

# Combat®

## Tubular Unit Heaters and Duct Furnaces

**Over  
91.5%<sup>NET</sup>  
Efficient!**



- For room sealed or open flued installation
- Models meet ECA efficiency requirements
- Automatic ignition burners with remote lockout and reset
- Easy to install, maintain and operate with rear flue spigot
- Lights to indicate operation and lockout
- Long life provided by aluminised steel heat exchangers (stainless steel option available)
- Suspended or shelf mounted installation frees valuable workspace and provides flexibility
- Remote fan operation for summer air circulation



Authorised User No. 00184



0063

### Technical Data - CTU (All Models)

Model	22	30	35	40	50	60	75	90	100	115
Maximum Heat Input-Gross [kW] [Btu/h] x [1000]	27 93	33 113	39 133	48 163	61 210	70 238	95 324	111 378	119 405	134 459
Maximum Heat Input -Net [kW] [Btu/h] x [1000]	25 85	30 102	35 119	43 147	55 188	63 215	87 297	100 341	107 365	121 413
Maximum Heat Output [kW] [Btu/h] x [1000]	23 78	27 92	32 109	39 133	51 174	58 198	78 266	91 310	98 334	111 379
Maximum Gas Rate [m <sup>3</sup> /h] Natural (G20) [ft <sup>3</sup> /h]	2.6 92	3.2 112	3.7 131	4.5 160	5.8 206	6.6 234	9.0 319	10.5 371	11.3 398	12.8 451
Maximum Gas Rate [m <sup>3</sup> /h] Natural (G25)	3.03	3.33	4.31	4.78	6.14	6.98	9.49	11.06	11.86	13.43
Maximum Gas Rate [m <sup>3</sup> /h] LPG Propane (G31) [kg/h]*	1.01 1.87	1.23 2.28	1.48 2.75	1.77 3.27	2.27 4.21	2.58 4.79	3.51 6.50	4.09 7.58	4.39 8.13	4.97 9.21
Maximum Gas Rate [m <sup>3</sup> /h] LPG Butane (G30) [kg/h]*	0.76 1.86	0.93 2.27	1.06 2.59	1.34 3.26	1.72 4.19	1.95 4.77	2.65 6.47	3.09 7.55	3.32 8.09	3.75 9.17
Gas Connection	R - 1/2"	R - 1/2"	R - 1/2"	R - 1/2"	R - 1/2"	R - 1/2"	R - 3/4"	R - 3/4"	R - 3/4"	R - 3/4"
Number of Burners	5	5	6	7	9	11	12	14	15	17
Inlet Pressure [mbar]	Nat. Gas G20 (Min. 17, Max. 25), Nat. Gas G25 (Min. 20, Max. 30), Propane G31 (Min. 25, Max. 45), Butane G30 (Min. 20, Max. 35)									
Electrical Supply	230 V, 50 Hz, 1 Ø									

\* For litres per hour, multiply: (kg/h) x 1.97

### Air Handling Data - CTUA (All Models)

CTUA heaters are fitted with axial fan systems, consisting of a low noise fan(s) powered by a direct drive motor located on the rear of the unit. CTUA heaters should be used for free blowing applications only.

Model	22	30	35	40	50	60	75	90	100	115
Air Flow [m <sup>3</sup> /h]	3800	4000	4000	4000	5500	5500	7500	7500	11000	11000
Running Current [A]	1.0	1.0	1.0	1.0	1.72	1.72	1.9	1.9	3.2	3.2
Start Current [A]	1.4	1.4	1.4	1.4	2.4	2.4	2.8	2.8	4.5	4.5
Total Electrical Load [W]	210	210	210	210	415	415	510	510	745	745
Noise @ 3 m (determined by EN ISO 3746 parallel piped measurement surface)										
dB[A]	[NR]	56 (51)		57.1 (52.1)				57.3 (52.3)		

### Air Handling Data - CTUB, CTUC (All Models)

CTUB/C heaters are fitted with centrifugal fan systems, consisting of a low noise fan(s) powered by a direct drive motor located on the rear of the unit. CTUB heaters should be used for free-blowing applications. CTUC heaters are equipped with enclosed blowers as well as inlet and outlet duct spigots. Heaters should be used for ducted applications.

Model	22	30	35	40	50	60	75	90	100	115
Air Flow [m <sup>3</sup> /h]	3300	3300	3300	3300	5500	5500	6400	6400	9400	9400
Normal Speed Run Current [A]	4.6	4.6	4.6	4.6	11	11	11	11	15.6	15.6
Normal Speed Start Current [A]	9.0	9.0	9.0	9.0	13.5	13.5	13.5	13.5	19.2	19.2
High Speed Run Current [A]	5.5	5.5	5.5	5.5	14	14	14	14	21	21
High Speed Start Current [A]	13.6	13.6	13.6	13.6	17.2	17.2	17.2	17.2	25.8	25.8
Total Electrical Load [W]	550	550	550	550	1100	1100	1100	1100	1650	1650
Noise @ 3 m (determined by EN ISO 3746 parallel piped measurement surface)										
dB[A]	[NR]	59.9 (59)		63.1 (62)		69.6 (67)			72.1 (70)	

### Air Handling Data - CTUD (All Models)

CTUD heaters are supplied without a fan and are designed to be incorporated into ducted heating systems with separate fans. CTUD heaters should be used for ducted applications.

Model	22	30	35	40	50	60	75	90	100	115
Minimum Air Flow [m <sup>3</sup> /h]	3300	3300	3300	3300	5500	5500	6400	6400	9400	9400
Heat Exchanger Pressure Drop	30 Pa									

### Dimension Data - CTUA (All Models)

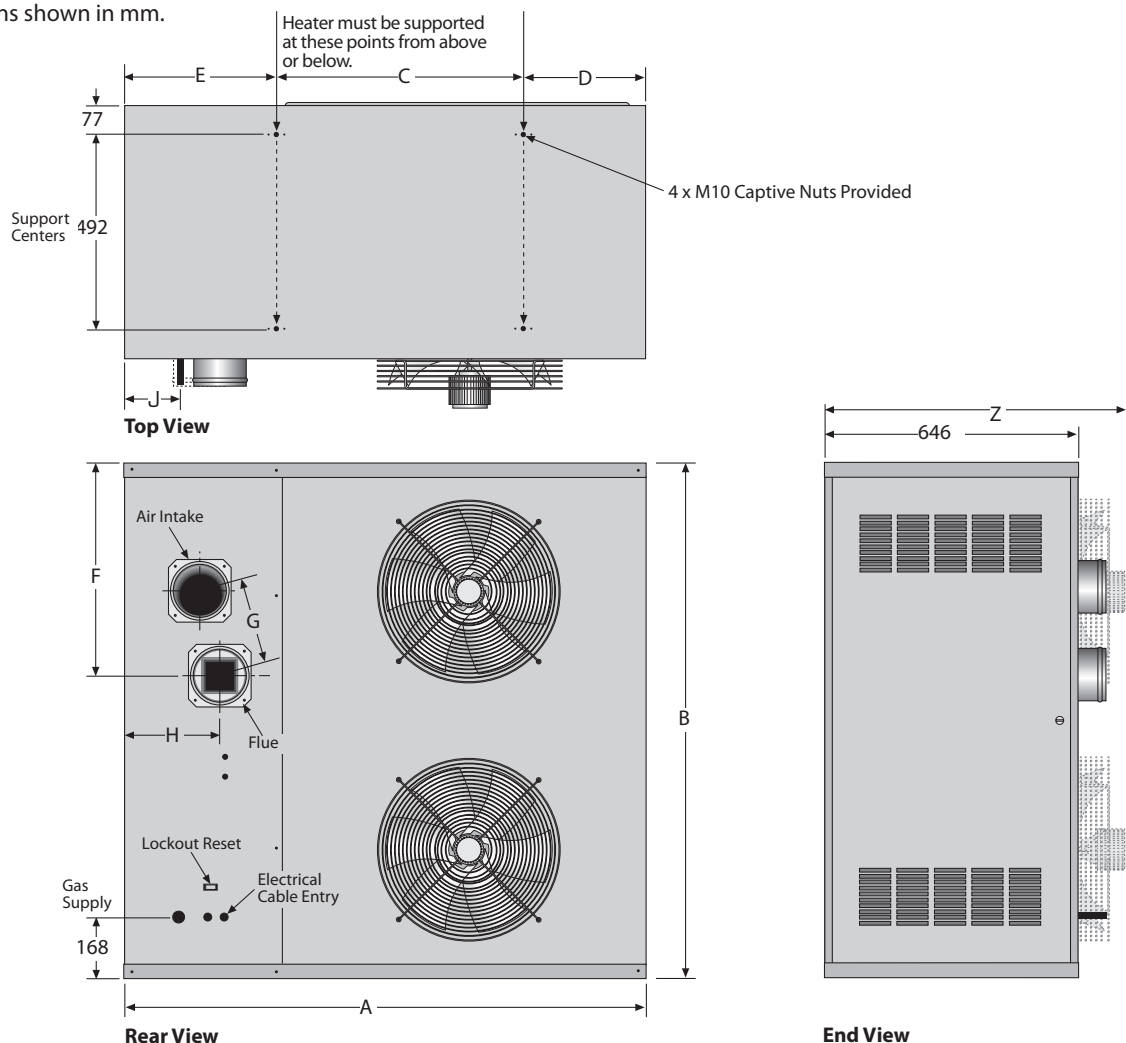
Model		22	30	35	40	50	60	75	90	100	115
'A' Width	[mm]	1075	1075	1075	1075	1075	1075	1327	1327	1327	1327
'B' Height	[mm]	610	610	610	610	895	895	1100	1100	1345	1345
'C' Support Spacing	[mm]	450	450	450	450	450	450	627	627	627	627
'D' Support Spacing	[mm]	312	312	312	312	312	312	312	312	312	312
'E' Support Spacing	[mm]	315	315	315	315	315	315	388	388	388	388
'F' Centre of Flue	[mm]	240	240	240	240	430	430	346	346	537	537
'G' Flue Centre to Air Intake Centre[mm]		140	140	140	140	140	140	225	225	225	225
'H' Position of Flue	[mm]	218	218	218	218	211	211	260	260	260	260
'J' Gas Inlet Position	[mm]	150	150	150	150	150	150	220	220	220	220
Weight	[kg]	84	84	88	92	115	122	160	169	194	203
'Z' Length	[mm]	756	756	756	756	806	806	756	756	806	806
Mounting Height to Heater Base	[m]	Min. Recommended 2.5 Max. Recommended 3.5		Heaters may be mounted at a higher level if destratification fans and/or turn down nozzles are installed.							

### Heater Clearances to Combustibles (mm)

Above Heater	Below Heater	To Side of Heater	To Rear of Heater	To Front of Heater	To Flue
150	300	500	600	3000	50

### Specifications - CTUA (All Models)

All dimensions shown in mm.



### Dimension Data - CTUB, CTUC, CTUD (All Models)

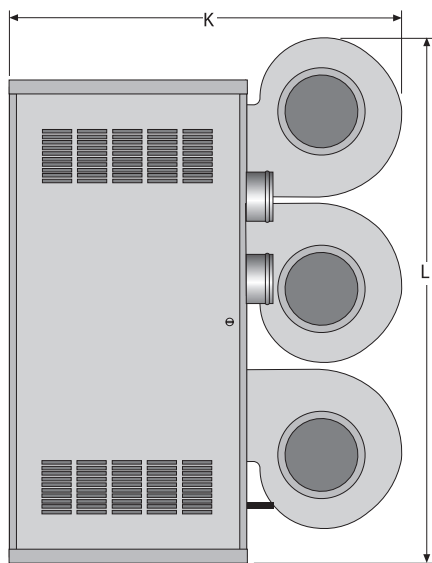
Model		22	30	35	40	50	60	75	90	100	115
'K' CTUB Depth	[mm]	1026	1026	1026	1026	1026	1026	1076	1076	1076	1076
'L' CTUB Height	[mm]	610	610	610	610	895	895	1100	1100	1380	1380
'M' CTUC Height	[mm]	610	610	610	610	895	895	1100	1100	1431	1431
'N' Inlet & Outlet Duct Spigot Height	[mm]	534	534	534	534	813	813	1024	1024	1233	1233
'P' Inlet & Outlet Duct Spigot Width	[mm]	709	709	709	709	709	709	888	888	888	888
Weight CTUB	[kg]	96	96	100	104	139	146	185	210	228	237
Weight CTUC	[kg]	109	109	113	117	156	163	205	214	251	260
Weight CTUD	[kg]	80	80	84	88	107	113	151	160	177	209
Mounting Height to Heater Base	[m]	Min. Recommended 2.5		Max. Recommended 3.5		Heaters may be mounted at a higher level if destratification fans and/or turn down nozzles are installed.					

### Heater Clearances to Combustibles (mm)

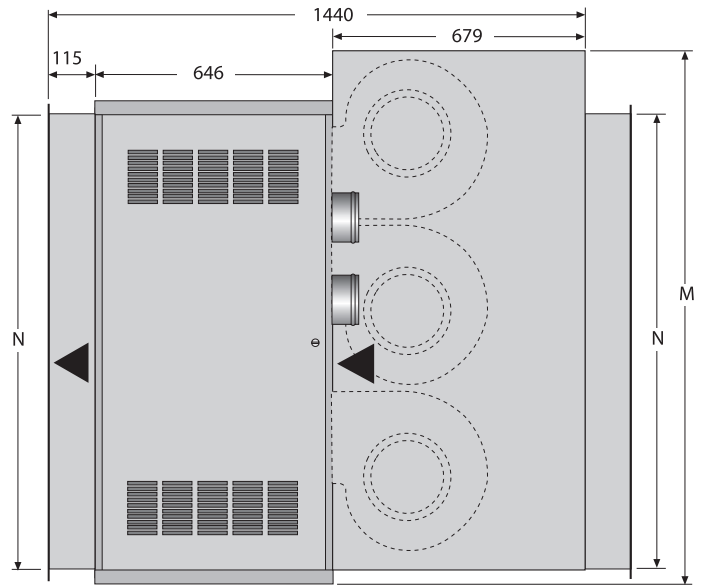
Above Heater	Below Heater	To Side of Heater	To Rear of Heater	To Front of Heater	To Flue
150	300	500	600	3000	50

### Specifications - CTUB, CTUC, CTUD (All Models)

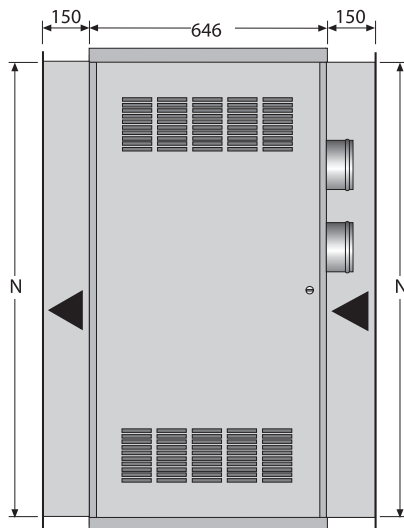
All dimensions shown in mm.



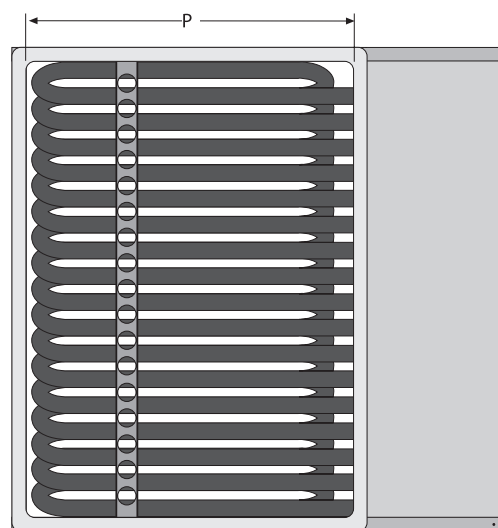
End View  
CTUB (All Models)



End View  
CTUC (All Models)



End View  
CTUD (All Models)



Front View  
CTUC / CTUD (All Models)

**Technical Flue Data - CTU (All Models)**

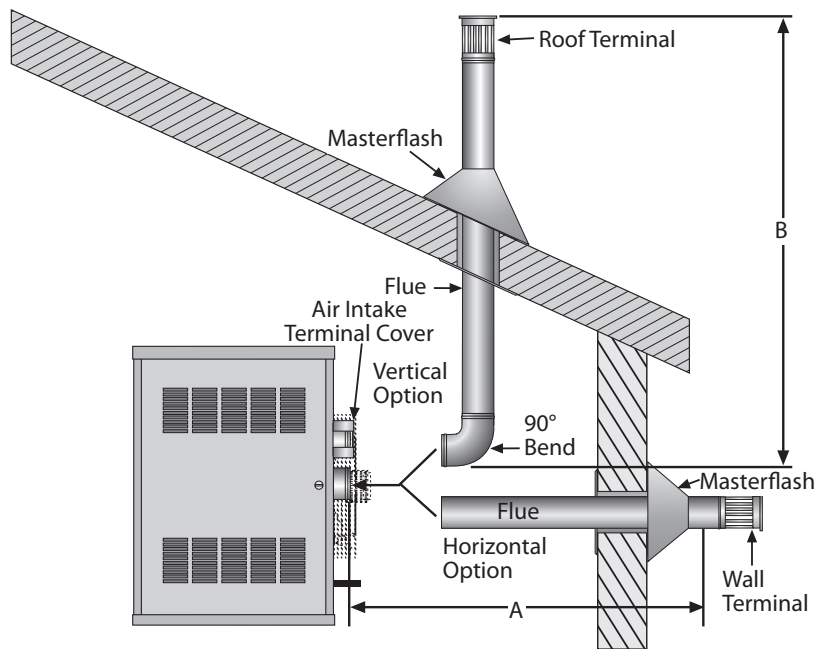
CTU heaters must be fitted with a flue system. Straight lengths and bends can be added, if required. For every additional 90° bend added to the flue, the maximum flue length must be reduced by 1 m. For overall length of the flue, please refer to dimension A (horizontal) or B (vertical).

NOTE: The flue terminal must not be positioned under a window or anywhere that could draw combustion products back into the building. Each joint in the flue must be made using the manufactured female joint with the special seal.

**Open Flue and Room Sealed Arrangements**

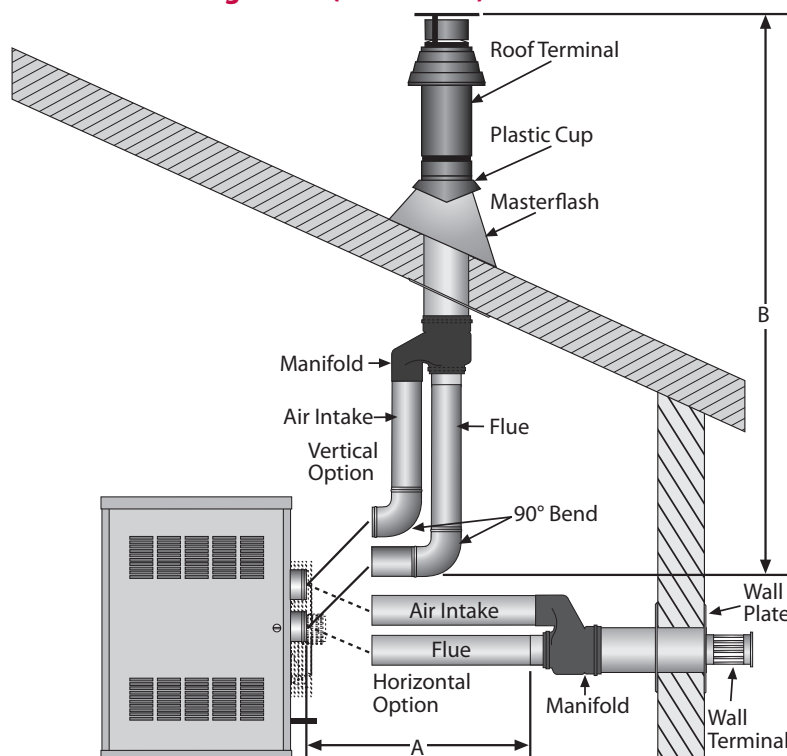
Model		22	30	35	40	50	60	75	90	100	115
Maximum Length 'A' Horizontal	[m]	7	8	8	10	13	15	15	17	20	20
Maximum Length 'B' Vertical	[m]	6	7	7	9	12	14	14	16	19	19
Flue and Air Intake Diameter	[mm]	100	100	100	100	100	100	130	130	130	130

**Specifications - Open Flue Arrangement (All Models)**



For additional information, please consult the CTU heater price list or installation, commissioning, operation and service manual.

**Specifications - Room Sealed Flue Arrangement (All Models)**



For additional information, please consult the CTU heater price list or installation, commissioning, operation and service manual.

## Ignition Systems

CTU heaters are automatic ignition burners.

## Burner Options

CTU heaters are fitted with On/Off burners as standard.

## Air Outlets

CTUA and CTUB heaters are fitted with adjustable horizontal louvres as standard.

For CTUC and CTUD, advice should be sought from Roberts-Gordon to ensure that proposed ducting systems are compatible with the heater.



Authorised User No. 00184

COMBAT® Tubular Unit Heaters are high efficiency heaters and are listed on the Enhanced Capital Allowance Scheme 'Energy Technology Product List'. The ETL symbol is a UK registered certification mark of the Carbon Trust.

## Important Notice

**The equipment described in this Data Sheet is suitable for most commercial and industrial heating applications. However, in certain environments, particularly where there is a chlorinated atmosphere (e.g. near degreasing plant or other solvent processes), or a particularly dusty atmosphere, specialist advice should be sought at the design stage. Please consult Roberts-Gordon.**

**Roberts-Gordon reserves the right to alter product specification details without notice.**

### Installation Code and Annual Inspections:

All installation and service of ROBERTS GORDON® equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Roberts-Gordon and conform to all requirements set forth in the ROBERTS GORDON® manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Roberts-Gordon recommends that a qualified contractor conduct, at a minimum, annual inspections of your ROBERTS GORDON® equipment and perform service where necessary, using only replacement parts sold and supplied by Roberts-Gordon.

**Further Information:** Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through ROBERTS GORDON® representatives. Please contact us for any further information you may require, including the Installation, Commissioning, Operation and Service Manual.

**This product is not for residential use.**

**This document is intended to assist licensed professionals in the exercise of their professional judgment.**

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## Roberts-Gordon Europe Limited

Unit A, Kings Hill Business Park  
Darlaston Road, Wednesbury  
West Midlands, WS10 7SH UK  
Telephone: +44 (0)121 506 7700  
Fax: +44 (0)121 506 7701  
Service Telephone: +44 (0)121 506 7709  
Service Fax: +44 (0)121 506 7702

**www.rg-inc.com**