



# ENVIROAIR

## Gas Fired Unit Heaters



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## DESCRIPTION

Ambi-Rad EnviroAir gas fired unit heaters are compact, fully automatic heaters for industrial and commercial applications. The units provide efficient, practical and economic heating and do not occupy valuable floor space. Designed and manufactured to the highest degree of technical excellence, these simple to install units have a proven record of long life, low maintenance and reliability.

## AXIAL FAN MODELS

Heaters are fitted with a lightweight, multi-blade axial flow fan driven by a totally enclosed motor. Heater sizes 250, 300, 350 & 400 have a twin fan and motor assembly.

## CENTRIFUGAL FAN MODELS

Heaters are fitted with a centrifugal forward curved blade fan using an adjustable V belt drive and heavy duty motor.

The centrifugal fans allow for higher airflows and increased mounting height of the unit or may be used with ductwork.

For extreme mounting heights, **TB** units should be fitted with a 90 degree downturn head.

A fan enclosure is fitted to the **TE** units to allow the use of return air ducts, fresh air or recirculation dampers, attenuators, fresh air intakes and filters.

## SPECIFICATION

The heaters are supplied factory tested and assembled complete with integral aluminised steel down draught diverter and universal open flue connection. Standard units are designed for operation on natural gas.

## Heat Exchanger

An all welded venturi tube heat exchanger manufactured from aluminised steel and die formed corrosion resistant aluminised steel burners with flared ports and stainless steel ribbons provide high thermal efficiency and long life. A unique stainless steel carry over lighting system ensures quiet and reliable ignition. For inlet temperatures below 5 degrees C. (40 degrees F.), optional stainless steel heat exchangers are recommended.

## Air Handling

High quality adequately sized fans provide excellent air throws at low noise levels and an optional range of 30°, 60° and 90° discharge heads is available.

## Cabinets

Cabinets are manufactured from corrosion resistant steel and are stove enamelled finished. All components coming into contact with the products of combustion are manufactured from aluminised steel.

## Safety

Each heater is fitted with a multi-functional safety control. The fan operation is controlled from an integral fan stat which delays the fan operation to avoid blowing cold air and continues to run the fan after the burner switches off until the heat in the heat exchanger has been dissipated into the space for maximum economy. A fan limit switch shuts the heater down in the event of insufficient airflow through the unit or any other cause of over-heating. For additional safety, an energy cut-off device monitors safe operation of the unit and will shut down the heater should the normal limit switch malfunction or be incorrectly wired on-site.

## Controls

Designed for fully automatic operation, the units may be used with time clocks, thermostats, frost stats or with a remote control panel. During summer periods the fans may be used for air circulation by use of an optional remote heat/vent switch. For winter economy an air recirculation kit option operates the fans to redistribute high level stratified air back down to the working zone.

## INSTALLATION

Units may be suspended or base mounted on a non combustible surface. Installation should be carried out by a competent CORGI registered installer in accordance with the installation instructions provided and current codes of practice. Incorrect installation will invalidate the warranty.

**Whilst the units are suitable for most industrial and commercial applications, they must not be installed in atmospheres containing highly flammable vapours, combustible dust, halogenated hydrocarbons or chlorinated vapours. Special units using separated combustion and/or special high grade stainless steel heat exchangers or remotely sited units will be required for such applications.**

A gas isolation valve must be fitted adjacent to each unit, the gas supply must be turned off during maintenance periods, care should be taken to isolate the unit from any vibrations.

**ALWAYS ENSURE ADEQUATE COMBUSTION AIR IS PROVIDED TO BS 5440 AND/OR BS 6230 DEPENDENT ON HEAT OUTPUT OF APPLIANCES.**

## Electrical

Units must be wired in accordance with the wiring diagrams provided and the current edition of electrical standards. The main electrical supply to the unit should not be isolated except for maintenance, care must also be taken when fitting a time switch which must have volt free contacts to ensure that 240 volt input is not connected to 24 volt control circuits.

## STANDARD FEATURES

- SUITABLE FOR NATURAL GAS
- ALUMINISED STEEL HEAT EXCHANGER
- ALUMINISED STEEL BURNER (WITH STAINLESS STEEL INSERT)
- FAN & LIMIT SAFETY CONTROL
- DUAL SAFETY CUT OUT
- SIDE ACCESS BURNER DRAWER
- LEFT HAND SIDE CONTROLS (FACING AIRSTREAM)
- HORIZONTAL LOUVRES

## OPTIONAL FEATURES FACTORY FITTED

- STAINLESS STEEL HEAT EXCHANGER (409 GRADE)
- STAINLESS STEEL HEAT EXCHANGER (321 GRADE)
- STAINLESS STEEL BURNERS
- STAINLESS STEEL BOTTOM PAN
- AUTOMATIC SPARK IGNITION
- HIGH LOW CONTROL
- MODULATING CONTROL
- SUMMER FAN OPERATION
- "ECONOMY" RELAY
- RIGHT HAND SIDE CONTROLS (FACING AIRSTREAM)
- VERTICAL LOUVRES

## FOR TE UNITS ONLY

- FRESH AIR DAMPERS
- RECIRCULATION AIR DAMPERS
- FILTERS

## OPTIONAL ITEMS FOR ON SITE FITTING

- DOWNTURN NOZZLES
- POWER FLUE VENTERS
- CONTROL PANELS

## TECHNICAL DATA

Model		75	100	125	150	175	200	225	250	300	350	400
Nominal Output	kW	17.58	22.56	28.7	34.5	40.2	45.9	51.7	57.4	68.9	80.4	92
	Btu/Hr.	60,000	77,000	97,000	116,000	135,000	154,000	174,000	193,000	231,000	270,000	308,000
Gas Rate †	m <sup>3</sup> /h	2.05	2.73	3.41	4.10	4.78	5.46	6.15	6.83	8.20	9.57	10.95
	ft <sup>3</sup> /h	72	97	121	145	169	193	217	241	290	338	387
Gas Connection	mm	15	15	15	15	15	15	15	20	20	20	20
Nominal Flue Dia.	mm	125	150	175	200	200	200	200	250	250	300	300

### TA AXIAL FAN FREE BLOWING UNITS

Model			125	150	175	200	225	250	300	350	400
Airflow	m <sup>3</sup> /s		.661	.925	.925	1.19	1.19	1.59	1.59	1.85	2.12
	cfm		1400	1960	1960	2520	2520	3360	3360	3920	4480
Motor Rating	kW		.22	.26	.26	.30	.30	.46	.46	.50	.58
Mounting Height	m		2.5-3.0	2.5-3.0	2.5-3.0	3.0-3.5	3.0-3.5	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0
Throw	m		18	20	20	25	25	30	30	32	35
Approx. Weight (Nett)	kg		86	93	93	118	118	146	146	166	191
	(Shipping) kg		99	109	109	135	135	165	165	185	214

### TB CENTRIFUGAL FAN UNITS

Model		75	100	125	150	175	200	225	250	300	350	400
Airflow Freeblowing	m <sup>3</sup> /s	.47	.70	.87	1.06	1.06	1.18	1.39	1.45	1.75	2.03	2.33
	cfm	1000	1480	1850	2250	2250	2500	2940	3080	3700	4310	4930
Airflow at 50 Pa	m <sup>3</sup> /s	.47	.70	.87	.94	.94	1.04	1.18	1.33	1.33	1.79	1.89
	cfm	1000	1480	1850	2000	2000	2200	2500	2820	2820	3800	4000
Motor Rating	kW	.250	.250	.50	.50	.375	.375	.560	.560	.560	.750	.750
Mounting Height	m	2.5-3.0	3.0	3.0	3.0	3.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.50	3.50-4.50	3.0-5.0
Throw Freeblowing	m	15	17	19	20	22	25	28	30	32	35	36
Approx. Weight (Nett)	kg	98	98	115	134	134	145	145	175	175	195	221
	(Shipping) kg	116	116	142	165	165	178	178	215	215	250	280

### TB/D DOWNFLOW UNITS

Model			125	150	175	200	225	250	300	350	400
Mounting Height	m		3.0-6.0	3.0-6.0	3.0-6.0	4.5-7.0	4.5-7.0	4.5-7.0	5.0-7.0	5.0-9.0	6.0-10.0
Approx. Weight (Nett)	kg		143	150	150	157	157	192	192	221	246
	(Shipping) kg		156	166	166	174	174	211	211	240	269

### TE ENCLOSED CENTRIFUGAL UNITS

Model		75	100	125	150	175	200	225	250	300	350	400
Airflow minimum	m <sup>3</sup> /s	.290	.373	.467	.562	.654	.748	.843	.935	1.124	1.324	1.468
	cfm	615	790	990	1190	1385	1585	1785	1980	2380	2805	3110
Airflow maximum	m <sup>3</sup> /s	1.24	1.6	1.79	2.12	2.12	2.12	2.12	2.59	2.59	2.83	3.07
	cfm	2645	3400	3800	4500	4500	4500	4500	5500	5500	6000	6500
Motor Sizes Available	kW	.25	.25	.187	.25	.25	.25	.375	.375	.375	.56	.56
	kW	.375	.375	.25	.375	.375	.375	.56	.56	.56	.75	.75
	kW	.56	.56	.375	.56	.56	.56	.75	.75	.75	1.1	1.1
	kW	.75	.75	.56	.75	.75	.75	1.1	1.1	1.1	1.5	1.5
	kW	1.1	1.1	.75	1.1	1.1	1.1	1.5	1.5	1.5	2.25	2.25
	kW	1.5	1.5	1.1	1.5	1.5	1.5	2.25	2.25	2.25		
	kW	2.25	2.25	1.5	2.25	2.25	2.25					
Approx. Weight (Nett)	kg	106	106	134	151	151	175	175	224	224	234	261
	(Shipping) kg	127	127	157	185	187	212	212	269	269	292	325

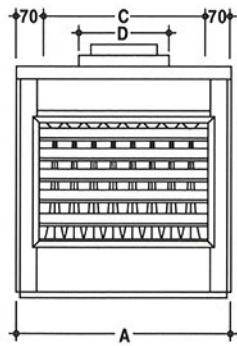
### CLEARANCE FOR SAFETY AND MAINTENANCE (ALL MODELS) mm

Top	Bottom*	Control Side	Opposite Side	Rear	Front of Draughthood
150	75	"A" + 150	150	150	450

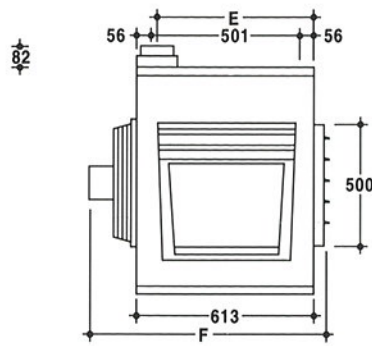
\*No clearance is required to non combustible surface.

† Maximum inlet pressure 35 mbar. Minimum inlet pressure 17.5 mbar.

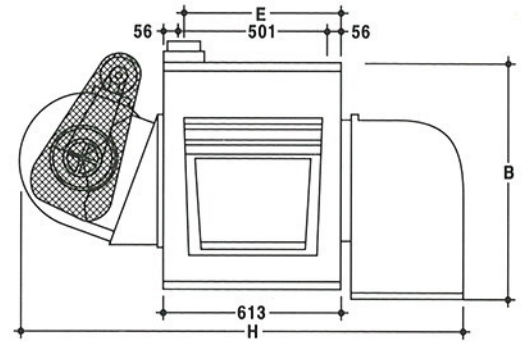
## DIMENSIONAL DATA



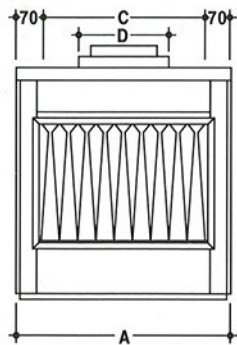
FRONT TA



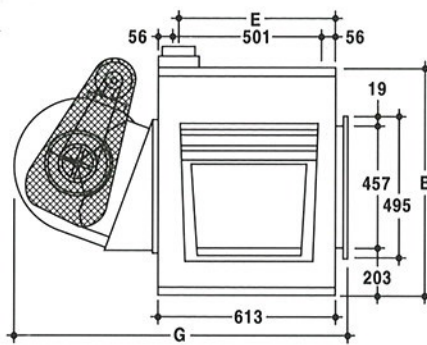
SIDE TA



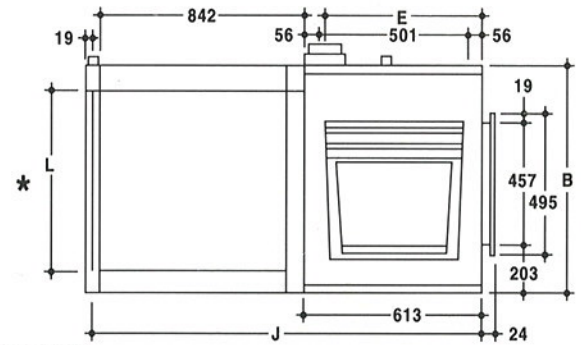
SIDE TB + 90° DOWNFLOW HEAD



FRONT TB/TE



SIDE TB



SIDE TE

\* REAR INLET CONNECTION L X M

### DIMENSIONS (mm)

Model	75	100	125	150/175	200/225	250/300	350	400
A Width	488	488	558	698	838	1048	1188	1328
B Height	819	819	819	819	895	895	895	895
C Suspension Point Centres	348	348	418	558	698	908	1048	1187
D Flue Diameter	125	150	175	200	200	250	300	300
E Front to Flue Centre	489	489	489	489	438	438	438	438
F Length Axial Fan Model	N/A	N/A	908	927	929	921	929	929
G Length Centrifugal Fan Model	1133	1133	1133	1225	1225	1133	1225	1225
H Length with 90° Downturn	N/A	N/A	1668	1760	1760	1668	1760	1760
J Length with Fan Enclosure	1498	1498	1498	1498	1498	1498	1498	1498
K Suspension Points TE Model	1022	1022	1022	987	1022	1022	987	1022
L Rear Duct Inlet (Height)	704	704	704	704	781	781	781	781
M Rear Duct Inlet (Width)	451	451	451	590	730	940	1070	1220
N Duct Outlet (Width)	317	317	387	527	667	877	1016	1156

N/A 75 & 100 size only available as TB & TE models.

Due to continuous product innovation, AMBI-RAD reserve the right to change product specification without due notice.

# AMBI-RAD

Energy Efficient Heating Systems



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