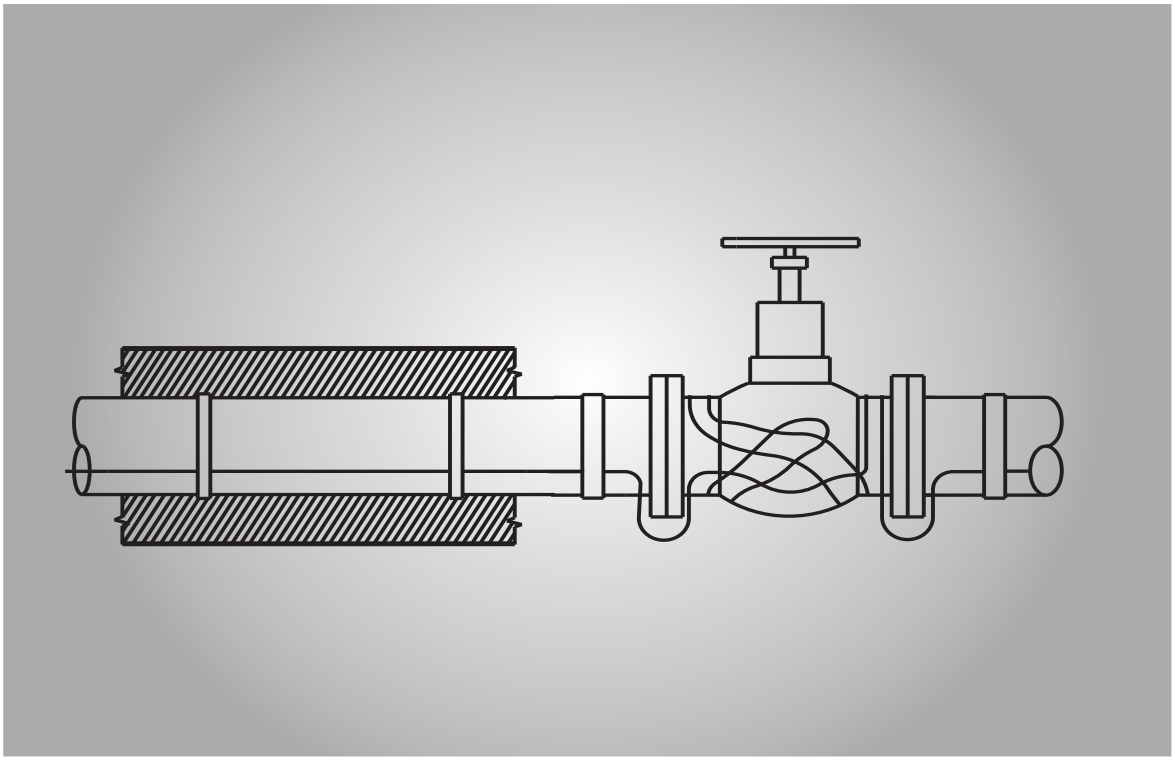
Trace Heating Systems Serving Your Industrial and Domestic Requirements

Self-Regulating Heating Tape Installation Manual



For installation in safe and hazardous areas

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Worldwide Specialists in Electric Heat Tracing

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Receipt of Goods

After receipt of the goods check the heating tape and accessories for physical damages and compare wthe data and amounts with the delivery note to ensure that the correct material has been supplied.

By hazardous area applications ensure that the corresponding approval certificates have been supplied.

Warning!

All electric heat tracing systems must be installed correctly to ensure safe, proper operation and in order to prevent shock and fire. Read and follow these instructions carefully. Electrical equipment is to be installed only by qualified electricians.

Use a ground fault protection device (30mA) to minimize the danger of fire from sustained electrical arcing if the heating tape is damaged or improperly installed. Arcing may not be prevented using conventional style circuit breakers. When using the heating tape with braiding, this has to be connected to the potential earth. When using the tape without braiding, the heating system must be protected with a metallic covering. This metallic covering (eg. metallic covering of the thermal insulation) has to be connected to the potential earth. Local laws and regulations requiring the use of ground fault equipment protection for heating tape installations are to be followed at all times.

Measurements have to be taken on site to protect the braiding against physical or chemical damage by outdoor use of the heating tapes without outer protective overjacket. Ensure that the proper heating tape overjacket is chosen according to application, eg. chemical aggresive areas or UV protection by gutter heating.

Failure to properly install using the correct component kits or materials may cause arcing and fire. Do not use improper kits or substitute the materials. Do not use vinyl electrical tape or adhesive tape with emollients. Use only electrically specified termination, connection kits and installation materials, and follow the installation instructions supplied with them.

Damaged heating cable or components can cause electrical shock, arcing and fire. Do not attempt to repair or energize damaged heating tapes. Remove damaged sections at once and replace them with a new length of heating cable using the appropriate splice kit. Replace damaged components.

The black heating tape core within all styles of self-regulating heating tapes is electrically conductive and may short. The heating tape core must be properly insulated and kept dry.

Damaged bus wires may overheat or short. Do not break bus wire strands when terminating the heating tape.

Do not use metal attachments such as pipe straps with sharp edges or tie wires that may cause damage to the heating tape during installation or in usage. Use only appropriate installation materials and cable ties to secure the heating cables to the pipe.

When using the heating tapes on metal surfaces, they also have to be protected against indirect contact according to local laws and standards before the system is taken into operation.

Storage

The heating tapes and components have to be stored in a dry place at an ambient temperatures between –30 and +60°C. If a dry storage is not possible, the heating tape needs to be closed with an end termination set. This is also necessary if a heating circuit cannot be finished at the end of a shift. Do not store the materials in areas with a lot of trraffic where potential damages may occur.

Pre-Installation checks

General installation requirements
Verify that the correct components and quantities are present with the selected heating tape and that there are no physical damages.

Verify that any paint or coatings used have dried.

Verify that the installation has been completed for surface to be heated.

Verify that the surface is clean of fats, sharp edges and burrs.

Plan the heating tape installation route on the surface to be heated.

Compare the design drawings and sketches with the actual surface to be heated.

Identify and mark the positions of the heating tape locations, according to design or max. heating tape length stated in the correspoding data sheet, and mark these with color spray paint or marker.

Pipeline installation
Verify that the pipelines have been pressure-tested and that all appropriate equipment and supports have been installed.

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Compare the design drawings and sketches with the actual pipeline and note any differences in:

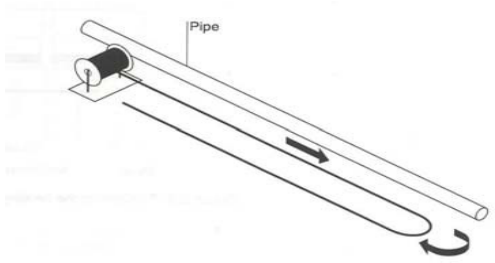
- pipe length and size
- number of valves, flanges, guages
- supports and other installation equipment.

Note: The max. allowable length of a heating circuit for unilateral feed depends on the admissible voltage drop. We recommend not to exceed a voltage drop of 10% and not to exceed 80% utilisation of the circuit breaker (with “C” characterisation).

Heating tape installation on pipelines
(and their respective components)

Attention: When installing heating tapes or cables on PVC,FRP or other forms of non metalic pipelines, the pipeline is to be completely covered using aluminium foil before installing the heating tape.

Mount the heating tape spool on a holder near either end of the pipeline to be traced. For installations that require two or more heating tapes, use two or more holders to pay out the heating tapes. Alternatively, using one spool, for installations that require two heating tapes, secure the end of the heating tape to the pipe and string one large loop along the length of the pipeline.



Do not apply excessive pulling or tension on the heating tape as it is being unrolled.

Pay out the heating tape and loosely string it along the pipe. Make sure that the heating tape is always next to the pipe when crossing obstacles. If the heating tape is on the wrong side of the obstacle (eg. a support beam, crossing pipe etc.) it may have to be removed and reinstalled or cut and spliced.

The heating tape may be straight traced along the pipe, spiral wrapped around the pipe or straight traced in multiple runs along the pipe, as required by the design.

Note: An overlapping during installation of the heating tape does not cause overheating due to the self-regulating heating characteristic. For further information regarding self-regulating heating tape characteristics, please feel free to contact HTS or one of it’s representatives.

Straight tracing

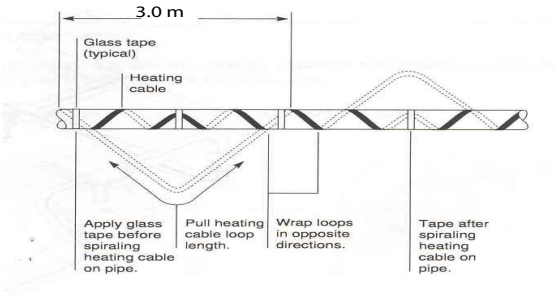
Whenever possible, position the heating tape or tapes on the lower section of pipe. This helps to protect the heating tape from mechanical damage during the installation, pre-insulation and insulation phases of the project.

Ensure that the maximal exposure temperatures of the the aluminium foil and glass cloth tapes used for securuing and installation are within the maxmal operation exposure ranges.

Starting from the end opposite to the heating tape spool and holder, secure the heating tape to the pipe using wraps of glass cloth tape at 0.3m intervals.

Spiral Tracing

When the design calls for spiral tracing or wrapping of the heating tape on the pipe, begin by suspending a loop of heating tape for every 3.0m section of pipe.



To determine the loop length, multiply the spiral factor from the drawing by ten (eg if the spiral factor is 1.3 leave a 4.0m loop of heating cable for every 3.0m of pipe). Pull the required amount of heating tape for the 3.0m section of pipe, attach the heating tape to the pipe at each end and let it hang in a loop. Grasp the loop in the center and wrap it around the pipe. Even out the distances between each spiral by sliding the wraps along the pipe. Use glass cloth tape at intervals to secure the loop to the pipe. Ensure that the heating tape is flat to the pipe for good heat transfer.

Double or Multiple tracing runs

There are two design situations that dictate the use of two or more runs of heating tape on the pipe. These are:

• Critical processes sometimes require redundant heating circuits. In this type of design, heat sinks must be traced with both runs of heating tape.