

# Specify A Cleaner Future

## Pre-fabricated heating system



Paraskid  
Pre fabricated  
modulating condensing  
heating system  
120kW – 240kW

**POTTERTON**  
COMMERCIAL

heating specialists

# Paraskid

Breaking new ground in commercial heating engineering, the Paraskid is the ultimate pre-fabricated condensing heating system. Available in three sizes 120kW, 160kW and 240kW, the Paraskid is designed around the Paramount two modulating condensing boiler with its advanced heating control system, giving the Paraskid exceptional system energy efficiencies (up to 109% net).

Combined with an integral intelligent control system the Paramount's modulating burner system allows the Paraskid to modulate down to extremely low loads whilst maintaining optimum system efficiency.

With two options, heating only and heating and hot water, the Paraskid is factory complete requiring only the connection of external services and distribution pipe work, simplifying installation and minimising on-site construction costs.

Available with versatile flue options allowing conventional and balanced flue arrangements, the Paraskid incorporates integral pumps for heating and hot water generation.

The heating pumps are duplicated for optimum redundancy provision and sized for distribution throughout the heating system.

A state of the art self regulating pump system and integral bypass also allows the Paraskid to be utilised on systems with external flow reducing devices. This reduces the need for the additional cost of low loss header systems and secondary pumps, reducing the installation cost and maximising the use of low system return temperatures to operate the Paraskid at optimum condensing efficiency.

## Key Benefits & Features

### Factory assembled

Constructed under ISO 9000 factory conditions the Paraskid is factory complete to simplify on-site installation of the heating system.

Utilising quick release boiler isolating valves and boiler mounting frame, the Paramount boilers can be easily removed from the skid to facilitate on-site installation.

### Control panel

The Paraskid incorporates a control panel for automatic and manual control of boilers and pumps. The control system incorporates time control, including optimum start, and direct weather compensation for compliance with Part L of the building regulations.

### Electrical installation

The Paraskid and its associated components are factory wired in accordance with BS7671 (IEE Regulations).

### Pressurisation unit

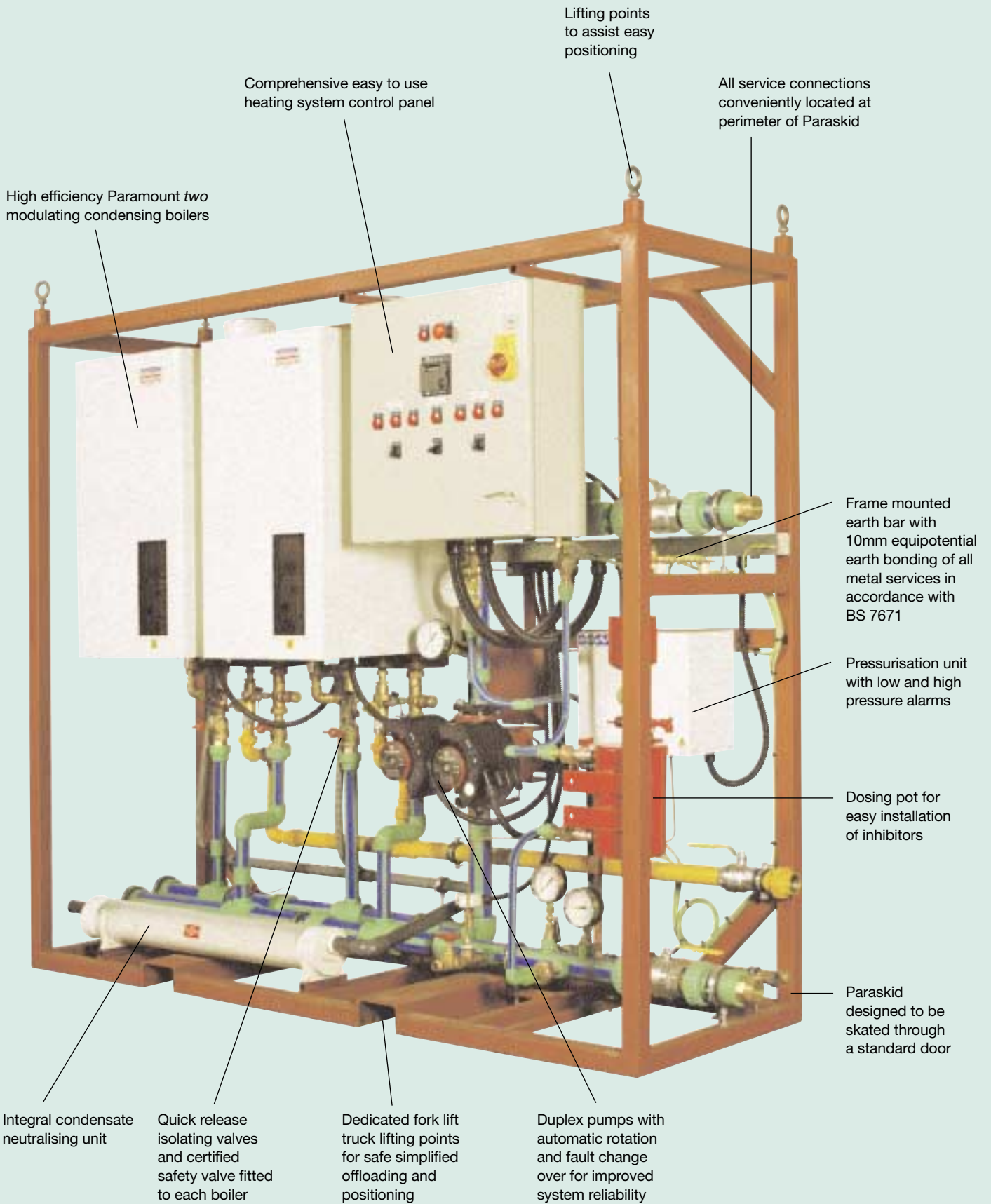
An integral pressurisation unit and expansion vessel is provided.

### Pipe work

The heating pipe work on the Paraskid is constructed from corrosion resistant polypropylene pipe, minimising heat loss without the need for additional insulation.

### Condensate treatment

The Paraskid incorporates an integral condensate neutralising unit to ease discharge and disposal.



# Control System

The Paraskid is manufactured in our ISO9000 approved manufacturing facility. The boilers are supplied with the Potterton Commercial lifetime guarantee on the heat exchangers, all other components have a 2 year on site warranty.\* The Paraskid is supplied with a comprehensive operating manual covering all components on the skid.

## Technical specifications

### Paramount Boiler

The Paramount boiler is a modulating condensing boiler offering operating efficiencies of up to 109% net and NOx levels <20mg/kwh.

### Part L2 efficiencies: Full Load 88%; Part Load 98% (Gross)

The Paramount incorporates a unique cast aluminium silicon alloy monoblock heat exchanger offering optimum heat transfer and long-lasting performance.

### Safety Valves

Individual boilers are protected by insurance class Nabic Fig 500 safety valves set at 4 bar.

### Heating Pumps

Heating pumps are supplied from the Grundfos Magna duplex head range. The pump incorporates internal automatic modulation of pump speed to maintain a constant water flow or differential head.

The pump circuit has internal pump rotation and fault diagnostics.

### Condensate Treatment Unit

The condensate unit neutralises the boiler condensate utilising a non hazardous chalk based charge to a pH of 7-8

### Pressurisation Unit

A BOSS MX Mini Pressfill unit is installed on the Paraskid. This incorporates a 4.5 Litre header tank with overflow complying with WRC bylaw 11.

The pressurisation unit has high and low level pressure switches wired to the Paraskid system control panel.

A removable RPZ valve is supplied for initial filling to prevent backflow in accordance with Water Supply regulations G15.3, G15.7 and G24.2

## Controls

The Paraskid is available in heating only and heating and hot water options. The technical data below details the heating technical data for both options.

The hot water option is provided by the addition of an energy efficient Heatrae Sadia Megafluo fast recovery calorifier, providing hot water at mains pressure. On compensated heating systems the domestic hot water is configured for hot water priority.

### Heating Pipe Work

The heating pipe work is constructed from light weight polypropylene pipe. The pipe is corrosion resistant and minimises heat loss.

### Local isolating valves are provided for each boiler.

Automatic air vents with isolating valves are provided at all high points and drain valves at all low points.

### Gas Pipe Work

Gas pipe work is screwed steel to BS 1384 and incorporates individual local boiler isolating valves and a gas purge point. Gas pipe work is painted Yellow Ochre.

### Pressure & Temperature Gauges

100mm diameter pressure and temperature gauges are provided on the heating flow and return headers.

### Expansion Vessel

An expansion vessel suitable for heating system is supplied loose for installation at site. Pipe work between the expansion vessel and the Paraskid should incorporate an anti gravity loop.

### Paraskid Frame

The Paraskid is constructed from a fully welded steel frame painted with red oxide for protection.

### HWS Module (Option)

The HWS option incorporates a Heatrae Sadia Megafluo unvented hot water cylinder. This is complete with primary and secondary pumps and all safety devices and controls for compliance with building regulations.

The HWS option has a 25 Year guarantee on the calorifier cylinder.

The boilers are suitable for a versatile range of flue options allowing conventional and balanced flue arrangements. A range of flue fittings and accessories are available from Potterton Commercial to suit installation requirements.

The Paraskid is available with right hand connections as standard designated by Suffix R. Left hand options are available to order designated Suffix L.

\* Terms & conditions apply

## Technical Data

	<b>Paraskid 120R</b>	<b>Paraskid 160R</b>	<b>Paraskid 240R</b>
Boiler CE Number	0085BL0514	0085BL0514	0085BL0514
Number of Boilers	2 x Paramount two 60	2 x Paramount two 80	3 x Paramount two 80
Nominal Heat Input Range (gross) kW	15.5 – 130	22 – 171	22 – 256
Nominal Heat Output Range 80/60°C kW	15 – 119	21 – 158	21 – 237
Gas Consumption (NG) [Max Output] m <sup>3</sup> /hr	12.0	16.0	24.0
Nominal Gas Inlet Pressure (NG)	20 – 30 mbar	20 – 30 mbar	20 – 30 mbar
Nominal Gas Inlet Pressure (LPG)	35 mbar	35 mbar	35 mbar
High Level Ventilation to BS6644 cm <sup>2</sup>	435	535	734
Low Level Ventilation to BS6644 cm <sup>2</sup>	870	1070	1468
External Pump Head Available at 11°C ΔT Kpa	72	52	29
External Pump Head Available at 20°C ΔT Kpa	82	65	49
Water Flow rate @ 11°C ΔT L/Sec	2.60	3.46	5.19
Water Flow rate @ 20°C ΔT L/Sec	1.43	1.90	2.86
Electrical Supply V/Hz	230/50	230/50	230/50
Electrical Power Consumption Start A	8	10	15
Electrical Power Consumption Run A	2.8	3.1	5.2
External Fuse Size A	10	10	10
Expansion Vessel size Litre	100	150	150
Minimum Operating Pressure Bar	1	1	1
Maximum Water Pressure Bar	4	4	4
Safety Valve Setting (Per Boiler)	Nabic fig. 500 @ 4 Bar	Nabic fig. 500 @ 4 Bar	Nabic fig. 500 @ 4 Bar
MAX FLOW TEMP °C	85	85	85
Water Connection (CWM)* mm	22	22	22
Gas Connection BSP	40	40	40
Heating Flow & Return Connection BSP	50	50	50
Condensate Connection PE mm O/D	40	40	40
Skid Weight (empty)** kg	400	400	500
Water Content litre	50	60	80

\*The pressurisation unit is provided with a cold mains fill loop for initial filling. \* Maximum cold water supply pressure 4 Bar. \*\* Individual Boiler weight – removable for installation with quick release fittings – Paramount 60: 63kg - Paramount 80: 76kg. \*\*\* A dosing vessel is provided for the addition of inhibitors

## Hot Water Module

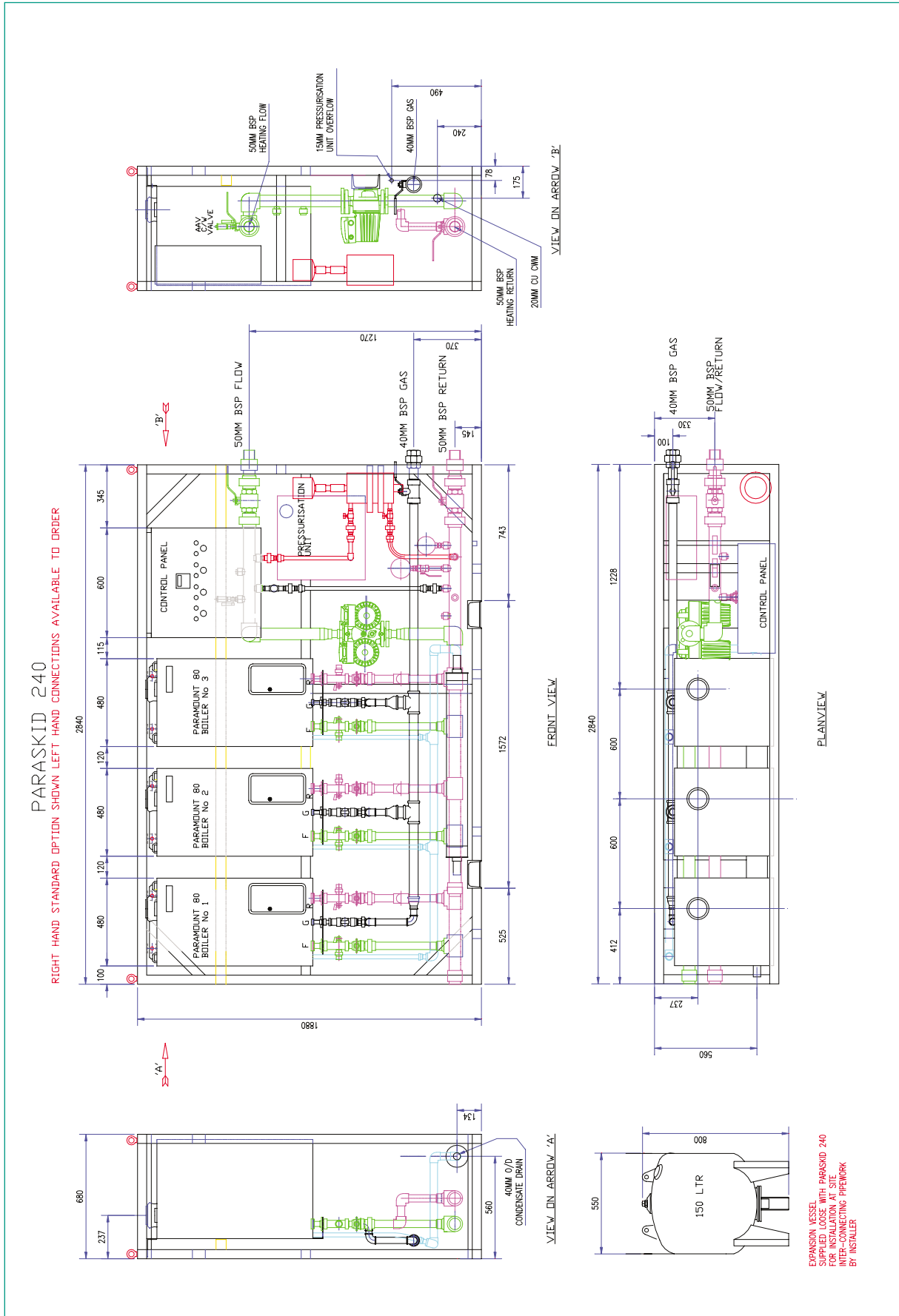
	<b>Paraskid 120CR</b>	<b>Paraskid 160CR</b>	<b>Paraskid 240CR</b>
Calorifier Storage Capacity Litre	125	125	125
Recovery From Cold * Min	15	15	15
Hot Water Flow mm	22	22	22
Hot Water Pressure Bar	4	4	4
Cold Water Inlet mm	22	22	22
Secondary Return mm	15	15	15
Maximum Electrical Power Consumption Start A	10	10	10
Maximum Electrical Power Consumption Run A	7.5**	7.5**	7.5**
Skid Weight (empty)** kg	280	300	400
Water Content (Total) litre	180	90	210
Electric Element Rating KW***	3	3	3

\* On compensated heating circuits hot water is configured for priority.

\*\* On constant temperature heating circuits hot water and Heating including pumps can operate simultaneously.

\*\*\* To be connected as option by installer to local supply.

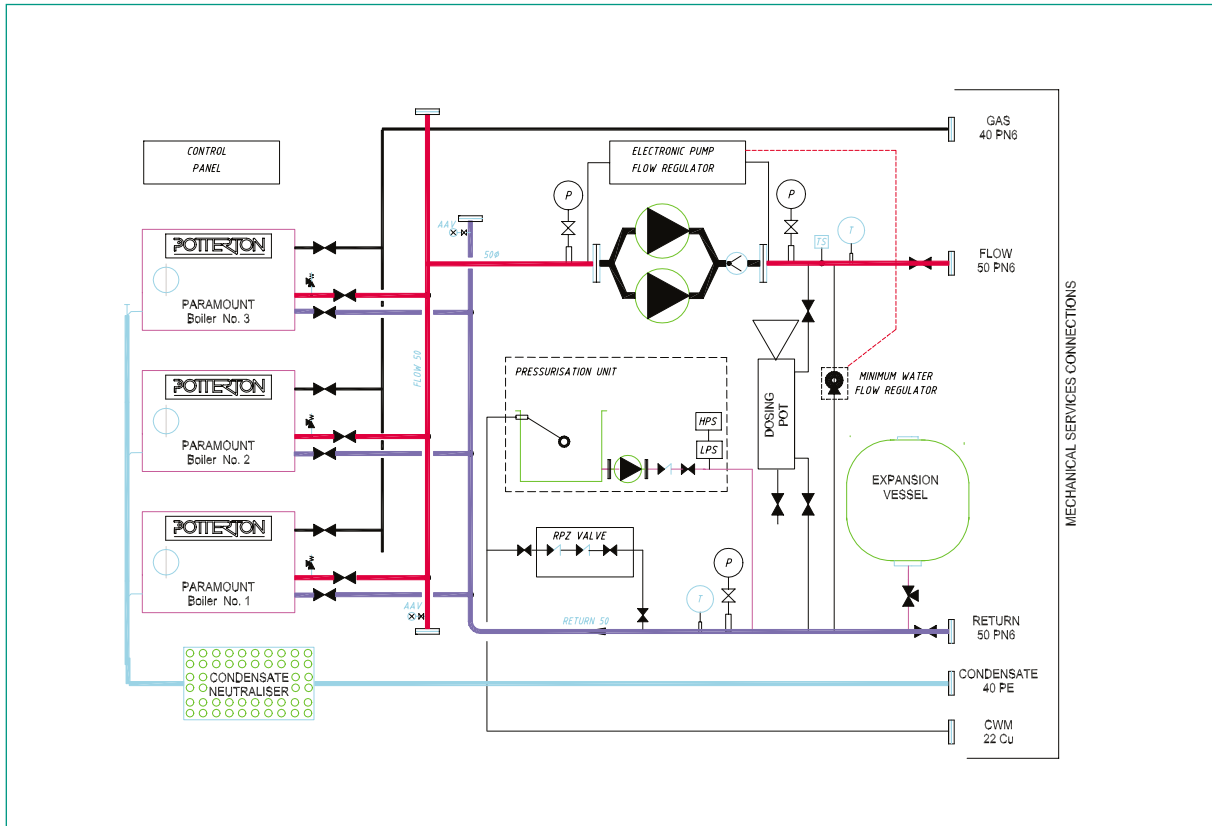
# Dimensions – Paraskid 240



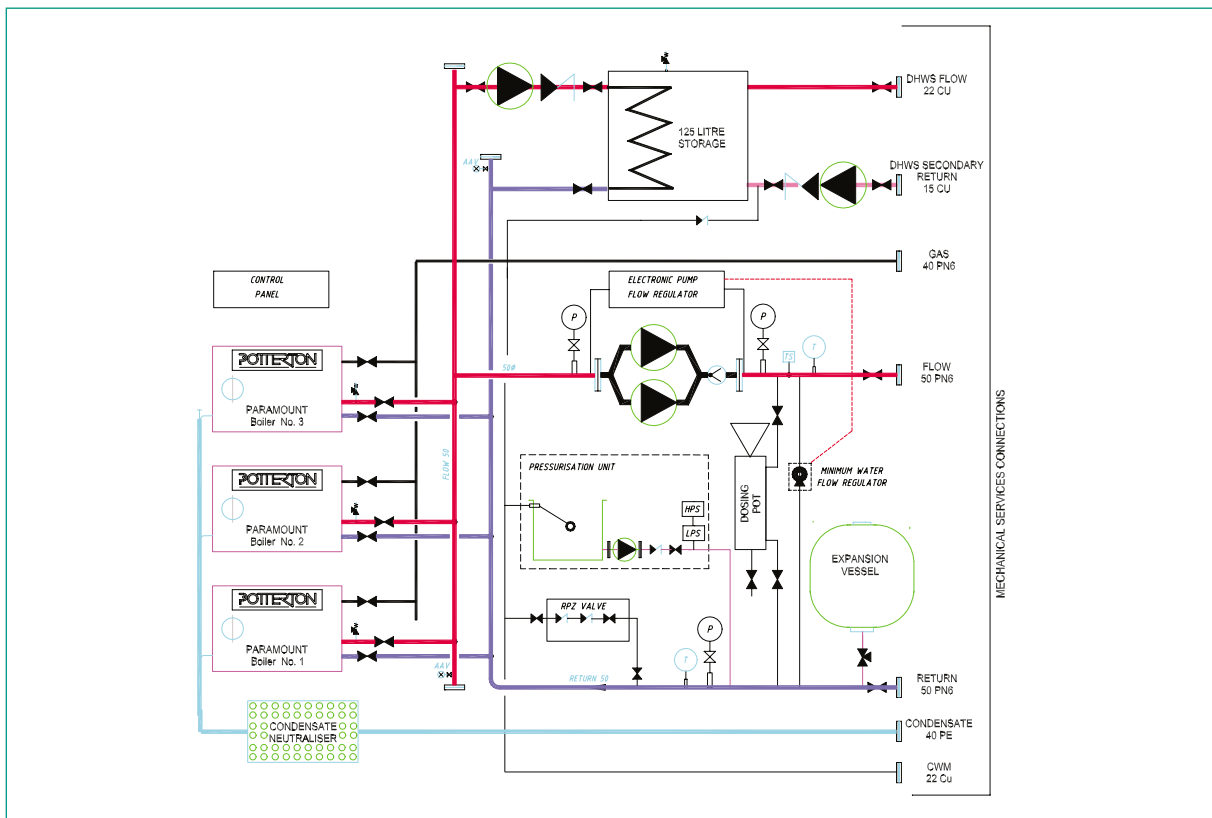




## Paraskid Schematic – Heating



## Paraskid C Schematic – Heating and Hot Water





## Control Systems

Paraskid has a dedicated integral control panel for control of the heating and hot water system.

The control panel has been designed for compliance with Part L of the Building Regulations and includes sensors for weather compensation and room temperature control.

The heating system has been designed to allow zone control to be provided locally with thermostat radiator valves.

The control panel incorporates switches to allow manual and automatic operation of boilers and pumps, a door interlocked isolator and an emergency stop button.

Local fault lights are provided for boiler and pump faults with volt free contacts for remote alarms to interface to external BMS systems.

All electrical equipment on the Paraskid is wired to the control panel using an appropriate fuse for electrical discrimination.

A Euro Control BCA2 is provided for heating and hot water control with the following key functions.

### Time Control

7 Day 2 channel time clock  
3 heating on/off periods per day  
3 hot water on/off periods per day  
Optimum start/ Night setback facility  
Frost protection

### Boiler Control

Boiler sequence control with adjustable sequence control strategy to match building conditions.  
Individual boiler hour run meters

### Heating Control

Direct weather compensation on heating with adjustable heating curve

Adjustable building insulation type adaptation curve for new or old buildings

Room thermostat for room control  
Heating pump rotation for equal use  
Heating pump run on at end of heating period  
Automatic pump rotation

### Heating Options

The heating flow water temperature can be controlled directly by the Paraskid control system or remotely by a BMS.

Local control can be either as a constant temperature system or variable temperature system with direct weather compensation.

BMS systems can remotely adjust the required water temperature using a 0-10VDC signal

### Hot Water Control (Optional)

Timed hot water generation based on hot water priority for compensated heating systems.

Hot water and secondary pump control

Anti-Legionella function

### Heating Pumps

The heating system incorporates an electronic modulating pump system, that can be configured for constant flow or constant head discharge.

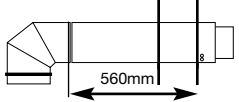




Modulation of the pump to low flow on low load conditions reduces the electrical consumption of the heating system.

The pumps incorporate electronic soft starters to reduce starting current.

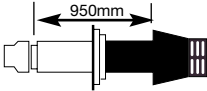




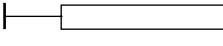
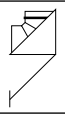
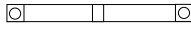
Additionally to the modulating pump, the system incorporates a bypass valve. This allows the heating system to automatically compensate for low flow rates due to the operation of thermostatic valves and similar devices, preventing system noise and pump wear.

The control system has pump and boiler interlocks on the pressurisation unit for safe operation on low and high pressure conditions in accordance with H&S document PM5.

## Balanced Flue Options – Concentric Horizontal flue (C13)

Description	Size	Sales Code	Item
Standard Balanced Flue Kit – 87° Elbow – Terminal with 560mm extension* – Wall Plates	Ø110/150	PARABFKIT2	
1 Metre Extension or 0.5m extension	Ø110/150	PARAK2SE1 or 0.5m PARAK2SE05	
Terminal Cage Guard		PARACAGE	
87° Concentric Elbow	Ø110/150	PARAK2E87	
45° Concentric Elbow	Ø110/150	PARAK2E45	

## Balanced Flue Options – Concentric Vertical flue (C33)

Description	Size	Sales Code	Item
Standard Vertical Flue Kit – Boiler adaptor 950mm extension – Roof Terminal	Ø110/180	PARAVFKIT4	
87° Concentric Elbow	Ø110/180	PARAK4E87	
45° Concentric Elbow or 30° Concentric Elbow	Ø110/150	PARAK4E45 PARAK4E30	
1 Metre Concentric Extension or 0.5 Metre Concentric Extension	Ø110/180	PARAK4SE1 PARAK4SE05	
300 – 400mm Adjustable Length or 600 – 1000mm Adjustable Length	Ø110/180	PARAK4ADJ05 PARAK4ADJ01	
50mm Stand Off Wall Bracket 300mm Stand Off Wall Bracket	Ø110/180	PARAK4WB PARAK4WB300	
Outside Bottom Flue Bracket	Ø110/180	PARAK4BFS	
Guy Wire Support Bracket	Ø110/180	PARAK4GUY	

## Paramount Flue Systems

The Paramount two boiler is supplied as standard for use in both room sealed and open flue fan assisted operation.

The boiler is suitable for use in either single or multiple flue configurations and can be fitted with a wide variety of flue systems.

Potterton Commercial supplies a range of balanced flue fittings for room sealed applications. These kits and the associated options are available for both horizontal wall and vertical roof terminations.

Where a common flue header is used on a Paraskid installation this must be of the open flue type.

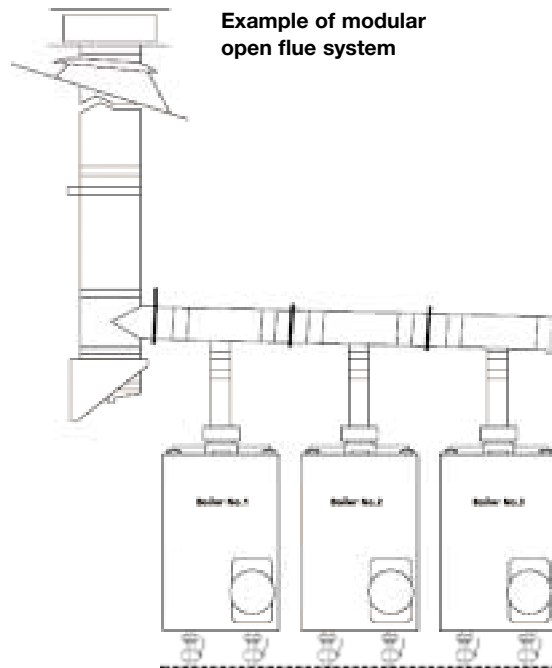
To ensure safe and satisfactory operation, the boiler must be connected to a chimney system capable at all times of adequately evacuating the combustion products.

Horizontal flue runs must be inclined at 2.5° to the horizontal in order that any condensate formed can be discharged through the boiler.

Note: A vapour plume will be visible at the flue terminal.

Flues and terminal positions should be designed with strict regard to the requirements of BS5440 Part 1, BS6644 and the Building Regulations Part J as appropriate. IGE Guidance note UP/10 Pt 1 provides guidance notes on flue terminal positions.

The flue fittings supplied by Potterton Commercial are suitable for use with the Paramount two boiler only.



	Paramount two 60			Paramount two 80		
	Flue Size	Max Flue Length*	Max No of Bends (90°)	Flue Size	Max Flue Length*	Max No of Bends (90°)
C13 (Balanced Flue)	110/150	5	2	110/150	5	2
C33(1) (Concentric Vertical)	110/180	22	0	110/180	13	0
C33(2) (Concentric Vertical)	110/180	24(3)	2	110/180	15(3)	2
C33(3) (Concentric Vertical)	110/180	13(2)	2	110/180	9(3)	2
B23 (Conventional Flue)	110	25(3)	3	110	16(3)	3

\*This is the maximum flue length, the allowable horizontal run within total flue length is shown in brackets.  
NOTE: Flue sizes shown for the Concentric Vertical Flue are adapted sizes for flues supplied by Potterton Commercial. For flues supplied by other manufacturers, please refer to technical data for standard spigot sizes.

NOTE: BS5440 states a suitable guard should be provided whenever the appliance terminal is fitted less than 2m above ground, above a balcony or the roof.

## Commercial sales technical & service enquiries

### Potterton Commercial

Wood Lane  
Erdington  
Birmingham B24 9QP

Tel: 0845 070 1055  
Fax: 0845 070 1059  
Sales hotline: 0845 070 1056  
Technical helpline: 0845 070 1057  
Service hotline: 0845 070 1058  
Service fax: 0845 070 1074  
e-mail: [potterton.commercial@baxigroup.com](mailto:potterton.commercial@baxigroup.com)  
web: [www.pottertoncommercial.co.uk](http://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: 08706 000454  
Fax: 08706 000545

## Applications & Installations

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

Please contact:  
Tel: 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. We are also able to offer our services for other manufacturer's products.

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

- Boiler site assembly
- Burner commissioning for all fuels
- Boiler maintenance and maintenance contracts
- Breakdown and repair services
- Burner and boiler replacement
- Oil/gas conversions
- Systems conditioning
- 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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