

Industrial Elements

CATALOGUE







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ISO 9001 Accreditation and the regular audits and reviews necessary, together with the ongoing staff training and upskilling, ensures the maintenance of our quality standard.

Multi-Purpose Elements

Applications

Multi-purpose elements give the user the ability to shape or modify an element for use in a wide variety of heating applications, whether in liquid, acid, alkaline or air environments. These elements are ideally suited for prototype runs or urgent repairs.

MPE Construction:

- All BJC MPEs are constructed from the highest grade materials.
- All BJC MPEs are uniformly annealed for ease of forming.
- 1/8" Whitworth terminal pins allow for universal connections.
- M16 compression bushes for ease of mounting are available.
- BJC MPEs are ideally suited for machine breakdowns and prototype runs etc., as the elements are readily available ex stock.



Design & Development

Investing in Design & Development is critical for keeping BJC at the forefront of element manufacturing techniques, and in ensuring we can deliver on our customer's needs.

We have a wide range of equipment and capabilities ranging from our 3D CAD Software, through to sheet metal machinery and our customised equipment for element manufacture.

We pride ourselves on being able to provide the complete service from initial contact right through to the finished product with a strong focus on customer satisfaction.

Our expertise include, but are not limited to the following:

ion Nut & Oli

Fibre Wash

Brass Washe

- Electric Heating Elements
- Load Banks and Resistors
- Sheet Metal Work
- Bending & Forming
- Tool Making & Design
- Lab Testing Facilities



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Series B:

Incoloy 800 sheathed elements for use in air heating, ovens and bain marie units where boil dry situations may occur.

INCOLOY 800

- 55kW/M² (35W/IN²) SERIES

CAT NO.	WATTS	DIM "X"	DIM "Y"
MPE05B	500	520	360
MPE10B	1000	890	730
MPE12B	1200	1025	865
MPE15B	1500	1250	1090
MPE18B	1800	1460	1300
MPE20B	2000	1610	1450
MPE24B	2400	1900	1740
MPE30B	3000	2335	2175
MPE35B	3500	2700	2540
MPE40B	4000	3000	2840

Series J:

Incoloy 800 sheath elements for air and liquid heating. Ideal for use in many types of acid/alkaline situations. Contact your BJC agent for more information.

Multi-purpose

universal

connector

element showing

INCOLOY 800

- 31kW/M² (20W/IN²) SERIES

CAT NO.	WATTS	DIM "X"	DIM "Y"
MPE05J	500	800	640
MPE10J	1000	1430	1270
MPE15J	1500	2065	1905
MPE18J	1800	2435	2275
MPE24J	2400	3185	3025

Series C:

304L stainless steel sheathed elements for use in a wide variety of heating applications from forced air heating to die heating systems.

304L Stainless Steel - 45kW/M² (30W/IN²) SERIES

CAT NO.	WATTS	DIM "X"	DIM "Y"
MPE05C	500	580	420
MPE10C	1000	1000	840
MPE12C	1200	1170	1010
MPE15C	1500	1430	1270
MPE18C	1800	1675	1515
MPE20C	2000	1850	1690
MPE24C	2400	2200	2040
MPE30C	3000	2700	2540
MPE35C	3500	3115	2955

All elements rated at 235V.

All elements sealed using high temp epoxy suitable for temperatures up to 180°C.

Industrial Pocket Heaters

BJC Pocket Heaters

BJC Pocket Heaters are the ideal heating element to specify in applications where it is not suitable for the heating element to be in direct contact with the product being heated.

The low Watt-density tubular elements provide an efficient and cost effective way of heating a range of products from tar and bitumen to heating degreasing tanks.

Although not available ex stock, we do have a range of sizes and wattages that we recommend. Normal lead time is 10 working days ex BJC Elements.

Please contact your local BJC agent for more information.







SPECIFICATIONS						
WATTS	VOLTS	LENGTH MM	CAT NO.	NO. CIRCUITS		
1000	230	510	OE1	1		
1500	230	710	OE15	1		
2000	230	915	OE2	1		
2500	230	1120	OE25	1		
3000	230	1350	OE3	1		
3500	230	1550	OE35	1		
4000	400	1750	OE4	3		
4500	400	1955	OE45	3		
5000	400	2185	OE5	3		
6000	400	2620	OE6	3		
7000	400	3050	OE7	3		

Discs can be fitted to suit 2" or 3" bore. Please specify which bore size when ordering.

Defrost and Evaporator Elements



Applications

The most common application for this type of heater is as a defrost element in domestic and commercial refrigerators.

BJC defrost elements are found in most of the homes and businesses in Australasia, quietly keeping refrigerators and freezers frost-free.

Similarly, these heaters are used in commercial refrigerators and freezers found in almost every supermarket, petrol station and restaurant.



Industrial Cooking Elements

Applications

Industrial catering and hospitality elements are made to suit any specification from "bench-top" appliances to the largest bakery ovens, fryers, grills and more.

A wide range of sheath material and diameters are available to ensure that the elements exactly suit the required application.















Defrost and Evaporator Trays

Applications

A range of condensate trays are available, to suit any size of chiller or freezer.

These are ideal in situations where "hard plumbing" is not an option.

Trays can be supplied complete with a level sensor to detect when water is above the element, switching the element on and off via a relay.

Please contact your local BJC agent for more information.



Fittings

Standard fittings

- A. M16 crimp bush zinc plated
- **B.** $\frac{3}{8}$ x 1 $\frac{3}{4}$ BSP silver solder bush brass
- C. $\frac{1}{2}$ " BSB crimp bush stainless steel
- **D.** $\frac{3}{8}$ " BSP silver solder bush, $\frac{5}{8}$ " long brass
- **E.** $\frac{1}{2}$ " BSB silver solder bush brass
- **F.** $\frac{3}{8}$ " BSP crimp bush brass
- G. M16 compression bush brass
- H. 1" Jug boss 1 ⁵/₁₆" x 18TPI thread brass
- I. 1¹/₄" BSP boss brass
- J. 2" BSP boss T316 stainless steel
- K. 2" BSP boss brass
- L. 2" John Burns BSP boss brass

Unless stated, all the standard fittings are made from brass. Please contact your local BJC agent should you require a special size or material.



Immersion Heaters: Custom

Applications

Immersion heaters consist of tubular heating elements, which are silver soldered or TIG welded into a threaded brass, steel or stainless steel screw fitting. Immersion heaters or tank heaters as they are sometimes referred to, can then be inserted into a threaded opening in a tank wall.

Immersion heaters are used to heat fluids such as oil, water, chemical solutions, mild acids, electroplating and salt solutions etc.

BJC Elements immersion heaters are manufactured in a wide range of sheath materials to suit any medium.

Sheath materials include but are not limited to: Incoloy 800, Stainless 304, 309S and T316. Sheath diameters are 6.3mm, 8mm and 10.7mm.

Please contact your BJC agent for further advice.





Immersion Heaters - BJC Range

Applications

All listed elements on this page are fitted with 2" BSP brass bosses, and are manufactured using Ø8mm 309S Grade Stainless Steel. We are able to manufacture these elements in other materials if required but they would be made to order. All elements are fitted with a thermostat pocket, and are for use in water type applications. They are designed to be fitted horizontally.

Three Phase Heater Wiring diagrams for standard and alternative connections:

415V, 3 PHASE, 3 WIRE "DELTA" CONNECTION



235V, 3 PHASE, 4 WIRE "STAR" CONNECTION



235V, 1 PHASE, 2 WIRE SERIES CONNECTION



BJC41 Series: 235V Elements with 31kW/m2 Sheath Loading

Low Watt density elements for use in applications where sensitive solutions need heating or elements may be subjected to a build up of a solution on the sheath. These elements are suited for 235V single phase 415V/235V 3 phase with either tied or floating neutral connection.

CAT NO.	WATTAGE	REACH	WIRED @ 415V DELTA
BJC41A000	1500W	500mm	4.67kW
BJC41B000	2400W	600mm	7.49kW
BJC41C000	3600W	620mm	11.2kW
BJC41D000	4800W	825mm	15kW
BJC41E000	6000W	1260mm	18.7kW

BJC50 Series: 235V Elements with 77.5kW/m2 Sheath Loading

Medium Watt density elements for use in water heating type applications. Suited to 235V single phase or 415V/235V 3 phase connection using either tied or floating neutral.

CAT NO.	WATTAGE	REACH	WIRED @ 235V SERIES
BJC50A000	3600W	330mm	400W
BJC50B000	4800W	330mm	533W
BJC500000	6000W	560mm	667W
BJC50C000	7200W	730mm	800W
BJC50D000	9600W	965mm	1066W

BJC31 Series: 415V Elements with 77.5kW/m2 Sheath Loading

Medium Watt density elements for use in water type applications. Suited to 415V single phase or three wire 3 phase 415V (Delta) connection.

CAT NO.	WATTAGE	REACH	WIRED @ 235V STAR	WIRED @ 235V SERIES
BJC31A000	3600W	330mm	1200W	128W
BJC31B000	4800W	330mm	1600W	171W
BJC310000	6000W	560mm	2000W	213W
BJC31C000	7200W	730mm	2400W	256W
BJC31D000	9600W	965mm	3200W	342W

BJC04-0 Series: 235V Elements with 116kW/m2 Sheath Loading

High Watt loading series for use in applications where the space is limited. Suited to 235V single phase or 415V/235V 3 phase connection using either tied or floating neutral.

CAT NO.	WATTAGE	REACH	WIRED @ 235V SERIES
BJC04A000	10kW	620mm	1.111kW
BJC04B000	15kW	930mm	1.667kW
BJC04C000	20kW	1180mm	2.222kW

BJC04-1 Series: 415V Elements with 116kW/m2 Sheath Loading

High Watt loading series for use in applications where space is limited. Suited to 415V single phase or three wire 3 phase 415V (Delta) Connection.

CAT NO.	WATTAGE	REACH	WIRED @ 235V STAR	WIRED @ 235V SERIES
BJC04A001	10kW	620mm	3.333kW	360W
BJC04B001	15kW	930mm	5kW	535W
BJC04C001	20kW	1180mm	6.666kW	715W

Thermofin: F8 Series

Stainless Steel F865 Series

FINNED AIR HEATERS

Sheath Watts Density

Sheath 101kW/m² (65W/in²) Fin and Sheath total 18.2kW/m² (11.8W/in²) at 235V

Construction

Continuous spiral stainless steel fin on 8mm diameter stainless steel element. Diameter over fin 25mm. Fin pitch 5.0mm

Finish

Annealed 304 Stainless Steel

Mounting

Zinc plated bushes with M16 thread 16mm long. Clearance hole of 18mm required. Nuts & washers included.

Element Mounting Detail



Element temperature at varying air speed (25°C ambient, single element only)



STRAIGHT LENGTH

		Kg 0.31 0.35 0.43 0.51 0.6 0.72 0.83 1.11	MAX REACH 457 560 673 775 851 1003 1219 1435 1867	WATTS 900 1200 1500 1800 2000 2400 3000 3600 4800	CAT NO. F865S900 F865S1200 F865S1500 F865S1800 F865S2000 F865S2400 F865S2400 F865S3000 F865S3600 F865S3600 F865S4800
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"U" FORM

CAT NO.	WATTS	MAX REACH
F865U900	900	220
F865U1200	1200	275
F865U1500	1500	330
F865U1800	1800	380
F865U2000	2000	420
F865U2400	2400	495
F865U3000	3000	605
F865U3600	3600	710
F865U4800	4800	925

"W" FORM

CAT NO.	WATTS	MAX REACH
F865W1800	1800	205
F865W2000	2000	220
F865W2400	2400	260
F865W3000	3000	315
F865W3600	3600	370
F865W4800	4800	475





A typical duct insert



Thermofin: F8 Series

Stainless Steel F886 Series

FINNED AIR HEATERS

Sheath Watts Density

Sheath 133kW/m² (86W/in²) Fin and Sheath total 23.9kW/m² (15.4W/in²) at 235Volts.

Construction

Continuous spiral stainless steel fin on 8mm diameter stainless steel element. Diameter over fin 25mm. Fin pitch 5.0mm

Finish

Annealed 304 Stainless Steel

Mounting

Zinc plated bushes with M16 thread 16mm long. Clearance hole of 18mm required. Nuts & washers included.

Element Mounting Detail



Element temperature at varying air speed (25°C ambient, single element only)



STRAIGHT LENGTH

CAT NO.	WATTS	MAX REACH	Kg
F886S750	750	334	0.28
F886S1000	1000	415	0.33
F886S1250	1250	486	0.38
F886S1500	1500	574	0.43
F886S1750	1750	655	0.49
F886S2000	2000	722	0.54
F886S2500	2500	886	0.62
F886S3000	3000	1055	0.76
F886S3500	3500	1213	0.84
F886S4000	4000	1373	0.96
F886S4500	4500	1522	1.02
F886S5000	5000	1686	1.12



"U" FORM

CAT NO.	WATTS	MAX REACH
F886U750	750	164
F886U1000	1000	204
F886U1250	1250	240
F886U1500	1500	284
F886U1750	1750	324
F886U2000	2000	358
F886U2500	2500	440
F886U3000	3000	524
F886U3500	3500	603
F886U4000	4000	683
F886U4500	4500	758
F886U5000	5000	840

"W" FORM

CAT NO.	WATTS	MAX REACH
F886W1250	1250	133
F886W1500	1500	155
F886W1750	1750	175
F886W2000	2000	188
F886W2500	2500	233
F886W3000	3000	275
F886W3500	3500	315
F886W4000	4000	355
F886W4500	4500	388
F886W5000	5000	433









Common applications

Thermofin: F11 Series

Stainless Steel F1129 Series

FINNED AIR HEATERS

Sheath Watts Density

Sheath 44.5kW/m² (29W/in²) Fin and Sheath total 7.0kW/m² (4.5W/in²) at 235V

Construction

Continuous spiral stainless steel fin on 10.7mm diameter stainless steel element. Diameter over fin 28mm. Fin pitch 5.0mm

Finish

Annealed 304 Stainless Steel

Mounting

Zinc plated bushes with M16 thread 16mm long. Clearance hole of 18mm required. Nuts & washers included.

Element Mounting Detail



Element temperature at varying air speed (25°C ambient, single element only)



STRAIGHT LENGTH

				-
CAT NO.	WATTS	MAX REACH	Kg	
F1129S750	750	597	0.48	
F1129S1000	1000	764	0.55	
F1129S1250	1250	931	0.76	
F1129S1500	1500	1098	0.85	MAX REACH 46 REF
F1129S1750	1750	1265	1.09	╒ _{╋╼} ╶╴ ╔╓ ╖╴──┼╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿╿
F1129S2000	2000	1433	1.14	
F1129S2500	2500	1767	1.61	
F1129S3000	3000	2102	1.8	
F1129S3500	3500	2436	1.91	
F1129S4000	4000	2770	2.3	
F1129S4500	4500	3105	2.75	
F1129S5000	5000	3437	3.3	

"U" FORM

CAT NO.	WATTS	MAX REACH
F1129U750	750	298
F1129U1000	1000	381
F1129U1250	1250	465
F1129U1500	1500	548
F1129U1750	1750	632
F1129U2000	2000	716
F1129U2500	2500	883
F1129U3000	3000	1050
F1129U3500	3500	1217
F1129U4000	4000	1384
F1129U4500	4500	1552
F1129U5000	5000	1718



"W" FORM

CAT NO.	WATTS	MAX REACH
F1129W750	750	164
F1129W1000	1000	205
F1129W1250	1250	243
F1129W1500	1500	286
F1129W1750	1750	331
F1129W2000	2000	373
F1129W2500	2500	456
F1129W3000	3000	537
F1129W3500	3500	623
F1129W4000	4000	707
F1129W4500	4500	788
F1129W5000	5000	874

TRIPLE "U" FORM

CAT NO.	WATTS	MAX REACH
F1129T1750	1750	237
F1129T2000	2000	266
F1129T2500	2500	324
F1129T3000	3000	383
F1129T3500	3500	441
F1129T4000	4000	499
F1129T4500	4500	558
F1129T5000	5000	616





Thermofin: F11 Series

Stainless Steel F1141 Series

FINNED AIR HEATERS

Sheath Watts Density

Sheath $64kW/m^2$ ($41W/in^2$) Fin and Sheath total $10kW/m^2$ ($6.5W/in^2$) at 235Volts.

Construction

Continuous spiral stainless steel fin on 10.7mm diameter stainless steel element. Diameter over fin 28mm. Fin pitch 5.0mm

Finish

Annealed 304 Stainless Steel

Mounting

Zinc plated bushes with M16 thread 16mm long. Clearance hole of 18mm required. Nuts & washers included.

Element Mounting Detail



Element temperature at varying air speed (25°C ambient, single element only)



CAT NO.	WATTS	MAX REACH	Kg
F1141S750	750	455	0.39
F1141S1000	1000	564	0.51
F1141S1250	1250	695	0.57
F1141S1500	1500	815	0.68
F1141S1750	1750	920	0.8
F1141S2000	2000	1055	0.91
F1141S2500	2500	1277	1.1
F1141S3000	3000	1495	1.27
F1141S3500	3500	1718	1.56
F1141S4000	4000	1948	1.66
F1141S4500	4500	2220	1.79
F1141S5000	5000	2473	2.04
F1141S6000	6000	2908	2.3



"W" FORM

CAT NO.	WATTS	MAX REACH
F1141U750	750	226
F1141U1000	1000	281
F1141U1250	1250	346
F1141U1500	1500	406
F1141U1750	1750	459
F1141U2000	2000	526
F1141U2500	2500	638
F1141U3000	3000	747
F1141U3500	3500	858
F1141U4000	4000	973
F1141U4500	4500	1109
F1141U5000	5000	1235
F1141U6000	6000	1453

W FORM		
CAT NO.	WATTS	MAX REACH
F1141W1000	1000	154
F1141W1250	1250	184
F1141W1500	1500	218
F1141W1750	1750	240
F1141W2000	2000	278
F1141W2500	2500	334
F1141W3000	3000	384
F1141W3500	3500	439
F1141W4000	4000	500
F1141W4500	4500	569
F1141W5000	5000	632
F1141W6000	6000	738

TRIPLE "U" FORM

CAT NO.	WATTS	MAX REACH
F1141T2500	2500	239
F1141T3000	3000	276
F1141T3500	3500	315
F1141T4000	4000	357
F1141T4500	4500	403
F1141T5000	5000	447
F1141T6000	6000	523



MAX REACH

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Terminations for Tubular Elements

Terminals

Our range of terminals shown are fully assembled with nuts and washers etc., but are also available in unassembled form. These are in addition to a wide range of proprietary terminals.

All terminals are spot welded using the highest quality welding equipment available.

Each machine is also fitted with an electronic timer and weld checker to ensure our customers receive a fault-free finished product.





terminal







6mm

threaded

terminal



Bullet type

terminal

terminal

terminal 4mm screw and 3mm cross hole to accept 2mm wire



90° Quick-Connect



4mm

tapped

terminal

Goalpost Quick-Connect terminal

Cartridge Elements

BJC Stainless steel cartridge elements feature:

- · High heat density
- Fast Heating
- Stainless steel sheaths providing a stable, non-oxidising surface
- Maximum surface temperature 650°C (1200°F)
- Heat resistant flexible tails
- · Heating element supported on high quality ceramic and solidly compacted with magnesium oxide
- Precision diameter tube for close fit in machined holes
- Basic list of designs are readily adaptable to suit special requirements, sizes and ratings
- Clearly stamp rated- Watts/Volts/Code No

Our range of cartridge elements is commonly used in plastic dies, moulds, platens, bag sealers, carton making, shoe machinery, food vending, defrosting, electrical switch gear cabinets and a host of other applications.

Please contact your local BJC agent for more information.

Tolerances

BJC cartridge elements are manufactured +0.00mm - 0.10mm for any given diameter. This sizing is maintained so that all units are a slide fit into a standard reamed hole. Thermal action will expand the element to ensure a close fit for maximum heat transfer.

In most applications cartridge elements are inserted into reamed holes and dissipate their heat by direct contact thus allowing loadings up to 6.2 watts/cm² of surface area of the cartridge (40W/in²)

In applications where they are not in direct contact such as defrosting and air heating in switch gear cubicles, etc., then the maximum watt density must not exceed 3.1 watts/cm² of surface area $(20W/in^{2})$

All sizes feature flexible nickel wire leads with double glass insulation. Standard lead length is 250mm but longer leads can be supplied on application.

ANTI-CONDENSATION/ CARTRIDGE HEATERS

For use in switch gear cabinets and similar applications to combat condensation problems.

PART NO.	WATTAGE	LENGTH
CART001	25W	115mm
CART002	50W	125mm
CART003	75W	125mm
CART004	100W	150mm

- Available ex-stock
- Standard range diameter is 16mm
- Supplied with 250mm Tails
- Other diameters and lengths available upon request

BJC ELEMENTS 10

4.8mm 6.3mm Quick-Connect



6.3mm terminal

30° Quick-Connect

6.3mm terminal

Drum Heaters

Applications

The 200 litre (44 Gallon) drum is still today the container of choice to hold many solid, liquid and semi-liquid products. To heat these products, an electric drum heater is the safest and most efficient way of heating the contents.

BJC Elements manufactures a range of different drum heaters suitable for many industrial and commercial applications.

Pictured are just a few of the BJC drum heaters available. We are also able to design and build multi drum heater ovens to suit your application.





Engine Water Jacket Heaters

Applications

For many years the BJC water jacket heater element has helped keep Emergency vehicles ready for action by keeping the engine's water system hot. Available ex stock, the elements are rated at 400W 230V.



Load Banks

Applications

BJC load banks are made from high quality materials including stainless steel, or they can be powder coated from a selection of different colours. They are manufactured to suit your application, so whether it is 5kW or 500kW of load we can provide a load bank to suit.

Load banks are devices designed to provide electrical loads for testing power sources such as generators and uninterruptible power supplies (UPS). Load banks are also used to reduce "wet stacking" problems in diesel engines of backup generating systems. Elements are carefully selected to operate at low temperatures to provide extended, reliable performance, eliminating the need for a "cool down" period after load bank operation.

Load banks can be used in a wide variety of applications, such as:

- Factory testing of engine generator sets.
- Periodic exercising of stand-by engine generator sets.
- UPS system testing.
- Battery system testing.
- Dynamic braking systems used on lifting devices.



Mica Based Elements

Mica Bands and Strip Heaters

The uses for mica based heating elements are virtually endless, ranging from band heaters used on injection moulding machines to heater banks used in domestic home heaters.

With a maximum operating temperature of 750°C, mica is the ideal former or insulator for open wound heating elements.

Please contact your local BJC agent for more information.



BJC ELEMENTS 12







Founded in 1946 by Bazil James Cocksedge, BJC Elements Ltd continue a tradition of outstanding quality and service.

It is a privately owned business that has embraced the new millennium with a commitment to innovation, quality and service. BJC Elements Ltd offers a full range of services, from design and development through to testing in its own laboratory.

BJC Elements Ltd manufacture an extensive range of products for industrial applications in a multitude of forms, sizes and materials, including custom designs and prototypes.

BJC Elements Ltd have also proven themselves for over 65 years in manufacturing to be able to satisfy and exceed the expectations of customers in an increasingly complex and demanding industrial environment. The company has a strong focus on staff training and is accredited to both ISO 9001: 2008 (Quality) and NZS 4801: 2001 (Safety).

Contract Manufacturing

With State-of-the-Art Turret presses and metal forming equipment, BJC Elements now offers solutions for customers requiring such product.

BJC Elements Ltd offer a design through to fully wired and assembled service for which we currently export evaporator trays, architectural lighting fittings and gear tray units to various Countries around the World.





BJC Elements Ltd Element House 7-19 Gregory Street Naenae, Hutt City New Zealand PO Box 35094, Naenae

+64 4 567 4179 +64 4 567 4176

0800 432 863 (NZ) www.bjcelements.co.nz