default value of boiler power and perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 90	Unable to regulate combustion	Boiler does not work, E90 error code flashing on the screen	<ul style="list-style-type: none"> > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Cabeling disconnections > Combustion calibration > Electronic board > Gas valve failiure 	1-) Call for authorised service at first 2-) Check wrong flue OR flue gas blockage 3-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 4-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 5-) Check for condensation on the cabling AND/OR on board 6-) Check earth connection between board and electrode 7-) Check electrode cabeling between board and electrode 8-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 9-) Perform Auto Calibration. 10-) if not successfull replace gas valve, and Perform Au-To calibration. 11-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 releated to the default value of boiler power and perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 92	Air compensation active	Boiler does not work, E91 error code flashing on the screen	<ul style="list-style-type: none"> > Possible wind precence > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Combustion calibration > Min power adjustment 	1-) Call for authorised service at first 2-) Check wrong flue OR flue gas blockage 3-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 4-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 5-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 6-) Perform Auto Calibration. 7-) If boiler place is windy area then increase Minimum power to 5 kw via TsP parameter P10= in between 5 and 7. Attention: Only authorised service must perform Au-To calibration
E 93	Unable to regulate combustion (temporarily)	Boiler does not work, E93 error code flashing on the screen	<ul style="list-style-type: none"> > Aging or rust on the electrode > Recirculation on fluegas path > Blokage on flue or wrong flue > Electrode position > Combustion calibration > Gas valve failiure > Electronic board 	1-) Call for authorised service at first 2-) Check wrong flue OR flue gas blockage 3-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 4-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 5-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 6-) Perform Auto Calibration. 7-) if not successfull replace gas valve, and Perform Au-To calibration. 8-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 releated to the default value of boiler power and perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration

Error Code	Description of the Error	Malfunction	Probable Cause	Solution(s)
E 94	Possible low gas pressure or exhaust recirculation	Boiler does not work, E94 error code flashing on the screen	<ul style="list-style-type: none"> > Gas inlet pressure LOW > Recirculation on fluegas path > Blokage on flue or wrong flue > Aging or rust on the electrode > Electrode position > Combustion calibration > Gas valve failiure > Electronic board 	1-) Call for authorised service at first 2-) Check wrong flue OR flue gas blockage 3-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 4-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 5-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 6-) Perform Auto Calibration. 7-) if not successfull replace gas valve, and Perform Au-To calibration. 8-) If fault still persists Replace board, but use original service key from the board dismantled to keep original parameters and calibration points. If original service key not used aslo adjust P15 releated to the default value of boiler power and perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 95	Intermittent combustion value	Boiler does not work, E95 error code flashing on the screen	<ul style="list-style-type: none"> > Harness on electrode and earth > Aging or rust on the electrode > Electrode position > Combustion calibration 	1-) Call for authorised service at first 2-) Check intermittent contacts on harness carefully 3-) Check any problems on the ionisation electrode, (like condensation, rust etc.), and control poistioning of the electrode, if electrode poistion wrong calibrate the electrode. 4-) Check for condensation on the cabling AND/OR on board 5-) Check earth connection between board and electrode 6-) Check electrode cabeling between board and electrode 7-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 8-) Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 96	Flue or air suction way blockage	Boiler does not work, E96 error code flashing on the screen	<ul style="list-style-type: none"> > Blokage on flue > Blokage on air suction path 	1-) Call for authorised service at first 2-) Check wrong flue OR flue gas blockage 3-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 4-) Check venturi inlet if its blocked 5-) Check any blockage between fan and burner 6-) Check combustion CO ₂ or O ₂ values on HI and LO mode at sweeper mode. 7-) Perform Auto Calibration. Attention: Only authorised service must perform Au-To calibration
E 98	SW error, board start-up error fault	Boiler does not work, E98 error code flashing on the screen	<ul style="list-style-type: none"> > Boiler software problem 	1-) Call for authorised service at first 2-) Replace board directly, adjust P15 releated to the default value of boiler power 3-) Perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
E 99	Generic fault	Boiler does not work, E99 error code flashing on the screen	<ul style="list-style-type: none"> > Boiler electronic hardware problem 	1-) Call for authorised service at first 2-) Replace board directly, adjust P15 releated to the default value of boiler power 3-) Perform Au-To calibration. 4-) if not successfull replace gas valve, and perform Au-To calibration. Attention: Only authorised service must perform Au-To calibration
flashing LCD	Half Power mode on Lawa / Lawa Plus models	Boiler continue to work, flashing screen boiler still operational	<ul style="list-style-type: none"> > Recirculation on fluegas path > Blokage on flue or wrong flue > Combustion calibration > Temporary wind precence 	1-) If there is strong wind (ie.wind storm) wait until the wind storm stop then keep using the boiler as it is 36 or 48 hours boiler try to remove half power mode by it self automatically by increasing power gradually. 2-) IF problem persist after 48 hours Call for authorised service 3-) Check wrong flue OR flue gas blockage 4-) Check recirculation (flue gas leak) from flue gas path to fresh air side, check flue gas sealings specially 5-) Activate service man menu and dis activate to remove half power mode 6-) IF problem still persist then perform Auto Calibration Attention: Only authorised service must perform Au-To calibration

Benchmark Commissioning & Warranty Validation Service Record

It is a requirement that the boiler is installed and commissioned to the manufacturers' instructions and the data fields on the commissioning checklist completed in full.

To instigate the boiler warranty the boiler needs to be registered with the manufacturer within one month of the installation. The warranty rests with the end-user (consumer), and they should be made aware it is ultimately their responsibility to register with the manufacturer, within the allotted time period.

It is essential that the boiler is serviced in line with the manufacturers' recommendations, at least annually. This must be carried out by a competent Gas Safe registered engineer. The service details should be recorded on the Benchmark Service and Interim Boiler Work Record and left with the householder. Failure to comply with the manufacturers' servicing instructions and requirements will invalidate the warranty.



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This Commissioning Checklist is to be completed in full by the competent person who commissioned the boiler as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission according to the manufacturers' instructions and complete this Benchmark Commissioning Checklist will invalidate the warranty. This does not affect the customer's statutory rights.

* 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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GAS BOILER SYSTEM COMMISSIONING CHECKLIST & WARRANTY VALIDATION RECORD

Address:													
Boiler make and model:													
Boiler serial number:													
Commissioned by (PRINT NAME):						Gas Safe registration number:							
Company name:						Telephone number:							
Company email:						Company address:							
										Commissioning date:			
Heating and hot water system complies with the appropriate Building Regulations?											Yes		
Optional: Building Regulations Notification Number (if applicable):													
Time, temperature control and boiler interlock provided for central heating and hot water											Yes		
Boiler Plus requirements (tick the appropriate box(s))													
Boiler Plus option chosen for combination boiler in ENGLAND						Weather compensation			Smart thermostat with automisation and optimisation				
						Load compensation			Flue Gas Heat Recovery				
Time and temperature control to hot water			Cylinder thermostat and programmer/timer						Combination boiler				
Zone valves			pre-existing			Fitted			Not required				
Thermostatic radiator valves			pre-existing			Fitted			Not required				
Automatic bypass to system			pre-existing			Fitted			Not required				
Underfloor heating			pre-existing			Fitted			Not required				
Water quality													
The system has been flushed, cleaned and a suitable inhibitor applied upon final fill, in accordance with BS7593 and boiler manufacturers' instructions											Yes		
What system cleaner was used?						Brand:			Product:				
What inhibitor was used?						Brand:			Product:				
Primary water system filter			pre-existing			Fitted			Not required				
CENTRAL HEATING MODE measure and record (as appropriate)													
Gas rate (for combination boilers complete DHW mode gas rate)						m ³ /hr			or			ft ³ /hr	
Central heating output left at factory settings?						Yes			No				
If no, what is the maximum central heating output selected?												kW	
Dynamic gas inlet pressure												mbar	
Central heating flow temperature												°C	
Central heating return temperature												°C	
System correctly balanced/rebalanced?						Yes							
COMBINATION BOILERS ONLY													
Is the installation in a hard water area (above 200ppm)?						Yes			No				
Water scale reducer/softener			pre-existing			Fitted			Not required				
What type of scale reducer/softener has been fitted?						Brand:			Product:				
Water meter fitted?						Yes			No				
If yes- DHW expansion vessel			pre-existing			Fitted			Not required				
Pressure reducing valve			pre-existing			Fitted			Not required				
DOMESTIC HOT WATER MODE Measure and record													
Gas rate						m ³ /hr			or			ft ³ /hr	
Dynamic gas inlet pressure at maximum rate												mbar	
Cold water inlet temperature												°C	
Hot water has been checked at all outlets						Yes			Temperature			°C	
CONDENSATE DISPOSAL													
The condensate drain has been installed in accordance with the manufacturers' instructions and/or BS5546/BS6798											Yes		
Point of termination						Internal			External (only where internal termination impractical)				
Method of disposal						Gravity			Pumped				
ALL INSTALLATIONS													
Record the following		At max rate:		CO ppm		CO ₂ %		CO/CO ₂		Ratio			
		At min rate (where possible)		CO ppm		CO ₂ %		CO/CO ₂		Ratio			
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?											Yes		
The operation of the boiler and system controls have been demonstrated to and understood by the customer											Yes		
The manufacturers' literature, including Benchmark Checklist and Service Record, has been explained and left with the customer											Yes		
Commissioning Engineer's signature													
Customer's signature (To confirm satisfactory demonstration and receipt of manufacturers' literature)													

* 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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SERVICE & INTERIM BOILER WORK RECORD

It is recommended that your boiler and heating system are regularly serviced and maintained, in line with manufacturers' instructions, and that the appropriate service / interim work record is completed.

Service provider

When completing a service record (as below), please ensure you have carried out the service as described in the manufacturers' instructions. Always use the manufacturers' specified spare parts.

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone No.:		Gas Safe registration No.:			
Max rate	CO ppm	CO ² %	CO/CO ²		
Min rate	CO ppm	CO ² %	CO/CO ²		
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?*				yes	
Gas rate:	m ³ /h	OR	ft ³ /h		
Were parts fitted? ^{delete as appropriate}		Yes	No		
Parts fitted:					
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *				yes	n/a
Comments:					
Signature:					

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone No.:		Gas Safe registration No.:			
Max rate	CO ppm	CO ² %	CO/CO ²		
Min rate	CO ppm	CO ² %	CO/CO ²		
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?*				yes	
Gas rate:	m ³ /h	OR	ft ³ /h		
Were parts fitted? ^{delete as appropriate}		Yes	No		
Parts fitted:					
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *				yes	n/a
Comments:					
Signature:					

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone No.:		Gas Safe registration No.:			
Max rate	CO ppm	CO ² %	CO/CO ²		
Min rate	CO ppm	CO ² %	CO/CO ²		
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?*				yes	
Gas rate:	m ³ /h	OR	ft ³ /h		
Were parts fitted? ^{delete as appropriate}		Yes	No		
Parts fitted:					
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *				yes	n/a
Comments:					
Signature:					

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone No.:		Gas Safe registration No.:			
Max rate	CO ppm	CO ² %	CO/CO ²		
Min rate	CO ppm	CO ² %	CO/CO ²		
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?*				yes	
Gas rate:	m ³ /h	OR	ft ³ /h		
Were parts fitted? ^{delete as appropriate}		Yes	No		
Parts fitted:					
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *				yes	n/a
Comments:					
Signature:					

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone No.:		Gas Safe registration No.:			
Max rate	CO ppm	CO ² %	CO/CO ²		
Min rate	CO ppm	CO ² %	CO/CO ²		
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?*				yes	
Gas rate:	m ³ /h	OR	ft ³ /h		
Were parts fitted? ^{delete as appropriate}		Yes	No		
Parts fitted:					
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *				yes	n/a
Comments:					
Signature:					

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone No.:		Gas Safe registration No.:			
Max rate	CO ppm	CO ² %	CO/CO ²		
Min rate	CO ppm	CO ² %	CO/CO ²		
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?*				yes	
Gas rate:	m ³ /h	OR	ft ³ /h		
Were parts fitted? ^{delete as appropriate}		Yes	No		
Parts fitted:					
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *				yes	n/a
Comments:					
Signature:					

ENERWA PLUS 2530C ENERWA PLUS 3035C ENERWA PLUS 3540C ENERWA PLUS 4240C ENERWA PLUS 4543C

NOTES FOR THE USER & INSTALLER

NATIONAL GRID UK EMERGENCY NUMBERS

Enquiries about assets

If you have any questions about our power cables, gas lines, or other assets, please contact Cadent's Plant Protection team. Cadent provide first-line support for our assets.

- **0800 688 588**
- plantprotection@cadentgas.com
- <https://www.nationalgrid.com/uk/contact-us>

Gas Emergencies

If you smell gas or have accidentally hit the NTS pipeline please call us urgently:

0800 111 999

Electricity Emergencies

If you spot a potential hazard on or near an overhead electricity line please call us urgently:

0800 40 40 90

FOR ANY TECHNICAL QUERIES PLEASE RING THE
WARMHAUS CONSUMER / INSTALLER / TECHNICAL HELPLINE:
0207 1646233

CONDENSING COMBI BOILERS INSTALLATION & SERVICE MANUAL

Enerwa Plus Combi Installation & Service Manual-(UK) Code : 150.11.606.000125
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