

“CooRe” Selection Guide

In recent years, there has been an increase in the manufacture of carbonated beverages. Generally, the beverage industry is broadly divided into several categories, including carbonated drinks, tea, coffee, sports drinks, fruit juice, and dairy-based drinks. Examining the production of these individual categories, however, it becomes clear that carbonated beverage production is markedly increasing compared to other beverage categories which are mostly flat.*Note 1

You may have felt this increase yourself in recent times when observing the amount of hit products, including heavily carbonated beverages, Tokuho (beverages with health benefits), and energy drinks at convenience stores and large-scale retailers. This growth can be attributed, at least in part, to the fact that carbonated beverages can only be enjoyed by purchasing them at a store, unlike tea or coffee, which can be made at home.

The success of the carbonated beverage industry is not only limited to the Japanese market, but is also booming in developing countries with expected future economic growth.*Note 2 In some parts of developed countries there is a trend away from carbonated drinks due to potential health concerns, however, looking on a global scale a steady growth for carbonated beverages is clearly observable.

While reading this you are probably also thinking about your own favorite carbonated beverage that you love to drink all the time – for the sake of discussion let’s call it ‘Company A’ s Ginger Ale’ . The ability to enjoy the flavor of ‘Company A’ s Ginger Ale’ with the same sweetness and the same level of carbonation no matter when or where you purchased it is a gift of the tireless efforts of the manufacturer.

Only by their quality control assurance processes can ‘Company A’ s Ginger Ale’ continue to maintain the same quality. Now, imagine how you would feel opening a can of ‘Company A’ s Ginger Ale’ and not hearing the “pssh” sound and, when you go to drink it, you get nothing but a disappointing mouthful of flat soda. Not only you may choose to never purchase the same merchandise again, but further it may prompt you to call the manufacturer to complain.

The selling point for carbonated drinks is the sensation of carbonation, which is the most significant factor that determines the merchandise’ s value and is the focus point for quality assurance. Beverage manufacturers must strictly maintain the amount of carbonation (gas volume) in their products.

For this purpose, ATAGO has newly developed a gas volume monitor. This instrument boasts several convenient, never-before-seen features in gas volume meters for the benefit of users.

Below, you will be guided through **the reasons to choose the "CooRe"**, by introducing the features of the instrument and comparing it to conventional gas volume meters.

Vs. Automatic Gas Volume Meters

The "CooRe" is more convenient than previously available automatic gas volume meters in several ways. This section will act as a guide through the special features of the "CooRe" while comparing it to conventional automatic gas volume meters.

[1] Simultaneous Measurement of Gas Volume and Brix

The "CooRe" allows for simultaneous, **automatic measurement of gas volume and Brix**. The operation method simply involves setting up a sample container and pushing a button. By adding the technology for Brix measurement to in addition to gas volume measurement, ATAGO has created a gas volume monitor like none previously available in the market. In allowing for the completion of two quality control tasks at once, the "CooRe" halves the necessary work and improves operator efficiency.

In fact, the "CooRe' s" name was created as a reference to its dual measurement capabilities characterized above. "Coo" refers to CO₂, or the gas volume measurement, while "Re" is a shortening of "refractometer." **By utilizing ATAGO' s honed knowledge of refractometers in a gas volume monitor, an innovative product has been created.**

[2] Easy Measurements Whenever, Wherever

Conventional automatic gas volume meters, which can weigh up to **66lbs (30kg)** and/or use a split design that separates the display and measurement sections, **cannot be easily moved**. As a result, for example, in the case of the gas volume meter being placed in a quality assurance testing room, the operator must carry sample from the production line to the testing room, an unnecessary waste of operation time. In this situation, even if the operator was to find an issue in the test results, immediate action cannot be taken. As a result, the nightmare of producing inadequate product continues.

On the other hand, **the "CooRe" can be carried by hand**. The "CooRe' s" size and weight are as follows: Size: Approx. H 400mm X W 450mm X D 220mm, Weight: Approx. **26.45lbs (12kg)** At 26.45lbs (12kg), the "CooRe" weighs less than half of conventional automatic gas volume meters, which might weigh as much as 88.2lbs (40kg). At the weight of 26.45lbs (12kg), it can easily be carried. In addition, the display section and the measurement section are combined in one unit

and there is a handle on the instrument to makes it possible to carry it in one hand without taking up both hands.

For the suction and expulsion of liquid, **conventional gas volume meters have required a connection to nitrogen gas cylinders**, which weigh up to 22lbs (10kg). **The “CooRe” , however, has a built-in pump so it does not require a connection to or the changing of nitrogen gas cylinders.** This is another feature that allows for convenient measurements to be carried out.

Additionally, operators can choose to supply power to the “CooRe” using **an AC adaptor or a lithium-ion battery**. Therefore, the instrument can be used even in locations without a stable power source so there is no more need to worry about where to take measurements. Clearly, **the “CooRe” is a gas volume monitor that allows operators to take measurements whenever and wherever needed.**

[3] User Scale Function

Conventional users of automatic gas volume meters may at this point be worried that making the switch to the “CooRe” would result in the loss of all of their hard-earned data that has been gathered on their current instrument. However, there is no need to worry. Using the “CooRe’ s” user scale functionality, a calibration curve can be created between the existing data from another instrument and the “CooRe” . By entering a coefficient, the “CooRe” performs automatic calculations so there is no need for any concern about losing the gathered data when switching. Once set up, a user scale can be used to check gas volume for each lot based on that standard.

Vs. Manual Shaking Gas Volume Meters

In the previous sections, there was an introduction to the “CooRe” as the automatic gas volume monitor that can easily take measurements anywhere and at any time. In this section, the “CooRe” will be compared with other portable units, manual shaking gas volume meters, to introduce the advantages of the “CooRe” in more detail.

[1] No More Physical Strain For Operators

A benefit of manual shaking gas volume meters is that they are portable. However, because the pressure of **the carbon dioxide is determined by shaking the container** and expelling it from its dissolved state in the liquid, each measurement requires that operators shake the instrument for a period of time. **This shaking must be done manually**, which is a big difference between the manual shaking gas volume meters and automatic “CooRe.”

For manual shaking gas volume meters, a container filled with 16.9oz – 67oz (500mL – 2L) of the desired sample is placed into the meter and then manually shaken by hand for a period of time. Although it depends on the instrument, the combined weight can exceed 4.4lbs (2kg), which places a large physical burden on the operator during the shaking. There is a risk that the operator may become fatigued over time and drop the instrument, causing damage or injury.

Automatic gas volume monitors like **the “CooRe” do not require any manual shaking**, creating a more pleasant measurement environment. **The “CooRe” frees operators from the strain of manual shaking.**

[2] Accurate Measurement Conditions

Since manual shaking gas volume meters are hand shaken, the method of shaking varies by operator and this has an effect on the measurement results. There is the potential that the numbers can be different each time the operator changes, meaning that there can never be certainty about the accuracy of the results. Of course, always relying on the same operator is a possibility, but ... well, that will result in the aforementioned situation.

On the other hand, with the “CooRe” operators can perform measurements with button presses. By pushing one button the “CooRe” automatically measure the sample and there will be no operator-related variance in the results. If a user is looking for more precise data – and of course all users are – it should be clear which the best instrument to choose is. Taking into consideration all the benefits of a digital instrument, including the automatic measurement feature, the aforementioned user scales, the answer to the question of which instrument is best suited to the difficult process of quality management should be clear.

Vs. Automatic and Manual Shaking Gas Volume Meters

In the previous sections, automatic gas volume meters and manual shaking gas volume meters were compared separately. By now you understand that the “CooRe” , while being an automatic gas volume monitor, boasts the ability to measure anytime, anywhere usually found in manual shaking gas volume meters. This section will finally introduce the overall features of the “CooRe” .

[1] Simple Operation

The “CooRe” was developed with the goal of providing an excellent user experience.

One point concerned the ability to piecing sample containers by inserting tubes. The “CooRe” can easily pierce containers such as cans or bottles. It is possible for anyone to

set a sample container smoothly, without any excessive effort. Also, since only 3.38oz (100mL) is required to take measurements, only a small amount of sample must be prepared. Any standard container used for carbonated beverages can be set up to take measurements.

Moreover, a special consideration was attributed to the removal procedure of sample containers. With conventional gas volume meters, the gas pressure on the tubing that is inserted into sample containers can cause liquid to leak and splatter during its removal. On the other hand, "CooRe" is equipped with a cover which eliminates the risk of liquid spraying clothing or making a mess in the measurement area during removal, so operators can use the instrument without worry.

Ease of operation also refers to the time required for measurements. In addition to the improvements listed above, ATAGO has minimized the measurement time on the instrument. Getting from setting up the sample container to measurements only takes between 1.5 and at most, 3 minutes.

[2] Made In Japan

The "CooRe" is proudly made in Japan. The instrument takes full advantage of the expert techniques that ATAGO has cultivated for over 70 years in the refractometer business. We believe in this product.

For each unit ATAGO produces, the internal Quality Control Department thoroughly checks the paint and mounted parts as well as for any missing screws or labels, scratches to the prism surface and any dirt. They also check the accuracy of measurement operations and for correct functioning of the lighting, display, and output.

With authorized service centers all over the world, ATAGO can respond to any inquiries or issues. An experienced ATAGO technician will quickly respond to all of your questions. We also handle any repairs that may arise. Our on-going commitment to after-purchase customer service is one of our greatest strengths.

[3] Cost Performance

Up to now, there has been an explanation about all the benefits that the "CooRe" provides, but there is one more important benefit that we must mention. No matter how convenient an instrument is, for users the price still has to be right. The cost of other automatic CO2 meters on the market today ranges from upwards of \$50,000 for top of the line models to around \$15,000 for less expensive models. The "CooRe" , on the other hand, costs just \$8,500 – comfortably under \$10,000.

In addition, the running costs of the instrument cannot be overlooked. The battery is rechargeable, so there is no need to periodically change the battery. Operators for whom charging the battery may be an issue, or those who want to keep costs down even further, also have the option of using the AC adaptor. One negative aspect of traditional gas volume meters has been preparing gas cylinders to use with the unit for pumping/expulsion of the sample, which drives costs up over time. On the other hand, the “CooRe” has a pump built-in to the instrument so there is no need to buy new gas cylinders.

The “CooRe” provides all the convenience of a portable, manual CO₂ meter, while being an automatic monitor with the added benefit of simultaneous Brix measurement and a user scale function – all for under \$10,000. Beverage makers are sure to appreciate the cost performance of the “CooRe” .

(Note)

Note 1: From “Changes in Output of Soft Drink by Item” (1996 -2015)

Reference URL: Japan Soft Drink Association

<http://www.j-sda.or.jp/about-jsda/english/sd-statistics/sd-statistics03.php> (Accessed: 1/5/2017)

Note 2: According to the following document, the per-person consumption of Coca-Cola products in Brazil rose 38% in the 10 years between 1990 and 2000 and a further 65% in the 10 years between 2000 and 2010.

Reference URL: Goldman Sachs Asset Management Co., Ltd.

<<http://www.j-sda.or.jp/statistically-information/stati04.php>> (Accessed: 1/5/2017)

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