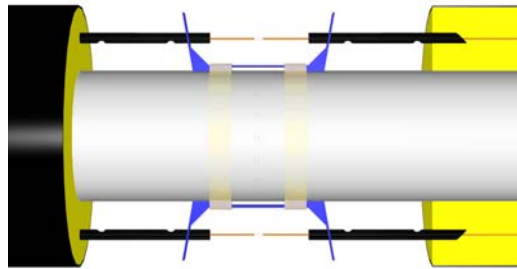


Alarm Wire Positioning Unit

Alarm Wire Positioning Unit is a part of the *Wideco Security System* which is a complete moisture monitoring system for insulated pipelines with alarm units from the simplest measuring box to units for advanced communication with a central computer via telephone network, GSM telephone, signal cables or Ethernet.



Insulated pipe systems usually entail a large investment. A leak from the supply pipe or penetration of water into the pipe insulation should be discovered and localized as quickly as possible. This in turn, demands a monitoring system that functions even after long periods of inactivity. A typical monitoring system consists of uninsulated copper wires which are embedded in the insulation surrounding the pipe and connected to an alarm unit. When moisture is present in the insulation the resistance between the alarm wire and the supply pipe decreases causing an alarm is activated in the central unit.

Localizing the position of a fault is carried out with the help of a measuring instrument which sends an electric pulse through the system. When the pulse detects a fault a reflection is sent back to the measuring instrument. As the velocity of the pulse is known the position of the fault can be calculated.

In order to ensure the greatest accuracy possible in positioning a fault in a pipeline, the alarm wire must be positioned the same distance possible from the pipe, pipe parts and joints. Furthermore, the higher the total resistance was before the fault occurred the more accurate the positioning of the fault.

AWP-unit

Our newly developed method and product known as AWP-unit (patent pending) removes all the

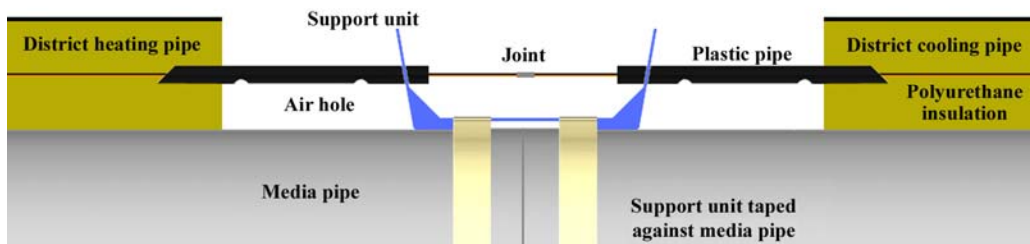
earlier disadvantages which could occur in mounting the alarm wire.

The AWP-Unit consists of three parts - two plastic tubes and a support unit. The plastic tube is drawn over the alarm wire at the point of mounting and then inserted into the insulation of the district heating pipe. This prevents the layer of moisture gathering, which is often found at the pipe ends. There is no need for cutting away the insulation at the pipe end. Even dampness in the insulation is reduced further in the pipe too. The problem with moisture on cold water pipelines is also removed. Condensation does not affect the resistance of the insulation at joints which are mounted one day and then have the foam added on later occasion. An AWP-Unit, correctly mounted improves the total insulation resistance of the pipeline and simplifies the localizing of a fault.

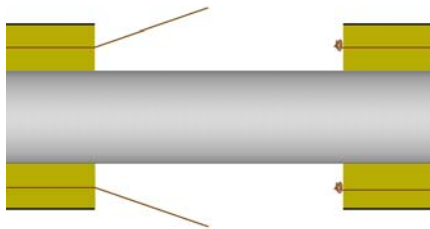
With the help of the plastic tubes and the position support unit the alarm wire follows the district heating pipeline at precisely the same distance as that in the insulation of the piping and at the joints. This means that a large number of "unnecessary" impedance changes are eliminated and the pulses from the measuring unit are able to locate a fault easier regardless of distance. The support unit has several holes to suit different distances. When adding the foam at joints even the pipe surrounding the alarm wire is protected by the same polyurethane which means that the pulse travels through the same material as in the pipeline.

AWP – Alarm Wire Positioning Unit

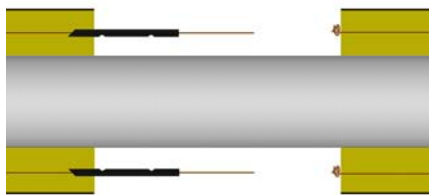
Mounting instructions



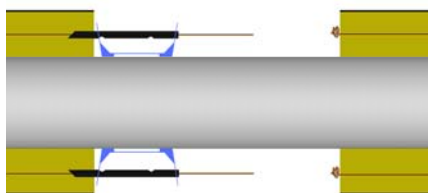
1. Straighten and clean the whole length of the alarm wire from one end of the piping, using abrasive cloth or steel wool. Check carefully for any damage to the wire.



2. Draw the plastic tube over the alarm wire and then insert the tube into the polyurethane insulation of the piping. Insert the tube up to the mark. Turn the air holes towards the pipe.

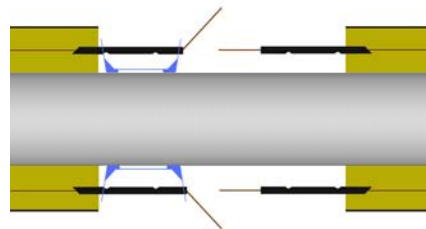


3. Mount the support unit over the plastic tube. Use the holes in the support unit which are at the same distance as those in the pipe.

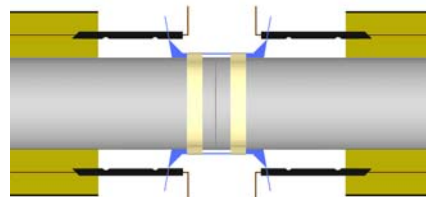


4. Straighten and clean the alarm wire in the other pipe. Draw the remaining two plastic tubes over the alarm wires. Insert the tube into the

insulation and turn the air holes towards the pipe.



5. Push the support units over the four tubes. Centre the support units. Bend the alarm wires upwards then tape the support units onto the pipeline. Use only the approved tape.



6. Splice the alarm wires with the help of sleeves and a contact pressing tool. Do not tape over the alarm wires.

