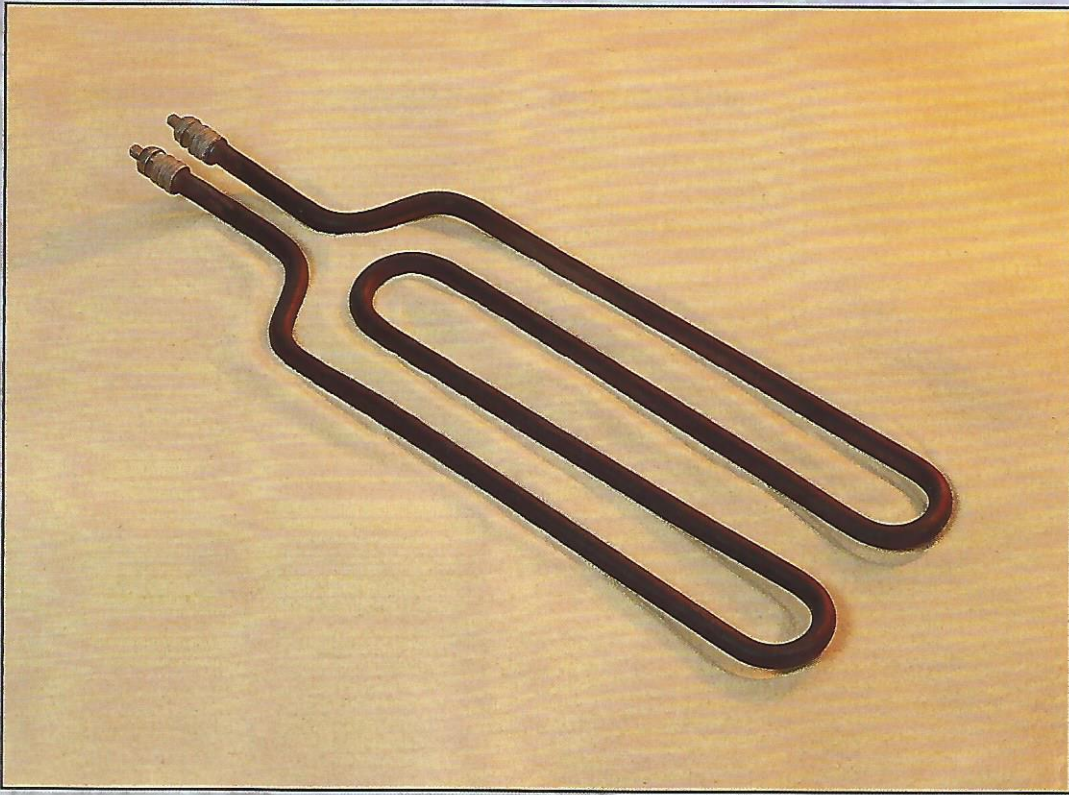


TUBULAR HEATERS



So versatile that they can be formed to suit most tubular applications. Various sheath materials are available, including high performance Incoloy®—capable of reaching 1,600° F (871° C).

fast  *heat*®



TUBULAR HEATERS

TUBULAR HEATERS

Fast Heat's versatile Tubular heaters are custom-formed in a wide variety of shapes to correspond to your requirements.

Incoloy®, stainless steel or steel sheath materials are available, as well as a large selection of termination styles. Magnesium oxide (MgO) insulation ensures superior heat transfer, and the resistance wire is precision-wound for long heater life.

APPLICATIONS

Tubular heaters can be used in almost any application. Straight Tubulars can be clamped to metal surfaces or inserted in machined grooves for conductive heat transfer. Or use a formed Tubular to provide consistent heat in any type of special application.

SPECIFICATIONS

SHEATH MATERIALS:
Max. recommended sheath temperature:

Steel.....	750° F (398° C)
Stainless Steel.....	1,200° F (648° C)
Incoloy.....	1,600° F (871° C)

Tolerances: Resistance +10%
 - 5%

 Wattage + 5%
 -10%

 Length +/- 1%

SHEATH DIAMETERS:
Fast Heat Tubular heating elements are available in the following diameters and a variety of lengths.

.260".....	+/- .003"	6.6 mm
.315".....	+/- .003"	8.0 mm
.430".....	+/- .003"	10.9 mm
.490".....	+/- .003"	12.4 mm

Maximum Sheath Watt Density.... 45w / in²

NOTE: Cold zone at each end; 1-1/2" min.

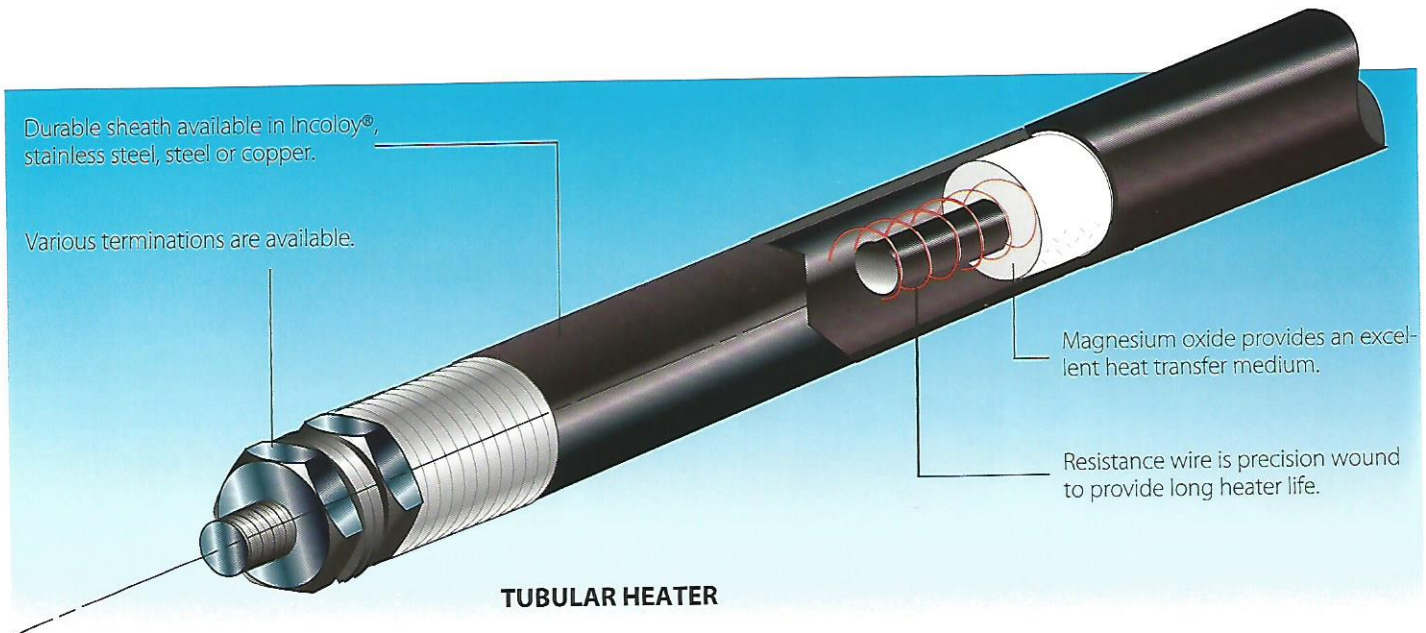
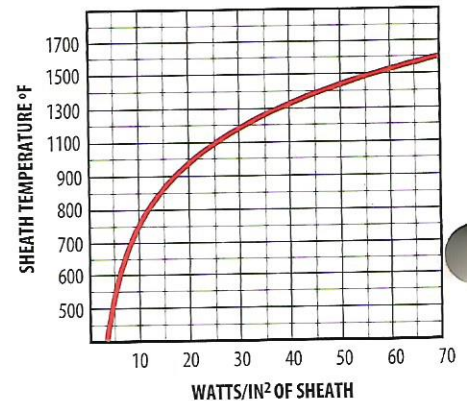
TYPES OF SEAL:

Silicone Resin: Tubular heaters are sealed at ends to restrict moisture penetration.
Silicone Rubber: Seal for moisture protection and accidental fluid splashing.

WATTS PER SQUARE INCH VERSUS SHEATH TEMPERATURE

The following chart is for reference only. Values are approximate and could vary depending upon the actual conditions. Consult Fast Heat for more details.

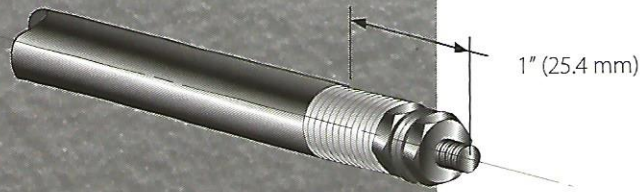
Test is based on using Incoloy® sheath at 70° F (21° C) ambient temperature.



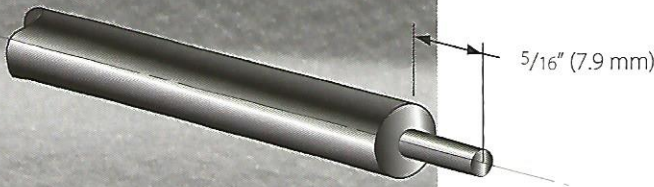
TUBULAR HEATERS



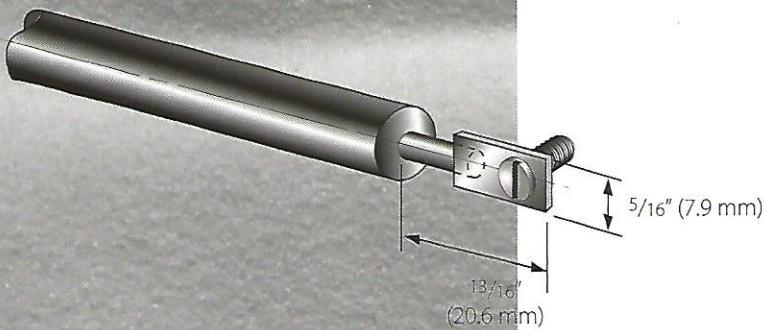
SCREW TERMINAL



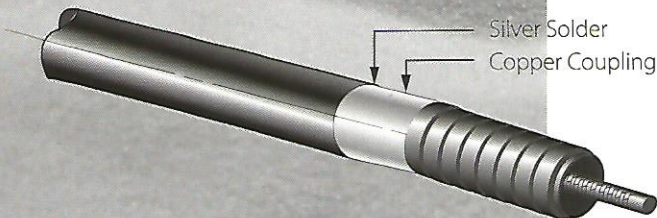
PLAIN PINS



FLAG TERMINALS



ARMOR



With mica washer insulation:

DIAMETER		SCREW STUD
IN	MM	
.260	6.6	#10-32
.315-.430	8.0-10.9	#10-32

Customer can finish termination to suit their application.

5/16" (7.9 mm) pin length is standard.

With #10-32 screw.

Specify direction.

Stainless steel armor to prevent abrasion and wear of leads (Type A).

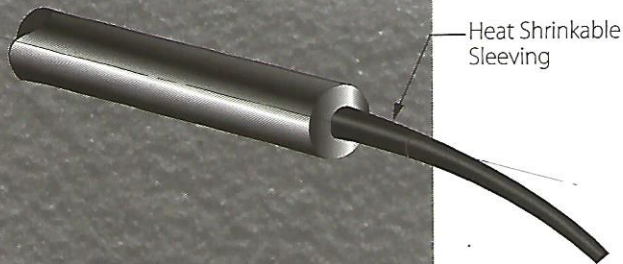
Also available with leak-proof bellows.

Specify length of leads and armor.



TUBULAR HEATERS

LEADS

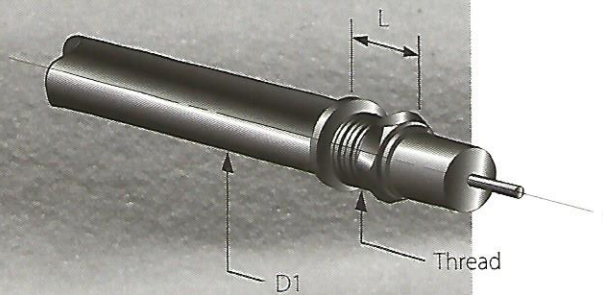


High-temperature 250° F (121° C) lead wire brazed onto the heater terminals.

Insulated with fiberglass sleeving and covered with shrink tubing.

Specify length of leads.

BULKHEAD FITTING

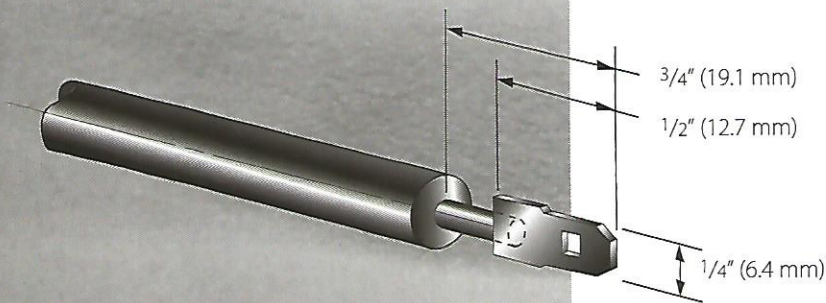


Brazed to heater.

For quick feed-through mounting.

Specify round or hex head, stainless steel or brass.

SPADE TERMINALS



Specify direction of spade terminals.

D1	THD. SIZE	L		HEAD SIZE	
		IN	MM	IN	MM
.260	6.6	7/16-20	7/8	22.2	3/4 19.1
.315	8.0	1/2-20	7/8	22.2	3/4 19.1
.430	10.9	5/8-18	1	25.4	7/8 22.2
.430	10.9	3/4-16	1 1/8	28.6	1 25.4



TUBULAR ORDERING GUIDE

For better customer service, the following information will be needed when placing an order:

1. Your customer number, if you have been assigned one.
 2. Your P.O. number.
 3. Shipping instructions.
 4. Our catalog number or: product line, length, diameter, termination style, watts, volts, medium to be heated, temperature limits, space limitations, heated length, cold zone at each end, and drawing as to forming requirements.
- Please note that cold length may not stop in a sharp bend area, but may stop just before or just after such an area.
5. Customer service will provide you with a catalog number. Please record this for future reference.
 6. Specify the quantity you wish to order and whether or not your order is taxable.

BENDING OF TUBULARS GUIDE

TUBULAR DIA.		FACTORY BENDING RADIUS (MIN.)	
IN	MM	IN	MM
.260	6.6	1/4	6.4
.315	8.0	5/16	7.9
.430	10.9	7/16	11.1
.490	12.4	5/8	15.9

TYPICAL FORMATIONS

The following are a few, but by no means the only, ways tubular heaters can be formed. For other shapes, please supply details and/or prints.

FIG. 1— Straight Element

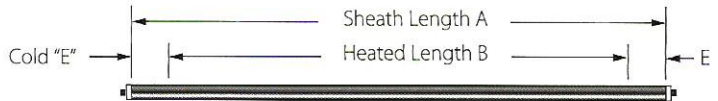


FIG. 2— "U" Shape

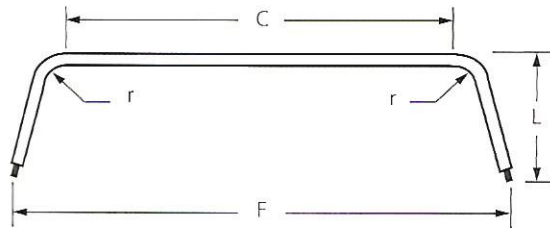


FIG. 3— Circular

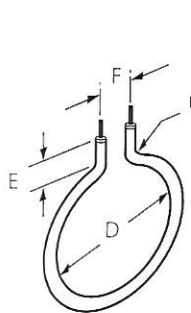


FIG. 4— Circular with extension

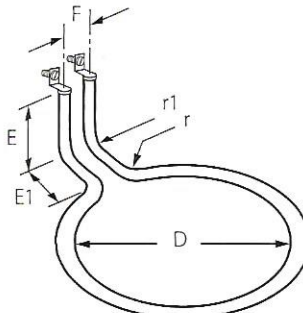


FIG. 5— Hairpin

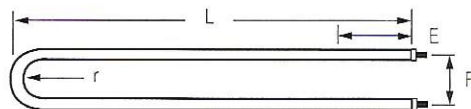


FIG. 6— "W" Shape

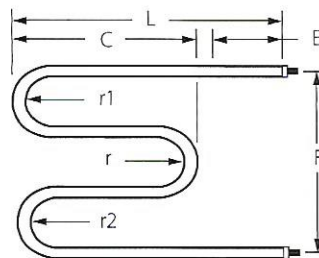


FIG. 7— Double Loop

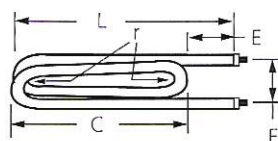


FIG. 8— Bent Hairpin

