CPx Gas & Oil Cabinet Heater Range

Industrial & Commercial Heating Systems.

powrmatic

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CE

HEATING // VENTILATION // AIR CONDITIONING // OEM PRODUCTS

CPx Overview

Models Available

- **CPx UF** - Upright Freeblowing
- **CPx UD** - Upright Ducted
- **CPx HF** - Horizontal Freeblowing
- **CPx HD** - Horizontal Ducted
- **CPx EA** - External

Designed without Compromise

- New compact size
- Installer friendly
- Non louvred side panel options
- Complete with time and temperature controls (factory fitted and wired on internal upright freeblowing models)
- Freeblowing with extended heads *(model dependent)* or ducted versions
- Painted to RAL6027. BS/RAL colours to special order.

Caring For The Environment

- High efficiency models
- Biofuel options (contact Powrmatic technical department)

Peace Of Mind

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

Application & Configuration

Powrmatic CPx cabinet heater range covers 13 models with outputs from 30kW to 590kW. Heaters can be supplied in either upright or horizontal configuration and can be installed directly into the space to be heated, sited in plant rooms or specified for external applications (CPx EA).

All heaters have on/off control, both oil and gas high/low burners and modulating gas burner options available (model dependent)

Burners

CPx heaters are matched to Riello pressure jet oil and forced draught gas burners. Oil fired heaters are supplied with a factory fitted fire safety valve and filter.

Fuel Options

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.

Combustion Chamber/Heat Exchanger

Formed from a rolled and welded AISI430 stainless steel combustion chamber close coupled to a two-pass tubular heat exchanger. The heat exchanger benefits from unique split rear header box to allowing differential expansion of the two tube banks whilst the aluminised heat exchanger tubes are hydraulically swaged into position to further reduce stress. Stainless steel heat exchanger options available.

Air Movement

Via dynamically balanced centrifugal fan sets. Freeblowing heaters are equipped with heads providing rotational and lateral jet direction. Ducted heaters are provided with an outlet spigot for the onward connection of ductwork. A comprehensive range of return air spigots, dampers and filters accessories are available.

Efficiencies

CPx heaters have efficiencies which meet or exceed the requirements of current UK Part L2B Building Regulations.

Cabinet

Of frame and panel construction complete with integral heat shields and finished with a hardwearing epoxy powder coat stove baked paint.

Controls

Heaters are supplied ready for automatic operation and are complete with safety and comfort controls. As standard heaters are provided with built in MC200BL control, a tamperproof digital control that features optimised start and stop which includes a digital time switch, electronic day thermostat and frost protection thermostat. Remote temperature sensor option available.

For installer convenience upright heater controls are factory fitted and pre-wired whilst horizontal and external heaters are supplied with a remote console (inter-connecting wiring by others).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

Model				30	45	60	90	120	150	175	200	250	300	360	440	590
Output			kW	30	45	60	90	120	150	175	200	250	290	366	440	586
Old Powrmatic Reference			CP	100	150	200	300	400	500	600	700	800	1000	1250	1500	2000
Thermal Efficiencies (Nett CV)			%	91.5%												
Airflow	Volume		m^3/s	0.58	0.86	1.15	1.73	2.30	2.88	3.36	3.84	4.80	5.76	6.49	7.88	10.5
	Heads	UF / HF	No.	2	2	3	3	4	4	4	4	4	4	4	8	8
		Size	mm	203	254	254	305	305	305	356	406	457	457	457	457	457
	Throw	UF / HF	m	14	20	18	23	23	28	28	28	40	47	48	30	40
	Fan Static	Standard	Pa	188	322	185	100	140	175	190	100	60	150	300	300	300
		Up-rated	Pa	n/a	n/a	n/a	200	200	240	250	200	150	n/a	600	600	600
Electrics	Supply	Standard	V/ph/Hz	230/1/50				400/3/50								
		Optional	V/ph/Hz	400/3/50				230/1/50		n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Standard Fan	Motor	kW	0.37	0.55	0.55	1.1	2.2	2.2	3.3	4.0	4.0	7.5	11.0	11.0	15.0
		Run	amp	4.2	5.0	4.7	7.2	4.8	5.1	6.9	6.5	9.0	14.4	21.3	21.3	28.9
		Start	amp	6.5	9.1	8.1	12.0	13.1	32.5	20.8	38.0	58.0	32	127.2	127.2	182.4
	Uprated Fan	Motor	kW	n/a	n/a	n/a	1.5	2.2	3.3	5.5	5.5	5.5	n/a	15.0	15.0	18.5
		Run	amp	n/a	n/a	n/a	6.1	8.3	5.75	11.0	8.83	11.65	n/a	28.9	28.0	35.0
		Start	amp	n/a	n/a	n/a	17.5	25	25.0	35.0	35.0	35.0	n/a	182.4	182.4	221.2
Fuel	Connection	Oil	BSP/Rc	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	⅜"	½"
		Gas	BSP/Rc	½"	½"	¾"	¾"	¾"	1¼"	1¼"	1¼"	1¼"	1¼"	1½"	1½"	1½"
	Minimum Inlet Pressure	Nat Gas	mbar	17.5												
		LPG	mbar	37.0												
	Consumption Standard Outputs	Oil	l/h	3.16	4.83	6.38	9.70	12.95	15.90	18.89	21.17	26.73	31.36	38.82	47.45	63.62
		Nat Gas	m^3/h	3.42	5.18	6.84	10.40	13.48	17.24	20.11	22.84	28.56	31.97	41.41	50.61	67.86
		LPG	m^3/h	1.34	1.98	2.64	4.01	5.31	6.64	7.72	8.84	11.00	12.84	16.00	19.56	26.23
Overall Dimensions	UF Upright Freeblowing	Height	mm	2024	2072	2494	2585	2821	2821	3054	3174	3307	3307	3657	4107	4407
		Width	mm	669	669	744	744	904	904	904	904	1104	1104	1260	1330	1330
		Depth *(Excludes burner)*	mm	732	732	927	927	1200	1200	1399	1399	1599	1599	1915	2165	2715
Installation Clearances	UF Upright Freeblowing	Front	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
		Side	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
		Blank Side	mm	150	150	150	150	150	150	150	150	150	150	n/a	n/a	n/a
		Rear	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Flue Diameter			mm ø	125	125	150	150	150	175	175	175	200	200	250	300	300
Combustion Air Spigot			mm ø	150	150	150	150	150	150	150	150	150	150	150	175	175
Maximum Combustion Duct Length *			m	34	34	21	21	12	8	6	4	3	2	3	2	2
Noise Level (See Note Below)			dB(A)	56	61	61	63	70	62	73	74	75	77	78	80	82
Nett Weight (See Note Below)			kg	168	173	231	241	341	386	530	530	556	556	1012	1380	1720

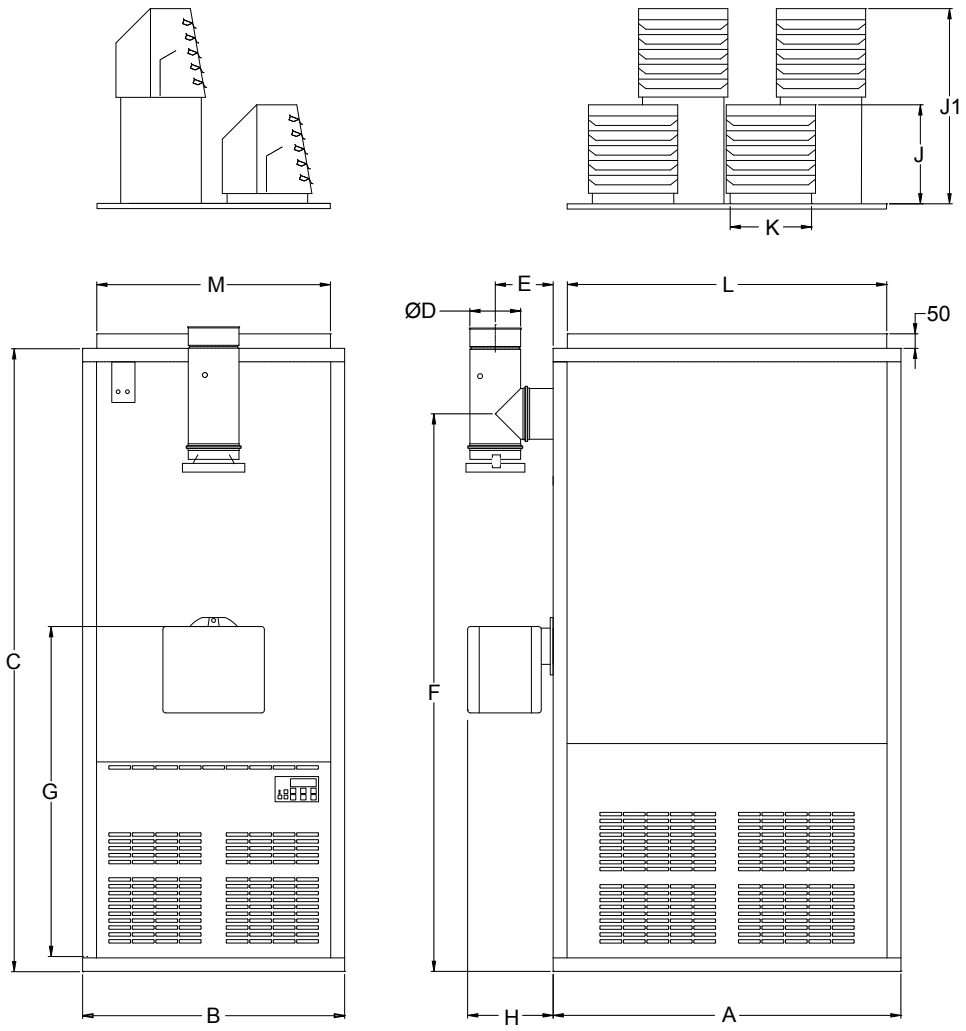
***** For extended combustion duct lengths please contact Powrmatic

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
  - Propane (G31) nett CV 88.00 MJ/m^3
- Heaters have efficiency levels which meet with the minimum efficiency requirements of UK PartL2B Building Regulations
- Air handling data is assessed at room ambient conditions
- Throw figures provide the distance to the point where the terminal velocity degrades to 0.25 m/s
- Overall vertical heater height include heads or extended heads where appropriate
- Standard height heads can be specified where site height is restricted
- Blank and louvred lower side panels are interchangeable
- Dimensions in table above refer to upright heaters only - for horizontal and counterflow heater dimensions refer to dimensions page
- Noise levels are applicable to standard UF models and are measured 5m from appliance and in free field conditions
- Motor kW, run and start amps apply to standard electrical supply as stated. For optional data contact sales office
- Installer guidance notes on rear page
- Nett weight figures apply to standard upright CPx heaters only
- It is the responsibility of the installing contractor to ensure that ductwork is correctly sized and balanced when installing ducted units

Dimensions

CPx UD/UF Upright Free Blowing Upright Ducted (30-300)



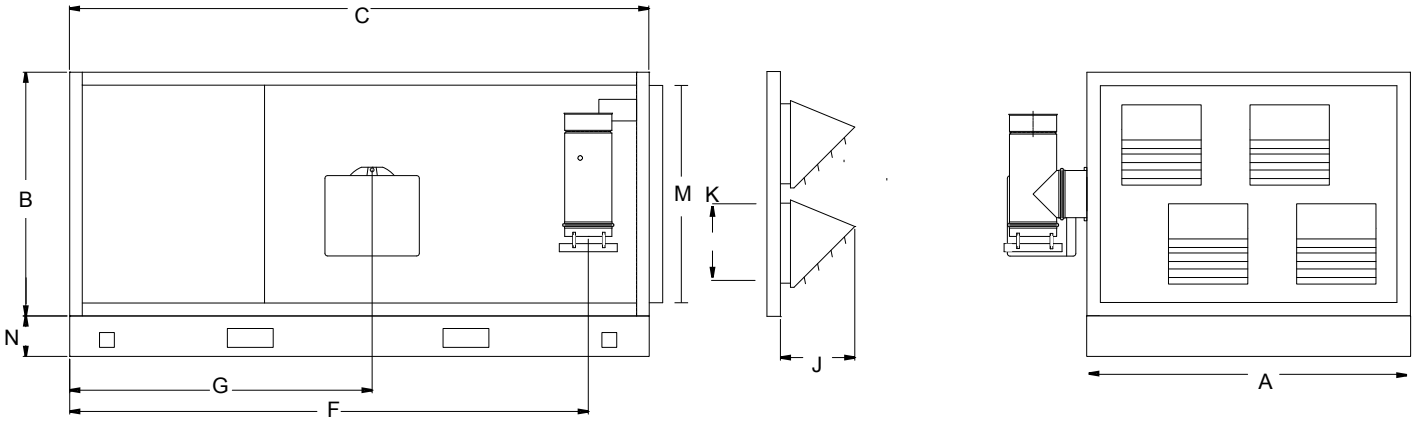
Notes -

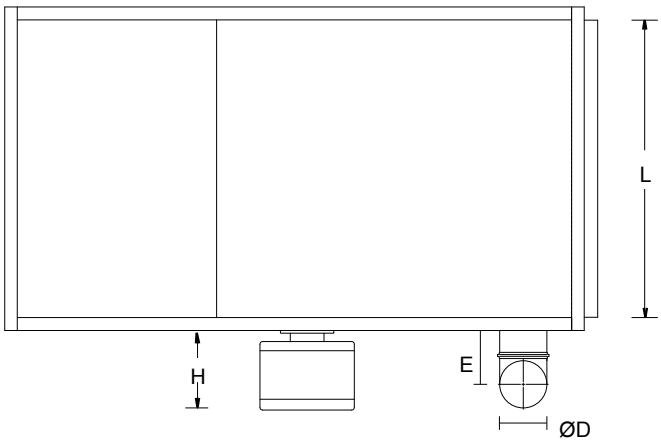
- Flue tee provided as standard.

Model			30	45	60	90	120	150	175	200	250	300
A	All	mm	732	732	927	927	1200	1200	1399	1399	1599	1599
B	All	mm	669	669	744	744	904	904	904	904	1104	1104
C	All	mm	1767	1767	1895	1895	2149	2149	2265	2265	2265	2265
D	All	mm ø	125	125	150	150	150	175	175	175	200	200
E	All	mm	150	150	150	150	150	200	200	200	240	240
F	All	mm	1535	1535	1661	1661	1923	1923	2021	2021	2021	2021
G	All	mm	864	864	944	944	1122	1122	1122	1122	1122	1122
H	Gas	mm	295	295	346	346	389	389	389	610	610	610
	Oil	mm	236	236	261	261	295	295	295	295	473	473
J	All	mm	238	286	286	340	340	340	400	442	558	558
J1	All	mm	n/a	n/a	581	672	672	672	788	875	1007	1007
K	All	mm	180	234	234	287	287	287	333	381	431	431
L	Duct Spigot	mm	632	632	824	824	1100	1100	1299	1299	1499	1499
M		mm	569	569	644	644	804	804	804	804	1004	1004
Head Plan			1	1	2	2	3	3	3	3	2	2

Dimensions

CPx HF/HD Horizontal Free Blowing Horizontal Ducted (30-300)





Notes -

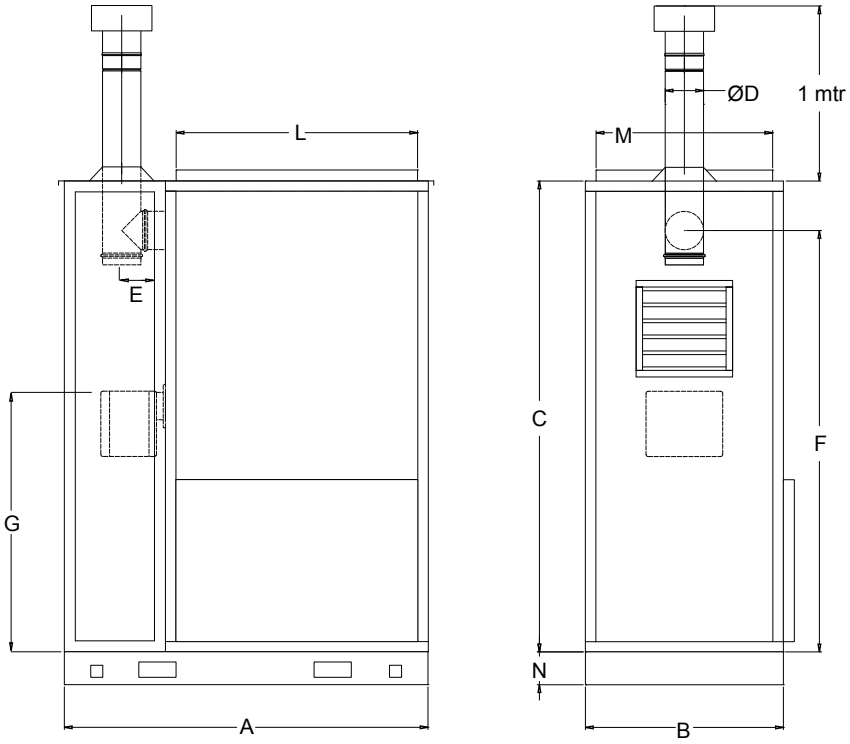
- Flue tee provided as standard.
- Screened air intake (SAI) fitted as standard on HF models. Duct spigot option available.
- Direction of airflow to be specified at time of order. Left to Right (L-R when looking at the burner) airflow shown above.

Model			30	45	60	90	120	150	175	200	250	300
A	All	mm	732	732	927	927	1200	1200	1399	1399	1599	1599
B	All	mm	669	669	744	744	904	904	904	904	1104	1104
C	All	mm	1767	1767	1895	1895	2151	2151	2265	2265	2265	2265
D	All	mm ø	125	125	150	150	150	175	175	175	200	200
E	All	mm	150	150	150	150	150	200	200	200	240	240
F	All	mm	1535	1535	1661	1923	1923	1661	2021	2021	2021	2021
G	All	mm	864	864	944	944	1122	1122	1122	1122	1122	1122
H	Gas	mm	295	295	346	346	389	389	389	610	610	610
	Oil	mm	236	236	261	261	295	295	295	295	473	473
J	All	mm	227	227	260	260	260	260	297	297	367	367
K	All	mm	180	234	234	287	287	287	333	381	431	431
L	Duct Spigot	mm	632	632	824	824	1100	1100	1299	1299	1499	1499
M		mm	569	569	644	644	804	804	804	804	1004	1004
N	All	mm	125	125	125	125	150	150	150	150	150	150
Head Plan			1	1	2	2	3	3	3	3	4	4

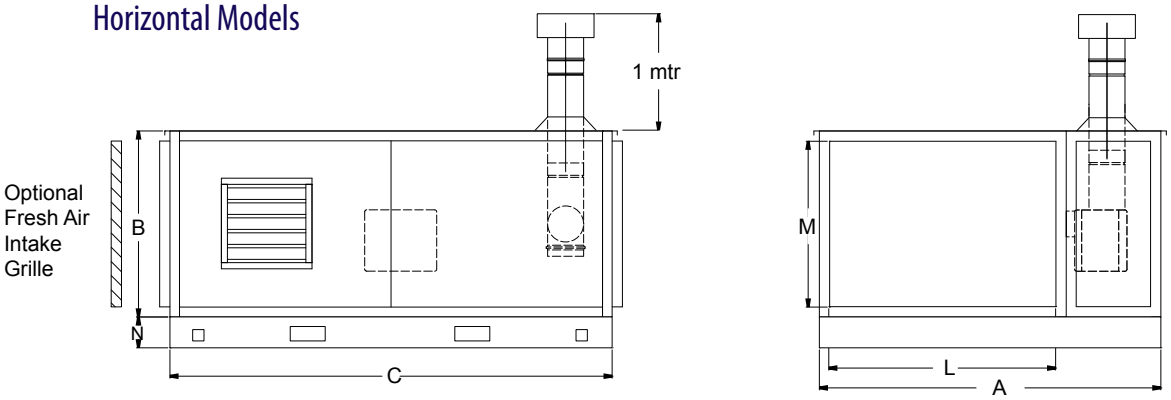
Dimensions

CPx-EA External Cabinet Heaters (30-300)

Upright Models



Horizontal Models



Notes -

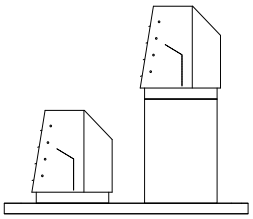
- Direction of airflow to be specified at time of order. Left to Right (L-R when looking at the burner) airflow shown above.
- Inlet and Outlet duct spigots have the same dimensions (Horizontal units only)
- Primary flue length, cowl and flashing provided as standard.

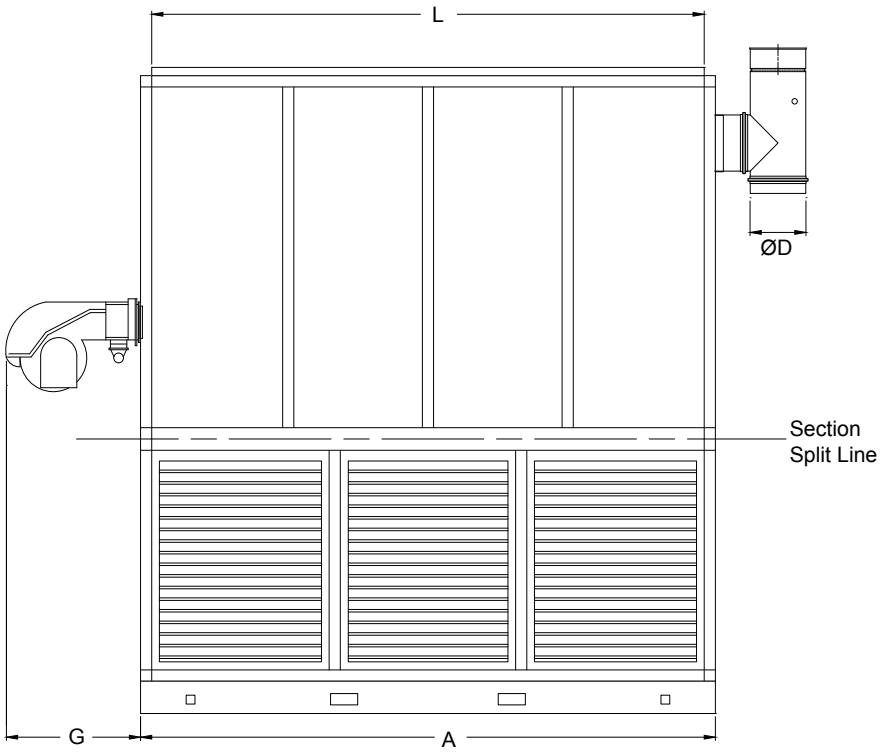
Model			30	45	60	90	120	150	175	200	250	300
A	All	mm	1184	1184	1379	1379	1692	1692	1891	1891	2280	2280
B	All	mm	669	669	744	744	904	904	904	904	1104	1104
C	All	mm	1767	1767	1895	1895	2149	2149	2265	2265	2265	2265
D	All	mm ø	125	125	150	150	150	175	175	175	200	200
E	All	mm	150	150	150	150	150	200	200	200	240	240
F	All	mm	1535	1535	1661	1661	1923	1923	2021	2021	2021	2021
G	All	mm	864	864	944	944	1122	1122	1122	1122	1122	1122
H	Gas	mm	295	295	295	347	389	389	389	610	610	610
	Oil	mm	236	236	270	270	295	295	295	473	473	473
L	Duct Spigot	mm	632	632	824	824	1100	1100	1299	1299	1499	1499
M		mm	569	569	644	644	804	804	804	804	1004	1004
N	All	mm	125	125	125	125	150	150	150	150	150	150

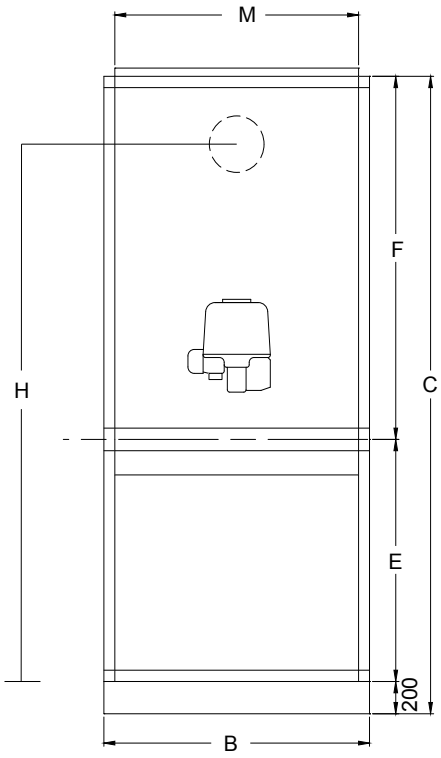
Dimensions

CPx UD/UF Upright Free Blowing and Ducted (360-590)

Upright Models







Notes -

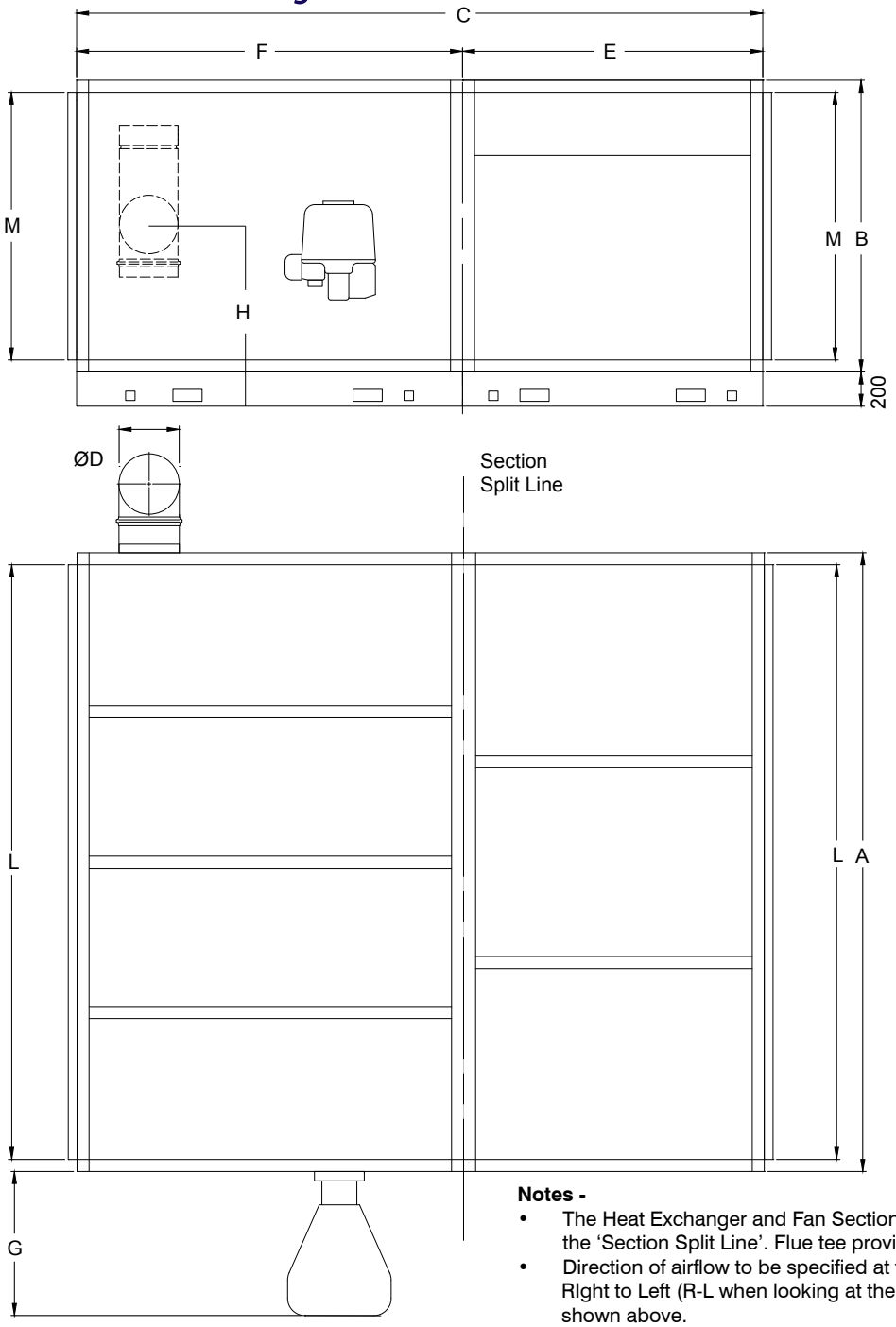
- The Heat Exchanger and Fan Section can be split on the 'Section Split Line'.
- Flue tee provided as standard.

Model			360	440	590
A	All	mm	1915	2165	2715
B	All	mm	1260	1330	1330
C	All	mm	2615	3065	3365
D	All	mm ø	250	300	300
E	All	mm	865	965	1265
F	All	mm	1550	1900	1900
G	Gas	mm	580	580	840
	Oil	mm	468	468	680
H	All	mm	2152	2537	2837
J	All	mm	558	558	558
J1	All	mm	1007	1007	1007
K	All	mm	431	431	431
L	Duct Spigot	mm	1815	2065	2615
M		mm	1160	1230	1230
		Head Plan	3	5	5

Dimensions

CPx HF/HD Horizontal Free Blowing and Ducted (360-590)

Horizontal Models



Notes -

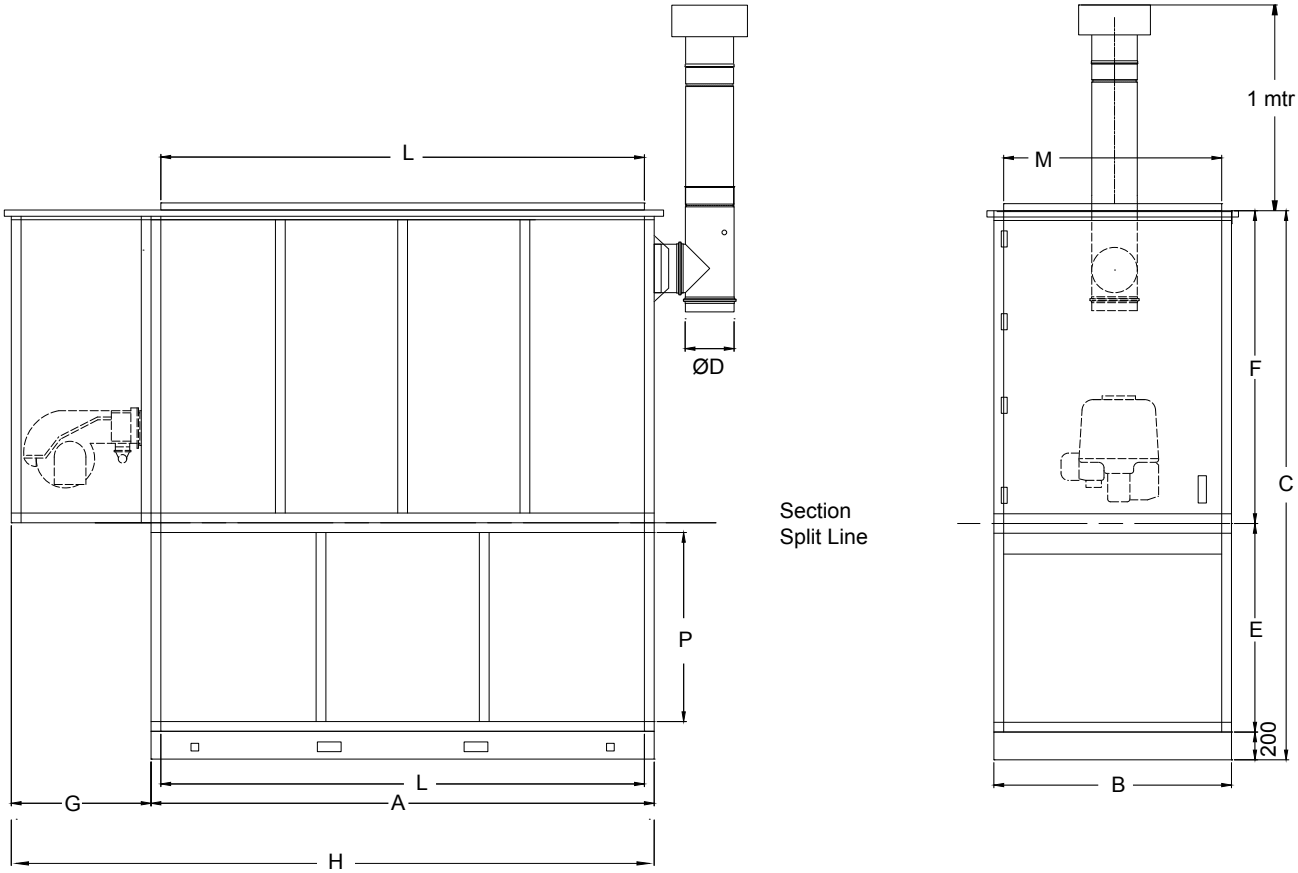
- The Heat Exchanger and Fan Section can be split on the 'Section Split Line'. Flue tee provided as standard.
- Direction of airflow to be specified at time of order. RIght to Left (R-L when looking at the burner) airflow shown above.

Model			360	440	590
A	All	mm	1915	2165	2715
B	All	mm	1260	1330	1330
C	All	mm	2800	3250	3600
D	All	mm ø	250	300	300
E	All	mm	1250	1350	1700
F	All	mm	1550	1900	1900
G	Gas	mm	580	580	840
	Oil	mm	468	468	680
H	All	mm	830	865	865
L	Duct Spigot	mm	1815	2065	2615
M		mm	1160	1230	1230
		Head Plan	3	5	5

Dimensions

CPx-EA External Cabinet Heaters (360-590)

Upright Models



Notes -

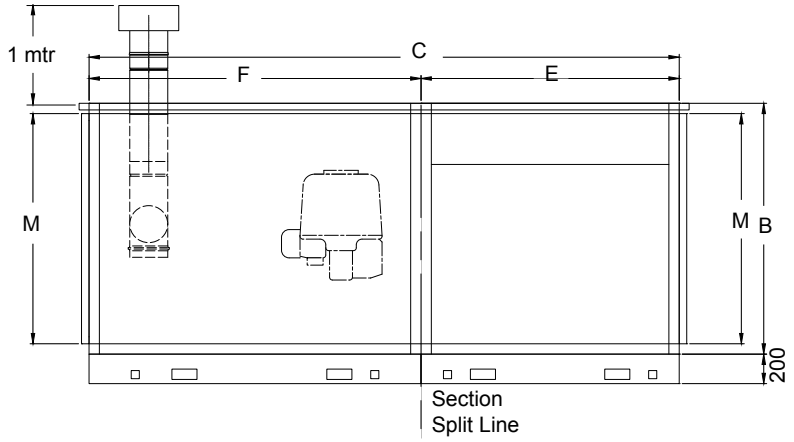
- The Heat Exchanger and Fan Section can be split on the 'Section Split Line'.
- Return air via inlet duct spigot is standard. Optional fresh air grille is available.
- Primary flue and cowl provided as standard.

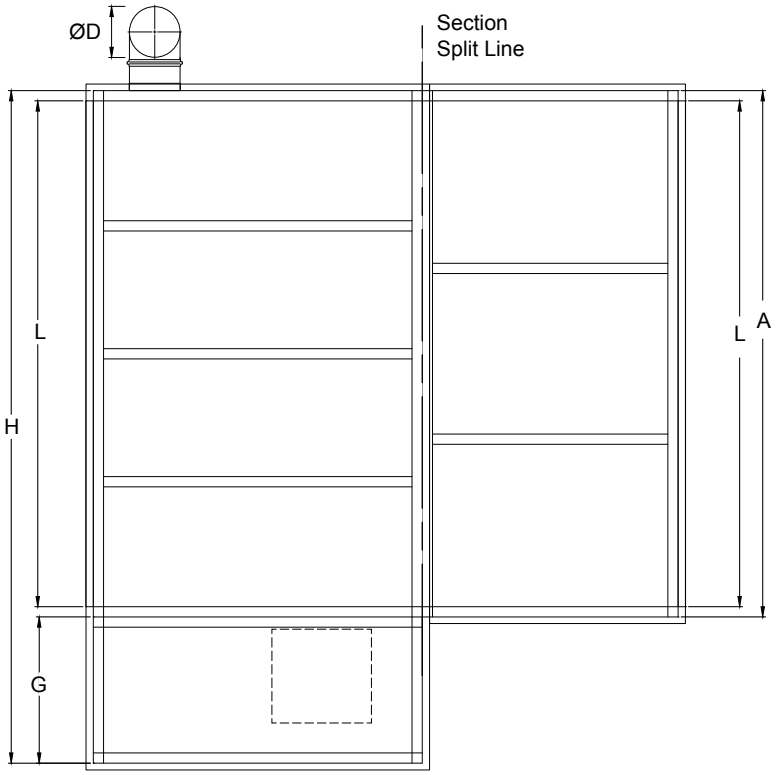
Model			360	440	590
A	All	mm	1915	2165	2715
B	All	mm	1260	1330	1330
C	All	mm	2615	3065	3365
D	All	mm ø	250	300	300
E	All	mm	865	965	1265
F	All	mm	1550	1900	1900
G	All	mm	650	650	950
H	All	mm	2565	2815	3665
L	Duct Spigot	mm	1815	2065	2615
M		mm	1160	1230	1230
P	All	mm	760	860	1160

Dimensions

CPx-EA External Cabinet Heaters (360-590)

Horizontal Models





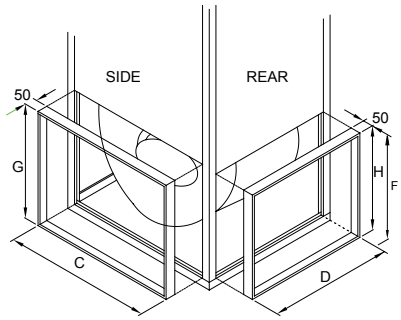
Notes -

- The Heat Exchanger and Fan Section can be split on the 'Section Split Line'. Primary flue and cowl provided as standard.
- Direction of airflow to be specified at time of order. Right to Left (R-L when looking at the burner) airflow shown above.

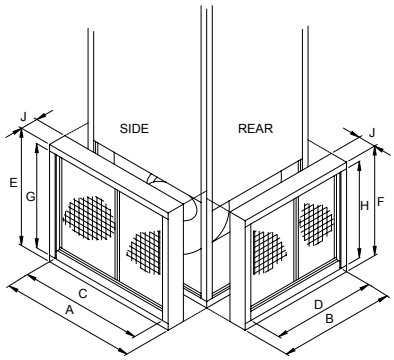
Model			360	440	590
A	All	mm	1915	2165	2715
B	All	mm	1260	1330	1330
C	All	mm	2800	3250	3600
D	All	mm ø	250	300	300
E	All	mm	1250	1350	1700
F	All	mm	1550	1900	1900
G	All	mm	650	650	950
H	All	mm	2565	2815	3665
L	Duct Spigot	mm	1815	2065	2615
M		mm	1160	1230	1230

Accessories

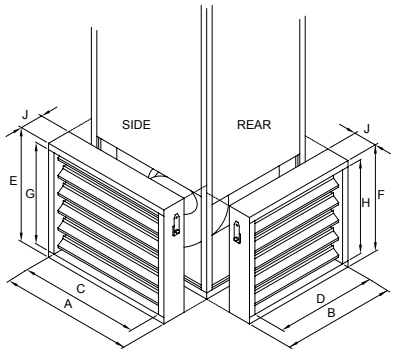
Side/Rear Inlet Spigots



Filters



Dampers

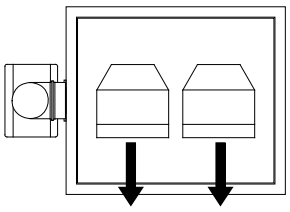


Model			30	45	60	90	120	150	175	200	250	300	360	440	590
A	All	mm	732	732	927	927	1200	1200	1399	1399	1599	1599	1915	2165	2715
B	All	mm	669	669	744	744	904	904	904	904	1105	1105	n/a	n/a	n/a
C	All	mm	630	630	825	825	1098	1098	1300	1300	1500	1500	1815	2065	2615
D	All	mm	567	567	642	642	802	802	802	802	1003	1003	n/a	n/a	n/a
E	All	mm	685	685	738	738	868	838	838	838	838	838	865	965	1265
F	All	mm	627	627	677	677	775	775	775	775	775	775	n/a	n/a	n/a
G	All	mm	585	585	640	640	738	738	738	738	738	738	765	865	1165
H	All	mm	527	527	577	577	675	675	675	675	675	675	n/a	n/a	n/a
J	All	mm	136	136	136	136	136	136	136	136	136	136	250	250	250

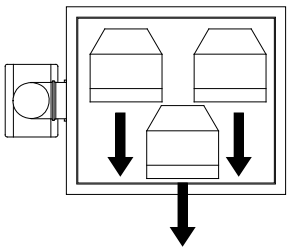
Notes -

- All dimensions are outside dimensions
- Vertical units shown - for horizontal units please contact our sales office
- Standard filter specification is 10ppi
- Higher specification filters available on request - contact our sales team for more information
- Standard dampers are manual operation - motorised options available
- Installer guidance notes on rear page

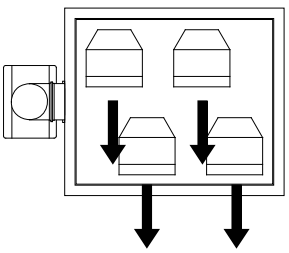
Head Plans



HEAD PLAN 1



HEAD PLAN 2



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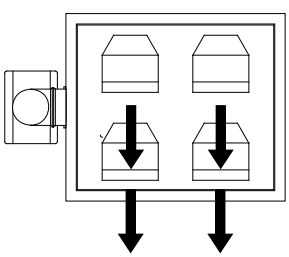
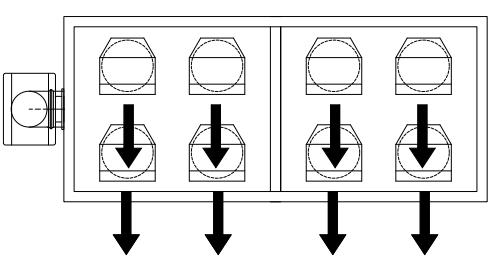


HEAD PLAN 4



HEAD PLAN 5

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 manuals please consult our technical department or visit our website - www.powrmatic.co.uk

Standards
All Powrmatic CPx and CPx EA heaters must be installed, commissioned and operated with due regard to appropriate regulations including but not limited to BS 6230 2005, 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 suspended. It is important that all supporting structures or methods of suspension have due regard to the relevant weight Loadings.

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, the throw characteristics of the heater, issues of public access and in the instance of remote temperature sensors the position necessary 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 foam products are moulded, cut or fabricated
- Where airborne silicone is present
- Where petrol engined vehicles are stored or maintained
- Where dust is present (ie 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.

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. 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.

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.

Flue
All CPx heaters are supplied with a 90° Flue Tee that has a flue gas analysis sample point. 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 such that flue gases can enter a 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 CPx 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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