

AIR HEATERS

'FINROD'-FINNED TUBULAR HEATERS

The Hotco 'Finrod' is a standard steel sheathed tubular heater with edge-wound steel fins furnace copper brazed to the sheath.

The fin, applied at 5.1 mm pitch, with an outside diameter of 32mm, increases by six times the radiant surface of the heater, thus permitting high kW rating per unit length at relatively low surface watt density. The brazing of the fin assures maximum and rapid heat transfer, and prevents fin vibration at high air velocities.



The completed assembly is finished in a high temperature aluminium paint for operation up to 425 °C maximum sheath temperature. Mounting bushes are 3/8" B.S.P. x 15 mm long.

APPLICATION

For natural or forced convection space heating and for industrial process air heating.

Natural Convection Ovens, cabinets, food warmers, convection heaters, incubators, anti-condensation and defrost heaters etc.

Forced Convection Air ducts, blower type unit heaters, recirculation and 'single pass' ovens, dryers, load and discharge resistors, and industrial processes requiring heated air for drying, baking preheating and curing etc.

NOTE: Not suitable for applications where material reacts against copper brazed steel.

FORMS

The types listed above are manufactured in three standard forms: Straight length, 'U' shape and 'W' shape, suitable for most types of installations.

NATURAL CONVECTION

Nominal sheath temperature 270 °C in still air at 20 °C ambient, density rating of 22.5 kW/m² on the sheath, 3.75 kW/m² on the surface. Other low ratings can be manufactured dependent upon application.

FORCED CONVECTION

SERIES B Electrically rated in accordance with S.A.A std. A.S. 1668 pt. 1, 1979
Maximum sheath temperature 400 °C in still air at 20 °C ambient.

Watt density: Sheath 46.5 kW/m², fins 7.75 kW/m². For air heating the minimum recommended air velocity is 1 m/s through nett face area of the duct.

Heater mounting glands: 3/8" BSP crimp-on glands x 15 mm long.

Heater Terminals: 3/16" with nickel plated stud terminals x 12 mm long.

Voltage limit: 480 volts.

SERIES C

Maximum allowable sheath temperature 420 °C.

Watt density: Sheath 93 kW/m², fins 15.5 kW/m². For air heating the minimum recommended air velocity is 2.8 m/s through nett face area of the duct.

Heater mounting glands: 3/8" BSP crimp-on glands x 15 mm long.

Heater Terminals: 3/16" with nickel plated stud terminals x 12 mm long.

Voltage limit: 480 volts.

NOTE

For installation other than in clean air consult factory for suitability.

Non-standard heaters: available within limited current rating, with lengths up to 4.5 metres, and can be factory formed in a wide variety of shapes.

Where 'Finrod' immersion length exceeds 500 mm it is recommended that they be supported.

AIR HEATERS

'FINROD'-FINNED TUBULAR HEATERS

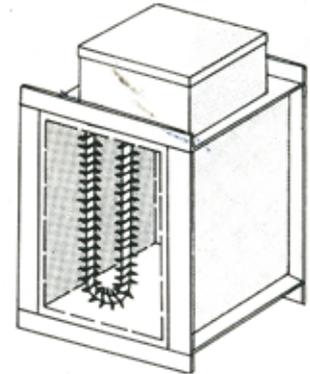
Maximum sheath temperature 425 °C

Hotco flanged and insert duct heaters have finned tubular sheathed heaters, secured by mounting bushes into a terminal box, where the heaters can be pre-wired for a specified number of stages if required.

The flanged type is supplied complete with a robust, rust resistant metal frame and internally insulated with a non combustible material of thermal conductance not greater than 30 kW/m² at 100 °C, the insert type with a heavy gauge mounting flange.

We recommend for all duct heating a minimum air velocity of 1 m/s and a maximum of 6 m/s.

Thermal cutout or manual reset thermostats can be incorporated when specified.



APPLICATION

Forced Air Heating	Installation for comfort and process air heating.
Comfort Heating	Can be installed in new or old ducts for complete or supplementary heating in central and air-conditioning systems.
Comfort Heating	For complete process air heating, make up air, and recirculating oven heating for drying, baking, pre-heating and other industrial processes requiring heated air.

Other applications include load or discharge resistors, blower type unit heaters, defrost heaters etc.

CUSTOM BUILT UNITS

Hotco can provide custom built finned duct heaters manufactured for rating, duct sizes and air flows other than those shown as our standard range. This method of manufacture avoids costly duct alteration by the installer of the system.

We also manufacture heaters for air and other gases, designed to incorporate open coil elements (details page 57), or unfinned tubular heaters with heat and corrosive resistant alloy sheaths for conditions of high temperatures and/or high pressures. Details page 45. Consult our factory for your special requirements.

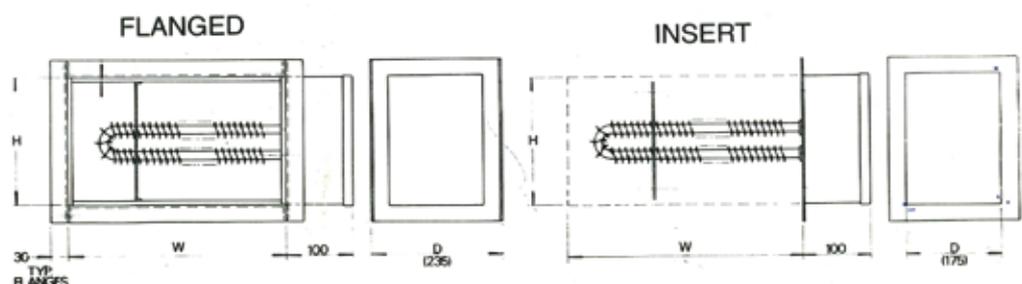
CONTROLS

An adjustable set point over-temperature manual reset thermostat and adjustable pressure switch are available ex-stock and can be fitted to duct unit or supplied as required.

UNIT PART No DESCRIPTION

eg: 3WIB3

- 3 - No. Heaters
- W - Heater Form
- I - Unit Type
- B - Heater Series
- 3 - Kw Rating



AIR HEATERS

“FINROD” - FINNED TUBULAR HEATERS -240 VOLTS
and “FINROD” DUCT HEATER UNITS 240/415V -
3 PHASE FOR STAR CONNECTION

REMARKS

Maximum sheath temperature 400 °C in still air at 200 °C ambient,
Watts Density: Sheath - 46.5 kW/m², Fins - 7.75 kW/m².

For air heating the minimum recommended air velocity is 1 m/s
through nett face area of duct.

Heater Mounting Glands: 3/8” B.S.P. Crimp-on glands x 15 long.

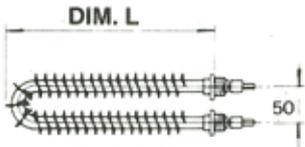
Heater Terminals: 3/16” with Nickel plated stud terminals x 12 long.

Voltage Limit: 480 Volts.

SERIES B

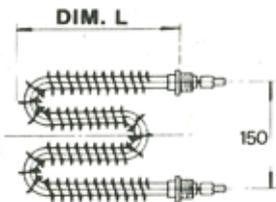
“FINROD” AND
“FINROD” DUCT
HEATER UNITS
ELECTRICALLY
RATED IN
ACCORDANCE WITH
S.A.A.STANDARD
A.S. 1668 PT. 1.1979

STANDARD U-SHAPE ‘FINRODS’



PART No	WATTS	L
UB7.5	750	275
UB10	1000	375
UB15	1500	525
UB20	2000	675
UB25	2500	825
UB30	3000	975
UB35	3500	1125
UB40	4000	1275

STANDARD W-SHAPE ‘FINRODS’



PART No	WATTS	L
WB10	1000	200
WB15	1500	275
WB20	2000	350
WB25	2500	425
WB30	3000	500
WB35	3500	575
WB40	4000	650

STANDARD DUCT HEATERS

Kw	DUCT SIZE		No OF HTRS	PART NUMBER		MIN. AIR FLOW (m ³ /S)
	W	H		INSERT	FLANGED	
3.0	225	250	3	3WIB 3.	3WFB 3	0.06
4.5	300	250	3	3WIB 4.5	3WFB 4.5	0.08
6.0	375	250	3	3WIB 6	3WFB 6	0.10
7.5	450	250	3	3WIB 7.5	3WFB 7.5	0.12
9.0	525	250	3	3WIB 9.	3WFB 9	0.14
10.5	600	250	3	3WIB10.5	3WFB10.5	0.16
12.0	675	250	3	3WIB12	3WFB12	0.18
15.0	450	450	6	6WIB15	6WFB15	0.20
18.0	525	450	6	6WIB18	6WFB18	0.25
21.0	600	450	6	6WIB21	6WFB21	0.28
24.0	675	450	6	6WIB24	6WFB24	0.32
27.0	525	650	9	9WIB27	9WFB27	0.36
31.5	600	650	9	9WIB31.5	9WFB31.5	0.41
36.0	675	650	9	9WIB36	9WFB36	0.46

STANDARD DUCT HEATERS

Kw	DUCT SIZE		No OF HTRS	PART NUMBER		MIN. AIR FLOW (m ³ /S)
	W	H		INSERT	FLANGED	
2.25	300	250	3	3UIB 2.25	3UFB 2.25	0.08
3.0	400	250	3	3UIB 3	3UFB 3	0.10
4.5	550	250	3	3UIB 4.5	3UFB 4.5	0.14
6.0	700	250	3	3UIB 6	3UFB 6	0.18
7.5	850	250	3	3UIB 7.5	3UFB 7.5	0.22
9.0	1000	250	3	3UIB 9	3UFB 9	0.25
4.5	300	350	6	6UIB 4.5	6UFB 4.5	0.11
6.0	400	350	6	6UIB 6.	6UFB 6.	0.14
9.0	550	350	6	6UIB 9.	6UFB 9.	0.19
12.0	700	350	6	6UIB12	6UFB12	0.25
15.0	850	350	6	6UIB15	6UFB15	0.30
18.0	1000	350	6	6UIB18	6UFB18	0.35
9.0	400	350	9	9UIB 9	9UFB 9.	0.14
13.5	550	350	9	9UIB13.5	9UFB13.5	0.19
18.0	700	350	9	9UIB18	9UFB18	0.25
22.5	850	350	9	9UIB22.5	9UFB22.5	0.30
27.0	1000	350	9	9UIB27	9UFB27	0.35
12.0	400	450	12	12UIB12	12UFB12	0.18
18.0	550	450	12	12UIB18	12UFB18	0.25
24.0	700	450	12	12UIB24	12UFB24	0.32
30.0	850	450	12	12UIB30	12UFB30	0.38
36.0	1000	450	12	12UIB36	12UFB36	0.45
15.0	400	550	15	15UIB15	15UFB15	0.22
22.5	550	550	15	15UIB22.5	15UFB22.5	0.31
30.0	700	550	15	15UIB30	15UFB30	0.39
37.5	850	550	15	15UIB37.5	15UFB37.5	0.47
45.0	1000	550	15	15UIB45	15UFB45	0.55
36.0	700	650	18	18UIB36	18UFB36	0.46
45.0	850	650	18	18UIB45	18UFB45	0.55
54.0	1000	650	18	18UIB54	18UFB54	0.65
52.5	850	750	21	21UIB52.5	21UFB52.5	0.64
63.0	1000	750	21	21UIB63	21UFB63	0.75
60.0	850	850	24	24UIB60	24UFB60	0.73
72.0	1000	850	24	24UIB72	24UFB72	0.85

AIR HEATERS

“FINROD” - FINNED TUBULAR HEATERS -240 VOLTS
and “FINROD” DUCT HEATER UNITS 240/415V -
3 PHASE FOR STAR CONNECTION

REMARKS

Maximum allowable sheath temperature 420 °C.
Watts Density: Sheath - 93 kW/m², Fins - 15.5 kW/m²
For air heating the minimum recommended air velocity is 2.8 m/s
through nett face area of duct.
Heater Mounting Glands: 3/8” B.S.P. Crimp-on glands x 15 long.
Heater Terminals: 3/16” with Nickel plated stud terminals x 12 long.
Voltage Limit: 480 Volts.

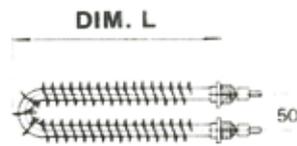
SERIES C

HIGH DENSITY -
“FINROD” AND
“FINROD” DUCT
HEATER UNITS FOR
FORCED AIR
CIRCULATION
HEATING

STANDARD DUCT HEATERS

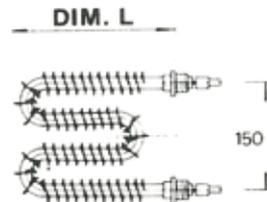
kW	DUCT SIZE		No OF HTRS	PART NUMBER		MIN. AIR FLOW (m ³ /s)
	W	H		INSERT	FLANGED	
4.5	300	250	3	3UIC 4.5	3UFC 4.5	0.21
6.0	400	250	3	3UIC 6	3UFC 6	0.28
9.0	550	250	3	3UIC 9	3UFC 9	0.39
12.0	700	250	3	3UIC 12	3UFC 12	0.49
15.0	850	250	3	3UIC 15	3UFC 15	0.59
18.0	1000	250	3	3UIC 18	3UFC 18	0.70
9.0	300	350	6	6UIC 9	6UFC 9	0.30
12.0	400	350	6	6UIC 12	6UFC 12	0.39
18.0	550	350	6	6UIC 18	6UFC 18	0.54
24.0	700	350	6	6UIC 24	6UFC 24	0.69
30.0	850	350	6	6UIC 30	6UFC 30	0.83
36.0	1000	350	6	6UIC 36	6UFC 36	0.98
18.0	400	350	9	9UIC 18	9UFC 18	0.39
27.0	550	350	9	9UIC 27	9UFC 27	0.54
36.0	700	350	9	9UIC 36	9UFC 36	0.69
45.0	850	350	9	9UIC 45	9UFC 45	0.83
54.0	1000	350	9	9UIC 54	9UFC 54	0.98
24.0	400	450	12	12UIC 24	12UFC 24	0.51
36.0	550	450	12	12UIC 36	12UFC 36	0.69
48.0	700	450	12	12UIC 48	12UFC 48	0.88
60.0	850	450	12	12UIC 60	12UFC 60	1.07
72.0	1000	450	12	12UIC 72	12UFC 72	1.26
30.0	400	550	15	15UIC 30	15UFC 30	0.62
45.0	550	550	15	15UIC 45	15UFC 45	0.85
60.0	700	550	15	15UIC 60	15UFC 60	1.08
75.0	850	550	15	15UIC 75	15UFC 75	1.31
90.0	1000	550	15	15UIC 90	15UFC 90	1.54
72.0	700	650	18	18UIC 72	18UFC 72	1.27
90.0	850	650	18	18UIC 90	18UFC 90	1.55
108.0	1000	650	18	18UIC108	18UFC108	1.82
103.0	850	750	21	21UIC103	21UFC103	1.79
126.0	1000	750	21	21UIC126	21UFC126	2.10
120.0	850	850	24	24UIC120	24UFC120	2.02
144.0	1000	850	24	24UIC144	24UFC144	2.38

STANDARD U-SHAPE 'FINRODS'



PART No	WATTS	L
UC 15	1500	275
UC 20	2000	375
UC 30	3000	525
UC 40	4000	675
UC 50	5000	825

STANDARD W-SHAPE 'FINRODS'



PART No	WATTS	L
WC 20	2000	200
WC 30	3000	275
WC 40	4000	350
WC 50	5000	425

STANDARD DUCT HEATERS

kW	DUCT SIZE		No OF HTRS	PART NUMBER		MIN. AIR FLOW (m ³ /s)
	W	H		INSERT	FLANGED	
6.0	225	250	3	3WIC 6	3WFC 6	0.16
9.0	300	250	3	3WIC 9	3WFC 9	0.21
12.0	375	250	3	3WIC12	3WFC12	0.28
15.0	450	250	3	3WIC15	3WFC15	0.32
12.0	225	450	6	6WIC12	6WFC12	0.28
18.0	300	450	6	6WIC18	6WFC18	0.38
24.0	375	450	6	6WIC24	6WFC24	0.51
30.0	450	450	6	6WIC30	6WFC30	0.57
18.0	225	650	9	9WIC18	9WFC18	0.41
27.0	300	650	9	9WIC27	9WFC27	0.55
36.0	375	650	9	9WIC36	9WFC36	0.73
45.0	450	650	9	9WIC45	9WFC45	0.82

AIR HEATERS

STAINLESS STEEL 'FINROD' AND 'THERMOROD' TUBULAR AIR HEATERS.

STAINLESS STEEL FINROD TUBULAR AIR HEATERS.

The Hotco Stainless Steel Finrod is a standard incoloy sheathed tubular heater with edge-wound stainless steel fins attached to the sheath.

REMARKS.

NATURAL CONVECTION.

Nominal sheath temperature 270 °C in still air at 20 °C ambient, density rating of 22.5 kW/m² on the sheath, 3.75 kW/m² on the surface. Other low rating can be manufactured dependent upon application.

FORCED CONVECTION.

SERIES B - Electrically rated in accordance with S.A.A. std. A.S. 1668 pt. 1, 1979.

Maximum sheath temperature 400 °C in still air at 20 °C ambient.

1 m/s through nett face area of the duct.

Heater mounting glands: 3/8" BSP crimp-on glands x 15 mm long.

Heater Terminals: 3/16" with nickel plated stud terminals x 12 mm long.

Voltage limit: 480 volts.

THERMOROD - TUBULAR HEATERS.

Incoloy Sheath - Maximum Sheath Temperature 800 °C

GENERAL DESCRIPTON.

The Hotco "Thermorod" is a standard incoloy sheathed tubular heater of 11 mm nominal diameter and rated at 32 kW/m² (20 w/in²), watt density, giving a sheath temperature in still air of 650 °C.

Mounting bushes - 3/8" BSP crimp-on glands x 15 mm long.

Heater Terminals - 3/16" with nickel plated stud terminals x 12 mm long.

Voltage Limit 480 volts.

Minimum recommended air velocity 2m/sec.

APPLICATION

For high temperature air ducts, make-up air and recirculation oven heating. For drying, pre-heating and other industrial processes requiring heating air. Other applications, include load or discharge resistor, or for use in corrosive air heating processes where sheath material can be selected to suit application.

"FINROD" - DOUBLE LOOP FINNED TUBULAR HEATERS - 240 VOLTS.

ELECTRICALLY RATED IN ACCORDANCE WITH S.A.A. STANDARD A.S. 1688 Pt. 1. 1979

REMARKS

Maximum sheath temperature 400 °C in still air 20 °C ambient.

Watts Density: Sheath - 46.5 kW/m², Fins - 7.75 kW/m².

For air heating the minimum recommended air velocity is 1 m/s through nett fdace aire of duct.

Heater Mounting Glands: 3/8" B.S.P. crimp on glands x 15 long.

Heater Terminals: 3/16" with Nickel plated stud terminals x 12 long.

Voltage Limit: 480 volts.

STANDARD DOUBLE LOOP FINRODS.

PART No	WATTS	L
DLB 20	2000	255
DLB 25	2500	305
DLB 30	3000	355
DLB 35	3500	405
DLB 40	4000	455
DLB 45	4500	505
DLB 50	5000	555

