CERAMIC PAD HEATING ELEMENTS (FCP)

We incorporate the highest quality materials available in the construction of our (FCP) heating elements. These materials make the heating elements highly durable, which extends the usable life of Cooperheat heating elements beyond that normally expected.

This extended life, high durability and reliability combine to save you money by:

- Reducing reworks and lost time due to heating element failures.
- Reducing your annual costs for replacing or repairing failed or damaged heating elements.

Cooperheat ceramic heating elements are constructed from high grade sintered alumina ceramic beads, nickel chrome core wire and nickel cold tail wire. The construction allows the heating element to be flexible and provides high heat transfer efficiency.

We insist on using high quality, ceramic beads, with a high resistance to thermal and physical shock, in the construction of the FCP.

The important physical properties, which make these beads superior to other beads used in the heat treatment industry, are available on request.

- Alumina content - 95%
- Bulk density fired - 3.7Mg/m^3
- Grain size - 6µm
- Vickers hardness - 12.5
- Rockwell hardness - 78 (R45N)
- Compressive strength - 2000MPa
- Flexural strength - 320MPa (ASTM C1161, 3 point)
- Young's modulus - 325Gpa
- Thermal conductivity - 21W/m^3

These beads are supplied to us by one of the leading specialist ceramic manufacturers in the ceramic industry. The cold tails of Cooperheat ceramic heating elements are butt welded to the heater core wire which eliminates the cold tail/core wire junction failures often seen with low quality heaters which use steel ferrules.

By selection, from the extensive range of the Cooperheat FCP, any pipe size or pipe configuration can be covered so that the correct amount of heating power can be applied to successfully heat treat the pipe weld or other fabrication. Our FCP's are manufactured with a range of power ratings for use with a selection of standard voltages.

If you require any special heating element configuration, voltage or power rating, we will use our heat treatment engineering expertise to provide you with a heating element custom built to meet your exact needs.

Please note: the width of the heater is the first measurement (ceramic bead width—tail to tail)

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HEATING ELEMENT SELECTION GUIDE: (FOR HEAT TREATMENT CYCLES UP TO 800°C)

Suggested applications for ceramic pad elements on Straight Pipe Butt Welds in Carbon Steel / Chromium Molybdenum Vanadium steel. To be used as a guide only: Reference should always be made to specific code or specification heated width requirements.

Nominal Bore Inches — (mm)	0 — 0.8 Inch (0-20mm)	0.8 — 0.9 Inch (20-23mm)	0.9 — 1.1 Inch (23-28mm)	1.1 — 1.4 Inch (28-36mm)	1.4 — 1.8 Inch (36-46mm)	1.8 — 2.4 Inch (46-61mm)
1.0 Inch (25.4mm)	1 x CP48	N/A	N/A	N/A	N/A	N/A
2.0 Inch (50.8mm)	1 x CP48	N/A	N/A	N/A	N/A	N/A
3.0 Inch (76.2mm)	1 x CP12	N/A	N/A	N/A	N/A	N/A
4.0 Inch (101.6mm)	1 x CP15	N/A	N/A	N/A	N/A	N/A
6.0 Inch (152.4mm)	2 x CP12	2 x CP12	N/A	N/A	N/A	N/A
8.0 Inch (205.2mm)	2 x CP15	3 x CP10	3 x CP10	N/A	N/A	N/A
10.0 Inch (254.0mm)	3 x CP12	4 CP8	4 x CP8	Two Rows 3 x CP12	N/A	N/A
12.0 Inch (304.8mm)	4 x CP10	4 x CP10	4 x CP10	Two Rows 4 x CP10	N/A	N/A
14.0 Inch (355.6mm)	3 x CP15	4 x CP12	6 x CP8	6 x CP8	Two Rows 4 x CP12	N/A
16.0 Inch (406.4mm)	Two Rows 4 x CP12	Two Rows 4 x CP12	Two Rows 4 x CP12	Two Rows 5 x CP10	Two Rows 5 x CP10	N/A
18.0 Inch (457.2mm)	Two Rows 4 x CP15	Two Rows 4 x CP15	Two Rows 4 x CP15	Two Rows 5 x CP12	Two Rows 5 x CP12	N/A
20.0 Inch (508.0mm)	Two Rows 5 x CP12	Two Rows 5 x CP12	Two Rows 5 x CP12	Two Rows 5 x CP12	Two Rows 6 x CP10	Two Rows 6 x CP10
22.0 Inch (558.8mm)	7 x CP10	7 x CP10	8 x CP6	N/A	N/A	N/A
24.0 Inch (609.6mm)	Two Rows 5 x CP15	Two Rows 5 x CP15	Two Rows 6 x CP12	Two Rows 6 x CP12	Two Rows 6 x CP12	Two Rows 7 x CP10
47.0 Inch (1,193.8mm)	Two Rows 12 x CP12	Two Rows 12 x CP12	Two Rows 12 x CP12	Three Rows 2 x CP12	Three Rows 12 x CP12	Three Rows 12 x CP12
63.0 Inch (1,600.2mm)	Two Rows 15 x CP12	Two Rows 15 x CP12	Two Rows 15 x CP12	Three Rows 15 x CP12	Three Rows 15 x CP12	Three Rows 15 x CP12

Elements

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Ceramic Pad Heating Elements 30V—1.35KW—45A (80/20 Ni-Cr Core Wire)
(All dimensions are nominal)

Stock Reference	Type Ref	Ceramic Beads Width	Ceramic Bead Height (Length of heater body)	Dimensions Width (mm)	Dimensions Height (mm)
20040	CP10	10	4	250mm	85mm
20042	CP20	20	2	510mm	45mm
20047	CP12	12	4	305mm	85mm
20048	CP7	7	7	178mm	147mm
20049	CP3	3	14	75mm	295mm
20052	CP4	4	11	100mm	230mm

Ceramic Pad Heating Elements 60V—2,7KW—45A (80/20 Ni-Cr Core Wire)
(All dimensions are nominal)

Stock Reference	Type Ref	Ceramic Beads Width	Ceramic Bead Height (Length of heater body)	Dimensions Width (mm)	Dimensions Height (mm)
20030	CP3	3	32	75mm	670mm
20031	CP4	4	24	100mm	505mm
20032	CP6	6	16	150mm	335mm
20033	CP8	8	12	205mm	250mm
20034	CP10	10	10	255mm	210mm
20035	CP15	12	8	305mm	165mm
20036	CP15	15	7	380mm	150mm
20037	CP16	16	6	405mm	125mm
20038	CP21	21	5	535mm	100mm
20039	CP24	24	4	610mm	85mm
20041	CP48	48	2	1,220mm	40mm

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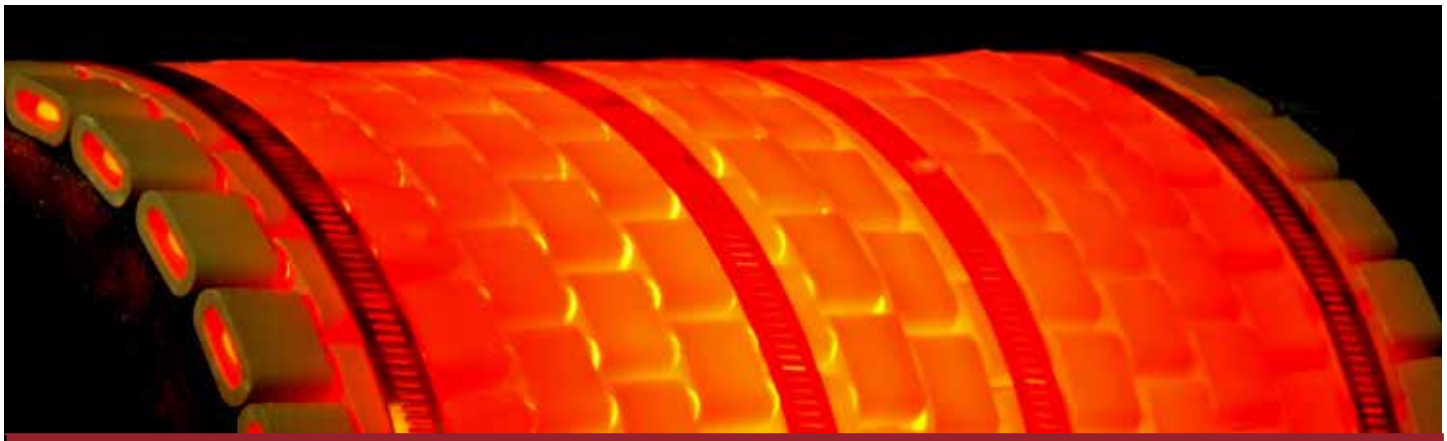

Ceramic Pad Heating Elements 80V—3.6KW—45A (80/20 Ni-Cr Core Wire)
(All dimensions are nominal)

Stock Reference	Type Ref	Ceramic Beads Width	Ceramic Bead Height (Length of heater body)	Dimensions Width (mm)	Dimensions Height (mm)
21630	CP3	3	47	75mm	985mm
21631	CP4	4	35	100mm	735mm
21632	CP6	6	24	150mm	500mm
21633	CP8	8	18	205mm	380mm
21634	CP10	10	15	255mm	315mm
21635	CP12	12	12	305mm	250mm
21636	CP15	15	10	380mm	210mm
21637	CP18	18	8	460mm	170mm
21638	CP21	21	7	535mm	145mm
21639	CP24	24	6	610mm	125mm
21640	CP29	29	5	735mm	105mm
21641	CP36	36	4	915mm	85mm