How to improve your leak testing RESULTS GUARANTEED...

Leak-Tec

THIN FILM BUBBLE TESTING LIQUID

A Formula specifically designed for each application

Formulas meet the requirements of ASTM E-515

16-OX

For gaseous oxygen systems at normal temperature.

Exceeds MIL-L-25567 Type 1. Low viscosity, low residue (.4% by weight evaporation residue) making it easy to paint over surfaces tested with 16-OX. Can detect very low pressure leaks. Sensitivity 1 x 10^{-6} std cc/second. Temperature range +35 to 160°F. National Stock Numbers 6850-00-621-1820, 6850-00-185-0423, 6850-00-051-5052 and 6850-00-186-2963. Corrosion Index V.

OX-65-C

For gaseous oxygen systems at low temperature.

Exceeds MIL-L-25567 Type II. Sensitivity 1 x 10^{-5} std cc/second. Temperature range -65 to +180°F. National Stock Numbers 6850-00-621-1819 and 6850-00-880-9109. Corrosion Index V.

415

For very high temperature testing.

Used with hot gas chromatography and other uses where cooling wastes time or hides leaks. Also used for high temperature immersion testing. Sensitivity 5 x 10^{-5} std cc/second. Temperature range +120°F to 410°F. (210°C). Corrosion Index V.

METAL CORROSION INDEX	
Because the mechanisms of corrosion are not always the same, Leak-Tec solutions have been formulated with different types of inhibitor systems.	
INDEX	DESCRIPTION
I	Inhibits stress corrosion cracking of stainless steels, magnesium and titanium alloys.
II	Inhibits electrolytic corrosion between dissimilar metals.
III	Inhibits surface corrosion on cast iron and mild steels. This system is poisonous and is not required for most steels. It may even cause slight corrosion on aluminum, copper, and brass.
IV	Inhibits normal corrosion on aluminum, copper, brass and on most metals.
V	Meets the corrosion and faying edge requirements of MIL-L-25567.

112

For chlorine systems, including water purification and sewage disposal.

When leak-indicating bubbles burst, puffs of white smoke are emitted. Sensitivity 1 x 10^{-5} std cc/second. Temperature range +35 to 160°F. Corrosion Index V.

277

For use with polyethylene pipes and rubber seals.

Will not stress crack polyethylene pipes and fittings, or rubber seals in gas system; Has medium viscosity so liquid spreads evenly and stays in place for a period sufficient for careful inspection. Sensitivity 1 x 10^{-5} std cc/second. Temperature range +35 to 160°F. Corrosion Index V.

277C

For refinery and natural gas systems.

Spreads well, covering complex welds and penetrating surface oil films. Will not harm rubber. Sensitivity 1 x 10^{-5} std cc/second. Temperature range +35 to 160°F. National Stock Number 6850-00-825-0542. Corrosion Index IV.

277NE

For nuclear applications; for dissimilar metal joints; for electrical systems)

1. Meets the requirements of ANSI N45.2.1-1973 and Stone & Webster 2BVS-901 and NMP2-M060A and 211.160. Fully certified for use with high performance metal alloys like stainless, nickel and titanium. Halogens, sulfur and water leachable chlorides less than 4 ppm. One year shelf life for this application.

2) Has a specific resistance of 100,000 to 200,000 ohms which resists current seepage when testing electrical/electronic systems and does not promote electrolytic corrosion between dissimilar metals. Shelf life for electrolytic applications is 6 months. Where high electrolytic resistance is required, 277NE is available as a concentrate in returnable gallons. Sensitivity 1 x 10^{-6} std cc/second. Temperature range is +35 to 160°F. Corrosion Index II, I, V.

GUARANTEE

30 day free trial

If Leak-Tec doesn't completely satisfy you, return the unused portion for a complete refund.

372E

For general purpose applications involving compressed air and stable gases.

Stable gases including but are not limited to carbon dioxide, carbon monoxide, argon, sulfur hexafluoride, propane, butane, nitrogen, hydrogen, helium and ammonia. Relatively viscous allowing for easy testing of vertical surfaces. Sensitivity 1 x 10^{-5} std cc/second. Temperature range +35 to 160°F. National Stock Numbers 6850-00-543-7692, 6850-01-247-1327 and 6850-00-056-7901. Corrosion Index IV.

372E-HV

For general purpose applications involving testing on vertical surfaces.

Used with stable gases including but are not limited to carbon dioxide, carbon monoxide, argon, sulfur hexafluoride, propane, butane, nitrogen, hydrogen, helium and ammonia. Highly viscous allowing for easy testing of vertical surfaces. Sensitivity 1 x 10^{-5} std cc/second. Temperature range +35 to 160°F. Corrosion Index IV.

372G

For air conditioning/refrigeration systems, vacuum box testing and medium low/high temperature testing.

Will not boil easily under vacuum and can be applied to seams well in advance of testing. It is often used for vacuum box testing. Will bubble even in the presence of liquid halocarbons. Sensitivity 1 x 10^{-4} std cc/second. Temperature range -35 to 190°F. Corrosion Index IV.

372H

For very low temperature resting.

Temperature range -65 to +180°F. Sensitivity 5 x 10^{-4} std cc/second. National Stock Number 6850-00-552-9172. Corrosion Index IV.

FM-1

For missile fuel and oxidizer systems.

Inert to nitrogen dioxide, hydrazines, hydrogen peroxide, liquid oxygen, other oxidizers, and concentrated nitric and sulfuric acids. Meets ABMA-PD-M-44.

Sensitivity 1 x 10^{-6} std cc/second. Temperature range +32 to +160°F. Corrosion Index V.

OX-315

For liquid oxygen systems.

LOX compatible (residue will not cause explosion with liquid oxygen). Less than 0.35% evaporation residue. Meets MSFC-SPEC-384A, and exceeds AMS-3159. Sensitivity 1 x 10^{-6} std cc/second. Temperature range +35 to +160°F. Corrosion Index IV, V.

OX-315 III

For applications where metal corrosion is a severe problem.

Originally developed for NASA to combat corrosion on the aluminum alloy of the shuttle. It works well on carbon steel and galvanized metals to prevent corrosion. Meets the requirements of Martin Marietta Y824-1. Sensitivity 1 x 10^{-5} std cc/second. Temperature range +35 to 160°F. Corrosion Index III.

577V

For fluorescent and vacuum testing.

Highly fluorescent under black light. Widely used for vacuum testing in the nuclear industry. If the interior of the evacuated systems is not visible the fluorescence can easily be seen on disassembly of critical parts showing defective o-rings, gaskets, etc. Sensitivity 5 x 10^{-6} std cc/sec 1 x 10^{-5} torr liters/sec. Temperature range +35 to 160°F. Corrosion Index I, IV.

72V

For high pressure gross leaks and vacuum leaks.

An aerosol foam that captures large high pressure leaks causing a bubbling action of the foam. Also widely used as a vacuum leak detector; the foam craters at the point of a leak. Temperature range +35 to 170°F.

Sensitivity 5 x 10^{-4} std cc/sec, 1 x 10^{-3} torr liters/sec.

Corrosion Index V.

PACKAGING OPTIONS:

All formulas are available in 4 oz. squeeze bottles, 1 gallon jugs, 5 gallon carboys, and 55 gallon drums. Many are available in 10 oz. aerosols, 8 oz. squeeze bottles, bottles with daubers, and 16 oz. bottles with pump sprayers.

Partial list of Leak-Tec Users:

Abbott Laboratories
Aberdeen Proving Ground
Aer Lingus
Air India
Air New Zealand
Alabama Power
Alaska Airlines
Alcoa
Allied Signal
Ames Laboratories
Atlas Chemical
Bethlehem Steel Corp.
Birmingham Steel
The Boeing Company
Bendix Corp.
Boise Cascade
Brookhaven National Labs
Carolina Power & Light
Celanese Canada
Chrysler
Clorox Co.
Consolidated Edison Co., of N.Y.
Continental Can Co.
Deere, John Co.
Detroit Diesel
Dow Chemical
Dow Corning
E.I. Dupont
Eastman Kodak Co.
Elf Atochem
Eli Lilly and Company
Exxon
Flambeau Paper Corp.
Florida Power & Light
Ford Motor Co.
GAF Corp.
General Dynamics
General Electric
General Foods Corp.
General Motors
Georgia-Pacific Corp.
Goodrich
Goodyear
GTE Automatic Electric
Gulfstream Aerospace
Hamilton Standard
Hershey Chocolate
Hoffman-La Roche Inc.
Honeywell Inc.
IBM
International Harvester
ITT Corp.
Iberia Air Lines of Spain
Idaho Power
International Paper Co.
Jet Propulsion Labs
Johns-Manville Co.
Kaiser Aluminum Co.
Kellogg Co.
Kelly Springfield Tire Co.
Kennecott Copper Co.
Kimberly Clark Co.
Libbey Owens Ford
Lockheed Martin Corp.
McDonnell Aircraft
Merck, Sharpe & Dohme
Minneapolis-Honeywell Reg.
Mobil Oil Co.
Monsanto Chemical Co.
Motorola, Inc.
Miller Brewing Co.
3M Company
Northrop Grumman
Oak Ridge National Lab
Occidental Chemical
Ohio Edison Co.
Pacific Gas & Electric Co.
Phelps Dodge Mining
Pratt & Whitney Aircraft
Procter & Gamble Co.
Polaroid Co.
Quaker Oat Co.
Raytheon Mfg. Co.
R.C.A.
Rockwell International
Remington Arms Co.
Reynolds Metals Co.
Robert Shaw Controls Co.
Shell Oil Co.
So California Edison Co.
Sperry Rand Corp.
Stone & Webster
Tecumseh Products
Texas Instruments Inc.
Texas Power & Light Co.
TRW Inc.
Texaco Inc.
Thiokol Corp
Transcontinental Gas Pipe Line
Union Carbide
U.S. Air Force
U.S. Navy
U.S. Rubber
U.S. Steel
United Air Lines
U.S. Gypsum Corp.
United Nuclear Corp
University of California
Virginia Power
W. R. Grace
Westinghouse Electric Corp.
Whirlpool Corp.
Woods Hole Institute
Wyeth-Ayerst

ENGINEERED TO SAVE

Everything which is manufactured to contain gas or liquids is subject to leakage at material junctions, such as, seams, connectors, and fittings. This leakage can often cause warranty returns, production shutdowns, and loss of human life. With spiraling liability judgements and increased costs of reworking finished products, reliable leak testing saves *time and money!* In addition, leak testing is a major factor in the fight to save energy. Testing can locate leakage of fuels, like natural gas, as well as leakage of indirect energy such as steam and compressed air. Because leak testing saves time, saves money, and saves energy, it has assumed an important industrial role.

Bubble testing is the most common and one of the most reliable methods of detecting and locating leaks. As scientific leak testing has grown in importance, so has bubble testing. Bubble testing has many inherent advantages:

- It is easy to use and requires little operator training.
- It is inexpensive to use and not subject to break down like complex instrumentation.
- It operates immediately and continues to give indications.
- It can be extremely sensitive, finding leaks down to 1×10^{-6} (.000001) standard cc/second. The equivalent of losing a pound of Freon every 2,700 years.

With the increasing importance of bubble testing, the old time standby - soap and water - is gone forever. Soap and water has low sensitivity and tends to obscure small leaks by foaming when applied. Many industrial companies and organizations, such as the USAF, ASTM and ASME have banned the use of soap. These companies and organizations use only synthetic bubble solutions like Leak-Tec.

Over the last forty-five years, Leak-Tec bubble solutions have become synonymous with quality leak testing. With over 6,000 customers (including almost all of the Fortune 500 Industrials) depending upon us, we are called upon repeatedly to solve difficult leakage problems. As a result, we have developed, and continue to improve upon, the most comprehensive line of field proven bubble solutions. With this background of development technology, our products represent the forefront in leak testing science.

In addition to a complete line of scientifically developed formulas, we fully support our products with a comprehensive quality control program, detailed certifications, and process specifications. Our large stock and record for on time delivery makes us easy to deal with and save you *time.*

Besides the bubble solutions described here, we manufacture a great variety of other leak detectors, both electronic and chemical, which are currently being used to solve such problems as:

1) Vacuum leak testing
2) Hydrostatic testing
3) Dangerous gas monitoring & testing
4) Internal system leakage
5) Production line leak testing
6) Immersion testing

If the products in this brochure are not the answer to you leak detection problem, call today. Let us put our expertise to work for you.

american gas & chemical co. ltd.
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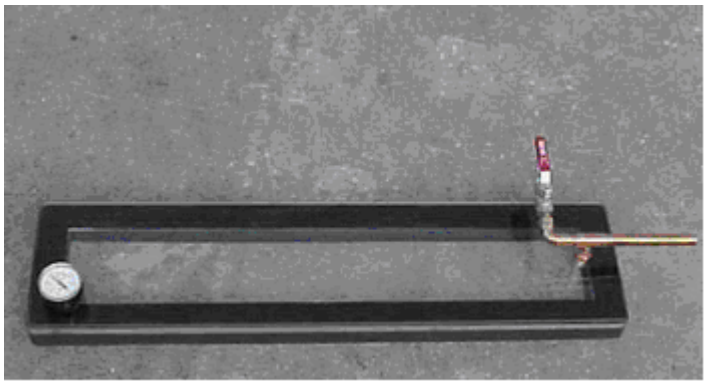
VACUUM LEAK TESTING BOXES

NONDESTRUCTIVE TESTING EQUIPMENT



DEPENDABLE PERFORMANCE

Vacuum Devices are pre-tested to assure maximum reliability. Our designs have been thoroughly field tested for several years in a variety of applications.

SIMPLE TO OPERATE

The air ejector has no moving parts and no lubrication is necessary. After applying leak detection fluid along seam, simply place the vacuum device over the area to be tested and open the air valve.

RUGGED YET LIGHTWEIGHT

Our shockproof Vacuum Devices are built with lightweight acrylic which can be heat formed for special applications. The tough rubber gasket is designed to provide a maximum seal.

FAST, SAFE EVACUATION

Air ejection on standard models is less than 30 seconds. Our ejector is explosion proof. Uses no electricity. Your compressed air supply (60-120 psi) will insure safe, economical operation.

6805 COOLRIDGE DR ■ TEMPLE HILLS MD 20748
301-449-7300 ■ 800-638-0554 ■ FAX 301-449-7011
EMAIL: sales@detek.com

NONDESTRUCTIVE TESTING EQUIPMENT

Flat Bottom Vacuum Box Model Number 30FB

This unit is used primarily for testing the bottom of storage tanks.

Dimensions: 36" X 9" X 5" (including ejector and gauge)
Approx. Weight: 18 lbs.

Corner Vacuum Device Model Number 18CB

These units are specifically designed for testing the inside corner (where the bottom meets the sidewall at 90 degrees) of storage tanks. This unit is designed for use in storage tanks less than 75 feet in diameter. Dimensions: 23" X 7 X 7" (including ejector and gauge) Approx. Weight: 4 1/2 lbs. (2.4kg)

Corner Vacuum Device Model Number 30CB

These units are specifically designed for testing the inside corner (where the bottom meets the sidewall at 90 degrees) of storage tanks. This unit is designed for use in storage tanks 75 feet to 150 feet in diameter. Dimensions: 34"L X 4" W (including ejector and gauge) Approx. Weight: 6 1/2 lbs. (2.9kg)

Corner Vacuum Device Model Number 40CB

These units are specifically designed for testing the inside corner (where the bottom meets the sidewall at 90 degrees) of storage tanks. This unit is designed for use in storage tanks greater than 150 feet in diameter. Dimensions: 44"L X 4 1/2"W (including ejector and gauge) Approx. Weight: 7 1/2 lbs. (3.3kg)

Special Order Devices

We can design and build a Vacuum Device to suit your specific needs. Examples of some of our SPECIALS include: Inside Corner Boxes for use on internal 90 degree corners where the side, end, and bottom of a tank meet. Plates for use on openings in plates, etc. Cubes or Cylinders for use in penetrations protruding above plates, etc

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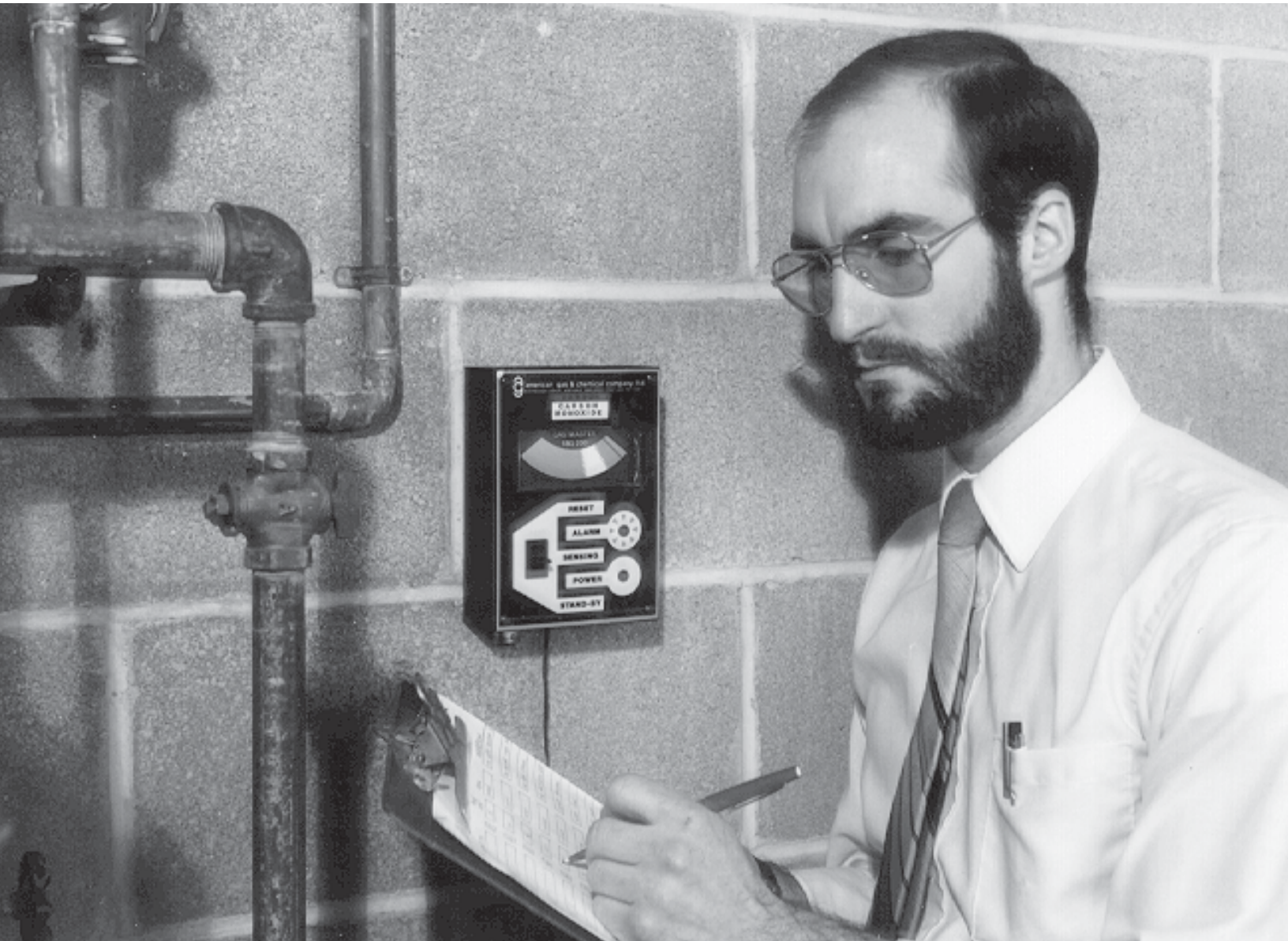
LOW COST SOLUTION TO MONITORING DANGEROUS GASES & VAPORS

- ☐ **RELIABLE & MAINTENANCE FREE:** State of the art circuitry ensures years of dependable service. Twelve second alarm delay avoids annoying false alarms.
- ☐ **ACCURATE:** Stable sensor temperature compensation delivers accurate performance.
- ☐ **INFREQUENT CALIBRATION NEEDED:** Solid state sensors have less drift and are less subject to poisoning.
- ☐ **SIMPLE TO INSTALL & OPERATE:** Designed to be plugged in and instantly operable. One switch controls all normal functions.



DETECTABLE GASES

Detectors are available to monitor over 100 combustible and toxic gases including

Acetylene	Carbon Monoxide	Hydrogen	Methane	Toluene
Ammonia	Ethylene Oxide	Hydrogen Sulfide	Natural Gas	1,1,1 Trichloroethane
Butane	Gasoline	Methylene Chloride	Propane	Xylene

Monitors are delivered precalibrated to the customer's requirements and ready to plug in.
No complex installation is required.

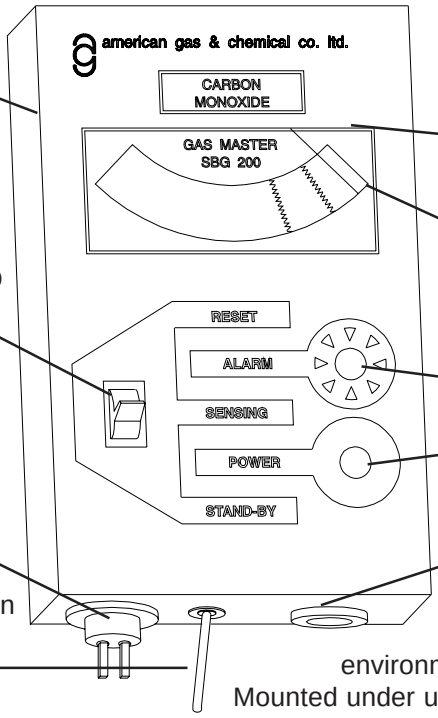
SBG-200 GAS MASTER

Case
Rust proof Nema 1 case protects the solid state circuitry from damage & yet is small enough to be mounted wherever needed.

Three Position Switch
Sensing: Normal Position
Reset: to acknowledge sound & light alarm after dangerous level detected
Standby: Makes it easy to calibrate & cleanup without triggering local & remote alarms

Remote Function Contact
Has secure plug which prevents accidental disconnects. Allows connection to central panel or to turn on remote alarms & emergency devices.

Power Supply
Sealed 110v power supply requires simple plug in & supplies the monitor with low voltage DC current.



Sensitivity Adjustment is inside unit in order to avoid accidental changes.

Pulsating Sound Alarm

Taut Band Meter
SAFE: Green
WARNING: Yellow
DANGER: Red

Flashing Red Alarm Light

Power Light

Sensor
Several sensors are available. Many can operate in oxygen deficient environments & cannot be poisoned. Mounted under unit to protect against particulate contamination. Operates by diffusion avoiding breakdown due to pump failure. Very stable over time.

OPTIONS
- ☐ Sensor can be mounted remotely from the monitor
- ☐ Jack can be mounted for chart recorder output.

THE GAS MASTER GUARANTEE

We guarantee our detector will save you time and money by detecting leaks more easily and quickly. If you are not completely satisfied by the end of the first month, simply return your detector and we will refund your entire purchase price.

GAS MASTER APPLICATIONS

Hospitals, Parking Garages, Factories, Utilities, Laboratories,Blueprint Rooms, Municipalities, Warehouses, Storage Areas, Poultry Farms, Schools, Homes, Hotels, Hookup to Security Systems, Refrigeration Rooms, Boiler Rooms, Wastewater Treatment Plants, Buildings by Landfill Areas, Schools etc.

GAS MASTER SPECIFICATIONS

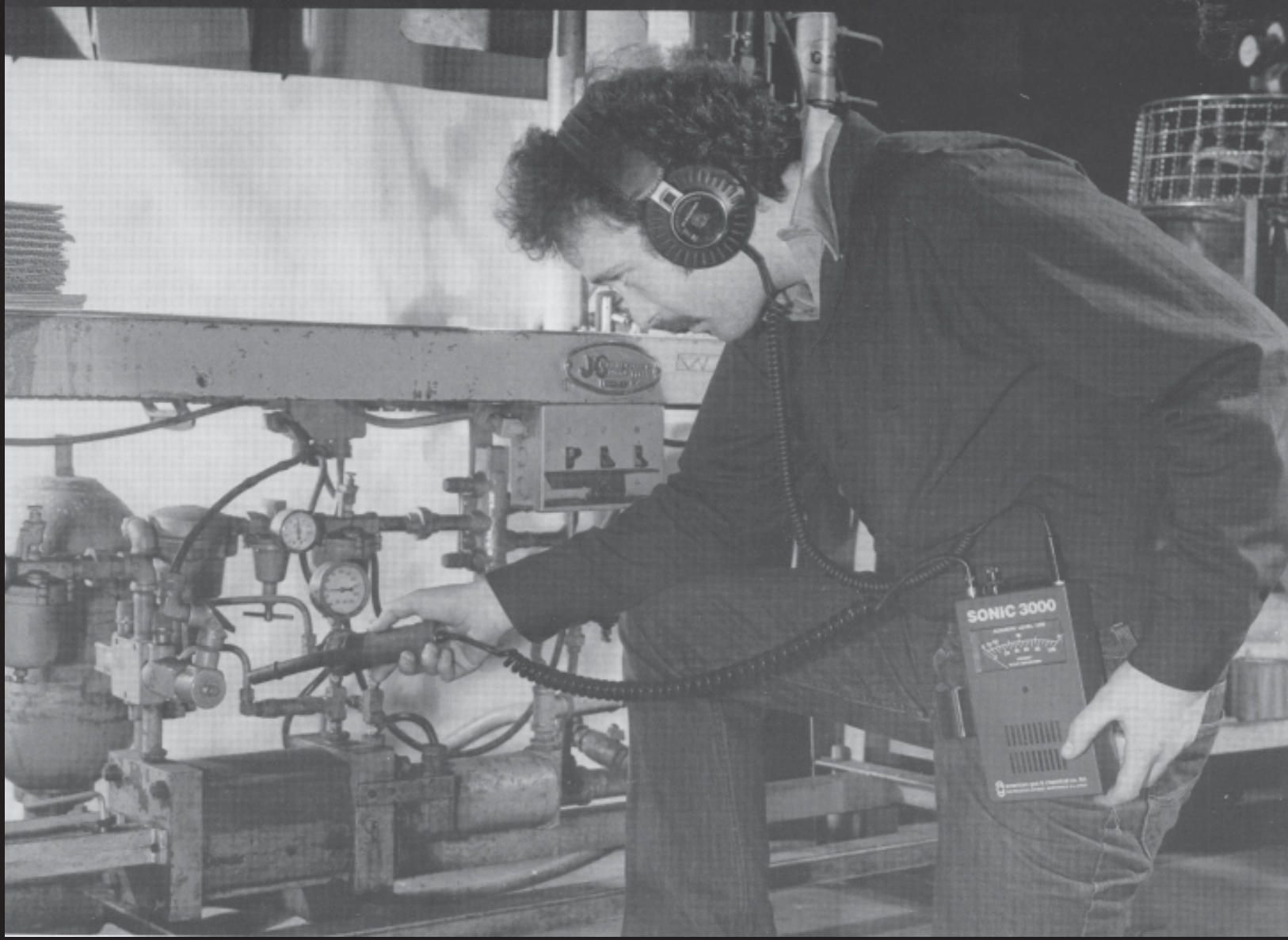
Power Supply	115 volts AC/8.5 volts DC	Sensor Life Expectancy	50,000 exposures (non corrosive vapors)
Dimensions	6 $^{3}/_{4}$"x4 $^{7}/_{8}$"x2"	Operating Temperature	-10°F to 120°F
Relay	1.0 amps; 120 volts (max)	Sound Alarm Level	85dB min at 30cm
Circuitry	Solid State	Response Time	1.2 seconds
Weight	2 lbs (Shipping weight:2.5 lbs)	Alarm Delay	12 seconds

american gas & chemical co. ltd.
220 Pegasus Ave, Northvale, NJ 07647 U.S.A.
www.amgas.com

CALL TOLL FREE 1-800-288-3647
In NJ call 201-767-7300 Fax 201-767-1741

Made in the U.S.A. 900014

HOW OUR DETECTOR CAN CUT THE COST OF FINDING LEAKS AND MAINTENANCE PROBLEMS



Why Our Detector Saves You 50%

Ultrasonic Testing Can Save You Time and Money

1 Prevent disastrous shutdowns.
2 Find leaks which were too difficult to find before.
3 Find leaks you didn't have time to find before.
4 Do twice as much in half the time.
5 Check machinery while it is operating. You don't need to shut down equipment for testing.
6 Dispense with time-consuming set-up, dismantling and cleanup.

Users Report Saving of 50% and More

A major producer of marine propulsion units reported a 50% reduction in time required for leak testing (with ultrasonics) compared to the time required to perform hydrostatic tests.*

A large aircraft overhaul facility revealed that the ultrasonic elimination of step-by-step trial and error replacement of aircraft valves has reduced inspections from as long as 8 hours to a maximum of 20 minutes.*

Ultrasonic leak testing is used in production leak testing of the exhaust systems on steam turbines. The test operator ultrasonically scans the exhaust system scrutinizing gaskets, bolted flanges, weldments, and other possible leak sources. This inspection takes approximately 30 minutes. This compares with test time as long as 4 days by other leak testing methods.*

Air conditioning contractors report a reduction in contractor checkout time as great as 80% by using ultrasonics to inspect the integrity of high pressure duct work.*

An airline's pneumatic power systems are inspected with the air probe for leaks at each operational check by a single mechanic in 90 minutes. Testing took up to 8 man hours with previous techniques.*

The ultrasonic method for testing the watertight integrity of compartments and tanks on ships under construction, conversion and repair has reduced inspection costs by 24% at one naval shipyard.*

Why Ultrasonics Works

Ultrasonic (high frequency sound waves) vibrations are measured in terms of Hertz (Hz). Leaks and other vibration sources produce a very broad band of ultrasonic noise. Experiments have shown that peak ampitudes for many of these problem areas are around 45 kilohertz. This frequency is well above the sounds which the human ear can hear. The Sonic 3000 has been set to translate frequencies between 30 and 50 kilohertz; therefore it will not pick up ordinarily deafening factory background noises. Each vibration source or leak has a very distinct sound characteristic. The Sonic 3000 translates these ultrasonic signals into an audible output. As a result the user can quickly identify the source of the problem. The Sonic Owner's Manual contains a detailed explanation of ultrasonics.

The Advantage of Ultrasonics

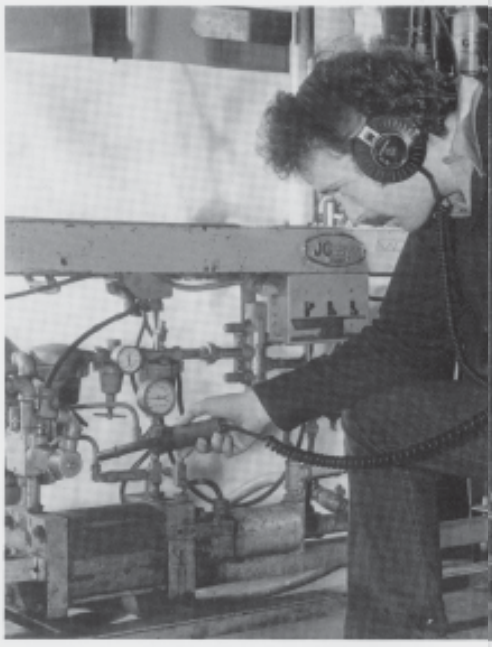
The Sonic 3000 is therefore an ideal tool to solve a number of different maintenance and quality problems. It has a great number of advantages over other detection techniques:

1 It can be used to detect a flow or leak of any gas or liquid.
2 It can detect leaks rapidly and at distances up to 100 feet.
3 It requires little operator training
4 It can locate internal as well as external leaks.
5 It can accurately locate vacuum or pressure leaks.
6 It makes irregular, shaped, or very large fittings easy to test.
7 It can detect electrical arcing from faulty electrical equipment and lines.
8 It works at high and low temperatures.
9 It can find intermittent leaks which many other techniques will not.
10 It can detect leaks in overhead lines, buried pipes and in unpressurized areas where other techniques are not viable.
11 Its versatility means increased employee productivity and less need for costly specialized equipment.
12 It is portable, passive, non-destructive, non-intrusive and requires no time-consuming cleanup.

Detect Electrical Leakage, Corona, Arcing and Insulation Breakdown

The Sonic 3000 with the air probe can easily and safely pick up airborne ultrasonic vibrations from electrical discharges. The focusing extension can pinpoint this energy at considerable distance from the source. The Sonic 3000 is ideal for such problems as: bad generator brushes, transformer shorts, electric cable shorts, R.F. interference. The contact probe is also effective in picking up internal arcing and, because it ignores airborne corona, it can be used to solve quality control problems in such items as high voltage transformers and capacitors safely.

Detect Leaks in Pressurize



*Reprinted from the Nondestructive Testing Handbook, second edition, Volume I, *Leak Testing*. Copyright © 1982, The American Society for Nondestructive Testing. Available from American Gas & Chemical Co. Ltd.

Detect Leaks in Unpressurized Containers and Chambers

Eliminate repeated complaints, lost resources and the expense of reworks by using the Sonic 3000 transmitter to find potential leaks and sources of energy waste in containers that are too large to make pressurizing practical such as automobile and aircraft interiors, heat exchangers, ship compartments, windows and refrigerators. The transmitter, when placed inside the test container, generates ultrasonic sound waves which escape through leaks in much the same way gas or fluid would. The sound waves are picked up by the Sonic 3000 air probe located outside the test chamber.

Detects Steam Trap Malfunctions and Fluid Flow Inside Systems

The Sonic 3000 makes it quick and easy to detect: steam trap problems, fluid flow in piping systems, valve seal leaks, buried pipeline leaks, leaks under insulation or under cement, and ball valve problems. By using the contact probe the Sonic is able to hear fluid flow or malfunctions inside systems. Each of these cause vibrations which are transmitted through the structure. By coupling the wave guide to a rigid portion of the structure, the Sonic 3000 eliminates expensive rechecking and time-consuming testing. The stable meter needle makes it easy to compare readings and tell the degree of the problem.

Detects Machine and Mechanical Engine Problems

The detector is now often the only method used to check hydraulic systems. It has eliminated the previous step-by-step replacement of valves which took as long as 4 to 8 hours per faulty system. The ultrasonic test now requires 15 to 20 minutes.*

A chemical plant has reduced downtime on a compressor from 32 to about 16 hours a month. Time is saved because a particular valve, or part that is causing trouble can be located immediately, without a full teardown and internal inspection of each part.*

The Sonic 3000 detects costly unplanned downtime by detecting such mechanical problems as bearing deterioration, forklift engine problems, hydraulic failure, gear breakdown, lubrication failure, deteriorating valve seats and blunted tools. The acoustic vibrations, which the Sonic is designed to receive, indicate the beginning of failure problems long before they are detectable by most vibration methods and long before they are audible. The Sonic 3000 will save the cost of purchasing expensive analyzers, as well as the extensive training and setup time required to use them. The Sonic 3000 can help you make your plant run more economically, efficiently and safely.

or Vacuum Systems

A plant that conducts an annual inspection of several thousand kilometers of air instrumentation networks reports that one person completes the tests during a 10 day shutdown. Before use of ultrasonic leak testing it took 14 people to perform equivalent inspections.*

The Sonic 3000's ability to quickly and accurately locate a wide range of leakage problems can generate a very fast payback for the instrument. Complicated vacuum and compressed gas systems can be frustrating and time-consuming to test. As a result leaks are often overlooked or ignored. The Sonic 3000 air probe can accurately and quickly pinpoint leaks in such components as vacuum lines, vacuum chambers, steam lines, pressurized gas containers and lines, compressed air lines, air conditioning and high pressure ducts, tires and aircraft escape slides. The rubber fine extension allows the air probe to pinpoint difficult to find vacuum leaks and to distinguish between multiple leaks in complex systems.

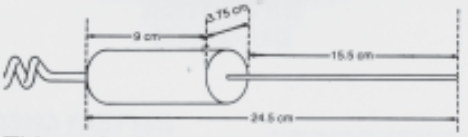
ASTM ULTRASONIC STANDARD

A standard method of calibrating the ultrasonic detector has been developed by the American Socity of Testing and Materials. By using the standard, leakage rates can be estimated, detectors can be uniformly regulated for particular functions, and repeatable results can be assured. Calibration can help you avoid mistakes and perform tests that previously required more expensive instruments.

SOUND GENERATOR

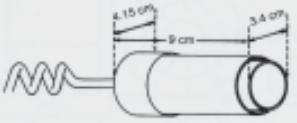
The generator transmits a distinctive ultrasonic signal in the 45 kilohertz region. The generator saturates an area with ultrasound which penetrates small holes and cracks. The air probe uses the escaping sound beams to home in on leaks. The generator is small enough to fit in small openings and powerful enough to make locating potential leaks easy. A light emitting diode flashes when the unit is in operation.

CONTACT PROBE



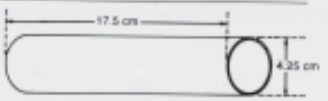
This probe is used to detect ultrasonic sounds which are transmitted along the surface of a rigid structure. The ultra sound may originate inside the structure or it may develop as a result of leakage through the structure. This probe ignores all airborne sound, both sonic and ultrasonic. The long metal stylus (wave guide) has several other advantages: it allows rapid testing, access to hot or dangerous areas and access to difficult to reach locations such as buried pipes. The probe is often used to monitor machinery, locate internal leaks, find electrical arcing and analyze steam trap operation.

AIR PROBE



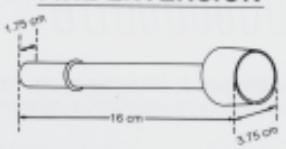
The Sonic 3000 air probe detects airborne ultrasonic signals in a 22° angle from its tuned directional cone. It ignores all sonic background frequencies commonly found in noisy factory areas. The probe takes advantage of high energy, directional beams produced in the 45 kilohertz region. The air probe makes it easy to pinpoint leaks even at great distances.

FOCUSING EXTENSION



This attachment to the air probe focuses ultrasonic energy and narrows the search pattern of the air probe making it easier to spot problems at a distance. It is also used to block background interferences and to permit pinpointing of leakage where it may be dangerous for the operator to get too close to the problem area.

FINE EXTENSION



This attachment to the air probe absorbs interfering noise and narrows the search pattern to a few degrees. It is useful in locating leaks among complex piping especially when there is more than one leakage site. The fine extension makes locating small vacuum leaks easier.

The Sonic 3000 Was Designed Ergonomically

- Lightweight detector with belt clip and probe holder makes it easy to wear. Controls are located on top of the detector unit for easy access.
- The controls and the meter have been designed to be easy to understand, read and record so the Sonic 3000 can be operated by non-technical personnel.
- The high resolution stereo headphones come with individual volume control for each ear. They are comfortable enough to wear all day.

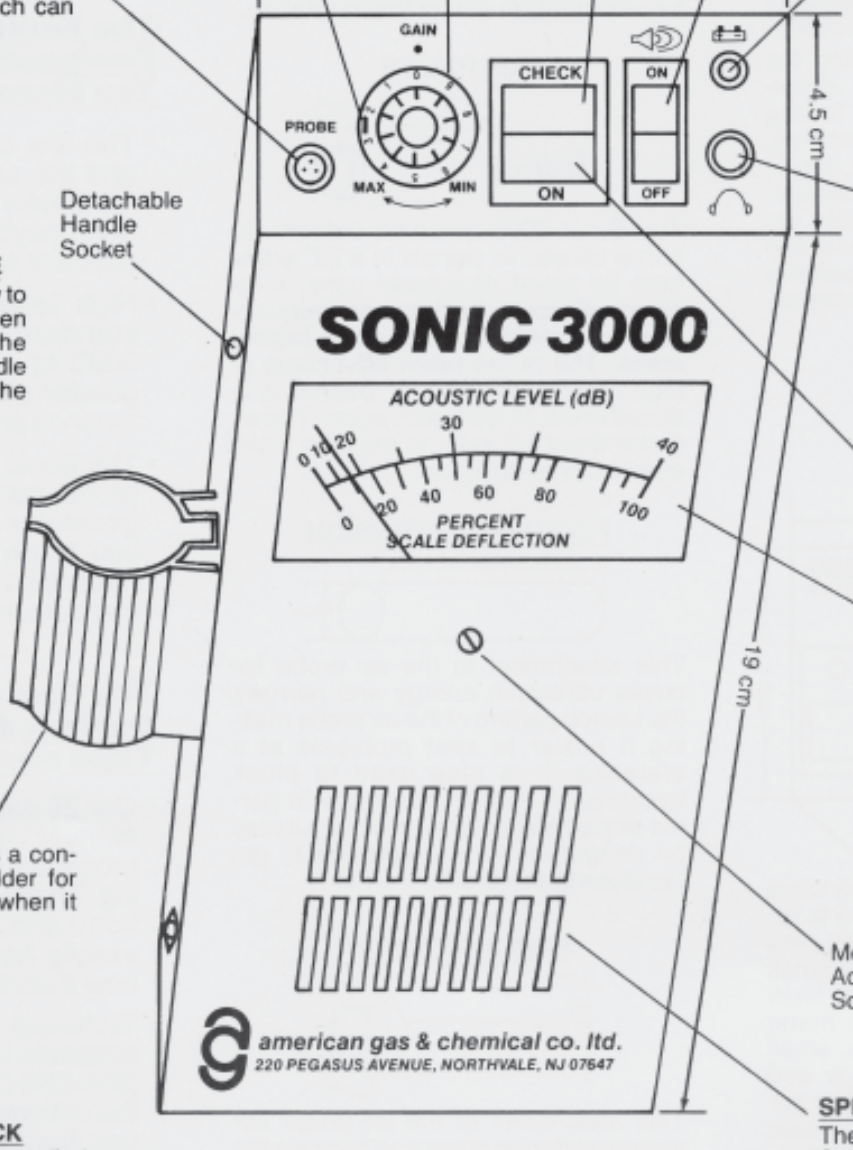
The Sonic 3000 Was Designed to Save You Money

- The low cost of the Sonic 3000 and the savings that can be immediately generated means a rapid payback. Send for our free payback analysis bulletin.
- High sensitivity (exceeds ASTM standards) allowing the Sonic 3000 to detect smaller leaks at greater distances and find maintenance problems earlier.
- The Sonic 3000 M includes an air probe, contact probe and sound generator. This versatility allows you to do more jobs and eliminates the need for single use special purpose equipment.

The Sonic 3000 Was Designed to Save You Time and Trouble

- Our 28 page spiral bound owners manual contains detailed testing procedures, sample record keeping charts, application information, and clear instructions on exactly how to use the unit and how it works.
- Technical assistance is always available on our toll-free number (800-288-3647) to help you get the maximum utilization from your unit from the day you receive it.
- The quality of the Sonic 3000 is so high that we are able to guarantee it for a full two years. This guarantee means a trouble free dependable unit with no repair hassles.

RECHARGEABLE DETECTOR DIAGRAM



SENSITIVITY CONTROL
A 10 turn, 3 digit readout provides precise control of the instrument's gain making measurements easier and assuring repeatable settings. The locking lever protects against accidental changes in settings.

BATTERY CHECK
The battery check and battery light are placed so that checks can be made while the unit is in use without the need to remove it from your belt.

SPEAKER SWITCH
Provides positive control of the sound function making it possible to record good and bad sounds while listening to the sound over the speaker.

QUICK CONNECT SOCKET
Probe attachments lock into place so accidental disconnects during testing are eliminated. Probes have retractable cables which can be extended 5 feet.

EARPHONE RECORDER JACK
High resolution stereo headphones, with individual volume controls for each ear, are included with the Sonic 3000 M. These block out external noise and amplify signals from the detector so that the sound output is easy to hear in all environments.

DETACHABLE HANDLE
The handle makes it easy to carry and use the unit when it is not attached to the operator's belt. The handle folds back to support the Sonic for bench use.

POWER SWITCH
A 3 function rocker switch (ON/ OFF/ BATTERY CHECK) provides positive control making the Sonic 3000 easier to use.

METER
The 90° analog meter has a taut band needle movement, that eliminates erratic readings so measurements are easier to see. The meter has a linear scale and 40db logarithmic scale making measurements more reliable. The meter face is scratch-resistant acrylic.

PROBE HOLDER
The holder provides a convenient non-slip holder for the attached probe when it is not in use.

RECHARGER JACK
The Sonic 3000 is supplied with a 9 volt rechargeable battery and recharger which can be used to continuously charge the unit without damage to the batteries.

SPEAKER
The audible output of the Sonic allows the detector to achieve much of its versatility. Each problem type produces a distinct sound which allows the user to rapidly identify the source and assess the extent of the problem.

SPECIFICATIONS

Detector Battery	Self contained Nickel-Cadmium rechargeable 9 Vdc ± .7 at 20mA
Transmitter Battery	9 Vdc ± .7V at 10mA
Sensitivity	10^{-2} std cc/sec leak rate.
Detector Dimensions	7.5" x 4.5" x 1.75"
Circuitry	Solid State Integrated Circuit.
Temperature Range	−10°F to 150°F
Meter	100 micro amp 90° taut-band needle movement 0-100 linear scale & 0-40 dB scale
Repeatability	99%
Detector Construction	Rugged .050 Aluminum
Carrying Case Dimensions	19" x 15" x 4"

THE SONIC 3000 GUARANTEE

We guarantee the Sonic 3000 will save you time and money by detecting leaks and other maintenance problems more easily and quickly. If you are not completely satisfied by the end of the first month simply return your instrument and we will refund your entire purchase price.

american gas & chemical co., ltd.
220 Pegasus Avenue, Northvale, NJ 07647

CALL TOLL FREE 1-800-288-3647
201-767-7300 fax:201-767-1741 www.amgas.com

Specifications

Physical	
Dimensions	180 mm H x 92 mm W x 46 mm D (7.1" H x 3.6" W x 1.8" D)
Weight	450g (0.99 lb) (including batteries)
Power	
Power Supply	Three AA batteries
Run Time	8 hours
Operating Environment	
Operating Temperature	0°C to 55°C (32°F to 131°F)
Storage Temperature	0°C to 70°C (32°F to 158°F)
Sealing	Impactant resistant, dust and splash proof, gasket sealed case tested to IP54
Transducer	
GE Part Number	389-024-400

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