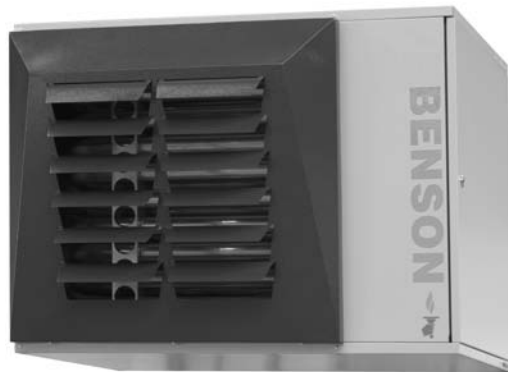


TRADE DATA – VARIANTE²

ROOM SEALED/FAN ASSISTED FLUE GAS UNIT HEATERS



VRA



VRX



VRC



For models -
VRA Axial Fan
VRX Axial Fan Enhanced Throw
VRC Centrifugal Fan



RANGE & CONFIGURATION

Room Sealed or Fan Assisted Flue Automatic Ignition

Axial Fan 12.0 kW to 144.0 kW

Centrifugal Fan 12.0 kW to 144.0 kW

SPECIFICATION

CABINET: Low profile in design and robotically punched and formed from electro-zinc plated steel the heater cabinet presents a functional yet pleasing appearance. Access to the burner and controls compartment is via a full width side hinged door. The cabinet is epoxy powder coated with a durable Kestrel Grey paint finish.

HEAT EXCHANGER: Formed from aluminised steel tube into a compact yet highly efficient four pass 'S' shaped assembly the Variante² heat exchanger has been designed so that manufacture can be accomplished without the use of any stress inducing welding processes. Stainless steel heat exchanger tubes available as an option.

BURNER: Variante² family heaters are fitted with a quiet multi-flame low Nox burner which in turn is complete with automatic electronic spark ignition and ionisation flame proving. The burner, in conjunction with the heat exchanger, is capable of delivering efficiencies in excess of 91% nett.

ECA APPROVED: The Variante² range easily meets the Government's energy efficiency criteria for inclusion into the Enhanced Capital Allowance scheme. Please contact our sales office for further details.

FUEL: Heaters can be specified to operate on either natural gas (G20) or Lpg (Propane G31).

SEALED COMBUSTION CIRCUIT: Variante² heaters are all factory fitted with a power flue venter that enables the heater to be operated in either room sealed or fan assisted flue mode. The flue fan is safety interlocked with the burner control system via a pressure differential sensor.

AIR DISTRIBUTION: Air movement for VRA heaters is via dynamically balanced aerofoil type axial fans which discharge warmth directly into the space to be heated via a set of adjustable horizontal louvres. VRX heaters similarly deploy axial fans but have a reduced grille opening to provide increased velocity and throw. Heaters for ducted applications are supplied with a centrifugal fan and outlet duct connection spigot.

CONTROLS: Variante² heaters are complete with necessary safety controls including overheat protection as well as external control connections including 'fan only' for summer air movement. Automatic operation requires only the simple connection of time and temperature controls. Benson, as an option, can provide a number of alternative integrated control consoles with the choice ranging from simple digital/mechanical controls through to fully optimised systems. Benson control systems are for remote mounting with inter-connecting wiring by others.

TESTING, APPROVALS & CERTIFICATION:

Benson Heating is accredited with ISO 9001 quality assurance certification – certificate number FM14923. All gas fired heaters have been type tested and approved to CE standards by an independent notified body. Each heater is function tested and fired prior to despatch.

GUARANTEE: Variante² gas unit heaters are provided with a comprehensive guarantee package which covers both parts and labour for the first twelve months with a further twelve months parts only. The tubular heat exchanger has the benefit of a ten-year time related warranty. Guarantees subject to terms and conditions.



VRA 70



VRA 490

QUICK REFERENCE DATA

Variante² Axial and Centrifugal Room Sealed/Fan Assisted Flue Gas Unit Heaters

Natural Gas/Lpg (Propane) VRA VRX VRC

Model			40	70	100	135	170	200	250	330	410	490	
Output	All	kW	12.0	19.6	29.4	39.2	49.0	58.8	72.0	96.0	120.0	144.0	
		Btu/h(K)	41	67	100	134	167	201	246	328	409	491	
Airflow	All	m ³ /s	0.31	0.55	0.79	0.96	1.21	1.54	1.90	2.26	3.08	3.78	
		ft ³ /m	657	1165	1674	2034	2564	3263	4026	4789	6527	8010	
Electrics	All	V/ph/hz	230/1/50										
Overall Dimensions	All	Height	mm	440	440	545	650	780	910	650	800	980	1150
		Width	mm	1050	1050	1050	1050	1050	1050	1750	1750	1750	1750
	VRA	Depth	mm	841	881	893	893	893	893	1023	1023	1023	1023
	VRX	Depth	mm	915	955	967	967	967	967	1097	1097	1097	1097
	VRC	Depth	mm	1134	1175	1175	1175	1246	1246	1305	1376	1305	1305
Flue Combustion Air	All	mm ø	80	80	100	100	100	100	130	130	130	130	
		mm ø	80	80	100	100	100	100	130	130	130	130	
Nett Weight	VRAX	kg	71	76	90	104	120	138	181	203	242	279	
	VRC	kg	82	87	108	126	142	160	216	238	281	323	

AIR HANDLING DATA

Variante² Axial and Centrifugal Room Sealed/Fan Assisted Flue Gas Unit Heaters

Natural Gas/Lpg (Propane) VRA VRX VRC

Model			40	70	100	135	170	200	250	330	410	490	
Output	All	kW	12.0	19.6	29.4	39.2	49.0	58.8	72.0	96.0	120.0	144.0	
		Btu/h(K)	41	67	100	134	167	201	246	328	409	491	
Airflow	All	m ³ /s	0.31	0.55	0.79	0.96	1.21	1.54	1.90	2.26	3.08	3.78	
		ft ³ /m	657	1165	1674	2034	2564	3263	4026	4789	6527	8010	
Throw	VRA	m	6	11	14	15	17	20	21	22	27	31	
		ft	20	36	46	49	56	66	69	72	89	102	
	VRX	m	8	14	18	20	23	26	30	32	37	43	
		ft	26	46	59	66	75	85	98	105	121	141	
Fan Static Pressure	VRC	Pa	100	125	100	150	150	180	150	180	200	200	
		in wg	0.40	0.50	0.40	0.60	0.60	0.72	0.60	0.72	0.80	0.80	
Outlet Duct Spigot (OD)	VRC	Height	mm	390	390	495	600	730	860	600	750	930	1100
		Width	mm	729	729	729	729	729	729	1339	1339	1339	1339

Note -

Air handling data is assessed at room ambient conditions

Throw figures provide the distance to the point where the average air velocity is 0.25m/s

INSTALLATION DATA

Variante² Axial and Centrifugal Room Sealed/Fan Assisted Flue Gas Unit Heaters

Natural Gas/Lpg Propane VRA VRX VRC

Model			40	70	100	135	170	200	250	330	410	490		
Output	All	kW	12.0	19.6	29.4	39.2	49.0	58.8	72.0	96.0	120.0	144.0		
		Btu/h(K)	41	67	100	134	167	201	246	328	409	491		
Fuel Consumption	All	Natural Gas	m ³ /h	1.37	2.23	3.38	4.50	5.63	6.76	8.33	11.12	13.87	16.63	
			ft ³ /h	48	79	119	159	199	239	294	393	490	587	
		Lpg Propane	m ³ /h	0.52	0.86	1.30	1.73	2.16	2.59	3.21	4.28	5.34	6.41	
			kg/h	0.96	1.59	2.41	3.20	4.00	4.79	5.94	7.92	9.88	11.86	
Minimum Gas Inlet Pressure	All	Natural Gas	mbar	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	
			in wg	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
		Lpg Propane	mbar	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
			in wg	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
Gas Connection	All	BSP/Rc	½	½	½	½	½	½	¾	¾	¾	¾		
Electrics	All	Supply	V/ph/hz 230/1/50											
	VRAX	FLC	Amp	0.4	0.7	0.8	1.2	1.6	2.7	2.8	3.4	4.8	5.8	
	VRC	FLC	Amp	2.0	2.0	2.0	6.0	8.0	8.0	9.0	11.0	12.0	14.0	
Flue Combustion Air	All	mm ø	80	80	100	100	100	100	130	130	130	130		
		mm ø	80	80	100	100	100	100	130	130	130	130		
Max Run	All	Horiz	m	3.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	8.0	8.0	
		Vert	m	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Mounting Heights	VRA	Min	m	1.8	1.8	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4	
		Max	m	2.3	2.3	2.5	2.5	3.0	3.0	3.5	3.5	3.5	3.5	
	VRX	Min	m	1.8	1.8	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4	
		Max	m	3.0	3.0	3.2	3.2	4.0	4.0	5.0	5.0	5.0	5.0	
Installation Clearances	All	Lh side	mm	250	250	250	250	250	250	250	250	250	250	
		Rh side	mm	800	800	800	800	800	800	950	950	950	950	
		Above	mm	300	300	300	300	300	300	300	300	300	300	
		Below	mm	300	300	300	300	300	300	300	300	300	300	
	VRAX	Rear	mm	300	350	400	500	500	560	560	560	560	630	
	VRC	Rear	mm	200	200	200	200	200	200	200	200	200	200	
Noise Level	VRAX	dBA	53	55	57	58	61	65	61	63	66	66		
Nett Weight	VRAX	kg	71	76	90	104	120	138	181	203	242	279		
	VRC	kg	82	87	108	126	142	160	216	238	281	323		

Note -
 Maximum mounting heights may exceed the figure recommended where, ductwork systems, downflow heads or de-stratification fans are used
 Rh side clearance (as viewed from front) = burner compartment side
 Flue and combustion air maximum runs for guidance purposes only. Please refer to installation instructions for detailed information
 Noise levels measured 3m from appliance
 Fuel consumption and output figures based upon gross calorific values as -
 Natural gas (G20) @ 37.78 MJ/m³
 Lpg Propane (G31) @ 95.65 MJ/m³

INSTALLATION REQUIREMENTS

INSTALLATION STANDARDS: Benson Variante² gas unit heaters must be installed by a competent person and in accordance with relevant standards, Codes of Practice, the requirements of the current Building Regulations, Health and Safety Regulations, IEE Regulations and any requirements of the Local Authority, Fire Officer or insurers. Relevant standards may include BS 6230, BS 6891 and BS 5588 parts 2 and 3.

SITING: The position chosen for the heater will need to take account of the following points -

Benson Variante² gas unit heaters can be positioned on a flat non-combustible surface, located on or fixed to cantilever brackets or suspended by means of the M10 fixings. It is recommended that for the cantilever bracket or suspended applications that the manufacturer's purpose designed brackets be used. Care should always be taken to ensure that bracket fixings or other mounting points are structurally adequate.

Care should be taken to ensure that the recommended maximum/minimum mounting heights, clearances for maintenance, air discharge, return and re-circulation are observed. Further information is provided in the Installation Data table on the previous page.

Consideration should be given to the route and maximum permitted length of the flue, the provision and connection of gas and electrical supplies and protection from overhead cranes, fork lift trucks etc.

For effective warm air distribution free blowing heaters should be both selected and positioned to take account of the throw characteristics and sited such that the discharge avoids any immediate obstructions, partitions or other significant obstacles. In areas where it is proposed to install more than one heater then a general scheme of uniform air circulation should be employed to provide optimum distribution.

So far as controls are concerned siting will often depend upon the type selected. Where controls have in-built or remote temperature sensors then consideration should be given to ensure that the sensor is located in a position which adequately reflects the working zone serviced by the heater. Sensors should not be located in areas subject to cold draughts.

In case of doubt relating to any aspect of heater or control siting please consult with Benson Sales.

GAS PIPEWORK: The gas supply pipework must be sized and installed with due regard for all current standards and legislation, flow rates and the maximum/minimum inlet pressure requirements of the heater. Isolating gas cocks must be provided adjacent to each heater, it is recommended that the final connection to all Variante² gas unit heaters be made with an approved and adequately sized flexible gas connector.

SPECIAL RISK AREAS: Where it is proposed to install a heater within a special risk area (including but not limited to areas containing flammable vapours, where petrol engined vehicles are stored, parked or serviced, where paint spraying occurs or where wood working or other flammable dust creating process are employed) then restrictions, additional regulations and requirements concerning the heater installation may apply. It is strongly recommended that you consult Benson Sales before installation commences.

CAUTION: When used in room sealed mode it may be possible to install Variante² heaters in areas containing flammable vapours, high levels of airborne dust, combustible dust, chlorinated or halogenated hydrocarbons, degreasing solvents, styrene's, other laminating materials or airborne silicones however before doing so consult Benson Sales. Failure to do so may invalidate or reduce guarantee cover.

PLANT ROOM SITING: Provided certain criteria are met it is possible to install Variante VRC (centrifugal fan) heaters within plant rooms. Heaters installed in plant rooms should only be configured for use in room sealed mode and provision should be made for the positive connection of flues, combustion air ductwork, warm air discharge and return air ductwork. Where such a siting is a requirement it is recommended that you consult Benson Sales prior to installation.

AIR SUPPLY: The provision of an air supply for combustion, for combustion product dilution if relevant, and for ventilation varies according to heater location. Where the heater is sited directly within the space to be heated and used in fan assisted flue mode (ie without the positive connection of the combustion air ductwork to atmosphere) then consideration of ventilation for combustion air and general ventilation is mandatory with the requirements dependent upon the ratio between heat input and building volume or the air change rate of the building. If the heater is to be sited directly into the space to be heated and used in room sealed mode the provision of a combustion air supply for the building is not necessary however the need for general ventilation may remain. Where the heater is to be sited within a plant room then it is recommended that it be operated in room sealed mode. General ventilation of the plant room will be a requirement. In all cases it is recommended that BS 6230 be used as a consultative document.

FLUES: Variante² heaters are approved for use in both room sealed and fan assisted flue format. The in-built flue fan permits the heater to be sited several metres away from the point of flue/combustion air ductwork exit.

The Variante² flue/combustion air spigots are situated on the rear of the heater and from which flues/combustion air ductwork may be run either horizontally or vertically. The diameters of flue and combustion air ductwork must not be less than stated in the Reference Data sections of this brochure. Benson offer a full range of compatible flue and it is strongly recommended that this flue be used.

The maximum permitted lengths given in the Installation Data table on the previous page are for guidance purposes and installers should be mindful that the inclusion of 45° and 90° flue bends will reduce the total available length on the basis that every 45° bend is equivalent to 0.5 metres of straight flue and every 90° bend if equivalent to 1.0 metres of straight flue.

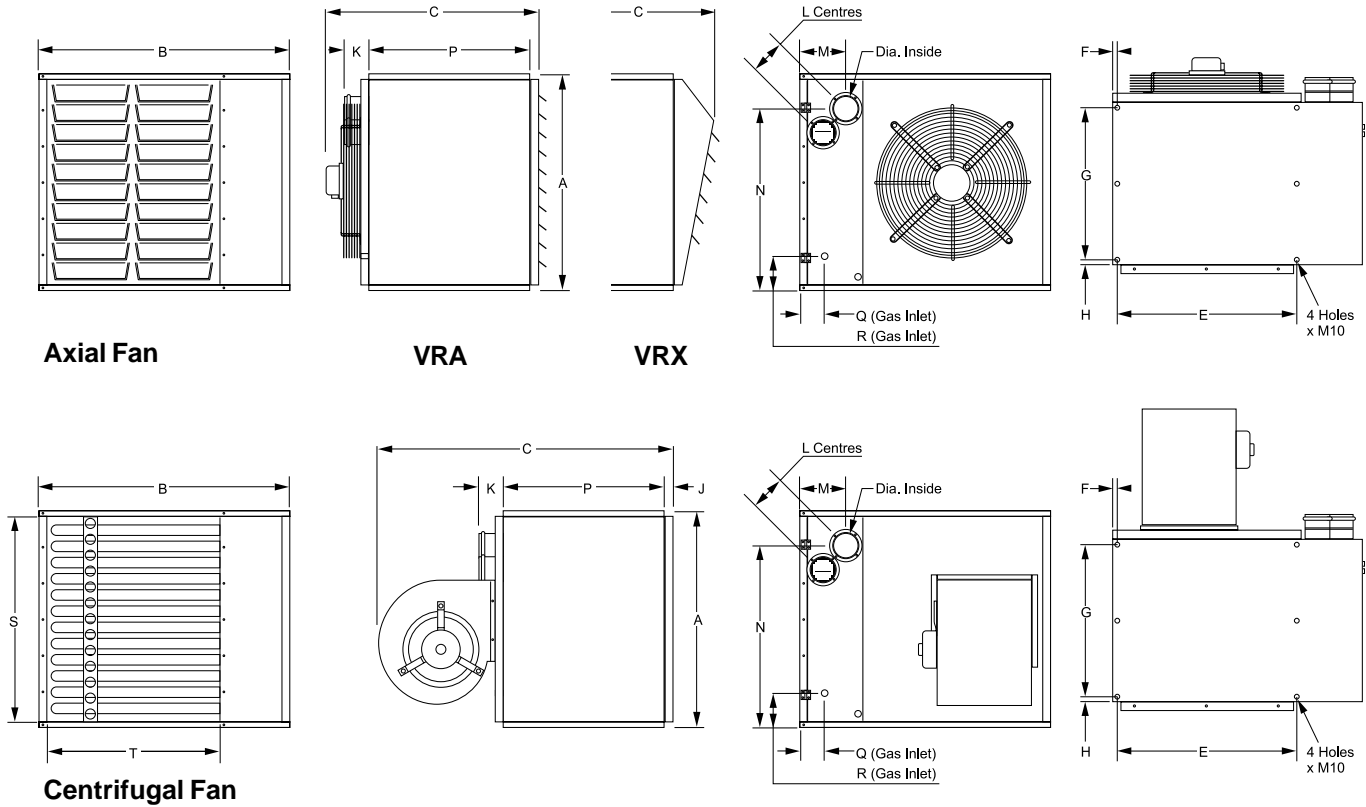
The flue route and exit point needs to be selected carefully and it is recommended that the installer consult the Variante² Installation, Operating and Maintenance manual before commencing installation. Additionally BS 5854 and BS 5440 should be used as consultative documents.

FURTHER INFORMATION: The foregoing is given for guidance purposes. More detailed information can be found within the relevant Installation, Operating and Maintenance manual or alternatively contact Benson Sales.

DIMENSIONS

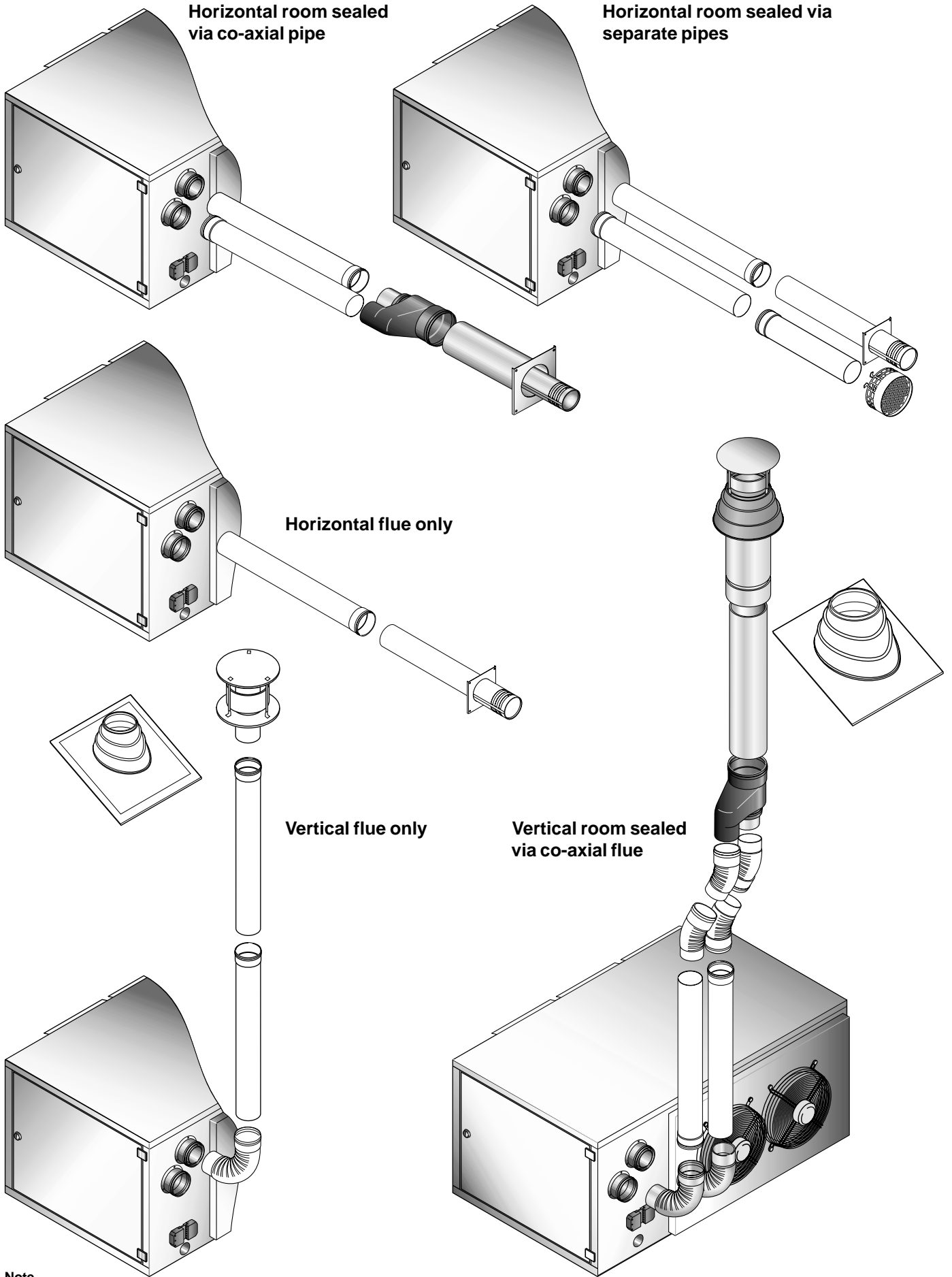
Variante² Axial and Centrifugal Room Sealed/Fan Assisted Flue Gas Unit Heaters

Natural Gas/Lpg Propane VRA VRX VRC



	Model		40	70	100	135	170	200	250	330	410	490
A	All	mm	440	440	545	650	780	910	650	800	980	1150
B	All	mm	1050	1050	1050	1050	1050	1050	1750	1750	1750	1750
C	VRA	mm	841	881	893	893	893	893	1023	1023	1023	1023
	VRX	mm	915	955	967	967	967	967	1097	1097	1097	1097
	VRC	mm	1134	1175	1175	1175	1246	1246	1305	1376	1305	1305
D	All	mm ø	80	80	100	100	100	100	130	130	130	130
E	All	mm	755	755	755	755	755	755	1365	1365	1365	1365
F	All	mm	17	17	17	17	17	17	17	17	17	17
G	All	mm	640	640	640	640	640	640	770	770	770	770
H	All	mm	20	20	20	20	20	20	20	20	20	20
J	VRC	mm	36	36	36	36	36	36	36	36	36	36
K	All	mm	60	60	100	100	100	100	100	100	100	100
L	All	mm	120	120	140	140	140	140	225	225	225	225
M	All	mm	192	192	192	190	190	190	308	308	293	293
N	All	mm	278	309	395	508	636	766	490	647	808	975
P	All	mm	680	680	680	680	680	680	810	810	810	810
Q	All	mm	103	103	103	103	103	103	227	227	227	227
R	All	mm	137	169	158	147	149	150	175	168	175	177
S	VRC	mm	390	390	495	600	730	860	600	750	930	1100
T	VRC	mm	729	729	729	729	729	729	1339	1339	1339	1339

FLUEING SYSTEMS



Note -
Flue components shown shaded form the horizontal and vertical co-axial flue kits.

INFORMATION

BENSON HEATING PRODUCTS

Oil and gas forced draught cabinet heaters
Oil and gas fired external cabinet heaters
Room sealed/fan assisted flue gas fired cabinet heaters
Room sealed/fan assisted flue gas fired unit heaters
Oil fired unit heaters
Combination heating and cooling units
Door curtains
Exchange modules
Marquee heaters
Cast iron boilers
Flue and accessories

SALES HOT LINE: 01547 529245
SALES FAX LINE: 01547 529195
TECHNICAL HELP LINE: 01547 528534
Email: information@bensonheating.co.uk
Web: www.bensonheating.com

BENSON HEATING
LUDLOW ROAD
KNIGHTON, POWYS
LD7 1LP

Tel: 01547 528534
Fax: 01547 520399

BENSON HEATING IS A DIVISION OF BENSON CLIMATE SYSTEMS LIMITED



*Guarantees and warranties subject to terms and conditions. It is the policy of Benson Heating to pursue a programme of continuous development. We therefore reserve the right to change model types, specifications and prices without prior notice. Details are believed to be correct but do not form the basis of any contract or guarantee. All orders accepted subject to our standard conditions of sale copy available upon request.