CERAMIC PAD HEATING ELEMENTS

INTRODUCTION

The ceramic pad is the workhorse of on-site heat treatment. In view of their flexibility, they may be applied flat or to curved surfaces. They are ideal for the preheat and PWHT of pipework butt welds.

As the design is modular they are suitable for a wide range of sizes and shapes.

DESIGN

The ceramic pad is manufactured from high alumina ceramic beads with a nickel-chromium flexible core wire serpentined within the beads. Nickel tails are weld to the core wire. The pads are flexible and suitable for heat treatment temperatures up to 1050°C. Temperatures above this value can be achieved by variation of the composition of the core wire.

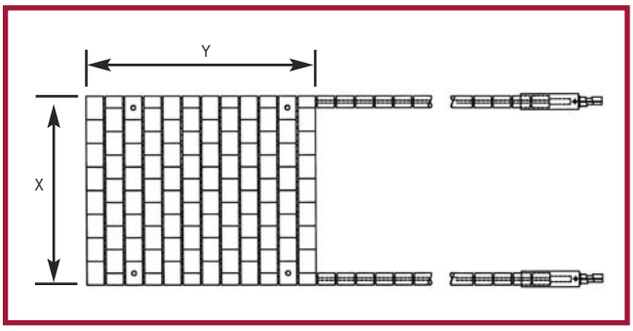
Standard pads are supplied for a range of voltages up to 240V

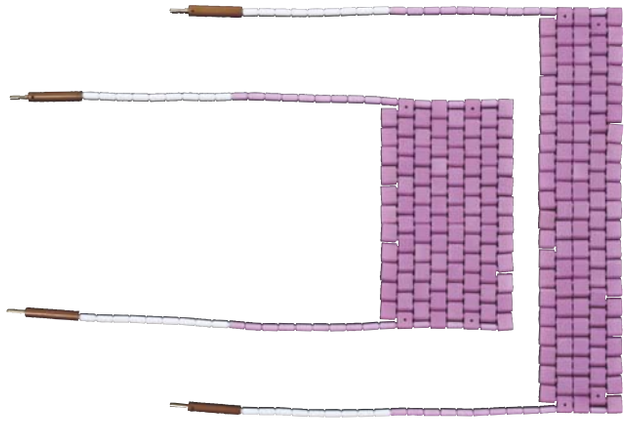
APPLICATION

Standard 30V, 60V and 80V heaters should deliver a current of 45amps. Minimise secondary cable lengths Standard 48V heaters should deliver a current of 52 amps. Check the current delivered.

Fit heater pad securely to component by banding or other suitable means and lock connectors fully home.

Avoid contaminants (grease, paint, oil etc) on the metal surface.





60V CERAMIC PADS

Stock Ref	X, Width,mm	Y, Length, mm	Volts	kW
400001	76	672	60	2.7
400002	102	504	60	2.7
400003	152	336	60	2.7
400004	203	252	60	2.7
400005	254	210	60	2.7
400006	305	168	60	2.7
400007	381	147	60	2.7
400008	406	126	60	2.7
400009	534	104	60	2.7
400010	610	84	60	2.7
400011	1220	42	60	2.7

48V CERAMIC PADS

Stock Ref	X, Width,mm	Y, Length, mm	Volts	kW
400091	76	672	48	2.5
400092	102	504	48	2.5
400093	152	336	48	2.5
400094	203	252	48	2.5
400095	254	210	48	2.5
400096	305	168	48	2.5
400097	381	147	48	2.5
400098	406	126	48	2.5
400099	534	104	48	2.5
400100	610	84	48	2.5
400101	1220	42	48	2.5

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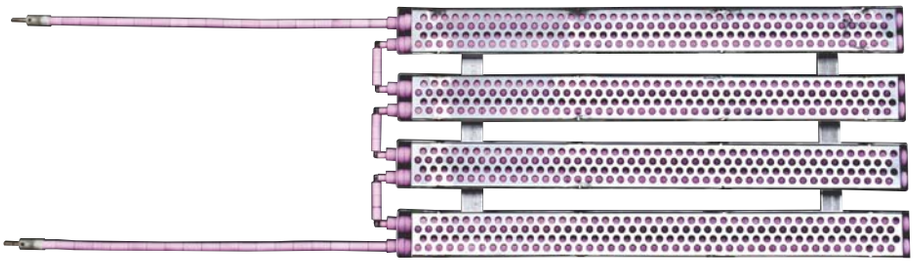
CHANNEL HEATING ELEMENTS

INTRODUCTION



The range of channel elements has been designed to provide modular heating units of a robust design suitable for connection to a mains or low voltage electrical supply.

The heaters are portable and solid and are suitable for use in temporary furnace design or for the heat treatment of pressure vessel welds and sections, or other large fabrications. Heat transfer to the component is effected by combined radiation and convection.

DESIGN

The heater element is manufactured from solid drawn 9swg Kanthal or nickel-chromium coiled wire. The coil may be embedded into a high conductivity cast refractory material within each of the unit stainless channels trays that form the heater. Alternatively the heaters can be manufactured with the traditional ceramic sleeves. The standard heaters are suitable for heat treatment temperatures up to 800°C. Temperatures above this value can be achieved by variation of the composition of the case/coiled wire and heater design. Standard heaters are supplied for a range of voltages up to 240V.

APPLICATION

Standard heaters should deliver a current of 55amps and unit heaters are designed for a range of voltages between 30 and 277V. The higher rating permits the connection of the heaters in groups of three to suit 3-phase supplies.

The heaters may be mounted on to supports (such as shown in the layout which follows) for vessel heat treatments or directly to the components as may be suitable.

Avoid contaminants (grease, paint, oil etc) on the metal surface.

CHANNEL HEATERS

Stock Ref	Description	Width ,mm, Across tails	Length, mm Excluding tails	Volts	kW	Weight, kg
400174	Single Channel	70	400	30	1.65	2.5
400171	Single Channel	70	720	60	3.3	3.9
400158	2-Bank channel	165	720	110	6.6	9.0
400164	4-Bank channel	360	720	60	13.2	15.5
400163	4-Bank channel	360	720	110	13.2	15.5
400152	4-Bank channel	360	720	240	13.2	15.5
400481 to 400490	Element tail extension hot leads c/w 60A male camlok	1m length (Ref 400481), 2m length (Ref 400482), 3m length (Ref 400483) etc, up to 10m length (Ref 400490)				

CERAMIC PAD PREHEATER (CPP) ELEMENTS

Stock Ref. 400181

INTRODUCTION

The ceramic pad preheater element is suitable for preheating and hydrogen diffusion heat treatments associated with the welding process. In view of the flexibility of the heater they may be applied to curved or flat surfaces. They are ideal for the preheating and PWHT of pipework or vessel longitudinal and circumferential weld seams and a wide range of fabricated components

As the design is modular, the heaters can be parallel connected into groups and therefore are suitable for accurate temperature control on a range of applications including vessel circumferential and longitudinal welds seams

APPLICATION

Standard heaters should deliver a current of 45amps. Minimise secondary cable lengths. Check the current delivered. Connect no more than three heaters in parallel to form one circuit.

Fit heater pad securely to component using magnetic fixings or by banding or other suitable means and lock connectors fully home.

Avoid contaminants (grease, paint, oil etc) on the metal surface.

DESIGN

The design of each CPP is based on a ceramic pad element manufactured in sintered high alumina ceramic beads with a nickel-chromium flexible core wire serpentined within the beads. The pads are selected on the basis of their dimensions as is suitable for the preheat temperature range.

The ceramic pad is mounted directly on to a safe Superwool insulation backing which is housed in a stainless steel mesh. The pad/insulation assembly is, in turn, protected with a flexible stainless steel backing. The backing permits the efficient application of the heater to the metal surface using magnetic fixings or by banding.

CERAMIC PAD PREHEATERS

Stock Ref	Width, mm	Length, mm	Volts	kW	Element Stock Ref
400181	101	775	60	2.7	400001
400182	127	604	60	2.7	400002
400189†	620	126	60	2.7	400009
400211	101	1024	80	3.6	400031
400212	127	793	80	3.6	400032
400220†	918	110	80	3.6	400040

Heater tails are across the width of the heater except where marked thus †

Stock Ref. 800092

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