



Model 16009

DiscovR R134a
Refrigerant Identifier

Operating Manual

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Safety Precautions



WARNING : To prevent personal injury:



- Study, understand, and follow all warnings in this manual before operating this unit. If the operator cannot read these instructions, operating instructions and safety precautions must be read and discussed in the operator's native language.
 - *Si el operador no puede leer las instrucciones, las instrucciones de operación y las precauciones de seguridad deberán leerse y comentarse en el idioma nativo del operador.*
 - *Si l'utilisateur ne peut lire les instructions, les instructions et les consignes de sécurité doivent lui être expliquées dans sa langue maternelle.*



- The Identifier is not capable of direct detection and indication of the presence of hydrocarbon compounds, which present a flammability hazard when present in sufficient concentrations. Whenever the identifier indicates unknown contaminants are present, the potential exists for a hydrocarbon flammability hazard.



- Operate this unit with R-134a refrigerant only. Cross-contamination with other refrigerant types causes severe damage to the A/C system, to service tools, and equipment. Do NOT attempt to adapt the unit for another refrigerant. Do NOT mix refrigerant types through a system or in the same container.



- DO NOT breathe refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose, and throat. Use recycling equipment certified to meet the requirements of SAE J2788 to remove refrigerant from the A/C system. If accidental system discharge occurs, immediately ventilate the work area. There must be adequate ventilation in the vehicle servicing area.

Safety Precautions cont'd



- When testing vehicle air conditioning systems, the vehicle ignition must be turned OFF. This action prevents EMI/RFI problems as well as eliminates potential user hazards from moving parts of the vehicle.



- Wear eye and skin protection when working with refrigerants. Escaping refrigerant vapors can freeze upon contact. Do NOT direct refrigerant escaping from the sample hose toward exposed skin or toward the face.



- Connection to power sources greater than 14V DC could cause “out of warranty” damage. Connection to a battery which is not fully charged, or is smaller than a typical vehicle battery, may cause errors in reading.



- To reduce the risk of battery explosion due to spark generation : First connect the RED clip to the positive 12-volt battery terminal; then connect the BLACK clip to a metal ground location away from the battery.

Safety Precautions cont'd

CAUTION: To prevent equipment damage,

- **Brass Filter:** This instrument is equipped with a brass filter located at the outlet of the R134a coupler. This filter significantly reduces the possibility of oil contamination in the unit. Replace this filter when oil is detected in the hose near the coupler, or when the unit indicates “Excess Air/Fail”. Failure to replace the filter when so indicated may result in “out of warranty” damage to the instrument.
- **Sample Input:** This instrument requires connection of the sample hose to the low-side, or vapor, port of the source vehicle or refrigerant cylinder. Connection of the sample hose to the high-side, or liquid, port of the source vehicle or refrigerant cylinder will result in “out of warranty” damage to the instrument. Additionally, the low-side, or vapor, port shall not emit sample gas in excess of 300 psig or sample gas that contains oil or liquids.
- **Sample Hose:** Inspect the sample hose before and after each use of the instrument. Immediately replace the hose if it appears cracked, obstructed, or fouled with oil.
- Never use a sample hose other than those approved for use with the Identifier. The use of other hose types may introduce errors and excessive refrigerant loss.
- Verify the refrigerant source to be tested will not emit oil or liquid refrigerant before connecting the Identifier sample hose.
- Never connect the Identifier to any refrigerant source that exceeds 300 psi pressure.
- Do not use the coupling supplied on the Identifier R-134a sample hose for any purpose other than Identifier sampling. The coupler supplied on the R-134a hose does not contain check valves and will continually vent refrigerant.
- Never obstruct the sample exhaust or air intakes—located on the front and top of the instrument—during use of this tool.
- Do not throw, drop, immerse in liquid, or mistreat the instrument.
- Store the instrument in its storage case when not in use.
- Maintain the cleanliness of the instrument to prevent contamination and prolong its life.

Description

Contamination of refrigerant in air conditioning systems can lead to component corrosion or destruction, elevated system head pressure, and system failures when used by unsuspecting technicians. Determining refrigerant type and purity is severely hampered by the presence of air when attempting to use pressure-temperature relationships.

The 16009 DiscovR R134a Refrigerant Identifier provides a fast, easy, and accurate means to determine purity in R134a refrigeration systems. It also provides refrigerant technicians with knowledge of refrigerant purity and how to protect against equipment and air conditioning system damage resulting from contamination.

Operating Instructions

Understanding the LED indicators

- A solid LED light indicates the unit is busy.
- A flashing LED light indicates the unit is waiting for the operator.

Operation

1. Remove unit from box and expose unit to fresh air.
2. Verify vehicle ignition is turned OFF. Connect the power cable clips (red to positive; black to a metal ground) to the vehicle's 12-volt battery.
3. Connect the power cable to the 16009 DiscovR. The LED lights will run through the function sequence.
4. Press the NEXT button.
5. Wait while the WARM UP LED is on.
6. After the unit is warm, the CALIBRATING LED will flash:
 - a. Fully squeeze the rubber calibration bulb five (5) times.
 - b. Press the NEXT button.
 - c. The CALIBRATING LED will light solid.
7. After calibrating, the ANALYZING LED will flash:
 - a. Connect the sample hose with the R134a service coupler to the vehicle. A very slight flow of gas will exit the unit from the center tube.
 - b. Press the NEXT button.
 - c. The ANALYZING LED will light solid.

Operating Instructions cont'd

8. After analyzing the refrigerant, a PASS or FAIL LED will flash:
 - a. A flashing PASS LED indicates the refrigerant is 95% pure or better.
 - b. A flashing FAIL LED indicates the refrigerant is less than 95% pure.
 - c. The EXCESS AIR LED will light with a PASS or FAIL LED if the unit has detected a lot of air in the refrigerant.
9. Disconnect the sample hose from the vehicle to prevent refrigerant loss.
10. Press the NEXT button.
11. The CALIBRATING LED will flash:
 - a. Fully squeeze the rubber calibration bulb five (5) times.
 - b. The unit can now be disconnected from the vehicle; or press the NEXT button to begin another gas test.
Note: The indication of excess air may be the result of oil or other contaminants trapped in the brass filter.

Fault Codes & Troubleshooting

Fault Codes

If the DiscovR unit displays a fault light, the code is determined by counting the number of times the fault light flashes.

- Code 1 = Calibration unstable
- Code 3 = Calibration error
- Code 4 = Temperature over the range
- Code 5 = Calibration compensation error

If any of these codes display, disconnect the unit from its power source and bring it to a room temperature (60°-80° F) place. Check the vehicle battery voltage, and confirm it is within the specified range. Fully squeeze the rubber calibration bulb ten (10) times, and allow the unit to cool for thirty (30) minutes. Reconnect the unit to the refrigerant source and retest.

If the fault light persists, or if Code 6 is displayed, contact the Technical Services Department.

Troubleshooting

No Power - Check for correct battery clip polarity, and full connection of the plug connector into the unit.

Excess Air/Fail - Check the sample hose for good connections to the refrigerant source and the unit. Also, check the brass filter for any oil residue, and replace it if necessary.

Note: Clean the coupler with compressed air before installing a new filter.

Replacement Parts

Part Number	Description
16109	Replacement filter (qty. 3) and hose kit

Warranty

Rev. November 1, 2005

This product is warranted to be free from defects in workmanship, materials, and components for a period of one year from date of purchase. All parts and labor required to repair defective products covered under the warranty will be at no charge. The following restrictions apply:

1. The limited warranty applies to the original purchaser only.
2. The warranty applies to the product in normal usage situations only, as described in the Operating Manual. The product must be serviced and maintained as specified.
3. If the product fails, it will be repaired or replaced at the option of the manufacturer.
4. Transportation charges for warranty service will be reimbursed by the factory upon verification of the warranty claim and submission of a freight bill for normal ground service. Approval from the manufacturer must be obtained prior to shipping to an authorized service center.
5. Warranty service claims are subject to authorized inspection for product defect(s).
6. The manufacturer shall not be responsible for any additional costs associated with a product failure including, but not limited to, loss of work time, loss of refrigerant, cross-contamination of refrigerant, and unauthorized shipping and/or labor charges.
7. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.
8. Use of recovery/recycling equipment with unauthorized refrigerants or sealants will void warranty.
 - Authorized refrigerants are listed on the equipment or are available through the Technical Service Department.
 - The manufacturer prohibits the use of the recovery/recycling equipment on air conditioning (A/C) systems containing leak sealants, either of a seal-swelling or aerobic nature.

This Limited Warranty does NOT apply if:

- The product, or product part, is broken by accident.
- The product is misused, tampered with, or modified.
- The product is used for recovering or recycling any substance other than the specified refrigerant type. This includes, but is not limited to, materials and chemicals used to seal leaks in A/C systems.



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call our Toll-Free
Technical Support Line at
800-822-5561
in the continental U.S. or Canada.

In all other locations, contact your local distributor. To help us serve you better, be prepared to provide the model number, serial number, and date of purchase.

To validate the warranty, complete the warranty card attached to the unit, and return it within ten days from date of purchase.

Due to ongoing product improvements, we reserve the right to change design, specifications, and materials without notice.

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