CONTENTS

Ⅰ. Preparation before using

1-1. Cautions before using…… 1
1-2. Specification and characteristics of products …… 1

Ⅱ. Introduction and installation of products

2-1. Assembly specification of scale pan and windshield …… 2
2-2. Removal of protecting screws…… 2
2-3. Adjustment of leveler…… 3
2-4. Function specification of buttons and display window…… 3

Ⅲ. Applications of general functions

3-1.Specification of weighing function…… 4
3-2.Specificatin of counting function…… 4
3-3.Specification of percentage function…… 5
3-4.Setting of time and date…… 5

Ⅳ. Setting of various parameters

4-1. Entry and parameter adjustment mode…… 6
4-2.Specification of parameter and function…… 6

Ⅴ. Weight calibration

5-1.List of calibration weights…… **10**
5-2.Linear calibration of weight…… **10**
5-3.Single-point calibration of weight…… **11**

Ⅵ. Interface of peripheral devices

6-1. RS-232 specification…… …… **12**
6-2. Printing format of peripheral devices…… **13**
6-3.Specification of USB interface application…… **13**

Ⅶ. Miscellanies

7-1.Specification of trouble information…… **14**
7-2.List of unit conversion…… **14**
7-3.Warranty of product…… **15**

Ⅰ. Preparation before using

1-1 Cautions before using

◎The site for fixing the scale must be stable and even, and its level adjustment may be performed by referring to page 4 【Adjustment of leveler】.

◎ The ambient temperature must not exceed 0℃～40℃, and the condition with too drastic temperature fluctuation should be avoided.

◎ After starting, the scale must be energized for at least 10 min. before using.

◎ The scale must not be used in a condition with strong wind, vibration, or electromagnetic interference (for example, near the outlet of cool air, in front of a fan, or near a heavy-duty machine).

◎ Never impact or drop the scale, or press the scale with something whose weight exceeds the maximal capacity of the scale.

◎ Never expose the scale to rains or wash the scale with water.

◎ Be careful not to let cockroaches or other pest insects enter the scale.

◎ Be sure to select the suitable transformer whose output is DC 9V / 400ma (please use a separate power socket and the transformer delivered by the scale manufacturer in order to avoid interference)

◎ Change the batteries as soon as possible when battery symbol appears; if the scale uses batteries as its main power supply and the scale will be idle for a long term, the batteries must be removed to avoid the damage of scale due to the leakage of battery electrolyte.

※ Application of improper batteries or wrong connection may lead to the failure of system or other adverse effect.

1-2 Specification and characteristics of products

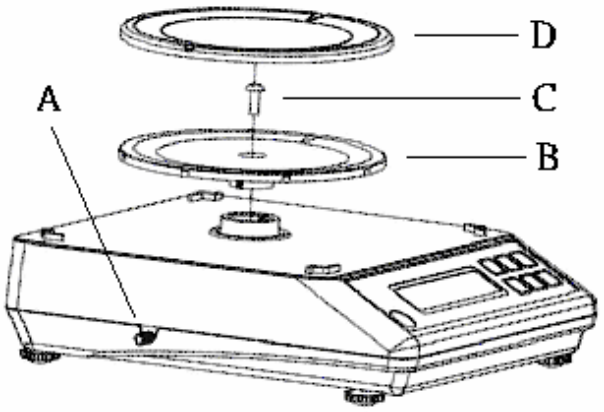
Model	SNUG III-150	SNUG III-300	SNUG III-600	SNUG III-600	SNUG III-3000
Capacity (g)	150	300	600	1500	3000
Resolution (g)	0.005/0.002	0.01/0.005	0.01/0.02	0.05/0.02	0.1/0.05
Display	LCD and backlight sheet, 14mm(H)X7mm(W) weight--- 6 digitals				
Pan size (mm)	125 stainless steel round pan	146×125 stainless steel square pan			
Overall size	245×175×147				
Power supply	9V DC transformer 50/60Hz, or 2# dry battery*4				

Ⅱ. Introduction and installation of products

2-1 Assembly specification of scale pan and windshield

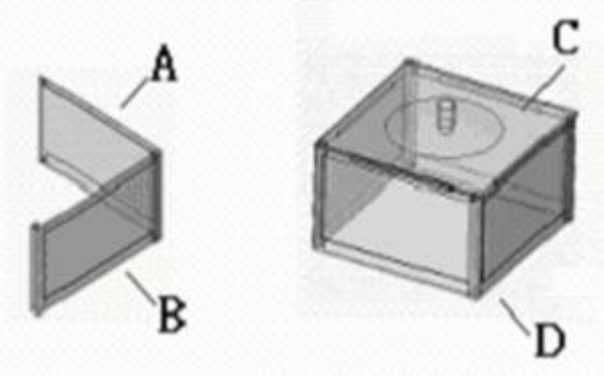
Assembly of scale pan

1. In order to avoid the possible damage while assembling the scale pan, please make sure that the transportation protecting screw (A) has been locked.
2. The pan set is consisted of a plastic base and a stainless steel pan, please put plastic base (B) on the scale first.
3. Use Philips screwdriver to lock fixing screw (C) in the center of plastic base.
4. Put stainless steel pan (D) on plastic base, and then loose transportation protecting screw.



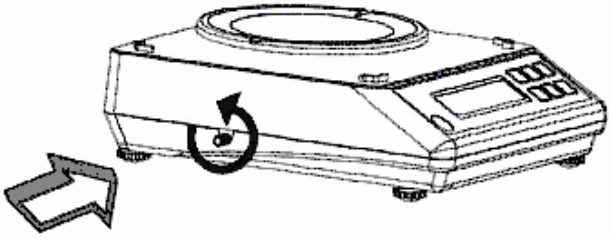
Assembly of windshield

1. Windshield is consisted of 5 components, and they must be assembled together before being used.
2. First assemble four sides of windshield (A, B) by inserting A into B from top to bottom (or from bottom to up).
3. Place the assembled windshield on the scale body; make sure that the position of D should face downwards, or rotate the assembled windshield up and down if it fails to be clutched after being placed on.
4. Then place upper cover (C) of windshield on.



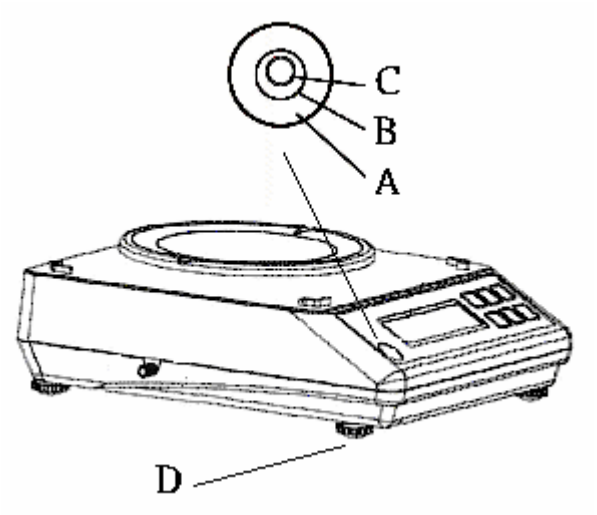
2-2 Removal of protecting screws

1. As shown by the arrow in the right figure, you may turn anticlockwise the transportation protecting screw direct with fingers to loose it.
2. For locking the screw, you may push gently the screw inwards with fingers meanwhile turn it clockwise.
3. The transportation protecting screw must be locked while transporting, storing, disassembling or assembling the scale.

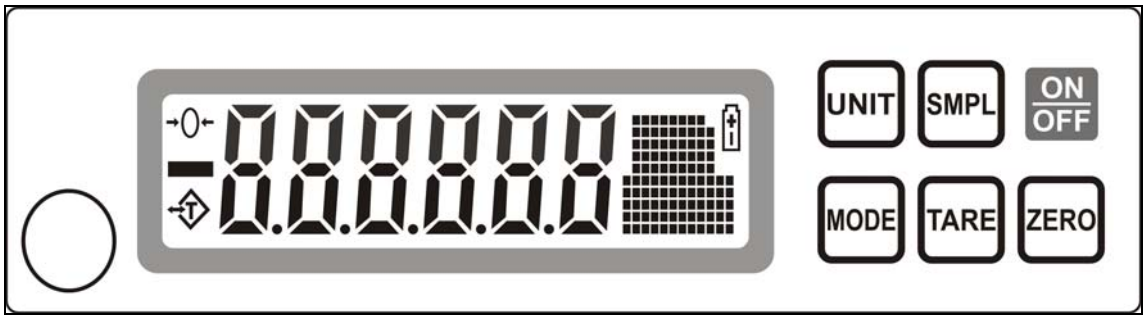


2-3 Adjustment of leveler

1. Leveler (A) is located at the left side of operation panel; the standard for judging if the scale body is placed horizontally is that if the bubble (C) is within the circle (B) .
2 In case the bubble is outside the circle, you should adjust four adjusting feet (D) at the bottom of the scale with hands direct.
3. Adjustment: the bubble will move towards the highest foot, therefore it is enough to raise the foot that is in the opposite direction of the bubble, and the scale will be horizontal.



2-4 Function specification of buttons and display window



ON/OFF — Button for Start/Stop.

ZERO — Button for zeroing. It returns the weight to zero, may return the value displayed on screen to “zero” position (zeroing range is ±2% of the full range).

TARE — Button for deduction of tare, used to deduct the weight of article on the pan.

MODE — Button for shifting weighing function; it may be cycled from weighing mode, counting mode, percentage mode to printing time setting mode sequentially.

UNIT — Button for shifting weighing units; total 13 weighting units may be selected.

SMPL — Button for switching on/off backlight under the weighing mode (the button will take effect only when backlight is set to ON or OFF). It is the button for sampling entry and sampling execution under counting mode and percentage mode.

Ⅲ. Applications of general functions

3-1 Specification of weighing function

1. Press down button ON/OFF to start the scale; this time the whole screen will be displayed and then count down, when screen shows 0.00 X , the scale may be used to weigh; if backlight is needed, please press down button SMPL. (It is not need to press down the button if Auto backlight is set).
2. Press down button TARE to deduct the weight of article; press down button ZERO to cancel the deduction.

   (Note: if the deducted weight is within the zeroing range, the deduction may be cancelled and the scale is zeroed)
3. Press down button UNIT to shift the weighing units.

Caution: the symbol of weighing unit will flash when the weight becomes unstable during the weighing.

3-2 Specification of counting function

1. Under the weighing mode, press down button MODE to show XXXX pcs on screen and to enter the counting function.
2. Then press down button SMPL to enter the sampling mode for counting, and SE 0pcs will be displayed on screen this time; please press down button TARE to select one out of the following five sampling quantities in a cyclic manner: 20, 50, 100, 200, and 500.
3. After selecting the sampling quantity, place the article whose quantity is the same with the selected one on the scale pan, and press down button SMPL to begin sampling; when the sound “bi” is heard and “SE” is disappeared, the sampling process is completed.

4. Press down button UNIT to display “Unit weight of article” and “Counting value” in a cyclic manner.

Caution: the minimum unit weight of sampled article ≥ 9 resolutions. (For example: the weight of sampled article for 600g/0.01g should not be less than 0.09g)

3-3 Specification of percentage function

1. Under the weighing mode, press down button MODE to show XXXX % on screen and to enter the percentage function.
2. Then press down button SMPL to enter the sampling mode for percentage function; this time screen will show SE 0pcs ; then press down button TARE to select one out of the following five sampling quantities in cyclic manner: 20, 50,100, 200, and 500.
3. After selecting the sampling quantity, place the article whose quantity is the same with the selected one on the scale pan, and press down button SMPL to begin sampling; when the sound “bi” is heard and “SE” is disappeared, the sampling process is completed.
4. Press down button UNIT to display “Unit weight of article” and “Percentage” in a cyclic manner.。

Caution: the minimum unit weight of sampled article ≥ 9 resolutions. (For example: the weight of sampled article for 600g/0.01g should not be less than 0.09g)

3-4 Setting of time and date

1. After starting, press down button MODE to show time XX.XX T on screen.
2. Press down continuously button UNIT to shift months XX.XX D and years XXXX Y.
3. Shift to the part to be modified, press down button TARE to shift for selecting the digit to be modified, and the selected digit will flash this time; then press down button SMPL to shift among 1~9 sequentially, and press down button MODE to exit after completing the setting.

Ⅳ. Setting of various parameters

4-1 Entry and parameter adjustment mode

Procedure 1: Under Stop mode, hold down button MODE and then press down button ON/OFF and then release button MODE to enter the mode of parameter display.

Procedure 2: Press down button MODE to select “Option of main functions” in a cyclic manner, and press down button UNIT to enter “Internal option” to make modification, and then press down button UNIT to select “Internal option”.

Procedure 3: After completing the modification of internal options, press down button MODE to exit; in case the next option should be set, press down button MODE to go to the next option.

Procedure 4: After completing all settings, press down button SMPL to end the setting of functions to return to the normal weighing mode.

4-2 Specification of parameter and function **(The item marked with ☆ is set at delivery)**

Option of main functions		**Internal options**		
Item	**Specification**	**Item**		**Specification of internal options**
CoUnt	**Internal value** Note: for maintenance and setting		----------	----------

Unit	**Selection of units to be used** Note: the unit that won't be used may be cancelled temporarily. Press down button SMPL to select ON/OFF and complete the setting.	☆	g (GRAM)	ON(in use) or OFF(not in use)
			Ct (MET.CARAT)	ON(in use) or OFF(not in use)
			Lb (AVORIRDUPOIS POUND)	ON(in use) or OFF(not in use)
			Oz (AVORIRDUPOIS OUNCE))	ON(in use) or OFF(not in use)
			Dr	ON(in use) or OFF(not in use)
			GN (GRAIN (U.K))	ON(in use) or OFF(not in use)
			Ozt (TROY OUNCE)	ON(in use) or OFF(not in use)
			Dwt (PENNY WEIGHT)	ON(in use) or OFF(not in use)
			MM (JPN)	ON(in use) or OFF(not in use)
			tl.j (HONGKONG JE WELRY TAEL)	ON(in use) or OFF(not in use)
			tl.T (TAEL(TWN))	ON(in use) or OFF(not in use)
			tl.H (HONGKONG TAEL)	ON(in use) or OFF(not in use)
			t (INDIA)	ON(in use) or OFF(not in use)
LnitU	**Starting unit** Note: the unit used promptly after starting	☆	g (GRAM)	----------
			Ct (MET.CARAT)	----------
			Lb (AVORIRDUPOIS POUND)	----------
			Oz (AVORIRDUPOIS OUNCE)	----------
			Dr	----------
			GN (GRAIN (U.K))	----------

			Ozt (TROY OUNCE)	----------
			Dwt (PENNY WEIGHT)	----------
			MM (JPN)	----------
			tl.j (HONGKONG JE WELRY TAEL)	----------
			tl.T (TAEL(TWN))	----------
			tl.H (HONG KONG TAEL)	----------
			t (INDIA)	----------
AUto	**Setting of Auto Stop time** Note: if a scale is started and becomes stabilized but it is still idle, it will stop automatically according to the set time.		AU-no	No function of Auto Stop
			AU-5	Auto Stop 5 min later
			AU-15	Auto Stop 15 min later
			AU-30	Auto Stop 30 min later
		☆	AU-60	Auto Stop 60 min later
bAUd	**Setting of RS-232 transmission function** Note: Selection of transmission speed		2400	----------
			4800	----------
		☆	9600	----------
PEro	**Range of zero display** Note: It may improve zero draft caused by environment or other interferences.		d 0	No limitation of zero display
			d 1	In case the indication is below zero, the value may be displayed only after at least 2 resolutions are loaded.
		☆	d 2	In case the indication is below zero, the value may be displayed only after at least 3 resolutions are loaded.
			d 3	In case the indication is below zero, the value may be displayed only after at least 4 resolutions are loaded.

			d 4	In case the indication is below zero, the value may be displayed only after at least 5 resolutions are loaded.
			d 5	In case the indication is below zero, the value may be displayed only after at least 6 resolutions are loaded.
FiL	**Anti-vibration function** Note: it may improve the weighing instability caused by environment and other interferences.		FIL 1	The application environment of the scale is excellent.
		☆	FIL 2	The application environment of the scale is good
			FIL 4	The application environment of the scale is adequate
			FIL 8	The application environment of the scale is poor
LiGH	**Backlight mode of display window** Note: there are three backlight modes that may increase effectively the convenience of application.	☆	onoff	Auto backlight
			off	No backlight
			on	Backlight keeps ON
Print	**Setting of printing mode** Note: the mode of signal transmission.	☆	Pr-co	Signals transmit continuously. In case this option is selected, peripheral devices may only be set to “PC”.
			Pr-st	Signals transmit automatically only when the weighing process becomes stabilized. In case this option is selected, all options for peripheral devices may be selected.
PrFU	**Selection of peripheral devices** Note: It may support the general requirement of peripheral devices. The model of built-in printer is also the common commercial mode.	☆	PC	Computers
			SH-24	Common printers
			ZEBRA	Option specially for Zebra printer
			BP-443	Thermosensitive printer

Ⅴ. Weight calibration

5-1 List of calibration weights (Please get the standard weighs ready before calibration pursuant to the stipulated weight)

MODEL	SNUG III-150	SNUG III-300	SNUG III-600	SNUG III-1500	SNUG III-3000
on1	50g	100g	200g	500g	1000g
on2	100g	200g	400g	1000g	2000g
on3	150g	300g	600g	1500g	3000g

5-2 Single-point calibration of weight

	Specification	Display on screen
Procedure 1	Under Stop mode, first hold down button MODE, then press down button ON/OFF once to energize the scale, and then release button MODE.	Count
Procedure 2	Press down button MODE to enter calibration mode.	CAL
Procedure 3	First make sure that nothing is on the scale pan, and then press down button UNIT to enter zero calibration.	Zero
Procedure 4	Perform calibration after on1 is displayed on screen.	On1
Procedure 5	Press down button TARE to select weights; on1 indicates 1/3 of full capacity, on2 indicates 2/3 of that, and on3 indicates full capacity. Place the selected weight on the pan promptly after completing selection.	On1 → On2 → On3

Procedure 6	After the sound “bi” is heard and “PASS” is displayed on screen, the calibration is completed. Remove weights, and press down button MODE and button SMPL sequentially to begin count-down, and then enter the weighing mode.	PASS

5-3 Linear calibration of weight

	Specification	Display on screen
Procedure 1	Under Stop mode, hold down button ZERO and button TARE simultaneously, and then press down button ON OFF once to energize the scale, and then release all pressed buttons.	L-CAL
Procedure 2	After clearing away the scale pan, press down button TARE to enter zero calibration.	On0
Procedure 3	After the sound “bi” is heard, place the weight equal to 1/3 of the full capacity on the pan.	On1
Procedure 4	After the sound “bi” is heard, place the weight equal to 2/3 of the full capacity on the pan.	On2
Procedure 5	After the sound “bi” is heard, place the weight equal to the full capacity on the pan.	On3
Procedure 6	After the sound “bi” is heard and “PASS” is displayed on screen, the calibration is completed. Remove weights and then press down button TARE to return to the weighing mode.	PASS

Ⅵ. Interface of peripheral devices

6-1 RS-232 specification

The standard RS-232 interface is the 9-pin joint located at the rear-right of SNUG III; pin 2 is for signal output, and pin 5 is for grounding, and other pins are in reserve.

BAUD RATE：2400 OR 4800 OR 9600 bps

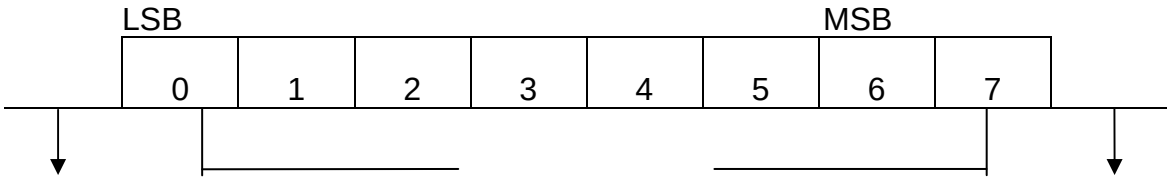
DATA BIT： 8

PARITY BIT：N〔NONE〕

STOP BIT：1

CODE：ASCII

BIT FORMAT：



DATA FORMAT：

N/G/T	.	W	.	:		+/-												LF	CR

SP WEIGHT SP UNIT

N.W：Net weight
G.W：Gross weight
T.W：Tare weight
SP：SPACE

6-2 Printing format of various peripheral devices

PC	SH-24	ZEBRA	BP443
2007-07-10 10:26:22 T.W.: + 0.00g N.W.: + 0.06g G.W.: + 0.06g	2007-07-10 10:30:23 T.W.: + 0.00g N.W.: - 0.25g G.W.: - 0.25g	2007-07-10 10:26:22 T.W.: + 0.00g N.W.: + 0.06g G.W.: + 0.06g	2007-07-10 10:26:22 T.W.: + 0.00g N.W.: + 0.06g G.W.: + 0.06g
2007-07-10 10:26:59 Total:+ 3PCS	2007-07-10 10:31:18 Total:+ 10PCS	2007-07-10 10:26:59 Total:+ 3PCS	2007-07-10 10:26:59 Total:+ 3PCS
2007-07-10 10:28:02 Total:+ 7%	2007-07-10 10:32:09 Total:+ 9%	2007-07-10 10:26:59 Total:+ 3%	2007-07-10 10:26:59 Total:+ 3%

6-3 Specification of USB interface application

For applying USB devices, the cautions below must be followed:

1. This USB interface may be connected only with computers.
2. The computer must be installed first with the necessary driving program that may be downloaded from the website of our company.
3. After the driving program for computer is installed, the communication between this device and the computer acts as serial communication. The serial transmission speed should be set correspondingly.

USB peripheral devices should be used as follows:

1. Connect this electronic scale to a computer with USB line and then start the electronic scale; in case the computer has not been installed with the needed driving program, the computer will show the related information to prompt that a new hardware is found and needs the driving program.
2. After the installation of driving program, perform a test with hyper-terminal of computer to determine whether data is transmitted. The procedure for opening hyper-terminal of computer is as follows: Start — all programs — attachments — communication — hyper-terminal; input the name press down button “Confirm” to confirm the inputted name, select COM3 or COM4, and then press down button “Confirm” once again; select the corresponding serial transmission speed (select 9600 if the scale is set as 9600), confirm it, and then communication can be started.
3. USB communication is like RS-232 communication; if users have their own receiving terminals of computer, they may use their own terminals for the communication.

Users may select one out of USB interface and RS-232 interface based on their requirement.

Ⅶ. Miscellanies

7-1 Specification of trouble information

Error information	Causes	Solutions
Err	1. Transportation protecting screw is not loosed 2. Starting zero exceeds +/-30% of full capacity. 3. LOAD CELL trouble	1. Loose transportation protecting screw. 2. Check whether there is a too heavy article on the pan and whether other interference exists, remove the article form the pan. 3. Perform the linear calibration of weight once again. 4. Replace LOAD CELL or contact Service Dept.
Err4	EEPROM Checksum error	Re-start the scale; in case this error information appears once again, weld EEPROM once again or contact Service Dept.
Err5	The weight of an article exceeds the maximal capacity +9e	Remove the over-heavy article from the pan promptly, and avoid the similar error from then to avoid the possible damage.
Err6	The weight for calibration is wrong.	Please load the corresponding calibration weight pursuant to the list of calibration weights.
Battery symbol	Batteries are short of electricity	Replace it with new one or use AC power supply (transformer).

7-2 List of unit conversion

1	ct	[MET.CARAT]	=	0.1999694 g
1	lb	[AVORIRDUPOIS POUND]	=	453.59237 g
1	oz	[AVORIRDUPOIS OUNCE]	=	28.349523125 g
1	dr	[AVOIRDUPOIS DRAM]	=	1.7718451 g
1	GN	[GRAIN](U.K)	=	0.06479891 g
1	ozt	[TROY OUNCE]	=	31.1034768 g
1	dwt	[PENNY WEIGHT]	=	1.55517384 g
1	MM	[MOMME] (JPN)	=	3.749996 g
1	tl.j	[HONG KONG JEWELRY TAEL]	=	37.4290018 g
1	tl.T	[TAEL](TWN)	=	37.49995 g
1	tl.H	[HONG KONG TAEL]	=	37.799375 g
1	t	[TOLA] (INDIA)	=	11.6638038 g

Warranty of product

User's name:_____

Model of product:_____

Serial No. of product:_____

Purchase date: _____

We appreciate your purchasing our products, and we have the honor to inform you that you may enjoy one-year's free service from the purchase date by showing this warranty of product.

* In case the trouble is due to one of the following causes, you will be charged the reasonable fee for material cost or service even if the scale is still in the warranty period, and we beg your pardon for this.

1. You fail to show the warranty of products, or the writing of the warranty is too illegible to be discerned.
2. The damage of scale is due to the abnormal or incorrect application.
3. The trouble of scale is due to the modification or maintenance made of your own accord.
4. The damage of scale is due to natural catastrophes.
5. The damage of scale is due to such factors as pest insect, pest rodents or other adverse environmental factors.

* After the expiration of the warranty period, you will be charged the reasonable fee for our after-sale service.

* The warranty without being stamped by the dealer or being filled with purchase date will be invalid.