CP+ Overview

Designed without Compromise

- Six model options
- 366 kW - 1025 kW output
- Vertical or horizontal configurations
- Oil, natural gas, LPG and biodiesel (B10) fired
- External static pressure options up to 1000 Pa
- Stainless steel combustion chamber and heat exchanger as standard
- Galvanised and powder coated outer panels

Caring For The Environment

- High efficiency models
- Biofuel options

Peace Of Mind

- More than sixty years experience in warm air
- Two year parts and one year labour guarantee
- Ten year combustion chamber/heat exchanger warranty

Application & Configuration

Powrmatic CP+ cabinet heater range covers six models with outputs from 366 kW to 1025 kW. Heaters can be supplied in either upright or horizontal configuration and can be internally installed directly into the space to be heated or sited in plant rooms.

In addition, the heater can be specified in CP+EA configuration. EA configured heaters are suitable for external locations and are weatherproofed to IP44 standard.

Both oil and gas fired heaters have high/low burners as standard and modulating gas burners are available an extra cost option.

Efficiencies

Favourable levels of fuel usage and reduced emissions are a key element of CP+ heater design. Additionally, heaters have efficiencies which meet or exceed the requirements of current UK Part L2B Building Regulations. Efficiencies can be further enhanced with the selection of modulating burners.

Cabinet

To ease transportation and installation, the heater comprises of separate fan and heat exchanger sections. Each section is of frame and panel construction. Heat exchanger section panels are fully insulated being filled with high density mineral wool. All heaters have the benefit of a galvanised skid base frame.

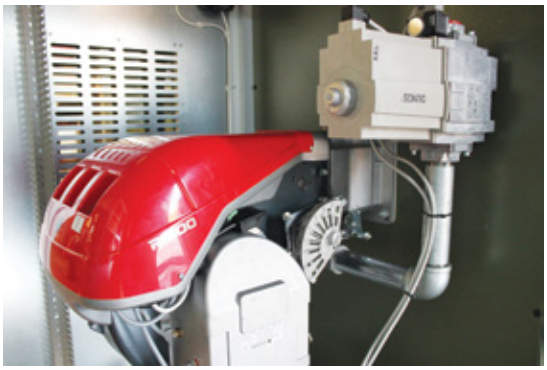
Internal heaters have the benefit of stove hardened epoxy powder coat paint finished to our standard RAL 6027 colour whilst external CP+EA units have the benefit of enhanced weather resistance by the application of a full polyester spruce green coating to BS 12-B-25.

Combustion Chamber

The drum type chamber is fabricated from AISI430 stainless steel coupled to a tubular heat exchanger also manufactured from stainless steel.

Burners & Fuel Options

Powrmatic CP+ heaters are matched to Riello pressure jet oil and forced draught gas burners. Gas fired units are certified for use on Natural Gas, Group H -G20, Group L - G25 and Propane - G31. Oil fired units are supplied as standard for use with 35sec fuel and can be supplied for use with 28sec fuel as an option. In accordance with guidelines from our burner supplier, Riello, the burners fitted to Powrmatic oil-fired heaters are suitable for fuels with a bio content of up to 10% only (B10). For fuels with a bio content of more than 10%, please consult our Technical Department.



Air Movement

Via dynamically balanced centrifugal fan sets with belt driven motors offering a choice of 300, 600 or 1000 Pa external static pressures. As standard, internal CP+ heaters are arranged for ducted applications and are provided with an outlet spigot for the onward connection of ductwork. Unless otherwise specified return air is via louvred intake panels.

External heaters are also provided with a duct outlet spigot and louvred intake panels. All heaters can be specified with alternative return air spigots, dampers and filter boxes. Freeblowing internal heaters are optional, details on request from our sales office.

Controls

Heaters are supplied ready for automatic operation and are complete with safety and comfort controls. As standard heaters will be provided with the optimised entry code protected control MC200BL (mandatory for high/low and modulating applications) which includes a digital time switch, electronic day thermostat and frost protection thermostats. Remote temperature sensor option available.

Alternatively heaters may be specified with our Powrtol control, a high temperature limit protection as well as a digital time switch, mechanical day temperature and night set-back thermostats.

Internal upright heater controls are factory fitted whilst horizontal and all external heaters are supplied with a remote console (inter-connecting wiring by others). It is recommended that all external heaters installed where the ambient temperature is likely to be below -5°C are specified with the optional low temperature kit which provides additional protection for the burner and control components.

All heaters have the ability to provide 'fan only' summer air movement.

Approvals

All Powrmatic heaters are type tested to meet the stringent requirements of the Gas Directive and are CE approved.

Duties

CP+

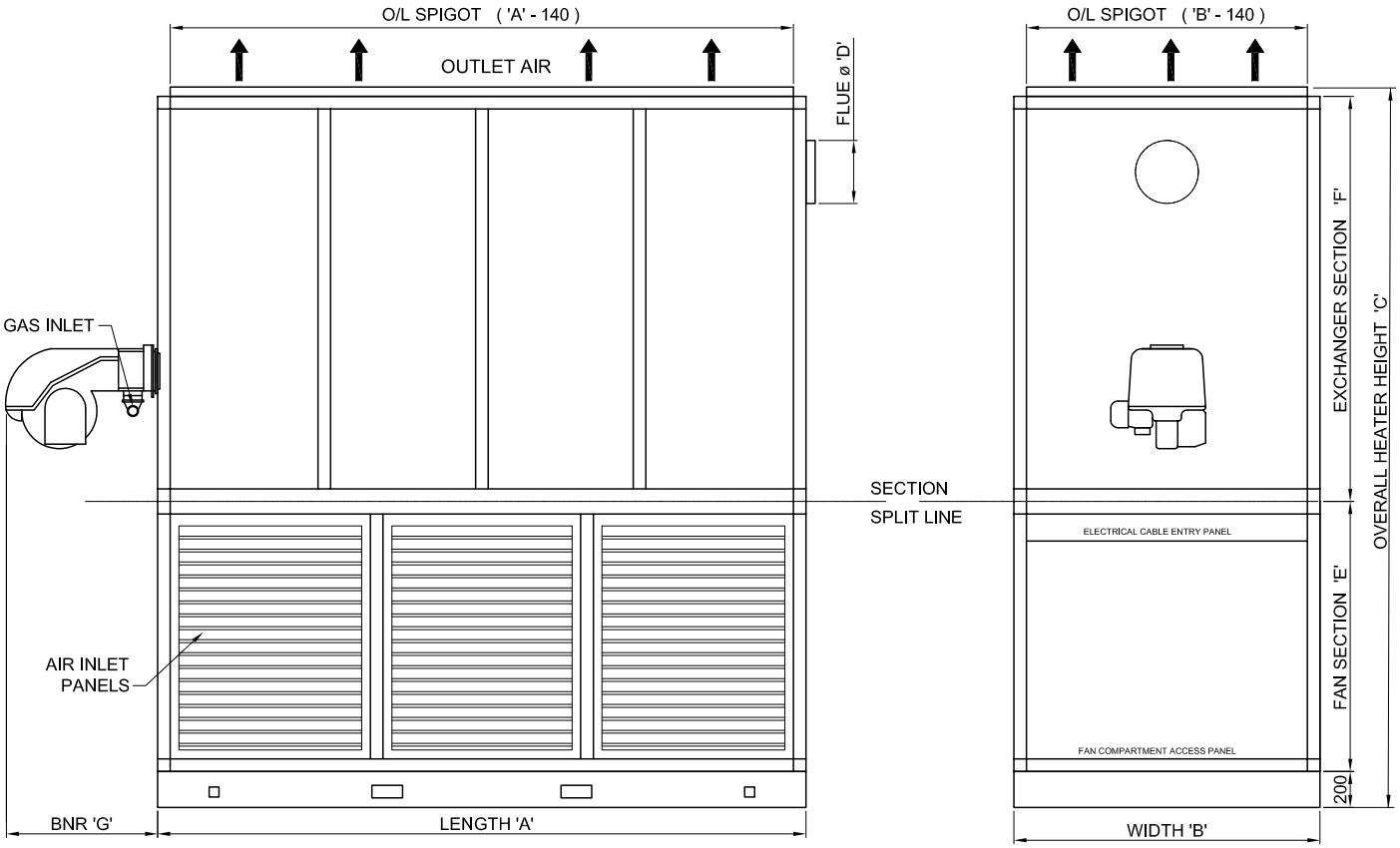
Model				1250	1500	2000	2500	3000	3400
Output			kw	366	440	586	732	879	1025
Input			kw	395.7	475.7	633.5	791.4	950.3	1108.1
Design Efficiency			%	92.5					
Temperature Rise °C			°C	45					
Air Volume			m^3/s	6.49	7.88	10.5	13.1	15.75	18.37
			m^3/h	23364	28368	37800	47160	56700	66132
Airside Performance Ducted Units	Fan Static	Option 1	Pa	300					
		Option 2	Pa	600					
		Option 3	Pa	1000					
Electrics	Supply		V/ph/Hz	415/3/50					
	Option 1 300 Pa	Motor	kW	11	11	15	15	18.5	30
	Option 2 600 Pa	Motor	kW	15	15	18.5	22	30	40
	Option 3 1000 Pa	Motor	kW	22	22	30	30	40	55
Burner	High - Low Gas (Standard - Gas Fired)			Riello RS38	Riello RS50	Riello RS70	Riello RS100	Riello RS100	Riello RS100
Burner	Modulating Gas (Optional)			Riello RS38/M	Riello RS50M	Riello RS70M	Riello RS100M	Riello RS100M	Riello RS100M
Burner	High - Low Oil (Standard - Oil Fired)			Riello RL38	Riello RL50	Riello RL70	Riello RL70	Riello RL100	Riello RL100
Fuel	Connection	Oil	V/Rc	3/8”					
		Gas	BSP/Rc	1½”		2”			
	Minimum Inlet Pressure	Nat Gas	mbar	17.5					
		LPG	mbar	37.0					
	Consumption Standard Outputs	Oil	kg/h	33.4	40.1	53.4	66.7	80.1	93.4
		Nat Gas	m^3/h	41.90	50.3	67	83.7	100.6	117.3
		LPG	m^3/h	16.2	19.5	25.9	32.4	38.9	45.3
Overall Dimensions	UD Upright Ducted	Height	mm	2750	3200	3500	3750	4000	4250
		Width	mm	1150	1400		1700		1800
		Depth	mm	1950	2200	2750	3000	3600	4000
Installation Clearances	UD Upright Ducted	Front	mm	1950	2200	2750	3000	3600	4000
		Side	mm	1000	1000	1000	1000	1000	1000
		Rear	mm	1000	1000	1000	1000	1000	1000
Flue Diameter			mm ø	250	300	300	350		400

Notes -

- Fuel consumption and output figures based upon nett calorific values as follows
  - Class D light distillate fuel oil nett CV 36.28 MJ/l
  - Natural gas (G20) nett CV 34.02 MJ/m^3
  - LPG Propane (G31) nett CV 95.65 MJ/m^3
- Alternative or more specific fan static pressures available, please contact the sales office for further details
- Air handling data is assessed at room ambient conditions.
- Dimensions and clearances in table above refer to upright heaters only - for horizontal heater dimensions refer to dimensions page and for clearances refer to the relevant O&M manual
- Noise levels measured 3m from appliance and in free field conditions
- Installer guidance notes on rear page

Dimensions

CP+ Internal Heater - Upright

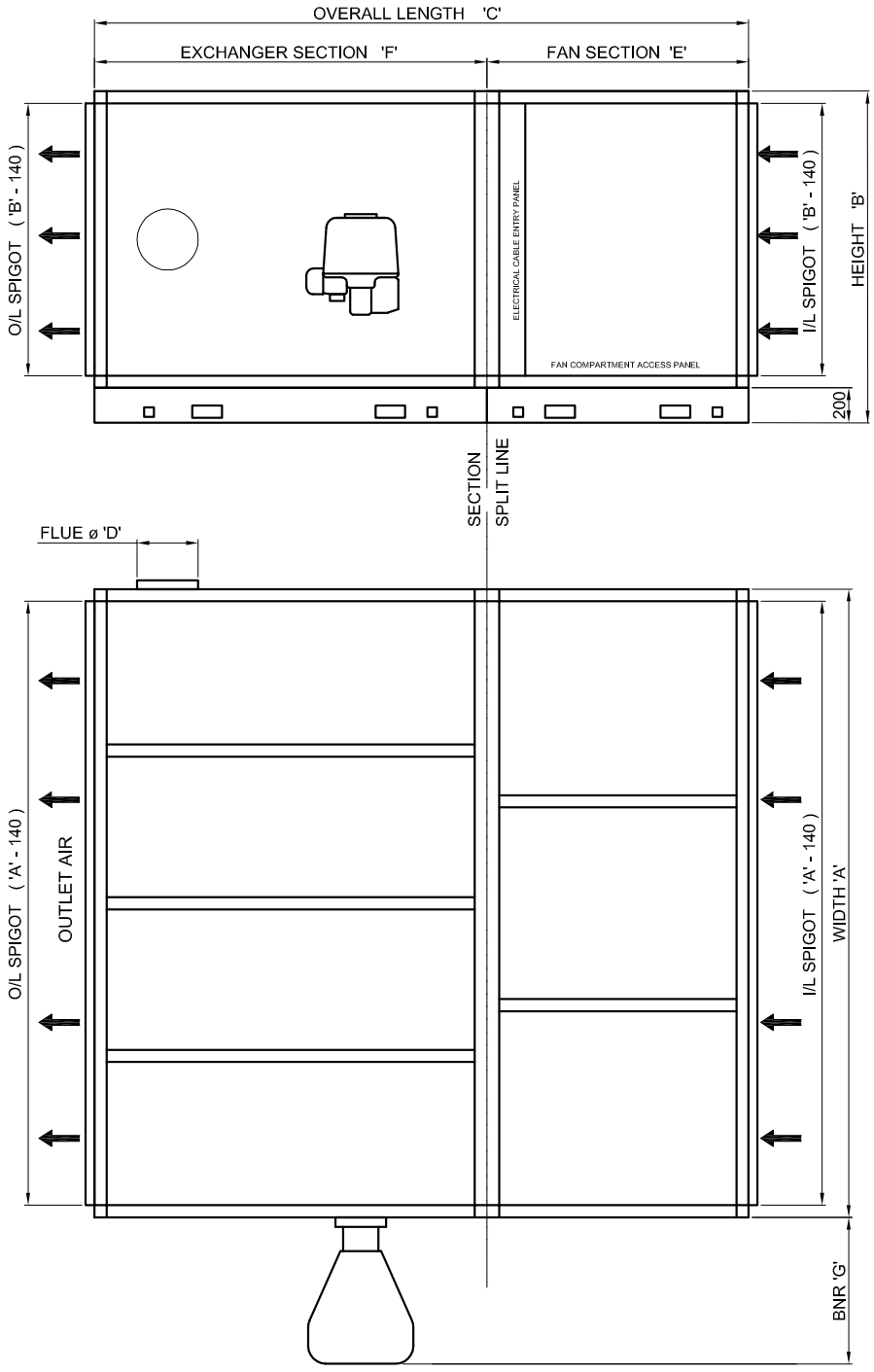


(All measurements are in mm)

Model	1250	1500	2000	2500	3000	3400
Length 'A'	1950	2200	2750	3000	3600	4000
Width 'B'	1150	1400		1700		1800
Overall Height 'C'	2750	3200	3500	3750	4000	4250
Flue Diameter 'D'	250	300		350		400
Fan Section 'E'	900	1000	1300		1500	
Exchanger 'F' Section	1600	1950	1950	2200	2250	2500
Burner Length 'G' - Gas	580		840			
Burner Length 'G' - Oil	468		680			

Dimensions

CP+ Internal Heater - Horizontal

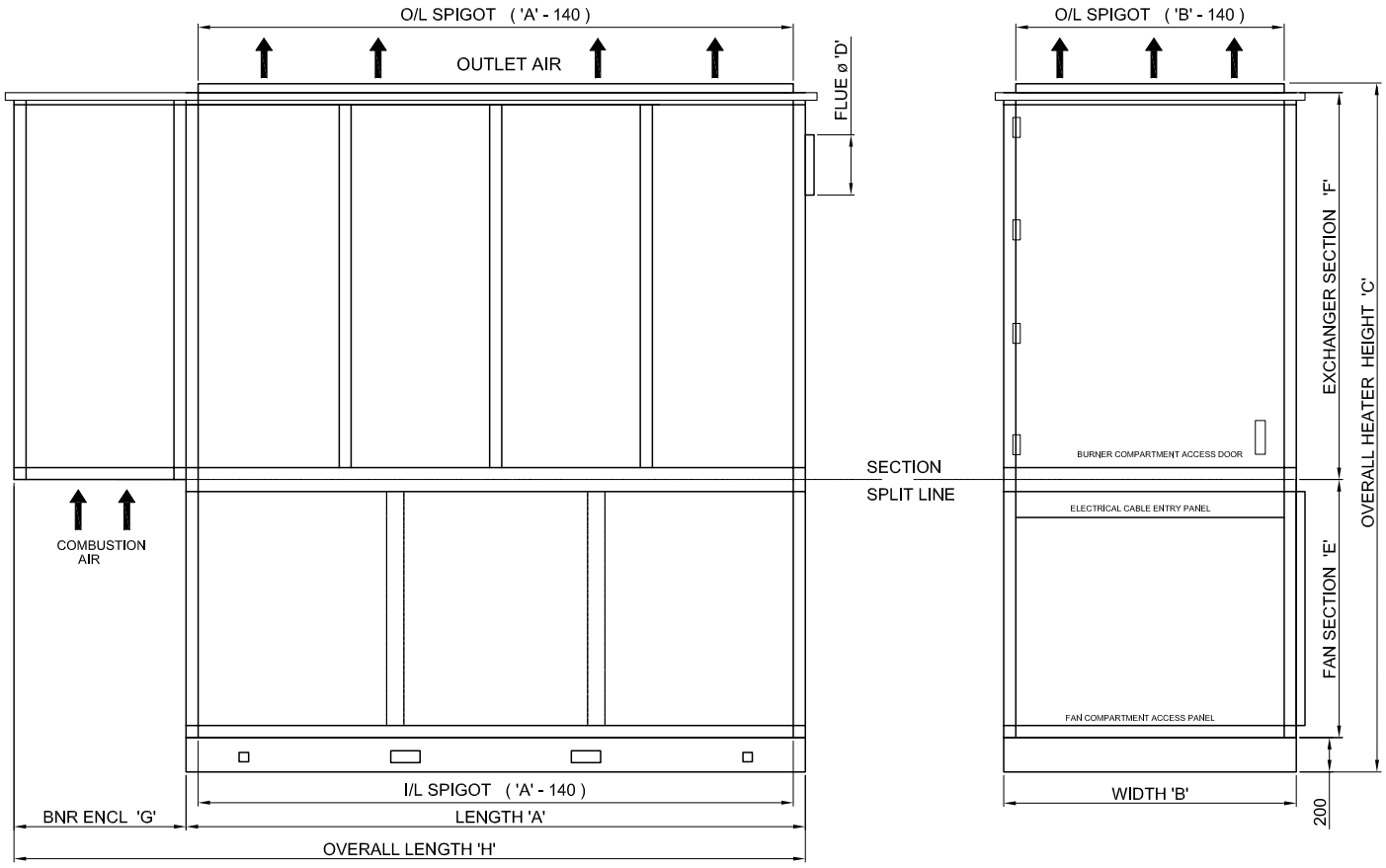


(All measurements are in mm)

Model	1250	1500	2000	2500	3000	3400
Width 'A'	1950	2200	2750	3000	3600	4000
Height 'B'	1350	1600		1900		2000
Overall Length 'C'	2800	3250	3550	4000	4050	4400
Flue Diameter 'D'	250	300		350		400
Fan Section 'E'	1200	1300	1600	1800	1800	1900
Exchanger 'F' Section	1600	1950	1950	2200	2250	2500
Burner Length 'G' - Gas	580		840			
Burner Length 'G' - Oil	468		680			

Dimensions

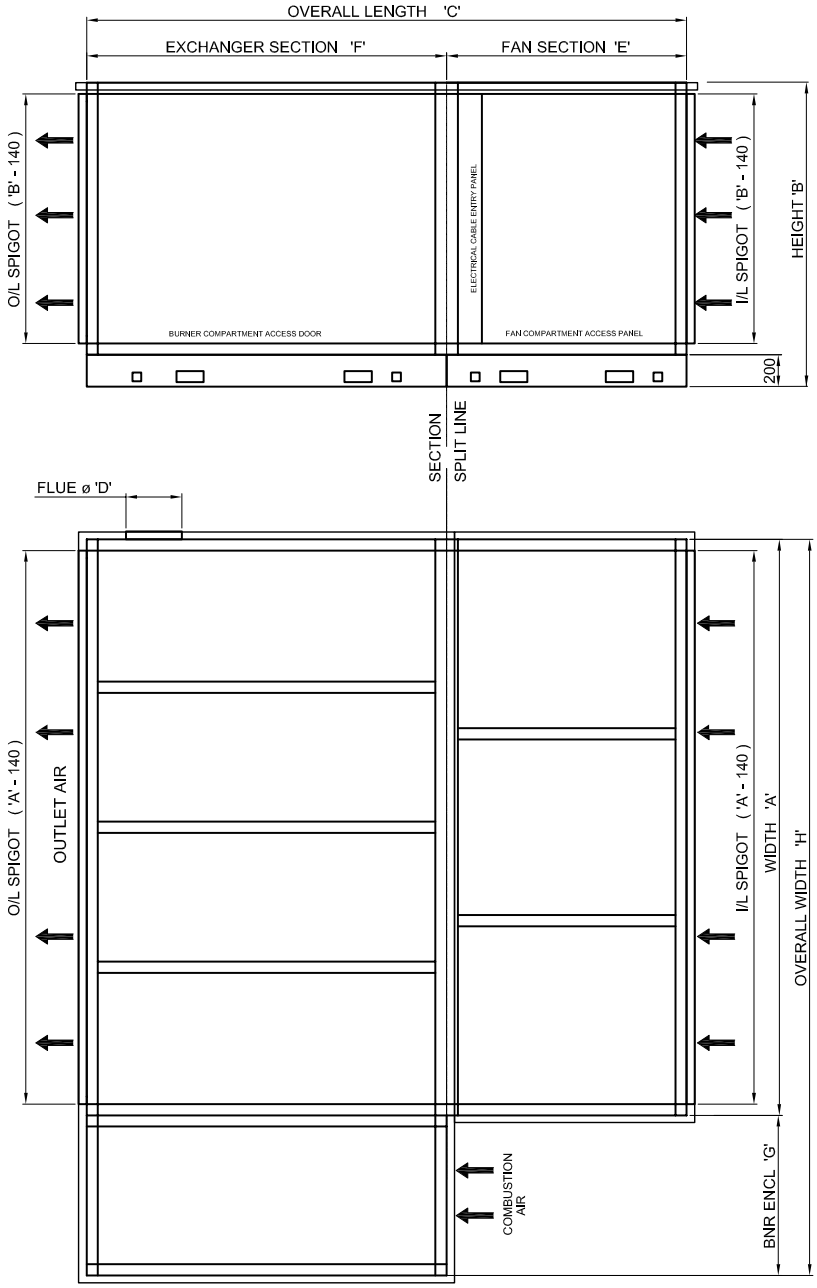
CP+ External Heater - Upright



(All measurements are in mm)

Model	1250	1500	2000	2500	3000	3400
Length 'A'	1950	2200	2750	3000	3600	4000
Width 'B'	1150	1400		1700		1800
Overall Height 'C'	2750	3200	3500	3750	4000	4250
Flue Diameter 'D'	250	300		350		400
Fan Section 'E'	900	1000	1300		1500	
Exchanger 'F' Section	1600	1950	1950	2200	2250	2500
Burner Enclosure 'G' - Gas	700		1000			
Burner Enclosure 'G' - Oil	600		800			
Overall 'H' - Gas	2650	2900	3750	4000	4600	5000
Overall 'H' - Oil	2550	2800	3550	3800	4400	4800

Duties
CP+ External Heater - Horizontal



(All measurements are in mm)

Model	1250	1500	2000	2500	3000	3400
Width 'A'	1950	2200	2750	3000	3600	4000
Height 'B'	1350	1600		1900		2000
Overall Length 'C'	2800	3250	3550	4000	4080	4400
Flue Diameter 'D'	250	300		350		400
Fan Section 'E'	1600	1300	1300	1800	1800	1900
Exchanger 'F' Section	1600	1950	1950	2200	2250	2500
Burner Enclosure 'G' - Gas	700		1000			
Burner Enclosure 'G' - Oil	600		800			
Overall Width 'H' - Gas	2650	2900	3750	4000	4600	5000
Overall Width 'H' - Oil	2550	2800	3550	3800	4400	4800

General
The following notes are provided as a guide, however installers and operators should fully acquaint themselves with the more detailed guidance provided in the relevant installation manual. For copies of such manuals please consult our technical department or visit our website - www.powrmatic.co.uk

Standards
All Powrmatic CP+ and CPEA+ heaters must be installed, commissioned and operated with due regard to appropriate regulations including but not limited to BS 6230, BS5410 1998, relevant Codes of Practice, the possible requirements of Local Authorities, Fire Officers and insurers as well as Powrmatic's installation manual.

Position & Location
Heaters should be installed on a level non-combustible base. Horizontal heaters can be mounted directly on their skid base-frame or on a supporting structure. It is important that all supporting structures have due regard to the relevant weight loadings.

To assist installation, the heaters are generally supplied with separate fan and heat exchanger sections in which case on-site assembly will be required. Consideration should however be given to the means of moving the component parts within the site and necessary mechanical handling for assembly.

External heaters are specifically designed for outside locations and should not be installed within partially enclosed areas or under canopies which may restrict the operation of the heater or evacuation of flue gases. If an external heater is to be located in any area which is partially or fully enclosed then it is recommended that you consult our technical department.

Consideration should also be given to flue routes and points of exit, gas, oil, electrical and, where applicable, control connections, issues of public access and in the instance of remote temperature sensors the position need to be representative of the zone temperature to which they refer.

Heaters should not be installed in hazardous areas or areas where there is a foreseeable risk of flammable or corrosion inducing particles, gases or vapours being drawn into the combustion air or main fan circuits

Areas where special consideration or advice may be required could include but is not limited to –

- Where de-greasing solvents are present, even in minute concentrations
- Where paint spraying is carried out
- Where styrenes or other laminating products are used
- Where airborne silicone is present
- Where petrol engined vehicles are stored or maintained
- Where dust is present (i.e. wood working or joinery shops)
- Where high levels of extract persist

Installation in such areas may be possible under specific conditions. Please consult our technical department for further information.

Installation Clearances
Particular clearances may be necessary for the correct and safe function of the heater as well as for maintenance purposes. Such clearances are confirmed in the relevant installation manual.

Plant Room or Enclosure Locations
Specific requirements exist where heaters are to be installed within plant rooms or enclosures. Such requirements cover the provision of positive ductwork connections as well as ventilation for combustion air and general plant room or enclosure ventilation. It is recommended that you consult with our technical department or the installation manual prior to installation.

Combustion Air & General Ventilation
Within the United Kingdom mandatory regulations apply concerning the provision of combustion air and general heater ventilation for all internally located heaters. Where a heater is installed within the heated space and where that heated space has a natural ventilation rate greater than 0.5 air changes per hour, then combustion air and general heater ventilation is probably not required.

If the heated space has a natural ventilation rate of less than 0.5 air changes per hour then either natural ventilator openings or mechanical ventilation will be required. Please consult the installation manual for further details.

External heaters located in unrestricted outside areas will generally source combustion air from the surroundings and as such no additional requirements should be necessary.

Flue
For internally located heaters each heater requires a separate flue system of the appropriate size. The flue should essentially be installed in the vertical plane and the number of bends kept to a minimum. The flue must be adequately supported and terminated with a suitable cowl, with due regard to the point of exit and it's proximity to any windows, doors or ventilation intakes etc.

External heaters are supplied complete with a primary flue section and cowl which provides the direct discharge of flue gases directly to atmosphere. Care should be taken to ensure that the flue discharge is not in anyway restricted or the exit point could result in flue gases entering the building.

If the application requires, it may be possible to extend the flue to enable the point of discharge to be repositioned. However, should this be necessary then the diameter of flue must not be less than stated in the data sections of this brochure.

Pipework
Care should be taken when sizing pipework to ensure that minimum gas and maximum oil inlet pressures are not compromised under dynamic load conditions. Isolating valves and service unions should be provided for each heater and pipework installed with due regard for relevant standards and Codes of Practice.

Guarantee
Powrmatic CP+ heaters are provided with a comprehensive guarantee covering both the heater and the heat exchanger. For United Kingdom sales the heater has the benefit of a **two year** parts and **one year** labour guarantee whilst the heat exchanger assembly has a **ten year** time related warranty. All guarantees are subject to terms and conditions.

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