

# **MAINTENANCE MANUAL**

## **SAC SERIES**

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February 2004 REV 2

*Specifications and Function Subject to Change without Notice*

## 1. INTRODUCTION

This maintenance manual contains of certain information that may result in fraudulent use. Do not release any part of this manual to any end users or un-authorized persons.

The internal mini jumper should be so set to prevent un-authorized settings or alternations.

Should a load cell has been replaced; make sure that the protection devices are properly set.

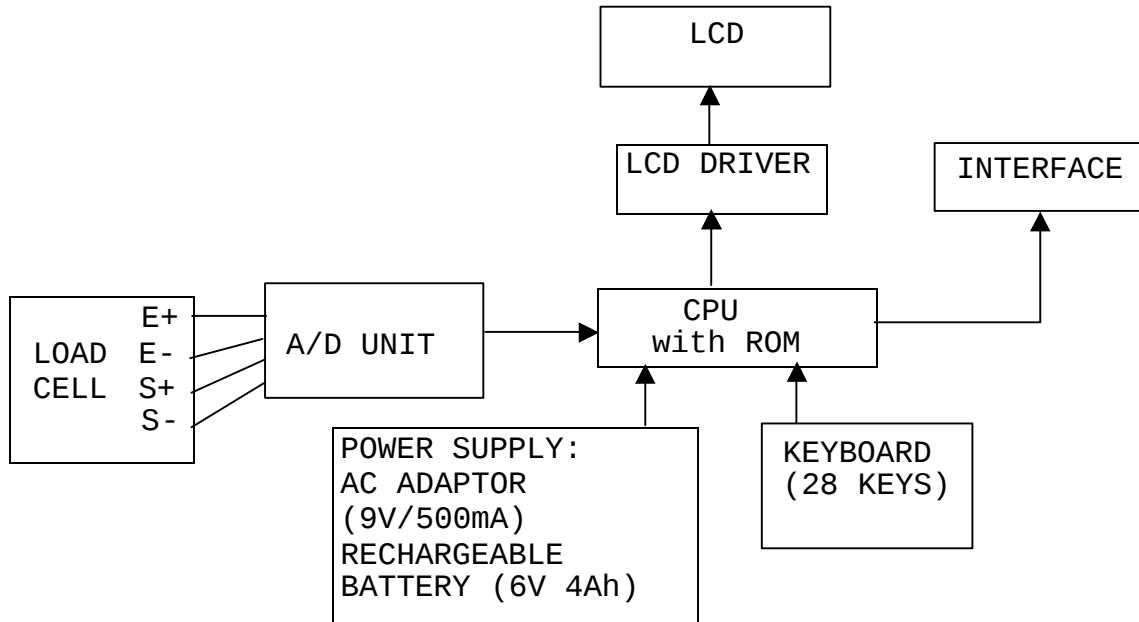
After servicing, it is necessary to go through all tests and procedures to ensure the scale meets all the meteorological and approval requirements, if any.

Here are some features of the SAC series

1. Triple interval 1/60000 ~ 1/75000 overall display resolution
2. 24 bit sigma to delta high speed A/D converter with 1000000 internal counts.
3. Zero Indicator.
4. Net Indicator.
5. Negative Value Indicator.
6. Insufficient sample size indicator.
7. Insufficient unit piece weight indicator.
8. Accumulation Function for weight piece.
9. Over weight/quantity Check Alarm
10. Fixed Tare Function.
11. Pre Tare Function.
12. Auto Tare Function.
13. Power on Zero Tracking Function.
14. Manual Zero Function.
15. Auto Power Saving Function.
16. Metric Conversion Function.
17. Low battery warning signal.
18. 2 points Calibration.
19. Mini jumper to prevent end-user calibration.
20. Built-in rechargeable battery operated.
21. Battery operating time: 100 hours plus after charged.
22. EL backlights included.
23. Optional RS232C or printer interface.

## 2. SPECIFICATION

### 2.1 SYSTEM BLOCK DIAGRAM



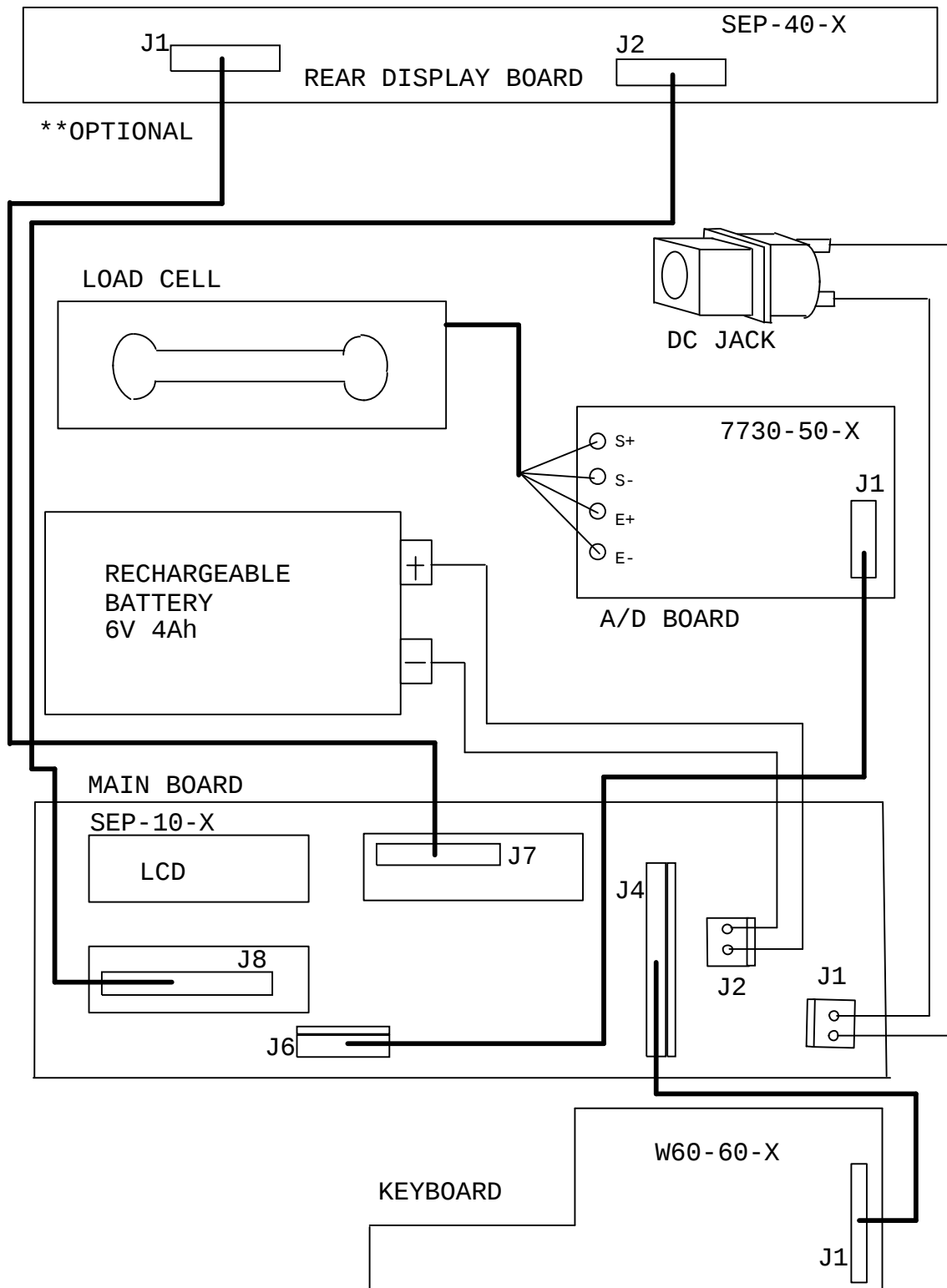
#### Description:

When a mass is placed on the platform, the load of the article is applied to the load cell inside it.

The resistance to the excitation current in the strain gauge will then change and the analog output signal varies.

It is amplified and digitized continuously by the A/D converter into a digital signal. Subsequently, the resulting count is processed and managed by the CPU. The CPU refers to the instructions from the keyboard, and then conveys the output data to LCD driver, which formats the data into readout on the display panels.

## 2.2 PHYSICAL LAYOUT OF ELECTRICAL CONNECTION



## 2.3 GENERAL SPECIFICATION

### 2.3.1 Overall View



### 2.3.2 Dimension:

Platter size: 230 x 345 mm

Overall size: 360(W) x 360(D) x 114(H) mm

### 2.3.3 Model Specifications

| Model No.               | Max <sub>1</sub> /e <sub>1</sub>                                                          | Max <sub>2</sub> /e <sub>2</sub> | Max <sub>3</sub> /e <sub>3</sub> |
|-------------------------|-------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|
| SAC-7.5C                | 1500g/0.1g                                                                                | 3000g/0.2g                       | 7500g/0.5g                       |
| SAC-15C                 | 3000g/0.2g                                                                                | 7500g/0.5g                       | 15000g/1g                        |
| SAC-30C                 | 7500g/0.5g                                                                                | 15000g/1g                        | 30000g/2g                        |
| SAC-60C                 | 15000g/1g                                                                                 | 30000g/2g                        | 60000g/5g                        |
| SAC-15 lb               | 3/0.0002 lb                                                                               | 7.5/0.0005 lb                    | 15/0.001 lb                      |
| SAC-30 lb               | 7.5/0.0005 lb                                                                             | 15/0.001 lb                      | 30/0.002 lb                      |
| SAC-60 lb               | 15/0.001 lb                                                                               | 30/0.002 lb                      | 60/0.005 lb                      |
| SAC-150 lb              | 30/0.002 lb                                                                               | 75/0.005 lb                      | 150/0.01 lb                      |
| Minimum Load Applied    | 20 x e <sub>1</sub>                                                                       |                                  |                                  |
| Min. Unit Piece Weight  | = 0.5 x e <sub>1</sub>                                                                    |                                  |                                  |
| Min. Sample Size Weight | 7.5C, 15C, 15 lb & 150 lb = 25 x e <sub>1</sub><br>Other capacities = 20 x e <sub>1</sub> |                                  |                                  |
| Maximum Tare Range      | Full Tare Range                                                                           |                                  |                                  |
| Power on Zero Range     | = Max <sub>3</sub>                                                                        |                                  |                                  |
| Manual Zero Range       | ±2% Max <sub>3</sub>                                                                      |                                  |                                  |
| Operation Environment   | 0°~40°C (32°~104°F),<br>Non-condensed. R.H. ≤ 85%                                         |                                  |                                  |
| Power Consumption       | 0.5W (when charged)                                                                       |                                  |                                  |

#### 2.3.4 Main Components Used

- Microprocessors: 89C52
- Crystal Oscillator: 16MHz
- Display Device: Bold Type WTN Liquid Crystal Display

#### 2.3.5 Analog Specification

- Power supply of 5V DC;
- 24 bits serial digital output;
- Excitation power supply for the load cell is 5 V DC;
- Input impedance of the load cell is 350 ;
- The analog data processing unit is built in a closed metal box.

### 2.4 INTERNAL SETTINGS AND CALIBRATION METHODS

6 internal settings are available as below table.

| Function | Symbol | Description            |
|----------|--------|------------------------|
| 1        | F0     | Zero motion filter     |
| 2        | F1     | Offset value Reading   |
| 3        | F2     | Full display Segment   |
| 4        | F3     | Span value Check       |
| 5        | F4     | Auto power off setting |
| 6        | F6     | Weighing motion filter |

#### 2.4.1 How to Enter the Functions Required

- Turn scale on by pressing **ON/ZERO**, then press and hold **NUMBER SET** before scale completes counting down
- The **WEIGHT PANEL** shows **F1**
- Press **NUMBER SET** until the desired function number appears
- Press **@WT/SET** to enter selection
- Press **NUMBER SET** to save
- Press **M+** to quit to normal operation status

#### 2.4.2 Zero Motion Filter (F0)

To ensure the best performance under poor operating environment, this scale can set motion filter when at zero. Follow the below steps to set the motion filter.

- a. Refer to step a to c in **4.4.1** and select **F.0**
- b. Press **@WT/SET** to enter
- c. **WEIGHT** panel shows **F0** and **UNIT WEIGHT** panel shows **ZEro\_0**
- d. Press **@WT/SET** to select from **ZEro\_0** to **ZEro\_4**
- e. Press **NUMBER SET** to confirm
- f. Press **M+** to restart the scale

#### **2.4.3 Offset Value Reading (F1)**

1. Remove all loads from platter
2. Enter **F1** through procedures as described in **2.4.1**
3. The offset value is displayed on the **TOTAL COUNT PANEL**

#### **2.4.4 Full Display Segment (F2)**

1. Refer to the **2.4.1** on how to enter **F2**
2. Press **@WT/SET**
3. All display segments will be lighted up
4. Check digits and arrow indications of all 3 panels to verify any defects or errors
5. Press **CLEAR** to quit

#### **2.4.5 Span Value Check (F3)**

1. Remove all loads from platter
2. Enter **F3** through procedures as described in **2.4.1**
3. The offset value is displayed on the **TOTAL COUNT PANEL**
4. Press **ON/ZERO** to clear the offset value
5. Add load on platter
6. The span value of the load applied is displayed on the **TOTAL COUNT PANEL**

#### **2.4.6 Auto Power Off Setting (F4)**

This unit is equipped with **AUTO POWER OFF** function. Default setting = auto off after 4 minutes unused. Follow the below steps to disable/employ the **AUTO POWER OFF** function.

1. Refer to the **2.4.1** on how to enter **F4**
2. Press **@WT/SET** to shift between **0\_OFF** and **4\_OFF**
  - To disable the **AUTO POWER OFF** function, press **NUMBER SET** when display shows **0-OFF**
  - To employ the **AUTO POWER OFF** function, press **NUMBER SET** when display shows **4-OFF**

3. Scale display **F6**
4. Press **M+** to restart the scale

#### 2.4.7 Weighing Motion Filter (F6)

The weighing motion filter gives a more stable result when the operating environment is in a poor condition. Follow the below steps to set the motion filter.

- a. Refer to step a to c in **4.4.1** and select **F.6**
- b. Press **@WT/SET** to enter
- c. **WEIGHT** panel shows **F6** and **UNIT WEIGHT** panel shows **Filt\_0**
- d. Press **@WT/SET** to select from **Filt\_0** to **Filt\_4**
- e. Press **NUMBER SET** to confirm
- f. Press **M+** to restart the scale

#### 2.4.6 Calibration Methods

##### 2.4.6.1 Calibration load and span value range

| Model No.  | CAL_1        |                       | CAL_2        |                       |
|------------|--------------|-----------------------|--------------|-----------------------|
|            | LOAD APPLIED | SPAN RANGE (Thousand) | LOAD APPLIED | SPAN RANGE (Thousand) |
| SAC-7.5C   | 2 or 3 kg    | 160~224               | 6 kg         | 480~672               |
| SAC-15C    | 5 or 10 kg   | 200~280               | 15 kg        | 600~840               |
| SAC-30C    | 10 or 20 kg  | 200~280               | 30 kg        | 600~840               |
| SAC-60C    | 20 or 40 kg  | 200~280               | 60 kg        | 600~840               |
| SAC-15 lb  | 5 or 10 lb   | 160~280               | 15 lb        | 480~840               |
| SAC-30 lb  | 10 or 20 lb  | 160~280               | 30 lb        | 480~840               |
| SAC-60 lb  | 20 or 40 lb  | 160~280               | 60 lb        | 480~840               |
| SAC-150 lb | 50 or 100 lb | 160~280               | 150 lb       | 480~840               |

To increase the span value: - Decrease the impedance value of R5  
 To decrease the span value: - Increase the impedance value of R5

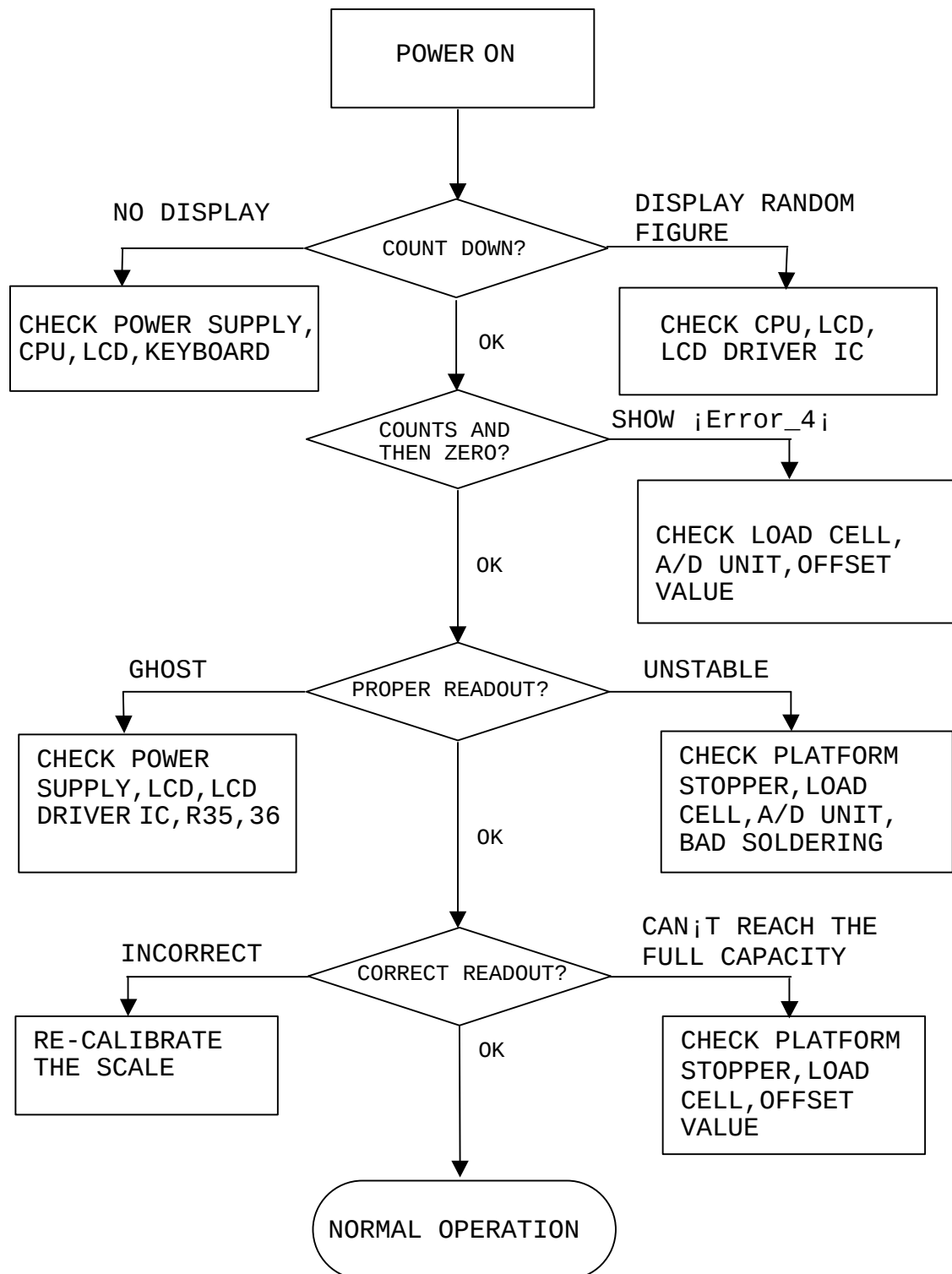
#### Calibration procedures

1. Hold **@WT.SET** and press **ON/ZERO** to turn on the scale.
2. "i\$CAL?\_1i" will appear on **WEIGHT** panel.
3. Press **@WT.SET** again to enter calibration.

4. **WEIGHT** panel will display `¡SCAL. 0¡` to automatically calibrate the zero point.
5. When it completes in calibrating zero point, it will automatically enter the next step.
6. **WEIGHT** panel will now keep flashing two different standard calibrate weights for user to choose.
7. Load the mass.
8. Scale will have a beep sound when it is calibrated.
9. **WEIGHT** panel now display `¡$CAL?_2`
10. There are two options now, either press **OFF** to exit the calibration or press **@WT.SET** to enter second point calibration.
11. When **@WT.SET** is pressed, scale will display `¡$YES¡` and ask to load the second weight, which is normally close to the maximum capacity.
12. Load the mass.
13. Scale will automatically exit the calibration procedure when it is calibrated.
14. Scale now reads the weight of the load on the platter.

### 3. TROUBLE SHOOTING

#### 3.1 TROUBLE SHOOTING LOOP



## 3.2 PARTS AND COMPONENTS TROUBLE SHOOTING

### 3.2.1 Power Supply Checking

#### 3.2.1.1 Relevant parts:

Main Board (SEP-10-X)

Q1 (C1061)

Q3 (C945)

Q4 (C945)

Q5 (A1515)

Q6 (A733)

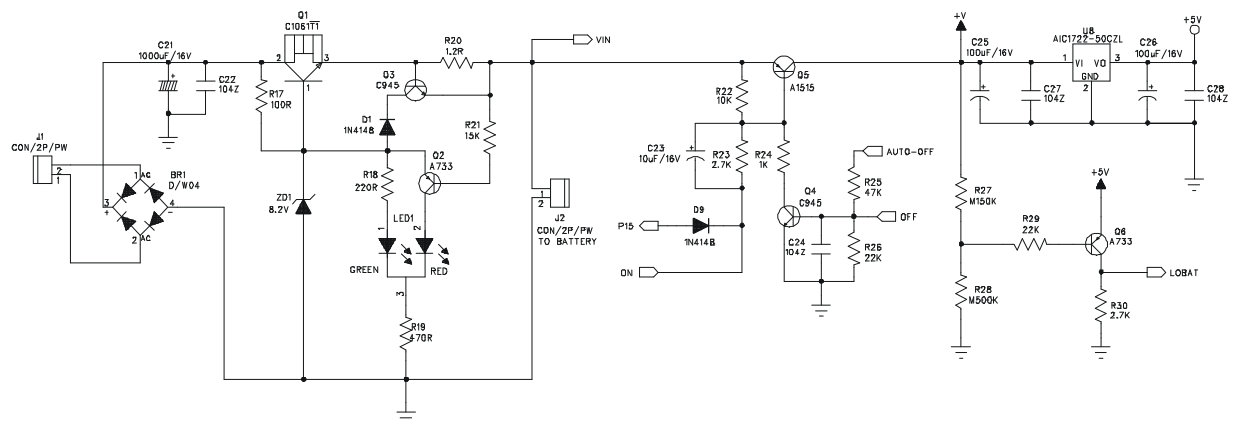
U8 (AIC 1722-5.0)

R20 (1.2R 1/2W)

ZD1 (ZENER 8.2V)

DC JACK

BATTERY (6V 4Ah)



**Description:**

- 1) Power source: Rechargeable Battery 6V/4Ah or AC adaptor (9V, 500mA)
- 2) How Battery is charged completely?  
The charging voltage is regulated by Q1 (C1061) and ZD1 (8.2V) for about 7 volts.  
  
The charging current will go down automatically when voltage reached. Q3 (C945) and R20 (1.2R, 1/2W) provide Over-Current protection.
- 3) +5V power drives digital circuit system.  
U8 (AIC 1722-5.0) is a 5volts Voltage Regulator.
- 4) +5V power drives analog circuit system.  
U4 (NS2950A) is a 5volts Voltage Regulator.
- 5) Auto-off:  
If the scale is set with 4\_off or even under LO-BAT situation, after fixed time interval, CPU will release a low potential signal to draw down Q4, then Q5 cuts off, the scale will be shut down immediately.
- 6) Low Power Detection:  
The Q6(A733) is designed to detect the power level. When battery power is less than 5.5V, the collector pole will become high potential, then CPU will instruct LCD display to show LO-BAT symbol.

**3.2.1.2 Input voltage: 5.5V or higher**

Check and recharge battery if voltage is less than 5.5V.

**3.2.1.3 System voltage (Vcc): 5V +/- 10%**

Check that the system voltage is within 5V +/- 10%

- a) less than 4.5V, the CPU may not work properly.
- b) more than 6V, ghost will appear on LCD.

### **3.2.2 Platform Stopper Checking**

The platform device shall not touch anything around itself during operation. Check that the platform is not contacted with the upper (no load) and/or lower (with load) stopper.

### **3.2.3 LCD Display Checking**

**3.2.3.1** Check that it is soldered and connected properly between LCD and driver IC (PCF8576), driver IC (PCF8576) and CPU.

**3.2.3.2** Check whether LCD is broken.

### **3.2.4 CPU Checking**

**3.2.4.1** Check that all pins are seated properly into the socket.

**3.2.4.2** Check that the Crystal Oscillator works.

**3.2.4.3** Check the RESET is normally low.

### **3.2.5 A/D Unit Checking**

**3.2.5.1** Check that the +5V powers are correctly fed to the A/D unit.

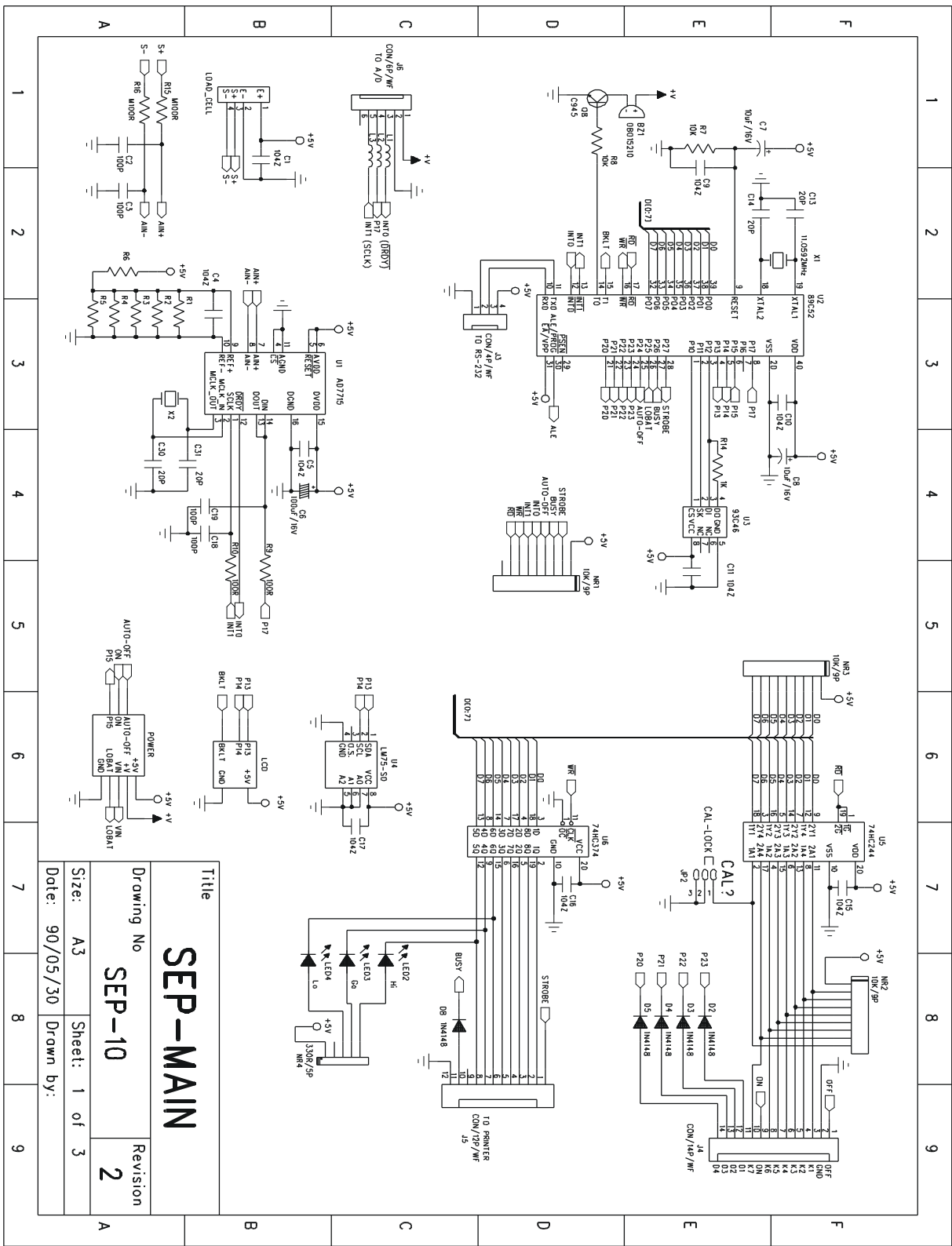
**3.2.5.2** Check that the signal output of loadcell is normal.

**3.2.5.3** Check OP. Amplifiers & A/D Converter (AD7730).

When no error is found with the above checking procedures, the trouble can be caused on the load cell or the PCB itself. Replace a new one could be better to identify the defective.

In this way, the readout of weight would be varied because of the output voltage of load cell and different span value, so re-calibration is required after this replacement.

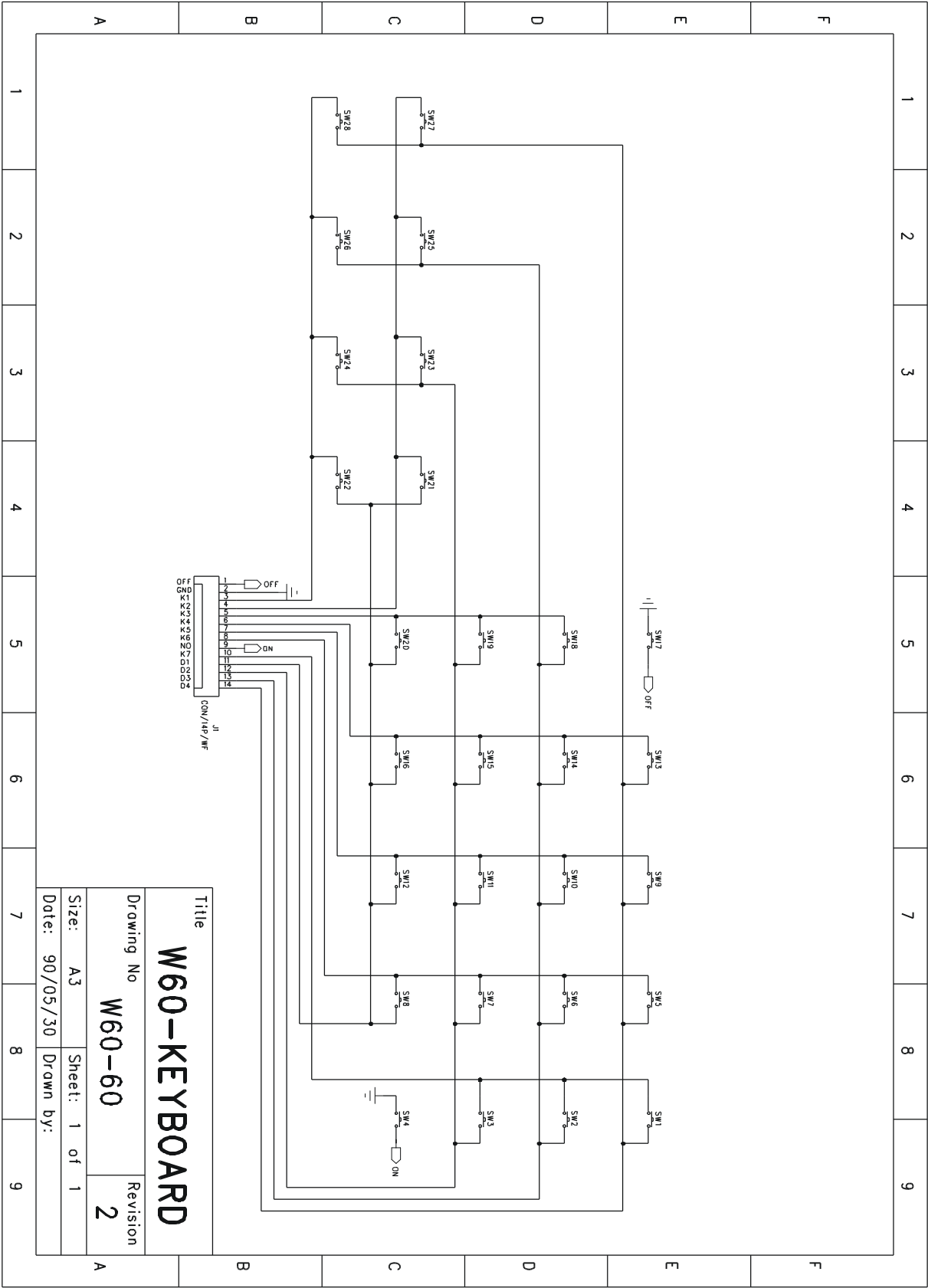
# 4. ELECTRICAL CIRCUITRY 4.1 SCHEMATICS





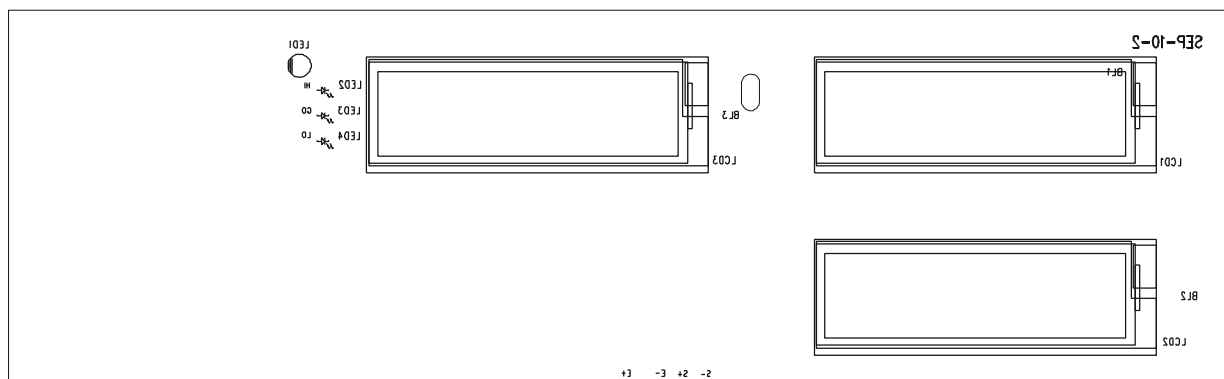


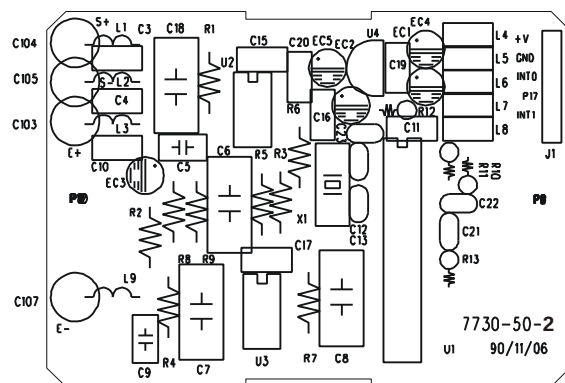




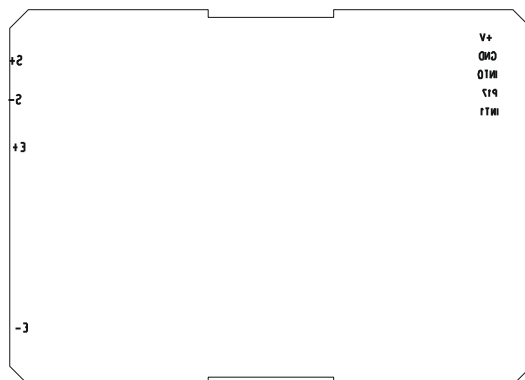
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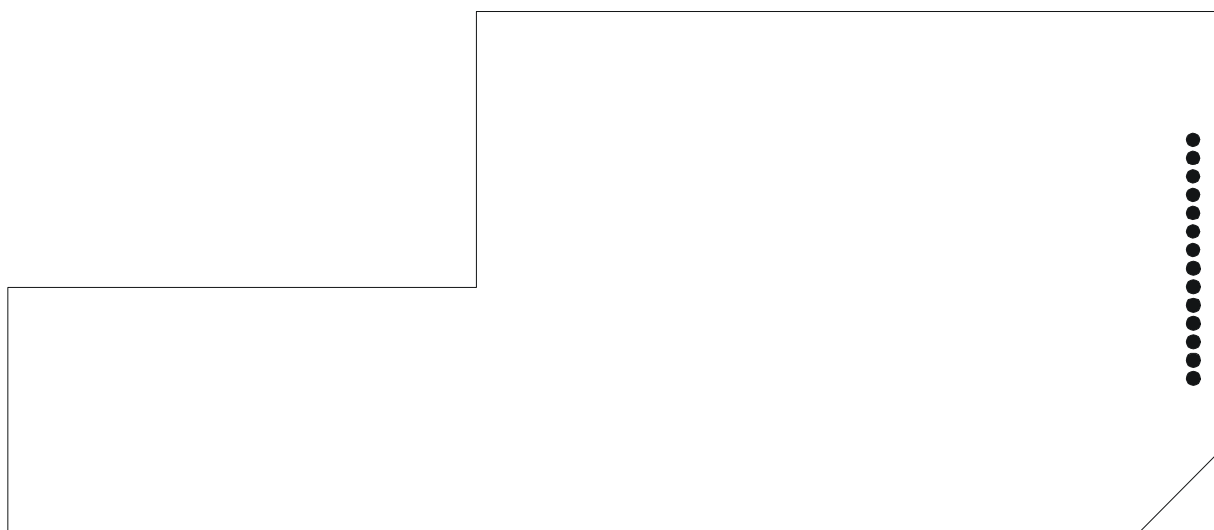




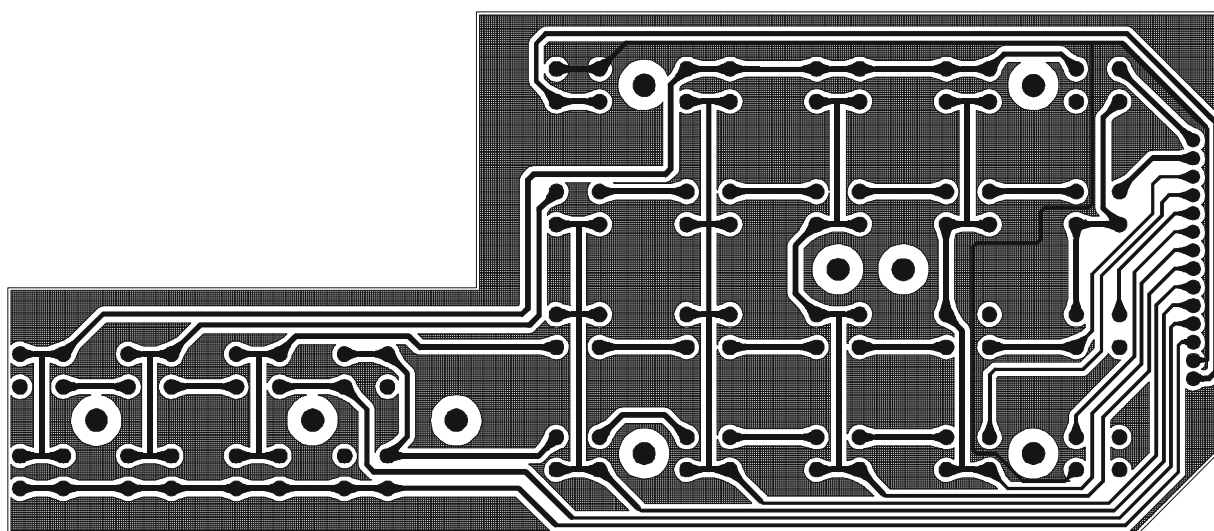
7730-50-2 TOP OVERLAY



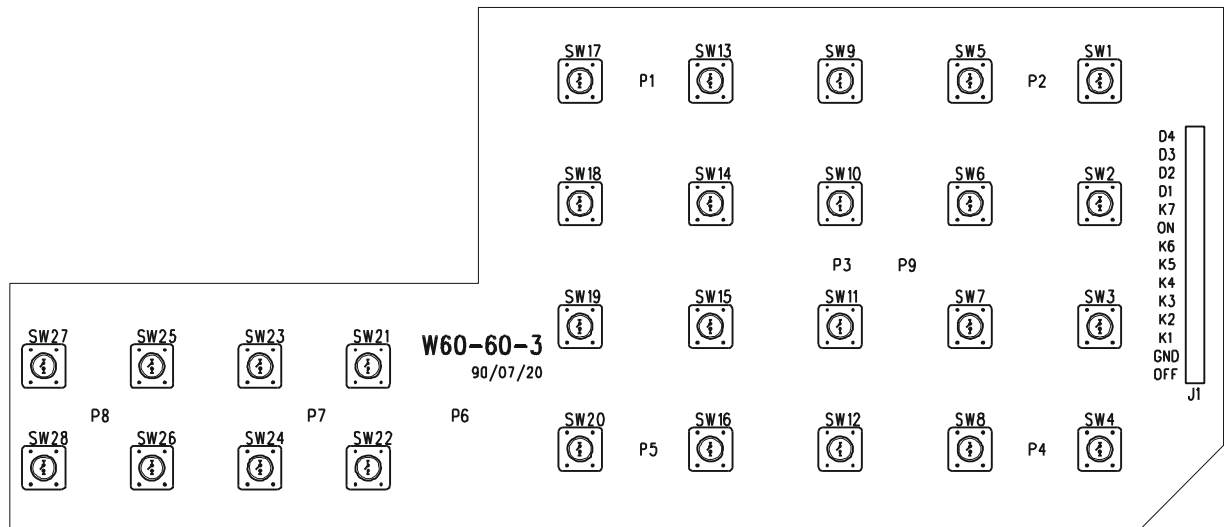
7730-50-2 BOTTOM OVERLAY



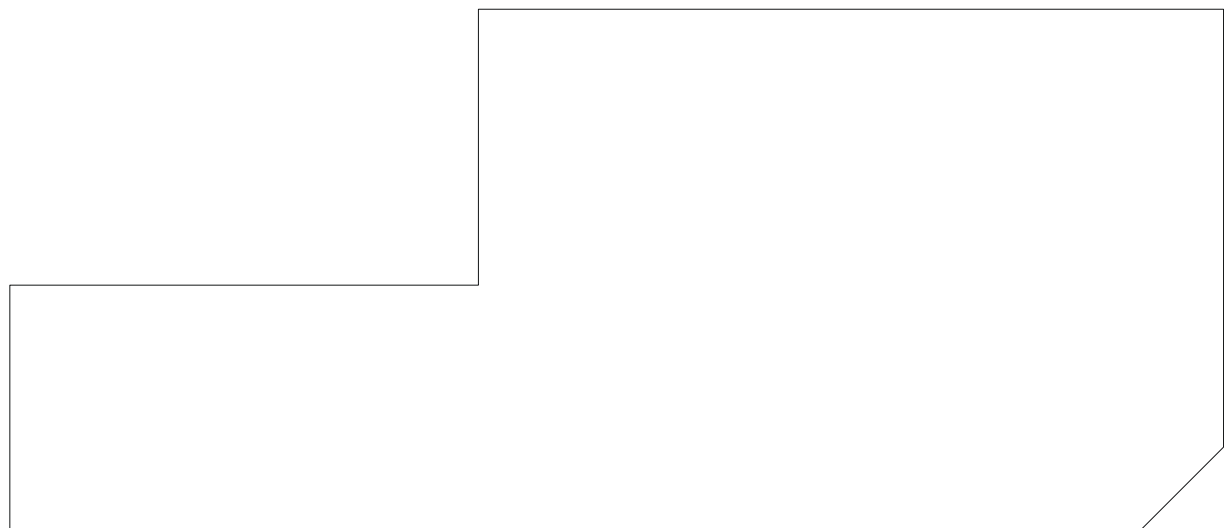
W60-60-3 TOP LAYER



W60-60-3 BOTTOM LAYER



W60-60-3 TOP OVERLAY



W60-60-3 BOTTOM OVERLAY

## 5. BILL OF MATERIAL

### STRUCTURE

| PARTS NO.   | DESCRIPTION             | SPECIFICATIONS              | QTY | REMARKS |
|-------------|-------------------------|-----------------------------|-----|---------|
| A0015300272 | LOAD CELL               | PW6C3-7.2Kg                 | 1   |         |
| A0901010040 | CONNECTOR               | 4 PIN WAFER                 | 1   |         |
| A1007000001 | FERRITE CORE            | TR-16*9*28mm                | 2   |         |
| A1202060300 | WIRE ARRAY              | 6PIN 30cm                   | 1   |         |
| A6000120950 | ADAPTOR                 | 120V/ 9V 500mA(UL)          | 1   |         |
| C1SAC000000 | SAC CAP. PANEL          | SAC SERIES                  | 1   |         |
| C1SAC030001 | SAC FRONT PANEL PC      | SAC SERIES (lb)             | 1   |         |
| C1SAC030999 | SAC REAR PANEL PC       | SAC,SEC SERIES              | 1   |         |
| C1SAC031000 | SAC FRONT PANEL PC      | SAC SERIES KEYBOARD         | 1   |         |
| F0010305015 | COPPER COLUMN           | 3*5*15                      | 1   |         |
| F0015000004 | ANTI I/F BOX            | EM SERIES (UPPER)           | 1   |         |
| F0015000005 | ANTI I/F BOX            | EM SERIES (LOWER)           | 1   |         |
| G0004DW0001 | RUBBER PAD              | 16*3.5t BLACK               | 1   |         |
| Y0001S00000 | S SERIES COMMON PARTS   |                             | 1   |         |
| A0906003430 | D.C. JACK               | DC-343                      | 1   |         |
| A1202140200 | WIRE ARRAY              | 14PIN 20cm                  | 1   |         |
| A1208020351 | BATTERY WIRE ARRAY      | 2PIN SINGLE 35cm            | 2   |         |
| A5005000090 | BUBBLE LEVEL            | D14 (DIA. = 14mm)           | 1   |         |
| F0002S00000 | S/S PLATTER             | S SERIES (350*242*12*1t)    | 1   |         |
| F0003S00100 | UPPER LOAD CELL SUPPORT | S SERIES (5.5 X 6)          | 1   |         |
| F0003S00101 | LOWER LOAD CELL SUPPORT | S SERIES (M4 X 8)           | 1   |         |
| G0001S00000 | HOUSING                 | S SERIES LOWER (5/16-24UNF) | 1   |         |
| G0001S00100 | HOUSING                 | S SERIES UPPER              | 1   |         |
| G0004BW1000 | ADJUSTABLE FOOT         | BW SERIES                   | 4   |         |
| G0005S00000 | PLASTIC CAP FOR PLATTER | S SERIES (42*15)            | 5   |         |
| G0009EM0002 | BATTERY PACK COVER      | EM SERIES (GREY)            | 1   |         |
| A1600060400 | RECHARGEABLE BATTERY    | GP4-6 6V 4AH                | 1   |         |
| Z7SAC000000 | DUST COVER              | SAC SERIES                  | 1   |         |

### KEY BOARD

|             |                      |                |    |  |
|-------------|----------------------|----------------|----|--|
| E1W60100000 | P.C.B.               | W60-60-3       | 1  |  |
| A0907011140 | CONNECTOR            | 1 x 14 PIN 90° | 1  |  |
| A1306000006 | TACT SW.             | 6*6*4.3( 180°) | 28 |  |
| E0W60100000 | P.C.B. W60 KEY BOARD | W60-60-3       | 1  |  |

**MAIN BOARD**

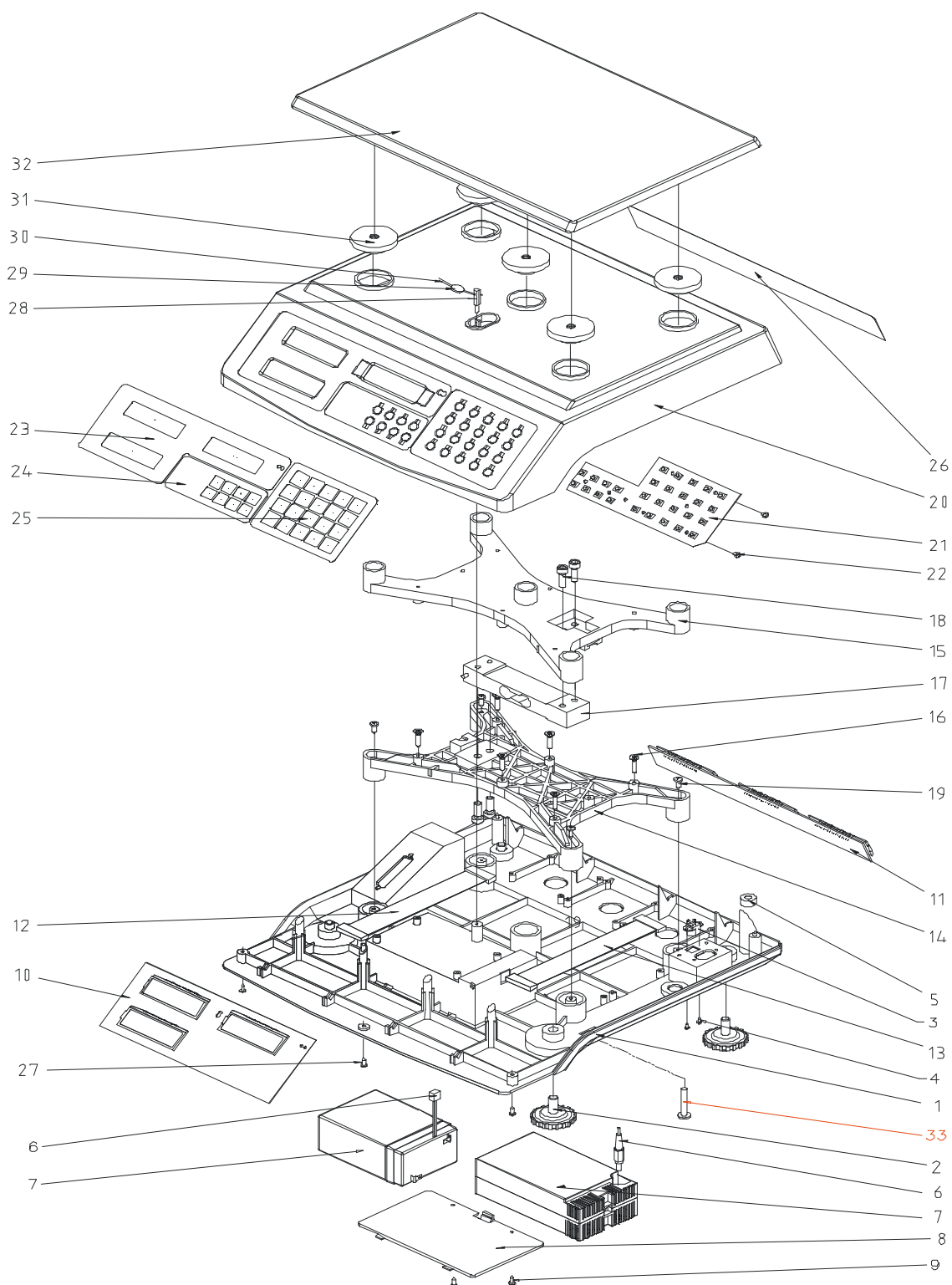
|             |                      |                           |    |                                             |
|-------------|----------------------|---------------------------|----|---------------------------------------------|
| E9SEP000011 | P.C.B. COMMON PARTS  | SEP MAIN BOARD LCD)+EL    | 1  |                                             |
| A0102004436 | L.C.D.               | 4436B                     | 3  |                                             |
| A0201089521 | I.C.                 | 89C52                     | 1  |                                             |
| A1400000002 | BACK LIGHT           | 75.0*25.0mm               | 3  |                                             |
| A1401005000 | BACK LIGHT INVERTER  | 5V / 90c ¢                | 1  |                                             |
| A1500000004 | BUZZER               | OBO-15210                 | 1  |                                             |
| E1SEP000010 | P.C.B.               | SEP (SEP-10-2)            | 1  |                                             |
| A0202093462 | I.C.                 | 93C46PC27 OR 93LC46       | 1  | U3                                          |
| A0204742442 | I.C.                 | 74HC244                   | 1  | U5                                          |
| A0207017220 | V. REGULATING I.C.   | AIC1722-50CZL             | 1  |                                             |
| A0300000040 | I.C. SOCKET          | 40 PIN                    | 1  | U2                                          |
| A0401007330 | TRANSISTOR           | A733                      | 2  | Q2.6                                        |
| A0401009450 | TRANSISTOR           | 2SC945                    | 3  | Q3.4.8                                      |
| A0401010610 | TRANSISTOR           | H1061C OR D880            | 1  | Q1                                          |
| A0401015150 | TRANSISTOR           | 2SA1515R(2SB1116K,A950 Y) | 2  | Q5.9                                        |
| A0501004148 | DIODE                | 1N4148                    | 6  | D1.2-5.9                                    |
| A0502000001 | BRIDGE REGULATOR     | W06 (1A)                  | 1  | BR1                                         |
| A0503020082 | ZENER DIODE          | 1/2W 8V2 (9A3)            | 1  | ZD1                                         |
| A0625050000 | L.E.D.               | RED/GREEN,; 5             | 1  | LED1                                        |
| A0701106017 | CAPACITY (EC)        | 10£g# 25V( SS TYPE        | 4  | C25.23.8.7                                  |
| A0701107016 | CAPACITY (EC)        | 100£g# 16                 | 2  | C26.39                                      |
| A0701108016 | CAPACITY (EC)        | 1000£g# 16                | 1  | C21                                         |
| A0730104050 | CAPACITY (MLC)       | 0.1£g# 50V\ 104           | 12 | C10.38.37.9.1<br>0.11.40.15.28.<br>27.22.24 |
| A0740030050 | CAPACITY (CC)        | 30PF/50V(30)              | 2  | C14.13                                      |
| A0740101050 | CAPACITY (CC)        | 100PF/50V(101)            | 2  | C35.36                                      |
| A0802010309 | RESISTOR NETWORK     | 10K£ [ 9P                 | 3  | NR2.3.1                                     |
| A0804041503 | PRECISION RESISTOR   | 1/4W 150K£                | 1  | R27                                         |
| A0804045003 | PRECISION RESISTOR   | 1/4W 500K£                | 1  | R28                                         |
| A0805020120 | CARBON FILM RESISTOR | 1/2W 1.2£                 | 1  | R20                                         |
| A0805021101 | CARBON FILM RESISTOR | 1/2W 100£                 | 1  | R17                                         |
| A0805041101 | CARBON FILM RESISTOR | 1/4W 100£                 | 2  | R33.34                                      |
| A0805041102 | CARBON FILM RESISTOR | 1/4W 1K£                  | 2  | R14.39                                      |
| A0805041103 | CARBON FILM RESISTOR | 1/4W 10K£                 | 7  | R22.7.31.32.3<br>7.8                        |
| A0805041153 | CARBON FILM RESISTOR | 1/4W 15K£                 | 1  | R21                                         |
| A0805041221 | CARBON FILM RESISTOR | 1/4W 220£                 | 1  | R18                                         |
| A0805041223 | CARBON FILM RESISTOR | 1/4W 22K£                 | 2  | R29.26                                      |
| A0805041272 | CARBON FILM RESISTOR | 1/4W 2.7K£                | 2  | R30.23                                      |
| A0805041471 | CARBON FILM RESISTOR | 1/4W 470£                 | 1  | R19                                         |
| A0805041472 | CARBON FILM RESISTOR | 1/4W 4.7K£                | 2  | R24.38                                      |
| A0805041473 | CARBON FILM RESISTOR | 1/4W 47K£                 | 1  | R25                                         |

|             |                       |                 |   |      |
|-------------|-----------------------|-----------------|---|------|
| A0901010060 | CONNECTOR             | 6 PIN WAFER     | 1 | J6   |
| A0901010140 | CONNECTOR             | 14 PIN WAFER    | 1 | J4   |
| A0902010020 | CONNECTOR             | 2 PIN WAFER     | 2 | J1.2 |
| A0907010030 | CONNECTOR             | 1 x 3 PIN 180¢  | 1 | JP2  |
| A0907020200 | CONNECTOR             | 2 x 10 PIN 180¢ | 1 | J7   |
| A0907020300 | CONNECTOR             | 2 x 15 PIN 180¢ | 1 | J8   |
| A1005030512 | FERRIT BEAD           | 3.5*6*0.8m      | 3 | L1-3 |
| A1100316000 | CRYSTAL               | 16.0MHZ         | 1 | X1   |
| A5004000004 | HEAT SINK             | MB-217-22+PIN   | 1 | Q1   |
| E3SEP000010 | P.C.B.(SMT)           | SEP-10-2 LCD    | 1 |      |
| A0208085760 | I.C.                  | PCF8576CT       | 1 | U12  |
| E0SEP000010 | P.C.B. SEP MAIN BOARD | SEP-10-2 (LCD)  | 1 |      |

#### A/D BOARD

|             |                      |                              |   |                            |
|-------------|----------------------|------------------------------|---|----------------------------|
| E1SEP200000 | P.C.B.               | SEP A/D BOARD<br>(7730-50-2) | 1 |                            |
| A0203077300 | I.C.                 | AD7730BN                     | 1 | U1                         |
| A0206000072 | I.C.                 | OP07EN8 OR OP177             | 2 | U2.3                       |
| A0207029500 | V. REGULATING I.C.   | NS2950ACN OR<br>LP2950AC2-5  | 1 | U4                         |
| A0702106016 | CAPACITOR (TC)       | 10£g# 16V 106                | 4 | EC1-4                      |
| A0702226016 | CAPACITOR (TC)       | 22£g# 16V 226                | 1 | EC5                        |
| A0713104101 | CAPACITOR (MEF)      | 0.1£g# 100V 104              | 2 | C6.7                       |
| A0713224101 | CAPACITOR (MEF)      | 0.22£g# 100V 224             | 2 | C8.18                      |
| A0720103101 | CAPACITOR (PEI)      | 0.01£g# 100V 103J            | 2 | C5.9                       |
| A0730104050 | CAPACITOR (MLC)      | 0.1£g# 50V 104               | 9 | C3.4.10.11.1<br>5-17.19.20 |
| A0740047050 | CAPACITOR (CC)       | 47PF/50V(47)                 | 2 | C12.13                     |
| A0740101050 | CAPACITOR (CC)       | 100PF/50V(101)               | 3 | C21-23                     |
| A0750122050 | CAPACITOR (CCFT)     | 1200PF/50V                   | 4 |                            |
| A0804044701 | PRECISION RESISTOR   | 1/4W 4.7K£                   | 4 | R1.2.6.7                   |
| A0805041101 | CARBON FILM RESISTOR | 1/4W 100£                    | 3 | R10-12                     |
| A0805041103 | CARBON FILM RESISTOR | 1/4W 10K£                    | 3 | R8.9.13                    |
| A0901010060 | CONNECTOR            | 6 PIN WAFER                  | 1 | J1                         |
| A1005030512 | FERRITE BEAD         | 3.5*6*0.8m                   | 4 | L1-3.9                     |
| A1008000011 | LINE FILTER          | SB4515-600                   | 5 | L4-8                       |
| A1100249153 | CRYSTAL              | 4.9152MHZ/us                 | 1 | X1                         |
| E0SEP200000 | P.C.B. SEP A/D BOARD | AD7730-50-2                  | 1 |                            |

## 6. APPENDIX: - EXPLOSION DIAGRAM



| NUMBER | DESCRIPTION             | SPECIFICATIONS              |
|--------|-------------------------|-----------------------------|
| 1      | HOUSING                 | S SERIES LOWER (5/16-24UNF) |
| 2      | ADJUSTABLE FOOT         | BW SERIES                   |
| 3      | DC JACK                 | DC-343                      |
| 4      | SCREW                   | i 2*6L                      |
| 5      | BUBBLE LEVEL            | D14 (DIA. = 14mm)           |
| 6      | BATTERY WIRE ARRAY      | 2PIN SINGLE 35cm            |
| 7      | RECHARGEABLE BATTERY    | GP4-6 6V 4AH                |
| 8      | BATTERY PACK COVER      | EM SEREIS (GREY)            |
| 9      | SCREW                   | i 3*12L                     |
| 10     | P.C.B. COMMON PARTS     | SEP MAIN BOARD (LCD)+EL     |
| 11     | P.C.B. COMMON PARTS     | REAR BOARD                  |
| 12     | WIRE ARRAY              | 20PIN 40cm                  |
| 13     | WIRE ARRAY              | 30PIN 40cm                  |
| 14     | LOWER LOAD CELL SUPPORT | S SERIES (M4 X 8)           |
| 15     | UPPER LOAD CELL SUPPORT | S SERIES (i 5.5 X 6)        |
| 16     | SCREW                   | M4*0.7P*15L                 |
| 17     | LOAD CELL               | DEPENDS ON CAPACITY         |
| 18     | SCREW                   | M6*1P*20L                   |
| 19     | SCREW                   | i 4*10L                     |
| 20     | HOUSING                 | S SERIES UPPER              |
| 21     | P.C.B.                  | W60-60-3                    |
| 22     | SCREW                   | i 3*5L                      |
| 23     | SAC FRONT PANEL PC      | SAC SERIES                  |
| 24     | SAC CAP. PANEL          | SAC SERIES                  |
| 25     | SAC FRONT PANEL PC      | SAC SERIES KEYBOARD         |
| 26     | SAC REAR PANEL PC       | SAC, SEC SERIES             |
| 27     | SCREW                   | M3*0.5P*10L                 |
| 28     | COPPER COLUMN           | i 3+5*15                    |
| 29     | SEAL                    | i 13*4t                     |
| 30     | SEAL LEAD               | i 0.7                       |
| 31     | PLASTIC CAP FOR PLATTER | S SERIES (i 42*15)          |
| 32     | S/S PLATTER             | S SERIES (350*242*12*1t)    |
| 33     | SCREW                   | M4*0.7P*25L                 |