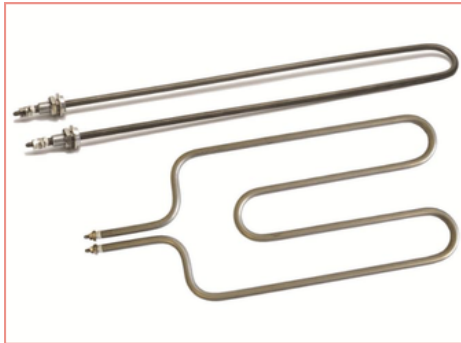




ELEMENTS

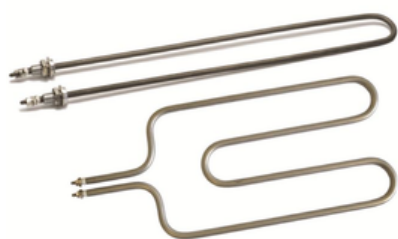
Tubular Elements & Immersion Heaters

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Backer Heatrod manufacture both standard and bespoke products for both the domestic and industrial electrical heating markets. Ranging from traditional tubular heating elements which remains the most common and versatile form of electric heating available, through to more specialist technologies.

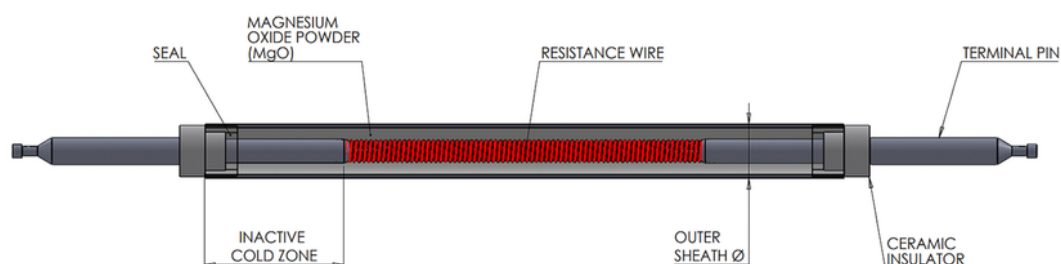
We cater for most types of applications and have the support of a global network of manufacturing centres. From high volume OEM design and manufacture to single bespoke heating solutions, we've got it covered.

Tubular Elements



Tubular elements can be used in a range of applications from air, water, oil, chemical solutions and defrost. They are a versatile means of heating an application and can be straight or formed to a required shape and can reach temperatures of 800°C.

A tubular element consists of resistant wire which is spot welded to a terminal pin. The resistance wire is insulated by MGO powder which is then housed in an outer sheath.



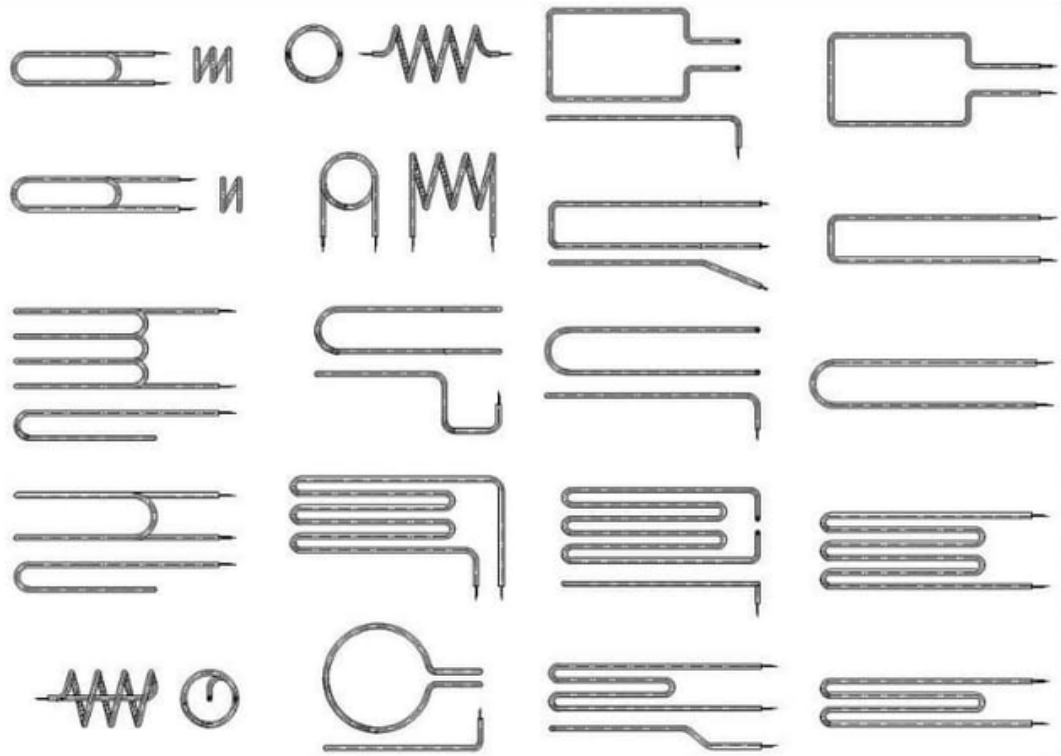
Ø Diameter (mm)	Material							Terminal Pin				
	304 Stainless Steel	316 Stainless Steel	321 Stainless Steel	Incoloy 800	Incoloy 825	Titanium	Copper	Ø2.8mm Plain Pin Max 20amp	Ø3.1mm Plain Pin Max 20amp	4BA Max 20amp	M4 Max 25amp	M5 Max 32amp
	Ø8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Ø10			✓	✓	✓				✓	✓	✓
	Ø11			✓	✓					✓	✓	✓
Ø12				✓	✓	✓				✓	✓	✓
Minimum Length	450mm	450mm	450mm	450mm	450mm	450mm	450mm				Seal Options	Silicon Seal
Maximum Length	4300mm	4300mm	4300mm	4300mm	4300mm	4300mm	4300mm					Epoxy Seal
Other materials are available on request based on MOQ's.												

When choosing a tubular element for a certain application there are set parameters that need to be considered. Whilst standard requirements are wattage and voltage, other parameters are sometimes not so obvious. Sheath watt density must also be considered which determines the working surface temperature of the element - this can be critical to the application as many of the media in which our elements are applied will have maximum contact temperatures. Aspects such as electrical and mechanical connections must also be considered at the design stage.

Formed Elements

Applications that require a heat source often have differing application demands such as restricted operating space or very specific local heat zones in shaped objects.

To help solve your specific requirements Heatrod have a fully trained engineering team who can assist with specification, design and manufacture of tubular elements for your application. Our products are produced using traditional manual methods through to CNC controlled bending machinery. A small selection of tubular elements designs are shown here.

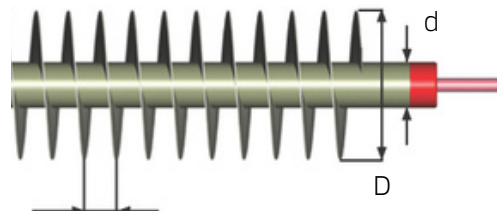


Finned Tubular Elements

Finned tubular elements are metal-sheathed tubular heaters equipped with continuous, spiral-wound fins that increase the surface area to improve heat transfer efficiency.

Fin material:
SS304, EN 1.4301

Surface enlarged element $\varnothing$ (d/D):
Nipples, fixing plates



Applications: Fixings and Electrical Connections

With tubular heaters being so versatile and able to work in a variety of applications, aspects such as electrical connections and a means of fixing the element to an application need to be taken into consideration.

Fixings		Electrical Connection	
	1/4" & 3/8" brazed and crimped compression fixings available in various materials.		Male Spade Terminal
	Fixing plates made to suit specific customer requirements.		Double Male Spade Terminal
			Female Spade Terminal
			Range of high temperature cables available

Domestic Immersion Heaters

Backer Heatrod supply the largest range of domestic immersion heaters in the UK. Through many years of experience and supply into this market Heatrod have build up a vast library of replacement immersion heaters and parts. In more recent years the acquisition of Thermtec Ltd has also added to our range of products which are traditionally fitted into many common household water cylinders.

We also provide a bespoke service for many styles of Immersion Heater so in the unlikely situation where we cannot reference a product to our standard and stock ranges we will make a unit to your requirements!



Product Number	Product Name	Material	Loading (kW)	Voltage (V)	Phase Connection	Immersed Length (inches/mm)
SH311C-AA1CA1	1 3/4" 3KW 11" 240V Incoloy Immersion Heater 70/80	Incoloy	3	240	1	11/280
SH311A-AA1CA1	2 1/4" 3KW 240V 11" Incoloy Immersion Heater 70/80	Incoloy	3	240	1	11/280
SH314A-AA11A1	2 1/4" 3KW 240V 14" Incoloy Immersion Heater	Incoloy	3	240	1	14/355
SH327A-AA18A1	2 1/4" 3KW 240V 27" Incoloy BSP Immersion Heater	Incoloy	3	240	1	27/685
SH311A-CA11A1	2 1/4" 3KW 11" Titanium BSP Immersion Heater	Titanium	3	240	1	11/280
SH314C-CA11A1	1 3/4" 3KW 240V 14" Titanium Immersion Heater	Titanium	3	240	1	14/355
SH327A-CA18A1	2 1/4" 3KW 240V Titanium BSP Immersion Heater	Titanium	3	240	1	27/685
SH314A-DA11A1	2 1/4" 3KW 240V 14" Copper Immersion Heater	Copper	3	240	1	14/355
SH311A-DA11A1	2 1/4" 3KW 240V 11" Copper Immersion Heater	Copper	3	240	1	11/280
SH327A-DA18A1	2 1/4" 3KW 240V 27" Copper BSP Immersion Heater	Copper	3	240	1	27/685

Immersion heating is still the most efficient way to heat liquids quickly and safely. Often the key is the knowledge of which heater to apply to which type of media. Our industrial range of immersion heaters covers all the angles.

Industrial and Light Industrial/Commercial Immersion Heaters

HR Range Immersion Heaters

The HR Range of immersion heaters are designed for commercial and light industrial applications. The terminal box is proven for ease of wiring and flexible for access in all types of locations. Along with the standard range detailed we also manufacture using different levels of element sheath protection depending on the environment which the heater is being installed into.



Key Features:

- IP55 Rotatable Terminal Cover
- Incoloy 825 Sheath
- For Use in Water in Commercial/Light Industrial Applications
- Separate Power and Control Glands
- Single Thermostat Pocket
- Large Range of Thermostats available
- Unique Design offers both Single and Three Phase Installation

Part Number			Loading (kW)	Voltage (V)	Phase Connection	Immersed Length (in/mm)	Element Diameter (mm)	No. of Elements	Watts Density (W/cm ²)	Add Suffix	Temperature Range (°C)	Cut-out Temperature (°C)
2 ¼" BSP	2" BSP	1 ¾" BSP										
HR311A	HR311B	HR311C	3	240/415	1/3 PH	11/280	8	3	8.5	A	Max 80	90
HR616A	HR616B	HR616C	6	240/415	1/3 PH	16/406	8	3	11			
HR624A	HR624B	HR624C	6	240/415	1/3 PH	24/610	8	3	7			
HR636A	HR636B	HR636C	6	240/415	1/3 PH	36/914	8	3	4.6			
HR916A	HR916B	HR916C	9	415	3 PH	16/406	8	3	16.5			
HR924A	HR924B	HR924C	9	415	3 PH	24/610	8	3	10.5			
HR936A	HR936B	HR936C	9	415	3 PH	36/914	11	3	5.2			
HR1236A	HR1236B	HR1236C	12	415	3 PH	36/914	11	3	6.9			

*Contact us for chemical and oil applications



HRi Range Immersion Heaters

The HRi Range of immersion heaters are designed specifically for high usage environments with a maximum of 8.5W/cm². This heater can be manufactured for use in water and chemical applications. With Incoloy 825 elements fitted as standard this heater offers resistance to aggressive liquids and hard water process applications.

Key Features:

- IP68 Rotatable Terminal Cover
- Incoloy 825 Sheath
- Low Watts Density (8.5W/cm² Max)
- Separate Power and Control Glands
- Single Thermostat Pocket
- Large Range of Thermostats available
- Unique Design offers both Single and Three Phase Installation

Part Number			Loading (kW)	Voltage (V)	Phase Connection	Immersed Length (in/mm)	Element Diameter (mm)	No. of Elements	Watts Density (W/cm ²)	Add Suffix	Temperature Range (°C)	Cut-out Temperature (°C)
2 ¼" BSP	2" BSP	1 ¾" BSP										
HRI311L	HRI311A	HRI311B	3	240/415	1/3 PH	11/280	8	3	8.5	A	Max 80	90
HRI624L	HRI624A	HRI624B	6	240/415	1/3 PH	24/610	8	3	7			
HRI636L	HRI636A	HRI636B	6	240/415	1/3 PH	36/914	8	3	4.6			
HRI930L	HRI930A	HRI930B	9	415	3 PH	24/610	8	3	8.2			
HRI936L	HRI936A	HRI936B	9	415	3 PH	36/914	11	3	5.2			
HRI1236L	HRI1236A	HRI1236B	12	415	3 PH	36/914	11	3	6.9			

*Contact us for chemical and oil applications

HRZ Range Immersion Heaters

The HRZ range of titanium immersion heaters are designed for commercial and light industrial applications in hard water areas. The rotatable IP55 terminal box is provided for ease of wiring and flexible for access in all types of locations.



Key Features:

- For use in water applications only*
- Heavy duty titanium element
- Designed for hard water areas
- Flexible fitting and wiring options
- Flexible operational features (manual or fixed heat settings)
- IP55 rotatable enclosure
- Dual function thermostat
- Control Temp Maximum 80°C
- Safety Cut-Out 90°C

Part Number			Loading (kW)	Voltage (V)	Phase Connection	Immersed Length (in/mm)	Watts Density (W/cm ²)
2 ¼" BSP	2" BSP	1 ¾" BSP					
HRZ311A	HRZ311B	HRZ311C	3	240/415	1/3 PH	11/280	7.7
HRZ316A	HRZ316B	HRZ316C	3	240/415	1/3 PH	16/406	5.3
HRZ616A	HRZ616B	HRZ616C	6	240/415	1/3 PH	16/406	9.6
HRZ624A	HRZ624B	HRZ624C	6	240/415	1/3 PH	24/609	7
HRZ636A	HRZ636B	HRZ636C	6	240/415	1/3 PH	36/914	4.8
HRZ916A	HRZ916B	HRZ916C	9	415	3 PH	16/406	14.9
HRZ924A	HRZ924B	HRZ924C	9	415	3 PH	24/609	10.5
HRZ936A	HRZ936B	HRZ936C	9	415	3 PH	36/914	7.2
HRZ1224A	HRZ1224B	HRZ1224C	12	415	3 PH	24/609	14.1
HRZ1236A	HRZ1236B	HRZ1236C	12	415	3 PH	36/914	9.6

*Contact us for chemical and oil applications

HRZi Range Immersion Heaters

The HRZi Range of titanium immersion heaters are designed specifically for high usage environments. This heater is ideal for use in water applications, due to the low watts density of the element sheath. With titanium elements fitted as standard this heater offers resistance to aggressive liquids and hard water process applications.



Key Features:

- Ideal for use in water applications*
- Heavy duty titanium element - designed for hard water areas
- Flexible fitting and wiring options
- Flexible operational features (manual or fixed heat settings)
- Dual function thermostat
- IP68 outdoor rated heavy duty rotatable enclosure
- Control Temp Maximum 80°C
- Safety Cut-Out 90°C
- Unique design offers both single and three phase installation
- Element diameter: 8mm
- Terminal Enclosure Conforms and Certified to IP55 | IP65 | IP66 | IP67 | IP68

Part Number			Loading (kW)	Voltage (V)	Phase Connection	Immersed Length (in/mm)	Watts Density (W/cm ²)
2 ¼" BSP	2" BSP	1 ¾" BSP					
HRZi311A ISS 3	HRZi311B ISS 3	HRZi311C ISS 3	3	240/415	1/3 PH	11/280	7.7
HRZi616A ISS 3	HRZi616B ISS 3	HRZi616C ISS 3	6	240/415	1/3 PH	16/406	9.6
HRZi624A ISS 3	HRZi624B ISS 3	HRZi624C ISS 3	6	240/415	1/3 PH	24/609	7
HRZi636A ISS 3	HRZi636B ISS 3	HRZi636C ISS 3	6	240/415	1/3 PH	36/914	4.8
HRZi916A ISS 3	HRZi916B ISS 3	HRZi916C ISS 3	9	415	3 PH	16/406	14.9
HRZi924A ISS 3	HRZi924B ISS 3	HRZi924C ISS 3	9	415	3 PH	24/609	10.5
HRZi936A ISS 3	HRZi936B ISS 3	HRZi936C ISS 3	9	415	3 PH	36/914	7.2
HRZi1224A ISS 3	HRZi1224B ISS 3	HRZi1224C ISS 3	12	415	3 PH	24/609	14.1
HRZi1236A ISS 3	HRZi1236B ISS 3	HRZi1236C ISS 3	12	415	3 PH	36/914	9.6

*Contact us for chemical and oil applications

HRO Range Immersion Heaters

The HRO range of stock immersion heaters is designed for commercial and light industrial water heating applications. Previously known as the Heatrae Industrial and Ormandy R Series range of products, this is a trusted range with a wide installed base. The IP55 terminal box can be rotated through 180 degrees to facilitate easy installation into all types of locations. Supplied as standard with control and high safety limit thermostatic control. The heaters are available with both low temperature thermostats for frost control along with normal and high temperature thermostats to give a wide flexibility of application uses.



Key Features:

- For use in water applications only*
- IP55 rotatable terminal cover
- 2" & 2½BSP threaded glands
- Incoloy 825 alloy sheathed elements
- Wide range of thermostats available
- Available from stock
- Unique design offers both single and three phase installation

Part Number		Loading (kW)	Voltage (V)	Phase Connection	Immersed Length (in/mm)
2 ¼" BSP	2" BSP				
HRO111A ISS 3	HRO111B ISS 3	1	240/425	1/3 PH	11/280
HRO216A ISS 3	HRO216B ISS 3	2	240/415	1/3 PH	16/406
HRO311A ISS 3	HRO311B ISS 3	3	240/415	1/3 PH	11/280
HRO411A ISS 3		4	240/415	1/3 PH	11/280
HRO416A ISS 3		4	240/415	1/3 PH	16/406
HRO616A ISS 3	HRO616B ISS 3	6	240/415	1/3 PH	16/406
HRO630A ISS 3		6	240/415	1/3 PH	30/762
HRO636A ISS 3		6	240/415	1/3 PH	36/914
HRO724 ISS 3		7	240/415	1/3 PH	24/609
HRO916A ISS 3		9	415	3 PH	16/406
HRO924A ISS 3	HRO924B ISS 3	9	415	3 PH	24/609
HRO936A ISS 3		9	415	3 PH	36/914
HRO1224A ISS 3		12	415	3 PH	24/609
HRO1236A ISS 3	HRO1236B ISS 3	12	415	3 PH	36/914
HRO1824A ISS 3		18	415	3 PH	24/609
HRO1836A ISS 3		18	415	3 PH	36/914

*Contact us for chemical and oil applications

Our customers operate in several industries

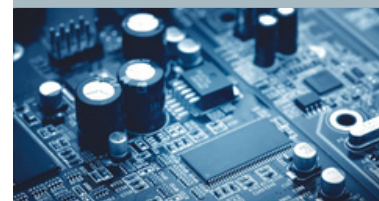
Industrial/Projects



Energy/Environment



Advanced Technology



Commercial Equipment



Home Appliance



Transportation



HVAC (Heating, Ventilation and Air Conditioning)



If your industry is not shown or you have a specific project in mind, please get in touch with us as we offer a bespoke service, tailored to your needs.

A complete package which is totally focussed on minimum lead time, maximum flexibility and full design service, from individual raw material components through to the finished solution.

info@heatrod.com

Backer Heatrod are based in Manchester and have been manufacturing electric heating elements and associated equipment for over 50 years.

This level of experience has allowed the business to develop into industrial products and projects whilst still retaining a base manufacturing capability for heating elements.



INDUSTRIAL

Heating is nothing without control and our range of industrial products are engineered not only to provide customers with the complete heating and control package but also to provide the relevant components in order to build and maintain their own heating applications.

Our application engineering team are available to provide support in selecting the right combination of components through to complete design and manufacturing services.



BRAUDE

The Braude brand is a range of heaters, heat exchangers, controllers and pumps, specifically designed for use in corrosive liquids. The brand has been part of Backer Heatrod since 2016 when E. Braude (London) Ltd was taken over by Backer Heatrod Ltd.

2020 saw the completion of the installation of the Braude production lines at our new factory in Bolton. All Braude products are now produced in this modern facility alongside the extensive range of heating elements already available from Heatrod.



Industrial/
Projects



Energy/
Environment



Advanced
Technology



Commercial
Equipment



Home
Appliance



Transportation



HVAC



Backer Heatrod, Unit 10 Top Deck, Smethurst Lane, Bolton, BL4 0AN | 0161 727 3713 | info@heatrod.com

www.heatrod.com | www.heatrodshop.com

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