【Precautions】

The scale should always be used in an environment, which is free from excessive air currents, corrosives, vibration, and temperature or humidity extremes. These factors will affect displayed weight readings. Before starting the operation of the scale, please read the following instructions below to operate the scale properly.

DO NOT use the scale:
- next to open windows or doors causing drafts or rapid temperature changes.
- near air conditioning or heat vents.
- near vibrating, rotating or reciprocating equipment.
- near magnetic fields or equipment that generates magnetic fields.
- on a rough work surface

1. Loosen the delivery protection screw （**this screw can't be removed**）

Please find the delivery protection screw in the bottom of the scale. Loose it according to the instruction sticker next to it

- **Before use the scale** Loose the screw <u>counter-clockwise</u> to the end
- **Before move the scale** Tighten the screw <u>clockwise</u> to the end

2. Install the weighing pan

Put on the weighing pan to complete the installation.

3. Leveling the scale

The scale is equipped with four level adjusters. Adjust the scale to a level position with four level adjusters until the bubble appears in the center circle of the level indicator.

4. Recharging battery

Recharging battery when the battery sign 🔋 starts blinking. When battery is being charged, the LED indicated by the word CHARGE on the display panel will be RED, the LED will become <u>GREEN</u> when the indicator has been charged to full capacity (charging time is about <u>8 hours</u>).
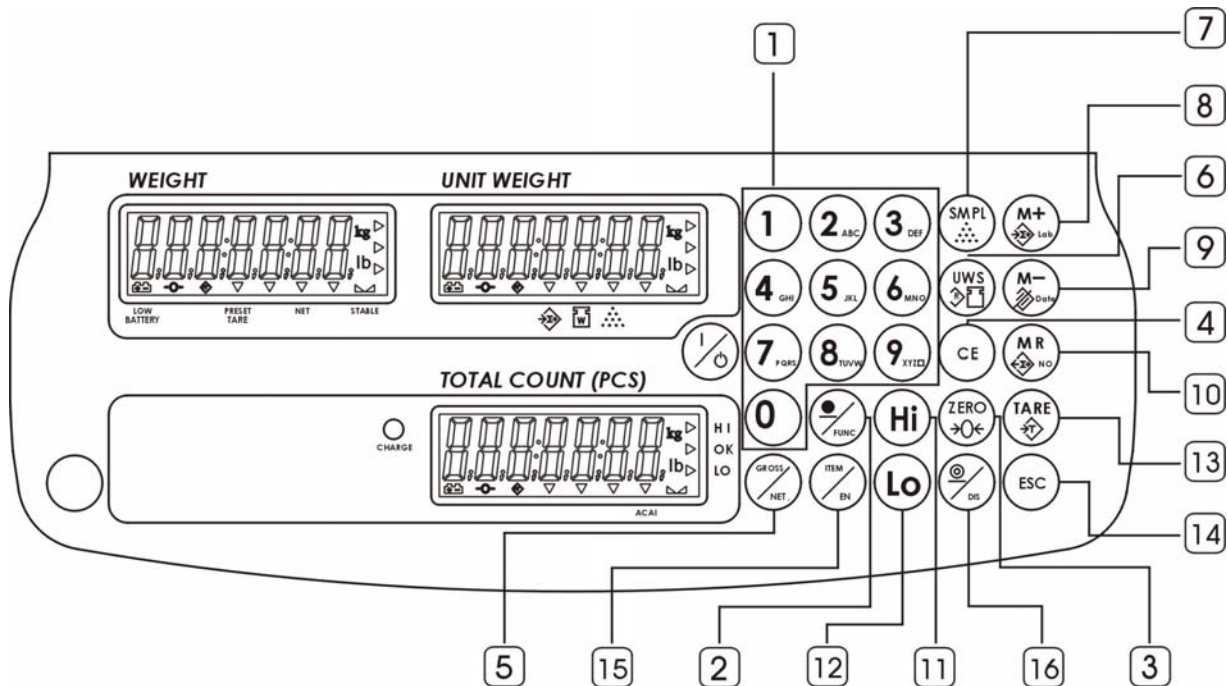
【Function Keys】
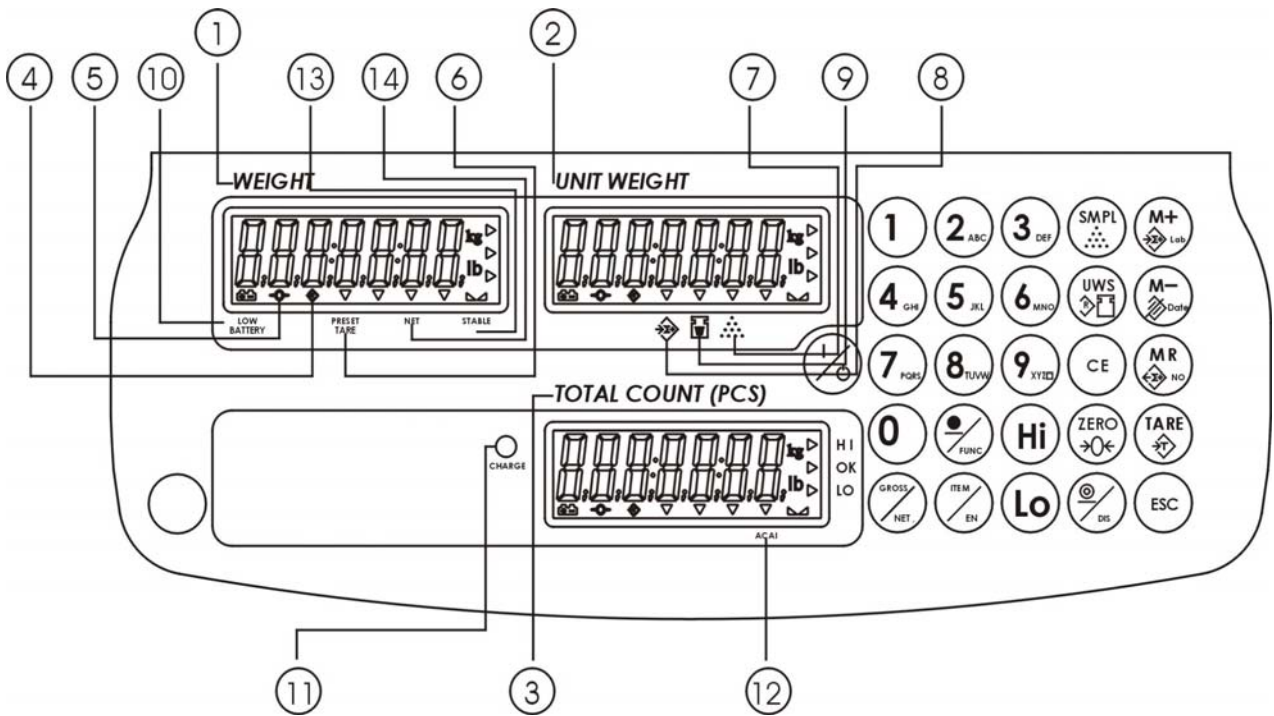
①	**WEIGHT**	：	Display weight value.
②	**UNIT WEIGHT**	：	Display unit weight value.
③	**TOTAL COUNT (PCS)**	：	Display total pieces of the weight.
④	→T◇	：	Tare weight value is set.
⑤	→0←	：	The weight return to zero point.
⑥	**PRESET TARE**	：	Tare weight is set.
⑦	∴	：	Sampler is insufficient.
⑧	→Σ◇	：	Under accumulation.

⑨	[W icon]	:	The unit weight is lower than 4/5 e.
⑩	[battery icon]	:	Battery is low.
⑪	**CHARGE**	:	Red LED light is on while the battery is Charging; green LED light is on when Charging is completed.
⑫	**ACAI**	:	ACAI is enabled.
⑬	**STABLE**	:	The weight value is stable.
⑭	**NET**	:	Net weight.

【Keyboard】

1	(0) ~ (9 XYZ□)	:	**Number & letter** keys. (9 XYZ□) as space key when edit label.
2	(● / FUNC)	:	To key in **decimal point /** to enter **function** setup.
3	(ZERO →0←)	:	To reset the weight to **zero**.
4	(CE)	:	To **clear** the key-in.
5	(GROSS / NET)	:	To switch **Gross / Net** weight.
6	(UWS)	:	Input **Unit Weight.**
7	(SMPL)	:	To **sampling /** switch between main scale and remote platform.
8	(M+ Lab)	:	To **Accumulate** / To enter label editing mode / To next parameter.
9	(M− Date)	:	To **delete the accumulated data /** to display year, date, time / To previous parameter.
10	(M R NO)	:	To **call up an accumulated data /** to access the accumulated data.
11	(Hi)	:	To **select** / to set the **Hi** value of weight or piece / To change to next content of parameter.
12	(Lo)	:	To **select** / to set the **Lo** value of weight or piece / To change to previous content of parameter.
13	(TARE)	:	**Tare.**
14	(ESC)	:	To **give up** any setting and **return to normal weighing status.**
15	(ITEM / EN)	:	To set/call up **unit weight ID**；To **enable** / **switch on** relay output function under Hi/Lo setting.
16	(◎ / DIS)	:	To **print**；To **disable / switch off** relay output function under Hi/Lo setting.

【Analog Section】

Input sensitivity	1~4mV/V
Zero adj. Range	20% FS
A/D conversion rate	10 times per second.
Load cell excitation	5V DC
Number of load cells.	up to 4x350 ohm loadcells

＊**General Weight display resolution up to 1/30,000**

Diagram of sub channel connector

1   E+
2   E-
3   S+
4   S-
5   GND
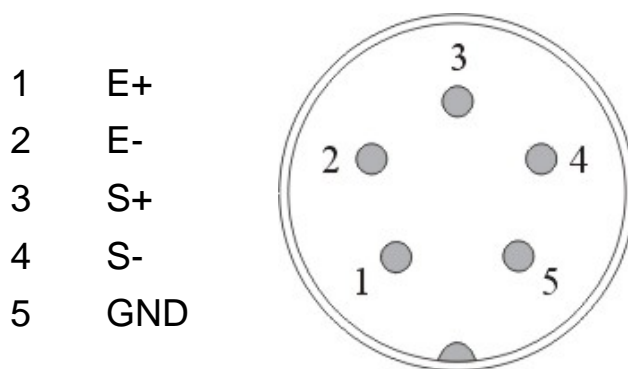
【Installation】
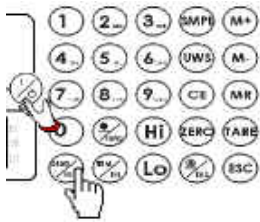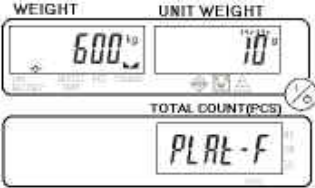
1. Turn off the scale.
2. Connect the JCA scale to the remote platform

【 Set Up 】

■ **Set The Parameters Correctly To Activate The Remote Platform**

①②③ SMP0 M+ ④⑤⑥ UWS M- ⑦⑧⑨ CE MR ⓪ %/FUNC Hi ZERO TARE ⊕ %/U Lo %/U ESC	(1) Under normal weighing mode, press ⊙/FUNC for 3 seconds to enter the basic parameter settings.
WEIGHT **P-2** kg UNIT WEIGHT **n-di 9** TOTAL COUNT(PCS) **oFF**	(2) The scale is now in the basic parameter setting mode. press ⊙/GROSS NET for 3 seconds to enter the advance parameter settings.
WEIGHT **RP-0** UNIT WEIGHT **SPrt** TOTAL COUNT(PCS) **100**	(3) The scale is now in the advance parameter setting mode. Press ⊕/M+ Lab or ⊙/M- Date to switch between the parameters. Repeat step 3 until AP-12 appear
WEIGHT **RP-12** UNIT WEIGHT **dUAL** TOTAL COUNT(PCS) **botH**	(4) AP-12 will appear in the weight display. Press (Hi) or (Lo) to select between **botH**, **SUb**, or **iAin**. **botH** means " Using main scale and remote platform together." **SUb** means " Using remote platform to weight and operate the main scale as indicator ". **iAin** means " Using main scale only.
①②③ SMP0 M+ ④⑤⑥ UWS M- ⑦⑧⑨ CE MR ⓪ %/FUNC Hi ZERO TARE ⊕ %/U Lo %/U ESC ①②③ SMP0 M+ ④⑤⑥ UWS M- ⑦⑧⑨ CE MR ⓪ %/FUNC Hi ZERO TARE ⊕ %/U Lo %/U ESC	(5) Press ⊕/M+ Lab or ⊙/M- Date to save and go to next advanced parameter setting or press ⊙/FUNC to save the setting and return to normal weighing mode.

Set max. Capacity & Division Of Remote Platform

	(1) Switch off the scale. Press (⊘ GROSS/NET) and (⊘ I/O) together then release (⊘ I/O), but keep pressing (⊘ GROSS/NET) until $PLAt\text{-}F$ appear in the total count display.
WEIGHT **600** kg UNIT WEIGHT **20** g TOTAL COUNT(PCS) **PLAt-F**	(2) After $PLAt\text{-}F$ appears in total count display, then you can set up the division of the remote scale.
WEIGHT **600** kg UNIT WEIGHT **10** g TOTAL COUNT(PCS) **PLAt-F**	(3) Set up the division by key in the desired division value. For example: Set division as 10g. Press (1)(0), then 10 will display in unit weight display and flash.
WEIGHT **600** kg UNIT WEIGHT **10** g TOTAL COUNT(PCS) **PLAt-F**	(4) Press (Hi) key to switch to capacity setting.
WEIGHT **300** kg UNIT WEIGHT **10** g TOTAL COUNT(PCS) **PLAt-F**	(5) Set up the capacity by key in the desired max. capacity value. For example: Set max. capacity as 300kg. Press (3)(0)(0) and the number 300 will appear in the weight display and flash.

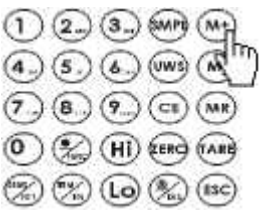|	
	(6) Press ⊘ to save the capacity and division settings and automatically enter into the calibration mode. Please refer to Three-point calibration for main scale and remote platform to conduct the calibration. Please start with step (2). **Note :** Please remember the digits of the internal counts when you complete three-point calibration for remote scale. If the internal counts of the remote platform are not close to the internal counts of the main scale, then please refer to "Set AD gain of remote platform." For example: After completion of Three-point calibration procedure for main scale and remote platform, the internal counts for the main scale is 33, and the internal counts for the remote platform is 4. This means that the internal counts of the main scale is approximately 8 times higher than the internal counts of the remote platform It means that the initial AD gain parameter should be multiplied 8 times. For example if the initial setting is 8 then you need to reset the AD gain parameter to 64.

Three-Point Calibration For Main Scale And Remote Platform
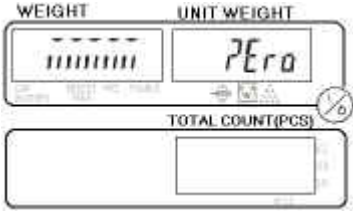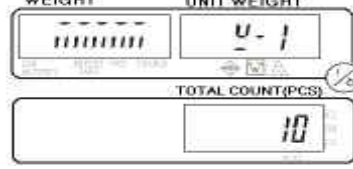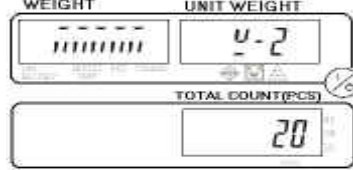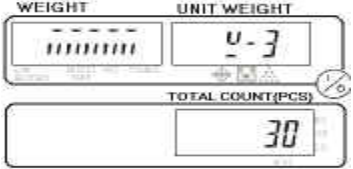
Note: Please calibrate the main scale first

	(1) Switch off the scale and then Press (M+) and (I/○) together, then release (I/○) but keep pressing (M+) key until *PEro* appear in the unit weight. Display.

	(2) Please conduct 3 point calibration.
	
	  2-1 *ıııııııı* means three-point calibration for main scale.
	
	    55555 means three-point calibration for remote platform.
	
	  2-2. Press (SMPL) to switch to three-point calibration for main scale or remote platform.
	
	 Important Note. You can only do the 3-point calibration for the remote platform after you have set the max. capacity and division for the remote platform. .
	
	Leave weighing pan empty and press (ZERO) key to do the zero point calibration.

	(3) *CAL-1* appears in the unit weight display and the scale beeps. You can now do the 1-point calibration

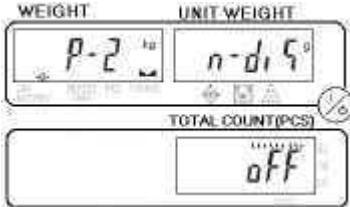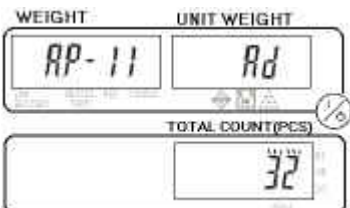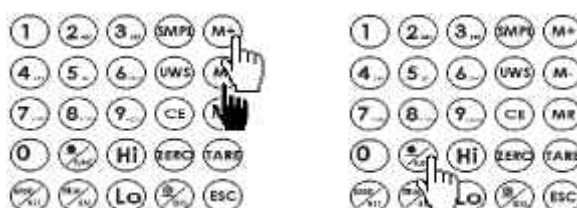|	
WEIGHT UNIT WEIGHT `||||||||` **CAL-1** TOTAL COUNT(PCS) `0010KG`	(4) Put the first calibration weight onto the weighing pan. (For example, 10kg illustrated.) If the weight is not correct, key in the correct numbers by keys.
WEIGHT UNIT WEIGHT `||||||||` **CAL-2** TOTAL COUNT(PCS) `0010KG`	(5) Press (ZERO →0←) to perform the 1- **point calibration** and afterwards will **CAL-2** appear in the unit weight display and the scale will beep.
WEIGHT UNIT WEIGHT `||||||||` **CAL-2** TOTAL COUNT(PCS) `0020KG`	(6) Put the second calibration weight onto the weighing pan. (For example, 20kg illustrated.)
WEIGHT UNIT WEIGHT `||||||||` **CAL-3** TOTAL COUNT(PCS) `0020KG`	(7) Press (ZERO →0←) to conduct the **2 point calibration**. and afterwards will **CAL-3** appear in the unit weight display and the scale will beep.
WEIGHT UNIT WEIGHT `||||||||` **CAL-3** TOTAL COUNT(PCS) `0030KG`	(8) Put the third calibration weight onto the weighing pan.

WEIGHT UNIT WEIGHT ‖‖‖‖‖‖, CRL - 3 TOTAL COUNT(PCS) 003066	(9) Press (ZERO →0←) to perform the 3-point calibration
WEIGHT UNIT WEIGHT 30.000ᵏᵍ 33ᵈ TOTAL COUNT(PCS) PASS	(10) PASS appear in the total count display and the scale will beep. (11) After three-point calibration for **main scale** is finished, please remember the digits, which appears the unit weight display. For example, the digits 33 shown in the unit weight display means " 1division equals 33 internal counts. The closer division digits of main scale and remote platform, the better performance of the system.
(keypad image)	(12) Press (M+) to save the calibration, then the unit weight display and total counts display will show the three-point calibration weights for the respective 3 points. (13) Turn off and turn on the scale, now is OK to be weighing.

Note :

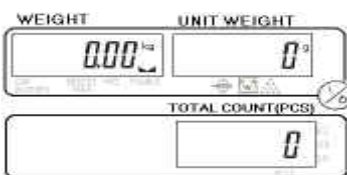You can press (GROSS/NET) to restart the calibration from the beginning during the three-point calibration procedures.
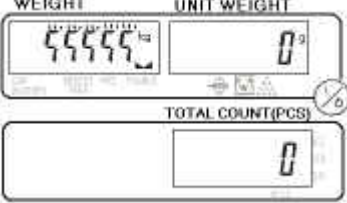
Call Up The 3-Point Calibration Data

	(1) Switch off the scale and then Press (M+) and (I/O) together, then release (I/O) but keep pressing (M+) key, until *PEro* appear in the unit weight. Display.
	(2) After *PEro* appears, 2-1 .*IIIIIII* means three-point calibration for main scale. *55555* means three-point calibration for remote platform. 2-2. Press (SMPL) to switch three-point calibration for main scale or for remote platform.
	(3)Press (M+) to call up the calibration data. The calibration data will automatically appear in sequence.
	(4) The left figure means 1st point calibration weight
	(5) The left figure means 2nd point calibration weight.
	(6) The left figure shows 3rd point calibration weight
	(7) The left figure shows " 1div equals 33 internal counts". The 1div of scale1 is always around 33. The one of scale2 should be close to 33. If not, adjust AP-10 to make the 1div of scale2 close to 33 as could as possible. For example: JCA 30kgx1g 1g=33 internal counts
Note: *IIIIIII* means that we are checking the calibration data under the main scale mode.	

Set AD Gain Of Remote Platform

	(1) Under normal weighing mode, press 🔘 for 3 seconds to enter the basic parameter settings.
	(2) The scale is now in the basic parameter setting mode. press 🔘 for 3 seconds to enter the advance parameter settings.
	(3) The scale is now in the advance parameter setting mode.
	(4) Press 🔘 or 🔘 to switch between the parameters. Repeat step 3 until AP-11 appear in the weight display, as show in the left chart below.
	Note: This ad value should make 1div of scale2 close to 33.
	(5) Press (Hi) o r (Lo) to select proper AD gain Note : There are 8 options of ad gain 1,2,4,8, 16,32,64, 128.
	(6) Press 🔘 or 🔘 to save and go to next advanced parameter setting or press 🔘 to save the setting and return to normal weighing mode.

How To Switch Between Main Scale And Remote Platform

Main scale Capacity: 30kg Division: 1g	Remote platform Capacity: 300 kg Division: 10g
	(1) In this example the scale is in the main scale mode. To switch to the sub channel mode (remote platform), press SMPL.
	(2) The 55555 flashed in the weight display..
	(3) When 55555 flashing disappear, means that you are in the sub channel mode (remote platform). Now the remote platform could be used, and all applications of JCA plus could be used..
	(4)To change back to the main scale mode just press SMPL, and IIIIIIIII will flash in weight display
	(5) When IIIIIIIII flashing disappear, means that the scale have returned back to main scale mode. All applications is of course available in this mode also.

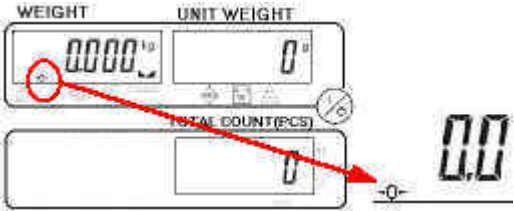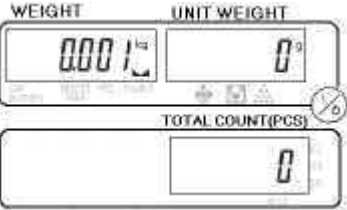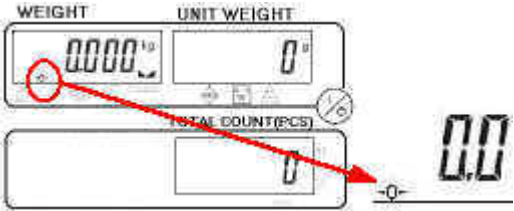## Some restriction in dual channel system

Accumulation

　　　　When accumulated already in one channel, it can't be accumulated in another channel.
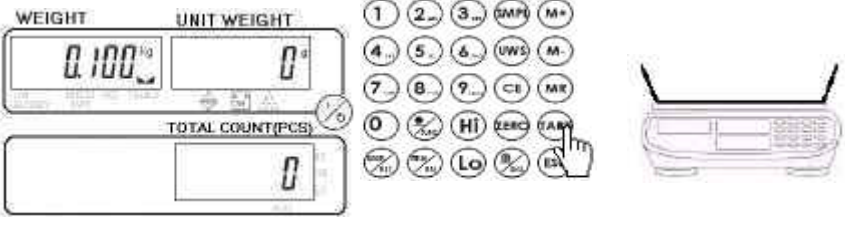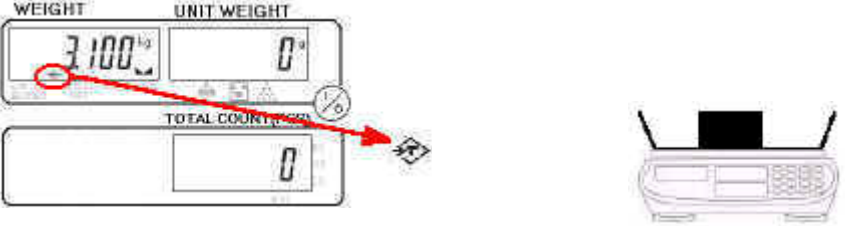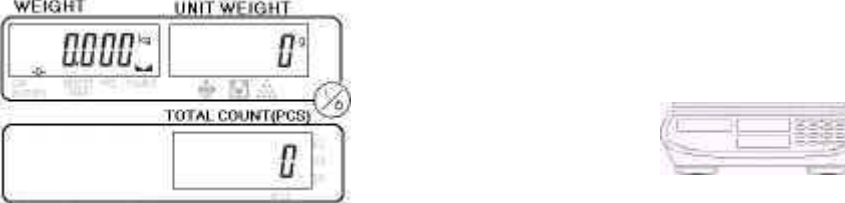
Hi/Lo checking

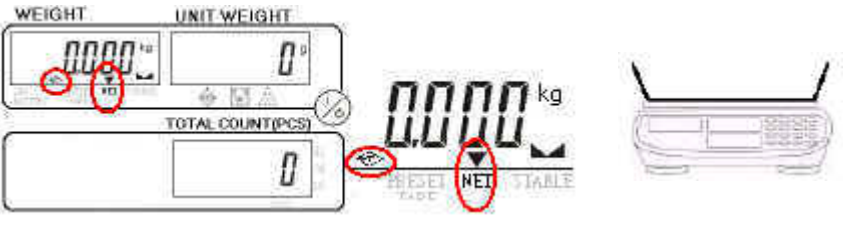　　　　When Hi/Lo checking is enable in one channel, Hi/Lo setting can't be accessed and enabled in another channel.

【Zero–Point】

	(1)The scales zero point is shown as left diagram with →O←.
	(2)Press ⊘(ZERO →O←) key if you see the display shown as left without →O←, but ◣◢ appears.
	(3)Here you see the zero point →O← again. PS: The range of the zero point is ±2% of the capacity. For example, the zero rang of 30K is 600g

【Tare】

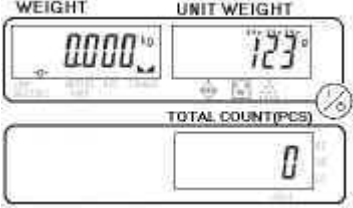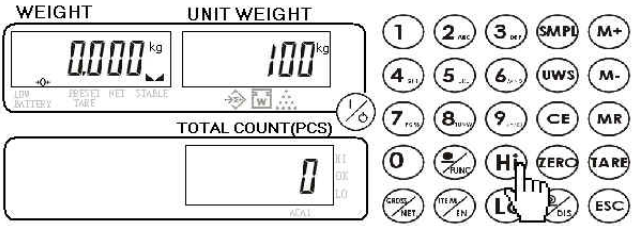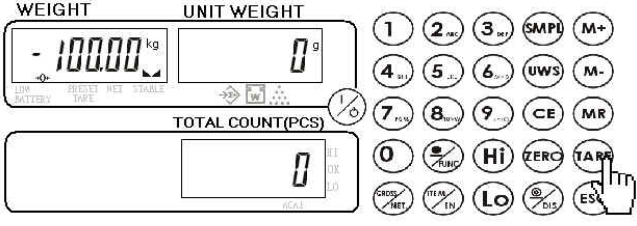|	
	(1) Put a container weighing 0.100 kg on the pan. (2) Press TARE key when ◣◢ appears.
	(3) TARE' symbol appears and the arrow points to the word 'NET'. The net weight is 0.000 kg
	(4) Put a 3kg weight master into the container. The net weight is 3.000 kg.
	(5)Press GROSS/NET key
	(6)The arrow points to the symbol 'NET' disappears. The gross weight is 3.100 kg (7) Press GROSS/NET again and the display is showing net weight again.
	(8)Remove all objects from the pan. When ◣◢ and →0← appears, press TARE to cancel the tare .

【Pre- Tare】

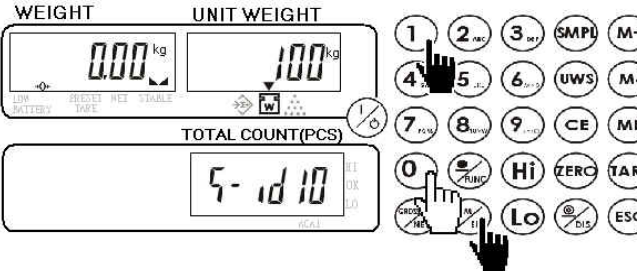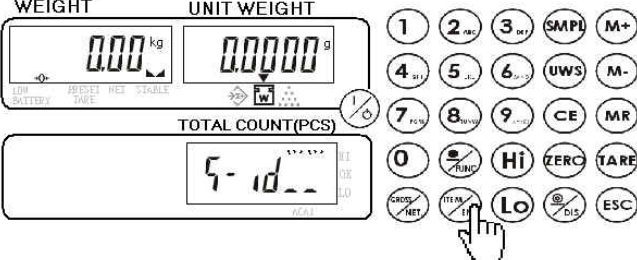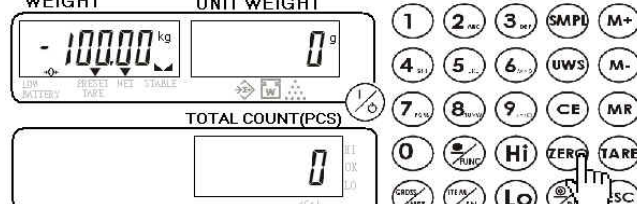|	
	(1)For example the container is weighing 123g , then press ① ②_{ABC} ③_{DEF}.
WEIGHT UNIT WEIGHT 0000 kg 123 g TOTAL COUNT(PCS) 0	(2)The 123g are blinking in the unit weight display..
① ② ③ (GMP) (M+) ④ ⑤ ⑥ (UWS) (M-) ⑦ ⑧ ⑨ (CE) (MR) ⓪ (Hi) (ZERO) (TARE) (Lo)	(3) Press (TARE) key
WEIGHT UNIT WEIGHT 0123 kg 0 g TOTAL COUNT(PCS) 0 0.1 PRESET TARE	(4) The arrows point the 'NET' & 'PRESET TARE' symbol in the weight display.

【 How to do Pre-TARE more than 100kg by DUAL CHANNEL model 】

■ **Directly by number input**

	(1) Key in pre-tare weight in normal weighing mode, like key in 100 and as before it means 100g. Now press [HI].
	(2) Then the display will show 100kg and now press [TARE] key and now you have pre-tare 100kg.

■ **Pre-TARE by ITEM value**

(So you can easily do pre-tare and get values of Pre-tare of more than 100kg. It is good to prevent mistakes in key in of pre-tare values.)
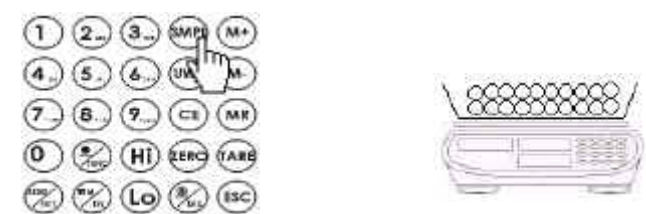
	(1) Key in pre-tare weight in normal weighing mode, like key in 100 and as before it means 100g. Now press [HI] and display will show 100kg. Now you press the [ITEM] key to save the pre-tare value in the memory and after you have chosen the memory slot like ITEM 10 then you press the [ITEM] key again to save the information.
	(2)You can now call out the pre-tare value by pressing the [ITEM] key and key in the ITEM number you have saved the information's in.
	(3)You can now do pre-tare of this value by simply pressing the [TARE] key.

【Counting Method 1— Key In Unit Weight】
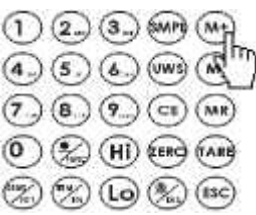
	(1) For example the unit weight is 1.2 g. Press ①⑦②ABC
WEIGHT **0000** UNIT WEIGHT **1.2** TOTAL COUNT(PCS) **0**	(2)The unit weight display is showing 1.2 g and is blinking.
① ② ③ (SMP) (M+) ④ ⑤ ⑥ (UWS) (M-) ⑦ ⑧ ⑨ (MR) ⓪ (Hi) (ZERO) (TARE) (Lo) (ESC)	(3) Press (UWS) key
WEIGHT **0000** UNIT WEIGHT **1.2000** TOTAL COUNT(PCS) **0**	(4) The display of the unit weigh is 1.2000g
WEIGHT **00.12** UNIT WEIGHT **1.2000** TOTAL COUNT(PCS) **10**	(5) You can start to count.
WEIGHT **0000** UNIT WEIGHT **0.5000** TOTAL COUNT(PCS) **0** **0.50**	PS: If the unit weight is less than 0.8e, Then the display is shown as left. You can operate the counting func. But the accuracy is low. Take 30kg x1g, 0.8e=0.8g

Note: When the scale have a unit weight in the unit weight display, and if you turn off the scale it will memorize the unit weight. This means that when you turn on the scale again the previously unit weight will again appear in the unit weight display.
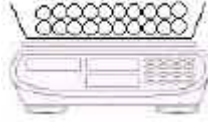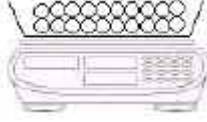
【Counting Method 2— Sampling】

WEIGHT: 0.300 kg UNIT WEIGHT: 0 TOTAL COUNT(PCS): 0		(1) Put container on the pan and press (TARE) key., put part of the sample about 300g into the container.
		(2) For example the quantity is 20 pieces Press (2 ABC) (0)
WEIGHT: 0.300 kg UNIT WEIGHT: 20 TOTAL COUNT(PCS): 0		(3) The number 20 is blinking. In the unit weight display.
(keypad)		(4) Press (SMPL) key.
WEIGHT: 0.300 kg UNIT WEIGHT: 20 TOTAL COUNT(PCS): - SAP -		(5) The scale will calculate the unit weight.
WEIGHT: 0.300 kg UNIT WEIGHT: 15.090 TOTAL COUNT(PCS): 20 ACAI		(6) You get a unit weight of 15.090g in this example
WEIGHT: 0.000 kg UNIT WEIGHT: 15.090 TOTAL COUNT(PCS): 0		(7) After you get the unit weight , you can start counting the parts in bulk or big quantities.

【Manual Accumulation】
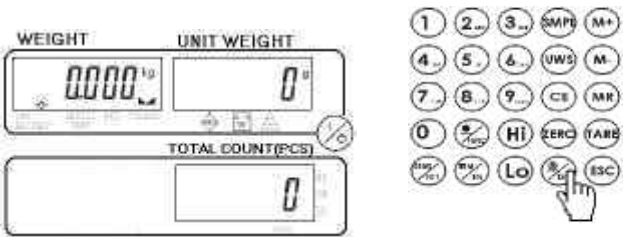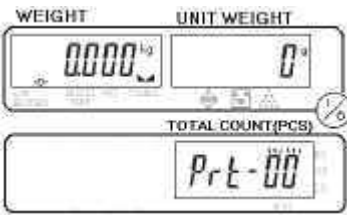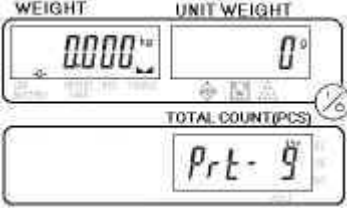
	(1) Put container on the pan and press (TARE) key. Put objects into the container and start counting,
	(2) Wait for the ◣◢ symbol to appear.
	(3) Press (M+) key
	(4)The display shows ACC 1 and is blinking . This is the first accumulation.
	(5)The display will show as left chart when there get accumulated the ▼ above ⟳Σ⧫ will on.

PS:

When the weight is less than 20e, it will go into accumulation setting mode.

Take 30kg x1g, 20e=20g

【Manual Print】

	(1) Put container on the pan and press ⟨TARE⟩ key.
WEIGHT UNIT WEIGHT 0.299 kg 1.0000 g TOTAL COUNT(PCS) 299	Put objects into the container.
WEIGHT UNIT WEIGHT 0.300 kg 1.0000 g TOTAL COUNT(PCS) 300 0.300 kg	(2) Wait for the ◣◤ symbol to appear.
① ② ③ SMPⓇ M+ ④ ⑤ ⑥ UWS M- ⑦ ⑧ ⑨ CE MR ⓪ 🔆 Hi ZERO TARE ⊠ ⊠ Lo % ESC	(3) Press ⟨DIS⟩ key to print.

PS: When the weight is less than 20e, it will go into print setting mode.   Take 30kg x1g,   20e=20g

【Set / Choose A Print Form】
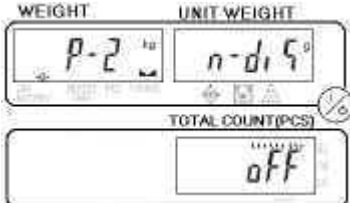
※ EZ-2P/BP-443D set 0~99 forms; SH-24 set 0~15 forms

WEIGHT UNIT WEIGHT 0.000 0 TOTAL COUNT(PCS) 0	(1) Under normal weighing mode press ⊘ when the pan is empty. (If there is object on the pan and you press ⊘ then it will print out automatically)
WEIGHT UNIT WEIGHT 0.000 0 TOTAL COUNT(PCS) Prt-00	(2) 00 is blinking in the total count display
(keypad)	(3) For example if you wish to print the 9th form, press ⑨ and,
WEIGHT UNIT WEIGHT 0.000 0 TOTAL COUNT(PCS) Prt- 9	(4) You will see Prt- 9 blinking in the total count display (press CE if you want to choose another print form and repeat step (3))
(keypad)	(5) Press ⊘ key to complete the setting and return to normal weighing mode.
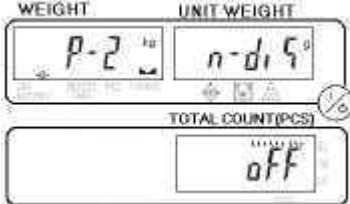
【Set Print Mode】

WEIGHT UNIT WEIGHT 0000 kg 0 g TOTAL COUNT(PCS) 0	(1)Under normal weighing mode press ⊘ when the pan is empty. (If there is object on the pan and you press ⊘ then it will print out automatically)
WEIGHT UNIT WEIGHT 0000 kg 0 g TOTAL COUNT(PCS) Prt-00	(2) *00* is blinking in the total count display
(keypad)	(3) Press ⊘ key
WEIGHT UNIT WEIGHT 0000 kg nAnUA g TOTAL COUNT(PCS) Prt---	(4)The unit weight display will be blinking.
(keypad)	(5) Press (Hi) or (Lo) to choose print mode nAnUA Manual StAbL Print after ►◄ mark appears PiECE Print when quantity is okay (with check function) uEiGH Print when weight is okay (with check function) Conti Print continuously no No action
(keypad)	(6) Press ⊘ to save the print mode and return to normal weighing mode.
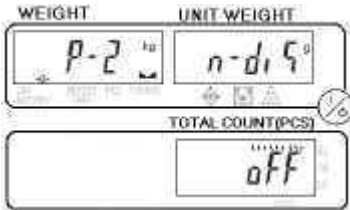
【Select The Printer Model】

	(1) Under normal weighing mode keep pressing ⊘ for about three seconds.
WEIGHT P-2 kg UNIT WEIGHT n-di 9° TOTAL COUNT(PCS) oFF	(2)You will enter into parameter settings.
	(3)Press M+ or M− to switch between the parameters.
WEIGHT P-5 kg UNIT WEIGHT Print° TOTAL COUNT(PCS) bP-443	(4)Repeat step (3) until P-5 appear.
	(5)Press Hi or Lo to choose printer model.
	(6) Press M+ or M− to save and go to next parameter setting or press ⊘ to save the setting and return to normal weighing mode.

【Set RS-232 Baud Rate】

	(1)Under normal weighing mode keep pressing ⊘(FUNC) for about three seconds.
WEIGHT *P-2* kg UNIT WEIGHT *n-di5* TOTAL COUNT(PCS) *oFF*	(2)You will enter into parameter settings..
	(3)Press ⊛(M+)or ⊛(M-) to switch between the parameters.
WEIGHT *P-6* kg UNIT WEIGHT *bRUd* TOTAL COUNT(PCS) *9600*	(4)Repeat step (3) until P-6 appear.
	(5) Press (Hi)or(Lo) to choose baud rate 19200/ 9600/4800/2400
	(6) Press ⊛(M+)or ⊛(M-) to save and go to next parameter setting or press ⊘(FUNC) to save the setting and return to normal weighing mode.

【RS-232 Data Format】

	(1)Under normal weighing mode keep pressing for about three seconds.
	(2)You will enter into parameter settings.
	(3)Press $\overset{M+}{\bigcirc}$ or $\overset{M-}{\bigcirc}$ to switch between the parameters.
	(4) Repeat step 3 until P-7 appear.
	(5)Press (Hi) or (Lo) to choose Data Format n,7,1/o,7,1/e,7,1/n,8,1/o,8,1/e,8,1
	(6) Press $\overset{M+}{\bigcirc}$ or $\overset{M-}{\bigcirc}$ to save and go to next parameter setting or press $\bigcirc$ to save the setting and return to normal weighing mode.

【Samples Of BP-443D / EZ-2P Print Forms】

※10 print forms is preset by manufacturer

Prt-00

```
2002/07/11        10:10:20
N.W.:   0.379 kg
U.W.:   3.7930 g
Total:       100 PCS
```

Prt-05

```
NW: 0.379 kg   UW:3.7930 g
    100 PCS
                 2002/07/11
rate  1    2    3  12:07:41
     □    □    □
```

Prt-01

```
2002/07/11        10:10:20
      1.000 kg
ABC COMPANY
0981-123456
```

Prt-06

```
NW: 0.379 kg   UW:3.7930 g
    100 PCS
2002/07/11         12:07:41
```

Prt-02

```
2002/07/11        10:10:20
      1.000 kg
     ||||||||||||||
   T C - 0 0 1 2
```

Prt-07

```
NW: 0.379 kg   UW:3.7930 g
    100 PCS
2002/07/11         12:07:41
```

Prt-03

```
2002/07/11        10:10:20
N.W: 1.000 kg
T.W.:   0.095 kg
#   2
```

Prt-08

```
2002/07/11      10:10:20 #1
    0.379 kg
       100 PCS
     UW:3.7930 g
```

Prt-04

```
2002/07/11        10:10:20
    1.000 kg
```

Prt-09

```
2002/07/11        10:10:20
N.W.:    0.379 kg
T.W.:    0.095 kg
U.W.:    0.095 kg
Total:       100PCS
```

Note：

(1) Please contact your supplier/-dealer for additional EZ-2P & BP-443D print forms.

(2) A memory card has to be installed in EZ-2P. (BP-443D memory card is standard)

(3) A RTC-device has to be installed in EZ-2P if you need to print time/-date.
   (BP-443D RTC is standard)

(4) The print forms are installed into the printers through PC. Please email us and we will
   make the requested print form for you.

【Sample Of SH-24 Print Forms】 .... 16 forms

Prt08-15 print forms with unit weight **Prt08-15 print forms with tare weight**

Prt-00
0.379kg 3.7930g 100PCS

Prt-01
2002/01/01 00:09:23
0.379kg 3.7930g 100PCS

Prt-02
ABC COMPANY
0918-123456
0.379kg 3.7930g 100PCS

Prt-03
2002/01/01 00:09:23
ABC COMPANY
0918-123456
0.379kg 3.7930g 100PCS

Prt-04
#1
0.379kg 3.7930g 100PCS

Prt-05
2002/01/01 00:09:23
#1
0.379kg 3.7930g 100PCS

Prt-06
ABC COMPANY
0918-123456
#1
0.379kg 3.7930g 100PCS

Prt-07
2002/01/01 00:09:23
ABC COMPANY
0918-123456
#1
0.379kg 3.7930g 100PCS

Prt-08
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-09
2002/01/01 00:09:23
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-10
ABC COMPANY
0918-123456
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-11
2002/01/01 00:09:23
ABC COMPANY
0918-123456
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-12
#1
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-13
2002/01/01 00:09:23
#1
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-14
ABC COMPANY
0918-123456
#1
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-15
2002/01/01 00:09:23
ABC COMPANY
0918-123456
#1
N.W: 0.379 kg
U.W: 3.7930 g
TOTAL: 100 PCS

Prt-08
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-09
2002/01/01 00:09:23
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-10
ABC COMPANY
0918-123456
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-11
2002/01/01 00:09:23
ABC COMPANY
0918-123456
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-12
#1
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-13
2002/01/01 00:09:23
#1
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-14
ABC COMPANY
0918-123456
#1
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

Prt-15
2002/01/01 00:09:23
ABC COMPANY
0918-123456
#1
N.W: 0.379 kg
T.W: 0.100 kg
G.W: 0.479 kg

When _RLL03_ appear under Display of accumulation, press ⊘.the printout will like as following.
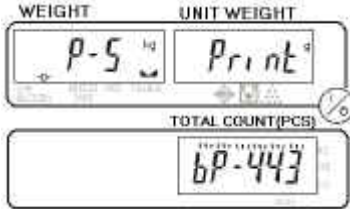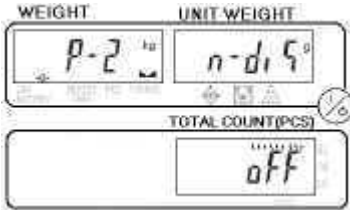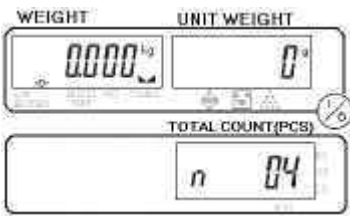
2002/01/01 00:09:23
ABC COMPANY
0918-123456
1) 0.100 kg   10 PCS
2) 0.100 kg   10 PCS
3) 0.100 kg   10 PCS

   0.300 kg   30 PCS
U.W.=10.000 g
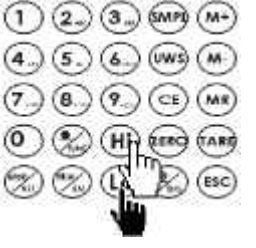
Note：
(1) If you wish the SH-24 should be able to print date & time, the scale needs an optional module RS-232+RTC.
(2) If you have a printer that you think is compatible with the SH-24, then just connect the scale and the printer and remember to choose print model _nor̄iRL_ (even it is not the SH-24). Please choose own of the print formats from Prt-00 to Prt-15 and if the print appears correct, means that the printer is compatible with the SH-24.

【Activate The Serial Number Function】

	(1)Keep pressing ⊘ for about three seconds
	(2) You will enter into parameter settings.
	(3)Press M+ or M− to switch between the settings.
	(4)Repeat step (3) until seeing P-2 appear.
	(5)Press Hi or Lo to select serial number on/-off on Showing serial No. oFF No serial no. showing If you turn on the serial No., it will be shown in the total count display. Please see example in step (7)
	(6) Press M+ or M− to save and go to next parameter setting or press ⊘ to save the setting and return to normal weighing mode.
	(7)Example of how the serial number is displayed when serial number is activated. **Note**：If the scale get pieces the total count display will show piece instead.

【Set The Serial Number Mode】

	(1)Under normal weighing mode press (MR NO)
	(2)The displays will show as below (if not, please press (FUNC))
	(3) Press (Hi) or (Lo) to choose serial number mode ᴎᴿᴺᵁᴿ No action. SᴱᴿᵇL The serial no. plus 1 when � sign appear. PᵢᴱCᴱ The serial no. plus 1 when quantity is between HI – LO limits. ᵁᴱᵢᴳᴴ The serial no. plus 1 when weight is between HI – LO limits
	(4) Press (MR NO) to save setting and return to normal weighing mode.

【Set Max Serial Number】 ....limit 99999

The max serial number is 99999, but you can change the max serial number as shown below.

WEIGHT · 0000 ᵏᵍ UNIT WEIGHT 0 ⁰ TOTAL COUNT(PCS) n 01	(1) For example if you wish to change the max serial number to 12, then you need to do the following steps below. Press ①, ②ᴬᴮᶜ,
WEIGHT 0000 ᵏᵍ UNIT WEIGHT 12 ᵍ TOTAL COUNT(PCS) n 01	(2)The unit weight display is blinking
① ②.. ③.. SMPB M+ ④. ⑤. ⑥. UWS M- ⑦. 8.. 9.. CE MR ⓿ Hi ZERO TAR Lo ESC	(3) Press (MR ⇄ NO) to complete the setting and,
WEIGHT · 0000 ᵏᵍ UNIT WEIGHT 0 ⁰ TOTAL COUNT(PCS) n 01	(4) Return to the normal weighing mode.

Note:

When the serial number reach the max, the unit weight display will flash *เต็มแล้ว* and beep for 3 second, afterwards return to normal weighting mode.

And because it already reached the max serial number, it will reset to 1 when the serial number do increase 1.

【Change The Serial Number】
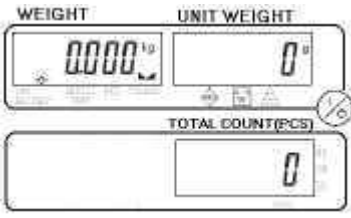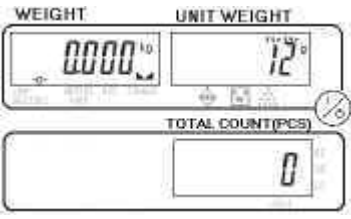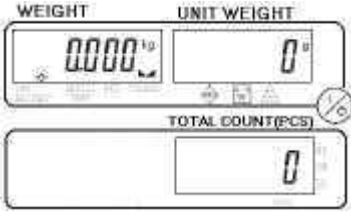
	(1)If you want to change the serial no. to 12, then Press ①, ②
	(2) The unit weight display is blinking
	(3) Press (GROSS/NET) to complete the setting and,
	(4) Return to the normal weighing mode. **Note**:The serial no. is starting from 12..

【Set / Choose Accumulation Mode】

WEIGHT UNIT WEIGHT	(1)Under normal weighing mode and when the pan is empty then press (M+) (If there is a object on the pan, it will accumulate.)
WEIGHT UNIT WEIGHT ACC TOTAL COUNT(PCS) ii̅RnUR	(2)The display of the total count is blinking.
keypad	(3) Press (Hi) or (Lo) to choose accumulation mode ii̅RnUR Manual 5ERbL Accumulate when ◣◢ sign appear P,ECE Accumulate when quantity is between HI – LO limits UE,GK Accumulate when weight is between Hi – LO limits.
keypad	(4) Press (M+) to save the settings and return to normal weighing mode.

【Set The Max Amount Of Accumulations】 ...... the limit is 50

The max accumulation number is 50, but you can change the max accumulation number as shown below.

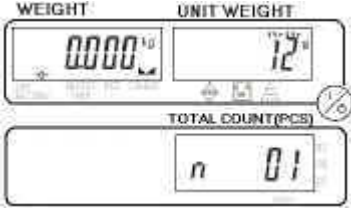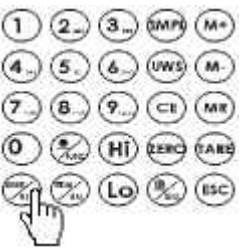|	
WEIGHT `0000` kg UNIT WEIGHT `0` g TOTAL COUNT(PCS) `0`	(1) For example if you wish to change the max accumulation number to 12, then you need to do the following steps below. Press ①, ②ABC,
WEIGHT `0000` kg UNIT WEIGHT `12` g TOTAL COUNT(PCS) `0`	(2) The unit weight display is blinking
① ②.. ③., SMPB M+ ④. ⑤. ⑥. UWS M ⑦. ⑧. ⑨. CE MR ⓪ 💧 Hi ZERO TARE LED % Lo % ESC	(3) Press (M+) to complete the settings and,
WEIGHT `0000` kg UNIT WEIGHT `0` g TOTAL COUNT(PCS) `0`	(4) Return to the normal weighing mode. Now you can accumulate up to 12 times only. **Note:** You can change the max accumulation back to 50 times, by repeating the above steps.
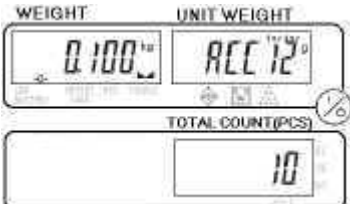
For example,
max amount of accumulations=12, when accumulate to 12 amount, the displays will show as following, and beep for 3 second. but `nAC- 12` still blink waiting operator to do action.

WEIGHT `0.100` kg UNIT WEIGHT `nAC 12` TOTAL COUNT(PCS) `0`

3 Actions as following

(1) press (🖨),then it'll print every set and total, `nAC- 12` still blink
    (it's only for normal printer like SH-24.Label printer couldn't do it)

(2) press (ESC) to return normal weighting mode, and still keep those accumulation.
    (but if you try to accumulate another set, it'll appear `ou- 12` to warn)

(3) press (M-) twice, delete all accumulation.

【Display Of Accumulation】

① ② ③ SMPL M+ ④ ⑤ ⑥ UWS M- ⑦ ⑧ ⑨ CE MR ⓪ HI ZERO TARE Lo ESC	(1) Under normal weighing mode press (MR)
WEIGHT 0.100 kg UNIT WEIGHT ACC 12 TOTAL COUNT(PCS) 10	(2) The display will show the value of the last accumulation
WEIGHT 1200 kg UNIT WEIGHT ALL 12 TOTAL COUNT(PCS) 120	(3) Repeat step (1) and you will see the total accumulations.
	(4) Press any number key to select a certain accumulation. Example, to select the 12 accumulation press ①,②
WEIGHT 0.100 kg UNIT WEIGHT ACC 12 TOTAL COUNT(PCS) 10	(5) The display will show the twelfth accumulation. NOTE : You can press (CE), then repeat step (4) to see the accumulation that you want.
WEIGHT 1200 kg UNIT WEIGHT ALL 12 TOTAL COUNT(PCS) 120	(6) If you press ①,③ then the display will show the amount of the all accumulations, since there is no accumulation number 13
① ② ③ SMPL M+ ④ ⑤ ⑥ UWS M- ⑦ ⑧ ⑨ CE MR ⓪ HI ZERO TARE Lo ESC	(7) Press (ESC) and return to the normal weighing mode.

【Print While Display Of Accumulation】 ....only for SH-24

Print one set of accumulation

Enter display of accumulation, when it show single set press ⊘

WEIGHT **0.100** kg UNIT WEIGHT **ACC01** TOTAL COUNT(PCS) **10**	2002/01/01 00:09:23 ABC COMPANY 0918-123456 1) 0.100 kg 10 PCS

Print total accumulation

Enter display of accumulation, when it show total, press ⊘
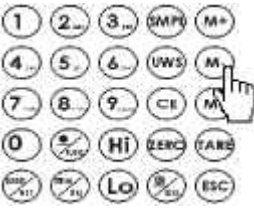
WEIGHT **0.300** kg UNIT WEIGHT **ALL 3** TOTAL COUNT(PCS) **30**	Weight on the scale will Print out as following. 2002/01/01 00:09:23 ABC COMPANY 0918-123456 1) 0.100 kg 10 PCS 2) 0.100 kg 10 PCS 3) 0.100 kg 10 PCS ------------------------------ 0.300 kg 30 PCS U.W.=10.000 g	No weight on the scale Will print out as following. 2002/01/01 00:09:23 ABC COMPANY 0918-123456 0.300 kg 30 PCS U.W.=10.000 g
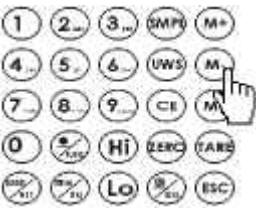
【Delete Accumulations】

Delete one single accumulation

	(1) Enter the Display of accumulation. (2) Press any number key to select a certain accumulation.. Example to select the 12 accumulation press ①,②ABC
	(3)The display will show the twelfth accumulation.
	(4)Press M− to delete the twelfth accumulation value.
	(5)The display will now show as left chart.
	(6)Repeat steps (2)(3)(4) to delete the accumulation value you don't need. Then press ESC and return to the normal weighing mode.
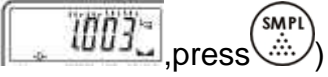
Delete all accumulation

	(1) To delete all accumulation it is important to have all accumulation appearing in the unit weight display like ALL 12
	(2)Press
	(3) If you want to delete all accumulation then go to step 4 and if you don't want to delete all accumulation go to step 5.
	(4)Press again to delete all accumulations. The scale returns automatically to the normal weighing mode.
	(5)If you don't want to delete, press and return to the normal weighing mode.
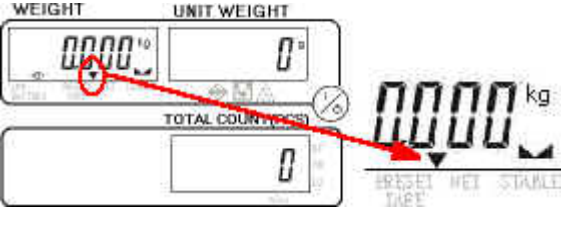
【Set The High Limit Of The Pieces】

	(1)Under normal weighing mode press **Hi** key.
WEIGHT *0000* kg UNIT WEIGHT *0* ⁰ TOTAL COUNT(PCS) *2000*	(4) The display of the total count will show the last hi limit. (If the weight is blinking , WEIGHT *l003* ,press **SMPL**) PS： arrow points the Hi
	(3)For example if the Hi limit is 2013, then Press **2** **0** **1** **3**
WEIGHT *0000* kg UNIT WEIGHT *0* ⁰ TOTAL COUNT(PCS) *2013*	(3) The value 2013 is blinking in the total count display
	(5)Press **Hi** again and the setting is completed

【Set The Low Limit Of The Pieces】

	(1)Under normal weighing mode press ⓛⓞ key
	(2)The display of the total count will show the last low limit. (If the weight is blinking _1003_ ,press SMPL) PS：arrow point to low
	(3)For example if the LO limit is 1987, then press ① ⑨ ⑧ ⑦
	(4)The value 1987 is blinking in the total count display.
	(5)Press ⓛⓞ key again and the setting is completed

【Enable / Disable The Piece Checking Function】

	(1)Under normal weighing mode press **Lo** key PS: Pressing **Hi** key is the same. PS: You don't have to operate both step (3) and (4).Do one of them.
	(2)Make sure the total count is blinking, if not press **SMPL** key.
	(3) Press **ITEM/EN** if you want to enable Hi & Lo checking function.
	(4)Press **DIS** if you want to disable the Hi & Lo checking function.
	NOTE： There is an arrow between PRESET TARE and NET, when you enable the Hi & Lo checking function. The arrow disappears when disable the Hi & Lo checking function.

Execute step(1)(2)(3) to enable Hi/Lo checking Function（Now light tower is available ）
Execute step(1)(2)(4) to disable Hi/Lo checking Function

【Set The High Limit Of The Weight】

① ② ③ ⑼ ⑾ ④ ⑤ ⑥ ⑾ ⑿ ⑦ ⑧ ⑨ ⑿ ⑿ ⓪ ⑿ Ⓗ ⑿ ⑿ ⑿ ⑿ ⑿ ⑿	(1)Under normal weighing mode press the (Hi) key
WEIGHT UNIT WEIGHT _2.000_kg 0 ⁹ TOTAL COUNT(PCS) 0	(2)The display of the weight is blinking and the arrow in the display of the total count points to high limit. (If the display of the total count is blinking then press (UWS)) PS: ▸ point to Hi (without _tArE_ showing)
	(3)For example if Hi limit is 1.023kg, then press ① ⓪ ②ₐᵦC ③DEF
WEIGHT UNIT WEIGHT _1.023_kg 0 ⁹ TOTAL COUNT(PCS) 0	(4)The high limit 1.023kg is blinking in the weight display.
① ② ③ ⑼ ⑾ ④ ⑤ ⑥ ⑾ ⑿ ⑦ ⑧ ⑨ ⑿ ⑿ ⓪ ⑿ Ⓗ ⑿ ⑿ ⑿ ⑿ ⑿ ⑿	(5)Press (Hi) key again and the setting is completed

【Set The Low Limit Of The Weight】

	(1)Under normal weighing mode press key
	(2)The display of the weight is blinking and the arrow in the display of the total count points to low limit.(If the display of the total count is blinking then press) PS: ▸point to Lo (without _tArE_ showing)
	(3)For example if the Lo limit is 0.987kg, then press
	(4)The low limit of 0.987kg is blinking in the weight display.
	(5) Press key again and the setting is completed.

【Enable / Disable The Weight Checking Function】
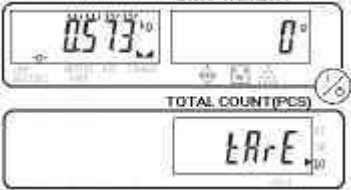
	(1)Under normal weighing mode press Lo key PS: Pressing Hi is the same. PS: You don't have to operate both step (3) and (4).Do one of them.
	(2)Make sure the weight display is blinking, if not press UWS key.
	(5) Press ITEM EN if you want to enable Hi & Lo checking function.
	(6) Press DIS if you want to disable the Hi & Lo checking function.
	NOTE： There is an arrow between PRESET TARE and NET, when you enable the Hi & Lo checking function. The arrow disappears when disable the Hi & Lo checking function.

Execute step(1)(2)(3) to enable Hi/Lo checking Function（Now light tower is available ）
Execute step(1)(2)(4) to disable Hi/Lo checking Function

【Set The High Limit Of The Tare Value】

	(1)Under normal weighing mode press Hi key
WEIGHT UNIT WEIGHT 0560 0 TOTAL COUNT(PCS) tArE	(2)The display of the total count will show tArE if not, press TARE. PS: ▸ points to Hi and the tArE is on the display.
	(3)For example the Hi limit is 0.579kg, then press 5 7 9
WEIGHT UNIT WEIGHT 0579 0 TOTAL COUNT(PCS) tArE	(4)The display of the tare weight will show 0.579kg blinking in the weight display.
	(5)Press Hi key again and the setting is completed

【Set The Low Limit Of The Tare Value】

	(1)Under normal weighing mode press Lo key
	(2)The display of the total count will show ⊏Rr⊢ if not, press TARE. PS: ▸ points to Lo and the ⊏Rr⊢ is on the display.
	(3)For example if the Lo limit is 0.573kg, then press 5 7 3
	(4)The display of the tare weight will show 0.573kg, which is blinking in the weight display.
	(5) Press Lo key again and the setting is completed.

【Enable / Disable The Auto-Tare Checking Function】

	(1)Under normal weighing mode press **Lo** key PS: Pressing **Hi** is the same. PS: You don't have to operate both step (3) and (4).Do one of them.
WEIGHT UNIT WEIGHT _0573_ _0_ TOTAL COUNT(PCS) _tArE_	(2) Make sure the display of the total count TOTAL COUNT(PCS) show _tArE_. If not press **TARE**. PS: ▸ points to Lo and _tArE_ showing.
	(3) Press **ITEM/EN** if you want to enable auto tare checking function.
	(4) Press **◎/DIS** if you want to disable the auto tare checking function.

Execute step(1)(2)(3) to enable Auto-Tare Function
Execute step(1)(2)(4) to disable Auto-Tare Function
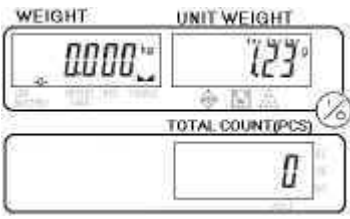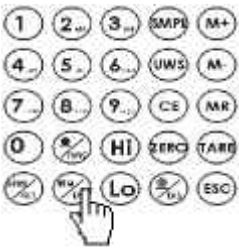
【Saving ID - Method 1】

※Possible to save up to 50 ID
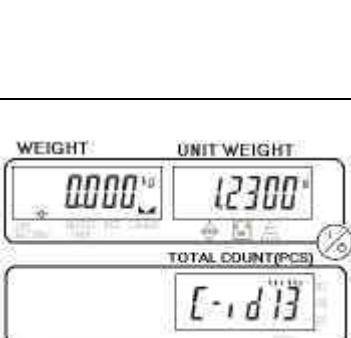
	(1) Under normal weighing mode press (1) (•) (2) (3)
WEIGHT **0.000** kg UNIT WEIGHT **123** g TOTAL COUNT(PCS) **0**	(2)The unit weight display is blinking.
(1) (2) (3) (SMPL) (M+) (4) (5) (6) (UWS) (M-) (7) (8) (9) (CE) (MR) (0) (%) (HI) (ZERO) (TARE) (%) (%) (Lo) (%) (ESC)	(3)Press (ITEM/EN) key
WEIGHT **0.000** kg UNIT WEIGHT **123** g TOTAL COUNT(PCS) **5-id__**	(4)Key in a number from 0 to 49.
	(5)Press (1) (2) for example.
WEIGHT **0.000** kg UNIT WEIGHT **123** g TOTAL COUNT(PCS) **5-id 12**	(6)The ID 12 should be blinking in the total count display.(If you want to save into another ID, then press (CE). Then you need to do step (5) again)
(1) (2) (3) (SMPL) (M+) (4) (5) (6) (UWS) (M-) (7) (8) (9) (CE) (MR) (0) (%) (HI) (ZERO) (TARE) (%) (%) (Lo) (%) (ESC)	(7)Press (ITEM/EN) to confirm.
WEIGHT **0.000** kg UNIT WEIGHT **12300** g TOTAL COUNT(PCS) **0**	(8)You have now saved 1.2300g into the ID-13.

【Saving ID - Method 2】

※Possible to save up to 50 ID
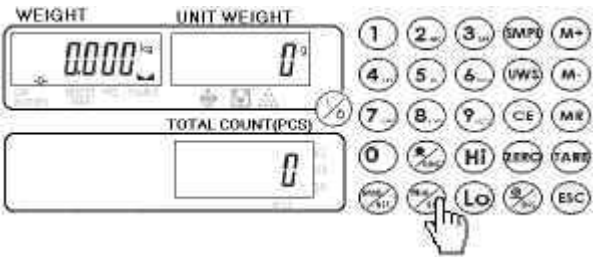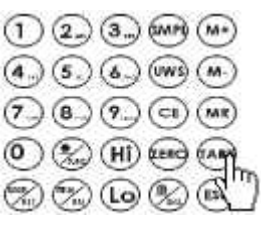
WEIGHT UNIT WEIGHT 0000 123 TOTAL COUNT(PCS) 0	(1)There is a unit weight already existing (maybe based on sampling).
① ② ③ SMPL M+ ④ ⑤ ⑥ UWS M- ⑦ ⑧ ⑨ CE MR ⓪ ⊘ HI ZERO TARE ⊘ ⊘ Lo ⊘ ESC	(2)Press ITEM/EN .
WEIGHT UNIT WEIGHT 0000 123 TOTAL COUNT(PCS) 5-id__	(3)Key in a number from 0 to 49.
	(4)Press ① ③ for example.
WEIGHT UNIT WEIGHT 0000 12300 TOTAL COUNT(PCS) 5-id13	(5)The number 13 should be blinking in the total count display. (If you want to save into another ID, then press CE . Then you need to do step (4) again)
① ② ③ SMPL M+ ④ ⑤ ⑥ UWS M- ⑦ ⑧ ⑨ CE MR ⓪ ⊘ HI ZERO TARE ⊘ ⊘ Lo ⊘ ESC	(6) Press ITEM/EN to confirm.
WEIGHT UNIT WEIGHT 0000 12300 TOTAL COUNT(PCS) 0	(7)You have saved 1.2300g into the ID-13 .
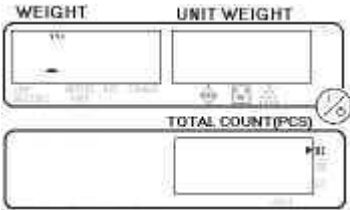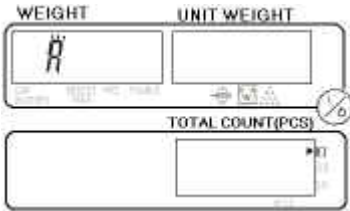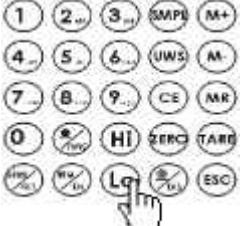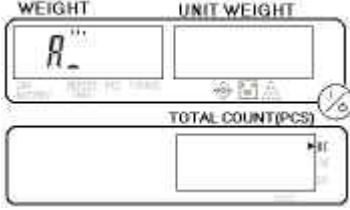
【Call Up ID】
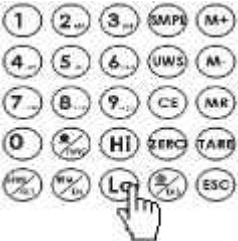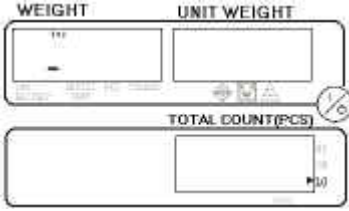
	※If the unit weight display is not showing 0, please press $\boxed{CE}$ first (1)Under normal weighing mode press $\boxed{ITEM/EN}$
	(2)The value of the ID-00 is 10.300g.
	(3)Press $\boxed{1}$ $\boxed{3}$ to call up ID-13.
	(4) The number 13 is blinking in the total count display.
	(5)Press $\boxed{ITEM/EN}$ to confirm and the scale is ready for counting.
	(5) The value of the ID-13 is 1.2300g and appears in the unit weight display.

【Pre - Tare By ID】
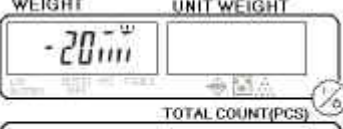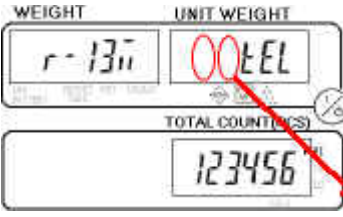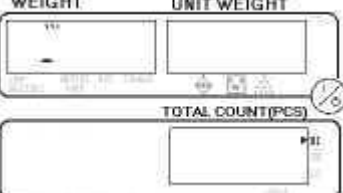
	※If the unit weight display is not showing 0, please press (CE) first (1)Under normal weighing mode press (ITEM/EN)
	(2)The value of the ID-00 is 1.0300 g.
	(3)Press (1)(3) to call up ID-13.
	(4)The number 13 is blinking in the total count display.
	(5)Press (TARE) to execute pre-tare by value of 123.00 g. (that is value of ID-13)
	(6)The arrows point the 'NET' & 'PRESET and TARE' symbol appears in the weight display.

【Customize Your Own Label】

	(1)Under normal weighing mode keep pressing ⓜ⁺ until you see the display shown as below.
	(2)If the displays are blank, means that no label form has ever been saved in the scales memory. PS: The label can save up to 32 characters ▸ pointing at Hi means the front 16 characters can be edited..
	(3)Keep pressing and releasing ②. The display will show 2,A,b,C in order. Choose A for example.
	(4)Press Lo or do nothing in a second to edit the next character. Press Hi to move leftwards and Lo to move rightwards.
	(5)You can key in another character.

	(6)Repeat steps (3),(4),(5) until you finish your first 16 characters.
	(7)After the front 16 characters, press ⓛ Lo key to edit the next 16 characters. You can see the display as below
	(8)You can now key in the next 16 characters. Note: Now ▶ is pointing at Lo
	(9)Do as procedures (3),(4),(5)
	(10)Press M+ to save the label setting and the scale will return to normal weighing mode. **PS.1** In step (6), if you key in " ⁙ " then the label will print into two lines. **PS.2** If you key in two empty blocks the word behind the block will not appear on the label. **PS.3** When you press CE you will clear up the 16 characters showing on the displays.

【Label Example】

■ Example for 2-line print out separate by ‥ from press (GROSS/NET) twice	
the first 16 characters the last 16 characters	➤ print company's name and telephone number Title: ABC COMPANY Tel : 0981-123456 BP-443D ABC COMPANY 0981-123456 SH-24
the first 16 characters the last 16 characters	➤ print brand and spec brand: LTYPE WIRE spec: D 15-20MM BP-443D LTYPE WIRE D 15-20MM SH-24

■ all the characters behind two space won't be save.	
2 space	Input two space by pressing (9 XYI□). Then press (M+ Lab) to save the label. It is only saved r - 13ıı, and get rid of those characters behind the 2 space.

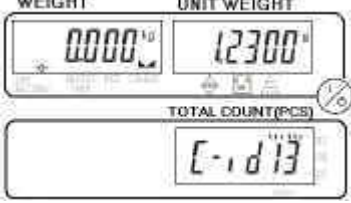| ■ press (CE) to clear now 16 characters	
	(1)press (CE)
	(2)the 16 characters is clear and return to the first place.

【Show / Readjust The Time】

	(1) Under normal weighing mode press then you see the displays show as below.
	(2) You can see the time/-date.
	(3)Press to enter into readjusting mode.
	(4)Go into readjusting mode. PS： The time will not be running when you adjust the time/-date.
	(5)Press **Lo** for moving cursor right. (or press **Hi** for moving cursor left)
	(6)For example, if you want to readjust the minute then repeat step (5) to move the cursor to the minute section.
	(7)Press
	(8)The time has been adjusted

	(9)Press to save the setting and return to normal weighing mode when you have finished readjusting.

Note

This scale is not installed with RTC so the time setting won't be memorized after switch off. Please set correct time whenever the scale is switched-on. （unless the scale is using RS-232 with RTC, then there is no such problem, please contact your supplier for RS-232 with RTC）

【ACAI Parameter】

※In the below example the parameter is set at 15
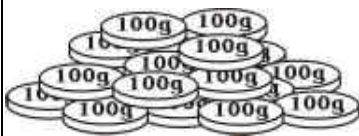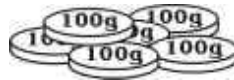
chart1：Normal sampling
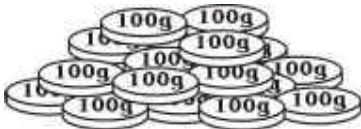
chart2：One of the objects is short of 20g
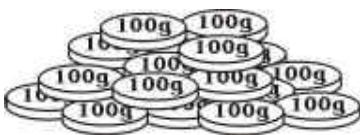
chart3：One of the object's unit weight have 20g surplus

＊ If you set the average parameter (p-4) to OFF, means that the scale will do the ACAI in all situations..

＊ If you set the average parameter to15, the scale will not work as seen in chart 2 & 3., which means that if there is a object shortage or more than ±15% of the unit weight,

  the scale will not do the sampling.

＊ Whether it works or not, depend on the object's tolerance of weight.

【Sampling With ACAI Function】

ACAI(Automatic Counting Accuracy Improvement)：ACAI is used to calculate a more precise unit weight. User needs to repeat each procedure until the total quantity reaches users' packing quantity or target quantity.

	(1) Put a container on the weighing pan and remember to tare the container. Put a sample of 20 pieces into the container.
	(2) Key in 20
WEIGHT: 0.300 kg UNIT WEIGHT: 20 TOTAL COUNT(PCS): 0	(3) The number "20" is blinking in the unit weight display.
(keypad image)	(4)Press SMPL key.
WEIGHT: 0.300 kg UNIT WEIGHT: 20 TOTAL COUNT(PCS): -SAP-	(5)The scale is calculating the unit weight.
WEIGHT: 0.300 kg UNIT WEIGHT: 150.18 TOTAL COUNT(PCS): 20	(6)The unit weight is 15.018g. If the ▼ above ACAI shows means that ACAI is activated.

		(7)Put another 10 pieces into the container. PS: The additional pieces must be less than the pieces already in the container and more than 5 pieces.
WEIGHT 0450 kg	UNIT WEIGHT 15.007 g TOTAL COUNT(PCS) 30	(8)When you hear a beep sound, you get a even more accurate unit weight value of 15.007g.
		(9)Repeat steps (6)(7) and you get an even more accurate value. Remove all sample objects from the container, and ▼ above ACAI will disappear. Scale is ready for precise counting.
重量 0.000 kg	單重 15.003 g 數量 0	(10)You can now count the same objects again with the more accurate unit weight value.

【Data Protection 1】

	Unit weight	Hi/LO setting	Serial No/Acc setting
Save **99990** to ID49	unlock	unlock	unlock
Save **99991** to ID49	**lock**	unlock	unlock
Save **99992** to ID49	unlock	**lock**	unlock
Save **99993** to ID49	**lock**	**lock**	unlock
Save **99994** to ID49	unlock	unlock	**lock**
Save **99995** to ID49	**lock**	unlock	**lock**
Save **99996** to ID49	unlock	**lock**	**lock**
Save **99997** to ID49	**lock**	**lock**	**lock**
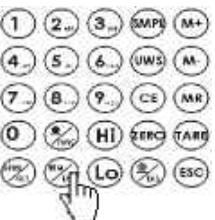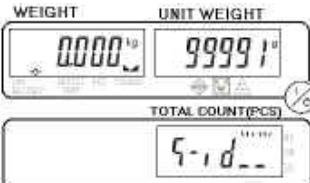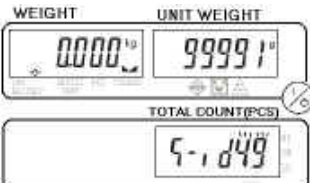
Note:

(1) The procedure to Save 9999X to ID49 is the same as Saving ID (Method 1)

(2) It seems that you save 9999x to ID49, but it is just a virtual action for protection decode, and ID49 still keep it's original data.

(3) If you try to lock Unit weight, there must be a unit weight on the display, otherwise, the scale will beep three times to warn you.
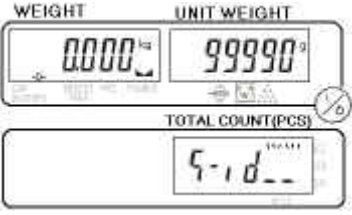
◼ Lock Description

Unit weight lock	The advantage of the unit weight lock, is to prevent anybody to alter/-modify the unit weight, without access to the unlock code. (1) You can only lock one single unit weight (2) When you don't require the locked unit weight you can press the (CE) to clear the unit weight display, which means that the scale can be used to simple weighing. (3) You can press (ITEM/EN) to call the locked unit weight directly.
Hi/LO setting **lock**	The advantage of the Hi/Lo setting lock is to prevent anybody to alter /-modify the Hi/Lo setting without access to the unlock code. You can press (Hi),(Lo) key to call up the Hi/Lo setting, but it becomes read-only data and you can't modify the data.
Serial No/Acc setting lock	Function is as following (1) to prevent any change of serial No, maximum serial No, and serial No mode. (2) to prevent any change of maximum Accumulation setting and accumulation mode. The advantage is to make sure that when you are doing serial No increase or accumulation is under control. For example, you set accumulation mode to weight, then it couldn't be change to manual ,stable or other, that make sure that every time the scale do Accumulation is in weight spec.

■ How To Lock The Unit Weight
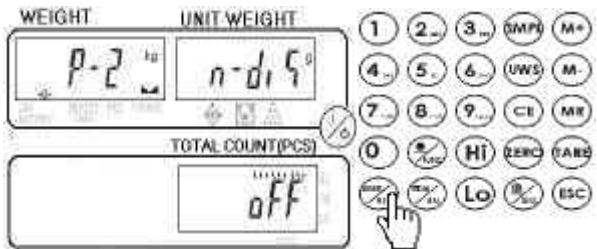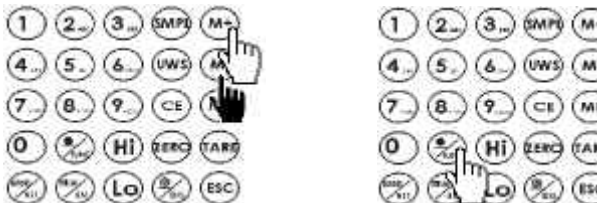
WEIGHT 0.000 kg UNIT WEIGHT 1.2300 g TOTAL COUNT(PCS) 0	(1)Assume that there already get unit weight 1.23g.
	(2)Then you press ⑨ₓᵧᵢ□,⑨ₓᵧᵢ□,⑨ₓᵧᵢ□,⑨ₓᵧᵢ□,①
WEIGHT 0.000 kg UNIT WEIGHT 99991 g TOTAL COUNT(PCS) 0	
① ② ③ (SMPL) (M+) ④ ⑤ ⑥ (UWS) (M-) ⑦ ⑧ ⑨ (CE) (MR) ⓪ (Hi) (ZERO) (TARE) (Lo) (ESC)	(3)Press (ITEM/EN) key
WEIGHT 0.000 kg UNIT WEIGHT 99991 g TOTAL COUNT(PCS) 5-id__	
	(4)And key in ④ɢₕᵢ,⑨ₓᵧᵢ□
WEIGHT 0.000 kg UNIT WEIGHT 99991 g TOTAL COUNT(PCS) 5-id49	
① ② ③ (SMPL) (M+) ④ ⑤ ⑥ (UWS) (M-) ⑦ ⑧ ⑨ (CE) (MR) ⓪ (Hi) (ZERO) (TARE) (Lo) (ESC)	(5)Press (ITEM/EN) to lock the unit weight.
WEIGHT 0.000 kg UNIT WEIGHT 1.2300 g TOTAL COUNT(PCS) 0	Now you have locked the unit weight and this is the only available unit weight the scale can use. Any changes require the access unlock code.

■ How To Unlock The All Settings
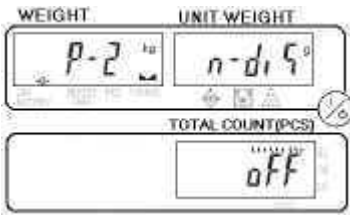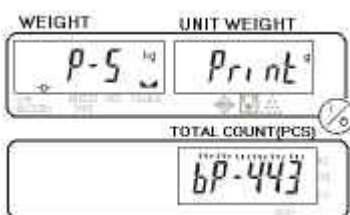
	(1)In normal weighing mode press,
	(2)Then you need to press the key
	(3)And press which will unlock the all settings.
	(4)Press key to confirm that you will unlock the all settings.

【Data Protection 2】.................. 50 set of ID

	(1) Under normal weighing mode, press for 3 seconds to enter the basic parameter settings.
	(2) The scale is now in the basic parameter setting mode. press for 3 seconds to enter the advance parameter settings.
	(3) The scale is now in the advance parameter setting mode. Press or to switch between the parameters. Repeat step 3 until AP-10 appear
	(4) AP-10 will appear in the weight display. Press or to select between $0, 1$ $0 \rightarrow$ Unlock $1 \rightarrow$ Lock, the value of 50 set ID will be protected and locked and you can't change any of the 50 ID. The data becomes read-only data.
	(5) Press or to save and go to next advanced parameter setting or press to save the setting and return to normal weighing mode.

Note: To unlock the protection you need to set the AP-10 parameter to 0 (Unlock).

【Parameter Settings】

	(1)Under normal weighing mode keep pressing key for about 3 seconds.
WEIGHT UNIT WEIGHT P-2 n-di 9 TOTAL COUNT(PCS) oFF	(2)You will now enter parameter settings as show by the left chart.
	(3)Press $M+$ or $M-$ to switch between the parameters.
WEIGHT UNIT WEIGHT P-5 $Print$ TOTAL COUNT(PCS) bP-443	(4)Repeat step (3) till the parameter you want to reset shows.
	(5)Press Hi or Lo to reset the parameter.
	(6)Press $M+$ or $M-$ to save the setting and go to next parameter setting.
	(7)Press FUNC to save and return to the normal weighing mode.

【Parameters Description】

P- 0：power(default : off)
（item：off/ 10/20/30/40/50/60/70/80/90min）

＊If P-0＝10, when there is no object on scale for ten min, it will shut off automatically.

P- 1：backlight (default : auto)
o̅F̅F̅ ：always off   on ：always on

Auto ：turn on when the weight is greater than 20e

P- 2：serial number display（default : off）
o̅F̅F̅ ：never display   on：will display when piece is zero

＊The scale will saving the latest serial number when it be turn off normally.
As it is shut off improperly, the memory won't be saved, like plug off the power cable.

P- 3：beep sound（default : in）
in: when check is OK   out: when check is Hi / Lo   (in,out using scale's buzzer)

E- in：when check is OK   E- out ：when check is Hi / Lo   (E- in,E- out using light tower's buzzer)

P-4：average ACAI（default : off）
（item：off/5/10/15/20/25/30/35/40/45）

P- 5：printer（default : normal）
（item：normal / EZ-2P / BP-443D）   normal as SH-24 or compatible printer

P- 6：baudrate（default : 9600）
（item：19200/9600/4800/2400）

P- 7：data（default : n81）
(item：n81/o81/e81/n71/o71/e71)

【The Rule For Using The Keypad】

1. Press (ESC) and return to the normal weighing mode in any situations.

2. Press (CE) to clear the wrong input.

3. There will be short beep whenever you press any key; a long beep sound indicates

   successfully setting and three beep sounds indicate an error.

【Connecter】

Scale To Printer

Connecter for EZ-2P/BP-443D	Connecter for SH-24
SCALE PRINTER RXD 2 ○ ○ 2 TXD TXD 3 ○ ○ 3 RXD GND 5 ○—————○ 5 GND DSUB9 DSUB9	SCALE PRINTER RXD 2 ○ ○ TXD 3 ○ ○ 2 RXD GND 5 ○—————○ 7 GND ○ ○ ○ ○ ○ ○ DSUB9 DSUB25
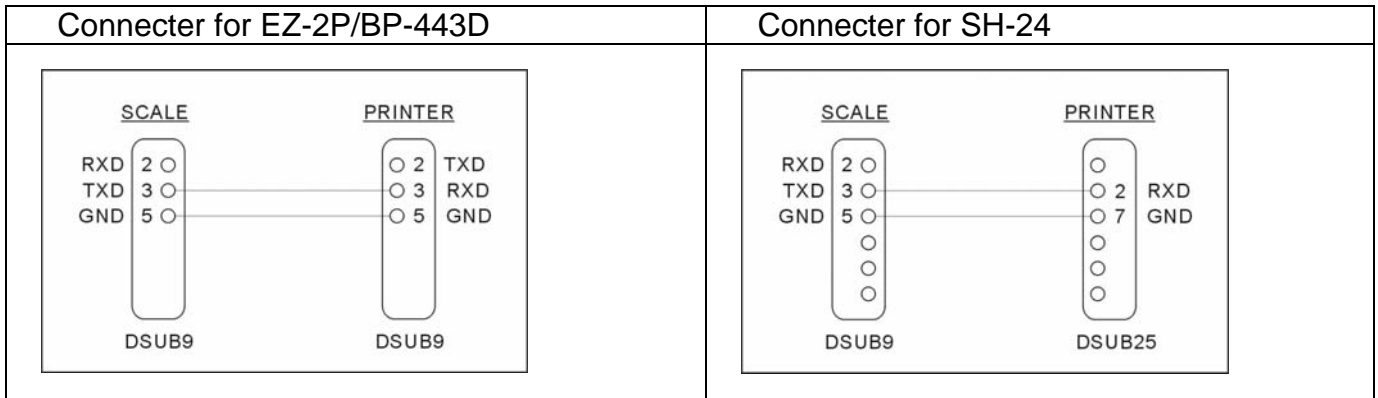
Scale To PC

When you want a scale to transmit data to PC continuosly.

(1) Using a cable as following to connect Scale and PC

(2) Set printer mode as continue

(3) Scale data will be sent to PC continuously. (of course, you must have the receiving software on the PC

```
      SCALE              PC
RXD  2 ○            ○ 2  RXD
TXD  3 ○      ╳     ○ 3  TXD
GND  5 ○————————————○ 5  GND
                    ○ 4  DTR
                ●───○ 6  DSR
                    ○ 8  CTS

     DSUB9           DSUB9
```
Only pin 2,3 and 5 are used.
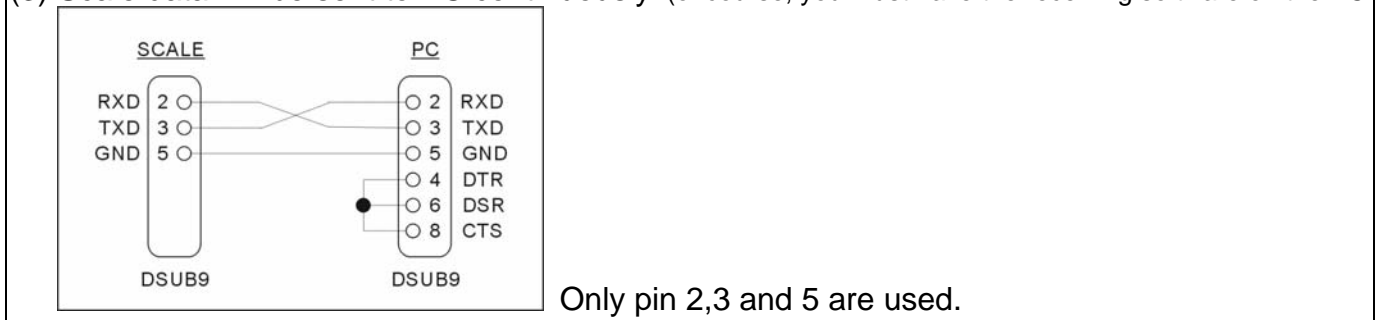
【Data Protocol】

● **Output Data When Print Mode Set As Continue**

Case1: No unit weight on Scale

```
[  ][ / ][  ][ ± ][≈][   ][CR][LF]
 header1  header2  weight      unit
                   (8digits)
```
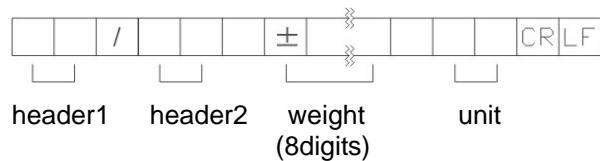
Case2: with unit weight on Scale

```
[  ][ / ][  ][ ± ][≈][   ][ , ][≈][   ][ , ][≈][ P ][ C ][ S ][CR][LF]
header1 header2  weight   unit  unit weight  unit  piece
                 (8digits)      (6digits)          (6digits)
```
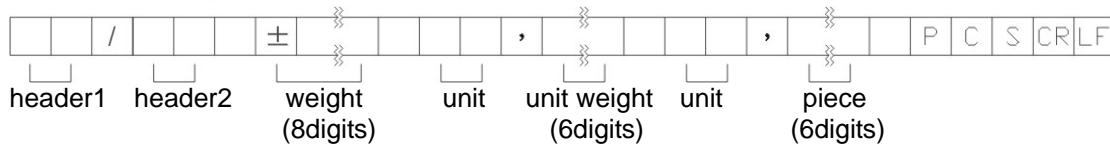
(header1: ST=STABLE   US=UNSTABLE)   (header2: NT=NET   GS=GROSS)

examples for Case1:   examples for Case2:

    ST /NT□+□12.350□kg   ST /NT□+□10.000□kg,1.0000□□g, □10000□PCS

    US/GS□+□30.000□lb   US/GS□+□30.000□l b,0.0010□ l b, □30000□PCS

● **Input Commands**

   "T"＝perform TARE function   "Z"＝perform ZERO function

【Applications】

■ Quality Checking According To Weight.

For example a batch of PDA outer casing box is weighing　79~82g
- (1)　Set the Hi limit at 0.082 kg, Lo limit at 0.079 kg
- (2)　Enable the HI/LO checking function
- (3)　Start weighing now and carry out the HI/LO (weights) checking function.

Note : You may set the beeping sounds according to your needs. Please refer to P-3. for parameter of Beeping Sounds.

■ Control Check On Each Packing According To Weights.

A factory is a manufacturer of DVD player, the standard packing weights of one DVD player is 1.731kg inclusive of :

DVD player	1.200	kg
Adaptor	0.148	kg
User Manual	0.090	kg
Packing Material	0.293	kg
--		
Total Weights	1.731	kg

Assume that a standard error of ±30 g is allowed for every packing . So ,
- (1)　Set the HI limit for weight at 1.761 kg, LO limit at 1.701 kg
- (2)　Enable the HI/LO checking function
- (3)　Start weighing now and carry out the HI/LO (weights) checking function.

Note :
- (1) You may set the beeping sounds according to your needs. Please refer to P-3. for parameter of Beeping Sounds.
- (2) Sometime the scale is unable to read the shortage of item if for example : if there are 2 adaptors in this packing which are now 0.148kg x 2 = 0.296kg and there are shortage of 0.150g in packing material which at the end still made up to the total of 1.733kg .

■ Construct A ID Memory Chart (ID Memory)

For easy reference , you may construct a chart indicating all the ID of each item from 0~49 .Please refer to【saving ID – Method 1】.

■ **Control Check On Each Packing According To Pieces .**

Assumed that a box of pen knife is weights 5.500kg . Each box contains 50 pieces of pen knife and each pen knife is 0.100kg . The empty box weighed 0.500kg . So ,the net weights of each box is 50x0.100kg= 5.000 kg and gross weights of each box is 5.500kg .

Now , we want to check each packing according to pieces .

    (1)   set the pre-tare at 500g (weight of the empty box)

    (2)   key in unit weight of pen knife as 100g

    (3)   Set the HI limit (pieces) 50 pcs , LO limit (pieces) at 50 pcs

    (4)   Enable the HI/LO checking function .

    (5)   Start weighing now and carry out the HI/LO checking function

Note :

    (1) You may set the beeping sounds according to your needs. Please refer to P-3. for parameter of Beeping Sounds.

    (2) You may perform the control check according to weights control checking. Please refer to the application on Control check on each packing according to weights.

■ **Auto Tare On The Weight Of Boxes , Basket Or Container**

If a fruits monger want to pack his fruits in a standard packing basket . He wish that the weight of the basket will be auto tare-off when the basket is place on the weighing pan, and when he remove the basket , the scale will cancel off the tare value and return to zero.

Assumed that the weight of the basket is 0.450 ~0.480kg

    (1)   Under the HI/LO checking for TARE , set the HI limit 0.480g, Lo limit at 0.450g.

    (2)   Enable the HI/LO checking function

    (3)   Place the basket on the pan , you will hear a beep sound. The display show like   *0000* and ⟨T⟩ indicate that the weight of basket has been tare .

    (4)   start packing the fruits .

    (5)   after complete the packing , remove the whole basket, when the scale reaches the zero point, you will hear a beep sound and TARE will be canceled.

■ **Control The Total Production Volume According To Serial Number**

    (1) enter the parameter setting and turn on the serial number

    (2) set the mode of serial number according to weight (within the HI/LO limit), serial number will add 1.

    (3) start weighing, when the weight is stable and is within the HI/LO limit , the number will add 1.

■ **With This Function , The Total Production Volume And Weight Of Packing Can Be Checked According To Serial Number .**

■ **Control The Production According To The Maximum Serial Number.**

Assumed that a production line need to do the packing for every 100 standard items produced :

    (1) turn on the serial number
    (2) set the mode of serial number according to weight (within the HI/LO limit), serial number will add 1.
    (3) set the maximum serial number to be 100
    (4) start weighing, when the weight is stable and is within the HI/LO limit , the number will add 1.
    (5) when the serial number reach 100 , the unit weight display will show a blinking 𝑖𝑛̄𝑑̄𝑛𝑜 and beeping sounds , meaning that have reached 100 standard items and you can do the packing now.
    (6) the serial number will return and start from 1 again , after the 100th serial number ,

■ **Difference Printing Format For Difference Products**

This scale is well equipped with 100 difference printing format according to your needs . Please refer to 【label & sample of the printing forms】 .

■ **Print The Product Name And Specifications (Label Setting)**

You may key in the product name and specification and print the label using the printer because this scale is equipped with the A ~ Z alphabets . Please refer to 【sample of print forms】 .

■ **Using The Tower Light To Indicate A Defect Or Shortage In Production**

The examples of production control mentioned above can be more effective by Using a tower light connecting to the scale. The advantage of the tower light is to overcome the noisiness in the production line and enable the users to check the production through the signals of the tower light .

■ **Please Contact Your Nearest Agent Or Sales Person If You Have Others Special Requirements Related To The Scale.**

【FAQ】

■ **Why can't the printer print out, when I connect to the scale?**

1. Make sure the parameter P-5 model be set correctly.

2. Make sure P-6 and P-7 match the printer.

3. If EZ-2P or BP-443D are being used, they should have download the printer format before.

■ **Why does the Hi & Lo checking not work?**

1. Make sure you have enabled the function.

2. The value of Lo is greater than Hi.

■ **How do check if my printer compatible to the scale ?**

1. Under parameter setting P-5 , select the "normal" printer .

2. check the baud rate (P-6) and the data (P-7) is compatible to printer. If it is not , please change the setting accordingly .

3. When you weight and stable sign appeared, press ⊘,key to print . If the printer able to print meaning that this printer can replace the SH-24 printer .

.

■ **Why are there no sounds in the Hi & Lo checking function?**

Make sure P-3 is set correctly

■ **Why do I have to reset the time every time I turn on the scale?**

The scale needs an optional RTC.

【 LCD Characters 】

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

A	B	C	D	E	F	G	H	I	J	K	L	M
A	b	C	d	E	F	G	H	i	J	h	L	n
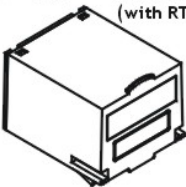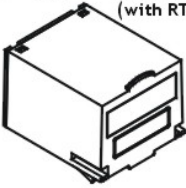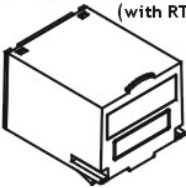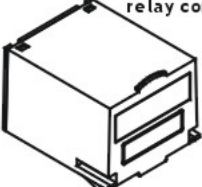
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
n	o	P	q	r	S	t	U	u	Y	h	Y	?
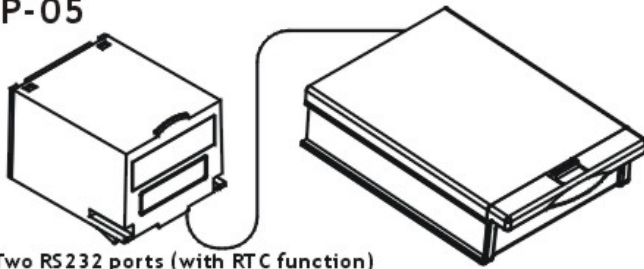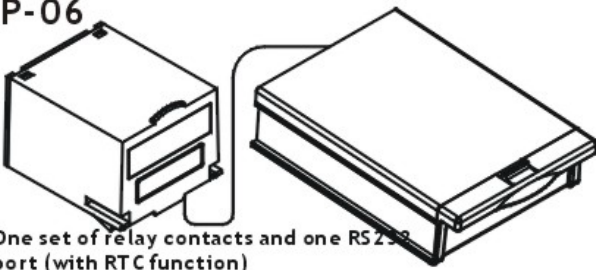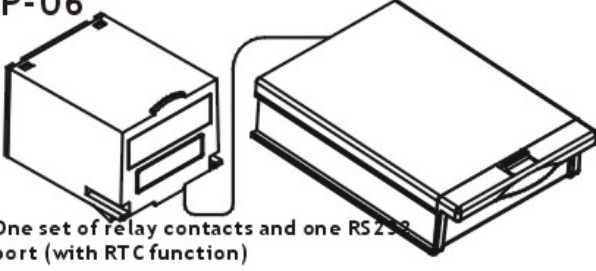
【Error Messages】

Error Message	Reasons	Solutions
E noEE	The CPU unable to read the EEPROM	Return To The Manufacturer
E CALF	Unable to read the 3 points calibration range	Do the 3 points calibration
?Hi	Zero Point is Too High	Make sure the pan is empty when turn on the scale or perform the 3 points calibration.
?Lo	Zero Points is Too low	Make sure the pan is on the scale or perform the 3 points calibration.
E UnSt	Unstable Zero Point	(1)Make sure there is no winds or vibration . (2)Change the stability /vibration parameter accordingly.
CLh-b	Battery for RTC is too weak	Replace a new battery or press (ESC) to abort.
- - - - -	Overload (The weights on the pan is more than +9e of the max. capacity)	Take away the overloaded objects.
di FFE	Unable to accumulate due to contradiction in net weight and net weight with quantity . You cannot accumulate this two together .	Press (M−) key twice to clear the all the accumulation or press (ESC) key to return to normal weighing mode .
ou- 15	The last accumulation is more than the preset accumulation allowed .	Press (M−) key twice to clear the all the accumulation or press (ESC) key to return to normal weighing mode .

【Option】
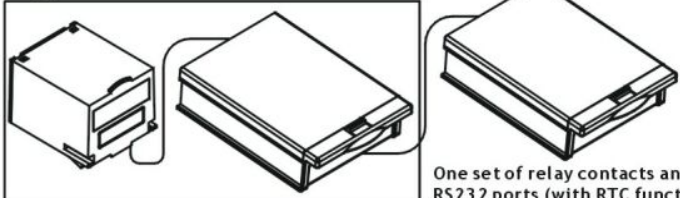
■ Only One Optional Device Being Used

	Option	Application	Remark
AP1	OP-03 One RS232 port (with RTC function) +	BP-443D	Can print out Bar Code
AP2	OP-03 One RS232 port (with RTC function) +	SH-24	Can print out accumulation data
AP3	OP-03 One RS232 port (with RTC function) +	LED Display	Only the weighing data can be shown on LED Display
AP4	OP-01 One set of relay contacts +	LED Light Tower	Three light of light towel to indicate three different situation, easy to see, besides it's buzzer is loud enough even in a noisy place.

■ Two Optional Devices Being Used

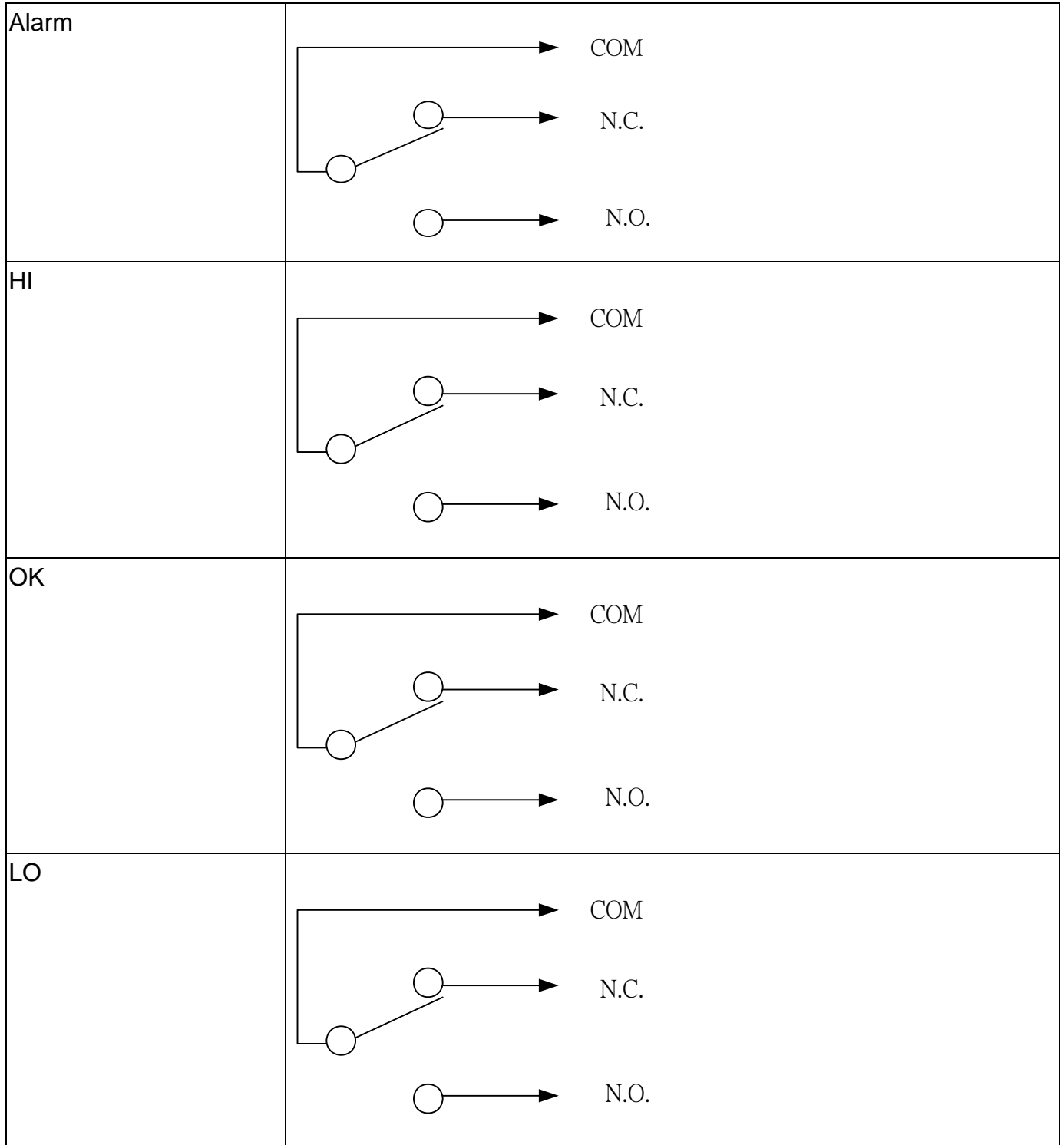|	Option	Remark
AP5	OP-05 Two RS232 ports (with RTC function) →	**BP-443D** PC or **LED Display**
AP6	OP-06 One set of relay contacts and one RS232 port (with RTC function) →	**BP-443D** **LED Light Tower**
AP7	OP-06 One set of relay contacts and one RS232 port (with RTC function) →	**LED Light Tower** **LED Display** PC or

■ Three Optional Devices Being Used

	Option	Remark
AP8	OP-07 One set of relay contacts and two RS232 ports (with RTC function) →	**BP-443D** **20.000** WEIGHT **LED Display** **LED Light Tower**

【Relay Module Diagram】

■ **Relay Output**：

Alarm	COM N.C. N.O.
HI	COM N.C. N.O.
OK	COM N.C. N.O.
LO	COM N.C. N.O.

■ **Relay Contact Spec**
1A/24VDC，0.5A/125VAC，0.25A/250VDC