AD Series

Service Manual

LAST Rev. NO : 2

LAST Rev. Date : 2011. 02. 21

Table of Contents

1. Proper Operation / 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 AD series.

Please keep it handy for the future references.

1.2. Precaution

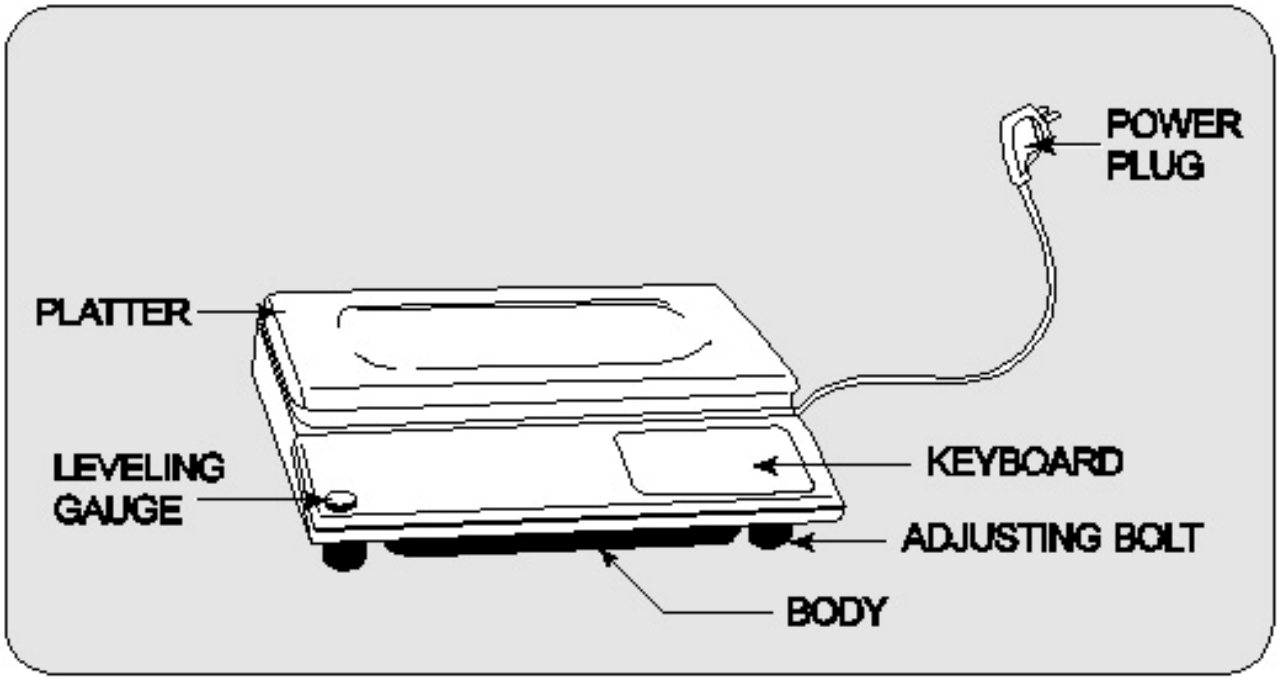
- Make sure that you plug your scale into the proper power outlet.
- Place the scale on a flat and stable surface.
- Plug into a power outlet 30 minutes before operations.
- Keep the scale away from strong EMI noises may cause incorrect weight readings.
- This scale must be installed in a dry and liquid 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. Specification

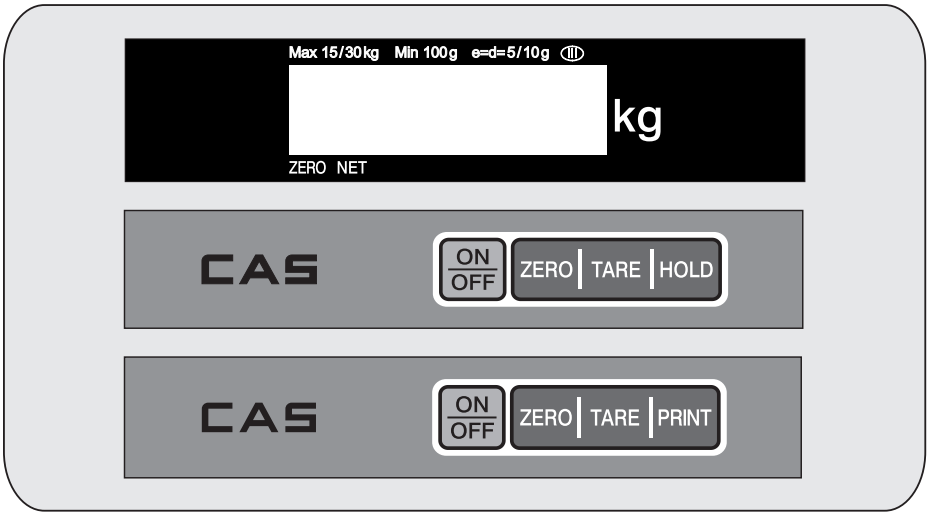
MODEL	AD PLUS							
MAX. CAPACITY	1.25/2.5kg	1.5/3kg	2.5/5kg	3/6kg	4/10kg	6/15kg	12.5/25kg	15/30kg
MIN. CAPACITY	0.5/1g		1/2g		2/5g		5/10g	
DISPLAY	VFD, 7 DIGIT							
DISPLAY DESIGNATORS	ZERO, NET							
MAXIMUM TARE	-1.2495kg	-1.4995kg	-2.499kg	-2.999kg	-3.998kg	-5.998kg	-12.495kg	-14.995kg
TEMPERATURE RANGE	-10℃ ~ +40℃							
POWER SOURCE	AC 110V/ 220V/ 240V, 50/60Hz							
POWER CONSUMPTION	Approx. 10W							
PLATTER SIZE(mm)	340(W) x 215(D)							
PRODUCT SIZE(mm)	350(W) x 325(D) x 105(H)							
PRODUCT WEIGHT	4.7kg							

2. Classification

2.1. Overall View



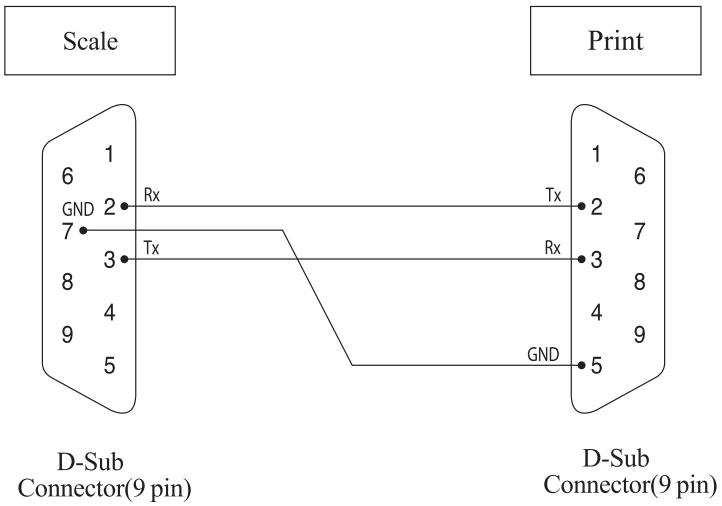
2.2. Display Pad (Key Pad)



■ KEY FUNCTIONS

KEYS	FUNCTIONS
ON/OFF	Turns the display ON or OFF.
ZERO	Used to correct the ZERO point.
TARE	Used to enter a TARE weight. Used to remove a TARE weight.
HOLD	When the weight is not stable, display will show the average weight for 4 seconds. – Hold version.
PRINT	PRINT FUNCTION (OPTION) – Print version

2.3. Serial Communiction



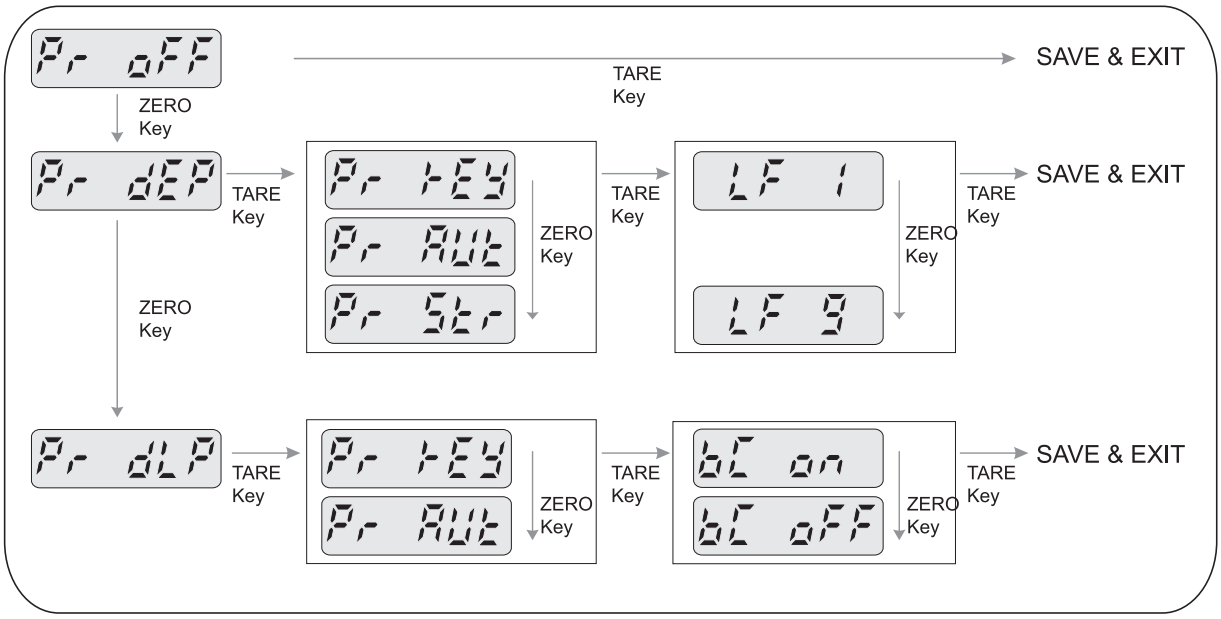
3. Getting Started

3.1. User setup

① While pressing the PRINT key, press the POWER key. The display shows “U SEt”.

② Press the TARE key, the display shows “Pr off”.
(If the setting value already exist in the scale, then it would display as the setting.)

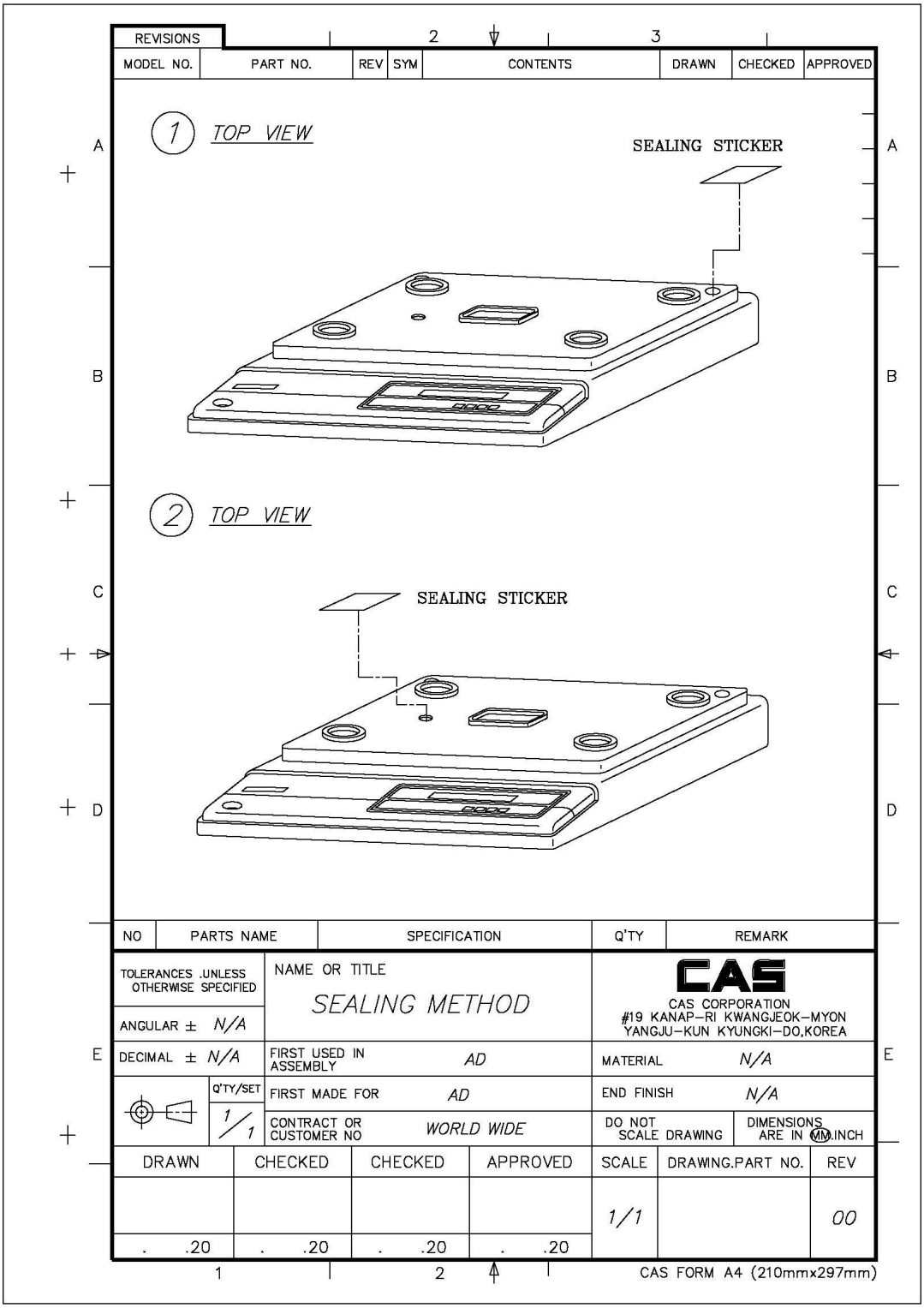
③ You can change the setting by pressing the ZERO key . Press TARE key to save and move next function setting.



※MENU DESCRIPTIONS

MENU	DISPLAY	DESCRIPTION
Printer	“Pr oFF”	Do not use printer.
	“Pr DLP”	DLP50 printer interface. (Label)
	“Pr DEP”	DEP50 printer interface. (Ticket)
Printer method	“Pr key”	Manual print. (DLP, DEP)
	“Pr AUt”	Auto print when the scale is stable. (DLP, DEP)
	“Pr Str”	Ptint continually when the scale is stable. (DEP)
Barcode (DLP only)	“BC on/off”	Print out barcode on/off.
Linefeed (DEP only)	LF1~LF9	Linefeed

3.2. Sealing Method



4. Calibration Mode

4.1. Genaral Calibration

(1) Hold down "Calibration Switch" and "[POWER] key" to enter Calibration mode and then the scale displays "CAL 1" after "onE".

(2) User can move to other menu by using [TARE] key (Next) or [HOLD] key (Previous).

(3) User can also enter the sub-menus in each mode by using [ZERO] key.

(4) To confirm the modified setting, press the [ZERO] key.

MODE	Function
CAL 1	**Display normalized AD**
CAL 2	**Display Keypad infomation-**
CAL 3	**Weight Setting Mode** (Refer to the page 11) "UnLoad" → [ZERO] → "MIDD" → [ZERO] after loading for Middle weight → "FULL" → [ZERO] after loading for Full weight → "MIDD" → [ZERO] after loading for Middle weight → "END"
CAL 4	**Option Setting** (Refer to the page 10)
CAL 5	**Display filtered Raw AD**
CAL 6	**Function Setting**
CAL 7	**% Calibration**
CAL 8	**Battery calibration**
CAL 9	**Gravity constant**
CAL 10	**Set calibration factor** "Unit" → [ZERO]→ select 0, 1 (0:kg, 1: lb) → [ZERO] "CAPA" → [ZERO]→ select capacity → [ZERO] "MCAPA" → [ZERO]→ select mid-capacity → [ZERO] "W-dP" → [ZERO] → Select Decimal Point → [ZERO] " 1 d " → [ZERO] → Select division → [ZERO] "Dual" → [ZERO] → Enable dual interval (0:disable, 1:enable) → [ZERO] "tare" → [ZERO] → Enable custom tare (0:disable, 1:enable) → [ZERO] →Select Tare Limit (only enable) → [ZERO]
CAL 11	**Set Nation**(00 : OIML , 01 : NTEP , 02: KOREA)

4.2. C4 Setting

AD PLUS stores optional settings by using hexadecimal number in C-4 menu. When you entered CAL-4, it will display hexadecimal number on the Total Price Display panel. For example, it displays B0 in C41 setting. $B0_{(16)}$ represents $10110000_{(2)}$ in the binary system. It means that scale has been set by (+/-)10% zero range, last digit invalid enable, (+/-)2% key zero percent, proper successive tare type and gross zero indication settings. Please refer to below table.

Bit	7(MSB)	6	5	4	3	2	1	0(LSB)
Value	1	0	1	1	0	0	0	0

4.2.1. C4-1 Setting (AD)

BIT 6~7	Initial Zero range	11	+15%, -5%
		10	±10%
		01	±3%
		00	±2%
BIT5	Last digit enable	1	Enable
		0	Disable
BIT4	Key zero percent	1	±2% key zero percent
		0	±3% key zero percent
BIT 2~3	Successive tare	11	(+), (-) All Direction successive Tare
		10	(-) Direction successive Tare
		01	(+) Direction successive Tare
		00	One Time tare
BIT0~1	Zero mark type	10	Both(gross and net) zero indication
		01	Net zero indication
		00	Gross zero indication

4.2.2. C4-3 Setting (Sale functions)

BIT7	Dot Type	0	"." dot
		1	"," comma
BIT6	Use Preset tare (AD can't use)	0	Don't use
		1	Use
BIT5	Use Back light (AD can't use)	0	Don't use
		1	Use
BIT4	Use Head message (AD can't use)	0	Don't use
		1	Use
BIT3	Use gram	0	Don't use
		1	Use
BIT2	Use oz	0	Don't use
		1	Use
BIT1	Use lb	0	Don't use
		1	Use
BIT0	Use Kg	0	Don't use
		1	Use

4.3. Calibration factor Setting (C-10) * Refer to CAL-10 Table.

(1) Hold down "Calibration Switch" and "[POWER] key" to enter Calibration mode, and then it displays "CAL 1" message.

(2) Press [TARE] to display "C-10".

(3) Press [ZERO] 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)

(4) Input a calibration unit by using [HOLD] key.

(5) Press [ZERO] 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)"

(6) Input a capability by using [HOLD] key.

(7) Press [ZERO] 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)"

(8) Input a capability by using [HOLD] key.

(9) Press [ZERO] 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)"

(10) Input a weight decimal point by using [HOLD] key.

(11) Press [ZERO] 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)"

(12) Input a division by using [HOLD] key.

(13) Press [ZERO] 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)"

(14) Input a dual interval enable by using [HOLD] key.

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

*** CAL-10 TABLE**

CAPA(Kg)	Interval	Resolution	CAL 10 SETTING						
			Unit	CAPA	Mid	W-dp	1d	dual	tare
2.5	Dual	1/2500	0	2.5	1	3	0.001	1	0 or 1
3	Dual	1/3000	0	3	1	3	0.001	1	0 or 1
5	Dual	1/2500	0	5	2	3	0.002	1	0 or 1
6	Dual	1/3000	0	6	2	3	0.002	1	0 or 1
10	Dual	1/2000	0	10	5	3	0.005	1	0 or 1
15	Dual	1/3000	0	15	5	3	0.005	1	0 or 1
20	Dual	1/2000	0	20	10	2	0.01	1	0 or 1
30	Dual	1/3000	0	30	10	2	0.01	1	0 or 1

Unit	Meaning	Remark
0	Kilo gram	
1	Pound	
3	Gram	
4	Ton	

CAPA	Max capa
Mid	Mid capa
W-dp	Position of decimal point
1d	Actual scale interval
dual	Dual Interval setting (1: use, 0: nonuse)
tare	Tare setting (1: Custom, 0: Proper)
"W-dp" and "1d" are high interval in dual.	

4.4. SPAN Calibration Setting (C-3)

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

After shows "ONE" message, and then it displays "CAL 1" message.

(2) Press [TARE] to display "CAL-3".

(3) Press [ZERO] key and then it displays "zero " message.

(4) Press [ZERO] key and then it displays "midup" message.

(5) Load middle weight on the platform. (Refer to the Setting Table)

(6) Press [ZERO] key and then it displays "span " message.

(7) Load full weight on the platform.

(8) Press [ZERO] key and then it displays "middn" message.

(9) Load middle weight on the platform. (Refer to the Setting Table)

(10) Press [ZERO] key and then it display "CAL 3" message.

4.5. Mode Setting (C-6)

(1) Press [TARE] to display "C-6".
(2) Press [ZERO] key, and then " HoLd" or "Print" or "Unit" message
(3) Press [TARE] and [HOLD] key at the same time. You can change the Setting Mode.
(4) Press [ZERO] key and then it display "CAL 6" message.

4.6. Gravity Constant Value Setting (C-9)

Current gravitational Acceleration value is set to 9.7994 m/s^2 .
(1) Pressing and holding "Calibration Switch" press [POWER] key.
(2) After shows "ONE" message, and then it displays "CAL 1" message.
(3) Press [TARE] to display "C-9".
(4) Press [ZERO] key, and then " G-1" message and "9.7994" will be shown. The first digit,"9" will blink.
(5) Input a gravitational acceleration value by using [HOLD] key.
(6) Press [ZERO] key, and then "G-2" message blinks."9.7994" will be shown. The first digit,"9" will blink.
(7) Input a gravitational acceleration value by using [HOLD] key.
(8) Press [ZERO] key to save the gravitational acceleration value, and "C-9 " message will be shown.

4.7. Percent Calibration (C-7)

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

4.8. Battery Calibration (C-8)

(1) Pressing and holding "Calibration Switch" press [POWER] key. After shows "ONE" message, and then it displays "CAL 1" message.
(2) Press [TARE] to display "CAL-8".
(3) Press [ZERO] key and then it displays voltage of battery.

(4) Change the jumper-pin of main PCB, 'BAT' to '+5V'.

(5) Press [TARE] key two times and then Press [HOLD] 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.

5. Servicing & Parts Replacement

5.1. Trouble shooting

SYMPTOM	PROBABLE CAUSE	REMEDY
ERROR 0 (unstable error)	1)The Scale is not put on the flat part. 2)A Vibration or wind is exist around The Scale.	- Check a foot. (Foots are must all touched in flat part.) -Check a PCB's field ground. (Field ground is must connected to platform.) - Move the scale to the stable place.
ERROR 1(initial zero)	1)The Scale is not operate Calibration 2)Cable is not connected between Loadcell and PCB.	-Operate Calibration. -Check a L/C and PCB. (L/C and PCB are must connected.)
Batt -> Error 0	1)ONEMODULE(A/D Converter) is damaged. 2)The Scale is not operate Battery Calibration	-Check a battery voltage(C-8) and then operate a battery calibration. -Check the A/D value. (C-1) If place a weight, A/D value have to changed.
NOT OPERATION (POWER OFF)	1)Power ON/OFF Key is damaged. 2) Battery discharge or not connected. 3)Fuse is down.(Open) 4)Power cable is down.	-Check a output voltage, holding a Tact S/W. -Check a battery connection and Battery voltage. -Check a fuse connection

5.2. Error Message

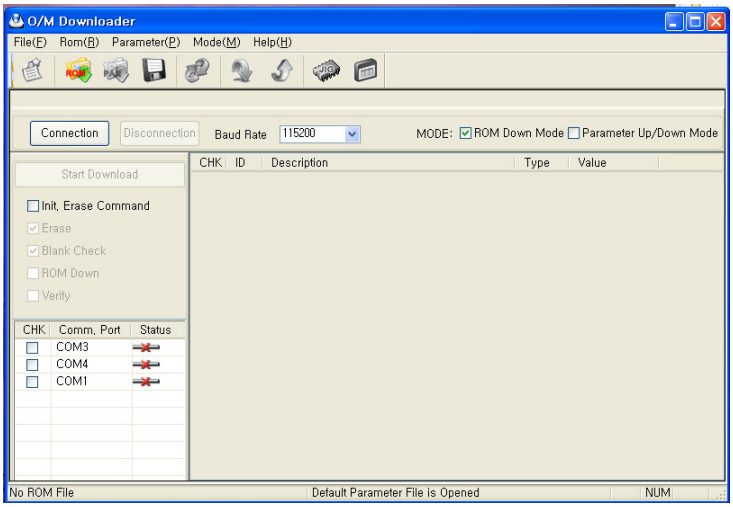
ERROR LIST	REASONS	SOLUTION
"Err 0"	The "Err 0" occurs when scale is not stable.	Remove unstable facts.
"Err 1"	The "Err 1" occurs when a current zero point has shifted from the last span calibration.	Please call your CAS dealer.
"Err 2"	The "Err 2" is not a real error. Only it prompts return CAL switch to the normal position.	Please call your CAS dealer.
"Err 3"	The "Err 3" is an overload error.	Please remove the weight.

"Err 9"	The "Err 9" is no weight error. When scale set counting number in counting mode, you must load the weight If you have no weight on your scale, you can see this error message.	Please load the weight on your tray.
"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.

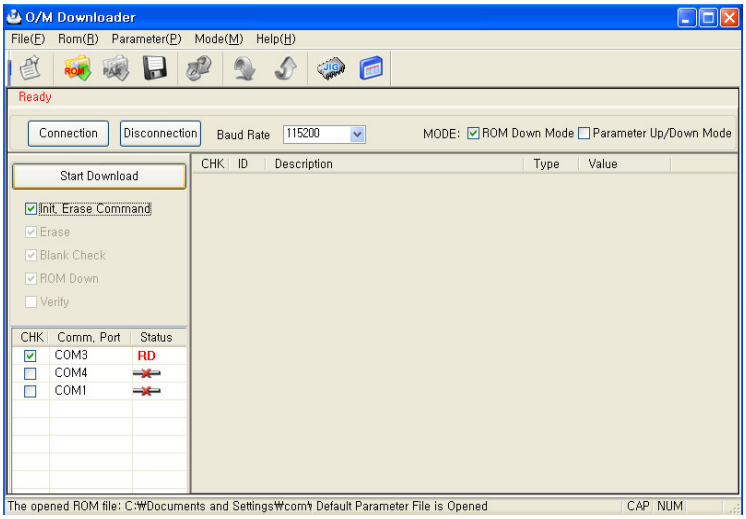
6. Update

6.1. ROM Download Method

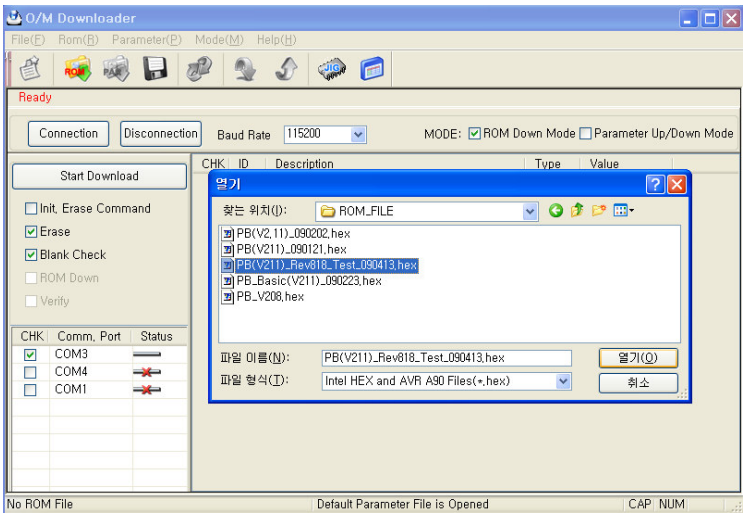
(1) Connect a RS-232C Cable, between the scale and PC and then excute a O/M Downloader program.



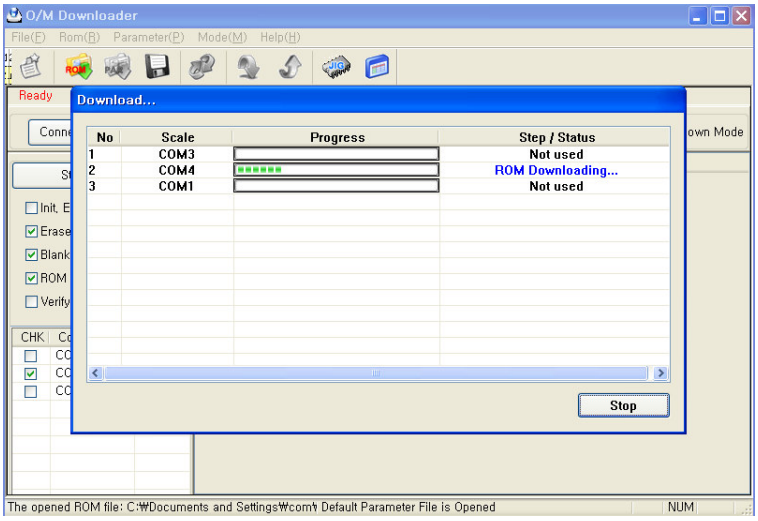
(2) Check a 'Communication port' and click the 'Init. Erase Command'. And then Click the 'Start Download', Communication port will be "Ready" status.



(3) Push a 'Open ROM File' button and then open the ROM File.

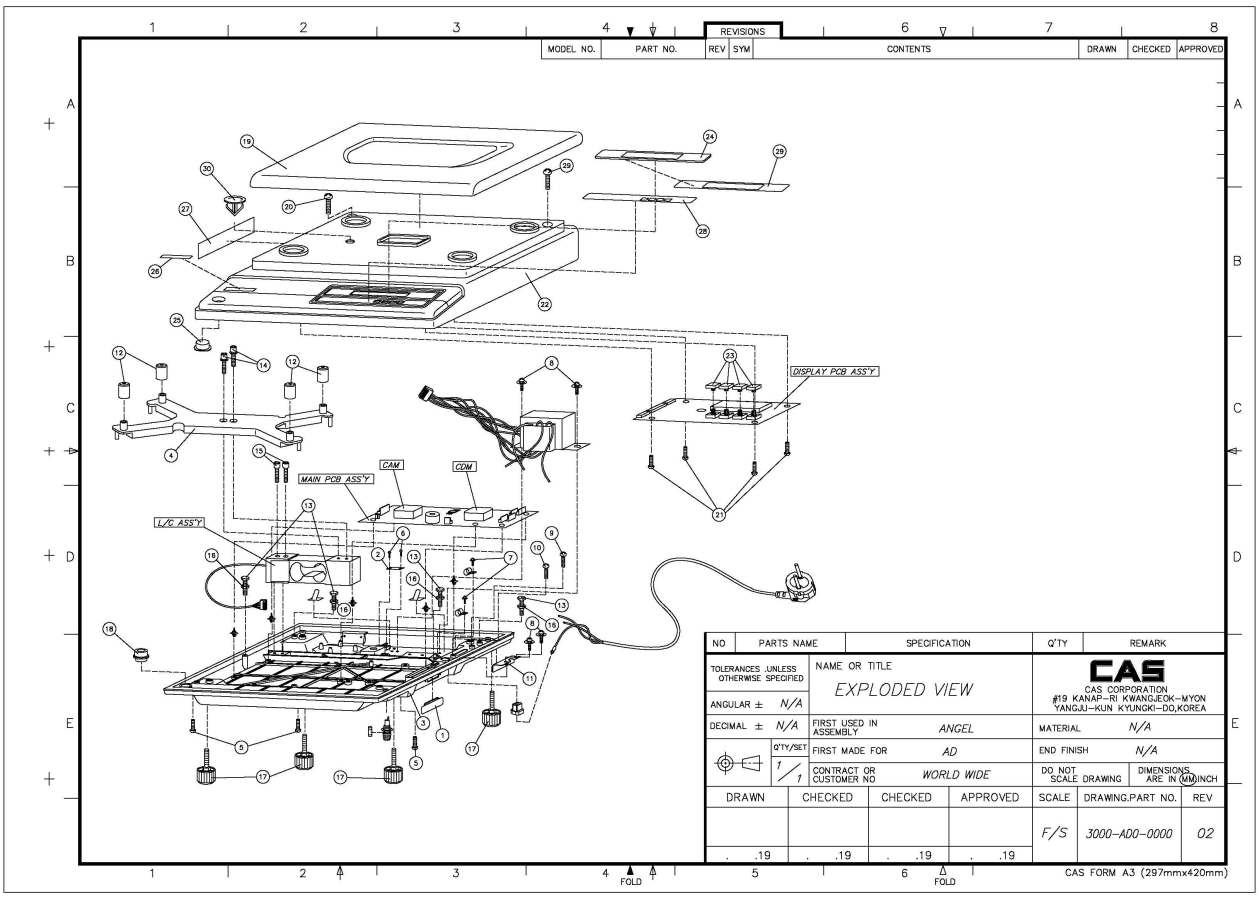


(4) If click the 'Start Download' holding a power ON/OFF key, You will see ROM Downloading display and then ROM download will be finished.



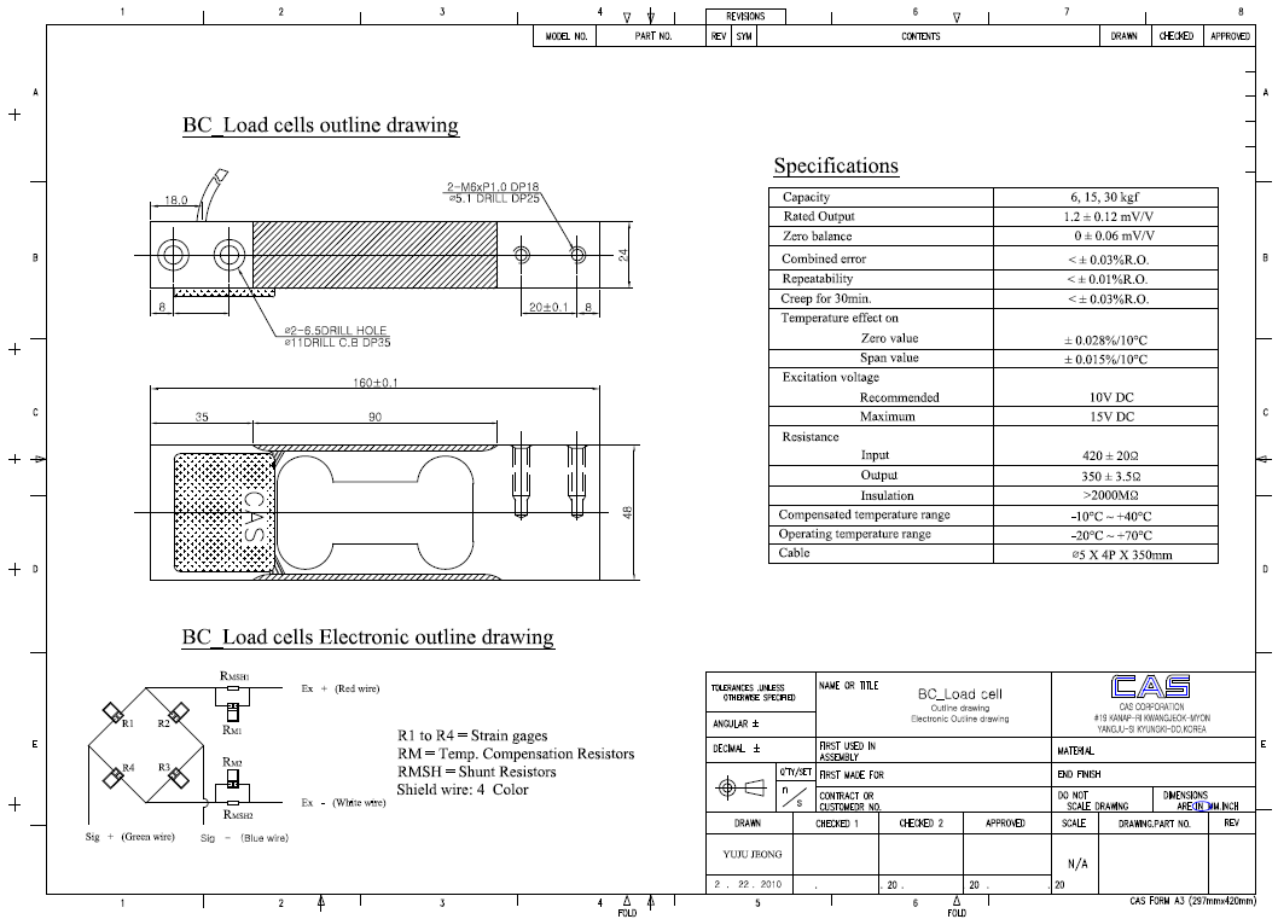
7. Exploded Views & Parts List

7.1. Exploded View



NO	MAT'L NEW CODE	PART NAME	SPECIFIACTION	UNIT	Q'TY	LOCATION
30	2002-A00-0002-0	SPAN HOLE COVER	NYNON #6 23*10*16.5	EA	1	
29	2632-A00-0001-0	D/P COVER TAPE	D-TYPE	EA	1	
28	2200-A00-0008-A	KEY PAD	D-TYPE	EA	1	
27	1710-A00-0005-0	SPEC PLATE	ENGLISH	EA	1	
26	1800-A00-0021-0	NAME PLATE	60.2*12.4	EA	1	
25	2001-A00-0059-0	LEVEL LENS	24*10	EA	1	
24	2050-A00-0076-0	DISPLAY COVER	AD TYPE	EA	1	
23	2000-A00-0057-0	K/B SWITCH KNOB	11.5*11.5*3.8	EA	4	
22	2000-A00-0004-0	UPPER COVER	350*325*45	EA	1	
21	1512-A00-0308-0	TAPPING SCREW (PH)-2	3*8	EA	4	
20	1502-A00-0430-0	MACHINE SCREW (PH)	M4*30	EA	2	
19	1000-A00-0012-0	TRAY	345*223*15*0.9t	EA	1	
18	2002-A00-0001-0	W/L GAUGE ASS'Y	ø19*ø21*14.5 -IVORY	EA	1	
17	2001-A00-0053-0	FOOT	S8*1.25*30	EA	4	
16	1540-A00-0500-0	NUT (HEX)	M5*0.8	EA	4	
15	1530-MSU-0625-0	WRENCH BOLT	M6*25-SUS	EA	2	
14	1530-MSU-0615-0	WRENCH BOLT(WA)	M6*20 -SUS	EA	2	
13	1520-A00-0520-0	HEXAGON BOLT	M5*20	EA	4	
12	2600-A00-0004-0	PLATFORM RUBBER	NBR 11*18*23-BLACK	EA	4	
11	1030-A00-0047-0	CONNECTOR BRACKET	SPC 1.5t, 65*26	EA	1	
10	1502-A00-0425-0	MACHINE SCREW (PH)	M4*25	EA	1	
9	1502-A00-0420-0	MACHINE SCREW (PH)	M4*20	EA	1	
8	1503-A00-0408-0	MACHINE SCREW (WPH)	M4*8	EA	4	
7	1502-A00-0406-0	MACHINE SCREW (PH)	M4*6	EA	2	
6	1502-A00-0308-0	MACHINE SCREW (PH)	M3*8	EA	2	
5	1512-A00-0420-0	TAPPING SCREW (PH)-2	4*20	EA	3	
4	1100-A00-0024-0	PLATFORM	332*181.5*30.5	EA	1	
3	1100-A00-0001-0	BODY	345*320*31	EA	1	
2	1050-A00-0002-0	SELECT S/W COVER	AL 30*13*0.5t	EA	1	
1	2620-A00-0017-0	CONNECTOR HOLE COVER	30*20*6.6t	EA	1	

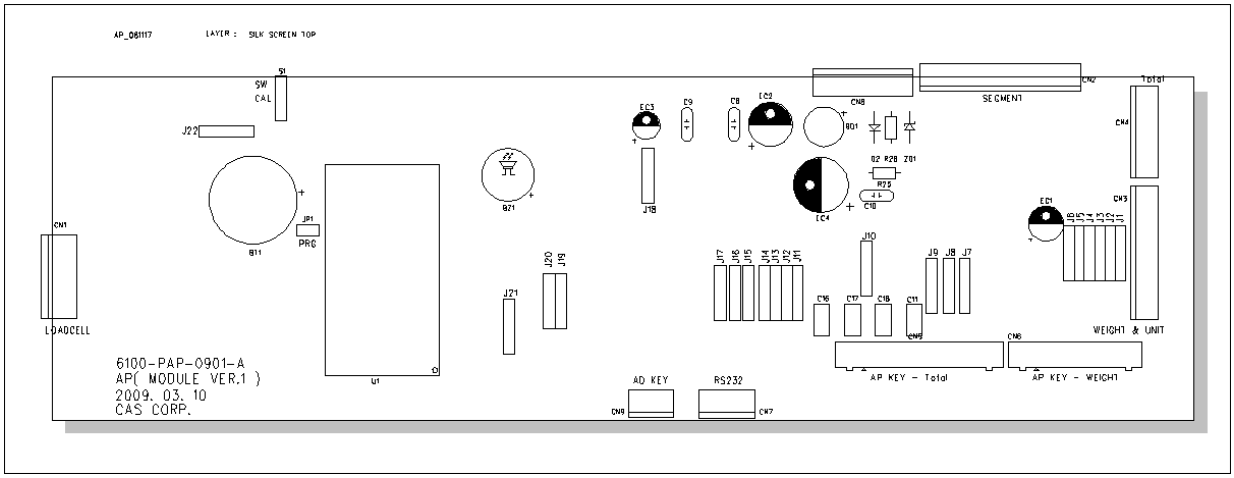
7.2. Loadcell Ass'y



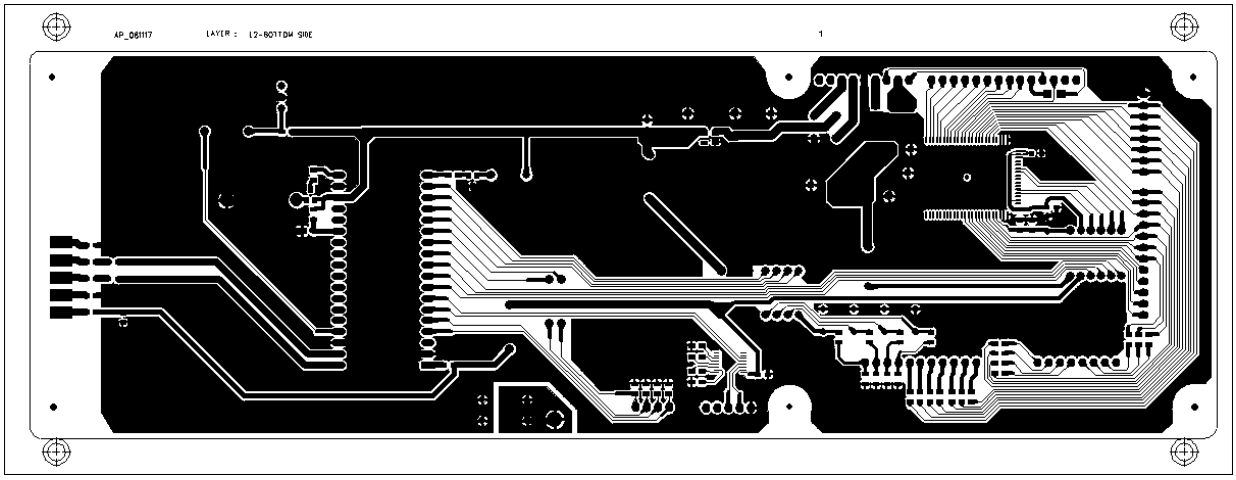
Specifications

Capacity	6, 15, 30 kgf
Rated Output	1.2 ± 0.12 mV/V
Zero balance	0 ± 0.06 mV/V
Combined error	< ± 0.03%R.O.
Repeatability	< ± 0.01%R.O.
Creep for 30min.	< ± 0.03%R.O.
Temperature effect on	
Zero value	± 0.028%/10°C
Span value	± 0.015%/10°C
Excitation voltage	
Recommended	10V DC
Maximum	15V DC
Resistance	
Input	420 ± 20Ω
Output	350 ± 3.5Ω
Insulation	>2000MΩ
Compensated temperature range	-10°C ~ +40°C
Operating temperature range	-20°C ~ +70°C
Cable	ø5 X 4P X 350mm

7.3. Main PCB Ass'y (Top)



7.4. Main PCB Ass'y (Bottom)



7.5 Part List

7.5.1. MAIN PCB ASS'Y

No	Part Name	Specification	Part Number	Q'ty	Remark
1	PCB-MAIN	6100-PAP-0901-A	6100PAP0901A	1	MAIN PCB
2	ONE MODULE	ONE MODULE	6PA0A0000010	1	U1 ONE MODULE(FULL OPTION)
3	IC(FIP DRIVER)	UPD16310GF-3L9	6224IS016310	1	U2
4	IC(INTERFACE)	3232(3.3V)	6232IS032320	1	U3
5	IC(REGULATOR)	XC6204C502MR(5.0V)	6220IS0C5020	1	U4
6	CONDENSER-CHIP	CL21F 104KBNC	6712CHP01040	7	C1,C2,C3,C4,C5,C6,C7
7	CONDENSER-CHIP	CL21F 102KBNC	6712CHP01020	4	C13,C14,C15,C12
8	CONDENSER-CERAMIC	0.01uF/3KV	6710CAP0103B	2	C19,20
9	CONDENSER-CERAMIC	0.1uF/50V	6710CAP01040	3	C8,C9,C10
10	CONNECTOR(WAFER)	LW0640-14 (LPH01-14)	7801CLW00140	1	CN2
11	CONNECTOR(WAFER)	LW0640-8 (LPH01-8)	7801CLW00080	1	CN4
12	CONNECTOR(WAFER)	LW0640-5 (LPH01-5)	7801CLW00050	1	CN7
13	CONNECTOR(WAFER)	LW0640-9 (LPH01-9)	7801CLW00090	1	CN8
14	CONNECTOR(WAFER)	LW0640-4 (LPH01-4)	7801CLW00040	1	CN9
15	DIODE-CHIP	KDS184	6294ICP01840	1	D1
16	DIODE-POWER	1N4004	6291IPO40040	1	D2
17	DIODE-TVS	SD12	6294ICP00120	2	D3,D4
18	DIODE-ZENER	6.8V/1W(1N4736)	6292IZE47360	1	ZD1
19	DIODE-BRIDGE	RB-153	6290IBR01530	1	BD1
20	CONDENSER-ELECTRIC	47u/50v	6704C5000470	1	EC1
21	CONDENSER-ELECTRIC	470uF/25V	6704C2504700	1	EC2
22	CONDENSER-ELECTRIC	100uF/16V	6704C1601000	1	EC3
23	CONDENSER-ELECTRIC	220uF/50V	6704C5002200	1	EC4
24	INDUCTANCE	HB-1M2012-102JT(TP2,LP2,DBB)	6670T0001020	5	L1~L7
25	TRANSISTOR CHIP	KTA1504 SY	6281I0015040	1	Q1
26	RESISTOR-CHIP 1/10W	WR06X0000JT(0Ω)	6527ID00000A	1	R27
27	RESISTOR-CHIP 1/10W	RR1220P-100D(10Ω)	6527ID001000	1	R1
28	RESISTOR-CHIP 1/10W	RR1220P-101D(100Ω)	6527ID010000	1	R2
29	RESISTOR-CHIP 1/10W	RR1220P-104D(100K)	6527ID310000	2	R3,R4
30	RESISTOR-CHIP 1/10W	RR1220P-472D(4.7K)	6527ID300470	1	R6
31	RESISTOR-CHIP 1/10W	RR1220P-103D(10K)	6527ID301000	2	R5
32	RESISTOR 1/4W	CFR 30k (+-5%)	6515CJ303000	2	R25,R26
33	SLIDE S/W	INCA-2(DJMM-12V)	7600SLD00020	1	S1
34	BATTERY	CR2032-3V(PIN TYPE)	7520P002032A	1	BT1
35	PIEZO BUZZER	APR,ADR(CHINA)	7002Z0000000	1	BZ1
36	JUMP WIRE	ø0.6*10m/m	7844W0001000	22	J1~J22
37	JUMPER	2PIN	7821CJM00020	1	JP1
38	GROUND TERMINAL ASS'Y	310mm(YELLOW,GREEN)(한단)	7860GND0310B	1	ground wire

7.5.2. DISPLAY PCB ASS'Y

No	Part Name	Specification	Part Number	Q'ty	Remark
1	PCB-DISPLAY	6110-PAD-0900-0 (OM Ver.)	6110PAD09000	1	DISPLAY PCB
2	VFD(FIP)	07MS21T(SAMSUNG,7DIGIT,F52B,L)	7202D0000210	1	
3	CONNECTOR(WAFER)	LA0640-08 (LPHA01-08)	7803CLA00080	1	CN2
4	CONNECTOR(WAFER)	LA0640-04 (LPHA01-04)	7803CLA00040	1	CN1
5	CONNECTOR(WAFER)	LA0640-12 (LPHA01-12)	7803CLA00120	1	CN3
6	FLAT CABLE CONNECTOR	(2*4P)*350mm(AWG26-AD OM)	7850W0004360	1	key wire
7	FLAT CABLE CONNECTOR	(2*8P)*350mm(AWG26-AD OM)	7850W0008360	1	display wire
8	FLAT CABLE CONNECTOR	(2*14P)*350mm(AWG26-AD OM)	7850W0014360	1	display wire
9	CUSHION-VFD	30*20*2T	2631A0000010	1	
10	TACT S/W	KPT-1104(DJTA-1103C)	7600STA11040	4	KEY

7.5.3. BODY ASS'Y

No	Part Name	Specification	Part Number	Q'ty	Remark
1	TRAY	ANGEL(0.9T)	1000A0000120	1	
2	PLATFORM	ANGEL (일반) 샌딩	1100AZ100240	1	
3	SCREW-MACHINE(PH)	M4*6	1502A0004060	1	
4	SCREW-MACHINE(PH)	M4*30	1502A0004300	2	
5	SCREW-MACHINE(WPH)	M4*12	1503A0004120	1	
6	SCREW-TAPPING(PH)-1	M4*20	1510A0004200	3	
7	BOLT-WRENCH	M6*25-SUS	1530MSU06250	2	
8	BOLT-WRENCH(WA)	M6*20-SUS	1535MSU06200	2	
9	WATER LEVEL GAGE ASS'Y	ø18.9*23*12.6(IVORY)상보	2022A0000011	1	
10	METAL CLAMP	6N	7642S0000600	3	
11	TIE BAND	100mm	7650S0000100	1	
12	WARNING FUSE STICKER	TIME DELAY 0.25AMP 250V	9020AP000110	1	
13	STICKER	GROUND (접지)	9030A0000260	1	
14	CONNECTOR BRACKET	65*26*1.5T(ANGEL) (외주)	1030A0000470	1	
15	SELECT S/W COVER	AL31*12.2*0.5t (외주)	1050A0000021	1	
16	BODY	AL345*320*31(일반공용)(외주)	1100A000001B	1	
17	BOLT-LIMIT	M5*0.8*9.2(BSBM 6Kg)(AP)(외주)	1261A0000090	1	
18	SCREW-MACHINE(PH)	M3*8 (외주)	1502A0003080	2	
19	SCREW-MACHINE(PH)	M4*8	1502A0004080	1	
20	SCREW-MACHINE(WPH)	M4*8	1503A0004080	2	
21	BOLT-HEXAGON	M5*20	1520A0005200	4	
22	NUT(HEX)	M5*0.8	1540A0005000	4	
23	FOOT	M8.0*1.25*30.0(ANGEL)(외주)	2001A000053B	4	
24	HARNESS HOLE COVER	PE 43*23*6.7(AP,AD,ADH,CS)외주	2013A0000060	1	
25	POWER TRANS(48)	230V (CE.말레이 공용:ANGEL)	7502PAP02300	1	
26	POWER CORD	폴란드,LVD 일반 (외주)	7560PAC00080	1	
27	FUSE	250mA/250V ø5 UL,S,VDE,BSI	7620S0502500	1	
28	FUSE HOLDER	FH-B02(CE)	7630S000125A	1	
29	CORD STOPPER	SR-6N-4	7640S0006040	1	
30	TIE BAND	PMT-152	7650S0000110	4	
31	PCB SUPPORT	6N-(T)	7702G0000060	4	
32	SLEEVE	DDITC-SQ1.25(투명파랑)UL	7704G0000400	2	
33	EARTH TERMINAL	4ø*1.25m/m	7760GND01250	1	
34	D-SUB CONNECTOR WIRE	D9P*5P*180(AP-RS232)CORE유상	7832W0014180	1	

7.5.4. C/T BOX ASS'Y

No	Part Name	Specification	Part Number	Q'ty	Remark
1	BOLT-SEALING	M4*6(S-2000)	1260A0000010	1	
2	BOLT-SEALING	M10*8(C-III)	1260A0000040	1	
3	FUSE	250mA/250V ø5 UL,S,VDE,BSI	7620S0502500	1	
4	MANUAL	AD (SYMBOL)(영공, ONEMODULE)	9002AD000334	1	
5	STICKER-제품부착	WEEE 마크,전제품,영공	9020A0000333	1	
6	C/T BOX	505*385*205(CAS)ANGEL	9100AP001330	1	
7	C/T BOX	525*405*450(ANGEL-2)	9100AP002300	0.5	
8	PAD	495*375(ANGEL)	9102AP001000	1	
9	STYROFOAM BOX	380*170*220 ANGEL-L	9203AS00004A	1	
10	STYROFOAM BOX	380*170*220 ANGEL-R	9203AS00005A	1	
11	POLY BAG	90*150*0.05T(FUSE)	9300A0000020	1	
12	POLY BAG	170*250*0.05T(MANUAL)	9301A0000030	1	
13	POLY BAG	500*650*0.04T(S2000)(SET,HD)	9305A000001B	1	
14	SILICAGEL	10g	9400A0000460	1	
15	봉인납	수출용	9900A0000010	1	
16	SEALING WIRE	300M/ROLL	9900A0000020	0	

7.5.5. UPPER CASE ASS'Y

No	Part Name	Specification	Part Number	Q'ty	Remark
1	SCREW-TAPPING(PH)-1	M3*8	1510A0003080	4	
2	RIVET	@3.2*8	1563A0003080	2	
3	NAME PLATE	AP-M(양면테잎용)ENGLISH	1800APM0000A	1	
4	SPEC PLATE	AP,AD(CE)	1810AP000222	1	
5	K/B SWITCH KNOB	11.4*11.4*6(DB,AD)	2000A000057A	4	
6	LENS	ACRYL ø24*10(ANGEL)	2001A0000590	1	
7	UPPER CASE	D-TYPE(난연)	2004A0000140	1	
8	DISPLAY COVER	AD-2.5(영공)	2050AD002332	1	
9	KEY BOARD PAD	AD-1(영공,print)	2200AD000333	1	
10	DISPLAY COVER TAPE	ANGEL D	2632D0000000	1	

NO	변경 사유(CAUSE)	DATE	변경자 (APPROVAL)	
1				