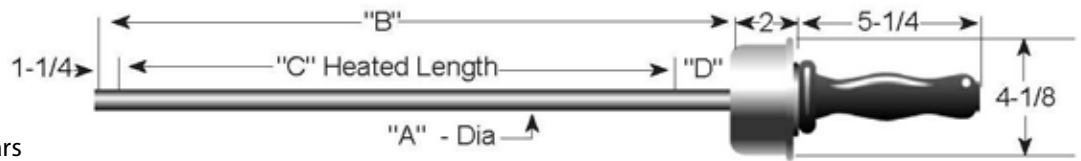




BOLT HEATERS/

FLEXIBLE BOLT HEATERS



Heatrex has over thirty-five years experience in the design and manufacture of high quality bolt heaters.

The Heatrex Bolt Heater is specifically designed to provide maximum watt density rating on the heated tube length. Heatrex uses the highest quality materials commonly available to manufacture these heaters and maintains rigid quality control procedures to insure a reliable product. Each heater is energized at rated voltage and electrically tested at full heat prior to shipment.

Applications

Heatrex Bolt Heaters are used to preheat large, hollow holding bolts or studs where a high concentration of heat is critical for bolt expansion in a short period of time. As an insertion type unit, the bolt heater is widely used in the manufacture and servicing of heavy duty steam or other pressure equipment. It is also used to heat die blocks and large platens and to expand adjusting bolts on mechanical or hydraulic presses.

In general, most applications attempt to produce an expansion (or stretch) of .0015 inches per inch of length on alloy bolts. This will produce a bolt stress of 45,000 psi at the root of the thread. The portion of the bolting member to be heated, excluding threads, is usually approximately 65% of the total length.

The following chart outlines suggested heater diameters for some common hole sizes to produce the above stretch using standard Heatrex Bolt Heaters.

Clearance Hole	Heater Diameter
.500	438
.625	.553 or .565
.750	.688
.813	.781
.875	.813
1.000	.938
1.125	1.047
1.250	1.188
1.500	1.324

Standard Features

- Alloy sheath swaged tubular construction
- Grade "A" magnesium-oxide filled and swaged
- 80/20 Nickel chrome alloy resistance wire
- Standard 4" octagon electrical enclosure, with knock-outs for easy wiring
- Insulating handle
- Wide range of standard (stock) diameters and length

Optional Features

- Special watt densities, wattages, lengths and diameters available
- Three conductor power leads and plug assemblies
- Two conductor power leads with grounding clip and plug assemblies
- Replaceable element bolt heaters feature cast boxes for convenient screw-in interchangeability
- Flexible Bolt Heaters available

Benefits

- Fast response, large bolts can be heated to full expansion in 15-30 minutes
- May be used in multiples, for uniform heating of matching bolts

Installation

Heatrex Bolt Heaters can be portable with plug disconnect. When multiple heaters are used, all must be energized simultaneously. Check service to determine that the line will carry the heater load at rated voltage. For insertion applications, hole diameter should be as close to heater diameter as possible (1/16" maximum clearance). Close tolerance will permit maximum heat transfer and prolong heater life. For applications other than bolt heating contact the factory.

Operating Instructions

Warning: Do not operate bolt heater at rated voltage in open air. Insert heater into bolt before energizing. Heater must be properly fused and grounded.

In view of the fact that bolt heaters operate at high temperatures with a relatively short life, ultimate failure should be anticipated and precautions taken to prevent an electrical or shock hazard.

Heaters should be connected to a power supply of rated voltage on the nameplate. All field wiring should be in accordance with NEC and local codes.

Adequate wire size for total amperage and length of run should be determined from standard code tables. Where more than one heater is used on a circuit, it is recommended that each heater be individually fused to prevent damage to the equipment and possible shock hazard to operating personnel.

Storage

Care should be taken to store heaters properly prior to use. Heaters must be stored inside in dry heated locations. Do not store in wet humid locations. If heaters have been stored for more than sixty days or have not been used for over thirty days between operations, insulation tests should be conducted to check for moisture absorption (see Field Test Instructions included with shipment).

Bolt Heater Selection Guide

Watts	Dimension In.				Catalog Number		Wt. lb (approx.)
	"A"	"B"	"C"	"D"	120V	240V	
825 1240 1650 2475	.438	19 1/4 25 1/4 31 1/4 43 1/4	12 18 24 36	6	200001-1 200002-1 200003-1 200004-1	200001-2 200002-2 200003-2 200004-2	1 2 2 2
1050 1560 2085 3125 4175	.553	19 1/4 25 1/4 31 1/4 43 1/4 55 1/4	12 18 24 36 48	6	200005-1 200006-1 200007-1 200008-1 200056-1	200005-2 200006-2 200007-2 200008-2 200056-2	1 2 3 3 4
1300 1950 2600 3900 5185 6485	.688	19 1/4 25 1/4 31 1/4 43 1/4 55 1/4 67 1/4	12 18 24 36 48 60	6	200009-1 200010-1 200011-1 200012-1 200048-1 200054-1	200009-2 200010-2 200011-2 200012-2 200048-2 200054-2	2 3 3 4 5 5
1535 2300 3065 4600 6135 7665	.813	19 1/4 25 1/4 31 1/4 43 1/4 55 1/4 67 1/4	12 18 24 36 48 60	6	200013-1 200014-1 200015-1 200016-1 200046-1 200053-1	200013-2 200014-2 200015-2 200016-2 200046-2 200053-2	2 4 5 6 6 8
1770 2650 3540 5300 7075 8850	.938	22 1/4 28 1/4 34 1/4 46 1/4 58 1/4 70 1/4	12 18 24 36 48 60	9	200017-1 200018-1 200019-1 200020-1 200049-1 200055-1	200017-2 200018-2 200019-2 200020-2 200049-2 200055-2	4 5 5 7 8 9
1975 2960 3950 5925 7900 9870	1.047	22 1/4 28 1/4 34 1/4 46 1/4 58 1/4 70 1/4	12 18 24 36 48 60	9	200017-2 200018-2 200019-2 200020-2 200049-2 200055-2	200017-2 200018-2 200019-2 200020-2 200049-2 200055-2	5 6 6 8 10 11
4995 7490 9985 12490	1.324	37 1/2 49 1/2 61 1/2 73 1/2	24 1/4 36 1/4 48 1/4 60 1/4	12	200026-1 200027-1 200028-1 200029-1	200026-2 200027-2 200028-2 200029-2	8 11 15 16

Watts	Dimensions (in.)				Catalog Number		
	"A"	"B"	"C"	"D"	115V	230V	240V
845 1350 1850 2360 2865	.565	14 20 26 32 38	10 16 22 28 34	2.75	- - - - -	- - - - -	540223 540224 540225 540058 540092
270 440 620 790	.565	7 9 11 13	7 9 11 13	2.75	540180 540181 540042 540079	- - - -	- - - -
960 1140 1310 1500 1660 1850	.565	15 17 19 21 23 25	11 13 15 17 19 21	2.75	540182 540184 540185 540116 540186 540188	540183 540018 540115 540076 540187 540136	- - - - - -
2015 2200 2375 2540 2800	.565	27 29 31 33 36	23 25 27 29 32	2.75	- - - - -	540189 540190 540191 540192 540193	- - - - -
960 1215 1460 1700 1960	.781	10 14 16 18 20	6 10 12 14 16	2.75	- 540203 540112 540113 540151	540168 540111 540043 540040 540114	- - - - -
2200 2430 2550 2680 2915	.781	22 24 25 26 28	18 20 21 22 24	2.75	540152 540154 - 540155 540157	540153 540078 540169 540156 540158	- - - - -
3160 3400 3650 3900	.781	30 32 34 36	26 28 30 32	2.75	540159 540160 540162 540164	540051 540161 540163 540019	- - - -
4140 4375 4625 4860	.781	38 40 42 44	34 36 38 40	2.75	- - - -	540165 540166 540015 540093	- - - -
5110 5350 5590 6075	.781	46 48 50 54	42 44 46 50	2.75	- - - -	540077 540039 540167 540052	- - - -
2670 3400 4125 4850 5580	.813	26 32 38 44 50	22 28 34 40 46	2.75	- - - - -	- - - - -	540050 540118 540060 540053 540054
6305 7035 7760 8610	.813	56 62 68 75	52 58 64 71	2.75	- - - -	- - - -	540049 540117 540205 540207
4970 6025 7090 8150 9215 10275 11340 12580	1.188	32 38 44 50 56 62 68 75	28 34 40 46 52 58 64 71	2.75	- - - - - - - -	- - - - - - - -	540209 540210 540119 540212 540214 540215 540217 540219

*SPECIAL SIZES AND RATING AVAILABLE - CONSULT FACTORY

Standard Heaters Provided with Box and Handle Only. For Additional Accessories Add Correct Suffix to Catalog Number
 "0" - Lead wires only "1" - Lead wire with ground clip "2" - Twist lock plug with ground clip "3" - Twist lock plug with integral ground
 Standard lead length on above options is 2 feet. Longer lead lengths available.

Flexible Bolt Heaters

Applications

Heatrex Flexible Bolt Heaters are designed to allow easy access to stud bolts with overhead clearance restrictions. Heatrex Flexible Bolt Heaters incorporate a time proven design of 50 watts of heat per square inch. The flexible sheath allows the heater to be flexed or bent to almost any required configuration.

Standard Features

- Alloy sheath
- Element swaged to finished size
- Two high-temperature resistance wires Grade "A" magnesium-oxide insulation

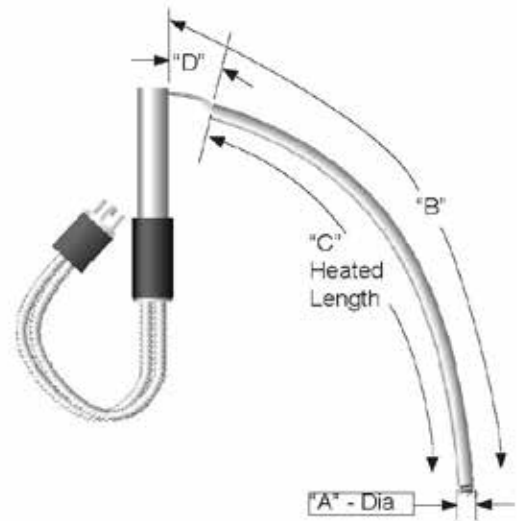
Optional Features

- Three prong twist lock plug

Benefits

- A unique "Top Hat" design, retaining plug and cable, help with insertion while preventing unraveling of element.
- A special handle assembly incorporates a 90° offset, which increases the insertion clearance by 80%, allowing easy entry into studs with less than optimum clearance.

Watts	Dimensions (in)				Catalog Number		Wt. lb. (approx)
	"A"	"B"	"C"	"D"	120V	230/240V	
590	.375	13	10	3	640001	N/A	.75
1060		21	18		640002	N/A	1.00
825	.438	15	12	3	640003	N/A	1.00
1650		27	24		640004	N/A	1.00
2475		39	36		640005	N/A	1.50
820	.500	16.5	13	3.5	*	640057	1.50
1050	.553	15	12		640006	640007	1.50
2090		27	24		N/A	640008	2.00
4180	.560	51	48		N/A	640009	2.75
1414		16	11	5	640010	640015	1.00
1300	.688	16	12	4	*	640011	1.75
1950		24.25	18	6.25	*	640055	2.00
3900		43.25	36	7.25	*	640056	3.00
4000		54.25	48	6.25	*	640054	3.00
1800	.724	29.5	26.5	3	*	640059	3.00
3564	.750	36	33	3	*	640043	3.00
1800	.762	29.5	26.5	3	*	640058	3.00
2700	.781	24	21	3	*	640037	2.50
3510		30	27	3	*	640038	2.75
1540	.813	16	12	4	640012	640013	2.00
1770	.938	17	12	5	N/A	640014	2.75



Additional products from HEATREX



Bolt Heater Storage Cart



The "Outage Master" Distribution Center



Portable Distribution Center