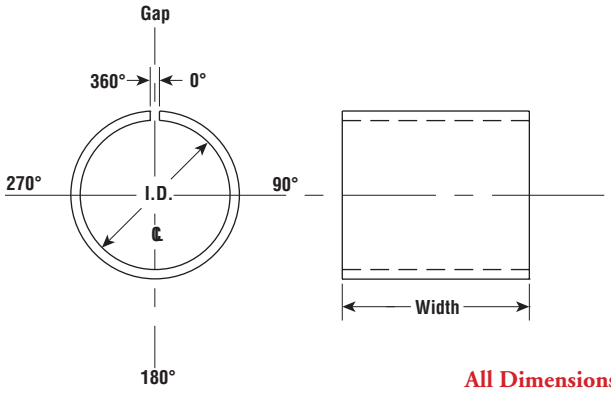
CB
Ceramic Band Heater

- **3-12" Barrel Dia.**
- **1-1/2 - 6" Widths**
- **500 - 5,000 Watts**
- **120 to 600 Volts**
- **18 - 40 W/In²**
- **Ceramic Fiber Insulated**
- **Up to 1600°F Band Operating Temp.**
- **Corrosion - Resistant Alloy Shell**

Dimensions



All Dimensions in Inches

Applications

- Blow Molding
- Die Heads
- Extruders
- Heating Pipes
- Injection Molding

Features

Type CB ceramic band heaters are best suited for applications up to 1600°F Band operating temperatures and provide even heating on injection and extrusion molding barrels. The ceramic segments and high temperature resistance wires are capable of highly efficient heat transfer. Ceramic fiber insulation, 1/4" thickness, provides an additional 25% energy savings over non-insulated types. Ceramic bands also contribute a radiant heating effect to the object being heated. They can be constructed in greater widths, allowing fewer heaters per zone, wider heating patterns, and simplified wiring.

Energy Efficient, 25% Savings

Radiant Heating Principle

Uniform Heating Pattern

Available in **Special** Configurations

Thermal Insulation

1600°F Band Operating Temperatures

Flexible

Corrosion-Resistant Alloy Shell

High Temperature Resistance Wires

Construction

The use of ceramic inserts to support high temperature resistance wire allows the Chromalox Type CB ceramic heater band to operate at high temperatures reaching 1500°F. Corrosion resistant metal is slit along the edges to allow easy fitting of the shroud to the object being heated.

Insulation — 1/4" of ceramic fiber is placed between the inserts and the shroud to provide a 25% energy savings over non-insulated heater bands. Additional insulation and metal liners can be supplied as an option.

Clamping Method — Mounting flanges are standard on Chromalox ceramic bands. Other clamping methods are available.

Terminations — Due to the high temperature capabilities of ceramic insulated heat bands, the use of lead wires is not recommended. When leads must be supplied, Chromalox will exit the heater with ceramic wire insulating beads, and make a junction with the nickel alloy lead wire at a point outside the shroud. Terminals are generally best located 180° from the gap. Alternate locations are possible, consult factory.

Sensor Holes — Sensor holes should be positioned in the gap, and a shroud be supplied as a shell overlap construction. For holes through the elements, consult factory.

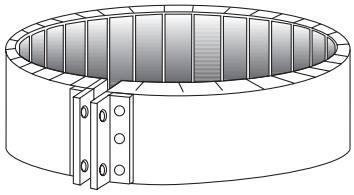
CB
Ceramic Band Heater

Variations

One-Piece

Standard completely flexible construction consists of flange lockup, 1/4" thick ceramic insulation, 1/4-20 screw terminals, located 180° from gap, on width center line.

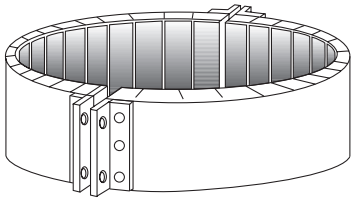
Max. I.D. 21"
Min. Width 1-1/2"



Two-Piece

Easy to apply when an obstruction prohibits the application of 1-piece heater. Heaters can be supplied with any termination or clamping variation. 2-piece heaters are rated at half of the voltage and each half is rated half of the total wattage. Larger diameters made in multiple segments.

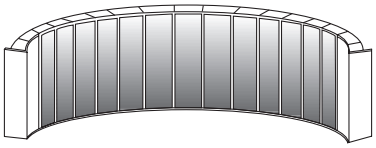
Min. I.D. 4"
Width 1-1/2"
Max. I.D. 44"



Partial Coverage

Allows for the heating of the accessible portion of machine when full coverage is not possible. Heaters supplied with standard clamping and termination.

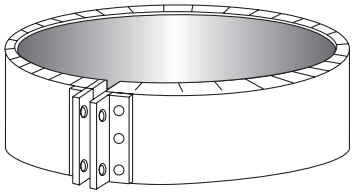
Min. length 6"
Max. length 21".



Liner

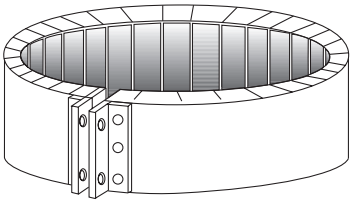
Stainless steel liners inhibit contamination of the ceramic tiles.

Min. I.D. 3"
Width 1-1/2"
Max. I.D. 21"



Special Insulation

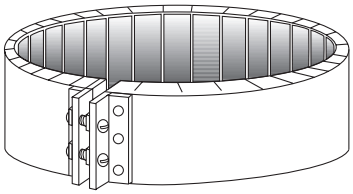
1/2" ceramic fiber insulation can be inserted. The thickness of the heater will expand to 3/4". When 3/4" ceramic fiber and an inner liner is inserted the heater will be 7/8" thick.



Clamping

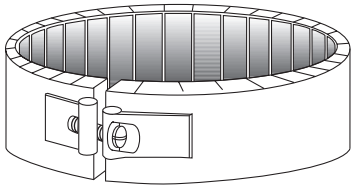
Bent-Up Flange - F

Flange clamping is standard construction on ceramic heaters



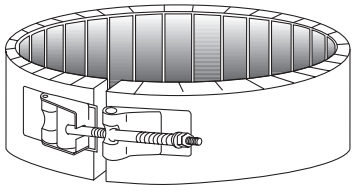
Built-In Bracket - BB

Mounting bracket with barrel nut lockup, and 1/4-20 screws. Supplied in any construction or termination variation.



Latch and Trunion - LT

Quick Release Spring loaded latch & trunion. Recommended I.D. 12" or greater.



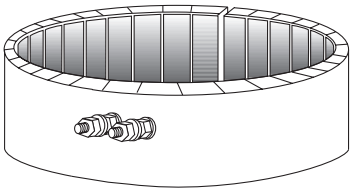
CB
Ceramic Band Heater *(cont'd.)*

Terminations

Tandem T-2

Tandem terminals located 180° from gap, on center line with length of heater. Available with 1/4-20 post terminals. Standard on widths under 3".

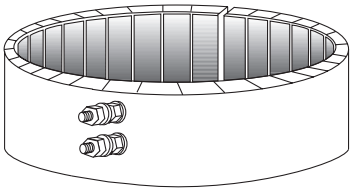
Min. I.D. 3"



Parallel T-3

Parallel terminals located 180° from gap with width of heater. Available with 1/4-20 post terminals. Standard on all heaters greater than 3" width.

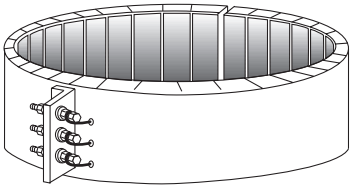
Min. I.D. 3"
Min. Width 3"



Standoff Terminals - SO

Provides relief from direct heat. Available on any constrution or clamping variation. Single or 3-phase power, single or dual voltage.

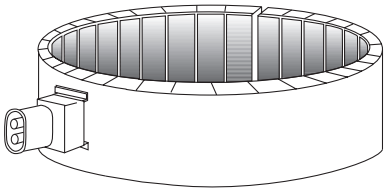
Min. I.D. 3"
Min. Width 3"



Euro Plug - EP

Quick disconnect cup assembly is a safe way to provide power to heater.

Min. Width 1-1/2"
Max. Amps 15 at 240V, Max. Volts 240

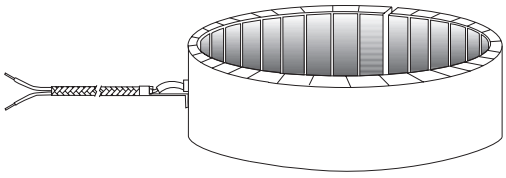


Lead Types

Stainless Steel Metal Braid - C

Provides abrasion resistant protection of fiberglass leads. Leads exit one point of heater surface through a strain relief. 10" braid over 12" leads, standard.

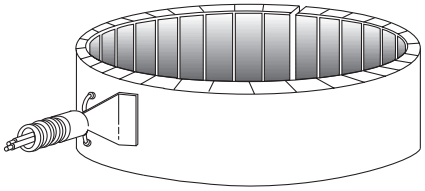
Min. I.D. 3"
Min. Width 1-1/2"



Metal Flexible Conduit - M

Stainless steel or galvanized. Flexible metal conduit to protect leads from abrasion. Available on any construction or clamping variation. 10" metal conduit over 12" fiberglass leads, standard.

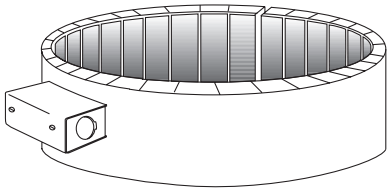
Min. I.D. 3"
Min. Width 1-1/2"



Options

Terminal Box Protection - TB

Designed in standard height of 1-3/4" high, with 5/8" conduit knockout for standard metal conduit connections. Protects terminals from damage, spill leakage, grounding or short circuiting. Available for single or 3-phase construction. For conduit connections, consult factory.



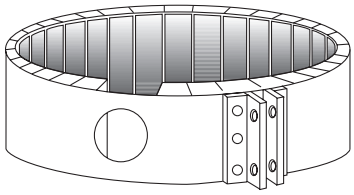
CB
Ceramic Band Heater *(cont'd.)*

Options (cont'd.)

Shroud Overlap

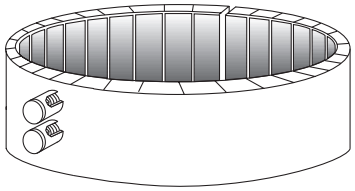
Shroud overlap designed to accommodate a thermocouple hole in gap. This is the preferred way of adding a themocouple hole. Heaters can be supplied with any termination or clamping variation.

Min. I.D. 5"
Width 1-1/2"
Max. I.D. 21"



Ceramic Caps - CC

Protects against electric shock, when used with insulated wire. Can be rotated at any angle - Screw size 1/4-20 standard.



How to Order Ceramic Bands

1. Order by Catalog Code and PCN
2. Specify quantity
3. Specify Inside diameter (ID)
4. Specify Width (1/2" increments)
5. Wattage - 2-piece bands each half is rated one-half the wattage.
6. Voltage on 2-piece bands, we recommend each piece is rated at half the operating voltage.
7. Terminal type - post terminals are standard, specify terminal location.
8. Standard 1/4" insulated or optional 1/2" insulation.
9. Indicate size and location of thermocouple holes, cutouts, partial coverage, gaps or other special features - Fax Drawing.

Specifications

Sheath Material	Corrosion resistant alloy shroud
Maximum Temperature	1600°F
Insulation Material	Thickness of heater with 1/4" insulation = 5/8 Thickness of heater with 1/2" insulation = 3/4"
Minimum I.D.	3"
Minimum Width/Tolerance	1-1/2" wide Width in 1/2" increments Width tolerance: ± 1/8"
Standard Gap When Tightened	3/8" ± 1/8"
Resistance Tolerance	NEMA standard + 10% -5%
Wattage Tolerance	NEMA standard +5% -10%
Watt Density	Depends on power, operating temperature and heater size. See ordering information.
Maximum Volts	600 volts
Maximum Amps	25 amps

CB
Ceramic Band Heater *(cont'd.)*

Specifications and Ordering Information

Watts	W/In²	Dimensions (In.)		Terminal Type	120V			240V		
		I.D.	Width		Model	Stock	PCN	Model	Stock	PCN
500	40	3	1-1/2	T2	CB3A1J1P1	NS	160012	CB3A1J1P2	NS	160020
700	26	3	3	T3	CB3A3A1P1	NS	160055	CB3A3A1P2	NS	160063
1500	40	3	4	T3	CB3A4A1P1	NS	160071	CB3A4A1P2	NS	160080
1350	28	3	6	T3	CB3A6A1P1	NS	160098	CB3A6A1P2	NS	160100
1800	35	3	6	T3	CB3A6A1P3	NS	160119	CB3A6A1P4	NS	160127
600	38	3-1/2	1-1/2	T2	—	—	—	CB3J1J1P1	NS	160135
650	30	3-1/2	2	T2	CB3J2A1P1	NS	160143	CB3J2A1P2	NS	160151
800	37	3-1/2	3	T3	CB3J3A1P1	NS	160160	CB3J3A1P2	NS	160178
1200	30	3-1/2	4	T3	—	—	—	CB3J4A1P1	NS	160186
1000	23	3-1/2	4-1/2	T3	CB3J4J1P1	NS	160194	CB3J4J1P2	NS	160207
800	22	4	2	T2	**CB4A2A1P1**	**S**	**160223**	**CB4A2A1P2**	**S**	**160231**
1200	35	4	3	T3	**CB4A3A1P1**	**S**	**160240**	CB4A3A1P2	NS	160258
1200	26	4	4	T3	—	—	—	CB4A4A1P1	NS	160266
2500	38	4	6	T3	—	—	—	**CB4A6A1P1**	**S**	**160274**
700	35	4-1/2	1-1/2	T2	**CB4A6A1P3**	**S**	**160282**	—	—	—
1100	40	4-1/2	2	T2	—	—	—	**CB4J2A1P1**	**S**	**160290**
1000	19	4-1/2	4	T3	**CB4J4A1P1**	**S**	**160303**	**CB4J4A1P2**	**S**	**160311**
2000	26	4-1/2	6	T3	—	—	—	**CB4J6A1P1**	**S**	**160346**
800	35	5	1-1/2	T2	—	—	—	**CB5A1J1P1**	**S**	**160354**
850	19	5	3	T3	**CB5A3A1P1**	**S**	**160370**	—	—	—
1250	28	5	3	T3	**CB5A3A1P2**	**S**	**160389**	**CB5A3A1P3**	**S**	**160397**
1600	35	5	3	T3	—	—	—	**CB5A3A1P4**	**S**	**160400**
1250	24	5	3-1/2	T3	**CB5A3J1P1**	**S**	**160418**	CB5A3J1P2	NS	160426
2200	38	5	4	T3	**CB5A4A1P1**	**S**	**160434**	**CB5A4A1P2**	**S**	**160442**
2750	32	5	6	T3	**CB5A6A1P1**	**S**	**160450**	**CB5A6A1P2**	**S**	**160469**
900	38	5-1/2	1-1/2	T2	**CB5J1J1P1**	**S**	**160477**	**CB5J1J1P2**	**S**	**160485**
1000	30	5-1/2	2	T2	**CB5J2A1P1**	**S**	**160493**	**CB5J2A1P2**	**S**	**160506**
1500	38	5-1/2	2-1/2	T2	—	—	—	**CB5J2J1P1**	**S**	**160514**
1200	25	5-1/2	3	T3	**CB5J3A1P1**	**S**	**160522**	**CB5J3A1P2**	**S**	**160530**
1550	25	5-1/2	4	T3	**CB5J4A1P1**	**S**	**160549**	**CB5J4A1P2**	**S**	**160557**
2000	24	5-1/2	5	T3	**CB5J5A1P1**	**S**	**160565**	**CB5J5A1P2**	**S**	**160573**
650	27	5-3/4	1-1/2	T2	—	—	—	**CB5N1J1P1**	**S**	**160581**
850	25	5-3/4	2	T2	**CB5N2A1P1**	**S**	**160590**	**CB5N2A1P2**	**S**	**160602**
1250	25	5-3/4	3	T3	**CB5N3A1P1**	**S**	**160610**	**CB5N3A1P2**	**S**	**160629**
1200	18	5-3/4	4	T3	**CB5N4A1P1**	**S**	**160637**	**CB5N4A1P2**	**S**	**160645**
1100	40	6	1-1/2	T2	—	—	—	**CB6A1J1P1**	**S**	**160653**
1000	28	6	2	T2	**CB6A2A1P1**	**S**	**160661**	**CB6A2A1P2**	**S**	**160670**
1500	35	6	2-1/2	T2	**CB6A2J1P1**	**S**	**160709**	**CB6A2J1P2**	**S**	**160717**
1600	29	6	3	T3	**CB6A3A1P1**	**S**	**160725**	**CB6A3A1P2**	**S**	**160733**
1450	21	6	4	T3	**CB6A4A1P1**	**S**	**160741**	**CB6A4A1P2**	**S**	**160750**
1800	20	6	5	T3	**CB6A5A1P1**	**S**	**160768**	**CB6A5A1P2**	**S**	**160776**
2000	22	6	5-1/2	T3	**CB6A5J1P1**	**S**	**160784**	**CB6A5J1P2**	**S**	**160792**
2000	19	6	6	T3	**CB6A6A1P1**	**S**	**160805**	**CB6A6A1P2**	**S**	**160813**
3000	28	6	6	T3	**CB6A6A1P3**	**S**	**160821**	**CB6A6A1P4**	**S**	**160830**

Note: For watt densities higher than 40 wpsi, consult factory.

CB
Ceramic Band Heater *(cont'd.)*

Specifications and Ordering Information

Watts	W/In²	Dimensions (In.)		Terminal Type	120V			240V		
		I.D.	Width		Model	Stock	PCN	Model	Stock	PCN
1000	33	6-1/2	1-1/2	T2	**CB6J1J1P1**	**S**	**160848**	**CB6J1J1P2**	**S**	**160856**
1000	26	6-1/2	2	T2	**CB6J2A1P1**	**S**	**160864**	**CB6J2A1P2**	**S**	**160872**
1600	35	6-1/2	3	T3	—	—	—	**CB6J3A1P1**	**S**	**160880**
2500	26	6-1/2	5	T3	**CB6J5A1P1**	**S**	**160899**	**CB6J5A1P2**	**S**	**160901**
3000	24	6-1/2	6-1/2	T3	**CB6J6J1P1**	**S**	**160910**	**CB6J6J1P2**	**S**	**160928**
1000	31	6-3/4	1-1/2	T2	**CB6N1J1P1**	**S**	**160936**	**CB6N1J1P2**	**S**	**160944**
1250	36	6-3/4	2	T2	**CB6N2A1P1**	**S**	**160952**	**CB6N2A1P2**	**S**	**160960**
2000	25	6-3/4	4	T3	—	—	—	**CB6N4A1P1**	**S**	**161605**
3000	30	6-3/4	5	T3	**CB6N5A1P1**	**S**	**160987**	**CB6N5A1P2**	**S**	**161613**
3000	25	6-3/4	6	T3	—	—	—	**CB6N6A1P1**	**S**	**161007**
1700	38	7	2	T2	—	—	—	**CB7A2A1P1**	**S**	**161023**
2500	38	7	3	T3	—	—	—	**CB7A311P1**	**S**	**161621**
2600	32	7	4	T3	CB7A4A1P1	NS	161040	**CB7A4A1P2**	**S**	**161648**
3000	30	7	5	T3	CB7A5A1P1	NS	161066	**CB7A5A1P2**	**S**	**161664**
5000	40	7	6	T3	CB7A6A1P1	NS	161082	**CB7A6A1P2**	**S**	**161090**
1200	35	7-1/2	1-1/2	T2	—	—	—	**CB7J1J1P1**	**S**	**161103**
1500	35	7-1/2	2	T2	—	—	—	**CB7J2A1P1**	**S**	**161672**
1800	30	7-1/2	3	T3	—	—	—	**CB7J3A1P2**	**S**	**161120**
2000	20	7-1/2	4-1/2	T3	CB7J4J1P1	NS	161680	**CB7J4J1P2**	**S**	**161146**
3000	30	7-1/2	4-1/2	T3	—	—	—	**CB7J4J1P3**	**S**	**161699**
2500	22	7-1/2	5	T3	CB7J5A1P1	NS	161162	**CB7J5A1P2**	**S**	**161701**
3500	32	7-1/2	5	T3	—	—	—	**CB7J5A1P3**	**S**	**161189**
3500	33	7-1/2	5-1/2	T3	—	—	—	**CB7J5J1P1**	**S**	**161728**
4500	25	7-1/2	6	T3	—	—	—	**CB7J8A1P1**	**S**	**161200**
1250	33	8	1-1/2	T2	**CB8A1J1P1**	**S**	**161218**	**CB8A1J1P2**	**S**	**161226**
1500	21	8	2	T2	—	—	—	**CB8A2A1P1**	**S**	**161744**
2000	28	8	3	T3	CB8A3A1P1	NS	161242	**CB8A3A1P2**	**S**	**161250**
3000	30	8	4	T3	—	—	—	**CB8A4A1P1**	**S**	**161269**
3500	28	8	6	T3	—	—	—	**CB8A6A1P1**	**S**	**161277**
1500	39	8-1/2	1-1/2	T2	CB8J1J1P1	NS	161285	**CB8J1J1P2**	**S**	**161752**
1300	31	9	1-1/2	T2	CB9A1J1P1	NS	161322	CB9A1J1P2	NS	161330
1750	32	9	2	T2	CB9A2A1P1	NS	161349	CB9A2A1P2	NS	161779
2000	30	9	2-1/2	T2	CB9A2J1P1	NS	161365	CB9A2J1P2	NS	161373
2800	34	9	3	T3	—	—	—	CB9A3A1P1	NS	161381
2500	19	9	5	T3	—	—	—	CB9A5A1P1	NS	161787
3000	20	9	5-1/2	T3	—	—	—	CB9A5J1P1	NS	161402
2200	25	9-1/2	3	T3	—	—	—	CB9J3A1P1	NS	161795
4200	32	9-1/2	6	T3	—	—	—	CB9J6A1P1	NS	161429
2400	26	10	3	T3	—	—	—	CB10A3A1P1	NS	161808
3000	20	10	5	T3	—	—	—	CB10A5A1P1	NS	161445
3500	25	10	5-1/2	T3	—	—	—	CB10A5J1P1	NS	161461
2500	25	10-1/2	3	T3	—	—	—	CB10J3A1P1	NS	161470
4000	34	10-1/2	4-1/2	T3	—	—	—	CB10J4J1P1	NS	161488
2500	25	11	3	T3	—	—	—	CB11A3A1P1	NS	161496
4000	25	11	5	T3	CB11A5A1P1	NS	161509	CB11A5A1P2	NS	161824
4500	23	11	6	T3	—	—	—	CB11A6A1P1	NS	161525
2000	28	12	2	T2	—	—	—	CB12A2A1P1	NS	161533
2500	28	12	3	T3	—	—	—	CB12A3A1P1	NS	161541
4000	19	12	6	T3	CB12A6A1P1	NS	161832	CB12A6A1P2	NS	161568
5000	23	12	6	T3	CB12A6A1P3	NS	161576	CB12A6A1P4	NS	161584

Note: For watt densities higher than 40 wpsi, consult factory.