



AUTOMATIC HALOGEN HFC/CFC/HCFC LEAK DETECTORS

Owner's Manual

Covers Leak Detector Models:

TIF5050A- Automatic Halogen Leak Detector

TIF5550A- Pump Style Automatic Halogen Leak Detector

**TIF5650A- Pump Style Automatic Halogen Leak Detector
with LED Leak Intensity Indicators**

**TIF5750A- Super Scanner Halogen Leak Detector with
LED Leak Intensity Indicators**

ALL MODELS ARE:



CLASS 1 DIVISION 2 GROUPS A, B, C & D HAZARDOUS
LOCATIONS HAND HELD GAS DETECTOR CLASSIFIED
BY UNDERWRITERS LABORATORIES, INC. © AS TO
FIRE ELECTRICAL SHOCK AND EXPLOSION HAZARDS
ONLY. READ OWNERS MANUAL BEFORE OPERATING.
CAUTION: TO REDUCE THE RISK OF ELECTRIC
SHOCK, DE-ENERGIZE UNIT BEFORE REPLACING
SENSING TIP OR SERVICING UNIT. USE ONLY WITH
1.5V ALKALINE BATTERIES SIZE C.

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**DESIGN CERTIFIED BY
MET LABORATORIES, INC. TO MEET
SAE J1627 FOR R134a, R12 AND R22.**

TABLE OF CONTENTS



General Description	2
Features	2
Parts & Controls	3
Operating Instructions	4
Operating Tips	6
Applications	7
Maintenance	8
Troubleshooting	9
Replacement Parts	10
Specifications	10
Warranty	11
ESPAÑOL	11
FRANÇAIS	19
DEUTSCH	26

GENERAL INFORMATION

This manual contains operating instructions for four models. Basic operation of all units is the same. Individual model features and specific operating characteristics are noted within the text as applicable.

Refer to the packaging or unit labels for identification of your model. Your new unit has been specifically designed to meet both current and future leak detection needs by providing you with the ability to detect a multitude of refrigerants. See the Applications section on page 7 for more detailed information on detectable compounds.

Just turn the unit on and begin searching for leaks. A computer-like beeping signal will increase in frequency as the leak source is approached. In situations where the area is heavily contaminated with gas the unit can be adjusted to the contaminated atmosphere to prevent misleading readings.

For best results please read this manual carefully before attempting to operate the unit.

FEATURES

All models:

- Detects ALL Halogenated Refrigerants
- Long flexible stainless probe reaches all areas
- Enhanced electronic circuitry
- Constant power indication
- Rapid warm up
- Cordless and Portable, operates on 2 "C"-cell batteries
- Finds leaks in contaminated atmospheres
- Super sensitive, responds to minute traces of halogen gases
- Carrying case included
- One Year Warranty
- Made in USA

Additional Model 5550A features:

- High efficiency pump reduces response and clearing times
- Coil cord probe handle increase flexibility

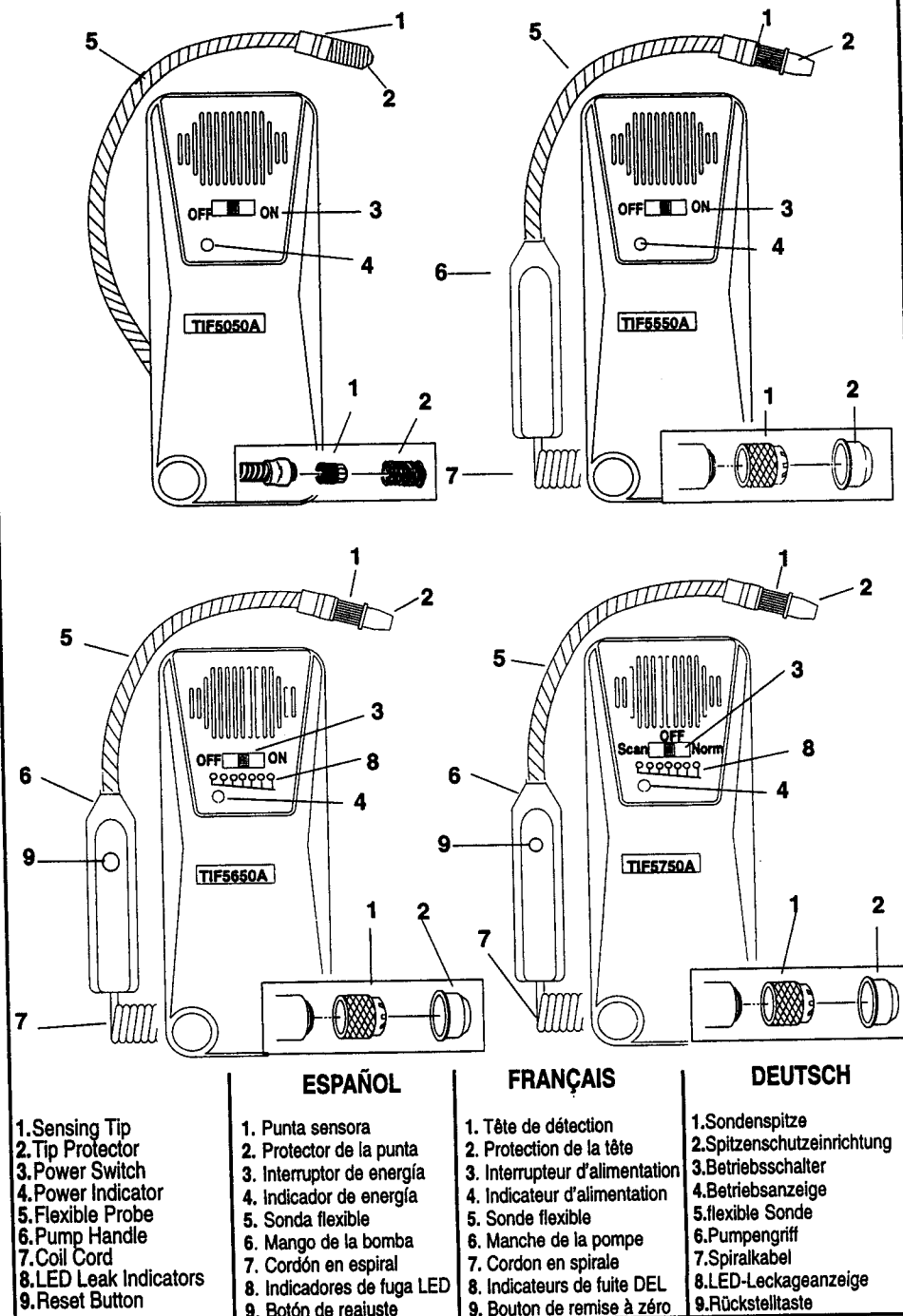
Additional Model 5650A features:

- LED Leak Intensity Indicators show relative leak size.
- High efficiency pump reduces response and clearing times
- Coil cord probe handle increases flexibility
- Reset button in probe handle

Additional Model 5750A features:

- Exclusive SCAN mode increases sensitivity and quickens leak checking
- LED Leak Intensity Indicators show relative leak size
- High efficiency pump reduces response and clearing times
- Coil cord probe handle increases flexibility
- Reset button in probe handle

PARTS AND CONTROLS



OPERATING INSTRUCTIONS



Automatic Calibration

The leak detector models covered by this manual are all equipped with special automatic circuitry. A good understanding of how this circuitry works will enable you to take full advantage of this feature and avoid misuse.

The automatic calibration feature works like this: Whatever level of gas surrounds the tip when the unit is turned on, or reset, is taken as zero. Only a greater concentration of gas will be indicated. If there is no gas around the tip when the unit is turned on, or reset, the unit is set at its maximum sensitivity and will indicate the presence of any halogen. However, if, for example, there is a 100-ppm concentration around the tip at turn on, or reset, only a concentration above 100 ppm will be indicated.

The units may be further "reset" or automatically 're-calibrated', to ambient concentrations at any point. If an alarm occurs before a leak is pinpointed, the units can be reset, or re-calibrated, to ignore this level; allowing you to approach the source of the leak (which creates a larger concentration) more closely. Follow the instructions in the Operating Tips section on page 6 to reset, or re-calibrate, your particular model.

The automatic calibration feature makes it possible for you to ignore ambient concentrations of gas and pinpoint leaks much more easily. For best results turn the unit on in fresh air and then move towards the suspected leak area. Reset as often as necessary to pinpoint the exact location of the leak.

NOTE: Because of this automatic feature, if the probe is placed in front of an open refrigerant cylinder, and the unit is switched on, a leak may NOT be indicated. This occurs because the level at the tip, at turn on, is taken as zero; only a concentration above the level at the cylinder would be indicated.

FOR MODEL 5750A ONLY:

Model 5750A Halogen Leak Detector offers a unique Scan mode feature in addition to the NORMAL (ON) operation mode. By using the Scan Mode a system can be checked for leaks with a few quick passes of the probe. Scanning will show where a region of the system is leaking. The exact leak point can then be located by switching to the NORMAL (ON) mode of operation. This "double-barreled" approach to leak finding is an enormous time saver.

How to Use the Scan Mode:

Switch on the unit to the Scan Mode by moving the Power Switch to the left. The beeping rate (in fresh air) will quicken compared to the NORMAL (ON) mode as the instrument automatically adjusts for supersensitivity.

When in the scan mode always move the probe in a constant motion over the suspected area, keeping the probe conveniently close to the pipe, joint etc.... Two to three inches per second is a suitable scan rate.

OPERATING INSTRUCTIONS



This mode should be used to initially find a leak. Upon receiving an alarm (a rapid increase in signal) the leak can be more precisely located by switching to NORMAL (ON) mode (Right hand switch position). The beeping rate (in fresh air) will return to its normal, slower rate. Follow the instructions for leak detection as described in the next section.

OPERATION (ALL MODELS):

1. Turn unit on by moving the power switch to the "ON" position.
2. The unit will begin to beep at a slow steady rate. Allow the unit to stabilize for five or six beeps and then begin searching for leaks.
3. **MODEL 5750A ONLY:** Begin leak checking in the SCAN mode. Switch to NORMAL (ON) sensitivity if needed as described above.

Leak Detection Techniques

NOTE: On Automotive A/C Systems leak test with the engine not in operation.

1. The air conditioning or refrigeration system should be charged with sufficient refrigerant to have a gauge pressure of at least 340 kPa (50 psi) when not in operation. At temperatures below 15° C (59° F), leaks may not be measurable, since this pressure may not be reached.
2. Take care not to contaminate the detector probe tip if the part being tested is contaminated. If the part is particularly dirty, or condensate (moisture) is present it should be wiped off with a dry shop towel or blown off with shop air. No cleaners or solvents should be used, since the detector may be sensitive to their ingredients.
3. Visually trace the entire refrigerant system, and look for signs of air conditioning lubricant leakage, damage, and corrosion on all lines, hoses, and components. Each questionable area should be carefully checked with the detector probe, as well as all fittings, hose to line couplings, refrigerant controls, service ports with caps in place, brazed or welded areas, and areas around attachment points and hold-downs on lines and components.
4. Always follow the refrigerant system around in a continuous path so that no areas of potential leaks are missed. If a leak is found, always continue to test the remainder of the system.
5. At each area checked, the probe should be moved around the location, at a rate no more than 25 to 50 mm/second (1-2 in/second), and no more than 5 mm (1/4 in) from the surface, completely around the position. Slower and closer movement of the probe greatly improves the likelihood of finding a leak (see Fig. 2, below). Any increase in beep rate is indicative of a leak.

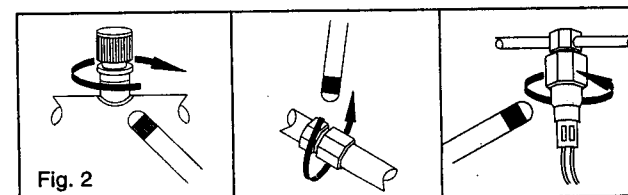


Fig. 2

OPERATING INSTRUCTIONS

6. An apparent leak shall be verified at least once as follows:
- Blow shop air into the area of the suspected leak, if necessary, and repeat the check of the area. In cases of very large leaks, blowing out the area with shop air often helps locate the exact position of the leak.
 - First move the probe to fresh air and reset. Then hold the probe tip as close as possible to the indicated leak source and slowly move around it until the leak is confirmed. **5750A ONLY:** Switch back to NORMAL (ON) mode for reduced sensitivity if unable to pinpoint the leak.

Automotive A/C Systems only -

7. Leak testing of the evaporator core while in the air conditioning module shall be accomplished by turning the air conditioning blower on high for a period of 15 seconds minimum, shutting it off, then waiting for the refrigerant to accumulate in the case for 10 minutes.

After such time, insert the leak detector probe into the blower resistor block or condensate drain hole, if no water is present, or into the closest opening in the heating/ventilation/air conditioning case to the evaporator, such as the heater duct or a vent duct. If the detector alarms, a leak apparently has been found.

All Systems -

8. Following any service to the refrigerant system and any other service which disturbs the refrigerant system, a leak test of the repair and of the service ports of the refrigerant system should be done.

OPERATING TIPS

1. To reset, or automatically re-calibrate, you unit as described on page 4, follow the instruction below for you particular model:

5050A	Switch the unit OFF, and back ON again
5550A	Switch the unit OFF, and back ON again
5650A	Depress the Blue RESET button on probe handle
5750A	Depress the Blue RESET button on probe handle

2. In areas that are heavily contaminated with gas the unit may be reset to block out ambient contamination and pinpoint the leak. The probe should not be moved while the unit is being reset. The unit can be reset as many times as necessary to pinpoint the leak.
3. In windy areas even a large leak can be extremely difficult to find because the escaping gas is rapidly carried away from the leak source. Under these conditions, it is often necessary to shield the potential leak area.
4. In situations where large leaks mask the presence of very small leaks the larger leaks must be located and repaired first. Finding the small leaks will then become a much easier task.
5. Be aware that the detector may alarm if the probe tip comes in contact with moisture and/or solvents. Therefore avoid contact with these when leak checking.

OPERATING TIPS

6. Models 5550A, 5650A and 5750A may be used with either one hand or two. To operate with one hand, simply straighten the flexible probe and leave it attached to the case body. To access more difficult to reach areas, detach the probe from the case and hold the probe with you other hand; the benefits of the 36" coiled cord are now employed.

5750A ONLY

7. The SCAN mode should be used to initially find a leak, switching to the NORMAL (ON) mode will allow estimation of leak size; a leak which is undetectable in NORMAL (ON) mode is less than 1/2 oz. per year and may not need repair. If you have difficulty finding leaks in NORMAL (ON) mode, switch to the SCAN mode to enhance sensitivity. Bear in mind that the SCAN mode provides Super-sensitivity. False signals may occur if the probe is moved very rapidly (i.e. 2-3 feet per second). If this occurs it should be of no concern since this type of movement is not beneficial in leak detecting.

APPLICATIONS

All of the Leak Detectors covered by this manual may be used to:

- Detect refrigerant gas leaks in Air Conditioning or Refrigeration systems and storage/recover containers. These detectors will respond to ALL halogenated (contains Chlorine or Fluorine) refrigerants. This includes, but is not limited to:
 - CFCs e.g. R12, R11, R500, R503 etc...
 - HCFCs e.g. R22, R123, R124, R502 etc...
 - HFCs e.g. R134a, R404a, R125 etc...
 - Blends such as AZ-50, HP62, MP39 etc...
- Detect Ethylene Oxide gas leaks in hospital sterilizing equipment (detects halogenated propellant)
- Detect SF-6 in high voltage circuit breakers
- Detect most gases that contain Chlorine, Fluorine and Bromine (halogen gases)
- Detect cleaning agents used in dry cleaning applications such as perchloroethylene.
- Detect Halon gases in fire extinguishing systems

MAINTENANCE

Proper maintenance of your Leak Detector is very important. Carefully following the instructions, outlined below, will reduce performance problems and increase the life expectancy of the unit.

WARNING: TURN UNIT OFF BEFORE REPLACING THE SENSING TIP. FAILURE TO DO SO MAY RESULT IN A MILD ELECTRICAL SHOCK!

- **Keep the sensing tip clean:** Prevent dust, moisture and grease build-up by utilizing the provided tip protector. Never use the unit without the protector in place.

Before using the unit **always** inspect the tip and protector to see that they are free of dirt and/or grease. To clean:

1. Remove protector by grasping and pulling off tip.
2. Clean protector with shop towel and/or compressed air.
3. If the Tip itself is dirty it can be cleaned by unscrewing it and immersing in a mild solvent, such as alcohol, for a few seconds, and then using compressed air and/or a shop towel to clean.

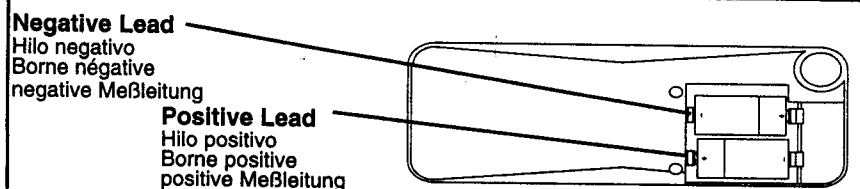
NOTE: Never use solvents such as gasoline, turpentine, mineral spirits, etc... as these will leave a detectable residue and desensitize your unit.

- **Sensing tip replacement:** The tip will eventually wear out and require replacement. It is difficult to predict exactly when this will occur since tip longevity is directly related to the conditions and frequency of use. The tip should be replaced whenever the beep rate increases in frequency or becomes erratic, even in a clean, pure, air environment.

To replace the tip (Refer to the inset Figures on page 3.)

1. Make sure the unit is in the OFF position.
2. Remove the old tip by unscrewing in a counter-clockwise direction.
3. Use the supplied replacement tip, **located in the battery compartment**, and screw it on in a clockwise direction until finger tight.

- **Batteries affect unit performance.** When the selector switch is in the ON position the red power indicator light should be on. If the light does not come on, then 2 new and/or tested size "C" Alkaline batteries should be installed. Batteries must supply at least 2.2v (under load) to light power indicator and operate unit. Always check battery voltage under load: Remove battery cover and turn unit on. Measure voltage across the batteries as indicated by arrows in the following diagram.



TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Erratic and/or continuous beeping signal	Dirty tip or protector	Replace or clean tip or protector *
Erratic and/or continuous beeping signal	Low battery condition	Check pwr light ** & voltage. Replace batteries if needed
Reduced sensitivity	Tip is worn out	Replace tip
Reduced sensitivity	Dirty tip or protector	Replace or clean * tip or protector
Probe pump runs but unit does not beep	Batteries reversed	Remove and correct
Unit will not detect a known leak	Tip is worn out	Replace tip
Unit will not detect a known leak	Low battery condition	Check power light** & voltage. Replace batteries if needed
Unit will not detect a known leak	Turned on in presence of a leak	Reset unit in a clean atmosphere (see page 6)
Unit will not detect a known leak	Dirty tip or Protector	Clean or * Replace tip or Protector

* Remember that a worn out tip, no matter how clean, is still worn out and will result in poor unit performance.

** Battery condition can be judged by checking the power indicator light on the front of the unit. Weak batteries may cause the light to "blink". Good batteries will result in a steady light.

NOTE: It is best to measure the battery voltage, as indicated in the maintenance section on page 8, before reaching a conclusion.

REPLACEMENT PARTS



Standard Equipment

Your Halogen Leak Detector comes equipped with one Carrying Case, one Owner's Manual, and one replacement Sensing Tip. **The replacement tip is located inside the unit, in the battery compartment.**

To purchase replacement parts for you leak detector please contact your local TIF distributor. To ensure that you obtain the correct parts it is best to reference the part number when placing your order.

Replacement Parts

Model	Part Description	Part #
5050A	Carrying Case	447
5550A/5650A/5750A	Custom Carrying Case	548
5050A	Maintenance Kit 3 Sensing Tips 3 Tip Protectors	554
5550A,5650A, 5750A	Maintenance Kit 3 Sensing Tips 3 Tip Protectors	555

SPECIFICATIONS



Power Supply:	3V DC; two "C" cell Alkaline batteries
Maximum Sensitivity:	Per SAE J1627 Rating Criteria; Certified for R12, R22 and R134a @ 0.5 oz/yr. (14gr/yr)
Ultimate sensitivity with probe stationary: 5750A	less than 0.1 oz/yr (3 gr/yr) for all Halogen based refrigerants.
5050A,5550A,5650A	less than 0.25 oz/yr (7gr)
Operating Temperature:	0°-52° C (30° to 125° F)
Battery Life:	Approximately 50 hours normal use
Duty Cycle:	Continuous, no limitation
Response Time:	Instantaneous
Reset Time:	One second
Warm-Up Time:	5 to 6 Seconds
Unit Weight:	20 ounces (560 grams) (with batteries)
Unit Dimensions:	8" x 3" x 1.8" (20.3 x 7.6 x 4.6 cm)
Probe Cord Length:	36" or 91.5 cm