TECHNICAL HEATERS

ELECTRICALLY HEATED
SERIES 500 STAINLESS STEEL HOSES

MODEL 500 BENDABLE

Model 500 Heat/Line hose features a bendable, smooth bore stainless steel tube for use in fixed applications where tubing is to be bent to the desired configuration and where flexibility is not required. Unique features include a built-in electrical heating element which provides temperatures up to 600°F (315°C). The electrical insulation features a polyimide film with excellent dielectric properties. The hoses come standard with double high temperature thermal insulation, durable scuff resistant jacket and 1" bare tubing on each end.

MODEL 500F FLEXIBLE

This hose features a flexible stainless steel convoluted core for use in applications where limited flexibility is required. It provides non-rigid connections for conveying liquids, gases and semi-solids at temperatures up to 500°F (258°C). It features the same basic construction and materials as our Model 500 Bendable, and is available with bare tube ends for compression fittings.

MODEL 500EF EXTRA FLEXIBLE

This hose is the same as our Model 500F, but is more flexible due to its unique construction. It incorporates a built-in electric heating element that provides temperatures up to 450°F (232°C). The electrical insulation is fiberglass reinforced silicone rubber.

GAS ANALYZER SYSTEMS
HOT MELT SYSTEMS
PETROLEUM PRODUCTS

TECHNICAL HEATERS, INC.

CONSTRUCTION

	500 BENDABLE	500F FLEXIBLE	500EF EXTRA FLEXIBLE
CORE	Stainless Steel Tubing Smooth Bore	Stainless Steel Convoluted	Stainless Steel Convoluted
OVERBRAID	None	Stainless Steel High Density	Stainless Steel High Density
HEATING ELEMENT	Spiral Wound Resistance Wire Completely Sealed	Spiral Wound Resistance Wire Completely Sealed	Spiral Wound Resistance Wire Completely Sealed
ELECTRICAL INSULATION	Kapton® Polymide Film	Kapton® Polymide Film	Fiberglass Reinforced Silicone Rubber
THERMAL INSULATION	Double High Temp. Fiberglass	Double High Temp. Fiberglass	Double High Temp. Fiberglass
EXTERNAL JACKET	Abrasion Resistant Sleeving or Extruded Polyurethane Jacket	Abrasion Resistant Sleeving or Extruded Polyurethane Jacket	Abrasion Resistant Sleeving or Extruded Polyurethane Jacket
MAXIMUM OPERATING TEMP.	600°F (315°C)	500°F (263°C)	450°F (232°C)

ELECTRICAL SPECIFICATIONS

OPERATING VOLTAGE:

Any single phase voltage to 480 VAC. Depending on length, hoses may be ordered to operate on 208, 240 or 480 VAC, 3 phase.

POWER DENSITY:

Power density is based on the desired operating temperature, ambient temperature and size of hose. Our engineering staff will help you determine wattage necessary to maintain temperature required for your application.

TEMPERATURE CONTROL:

Series 500 Heat/Line Hoses must be controlled to maintain the desired operating temperature and to ensure operation within design limits. A sensor for the controller is installed in the hose during construction, and unless otherwise specified, is located 2 ft. from the lead end. For very close temperature control, a solid state proportional controller is recommended.

POWER/CONTROL CABLE:

Standard length is 4 feet. Longer lengths are available.

AVAILABLE OPTIONS

SELF-LIMITING HOSE:

Custom designed to maintain your minimum operating temperature without the need of a controller.

- Messenger wires available in different gauges & colors.
- Higher temperatures

MODULAR:

Hydraulically in series, electrically in parallel. Suitable for individual use or in combinations.

- Multiple Sensors
- Bulk

MULTIPLE TUBE BUNDLES

Available in any combination you specify. Heated and unheated.

- Approved for Class I Div. 2 Group C & D
- ETL/CSA Approval

- Color coded
- Varied watt density
- Other alloy cores

MODEL 500 • Physical Characteristics

HOSE SIZE	STAINLESS STEEL TUBE O.D.	NOMINAL O.D. with DOUBLE THERMAL INSULATION	MINIMUM BEND RADIUS	MAX. WORKING PRESSURE AT 400°F (204C)	NOMINAL WEIGHT
4	1/4" 6.35MM	1" 25.4MM	5" 12.70CM	2800 PSI 197Kg/CM^2	.38 lb/ft. .57 kg/m
5	5/16" 7.94MM	1-3/16" 30.16MM	6" 15.24CM	2400 PSI 169Kg/CM^2	.40 lb/ft. .59 kg/m
6	3/8" 9.5MM	1-3/8" 35MM	7" 17.78CM	1800 PSI 127Kg/CM^2	.45 lb/ft. .66 kg/m
8	1/2" 12.7MM	1-1/2" 38.1MM	8" 20.32CM	1500 PSI 105Kg/CM^2	.52 lb/ft. .76 kg/m

Model 7000

Model 8000 and 8001

MODEL 500F (Flexible) • Model 500EF (Extra Flexible)

HOSE SIZE I.D.	NOMINAL O.D. with DOUBLE THERMAL INSULATION	MAX. WORKING PRESSURE AT 400°F (204C)	NOMINAL WEIGHT
1/4" 6.35MM	1-1/8" 2.86CM	1300 PSI 91.4Kg/CM^2	.42 lb/ft. .62 kg/m
3/8" 9.52MM	1-1/4" 3.17CM	950 PSI 66.8Kg/CM^2	.48 lb/ft. .71 kg/m
1/2" 12.7MM	1-3/8" 3.5CM	800 PSI 56.2Kg/CM^2	.52 lb/ft. .76 kg/m
3/4" 19.05MM	1-3/4" 4.44CM	500 PSI 35.2Kg/CM^2	.75 lb/ft. 1.11 kg/m
1" 25.4MM	2" 5.08CM	400 PSI 28.1Kg/CM^2	1.0 lb/ft. 1.48 kg/m
1-1/4" 31.75MM	2-3/8" 6.03CM	300 PSI 21.1Kg/CM^2	1.10 lb/ft. 1.62 kg/m
1-1/2" 3.8CM	2-5/8" 6.67CM	275 PSI 19.3Kg/CM^2	1.38 lb/ft. 2.04 kg/m
2" 5.1CM	3-1/8" 7.94CM	250 PSI 7.6Kg/CM^2	1.75 lb/ft. 2.59 kg/m
2-1/2" 6.35CM	3-5/8" 9.21CM	200 PSI 14.0Kg/CM^2	2.25 lb/ft. 3.33 kg/m
3" 7.62CM	4-1/8" 10.48CM	150 PSI 10.5Kg/CM^2	2.50 lb/ft. 23.70 kg/m
4" 10.16CM	5-1/8" 13.02CM	100 PSI 7.0Kg/CM^2	3.25 lb/ft. 4.81 kg/m

TEMPERATURE CONTROLLERS

SPECIFICATIONS	MODEL 7000	MODEL 8000 and 8001
Line Supply Voltage	120/241 VAC +10%-15% 50/60 HZ	120/241 VAC +10%-15% 50/60 HZ
Thermocouple Input	Type J (Iron/Constsantin)	Type J (Iron/Constsantin) Type K (Chromel/Alumel)
Control Output	25 amps (SCR Design)	25 amps (SCR Design)
Temperature Range	Dual Scale: 0-800°F -17 - 425°C	Model 8000: 0 -999°F Model 8001: 0 - 500°C
Meter Indication	Deviation Meter ±50°F ±30°C	Filter LED Digital Display
Calibration Accuracy	±0.6% of span @ calibrated points	±0.4% of span @ calibrated points
Set Point Repeatability	±0.3% of span	±0.1 oto 0.2% of span
Adjustment Proportional Band (gain)	5° to 40°F	0 -5% of span
Operating Ambient	30°F to 130°F	30°F to 130°F
T/C Break Protection	Built-in Fail Safe Open Sensor	Upscale. Built-in Fail Safe Open Sensor. Zero Output

WATT DENSITY REFERENCE

MODEL 500F & MODEL 500EF		
WATTS PER FT.	▲T Based on 2" I.D. Hose	▲T Based on 4" I.D. Hose
40 watts	280°F (138°C)	105°F (41°C)
50 watts	350°F (177°C)	130°F (54°C)
60 watts	400°F (204°C)	150°F (66°C)
75 watts	450°F (232°C)	180°F (82°C)
100 watts	525°F (274°C)	220°F (104°C)
150 watts	615°F (324°C)	275°F (135°C)
200 watts	----------	325°F (163°C)
300 watts	----------	390°F (199°C)

Use as a nominal guide only.

WATT DENSITY REFERENCE

MODEL 500 (Data based on 3/8" hose)	
WATTS PER FT.	▲T (DOUBLE INSULATION)
10	190°F (88°C)
15	250°F (121°C)
20	360°F (182°C)
25	470°F (243°C)
30	550°F (288°C)
35	620°F (327°C)

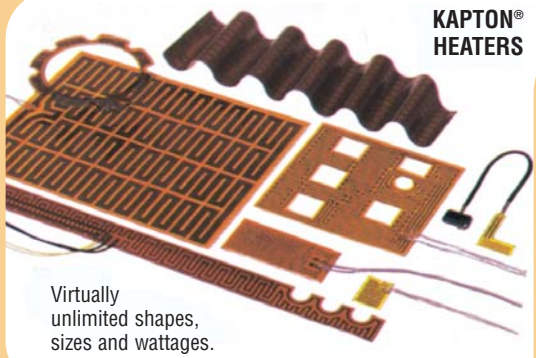
Use as a nominal guide only.

Bare tube for compression fittings

3-DIMENSIONAL HEATERS

Fit the contour of your part or product perfectly.

KAPTON® HEATERS

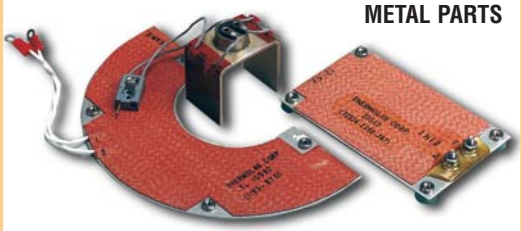


Virtually unlimited shapes, sizes and wattages.

HEATED LINES TO MEET STRINGENT REQUIREMENTS
- **MIL-I-45208A**
- **FAR. 25-1359**

Teflon® Cores, electrically & hydraulically complete. Wide choice of voltages, diameters & temps.

HEATERS BONDED TO MATING METAL PARTS



Provide a perfect fit between heater and part for complete sub-assemblies of high efficiency.

Leaders in the development of electrically heated products since 1968

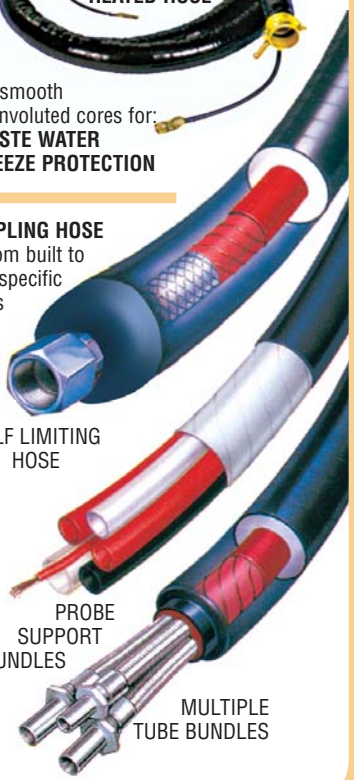
Since 1968, we have pioneered the creation of a wide spectrum of the electrically heated products that have become indispensable elements in today's industrial world. Our broad line of electrically heated hoses and tubing has made us an industry leader in that field: with such products prominently employed in pollution monitoring and control, gas sampling, freeze protection and the efficient transfer of viscous products in the petrochemical, food processing and chemical fields.

We have been in the forefront of the heater and flexible circuit industry since its inception. Working with the engineering staffs of the world's leading corporations, we have played a leading role in developing the materials, technologies and manufacturing techniques that have brought these products from a few simple devices to the almost limitless array of sophisticated units that now play a vital role in contemporary space exploration, advanced medical research and the electronic processing of information.

LARGE DIAMETER HEATED HOSE

With smooth or convoluted cores for:
- **WASTE WATER**
- **FREEZE PROTECTION**

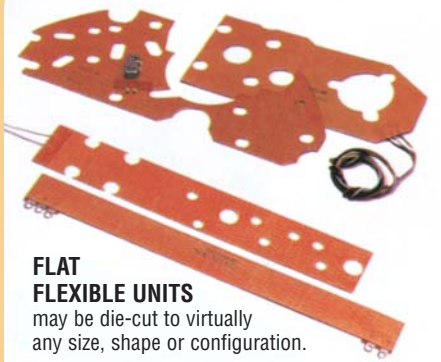
SAMPLING HOSE
Custom built to your specific needs



SELF LIMITING HOSE

PROBE SUPPORT BUNDLES

MULTIPLE TUBE BUNDLES



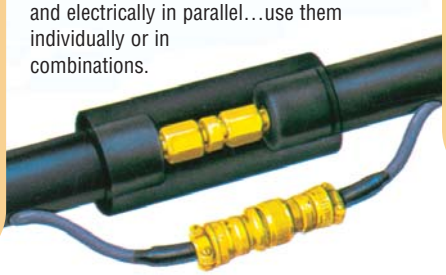
FLAT FLEXIBLE UNITS
may be die-cut to virtually any size, shape or configuration.

SILICONE RUBBER HEATERS

Single, rugged and economical, in a wide range of shapes, sizes, and insulations.

HOT MELT HOSES
Built to your spec's or off-the-shelf. Unequaled inventories. **REPLACEMENT OR REPAIR,** in fast turn-around times!

MODULAR UNITS...hydraulically in series and electrically in parallel...use them individually or in combinations.



BULK HOSE
In high and low temperature designs and in lengths of 100 ft. or more. Parallel circuitry allows you to cut the hose to the exact lengths you need.

TECHNICAL HEATERS, INC. / THERMOLAB
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