Bottle Carbon Dioxide Pressure Tester

NBCP-100

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1. Introduction

Bottle Carbon Dioxide Pressure Tester NBCP-100 is utilized to monitor the carbon dioxide gas pressure inside a sealed system or container guaranteeing both operational safety and product quality. It features CO_2 measuring ranges from 0 to 4.00%v/v that detect pressure levels at maximum temperatures up to 0 to 50 °C. Our pressure tester improved with a pressure gauge that enable regular calibration to ensure accurate pressure readings.

2. Features

- ✓ Crafted with stainless steel material ensures safety and long-term usability
- ✓ Equipped with a pressure gauge for monitoring and controlling the pressure
- ✓ Upgraded with safety features that prevent protection against overloading
- ✓ Enhanced with pressure sensor Fitted with a bottle cap that prevents air leakage
- ✓ Convenient cleaning
- ✓ Minimal maintenance

3. Specifications

Model No	**NBCP-100**
CO_2 Measuring Range	0 to 4.00%V/V(0.8%W/W)
Pressure Range	0/0.6 Mpa
Temperature Range	0 to 50 °C
Resolution	0.1 °C
Graduation	Pointer:0.01 Mpa, Digital Display 0.001 Mpa
Bottle Height	Minimum 50 mm, Maximum 330 mm
Bottle Diameter	Maximum 115 mm
Dimension	23 × 51.5 ×17 cm
Net Weight	2.58 Kg
Gross Weight	5 Kg

4. Applications

Bottle Carbon Dioxide Pressure Tester is used to measure the CO2 content in carbonated beverages filled in glass and PET bottles and cans.

5. Working Principle

The pressure in the sample container of carbonated beverage and the temperature of the sample measured by the pressure detector is shown in the table of carbonated gas absorption coefficient

Conversion relationship between this method and the value determined by the voltage detector method:

$$X = \frac{1.9768 \times K}{1000} \times 100$$

Formula: x-carbon dioxide content in the sample, % (% by mass); 1.9768-carbon dioxide density in standard condition, g/l; K-at a certain temperature, carbon dioxide capacity measured by the pressure detector, times.

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6. Operations

- Place the test sample bottle (can) in the center of the black chassis of the instrument, adjust the height of the head bracket (approximately 3mm higher than the height of the bottle cap and 2mm above the height of the bottom of the tank), and tighten the black screws on the left and right sides.
- After confirming that the sample bottle is placed and the height of the puncture holder is adjusted, pull the handle of the chassis by hand to lift the puncture head of the chassis to pierce the lid of the bottle (can) being tested, unscrew the needle valve to exhaust, and wait until the pressure gauge reads zero. Close the needle valve immediately.
- Pick up the instrument with both hands and shake the instrument and sample bottle (can) back and forth along its axial direction for 40 seconds. (**Note**: During the shaking of the bottle, the force should be controlled appropriately to prevent the bottle from slipping out of the base) Wait. After the pressure stabilizes, record the number of MPa on the pressure gauge (take two decimal places). After recording the pressure value, unscrew the needle valve to deflate.
- Open the lid of the bottle (can) and measure the temperature inside the container with a thermometer.
- Based on the measured pressure and temperature, check the carbon dioxide absorption coefficient table to obtain the volume multiple of the carbon dioxide capacity (see attached table).
- After each test, the surface of the instrument should be wiped clean of beverages, wine, etc. If it is not used for a long time, the needle valve and other parts should be washed repeatedly with clean water, wiped clean, and dried before use.

Instrument Pressure Detector

- Pierce the cap of the sample bottle (or can) with the needle on the pressure detector, turn the opening valve to exhaust, and wait for the pressure gauge to point
- after the needle returns to zero, close the vent valve immediately, and vibrate the sample bottle (or tank) violently for about 40 Seconds. After the pressure is stable, Record the pressure
- Pascal number (take two decimal places). Turn the opening valve, then open the bottle cap (or tank cap), and measure the liquid in the container with a thermometer
- The temperature of the temperature.
- According to the measured pressure and temperature, the volume of carbon dioxide gas capacity can be found in the table of carbon dioxide gas absorption coefficient (see attached table) multiple.

7. Troubleshooting

1) The pressure gauge reading is too low.
   - Insufficient shaking and carbon dioxide are not completely released.
   - The puncture is blocked, and the gas transmission is not smooth.
   - The pressure gauge is faulty.
   - The carbon dioxide meter result is inaccurate.
   - The pressure gauge reading is low.
2) There is a large error in the temperature itself.
   - Air leakage phenomenon (that is, the pressure of the pressure gauge drops when the needle valve is closed).
   - The seal between the sealing rubber particles and the bottle cap is not tight. If the sealant grains are aging, replace them with new sealant grains.
3) Air leakage phenomenon (that is, the pressure of the pressure gauge drops when the needle valve is closed).
   The seal between the sealing rubber particles and the bottle cap is not tight. If the sealant grains are aging, replace them with new sealant grains.
4) After a puncture, the pressure is zero and the inner hole of the puncture head is blocked. Use a metal wire to clear the blockage.

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