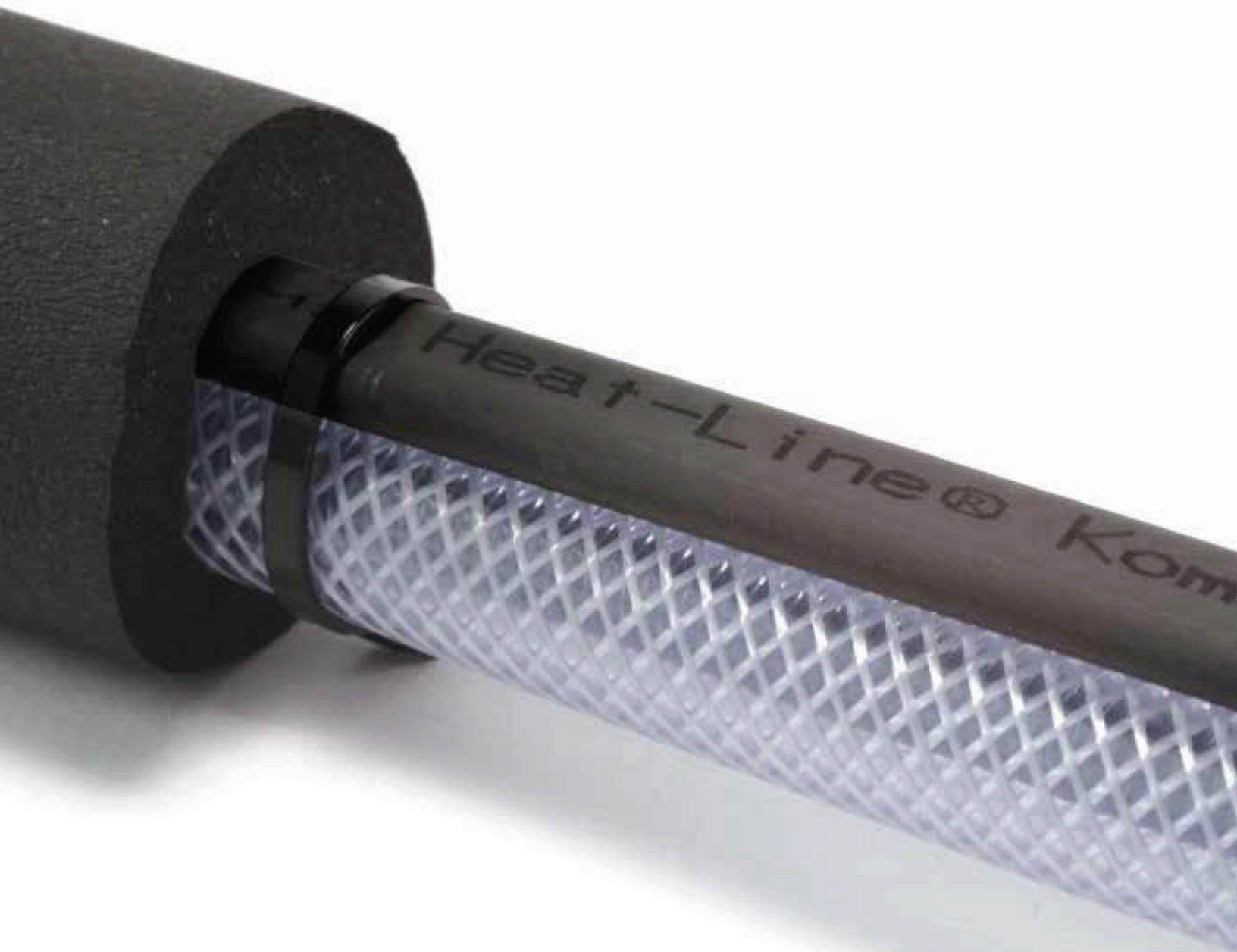


Kompensator[®]

Low Voltage Custom Manufactured Pipe Freeze Protection made to Suit Various Applications.

Kompensator systems are low voltage heating cables which are used in freeze protection applications for both metallic and non-metallic pipes, tubes, and hoses. These high quality heating cables are designed to be used in a variety of freeze protection applications including the transportation industry and are compatible with off-grid (solar and wind) and battery/alternator systems.





JOB READY SYSTEM

Kompensator systems are low voltage, factory finished, job-ready heating cable systems that are designed to provide safe, efficient and reliable freeze protection.

APPLIED TO OUTSIDE OF PIPE

Kompensator is designed to be applied to the outside of the pipe, making it suitable for both small and large pipe diameters. Traditional heat tapes must be pitched or spiraled around the pipes in order to apply an adequate amount of heat, making them very high in energy consumption.

INSTALL IN SINGLE RUN

In most applications, the Kompensator system is installed in a single run, reducing the overall length of product by as much as 60 percent. For large pipe diameters or where more heat is required, a dual (double) trace system is adequate, which still saves on product length.

OIL LINES, PUMPS, HOSES

The Kompensator system is so versatile that it can be used in a variety of applications where 12 and or 24 volt power is available, including but not limited to, small diameter hoses, appliance and comfort heating, condensate freeze protection, oil lines, hydraulic hoses, pumps and compressed air systems.

TRANSPORTATION INDUSTRY

When used in the recreational vehicle and transportation industry, Kompensator systems are capable of maintaining hydraulic oil and other fluid viscosities in cold temperatures, minimizing stress while maximizing winter performance.

SAFE ON PLASTIC AND METAL

Kompensator is safe to use on all pipe and hose materials, including plastic and metals, even if there is no water in the pipe. Insulation and a thermostat can be added to the system to further optimize energy efficiency. Heat-Line offers a wide range of low voltage thermostat options which can be used to duty cycle and regulate the heating cable system within a specific temperature range.

SIMPLE, FAST, COST EFFECTIVE

Kompensator is factory finished to length and provided with a complete set of installation instructions making installation simple, fast and cost effective.

Kompensator[®]



Kompensator® Series Features / Benefits / Differentiators / Applications

Features

- Can be overlapped without the concern of overheating
- Thermostats or other control devices are optional
- Will not melt or overheat
- Can be fully insulated
- Available in 12 volt or 24 volt systems
- 12 volt systems available in 3 and 5 watts per foot self-regulating
- 24 volt systems available in 3 watts per foot self-regulating
- Extremely energy efficient
- Self-regulating, high-performance, conductive polymer cable
- 1 year limited warranty
- Available in common and custom lengths
- Intended for ordinary locations only

Benefits

- Proven performance in extreme cold climates
- Suitable for use with metal and plastic pipes, tanks, and vessels
- Can be used on small and large pipe diameters
- Fast installation
- Compatible with both AC and DC voltages
- Are compatible with off-grid (solar and wind) and alternator battery generators
- Can be directly connected to alternator systems without need of inverters
- Each completed system is factory tested prior to shipment to ensure product quality and customer satisfaction
- Can be insulated to maximize energy efficiency
- Thermostats not required for applications where they are not beneficial
- Unlimited control options

Differentiators

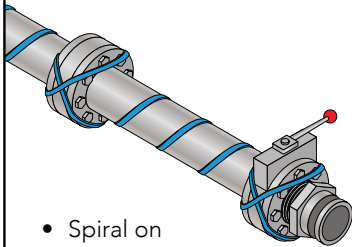
- Suitable for use on metallic and non-metallic pipes of all diameters
- Suitable for external temperatures up to 150F
- Manufactured in North America
- Clear, concise installation and support documentation
- Will not melt or overheat pipe, even if pipe is dry
- Up to 80% more efficient compared with uninsulated constant wattage heating cable
- Available in short and custom lengths
- Extremely High Quality
- Excellent Warranty

Applications

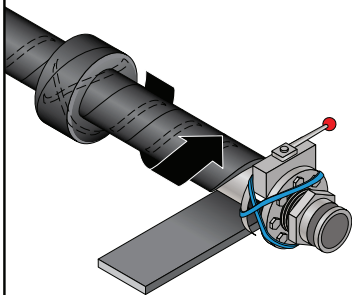
- Transportation industry including fire and fluid delivery trucks
- Hydraulic and Condensate fluid lines
- Existing water supply lines subject to freezing
- Small diameter water supply lines
- Large diameter pipes
- All metal and plastic pipes
- Rubber and PVC Hoses
- Metal tanks
- Non-metal tanks
- Farms, agriculture
- Commercial, industrial
- Camps
- Mining

Kompensator® | Sample Applications

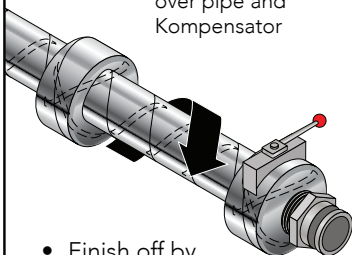
Pipe Freeze Protection: Water Hauler Gate Valve



- Spiral on Kompensator cable
- Criss cross at flanges and valves



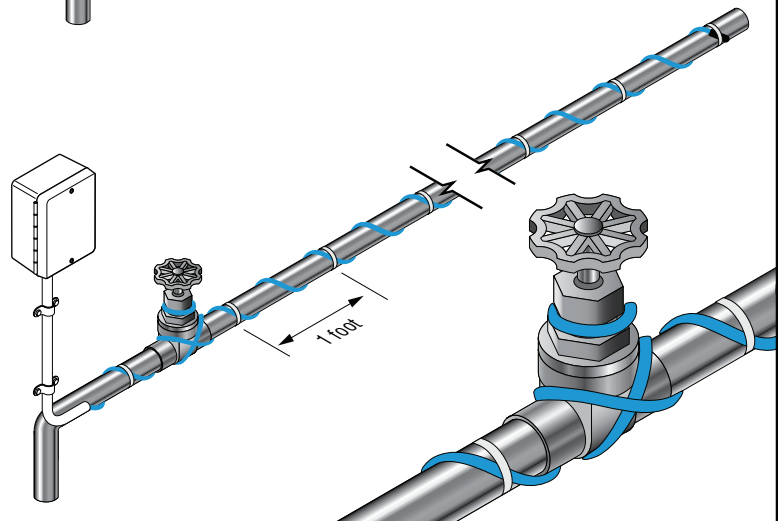
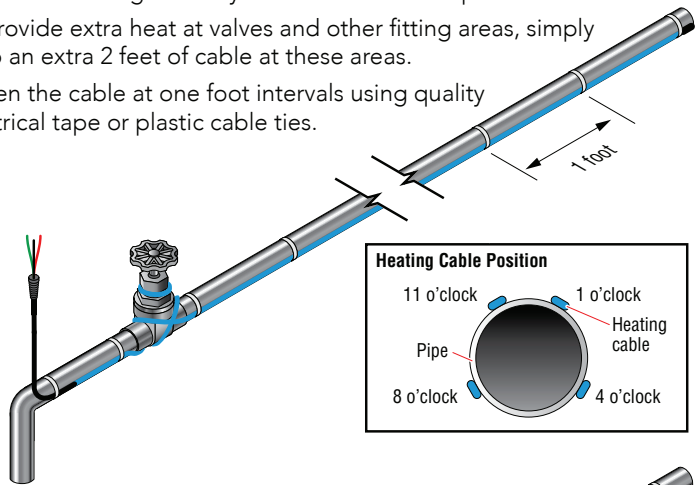
- Wrap insulation over pipe and Kompensator



- Finish off by enclosing in Aluminum Tape

Pipe Freeze Protection: Straight Line and Spiral Method

- If your Kompensator cable set is the same length as the pipe, run it straight along the pipe in the 4 or 8 o'clock position. For large diameter pipes you can pitch or spiral the heater evenly along the pipe length or run the cable longitudinally at the 4 or 8 o'clock position.
- To provide extra heat at valves and other fitting areas, simply wrap an extra 2 feet of cable at these areas.
- Fasten the cable at one foot intervals using quality electrical tape or plastic cable ties.



Kompensator® | Product Code

Example: **KHL123 - 040 - CS**

Product

KHL123 12 volt 3 watt per foot
KHL125 12 volt 5 watt per foot
KHL243 24 volt 3 watt per foot

Cord-Set Type

CS Cord connected (No GFCI)

Length of Heater

5 to 40 feet 12 volt 3 watt per foot systems
5 to 30 feet 12 volt 5 watt per foot systems
5 to 60 feet 24 volt 3 watt per foot systems

Notes: It is the requirement of the installer to provide proper voltage regulation and over-current protection. It is also the recommendation of Heat-Line that since the power consumption of the product can never be zero to install a shut-off switch to prevent the draining of batteries or power supply.