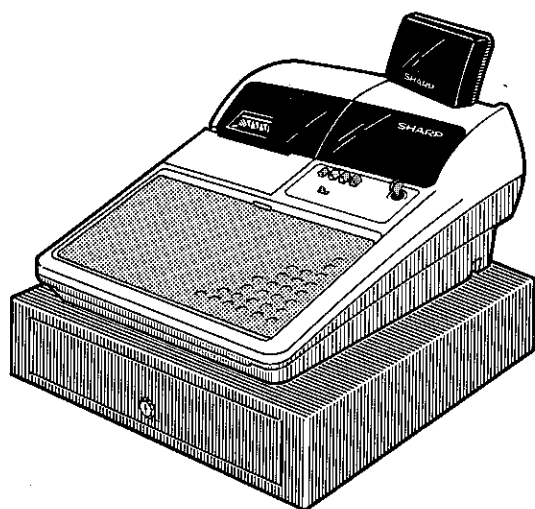# SHARP   INSTALLATION MANUAL

CODE: 00ZERA550IMUE

ELECTRONIC CASH REGISTER

MODEL ER-A550

SRV Key : LKGIM7113RCZZ
PRINTER : M-820
(For "U" and "A" version)

CAUTION
EXTREME CAUTION MUST BE TAKEN WHEN SERVICING THIS MACHINE. EVEN THOUGH THE MODE SWITCH IS IN THE OFF POSITION, VOLTAGE IS STILL SUPPLIED TO THE ENTIRE MACHINE.
WHEN WORKING ON THIS MACHINE MAKE SURE THAT THE POWER CORD IS REMOVED FROM THE WALL OUTLET.

CONTENTS

Parts marked with "⚠" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

CHAPTER 1. GENERAL

This manual describes the installation and operational test procedures for the Model ER-A550 system ECR options.
Be sure to read the "BEFORE INSTALLING OPTIONS" prior to installing any option.
Descriptions of the specifications of the ECR and options subject to change.

Note: This manual describes only options whose installing procedures need to be explained.

※ BERORE INSTALLING OPTIONS

1. If you install any options in an ER-A550 register already in use, you must reset the totals. Please notify its user before performing the installation.
   If the register is not reset, sales data stored in the register may be destroyed due to possible incorrect installation.

2. Print out the SRV-mode and PGM2-mode programs before installing any option. It may be necessary to modify each program after installation. These printouts are needed for this modification.

3. If you install the option PWBs (ER-A5IN, ER-A5RS), option control ROM (ER-A55RI) and expansion RAM chip in the ER-A550 register already in use, perform data saving for memory protection by using the SIO interface in advance.

4. As a safety measure, be sure to turn the mode switch to the OFF position and unplug the register before installing any option.

5. The ER-A550 is equipped with various SRV-mode functions to aid you in installing the options. Never enter any job numbers other than those shown in each of the following sections, so that data stored is not destroyed.

6. After installing any options, start the ER-A550 register by performing the service reset or the master reset.

   Service reset   1) Turn the mode switch to the SRV' position to turn on the power.
                    2) Turn the mode switch to the SRV position.

   Sample printout
   PRG. RESET ***

   Master reset   1) Turn the mode switch to the SRV' position to turn on the power.
                   2) Turn the mode switch to the SRV position, holding down the journal feed key.

   Sample printout
   MASTER. RESET ***

CHAPTER 2. LIST OF OPTIONS

1. Options

NO	NAME	MODEL	DESCRIPTION
1	REMOTE PRINTER	E R – 0 2 R P	Via RS-232C I/F
2	REMOTE DRAWER	E R – 0 1 D W	MAX. 3units
3	COIN CASE	E R – 3 3 C C	6B/6C For U.S.A
		E R – 3 3 C C 1	6B/5C For CANADA
4	COIN CASE COVER	E R – 3 3 C V	For U.S.A
		E R – 3 3 C V 1	For CANADA
5	EXPANSION RAM CHIP	E R – 0 1 R A	32K bytes RAM chip
		E R – 0 2 R A	128K bytes RAM chip
6	IN-LINE & ON-LINE SYSTEM	E R – A 5 I N	2ports simple inline and 1port RS-232C I/F
7	ON-LINE SYSTEM	E R – A 5 R S	2ports RS-232C I/F
8	CONTROL ROM	E R – A 5 5 R 1	Control PROM for ER-A5IN and ER-A5RS
9	PRESETS LOADER	E R – 0 2 F D	FD unit
10	CONNECTION CABLE	E R – A 5 C B	Loader cable (ER-A550 to ER-A550)

2. Service options

NO.	NAME	PARTS CODE	DESCRIPTION
1	SERVICE KEY	L K G I M 7 1 1 3 R C Z Z	For the mode switch
2	DRIP-PROOF SWITCH COVER	G C O V B 7 0 4 7 R C Z Z	
3	MODE KEY GRIP COVER	L K G I M 7 1 2 6 R C Z Z	OPkey only
4	JOURNAL NEAR END SENSOR	D K I T – 8 6 4 3 R C Z Z	
5	DRAWER FIXING KIT	D K I T – 8 6 3 3 R C Z Z	

3. Supplines

NO.	NAME	PARTS CODE	DESCRIPTION
1	ROLL PAPER	D P A P R 1 0 0 6 C S Z Z	5rolls/pack
2	INK RIBBON	P R B N – 6 6 4 0 R C Z Z	
3	INK FOR STAMP	U I N K – 1 0 0 1 C C Z Z	5cc
4	KEY SHEET	P S H E K 6 7 7 5 R C Z Z	Programming character sheet
		P S H E K 6 7 7 6 R C Z Z	Standard character sheet
		P S H E K 6 7 7 7 R C Z Z	Blank character sheet

CHAPTER 3. REMOVING THE MAIN DRAWER

1. Removing the main drawer.
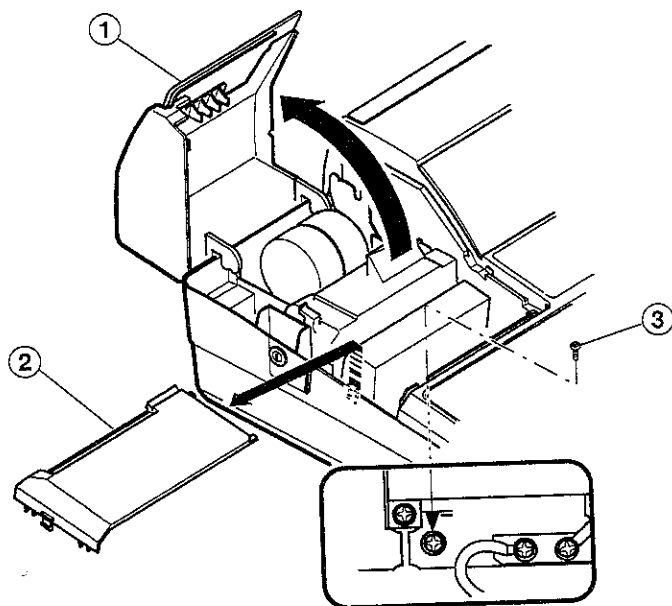
Fig. 1

1) Open the printer cover ①.
2) Remove the ribbon cover ②.
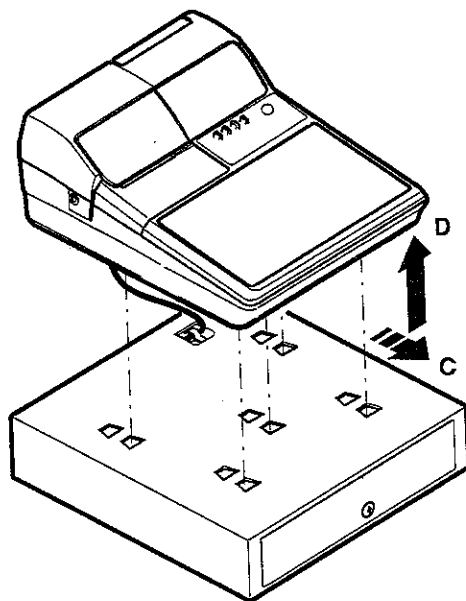3) Remove the drawer fixing screw ③ (Self tap screw).

Fig. 2

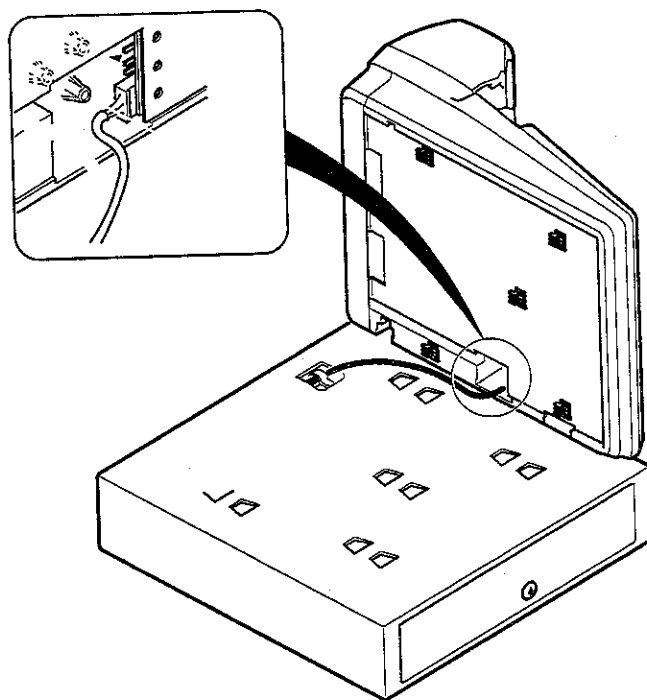4) Slide the main unit in the direction of the arrow C and lift it in the direction of the arrow D.

Fig. 3

5) Stand the main drawer sideways as illustrated above, and disconnect the drawer connector.

2. Replacing the main drawer

Install the main drawer in the reverse order of removing. Before installing, make sure that the connector is securely fastened.

3. Changing drawer position.

The position of the drawer on the main body can be changed by changing the holes into which the drawer is fixed. After changing the drawer position, fix the drawer securely with the drawer fixing screw (Self tap screw).
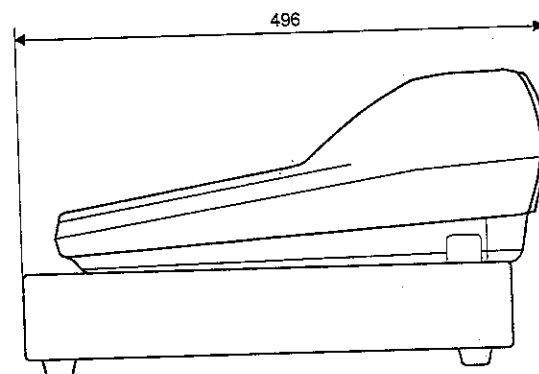
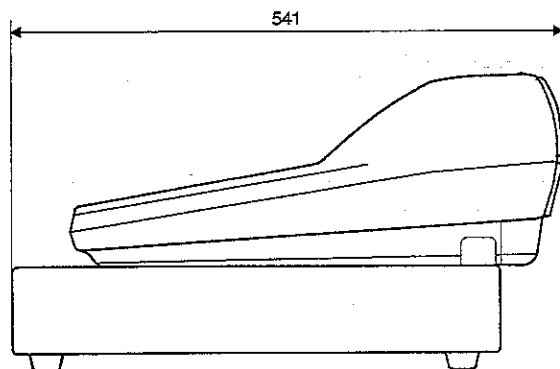<< When shipping>>

496

Fig. 4

<<When sliding backwards>>

541

Fig. 5

CHAPTER 4. REMOVING THE TOP CABINET

1. Removing the top cabinet
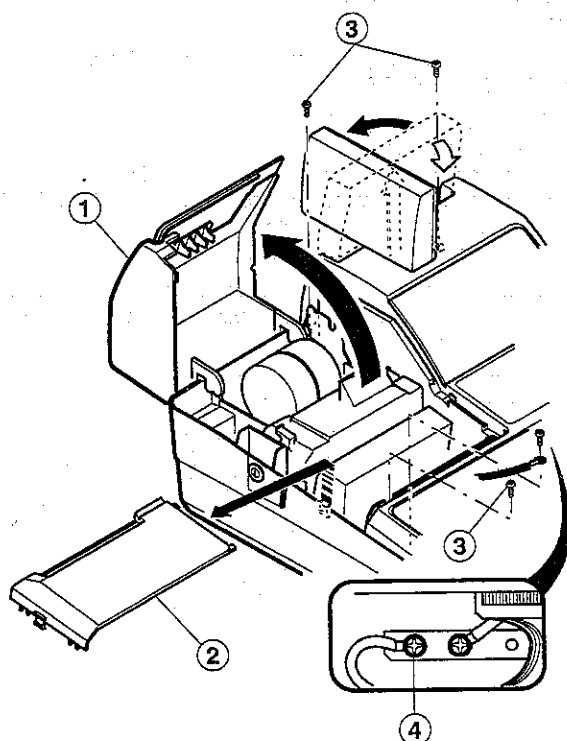
Fig. 1

1) Open the printer cover ①.

2) Remove the ribbon cover ②.
   Lift the left end of the ribbon cover and slide it to the left.

3) Lift the pop-up display and rotate as illustrated above.

4) Remove the three screws ③ suited on the lower cabinet.
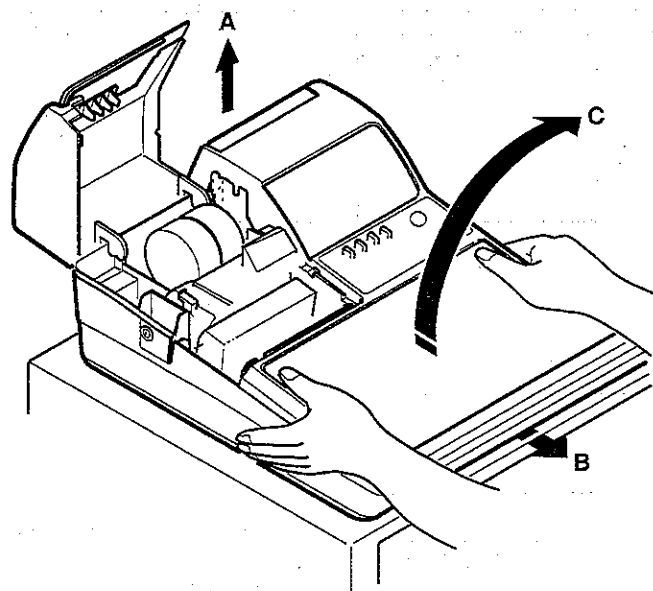
5) Remove the grounding wire ④.

Fig. 2

6) Remove the top cabinet.
   As illustrated, lift the top cabinet in the direction of the arrow A, slide it in the direction of the arrow B and lift it in the direction of the arrow C.

2. Replacing the top cabinet

Install the top cabinet in the reverse order of removing. Before install-ing, make sure that each connector is connected securely and that the grounding wire is secured.

CHAPTER 5. EXPANSION RAM CHIP (ER-01RA, ER-02RA)

1. Outline

The following expansion RAM chips are available for the ER-A550.

ER-01RA: 32KB SRAM chip

ER-02RA: 128KB SRAM chip

The required memory size varies depending on the use of the ER-A550. Select the expansion chip according to the needs. (Only one expansion chip can be installed in the ER-A550)

2. Installation procedure

Before working on the installation, turn off the power switch on the ECR and unplug the AC cord from the AC outlet.
Also save the memory contents via the serial interface before proceeding to the installation work.

1) Remove the top cabinet.

2) Insert the expansion RAM chip onto the socket RAM2 on the main PWB. (Fig.1, 2)

   <<ER-01RA>> : 28pins.
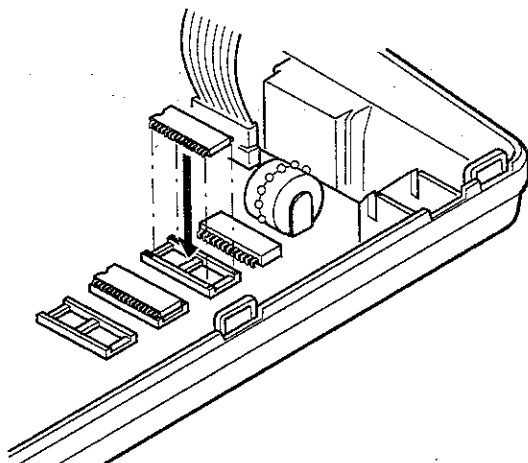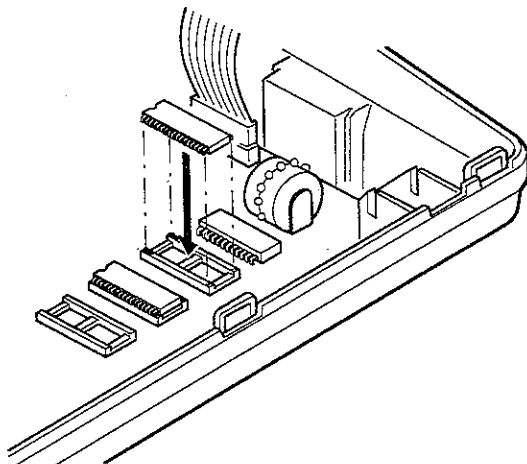

Fig. 1

   <<ER-02RA>> : 32pins.

Fig. 2

The number of pins are different between the ER-01RA (28 pins) and the ER-02RA (32 pins). Observe the correct position for insertion of the chip. (Fig.1, 2)
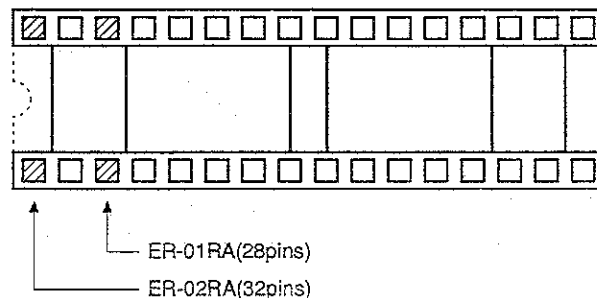

ER-01RA(28pins)
ER-02RA(32pins)

Fig. 3

3) Install the top cabinet.

4) Master reset the ER-A550.

5) Load the data in memory which had been saved.

3. Opertion test

1) Key operation
   200 → [CA/AT]

2) Functional description
   Perform the following check for the option RAM 128KByte SRAM. The memory contents should not be changed before and after the check.

   Perform the following processes for memory address to be checked (1E0000H~1FFFFFH).

   PASS1: Save memory data.
   PASS2: Write data "0000H."
   PASS3: Read and compare data "0000H," write data "5555H."
   PASS4: Read and compare data "5555H," write data "AAAAH."
   PASS5: Read and compare data "AAAAH."
   PASS6: Restore the memory data.

   If a compare error occurs in the check sequence PASS1-PASS6, an error print is made. If no error occurs through all addresses, the check ends normally.

   The following address check is performed further.
   Check point address =   1E0000H
                           1E0001H, 1E0002H
                           1E0004H, 1E0008H
                           1E0010H, 1E0020H
                           1E0040H, 1E0080H
                           1E0100H, 1E0200H
                           1E0400H, 1E0800H
                           1E1000H, 1E2000H
                           1E4000H, 1E8000H
                           1F0000H
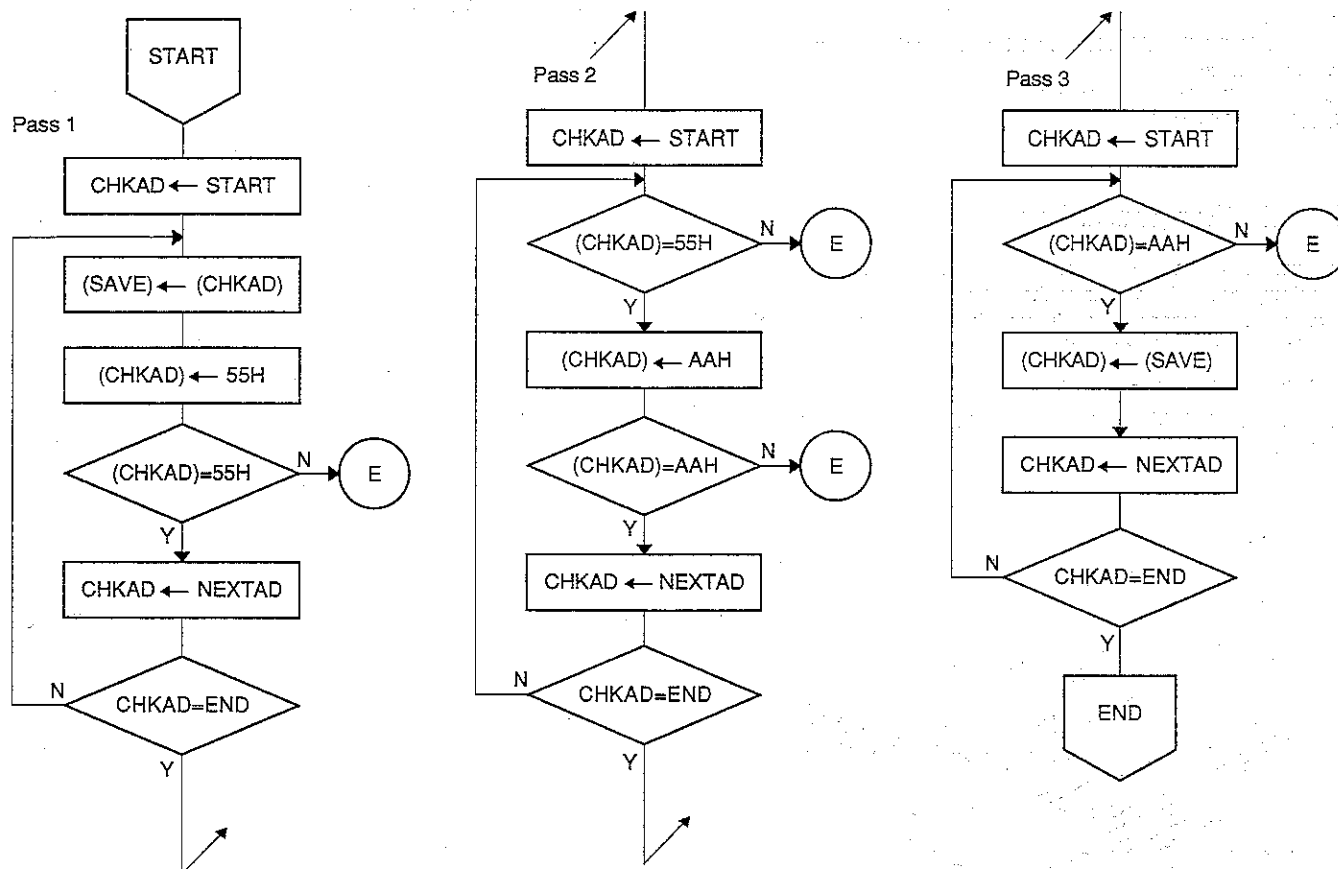
Test point read/write test
The following test is conducted to the test address.

Pass 1: After saving the data existing in the test address, the test data "55H" is written and verified (NOTE).

Pass 2: After verifying existence of the test data "55H" written in the pass 1 above (NOTE), the next test data "AAH" is written and verified (NOTE).

Pass 3: After verifying the test data "AAH" written in the pass 2 above (NOTE), the data previously saved is then restored to its address.

NOTE: Error printout 2 is produced when an error is met. (E02)

```
Pass 1                          Pass 2                          Pass 3

   START                     CHKAD ← START               CHKAD ← START

CHKAD ← START              (CHKAD)=55H  →N→  E          (CHKAD)=AAH  →N→  E
                                  │Y                          │Y
(SAVE) ← (CHKAD)            (CHKAD) ← AAH                (CHKAD) ← (SAVE)

(CHKAD) ← 55H              (CHKAD)=AAH  →N→  E          CHKAD ← NEXTAD

(CHKAD)=55H  →N→  E         │Y                          N← CHKAD=END
        │Y                  CHKAD ← NEXTAD                     │Y
CHKAD ← NEXTAD                                               END
                           N← CHKAD=END
N← CHKAD=END                      │Y
        │Y
```

3) Check the following items:
   Check the termination printout.
4) Test termination
   The test terminates after printing the termination printout.
   Termination printout:

Normal termination		200
Abnormal termination	E01----	200
	E02----	200

E01: PASS1 ~ 6 ERROR
E02: TEST POINT ERROR

<<Checking installation of ER-01RA>>

① Key operation: 200 → [CA/AT].

| E02---- | 200 |

(The error message "E02" will be reported with ER-01RA as it does not check address.)

② If an operational fault should occur with ER-01RA during the test ① even if the test was terminated. normally, it needs to install ER-02RA in stead of ER-01RA and the address must then be checked.

| | 200 |

CHAPTER 6. CONTROL ROM (ER-A55R1)

1. Outline

The ER-A55R1 is the control ROM used for the following options of the ER-A550.
The control ROM (ER-A55R1) must be installed when any of the following options is used.
ER-A5IN: IN-LINE and RS-232C I/F
ER-A5RS: RS-232C 1/F

2. Installation procedure

Before working on the installation, turn off the power switch on the ECR and unplug the AC cord from the AC outlet.
Also save the memory contents via the serial interface before proceeding to the installation work.

1) Remove the top cabinet.
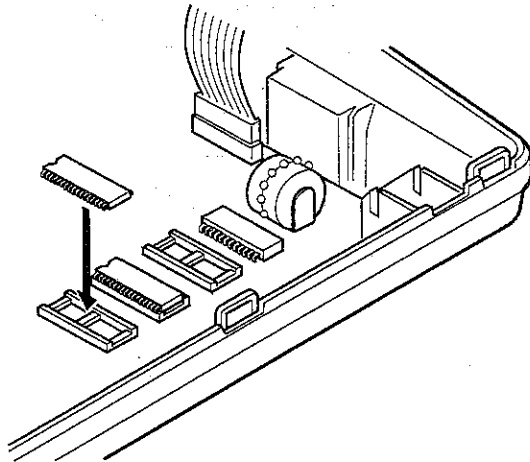2) Insert the control ROM in the IC socket ROM2 on the main PWB (Fig. 1).

Fig. 1

Termination printout

Normal termination		400
	ROM2	27010XXXXX
Abnormal termination	E -----	400
	ROM2	27010XXXXX

XXXXX: ROM version number

3. Operation test

1) Key operation:
   400 → [CA/AT]

2) Functional description:
   A sum check is done for the option ROM (Address C80000H ~ CFFFFFH).

3) Check the following items:
   Check the termination printout.

4) Test termination:
   The test terminates after printing the termination printout.

CHAPTER 7. IN-LINE & RS232C I/F (ER-A5IN) AND RS232C I/F (ER-A5RS)

1. Outline

The ER-A5IN and ER-A5RS are interface PWB options for the ER-A550. The control ROM (ER-A55R1) must be installed in order to use this PWB options.
Refer to the programming manual for system setup and configure the correct setting appropriate to the devices selected.

ER-A5IN

1) Simple inline

Transmission method: RS485 start-stop two wire system half-duplex transmission.

Transmission speeds: 38400/9600 bits per second (Programmable)

Transmission distance: Up to 600 meters in full extension.

Transmission line:
    Cable: Twisted pair cable (shielded cable).
    Connector: D-sub 9 pin (male type) connector
    Inch Pitch (4-40 UNC) lock screw
    Connector cover: Shielded type
NO. of machines
connectable: Up to 16 (1 master and 15 satellites)

2) RS232C (1 port)
It is equivalent to ER-A5RS
(For details, see the ER-A550 RS232C specification.)

ER-A5RS

1) Online interface
a) Interface : RS232C
b) Duplex type : Half-duplex/Full-duplex
c) Line configuration : Direct connection/Modem connection
d) Data rate : 9600, 4800, 2400, 1200, 600 and 300 bps (Programmable)
e) Synchronizing mode : Asynchronous
f) Parity check : Vertical parity check (odd)
g) Code : ASCII
h) Bit sequence : LSB first
i) Data format : 1 start bit + 7 dat bits + 1 parity + 1 stop bit
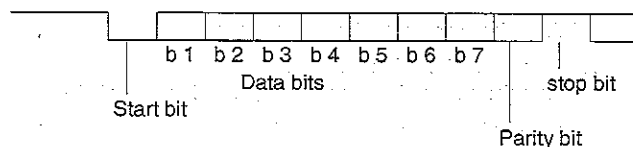
j) Protocol : Polling/selecting (Simple procedure)
k) Transmission line:
    Cable: Shielded cable
    Connector: D-sub 9 pin (female type) connector
    (ECR side) inch pitch (4-40 UNC) lock screw
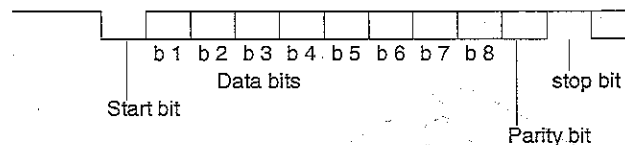   Connector cover: Shielded cover

2) Kitchen printer interface

The ER02RP is connected to the ER-A550 through an RS232C interface.

Its specification is as follows.
a) Interface : RS232C
b) Duplex type : Simplex
c) Line configuration : Direct connection
d) Data rate : 9600, 4800, 2400, 1200, 600 and 300 bps (Programmable)
e) Synchronizing mode : Asynchronous
f) Parity check : Vertical parity check (odd parity check)

g) Code : 8 bits
h) Bit sequence : LSB
i) Data format : 1 start bit + 8 data bits + 1 parity bit + 1 stop bit

j) Transmission line:
    Cable: Shielded cable
    Connector: D-sub 9 pin female type) connector
    (ECR side) Inch pitch (4-40 UNC) lock screw
    Connector cover: Shielded cover

2. Components list

ER-A5IN

NO	NAME	PARTS CODE	Q'ty
1	PWB UNIT	CPWBS7293RC01	1
2	BRACKET	LANGT7466RCZZ	1
3	SCREW (FOR PWB AND BRACKET)	LX–BZ6665RCZZ	2
4	SCREW (FOR HOLDING OF THE PWB BRACKET, AND BRACKET TO BRACKET)	LX–BZ6774RCZZ	3
5	SCREW (FOR HOLDING OF THE RS-232C CABLE CORE)	XHBSD30P08000	1
6	SCREW (FOR HOLDING OF THE POWER SUPPLY PWB CORE)	XUBSD30P10000	1
7	WIRE TIE	LBNDJ2004SCZZ	1
8	CLAMP (FOR POWER SUPPLY PWB)	LHLDW0006SCZZ	1
9	CLAMP (FOR EARTH WIRE G/Y)	LHLDW2341RCZZ	1
10	CLAMP (FOR RS232C CABLE)	LHLDW6814RCZZ	1
11	SPACER	PSPAN7039XCZZ	1
12	FERRITE CORE (FOR EXTERNAL CABLE)	RCORF1016LCZZ	2
13	FERRITE CORE (FOR EXTERNAL CABLE)	RCORF6658RCZZ	1
14	FERRITE CORE (FOR INTERNAL CABLE)	RCORF6661RCZZ	1
15	FERRITE CORE (FOR INTERNAL CABLE)	RCORF6662RCZZ	1

ER-A5RS

NO	NAME	PARTS CODE	Q'ty
1	PWB UNIT	CPWBS7292RC01	1
2	BRACKET	LANGT7466RCZZ	1
3	SCREW (FOR PWB AND BRACKET)	LX–BZ6665RCZZ	2
4	SCREW (FOR HOLDING OF THE PWB BRACKET, AND BRACKET TO BRACKET)	LX–BZ6774RCZZ	3
5	SCREW (FOR HOLDING OF THE RS-232C CABLE CORE)	XHBSD30P08000	2
6	WIRE TIE	LBNDJ2004SCZZ	1
7	CLAMP (FOR RS232C CABLE)	LHLDW6814RCZZ	2
8	SPACER	PSPAN7039XCZZ	1
9	FERRITE CORE (FOR EXTERNAL CABLE)	RCORF6658RCZZ	2

3. Installation procedure

1) Connect the internal cable to the interface PWB unit and secure it with the connector screw, and install the core on each cable.
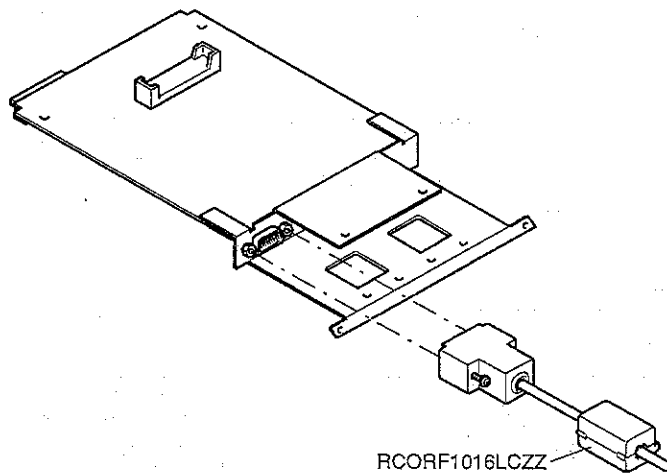
① In-Line cable

RCORF1016LCZZ

Fig. 1

• Be sure to install the core (RCORF1016LCZZ) on the inline cable. (Fig. 1)
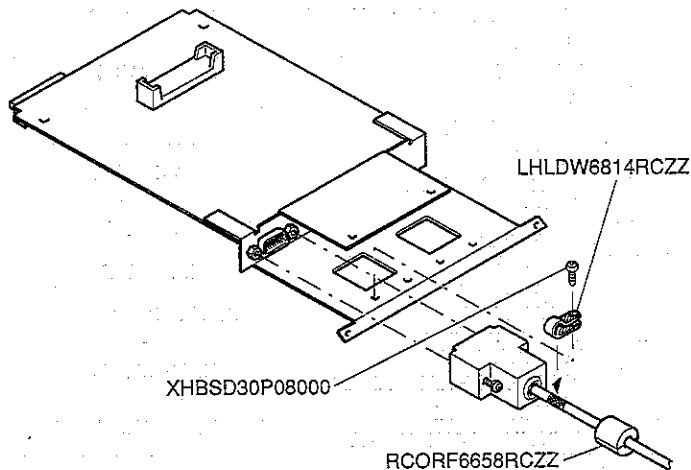
② RS-232C cable

LHLDW6814RCZZ

XHBSD30P08000

RCORF6658RCZZ

Fig. 2

• Strip the covering from RS-232C cable and install the frame ground clamp (LHLDW6814RCZZ). Then fasten it to the angle with the screw (XHBSD30P08000: Self tap screw). (Fig. 2)

• Be sure to install the core (RCORF6658RCZZ) on RS-232C cable. (Fig. 2)

2) To install two interface PWB's, follow the next steps. (When installing the ER-A5IN and the ER-A5RS)

① Insert two spacers ⓐ and connect the connectors of the interface PWB together (Fig.2).

⁕ Make sure the spacer is mounted properly to insure proper connection.

② Secute the brackets ⓓ with the screws ⓑ and ⓒ (LX-BZ6774RCZZ: Self tap screw).
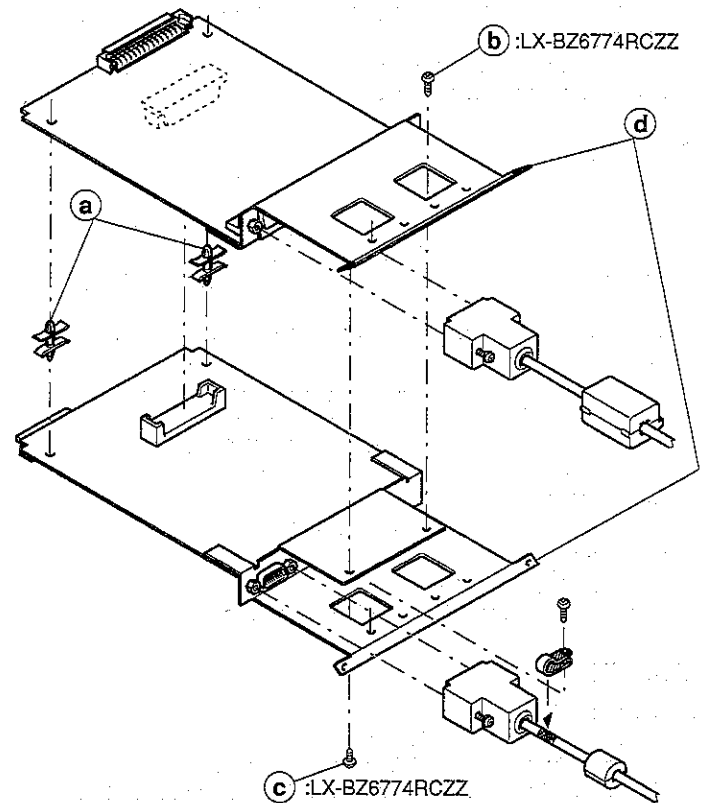

ⓑ :LX-BZ6774RCZZ

ⓒ :LX-BZ6774RCZZ

Fig. 3

3) Remove two rear cover holding screws and remove the rear cover ① (Fig.4).

⁕ The interface PWB needs to be inserted into the left side slot as seen from rear.

⁕ Tilt up the popup dispalay when removing the rear cover.

4) Break open the knockout ② of the rear cover ① (Fig.4). After beraking open the knockout ②, file off the new hole.

5) Insert the interface PWB ③ onto the connector of the main PWB ④, and fasten the bracket to the main chassis using screws ⑤ BZ6774RCZZ: Self tap screw) (Fig.4).

⁕ Insert both sides of the interface PWB along the guides of the bottom cabinet.

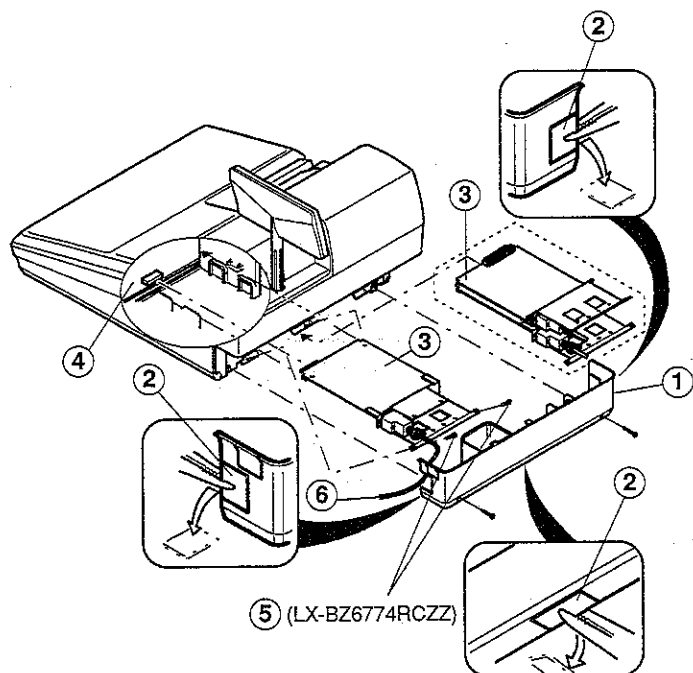6) Route the external cable ⑥ through the hole and fasten the rear cover (Fig.4)

Fig. 4

7) When the ER-A5IN is installed, attach the ferrite core to the power supply PWB of the ER-A550 and the GND wire.
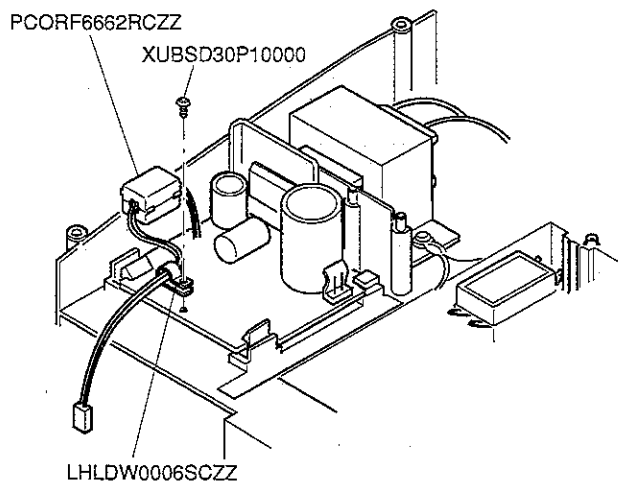

PCORF6662RCZZ

XUBSD30P10000

LHLDW0006SCZZ

Fig. 5

• Attach the ferrite core (RCORF6662RCZZ) to the power supply PWB (CPWBF7290RC01).

• Remove the fixing screw (XEBSD30P06000) of the power supply PWB (CPWBF7290RC01), attach the clamp (LHLDW0006SCZZ) to the PS cable (QCNW-7575RCZZ), and fix with the screw (XUBSD30P10000).
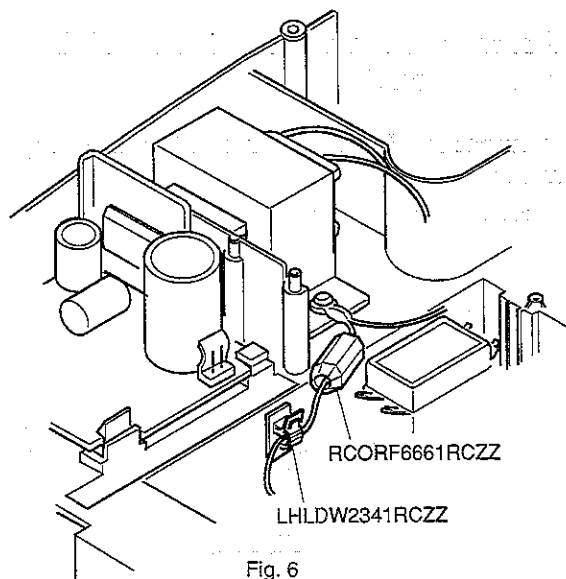

RCORF6661RCZZ

LHLDW2341RCZZ

Fig. 6

• Attach the ferrite core (RCORF6661RCZZ) and the clamp (LHLDW2341RCZZ) to the earth wire G/Y (QCNW-7574RCZZ).

4. External cable routing

In the ER-A550, option cables can be pulled out from three points in the rear cover of the body. Refer to figs, 4, 7, 8 and 9.

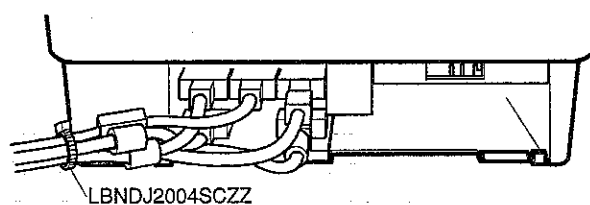1) The picture below shows how to pull out the cables from the left side. (Fig. 7)

LBNDJ2004SCZZ

Fig. 7

2) The picture below shows how to pull out the cables from the right side. (Fig. 8)
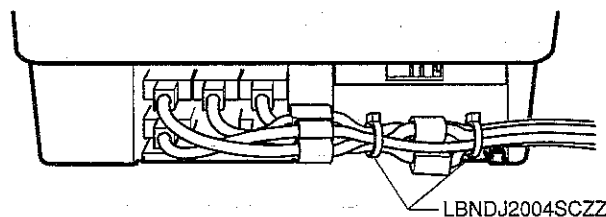

LBNDJ2004SCZZ

Fig. 8

3) The picture below shows how to pull out the cables from the center. (Fig. 9)

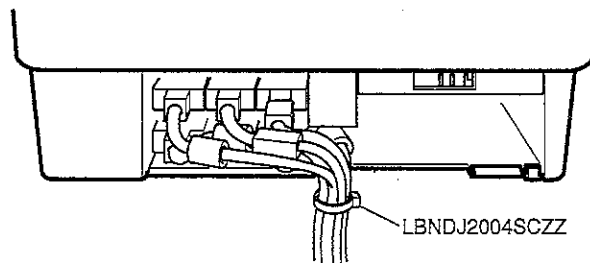✕ To pull out the cable from the center, slide the drawer backwards.

LBNDJ2004SCZZ

Fig 9

5. Points to note in connection of ER-A5IN external cable

1) Connect the ER-A5IN cable in the following manner.
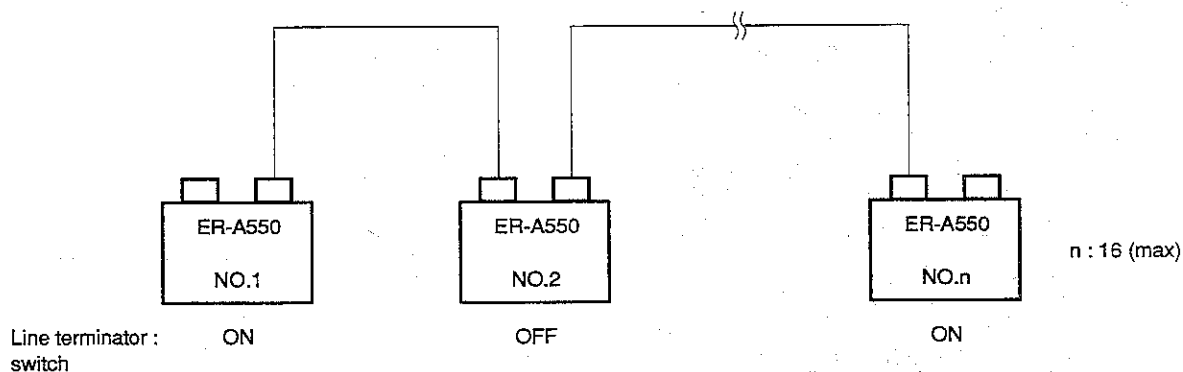
① Direct connection of external cable

Line terminator :   ON   OFF   ON
switch

Fig. 10

② Connection using branch cables

A : Trunk cable
B : Branch cable

Line terminator :   ON   OFF ---------------- OFF ---------------- ON
switch

Fig. 11
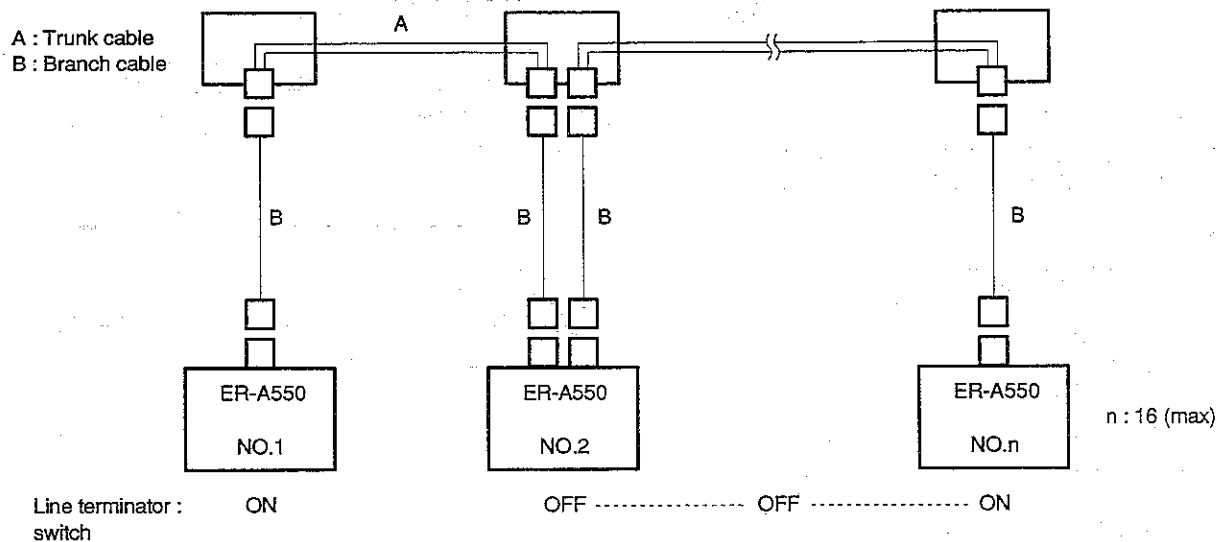
NOTE: Connect the terminals in such a manner that the branch cables provide serial connection.

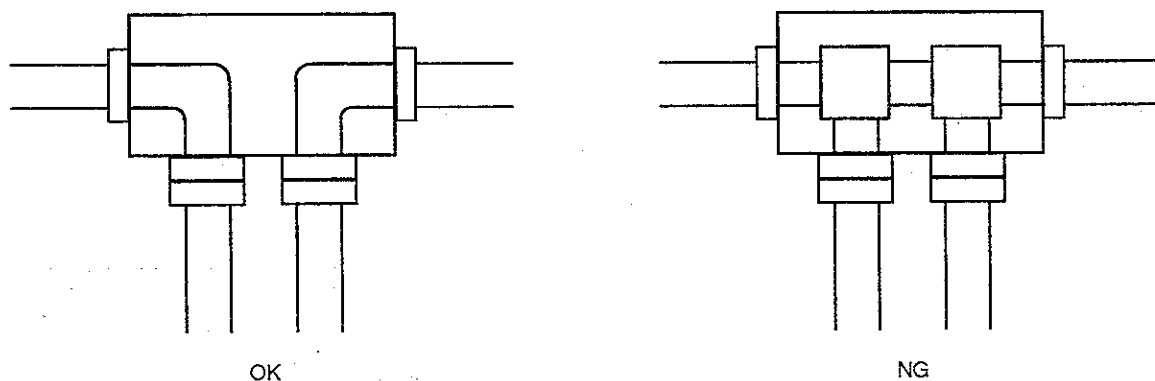OK   NG

Fig. 12

In the system configuration, the method 1) provides better electrical characteristics because of fewer contacts of connectors, but in terms of the system arrangement, the method 2) offers a greater freedom of design because of the installation of terminals at appropriate points.

③ In-line cable

The following cable should be used for the trunk and branch lines of the in-line system.

BELDON: 9182 EQUIVILENT
Hitachi: CO-SPEV-SB(A)-0.3SQ
Sharp 13-digit code: QCNW-7377RCZZ (200m per roll)

④ Connector housings and connectors

Due to the structure of the ER-A550 bottom cabinet, one of the following cable housings or its equivalent must be used for the external cable.

Fujitsu: FCN-671P009-L/C-HNT
Housing: D-sub, 9-pin (socket side)

⑤ Connection

1	IRCA		1	IRCA
5	IRCB		5	IRCB

NOTE: Connect the cable shield secure to the angle of the ECR. In the case of the above housings, connect the cable shield secure to the housing case which hooks up to the ECR angle when the connector is fastened.
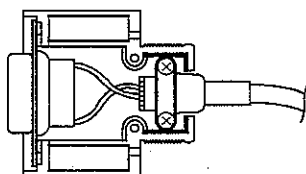Plug case assembling method

Fig. 13

2) Transmission line specification

Line method: D-SUB, 9-pin
Trunk line cable: shield cable
Branch line cable shield cable
Number of connectable units 16 units max.

3) Pre-wiring check

① Deciding the cable length

Before proceeding the work, prepare layout and wiring diagrams for the ER-A550. The combined total length of the trunk and branch line cables must not exceed 600m in any circumstances. (NOTE 1)

NOTE 1: Total cable length: Trunk line cable + Branch line cable

② Supply of materials for the IRC network

Use our specified or approved parts for the D-sub connectors and shield cables which are described in the latter part of this document. No specifications are provided for the piping parts and junction boxes, but these parts must be provided with shielding.
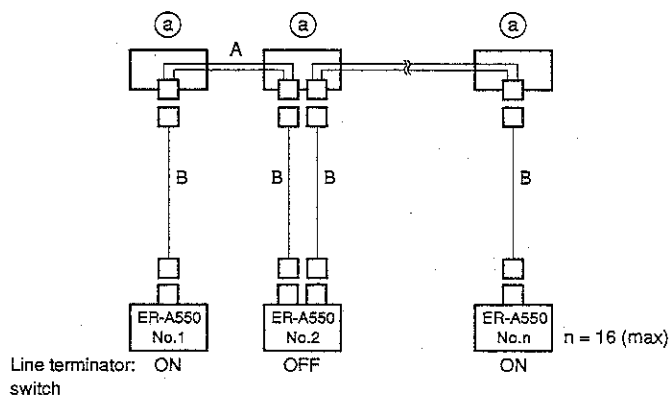
4) Block diagram of the entire system

Fig. 14

Line terminator

Communication lines A, B, and C are all shield cable.
A .... Trunk communication line
B .... Branch communication line
ⓐ .... Trunk/branch junction

5) Assembly of the communication lines

In the above block diagram, erection work is necessary to install A and ①.
Arrange B separately, and connect it to the ① after the above work is completed.

① **Assembly of trunk communication line (A)**

<Cable>

Hitachi: CO-SPEV-SB(A)-0.3SQ
BELDON: 9182EQIVILENT

<Connector>

D-sub, 9-pin

① Before proceeding, prepare the layout and wiring drawings for the ER-A550, from which calculate the trunk line length and cut the cable to that length.

② Install a connector at each end of the cable.

<Trunk communication line>

D-SUB 9Pin   D-SUB 9Pin
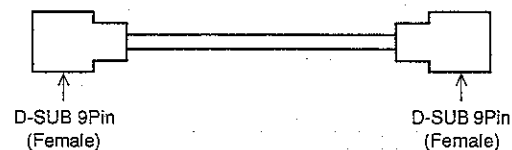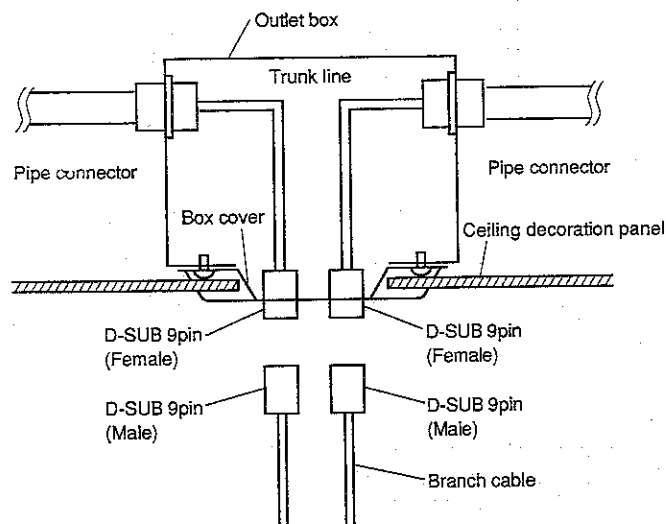(Female)   (Female)

Fig. 15

6) Installation of signal line branch (ⓐ)

Use an embedded type branch box as shown below in the signal line branch section.
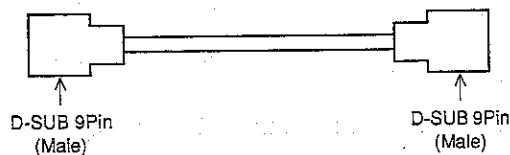

Fig. 16

<Installation procedure>

① Fix two piping connectors to the outlet box with screws.

② Fix the box cover to the outlet box with screws. (The screws are supplied together with the outlet box)

③ Route the trunk line through the piping connector and direct it outside the ceiling through the box cover.

④ Fix the outlet box under the ceiling above the position where the ER-A550 is installed.

⑤ Fix the D-SUB connector to the decoration panel on the ceiling using a nut.

⑥ Fasten the trunk line routed outside the ceiling in step 3. to the D-SUB connector installed in step 5.

⑦ Fix the decorative panel to the box cover with decoration screws. (The screws come with the panel)

⑧ If the trunk line is to be connected to the terminal station, connect a line terminator ⑦ on the end of the trunk line as shown below.

7) Precautions in wiring

It is recommended to assemble the trunk line by using piping and outlet boxes. The following basic points must be observed in the erection work as well as in other works.

① When installed, the D-sub connectors must be insulated from the other metal parts.

② The shield cable and the branching portions of the D-sub connectors must be provided with full protection against moisture, oil, dirt, and heat.

③ The shield cable and the branching portions of the D-sub connectors must be provided with full protection against external mechanical shock and damage caused by rats, etc.

④ The lines must be installed in a location that does not interfere with the path of people in the shop and that does not present the possibility of injury.

⑤ The communication lines must not be routed through the same pipe as the power lines. The communication lines must be kept at least 300mm away from the power lines.

⑥ Avoid routing the lines in a location that may be subjected to the effects of induction noise (for example, motors, relays, etc.).

8) Finishing of reserve branch terminals

Reserve branch terminals which are not used to connect branch cables to the trunk line must be finished as shown below, using a junction cable that directly joins the branch cable joints to provide connection between the trunk lines.
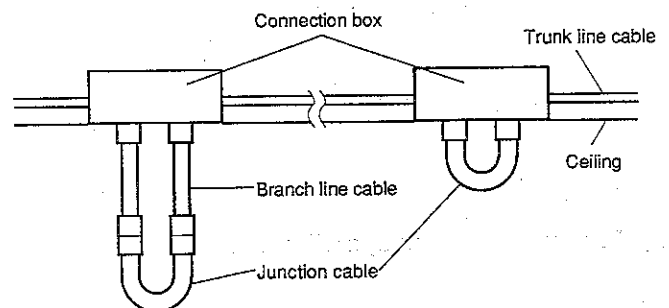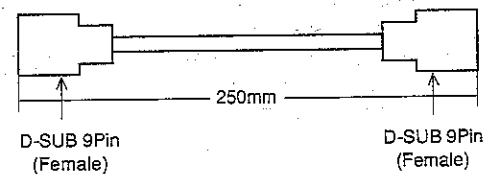
<Junction cable>

Fig. 17

9) Wiring materials

Parts code: QCNW-7377RCZZ
(For trunk line: 200m/roll)

NOTE: The shield cable of the following maker must be used for the wiring materials.
Hitachi Cable: CO-SREV-SB(A)
BELDON: 9182EQIVILENT

6. Prevention of flame spreading through in-line and on-line cables

Route the in-line and on-line cables through metal piping to prevent flame spreading in case of a fire.
Also, to prevent flame from spreading to the ECR, wind the following tape around the cable near the ECR.

Parts code: PTPEZ6643RCZZ (20 rolls per pack)
Hitachi Cable: H-GF tape

Use this tape to protect the cable from burning when it is placed near any neated parts.

7. Operation Test

1) General

This test program, as a checking program to be contained in ER-A55R1 (option ROM), has been developed for the purpose of confirming the operations for I/F board check conducted by ER-A5RS and ER-A5IN mounted on ER-A550.

2) Structure (RS-232 test & inline test)

* RS-232 test (RS-232 port test conducted by ER-A5RS and ER-A5IN)
  The following structure is required to execute RS-232 test program.

  * ER-A550
  * ER-A5RS or ER-A5IN (I/F PWB Unit)
  * Loopback connector for testing (UKOG-6705 RCZZ)
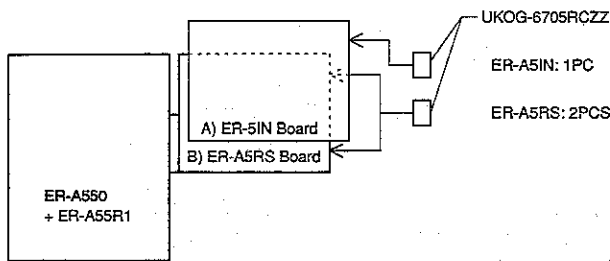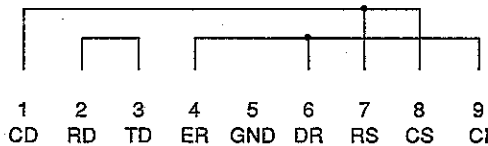 * ER-A55R1 (option control ROM)

Fig. 18

LOOP BACK CONNECTOR WIRING DIAGRAM (UKOG-6705RCZZ)

1	2	3	4	5	6	7	8	9
CD	RD	TD	ER	GND	DR	RS	CS	CI

* Inline test
  The following structure is required to execute the inline test program.

  * ER-A550
  * ER-A5IN (inline I/F PWB unit)
  * ER-A55R1 (option control ROM)
  (When executing a transmission test, two or more units of the above set and a transmission cable are required.)

3) Activation

This test program can be activated by inputting 3-digit number → CA/AT (or TL) with the mode key positioned at "SRV" in the above structure.

4) Test Job & Code

RS-232 I/F check

JOB & CODE	Contents
500	Channel check
501	RS-232 channel 1 check
502	RS-232 channel 2 check
503	RS-232 channel 3 check
504	RS-232 channel 4 check
505	RS-232 channel 5 check
506	RS-232 channel 6 check
507	RS-232 channel 7 check

Inline I/F check

JOB & CODE	Contents
600	Inline transmit-receive circuit check
601	Terminator switch check
602	Dummy data transmission/loopback check
603	Transmission test (SLAVE setting)
604	Transmission test (MASTER setting)

5) Cautions

* Options should be installed with the power supply turned off.
* When setting channels of RS-232, never set 2 or more ports for the same channel. If the port of ER-A5RS and that of ER-A5IN are set for the same channel, the hardware will be destroyed.
* Concerning the inspection items whose display formats are not presented in this diagnostic program, nothing appears on the display screen. (blank display)

6) RS-232 Test

6)-1. Channel check

① Activation
The program is activated by JOB#500
SRV mode: 500 → CA/AT

② Contents to be tested
Information about connected RS-232C channel is printed.

Printing
digit

CHn = 0 : Presence of channel
1 : Ansence of channel

③ Confirmed content
Printed contents and the setting of channel changeover switch on PWB are compared and confirmed.

④ Release
The program is terminated after the above contents are printed.
RS-232 channel setting (SW OFF: 1, SW ON: 0)

ER-A5RS CN2				ER-A5RS CN1				ER-A5IN RS-CN			
SW1			Channel	SW1			Channel	SW2			Channel
6	5	4		3	2	1		3	2	1	
0	0	0	Invalid	0	0	0	Invalid	0	0	0	Invalid
0	0	1	Channel 1	0	0	1	Channel 1	0	0	1	Channel 1
0	1	0	Channel 2	0	1	0	Channel 2	0	1	0	Channel 2
0	1	1	Channel 3	0	1	1	Channel 3	0	1	1	Channel 3
1	0	0	Channel 4	1	0	0	Channel 4	1	0	0	Channel 4
1	0	1	Channel 5	1	0	1	Channel 5	1	0	1	Channel 5
1	1	0	Channel 6	1	1	0	Channel 6	1	1	0	Channel 6
1	1	1	Channel 7	1	1	1	Channel 7	1	1	1	Channel 7

6)-2. RS-232 Channel 1 ~ 7 check

① Activation

The program is activated by JOB#501~507.

SRV mode: 501 → CA/AT: Channel 1
502 → CA/AT: Channel 2
503 → CA/AT: Channel 3
504 → CA/AT: Channel 4
505 → CA/AT: Channel 5
506 → CA/AT: Channel 6
507 → CA/AT: Channel 7

② Contents to be tested

If the channel specified by JOB#CODE is not set, the machine performs the mis-operation processing. When the channel is set, the machine conducts the loop check concerning the channel specified by JOB#CODE by using the loopback connector.

The following three items are checked:

① Control signal check

② Data transfer check

③ Timer check (RS232 onboard timer)

Check ① Control signal check (ERn-DR•CIn, RSn-CD•CSn loop check)

OUTPUT		INPUT			
$\overline{ERn}$	$\overline{RSn}$	$\overline{DRn}$	$\overline{CIn}$	$\overline{CDn}$	$\overline{CSn}$
OFF	OFF	OFF	OFF	OFF	OFF
OFF	ON	OFF	OFF	ON	ON
ON	OFF	ON	ON	OFF	OFF
ON	ON	ON	ON	ON	ON

The read check about the above INPUT items and interrupt check of $\overline{CS}$, $\overline{CI}$ and $\overline{CD}$ are performed.

Read check: ER and RS are switched over in the order as shown in the above table to confirm the logic of $\overline{DR}$, $\overline{CI}$, $\overline{CD}$ and $\overline{CS}$. If the read logic is different from the one in the table, error print-outs occur.

Interrupt check: Allows the interruption of either of $\overline{CS}$, $\overline{CI}$ and $\overline{CD}$ one by one. (The mask is released.) The interruption does not take place when each signal is turned on. Or if the interruption occurs when a signal is turned off, error print-outs occur.

Each of the above checks should be made in four cycles.

Note) ERn control selector jumper switch on the I/F board must be switched to the software control side.

Check ② Data transfer check (SDn-RDn loop check)

In this check, transfer 256-byte loopback data of $00 ~ $FF.

Note) The above check should be made with the baud rate set at 9600BPS.

Check ③ Timer check

Before making check ②, set the corresponding timer at 10ms for RCVDT activation, and check to see that:

1) $\overline{TRQ1}$ is not generated during the execution of check ②.

2) $\overline{TRQ1}$ is generated in 10msec. after check ② is finished.

③ Contents to be checked

If an error occurs during the above checks, following error print-outs occur. Even if an error occurs during check ①, the test is continued after the corresponding error print-out has occurred, but if an error occurs during the execution of check ② or ③, the test is terminated after the corresponding error print-out has occurred. Note that when check ①, ② or ③ terminates, the termination print-out occurs irrespective of any errors that have occurred during the check. (The program terminates normally only when no error print-out has occurred.)

ERROR	ERROR PRINT	Contents
1	E1-ER DR	$\overline{ERn}$-$\overline{DRn}$ ERR
2	E2-ER CI	$\overline{ERn}$-$\overline{CIn}$ ERR
3	E3-RS CD	$\overline{RSn}$-$\overline{CDn}$ ERR
4	E4-RS CS	$\overline{RSn}$-$\overline{CSn}$ ERR
5	E5-CI INT	Interruption error of $\overline{CIn}$
6	E6-CD INT	Interruption error of $\overline{CDn}$
7	E7-CS INT	Interruption error of $\overline{CSn}$
8	E8-TXEMP	TXEMPn error
9	E9-TXEMP I	Interruption error of TXEMPn
10	E10-TXRDY	TXRDYn error
11	E11-TXRDY I	Interruption error of TXRDYn
12	E12-RCVRDY	RCVRDYn error (Reception is impossible. TRQ1 has occurred during execution of check ②.)
13	E13-RCVRDY I	Interruption error of RCVRDY
14	E14-SD RD	SDn-RDn ERR (Data error)
15	E15-SD RD	SDn-RDn ERR (Data error)
16	E16-TIMER	TIMERn error ($\overline{TMRQn}$ cannot be set after termination of check ②.)
17	E17-TIMER I	Interruption error of TRQ1

Errors that may occur during check ① (control signal check): E1 ~ E7

Errors that may occur during check ② (data transfer check): E8 ~ E15

Errors that may occur during check ③ (timer check): E12, E16 and E17

④ Cancellation

The program automatically terminates when a check is finished.

Termination print-out:

50n   n : 1 – 7

7) Inline check

7)-1. Inline transmitter-receiver circuit check

① Activation
The program is activated by JOB#600.
SRV mode: 600 → CA/AT

② Contents to be tested
Operatinal test for ER-A5IN I/F PWB unit is performed according to the procedure as shown below.
①: Data transfer/control signal check

Interrupt mask flag						Control flag					Condition	Error condition	Content of error
MBD-	MRCV RDY-	MTRN RDY-	MTRN EMP-	MP2	MP1	MTR RQ	TR CONT	TRN EN	RCV EN	BREAK			
0	0	0	0	1	1	0	0	1	0	0		Interrupt of TRRQ occurs.	Hardware error
1	1	0	0	1	1	0	0	1	0	0		Interrupt of TRRQ occurs.	Hardware error
0	0	1	0	1	1	1	0	1	0	0		Interrupt of TRRQ occurs.	Hardware error
0	0	1	0	1	1	0	0	1	0	0		Interrupt of TRRQ does not occur.	TRNRDY error
☆ 0	☆ 1	☆ 0	☆ 1	☆ 1	☆ 1	☆ 1	☆ 1	☆ 1	☆ 1	☆ 0	(Send buffer)←0AAH	1. RCVRDY is not set after approximately 2ms.	Hardware error
						0						2. Interrupt of TRRQ does not occur.	
												3. Received data is not 0AAH.	Hardware error
												4. RCVRDY is not reset.	Hardware error
1	0	0	1	1	1	1	1	1	1	1	(Send buffer)←0AAH	1. USART is not set to BREAK.	Hardware error
						0					Continuation of 5 bytes	2. Interrupt of TRRQ does not occur.	BREAK error
											Checked at fifth byte		
0	0	0	1	1	1	1	1	1	1	1	(Send buffer)←0AAH	1. USART is not set to BREAK.	Hardware error
						0					5 consecutive bytes	2. Interrupt of TRRQ occurs.	BREAK error
											Checked at fifth byte.		
1	0	0	1	1	1	1	0	1	1	1	(Send buffer)←0AAH	1. USART is set to BREAK.	Hardware error
						0					5 consecutive bytes	2. Interrupt of TRRQ occurs.	BREAK error
											Checked at fifth byte		

Note: Even if an interrupt which is not specified in the above table occurs, an error is not caused. The interrupt condition can be checked by the interrupt bit obtained from simple IRC after masking TRRQ of MPCAV.

② Onboard timer check
Set the timer at 10ms. in RCVDT activation, and perform the loopback transfer and reception of 0AAH data in 128 consecutive bytes according to the settings marked by asterisk (☆) in the above table.
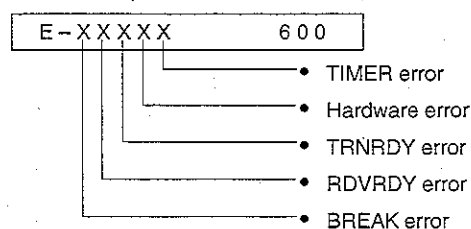
• TRQ2 should not occur during the consecutive transfer and receiving operations.
→ An error print-out occurs if TRQ2 is generated.

• Confirm that TRQ2 is generated in approximately 10 seconds after the transfer and receiving of data has been completed.
→ An error print-out occurs if TRQ2 is not generated.

③ Contents to be confirmed
Confirms conditions of the termination print-out.
If an error occurs, the status is printed out through the error print-out.

Error status (0: Normal or unchecked, 1: Abnormal)

```
E - X X X X X     6 0 0
```
• TIMER error
• Hardware error
• TRNRDY error
• RDVRDY error
• BREAK error

④ Termination
Termination print-out occurs to terminate the program automatically.

```
6 0 0          E - X X X X X     6 0 0
```
Normal print   Error print
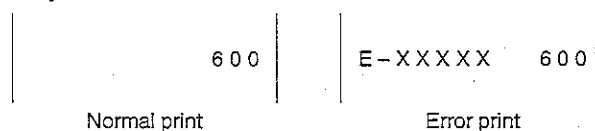
7)-2. Terminator switch check

① Activation
This program is activated by JOB#601.
SRV mode: 601 → CA/AT

② Contents to be tested
Tests the terminator switch (SW1) of ER-A5IN I/F PWB unit.

7SEG DISPLAY : | X |

X = 1 Terminator released (P0-bit=1)
0 Terminator connected (P0-bit=0)

Setting of SW1 (C/O is a silk display of PWB.)
Set to C side: terminater connected
Set to 0 side: terminater released

③ Confirmed content
While looking at the display, Panysically change the terminator switch (SW1) and confirm that it works properly.

④ Termination
Pressing any key causes a termination print-out to occur to terminate the program.

Termination print:

| 6 0 1 |

7)-3. Dummy data transfer/loopback check

① Activation
This program is activated by JOB#602.
SRV mode: 602 → CA/AT

② Contents to be tested
Makes a loopback check for transfer and receiving operation performed by ER-A5IN.
Make settings of 8 bit character, 1 stop bit, parity even, TRNEN=1, RCVEN=0, SBRK=0 and TRCONT=1, and transfer the data of 55H consecutively.

③ Termination
Pressing any key causes the termination print-out to occur to terminate the program.

Termination print-out:

| 6 0 2 |

7)-4 Transmission test (satellite/master setting)

The purpose of this test is to make a data transmission test in the actually configured system. This sytem can be configured by 1 master machine (set by JOB#604) and up to 15 sets of satellite machines (set by JOB#603).

Notes at the start of test)

• When the unit for which the simple IRC has been set is to be tested, be sure to change its setting to the status of absence of simple IRC before starting the test. (902-A)

• When the test is performed in the system already configured, be sure to change the settings in the sets which are not to be tested to the ones for absence of simple IRC or disconnect the cable.
If the test is performed with the cable connected to the non-tested units to which presence of simple IRC is set, their data may be destroyed.

Note at the end of test)

• After completing the tests of all the units used for the test (completed by service reset), RE-ebable simple IRC in JOB#902-A

① Setting of satellite machine (JOB#603)

Activation
SRV mode: 603 → CA/AT

7SEG DISPLAY : | O |

Entry of terminal No. for test and starting of test
XXX → CA/AT
(XXX: 000~254)
XXX: Terminal No. of satellite machine to be tested

7SEG DISPLAY : | X X X |

The setting and activation of a test satellite machine are completed according to the above procedure and the machine enters the wait state for the activation of the master machine. The sequence No. of the received data is displayed on 7SEG display after data transmitted from the master machine.
When the test is performed with the plural number of satellites machine used at the same time, the procedure as shown above must be done to each satellite. In this case, be careful not to use the same terminal No. more than once.

② Selection of master machine (JOB#604)
The master machine must be set after each satellite has been set. If the master machine is activated before the satellite, an transmission error is caused.

Activation
SRV mode: 604 → CA/AT

7SEG DISPLAY : | O   O |

Entry of terminal No. for test and start of test

$$ XXX \rightarrow YYY \rightarrow SBTL \rightarrow CA/AT $$

Repeat the above procedure if plural number of satellites are used.

(XXX, YYY: 000~254)
XXX: Terminal No. of master machine to be tested
YYY: Terminal No. of satellite to be tested

Note) Never use the same No. more than once in the same system for the terminal No.'s of both master and satellites.

7SEG DISPLAY : | X X X   Y Y Y |

The above procedure allows the master machine to start data transmission with the satellite.
On starting the data transmission, the sequence No.'s of the transmitted data for both master and satellites are displayed on 7SEG display.

7SEG DISPLAY : | Z Z Z Z |

ZZZZ: Sequence No.   → 0000 —— → 9999 ——

③ Contents to be tested

a. 2 bytes of sequence No. and the data of the following format which consists of 254 bytes of 0AAH data are transmitted from the master machine to the satellite. The master machine displays the sequence No. on 7SEG display.

b. The slave machine returns the received data to the master machine. The satellite increments the sequence No. of the received data to display it on 7SEG display.

c. The master machine, after receiving the data, checks the sequence No. and 0AAH data.

d. If two or more satellite are used at the same time, repeat the above steps a, b and c. If all the data received from the satellites are normal, the sequence No.'s are incremented.

Repeat the above steps from a~d.

Test data format (1 packet: 256 bytes)

```
 1  2  3  4  5  • • • • • • • •  254 255 256 (BYTE)
┌──┬──┬──┬──┬──┬                 ┬───┬───┬───┐
│ZZ│ZZ│AA│AA│AA│ • • • • • • • • │AA │AA │AA │
└──┴──┴──┴──┴──┴                 ┴───┴───┴───┘
```

ZZZZ   : Sequence No.: 2 bytes (4-digit interger)

AA   : Transmitted data (0AAH) ū~ 254 bytes

④ Error display
If an error occurs during the data transmission test, an error print-out is caused to terminate the test.

Error print-out

```
│ E – – – X X     6 0 3 │
│                       │
```
XX: Error code

	XX= 01 :	Abnormal parameter
	02 :	Retry over/time out
	03 :	Break detection
	11 :	Sequence No. error
	12 :	Data error

−17−

CHAPTER 8 . REMOTE DRAWER (ER-01DW)

1. Outline

ER-01DW is a remote drawer. Up to three ER-01DWs can be connected to ER-A550 at the same time.

- Drawer connectors

  ER-A550 is equipped with a connector for standard type drawer and another one for remote drawer on the main PWB. Therefore, it is necessary to add connectors to the main PWB if two or three remote drawers are to be connected at the same time.

DRCN1 ——▶ ☐ ☐ ◀—— DRCN2
DRCN4 ——▶ ☐ ☐ ◀—— DRCN3
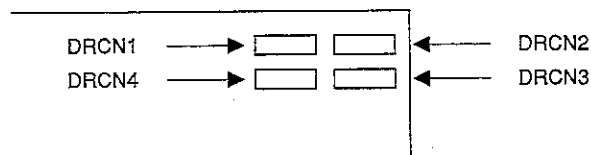
DR CN1: For standard type drawer
DR CN2: For first remote drawer
DR CN3: For second remote drawer
DR CN4: For third remote drawer
Be sure to use the connectors (QCNCM6822RCOC) for DR CN3 and DR CN4.

- The remote drawer consists of the following items.

  - Drawer   1pc.
  - Balancing metal fixtures   2pcs.
  - Bushing   3types, 1pc. each
  - Screw (XUPSD30P08000)   2pcs.
  - Screw (XBPSD40P06000)   1pc.
  - Screw (LX–BZ3006SC0S)   1pc.
  - Ground wire (QCNW-7582RCZZ)   1pc.
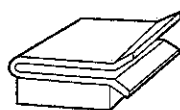
Balancing metal
fixtures (2 pcs.)
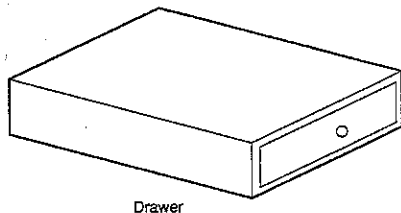
Drawer

2. Installation procedure

1) Open the printer cover ① and remove the ribbon cover ② (Fig.1)

   ✳ Holding the left side, move the ribbon cover in the direction of the arrow.

2) Remove the drawer holding screw ③ (Self tap screw) (Fig.1).
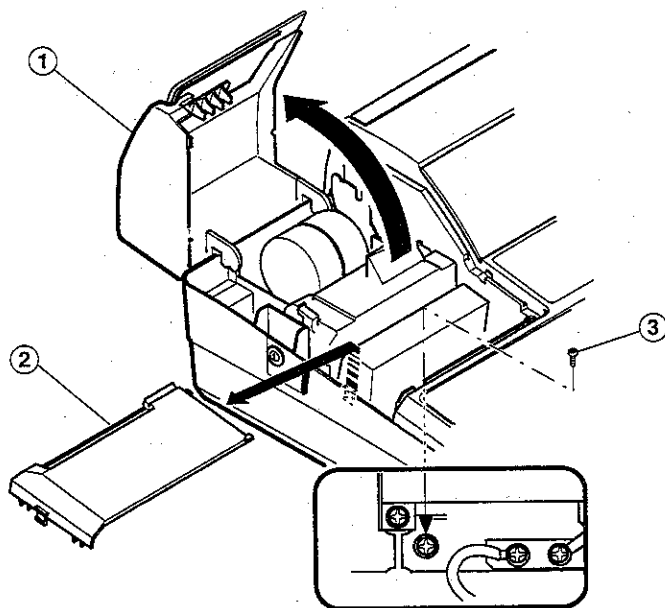
Fig. 1

3) Detach the ECR from the drawer.

4) Fasten the remote cable ④ to the main PWB connector (Fig.2)

5) The remote drawer cable must be secured using the cable clamp ⑤ and the screw ⑥ (XUPSD30P08000 : Self tap screw) comes with the product.

6) Put the grounding wire of the remote drawer into the screw hole in the lower cabinet and fasten it with the screw. (Use the holes ⓐ and ⓑ in the illustration. Never use the hole ⓒ . If the third and fourth drawers are to be added, share the holes ⓐ and ⓑ among the drawers.)

Note: If it is feasible to directly connect the ground strap to the remote drawer, it must be connected to ground directly, not to the ECR. If it is not feasible at all, it must be connected to the ECR as illustrated.

7) To install the ground wire, tighten the wire holder together on the rear surface of the ER-01DW.

GND Wire
QCNW-7582RCZZ

Fig. 2

CHAPTER 9. PRESETS LOADER

1. Outline

The presets loader option consists of the following devices:

- ER-A5CB SIO interface cable, for machine to machine only.

- ER-02FD 3.5-inch floppy disk unit (QCNW-7578RCZZ SIO interface cable included). Must be ordered from the parts DEPT.

The TTL-level SIO transfer function is standard for the ER-A550 cash register.

The ER-A550 can achieve standard (TTL-level) SIO data exchange with another ER-A550 through the ER-A5CB or the ER-02FD through QCNW-7578RCZZ.

This enables saving and loading of various data.

For the ER-02FD this section only describes the method of data down-loading for memory saving to be performed in servicing.

NOTE: The ER_02FD must be set to the ER-01FD mode.

2. Installation procedure

- Installation of the ER-A5CB SIO interface cable (for data transfer between ER-A550s)

1) Open the SIO connector cover on the right side of the ER-A550 by opening and connect the one end of the ER-A5CB to the SIO connector.

2) Connector the other end of the cable to the SIO connector of the mating cash register.

Note: After the cable is disconnected from the SIO connector, be sure to close the cover to protect the connector.
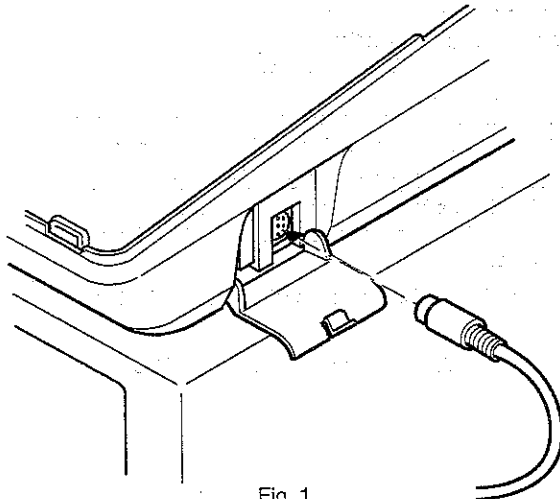

Fig. 1

Installation of the QCNW–7578RCZZ (SIO interface cable) and ER-02FD 3.5-inch floppy disk unit (for data transfer between the ER-A550 and the ER-02FD)

1) Connect the QCNW–7578RCZZ to the SIO connector on the right side of the ER-A550 and to the serial interface conroctor ④ of the ER-02FD

2) Open the cover on the right side of the ER-02FD and perform its programming.
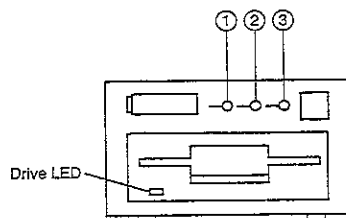
- Description of the indicators on the ER-02FD

Fig. 2

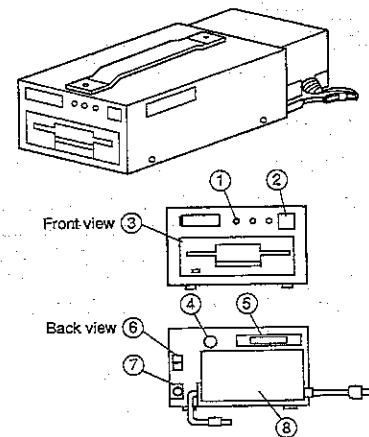|	LED	State of LED	State of the floppy disk drive
①	Power LED	The LED lights up.	The power of the ER-02FD is on.
	Drive LED	The LED lights up.	The drive is in opetation. (The drive is reading, wriling, or formatting.
②	FD LED	The LED lights up.	A read/write error has occurred.
		The LED blinks	• The format type of the floppy disk set in the drive is different form the programmed one. • The disk set in the drive is protected against writing.
			In the ER-02FD mode only • There is no files to read. • A specified file to be read or witten does not exist. • The volume of data stored in a file to be written is greater than the remaining storage capacity of the floppy disk.
			• The attribute of a file to be written or deleted is "Read only" (PC-DOS and MS-DOS only).
③	TR LED	The LED lights up.	• The time is over. • The power of the ECR is off. • The cable is not connected. • Anything unusual has occurred in the communication line.
		The LED blinks (Blinking 1)	The transmission parameters of the ER-02FD and the ECR are incorrect.
		The LED blinks (Blinking 2)	The TR LED blinks each time one trame of data (128 bytes) is outputted to the communication line.
② and ③	FD and TR LEDs	These LEDs light up together.	The program does not function correctly when the power is turned on. (ROM check error)
		These LEDs blink together.	NO flopply disk is present in the drive.
		These LEDs blink alternately.	The ER-02FD is waiting for the SEND key to be operated.

Fig. 3 ER-02FD

1 POWER LED
ON when the ER-02FD power is on.

2 SEND key
Used to start data transfer between the ER-02FD and the ECR.

3 3.5" FD

④ Serial interface connector (TTL level)

⑤ Serial interface connector (RS-232C level)

⑥ POWER switch

⑦ AC adapter jack

⑧ AC adapter

3. Operation test

1) Key operation
   117 →[CA/AT]

2) Functional description
   The following two kinds of loopback tests are carried out using the special service tool (UKOG-6704RCZZ) to check the trans and receive data, ready, and not ready signals.
       Test 1: Checks ER-DR, RS-CD and RR-CS
       Test 2: Checks TDX-RDX

3) Check the following items:
   Successful test results must be checked on the display and the termination message print.

4) Test termination

   | 117 | | EX ---   117 |

   Termination print

   X = 1 : ER-DR error
        2 : Send and receive data unmatch error
        3 : Hardware error
        4 : P-OFF
        5 : Timer overflow error

4. Operation

1) ER-02FD and ER-A550

   ① To send data from the ER-A550 to the ER-02FD:
      Enter : 996 → [•] → [@/FOR] → [CA/AT]

   ② To receive data from the ER-02FD to the ER-A550:
      Enter : 998 → [•] → [@/FOR] → [CA/AT] and depress the [SEND] button on the ER-02FD

2) ER-A550's

   ① On the receiving ER-A550:
      Enter : 998 → [•] → [@/FOR] → [CA/AT]

   ② On the transmitting ER-A550:
      Enter : 996 → [•] → [@/FOR] → [CA/AT]

   NOTE: Be sure to start the receiving machine first.

CHAPTER 10. JOURNAL NEAR END SENSOR (DKIT-8643RCZZ)

The DKIT-8643RCZZ has one more screw (LX-BZ6773RCZZ) than with the previous DKIT-8226RCZZ.

1. Parts list

KIT CODE : DKIT-8633RCZZ

No.	Parts code	Description	Price rank	Q'ty
1	D U N T K 8 2 9 6 R C Z Z	Near end sensor	BC	1pc.
2	L X – B Z 6 7 7 3 R C Z Z	Screw (Self tap screw)	AA	1pc.
3	Q C N W – 7 0 4 9 R C Z Z	Ground wire	AD	1pc.
4	X B P S D 3 0 P 0 4 K S 0	Screw	AA	1pc.
5	X B P S D 4 0 P 0 6 K S 0	Screw	AA	1pc.
6	X W H S D 3 0 – 0 5 0 8 0	Washer	AA	1pc.

2. Installation procedure

1) Protecting data
   If there is no need of saving the data, you may proceed to a next steps without executing this step.
   The contents of the memory of the ER-A550 to be installed with the option must be saved in the data saving unit consisting of the ER-A550 and ER-02FD.

2) Removing the cabinet

3) Removing the main PWB

4) Installing parts on main PWB (Fig. 1)
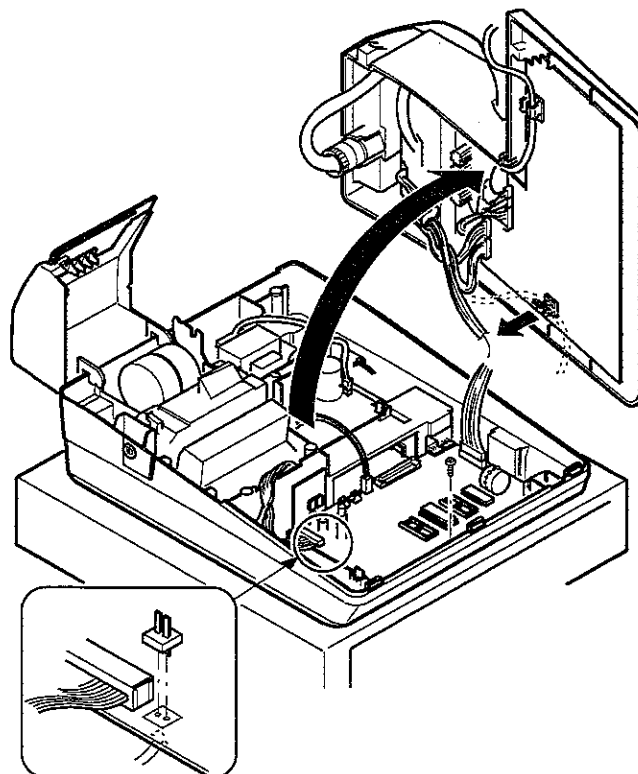   Install and solder the 2-pin connector on the main PWB (Fig. 1)

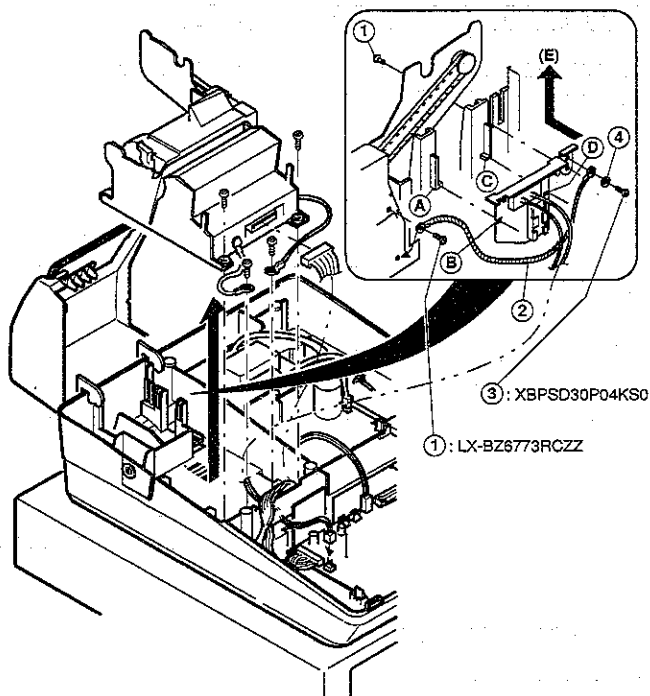
Fig. 1

5). Installing the sensor unit.

Fig. 2

Remove the sensor unit adjusting screw.

Fix the ground wire to the sensor unit with a washer ④ and screw ③ (XBPSD30P04KSO). Then attach the sensor as shown below:
Match the journal guides Ⓐ and Ⓒ to points Ⓑ and Ⓓ of the sensor unit, and install the sensor unit in the aroow direction Ⓔ
Then, secure it with the adjusting screw ③. (LX-BZ6773RCZZ. Self tap screw)
Fix the other end of the grounding wire ② to the screw ① hole in the righ rear side of the R/J printer. (Fig. 2)

6) Fasten the connector removed at 4) with the connector from the sensor unit.

7) Replace the main PWB and the cabinet.

8) Restoring the data
Load the data saved from the ER-A550 in which the data was saved.

3. Operation test

The near end sensor a optional unit.
The validation sensor a not optional unit.

1) key operation
106 → [CA/AT]

2) Functional description
State of the validation and near end sensor is sensed and displayd.

3) Check the following items:
On and off actions of the validation and near end sensor are tested and their results are displayed.

Display: | x y | N E S | z |

x: STATE OF THE VDST SENSOR
y: STATE OF THE VDSB SENSOR
z: STATE OF THE NES SENSOR

Display	X/Y/Z	Description
CDST	O	Validation card top (JOURNAL) not detected
	C	Validation card top (JOURNAL) detected
VDSB	O	Validation card bottom (RECEIPT) not detected
	C	Validation card bottom (RECEIPT) detected
NES	O	Journal side paper roll near end detected.
	C	Journal side paper roll near end not detected.

NOTE: "C" is always displayed when no sensor is used.

4) Test termination
Any key depression causes the test to terminate with the termination message on printout.

```
                          1 0 6
       Test termination print
```

CHAPTER 11. DRAWER FIXING KIT (DKIT-8633RCZZ)

The drawer fixing kit is used for securing the cash drawer when installing separately from the ECR main unit.
By using two of brackets, the drawer box can be protected from drifting especially when it is filled with coins.

1. Parts list   KIT CODE: DKIT-8633RCZZ

No.	Parts code	Description	Price rank	Q'ty
1	LBRC-2321RCZZ	Fixing bracket	AN	2
2	XTPSD40P16000	Tapping screw M4x16	AA	4
3	XBSSD40P16000	Flat head screw M4x16 (For remote drawer)	AA	2
4	XUSSD40P20000	Flat head screw M4x20 (For standard drawer)	AA	2
5	XBPSD40P22000	Screw M4x22	AA	4
6	XNESD40-32000	NUT M4x32	AA	4

2. Installation procedure

① Turn over the drawer bottom side and remove rubber footing at two to locations.

② Fasten the bracket together with the rubber footing using the pand head screw.
Pay attention for the installing direction of the bracket that the pan head screw can be inserted properly into the bracket.
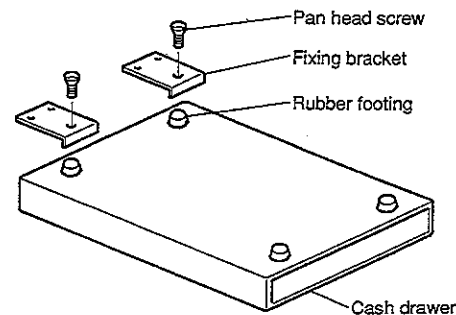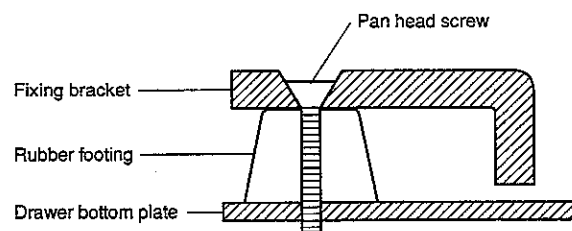
Fig. 1

③ Fastening on the table:
Secure the fixing Bracket using the screw (Fig. 2).
If the thickness of the table is less than 15mm, bore a 4.5mm hole
in the table and fasten it with the screw (XBPSD40P22000 - 4pcs.)
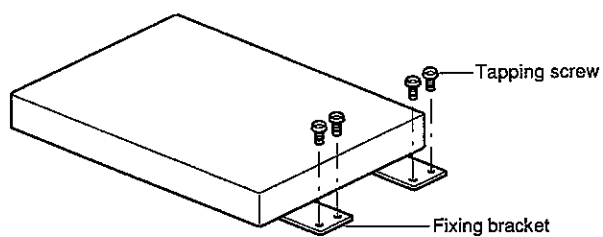and nut (XNESD40-32000 - 4pcs.).

Fig. 2