

NVx Gas Unit Heater Range

Controlling your working environment

HEATING • VENTILATION • INTEGRITY



Authorised User No. 00175



Benefits

Installer Friendly

- New compact model
- Horizontal wall exit flue discharge option (no roof work)
- Room sealed or fan assisted flue
- Interchangeable top or rear flue/combustion air spigot positions
- Centrifugal fan option

Caring For The Environment

- High Efficiency
- ECA Approved Models

Peace Of Mind

- More Than Sixty Years Experience in Warm Air
- Two Year Parts And One Year Labour Guarantee
- Ten Year Heat Exchanger Warranty

Application and Configuration The NVx range of gas fired unit heaters comprises twelve models with outputs ranging from 10 kW to 140 kW. The heaters are typically installed directly into the space to be heated with ducted applications satisfied using the centrifugal fan option. Suitable for either natural or lpg gases heaters can be specified arranged for on/off, high/low or modulated heat outputs.

Efficiencies Favourable levels of fuel usage and reduced emissions are a key element of NVx heater design, further enhanced by the deployment of low NOx combustion technology. Additionally, all heaters have efficiencies which meet or exceed the requirements of both current Building Regulations and the United Kingdom Enhanced Capital Allowance scheme. Efficiencies can be further enhanced with the selection of the modulating burner option.

Cabinet The heater unit is of unitary construction and provided with a separate compartment with a full width hinged and lift-off door giving easy access to heater function controls, gas valve and burner. The cabinet is finished with durable epoxy powder coat stove baked paint.

Heat Exchanger Four pass tubular assembly manufactured from aluminised steel formed, swaged and expanded without recourse to stress inducing welding. 409 and 316 grade stainless steel options available.

Burners Multi burner in-shot matched to each tube assembly and manifolded to a common gas valve and ignition system, itself complete with flame monitoring and safety controls and supplied ready for use with natural gas (G20). Alternative lpg propane (G31) firing available to order.

Air Movement Axial fan heaters are, dependent upon model, fitted with either single or multiple fan sets and discharge warmed air directly into the heated space via adjustable louvred horizontal grilles. As an option a punched type grille is also available. Centrifugal fan models are fitted with the centrifugal fan mounted directly to the heater and discharge via a duct outlet spigot mounted to the front of the heater.

Controls Heaters, as standard, are provided with full ignition and flame protection safety controls, high temperature limit protection and connections for both heat and fan only operation. Heaters may be connected to our compatible environmental control stations which are themselves available in two options. The Powtrol control station provides a digital timeswitch with mechanical day and frost protection thermostats and switching options to enable 'fan only' operation for summer air movement. Alternatively heaters may be specified with the MC200bl optimised entry code protected control (mandatory for ECA, high/low and modulating applications) which includes a digital time switch, electronic day thermostat and frost protection thermostats. Remote temperature sensor option available. Interconnecting wiring for all controls is the responsibility of the installer.

Approvals All Powmatic heaters are type tested to meet the stringent requirements of both the Gas Directive and CE accreditation.



NVx Centrifugal heater front and rear view

Duties

Model			10	15	20	25	30	40	50	60	75	90	120	140		
Output			kW	10	15	20	25	30	40	50	60	75	90	120	140	
Input (nett CV)			kW	10.79	16.00	21.85	27.32	32.60	43.48	54.23	65.22	81.50	97.80	130.4	152.1	
Airflow	Volume	NVx F/ NVx C	m ³ /s	0.26	0.39	0.52	0.65	0.78	1.04	1.30	1.56	1.95	2.34	3.12	3.64	
		NV D	min	m ³ /s	0.21	0.31	0.42	0.52	0.63	0.83	1.04	1.25	1.56	1.88	2.50	2.92
			max	m ³ /s	0.28	0.42	0.56	0.69	0.83	1.11	1.39	1.67	2.08	2.50	3.33	3.89
	Throw	NV F	m	7.0	10.0	13.0	16.0	15.0	21.0	24.0	25.0	29.0	31.0	35.0	37.0	
	Fan Static	NV C	Pa	147	145	177	143	250	236	205	250	260	200	284	285	
Electrics	Supply	Standard	v/ph/hz	230/1/50												
		Optional	v/ph/hz	415/3/50												
	NVx F	Motor	kW	0.04	0.12	0.07	0.18	0.18	0.30	0.44	0.55	0.55	2 x 0.44	2 x 0.55	2 x .055	
		Start	amp	0.34	1.39	0.38	1.89	1.83	2.56	4.01	4.70	4.78	7.81	9.57	9.64	
		Run	amp	0.16	0.51	0.28	0.62	0.61	1.35	1.96	2.44	2.51	4.22	5.13	4.98	
	NVx C	Motor	kW	0.37	0.37	0.37	0.37	1.10	1.10	1.10	1.50	1.50	2 x 1.10	2 x 1.50	2 x 1.50	
		Start	amp	8.30	8.10	7.80	8.20	14.70	14.00	16.00	24.50	24.50	58.40	42.50	39.80	
Run		amp	2.40	2.60	3.60	2.90	4.50	5.30	6.40	10.16	12.30	11.60	21.15	25.20		
Fuel	Connection		BSP/Rc	¾"												
	Minimum Inlet Pressure	Nat Gas	mbar	17.5												
		LPG	mbar	37.0												
	Consumption	Nat Gas	m ³ /h	1.14	1.69	2.31	2.89	3.45	4.60	5.74	6.90	8.60	10.08	13.37	15.76	
LPG		m ³ /h	0.44	0.65	0.89	1.12	1.33	1.78	2.22	2.67	3.32	3.90	5.17	6.09		
Mounting Height	NVx F Crossflow	Min	m	2.50					3.00							
		Max	m	3.00					5.00							
	NVx V Downflow	Min	m	3.00			4.00			4.00	5.00			6.00	6.00	
		Max	m	5.00			6.00			7.00	8.00			10.00	12.00	
Overall Dimensions	NVx F	Height	mm	540	540	540	540	760	760	912	760	912	700	831	975	
		Width	mm	785	1000	1000	1000	1000	1000	1000	1000	1325	1325	2325	2325	2325
		Depth	mm	700	700	700	700	700	700	700	700	700	700	700	700	700
Installation Clearances	NVx F	Top	mm	200												
		LH Side	mm	200												
		RH Side	mm	1000												
		Rear	mm	400												
Flue	Diameter		mm Ø	80	80	80	80	100	100	100	130	130	130	130	130	
	Maximum Length	Flue Only	m	12												
		Room Sealed	m	6												
Combustion Air Spigot			mm Ø	80	80	80	80	100	100	100	130	130	130	130	130	
Noise Levels			dB(A)	42	50	48	49	50	54	57	58	58	62	63	63	
Nett Weight	NVx F		kg	53	54	68	89	89	93	114	130	150	188	260	260	
	NVx CCF		kg	92	107	121	127	167	169	183	213	234	303	364	424	
	NVx C/FS		kg	102	118	133	139	185	189	203	223	254	323	384	444	

Notes:

Fuel Consumption and output figures based upon nett calorific values as follows:

Natural Gas (G20) nett CV 34.02 MJ/m³

Propane (G31) nett CV 95.65 MJ/m³

Heaters have efficiency levels which meet with the minimum efficiency requirements of UK PartL2B Building Regulations

Heaters have efficiency levels which meet the criteria of the Enhanced Capital Allowance Scheme

Air handling data is assessed at room ambient conditions

Throw figures provide the distance to the point where the terminal velocity degrades to 0.25m/s

Dimensions and clearance data in the table above refer to NVx F units only - for NVx C and NVx D data refer to the dimensions page and/or the installation instructions

Noise levels are applicable to standard NVx F models and are measured 5m from appliance in free field conditions

Motor kW, run and start amps apply to standard electrical supply as stated. For optional data contact sales office

Connection of combustion air duct is not required for 'flue only' applications

It is the responsibility of the installing contractor to ensure that ductwork is correctly sized and balanced when installing NVx Centrifugal units

Installer guidance notes on rear page

Dimensions

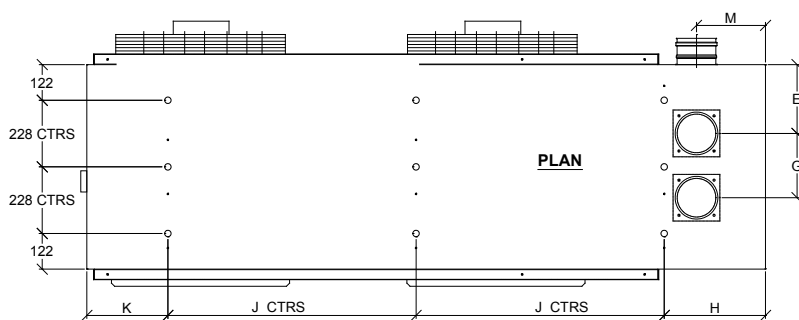
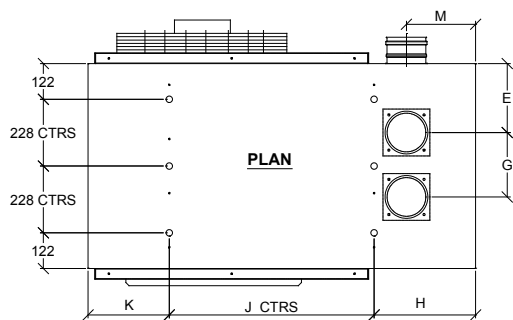
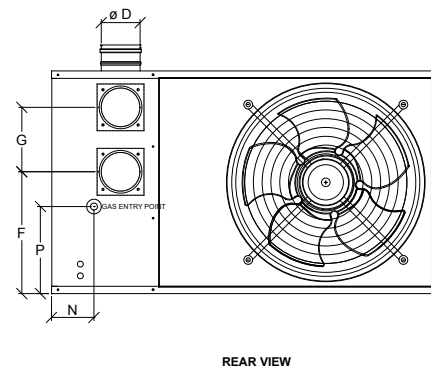
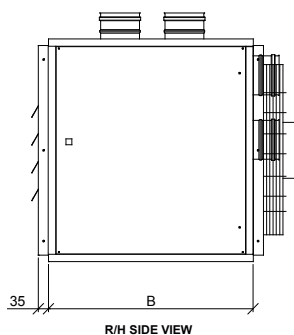
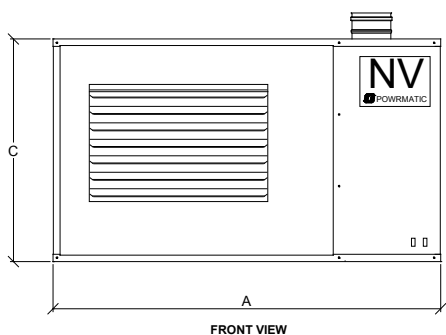
NVx F - Axial Fan Crossflow Units



NVx 40F



NVx 120F

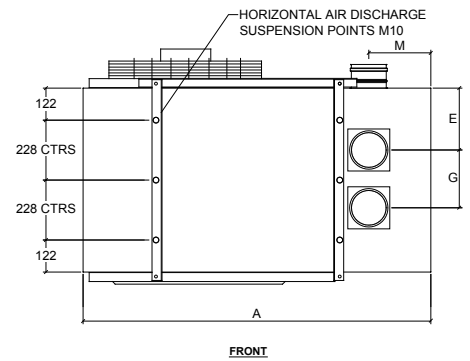
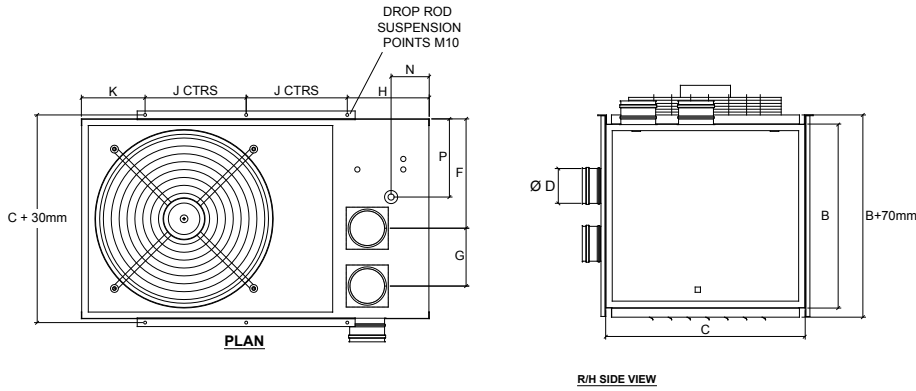


Note: For dimensioning purposes, both top and rear flue and combustion air connections are shown.

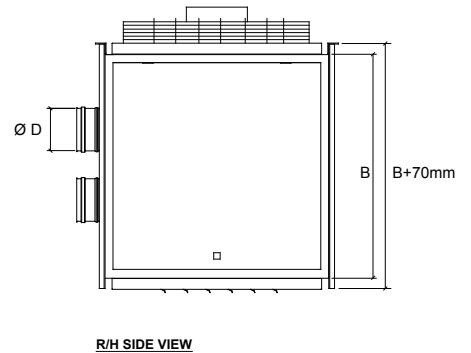
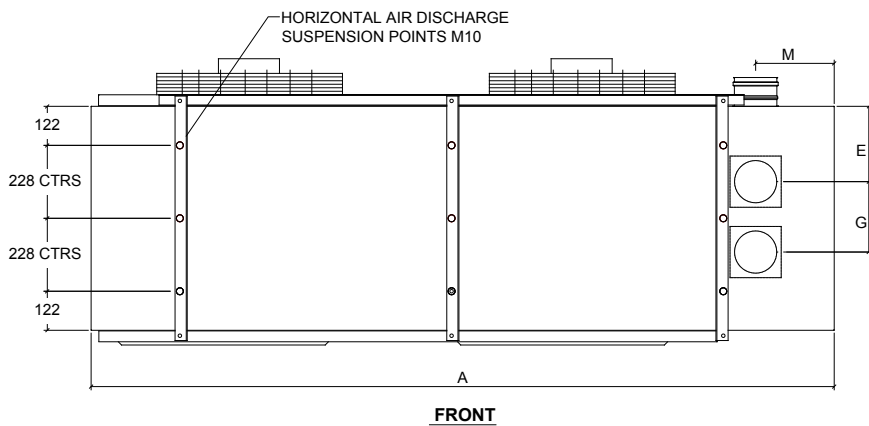
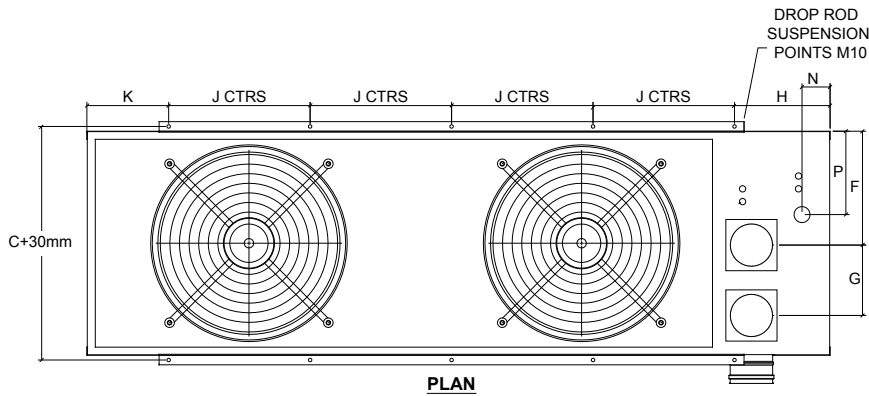
Model		10	15	20	25	30	40	50	60	75	90	120	140
A	mm	785	1000	1000	1000	1000	1000	1000	1325	1325	2325	2325	2325
B	mm	700	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	540	760	760	912	760	912	700	831	975
DØ	mm	80	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	308	492	492	644	416	568	321	487	631
G	mm	120	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	317	347	347	347	347	347
J	mm	250	250	450	450	450	450	450	700	700	2x850	2x850	2x850
K	mm	218	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
M	mm	216	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	194	225.5	297	297	374	297	374	243	326	398

Dimensions

NVx V - Axial Fan Downflow Units



NVx60V Downflow Unit

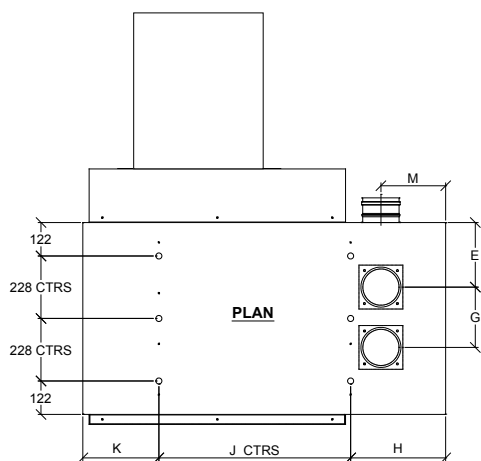
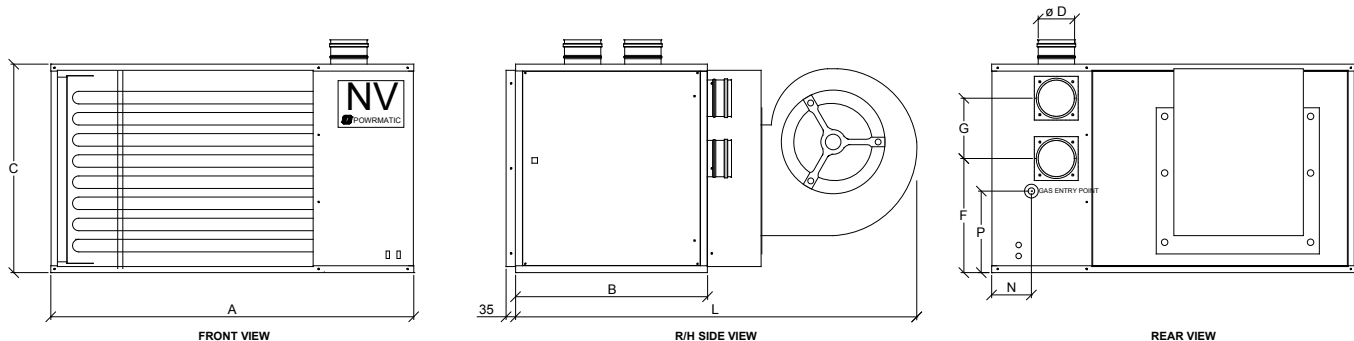


Note: For dimensioning purposes, both top and rear flue and combustion air connections are shown.

Model		10	15	20	25	30	40	50	60	75	90	120	140
A	mm	785	1000	1000	1000	1000	1000	1000	1325	1325	2325	2325	2325
B	mm	700	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	540	760	760	912	760	912	700	831	975
DØ	mm	80	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	308	492	492	644	416	568	321	487	631
G	mm	120	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	317	347	347	347	347	347
J	mm	250	250	450	450	450	450	450	700	700	2x850	2x850	2x850
K	mm	218	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
M	mm	216	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	194	225.5	297	297	374	297	374	243	326	398

Dimensions

NVx CCF - Centrifugal Close Coupled Fan Units



NVx 50 CCF Front



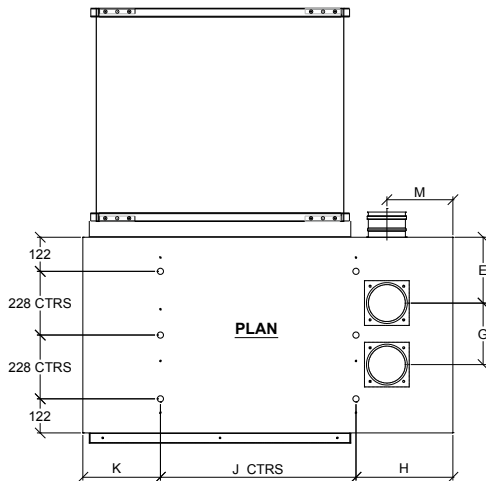
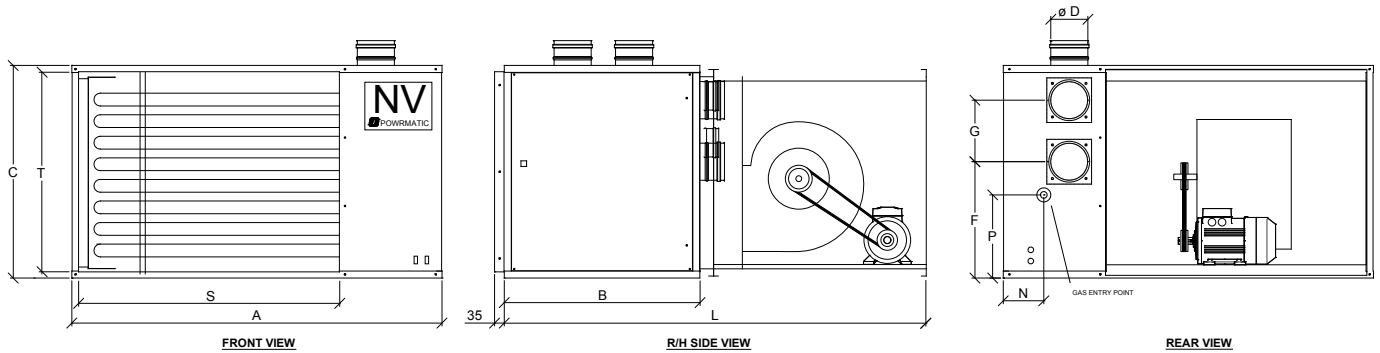
NVx 50 CCF Rear

Note: For dimensioning purposes, both top and rear flue and combustion air connections are shown.

Model		10	15	20	25	30	40	50	60	75	90	120	140
A	mm	785	1000	1000	1000	1000	1000	1000	1325	1325	2325	2325	2325
B	mm	700	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	540	760	760	912	760	912	700	831	975
DØ	mm	80	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	308	492	492	644	416	568	321	487	631
G	mm	120	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	317	347	347	347	347	347
J	mm	250	250	450	450	450	450	450	700	700	2x850	2x850	2x850
K	mm	218	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
L	mm	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
M	mm	216	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	194	225.5	297	297	374	297	374	243	326	398
S	mm	422	637	637	637	637	637	637	932	932	1932	1932	1932
T	mm	492	492	492	492	712	712	864	712	864	617	783	927

Dimensions

NVx C/FS units - Centrifugal Heater with fan plenum fitted - belt drive



NVx 50 C/FS Front



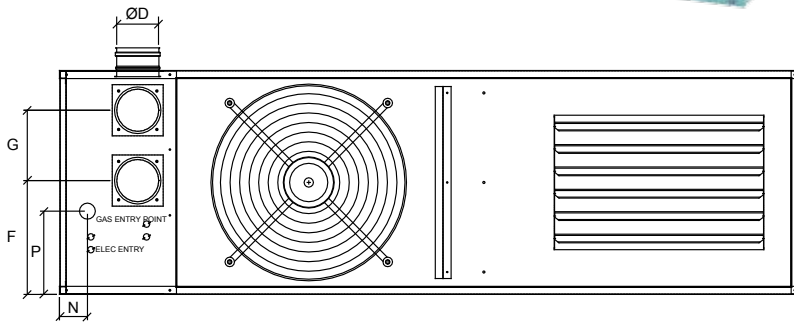
NVx 50 C/FS Rear

Note: For dimensioning purposes, both top and rear flue and combustion air connections are shown.

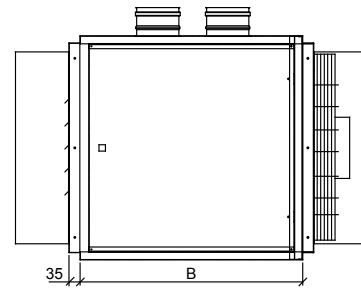
Model		10	15	20	25	30	40	50	60	75	90	120	140
A	mm	785	1000	1000	1000	1000	1000	1000	1325	1325	2325	2325	2325
B	mm	700	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	540	760	760	912	760	912	700	831	975
DØ	mm	80	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	308	492	492	644	416	568	321	487	631
G	mm	120	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	317	347	347	347	347	347
J	mm	250	250	450	450	450	450	450	700	700	2x850	2x850	2x850
K	mm	218	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
L	mm	1730	1730	1730	1730	1730	1730	1730	1730	1730	1730	1730	1730
M	mm	216	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	194	225.5	297	297	374	297	374	243	326	398
S	mm	422	637	637	637	637	637	637	932	932	1932	1932	1932
T	mm	492	492	492	492	712	712	864	712	864	617	783	927

Dimensions

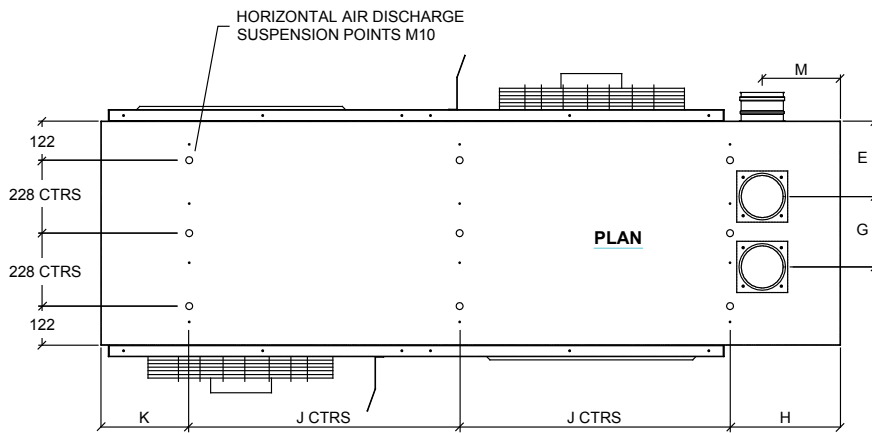
NVx Duo - Axial Fan Bi-directional Units



REAR VIEW



R/H SIDE VIEW

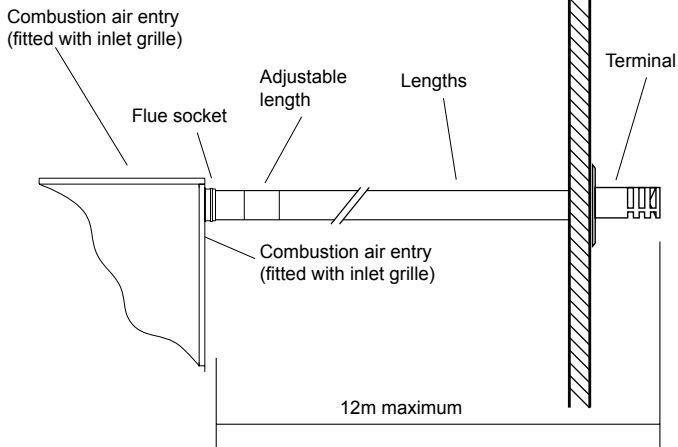


Note: For dimensioning purposes, both top and rear flue and combustion air connections are shown.

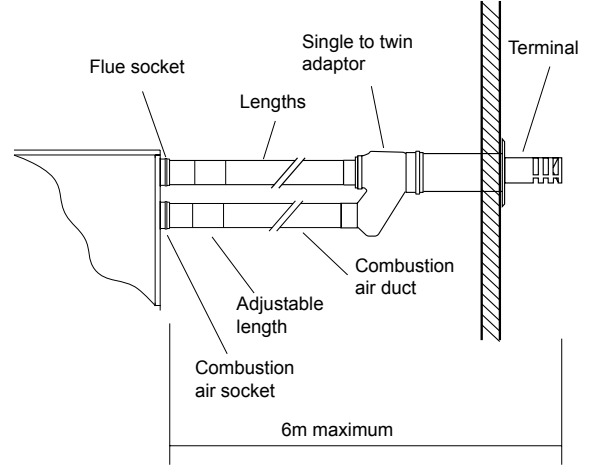
Model		90	120	140
A	mm	2325	2325	2325
B	mm	700	700	700
C	mm	700	831	975
DØ	mm	130	130	130
E	mm	235.5	235.5	235.5
F	mm	321	487	631
G	mm	220	220	220
H	mm	347	347	347
J	mm	2 x 850	2 x 850	2 x 850
K	mm	278	278	278
M	mm	246	246	246
N	mm	88	88	88
P	mm	243	326	398

Flue Arrangements

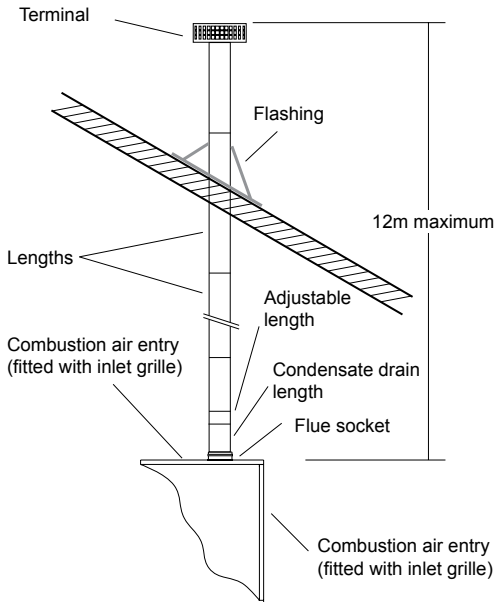
single wall - horizontal flue system



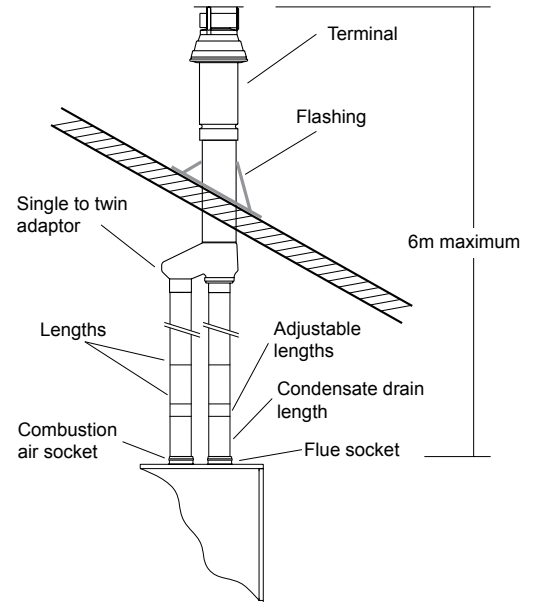
room sealed - horizontal flue system



single wall - vertical flue system



room sealed - vertical flue system



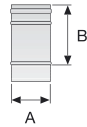
Notes for all systems:

1. Final overall length of adjustable disconnection piece must be between 360-415mm.
2. 45° offsets may be used if required. Each set is equivalent to 0.5m of flue length.
3. Where nvx heaters are used in clean environments it is permissible to take the combustion air directly from the heated space. The supplied mesh intake plate must be fitted to the combustion air inlet on the rear of the heater.

Flue Components

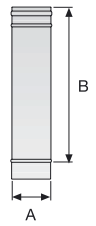
Single Wall 200mm Length

Unit	Part Number	A mm	B mm
NVx 10 - 25	NV4010308	80	200
NVx 30 - 50	NV4010310	100	200
NVx 60 - 140	NV4010313	130	200



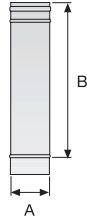
Single Wall 500mm Length

Unit	Part Number	A mm	B mm
NVx 10 - 25	NV4010208	80	500
NVx 30 - 50	NV4010210	100	500
NVx 60 - 140	NV4010213	130	500



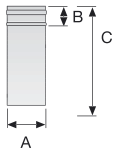
Single Wall 1000mm Length

Unit	Part Number	A mm	B mm
NVx 10 - 25	NV4010108	80	1000
NVx 30 - 50	NV4010110	100	1000
NVx 60 - 140	NV4010113	130	1000



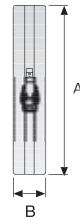
Single Wall 75-230mm Adjustable Length

Unit	Part Number	A mm	B mm	C mm
NVx 10 - 25	NV4014408	80	75	230
NVx 30 - 50	NV4014410	100	75	230
NVx 60 - 140	NV4014413	130	75	230



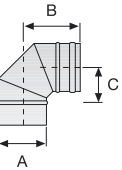
Single Wall Adjustable Length Locking Band

Unit	Part Number	A mm	B mm
NVx 10 - 25	NV4007208	80	22
NVx 30 - 50	NV4007210	100	22
NVx 60 - 140	NV4007213	130	22



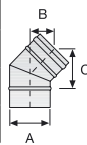
Single Wall 90° Elbow

Unit	Part Number	A mm	B mm	C mm
NVx 10 - 25	NV4012808	80	150	90
NVx 30 - 50	NV4012810	100	160	100
NVx 60 - 140	NV4012813	130	175	115



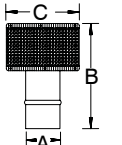
Single Wall 45° Elbow

Unit	Part Number	A mm	B mm	C mm
NVx 10 - 25	NV4012308	80	97	179
NVx 30 - 50	NV4012310	100	105	197
NVx 60 - 140	NV4012313	130	116	225



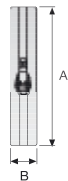
Single Wall Vertical Gas Terminal

Unit	Part Number	A mm	B mm	C mm
NVx 10 - 25	NV4006108	80	245	170
NVx 30 - 50	NV4006110	100	245	190
NVx 60 - 140	NV4006113	130	270	225



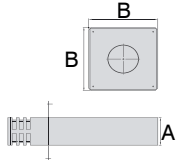
Single Wall Locking Band

Unit	Part Number	A mm	B mm
NVx 10 - 25	NV1017008	80	22
NVx 30 - 50	NV4017010	100	22
NVx 60 - 140	NV4017013	130	22



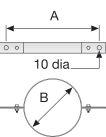
Single Wall Horizontal Gas Terminal

Unit	Part Number	A mm	B mm
NVx 10 - 25	NV2500101	80	215
NVx 30 - 50	NV2510101	100	220
NVx 60 - 140	NV2520101	130	295



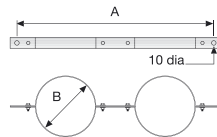
Single Wall Individual Wall Band

Unit	Part Number	A mm	B mm
NVx 10 - 25	NVSW/IWB1	165	80
NVx 30 - 50	NVSW/IWB2	185	100
NVx 60 - 140	NVSW/IWB3	215	130



Single Wall Double Wall Band

Unit	Part Number	A mm	B mm
NVx 10 - 25	NVSW/DWB1	285	80
NVx 30 - 50	NVSW/DWB2	327	100
NVx 60 - 140	NVSW/DWB3	435	130

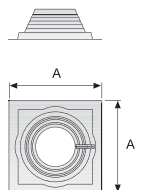


Concentric Vertical Terminal Kit

Unit	Part Number	A mm	B mm	C mm	D mm	E mm
NVx 10 - 25	NVC/VTK1	80	1270	240	660	130
NVx 30 - 50	NVC/VTK2	100	1340	215	800	150
NVx 60 - 140	NVC/VTK3	130	1763	885	80	200

Single Wall High Temperature Silicon Flashing

Unit	Part Number	A mm
NVx 10 - 25	800014026	254
NVx 30 - 50	800014026	254
NVx 60 - 140	800014028	305

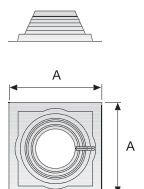


Concentric Horizontal Terminal Kit

Unit	Part Number	A mm	B mm	C mm	D mm	E mm
NVx 10 - 25	NVC/HTK1	80	577	240	400	130
NVx 30 - 50	NVC/HTK2	100	577	215	400	150
NVx 60 - 140	NVC/HTK3	130	850	670	80	200

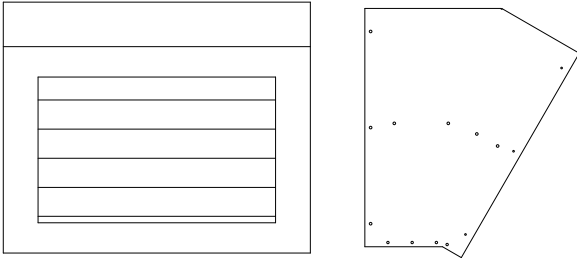
Concentric High Temperature Silicon Flashing

Unit	Part Number	A mm
NVx 10 - 25	800014026	254
NVx 30 - 50	800014028	305
NVx 60 - 140	800014030	356

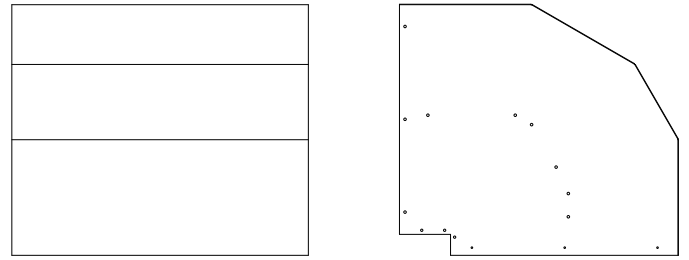


Accessories

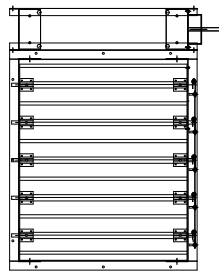
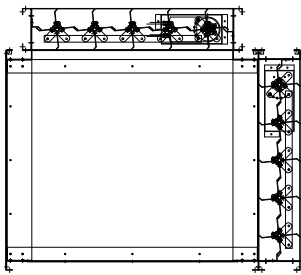
30° Downflow Head



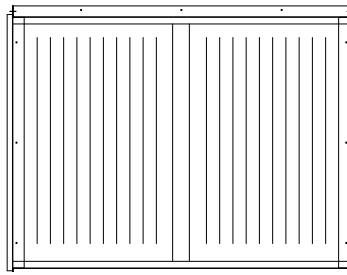
90° Downflow Head



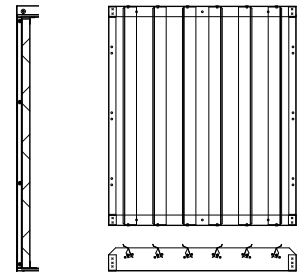
Mixing Box



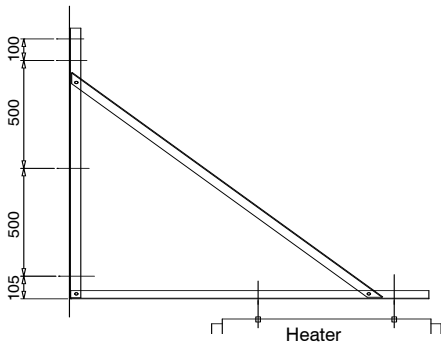
Filter Box



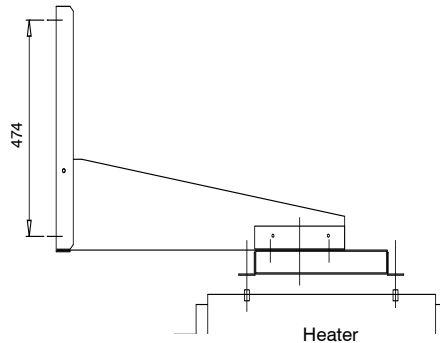
Vertical Louvres



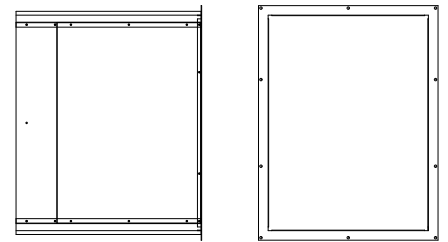
Cantilever Wall Bracket



Swivel Wall Bracket



Fan Plenum Box



Controls

Powtrol/RR



MC200bl



RBR Relay Boxes



**RBR2 shown - control up to 2units.
Other RBR relay boxes available to
control up to 4,6 or 8 units**

A choice of control options are available for the NVx range. Please note that it is mandatory to use the optimised MC200bl control for any application where an application is being made through the Enhanced Capital Allowance (ECA) scheme.

Multiple units can be controlled using the appropriate relay box

Installer Guide

General The following notes are provided as a help, 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 NVx heaters must be installed, commissioned and operated with due regard to appropriate regulations including but not limited to BS 6230, relevant Codes of Practice, the possible requirements of Local Authorities, Fire Officers and insurers as well as Powrmatic's installation manual.

Position & Location Powrmatic NVx heaters can be 'drop rod' suspended via purpose designed M10 suspension fixing points, attached to our optional wall support brackets or positioned on a level non-combustible base. In all cases it is important that all supporting structures have due regard to the relevant weight loadings.

Consideration should also be given to flue routes and points of exit, gas, electrical and control connections, the throw characteristics of the heater, issues of public access and the siting of environmental control stations and/or remote temperature sensors where the position needs 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 (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 It is recommended that you consult with our technical department.

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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 in room sealed mode (ie where both the flue exit and combustion air and positively connected to atmosphere) then there is no specific requirement for combustion air ventilation. However, depending upon location, provision for general ventilation may still be a necessity.

If the heater is installed in flue only mode and directly 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.

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 Powrmatic NVx heaters can be installed in either room sealed or flue only mode. Each heater requires a separate flue and/or combustion air intake system of the appropriate size and type. Installers are reminded that type approval has been granted for these appliances on the basis that they are fitted with Powrmatic NVx flue systems. Maximum lengths apply and should be strictly observed.

Systems may be installed in either the horizontal or vertical plane. In either case the number of bends kept to a minimum and regard must be given to the reduction in permissible length with the addition of each bend. The flue must be adequately supported and terminated with the approved terminal assembly, with due regard to the point of exit and its proximity to any windows, doors or ventilation intakes etc.

Pipework Care should be taken when sizing pipework to ensure that minimum gas 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 NVx 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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