PW-II SERVICE MANUAL

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1. Introduction

1.1. Preface

Thank you for purchasing of our CAS scale.

This scale has been designed with CAS reliability, under rigid quality control and with outstanding performance.

WE hope that your departments enjoy with high quality of CAS product.

This manual will help you with proper operations and care of the EB series.

Please keep it handy for the future references.

1.2. Precaution

- Make sure that you plug your scale into the proper power outlet.
- Place the scale on a flat and stable surface.
- Plug into a power outlet 30 minutes before operations.
- Keep the scale away from strong EMI noises may cause incorrect weight readings.
- This scale must be installed in a dry and liquid free environment.
- Do not subject the scale to sudden temperature changes.
- Do not subject the platter to sudden shocks.
- If the scale is not properly level, please adjust the 4 legs at the bottom of the scale (turn legs clockwise or counterclockwise) so as to center the bubble of the leveling gauge inside the indicated circle.

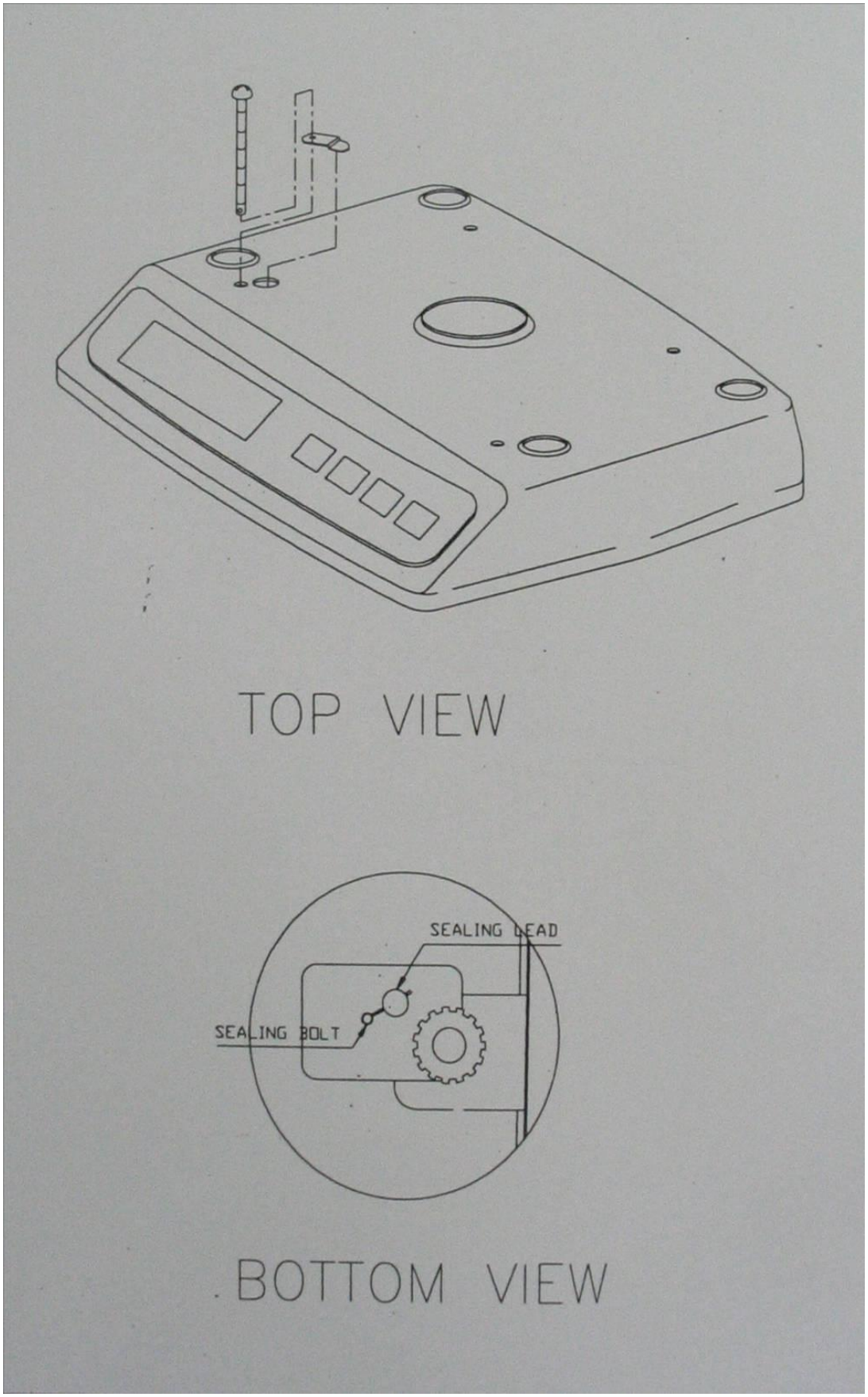
1.3. Specifications

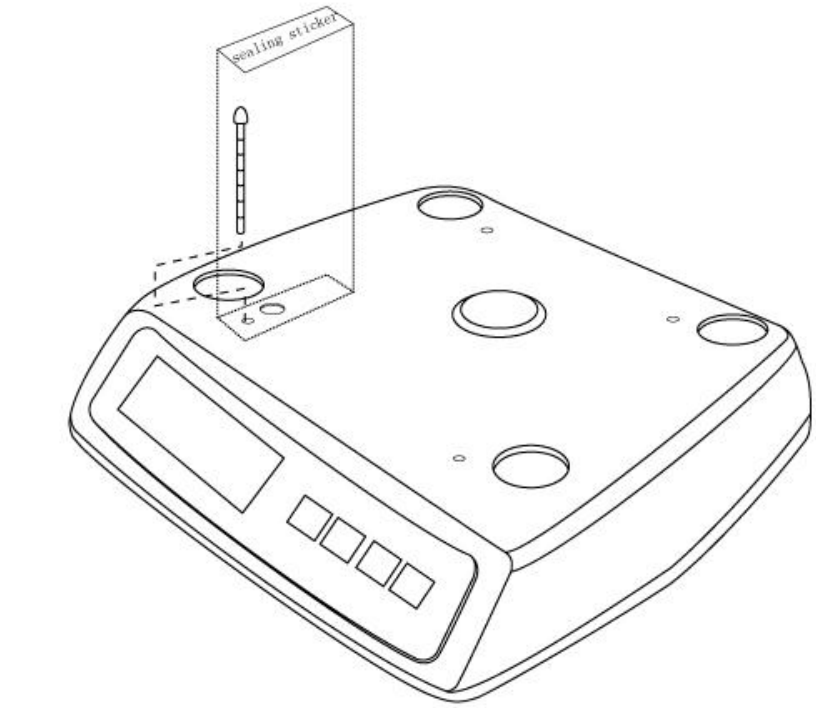
MODEL	PW- (2kg)	PW- (5kg)	PW- (10kg)
CAPACITY/e	*Dual Interval* 1kg/0x0005kg 2kg/0.001kg	*Dual Interval* 2.5kg/0x001kg 5kg/0.002kg	*Dual Interval* 4kg/0x002kg 10kg/0.005kg
	Dual Interval 2.5lb/0x001lb 5lb/0.002lb	*Dual Interval* 4lb/0x002lb 10lb/0.005lb	*Dual Interval* 10lb/0x005lb 20lb/0.01lb
	Dual Interval 40oz/0.02oz 80oz/0.05oz	*Dual Interval* 80oz/0.05oz 160oz/0.1oz	*Dual Interval* 200oz/0.1oz 400oz/0.2oz
DISPLAY	91 x 39 [mm] / 3.6 x 1.5 [inch] 5 digits LCD		
MAX TARE	- 0.9995 kg	- 2.499 kg	- 3.998 kg
TEMPERATURE RANGE	-10°C ~ +40°C / 14 °F ~ 104 °F		
POWER SUPPLY	1.5V x 6 (AA size Battery)		
POWER CONSUMPTION	APPROX. 0.25W		
BATTERY OPERATING TIME	150 hours (Manganese battery)		
	400 hours (Alkaline battery)		
PLATTER SIZE	222(W) x 151(D) [mm] / 8.7(W) x 5.9(D) [inch]		
DIMENSIONS	239(W) x 227(D) x 66(H) [mm] / 9.4(W) x 8.9(D) x 2.6(H) [inch]		
PRODUCT WEIGHT	1.5kg / 3.3lb		
OPERATING POWER	9V Adaptor 300mA		

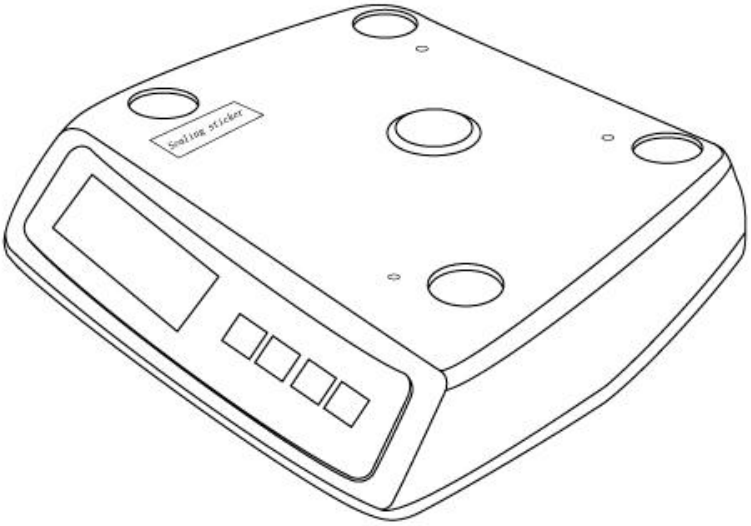
1.4. Key

Key	Function
HOLD	To make the weight of item stable. This weight is average value.
UNIT	Used to convert the unit of weight
TARE	To input or cancel the tare (the weight of container).
ZERO (-O-) **[Set]**	To set zero point To do **[SET]** key in the SETUP mode.
POWER	To turn on or off.

1.5. Sealing Method







SEALING METHOD

2. Calibration

2.1. General Calibration

Pressing and holding calibration switch press [POWER] key to go to calibration mode.

User can move to other mode by using [ZERO] key in the calibration mode.

User also moves to other sub-modes for each mode by using [TARE] key.

Please simply follow below procedure to move to other mode.

(1) Calibration Mode: Pressing and holding "Calibration Switch" press [POWER] key.

(2) It displays "CAL-0" after "CAL", and it blinks the version of scale three times.

(3) Selecting menu: press [TARE].

(4) ENTER(Setting) : [TARE] key

MODE	Function
CAL 1	Display normalized AD
CAL 2	Display Keypad infomation-
CAL 3	Weight Setting Mode "UnLoad" → [TARE] → "MIDD" → [TARE] after loading for 1/3 weight → "FULL" → [TARE] after loading for Full weight → "MIDD" → [TARE] after loading for 1/3 weight → "END"
CAL 4	Option Setting (Table 1 참조)
CAL 5	Display filtered Raw AD
CAL 7	% Calibration
CAL 8	Battery calibration
CAL 9	Gravity constant
CAL 10	Set calibration factor "Unit" → [TARE] → select 0, 1 (0:kg, 1: lb) → [TARE] "CAPA" → [TARE] → select capacity → [TARE] "MCAPA" → [TARE] → select mid-capacity → [TARE] "W-dP" → [TARE] → Select Decimal Point → [TARE] " 1 d " → [TARE] → Select division → [TARE] "Dual" → [TARE] → Enable dual interval (0:disable, 1:enable) → TARE
CAL 11	Set nation(00 : OIML , 01 : NTEP , 02: KOREA)

< Modes >

2.1.1. C4 Setting

2.1.1.1. C4-1 Setting

BIT 6~7	Initial Zero range	3	5%
		2	10%
		1	3%
		0	2%
BIT5	Tare Type	0	Proper tare
		1	Full Tare
BIT4			
BIT 2~3	Successive tare	3	(+), (-) Direction successive Tare
		2	(-) Direction successive Tare
		1	(+) Direction successive Tare
		0	One Time tare
BIT1			
BIT0			

2.1.1.2. C4-3 Setting

BIT7	Dot Type	0	"." dot
		1	"," comma
BIT6	Use Preset tare	0	Don't use
		1	Use
BIT5	Use Back light	0	Don't use
		1	Use
BIT4	Use Head message	0	Don't use
		1	Use
BIT3	Use gram	0	Don't clear
		1	Clear
BIT2	Use oz	0	Don't clear
		1	Clear
BIT1	Use lb	0	Don't use
		1	Use
BIT0	Use Kg	0	No
		1	Yes

2.1.2. SPAN Calibration Setting (C-3)

(1) Pressing and holding "Calibration Switch" press [POWER] key.
After "CAL" message blinks three times and shows the version of scale, it displays "CAL 1" message.
(2) Press [ZERO] to display "CAL-3".
(3) Press [TARE] key and then it displays "zero " message.
(4) Press [TARE] key and then it displays "midup" message
(5) Load middle weight (ex:1/3 full capacity) on the platform
(6) Press [TARE] key and then it displays "span " message
(7) Load full weight on the platform
(8) Press [TARE] key and then it displays "middn" message
(9) Load middle weight (ex:1/3 full capacity) on the platform
(10) Press [TARE] key and then it display "CAL 3" message

2.1.3. Gravity Constant Value Setting (C-9)

Current gravitational Acceleration value is set to 9.7994 m/s^2 .

(11) Pressing and holding "Calibration Switch" press [POWER] key.
After "CAL" message blinks three times and shows the version of scale, it displays "CAL-1" message.
(12) Press [ZERO] to display "C-9".
(13) Press [TARE] key, and then " G-1" message and "9.7994" will be shown. The first digit,"9" will blink.
(14) Input a gravitational acceleration value by using [ZERO] key.
(15) Press [TARE] key, and then "G-2" message blinks."9.7994" will be shown. The first digit,"9" will blink.
(16) Input a gravitational acceleration value by using [ZERO] key.
(17) Press [TARE] key to save the gravitational acceleration value, and "C-9 " message will be shown.

2.1.4. Calibration factor Setting (C-10)

(1) Pressing and holding "Calibration Switch" press [POWER] key.
(2) After "CAL" message blinks three times and shows the version of scale, it displays "CAL-1" message.
(3) Press [ZERO] to display "C-10".
(4) Press [TARE] key, and then "UNIT " message and "0" will be shown. The first digit,"0" will blink. It means calibration unit is "kg" (0 : kg, 1 : lb)
(5) Input a calibration unit by using [ZERO] key.
(6) Press [TARE] key, and then "CAPA" message blinks."0015" will be shown. The first

digit,"0" will blink. It means a full-capability is "15 (calibration unit, kg or lb)"

(7) Input a capability by using [ZERO] key.

(8) Press [TARE] key, and then "MCAPA" message blinks."0005" will be shown. The first digit,"0" will blink. It means a mid-capability is "05 (calibration unit, kg or lb)"

(9) Input a capability by using [ZERO] key.

(10)Press [TARE] key, and then "W-dP " message blinks."3" will be shown. The first digit,"3" will blink. It means a weight decimal point is "3 (will display 0.000)"

(11)Input a weight decimal point by using [ZERO] key.

(12) Press [TARE] key, and then "1d " message blinks."0.005" will be shown. The third digit,"0" will blink. It means a division is "0.005 (calibration unit, kg or lb)"

(13) Input a division by using [ZERO] key.

(14) Press [TARE] key, and then "dual " message blinks."1" will be shown. The third digit,"1" will blink. It means a dual interval is disable. (0 : disable, 1 : enable)"

(15) Input a dual interval enable by using [ZERO] key.

(16) Press [TARE] key to save the calibration factor, and "C-10 " message will be shown.

2.1.5. Displaying Real A/D Value (C-5)

Display Raw AD

2.1.6. Percent Calibration (C-7)

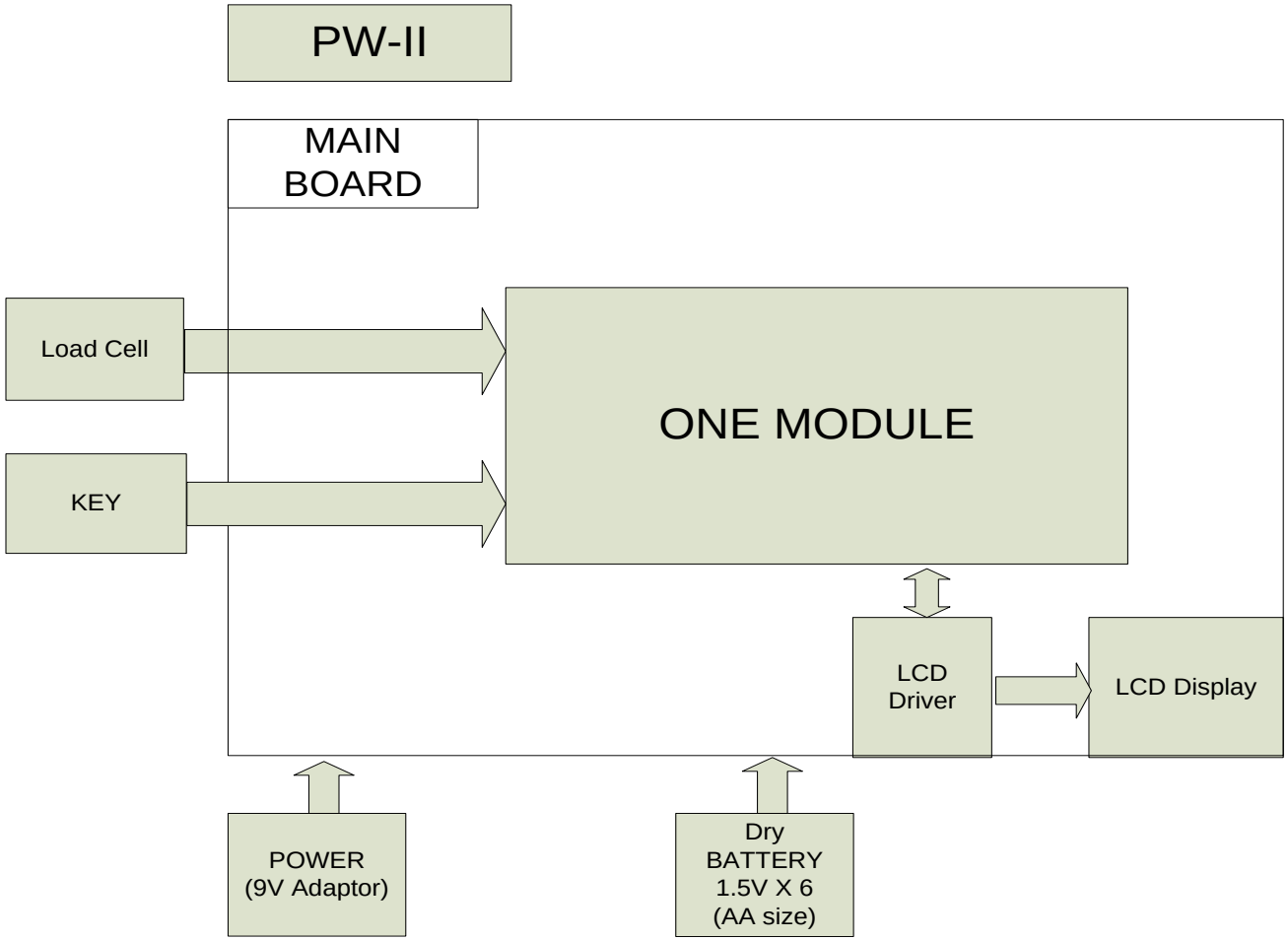
(1) Pressing and holding "Calibration Switch" press [POWER] key.
After "CAL" message blinks three times and shows the version of scale, it displays "CAL 1" message.
(2) Press [ZERO] to display "CAL-7".
(3) Press [TARE] key and then it displays "per 0 " message. Select the percent value using the
[numeric] key. You can choose 10~90 percent.
(4) Press [TARE] key and then it displays "zero" message
(5) Press [TARE] key and then it displays "pspan " message
(6) Load choice percentage weight of full weight on the platform
(7) Press [TARE] key and then it displays "CAL 7" message

2.1.7. Battery Calibration (C-8)

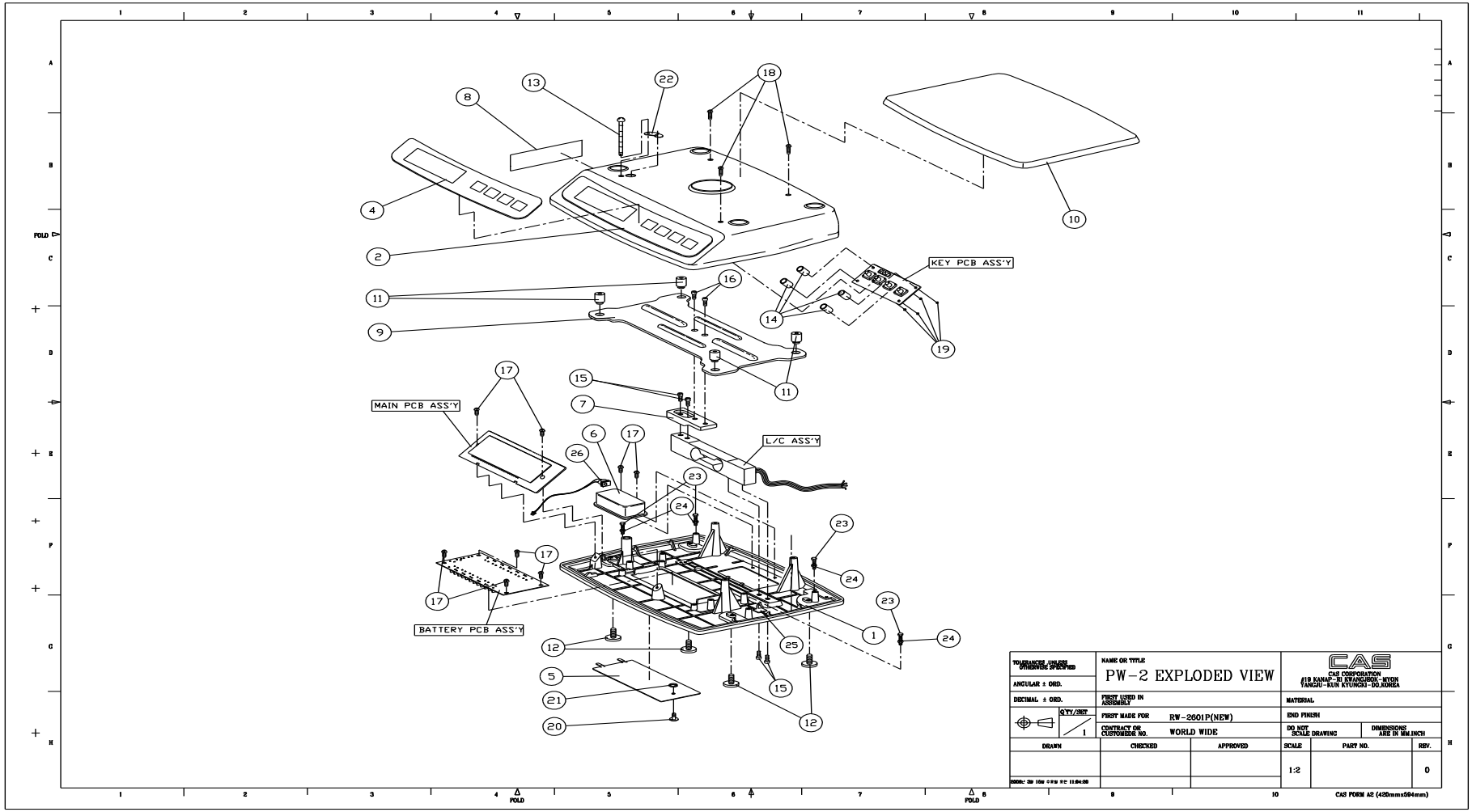
(1) Pressing and holding "Calibration Switch" press [POWER] key.
After "CAL" message blinks three times and shows the version of scale, it displays "CAL 1" message.
(2) Press [ZERO] to display "CAL-8".
(3) Press [TARE] key and then it displays voltage of battery.
(4) Change the jumper-pin of main PCB, 'BAT' to '+5V'.
(5) Press [ZERO] key two times and then Press [-] key two times.
And then it display '500'
(6) Change the jumper-pin of main PCB, '+5V' to 'BAT'.
(7) You can see the calibrated voltage of battery.

3. The Schematics and Diagram

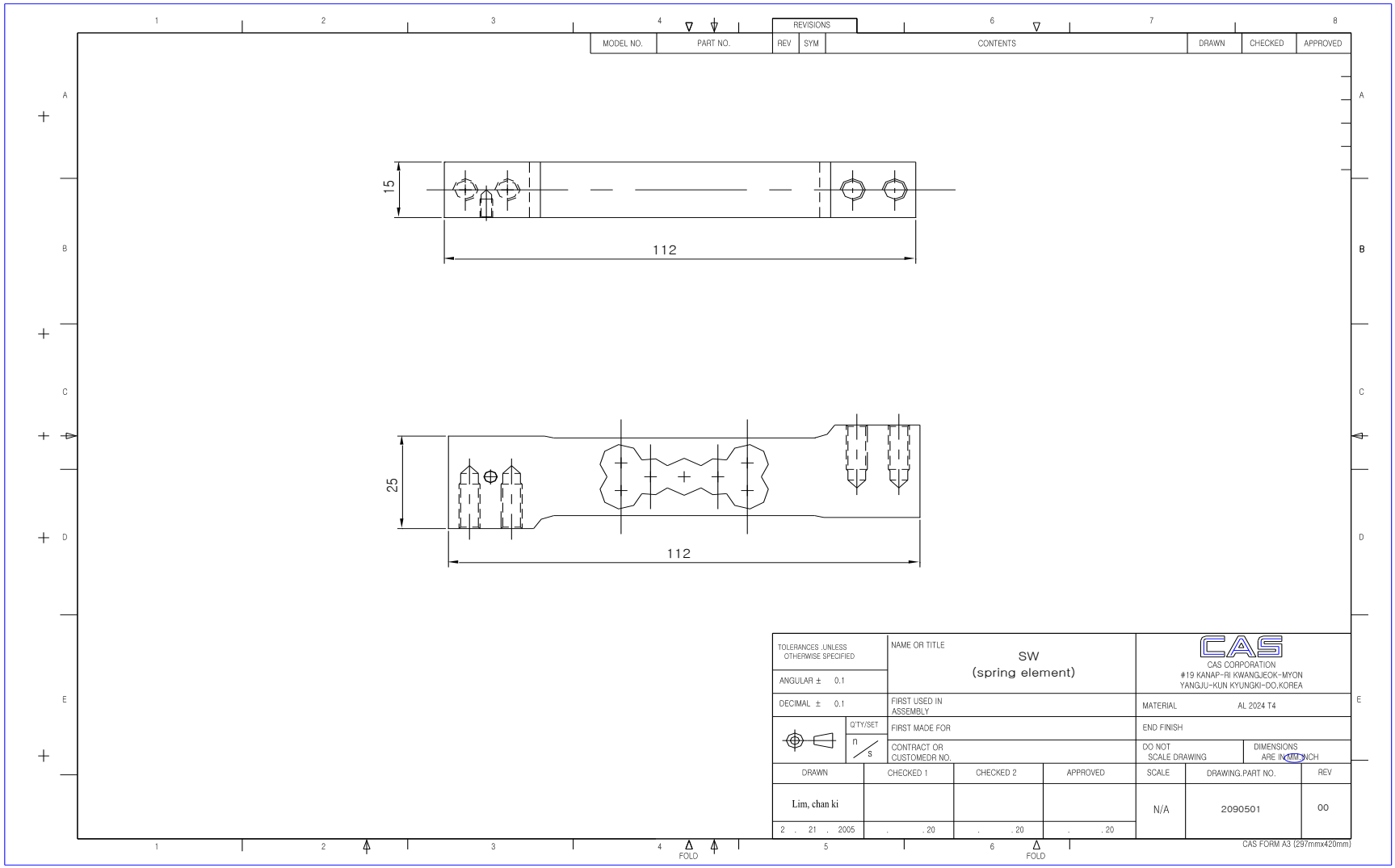
3.1. System Block Diagram



4. Exploded View

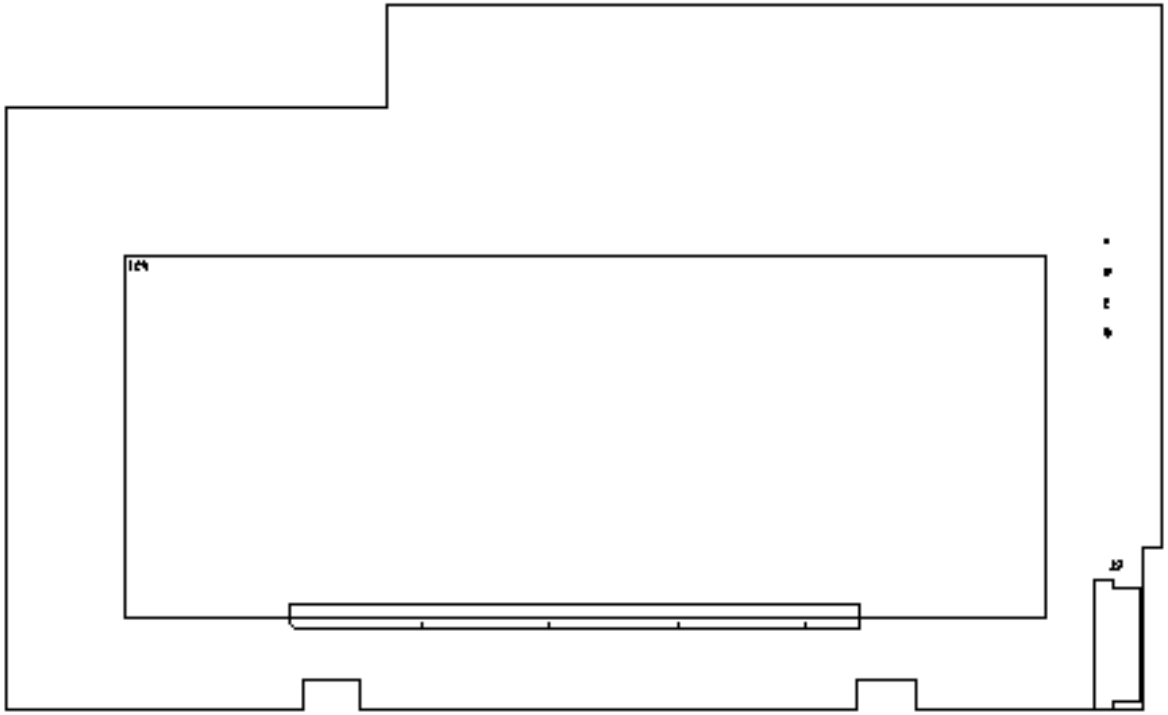


5. Load Cell drawing

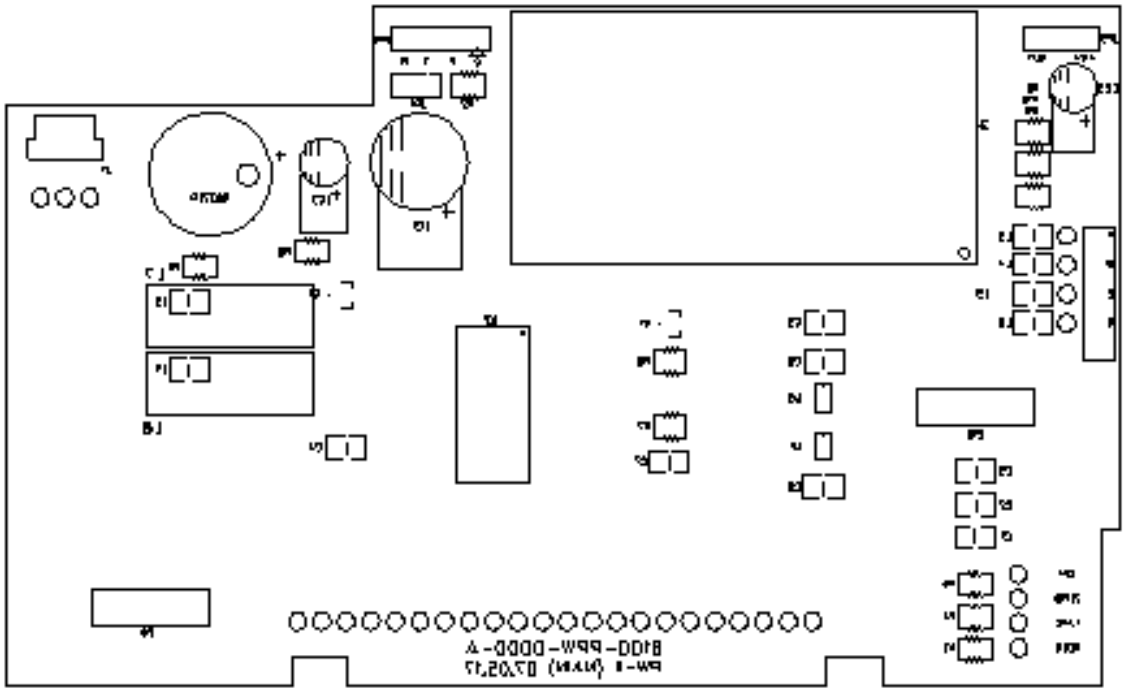


6. Part Location

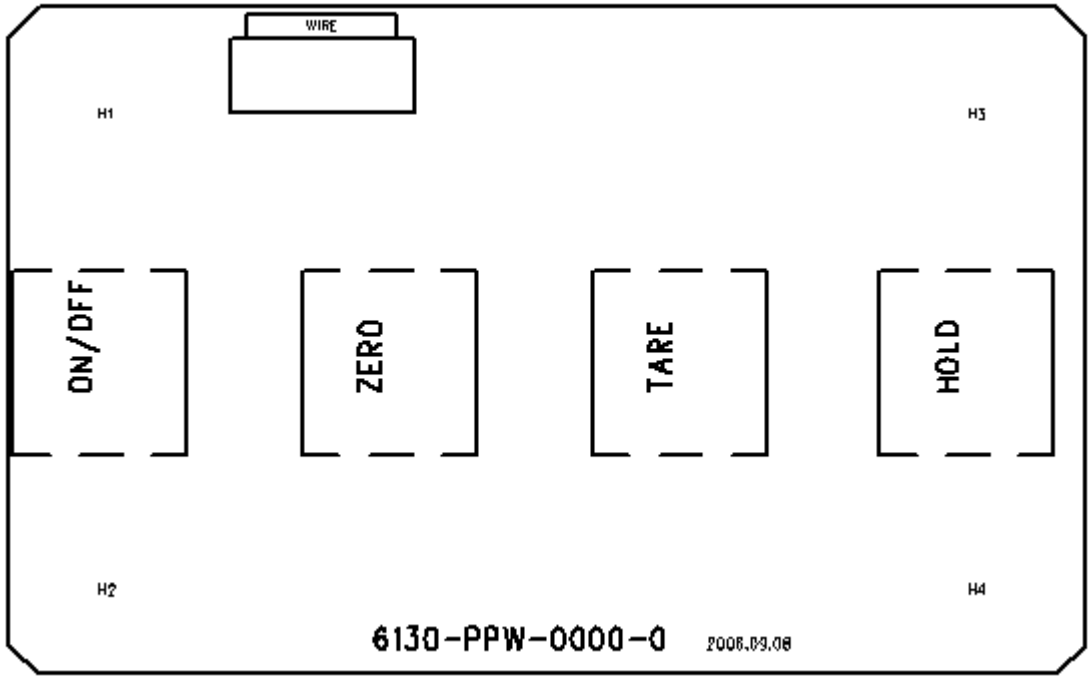
6.1. Main PCB (Top)



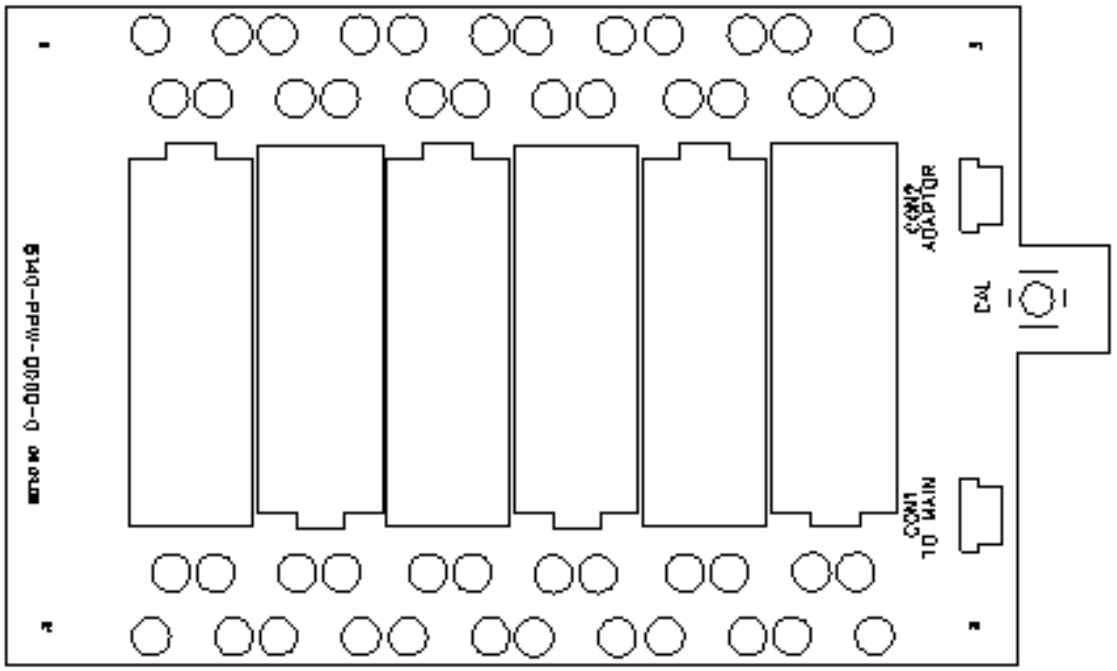
6.2. Main PCB (Bottom)



6.3. KEY PCB



6.4. BATTERY PCB (Bottom)



7. Error Messages & Solution

Error Message on Display	Description	Solution
"Err 0"	The "Err 0" occurs when scale is not stable.	Remove unstable facts.
"Err 1"	The "Err 1" occurs when a current zero point has shifted from the last span calibration.	Please call your CAS dealer.
"Err 2"	The "Err 2" is not a real error. Only it prompts return CAL switch to the normal position.	Please call your CAS dealer.
"Err 3"	The "Err 3" is an overload error.	Please remove the weight.
"Err 11"	The "Err 11" means a writing error of the internal nonvolatile memory. To recognize this error, be sure to check the voltage on the circuit and do calibration procedures.	If it still has "Err 11", replace the digital module.
"Err 12"	The "Err 12" warns that the scale has lost the parameters for weighing regulations or has lost the factors for a digital span calculation.	Enter each condition codes again (?). Please try a span calibration again if still not fixed.
"Err 14"	The "Err 14" means calibration range is not correct.	Please call your CAS dealer.