T-LINE MINI ID ™

R134a REFRIGERANT ANALYZER

OPERATION MANUAL

Manual Part Number: 5-06-4900-74-0
Manual File 023524 Rev. A

456 Creamery Way, Exton, PA 19341, USA
Phone: 610.524.8800 • Fax: 610.524.8807 • Email: info@refrigerantid.com
www.refrigerantid.com

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For Your Safety:

PLEASE READ THIS MANUAL IN ITS ENTIRETY BEFORE ATTEMPTING INSTALLATION OR OPERATION! Attempting to operate the *T-Line Mini ID* without fully understanding its features and functions may result in unsafe conditions.

Identifier Warnings

- **SAMPLE FILTER WARNING:** The Mini ID contains a unique filter designed to significantly reduce the probability of oil contamination. Replace the brass oil filter of the instrument AS SOON AS OIL IS DETECTED IN THE SAMPLE HOSE. Failure to properly maintain and replace the oil filter may result in severe damage.

- **SAMPLE INPUT WARNING:** The instrument requires connection of the supplied sample hose to the LOW SIDE OR VAPOR port of refrigerant storage cylinders or vehicle air conditioning systems. DO NOT attempt to introduce liquid or samples heavily laden with oil into the instrument. DO NOT connect the sample hose to the HIGH SIDE or LIQUID port! Liquid or oil laden samples may cause severe damage to the instrument that will not be covered under warranty repairs.

General Cautions

- **ALWAYS** wear eye and skin protection when working with refrigerants. Escaping refrigerant vapors will present a freezing danger.
- **ALWAYS** turn the compressor *OFF* before connecting the instrument to an air conditioning system.

- **ALWAYS** inspect the sample hose before each use. Replace the hose if it appears cracked, frayed, obstructed or fouled with oil.
- **DO NOT** direct refrigerant vapors venting from hoses towards the skin.
- **CAUTION** – Do not pressure test or leak test HFC-134a service equipment and/or vehicle air conditioning systems with compressed air. Some mix-tures of air and HFC-134a have been shown to be combustible at elevated pressures. These mixtures, if ignited, may cause injury or property damage. Additional health and safety information may be obtained from refrigerant manufacturers.

- **DO NOT** disassemble the instrument. There are no serviceable components internal to the instrument and disassembly will void the warranty.
- **ALWAYS** place the Analyzer on a flat and sturdy surface.
- To reduce the risk of electrical shock, do not disassemble the instrument; do not use the instrument in wet or damp areas.

- **AVOID** breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove HFC-134a from the A/C system, use service equipment certified to meet the requirements of SAE J2788. Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.

- **DO NOT** utilize any hose assembly other than those supplied with the instrument. The use of other hose types will introduce errors into the refrigerant analysis and instrument calibration.
- **ALWAYS** verify that the refrigerant which is tested from the Low Side does not contain or will not emit heavy loads of oil or liquid.
- **CAUTION** – Should be operated by certified personnel.

- **NEVER** admit any sample into the instrument at pressures in excess of *300 psig*.
- **NEVER** obstruct the air intake, sample exhaust or case ventilation ports of the instrument during use.
- **WARNING** – This Identifier must not be operated in flammable atmospheres.

WELCOME

Thank you for purchasing the MINI ID 134a Refrigerant Analyzer.

The Mini ID is the most economical refrigerant identifier ever designed for analysing the purity of gaseous R-134a automotive refrigerant. It has many features to offer the user, which will be described in this manual. We recommend that all personnel who use this instrument read this manual to become more familiar with its proper operation.

For further information regarding the application, operation or spare parts, please contact the Neutronics Inc. Customer Service Department. If you have questions or comments, we would like to hear from you.

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Fax: (610) 524-8807

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1 INTRODUCTION AND OVERVIEW

Contamination of refrigerants in vehicle air conditioning systems can lead to component corrosion, elevated head pressures and system failures when utilized by unsuspecting technicians. The ability of the technician to deter-mine refrigerant type and purity is severely hampered by the presence of air when attempting to utilize temperature-pressure relations. The development of various substitute refrigerants further complicates the ability of a technician to identify refrigerant purity based upon temperature-pressure relationships. The substitute refrigerant blends can also introduce a flammability hazard to the technician and the ultimate end user of the vehicle air conditioning system.

The Neutronics Mini ID Refrigerant Identifier will provide an easy and accurate means to determine if the R134a refrigerant in vehicle air conditioning systems is of suitable purity. The instrument utilizes non-dispersive infrared (NDIR) technology to determine the weight concentrations of refrigerant types R12, R134a, R22, as well as, hydrocarbons and air. Refrigerant purity is automatically determined for refrigerant R134a by the instrument to eliminate human error.

The instrument is supplied complete with a R134a sample hose, a 12 VDC power cord and all required plumbing housed within a rugged, portable instrument.

2 PRODUCT DESCRIPTION

2.1 General

The T-Line Mini ID is an economical instrument designed to provide a “PASS” or “FAIL” indication for R134a Purity. The product will also indicate if an excess amount of non-condensable gas (air) is present in the system. Excess “air” will cause poor cooling performance and can be easily corrected by simply recovering the refrigerant, evacuating the system and re-charging the vehicle. The Mini ID uses a simple hand pump to purge refrigerant from the sample cell in order to calibrate the instrument. LED’s pro-vide the user with easy to understand status indicators. Flashing LED’s re-quire user action while solid LED’s indicate the instrument is performing a task.

The unique brass filter, located between the Coupler and Sample Hose, provides excellent protection from oil contamination by trapping the oil at the coupler and preventing it from entering the instrument. If the instrument continually gives excess air messages, this is an indication that the filter has been compromised by oil and the filter must be changed.

3 PRODUCT COMPONENTS

3.1 Base Module

****TEXT**********

3.2 Coupler with Filter

****TEXT******

3.3 Calibration Bulb

****TEXT**********

3.4 Battery Clips

Vapor sampling is the most common method used for identifying refrigerants using the *T-Line Mini ID*™. It is a simple process requiring the operator to take these 4 steps:

1) Connect the Low Pressure Vapor Sampling Hose to the Low Side Vapor port of the system or cylinder.
2) Open the low side valve of the cylinder and press 'TEST' **(Figure 7)**.
3) When the test is complete, close the low side valve of the cylinder and disconnect the hose from the cylinder.
4) Disconnect the hose from the *T-Line Mini ID*™ for storage.

4 INSTRUCTION FOR USE

WARNING: Be sure to turn off the vehicle and let it rest for 3 minutes.

1) Connect the power cable to the power port located on the bottom of the instrument.
2) Connect the power clips to the 12 VDC battery source. Be sure to observe the correct polarity.
3) The lights will sequence, press “NEXT” to begin the “WARM UP”.
4) After approximately 90 seconds, the “CALIBRATING” light will flash.
5) Fully squeeze the calibration bulb 5 times and press “NEXT”.
6) The “CALIBRATING’ light will illuminate for approximately 60 seconds.
7) When the Analyzing light begin to flash, connect hose to the vehicles low side service port and then press “NEXT”.
8) The Analyzing light will illuminate for approximately 45 seconds while the test is in progress.
9) The “PASS”/”FAIL” light will then provide the test results (See The Test Results)
10) Disconnect the sample hose from the vehicle, press the “NEXT” button and squeeze the calibration bulb 5 times. Remove the power and the instrument may now be stowed.

5 THE TEST RESULTS

1) After the Analysis is complete, the “PASS” or “FAIL” light will flash.
   a) “PASS” indicates the refrigerant tested is 95% or greater R-134a and is suitable for recovery.
   b) “FAIL” indicates the refrigerant tested is less than 95% R-134a and should not be recovered without special equipment.
   c) The EXCESS AIR” light will illuminate in conjunction with the “PASS” or “FAIL” if the instrument determines that a significant amount of air is present. (See Help/Troubleshooting)

6 HELP/TROUBLESHOOTING

6.1 Unit Fails to Power On

Check the voltage and polarity of the power source. Ensure that the power plug is fully inserted into the power socket on the unit.
In the unlikely event that an "Error" message is displayed on the screen, power off the unit, take it to a location outside of the shop environment where fresh air is available and turn the unit back on. If the "Error" message reappears, refer to the help screens on the instrument or contact our service department for assistance.

6.2 Excess Air/Fail

The Mini ID is equipped with a unique filter located between the coupler and hose. This is a disposable filter designed to trap oil and sealant to prevent damage to the unit. Remove and inspect the filter for oil etc. and replace if necessary. Remove any oil in the coupler with compressed air and a dry cloth. Replacement Filter P/N 6-01-6001-23-1

The Mini ID is equipped with internal fault codes for assistance with troubleshooting. When the **"FAULT"** light is illuminated, the code is determined by counting the number of flashes.

- **Code 3** = Calibration Error
- **Code 4** = Temperature Error
- **Code 5** = Calibration Compensation Error

Should one of these codes appear, take the following action prior to contacting you Neutronics Service Representative.

1. Disconnect the power from the instrument and verify the power source is between 12 and 15 VDC.
2. Place the unit in a climate controlled area between 15°C and 27°C.
3. Fully Squeeze the Calibration Bulb 10 times.
4. Allow the unit to remain in the climate controlled room for 30 minutes.
5. Reconnect the unit and re-test.

If these steps fail to restore the unit to good working order, contact:

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APPENDICES

6.3 Specifications

REFRIGERANT DETECTED:	R-134a
PASS/FAIL PURITY:	95%
POWER:	12-15 VDC @ 1 amp
SAMPLE SOURCE:	Oil Free Vapour Refrigerant
MINIMUM INPUT PRESSURE:	1.38 Bar (20 Psig)
MAXIMUM INPUT PRESSURE:	20.70 Bar (300 Psig)
OPERATING TEMPERATURE:	50-113ºF (10-45ºC)
APPROVALS	UL, CE, SAE J1771
REPLACEMENT OIL FILTERS P/N:	6-01-6001-23-1

6.4 APPENDIX E – Warranty

Neutronics Inc. warrants, subject to the terms listed below, that the goods will be free from defects in design, materials, and workmanship for a period of (1) one year from the date that the goods are shipped to the buyer.

THE SOLE LIABILITY OF NEUTRONICS INC. FOR ALL PURPOSES SHALL BE TO REPAIR OR REPLACE, AT THE SOLE OPTION OF NEUTRONICS INC. , DEFECTS APPEARING WITHIN THE (1) ONE YEAR PERIOD. NEUTRONICS INC. SHALL HAVE NO OBLIGATION FOR REPAIR OR REPLACEMENT UNLESS NEUTRONICS INC. HAS RECEIVED WRITTEN NOTICE OF THE ALLEGED DEFECT WITHIN THE (1) ONE YEAR PERIOD AND THE DEFECTIVE GOODS ARE PROMPTLY RETURNED BY THE BUYER, AT THEIR EXPENSE, TO NEUTRONICS INC. AT: 456 CREAMERY WAY, EXTON, PA 19341 USA, AND THE DEFECT OCCURS UNDER THE CIRCUMSTANCES OF PROPER USE IN ACCORDANCE WITH ALL INSTRUCTIONS AND MANUALS PROVIDED TO THE BUYER. NEUTRONICS INC. WILL DELIVER THE REPAIRED OR NEW GOODS TO THE BUYER AT NEUTRONICS INC. EXPENSE. IN NO EVENT WILL NEUTRONICS INC. BE LIABLE FOR ANY LOSS OR DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE DEFECTS OR FROM THE USE OF THE GOODS OR FROM CONSEQUENTIAL OR INCIDENTAL DAMAGES, WHETHER IN CONTRACT, TORT, OR OTHERWISE, FOR PERSONAL INJURY OR PROPERTY DAMAGE OR ANY FINANCIAL LOSS.

Buyer shall be responsible for insuring that the goods are functioning properly at all times and shall not use any goods which are not functioning properly. Buyer, therefore, agrees to indemnify Neutronics Inc. from and against all losses and claims to or by any person or property caused in any manner by the goods or the use of the goods, including any expenses and attorney's fees in connection with all claims, demands, proceedings, or other expenses.

Any description of the goods contained in any documents to which these warranty provisions relate, including any quotations or purchase orders relating to the goods being delivered to the buyer, are for the sole purpose of identifying the goods, and any such description, as well as any sample or model which may have been displayed to or seen by the buyer at any time, have not been made partof the basis of the bargain and have not created or amounted to any express warranty that the goods would conform to any such description or any such sample or model.

NEUTRONICS INC. DOES NOT WARRANT THAT THE GOODS ARE FREE OF THE RIGHTFUL CLAIM OF ANY THIRD PERSON BY THE WAY OF INFRINGEMENT OF PATENT OR OTHER PROPRIETARY INFORMATION AND DISCLAIMS ANY WARRANTY AGAINST SUCH INFRINGEMENT.

It shall be the responsibility of the buyer to read carefully and abide by all instructions provided to the buyer in the instruction manual or elsewhere. If the buyer, or the employees of the buyer, did not abide by such instructions, then the alleged defect shall not be deemed to have arisen under circumstances of proper use**.**

The terms of these warranty provisions shall apply to all products sold by Neutronics Inc., except filters which are considered "consumable items," and as such are not covered by the terms of these warranties. No waiver, alteration or modification of the terms of these provisions shall be valid unless in writing and signed by an executive officer of Neutronics Inc.

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