

Installation and Servicing Instructions

Alpha Wall Hung FlowSmart

**Hot Water System incorporating an Alpha InTec 40GS2
Condensing Combination Boiler with Integrated Flue Gas Heat
Recovery Device and wall mounted Primary Store.**

For Technical help or for Service call ...

ALPHA HELPLINE

Tel: 0344 871 8764

Alpha
HEATING INNOVATION

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Leave these instructions with the User

CONTENTS

1.0 Introduction

2.0 System Operation

3.0 Important Information

4.0 Technical Data

5.0 Cylinder Connections & Clearances

6.0 FlowSmart System Options

7.0 Installation

7.1 Flushing

7.2 Secondary circulation (optional)

7.3 InTec 40GS2 + Wall hung FlowSmart + Alpha Controls + 1CH zone

7.4 InTec 40GS2 + Wall hung FlowSmart + Alpha Controls + 2CH zone

7.5 Installation with Non-Alpha Controls

8.0 Commissioning

8.1 Final Commissioning

8.2 Routine inspection

9.0 Product Data Sheet (ErP)

1.0 INTRODUCTION

The Alpha FlowSmart system is a domestic hot water system designed to provide a high level of heating and hot water performance more efficiently. The combination boiler provides high volume and flow of instantaneous hot water using a patented pre-heat system and central heating via a sealed heating system. The complete wall hung FlowSmart package consists of an Alpha InTec 40GS2 combination boiler with built in GasSaver and, wall mounted cylinder. A diverter valve, cylinder sensor and pipe kit are supplied with the wall mounted version.

2.0 SYSTEM OPERATION

The Alpha FlowSmart system has been designed to deliver domestic hot water at a high level of performance more efficiently, for example up to 18 l/min for temperatures of 50°C and above for long periods of demand using less energy than a typical hot water storage system utilizing a large cylinder.

The cold water supply first passes through the GasSaver where the reclaimed heat from the hot flue gasses is used to pre-heat the cold water supply. This pre-heated water then enters the coil in the primary store where it is heated to a higher temperature.

This hot water is then blended into the inlet of the combination boiler at a temperature of approximately 30°C to give a constant pre-heated supply to the boiler. The boiler then further heats the water to the required outlet temperature. When the flow of hot water is stopped, the FlowSmart store is reheated and then the system is ready to provide the same performance again.

3.0 IMPORTANT INFORMATION

The Alpha FlowSmart must be installed as described in these instructions. The Alpha boiler must be installed in accordance with the instructions supplied with it. Failure to do so will negate the warranty supplied with this unit.

The FlowSmart system has been approved to the relevant requirements of the building regulations for primary hot water storage systems and the UK Water Regulations. It is the law that all gas appliances are installed by a competent person, i.e. Gas Safe registered engineer, in accordance with Current Gas Safety (Installation and use) Regulations and all current Building Regulations.

Failure to install any part of the FlowSmart system correctly could lead to prosecution. It is in your own interest and that of safety to ensure that the law is complied with. Manufacturer's instructions must **not** be taken in any way as over-riding statutory obligations.

It is essential that the central heating system is thoroughly cleaned and flushed before fitting an Alpha FlowSmart system. Failure to do so will invalidate the warranty.

If it is not possible to clean the system before fitting the new boiler, the system should be cleaned using a proprietary cleaner and a magnetic filter connected in the return before the boiler as this is the most effective method of ensuring that any magnetite and rust particles are prevented from entering and damaging the boiler. Once the system condition has been restored, an effective magnetic filter and strainer should be fitted permanently to the system as a method of collecting any magnetite and rust from the system during operation.

Before installation, check that the incoming mains water supply is adequate to provide the required flow rate. High outlet flow rates can only be achieved with a good mains supply pressure and flow. In certain high flow demands serving many outlets simultaneously, a boosted supply may be required.

IMPORTANT! The incoming mains water pressure should be between 1 and 5 Bar to ensure efficient operation. If the pressure is above 5 Bar a pressure reducing valve must be fitted.

A small expansion device should also be added to supply circuit to take up any thermal expansion of the water within the pipes.

Consideration should be given to correct pipe sizing to and from the FlowSmart system to ensure optimum performance. All pipe runs should be as short as possible using suitably sized pipes to enable sufficient flow rates, the pipework should also be insulated to reduce heat loss. Before the mains water supply pipe is connected to the boiler, it should be thoroughly flushed out to avoid the danger of dirt or foreign matter entering the boiler.

4.0 TECHNICAL DATA

Flowsmart

Cylinder External Dimensions	Wall Mounted H1000 x W360 x D360mm
Outer Case	Steel - White Paint
Cylinder Insulation Material	Polyester Fibre
Cylinder Insulation Thickness	50mm
Standing Energy Loss - ErP	1.33kWh/24h
WRAS - BS EN 12897:2006	0.85 Watts/litre
Mains Water Inlet Pipe Connection	1/2" BSP (fittings and pipes supplied)
Mains Water Outlet Pipe Connection	1/2" BSP (fittings and pipes supplied)
Coil Material	Stainless Steel
DHW Coil Water Capacity	5 L
Secondary Circulation Connections	N/A
Maximum Water Inlet Pressure	5bar*
Recommended inlet water pressure	2-4 Bar
Recommended incoming cold mains flow rate	20 litres per minute
Maximum Water Flow Rate	18L/min**
Minimum Water Flow Rate	2.5L/min
Outlet Water Temperature (approx. max)	62°C

* If the mains water inlet is higher than 5bar then a pressure reducing valve must be fitted.

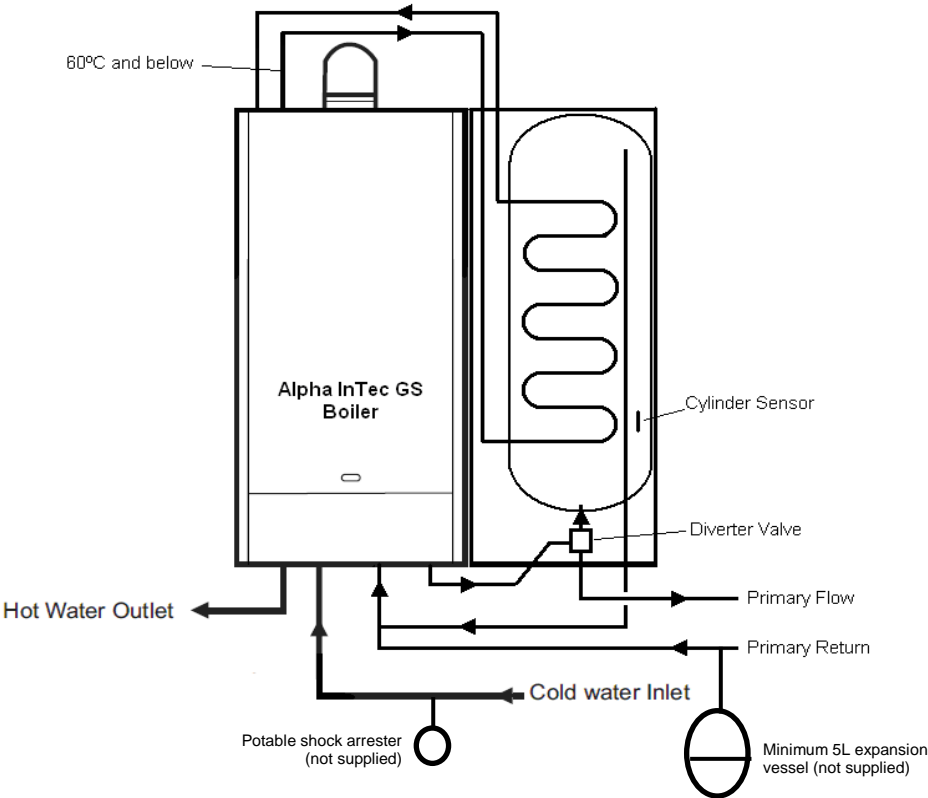
** Sufficient mains supply flow and pressure is required to achieve the required output flow.

Primary System

Maximum Working Pressure	2.5bar
Minimum System Pressure	0.5bar
Maximum System Temp. (approx.)	82°C
Boiler Pressure Relief Valve Setting	3bar
Boiler Exp. Vessel (pre-charge press)	8L at 1bar
Recommended System Pressure (cold)	1bar
Flow and Return connections	3/4"BSP (fittings and pipes supplied)
Cylinder Material	Stainless Steel
Cylinder Capacity	50L
Blending Valve Setting (Inside Boiler)	30°C
Additional Primary Expansion Vessel (not supplied)	Additional expansion vessel of at least 5 litres recommended***

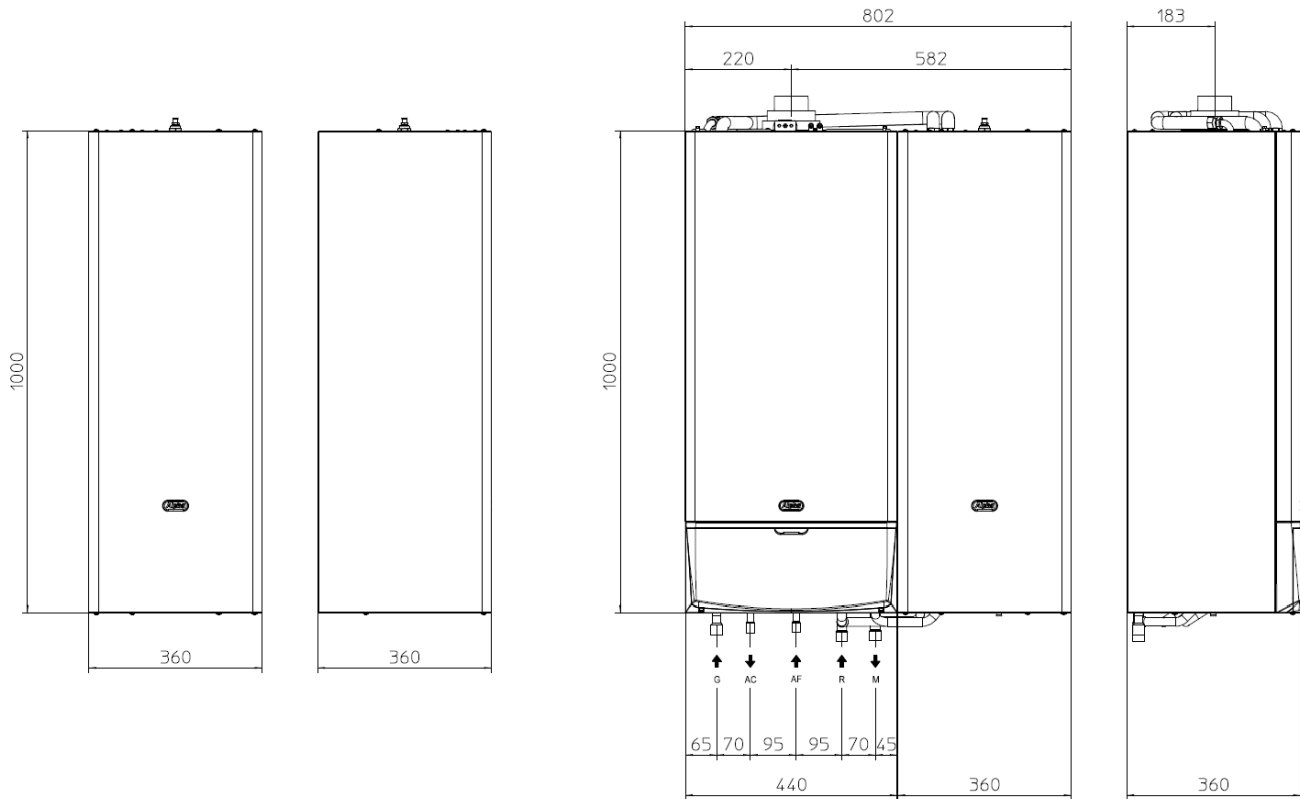
*** If the primary heating system volume is above 80 litres then the additional primary expansion vessel size must be increased by 1 litre per 10 litres of system volume. The additional expansion vessel must be pre-charged to 1bar.

5.0 FLOWSMART CYLINDER CONNECTIONS + CLEARANCES

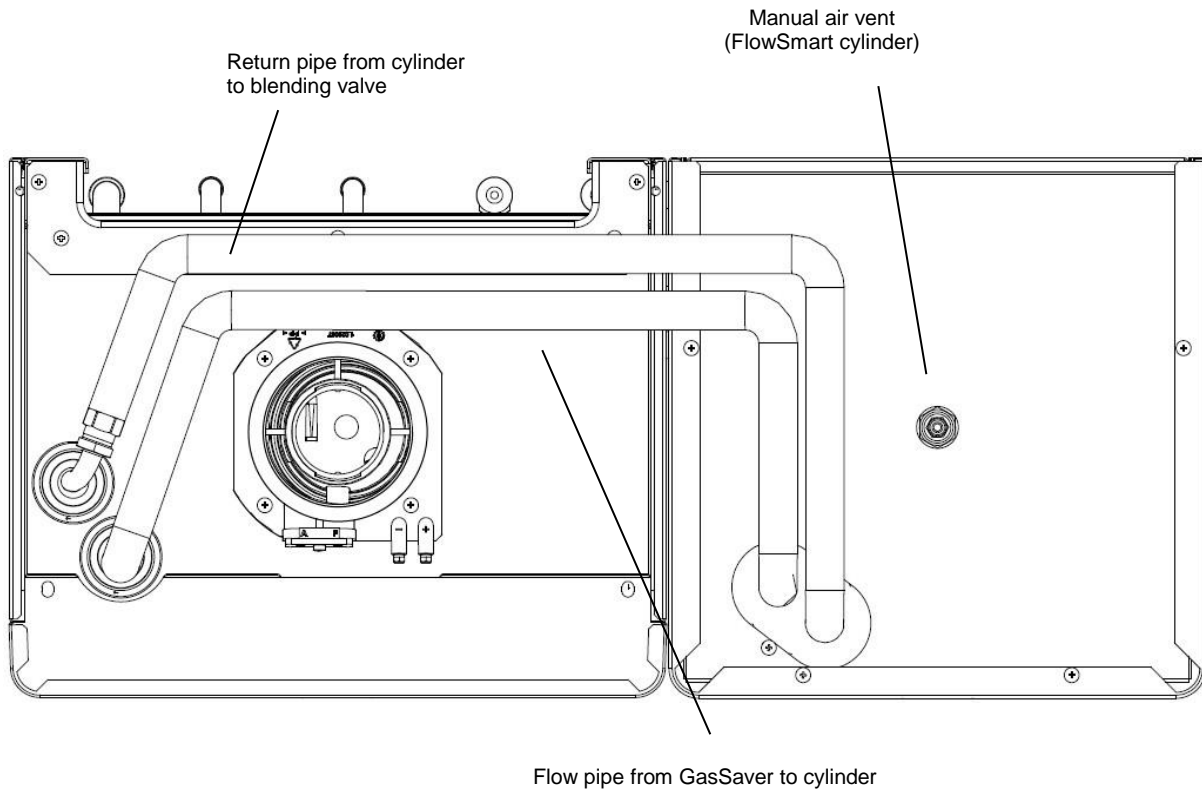
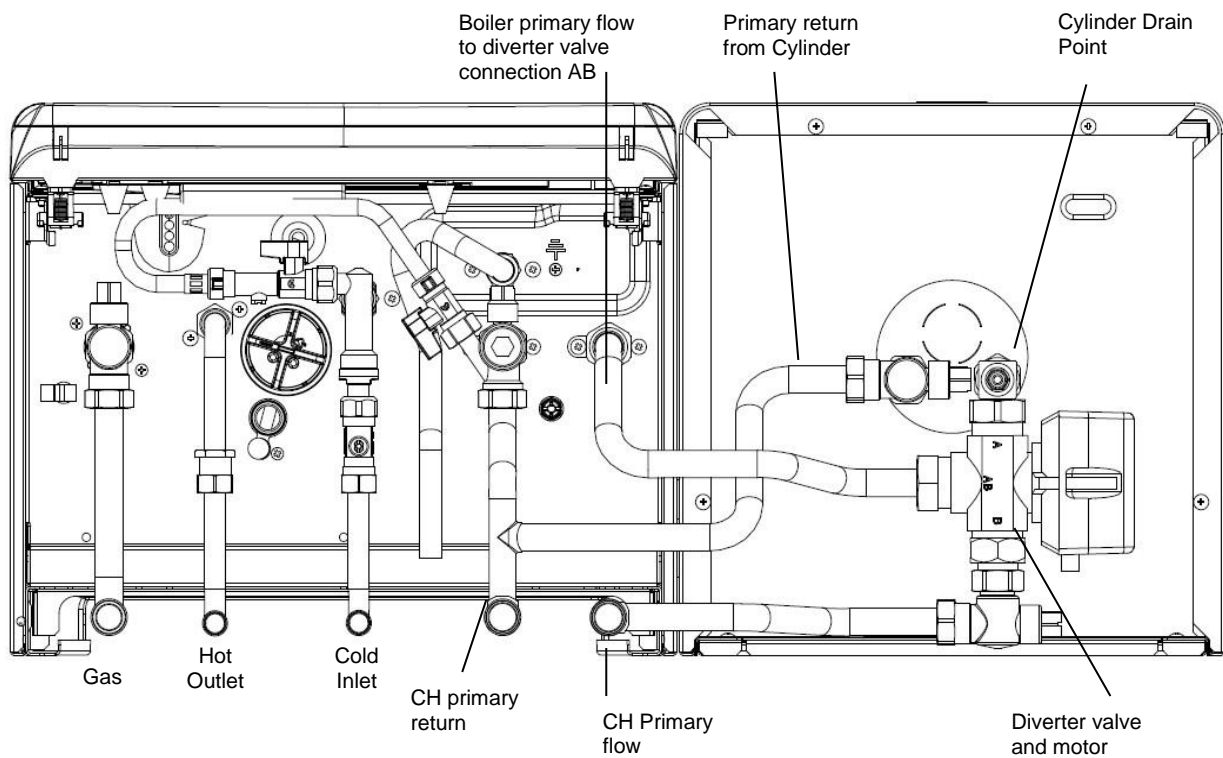


Minimum clearances for servicing	Top	150mm vertical flue / 235mm horizontal flue
	Front	450mm
	Side	10mm
Lift weight (empty)		37kg
Weight full ink DHW and Primary circuit		89kg

Dimensions



Connections between boiler and cylinder



6.0 FLOWSMART SYSTEM OPTIONS

The wall mounted* FlowSmart system is available in two options:

1.) An Alpha InTec 40GS2 combination boiler and bolt on cylinder (6.2004556)

Or

2.) An Alpha InTec 40GS2 LPG combination boiler and bolt on cylinder (6.2004556GPL)

It is recommended that an optional Alpha Climatic controller is also used to give time control over the operation of the FlowSmart cylinder. Further details of control options can be seen in the installation section.

It is important to purchase the correct FlowSmart system components and controls to ensure the system works efficiently and as intended.

** Please Note: Floor standing FlowSmart is a separate product and has separate installation instructions.*

7.0 INSTALLATION

When delivered on site do not unpack until ready for installation and store in a dry area. Depending on the system type you have, FlowSmart should be installed as shown in the sections below.

Note: Please ensure you have all kit components and controls BEFORE commencing installation.

7.1 FLUSHING

If it is not possible to clean the system before fitting the new boiler, the system should be cleaned using a proprietary cleaner and a magnetic filter connected in the return before the boiler as this is the most effective method of ensuring that any magnetite and rust particles are prevented from entering and damaging the boiler.

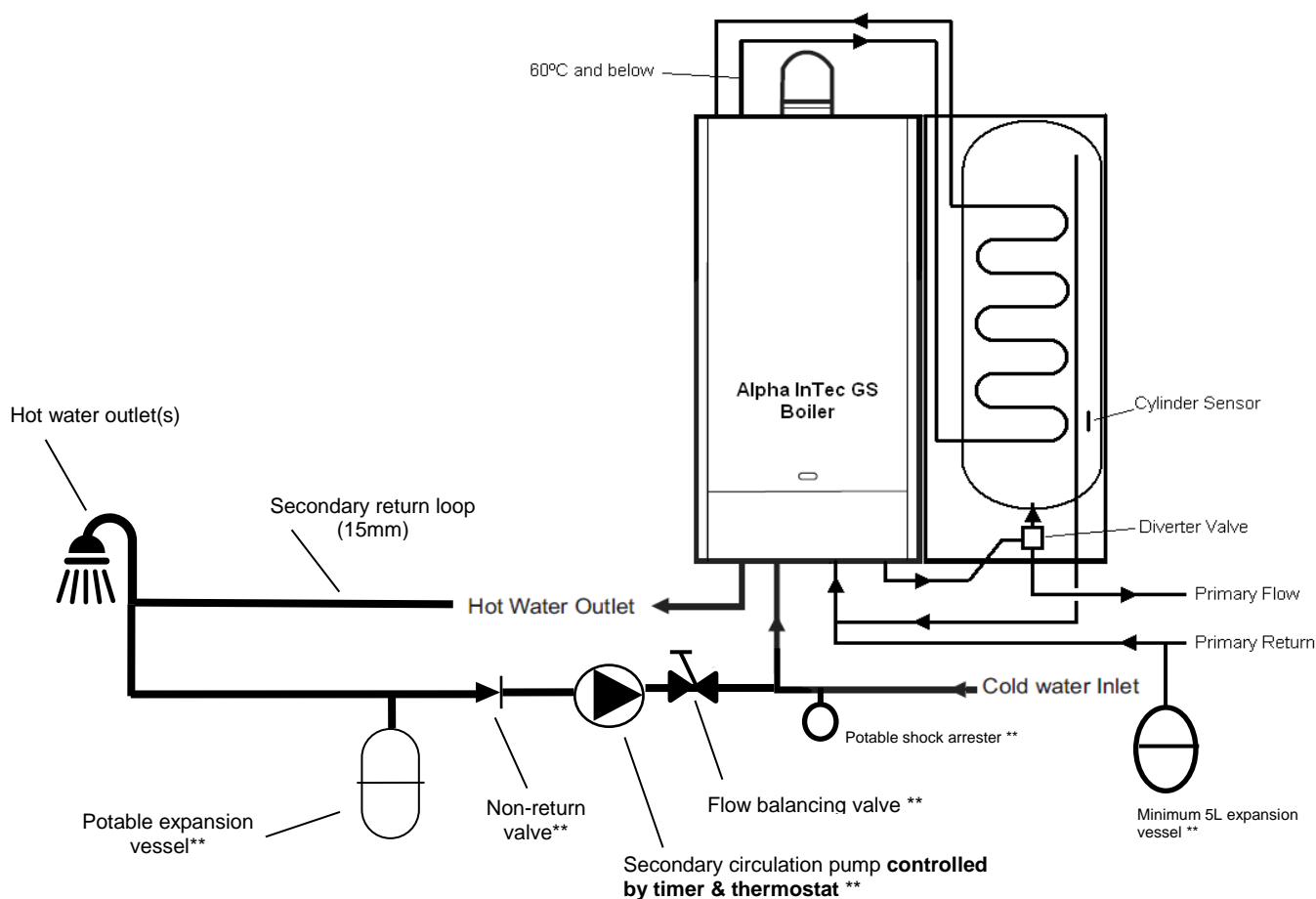
Once the system condition has been restored, an effective magnetic filter and strainer should be fitted permanently to the system as a method of collecting any magnetite and rust from the system during operation.

7.2 SECONDARY CIRCULATION (OPTIONAL)

Note: If a DHW secondary circulation circuit is required, it is preferable to use the floor standing FlowSmart 50 cylinder because it incorporates a dedicated secondary circulation coil in the store.

The installer assumes all responsibility for installing a wall hung FlowSmart system with secondary hot water recirculation. The installer must ensure the recirculation system is correctly installed, controlled and commissioned.

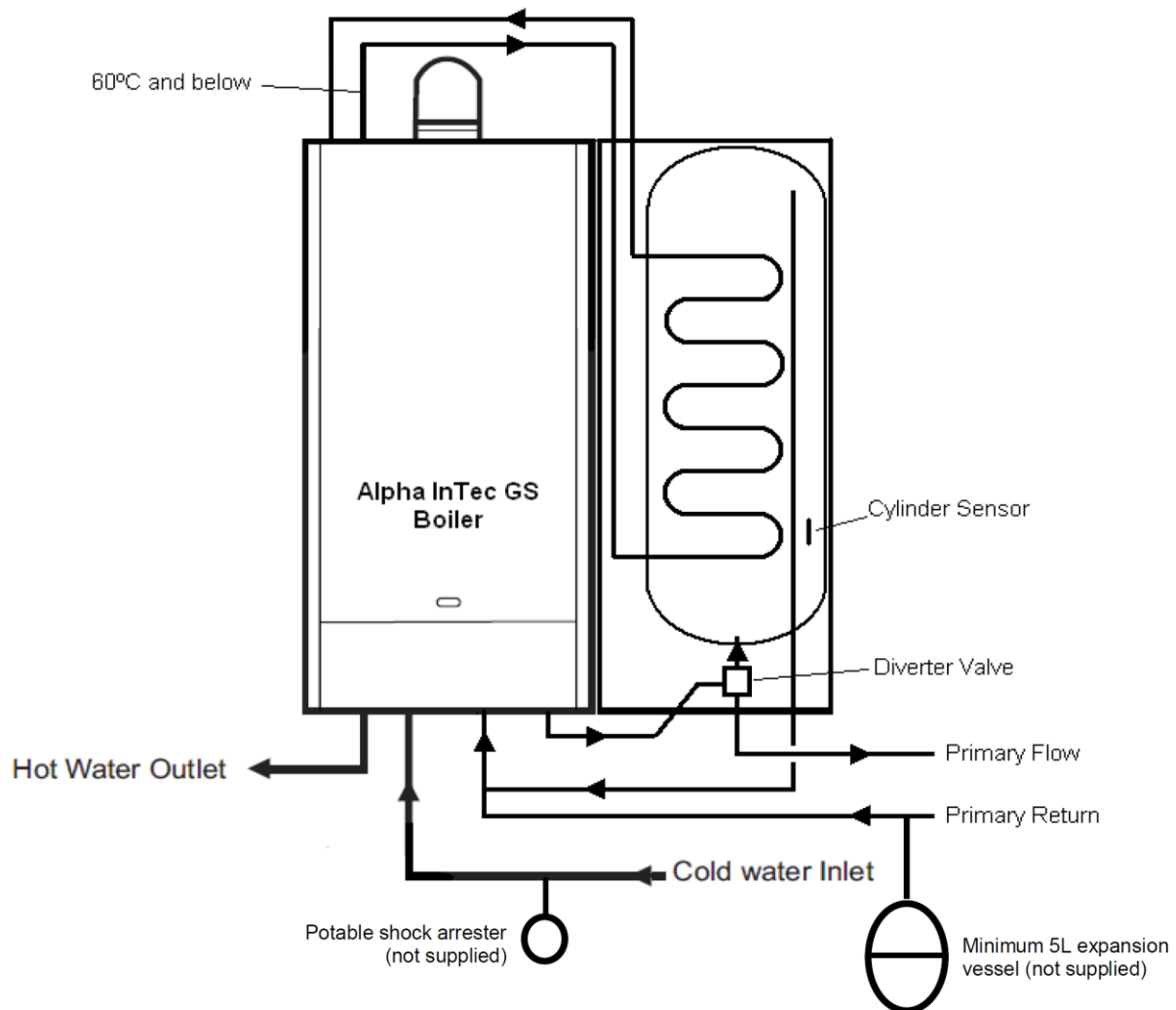
1. A DHW expansion vessel of the correct size must be fitted to the secondary circulation system. The vessel must be a minimum of 10% of the secondary pipe work volume e.g. if the secondary circulation circuit has a water volume of 20 litres then the vessel size must be 2 litres. The vessel pre-charge must be set to the same pressure as the static mains water supply.
2. The secondary circulation pump must be controlled by a timer and correspond with the timer settings of the FlowSmart system i.e. do not operate the pump when the store is not heated.
3. The secondary circulation pump must have a form of temperature control (i.e. surface mounted thermostat or similar) and the thermostat setting does not exceed the FlowSmart cylinder thermostat setting.
4. A balancing valve must be used to prevent excessive secondary circulation force from continually operating the combination boiler DHW flow switch (or the boiler will continually fire for hot water and never operate for heating)
5. Ensure there are no dead areas or areas where there is no circulation within the pipe work of the secondary circulation system.
6. The entire secondary pipework circuit should be well insulated to avoid energy losses.



**** Not supplied by Alpha**

7.3 SYSTEM TYPE 1

InTec 40GS2 boiler with wall hung cylinder + Alpha Diverter + Alpha Controls (1 CH zone)



For optional DHW secondary circuit schematic (if required), see page 9

Recommended Alpha Equipment List

Wall hung FlowSmart kit (6.2004556)

Controls:

Alpha Climatic controller (3.022143 Wireless or 3.022144 hard wired)

Optional Alpha external weather compensation probe (3.022383)

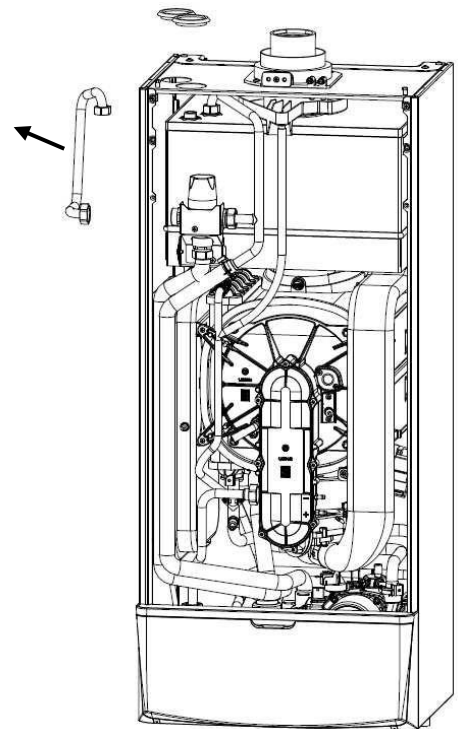
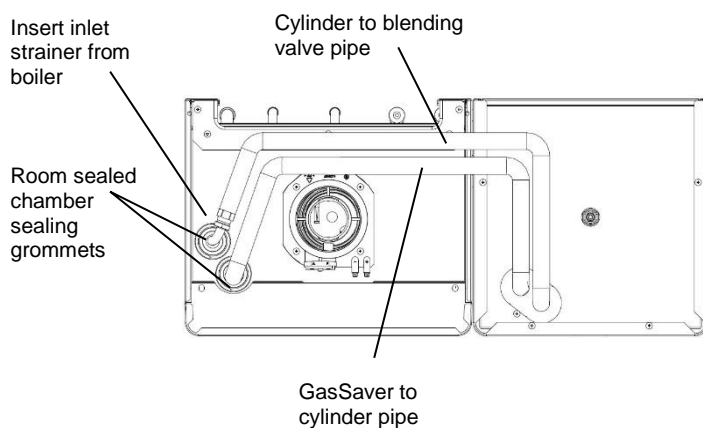
FITTING THE BOILER & CYLINDER

The following items are supplied with the wall hung FlowSmart system.

- A. An Alpha InTec 40GS2 boiler
 - B. A 50 litre wall hung cylinder and sensor
 - C. Three port diverter valve
 - D. Pipe fitting kit and washers
 - E. Wall template
- Hang the boiler on the wall as described in the boiler installation manual making sure there is enough space to its right to accommodate the FlowSmart cylinder.
 - Align the FlowSmart template to the right hand side of the boiler making sure the top and bottom of the casing line up with the top and bottom of the boiler.
 - Mark the screw hole positions for the hanging bracket marked on the template.
 - Drill the wall and secure the bracket using the plugs and screws provided.
 - Hang the FlowSmart cylinder on the wall making sure it is tight against the side of the boiler.

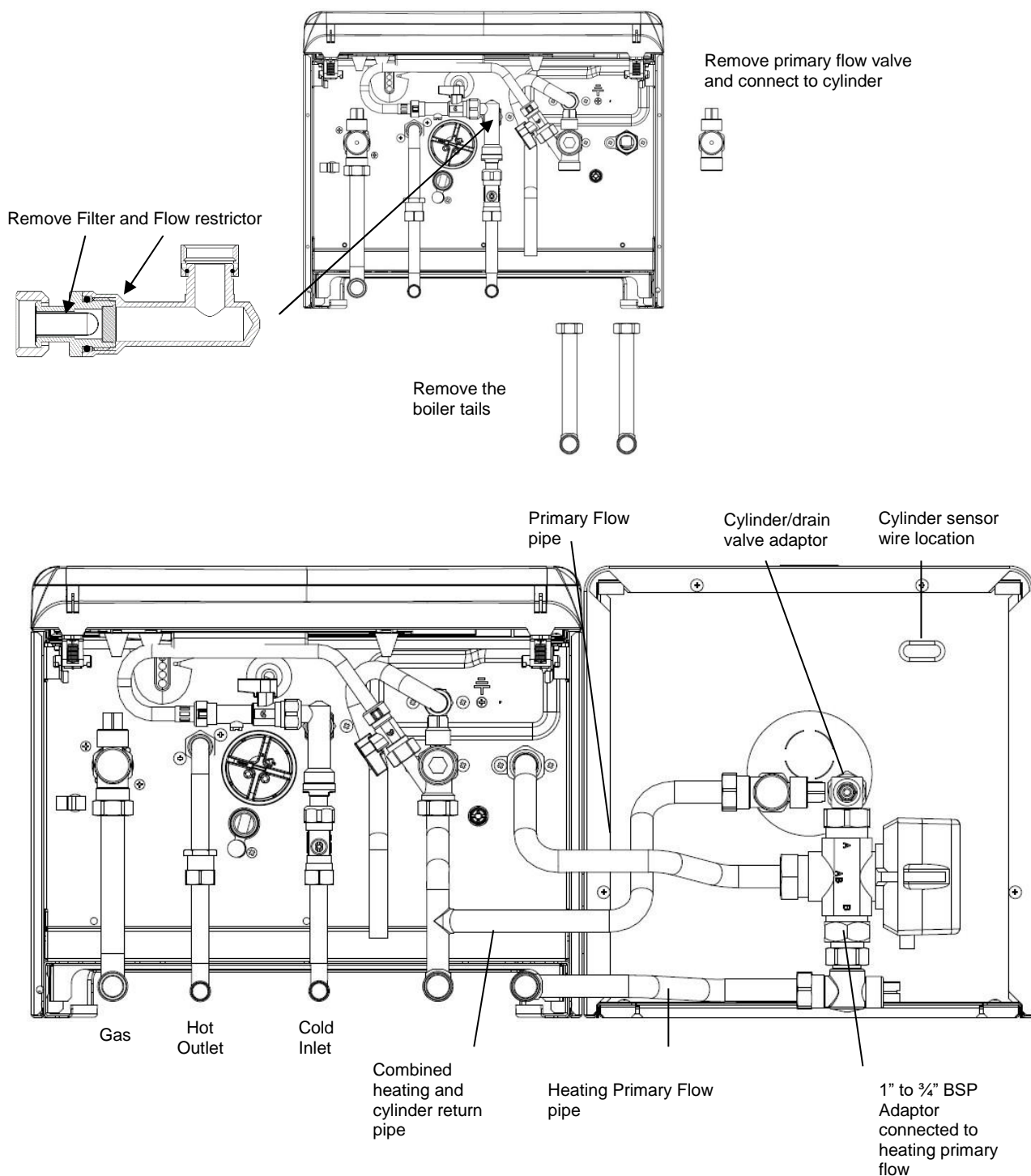
Top Connections

1. Remove the left hand pipe that joins the flue heat recovery box to the hot connection of the blending valve and remove the two grommets in the top of the boiler casing.
2. Pass the new pipe and grommet through the left hand hole in the top of the boiler and connect the other end to the blending valve hot in connection.
3. Pass the GasSaver to cylinder pipe through the top of the boiler and connect to the GasSaver and left hand cylinder union.
4. Connect the cylinder to blending valve pipe inserting the strainer from the boiler inlet connection.
5. Always use new sealing washers and make sure the pipe grommets are correctly fitted to the boiler casing.



Bottom Connections

1. Remove the primary flow and return tails from the boiler and remove the primary flow isolation valve (this will be used later).
2. **Remove the mains water strainer and flow restrictor from the brass housing located at the mains inlet of the boiler. Note: If this is not done the FlowSmart will NOT achieve 18 lpm DHW flow rate.**
3. Connect the previously removed primary flow valve to the return connection of the cylinder (left hand connection) and connect the cylinder and primary return pipe assembly to it and the boiler return isolation valve.
4. Connect the cylinder/drain valve adapter to the cylinder flow connection (right hand connection).
5. Connect port A of the diverter valve to the cylinder/drain valve adapter and connect the boiler flow to the diverter valve flow connection AB using the connection pipe supplied.
6. Connect the heating primary flow pipe to the diverter valve B connection with the 1" to 3/4" BSP adaptor and tighten all connections.
7. Connect the wires for the diverter valve and cylinder sensor to the main boiler panel as shown below
8. When filling the heating system and cylinder vent the cylinder using the top vent connection point.



CONTROL VALVE INSTALLATION

The Alpha diverter valve supplied **MUST** be fitted exactly as shown, port A to FlowSmart cylinder, port B to heating system.

EXTERNAL BYPASS

An external automatic type bypass is not typically required.

EXPANSION VESSELS

It is recommended that an additional primary heating expansion vessel of at least 5 litres is fitted to the central heating return external to the boiler.

If the total primary heating system volume is above 80 litres then the additional primary expansion vessel size must be increased by 1 litre per 10 litres of system volume. The additional expansion vessel must be pre-charged to 1bar.

It is recommended that a potable water shock arrester is fitted on the incoming water main to the boiler.

ELECTRICAL CONNECTIONS

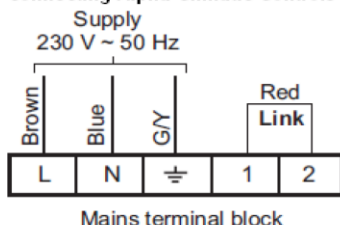
All electrical wiring must be carried out by a competent person to BS 7671 - Requirements for Electrical Installations, IEE Wiring Regulations.

Connect the mains supply to the boiler terminal block as described in the instructions supplied with the boiler.

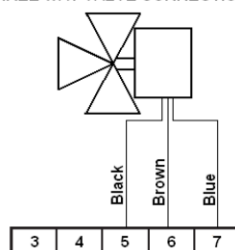
Note: An internal clock should not be fitted to the boiler when a FlowSmart system is connected.

230 V ~ 50 Hz CONNECTIONS

Remove Link between 1 and 2 when connecting Alpha Climatic Controls



THREE WAY VALVE CONNECTIONS



LOW VOLTAGE CONNECTIONS ONLY

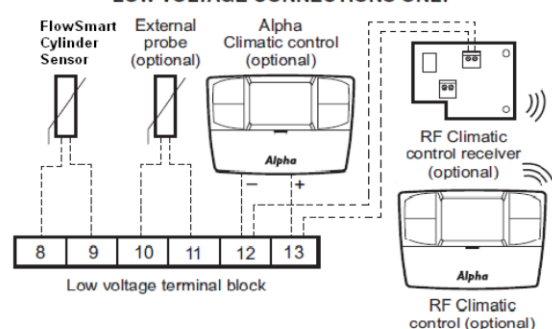


Fig 6

Main Zone Controls

Connect Climatic to boiler terminals 12 & 13 (can be connected either way round)

Note: Remove link from terminals 1 & 2. **Do not** fit Climatic wires into terminals 1 & 2!

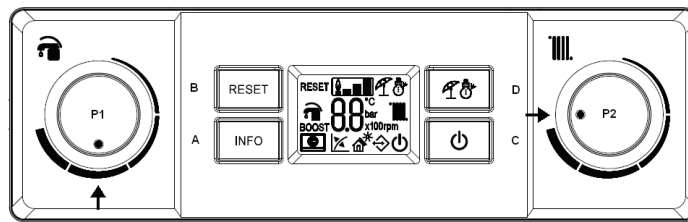
Cylinder Sensor

Connect to boiler terminals 8 & 9 (can be connected either way round)

Weather compensation probe (optional)

Connect to boiler terminals 10 & 11 (can be connected either way round)

FLOWSMART FUNCTION



Boiler control panel

The Alpha InTec 40GS2 boiler will automatically recognize the cylinder sensor connection and activate the cylinder heating function. This is confirmed with the word “BOOST” on the boiler display.

To turn the FlowSmart function on/off press and hold the RESET and INFO buttons together (>3 seconds) until the BOOST symbol is shown/goes. The Flowsmart cylinder temperature will be maintained when the “BOOST” symbol is activated.

Note: In periods of lower demand/occupancy (i.e. fewer people at home/holidays, etc.) the FlowSmart cylinder function can be turned off to conserve energy, if required. The boiler will continue to deliver hot water on demand.

It is strongly recommended that the cylinder heating periods are timed using an Alpha Climatic controller hot water time periods. (The “BOOST” function must be kept activated to control the cylinder heating).

FLOWSMART PRIMARY TEMPERATURE

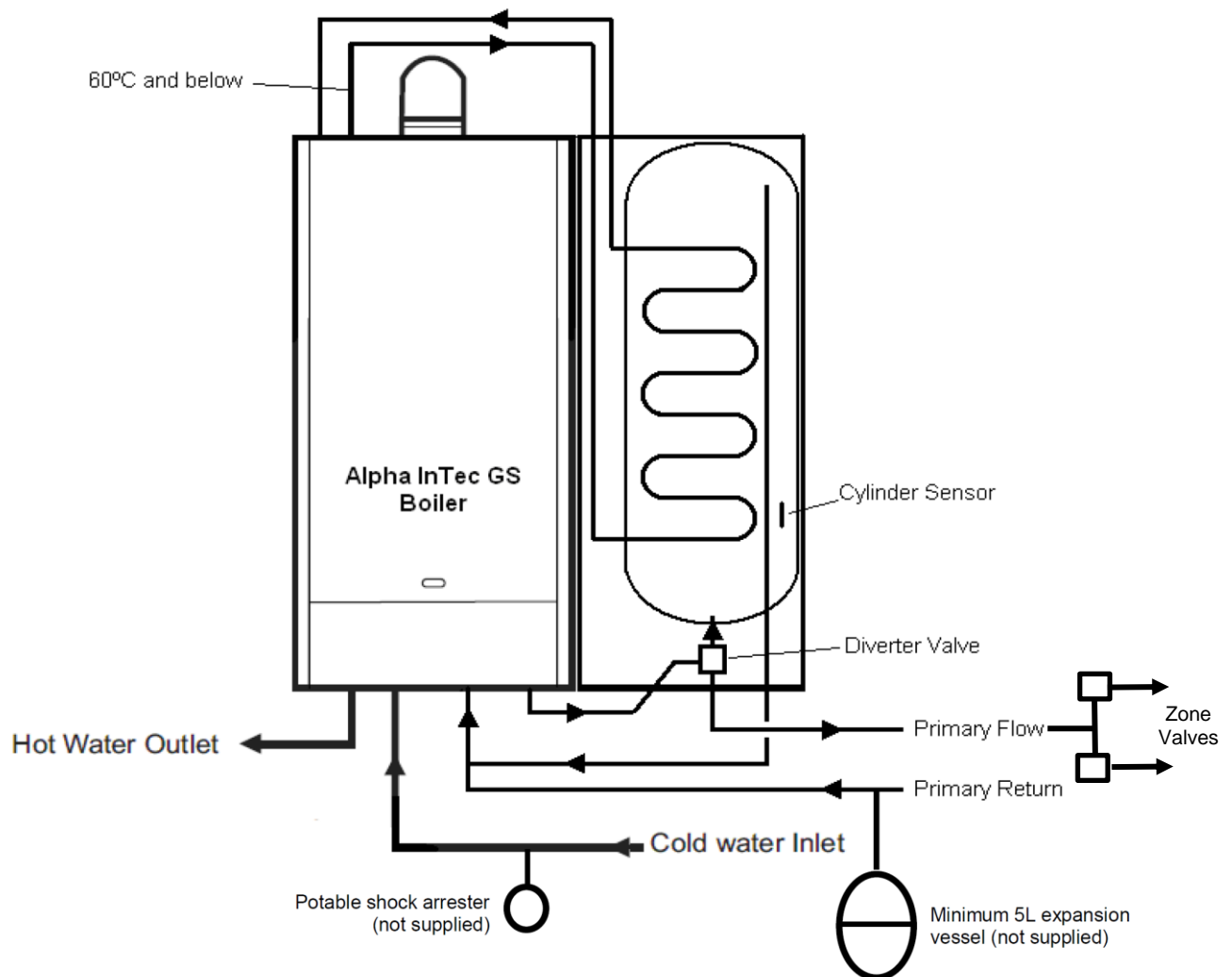
The FlowSmart thermal store temperature setting can be adjusted by pressing the INFO button on the boiler.

Press INFO, “d0” will be displayed, alternating with the cylinder set temperature value. Turning the DHW thermostat knob will adjust this temperature reading. Stop turning the knob and “88” will flash to show the new setting is saved.

Recommended setting is 65°C

7.4 SYSTEM TYPE 2

InTec 40GS2 boiler with wall hung cylinder + Alpha Diverter + Alpha Controls (2 CH zones)



For optional DHW secondary circuit schematic (if required), see page 9

Recommended Alpha Equipment List

Wall hung FlowSmart kit (6.2004556)

Controls:

Alpha Climatic controller (3.022144 hard wired only)

Alpha Easystat (7.2000050)

Optional Alpha external weather compensation probe (3.022383)

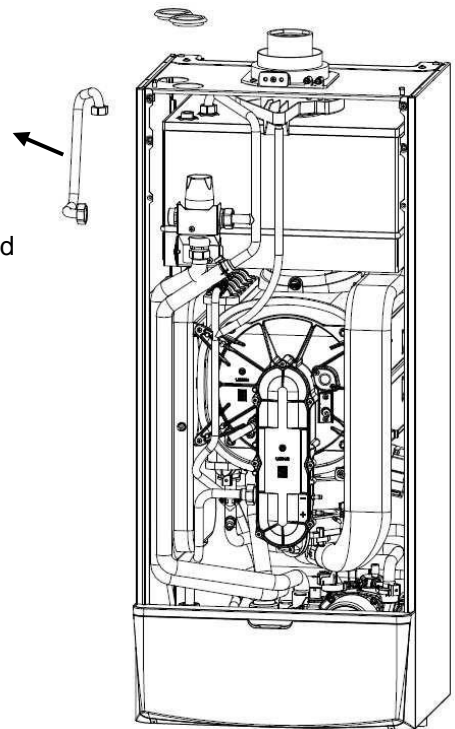
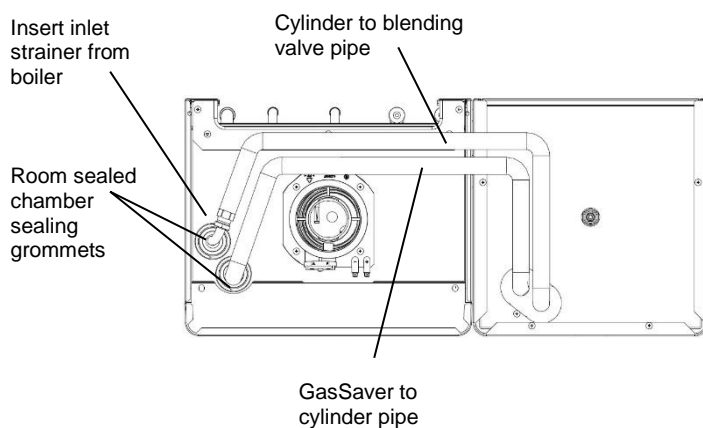
FITTING THE BOILER & CYLINDER

The following items are supplied with the wall hung FlowSmart system.

- A. An Alpha InTec 40GS2 boiler
 - B. A 50 litre wall hung cylinder and sensor
 - C. Three port diverter valve
 - D. Pipe fitting kit and washers
 - E. Wall template
- Hang the boiler on the wall as described in the boiler installation manual making sure there is enough space to its right to accommodate the FlowSmart cylinder.
 - Align the FlowSmart template to the right hand side of the boiler making sure the top and bottom of the casing line up with the top and bottom of the boiler.
 - Mark the screw hole positions for the hanging bracket marked on the template.
 - Drill the wall and secure the bracket using the plugs and screws provided.
 - Hang the FlowSmart cylinder on the wall making sure it is tight against the side of the boiler.

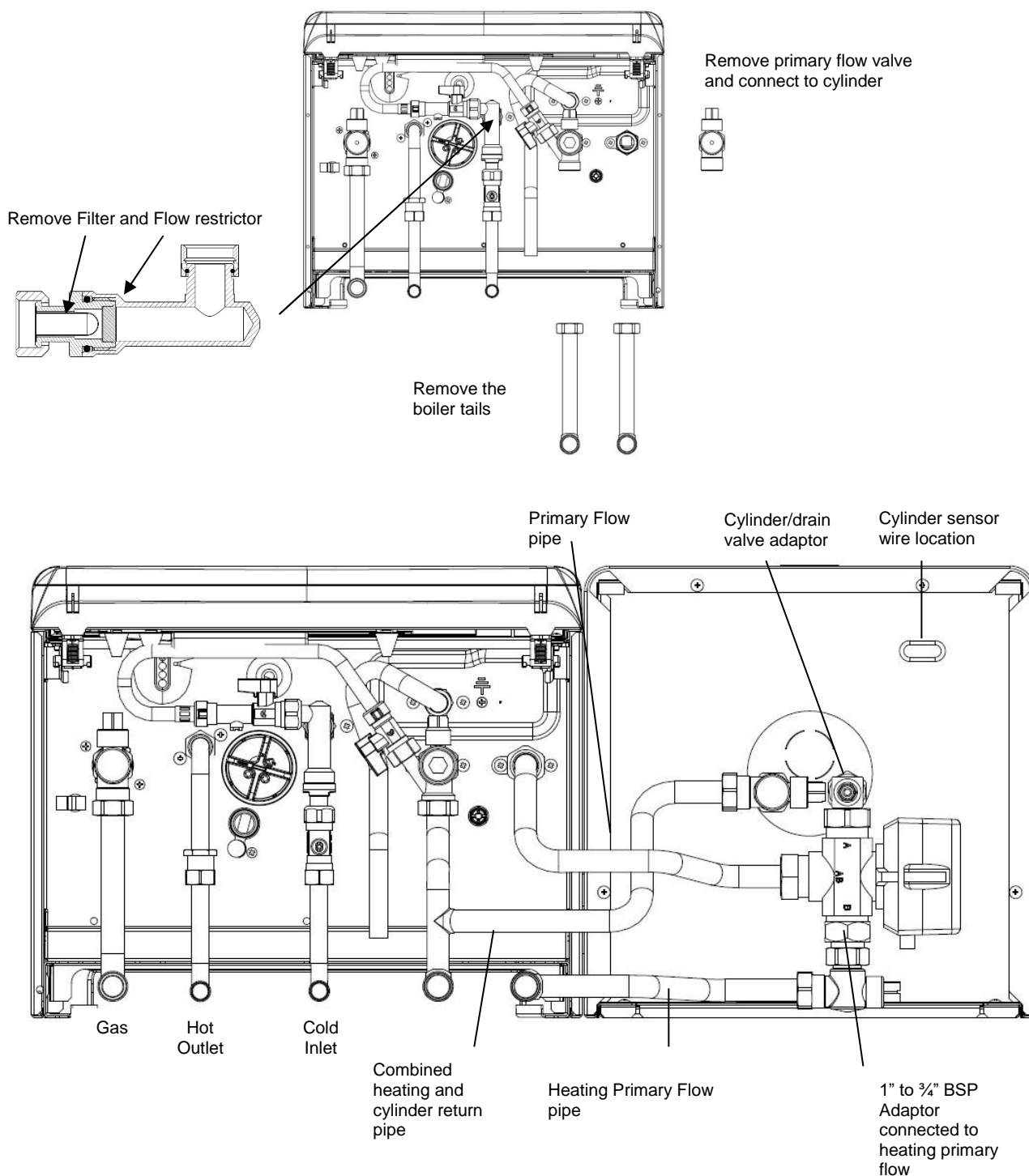
Top Connections

1. Remove the left hand pipe that joins the flue heat recovery box to the hot connection of the blending valve and remove the two grommets in the top of the boiler casing.
2. Pass the new pipe and grommet through the left hand hole in the top of the boiler and connect the other end to the blending valve hot in connection.
3. Pass the GasSaver to cylinder pipe through the top of the boiler and connect to the GasSaver and left hand cylinder union.
4. Connect the cylinder to blending valve pipe inserting the strainer from the boiler inlet connection.
5. Always use new sealing washers and make sure the pipe grommets are correctly fitted to the boiler casing.



Bottom Connections

1. Remove the primary flow and return tails from the boiler and remove the primary flow isolation valve (this will be used later).
2. **Remove the mains water strainer and flow restrictor from the brass housing located at the mains inlet of the boiler. Note: If this is not done the FlowSmart will NOT achieve 18 lpm DHW flow rate.**
3. Connect the previously removed primary flow valve to the return connection of the cylinder (left hand connection) and connect the cylinder and primary return pipe assembly to it and the boiler return isolation valve.
4. Connect the cylinder/drain valve adapter to the cylinder flow connection (right hand connection).
5. Connect port A of the diverter valve to the cylinder/drain valve adapter and connect the boiler flow to the diverter valve flow connection AB using the connection pipe supplied.
6. Connect the heating primary flow pipe to the diverter valve B connection with the 1" to ¾" BSP adaptor and tighten all connections.
7. Connect the wires for the diverter valve and cylinder sensor to the main boiler panel as shown below
8. When filling the heating system and cylinder vent the cylinder using the top vent connection point.



CONTROL VALVE INSTALLATION

The Alpha diverter valve supplied **MUST** be fitted exactly as shown, port A to FlowSmart cylinder, port B to heating system.

EXTERNAL BYPASS

An external automatic type bypass is not typically required.

EXPANSION VESSELS

It is recommended that an additional primary heating expansion vessel of at least 5 litres is fitted to the central heating return external to the boiler.

If the total primary heating system volume is above 80 litres then the additional primary expansion vessel size must be increased by 1 litre per 10 litres of system volume. The additional expansion vessel must be pre-charged to 1bar.

It is recommended that a potable water shock arrester is fitted on the incoming water main to the boiler.

ELECTRICAL CONNECTIONS

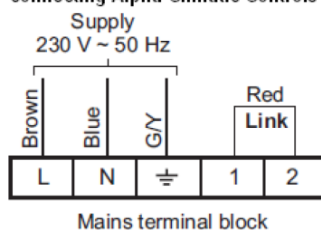
All electrical wiring must be carried out by a competent person to BS 7671 - Requirements for Electrical Installations, IEE Wiring Regulations.

Connect the mains supply to the boiler terminal block as described in the instructions supplied with the boiler.

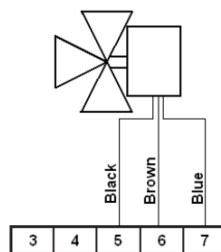
Note: An internal clock should not be fitted to the boiler when a FlowSmart system is connected.

230 V ~ 50 Hz CONNECTIONS

Remove Link between 1 and 2 when connecting Alpha Climatic Controls



THREE WAY VALVE CONNECTIONS



LOW VOLTAGE CONNECTIONS ONLY

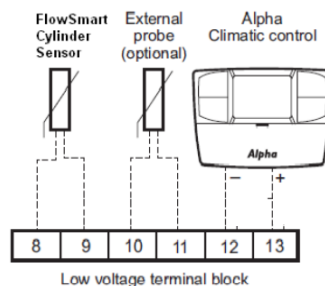


Fig 6

Main Zone Controls

Connect hard wired Climatic to boiler terminals 12 & 13 (can be connected either way round)

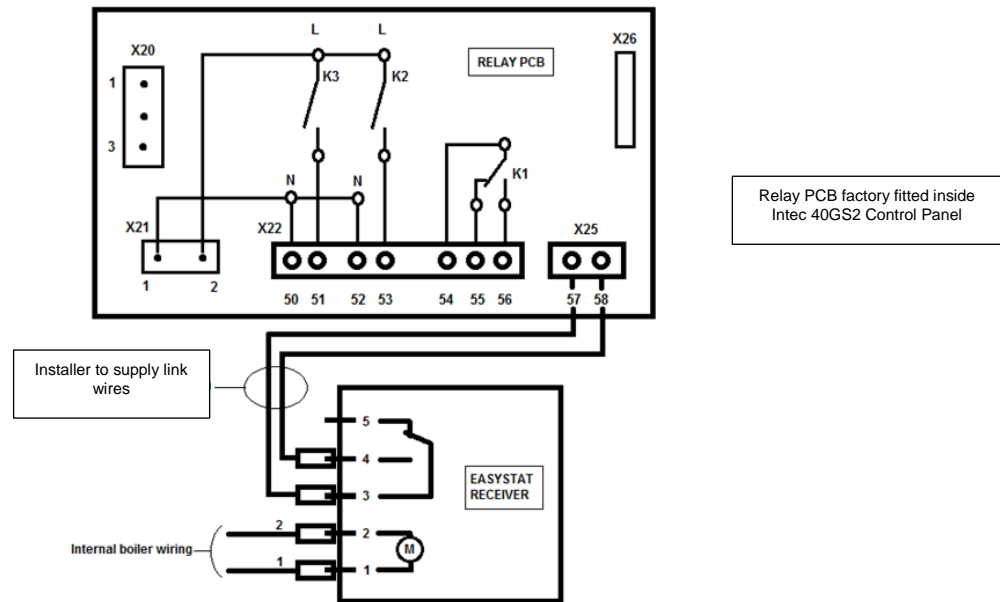
Note: Remove link from terminals 1 & 2. **Do not** fit Climatic wires into terminals 1 & 2!

Second Zone Controls

Fit the Easystat RF receiver as described in the boiler installation manual, but **do not** connect the boiler wires 3 and 4 to terminals 3 and 4 on the receiver!

Instead fit 2no. spade connections (not supplied) to the receiver connections 3 and 4, and the other ends to terminals 57 and 58 of the Relay PCB within boiler (wires can be connected either way round)

Alpha RF Easy Stat receiver connection to relay PCB:



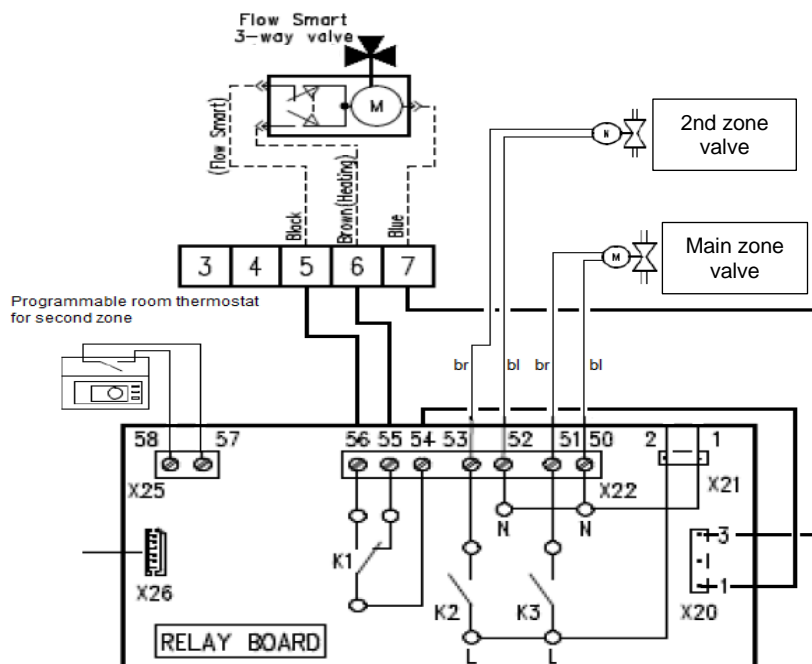
Heating Zone Valves (not supplied):

These connect to the relay PCB factory fitted within boiler control panel.

Connect to boiler terminals as follows:

- Main zone valve brown (live) to relay PCB terminal 51
- Main zone valve blue (neutral) to relay PCB terminal 50
- 2nd zone valve brown (live) to relay PCB terminal 53
- 2nd zone valve blue (neutral) to relay PCB terminal 52

Zone valve connections:



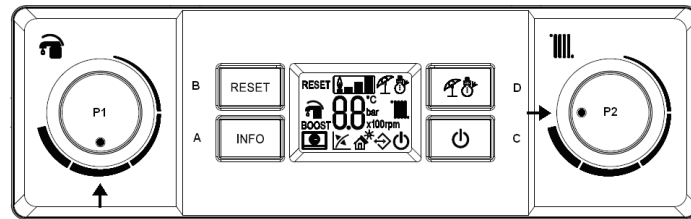
Cylinder Sensor

Connect to boiler terminals 8 & 9 (can be connected either way round)

Weather compensation probe (optional)

Connect to boiler terminals 10 & 11 (can be connected either way round)

FLOWSMART FUNCTION



Boiler control panel

The Alpha InTec 40GS2 boiler will automatically recognize the cylinder sensor connection and activate the cylinder heating function. This is confirmed with the word “BOOST” on the boiler display.

To turn the FlowSmart function on/off press and hold the RESET and INFO buttons together (>3 seconds) until the BOOST symbol is shown/goes. The Flowsmart cylinder temperature will be maintained when the “BOOST” symbol is activated.

Note: In periods of lower demand/occupancy (i.e. fewer people at home/holidays, etc.) the FlowSmart cylinder function can be turned off to conserve energy, if required. The boiler will continue to deliver hot water on demand.

It is strongly recommended that the cylinder heating periods are timed using an Alpha Climatic controller hot water time periods. (The “BOOST” function must be kept activated to control the cylinder heating).

FLOWSMART PRIMARY TEMPERATURE

The FlowSmart thermal store temperature setting can be adjusted by pressing the INFO button on the boiler.

Press INFO, “d0” will be displayed, alternating with the cylinder set temperature value. Turning the DHW thermostat knob will adjust this temperature reading. Stop turning the knob and “88” will flash to show the new setting is saved.

Recommended setting is 65°C

7.5 Installation with Non-Alpha Controls

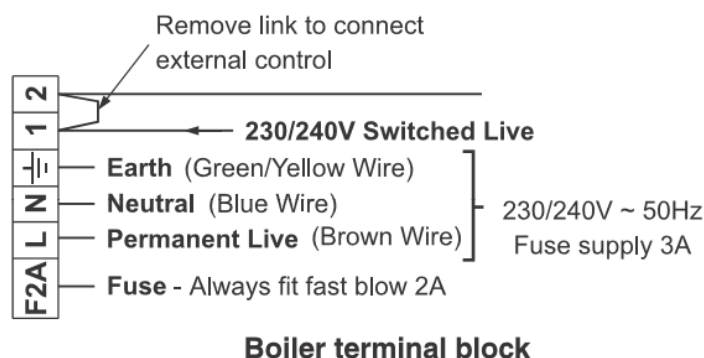
Install Alpha Intec 40GS2 boiler and wall hung cylinder as shown above.

It is recommended that an optional Alpha Climatic controller is used to give time control over the operation of the FlowSmart cylinder. However, if non-Alpha controls are used they must be installed in accordance with their manufacturer's instructions. A switched live should be brought back to terminal 1 on the boiler to activate heating.

All electrical wiring must be carried out by a competent person to BS 7671 - Requirements for Electrical Installations, IEE Wiring Regulations.

Note: An internal clock should not be fitted to the boiler when a FlowSmart system is connected.

General boiler wiring connections:



FLOWSMART FUNCTION

The Alpha InTec 40GS2 boiler will automatically recognize the cylinder sensor connection and activate the cylinder heating function. This is confirmed with the word "BOOST" on the boiler display.

To turn the FlowSmart function on/off press and hold the RESET and INFO buttons together (>3 seconds) until the BOOST symbol is shown/goes. The Flowsmart cylinder temperature will be maintained when the "BOOST" symbol is activated.

Note: In periods of lower demand/occupancy (i.e. fewer people at home/holidays, etc.) the FlowSmart cylinder function can be turned off to conserve energy, if required. The boiler will continue to deliver hot water on demand.

FLOWSMART PRIMARY TEMPERATURE

The FlowSmart thermal store temperature setting can be adjusted by pressing the INFO button on the boiler.

Press INFO, "d0" will be displayed, alternating with the cylinder set temperature value. Turning the DHW thermostat knob will adjust this temperature reading. Stop turning the knob and "88" will flash to show the new setting is saved.

Recommended setting is 65°C

8.0 COMMISSIONING

8.1 FINAL COMMISSIONING

1. Fill all the systems, i.e. primary and secondary circuits and check for leaks. Refer to the boiler instructions.

2. Ensure the system has been flushed and cleaned and inhibitor added to the primary system.

Note: All cleaning agent **must** be removed, and inhibitor added to the primary system, failure to do so will invalidate the warranty.

3. Commission the boiler as described in the installation instructions.

4. Check all controls and wiring are complete

5. Check all controls are functioning correctly

6. Check FlowSmart function is correct.

Program FlowSmart timing with *optional* Alpha Climatic Controller (Recommended)

It is recommended to set Flowsmart HW on/off times to coincide with periods of high hot water demand (i.e. mornings/evenings, etc.) *Note: Hot water will always be available via the combi boiler regardless of FlowSmart HW timer settings.*

- Press the “PROG” button and TIME will appear, press + twice and HW PRG will flash, press OK and MONDAY will appear.
- Using the + button you can programme individual days or blocks of days then press OK.
- “On 1” will flash on the display with a time below it. Using the +/- buttons you can select the time you wish the hot water to turn on followed by OK, then using the +/- buttons you can set the time you wish the hot water to turn off.
- Press OK and the next on period will appear, repeat the previous procedure for the next on-off periods for the rest of the day to a maximum of four on periods. After one minute, the display will return to main menu or keep pressing ESC.

Note: If four on off periods are not required, then set the unused periods on off times the same e.g. On 23:00 off 23:00.

8.2 ROUTINE INSPECTION

The cylinder has a drain connection fitted to the manifold underneath. Before removing any connections or the cylinder cover the cylinder should be fully drained using this connection.

It is recommended that the FlowSmart cylinder and connections should be subject to a general condition inspection at each boiler maintenance interval.

9.0 Product Data Sheet (ErP)

PRODUCT DATA SHEET (IN COMPLIANCE WITH REGULATION 811/203)

FlowSmart Cylinder (wall hung)

