

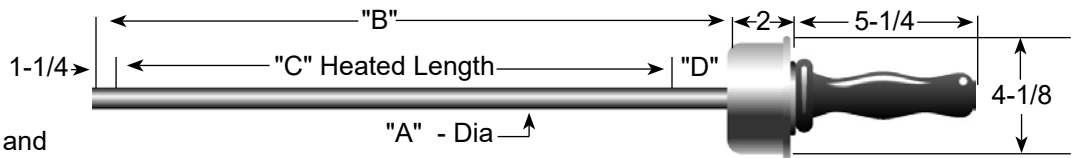


BOLT HEATERS/

FLEXIBLE BOLT HEATERS

electric heaters and controls

INDEECO has over thirty-five years experience in the design and manufacture of high quality bolt heaters. The INDEECO Bolt Heater is specifically designed to provide maximum watt density rating on the heated tube length. INDEECO 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.



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

Applications

INDEECO 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 INDEECO Bolt Heaters.

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 lengths

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

INDEECO 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	Dimensions In.				Catalog Number		Wt. lb (approx)
	"A"	"B"	"C"	"D"	120V	240V	
825	.438	19-1/4	12	6	200001-1	200001-2	1
1240		25-1/4	18		200002-1	200002-2	2
1650		31-1/4	24		200003-1	200003-2	2
2475		43-1/4	36		200004-1	200004-2	2
1050		19-1/4	12		200005-1	200005-2	1
1560	.553	25-1/4	18	6	200006-1	200006-2	2
2085		31-1/4	24		200007-1	200007-2	3
3125		43-1/4	36		200008-1	200008-2	3
4175		55-1/4	48		200056-1	200056-2	4
1300		19-1/4	12		200009-1	200009-2	2
1950	.688	25-1/4	18	6	200010-1	200010-2	3
2600		31-1/4	24		200011-1	200011-2	3
3900		43-1/4	36		200012-1	200012-2	4
5185		55-1/4	48		200048-1	200048-2	5
6485		67-1/4	60		200054-1	200054-2	6
1535	.813	19-1/4	12	6	200013-1	200013-2	2
2300		25-1/4	18		200014-1	200014-2	4
3065		31-1/4	24		200015-1	200015-2	5
4600		43-1/4	36		200016-1	200016-2	6
6135		55-1/4	48		200046-1	200046-2	6
7665	67-1/4	60	200053-1	200053-2	8		
1770	.938	22-1/4	12	9	200017-1	200017-2	4
2650		28-1/4	18		200018-1	200018-2	5
3540		34-1/4	24		200019-1	200019-2	5
5300		46-1/4	36		200020-1	200020-2	7
7075		58-1/4	48		200049-1	200049-2	8
8850	70-1/4	60	200055-1	200055-2	9		
1975	1.047	22-1/4	12	9	200021-1	200021-2	5
2960		28-1/4	18		200022-1	200022-2	9
3950		34-1/4	24		200023-1	200023-2	9
5925		46-1/4	36		200024-1	200024-2	8
7900		58-1/4	48		200025-1	200025-2	10
9870	70-1/4	60	200047-1	200047-2	11		
4995	1.324	37-1/2	24-1/4	12	200026-1	200026-2	8
7490		49-1/2	36-1/4		200027-1	200027-2	11
9985		61-1/2	48-1/4		200028-1	200028-2	15
12490		73-1/2	60-1/4		200029-1	200029-2	16

Watts	Dimensions In.				Catalog Number		
	"A"	"B"	"C"	"D"	115V	230V	240V
845	.565	14	10	2.75	—	—	540223
1350		20	16		—	—	540224
1850		26	22		—	—	540225
2360		32	28		—	—	540058
2865		38	34		—	—	540092
270	.565	7	3	2.75	540180	—	—
440		9	5		540181	—	—
620		11	7		540042	—	—
790		13	9		540079	—	—
960	.565	15	11	2.75	540182	540183	—
1140		17	13		540184	540018	—
1310		19	15		540185	540115	—
1500		21	17		540116	540076	—
1660		23	19		540186	540187	—
1850		25	21		540188	540136	—
2015	.565	27	23	2.75	—	540189	—
2200		29	25		—	540190	—
2375		31	27		—	540191	—
2540		33	29		—	540192	—
2800		36	32		—	540193	—
960	.781	10	6	2.75	—	540168	—
1215		14	10		540203	540111	—
1460		16	12		540112	540043	—
1700		18	14		540113	540040	—
1960		20	16		540151	540114	—
2200	.781	22	18	2.75	540152	540153	—
2430		24	20		540154	540078	—
2550		25	21		—	540169	—
2680		26	22		540155	540156	—
2915		28	24		540157	540158	—
3160	.781	30	26	2.75	540159	540051	—
3400		32	28		540160	540161	—
3650		34	30		540162	540163	—
3900		36	32		540164	540019	—
4140		38	34		—	540165	—
4375	.781	40	36	2.75	—	540166	—
4625		42	38		—	540015	—
4860		44	40		—	540093	—
5110		46	42		—	540077	—
5350	.781	48	44	2.75	—	540039	—
5590		50	46		—	540167	—
6075		54	50		—	540052	—
2670		26	22		—	—	540050
3400	.813	32	28	2.75	—	—	540118
4125		38	34		—	—	540060
4850		44	40		—	—	540053
5580		50	46		—	—	540054
6305		56	52		—	—	540049
7035	.813	62	58	2.75	—	—	540117
7760		68	64		—	—	540205
8610		75	71		—	—	540207
4970	1.188	32	28	2.75	—	—	540209
6025		38	34		—	—	540210
7090		44	40		—	—	540119
8150		50	46		—	—	540212
9215		56	52		—	—	540214
10275		62	58		—	—	540215
11340		68	64		—	—	540217
12580		75	71		—	—	540219

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

INDEECO Flexible Bolt Heaters are designed to allow easy access to stud bolts with overhead clearance restrictions. INDEECO 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

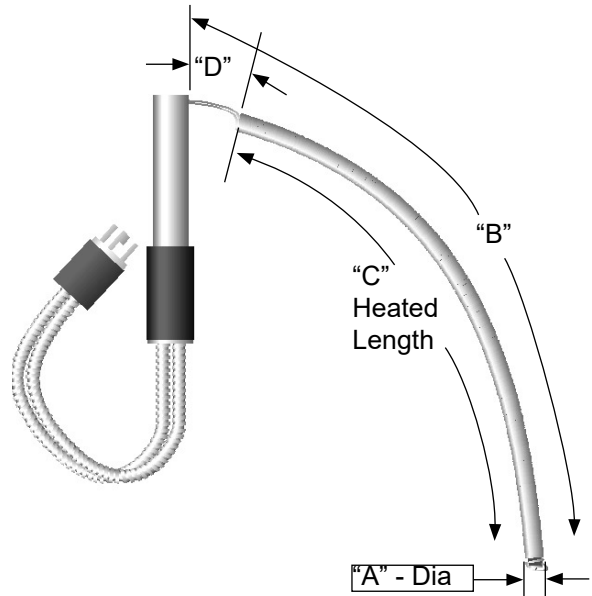
Optional Features

- 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	*
1050	.553	15	12	3	640006	640007	1.50
2090		27	24		N/A	640008	2.00
4180		51	48		N/A	640009	2.75
1414	.560	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



*SPECIAL SIZES AND RATINGS AVAILABLE - CONSULT FACTORY

Standard Heaters Provided with Handle and Leads. For Additional Accessories Add Correct Suffix to Catalog Number

"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.

Additional products from INDEECO



Portable Distribution Center



The "Outage Master" Distribution Center



Bolt Heater Storage Cart



www.indeeco.com

FOR YOUR NEAREST INDEECO REPRESENTATIVE CALL: 800-243-8162