R.A. Colvin & Co

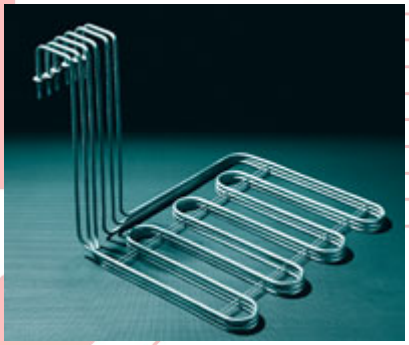
Industrial Heating Catalogue















History

R.A. Colvin & Company was formed in 1986 by the now Managing Director Richard (Andy) Colvin.

It started as a small family business with two employees Andy and his daughter Heather. Agents for companies such as Sephco and Le Carbon Lorraine

In time the company has steadily grown to become renowned in it's manufacturing field and are proud to be agents for large international and national quality endorsed companies including E.G.O Products, and Hotco/Helios also Australian distributors for Toho Controllers.

In 1993 with a vision of expansion and increase market share Kevin Fitzgerald (Andy's son in-law) joined the company. A qualified Fitter and Machinist who brought a wealth of experience in manufacturing and stock control to the company.

In 1996 R A Colvin acquired P & C McGerr & Company and due to increased staff and market share meant our then current premises in Chalkley Place Bayswater was too small. We moved into our current premises at Unit 1/10-14 Munt Street, Bayswater.

Although still a small family business R A Colvin & Company now employs 6 staff.

R A Colvin & Company is considered experts in the field of Electrical Heating for Commercial and Industrial applications. Mr Andy Colvin himself considered a guru in this field. Andy has over 40 years experience in the field.

R A Colvin is a one-stop shop for all your Electrical Heating for Commercial and Industrial applications and if we can't help we will generally know who can.

Our Company Policy

To provide high quality product at a competitive price with rapid turn around.

To provide professional, friendly advice in answering all customer enquiries and ensure specialised attention to customer's product problems and needs.

Where our elements are hot

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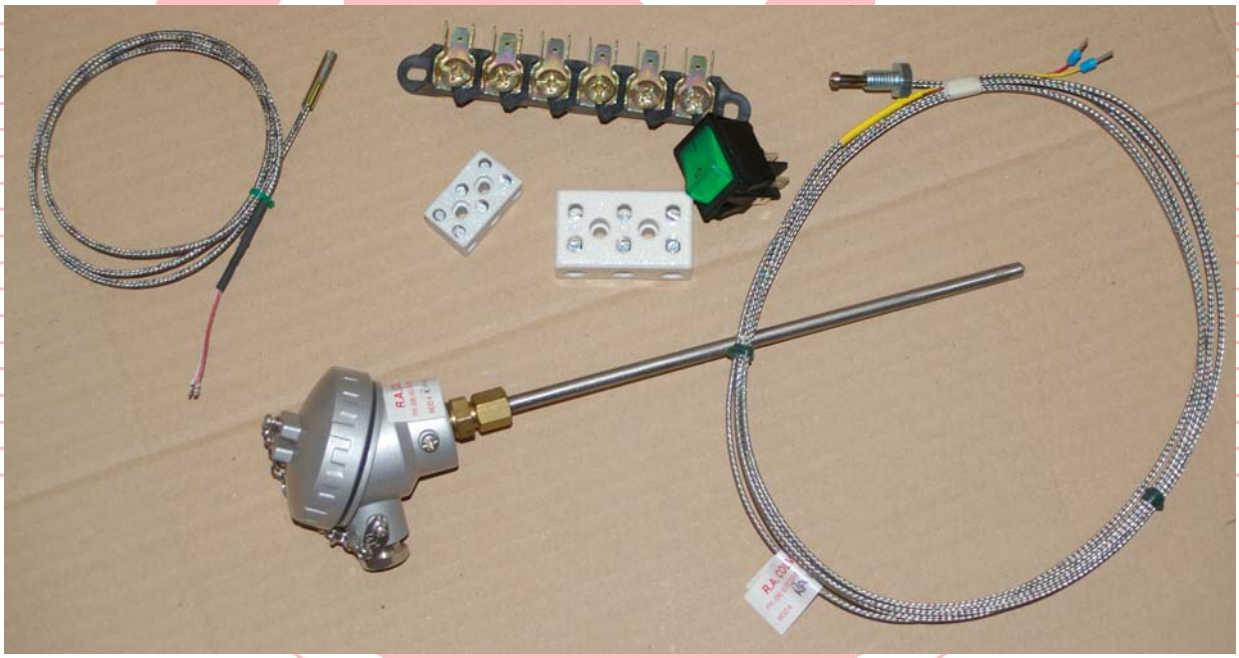
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Accessories



High Temperature Plugs



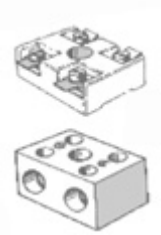
Commonly used in connection of electric elements and other electrical connections in hot zones. The ceramic plugs are suitable for higher temperatures but they can be more fragile than the silicone rubber version.

Note: 2 Pin European female plugs (spare parts also available) ---->



ORDER CODE	STOCKED	AMPS	TEMP °C	DESCRIPTION
AM25318	NO	10	105	Porcelain tip - straight out - light duty
KALTHOFFS	YES	15	150	Silicon rubber tip, straight out, industrial duty
KALTHOFFS	YES	15	150	Silicon rubber tip, right angle, industrial duty
HTS	YES	25	200	Porcelain tip, straight out, industrial duty
AM25322	NO	25	200	Porcelain tip, right angle, industrial duty

Terminal Blocks



ORDER CODE	STOCKED	DESCRIPTION
B10-1E	YES	200° C 1 way - 20 amp
B10-2E	YES	200° C 2 way - 15 amp
B16-2E	YES	300° C 2 way, 30 amp
AM32879	NO	200° C 2 way, 30 amp HD plated terminals
B16-3E	YES	200° C 3 way, 30 amp
B16-4E	YES	200° C 4 way, 30 amp

High Temperature Terminals



Heat resistant steel alloy ring terminals - nickel plated, rated to 600°C continuous

ORDER CODE	STOCKED	STYLE	STUD Dia (mm)	CABLE Dia (mm)
LX4300	YES	Ring Terminal	5	1.5
LX4301	YES	Ring Terminal	6	1.5
UTIH 3233	YES	Ring Terminal	5	2.5-6
UTIH 3234	YES	Ring Terminal	6	2.5-6

Connection Cables

Wrapped Fibreglass insulated, nickel conductors, single core, 300° C Maximum

ORDER CODE	STOCKED	STRANDING METRIC	RATING AMPS @ 200° C	CONDUCTOR CSA mm²	CONDUCTOR OD (mm)
32760	YES	16/0.020	2	0.5	1
33160	YES	24/0.020	4.5	0.75	1.2
AM25273	NO	32/0.020	6	1	1.3
33840	YES	30/0.025	9	1.5	1.6
34160	YES	50/0.025	12	2.5	2.1
34640	YES	56/0.030	15	4	2.7

Silicon Rubber insulation, tin plated copper conductors, 150° C Maximum

ORDER CODE	STOCKED	CORES	COPPER mm² / CORE	RATING AMPS / CORE
AM25279	NO	4	0.75	7.5
AM25280	NO	4	1.50	15.0
AM25281	NO	3	0.75	7.5
3 CORE CABLE 3CF1500	YES	3	1.5	7.5
3 CORE CABLE 3CF2500	YES	3	2.5	12.0
AM25284	NO	1	0.50	5.0
AM25285	NO	1	0.75	7.5
AM25286	NO	1	1.00	10.0
AM25287	NO	1	1.50	15.0
AM25288	NO	1	2.50	20.0
AM25289	NO	1	4.00	25.0

Electrical Insulation (Mica Sheets)

Electrical Insulation - Mica - High Temperature, 400° C

ORDER CODE	STOCKED	DESCRIPTION
AM25294	NO	Mica board, semi rigid, 0.4mm thick. 1000 x 1200 mm sheets

High Temperature Sleeving

TYPE FG Electrical Insulation and Temperature Protection on Leads - Fibreglass, 400° C

We carry various sizes in stock please check with our staff.

Heat Transfer & Anti-Oxidation Compounds



Heat transfer products are used to seal or fill air cavities within bores and grooves. Sometimes these pockets of air work as heat insulators, therefore hindering the transfer of heat to the mass. Indeed even tiny air cavities can result in shorter heater life due to the radiation of heat back onto the element. These products seal this cavity and some even assist in reducing the oxidisation effects on the element steel sheath.

ORDER CODE	STOCKED	DESCRIPTION
ATCEMENT	YES	Heat transfer cement, high temp 2 part mix ideal for cementing tubular elements into hot runner manifolds. 150gm liquid / 250gm Powder.
WATLUB	YES	Heat transfer and anti-oxidation compound idea for coating cartridge heaters. 150gm bottle.
AM25311	NO	Heat transfer cement, 50cc syringe, water soluble, 650° C max
AM25312	NO	Heat transfer cement, 5 litre, water soluble, 650° C max
AM25313	NO	Heat transfer cement, 10 litre, water soluble, 650° C max
AM25314	NO	Electric resister cement, 1370° C max (US Gallon tin)
AM25315	NO	Low electrical leakage cement, 1420° max (US Gallon Tin)

Thermometers and other Measuring Devices

Along with the controlling of temperature, we can also assist in remote measuring devices including:

- *Hand held "INFRA-RED" thermo-measuring instruments*
- *Hand held DIGITAL thermometers*
- *Specialised probes to suit hand held digital thermometers*

Temperature Sensors & Accessories



RA Colvin manufactures a large range of thermocouples to suit almost any requirement.



DIFFERENT SHAPES FOR DIFFERENT APPLICATIONS

- 45° and 90° angled probes
- Ring sensors - for barrels, nozzles and pipes (Specify diameter)
- Shim Type - for barrels and nozzles (Specify Diameter)
- Eyelet Type
- Leaf Style - Fits under heaters for surface sensing - shim brass 10mm x 20mm
- Threaded Button Style - for screwing into threads (Specify thread and length)

We also carry an excellent range of standard K and J thermocouples in stock for your convenience.



These stock thermocouples are supplied with stainless steel 3/16ø 1.125" long sensor and stainless steel braided leads.

Lead Length	3/16"ø S/S Tip, Industrial Std. Type J	3/16"ø S/S Tip, Industrial Std. Type K
1.0 m	RA1MJIA	RAIMK1A
2.0 m	RA2MJIA	RA2MK1A
3.0 m	RA3MJIA	RA3MK1A
4.0 m	RA4MJIA	RA4MK1A

Mineral Insulated Metal Sheathed Range (MIMS)

MIMS thermocouples consist of 2 conducting materials (Types K, J &T) compacted into a tube (probe), normally 310 stainless steel and insulated with fine magnesium oxide. Supplied as standard with 2 metres of metal braided leads, they offer 3 advantages over the standard type:

1. *The probe can be made in very small diameters*
2. *The whole thermocouple, though semi-rigid, can be bent to suit most applications without impairing performance*
3. *They have a higher temperature handling capability.*

Contact us for your requirements

Accessories for Sensors

- Collar & Spring Assemblies
- Adaptors (male) Brass 1/8" BSP
- Thermocouple Cable
- Compensating Cable
- Panel Mount Sockets
- Plugs (mini and standard)
- Compression Glands
- Reducing bushes





Switches

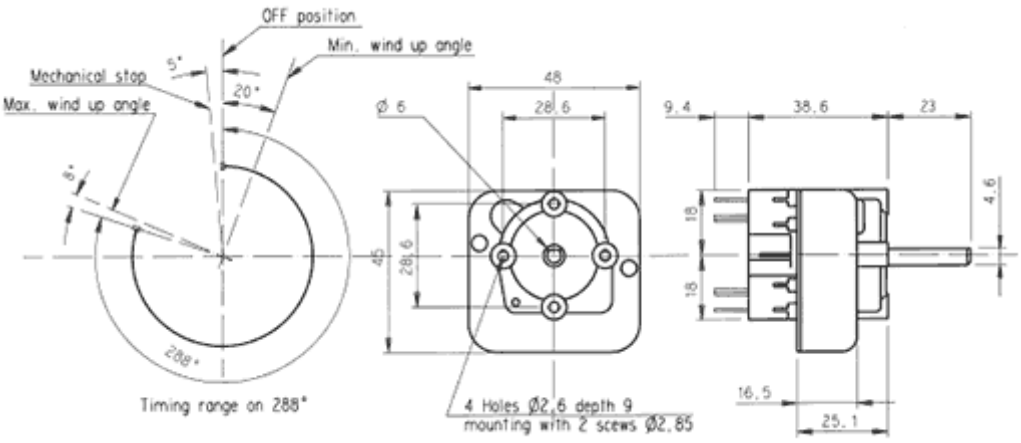
R.A Colvin carries a range of switches both toggle and rocker and their accessories.

	Order #	Description
	7011C	SPST Toggle Switch 20A 240V
	7021	DPST Toggle Switch 20A 240V
	7023	DPDT Toggle Switch 20A 240V
	BOOT	Rubber Boot AW-7A
	P-70	On-Off Marker for 70 SEI
	825082771E	Rocker Switch Red Mark
	825082781E	Rocker Switch Green Mark

Run Back Timers



Part Number	Description	Knob	Amp/Volt
C53-5	**5 Min Timer**	**EF524.153A**	**16Amp / 240V**
C53-15	**15 Min Timer**	**EF524.152A**	**16Amp / 240V**
C53-30	30 Min Timer	EF524.155A	16Amp / 240V
C53-60	**60 Min Timer**	**EF524.154A**	**16Amp / 240V**



Air Heaters





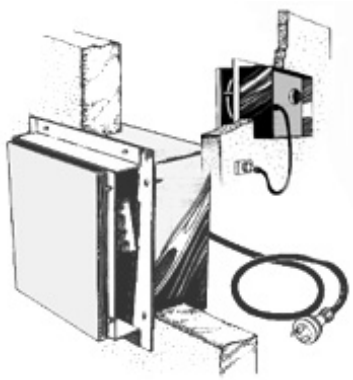


Fan Forced Air Heating Modules

Our customers can sometimes utilise small-insulated rooms or even insulated shipping containers for temporary or permanent heating jobs - the 'Fan Forced Module' turns any sealed area into instant fan forced oven efficiency.

These innovative products have made easy solutions available to what's normally a complex problem. Have to heat and circulate? This is the product you need...whether you're looking at a new installation or a power boost for an existing one; these Modules make the job happen fast!

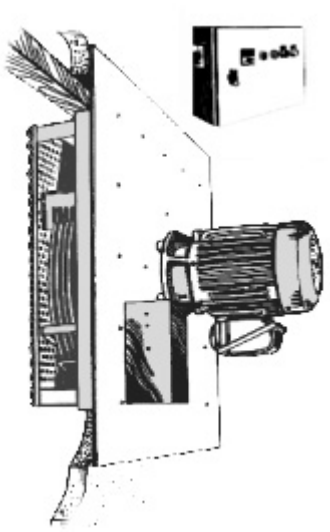
THROUGH THE WALL MODULE - 2.2kW *(No Stocked)*



* Fits into 253 x 253mm cut out
* 240V, 10 amp, 3 pin plug included
* Thermostatically controlled fully adjustable
* All Stainless Steel construction
* Fitted with over temperature protection
* Easy to install - 4 fixing screws

ORDER CODE	DESCRIPTION
GM25007	Module 240V 2200W - Range 0 - 40° C
GM25008	Module 240V 2200W - Range 40 - 110° C
GM25009	Module 240V 2200W - Range 60 - 200° C
GM25010	Module 240V 2200W - Range 30 - 320° C

THROUGH THE WALL MODULES - 12, 15 & 18kW *(Not Stocked)*



This module can be mounted to the outside face of any enclosure as long as the wall thickness is no greater than 75mm. These modules are manufactured in accordance with AS 3000 standards.

* Mounts in cut out size 600 x 600 mm (flange plate 800 x 800mm)
* Easy to install - compact design with minimal protrusion.
* Air flow 42 cu m/min via 1.1HP 3ph 50Hz motor
* Heavy duty construction (Includes over temperature protection)
* Shipping: 78kg (101kg crated) 950 x 950 x 800H mm crate.
* Control System enclosure (as pictured) also available.

ORDER CODE	DESCRIPTION
GM25011	Fan Forced air heating module - Rated 12,000W, 3ph.
GM25012	Fan Forced air heating module - Rated 15,000W, 3ph.
GM25013	Fan Forced air heating module - Rated 18,000W, 3ph.
GM24516	Fan Forced air heating module Control system enclosure (12, 15, 18kW)

Finned Tubular Elements & Duct Heaters

Finned tubular heaters are most commonly used in air heating applications. The fins along the tubular length assist in even heat dissipation. All elements have mild steel fins copper brazed to the tubular element sheath unless otherwise specified

Finned Elements are available in STRAIGHT FORM - U FORMED and MULTIFORMED Designs

There are 3 types manufactured - **Type AFH** **Type FG** and **Type FH**.

Type AFH are a lower watts density element manufactured to Australian Standards generally used in air ducts with forced drafts - or industrial process heating applications requiring heated air blasts.

Type FG are elements designed for forced convection air heating. This element operates at a black heat in an application where air velocity is in excess of 3m/sec (600fpm).

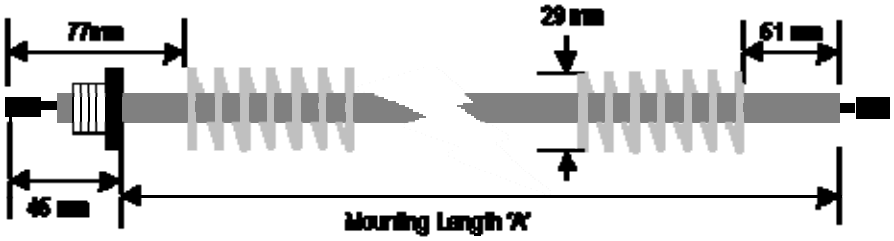
Type FH series elements are low watts density suitable for applications such as air ducts with forced air drafts and other Industrial applications. Due to the low density, a tight construction can be achieved permitting large heater mass with lower power output.

Element Technical Data

Technical data for finned elements

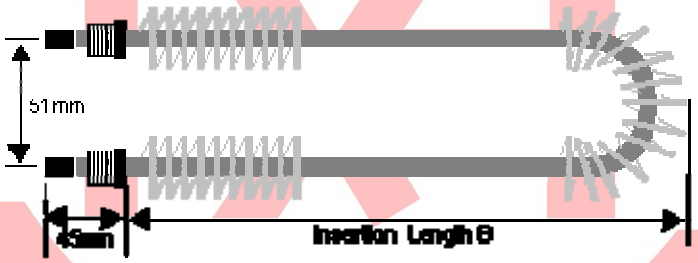
Data	TYPE AFH	TYPE FG	TYPE FH
Maximum sheath Temp.	400° C	400° C	400° C
Maximum Circulation Air Temp.	200° C	200° C	200° C
Average Watts Density over sheath	46.5kW/m²	15kW/m²	65KW/m²
Minimum Air Velocity	1 metre per second	1 metre per second	1 metre per second
Tubular Element Dia (ø)	11mm	11mm	11mm
Diameter over fin	29mm	29mm	29mm

STRAIGHT FINNED TUBULAR, 3/8" BSP Gland (one end)



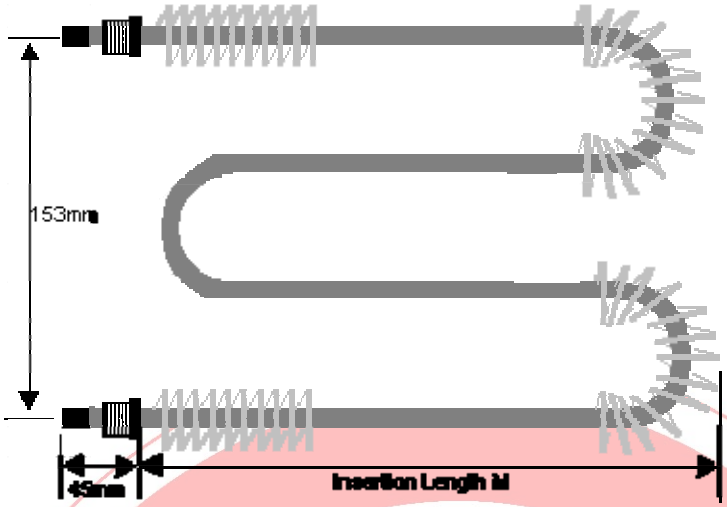
TYPE AFH STRAIGHT FORM			TYPE FG STRAIGHT FORM			TYPE FH STRAIGHT FORM		
ORDER CODE	WATTS @ 240 VOLTS	MOUNTING LENGTH A	ORDER CODE	WATTS @ 240 VOLTS	MOUNTING LENGTH A	ORDER CODE	WATTS @ 240 VOLTS	MOUNTING LENGTH A
AFS1	750	560mm	**FGS1**	2000	580mm	**FS1A**	600	510mm
AFS15	1000	660mm	**FGS15**	2500	680mm	**FS1**	1000	560mm
AFS21	1250	820mm	**FGS21**	3000	820mm	**FS15**	1250	660mm
AFS31	1500	1061mm	**FGS31**	4000	1080mm	**FS21**	1500	820mm
AFS41	2000	1320mm	**FGS41**	5000	1360mm	**FS25**	1750	940mm
AFS51	2500	1580mm	**FGS51**	6000	1620mm	**FS31**	2000	1061mm
-	-	-	-	-	-	**FS41**	2500	1320mm
-	-	-	-	-	-	**FS51**	3000	1580mm

"U" SHAPED FINNED TUBULAR, 3/*"BSP GLANDS (Both ends)



TYPE AFH "U" SHAPED			TYPE FG "U" SHAPED			TYPE FH "U" SHAPED		
ORDER CODE	WATTS @ 240 VOLTS	INSERTION LENGTH B	ORDER CODE	WATTS @ 240 VOLTS	INSERTION LENGTH B	ORDER CODE	WATTS @ 240 VOLTS	INSERTION LENGTH B
AFH1	750	280mm	**FG1A**	1000	200mm	**FH1A**	600	255mm
AFH15	1000	330mm	**FG1B**	1500	230mm	**FH1**	1000	280mm
AFH21	1250	410mm	**FG1**	2000	280mm	**FH15**	1250	330mm
AFH31	1500	530mm	**FG15**	2500	330mm	**FH21**	1500	410mm
AFH41	2000	660mm	**FG21**	3000	400mm	**FH25**	1750	470mm
AFH51	2500	790mm	**FG31**	4000	530mm	**FH31**	2000	530mm
AFH61	3000	915mm	**FG41**	5000	670mm	**FH41**	2500	660mm
AFH81	3500	1170mm	**FG51**	6000	800mm	**FH51**	3000	790mm
AFH91	4000	1295mm	-	-	-	**FH61**	3500	915mm
-	-	-	-	-	-	**FH81**	4500	1170mm
-	-	-	-	-	-	**FH91**	5000	1295mm

"M" SHAPED FINNED TUBULAR, 3/8"BSP GLANDS (Both ends)



TYPE AFH "M' SHAPED			TYPE FG "M' SHAPED			TYPE FH "M' SHAPED		
ORDER CODE	WATTS @ 240 VOLTS	INSERTION LENGTH M	ORDER CODE	WATTS @ 240 VOLTS	INSERTION LENGTH M	ORDER CODE	WATTS @ 240 VOLTS	INSERTION LENGTH M
AFH21M	1250	215mm	**FG21M**	3000	215mm	FH21M	1500	215mm
AFH31M	1500	280mm	**FG31M**	4000	280mm	FH25M	1750	255mm
AFH41M	2000	345mm	**FG41M**	5000	345mm	FH31M	2000	280mm
AFH51M	2500	410mm	**FG51M**	6000	410mm	FH41M	2500	345mm
AFH61M	3000	470mm	-	-	-	FH51M	3000	410mm
AFH81M	3500	600mm	-	-	-	FH61M	3500	470mm
AFH91M	4000	670mm	-	-	-	FH71M	4000	533mm
-	-	-	-	-	-	FH81M	4500	600mm
-	-	-	-	-	-	FH91M	5000	670mm

DUCT AIR HEATING UNITS (Not Stocked)

Duct heater units consist of group of *finned tubular elements* fitted to a specified terminal box. The area with exposed group of elements will sit inside the duct chamber (mounted via the terminal box), the cold air passes over the finned elements heating the air. Ideally, for a duct heater unit to be affective - it is ideal to cover as much area with finned tubular in order to ensure that at some point in passing the group of elements, a large majority of the air must come into contact with the heated fins. Depending on the duct size, we generally group 'U' or 'M' shaped elements together ensuring they reach to the edges of the duct. They are offset in many cases to enable air gaps to be filled. A range of our common designs are listed below, they are by no means a limit to our scope however. Please feel free to contact our sales staff for further information.

ORDER CODE		TOTAL	DUCT SIZE		Min Flow	No.
Flanged	Insert	kW	W mm	H mm	m³/sec	Elements
G31G	G31SG	3.00	152	228	0.098	3
G32G	G32SG	4.50	152	258	0.098	3
G34G	G34SG	6.00	152	305	0.123	3
G35G	G35SG	7.50	152	381	0.162	3
G36G	G36SG	9.00	152	457	0.198	3
G37G	G37SG	12.00	152	560	0.217	3
G61G	G61SG	9.00	305	258	0.195	6
G62G	G62SG	12.00	305	305	0.260	6
G64G	G64SG	15.00	305	381	0.325	6
G65G	G65SG	18.00	305	457	0.389	6
G66G	G66SG	24.00	305	560	0.432	6
G91G	G91SG	18.00	381	305	0.325	9
G92G	G92SG	22.50	381	381	0.405	9
G93G	G93SG	27.00	381	457	0.478	9
G94G	G94SG	36.00	381	560	0.538	9
G95G	G95SG	45.00	381	686	0.728	9

Band Heaters





STOCKED WELDED BAND - BRASS, MICA INSULATED ELEMENTS



Check out the very competitive range of stock heaters below or if you require variations to these designs - please contact us.

These off the shelf 'Nozzle Elements' are fitted with a 45° Brass SK Box with 1m of metal braided protected leads. Ready to be shipped today!

ORDER CODE	Other Codes	DESCRIPTION
BSS2525	BM16745	Weldband Brass 25x25L 240V 110W 1m SSB lead & earth
BSS3225	BM22848	Weldband Brass 32x25L 240V 140W 1m SSB lead & earth
BSS3230	BM15806	Weldband Brass 32x30L 240V 180W 1m SSB lead & earth
BSS3238	BM15807	Weldband Brass 32x38L 240V 170W 1m SSB lead
BSS3250	BM18962	Weldband S/Steel 32x50L 240V 270W 1m SSB lead & earth
BSS3260	BM18963	Weldband Brass 32x60L 240V 260W 1m SSB lead
BSS3270	BM18966	Weldband S/Steel 32x70L 240V 350W 1m SSB lead
BSS3275	BM18964	Weldband S/Steel 32x75L 240V 420W 1m SSB lead & earth
BSS3280	BM18965	Weldband S/Steel 32x80L 240V 275W 1m SSB lead
BSS3538	BM15867	Weldband Brass 35x38L 240V 150W 1m SSB lead
BSS3839	BM15808	Weldband Brass 38x39L 240V 250W 1m SSB lead & earth
BSS3845	BM18967	Weldband Brass 38x45L 240V 250W 1m SSB lead
BSS3850	BM15809	Weldband 38x50L 240V 270W 1m SSB lead
BSS4030	BM16555	Weldband Brass 40x30L 240V 180W 1m SSB lead & earth
BSS4038	BM22749	Weldband Brass 40x38L 240V 220W 1m SSB lead
BSS4850	BM18968	Weldband 48x50L 240V 300W 1m SSB lead
BSS5025	BM23165	Weldband 50x25L 240V 180W 1m SSB lead
BSS5038	BM15805	Weldband 50x38L 240V 280W 1m SSB lead
BSS5438	BM16746	Weldband Brass 54x38L 240V 250W 1m SSB lead
BSS6035	BM17788	Weldband Brass 60x35L Brass 240V 360W 1m SSB lead & earth
BSS7038	BM16747	Weldband Brass 70x38L Brass 240V 320W 1m SSB lead

SSB = Stainless Steel Braided Leads

MICA WELDBANDS - NOZZLE HEATERS



These elements are a metal or brass sheathed, mica insulated, nichrome wire wound and fully sealed (welded) construction. They come with many terminal options and design choices to suit every injection-moulding machine. Due to their welded nature, weldbands do not open up wide in their diameter so are generally most suitable for sliding on from the front.

Element Technical Data

Minimum Diameter	20 mm
Maximum Diameter	400 mm
Minimum Voltage	120V
Maximum Voltage	415V
Maximum Nozzle Watts Density	4.6 Watts/cm^2
Maximum Nozzle Element Temperature	350° C
Maximum Barrel Watts Density	3.8 Watts/cm^2
Standard Gap	6 mm

MICA WELDBANDS - BARREL HEATERS (Refer Data Above)

Same internal construction as the nozzle weldband - these larger examples are handy for areas near the front of the barrel where blow back can be a problem as the heater is well sealed and not subjected to product contamination as readily. You do need to ensure that you can slide this heater on, as these can not be opened up to the barrel diameter unless a two-sectioned hinged element is specified.



TUBULAR BANDS - NOZZLE & BARREL HEATERS

Where high temperatures and high power is needed. These heaters are rugged and reliable - constructed with a stainless steel clamp band and a formed tubular element. They are slightly flexible in terms of diameter opening.

Element Technical Data

Minimum Diameter	30 mm
Maximum Diameter	1000 mm
Minimum Length	30 mm
Maximum Length	500 mm
Minimum Voltage	110V
Maximum Voltage	415V
Maximum Watts Density Rating	6 Watts/cm²
Maximum Element Temperature	500° C
Maximum Barrel Watts Density	3.8 Watts/cm²
Standard Gap (opposite Termination Point)	10 - 15 mm wide

MICA FLEXBANDS - BARREL HEATERS



Designed to open up around the barrel, these elements are manufactured with a stainless steel clamp band and inner zinc plated steal element sheath.

Element Technical Data

Minimum Diameter	60 mm
Maximum Diameter	500 mm
Minimum Length	32 mm
Maximum Length	200 mm
Minimum Voltage	120V
Maximum Voltage	415V
Maximum Watts Density Rating	3.8 Watts/cm²
Maximum Element Temperature	350° C
Standard Gap	15 mm Swivel Brackets



CERAMIC FLEXBANDS - BARREL HEATERS

A flexible high temperature band heater also designed to open up around the barrel diameter. These high quality elements are constructed with a stainless steal clamp band and ceramic linking insulation. Note: The band length can only be increased by multiples of 15 mm.

Element Technical Data

Minimum Diameter	60 mm
Maximum Diameter	500 mm
Minimum Length	30 mm
Maximum Length	400 mm
Minimum Voltage	120V
Maximum Voltage	415V
Maximum Watts Density Rating	7 Watts/cm^2
Maximum Element Temperature	600° C
Standard Gap	15 mm Swivel Brackets



CERAMIC WELDBANDS - BARREL HEATERS

These heaters are manufactured for their sealed protective nature and also their high temperature capabilities. They are however rigid as they are a fully welded construction with inner ceramic linking insulation. They are very robust and a less expensive option than a cast in tubular element.

Element Technical Data

Minimum Diameter	75 mm
Maximum Diameter	500 mm
Minimum Length	30 mm
Maximum Length	200 mm
Minimum Voltage	120V
Maximum Voltage	415V
Maximum Watts Density Rating	7 Watts/cm^2
Maximum Element Temperature	600° C
Standard Gap	15 mm Clamping Lugs

TUBULAR CAST IN BANDS - BARREL HEATERS

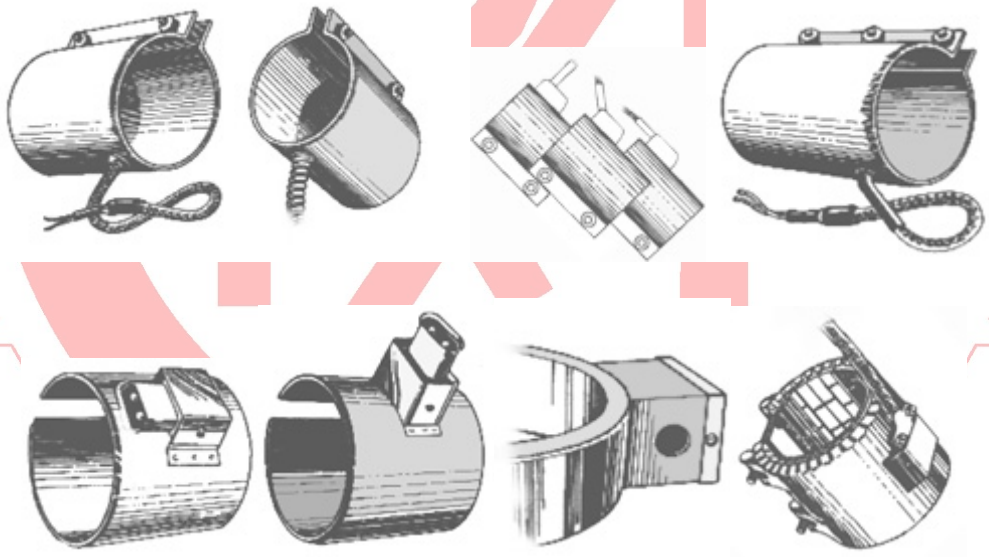


The Rolls Royce of Band heaters ~ long life ~ high temperatures and even heat distribution! These elements are manufactured to your specifications - they can be made in multi segments, with water pipes for cooling etc. They are cast in aluminium, mild steel and bronze.

Element Technical Data

Minimum Diameter	30 mm
Maximum Diameter	1000 mm
Minimum Length	30 mm
Maximum Length	500 mm
Minimum Voltage	110V
Maximum Voltage	415V
Maximum Watts Density Rating	6 Watts/cm^2

OPTIONS & ADD ONS

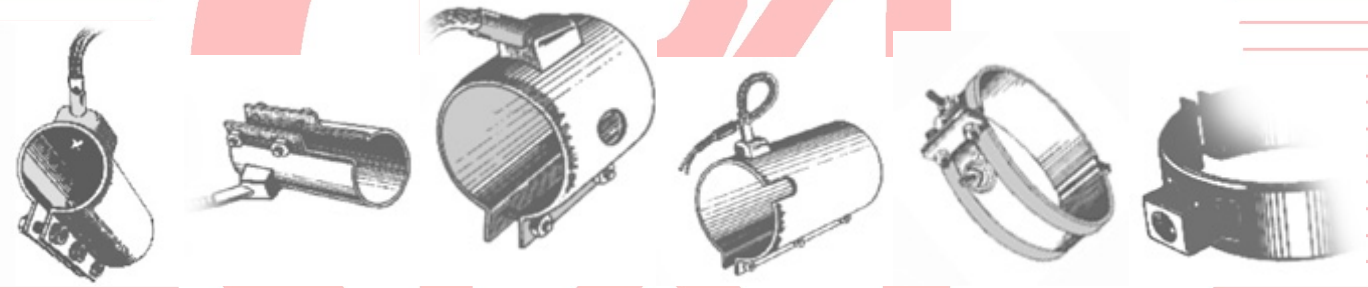


Terminations

	Screw Terminal	Straight Leads	Brass SK Box	Copper Tube	Plugall Socket	Super Layflat	S/S Junction Box
Mica Welded	✓	✓	✓	✓	Barrel		Barrel
Mica Flexible	✓	✓	✓	✓	✓		✓
Ceramic Flex	✓	✓		✓	✓	✓	✓
Ceramic Welded	✓			✓	✓	✓	✓
Tubular Bands	✓				✓		✓
Cast-in Bands	✓						✓

Note: Brass SK Box available in 45°, 90° & 180°- lead exit ~ Lead material and lengths need to be specified

Add Ons & Extra's



	Built in T/C (K,J)	Cut away Clamping Lug	Hole in winding strip	Slot - edge	3 pin 10 amp plug	Fitted T/C Plug	Half Bands	T/C bracket
Mica Welded	✓	✓	✓	✓	✓	✓	Barrel	Barrel
Mica Flexible			✓	✓	✓			✓
Ceramic Flex			✓		✓			✓
Ceramic Welded			✓	✓	✓		✓	✓
Tubular Bands			Barrel		✓		✓	✓
Cast-in Bands			✓	✓			✓	

Note: Hole diameter & location needs to be specified ~ Slot size & location needs to be specified ~ T/C means Thermocouple sensor (temperature) ~ Half Bands can be hinged or clamped ~ For Australian 3 pin 10 amp plug & lead to be fitted, heater must be rated below 2400W single phase.

MINI TUBULAR



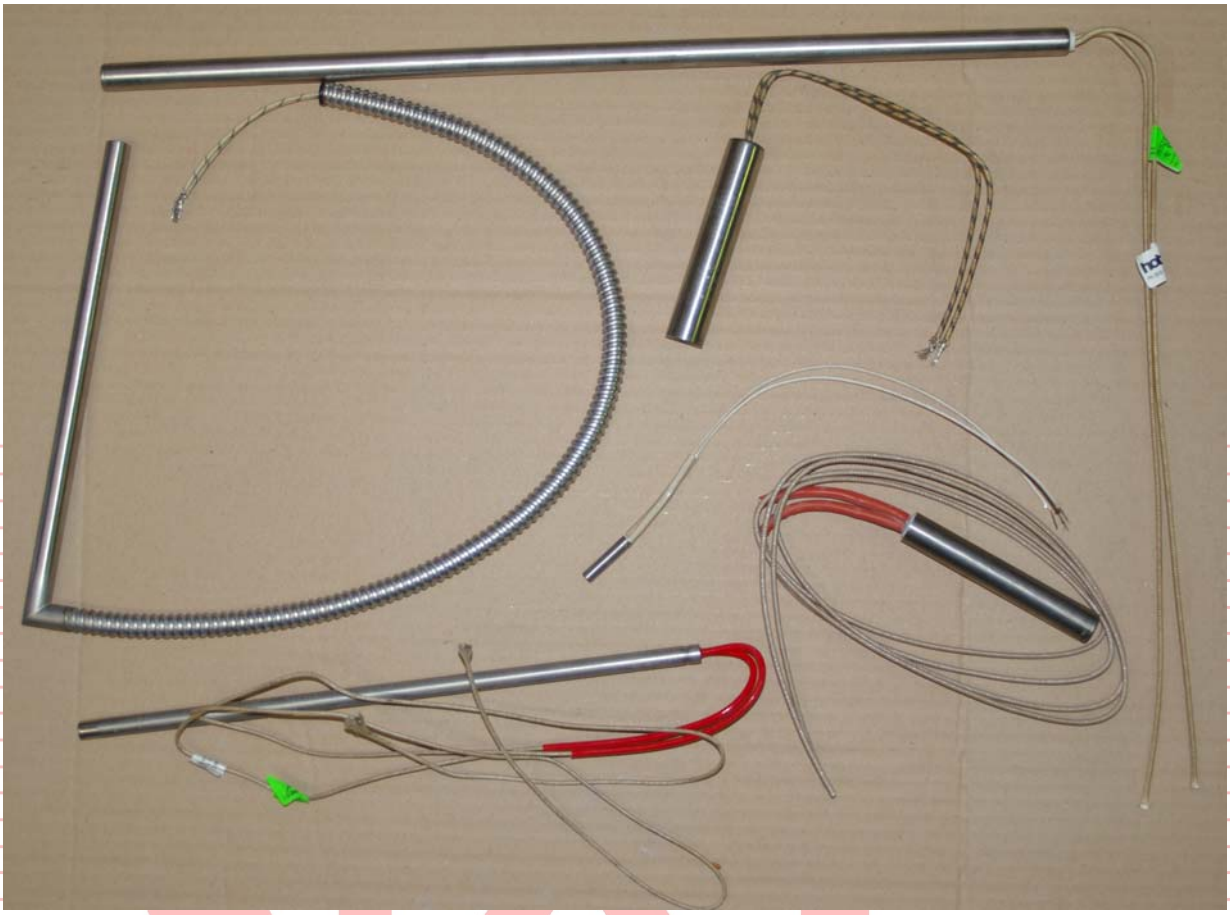
Metal sheathed magnesium oxide insulated mini tubulars are for use when space is resticted. Most commonly seen on nozzles and sprue bushes on plastic injection moulding machines, they can also be used for hot melt adhesive applicators, medical equipment and in heated rolling machines.

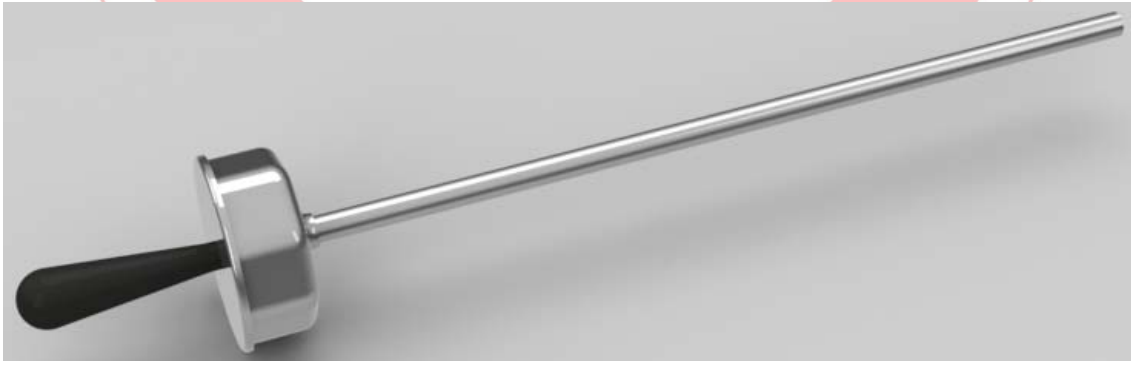
They can be supplied in straight length, coiled or formed. Successful coiling requires trades equipment and experience, we don't recommend DIY coiling. Mini tubulars are supplied with or without TYPE J thermocouple. The thermocouple is built in to a cold section at the tip of the tubular.

Element Technical Data

Sheath Material	CrNi Steel
Electrical Insulation	Magnesium Oxide, highly compressed
Element Material	NiCr 80/20
Connection	Teflon multi-strand wire
Thermocouple	Standard Type J (K is available)
Ohms Per heated metre	40-1200
Voltage	230V nominal (250V max)
Sheath Temperature	750˚C maximum
Minimum bend radius	5mm
Tube length	Maximum 2140mm

Cartridge Heaters





Element Applications

WATER HEATING - We recommend no more than 10 W/cm² when using cartridge heaters as immersion heaters in water - for chemicals contact R.A. Colvin for further advice. Please make sure you specify immersion applications prior to ordering.
OIL HEATING - To avoid oxidisation a watt density of no more than 2 W/cm² is recommended. These heaters have been commonly used as sump heaters or in applications where area is restricted.
AIR HEATING - Elements of approximately 1 W/cm² are recommended ~ most commonly used as convection or anti-condensation heaters.
DIE HEATING - For applications where a large mass of metal requires thermal input ~ Manifolds, Patterns, Hot Runners and Torpedoes. This form of heating is very efficient as the heat transfers from the inner core of the mass. Heaters require reamed holes to fitting tolerances.
PACKAGING - Hot melt glue applications.

Element Technical Data

There are 2 main methods used in manufacturing cartridge heaters:
COMPACTED HIGH DENSITY
These consist of resistance wire wound around a refractory rod and inserted into stainless steel tubes where the remaining space is filled with magnesium oxide. The tube is then reduced in diameter to compact the contents and then machined to precise tolerances.
• Sizes Available - 1/4", 3/8", 1/2", 5/8", 3/4", 1" (Stocked) Other sizes including metric sizes are available on request.
Watts Density - 20 W/cm²
NON-COMPACTED LOW DENSITY
Manufactured by supporting helically coiled resistance wire wound on a refractory rod and inserted into a stainless steel tube with the remaining space being filled with magnesium oxide. This assembly is inserted into the exact tolerance-machined tube and sealed.
• Sizes Available - 3/8", 1/2", 5/8", 3/4", 1", 10mm, 12mm, 14mm, 16mm, 20mm, 25mm
Watts Density - 6 W/cm²
FITTING TOLERANCES - Good contact between the cartridge body and bore is essential, especially so for high powered high-density cartridge heaters. They should always be fitted into accurately reamed parallel-sided holes.
TEMPERATURE CONTROL - To ensure the element does not overheat, the temperature sensing point should be positioned in the metal tool not more than 2 cartridge heaters away.
• Element life is reduced by slow 'on / off' cycling of temperature controllers. Slow cycling occurs when the mass to be heated is small and the element is higher rated than it needs to be.. Full PID auto-tuning controllers with solid state output are recommended.

CARTRIDGE SIZES IN STOCK

HIGH DENSITY IMPERIAL	LOW DENSITY IMPERIAL	LOW DENSITY METRIC
1/4 " Diameter	3/8" Diameter	10 mm Diameter
3/8 " Diameter	1/2" Diameter	12 mm Diameter
1/2 " Diameter	5/8 " Diameter	14 mm Diameter
5/8" Diameter		16 mm Diameter
1/4" Inbuilt Thermocouple J		

High Density Imperial Cartridges

COMPACTED HIGH DENSITY
These consist of resistance wire would around a refractory rod and inserted into stainless steel tubes where the remaining space is filled with magnesium oxide. The tube is then reduced in diameter to compact the contents and then machined to precise tolerances.
These elements generally run at a higher surface temperature than non-compacted cartridge heaters and are of the best quality found anywhere in this country.

Part No.	Compacted High Density 1/4" Dia - 250 mm NiG Leads
CM21954	1/4"x1.5" 230V 160W 10" NiG leads
CM23254	1/4"x1.5" 230V 200W 10" NiG leads
CM21955	1/4"x2" 230V 200W 10" NiG leads
CM24673	1/4"x2"L 230V 200W 10" NiG leads J Thermocouple built-in
CM21956	1/4"x2.5" 230V 250W 10" NiG leads
CM21957	1/4"x3" 230V 300W 10" NiG leads
CM21958	1/4"x4" 230V 350W 10" NiG leads
CM24676	1/4"x4"L 230V 350W Tc J 1m NiG Leads

Part No.	Compacted High Density 1/2" Dia - 250 mm NiG Leads
CM21973	1/2" x 1.5" 230V 250W 10" NiG leads
CM21974	1/2" x 2" 230V 300W 10" NiG leads
CM21975	1/2" x 2.5" 230V 400W 10" NiG leads
CM21976	1/2" x 3" 230V 500W 10" NiG leads
CM23082	1/2" x 4" 230V 500W 10" NiG leads
CM21977	1/2" x 4" 230V 630W 10" NiG leads
CM23260	1/2"x5" 230V 600W 10" NiG leads
CM21978	1/2"x5" 230V 750W 10" NiG leads
CM21979	1/2"x6" 230V 1000W 10" NiG leads
CM22437	1/2"x6" 230V 600W 10" NiG leads
CM22741	1/2"x6" 230V 800W 10" NiG leads
CM23363	1/2"x6.5" 230V 500W 10" NiG leads
CM22738	1/2"x7" 230V 1000W 10" NiG leads
CM23257	1/2"x8" 230V 1000W 10" NiG leads
CM21980	1/2"x8" 230V 1500W 10" NiG leads
CM22739	1/2"x9" 230V 1000W 10" NiG leads
CM23258	1/2"x10" 230V 1000W 10" NiG leads
CM21981	1/2"x12" 230V 1500W 10" NiG leads
CM21982	1/2"x12" 230V 2000W 10" NiG leads
CM23261	1/2"x14" 230V 1200W 10" NiG leads

Part No.	Compacted High Density 3/8" Dia - 250 mm NiG Leads
CM22737	3/8"x1.5" 230V 100W 10" NiG leads
CM21962	3/8"x1.5" 230V 200W 10" NiG leads
CM23079	3/8"x2" 230V 160W 10" NiG leads
CM21963	3/8"x2" 230V 250W 10" NiG leads
CM23880	3/8"x2.5" 230V 180W 10" NiG leads
CM21964	3/8"x2.5" 230V 350W 10" NiG leads
CM23255	3/8"x3" 230V 250W 10" NiG leads
CM21965	3/8"x3" 230V 400W 10" NiG leads
CM23080	3/8"x4" 230V 350W 10" NiG leads
CM21966	3/8"x4" 230V 500W 10" NiG leads
CM23256	3/8"x5" 230V 500W 10" NiG leads
CM21967	3/8"x5" 230V 750W 10" NiG leads
CM23081	3/8"x6" 230V 500W 10" NiG leads
CM21968	3/8"x6" 230V 750W 10" NiG leads
CM21969	3/8"x6.5" 230V 630W 10" NiG leads

Part No.	Compacted High Density 5/8" Dia - 250 mm NiG Leads
CM21986	5/8"x1.5" 230V 315W 10" NiG leads
CM21987	5/8"x2" 230V 400W 10" NiG leads
CM23262	5/8"x2.5" 230V 250W 10" NiG leads
CM21988	5/8"x2.5" 230V 400W 10" NiG leads
CM21989	5/8"x3" 230V 500W 10" NiG leads
CM21990	5/8"x4" 230V 600W 10" NiG leads
CM21991	5/8"x5" 230V 750W 10" NiG leads
CM21992	5/8"x6" 230V 1000W 10" NiG leads
CM21993	5/8"x7" 230V 1000W 10" NiG leads
CM21994	5/8"x8" 230V 1250W 10" NiG leads
CM22740	5/8"x9" 230V 1250W 10" NiG leads
CM21995	5/8"x10" 230V 2000W 10" NiG leads
CM21996	5/8"x12" 230V 1800W 10" NiG leads

Part No.	High Density 1/4" Dia J T/C - 1000 mm NiG Leads
CM24672	1/4" x 1.5" 230V 175W J Thermocouple Built in, 1m NiG
CM24673	1/4" x 2" 230V 200W J Thermocouple Built in, 1m NiG
CM24674	1/4" x 2.5" 230V 250W J Thermocouple Built in, 1m NiG
CM24675	1/4" x 3"L 230V 300W J Thermocouple Built in, 1m NiG
CM24676	1/4" x 4" 230V 350W J Thermocouple Built in, 1m NiG

Low Density Metric Cartridges

NON-COMPACTED LOW DENSITY

Manufactured, by supporting a helically coiled resistance wire wound on a refractory rod then inserted into a stainless steel tube. The remaining space is filled with magnesium oxide. This assembly is inserted into the exact tolerance-machined tube and sealed.

Part No.	Non Compacted Low Density 10mm Dia - 300 mm NiG Leads
CM16806	10mm x 50L" reamed hole 240V 70W 12" NiG leads
CM16821	10mm x 60L" reamed hole 240V 90W 12" NiG leads
CM16822	10mm x 70L" reamed hole 240V 110W 12" NiG leads
CM16807	10mm x 75L" reamed hole 240V 120W 12" NiG leads
CM16823	10mm x 80L" reamed hole 240V 130W 12" NiG leads
CM16824	10mm x 90L" reamed hole 240V 150W 12" NiG leads
CM16808	10mm x 100L" reamed hole 240V 170W 12" NiG leads
CM16809	10mm x 125L" reamed hole 240V 220W 12" NiG leads
CM16810	10mm x 150L" reamed hole 240V 270W 12" NiG leads
CM16825	10mm x 175L" reamed hole 240V 320W 12" NiG leads
CM16811	10mm x 200L" reamed hole 240V 360W 12" NiG leads
CM16826	10mm x 225L" reamed hole 240V 410W 12" NiG leads
CM16812	10mm x 250L" reamed hole 240V 460W 12" NiG leads
CM16827	10mm x 275L" reamed hole 240V 510W 12" NiG leads
CM16828	10mm x 300L" reamed hole 240V 560W 12" NiG leads

Part No.	Non Compacted Low Density 12mm Dia - 300 mm NiG Leads
CM17551	12mm x 50L" reamed hole 240V 90W 12" NiG leads
CM17552	12mm x 60L" reamed hole 240V 110W 12" NiG leads
CM17553	12mm x 70L" reamed hole 240V 130W 12" NiG leads
CM17554	12mm x 75L" reamed hole 240V 150W 12" NiG leads
CM17555	12mm x 80L" reamed hole 240V 160W 12" NiG leads
CM17556	12mm x 90L" reamed hole 240V 180W 12" NiG leads
CM17557	12mm x 100L" reamed hole 240V 200W 12" NiG leads
CM17558	12mm x 125L" reamed hole 240V 260W 12" NiG leads
CM17559	12mm x 150L" reamed hole 240V 320W 12" NiG leads
CM17560	12mm x 175L" reamed hole 240V 380W 12" NiG leads
CM17561	12mm x 200L" reamed hole 240V 440W 12" NiG leads
CM17562	12mm x 225L" reamed hole 240V 500W 12" NiG leads
CM17563	12mm x 250L" reamed hole 240V 550W 12" NiG leads
CM17564	12mm x 275L" reamed hole 240V 610W 12" NiG leads
CM17565	12mm x 300L" reamed hole 240V 670W 12" NiG leads

Part No.	Non Compacted Low Density 14mm Dia - 300 mm NiG Leads
CM16814	14mm x 50L" reamed hole 240V 100W 12" NiG leads
CM16829	14mm x 60L" reamed hole 240V 130W 12" NiG leads
CM16830	14mm x 70L" reamed hole 240V 160W 12" NiG leads
CM16815	14mm x 75L" reamed hole 240V 170W 12" NiG leads
CM16831	14mm x 80L" reamed hole 240V 180W 12" NiG leads
CM16832	14mm x 90L" reamed hole 240V 210W 12" NiG leads
CM16816	14mm x 100L" reamed hole 240V 240W 12" NiG leads
CM16817	14mm x 125L" reamed hole 240V 310W 12" NiG leads
CM16818	14mm x 150L" reamed hole 240V 370W 12" NiG leads
CM16833	14mm x 175L" reamed hole 240V 440W 12" NiG leads
CM16819	14mm x 200L" reamed hole 240V 510W 12" NiG leads
CM16834	14mm x 225L" reamed hole 240V 580W 12" NiG leads
CM16820	14mm x 250L" reamed hole 240V 650W 12" NiG leads
CM16835	14mm x 275L" reamed hole 240V 720W 12" NiG leads
CM16836	14mm x 300L" reamed hole 240V 780W 12" NiG leads

Part No.	Non Compacted Low Density 16mm Dia - 300 mm NiG Leads
CM17566	16mm x 50L" reamed hole 240V 120W 12" NiG leads
CM17567	16mm x 60L" reamed hole 240V 150W 12" NiG leads
CM17568	16mm x 70L" reamed hole 240V 180W 12" NiG leads
CM17569	16mm x 75L" reamed hole 240V 190W 12" NiG leads
CM17570	16mm x 80L" reamed hole 240V 210W 12" NiG leads
CM17571	16mm x 90L" reamed hole 240V 240W 12" NiG leads
CM17572	16mm x 100L" reamed hole 240V 270W 12" NiG leads
CM17573	16mm x 125L" reamed hole 240V 350W 12" NiG leads
CM17574	16mm x 150L" reamed hole 240V 430W 12" NiG leads
CM17575	16mm x 175L" reamed hole 240V 510W 12" NiG leads
CM17576	16mm x 200L" reamed hole 240V 580W 12" NiG leads
CM17577	16mm x 225L" reamed hole 240V 660W 12" NiG leads
CM17578	16mm x 250L" reamed hole 240V 740W 12" NiG leads
CM17579	16mm x 275L" reamed hole 240V 820W 12" NiG leads
CM17580	16mm x 300L" reamed hole 240V 900W 12" NiG leads

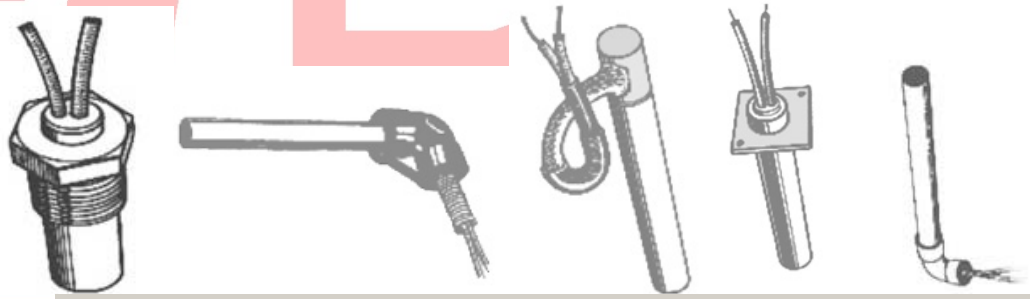
Low Density Imperial Cartridges

Part No.	Non Compacted Low Density 3/8" Dia - 300 mm NiG Leads
CM6021	3/8" x 1.5" reamed hole 120V 50W 12" NiG leads
CM3083	3/8" x 2" reamed hole 240V 70W 12" NiG leads
CM10487	3/8" x 2.5" reamed hole 240V 90W 12" NiG leads
CM12982	3/8" x 3" reamed hole 240V 120W 12" NiG leads
CM6061	3/8" x 3.5" reamed hole 240V 140W 12" NiG leads
CM14447	3/8" x 4" reamed hole 240V 160W 12" NiG leads
CM6062	3/8" x 4.5" reamed hole 240V 190W 12" NiG leads
CM5766	3/8" x 5" reamed hole 240V 210W 12" NiG leads
CM10940	3/8" x 6" reamed hole 240V 260W 12" NiG leads
CM6063	3/8" x 6.5" reamed hole 240V 280W 12" NiG leads
CM10941	3/8" x 7" reamed hole 240V 310W 12" NiG leads
CM13288	3/8" x 9" reamed hole 240V 400W 12" NiG leads

Part No.	Non Compacted Low Density 1/2" Dia - 300 mm NiG Leads
CM6083	1/2"x 1.5" reamed hole 240V 60W 12" NiG leads
CM13082	1/2"x 2" reamed hole 240V 90W 12" NiG leads
CM12400	1/2"x 2.5" reamed hole 240V 130W 12" NiG leads
CM10105	1/2"x 3" reamed hole 240V 160W 12" NiG leads
CM6066	1/2"x 3.5" reamed hole 240V 190W 12" NiG leads
CM8608	1/2"x 4" reamed hole 240V 220W 12" NiG leads
CM6067	1/2"x 4.5" reamed hole 240V 250W 12" NiG leads
CM6299	1/2"x 5" reamed hole 240V 280W 12" NiG leads
CM6068	1/2"x 5.5" reamed hole 240V 310W 12" NiG leads
CM14725	1/2"x 6" reamed hole 240V 350W 12" NiG leads
CM6069	1/2"x 6.5" reamed hole 240V 380W 12" NiG leads
CM10981	1/2"x 7" reamed hole 240V 410W 12" NiG leads
CM14865	1/2"x 8" reamed hole 240V 470W 12" NiG leads
CM6020	1/2"x 10" reamed hole 240V 600W 12" NiG leads
CM5350	1/2"x 12" reamed hole 240V 720W 12" NiG leads

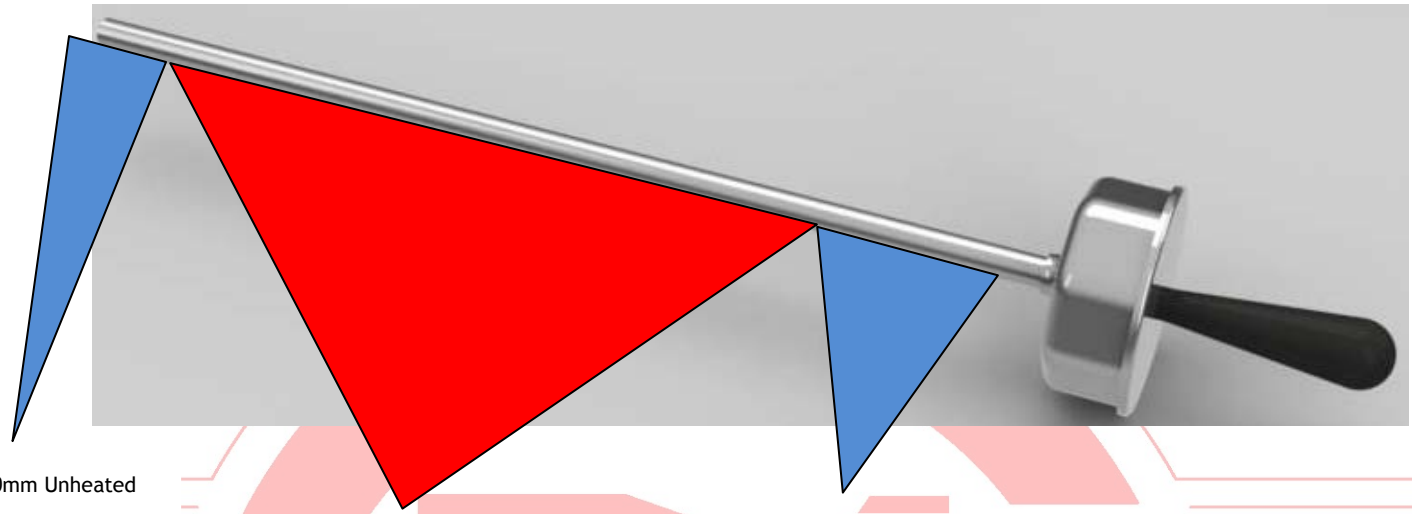
Part No.	Non Compacted Low Density 5/8" Dia - 300 mm NiG Leads
CM13084	5/8" x 2" reamed hole 240V 120W 12" NiG leads
CM11424	5/8" x 2.5" reamed hole 240V 160W 12" NiG leads
CM13850	5/8" x 3" reamed hole 240V 200W 12" NiG leads
CM9899	5/8" x 3.5" reamed hole 240V 240W 12" NiG leads
CM10757	5/8" x 4" reamed hole 240V 270W 12" NiG leads
CM14567	5/8" x 5" reamed hole 240V 350W 12" NiG leads
CM10942	5/8" x 6" reamed hole 240V 430W 12" NiG leads
CM10263	5/8" x 7" reamed hole 240V 510W 12" NiG leads
CM10977	5/8" x 8" reamed hole 240V 590W 12" NiG leads
CM6298	5/8" x 9" reamed hole 240V 670W 12" NiG leads
CM6070	5/8" x 1.5" reamed hole 240V 80W 12" NiG leads
CM10807	5/8" x 10" reamed hole 240V 750W 12" NiG leads
CM8058	5/8" x 11" reamed hole 240V 820W 12" NiG leads
CM6023	5/8" x 12" reamed hole 240V 900W 12" NiG leads

OPTIONS & EXTRAS.



Plug - Brass BSP	For screwing into water tanks.
Plug - S/S BSP	For screwing into chemical / abrasive tanks.
Elbow (Copper)	For reinforced cable strength at bend.
Elbow (Stainless Steel)	For extra robust strength and chemical resistance.
Flanged (Round or Square)	For mounting stability and strength.
Tab	For lead and element stability in moving applications.
Right Angle Cable Entry	For applications where leads need to be diverted to side.
Moisture Proof	In wet / moist areas (not waterproofed to immersion).
Thermocouple	Built into body for fast reaction and control performance.
Lead Options	NiG (Nickle, glass insulated - stranded) Steel Braided NiG Steel Conduit

Bolt Heaters



Bolt Heaters are used as an aid to tighten large bolts in heavy machinery and equipment. Heaters are sized for easy insertion into a drilled hole in the bolt. The rapid heating of the bolt expands it, allowing further tightening of the nut. The heater is then de-energised and removed. As the bolt cools, its contraction back to original size provides a tight fit.

Bolt heaters are constructed with one of the industries most efficient and highest quality heating elements, Hi-density (swaged) Cartridge Heaters. With close tolerance fits, watt densities of 100 watts per square inch are obtainable – 65% higher than standard cartridge or tubular elements can deliver. The higher wattage on Hi-Density Bolt Heaters means quicker heat up time and minimum heat loss to the area surrounding the bolt.

Features

- High Density Construction
- Conduit Box with Knockouts
- Wooden Handle
- High Temperature Lead Wires-250°C
- Optional SJO Cord or Post Terminals
- Optional Quick Disconnect Plugs

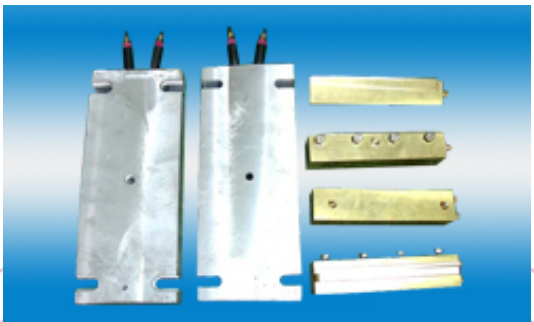
Typical Industries

- Power Plants
- Shipyards
- Large Machinery and Die Manufacturers
- Construction
- Boiler Manufacturers

Typical Applications

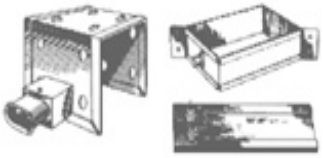
- Large Compressors
- Turbines
- Die Block
- Large Cylinders
- Engine Head
- Pressure Vessels

Flat and Shaped Elements





FLAT & SHAPED MICA INSULATED ELEMENTS



Metal sheathed mica insulated plate elements where cylindrical clamping is not possible. These elements are generally manufactured with a heavy steel backing plate to specifications / sizes and can have built in temperature sensors for excellent control.

Element Technical Data

General Manufacturing Data	
Minimum Length	30mm
Maximum Length	1000mm
Minimum Width	30mm
Maximum Width	500mm
Minimum Voltage	110V
Maximum Voltage	415V
Maximum Watts Density	6 Watts/cm^2
- without clamping plate	3.5 Watts/cm^2
- with clamping plate	6 Watts/cm^2
Maximum element temperature	350°C

TUBULARS CAST-IN METAL

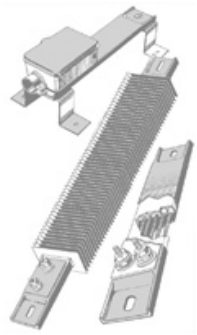


Manufactured to customer specifications. They can be supplied in many shapes and configurations to enable high temperature heat transfer. Water cooling pipes can be cast in to speed temperature cooling. These elements provide excellent life span along with incredible durability in all industrial applications.

Element Technical Data

General Manufacturing Data	
Minimum Length	30mm
Maximum Length	1000mm
Minimum Width	30mm
Maximum Width	500mm
Minimum Voltage	110V
Maximum Voltage	415V
Maximum Watts Density	6 Watts/cm^2

CERAMIC STRIP HEATER (In Stock)

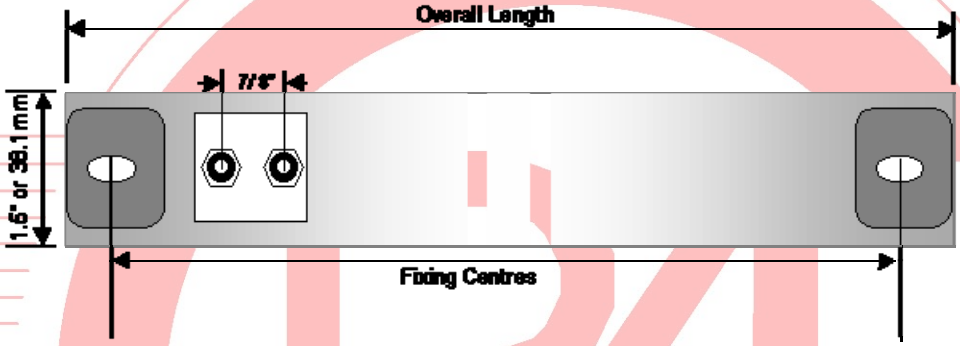


The strip heater, being a robust uniform generator of heat, provide clean and dependable energy to attain sheath temperatures up to 450°C.

The electrical insulation medium is high temperature ceramic. It is important that to maintain a long working life, the correct watt-density is selected for the application.

They can be supplied with fins for heat distribution, terminal box and mounting feet for various applications like anti-condensation and can be manufactured to a variety of lengths and wattages as required.

Element Technical Data



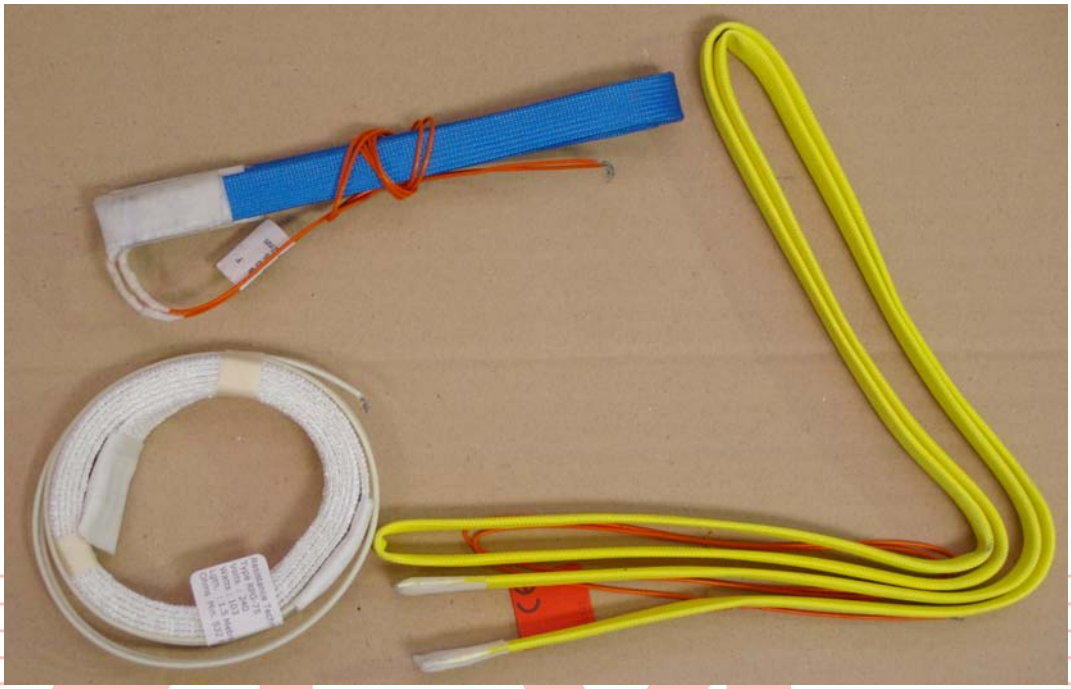
SPECIFICATIONS
Sheath dimensions, nominal 1½" wide x 5/16" thick (38.1 x 8mm)
Terminal stud projection - 0.71" (18mm)
Fastening slot - 0.5" x 0.28" (12.5mm x 7mm)
Terminal connection stud - 2 BA
Sheath material - 0.8mm cold drawn mild steel (zinc plated)
Power variation from the specified value - up to ±10%

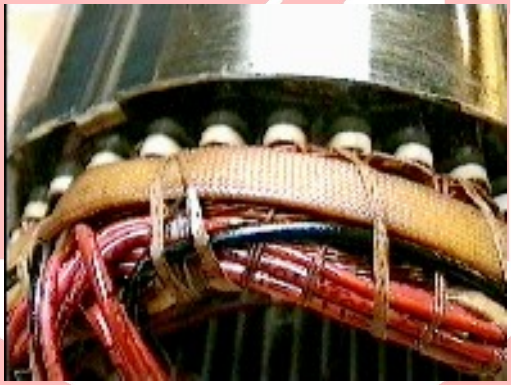
STOCK SIZES AVAILABLE

Order Code	Wattage				Overall Length (mm)	Fixing Centres (mm)
	XBA	XCA	XDA	XEA		
SO20	-	150	200	-	203	175
SO27	250	350	500	-	267	240
SO30	270	475	-	-	305	280
SO33	-	100	-	-	330	302
SO39	350	-	850	1000	387	360
SO45	-	-	-	500	454	424
SO50	550	900	1100	1300	495	468
SO53	600	-	-	-	533	504
SO60	650	1200	-	-	603	572
SO65	750	-	1500	-	648	618
SO67	750	1250	1600	-	673	640
SO77	1000	1500	1800	2200	775	748
SO85	-	-	3388	-	851	823
SO91	1150	-	2200	-	914	885
SO108	1300	2100	-	-	1080	1052

Variations to the above standard sizes can be manufactured as specials.

Flexible Elements





Element Applications

R A Colvin tape and flexible elements are generally used for applications which require a gentle warming. Due to their flexibility they are ideal to affix to uneven surfaces or coiling around pipe work. Due to their low power rating, it is advisable to insulate (lag) the structure being heated in order to control the losses of heat.

Frost protection	Thinning of liquids	Electrical cabinets	Incubators
Food cabinets	De-icing	Horticulture	Biochemistry

SILICONE RUBBER BLANKET ELEMENTS



Blanket elements are very flexible and they follow most single plane contours. They are able to withstand a uniform pressure of 200 lb. in^2 and can be tied, clamped or bonded into position.

These elements offer a gentle and very uniform heat distribution making the idea for any warming application requiring even heating.

Element Technical Data

The blankets and tapes consist of an element nichrome wire sandwiched between two sheets of fibreglass cloth impregnated with silicone rubber.

SPECIFICATIONS	STANDARDS
Maximum Size (Blankets)	1050 mm x 3000 mm
Maximum Length (Tape Heaters)	6000 mm
Thickness	3 mm
Minimum Surface Temperature	-70°C
Maximum Surface Temperature	200°C
Surface Power Density	Up to 0.5 w/cm^2
Maximum Size (Blankets)	1050 mm x 3000 mm

Element Options & Extras

- Built in Thermocouple (K or J)
- Hole in element winding area (specify location and ø)
- Cut out in element winding area (specify location and size)
- Eyelet in element winding area
- Two silicone leads
- 2 core silicone lead
- 3 core silicone lead

SILICONE RUBBER TAPE HEATERS Refer Technical Data Above



Silicone Rubber Tape Heaters are created using the same manufacturing process as the flexible blanket elements - it is only the shape which varies. In applications where a standard pre-cut size is not suitable, we can usually meet the special needs of special lengths, voltages and wattages.
The technical data for Flexible Blanket Elements applies to both blanket and tapes.

Element Options & Extras

- Built in Thermocouple (K or J)
- Eyelet in element winding area
- Two silicone leads
- 2 core silicone lead
- 3 core silicone lead

FSR FLEXIBLE TAPE RANGE (In Stock)

These tape heaters primarily designed for pipe heating applications - the stock FSR tape heaters can maintain pipe temperature up to 150°C.
Tapes are 240V and come with 1m leads with 40mm cold each end. Other sizes, voltage and wattages can be manufactured on request.

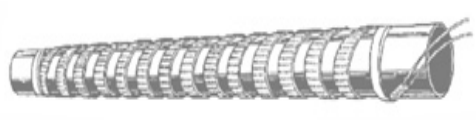
PARALLEL CIRCUIT WATERPROOF TAPE HEATERS (In Stock)

This tape being a parallel circuit element is most convenient in allowing a termination at each end - especially so over long runs. For rigorous applications this fully sealed tape heater is ideal. The tape is cutable - out of every cut length of tape, each end circuit is cold for termination.

The tape is in stock and can be ordered by the metre or roll along with termination kits.

ORDER CODE	WATTAGE	VOLTS	NOTES
FKSR / 30	30 watts per metre	240V	Pipe maximum temperature 110°C. Maximum length per each circuit is 60m
FKSR / 50	50 watts per metre	240V	Pipe maximum temperature 110°C. Maximum length per each circuit is 60m
FKSR TK	Termination kit - silicone rubber termination sleeves and PVC waterproof gland		

FIBREGLASS INSULATED TAPE HEATERS (In stock)



The FKPG heating tape are individually insulated and integrally woven into a heavy duty glass fibre carrier. The standard cold length is 500mm.

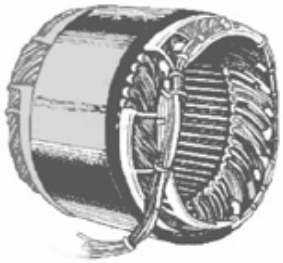
Maximum surface maintenance temperature

- **350° C for 75w/m tape**
- **200° C for 150w/m tape**

Temperature control system is recommended for both sizes.(# = Stocked items)

TAPE LENGTH		VOLTS	75 Watts / metre		150 Watts / metre	
METRES	INCHES		WATTS	ORDER CODE	WATTS	ORDER CODE
1.5	59	240	105	**FKPG75-01 (#)**	210	**FKPG150-01**
2.0	79	240	140	**FKPG75-02**	300	**FKPG150-02 (#)**
2.5	98	240	190	**FKPG75-2.5 (#)**	-	**-**
3.0	118	240	240	**FKPG75-03**	400	**FKPG150-03**
4.0	157	240	300	**FKPG75-04**	570	**FKPG150-04 (#)**
5.0	197	240	380	**FKPG75-05**	720	**FKPG150-05**
6.0	236	240	445	**FKPG75-06**	830	**FKPG150-06**
7.0	276	240	515	**FKPG75-07**	1030	**FKPG150-07**
8.0	315	240	620	**FKPG75-08**	1090	**FKPG150-08**
9.0	354	240	650	**FKPG75-09**	1455	**FKPG150-09**
12.0	472	240	890	**FKPG75-12**	1780	**FKPG150-12**
15.0	591	240	1065	**FKPG75-15**	2135	**FKPG150-15**

ANTI-CONDENSATION TAPE HEATERS FOR MOTORS (In stock)



The **ACM** range of electric tape elements are typically used in electric motors, generators and alternators which operate in damp, humid or wet conditions. The tapes are sized to fit around the stator pack covering at least 70% of the circumference.

ACM tape heaters are manufactured using a Glass Fibre Braid to Temperature Class C. They are supplied with 500mm cold leads (Tefzel).

Flameproof heaters and special sizes & Voltages are also available on request.

ORDER CODE	LENGTH (mm)	WATTAGE @ 220V	SUIT MOTOR FRAME SIZE
ACM00B	203L x 15mm Wide	8W	80
ACM0B	305L x 15mm Wide	25W	90
ACM1B	432L x 15mm Wide	26W	100
ACM2B	686L x 15mm Wide	21W	112
ACM3B	686L x 15mm Wide	40W	132 & 160
ACM4B	762L x 15mm Wide	26W	180 & 200
ACM5B	1016L x 15mm Wide	42W	225 & 250
ACM6B	1067L x 15mm Wide	54W	280
ACM7B	1473L x 15mm Wide	65W	280
ACM8B	1702L x 15mm Wide	99W	315

Motor winding class F (155°C)

Immersion Elements





AQUACULTURE INDUSTRY

The worked with the Australian Aquaculture Industry to accomplish an end design that has proven to be both versatile and dependable. With thanks to the Industry we have worked with in design development, we now have a very successful, purpose built element available.

These hanging 'Over the Side' type elements offer excellent versatility. One element can be moved from one tank to another - or multiple heaters can double as 'boosters' for a faster heat up time.

The design has a 'hanging depth' (Total Length) of 1000mm. The hot zone area (Heated Length) occupies less than 300mm at the bottom (this area must be covered by water at all times). Hence, the element has a 700mm cold zone from the hanging bend down to the hot zone. *The thermostat is fully adjustable*.

SHEATH MATERIAL	POWER RATING	CONTROL	APPLICATION
ø 0.420 Titanium	3.6kW 240V 15amp	0-40° C Thermostat	Salt Water
ø 0.420 Titanium	2.4kW 240V 10amp	0-40° C Thermostat	Salt Water
ø 0.420 Titanium	2.0kW 240V 8.3amp	0-40° C Thermostat	Salt Water
ø 0.420 Incoloy800	3.6kW 240V 15amp	0-40° C Thermostat	Fresh Water
ø 0.420 Incoloy800	2.4kW 240V 10amp	0-40° C Thermostat	Fresh Water
ø 0.420 Incoloy800	2.0kW 240V 8.3amp	0-40° C Thermostat	Fresh Water

For Aquaculture applications requiring other heating systems OR variations on the above criteria, please contact R A Colvin

ELEMENTS FOR STERILISERS (Not Stocked)

The food industry often has a requirement for sterilising equipment. In our modern age of environmental awareness, the output of water wastage via giant boilers has become a real issue. However, by far the biggest issue faced by today's food processing is hygiene. Bacteria are of course the primary concern - and the safest way to kill bacteria is to apply more heat to it than it can withstand.



MEAT INDUSTRY

- R A Colvin has a stock range of 'Knife Sterilisers' designed to operate in small knife holders, which are regulated at a pre-set temperature. There are 2 main designs for this specific application.

ORDER CODE	DESCRIPTION
TM29617	Knife Steriliser 92°C, Overside, 240V 2400W, 1m lead & Plug
TM29804	Knife Steriliser 90° C, 1.5"BSP Stainless Steel Screw In boss, 240V 750W, 1m lead & Plug

OTHER FOOD INDUSTRY - **Heating elements and indeed heating systems can be specifically designed to cater to the needs of each customer. Please contact us.**

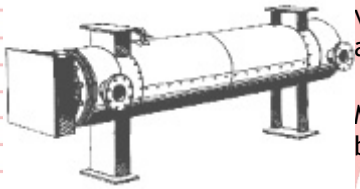
DRUM IMMERSION HEATERS



We have a full range of Drum heaters including direct immersion heaters specifically designed for standard size storage drums.

For further data on these heaters and other drum heaters, please contact us.

FLANGED & CIRCULATION HEATING SYSTEMS

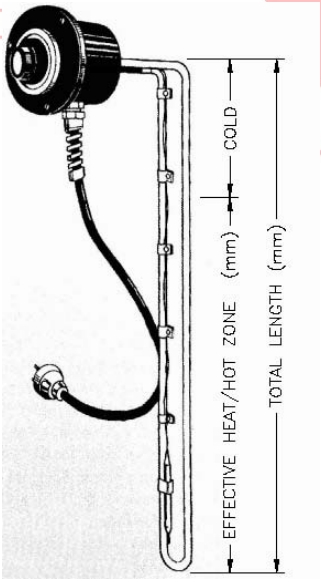


This is the mother of immersion heaters. Flanged elements are capable of heating massive volumes with high power input. They can be mounted in still vessels or be manufactured as a part of an in-line circulation system (pictured)

Moving liquids are pumped through the 'inlet' valve and then pass over the massed heater bundle inside. From there the liquids pass back into the process via the 'outlet' valve.

Systems range from small 5kW to a mammoth 400kW and can have single or multiple chambers (as shown). They can be mounted vertically or horizontally - manufactured to heat oils, waters, chemicals and gasses.

OVERSIDE IMMERSION HEATERS (Not Stocked)



Over the side immersion heaters as their name describes, simply - they hang over the side edge of a tank or vessel. They are available in many different sizes with various tube sheath materials and extras. The hot zone or heated length is required to be immersed in liquid at all times when the heater is operational. The cold zone is advantageous in tanks that may not hold full fluid levels or suffer a high rate of evaporation.

Standard designs (below) are readily available however many unique designs can be manufactured according to the requirements of our clients. These needs may relate to heat up times, the caustic nature of liquids or even a necessity for complete electronic, precise control.

A very small sample of 'standard' **Over-Side Immersion** *Heaters are listed in the table below. Should you require a variation on these, please email* (click on link) colv@bigpond.com *us with your specifications.*

ORDER CODE	WATTS @ 240 VOLTS	SHEATH MATERIAL	TOTAL LENGTH	HEATED LENGTH	HAIRPIN WIDTH
LOTX20I40N	2000	INC 800	670 mm	470 mm	70 mm
LOTX30I40N	3000	INC 800	910 mm	710 mm	70 mm
LOTX40I40N	4000	INC 800	1150 mm	950 mm	70 mm
LOTX50I40N	5000	INC 800	1390 mm	1190 mm	70 mm
LOTX20S40N	2000	316 SS	670 mm	470 mm	70 mm
LOTX30S40N	3000	316 SS	910 mm	710 mm	70 mm
LOTX40S40N	4000	316 SS	1150 mm	950 mm	70 mm
LOTX50S40N	5000	316 SS	1390 mm	1190 mm	70 mm
LOTX20T40N	2000	TITANIUM	670 mm	470 mm	70 mm
LOTX30T40N	3000	TITANIUM	910 mm	710 mm	70 mm
LOTX40T40N	4000	TITANIUM	1150 mm	950 mm	70 mm
LOTX PC61	2000	LEAD	760 mm	500 mm	160mm
LOTX PC62	2500	LEAD	760 mm	530 mm	160 mm
LOTX PC71	3000	LEAD	870 mm	640 mm	160 mm
LOTX PC 81	4000	LEAD	1000 mm	770 mm	160 mm
LOTX PC91	5000	LEAD	1300 mm	1070 mm	160 mm

Note: Please specify if a fitted Thermostat is required and what temperature range you need.

Double Insulated Elements are also available on request.

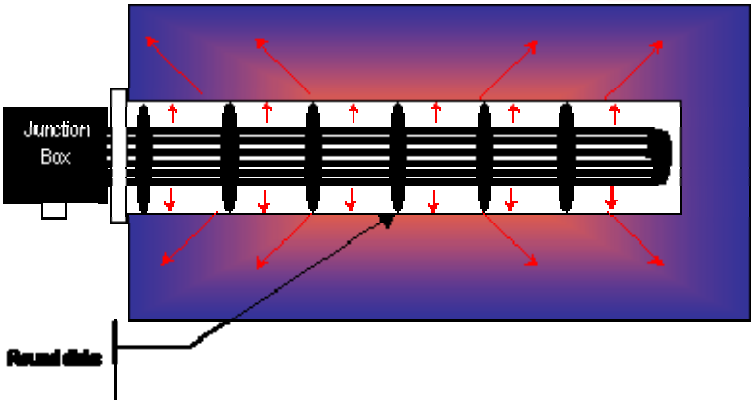
WITHDRAWABLE ELEMENTS IN POCKETS

At times it isn't convenient to fit a direct immersion element into a tank. This may be due to the substance being heated or even perhaps the tank can't be drained easily to fit, clean or replace tubular style heaters.

The solution would be an element which can radiate heat in a metal sleeve or pocket (steel, brass, copper). These are commonly used in Bitumen tanks and also in highly aggressive solutions and acids.

WITHDRAWABLE TUBULAR HEATER

The tubular sheathed hairpin elements are mounted and spaced by the round steel disks. The element radiates heat onto the pocket that in turn radiates its energy into the material being heated.



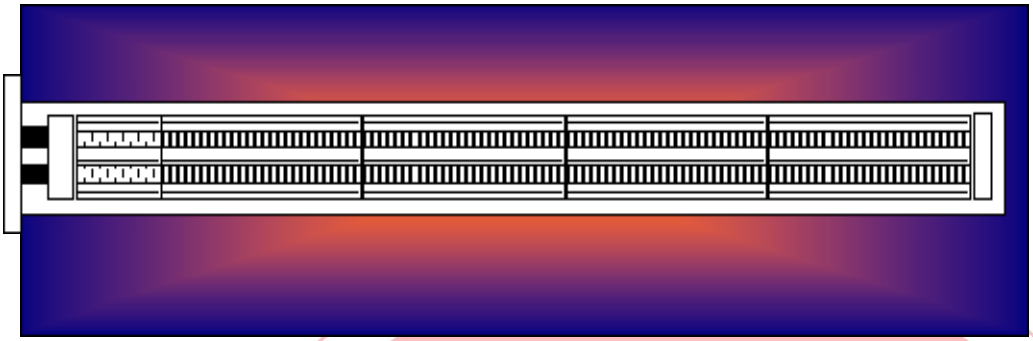
Ideal for applications where vibration (mobile trucks) are likely to occur. A very robust design.

Please Specify:

- Pocket inside ø Diameter
- Pocket Length
- Material being heated.
- Heat up times needed.

WITHDRAWABLE CERAMIC BOBBIN ELEMENTS

A low cost element suitable for heating a vast number of liquids. Best suited for applications where there is no vibration or excessive wear and tear. Ceramic bobbin elements have the added advantage of being suitable for high density heating radiating directly from the resistance wire set in refractory ceramic flutes.



Please Specify

- *Refer details required for the Withdrawable tubular element.*

Process Heating





Storage Drum Heaters & Standard Drum Ovens

R A Colvin holds a large range of standard drum heating products in stock at all times. These products generally meet the urgent demands of industry and are both convenient and very much cost effective.

FLEXIBLE RUBBER BELT HEATER



For lower temperatures up to 40° C. Suitable for light duty applications heating standard steel drums and containers. Ideal for viscous products such as oils, honey, waxes and grease and various chemicals.

Simply wrap around the drum and tighten via the spring hook assembly. It comes with or without adjustable thermostat and does require a flat surface (ie. Not a dented drum) in order to achieve a good heat transfer. **(# = STOCKED ITEM)**

ORDER CODE	DESCRIPTION
DH5230TS	Heater belt, 240V 300W 4 gal / 18 litre. Silicone rubber, with thermostat. Suits 365 - 320mm diameter drums.
DH15230TS	Heater belt, 240V 500W 12 gal / 55 litre. Silicone rubber, with thermostat. Suits 320-360mm diameter drums.
DH30230TS	Heater belt, 240V 750W. 25gal / 114 litre. Silicone rubber, with thermostat. Suits 430-480mm diameter drums.
DH55230TS (#)	Heater belt, 240V 1000W. 44gal / 200 litre. Silicone rubber, with thermostat. Suits 545-595mm diameter drums.
DH55230	Heater belt, 240V 1000W. 44gal / 200 litre. Silicone rubber, no thermostat. Suits 545-595mm diameter drums.

STAINLESS STEEL HEAVY DUTY DRUM BAND *(In Stock)*

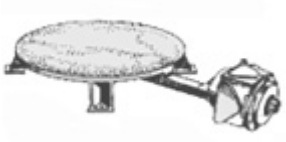
To suit standard 44 Gallon (200 litre) drums. Suitable for higher temperatures and shorter heat up times. Supplied with thermostat, lead and 3-pin 10-amp plug.



ORDER CODE: DM44TS - Stainless steel band, 240V 2400W.

BASE HOTPLATE





Manufactured from either cast alloy or hot dip galvanised steel. Both styles have thermostat control and are designed for rugged use. Ideal for products that require bottom heating or when products are being pumped. For temperatures above 60° C, use in conjunction with DH44TS band (REFER ABOVE).
Also available - the **FLAMEPROOF** base hotplate. Fitted with flameproof box with cast in elements, it's suitable for use in Class 1 Zone 1 applications.(# =STOCKED ITEM)

ORDER CODE	DESCRIPTION
DMB3158 (#)	Base hotplate, 240V 2400W, 44gal / 200 litre. Cast aluminium, thermostat, lead and 3 pin plug.
DBHM2.4ST	Base hotplate, 240V 2400W, 44gal / 200 litre. Galvanised steel, thermostat, lead and 3 pin plug.
DMBF3159T	Base hotplate, 240V 2400W, 44gal / 200 litre. Thermostat, flameproof.

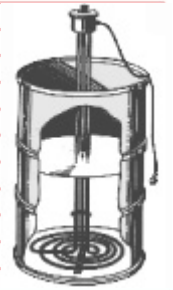
THROUGH THE BUNG HOLE IMMERSION *(Not Stocked)*



A high powered immersion element especially suited to 44 gallon drums. It's designed to heat non-viscous and non-volatile products. The vertical section of the heater is not heated therefore allowing low level heating. It comes with a thermostat adjustable 30° -110° C.

ORDER CODE: **DMDA36** - Immersion heater, 240V 3600W 15 amp.

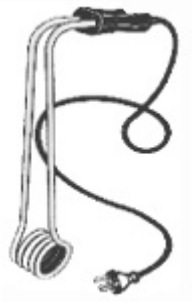
WAX IMMERSION *(Not Stocked)*



Ideal for solidified products such as waxes, cold grease or pharmaceutical products where heat penetration is difficult. The heater is placed on the solid mass and will slowly work its way down the drum as it begins to melt the product. Supplied complete with thermostat, lead and 3-pin plug.

ORDER CODE: **DMW3107** - Immersion Heater, 240V 2400W, 10 amps.

PAIL HEATERS

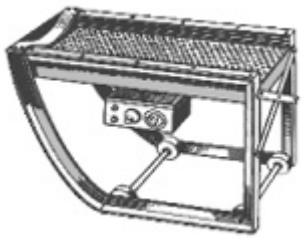


High density boiling element designed to hang over the side of smaller drums and buckets. Suitable for water based materials only. Available in resistant Incoloy 800 sheath and plated copper. Suppled with lead and 3-pin plug.

ORDER CODE: **DMPH4CI** - Immersion Heater, 240V 2400W Incoloy 800 sheath (stocked)

ORDER CODE: **DMPH4C** - Immersion Heater, 240V 2400W, Plated Copper sheath.(Not Stocked)

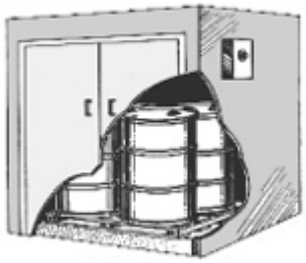
MOBILE DRUM RACK (Not Stocked)



The mobile drum rack is designed to transport drums in a horizontal position heating them via radiant heat from below. They are supplied with an energy regulator for temperature regulation

ORDER CODE: DR - Drum rack, 240V 2000W.

WARMING ROOMS / OVENS *(Standard & Custom Designs)*

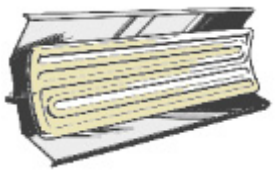


Drum heating rooms are idea for storing a quantity of drums under controlled temperatures (generally between 30° C - 70° C). Suited for products requiring a long duration of heating. The units are manufactured with double skin insulation with black heat type energy radiators and fan forced air circulation. Control is fully automatic with a digital temperature management system. **(Not Stocked)**

ORDER CODE	DESCRIPTION
DHO1	Drum oven, 240V 3ph, 7200W, single pallet 4x44 gal/200 litre drums.
DHO2H	Drum oven, 240V 3ph, 10,800W, 2 pallet side by side, 8x44 gal / 200 litre drums.
DHO2V	Drum oven, 240V 3ph, 10,800W, 2 pallets high, 8x44 gal / 200 litre drums.

Infra-Red Ceramic Emmitters

The main factors which are energy consumption via an inability to contain heat influence the need for Infra-red heating and the low cost of the heaters themselves.



Common applications:

Drying	Fusion	Softening	Evaporation	Melting	Baking	Comfort Heating

Infra-red is best described in a similar fashion to sunlight. It is not affected by draughts and open spaces - rather, like sunshine, it directs its energy by means of wavelengths towards any solid object to be absorbed. It is very efficient - and ceramic emitters transmit something in the vicinity of 96% of their energy through the glaze.

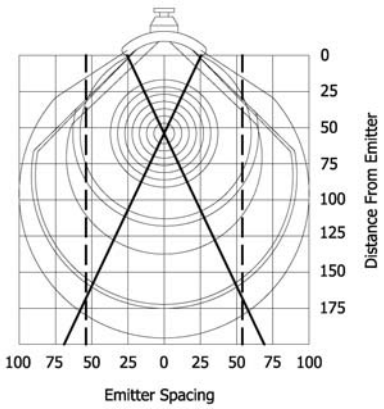
EMITTER RANGE & PERFORMANCE DATA

There are 2 primary emitters commonly used by Industry, the IR/FTE and the IR/HTE sizes (refer below for wattage available). They are often mounted in banks and elements are available with built in Thermocouple temperature sensors.

IRFTE Emitters	IRHTE Emitters
Full trough - 245mm Long / 60mm Wide	Half Trough - 245mm Long / 60mm Wide

SPECIFICATIONS ON EMITTERS								
IR / FTE	**150 Watts**	**250 Watts**	**300 Watts**	**400 Watts**	**500 Watts**	**650 Watts**	**750 Watts**	**1000 Watts**
IR / HTE		**125 Watts**	**150 Watts**	**200 Watts**	**250 Watts**	**325 Watts**	**375 Watts**	**500 Watts**
kW / Wavelength	6	10	12	16	20	26	30	40
Emitter Temp.	260˚C	370˚C	400˚C	460˚C	550˚C	615˚C	660˚C	755˚C
Operating Max. ˚C	800˚C is the maximum operating temperature permissible.							
Point at a distance of 175mm will occur	4.9	4.3	3.9	3.7	3.5	3.2	3	2.9
Heat-up, 90%, min	4.9	4.5		4		3.5		3
Material Temp ˚C	90˚C	130˚C	150˚C	180˚C	210˚C	245˚C	275˚C	300˚C

Radiant Emission Grid



The Radiant emission grid can be used to determine the proper ceramic emmiter spacing when used in an application such as infrared panel. In order to achieve an even heat panel it is critical that the emitters are spaced so that their radiant emission patterns overlap when reaching the target. The more overlap that occures, the more even the heat will be across the face of the product being heated. The area of highest radiant emission intensity for a single emitter is shown within the two dark crossed lines on the grid. In order for element emissions to overlap,the dashed line shows an intersection point at a distance of 175mm will occur if the emitters are placed a distance of 50mm apart from edge to edge. This same concept should be used to either determine the distance to place the product if using an existing panel, or placement of emitters if building a panel to guarantee radiant emission overlap.

LONG WAVE CERAMIC BULB EMITTERS (Not Stocked)

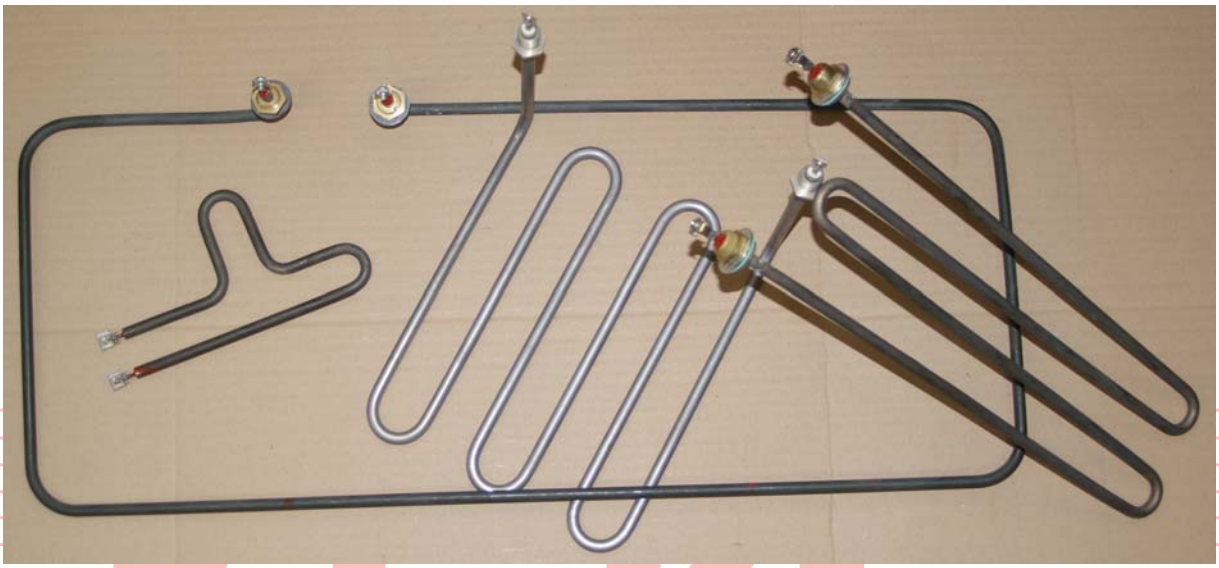


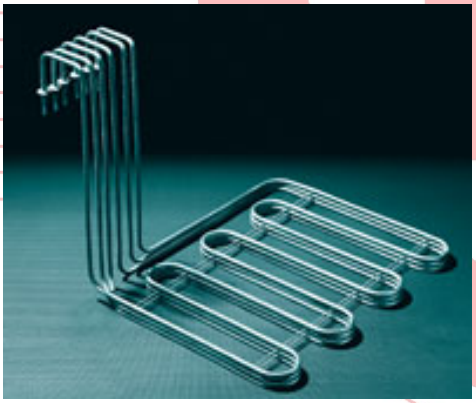
Where directional heat is required, the long wave ceramic bulb emitter is ideal. Most commonly seen in animal husbandry applications (pig, poultry farming, reptile enclosures etc.).

These bulb emitters are quite robust as compared to glass Infra-red lamps and therefore the safety factor is a real advantage. These heaters also don't omit bright UV light which can be disruptive to infant animal rearing.

Available in 100 watt and 150 watt sizes and are best mounted with our aluminium reflector and high temperature sockets.

Tubular Elements





Element Applications

Tubular elements can be formed to an infinite number of designs and patterns.

Here are just a few examples:

LIQUID IMMERSION

Hot water and steam are required for numerous Industrial and Commercial applications. For a good percentage of these, an immersed tubular element is the most efficient. inexpensive and robust solution. It is essential however that the liquid properties, volume and surface loading all be considered in the final design. For this reason, in any new application - it is recommended that you contact us for further input.

- Corrosive solutions for plating baths and acid tanks
- Fresh and salt water for Aquaculture and Sterilising Equipment
- Waxes and other substances which require a higher temperature to become workable.
- Oils and like liquids which need to be heated gently.

AIR HEATING

In this type of process the system of heating relies on the element/s to heat the air surrounding them. The watts density is dependant on the temperature and the velocity (if any) of the air or gases passing over the element. Elements can be teamed up in banks for higher energy output.

- High temperature sealed Ovens
- Low Temperature drying / warming Ovens
- Hot Zone sealed chambers on conveyor systems
- Incubators and other warming cabinets

INFRA-RED & RADIANT HEATING

Radiant or Infra-red heat is utilised best in open applications where sealing the area is not possible or practical. They effectively heat solid masses which fall in the path of the radiant heat. For this reason it is more efficient to utilise radiant heat to heat a mass or object in an open environment.

- Curing ovens
- Open Conveyor systems
- Powder Coating / Paint drying processes

METAL HEATING

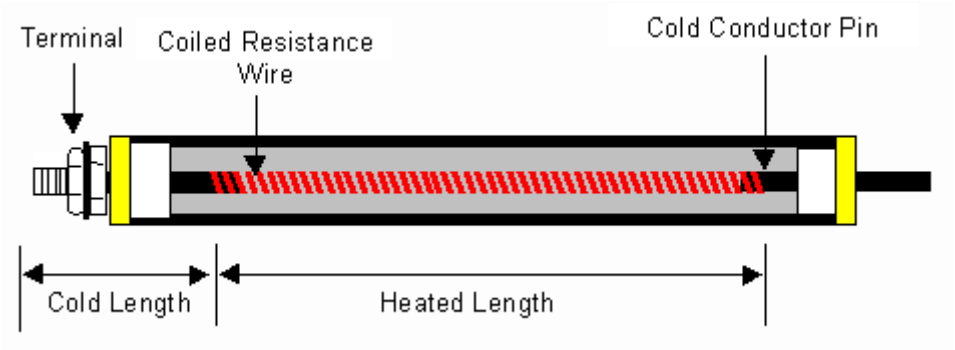
These elements are essentially designed to transfer energy (heat) onto or into a solid mass of metal. Elements can be either clamped on - or better still, cemented into a machined groove. We are leaders in this field and should you require advice, please contact us.

- Clamped onto solid mass for heat transfer
    - Cemented into machined grooves for direct mass heating - Hotrunner Manifolds

Element Technical Data

PHYSICAL CONSTRUCTION

Tubular elements consist of a resistance wire held centrally in a metal tube by compacted mineral insulation. A conductor rod is welded to both ends of the coiled resistance wire. The cold conductor rod in the tube should not be less than 40 mm.



BENDING RECOMMENDATIONS

Tubular elements are formed in their cold state by means of bending rollers. The connections between the terminal stud and the resistance wire **must not** lie on a bend. The bending diameter (Min Bend ID) should not be less than indicated in the table below 'Tubular Element Properties'.

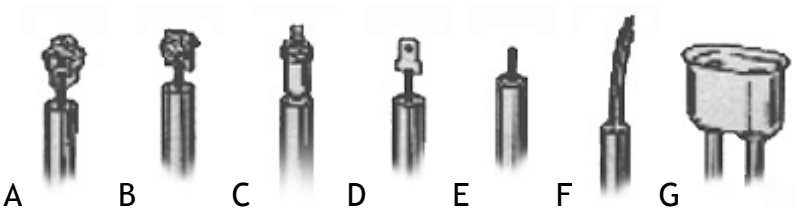
Sheath Materials Available	**Tubular Element Properties**		
Stainless Steel - 316, 321 & 304	Ø Inches	Ø mm	Min Bend ID
Incoloy - 800 & 825	0.250	6.35	20 mm
Inconel	0.315	8.00	20 mm
Titanium	0.420	10.67	32 mm
	0.520	13.21	35 mm

WHEN ORDERING SPECIFY

- Tube Diameter
- Material being heated
- The heated length in mm
- The cold zone in mm
- The voltage across the terminals
- The wattage
- The tube material and temper
- The terminals

Element Options & Extras

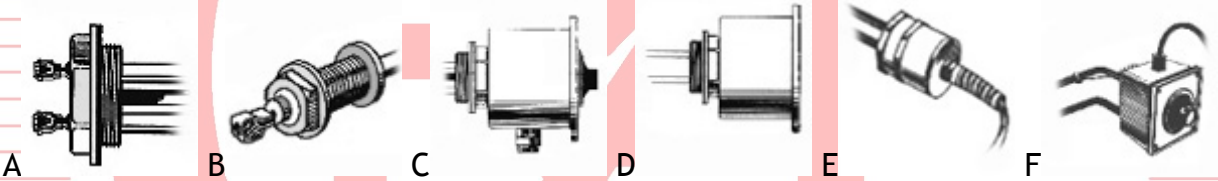
ELECTRO MECHANICAL TERMINATIONS



A B C D E F G

Type A Terminal Screw parallel to Cold pin	**Type C** Post Terminal	**Type E** Exposed terminal pin 12 mm	**Type G** Socket Plugall silver soldered to cold pin on 19 mm centres.
Type B Terminal Screw 90 degree to cold pin	**Type D** Quick connect terminal parallel to cold pin	**Type F** Cable - Fibreglass or Silicon Rubber (specify length)	

MECHANICAL FITTINGS



A B C D E F

Type A BSP Screw in - 1", 1¼", 1½, 2" & 2½" BSP Parallel thread Brass or 316SS in tapered thread 1¼" & 2"	**Type B** Glands - 3/8" or ½" BSP in brass silver soldered or 316SS tig welded	**Type C** Junction Box large, spun metal, round - painted
Type D Junction Box small, spun metal, round - painted	**Type E** Junction Box PVC, round moisture resistant epoxy pot	**Type F** Junction Box PVC, square

MACHINING DATA FOR HOTCO CEMENTED TUBULARS

NOMINAL ROLLED dia (mm)	BOTTOM RADIUS (mm)	TRACK WIDTH (mm)	TRACK DEPTH (mm)
6.4	3.3	6.66	8.0
7.94	4.18	8.36	10.0
10.6	5.56	11.11	13.0
13.23	6.87	13.74	16.0

HOTCO MANIFOLD PRECISION BENDING RECOMMENDATIONS

INCHES DIAMETER	DIAMETER (mm)	Kg/m	BEND MINIMUM ID	MAXIMUM LENGTH
0.250	6.35	0.16	20 mm	3.66 meters
0.315	8.00	0.24	25 mm	4.27 meters
0.420	10.67	0.44	30 mm	7.00 meters
0.520	13.21	0.59	35 mm	7.00 meters

FORMULA POWER CALCULATIONS *(Note: kJ/kg°K Steel = .502)*

kW = (Mass in Kg) x (kJ/Kg°) x (Temperature Rise °C) = **RESULT** ÷ 3600 + **LOSSES**

Standard tubular elements manufactured at 40w/in² = 6w/cm²

FURTHER RECOMMENDATIONS

- Manifolds operating at higher temperatures (above 250°C) would be best suited for further technical advice from our friendly staff.

  Aim to track the tubular as close to a central position as possible in order to avoid excessive losses from the outer edge of the manifold.

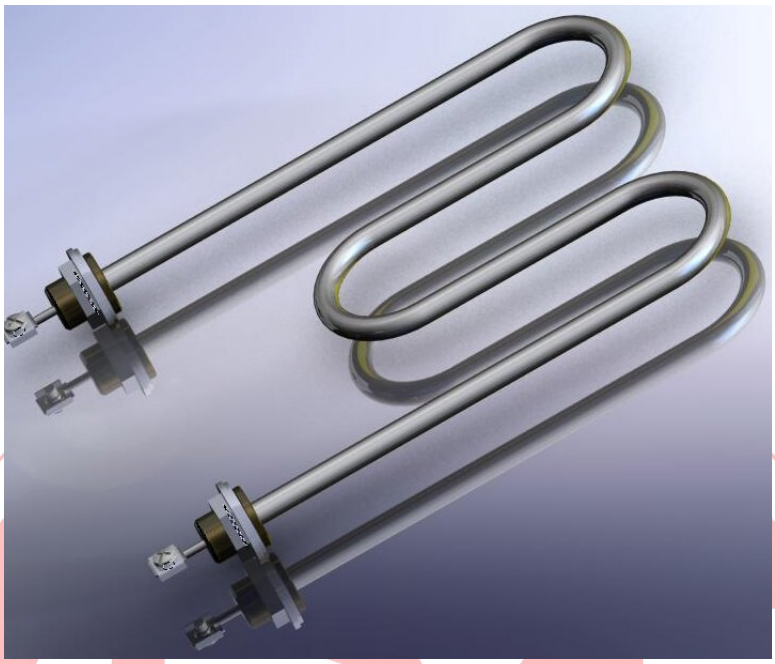
  Locate temperature sensors ideally somewhere between the heat source and the colder outer zone.

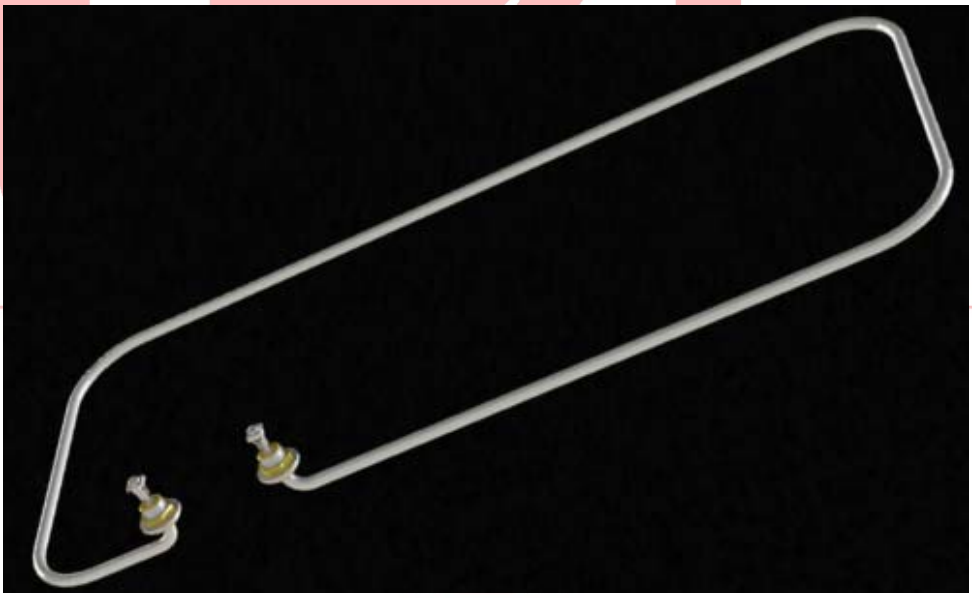
  Take into account any large masses attached to the manifold that could absorb and drag energy from the manifold.

  To avoid excessive losses insulating the manifold.

  Ensure the terminal exit does not lie on a bend - contact our staff for clarification.

Drawings



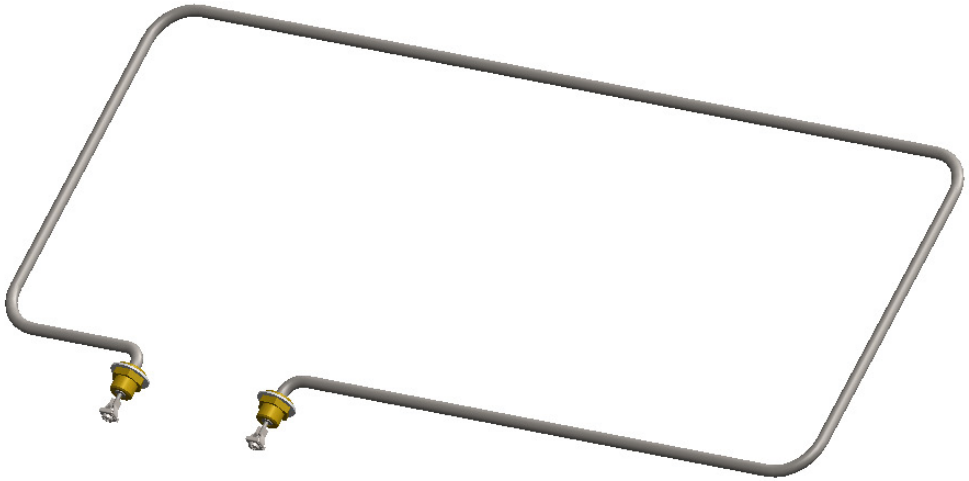


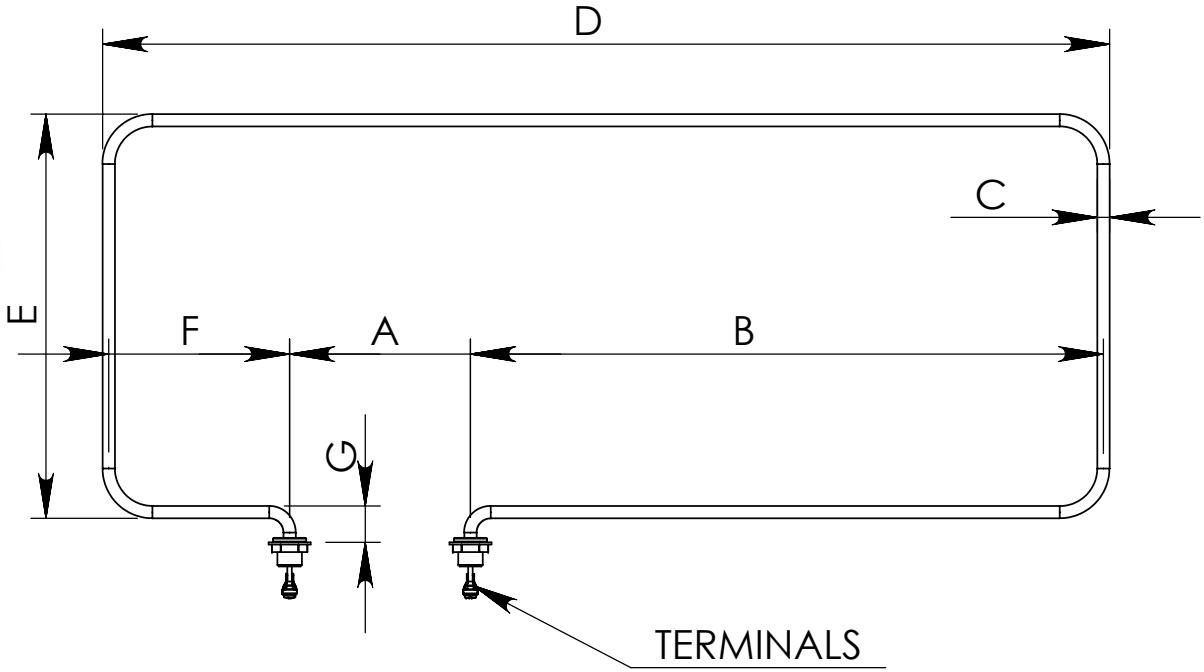
All drawings can be printed then fill out all relevant information in the boxes supplied and return the completed drawing for quoting or manufacture.

To print drawings in this section

1. Select print button on drawing that is required to be printed.
2. When print screen appears select '*Current Page*'
3. Check that the correct printer is selected.
4. Press '*OK*' or '*Enter*'

Print



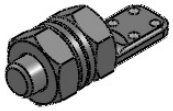


Terminals

(Please tick the relivant box
for terminal selection)

A  ☐

B  ☐

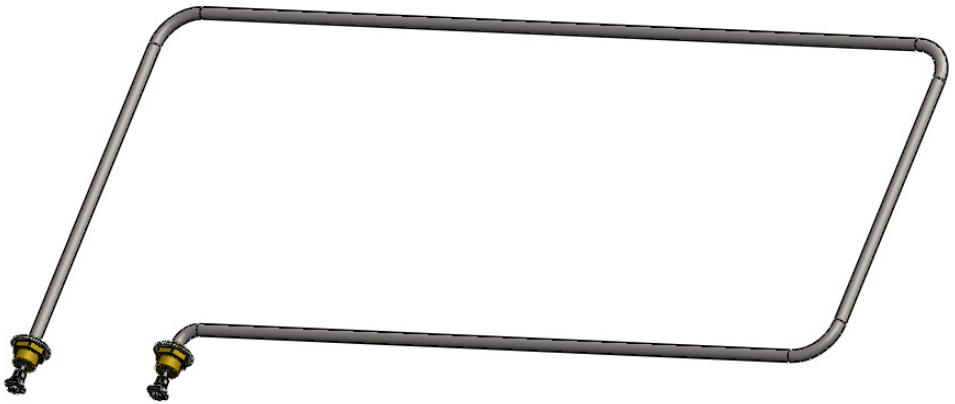
C  ☐

D  ☐

Information Required	
Dimension	Value in mm
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D	
E	
F	
G	
Element Wattage	
Wet or Dry Bushes	
Bush Thread Size 3/8"BSP or 1/2"UNF	

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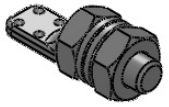
Information Required	
Dimension	Value in mm
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E	
Element Wattage	
Wet or Dry Bushes	
Bush Thread Size 3/8"BSP or 1/2"UNF	

Terminals

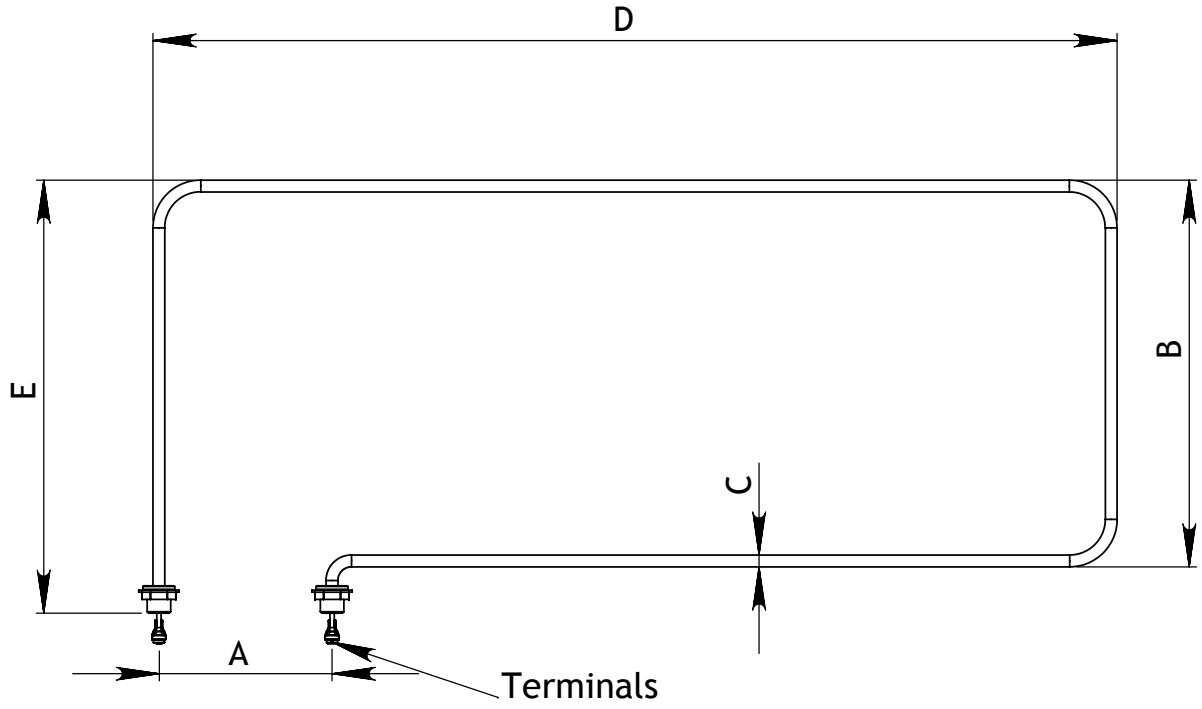
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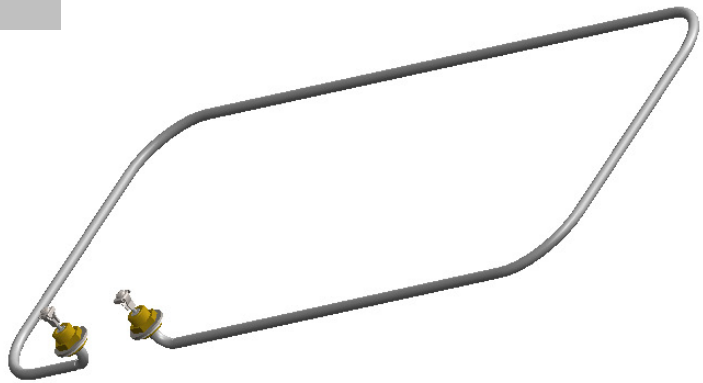
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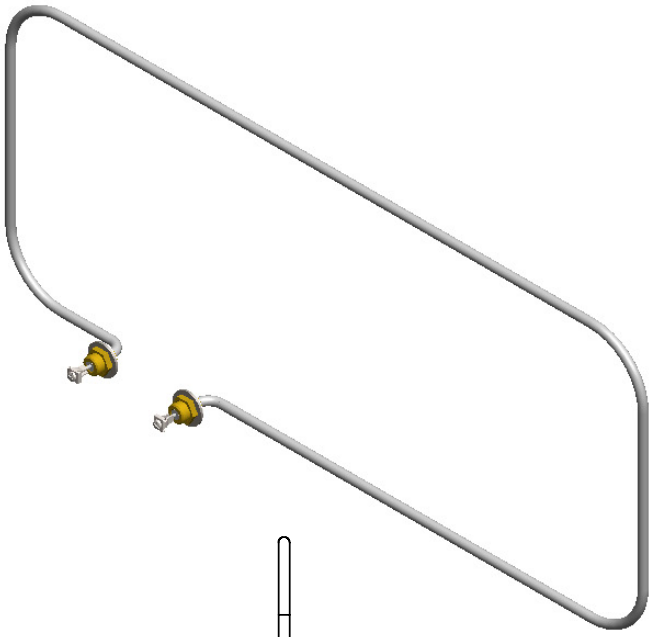
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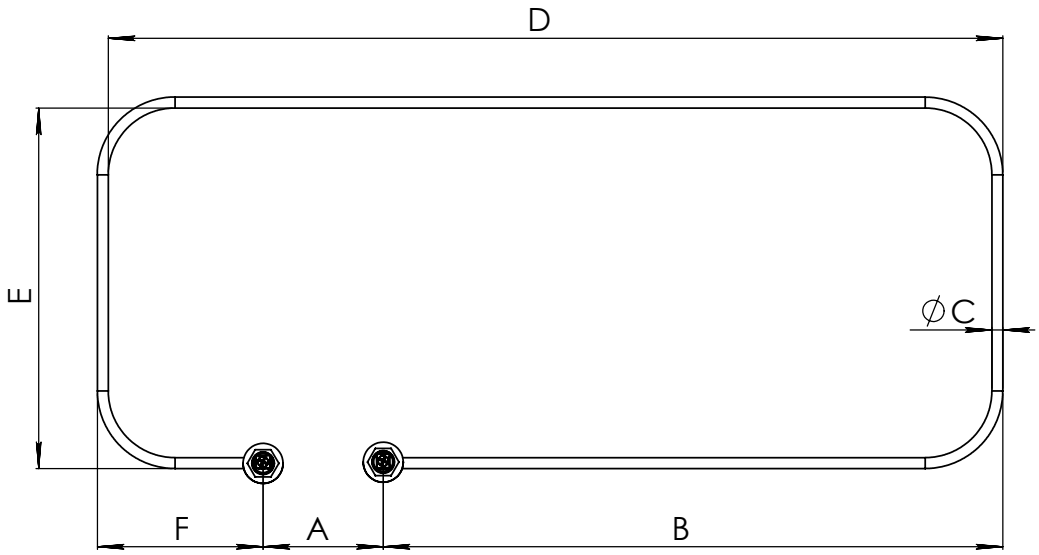


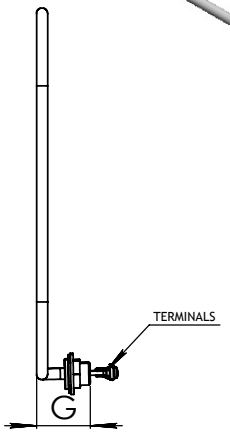
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Terminals

(Please select the Relivant box for terminal selection)

A  ☐

B  ☐

C  ☐

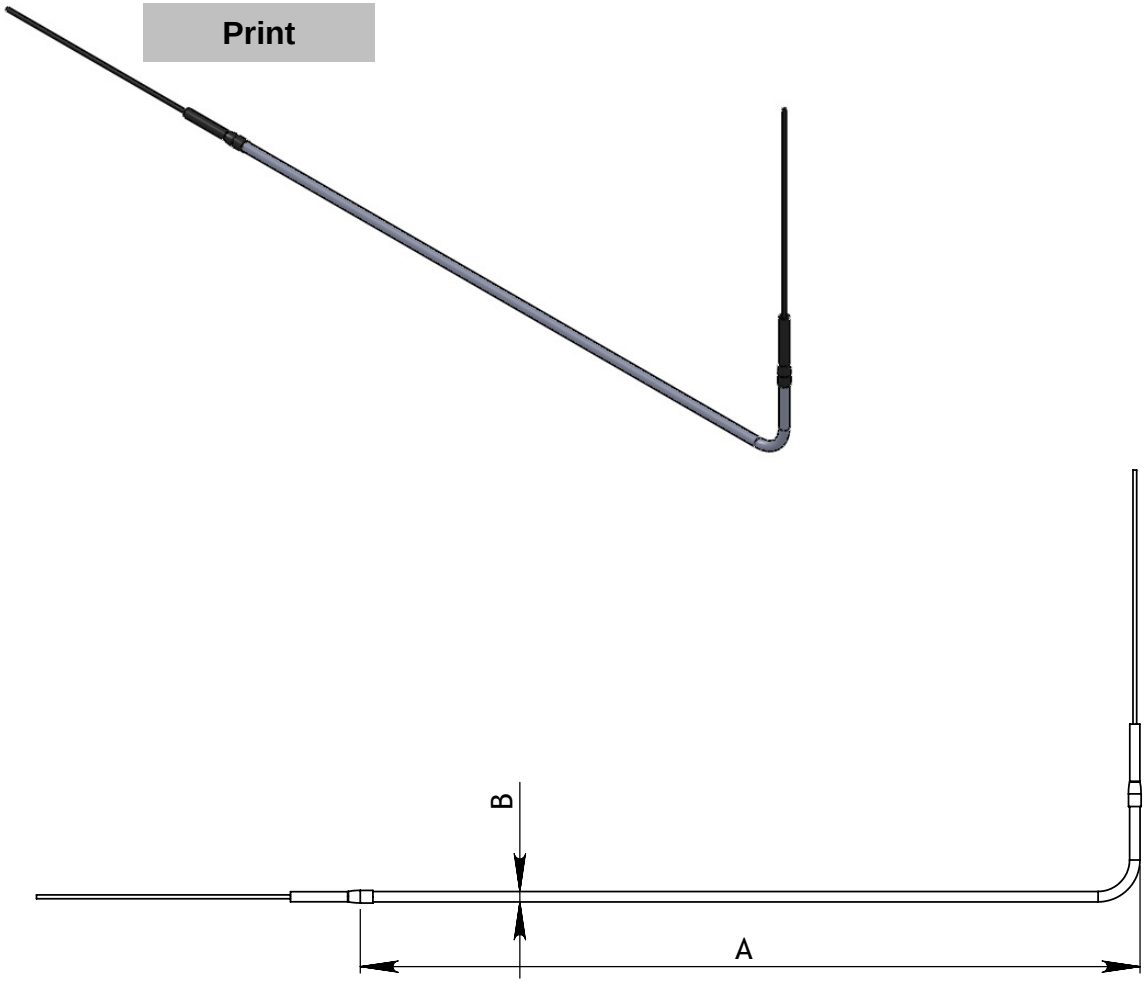
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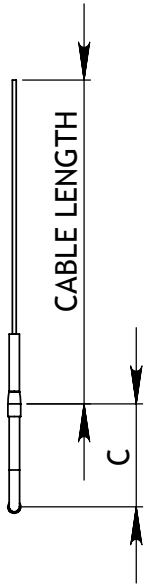
Information Required	
Dimension	Value in mm
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B	
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D	
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G	
Element Wattage	
Wet or Dry Bushes	
Bush Thread Size 3/8"BSP or 1/2"UNF	

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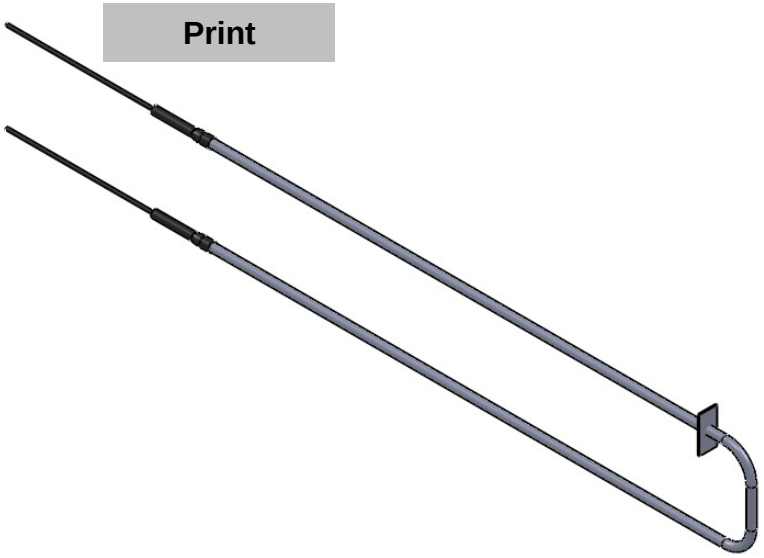


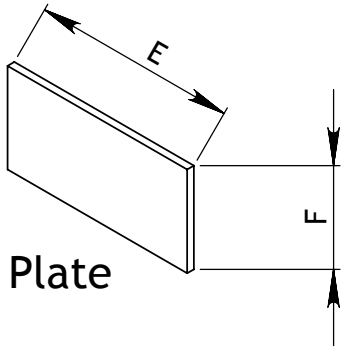


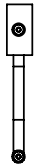
Information Required	
Dimension	Value in mm
A	
B	
C	
Cable Length	
Cable Size	mm2

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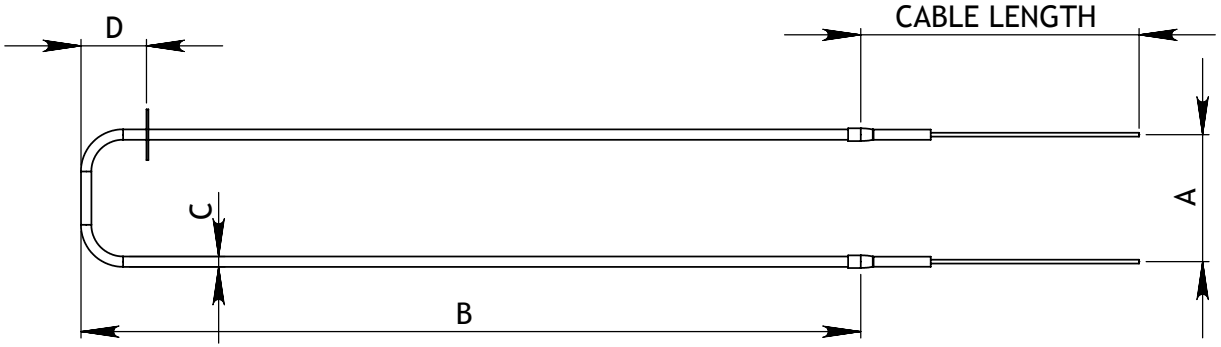
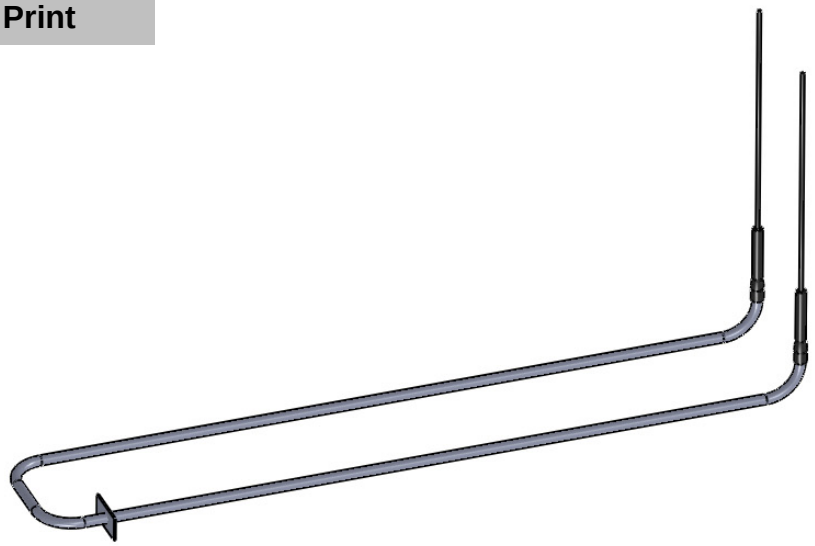


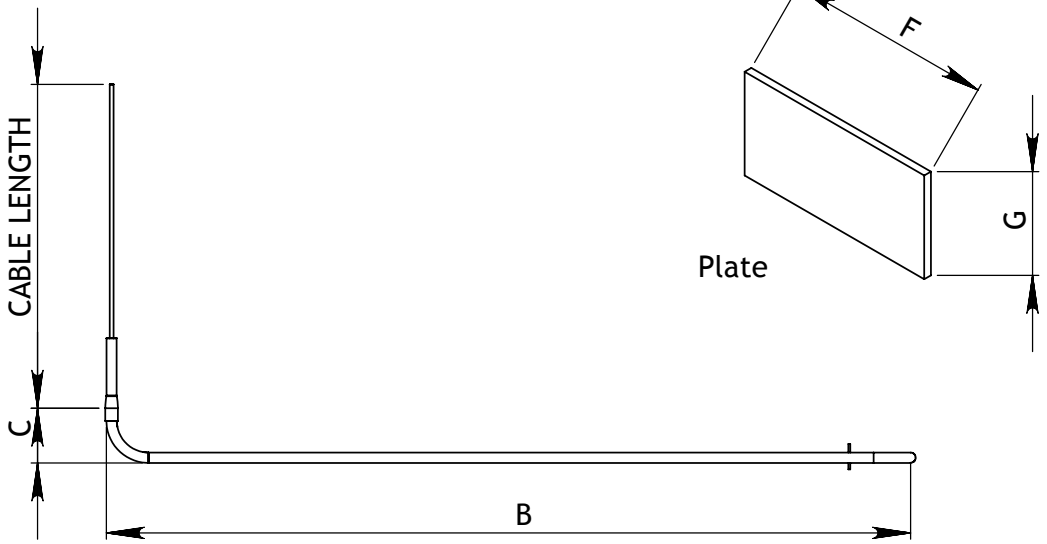
Plate Size	
Dimension	Value in mm
E	
F	

Information Required	
Dimension	Value in mm
A	
B	
C	
D	
Cable Length	
Cable Size	mm2

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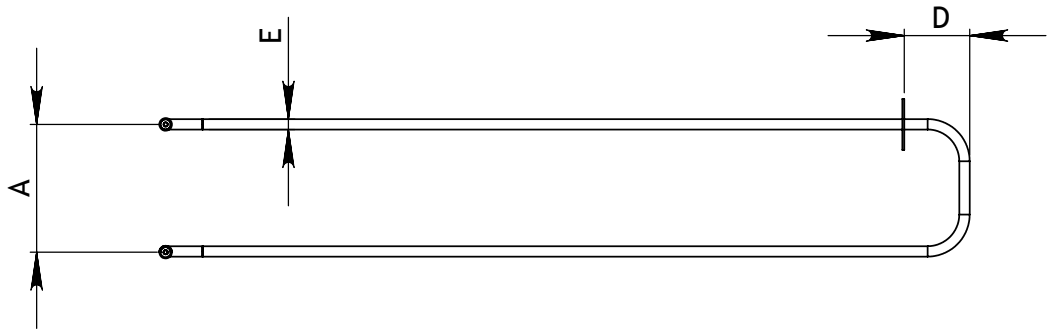


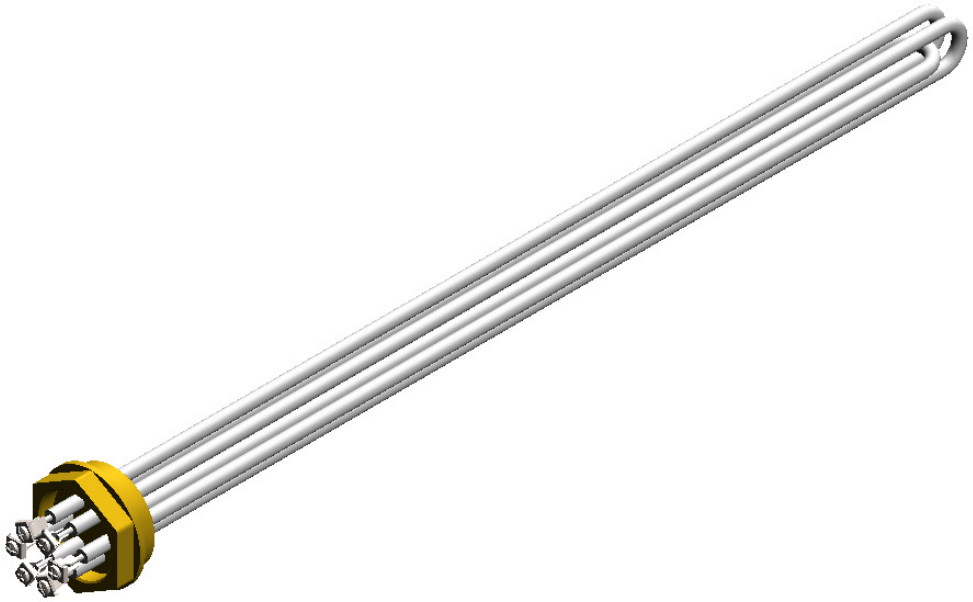
Plate Size	
Dimension	Value in mm
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Information Required	
Dimension	Value in mm
A	
B	
C	
D	
E	
Wattage	
Cable Length	
Cable size	mm2

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Information Required	
Dimension	Value in mm
Penitration	
Thread Size	
Wattage	
Voltage	

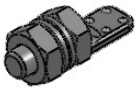


Terminals

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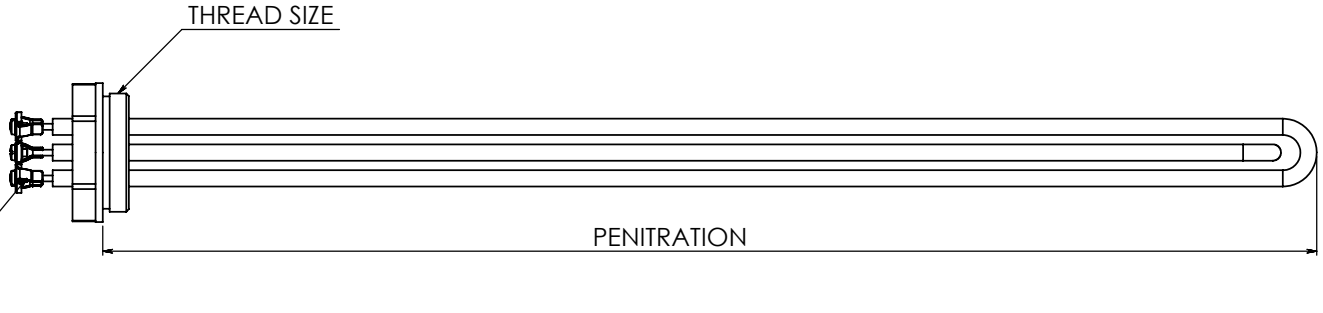
A  ☐

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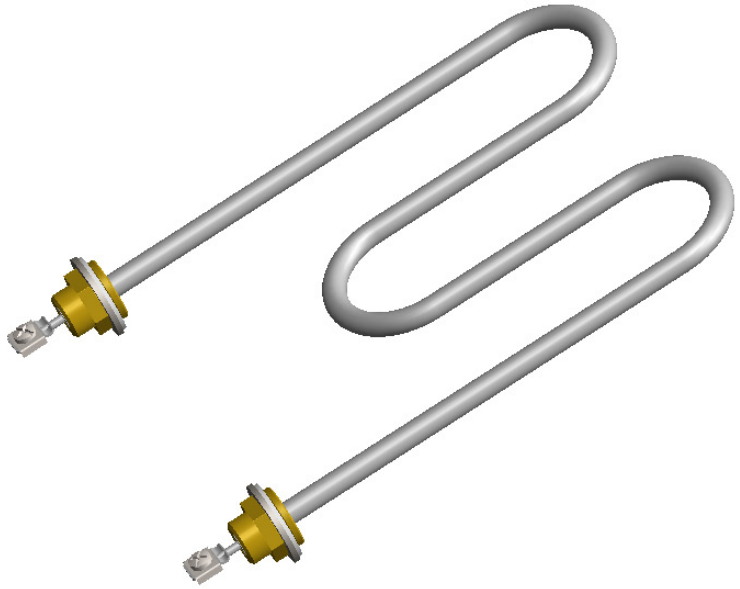


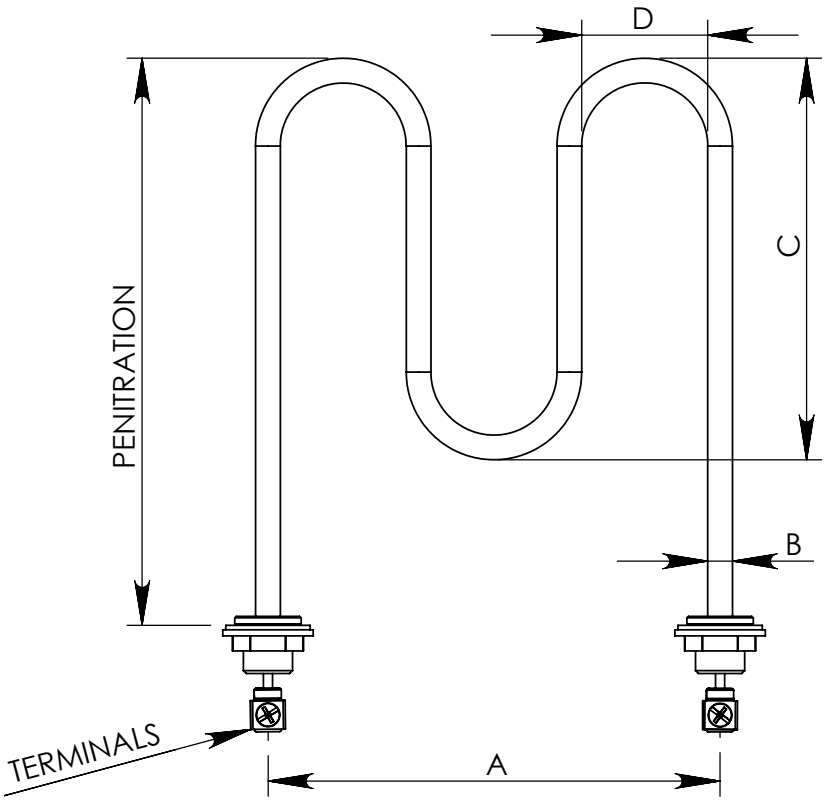




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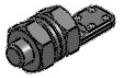
Information Required	
Dimension	Value in mm
A	
B	
C	
D	
Penitration	
Wet or Dry Bushes	
Bush Thread Size 3/8"BSP or 1/2"UNF	
Wattage	

Terminals

(Please tick the relivant box for terminal selection)

A  ☐

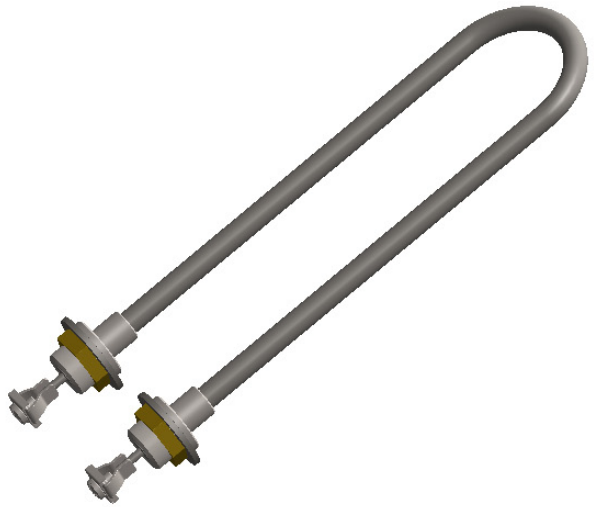
B  ☐

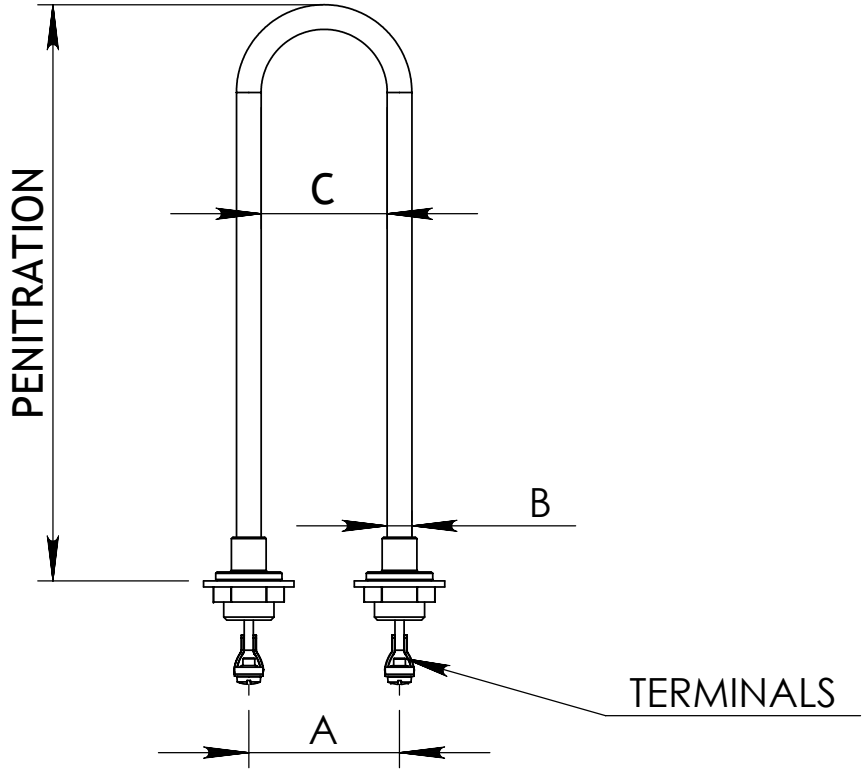
C  ☐

D  ☐

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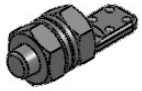


Terminals

(Please tick the relivant box for terminal selection)

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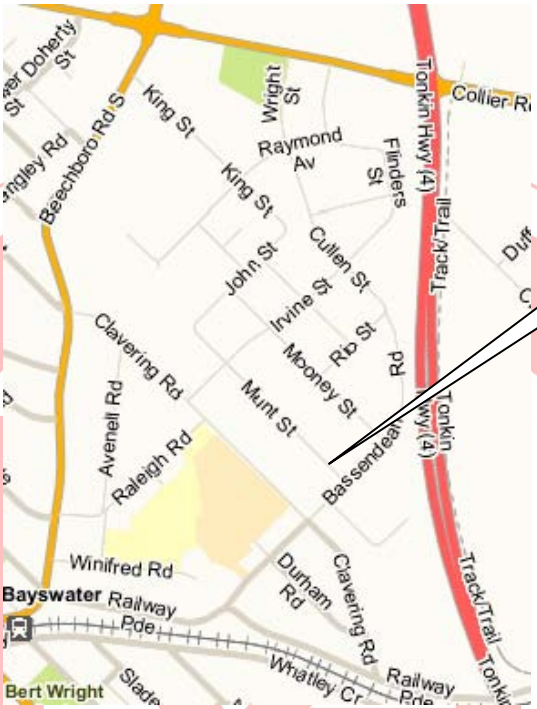
C  ☐

D  ☐

Information Required	
Dimension	Value in mm
A	
B	
C	
Penitration	
Wet or Dry Bushes	
Bush Thread Size 3/8"BSP or 1/2"UNF	
Wattage	

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Fax: 08 9370 5559

Email: colv@bigpond.com

Accounts/General Sales: Heather Fitzgerald

Technical: Andy Colvin
Kevin Fitzgerald

