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AMBIRAD

ENERGY EFFICIENT HEATING SYSTEMS

SCA

Room Sealed Gas
Fired Unit Heater

An Ambi-Rad Group company

Introduction

SCA gas fired suspended warm air heaters are fully automatic room sealed units. The range is suitable for all standard industrial and commercial heating applications, particularly in areas where draughts, dust or other non-corrosive contaminants may be present.

These fan-assisted balanced flue units incorporate an integral flue gas exhaust fan to mechanically induce combustion air from outside the building. This same fan then exhausts the products of combustion back to the outdoor atmosphere. A single balanced flue terminal provides a combined air inlet and flue outlet.

The units are equipped with high airflow fans to eliminate excessive discharge air temperatures, thereby avoiding high levels of stratification. Units are available in capacities from 11 to 72kW for use on natural gas or LPG. Each unit is fitted as standard with a high capacity axial fan and horizontal discharge louvres.

Time and Temperature Control

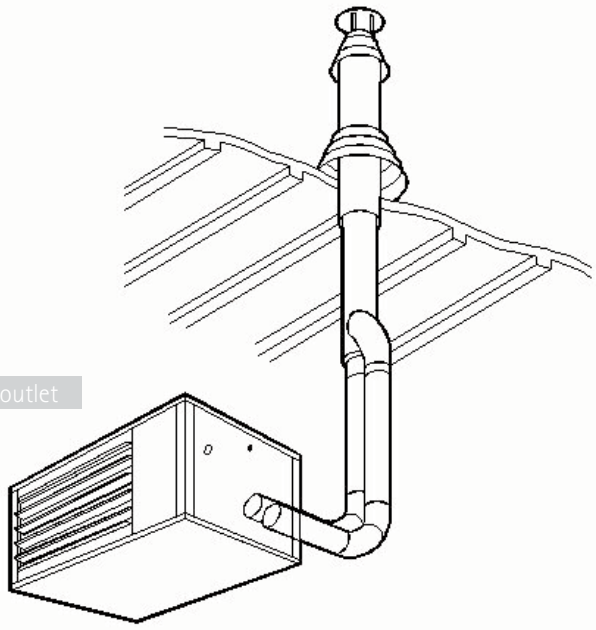
Remote control panels complete with digital time control, day and night temperature sensors, low level burner re-set facility and summer "fan only" switches are available to optimise fuel economy and simplify on-site wiring.

SCA Benefits

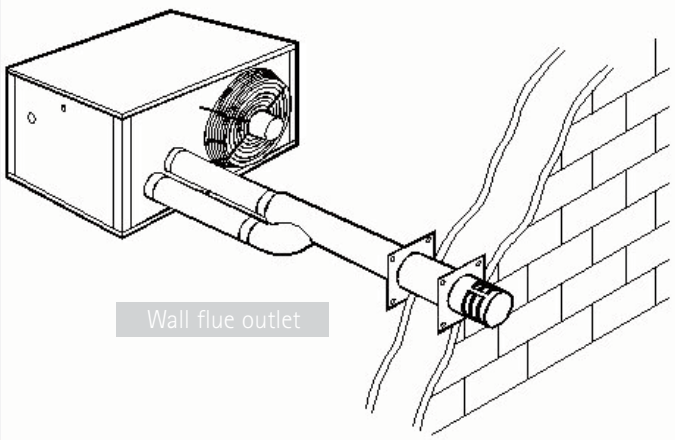
- High Thermal Efficiency: up to 91% based on net calorific value.
- Higher Seasonal Efficiency: unnecessary loss of heat from the building via a conventional open flued system is eliminated.
- Lower Installation Costs: balanced flue operation eliminates the need for the ventilation openings in external walls associated with conventional heaters.
- Energy Saving: high thermal efficiency results in lower running costs.

Alternative Flue Arrangements

The balanced flue terminal provides both the combustion air inlet and flue outlet from a single building penetration. The terminals are ordered separately from the heaters to suit either a wall outlet or roof outlet. Additional flue and combustion air pipes may be added, up to a maximum of 9 meters of flue pipe, plus 9 meters of combustion air pipe, this reduces by 1.5 meters for every 90˚ bend fitted.



Roof flue outlet



Wall flue outlet

Specification

Heat Exchanger

The aluminised steel tubular heat exchanger provides high thermal efficiency at low cost.

Air Distribution

A high capacity axial flow fan is fitted to all units for improved air distribution and to minimise the effects of heat stratification. An optional "Economy Thermostat" may be fitted to heaters installed at high levels to recirculate warm air down to working level when the burners are switched off.

The fan operation is controlled by an integral controller which delays fan start-up until the heat exchanger has reached operating temperature and continues to run after the burner has switched off until all the useful heat has been dissipated.

Safety

To ensure safe automatic operation, each unit is fitted as standard with comprehensive safety controls. Ignition is controlled and monitored from an electronic sequence controller and multi-functional gas safety valve.
A differential pressure switch shuts off the burners if either the flue or combustion air supply is obstructed, or the flue exhaust fan fails. A limit thermostat protects the unit from overheating and a second higher limit thermostat is fitted to provide dual safety control.

Installation

Units may be suspended or mounted on a suitable non combustible support. The low profile of the units makes them eminently suitable for installations where headroom may be restricted. Four integral suspension points complete with a M10 female thread are provided to each heater. The integral exhaust fan reduces the diameter of the flue system and a single opening provides both the flue outlet and combustion air inlet when the concentric balanced flue terminal is used.

A single phase electrical supply is required to each unit. This supply should not be switched off except for maintenance.

Units must not be installed in atmospheres containing highly flammable or explosive vapours, combustible dust, halegonated hydrocarbons or chlorinated vapours. They are also unsuitable for areas where contaminants may affect electrical motors or connections.

Ease of Maintenance

All controls are housed behind a service door situated on the right hand side of the heater (viewed from the front).

Certification

The units are designed and tested in accordance with current EUROPEAN CE STANDARDS. To comply with CE approvals, the appliances must be used with the approved concentric balanced flue terminal and sealed flue and combustion air pipework if they are to be classified as room sealed "Type C" units. The units are also certified as "Type B" appliances, for installation where the combustion air is to be drawn from within the heated space, and an alternative flue kit is available to meet these requirements.

Technical Data

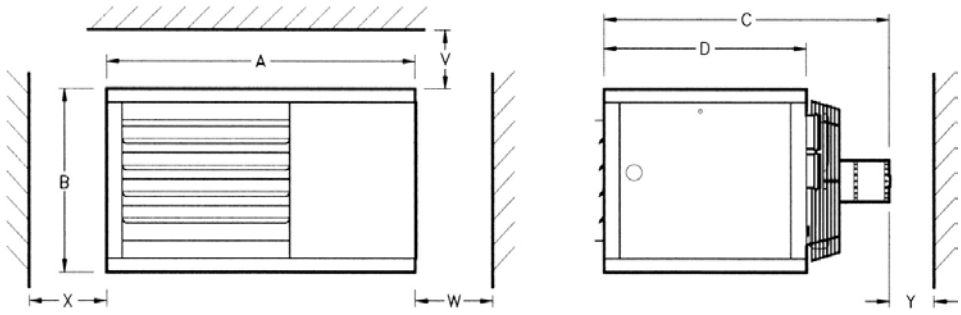
Model			45	75	100	125	150	200	250	300
Heat output		kW	10.8	18.0	24.0	29.8	35.8	46.4	60.0	72.0
Gas consumption [1]	Nat. Gas G20	m^3/h	1.26	2.10	2.80	3.49	4.20	5.40	6.99	8.34
	Propane G31	kg/h	0.94	1.57	2.09	2.61	3.14	4.04	5.23	6.28
Gas connection [2]		Rc	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Air volume @ 15˚C		m^3/h	1000	1700	2500	3225	4500	5050	7775	7625
Temperature rise		K	32	31	28	27	24	27	24	28
Approx throw [3]		m	6.7	13.0	19.0	22.0	30.6	31.3	32.0	32.1
Noise level (free field @ 5 metres)		dB (A)	42	38	39	42	50	54	56	56
Noise level (typical installation @ 5 metres)		dB (A)	52	48	49	52	60	64	66	66
Flue diameter		mm	80	100	100	100	130	130	130	130
Combustion air inlet		mm	80	100	100	100	130	130	130	130
Wall opening		mm	135	145	145	145	190	190	190	190
Roof opening		mm	135	160	160	160	210	210	210	210
Maximum flue length [4]		m	9	9	9	9	9	9	9	9
Recommended mounting height to underside of heater [5]		m	2	2	2.25	2.25	2.75	2.75	2.75	2.75
Total electrical rating		kW	0.16	0.20	0.33	0.33	0.42	0.45	0.73	0.76
Net weight		kg	28	37	60	73	91	97	114	126

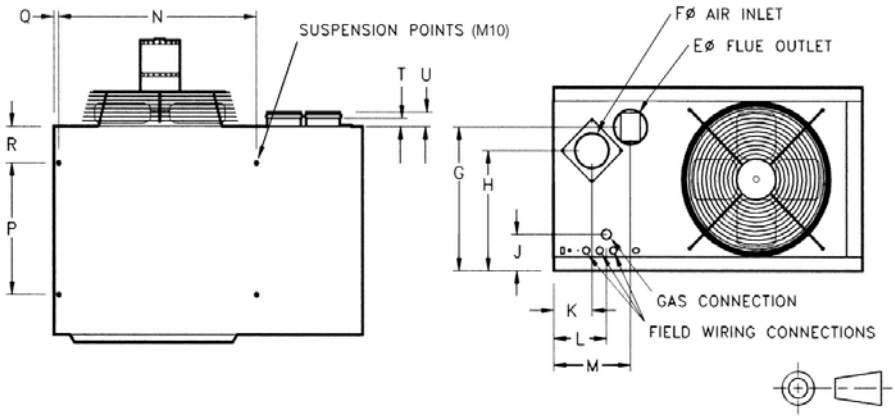
1. Natural gas G20-calorfic value 10.48 kWh/m^3 GCV, 15°C 1013mbar. Propane G31- calorific value 14.0 kWh/kg GCV.
2. Not supply line size.
3. Discharge louvres zero deflection.
4. Reduce flue length by 1.5 metres for each 90° elbow. An equal amount of combustion air pipework may also be fitted.
5. Downflow nozzles should be used for heaters installed at higher mounting heights.

Dimensions

Front View

Right Side View





Top View

Rear View

Model		45	75	100	125	150	200	250	300
Cabinet width	A	753	753	967	967	967	967	1300	1300
Height	B	311	450	567	567	845	845	845	845
Overall length	C	751	871	940	940	895	895	898	898
Cabinet length	D	596	596	654	654	652	652	652	652
Flue outlet dia.	E	80	100	100	100	130	130	130	130
Air inlet dia.	F	80	100	100	100	130	130	130	130
Base to flue outlet	G	170	339	442	442	720	720	720	720
Base to air inlet	H	230	225	343	343	508	508	508	508
Base to gas inlet	J	103	109	116	116	185	185	182	182
Side to air inlet	K	85	91	128	128	139	139	140	140
Side to gas inlet	L	99	99	163	163	150	150	153	153
Side to flue outlet	M	182	172	227	227	216	216	206	206
Suspension centres	N	450	450	610	610	610	610	745	745
Suspension centres	P	406	406	406	406	406	406	406	406
Side to suspension point	Q	20	20	20	20	20	20	218	218
Back to suspension point	R	25	25	123	123	120	120	120	120
Flue outlet spigot	T	78	50	50	50	50	50	50	50
Air inlet spigot	U	78	50	50	50	50	50	50	50
Top clearance	V	50	50	150	150	150	150	150	150
Access side clearance	W	500	500	500	500	500	500	500	500
Side clearance	X	50	50	150	150	150	150	150	150
Rear clearance	Y	250	250	250	250	250	250	250	250

Bottom clearance: all units require 50mm clearance to combustibles. All dimensions in mm.

Ambi-Rad Limited Fens Pool Avenue
Brierley Hill West Midlands
DY5 1QA United Kingdom

Telephone +44 (0)1384 489700
Facsimile +44 (0)1384 489707
UK sales email sales@ambirad.co.uk
Website www.ambirad.co.uk

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