olivetti

Cash Register

ECR 7700

SERVICE MANUAL

Code Y 111730 - 3

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CAUTION

Danger of explosion if the battery is not replaced properly.
Replace only with same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacturer's instructions

CONTENTS

MAJOR FEATURES……6
ECR7700 EXERNAL COMPONENTS……7
CASH REGISTER SPECIFICATIONS……8
SAFETY PRECAUTIONS……9
MAINTAINING THE CASH REGISTER……9
UNPACKING AND SETTING UP THE CASH REGISTER……10
STANDARD ACCESSORIES……10
PRINTR COMPARTMENT……11

1. PRODUCT OUTLINE……14
1-1 HARDWARE……14
1-2 DISPLAY……14
1-3 KEYBOARD……15
1-4 THE KEYBOARD FOR ECR7700……16
1-5 KEYPAD FUNCTIONS……16
1-6 DRAWER……18
1-7 PRINTER……18
1-8 SYSTEM BLOCK DIAGRAM……19

2 DIAGNOSTIC SOFTWARE……20
2-1 DIAGNOSTIC CHECK & FINISHED GOODS CHECK……20
2-2 SOFTWARE VERSION CHECK……23

3 ASSEMBLY INSTRUCTION……24
3-1 TOP CASE UNIT……24
3-2 DRAWER unit ASSY……39

4 CIRCUITRY……49

4-1 POWER SUPPLY CIRCUIT……49

4-2 TRANSFORMER WIRIN DIAGRAM……51

4-3 µPD 78F0547 MICROCOMPUTER……52

4-4 RESET CIRCUIT……54

4-5 POWER FAIL CIRCUIT……55

4-6 WINDING MOTOR CIRCUIT……55

4-7 DISPLAY CIRCUIT……56

4-8 DISPLAY TUBE INFORMATION……57

4-9 KEYBOARD CIRCUIT……58

4-10 DRAWER CIRCUIT……60

4-11 BUZZER CIRCUIT……60

4-12 BATTERY CIRCUIT……61

4-13 EXTERNALMEMORY……62

4-14 PRINTER CIRCUIT……63

5 CURCUIT DIGRAM……66

6 EXPLODED DIAGRAM……70

PREFACE

This Service Manual is addressed to the field engineers who will install and service the cash register. it also provides product maintenance guidelines.

SUMMARY

This manual Is divided into five chapters.
The first two chapters describe the operating, functional checks and maintenance procedures. Chapter 3 describes the disassembly and reassembly procedures, Chapter 4 gives troubleshooting/repair
information while Chapter 5 describes the electronic circuitry.

PREREQUISITES

The topics described in this manual require knowledge of similar products.

REFERENCE DOCUMENTATION

- Instruction Manual - (provided with the product)
- Spare Parts Catalogue

DISTRIBUTION: General

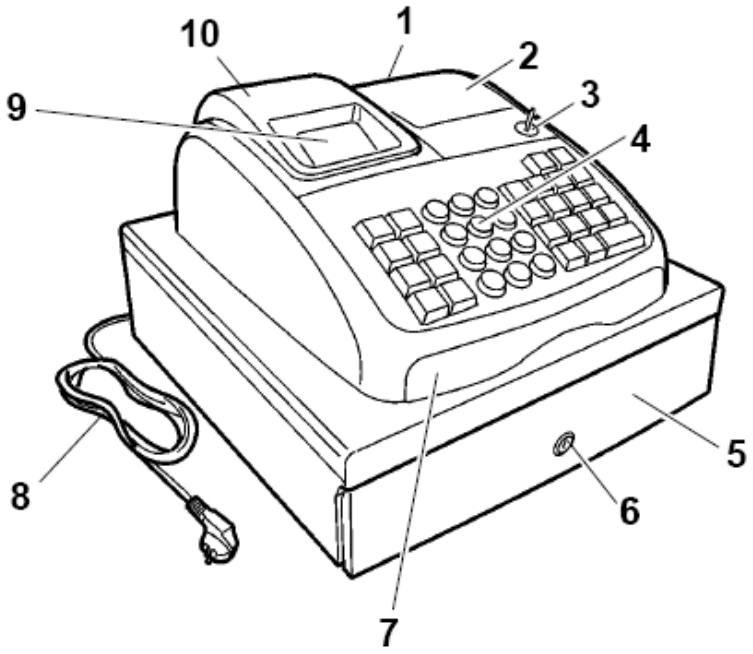
LAST EDITION: October 2009

MAJOR FEATURES

• 14 departments and up to 400 Price Look-Up (PLU) settings;
• 8 clerk numbers to monitor the sales of individual employees;
• Electronic journal with a maximum capacity of up to 3,000 transaction lines for storing all transaction data; signalling of EJ memory full and nearly full conditions;
• 10-digit operator and client Vacuum Fluorescent Displays (VFD);
• Quantity entries using the decimal point;
• Training mode facility with related password;
• Stock counter for PLU items, that automatically decrements to keep track of the remaining number of items in stock;
• Replaceable keycaps;
• Receipt on/off, and duplicate receipt features;
• Possibility of activating a Clerk Security System consisting of a three-digit security code;
• Possibility of assigning a name to each Clerk for rapid identification;
• Z management report mode password definition;
• Customer sales receipt header personalization and receipt footer definition;
• Special rounding capabilities for Swiss, Danish and Swedish currencies;
• Customer receipt and management report printing in English, French, German, Spanish, Dutch, Portoguese, Danish or Swedish;
• Department programming (positive and negative sales)
• 4 foreign currency exchange rates with related currency descriptors;
• Cash, check, charge and card tender media keys, with change tendered on all payments;
• 4 different VAT rates;
• Possibility of programming the cash register to print a range of VAT totals on the sales receipt;
• Time display at the press of a key;
• Battery back-up protection for the records and programming data.

ECR 7700 External Components

With reference to figure:



Customer Display	Operator Display
Control lock	Keypad
Cash Drawer	ICash Drawer Lock
Item deposit drawer	Power Cord
Customer Receipt Output Window	Printer Compartment Cover

Removable Cash Drawer and Box

With reference to figure 4, the cash drawer has slots for banknotes and for coins.

Open the drawer by pressing  or by sliding the hidden emergency button underneath the register.

The cash drawer can be completely removed from the register by lifting up on the open drawer and pulling towards yourself.

ECR 7700 Technical Characteristics

Listed below are the technical characteristics of this cash register model.

Listed below are the technical characteristics of this cash register model.
Type: Electronic cash register with clamshell thermal printer, 14 departments, 8 clerks, up to 400 PLU settings and 3,000 line electronic journal
Displays: Two 10-digit operator and client alphanumeric Vacuum Florescent Displays (VFD). Symbols for error, change, subtotal, minus, total, foreign currency value, electronic journal memory nearly full or full, and item count shown
Capacity: 7-digit input and readout
Printer: 24-column line thermal printer with drop-in paper loading
Paper supply: 57.5 ± 0.5 mm thermal paper
Batteries: Three standard "AA" size batteries which safeguard memory contents in the event of power failures
Technology: CMOS RAM
Power cons.: Standby 8.5 W, Operating 30 W
Operating Temperature: 32 – 104 °F (0 °C – 40 °C)
Dimensions: 340 mm (W) x 360 mm (D) x 230 mm (H)
Weight: 5.1 Kg (11.22 lbs)

SAFETY PRECAUTIONS

The power socket for this cash register must be located near the machine and must be easily Accessible.

Do not use this cash register outdoors in the ram or near any liquid.

MAINTAINING THE CASH REGISTER

Provided below is information on how to maintain the cash register.
Note: Before cleaning the cash register, make sure it Is powered off and/or unplugged from the wall outlet. Before unplugging the cash register from the wall outlet, make sure that three charged AA standard backup batteries are installed in the battery compartment. All data stored in memory will be cancelled if you unplug the cash register from the electrical wall outlet without back-up battery supply.

Keep all liquids away from the cash register so as to avoid spills which could damage the electronic components.

To clean the cash register firstly turn it off and/or unplug it from the wall outlet (be sure the back-up batteries are installed), then use just a damp cloth. Do not use corrosive substances such as solvents, alcohol, petrol, or abrasive components.

Il the cash register is stored in extreme hot or cold temperatures (0 °C - 40 °C), allow the temperature inside the cash register to reach room temperature before turning it on.

DO NOT attempt to pull the paper tape when the cash register Is printing or when you are loading paper. Always use the [Feed] key to feed paper. Pulling the paper tape could damage the print mechanism.

UNPACKING AND SETTING UP THE CASH REGISTER

STANDARD ACCESSORIES

The cash register comes with the following items:
One black plastic journal winder spindle
One roll of standard paper tape
Three standard 'AN' size batteries for the battery back-up system
The multilingual User's Guide, Reference Guide in English and Warranty Card + Setup Poster
A set of keys for looking the cash drawer
Make sure that the cash register and all of the above items are included in the shipping canon.
Open the cash register's shipping carton and carefully withdraw each component. Make sure that the cash register and all al its accessories, listed in the section entitled Standard Accessories, are present in order to setup the cash register by following these guidelines:

Place the cash register on a level, stable, vibration-free and dust-free surface. Make sure it is near a power outlet compliant will the latest safety standards.

Plug the cash register into a power outlet compliant with the latest safety standards.
Insert memory backup batteries as explained in the section entitled Inserting/Replacing Batteries.
Do not insert the batteries unless the cash register is plugged into an electrical power outlet.

WARNING: The machine must be plugged into an electrical outlet before you insert the batteries.

Load the thermal paper roll as explained in the section entitled Loading Thermal Paper.
Set the desired program options as explained in the section Cash Register Programming.

PRINTER COMPARTMENT

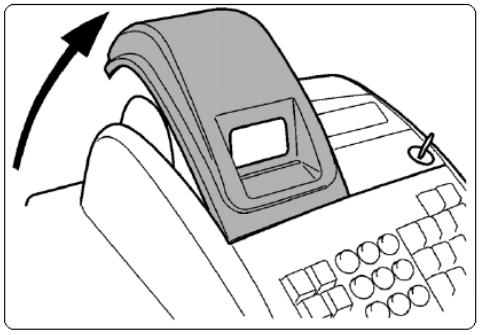
The printer compartment Is on the top Ieft-hand side of the cash register. It houses the thermal paper roll, journal winder spindle, back-up batteries and the thermal printer. This cash register uses standard 21/4” (57 mm) thermal paper.

LOADING THERMAL PAPER FOR ECR 7100

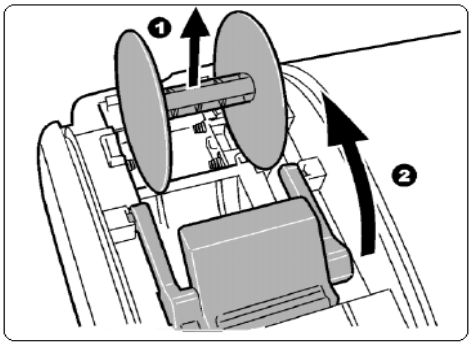
Proceed as follows to Ioad the cash register with paper.

1. Make sure the cash register is plugged into a grounded power outlet.

2. Unlock, open and remove the printer compartment cover , then remove the plastic journal winder spindle.

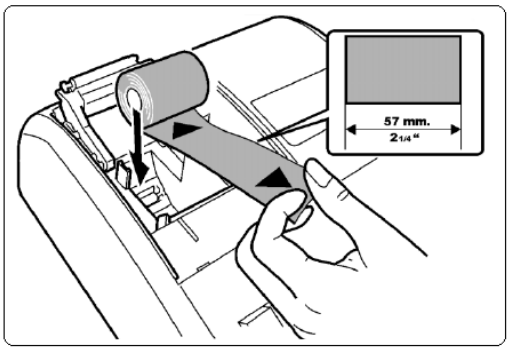


3. Release and Ieft the clamshell mechanism as shown in the following figure.

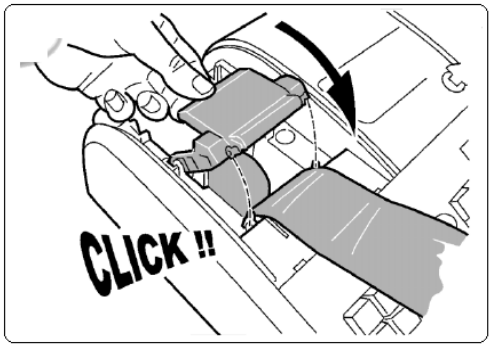


4. With a pair of scissors, cut the end of the paper tape to create a straight, even edge so that the paper can be properly fed through the print mechanism.

5. Set the paper roll in the bottom of the printer compartment so that the paper feeds out from the bottom of the roll.



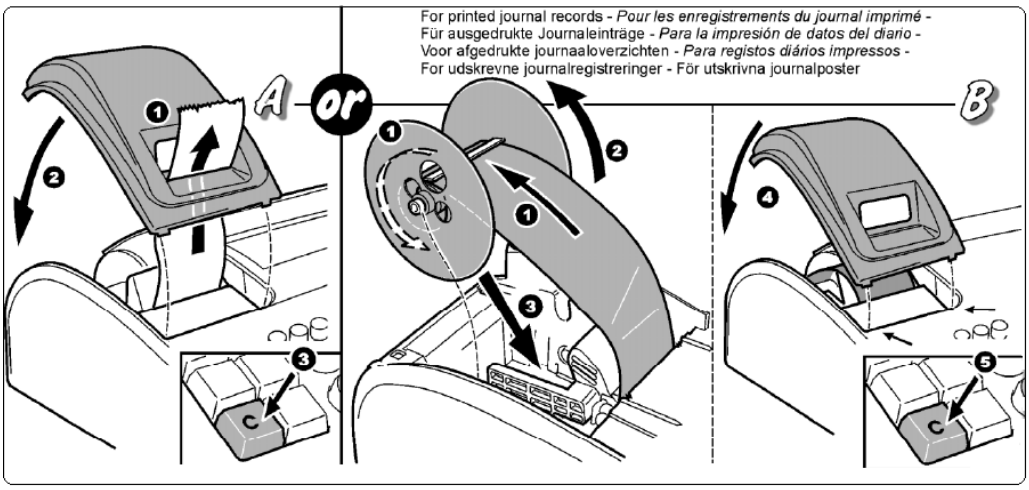
6 Lower the clamshell mechanism and secure it in place by pushing it all the way down until it clicks into pace.



7. Replace journal winder with wheel to right of compartment.

8. Pass the edge of the customer receipt through the receipt window on the compartment cover.

9. Insert the edge of the paper into the paper slot as shown below. Reposition and dose the printer compartrnent cover.



10. Set the menu RECEIPT MODE switch to JOURNAL, press the **[Feed]** key and manually feed the paper into the slot until the paper catches and advances approximately six to ten inches above the print mechanism.

Note: I the paper does not feed properly, check the alignment of the paper in the slot and/or for the straight edge on the end on the paper roll.

11. Il you are loading a journal record, slide edge of tape through slots on journal winder spindle (depress the [Feed] key to advance additional tape, if necessary). Manually roll winder toward the back of register to take up slack in tape. dose the printer compartment cover.

1. PRODUCT OUTLINE

1-1 HARDWARE

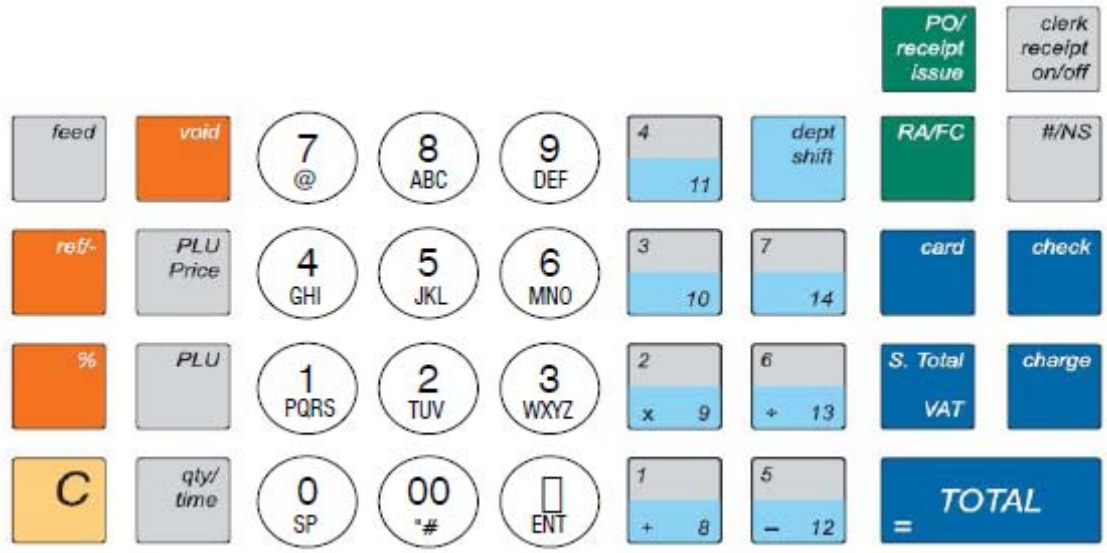
The terminal uses 8-bits single chip microcomputer. The CPU has 128K bytes of internal Flash ROM and 6k bytes internal RAM, also used the 512K bytes S-RAM of external memory.
This terminal uses 10-digits Union Jack green fluorescent display.
This terminal also has a battery-backed up clock that keeps track of the month, day of the year, hour and minute.

1-2 DISPLAY

Front Display is 10-digits 16 segment VFD.
Rear Display is 10-digits 16 segment VFD.

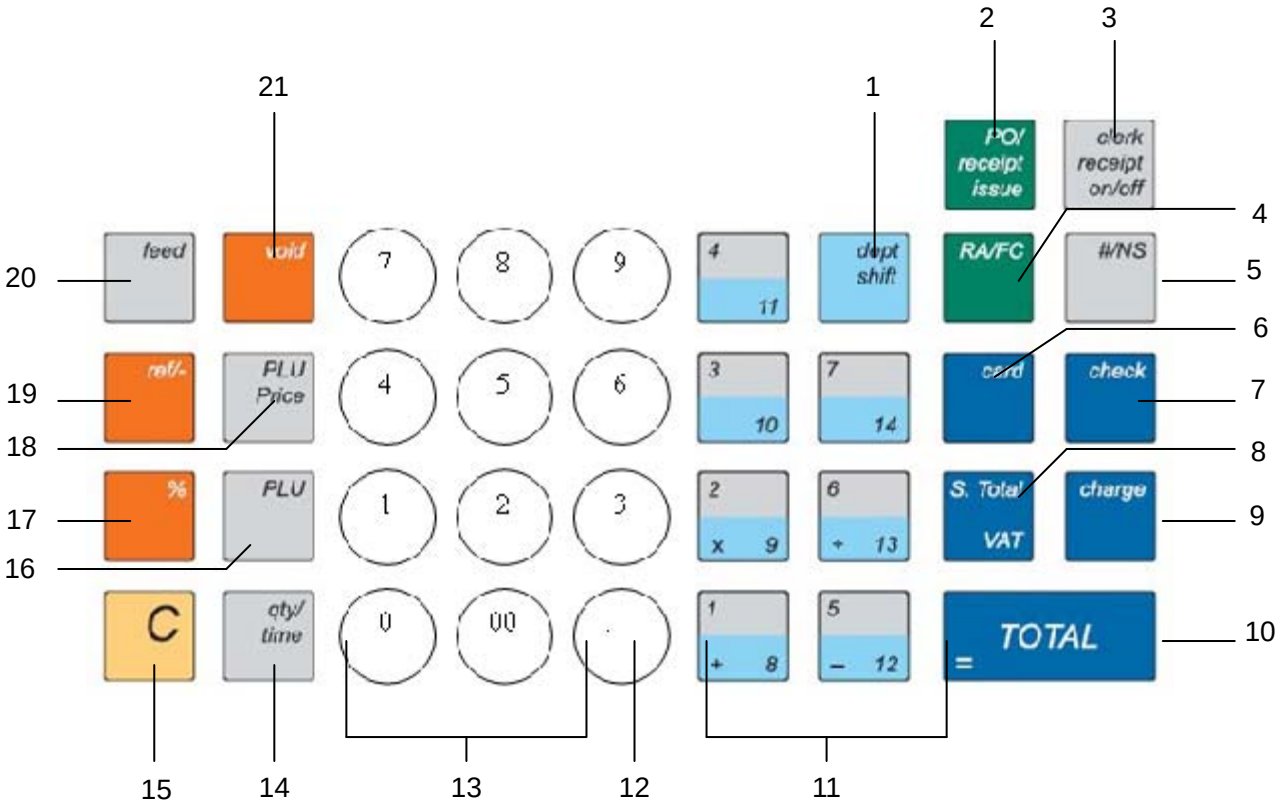
1-3 KEYBOARD

The keyboard consists of Stroke 37 keys with key caps (except numeric keys).



1-4THE KEYPAD FOR ECR 7700

The figure below shows the keypad layout



1-5KEYPAD FUNCTIONS

The keys described here are those configured by default on the cash register keyboard, shown in figure 5. The symbol (*) indicates that the key is also used in caption programming.

1. Allows price entries for Departments 8-14. Press this key before entering applicable department keys.

2. Registers any money taken out of the cash drawer that is not part of a sale. When pressed in the JRNL mode, prints one or more copies of the last sales translation recorded (overrides the Receipt Off mode set with the related key).

2. Confirms an entered clerk number and three-digit security code. In the JRNL mode, toggles the cash register between printing and not printing the sales receipt.

3. When used as the RA key, registers any money received on account that is not part of a sale; for example, the start-up money put in the drawer at the start of each business day can be registered as an RA. As the Currency Conversion key, it is used to automatically calculate and display the value in foreign currency of the subtotal of a sale or of a particular amount registered.

4. Opens the cash drawer without registering any amount or when changing cash for a non-sales transaction.

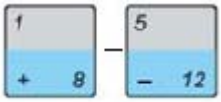
5. Registers sales that are put on credit, such as a debit card, or on a credit card that is alternative to the one used for Charge tenders.

6. Registers sales paid by check.

7. Subtotals a sale, and used for the programming of VAT rates.

8. Registers sales that are charged.

9. Totals exact cash transactions, computes change and totals transactions that are split tendered with check or credit card and cash together. This key is also used to enter into the calculator mode. In the calculator mode, it is used as the "equal" (=) key.

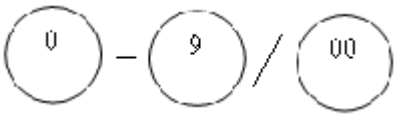


10. Departments 1 through 7, to enter single or multiple item sales to a particular department.

When pressed after, 

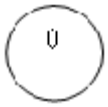
regis epartments 8 through 14.

11. Enters a decimal point for defining quantities with decimals during sales transactions.



12. Input amounts, indicate how many times a particular item repeats, add and subtract percentage rates and input department code numbers.

Used to input the characters indicated on the related key and indicated in the Character Table when defining
clerk names, receipt header, receipt footer, department names, PLU product names and currency identifiers.

During caption programming, 

adds a space between characters.

13. Multiplies [DEPARTMENT], or 

ies and displays the current date, time and

EJ information in the REG and JRNL modes. During caption programming, enters double-width characters.

15. Clears an entry made from the numeric keypad or with 

before finalizing a before transaction with a Department or function key. Also used to clear error conditions.

16. Registers a preset price of an individual item to the appropriate department.

17. Used to subtract a percentage rate from an individual item or an entire sale. The rate can be a preprogrammed percentage rate or any other manually entered percentage rate.

18. Used to manually enter a price for a PLU article.

19. When used as the coupon key, subtracts an amount from an item or the sales total, such as a coupon deduction. When used as the Refund key, subtracts an item that is returned for refund.

20. Advances the receipt or journal paper one line feed; advances the paper continuously when held down.

21. Deletes the last item entered, and used for correcting a particular entry after it is processed and printed. During caption programming, cancels from right to left the characters that have been entered.

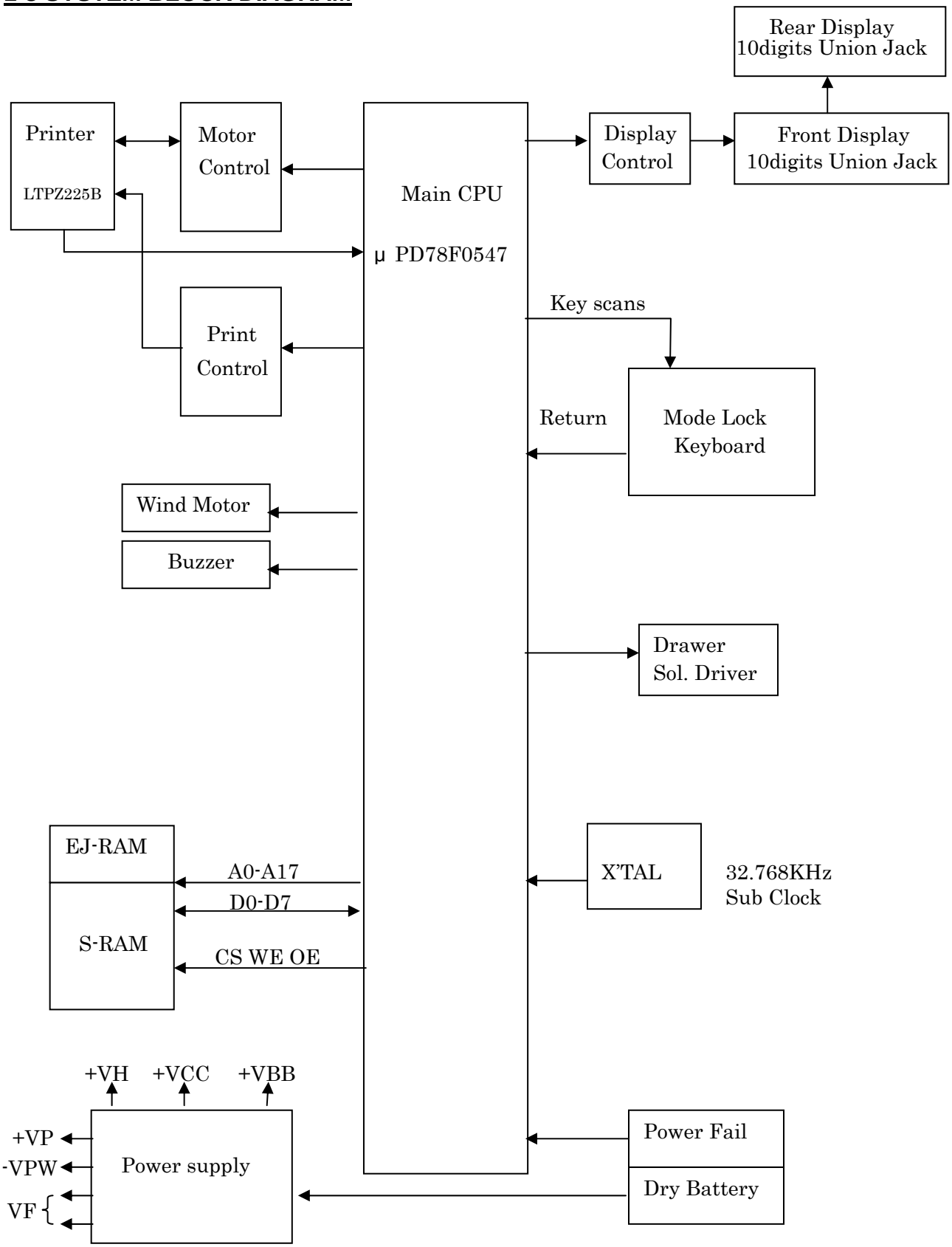
1-6 DRAWER

The drawer type is DSSA, 3 Bill / 8 Coin with D/DRAWER(Removable coin tray).

1-7 PRINTER

The printer is SII LTPZ225, that is a line thermal printer developed for ECR use.
58mm 1 station Thermal Printer.

1-8 SYSTEM BLOCK DIAGRAM



2. DIAGNOSTIC SOFTWARE

2-1. DIAGNOSTIC CHECK & FINISHED GOODS CHECK

Diagnostic Software will check whether the machine works properly or not. It is already built in the machine and is always ready to boot this software by the following instructions. It is also useful to check after repairing the machine.

Note)
Once you start up the diagnostic software, you should operate all the checkup items. In other words, it is impossible to check only Keyboard unit, Display unit, or Drawer unit etc. Please make sure you should complete the diagnostic software and it means OK when no error occurs through the checkup.

DIAGNOSTIC CHECK LIST

ECR7700 (0VD0R-1430R)

For PCB

MODE (モード)	Steps Description (操作)	A/N Display (A/N表示)	RECEIPT (レシート)
PRG	Power ON (電源ON)	0	
	Insert backup battery (バックアップ電池を付ける)		
	Press [FEED] key ([FEED]キーを押下する)	P A P E R E N D	
	Insert roll paper (ロールペーパーを挿入する)		
	Press [C] key ([C]キーを押下する)	0	
			* *
	Input 960802 -> [TOTAL]	P - 1 □ X X X X X	* Clover Electronics *
	(960802 -> [TOTAL])		* ECR Test Report *
	* XXXXX is memory address (* XXXXXはメモリーアドレス)	P - 1 □ 1 F F F F	* ECR7700 *
			* *
	Power OFF —> Power ON after 30 seconds ・・・ Note	P - 1 □ X X X X X	software version. 1.00
	(電源OFF —> 30秒後に電源ON ・・・ 注)		
	Note: The electric currents of bettery consumption during	P - 1 □ 1 F F F F	RAM TEST ---------- OK
	power-off are less than 50 micro A.	P - 2	
	(注:停電中でのバッテリー消費電流は、		
	おおよそ50マイクロアンペア以下です。)		
PRG	Keyboard Check: (キーボードチェック)		
	A key is pushed in order of the following.		
	(以下の順にキーを押下していきます)		
	[clerk receipt on/off]	P - 2 0 0	
	[#/NS]	0 1	
	[check]	0 2	
	[charge]	0 3	
	[C]	0 4	
	[qty/time]	0 5	
	[0]	0 6	
	[00]	0 7	
	[.]	0 8	
	[1/8]	0 9	
	[5/12]	1 0	
	[TOTAL]	P - 3	KEYBOARD TEST ------- OK
	* If wrong key sequence is entered and error is occurred, press		
	PO/receipt issue key to restart the keyboard check.		
	(* もしキーを押し間違えたりエラーが発生した場合は、		
	PO/receipt issue キーを押して最初からやり直す)		

1

For PCB

ECR7700 (OVOOR-1430R)

MODE (モード)	Steps Description (操作)	A/N Display (A/N表示)	RECEIPT (レシート)
PRG	Display Check: (表示チェック)	- - - - - - - - - -	
	Confirm each digit and each segment is displayed.	1 1 1 1 1 1 1 1 1 1	} Each segment will be turn on sequentially
	(各数字および各セグメントが表示されることを確認します)		(各セグメントが連続して回転します)
	Press [TOTAL] key when confirm all is correct	8	
	and go to next testing phase.	8 →	
	(全ての表示を確認し終えてから[TOTAL]キーを押下すると、	8 8 8 8 8 8 8 8 8 8	
	次のテスト面に移ります)	P H - 4	VFD TEST - - - - - - - - - - - - OK
	[PO/receipt issue] key is pushed for NG.		
	(NGの場合は、[PO/receipt issue]キーを押下する)		
Z1/2 ↓ X1/2 ↓ JRNL ↓ REG ↓ OFF ↓ PRG	Mode Lock Check: (モードロックチェック)	P - 4	MODE Z - - - - - - - - - - - - - - OK
	*Switching each mode lock slowly and confirm the printing is correct.		
	(各モードロックをゆっくり切り替えること、また印字が正確であることを確認する)		MODE X - - - - - - - - - - - - - - OK
			MODE REG 2 - - - - - - - - - - OK
			MODE REG 1 - - - - - - - - - - OK
			MODE OFF - - - - - - - - - - - OK
		P - 5	MODE PRG - - - - - - - - - - - OK
PRG	Drawer Check: (ドロワーチェック)		
	Confirm drawer is opened. (ドロワーがオープンすることを確認する)	P - 5	
	Press [TOTAL] to go to next testing phase.	P - 7	DRAWER TEST - - - - - - - - - OK
	([TOTAL]キーを押下すると、次のテスト面に移ります)		
	[PO/receipt issue] key is pushed for NG.		
	(NGの場合は、[PO/receipt issue]キーを押下する)		

For PCB

ECR7700 (OVOOR-1430R)

MODE (モード)	Steps Description (操作)	A/N Display (A/N表示)	RECEIPT (レシート)
PRG	Print Check: (プリントチェック)	P - 7	!"#$%&'()*+,-./01234567 89:;<=>?@ABCDEFGHIJKLMNO PQRSTUVWXYZ[\]^_ abcdefg hijklmnopqrstuvwxyz{|}~ ÄÅÆÇÉÑÖÜáàâäãåçéèêëíìîïñóòôöõúùûü °¢£§•¶ß®©™´¨≠ÆØ ∞±≤≥¥µ∂∑∏π∫ªºΩæø ¿¡¬√ƒ≈∆«»…ÀÃÕŒœ –—“”‘’÷◊ÿŸ⁄€‹›ﬁﬂ ‡·‚„‰ÂÊÁËÍÎÈÏÎÓÔ ÒÚÛÙıˆ˜¯˘˙˚¸˝˛ˇ <<< RESET A >>>
			0
	Power OFF (電源OFF)		

It means OK when no error occurs through the checkup.

FINISHED GOODS CHECK LIST

For ASM

ECR7700 (0W00R-1430R)

MODE (ﾓｰﾄﾞ)	Steps Description (操作)	Display (表示)	RECEIPT (ﾚｼｰﾄ)
PRG	Power ON (電源ON)	0	
	Insert backup battery (ﾊﾞｯｸｱｯﾌﾟ電池を付ける)		
	Press [FEED] key ([FEED]ｷｰを押下する)	P A P E R E N D	
	Insert roll paper (ﾛｰﾙﾍﾟｰﾊﾟｰを挿入する)		
	Press [C] key ([C]ｷｰを押下する)	0	
			* *
	Input 960804 -> [TOTAL]	P - 1 □X X X X X	* Clover Electronics *
	(960804 -> [TOTAL])		* ECR Test Report *
	* XXXXX is memory address (* XXXXXはﾒﾓﾘｰｱﾄﾞﾚｽ)	P - 1 □1 F F F F	* ECR7700 *
			* *
	Power OFF --> Power ON after 30 seconds ・・・ Note	P - 1 □X X X X X	software version. 1.00
	(電源OFF --> 30秒後に電源ON ・・・ 注)		
	Note: The electric currents of battery consumption during	P - 1 □1 F F F F	RAM TEST ---------- OK
	power-off are less than 50 micro A.	P - 2	
	(注:停電中でのﾊﾞｯﾃﾘｰ消費電流は、		
	おおよそ50ﾏｲｸﾛｱﾝﾍﾟｱ以下です。)		
PRG	Keyboard Check: (ｷｰﾎﾞｰﾄﾞﾁｪｯｸ)		
	Except Feed Key (Feedｷｰは除く)		
	Entry each keys from most upper line to most lower line,		
	from left to right.	P - 2 X X	
	(最上段から最下段まで、左から右に向かって順番にｷｰを押下していく。		
	* XX is key code (XXはｷｰｺｰﾄﾞです)		
		P - 3	KEY BOARD TEST ----- OK
	* If wrong key sequence is entered and error is occurred, press		
	PO/receipt issue key to restart the keyboard check.		
	(* もしｷｰを押し間違えたりｴﾗｰが発生した場合は、		
	PO/receipt issue ｷｰを押して最初からやり直す)		

For ASM

ECR7700 (0W00R-1430R)

MODE (ﾓｰﾄﾞ)	Steps Description (操作)	Display (表示)	RECEIPT (ﾚｼｰﾄ)
PRG	Display Check: (表示ﾁｪｯｸ)		
	Confirm each digit and each segment is displayed.	- - - - - - - - - -	
	(各数字および各セグメントが表示されることを確認します)	1 1 1 1 1 1 1 1 1 1	Each segment will be turn on sequentially (各ｾｸﾞﾒﾝﾄが連続して回転します)
	Press [TOTAL] key when confirm all is correct	8	
	and go to next testing phase.	8	
	(全ての表示を確認し終えてから[TOTAL]ｷｰを押下すると、	8. 8. 8. 8. 8. 8. 8. 8. 8. 8.	
	次のﾃｽﾄ面に移ります)	P - 4	VFD TEST ---------- OK
	[PO/receipt issue] key is pushed for NG.		
	(NGの場合は、[PO/receipt issue]ｷｰを押下する)		
Z1/2 ↓ X1/2 ↓ JRNL ↓ REG ↓ OFF ↓ PRG	Mode Lock Check: (ﾓｰﾄﾞﾛｯｸﾁｪｯｸ)	P - 4	MODE Z ---------- OK
	*Switching each mode lock slowly and confirm the printing is correct.		MODE X ---------- OK
	(各ﾓｰﾄﾞﾛｯｸをゆっくり切り替えること、また印字が正確であることを確認する)		MODE REG 2 ---------- OK
			MODE REG 1 ---------- OK
			MODE OFF ---------- OK
		P - 5	MODE PRG ---------- OK
PRG	Drawer Check: (ﾄﾞﾛﾜｰﾁｪｯｸ)		
	Confirm drawer is opened. (ﾄﾞﾛﾜｰがｵｰﾌﾟﾝすることを確認する)	P - 5	
	Press [TOTAL] to go to next testing phase.	P - 7	DRAWER TEST ---------- OK
	([TOTAL]ｷｰを押下すると、次のﾃｽﾄ面に移ります)		
	[PO/receipt issue] key is pushed for NG.		
	(NGの場合は、[PO/receipt issue]ｷｰを押下する)		

For ASM

ECR7700 (0V00R-1430R)

MODE (モード)	Steps Description (操作)	Display (表示)	RECEIPT (レシート)
PRG	Print Check: (プリントチェック)	P - 7	!"#$%&'()*+,-./01234567 89:;<=>?@ABCDEFGHIJKLMNO PQRSTUVWXYZ[\]^_ abcdefg hijklmnopqrstuvwxyz{|}~ [illegible] [illegible] [illegible] [illegible] [illegible] <<< RESET A >>>
		0	
	Power OFF (電源OFF)		

2-2. SOFTWARE VERSION CHECK

Through the diagnostic check, it shows the software version in the beginning of the check. However, it is possible to check only the software version without diagnostic check.

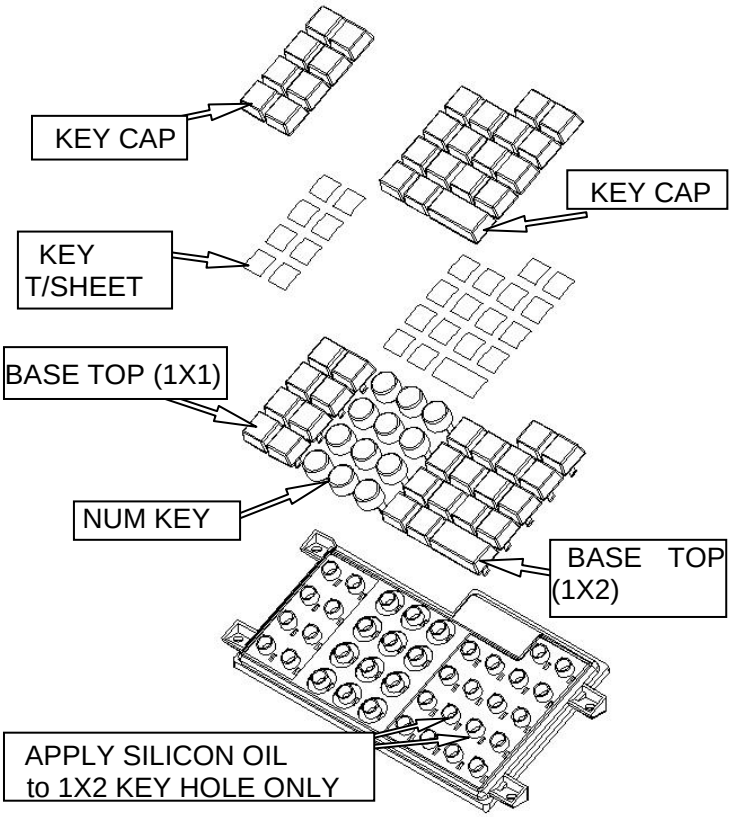
SOFTWARE VERSION CHECK

1) Input [960801] at PRG mode position.

2) VFD will show you the current software version.

3. ASSEMBLY INSTRUCTION

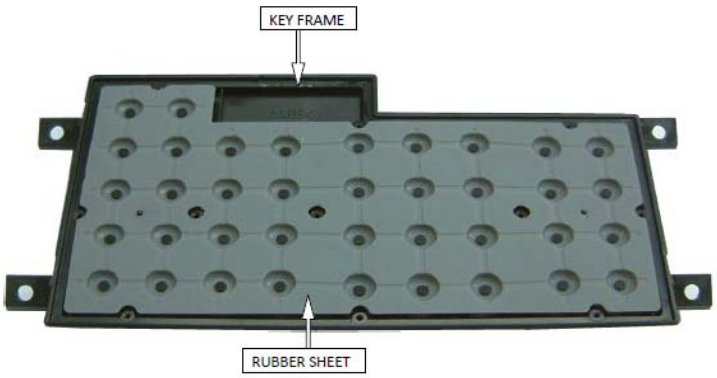
3-1 TOP CASE UNIT



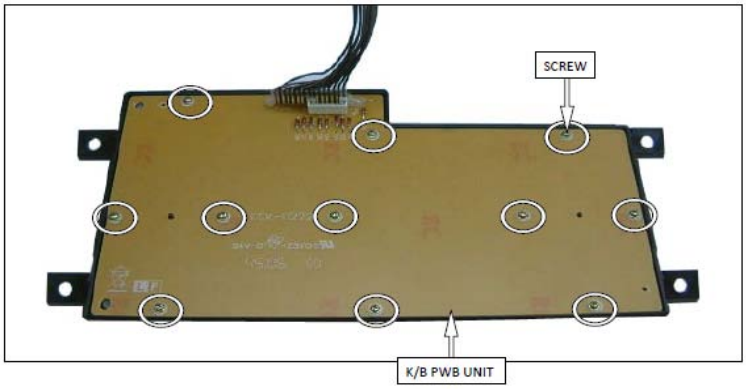
(1)
APPLY SILICON OIL TO 1X2 KEY HOLE ONLY.

(2)
FIX 25PCS BASE TOP TO KEY FRAME.

(3)
FIX KEY TOP SHEET TO KEY CAP THEN FIX ON BASE TOP KEY.

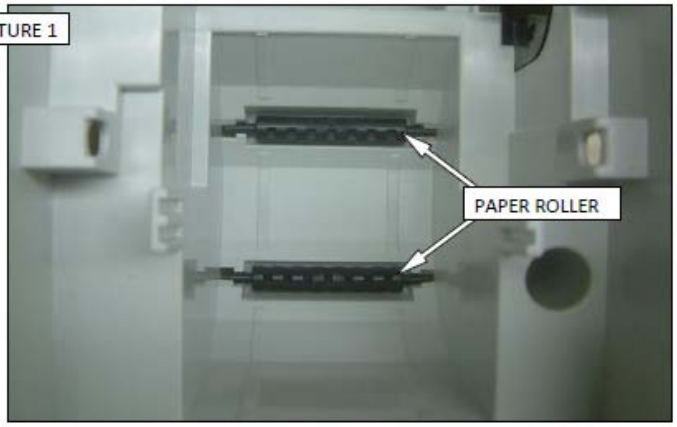


(4)
PUT RUBBER SHEET TO KEY FRAME WITH FLAT.
IT MUST BE ON FITTING BOSSES POSITION.



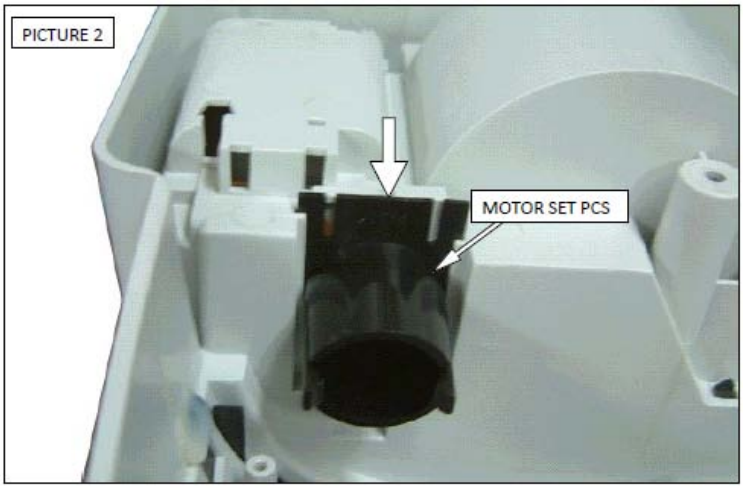
(5)
FIX K/B PWB UNIT TO KEY FRAME BY FASTEN 11PCS SCREW.

PICTURE 1

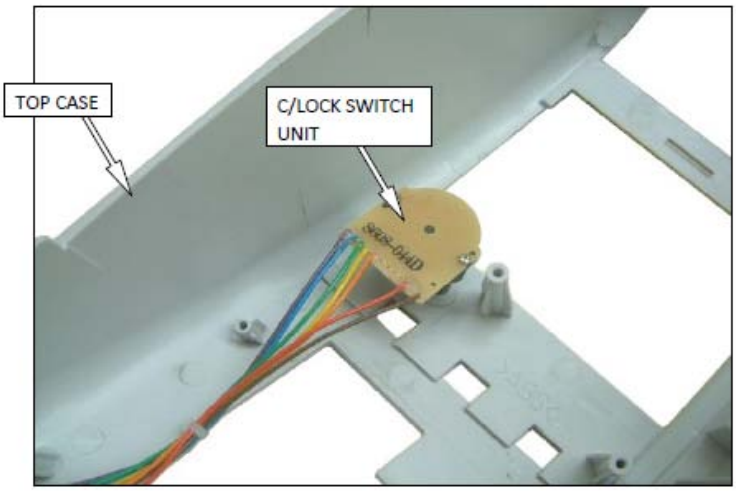


(6)
SLOT 2PCS PAPER ROLLER TO TOP CASE. (AS ON PICTURE 1)

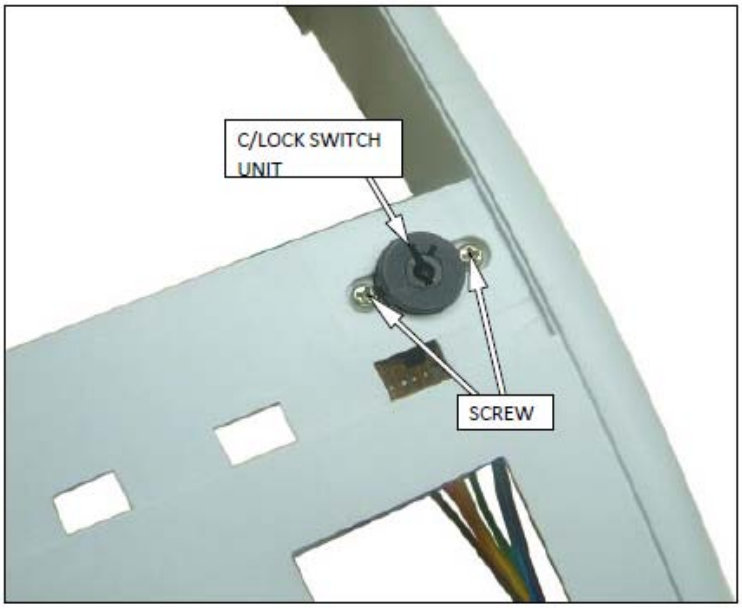
PICTURE 2

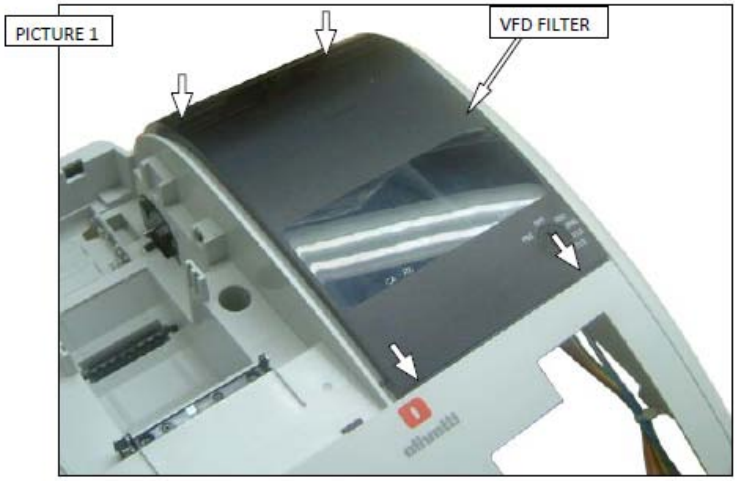


(7)
SLOT MOTOR SET PCS TO TOP CASE. (AS ON PICTURE 2)

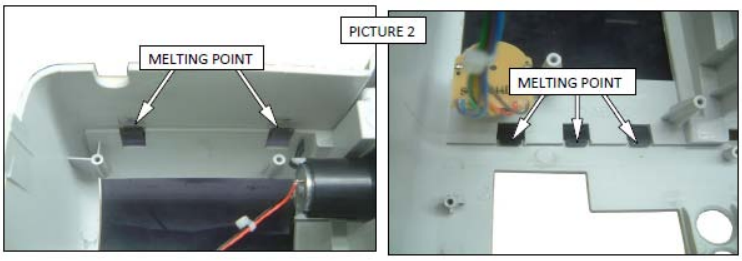


(8)
FIX CONTROL L/SWITCH UNIT TO TOP CASE BY FASTEN 2PCS SCREW.

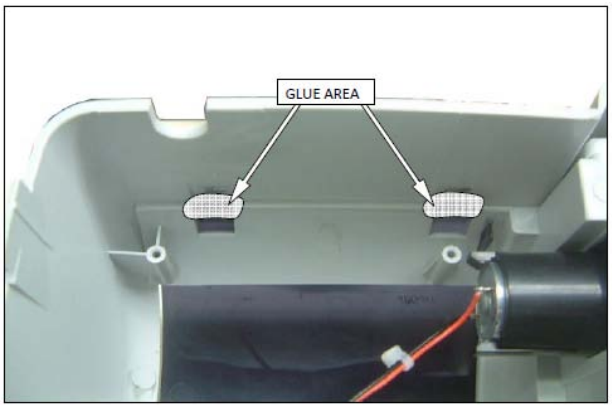




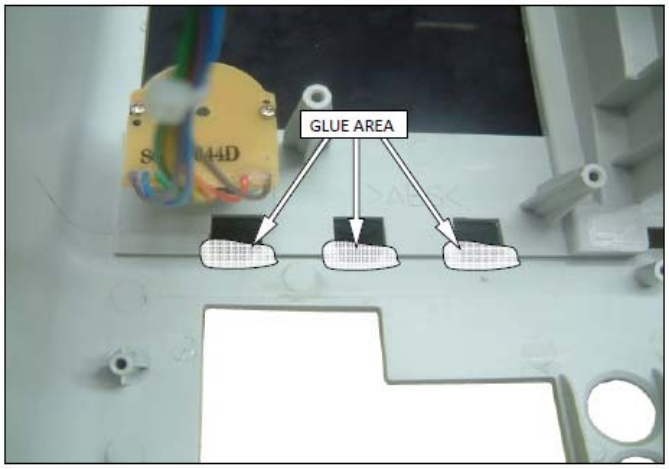
(9)
FIX VFD FILTER TO TOP CASE. (AS ON PICTURE 1)

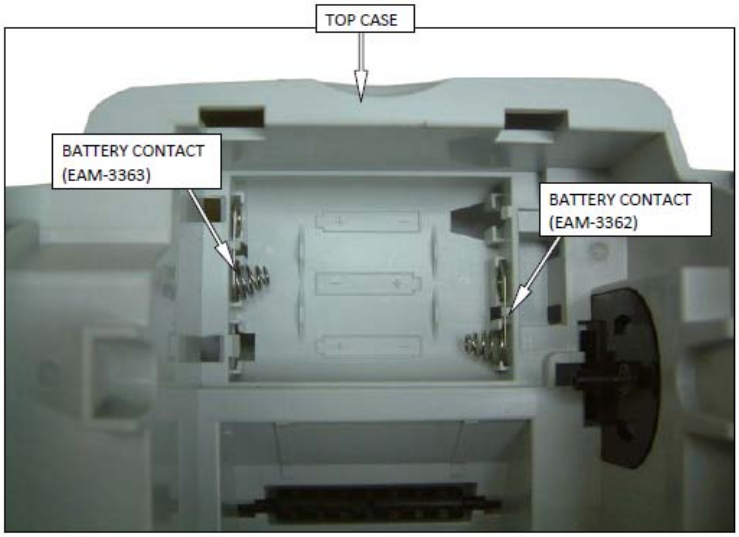


(10)
MELT 5 POINT V/FILTER LEG TO TOP CASE. (AS ON PICTURE 2)

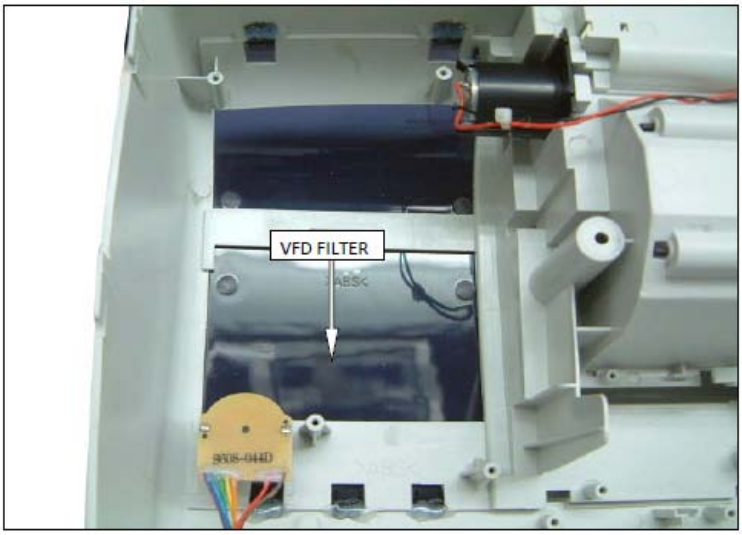


(11)
APPLY GLUE ON VFD FILTER LEG.
(5 POINT)
(LOCATION AS SHOWN ON PICTURE)

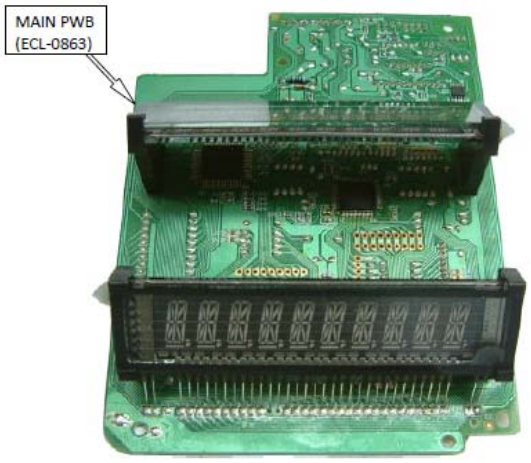


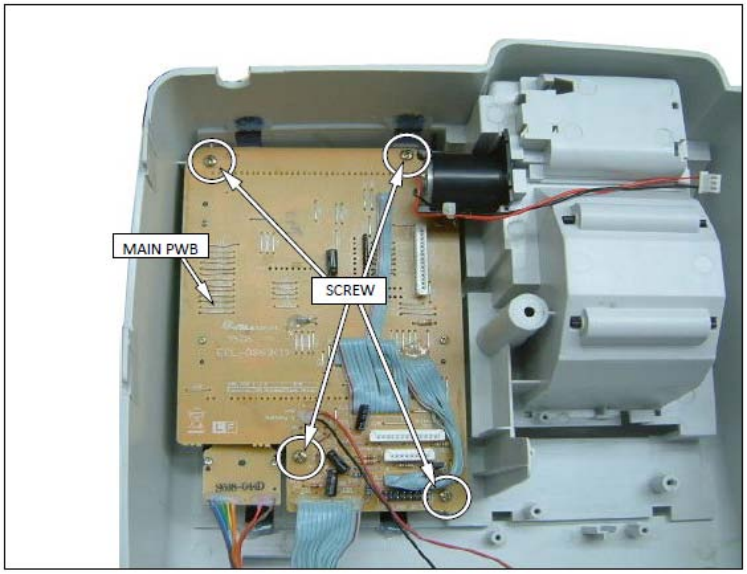


(12)
SLOT 2PCS BATTERY CONTACT TO TOP CASE.
(AS SHOWN ON PICTURE)

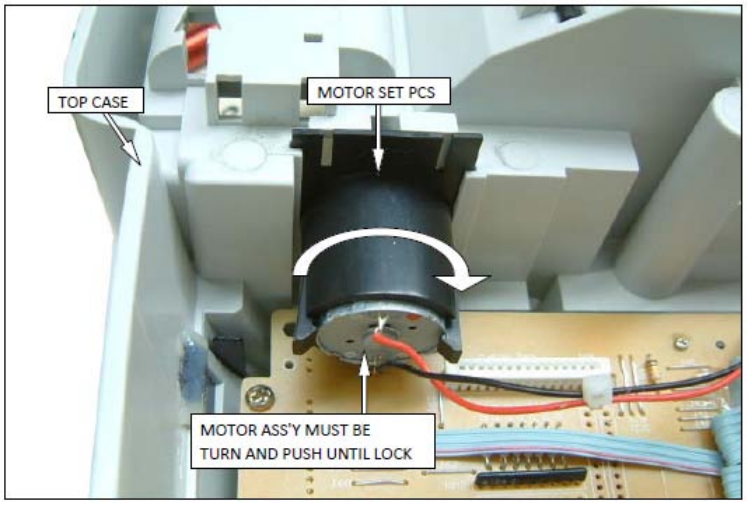


(13)
CHECK AND CLEAN VFD FILTER
AND MAIN PWB (DISPLAY TUBE).

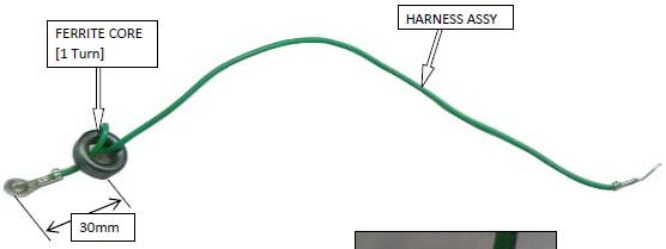




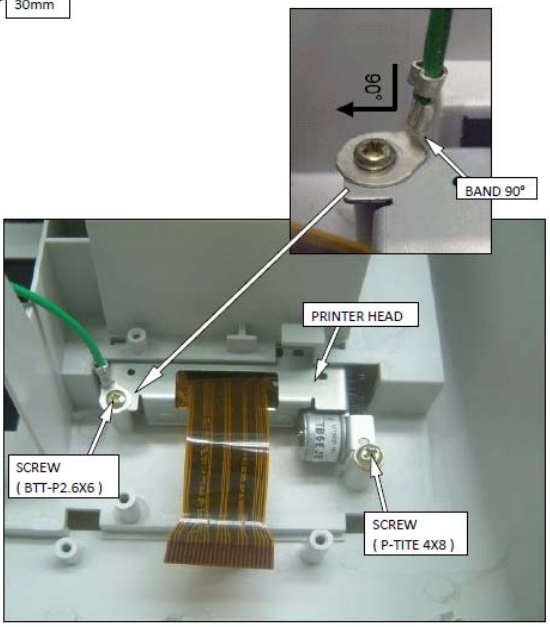
(14)
FIX MAIN PWB UNIT TO TOP CASE BY FASTEN 4PCS SCREW.



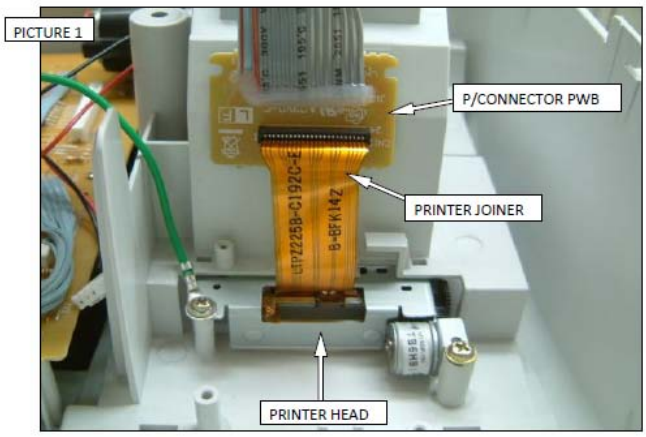
(15)
FIX MOTOR UNIT TO MOTOR SET PIECE AND TURN ROUND THEN PRESS UNTIL IS LOCKED.



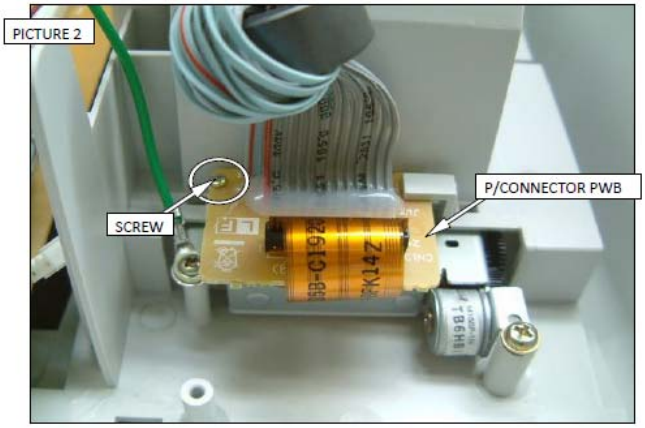
(16)
SLOT HARNESS ASSY TO FERRITE CORE AND TUNR 1 ROUND TO FERRITE CORE.



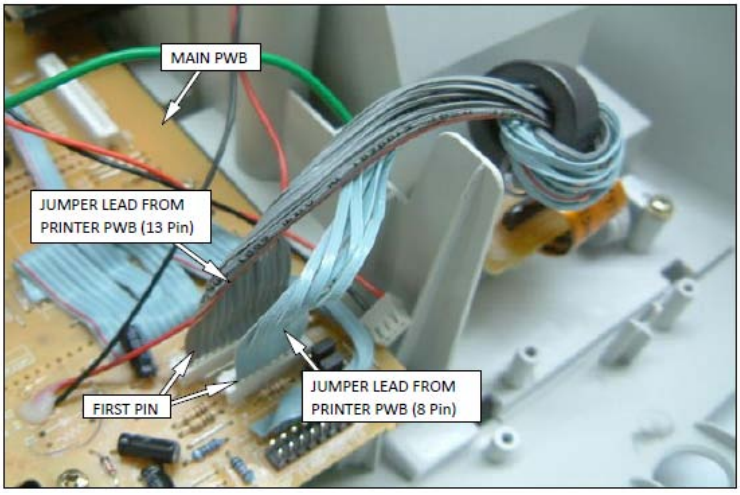
(17)
FIX PRINTER HEAD TO TOP CASE BY FASTEN 2PCS SCREW AND USE HARNESS ASSY.
(HARNESS ASSY MUST BE BEND 90°)



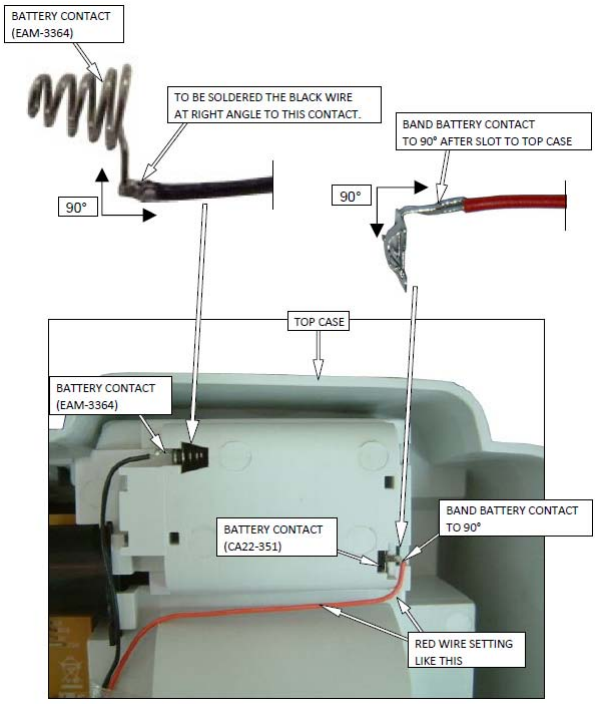
(18)
INSERT PRINTER JOINER TO PRINTER CONNECTOR PWB. (AS ON PICTURE 1)



(19)
FASTEN 1PC SCREW TO PRINTER PWB AND TOP CASE. (AS ON PICTURE 2)

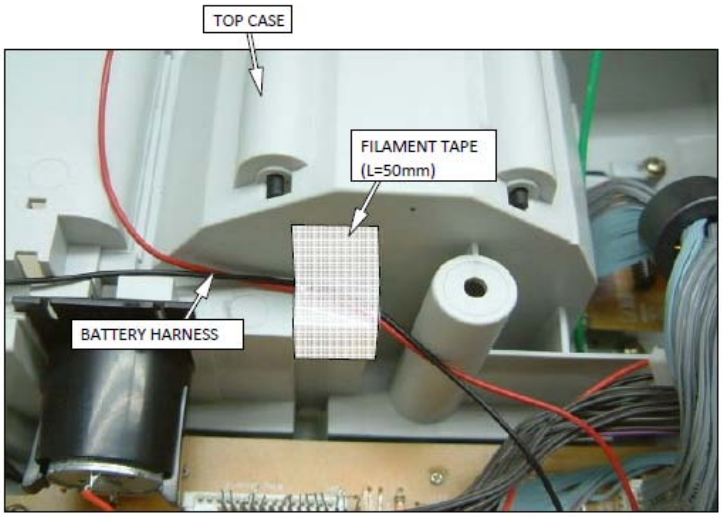


(20)
INSERT PRINTER PWB JOINER TO MAIN PWB.

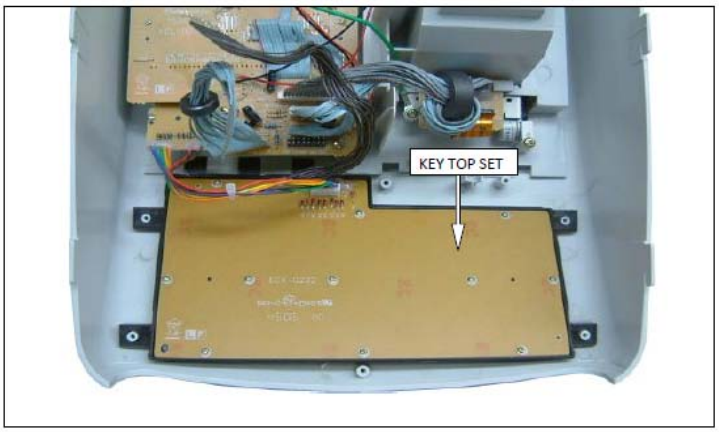


(21)
SLOT BATTERY CONTACT (+/-) TO TOP CASE.
(AS SHOWN ON PICTURE)
(THE BATTERY CONTACT MUST BE PRESS UNTIL IS LOCK)

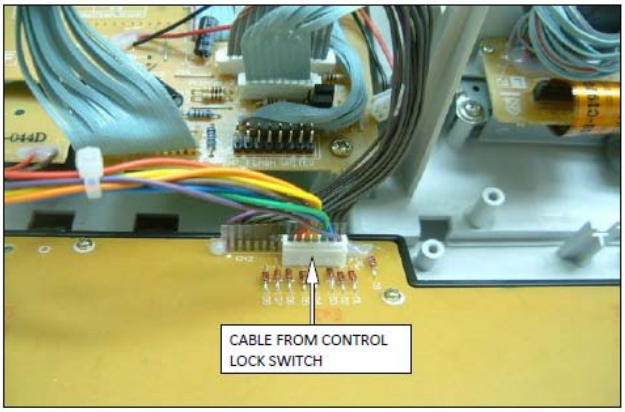
(22)
BAND BATTERY CONTACT (+) TO 90° AFTER INSERT.



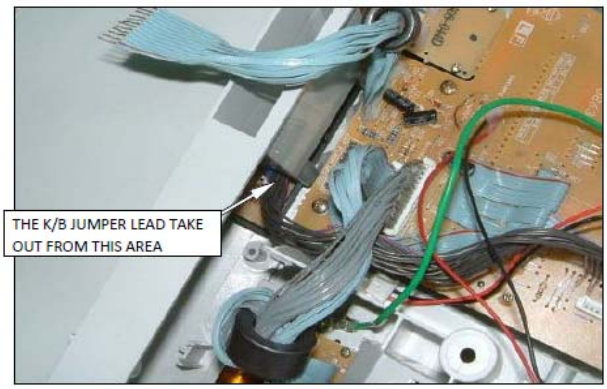
(23)
STICK FILAMENT TAPE, BATTERY HARNESS TO TOP CASE.
(FOLLOW THE PICTURE AS SHOWN ON PICTURE)

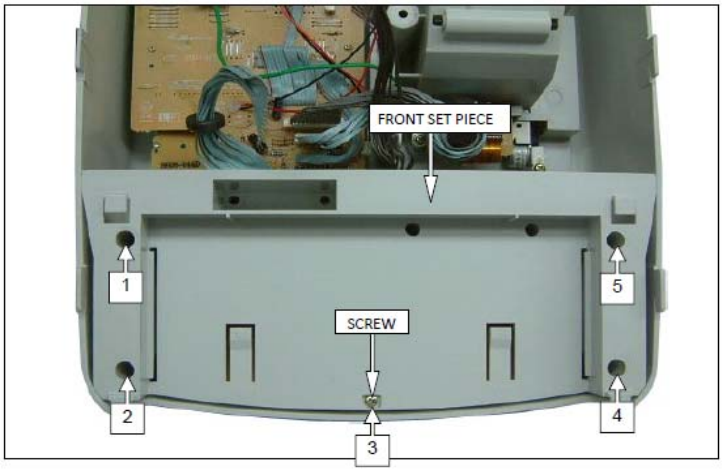


(24)
SETTING KEY FRAME TO TOP CASE.

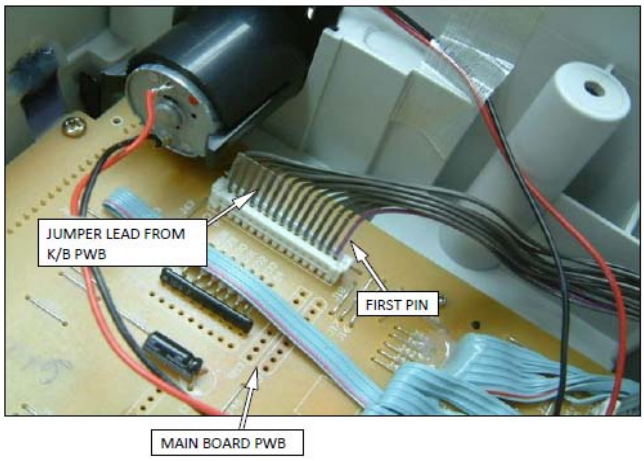


(25)
INSERT CONTROL LOCK SWITCH CONNECTOR TO K/B PWB.





(26)
FIX FRONT SET PIECE TO TOP CASE BY FASTEN 5PCS SCREW. (LOCATION AS SHOWN ON PICTURE)

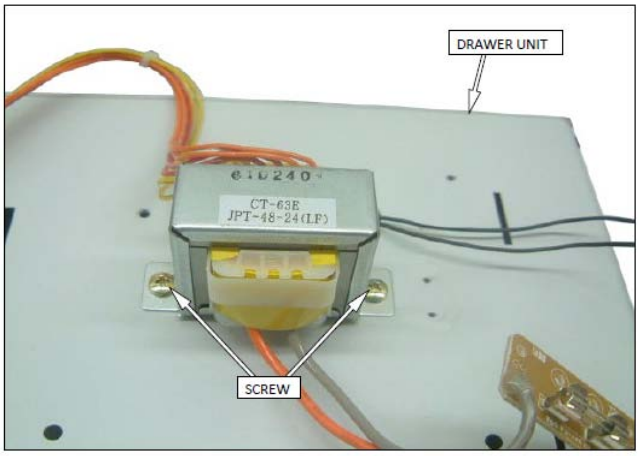


(27)
INSERT K/B PWB JUMPER LEAD TO MAIN PWB UNIT.
(LOCATION AS SHOWN ON PICTURE)

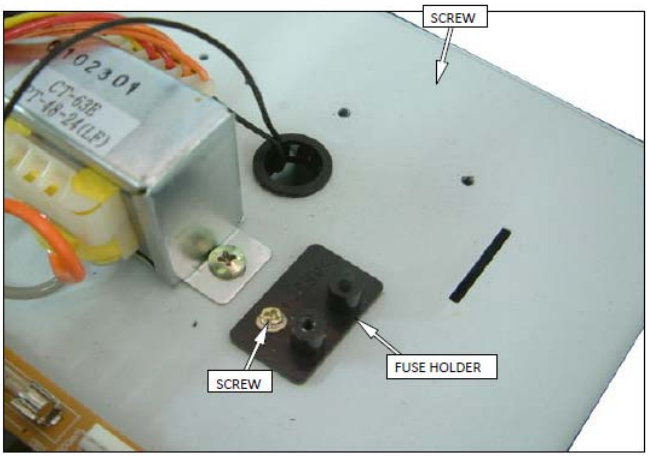
(28)
LAST CHECKING THE SEMI SET.

3-2 DRAWER UNIT ASSY

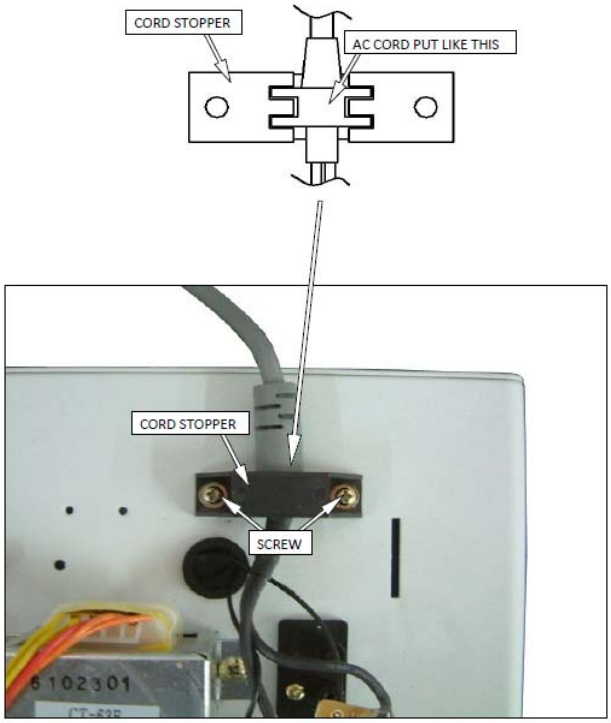
(1)
APPREARANCE CHECK THE DRAWER UNIT.
- NO WARPING & SCRATCHES



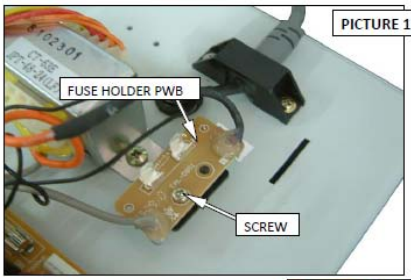
(2)
FIX TRANSFORMER UNIT TO UPPER PLATE BY FASTEN 2PCS SCREW.



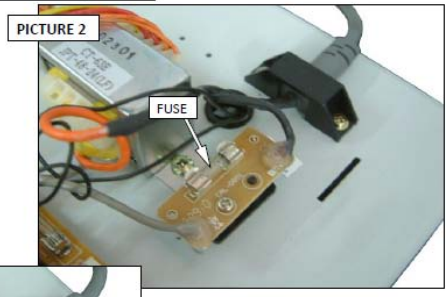
(3)
FIX FUSE HOLDER TO UPPER
PLATE BY FASTEN 1PC SCREW.



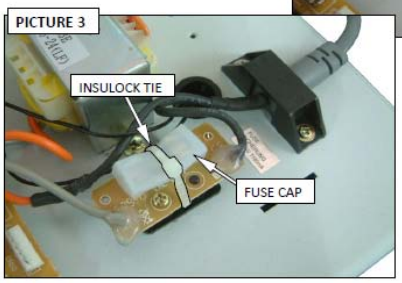
(4)
FIX CORD STOPPER TO AC CORD THEN FIX TO UPPER PLATE BY FASTEN 2PCS SCREW.



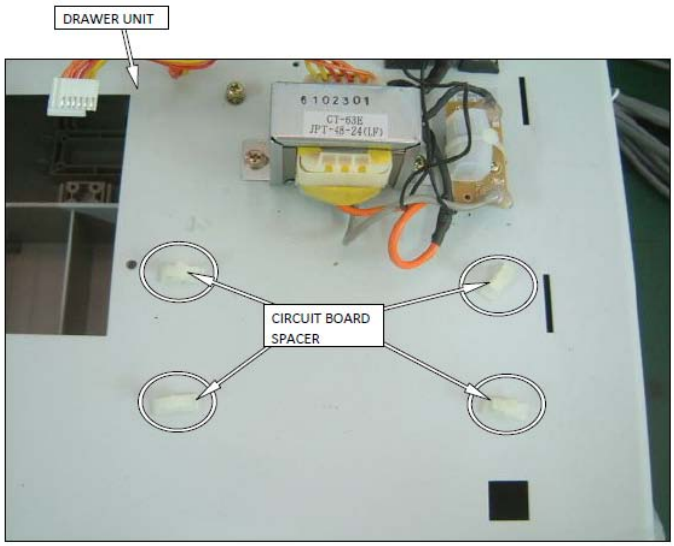
(5)
FIX FUSE HOLDER PWB TO FUSE HOLDER BY FASTEN 1PC
SCREW. [AS PICTURE 1.]

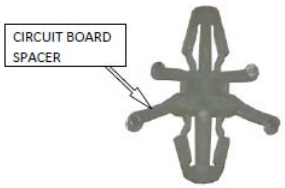


(6)
FIX FUSE TO FUSE HOLDER. [AS PICTURE 2.]

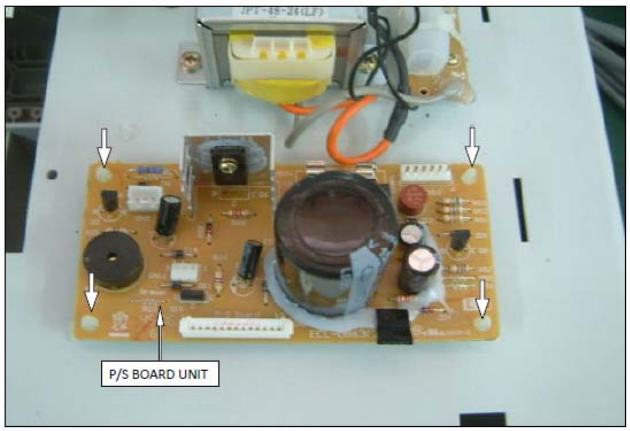


(7)
FIX FUSE CAP TO FUSE HOLDER BY TIED WITH INSULOCK TIE.[AS PICTURE 3.]

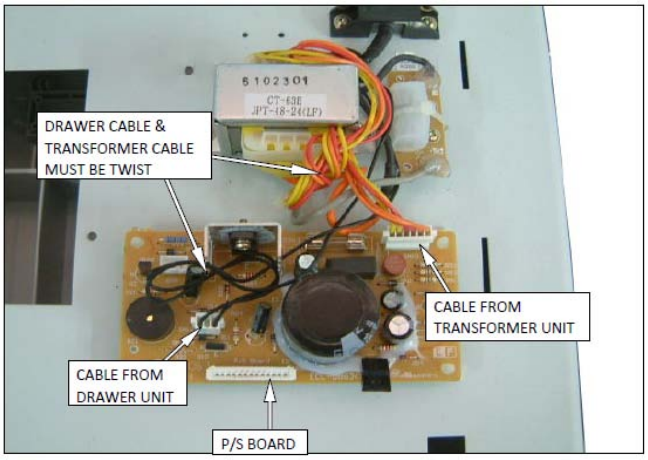




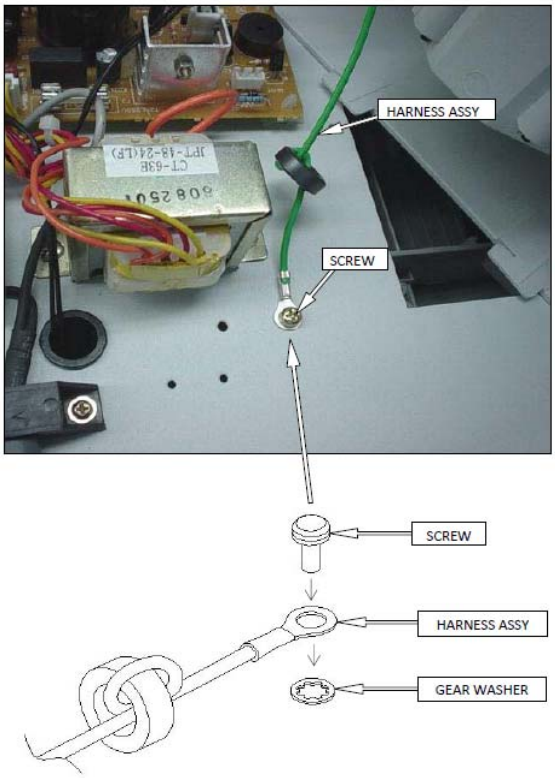
(8)
SLOT 4PCS CIRCUIT BOARD SPACER TO DRAWER UNIT. (LOCATION AS SHOWN ON PICTURE)



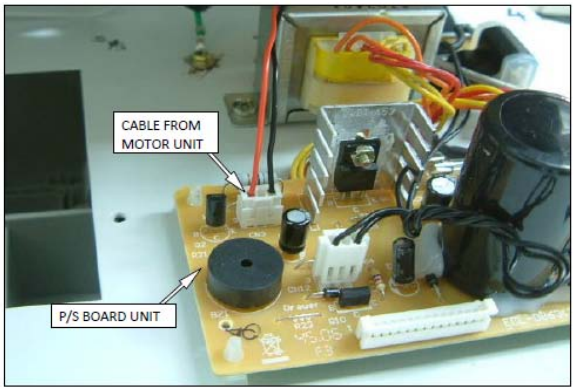
(9)
FIX P/S BOARD UNIT TO CIRCUIT B/SPACER.

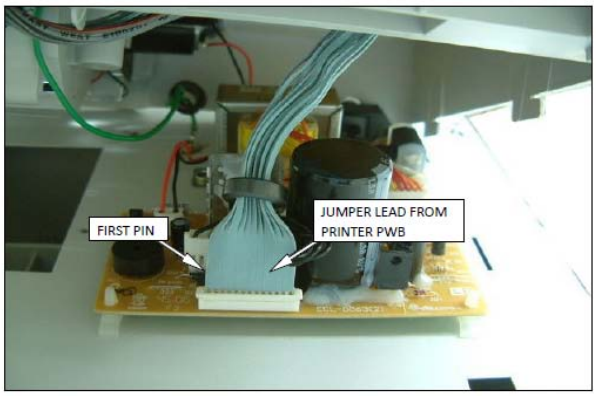


(10)
INSERT DRAWER CABLE AND TRANSFORMER CABLE TO POWER SUPPLY BOARD UNIT. (LOCATION AS SHOWN ON PICTURE)



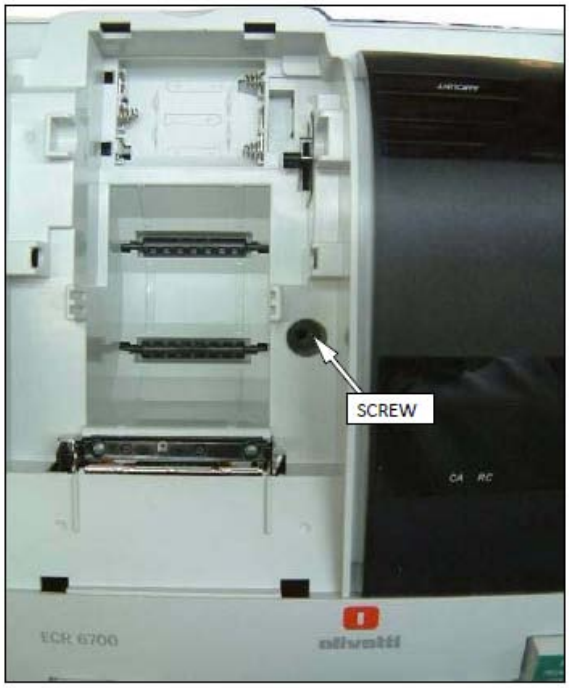
(11)
FIX HARNESS ASSY TO UPPER PLATE BY FASTEN 1PC SCREW AND USE GEAR WASHER



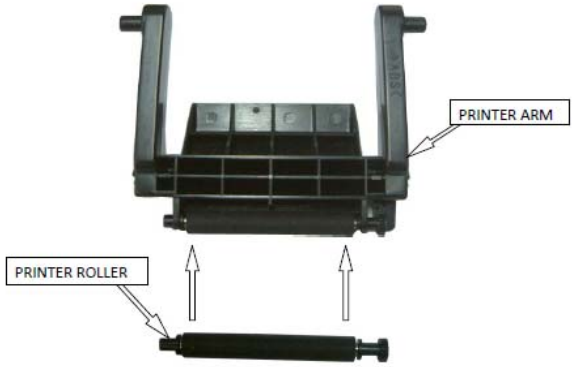


(12)
INSERT MOTOR CONNECTOR AND PRINTER JUMPER LEAD TO P/S BOARD UNIT.
(LOCATION AS SHOWN ON PICTURE)

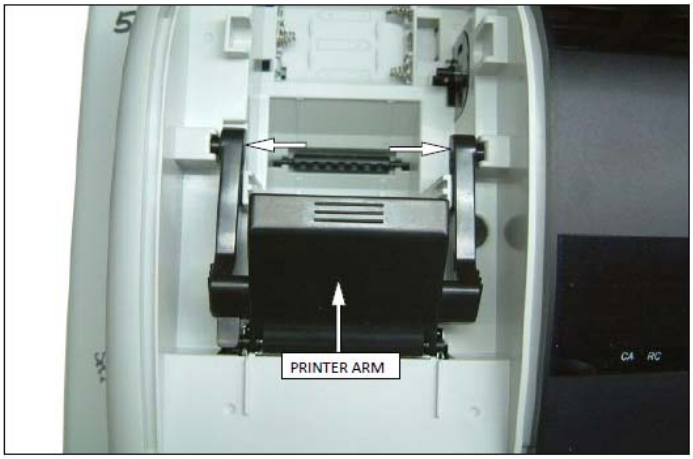
(13)
FIX SEMI SET TO DRAWER UNIT.
(FOLLOW THE PICTURE AS SHOWN ON PICTURE)



(14)
FASTEN 1PC SCREW, TOP CASE TO DRAWER UNIT.



(15)
SLOT PRINTER ROLLER TO PRINTER ARM.



(16)
FIX PRINTER ARM TO TOP CASE.
(AS ON PICTURE)

(17)
FIX DEPOSIT DRAWER TO ASSY UNIT.
(AS SHOWN ON PICTURE)

(18)
SETTING THE 3PCS BATTERY, WINDING REEL AND ROLL PAPER TO ASSY UNIT.

(19)
FOLLOW CHECK LIST TO PERFORM FUNCTION CHECK. NO PRINTER NOISY & PRINTING MISSING DURING TESTING. IF ANY DEFECTIVE, PLS PUT IN DEFECTIVE BASKET.

4. CIRCUITRY

4-1 POWER SUPPLY CIRCUIT

VP
VP is generated using the 15.6V AC input across pins 1 and 2 of CN10. This AC voltage is rectified by the RS202 bridge rectifier and filtered by EC25 a 15000uF capacitor. The resulting DC voltage is about +18V. VP is used for the Drawer solenoid and the Buzzer.

VH
VH is generated using the 15.6V AC input across pins 1 and 2 of CN10. This AC voltage is rectified by the RS202 bridge rectifier and filtered by EC25 a 15000uF capacitor.
The resulting DC voltage is about +18V. It applies to the corrector of Q6, a 2SD1415 transistor and the base voltage controlled by ZD3. In the result, this emitter voltage is +7.6V. VH is used for the Printer and the Winding Motor.

VCC, VBB
VCC is generated using the 15.6V AC input across pins 1 and 2 of CN10. This AC voltage is rectified by the RS202 bridge rectifier and filtered by EC25 a 15000uF capacitor.
The resulting DC voltage is about +18V. It applies to the corrector of Q7, a 2SD2012 transistor and the base voltage controlled by ZD4. In the result, this emitter voltage is +5.0V.

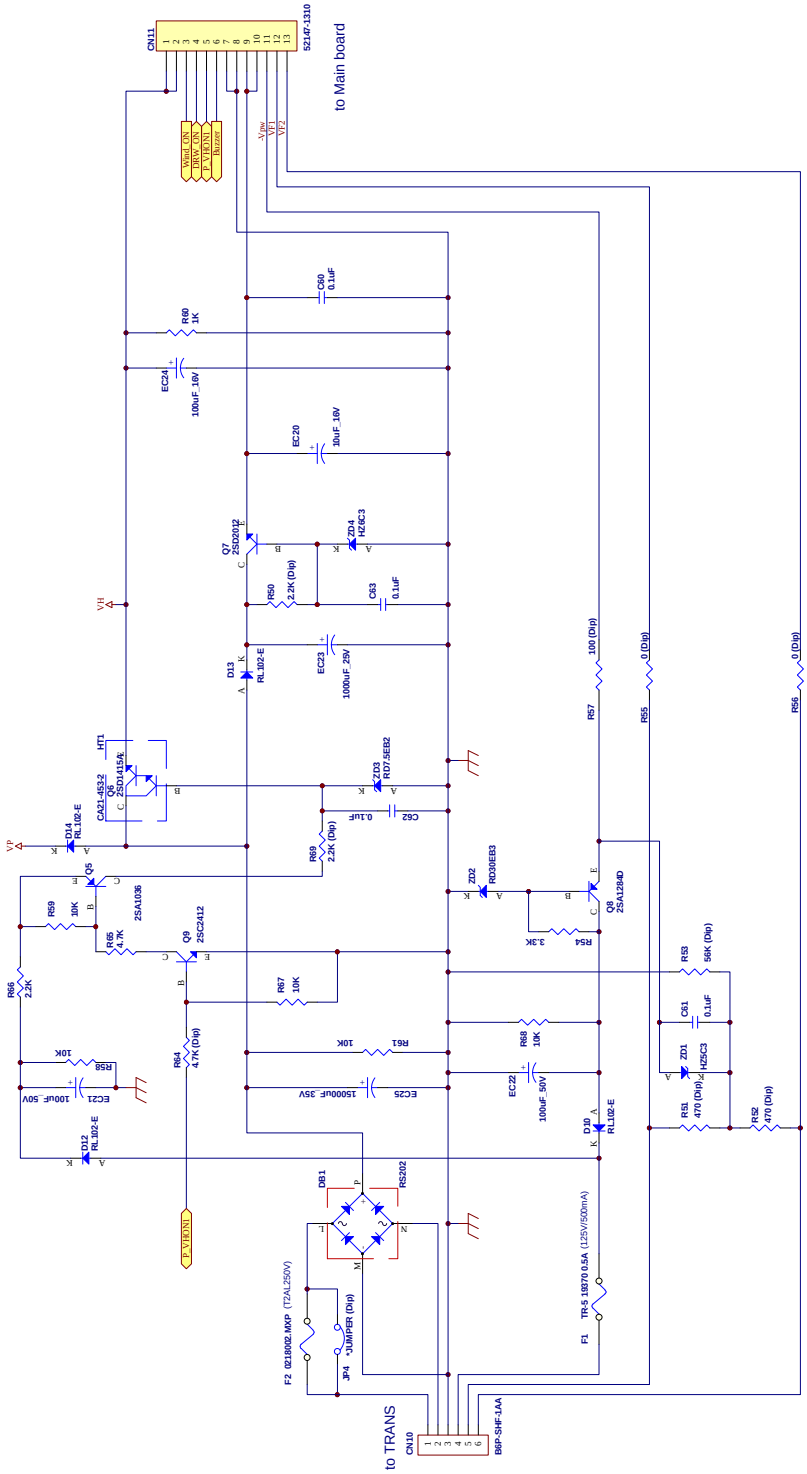
-VPW
The –VPW circuit uses 27V AC across pins 3 and 4 of CN10.
This AC voltage is rectified by D10, a RL102-E diode and filtered by EC22.
The circuit is generating the -VPW uses the -30V. It applies to the emitter of Q8 a 2SA1284D transistor, and base voltage controlled by ZD2.
In the result, -VPW is about -28V DC. This voltage is used for the display.

Filament Voltage (VF1, VF2)
The filament voltage, VF1, VF2 are used for the display tube.
Its AC input is 4.3V, and uses a ground reference -23V from the -28V circuit dropped across ZD1 and R51, R52, a 470 ohm resister.

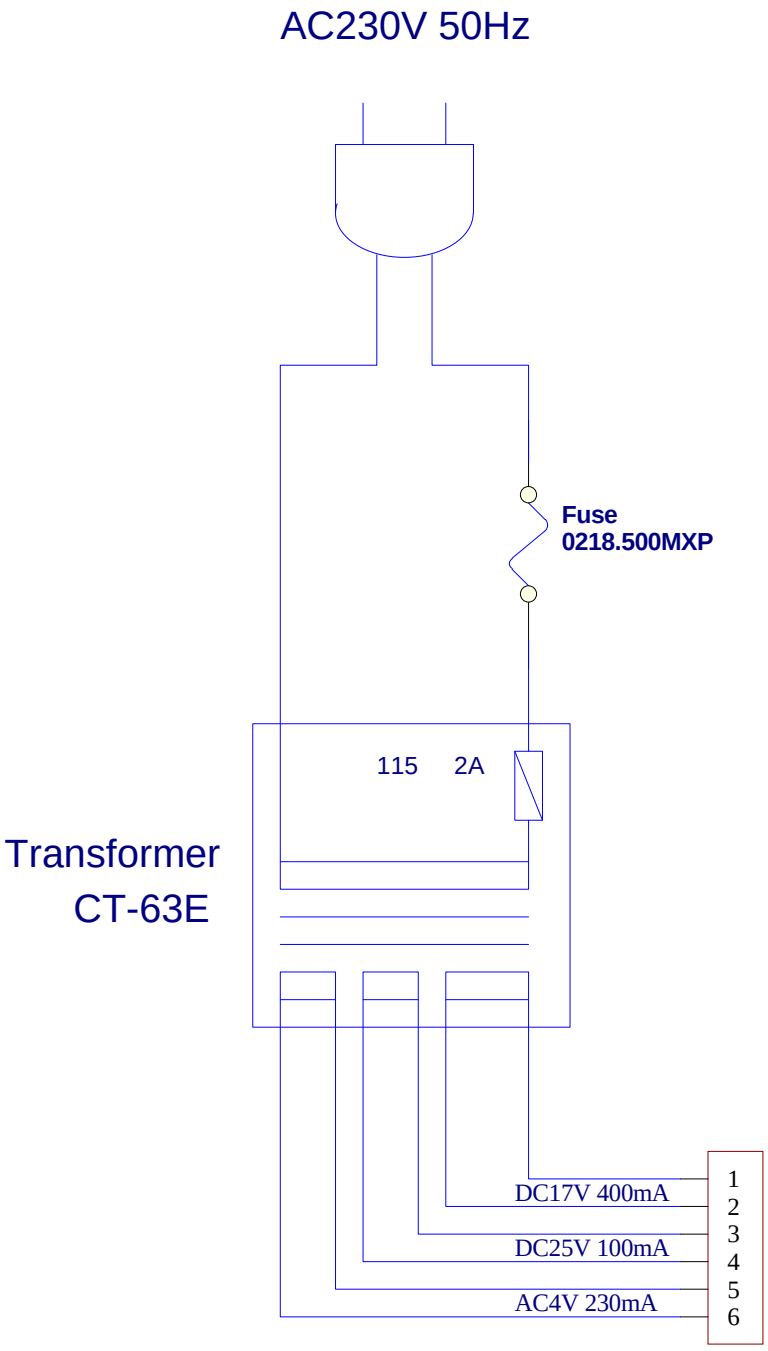
Fuse for Secondary side.

F1	125V 500mA	TR-5 19370 0.5A	
F2	250V 2A	0218002.MXP	type: Time Lug

POWER SUPPLY CIRCUIT continued



4-2 TRANSFORMER WIRING DIAGRAM



4-3 μ PD78F0547 MICROCOMPUTER

Port Assignment (μ PD78F0547)

Port #		Pin Specification				Signal Name	Signal Specification	I/O	Pin Term	INITIAL		PF(Backup)	
		#	Pin Name	I/O	Type					I/O	Data	I/O	Data
P0	0	74	TI000	I/O	PU	M_PH1	Printer Motor Pulse1	O	-	O	L	O	L
	1	73	TI010/TO00	I/O	PU	M_PH2	Printer Motor Pulse2	O	-	O	L	O	L
	2	72	SO11	I/O	PU	P_DATA	Printer Head Data	O	-	O	L	O	L
	3	71	SI11	I/O	PU	P_LAT#	Printer Head Latch	O	-	O	H	O	L
	4	70	SCK11#	I/O	PU	P_CLK	Printer Head Clock	O	-	O	L	O	L
	5	39	TI001/SSI11#	I/O	PU	M_PH3	Printer Motor Pulse3	O	-	O	L	O	L
	6	38	TI011/TO01	I/O	PU	M_PH4	Printer Motor Pulse4	O	-	O	L	O	L
P1	0	54	SCK10#/TxD0	I/O	PU	A16	SRAM Address	O	-	O	L	O	L
	1	53	SI10/RxD0	I/O	PU	A17	SRAM Address	O	-	O	H	O	L
	2	52	SO10	I/O	PU	NC(A18)	NC(SRAM Address)	O	-	O	H	O	L
	3	51	TxD6	I/O	PU	TD_DST1#	Printer Head Strobe1 (Flash Writer TxD)	O	-(GND-PD)	O	H	O	L
	4	50	RxD6	I/O	PU	RD_DST2#	Printer Head Strobe2 (Flash Writer RxD)	O(L)	-(VBB-PU)	O	H	L	-
	5	49	TOH0	I/O	PU	P_DST3#	Printer Head Strobe3	O	-	O	H	O	L
	6	48	TOH1/INTP5	I/O	PU	P_DST4#	Printer Head Strobe4	O	-	O	H	O	L
	7	47	TI50/TO50	I/O	PU	WIND_ON	Winding Motor On	O	GND-PD	O	L	O	L
P2	0	68	ANI0	I/O		KS0	Key Scan	O	-	O	L	O	L
	1	67	ANI1	I/O		KS1	Key Scan	O	-	O	L	O	L
	2	66	ANI2	I/O		KS2	Key Scan	O	-	O	L	O	L
	3	65	ANI3	I/O		NC	NC	O	-	O	L	O	L
	4	64	ANI4	I/O		P_SENS	Printer Sensor	I	VCC-PU	I	(H)	I	(L)
	5	63	ANI5	I/O		NC(SVBT)	NC(Back Up Battery Sense)	AI	GND-PD	AI	AD	I	(L)
	6	62	ANI6	I/O		P_VPRN	Printer Power Voltage	AI	GND-PD	AI	AD	I	(L)
	7	61	ANI7	I/O		P_TH	Printer Head Thermista	AI	VCC-PU	AI	AD	I	(L)
P3	0	46	INTP1	I/O	PU	RAM_CS#	SRAM CS	O	-	O	H	O	H
	1	41	INTP2/CCD1A	I/O	PU	RD#	SRAM RD	O	-	O	H	O	H
	2	40	INTP3/CCD1B	I/O	PU	WR#	SRAM WR	O	-	O	H	O	H
	3	25	TI51/TO51/INTP4	I/O	PU	P_VHON	Printer Head Power On	O	GND-PD	O	L	O	L
P4	0	9		I/O	PU	A0	SRAM Address	O	-	O	L	O	L
	1	8		I/O	PU	A1	SRAM Address	O	-	O	L	O	L
	2	7		I/O	PU	A2	SRAM Address	O	-	O	L	O	L
	3	6		I/O	PU	A3	SRAM Address	O	-	O	L	O	L
	4	5		I/O	PU	A4	SRAM Address	O	-	O	L	O	L
	5	4		I/O	PU	A5	SRAM Address	O	-	O	L	O	L
	6	3		I/O	PU	A6	SRAM Address	O	-	O	L	O	L
	7	2		I/O	PU	A7	SRAM Address	O	-	O	L	O	L
P5	0	42		I/O	PU	A8	SRAM Address	O	-	O	L	O	L
	1	43		I/O	PU	A9	SRAM Address	O	-	O	L	O	L
	2	44		I/O	PU	A10	SRAM Address	O	-	O	L	O	L
	3	45		I/O	PU	A11	SRAM Address	O	-	O	L	O	L
	4	55		I/O	PU	A12	SRAM Address	O	-	O	L	O	L
	5	56		I/O	PU	A13	SRAM Address	O	-	O	L	O	L
	6	57		I/O	PU	A14	SRAM Address	O	-	O	L	O	L
	7	58		I/O	PU	A15	SRAM Address	O	-	O	L	O	L
P6	0	21	SCL0	I/O	OD	KR0	Key Return	I	VCC-PU	I	(H)	I	(L)
	1	22	SDA0	I/O	OD	KR1	Key Return	I	VCC-PU	I	(H)	I	(L)
	2	23	EXSCL0	I/O	OD	KR2	Key Return	I	VCC-PU	I	(H)	I	(L)
	3	24		I/O	OD	KR3	Key Return	I	VCC-PU	I	(H)	I	(L)
	4	26		I/O	PU	KR4	Key Return	I	VCC-PU	I	(H)	I	(L)
	5	27		I/O	PU	KR5	Key Return	I	VCC-PU	I	(H)	I	(L)
	6	28		I/O	PU	KR6	Key Return	I	VCC-PU	I	(H)	I	(L)
	7	29		I/O	PU	KR7	Control Key Return	I	VCC-PU	I	(H)	I	(L)
P7	0	37	KR0	I/O	PU	D0	SRAM Data	I/O	GND-PD	O	L	I	(L)
	1	36	KR1	I/O	PU	D1	SRAM Data	I/O	GND-PD	O	L	I	(L)
	2	35	KR2	I/O	PU	D2	SRAM Data	I/O	GND-PD	O	L	I	(L)
	3	34	KR3	I/O	PU	D3	SRAM Data	I/O	GND-PD	O	L	I	(L)
	4	33	KR4	I/O	PU	D4	SRAM Data	I/O	GND-PD	O	L	I	(L)
	5	32	KR5	I/O	PU	D5	SRAM Data	I/O	GND-PD	O	L	I	(L)
	6	31	KR6	I/O	PU	D6	SRAM Data	I/O	GND-PD	O	L	I	(L)
	7	30	KR7	I/O	PU	D7	SRAM Data	I/O	GND-PD	O	L	I	(L)
P12	0	1	INTP0/EXLVI	I/O	PU	PF	Power Fail	LVI	-	AD	AD	AD	AD
	1	15	X1/CCD0A	I/O		NC	NC	O	-	O	L	O	L
	2	14	X2/EXCLK/CCD0B	I/O		F_CLK	Flash Writer CLK	I	GND-PD	I	(L)	I	(L)
	3	12	XT1	I/O		XT1	32.768kHZ	CLK	-	O	O	O	O
	4	11	XT2/EXCLKS	I/O		XT2	32.768kHZ	CLK	-	O	O	O	O

Port Assignment continued

Port #		Pin Specification			Signal Name	Signal Specification	I/O	Pin Term.	INITIAL		PF(Backup)	
		#	Pin Name	I/O	Type						I/O	Data
P13	0	69		O		DRAWER	Darwer On	O	GND-PD	O	L	O	L
P14	0	80	PCI/INTP6	I/O	PU	NC	NC(クロック出力)	O	-	O	L	O	L
	1	79	BUZ/BUSY0/INTP7	I/O	PU	BUZZER	Buzzer	O	GND-PD	O	L	O	L
	2	78	SCKA0#	I/O	PU	DSP_CLK	Display Controller Clock	O	-	O	L	O	L
	3	77	SIA0	I/O	PU	NC	NC	O	-	O	H	O	L
	4	76	SOA0	I/O	PU	DSP_DATA	Display Controller Data	O	-	O	L	O	L
	5	75	STB0	I/O	PU	DSP_CS1#	Display Controller CS	O	-	O	H	O	L
		10	RESET#	I		RESET#	External Input Reset	I	VBB-PU	I		I	
		13	FLMD0	I		FLMD0	LCF/FLMD0	I	GND-PD	I	(L)	I	(L)
		16	REGC	-		REGC	Stabilization Capacitance Connect Pin						
		17	VSS		Power	GND	Ground(0V)						
		18	EVSS		Power	GND	Ground(0V)						
		19	VDD		Power	VBB	P-ON:+5V/BackUp:+5.5V_1.8V						
		20	EVDD		Power	VBB	P-ON:+5V/BackUp:+5.5V_1.8V						
		59	AVREF		Power	VBB	P-ON:+5V/BackUp:+5.5V_1.8V						
		60	AVSS		Power	GND	Ground(0V)						

4-4 RESET CIRCUIT

The following four operations are available to generate a reset signal.

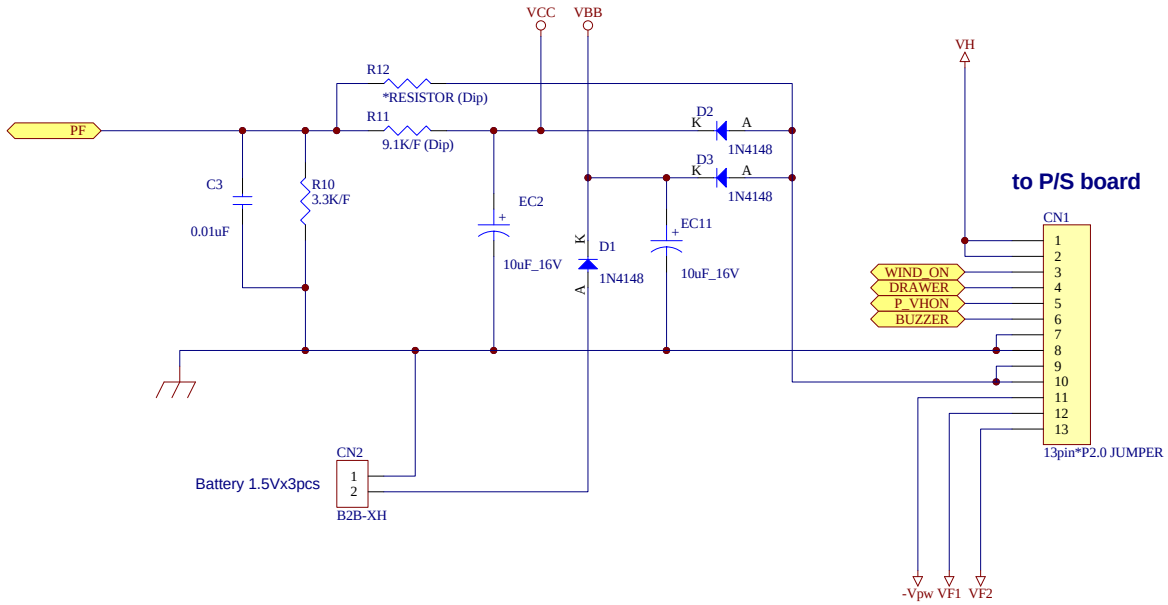
External reset input via RESET pin
Internal reset by watching timer program loop detection
Internal reset by comparison of supply voltage and detection voltage of power-on-clear(POC) circuit
Internal reset by comparison of supply voltage and detection voltage of low-power-supply detector(LVI)

ECR6700 adopts the (3) method.
External and internal resets have no functional differences. In both cases, program execution starts at the address at 0000H and 0001H when the reset signal is generated.

Reset by POC and LVI circuit power supply detection is automatically released when VDD VPOC or VDD VLVI after the reset, and program execution starts using the internal high-speed oscillation clock (see 78F0547 User's Manual **CHAPTER 24 POWER-ON-CLEAR CIRCUIT** and **CHAPTER 25 LOW-VOLTAGE DETECTOR**) after reset processing.

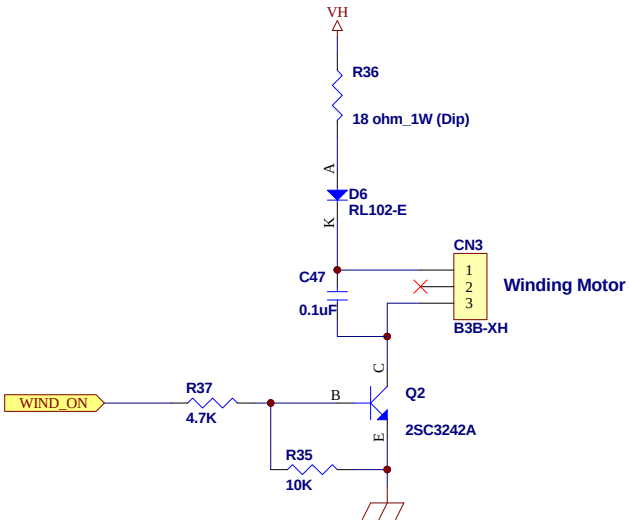
4-5 POWER FAIL CIRCUIT

Power fail generated by a circuit using the PF DTC voltage.
When power is on and the system is operating normally, the power fall signal stays at a higher voltage than 1.21V.
The CPU watches power failure signals all the time. When power is on, PF is High level.
When power down and CPU(U1)1pin voltage goes down lower than PF detection voltage(=1.21V), low-power-supply detector circuit of the CPU works and execute PF.



4-6 WINDING MOTOR CIRCUIT

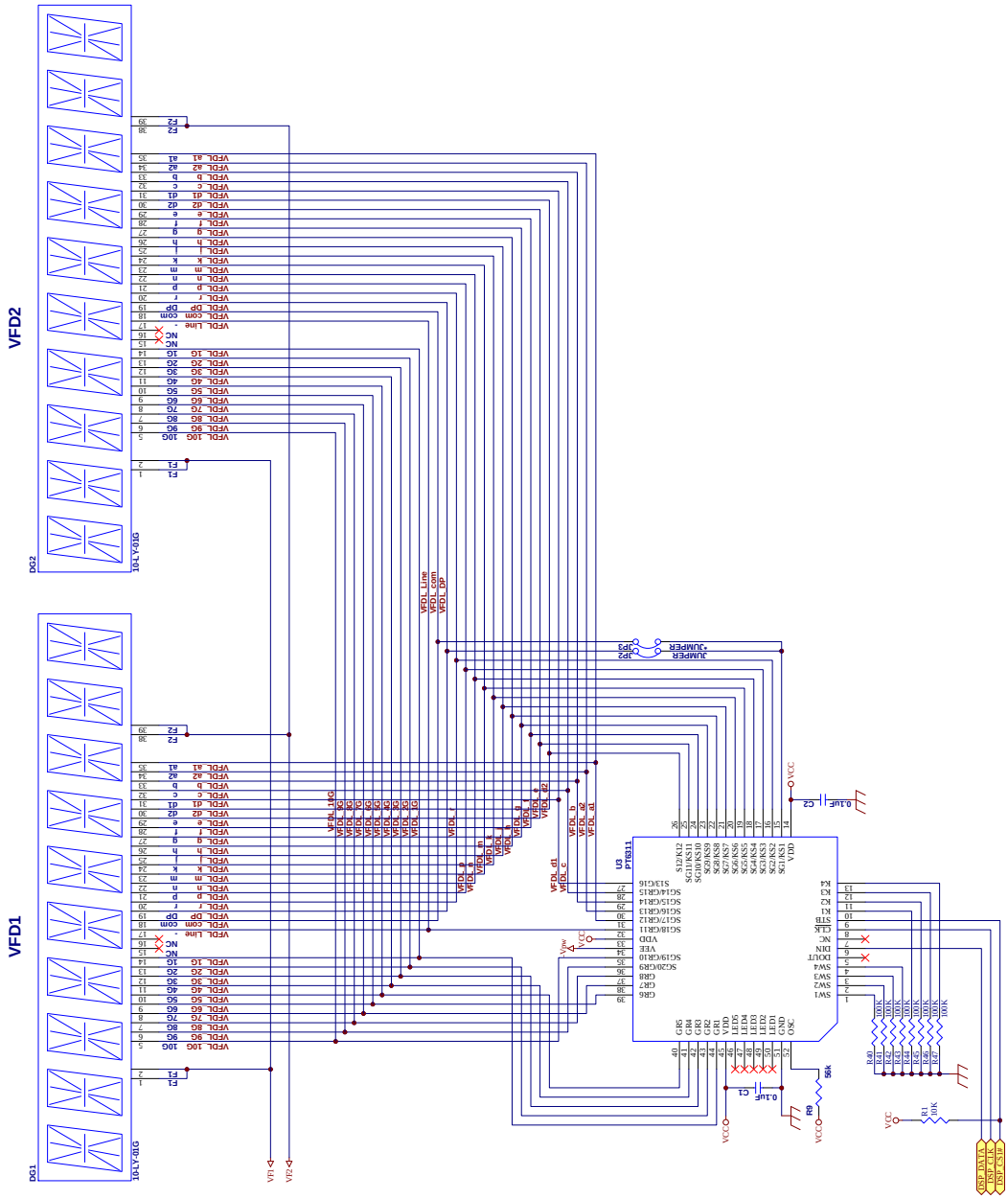
The winding motor power is VH at Printer Power voltage.
Printer Power voltage is on, and WIND_ON is Hi ,when Q2 is ON as the winding motor is run.



4-7 DISPLAY CIRCUIT

Union Jack display (Front and rear)
This display is controlled by U3, PT6311 for VFD controller.
Front display and Rear display are connected in parallel.

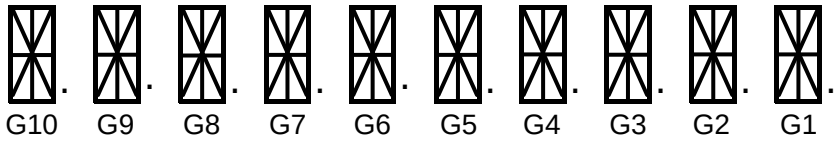
DISPLAY CIRCUIT



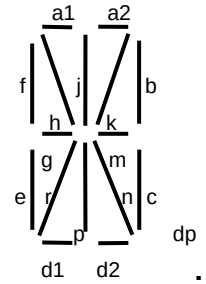
4-8 DISPLAY TUBE INFORMATION

Display Digit (Union Jack)

10LY-01G



Segment



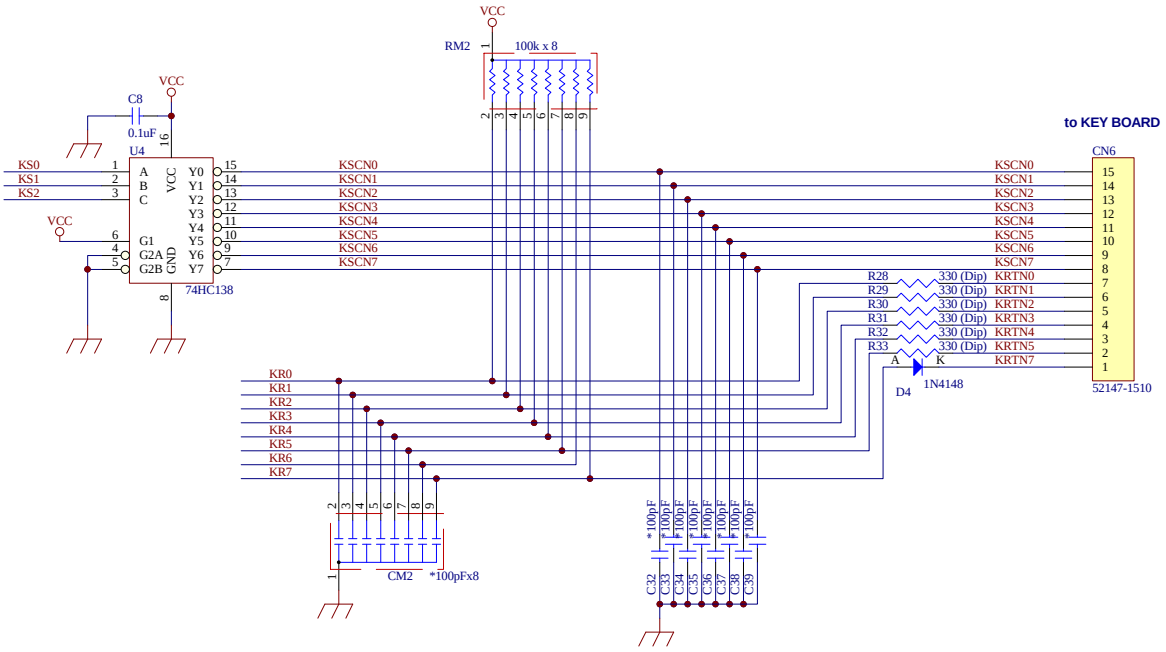
(Union Jack)

Display specification

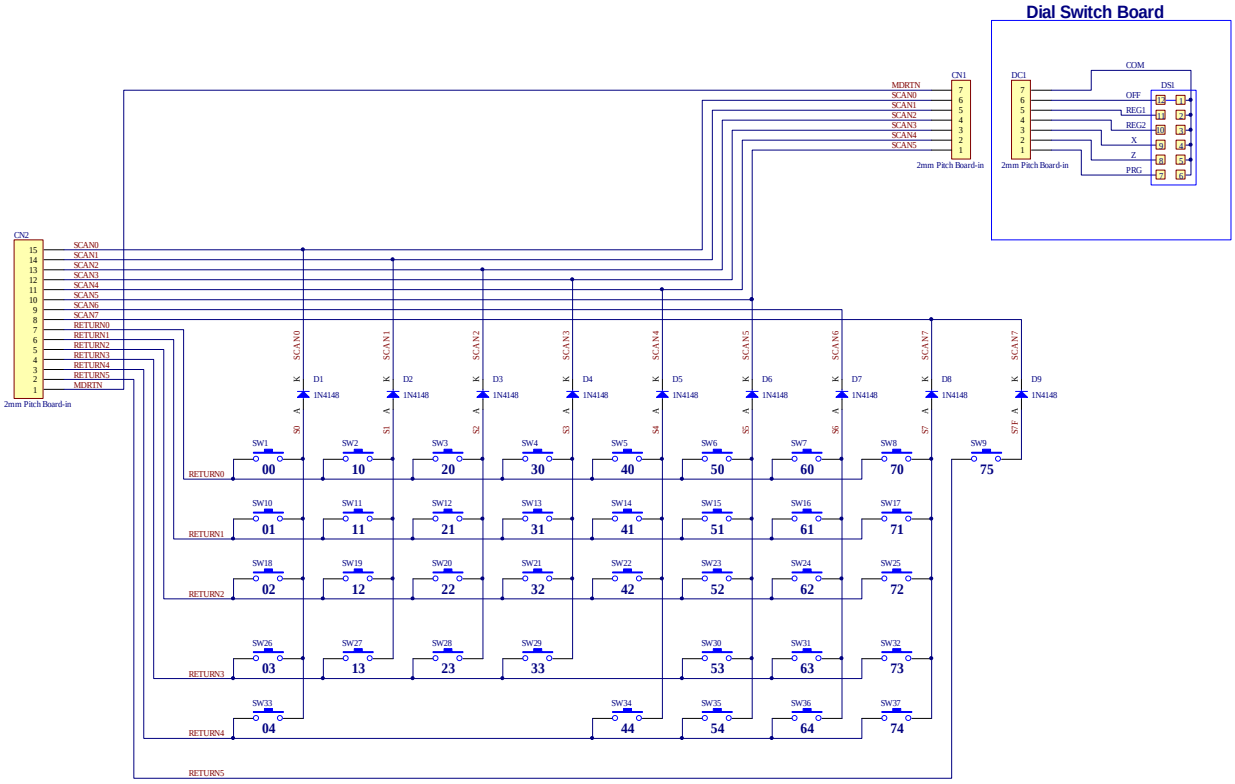
Display tube	Front	10LY-01G (Union Jack)
	Rear	10LY-01G (Union Jack)
Character size	Front	14 mm (H) x 4.9 mm (W)
	Rear	14 mm (H) x 4.9 mm (W)

4-9 KEYBOARD CIRCUIT

Keyboard strobe line are the CPU port, this CPU port are P20-P22.
Keyboard Return lines are the CPU port, this CPU port are P60-63 and P64-67.
It is consist of matrix of Strobe line (8) × Return line (6).
This ports' data is encoded by IC U4 of 74HC138 generated 8 stroke signals.



KEYBOARD CIRCUIT continued

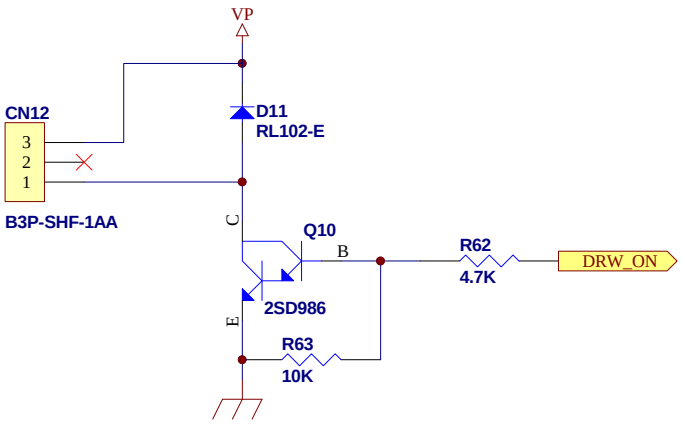


Key Layout

						73	54
75	40	13	20	21	53	63	64	74
30	71	10	11	12	52	62	33	42
31	72	01	02	03	51	61	41	32
23	70	00	04	22	50	60	44	

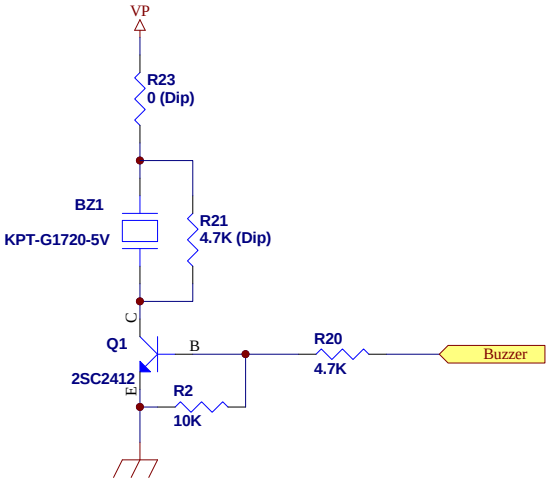
4-10 DRAWER CIRCUIT

The solenoid for a drawer is activated using the signal P130 from the CPU.
This signal is normally Low, and goes High to cause the drawer to run. When P130 is High, Q10 is on. Current flow through the transistor cause the collector to be held Low, near ground potential.



4-11 BUZZER CIRCUIT

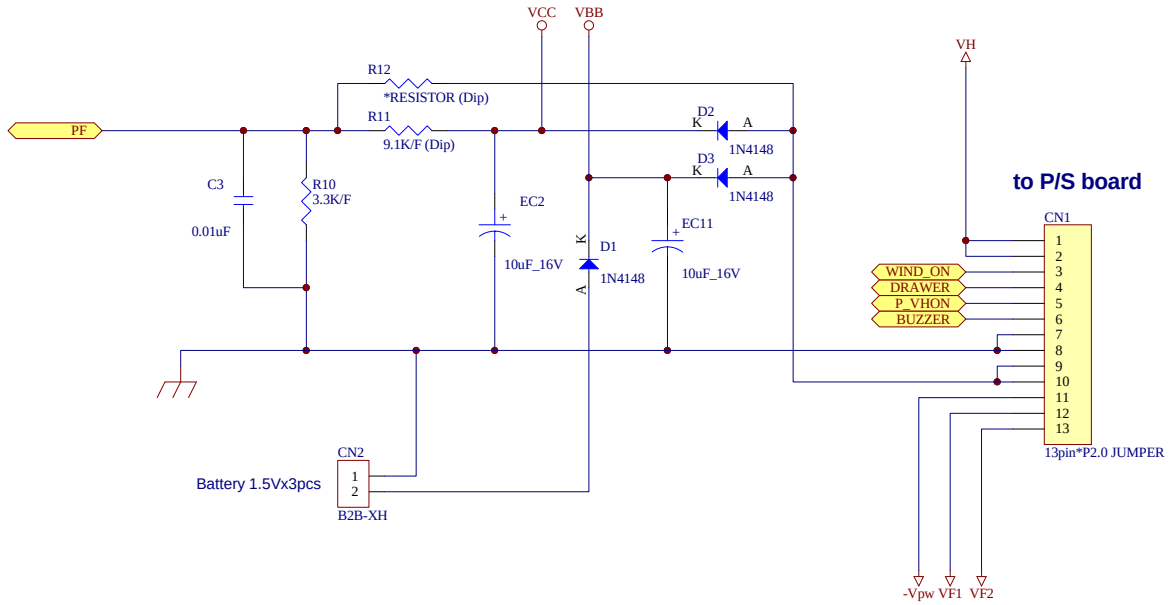
The buzzer circuit uses as its input signal P141 from the CPU. This normally Low signal and goes High on 2 conditions. First on an error tone, P141 goes Clocked until the error condition is cleared. For a key beep tone, P141 goes High and then returns to its Low state. This pulse is of extremely short duration.



4-12 BATTERY CIRCUIT

VBB voltage is used Battery or VCC voltage.
The batteries are connect the CN2, through the diode at D1.
VBB goes to the CPU and external RAM, for backup voltage.

Battery specification
Type : SUM-3 × 3
Voltage: 4.5V

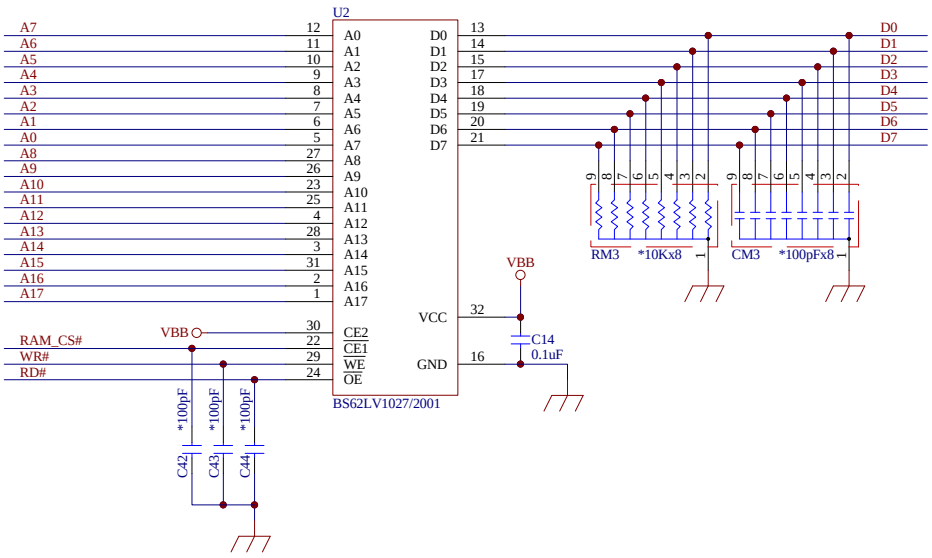


4-13 EXTERNAL MEMORY

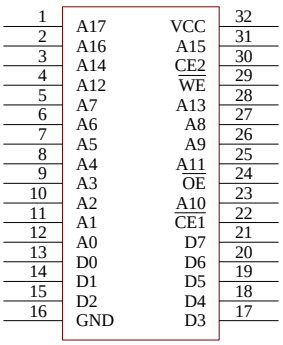
128K bytes S-RAM (BS62LV1027) used as an external RAM for PLU and electric Janal and etc.

P70 through P77 are multiplex bus consists of data bus (D0-D7).
P40 through P47 are multiplex bus consists of data bus (A0-A7).
P50 through P53 are multiplex bus consists of data bus (A8-A11).
P54 through P57 are multiplex bus consists of data bus (A12-A15)
P10 is multiplex bus consists of data bus (A16).
P11 is multiplex bus consists of data bus (A17).
P30 is used for chip select at RAM.
P31 is used for Output Enable.
P32 is used for Write Enable control.

EXTERNAL MEMORY CIRCUIT



S-RAM PIN Configuration



4-14 PRINTER CIRCUIT

STEP MOTOR

The motor drives with 2-2 phase excitation. One step of the motor drive signal feeds the paper 0.125mm. One dot line is configured by 2 steps. When the voltage signal shown in below Figure is input to U5, the printer feeds the paper in the normal direction when the motor is excited in the order of step 1, step 2, step 3, step 4, step 1, step 2,……, as shown in below Table.

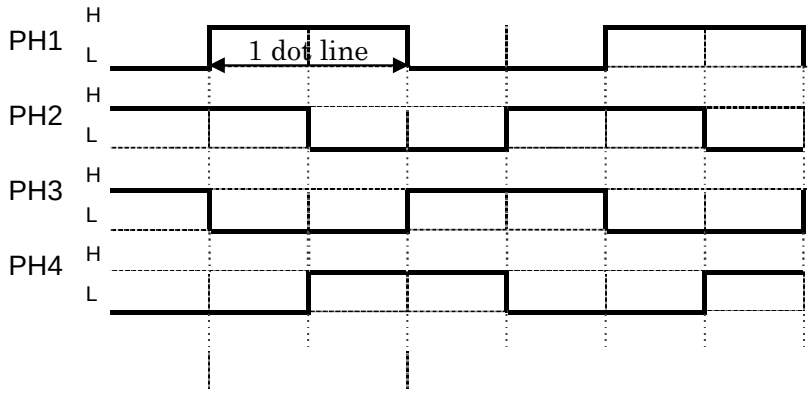


Figure : Input Voltage Signals for the Sample Drive Circuit

	Input signal				Output signal			
STEP	PH1	PH2	PH3	PH4	A	B	/A	/B
1	H	H	L	L	H	H	L	L
2	H	L	L	H	H	L	L	H
3	L	L	H	H	L	L	H	H
4	L	H	H	L	L	H	H	L

Table : Excitation Sequence

THERMAL HEAD

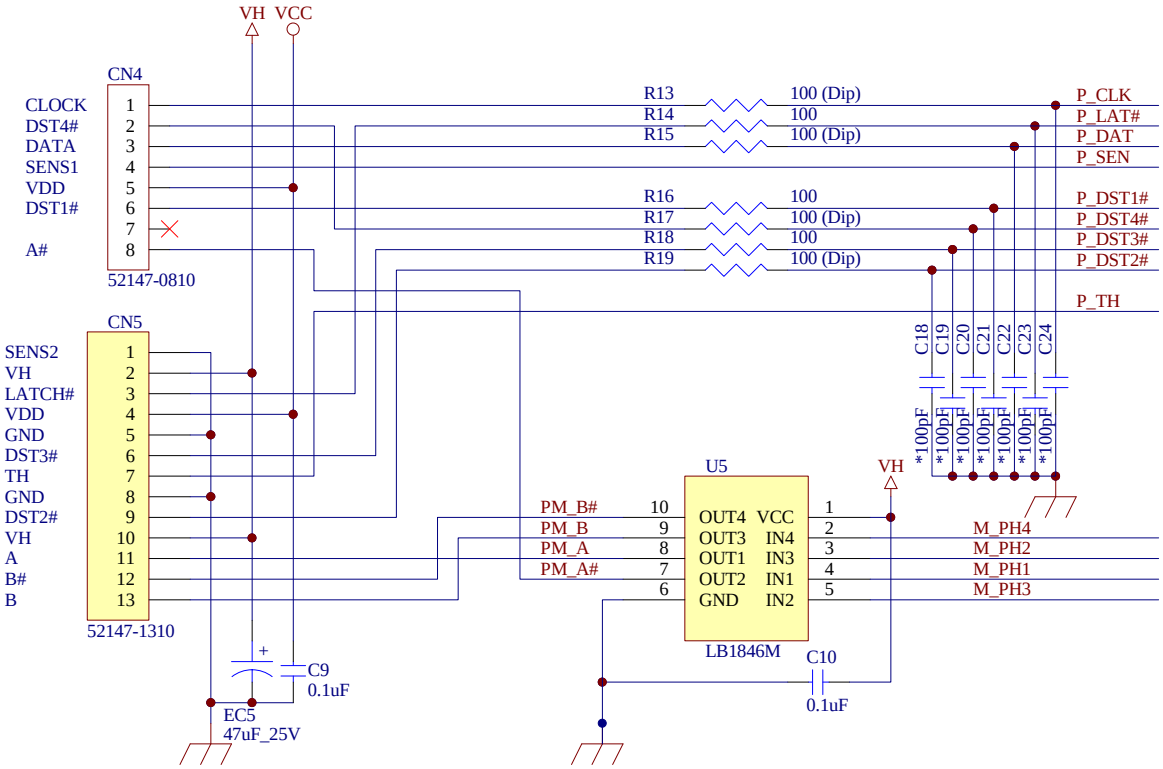
The thermal head consists of heat elements and a head driver that drives and controls the heat elements.
Serial print data input from the DAT terminal is transferred to the shift register synchronously with the CLK signal, then stored in the latch register at the timing of the LATCH signal.
The DAT signal is high active. (Print : high, No-print : low)
The DAT (data) signal is read at the rising edge of the CLK input signal.
One line data is read into the latch register by making LATCH signal “Low” after one line data transmission. The heat elements are activated by making print activation signal DST “Low” according to the stored print data.

PRINTER CIRCUIT continued

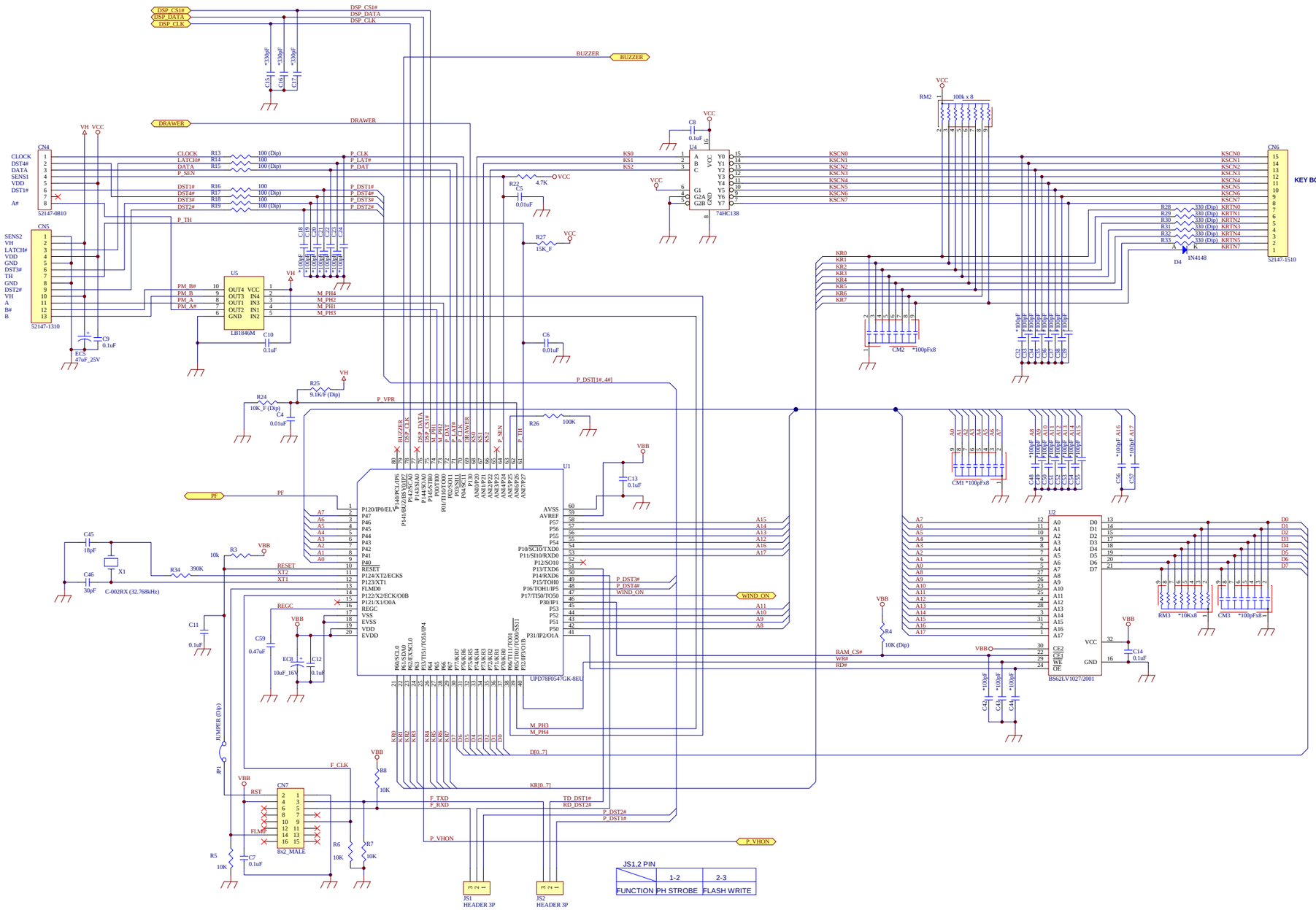
Table: Terminal Assignments of the Printer Mechanism Connecting Terminal

Terminal Number	Signal Name	Description
1	SENS1	Mechanical switch signal
2	SENS2	Mechanical switch signal
3	Vp	Head drive power
4	Vp	Head drive power
5	DATA	Print data input (serial input)
6	LATCH#	Print data latch (memory)
7	CLOCK	Print data transfer synchronization signal
8	Vdd	Logic power (5V)
9	DST4#	Head activation signal
10	GND	GND
11	GND	GND
12	DST3#	Head activation signal
13	Vdd	Logic power (5V)
14	THERMINTOR	Thermistor (One side is grounded)
15	GND	GND
16	GND	GND
17	DST1#	Head activation signal
18	DST2#	Head activation signal
19	Vp	Head drive power
20	Vp	Head drive power
21	A#	Motor drive signal
22	A	Motor drive signal
23	B	Motor drive signal
24	B#	Motor drive signal

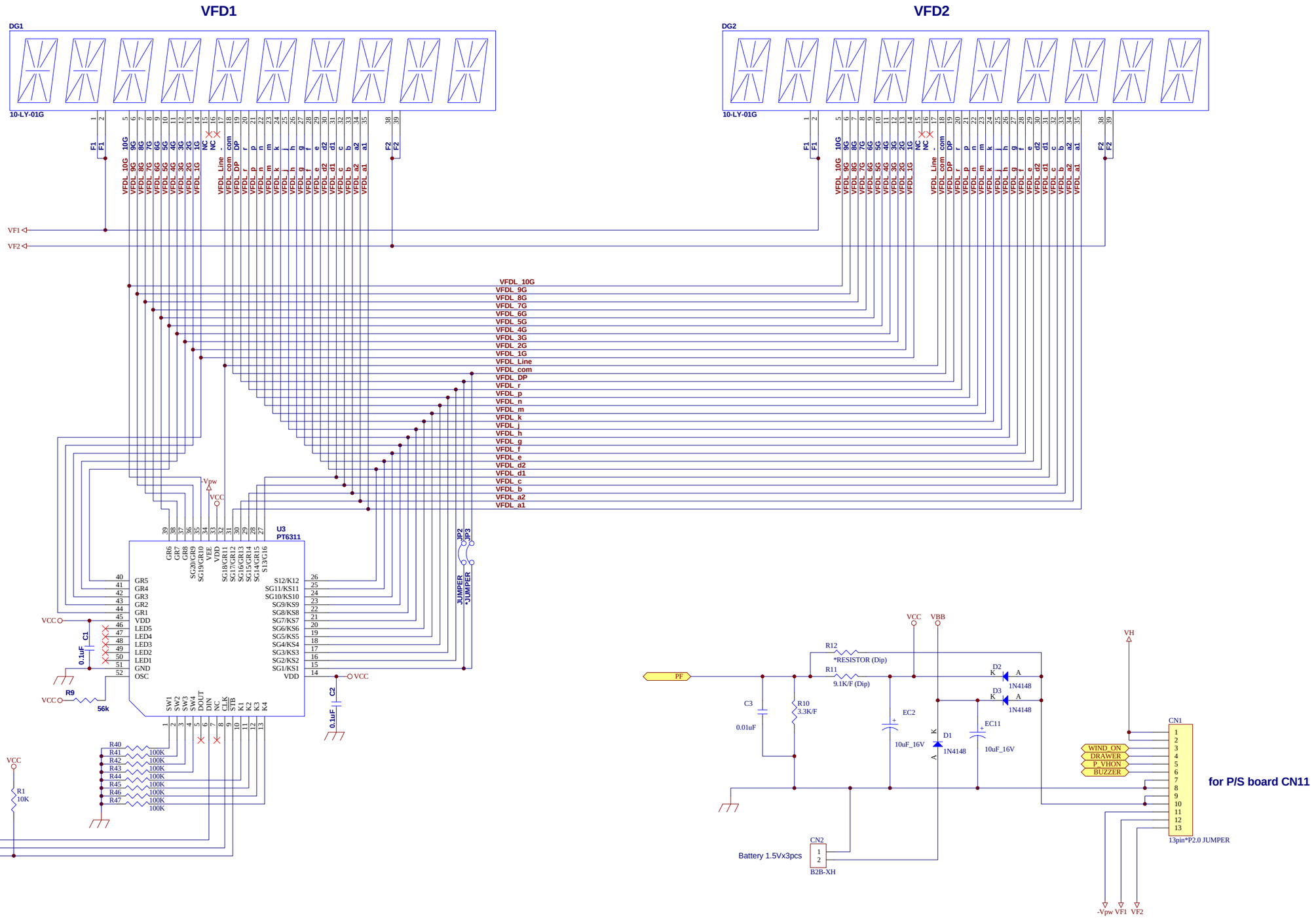
PRINTER CIRCUIT continued



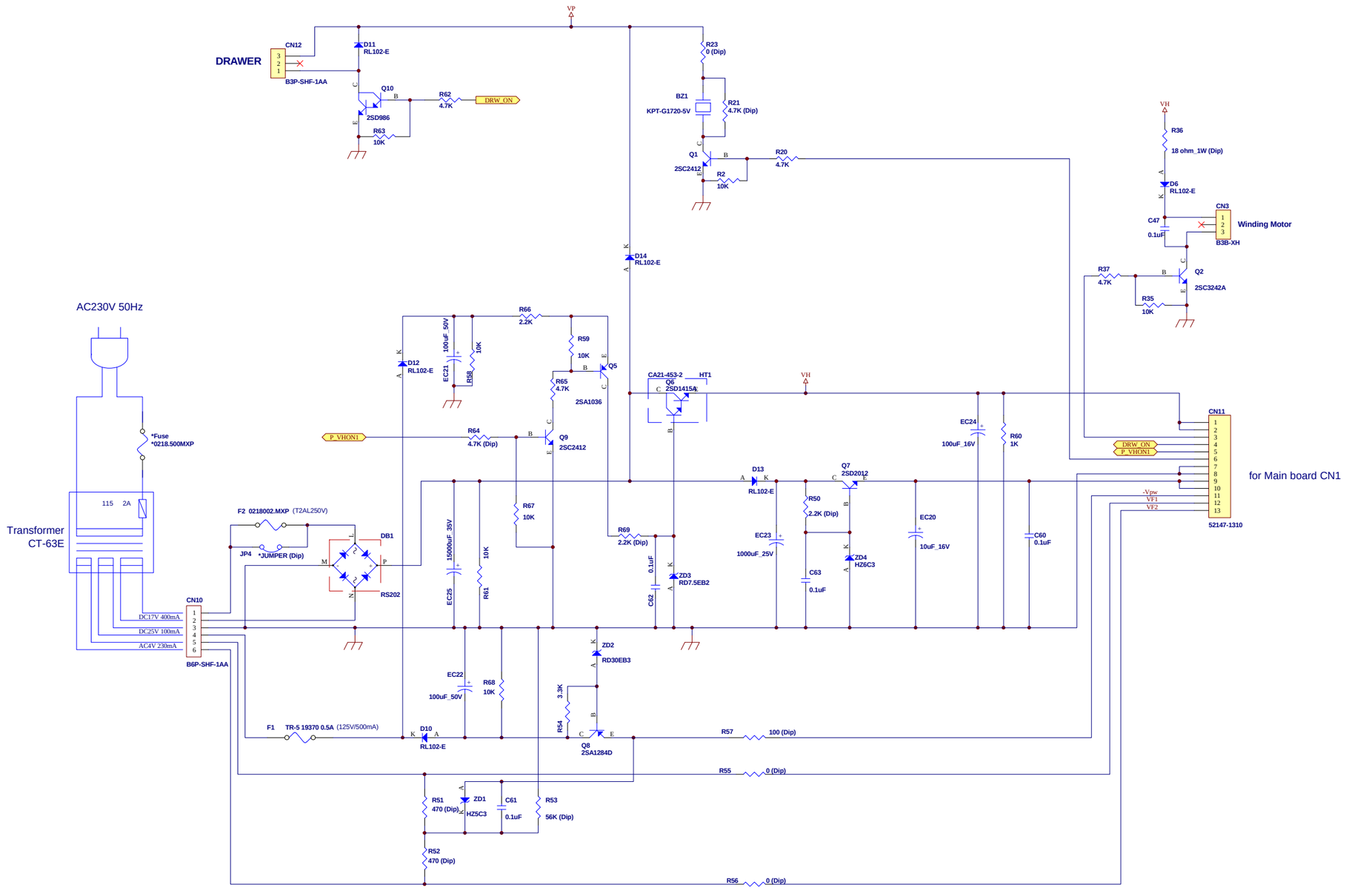
5. CIRCUIT DIAGRAM



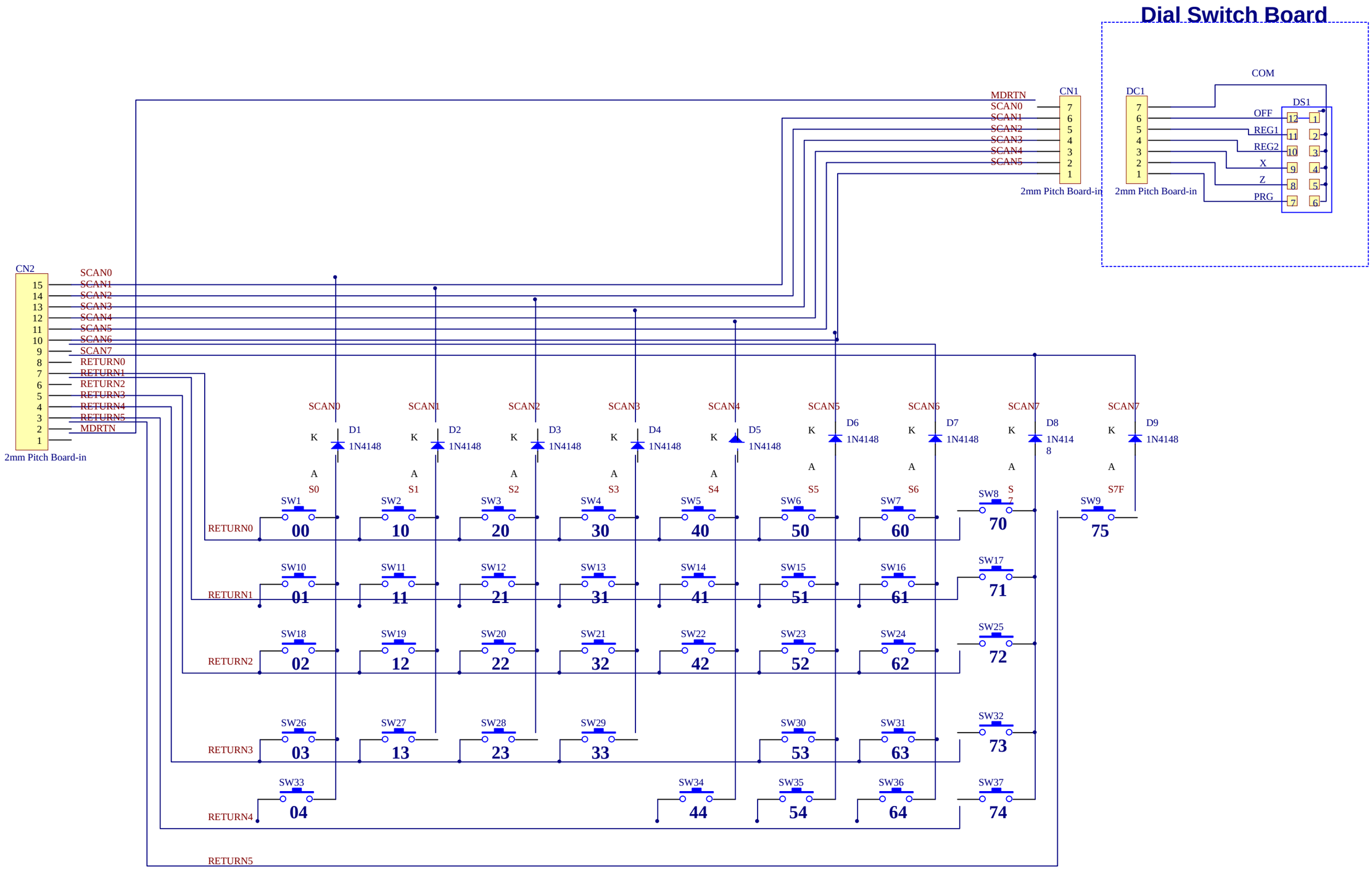
CIRCUIT DIAGRAM continued



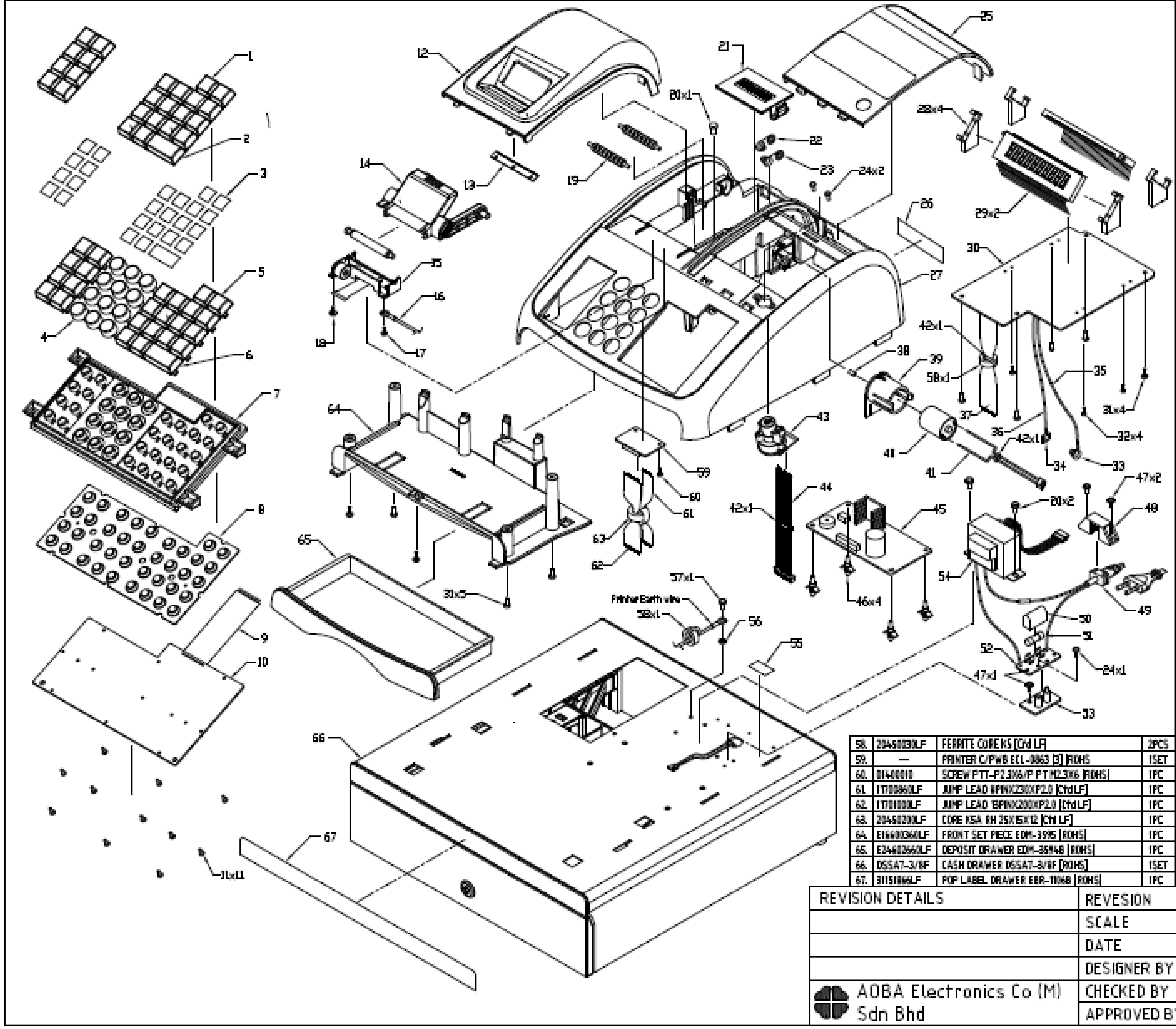
CIRCUIT DIAGRAM continued



CIRCUIT DIAGRAM continued



6. EXPLODED DIAGRAM



ITEM NO.	PART NO.	PART NAME	Q'TY
1.	E11400041LF	KEY CAP 1X1EBM-0612A YC1 CLEAR [ROHS]	24PCS
2.	E11400051LF	KEY CAP 1X2 EBM-0618A YC2 CLEAR [ROHS]	1PC
3.	E11501150LF	K/TOP SHEET EBB-0417/0418 ECR71/7700 ROHS	1SET
4.	E11201450LF	K/TOP SET EBB-0318B/EBB-0418 ECR7700 [ROHS]	1SET
5.	E11300301LF	BASE TOP 1X1 EBM-1725 ECR465T	24PCS
6.	E11300311LF	BASE TOP 1X2 EBM-1726 ECR465T	1PC
7.	E13600860LF	K/FRAME EDM-3596 ECR61/6700 [ROHS]	1PC
8.	E12302430LF	RUBBER SHEET ECM-3597 MDL61/6700 [ROHS]	1PC
9.	11701080LF	JUMP LEAD [MAA-0049] 15PINX200XP2.0 [Ctd LF]	1PC
10.	13520212LF	K/B PWB EDK-0222 [Ctd LF]	1PC
11.	01401310	SCREW TP 2X6 P-TITE/TP PT M2x6 RB [ROHS]	11PCS
12.	24261000LF	P/COVER EDM-3589 ECR61/6700 [ROHS]	1PC
13.	E24300220LF	P/CUTTER MEAM-0039 [ROHS]	1PC
14.	E24601031LF	PRINTER ARM EDM-3138B [ROHS]	1PC
15.	24791600LF	P/HEAD LTPZ225B-C192C-E [Ctd LF]	1PC
16.	E20500040LF	HARNESS ASSY CA23-714 [Ctd LF]	1PC
17.	01400120	SCREW BTT-P2.6X6/B PT M2.6X6 [ROHS]	1PC
18.	01400500	SCREW TP PT M4X8/P-TITE 4X8 J/WASHER RB [ROHS]	1PC
19.	E24601100	PAPER ROLLER EAM-2889 POM BLK [ROHS]	2PCS
20.	01400400	SCREW B.S-TITE 4X8 M/SCREW/B ST M4X8 [ROHS]	3PCS
21.	E24500461LF	BATTERY COVER EBM-3140B BLK [ROHS]	1PC
22.	10800280LF	BATTERY CONTACT EAM-3363 [Ctd LF]	1PC
23.	10800270LF	BATTERY CONTACT EAM-3362 [Ctd LF]	1PC
24.	01400030	SCREW PTT P.3X8/P PT M3X8 [ROHS]	3PCS
25.	E10203201LF	VFD FILTER EDM-3592C/EBP-0477B ECR6700 [ROHS]	1PC
26.	E32103220LF	R/LABEL EAR-1445 ECR7700 [ROHS]	1PC
27.	E11304230LF	TOP CASE EDM-3586B/978 EBP-0617 [ROHS]	1PC
28.	E11100170	F/DG HOLDER EAM-1469 [ROHS]	4PCS
29.	11000410LF	DISPLAY TUBE 10LY-016 [Ctd LF]	2PCS
30.	E00101900LF	M/PWB ECL-0063 [1] ECR6700 [Ctd LF]	1SET
31.	01400900	SCREW BTT-P 3X8 [RB]/B PT M3X8 [ROHS]	9PCS
32.	01400020	SCREW PTT-P 2X6 [RB]/P PT M2X6 [ROHS]	4PCS
33.	10800290LF	BATTERY CONTACT EAM-3364 [Ctd LF]	1PC
34.	10800010LF	BATTERY CONTACT [+] CA22-351 [Ctd LF]	1PC
35.	03001060LF	L/WIRE 1007 26 RED L=250 [Ctd LF]	1PC
36.	03001050LF	L/WIRE 1007 26 BLK L=210 [Ctd LF]	1PC
37.	11701160LF	JUMPER LEAD 15PIN x 150 x P2.0 [Ctd LF]	1PC
38.	E33000350	WINDING ROLLER WDM45-00101 [D4X7] [ROHS]	1PC
39.	E16700070LF	MOTOR SET PCS EBM-3300 BLK [ROHS]	1PC
40.	E16000010LF	DC MOTOR RK-370CA-16260 [Ctd LF]	1PC
41.	E20500150LF	HARNESS ASSY B EAA-1935 [B/R] [Ctd LF]	1SET
42.	E33000020LF	INSULOCK TIE T-18S/PLT1M [ROHS]	3PCS
43.	E11000104LF	CONTROL LOCK SWITCH S600-44F [ROHS]	1PC
44.	E20502030LF	HARNESS ASSY EAHR-0795 [Ctd LF]	1PC
45.	—	P/S BOARD ECL-0063 [2] [ROHS	1SET
46.	E33000140LF	CIRCUIT BOARD SPACER SPLSN-3/CS0305 [Ctd LF]	4PCS
47.	01400290	SCREW S-TITE 3X8 J-WASHER/TP ST M3X8 [ROHS]	3PCS
48.	E33000030	CORD STOPPER EBM-0135N [ROHS]	1PC
49.	20600014LF	AC CORD EP-047-E018 GRAY L=1.8M [Ctd LF]	1PC
50.	02600015LF	FUSE CAP EAM-0124 [ROHS]	1PC
51.	02500190LF	FUSE 0218.160MXP [Ctd LF]	1PC
52.	E00100890LF	FUSE HOLDER PWB EAL-0051 [Ctd LF]	1PC
53.	02610100LF	FUSE HOLDER EAM-3656 [ROHS]	1PC
54.	20100470LF	TRANSFORMER CT-63E [Ctd LF]	1SET
55.	02600026LF	FUSE LABEL AC250V T160mAL EAR-1255 [ROHS]	1PC
56.	01400190	GEAR WASHER M4 [ROHS]	1PC
57.	01400140	SCREW P M4X8 SW M/SCREW [RB] [ROHS]	1PC
58.	20450030LF	FERRITE CORE KS [Ctd LF]	2PCS
59.	—	PRINTER C/PWB ECL-0063 [3] [ROHS	1SET
60.	01400010	SCREW PTT-P2.3X6/P PT M2.3X6 [ROHS]	1PC
61.	11700060LF	JUMP LEAD 8PINX230XP2.0 [Ctd LF]	1PC
62.	11701000LF	JUMP LEAD 15PINX200XP2.0 [Ctd LF]	1PC
63.	20450200LF	CORE KSA RH 25X15X12 [Ctd LF]	1PC
64.	E16600360LF	FRONT SET PIECE EDM-3595 [ROHS]	1PC
65.	E24602660LF	DEPOSIT DRAWER EDM-3594B [ROHS]	1PC
66.	DSSA7-3/8F	CASH DRAWER DSSA7-3/8F [ROHS]	1SET
67.	31151066LF	POP LABEL DRAWER EBR-1106B [ROHS]	1PC

REVISION DETAILS	REVESION		MODEL NAME
	SCALE	NOT TO SCALE	ECR7700
	DATE	29 Jun 2009	PART NAME
	DESIGNER BY	Sugumar	ASSEMBLY DIAGRAM
AOBA Electronics Co (M) Sdn Bhd	CHECKED BY		DRAW. NO.
	APPROVED BY		EBZ-0816