NVx Suspended Gas Unit Heater

Industrial & Commercial Heating Systems

powrmatic

ErP READY
2018 POWRMATIC PRODUCT

www.powrmatic.co.uk

+44 (0) 1460 53535
info@powrmatic.co.uk

Powrmatic NVx

The NVx range of gas fired warm air suspended unit heaters from Powrmatic provide efficient and cost effective heating solutions for a wide variety of industrial, commercial and retail buildings.

The range comprises of 11 models with outputs from **15 to 140kW** with heaters typically configured for free discharge and installed directly into the space to be heated. Heaters can also be specified for ducted or plant room applications.

Energy efficiency is a key consideration and to comply with the stringent requirements of ErP legislation heaters as standard are arranged with high/low heat outputs with modulation an option.

GAS NATURAL GAS (G20)

LPG PROPANE (G31)

ErP READY
2018 POWRMATIC PRODUCT

Efficiency and ErP Compliance

From 1st January 2018 all warm air heaters used to provide comfort for the occupants of a heated space are required to meet minimum standards of 'seasonal' efficiency as determined by the Ecodesign regulation (EU) 2015/1188, Directive 2009/125/EC - Lot 21 Tier 1. Compliance to the standard is mandatory.

The calculation for seasonal efficiency takes into account air flow, temperature rise across the heat exchanger, electrical power consumption as well as the usual thermal efficiencies.

NVx gas fired suspended unit heaters placed on the market after 1st January 2018 comply with the requirements of the standard.

Installers and customers will note that in pursuit of increased efficiency when ErP legislation is implemented NVx heaters will no longer be available in on/off configuration other than for non-personnel heating applications. For most space heating applications high/low heat output will be standard with modulation as an option.

Models Available

- NVx F - Axial Fan Crossflow Units
- NVx C - Centrifugal Close Coupled Fan Units
- NVx V - Axial Fan Downflow Units
- NVx Duo - Axial Fan Bi-Directional Units
- NVx D - Ducted Heat Module (no fan)

Installation Benefits

- Compact in size
- Horizontal wall exit flue discharge option (no roof work)
- Suitable for either room sealed or flue only applications
- Interchangeable top or rear flue/combustion air spigot positions
- Standard models require a single phase electrical supply

Peace Of Mind

- More than sixty years experience in warm air
- Two year parts and one year labour guarantee
- Ten-year time related heat exchanger warranty
- Full technical support

Working With The HVAC Trade

Powrmatic philosophy is to work in partnership with our customers establishing a long-term commitment to a relationship based on understanding the expectations of customers and a dedicated common goal.

By working with our customers we can deliver solutions that enable them to meet technical and regulatory challenges they face, fulfil their clients needs effectively and economically, and gain a competitive edge.

TYPICAL APPLICATIONS

- Warehouses
- Factories
- Garage Workshops
- Distribution / Logistic Centres
- Horticultural & Garden Centres
- Showrooms
- Retail Outlets

Construction
The heater is of unitary construction and provided with a separate burner 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 in-shot burners 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 on model) fitted with either single or twin fan sets and discharge warmed air directly into the heated space via adjustable horizontal louvres. Vertical louvres are available as an option where lateral air discharge is a requirement.

The NVx Duo discharges air in two directions, significantly enhancing the effective coverage of the heater, often a problem in modern well insulated buildings, offering a potential saving on both capital and installation costs.

Centrifugal fan models benefit from a close coupled fan which discharges warmed air via a duct outlet spigot suitable for the onward connection of ductwork. A comprehensive range of accessories are available.

Controls
As standard NVx heaters are supplied with approved safety controls including high limit protection, flame monitoring and multiple try ignition.

For comfort and fuel efficiency connection terminals are provided for independent time, temperature and 'fan only' control. Alternatively we recommend that heaters be connected to compatible Powrmatic digital control systems -

- MC200 (control of single units)
- MC300 Multi (control of multiple units)

Note: Interconnecting wiring for all controls is the responsibility of the installer.

Approvals
NVx heaters are type tested and CE approved. In addition heaters placed on the market subsequent to 1st January 2018 meet the seasonal efficiency requirements of ErP Lot 21 Tier 1.

CUSTOMER BENEFITS

Energy efficient •
Range of sizes and configurations •
Space saving 'off-floor' location •
Colour (RAL) options •
Manufactured in the United Kingdom •

CE
APPROVED PRODUCT

Technical Specification

Model					15	20	25	30	40	50	60	75	90	120	140
Output (nominal)	High Fire (Max)			kW	15	20	25	30	40	50	60	75	90	120	140
	Low Fire (Min)			kW	11	14	18	21	28	35	42	53	63	84	98
Airflow Volume	NVx F / V / CCF			m^3/s	0.42	0.56	0.78	1.06	1.18	1.51	1.86	2.56	2.81	3.56	3.75
	Duo			m^3/s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.34	3.12	3.64
	NVx D		Min	m^3/s	0.42	0.56	0.78	1.06	1.18	1.51	1.86	2.56	2.81	3.56	3.75
			Max	m^3/s	0.46	0.62	0.86	1.16	1.30	1.67	2.02	2.81	3.09	3.91	4.13
Airflow	Throw	NVx F		m	10.0	14.0	20.0	24.0	28.0	30.0	30.0	32.0	34.0	36.0	38.0
		NVx Duo		m	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60.0	60.0	64.0
	Fan Static	NVx CCF		Pa	220	320	220	220	150	250	250	250	180	290	250
Electrics	NVx F / V / Duo	Standard		V/ph/Hz	230/1/50										
		Run Current		amp	0.50	0.53	0.56	1.0	1.0	1.7	2.6	2.6	3.40	5.2	5.2
	NVx CCF (Standard)	Supply		V/ph/Hz	230/1/50										
		Start Current		amp	5.0	8.5	13.3	13.3	18.0	26.3	29	N/A	31.0	40	44
		Run Current		amp	2.0	3.1	4.2	4.3	5.8	7.6	10	N/A	12.8	17	20
	NVx CCF (Optional)	Supply		V/ph/Hz	400/3/50 (Centrifugal units only)										
		Start Current		amp	N/A						16.5	18.0	N/A	14.9	16.8
		Run Current		amp	N/A						4.8	5.3	N/A	4.6	4.9
Fuel	Connection			BSP/Rc	¾"										
	Minimum Inlet Pressure		Nat Gas	mbar	20.0										
			LPG	mbar	37.0										
	Consumption		Nat Gas	m^3/h	1.75	2.33	2.91	3.49	4.66	5.71	6.93	8.52	10.32	13.60	15.77
			LPG	m^3/h	0.65	0.90	1.13	1.33	1.78	2.21	2.68	3.33	4.01	5.44	6.20
Mounting Height	NVx F/Duo		Min	m	2.5				3.00						
			Max	m	3.0				5.00						
	NVx V Downflow		Min	m	3.00	4.00			4.00	5.00			6.00	6.00	
			Max	m	3.00	6.00			7.00	8.00			10.00	12.00	
Overall Dims	NVx F	Height		mm	540	540	540	760	760	912	760	912	831	975	1140
		Width		mm	1000	1000	1000	1000	1000	1000	1325	1325	1950	1950	1950
		Depth		mm	892	925	925	925	905	925	941	941	925	941	941
Install Clearance	NVx F	Top		mm	200										
		LH Side		mm	200										
		RH Side		mm	1000										
		Rear		mm	400										
Flue	Diameter			mm Ø	80	80	80	100	100	100	130	130	130	130	130
	Max Length	Flue Only		m	12										
		Room Sealed		m	6										
Combustion Air Spigot				mm Ø	80	80	80	100	100	100	130	130	130	130	130
Noise Levels	NVx F			dB(A)	54	52	53	54	58	61	62	62	66	67	67
	NVx V			dB(A)	64	62	63	64	68	71	72	72	76	77	77
Nett Weight	NVx F			kg	71.5	71.5	72.5	75.5	115	133.5	135.5	157	202	238	286
	NVx CCF			kg	106.5	120.5	126.5	166.5	168.5	183	213	234	329	363.5	430

Notes:

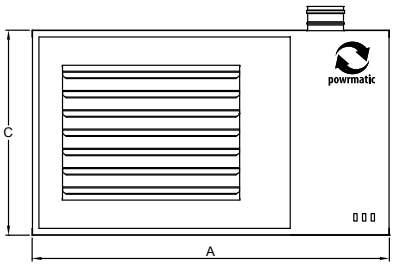
- Fuel Consumption and output figures based upon nett calorific values as follows:
  - Natural Gas (G20) nett CV 34.02 MJ/m^3
  - LPG Propane (G31) nett CV 88.00 MJ/m^3
- NVx heaters have efficiency levels which comply with the requirements of United Kingdom Part L Building Regulations and the seasonal efficiency requirements of the Ecodesign regulation (EU) 2015/1188, Directive 2009/125/EC – Lot 21 Tier 1 (Known as ErP and mandatory as from 1st January 2018)
- 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
- The NVx Duo throw dimension is the effective combined throw measurement.
- Dimensions and clearance data in the table above refer to NVxF units only - for all other model data refer to the dimensions page and/or the installation, operation and
- maintenance manual.
- Noise levels are applicable to standard NVx F and V models and are measured 5m from appliance in a typical installation situation.
- Motor, run and start amps apply to standard electrical supply as stated. For optional data contact sales office.
- Where NVxD heaters are to be applied installers should be aware of both the minimum and maximum airflows as well as a need for fan over-run facilities to protect the heater. It is recommended that you consult with Powrmatic Technical Support prior to product selection and installation.
- For extended combustion duct lengths measurement please contact Powrmatic Technical Support
- For Installer guidance notes see page 11.

Dimensions

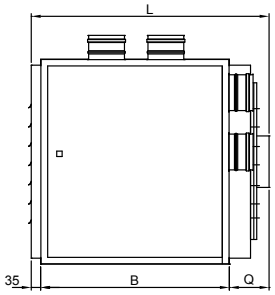
NVx F - Freeblowing Units

NVx 40F

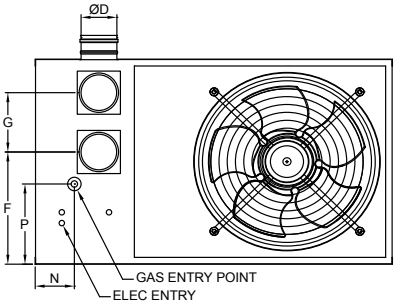
NVx 90F



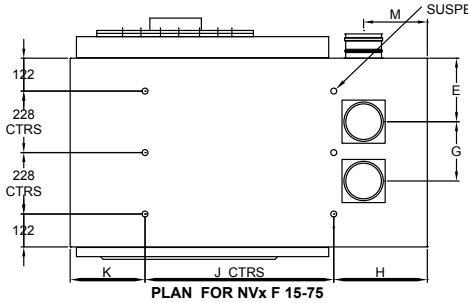
FRONT VIEW



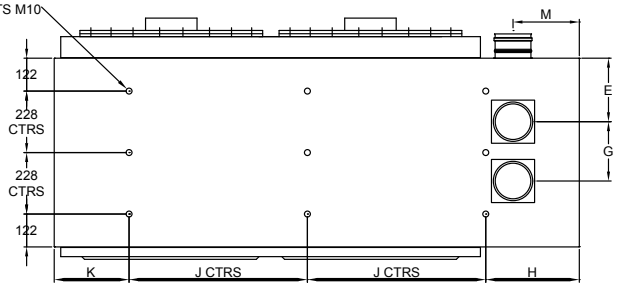
R/H SIDE VIEW



REAR VIEW



PLAN FOR NVx F 15-75



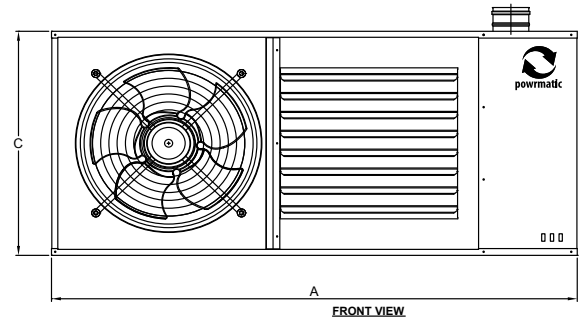
PLAN FOR NVx F 90-140

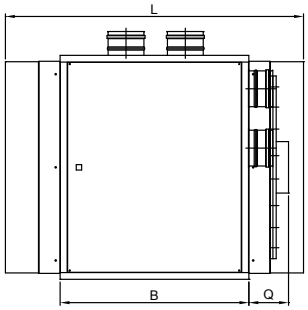
Model		15	20	25	30	40	50	60	75	90	120	140
A	mm	1000	1000	1000	1000	1000	1000	1325	1325	1950	1950	1950
B	mm	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	760	760	912	760	912	831	975	1140
DØ	mm	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	492	492	644	416	568	487	631	796
G	mm	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	347	347	347	347	347
J	mm	450	450	450	450	450	450	700	700	2 x 662.5	2 x 662.5	2 x 662.5
K	mm	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
L	mm	892	925	925	925	925	922	939	985	922	941	941
M	mm	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	225.5	297	297	374	297	374	326	398	481
Q	mm	157	190	190	190	170	190	204	250	188	207	207

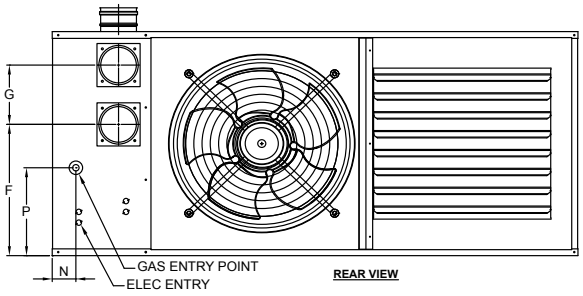
Dimensions

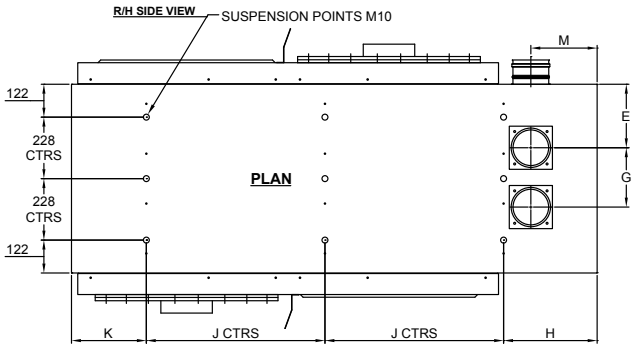
NVx Duo - Axial Fan Bi-Directional Units

NVx 90 Duo







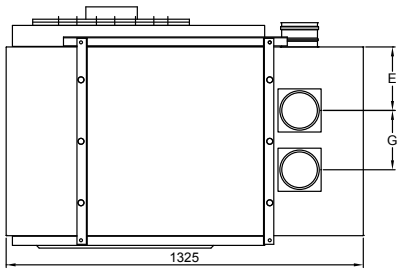


Model		90	120	140
A	mm	1950	1950	1950
B	mm	700	700	700
C	mm	831	975	1140
DØ	mm	130	130	130
E	mm	235.5	235.5	235.5
F	mm	487	631	798
G	mm	220	220	220
H	mm	347	347	347
J	mm	2x662.5	2x662.5	2x662.5
K	mm	278	278	278
L	mm	1287	1350	1350
M	mm	246	246	246
N	mm	88	88	88
P	mm	326	398	481
Q	mm	188	207	207

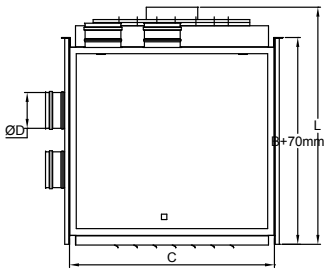
Dimensions

NVx V - Axial Fan Downflow Units

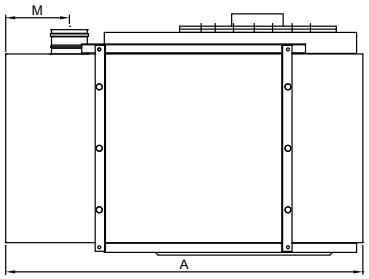
NVx 60V



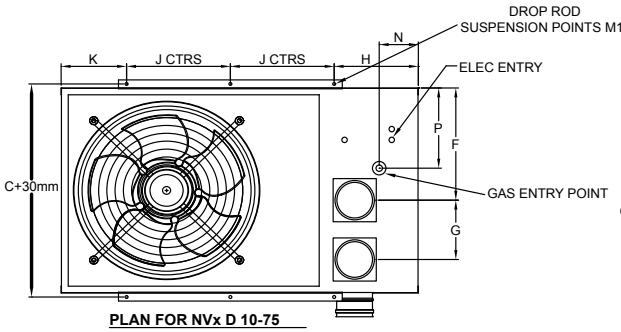
FRONT



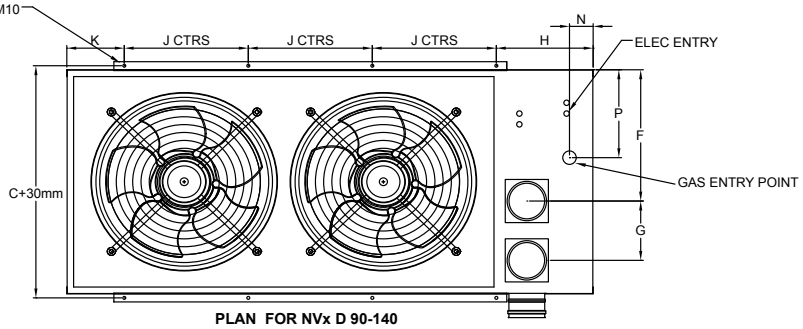
R/H SIDE VIEW



REAR



PLAN FOR NVx D 10-75



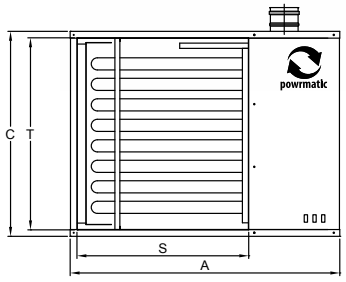
PLAN FOR NVx D 90-140

Model		15	20	25	30	40	50	60	75	90	120	140
A	mm	1000	1000	1000	1000	1000	1000	1325	1325	1950	1950	1950
B	mm	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	760	760	912	760	912	831	975	1140
DØ	mm	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	492	492	644	416	568	487	631	796
G	mm	120	120	120	142	142	142	220	220	220	220	220
H	mm	283	283	304	283	283	283	312	312	319	319	319
J	mm	260	260	260	260	260	260	385	385	460	460	460
K	mm	197	197	197	197	197	197	243	243	251	251	251
L	mm	892	925	925	925	905	925	939	985	986	986	986
M	mm	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	225.5	297	297	374	297	374	326	398	481

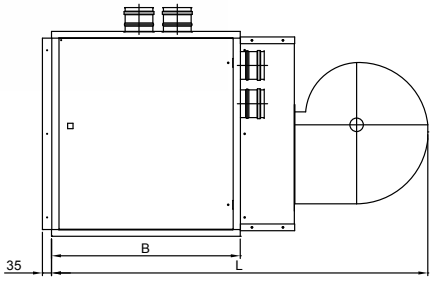
Dimensions
NVx CCF - Centrifugal Close Coupled Fan Units

NVx 50CCF (Front)

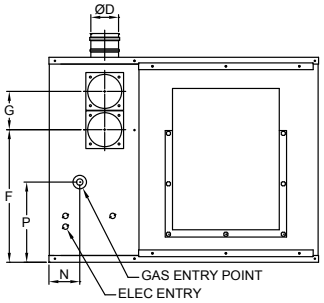
NVx 50CCF (Rear)



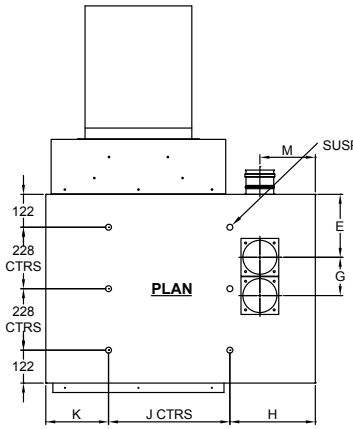
FRONT VIEW



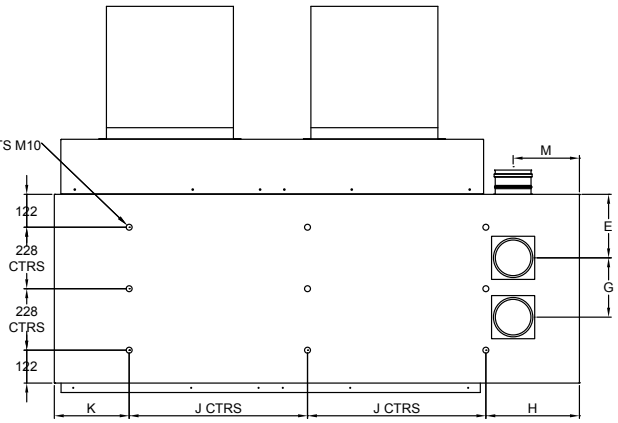
R/H SIDE VIEW



REAR VIEW



PLAN FOR NVx F 15-75



PLAN FOR NVx C 90-140

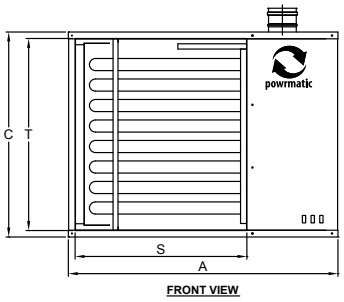
Model		15	20	25	30	40	50	60	75	90	120	140
A	mm	1000	1000	1000	1000	1000	1000	1325	1325	1950	1950	1950
B	mm	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	760	760	912	760	912	831	975	1140
DØ	mm	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	492	492	644	416	568	487	631	796
G	mm	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	347	347	347	347	347
J	mm	450	450	450	450	450	450	700	700	2x662.5	2x662.5	2x662.5
K	mm	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
L	mm	1317	1356	1356	1430	1430	1430	1505	1505	1430	1505	1505
M	mm	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	225.5	297	297	374	297	374	326	398	481
S	mm	637	637	637	637	637	637	932	932	1557	1557	1557
T	mm	492	492	492	712	712	864	712	864	783	927	1092

Dimensions

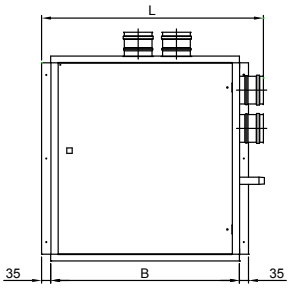
NVx D - Ducted Heat Module

NVx 50D (Front)

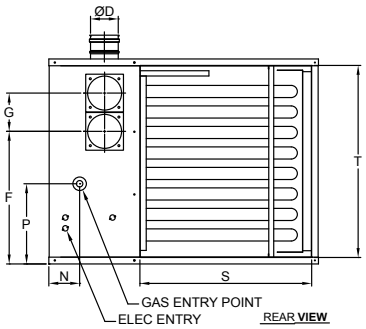
NVx 50D (Rear)



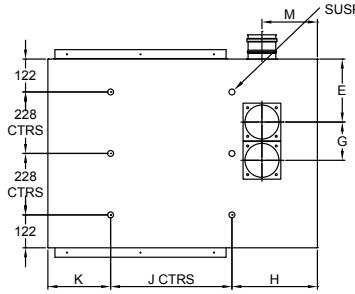
FRONT VIEW



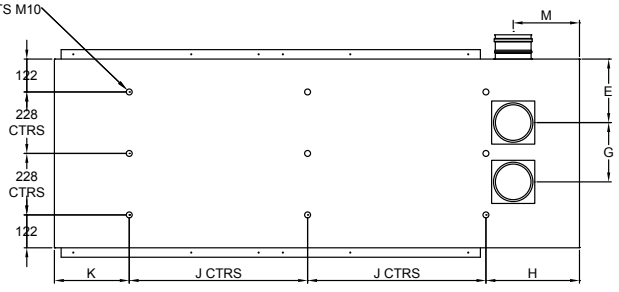
R/H SIDE VIEW



REAR VIEW



PLAN FOR NVx D 15-75



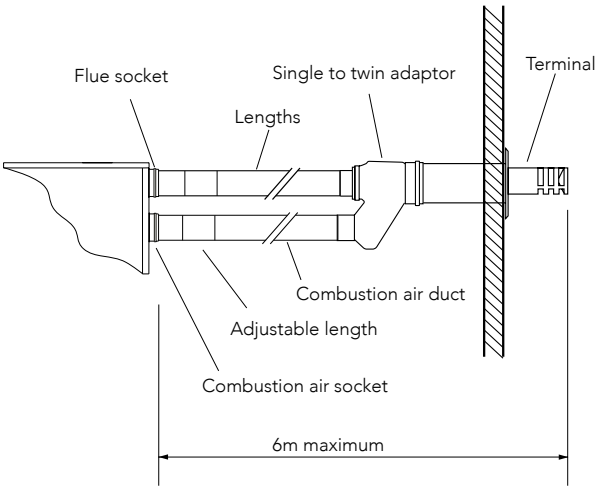
PLAN FOR NVx D 90-140

Model		15	20	25	30	40	50	60	75	90	120	140
A	mm	1000	1000	1000	1000	1000	1000	1325	1325	1950	1950	1950
B	mm	700	700	700	700	700	700	700	700	700	700	700
C	mm	540	540	540	760	760	912	760	912	831	975	1140
DØ	mm	80	80	80	100	100	100	130	130	130	130	130
E	mm	248	248	248	233.5	233.5	233.5	235.5	235.5	235.5	235.5	235.5
F	mm	308	308	308	492	492	644	416	568	487	631	796
G	mm	120	120	120	142	142	142	220	220	220	220	220
H	mm	317	317	317	317	317	317	347	347	347	347	347
J	mm	450	450	450	450	450	450	700	700	2x662.5	2x662.5	2x662.5
K	mm	218	232.5	232.5	232.5	232.5	232.5	278	278	278	278	278
L	mm	835	835	835	835	835	835	835	835	835	835	835
M	mm	216	216	216	206	206	206	236	236	246	246	246
N	mm	114	114	114	114	114	114	145	145	88	88	88
P	mm	194	194	225.5	297	297	374	297	374	326	398	481
S	mm	637	637	637	637	637	637	932	932	1557	1557	1557
T	mm	492	492	492	712	712	864	712	864	783	927	1092

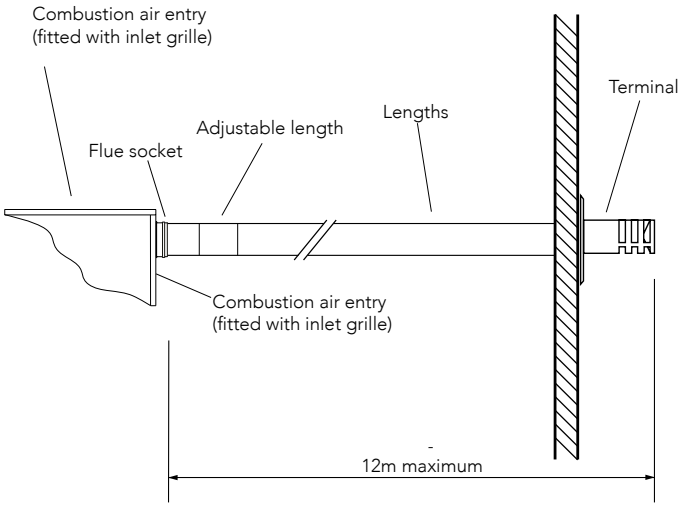
Flue Arrangements

Room Sealed & Flue Only Flue Systems

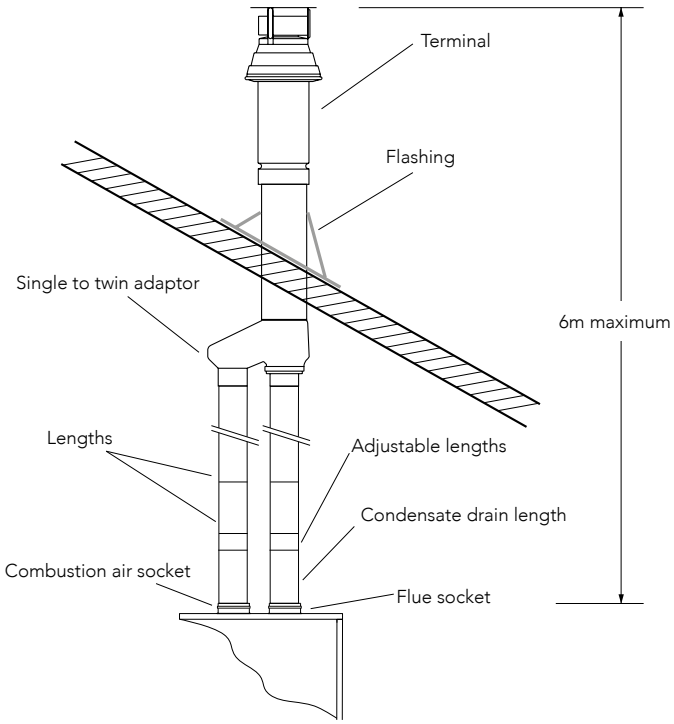
Room Sealed - Horizontal Flue System



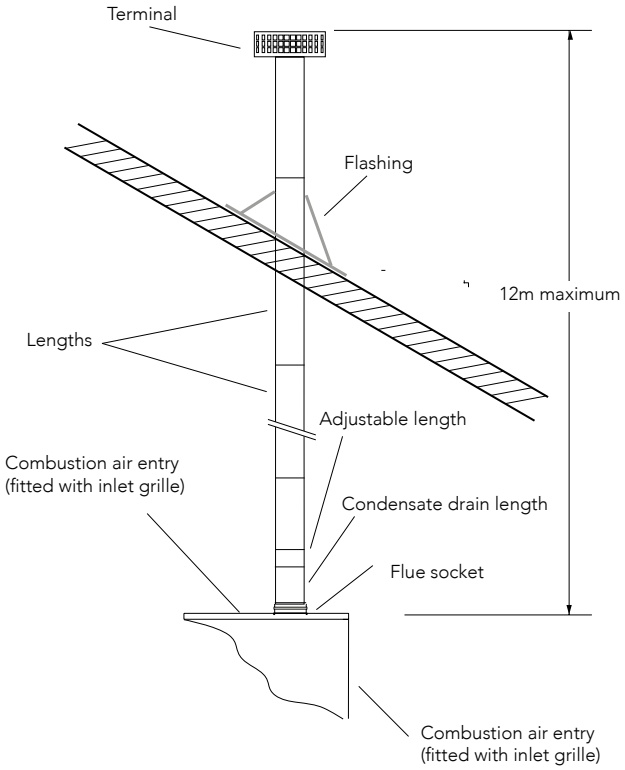
Flue Only- Horizontal Flue System



Room Sealed - Vertical Flue System



Flue Only- Vertical Flue System



Notes:

- The following notes are for guidance purposes. Installers should refer to the Installation, Operation and Maintenance manual prior to commencing installation
- Where heaters are installed in room sealed mode the maximum flue run is 6 metres. For flue only installations the maximum flue run is 12 metres.
- 45 ° bends may be used if required. For each bend the maximum flue length is reduced by 0.5 metres per bend
- 90 ° bends should be avoided if possible. Where bends are used the maximum flue length is reduced by 1.0 metres per bend
- Where NVx heaters are installed in clean environments and where the combustion air ventilation requirements allow it is possible to take combustion air directly from the installed space. In such cases the combustion air entry grille must be fitted.
- Where NVx heaters are installed with a vertical flue it is recommended to install a condensate drain length

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

Standards
NVx heaters must be installed, commissioned and operated with due regard to appropriate regulations including but not limited to BS6230:2011, relevant Codes of Practice, the possible requirements of Local Authorities, Fire Officers and insurers as the relevant Installation, Operation and Maintenance 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 (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 or your local sales manager for further information.

Plant Room or Enclosure Locations
Specific requirements exist where heaters are to be installed in a plant room or enclosure. Such requirements include the provision of positive ductwork connections as well as ventilation for combustion air and general ventilation. It is recommended that you consult with our technical department or your local area sales manager for further guidance.

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, Operation and Maintenance Manual.

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 (i.e. where both the flue exit and combustion air are 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, Operation and Maintenance Manual for further details.

Flue
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 it's proximity to any windows, doors or ventilation intakes.

Pipework
Care should be taken when sizing pipe work 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 pipe work installed with due regard for relevant standards and Codes of Practice.

Ductwork
NVx heaters can be fitted with distribution ductwork and/or inlet or return air duct connections. In such circumstances the NVx C centrifugal fan model should be selected and installers must ensure that the combined duct resistances, including grilles, filters, dampers or other ductwork components are balanced to closely match the static pressure as shown on page 4 of this brochure. Insufficient or excessive duct resistance will compromise the performance of the heater. Please consult or technical department or your local area sales manager for further guidance.

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.

2 YEAR PARTS WARRANTY

1 YEAR LABOUR WARRANTY

10 YEAR TIME RELATED HEAT EXCHANGER WARRANTY

Powrmatic are a leading British manufacturer of industrial and commercial heating equipment. With over 60 years of experience in the HVAC industry, our products are built with integrity, and characterised by high quality and energy-saving designs, delivering exceptional performance and facilitating compliance with energy and emission regulations.

Powrmatic are also a specialist British manufacturer of natural, powered and smoke ventilation products working closely with a wide range of architects and consultants whilst also a supplier of a range of air conditioning and evaporative cooling equipment.

We provide a full product application advice service for architects, mechanical engineers, installers and end users to ensure the best products are selected to meet the required budget, design and regulatory requirements. Our heating and ventilation engineers are also supported by distribution partners and a network of installers who are knowledgeable in the supply, installation and maintenance of all of our equipment.

Get in touch

United Kingdom Office

Powrmatic Limited
Hort Bridge
Ilminster
Somerset
TA19 9PS

tel: +44 (0) 1460 53535
fax: +44 (0) 1460 52341
e-mail: info@powrmatic.co.uk
web: www.powrmatic.co.uk

Ireland Office

Powrmatic Ireland
45 Broomhill Close
Tallaght
Dublin 24

tel: +353 (0) 1452 1533
fax: +353 (0) 1452 1764
e-mail: info@powrmatic.ie
web: www.powrmatic.ie

FOR THE LATEST NEWS, CASE STUDIES, AND TECHNICAL SUPPORT FOLLOW US ON

#keepingthenationwarm

Powrmatic pursues a policy of continues improvement in both design and performance of its products and therefore reserves the right to change, amend or vary specifications without notice. Whilst the details contained herein are believed to be correct they do not form the basis of any contract and interested parties should contact the Company to confirm whether any material alterations have been made since publication of this brochure.

Issue 6.1 ErP 2018