GW SERIES

MULTI-FUNCTION DIGITAL SCALE

OPERATION MANUAL

PLEASE READ THIS MANUAL VERY CAREFULLY
BEFORE ATTEMPT TO OPERATE THE SCALE

AUGUST 1999 REV 2

*Specifications subject to change without prior
notice*

CONTENTS

1. INSTALLATION INSTRUCTION

1.1 CHECK AND MAKE SURE THAT THE FOLLOWING ITEMS ARE INCLUDED.

This operation manual

Scale x 1

Plastic platter x 1

AC adaptor x 1

Stainless steel platter cover x 1 (option)

Contact your dealer if any items missed.

1.2 PLACING THE PLATTER

1.2.1 Place the platter into the scale in longitude or latitude direction preferred. Always place the platter into the scale gently, no excessive force is needed. Then place the stainless steel platter cover (if purchased) onto the plastic platter.

1.2.2 The stainless steel platter cover can be fixed permanently to the platter by putting a double side adhesive tape between the platter and the stainless platter cover.

1.3 POWER THE SCALE

1.3.1 This scale is powered by the built-in rechargeable battery and/ or by a AC adapter included.

1.3.2 Check and make sure that the voltage of the AC adaptor supplied matches with the voltage of the main output. Contact your dealer if not.

1.3.3 Insert the output plug of AC adaptor firmly into the DC input jack of scale. The DC input jack is located at the left side of scale.

1.3.4 Before first time use, charge the built-in rechargeable battery for at least 8 hours or until the charging indicator turns green.

1.3.5 For safety reasons, do not share the same mains outlet with other apparatus.

1.4 Retain all packing material for future transportation of scale.

2. INSTALLATION DIAGRAM

Stainless steel platter cover (option)

Platter

AC adaptor DC9V/500mA
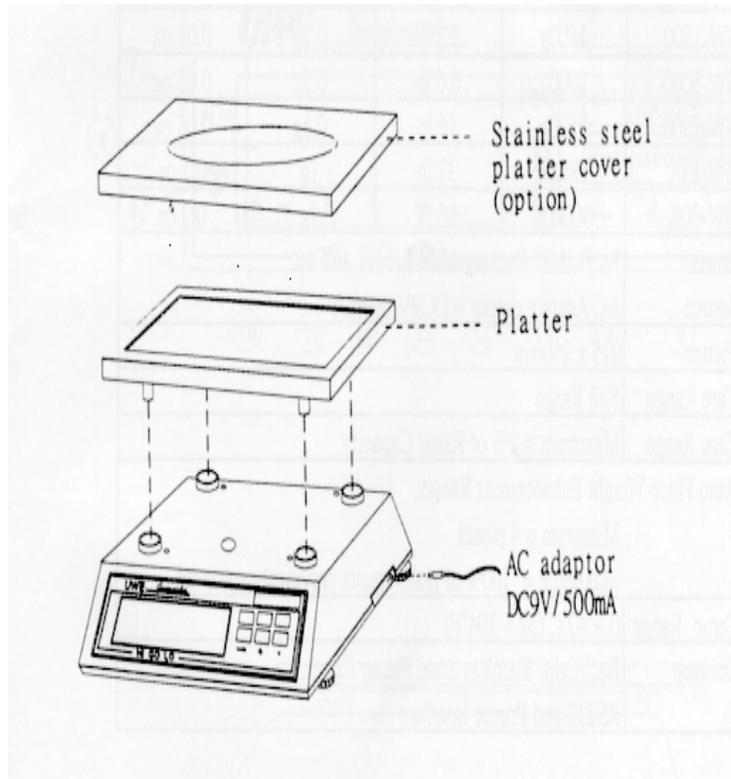
3. SPECIFICATIONS

General Specifications

Model	Capacity		Division	
Number	Metric	Pound*	Metric	Pound*
GW-1500	1500g	3.3 1b	0.1g	0.01 oz
GW-3000	3000g	6.6 1b	0.2g	0.02 oz
GW-7500	7500g	16 1b	0.5g	0.05 oz
GW-15K	15000g	33 1b	1g	0.1 oz
GW-30K	30000g	66 1b	2g	0.2 oz
Power Source	By Built-in Rechargeable Battery and /or, AC Adaptor output = DC9V/ 500mA			
Platter	215 x 250mm			
Tare Range	Full Range			
Zero Range	Maximum = 2% of Rated Capacity			
Auto Piece Weight Enhancement Range: Minimum = 4 pieces Maximum = 100% of max. counts previously achieved				
Temp. Range	0 ~ 40^{0}C (32 ~ 104^{0}F)			
Options:	Backlight, Stainless Steel Platter Cover,RS232 and Printer Interface			

*To comply with the law of certain countries, the pound unit may be disabled.
Contact your dealer for more information.

Specifications and functions subject to change without prior notice.

4. KEYBOARD LAYOUT
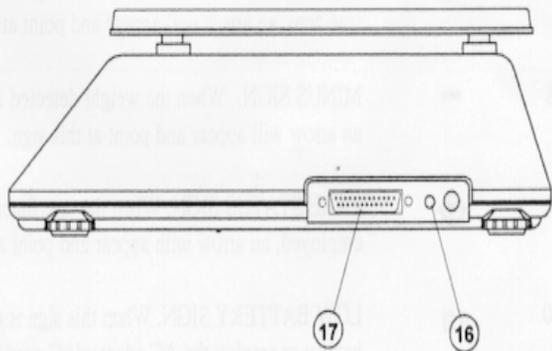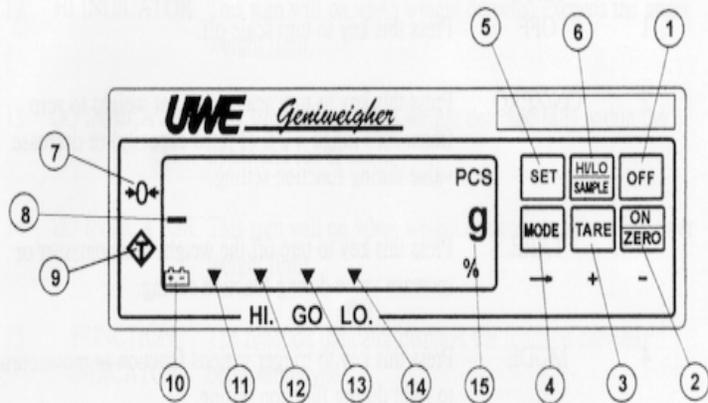
1	KEYS	
	OFF	Press this key to turn scale off.
2	ON/ZERO	Press this key to turn scale on or set weight to zero (max. zero range = 2% of rated capacity) or decrease value during function setting.
3	TARE	Press this key to tare off the weight of a container or increase value during function setting.
4	MODE	Press this key to trigger various function or move cursor to right during function setting.
5	SET	Press this key to turn backlight on/off or confirm setting.
6	HI/LO/SAMPLE	Press this key to trigger

various function value setting.

7	**DISPLAY SIGNS** →0←	ZERO STATUS SIGN. When the weigh detected is at true zero, an arrow will appear and point at this sign.
8	**–**	MINUS SIGN. When the weight detected is below zero, an arrow will appear and point at this sign.
9	⬥	TARE STATUS SIGN. When the tare function is being employed, an arrow with appear and point at this sign .
10	🔋	LOW BATTERY SIGN. When this sign is on, recharge the battery or employ the AC adaptor/AC cord immediately.
11	**MOTION INDICATOR**	This sign appears when weight detected is not stable.
12	**HI INDICATOR**	This sign will on when weight detected exceeds the upper weight limit.
13	**GO INDICATOR**	This sign will on when weight detected falls within the upper and lower limit.
14	**LO INDICATOR**	This sign will on when weight detected is below the lower weight limit.
15	**FUNCTION INDICATOR**	The function indicator displays the function currently being employed.
16	**OTHERS CHARGE INDICATOR**	RED: Built-in rechargeable battery is being recharged. GREEN: Rechargeable battery is completely charged.
17	**RS232/PRINTER**	Output port for computer or

Output Port printer interface.

6. INTERNAL FUNCTIONS

6.1 INTERNAL FUNCTION TABLE

Function	Symbol	Description	Note
1	Fun – 1	Scale configuration setting and dealer calibration.	A
2	Fun – 2	Display segment check.	
3	Fun – 3	Off set value and span value reading.	A
4	Fun – 4	Auto power off setting.	
5	Fun – 5	RS232 baud rate setting.	B
6	Fun – 6	Auxiliary weight unit setting.	A
10	Fun – 10	RS232 protocol setting.	B
11	Fun – 11	RS232 transmission mode setting.	B
12	Fun – 12	Printer transmission mode setting.	C
20	Fun – 20	RS232 data format setting.	B
21	Fun – 21	Printer data format setting.	C
30	Fun – 30	Beep mode setting.	

NOTE:

A For dealer and authorized person only. Inappropriate setting will cause system down. Contact your dealer for more information or service.

B   Function when RS232 interface is purchased.
C   Function when printer interface is purchased.

6.2 HOW TO ENTER THE REQUIRED FUNCTION MODE

6.2.1 Function 1 to 6

a. Turn scale off.
b. Press and hold **MODE**, then turn scale on. Scale displays **Fun-1**
c. Press **MODE** until the required function number appears.
d. Press **SET**
e. Press **MODE** until the required setting/value appears.
f. Press **SET** to confirm.
h. Repeat step **c** to **f** for other function setting, or
j. Press **HI/LO/SAMPLE** to save settings and return to normal operation.

6.2.2 Function 10 to 30

a. Turn scale on.
b. Press and hold **SET** until Fun-10 appears.
c. Utilize **MODE**, **TARE** and **ON/ZERO** to achieve required function number.
d. Press **SET** to enter.

e. Press **TARE** until the required setting/value appears.
f. Press **SET** to confirm.
h. Repeat step **c** to step **f** for other function setting, or
j. Press **HI/LO/SAMPLE** to save setting and return to normal operation.

6.3 Internal Functions Description

Fun-1 Contact your dealer for more information.

Fun-2 To check all display segment works properly.

Fun-3 Contact your dealer for more information.

Fun-4 To set the Auto Power Off Function. Two modes are available: (Default = 4_OFF)
0_OFF = Auto Power Off Function is disabled.
4_OFF = Scale will automatically turned off after 4 minutes used.

Fun-5 Set RS232 baud rate: 7 rates are available:

300, 600, 1200, 2400, 4800, 9600 and 19200

Fun-6 Contact your dealer for more information.

Fun-10 Set RS232C protocol. Two modes are available:

E.7 = even parity, 7 data bit

N.8 = no parity, 8 data bit

Fun-11 Set RS232C transmission mode. Three modes are available:

00 = Key transmission mode. Data is transmitted only when the **ON/ZERO** is pressed.
Under this mode, no data will be transmitted if weight detected is less than 2% of rate capacity. Refer to Appendix 1 for minimum weight required.

01 = Auto transmission mode. Data is transmitted when weight detected is stable.
Under this mode, no data will be transmitted if weight detected is less than 40 d.

02 = Continuos transmission mode. Under this mode, data is continuously transmitted disregarding weight applied or detected.

Fun-12 Set Printer transmission mode. Two modes are available:

00 = Key transmission mode. Data is transmitted only when the **ON/ZERO** is pressed.
Under this mode, no data will be transmitted if weight detected is less than 2% of rate capacity. Refer to Appendix A for minimum weight required.

01 = Auto transmission mode. Data is transmitted when detected is stable.
Under this mode, no data will be transmitted if weight detected is less than 40 d.

Refer to Appendix A for minimum weight required.

NOTE: Details of every transaction transmitted will be stored in memory. Press **MODE** to transmit the total value accumulated to printer.

NOTE: The data stored in memory will be erased:
a. when **MODE** is pressed, or
b. when scale is turned off, or
c. when weight unit is changed.

Fun-20 Set RS232 data format. Three formats are available:

00 = Format 0 (Default)

01 = Format 1

02 = Format 2

Refer to Appendix B for individual transmission format.

Fun-21 Set Printer data format

00 = Format (Default)

01 = Format (Mot available)

Refer to Appendix C for printout format.

Fun-30 Set Weight Check Beep Mode

Beep 0: No alarm output, (Default)

Beep 1: Alarm when weight detected falls within the upper and lower limit.

Beep 2: Alarm when weight detected exceeds the upper limit or below the lower limit.

Beep 3: Alarm when weight detected exceeds the upper limit.

Beep 4: Alarm when weight detected is below the low limit.

7. OPERATING INSTRUCTION

7.1 PLACING THE SCALE

Place this scale on a hard and strong enough surface where is free from RF interference, vibration, fire, direct sunlight and excessive moisture.

For best weighing result, always place this scale on a level surface. This scale is equipped with a bubble level. If required, adjust the adjustable feet underneath the scale to obtain a level condition.

7.2 POWER ON/OFF THE SCALE

7.2.1 To turn scale on, press **ON/ZERO.**

7.2.2 To turn scale off, press **OFF**.

7.3 BACKLIGHT MODE

7.3.1 Turn backlight on

a. press **SET** during normal operation.

b. Backlight is turned on.

NOTE: The backlight function is monitored by a power saving program. Backlight will be automatically turned off after weight displayed is unchanged for about 30 seconds. Backlight will automatically be turned on again by pressing any key or when a new weight is detected.

7.3.2 Turn backlight off

When backlight is on, press **SET** to turn backlight off.

7.4   TARE FUNCTION

7.4.1 To Tare Off the Weight of a Container
Place a container onto platter, then press **TARE** to tare off the weight of it. After the **TARE** is pressed, the tare sign will appear.

7.4.2 To Clear the Weight of a Container from Memory
Remove the container from the platter then press TARE. The tare sign will go off indicating no container weight is resided in memory.

7.5   ZERO FUNCTION
If Zero Status Sign does not appear when scale is unloaded, press **ZERO** to reset weight displayed to zero. Refer to general specification table for maximum zero range.

7.6   PLACING LOAD
Always place a load onto the platter gently. Sudden shock, excessive force

or overloading the scale may cause damage to the weight sensor inside. It is a good practice to remove all load from platter when not in used. This would prolong the lifetime of weight sensor.

7.7 WEIGHING FUNCTION

a. Before weighing, make sure that the Zero Status Sign is on.

b. Press **MODE** until the required weight unit appears.

c. Place subject matter on platter and the weight of it is displayed.
For best weighing result, refer to general specification table for <u>recommended minimum weight </u>to be applied.

7.8 COUNTING FUNCTION

7.8.1 Turn scale on. Press **MODE** until the PCS sign appears. Make sure that the Zero Status Sign is on.

7.8.2 Sampling
Sampling is the first step of counting transaction. By means of sampling process, the unit piece weight is obtained. The unit piece weight forms the foundation of quantity calculation.

a. If a container is used, place the container onto the platter first then press **TARE** to tare off the weight of it.

b. Place a sample size with known quantity onto the platter. The number of the sample size must equal to one of the below value:
5, 10, 20, 50, 100, 200, 500 or 1000 pieces

c. Press **HI/LO/SAMPLE** until 5 PCS appears.

d. Press **TARE** until corresponding sample number appears.

e. Press **SET** to confirm. The unit piece weight is obtained and scale is now ready for counting transaction.

Hint: It is usually true that the more the sample size, the more accurate the subsequent counting result.

NOTE: For best counting result, refer to general specification table for recommended minimum piece weight.

NOTE: An error sign will appear if the unit piece weight is less than the feather unit weight. Refer to Appendix E for more

information.

7.8.3 Counting Transaction

Put more subject matter or remove part of the subject matter, the new piece value is shown on the display.

7.9 AUTO PIECE WEIGHT ENHANCEMENT FUNCTION

In order to obtain the best counting result and to avoid sampling error, this scale is equipped with Auto Unit Piece Weight Enhancement function.

This function is resided in memory once the unit piece is obtained by the sampling method as described in 7.8.2.

NOTE: Auto Unit Piece Weight Enhancement Function will be terminated if a zero weight is detected during the transaction process. It is strongly piece weight is unknown or individual piece weight is not standardized.

7.9.1 How Auto Piece Weight Enhancement Function Works.

7.9.1.1 After a unit piece weight is obtained by method as described in 7.8.2 then place more/remove some subject matter onto the platter. The new quantity will be shown on the display.

7.9.1.2 The Auto Unit Piece Weight Enhancement Function will update the unit piece weight if both of the below requirements are met:

a. The quantity added to platter is more than 4 pieces of previous maximum counts previously attained from the same transaction.

b. The quantity added to platter is less than 100% of previous maximum counts previously attained from the same transaction.

7.9.1.3 If the above requirements are met, a new unit piece weight will be displayed on the Unit Weight window and confirmed by an audio "beep".

7.10 WEIGHT CHECK FUNCTION

This scale is equipped with Weight Check Function. An audio and video signal is generated to reflect the weight check result.

7.10.1 Set Audio Alarm Output

If an audio alarm output is required, enter function 30 and set appropriate parameter. Refer to INTERNAL FUNCTIONS for more information.

7.10.2 Setting Upper and lower Weight Limit

7.10.2.1 Set Upper Weight Limit

a. Press **MODE** until the desired weight unit appears.

b. Press **HI/LO/SAMPLE.**

c. The HI indicator appears.

d. Utilize **MODE**, **TARE** and O**N/ZERO** to achieve required upper weight limit.

e. Press **SET** to confirm.

7.10.2.2 Set Lower Weight Limit

a. Press **MODE** until the desired weight unit appears.

b. Press **HI/LO/SAMPLE** twice.

c. The LO indicator appears.

d. Utilize **MODE**, **TARE** and **ON/ZERO** to achieve required lower weight limit.

e. Press **SET** to confirm.

NOTE: Change of function, (e.g. from weighing mode to counting mode) or turned scale off will not result in the lost of weight limits set.

NOTE: Weight Check will not function if a weight unit, other than the weight unit used to set the limits, is employed.

7.10.3 Weight Check Transaction

Place a subject matter onto the platter. The Weight Check result is displayed on the display.

a. The HI indicator will appear when weight detected exceeds the upper weight limit preset.

b. The GO indicator will appear when weight detected falls within the upper and lower weight limit.

c. The LO indicator will appear when weight detected is below the lower weight limit preset.

NOTE: The scale will not display or generate and comparison result/alarm if weight detected is less than 40 d. Refer to Appendix E for minimum weight required.

7.11   PERCENTAGE CHECK FUNCTION

7.11.1 Sampling

Sampling is the first step of Percentage Check function. By means of sampling process, the weight of subject matter at 100% is determined. Follow the below steps for sampling.

a. Press **MODE** until the % sing appears.

b. Make sure that the Zero Status sign is on.

c. If a container is used, place the container onto the platter first then press **TARE** to tare off the weight of it. Place the subject matter onto the platter.

d. Place the subject matter onto the platter.

e. Press **HI/LO/SAMPLE** until 100.0% appears.

f. Press **SET** to confirm.

g. Scale displays 100.0% and is ready for Percentage Check transaction.

NOTE: An error sign will appear if the unit piece weight is less than the feather percentage weight. Refer to Appendix E for more information.

7.11.2 Percentage Checking Transaction

Add/reduce something to/from the subject matter, the new relative percentage value will appear on the display.

NOTE: For best checking result, refer to general specification table for recommended minimum load applied.

7.12 COMPUTER DATA OUTPUT (option) FUNCTION

7.12.1 Set appropriate RS232 transmission parameters, i.e. function 5, 10, 11 and 20 to scale. Refer to INTERNAL FUNCTIONS for more information.

7.12.2 Creating a Program File in Computer

a. Create BASIC computer program file as below to enable the data from scale can be received by computer.
10 OPEN "COM*:2400**,N,8,2***,CS, DS, CD" AS#1

Remark:*: Input 1 if the input port of computer is COM 1, or input 2 for COM 2…etc.

**: Input the same baud rate as preset through Function 5.

***: Input N,8,2 if parameter input for Function 10 is n.8

***: Input E,7,1 if parameter input for Function 10 is E.7

```
20  LINE INPUT #1, A$
30  PRINT A&
40  GOTO 20
50  END
```
  b. Save the above program file.

7.12.3 **Connecting the Scale with a Computer**

Follow the below steps to connect the scale with a computer.

a. Turn scale off

b. Turn computer off

c. Connect the RS232C output of scale to computer by a appropriate data cable.

d. Turn scale on

e. Turn computer on

f. Load and run the BASCIA program file

7.12.4 **Computer Data Transmission**

a. Set all the parameters required.

b. Conduct transaction as usual.

c. Data will be transmitted to computer according to parameters set.

7.13 **PRINTER OUTPUT (option) FUNCTION**

7.13.1 Set appropriate printer transmission parameters

(Function 12 and 20) to scale. Refer to INTERNAL FUNCTIONS for more information.

7.13.2 Connecting the Scale with a Computer

a. Turn scale off

b. Turn printer off

c. Connect the printer output of scale to printer by a appropriate data cable

d. Turn scale on

e. Turn printer on

7.13.3 Print Data Transmission

a. Set all the parameters required.

b. Conduct transaction as usual.

c. Data will transmitted to printer according to parameters set.

7.14 **RECHARGING THE SCALE**

When the LOW BATTERY sign appears, recharge the scale immediately. Fail in doing so will damage the built-in rechargeable battery.

Scale can be recharged during normal operation. This charge status is displayed by the Charge indicator as below:

a. RED: Recharged battery is being

recharged.

b. GREEN: Rechargeable battery is completely charged.

Check	Is a right AC adaptor employed or is it inserted properly both to the wall outlet and into the scale properly?
Action	Check AC adaptor and secure both ends of the AC adaptor into the wall outlet and DC input of scale.

ZERO WEIGHT CANNOT BE ATTAINED WHEN TURN ON

Check	Is the platter placed correctly?
Action	Check and insert the platter again.
Check	Is any load applied to the Platter?
Action	Remove all load from platter. Turn scale off and turn on again.
Check	Is the scale affected by air flow , vibration of RF interference?
Action	Place scale away from all disturbances and try again.

RATED CAPACITY CANNOT BE ATTAINED

Check	Is anything obstructing the platte
Action	Remove all obstacles between platter and scale.

SCALE DISPLAYS ^{00000}

8.TROUBLE SHOOTING

SCALE CANNOT BE TURNED ON

Check	Is the built-in rechargeable
Action	

Check	Is the scale overloaded?
Action	Remove all load on platter and check again.
Check	Is the platter insert correctly into the scale?
Action	Take out the platter and insert again.
Check	Is the stainless steel platter (if purchased) place onto the platter?
Action	Place the stainless steel platter onto the plastic platter.

SCALE DOES NOT WEIGH CORRECTLY

Check	Is the right weight unit employed?
Action	Select the correct weight unit.
Check	Are the minimum weight applied to scale?
Action	Refer to Appendix F for recommended minimum load applied and try again.
Check	Is the scale placed on a level surface?
Action	Check the bubble level and adjust the adjustable feet to obtain a level condition.
Check	Is the scale affected by air flow, vibration or RF interference?
Action	Place scale away from all disturbances.
Check	Is the scale calibrated correctly?

Action	Contact your dealer.

SCALE DOES NOT COUNT CORRECTLY

Check	Is the right sample size employed during sampling process?
Action	Repeat the sampling process and try again.
Check	Is the sample size employed during sampling process too small?
Action	Increase the sample size, repeat the sampling process and try again.
Check	Is the scale placed on a level surface?
Action	Check the bubble level and adjust the adjustable feet to obtain a level condition.
Check	Is the scale affected by air flow, vibration or RF interference?
Action	Place scale away from all disturbances.
Check	Is the scale calibrated correctly?
Action	Contact your dealer.
Check	Is the Auto Unit Piece Weight Enhancement function being employed?
Action	Repeat the sampling process. Conduct counting transaction according to all procedures as listed on paragraphs 7.8 and 7.9.

SCALE TURNED OFF AUTOMATICALLY

Check	Is the AUTO POWER OFF function employed?
Action	Disable the AUTO POWER OFF function.

Check	Is the LOW BATTERY sign on?
Action	Recharge the battery or employed the AC adaptor.

DATA TRANSMISSION ERROR

Check	Are all transmission parameters set correctly?
Action	Set all parameters according to INTERNAL FUNCTIONS.
Check	Is the minimum required weight obtained/applied?
Action	Refer to Appendix A for minimum weight requirements?
Check	If both end of the cable linking scale and computer/printer firmly secured?
Action	Secure both end firmly.
Check	Is a right data cable used?
Action	Contact your dealer or hardware engineer.
Check	(For RS232 output) Is the BASICA Program file written correctly?
Action	Refer to the operation instruction and check program file is correctly written?
Check	Is the BASICA program file (RS232 output only) loaded and run?
Action	Run and load the BASICA program file.

9.DAILY CARE AND MAINTENANCE

9.1 Avoid exposing scale to direct sunlight or excess moisture.

9.2 Do not lift/move scale by holding the platter.

9.3 Do not submerge scale into water.

9.4 Take platter away from scale before transportation.

9.5 Clean the scale with a soft and damp cloth, if necessary with a mild detergent.

9.6 Do not use any harsh, abrasive material, violate solvent thinner or alcohol for cleaning.

9.7 Verify the accuracy of scale periodically. Re-calibrate the scale when needed.

NOTE: In some countries, calibration is restricted to be done by qualified or authorized agent only. Contract your dealer for more information.

9.9 Store scale in a dry and cool place.

Appendix A

Minimum Weight Requirements of Function 11 and Function 12

Model No.	Minimum Weight Required for	
	Mode 00	Mode 01
GW-1500	3g	4g
GW-3000	6g	8g
GW-7500	15g	20g
GW-15K	30g	40g
GW-30K	60g	80g

Appendix B

RS232 Data Format of Function 20

Format 00 (Default)

S	T	,			1	0	0	.	0	5			g	CR	LF

Position code

1 2 3 4 5 6 7 8 9 10 11 12 13

Format 01

U	S	,	-			1	0	.	0	5				g	,	G	CR	LF

Position Code

1 2 3 4 5 6 7 8 9 10 11 12 13   14

Format 02

+			1	0	0	.		0	5	CR		LF

Position Code

3 4 5 6 7 8 9 10

Position Code Definition:

1	2

=Weight Status:

   ST=Stable

   RS=Not stable

3

= Polarity of value (Plus or Minus)

   + or blank = positive value

   - = Negative value

4	5	6	7	8	9	10

=Value of weight, pieces or percentage

12	13

=Unit

   kg = kilogram

   g = gram

   pc = pieces

   % = percentage

14

= Weight check result

   H = Weight detected over upper limit.

   G = Weight detected falls within upper and
       lower limit.

   L = Weight detected below lower limit.

Appendix C

Printout Format of Function 21

   Format 00 (Default)

```
S/N         Unit              (Note A)
0001.       10.00    L
0002.       20.00    G        (Note B)
0003.       30.00    H
0003/       60.00             (Note C)
```

NOTE A: S/N = Sequence Number

Unit = The current function being employed e.g, k.g, g, lb, pc, or %.

NOTE B: Weight check result:

L = Weight detected below lower limit.

G = Weight detected falls within upper and lower limit.

H = Weight detected over upper limit. The weight check result will only appear on printout when the weight check function (Function 30) is employed. Set parameter of function 30 to 1, 2, 3 or 4 in order to display the weight check result to printout.

NOTE C: Accumulated result of previously transactions.

Appendix D

Minimum Weight Required for Weight Check Function

Model No.	Minimum Weight Required
Gw-1500	4g
GW-3000	8g
GW-7500	20g
GW-15K	40g
GW-30K	80g

Appendix E

Feather Weight of Counting and Percentage Check Function

Model No.	Feather Unit Piece Weight of Counting function	Feather 100% Weight of Percentage Check function
Gw-1500	0.075g	30G
GW-3000	0.15g	60g
GW-7500	0.375g	150g
GW-15K	0.75g	300g
GW-30K	1.5g	600g

Appendix F

Recommend Minimum Weight for various applications

Model	Recommended Minimum

No.	Piece Weight	Load Applied	100% Weight
Gw-1500	0.1g	2g	75G
GW-3000	0.2g	4g	150g
GW-7500	0.5g	10g	375g
GW-15K	1g	20g	750g
GW-30K	2g	40G	1500g