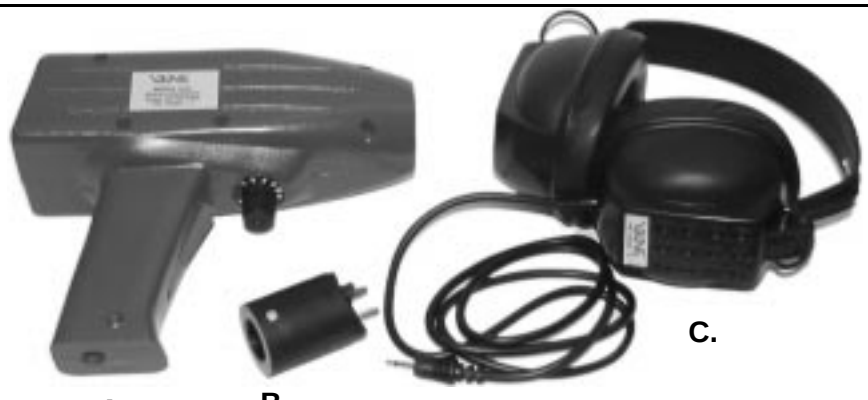
VIKING®

TECHNICAL DATA

AIR LEAK DETECTOR



Air Leak Detector Kit:

A. Detector Body
B. Leak Detection Plug-in Module
C. Headset
D. Carrying Case (not pictured)

Figure 1

1. PRODUCT NAME

Viking Air Leak Detector
Standard Kit Part No. 10530
Accessories Package Part No. 10620
Available since 1998.

2. MANUFACTURED FOR:

The Viking Corporation
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Hastings, Michigan 49058 USA
Telephone: (269) 945-9501
(877) 384-5464
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3. PRODUCT DESCRIPTION

The Viking Air Leak Detector Kit is designed to find ultrasonic indication of air or vapor leaks on Dry Systems and Preaction Systems. It is considered a convenient alternative to using soap solution on pipe joints and looking for bubbles to find leaks. The purpose of the detector is to pinpoint high-frequency sound coming from air leaks in pipes, fittings, or valves and to convert this information into a tone that the user hears through the headset.

4. TECHNICAL INFORMATION

FM Approved: Units intrinsically safe Class 1, Division 1, Groups B, C, & D.

Accessories Package:
(order separately)

Includes tone generator, rubber focusing extension, and stethoscope module with 4" metal probe.
Package Part No. 10620.

5. AVAILABILITY & SERVICE

Viking products are available through a network of domestic, Canadian, and international distributors. See the Yellow Pages of the telephone directory for a local distributor (listed under "Sprinklers-Automatic-Fire") or contact The Viking Corporation.

Viking technical data may be found on The Viking Corporation's Web site at http://www.vikingcorp.com. The Web site may include a more recent edition of this technical data page.

6. GUARANTEES

For details of warranty, refer to Viking's current price schedule, or contact The Viking Corporation directly.

7. STANDARD FEATURES

(Refer to Figure 1.)

The Viking Air Leak Detector Standard Kit includes a pistol-type detector body with 9 Volt battery, a leak detection plug-in module, a lightweight headset, and a rugged carrying case (not shown).

A. The hand-operated detector body is equipped with a large meter.
B. The leak detection module is sensitive enough to pinpoint very small air leaks in a pressure or vacuum system even if the system is located in a noisy plant.
C. The deluxe earmuff-type headset covers ears for use in noisy areas. Use of the headset is not absolutely necessary. It doesn't have to be plugged into the detector. However, using the sounds produced by the headset as well as using the visual information produced by the meter readings makes a search easier.
D. The durable carrying case protects the kit while it is not being used.

8. STANDARD OPERATION

(Refer to Figure 1.)

AS A LEAK DETECTOR: For this application, insert the leak detector module (B) (the one with the grill opening in the front) into the recessed front of the detector body (A). Be sure the two prongs line up with the receptacles and that the module seats firmly in the recess. Plug the headset cord connector into the receptacle at the bottom of the "grip" of the gun.

The unit can now be used to search for leaks of any gas or vapor that is under pressure or vacuum.

Press the trigger to turn on the detector while pointing and sweeping the front of the detector over the piping, valves, or flanges to be checked. The device should quickly direct the user to the location of a leak after picking up the ultrasound created by air passing through any opening in the system.

The ultrasound from an air leak produces a distinct high pitch hissing or rushing sound through the headset. This high-pitch sound cannot be heard by human ears and would go unnoticed without the detector.

As the user approaches the leak, the rushing sound gets louder through the headset, and the meter reading also increases. A scanning or sweeping motion of the muzzle of the detector helps pinpoint the exact location of the trouble spot.

The sound of a leak and the reaction of the meter are similar to that resulting from holding your free hand a foot or two away from the muzzle and briskly rubbing your fingers together. Ultrasonic noise generated by the friction between finger tips can be heard through the headset.

For general leak detection, the function switch on the left side of the pistol housing should be in the forward, or OPERATE position. When operating in this mode, the knob just forward of the trigger acts as a combination sensitivity and volume control. Generally, begin a search with the knob set at or near maxi-

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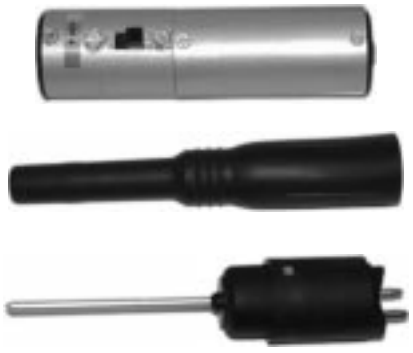
mum, then reduce the setting (turn the knob down) as required as the leak is approached.
As a reminder, the knob controls overall sensitivity of the detector--both headset volume and the meter circuitry. To obtain near repeatability of readings, and reliability of the tests, both the knob and the meter sensitivity settings must be the same as during previous tests. As a general rule, once a detector has been in use for a short period of time, the meter sensitivity is seldom adjusted. Very quickly, a setting is found that is satisfactory for almost all uses.



Accessory Features Package (from top):
A. Tone Generator
B. Rubber Focusing Extension
C. Stethoscope Plug-in Module with 4" probe

Figure 2

9. ACCESSORY FEATURES

(See Figure 2.)

The accessories package must be ordered separately from the standard kit. The optional accessories package contains an ultrasonic tone generator with 9 Volt battery, a rubber focusing extension, and a stethoscope plug-in module with a 4" metal probe.

A. The optional ultrasonic tone generator can be placed inside systems while the user operates the standard leak detector to find leaks in systems where there is no pressure or vacuum.
B. The optional rubber focusing extension attaches to the end of the standard leak detection module and is useful for hard-to-reach places.
C. The optional stethoscope plug-in module is intended to "listen" inside machinery that is operating. This is used to detect the abnormal sound produced by malfunctioning equipment such as bypassing valves. The stethoscope is equipped with a 4" metal probe to reach hard-to-get-at places, or for work in dangerous or hot areas.

10. OPERATION WITH ACCESSORY FEATURES

A. AS A LEAK DETECTOR WITH TONE GENERATOR: To locate openings or leaks in systems that don't have pressure or vacuum, use the optional tone generator. The tone generator produces its own high intensity ultrasonic tone that cannot be directly heard by the human ear, but is picked up by the ultrasonic detector. Ultrasonic sound, like all sound, will not penetrate a solid to any extent, but will go around it or find its way through openings, cracks, and crevices. The tone generator may be placed inside an enclosure. The inside of the enclosure becomes "filled" with the sound from the generator, which will "leak" through openings. While the standard leak detector module is attached, point the gun and scan the surface, seams, and seals of the enclosure. Anywhere a leak is detected by the device, the tone from the generator will be heard.
When the detector is used with the optional tone generator, the function switch on the left side of the detector gun must be in the forward (OPERATE) position or no tone can be heard.

B. AS A LEAK DETECTOR WITH RUBBER FOCUSING EXTENSION: Ultrasound is highly directional, so an air leak is easily pinpointed by the detector. Sometimes, it may be helpful to restrict outside interfering ultrasonic noises or to increase the directivity of the unit. To do so, slip the optional rubber focusing extension onto the front of the standard leak detection module. This combination also assists in picking up sounds of a small leak in inaccessible locations, such as on the rear side of pipe fittings. It also allows one to drag the rubber front end opening along seams and seals without creating a lot of interfering ultrasonic noise.
For this general search type operation, the meter sensitivity adjust setting should be at least moderately high. This setting may be adjusted with a small flat blade screwdriver through the hole in the left side of the pistol housing. (A plastic screwdriver is included in the kit).

C. AS A STETHOSCOPE: To convert the unit for this application, the leak detector module should now be removed by pulling it straight out from the detector body. Replace it with the stethoscope module (the one with the metal probe). The stethoscope module is inserted in the same manner as the leak detector module. The device has now been converted to a stethoscope. (Note: If the probe is removed, replace it carefully to avoid internal damage to the detector body.)
The microsonic stethoscope will detect internal sounds in the ultrasonic range. It does not detect the sounds that the ear can hear, or other low frequency sounds. The friction between moving parts of machinery generates ultrasonic sound. Minute sounds are present that would otherwise go unnoticed without the stethoscope.
As with the standard leak detector module, the normal mode of the stethoscope is with the function switch in the forward or OPERATE position. In this position, there is greater latitude of sensitivity adjustment, which sometimes allows the operator to screen out some sounds to pay particular attention to others.
Internal flow and valve activity can be heard and monitored with the stethoscope to detect turbulence or blockages of flow inside the valves. It is easy to determine if a valve has shut completely, is leaking, or is bypassing. As the valve closes completely, flow ceases. If the valve stops moving as if closed, and flow is still heard, the valve has not seated and sealed properly.
Operation with the side function switch in the rear or CAL position is sometimes desirable where there is a high level of ambient noise, such as that generated by nearby machinery or pneumatic tools, or where very weak signals must be detected. When the switch is in this position, the internal noise of the pistol is reduced and weak signals which might otherwise be masked by noise can often be detected more readily.