

EJ-123 / EJ-303

EJ-1202 / EJ-3002

Compact Precision Balance

MAINTENANCE MANUAL

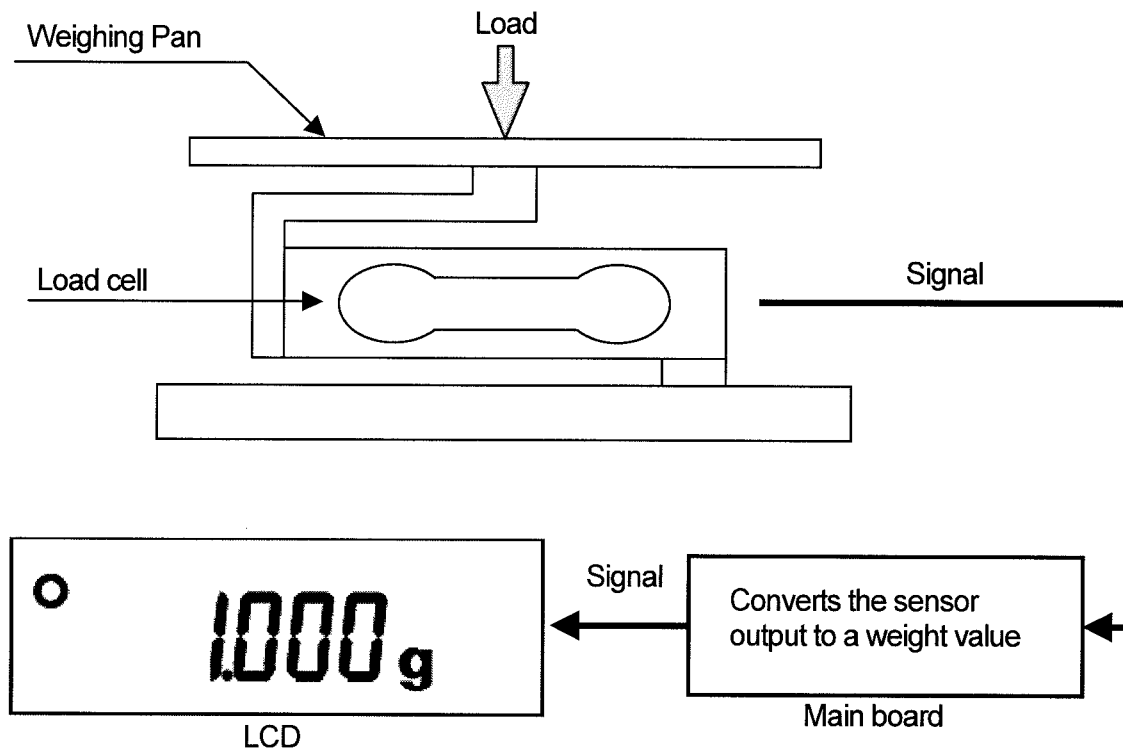
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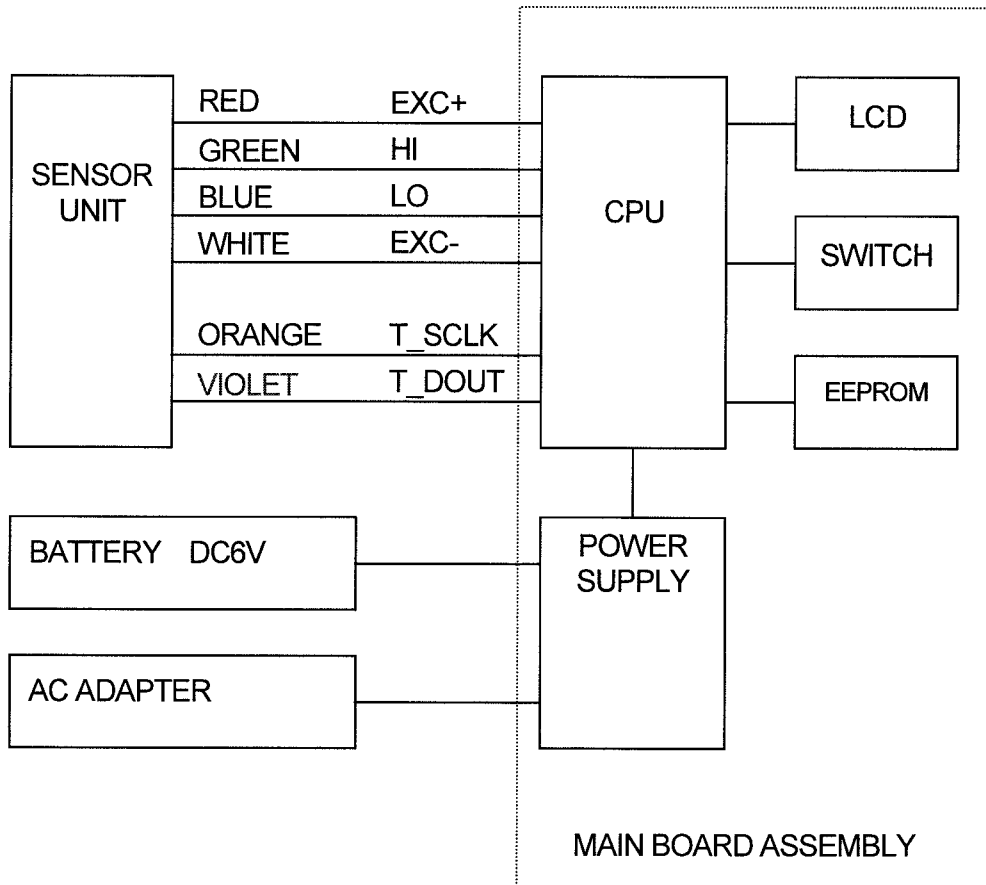
1. Principle of Operation

The EJ-123/ EJ-303/ EJ-1202/ EJ-3002 are load cell type electronic balances. The following diagram shows their principle of operation. The load cell senses a load applied onto the weighing pan and generates analog signals. The A/D converter on the main board converts these analog signals to digital signals, which are then read by a microprocessor and displayed as a weighing value on the liquid crystal display.



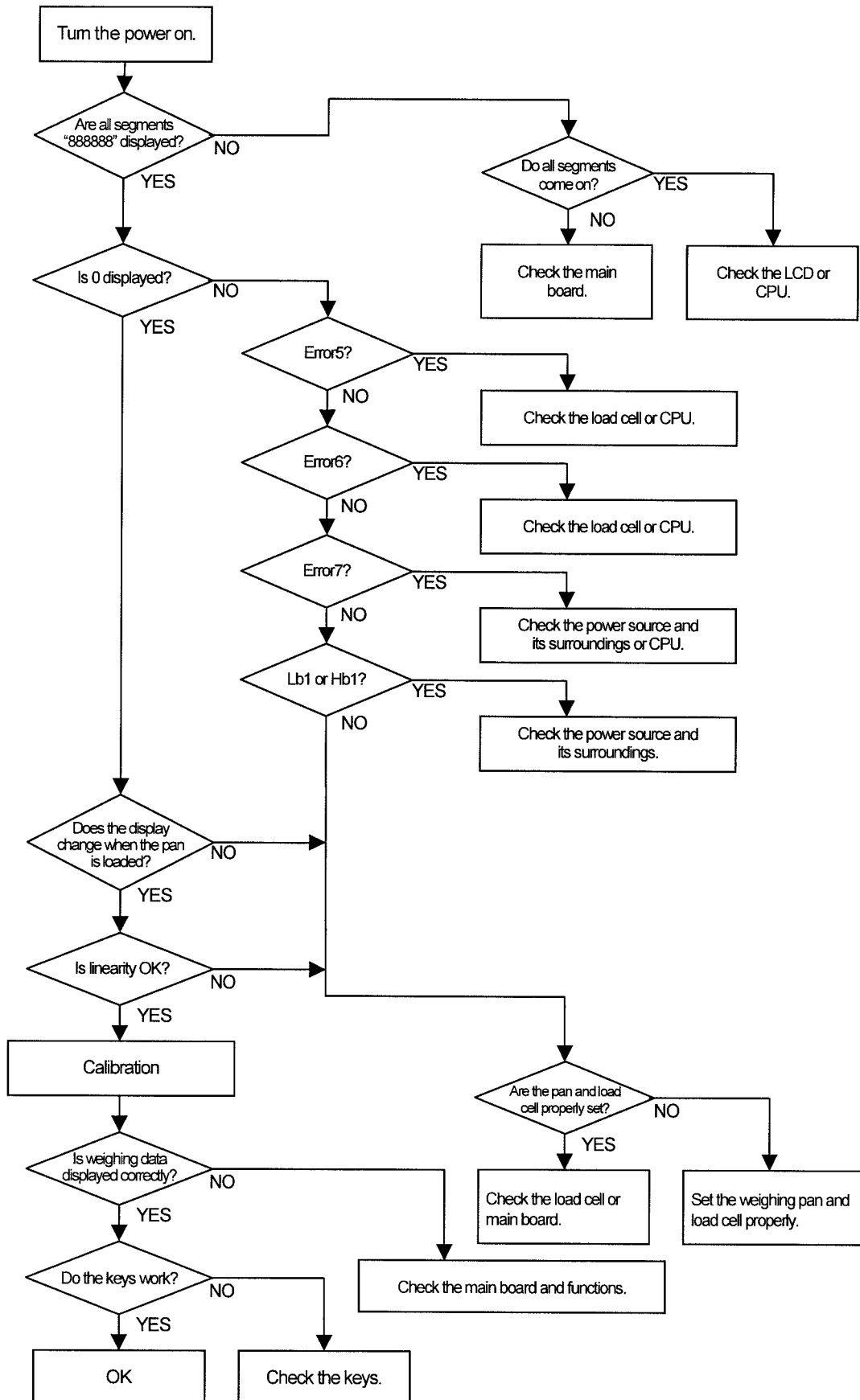


2. Block Diagram





3. Troubleshooting





4. Replacing Parts



4.1 Replacing the Main Boards

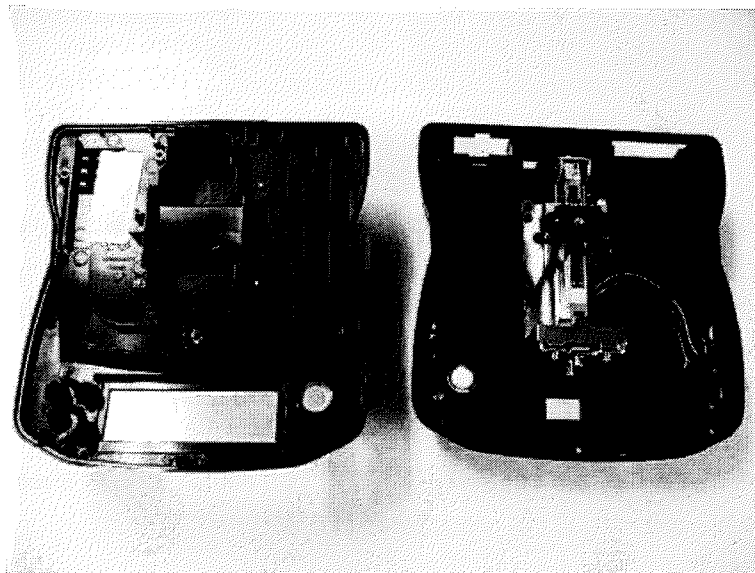
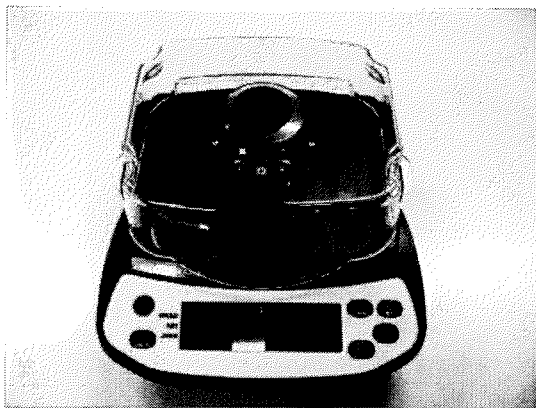
Replace only the main board (1PZ6269 or 1PZ6269A) and calibrate it while referring to the procedures in 5.2.1.



4.2 Replacing the Sensor Unit

Prepare a sensor unit for maintenance as shown below.

<Sensor unit for maintenance (This example shows EJ-123 / EJ-303)>



Use a maintenance sensor unit for the EJ-303/ EJ-3002 class, in principle.
(Only when the current model is EJ-123/ EJ-1202, a sensor unit for the EJ-123/ EJ-1202 class can be used.)

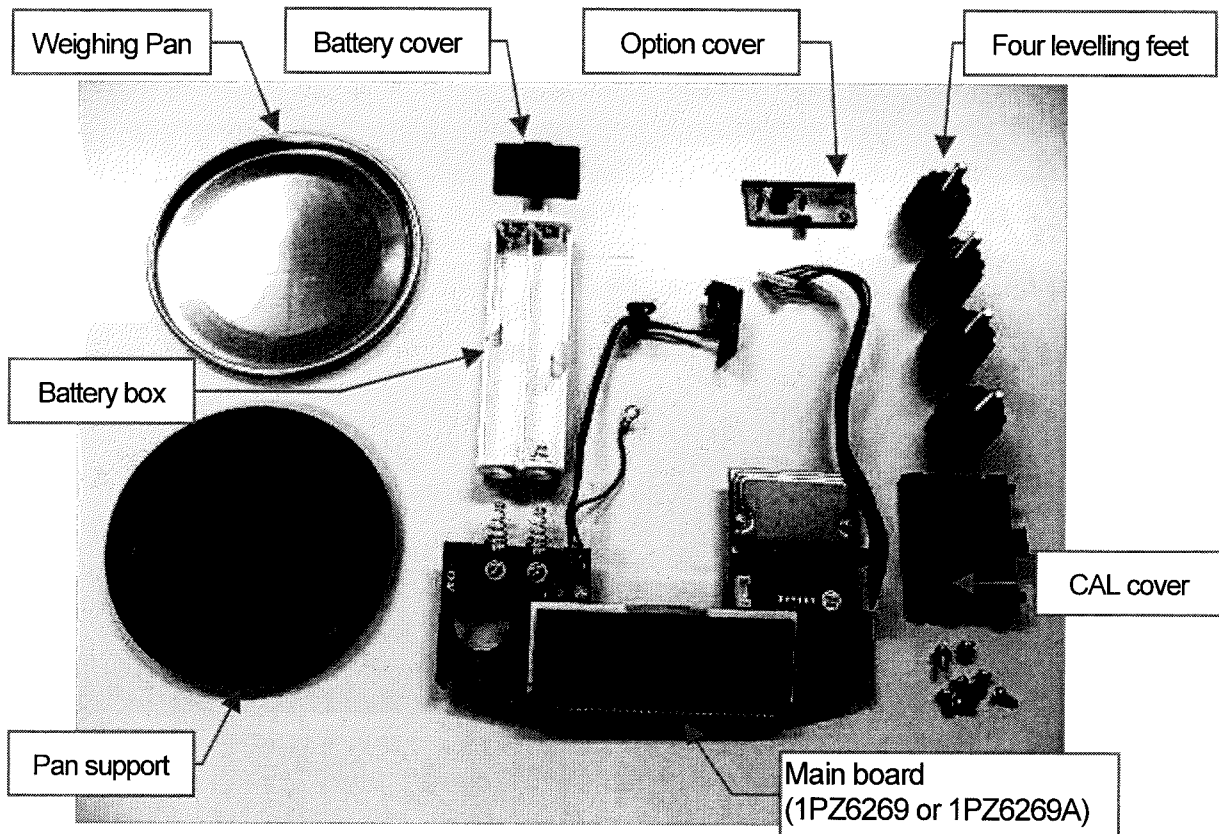
Examine the parameter sheet attached to the upper section of the option slot of the sensor unit to check the model class of the sensor unit "MD:EJ***."

* "MD:EJ303"...EJ-303 class, "MD:EJ123"...EJ-123 class

* "MD:EJ3002"...EJ-3002 class, "MD:EJ1202"...EJ-1202 class

Replace the sensor unit in accordance with the procedures shown below.

Step 1. Remove the main board (1PZ6269 or 1PZ6269A), battery box, four levelling feet, three types of covers (CAL cover, battery cover, and option cover), pan support, and pan from the balance with the faulty sensor.



Step 2. Install the parts that were removed in Step 1 onto the maintenance sensor unit.

Step 3. If the MODEL LABEL of the maintenance sensor unit is different from that of the balance with the faulty sensor, attach a new MODEL LABEL with a description which is the same as that on the balance with the faulty sensor.

Step 4. The serial number becomes the new one indicated on the maintenance sensor unit.

* If the old serial number is continuously used, remove the old SERIAL LABEL and attach a new one. Rewrite the number ("SN.*****") on the parameter sheet manually.

Step 5. Calibrate it while referring to the procedures in 5.2.2.



4.3 Replacing the Breeze Break (Only for EJ-123 / EJ-303)

Pay attention to the following items when replacing the breeze break.

- When the breeze break that was removed from the main unit is used
→ An antistatic agent has been applied to it, so just replace it.

- When an option of the EJ series is used (EJ-11 breeze break)
→ An antistatic agent has not been applied to it, so apply an antistatic agent to the entire breeze break before replacement.

For the procedures for replacing the breeze break, refer to “6.3 Assembling the breeze break.”



5. Calibration

If components such as the sensor unit or the main board have been replaced (the main unit has been disassembled and reassembled), select the model type, set the gravity acceleration value, input coefficients, and perform calibration using a weight in check mode.



5.1 Work Environment

Perform calibration using a weight and performance inspection in an environment in which the unit is not subject to much noise, wind, or vibrations and the temperature and humidity do not change much. Leave the main unit in this environment for at least four hours to allow it to settle in the environment, and supply power for at least 30 minutes before starting the calibration and performance inspection.



5.2 Calibration Procedures

5.2.1 When the main board has been replaced

- A. Set the balance to check mode.
- B. Initialize the balance. * This is usually not required.
(Perform only after the EEPROM was replaced or a board that has not been initialized is used.)
- C. Enter coefficient data.
(Enter the coefficients specified on the parameter sheet, which can be found above the option slot of the main unit.)
- D. Perform factory function setting.
- E. Enter the serial number.
- F. Set the gravity acceleration value and perform calibration using a weight.
- G. Perform performance inspection in normal display (unit: g).

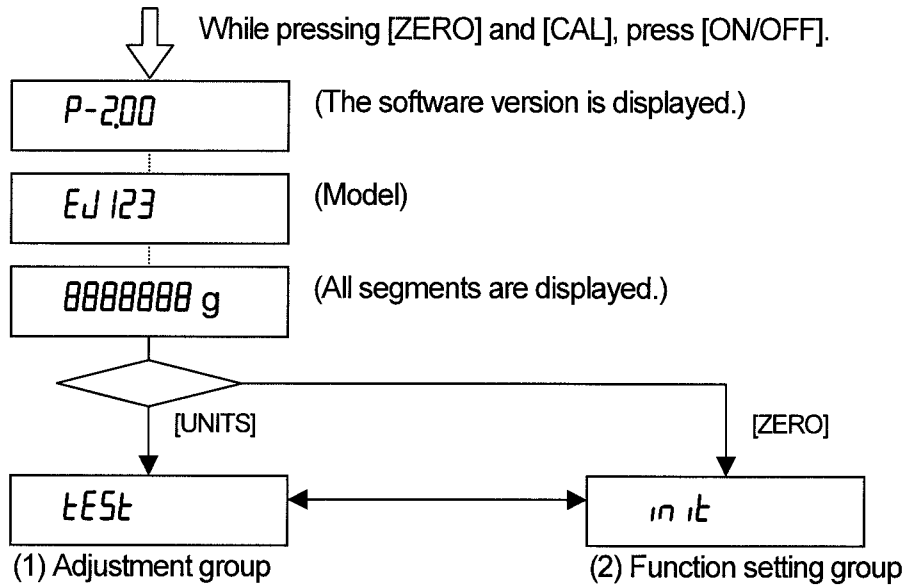
5.2.2 When the sensor unit has been replaced

- A. Set the balance to the check mode.
- C. Enter coefficient data.
(Enter the coefficients specified on the parameter sheet, which can be found above the option slot of the sensor unit.)
- E. Enter the serial number.
- F. Set the gravity acceleration value and perform calibration using a weight.
- G. Perform performance inspection in normal display (unit: g).

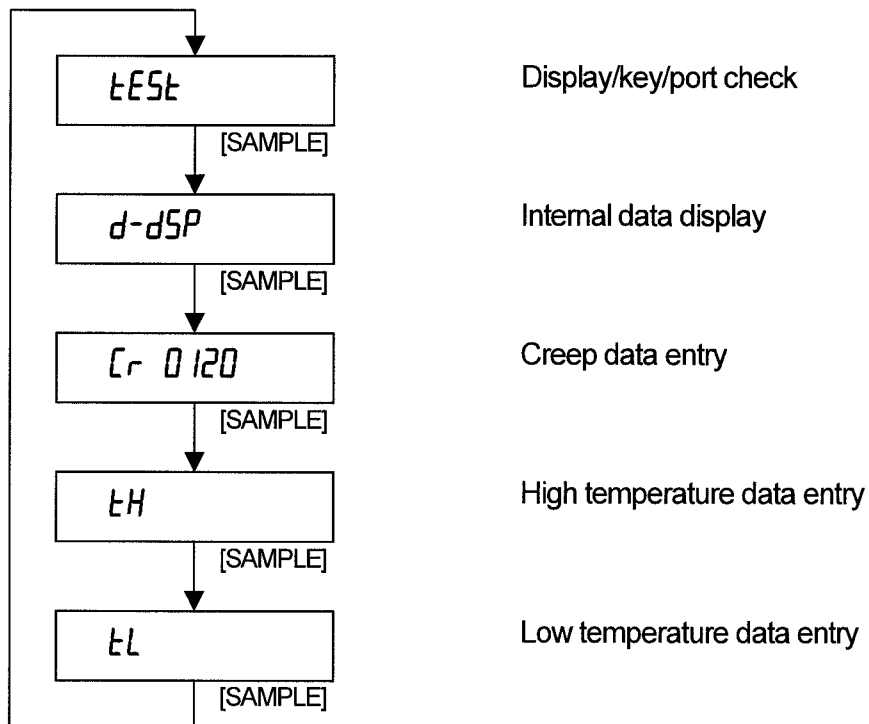


5.3 Operation Procedures

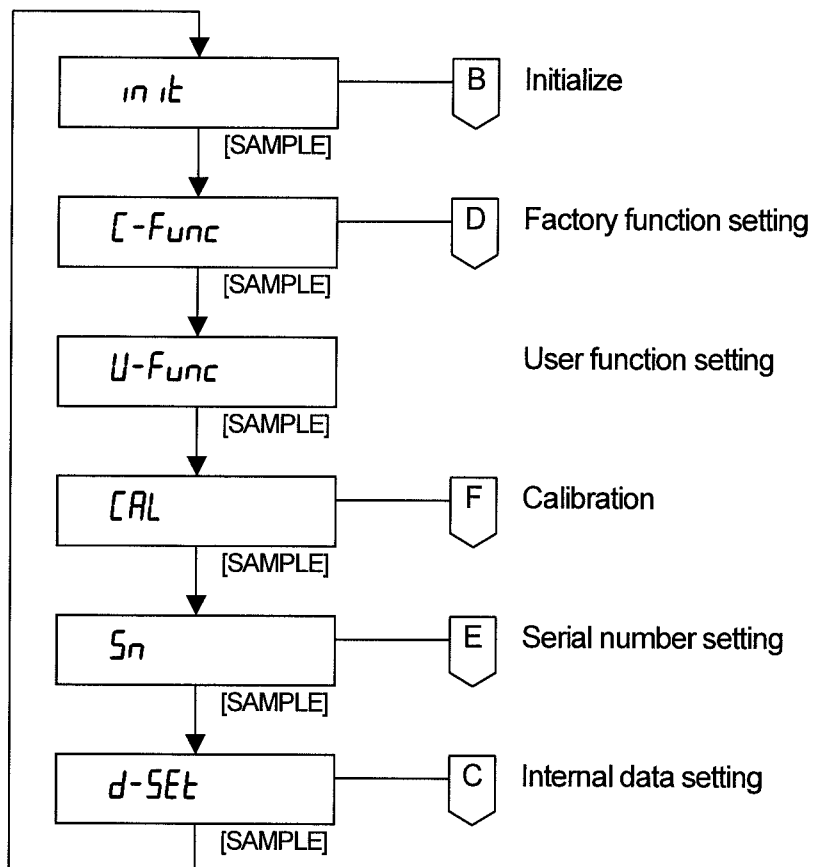
A. Check mode



(1) Adjustment group (* Press [ZERO] to go to the function setting group.)

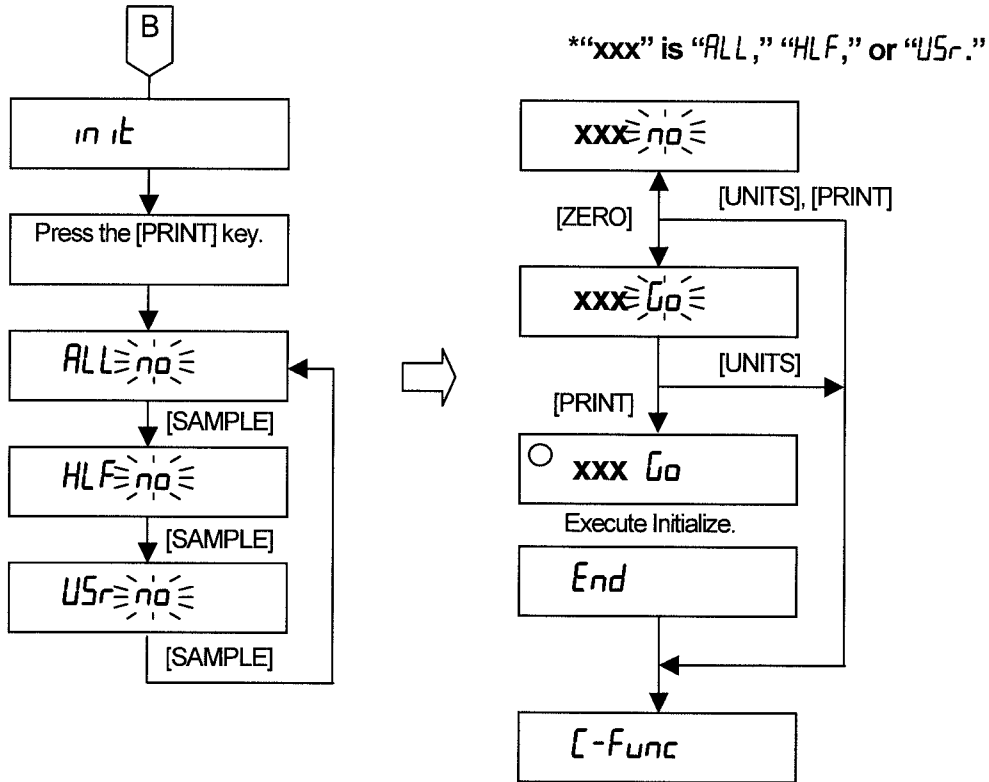


(2) Function setting group (* Press [UNITS] to go to the adjustment group.)



B. Initialize

- Step 1. When "init" is displayed, press the [PRINT] key.
 "ALL no" is displayed with "no" blinking.
- Step 2. Press the [ZERO] key to display "xxx Go" with "Go" blinking.
- Step 3. Press the [PRINT] key to execute All initialize.
- Step 4. "End" is displayed and then "[Func]" is displayed, which completes the operation.



<Supplementation>

- All initialize (ALL Go) * Clear all data in the EEPROM.
 Performing All initialize clears the data shown below.
 - Factory adjustment data (e.g., load cell parameters and serial number)
 - Factory functions and calibration data
 - User functions and user setting
- Half initialize (HLF Go)
 Performing Half initialize clears the data shown below.
 - Factory functions and calibration data
 - User functions and user setting
- User initialize (USR Go)
 Performing User initialize clears the data shown below.
 - User functions and user setting

C. Coefficient data entry

Step 1. When “d-SET” is displayed, press the [PRINT] key. Coefficient setting items are displayed.

Step 2. Press the [SAMPLE] key to select an item to set.

Step 3. Press the [PRINT] key to go to setting value change. The preset value is displayed.

Step 4. Change the value.

- The digit to be set starts blinking.
- Press the [ZERO] key to increase the value.
- Press the [SAMPLE] key to shift the digit to be set.
- Press the [ZERO] key and hold it down to change \pm .

Step 5. Press the [PRINT] key to store the coefficient value. After “End” is displayed, go to the next item.

Step 6. Repeat Steps 2 to 5 to complete the setting of all items.

Step 7. After completing the setting of all items, press the [UNITS] key. “init” is displayed, which completes the operation.

<Supplementation>

Set the 17 items (H0, HF, Ht, L0, LH, Lt, rt, cr, ck1, ct1, ck2, ct2, ck3, ct3, (1), (2), and (3)) shown in the figure below.

* Set (1) to L or A under the “LH-cH” (or “LH-cl”) item.

Step 1. When “LH-cH” is displayed, press the [PRINT] key.

Step 2. Press the [ZERO] key and hold it down to change the letter displayed at the upper section of the display from L to A or from A to L. When the value of (1) is 0, set it to L; when it is 1, set it to A.

Step 3. Press the [PRINT] key to store the setting value.

* Set the value (2) under the “LH-cH” item.

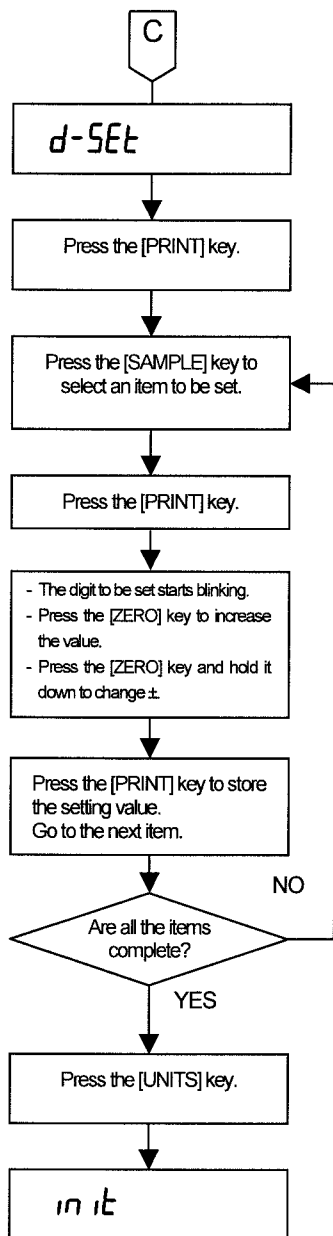
* Set the value (3) under the “LH-cl” item.

● Example of a parameter sheet

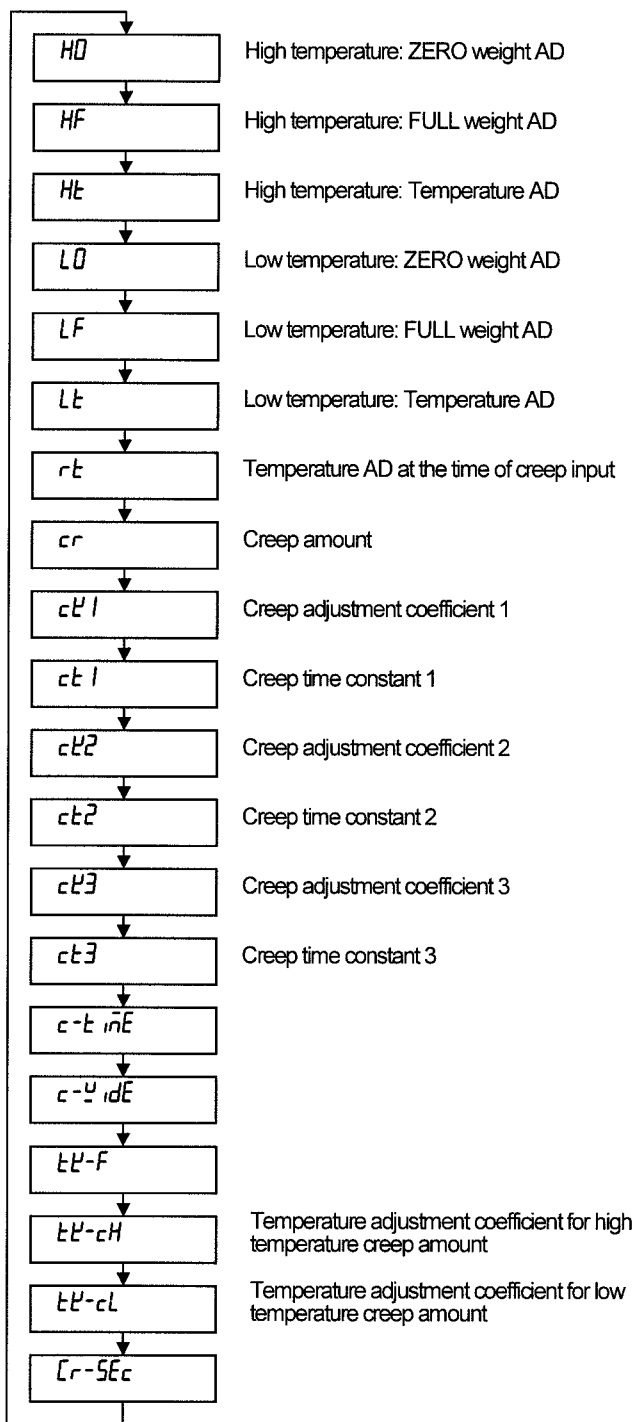
A&D Company Co., LTD Ver:1.1.0
 +00172129+00663585+00031518, PD:B12345
 +00171257+00660190+00046019, SN:123456789
 +00036367-0170, MD:EJ303
 +0050+4000+0020+0050+0005+0020, 1+0500+0300

● Coefficients corresponding to the values in the parameter sheet

A&D Company Co., LTD Ver:1.1.0
 H0 HF Ht , PD:B12345
 L0 LF Lt , SN:123456789
 rt cr , MD:EJ303
 ck1 ct1 ck2 ct2 ck3 ct3 , (1) (2) (3)

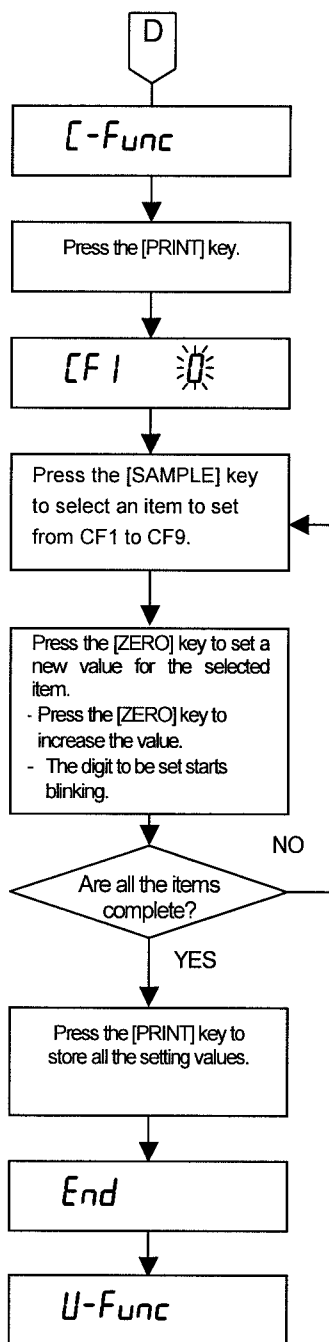


Each time [SAMPLE] is pressed, the item displayed changes in the order shown below.



D. Factory function setting

- Step 1. When “ \overline{L} -Func” is displayed, press the [PRINT] key.
The setting “ $\overline{CF} \ 1 \ 0$ ” is displayed. (The preset value starts blinking.)
- Step 2. Press the [SAMPLE] key to select an item to set from CF1 to CF9.
- Step 3. Press the [ZERO] key to set a new value for the selected item.
- Step 4. Repeat Steps 2 and 3 to change other settings, if necessary.
- Step 5. After setting all the items (CF1 to CF9), press the [PRINT] key to store all the setting values.
- Step 6. “End” is displayed and then “ \overline{U} -Func” is displayed, which completes the operation.



Factory function list (Ver. P-2.00 or later)

Series		
CF1	0	EJ1mg Series (EJ123/303)
	1	EJ10mg Series (EJ1202/3002)
Model		
CF2	0	EJ123/1202
	1	EJ203/2002 * Not used
	2	EJ303/3002
Unit 1		
CF3	0	Metric verification (g, (newton), (DS))
	1	Metric (g, pcs, %, (newton), (DS))
	2	Metric + ct,mom (g, pcs, %,ct,mom, (newton), (DS))
	3	Metric + newton (g, pcs, %, (newton), (DS))
	4	Jewelry (g, pcs, %, ozt, ct,mom, dwt, (newton), (DS))
	5	Metric + ct (g, pcs, %, ct, (newton), (DS))
	6	Non-metric (g, pcs, %, oz, lb,ozt, ct,mom, dwt, GN, (newton), (DS))
	7	Non-metric+ newton (g, pcs, %, oz, lb,ozt, ct, dwt, GN, (newton), (DS))
	8	Tola (g, pcs, %, oz, lb,ozt, ct,mom, dwt, GN,tola, (newton), (DS))
	9	Tael (g, pcs, %, oz, lb,ozt, ct,mom, dwt, GN,tael, (newton), (DS))
A	All (g, pcs, %, oz, lb,ozt, ct,mom, dwt, GN, tola,tael, (newton), (DS))	
Power on zero range/method		
CF4	0	±10% / balance specifications
	1	±50% / balance specifications
	2	±10% / counting scale specifications
	3	±50% / counting scale specifications
Zero tracking width		
CF5	0	±0.5 / second
	1	±0.75 / second
	2	±1 / second
Not used		
CF6	0	Not used
Calibration		
CF7	0	Prohibited
	1	Allowed
Not used		
CF8	0	Not used
Unit 2		
CF9	0	Without newton,DS , teal select Hongkong (General) teal
	1	Without newton,DS , teal select Hongkong (Jewel) teal
	2	Without newton,DS , teal select Taiwan teal
	3	newton,DS , teal select Hongkong (General) teal
	4	newton,DS , teal select Hongkong (Jewel) teal
	5	newton,DS , teal select Taiwan teal

Factory function list (Ver. P-1.13 or earlier)

Not used		
CF1	<u>0</u>	Not used
Model		
CF2	0	EJ123 (120 g × 0.001 g)
	1	EJ203 (210 g × 0.001 g) * Not used
	<u>2</u>	EJ303 (310 g × 0.001 g)
Unit 1		
CF3	0	Metric verification (g, (DS))
	1	Metric verification + newton (g, newton, (DS))
	2	Metric (g, pcs, %, (DS))
	3	Metric + newton (g, pcs, %, newton, (DS))
	4	Metric + ct (g, pcs, %, ct, (DS))
	5	Metric + newton + ct (g, pcs, %, ct, newton, (DS))
	6	Jewelry (g, pcs, %, ozt, ct, dwt, (DS))
	7	Jewelry + newton (g, pcs, %, ozt, ct, dwt, newton, (DS))
	8	Non-metric (g, pcs, %, oz, ozt, ct, dwt, GN, (DS))
9	Non-metric + newton (g, pcs, %, oz, ozt, ct, dwt, GN, newton, (DS))	
Power on zero range/method		
CF4	0	±10% / balance specifications
	1	±50% / balance specifications
	2	±10% / counting scale specifications
	3	±50% / counting scale specifications
Zero tracking width		
CF5	<u>0</u>	±0.5 / second
	1	±0.75 / second
	2	±1 / second
Not used		
CF6	<u>0</u>	Not used
Calibration		
CF7	0	Prohibited
	<u>1</u>	Allowed
Not used		
CF8	<u>0</u>	Not used
Unit 2		
CF9	<u>0</u>	Without DS
	1	With DS

E. Serial number entry

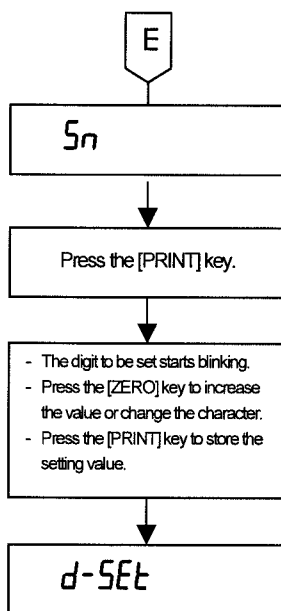
Enter the 9-digit serial number specified on the serial label on the side of the main unit or on the parameter sheet (SN:*****).

Step 1. When “Sn” is displayed, press the [PRINT] key. The currently set serial number is displayed.

Step 2. Change the serial number.

- The digit to be set starts blinking.
- Press the [ZERO] key to increase the value or change the character.
- Press the [SAMPLE] key to shift the digit to be set.

Step 3. Press the [PRINT] key to store the serial number. “End” is displayed and then “d-SEt” is displayed, which completes the operation.



Settable numbers and characters

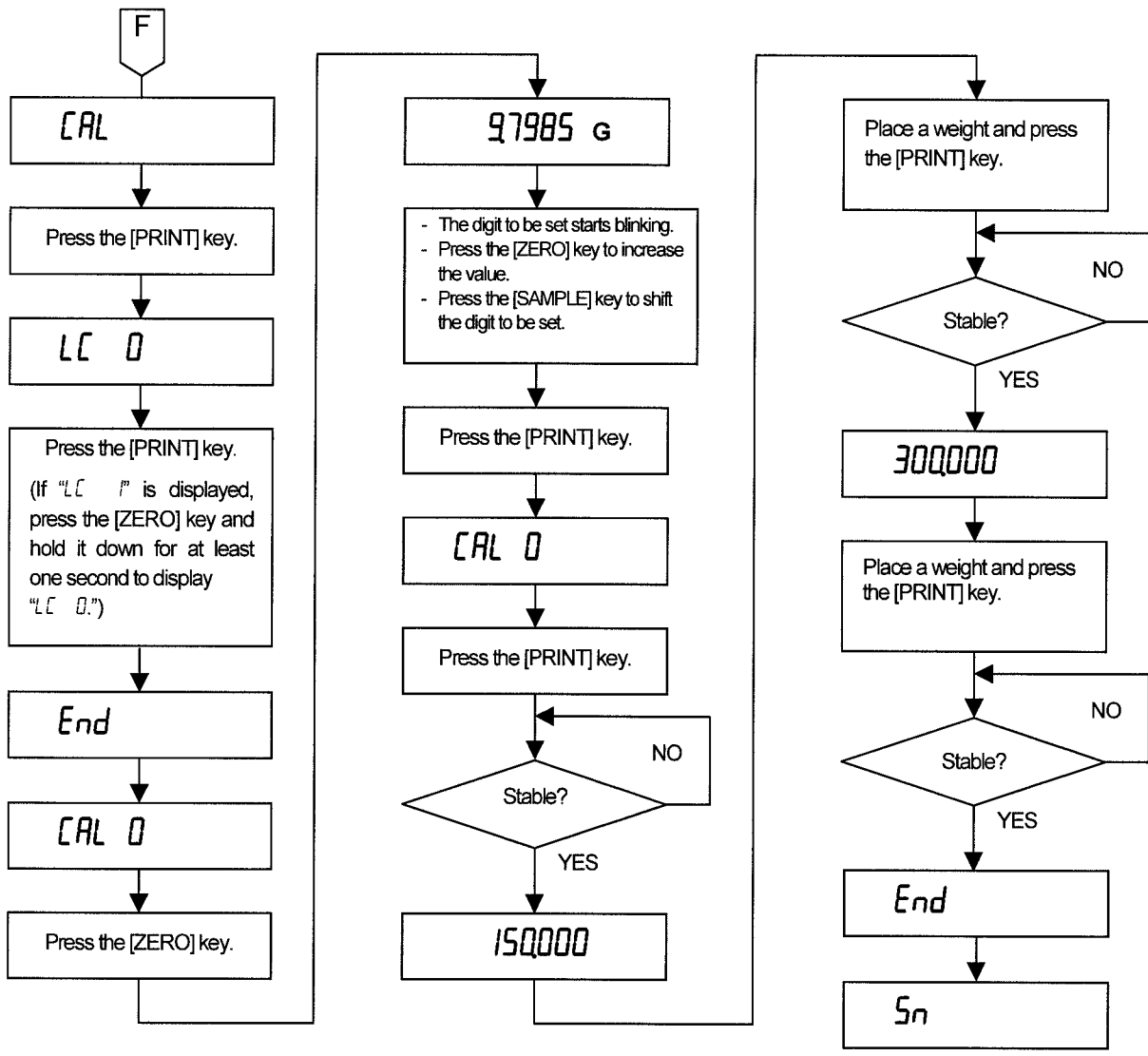
0123456789- _ABCDEFGHIJKLMN~~OP~~QRSTUVWXYZ

Each time the [ZERO] key is pressed, the displayed character changes in the order shown above.

The underbar indicates a blank space.

F. Setting the gravity acceleration value and performing calibration using a weight

- Step 1. When "CAL" is displayed, press the [PRINT] key to display "LC 0" (LC selection).
(If "LC 1" is displayed, press the [ZERO] key and hold it down to display "LC 0.")
- Step 2. Make sure that "LC 0" is displayed and then press the [PRINT] key. "End" is displayed and then "CAL 0" is displayed.
- Step 3. Press the [ZERO] key to go to the gravity acceleration setting.
- Step 4. Change the gravity acceleration value.
- The digit to be set starts blinking.
 - Press the [ZERO] key to increase the value.
 - Press the [SAMPLE] key to shift the digit to be set.
- Step 5. Press the [PRINT] key to store the gravity acceleration value. The display shows "End" and then returns to "CAL 0."
- Step 6. Make sure that there is nothing on the pan and press the [PRINT] key. The balance obtains the CAL0 value if it is stable. Then it displays half the rated capacity value.
(If a weight of half the rated capacity is not available, pressing the [SAMPLE] key can skip Step 7. However, this may compromise linearity, so usually go to Step 7.)
- Step 7. Place a weight of half the rated capacity and press the [PRINT] key. The balance then displays the rated capacity value if it is stable.
- Step 8. Place a weight of the rated capacity and press the [PRINT] key. The balance displays "End" and then "Sn" if it is stable, which completes the operation.



G. Inspection in normal display (unit: g)

* Pay attention to make the environment stable because noise, vibration, wind, and changes in the temperature and humidity significantly affect the balance during inspection.

In addition, idle the balance for at least 30 minutes before starting the adjustment.

Step 1. Press the [ON/OFF] key to turn the power off once.

Step 2. Press the [ON/OFF] key to turn the power on. Idle the balance for at least 30 minutes. Check the items listed below in normal display (unit: g). Apply a pre-load three times before starting the check. (Place and remove a weight of the rated capacity three times.)

Step 3. Check the instrumental error and repeatability.

Place and remove a weight of the rated capacity three times to check the instrumental error and repeatability.

• Instrumental error

EJ123/1202	±5 dig
EJ303/3002	±5 dig

• Repeatability: Maximum value - minimum value

EJ123/1202	±4 dig
EJ303/3002	±4 dig

Step 4. Check creep.

With nothing on the pan, wait for at least one minute.

Place a weight of the rated capacity. After 30 seconds, check the creep and zero restoration.

EJ123/1202	±8 dig
EJ303/3002	±8 dig

Step 5. Check the linearity.

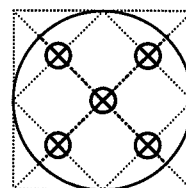
Check the linearity when nothing is placed on the pan and a weight of half the rated capacity and a weight of the rated capacity are placed.

EJ123/1202	±5 dig
EJ303/3002	±5 dig

Step 6. Check the corner-load error.

Use a weight that is one-third (1/3) of the rated capacity. First, record the value when the weight is placed at the center of the weighing pan. Next, move the weight in turns to each of the four corners (at a distance of 1/4d from the center) and record the values. (d indicates the diagonal distance or diameter.)

EJ123	40 g loaded	±6 dig
EJ303	100 g loaded	±6 dig
EJ1202	400 g loaded	±6 dig
EJ3002	1k g loaded	±6 dig



* Weight of the rated capacity...EJ123: 120 g, EJ303: 300 g, EJ1202: 1200 g, EJ3002: 3k g

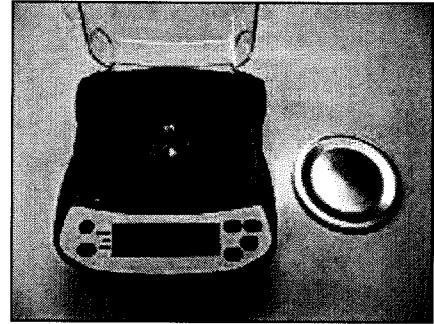


6. Disassembling & Assembling

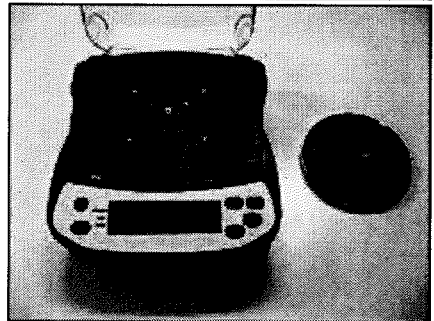


6.1 Disassembling

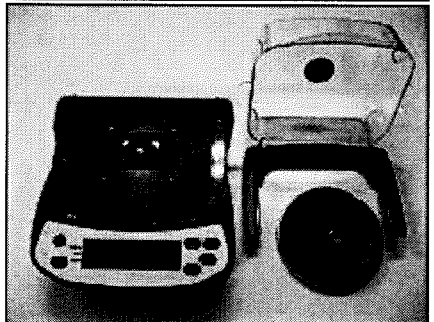
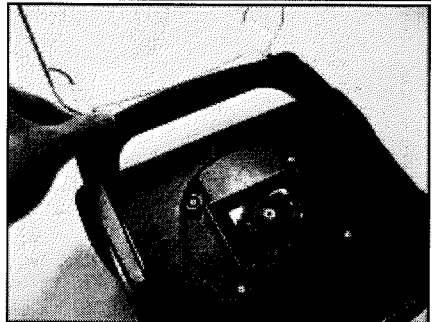
- Step 1. Open the breeze break and remove the weighing pan.
* Only EJ-123 / EJ-303 is equipped with the breeze break



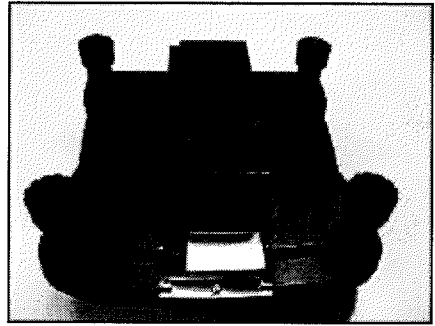
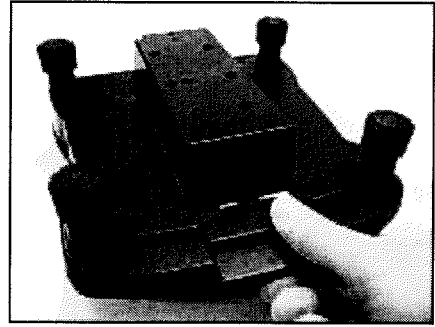
- Step 2. Remove the screw that secures the pan support and remove the pan support.



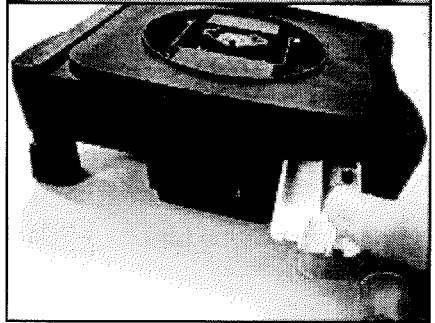
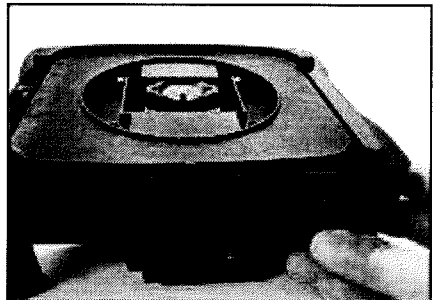
- Step 3. Slide the frame that secures the breeze break and remove the breeze break.



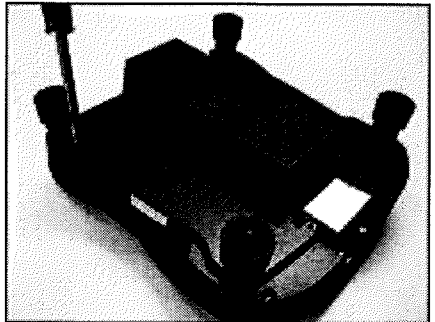
Step 4. Remove the CAL cover.



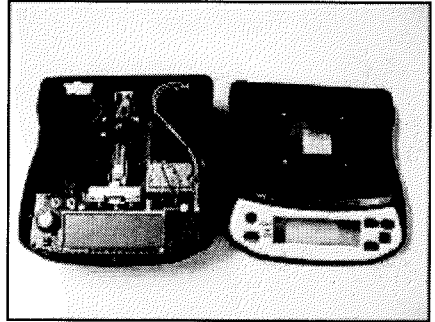
Step 5. Remove the battery cover and then remove the battery case.



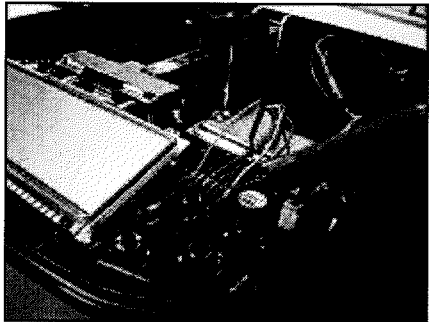
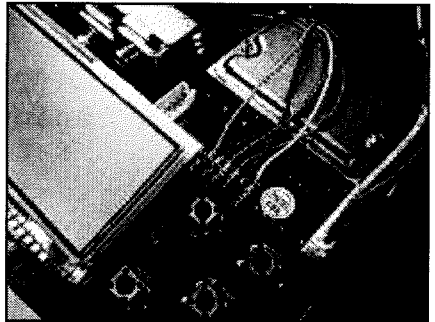
Step 6. Turn the main unit upside down. Remove the five screws from the lower case.



Step 7. Remove the upper case.

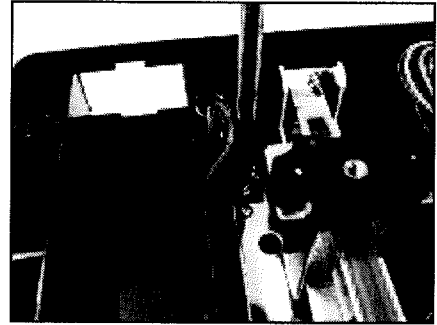


Step 8. Use a soldering iron to remove the load cell cables that are connected to the main board.

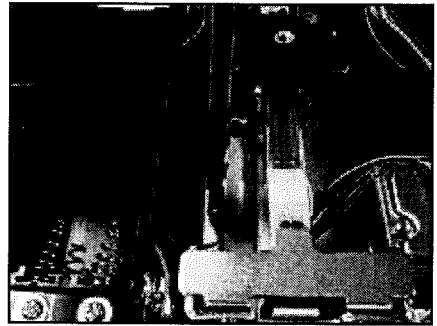


Step 9. Remove the screws shown in the photographs on the right.

(1) DC jack board

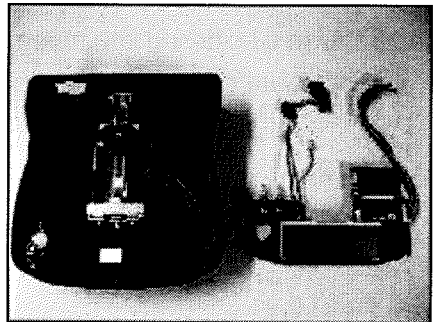


(2) Earth wire

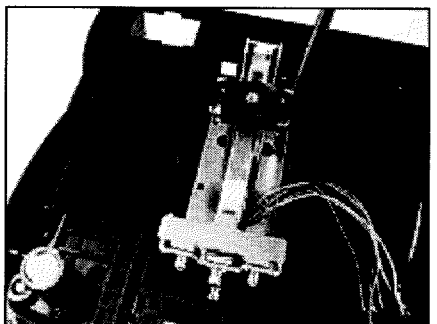
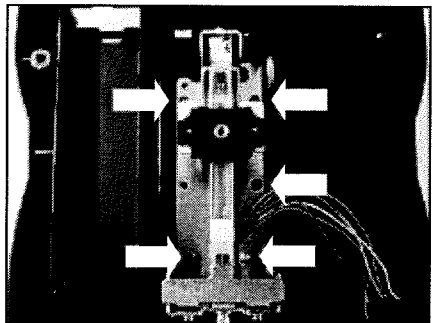


Step 10. Remove the main board.

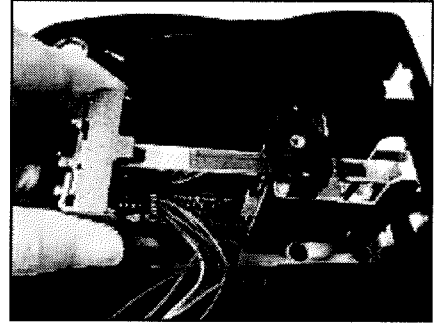
* For EJ-1202 / EJ-3002, remove the two screws that secure the main board.



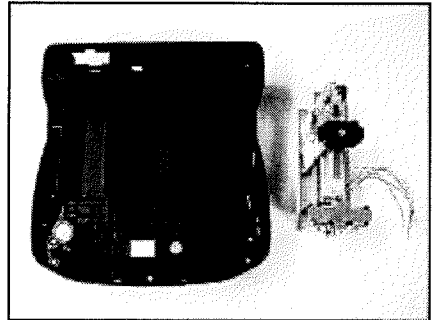
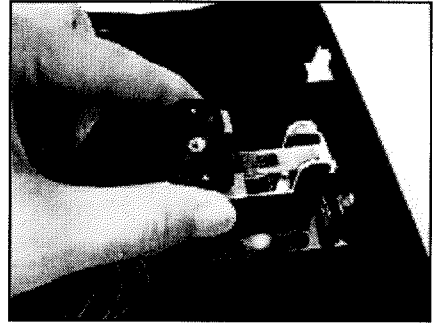
Step 11. Remove the five screws that secure the load cell support.



Step 12. Remove the load cell unit from the main unit.



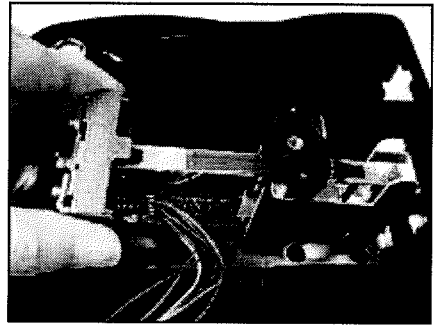
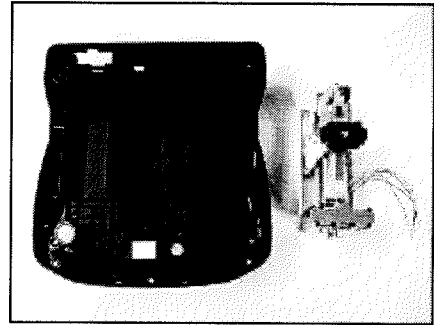
Do not pull up the load angle section.
Doing so may damage the load cell.



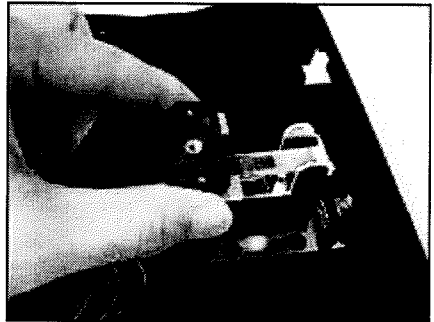


6.2 Assembling

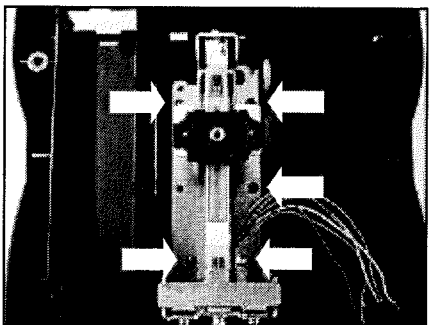
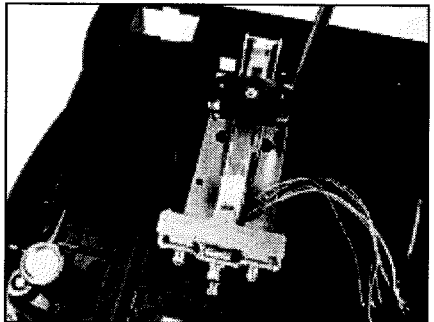
Step 1. Place the load cell unit in the lower case.



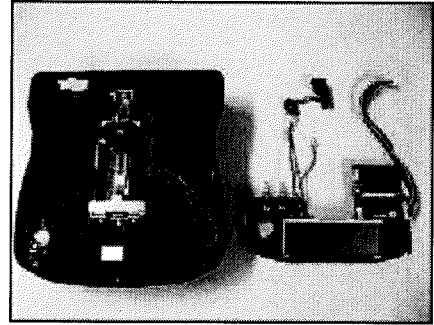
Do not hold the load angle section. Doing so may damage the load cell.



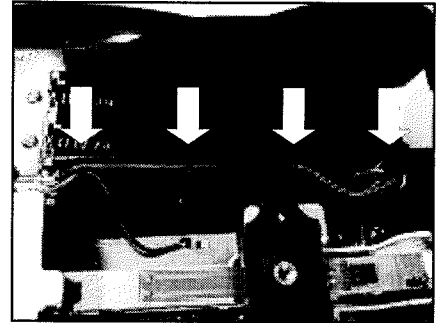
Step 2. Tighten the five screws to secure the load cell support.



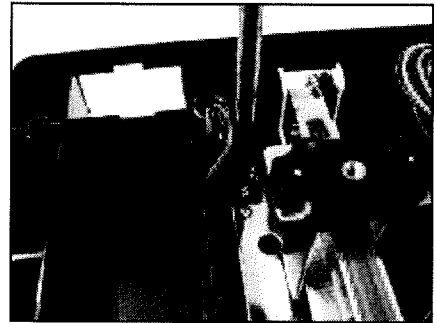
- Step 3. Put the main board in the lower case.
* For EJ-1202 / EJ-3002, tighten the two screws to secure the main board.



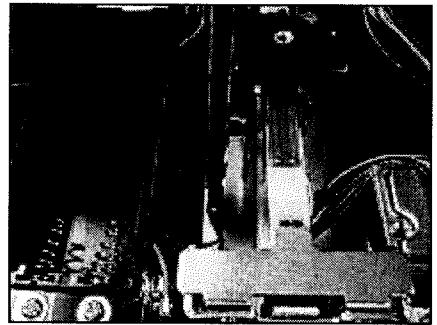
- Step 4. Place the earth wire (green) and power cables (red and black) between the hooks. Fix the core wire to the hooks (as shown in the photograph).



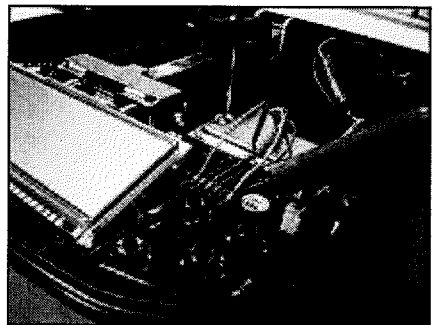
- Step 5. Use screws to secure the parts shown in the photographs.
(1) DC jack board

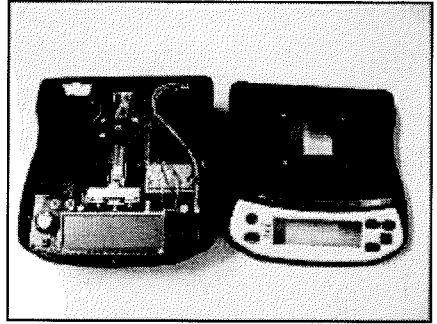
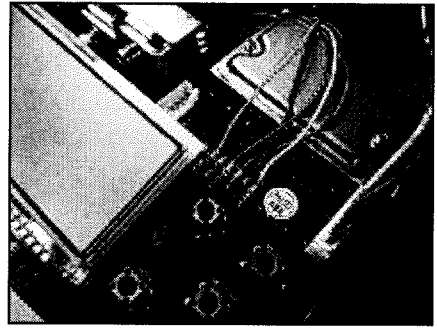


- (2) Earth wire

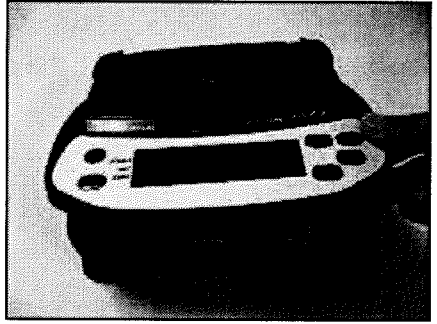


- Step 6. Use a soldering iron to connect the load cell cables to the main board.

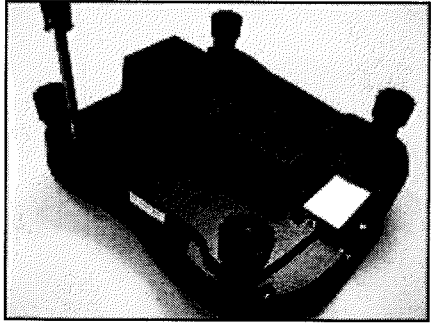




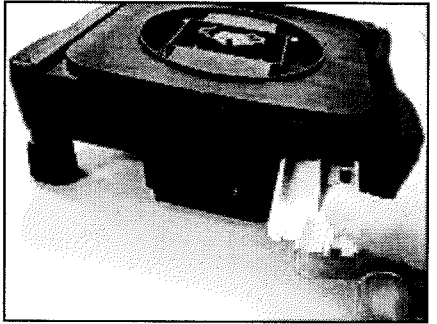
Step 7. Attach the upper case as it was in the original state.



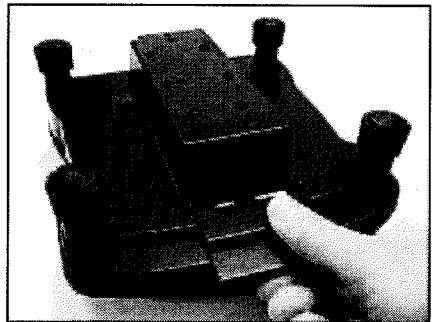
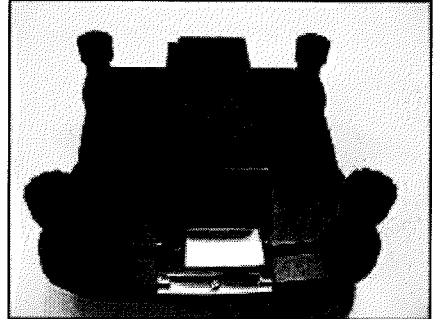
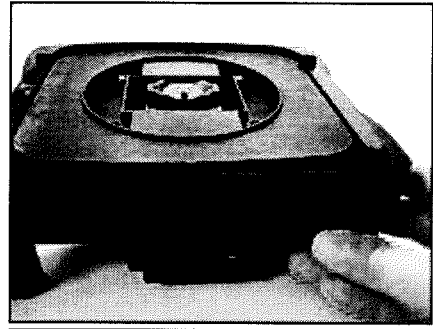
Step 8. Turn the main unit upside down and tighten the five screws.



Step 9. Put the battery case in the main unit. Attach the battery cover.

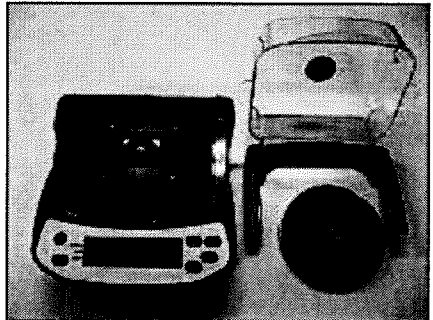


Step 10. Attach the CAL cover.

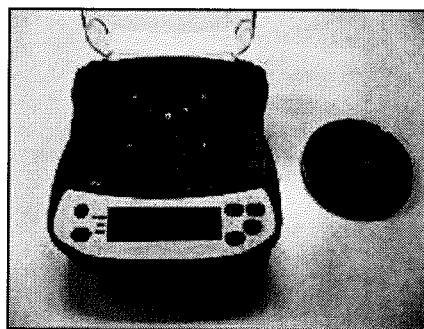


Step 11. Slide the frame for securing the breeze break and install the breeze break.

* Only EJ-123 / EJ-303 is equipped with the breeze break



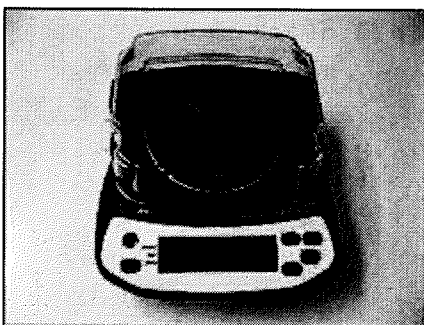
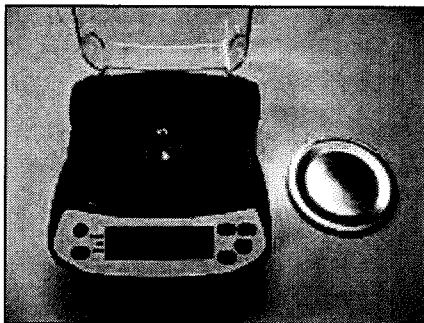
Step 12. Install the pan support.



Step 13. Tighten the screw to secure the pan support.



Step 14. Install the weighing pan. This completes the operation.

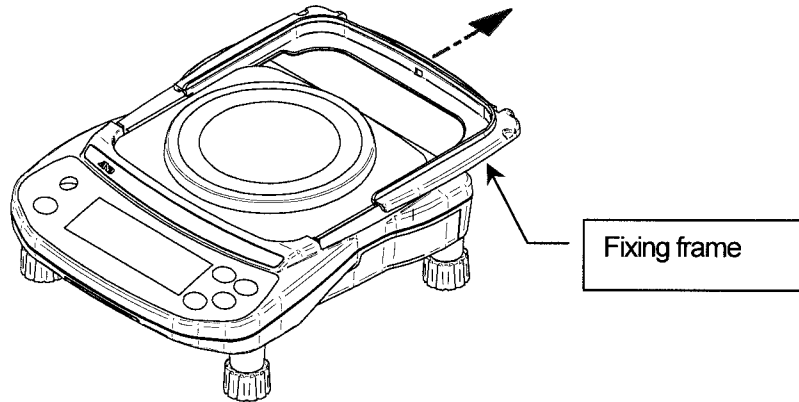




6.3 Assembling the breeze break (Only for EJ-123 /EJ-303)

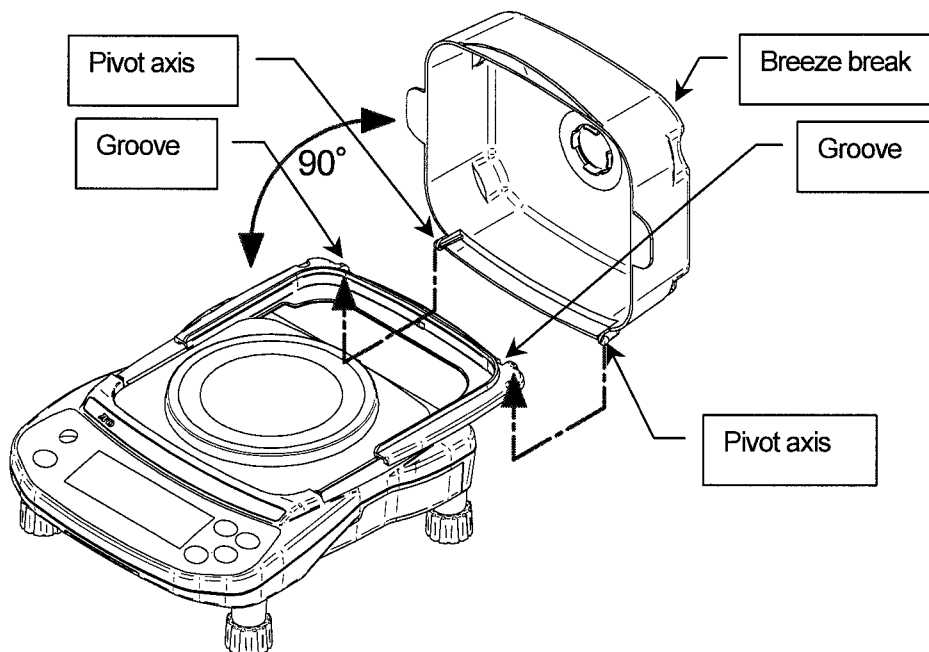
The breeze break can be disconnected from the fixing frame easily when adding excessive stress during operation. Assemble the breeze break with the following steps.

Step 1. Slide the fixing frame back to attach the breeze break.

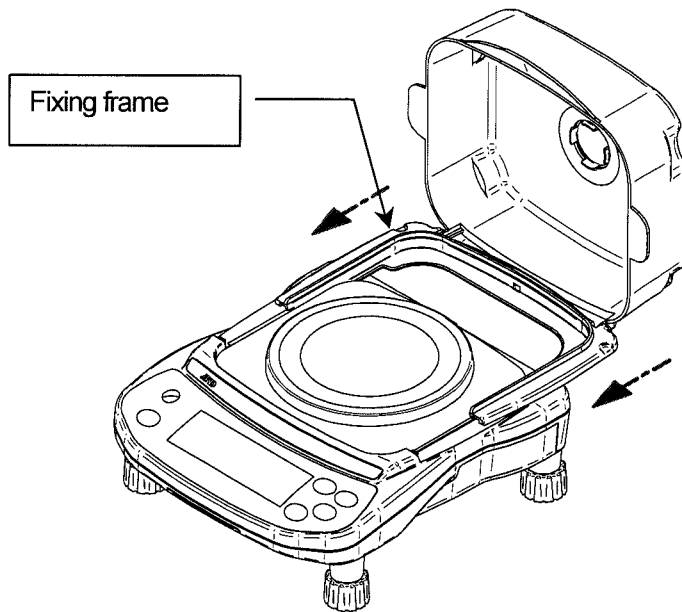


* If the fixing frame is too tight to slide, refer to "How to remove the fixing frame when it is too tight to slide" described later in this document.

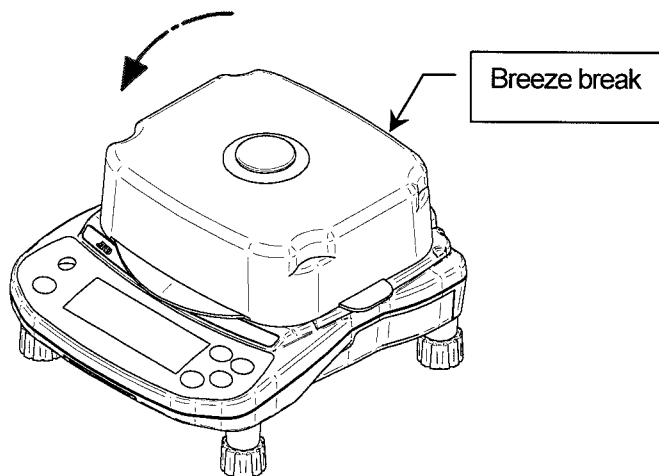
Step 2. Attach the axis of the breeze break to the groove of the fixing frame while keeping it at a 90-degree angle.



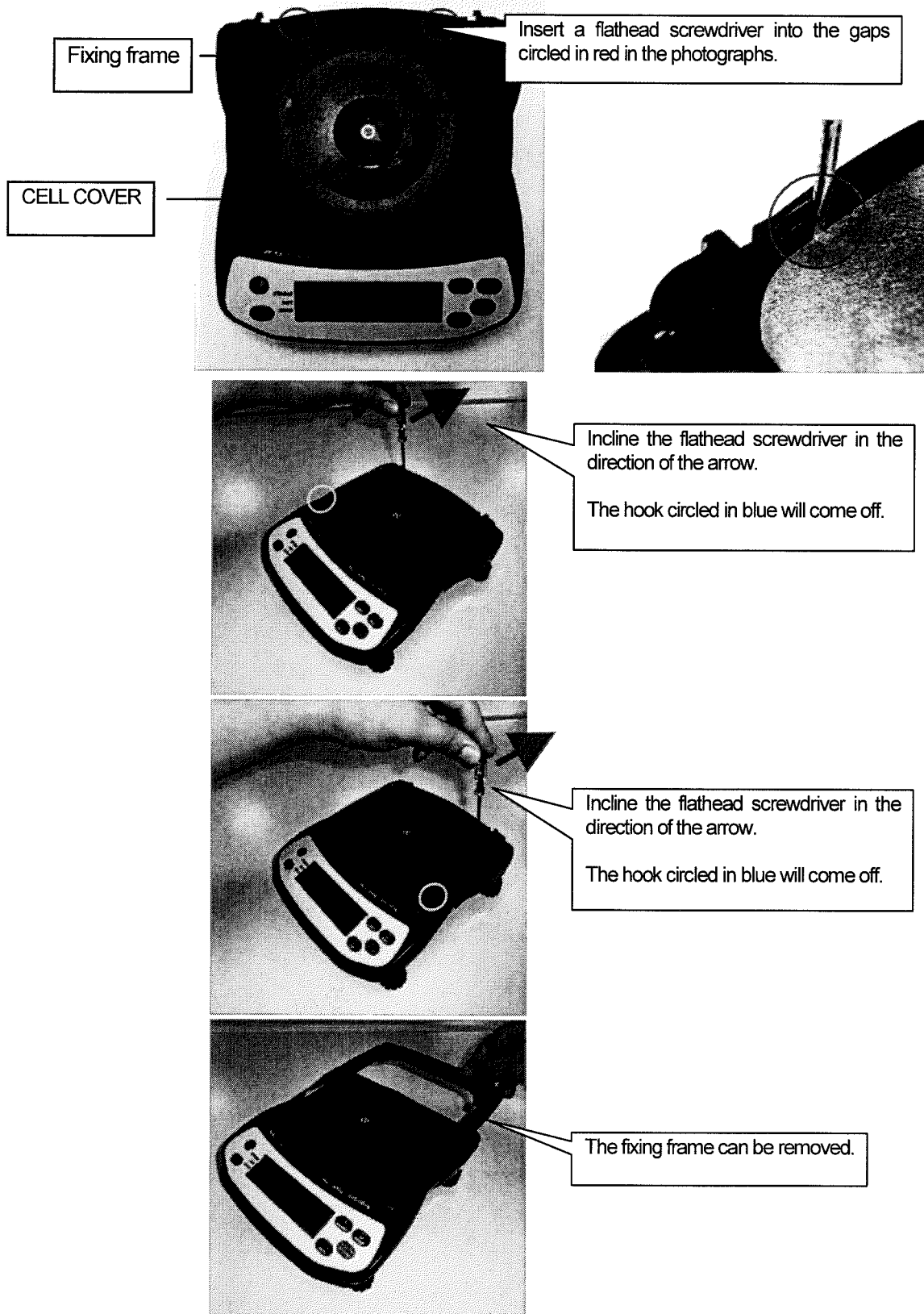
Step 3. Slide and fix the breeze break.



Step 4. Close the breeze break.



<How to remove the fixing frame when it is too tight to slide>



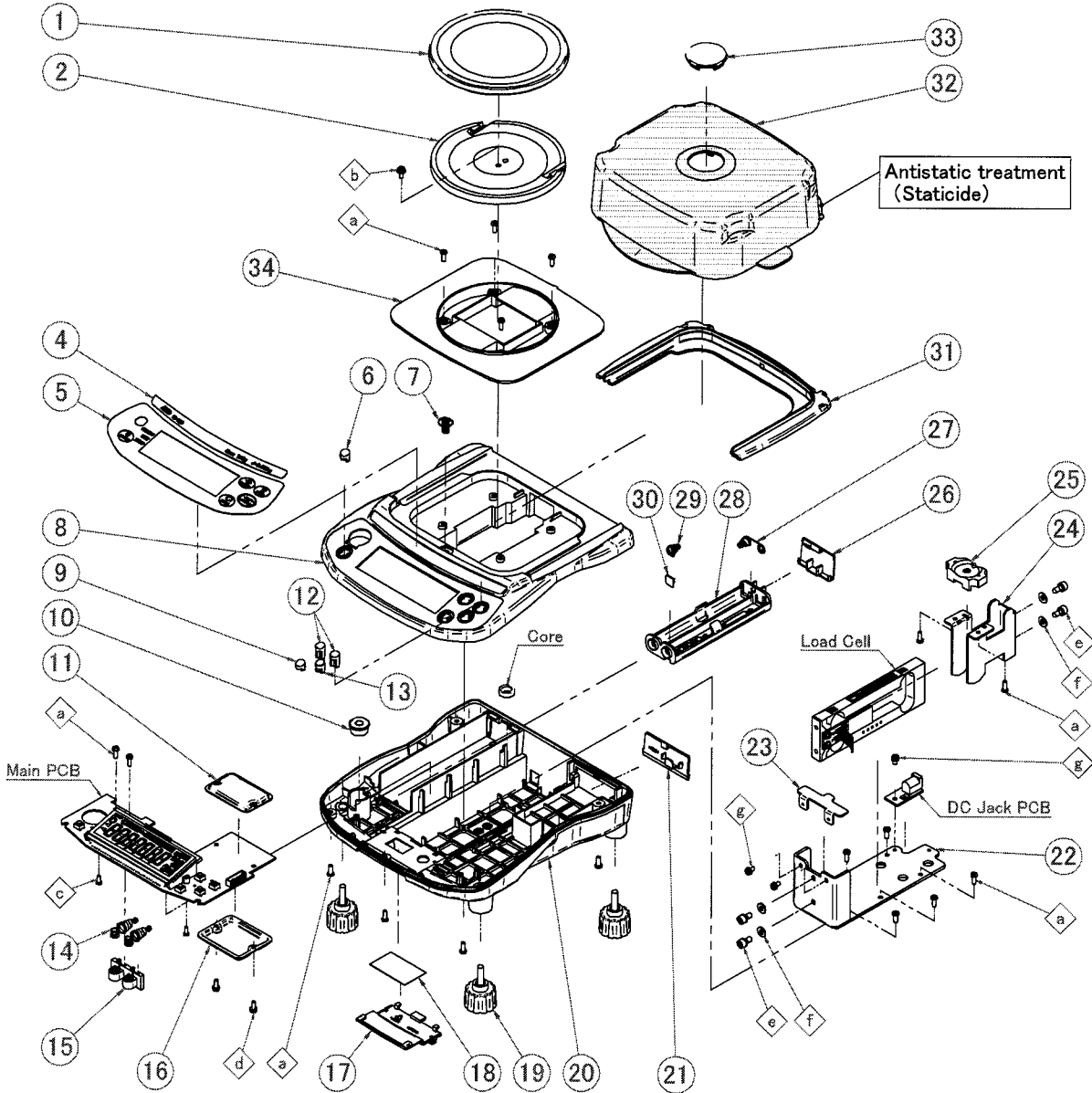


7. Diagrams



7.1 Housing Parts

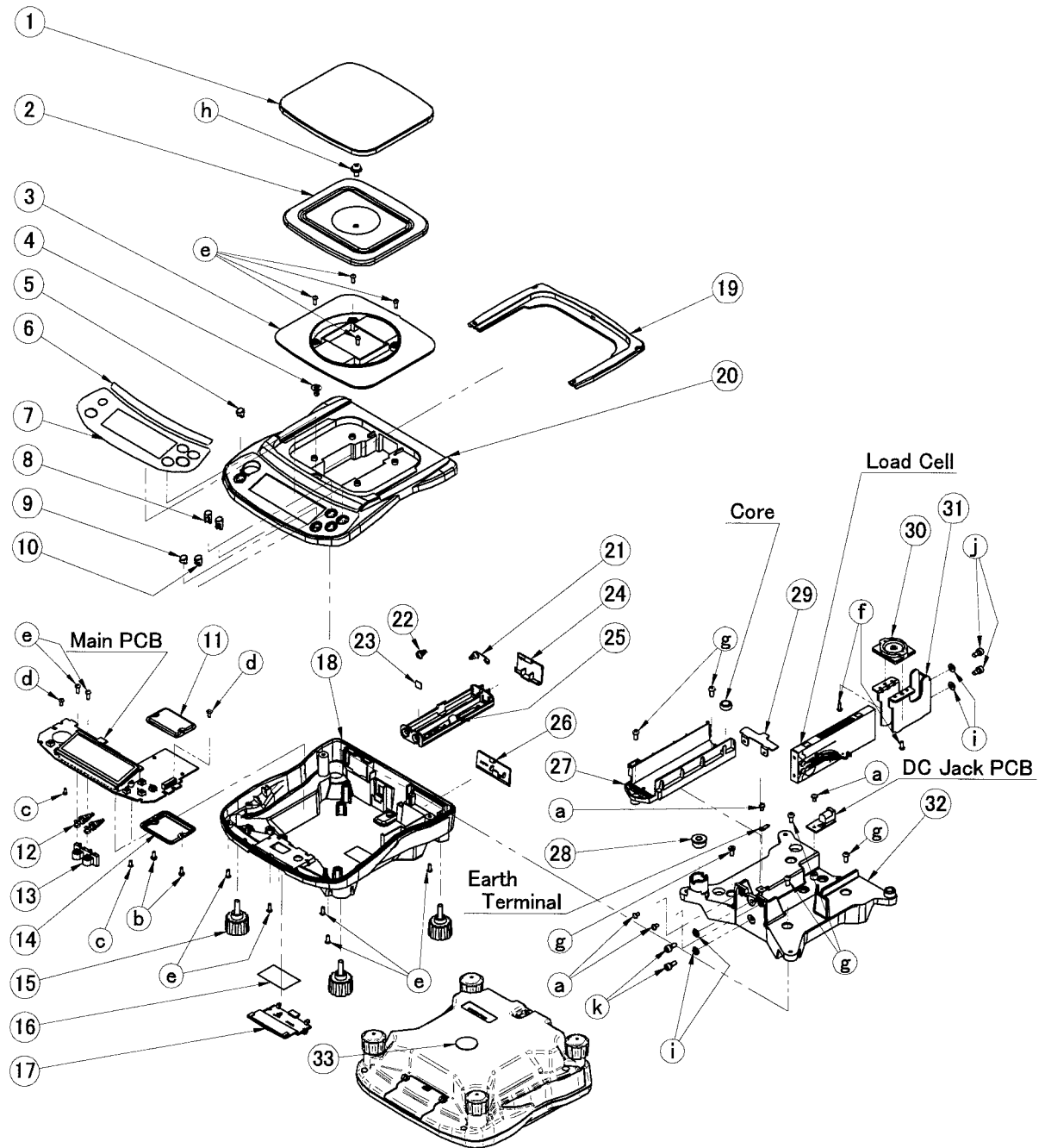
7.1.1 Exploded View (EJ-123/EJ-303)



7.1.2 Parts list (EJ-123/EJ-303)

No.	Part Name	Part No.	RoHS	Qty
1	110PAN	1044015279	✓	1
2	PAN SUPPORT S	1073011608	✓	1
4	MODEL LABEL (EJ123-EX)	1083017440-1	✓	1
	MODEL LABEL (EJ303-EX)	1083017440-3	✓	1
5	KEY SHEET EJ-EX	1083011719	✓	1
6	KEY TOP B	1074023581	✓	1
7	EARTH SPRING	1154011703C	✓	1
8	UPPER CASE	1071000843	✓	1
9	KEY TOP A	1074023580	✓	1
10	FZ LEVEL VIAL	1074024145A	✓	1
11	SHIELD CASE B	1044023593	✓	1
12	KEY TOP D	1074023583	✓	2
13	KEY TOP C	1074023582	✓	1
14	BATTERY SPRING	1044023594	✓	2
15	SPRING GUIDE	1074023576A	✓	1
16	SHIELD CASE A	1044023592	✓	1
17	CAL COVER	1074031070	✓	1
18	BLANK SEAL	1084024143	✓	1
19	LEVEL FOOT	1074031069	✓	4
20	LOWER CASE	1071001317A	✓	1
21	BLANK COVER	1074023574	✓	1
22	CHASSIS	1043016706	✓	1
23	EARTH PLATE	1044032180	✓	1
24 23	LC ANGLE	1044031068	✓	1
25	SUPPORT BASE 300	1074023577	✓	1
26	BATTERY COVER	1074023573	✓	1
27	BATTERY SPRING+-	1154020627	✓	1
28	BATTERY BOX	1072001370	✓	1
29	BATTERY SPRING-	1154020628	✓	1
30	SPRING SUPPORT	1044020629	✓	1
31	PAN GUIDE WS 1MG	1073011607-2	✓	1
32	COVER WS	1072001724	✓	1
33	WIND SHIELD CAP	1074032018	✓	1
34	CELL COVER	1073011604	✓	1
a	B-Tight M3 x 8 Fe Ni	11714FN-B3X8	✓	19
b	W Sems L M3x8 Fe Ni	11702FN-L3X8	✓	1
c	B-Tight M2.6 x 6 Fe Ni	11714FN-B2.6X6	✓	2
d	W Sems S M3x8 Fe Ni	11702FN-S3X8	✓	2
e	Cap Bolt M4x8 Ni SW	11706FN-B4X8	✓	4
f	Washer M4 Fe Ni	11704-22-FN4	✓	4
g	W Sems S M3x6 Fe Ni	11702FN-S3X6	✓	3
	SERIAL LABEL(EX)	1084032307-1	✓	1
	A&D LABEL	1084034764	✓	1
	LOAD CELL EJ303	1LC199-300	✓	1

7.1.3 Exploded View (EJ-1202/EJ-3002)



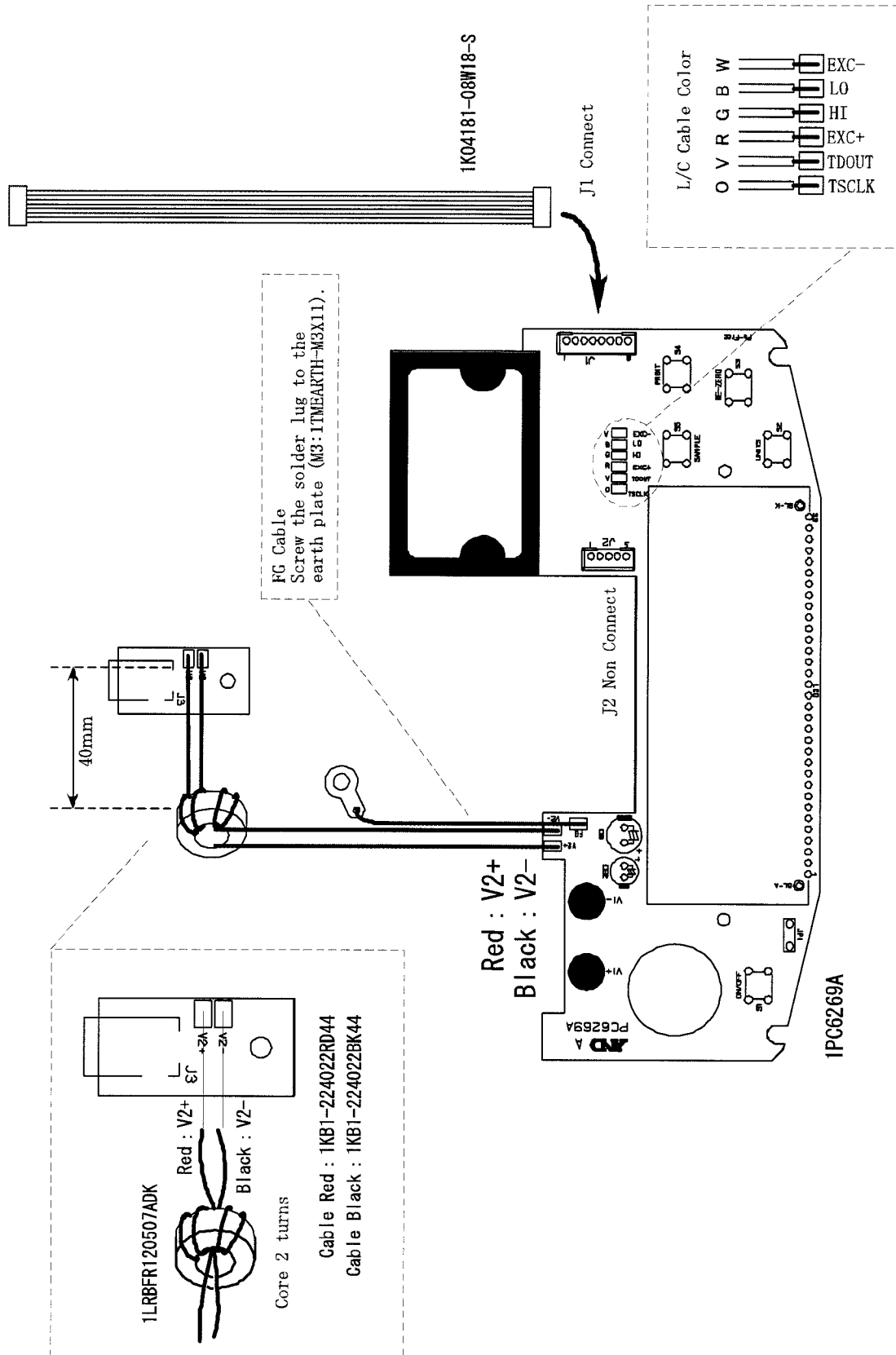
7.1.4 Parts list (EJ-1202/EJ-3002)

No.	Part Name	Part No.	RoHS	Qty
1	Pan M EJ	1043011611	✓	1
2	PanSupport M EJ	1043011612	✓	1
3	CellCover	1073011604	✓	1
4	Earth Spring	1154011703C	✓	1
5	KeyTopB	1074023581	✓	1
6	MODEL LABEL (EJ1202-EX)	1083022111-1	✓	1
	MODEL LABEL (EJ3002-EX)	1083022111-2	✓	1
7	KEY SHEET EJ EX	1083011719	✓	1
8	KeyTopD	1074023583	✓	2
9	KeyTopA	1074023580	✓	1
10	KeyTopC	1074023582	✓	1
11	SHIELD CASE B	1044023593	✓	1
12	BATTERY SPRING	1044023594	✓	2
13	SPRING GUIDE	1074023576A	✓	1
14	SHIELD CASE A	1044023592	✓	1
15	LEVEL FOOT	1074031069	✓	4
16	BLANK SEAL	1084024143	✓	1
17	CAL COVER	1074031070	✓	1
18	LOWER CASE	1071001599	✓	1
19	PanGuide	1073011603	✓	1
20	UpperCase	1071000843	✓	1
21	BATTERY SPRING+--	1154020627	✓	1
22	BATTERY SPRING--	1154020628	✓	1
23	SPRING SUPPORT	1044020629	✓	1
24	BATTERY COVER	1074023573	✓	1
25	BATTERY BOX	1072001370	✓	1
26	BLANK COVER	1074023574	✓	1
27	BATTERY CHASSIS	1072003329	✓	1
28	FZ LEVEL VIAL	1074024145A	✓	1
29	EARTH PLATE	1044032180	✓	1
30	SUPPORT BASE	1073021626	✓	1
31	LC ANGLE	1043021625	✓	1
32	INNER BASE	1031001600B	✓	1
33	BLANK SEAL(Φ24)	1084040212	✓	1
a	W Sems S M3x6 Fe Ni	11702FN-S3X6	✓	4
b	W Sems S M3x8 Fe Ni	11702FN-S3X8	✓	2
c	B-Tight M2.6 x 6 Fe Ni	11714FN-B2.6X6	✓	2
d	B-Tight M3 x 6 Fe Ni	11714FN-B3X6	✓	2
e	B-Tight M3 x 8 Fe Ni	11714FN-B3X8	✓	11
f	B-Tight M3 x 8 Fe Ni	11714FN-B3X8	✓	2
g	B-Tight M4 x 10 Fe Ni	11714FN-B4X10	✓	6
h	W Sems L M5x10 Fe Ni	11702FN-L5X10	✓	1
i	Washer M4 Fe Ni	11704-22-FN4	✓	4
j	Cap Bolt M4x8 Ni SW	11706FN-B4X8	✓	2
k	Cap Bolt M4x10 3Z Ni SW	11706FD-B4X10	✓	2
	SERIAL LABEL (EX)	1084038879-1	✓	1
	A&D LABEL	1084034764	✓	1
	LOAD CELL EJ3002	1LC199-3K	✓	1



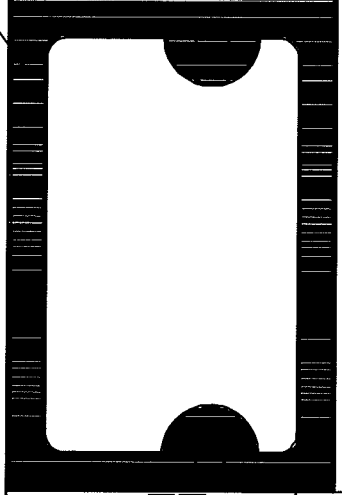
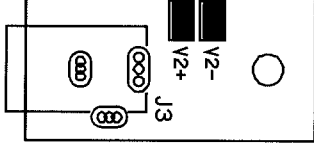
7.2 Electrical Parts

7.2.1 Parts Layout of 1PZ6269



Side A: SHIELD CASE B (Small)
1044023593

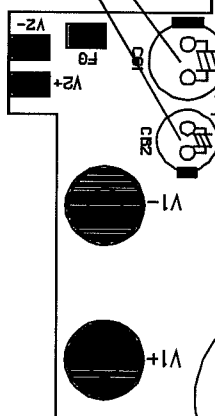
1EJ0470-01-230



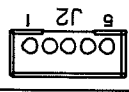
1PC6269A

PC6269A
ND A

1CKSME35VB47
1CKSME35VB100

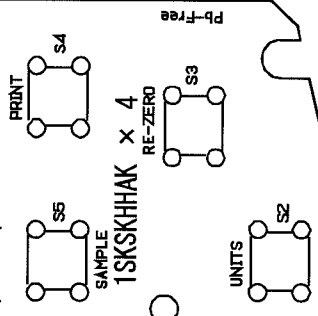
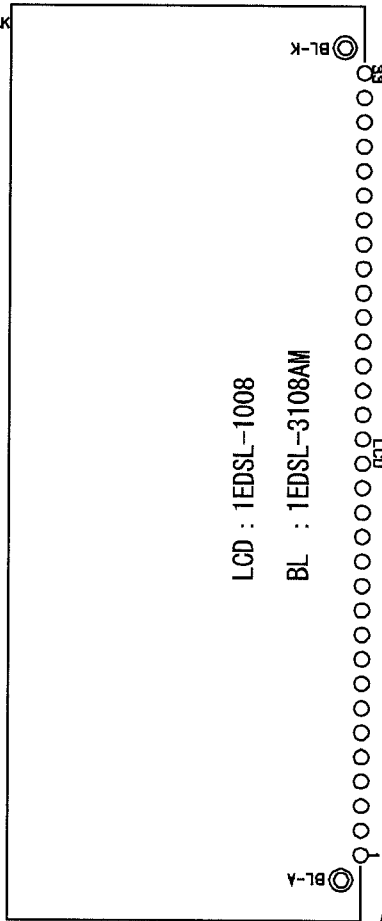
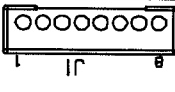


1J120010WS-05



W EXC-
B LO
G HI
R EXC+
V TOUT
D TSCLK

1J120010WS-08



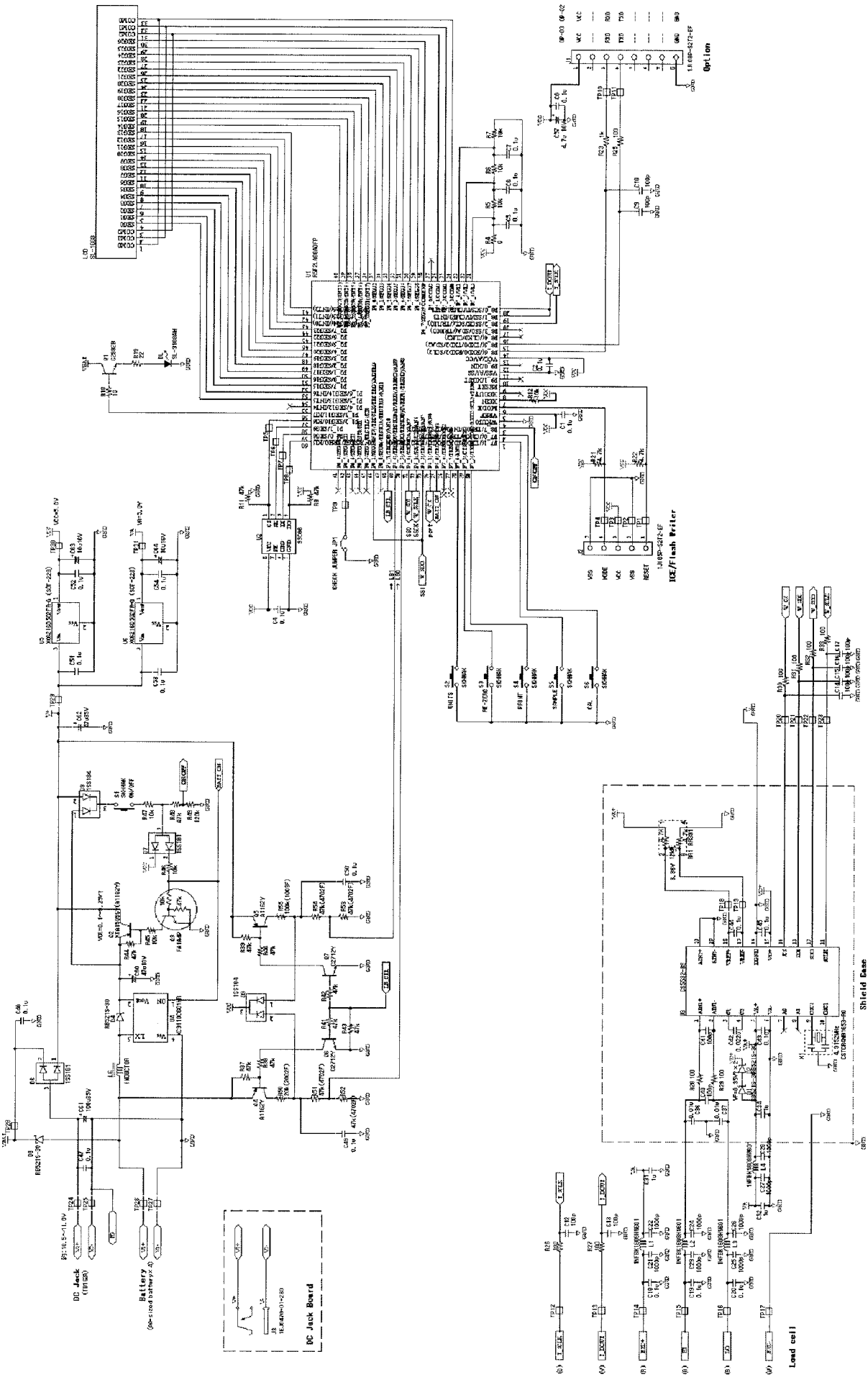
DN/DF
S1
1SKSKHAK

LCD : 1EDSL-1008
BL : 1EDSL-3108AM

BL-A

BL-K

7.2.2 Circuit Diagram of 1PZ6269

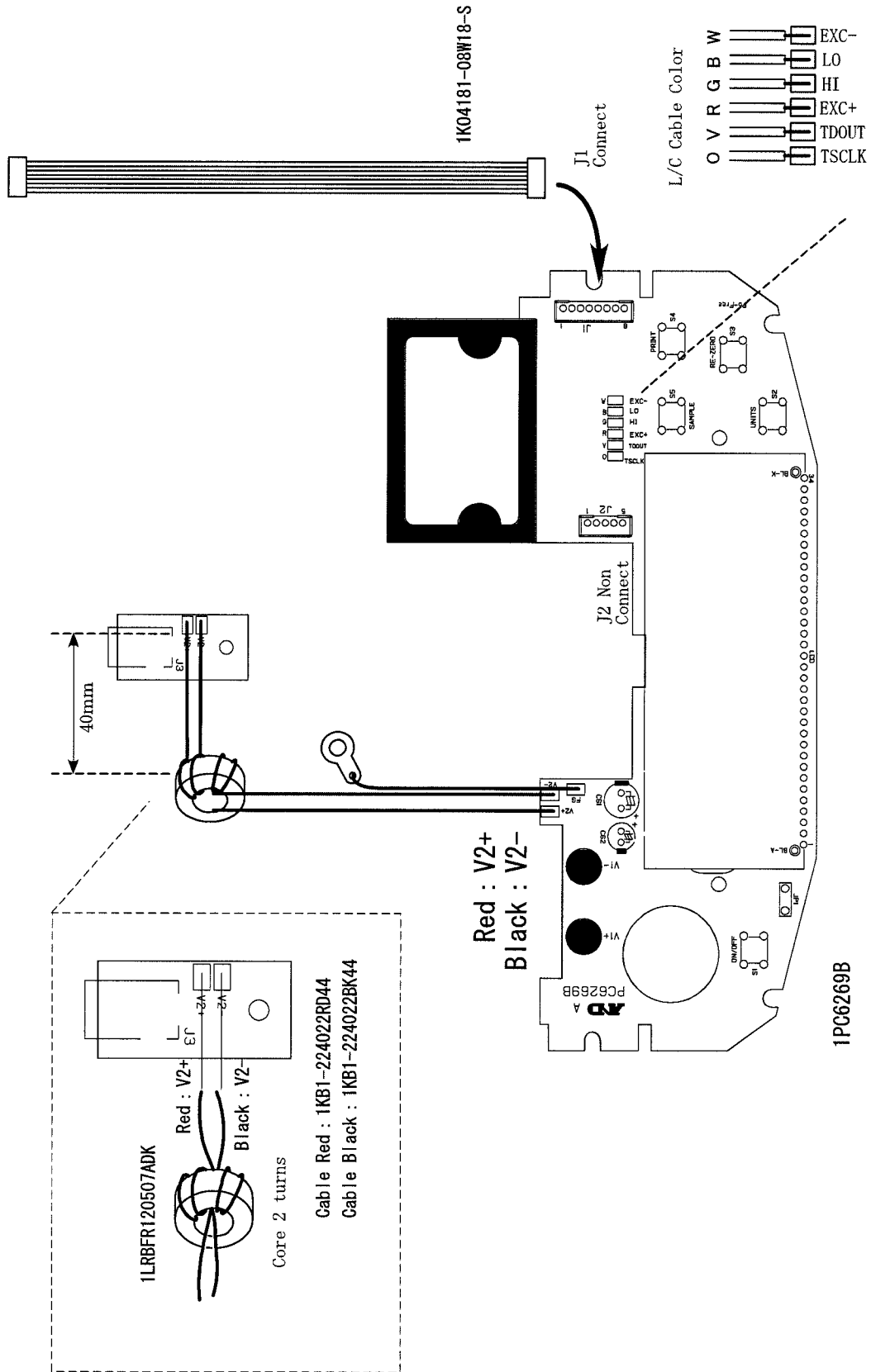


7.2.3 Parts List of 1PZ6269

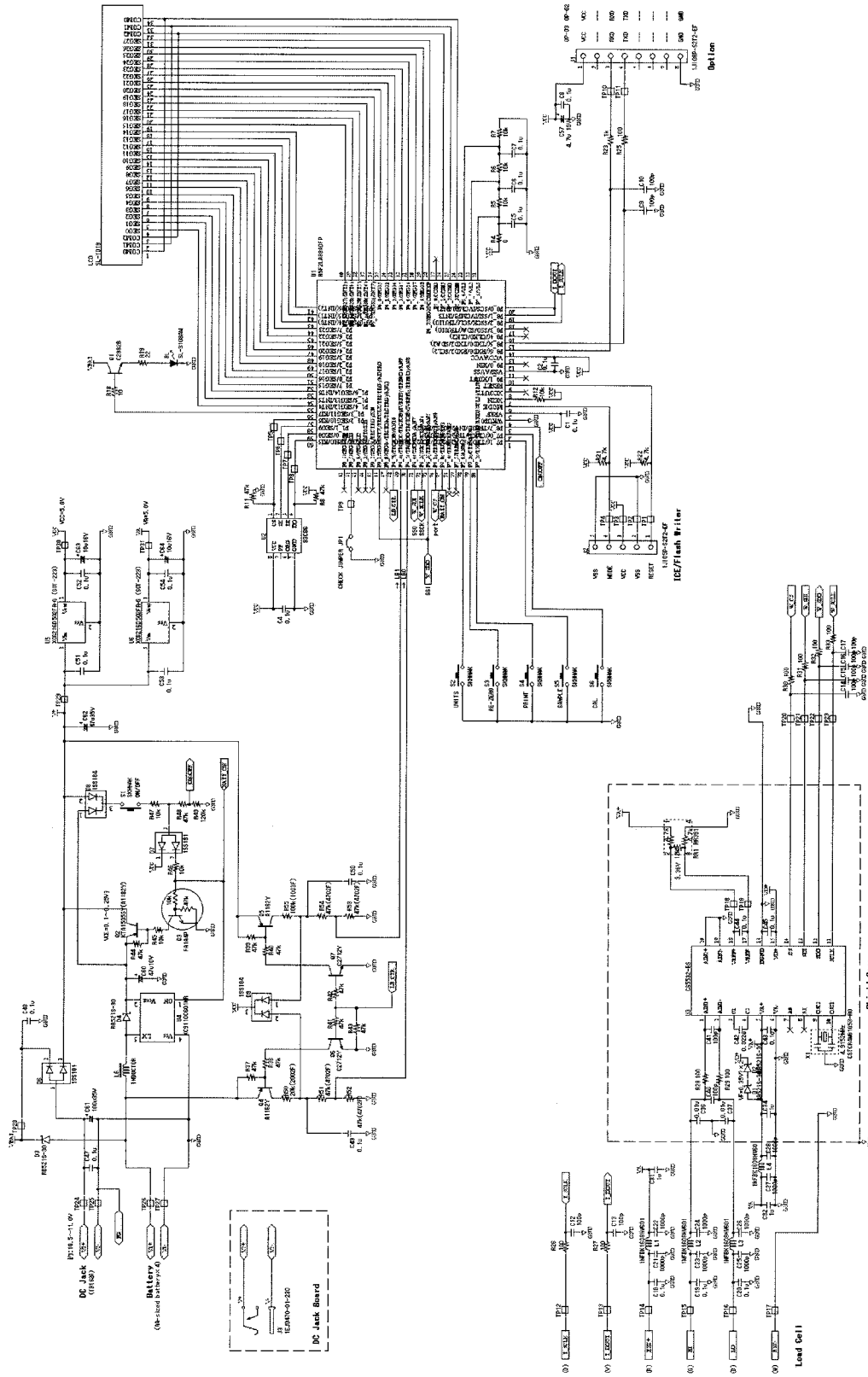
Symbol	Parts Name	Parts No.	RoHS	Qty
	PCB	1PC6269A		1
U1	CPU (FLASH)	1UCR5F2LA88ADFP	✓	1
U2	EEPROM (19Kbit)	1UC93C86	✓	1
U3	A/D converter	1UFCS5532-BS	✓	1
U4	6V DC/DC converter	1URXC9110C601MR	✓	1
U5,6	5V Regulator	1URXC6216D502FR	✓	2
Q1	Transistor	1QTC2982B	✓	1
Q2	Transistor	1QTKTA1505SY	✓	1
Q3	Transistor	1QTFA1A4P-C	✓	1
Q4,5	Transistor	1QTA1162Y-C	✓	2
Q6,7	Transistor	1QTC2712Y-C	✓	2
D1-4	Schottky diode	1DSRB521S-30	✓	4
D6,7	Diode	1DI1SS181-C	✓	2
D8,9	Diode	1DI1SS184-C	✓	2
X1	Ceramic resonator (4.9152MHz)	1XTCSTCR4M91G53	✓	1
LCD	LCD	1EDSL-1008	✓	1
BL	LCD Backlight	1EDSL-3108AM	✓	1
S1-6	Tact switch	1SKSKHHAK	✓	6
J1	8pin Connector	1J20010WS-08	✓	1
J2	5pin Connector	1J20010WS-05	✓	1
J3	DC-JACK	1EJ0470-01-230	✓	1
L1-4	EMI Filter	1NFBK1608HW601	✓	4
L6	Coil	1LLLQNGC101M04	✓	1
RR1	Metal film resistor array 4.7k-12k-4.7k	1RR391	✓	1
R4	Carbon resistor 0Ω	1RC1/10W0	✓	1
R5,6,7,12,45,46,47	Carbon resistor 10kΩ	1RC1/10W103J	✓	7
R18	Carbon resistor 10Ω	1RC1/10W100J	✓	1
R19	Carbon resistor 22Ω	1RC1/10W220J	✓	1
R21,22	Carbon resistor 4.7kΩ	1RC1/10W472J	✓	2
R23	Carbon resistor 1kΩ	1RC1/10W102J	✓	1

Symbol	Parts Name	Parts No.	RoHS	Qty
R25-33	Carbon resistor 100Ω	1RC1/10W101J	✓	9
R8,11,37-44,48	Carbon resistor 47kΩ	1RC1/10W473J	✓	11
R49	Carbon resistor 120kΩ	1RC1/10W124J	✓	1
R50	Carbon resistor 20kF	1RC1/10W2002F	✓	1
R51-54	Carbon resistor 47kF	1RC1/10W4702F	✓	4
R55	Carbon resistor 100kF	1RC1/10W1003F	✓	1
C1,2,4-8,18-20,43-45,47-54	Ceramic capacitor 0.1u	1CC0.1U25V-C	✓	21
C9,10,12-17,40,41	Ceramic capacitor 100p	1CC100P-C	✓	10
C21-28	Ceramic capacitor 0.001u (1000p)	1CC0.001U-C	✓	8
C31,32,34	Ceramic capacitor 1u	1CC105-16V2012	✓	3
C36,37	Ceramic capacitor 0.01u	1CC0.01U-C	✓	2
C42	Ceramic capacitor 0.022u	1CC2012-1H223J	✓	1
C57	Tantalum electrolytic 4.7u10V	1CT1A4R7-C	✓	1
C60	Tantalum electrolytic 47u10V	1CT1C470-C	✓	1
C61	Aluminum electrolytic 100u35V	1CKSME35VB100	✓	1
C62	Aluminum electrolytic 47u35V	1CKSME35VB47	✓	1
C63,64	Aluminum electrolytic 10u16V	1CKEVE1CA100SR	✓	2
	B-Tight M2.6 x 6 Fe Ni	11714FN-B2.6X6	✓	2
	W Sems S M3x8 Fe Ni	11702FN-S3X8	✓	2
	Shield Case A	1044023592	✓	1
	Shield Case B	1044023593	✓	1
	Ferrite core (AC adapter)	1LRBFR120507ADK	✓	1
	DC cable + (Red) 22cm	1KB1-224022RD44	✓	1
	DC cable - (Black) 22cm	1KB1-224022BK44	✓	1
	Earth cable 8cm	1KB1-224008GN44	✓	1
	Option cable 8pin	1KO4181-08W18-S	✓	1

7.2.4 Parts Layout of 1PZ6269A



7.2.5 Circuit Diagram of 1PZ6269A



7.2.6 Parts List of 1PZ6269A

Symbol	Parts Name	Parts No.	RoHS	Qty
	PCB	1PC6269B	✓	1
U1	CPU (FLASH)	1UCR5F2LA88ADFP	✓	1
U2	EEPROM (16Kbit)	1UC93C86	✓	1
U3	AVD converter	1UFC55532-BS	✓	1
U4	6V DC/DC converter	1URXC9110C601MR	✓	1
U5,6	5V Regulator	1URXC6216D502FR	✓	2
Q1	Transistor	1Q1TC2982B	✓	1
Q2	Transistor	1Q1TKTA1505SY	✓	1
Q3	Transistor	1Q1FA1A4P-C	✓	1
Q4,5	Transistor	1Q1TA1162Y-C	✓	2
Q6,7	Transistor	1Q1TC2712Y-C	✓	2
D1-4	Schottkey diode	1DSRB521S-30	✓	4
D6,7	Diode	1DI1SS181-C	✓	2
D8,9	Diode	1DI1SS184-C	✓	2
X1	Ceramic resonator (4.9152MHz)	1X1CSTCR4M91G53	✓	1
LCD	LCD	1EDSL-1018	✓	1
BL	LCD Backlight	1EDSL-3108AM	✓	1
S1-6	Tact switch	1SKSKHHAK	✓	6
J1	8pin Connector	1J120010WS-08	✓	1
J2	5pin Connector	1J120010WS-05	✓	1
J3	DC-JACK	1EJ0470-01-230	✓	1
L1-4	EMI Filter	1NFBK1608HW601	✓	4
L6	Coil	1LLLQN6C101M04	✓	1
RR1	Metal film resistor array 4.7k-12k-4.7k	1RR391	✓	1
R4	Carbon resistor 0Ω	1RC1/10W0	✓	1
R5,6,7,12,45,46,47	Carbon resistor 10kΩ	1RC1/10W103J	✓	7
R18	Carbon resistor 10Ω	1RC1/10W100J	✓	1
R19	Carbon resistor 22Ω	1RC1/10W220J	✓	1
R21,22	Carbon resistor 4.7kΩ	1RC1/10W472J	✓	2
R23	Carbon resistor 1kΩ	1RC1/10W102J	✓	1
R25-33	Carbon resistor 100Ω	1RC1/10W101J	✓	9
R8,11,37-44,48	Carbon resistor 47kΩ	1RC1/10W473J	✓	11
R49	Carbon resistor 120kΩ	1RC1/10W124J	✓	1
R50	Carbon resistor 20kF	1RC1/10W2002F	✓	1
R51-54	Carbon resistor 47kF	1RC1/10W4702F	✓	4
R55	Carbon resistor 100kF	1RC1/10W1003F	✓	1
C1,2,4-8,18-20,43-45,47-54	Ceramic capacitor 0.1u	1CC0.1U25V-C	✓	21
C9,10,12-17,40,41	Ceramic capacitor 100p	1CC100P-C	✓	10
C21~28	Ceramic capacitor 0.001u(1000p)	1CC0.001U-C	✓	8
C31,32,34	Ceramic capacitor 1u	1CC105-16V2012	✓	3
C36,37	Ceramic capacitor 0.01u	1CC0.01U-C	✓	2
C42	Ceramic capacitor 0.022u	1CC2012-1H223J	✓	1

Symbol	Parts Name	Parts No.	RoHS	Qty
C57	Tantalum electrolytic 4.7u10V	1CT1A4R7-C	✓	1
C60	Tantalum electrolytic 47u10V	1CT1C470-C	✓	1
C61	Aluminum electrolytic 100u35V	1CKSME35VB100	✓	1
C62	Aluminum electrolytic 47u35V	1CKSME35VB47	✓	1
C63,64	Aluminum electrolytic 10u16V	1CKECEV1CA100SR	✓	2
	B-Tight M2.6 x 6 Fe Ni	11714FN-B2.6X6	✓	2
	W Semis S M3x8 Fe Ni	11702FN-S3X8	✓	2
	Shield Case A	1044023592	✓	1
	Shield Case B	1044023593	✓	1
	Ferrite core (AC adapter)	1LRBFR120507ADK	✓	1
	DC cable + (Red) 22cm	1KB1-224022RD44	✓	1
	DC cable - (Black) 22cm	1KB1-224022BK44	✓	1
	Earth cable 8cm	1KB1-224008GN44	✓	1
	Option cable 8pin	1KO4181-08W18-S	✓	1



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