



MedGasScan **reduce risk and cost by identifying leaks on your MGPS**

Medical Gas Pipeline System  
Leakage Audit





## Audit On-site inspection to identify and measure gas leakage

The purpose of the audit is to identify and quantify the leaks present in your medical gas pipeline distribution system. You can then put together an action plan to have them repaired, therefore reducing risk, saving energy and reducing costs.

To identify gas leaks, it is necessary to use specific tools. Our tools are specifically designed to detect ultrasonic signals produced by the loss of gases such as oxygen, nitrous oxide or medical air, which are typically not audible by the human ear. In the event of oxygen leaks this also poses a serious fire risk hazard. Oxygen/nitrous oxide 50/50 gases contribute highly to a facility's emissions and carbon footprint.

Our acoustic camera uses 124 microphones to form a very accurate acoustic image in the desired direction. This acoustic image is transposed in real-time on top of a digital camera picture, which allows the user to accurately see from which direction sound is arriving to the camera. Interesting sound sources can then be separated from background noise and saved.

## Tagging and results

For each leak, a digital image is tagged at the point where the loss is. On the tag, the intensity of the leak is indicated. A detailed list of leaks is provided where you can find the intensity of the leak, according to the following colour code:

**Yellow = small leak**

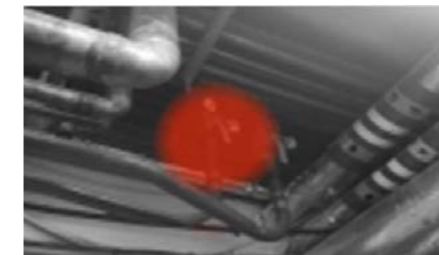
**Orange = medium leak**

**Red = big leak**

## Risk and oxygen enrichment

As well as the associated costs with gas leakage there's the undeniable risks of oxygen enrichment. By undertaking a comprehensive check of your oxygen pipeline system problems can be identified and corrected by our installation or maintenance teams.

Leakages can often be found on component joints within source equipment such as manifold control systems and air plant or control valves which can be "blanked" off and hidden in ceiling voids. As well as worn out terminal units, hoses and flow meters connected to the patient equipment.



Above - Oxygen main pipeline leak

Right - Oxygen and medical air leaks via terminal units, hoses & flow meters



## Report summary

The intensity of the leak is calculated by the camera based on the sound value, expressed in dB, and the distance to the leak.

In order to better identify the leak, an image of the point where the leak is identified is also attached, to allow the operator to repair the leak.

Sequence	Description	Picture	Wasted Flow l/m
1	49.6		58.2
2	Phase 2 Medical Air Plant Dryer A (Push Fitting Leak)		56
3	Phase 2 Medical Air Plant Dryer B (Push Fitting Leak)		49.6



Once the gas system has been tested and tagged a comprehensive report is produced highlighting the amount of leaks on the distribution system. The flow of each leak is determined in litres per minute, as well as the accumulated losses. This can then be calculated into an estimated yearly cost. An example of a real life medical audit is given below:

Site Test - Oxygen			
Total No. Identified Leaks	Total Wasted Flow	Total Yearly Cost of Leaks*	
29	202.5 l/min	£12,757.50	
Leakages by Size	Small	Medium	Large
No.	24	5	0
% Of Total	82%	18%	0%
Wasted Flow	36.1 l/min	166.4 l/min	0 l/min
% Of Total	82%	18%	0%
Wasted Flow Cost	£10,461	£2,296.50	£0

Gas cost only - transport, handling, delivery and on costs not excluded

The completed report is then uploaded to our cloud based asset, compliance and risk management system MyMedGas. This report is available to access any time and is just one, of many, benefits of having a Preventative Maintenance Contract with BeaconMedaes.



Scan to learn more about MedGasScan

Life is in the details.®

