

Sirius FS

Floor Standing Stainless Steel Condensing Boilers

Single Boiler Applications: 50 to 160kW

Modular Boiler Applications: up to 640kW



Working towards
a cleaner future

POTTERTON
COMMERCIAL

heating specialists



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1.1 Background

Potterton Commercial's Sirius FS is a technically sophisticated range of floor standing, stainless steel condensing boilers. Backed by a unique, fully comprehensive extended warranty, and built in reliability you can sit back and relax after the installation.

Lightweight, low noise and easy to install, the Sirius FS is also extremely energy efficient (up to 107% net) as well as offering advanced ultra low NOx performance, exceeding Class 5. Using the latest stainless steel heat exchanger technology in conjunction with the most sophisticated control system, the Sirius FS delivers maximum condensing performance. Sirius FS boilers are easy to service with good internal space for providing easy access to key components.

1.2 Product

The Potterton Commercial Sirius FS is available in six outputs, all with a width of 450mm, for single boiler applications with nominal outputs of: 50, 70, 90, 105, 130, & 160kW. These sizes make it the perfect choice for large domestic applications as well as for use in a range of light commercial premises e.g. small hotels, bars and restaurants etc. The boilers can also be arranged in modular format up to 640kW. This also enables the boiler to be suitable for use in general commercial applications such as hospitals, schools and colleges etc.

1.3 Benefits

Peace of mind

The Potterton Commercial Sirius FS is manufactured to ISO9001 Quality Standards using only components of the finest quality, ensuring the range delivers exceptional reliability. Potterton Commercial also provides a fully comprehensive five year parts and labour warranty on the Sirius FS boilers*, when commissioned by Potterton Commercial. Otherwise our standard one year warranty applies.

Environmentally Friendly

The Sirius FS generates net operating efficiency levels of up to 107% at 50°C/30°C and is fully Part L2 compliant. An in-built weather compensation facility optimises seasonal efficiency (full modulation down to 30% and encourages the boiler to condense whenever possible).

Fuel Flexibility

Supplied for use with natural gas or LPG (propane) optional.

User-friendly Controls

Full on-board diagnostics indicate any faults on the user-friendly display panel. The in-built time control (one heating phase) provides the end-user simple control with full diagnostics.

1.4 Design

Designed for floor standing applications, the Sirius FS is a perfect replacement for applications where the existing atmospheric boilers no longer meet the requirements of energy saving legislation. Its compact design allows space saving installation of boiler plant.

1.5 Options

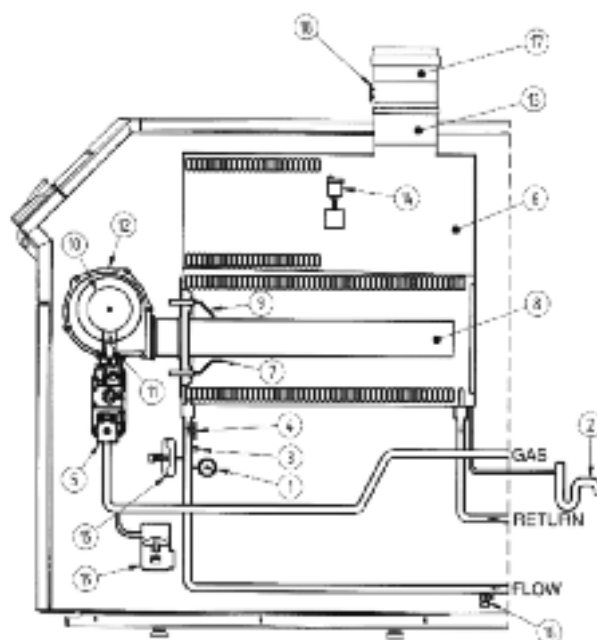
The Sirius FS is available with a variety of options to enable the specifier to customise each installation: modular pipework kits and Building Management Controls.

*Terms & Conditions apply



1.6 Construction

The Sirius FS range of floor standing condensing boilers comprise the latest in stainless steel heat exchangers. For ease of access, the full premix burner has been sited at the front of the boiler. Water and gas connections are made at the rear, conventional flue outlet at the top and controls are accessible by a push-open door. All servicing is carried out from the front of the boiler.



1.7 Exploded View & Description

- | | |
|------------------------------|---------------------------|
| 1. Pressure Gauge | 11. Gas Diaphragm |
| 2. Condensate Siphon | 12. Fan |
| 3. Flow Sensor | 13. Flue Joint |
| 4. Safety Thermostat | 14. Automatic Air Vent |
| 5. Gas Valve | 15. Water Pressure Switch |
| 6. Heat Exchanger | 16. Boiler Drain Point |
| 7. Ionisation Electrode | 17. Flue Spigot |
| 8. Burner | 18. Flue Thermostat |
| 9. Ignition Electrode | 19. Gas Pressure Switch |
| 10. Mixing Chamber & Venturi | |

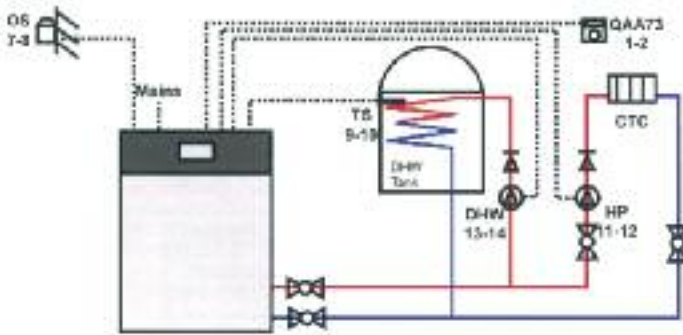
2.1 System Requirements

The Potterton Commercial Sirius FS is suitable for systems with a minimum water pressure of 1 Bar (10 metres vertical head), with a maximum working pressure of 4 Bar.

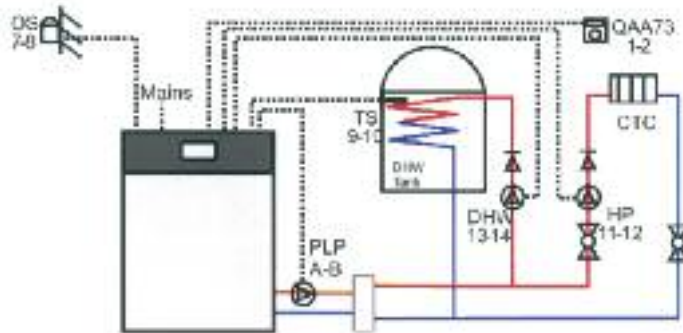
All installations should comply with all relevant codes of practice, British Standards and current Building Regulations. Maximum efficiencies can only be achieved when the Sirius FS boilers are installed within fully condensing systems. Typical heating system layouts and their controls can be seen in the diagrams that follow.



2.2 Single Boiler DHW & CT



2.3 Single Boiler with Low Loss Header DHW & CT

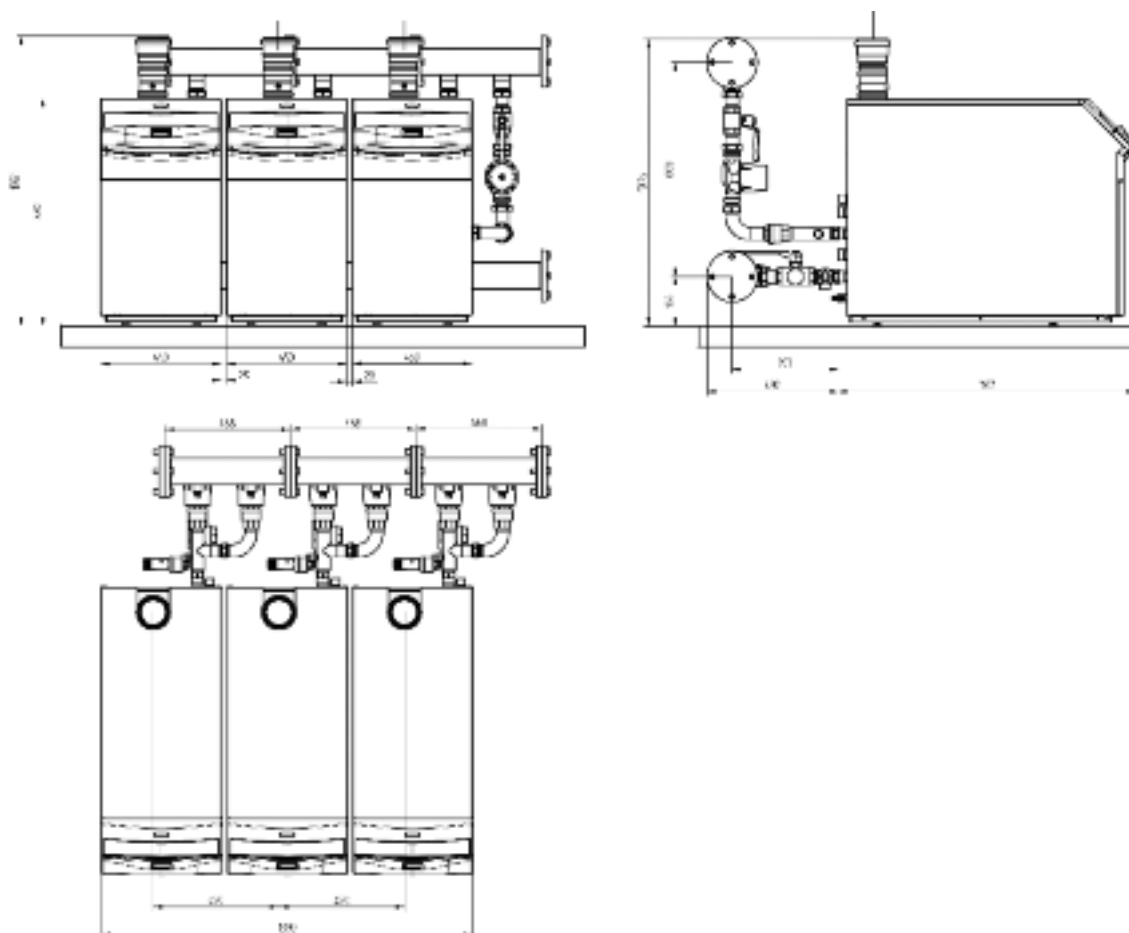


	Pump (Not Supplied)
	Isolating Valve (Not Supplied)
	Non-Return Valve (Not Supplied)
.....	Installer Wiring
	Low Loss Header (Not Supplied)
TS	Tank Sensor*
DHW	DHW Pump (Not Supplied)
PLP	Primary Loop Pump (Not Supplied)
QAA73	Room Control Module*
HP	Heating Pump (Not Supplied)
OS	Outside Sensor
Numbers	Boiler Terminal Connections
*Optional Extra	

3.1 Pipe-work Options

Optional pipe-work header kits are available for modular applications. This should facilitate the installation process, removing the need to fabricate additional pipe-work on site. Manufactured to ISO 9001, the kits are fully tested and supplied in a ready-to-use single package.

3.2 Sirius FS Modular Pipe-work Header Kits





Boiler	Hydraulic Resistance & Water Flow Rates							
	11°C ΔT		15°C ΔT		20°C ΔT		30°C ΔT	
	kPa	L/sec	kPa	L/sec	kPa	L/sec	kPa	L/sec
FS50	50	0.97	32	0.71	25	0.53	10	0.35
FS70	60	1.41	35	1.03	20	0.77	11	0.51
FS90	77	1.85	36	1.35	24	1.02	11	0.68
FS105	75	2.17	40	1.59	23	1.19	13	0.80
FS130	54	2.61	31	1.91	23	1.43	11	0.96
FS160	49	3.26	31	2.39	20	1.79	11	1.19

3.3 Sirius FS Modular Pipe-work Header Kits Sales Codes

	FS90	FS105	FS130	FS160
2 Boilers	2 x BFS/PCAK	2 x BFS/PCAK	2 x BFS/PCAK	2 x BFS/PCAK
3 Boilers	3 x BFS/PCAK	3 x BFS/PCAK	3 x BFS/PCAK	3 x BFS/PCAK
4 Boilers	4 x BFS/PCAK	4 x BFS/PCAK	4 x BFS/PCAK	4 x BFS/PCAK

Note: For the FS160 when operating on systems with DT < 15°C then a BFS/PCAK/15 kit is required for each boiler.

4.1 Controls Options

A versatile range of control options are available to meet most project requirements – from large domestic applications to commercial projects such as hospitals and schools. Whether your project is a single boiler, heating only installation, or a multiple boiler installation with multiple heating and hot water zones, the Sirius FS offers a controls solution to suit.

The Sirius FS controls options can be used in conjunction with a building's existing system and are fully compatible with most available types. Supported by the Potterton Commercial Technical Team, assistance for system specification and design is available to help you design the best controls system for your application.

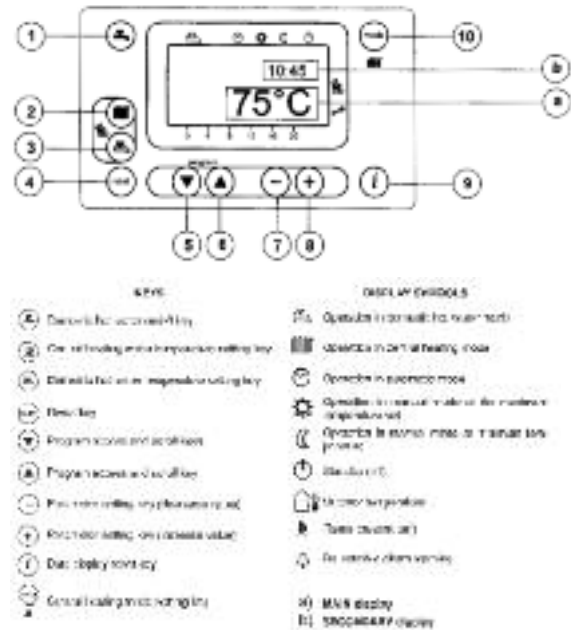
4.2 Single Boiler Application Controls & Sales Codes

Standard Boiler – Sirius FS



Product	Sales Code
FS50	BFS50
FS70	BFS70
FS90	BFS90
FS105	BFS105
FS130	BFS130
FS160	BFS160

Standard Boiler Controls

The Potterton Commercial Sirius FS range of boilers are supplied with a fully integrated Human Machine Interface (HMI) control system. This control and display panel allows the service engineer immediate and accurate information on faults and provides the end user with flexible programming for heating and hot water services. An outside weather compensation sensor, pump overrun facilities and full remote fault diagnostics (fully compatible with existing systems) are also supplied as standard.



4.3 Optional Single Boiler Controllers

Control Type	Sales Code		Description
QAA73	BCC/QAA73		Remote programmable digital room thermostat allowing weather compensation and night set-back for zone control. Programmable up to 3 phases per day for heating and DHW, holiday functions and frost protection. Allows service engineer entry to in-built programming of the boiler control unit allowing building characteristics to be altered and set.
RT	BCC/RT		Remote room thermostat, allowing simple temperature control.
QAZ36	BCC/QAZ36		Immersion sensor for use when hot water control is required using an indirect cylinder.
AGU2.500	BCC/AGU2500		Clip-in interface for use with a variable temperature circuit allows control of 2nd heating pump and 3-way mixer valve (Drive Open/Drive Shut).

4.4 Modular Boiler Application Controls & Sales Codes

The Sirius FS can easily be modularised and is suitable for applications where up to 12 boilers are arranged in cascade formation i.e. up to a maximum of 1920kW. Potterton Commercial offers a range of modular controls options that facilitate optimum sequencing, matching the boiler output to the system load in the most efficient way.

In addition, Potterton Commercial controls can also look after up to 12 heating circuits at a time (including constant

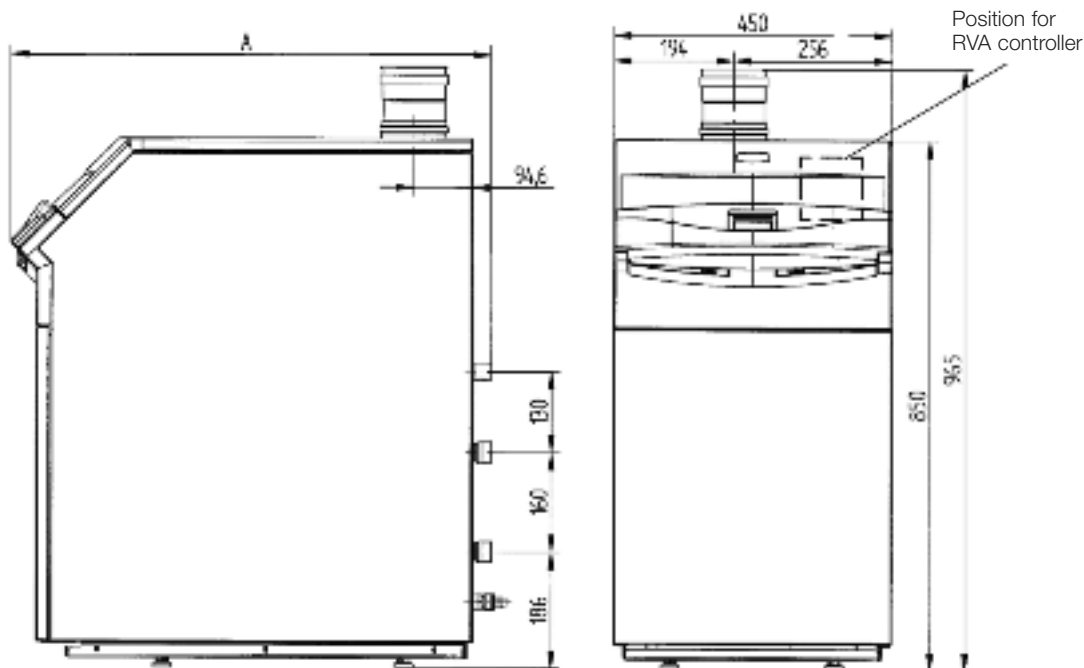
temperature, variable temperature and domestic hot water circuits). It can therefore allow individual zone control and optimisation, individual weather compensation and individual night set-back facilities for each circuit.

Assistance for controls system specification and design is available from the Potterton Commercial technical team to help you design the best controls system for your modular application.

4.5 Optional Modular Boiler Controllers

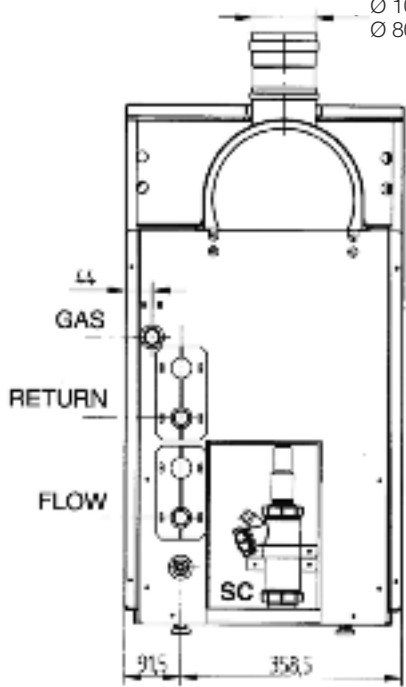
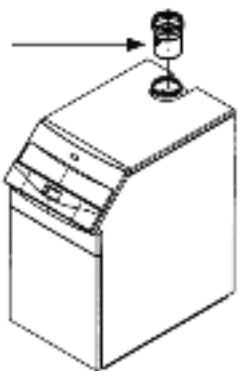
Control Type	Sales Code		Description
RVA47	BCC/RVA47		Sequence controller for the control of up to 12 boilers.
OCI420.A109	BCC/OCI420		Clip-in interface board for bus connection when using the RVA47 Sequence control. One required for every additional boiler in the cascade.
RVA46	BCC/RVA46		Zone controller for the control of CTC and VTC zones. Allows for the control of individual circuit pumps and 3 port motorized valves, with individual room control.
QAZ21	BCC/QAZ21		Immersion sensor for use when hot water control is required using an indirect cylinder.
QAA50	BCC/QAA50		Remote digital room thermostat allowing optimisation and night set-back for zone control.
RVA Housing	BCC/RVAH		Housing for the mounting of RVA controllers

5.1 Dimensions



Ø 100 int FS90 – 160
Ø 80 int FS50 – 70

Insert the flue-gas union and fasten the connector to the flue-gas thermostat



F CH: heating flow
R CH: heating return
GAS: gas inlet to the boiler
SC: condensate drain
SIZE = EXTERNAL 25mm
INTERNAL 18mm

Model	Depth A (mm)	Height (mm)	Width (mm)	Gas	Flow F (CH)	Return R (CH)	Water content (L)
FS 50	621	850	450	3/4"	1"	1"	5.1
FS 70	693	850	450	3/4"	1"	1"	6.5
FS 90	801	850	450	3/4"	1 1/4"	1 1/4"	13.7
FS 105	871	850	450	1"	1 1/2"	1 1/2"	21
FS 130	1024	850	450	1"	1 1/2"	1 1/2"	23.3
FS 160	1132	850	450	1"	1 1/2"	1 1/2"	25.3

5.2 Technical Data

Model		FS50	FS70	FS 90	FS 105	FS 130	FS 160
Nominal Heat Input (Net)	kW	46.4	67	87.2	102.7	123.2	154
Nominal Heat Input (Gross)	kW	51	73.7	95.92	112.97	135.52	169.4
Reduced Heat Input (Net)	kW	12.2	19.9	33.1	36.8	40	41.5
Reduced Heat Input (Gross)	kW	13.4	21.9	36.41	40.48	44	45.65
Nominal Heat Output 75/60°C	kW	45	65	85	100	120	150
Nominal Heat Output 50/30°C	kW	48.7	70.3	91.6	107.8	129.7	162
Reduced Heat Output 75/60°C	kW	11.8	13.4	32.2	35.8	39	40.4
Reduced Heat Output 50/30°C	kW	12.8	14.5	34.9	38.8	42.1	43.7
Gas Consumption (NG)	m ³ /h	4.91	7.08	9.26	10.9	13.8	16.35
Max Flue Temperature	°C	72	73	78	80	77	75
Max Flue Gas Flow Rate	kg/s	0.022	0.031	0.041	0.049	0.058	0.073
Min Flue Gas Flow Rate	kg/s	0.006	0.007	0.016	0.018	0.019	0.02
Nominal Gas Inlet Gas Pressure (NG)	mbar	20	20	20	20	20	20
CO ₂ for Natural Gas	%	8.7					
High Level Ventilation to BS6644	cm ²	92.8	134	174.4	205.4	246.4	308
Low Level Ventilation to BS6644	cm ²	185.6	268	348.8	410.8	492.8	616
Hydraulic Resistance @ 15°C Δt	kPa	32	35	36	46	31	31
Hydraulic Resistance @ 20°C Δt	kPa	25	20	25	25	22	21
Hydraulic Resistance @ 30°C Δt	kPa	10	11	11	13	11	11
Water Flow Rate @ 15°C Δt	L/sec	0.71	1.03	1.35	1.59	1.91	2.39
Water Flow Rate @ 20°C Δt	L/sec	0.53	0.35	1.02	1.19	1.43	1.79
Water Flow Rate @ 25°C Δt	L/sec	0.77	0.51	0.68	0.80	0.96	1.19
Cold Feed Size	mm	19	19	19	19	25	25
Open Vent Size	mm	25	25	25	25	32	32
Safety Valve Size to BS6644	mm	19	19	19	19	19	19
Flue Type		B23					
Flue Spigot Size	mm	80	80	100	100	100	100
Electrical Supply	V	230	230	230	230	230	230
Maximum Electrical Power Consumption (single phase, 50Hz)	W	90	110	100	160	135	235
Minimum Operating Pressure	bar	1	1	1	1	1	1
Maximum Operating Pressure	bar	4	4	4	4	4	4
Maximum Flow Temperature	°C	85	85	85	85	85	85
Boiler Dry Weight	kg	60	68	75	83	95	103
Water Content	litre	5.1	6.5	13.7	21	23.3	25.3
Boiler Height	mm	850	850	850	850	850	850
Boiler Width	mm	450	450	450	450	450	450
Boiler Depth	mm	621	693	801	871	1024	1132

Commercial sales technical & service enquiries

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Technical helpline: 0845 070 1057
Service hotline: 0845 070 1058
e-mail: potterton.commercial@baxigroup.com
web: www.pottertoncommercial.co.uk

Spares

Potterton Commercial spares are available nationwide through the interpart network of approved stockists. Alternatively please contact:-

Interpart

Brooks House
Coventry Road
Warwick CV34 4LL
Tel: 0844 871 1540

Applications & Installations

Our experienced technical support team are available to offer advice on any aspect of heating system design and boiler installation.

Please contact: 0845 070 1057

Commercial service offices

Our service organisation covers the whole of the UK to look after your needs for all Potterton Commercial products.

Our service office offers a wide range of specialised services including:

- Burner commissioning for all fuels
- Boiler service contracts
- Breakdown and repair services
- Burner and boiler replacement
- Oil/gas conversions
- Water treatment and descaling
- Packaged units

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

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