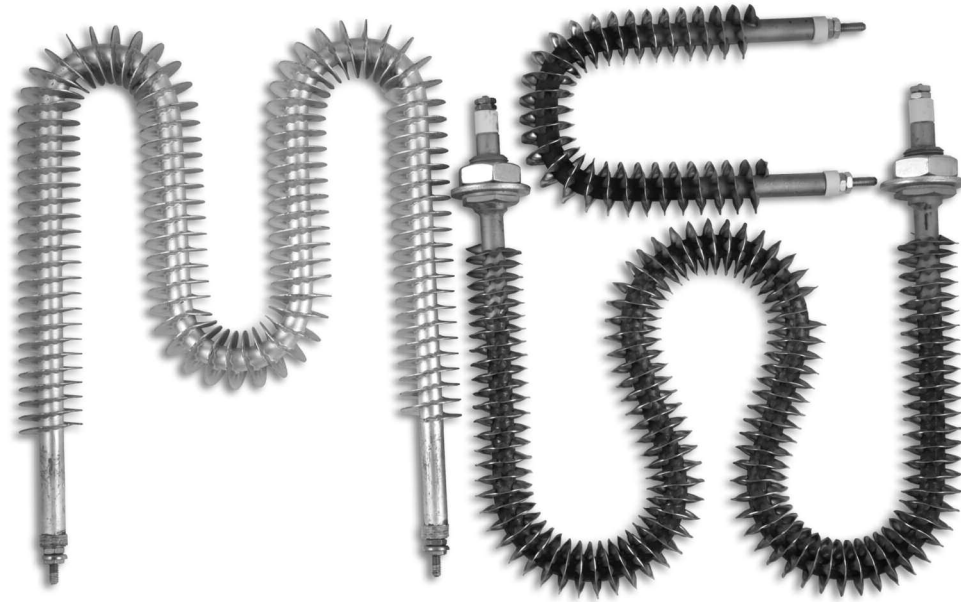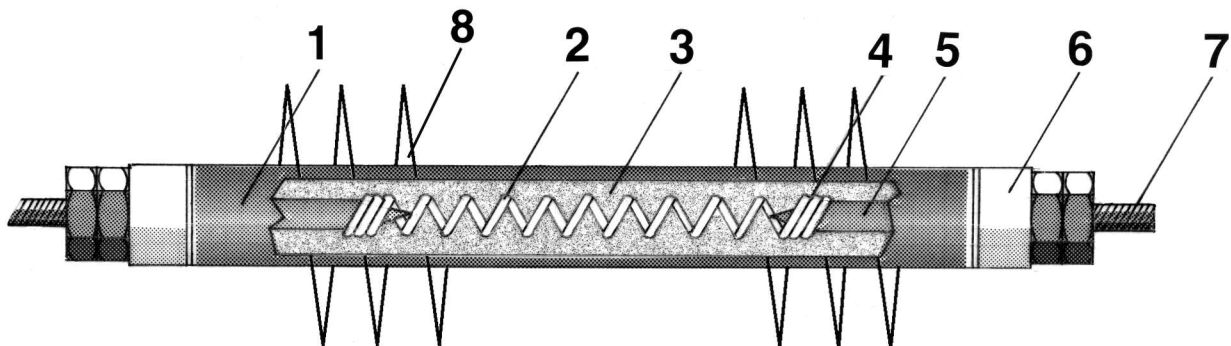# Tubular Heaters
Finned

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.

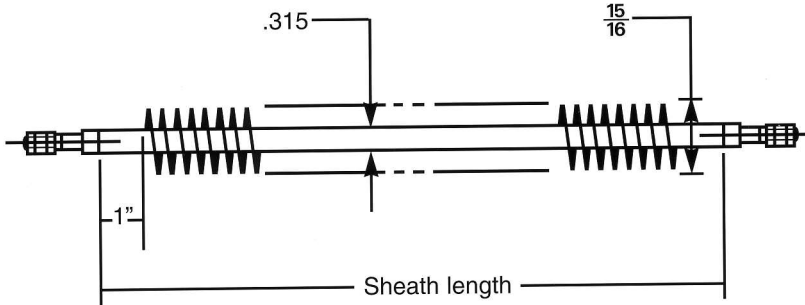**8** Painted steel or stainless steel continuous fin (approx. 5 per inch).
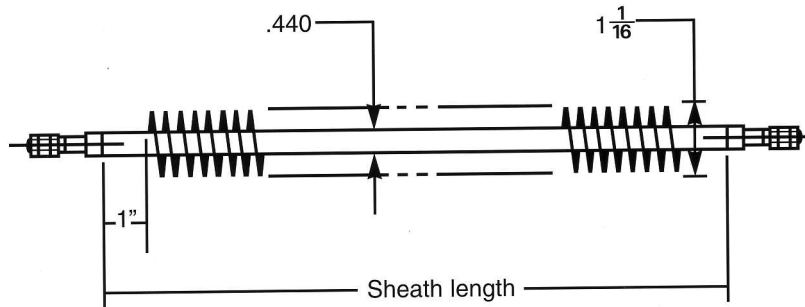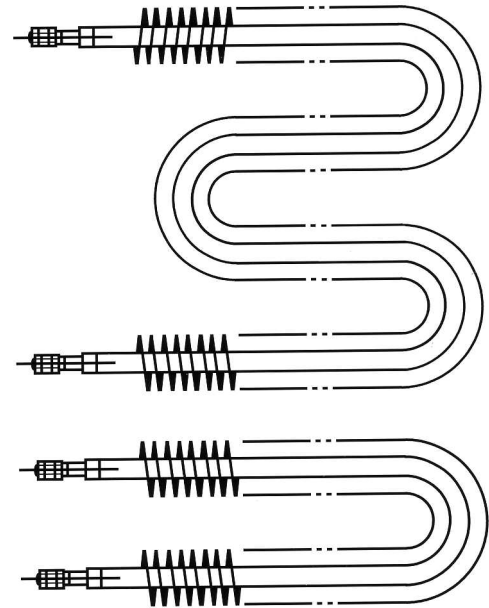
TUBULAR

Tubular Heaters
Finned

.315 $\frac{15}{16}$

1"

Sheath length

Optional Configurations

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		

.440 $1\frac{1}{16}$

1"

Sheath length

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		

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".

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 optimal features. If forming is required, include a dimensional sketch.

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

TUBULAR

Tubular Heaters
Forming Options

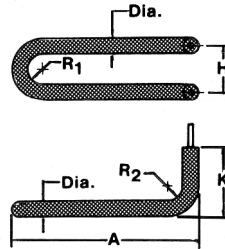**Custom Formations to your requirements are available.**

1
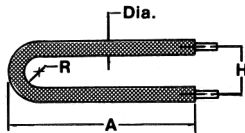
$SL = 2A + 1.14R - .43\ Dia.$

2

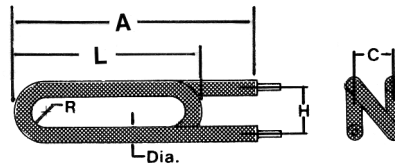$SL = 2K - .86\ R_2 - 2.86\ Dia. + 2A + 1.14\ R_1$

3
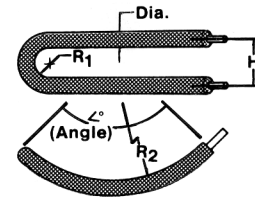
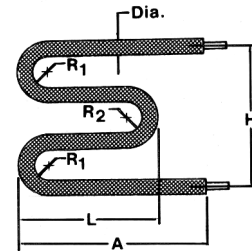
$SL = .0175 <°(2\ R_2 + Dia.) + 1.14\ R_1 - .43\ Dia.$

4
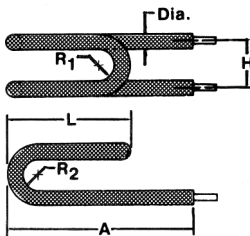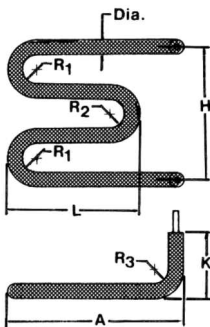

$SL = 2A + 2.28\ R_2 - 1.29\ Dia. + 2L + 1.14\ R_1$
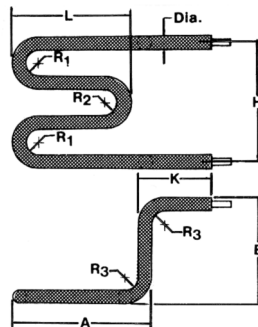
5

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

6
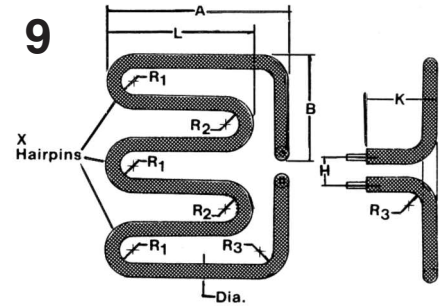

$SL = 2A + 2.28\ R_1 - 1.29\ Dia. + 2L + 1.14\ R_2$

7

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

8

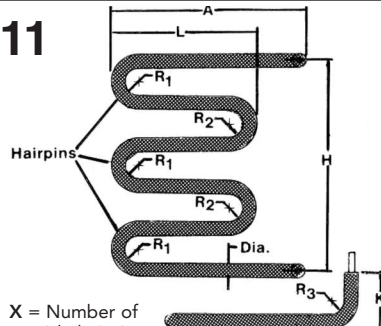$SL = 2K - 1.72\ R_3 - 6.15\ Dia. + 2B + 2A + 2L + 2.28\ R_1 + 1.14\ R_2$

9

X = Number of outside hairpins
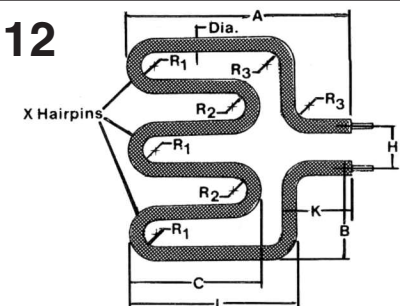$SL = 2K + 2A - 1.72\ R_3 + 3.14\ R_1\ X + 3.14\ R_2\ (X-1) + 2L\ (X-1) - H + 1.14\ X\ Dia. - 3.42\ Dia.$

10
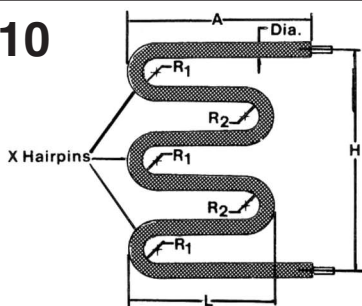
X = Number of outside hairpins
$SL = 2A + .43\ Dia.\ (1-2X) + 2L\ (X-1) + 1.14\ X\ R_1 + 1.14\ R_2\ (X-1)$

11

X = Number of outside hairpins
$SL = 1.14\ R_2\ X - .88\ Dia.\ X\ 1.14\ R_2 - 2\ Dia. + 1.14\ R_1\ X - .86\ R_3 + 2L\ X - 2L + 2A + 2K$
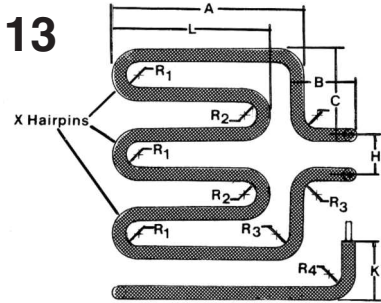
12

X = Number of outside hairpins
$SL = 2L + 2K + 2B + 2C\ (X-1) - 0.86\ R_3 - 0.86\ R_3 - 4.86\ (Dia.) + 1.14\ R_1\ (X) + 1.14\ R_2\ (X-1) - (2X-1)\ 0.43\ Dia.$
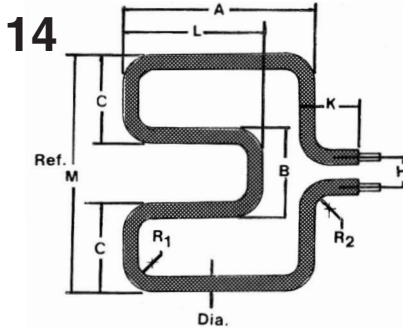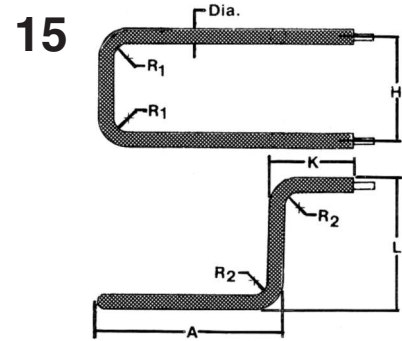
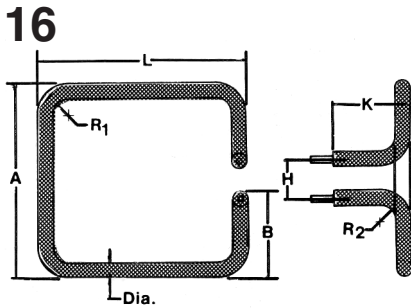**TUBULAR**

Tubular Heaters
Forming Options

13

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 Dia. - 5.85 Dia.

14
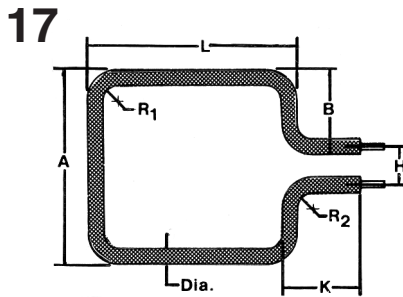

SL = 2K + 4C + 2B + 2A + 2L - H - 2.58 R_1 - .86 R_2 - 12.15 Dia.

15

SL =2K - 1.72 R_2 - 6.29 Dia. + 2L + 2A - .86 R_1 + H

16

SL = 2K + 2A + 2L - H - 1.72 R_1 - .86 R_2 - 6.29 Dia.

17

SL = 2K + 2A + 2L - H - 1.72 R_1 - .86 R_2 - 6.29 Dia.

18
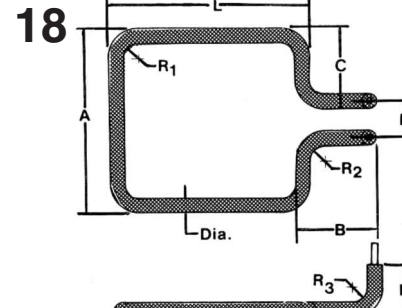
SL = 2K + 2A + 2L + 2B - H - 1.72 R_1 - 1.72 R_2 - 8.72 Dia.

19
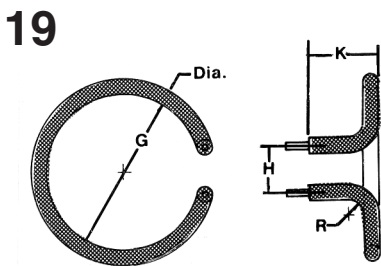
SL = (G + Dia.) (3.14) + 1.14 R + 2K + 3.28 Dia. - H

20
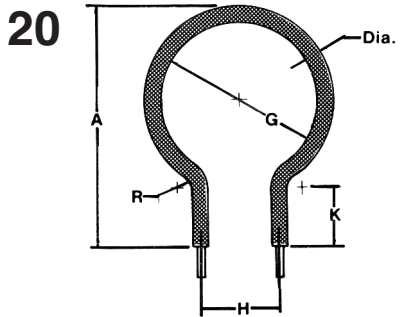
SL = (G + Dia.) (3.14) + 1.14 R + 2K + 3.71 Dia. - H

21
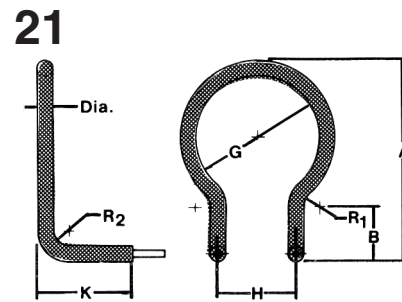
SL = (G + Dia.) (3.14) + 1.14 R_1 + 2B + 1.14 R_2 + 2K + 3.28 Dia. - H

22
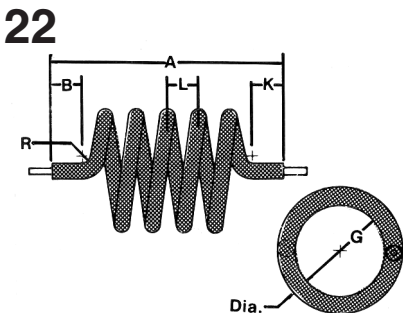
SL = [(G + Dia.) (3.14) (Number of 360°'s)] + B + K.

23
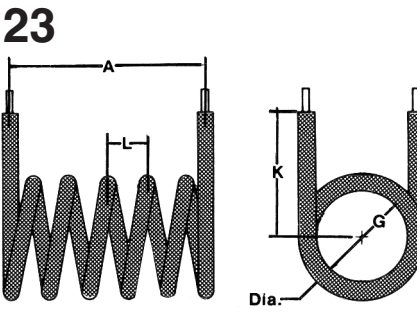
SL = [(G + Dia.) (3.14) (Number of 360°'s)] + 2K

24

SL = [(G + Dia.) (3.14) (Number of 360°'s)] + (G ÷ 2) + A + K.