



**TIF Instruments, Inc.**  
9101 NW 7th Avenue  
Miami, FL 33150  
Phone (305) 757-8811  
FAX (305) 757-3105

**Repair Location:**  
TIF Service Center  
3360 NW 110th Street  
Miami, FL 33167



**TIF5750  
SUPER SCANNER  
HALOGEN LEAK  
DETECTOR**

**OWNER'S MANUAL**

U.S. Patent # 32,552 and 4,282,521  
Other Patents Pending

PM108 1/94 Printed in U.S.A.

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

\*When used in Scan Mode



CLASS I 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.

## TABLE OF CONTENTS



Introduction .....	2
Features .....	3
Parts & Controls .....	4
Operating Instructions .....	5
Automatic Calibration .....	5
Using the Scan Mode .....	6
Leak Detection Techniques .....	8
Operating Tips .....	11
Product Applications .....	13
Maintenance .....	14
Sensing Tip .....	14
Batteries .....	16
Troubleshooting Guide .....	17
Replacement Part Information .....	19
Specifications .....	20
Warranty and Repair Information .....	21

## INTRODUCTION

Congratulations on your decision to purchase TIF's newest Halogen Leak Detector. You have made an excellent choice. TIF, an innovator in electronic leak detection, patented the first hand held battery operated unit in 1971 and the first automatic unit in 1981. In intervening years TIF has made constant improvements that have resulted in making TIF the leading manufacturer of electronic leak detectors in the world.

Your new unit is the first SAE certified PORTABLE Electronic Refrigerant Leak Detector. The TIF5750 is "Design Certified" for CFC, HFC and HCFC refrigerants. It will detect ALL refrigerants in quantities far below industry leak standards.

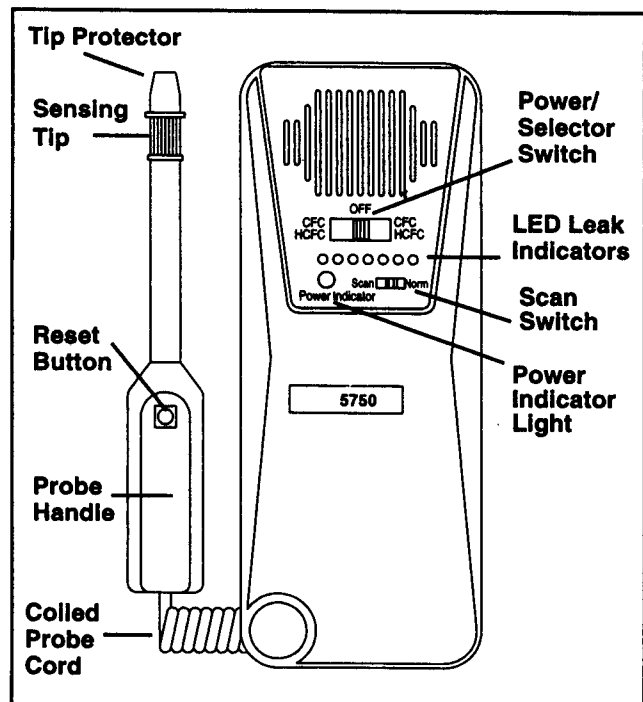
Just turn the Detector on and begin scanning for leaks. An audible computer-like beeping signal will increase in frequency and an LED Leak Size Indicator will light as the leak source is approached. In situations where the area is heavily contaminated with gas the unit can be automatically adjusted to the contaminated atmosphere to prevent misleading readings.

For best results please read this manual carefully before attempting to operate the unit. Should you experience any difficulty or require technical assistance please call our TIF Customer Service Hotline at 1-800-327-5060.

## FEATURES

- Design certified to SAE J1627 for R134a, R12, and R22
- Super Sensitive Scan Mode to quicken leak checking
- Switchable to detect either CFC, HFC or HCFC gases
- LED leak intensity display for leak size indication
- High efficiency pump reduces response time
- Long flexible coiled probe cord for hard-to-reach areas
- Automatic calibration circuit
- Reset button for instant re-calibration
- Cordless - Operates on two "C" Cell batteries
- Constant power indication
- Finds leaks in contaminated atmospheres
- Super sensitive: Responds to minute traces of Halogen gases
- No dangerous or poisonous gases are generated
- Rugged blow-molded carrying case
- Two Patented features, other patents pending
- Made in USA
- One Year Warranty

## PARTS & CONTROLS



4

## OPERATING INSTRUCTIONS

### Automatic Calibration

The Super Scanner Halogen Leak Detector is equipped with patented 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 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 large leak, and the unit is switched on, a leak would **NOT** be indicated. This occurs because the level at the tip, at turn on, is taken as zero; only a concentration **above** the level of the leak would be indicated.

5

## OPERATING INSTRUCTIONS



### Using the Scan Mode

Your new Super Scanner Halogen Leak Detector offers a unique Scan mode feature in addition to the two normal operation modes. 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 mode of operation. This "double-barreled" approach to leak finding is an enormous time saver.

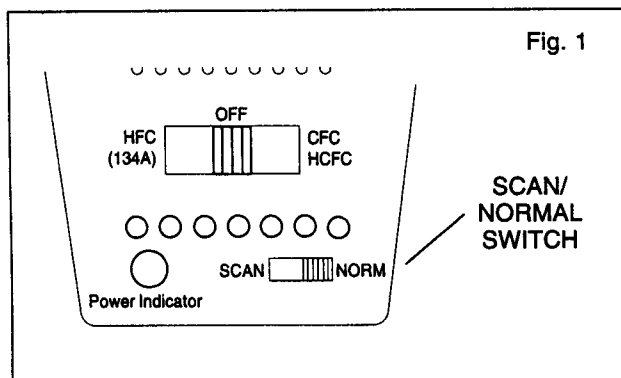


Fig. 1

SCAN/  
NORMAL  
SWITCH

## OPERATING INSTRUCTIONS



### How to Use The Scan Mode

Switch on the unit, choosing the appropriate switch position as described on page 8. Then switch to the Scan Mode using the control in the RH corner of the faceplate (see Fig. 1., p. 6). The beeping rate (in fresh air) will quicken compared to the normal 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.

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 mode. 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.

Note that the certification to SAE J1627 applies only when the unit is operated in the SCAN MODE using the audio alarm as the leak indicator.

## OPERATING INSTRUCTIONS

### Getting Started

1. Turn unit on by moving the selector switch to the position which identifies the type of gas to be detected. IF THE GAS IS NOT KNOWN, START IN THE "HFC" POSITION (see p. 11).

#### GAS IDENTIFICATION CHART

HFC	R125, R134a, HP62
CFC	R12, R11, R13, R113, R114, R500, R503
HCFC	R22, R123, R124, R502, other "HP" and "MP" Blends

2. The unit will begin to beep at a slow, steady rate. Allow the unit to stabilize for five or six beeps and then switch to the Scan Mode to search for leaks.

### 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.

## OPERATING INSTRUCTIONS

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.

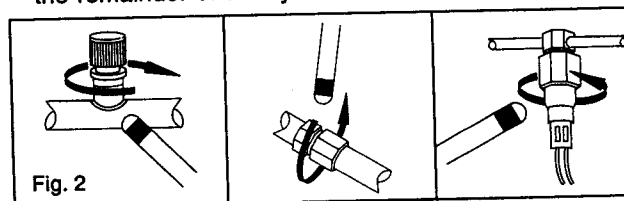


Fig. 2

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 to 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).

## OPERATING INSTRUCTIONS

Any increase in beep rate is indicative of a leak.

6. An apparent leak shall be verified at least once as follows:

- a) 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.
- b) 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. Switch back to NORMAL 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 20 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.

## OPERATING INSTRUCTIONS

### 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. The SCAN mode should be used to initially find a leak, switching to the NORMAL mode will allow estimation of leak size; a leak which is undetectable in NORMAL mode is less than 1/2 oz. per year and may not need repair.
2. The selector switch is, in essence, a sensitivity switch with the 'HFC' position being the most sensitive. The unit cannot, in fact, tell the difference between CFC, HCFC or HFC compounds.

If you have difficulty finding leaks in the CFC/HCFC position while in NORMAL mode, switch to the HFC position to gain added sensitivity. Switching to SCAN mode enhances sensitivity even more.

## OPERATING INSTRUCTIONS

3. 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.

**To reset for contaminated areas:** push reset button on probe handle and then proceed with leak checking.

4. 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.
5. 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.
6. 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.

Also 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 INSTRUCTIONS

### Applications

The Super Scanner Halogen Leak Detector may be used to:

- Search for refrigerant gas leaks in air conditioning and refrigeration systems and storage/recovery containers (all CFC/HFC/HCFC gases)
- Search for Ethylene Oxide gas leaks in hospital sterilizing equipment (detects Freon mixture)
- Search for SF-6 in high voltage circuit breakers
- Search for most gases that contain Chlorine, Fluorine and Bromine (halogen gases)
- Search for cleaning agents used in dry cleaning applications such as perchloroethylene
- Search for Halon gases in fire extinguishing systems
- Search for contaminants in oil to be recycled



## UNIT MAINTENANCE

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

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

- **Keep the sensing tip clean:** Your new unit is equipped with a Sensing Tip Protector to keep the Tip free of contamination. 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 it off the 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.

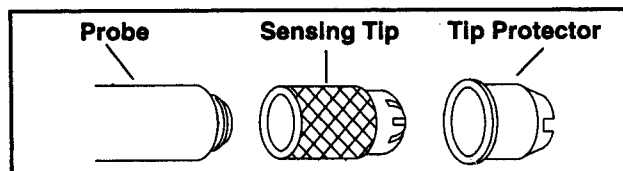
**NOTE:** Never use solvents such as gasoline, turpentine, mineral spirits, etc... as these will leave a detectable residue and desensitize your unit.

## UNIT MAINTENANCE

- **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 in a clean, pure air environment.

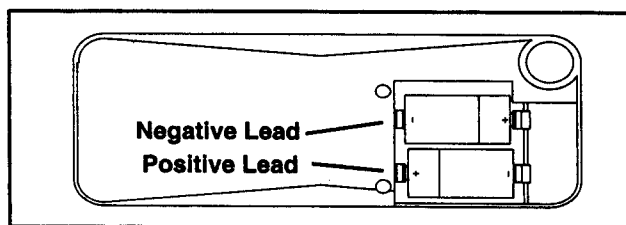
Refer to the figure below to replace the tip. Make sure the unit is in the OFF position. Pull off the protector and remove the old tip by unscrewing in a counter-clockwise direction. Use the replacement tip, **located in the battery compartment**, and screw it on in a clockwise direction until finger tight; replace protector.



**Note:** Old style tips used on previous models will not work on your new detector.

## UNIT MAINTENANCE

- **Batteries affect unit performance.** When the selector switch is in either 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 diagram below.



- **To Install batteries:** switch unit OFF, unscrew the large screw located on the back of the instrument case and remove the battery cover. Install two fresh batteries, replace the battery cover and tighten the screw. The power indicator light should illuminate when the unit is switched back on.

**NOTE:** Low temperatures will affect battery voltage.

16

## TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	CORRECTION
Continuous Beeping Signal	Loose Tip	Tighten Tip finger tight
Erratic and/or continuous beeping signal	Dirty tip or tip 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	Incorrect Switch position	Switch to 'HFC' position or SCAN mode
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

17

## TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	CORRECTION
Unit will not detect a known leak	Turned on in presence of a leak	Reset unit in a clean atmosphere (see pp. 5 and 12)
Unit will not detect a known leak	Dirty Tip or Tip 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 16, before reaching a conclusion.

## REPLACEMENT PARTS

### Standard Equipment

Your Halogen Leak Detector comes equipped with two "C" Cell batteries, 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

Part Description	Part #
Sensing Tip .....	TIF571
Sensing Tip Protector .....	TIF572
Custom Carrying Case .....	TIF548

## 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.  
Ultimate sensitivity with probe  
stationary: less than 0.1 oz/yr  
for all Halogen based refrigerants.  
**Operating Temperature:** 30° to 125° F (0° to 52° C)  
**Battery Life:** Approximately 50 hours normal use (Alkaline)  
**Duty Cycle:** Continuous, no limitation  
**Response Time:** Instantaneous  
**Reset Time:** One second  
**Warm-Up Time:** 5 to 6 Seconds  
**Unit Weight:** 20 ounces or 560 grams (with batteries)  
35 ounces or 980 grams (in package)  
**Unit Dimensions:** 8" x 3" x 1.8" or  
20.32 cm x 7.62 cm x 4.57 cm  
**Probe Cord Length:** 36" or 91.44 cm

## WARRANTY & REPAIR



### Limited Warranty and Repair/Exchange Policy

This instrument has been designed and manufactured to provide unlimited service. Should the unit be inoperative, after performing the recommended maintenance, a no-charge repair or replacement will be made to the original purchaser if the claim is made within one year from the date of purchase. This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use.

This warranty does not cover batteries, sensing tips or any other materials that wear out during normal operation of the instrument.

### Returning Your Unit For Repair

Before returning your instrument for repair please make sure that you have carefully reviewed the **Operating Tips**, **Troubleshooting Guide** and **Unit Maintenance** sections of this manual to determine if the problem can be easily repaired. Make sure that you have either replaced or cleaned the **sensing tip**, and **protector** and that the **batteries** are working properly **BEFORE** returning the unit.

If the instrument still fails to work properly send the unit to the repair facility address on the back cover of this manual. Repaired or replaced tools will carry an additional 90 day warranty. For more information please call (800) 327-5060.