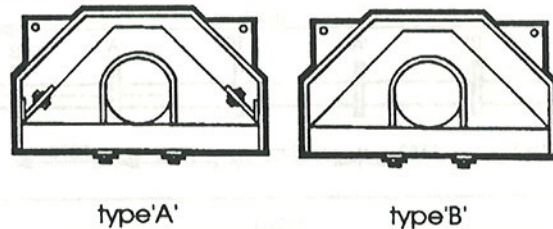
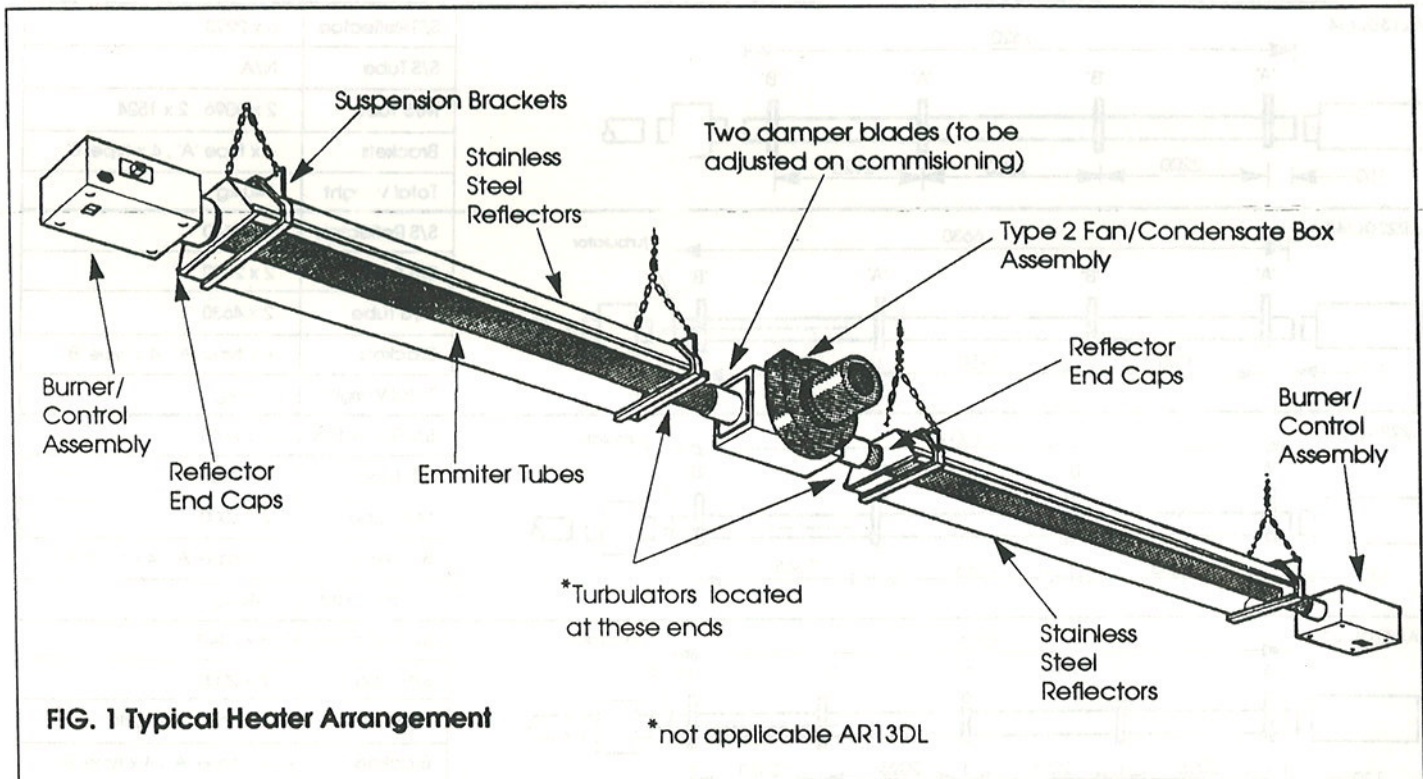


AMBI-RAD.

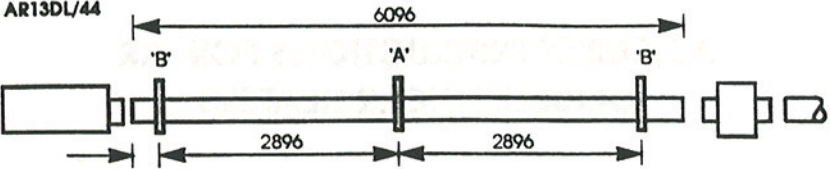
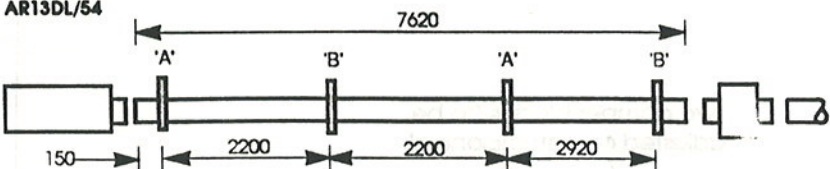
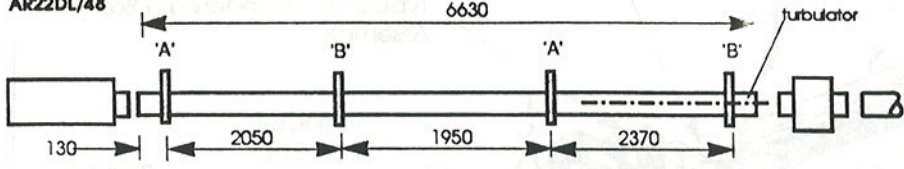
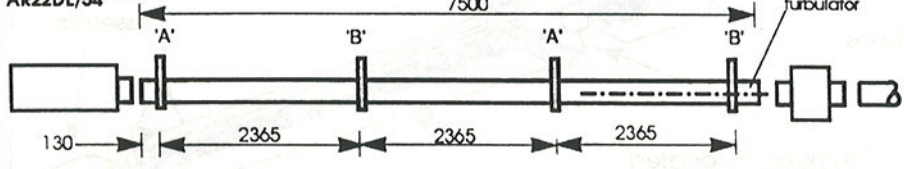
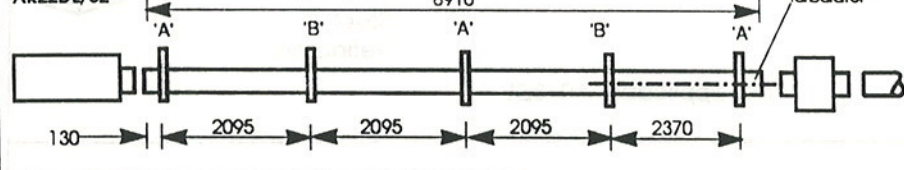
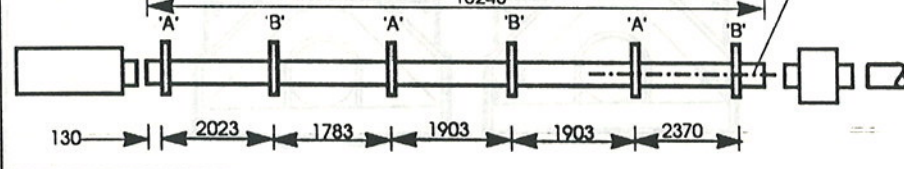
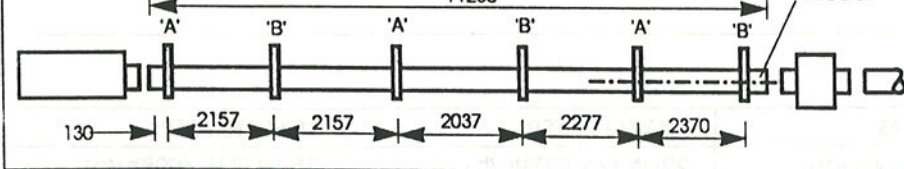
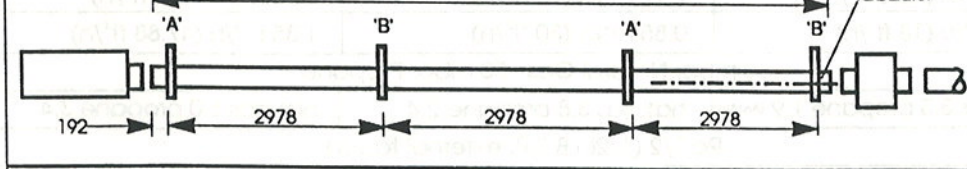
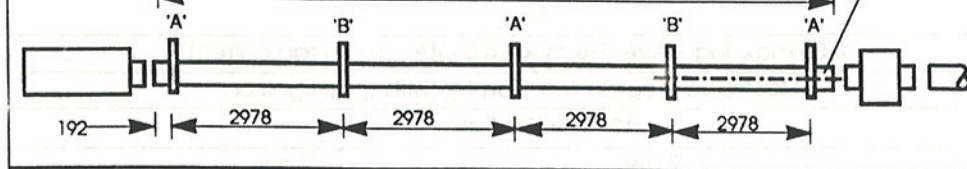
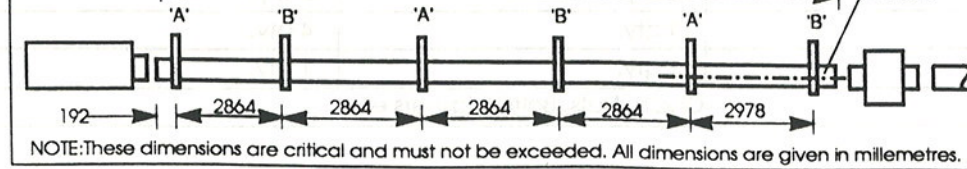
radiant heating systems

ASSEMBLY INSTRUCTIONS FOR AR DOUBLE LINEAR HEATERS



TECHNICAL DATA & CONTENTS

MODEL	13 kW HEATERS		22 kW HEATERS		35 kW HEATERS	
Heat Input	13.2kW (45,000Btu/h)		22kW (75,100Btu/h)		35kW (119,400Btu/h)	
Nominal Gas Rate	(nat gas)	1.24 m ³ /h (43.6 ft ³ /h)	2.12 m ³ /h (75 ft ³ /h)		3.28 m ³ /h (116 ft ³ /h)	
	(propane)	0.51 m ³ /h (18 ft ³ /h)	0.85 m ³ /h (30 ft ³ /h)		1.35 m ³ /h (47.88 ft ³ /h)	
Gas Pressure Setting* (max)	30 mbar Natural Gas 50 mbar Propane					
Injector Size	nat.gas 3.3 propane 1.9 (AMAL)	nat.gas 3.8 propane 2.4		nat.gas 5.0 propane 3.4		
Gas Supply Connection	Rc 1/2 (1/2in B.S.P. external taper)					
Electrical Supply	240v 1 phase 50hz					
Internal Fuse Rating	1A					
Current Rating	0.55 max. inductive (HB models 0.04A + main fan current)					
Ignition	Electronic Programme Start-Up with spark Ignition					
Exhaust Flue (optional)	125mm (5in.) dia.					
Burner Assembly	2 qty.		2 qty.		2 qty.	
Turbulators	None		2 qty.		2 qty.	
End Caps	4 qty.		4 qty.		4 qty.	
Fan/Condensate Assembly	1 qty.		1 qty.		1 qty.	
Sundry Items	Chain, Nuts, Bolts, Washers etc.					

AR13DL/44 	<table border="1"> <tr><td>S/S Reflectors</td><td>4 x 2990</td></tr> <tr><td>S/S Tube</td><td>N/A</td></tr> <tr><td>M/S Tube</td><td>2 x 6096</td></tr> <tr><td>Brackets</td><td>2 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>112 kg</td></tr> </table>	S/S Reflectors	4 x 2990	S/S Tube	N/A	M/S Tube	2 x 6096	Brackets	2 x type 'A' , 4 x type 'B'	Total Weight	112 kg
S/S Reflectors	4 x 2990										
S/S Tube	N/A										
M/S Tube	2 x 6096										
Brackets	2 x type 'A' , 4 x type 'B'										
Total Weight	112 kg										
AR13DL/54 	<table border="1"> <tr><td>S/S Reflectors</td><td>6 x 2990</td></tr> <tr><td>S/S Tube</td><td>N/A</td></tr> <tr><td>M/S Tube</td><td>2 x 6096 , 2 x 1524</td></tr> <tr><td>Brackets</td><td>4 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>140 kg</td></tr> </table>	S/S Reflectors	6 x 2990	S/S Tube	N/A	M/S Tube	2 x 6096 , 2 x 1524	Brackets	4 x type 'A' , 4 x type 'B'	Total Weight	140 kg
S/S Reflectors	6 x 2990										
S/S Tube	N/A										
M/S Tube	2 x 6096 , 2 x 1524										
Brackets	4 x type 'A' , 4 x type 'B'										
Total Weight	140 kg										
AR22DL/48 	<table border="1"> <tr><td>S/S Reflectors</td><td>6 x 2440</td></tr> <tr><td>S/S Tube</td><td>2 x 2000</td></tr> <tr><td>M/S Tube</td><td>2 x 4630</td></tr> <tr><td>Brackets</td><td>4 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>131 kg</td></tr> </table>	S/S Reflectors	6 x 2440	S/S Tube	2 x 2000	M/S Tube	2 x 4630	Brackets	4 x type 'A' , 4 x type 'B'	Total Weight	131 kg
S/S Reflectors	6 x 2440										
S/S Tube	2 x 2000										
M/S Tube	2 x 4630										
Brackets	4 x type 'A' , 4 x type 'B'										
Total Weight	131 kg										
AR22DL/54 	<table border="1"> <tr><td>S/S Reflectors</td><td>6 x 2440</td></tr> <tr><td>S/S Tube</td><td>2 x 2000</td></tr> <tr><td>M/S Tube</td><td>2 x 5500</td></tr> <tr><td>Brackets</td><td>4 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>145 kg</td></tr> </table>	S/S Reflectors	6 x 2440	S/S Tube	2 x 2000	M/S Tube	2 x 5500	Brackets	4 x type 'A' , 4 x type 'B'	Total Weight	145 kg
S/S Reflectors	6 x 2440										
S/S Tube	2 x 2000										
M/S Tube	2 x 5500										
Brackets	4 x type 'A' , 4 x type 'B'										
Total Weight	145 kg										
AR22DL/62 	<table border="1"> <tr><td>S/S Reflectors</td><td>8 x 2440</td></tr> <tr><td>S/S Tube</td><td>2 x 2000</td></tr> <tr><td>M/S Tube</td><td>2 x 4630 , 2 x 2286</td></tr> <tr><td>Brackets</td><td>6 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>172 kg</td></tr> </table>	S/S Reflectors	8 x 2440	S/S Tube	2 x 2000	M/S Tube	2 x 4630 , 2 x 2286	Brackets	6 x type 'A' , 4 x type 'B'	Total Weight	172 kg
S/S Reflectors	8 x 2440										
S/S Tube	2 x 2000										
M/S Tube	2 x 4630 , 2 x 2286										
Brackets	6 x type 'A' , 4 x type 'B'										
Total Weight	172 kg										
AR22DL/72 	<table border="1"> <tr><td>S/S Reflectors</td><td>10 x 2440</td></tr> <tr><td>S/S Tube</td><td>2 x 2000</td></tr> <tr><td>M/S Tube</td><td>2 x 5500 , 2 x 2743</td></tr> <tr><td>Brackets</td><td>6 x type 'A' , 6 x type 'B'</td></tr> <tr><td>Total Weight</td><td>199 kg</td></tr> </table>	S/S Reflectors	10 x 2440	S/S Tube	2 x 2000	M/S Tube	2 x 5500 , 2 x 2743	Brackets	6 x type 'A' , 6 x type 'B'	Total Weight	199 kg
S/S Reflectors	10 x 2440										
S/S Tube	2 x 2000										
M/S Tube	2 x 5500 , 2 x 2743										
Brackets	6 x type 'A' , 6 x type 'B'										
Total Weight	199 kg										
AR22DL/78 	<table border="1"> <tr><td>S/S Reflectors</td><td>10 x 2440</td></tr> <tr><td>S/S Tube</td><td>2 x 2000</td></tr> <tr><td>M/S Tube</td><td>4 x 4630</td></tr> <tr><td>Brackets</td><td>6 x type 'A' , 6 x type 'B'</td></tr> <tr><td>Total Weight</td><td>213 kg</td></tr> </table>	S/S Reflectors	10 x 2440	S/S Tube	2 x 2000	M/S Tube	4 x 4630	Brackets	6 x type 'A' , 6 x type 'B'	Total Weight	213 kg
S/S Reflectors	10 x 2440										
S/S Tube	2 x 2000										
M/S Tube	4 x 4630										
Brackets	6 x type 'A' , 6 x type 'B'										
Total Weight	213 kg										
AR35DL/66 	<table border="1"> <tr><td>S/S Reflectors</td><td>6 x 3050</td></tr> <tr><td>S/S Tube</td><td>2 x 1750</td></tr> <tr><td>M/S Tube</td><td>2 x 5239 , 2 x 2591</td></tr> <tr><td>Brackets</td><td>4 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>153 kg</td></tr> </table>	S/S Reflectors	6 x 3050	S/S Tube	2 x 1750	M/S Tube	2 x 5239 , 2 x 2591	Brackets	4 x type 'A' , 4 x type 'B'	Total Weight	153 kg
S/S Reflectors	6 x 3050										
S/S Tube	2 x 1750										
M/S Tube	2 x 5239 , 2 x 2591										
Brackets	4 x type 'A' , 4 x type 'B'										
Total Weight	153 kg										
AR35DL/84 	<table border="1"> <tr><td>S/S Reflectors</td><td>8 x 3050</td></tr> <tr><td>S/S Tube</td><td>2 x 1750</td></tr> <tr><td>M/S Tube</td><td>4 x 5239</td></tr> <tr><td>Brackets</td><td>6 x type 'A' , 4 x type 'B'</td></tr> <tr><td>Total Weight</td><td>234 kg</td></tr> </table>	S/S Reflectors	8 x 3050	S/S Tube	2 x 1750	M/S Tube	4 x 5239	Brackets	6 x type 'A' , 4 x type 'B'	Total Weight	234 kg
S/S Reflectors	8 x 3050										
S/S Tube	2 x 1750										
M/S Tube	4 x 5239										
Brackets	6 x type 'A' , 4 x type 'B'										
Total Weight	234 kg										
AR35DL/102 	<table border="1"> <tr><td>S/S Reflectors</td><td>10 x 3050</td></tr> <tr><td>S/S Tube</td><td>2 x 1750</td></tr> <tr><td>M/S Tube</td><td>4 x 5239 , 2 x 2591</td></tr> <tr><td>Brackets</td><td>6 x type 'A' , 6 x type 'B'</td></tr> <tr><td>Total Weight</td><td>226 kg</td></tr> </table>	S/S Reflectors	10 x 3050	S/S Tube	2 x 1750	M/S Tube	4 x 5239 , 2 x 2591	Brackets	6 x type 'A' , 6 x type 'B'	Total Weight	226 kg
S/S Reflectors	10 x 3050										
S/S Tube	2 x 1750										
M/S Tube	4 x 5239 , 2 x 2591										
Brackets	6 x type 'A' , 6 x type 'B'										
Total Weight	226 kg										

NOTE: These dimensions are critical and must not be exceeded. All dimensions are given in millimetres.

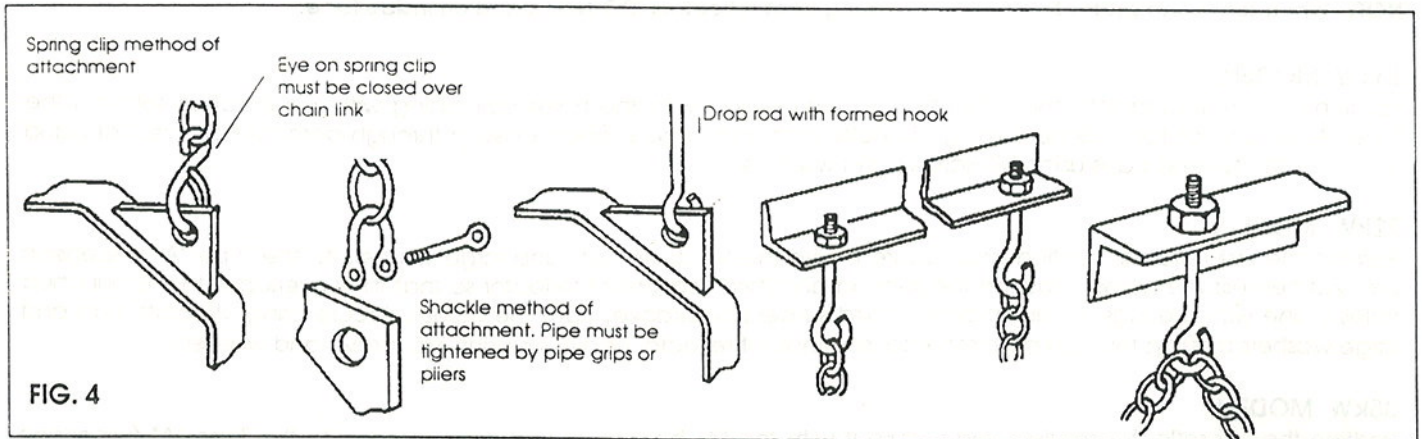
2. ASSEMBLY INSTRUCTIONS FOR AR/DL HEATERS

We advise that the tube assembly be built in the roof space where the heater will eventually be situated, due to the overall length of the heater, which could be too large for floor assembly.

Referring to the chart opposite with the bracket location dimensions, suspend the brackets for the first half of the heater from the roof using chains of 4mm gauge galvanized welded link construction. **Note: These bracket positions are critical and when suspended, must have the same orientation - i.e., all at the same angle.**

The hanging attachments to overhead steelwork etc. must be purpose made to good sound engineering practice or of a proprietary type fixing. They must be adequately fixed and designed to carry the whole weight of the heater and to permit free movement due to linear expansion. In the event of suitable roof steelwork not being available, additional steelwork should be fitted to enable vertical hangers to be used for suspending the heaters. If there is any doubt as to the strength or suitability of roof steelwork to which heaters are to be suspended, please refer to the consultant/architect/owner of the building.

Attachment to the heater bracket support tabs should be made by either a spring hook, "D" shackle, nut bolt and large washers, or in the case of drop rods, a formed hook and due allowance must be made for thermal expansion of the heater. See FIG.4 below.



Where supplied (22kW & 35kW models only), insert the stainless steel tube into the first two suspension brackets. **Note: This stainless steel section is at the burner end of the heater.** Insert the remaining mild steel tube(s) into the remaining brackets to make up the overall tube length of one half of the heater. Tube sections are attached to each other by means of two "grub screws" and locking nuts. **Note: Do not over tighten the grub screws into the mild steel tube. Finger-tight is sufficient to allow for thermal expansion, but the locking nuts must be tightened with a spanner.**

When all the tubes are connected together, turn the tube assembly so the collar screws and nuts are facing left to right when viewed from the top.

Where supplied (22kW & 35kW models only), push the turbulator into the end of the tube which is furthest away from where the burner will be located (same end as fan/condensate box), ensuring it is fully inserted to the location tabs at the end of the turbulator.

Fit reflector end-caps before fitting burner assembly and condensate box.

Fit the condensate box onto the mild steel tube (opposite end to where the burner will be located), ensuring it is fully engaged and horizontal, with the fan discharge outlet facing vertically upwards and the damper blades in the vertical plane. Secure with pinch screws provided.

This procedure is now repeated for the second half of the heater assembly starting at the fan end.

NOTE: For both horizontal and inclined mounting both burner assemblies must be perfectly horizontal with the burner indicating lights facing downwards.

The minimum and recommended mounting heights for AMBI-RAD DL heaters are as follows:

MODEL	MOUNTING POSITION	MINIMUM MOUNTING HEIGHT	RECOMMENDED MOUNTING HEIGHT RANGE	WHEN MOUNTING OVER THESE HEIGHTS CONTACT AMBI-RAD DESIGN OFFICE
13 kW HEATERS	HORIZONTAL	3000	3300 - 4200	over 4400
	WALL MOUNTED	2700	3000 - 4000	
22 kW HEATERS	HORIZONTAL	3600	4800 - 1100	over 7000
	WALL MOUNTED	3000	4200 - 4900	
35 kW HEATERS	HORIZONTAL	4300	4900 - 1830	over 1100
	WALL MOUNTED	3600	4000 - 7000	

NOTE: All measurements are given in millimetres.

The proposed position of the heater should be selected so that the clearance distances to combustible materials will be ensured. These are tabulated overleaf.

MINIMUM CLEARANCE DISTANCES

Model	13 kW Models	22 kW Models	35 kW Models
Above Reflector	100	100	100
Above Burner/Fan (unflued)	300	300	400
Above Burner/Fan (flued)	200	200	400
Beneath Tubes	900	1250	1500
To The Sides	300	500	500

NOTE: All measurements are given in millimetres.

3. FITTING REFLECTORS / END CAPS

Remove the plastic film from the reflectors. Notice that the reflectors are punched at one end. These holes coincide with the Type 'A' suspension brackets with the reflector locating tabs fitted, the other end of the reflector is free-floating allowing for thermal expansion.

NOTE: When removing protective plastic covering from reflectors, DO NOT stand on inside face.

13kW MODELS

Position both reflectors into the brackets so they overlap with the holes coinciding with the locating tabs on the Type 'A' second bracket. Secure using M6 bolts, nuts and large washers passing through both reflector sections and tabs. Fit reflector end caps using M5 screws and washers.

22kW MODELS

Position the first reflector section and secure it with the M6 bolts, nuts and large washers to the Type 'A' suspension bracket nearest the burner. Position the second and third sections of reflector so that they overlap with the punched holes in line with the lugs provided on the third suspension bracket from the burner. Secure using M6 bolts, nuts and large washers passing through both reflector sections. Fit reflector end caps using M5 screws and washers.

35kW MODELS

Position the first reflector section and secure it with the M6 bolts, nuts and large washers to the Type 'A' suspension bracket nearest the burner. Position the second and third section of reflector so that they overlap with the punched holes in line with the tabs provided on the third suspension bracket from the burner. Position the fourth reflector in the fourth bracket, and attach the reflector to the fifth bracket. Secure using M6 bolts, nuts and large washers passing through both reflector sections where appropriate. Fit reflector end caps using M5 screws and washers.

BURNER ASSEMBLY

Slide the burner/control assembly onto the tube assembly (with 22kw and 35kw models the burner assembly must be fitted to the stainless steel section), ensuring it is fully engaged and whilst holding burner assembly horizontal secure with pinch screws provided.

IMPORTANT: For both horizontal and inclined mounting both burner assemblies must be perfectly horizontal with the burner indicating lights facing downwards.

4. FLUE CONNECTION

The Ambi-Rad heater may be installed with or without a flue to atmosphere providing the air supply and building ventilation requirements as stated in BS 6896:1991 are complied with.

If the heater is installed without a flue, ensure that combustion gases do not impinge on combustible materials. The maximum permitted temperature for such materials is 50C (BS.7186). When unflued due consideration must be given to the possibility of condensation forming on cold surfaces.

The flue construction should be adequately supported at regular intervals from the building structure and terminated externally with a British Gas Tested and Certificated terminal. The maximum flue length is 9m and maximum number of bends is two. All connections in the flue pipe must be properly sealed.

**FOR GAS CONNECTION, COMMISSIONING, ELECTRICAL DETAILS AND SERVICING SEE PUBLICATION:
USER INSTALLATION AND SERVICING MANUAL**

Because of our policy of continuous development Ambi-Rad Ltd. reserve the right to vary the equipment specification without notice.



Ambi-Rad Limited, P.O. Box 30, Enfield Works,
Mucklow Hill, Halesowen, West Midlands, B62 8DS.
Tel: 021-503 0707. Fax: 021-501 2955.