



## Bench Receiving Scale

**HBR302-1**

## Operator Manual



701 S. Ridge Avenue  
Troy, Ohio 45374

**F35570 Rev.0 (07-2021)**

# Introduction

The HBR302-1 Scale can be used for a wide range of commercial activities including, receiving at factories and general stores as well as at fish markets, fresh markets, and agricultural industries. The system features “the check weighing function” that weighs based on the specified upper and lower limits. Thoroughly read this operation manual to use the HBR302-1.

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# 1. Read these instructions before use

## 1-1. For safe and proper use


Carefully read this “For safe and proper use” before use, and properly use the product. By following the instructions in this section, you can safely use the product, thus preventing harm to yourself and others and also preventing damage to property.


In addition, carefully keep this manual in an appropriate place.

- The hazardous levels and descriptions are defined in this manual as follows:


	<b>Danger</b>	Indicates that incorrect handling with disregard of the description could result in death or severe injury.
	<b>Warning</b>	Indicates that incorrect handling with disregard of the description could result in injury or property damage.
	<b>Caution</b>	Indicates that incorrect handling with disregard of the description could result in physical impairment or equipment damage.
	<b>Don'ts</b>	Indicates a prohibited action that you must NOT do.
	<b>Dos</b>	Indicates a mandatory action that you must do.

- Before using this product, carefully read and understand the following instructions labeled as “Danger” “Warning” and “Caution” and ensure to observe them.


**Danger**

 : To avoid an electric shock

- (1) Do not step on the AC adapter cable with your foot or run over it with the wheels of a cart or other equipment.
- (2) Never remove any parts installed with screws, such as the indication unit.
- (3) Hold the plastic main body of the AC adapter and securely connect or disconnect the AC adapter.

 : To avoid an explosion or ignition

This instrument is not explosion-proof.  
Do not use it where a combustible gas, hazardous material, or other hazards may be present.

 : To avoid a fire or electrical shock

Using the instrument in abnormal conditions (e.g. it gives out smoke or foul smell) may lead to a fire or an electric shock. In such a case, immediately unplug the power cable from the outlet. Confirm that it gives out no more smoke, and then ask your vendor for repairs.  
The users are strongly advised not to repair the product on their own as doing so is very dangerous.



## Warning

⊘ : To avoid injuries and physical damage

- (1) Do not use the instrument at an unstable place. When you place items on the weighing platform, ensure that the items would not collapse or fall down.
- (2) Unplug the AC adapter from the outlet after use (when the optional AC adapter is used).
- (3) Do not place your finger(s) into a gap, a hole, or any other pinching points on the instrument.
- (4) Do not disassemble or modify the instrument.
- (5) When you carry or move this instrument, be sure to hold the bottom of the instrument with both hands and lift it. (Never carry it in a poor posture or hold the indication unit or the pole when you lift and carry it.)
- (6) Liquid may leak from the display panel if it is damaged. Do not put the liquid into your mouth.



## Caution

⊘ : To avoid damage to the instrument

- (1) Do not push the display panel or operation keys with your fingernail or a pointed object.
- (2) Observe the specified input voltage and operating conditions.
- (3) Do not place anything heavier than the weighing capacity on the weighing platform.
- (4) Do not apply any excessive impact or vibration to the weighing platform—for example by dropping an item on it.
- (5) Do not disassemble or modify the instrument.

⊘ : To maintain the performance of the instrument

- (1) Do not place the instrument in a place close to any equipment that generates vibrations.
- (2) Do not place the instrument in a place exposed to direct sunlight or air-blow from an air conditioner.
- (3) Place the instrument on a rigid floor or table.
- (4) Do not use the instrument outside the range of the operating temperatures (–10 to 40°C).
- (5) Use the instrument in a horizontal position.  
(When the instrument is not horizontal, ensure to make it level through adjustments with the leveling legs.)
- (6) Do not drop the instrument. Do not place it on its side during storage.

## 1-2. Cautions and instructions on use

### • Causes of failure

- (1) Do not push the display panel or operation keys with your fingernail or a pointed object.
- (2) When you carry or move this instrument, be sure to hold the bottom of the instrument with both hands.
- (3) Do not apply any excessive impact or vibration.
- (4) Do not drop anything on the instrument, jump on it, or drop it.
- (5) Do not wipe the instrument using thinner, benzene, or other solvents.
- (6) Do not disassemble or modify the instrument. Otherwise, you may get injured—for example, suffer a wound on your hand from internal parts.
- (7) Do not expose the instrument to water or install it in a humid place.

### • Causes of inaccurate measurement

- (1) Do not use the instrument near a heat source or steam, or in a place exposed to direct sunlight or air-blow from an air conditioner.
- (2) Do not use the instrument in a place exposed to excessive shock or vibration, or near any devices that emit strong electromagnetic waves (e.g. microwave ovens).
- (3) Use the instrument on a level, stable place which is rigid enough to sustain the load.
- (4) Use the instrument in the specified operating conditions. (Operating conditions:  $-10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ , 30% RH to 85% RH)  
Note that, even in the specified operating range, measurement results may become inaccurate under the following conditions where condensations occur.
  - 1) When the instrument has been used or stored in a humid environment for a long time.
  - 2) When the instrument has been exposed to sudden temperature change even if the humidity is low (e.g. cold water has been splashed onto the instrument).
  - 3) When the instrument has been used in an atmosphere exposed to cold air (from a refrigerator etc.), steam, or water vapor.
- (5) Do not spray alcohol or chemicals, such as sodium hypochlorite, directly over the load cell.

### • Batteries

- (1) Battery other than the specified one must not be used.
- (2) Charge the battery as soon as the battery dead sign [-bat-] appears. When the battery exhaustion becomes remarkable, change to a new battery.
- (3) Upon replacement, set the batteries according to the specified direction. Otherwise, the scale may break down.
- (4) If you do not use the scale for a long period (about 3 month and more), Charge from time to time.. Otherwise, the battery may completely discharge and may not be used ..

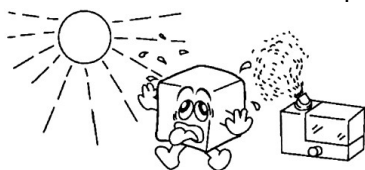
Please inspect the instrument at the start of the operation

The execution of proper measurement is required in the Measurement Act. Ensure to inspect the instrument and conduct the weight check at the start of the operation.

### Storage and disposal

#### • Storage locations

- (1) Avoid storing the instrument in a place exposed to high temperatures, high humidity, or long hours of direct sunlight. Note that a sudden change in the ambient temperature may cause condensation inside the instrument and disable the operation.
- (2) This instrument is a precision electronic device. Avoid storing it in a place with potential exposure to vibration and/or shock.



#### • Disposal


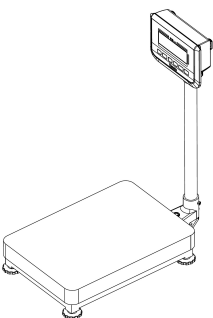
Dispose of the instrument as industrial waste (non-combustible waste). On disposal, comply with the disposal procedures specified by your local government.

### 1-3. Functions

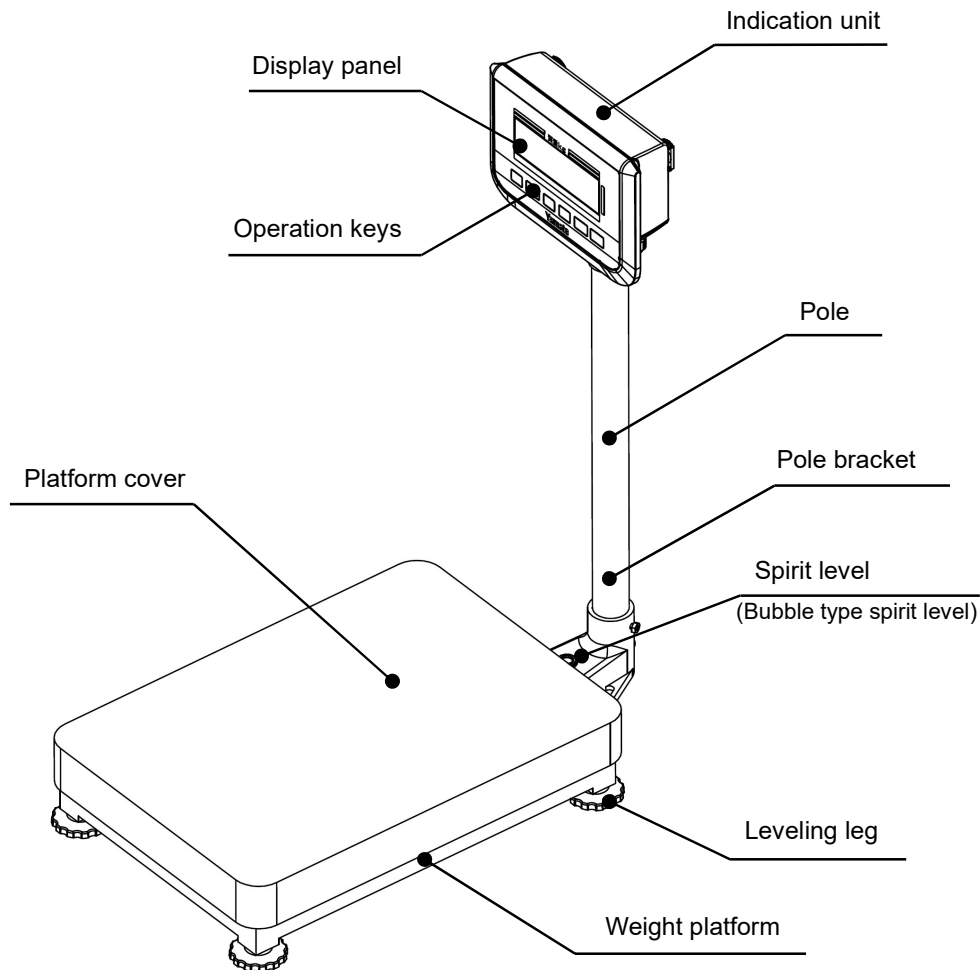
The digital platform scale HBR302-1 has the following functions. Make use of these functions according to your work.

Purpose	Method
Q1. I want to display the weight of an item or a container as zero on the panel. <b>Answer</b> <b>One-touch tare function → [Sec. 4-1]</b>	You can subtract tare by simply pressing the <b>Tare key</b> .
Q2. I want to check the gross weight or net weight of items. <b>Answer</b> <b>Gross/Net switching function → [Sec. 4-2]</b>	When the tare is inputted, you can switch the weight indications using the <b>Gross/Net switching key</b> .
Q3. I want to check whether the items fall into the range of the target weight. <b>Answer</b> <b>Checkweighing function</b> <b>Easy Program Set key → [Sec. 6-1]</b>	You can instantly know whether the current weight is too low, proper, or too high with respect to the target weight. A target value can be set easily using the <b>Easy Program Set key</b> , which allows you to register the upper and lower limits of a program.
Q4. I want to use another weigh unit. <b>Answer</b> <b>Weigh unit change function → [Sec. 2-5]</b>	You can change weigh units among kg, lb, oz and lb/oz..

### 1-4. Product package

Accessories	Main unit	Option
Operation manual (this manual) and AC adapter 		To be provided separately. * Refer to [Section 8-1].

## 1-5. Scale Diagram



## 1-6. To maintain the performance of the scale

- When you wash the platform cover, use clean water and then carefully wipe off moisture with a clean dry cloth.  
you use sea water, unclean water, or contaminated water, the instrument may break down.
- Use soft cloth when wiping stains off the whole instrument. Do not use a scrubber, brush, or other tools.
- To clean the instrument using neutral detergent, (1) moisten a sponge with neutral detergent, (2) wipe stains off the instrument with the sponge, (3) wash the instrument with clean water, and then (4) carefully wipe off moisture with a clean dry cloth.
- To disinfect the whole instrument using alcohol, (1) moisten a cloth with a solution of up to 80% alcohol concentration, (2) wipe stains off the instrument with the cloth, (3) wash the instrument with clean water, and then (4) carefully wipe off moisture with a clean dry cloth. Wash the display panel with clean water.
- Never disassemble or modify the instrument. Otherwise, it may deteriorate the water-proof performance of the instrument.  
Be sure to contact your vendor if, by any chance, you have disassembled the instrument by mistake.
- Do not drop the instrument. Do not allow the instrument to hit against hard objects such as a table.
- Do not open the battery cover at a place exposed to a large amount of sand, dust, or dirt.  
Any foreign matter adhered to the gasket may affect its water-proof performance.
- Do not push the display panel, operation keys, or rubber area with your fingernail or a pointed object.
- After replacing the dry batteries, firmly close the cover.
- After use, store the instrument in a dry place with a small change in temperature.

## 2. Preparations before use

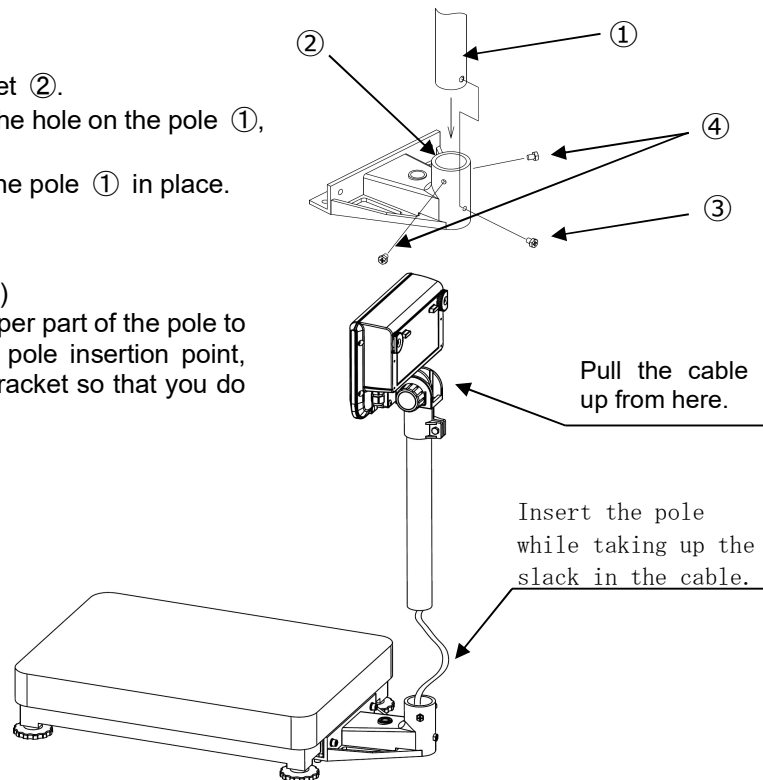
### 2-1. Assembling the instrument

(How to attach the pole)

1. Insert the pole ① into the pole bracket ②.
2. Align the hole for the screw ③ with the hole on the pole ①, and insert and tighten the screw.
3. Set and tighten the screws ④ to fix the pole ① in place.

(Cautions in assembling the instrument)

While pulling the cable up from the upper part of the pole to take up the slack in the cable at the pole insertion point, carefully insert the pole into the pole bracket so that you do not damage the cable.

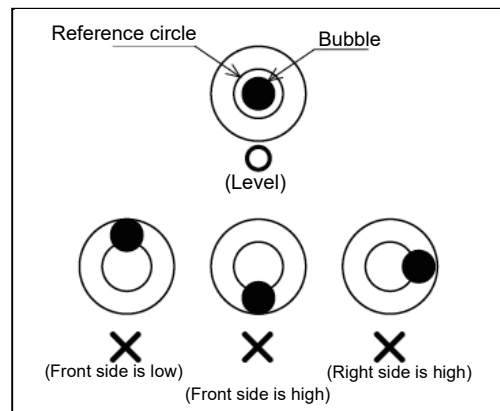


### 2-2. Place of installation

Be sure to install the scale horizontally. Otherwise, the measurement results will become inaccurate. Placing the scale on a wobbly surface will also result in inaccurate measurement.

[Note] Do not place the scale on a slanted floor (if the slant is too large to be adjusted).

On the underside of the scale, there are leveling legs for adjusting its levelness. Place the scale on as flat a surface as possible and turn the leveling legs so that the bubble in the spirit level is located at the center of the reference circle. On adjustment, ensure that all the leveling legs are in firm contact with the floor (the scale goes down when a leveling leg is turned clockwise, and it goes up when a leg is turned counterclockwise).



### 2-3. How to charge a battery

(1) Firmly insert the plug of the AC adapter into the jack. Otherwise, you may not charge it definitely.

\* Be sure to use a dedicated AC adapter. If you use a different adaptor, the instrument may break down.

(2) The scale starts charging. A battery indicator flashes on and off during charging. When charge is complete, the battery indicator turns off the light. (Approx. 12 hours is needed for a complete charging)

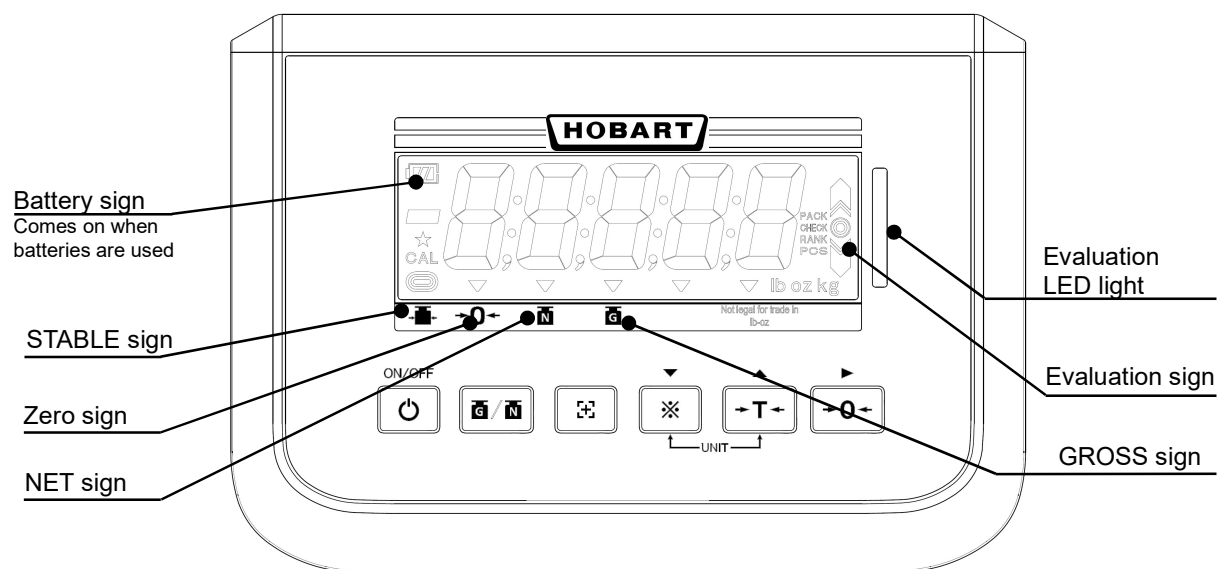
[Note] You can extend the life cycle of the battery since the early charge than become low battery. If you use the scale repeatedly by one cycle that is from full charge to [-bat-] display, the life cycle of the battery will be about 200 times.





## 2-4. Display panel and operation keys

### Display panel



### Operation keys

	<b>Power ON/OFF key</b> Press this key to turn the power ON. To turn the power OFF, hold down this key until it does. If the upper and lower limits are set for the checkweighing function, the checkweighing function starts.
	<b>Gross/Net switching key</b> If you wish to check the gross weight with the tare function enabled, press this key to switch the indicated value between the gross and net weights. This key can also be used to register various setting values.
	<b>Easy Program Set key</b> Press this key to set a target value with a single action. This key can also be used to register various setting values.
	<b>X key</b> If you wish to use the checkweighing function, hold down this key to start setting a target value. This key can also be used to decrease various setting values by 1.
	<b>Tare key</b> Press this key to show the weight of a container as zero. Then the system subtracts the weight as tare. This key can also be used to increase various setting values by 1.
	<b>Zero Reset key</b> If the indication is deviated from zero before weight measurement, press this key to reset it to zero. This key can also be used to register an input value of user parameters and switch to the next screen.


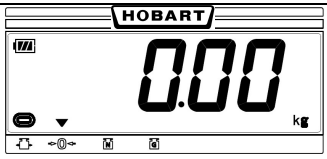
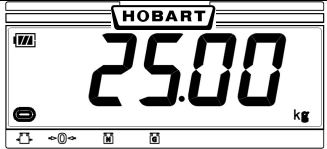
#### (Combination of multiple keys)

	<b>User parameter setting mode</b> Press both keys simultaneously. System enters the user parameter setting mode, where you can set various user parameters.
	<b>Unit Selection</b> Press both keys simultaneously to toggle among kilogram, pound, ounce and pound/ ounce indications.




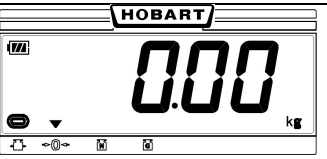
## 3. Basic operations

### 3-1. How to weigh an item


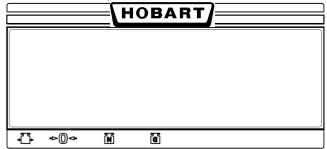
[Example] Procedure for turning ON the power and weighing a 25 kg item:

	Operation	Display
①	Press  . All the indicators and the Evaluation LED light come on, and then the panel shows 0.	
②	Put the item on the instrument. The panel shows the weight of the item (25 kg). When the measured weight becomes stable, the STABLE sign comes on.	

### 3-2. How to reset the indication to zero

	Operation	Display
③	Press  . The value on the panel is reset to zero.	  




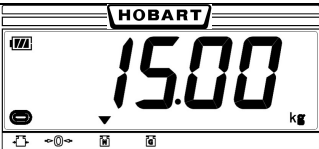
### 3-3. How to turn off the power

	Operation	Display
④	Hold down  . The power is turned off.	

## 4. One-touch tare function


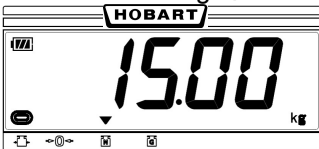

### 4-1. How to enable the one-touch tare function

[Example] When you weigh a 15 kg item with a 2 kg container as the tare:

	Operation	Display
①	Put the container (tare) on the instrument. The display panel shows the weight of the container (2kg).	
②	When the STABLE sign comes on, press  . The NET sign comes on and the panel shows 0.	
③	Put the item on the instrument. The panel shows the net weight (15kg) of the item excluding the container weight.	

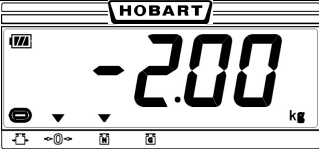


### 4-2. How to check the gross weight when the tare function is enabled

When the tare function is enabled, press  switch the indicated value between the gross and net weights.

	Operation	Display
④	When the panel shows a net weight, press  . The GROSS sign comes on and the panel shows the gross weight.	<div> <div>(Net weight)</div>  </div> <div> <div>(Gross weight)</div>  </div>

### 4-3. How to exit the one-touch tare function

[Example] When you remove a 2 kg container and exit the one-touch tare function:



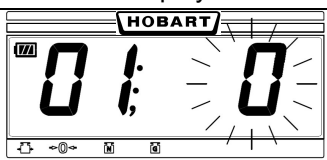






	Operation	Display
⑤	Remove the container from the instrument. The panel shows the weight of the container (2 kg) as a minus value.	
⑥	Press  . The NET sign goes out and the panel shows 0.	

## 5. User parameters

### 5-1. About user parameters

The HBR302-1 allows you to change the settings to best fit for your needs and applications. Change the settings as needed, referring to the upcoming user parameter table.

### 5-2. How to set a user parameter

	Operation	Display
①	Press  and  at the same time. The panel shows the user parameter #01 and its setting.	
②	Use the following keys when you set a user parameter.  <div style="display: flex; justify-content: space-around;"> <div>  Switches to the next parameter.   &amp;  Returns to the previous parameter. </div> <div>  Increases the parameter setting by 1.   Decreases the parameter setting by 1. </div> </div>	
③	<b>[IMPORTANT]</b> When you have changed a setting, be sure to press  to switch to the next parameter before turning off the power. Unless you switch to the next parameter, any changes you made to the setting will be lost.	

### 5-3. User parameter table

Number	Item	Setting value	Description of options (The underlined option is the factory setting.)
#01	Checkweighing function	0: Disable the checkweighing function 1: Simplified checkweighing function <u>2: Inspection checkweighing function</u> (The upper and lower limits are set using the measured weight of a sample as the middle value.)	
#03	LED lighting timing (parameter for multi-function)	0: Disable LED 1: LED ON upon underweight <u>2: LED ON upon proper weight</u> 3: LED ON upon overweight 4: LED ON upon underweight and flashes upon overweight	
#05	Automatic power OFF time	0: Disable automatic power OFF function 1: 5 minutes <u>2: 10 minutes</u> 3: 15 minutes 4: 30 minutes 5: 60 minutes	
#07	Flashing of indicated value per evaluation (parameter for checkweighing function)	<u>0: Disable flashing</u> 1: Flash upon underweight 2: Flash upon proper weight 3: Flash upon overweight 4: Flash upon underweight or overweight 5: Synchronize with #03 (LED lighting timing)	

Number	Item	Setting value	Description of options (The underlined option is the factory setting.)
#09	Gravity compensation for the region of use	0:	Parameter for instruments for other than transactions or certifications
#22	Weighing speed	0: <u>Standard</u> Speed-oriented 1: * If you specify this option for an instrument for transactions or certifications, it becomes invalid (0: standard). 2: Accuracy-oriented	
#25	LED brightness	0: 25% of full brightness 1: 50% of full brightness 2: <u>75% of full brightness</u> 3: 100% of full brightness	
#P3	Unit of proper weight value for checkweighing function	0: <u>Scale interval</u> 1: Ratio with respect to the target value (%) 2: Ratio with respect to the weighing capacity (%)	
#P4	Proper weight value for checkweighing function	0 to 255:	Range in units specified in #P3 (Factory setting: 10)

## 5-4. Description of each user parameter

### **[#01] Checkweighing function**

Select a type of the checkweighing function built in the HBR302-1 you wish to use.

### **[#03] LED lighting timing**

Select the timing of turning on the Evaluation LED light when the checkweighing function is used.

### **[#05] Automatic power OFF time**

You can automatically turn off the power of the instrument when it is not used for a specified period (minutes).

### **[#07] Flashing of indicated value per evaluation (parameter for checkweighing function)**

When the checkweighing function is enabled, you can make a setting so that the indicated value flashes. For example, if you set it to flashing when the weighed items have the proper weight, the evaluation result will be clearer.

### **[#09] Gravity compensation for the region of use**

Make this setting when you use the instrument for other than transactions or certifications in another gravitational region. Refer to page 21 for details.

### **[#22] Weighing speed**

You can increase the weighing speed; or you can decrease the weighing speed to ensure accurate measurements when you weigh items whose measured value takes a long time to be stable.

[Note] Be aware that you cannot increase the weighing speed when you use an instrument for transactions or certifications.

### **[#25] LED brightness**

You can change the brightness of the LED light used for the checkweighing function.

### **[#P3] Unit of proper weight value for checkweighing function**

From the following options, you can select a unit of the proper weight value for the checkweighing function:

- 1: Scale interval,
- 2: Ratio with respect to the target value (%),
- 3: Ratio with respect to the weighing capacity (%).

### **[#P4] Proper weight value for checkweighing function**

Set the proper weight range in units specified in #P3.

If you set #P3 to "3" and #P4 to "10," the proper weight range will be 10% of the weighing capacity.

## 6. Checkweighing function

### 6-1. Checkweighing function

The HBR302-1 has two checkweighing functions: the simplified checkweighing function and the inspection checkweighing function.

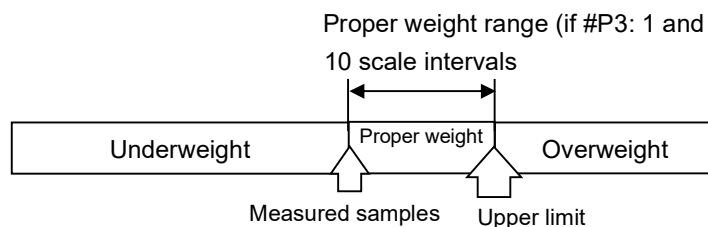
User parameter table for checkweighing function

Number	Item	Setting value	Description of options (The underlined option is the setting.)
#01	Checkweighing function	0: 1: <u>2:</u>	Disable the checkweighing function Simplified checkweighing function <u>Inspection checkweighing function</u> (The upper and lower limits are set using the measured weight of a sample as the middle value.)
#P3	Unit of proper weight value for checkweighing function	<u>0:</u> 1: 2:	<u>Scale interval</u> Ratio with respect to the target value (%) Ratio with respect to the weighing capacity (%)
#P4	Proper weight value for checkweighing function	0~255:	Range in units specified in #P3 (Factory setting: 10)

#### Simplified checkweighing function (#01: 1)

The weight of measured sample(s) becomes **the lower limit** of the proper weight range.  
The system automatically sets the upper limit of the proper weight range, based on the amount specified in the parameters.

[Example] if the measured weight of the samples is 2.00 kg and the scale interval is 0.01 kg:

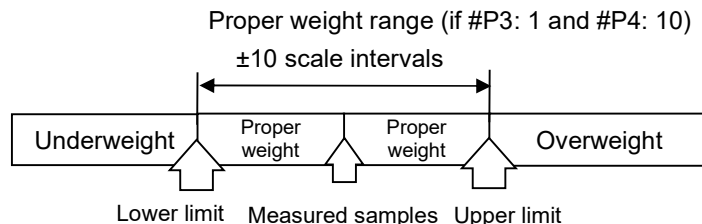


Underweight: 20 scale intervals to 1.99kg,  
Proper weight: 2.00kg to 2.10kg,  
Overweight: 2.11kg to Weighing capacity

#### Inspection checkweighing function (#01: 2)

The weight of measured sample(s) becomes **the middle value** of the proper weight range.  
The system automatically sets the upper limit and lower limit of the proper weight range, based on the amount specified in the parameters.

[Example] if the measured weight of the samples is 2.00 kg and the scale interval is 0.01 kg:



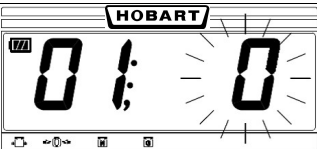




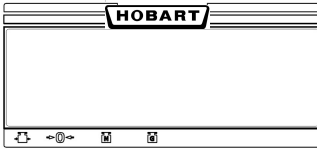


Underweight: 20 scale intervals to 1.89kg,  
Proper weight: 1.90kg to 2.10kg,  
Overweight: 2.11kg to Weighing capacity

## 6-2. How to select a checkweighing function

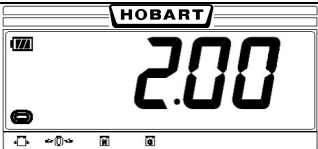




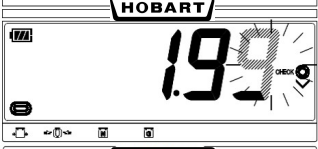
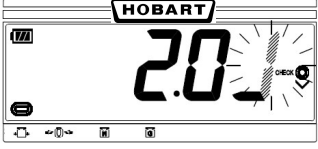

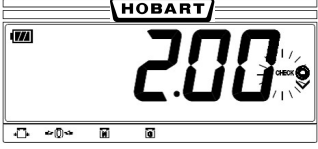

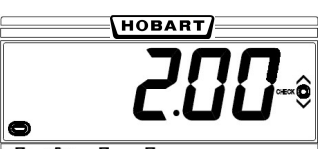
Before using the checkweighing function, set the user parameters.

Parameter number	Description
#01:	Checkweighing function
#P3:	Unit of proper weight value for checkweighing function
#P4:	Proper weight value for checkweighing function

	Operation	Display
①	Press  and  at the same time to enter the user parameter setting mode, and then set the parameter #01 to a function you use.	
②	Using the key  (+1) or  (-1), toggle between the options. When you reach the option you use, press  to switch to the next parameter.	0: Disable the checkweighing function 1: Simplified checkweighing function 2: Inspection checkweighing function
③	When the setting is complete, press  to turn off the power. The system enables the change of the checkweighing function.	







## 6-3. How to use the checkweighing function

### How to make the settings




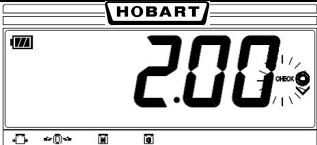


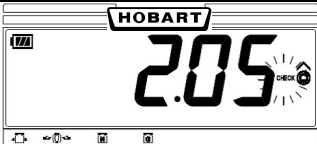


	Operation	Display
①	Put the items used for the target value on the instrument.	
②	Long press  until the rightmost digit flashes. ※ During the setting, the “CHECK” sign flashes.	
	To finely adjust the target value, Press  to decrease the target value by 1 scale interval. Press  to increase the target value by 1 scale interval. <b>At that time, if the weighing value becomes unstable, the adjusted indication will be canceled.</b>	 
③	Press  to register the target value. The system displays the lower limit and then the upper limit. Now, it is ready to start weight measurement. * During measurement, the “CHECK” sign changes from flashing to steady light. * The upper limit is automatically determined by the two user parameters: #P03 - Unit of proper weight value for checkweighing function and #P04 - Proper weight value for checkweighing function.	  



## How to confirm the setup values and start weight measurement (1)

	Operation	Display
①	Confirm that the panel shows 0.	
②	<p>Press . The system displays the lower limit and then the upper limit, and starts measurement using the checkweighing function.</p> <p>* When the panel shows 0 with the checkweighing function enabled, pressing  terminates the checkweighing function.</p>	  

## How to confirm the setup values and start weight measurement (2)

	Operation	Display
①	Confirm that the panel shows 0.	
②	<p>Press  to display the lower limit.</p> <p>If you hold down  at this point, you can clear the setting.</p>	
③	<p>Press  to display the upper limit.</p> <p>If you hold down  at this point, you can clear the setting.</p>	
④	Press  to start weight measurement using the checkweighing function.	

## How to obtain items of the proper weight (Simplified checkweighing function [#01=1])

- (0) At the user parameter #03, you can select a timing at which the Evaluation LED light comes on.  
At the user parameter #07, you can select a timing at which the indicated value flashes according to the evaluation.

### #03 LED lighting timing

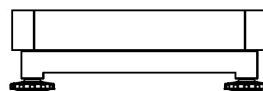
- 0: Disable LED
- 1: LED ON upon underweight
- 2: LED ON upon proper weight (Factory setting)
- 3: LED ON upon overweight
- 4: LED ON upon underweight and flashes upon overweight

### #07 Flashing of indicated value per evaluation

- 0: Disable flashing (Factory setting)
- 1: Flash upon underweight
- 2: Flash upon proper weight
- 3: Flash upon overweight
- 4: Flash upon underweight or overweight
- 5: Synchronize with #03

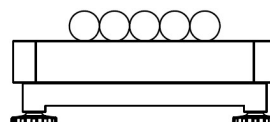
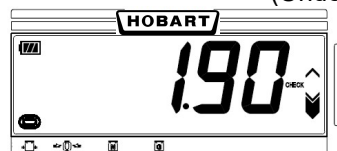
- (1) As with the normal weight measurement, the panel shows 0 at the start and the instrument is ready to weigh items.

(Start of measurement)



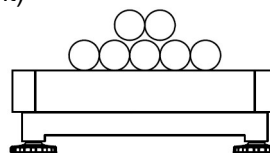
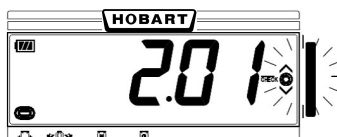
- (2) As you put items on the instrument, the Down Arrow sign comes on while the items are underweight.

(Underweight)



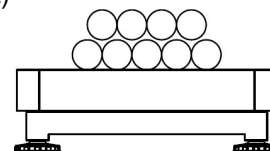
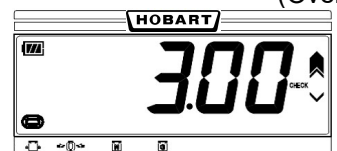
- (3) When you put items of the proper weight, the Evaluation LED light comes on.

(Proper weight)



- (4) When you put items exceeding the proper weight range, the Up Arrow sign comes on. Remove the excess from the instrument.

(Overweight)



- (0) At the user parameter #03, you can select a timing at which the Evaluation LED light comes on.  
At the user parameter #07, you can select a timing at which the indicated value flashes according to the evaluation.

#03 LED lighting timing

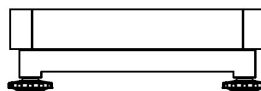
- 0: Disable LED
- 1: LED ON upon underweight
- 2: LED ON upon proper weight (Factory setting)
- 3: LED ON upon overweight
- 4: LED ON upon underweight and flashes upon overweight

#07 Flashing of indicated value per evaluation

- 0: Disable flashing (Factory setting)
- 1: Flash upon underweight
- 2: Flash upon proper weight
- 3: Flash upon overweight
- 4: Flash upon underweight or overweight
- 5: Synchronize with #03

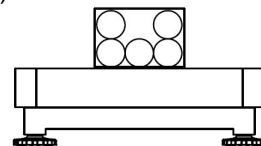
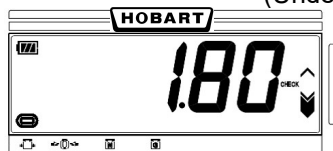
- (1) As with the normal weight measurement, the panel shows 0 at the start and the instrument is ready to weigh items.

(Start of measurement)



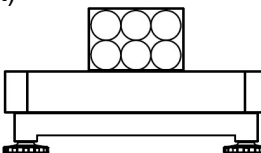
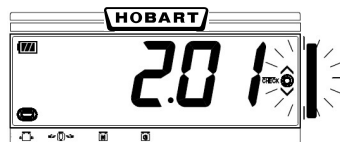
- (2) As you put items on the instrument, the Down Arrow sign comes on while the items are underweight.

(Underweight)



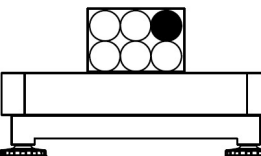
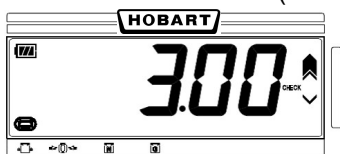
- (3) When you put items of the proper weight, the Evaluation LED light comes on.

(Proper weight)



- (4) When you put items exceeding the proper weight range, the Up Arrow sign comes on. Remove the excess from the instrument.

(Overweight)



## 7. Instruments for other than transactions or certifications

### 7-1. About instruments for other than transactions or certifications

If you use the HBR302-1 for a purpose other than transactions or certifications, first you need to compensate for gravitational acceleration according to the region of use. Otherwise, you may not be able to get the correct measurements. Therefore, carefully read the upcoming section 7-3 “Gravitational acceleration compensation for the region” and be sure to compensate for gravitational acceleration before proceeding with weight measurement.

### 7-2. User parameter of instruments for other than transactions or certifications

For the HBR302-1 for a purpose other than transactions or certifications, the user can compensate for gravitational acceleration according to the region of use and carry out span adjustment. Refer to the user parameter table and set the parameter before use.

Number	Item	Setting value	Description of options
#09	Regional compensation / gravitational acceleration	0: 1 to 29: 30 to 210:	No regional compensation / gravity compensation Not available for setting (Gravitational acceleration (m/s <sup>2</sup> ) - 9.7600) × 10000 ÷ 5 + Offset (30) Setting range: 9.7600 to 9.8500 m/s <sup>2</sup> Minimum setting increment: 0.0005 m/s <sup>2</sup>

#### [Number #09] Regional compensation / Gravitational acceleration

The HBR302-1 for other than transactions or certifications is equipped with the gravity compensation function.

Set the user parameter #09 - Regional compensation / gravitational acceleration to the value corresponding to the region of use.

### 7-3. Gravitational acceleration compensation for the region of use (only for a scale not legal for trade)

Carry out the following procedure to compensate for gravitational acceleration by the region of use. Refer to the setup value of the gravitational acceleration by the region of use.



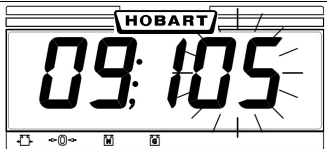


\*1 Once this compensation is made, there is no need to do it again the next time. Simply turn on the power and use the instrument.


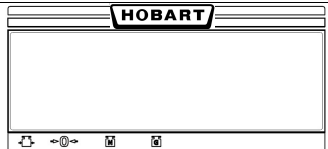
\*2 If you use a compensated instrument in an area with a different setup value, you need to compensate again for the gravitational acceleration corresponding to the region of use.

#### Gravity compensation for the region of use

[Example] If you use the instrument in Colorado Springs (Gravitational acceleration: 9.795 m/s<sup>2</sup>):

Formula:  $(9.795 - 9.7600) \times 10000 \div 5 + 30 = 100$ ; therefore, the setup value is “100”

	Operation	Display
①	Press  and  at the same time to enter the user parameter setting mode, and call the parameter #09.	
②	Set it to “76” and then press  . Then the next parameter #22 appears.	



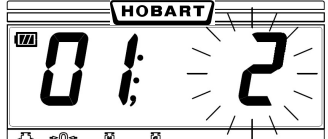





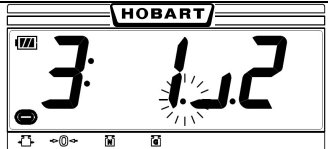



③	<p>Hold down  to turn off the power. This completes the setting for the region of use.</p>	
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
## 7-4. How to conduct weight calibration

For the HBR302-1 for a purpose other than transactions or certifications, the user can conduct weight calibration (calibration before use). It is recommended to periodically conduct weight calibration because otherwise measurement results may become inaccurate. Get Class 2 or better standard weights and conduct weight calibration according to the following procedure:

[Example] Procedure for weight calibration when you use an instrument with a weighing capacity of 60 kg:

\* Before conducting weight calibration, ensure to put a pre-load equivalent to the weighing capacity on the instrument.

	Operation	Display
①	Press  and  at the same time to enter the user parameter setting mode.	
②	<p>Press  and  at the same time while the parameter #01 is displayed.</p> <p>The weight calibration screen appears. Press  to start a calibration.</p>	
③	<p>Put 30kg weight(s), which is equivalent to 3000 scale intervals, and then press .</p> <p>* Put 15kg weight(s) when the weighing capacity is 30kg, or put 75kg weight(s) when the weighing capacity is 150kg.</p>	
④	<p>Put 60kg weight(s), which is equivalent to 6000 scale intervals, and then press .</p> <p>* Put 30kg weight(s) when the weighing capacity is 30kg, or put 150kg weight(s) when the weighing capacity is 150kg.</p>	
⑤	The weight calibration is now complete. Upon completion, the panel returns to mass indications. Put the weight(s) again to verify that the value indicated on the panel matches the actual mass of the weight(s).	

\* To cancel the calibration during the process, hold down .

## 8. Other topics

### 8-1. Options

The following options are available for the HBR302-1. In case you need any options, contact the supplier. Note that if you need any factory- options after the purchase of your scale, you need to send the scale back to the factory.

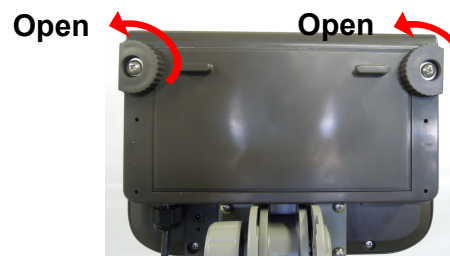
	Option name	Function
(1)	Communication unit - RS-232C - USB Serial - LAN	This unit enables a hard wire communication between the scale and a PC using our dedicated software.
(2)	Rechargeable battery(for exchange)	When the exhaustion of the battery becomes early, please change a battery.

#### ●How to exchange batteries

When you change to a new battery, follow the procedures below.

(1) Turn the thumbscrew for battery cover on the back of the indicator and then remove the battery cover.

\* When you exchange batteries, do not connect the AC adapter.



(2) You can remove the battery mount cover by loosening a screw.



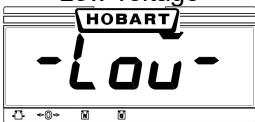
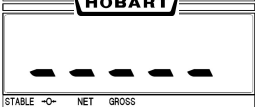

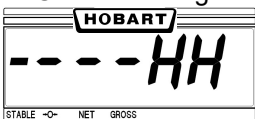
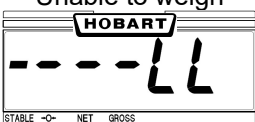
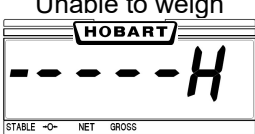
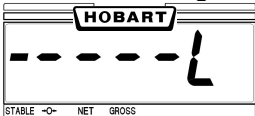
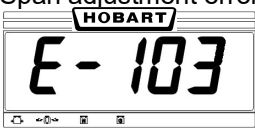
(3) Change to a new battery.


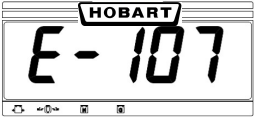
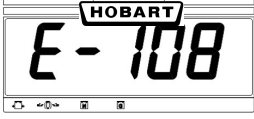

(4) You tighten a screw in a reverse procedure of (2). Confirm that all the connectors are connected firmly. Then you can restore the battery cover



## 8-2. Error messages

The following messages appear in the event of an error. Take appropriate actions according to the solution. When the following display appears, and it cannot be recovered by the following procedure, contact your vendor.

Message	Cause	Action
<p>Low battery</p> 	The batteries are running out.	Please charge it using exclusive AC adapter. You can extend the life cycle of the battery since the early charge than become low battery.
<p>Battery is dead</p> 	The batteries have run out.	Please charge it using exclusive AC adapter. If you use the scale repeatedly by one cycle that is from full charge to [-bat-] display, the life cycle of the battery will be about 200 times.
<p>Low voltage</p> 	The voltage from the AC adapter is significantly low.	The AC input voltage is low. After the shutdown, plug it in to another outlet. Then turn it on again.
<p>Unable to weigh</p> 	Measured weight is less than the value of 5 scale intervals.	Press the Zero Reset key. If the platform cover is removed, place it again.
<p>Unable to weigh</p> 	Measured weight is more than [the weighing capacity + 5 scale intervals].	Remove the item(s), which returns to measuring mode. Use the instrument within the weighing capacity.
<p>Unable to weigh</p> 	This code may appear when you turn on the power with a heavy item put on the weighing platform.	Turn on the power with nothing put on the platform.
<p>Unable to weigh</p> 	This code may appear when you turn on the power with something caught between the weighing platform and the platform cover.	Check that nothing is caught between them. In addition, check that no items are in contact with the platform cover, and then press the Zero Reset key.
<p>Unable to weigh</p> 	This code may appear when you press the Zero Reset key with a heavy item put on the weighing platform.	The item weighs more than the limit of zero reset. Remove the item, and then press the Zero Reset key.
<p>Unable to weigh</p> 	This code may appear when you turn on the power with something put on the weighing platform, remove it, and then press the Zero Reset key.	Turn on the power with nothing put on the weighing platform.
<p>Span adjustment error</p> 	The weight(s) used for weight calibration may have the incorrect mass.	Check the weight(s) and carry out span adjustment again. If the error still persists, contact your vendor.

Message	Cause	Action
<p>E2PROM write error</p> 	Invalid data are written into the E2PROM.	Turn off the power, and then turn it on again after a while. If the error still persists, contact your vendor.
<p>Electronic circuit error</p> 	An error has occurred at an electronic circuit.	Turn off the power, and then turn it on again after a while. If the error still persists, contact your vendor.
<p>Electronic circuit error</p> 	An error has occurred at an electronic circuit.	Turn off the power, and then turn it on again after a while. If the error still persists, contact your vendor.
<p>E2PROM write error</p> 	The writing into the E2PROM is restricted.	Turn off the power, and then turn it on again after a while. If the error still persists, contact your vendor.



### 8-3. Specifications

- The appearances and specifications of the product are subject to change for product improvements without prior notice.

1. Model HBR302-1 (Standard Model)
2. Weighing method Strain gauge load cell
3. Weighing platform dimensions 350(W)×500(D)mm
4. Data for each weighing capacity

□HBR302-1 (NTEP Certified model)





Capacity	Increment	Indication resolution	Minimum range	Maximum Tare
30kg	0.01kg	1/3000	0.2kg	30kg
60lb	0.02lb	1/3000	0.4lb	60lb
960oz	0.5oz	1/1920	10.0oz	960oz
60lb	0.5oz *1	1/1920	10.0oz	60lb
60kg	0.02kg	1/3000	0.4kg	60kg
150lb	0.05lb	1/3000	1.0lb	99lb
2400oz	1oz	1/2400	20oz	2400oz
150lb	1oz *1	1/2400	11lb:4oz	150lb
150kg	0.05kg	1/2400	1kg	99kg
300lb	0.1lb	1/3000	2.0lb	300lb
4800oz	2oz	1/2400	40oz	4800oz
300lb	2oz *1	1/2400	2lb:8oz	300lb

\*1: Unit "lb-oz" is not legal for trade.

□HBR302-1 (Not legal for trade model)

Capacity	Increment	Display resolution	Indication resolution	Minimum range	Maximum Tare
30kg	0.005kg	1/6000	1/3000	0.01kg	30kg
60lb	0.01lb	1/6000	1/3000	0.2lb	60lb
960oz	0.2oz	1/4800	1/1920	4.0oz	960oz
60lb	0.2oz	1/4800	1/1920	4.0oz	60lb
60kg	0.01kg	1/6000	1/3000	0.2kg	60kg
150lb	0.02lb	1/7500	1/3000	0.4lb	150lb
2400oz	0.5oz	1/4800	1/2400	10oz	2400oz
150lb	1oz	1/2400	1/2400	1lb:4oz	150lb
150kg	0.02kg	1/7500	1/3000	0.4kg	150kg
300lb	0.05lb	1/6000	1/3000	1.0lb	300lb
4800oz	1oz	1/4800	1/2400	20oz	4800oz
300lb	1oz	1/4800	1/2400	1lb:4oz	300lb

5. Display panel
 

Display tube	LCD module	
Digit size	17(W)×32(H)mm	
Indicators	Weight:	Maximum 5 digits
	STABLE sign (Ⓢ):	Comes on when the measured value of the instrument is stable
	Zero sign (▼):	Comes on when the zero point is displayed.
	GROSS sign (▼):	Comes on when the gross weight is displayed with the tare function enabled.
	NET sign (▼):	Comes on when the tare function is enabled.
	Overweight sign (▲):	Comes on when the checkweighing function is used.
	Proper weight sign (Ⓢ):	Comes on when the checkweighing function is used.
	Underweight sign (▼):	Comes on when the checkweighing function is used.
	Battery sign (  ):	Displayed at three levels    depending on the remaining battery.
6. Functions
 

(1) Zero reset function:	Resets the indication to zero (within ± 1.9% of weighing capacity).
(2) One-touch tare function:	Conducts the one-touch tare function.
(3) Automatic OFF function:	The power is automatically turned OFF when the STABLE sign has been turned ON for a preset time during the use of batteries.
(4) Checkweighing function:	Evaluates the weighed items as “underweight,” “proper weight,” and “overweight” as the indication is starting from zero.
(5) Gross/Net switching function:	When the tare function is enabled, the indication can be switched between gross weight and net weight.
(6) LED lighting function	The Evaluation LED light comes on depending on the weight level: underweight, proper weight, or overweight.
7. Appearance:
 

(1) Dimensions:	354(W)×634(D)×784~804(H)mm
(2) Weight:	Approx. 13 kg
(3) Materials:	Indication unit: ABS resin; Weighing platform: Steel; Platform cover: Stainless Steel; Separate Stand: Steel coated products or steel chrome oxide plated product or Aluminium
8. Dust-proof and water-proof protection: IP52 compliant
9. Power supply: Lead acid battery(include), AC adapter
10. Battery life:
 

Approx. 240 hours in continuous use.
Charging time: Approx. 12 hours.
Cycle life: Approx. 200 times.
11. Power consumption: About 0.006A for normal use and about 0.24A at max
12. Applicable regulations NTEP, FCC, UL
13. Operating conditions:
 

(1) Operating temperature range	-10°C~+40°C
(2) Charging temperature range	+5°C~+35°C
(3) Operating humidity range	30%~85% R.H.(No condensation)
14. Option
 

(1) RS-232C communication unit (D-SUB 9P)
(2) USB Serial communication unit (USB Type-B)
(3) LAN communication unit (RJ45 / 10BASE-T, 100BASE-T)

#### 8-4. Dimensional outline drawing

HBR302-1:

