

Bacharach 2100-8000 R22id Refrigerant Identifier

R22id

R22 Refrigerant Identifier

Instruction 2100-9002
Operation and Maintenance
Rev. 0 - June 2010



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NOTES

1 Introduction

Thank you for purchasing the Bacharach R•22id Refrigerant Identifier.

The Bacharach R•22id is an economical instrument designed to provide a "PASS" or "FAIL" indication for R22 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 and recharging the system. The R•22id uses an internal electric pump to purge refrigerant from the sample cell in order to calibrate the instrument. LED's provide the user with easy to understand status indicators. Flashing LED's require user action while solid LED's indicate the instrument is performing a task.

The unique brass filter, located between the Service Connector 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.

Contamination of refrigerants in 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 determine 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 air conditioning system.

The Bacharach R•22id Refrigerant Identifier will provide an easy and accurate means to determine if the R22 refrigerant in air conditioning systems is of suitable purity. The instrument utilizes non-dispersive infrared (NDIR) technology to determine the weight concentrations of refrigerant type R22, as well as, hydrocarbons and air. Refrigerant purity is automatically determined for refrigerant R22 by the instrument to eliminate human error.

Please read this manual in its entirety before attempting installation or operation. Attempting to operate the R•22id without fully understanding its features and functions may result in unsafe conditions.

1.1 How to Use This Manual

This manual provides important information on how to operate and maintain Bacharach's R•22id Refrigerant Analyzer.

To assure operator safety and proper use of the R•22id, please read, understand, and follow the contents of this manual.

1.2 Warnings and Cautions



WARNING: This symbol and/or the use of the word WARNING indicates a potential hazard associated with the use of this equipment. It calls attention to a procedure, practice, condition, or the like, which if not correctly performed or adhered to, could result in death or serious injury.



WARNING: This symbol and/or the use of the word WARNING indicates a potential hazard from electrical shock. It calls attention to a procedure, practice, condition, or the like, which if not correctly performed or adhered to, could result in death or serious injury.



CAUTION: This symbol and/or the use of the word CAUTION indicates a potential hazard associated with the use of this equipment. It calls attention to a procedure, practice, condition, or the like, which if not correctly performed or adhered to, could result in minor or moderate injury.

IMPORTANT: The use of the word IMPORTANT in this manual calls attention to a procedure, practice, condition, or the like, which if not correctly performed or adhered to, could result in incorrect performance of or damage to the equipment and may void the warranty.

1.2.1 Identifier Warnings

- **Sample Filter Warning:** The R•22id 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 air conditioning system. 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.

1.2.2 General Warnings & Cautions



- Always inspect the sample hose before each use. Replace the hose if it appears cracked, frayed, obstructed or fouled with oil.
- Always turn the AC system off before connecting the instrument to an air conditioning system.
- Always wear eye and skin protection when working with refrigerants. Escaping refrigerant vapors will present a freezing danger.
- To reduce the risk of electrical shock, do not disassemble the instrument; do not use the instrument in wet or damp areas.
- DO NOT direct refrigerant vapors venting from hoses towards the skin.
- DO NOT disassemble the instrument. There are no serviceable components internal to the instrument and disassembly will void the warranty.
- Always place the Identifier on a flat and sturdy surface.
- DO NOT utilize any other hose 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 to be tested does not contain or will not emit heavy loads of oil or liquid.
- NEVER admit any sample into the instrument at pressures in excess of 300 psig.
- DO NOT utilize the connection fitting supplied on the service end of the Sample Hose for any application other than with the instrument.
- NEVER obstruct the air intake, sample exhaust or case vent ports of the instrument during use.
- **WARNING:** This Identifier must not be operated in flammable atmospheres.
- **CAUTION:** Should be operated by certified personnel.
- Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove refrigerant from the A/C system, use service equipment design certified for the application. Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.
- **CAUTION:** Do not pressure test or leak test A/C service equipment and/or air conditioning systems with compressed air. Some mixtures of air and refrigerant 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.

1.3 Features and Capabilities

The R•22id Refrigerant Identifier is a highly advanced instrument capable of identifying R22 purity. Features of the R•22id include:

- Stable four gas infrared (IR) sensor
- 95% pure R22 pass/fail criteria
- Simple to understand LED driven status indicators
- Ergonomically designed case with integral stand, magnetic mounting, and rubber over-molding
- 9 VDC operation for maximum portability and easy replacement
- Optional AC power adapter
- Automatic calibration with onboard electric pump
- Single push button operation
- Oil resistant metal filter with simple, low cost replacement

1.4 R•22id Model and Contents

Model Name	Part Number	Contents
R•22id	2100-8000	R•22id w/ Filter and Hose Assembly 2100-8000 Spare Filter and Hose Assembly 2100-0001 Instruction Manual 2100-9002 9V Battery NOTE: A 9V battery or AC adapter is required for operation. See Section 3.1 for AC adapter ordering information.

2 Operation

2.1 Components



2.2 Using the Instrument



WARNING: Be sure to turn off the system to be tested and let it rest for 3 minutes before using the R•22id to analyze its refrigerant purity.

1. Remove the rubber protective boot and insert the 9V battery.

NOTE: A Lithium battery is recommended for longest life.

2. Turn on the power switch located on the top of the unit. For battery operation, press the switch to "BAT." For auxiliary power operation, connect the optional auxiliary power supply to the bottom of the unit and press the switch to "AUX."
3. The lights will sequence, press "NEXT" to begin the "WARM UP."
4. After approximately 90 seconds, the "CALIBRATING" light will flash.
5. Press "NEXT."
6. The "CALIBRATING" light will illuminate for approximately 60 seconds.
7. When the "ANALYZING" indicator begins to flash, connect hose to the system or cylinder's low side service port and then press "NEXT."
8. The "ANALYZING" indicator will illuminate for approximately 45 seconds while the test is in progress.
9. The "PASS"/"FAIL" light will then provide the test results (See Below)
10. Disconnect the sample hose from the test sample, press the "NEXT" button and allow the unit to complete a calibration cycle before powering off the unit. The instrument may now be stowed.

2.3 Interpreting the Results

After the Analysis is complete, the "PASS" or "FAIL" light will flash.

1. "PASS" indicates the refrigerant tested is 95% or greater R22.
2. "FAIL" indicates the refrigerant tested is less than 95% R22 and should not be recovered without special equipment.
3. 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 Troubleshooting) .

3 Troubleshooting

Unit Fails to Power On: Check the battery and replace with a fresh one. If using the optional auxiliary power supply, ensure that the power plug is fully inserted into the power socket on the unit.

Excess Air / Fail: The R•22id 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 connector with compressed air and a dry cloth. Replacement Filter P/N 2100-0001

The R•22id 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.

- Solid = Low Battery (replace with a fresh one)
- Code 1 = Unstable detectors
- 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 your Bacharach Service Representative.

1. Turn off the unit.
2. Place the unit in a climate controlled area between 60°F and 80°F.
3. Turn on and operate the unit with no refrigerant attached.
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 a Bacharach Service Center.

3.1 Replacement Parts

Part Number	Description
2100-0001	Replacement filter for Hose Assembly
2100-0002	Optional AC Adapter
2100-9002	Instruction Manual

4 Service Centers

Service and replacement parts can be found by contacting any of the Bacharach Service Centers

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