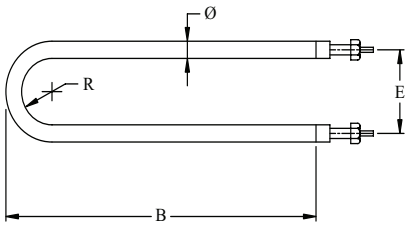
Tubular Heater Products:
Forming - Tubular Electric Heaters

Tubular Electric Heaters can be formed into a multitude of different shapes. Figures BF1 through BF28 are typical of some common designs. For orders or custom design requirements, please specify the dimensions for the figures shown or provide a drawing or sample of the desired shape.

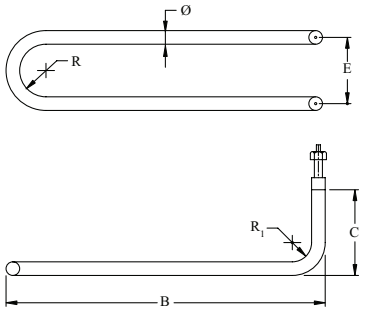
- SL = Sheath Length
- Bends are repressed as required
- Minimum bend radius is equal to the element diameter

BF1



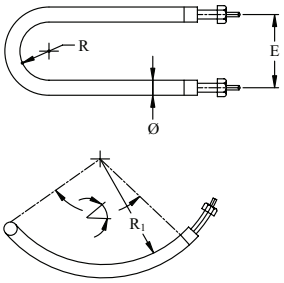
SL=2B+1.14R-.43Ø
E=2R+Ø

BF2



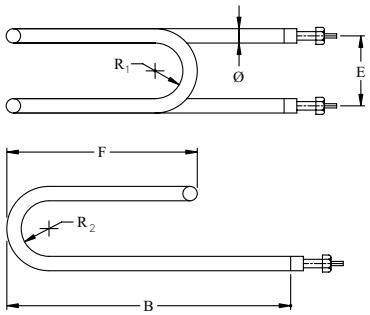
SL=2C-.86R_1-2.86Ø+2B+1.14R
E=2R+Ø

BF3



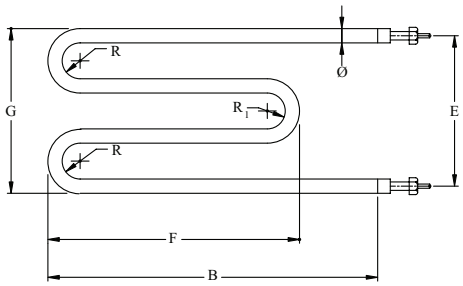
SL=.0175∠(2R_1+Ø)+1.14R-.43Ø
E=2R+Ø

BF4



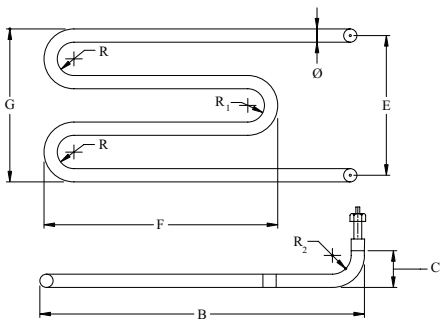
SL=2B+2.28R_2 -1.29Ø+2F+1.14R_1
E=2R_1+Ø

BF5



SL=2B+2.28R-1.29Ø+2F+1.14R_1
G=E+Ø

BF6

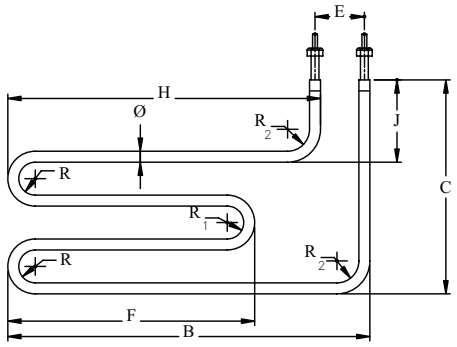


SL=2C-.86R_2-3.72Ø+2B+2F+2.28R+1.14R_1
G=E+Ø

CONVECTRONICS

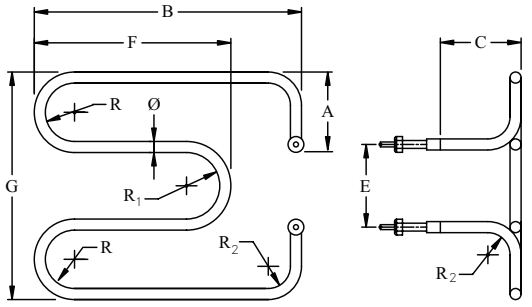
Tubular Heater Products:
Forming - Tubular Electric Heaters

BF7



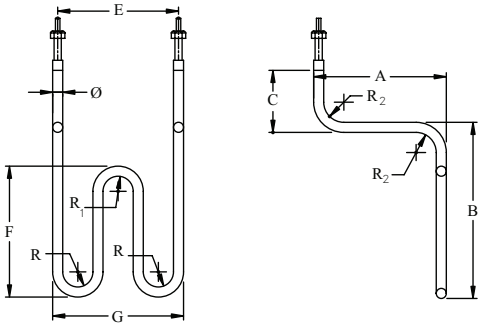
SL=2C+2B+2F-6.717Ø-1.717R-E-.858R_1-.858R_2

BF8



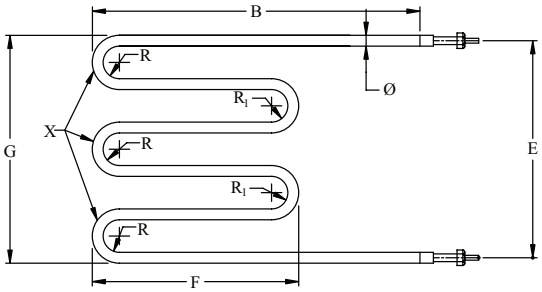
SL=2C+2B+2F+6.28R+3.14R_1-1.15Ø-1.72R_2-E
G=4R+2R_1+4Ø

BF9



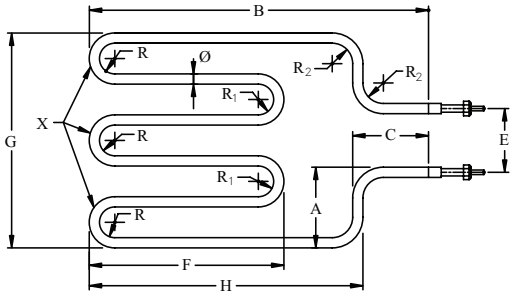
SL=2C-1.72R_2-6.15Ø+2A+2B+2F+2.28R+1.14R_1
G=4R+2R_1+4Ø

BF10



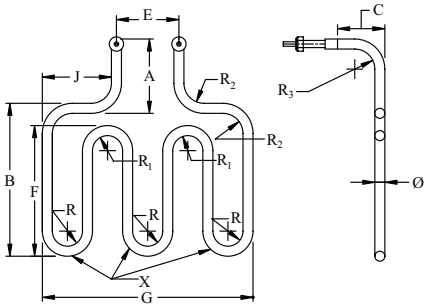
X=NUMBER OF OUTSIDE BENDS
SL=2B+.43Ø(1-2X)+2F(X-1)+1.14R_1(X-1)
G=2RX+2R(X1-1)+2ØX

BF11



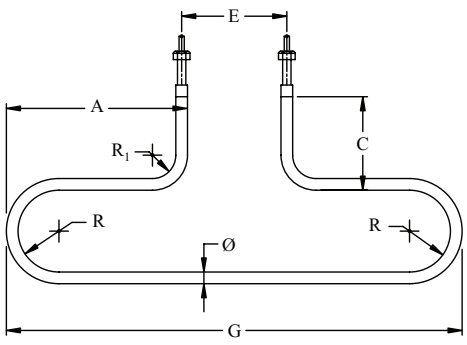
X=NUMBER OF OUTSIDE BENDS
SL=2B-1.72R_2+3.14RX+3.14R_1 (X-1)+2F(X-1)-E+1.14ØX-1.42Ø
G=2RX+2R_1 (X-1)+2ØX

BF12



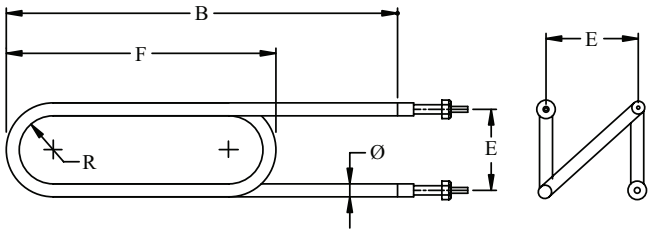
X=NUMBER OF OUTSIDE BENDS
SL=2J+2B+2C+2A-.86R_3-6.86Ø-1.72R_2+2F(X-1)+1.14R_1(X-1)+1.14XR-.86XØ
G=2RX+2R_1(X-1)+2ØX

BF13



SL=2G+2C-E+2.28R-.86R_1-3.29Ø

BF14

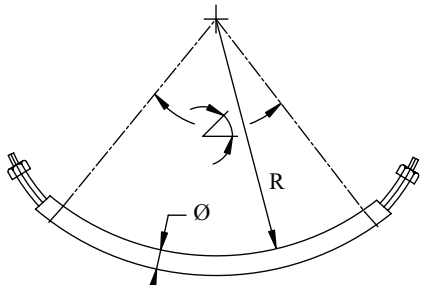


SL=2B+3.42R-1.29Ø+2F

CONVECTRONICS

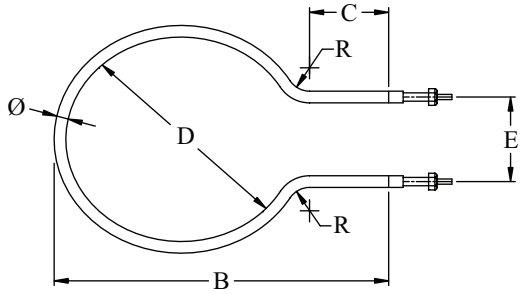
Tubular Heater Products:
Forming - Tubular Electric Heaters

BF15



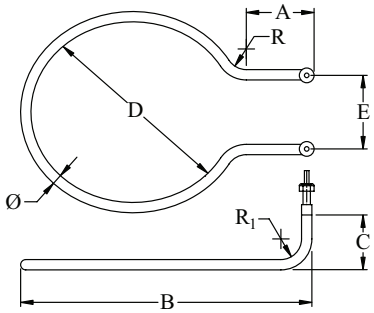
SL=.0175 ∠ (R+.5Ø)

BF16



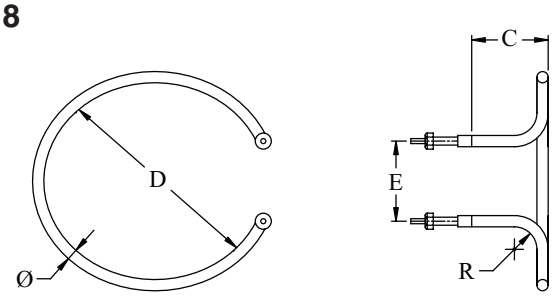
SL=3.14D+1.14R+2C-3.71Ø-E

BF17



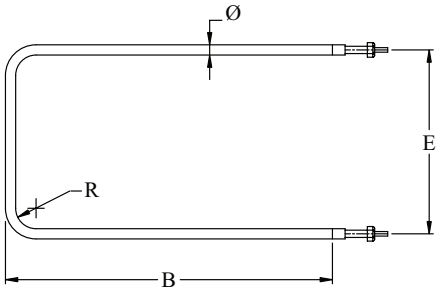
SL=3.14D+1.14R+2A+1.14R_1+2C+3.28Ø-E

BF18



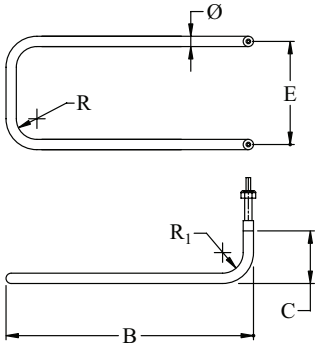
SL=3.14D+1.14R+2C+3.28Ø-E

BF19



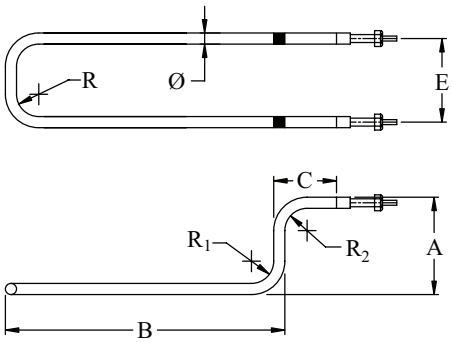
SL=2B-.86R-1.43Ø+E

BF20



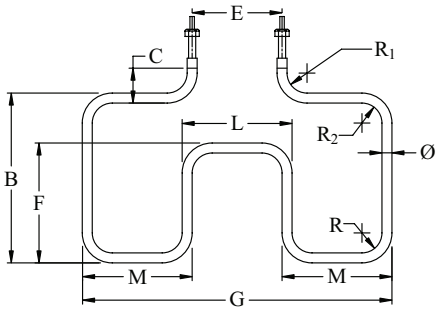
SL=2C-.86R_1-3.86Ø+2B-.86R+E

BF21



SL=2A+2B+2C+E-6.29Ø-.86R-.86R_1-.86R_2

BF22

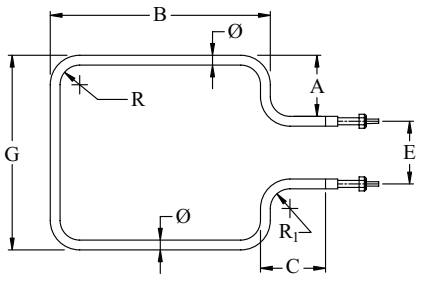


SL=2C+4M+2L+2B+2F-E-2.58R-.86R_1-12.15Ø
G=2M+L-2Ø

CONVECTRONICS

Tubular Heater Products:
Forming - Tubular Electric Heaters

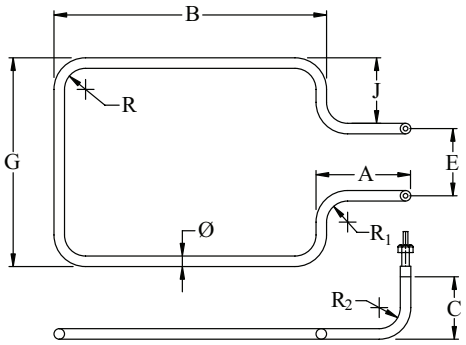
BF23



$SL=2C+2G+2B-E-1.72R-.86R_1-6.29Ø$

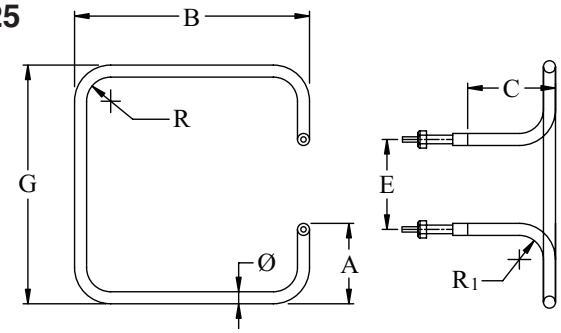
$A=\frac{(G-(E-Ø))}{2}$

BF24



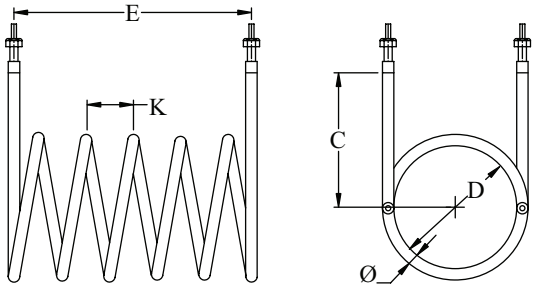
$SL=2C+2G+2B+2A-E-1.72R-.86R_1-.86R_2-8.72Ø$

BF25



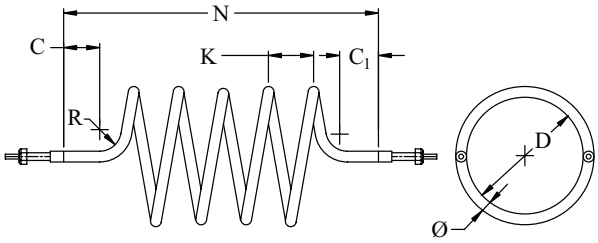
$SL=2C+2G+2B-E-1.72R-.86R_1-6.29Ø$

BF26



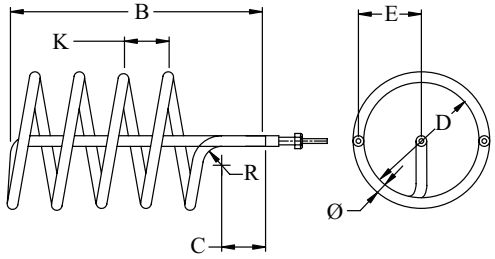
$SL=((D+Ø)(3.14)(\text{NUMBER OF 360° TURNS}))+2C$

BF27



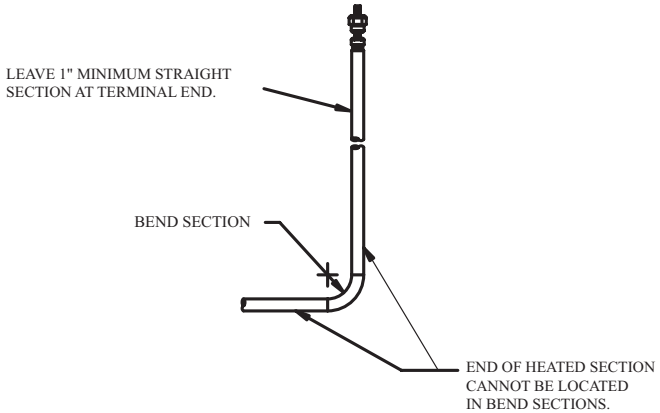
$SL=((D+Ø)(3.14)(\text{NUMBER OF 360° TURNS}))+C+C_1$

BF28



$SL=((D+Ø)(3.14)(\text{NUMBER OF 360° TURNS}))+(D/2)+B+C$

All Convectronics' Tubular Heating Elements have the MgO insulation compacted by reducing the element diameter. The elements are then annealed in a furnace to relieve the metal stressing (work hardening) that takes place during the roll reduction of the sheath. Annealing brings the metal back to a soft state, allowing the element to be bent into virtually any configuration. However, forming also work hardens the metal so some precautions must be observed in order to prevent the sheath from breaking during bending or developing stress crack marks.
Note: Elements with tight bends and some applications require the bends to be recompacted in special dies to restore the insulation density and maintain dielectric strength.



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