J. U. M. ENGINEERING

# Filled Aerosol Can Rapid Responding Leak Analyzer

# HFID 22B


During the past decades aerosol can fillers have relied on hot water bath testing to verify the integrity of their aerosol cans. This technique is known to be using up large floor space, using up high energy resources and being very costly to one's production; Our leak analyzers are officially approved in leak testing machines to replace the costly water bath.

Leak Testing machines which use our model 22B demonstrably provide the possibility of highest leak-proof quality. Aerosol Can Filling Machine Manufacturers can use our time proven model 22B ultra fast responding Leak Analyzer to design their own inline leak tester for filled aerosol cans. Our analyzer is officially certified for the water bath alternative when integrated in a complete machine.

16N7-1128-2025

## General:

To meet today's high demand for aerosol products, assembly lines must produce copious volumes in a wide variety of packaging, while upholding high standards of safety and quality. The J.U.M. Model 22B Aerosol Can Micro leak Analyzer with ultra fast response time of lower than 20 ms is the ideal choice to be integrated into an inline leak tester. It uses our proprietary time proven HFID detector to detect the whole range of Hydrocarbon based propellants a wide range to reject individual leaking aerosol cans in real time without stopping or disrupting the production line. It can detect up to 300 cans per minute and sense trace gases and leaks much smaller than 2 x 10-3 mBar l/s at 20 °C.

With the model 22B leak tester we grant continuous leak monitoring systems at lowest maintenance costs and highest operational reliability. It was firstly exclusively used by Bautz Engineering, a German Manufacturer for Aerosol Can Test Machinery. Bautz Engineering's Automatic High Speed Leak Detection Systems for filled aerosol cans were the first in the industry as early as 1983. Up to just recently they exclusively used our time proven high speed model 22B leak analyzer. After a Management Change in early 2025, Bautz Engineering has lifted the exclusivity clause and allowed J.U.M. Engineering to market the 22B Analyzer independently.

The automatic detection process through the analyzer's under the body mounted sensing barrier is continuous, contactless and prevents product damage- and contamination. The analyzer design fully grants the seamless detection of definitely ALL hydrocarbon based propellants, including LPG mixes, Butane, Propane, AP70 (C3/C4 blend), iso-Pentane, n-Pentane, DME, all blends, including HFC, HFA, R134A, 152A, 227EA, R134a/R152a blend and HCFC's like 142b, also including the new HFO-1234ze. However, Air, CO2 and N2O Propellants are NOT detected.

Continuous leak monitoring with our 22B analyzer results at lowest maintenance costs and highest operational reliability, when compared with optical laser testing systems, which entered the market much later. With today's increasing variants of safety and quality standards in place, leak testing machines will ensure current and future regulatory compliance. Certified hot water bath testing alternatives using the 22B significantly speed up and simplify the production process by significantly reduce floor space, energy consumption and maintenance cost. The current Aerosol Dispensers Directive by the European Commission's legislator (ADD), (UN ADR 2013, 75/324/EEC) mandates that aerosol dispensers and small receptacles containing compressed gases like spray cans must pass a rigorous test for a leak proof inspection before they become released for transportation. With the 22B leak analyzer we grant the design of continuous automatic leak testing systems for filled aerosol cans at lowest maintenance costs and highest operational reliability. Bautz Engineering's Automatic High Speed Leak Detection Systems with our 22B analyzer for filled aerosol cans were the first in the market since 1983from as low as 60 cans per minute up to 300 cans per minute and are used internationally by 100's of filling companies. Continuous leak monitoring with the 22B analyzer results at lower maintenance costs and higher operational reliability. With today's increasing variants of safety and quality standards in place leak testing machines ensure current and future regulatory compliance. Certified hot water bath testing alternative leak testers significantly speed up and simplify the production process by eliminating the water bath and significantly reduce floor space, energy consumption and maintenance cost.

The current Aerosol Dispensers Directive by the European Commission's legislator (ADD), (UN ADR 2013, 75/324/EEC) mandates that aerosol dispensers and small receptacles containing compressed gases like spray cans must pass a rigorous test for a leak proof inspection before they become released for transportation.

## Features of an Automatic Leak Testing Machine when equipped with our model 22B rapid responding leak analyzer for filled aerosol cans cans in aerosol filling lines:

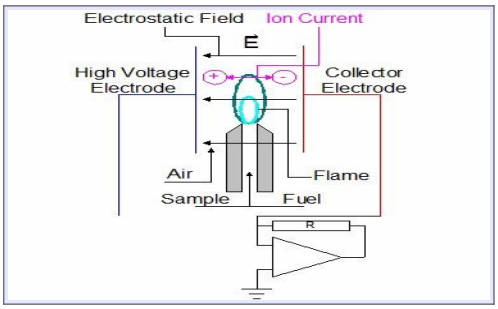
- ✗ Leak analyzer independently accredited in a machine to be a compliant hot water-bath alternative
- ✗ Leak analyzer equipped with Sensing Barrier and zero air nozzle in the analyzer bottom
- ✗ Use our Leak testers as water bath alternative to guarantee compliant leak detection
- ✗ Compliment your current hot water bath with our leak tester to guarantee compliant leak detection
- ✗ Very small, all over foot print can be only 1 m2
- ✗ All controls, data printer and displays to be operated in eye height in the front of the machine, no external control console used
- ✗ Leake

**Propellant Detection Flexibility**

- ✗ **All LPG mixes**, including Propane/Butane, AP70 (C3/C4 blend), iso-Pentane, n-Pentane, DME (ll blends), HFC, HFA, 134A, 152A, 227EA, R134a/R152a blend and HCFC's like 142b, including the new HFO-1234ze

**Can Type Flexibility**

- ✗ Different can diameters and heights



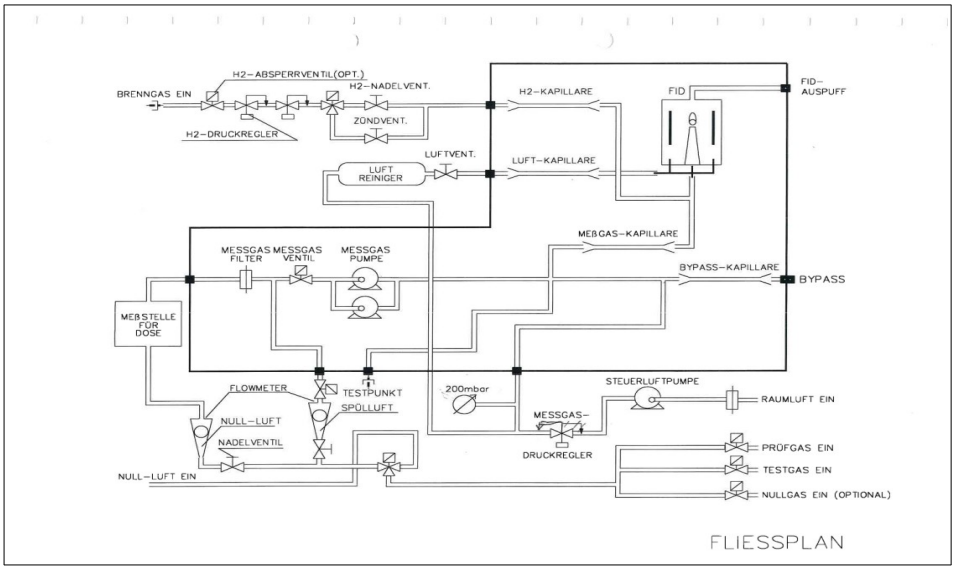

**Detector Schematic**

## Analyzer Features

- ✗ Made in Germany
- ✗ 190°C Heated oven HFID
- ✗ low priced
- ✗ Combined Blow/Extract sensing barrier
- ✗ Proprietary sample filter back purge after each leak detection
- ✗ Very economical, low cost of ownership
- ✗ Low maintenance
- ✗ Excellent long term stability
- ✗ 19-inch slim line design, 132 mm high
- ✗ Automatic flame out indicator with automatic fuel shut off valve
- ✗ Ultra Fast response of <20 ms
- ✗ Low fuel and air consumption
- ✗ Very selective to all hydrocarbon propellants
- ✗ All heated components in oven
- ✗ Microprocessor PID type temperature controller for FID oven

## Application

- ✗ OEM high speed Leak detection of filled aerosol cans




Flow Schematic complete

Example of Integration

**Click on #1 and #2 for Videos (#1 leak tester, #2 Calibration)**:

#1 https://youtu.be/xNsGHTuRLzY?si=WZxREMQlk4HMEwGD
#2 https://www.youtube.com/watch?v=WViKnjSwd1o&pp=ygUdYmF1dHogZW5naW5lZXJpbmcgbGVhayB0ZXN0ZXI%3D

## Technical Specifications

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|---|---|
| **Method** | Heated Flame Ionization Detector (HFID) |
| **Sensitivity** | **Much better than required 2X10$^{-3}$ mbar.l.s-1 @20”C Leakage rate, in full compliance with current UN and EU regulations** |
| **Zero drift** | <2% full scale / 24h |
| **Span drift** | <2% full scale / 24h |
| **Linearity** | Within 1,5% FSD |
| **Oxygen synergism** | < 2% FSD |
| **Measuring ranges (ppm)** | 0-10,100, 1.000, 10.000, 100.000 Units, others on request. Front panel turn switch. |
| **Concentration Display** | 3 1/2-digit direct reading units and separate LED bar display to monitor response time |
| **Signal output** | 0-10 VDC |
| **Sample filter** | 2 micron disposable mesh filter |
| **Zero and span adjust** | Manual duo dial on front panel |
| **Oven temperature** | **190˚C** |
| **Fuel gas** | 100% H2 quality 5.0, Hydrogen generator is highly recommended! |
| **Burner air consumption** | Generated by internal Air Purifier, Approx. 150 ml/min |
| **Oven temperature** | 190˚C (374˚F), digital PID controller |
| **Power requirements** | 230VAC/50Hz, 850 W. 120 VAC/60Hz optional |
| **Ambient temperature** | 5-43˚C (41-110˚F) |
| **Dimensions (W x D x H)** | 19" (483 mm) x 460 mm x 132 mm |
| **Weight** | approx. 20 kg (44 lbs) |

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