



# Innovative Heat Treatment

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## FLEXIBLE CERAMIC PADS-FCP



“The  
Heat Is  
On”



# SPECIFICATIONS

## Construction:

Highest quality materials available in the construction of our Ceramic Pad (FCP) heating elements.

- Reduce work time
- Highly Durable
- Extended Life
- Reduce annual repair costs



## Ceramic Beads

- High Resistance to Thermal and Physical Shock
- High grade sintered alumina ceramic beads 80/20 nickel cold tail wire.
- Flexibility and high heat transfer

## Advantage:

- Reduce worktime
- Highest Quality materials
- Highly Durable
- Extended Life
- Reduce annual repair costs



## Physical Properties:

- Alumina Content: 95 %
- Bulk Density Fired: 3.7 MG/M3
- Grain Size: 6 um
- Vickers Hardness: 12.5 ( GPA@Hv 0.5 kg )
- Rockwell Hardness: 78 (R45N)
- Compressive strength: 2000 Mpa
- Flexible strength: 320 MPA (ASTM C1161.3 point)
- Young Modulus: 325 Gpa
- Thermal Conductivity: 21 W/ m3



Heating elements are butt welded to the cold tails of ceramic eliminates the cold heater core wire which eliminates the cold tail/core wire junction failures often seen with low quality heaters which use steel ferrules.

# INDUSTRY APPLICATIONS



**Nuclear**  
Industry



**Aerospace**

Localized Heat  
treatment



**Oil**  
& Gas



**Mining**  
Industry

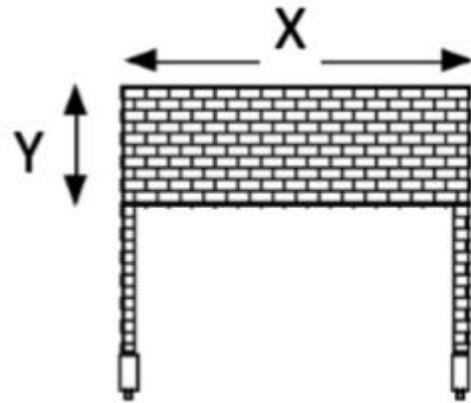
**“THE HEAT IS ON”**

# CERAMIC HEATER SIZES

## US & CANADA PAD SIZES



80 VOLT CERAMIC PAD HEATERS  
@ 45 AMPS - 3.6 kW



### CODES

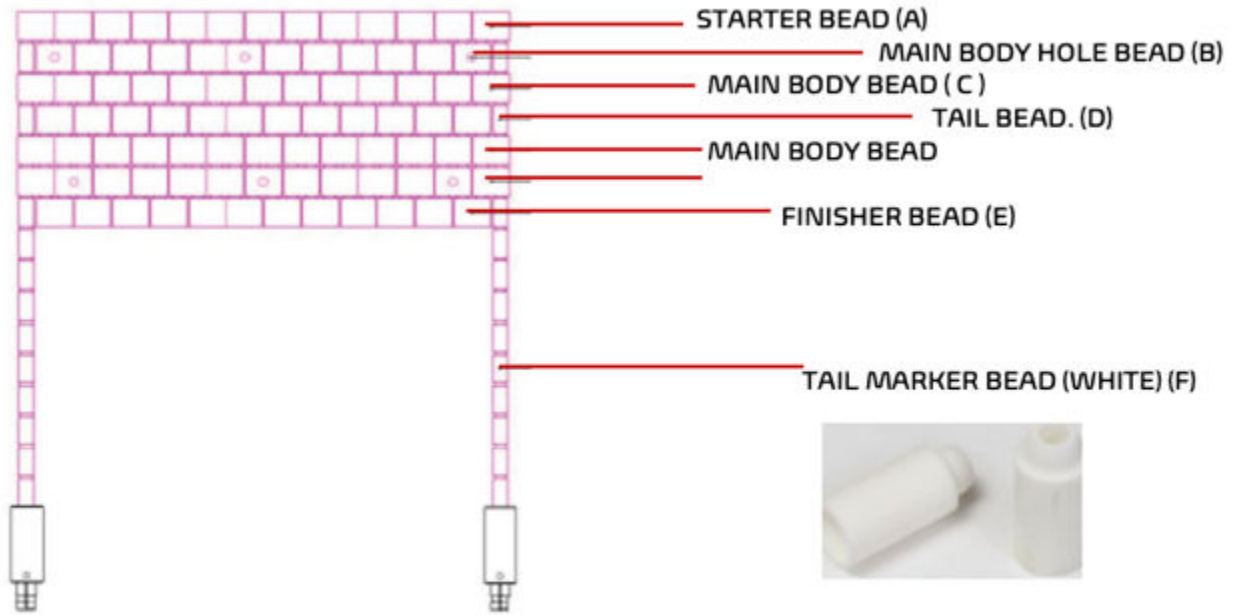
dimensions in inches

	X	Y
CP3	3	39
CP4	4	29
CP6	6	19.5
CP8	8	14.5
CP10	10	12.5
CP12	12	9.75
CP15	15	8
CP18	18	6.5
CP21	21	5.75
CP24	24	5
CP29	29	4
CP36	36	3.25

## NORTH AMERICAN SIZES-80 VOLTS

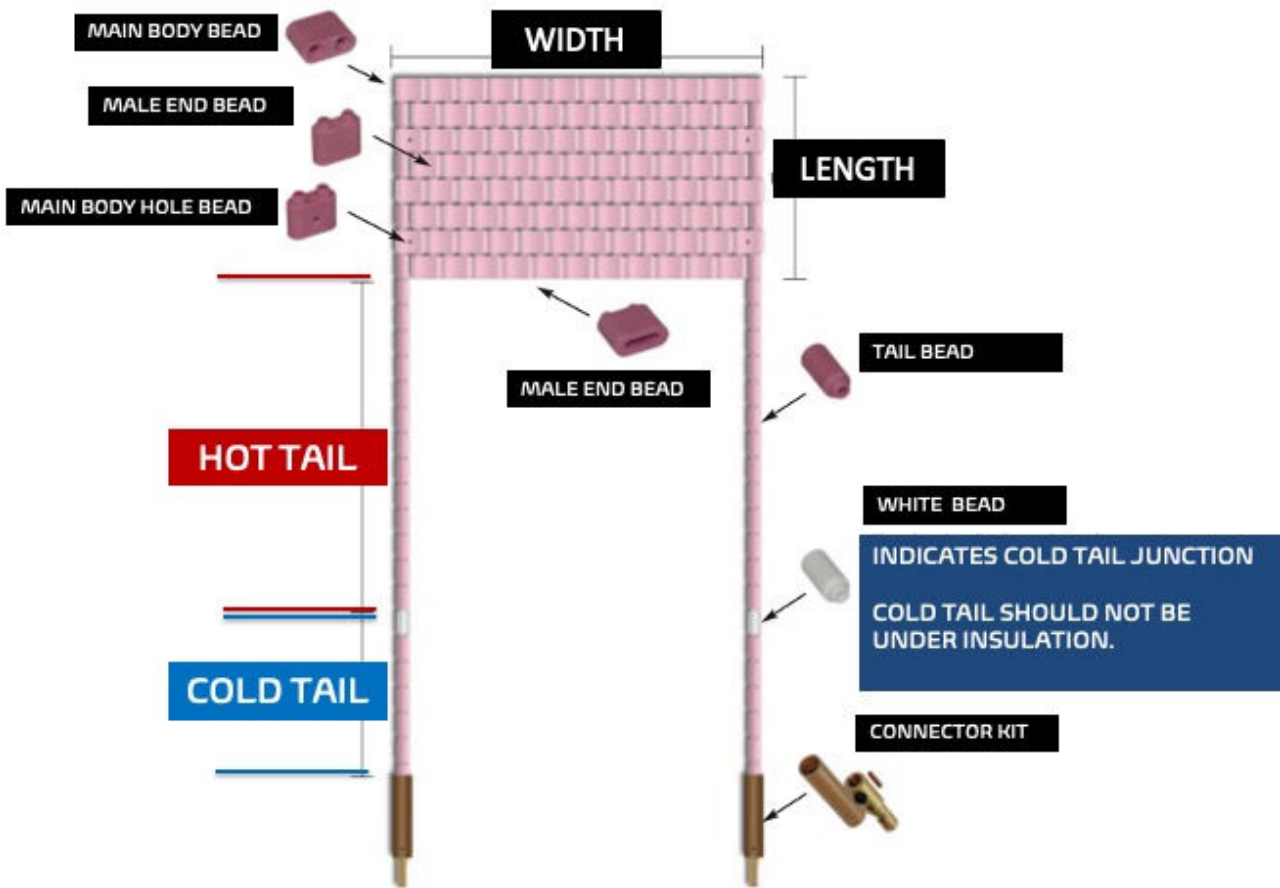
Catalog #	Ref#	Voltage	AMPS	Kw	Sizes (X) X (Y)
21113	CP3	80	45 A	3.6	3" X 39"
21114	CP4	80	45 A	3.6	4" X 29"
21116	CP6	80	45 A	3.6	6" X 19.5"
21118	CP8	80	45 A	3.6	8" X 14.5"
21110	CP10	80	45 A	3.6	10" X 12.25"
21112	CP12	80	45 A	3.6	12" X 9.75"
21115	CP15	80	45 A	3.6	15" X 8"
21118	CP18	80	45 A	3.6	18" X 6.5
21121	CP21	80	45 A	3.6	21" X 5.75"
21124	CP24	80	45 A	3.6	24" X 5"
21129	CP29	80	45 A	3.6	29" X 4"
21136	CP36	80	45 A	3.6	36" X 3.25"
21172	CP72	80	45 A	3.6	72" X 1.75"

# WHAT MAKES UP A HEATER?

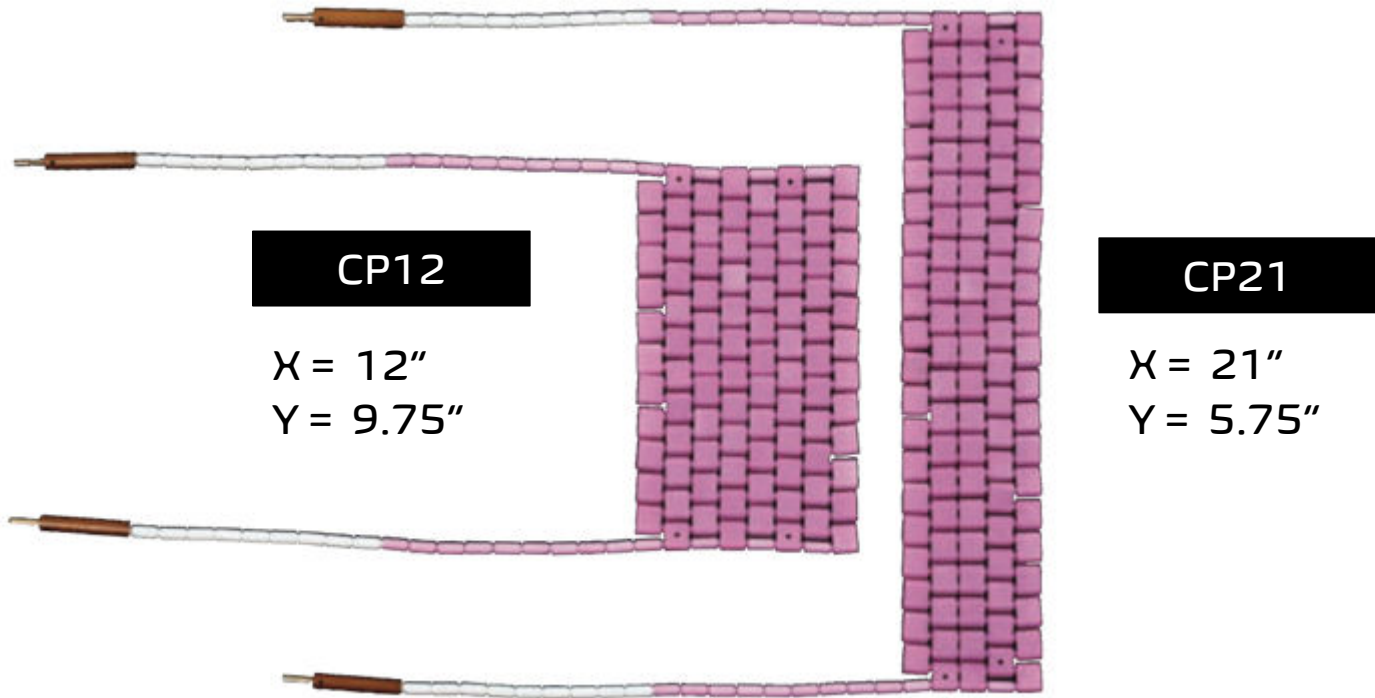


ITEM	LABEL	IMAGE
A	STARTER BEAD	
B	MAIN BODY HOLE BEAD	
C	TAIL BEAD	
D	MAIN BODY BEAD	
E	TAIL BEAD MARKER	

# FCP-FLEXIBLE CERAMIC PAD



## EXAMPLE - FCP SIZES



# FLEXIBLE CERAMIC PAD-PAD WRAP SETUP

1. CLEAN MAGNET & THERMOCOUPLE AREA



2. WRAP (FCP) WITH FIBER TAPE OVER PAD



3. STAINLESS STEEL BANDING



4. WRAP PADS WITH INSULATION



5. CREATE A THERMOCOUPLE INSIDE THE HEAT TREATMENT AREA



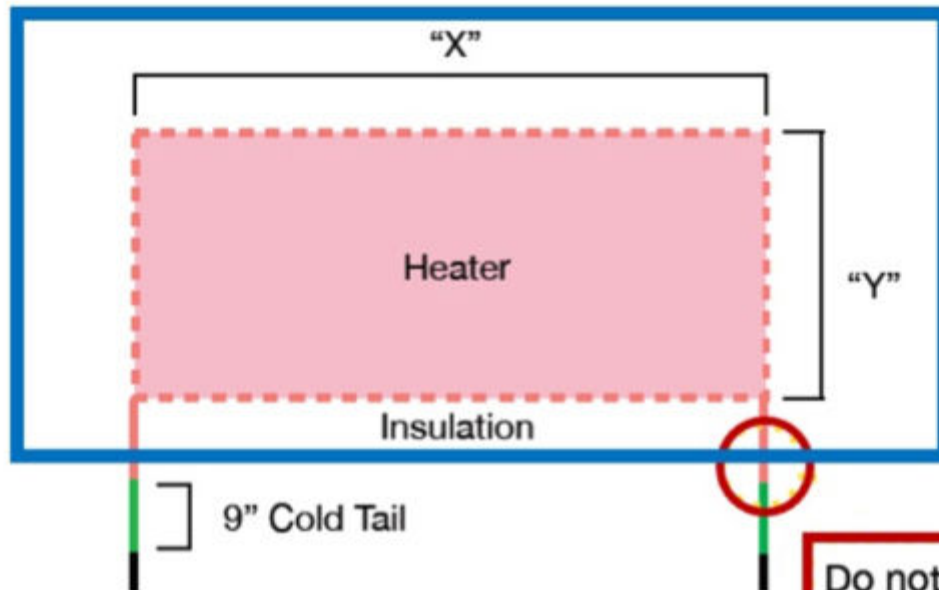
REDUCE  
HEAT  
LOSS

6. INSULATE INSIDE OF THE PIPE





# INNOVATIVE – HOT PAD TIPS



INSULATION  
COVERAGE  
4" ON  
EITHER SIDE

Do not insulate  
over the hot to  
cold junction or  
the cold tail.



Flexible ceramic pads  
are made of interlocking  
beads molded from  
sintered 95 % alumina  
ceramics. Multi stranded  
80/20 nichrome electric  
resistance heating wire  
is weaved through  
beads.



## CARE & MAINTENANCE



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Customized Heat Treatment Equipment

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