TIF RX-1A and XL-1A

Automatic Halogen Leak Detectors

BOTH MODELS ARE:

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

CLASS 1 DIVISION 2 GROUPS 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.

CE

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GENERAL INFORMATION

The TIF RX-1A and XL-1Aleak detectors are the culmination of over 30 years of Leak Detector manufacturing experience. TIF is proud to present these tools into which we have incorporated all of our experience, and years of customer feedback, in the hope of providing our valued customers with the best of everything; price, performance and reliability.

An advanced micro-processor is at the heart of each unit. It permits more advanced management of the circuitry and sensing tip signal than ever before possible. Additionally, the number of components used in the circuit is reduced 50%, increasing reliability and efficiency. The micro-processor monitors the sensing tip and battery voltage levels 4000 times per second, compensating for even the most minor fluctuations in signal. This translates into a stable and dependable tool in almost any environment.

Convenience features have been added to enhance usability. A revolutionary new case design gives the user grip and control, and places the visual indicators (RX-1A only) in direct sight during use.

Please take a few moments to read through the following pages, in order to understand and benefit from all the capabilities of your new RX-1A or XL-1A. We trust that you will be 100% satisfied with your new purchase. If you have any questions or comments after reviewing the manual, please feel free to contact us in the USA, toll free at (800) 327-5060 from 8AM to 5PM EST.

FEATURES

Both Models Feature:

- Microprocessor controlled circuit with Advanced Digital Signal Processing
- Detect ALL Halogenated refrigerants
- Certified to SAE J1627 for R12, R22 & R134a
- Variable frequency audible alarm
- Constant Power Indication
- Cordless and portable, operate on 2 C-cell batteries
- 14" (35.5cm) flexible stainless probe
- Spare sensing tip included
- UL Classified for Intrinsic Safety
- CE Approved
- Carrying case included, optional holster and reference leak source
- Two Year Warranty

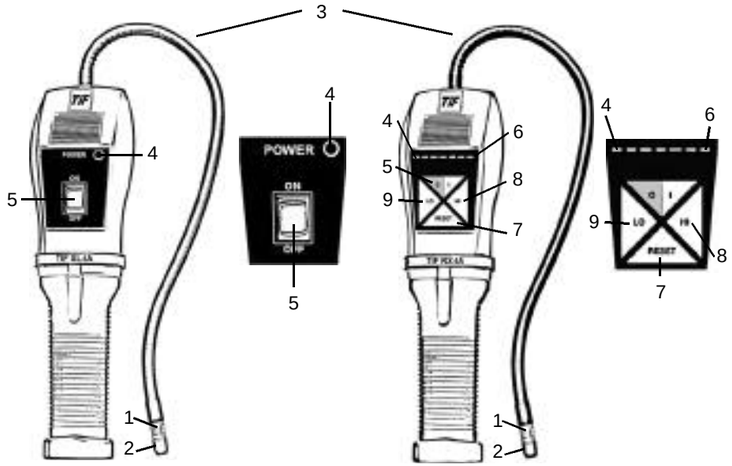
Additional Features of TIF XL-1A

- Single switch control

Additional Features of TIF RX-1A

- Six segment visual leak size indicator
- True mechanical pump provides positive airflow through sensing tip
- High and Low sensitivity levels
- One touch reset
- Tactile keypad controls
- Real time sensitivity adjustment

PARTS & CONTROLS



1 Sensing Tip
2 Tip Protector
3 Flexible Probe
4 Constant Power Indicator
5 Power On/Off
6 LED Leak Indicators (RX-1A only)
7 Reset Button (RX-1A Only)
8 High Sensitivity (RX-1A Only)
9 Low Sensitivity (RX-1A Only)

Fig.1

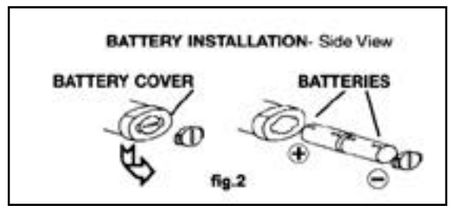


fig.2

GETTING STARTED

Installing Batteries

1. Remove the battery compartment door located on the bottom of the unit by sliding up, as shown above. Install batteries, Positive Polarity towards the battery cover (See Figure 1a).

OPERATING FEATURES

Constant Power Indication

The Constant Power indicator allows the user to see the battery level at all times.
TIF XL-1A - The Red LED will remain on whenever the unit is powered on. If the LED is dim, or is not lit, this is an indication that the batteries should be replaced.
TIF RX-1A - The first LED (leftmost) in the bargraph will remain on whenever the unit is powered on. If the LED is dim, or is not lit, this is an indication that the batteries should be replaced.

Automatic Circuit/Reset Feature

Both detectors feature an Automatic circuit that sets the unit to ignore ambient concentrations of refrigerant. The RX-1A additionally features a Reset function key for convenience.

- Automatic Circuit - Upon initial power on, the unit automatically sets itself to ignore the level of refrigerant present at the tip. Only a level, or concentration, greater than this will cause an alarm.

  CAUTION: Be aware that this feature will cause the unit to ignore any refrigerant present at turn on. In other words, with the unit off if you place the tip up to a known leak and switch the unit on, no leak will be indicated!

- Reset Feature - Resetting the unit during operation performs a similar function, it programs the circuit to ignore the level of refrigerant present at the tip. This allows the user to 'home-in' on the source of the leak (higher concentration). Similarly, the unit can be moved to fresh air and reset for maximum sensitivity. Resetting the unit with no refrigerant present (fresh air) causes any level above zero to be detected.

To Reset the unit:

XL-1A - Switch the unit OFF and back ON again
RX-1A - Press the RESET key. Whenever the unit is reset, all LED's will light for 1 second. This provides a visual confirmation of the reset action.

Sensitivity Adjustment (RX-1A Only)

The TIF RX-1A provides two levels of sensitivity. The base beeping tone is an indication of sensitivity level; the quicker beep rate indicates a higher level. When the unit is switched on, it is set to the high sensitivity position.

1. To change the sensitivity, press the LO key. When the key is pressed, the visual display will momentarily show the four left LED's red. The base beep rate will slow, indicating Low Sensitivity level.

2. To switch back to High Sensitivity, press the HI key. The three right LED's will light momentarily, and the base beep rate quickens.

OPERATING INSTRUCTIONS

1. Switch the unit on
   XL-1A - Move the ON/OFF switch to the ON position.
   RX-1A - Press the "I/O" (Red and Green) key. All LED's will light for two seconds as the unit performs a self check.
2. The unit will begin beeping at a steady rate.
3. Verify the battery level by observing the constant power indicator (see above).
4. Begin searching for leaks. When refrigerant is detected, the audible tone will change to a 'siren' type sound, distinctly different from the base beep rate.
   RX-1A - Additionally, the visual indicators will light progressively as described in the Alarm Indications section.
5. **RX-1A** - Sensitivity can be adjusted at any time during operation by using the HI or LO keys.
6. If a full alarm occurs before the leak is pinpointed, RESET the unit as described above, to reset the circuit to a zero reference.

OPERATING TIPS

The following section includes several general operating tips, and the SAE J1628 recommended procedure for leak detection.

1. In areas that are heavily contaminated with gas, the unit may be reset to block out ambient concentrations of gas. The probe should not be moved while the unit is being reset. The unit can be reset as many times as needed.
2. In windy areas, even a large leak can be difficult to find. Under these conditions, it is best to shield the potential leak area.
3. Be aware that the detector may alarm if the sensing tip comes in contact with moisture and/or solvents. Therefore, avoid contact with these when leak checking.

SAE J1628 Recommended Procedure

NOTE: On Automotive A/C Systems, 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.

OPERATING TIPS

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.

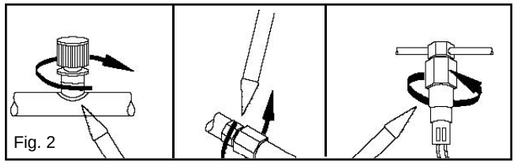


Fig. 2

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.

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.

APPLICATIONS

Both 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, R410a 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 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 alarm sounds or becomes erratic, in a clean, pure, air environment.

MAINTENANCE

To replace the tip:

1. Make sure the unit is OFF.
2. Remove the old tip by unscrewing counter-clockwise.
3. Use the supplied replacement tip, located in the carrying case. Replace by screwing on clockwise.

REPLACEMENT PARTS

Standard Equipment

Your Halogen Leak Detector comes equipped with one Carrying Case, one Owner's Manual, and one replacement Sensing Tip.

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 #	**Part Description**
TIFXP-2	Maintenance Kit 3 Sensing Tips 3 Tip Protectors
TIFXP-4A	Blow Molded Carrying Case
TIF5201	Reference Leak Source

SPECIFICATIONS

Power Supply: 3V DC; two “C" cell Alkaline batteries

Maximum Sensitivity:	Per SAE J1627 Rating Criteria Certified @ 0.5 oz/yr. (14gr/yr)
Ultimate sensitivity	
TIFXL-1A	less than 0.4 oz/yr (11 gr/yr) for all Halogen based refrigerants.
TIFRX-1A	less than 0.25 oz/yr (7 gr/yr) for all Halogen based refrigerants.
Sensing Tip Life:	Approximately 20 hours
Operating Temperature:	30° -125° F (0° to 52° C)
Battery Life:	
TIFXL-1:	Approximately 40 hours normal use
TIFRX-1A:	Approximately 30 hours normal use
Duty Cycle:	Continuous, no limitation
Response Time:	Instantaneous
Reset Time:	One second
Warm-Up Time:	Approximately 2 Seconds
Unit Weight:	1.2 pounds (560 grams) (with batteries)
Unit Dimensions:	9" x 2.5" x 2.5" (22.9cm x 6.5cm x 6.5cm)
Probe Cord Length:	14" or 35.5 cm

WARRANTY & REPAIR

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 TWO years 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, tip protectors, or any other materials that wear out during normal operation of the instrument.

Before returning your instrument for repair please make sure that you have carefully reviewed the Unit Maintenance section 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 tip protector and that the batteries are working properly BEFORE returning the unit. If the instrument still fails to work properly please call the Customer Service Department for an RMA number (800) 327-5060. Pack the instrument and 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.