



Model 16009

**DiscovR R134a
Refrigerant Identifier**

Operating Manual

Table of Contents

Safety Precautions	1
Description	4
Operating Instructions	
Fault Codes	7
Troubleshooting	7
Replacement Parts	8

Safety Precautions



WARNING : To prevent personal injury:

- Allow only certified personnel to operate the Identifier.
- 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.



- The Identifier is not capable of direct detection and indication of the presence of hydrocarbon compounds. These compounds 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.
- Do NOT operate the Identifier in flammable atmospheres.
- Do NOT use compressed air to pressure test or leak test HFC-134a service equipment and / or vehicle air conditioning systems. Some mixtures of air and HFC-134a are 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.

Safety Precautions cont'd



- 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 SAE J2788 requirements 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.



- 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 the DiscovR Identifier from the box and expose the unit to fresh air.
2. Verify the 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 Identifier. The LED lights run through the function sequence.
4. Press the NEXT button.
5. Wait while the WARM UP LED is on.
6. Once the unit has warmed up, the CALIBRATING LED flashes:
 - a. Fully squeeze the rubber calibration bulb five (5) times.
 - b. Press the NEXT button.
 - c. The CALIBRATING LED will light solid.
7. After calibration, the ANALYZING LED flashes:
 - 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 flashes:
 - 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 either a PASS or FAIL LED if the unit has detected a large amount of air in the refrigerant.

Note: The indication of excess air may be the result of oil or other contaminants trapped in the brass filter.

9. Disconnect the sample hose from the vehicle to prevent refrigerant loss.
10. Press the NEXT button.
11. The CALIBRATING LED flashes:
 - a. Fully squeeze the rubber calibration bulb five (5) times.
 - b. The unit may now be disconnected from the vehicle; or press the NEXT button to begin another gas test.

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 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

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