



Tubular Heaters

Straight and Formed



U.L. AND C-UL Recognized-E177353

Features

- The Hotwatt Tubular Heater has built-in resistance to shock, vibration, corrosion, and temperature extremes.
- The heater is swaged, reducing the diameter of the metal sheath and compacting the insulation. This insures rapid heat transfer and holds the coil in position for forming.
- Many formations are available.
- Long, trouble free service.
- Made in U.S.A.

Construction

1 Steel, stainless steel, copper, or Incoloy sheathed elements.

2 Element wire situated in proximity to outside surface for maximum heat transfer and minimum internal temperature while preserving good dielectric qualities.

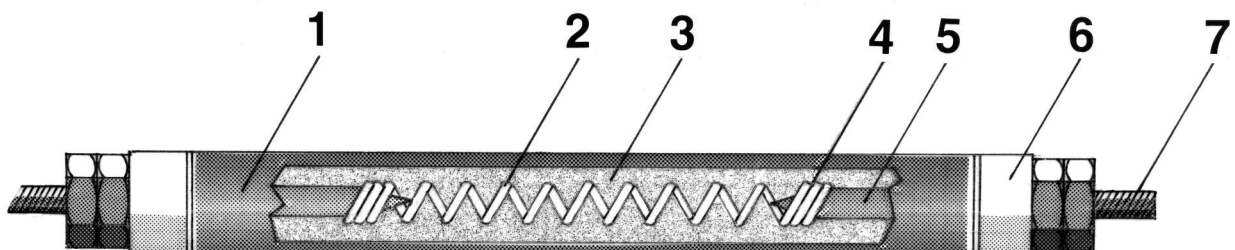
3 Pure magnesium oxide compressed to an optimum density for best heat transfer and electrical insulation at elevated temperatures.

4 Weld connection.

5 Cold pin.

6 Insulator.

7 Standard post terminal.



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Standard Sizes and Materials

The sheath materials available are stainless steel, steel, copper, and incoloy. Standard diameters are: .260", .315", .375", .440" and .475". Diameter tolerance is ± 0.010 ".

Sheath Material	Max. Temp. Allowed on Sheath	Max. Length of Sheath	Max. Cold Lengths
Steel	750°F	252"	96"
Copper	350°F	252"	96"
St. Steel	1200°F	324"	96"
Incoloy	1600°F	324"	96"

Sheath Materials and Watt Densities

Application	Approx. Operating Temp.	Rec. Sheath Material	Watts/sq. in. Of Element Surface
Clamped to Surfaces	up to 300°F	Steel	30
	500°F	Steel	20
	800°F	Incoloy	15
	1000°F	Incoloy	10
	1200°F	Incoloy	7
	1400°F	Incoloy	2.5
Still Air (Sheath Temp.)	800°F	Incoloy	7
	1000°F	Incoloy	11
	1200°F	Incoloy	14
	1400°F	Incoloy	30
Clamped into Machined Grooves	500°F	Steel	25
	800°F	St. Steel	15
	900°F	Incoloy	15

Formula for Determination of Unit Wattage

Unit Wattage = Diameter x 3.142 x Heated Length x Allowable watts/sq. in.

Electrical Tolerances and Limits

Sheath Diameter	.260"	.315"	.375"	.440"	.475"
Min. OHMS/in.	.15	.05	.05	.05	.05
Max. OHMS/in.	80	50	50	50	50
Max. Voltage	250	300	480	600	600
Max. Amperes	20	30	40	40	40

Wattage tolerance is +5%, -10% at rated volts.

Standard Length Tolerances

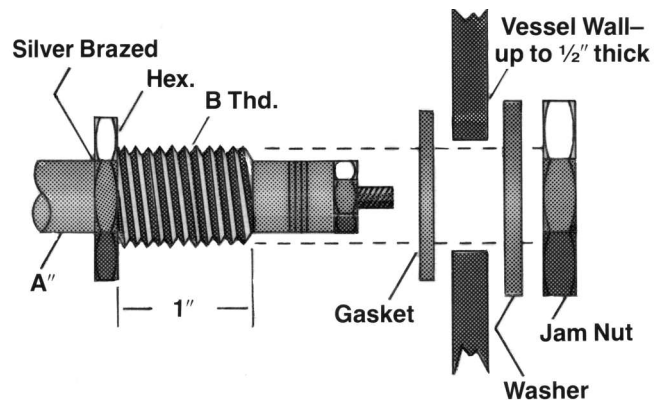
Sheath Length	Length	Heated Length
Up to 20"	$\pm \frac{1}{6}$ "	$\pm 2\%$
20" to 100"	$\pm \frac{1}{8}$ "	$\pm 2\%$
100" to 200"	$\pm \frac{1}{4}$ "	$\pm 2\%$

Cold Ends

When not specified, cold ends will be the minimum length as shown in the table below. Longer cold lengths may be specified. Optional cold ends of unequal lengths are available.

Sheath Length	Minimum Cold Ends
Up to 20"	1"
20" to 100"	1½"
100" to 200"	4"

Mounting Fittings



Fittings are available with light jam nuts (plated steel), plain washers (plated steel), and/or copper gaskets.

Brass bushings are used with copper and steel sheaths. Silver brazed stainless steel bushings are used with stainless steel and Incoloy sheaths. Welded stainless steel bushings are available at additional cost.

Catalog Number	Sheath Diameter A"	Thread Size B"
EF-12	.260"	½"-20
EF-13	.315"	½"-20
EF-16	.375"	¾"-18
EF-17	.440"	¾"-16
EF-17	.475"	¾"-16

Forming

If you plan to do the bending required, observe the minimum bend limits in the table, and do not plan any bend within 1" of a cold end junction.

Annealing for bending must be specified.

If Hotwatt is to do the bending, submit a sketch showing clearly the form the bent unit is to take.

Minimum Bend Radius

Diameter	.260"	.315"	.375"	.440"	.475"
Formed By Factory	¼"	⅝"	¾"	⅞"	⅞"
Formed By Customer	¾"	1"	1¼"	1½"	1½"



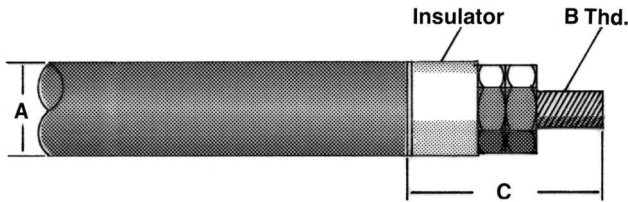
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Optional Terminations

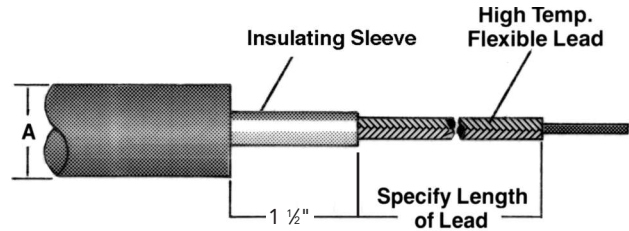
SF3S: Post

Post terminations will be supplied unless otherwise specified.



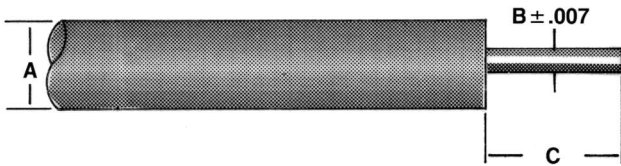
A	B	C	Max. Amps.
.260"	6-32	5/8"	20
.315"	6-32	5/8"	20
.375"	8-32	3/4"	30
.375"	10-32	1"	40
.440"	8-32	3/4"	30
.440"	10-32	1"	40
.475"	10-32	1"	40

SF2A: Lead Wire



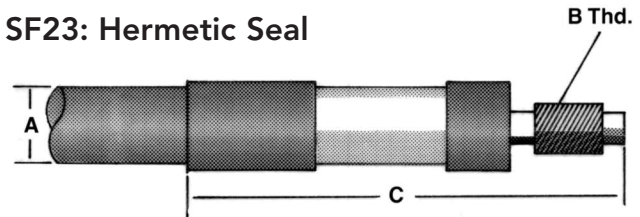
A	Max. Amps.
.260"	21
.315"	28
.375"	28
.440"	28
.475"	28

SF3P: Pin



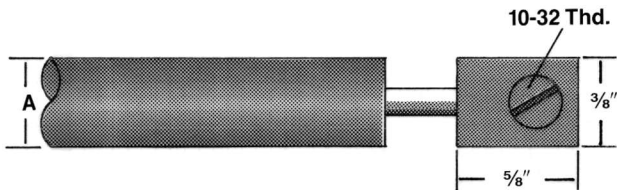
A	B	C	Max. Amps.
.260"	.091"	5/8"	20
.315"	.135"	5/8"	20
.375"	.156"	3/4"	40
.440"	.156"	3/4"	40
.475"	.156"	3/4"	40

SF23: Hermetic Seal



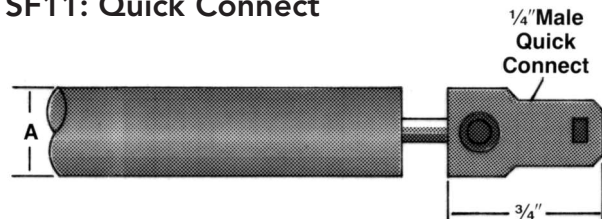
A	B	C	Max. Amps.
.260"	8-32	1 1/8"	20
.315"	10-32	1 1/8"	30
.375"	10-32	1 1/8"	30
.440"	1/4-28	2 1/4"	40
.475"	1/4-28	2 1/8"	40

SF3T: Tab



A	Max. Amps.
.260"	20
.315"	30
.375"	30
.440"	30
.475"	30

SF11: Quick Connect

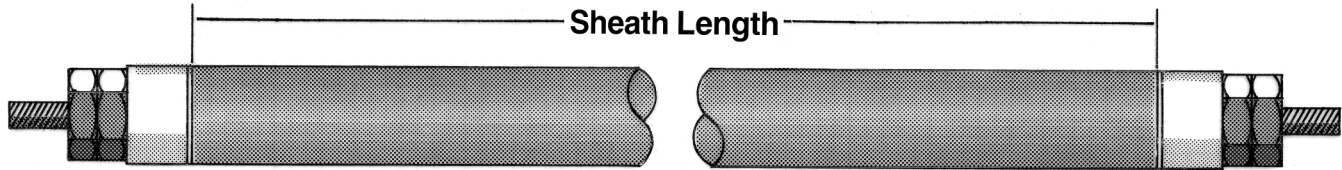


A	Max. Amps.
.260"	20
.315"	30
.375"	30
.440"	30
.475"	30



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Diameter:	.260: Incoloy	.315: Incoloy	.375: Incoloy
Maximum Amperage:	20	30	40

Sheath Length	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 480V
20"	TA26-20	555	TA31-20	675	TA37-20	800
40"	TA26-40	1210	TA31-40	1465	TA37-40	1745
60"	TA26-60	1860	TA31-60	2255	TA37-60	2685
80"	TA26-80	2515	TA31-80	3050	TA37-80	3630
100"	TA26-100	3170	TA31-100	3840	TA37-100	4570
120"	TA26-120	3825	TA31-120	4630	TA37-120	5515
140"	TA26-140	4475	TA31-140	5425	TA37-140	6455
160"	TA26-160	4640	TA31-160	6215	TA37-160	7395
180"	TA26-180	4640	TA31-180	7010	TA37-180	8340
200"	TA26-200	4640	TA31-200	7005	TA37-200	9285
220"	TA26-220	4640	TA31-220	7005	TA37-220	10225
240"	TA26-240	4640	TA31-240	7005	TA37-240	11170

Diameter:	.440: Incoloy	.475: Incoloy	.260: St. Steel
Maximum Amperage:	40	50	20

Sheath Length	Cat. No.	Max. Watts at 480V	Cat. No.	Max. Watts at 480V	Cat. No.	Max. Watts at 240V
20"	TA44-20	960	TA47-20	1055	TT26-20	420
40"	TA44-40	2090	TA47-40	2300	TT26-40	910
60"	TA44-60	3225	TA47-60	3545	TT26-60	1395
80"	TA44-80	4355	TA47-80	4790	TT26-80	1885
100"	TA44-100	5485	TA47-100	6035	TT26-100	2375
120"	TA44-120	6615	TA47-120	7280	TT26-120	2865
140"	TA44-140	7745	TA47-140	8520	TT26-140	3355
160"	TA44-160	8880	TA47-160	9765	TT26-160	3845
180"	TA44-180	10010	TA47-180	11010	TT26-180	4340
200"	TA44-200	11140	TA47-200	12255	TT26-200	4705
220"	TA44-220	12270	TA47-220	13495	TT26-220	4705
240"	TA44-240	13400	TA47-240	14740	TT26-240	4705

Diameter:	.315: St. Steel	.375: St. Steel	.440: St. Steel
Maximum Amperage:	30	40	40

Sheath Length	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 480V
20"	TT31-20	505	TT37-20	600	TT44-20	720
40"	TT31-40	1095	TT37-40	1305	TT44-40	1570
60"	TT31-60	1690	TT37-60	2015	TT44-60	2415
80"	TT31-80	2285	TT37-80	2720	TT44-80	3265
100"	TT31-100	2880	TT37-100	3425	TT44-100	4115
120"	TT31-120	3475	TT37-120	4135	TT44-120	4960
140"	TT31-140	4065	TT37-140	4840	TT44-140	5810
160"	TT31-160	4660	TT37-160	5550	TT44-160	6660
180"	TT31-180	5255	TT37-180	6255	TT44-180	7505
200"	TT31-200	5850	TT37-200	6965	TT44-200	8355
220"	TT31-220	6440	TT37-220	7670	TT44-220	9205
240"	TT31-240	7035	TT37-240	8375	TT44-240	10050

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Diameter:		.260: Steel		.315: Steel		.440: Steel	
Maximum Amperage:		20		30		40	
Sheath Length	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 240V	Cat. No.
20"	TS26-20	280	TS31-20	335	TS44-20	480	
40"	TS26-40	605	TS31-40	730	TS44-40	1045	
60"	TS26-60	930	TS31-60	1130	TS44-60	1610	
80"	TS26-80	1260	TS31-80	1525	TS44-80	2175	
100"	TS26-100	1585	TS31-100	1920	TS44-100	2745	
120"	TS26-120	1910	TS31-120	2315	TS44-120	3310	
140"	TS26-140	2240	TS31-140	2710	TS44-140	3875	
160"	TS26-160	2565	TS31-160	3105	TS44-160	4440	
180"	TS26-180	2890	TS31-180	3505	TS44-180	5005	
200"	TS26-200	3220	TS31-200	3900	TS44-200	5570	
220"	TS26-220	3545	TS31-220	4295	TS44-220	6135	
240"	TS26-240	3870	TS31-240	4690	TS44-240	6700	

Diameter:		.315: Copper		.440: Copper	
Maximum Amperage:		30		40	
Sheath Length	Cat. No.	Max. Watts at 240V	Cat. No.	Max. Watts at 600V	
20"	TC31-20	1345	TC44-20	1925	
40"	TC31-40	2930	TC44-40	4185	
60"	TC31-60	4515	TC44-60	6445	
80"	TC31-80	6095	TC44-80	8710	
100"	TC31-100	6890	TC44-100	10970	
120"	TC31-120	6890	TC44-120	13230	
140"	TC31-140	6890	TC44-140	15495	
160"	TC31-160	6890	TC44-160	17755	
180"	TC31-180	6890	TC44-180	18885	
200"	TC31-200	6890	TC44-200	18885	
220"	TC31-220	6890	TC44-220	18885	
240"	TC31-240	6890	TC44-240	18885	

Wattage

Wattages as shown in the above tables are based on sheath material or voltage/amperage limitations. For allowable wattage for your application, refer to Sheath Material/Watt Density chart on page 77.

How To Order

Specify: catalog number, wattage, voltage, termination and other optimal features. If forming is required, include a dimensional sketch and reference formation number, if applicable, as shown on pages 83 and 84.

Example: TA31-40/1000W240V/SF3S



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Finned



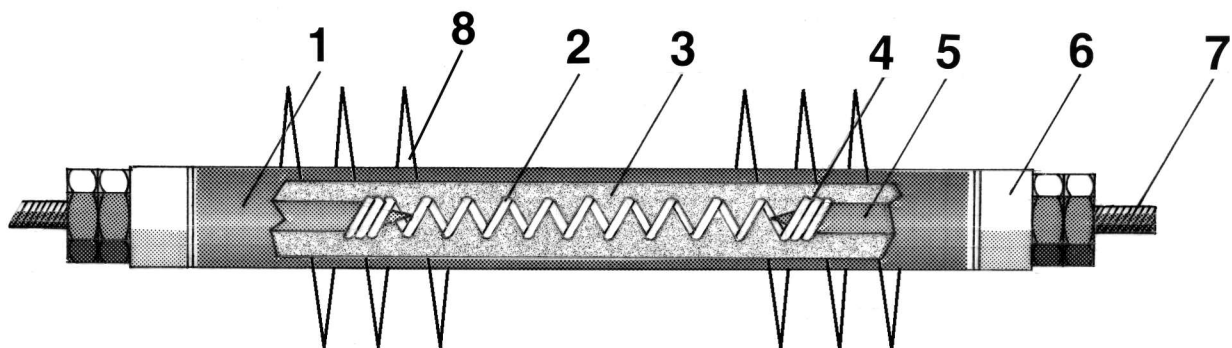
U.L. And C -UL Recognized No. E177353

Features

- Mechanically-bonded continuous fin assures excellent heat transfer and helps prevent fin vibration at high air velocities.
- Several standard formations and mounting bushings available.
- Standard fin is high temperature painted steel with steel sheath.
- Optional stainless steel fin with stainless steel or incoloy sheath for corrosion resistance.
- 120v, 208v, 240v, 480v available.
- Maximum Sheath Temperature.
750°F (400°C) - Steel
900°F (480°C) - ST.ST./INCOLY
- Made in U.S.A.

Construction

- 1 Steel, stainless steel or Incoloy sheathed elements.
- 2 Element wire situated in proximity to outside surface for maximum heat transfer and minimum internal temperature while preserving good dielectric qualities.
- 3 Pure magnesium oxide compressed to an optimum density for best heat transfer and electrical insulation at elevated temperatures.
- 4 Weld connection.
- 5 Cold pin.
- 6 Insulator.
- 7 Standard post terminal.
- 8 Painted steel or stainless steel continuous fin (approx. 5 per inch).

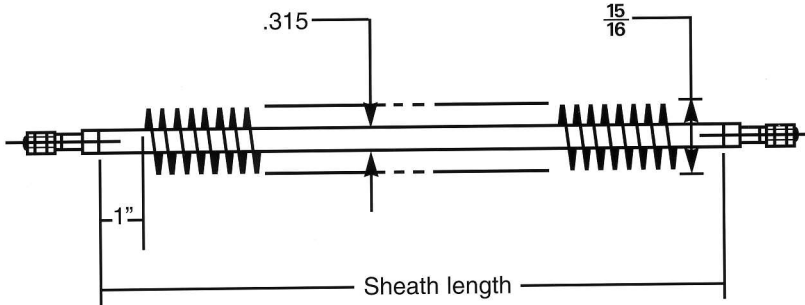


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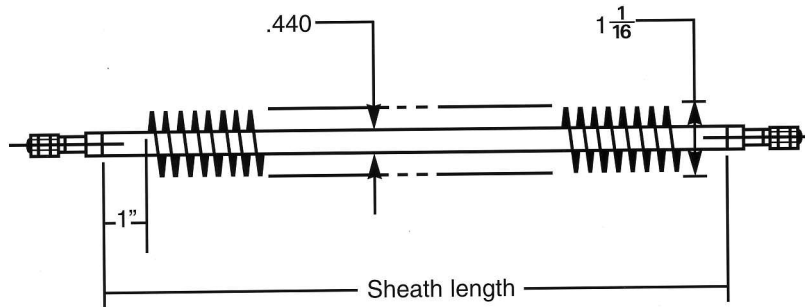
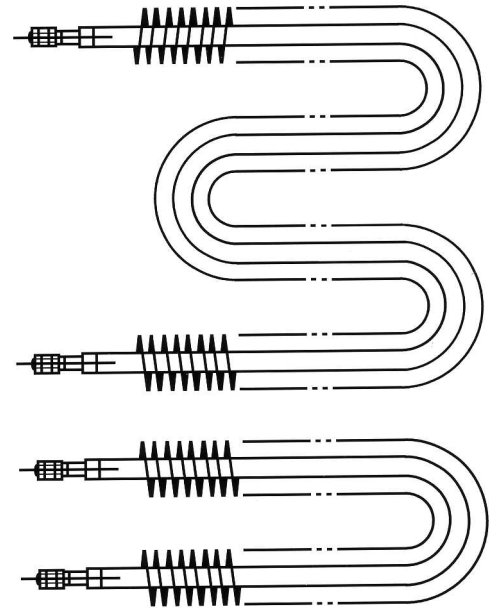
Finned



Sheath Length	Cat. No.	Wattage
.315 Sheath Dia. 30 Amps. max.		
12"	FT31-12	530
15"	FT31-15	700
24"	FT31-24	1250
36"	FT31-36	1960
48"	FT31-48	2675
60"	FT31-60	3385
72"	FT31-72	4100
96"	FT31-96	5500

Available in Voltages up to 250V

Optional Configurations



Sheath Length	Cat. No.	Wattage
.440 Sheath Dia. 40 Amps. max.		
12"	FT44-12	750
15"	FT44-15	1175
24"	FT44-24	1725
36"	FT44-36	2725
48"	FT44-48	3725
60"	FT44-60	4725
72"	FT44-72	5700
96"	FT44-96	7700

Available in Voltages up to 480V

Units may be formed to various shapes. Typical configurations shown above. Minimum radius as follows:

Sheath diameter	Minimum radius
.315	3/4 in.
.440	7/8 in.

Units may be supplied with mounting fittings as shown on page 77. Standard terminations is post type termination (SF3S), optional terminations as shown on page 78 are also available.

HOW TO ORDER

Specify: catalog number, wattage, termination, and other optional features. If forming is required, include a dimensional sketch.

Example: FT31-27/1300W 120V/SF3S

Wattages in the above tables are based on 60w/in². Other wattages both higher and lower are available depending upon operating conditions. Consult factory for details. Available in lengths between those and longer than those listed in the above tables. Maximum length is 120".

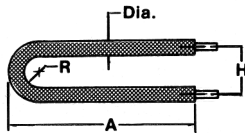


Tubular Heaters

Forming Options

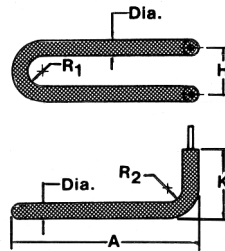
Custom Formations to your requirements are available.

1



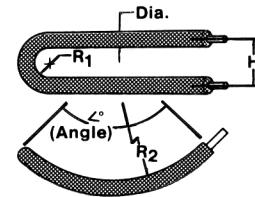
$$SL = 2A + 1.14R - .43 \text{ Dia.}$$

2



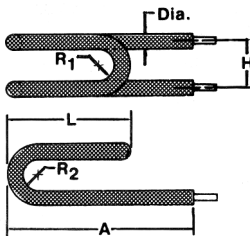
$$SL = 2K - .86 R_2 - 2.86 \text{ Dia.} + 2A + 1.14 R_1$$

3



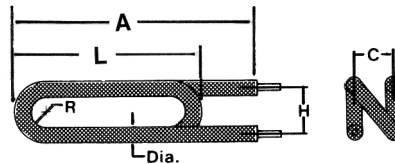
$$SL = .0175 \angle^{\circ}(2 R_2 + \text{Dia.}) + 1.14 R_1 - .43 \text{ Dia.}$$

4



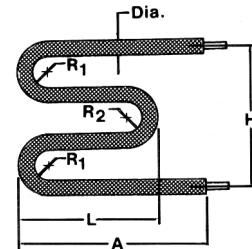
$$SL = 2A + 2.28 R_2 - 1.29 \text{ Dia.} + 2L + 1.14 R_1$$

5



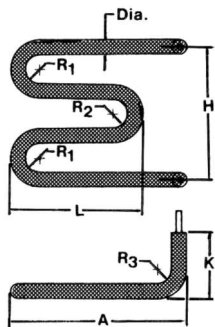
$$SL = 2A + 3.42R - 1.29 \text{ Dia.} + 2L$$

6



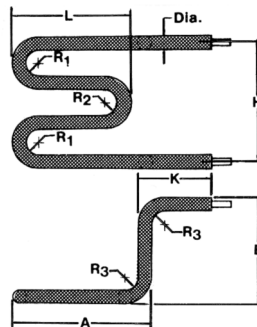
$$SL = 2A + 2.28 R_1 - 1.29 \text{ Dia.} + 2L + 1.14 R_2$$

7



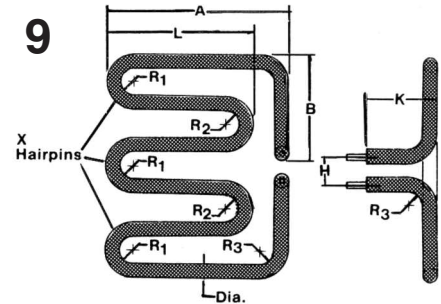
$$SL = 2K - .86 R_3 - 3.72 \text{ Dia.} + 2A + 2L + 2.28 R_1 + 1.14 R_2$$

8



$$SL = 2K - 1.72 R_3 - 6.15 \text{ Dia.} + 2B + 2A + 2L + 2.28 R_1 + 1.14 R_2$$

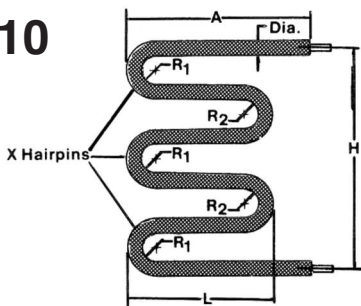
9



X = Number of outside hairpins

$$SL = 2K + 2A - 1.72 R_3 + 3.14 R_1 X + 3.14 R_2 (X-1) + 2L (X-1) - H + 1.14 X \text{ Dia.} - 3.42 \text{ Dia.}$$

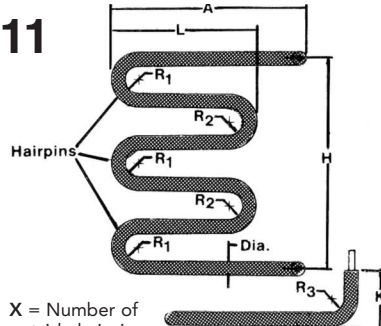
10



X = Number of outside hairpins

$$SL = 2A + .43 \text{ Dia.} (1-2X) + 2L (X-1) + 1.14 X R_1 + 1.14 R_2 (X-1)$$

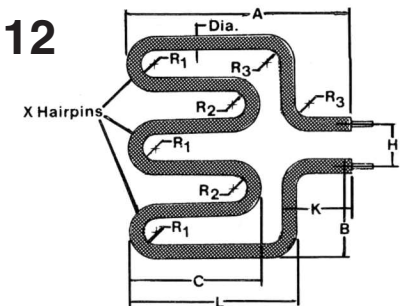
11



X = Number of outside hairpins

$$SL = 1.14 R_2 X - .88 \text{ Dia.} X + 1.14 R_2 - 2 \text{ Dia.} + 1.14 R_1 X - .86 R_3 + 2L X - 2L + 2A + 2K$$

12



X = Number of outside hairpins

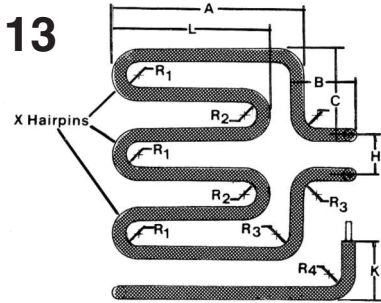
$$SL = 2L + 2K + 2B + 2C (X-1) - 0.86 R_3 - 0.86 R_3 - 4.86 (\text{Dia.}) + 1.14 R_1 (X) + 1.14 R_2 (X-1) - (2X-1) 0.43 \text{ Dia.}$$

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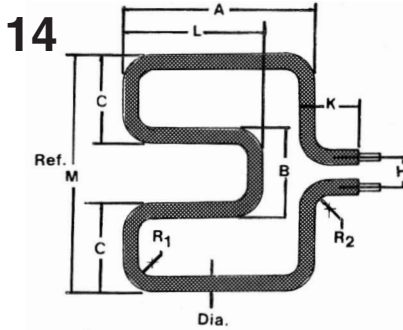


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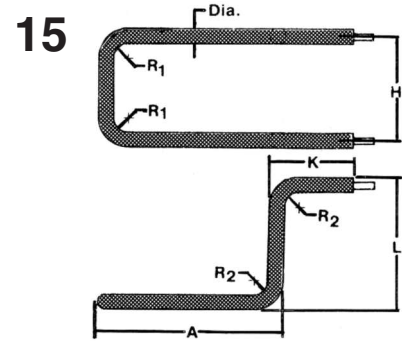
Forming Options



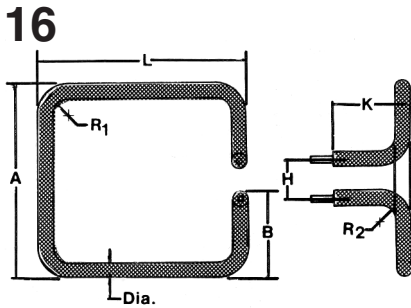
X = Number of outside hairpins
 $SL = 2K + 2A + 2B - 2.58 R_3 + 3.14 R_1 X + 3.14 R_2 (X-1) + 2L(X-1) - H + 1.14 X \text{ Dia.} - 5.85 \text{ Dia.}$



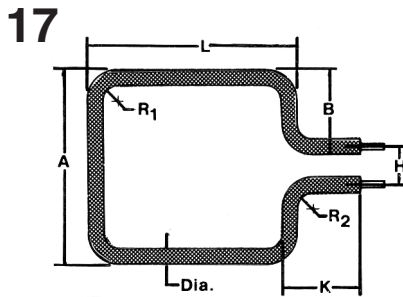
$SL = 2K + 4C + 2B + 2A + 2L - H - 2.58 R_1 - .86 R_2 - 12.15 \text{ Dia.}$



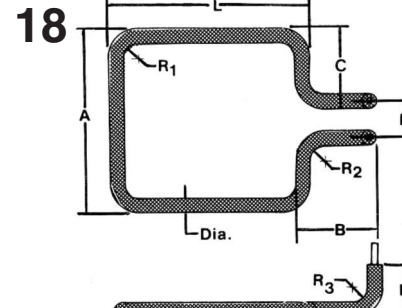
$SL = 2K - 1.72 R_2 - 6.29 \text{ Dia.} + 2L + 2A - .86 R_1 + H$



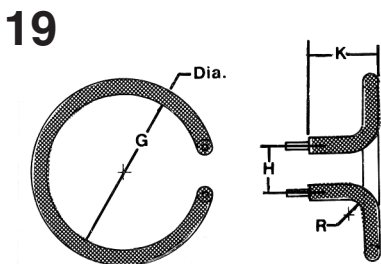
$SL = 2K + 2A + 2L - H - 1.72 R_1 - .86 R_2 - 6.29 \text{ Dia.}$



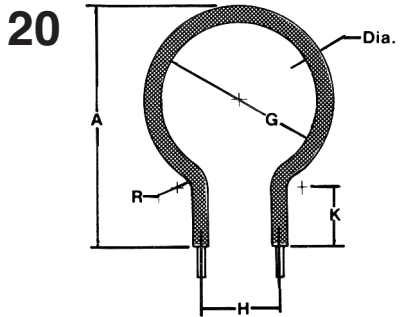
$SL = 2K + 2A + 2L - H - 1.72 R_1 - .86 R_2 - 6.29 \text{ Dia.}$



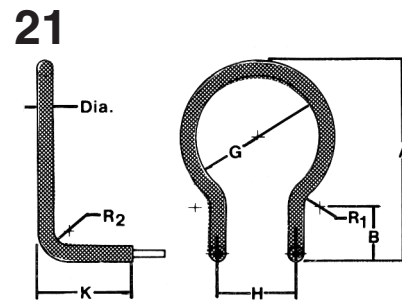
$SL = 2K + 2A + 2L + 2B - H - 1.72 R_1 - 1.72 R_2 - 8.72 \text{ Dia.}$



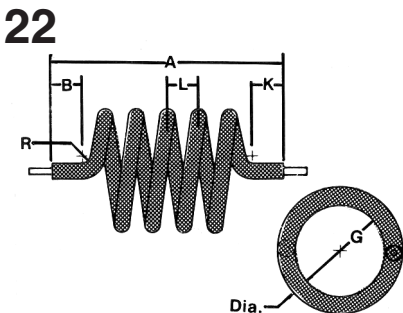
$SL = (G + \text{Dia.}) (3.14) + 1.14 R + 2K + 3.28 \text{ Dia.} - H$



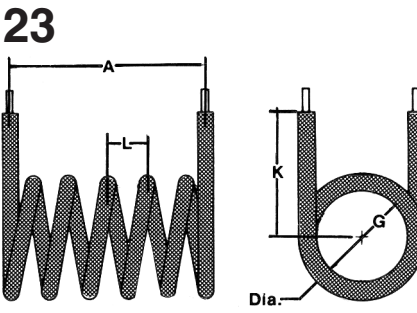
$SL = (G + \text{Dia.}) (3.14) + 1.14 R + 2K + 3.71 \text{ Dia.} - H$



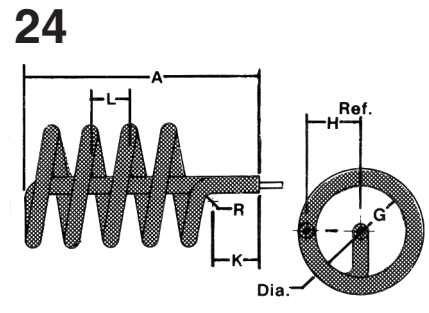
$SL = (G + \text{Dia.}) (3.14) + 1.14 R_1 + 2B + 1.14 R_2 + 2K + 3.28 \text{ Dia.} - H$



$SL = [(G + \text{Dia.}) (3.14) (\text{Number of } 360^\circ\text{s})] + B + K.$



$SL = [(G + \text{Dia.}) (3.14) (\text{Number of } 360^\circ\text{s})] + 2K$



$SL = [(G + \text{Dia.}) (3.14) (\text{Number of } 360^\circ\text{s})] + (G \div 2) + A + K.$

TUBULAR



Tubular Heaters

Screw Plug



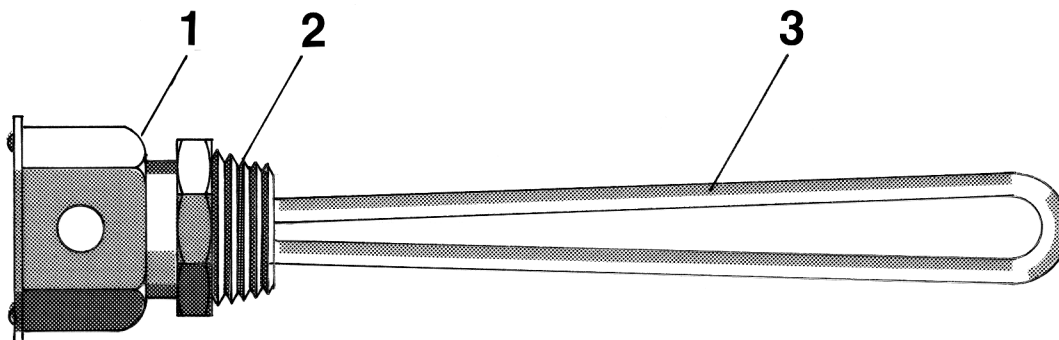
UL and C-UL Recognized-E177353

Features

- Ratings and sizes other than those listed above are available.
- Brass, steel, or stainless steel screw plugs in 1", 1½", 2", and 2½" sizes.
- Element supports in multiple element units for proper element spacing as required.
- Steel, stainless steel, copper, or incoloy sheathed elements. One, two or three per unit depending on size.
- Optional thermostat and well for temperature control.
- General purpose terminal housing with conduit opening. Optional terminal housings for special applications.
- 120V, 208V, 240V, 480V, single or three phase which are factory wired to your requirements.
- Long, trouble free service.
- Made in U.S.A.

Construction

- 1 Terminal housing, NEMA 1 general purpose for electrical connections.
- 2 Screw plug.
- 3 Tubular heating element.



TUBULAR



Tubular Heaters

Screw Plug

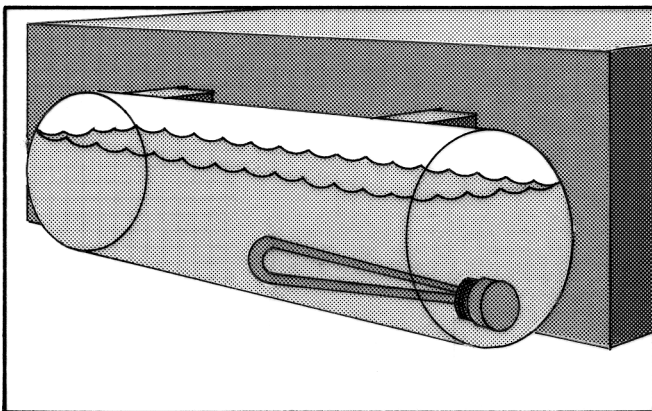
Screw Plug Heater Selection Guide

Application	Solution or Application	Alkaline or Acid Content (Est. % by Volume)	Sheath Material	Typical Watt Density (watts/sq. in.)	Screw Plug Material
Water and Very Mild Solutions	Clean Water	pH6 to pH8 Neutral	Copper	45	Brass
	Process Water or Very Mild Solutions	pH5 to pH9 2-3%	Incoloy	45	Stainless Steel
	Mild Solutions	5-6%	Incoloy	45	Stainless Steel
	Demineralized or Deionized Water	—	Incoloy	45	Stainless Steel Stainless Steel
Oil Heating*	Low Viscosity Oil	—	Steel	23	Steel
	Medium Viscosity Oil	—	Steel	15	Steel
	High Viscosity Oil	—	Steel	6	Steel
Specialty Heaters	Process Water	pH5-pH9	Incoloy	45	Brass
	Demineralized Water	—	Incoloy	45	Stainless Steel
	Low Viscosity Oil	—	Incoloy	23	Steel
	Pipe Insert	—	Incoloy	12	Steel
	Hot Tubs, Spa	Treated	Incoloy	100	Brass
Commercial Equipment	Clean Water	—	Incoloy	30	Brass
	Clean Water	—	Copper	60	Brass

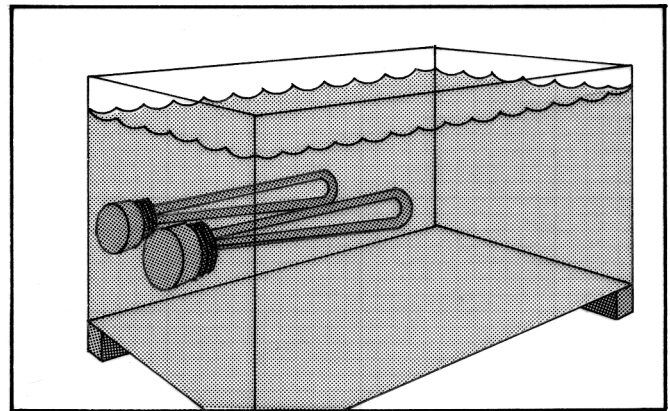
*The oil heaters on following pages are catalogued based on low viscosity oil. For medium and high viscosity oils, watt densities must be reduced in accordance with the above watt densities.

Installation

The heater is screwed into a pipe coupling or half coupling in the tank. Units must be immersed at all times for proper operation.



Oil Reservoir Heater



Tank Heater

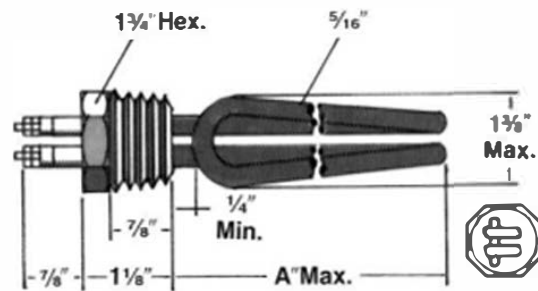
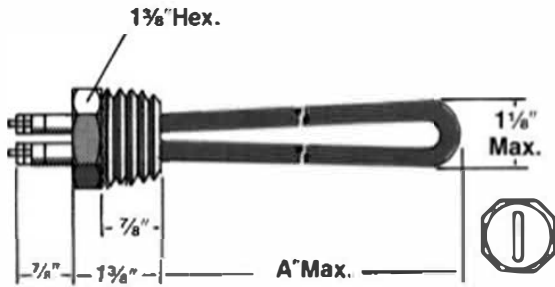
TUBULAR



Tubular Heaters

Screw Plug

Copper Sheath



1" NPT: Copper Sheath

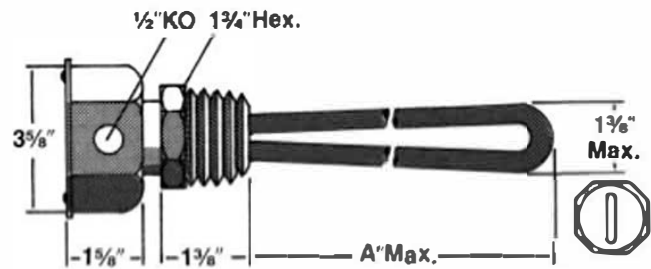
No. of Elements: 1
 Plug Type: Brass Screw
 Watts/sq. in.: Approx. 80
 Application: Water

A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
5 1/2"	LC9-5.25-X	.35	120
6"	LC9-6.37-X	.50	120
6"	LC9-6.37-X	.60	120
6"	LC9-6.37-X	.75	120
6"	LC9-6.37-X	.75	240
6"	LC9-6.37-X	1.0	120
6"	LC9-6.37-X	1.0	240
8 1/2"	LC9-8.12-X	1.2	120
8 1/2"	LC9-8.12-X	1.2	240
9 1/4"	LC9-9.25-X	1.5	120
9 1/4"	LC9-9.25-X	1.5	240
12 1/4"	LC9-12.25-X	2.0	120

1 1/2" NPT: Copper Sheath

No. of Elements: 1 (Fold Back Design)
 Plug Type: Brass
 Watts/sq. in.: Approx. 80
 Application: Water

A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
6 1/2"	LC11-6.12-X	1.0	120
6 1/2"	LC11-6.12-X	1.0	240
6 1/2"	LC11-6.62-X	2.0	120
6 1/2"	LC11-6.62-X	2.0	240
8 1/2"	LC11-8.5-X	2.5	120
9 1/2"	LC11-9.06-X	1.5	120
9 1/2"	LC11-9.06-X	1.5	240
10 1/2"	LC11-10.18-X	3.0	240
13 1/2"	LC11-13.56-X	4.0	240
16 1/2"	LC11-16.93-X	5.0	240



1 1/2" NPT: Copper Sheath

No. of Elements: 1
 Plug Type: Brass
 Watts/sq. in.: Approx. 45min. - 80max.
 Application: Water
 Terminal Enclosure: NEMA 1

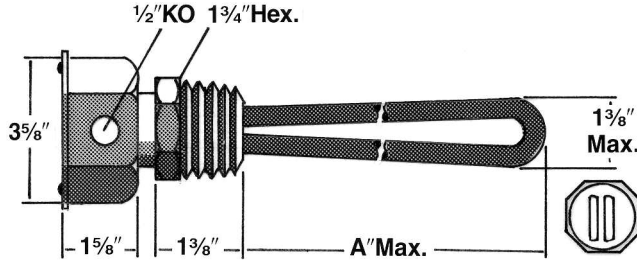
A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
6 1/2"	LC11-6.12-XJ	.60	120
6 1/2"	LC11-6.12-XJ	.60	240
6 1/2"	LC11-6.12-XJ	.75	120
6 1/2"	LC11-6.12-XJ	.75	240
6 1/2"	LC11-6.12-XJ	1.0	120
6 1/2"	LC11-6.12-XJ	1.0	240

TUBULAR



Tubular Heaters

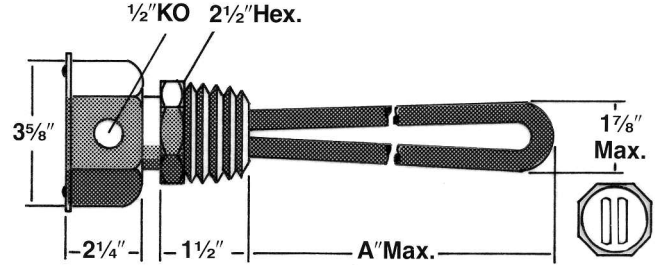
Screw Plug



1 1/4" NPT: Copper Sheath

No. of Elements: 2			
Plug Type: Brass			
Watts/sq. in.: Approx. 45min. – 80max.			
Application: Water			
Terminal Enclosure: NEMA 1			

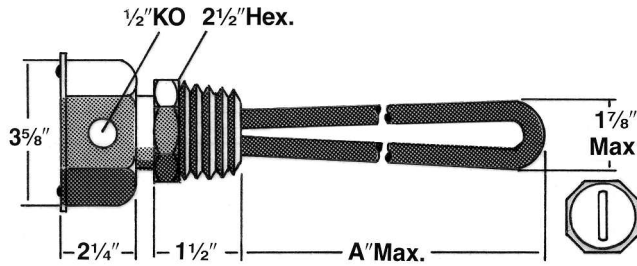
A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
6 1/2"	LC11-6.12-YJ	1.0	120
6 7/8"	LC11-6.12-YJ	1.0	240
6 7/8"	LC11-6.12-YJ	1.2	120
6 7/8"	LC11-6.12-YJ	1.2	240
6 7/8"	LC11-6.12-YJ	1.5	120
6 7/8"	LC11-6.12-YJ	1.5	240
6 7/8"	LC11-6.12-YJ	2.0	120
6 7/8"	LC11-6.12-YJ	2.0	240



2" NPT: Copper Sheath

No. of Elements: 2			
Plug Type: Brass Screw			
Watts/sq. in.: Approx. 45			
Application: Water			
Terminal Enclosure: NEMA 1			

A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
7 1/8"	LC13-7.87-YJ	2.0	120
7 7/8"	LC13-7.87-YJ	2.0	240
7 7/8"	LC13-7.87-YJ	2.0	480
9 3/8"	LC13-9.37-YJ	2.5	120
9 3/8"	LC13-9.37-YJ	2.5	240
9 3/8"	LC13-9.37-YJ	2.5	480
12"	LC13-12-YJ	3.0	120
12"	LC13-12-YJ	3.0	240
12"	LC13-12-YJ	3.0	480
18"	LC13-18-YJ	4.0	240
18"	LC13-18-YJ	4.0	480
19 7/8"	LC13-19.87-YJ	5.0	240
19 7/8"	LC13-19.87-YJ	5.0	480
25"	LC13-25-YJ	6.0	240
25"	LC13-25-YJ	6.0	480
28"	LC13-28-YJ	7.0	240
28"	LC13-28-YJ	7.0	480
40 3/8"	LC13-40.37-YJ	10.0	240
40 3/8"	LC13-40.37-YJ	10.0	480



2" NPT: Copper Sheath

No. of Elements: 1			
Plug Type: Brass Screw			
Watts/sq. in.: Approx. 45			
Application: Water			
Terminal Enclosure: NEMA 1			

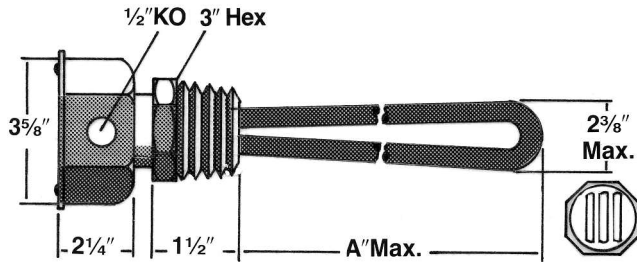
A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
12"	LC13-12-XJ	1.5	120
12"	LC13-12-XJ	1.5	240
12"	LC13-12-XJ	1.5	480
18"	LC13-18-XJ	2.0	120
18"	LC13-18-XJ	2.0	240
18"	LC13-18-XJ	2.0	480

TUBULAR



Tubular Heaters

Screw Plug

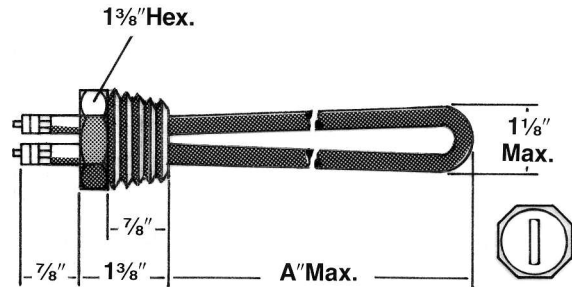


2 1/2" NPT: Copper Sheath

No. of Elements: 3
 Plug Type: Brass Screw
 Watts/sq. in.: Approx. 45
 Application: Water
 Terminal Enclosure: NEMA 1

A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts	Phase
7 3/8"	LC15-7.37-ZJ	3.0	240	1
7 3/8"	LC15-7.37-ZJ	3.0	240	3
7 3/8"	LC15-7.37-ZJ	3.0	480	3
8 7/8"	LC15-8.87-ZJ	3.75	240	1
8 7/8"	LC15-8.87-ZJ	3.75	240	3
8 7/8"	LC15-8.87-ZJ	3.75	480	3
11 3/8"	LC15-11.37-ZJ	4.5	240	1
11 3/8"	LC15-11.37-ZJ	4.5	240	3
11 3/8"	LC15-11.37-ZJ	4.5	480	1
11 3/8"	LC15-11.37-ZJ	4.5	480	3
17 3/8"	LC15-17.37-ZJ	6.0	240	1
17 3/8"	LC15-17.37-ZJ	6.0	240	3
17 3/8"	LC15-17.37-ZJ	6.0	480	1
17 3/8"	LC15-17.37-ZJ	6.0	480	3
19 1/8"	LC15-19.12-ZJ	7.5	240	1
19 1/8"	LC15-19.12-ZJ	7.5	240	3
19 1/8"	LC15-19.12-ZJ	7.5	480	1
19 1/8"	LC15-19.12-ZJ	7.5	480	3
24 1/2"	LC15-24.5-ZJ	9.0	240	1
24 1/2"	LC15-24.5-ZJ	9.0	240	3
24 1/2"	LC15-24.5-ZJ	9.0	480	1
24 1/2"	LC15-24.5-ZJ	9.0	480	3

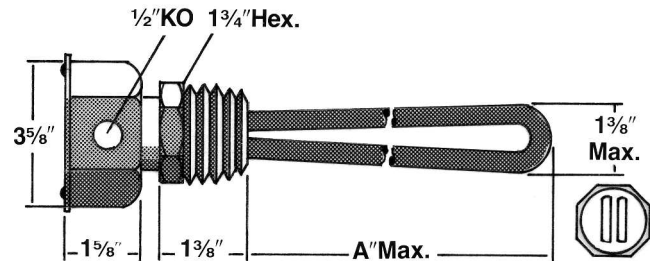
Steel Sheath



1" NPT: Steel Sheath

No. of Elements: 1
 Plug Type: Steel Screw
 Watts/sq. in.: Approx. 20
 Application: Low Viscosity Oil

A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
9 1/2"	LS9-9.5-X	.37	120
9 1/2"	LS9-9.5-X	.37	240
12 1/2"	LS9-12.5-X	.50	120
12 1/2"	LS9-12.5-X	.50	240
18 7/8"	LS9-18.87-X	.80	120
18 7/8"	LS9-18.87-X	.80	240



1 1/4" NPT: Steel Sheath

No. of Elements: 2
 Plug Type: Steel
 Watts/sq. in.: Approx. 20
 Application: Low Viscosity Oil
 Terminal Enclosure: NEMA 1

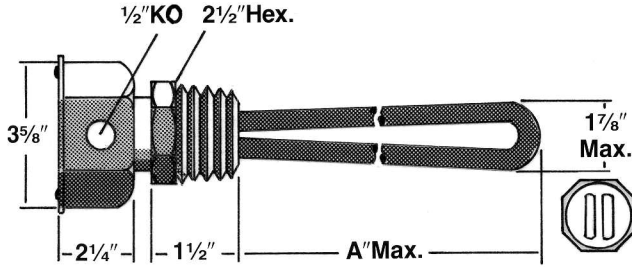
A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
12 1/2"	LS11-12.5-YJ	1.0	120
12 1/2"	LS11-12.5-YJ	1.0	240

TUBULAR



Tubular Heaters

Screw Plug



2" NPT: Steel Sheath

No. of Elements: 2

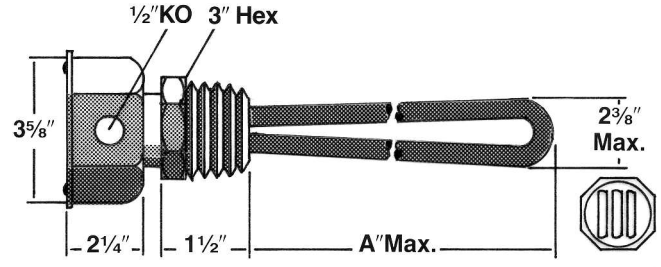
Plug Type: Steel Screw

Watts/sq. in.: Approx. 20

Application: Low Viscosity Oil

Terminal Enclosure: NEMA 1

A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts
11 3/4"	LS13-11.75-YJ	1.5	120
11 3/4"	LS13-11.75-YJ	1.5	240
11 3/4"	LS13-11.75-YJ	1.5	480
17 3/4"	LS13-17.75-YJ	2.0	120
17 3/4"	LS13-17.75-YJ	2.0	240
17 3/4"	LS13-17.75-YJ	2.0	480
19 3/4"	LS13-19.75-YJ	2.5	120
19 3/4"	LS13-19.75-YJ	2.5	240
19 3/4"	LS13-19.75-YJ	2.5	480
24 3/4"	LS13-24.87-YJ	3.0	120
24 3/4"	LS13-24.87-YJ	3.0	240
24 3/4"	LS13-24.87-YJ	3.0	480
32 3/4"	LS13-32.75-YJ	4.0	120
32 3/4"	LS13-32.75-YJ	4.0	240
32 3/4"	LS13-32.75-YJ	4.0	480
40 3/4"	LS13-40.25-YJ	5.0	120
40 3/4"	LS13-40.25-YJ	5.0	240
40 3/4"	LS13-40.25-YJ	5.0	480
47 3/4"	LS13-47.75-YJ	6.0	240
47 3/4"	LS13-47.75-YJ	6.0	480



2 1/2" NPT: Steel Sheath

No. of Elements: 3

Plug Type: Steel Screw

Watts/sq. in.: Approx. 20

Application: Low Viscosity Oil

Terminal Enclosure: NEMA 1

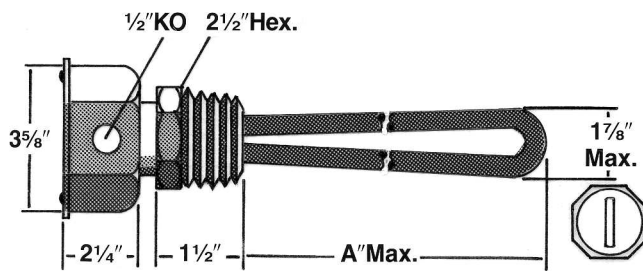
A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts	Phase
17 3/8"	LS15-17.37-ZJ	3.0	240	1
17 3/8"	LS15-17.37-ZJ	3.0	240	3
17 3/8"	LS15-17.37-ZJ	3.0	480	1
17 3/8"	LS15-17.37-ZJ	3.0	480	3
19"	LS15-19-ZJ	3.75	240	1
19"	LS15-19-ZJ	3.75	240	3
19"	LS15-19-ZJ	3.75	480	1
19"	LS15-19-ZJ	3.75	480	3
24 1/2"	LS15-24.50-ZJ	4.5	240	1
24 1/2"	LS15-24.50-ZJ	4.5	240	3
24 1/2"	LS15-24.50-ZJ	4.5	480	1
24 1/2"	LS15-24.50-ZJ	4.5	480	3
32 3/8"	LS15-32.37-ZJ	6.0	240	1
32 3/8"	LS15-32.37-ZJ	6.0	240	3
32 3/8"	LS15-32.37-ZJ	6.0	480	1
32 3/8"	LS15-32.37-ZJ	6.0	480	3
40"	LS15-40-ZJ	7.5	240	1
40"	LS15-40-ZJ	7.5	240	3
40"	LS15-40-ZJ	7.5	480	1
40"	LS15-40-ZJ	7.5	480	3
47 3/8"	LS15-47.37-ZJ	9.0	240	1
47 3/8"	LS15-47.37-ZJ	9.0	240	3
47 3/8"	LS15-47.37-ZJ	9.0	480	1
47 3/8"	LS15-47.37-ZJ	9.0	480	3



Tubular Heaters

Screw Plug

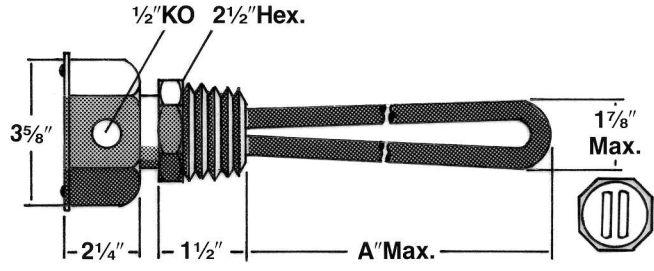
Incoloy Sheath



2" NPT: Incoloy Sheath

No. of Elements: 1			
Plug Type: Stainless Steel Screw			
Watts/sq. in.: Approx. 45			
Application: Process Water and Very Mild Solution			
Terminal Enclosure: NEMA 1			

A Dim.		Kilo-watts	Volts
Imm. Lgth	Cat. No.		
11 1/2"	LA13-11.5-XJ	1.5	120
11 1/2"	LA13-11.5-XJ	1.5	240
17 1/2"	LA13-17.5-XJ	2.0	120
17 1/2"	LA13-17.5-XJ	2.0	240



2" NPT: Incoloy Sheath

No. of Elements: 2			
Plug Type: Stainless Steel Screw			
Watts/sq. in.: Approx. 45			
Application: Process Water and Very Mild Solution			
Terminal Enclosure: NEMA 1			

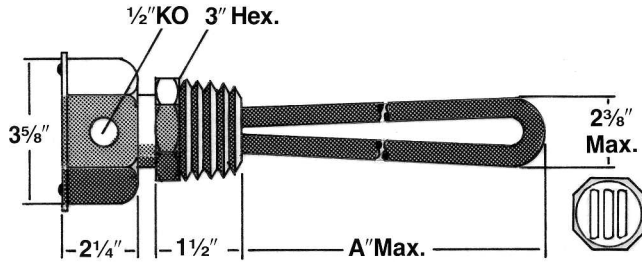
A Dim.		Kilo-watts	Volts
Imm. Lgth	Cat. No.		
8"	LA13-8-YJ	2.0	240
8"	LA13-8-YJ	2.0	480
9 1/2"	LA13-9.5-YJ	2.5	240
9 1/2"	LA13-9.5-YJ	2.5	480
12"	LA13-12-YJ	3.0	240
12"	LA13-12-YJ	3.0	480
18"	LA13-18-YJ	4.0	240
18"	LA13-18-YJ	4.0	480
19 1/8"	LA13-19.12-YJ	5.0	240
19 1/8"	LA13-19.12-YJ	5.0	480
25 1/4"	LA13-25.25-YJ	6.0	240
25 1/4"	LA13-25.25-YJ	6.0	480
28 1/2"	LA13-28.12-YJ	7.0	240
28 1/2"	LA13-28.12-YJ	7.0	480
40 1/2"	LA13-40.5-YJ	10.0	240
40 1/2"	LA13-40.5-YJ	10.0	480
48"	LA13-48-YJ	12.0	240
48"	LA13-48-YJ	12.0	480
54"	LA13-54-YJ	15.0	240
54"	LA13-54-YJ	15.0	480

TUBULAR



Tubular Heaters

Screw Plug



2 1/2" NPT: Incoloy Sheath

No. of Elements: 3
Plug Type: Stainless Steel Screw
Watts/sq. in.: Approx. 45
Application: Process Water and Very Mild Solution
Terminal Enclosure: NEMA 1

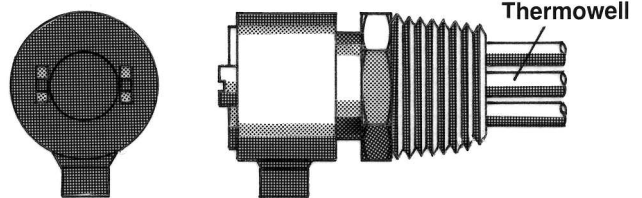
A Dim. Imm. Lgth	Cat. No.	Kilo-watts	Volts	Phase
7 1/8"	LA15-7.12-ZJ	3.0	240	1
7 1/8"	LA15-7.12-ZJ	3.0	240	3
7 1/8"	LA15-7.12-ZJ	3.0	480	3
11 1/4"	LA15-11.25-ZJ	4.5	240	1
11 1/4"	LA15-11.25-ZJ	4.5	240	3
11 1/4"	LA15-11.25-ZJ	4.5	480	1
11 1/4"	LA15-11.25-ZJ	4.5	480	3
17"	LA15-17-ZJ	6.0	240	1
17"	LA15-17-ZJ	6.0	240	3
17"	LA15-17-ZJ	6.0	480	1
17"	LA15-17-ZJ	6.0	480	3
19"	LA15-19-ZJ	7.5	240	1
19"	LA15-19-ZJ	7.5	240	3
19"	LA15-19-ZJ	7.5	480	1
19"	LA15-19-ZJ	7.5	480	3
24 1/8"	LA15-24.12-ZJ	9.0	240	1
24 1/8"	LA15-24.12-ZJ	9.0	240	3
24 1/8"	LA15-24.12-ZJ	9.0	480	1
24 1/8"	LA15-24.12-ZJ	9.0	480	3
32 1/8"	LA15-32.12-ZJ	12.0	240	1
32 1/8"	LA15-32.12-ZJ	12.0	240	3
32 1/8"	LA15-32.12-ZJ	12.0	480	1
32 1/8"	LA15-32.12-ZJ	12.0	480	3
39 1/2"	LA15-39.5-ZJ	15.0	240	1
39 1/2"	LA15-39.5-ZJ	15.0	240	3
39 1/2"	LA15-39.5-ZJ	15.0	480	1
39 1/2"	LA15-39.5-ZJ	15.0	480	3
47 1/8"	LA15-47.12-ZJ	18.0	240	1
47 1/8"	LA15-47.12-ZJ	18.0	240	3
47 1/8"	LA15-47.12-ZJ	18.0	480	1
47 1/8"	LA15-47.12-ZJ	18.0	480	3

Dimensions

Screw plug and enclosure dimensions shown in preceding tables may vary.

Special Features

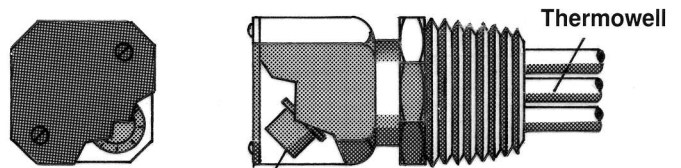
SF-13B: Moisture tight/Explosion resistant terminal enclosure.



Available on:

1", 1 1/4", 2", 2 1/2", NPT screw plugs. Enclosure sizes vary with element size.

XS-55: Thermostat control. Integral bulb and capillary control with thermowell. Two temperature ranges available. Specify XS-55 (0°-100°F) or XS-55 (60°-250°F).



Enclosed Thermostat Control

Available on:

1 1/4", 2", 2 1/2", NPT screw plugs. Enclosure sizes vary with element size.

How To Order

Specify: catalog number, wattage, voltage, and special features, if any. Other sizes are available. Consult factory.

Example: LS13-12.5-YJ/1000W120V/SF13B/XS55 (0°-100°F)



Tubular Heaters

Flanged



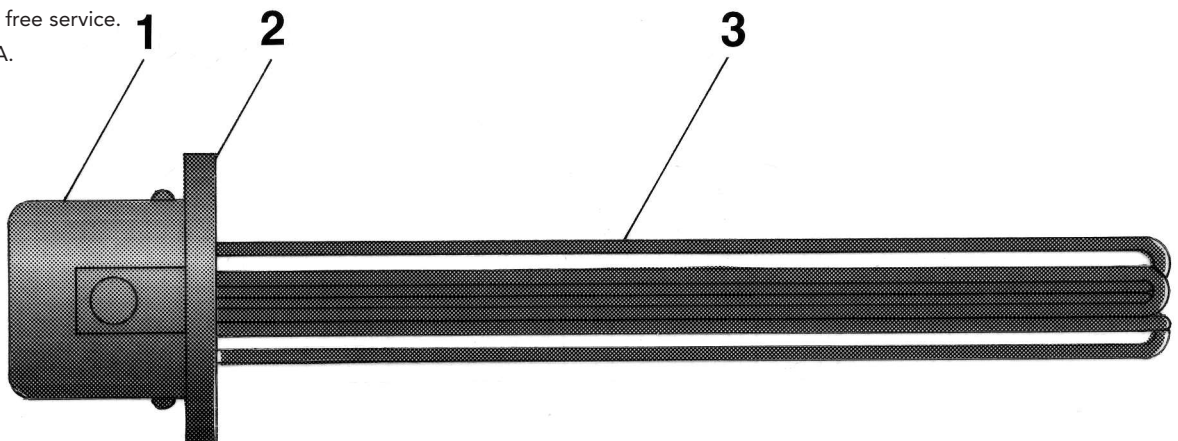
UL and C-UL Recognized-E177353

Features

- Ratings and sizes other than those listed are available.
- 150# rating ANSI carbon steel flange.
- Steel, stainless steel, copper, or incoloy sheathed elements.
- Optional thermostat and well for temperature control.
- Element supports in multiple element units for proper element spacing as required.
- General purpose terminal housing with conduit openings. Optional terminal housings for special applications.
- 240V and 480V, single or three phase which are factory wired to your requirements.
- Long, trouble free service.
- Made in U.S.A.

Construction

- 1 Terminal housing, NEMA 1 general purpose for electrical connections.
- 2 Standard pipe flange.
- 3 Tubular heating element.



TUBULAR



Tubular Heaters

Flanged

Flanged Heater Selection Guide

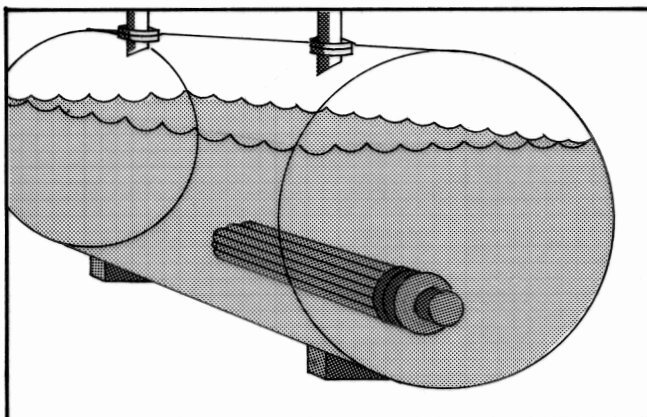
Application	Solution or Application	Alkaline or Acid Content (Est. % by Volume)	Sheath Material	Typical Watt Density (watts/sq. in.)
Water and Very Mild Solutions	Clean Water	pH6 to pH8 Neutral	Copper	45
	Process Water or Very Mild Solutions	pH5 to pH9 2-3%	Incoloy	45
	Mild Solutions	5-6%	Incoloy	45
	Demineralized or Deionized Water	—	Incoloy	45
Oil Heating*	Low Viscosity Oil	—	Steel	23
	Medium Viscosity Oil	—	Steel	15
	High Viscosity Oil	—	Steel	6
Specialty Heaters	Small Tanks	—		
	Process Water	pH5-pH9	Incoloy	45
	Demineralized Water	—	Incoloy	45
	Low Viscosity Oil	—	Incoloy	23
	Pipe Insert	—	Incoloy	12
	Hot Tubs, Spa	Treated	Incoloy	100
Commercial Equipment	Clean Water		Incoloy	30
	Clean Water		Copper	60
Air, Gases, and Steam Heating	Low Temperature	—	Stainless Steel	23
	High Temperature	—	Incoloy	23

*The oil heaters on following pages are catalogued based on low viscosity oil. For medium and high viscosity oils, watt densities must be reduced in accordance with the above watt densities.

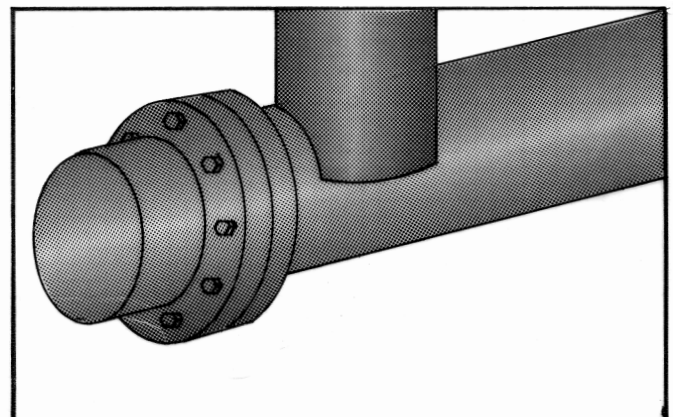
Installation

The heater is bolted onto a mating flange which is welded to a tank wall or a pipe. Terminal housings to enclose electrical connections are included.

TUBULAR



Oil Tank Heater



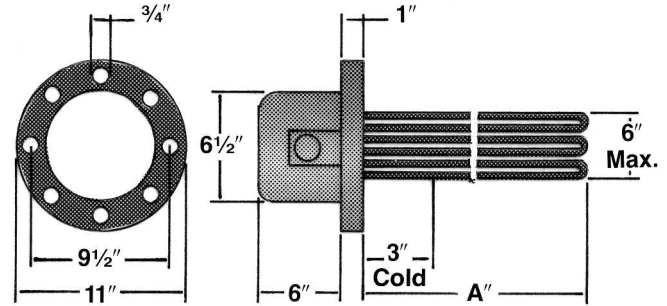
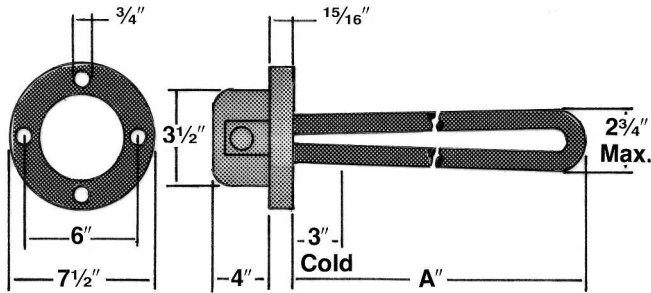
In-Line Fluid or Gas Heater



Tubular Heaters

Flanged

Steel Sheath: 150 lb Steel Flange



3" Flange: Steel Sheath

No. of Elements: 3

Watts/sq. in.: 23

Application: Low Viscosity Oil

Lgth. Inside		Cat. No.	Kilo-watts	Volts	Phase
Tank A					
18 1/8"		BS3-18.06-J	3.0	240	1
18 1/8"		BS3-18.06-J	3.0	240	3
25 3/8"		BS3-25.18-J	4.5	240	1
25 3/8"		BS3-25.18-J	4.5	240	3
33 3/8"		BS3-33.06-J	6.0	240	1
33 3/8"		BS3-33.06-J	6.0	240	3
40 3/8"		BS3-40.56-J	7.5	240	3
48 3/8"		BS3-48.06-J	9.0	240	1
48 3/8"		BS3-48.06-J	9.0	240	3

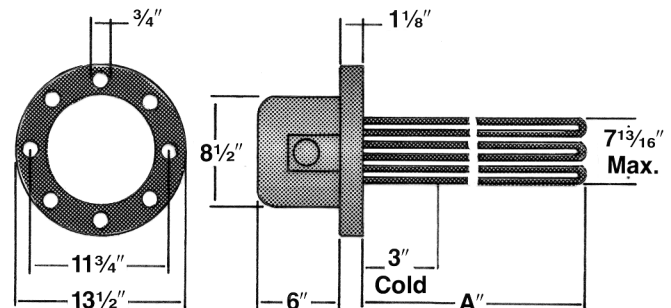
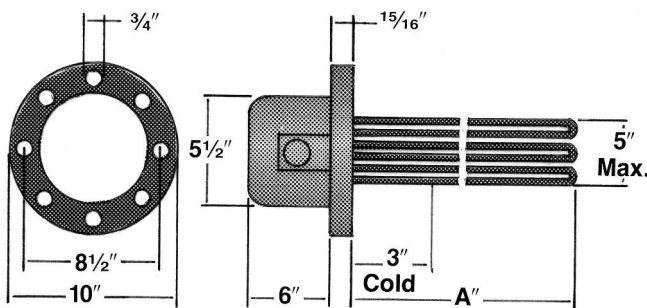
6" Flange: Steel Sheath

No. of Elements: 12

Watts/sq. in.: 23

Application: Low Viscosity Oil

Lgth. Inside		Cat. No.	Kilo-watts	Volts	Phase
Tank A					
25 1/2"		BS6-25.12-J	18.0	240	3
33"		BS6-33-J	24.0	240	3
40 1/2"		BS6-40.5-J	30.0	240	3
48"		BS6-48-J	36.0	240	3



5" Flange: Steel Sheath

No. of Elements: 6

Watts/sq. in.: 23

Application: Low Viscosity Oil

Lgth. Inside		Cat. No.	Kilo-watts	Volts	Phase
Tank A					
25 3/8"		BS5-25.18-J	9.0	240	3
33 3/8"		BS5-33.06-J	12.0	240	3
40 3/8"		BS5-40.56-J	15.0	240	3
52 3/8"		BS5-52.06-J	20.0	240	3
65 3/8"		BS5-65.06-J	25.0	240	3
78 3/8"		BS5-78.06-J	30.0	240	3

8" Flange: Steel Sheath

No. of Elements: 18

Watts/sq. in.: 23

Application: Low Viscosity Oil

Lgth. Inside		Cat. No.	Kilo-watts	Volts	Phase
Tank A					
32 3/8"		BS8-32.87-J	30.0	240	3
43 1/8"		BS8-43.68-J	40.0	240	3
51 1/8"		BS8-51.87-J	50.0	240	3
61 3/8"		BS8-61.37-J	60.0	240	3
61 3/8"		BS8-61.37-J	60.0	480	3
69 7/8"		BS8-69.87-J	70.0	240	3
69 7/8"		BS8-69.87-J	70.0	480	3
78 3/8"		BS8-78.87-J	80.0	240	3
78 3/8"		BS8-78.87-J	80.0	480	3

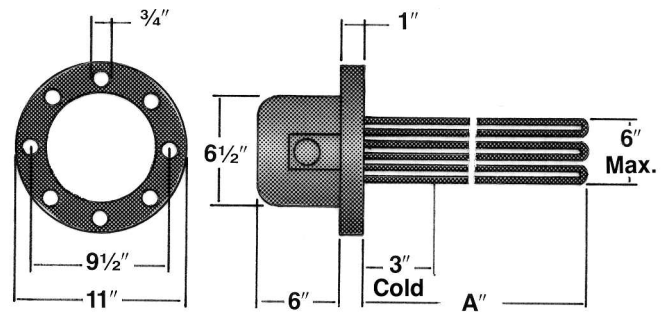
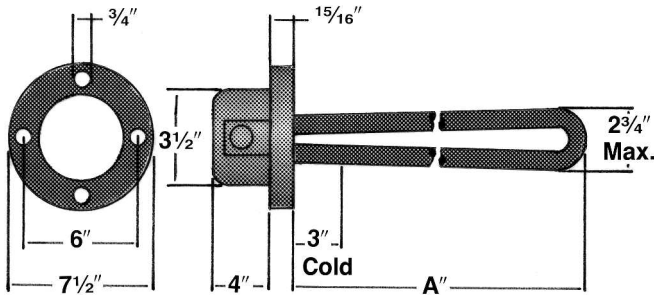
TUBULAR



Tubular Heaters

Flanged

Stainless Steel Sheath: 150 lb Steel Flange



3" Flange: Stainless Steel Sheath

No. of Elements: 3

Watts/sq. in.: 45

Application: Process Water and Very Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
18 1/8"	BT3-18.06-J	6.0	240	1
18 1/8"	BT3-18.06-J	6.0	240	3
25 3/8"	BT3-25.18-J	9.0	240	1
25 3/8"	BT3-25.18-J	9.0	240	3
33 1/8"	BT3-33.06-J	12.0	240	1
33 1/8"	BT3-33.06-J	12.0	240	3
40 1/8"	BT3-40.56-J	15.0	240	1
40 1/8"	BT3-40.56-J	15.0	240	3
48 1/8"	BT3-48.06-J	18.0	240	1
48 1/8"	BT3-48.06-J	18.0	240	3

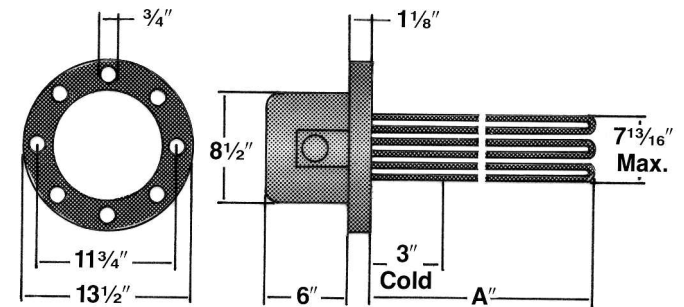
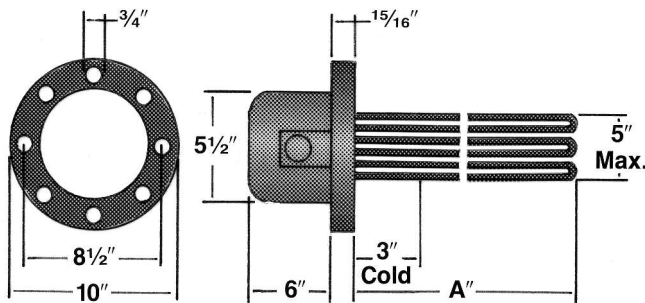
6" Flange: Stainless Steel Sheath

No. of Elements: 12

Watts/sq. in.: 45

Application: Process Water and Very Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
25 1/2"	BT6-25.12-J	36.0	240	3
33"	BT6-33-J	48.0	240	3
40 1/2"	BT6-40.5-J	60.0	240	3
48"	BT6-48-J	72.0	240	3



5" Flange: Stainless Steel Sheath

No. of Elements: 6

Watts/sq. in.: 45

Application: Process Water and Very Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
18 1/8"	BT5-18.06-J	12.0	240	3
19 1/8"	BT5-19.81-J	15.0	240	3
25 3/8"	BT5-25.18-J	18.0	240	3
33 1/8"	BT5-33.06-J	24.0	240	3
40 1/8"	BT5-40.56-J	30.0	240	3
52 1/8"	BT5-52.06-J	40.0	240	3
65 1/8"	BT5-65.06-J	50.0	240	3
78 1/8"	BT5-78.06-J	60.0	240	3

8" Flange: Stainless Steel Sheath

No. of Elements: 18

Watts/sq. in.: 45

Application: Process Water or Very Mild Solution

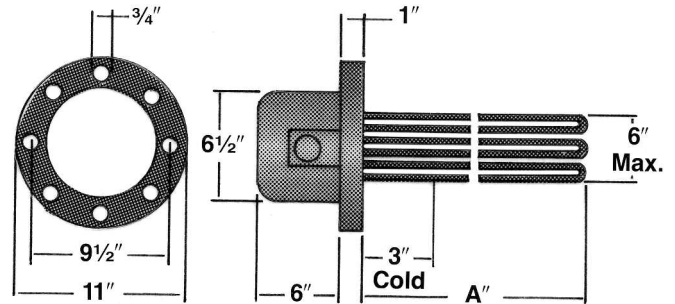
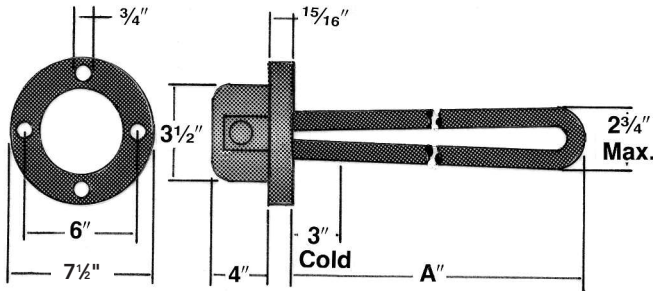
Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
27 1/8"	BT8-27.87-J	50.0	240	3
36 1/8"	BT8-36.87-J	75.0	240	3
43 1/8"	BT8-43.68-J	100.0	240	3
51 1/8"	BT8-51.87-J	120.0	240	3
61 3/8"	BT8-61.37-J	150.0	240	3
69 1/8"	BT8-69.87-J	175.0	240	3
78 1/8"	BT8-78.87-J	200.0	240	3



Tubular Heaters

Flanged

Copper Sheath: 150 lb Steel Flange



3" Flange: Copper Sheath

No. of Elements: 3

Watts/sq. in.: 45

Application: Water

Lgth. Inside				
Tank A	Cat. No.	Kilo-watts	Volts	Phase
18 1/8"	BC3-18.06-J	6.0	240	1
18 1/2"	BC3-18.06-J	6.0	240	3
25 1/8"	BC3-25.18-J	9.0	240	1
25 1/2"	BC3-25.18-J	9.0	240	3
33 1/8"	BC3-33.06-J	12.0	240	1
33 1/2"	BC3-33.06-J	12.0	240	3
40 1/8"	BC3-40.56-J	15.0	240	1
40 1/2"	BC3-40.56-J	15.0	240	3
48 1/8"	BC3-48.06-J	18.0	240	1
48 1/2"	BC3-48.06-J	18.0	240	3

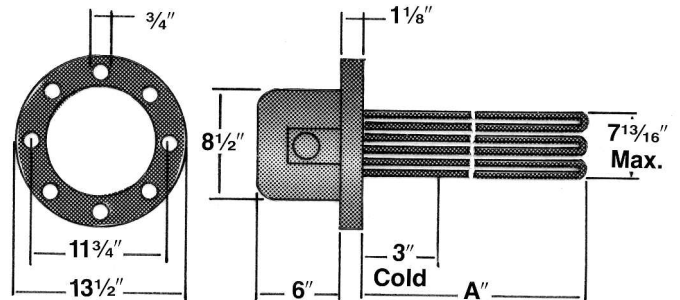
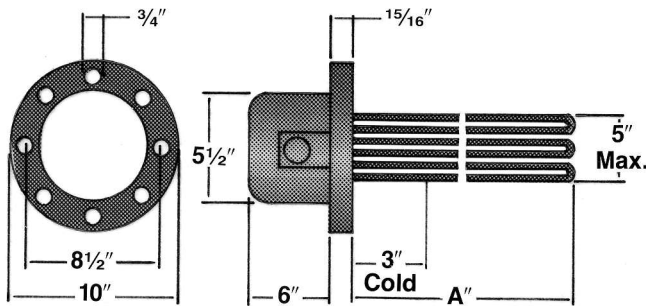
6" Flange: Copper Sheath

No. of Elements: 12

Watts/sq. in.: 45

Application: Water

Lgth. Inside				
Tank A	Cat. No.	Kilo-watts	Volts	Phase
25 1/2"	BC6-25.12-J	36.0	240	3
33"	BC6-33-J	48.0	240	3
40 1/2"	BC6-40.5-J	60.0	240	3
48"	BC6-48-J	72.0	240	3



5" Flange: Copper Sheath

No. of Elements: 6

Watts/sq. in.: 45

Application: Water

Lgth. Inside				
Tank A	Cat. No.	Kilo-watts	Volts	Phase
18 1/8"	BC5-18.06-J	12.0	240	3
19 1/8"	BC5-19.81-J	15.0	240	3
25 1/8"	BC5-25.18-J	18.0	240	3
33 1/8"	BC5-33.06-J	24.0	240	3
40 1/8"	BC5-40.56-J	30.0	240	3
52 1/8"	BC5-52.06-J	40.0	240	3
65 1/8"	BC5-65.06-J	50.0	480	3
78 1/8"	BC5-78.06-J	60.0	480	3

8" Flange: Copper Sheath

No. of Elements: 18

Watts/sq. in.: 45

Application: Water

Lgth. Inside				
Tank A	Cat. No.	Kilo-watts	Volts	Phase
27 1/8"	BC8-27.87-J	50.0	240	3
36 1/8"	BC8-36.87-J	75.0	240	3
43 1/8"	BC8-43.68-J	100.0	240	3
51 1/8"	BC8-51.87-J	120.0	240	3
61 1/8"	BC8-61.37-J	150.0	240	3
69 1/8"	BC8-69.87-J	175.0	240	3
78 1/8"	BC8-78.87-J	200.0	240	3

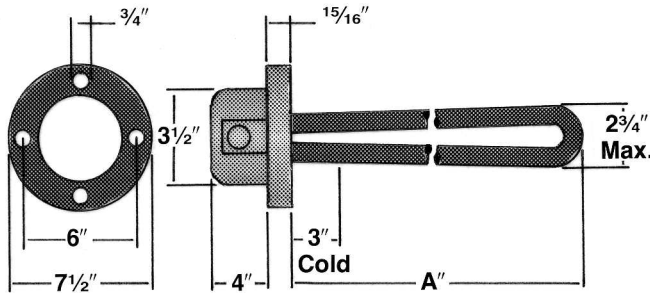
TUBULAR



Tubular Heaters

Flanged

Incoloy Sheath: 150 lb Steel Flange



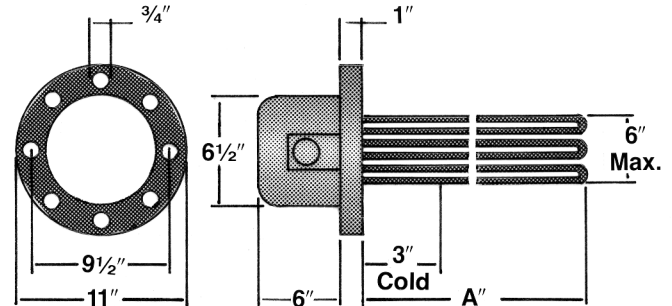
3" Flange: Incoloy Sheath

No. of Elements: 3

Watts/sq. in.: 45

Application: Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
18 ¹ / ₆ "	BA3-18.06-J	6.0	240	1
18 ¹ / ₆ "	BA3-18.06-J	6.0	240	3
25 ³ / ₆ "	BA3-25.18-J	9.0	240	1
25 ³ / ₆ "	BA3-25.18-J	9.0	240	3
33 ³ / ₆ "	BA3-33.06-J	12.0	240	1
33 ³ / ₆ "	BA3-33.06-J	12.0	240	3
40 ³ / ₆ "	BA3-40.56-J	15.0	240	1
40 ³ / ₆ "	BA3-40.56-J	15.0	240	3
48 ³ / ₆ "	BA3-48.06-J	18.0	240	1
48 ³ / ₆ "	BA3-48.06-J	18.0	240	3



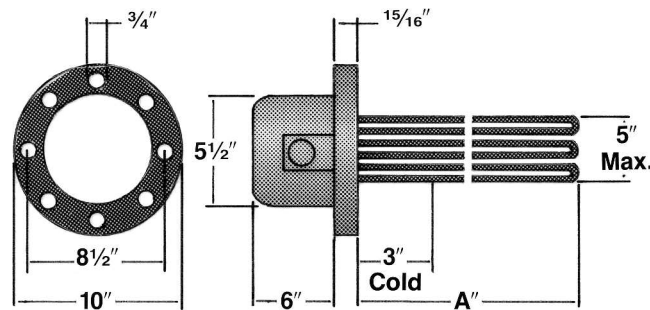
6" Flange: Incoloy Sheath

No. of Elements: 12

Watts/sq. in.: 45

Application: Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
25 ¹ / ₂ "	BA6-25.12-J	36.0	240	3
33"	BA6-33-J	48.0	240	3
40 ¹ / ₂ "	BA6-40.5-J	60.0	240	3
48"	BA6-48-J	72.0	240	3



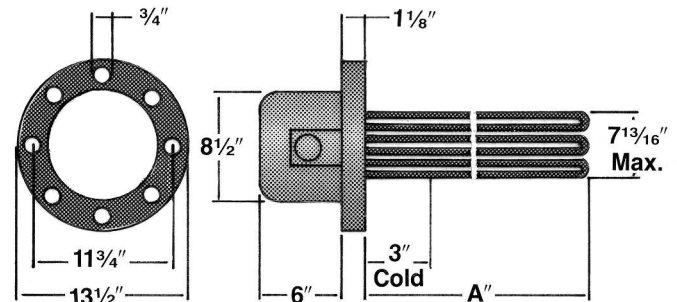
5" Flange: Incoloy Sheath

No. of Elements: 6

Watts/sq. in.: 45

Application: Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
18 ¹ / ₆ "	BA5-18.06-J	12.0	240	3
19 ³ / ₆ "	BA5-19.81-J	15.0	240	3
25 ³ / ₆ "	BA5-25.18-J	18.0	240	3
33 ³ / ₆ "	BA5-33.06-J	24.0	240	3
40 ³ / ₆ "	BA5-40.56-J	30.0	240	3
52 ¹ / ₆ "	BA5-52.06-J	40.0	240	3
65 ¹ / ₆ "	BA5-65.06-J	50.0	240	3
78 ¹ / ₆ "	BA5-78.06-J	60.0	240	3



8" Flange: Incoloy Sheath

No. of Elements: 18

Watts/sq. in.: 45

Application: Mild Solution

Lgth. Inside		Kilo-watts	Volts	Phase
Tank A	Cat. No.			
27 ¹ / ₈ "	BA8-27.87-J	50.0	240	3
36 ¹ / ₈ "	BA8-36.87-J	75.0	240	3
43 ¹¹ / ₆ "	BA8-43.68-J	100.0	240	3
51 ¹ / ₈ "	BA8-51.87-J	120.0	240	3
61 ¹ / ₈ "	BA8-61.37-J	150.0	240	3
69 ¹ / ₈ "	BA8-69.87-J	175.0	240	3
78 ¹ / ₈ "	BA8-78.87-J	200.0	240	3

Dimensions

Flanged and enclosed dimensions shown in preceding tables may vary.

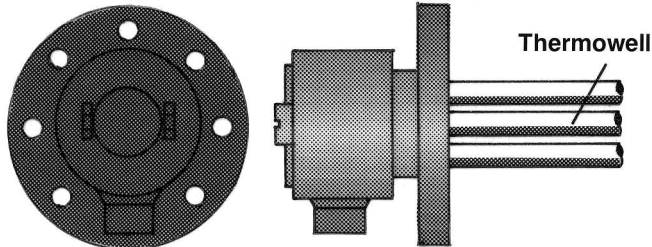


Tubular Heaters

Flanged

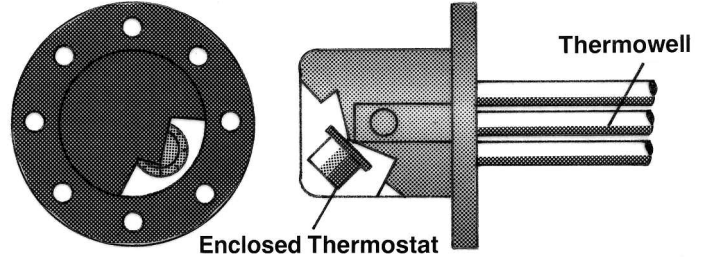
Special Features

SF-13B: Moisture tight/Explosion resistant terminal enclosure.



Available on:
3", 5", 6", 8" flanged. Enclosure sizes vary with element sizes.

XS-55: Thermostat control. Integral bulb and capillary control with thermowell. Two temperature ranges available. Specify XS-55 (0°–100°F) or XS-55 (60°–250°F).



Available on:
3", 5", 6", 8" flanged. Enclosure sizes vary with element size.

How To Order

Specify: catalog number, wattage, voltage, and special features, if any. Other sizes are available. Consult factory.

Example: BS3-18.06-J/1000W120V