



LEAKSHOOTER®

LEAK DETECTION CAMERA

LKS1000-V3

www.synergys-technologies.com



IDEAL FOR
ISO 50001
ENERGY
MANAGEMENT

LEAKSHOOTER® LKS1000-V3

Ultrasonic compressed air, steam & vacuum leak detector with camera.



Compressed air and steam are costly forms of energy.

20 to 40% of it is lost through leaks and defective steam traps.

Systematically checking for, eliminating leaks and defective traps will bring considerable energy savings.

LEAKSHOOTER® LKS1000-V3 is a unique and sensational detection device:

- It uses a camera and a dynamic on screen target to precisely find leak location (patent).
- It features a new concept of Steam Trap diagnostic: The STRAPSHOOTER®.

The STRAPSHOOTER® program is an Easy to use firmware which can automatically diagnose your Steam Trap condition state.

LEAKSHOOTER® LKS1000-V3 is extremely sensitive, capable to find compressed air leaks (not bigger than the size of syringe needle) at a distance of 20m.

The LEAKSHOOTER® LKS1000-V3 is used like a camera.

When it comes near a leak, a dynamic yellow target appears on the large colour screen. The target turns red and shrinks as it approaches the source of the leak. A bar graph at the bottom of the screen accompanies and facilitates the search.

When the device is facing the leak, a cross appears in the centre of the target. It is then possible to photograph and save the precise location of the leak.

GREEN	No leaks
YELLOW	Near the leak
RED	In front of the leak

Each photo is numbered, dated and timed and shows the dB RMS level of the leak.

The photos can be uploaded directly onto a PC via a USB cable (supplied), ready to be attached to inspection reports.

It is still possible, whilst visually searching for a leak, to use the traditional method of leak detection, listening for the hissing sound of the leak using the professional headphones also supplied, which can be plugged directly into the device.

High Voltage Lines

Vacuum leak

Compressed air leak

Steam traps

Tightness and sealing control

NEW! STRAPSHOOTER® program: Detect defective trap in seconds!

Steam Trap Surveys with traditional detector is often complex and is not accessible to everyone.

OPEN or CLOSED? That is the question.

To make the diagnosis more easily even for non specialist, SYNERGYS TECHNOLOGIES has invented the STRAPSHOOTER®, the first automatic Steam Trap analyzer.

LEAKSHOOTER LKS1000-V3 uses:

- Ultrasonic contact probe to analyze the Steam Trap working progress
- Embedded infrared pyrometer to measure the pipe T° IN & T° OUT
- STRAPSHOOTER® program to see, hear, analyze and report the Steam Trap condition state
- Embedded camera to take the Steam Trap picture for reporting





Live-steam losses caused by leaking steam traps represent a major economic factor!

How much does it cost?

STEAM LEAKAGE = A (kg/h)
 OPERATION HOURS = B (h/year)
 STEAM UNIT COST = C (± 20€/1.000 kg)

$$\text{COST} = (A \times B \times C) / 1000 \text{ (€/year)}$$

Example for only one leak :

With continuous operation, B = 8.000h/year

Small leak
 (4 kg/h)
= 640 €/year !

Standard leak
 (7 kg/h)
= 1.120 €/year !

Medium leak
 (15 kg/h)
= 2.400 €/year !

Big leak
 (70 kg/h)
= 11.000 €/year !

Please note these values are approximate.

SPECIFICATIONS LEAKSHOOTER® LKS1000-V3

Sensitivity	Detects a leak of 0,1 mm at 3 bars at 20 m
Camera	Colour 640 x 480 pixels
Display	LCD colour 3,5" 320 x 240 pixels
Pictures	BMP, number, date and time
Dynamic target	Red square with cross on strong leak Yellow square with cross on light leak
Measurements	dB RMS and MAX RMS
Program	Airborne leak detection & steam trap analyzer
Memory	Up to 1000 pictures, can be uploaded to PC
Communication	USB cable supplied
US sensor	Open type - Bandwidth ± 2 kHz to - 6 dB - Central frequency 40 kHz ± 1 kHz - Adjustable frequency mixer from 34 to 46 kHz - Adjustable gain from 50 to 110 dB
T° sensor	Infrared embedded pyrometer (0 - 250°C)
Headphones	Adjustable volume from 0 to 10
Case	ABS high impact IP67
Power supply	Lithium-ion rechargeable battery
Autonomy	± 6 hours
Temperature range	- 10°C to + 50°C
Dimensions	H : 230 mm - W : 100 mm - D : 70 mm
Weight	580 gr for the LKS1000 6 kg including ABS case
CE Standards	CEM 2004/108/CE : EN61000-6-4 & EN61000-6-2



Flexible 400 mm US Sensor
 Ref. LKSFLEX
+ Flexible 1500 mm US Sensor
 Ref. LKSFLEX1500



Mechanical US sensor
 (steam trap - bearing)
 Ref. LKSPROBE



Ultrasonic emitter
 Ref. LKSDOME



Holster
 Ref. LKSCOVER



SYNERGYS TECHNOLOGIES has been established in 1996 in France, to offer innovative and professional solutions for preventive and predictive maintenance.

SYNERGYS TECHNOLOGIES is the inventor of the ultrasonic visualization concept with the LEAKSHOOTER® and of the MCP (Machine Condition Picture) concept with the VSHOOTER®.

We are present worldwide with professional and trained distributors.



SYNERGYS
TECHNOLOGIES

VSHOOTER® & LEAKSHOOTER®
a SYNERGYS TECHNOLOGIES
innovation

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3893 Industrial Avenue • Rolling Meadows, IL • 60008
phone: (847) 577-3980 • fax: (847) 577-0474
www.bergeng.com • sales@bergeng.com