

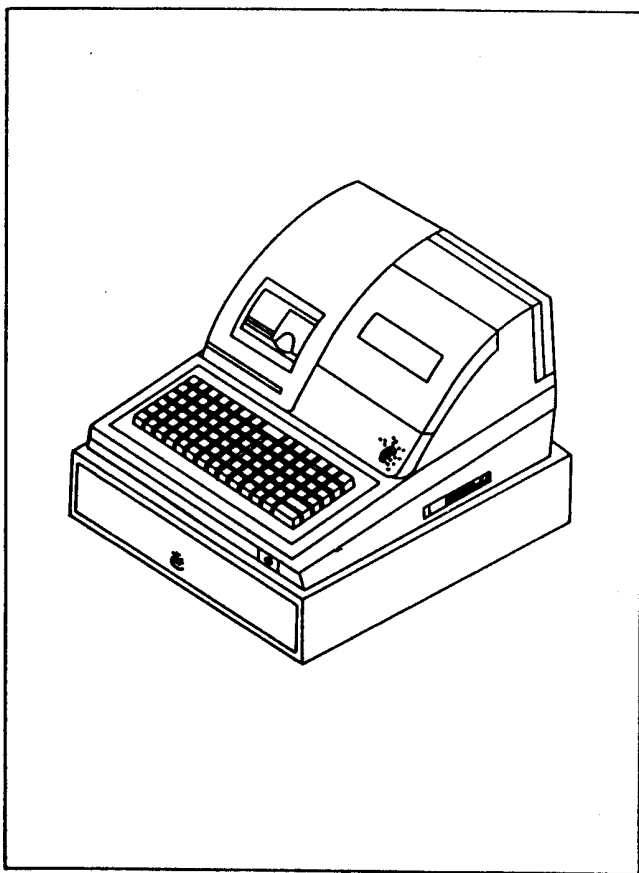
SAMSUNG

ELECTRONIC CASH REGISTER

ER-5100 / ER-5140 / ER-5140F / ER-5140FI
ER-5115 / ER-5115F / ER-5115FP

***SERVICE* Manual**

ELECTRONIC CASH REGISTER



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About this Manual

This service manual describes how to perform hardware service maintenance for the Samsung ER-5100 Series Electronic Cash Register.

Acronym	Definition
ASIC	Application for Specific integrated Circuit
ECR	Electronic Cash Register
EPROM	Electric Programmable ROM
ESD	Electrostatically Sensitive Device
Ext.	Extension
F	Fiscal
FP	Fiscal and PC interface
GND	Ground
IC	Integrated Circuit
N.C.	Not Connected
PCB	Printed Circuit Board
R..	Receive
RAM	Random Access Memory
ROM	Read Only Memory
SRAM	Static Random Access Memory
T..	Transmission

Notes

Note: Notes may appear anywhere in the manual. They draw your attention to additional information about the item.

Precaution symbols

 indicates a Safety Precaution applies to this part component.

 indicates the part or component is an electrostatically sensitive device. Use caution when handling these parts.

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1 Precaution Statements

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1 Safety Precautions

1. Be sure that all built-in protective devices are replaced. Restore any missing protective shields.
2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including nonmetallic control knobs and compartment covers.
3. Make sure there are no cabinet openings through which people particularly children might insert fingers and contact dangerous voltages. Such openings include excessively wide cabinet ventilation slots and improperly fitted covers and drawers.
4. Design Alteration Warning:
Never alter or add to the mechanical or electrical design of the ECR. Unauthorized alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.
5. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.
6. Observe the original lead dress, especially near the following areas: sharp edges, and especially the AC and high voltage supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.
7. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original even if the replacement is rated for higher voltage, wattage, etc.
Components that are critical for safety are indicated in the circuit diagram by shading, ($\triangle$), or ($\triangle$). Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

CAUTION

Danger of explosion if battery is incorrectly replaced

Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type
ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées
conformément aux instructions du fabricant.

1-2 Servicing Precautions

Warning 1: First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.

Warning 2: An electrolytic capacitor installed with the wrong polarity might explode.

1. Always unplug the unit's AC power cord from the AC power source before attempting to:
(a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels and input terminals).
5. **Insulation Checking Procedure:** Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.
The insulation resistance between each blade of the AC plug and accessible conductive parts should be greater than 1 megohm.
7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
8. Always connect an instrument's ground lead to the instrument chassis ground *before* connecting the positive lead; always remove the instrument's ground lead last.

1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.
2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power - this is an electric shock precaution.)
3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.
4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.
5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.
6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static"; these can accumulate sufficient electrical charge to damage ESDs.
7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
9. Minimize body motions when handling unpacked replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

2 Product Specifications

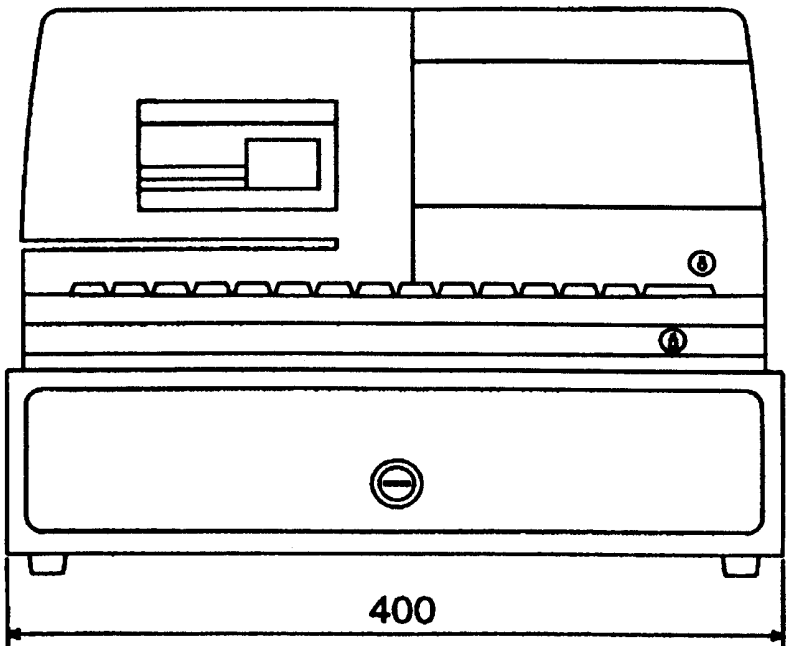
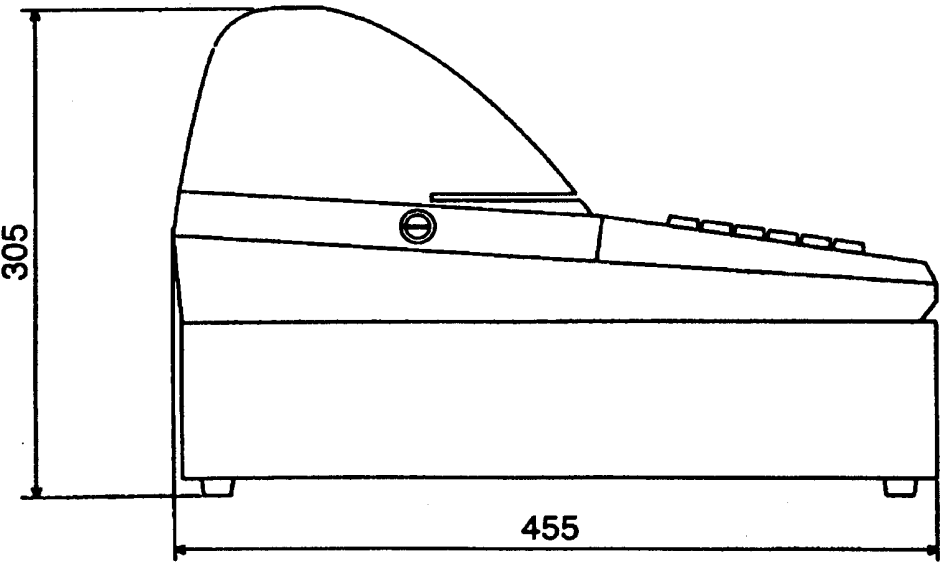
Specifications are correct at the time of printing. Product specifications are subject to change without notice. See below for product specifications.

2-1 Specifications

Item	Description	Remarks
AC Power Source	AC 120V, 60Hz AC 230V, 50 Hz	USA Europe
Power Consumption	55W	USA and Europe
R/J Printer	1 pair, 9-pin Dot matrix Receipt paper auto-cutter (optional) Printing speed: 3.0 lines per second Receipt/Journal paper sensor	
Processor	SCR60K	
Memory	* Main PCB Default : SRAM (KM681000*1) : 128kbyte EPROM (27C010*1) : 128kbyte Ext. : SRAM (KM681000*1) : 128kbyte * Fiscal (ER-5115F) Default : EPROM (27C512*1) : 64kbyte Ext. : EPROM (27C010*1) : 128kbyte	
Data Storage	60 Days	When battery fully charged
Battery	Ni-cad, 60mA Charging time: 24 hours	
Display	Front: 10-digit display (Window Display) Rear: 10-digit display (Turret Display)	
Keyboard	160-key 90-key 60-key	ER-5100 ER-5140 ER-5115/5115F/FP
Interface	Default - RS-232C : 1 port (Optional Board I) - Modular Jack : 2 ports (Optional Board I) Ext. - RS-232C : 1 port (Optional Board II)	
Drawer	D5508, 5C5B 8C4B Weight: 9.3Kg Dimensions: 400 (W) x 450 (L) x 111 (H)	USA Europe When packed millimeters
Packing Carton	Weight: 17.6Kg Dimensions: 498 (W) x 564 (L) x 384 (H)	millimeters

Equipment specifications are subject to change without notice.

2-2 Dimensions



2-3 Communication Interfaces

2-3-1 Serial Interfaces and Port Locations

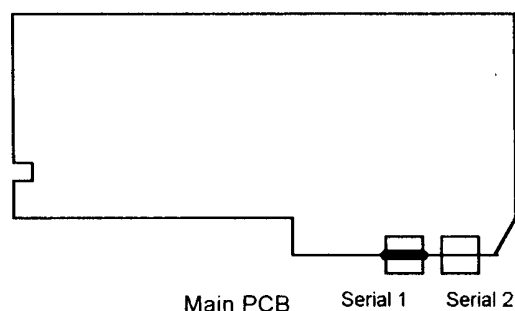
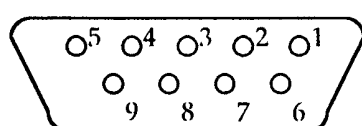


Figure 2-1. RS-232C Interface Locations

2-3-1 Pin Descriptions for Serial Interfaces (Optional P.C.B.)



Serial Port 1 (D-sub female)



Serial Port2 (Modular Jack)

Figure 2-2. Pin Number Assignment

Table 2-1. Pin Descriptions and Signals of Serial Ports

Serial Port #1		Serial Port #2			
Pin #	Signal	Pin #	Signal	Pin #	Signal
1	N.C.	1	DTR	1	DTR
2	RxD	2	N.C.	2	N.C.
3	TxD	3	TxD	3	TxD
4	DTR	4	N.C.	4	N.C.
5	GND	5	RxD	5	RxD
6	N.C.	6	GND	6	GND
7	N.C.				
8	DTR				
9	N.C.				

3 Installation and Operation

This chapter describes the method for installing the ECR system and shows the locations of the various feature items.

3-1 System Configuration

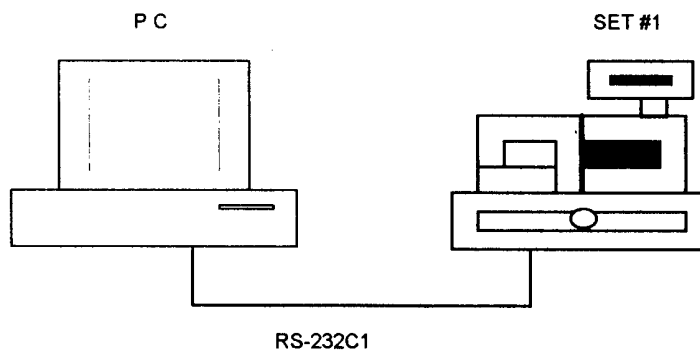


Figure 3-1. Terminal System

3-1-1 Terminator Specification

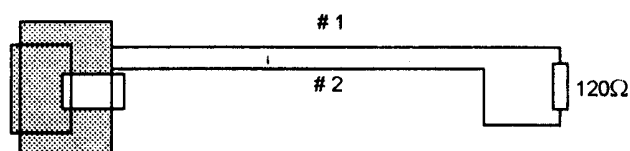


Figure 3-2. Terminator

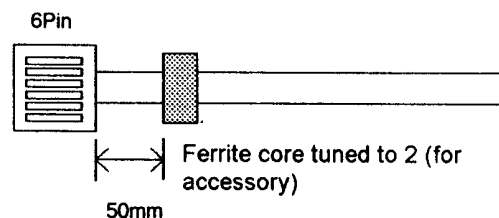


Figure 3-4. Cable for Serial Port 2

3-1-2 Cable Specifications

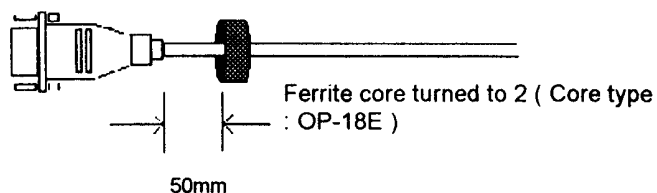


Figure 3-3. Cable for Serial Port 1

3-2 Installation

WARNING: When connecting the keyboard to the Main PCB, make sure the membrane sheet is shaped as in Figure 3-6 (a), below. If the membrane is shaped as in Figure 3-6 (b), the keyboard may malfunction.

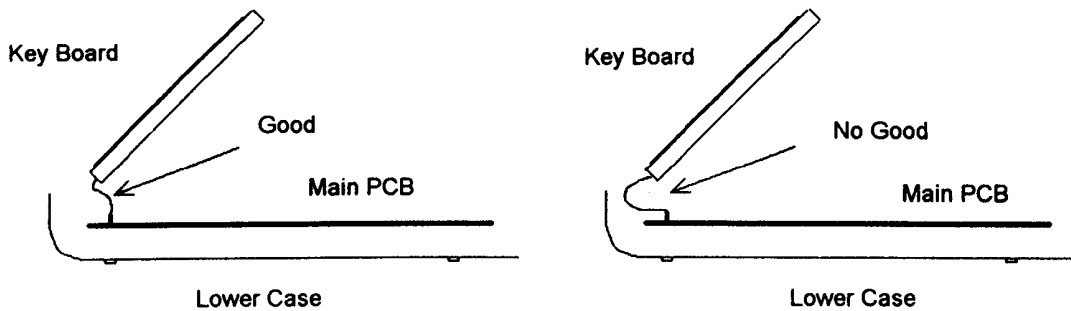
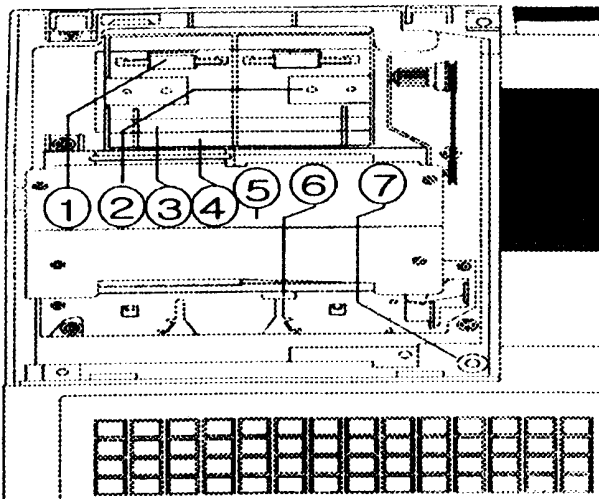


Figure 3-6. Membrane Shape

3-2-1 Printer

3-2-2 Ribbon Cassette Installation



- ① Paper Roller
- ② Spool
- ③ Stamp (LOGO)
- ④ Paper Chute
- ⑤ Impact Dot Printer
- ⑥ Paper Release Lever
- ⑦ Ribbon Cassette

Figure 3-7. Printer

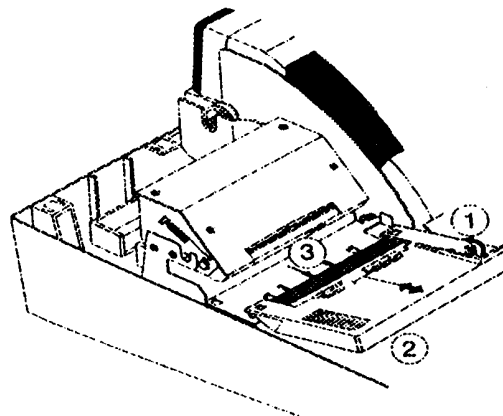


Figure 3-8. Ribbon Cassette

1. Before inserting the ribbon cassette ②, turn the knob ① (see Figure 3-8) counterclockwise to prevent twisting the ribbon.
2. After inserting the ribbon cassette ② at the center ③ of the printer, turn the knob ① counterclockwise again to make sure the ribbon moves freely in the cassette.

3-2-3 Receipt/Journal Paper Insertion

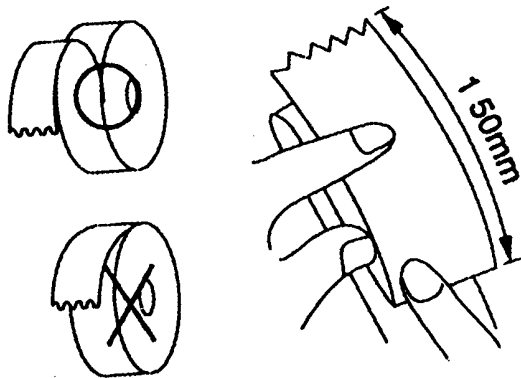


Figure 3-9. Folding Paper for Insertion

1. Using a new roll of paper, unroll the paper about 150 mm and fold the paper as shown in Figure 3-9.

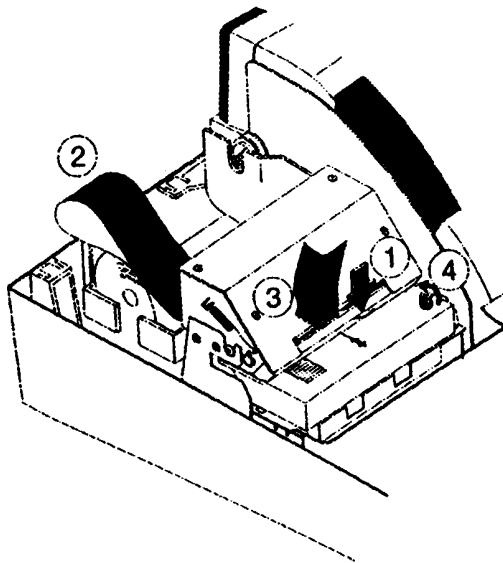


Figure 3-10. Inserting the Paper

2. Insert the folded paper into the chute ② of the ERP-300V printer. While holding the lever ① down, pull the paper out until the fold point ③ is completely out of the printer. And turn the knob ④ in the direction of the arrow.

3. Cut the receipt paper.
4. Insert the journal paper into the slit ⑤ of the rewind spindle. Wind the spindle three or four times.

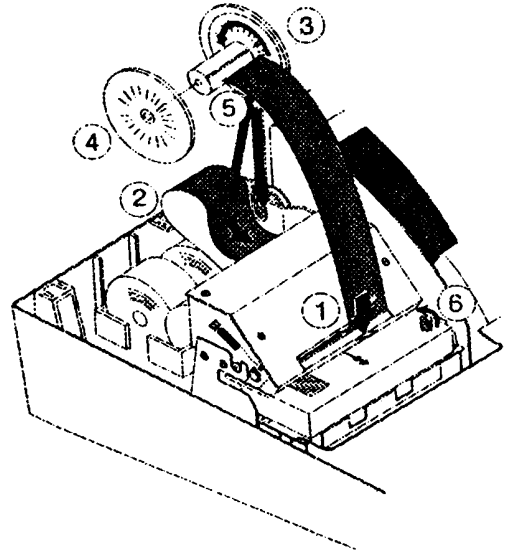


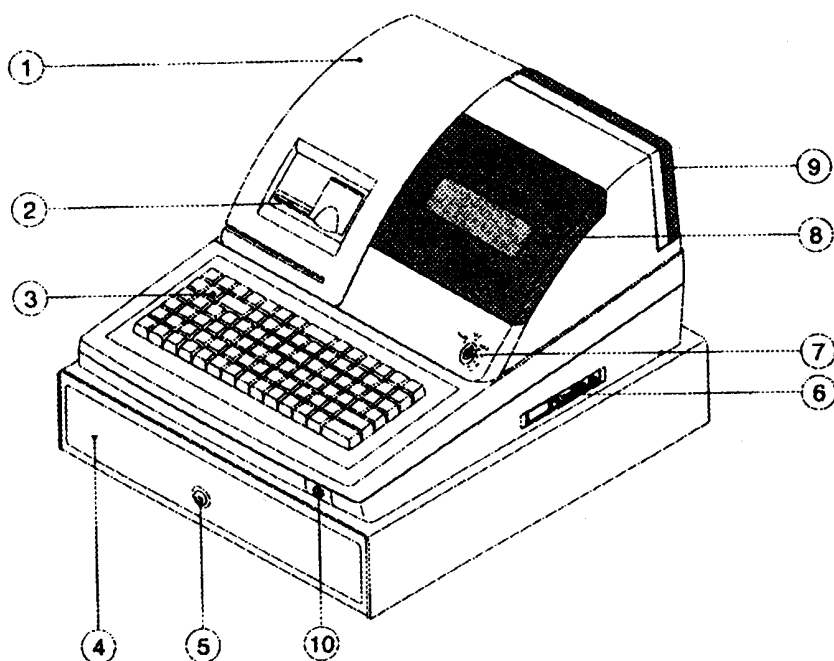
Figure 3-11. Inserting the Journal Paper

5. Push the end disk ④ onto the spindle as shown in Figure 3-11.
6. Insert the spool ③ to the printer.
7. When the journal paper is loose, rewind the spindle to tighten the paper.

3-3 Operation

Note: Before using this Electronic Cash Register (ECR) for the first time, leave it powered ON in the REG mode for at least twenty-four hours. This allows the Ni-Cad battery, which maintains the ECRs memory while the power is OFF, to fully charge.

3-3-1 ECR Features



① Cover Printer

② Impact Dot Printer

③ Keyboard

④ Drawer

⑤ Drawer Lock Key

⑥ Serial Interface Port

Serial 1 (D-sub 9 Pin) * 2

Serial 2 (Modular Jack) * 1

⑦ Mode Key Switch

⑧ Rear Display

⑨ Clerk Key

3-3-1 Mode Switch

The position of the Key in the Mode Switch determines the action of the SECR. Table 3-1 shows the various modes that are available.

Table 3-1. ECR Modes

Mode	Function
VOID	Cancel operation
OFF	Operation stop
REG	Sales Operation
X	X-level report generation
Z	Z-level report generation
P	Program mode
S	Service mode

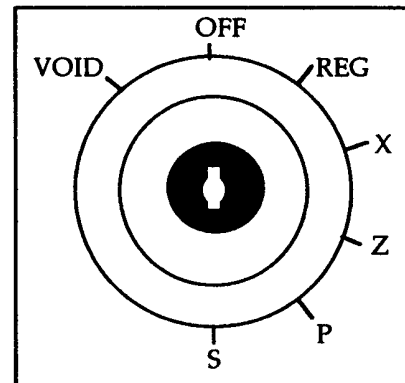


Figure 3-14. Mode Switch

3-3-2 Keyboard Matrix

The ER-5100, ER-5140, ER-5115, and ER-5115F ECRs offer three different types of keyboards; 160-key, 90-key or 60-key, as shown in Table 3-2.

Table 3-2. Keyboard Types

Model	Keys	Type
ER-5100	160	Membrane (Flat)
ER-5140	90	Membrane (Chip)
ER-5115	60	Membrane (Chip)
ER-5115F/FP	60	Membrane (Chip)

4 Disassembly and Reassembly

This chapter describes the disassembly and reassembly procedures for ER-5100 series, electronic cash registers.

WARNING: This ECR contains electrostatically sensitive devices. Use caution when handling any components.

4-1 Disassembly

Caution: Disconnect the ECR from the external power source before disassembly.

Note: The following directions are given for the ER-5100. Differences between the models are identified in the text.

4-1-1 Upper Case Disassembly

1. Lift off the Printer Cover.
2. Remove three screws (C2, C3 and C4) on the Upper Case and lift it up.
3. Remove the red and the white connectors on the Main PCB.
4. Remove the Upper Case.

4-1-2 ERP-300V Printer Disassembly

1. Remove the four screws (a) on the Upper Frame Assembly, C, and remove the Cover, A. See Figure 4-1, below.
2. Remove the two screws, (b), and remove the Ribbon Frame, B, from the Lower Frame assembly I, as shown in the drawing.

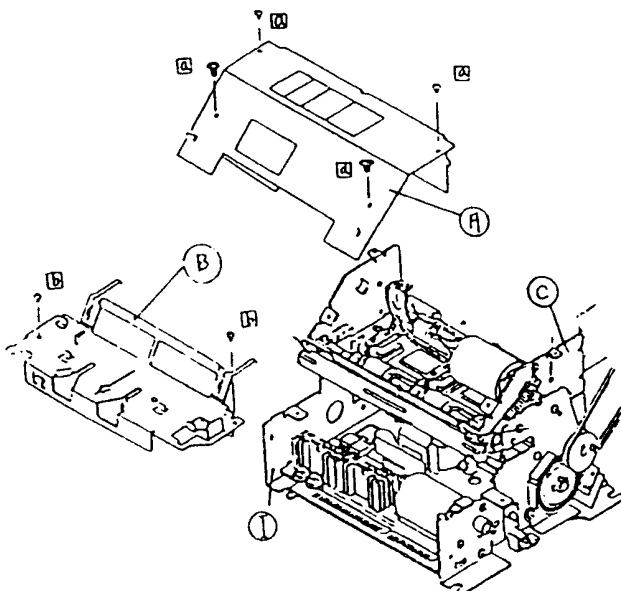


Figure 4-1. Printer Disassembly

3. Remove the four screws, (c), and separate the Upper Frame Assembly, C, from the Lower Frame assembly, I. Pull the Upper Frame assembly in the direction shown in Figure 4-2.

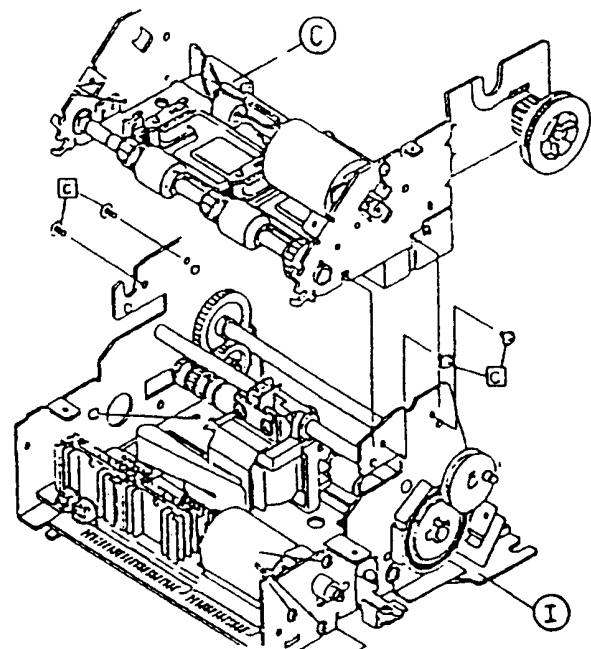
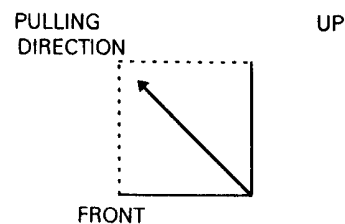


Figure 4-2. Separating the Upper Frame from the Lower Frame

4 Disassembly and Reassembly

- Turn the Upper Frame Assembly, down and remove the three screws, ④. Remove the Stamp Paper Guide Assembly D, from the Upper Frame Assembly C.
- Remove the left-side screw, ③, on the Platen Paper Guide, E. This screw connects the Platen Paper Guide Assembly E, -to Stamp Paper Guide Assembly, D. See Figure 4-4, below.

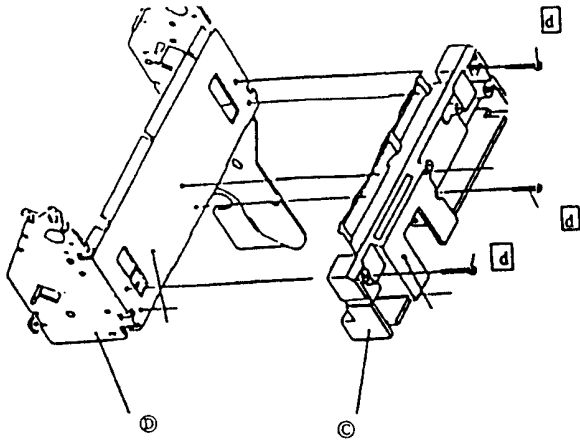


Figure 4-3. Stamp Paper Guide Removal

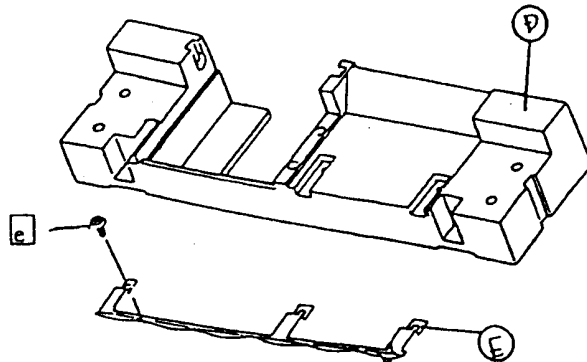


Figure 4-4. Platen Paper Guide Removal

4-2 Reassembly

Caution: Adjust the Head Gap (see Alignment and Adjustments chapter) before returning the ECR to the owner.

4-2-1 ERP-300V Printer Reassembly

- Position the Platen Paper Guide Assembly, E, on the Stamp Paper Guide Assembly, D, and replace the screw - ③ (see Figure 4-4, above).
- With the Upper Frame Assembly C, upside-down, position the Stamp Paper Guide Assembly, D, and replace the three screws -④ (see Figure 4-3, above).
- Position the Upper Frame Assembly, C, on the Lower Frame Assembly, I, and replace the four screws ③ (see Figure 4-5, to the right).

Caution: Locate Stamp Pusher ① on the hatched area as shown in the figure.

- Position the Ribbon Frame, B, on the Lower Frame Assembly, I, and replace the two screws ② (see Figure 4-1, above).
- Position the Cover, A, on the Upper Frame Assembly, C, and replace the four screws -④.

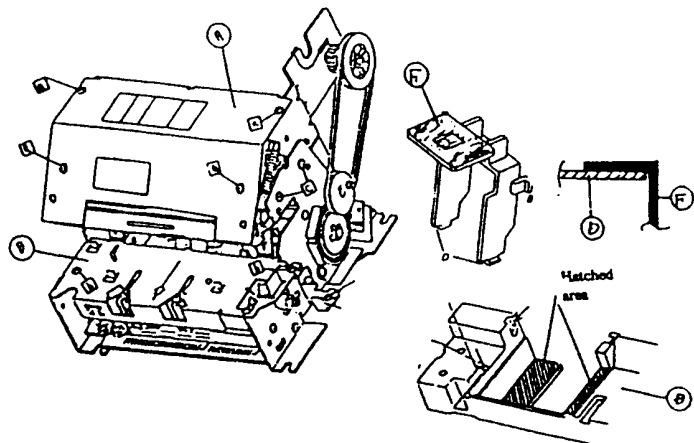


Figure 4-5. Stamp Pusher Position

4-2-2 Upper Case Reassembly

1. Position the Upper Case so that the connectors are within reach of the Main PCB. Replace the red and the white connectors.
2. Position the Upper Case on the Lower Case and replace the three screws (C2, C3 and C4)
3. Replace the Printer Cover.

5 Alignment and Adjustments

This chapter describes the methods for aligning and adjusting components in this ECR.

5-1 Printer Adjustments

5-1-1 Head Gap Adjustment

1. Assemble the Upper Frame Assembly, A, to the Lower Frame Assembly, I and loosely fix screws ③.
2. Wind the Head Gear counterclockwise to; move the Head to the right end of the Platen Guide.
3. Insert the Gap Gauge (width 0.5 mm) between the Head and Platen. Tighten the screws ③.
4. Wind the Head Gear counterclockwise again and move the Head to the left end of the Platen Guide.
5. Insert the Gap Gauge (0.5 mm) and tighten the screws.
6. After tightening all screws ③, apply Nej-Lock (a brand of grease) on each of the four screws ③.

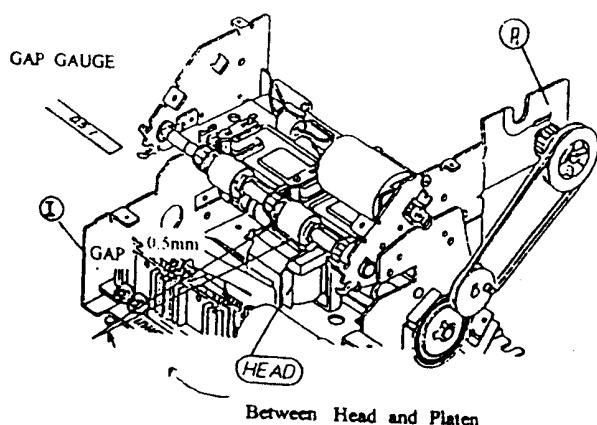


Figure 5-1. Head Gap Adjustment

5-1-2 Roll Paper Near-End Detector (Type 1 Paper Sensor)

5-1-2 (A) Adjustment Point

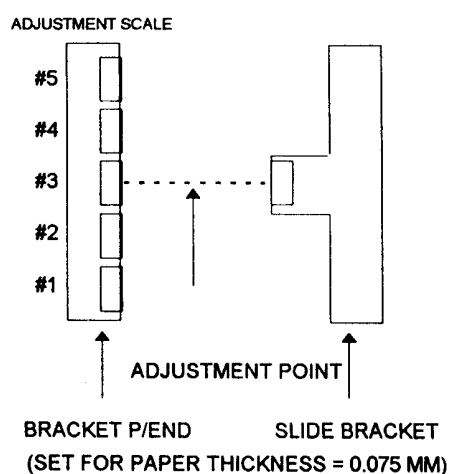


Figure 5-2. Adjustment Point

As Figure 5-2 shows, the slide bracket is set at Adjustment Scale #3. This is the appropriate scale for the recommended paper thickness (0.075 mm). The accuracy of the Near-End Detector depends on the Adjustment Scale setting and the Roll Paper Winding Core diameter. The only paper approved for use in this ECR has the following characteristics:

Table 5-1. Roll Paper Characteristics

Characteristic	Measurement
Paper Thickness	0.075 mm
Paper Width	44.5 mm $\pm$ 0.5 mm
Winding Core Inner Diameter	110mm

5 Alignment and Adjustments

The relationship between the Adjustment Scale and the paper remnant remaining on the core is as shown in Figure 5-3.

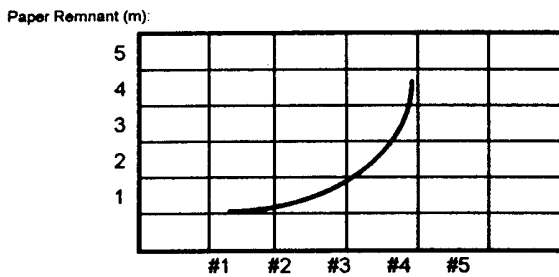


Figure 5-3 Relationship: Adjustment Scale to Remnant Length

Note: Figure 5-3 applies only when using Samsung recommended papers.

Figure 5-4 shows the relationship between the Adjustment Scale and the outer diameter of the Winding Core.

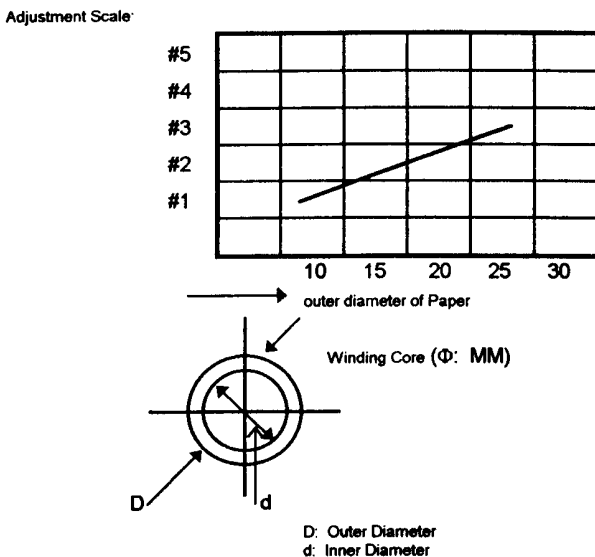


Figure 5-4. Relationship: Adjustment Scale to Winding Core Diameter

Note:

1. When using roll paper other than Samsung recommended paper, the roll paper remnant lengths will differ.
2. When using roll paper with a red end mark, the Winding Core may pull out of its holder due to the paper sticking to Winding Core. If the Winding Core pulls out of its holder, the Paper Sensor may indicate an inaccurate remnant length.

5-1-3 Clearing a Paper Jam

5-1-3 (A) Paper Jamming Causes

1. When more than two papers have entered the paper path.
2. When paper cutting remnants remain in the paper exit space.

5-1-3 (B) Clearing Procedure

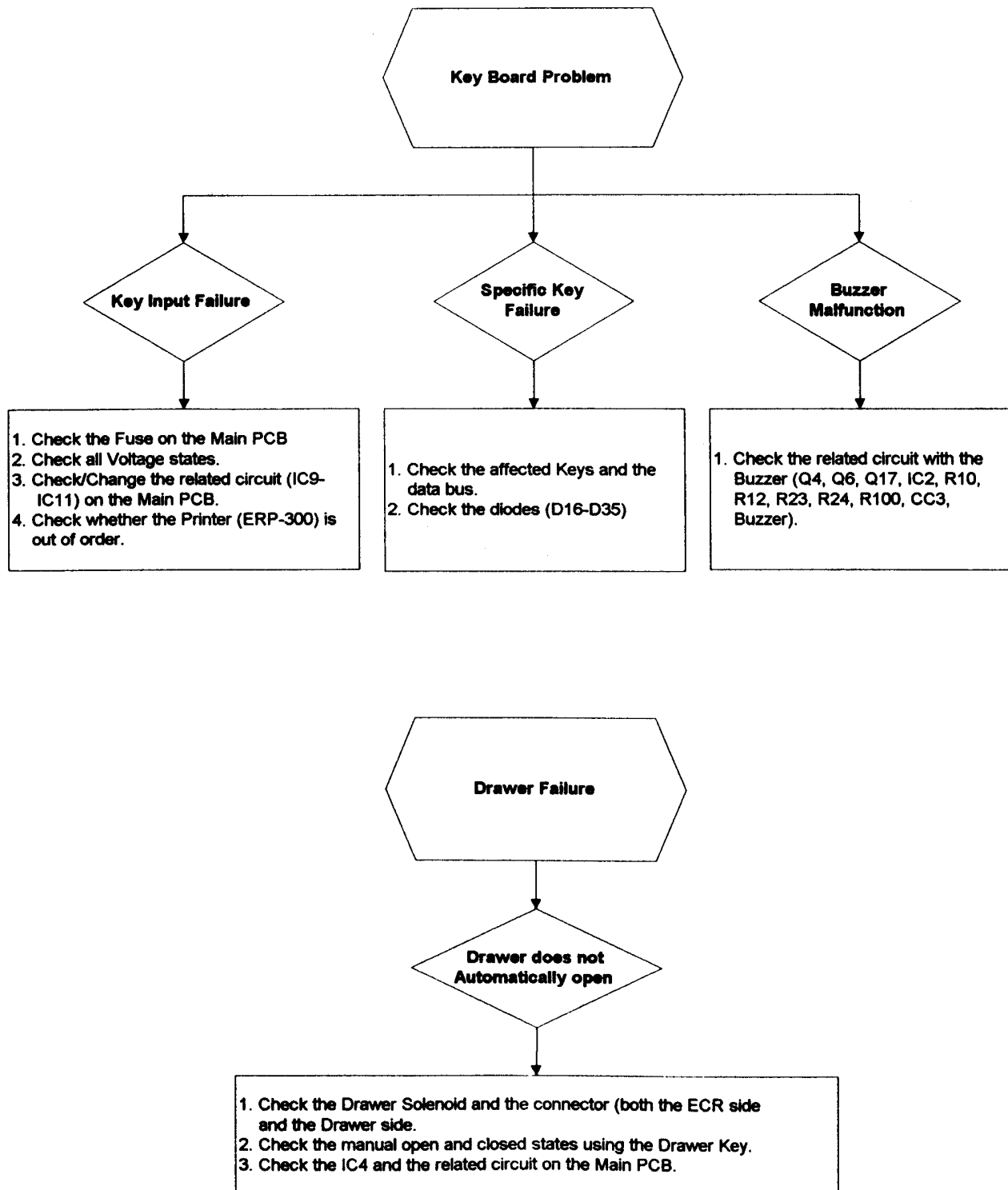
Caution: Always disconnect the power cord from the power outlet *before* working on the Paper Cutter.

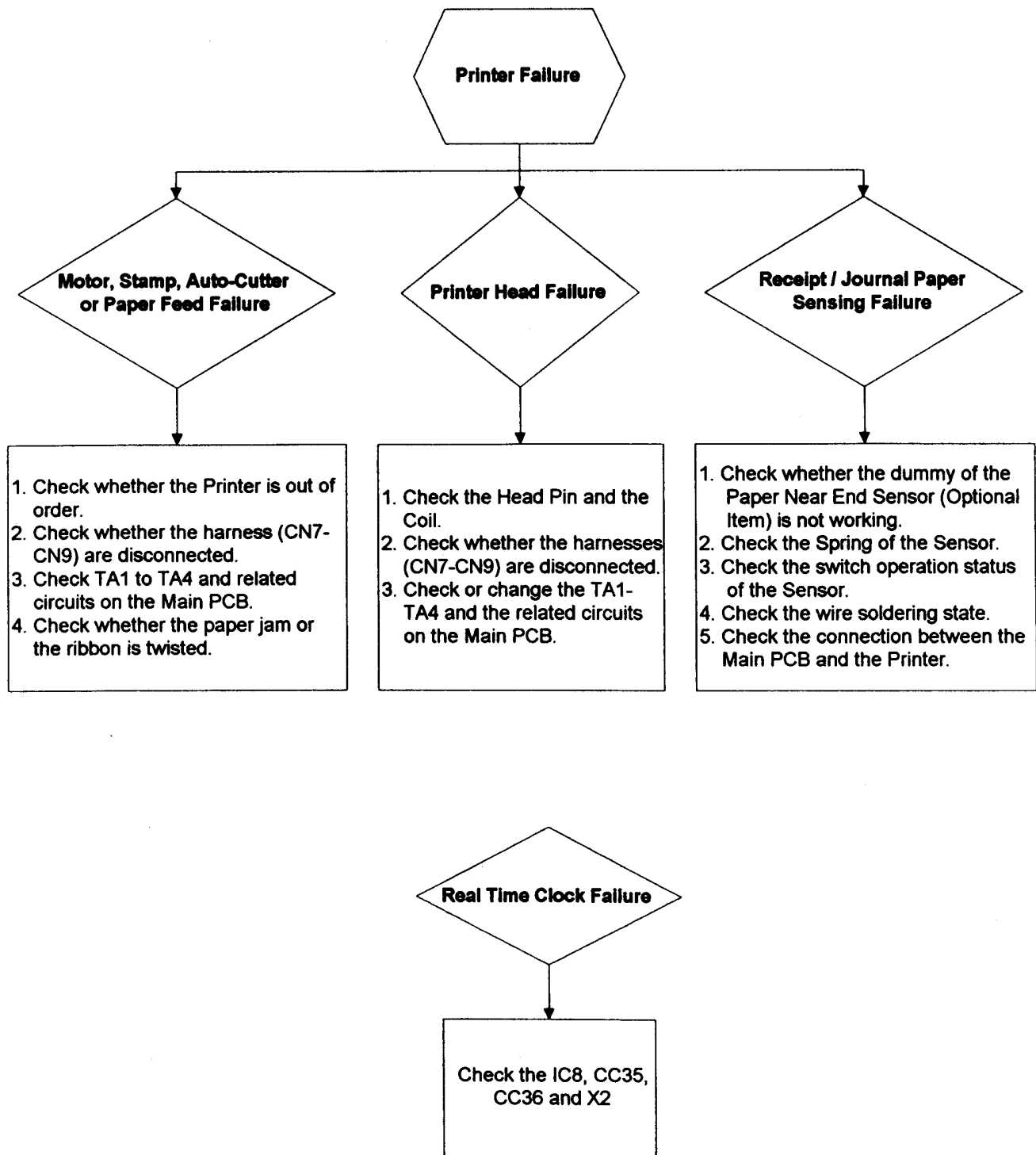
1. Open the Printer Cover and remove the Auto-Cutter Cover 2.
2. Remove all jammed paper at the Auto-Cutter.
3. Replace Auto-Cutter Cover 2 and close the Printer Cover.
4. The Auto-Cutter will operate as soon as power is restored to the ECR. After cutting once, the Auto-Cutter goes to its normal state.

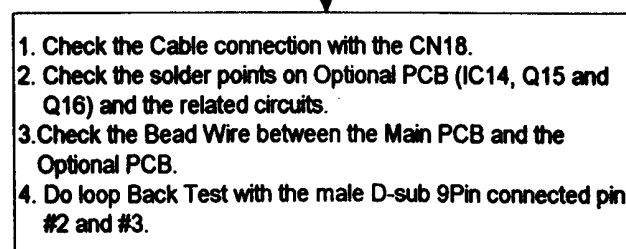
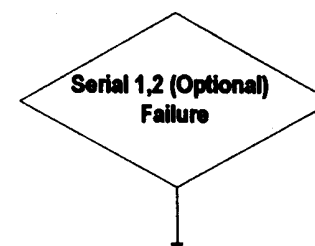
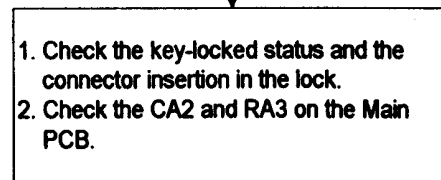
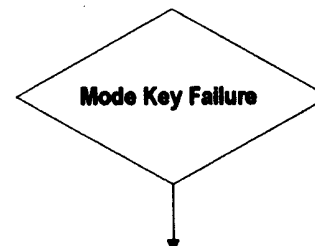
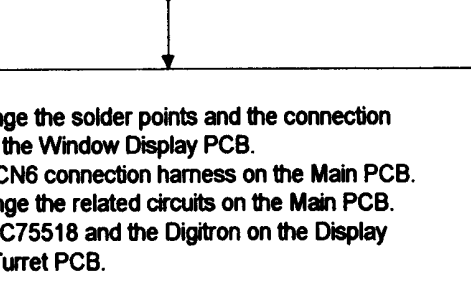
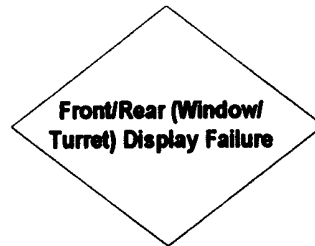
6 Troubleshooting and Test Procedures

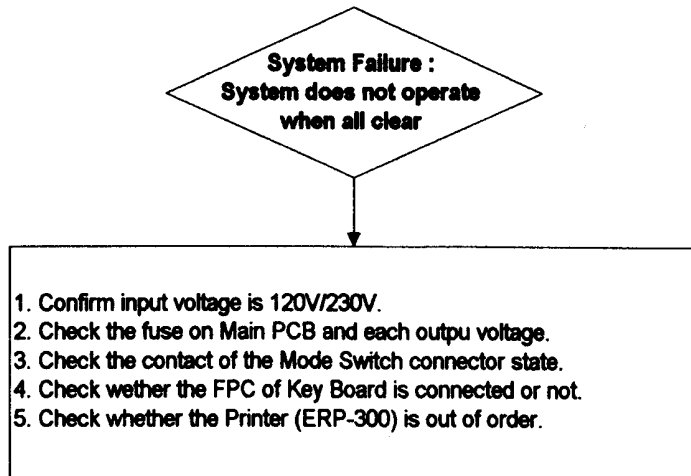
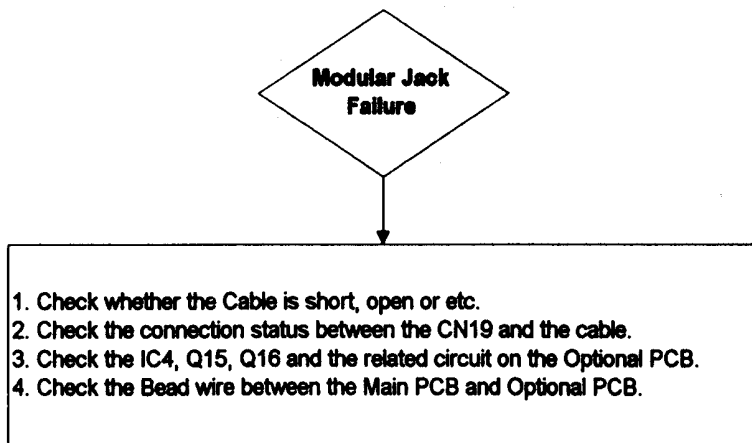
This chapter describes the methods for determining the source of malfunctions in this ECR.

6-1 Troubleshooting





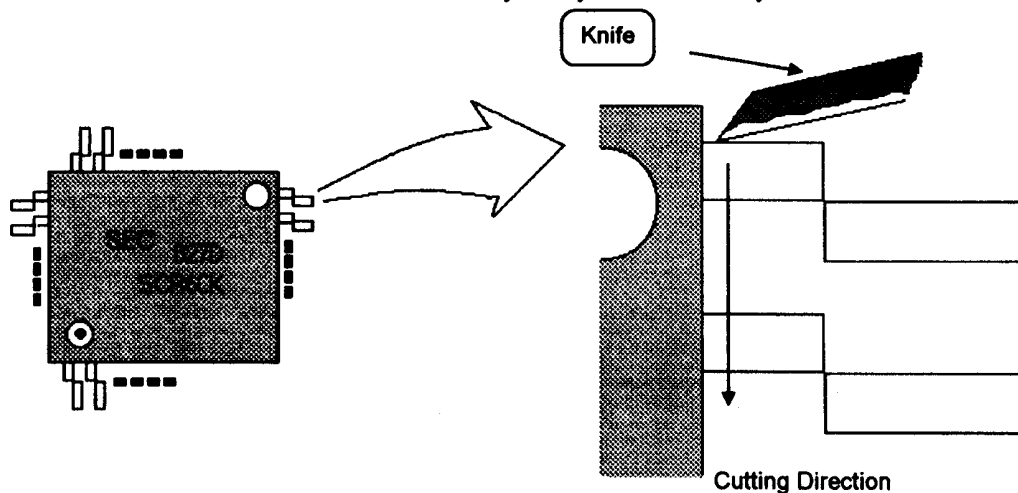




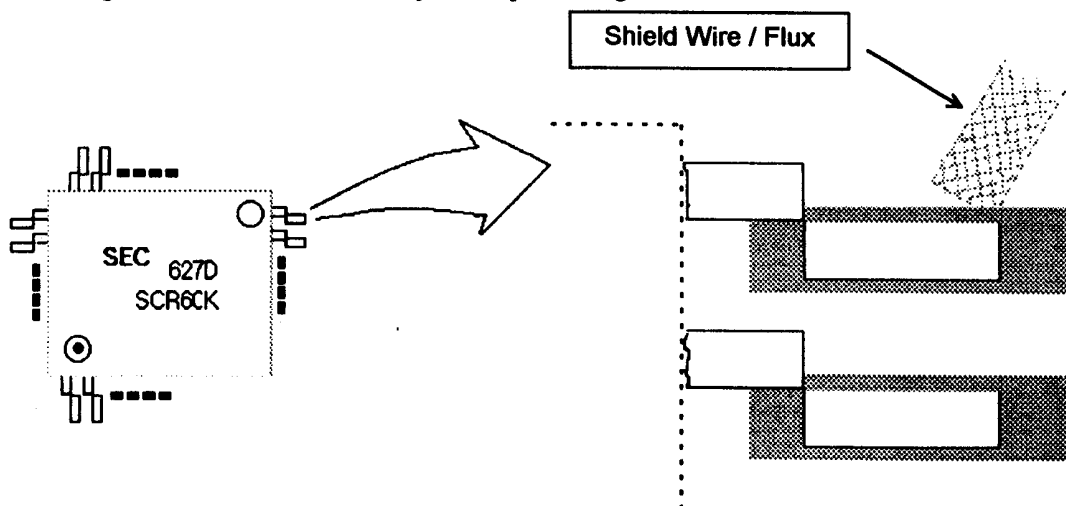
6-1-10 Change the ASIC SCR60K (IC4)

6-1-10 (a) When change the IC4, follow next procedure if the IC4 is out of order certainly

1. Cut the ASIC-side end of the top of ASIC's pin with a sharp-tip knife, one by one carefully. There may be some Pattern under the IC4, so it is necessary that you cut carefully them.



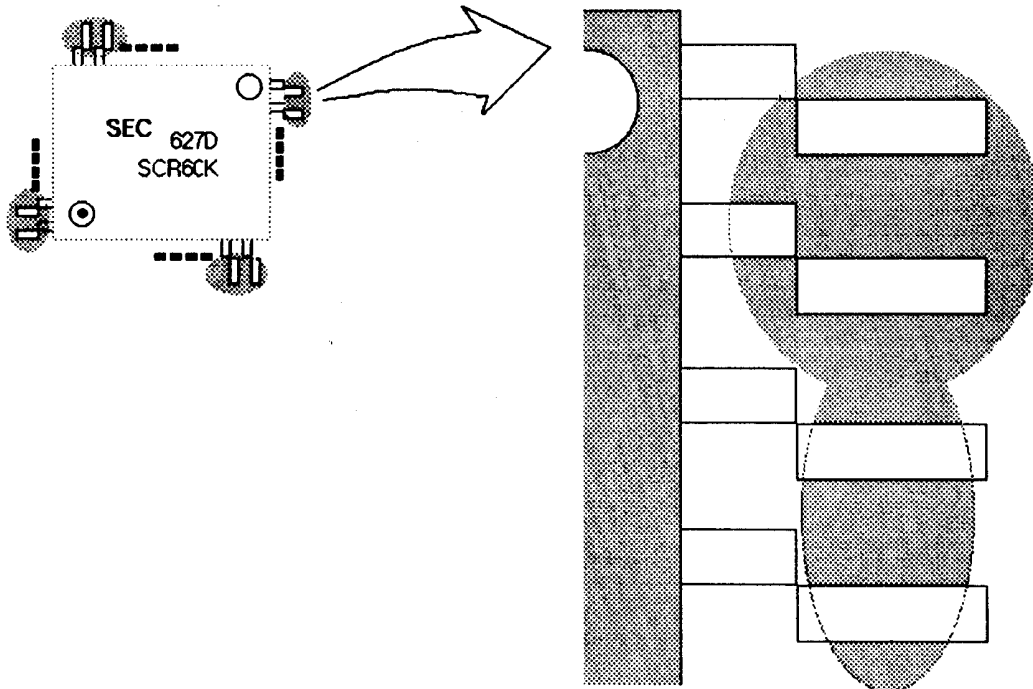
2. After cutting, desolder the lead dummy at the pins using a shield wire or flux.



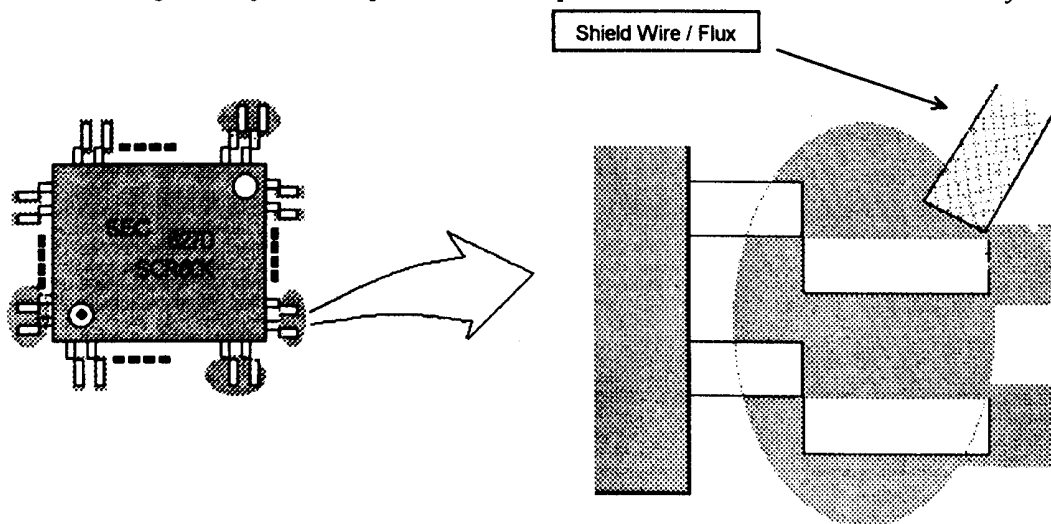
3. Then remove the pins one by one using the soldering iron.
4. Desolder the lead dummy on the PCB one more time before soldering the new ASIC SCR60K.
5. Take the Position of SCR60K on the Land of the Main PCB.

6 Troubleshooting and Test Procedures

6. Solder the 4 points first like the left side of the following Figure.
7. Solder the IC4 one top to bottom with much lead under the PCB erected.



8. Desolder the lead dummy around the end pin of the square using a shield wire or Flux liquid.
9. When using Flux liquid, after paint the Flux liquid and then desolder the lead dummy.



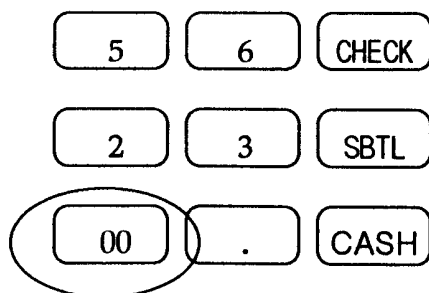
6-2 Test Procedure

6-2-1 Initial Clear Procedure

1. Turn key to P-Mode.
2. Unplug Register.
3. Hold down the SUBTL on keyboard and plug in the Register, again.
4. The Register issues an Initial Clear receipt.

6-2-2 All Clear

1. Turn the Mode Key to S-Mode.
2. Turn off the Power.
3. Hold down the key 00 on the Key board, turn on the Power.
4. The Register issues an All Clear receipt.



USE THIS KEY FOR ALL CLEAR PROCEDURE
REGARDLESS OF WHAT KEY FUNCTION ID
PROGRAMMED AT THAT LOCATION

6-2-3 Loop Back Connections

1. Turn the Mode Key to S-Mode.



For the jig for the communication test

① serial 1, serial 2(Main PCB, D-sub 9)
TxD(3) ---- RxD(2)

② serial 3, serial 4(Option PCB, Modular)
TxD(3) ---- RxD(5)

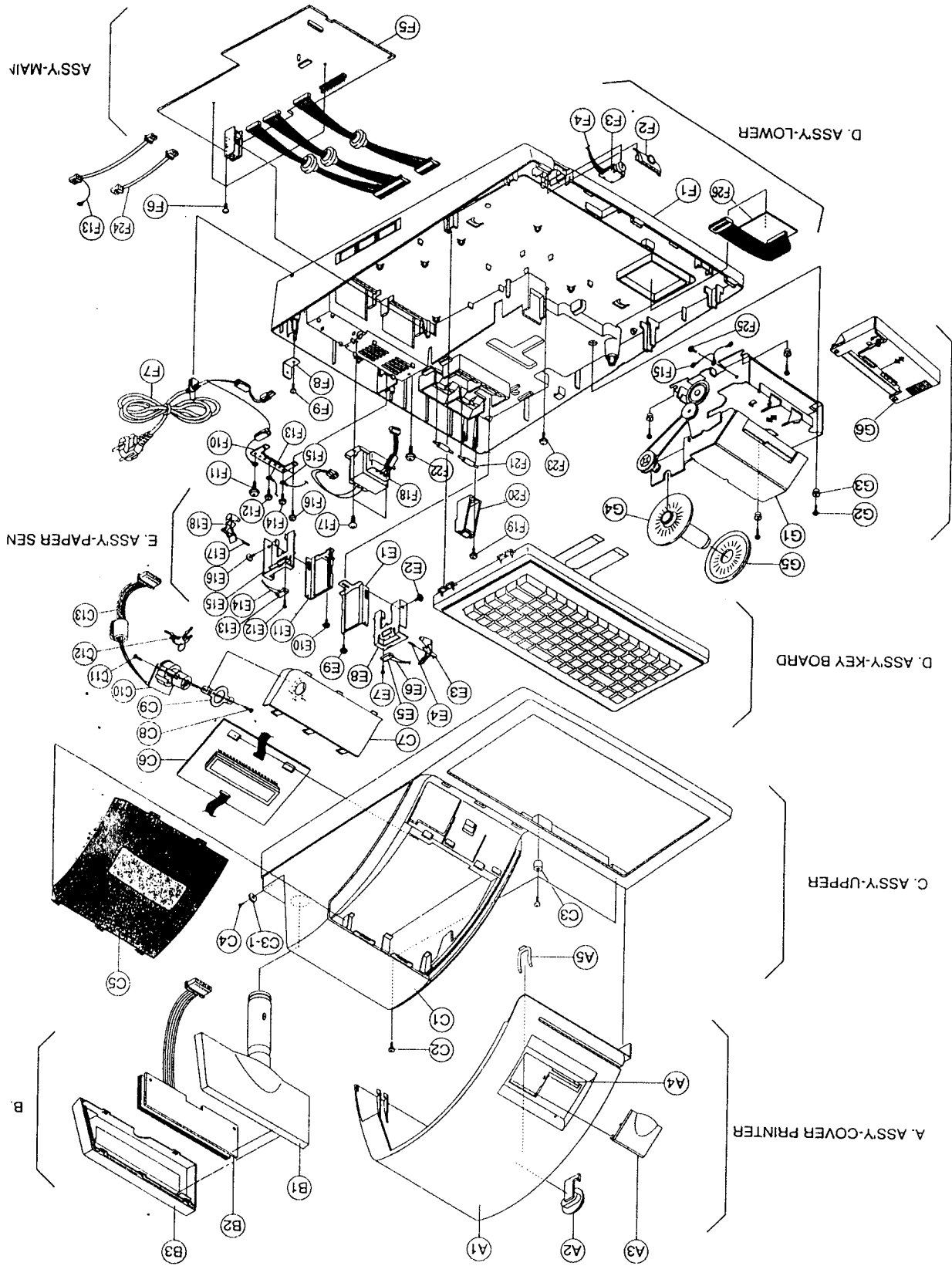
6-2-4 Test

1. Turn the Mode Key to S-Mode
2. Enter the one key of the following code, and enter the Key CASH.

CODE	FUNCTION
1	Print the Several Characters and Display 0~1 and the Several Characters.
2	Test the Key Board.
3	Test the Mode Key Switch.
4	Print the EPROM version and the Check Sum.
5	Test the Display (Display the ).
6	Print the H Pattern.

7 Exploded View and Parts List

7-1 Master View



7-1-1 Cover Printer Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
A1	JK72-40354A	PMO-COVER PRINTER	ER-5100,ABS,V0,IV16,T3	1	ERP-300V,ERP-400
	JK72-40355A	PMO-COVER PRINTER(A)	ER-5100A,ABS,V0,IV16,T3	1	ERP-300A,OPTION
A2	JK75-10391A	MEC-LOCK KEY	ER-5100	1	
A3	JK72-40223A	PMO-WINDOW JOURNAL	SER-6500,PMMA,HB,TRP,T2	1	
A4	JK70-10007A	IPR-PLATE CUTTER PAP	SER-6500,STS304,T0.3	1	
A5	JK70-10323A	IPR-PLATE CLIP	ER-100,SWP,T0.5	1	

7-1-2 Turret (Rear Display) Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
B1	JK72-40358A	PMO-TURRET BODY	ER-5100,ABS,V0,IV16,T3	1	
B2	JK96-00196B	ELA-TURRET	ER-350,10DIGIT	1	
B3	JK72-40359A	PMO-WINDOW TURRET	ER-5100,PC,HB,BL06,T3	1	

7-1-3 Upper Case Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
C1	JK72-40352A	PMO-CASE UPPER	ER-5100,ABS,V0,IV16,T3	1	
	JK72-40352B	PMO-CASE UPPER	ER-5115F,ABS,V0,IV16,T3,FISCAL	1	FISCAL (GREECE)
C2	6002-100172	SCREW-TAPPING	PH,+,2S,M4,L15,PASS,STS304	3	
C3	JK70-40304B	ICT-SHAFT MOLDING	ER-4615F,SUM24L,D11.4,Zn	1	FISCAL
	JK70-40305A	ICT-SHAFT MOLDING	ASUNG,SUM24L,D13.9,Zn	1	FISCAL (GREECE)
C4	6001-000367	SCREW-MACHINE	FH,+,M4,L10,N1 PLT,SM20C,-	1	
C5	JK72-40356A	PMO-WINDOW DISPLAY	ER-5100,PC,HB,BL06,T3	1	ER-5100
	JK72-40356B	PMO-WINDOW DISPLAY	ER-5115/5140,PC,HB,BL06,T3	1	ER-5115/5115F/5140
	JK72-40356D	PMO-WINDOW DISPLAY	ER-5140F,PC,HB,BL06,T3	1	ER-5140F,POLISH
	JK72-40356E	PMO-WINDOW DISPLAY	ER-5115/5140,PC,HB,BL06,T3	1	ER-5115/5140,ROC
	JK72-40356F	PMO-WINDOW DISPLAY	ER-5100,PC,HB,BL06,T3	1	ER-5100,ROC
	JK72-40920A	PMO-WINDOW DISPLAY	ER-5100,PC,HB,BL06,T3	1	ER-5100,CRS
C6	JK96-00206A	ELA-DISPLAY	ER-5100,10DIGIT	1	
C7	JK72-40357A	PMO-COVER MODE S/W	ER-5100,ABS,V0,IV16,T3	1	ER-5100
	JK72-40357B	PMO-COVER MODE S/W	ER-5115,ABS,V0,IV16,T3	1	ER-5115
	JK72-40357C	PMO-COVER MODE S/W	ER-5140,ABS,V0,IV16,T3	1	ER-5140
	JK72-40357D	PMO-COVER MODE S/W	ER-5115F,ABS,V0,IV16,T3	1	ER-5115F
	JK72-40357E	PMO-COVER MODE S/W	ER-5140F,ABS,V0,IV16,T3	1	ER-5140F
	JK72-40357F	PMO-COVER MODE S/W	ER-5100F,ABS,V0,IV16,T3	1	ER-5100F
	JK72-40357G	PMO-COVER MODE S/W	ER-5140FI,ABS,V0,IV16,T3	1	ER-5140FI
C8	6002-000154	SCREW-TAPPING	PH,+,2,M3,L8,ZPC(YEL),SM20C	2	
C9	JK70-10004A	IPR-BRKT MODW S/W	ER-350,SBHG,T1.0	1	
C10	3406-000116	SWITCH-ROTARY	12V,30mA,SP9T,-	1	
C11	6002-000394	SCREW-TAPPING	PH,+,2,M3,L6,ZPC(YEL),SM20C	2	
C12	JK75-10350A	UNIT/KEY	REG,VD,Z,P,C	1	
C13	JK39-40023A	CBF-HARNESS	8P,300MM,BLK/BRN/RED/ORG/YEL	1	

7-1-4 Key Board Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
D1	JK59-10002B	KEYBOARD-ECR	ER-5100,160K,FLATE TYPE,FPC	1	STANDARD(ENGLISH)
	JK59-10002G	KEYBOARD-ECR	ER-5115/5115F,60K,MEMBRANE,FPC	1	STANDARD(ENGLISH)
	JK59-10002H	KEYBOARD-ECR	ER-5140,90K,MEMBRANE,FPC	1	STANDARD(ENGLISH)

7-1-5 Paper Sensor Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
E	JK96-00450A	PAPER END ASSY	ASSY,SPS-8000	1	LEFT
E1	JK70-10384A	BRKT-PAPER/END	SECC,T1.5	1	
E2	6003-000221	SCREW-TAPTITE	PWH,+,S,M4,L8,ZPC(YEL),SWRCH18	1	
E3	JK64-10301A	KNOB-PAPER/END	POM,-,BLK,T2	1	
E4	6107-000127	SPRING-ES	PI0.3,D3.7,L10.8,DERGE,STS304	1	
E5	3405-000103	SWITCH-MICRO	125V,100mA,25gf,SPST	1	
E6	JK39-40303M	CBF-HARNESS	2P,630MM,WHT,1061,#26,5264-02	1	
E7	6001-000496	SCREW-MACHINE	PH,+,M2,L12,ZPC(YEL),SM20C,-	1	
E8	JK70-10385A	BRKT-SLIDE	SECC,T1.5	1	
E9	6002-000175	SCREW-TAPPING	PWH,+,2,M3,L8,ZPC(YEL),SM20C	1	
E	JK96-00464A	PAPER END ASSY	ASSY,ER-4615F	1	RIGHT
E10	6002-000175	SCREW-TAPPING	PWH,+,2,M3,L8,ZPC(YEL),SM20C	1	
E11	JK70-10384A	BRKT-PAPER/END	SECC,T1.5	1	
E12	6001-000496	SCREW-MACHINE	PH,+,M2,L12,ZPC(YEL),SM20C,-	1	
E13	3405-000103	SWITCH-MICRO	125V,100mA,25gf,SPST	1	
E14	JK39-40303G	CBF-HARNESS	2P,355MM,RED,1007,#26,5264-2P	1	
E15	JK70-10385A	BRKT-SLIDE	SECC,T1.5	1	
E16	6003-000221	SCREW-TAPTITE	PWH,+,S,M4,L8,ZPC(YEL),SWRCH18	1	
E17	6107-000127	SPRING-ES	PI0.3,D3.7,L10.8,DERGE,STS304	1	
E18	JK64-10301A	KNOB-PAPER/END	POM,-,BLK,T2	1	

7-1-6 Lower Case Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
F1	JK72-40353A	PMO-CASE LOWER	ER-5100, ABS, V0, IV16, T3	1	
F2	JK72-40361A	PMO-COVER CLERK KEY	ER-5100, ABS, V0, IV16, T3	1	OPTION
	JK72-40360A	PMO-COVER FRONT	ER-5100, ABS, V0, IV16, T3	1	
F3	3406-000001	SWITCH-ROTARY	DC12V, 10mA, 1C, 4P, 1000HN, 100MO	1	OPTION
F3-1	JK71-10002A	KEY-CLERK, 01	SER-6500, C2801P-H, T2, Ni, A	1	OPTION
F3-2	JK71-10002B	KEY-CLERK, 02	SER-6500, C2801P-H, T2, Ni, B	1	OPTION
F3-3	JK71-10002C	KEY-CLERK, 03	SER-6500, C2801P-H, T2, Ni, D	1	OPTION
F3-4	JK71-10002D	KEY-CLERK, 04	SER-6500, C2801P-H, T2, Ni, E	1	OPTION
F3-5	JK71-10002E	KEY-CLERK, 05	SER-6500, C2801P-H, T2, Ni, H	1	OPTION
F3-6	JK71-10002F	KEY-CLERK, 06	SER-6500, C2801P-H, T2, Ni, K	1	OPTION
F3-7	JK71-10002G	KEY-CLERK, 07	SER-6500, C2801P-H, T2, Ni, L	1	OPTION
F3-8	JK71-10002H	KEY-CLERK, 08	SER-6500, C2801P-H, T2, Ni, M	1	OPTION
F3-9	JK71-10002J	KEY-CLERK, 09	SER-6500, C2801P-H, T2, Ni, N	1	OPTION
F3-10	JK71-10002K	KEY-CLERK, 10	SER-6500, C2801P-H, T2, Ni, P	1	OPTION
F3-11	JK71-10002L	KEY-CLERK, 11	SER-6500, C2801P-H, T2, Ni, Q	1	OPTION
F3-12	JK71-10002M	KEY-CLERK, 12	SER-6500, C2801P-H, T2, Ni, R	1	OPTION
F3-13	JK71-10002N	KEY-CLERK, 13	SER-6500, C2801P-H, T2, Ni, S	1	OPTION
F3-14	JK71-10002P	KEY-CLERK, 14	SER-6500, C2801P-H, T2, Ni, T	1	OPTION
F3-15	JK71-10002Q	KEY-CLERK, 15	SER-6500, C2801P-H, T2, Ni, U	1	OPTION
F4	JK39-40305E	CBF-HARNESS	5P, 230MM, RED/YEL/BLK, 1007#26, A	1	OPTION
F5	JK92-01054A	PBA-MAIN BOARD	ER-5100, BASIC, WORLD	1	
F6	6002-000174	SCREW-TAPPING	PWH, +, 2, M3, L10, ZPC(YEL), SM20C	4	LOWER+PCB
F7	JK39-10001A	CBF-POWER/CORD	ATTACH, EUROPE, 250V/10A, IVORY	1	EUROPE
	JK39-10002A	CBF-POWER/CORD	ATTACH, OP-16, 250V/7.5V, IVORY	1	CHINA
	JK39-10003A	CBF-POWER/CORD	ATTACH, OP-16, 250V/7.5V, IVORY	1	USA
	JK39-10008A	CBF-POWER/CORD	ATTACH, EUROPE, 250V/10A, IVORY	1	UK
F8	JK70-10002A	IPR-BRKT CASING	ER-380, SBHG, T1.6	1	
F9	6002-000171	SCREW-TAPPING	PH, +, 2S, M4, L10, ZPC(YEL), SM20C	1	LOWER+BRKT CASING
F10	JK70-10377A	IPR-PLATE GROUND	ER-4615, SBHG-1, T1.2	1	
F11	6006-000199	SCREW-ASS'Y TAPT	WT, BH, +, M4, L8, ZPC(YEL), SWRCH18	1	
F12	6002-000174	SCREW-TAPPING	PWH, +, 2, M3, L10, ZPC(YEL), SM20C	1	
F13	JK39-40200A	CBF-CONN ASSY	150MM, 3P, SMP-03V-B, VH-2P, VT, GN	1	DRAWER HARNESS
F14	6002-000174	SCREW-TAPPING	PWH, +, 2, M3, L10, ZPC(YEL), SM20C	1	
F15	JK39-40302V	CBF-HARNESS	2P, 110MM/300MM, GRN, 1015, #18, ST	1	PRINTER GROUND
F16	6002-000174	SCREW-TAPPING	PWH, +, 2, M3, L10, ZPC(YEL), SM20C	2	LOWER+GROUND
F17	6002-000171	SCREW-TAPPING	PH, +, 2S, M4, L10, ZPC(YEL), SM20C	2	LOWER+TRANS
F18	JK26-20303F	TRANS-POWER	ER-5100, 230V, 6P	1	230V/50Hz
	JK26-20303G	TRANS-POWER	ER-5100, 120V/60Hz, 6P	1	120V/60Hz
	JK26-20303H	TRANS-POWER	ER-5100, 120V/230V, 6P	1	120V/230V
	JK26-20303J	TRANS-POWER	ER-5100, 230V, 6P, FISCAL	1	230V, FISCAL
F19	6002-000174	SCREW-TAPPING	PWH, +, 2, M3, L10, ZPC(YEL), SM20C	1	LOWER+HOLDER
F20	JK72-40389A	PMO-HOLDER COVER/PRT	ER-5100, ABS, V0, IV16, T3	1	
F21	JK72-40330A	PMO-ROLLER PAPER/END	SPS-8000, POM, -, WHT, D6	2	
F22	6003-000221	SCREW-TAPTITE	PWH, +, S, M4, L8, ZPC(YEL), SWRCH18	1	LOWER+DRAWER
F23	6002-000174	SCREW-TAPPING	PWH, +, 2, M3, L10, ZPC(YEL), SM20C	1	LOWER+DRAWER
F24	JK39-40302C	CBF-HARNESS	2P, 180MM, BRN, 1007, #26, SMP-02	1	OPTION
F25	6001-000618	SCREW-MACHINE	PH, +, 2S, M4, L8, ZPC(YEL), SM20C	1	PRINTER+GROUND
F26	JK92-00130F	PBA-FISCAL BOARD	ER-5140F, 128KB	1	FISCAL

7-1-7 Printer Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
G1	JK59-10162A	UNIT-PRINTER	ERP-300V	1	
	JK59-10163A	UNIT-PRINTER	ERP-300A	1	OPTION
G2	6002-000209	SCREW-TAPPING	RWH, +, 2, M3, L17.5, ZPC(YEL), SWRC	4	
G3	JK73-40201A	RMO-PRINTER	ER-4615, NR, BLK, 50HB, ID4*OD12*H15	4	
G4	JK81-10513E	SPOOL ASS'Y	ECR01-181, A/S	1	
G5	JK81-10513F	DISK	18628-01000AB, A/S	1	
G6	JK75-10383A	UNIT/RIBBON-CASSETTE	ER-4615, ERC-18, PURPLE	1	

7-2 Display PCB Assembly (c.f. 10-2 PCB diagram)

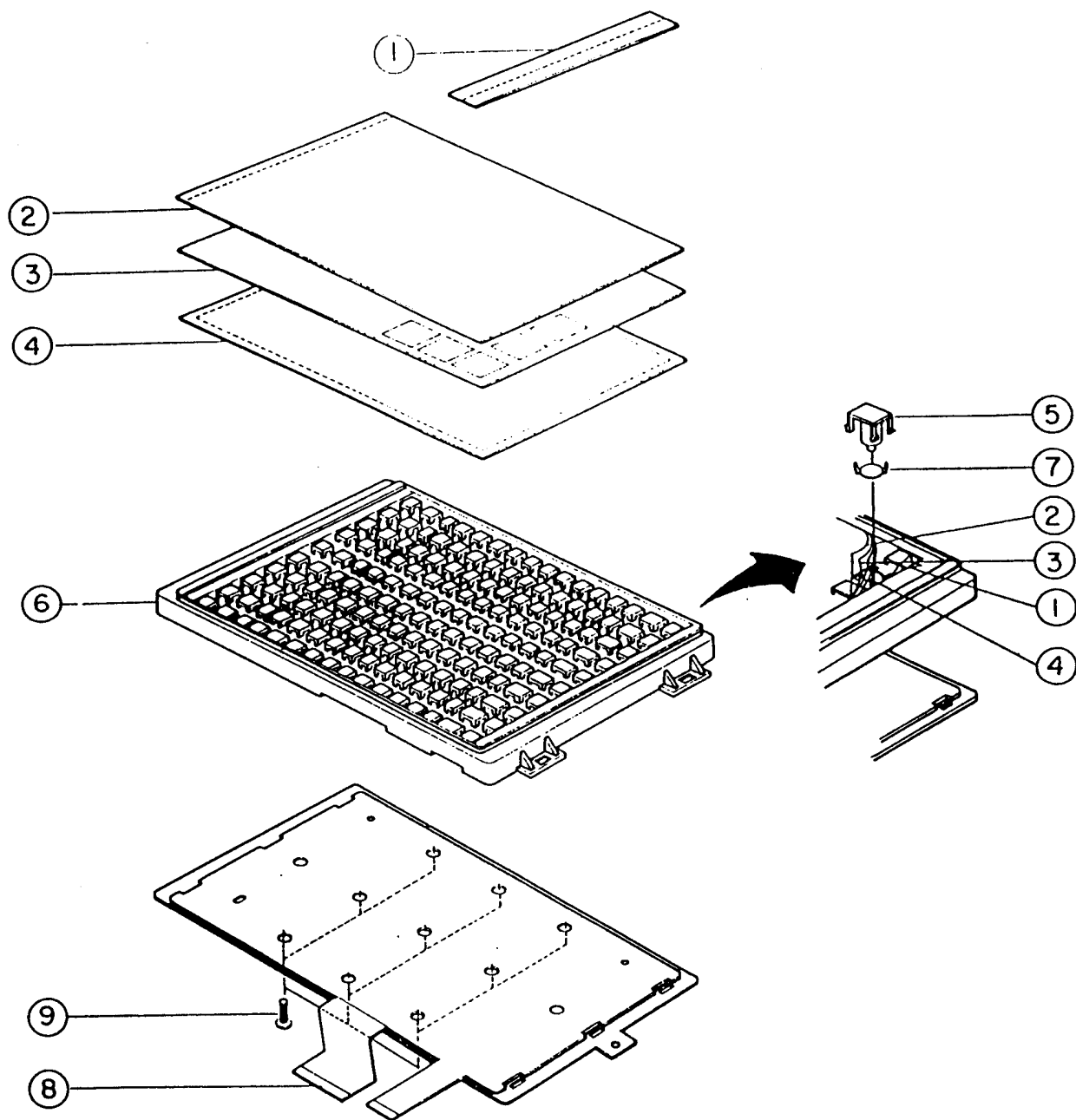
Loc. No.	Code No.	Description	Specifications	Q'ty	Remarks
	JK97-50301B	ASS'Y,DISPLAY-SUB	ER-5100	1	
	BH39-40305U	CBF-HARNESS	,52MM,,,AWG22	7	
	JK03-20004A	VACCUM/TUBE-F.D	10G,4.2V,	1	10 DIGIT
	JK39-40006A	CBF-HARNESS	2P,350MM,WHT/	1	2P
	JK39-40007A	CBF-HARNESS	8P,400MM,RED/	1	8P
	JK41-10304N	PCB-DISPLAY	ER-5100,POLYM	1	Big PCB
	JK73-60309A	RUBBER-PAD	ER-220N,SPONGE	2	PAD(T5.0)
	1003-000265	IC-DISPLAY DRIVER	75518,D	1	
	2202-000579	C-CERAMIC,MLC-AXIAL	100nF	2	C1,C2
	3711-000766	CONNECTOR-HEADER	BOX,22P,	1	

7-3 Keyboard Assemblies

7-3-1 Flat-Type (ER-5100 Model)

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
1	JK72-10308A	PPR-SHEET KBD/GUIDE	PC,-,TRP,T0.5	1	
2	JK72-10304A	PPR-SHEET KBD/A	PC,-,TRP,T0.5	1	
3		KEYBOARD-SHEET	ER-5100		
4	JK72-10306A	PPR-SHEET KBD/B	PC,-,TRP,T0.5	1	
5	JK72-40326A	PMO-KEY TOP(1*1)	ABS,V0,IV01,T1.5,350KFS-003-90	160	
6	JK72-40313A	PMO-FRAME KEYBOARD	ABS,V0,IV01,T3	1	
7	JK70-10383A	IPR-BRKT METALDOM	SUS304,D0.1,341KFS-008-91	160	
8	JK41-20301H	PCB-FPC	ER-4800,POLYIMIDE	1	
9	6002-000147	SCREW-TAPPING	PH,+,2,M3,L10,ZPC(YEL),SM20C	9	

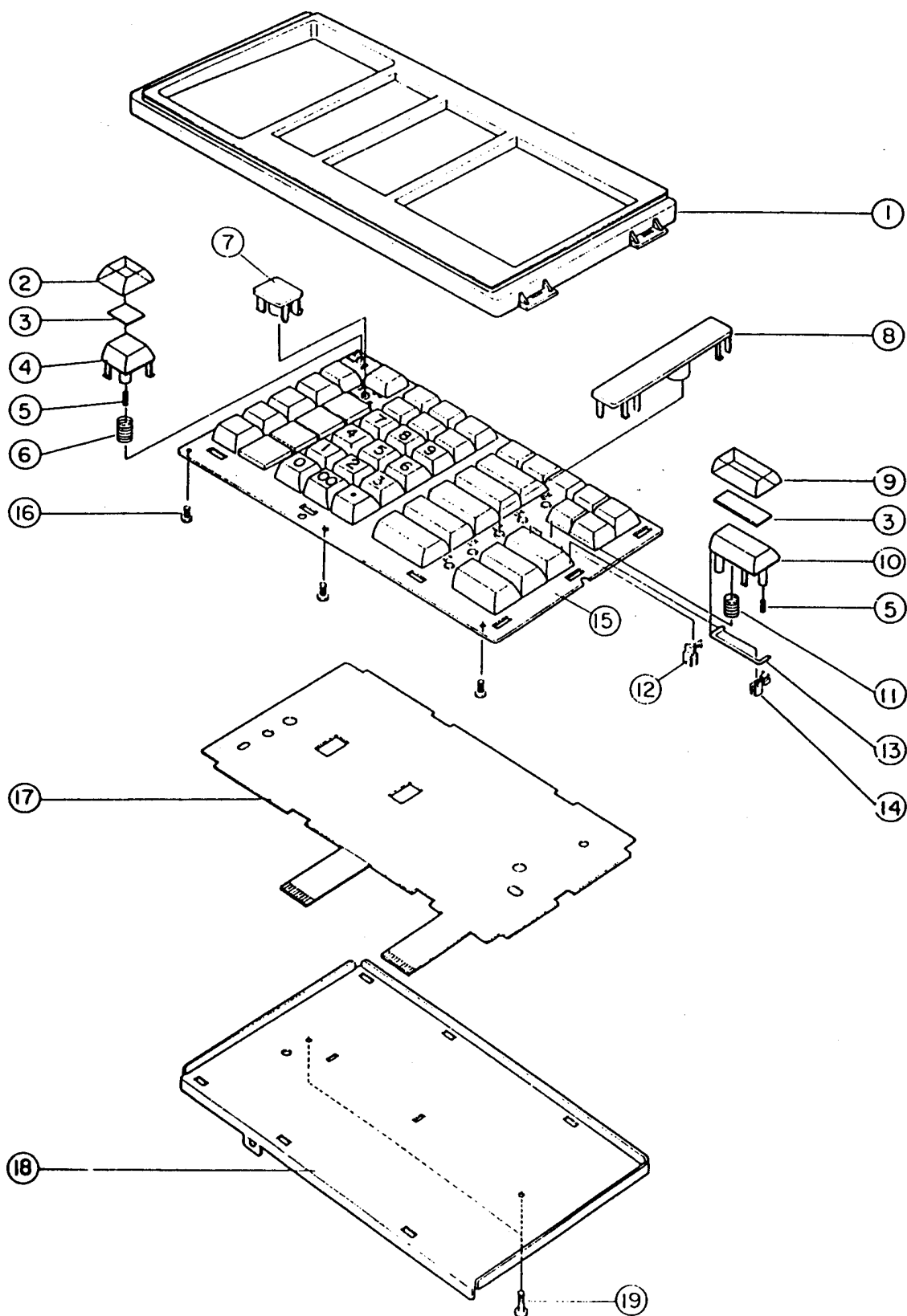
7-3-2 Flat-Type Key Board Disassembly



7-3-3 Membrane-Type (ER-5115 Series)

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
1	JK72-40230A	PMO-CASE KBD/HOUSING	ABS,V0,1V16,60KEY	1	
	JK72-40231A	PMO-CASE KBD/HOUSING	ABS,V0,1V16,90KEY	1	
2	JK81-10286C	AS-KEY TOP S(1*1)	ABS,V0,1V16,1*1,302KAS-014-01	1	
4	JK81-10286D	AS-KEY CAP S(1*1)	PC 1*1,S-Z0513-71 #01	1	
5	JK81-10286B	AS-SPRING TS(CONTACT	SUS CONTACT,601KAS-001-01	1	
6	JK81-10286A	AS-SPRING TS(RETURN)	SWPA RETURN 1*1U,601KAS	1	
7	JK72-40310A	PMO-COVER BLAK(1*1)	ABS,V0,1V16,T3	1	
8	JK72-40311A	PMO-COVER BLAK(1*5)	ABS,V0,1V16,T3	1	
9	JK81-10286E	AS-KEY CAP L(1*2)	PC 1*2,S-Z0513-75 #01	1	
10	JK72-40327A	PMO-KEY TOP L(1*2)	ABS,V0,1V16,302KAS-032-00	1	
11	JK61-70301A	SPRING-TS RETURN	SWP-A1,601KAS-016-01	11	
12	JK72-40324A	PMO-HOLDER HOOK(A)	POM,-,BLK,T1.5,541KAS-001-01	1	
13	JK70-10382A	IPR-SPACER KEYBOARD	SUS304,D0.8,321KAS-019-90	1	
14	JK72-40325A	PMO-HOLDER HOOK(B)	POM,-,BLK,T1.5,541KAS-002-01	1	
15	JK72-40309A	PMO-FRAME KEYBOARD	POM,HB,BLK,T1.6,60KEY	1	
	JK72-40312A	PMO-FRAME KEYBOARD	POM,HB,BLK,T1.6,90KEY	1	
16	6002-000175	SCREW-TAPPING	PWH,+,2,M3,L8,ZPC(YEL),SM20C	8	
	6002-000175	SCREW-TAPPING	PWH,+,2,M3,L8,ZPC(YEL),SM20C	12	
17	JK41-20301F	PCB-FPC	ER-4615,POLYIMIDE	1	
	JK41-20301K	PCB-FPC	ER-4640,POLYIMIDE	1	
18	JK70-10379A	IPR-PLATE BASE	ER-4615,SECC T0.8	1	
	JK70-10380A	IPR-PLATE BASE	ER-4640,SECC T0.8	1	
19	6002-000147	SCREW-TAPPING	PH,+,2,M3,L10,ZPC(YEL),SM20C	2	
20	JK72-40250A	PMO-KEY CAP/1	ECR/ALL,ABS,V0,302KAS-017-21	1	
	JK72-40251A	PMO-KEY CAP/2	ECR/ALL,ABS,V0,302KAS-017-22	1	
	JK72-40252A	PMO-KEY CAP/3	ECR/ALL,ABS,V0,302KAS-017-23	1	
	JK72-40253A	PMO-KEY CAP/4	ECR/ALL,ABS,V0,302KAS-017-24	1	
	JK72-40254A	PMO-KEY CAP/6	ECR/ALL,ABS,V0,302KAS-017-26	1	
	JK72-40255A	PMO-KEY CAP/7	ECR/ALL,ABS,V0,302KAS-017-27	1	
	JK72-40256A	PMO-KEY CAP/8	ECR/ALL,ABS,V0,302KAS-017-28	1	
	JK72-40257A	PMO-KEY CAP/9	ECR/ALL,ABS,V0,302KAS-017-29	1	
	JK72-40258A	PMO-KEY CAP/00	ECR/ALL,ABS,V0,302KAS-017-31	1	
	JK72-40259A	PMO-KEY CAP/.	ECR/ALL,ABS,V0,302KAS-017-32	1	
	JK72-40261A	PMO-KEY CAP/5	ECR/ALL,ABS,V0,302KAS-018-05	1	
	JK72-40262A	PMO-KEY CAP/0	ECR/ALL,ABS,V0,302KAS-019-05	1	

7-3-4 Membrane-Type Key Board Disassembly



7-3-5 Chip-Type (ER-5140)

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
1	JK72-40231A	PMO-CASE KBD/HOUSING	ABS,V0,IV16,90KEY	1	
2	JK81-10286C	AS-KEY TOP S(1*1)	ABS,V0,IV16,1*1,302KAS-014-01	1	
4	JK81-10286D	AS-KEY CAP S(1*1)	PC 1*1,S-Z0513-71 #01	1	
5	JK81-10286B	AS-SPRING TS(CONTACT)	SUS CONTACT,601KAS-001-01	1	
6	JK81-10286A	AS-SPRING TS(RETURN)	SWPA RETURN 1*1U,601KAS	1	
7	JK81-10286E	AS-KEY CAP L(1*2)	PC 1*2,S-Z0513-75 #01	1	
8	JK72-40327A	PMO-KEY(1*2)	ABS,V0,IV16,302KAS-014-01	1	
9	JK61-70301A	SPRING-TS RETURN	SWP-A1,601KAS-016-01	1	
10	JK70-10382A	IPR-SPACER KEYBOARD	SUS304,D0.8,321KAS-019-90	1	
11	JK72-40324A	PMO-HOLDER HOOK(A)	POM,-,BLK,T1.5,541KAS-001-01	1	
12	JK72-40325A	PMO-HOLDER HOOK(B)	POM,-,BLK,T1.5,541KAS-002-01	1	
13	6002-000175	SCREW-TAPPING	PWH,+,2,M3,L8,ZPC(YEL),SM20C	12	
14	JK72-40312A	PMO-FRAME KEYBOARD	POM,HB,BLK,T1.6,90KEY	1	
15	JK41-20301K	PCB-FPC	ER-4640,POLYIMIDE	1	
16	JK70-10380A	IPR-PLATE BASE	ER-4640,SECC T0.8	1	
17	6002-000147	SCREW-TAPPING	PH,+,2,M3,L10,ZPC(YEL),SM20C	3	
	JK72-40250A	PMO-KEY CAP/1	ECR/ALL,ABS,V0,302KAS-017-21	1	
	JK72-40251A	PMO-KEY CAP/2	ECR/ALL,ABS,V0,302KAS-017-22	1	
	JK72-40252A	PMO-KEY CAP/3	ECR/ALL,ABS,V0,302KAS-017-23	1	
	JK72-40253A	PMO-KEY CAP/4	ECR/ALL,ABS,V0,302KAS-017-24	1	
	JK72-40254A	PMO-KEY CAP/6	ECR/ALL,ABS,V0,302KAS-017-26	1	
	JK72-40255A	PMO-KEY CAP/7	ECR/ALL,ABS,V0,302KAS-017-27	1	
	JK72-40256A	PMO-KEY CAP/8	ECR/ALL,ABS,V0,302KAS-017-28	1	
	JK72-40257A	PMO-KEY CAP/9	ECR/ALL,ABS,V0,302KAS-017-29	1	
	JK72-40258A	PMO-KEY CAP/00	ECR/ALL,ABS,V0,302KAS-017-31	1	
	JK72-40259A	PMO-KEY CAP/.	ECR/ALL,ABS,V0,302KAS-017-32	1	
	JK72-40261A	PMO-KEY CAP/5	ECR/ALL,ABS,V0,302KAS-018-05	1	
	JK72-40262A	PMO-KEY CAP/0	ECR/ALL,ABS,V0,302KAS-019-05	1	

7-4 Printer Assembly

Lo.No.	Code No.	Description	Specification	Q'ty	Remarks
0	JK59-10162A	UNIT-PRINTER	ERP-300V	1	
1	JK81-10511Z	MAIN FRAME CAULKING ASSY	ERP-300V, ECR01-210	1	
2	JK81-10131A	SHAFT-LEVER SUPPORT	ERP-300V, 18634-00062EA	1	
3	JK81-10506G	GEAR REDUCTION 2	ERP-300V, 18613-01050AB	1	
4	JK81-10506P	GEAR HEAD IDLE-1	ERP-300V, 18613-01010AB	1	
5	JK81-10506Q	GEAR HEAD IDLE-2	ERP-300V, 18613-01020AB	1	
6	JK81-10512A	GEAR REDUCTION-3 ASSY	ERP-300V, ECR-1-220	1	
6-1	JK81-10054A	GEAR REDUCTION 3	ERP-300V, 18613-01060AB	1	
6-2	JK81-10055A	SHAFT REDUCTION 3	ERP-300V, 18634-00050EA	1	
44	JK81-10056A	SP (P12*10)	ERP-300V, 52062-01000QA	1	
7	JK81-10512B	ROLLING CAM ASS'Y	ERP-300V, ECR01-121	1	
8	JK81-10057A	R-DETECTOR PLATE L	ERP-300V, 18605-01010AA	1	
9	JK81-10058A	R-DETECTOR PLATE R	ERP-300V, 18605-01000AA	1	
10	JK81-10510J	RIBBON DRIVING LEVER	ERP-300V, 18607-01000AA	1	
11	JK81-10512E	LEAD CAM ASS'Y	ERP-300V, ECR01-230	1	
11-1	JK81-10059A	GEAR REDUCTION 1	ERP-300V, 18613-01040AB	1	
11-2	JK81-10060A	LEAD CAM	ERP-300V, 18621-01010BD	1	
44	JK81-10056A	SP (P12*10)	ERP-300V, 52062-01000QA	1	
13	JK81-10062A	SCREW (HF3*3)	ERP-300V, 50692-30030BA	1	
14	JK81-10063A	ENCODER SENSOR ASS'Y	ERP-300V, ECR01-401	1	
15	JK81-10508F	ENCODER	ERP-300V, 18614-01000AB	1	
16	JK81-10064A	HEAD MOTOR ASS'Y	ERP-300V, ECR01-341	1	
16-1	JK81-10065A	MOTOR HEAD BRACKET	ERP-300V, 18612-01000AA	1	
16-2	JK81-10066A	GEAR HEAD MOTOR	ERP-300V, 18613-01001AB	1	
16-3	JK81-10067A	CORE	ERP-300V, 71432-05004FA	1	
16-4	JK81-10068A	WIRE (L140, BLU)	ERP-300V, 70692-14001DA	1	
16-5	JK81-10069A	WIRE (L140, RED)	ERP-300V, 70692-14004RA	1	
16-6	JK81-10070A	MOTOR (M200)	ERP-300V, 71615-24001BA	1	
51	JK81-10071A	SCREW (PS 2.6*4)	ERP-300V, 50032-26041EA	2	
17	JK81-10072A	MAIN PAB ASS'Y	ERP-300V, ECR01-321	1	
17-1	JK81-10073A	MAIN PCB	ERP-300V, 18626-01003AA	1	
17-2	JK81-10074A	HEAT SINK	ERP-300V, 18632-01000AA	2	
17-3	JK81-10075A	SCREW-M (PH3*4)	ERP-300V, 50032-30041TA	2	
17-4	JK81-10076A	TR (TIP41C)	ERP-300V, 60010-00042TA	1	
17-5	JK81-10077A	TR (TIP42C)	ERP-300V, 60026-00041TA	1	
17-6	JK81-10078A	JUMP WIRE	ERP-300V, 60401-00076FA	7	
17-7	JK81-10079A	RESISTOR (12k)	ERP-300V, 60401-12375FA	1	
17-8	JK81-10080A	RESISTOR (18k)	ERP-300V, 60401-18375FA	1	
17-9	JK81-10081A	RESISTOR (2k)	ERP-300V, 60401-20275FA	1	

7 Exploded View and Parts List

17-10	JK81-10082A	RESISTOR (22000HM)	ERP-300V,60401-22175FA	1	
17-11	JK81-10083A	RESISTOR (6.2k)	ERP-300V,60401-62275FA	2	
17-12	JK81-10084A	RESISTOR-CEMENT (70HM)	ERP-300V,60457-07172TA	1	
17-13	JK81-10085A	RESISTOR-CEMENT (10)	ERP-300V,60457-10172TA	1	
17-14	JK81-10086A	RESISTOR-SEMI (2k)	ERP-300V,60641-20200FA	2	
17-15	JK81-10087A	CAPACITOR-E (50v,47uf)	ERP-300V,61414-47017MA	2	
17-16	JK81-10088A	IC (L200)	ERP-300V,62840-00200NA	2	
17-17	JK81-10089A	CONNECTOR (12PIN)	ERP-300V,70213-60001KA	1	
17-18	JK81-10090A	CONNECTOR (13PIN)	ERP-300V,70213-90001LB	1	
17-19	JK81-10091A	CONNECTOR (22PIN)	ERP-300V,70213-90001QA	1	
18	JK81-10092A	RIBBON FRAME ASS'Y	ERP-300V,ECR01-181	1	
18-1	JK81-10093A	RIBBON GUIDE PLATE L	ERP-300V,18605-01030AA	1	
18-2	JK81-10094A	RIBBON GUIDE PLATE R	ERP-300V,18605-01041AA	1	
18-3	JK81-10095A	RIBBON FRAME C/ASS'Y	ERP-300V,ECR02-300	1	
18-4	JK81-10096A	RIBBON FEED L/ASS'Y	ERP-300V,ECR02-321	1	
18-5	JK81-10097A	SPRING R/FEEDING	ERP-300V,51211-02046XA	1	
52	JK81-10511D	SCREW(T/T PH 3*4)	ERP-300V,50032-30049EA	2	
48	JK81-10511L	E-RING(PE 4.0)	ERP-300V,51855-04006XA	1	
19	JK81-10098A	SHAFT HEAD GUIDE	ERP-300V,18634-00030FA	1	
20	JK81-10512M	HEAD CARRIAGE ASSY	ERP-300V,ECR02-370	1	
21	JK81-10099A	SHAFT TRACER	ERP-300V,18634-00150EA	1	
22	JK81-10100A	SPRING CARRIAGE LOAD	ERP-300V,51298-01020AB	1	
23	JK81-10507H	HEAD COVER	ERP-300V,18604-01020AB	1	
24	JK81-10512Q	BACK COVER	ERP-300V,18604-01000AA	1	
25	JK81-10512R	SOLENOIDE STAMP ASS'Y	ERP-300V,ECR02-450	1	
26	JK81-10512S	STAMP PUSHER	ERP-300V,18618-01000AB	1	
27-1	JK81-10510M	STAMP COVER	ERP-300V,18604-01030AB	1	
27-2	JK81-10510N	PLATE STAMP SPRING	ERP-300V,18611-01000AA	1	
27-3	JK81-10101A	STAMP-CASE	ERP-300V,18615-01001AB	1	
27-4	JK73-10204A	RPR-STAMP	ERP-300V,PORUS,BLK	1	ENGLISH
27-4	JK73-10204B	RPR-STAMP	ERP-300V,PORUS,BLK	1	SPANISH
27-4	JK73-10204C	RPR-STAMP	ERP-300V,PORUS,BLK	1	
27-4	JK73-10204D	RPR-STAMP	ERP-300V,PORUS,BLK	1	RUSSIAN
27-4	JK73-10204E	RPR-STAMP	ERP-300V,PORUS,BLK	1	GERMAN
28	JK81-10512T	UPPER FRAME ASS'Y	ERP-300V,ECR01-111	1	
29	JK81-10102A	VALIDATION S/ASS'Y	ERP-300V,ECR01-421	1	
30	JK81-10512V	PAPER ROLLING ASS'Y	ERP-300V,ECR01-370	1	
30-1	JK81-10103A	GEAR PAPER ROLLING	ERP-300V,18613-01110AB	1	
30-2	JK81-10104A	PULLEY PAPER ROLLING	ERP-300V,18622-01000AB	1	
30-3	JK81-10105A	SPRING PAPER ROLLING	ERP-300V,51262-07113XA	1	
30-4	JK81-10106A	E-RING(PE 6.0)	ERP-300V,51855-06006XA	1	
31	JK81-10512W	STAMP PAPER GUIDE ASS'Y	ERP-300V,ECR02-240	1	
31-1	JK81-10107A	STAMP PAPER GUIDE	ERP-300V,18610-01020AB	1	
31-2	JK81-10108A	PLATEN PAPER GUIDE	ERP-300V,18610-01001AA	1	

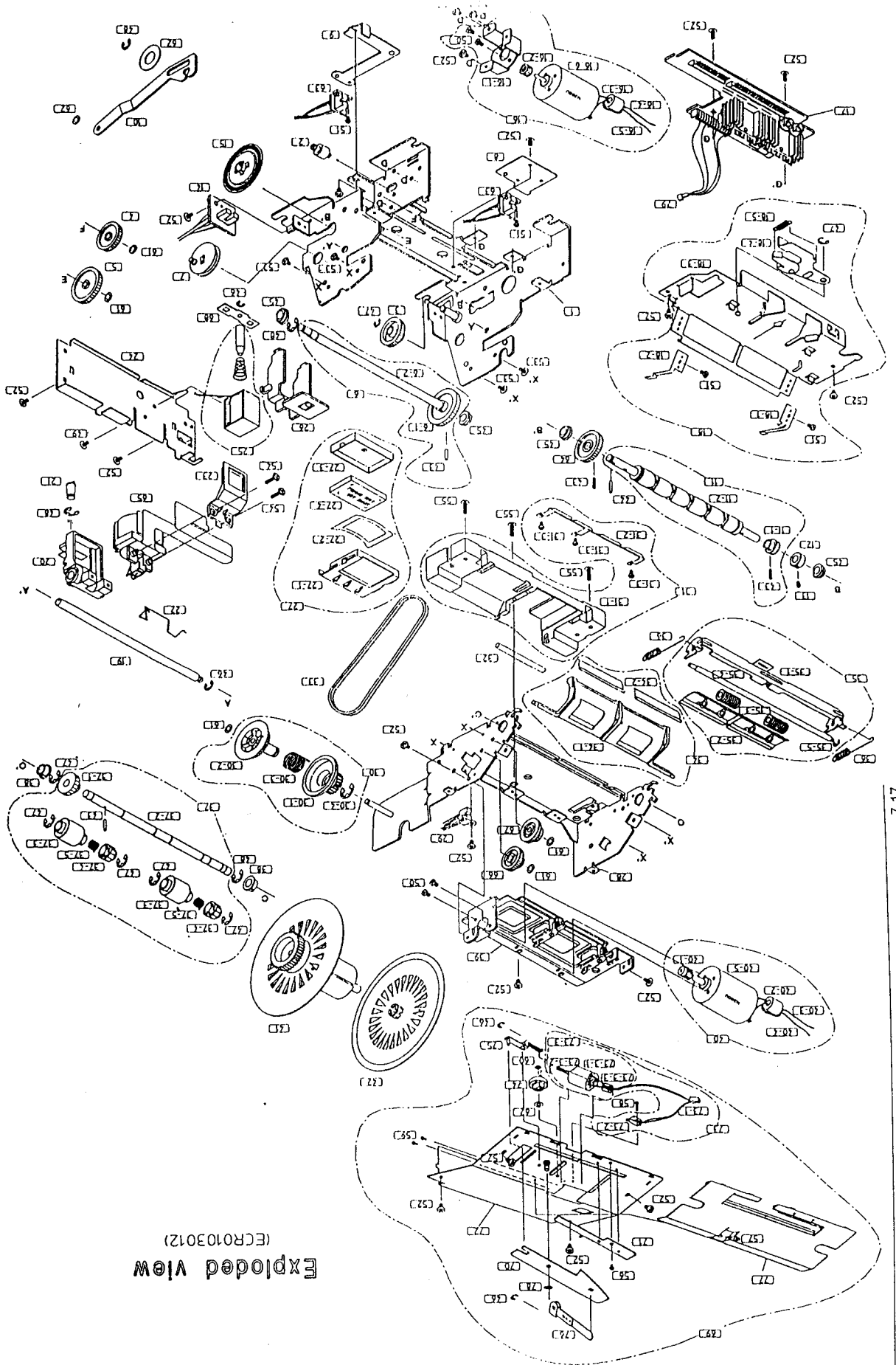
7 Exploded View and Parts List

31-3	JK81-10109A	SCREW (T/T PH 2*4)	ERP-300V, 20232-20039EB	3	
32	JK81-10110A	SHAFT PAPER ROLLER	ERP-300V, 50232-20039EB	1	
33	JK81-10509Y	TIMING BELT	ERP-300V, 51423-07122XA	1	
34	JK81-10512Y	PAPER GUIDE ASS'Y	ERP-300V, ECR01-191	1	
34-1	JK81-10111A	PAPER GUIDE	ERP-300V, 18610-01031AB	1	
34-2	JK81-10112A	GUIDE	ERP-300V, 18610-01010AA	2	
35	JK81-10512Z	RELEASE LEVER ASS'Y	ERP-300V, ECR01-151	1	
35-1	JK81-10113A	RELEASE LEVER	ERP-300V, 18607-01030AA	1	
35-2	JK81-10114A	PAPER HOLD ROLLER/P	ERP-300V, 18605-01060AA	1	
35-3	JK81-10115A	PAPER HOLDE ROLLER	ERP-300V, 18620-01000AB	2	
35-4	JK81-10116A	SHAFT HOLD ROLLER	ERP-300V, 18634-00130EA	1	
35-5	JK81-10117A	E-RING (RE2.5)	ERP-300V, 51855-02504XA	1	
36	JK81-10521R	SPRING RELEASE	ERP-300V, 51222-06053XA	2	
37	JK81-10118A	PAPER FEED S/ASS'Y	ERP-300V, ECR01-331	1	
37-1	JK81-10119A	GEAR PAPER FEED	ERP-300V, 18613-01100AB	1	
37-2	JK81-10120A	SHAFT PAPER FEED	ERP-300V, 18634-00120EA	1	
37-3	JK81-10121A	PAPER FEED R/ASS'Y	ERP-300V, ECR02-432	2	
37-4	JK81-10122A	RATCHET	ERP-300V, 18616-01000AB	2	
37-5	JK81-10123A	CLUTCH SPRING	ERP-300V, 51260-07064XA	2	
38	JK81-10510T	POLY BEARING		2	
44	JK81-10513G	SP(PI 2*10)	ERP-300V, 52062-01000QA	1	
48	JK81-10511L	E-RING(PE 4.0)	ERP-300V, 51855-04066XA	4	
39	JK81-10513B	MOTOR FEEDING BRACKET ASS'Y	ERP-300V, ECR01-300	1	
40	JK81-10124A	PAPER MOTOR ASS'Y	ERP-300V, ECR01-351	1	
40-1	JK81-10125A	GEAR FEED MOTOR	ERP-300V, 18613-01071AB	1	
40-2	JK81-10067A	CORE	ERP-300V, 71432-05004FA	1	
40-3	JK81-10126A	WIRE (L340, BLU)	ERP-300V, 70692-34003DA	1	
40-4	JK81-10127A	WIRE (L340, RED)	ERP-300V, 70692-34003RA	1	
40-5	JK81-10070A	MOTOR (M200)	ERP-300V, 71615-24001BA	1	
41	JK81-10513D	COVER ASS'Y	ERP-300V, ECR01-161	1	
42	JK81-10513E	SPOOL ASS'Y	ERP-300V, ECR01-181	1	
43	JK81-10513F	DISK	ERP-300V, 18628-01000AB	1	
44	JK81-10513G	SP(PI 2*10)	ERP-300V, 52062-01000QA	1	
45	JK81-10511Q	PARALLEL PIN(02*10)	ERP-300V, 52015-01000XA	1	
46	JK81-10510R	OILLESS METAL 1	ERP-300V, 51601-06000AA	4	
47	JK81-10511K	E-RING (RE3.0)	ERP-300V, 51855-03006XA	2	
48	JK81-10511L	E-RING (PE4.0)	ERP-300V, 51855-04006XA	2	
49	JK81-10511M	E-RING (PE5.0)	ERP-300V, 51855-05006XA	4	
50	JK81-10128A	SCREW (PH 3*3)	ERP-300V, 50032-30031EA	1	
51	JK81-10513H	SCREW(PS 2.6*4)	ERP-300V, 50032-26041EA	2	
52	JK81-10511D	SCREW(T/T PH 3*4)	ERP-300V, 50032-30049EA	2	
53	JK81-10513J	SCREW(T/T BH 3*5)	ERP-300V, 50032-30059EA	20	
54	JK81-10513K	SCREW(CP 3*6)	ERP-300V, 50032-30061EC	4	
55	JK81-10513L	SCREW(T/T PH 3*10)	ERP-300V, 50032-30104EA	2	

7 Exploded View and Parts List

56	JK81-10129A	SCREW (PH 3*18)	ERP-300V,50032-30181EA	3	
57	JK81-10511F	PSW(P13*6*0.5)	ERP-300V,51001-03605XA	6	
58	JK81-10511H	PW(P15*10*1.0)	ERP-300V,51002-05010EB	1	
59	JK81-10130A	PHOTO SENSOR,SG-23FH	ERP-300V,64850-05003MA	2	
60	JK81-10286G	GEAR HEAD FEEDING	ERP-300V,18613-01030AB	1	
61	JK81-10038A	9 PIN HEAD	ERP-300V,S09-15E	1	
62	JK81-10286H	GEAR FEED IDLE 1	ERP-300V,18613-01080AB	1	
63	JK81-10286J	GEAR FEED IDLE 2	ERP-300V,18613-01090AB	1	
64	JK81-10521E	STAMP SPRING	ERP-300V,18611-01010AA	1	

7-5 Printer Exploded View



Exploded View
(ECR0103012)

7-5 Drawer Assembly

7-5-1 Bill & Coin Assembly

Lo.No	Code No	Description	Specification	Q'ty	Remarks
A1	JK72-40267A	PMO-LEVER PRESS	DRAWER-A,POM,BLK	4,5	4B,5B
A2	6107-000134	SPRING-ES	PI0.65,D4.35,L31.7	5	
A3	JK70-10314A	IPR-HOLDER LEVER	DRAWER-A,SPCC,T1.2	4,5	4B,5B
A4	6001-000131	SCREW-MACHINE	BH,+,M3,L6	3	
A5	6002-000153	SCREW-TAPPING	PH,+,2,M3,L6	5	
A6	JK70-10304A	IPR-PLATE HOLDER	SBHG-1,T1.2	1	
A7	JK72-40269A	PMO-PANEL PARTITION	HIPS,HB,BLK	3,4	4B,5B
A8	JK72-40291A	PMO-BILL/COIN TILL	ERD-A54,HIPS,HB,BLK	1	4B8C
	JK72-40268A	PMO-BILL/COIN TILL	ERD-A55,HIPS,HB,BLK	1	5B5C

7-5-2 Till Tray Assembly

Lo.No	Code No	Description	Specification	Q'ty	Remarks
B1	JK75-10389A	MEC-LOCK	DRAWER	1	
B2	JK70-10334A	IPR-PANEL FRONT	SPCC,T1.0,IVR	1	NON-KEY
	JK70-10334B	PANEL-FRONT/KEY	SPCC,T1.0,IVR	1	KEY
B3	JK97-00326A	MEC-ETC SUB TRAY	ASSY	1	
B4	JK73-10203A	RPR-TENSION	SPONGE,BLK,W36XL11	2	
	JK74-40901A	MCT-SPONGE"A"	EVA SPONGE,UNIER.	2	
B5	JK75-10386A	MEC-ROLLER	DRAWER,DR-19-B1	2	
B6	JK70-10323A	IPR-PLATE CLIP	SUS 304, T 0.05	1	
B7	JK70-10324A	IPR-SUPPORT TRAY	SBHG-1,T1.2	1	
B8	6001-000354	SCREW-MACHINE	FH,+,M4,L8	2	
B9	6004-000124	RING-E	ID3,OD7	1	
B10	JK70-40302A	IPR-SHAFT PIN	SUM 24L, Zn	1	

7-5-3 Drawer Housing Assembly

Lo.No	Code No	Description	Specification	Q'ty	Remarks
C1	JK97-00195A	MEC-SUB HOUSING	ASSY	1	STD
	JK97-00196A	MEC-SUB HOUSING	ASSY	1	IVORY
	JK97-00199A	MEC-SUB HOUSING	ASSY	1	BLUE
C2	JK75-10386A	MEC-ROLLER	DRAWER,DR-19-B1	2	

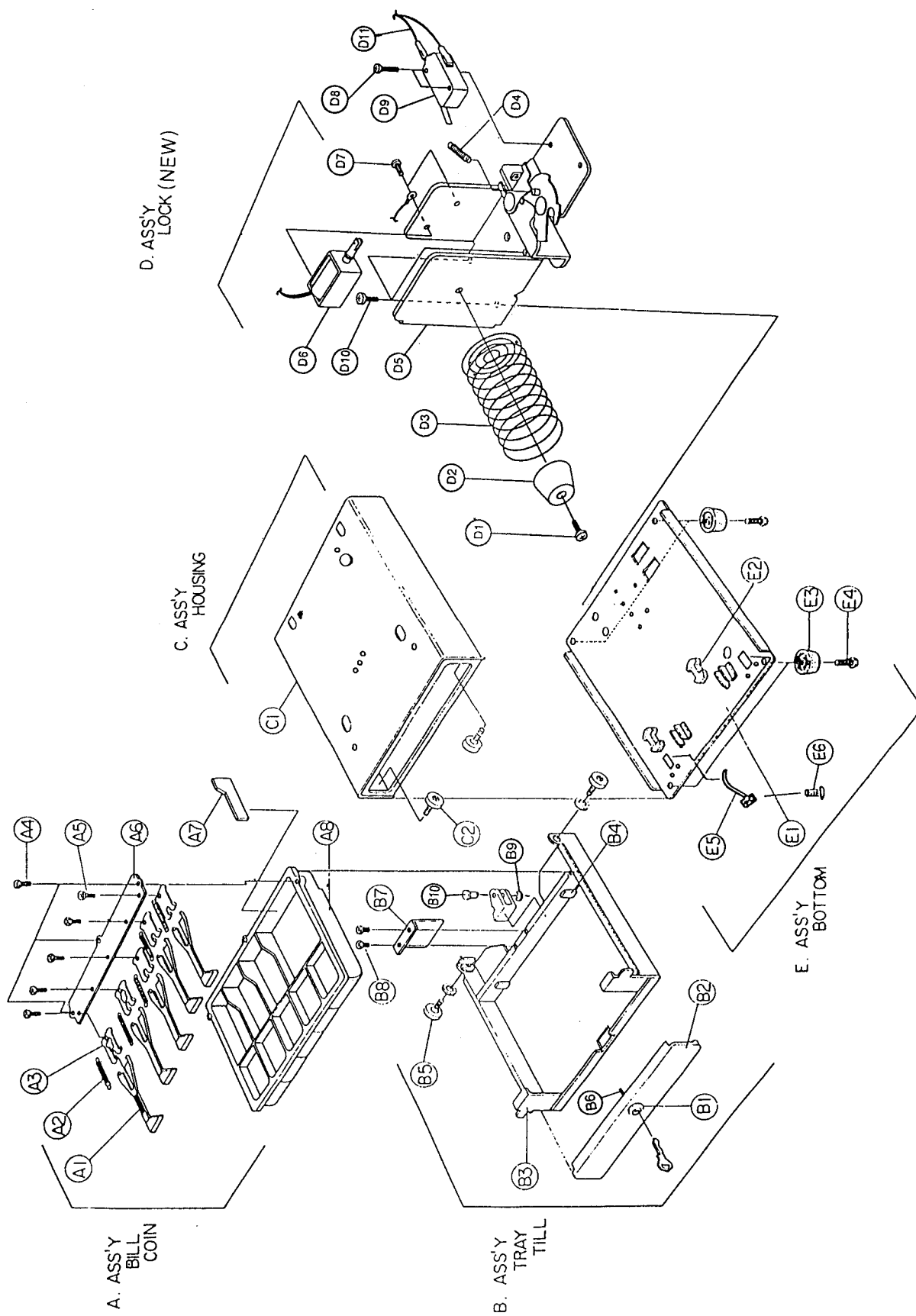
7-5-4 Drawer Lock Assembly

Lo.No	Code No	Description	Specification	Q'ty	Remarks
D	JK81-11039A	ASSY-LOCK UNIT	LEV(S), COM(Y)	1	
	JK81-11059A	ASSY-LOCK UNIT	LEV(S), COM(N)	1	
	JK81-11060A	ASSY-LOCK UNIT	STD,LEV(L), COM(Y)	1	
	JK81-11061A	ASSY-LOCK UNIT	STD,LEV(L), COM(N)	1	
D1	6001-000702	SCREW-MACHINE	TH,+,M4,L15	1	
D2	JK73-20210A	REX-BUMPER	DRAWER,NR,BLK	1	
D3	JK61-70100A	SPRING-PUSH	FZN,BLK	1	
D4	6107-000126	SPRING-ES	PI0.35,D2.84,L11.3	1	
D5	JK81-11063A	AS-SUB LOCK	ASSY	1	
D6	JK33-10500A	SOLENOID-DC	KSD-2013-S(200)	1	
D7	6001-000131	SCREW-MACHINE	BH,+,M3,L6	2	
D8	6001-000525	SCREW-MACHINE	PH,+,M3,L14	2	
D9	3405-001013	SWITCH-MICRO	125V,5A,60gf	1	
D10	6002-000161	SCREW-TAPPING	PH,+,M4,L8	3	
D11	JK39-40301R	CBF-HARNESS	2P,150MM,BRN	1	

7-5-5 Drawer Bottom Assembly

Lo.No	Code No	Description	Specification	Q'ty	Remarks
E1	JK70-10333A	PLATE-BOTTOM	SBHG-1,T=1.0	1	
E2	JK73-20207A	REX-PAD DRAWER	NR,BLK	2	
	JK73-10902A	RMO-STOPPER	NR,IVORY,UNIVERSAL	2	
E3	JK61-40200A	FOOT	NR,BLK,80HB	4	
E4	6001-000702	SCREW-TAPPING	TH,+,2S,M4,L16	4	
E5	JK70-10401A	IPR-PLATE SPRING/D	SUS 304, T=0.3	2	
E6	6002-000153	SCREW-TAPPING	PH,2,M3,L6	2	

7-5-6 Drawer Disassembly Diagram



8 Electrical Parts List

8-1 Main PCB (c.f. 10-1 Main PCB diagram)

Code No	Specification	EA	Location
JK92-01054A	ASSY PCB ER-5100(EUROPE)	1	BASIC
JK92-01054B			CLK/KEY
JK92-01054C	ASSY PCB ER-5100(USA)		BASIC
JK92-01054D			CLK/KEY
JK92-01055A	ASSY PCB ER-5115(EUROPE)		BASIC
JK92-01055B			CLK/KEY
JK92-01055C	ASSY PCB ER-5115(USA)		BASIC
JK92-01055D			CLK/KEY
JK92-01056A	ASSY PCB ER-5140(EUROPE)		BASIC
JK92-01056B			CLK/KEY
JK92-01056C	ASSY PCB ER-5140(USA)		BASIC
JK92-01056D			CLK/KEY
JK92-01057A	ASSY PCB ER-5140F(EUROPE)		BASIC
JK92-01057B			CLK/KEY
JK92-01057C	ASSY PCB ER-5140F(USA)		BASIC
JK92-01057D			CLK/KEY
JK92-01070A	ASSY PCB ER-5100F(EUROPE)		BASIC
JK92-01070B			CLK/KEY
JK92-01070C	ASSY PCB ER-5100F(USA)		BASIC
JK92-01070D			CLK/KEY
JK92-01071A	ASSY PCB ER-5115F(EUROPE)		BASIC
JK92-01071B			CLK/KEY
JK92-01071C	ASSY PCB ER-5115F(USA)		BASIC
JK92-01071D			CLK/KEY
JK92-01064A	ASSY PCB ER5140FI		BASIC
0402-000168	DIODE-RECTIFIER;1N5822,40V,3A,	1	D2
0402-000208	DIODE-RECTIFIER;EK-04,40V,1.5A	1	D15
0402-000287	DIODE-BRIDGE;GBL01,100V,3A,SIP	1	BD1
0403-000395	DIODE-ZENER;UZP6.2B,5.8-6.6V,1	1	ZD3
0502-000238	TR-POWER;KSA473-Y,PNP,-10W,TO-	1	Q14
0506-001019	TR-ARRAY;STA471A,NPN,4,4W,SIP-	4	TA1,TA2,TA3,TA4
0801-000522	IC-CMOS LOGIC;74HCT541,BUFFER/	1	IC12(CLERK KEY)
0801-000967	IC-CMOS LOGIC;74HCT138,3-TO-8	2	IC10,IC11
0904-001230	IC-PERIPHERAL;82C55.8BIT,DIP,4	1	IC13
1102-000109	IC-EPROM;27C010,128Kx8BIT,DIP,	1	IC5
1102-000135	IC-EPROM;27C020,256Kx8BIT,DIP,	1	IC5(ER-5140 FI)
1106-000316	IC-SRAM;628128,128Kx8BIT,DIP,3	1	IC6
1203-000442	IC-POS.FIXED REG.;7812,TO-220	1	Q13
2011-000290	R-NETWORK;1Kohm,5%,1/8W,A,SIP,	1	RA1
2011-000539	R-NETWORK;4.7Kohm,5%,1/8W,A,SI	1	RA2(CLERK KEY)
2011-000539	R-NETWORK;4.7Kohm,5%,1/8W,A,SI	1	RA3
2201-000013	C-CERAMIC.DISC;470pF,10%,50V,Y	1	CC13

8 Electrical Parts List

Code No	Specification	EA	Location
2201-000021	C-CERAMIC.DISC;100nF,+80-20%,5	3	104
2401-000031	C-AL;47uF,20%,16V,GP,TP,5x11,5	2	R34 R37 BOTH END
2401-000033	C-AL;100uF,20%,100V,GP,TP,12.5	1	CE2
2401-000033	C-AL;100uF,20%,100V,GP,TP,12.5	1	CE3
2401-001312	C-AL;4700uF,20%,50V,GP,BK,22x4	1	CE1
2503-000106	C-NETWORK;100pFx8,10%,--,--	4	CA5 CA4 CA3 CA1
2801-003376	CRYSTAL-UNIT;0.032768MHz,20ppm	1	X2
3002-001027	BUZZER-PIEZO;85dB,1.5V,24mA,2.	1	BUZZER
3601-000261	FUSE-FERRULE;250V,3.15A,TL,GLA	1	FUSE-FERRULE
3701-000232	CONNECTOR-DSUB;9P,2R,FEMALE,AN	1	CN18
3704-000256	SOCKET-IC;32P,DIP,SN,2.54mm	1	IC-SOCKET 32P(IC5)
3708-000147	CONNECTOR-FPC/FC/PIC;12P,2.54m	1	CN15
3708-000327	CONNECTOR-FPC/FC/PIC;8P,2.54mm	1	CN16
3710-000111	CONNECTOR-SHUNT;2P,1R,2.54mm,--	1	CN21
3711-000041	CONNECTOR-HEADER;BOX,8P,1R,2.5	1	CN6(RED)
3711-000183	CONNECTOR-HEADER;1WALL,2P,1R,3	2	CN4 CN5
3711-000247	CONNECTOR-HEADER;1WALL,4P,1R,3	1	CN1
3711-000817	CONNECTOR-HEADER;BOX,2P,1R,2.5	2	CN11 CN12(P/SENSOR)
3711-000817	CONNECTOR-HEADER;BOX,2P,1R,2.5	2	CN2 CN3
3711-001011	CONNECTOR-HEADER;BOX,5P,1R,2.5	1	CN14(CLERK KEY)
3711-001133	CONNECTOR-HEADER;BOX,8P,1R,2.5	1	CN17(WHT)
3711-001475	CONNECTOR-HEADER;NOWALL,3P,1R,	2	CN25 CN21(ALL CLEAR)
3711-001962	CONNECTOR-HEADER;NOWALL,30P,2R	1	CN13
4302-000126	BATTERY-NICD(2ND);3.6V(1.2Vx3)	1	
JC68-10564A	LABEL(P)-PROTECTOR;SLB-3108H,A	1	EPROM LABEL
JK13-10050A	IC ASIC--;ER-5200,SCR60K,QFP,10	1	IC4(ASIC SCR60K)
JK27-60100D	COIL FILTER--;ER-350,140 UH,--,--	1	COIL
JK39-40301W	CBF-HARNESS;ER-2610,--,UL1015,1	1	GND1(NO CORE)
JK39-40306C	CBF-HARNESS;ER-4615FP,--,UL1007	1	CN7,CN8
JK39-40306D	CBF-HARNESS;ER-4615FP,--,UL1007	1	CN9
JK39-40511A	CBF-HARNESS;ER-5100/46XX,--,UL1	1	GND2(CORE)
JK39-40550A	CBF-HARNESS-JUMPER;ER-350F,WIR	1	SOLER SIDE(IC5 30P/IC4 88P)
JK68-10232A	LABEL(P)-BATTERY;ER-4915(CRS),	1	BATTERY WARNING
JK73-10207A	RPR-PAD;ER-220N,SPONGE,--,BLK,--	1	
JK97-00181A	MEA-HEAT SINK	1	
0205-000003	OIL-SILICON;G746,--	0.001	
0502-000234	TR-POWER;KSA1010Y,PNP,40W,TO-2	1	
0502-000395	TR-POWER;--,NPN,30W,TO-220,--,12	1	
6002-000175	SCREW-TAPPING;PWH,+,2,M3,L8,ZP	2	KSD73
6203-000107	HEAT SINK;NONE,T2,W17,L22,H45,	2	KSD73

8-2 Main Auto

Code No	Specification	EA	Location
JK94-01065A	PRA MAN-AUTO	1	
0401-000005	DIODE-SWITCHING;1N4148,75V,300	22	D1 D16~35 D101
0402-000129	DIODE-RECTIFIER;1N4003,200V,1A	7	D3,5~9,14
0402-000208	DIODE-RECTIFIER;EK-04,40V,1.5A	6	D10~D13 D36 D100
0403-000343	DIODE-ZENER;UZ3.9B,3.7~4.1V,50	1	ZD2
0403-000537	DIODE-ZENER;1N4749A,5%,1W,DO-4	1	ZD1
0501-000399	TR-SMALL SIGNAL;KSC945-G,NPN,2	11	Q1/4~6/9~12/15~17
0801-000967	IC-CMOS LOGIC;74HCT138,3-TO-8	1	IC9
0909-000111	IC-REAL TIME CLOCK;5C15,4BIT,D	1	IC8
1006-000137	IC-DRIVER/RECEIVER;232,DIP,16P	1	IC14
1202-000103	IC-VOLTAGE COMP.;393,DIP,8P,30	1	IC2
1203-000391	IC-DC/DC CONVERTER;34063,DIP,8	1	IC1
1206-000139	IC-TIMER;NE555CN,DIP,8P,250MIL	1	IC3
2001-000027	R-CARBON;100ohm,5%,1/4W,AA,TP,	3	R58~60
2001-000034	R-CARBON;220ohm,5%,1/4W,AA,TP,	4	R48,51,53,76
2001-000036	R-CARBON;330ohm,5%,1/4W,AA,TP,	1	R82
2001-000042	R-CARBON;1Kohm,5%,1/4W,AA,TP,2	13	R4/11/13/20/38~43/67/80/81
2001-000045	R-CARBON;1.8Kohm,5%,1/4W,AA,TP	1	R79
2001-000047	R-CARBON;2.2Kohm,5%,1/4W,AA,TP	4	R35/R36R61/87
2001-000055	R-CARBON;4.7Kohm,5%,1/4W,AA,TP	9	R44~46/54/62~65/68
2001-000055	R-CARBON;4.7Kohm,5%,1/4W,AA,TP	6	R9/16~17/22/34/37
2001-000055	R-CARBON;4.7Kohm,5%,1/4W,AA,TP	8	R1/24/31/93~97
2001-000055	R-CARBON;4.7Kohm,5%,1/4W,AA,TP	7	R70/89~92/98/99
2001-000055	R-CARBON;4.7Kohm,5%,1/4W,AA,TP	1	R73(ER-5140 FI)
2001-000060	R-CARBON;6.8Kohm,5%,1/4W,AA,TP	2	R21/77
2001-000060	R-CARBON;6.8Kohm,5%,1/4W,AA,TP	1	R200(ER-5140 FI)
2001-000065	R-CARBON;10Kohm,5%,1/4W,AA,TP,	9	R8/25~28/47/49/56/30
2001-000065	R-CARBON;10Kohm,5%,1/4W,AA,TP,	8	R69/71~75/86/88
2001-000073	R-CARBON;33Kohm,5%,1/4W,AA,TP,	1	R18
2001-000076	R-CARBON;47Kohm,5%,1/4W,AA,TP,	3	R5/R50/52
2001-000081	R-CARBON;68Kohm,5%,1/4W,AA,TP,	3	R10/23/100
2001-000113	R-CARBON;18Kohm,5%,1/4W,AA,TP,	1	R19
2001-000855	R-CARBON;560ohm,5%,1/4W,AA,TP,	3	R3/55/57
2001-000876	R-CARBON;6.2Kohm,5%,1/4W,AA,TP	2	R14/R15
2001-000915	R-CARBON;680Kohm,5%,1/4W,AA,TP	1	R12
2004-000284	R-METAL;12Kohm,1%,1/4W,AA,TP,2	1	R7
2004-000825	R-METAL;36Kohm,1%,1/4W,AB,TP,2	2	R6/R78
2005-000210	R-WIRE WOUND;0.33ohm,5%,1W,AC,	1	R2
2201-000013	C-CERAMIC.DISC;470pF,10%,50V,Y	7	CC3/11/15/16/52/62/63

8 Electrical Parts List

Code No	Specification	EA	Location
2201-000021	C-CERAMIC,DISC;100nF,+80-20%,5	10	CC2,4,6,8~10,19~20,22,100
2201-000021	C-CERAMIC,DISC;100nF,+80-20%,5	5	CC66/67/68/69/64
2201-000021	C-CERAMIC,DISC;100nF,+80-20%,5	5	CC37,38,40,12,50
2201-000021	C-CERAMIC,DISC;100nF,+80-20%,5	5	CC25,26,28~30
2201-000021	C-CERAMIC,DISC;100nF,+80-20%,5	5	CC43~47
2201-000138	C-CERAMIC,DISC;100pF,10%,50V,Y	10	CC51,53~61
2201-000138	C-CERAMIC,DISC;100pF,10%,50V,Y	10	CC27,31~34,41,42,48,70,77
2201-000138	C-CERAMIC,DISC;100pF,10%,50V,Y	5	CC71~75
2201-000163	C-CERAMIC,DISC;10nF,79.8,50V,Y	1	CC21
2201-000232	C-CERAMIC,DISC;150pF,10%,50V,Y	1	CC1
2201-000464	C-CERAMIC,DISC;30pF,5%,50V,SL,	2	CC35,36
2201-000776	C-CERAMIC,DISC;47nF,+80-20%,50	2	CC23/24
2202-000579	C-CERAMIC,MIC-AXIAL;100nF,+80-	2	CC17,CC18
2301-000010	C-FILM,PEF;100nF,5%,100V,TP,11	4	CM1~4
2401-000023	C-AL;1uF,20%,50V,GP,TP,5x11,5	1	CE10
2401-000025	C-AL;100uF,20%,16V,GP,TP,6.3x1	3	CE11/17/19
2401-000025	C-AL;100uF,20%,16V,GP,TP,6.3x1	1	CE9
2401-000783	C-AL;220uF,20%,10V,GP,TP,6.3x1	1	CE9(ER-5140 FI)
2401-000025	C-AL;100uF,20%,16V,GP,TP,6.3x1	3	CE20/21/23
2401-000027	C-AL;4.7uF,20%,50V,GP,TP,5x11,	3	CE7/13/14
2401-000028	C-AL;10uF,20%,50V,GP,TP,5x11,5	3	CE12/15/16
2401-000966	C-AL;22uF,20%,50V,GP,TP,5x11,5	2	CE6/22
2401-001363	C-AL;470uF,20%,16V,GP,TP,10x12	2	CE5/8
2901-000183	FILTER-EMI ON BOARD;50V,1A,-,1	3	CB1~3
3301-000299	CORE-FERRITE BEAD;AA,3.6x5.0mm	6	FB36/37/39/40/43/44
3301-000299	CORE-FERRITE BEAD;AA,3.6x5.0mm	15	FB9/21~34
3301-000299	CORE-FERRITE BEAD;AA,3.6x5.0mm	3	FB18/20/46
3301-000344	CORE-FERRITE BEAD;ZZ,3.5x6.5mm	4	FB35,41,42,45
3301-000344	CORE-FERRITE BEAD;ZZ,3.5x6.5mm	5	FB1/2/4/7/8
3301-000344	CORE-FERRITE BEAD;ZZ,3.5x6.5mm	8	FB10~17
3602-000001	FUSE-CLIP;-,-,30mohm	2	Fuse
BH39-40305U	CBF-HARNESS;52MM,,,AWG22(0.6P	72	J43~107/111~116/121
BH39-40305U	CBF-HARNESS;52MM,,,AWG22(0.6P	17	J23~27/29/30/32~41
BH39-40305U	CBF-HARNESS;52MM,,,AWG22(0.6P	18	J1~4/5~7/10~15/17~21
JK41-10528A	PCB-MAIN;ER-5100(EUROPE),FR-1,	1	MAIN PCB

8-3 Clock PCB (c.f. 10-2 Clock PCB diagram)

Code No.	Specification	EA	Location
JK94-01070A	PRA ETC-CLOCK	1	
JK41-10519A	PCB-CLOCK: ER-5100,,FR-4	1	
2007-000290	R-CHIP: 100ohm,5%,1/10W,	1	CR5
2007-000477	R-CHIP: 1Mohm,5%,1/10W,	1	CR1
2007-000493	R-CHIP: 2.2Kohm,5%,1/10W,	1	CR2
2007-000941	R-CHIP: 47Kohm,5%,1/10W,	2	CR3,CR4
2007-001155	R-CHIP: 750ohm,5%,1/10W,	1	CR6
2203-000199	C-CERAMIC CHIP:100 nF,	1	CCC5
2203-000634	C-CERAMIC CHIP:22 pF,	3	CCC1,CCC2,CCC4
2203-000953	C-CERAMIC CHIP:470 pF,	1	CCC3
3301-000325	CORE-FERRITE BEAD:AB	2	CBD1,CBD2
4701-001020	FERQ-ATTENUATOR:FS741,	1	CU1
2401-000025	C-AL:100uF,20%,16V	1	CCE1
2802-001030	Resonator:22.11MHz	1	CX1

8-4 Window PCB (c.f. 10-3 Window PCB diagram)

Code No.	Specification	EA	Location
BH39-40305U	CBF-HARNESS:, 52M,AWG	9	JP1 - JP9
JK07-10101A	DISPLAY-VFD:ECR,SVE-10MS02	1	10 DIGIT
JK39-40028A	CBF-HARNESS:8P, 400MM	1	CN1
JK41-10304N	PCB-DISPLAY:ER-5100, FR-1	1	
JK73-10207A	RPR-PAD:ER-220,SPONGE	2	
0402-000129	DIODE (REC) :1N4003	1	D1
2202-000579	C-CERAMIC,MLC-AXIAL:100 nF	2	C1,C2
3301-000133	CORE-FERRITE:AC,29.5 * 8 * 18	1	3 TURN
3711-000766	CONNECTOR-HERDER:BOX,22P	1	CN3
1003-000265	IC-DISPLAY DRIVER, SN75518	1	U1

8-5 Turret PCB (c.f. 10-4 Turret PCB diagram)

Code No.	Specification	EA	Location
JK07-10101A	DISPLAY-VFD:ECR,SVE-10MS02	1	
JK39-40002A	CBF-HARNESS:22P	1	
JK41-10003A	PCB-TURRET:ER-380, FR-1	1	
JK73-10208A	RPR-PAD:ECR,SPONGE,BLK	1	

8-6 Fiscal PCB (c.f. 10-5 Fiscal PCB diagram)**8-6-2(A) EPROM(27C010)**

Code No.	Specification	EA	Location
JK39-40501A	CBF-HARNESS(CORE);ER-5100	1	200MM
JK41-10531A	PCB-FISCAL,ER-350,FR-4,2L,T1	1	NEW PCB(TWO FACE)
0402-000208	DIODE(REC), EK-04	2	D1,D2
0403-000395	DIODE-ZENER :UZP6.2B,6.2V	1	D3
0501-000399	TR-SMALL SIGNAL :KSC945-G	1	Q1
2001-000044	R-CARBON:1.2K ohm, 1/4W	1	R4
2001-000055	R-CARBON:4.7K ohm, 1/4W	2	R1,R3
2001-000855	R-CARBON:560 ohm, 1/4W	1	R2
2011-000539	R-NETWORK;4.7Kohm,5%,1/8W	1	RA1
2201-000021	C-CERAMIC,DISC;100Nf,+80-20%	1	
1102-000109	IC-EPROM:27C010	1	

8-6-2(B) EPROM(27C512)

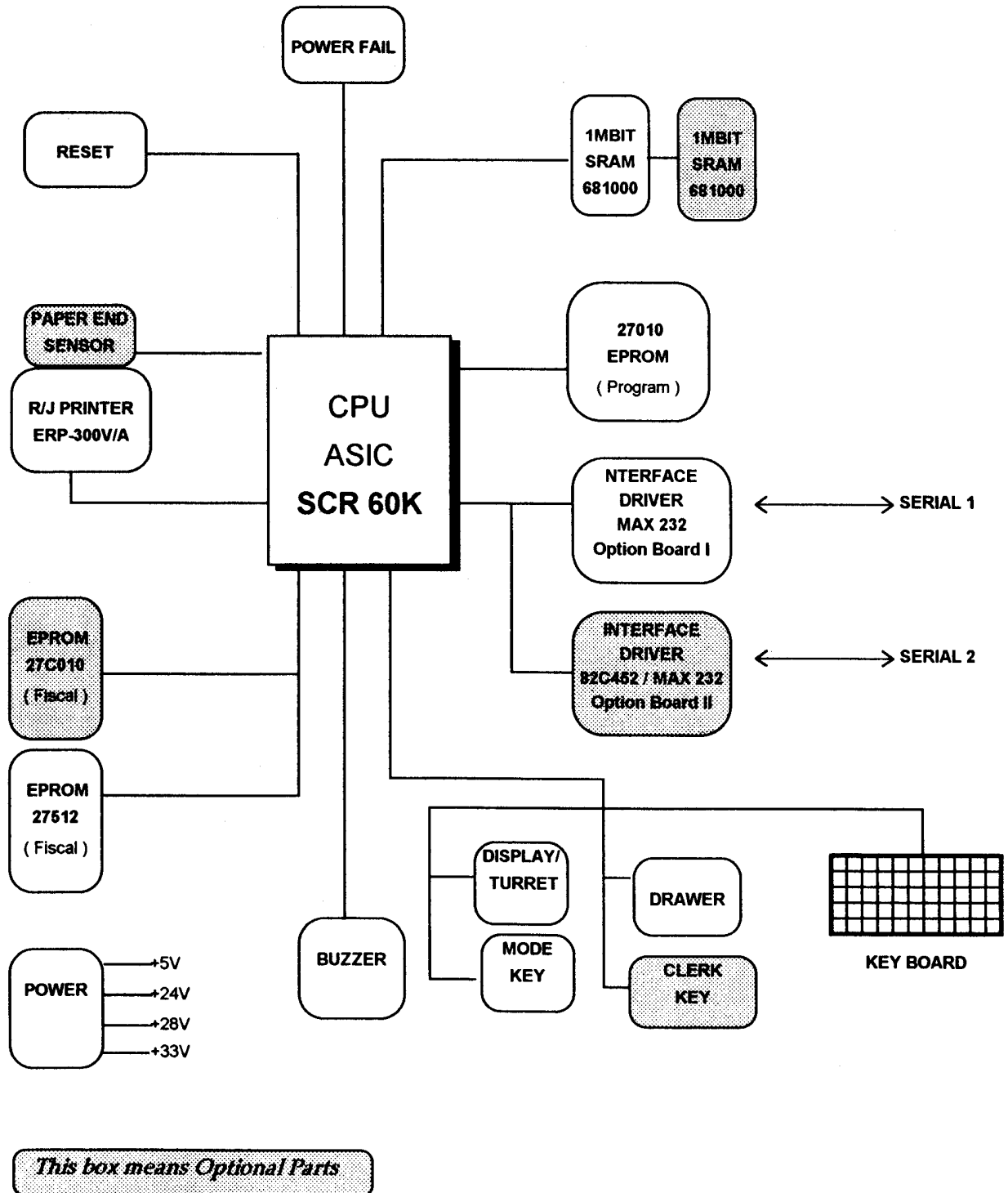
Code No.	Specification	EA	Location
JK39-40501A	CBF-HARNESS(CORE);ER-5100	1	200MM
JK41-10531A	PCB-FISCAL,ER-350,FR-4,2L,T1	1	NEW PCB(TWO FACE)
1102-000209	IC-EPROM:27C512	1	

8-7 Option Board II (c.f. 10-6 Option PCB II diagram)

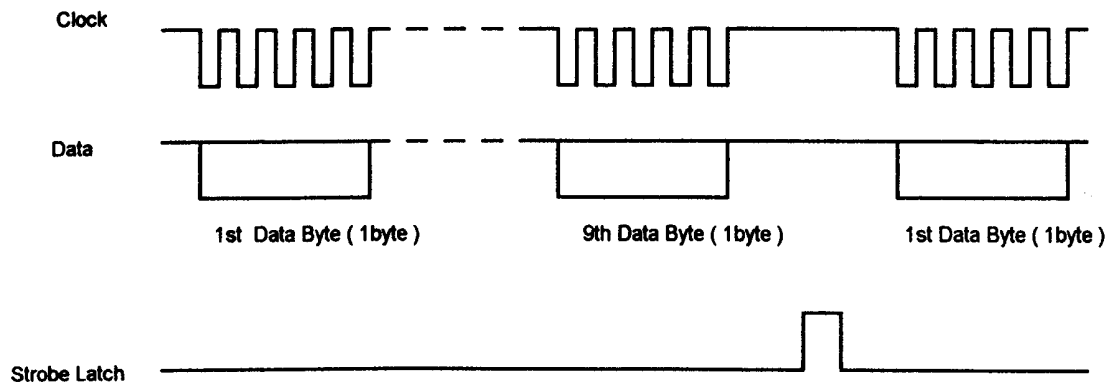
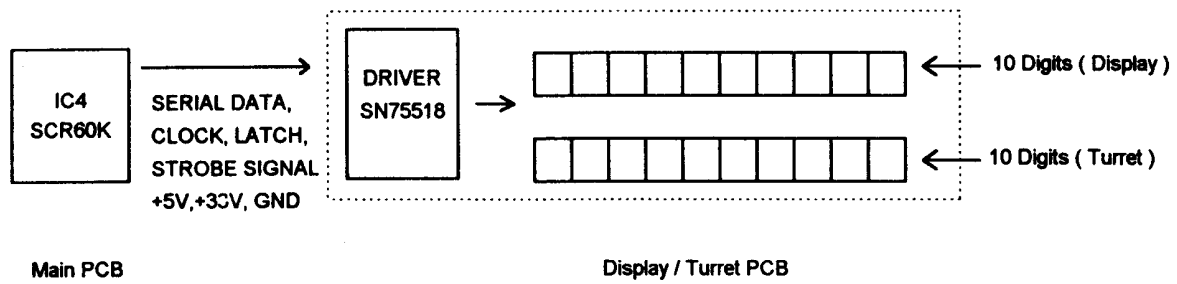
Code No.	Specification	EA	Location
JK41-10515A	PCB-OPTION,ER-5100,FR-4,T1.6	1	
0501-000399	TR-SMALL SIGNAL:KSC945,NPN	2	IQ1. 2
0904-000519	IC-PERIPHERAL,82C452A,8BIT	1	IC15
2804-000325	OSC-CLOCK,8MHz,100PPM	1	IX1
1006-000137	IC-DRIVER/RECEIVER,232,DIP,16P	2	IC14, 16
3701-000232	CONNECTOR-DSUB,9P,2R,FEMAL	2	CN18, 20
3301-000344	CORE-FERRITE BEAD: AA	8	IFB1 - 8
2201-000021	C-CERAMIC DISC: 100 nF	7	ICC3,4,7,8,9,10,11
2201-000013	C-CERAMIC DISC: 470 pF	4	ICC1,2,5,6
2201-000326	C-CERAMICDISC:2.2Nf	2	ICC12,13
2001-000065	R-CARBON:10Kohm,1/4W,AA	3	IR1, 3, 4
2001-000042	R-CARBON:1Kohm,1/4W,AA	1	IR2
2401-000028	C-AL:10 uF,20%,5V	6	ICE1 ,4, 5, 6, 9, 10
2401-000027	C-AL:4.7 uF,20%,5V	4	ICE2, 3, 7, 8
2401-000025	C-AL:100 uF,20%,5V	1	ICE11
JK39-40305X	CBF-HARNESS:150MM,22P	1	CN22
JK39-40027A	CBF-HARNESS:350MM,GYN/YE	1	CN20 SIDE
JK39-40305G	CBF-HARNESS:250MM,GYN/YE	1	CN18 SIDE
JK39-40523A	CBF-HARNESS:SRP-250,BLU/BLU	1	CN23

9 Block Diagram

9-1 Main

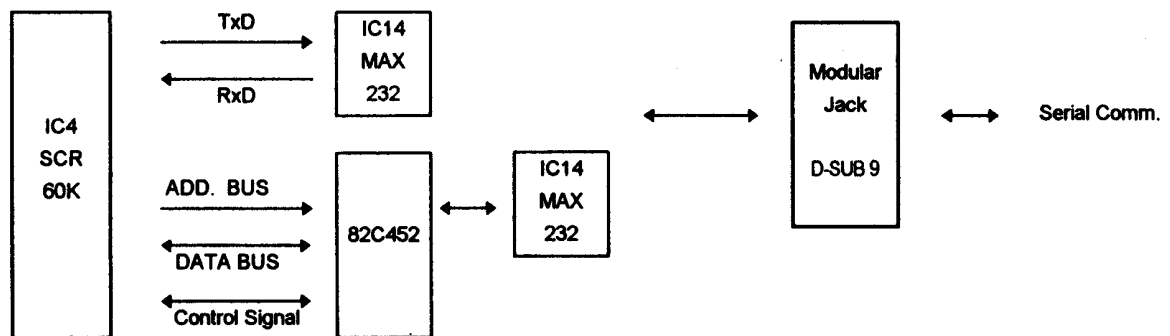


9-2 Front/Rear Display Driver

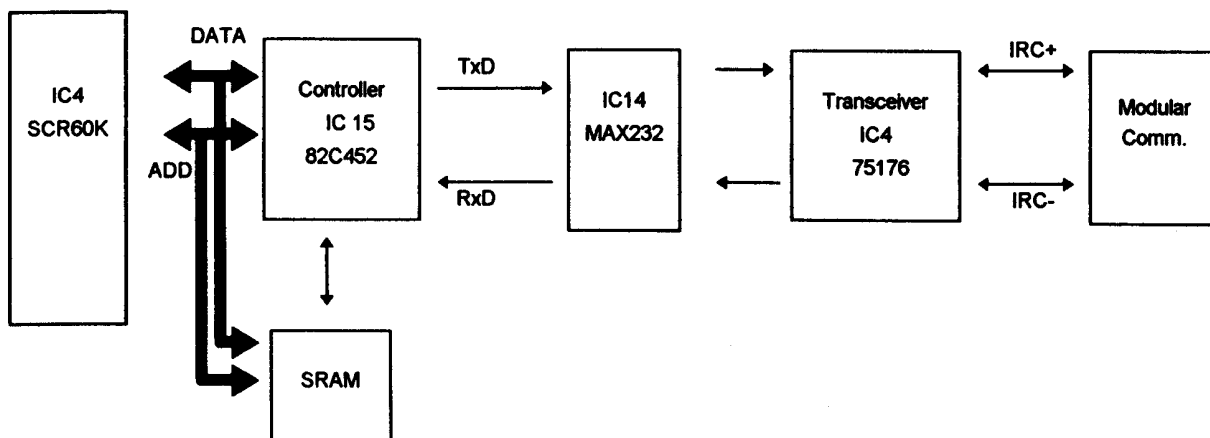


(Display Wave form Diagram)

9-3 Serial Communications (Optional Board I, II)

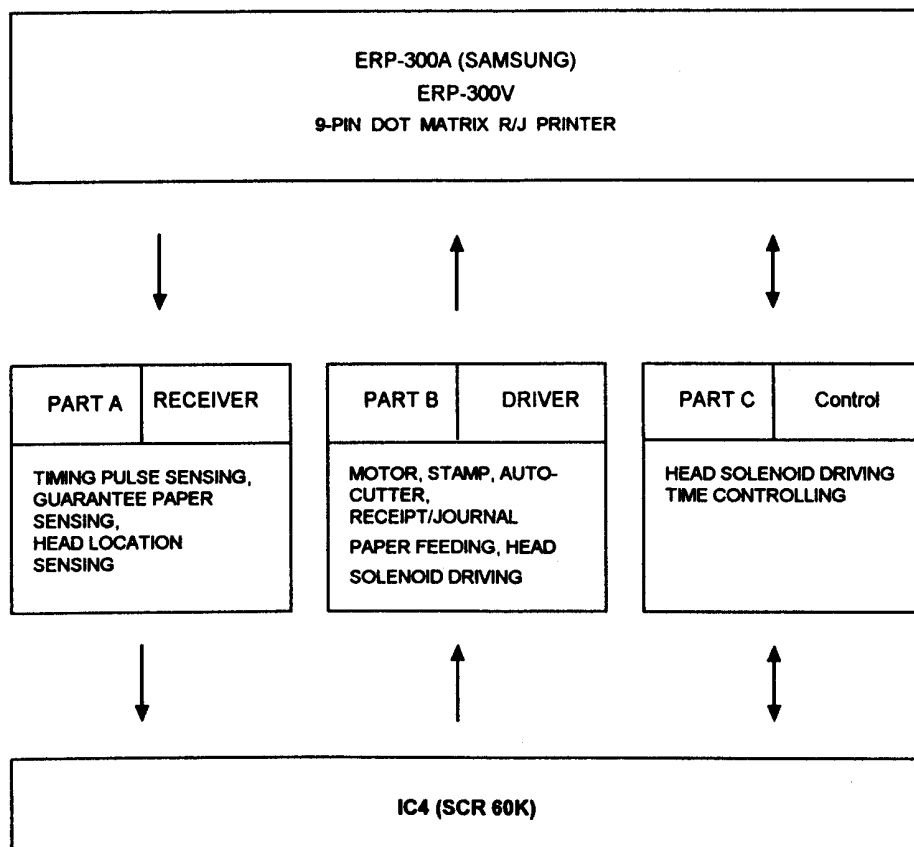


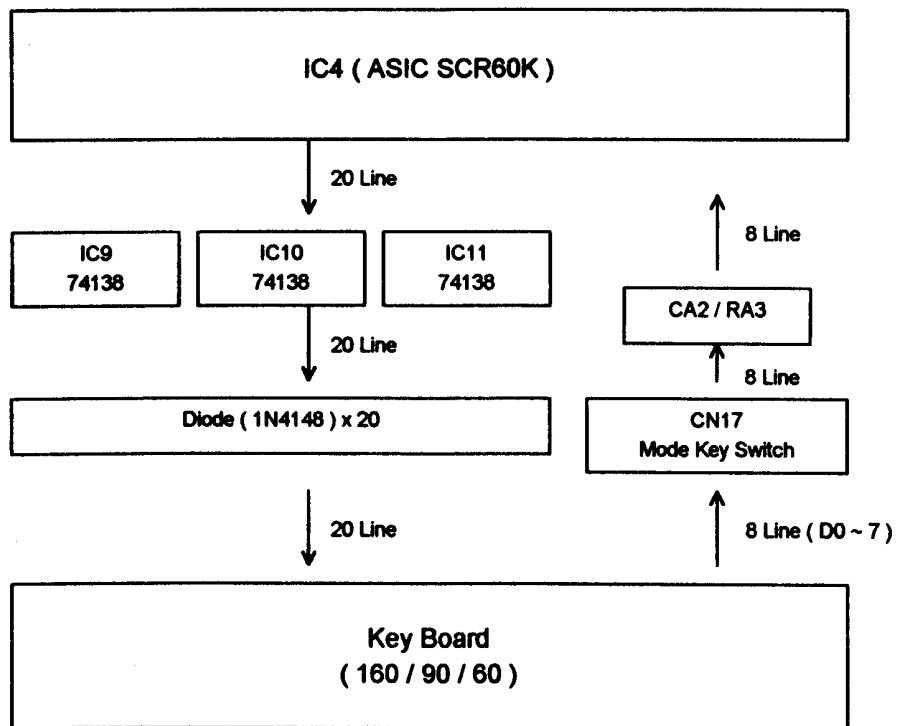
9-4 IRC Communications (Optional Board II)



9-5 Printer Driver

Note: When Head driving voltage is High, Head driving time becomes Short.
When Head driving voltage is Low, Head driving time becomes Long.



9-6 Keyboard

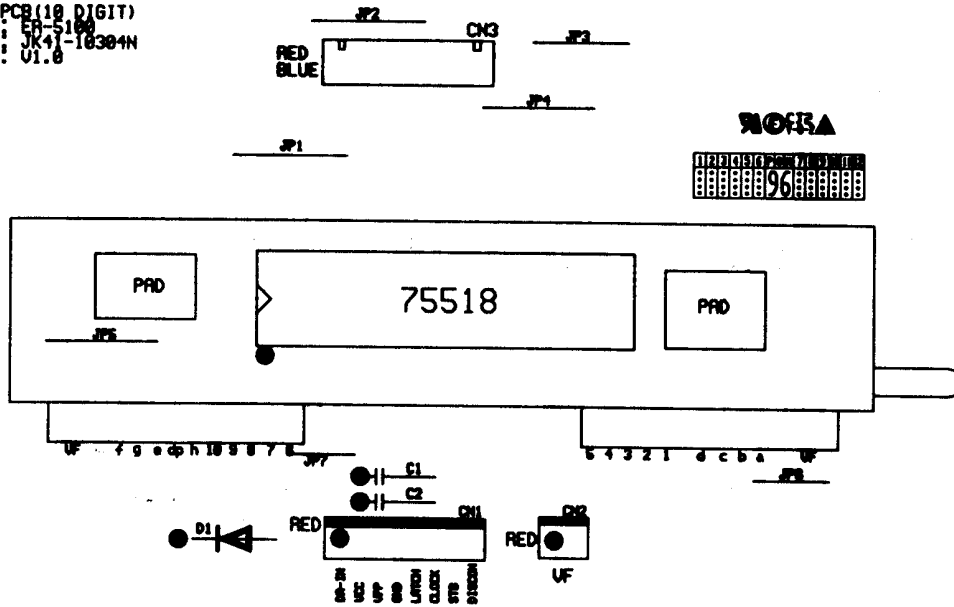
10 PCB Diagrams

10-1 Main PCB

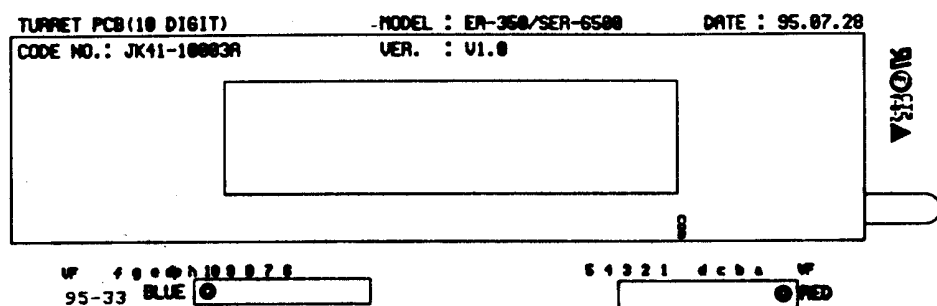


10-2 Window PCB

DISPLAY PCB(10 DIGIT)
 MODEL : 50-5180
 CASE NO. : JK41-18384N
 VER. : 01.0

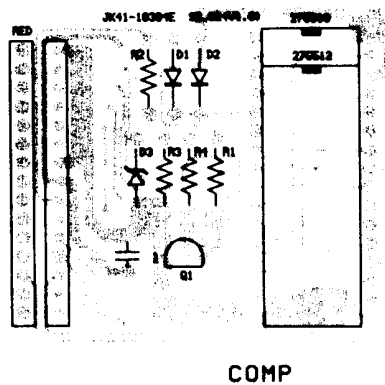


10-3 Turret PCB

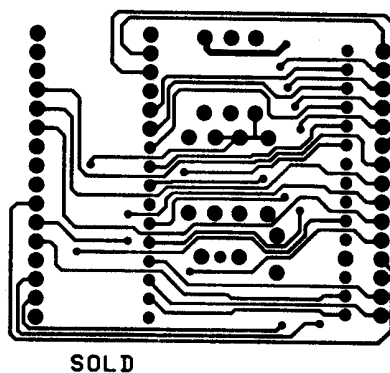


10-4 Fiscal Board

10-4-1 Top

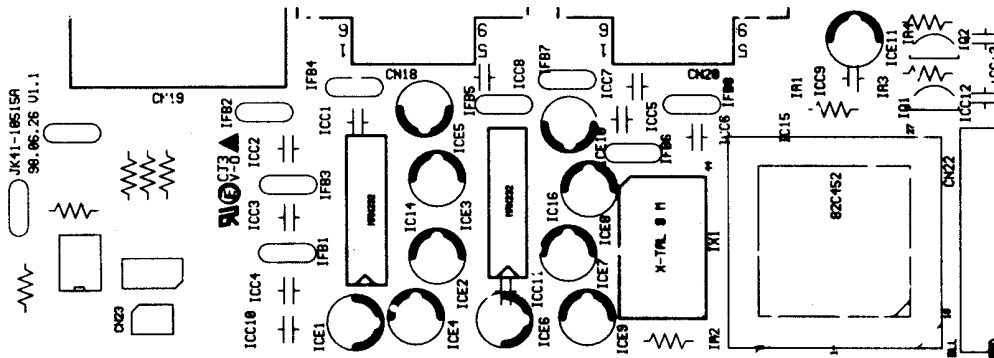


10-4-2 Bottom



10-5 Option Board

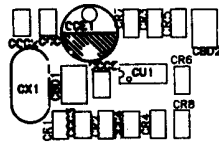
10-5-1 TOP



10-5-2 Bottom

10-6 Clock Board

10-6-1 TOP



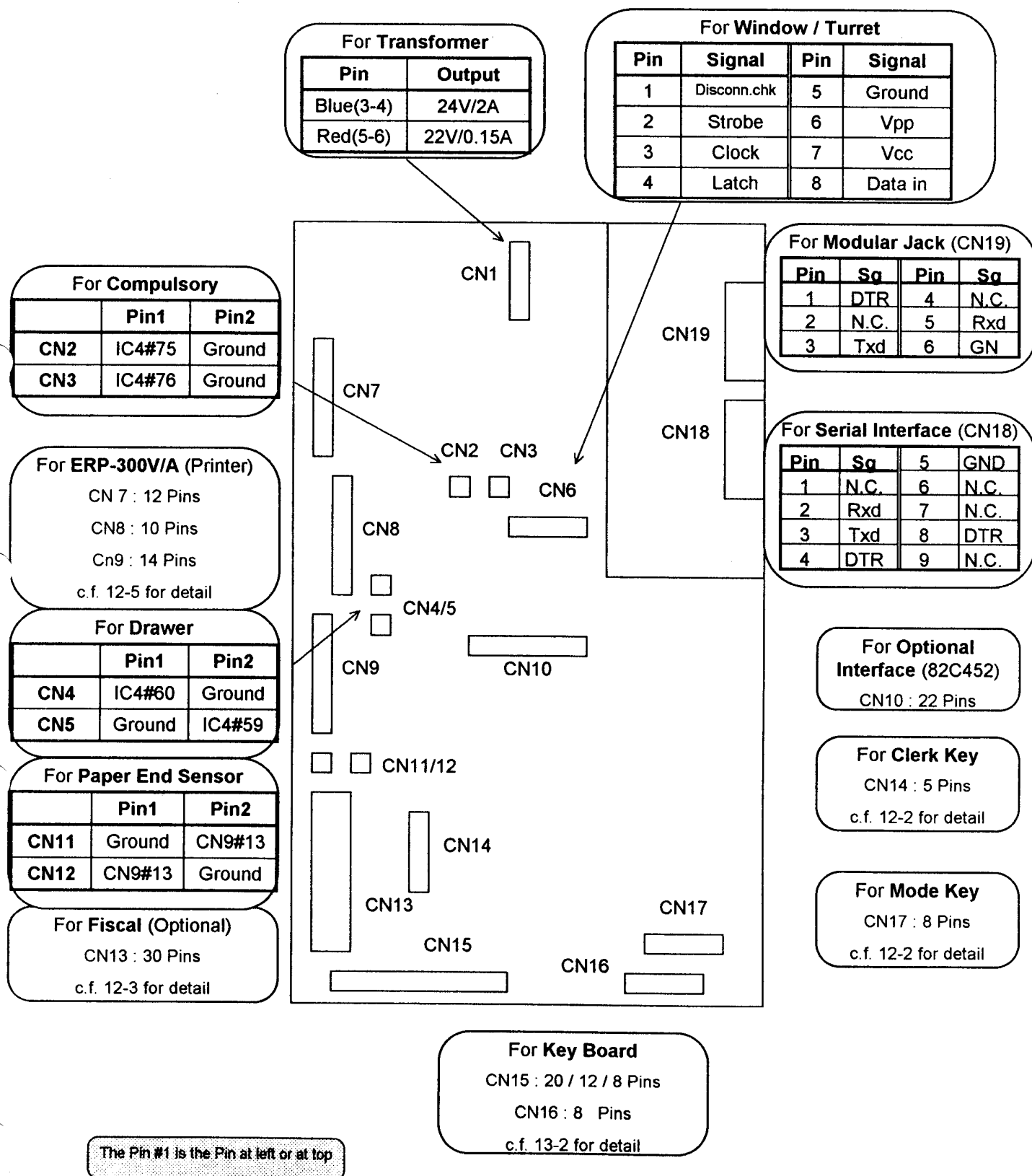
10-6-2 Bottom



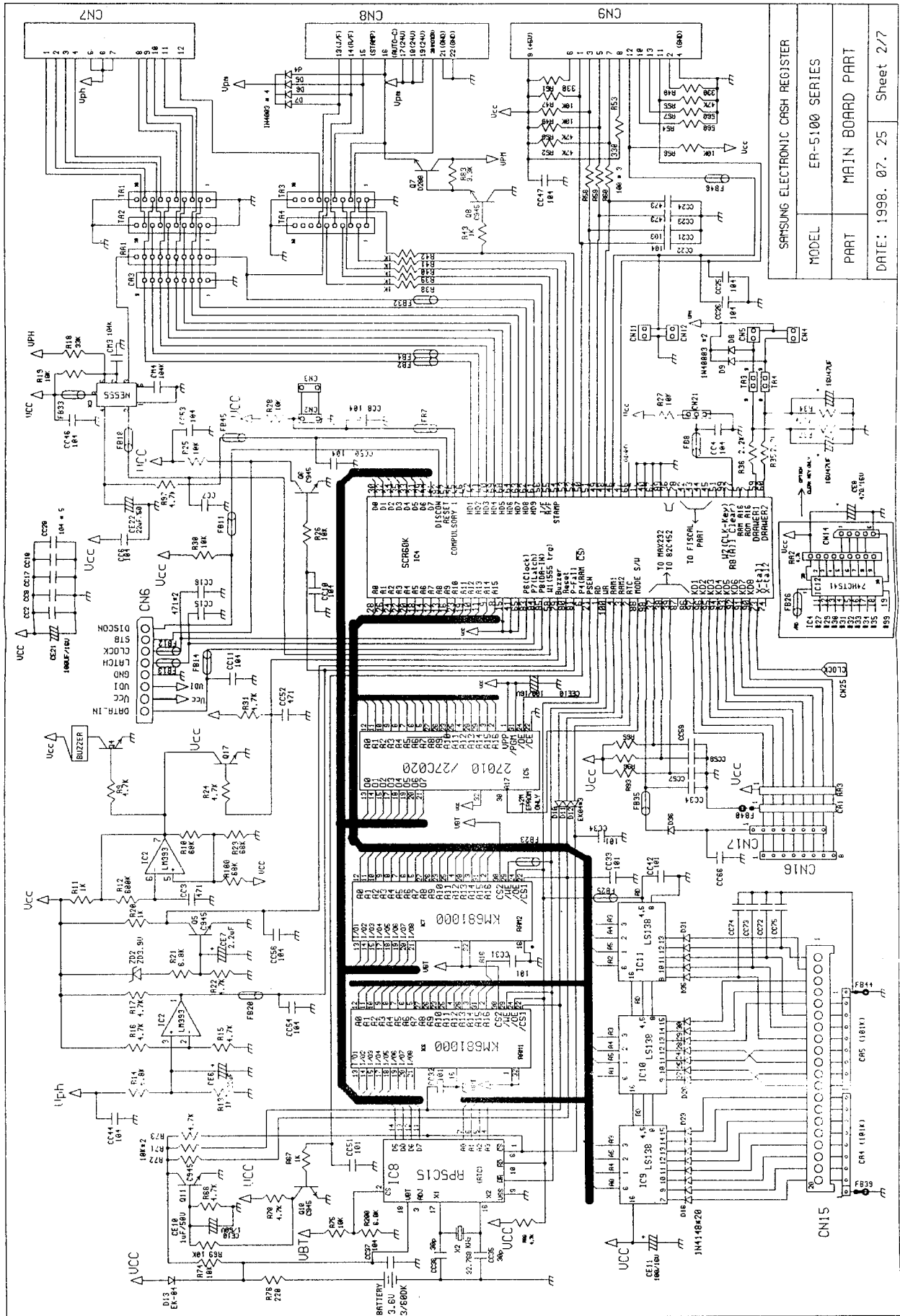
JK41-10519A V1.2 '98.04.01.



11 Wiring Diagram

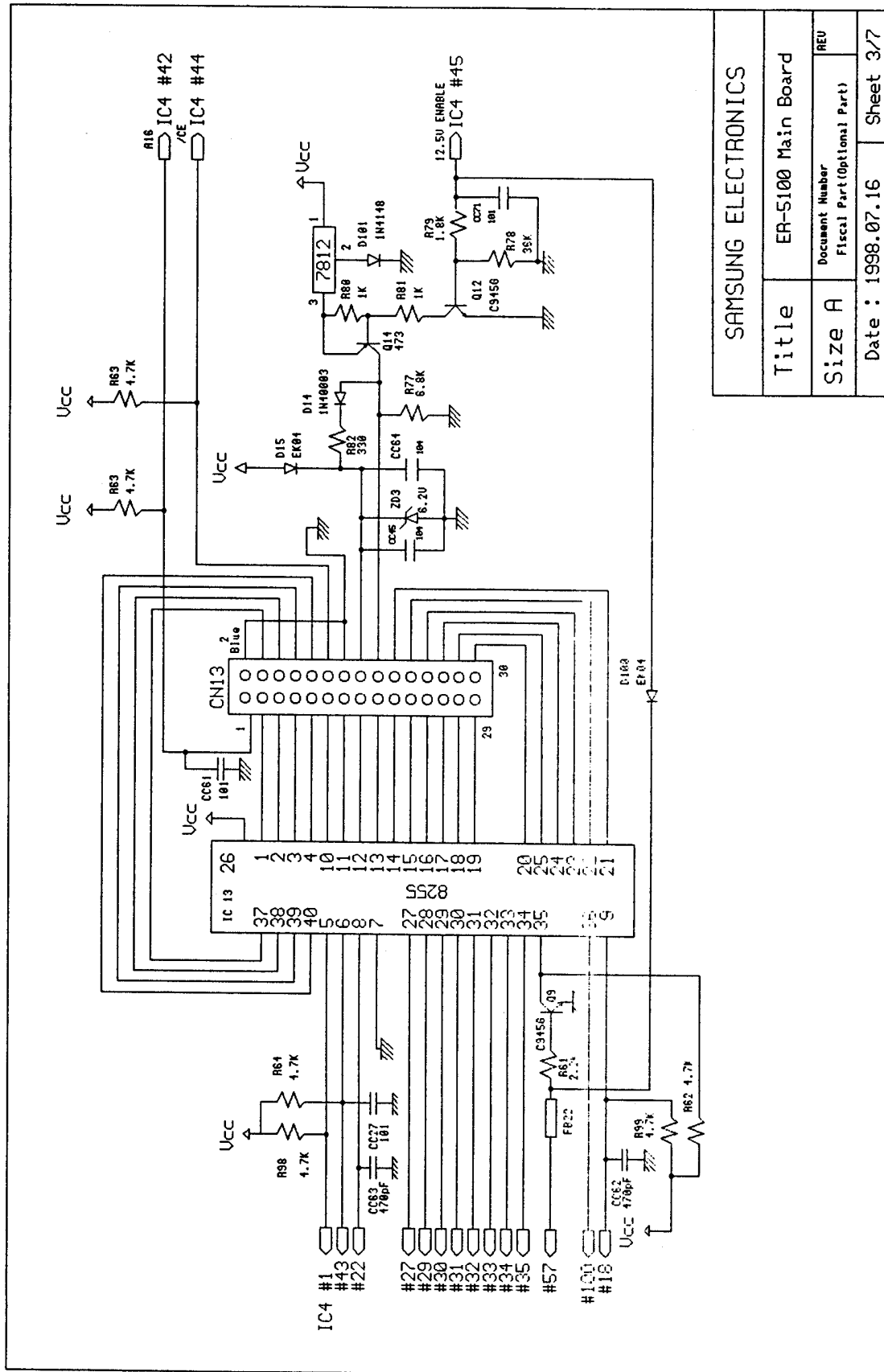


12-2 Main Part

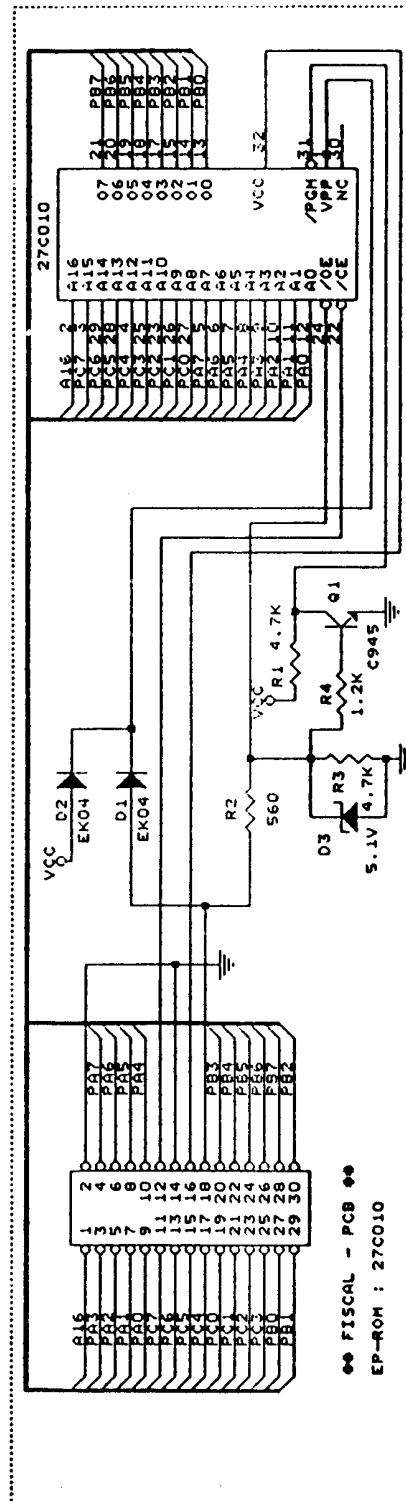
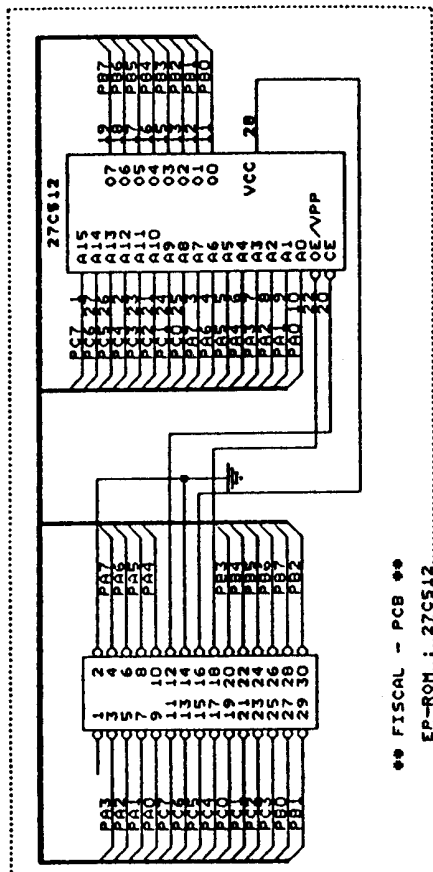


SAMSUNG ELECTRONIC CASH REGISTER			
MODEL	ER-5100 SERIES		
PART	MAIN BOARD PART		
DATE:	1998. 07. 25	Sheet	2/7

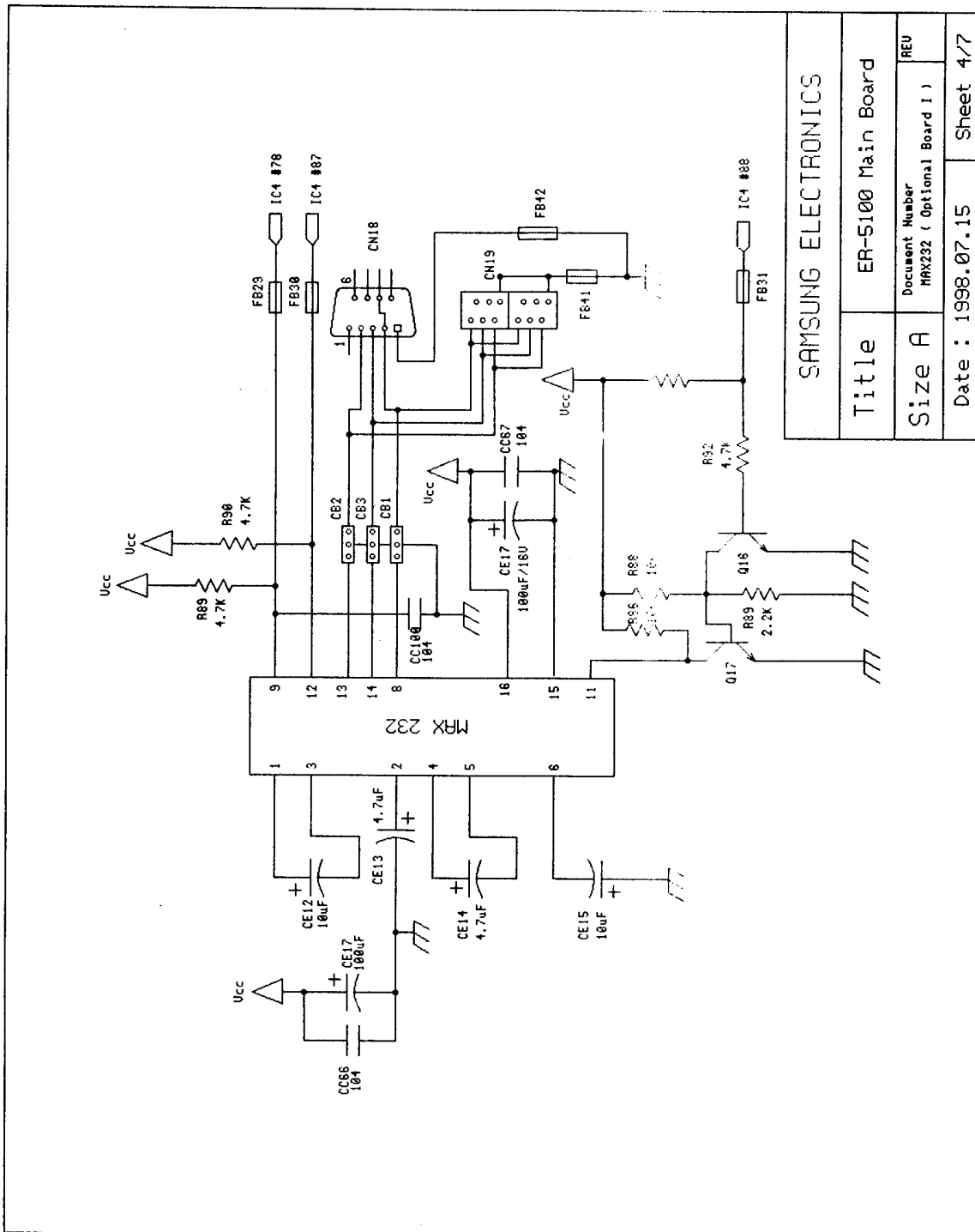
12-2-1 Fiscal Part I (Optional Part : on Main Board)



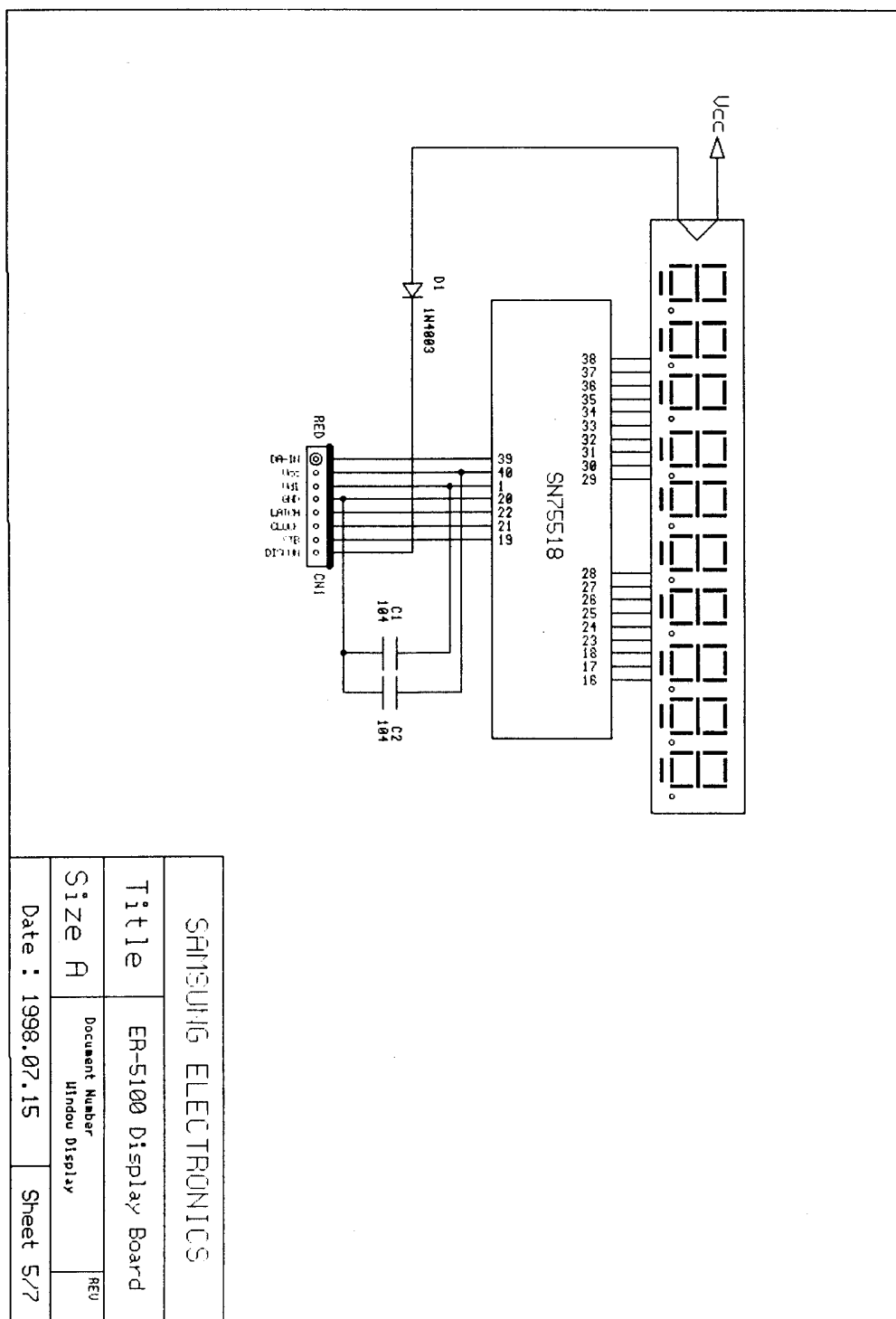
12-2-2 Fiscal Part II (Optional Part : Fiscal Board)



12-2-3 MAX232 Part (Basic Part)



12-2-4 Window Display (Basic Part : Display Board)





12-3 Printer Terminal Pin Assignments

12-3-1 CN7

Pin #	Description
1	Printer Solenoid #6
2	Printer Solenoid #2
3	Printer Solenoid #4
4	Printer Solenoid #1
5	Printer Common Line
6	Printer Common Line
7	Printer Common Line
8	Printer Solenoid #8
9	Printer Solenoid #3
10	Printer Solenoid #5
11	Printer Solenoid #7
12	Printer Solenoid #9

12-3-2 CN8

Pin #	Description
1	Journal Feed
2	Receipt Feed
3	Stamp
4	Auto Cutter (Optional)
5	N.C.
6	24V
7	24V
8	Motor
9	GND (Ground)
10	GND (Ground)

12-3-3 CN9

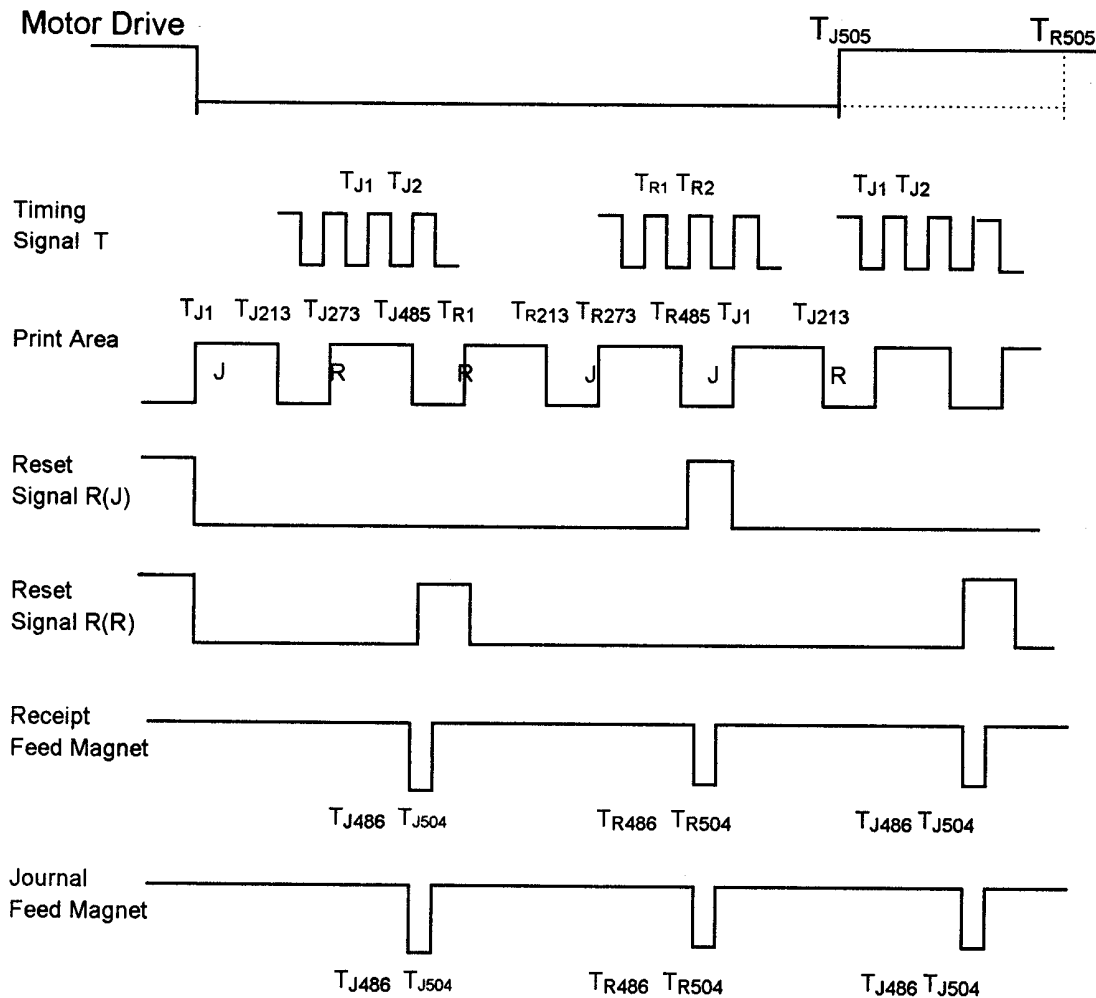
Pin	Description
1	Journal Side Low-End Detector
2	Timing Detector (Cathode)
3	Timing Signal
4	GND (Ground)
5	Journal Side Reset Signal
6	Reset Detector (Anode)
7	Receipt Side Reset Signal
8	Reset Detector (Anode)
9	+5V
10	Journal Side Validation Detector (Emitter)
11	Journal Side Validation Detector (Cathode)
12	Receipt Side Validation Detector (Emitter) For Paper Sensor (Optional)
13	Receipt Side Validation Detector (Cathode)

12-4 ASIC SCR60K Pin Assignments

Pin No.	Name	Description	Pin No.	Name	Description
1	RD	Read	51	INT1	CN9 #3 (Timing Signal)
2	RTC	Real Time Clock	52	PR1	CN8 #4 (Auto Cutter)
3	RAM2	Chip Select	53	PR2	CN8 #8 (Motor)
4	RAM1	Chip Select	54	PR3	CN8 #3 (Stamp)
5	P2	A16 (for 1M RAM)	55	PR4	CN8 #2 (Receipt Feed)
6	P4	RAM /CS	56	PR5	CN8 #1 (Journal Feed)
7	P3	A16 (for 1M ROM)	57	P8_1	CN13 #30 (Fiscal Reset), IC3 #4
8	A15	Address Bus	58	W1	NE555 Timer Trigger
9	A14	Address Bus	59	W3	CN5 (Drawer)
10	A12	Address Bus	60	W4	CN4 (Drawer)
11	A13	Address Bus	61	HD9	CN7 #12 (Head)
12	A7	Address Bus	62	HD8	CN7 #11
13	A8	Address Bus	63	HD7	CN7 #10
14	A6	Address Bus	64	HD6	CN7 #9
15	VDD1	+5V	65	VDD9	+5V
16	A9	Address Bus	66	RAM1_1	open
17	GND3	0V (Ground)	67	GND12	0V (Ground)
18	A5	Address Bus	68	HD5	CN7 #8
19	A11	Address Bus	69	HD4	CN7 #4
20	A4	Address Bus	70	HD3	CN7 #3
21	PSEN	ROM /CS	71	HD2	CN7 #2
22	A3	Address Bus	72	HD1	CN7 #1
23	A10	Address Bus	73	XTAL1	Crystal 22.1184 MHz
24	A2	Address Bus	74	XTAL2	Crystal 22.1184 MHz
25	ALE	Address Latch Enable	75	R6	CN2 (Compulsory)
26	A1	Address Bus	76	R7	CN3 (Compulsory)
27	D7	Data Bus	77	R8	CN21 (All Clear)
28	A0	Address Bus	78	R3	Option Board
29	D6	Data Bus	79	P5	Buzzer
30	D0	Data Bus	80	RESET	System Reset
31	D5	Data Bus	81	PWRFAIL	Power Fail
32	D1	Data Bus	82	R4	Display Disconnection Check
33	D4	Data Bus	83	P6	Display Clock
34	D2	Data Bus	84	P7	Display Latch Enable
35	D3	Data Bus	85	P8_1	Display Data in
36	AUX1	CN10 #18 (Option Board 452)	86	RAM1_2	RAM1 /CS
37	AUX2	CN10 #4 (Option Board 452)	87	RXD	Option Board (RxD)
38	R1	CN10 #19 (Option Board 452)	88	TXD	Option Board (TxD)
39	R2	CN10 #3 (Option Board 452)	89	GND14	0V (Ground)
40	GND6	0V (Ground)	90	K8	CN16 #1 (Key Scan)
41	VDD7	+5V	91	K7	CN16 #2
42	W5	CN13 #30 (Fiscal EPROM A16)	92	K6	CN16 #3
43	AUX3	PPI 8255 /CE	93	K5	CN16 #4
44	P10	CN13 #6 (Fiscal EPROM /CS)	94	K4	CN16 #5
45	P9	CN13 #9 (Fiscal EPROM Program Voltage, +12V)	95	K3	CN16 #6
46	PR6	CN9 #12 (Paper Sensor)	96	K2	CN16 #7
47	PR7	CN9 #10 (Journal Side Validation)	97	K1	CN16 #8
48	PR8	CN9 #7 (Receipt Side Reset Signal)	98	P1	CN17 #8 (Mode Key)
49	PR9	CN9 #5 (Journal Side Reset Signal)	99	W2	IC12 #19 (Clerk Key)
50	PR10	CN9 #1 (Receipt Side Validation)	100	WR	Write Signal

12-5 Printer Timing Chart

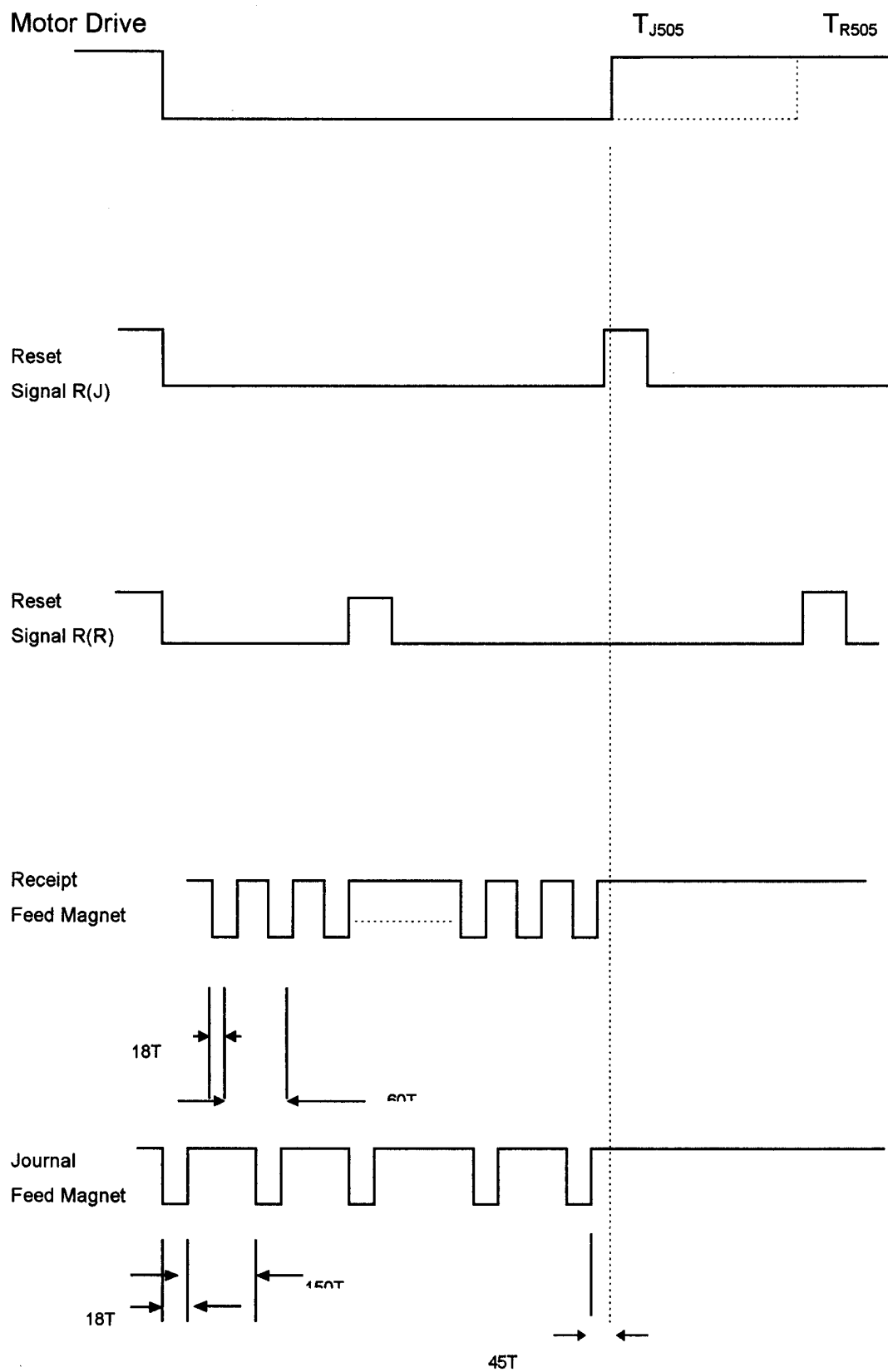
12-5-1 Printing and Paper Feed



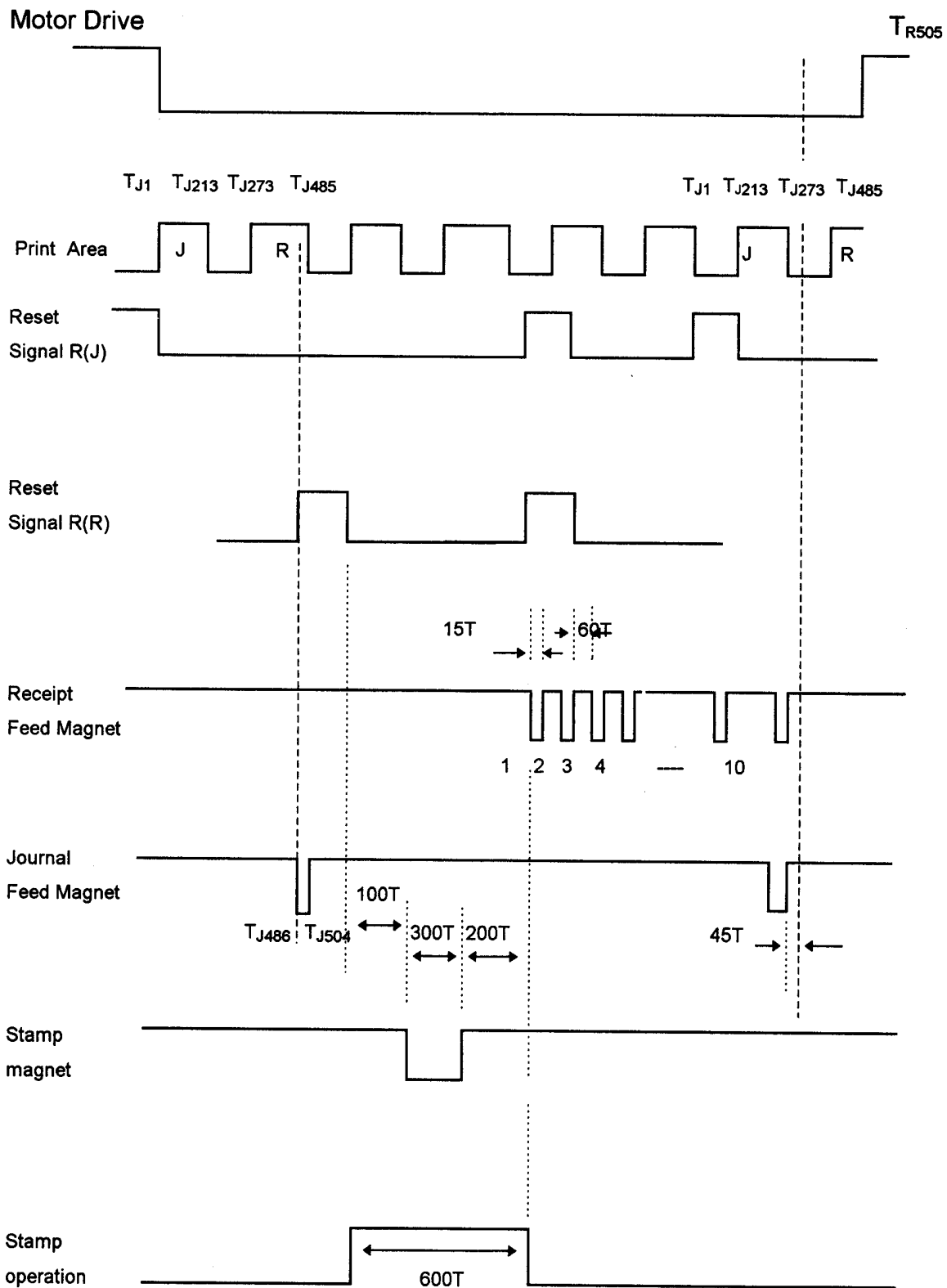
1. Motor is turned off at T_{J505} or T_{R505}.
2. On validation print, printing action is turned on at T_{J1} -J485 and T_{R1}-R485
Motor is turned off at T_{R505} or T_{J505}.

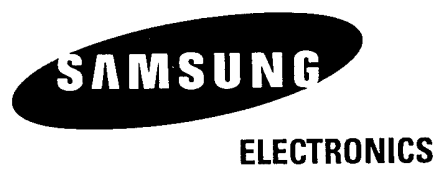
12 Schematic Diagrams

12-5-2 Fast Feeding



12-5-3 Receipt Issuing





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V2.0
Code No.: JK68-60918A
