

# Yamato

## **TDW-2102 WP** **Instruction Manual**



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## 1. For your safety use

Read "For your safely use" and the "Instruction Manual" thoroughly before using this product, and use it correctly.

After you read it, keep it with care so as to be available whenever you need it.

Marks used in this manual and the meanings:

	<b>Danger:</b>	Indicates operations without complying with the instruction may result in fatal or serious injury.
	<b>Warning:</b>	Indicates operations without complying with the instruction may result in bodily injury or damage of properties
	<b>Caution:</b>	Indicates operations without complying with the instruction or correcting your practice may result in damage of the entire product.



**Danger: To prevent electric shock**

- (1) To prevent serious injury caused by electrical leak, be sure to connect an earth wire. The power plug uses a 3P plug with an earth terminal. When the wall socket to be used is 2P, use a 3P/2P conversion socket, and connect an earth wire to it.
- (2) Do not step or let the wheel of cart pass on the power cable.
- (3) Never remove any screw on the display panel.
- (4) Hold firmly the resin part of the plug whenever connecting/disconnecting the power plug.
- (5) Do not attempt to disassemble or modify this product. Otherwise, it may cause not only failure to it, but also electric shock.



**Danger: To prevent explosion and flashing accident**

This machine is not explosion-proof.

Do not use it in an area where inflammable gas or hazardous substances exist.



**Danger: To prevent fire and electric shock**

Using it in such an abnormal situation as there is smoke or unusual smell may result in fire and/or electric shock.

Disconnect immediately the power cable plug from a wall socket.

Check that the smoke has ceased, and then request your distributor for repair.

Never repair it by yourself. It is dangerous.

Do not use it in an area where inflammable gas or hazardous substances exist.



**Caution:**

: Do not use it in an unstable place.

If using it in an inclined position, it may be overturned, which may result in an unexpected accident.

When you install the machine on a stand, use a stand with sufficient strength and check the safety before using it.

: Do not lift up the weighing pan by hand.

An unusual force may be applied to the scale, which may result in failure.

: Do not insert your hand or finger into the clearance of the scale.

Otherwise, it may result in bodily injury or failure.

An unusual force may be applied to the scale, which may result in failure.

: Be sure to verify the safety when you carry or relocate the machine.

Do not carry the machine in an unstable posture or by holding the controller of the machine.

## 2. Precautions for use

- **To prevent failure, comply with the following:**

- (1) The display panel is not waterproof. Do not water it directly.
- (2) The material of weighing scales is IP66; therefore, do not immerse them into water.
- (3) This machine is a precise electric device. Do not apply a rapid temperature change to the machine, or do not store it in any place with high humidity.
- (4) Do not damage the power cable and plug, or do not place a heavy load on it, pull it, nor break it.
- (5) Do not press on the display screen (touch panel, switch) with your nail or other sharp devices.
- (6) Hold the bottom of the machine by both hands with two or more persons to carry or relocate the machine, so as not to fall or bump it onto the floor.
- (7) Do not fall anything onto the machine, or do not apply a shock or vibration to it.
- (8) Do not wipe the machine with thinner or benzine.
- (9) Never disassemble or modify the machine. Otherwise you hand may be injured by internal components.
- (10) Do not use the machine in any place exposed to sand, dust, and powder, salt water and/or sea breeze.

- **The following may cause incorrect measurement:**

- (1) Do not use the machine in any place close to fire or steam, or subjected to direct sunlight or air conditioner wind.
- (2) Do not install the machine close to equipment generating excessive shocks, vibration, or strong electromagnetic waves (microwave oven, mobile telephone, etc.).
- (3) Install the machine on a flat and stable floor strong enough to withstand the load.
- (4) Use the machine in the specified environment.  
(Operating environment: -10 to +40°C, 30% to 80% RH)  
Do not expose it to a rapid temperature change.  
Do not use the machine for a long period of time in a high humidity environment.
- (5) Use calibrated weights for span adjustment.
- (6) Do not use the machine on an inclined or unstable stand (shaky stand).

• **To maintain the scale performance:**

- (1) Wipe the display panel with a wet cloth, and then completely wipe off the water with a dry cloth. Do not water it directly.
- (2) Wash the weighing scales with clean water, and then completely wipe off the water with a dry cloth. Do not wash the machine with seawater, unclean water, water containing impurity, hot water of 40°C or more or cold water of 10°C or less.
- (3) Use a soft cloth or sponge to clean the machine. Do not use a scrubber or brush.
- (4) Dilute a neutral detergent 200 times with water and wipe the weighing scales with a sponge moistened with it. Then, flush them with clean water and wipe off the water with a dry cloth. Never use a cleanser or alkaline detergent.
- (5) Sterilize the weighing heads with a cloth moistened with a solution of 80% or less alcohol. Then, flush them with clean water and wipe off the water with a dry cloth.
- (6) Use hypochlorous only for sterilization of the weighing pans, and never use it for the display panel or weighing scales. After the weighing pan is sterilized with hypochlorous acid, flush it with clean water and completely wipe off the water with a dry cloth.
- (7) Never disassemble or modify the machine. Otherwise, its water proof performance may be deteriorated.  
Should you disassemble it accidentally, be sure to contact your distributor.
- (8) Do not fall or bump the machine onto the floor. It may cause crack or deformation, which may also deteriorate the waterproof performance.  
Should you fall or bump the machine onto the floor accidentally, be sure to contact your distributor.
- (9) Disconnect the power plug from a wall socket, when you do not use the machine for a long period of time.

### 3. Start-up inspection, storage and disposal

#### **Recommendation of inspection at start-up**

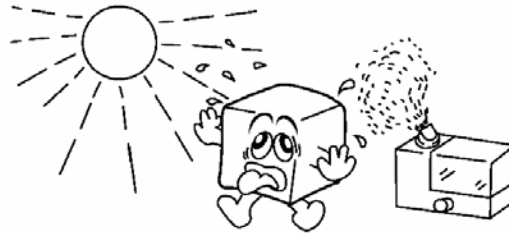
Appropriate measurement is required under the Measurement Law. Conduct of inspection and weight check at the start-up is recommended.

#### **Storage and disposal**

##### **Storage area**

1. Do not store the scale in any place subjected to high temperature, high humidity, or direct sunlight for a long time.

Significant change of the ambient temperature may cause malfunction due to internal condensation.



2. The main body is a precise electric device; therefore, do not store it in any place where shocks or vibration are applied, or likely applied.

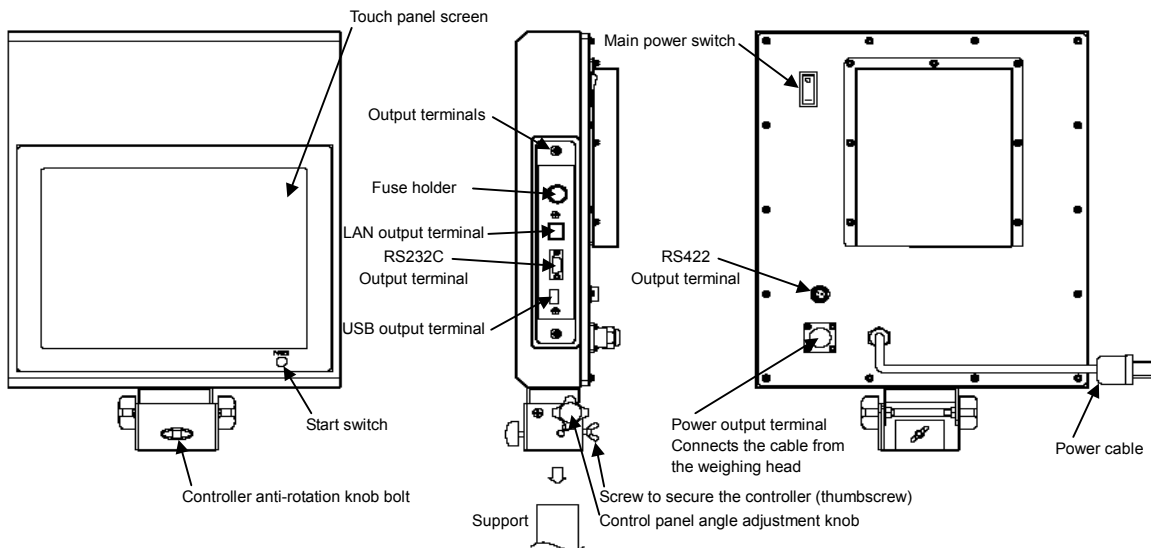
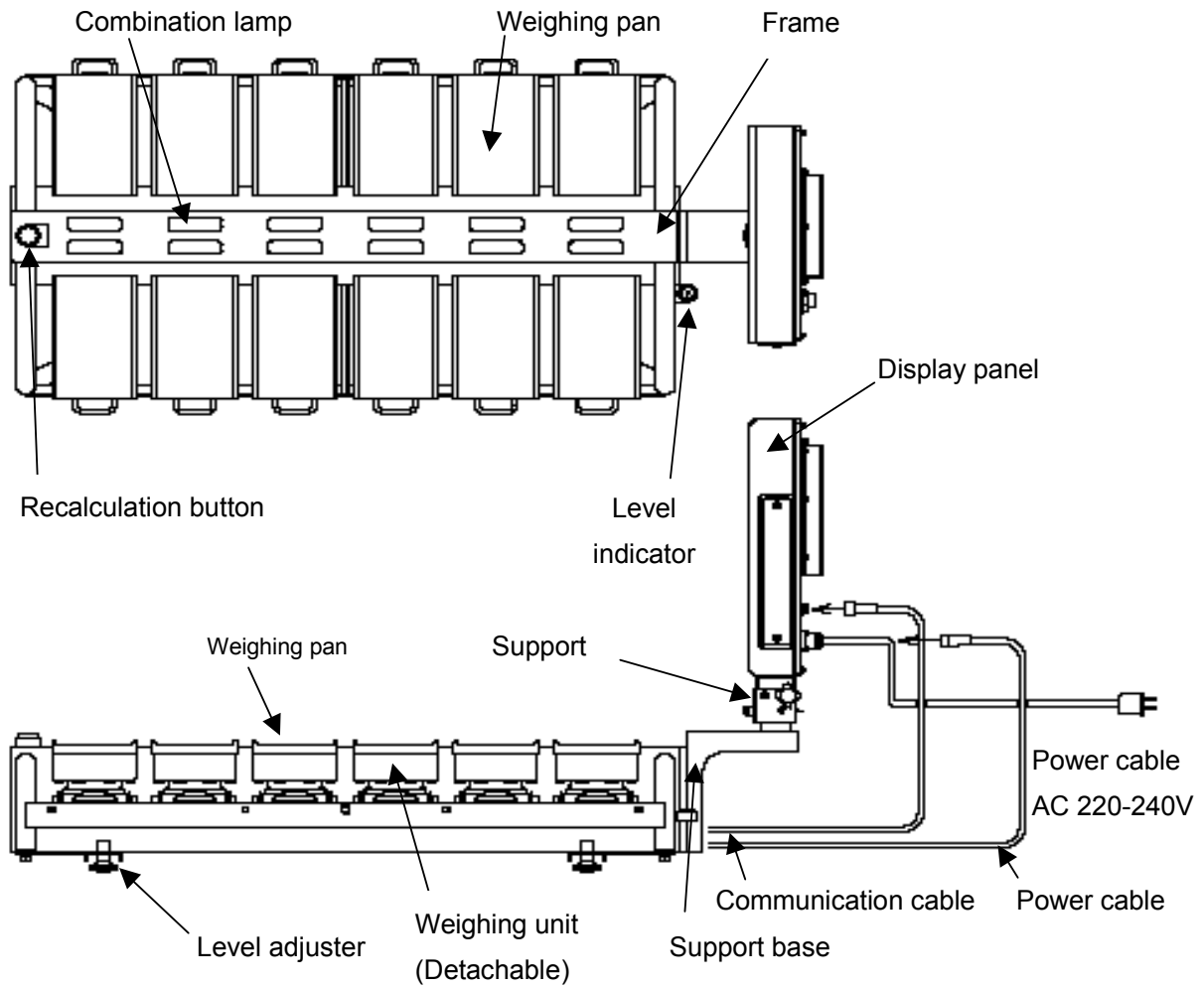


##### **Disposal**

This unit shall be disposed of as industrial waste (non-combustible waste).

Dispose it of appropriately according to the disposal instruction specified by the local government concerned.

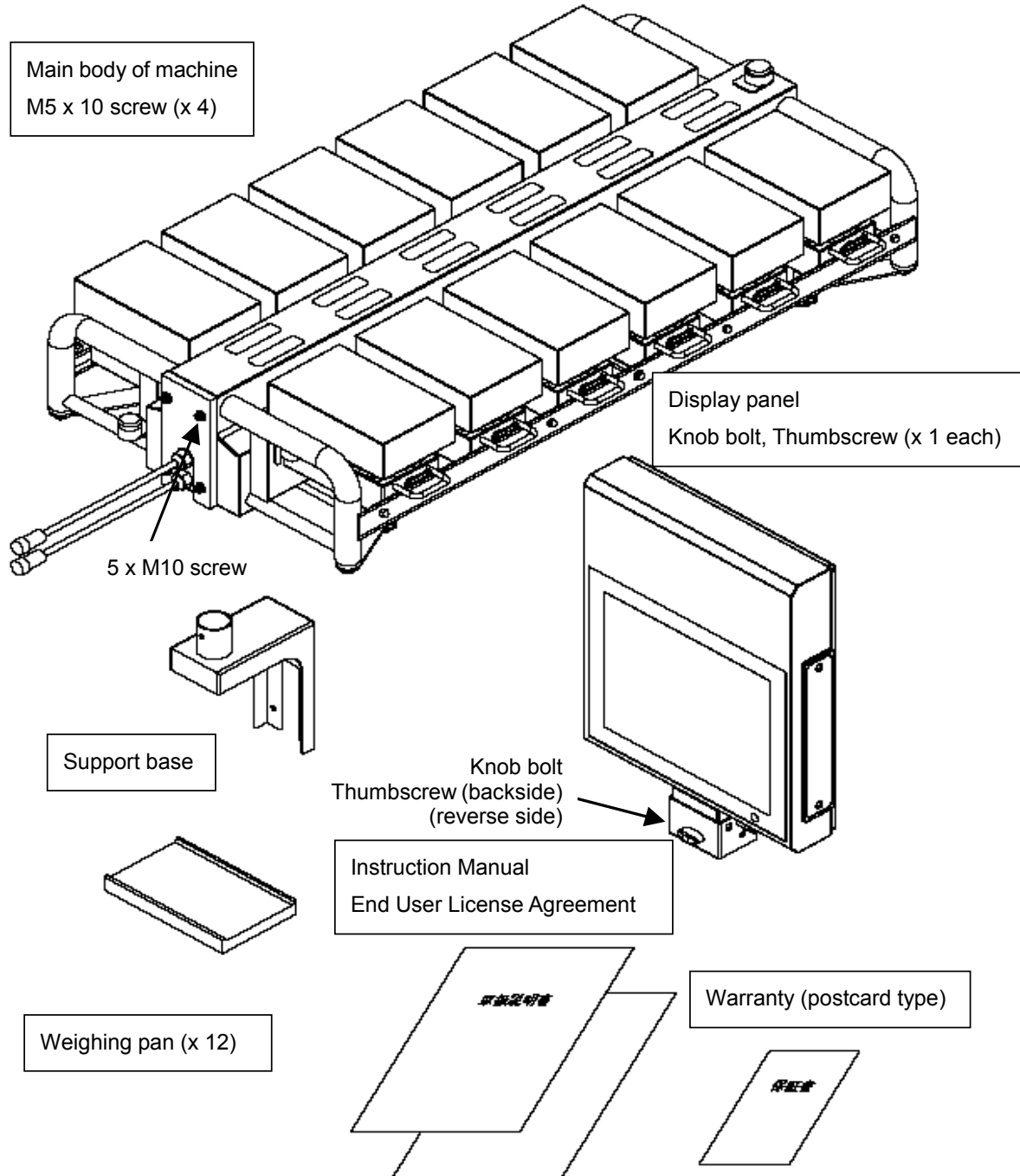
#### 4. Part names



## 5. How to assemble

### Components of the machine

Check the components contained.



## How to assemble

At first, mount the display panel on the main body of the machine.

1. Mount the support base contained in the display panel package using the provided screws (M5 x 10).

\* Prepare a Phillips head screwdriver.

Secure it with 4 screws.



2. Mount the display panel to the support base already secured.

(Insert the display panel to the support base pipe)

Insert the display panel



3. Tighten the screw (M5 thumbscrew) in the rear of the support base to secure the display panel.

\* The display panel does need to be swiveled.

Tighten it using a M5 thumbscrew



4. Tighten the knob bolt at the front bottom of the display panel to secure it.

Tighten also the knob bolt on the side to secure firmly the display panel.

Front knob bolt

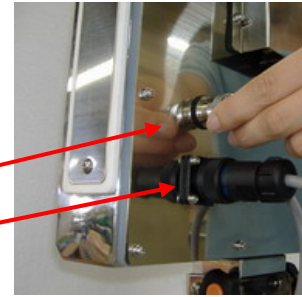
Side knob bolt



- Connect the interface cable connector(1) and the power cable connector(2) of the weighing scale to the connector hole at the back of the display panel.  
(After connecting it, turn the outer-ring of the connector to tighten it.)

Connector(1)

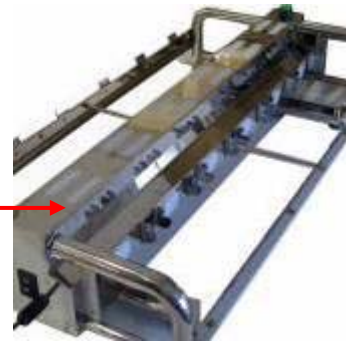
Connector(2)



#### How to mount the weighing unit

- Mount the weighing unit on the frame.  
(The weighing unit is mounted on the frame before shipment.)

Frame



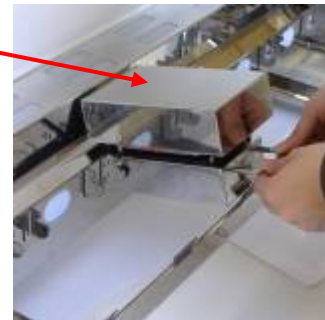
- Insert the mounting shaft of the weighing unit into the guide on the frame.

Weighing unit



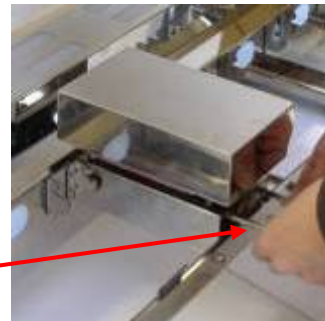
Mounting shaft

Guide



- After the mounting shaft is inserted, move down the weighing unit until it snaps on the frame.  
\* Check if both mounting shafts are inserted firmly.  
\* Hold its handle to mount the weighing unit.  
Do not press down the top of the weighing unit.

Handle



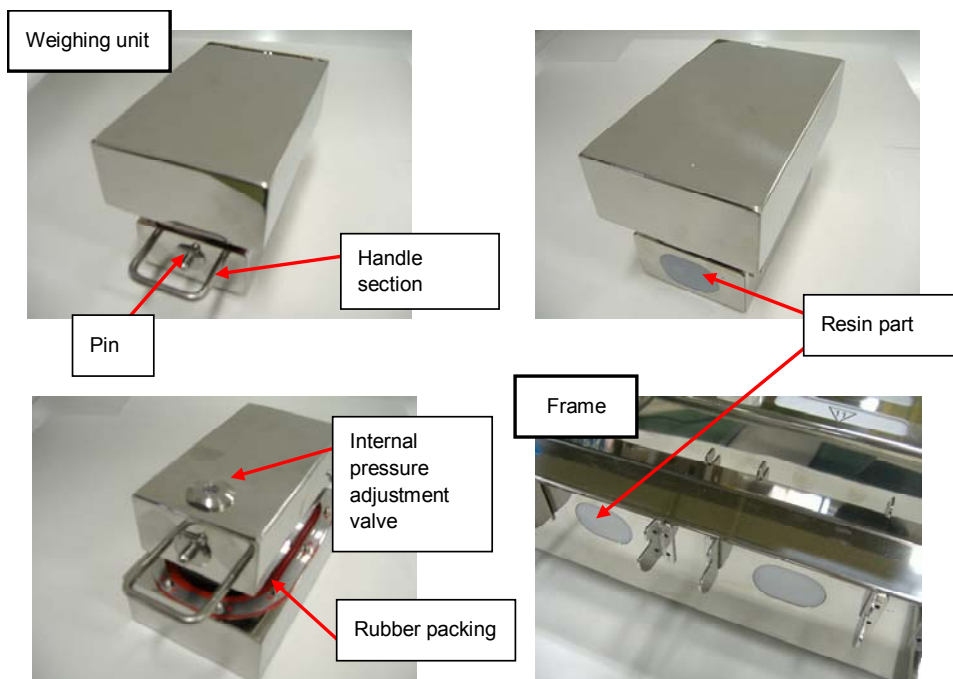
4. Place the weighing unit on the weighing unit.

Weighing pan



#### Precautions for handling weighing units

- Do not fall weighing units, or bump them against each other.
- Hold the handle to remove or insert weighing units.
- Do not soak weighing units in water although they are waterproof.
- When the internal pressure adjustment valve located at the bottom of a weighing unit is blocked with any foreign material, flush it away with water.
- Do not press the pin at the front of the weighing unit when it is flushed.  
(Water may enter into the weighing unit, which may damage it.)
- Remove foreign material that adheres to the rear part of weighing units or the resin part of the frame, if any. Do not scrape them with a brush to remove foreign material.
- Do not scrape the rubber packing with a brush or it may be damaged, and the scale may become unusable.



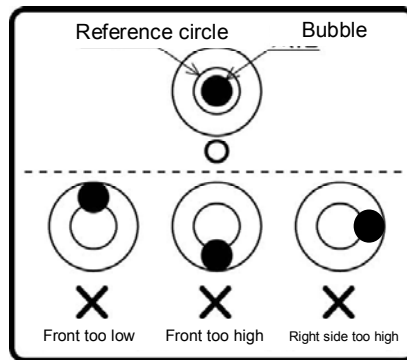
## 6. Installation location

Whenever using the machine, be sure to install it horizontally. Otherwise, correct measurement cannot be performed. Also, a rattling base is inappropriate for correct measurement.

Cautions: Do not place it on an inclined floor (when it is beyond the adjustable level range).  
Also, do not place it on an unstable stand.

There are 4 level adjusters on the bottom of the main body to adjust the level.

Turn the level adjuster on a flat floor as possibly and adjust the level so that the bubble can be observed at the center of the reference circle. In addition, adjust the level adjuster so that all of them sit firmly on the stand.



How to read the level

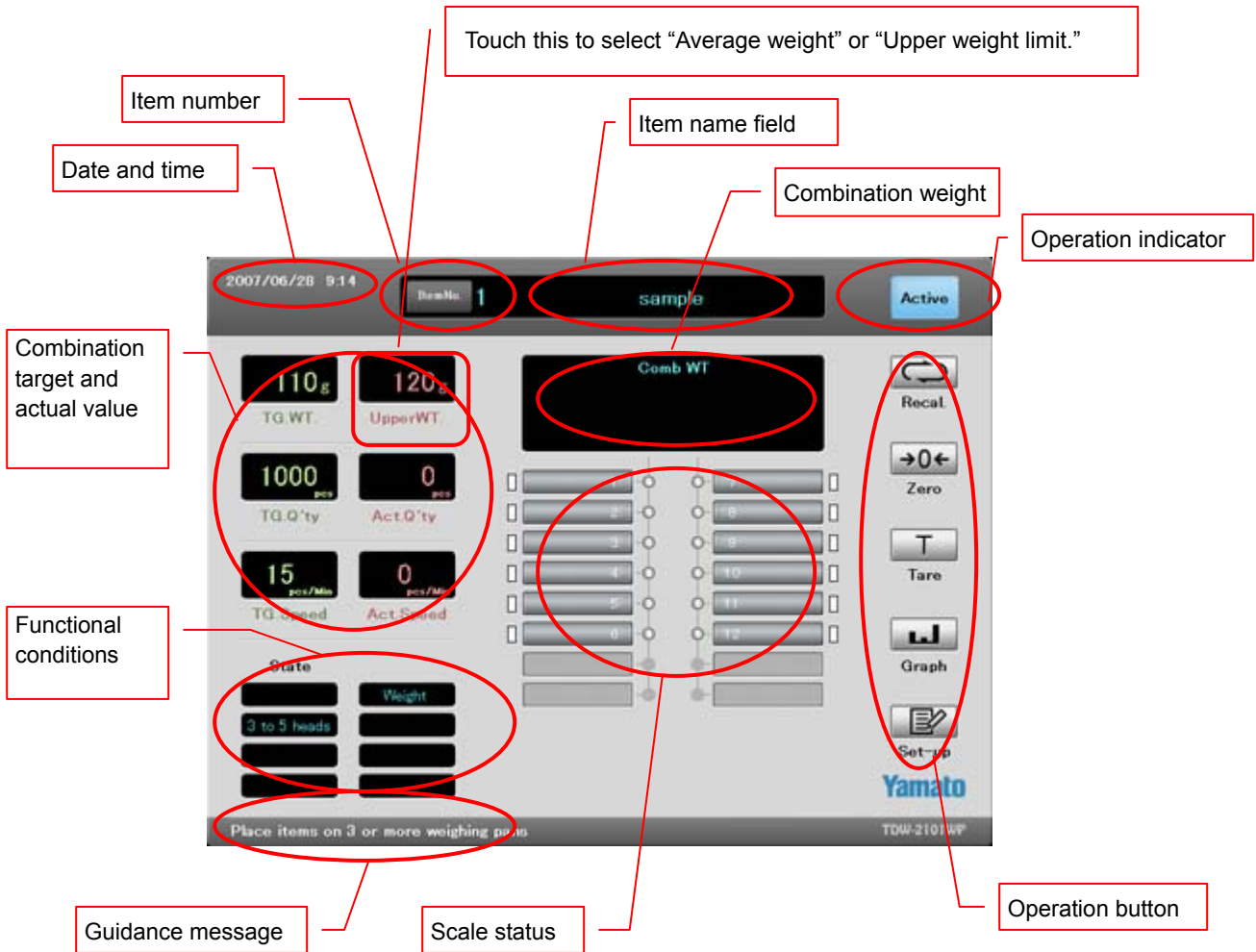
## 7. Setting the service region

When using the machine for the first time after purchasing, it is necessary to correct the gravity acceleration by service region.

Otherwise, correct measurement may not be performed. Refer to "User Setting" on page 67, and correct the gravity acceleration before you start weighing.

For setting, refer to "(6) Gravity Compensation(Setting the service region)" on page 75.

## 8. Display panel and key operation



Date and time: ..... Indicates the current date and time.

Item number: ..... The item number being recalled appears in the right of this button.  
Press it to recall the item registered. (Refer to page 36.)

Item name field: ..... Indicates the item name being recalled. Press this field to display  
the item selection screen. (Refer to page 36.)

The target weight (lower limit) cannot be changed on this screen.

Target weight: ..... Indicates the target weight (lower value) of the “item” registered.  
The target weight (lower limit) cannot be changed on this screen.

Target quantity of production: ..... Indicates the target quantity of production of the “item” registered.  
When the actual quantity of production reaches the target quantity  
of production, it sounds a buzzer, indicates a message, and  
cancels the subsequent combination weighing. The target quantity  
of production cannot be changed on this screen.

- Target capacity: ..... Indicates the target capacity of the “item” registered.  
The target capacity cannot be changed on this screen.
- Average weight: ..... Indicates the average weight of the combinations finalized.  
It is re-calculated each time a new combination is finalized.
- Upper weight limit: ..... Indicates the upper weight limit of the “item” registered.  
The upper weight limit cannot be changed on this screen.
- Actual quantity of production: ..... Indicates the actual number counted each time the item is picked up after the combination is finalized. It counts “+1” when the item is picked up after the combination is finalized. This value is stored by each item.
- Current capacity: ..... Indicates the current production capacity. This value is automatically updated each time a combination is found.
- Functional conditions: ..... Indicates the combination conditions currently being set.  
The functions highlighted blue are those currently being set.
- Guidance message: ..... Indicates various messages during the on-going combination operation.  
Check this guidance message when the combination is not found appropriately.
- Scale status: ..... Indicates the status of each scale.
- External scale status: ..... Indicates the status of external scales (optional).



..... Recalculation button  
Touch this button to recalculate the combination.



..... Zero reset button  
Touch this button to reset all weighing units to zero.



..... Tare button  
Touch this button to set tare for all weighing units.




..... Graphic button  
Touch this button to change the screen from the combination mode to the graphic mode.



..... Setting button  
Touch this button to change the combination mode to the setting mode.

**How to recalculate the combination:**

When a red LED flashes due to a pick-up error, press the recalculation button. Then, the red LED is off, and the combination is recalculated.

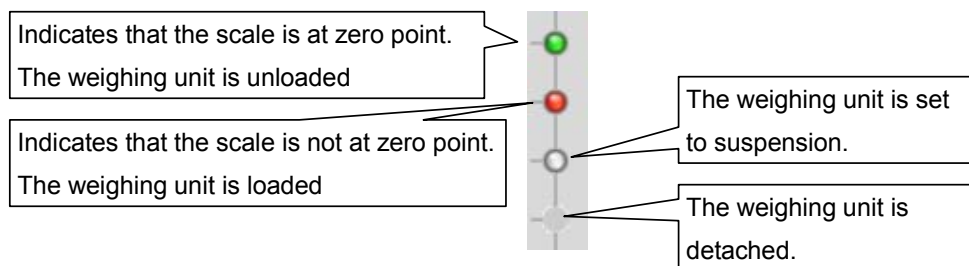
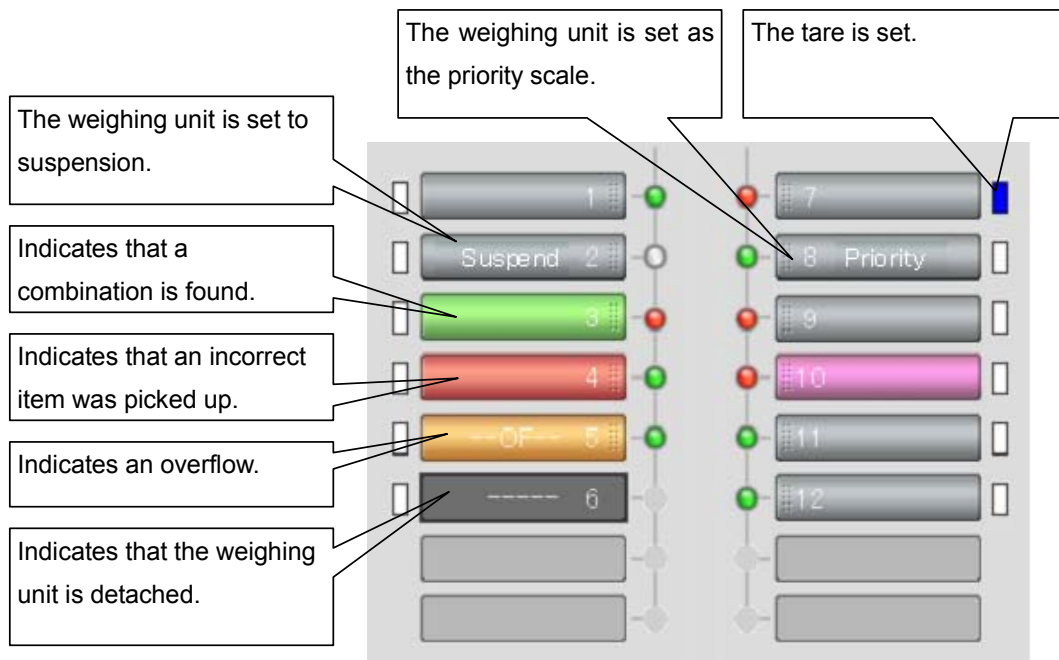
For the recalculation, press the recalculation button  on the controller, or press the recalculation switch on the weighing head.

\* **Lamps**

**(LED on the weighing heads)**

- Green lighting: Indicates that a combination or a compulsory combination of remains is found.
- Green flashing: Indicates that an proximity combination is found.
- Red flashing: Indicates that an incorrect item is picked up.
- Purple flashing: Indicates that an item is remaining. Remove the item.
- Orange lighting: The weighing unit is set to suspension.
- Orange flashing: Indicates a scale zero point error.

**(Status of the machines)**



## 9. Functions

### (1) Priority head combination function

In the case a package packed with different items (for example, making a type of package of 500g, consisting of one piece of cut fishtail and other items), this function selects by priority a scale from among the weighing scales specified as priority scales and perform calculation by combining the specified unit and others. For setting this function, refer to “Priority head combination function” on page 48.

### (2) Proximity combination and automatic recalculation function

The proximity combination function is activated when all scales are loaded and no combination is found within the setting range. When an proximity combination is found, a blue lamp lights up. For setting this function, refer to “Proximity combination and automatic recalculation functions” on page 53.

### (3) Weight & quantity combination function

Such a combination (such a pack of 200g consisting of 3 pieces) can be found by setting the number of weighing-heads in addition to the target weight/upper limit. (Quantity = Number of weighing units)

For setting this function, refer to “Weight & quantity combination function” on page 54.

### (4) Remains detection function

This function indicates the presence of the weighing unit that has not been involved in the combination for a long time.

This function attempts to involve such a weighing unit in the combination by priority, which has not been involved for the specific period of time since it was loaded. In case it is not still involved in the combination for another specific period of time, the relevant lamp for the weighing unit flashes purple to notify the presence of the remains.

For setting this function, refer to “Remains detection function” on page 56.

(5) Weighing unit check function

All the 12 weighing units can be checked independently.

It indicates weight values, so the weight can be checked for each weighing unit.

For setting this function, refer to "Weighing unit check function" on page 58.

(6) Combination number setting function

When the number of combinations reaches the target quantity of production, it stops the combination and sounds a buzzer.

(7) Graphic function

The combination data can be indicated by item.

For setting this function, refer to "Graphic function" on page 62.

\* The combination weighing can be performed also on this screen displayed.

《Display details》

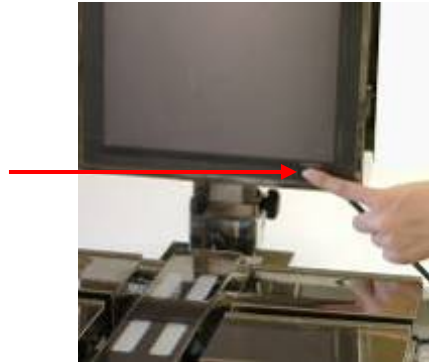
Upper limit:	Upper limit of the registered item.
Lower limit:	Target weight of the registered item.
Total weight:	Total weight of all combinations
Average weight:	Average weight of all combinations
Standard deviation:	Standard deviation of all combinations
Capacity:	Number of combinations per minute
Quantity of production:	Number of combinations

## 10. How to turn on power

1. Verify that no item is loaded on the weighing pan of the weighing unit.
2. Connect the power plug to a wall socket.
3. Turn on the main power switch on the display panel.



4. Press the **start switch (POWER)** at the front of the **display panel**.



The program starts and the following screen appears.

- \* It takes about 1 minute until the following screen appears after pressing the start switch.

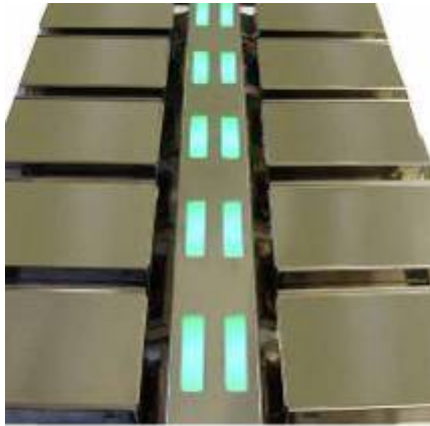
Fig. 1



Fig. 2



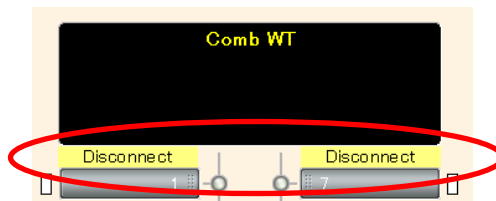
Then combination lamps light up red, blue, and green sequentially, and the machines are ready for use. If any lamp does not light up, contact your distributor. The lamp may be out of order.



Cautions:

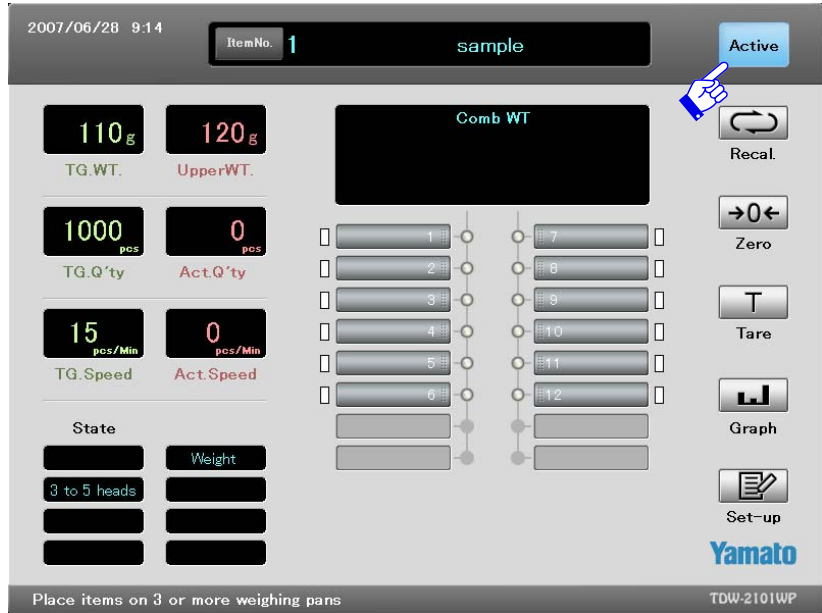
- \* When **Disconnect** is indicated under the combination weight field with the screen displayed as figure 2, turn off power according to “How to turn off power” on page 22, and then turn on power as per the procedure.

This trouble may occur when a power cable between the display panel and the frame is disconnected, or the communication condition between the display panel and the weighing heads is not good due to the long distance.

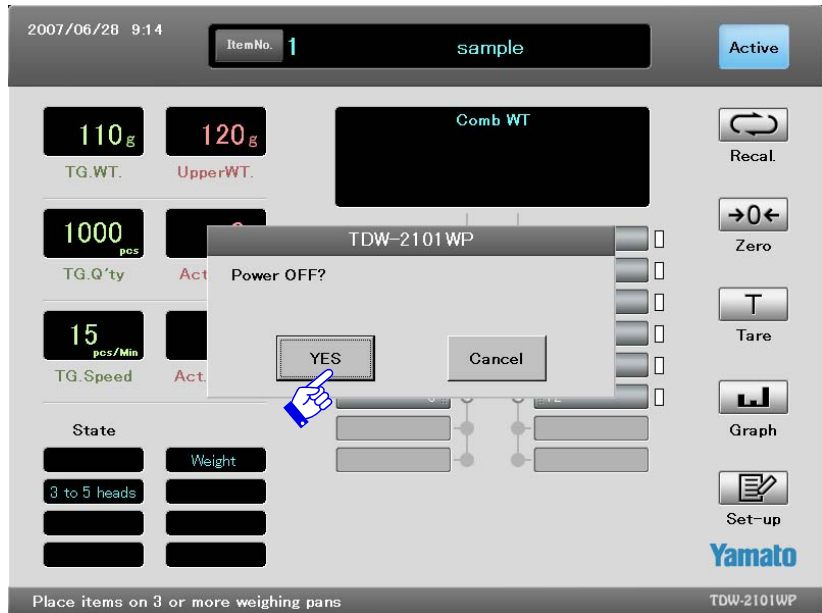


## 11. How to turn off power

1. Touch **Active** at the upper right of the screen.  
Or, press the **start switch (POWER)** at the front of the display panel to turn off power.



The following message appears.



Press **YES** to turn off power

Press **CANCEL** to return to the previous screen

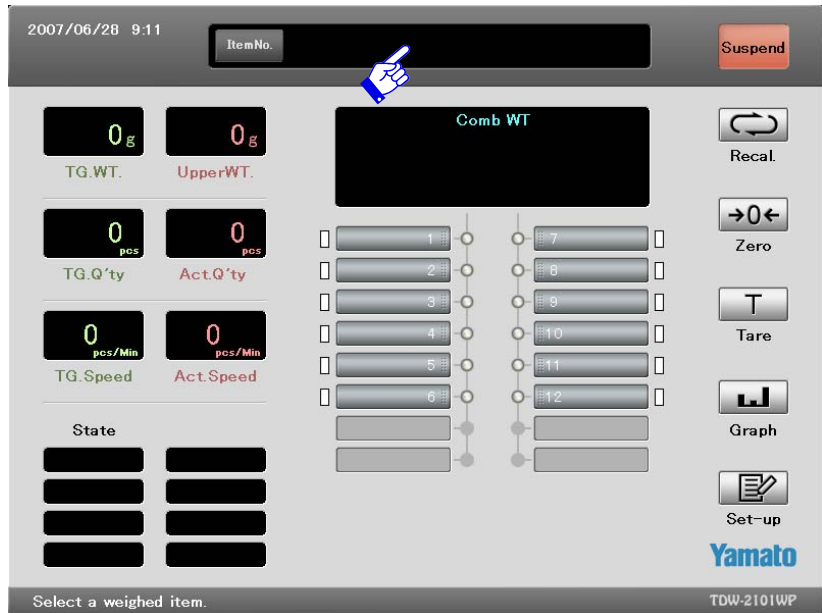
2. After you turn off power, turn off the main power switch on the display panel.

## 12. Initial setting (registration of item)

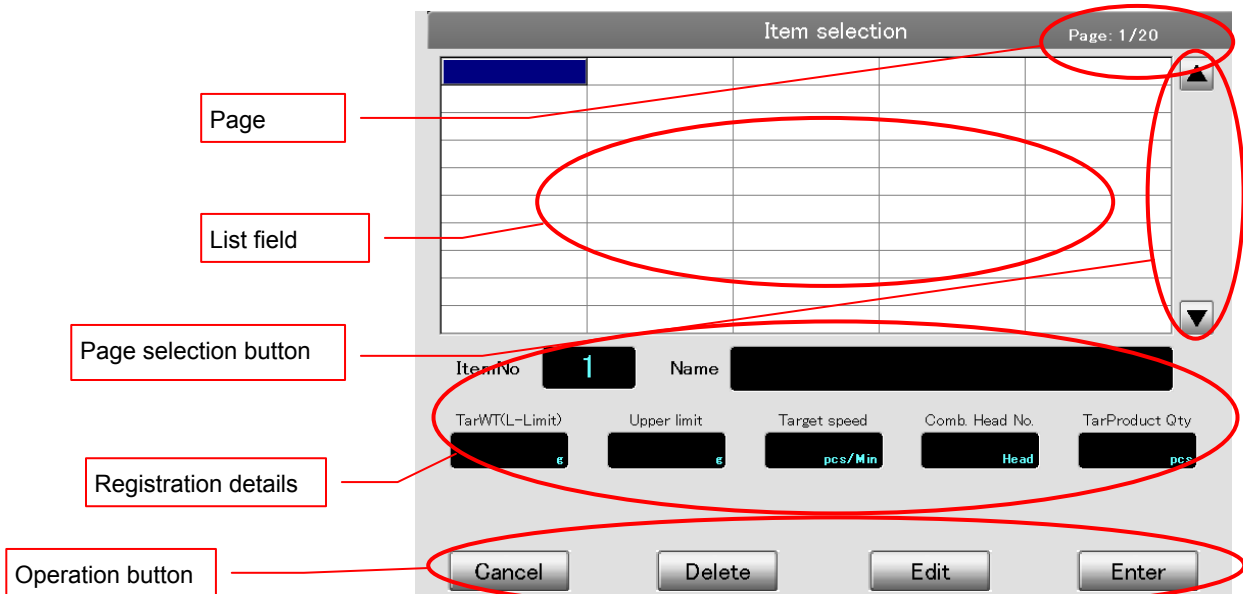
Register items before starting the combination weighing

(1) How to register the item:

Touch the frame of the item name field.



The "Item selection" screen appears.



List field: Indicates the names of the registered items.

It indicates up to 50 items on a page.

Page: It indicates the page number currently displayed.

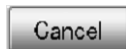
Page selection button: Touch it to select the page to be displayed.

Touch  to return to the previous page.

Touch  to forward to the next page.

Registration details: It indicates the registration details of the item selected from the list field.

**Operation button:**



Touch it to close the item selection screen and return to the combination weighing screen.



Touch it to delete the item registration details selected from the list field.



Touch it to open the item registration screen.


When a blank frame is selected, new entry of item is possible.

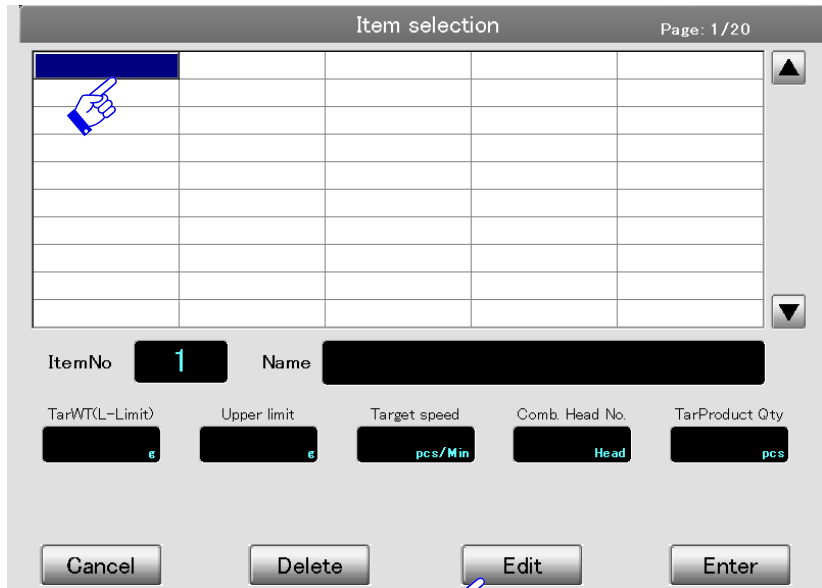
When a frame containing an item name is selected, edition of the registered item is possible.



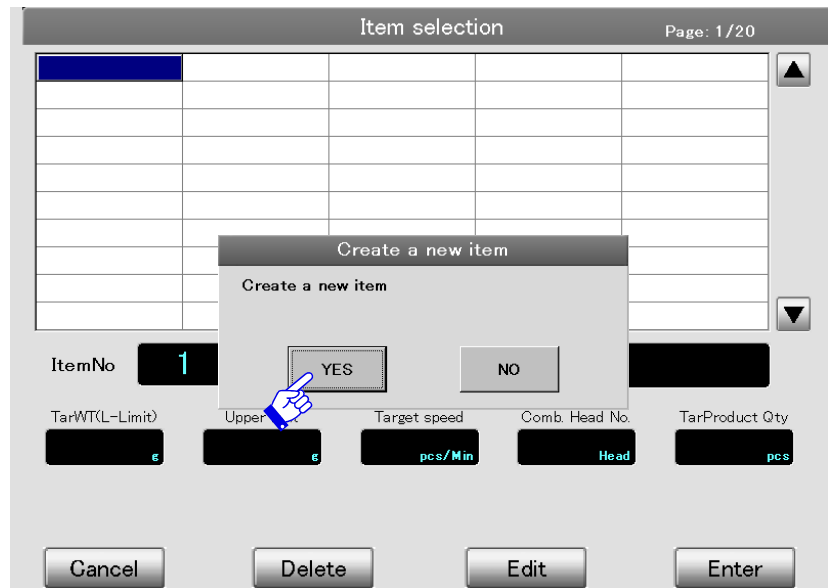
Touch it to select the item from the list field to enter it on the combination weighing screen.

(2) New entry

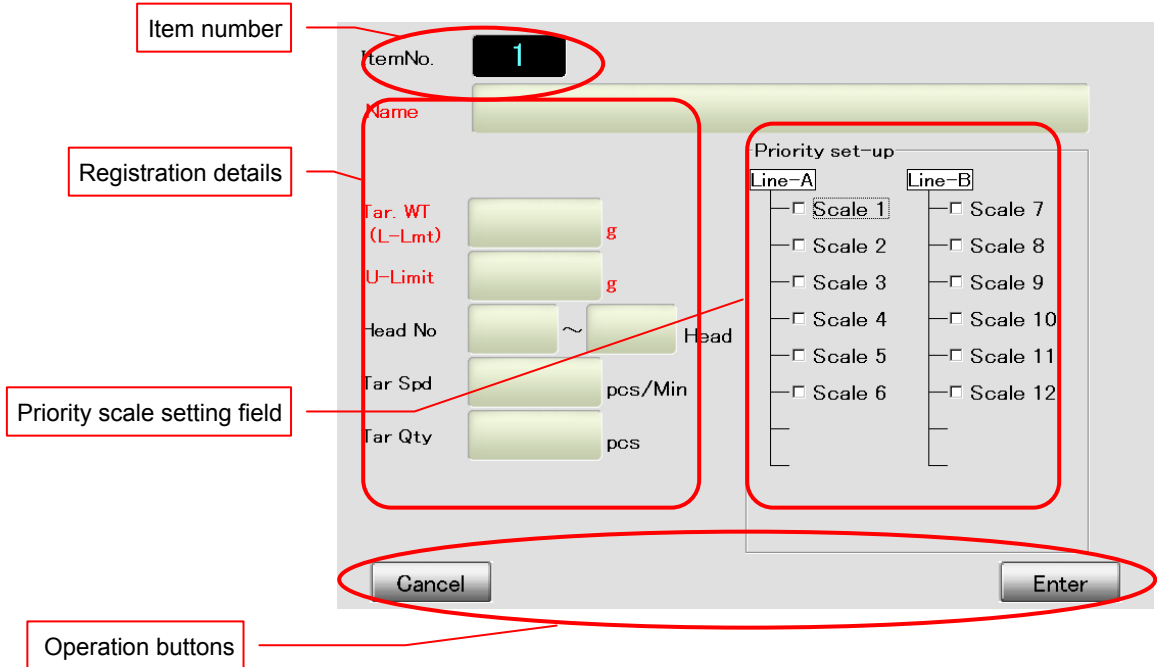
Touch a "blank" frame, and then touch 



Touch  Yes according to the message.



The item registration screen appears.



Item number: It indicates the item number to be registered.

Registration details: Indicates the registration details to be registered.

Priority scale settings: Indicates the settings of the priority scale.

Operation button:



Touch it to close the item selection screen and return to the combination weighing screen.



Touch it to select the item from the list field to enter it on the combination weighing screen.

"Item name", "Target weight (lower limit)", and "Upper limit" are the items to be always registered, which are all described in red. Other items can be registered as necessary.

(3) Registration details

This example describes the weight combination of the packages containing the item name of "sample" in the range of 110 to 120g.

(3-1) Item name

Set and register the item name.

Hiragana, Katakana, Kanji, and alphanumeric characters can be entered.

- (3-2) Target weight (lower limit)  
Set the target combination weight.  
When the combination range is 110 to 120g, set to 110.
- (3-3) Upper limit  
Set the upper limit of the combination weight range.  
When the combination range is 110 to 120g, set to 120.
- (3-4) Number of combination scales(Head)  
When the number of weighing scales is specified, the number of items for a combination is fixed, e.g., making a combination in the range of 110 to 120g with 3 pieces of the items.  
(This is the case when a single item is loaded on a single scale.)  
Set the number of weighing units for the combination when you want to specify it.  
When you do not specify it, set it to "0".  
Set it in the same way as described in (3-3).
- (3-5) Target capacity  
Set the target value of the combination work.  
When the target value is not specified, set it to "0".  
The setting unit is (piece/minute).  
Set it in the same way as described in (3-3).
- (3-6) Target quantity of production  
The setting unit is (piece/minute).
- (3-7) Priority scale settings  
Touch  of the scale to be specified as the priority scale to check as .  
Once the priority scale is set, the priority combination function is activated.  
For the priority scale function, refer to "Priority head combination function" on page 48.

(4) Registration of items

(4-1) Registration of item names

Touch the item name field.

ItemNo. 1

Name

Tar. WT (L-Lmt) g

U-Limit g

Head No ~ Head

Tar Spd pcs/Min

Tar Qty pcs

Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12

Cancel Enter

A keyboard screen appears.

The keyboard can be operated basically in the same manner as those of personal computers or word processors for entering the items.

The conversion system is Romaji-conversion.

**Example of entry:**

Register as "sample" .

**For operating the keyboard,** refer to "How to use the keyboard" on page 34.

ItemNo. 1

CLR DEL

1 2 3 4 5 6 7 8 9 0 - ^ \ BS

Tab q w e r t y u i o p @ [ ENT

Caps a s d f g h j k l ; : ]

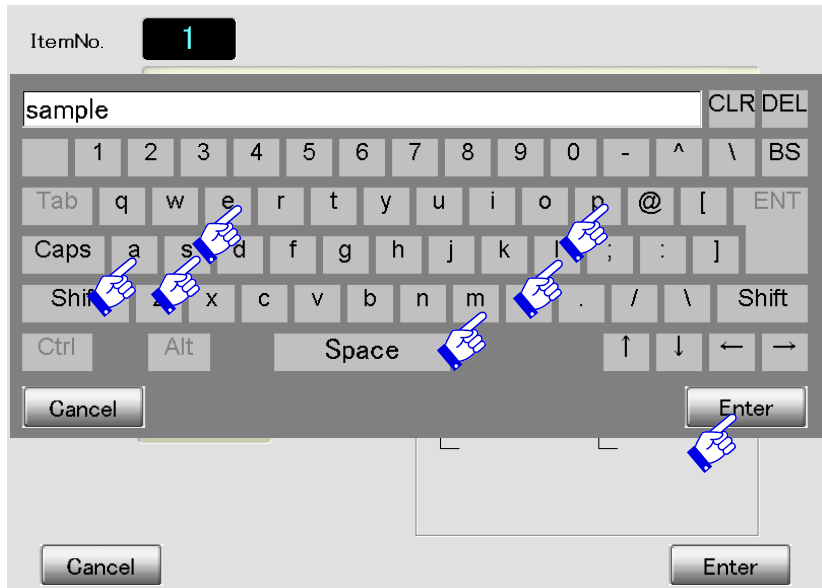
Shift z x c v b n m , . / \ Shift

Ctrl Alt Space ↑ ↓ ← →

Cancel Enter

Cancel Enter

Touch the keyboard as **s a m p l e** in sequence, and touch **Enter**.



ItemNo. **1**

Name **sample**

Tar. WT (L-Lmt)  g

U-Limit  g

Head No  ~  Head

Tar Spd  pcs/Min

Tar Qty  pcs

Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Cancel Enter

(4-2) Target weight (lower limit)  
Touch the target weight field.

ItemNo. **1**

Name **sample**

Tar. WT (L-Lmt)  g

U-Limit  g

Head No  ~  Head

Tar Spd  pcs/Min

Tar Qty  pcs

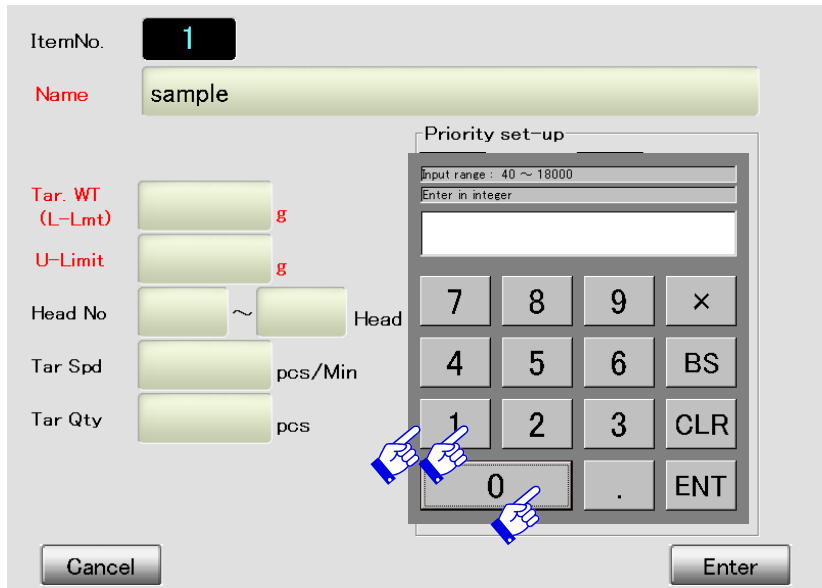
Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

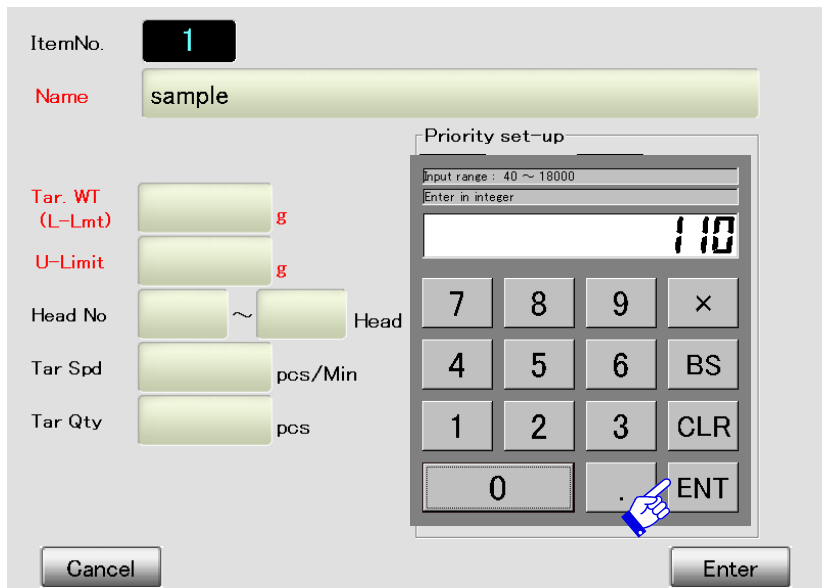
Cancel Enter

A numeric keypad appears.

**Example of entry:** Register as "110g."



Touch the key as **1****1****0** in sequence, and finalize it by **ENT**.



ItemNo. **1**

Name **sample**

Tar. WT (L-Lmt) **110 g**

U-Limit **g**

Head No **~** Head

Tar Spd **pcs/Min**

Tar Qty **pcs**

Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Cancel Enter

(4-3) Upper limit

(4-4) Number of combination units: For the entry, refer to page 54.

(4-5) Target capacity

(4-6) Target quality of production

Enter it in the same manner as described in (4-2) Target weight (lower limit).

Refer to page 30.

ItemNo. **1**

Name **sample**

Tar. WT (L-Lmt) **110 g**

U-Limit **120 g**

Head No **3 ~ 5** Head

Tar Spd **15** pcs/Min

Tar Qty **1000** pcs

Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Cancel Enter

Now, the setting is complete.



Touch it to register the setting, and return to the item selection screen.



Touch it to return to the item selection screen without setting.

Item selection Page: 1/20

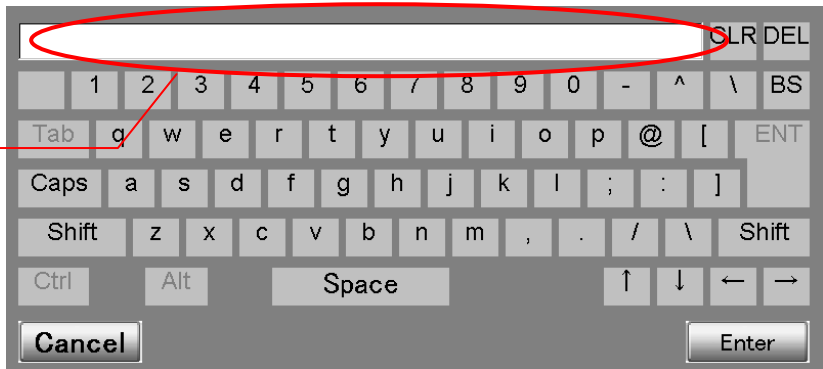
sample					▲
					▼

ItemNo **1** Name **sample**

TarWT(L-Limit) **110 g** Upper limit **120 g** Target speed **15 pcs/Min** Comb. Head No. **3~5 Head** TarProduct Qty **1000 pcs**

(5) How to use the keyboard

Character display field

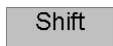
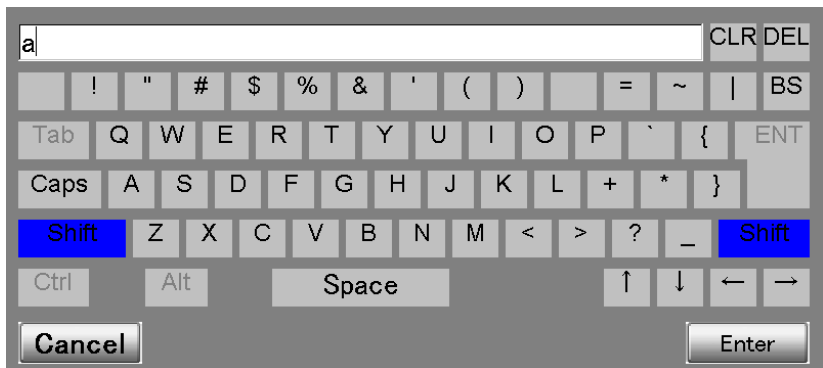


Touch it, and it turns red like **Caps**.

Capital alphabet letters can be entered.

Touch it again, and it returns to **Caps**.

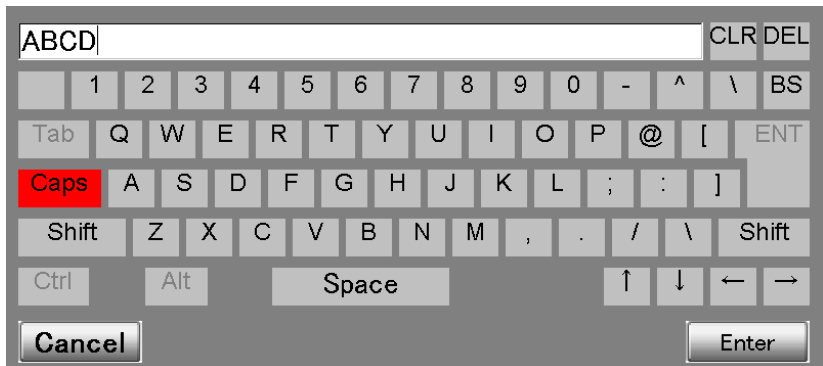
Lowercase alphabet letters can be entered.



Touch it to turn it blue like **Shift**.

The next alphabet letter can be entered in capital, or the next symbol to be displayed is changed.

Touch it again to return to **Shift**.





Touch it to convert the letters to Kanji in the Japanese entry mode. It enters a space in the alphanumeric character entry mode.



Touch it to move the cursor by 1 character in the intended direction.



Touch it to delete all the displayed characters.



Touch it to delete a character in the right of the cursor.



Touch it to delete a character in the left of the cursor.

### 13. Standard use 1 (How to operate the combination weighing)

\* A message, “**Select a weighted item**”, is displayed at the bottom left of the screen.

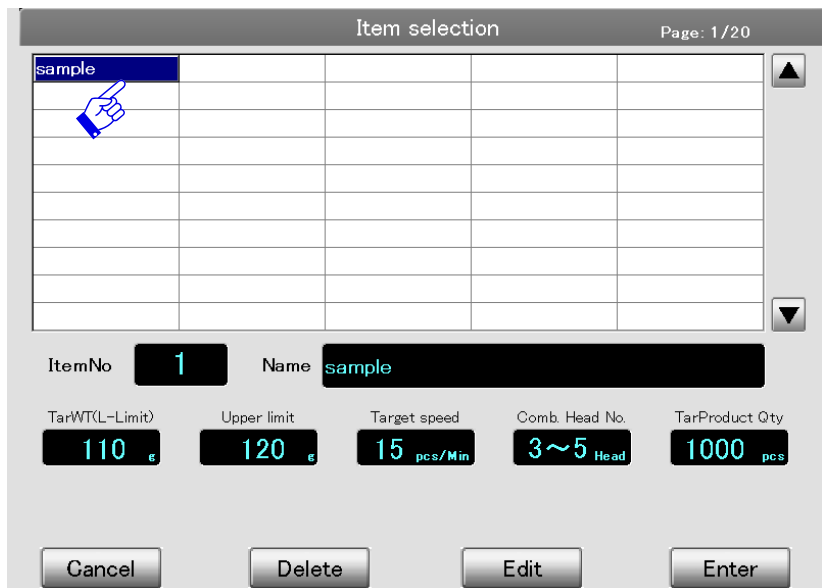
1. Confirm that no item is loaded on the weighing pan of the weighing unit.
2. Select the item

#### 2-1. How to recall the item by selecting from the list



Touch the item name field.

The item selection screen appears.

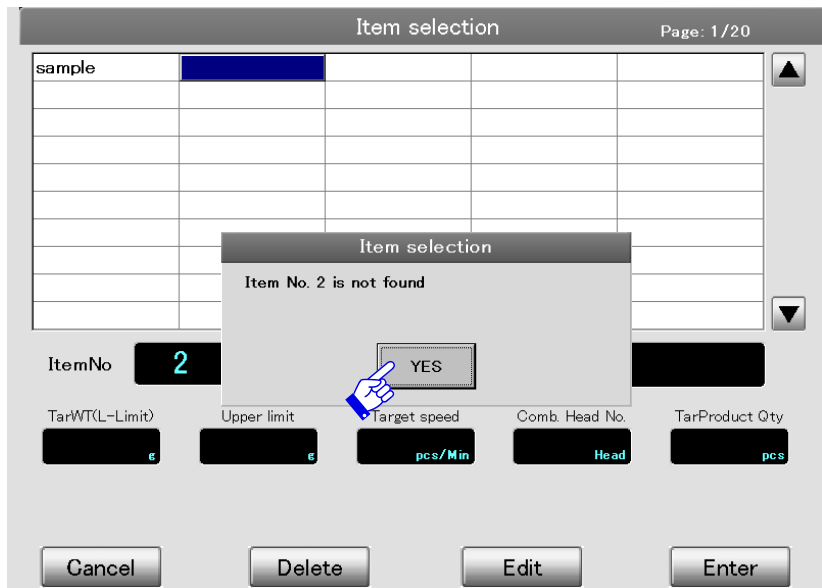


Select and touch the intended item from the list, and then touch **Enter** (finalize).

Now, "sample" is recalled, which is registered as the item number "1."



If you attempt to recall an unregistered item number, the following message appears. Touch **YES**, and re-enter another item number.

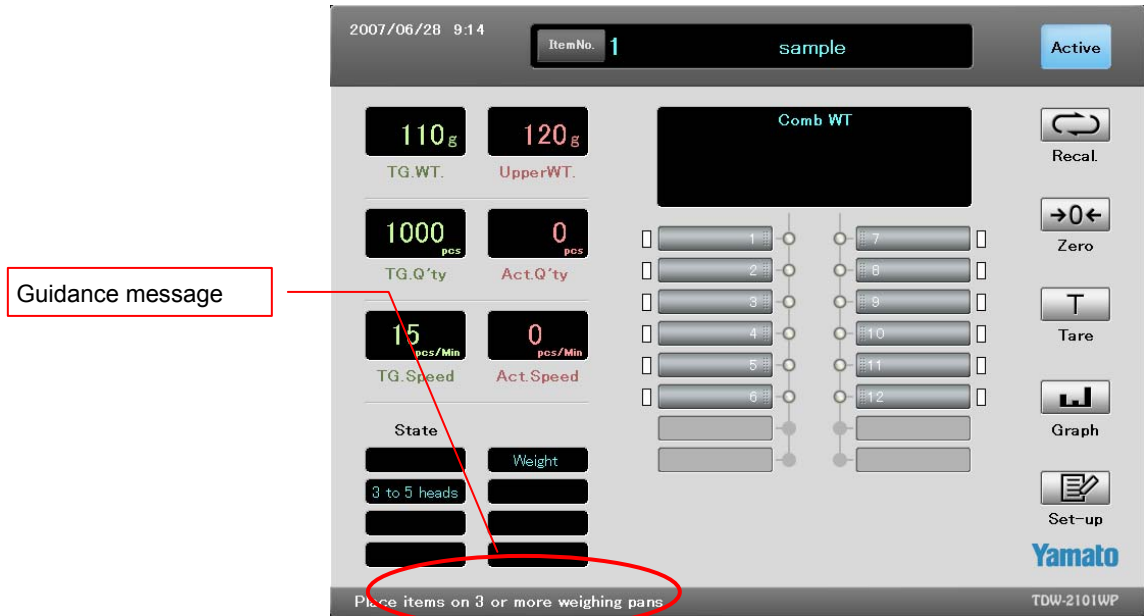


For the item registration, refer to 23. "How to register the item"

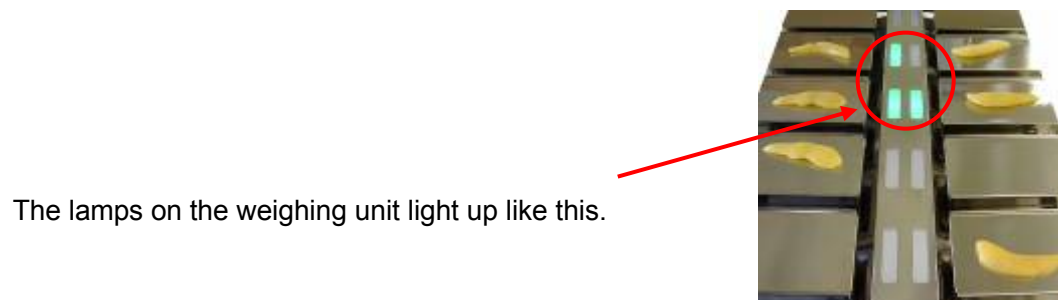
When the item number is changed, the zero reset function is activated automatically.

Remove the item remaining on the weighing unit, if any, and reset to zero.

- Load items on the weighing units.  
When items are loaded on 3 weighing units or more, it starts calculating the combination. If no combination lamp lights up, check the guidance message.



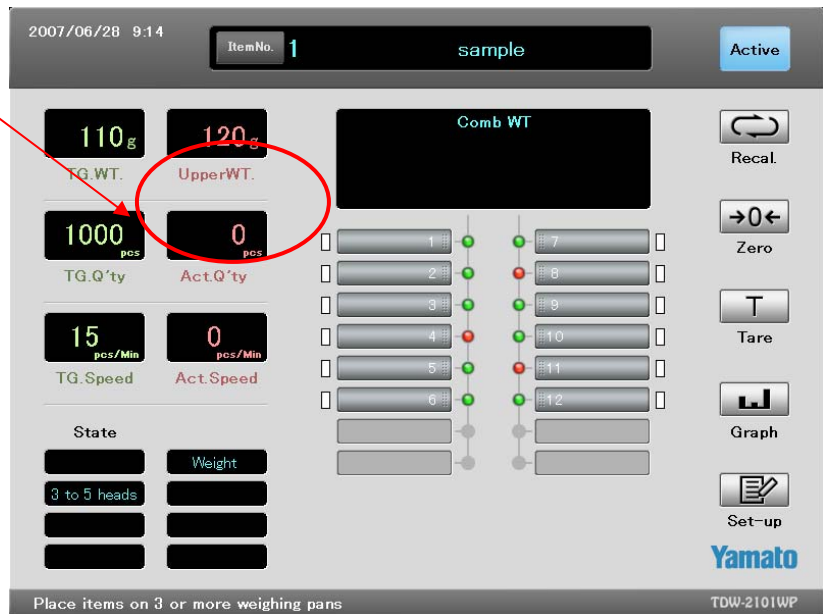
- When a combination is found, the relevant combination lamps on the frame light up green.



The lamps on the weighing unit light up like this.

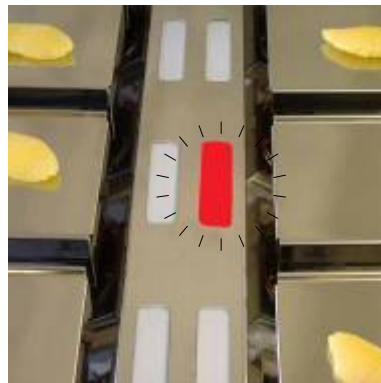
- The lamps lighting green indicate a combination is found. Pick up the items from the relevant scales.

When one item is picked up, the actual production quantity counts +1.



- If any item is picked up from an incorrect unit, a red LED flashes and a buzzer sounds. In such a case, return the item to the original scale.

When unable to identify the original unit, press the recalculation button to find the combination again. In this case check if the combination weight of items is correct.



## Guidance messages

### **“Select a weighed item”**

It does not calculate the combination even though the weighing units is loaded with items to be weighed, unless the item number is selected. Select the item.

### **“Place items on 3 or more weighing pans”**

The number of loaded weighing units is less than 3. Load items on 3 or more weighing units. The weighing unit zero point may be deviated. Remove the items from all weighing units, and then press the zero reset button.

### **“No combination available”**

No combination can be found with the items currently loaded on the weighing units. Check if the target weight, upper weight limit, and the number of combination units are appropriate.

### **“A good combination is made”**

A combination is found. Pick up the items from the relevant weighing units.

### **“The target quantity has been achieved”**

When some weighing unit are set as priority scales, it does not calculate the combination, unless items are loaded on one or more priority scales.

### **“The actual quantity of production reached the target quantity of production”**

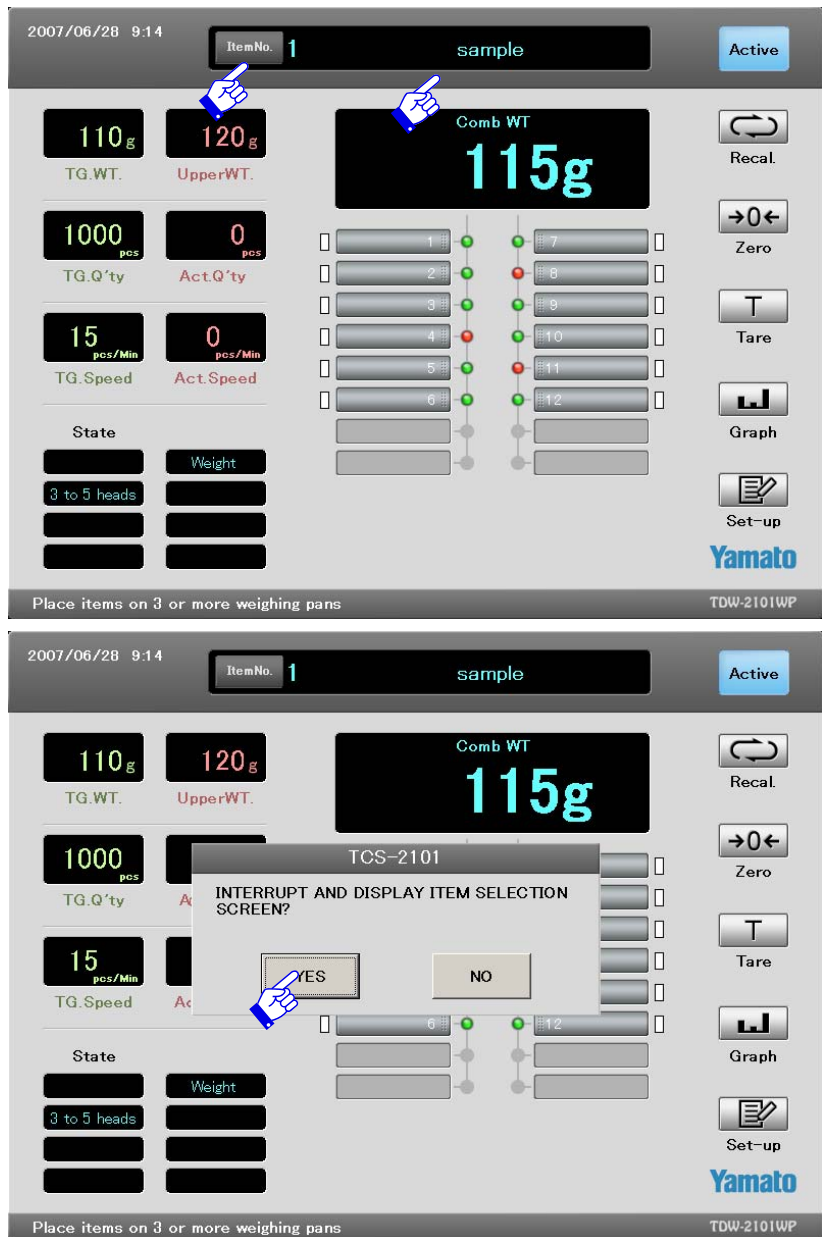
When the actual quantity of production has reached the “target quantity of production” of the item registered, the combination with the relevant item is completed.

### **“A proximity combination is completed”**

When the "proximity processing" is enabled, a combination closest to the setting range is determined in case that all weighing units are loaded with items and no combination is found within the setting range. In this case, the LED lamp flashes green. The green lumps light up on the display panel.

#### 14. Standard use 2 (Changing the product during the combination weighing)

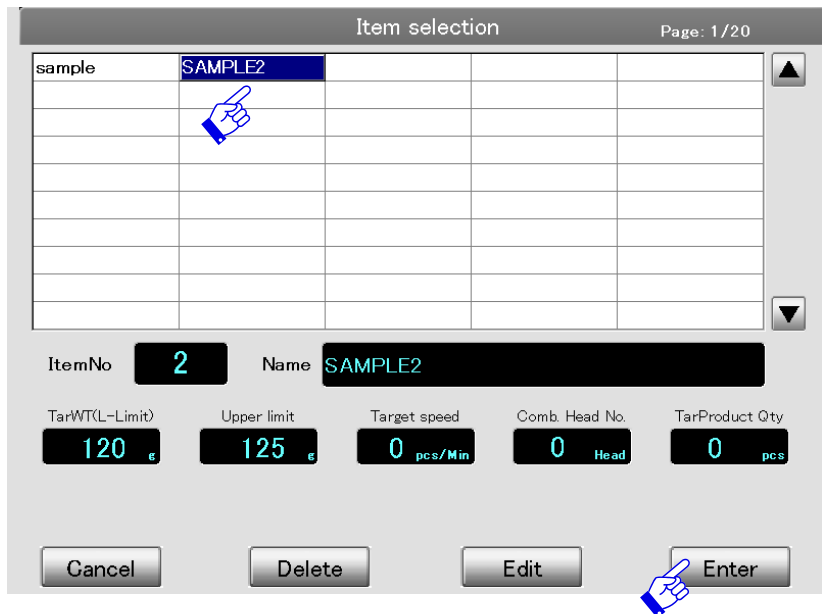
1. Verify that no item is loaded on the weighing pan of the weighing unit.
2. When you change the item during the combination weighing, touch the item number, or the item name field in the same manner as that for selecting the item.  
In such a case, a message, “**INTERRUPT AND DISPLAY ITEM SELECTION SCREEN**”, appears.



Touch  Yes to display the item selection screen.

Touch  No to return to the combination weighing screen without changing the item.

- Touch the item name you want to change, and the background of the characters turns blue. Touch **Enter** (Finalize) if it is correct.



Now, the item has been changed.



If you change the item number while a green LED lamp is on after a combination is found, the combination is cancelled and the LED lamp is off. Then, the zero reset function is activated automatically and reset all weighing units to zero.

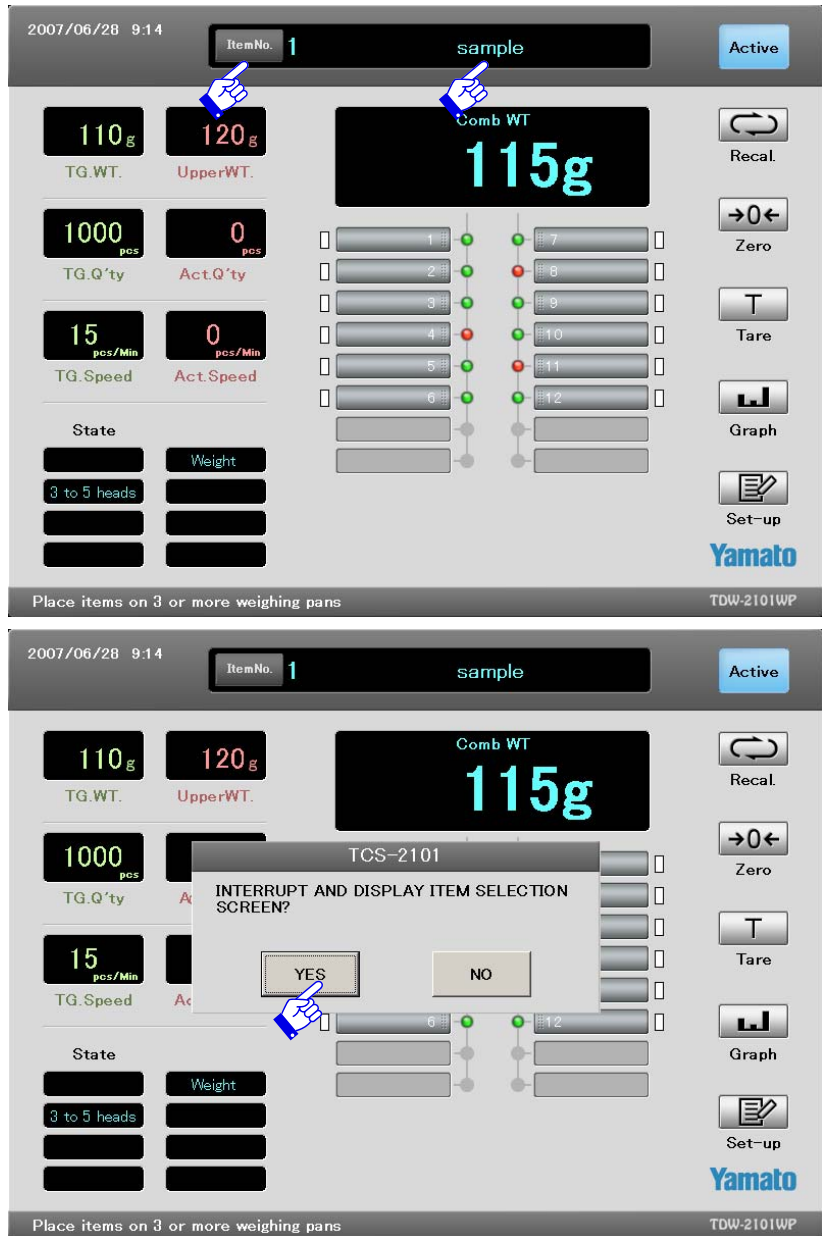
When any item remains on the weighing unit, remove the item before the zero reset.

## 15. Standard use 3 (Changing the registration during the combination weighing)

This operation is to change the item registration such as a change of the upper weight limit to improve the yield of the combination during the combination weighing.

1. "Example of operation": To change the upper weight limit from 120g to 130g

Touch the item number or the item name field in the same manner as that for selecting the item. And a message, " **INTERRUPT AND DISPLAY ITEM SELECTION SCREEN**", appears.



Touch **YES** to display the item selection screen.

Touch **NO** to return to the combination weighing screen without changing the item.

2. Touch the item name you want to change, and the background of the characters turns blue. Touch **EDIT** if it is correct.

Item selection Page: 1/20

sample	SAMPLE2				▲
					▼

ItemNo **1** Name **sample**

TarWT(L-Limit) **110 g** Upper limit **120 g** Target speed **15 pcs/Min** Comb. Head No **3~5 Head** TarProduct Qty **1000 pcs**

3. The item registration screen appears.  
Touch the upper limit field.

ItemNo. **1**

Name **sample**

Tar. WT (L-Lmt) **110 g**

U-Limit **120 g**

Head No **3 ~ 5** Head

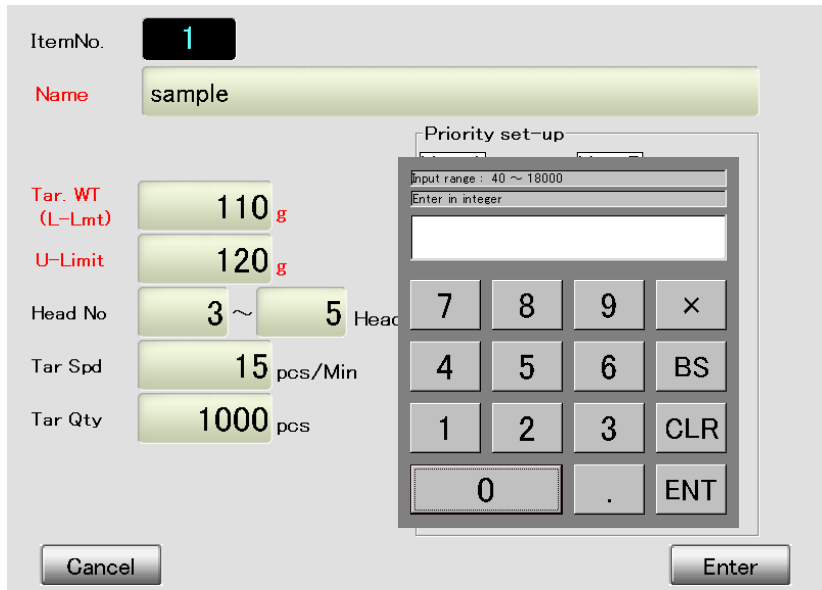
Tar Spd **15** pcs/Min

Tar Qty **1000** pcs

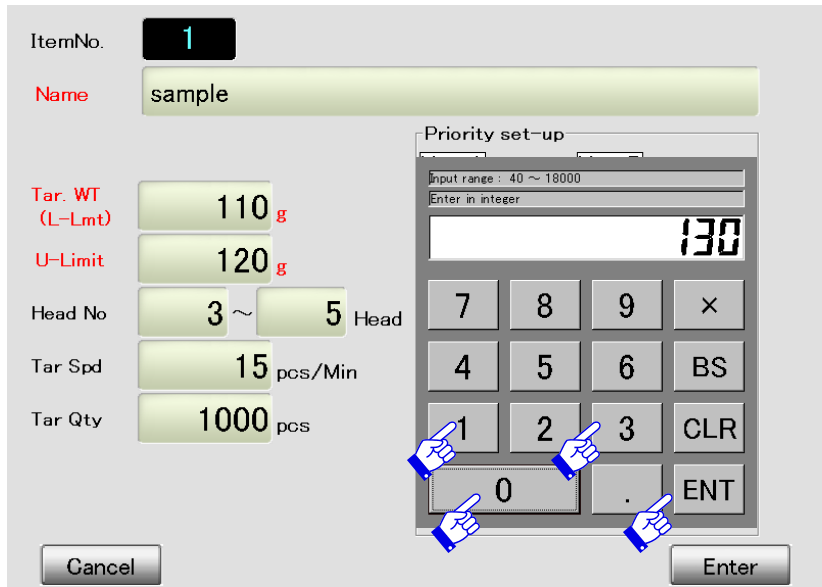
Priority set-up

<p>Line-A</p> <input type="checkbox"/> Scale 1 <input type="checkbox"/> Scale 2 <input type="checkbox"/> Scale 3 <input type="checkbox"/> Scale 4 <input type="checkbox"/> Scale 5 <input type="checkbox"/> Scale 6 <input type="checkbox"/> Scale 7 <input type="checkbox"/> Scale 8 <input type="checkbox"/> Scale 9 <input type="checkbox"/> Scale 10 <input type="checkbox"/> Scale 11 <input type="checkbox"/> Scale 12	<p>Line-B</p> <input type="checkbox"/> Scale 7 <input type="checkbox"/> Scale 8 <input type="checkbox"/> Scale 9 <input type="checkbox"/> Scale 10 <input type="checkbox"/> Scale 11 <input type="checkbox"/> Scale 12
---	---

4. A numeric keypad appears.



Enter the new value, and touch **ENT**.



When you complete the change, touch **ENTER** (Finalize).

ItemNo. **1**  
Name **sample**

Tar. WT (L-Lmt) **110 g**  
U-Limit **130 g**  
Head No **3 ~ 5** Head  
Tar Spd **15** pcs/Min  
Tar Qty **1000** pcs

Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**Cancel** **Enter**

It returns to the item selection screen. Touch **Enter** (Finalize), if the registration details are correct.

Touch **Edit** to return to edition.

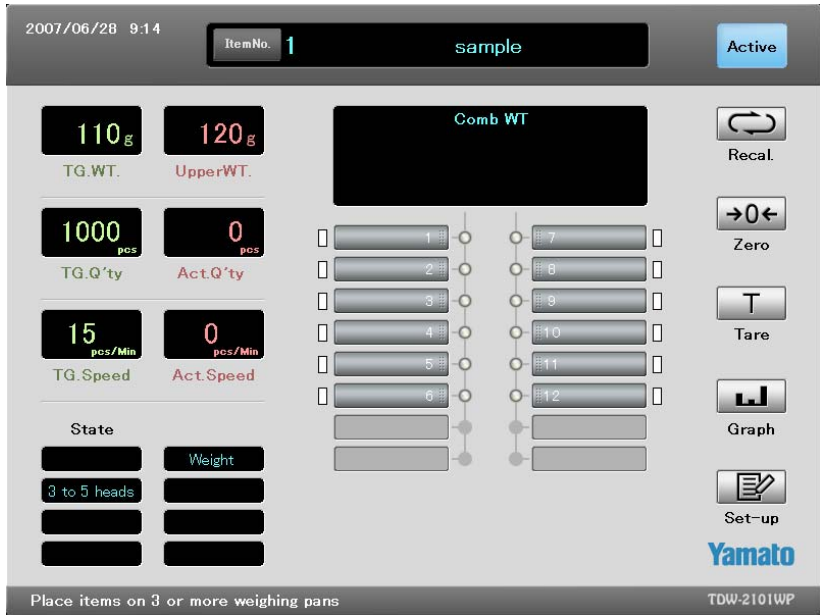
Item selection Page: 1/20

sample	SAMPLE2			

ItemNo. **1** Name **sample**

TarWT(L-Limit) **110 g** Upper limit **130 g** Target speed **15 pcs/Min** Comb. Head No **3~5 Head** TarProduct Qty **1000 pcs**

**Cancel** **Delete** **Edit** **Enter**



The zero reset function is not activated unless any item number is changed.  
The combination weighing can be continued even if some items remain on the weighing units.

## 16. Priority head combination function

In the case a package packed with different items (for example, making a type of package of 500g, consisting of one piece of cut fishtail and other items), this function selects by priority a scale from among the weighing scales specified as priority scales and perform calculation by combining the specified unit and others.

No combination is found unless any item is loaded on the priority scale.

In the case that two or more weighing units are specified as priority scales, one combination is made with one of the priority scales and weighing units other than the priority scales.

Note that no combination is found if all weighing units are specified as priority scales.

1. Set a priority scale on the item registration screen.

Register a priority scale on the item registration screen, and the priority scale is set when the item is recalled. (For the item registration, refer to “How to register the item” on page 23.)

On the item registration screen, touch  for the weighing unit you want to specify it as a priority scale to change to .

The screenshot displays the item registration interface. On the left, fields include ItemNo. (1), Name (sample), Tar. WT (L-Lmt) (110 g), U-Limit (130 g), Head No (3 ~ 5 Head), Tar Spd (15 pcs/Min), and Tar Qty (1000 pcs). On the right, a 'Priority set-up' dialog box is open, showing two columns: Line-A and Line-B. Line-A lists Scale 1 through Scale 5, and Line-B lists Scale 7 through Scale 12. A blue hand icon points to the checkbox next to Scale 6 in Line-A, which is currently checked. At the bottom of the screen are 'Cancel' and 'Enter' buttons.

When you complete the change, touch **ENTER** (Finalize).

ItemNo. **1**  
Name **sample**

Tar. WT (L-Lmt) **110 g**  
U-Limit **130 g**  
Head No **3 ~ 5** Head  
Tar Spd **15** pcs/Min  
Tar Qty **1000** pcs

Priority set-up

Line-A	Line-B
<input type="checkbox"/> Scale 1	<input type="checkbox"/> Scale 7
<input type="checkbox"/> Scale 2	<input type="checkbox"/> Scale 8
<input type="checkbox"/> Scale 3	<input type="checkbox"/> Scale 9
<input type="checkbox"/> Scale 4	<input type="checkbox"/> Scale 10
<input type="checkbox"/> Scale 5	<input type="checkbox"/> Scale 11
<input checked="" type="checkbox"/> Scale 6	<input type="checkbox"/> Scale 12
<input type="checkbox"/>	
<input type="checkbox"/>	

**Cancel** **Enter**

It returns to the item selection screen. Touch **Enter** (Finalize), if the registration details are correct.

Touch **Edit** (Edit) to return to edition.

Item selection Page: 1/20

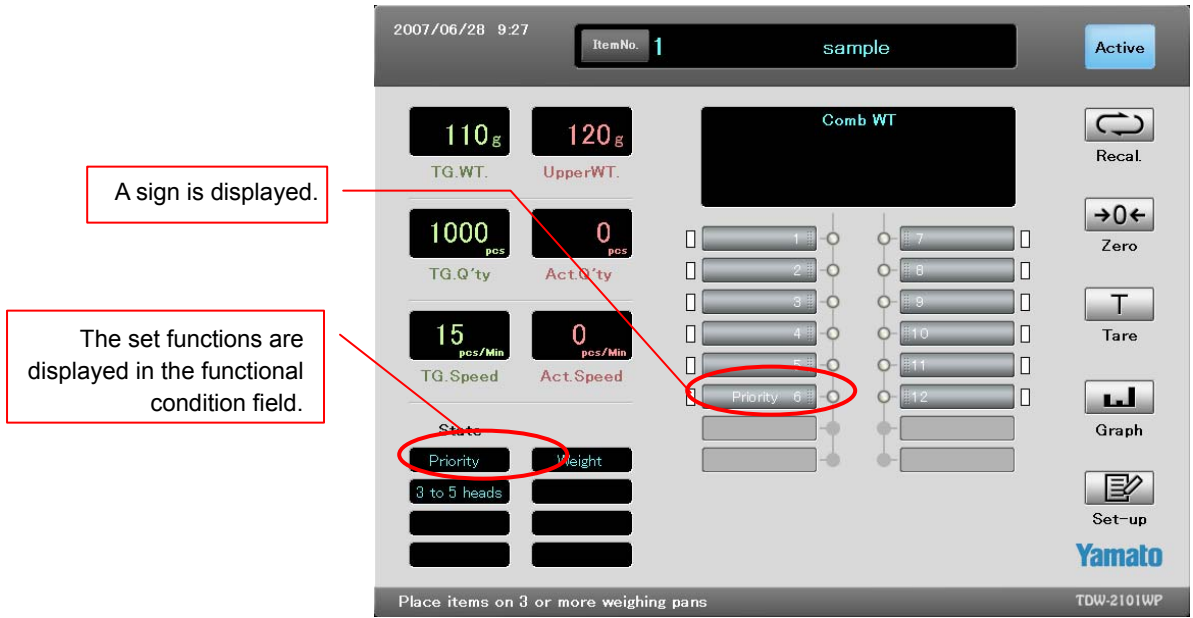
sample	SAMPLE2			

ItemNo. **1** Name **sample**

TarWT(L-Limit) **110 g** Upper limit **130 g** Target speed **15 pcs/Min** Comb. Head No **3~5 Head** TarProduct Qty **1000 pcs**

**Cancel** **Delete** **Edit** **Enter**

A sign is displayed to indicate the relevant scale is specified as the priority scale on the button of the scale number 6

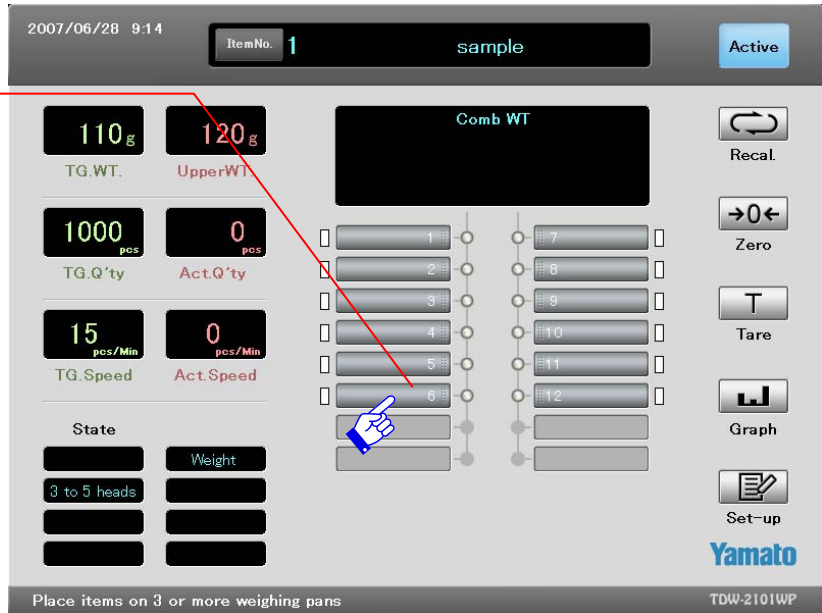


2. Set temporarily a scale as the priority scale.

Example: To set the scale number 6 as a priority scale

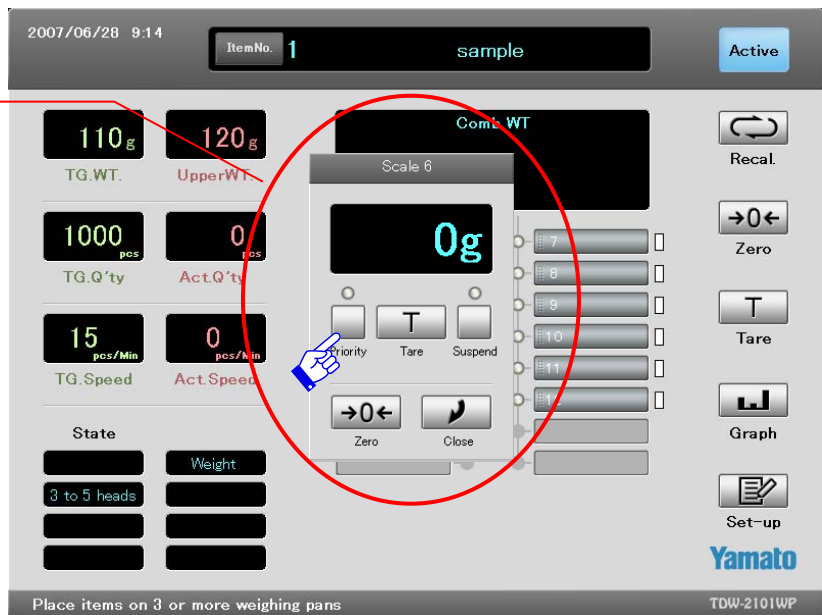
Touch the button of the scale number 6.

A sign is displayed.

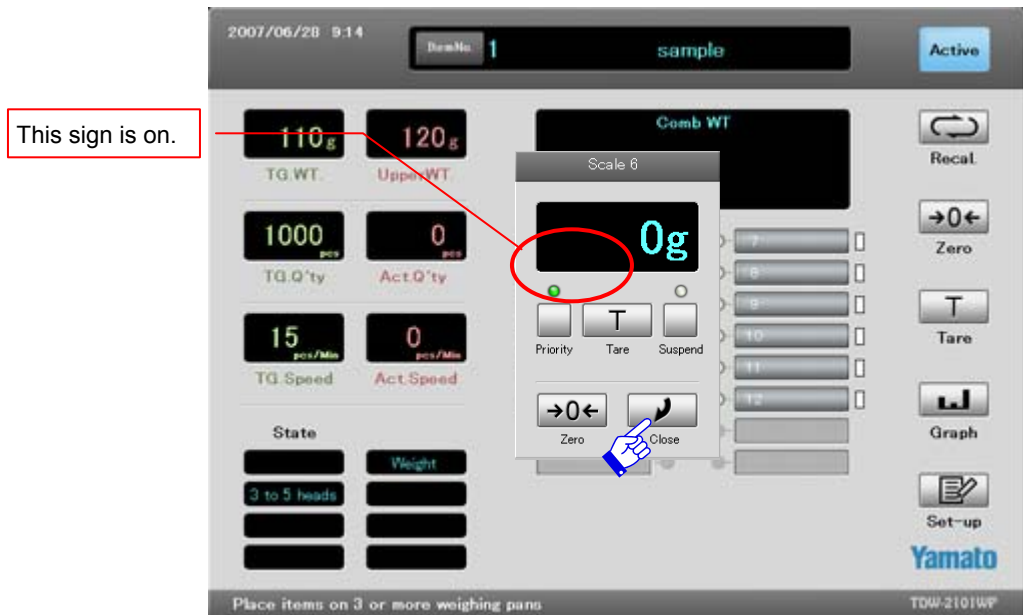


The unit screen appears. Touch the **Priority** button.

Unit screen

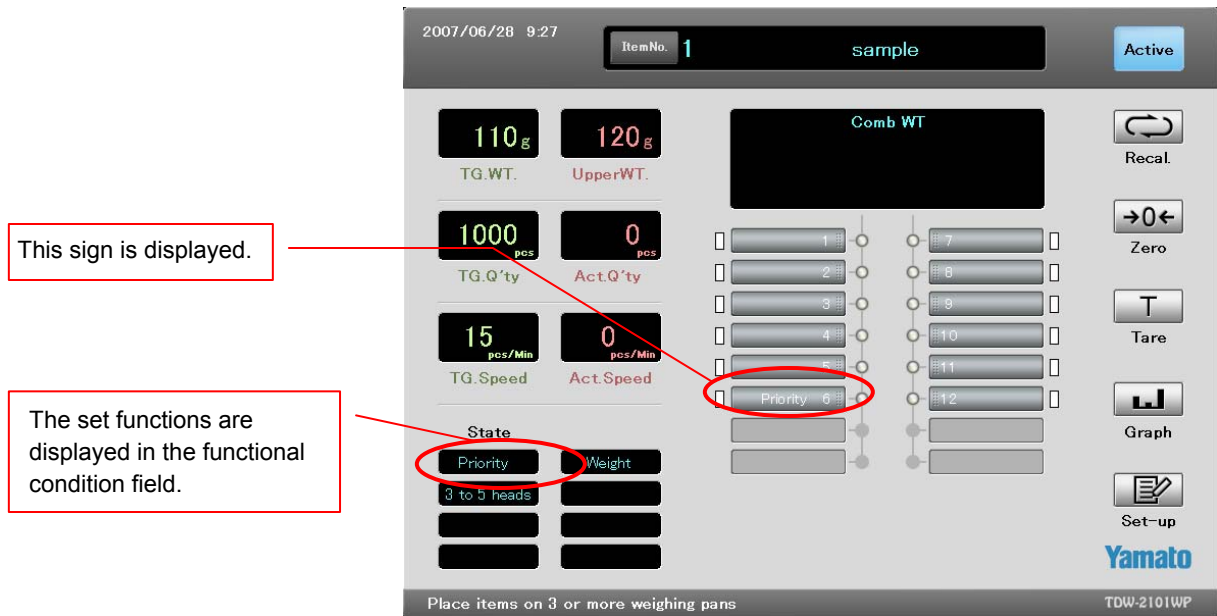


A sign indicating that it is specified as a priority scale turns green.



Touch **Close** (Back) to close the unit screen.

A sign is displayed to indicate the relevant scale is specified as the priority scale on the button of the scale number 6.



## 17. Proximity combination and automatic recalculation functions

When items are loaded on all the weighing units and no combination is found within the setting range, the proximity combination function indicates the value of combination closest to the upper or lower limit.

The proximity combination function notifies that a proximity combination is found by flashing a green lamp even though it is out of the range between the set target weight and upper limit. If some items are replaced here, the function automatically starts recalculation of the combination, then, if any combination is found within the setting range, the lamp stops flashing and lights up, and then the combination is finalized.

For example: With settings of Target weight: 100g and Upper limit is 102g, it indicates a combination of 105g as the proximity combination when no combination is found within the setting range and the value of 105g is the closest value.

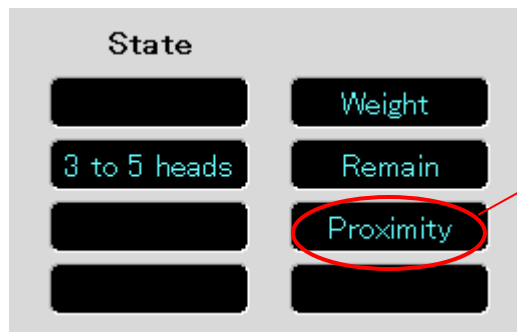
The conditions of the proximity combination are set by the following parameter.

Proximity condition:

- 0: Larger than the upper limit, and closest to the target weight.
- 1: Smaller than the lower limit, and closest to the target weight
- 2: Whichever closer to the target

At shipment: The proximity combination function is "disabled."

For setting this function, refer to "Proximity Combination" on page 67.



The set functions are displayed in the functional condition field.

## 18. Weight & quantity combination function

The weight & quantity combination (e.g., 100g with 3 pieces of the item) can be determined by setting the number of items (= number of weighing units) in addition to the target weight and the upper limit.

A range for the number of units for combination can be set, i.e., set a range of 3 to 5 units, and a combination of 3, or 4, or 5 units can be determined.

Example 1: Target weight: 110g, Upper limit: 130g, Number of units for combination: 3

To make a combination of 3 weighing units with the weight of 110g to 130g.

Example:  
For just 3 units, enter  
3 - 0.

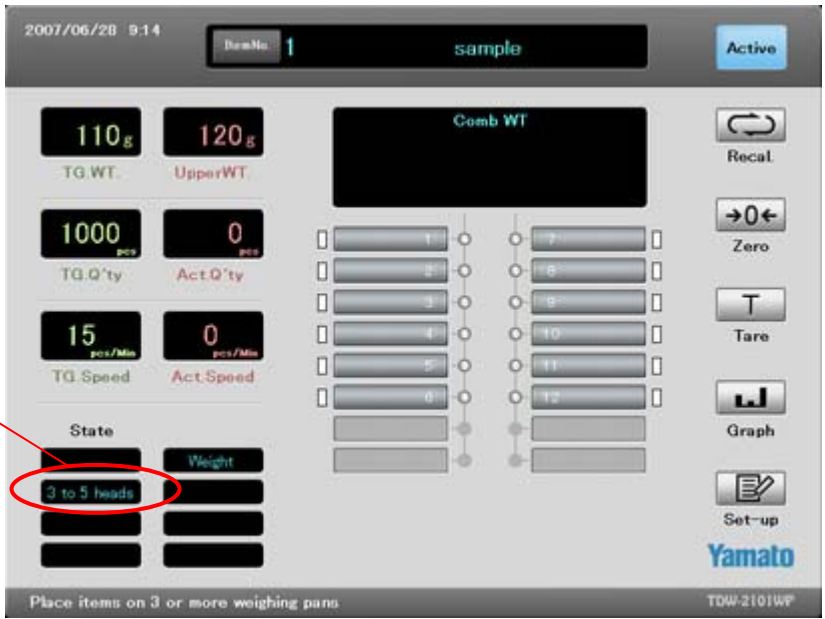
The screenshot shows a configuration window for 'ItemNo. 1' with the name 'sample'. The 'Tar. WT (L-Lmt)' is set to 110 g and the 'U-Limit' is 130 g. The 'Head No' field is highlighted with a red box and contains '3 ~ 0 Head', indicating a range from 3 to 0 units. The 'Tar Spd' is 15 pcs/Min and 'Tar Qty' is 1000 pcs. A 'Priority set-up' section on the right lists scales 1 through 12, with Scale 6 selected. 'Cancel' and 'Enter' buttons are at the bottom.

Example 2: Target weight: 110g, Upper limit: 130g, Number of units for combination: 3 -

5. To make a combination of 3 to 5 units with the weight of 110g to 130g.

Number of units for combination

The screenshot shows the same configuration window as Example 1, but the 'Head No' field is highlighted with a red box and contains '3 ~ 5 Head', indicating a range from 3 to 5 units. The 'Priority set-up' section on the right is identical to Example 1, with Scale 6 selected. 'Cancel' and 'Enter' buttons are at the bottom.



The set functions are displayed in the functional condition field.

## 19. Remains detection function

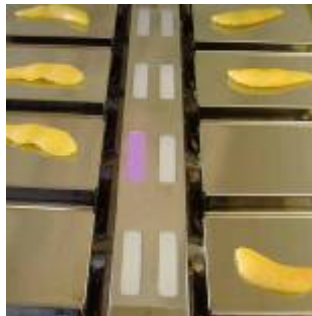
This function attempts to involve a weighing unit, which has not been involved for the specific period of time since it was loaded, in the combination by priority. In case it is not still involved in the combination for another specific period of time, the relevant lamp for the weighing unit flashes purple to notify the presence of the remains.

Remove the item from the weighing unit, and the relevant lamp is turned off.

Set the specific period of time by a parameter (1 minute increment, 0 to 60 minutes).

If an item of a weighing unit has not been involved in any combination for half of the specific period (if the set period is 30 minutes, the time when 15 minutes have passed), such item is regarded as remains. It calculates so that the weighing unit is by priority involved in the combination. During this period the combination is determined even if it is not the optimum combination.

When the item is not still involved in the combination after the set period has passed, a LED lamp flashes purple to indicate the presence of the remains. Once it is regarded as remains, the relevant weighing unit is no longer involved in the combination; therefore, remove the item from the relevant weighing unit. When it is removed, the purple LED is turned off. When the compulsory combination is selected for remains in advance, it is compulsorily involved in the combination when the set period has passed. In such a case, it determines the combination and a green lamp is turned on even if the combination weight value is out of the set range.



《Setting at shipment》 : At shipment, this function is disabled.

Function setting: 0: To remove the remains (purple flashing)

1: To involve the remains in the compulsory combination (green lighting).

At shipment: The remains detection is "disabled."

Setting: 1 minute Increment

For setting this function, refer to "Remains detection" on page 69.

State

	Weight
3 to 5 heads	Remain
	Proximity

The set functions are displayed in the functional condition field.

## 20. Weighing unit check function

Press the button for the weighing unit you want to check from the combination screen, and the unit screen for the specified scale appears.

Touch the button of the scale number 1 to display the unit screen for the scale number 1.



The unit screen for the scale number 1 appears.





(1) Check function

It can check respective 12 weighing units.

It indicates weight value to check the weight of the weighing units.

Any combination operation is disabled while this screen is displayed


Press  to set tare for the single weighing unit.

Press  to reset to zero for the single weighing unit.

Press  to close the check screen for the weighing unit.


\* The check screen can be displayed only for a single weighing unit at a time.

(2) Setting the priority scale

Touch  to set the weighing unit as a "priority scale."

Set it as a "priority scale", and the sign turns green to indicate that the relevant scale has been specified as a priority scale.

(3) Setting suspension of scale

Touch  to set the weighing unit as a "suspension scale."

Set it to a "suspension scale ", and the sign turns green to indicate that the relevant scale has been specified as a scale suspension.

Priority scale sign

Weight is displayed.

Scale suspension sign




## 21. Scale suspension

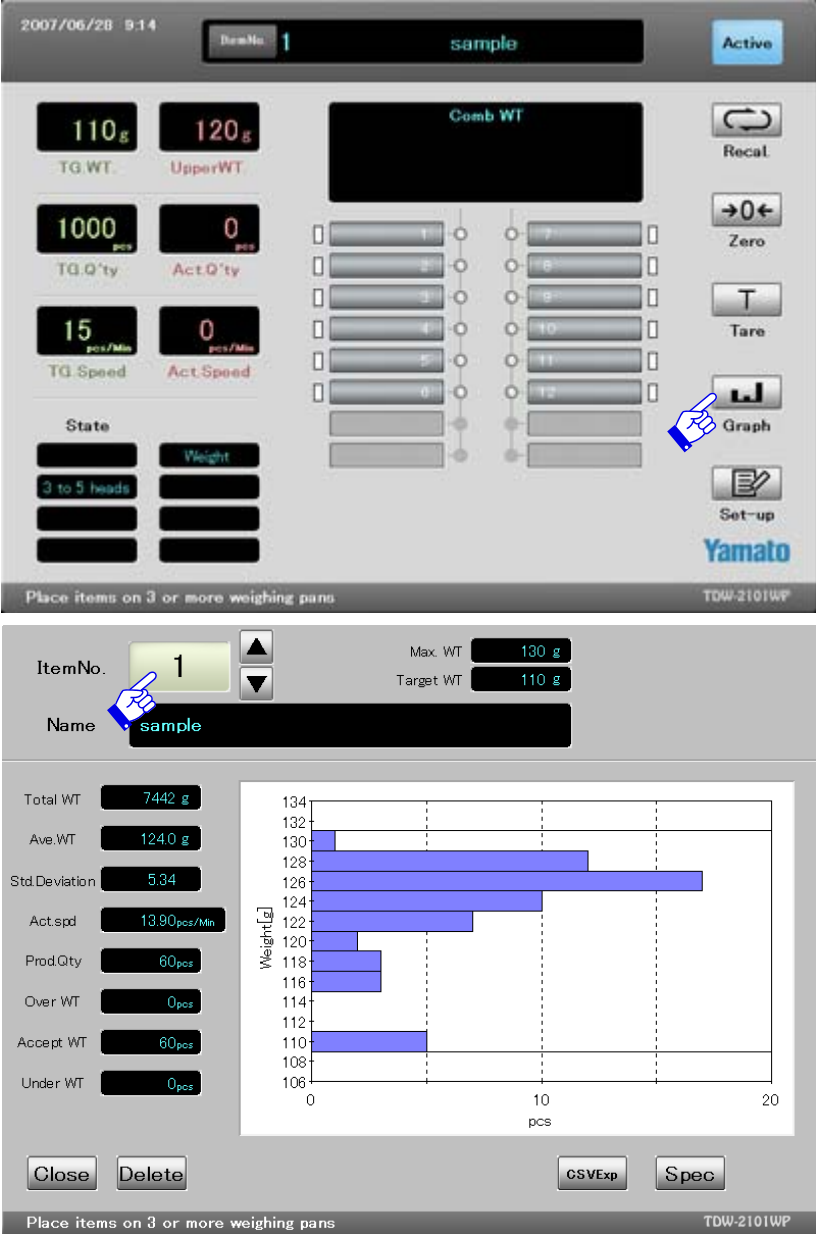
《Function》 In case any weighing unit is broken down, this function suspends the function of defective weighing unit and continue the work with the other weighing units. While the weighing unit is under "Suspension", the relevant orange lamp is on.



## 22. Graphic function

Touch  on the combination screen to recall the graphic screen.

The initial screen displays the weighing data of the item number currently being used.



The image shows two screenshots of the Yamato TDW-2101WP scale interface. The top screenshot is the combination screen, and the bottom screenshot is the graphic screen.

**Combination Screen (Top):**

- Date: 2007/06/28 9:14
- Item No: 1
- Sample Name: sample
- Active button
- TG WT: 110 g
- Upper WT: 120 g
- Comb WT: [Blank]
- TG Q'ty: 1000 pcs
- Act Q'ty: 0 pcs
- TG Speed: 15 pcs/Min
- Act Speed: 0 pcs/Min
- State: 3 to 5 heads, Weight
- Buttons: Recal, Zero, Tare, Graph (highlighted with a hand icon), Set-up
- Footer: Place items on 3 or more weighing pans, TDW-2101WP

**Graphic Screen (Bottom):**

- Item No: 1 (highlighted with a hand icon)
- Max. WT: 130 g
- Target WT: 110 g
- Name: sample
- Total WT: 7442 g
- Ave. WT: 124.0 g
- Std. Deviation: 5.34
- Act. spd: 13.90 pcs/Min
- Prod. Qty: 60 pcs
- Over WT: 0 pcs
- Accept WT: 60 pcs
- Under WT: 0 pcs
- Graph: A horizontal bar chart showing individual piece weights. The Y-axis is Weight [g] (106 to 134) and the X-axis is pcs (0 to 20). The bars represent individual pieces, with most falling between 110g and 130g.
- Buttons: Close, Delete, CSVExp, Spec
- Footer: Place items on 3 or more weighing pans, TDW-2101WP

See the next page.

This screen indicates the combination data of the displayed item number.

\* The combination weighing can be performed also with this screen displayed.

《Display details》

Upper weight limit:	Upper limit of the registered item.
Target weight:	Target weight of the registered item.
Total weight:	Total weight of all combinations
Average weight:	Average weight of all combinations
Standard deviation:	Standard deviation of all combinations
Capacity:	Number of combinations per minute
Quantity of production:	Total number of combinations
Excess weight:	Number of combinations weighed heavier than the upper weight limit
Appropriate weight:	Number of combinations weighed within the set range
Under weight:	Number of combinations weighed lighter than the target weight limit

 Touch this key to recall a numeric keypad. Enter the item number to recall the data.



Use it to recall the data of the next item number (item number +1).



Use it to recall the data of the previous item number (item number -1).



Touch it to close this screen, and return to the combination weighing screen.



Touch it to delete the weighing data of the item number being displayed.



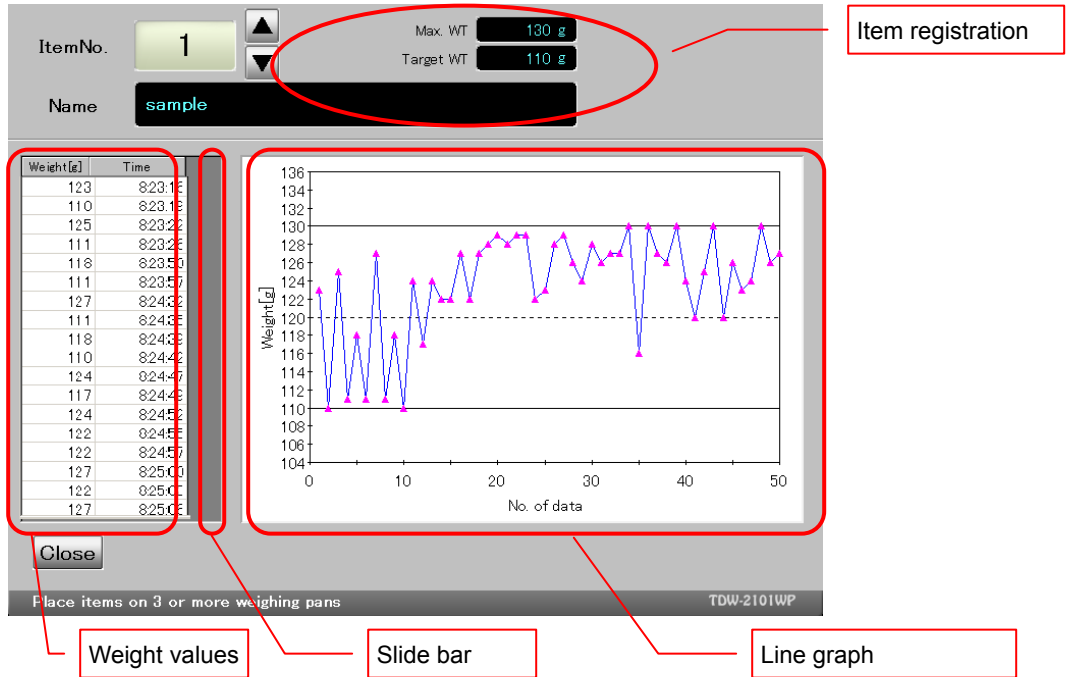
Touch it to output the detailed data as a file in CSV format.

You can specify the file to output according to the dialog displayed.

For the operation, refer to “How to write in CSV” on page 65.

Touch **Spec** to view the individual combination weight values and a line graph of the relevant item number.

\* The combination weighing can be performed also with this screen displayed.



Item registration:

Indicates the upper limit, lower limit, and item name.

Weight values:

Indicates the combination weight details.

Indicates the combination weight (g) and the time when the combination is made.

Operate the slide bar in the right of the display pane to view the combination weights during the time zone you want to check.

Line graph:


Indicates the data described in the detailed weight field in a line graph.

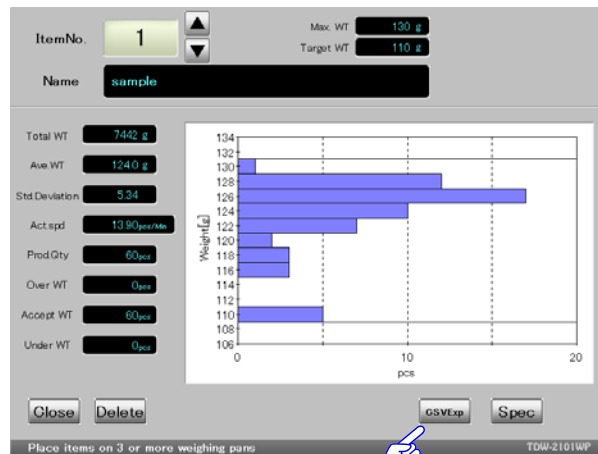
This example indicates the weighing data from the 1<sup>st</sup> to 50<sup>th</sup>.

## How to write in CSV

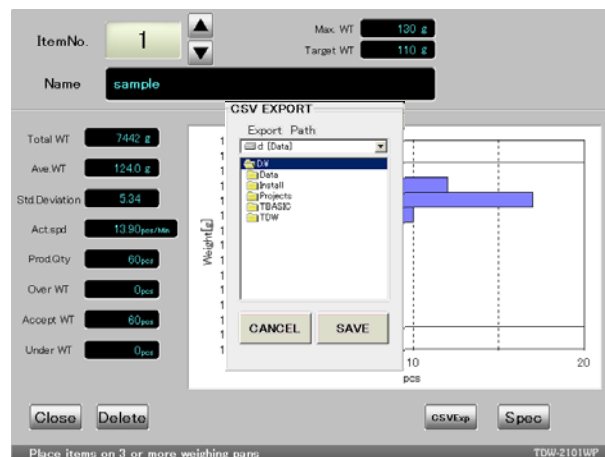
1. Install your USB memory to the connector at the side of the controller.



2. Then, touch. 

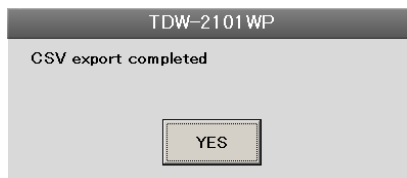


3. Touch the saving directory to select the drive installed with the USB memory (normally set to D:¥).



4. Specify the folder to save, and then touch **SAVE**.

When writing in CSV of the data is completed, a message, "" (Writing of CSV file is complete), appears. Touch .



Reference: When you want to save it in a specific folder, prepare a folder in advance in your USB memory using your personal computer.


5. Example of the CSV file

Title: Item number, Item name

Record structure: Date, Time, SN (serial number), and Combination weight

	A	B	C	D	E	F	G	H
1	ItemNo.	1						
2	Name	sample						
3								
4	Date	Time	SN	Combi.WT. [g]				
5	2007/8/6	15:37:51	1	105				
6	2007/8/6	15:37:53	2	107				
7	2007/8/6	15:37:55	3	105				
8	2007/8/6	15:37:56	4	107				
9	2007/8/6	15:37:58	5	104				
10	2007/8/6	15:38:00	6	106				
11	2007/8/6	15:38:02	7	106				
12	2007/8/6	15:38:03	8	106				
13	2007/8/6	15:38:05	9	106				
14	2007/8/6	15:38:08	10	106				
15	2007/8/6	15:38:16	11	105				
16	2007/8/6	15:38:19	12	100				
17	2007/8/6	15:38:28	13	104				
18	2007/8/6	15:38:31	14	100				
19	2007/8/6	15:38:32	15	104				
20	2007/8/6	15:38:35	16	100				
21	2007/8/6	15:38:39	17	104				
22	2007/8/6	15:38:40	18	100				
23	2007/8/6	15:38:47	19	104				
24	2007/8/6	15:42:27	20	106				
25	2007/8/6	15:42:29	21	108				
26	2007/8/6	15:42:32	22	105				
27	2007/8/6	15:42:35	23	104				

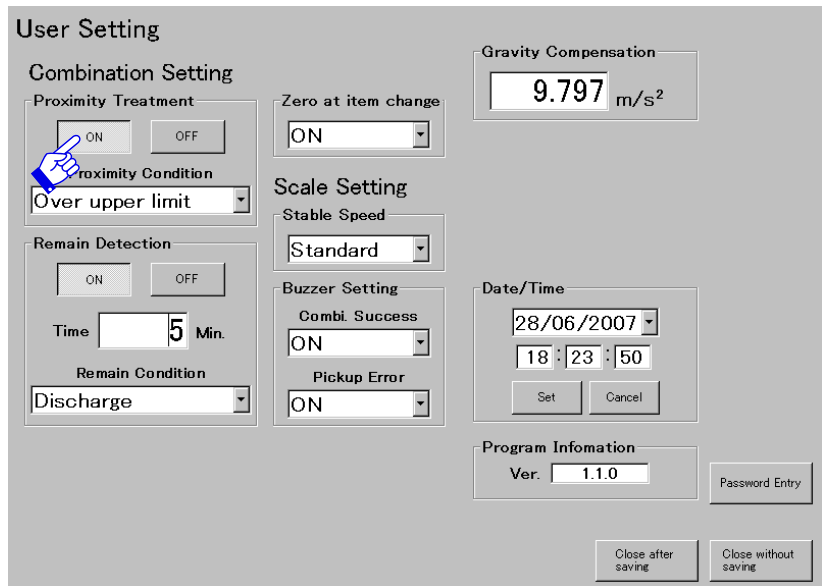
## 23. User Setting

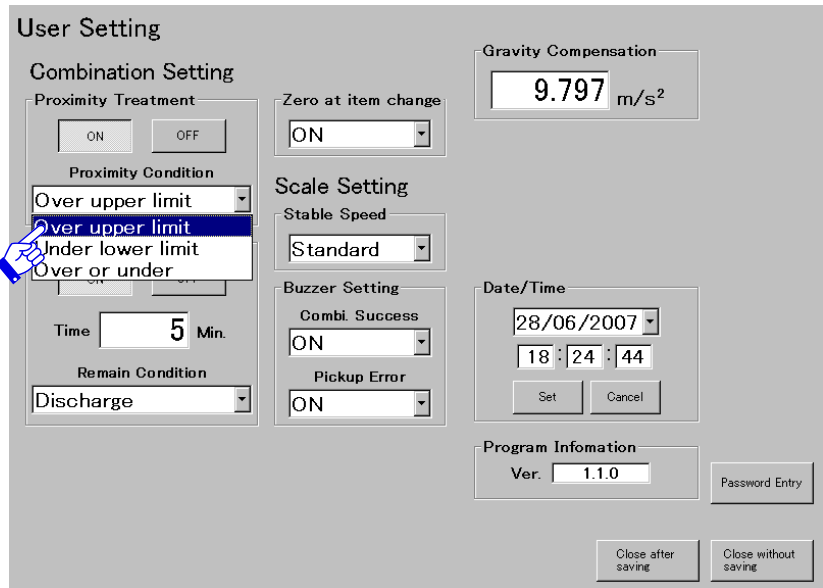
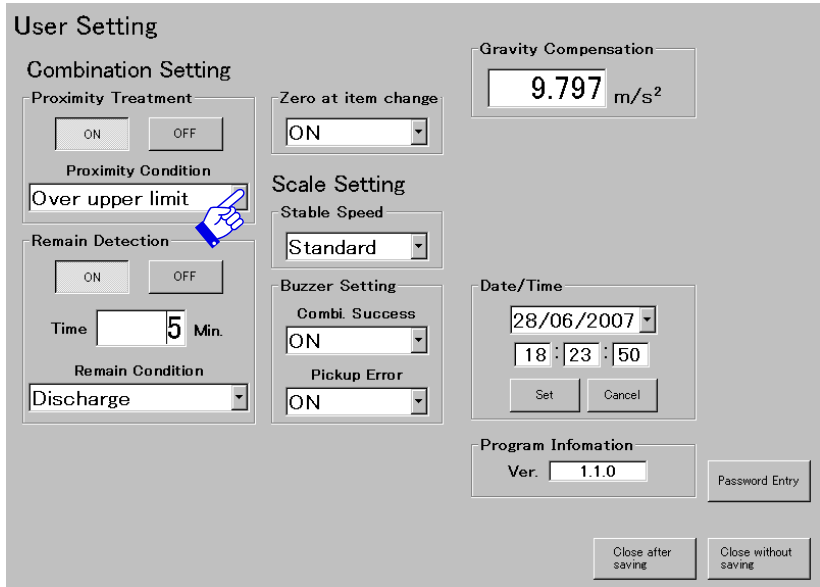
Touch  (Set-up) on the combination screen.

It changes to the User Setting screen.



(1) Proximity Combination: Set the Proximity Treatment to **ON** (enabled) or **OFF** (disabled).





Proximity Combination

- 0: Larger than the upper limit and closest to the target value
- 1: Smaller than the lower limit and closest to the target value
- 2: Whichever closer to the target

At shipment:

The proximity combination function is "NO(disabled)".

For the proximity combination function, refer to “Proximity combination and automatic recalculation functions” on page 53.

(2) Remains detection:  
(disabled).

Set the remains detection function to **ON** (enabled) or **OFF** (disabled).

The screenshot shows the 'User Setting' interface. The 'Remains Detection' section has the 'ON' button highlighted with a blue hand cursor, indicating it is the current selection. The 'Time' is set to 5 Min. and the 'Remain Condition' is set to 'Discharge'. Other settings include 'Proximity Treatment' (OFF), 'Proximity Condition' (Over upper limit), 'Zero at item change' (ON), 'Scale Setting' (Stable Speed: Standard), 'Buzzer Setting' (Combi. Success: ON, Pickup Error: ON), 'Gravity Compensation' (9.797 m/s<sup>2</sup>), 'Date/Time' (28/06/2007 18:23:50), and 'Program Information' (Ver. 1.1.0). Buttons for 'Close after saving' and 'Close without saving' are at the bottom right.

This screenshot is identical to the one above, but the 'OFF' button in the 'Remains Detection' section is highlighted with a blue hand cursor, indicating it is the current selection.

# User Setting

## Combination Setting

Proximity Treatment  Zero at item change

ON  OFF  
Input range : 1 ~ 60  
Enter in integer

Prox  
Over u

Remain D

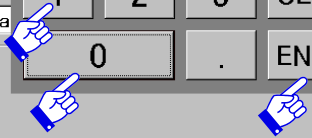
ON  OFF

Time

Ren

Discha

7	8	9	×
4	5	6	BS
1	2	3	CLR
0	.	ENT	



Gravity Compensation  
9.797 m/s<sup>2</sup>

Date/Time  
28/06/2007  
18 : 23 : 50  
Set Cancel

Program Information  
Ver. 1.1.0 Password Entry

Close after saving Close without saving

# User Setting

## Combination Setting

Proximity Treatment  ON  OFF

Proximity Condition  
Over upper limit

Remain Detection  ON  OFF

Time 10 Min.

Remain Condition  
Discharge

Zero at item change  
ON

Scale Setting  
Stable Speed  
Standard

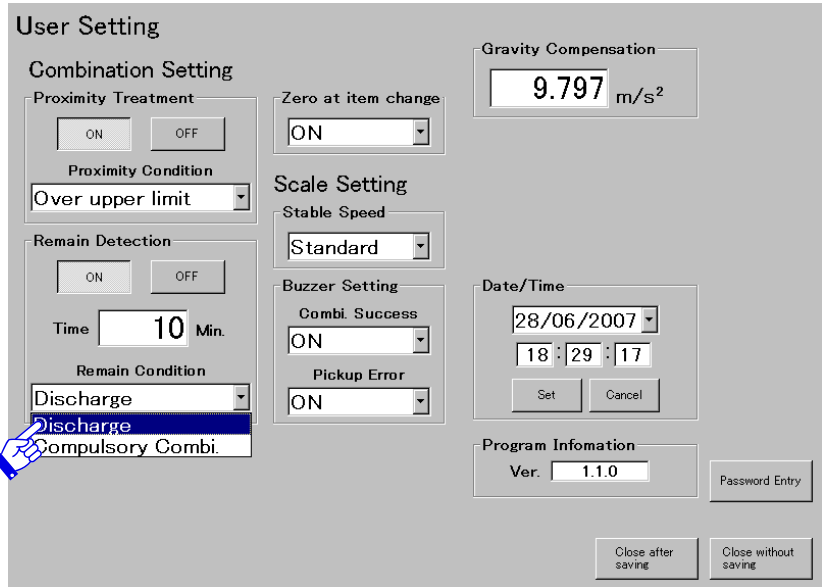
Buzzer Setting  
Combi. Success  
ON  
Pickup Error  
ON

Gravity Compensation  
9.797 m/s<sup>2</sup>

Date/Time  
28/06/2007  
18 : 28 : 56  
Set Cancel

Program Information  
Ver. 1.1.0 Password Entry

Close after saving Close without saving



Function setting: Discharge: To remove the remains  
(purple flashing)

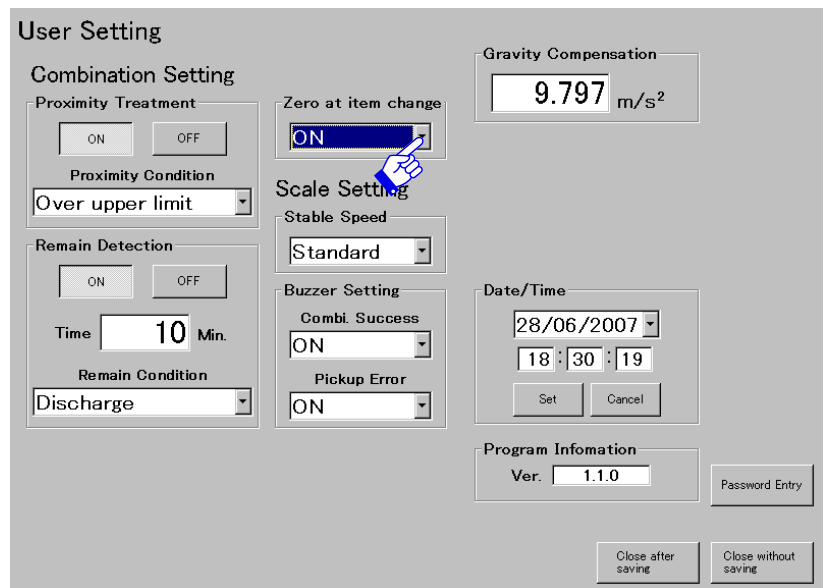
Compulsory Combi.: To involve the remains in  
the compulsory combination (green lighting).

At shipment:  
Setting:

The Remain Detection is "No(disabled.)"  
Setting in 1 minute increment/

For the remains detection function, refer to "Remains detection  
function" on page 56.

(3) Zero at item change:



### User Setting

#### Combination Setting

Proximity Treatment:

Proximity Condition:

Remain Detection:

Time:  Min.

Remain Condition:

Zero at item change:

Stable Speed:

Buzzer Setting

Combi. Success:

Pickup Error:

Gravity Compensation:  m/s<sup>2</sup>

Date/Time:

Program Information: Ver.

(4) Buzzer setting: Set the buzzer at a Combination Success and a Pick-up Error.

### User Setting

#### Combination Setting

Proximity Treatment:

Proximity Condition:

Remain Detection:

Time:  Min.

Remain Condition:

Zero at item change:

Scale Setting

Stable Speed:

Buzzer Setting

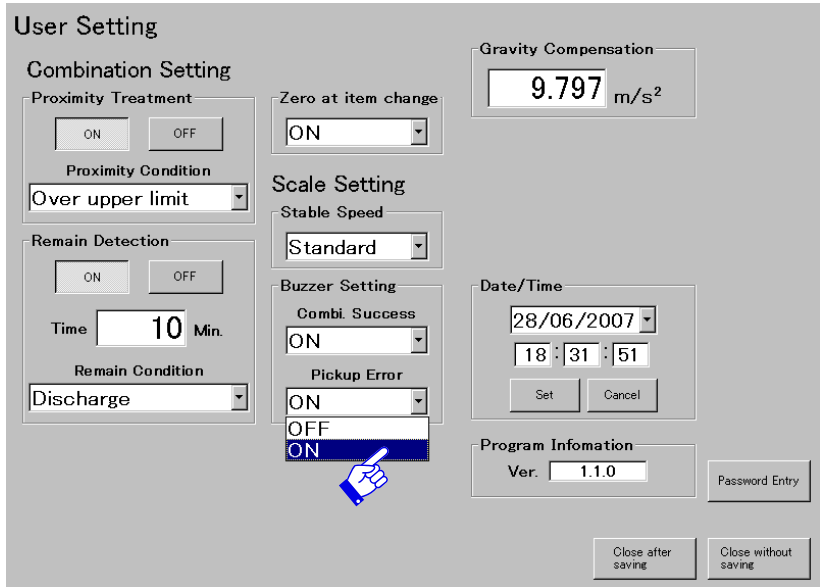
Combi. Success:

Pickup Error:

Gravity Compensation:  m/s<sup>2</sup>

Date/Time:

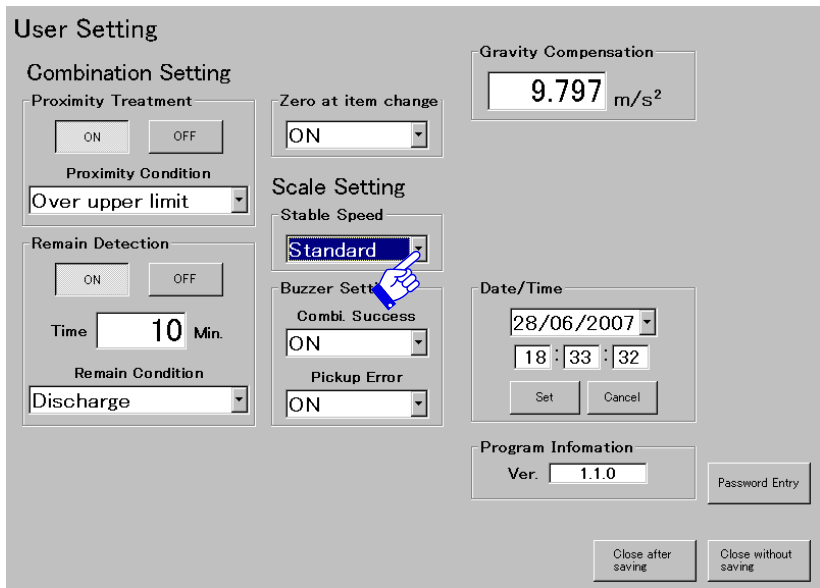
Program Information: Ver.



Function setting OFF: Not to sound.  
 ON: To sound  
 At shipment: "ON: To sound"

(5) Stability of scales: Set the stability of scales.

Standard setting: The setting well balanced between the combination speed and accuracy



**User Setting**

**Combination Setting**

Proximity Treatment:

Proximity Condition:

Remain Detection:

Time:  Min.

Remain Condition:

Zero at item change:

**Scale Setting**

Stable Speed:

Combi. Sur. Sps:

Pickup Error:

Gravity Compensation:  m/s<sup>2</sup>

Date/Time:

Set

**Program Information**

Ver.

Slow setting: To place priority on accuracy  
Set it when you want to improve the combination accuracy; however, the stabilization detection may be slightly delayed.

At shipment: "Standard setting"

(6) Gravity Compensation(Setting the service region):

Set the gravity acceleration where the machine is used.

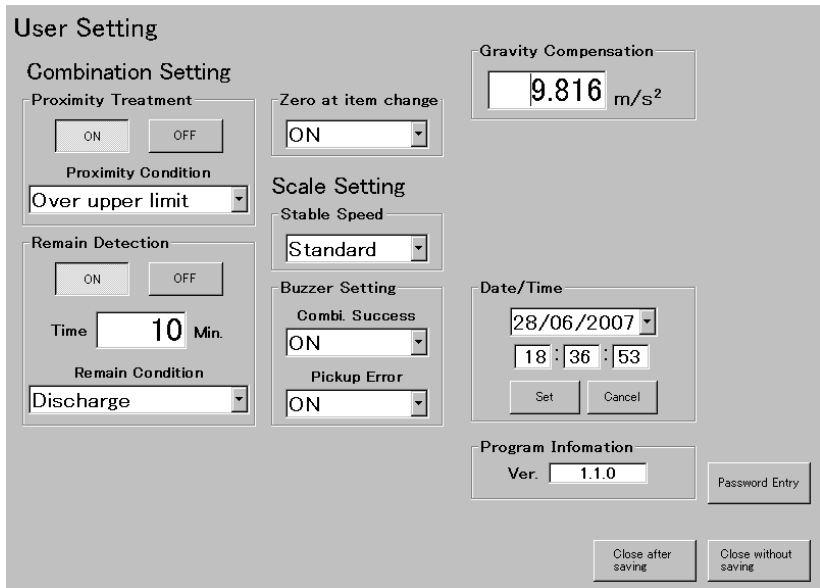
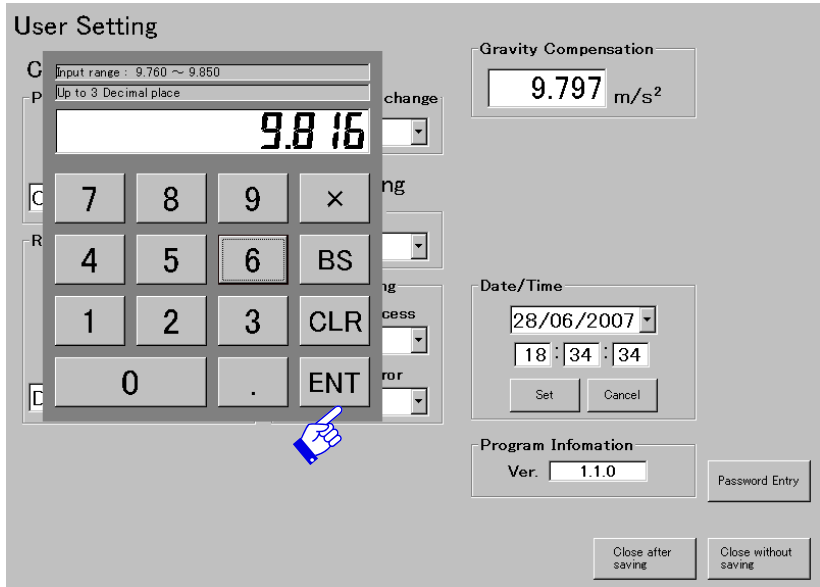
Touch the Gravity Compensation field.

**Example of entry:** Register as "9.816"

The screenshot shows the 'User Setting' screen. The 'Gravity Compensation' field is highlighted with a blue hand icon pointing to the value '9.797 m/s<sup>2</sup>'. Other settings include 'Combination Setting' (Proximity Treatment: ON/OFF, Proximity Condition: Over upper limit, Remain Detection: ON/OFF, Time: 10 Min., Remain Condition: Discharge), 'Zero at item change' (ON), 'Scale Setting' (Stable Speed: Standard), 'Buzzer Setting' (Combi. Success: ON, Pickup Error: ON), 'Date/Time' (28/06/2007, 18:34:34), and 'Program Information' (Ver. 1.1.0). Buttons for 'Close after saving' and 'Close without saving' are at the bottom.

Touch the key as **9** **.** **8** **1** **6** in sequence, and finalize it by **ENT**.

The screenshot shows the 'User Setting' screen with a numeric keypad overlay. The keypad has buttons for digits 0-9, a decimal point, and an 'ENT' key. Blue hand icons indicate the sequence of touches: 9, ., 8, 1, 6, and then ENT. The 'Gravity Compensation' field now shows '9.797 m/s<sup>2</sup>'. The rest of the screen is identical to the previous screenshot.



- When the machine is used next time, the gravity acceleration correction by service region is not required; therefore, just turn on the machine.
- When the machine of which gravity acceleration was already corrected is used in any area with different gravity acceleration, the gravity acceleration must be corrected according to such service region.

## (7) Date/Time setting

Adjust the built-in clock.

(7-1) Set the date.

Touch ▼ at the right end of the date field to display a monthly calendar below.

**User Setting**

**Combination Setting**

Proximity Treatment:  ON  OFF

Proximity Condition: Over upper limit

Remain Detection:  ON  OFF

Time: 10 Min.

Remain Condition: Discharge

Zero at item change: ON

**Scale Setting**

Stable Speed: Standard

**Buzzer Setting**

Combi. Success: ON

Pickup Error: ON

**Gravity Compensation**

9.816 m/s<sup>2</sup>

**Date/Time**

28/06/2007 18:36

Set Cancel

**Program Information**

Ver. 1.1.0 Password Entry

Close after saving Close without saving

Select the intended date from the calendar, and touch it to change.

**User Setting**

**Combination Setting**

Proximity Treatment:  ON  OFF

Proximity Condition: Over upper limit

Remain Detection:  ON  OFF

Time: 10 Min.

Remain Condition: Discharge

Zero at item change: ON

**Scale Setting**

Stable Speed: Standard

**Buzzer Setting**

Combi. Success: ON

Pickup Error: ON

**Gravity Compensation**

9.816 m/s<sup>2</sup>

**Date/Time**

28/06/2007

June 2007

Mon	Tue	Wed	Thu	Fri	Sat	Sun
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2	3	4	5	6	7	8

Today: 28/06/2007

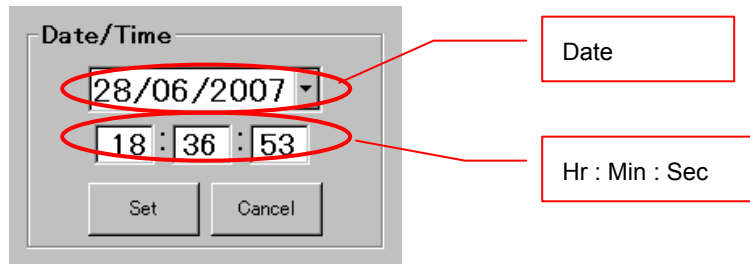
Put back by one month.

Put forward by one month.

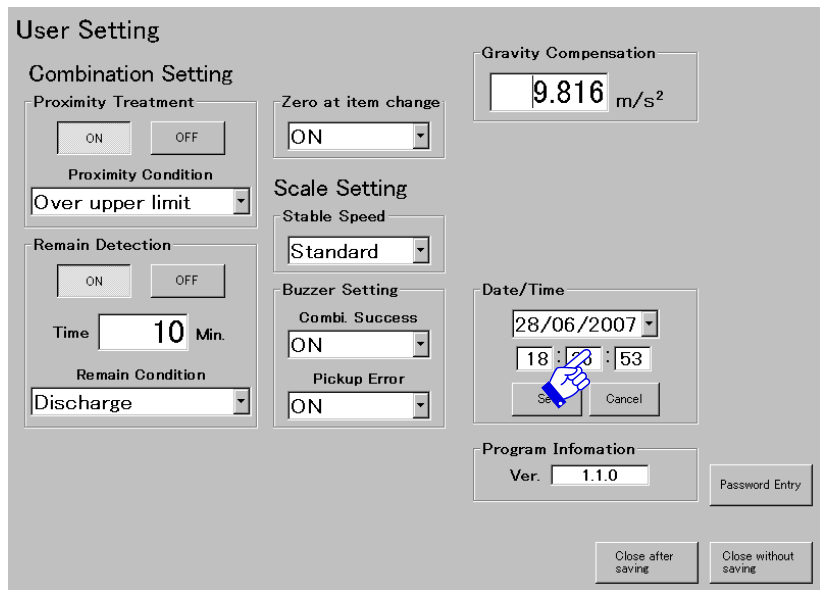
Return to the previous date.

Touch the date to set it.

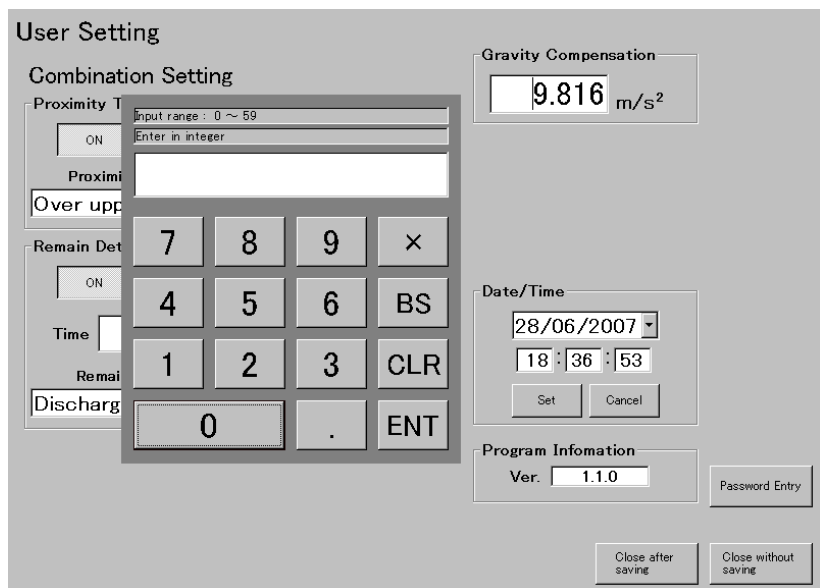
(7-2) Set the clock



Touch the "Min" field.

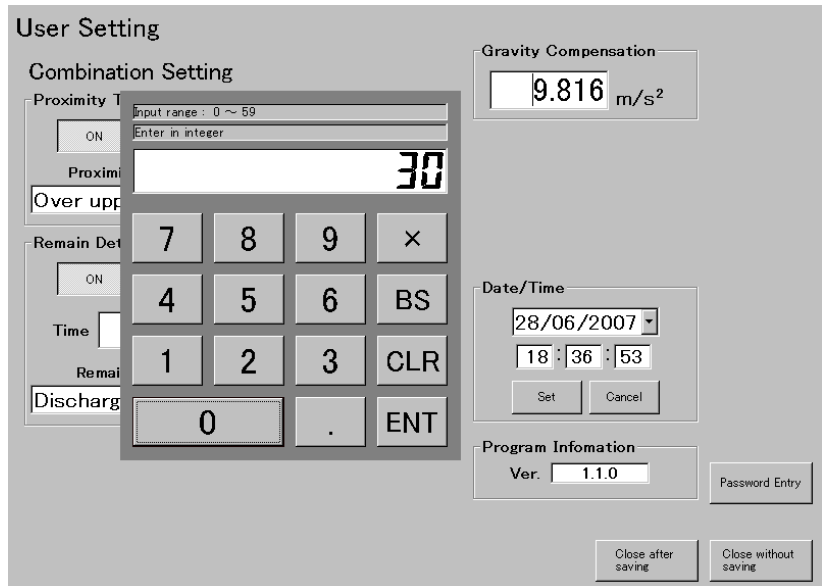


A numeric keypad appears.

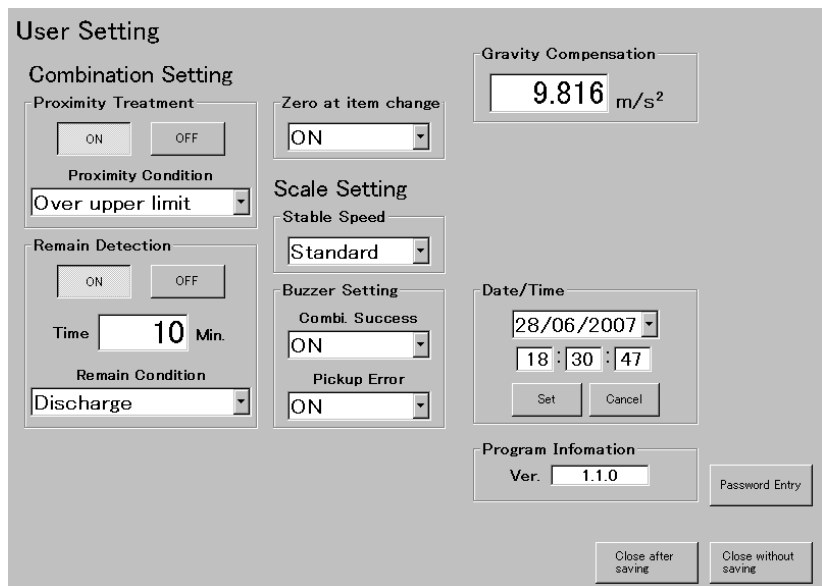


Touch the numbers to change the setting.

In this example, touch **3** **0** **ENT** to set "30 (min)."



The numbers in the "Min" field changes to "30."



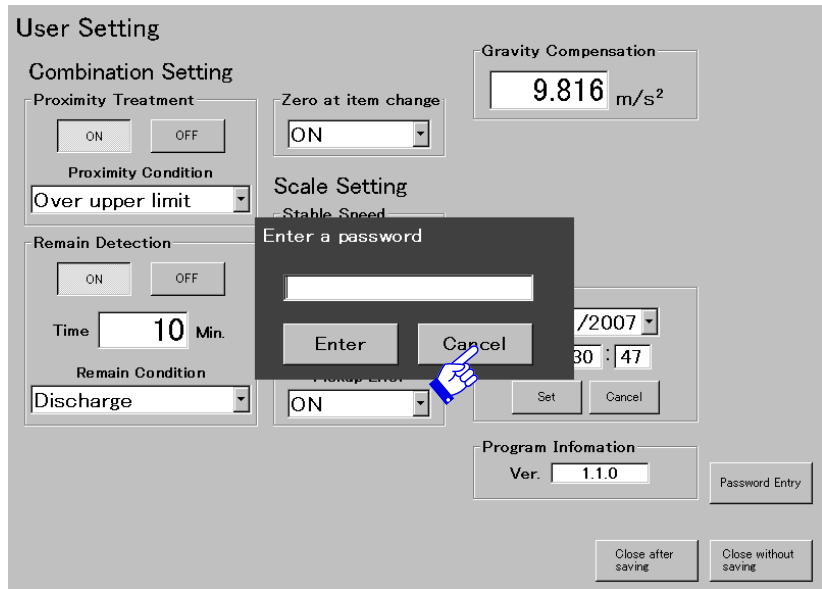
Touch **Set** to enable the setting.

Touch **Cancel** to cancel the setting.

(8) Passwprd Entry

Touch **Password Entry** to display the message for entering a password.

The subsequent operation is for proceeding to the menu for maintenance; therefore, in this case press **Cancel** to delete the dialog.



(9) After your setting on this screen is complete:

Press **Close after saving** to save the settings, and return to the combination weighing screen.

Press **Close without saving** to return to the combination weighing screen without changing the settings.

## 24. Troubleshooting

Examine the following points before requesting repair. If the trouble continues after the following checks and countermeasures have been taken, contact your distributor.

- Nothing is displayed after the start switch is pressed.  
  
Is the power plug connected to a wall socket?  
Is the main switch on the display panel turned on?  
It takes about 1 minute after pressing the start switch until the combination screen appears.  
Is not the fuse blown out?
  
- No operation is available even though the touch panel is pressed.  
  
Turn off power, and turn it on again.
  
- No combination is found.  
  
Are the items selected?  
Is the combination range set appropriately?  
Is any item loaded on the priority scale, when it is specified?  
Remove the item from the scale, and reset the scale to zero.  
Are the items loaded on 3 or more scales?  
Refer to the "Guidance messages" (page 40).
  
- The screen turned back to blue.  
  
Hold down the start switch (keep pressing it for several seconds) at the front of the display panel to turn off power.  
Then, press the start switch to restart.

## 25. Error messages

### Over-scale

“Weighing capacity +5 scale marks (3005 g)” is exceeded.

Remove the item to reset the error.

### Zero reset error (-- H)

The load applied is larger than the zero reset range.

Remove the item, and reset the scale to zero.

### Zero reset error (-- L)

The load applied is smaller than the zero reset range.

Check the weighing pan, and reset the scale to zero.

### Initial error (-HH)

The load applied is larger than the zero reset range when power is turned on.

Turn on power again with no item loaded on the weighing pan.

### Initial error (-LL)

The load applied is smaller than the zero reset range when power is turned on.

Check if anything contacts the weighing pan or foreign object is tucked under the weighing pan.

Then, turn on power again.

### An incorrect item was picked up.

When the combination was finalized, an incorrect item was picked up.

Return the item you picked up to the original scale.

## 26. Specifications

Model	TDW-2102WP (Separate type)
Outside dimension	508(W) x 1175(D) x 650(H) mm
Power supply	220-240±10% 50Hz
Operating Temp.	-10°C to +40°C
Protection	IP66 (Frame, Weighing unit)
Processor	Celeron 400 MHz (32bit)
Operating Systems	Windows XP
Display	12.1" Full Color LCD (800 x 600 dots), Touch screen panel
Controller and Weighing heads	Integrated Type (Standard) or Separate Type (Option)
Weighing system	Strain Gauge Load Cell
No. of scales	Standard: 12 Heads (Selectable among 8 to 16 Heads)
Capacity	3,000g (Each Weighing Unit)
Graduation	1g (Combination Resolution 0.1g)
Maximum tare	3,000g (up to capacity)
Platform size	195 (W) X 135 (D) mm
No. of stored items	Max. 999 items
Combination system	Weight Combination, Weight & Quantity Combination, Price Combination, Priority Head Combination
Combination weight range	40g to 18,000g
Minimum display	1g
Weighing range	20g to 3,000g per head
Speed	20 to 30 packs per minute
Net weight	Approx. 44 kg
Function	Weight Combination, Weight & Quantity Combination, Priority Head Combination, Automatic Recalculation, Scale Status Check, Scale Suspension, Proximity Combination, Total Quantity Setting, Zero reset, Remains Detection, One-Touch Tare
Option	2 Section Operation, Grading by Weight, Price Combination

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### Dimensions

