SEWERIN
Technologies for leak detection.

AQUAPHON®

AQUAPHON® A 100 receiver
Electro-acoustic water leak detection

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AQUAPHON®

Innovative technologies

The principle

When pressure pipelines leak, water gushes out of the crack into the ground.

The pipe material vibrates at the leakage point. These vibrations are transmitted by the pipe and can also be noticed at distant contact points, e.g. fittings. This is known as structure-borne sound and is made audible by the ***AQUAPHON® A 100***.

The water jet and the pipe in the vicinity of the leak also cause the ground to vibrate. These vibrations are transmitted through the ground to the earth's surface where they manifest themselves as ground noise.

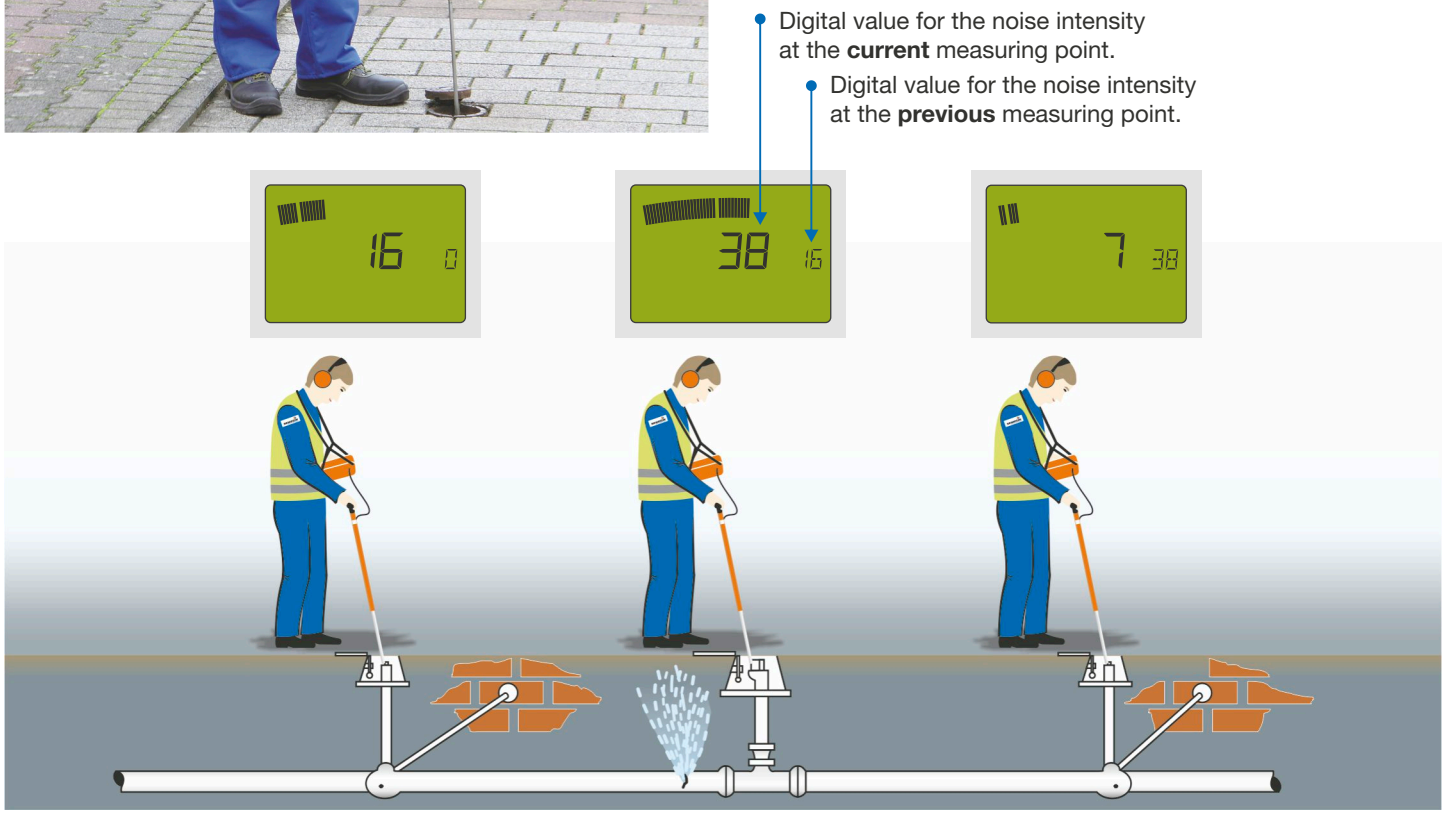
The acoustics

The human ear continues to play a significant role in analysing the incoming noise, despite improved assistance from the display. With relevant experience of different types and sounds, it can distinguish between the noise of a leak and background noise.

The outstanding quality of the sound relayed through the headphones helps the ***AQUAPHON® A 100*** user in this task.

Prelocation with a test rod

Metal pipe materials transmit structure-borne sound over particularly long distances. The test rod is ideal for prelocating leaks in these pipeline systems.



AQUAPHON®

Electro-acoustic water leak detection

Pinpointing with ground microphone

Non-metal pipe materials are less effective at transmitting structure-borne sound than metal ones. Simply checking the pipeline fittings with the test rod does not usually produce satisfactory results. The length of piping between the fittings also has to be examined with the ground microphone.

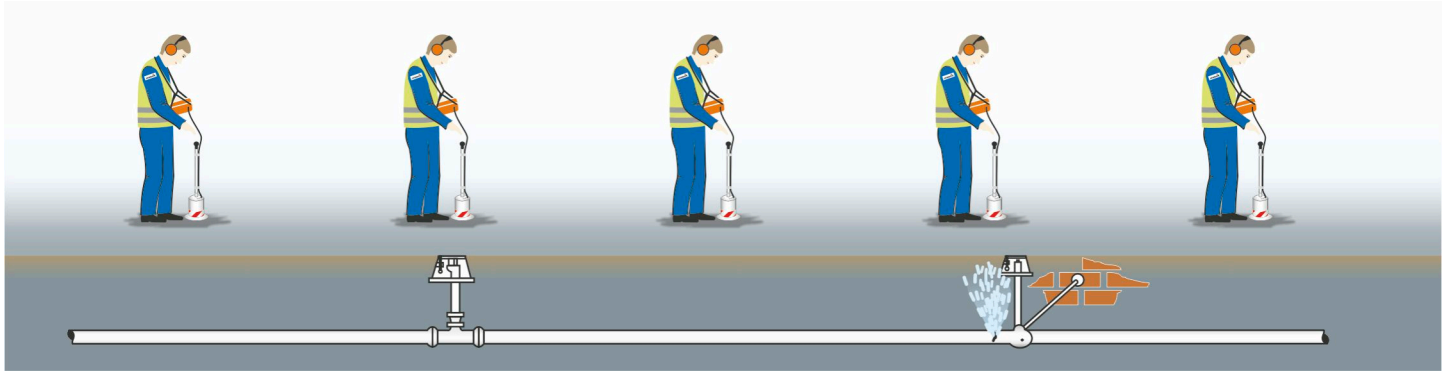
Using the ground microphone at regular intervals enables the leak to be located with sufficient accuracy for confident excavation. The ***AQUAPHON® A 100*** displays an accurate visual comparison of the noise intensities.

Is the noise getting louder or softer?

The visual display is particularly helpful for novices or those who do not use the system often.

Minimum analogue value for the noise intensity at the current measuring point.

Analogue **value** for the noise intensity at the current measuring point.



The hearing protection function

The ***AQUAPHON® A 100*** fulfils the current occupational health and safety requirements. Adequate hearing protection is particularly important. In the past an unpleasant and sometimes even dangerous acoustic pressure occurred if the test rod slipped off the contact point, the headphones were activated too early or too late or an object fell to the ground directly beside the ground microphone.

This is a thing of the past now thanks to new technology. The incoming sound signal is continuously monitored. If the noise gets very loud, the sound relayed by the headphones is muffled. If the signals continue to get louder, the headphones are switched off.

The ***AQUAPHON® A 100*** automatically recommences its work once the source of the noise goes quiet. The hearing protection function can be customised to various operational environments and different users.

The filter optimisation function

The ***AQUAPHON® A 100***'s innovative filter optimisation function makes it easier to accurately pinpoint water leakages. This is particularly useful where the ground microphone has identified a leak noise but the exact position of the leak is difficult to determine because of loud ambient influences.

The receiver records a noise sample using the ground microphone and analyses it. It then automatically switches to a suitable frequency range which distinguishes the structure-borne sound from the leak particularly clearly.

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Components

1. Ground microphone BO-4 with carrying rod H-4
2. Ground microphone 3P-4
3. Test rod T-4
4. Stereo headphones
5. Charging station HS
6. ***AQUAPHON® A 100***
7. ”Triangel” carrying system
8. Microphone EM 30

Ground **microphone BO-4** 1 is ideal for paved surfaces. The new solid metal soundproofing with separate acoustic centre can be optimally adjusted to the unevenness of the ground thanks to its freedom of movement.

Ground **microphone 3P-4** 2 is used for unpaved surfaces. A spike can be screwed on for soft ground. The three feet provide stable contact at all times.

Easy to service microphones: The cables on all microphones can be replaced by the user. This guarantees low maintenance and minimal downtime.

Indoor leaks hardly to reach are detected using the small, handy EM 30 microphone with short probe tip. There is also a magnet, tripod and compact case available specially for indoor use.

AQUAPHON® A 100

AQUAPHON® AF 100
Combi device for electro-acoustic water leak detection and pipeline location

Features

- Automatic microphone recognition, therefore various frequency settings
- Digital signal processor
- Filter optimisation function
- Slider function
- Memory function
- Large illuminated display
- Integrated NiMh rechargeable battery, integrated automatic charging/buffering function, battery status display

Please contact us for a comprehensive quotation, including additional technical specifications and information on accessories.

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