Weighing Scale

USER INSTRUCTIONS

TABLE OF CONTENTS

BEFORE USING THE SCALE

To enable you to use this scale correctly, we suggest that you read this manual carefully.

1. Do not use scale in areas with excessive water and don't spray the scale with water when cleaning. Remove all water from the scale with a clean dry cloth.

2. The load placed on the platform must not exceed the maximum weighing capacity of the scale.

3. Keep the scale away from high temperatures and damp conditions.

4. If the scale is not going to be used for some time, please clean it and store it in a plastic bag in dry conditions.   A desiccant sachet may be included to prevent moisture build up.

5. If the scale is not going to be used for some time, the internal rechargeable battery should be recharged every three months.

6. Before using the scale after a long period of storage, please ensure that the internal battery is fully charged.   NOTE: Care should be taken not to leave the internal battery on charge for too long, as this may decrease the life of battery.

PREPARING TO USE THE SCALE

1. Locate the scale on a firm level surface free from vibrations for accurate weight readings.

2. Adjust the four levelling feet to set the scale platform level using the spirit level bubble located on the scale platform frame.

3. Avoid operating the scale in direct sunlight or drafts of any kind.

4. Remove any weight that might be on the scale platform before the scale is switched on.

5. Once the scale has been switched on, it will go through a LCD display test and then re-zero to be ready for use.

6. The scale requires 15~20 minutes warm up before operation to ensure best accuracy.

7. Please note when the ⊟ symbol is shown on the display, the internal battery needs to be recharged.

8. All goods weighed should be placed in the centre of the platform for accurate weighing.   The footprint of the goods being weighed should not overhang the edges of the platform.

LCD DISPLAY
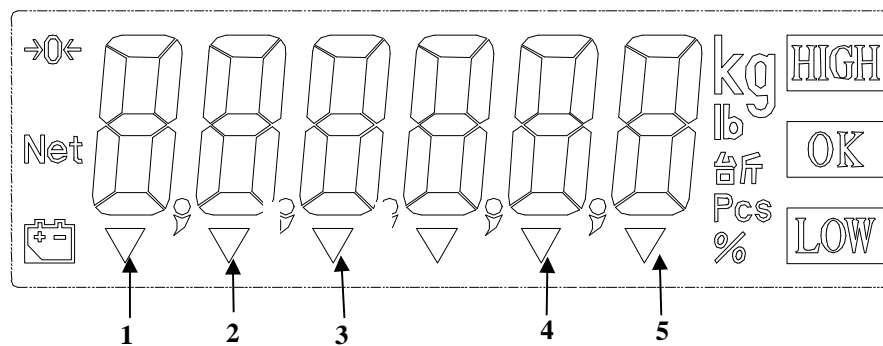
HIGH : High Preset Weight Limit

OK : The range between Low & High Limit Weight Limit

LOW : Low Preset Weight Limit

kg : "kg" unit

lb : "lb" unit

Pcs : "COUNTING" mode indicating the number of pieces

à0ß : "ZERO" indication and platform stable confirmation

Net : "Net Weight "indication

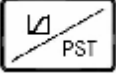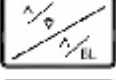**⊞** : "Low Battery" indication

61 : (STABLE) "Stable" indication
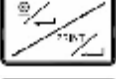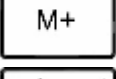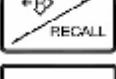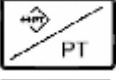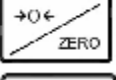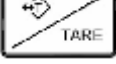
62 : (PT) "Pre-set Tare" mode

63 : (M+) "Accumulation" mode

64 : (　　) "Sample Too Small" indication
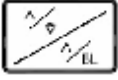
65 : (　　) "Piece Weight Too Small" indication

KEYBOARD FUNCTION

1. **UNITS** : Units Key to choose the unit weight kg or lb.

2. **PST** : Preset High & Low Limit.

3. **BL** : $\boxed{Ù}$ ⇒ Data Entry Key, ⇒ Backlight Key.

4. **PRINT** : ⊙ ⇒ Print Key to print the total data ; $\boxed{↵}$ ⇒ Confirmation Key.

5. **SMPL** : Sample Key to set the unit weight of sample.

6. **M+** : Accumulation Key to add the displayed value into memory.

7. **RECALL** : Re-call accumulated value or preset high & low limit value or preset tare value.

8. **CE** : Clear Key to delete the existing accumulated values, preset high & low limit value or preset tare value.

9. **COUNT** : Press this key to enter counting mode.

10. **PT** : Preset Tare Key.

11. **ZERO** : Zero Key to re-zero the weight.

12. **TARE** : Tare Key to deduct the container weight.

OPERATION

1. DISPLAY BACKLIGHT

Press [key icon] key to choose the display backlight mode :

⌷L. Auto ⇒ "Auto Backlight" mode.   When the weight is over 10 divisions or any key is pressed, the display backlight will be switched on.   When the weight returns to zero (the weight on platform is less than 10 divisions), the display backlight will switch off after 5 seconds.
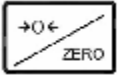
⌷L. on ⇒ Display backlight is on all the time.

⌷L. OFF ⇒ Display backlight is off.

2. ZERO

When the weigh pan is empty (free of load) and the display is not showing zero, press the

[ZERO key icon] key to zero the scale.   At zero, the "à0ß" indication is on.
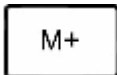
3. WEIGHING MODE

(1). Units Selection

I. Press [UNITS] key to choose the weighing units and the display will show the "kg" or "lb" symbol on the top right of the LCD display.

II. The unit status will be memorized when you turn the machine off.

(2). Totalising

♦ The totalising function can be used up to a maximum of 9999 times before it must be reset. The totalising display is limited to 6 digits maximum.

♦ The scale allows the next totalising operation, even when the weight value does not return back to zero.   The [M+] key is functional, when the weight value changes by more than 10 d. The scale will store the totalised weight value after the weight is stable.

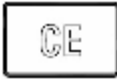## I. *Weight Totalising*

<div align="center">

ACTION   **DISPLAY**

</div>

Place the object onto the scale. The display shows the weight value

```
            0.0   kg
6
STABLE
```

Press [M+] key

```
          100.0   kg
6
STABLE
```

The display shows the total number of additions

```
        – 0001 –
```

The M+"**6**" symbol will flash on the display
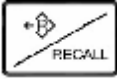
```
          100.0   kg
6      6
STABLE  M+
```
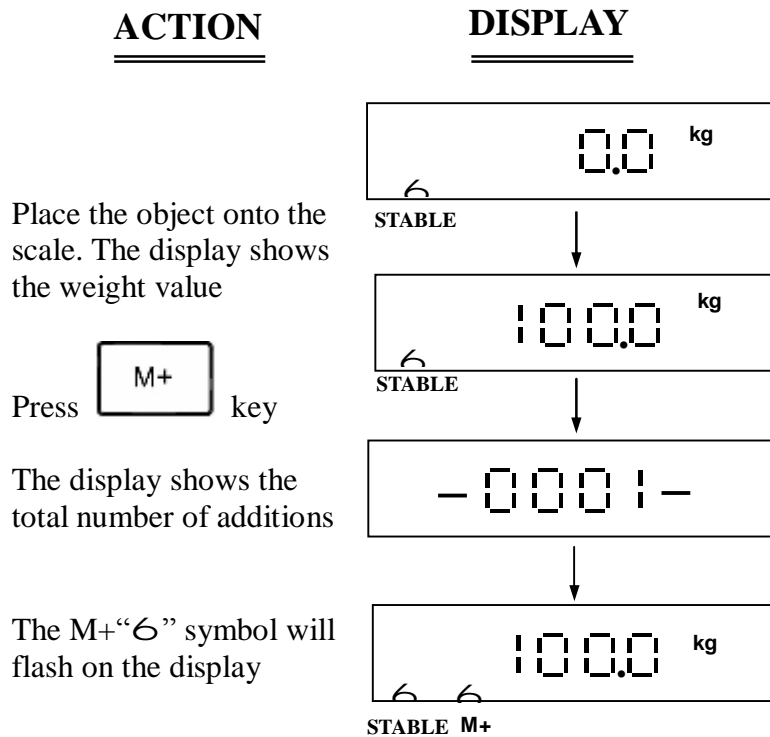
∨ The scale can totalise positive or negative weight but not both at the same time. The totalised weight must be cleared before it is possible to change positive or negative totalising mode.
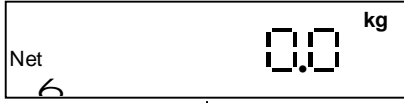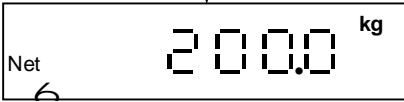
II. *Clear Totalised Weight Values*

- Press [RECALL] key followed by pressing [CE] key to clear the totalised weight values.

- All totals will be lost when the mode is changed from weighing to counting or vice versa and when the scale is switched off.

III. *Recall Totalised Weight Value*

- Press [RECALL] key to display the totalised weight value and the total number of additions. The M+"**6**" symbol will flash on the display. The scale will return to the weighing mode after 3 seconds.

∨ The scale will not display the negative sign "-" for negative totalised weight values, but the negative sign "-" will be printed out (transmitted serially) for each negative weight and negative totalised weight.

(3). Deduction of the Container Weight

I. *The weight of the container is unknown (Tare)*

ACTION   DISPLAY

Place the container onto the
scale

                        100.0 kg

                        STABLE

Press [TARE] key when the
weight is stable.   The weight
value becomes zero and the
(Net) symbol is displayed

     Net   **0.0** kg

             STABLE

Place the object into the
container and the display
shows the net weight value of
the object

     Net   **200.0** kg

             STABLE

II. *Clear the semi-auto tare*

When the container is removed from the scale, the display shows the container weight value with

a negative sign. Press [TARE] key to reset the scale to zero, and the (Net) symbol will switch

off.

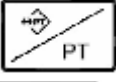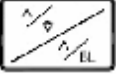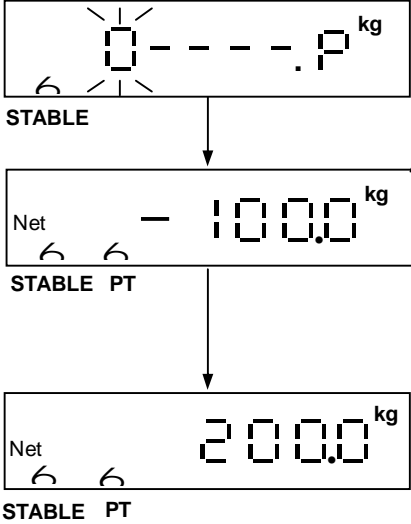∨ Multiple tare operation ⇒ Users can continuously increase or decrease the tare value by pressing the

[TARE] key.

∨ The total tare value (tare value + pre-set tare value) can equal the full capacity of the scale.
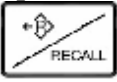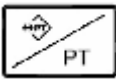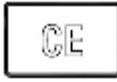
III. *Recall the semi-auto tare value*

Press [RECALL] key followed by pressing [TARE] key ⇒ The display shows the tare weight

value.

IV. *The weight of the container is known (Pre-set tare)*

ACTION	DISPLAY	DESCRIPTION

Press [PT] key

Use [key] key to enter the weight value of the container followed by pressing [key] key

$0---.P$ kg
STABLE

-100.0 kg
Net
STABLE PT

The display shows the weight value of the container with the negative sign and the (Net) symbol flashes on the display. The PT symbol indicates the tare function is active.

Place the object with the container onto the weigh pan.

The display shows the net value of object

200.0 kg
Net
STABLE PT

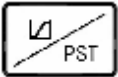## V. *Clear the pre-set tare value*

Press [RECALL] key followed by pressing [PT], then press [CE] key to clear the pre-set tare value. The scale resets back to zero, and the (Net) symbol and the PT symbol will switch off.

VI. *Recall the pre-set tare value*

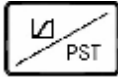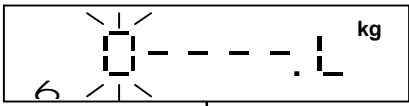Press [RECALL] key followed by pressing [PT] ⟹ The display shows the pre-set tare value.
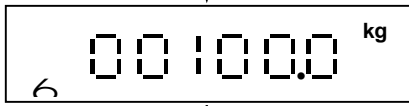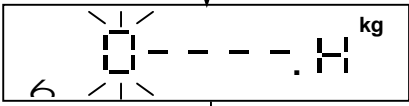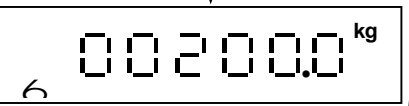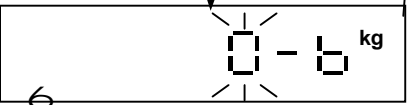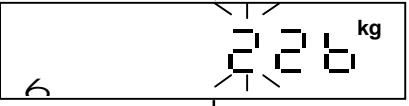
∨ **NOTE: In Tare mode, the Pre-set tare function is not available.**

(4). Check Weighing

Press [⊿/PST] to enter the check weighing function. Press [UNITS] key to abandon the setting and return back to the weighing mode.

I. Pre-set the "Low limit value", "High limit value", and "the buzzer" operation

Press [∧/φ ∧/EL] key to enter the value required and step to the next digit by pressing the [⊘ PR KT] key.

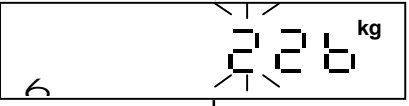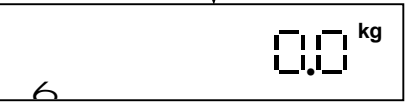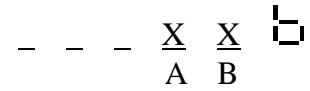| ACTION	DISPLAY	DESCRIPTION
Press [⊿/PST] key to select the check weighing function	`0----.L` kg STABLE	
Press [∧/φ ∧/EL] key to enter the Low limit value. Press [⊘ PR KT] key to confirm the setting	`00100.0` kg STABLE	`- - - X X b` A B
Set the "High limit value"	`0----.H` kg STABLE	A ⟹ **0** = When the weight is stable the buzzer sounds and the High, OK or Low icon is displayed.
Press [∧/φ ∧/EL] key to enter the High limit value. Press [⊘ PR KT] key to confirm the setting	`00200.0` kg STABLE	**1** =. The High, OK or Low icon is displayed irrespective of the stability of the weight. The buzzer sounds only when the weight is stable.
Set the "buzzer" operation	`0-b` kg STABLE	**2** = The buzzer sounds and the High, OK or Low icon is displayed irrespective of the stability of the weight.
Press [∧/φ ∧/EL] key to enter the buzzer operation. Press [⊘ PR KT] key to confirm the setting	`22b` kg STABLE	B ⟹ **0** = The buzzer does not sound. **1** = The buzzer sounds at the OK status.
The scale returns to the weighing mode	`0.0` kg STABLE	**2** = The buzzer sounds when the weight of the object is lower or equal to the Low limit value, or higher than the High limit value.

II. *Pre-set the Low limit value only*

After completing the Low limit value setting, the display shows $0 - \cdot - H$. Press
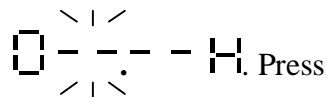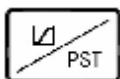
[PST] key to complete the setting, and the display shows $6 \quad 0.0$ **kg**
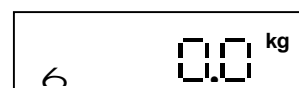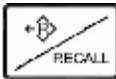
ν When users only pre-set the Low limit value, the buzzer setting is fixed at: $b\ 2\ 1$

III. *High/OK/Low indication*

| LOW | OK | HIGH |
| 10d | Low limit value | High limit value |
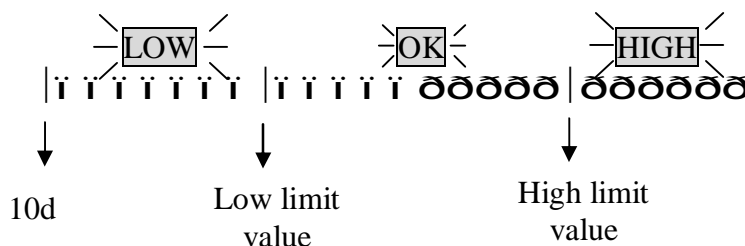
IV. *Recall the check weighing setting*
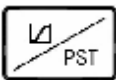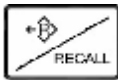
Press [PST] key followed by pressing [RECALL] key to recall the Low limit value.

Then press [RECALL] key again to recall the High limit value.

Then press [RECALL] key again to recall the buzzer setting.

Then press [RECALL] key again to return the weighing mode.

V. *Clear the check weighing settings*

Press [PST] key followed by pressing [RECALL] key, then press [CE] key to clear the Low limit value.

Press [CE] key again to clear the High limit value and the buzzer setting.

4. COUNTING FUNCTION

Press [COUNT] key to enter the counting function. Press [UNITS] key to return back to the weighing mode.

(1). Sampling

ACTION	DISPLAY

Press [COUNT] key to enter the counting function

```
              0  Pcs
6
STABLE
```

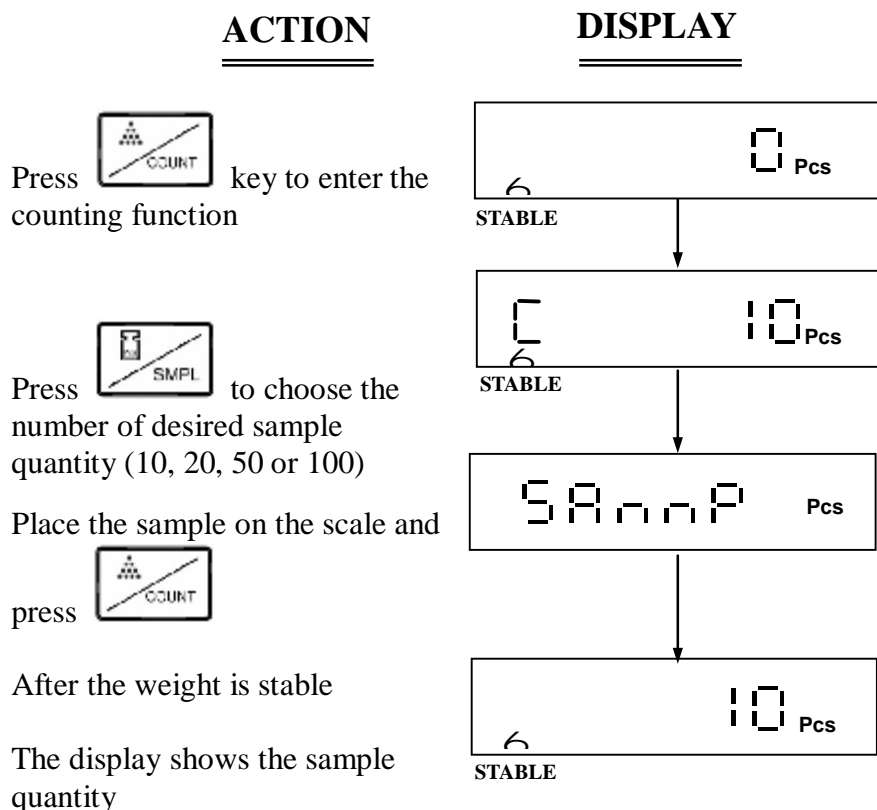Press [SMPL] to choose the number of desired sample quantity (10, 20, 50 or 100)

```
  C           10 Pcs
6
STABLE
```

Place the sample on the scale and press [COUNT]

```
  SAmmP        Pcs
```

After the weight is stable

The display shows the sample quantity

```
              10 Pcs
6
STABLE
```

NOTE:

♦ The larger the sample size, the more accurate the unit weight. (The minimum sample weight = 20d)

♦ A sample size of 10 pieces gives a typical count accuracy of 95%.

♦ A sample size of 50 pieces gives a typical count accuracy of 98%.

SAMPLE TOO SMALL ( ) ⇒ Sample is less than 20 divisions.

UNIT WEIGHT TOO SMALL ( ) ⇒ Unit weight is less than 1/5 of a division.

Under such conditions, the scale can still work, but may result in lower count accuracy.

(2). Totalising
Refer to the operation of totalising in the weighing function on page 7.

(3). Check Weighing
Refer to the operation of check weighing function on page 11.

CONFIGURATION SETTINGS

Switch on the scale.   While the scale is counting backward to zero, press and hold [→0←/ZERO] key until

the display shows the software program version number: "02001".
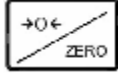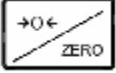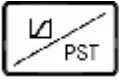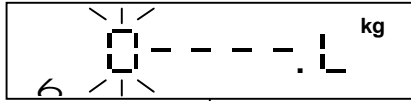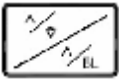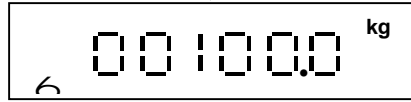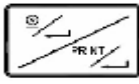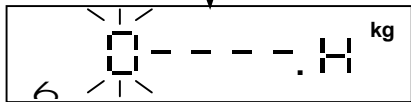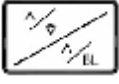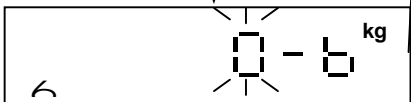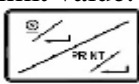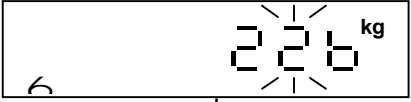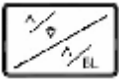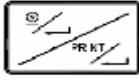
Release [→0←/ZERO] key, the scale enters the configuration setting mode. F0 is displayed.

F0 ⇒ **INTERNAL CALIBRATION (LOCKED)**

F1 ⇒ **INTERNAL CALIBRATION (LOCKED)**

F2 ⇒ **INTERNAL CALIBRATION (LOCKED)**

F3 ⇒ **INTERNAL CALIBRATION (LOCKED)**

F4 ⇒ **CHECK-WEIGHING SETTING**

F5 Þ **RS232 OR SERIAL PRINTER SETTING**

F6 Þ **EXIT FROM CONFIGURATION MODE**

F7 Þ **SHOWS THE INTERNAL VALUE**

F8 ⇒ **HOLD SETTING**

F9 ⇒ **INTERNAL CALIBRATION (LOCKED)**
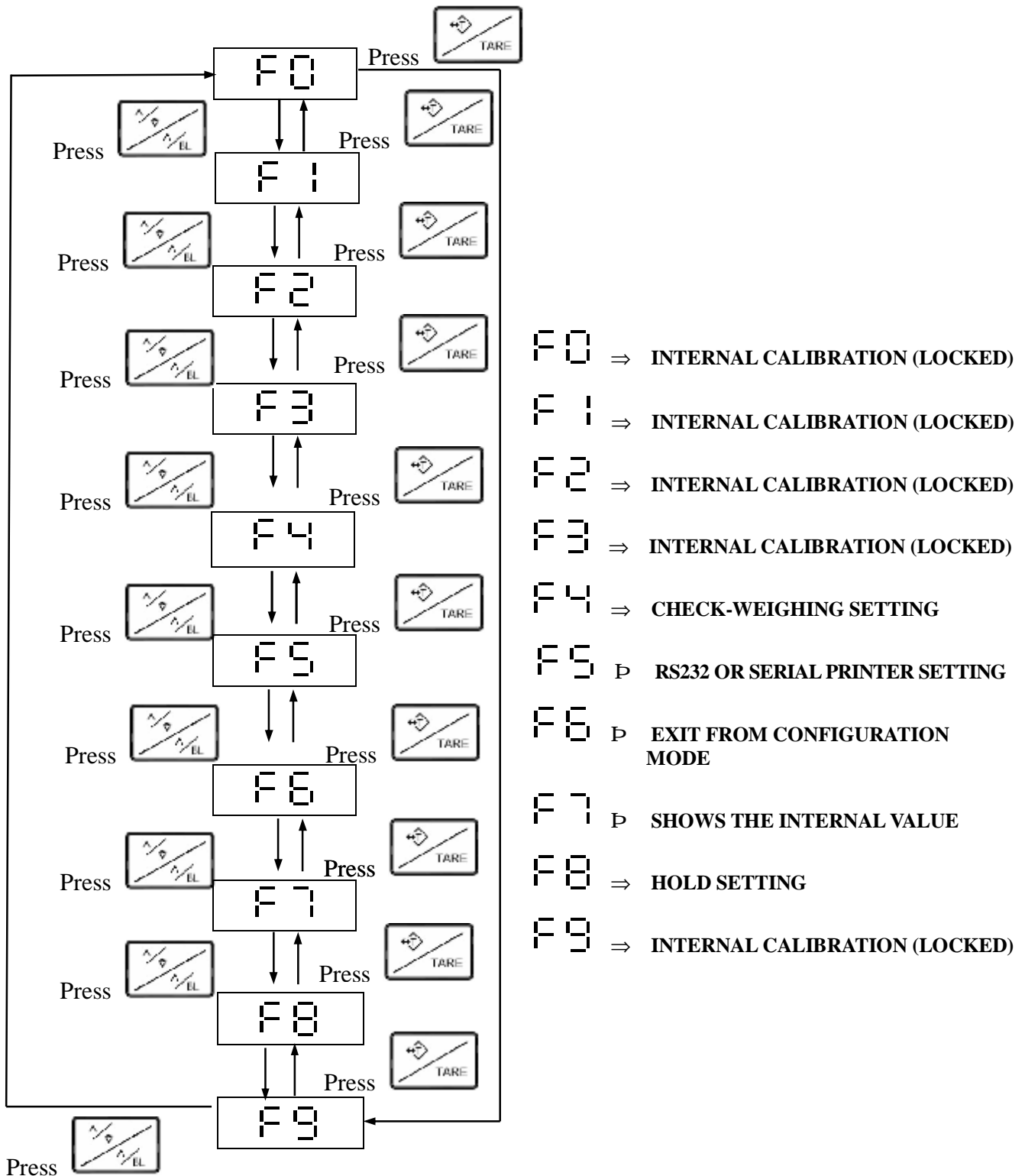
1. CHECK-WEIGHING CONFIGURATION F4

♦ F8 (Hold) affects access to F4. If F8 is set, access to F4 is denied.

Press [↑/EL] or [→/TARE] key to select **F4** function ⇒ the display shows F4

ACTION	DISPLAY	DESCRIPTION
Press [PST] key to select the check weighing function	`0----.L` kg STABLE	
Press [↑/EL] key to enter the Low limit value. Press [PR KT] key to confirm the setting	`00100.0` kg STABLE	
Set the "High limit value"	`0----.H` kg STABLE	A ⇒ **0** = When the weight is stable the buzzer sounds and the High, OK or Low icon is displayed.
	`00200.0` kg STABLE	**1** =. The High, OK or Low icon is displayed irrespective of the stability of the weight. The buzzer sounds only when the weight is stable.
Press [↑/EL] key to enter the High limit value. Press [PR KT] key to confirm the setting	`0-b` kg STABLE	**2** = The buzzer sounds and the High, OK or Low icon is displayed irrespective of the stability of the weight.
Set the "buzzer" operation	`22b` kg STABLE	B ⇒ **0** = The buzzer does not sound.
Press [↑/EL] key to enter the buzzer operation. Press [PR KT] key to confirm the setting	`F4`	**1** = The buzzer sounds at the OK status.
The scale returns to the weighing mode		**2** = The buzzer sounds when the weight of the object is lower or equal to the lower limit value, or higher than the upper limit value.

$$\underline{-}\ \underline{-}\ \underline{-}\ \underline{\underset{A}{X}}\ \underline{\underset{B}{X}}\ b$$

2. RS-232 SETTING ⌐ 5
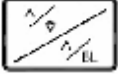
♦ J1 and J3 on the RS-232 interface are connected together (short), when the RS-232 interface is connected to a computer.

♦ J2 and J4 on the RS-232 interface are connected together (short), when the RS-232 interface is connected to a printer.

Press [⊘/EL] or [⇆/TARE] key to select the **F5** function ⇒ the display shows ⌐ 5

ACTION	DISPLAY	DESCRIPTION
Press [⊘/PRKT] key	F5	⌐ ⌐P **0** Þ No transmission
		⌐ ⌐P **1** Þ Stable transmission
Transmission default mode	⌐ ⌐P 0	⌐ ⌐P **2** Þ Continuous transmission
Press [⊘/EL] key to set the transmission mode	⌐ ⌐P 4	⌐ ⌐P **3** Þ Press [⊘/PRKT] to transmit (simple mode)
Then press [⊘/PRKT] key to confirm the setting	2400	⌐ ⌐P **4** Þ Press [⊘/PRKT] to transmit (complete mode)
Baud rate default setting		⌐ ⌐P **5** Þ Stable transmission (totalising mode). The format is as same as ⌐ ⌐P **3.**
	9600	⌐ ⌐P **6** Þ EZ-2 printer mode The format is as same as ⌐ ⌐P **4.**
Press [⊘/EL] key to set the baud rate (1200, 2400, 4800 or 9600)	F5	⌐ ⌐P **7** Þ Press [⊘/PRKT] to transmit (EZ-2 printer mode)
Then press [⊘/PRKT] key to confirm the setting		
Configuration complete		⌐ ⌐P **8** Þ Press [⊘/PRKT] to transmit The format is the same as ⌐ ⌐P **1 & 2**

∨ When choosing " EZ-2 printer mode", the Baud rate should be set to 9600 bps
∨ Refer to Page 19~22 for RS-232 data format

3. EXIT CONFIGURATION SETTINGS F6

Press [key] or [key] key to select the **F6** function⇒ the display shows F6

ACTION   **DISPLAY**

```
┌────────────────────┐
│                    │
│      F6            │
│                    │
└────────────────────┘
```

Press [key] key

```
┌────────────────────────────┐
│  Scale reverts back to normal │
│      weighing mode          │
└────────────────────────────┘
```
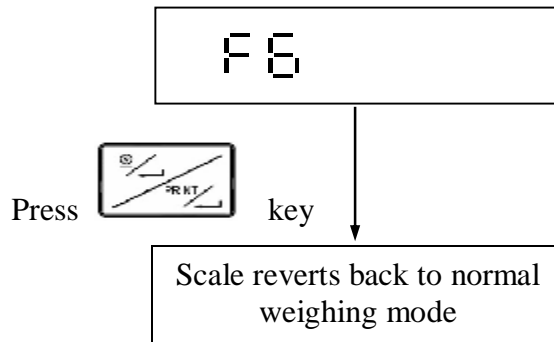
4. HOLD SETTING F8

♦ When the hold function is active, the display will show the maximum weight on the weigh pan.
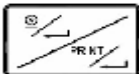
Press the [key] key to print out the weight value.

Press [key] or [key] key to select **F8** function ⇒ the display shows F8

ACTION	DISPLAY	DESCRIPTION

F8

Press [key]

hold 0

Press [key]

hold 1

Press [key]

hold 2

Press [key]

hold 3

Select one of the hold mode and

Press [key] **key**

press [key]   F8   to exit

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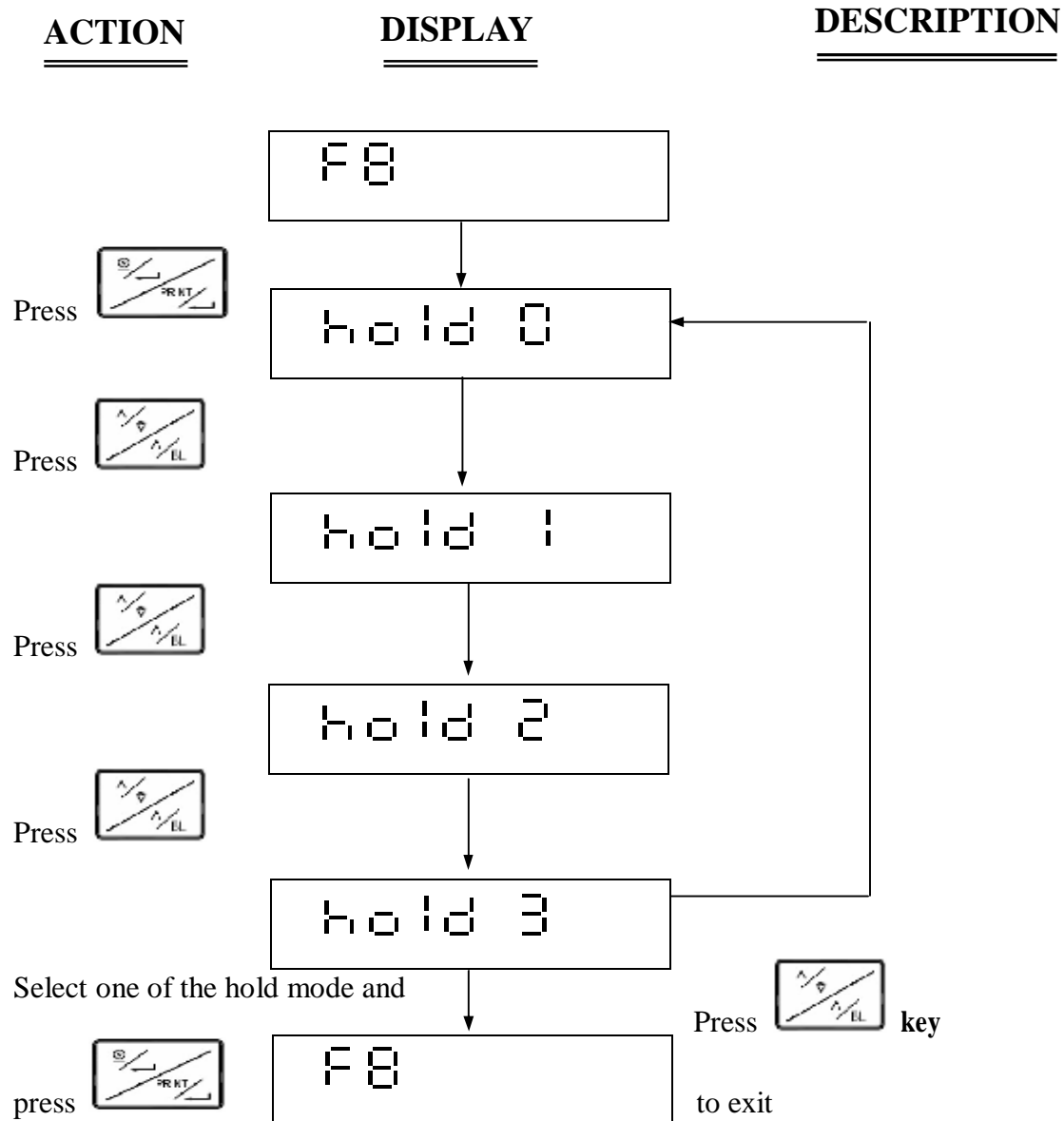
hoId 0 = No hold function.

hoId 1 = With a changing weight value, the scale automatically hold the maximum value displayed.

Pressing any key except the key to cancel the hold function.

hoId 2 = When the weight is stable, the scale hold the displayed value.

Pressing any key except the key to cancel the hold function.

hoId 3 = When the weight is stable, the scale will hold the displayed value. When the scale returns to zero (the weight is less than 10 divisions), the hold function will be released.

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RS-232 SERIAL OUTPUT

RS-232 SERIAL PRINTER OUTPUT (OPTIONAL INTERFACE)

(1) RS-232 (25 Pin 'D' type) Pin Description

˙ J1 - J3 SHORT ; J2 - J4 OPEN (default setting)

Pin 2 $\Rightarrow$ RXD
Pin 3 $\Rightarrow$ TXD
Pin 7 $\Rightarrow$ GND

˙ J2 - J4 SHORT ; J1 - J3 OPEN

Pin 2 $\Rightarrow$ TXD
Pin 3 $\Rightarrow$ RXD
Pin 7 $\Rightarrow$ GND
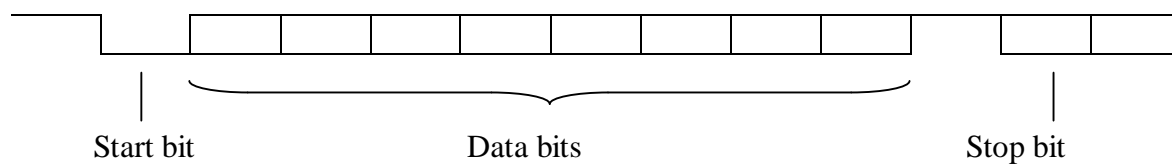
(2) RS-232 Interface Format
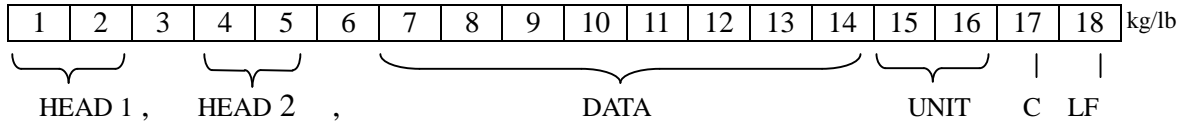
Ⅰ. Mode : EIA-RS232 C's UART signal
Ⅱ. Format :
1. Baud rate: 1200, 2400, 4800 or 9600 bps
2. Data bits: 8 BITS
3. Parity bit: none
4. Stop bits: 1 BIT
5. Code: ASCII

```
          Start bit              Data bits                    Stop bit
```

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(3) Data Format

Stable transmission ⌐ ⊓ P 1 / **Continuous transmission** ⌐ ⊓ P 2 /

Press [⊘ ▶R KT] **to transmit** ⌐ ⊓ P 8

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	kg/lb

HEAD 1 ,   HEAD 2 ,   DATA   UNIT   C   LF

HEAD 1 (2 BYTES)		HEAD 2 (2 BYTES)	
OL	- Overload , Under load	TR	- TARE Mode
ST	- Display is Stable	NT	- NET Mode
US	- Display is Unstable	GS	- GROSS Mode

DATA (8 or 9 BYTES)

2D (HEX) = " – " (MINUS)

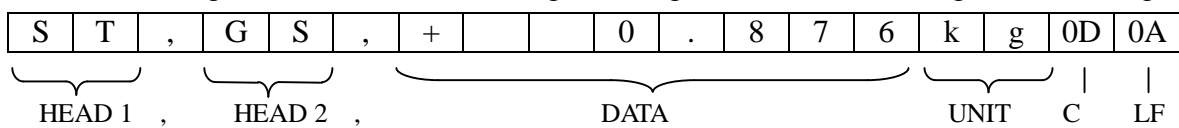2E (HEX) = " . " (DECIMAL POINT)

UNIT (2, 3 or 4 BYTES)
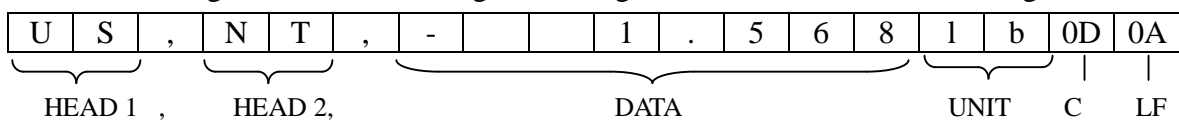
kg   = 6B (HEX) ； 67 (HEX)

lb   = 6C (HEX) ； 62 (HEX)

Transmission example:

1. With the weight stable, a tare set and a gross weight value of + 0.876 kg the data string is shown below:
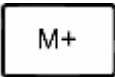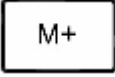
S	T	,	G	S	,	+		0	.	8	7	6	k	g	0D	0A

HEAD 1 ,   HEAD 2 ,   DATA   UNIT   C   LF
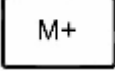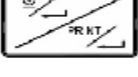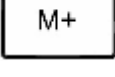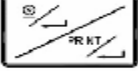
2. With the weight unstable, net weight the weight value -1.568lb the data string is shown below:

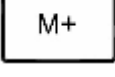| U	S	,	N	T	,	-		1	.	5	6	8	l	b	0D	0A

HEAD 1 ,   HEAD 2,   DATA   UNIT   C   LF

Press [key icon] **key to transmit (simple mode)** ⌐ ⊓ P ∃

```
S/N       WT/UNIT ( kg / lb )
- - - - - - - - - - - - -

0001      1.0000        E Press [key icon] key or [M+ key] key

0002      1.0000        E Press [key icon] key or [M+ key] key

0003      1.0000        E Press [key icon] key or [M+ key] key

0004      1.0000        E Press [key icon] key or [M+ key] key

0005      1.0000        E Press [key icon] key or [M+ key] key

- - - - - - - - - - - - -

0005      5.0000        E Press [key icon] key 2 times to print out the total
```

Stable transmission (totalising mode) ⌐ ⊓ P S

```
S/N       WT/UNIT ( kg / lb )
- - - - - - - - - - - - -
0001      1.0000        E scale stable, transmitting
0002      1.0000        E scale stable, transmitting
0003      1.0000        E scale stable, transmitting
0004      1.0000        E scale stable, transmitting
0005      1.0000        E scale stable, transmitting

- - - - - - - - - - - - -

0005      5.0000        E Press [key icon] key 2 times to print out the total
```

EZ-2 printer mode, press [key icon] **to transmit** ⌐ ⊓ P ⌐ **(Baud rate must be set at 9600 bps)**

Only prints out the "weight value". The proportion of the printed font ⇒ Height : Width = 3:2

$$+100.0 \, kg$$

EZ-2 printing mode ⌐⊓P̄⊟ **(Baud rate must be set at 9600bps). Press** [PRINT key icon] **key to transmit (complete mode)** ⌐⊓P̄닉

TICKET NO .0001		
G 1.000kg		
T 0.000kg	**E** Press [PRINT key icon] key or [M+ key icon] key
PT 0.000kg		
N 1.000kg		

(**Blank line x 3**)

TICKET NO .0002	
G 1.000kg	
T 0.000kg	
PT 0.000kg	**E** Press [PRINT key icon] key or [M+ key icon] key
N 1.000kg	

(**Blank line x 3**)

TICKET NO .0003	
G 1.000kg	
T 0.000kg	
PT 0.000kg	
N 1.000kg	
(**Blank line x 3**)	**E** Press [PRINT key icon] key or [M+ key icon] key
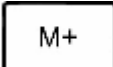
TOTAL NUMBER	
OF TICKETS 0003	
TOTAL	
NET 3.000 kg	

(**Blank line x 3**)

E Press [PRINT key icon] key twice to printout the total

<Remarks> :   G = GROSS   T = TARE   PT = PRE-TARE   N = NET