

How to Get Extended Warranty 1 year → 2 years

The warranty period will be extended from 1 year to 2 years when you register your information. ATAGO Logger NFC can also be downloaded at the same time.



Trouble scanning the code? Access this link <https://www.atago.net/ur/index.php?l=en> QR code

**Digital Hand-held "Pocket" IR Brix Meter
PAL-HIKARI 2**

Cat.No.5452 **Instruction Manual**

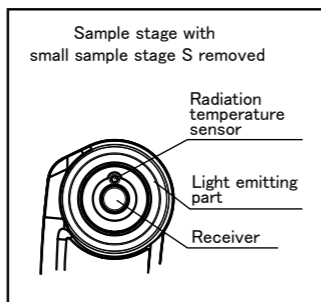
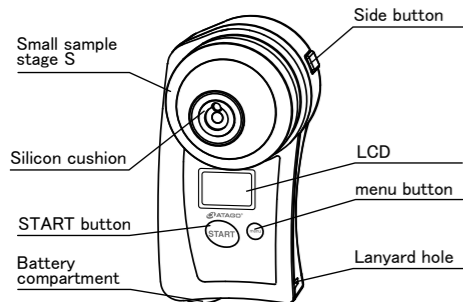


Contents

- Main unit (with silicone cover) 1
- Small sample stage S 1
- Shading Cover(S) 1
- Instruction Manual(this book) 1
- Inspection Report 1
- Silicon cushion (for replacement) ... 2
- AAA alkaline batteries 2
- ※AAA alkaline batteries are included.

Parts

When the small sample stage S is attached



Introduction

Thank you for purchasing the instrument.

Read and follow all safety instructions before operating the instrument.

Failure to comply with the following instructions may result in personal injury or property damages.

This instrument measures amount of light absorbed by shining the near infrared light to the fruit then converts to Brix (sugar level) to display.

Brix (sugar level) can be measured with no need to cut and squeeze the fruits.

Measurement variance may be seen depending on the variety and harvest timing. This instrument is equipped with offset function to match the value in such cases.

Safety Precautions

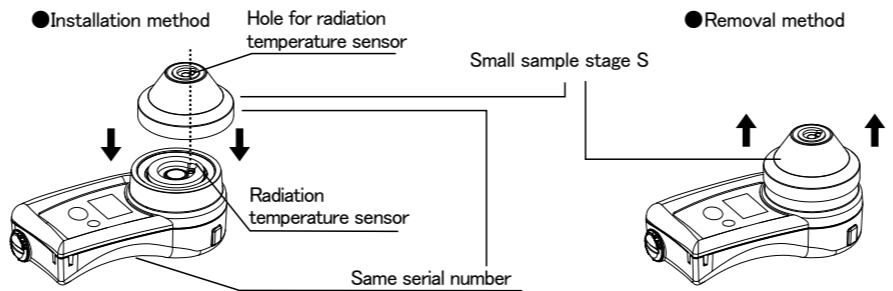
WARNING

- Do not aim it at a face when measuring.
- Do not attempt to repair, modify, or disassemble the instrument.

CAUTION

- Before use, carefully read this instruction manual and fully understand the function and operation for each part of the instrument.
- ATAGO is not liable for any or all damages as a result of use of the instrument for those other than its intended purposes (measurement of Brix, of fruits).
- Do not hit or protrude the light emitting or receiving section with a sharp object.
- ATAGO is not liable for any loss and damage caused by the measurement and use of this instrument.
- Do not expose the instrument to a rapid change in ambient temperature.
- Do not use the instrument where there is much dust.
- Do not subject the instrument to strong vibration.
- Do not place the instrument under anything heavy.
- If the instrument is dropped or subjected to a strong impact, contact your supplier for inspection.
- Loosen the battery compartment cover for air transportation.

Installing Small sample stage S / Removing



Align the hole for the radiation temperature sensor with the radiation temperature sensor and push the small sample stage S straight.

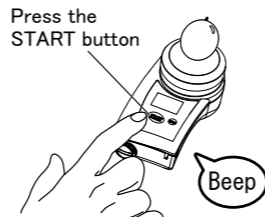
Pull the small sample stage S straight up.

Note Make sure to carry out the measurement with the small sample stage S installed. With small sample stage S removed, correct measurement can not be performed.

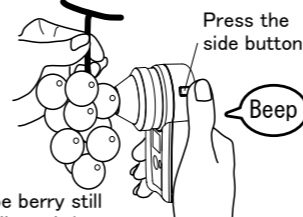
Note Do not turn the small sample stage S after mounting. Measurement can not be performed correctly if the hole for radiation temperature sensor and the radiation temperature sensor are misaligned.

Measurement

Place a fruit, then press the START button.



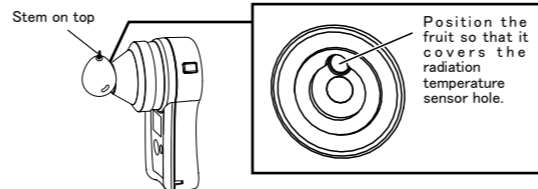
Press against a fruit, then press the side button.



or

Touch the fruit and do not move.
Not keeping a grape berry still while measuring will result in inaccurate measurements.
Measure a grape berry where it is bunched together.

Note Place the fruit in the orientation shown in the figure (or place against it).



The measurements are displayed.

<LCD Auto Shut-off>

The instrument will turn itself off after 30 seconds of inactivity. To manually turn it off, hold down the START button for more than 3 seconds.

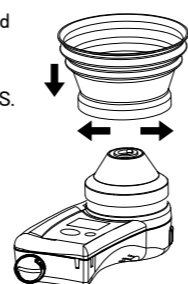
Depending on the variety, there may be a difference between the refractometer (sugar meter) and the measured value. Please confirm the difference from the value measured with your refractometer (PAL-0 of the set when purchasing IR Brix Meter x Brix Meter) and use the offset function as necessary. (Refer to "Offset Function")

Installing Shading Cover(S) / Removing

When measuring outdoors or in a greenhouse, it is recommended to use the Shading Cover(S) as shown.

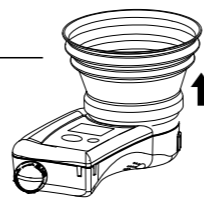
Installation method

Fit the Shading Cover (S) on to the Small sample stage S.



Removal method

Pull off the Shading Cover(S) from the Small sample stage S.

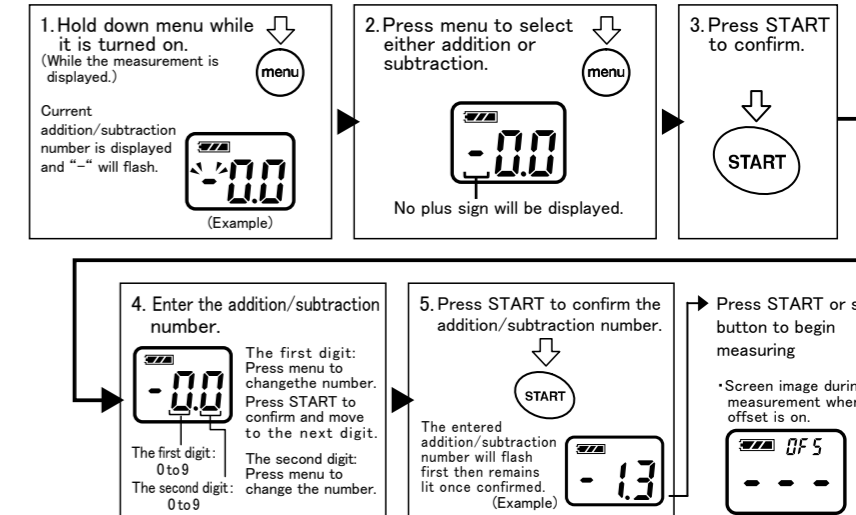


Note Make sure to carry out Installing Shading Cover(S) with the small sample stage S installed.

Offset Function

This function modifies the measurement value by a constant. Use this function to match the measurement value to the refractometer (Brix meter).

How to set addition/subtraction number [Range:-9.9~9.9]



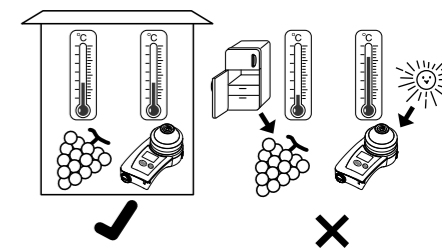
For default Press the side button while setting up the Off-Set feature.

Measurement Tips and Precautions

• **Acclimate the fruit and this instrument to ambient temperature.**

The temperature difference between the surface and the inside of the fruit, and temperature difference between this instrument and the fruit may affect the measurement values.

Especially when measuring refrigerated fruits, be sure to let the fruits acclimate to the ambient temperature.



• **Clean the surface of the fruits. Do not measure the spoiled spots.**

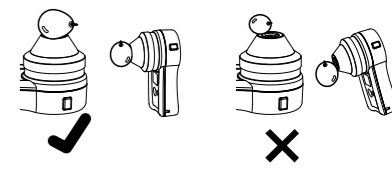
The instrument may not measure correctly when there is water droplets, dust or scar, and bruising soft spots.



• **Place the sample stage to the fruit. Recommended sample size is 15 mm or more in diameter.**

Measure the part where there is no dent with diameter that is 15 mm or more.

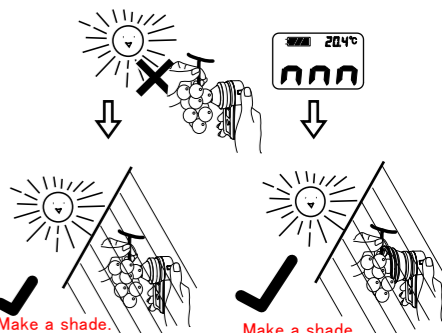
Be sure to avoid any spacing between the fruit and the silicon cushion to avoid the external light interference. If the silicon cushion is deteriorated, please replace it with a brand new silicon cushion. (Refer to "How to change the silicon cushion")



• **Avoid interference from sunlight**

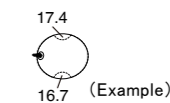
Exposure to sunlight may result in faulty measurement. (Refer to "Error Messages") Avoid sunlight when measuring outside or in the greenhouse.

When measuring outdoors or in a greenhouse, it is recommended to use the Shading Cover (S).



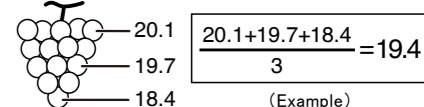
• **Sugar level varies depending on the measured area.**

Example for measurement value: Take few measurements from the same fruit, then compute and use the average.



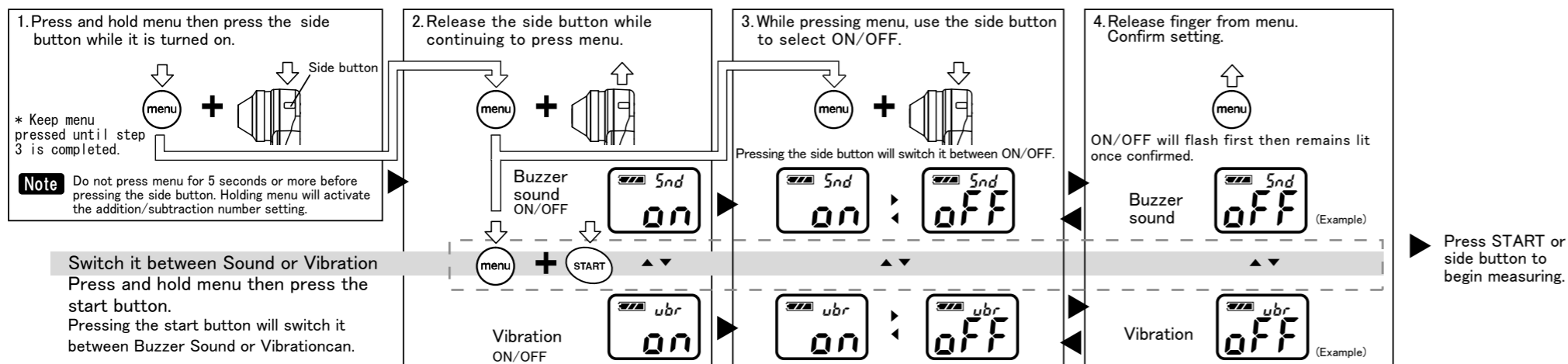
• **When taking measurements, avoid changing external light intensity.**

If the intensity of external light changes, it will result in inaccurate measurements.

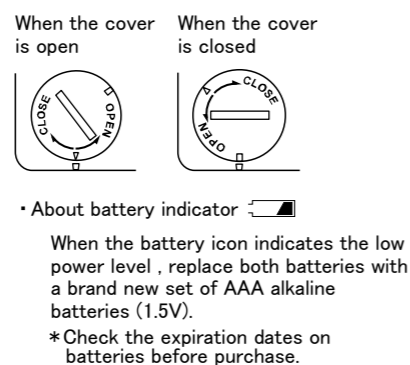
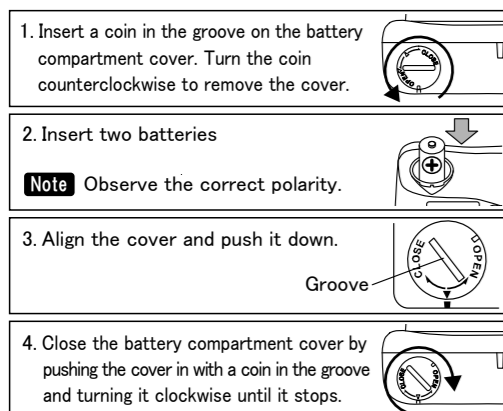


How to Set Alarm Sound and Alarm Vibrationcan

Buzzer sound and Vibration can be set to alarm when measurement error is displayed or at the beginning and end of measurement.



Replacing the Batteries

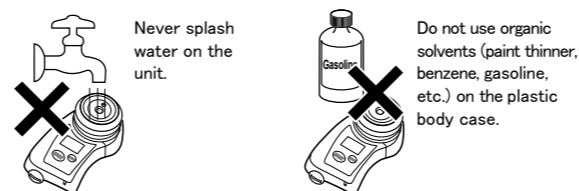


When the measured values are off

- Are there any difference between the fruit, unit, and ambient temperature?
- Are there any water droplets or soiled area in the measurement section? Is the fruit spoiled?
- Does the fruit and silicon cushion have a good contact? Especially when using the side key, is it out of alignment?
- Interference by sunlight
- Are there any difference depending on measured section?
①~⑤ → Refer to "Measurement tips and precautions"
- Are there any damages or soil on the light emitting or receiving section? → Refer to "Cleaning"
If light emitting or receiving section is damaged or soiled, contact ATAGO.
- Is the silicon cushion wet? → Refer to "Cleaning"
Replace silicon cushion to a new one if there is any deterioration. → Refer to "How to Change the Silicon cushion"
- Check the offset feature → Refer to "Offset Function"

Cleaning

- To clean the main body, use a wetted tissue or soft cloth.



- Small sample stage S can be removed and washed with water. Completely dry the silicon cushion area. Avoid using ethyl alcohol. It may compromise the adhesion on the silicon cushion. Remove when radiation temperature sensor is dirty.

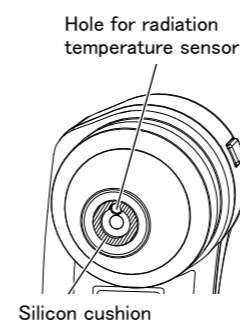
The Shading Cover(S) and the Silicone Cover can be replaced. Please contact ATAGO.
RE-39009 Shading Cover(S).
RE-39415 JORDAN for PAL-HIKARI(Silicon Cover)

How to Change the Silicon cushion

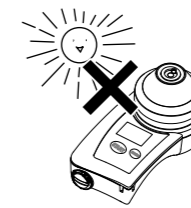
The silicon cushion of the small sample stage S can be replaced. Please contact ATAGO.
RE-39008 Spare silicon cushion S (2pieces)

- Remove the old silicon cushion from the small sample stage S.
- Peel the paper backing off the sticker. Place the silicon cushion on the small sample stage S.

Note Do not block hole for radiation temperature sensor with the silicon cushion.



Storage



Do not keep:

- In a hot and humid place
- In direct sun light
- Inside a closed car
- Close to a heater
- Extreme low temperature

Repair and Warranty

The instrument is warranted for one year from the date of purchase. This warranty is void if the instrument shows evidence of the following. Send the included batteries as well if they are still in use.

- Having been disassembled by unauthorized personnel
- Water damage or having been dropped
- Having been misused and/or operated outside the environmental specifications
- Leakage from batteries other than those included with the unit

Repair services are available for a fee after the warranty expires. Contact an ATAGO authorized service center for service and support.

Specifications

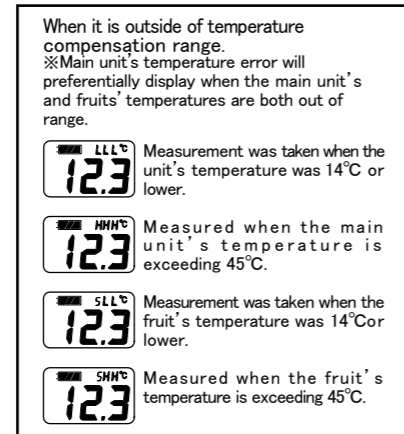
Measurement fruits	Grapes
Measurement range	Brix 10.0 to 25.0% Temperature 15.0 to 45.0°C
Resolution	Brix 0.1% Temperature 0.1°C
Measurement accuracy	Brix ± 1.5% (15.0~35.0°C) * Temperature ± 1°C
Repeatability	Brix ± 1%
Automatic temperature compensation range	15.0~35.0°C
Ambient temperature range	15 to 35°C
Measurement time	Approx. 1 second
Backlight	The backlight stays on for 30 seconds then turns off after 30 seconds. The backlight is off when measurements are taken.
Maximum number of data history	100
Output	NFC Forum Type 4 Tag ISO/IEC 14443 Type A Output category: Date Time, Brix [%], Temp [degC] (e.g.) 2017/08/17 09:30:45, 12.3, 20.4
Power supply	Two (2) AAA alkaline batteries
International Protection class	IP64
Dimensions and weight	61 (W) x 64 (D) x 115 (H)mm, 153g (main unit and small sample stage S only)

* Grape varieties and measurement environment may affect accuracy.

Error Messages

When there is an operation error or malfunction, the below error message will show with alarm sound for warning.

- L0** The battery is low.
- LLL** Measurement was taken for fruits with Brix lower than the measurement range.
- HHH** Measurement was taken for fruits with Brix higher than the measurement range.
- nnn** Measurement was taken while the sample stage was not in contact fruit. When correct measurements are not achievable due to interference from external light → Refer to "Measurement tips and precautions"
- EEt** There is a temperature difference between the fruit and the main unit.
- EEE** The instrument is faulty. Replace the batteries. Contact ATAGO if this error persists.



FULL When the history of measured data reaches 100. Turn OFF the NFC Function or Delete Data History.

Automatic Temperature Compensation

The measurement values are temperature dependent. This unit is equipped with automatic temperature compensation to correct the readings that are within the range to display measurement value at 20°C.

The unit displays temperature at the fruit surface.

Brix scale

Brix represents the weight of sucrose in 100 grams of sucrose solution as percentage by weight. When other dissolved solids are present in the solution, Brix conversion may be applied.

Brix is a measure of the total dissolved solids in a solution and indicates the combined concentration of all soluble substances, such as sugar, salt, protein, and acids.

ATAGO instruments are rigorously inspected to ensure each unit meets the highest standards of quality assurance.

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