![BACHARACH - The Measurable Difference]

CO Appliance Kit

for use with:
Fyrite® INSIGHT™ Plus Combustion Analyzer
Fyrite® InTech® Combustion Analyzer
Monoxor® Plus Carbon Monoxide Analyzer

1. Overview

Thank you for investing in the Bacharach CO Appliance Kit. The kit is to be used in conjunction with the Fyrite® INSIGHT™ Plus combustion analyzer, Fyrite® InTech™ combustion analyzer, and the Monoxor® Plus carbon monoxide analyzer.

Figure 1. Bacharach Analyzers with CO Appliance Kit

The kit consists of two interchangeable probes and a tubing assembly. The special probes included in the kit are used in place of the probe assembly that is supplied with your Bacharach combustion analyzer, and are designed to standardize the measurement process and normalize readings of CO gas from common appliances when adhering to European standard EN7967.

> **IMPORTANT:** The CO Appliance Kit is to be used only with the Bacharach Monoxor® Plus CO analyzer and Bacharach combustion analyzers configured to use Siegert combustion equations. Refer to your instrument's instruction manual for complete operation instructions.

2. Safety

Be sure to read, understand, and follow all safety warnings listed below and included with your combustion analyzer.

> ⚠ **WARNING:** The Bacharach combustion analyzer is not intended to be used as a safety device.

⚠ **WARNING:** When testing an appliance, a full visual inspection of the appliance should be performed to ensure its safe operation.

⚠ **CAUTION:** The Bacharach analyzer is not intended to be used on a continuous basis.

⚠ **CAUTION:** Do not store instrument or its sensors with solvents or products that contain solvents.

⚠ **HAZARDOUS AREA WARNING:** The Bacharach instrument has not been designed to be intrinsically safe for use in areas classified as hazardous locations. For your safety, **DO NOT** use it in hazardous (classified) locations.

⚠ **CAUTION:** Do not use flammable or combustible substances (like carburetor fluid used for cleaning the probe) near an open flame.

⚠ **CAUTION:** When the instrument is used in an inefficient oil-fueled appliance where there is a high emission of soot, the probe's sample filter may become clogged. Before every use check the filter to confirm it is clean. If not, replace it with a new filter.

To prevent soot intake and a clogged filter, a smoke test should be performed before operating under such conditions. This ensures that the furnace or boiler is burning at a level appropriate for the use of this instrument.

When the CO_2 level exceeds the allowable threshold, a warning will prompt the user to consider performing a smoke test. This screen is cleared by pressing the ENTER button. Once the warning is cleared, it will not be displayed again for that particular test. If a new test is started (by pressing the HOLD button), the warning will be displayed again if the limit has been exceeded.

3. Hardware Components and Probe Installation

The CO Appliance Kit (P/N 0024-8555) contains the following components:

- Sealed end grill probe with oval supports
- Sealed end right-angled multi-hole probe
- Standard 12" (30 cm) probe tube
- Probe handle and tubing
- Dust/vapor filter (3015-3071)
- Female GAS connector for INSIGHT™ Plus (0024-0877)
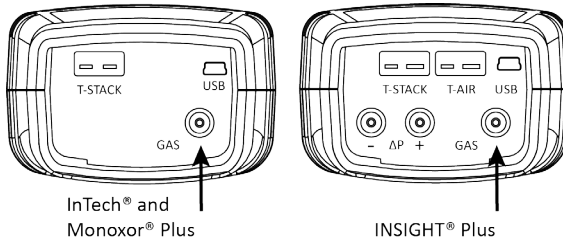- Instruction manual.

InTech® and Monoxor® Plus   INSIGHT® Plus

Figure 2. Gas Ports

4. Overview of Standard EN7967

IMPORTANT: The CO Appliance Kit (P/N 0024-8555) is intended to be used in accordance with the carbon monoxide standard EN7967 which provides specific guidelines for identifying and managing sources of hazardous combustion byproducts. Be sure to read, understand, and follow those guidelines when using your combustion analyzer with the CO Appliance Kit.

The EN7967 standard provides information on:

- identifying and managing sources of fumes, smells, spills, and leaks of combustion products
- CO detector activation
- using portable CO gas analyzers
- determining combustion performance
- response guidelines based on measurements (e.g., CO/CO_2 ratios).

Refer to the EN7967 standard for detailed flowcharts and guidelines on how to safely diagnose appliance problems and potential CO leaks. Use the CO Appliance Kit and your Bacharach combustion analyzer to monitor CO levels as described in the standard.

5. Instrument Configuration and Testing Procedure

Follow the steps below and the instructions in your combustion analyzer manual in preparation of appliance testing.

Step	Description
1	Refer to appropriate manual for the combustion instrument you are using. • 0024-9487 Fyrite® INSIGHT™ Plus combustion analyzer • 0024-9486 Fyrite® InTech™ combustion analyzer • 0019-9370 Monoxor® Plus CO analyzer
2	The standard (full) CO Ambient test samples the ambient air for approximately 15 minutes, so ensure that you have ample battery power. If using the Fyrite® INSIGHT™ Plus, you have the AC power option available.

Step	Description
3	Check the probe's filter for signs of soot and/or moisture. Replace if necessary.
4	Attach the desired probe to the probe handle. Attach the probe tubing to the GAS inlet on the bottom of the instrument. Use the female gas connector to attach to the INSIGHT™ Plus analyzer. 👉 **NOTE:** The first screen will show a "T-STK" error as the thermocouple is not used in this test. Press the "ENTER" button to step past this screen.
5	Power on the analyzer and wait while it initializes. Follow the instructions provided in your analyzer's instruction manual.
6	If using either the InTech® or INSIGHT® Plus *combustion* analyzer, confirm that your analyzer is configured for Siegert combustion equations. (Go to the COMBUSTION EQUATIONS option in the SETUP MENU for more information.)
7	When instructed to perform a CO test based on EN7967 procedures, place the CO appliance probe as instructed in EN7967.
8	Navigate to the CO AMBIENT TESTING option of the analyzer's MAIN MENU.
9	Follow the on-screen instructions to begin the CO testing.
10	After the testing is complete, analysis results will be displayed.
11	Review the results based on the criteria set forth in EN7967.
12	Make appliance and/or installation corrections, then re-test as required.

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World Headquarters
621 Hunt Valley Circle, New Kensington, Pennsylvania 15068
Phone: 724-334-5000 • Toll Free: 1-800-736-4666 • Fax: 724-334-5001
Website: www.MyBacharach.com • E-mail: help@MyBacharach.com