Installation Procedure

Electrical Supply Points

Locate all electrical supply points (and where applicable, any splice connection points) and site the components into the location where the heaters will be terminated. Any associated thermostatic controls or sensors should also be fixed and, if appropriate, interwired to the power supply unit. Fittings normally are mounted onto predrilled Heat Trace pipe mounting brackets or to any other firm surface within 0.5m of the termination (design) point.

Spiral Pitch

If the heater is to be spiralled onto the pipe then follow the circuit route, marking off the required spiral pitch with a piece of chalk. It may help to apply string or cord to the specified spiral ratio and note the resultant spiral pitch before applying the heaters. If the same pitch is commonly in use then a stick or rod marked with the spiral pitch may be a useful gauge.

Cable Installation

Follow the specific termination instructions. Generally they suggest cutting a zonal tracer close to an electrical zone connection which will be just visible through the basic tracer sheath. Series heaters must equal the design length when installed. Starting adjacent to the supply point, anchor the tracer to the surface with fixing tape at the next electrical connection (zonal tracers) or approximately 0.75 metre distant with other types, leaving the remainder of the tracer freely suspended for making off the terminations.

Cable Fixing

Spiral or straight trace as indicated on the drawings, following any instructions indicating which side of the heater should be on the heated surface. Apply straight tracers to the lower half of the pipe if possible, keeping away from the underside of flanges and other joints which might leak fluids onto the tracers in service. (See Fig 1).

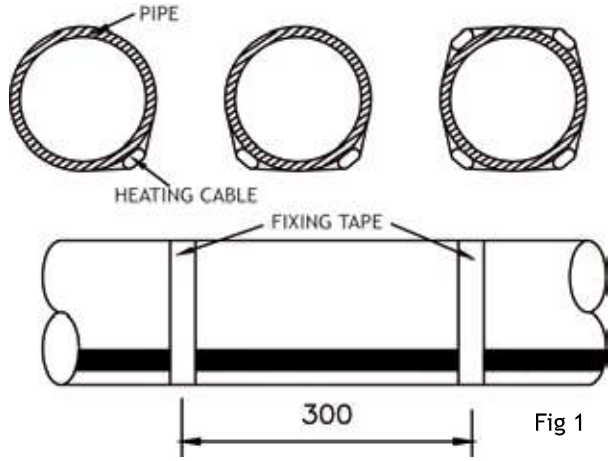
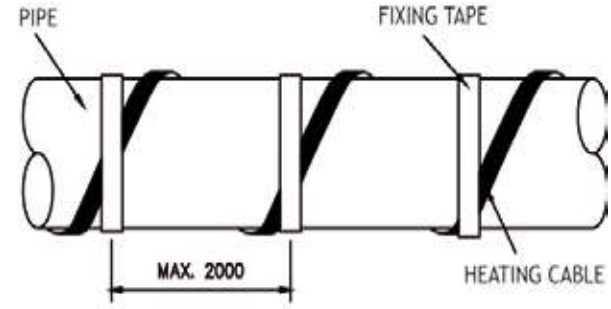


Fig 1

Keep the tracer reeled up as far as possible and apply under SLIGHT tension. Fix straight traced heaters every 300mm (12”) with 1.5 turns of fixing tape. It is recommended that an expansion allowance for all nominally straight traced heaters is allowed. This is achieved by a turn around the pipe at regular intervals, or by special expansion conduits applied to larger pipes. In no case should fixings be applied at more frequent intervals than the 300mm recommended in most standards, eg. wrapping fixing tape in a continuous close spiral over the tracer is not good practice and may result in expansion failures near the mid-point of the circuit. It is sufficient to fix spirally applied heaters at 2m (6ft) intervals.

Heaters normally are only spiralled at a maximum ratio of 1.5:1. Greater ratios are better achieved by straight tracing multiple heaters unless otherwise specified by the system designer. (See Fig 2).

To achieve maximum heat transfer from the heater to the surface to be heated, the use of over foil with Aluminium fixing tape is recommend.



NOTE: REFER TO SYSTEM DESIGN INFORMATION FOR HEATER SPIRAL PITCH

Fig 2

Flanges

At flanged joints, ties should be positioned on either side and close to the flanges to ensure maximum surface contact. To avoid mechanical damage during future servicing of the line fitting, and to cater for additional heat losses, allow sufficient slack, generally as a small loop over the flange, to permit attention to the flange packings. To avoid damage from leakage do NOT pass the tracer over the flange at the 6 o'clock position. (See Fig 3).

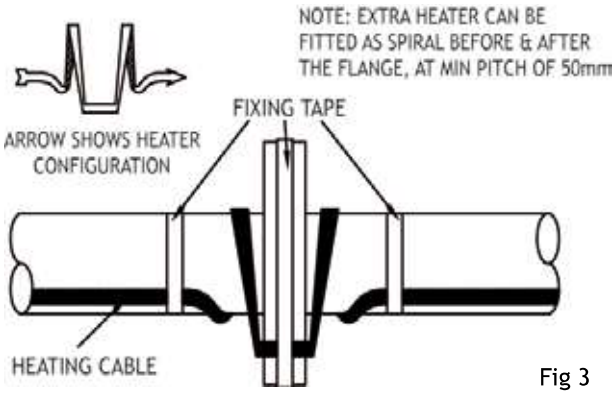


Fig 3

Valves

If valves are not to be provided with separate heaters then allow sufficient extra heater to cover the additional losses. Appropriate allowances are suggested in BS6351:Part 2:1983 - Design of Electric Surface Heating Systems or may be marked on the system drawings. Heat tracers should be "reverse spiralled" at fittings to permit future withdrawal of the fitting for service. (See Fig 4).

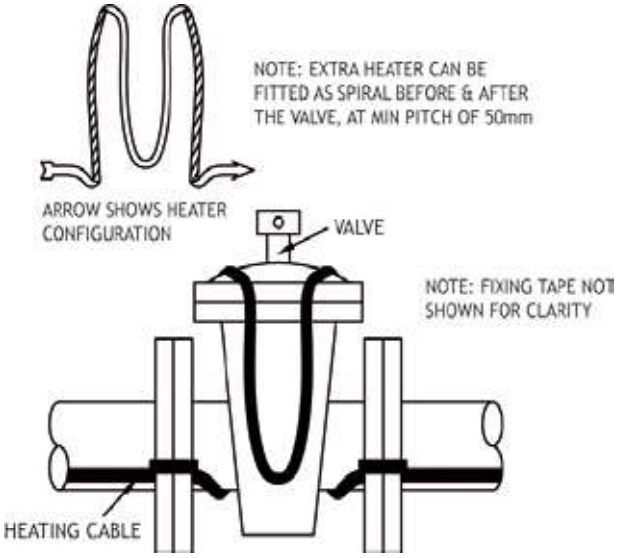


Fig 4

Heating cable should always follow the long radius at bends. (See Fig 5).

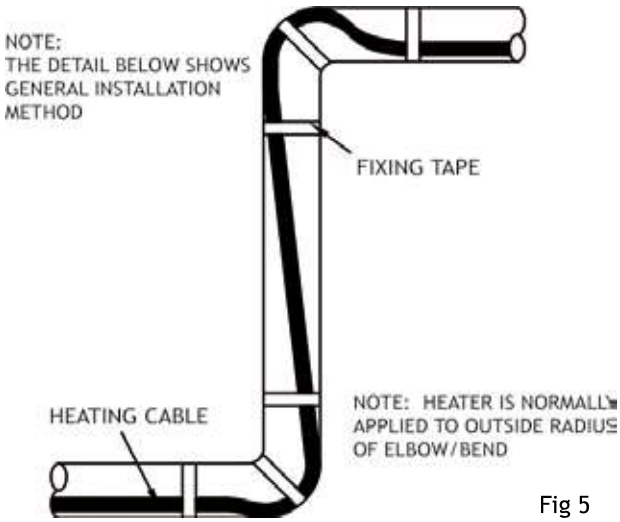


Fig 5

Cable Terminations

Terminate the tracers and fit the end seals in strict accordance with the product specific instructions.

Do NOT connect the conductors of a parallel circuitry heater together as this will result in a short circuit.

Protect all cable ends from moisture, damage or other interference if they are to be left exposed for an extended period of time.

Splice Connections

To facilitate the removal of spool pieces or fittings without disturbing the tracer scheme, parallel circuitry tracers may be cut at flanges, filters, pumps, etc. and a splice connection made off into a suitable junction box.

Note:

It may be possible to use this technique with series heaters by substituting lengths of suitably sized hook-up cable to a maximum total of 5% of the original circuit length.

Tee Branches

At 'Tee' branches the tracer may be cut and the three sections from each branch may be spliced together using a splice kit (if available) or termination kits and a 'Tee' connection box. Alternatively, it may be more convenient to run the heater through the Tee position and provide an independent heater for the branch.
(See Fig 6).

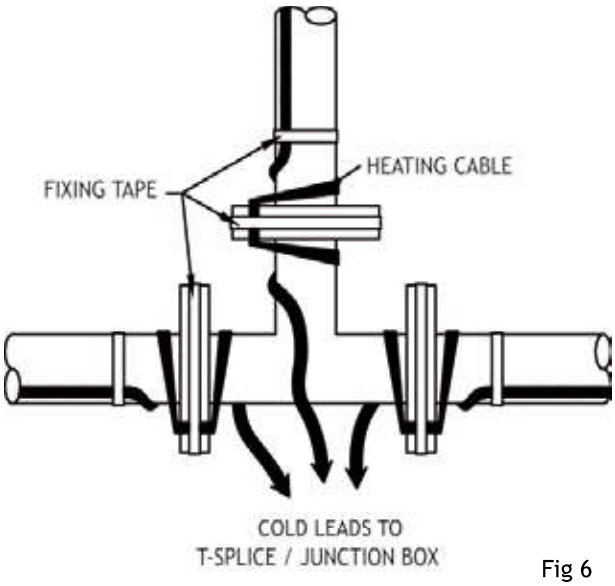


Fig 6

Plastic Pipework

Plastic piping will always use low power heaters, usually applied over a metallic foil carrier and/or fixed with an adhesive backed metallic foil tape.

Sensor Location

Position the sensor of the thermostat or other controller on the heated surface within 100mm of the heater using fixing tape, special adhesive backed aluminium fixing tape, or heat resistant clips. The temperature sensor should not be in direct contact with the heater unless the heated surface is plastic when it should be placed immediately adjacent to the heater. Set the thermostat or other controller to the design operating temperature specified in the system drawings or documentation. (See Fig 7).

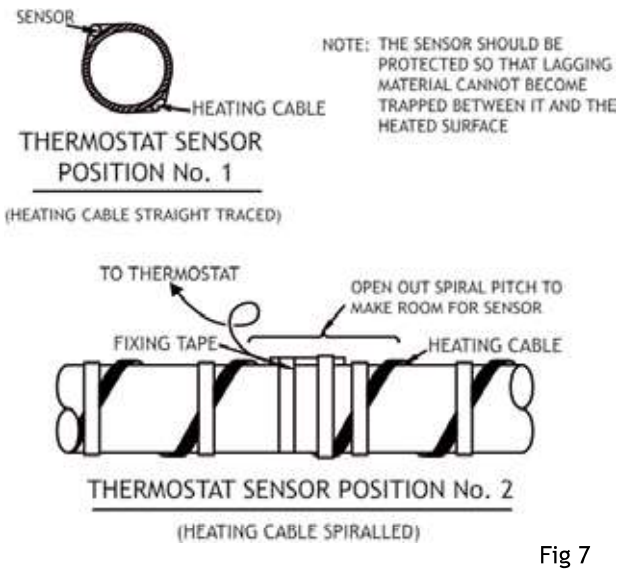


Fig 7

Fittings

Typical application of heat tracing at fittings:

Heater installation on strainers (See Fig 8)

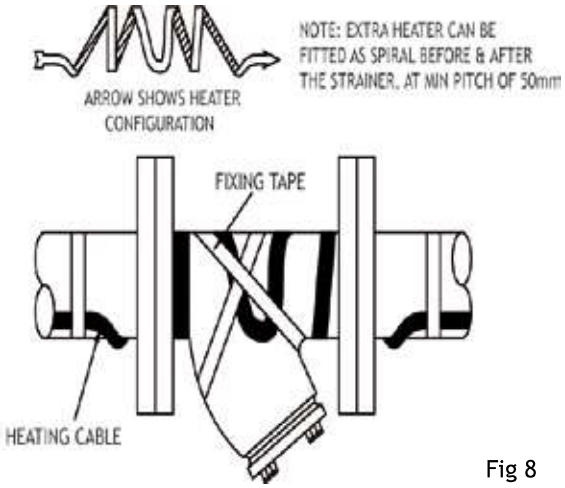


Fig 8

Heater installation on Pipe supports (See Fig 9)

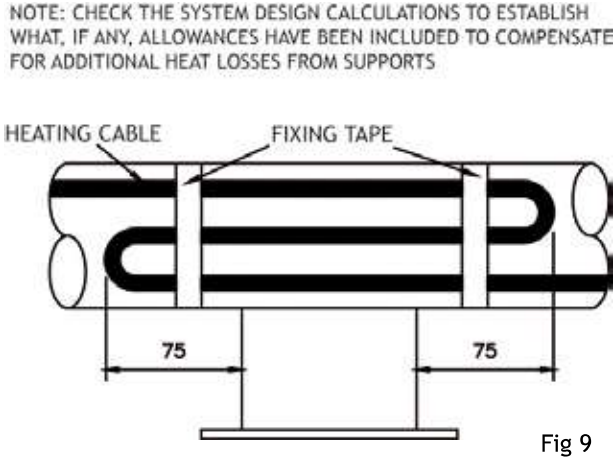


Fig 9

Heater installation on Pumps (See Fig 10)

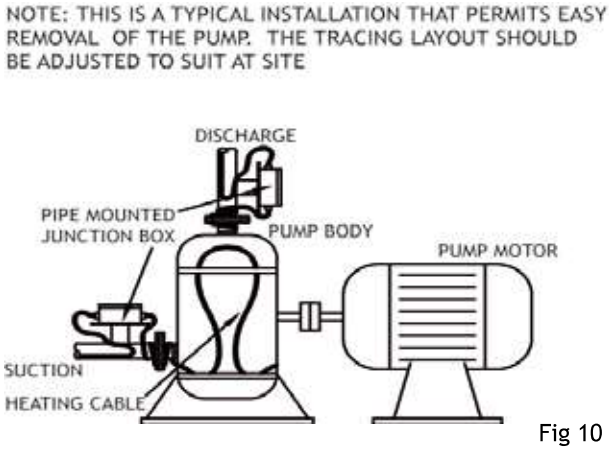


Fig 10