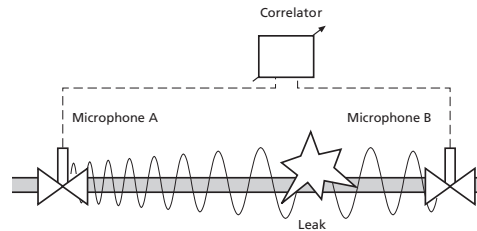


3.2.1 Working mode of the correlator

The word "correlator", which is at first not understandable, comes from the physical expression "correlation". This procedure names the comparison of different waves, e.g. sound waves. Although the expression "correlator" is not understandable for the leak locator, it has become common.

Another word, e.g. "leak calculator" has not been able to establish. The working mode of the correlator is based on the assumption that a leak in a pressure water pipe generally creates a noise. This noise proceeds in the form of sound waves longitudinally to the pipe (picture 44) and can be recorded with recorders that are to be put on (microphones) at accessible spots (gate valves, hydrants, house valves).



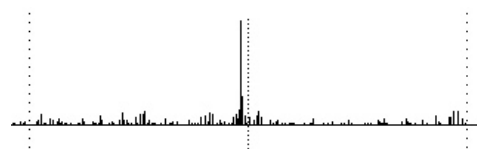
Picture 44: A leak generates sound waves

The noises detected by the recorders A and B are intensified on the spot and transferred to the correlator by radio transmission.

The correlator now executes 2 separate working steps:

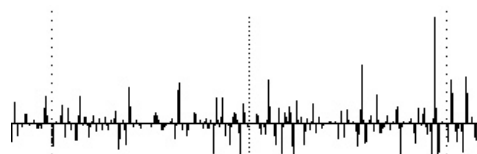
Step 1:

The correlator compares the noises at A and at B and can recognize (due to physical characteristics, such as frequency, amplitude, etc) when the noises are "equal". In that case, it will indicate so with a peak on the screen (picture 45).



Picture 45: A clear peak on the screen indicates a probable leak

If no clear peak is visible on the screen, the measurement is less or not at all usable (picture 46).



Picture 46: No clear peak: measurement not usable