

SHARP SERVICE MANUAL

CODE : 00ZER3241SM-E



ELECTRONIC CASH REGISTER

MODEL ER-3231 ER-3241

OPTIONS: ER-46SP1* ER-12KT2
ER-34DW3/34DW5/34DW7* ER-22KT2
ER-46PL1 ER-11DK2
ER-12HK2 ER-51DK2
ER-11KT2 ER-33CC/33CC1
ER-32RS

PRINTER: M-220F
SRV KEY: LKGIM6959RCZZ (2B5)

* for ER-3241 only



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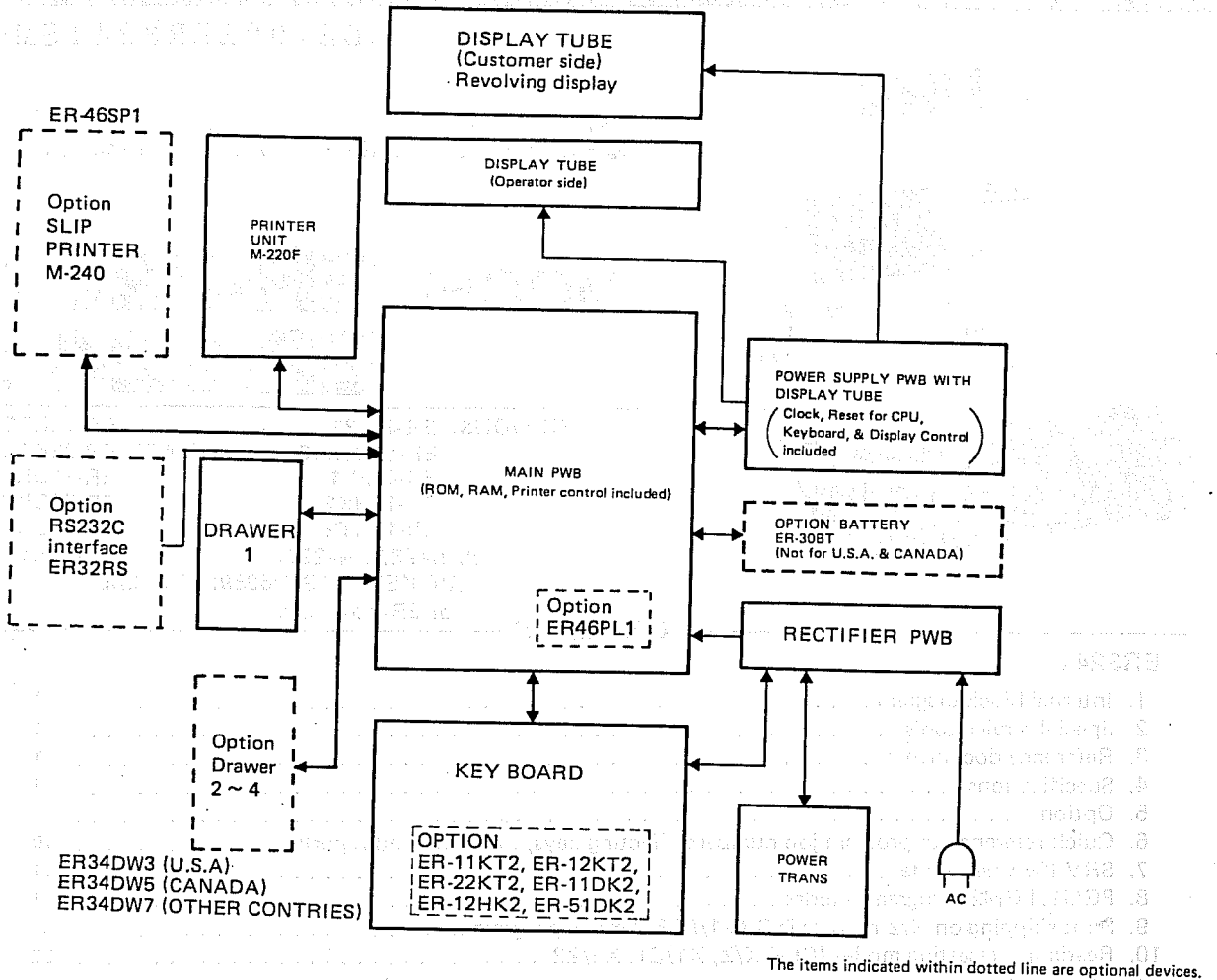
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NOTE: MASTER RESET (ALL MEMORIES CLEAR)
THIS FUNCTION HAS BEEN CHANGED TO JOURNAL KEY (),
NOT THE NUMERIC 9 KEY ()

1. INTERNAL BLOCK DIAGRAM



2. SPECIAL SERVICE TOOLS

TOOL NAME	PARTS CODE	PRICE RANK
KEY SWITCH removal tool	UKÖG-6635RCZZ	AX
KEY TOP and DUMMY KEY, removal tool	UKÖG-6636RCZZ	AX

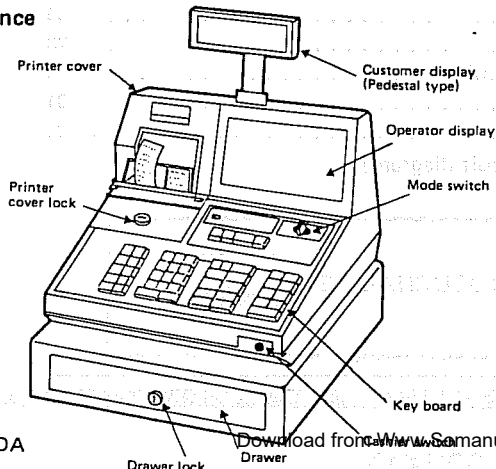
3. REFERENCE DOCUMENTS

1. Cash Register Basic Manual
2. Printer M-220F Service Manual (00ZM220F-SM-E)
3. Options Installation Manual for ER-3241/3231.

4. SPECIFICATIONS

4-1. Appearance/Rating

1) Appearance

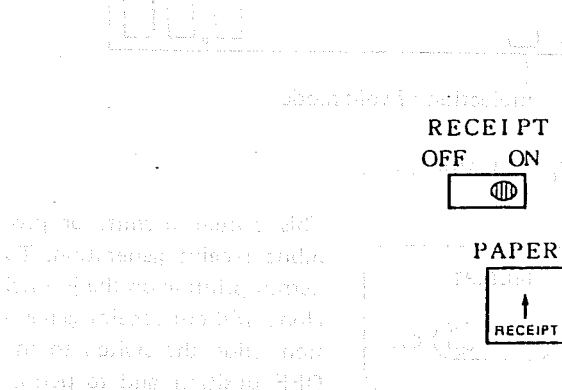


2) Rating

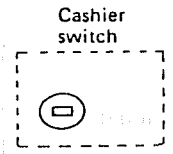
Model name	ER-3241
Power source	AC 115V±10% 50/60 Hz
Power consumption	46W
Operating temperature	0°C to 40°C (32 to 104°F)
Overall dimensions	514 (H) x 440 (W) x 460 (D) mm
	20-15/64 x 17-5/16 x 18-1/8 in (H) (W) (D)
Weight	39.5 lbs (18 kg)

4-2. Keyboard

1) Standard Keyboard Layout



RA	PO	@/FOR	•	CL	5	10	15	20	CH4	CH5
TAX1 SHIFT	TAX2 SHIFT	7	8	9	4	9	14	19	CH2	CH3
⊖1	⊖2	4	5	6	3	8	13	18	CH1	#/SBTL
%1	%2	1	2	3	2	7	12	17	CHK	MDSE SBTL
RFND	VOID	0		00	1	6	11	16	CA/AT/NS	



2) Key top name (With standard feature)

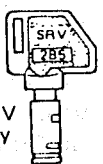
- 0** **00** ~ **9** : Numeric entry
- : Decimal point
- CL** : Clear
- @/FOR** : Multiplication, split pricing
- ↑** : Paper feed (Receipt & Journal)
- #/SBTL** : Non add code print, Time display, sub-total,
- CA/AT/NS** : Cash, Amount tender, No sale
- RA** : Received on account
- PO** : Paid out
- TAX1 SHIFT** **TAX2 SHIFT** : Tax shift 1, 2
- ⊖1** **⊖2** : Discount
- RFND** : Refund
- VOID** : Void
- 1** ~ **20** : Department
- %1** **%2** : Percent 1, 2
- PLU/SUB** * : Price look up, Sub-department
- CH1** ~ **CH5** : Charge sale
- CHK** : Check
- MDSE SBTL** : Merchandise sub-total
- CLK#** : Clerk # entry
- PRINT** : Validation print key
- RCPT** : Receipt

- L1** * : Department level-1 shift key
- L2** * : Department level-2 shift key
- L3** * : Department level-3 shift key
- SLIP** * : Slip print key
- F.S. SHIFT** * : Food stampable state reversal key
- F.S. TEND./ST** * : Food stamp tendering and Food stamp subtotal key
- PB** * : Previous balance key
- CB** * : Credit balance key
- TIP** * : Tip amount entry key
- TAX** * : Tax (Manual)
- TRAY TOTAL** : Tray Total
- CASH2** * : Cash 2.

NOTE: Keys marked with asterisk * do not exist on the key board of the STANDARD KEY LAYOUT.

3) Mode Select keys

- SRV** : Service key (No. 2B5) LKGiM6959RCZZ
- MA** : Master key (No. 6B5)
- SM** : Sub-master key (No. 3B2)
- OP** : Operator key (No. 0B6)



4) Mode Switch Positions

- SRV2 mode:** * This mode can be selected only with the SRV key.
- SRV1 mode:** * Machine initialization (partial, full)

- Feature selection
 - List of options
 - Special data correction
GT1, GT2, Z counter, etc.
- PGM2 mode: ★ This mode can be selected only with the SRV or MA key.
- Programming data of store control level that does not need to be frequently modified.
- PGM1 mode: ★ This mode can be selected with any keys other than the OP key.
- Programming of departmental unit price, PLU unit price, %1 ~ %4 rates, etc.
- OFF mode: ★ Any key can be inserted or removed from the mode switch when it is in the "OFF mode" position.
- Turning-off power.
- CLK X/Z mode: ● Individual reading and resetting for clerks.
- Attendance time will be printed.
- REG mode: ★ Any key can be inserted or removed from the mode switch when it is in the "REG mode" position.
- General registrations.
- MGR mode: ★ This mode can be selected with any keys other than the OP key.
- All REG-mode operations and transaction void.*
 - Overriding of pre-set limitation in the REG mode.
- X1/Z1 mode: ● Reading and resetting of daily general reports.
- Generation of various analysis reports.
- X2/Z2 mode: ● Reading and resetting of periodical-ly accumulated reports.
- Generation of analysis reports.

***Void mode (Transaction void)**

This mode serves to void incorrect registrations when they are noticed after the completion of a transaction or during the stage of tendering. The voiding operations for the latter case are as follows: temporarily finalize the current transaction, press the "VOID" key in the MGR. mode to set the machine to the VOID mode, then enter the whole transaction.

This mode allows even those registrations for which the past or last void is not applicable to be nullified.

The void mode is automatically cancelled whenever a transaction is finalized. Therefore, when clearing two or more transactions, it is necessary to first depress the VOID key before proceeding to the subsequent registration.

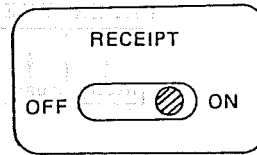
NOTE: The void mode entry is allowed only when the void mode is enabled via the SRV mode programming "JOB #902-C".

Void mode display:



Indication of void mode

5) Receipt ON-OFF switch

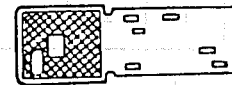


This switch permits or prohibits receipt generation. To permit printing on the journal alone without receipt generation, slide the switch to the OFF position and to permit printing on both the journal

and the receipt, slide it to the ON position.

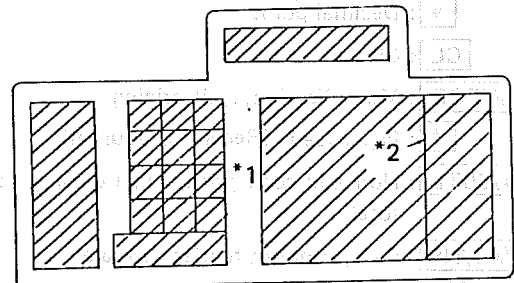
NOTE: The register will generate receipts regardless of the position of this switch except when the mode switch is in the REG position. This means that the receipt roll must be installed even when this switch is kept in the OFF position.

6) Cashier keys (A, B, D and E)



These keys serve to identify cashiers. Insert one of the A, B, D and E keys in the cashier switch.

7) Water-proof Keyboard Cover (GCÖVB6822RCZZ)



NOTE: The hatched areas protrude.

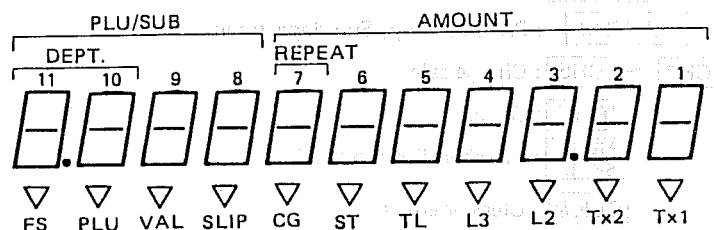
*1: Because this area does not protrude, this key cover can not be used for the key layout when this area is filled by key tops.

*2: This line does not protrude.

4-3. Display

1) Operator side display

(fluorescent display tube): 11-LT-07Z



Contents of display	No. of digits	Column No.	Pattern
Numerals	Numeric input 7 digits	1 to 7	1234567890
	Amount 7 digits	1 to 7	
Symbol	1 digit	4 to 9	(-) Minus sign (floating)
	1 digit	11	(P) PGM mode
	1 digit	11	(E) Error
	1 digit	11	(□) Deficit symbol
	1 digit	10	sentinel indicator
PLU	4 digits	8 to 11	4-digit display (zero-suppressed)
Dept.	2 digits	9 to 10	2-digit display (zero-suppressed)
Repeat	1 digit	7	Endless count, starting from 2
Decimal point	1 digit	2	Decimal point (1 to 3). TAB (2 to 4)
		11	Cash in drawer has exceeded a programmed amount.

The following legends are indicated by a small triangular lamp in the operator display.

- TX1: Lights up when the tax shift 1 key is depressed or a taxable 1 item is registered.
- TX2: Lights up when the tax shift 2 key is depressed or a taxable 2 item is registered.
- L2: Lights up when a second level-Dept. is selected. (option)
- L3: Lights up when third level Dept. is selected. (opcion)
- TL: Lights up when a registration is finalized by pressing the CA/AT/NS, CA2, CHK, or CH1 thru CH5 without any amount tendered entry.
- ST: Lights up alone or together with other lamps when the register has computed subtotals:
This lamp lights up alone when the merchandise sobtotal has been calculated.
The "ST" lamp and the deficit symbol "□" light up together when the tax-included subtotal has been calculated.
The "ST" and "TX1" lamps light up together when the taxable 1 subtotal has been calculated.
The "ST" and "TX2" lamps light up together when the taxable 2 subtotal has been calculated.
The "ST", "TX1" and "TX2" lamps light up together when the taxable 1 and 2 subtotal has been calculated.
The "ST" and "FS" lamps light up when the food stamp eligible subtotal has been calculated.
- CG: Lights up whenever the change due amount appears in the display or when the total sale amount is negative.
- SLIP: Lights up when the machine is set for compulsory validation or slip printing.
- VAL: Lights up when the machine is set for compulsory varidation printing.
- PLU: Lights up each time a PLU/SUB item is entered.
- FS: Light up when an eligible for food stamp is entered.

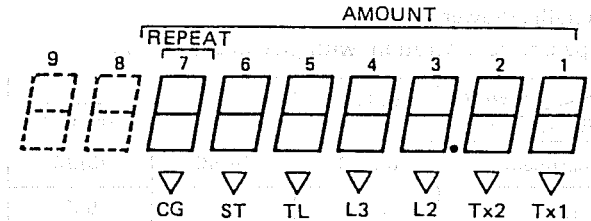
(NOTE)

The number of repeats is displayed from "2" and counted up with each repeat. When ten registrations are done, the display shows "0".

Example: (2 → 3 → 4 → 9 → 0 → 1 → 2 →)

(2) Customer side display (Revolving display)

Fluorescent display tube: 9-LT-03Z

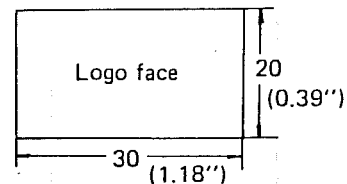


NOTE: The 8th and 9th digits are not used.

4.4. Printer (Model-220F)

1) Overview of the printer

- a. Printing system: 2-station print dot matrix printer (M-220F)
- b. Printing capacity: 16 digits in all (16 digits for both receipt and journal)
- c. Printing speed: about 2.4 lines/sec.
- d. Paper feeding speed: about 14.2 lines/sec. (receipt) about 7.1 lines/sec (journal)
- e. Functions:
 - Stamping
 - Receipt ON-OFF and journal select function.
 - Individual receipt and journal paper feeding.
 - One-line validation printing.
 - Validation paper detection (Journal side only)
 - Journal paper roll end sensing
- f. Paper width: 37.5±0.5mm 1.47" for receipt and journal, max. roll diameter: 80mm (3.14").
- g. Paper quality:
 - Receipt and journal paper: bond paper (0.07 to 0.09 mm in thickness 52.3 to 64.0g/m² in weight).
- h. Reliability: MCBF 2 mill. line. (excluding print head unit) ... Print head unit: 40 mill. characters (life)
- i. Color of print: Purple (single color)
- j. Paper cutter: Manual cutter.
- k. Ribbon cassette: Life: about 6 mill. characters.



2) Logo unit

- a. Type: Porous rubber.
- b. Color of stamp: Purple (single color)
- c. Max. logo dimensions: 30(W) x 10(H) mm 1.18" x 0.39"

3) Validation printing

- 1. Number of validation printing lines: 1 line.
- 2. Number of validation columns: 35 digits
- 3. Recommended validation card
 - (1) Type of paper: ordinary paper
 - (2) Minimum paper width: 130mm(5.12 inches)
 - (3) Paper thickness

4-5. Drawer/Lock

1) Drawer

- Metallic drawer
- Open/close operation with the micro switch

Country Part/Rotate	U.S.A., PANAMA	CANADA	SOUTH AFRICA
Compartment	6B/6C	6B/5C	4B/8C
Rotation	180°	180°	90°
Micro switch	O	O	O

O: Installed as a standard feature.

2) Locks

2-1) DRAWER LOCK Key No. B01
(For USA and Canada)

LOCK: 180° counter clockwise
UNLOCK: 180° clockwise

(For South Africa)

OPEN: 90° clockwise

2-2) PRINTER COVER LOCK Key No. 224

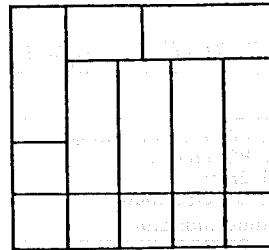
LOCK: 90° clockwise
UNLOCK: 90° counter clockwise

4-6. Totalizer and Counter

Item	Totalizer	Counter	Preset	Note
GT	12Dg x 3 S			
Z counter		4Dg x 1 (2)		
DEPARTMENT	8Dg x 30 S (90)	6Dg x 30 S (90)	6Dg x 30 (90)* 1Dg x 30 (90)* 1 x 30 (90) 1 x 30 (90) 1 x 30 (90) 1 x 30 (90) 1 x 30 (90) 6 ch x 30 (90) 1 x 30 (90) 1 x 30 (90) 1Dg x 30 (90)	*UNIT PRICE *HALO +/- TAX SORT 1/2 SIS or SIF Inhibit or provide OPEN and/or PRESET Alpha N. descriptor VALIDATION enforce HASH Flag for report
DEPT. TTL	8Dg x 4 S			
PLU	8Dg x (350) S	6Dg x (350) S	6Dg x (350)* 1 x (350) 1 x (350) 1 x (350) 2Dg x (350) 2Dg x (350) 6 ch x (350)	*UNIT PRICE (or HALO amount) +/- TAX SORT 1/2 Inhibit or provide Split pricing denominator Dept. number Alpha N. descriptor

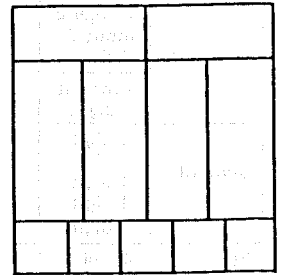
(COMPARTMENT LAYOUTS)

1-1) 6B/6C



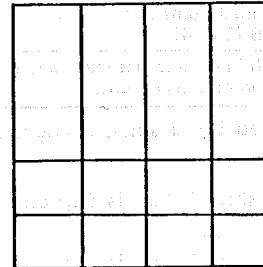
U.S.A.

1-2) 6B/5C



CANADA

1-3) 4B/8C



SOUTH AFRICA

Item	Totalizer	Counter	Preset	Note
NET	8Dg x 3 S			
VOID	8Dg x 4	4Dg x 4	6 chara x 1	VOID in REG. mode, two kind of VOID TTL in VOID mode and HASH VOID.
REFUND	8Dg x 2 S	4Dg x 2 S	6 chara x 1*	Normal & hash RFND *Alpha numeric
P/O	8Dg x 1 S	4Dg x 1 S	6 chara x 1*	*Alpha numeric
R/A	8Dg x 1 S	4Dg x 1 S	1 x 1 6 chara x 1	*Tend./Direct Alpha numeric
TX'BL SALES	8Dg x 2 S			
TAX TTL	8Dg x 9 S		72 steps* 4Dg x 2	*for 2 Tables for % TAX
MEDIA TTL	8Dg x 8 S	4Dg x 8	6 chara x 8* 8Dg x 1* 1Dg x 8	*Alpha numeric *Sentinel Flag for report
(-)	8Dg x 2 S	4Dg x 2 S	6 chara x 2*	*Alpha numeric
%	8Dg x 4 S	4Dg x 4 S	4Dg x 4* 1 x 4 6 chara x 4	% rate +/- Alpha numeric
CASH CHECK	8Dg x 1	4Dg x 1	8Dg x 1*	*HALO
CASH SALE	8Dg x 2 S	4Dg x 2 S	6 chara x 2*	*Alpha numeric
CHK CHANGE	8Dg x 1		8Dg x 1*	*HALO
TIP (TOTAL)	8Dg x 2	4Dg x 2	1Dg x 1*6chara x 2	*HALO
PLU TTL	8Dg x 1 S	4Dg x 1 S		
FS SALE	8Dg x 1	4Dg x 1		
FS CHANGE	8Dg x 1			
0 P-bal		4Dg x 1		
no sale		4Dg x 1		
validation		4Dg x 1		
slip count		4Dg x 1		
customer		4Dg x 1		
PERIODIC TTL	8Dg x ()	4Dg x ()		
consecutive		4Dg x 1		
machine No.			3Dg x 1	
HOURLY TTL	8Dg x 24	4Dg x 24		
CASHIER			6 chara x 4	Cashier's name
SALES	8Dg x 1 x4	4Dg x 1 x 4	*	*Same descriptor with the general report.
PO	8 x 1 x 4	4 x 1 x 4	*	
RA	8 x 1 x 4	4 x 1 x 4	*	
REFUND	8 x 1 x 4	4 x 1 x 4	*	
VOID	8 x 1 x 4	4 x 1 x 4	*	
(-)	8 x 2 x 4	4 x 2 x 4	*	
MEDIA	8 x 6 x 4	4 x 4 x 4	*	
CLERK	8Dg x 3 x 15 8 x 2 x (99)	4Dg x 3 x 15 (99) 4 x 2 x (99)	6 chara x 15 (99)	Clerk's name TIP
SLIP BUFFER	16Dg x (43)			
BALANCE FILE	8Dg x (1344)			amount

(NOTE)

The number in () is the maximum number with all options.

The number out of () indicates standard amount with no option installed.

"S" means "with +/- sign".

"Dg" = Digits, "chara" = Characters

4-7. Overflow Indication

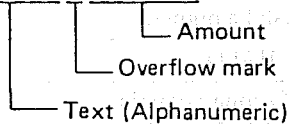
If any amount totalizer except GTs which is printed on X or Z reports has overflowed, two exclamation marks are printed for each totalizer on the report.

There is a possibility that the marks may be printed amounts less than the totalizer's capacity. (i.e. in case a negative registration after having overflowed causes the new amount to be within the totalizer's capacity, the marking is printed.)

A "!!" mark is printed in the 7th column from the most left column on the amount total line to show the overflow.

EXAMPLES:

- 1) AAAAAA!!\$12345.67
- 2) BBBBBB!!123456.78



4-8. In Case of Power Failure

When power is lost, the machine retains its memory contents and all information on sales registrations.

- (1) When a power failure is detected in either the register idling state or during registration, the machine returns to the normal state of operation after power recovery.
- (2) When power-failure is detected during a print cycle, the register prints "-----" and then carries out the correct printing procedure.

4-9. Motor Seizure Detecting Function

When motor seizure is sensed due to a paper jam inside the machine or ink ribbon jam, power to the motor is shut off to prevent the motor from overheating.

- (1) Motor seizure sensing method
After the motor starts to run, the CPU monitors printer timing pulses continuously. When a timing pulse is delayed beyond the predetermined cycle, the CPU interprets it as a motor seizure and therefore turns the motor power-on signal PA7 to low level to stop the motor.
- (2) Motor seizure alarm
The CPU issues intermittent buzzer-on signal PC4 after stopping the motor to alert the condition.
- (3) Release of the motor seized condition.
 - a) Power off.
 - b) Remove the cause of motor seizure, such as a paper jam or ink ribbon jam.
 - c) Power on.
 - d) Depress the **[CL]** key.

NOTE: Even in the motor lock condition, paper feed keys (Receipt/Journal) are acceptable.

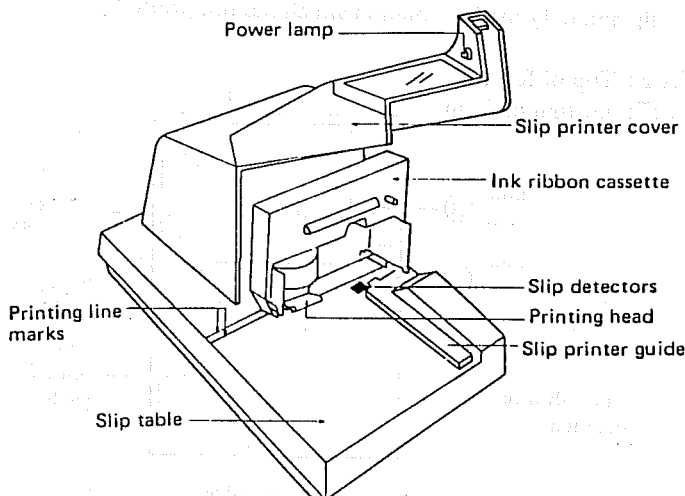
5. OPTIONS

No.	Description	Model name, Parts code	RAM	Key	SRV1 setting (JOB CODE)	Note
1	Restaurant RAM	ER-46PL1	8K (HM6264)	○		8KB RAM 1 chip
2	PLU/SUB-Department	ER-46PL1	8K (HM6264)	—		8KB RAM 1 chip
3	Key kit (1 x 1 size) x 30 pcs.	ER-11KT2	—	○	#901-C, D #950	<ul style="list-style-type: none"> • Department expandable up to 50 depts. • Flexible key layout
4	Key kit (1 x 2 size) x 30 pcs.	ER-12KT2	—	○		
5	Key kit (2 x 2 size) x 10 pcs.	ER-22KT2	—	○		
6	Key Kit (1.5 x 2 size) x 10 pcs.	ER-12HK2	—	○		
7	Dummy key (1 x 1 size) x 30 pcs.	ER-11DK2	—	○		
8	RS232C interface	ER-32RS	—	—	#906-C	
9	Slip printer	ER-46SP1	—	—	#907A, B, C, D	
10	Remote drawer	ER-34DW3/DW5/DW7	—	—	#902-A	
11	Water proof key cover	GCÖVB6822RCZZ	—	—	—	• Service parts only
12	External option battery	ER-30BT	—	—	—	Not for USA, CANADA
13	Coin case 6B/6C	ER-33CC	—	—	—	For U.S.A. and PANAMA
14	Coin case 6B/5C	ER-33CC1	—	—	—	For CANADA
15	Key kit	ER51 DK2	—	—	—	

[1] ER-46SP1 (Slip Printer)

The ER-46SP1 is a full slip printer (remote type) which can be connected to the ER-3241.

1. Appearance



2. SRV/PGM programming for slip printer

Mode	Job #	Programming Item
SRV1	907-A	• Printing method
	907-B	• Slip printer Yes/No
	907-C & D	• Slip selective print Slip print shifting
PGM2	255	Limit of times of slip print
	260	Slip print compulsory/Non comp.

3. Component parts

- Printer unit (slip printer M-240 FORM STOPPER MECHANISM)
- Ink ribbon (color: purple)
- Slip printer interface PWB unit
- Slip paper (standard)
- Cable (1.5 meter)
- etc.
- Slip head stopper

(NOTE)

- In case the slip is hard to insert, turn mode switch to "PGM1 or PGM2" position, depress the [SLIP] key, then try to insert the slip again. — (slip release operation).

4. Slip

Slips used for the slip printer must conform to the following standard. The use of slips that do not meet the standard causes problems, such as improper seating and blurry printing.

(1) Paper specifications

- Ordinary paper
- Thickness: 0.09 to 0.45 mm

(2) Form

Ordinary paper + carbon paper, or printing paper

(3) Dimensions

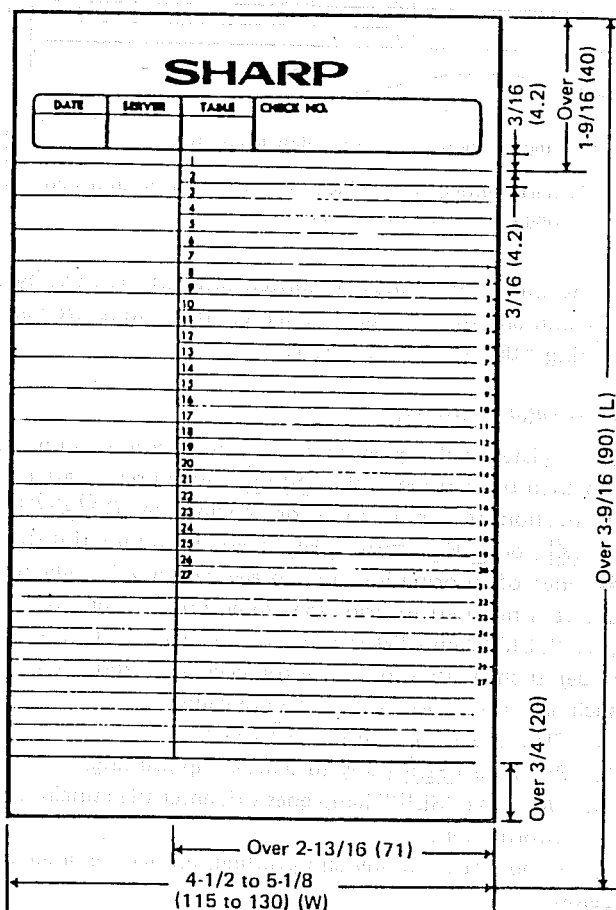
Width: 71 to 210 mm

Length: 90 to 297 mm

(4) Numbering

Print numbers as shown in illustration at right. The numbers printed in the center indicate serial numbers of printing lines, and the numbers at the right side are used to line up the slip in order to print on the proper lines. The number 1 is printed on the 7th line from above as shown in illustration at right, and the subsequent numbers are printed on the following underlines in sequence.

Format of recommended slip Unit: in. (mm)



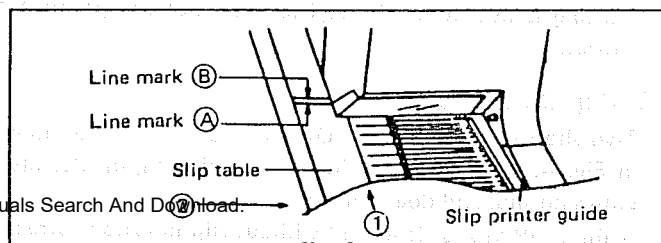
(5) Printing position alignment of slips

Every printing occurs between two red line marks (A) and (B) on the slip table.

At the use of recommended slips
Place the slip along the slip printer guide. Feed it deep into the slip printer (in the direction of arrow (1)) until it touches the stopper in the table.

Printing starts on the line just above the printing line No. 1 (within the frame of table/check No.) Make sure this line is between marks (A) and (B).

If you want print on a line halfway on the slip, the slip can be inserted in the direction of arrow (2) too.



5. Print sample

SHARP				
DATE	SERVER	TABLE	CHECK NO.	
			10/12/82	001001234 0.3
		1	00123445	
		2	DEPT	112.00
		3	DEPT	14.50
		4	DEPT	152.00
		5	DEPT	2.00
		6	DEPT	174.50
		7		

Feeding line number for the following print.

To start printing on this line program "1" for the initial line spacing in the PGM mode item (6).

The 2nd column may be shifted towards the right by a maximum of 16 digits. Refer to SRV mode programming #907-C & D on page 15.

5. Storage Capacity

The register is designed to store entered information first and then print it when the **[SLIP]** key is pressed after the finalization of a transaction (or pressing the **[CA/AT/NS]**, **[CHK]**, or **[CH1]** thru **[CH5]** key). Therefore, if it stores 44 lines of information, its storage capacity is fully used and it is required to print the stored information on a slip (the "SLIP" lamp lights up). If you make further entries under such a situation, an error occurs. If you encounter such an error, follow the procedure below.

- (1) Clear the error with the **[CL]** key.
- (2) Press the **[SLIP]** key to achieve slip printing.
- (3) When the "SLIP" lamp goes off, enter the remainder of information.

If you do not need any slip printing, follow the procedure below.

- (1) Clear the error with the **[CL]** key.
- (2) Press the **[@/FOR]** key.

This key operation causes the register to print "SLIP BUF DELETE" on the journal and clears the slip buffer memory - which is intended to temporarily store all entered information to be printed on a slip. That enables the entry of the remaining information.

6. Compulsory Slip Printing

If a transaction is finalized using the transaction finalize key and programmed for compulsory slip printing, the "SLIP" lamp lights up in the display. In this case perform slip printing by the programmed number of times. If this printing is not done, the register does not accept further entries.

7. Slip Detectors

Two slip detectors (TOF, BOF) are provided in area shown in Fig. A. If the slip is not inserted in this area, the detector senses no slip, and does not print.

If the SLIP key is depressed without slip insertion correct-

the error state (with continuous buzzer sound and display "E"). Meanwhile, the slip printer prints *CONTINUE* on the slip and releases its paper holder.

If such a situation is encountered, insert the slip correctly and depress the **[SLIP]** key. This will cause the ER-46SP1 to print a consecutive number and *CONTINUE* on the slip and only the information which has not printed yet.

TOF: Top of form
BOF: Bottom of form

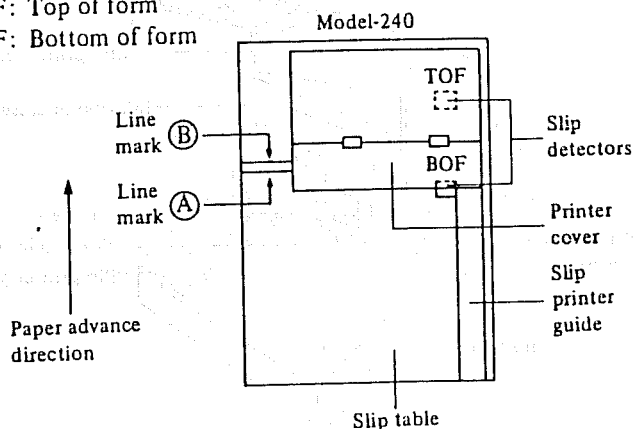


Fig. A

FOR A DESCRIPTION OF THE ER-46SP1 INTERFACE CIRCUIT, REFER TO THE ER-3241 PRINTER M-220F CIRCUIT DESCRIPTIONS ON THIS MANUAL SINCE THE CIRCUIT IS ALMOST THE SAME AS THAT OF THE M-220F.

8. Validation Print

Connecting the slip printer to the cash register prevents its built-in printer from performing validation printing. Carry out validation printing by use of the slip printer.

After pressing the **[CA/AT/NS]**, **[CH1]**, **[CH2]**, **[PO]** or **[RA]** key, (dept. key or PLU/SUB key), hold a simple receipt to the slip guide and advance the receipt deep into the printer until it touches the holder.

Depress the VP key permits the validation printing.

NOTE: When the machine has been programmed "COMPULSORY" for total validation print, if a slip paper is being inserted in the slip printer, the total validation print is automatically performed once on the slip after transaction finalizing key depression (**[CA/AT/NS]**, **[CH1]**, **[CH2]**, keys).

9. Error

If the slip advances inward and is out of contact with the detectors or the slip is drawn out in the course of printing, the detectors are off.

In this case the ER-3241 behaves as follows:

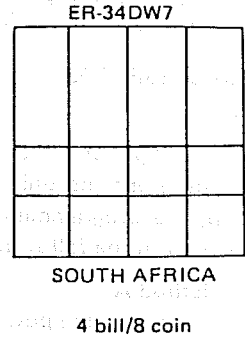
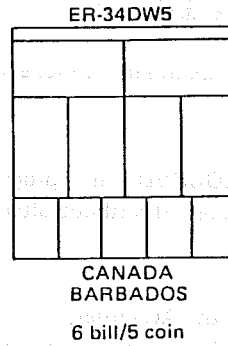
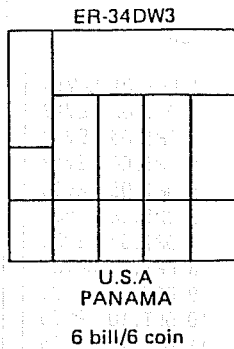
1. The status lamp "SLIP" lights up.
2. The alarm produces an error warning sound (long note).

The slip printer prints "→→→→" on slip.

The slip printer release its paper holder. If such situation is encountered, stop the sound by indexing the **[CL]** key,

This causes the slip printer to print a consecutive number, "→→→" and information which is not printed yet, and the build-in printer to print "***SLIP PRINT" on journal.

[2] ER-34DW3/34DW5/34DW7 (Remote Drawer)



Cable length: 1.5 m Fig. B

- PROGRAMMING IN THE SRV-1 MODE
JOB #902-A: Number of drawers

6. QUICK REFERENCE TO PROGRAM JOB NUMBERS AFFECTING KEYS, FUNCTIONS AND REPORTS

	SUBJECT	SRV JOB #	PGM2 JOB #	PGM1 JOB #
A	AMOUNT SYMBOL	905		
	AMOUNT TENDER		260	
C	CASHIR	902, 915		145
	CLERK	902, 906, 917		140, 144
	CONSECUTIVE #	905	253	
	CB	905, 907	231, 234, 260	
	CA2		260, 262, 263, 264	
	CHK	905	230, 260, 261, 262, 263, 264, 274	
	CH1-CH5		260, 262, 263, 264, 213	
	CLK X/Z		256	
D	CUPON		235	
	DEPARTMENT	901	210, 212, 214, 256	110
	DATE	905	250	
F	DRAWER	902, 903	260	
	FOOD STAMP	906	211, 221, 231	
	FRACTION TREATMENT	903		
G	FREE KEY LAYOUT	950		
	GT (GT1 - GT3)	904, 920, 921, 922, 923		
H	HASH	901	210	
	HALO		212, 232, 261, 262	
J	JOURNAL SELECT		256	
L	LOGO	906	254	
M	MDSE	905		
	⊖ 1 - ⊖ 2		231, 232, 234, 236	
	MACHINE NUMBER		252	
N	NON ADD CODE	906	230	

	SUBJECT	SRV JOB #	PGM2 JOB #	PGM1 JOB #
P	PLU/SUB	902, 904, 907	221, 224	120, 121
	PB	905, 908	231, 234, 260	
	% (%1 - %4)	903	231, 234, 235	130
	PO		230, 232, 234	
	PGM1		280	
	PERIODIC REPORT	902		
R	RS232C	906		
	RA	903	230, 232, 234	
	RFND		234, 256	
S	SBTL	904, 905	213, 260, 263	
	SLIP	907	255, 260	
	SECRET CODE	930	280, 281, 282	
	SPLIT PRICING		234	
	SENTINEL		257	
	STACK REPORT		286	
T	TAX	903, 904, 905	211, 221, 231, 232, 234, 240, 241, 260, 284	
	TIP	907	232, 234	
	TRAY		234	
	TIME		251	
V	VOID MODE	902		
	VOID		234, 256	
	VALIDATION		260, 274	
Z	Z COUNTER	910 - 917		
	Z1		281	
	Z2		282	

7. SRV (SERVICE) MODE

SRV1 mode (JOB #900)

900 → #/SBTL → CA/AT/NS

Service (SRV) Key is Required for use in service mode 1 or 2.

7-1. Program Reset

In the event the unit becomes "LOCKED" in a program loop, the programming may be restarted without altering memory in the following manner:

1) Method A

1. Remove the power cord from the AC outlet.
2. Turn the mode switch from the service 2 position to the service 1 position (SRV1).
3. Re-insert the AC plug into the outlet.

2) Method B

1. Turn the mode switch from the service 2 position to the service 1 position. (SRV2 to SRV1)

7-2. Master Reset (All Memories Clear)

To clear all memories and place the program in a key halt (wait) condition, do the following:

- (1) Turn the mode switch to the service 2 mode position.
- (2) Depress and hold journal paper feed key.
- (3) While holding the key depressed, turn the mode switch from the service 2 mode position to the service 1 mode position. (SRV2 to SRV1)

Note 1: After performing this procedure the unit must be completely reprogrammed in both the service (SRV) mode and program (PGM) mode.

Note 2: After turning the mode switch to the service 2 mode position, the memory is cleared of the date and time. Therefore the unit must be set in the PGM2 mode.

If the MASTER RESET operation is performed, the following readouts should be seen for service 1 (SRV-1) mode program and PGM mode program. See Sample Print-1 and 2.

7-3. Reading of SRV1 Mode Programming

[JOB CODE #900]

All SRV programming reports including the key layout report are printed in the SRV1 mode by JOB code #900. Key operation:

900 → #/SBTL → CA/AT/NS

[JOB CODE #950]

The key layout report is printed in the SRV1 mode by JOB code #950.

Key operation:

950 → #/SBTL → CA/AT/NS

00/00/00 12:00AM	H0950	1 DPT.01 KEY16	51 FLU --
000AH0000 ***		2 DPT.02 KEY17	52 CASH2 --
/		3 DPT.03 KEY18	53 CH1 KEY43
H0900		4 DPT.04 KEY19	54 CH2 KEY44
901H 1020		5 DPT.05 KEY20	55 CH3 KEY47
902H 1020		6 DPT.06 KEY21	56 CH4 KEY45
903H 5002		7 DPT.07 KEY22	57 CH5 KEY48
904H 0200		8 DPT.08 KEY23	58 CHECK KEY42
905H 3000		9 DPT.09 KEY24	59 ST KEY46
906H 0000		10 DPT.10 KEY25	60 TTL --
907H 0000		11 DPT.11 KEY26	61 VOID KEY06
910H Z1 0000		12 DPT.12 KEY27	62 RFND KEY01
911H Z2 0000		13 DPT.13 KEY28	63 #1 KEY02
912H Z2 0000		14 DPT.14 KEY29	64 #2 KEY07
913H Z1 0000		15 DPT.15 KEY30	65 #3 --
914H Z1 0000		16 DPT.16 KEY31	66 #4 --
915H Z1 0000		17 DPT.17 KEY32	67 (-)1 KEY03
916H Z1 0000		18 DPT.18 KEY33	68 (-)2 KEY08
917H Z1 0000		19 DPT.19 KEY34	69 TK S1 KEY04
920H		20 DPT.20 KEY35	70 TK S2 KEY09
921H		21 DPT.21 --	71 RTAK --
GT1		22 DPT.22 --	72 #R/A KEY05
\$0000000000.00		23 DPT.23 --	73 #F/D KEY10
922H		24 DPT.24 --	74 FS SFT --
923H		25 DPT.25 --	75 FS TND --
GT2		26 DPT.26 --	76 PRINT KEY51
\$0000000000.00		27 DPT.27 --	77 RCPT KEY50
GT3		28 DPT.28 --	78 SLIP --
\$0000000000.00		29 DPT.29 --	79 L 1 --
930H 0000		30 DPT.30 --	80 L 2 --
		31 DPT.31 --	81 L 3 --
		32 DPT.32 --	82 #FBAL --
		33 DPT.33 --	83 #LFBAL --
		34 DPT.34 --	84 CLK# KEY49
		35 DPT.35 --	85 TIP IN --
		36 DPT.36 --	
		37 DPT.37 --	
		38 DPT.38 --	
		39 DPT.39 --	
		40 DPT.40 --	
		41 DPT.41 --	
		42 DPT.42 --	
		43 DPT.43 --	
		44 DPT.44 --	
		45 DPT.45 --	
		46 DPT.46 --	
		47 DPT.47 --	
		48 DPT.48 --	
		49 DPT.49 --	
		50 DPT.50 --	

#902-A

Number of drawers.

The cashier A, B, D and E are assigned to a drawer by a fixed relation which is decided automatically by the number of drawers used for an ECR.

Number of drawer	(Cashier) drawer #	KEY ENTRY
0	No drawer	0
1	(A, B, D, E)1	1
2	(A, B)1, (D, E)2	2
3	(A)1, (B)2, (D,E)3	3
4	(A)1, (B)2, (D)3, (E)4	4

Drawer #1 = Standard fixed drawer
 Drawer #2-4 = Optional remote drawers
 (ER-34DW3, ER-34DW5, ER34DW7)

#902-B

- Cashier media totals exists/Does not exist on cashier reports.
- Clerk # appear/Hidden

	Display	Print
Appear	1234	1234
Hidden	----

(Clerk #: 1234) Clerk # may be preset in either PGM1 or PGM2 mode (JOB #140).

- Clerk # entry compulsory/Non compulsory in the REG and CLK X/Z modes.

(1) Cashier media totals *	(2) Clerk #	(3) Clerk # entry	KEY ENTRY
Not exist (SALE, CID) print only	Hidden	Non comp.	0
		Compulsory	1
	Appear	Non comp.	2
		Compulsory	3
Exist	Hidden	Non comp.	4
		Compulsory	5
	Appear	Non comp.	6
		Compulsory	7

#902-C

- Clerk sales total to include tax or not include tax.
- One hole cashier switch/4 PUSH down clerk switch
- Enable or inhibit of void mode in the MGR mode.

(1) Clerk sales total includes tax or not	(2) One hole cashier switch/4 push down switch (Select always "2" for ER324)	(3) void mode	KEY ENTRY
Not include	4 push clerk switch	Enable	0
		Inhibit	1
	One hole clerk switch	Enable	2
		Inhibit	3
Includes	4 push clerk switch	Enable	4
		Inhibit	5
	One hole clerk switch	Enable	6
		Inhibit	7

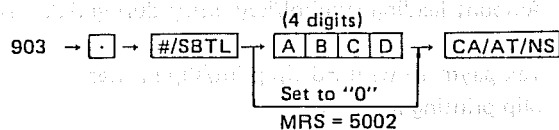
#902-D

- Enable or disable periodic (Monthly total) report in the X2/Z2 mode.
- Enable or disable PLU/Sub department function.
- Zero skip on PLU report in the X1/Z1 mode.

(1) Periodic report (X2/Z2)	(2) PLU/ Sub dept.	(3) Zero skip on PLU report	KEY ENTRY
Inhibit	Inhibit	Skip	0
		Not skip	1
	Enable	Skip	2
		Not skip	3
Enable	Inhibit	Skip	4
		Not skip	5
	Enable	Skip	6
		Not skip	7

[JOB CODE #903]

Key operation:



#903-A

Fraction treatment for multiplication and % calculation.

Fraction treatment	KEY ENTRY
Round down	0
Round off	5
Round up	9

EXAMPLE

Result	Example of regist.	*0.03@ 30% = *0.00 (9)	*0.03@ 10% = *0.00 (3)
Round down (0)		*0.00	*0.00
Round off (5)		*0.01	*0.00
Round up (9)		*0.01	*0.01

⊙ : rounded digit

#903-B

- The key operation is possible or impossible when the drawer is open.
- Selection of either Singapore tax or normal tax.

(1) Operation with drawer open	(2) Singapore tax* normal tax	KEY ENTRY
Disable	Normal tax	0
	Singapore tax	1
Enable	Normal tax	2
	Singapore tax	3
Disable	Normal tax	4
	Singapore tax	5
Enable	Normal tax	6
	Singapore tax	7

#903-C

1. Enable or disable tax delete function.
2. Error action for incorrect operation.
 LOCK ERROR: Long error released by CL key. (2 seconds)
 ONE SHOT ERROR: Short error
3. Enable or inhibit key catch sound.

(1) Tax delete*	(2) Error action	(3) Key catch sound	KEY ENTRY
Disable	All lock	Enable	0
		Inhibit	1
	Lock & One shot	Enable	2
		Inhibit	3
Enable	All lock	Enable	4
		Inhibit	5
	Lock & One shot	Enable	6
		Inhibit	7

#903-D

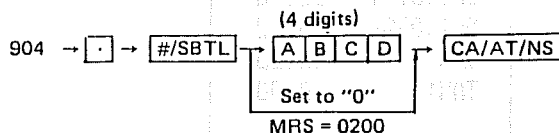
1. Received on account (RA) with tendering or Direct Received on account.
2. Enable or inhibit No sale after non add code (#) print.
3. Enable or inhibit No sale function.

#903-D

(1) RA with tender or direct RA	(2) No sale after non add code print	(3) No sale	KEY ENTRY
With tender	Enable	Enable	0
		Inhibit	1
	Inhibit	Enable	2
		Inhibit	3
Direct	Enable	Enable	4
		Inhibit	5
	Inhibit	Enable	6
		Inhibit	7

[JOB CODE #904]

Key operation:



#904-A

1. GT1 (Grand total 1) is printed on Z report or skipped.
 GT1 = Grand total of plus registrations.
2. GT2 (Grand total 2) is printed on Z report or skipped.
 GT2 = Grand total of minus registration.
3. GT3 (Grand total 3) is printed on Z report or skipped.
 GT3 = Net grand total (GT1 - GT2)

(1) GT1	(2) GT2	(3) GT3	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

#904-B

1. GT3 is printed on X reports./Skipped.
2. Coupon PLU is printed on X, Z reports./ Skipped.
3. Net sales SBTL is printed on X, Z report./Skipped.

(1) X report GT3 Print	(2) X/Z report coupon PLU Print	(3) X/Z report Nets ST Print	KEY ENTRY
Skip	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Print	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

#904-C

1. Taxable 1 subtotal is printed on X, Z reports or skipped.
2. Gross Tax 1 and refund Tax 1 total are printed on X, Z report or skipped.
3. Net Tax 1 total is printed on X, Z reports or skipped.

#904-C

(1) Taxable 1 subtotal	(2) Gross Tax 1 & Refund Tax 1 total	(3) Net Tax 1 total	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

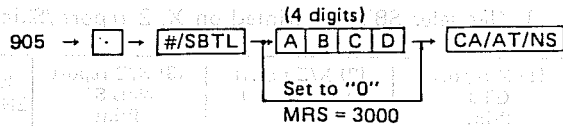
#904-D

1. Taxable 2 subtotal is printed on X, Z reports or skipped.
2. Gross Tax 2 and refund Tax 2 total are printed on X, Z reports or skipped.
3. Net Tax 2 total is printed on X, Z reports or skipped.

(1) Taxable 2 subtotal	(2) Gross Tax 2 & Refund Tax 2 total	(3) Net Tax 2 total	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

[JOB CODE #905]

Key operation:



#905-A

- Total tax amount are printed on X, Z reports or skipped.
- Gross manual tax and refund manual tax are printed on X, Z reports or skipped.
- Net manual tax total is printed on X, Z reports or skipped.

(1) X/Z report TOTAL TAX Print	(2) X/Z report Gross manual Tax & Refund manual Tax	(3) X/Z report Net manual Tax	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

#905-B

- Regular header format./With the consecutive number in larger in size.
- Regular header format./Two line header (special format 2: i.e. No cashier/clerk name print)
- Check change total is printed on X, Z reports or skipped.

(1) Special format 1	(2) Special format 2	(3) Check change total	KEY ENTRY
Regular header	Regular header	Print	0
		Skip	1
	2 line header	Print	2
		Skip	3
Consecutive number	Regular header	Print	4
		Skip	5
	2 line header	Print	6
		Skip	7

#905-C

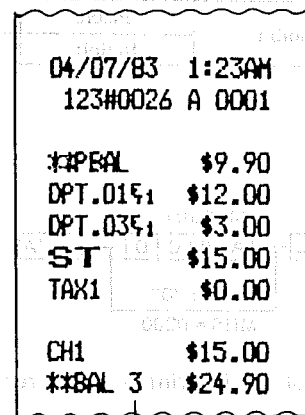
- Key entries during receipt issuing action (from depression of a transaction finalizing key CA/AT/NS, CH1~CH5 or CHK, PO or RA key to the finalizing of receipt issuing) are valid/invalid.
- Validation print format: Date/Time or Machine No./Consecutive No.
- Merchandise subtotal is printed or skipped.

(1) Key entry during receipt issuing	(2) Validation print format	(3) Merchandise subtotal	KEY ENTRY
Valid	Date/Time	Skip*	0
		Print	1
	M-No./C-No.	Skip*	2
		Print	3
Invalid	Date/Time	Skip*	4
		Print	5
	M-No./C-No.	Skip*	6
		Print	7

- Date/Time: 00/00/00 12:00AM CASH \$1.23
- Machine No. / Consecutive No.: 000#0013 A CASH \$1.23
- *SKIP: Merchandise subtotal amount is displayed by depressing ^{MDS}SBTL key but not printed.

#905-D

- Check digit exists for P-BAL and C-BAL/Not exist. If "Exist" is selected; A check digit is automatically produced together with the amount of new balance. When entering previous balance (P-BAL) amount or credit balance (C-BAL) amount, the check digit must be entered prior to the amount.



- Sample receipt for previous balance registration

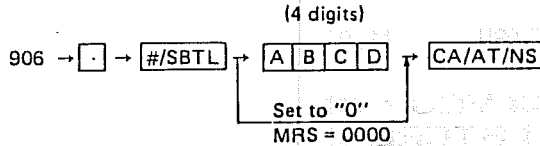
- Date format: Day-Month-Year or Month-Day-Year
- Amount leading symbol: * or \$.

(1) Check digit	(2) Date format*	(3) Amount leading symbol	KEY ENTRY
Not exist	M-D-Y	\$	0
		*	1
	D-M-Y	\$	2
		*	3
Exist	M-D-Y	\$	4
		*	5
	D-M-Y	\$	6
		*	7

*M: Month D: Day Y:Year

[JOB CODE #906]

Key operation:



#906-A.

Tax payment in Food Stamp*

Tax payment in Food Stamp	KEY ENTRY
Enable	0
Disable	1
Tax forgiveness	2

* Food stamp function is enabled via Job #950 (enabling FS SHIFT, FS TEND keys).

#906-B.

1. 99 or 15. clerks
2. Non-add code enforced./Not.
3. Maximum digits of non-add.code 14 or 8.

(1) Clerks	(2) Non-add code enforced /Not	(3) Maximum digits of Non-add code	KEY ENTRY
15	Not	8	0
		14	1
	enforced	8	2
		14	3
99	Not	8	4
		14	5
	enforced	8	6
		14	7

#906-C

1. RS232C interface exist./Not.
2. Print by #/SBTL key./Not.
3. Footer print control

Only for the case of finalization by the special media key (see JOB #263 in PGM2)./For the all receipt.

(1) RS232C	(2) SBTL Print	(3) Footer print control	KEY ENTRY
NO	Inhibit	All receipt	0
		Special media key*	1
	enable	All receipt	2
		Special media key*	3
YES	Inhibit	All receipt	4
		Special media key*	5
	enable	All receipt	6
		Special media key*	7

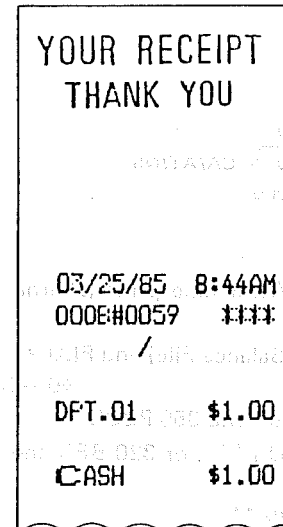
*: Need programming for JOB #263 in PGM2 mode

#906-D

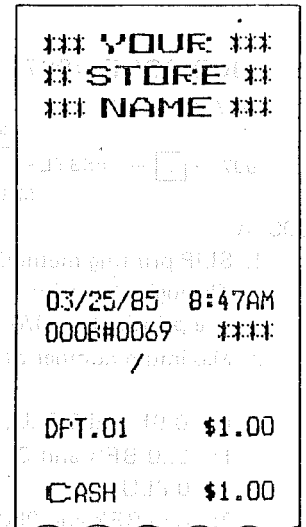
Logo message format



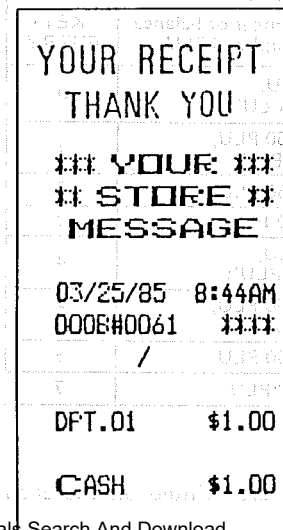
Logo message format	KEY ENTRY
No logo message (logo stamp only)	SMPL 1 0
3 line logo message instead of stamp	SMPL 2 1
Logo stamp and 3 line header message	SMPL 3 2
Six line header message instead of stamp	SMPL 4 3
Logo stamp and 3 line footer	SMPL 5 4
3 line header, 3 line footer and stamp	SMPL 6 6
Logo stamp and six line footer	SMPL 7 8



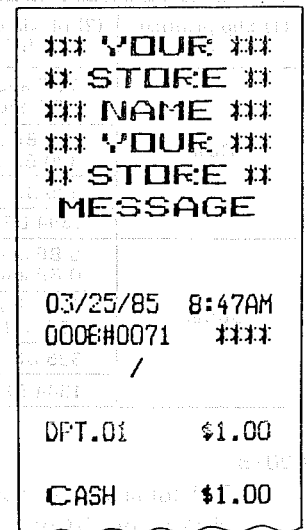
SMPL 1



SMPL 2



SMPL 3



SMPL 4

YOUR RECEIPT
THANK YOU

03/25/85 8:45AM
0006#0063 ***

DPT.01 \$1.00
CASH \$1.00

*** YOUR ***
** STORE **
MESSAGE

SMPL 5

YOUR RECEIPT
THANK YOU

*** YOUR ***
** STORE **
*** NAME ***

03/25/85 8:45AM
0006#0065 ***

DPT.01 \$1.00
CASH \$1.00

*** YOUR ***
** STORE **
MESSAGE

SMPL 6

YOUR RECEIPT
THANK YOU

03/25/85 8:46AM
0006#0067 ***

DPT.01 \$1.00
CASH \$1.00

*** YOUR ***
** STORE **
*** NAME ***
*** YOUR ***
** STORE **
MESSAGE

SMPL 7

[JOB CODE #907]

Key operation

907 → → #/SBTL → ^{Set to 0} ABCD → CA/AT/NS
MRS = 0000

#907A

- SLIP printing method
Through the print buffer/Real time print (alternative printing) = +4/0
- Maximum number of BF (Balance File) and PLU = +0 -3
0: 0 BF and 0 PLU, or 0 BF and 350 PLU's**
1: 320 BF's and 350 PLU's ***, or 320 BF's and 0 PLU*
2: 625 BF's and 250 PLU's ***
3: 1344 BF's and 0 PLU***

(1) Slip printing method	(2) Maximum number of balance file (PB look up) and PLU	KEY ENTRY
Real	0 BF and 0 PLU, 0 BF and 350 PLU's	0
	320 BF and 350 PLU, 320 BF and 0 PLU	1
	625 BF and 250 PLU	2
	1344 BF and 0 PLU	3
Buffer	0 BF and 0 PLU, 0 BF and 350 PLU's	4
	320 BF and 350 PLU, 320 and 0 PLU	5
	625 BF and 250 PLU	6
	1344 BF and 0 PLU	7

#907B

- TIP totalizer and counter are printed on the each clerk report.*/Not.
- Slip printer exist./Not.

- Header (date, time, etc.) printed on SLIP by RO key./Not.

(1) Clerk report TIP TTL counter print	(2) Slip printer exist	(3) Header printed on slip by RO Key	KEY ENTRY
NO	NOT	YES	0
	YES	NOT	1
		YES	2
YES	NOT	NOT	3
		YES	4
	YES	NOT	5
		YES	6
		NOT	7

#907C, D

- C&D Slip print shifting.
- Slip print select (short format)/Full print format.

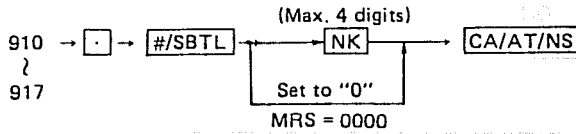
(1) Slip print digit of slip print	(2) Slip print select (short format) full print	KEY ENTRY
No shift	Full print format	0
1 digit		1
?		?
16 digit		16
X		Short format
	18	
	19	
	20	
		?
		36

*The feature requires a optional RAM chip at the #1 socket position on the main board (i.e. the restaurant RAM).
 **The feature requires a optional RAM chip at the #2 socket position on the main board (i.e. the PLU/SUB RAM).
 ***The features require the both of optional RAM chips at #1 and #2.

[JOB CODE #910] ~ [JOB CODE #917]

Z counter setting (Max. 4 digit)

Key operation:

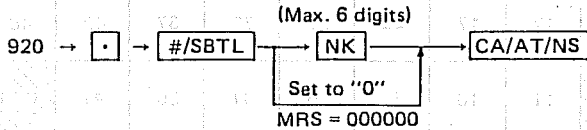


- 910: Z1 report
- 911: Z2 report
- 912: Tax report
- 913: Hourly report
- 914: PLU report
- 915: Cashier report
- 916: Balance file report
- 917: Clerk report

[JOB CODE #920]

GT1 upper 6 digits setting

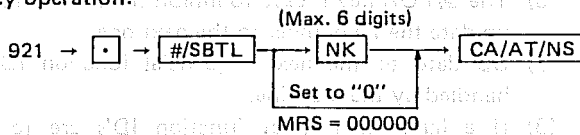
Key operation:



[JOB CODE #921]

GT1 lower 6 digits setting

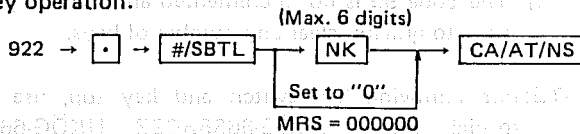
Key operation:



[JOB CODE #922]

GT2 upper 6 digits setting

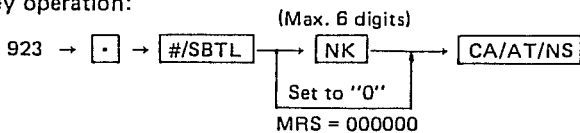
Key operation:



[JOB CODE #923]

GT2 lower 6 digits setting

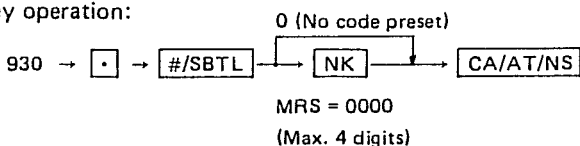
Key operation:



[JOB CODE #930]

Secret code for PGM2 mode.

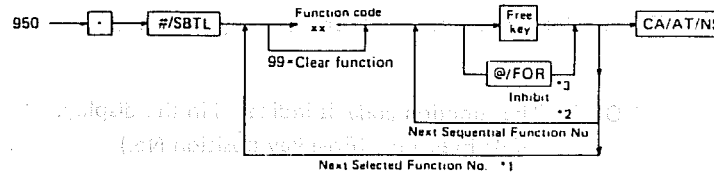
Key operation:



[JOB CODE #950]

Flexible key layout function

Up to 51 positions are reserved for free function keys. The related printing on the general reports are also defined to be printed or skipped by this programming.



① Function codes are as shown in Table 1.

- *1. To override the automatic assignment.
 - *2. To update the function code automatically to a new one.
 - *3. To inhibit the entered function.
- Be sure to inhibit every function that is not to be used.

② The function code for the free key function name LIST

FUNCTION CODE TABLE

Function Code	Free Key Function Name	Function Code	Free Key Function Name
1 ~ 50	DEPARTMENTS	69	TAX SHIFT 1
51	PLU/SUB	70	TAX SHIFT 2
52	CASH 2	71	TAX (MANUAL TAX)
53	CHARGE 1	72	RA
54	CHARGE 2	73	PO
55	CHARGE 3	74	F.S. SHIFT
56	CHARGE 4	75	F.S. TEND./ST
57	CHARGE 5	76	PRINT
58	CHECK	77	RECEIPT
59	MOSE SBTL	78	SLIP
60	TRAY TOTAL	79	L1 (DEPT. SHIFT)
61	VOID	80	L2 (DEPT. SHIFT)
62	REFUND	81	L3 (DEPT. SHIFT)
63	%1	82	P-BAL
64	%2	83	C-BAL
65	%3	84	CLK #
66	%4	85	TIP
67	⊖ 1	99	OPEN
68	⊖ 2		

③ The free key area on the keyboard

The free key area is shown in Fig. 1. The free key may be assigned with a function and cleared of a previous assignment. There are a total of 51 keys which may be involved in the assignment process. Some of these keys are physically connected together, as indicated in Fig. 1, thus allowing for an actual total of 50 keys to be uniquely defined.

FREE KEY AREA

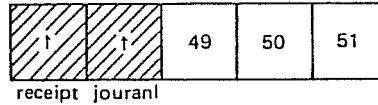
(NOTE)

- Numbers 1 thru 3 are assigned to three positions respectively, and numbers 4, 5, 26 thru 29 to two positions respectively.
- The hatched area is reserved for fixed key positions.

NOTE: The function code is indicated in the display.
1-34: Free keys (Free key position No.)

RECEIPT

OFF ON



5	10	@/FOR	•	CL	15	20	25	30	35	40	45	48
4	9	7	8	9	14	19	24	29 ✓	34	39	44	47
3	8	4	5	6	13	18	23	28	33	38	43	#/SBTL
2	7	1	2	3	12	17	22	27	32	37	42	46
1	6	0	00		11	16	21	26	31	36	41	CA1

Fig. 1

(4) Key assignment procedure

- The preparation for entry involves completing the attached form and placing the desired keys on the key board.
- ID (identification) of the first function to be assigned to a key according to "The function code for the free key function name LIST".
- Department assignments are allowed only to the maximum number specified in JOB CODE #901.
- The function code indicated in the display is assigned to a key by simply depressing the function key which is to be assigned. The machine will automatically update the display with the next sequential function code.
- The fact that there are no more codes in the table for assignment or that a function code ID (identification) number greater than the largest valid code in the machine is signalled by a "99" in the display. By entering a code number prior to the function key, a new function number may be entered or the CA/AT/NS may be depressed to end the job.

- The @/FOR key is used to inhibit the function and up date the ID number to the next one.
- Up date to the next sequential function ID is handled by the machine.
- If a large number of function ID's are to be skipped before the next assignment or if a previous entry must be corrected then the new function ID may be entered as indicated.
- The code 99 is not incremented and thus may be used to quickly clear any number of keys.

NOTE: For removing key switch and key top, use the special tools (UKÖG-6635RCZZ, UKÖG-6636-RCZZ); refer to page 1.

⑤ Example of the free key assignments

(1) SRV-1 Programming Sample (for key layout shown in Fig. 1 on page 19.)

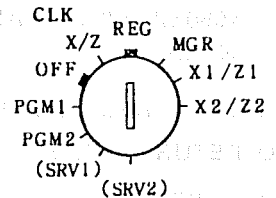
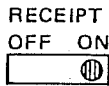
Key Operation:

950 → #/SBTL → CA/AT/NS

Depl
FAX 2.

<p>03/25/85 8:57AM 0006#0075 *** /</p> <p>#0950</p> <p>1 DPT.01 KEY01 2 DPT.02 KEY02 3 DPT.03 KEY03 4 DPT.04 KEY04 5 DPT.05 KEY05 6 DPT.06 KEY06 7 DPT.07 KEY07 8 DPT.08 KEY08 9 DPT.09 KEY09 10 DPT.10 KEY10 11 DPT.11 KEY16 12 DPT.12 KEY17 13 DPT.13 KEY18 14 DPT.14 KEY19 15 DPT.15 KEY20 16 DPT.16 KEY21 17 DPT.17 KEY22 18 DPT.18 KEY23 19 DPT.19 KEY24 20 DPT.20 KEY25 21 DPT.21 KEY26 22 DPT.22 KEY27 23 DPT.23 KEY28 24 DPT.24 KEY29 25 DPT.25 KEY30</p>	<p>26 DPT.26 KEY31 27 DPT.27 KEY32 28 DPT.28 KEY33 29 DPT.29 KEY34 30 DPT.30 KEY35 31 DPT.31 -- 32 DPT.32 -- 33 DPT.33 -- 34 DPT.34 -- 35 DPT.35 -- 36 DPT.36 -- 37 DPT.37 -- 38 DPT.38 -- 39 DPT.39 -- 40 DPT.40 -- 41 DPT.41 -- 42 DPT.42 -- 43 DPT.43 -- 44 DPT.44 -- 45 DPT.45 -- 46 DPT.46 -- 47 DPT.47 -- 48 DPT.48 -- 49 DPT.49 -- 50 DPT.50 -- 51 FLU -- 52 CASH2 KEY47 53 CH1 -- 54 CH2 -- 55 CH3 --</p>	<p>56 CH4 -- 57 CH5 -- 58 CHECK -- 59 ST -- 60 TTL -- 61 VOID KEY49 62 RFND -- 63 %1 <i>key</i> 64 %2 -- 65 %3 -- 66 %4 -- 67 (-)1 -- 68 (-)2 -- 69 TX S1 -- 70 TX S2 -- 71 MTAX -- 72 ***R/A -- 73 ***P/D -- 74 FS SFT -- 75 FS TND -- 76 PRINT -- 77 RCPT -- 78 SLIP -- 79 L 1 KEY50 80 L 2 KEY51 81 L 3 -- 82 ***FBAL -- 83 ***CBAL -- 84 CLKH -- 85 TIP IN --</p>	
	Function code	Function name	Free key position No.

(2) Key assignments Sample



↑	↑	VOID	L1	L2
---	---	------	----	----

receipt journal

5	10	@/FOR	.	CL	15	20	25	30	CA2
4	9	7	8	9	14	19	24	29	
3	8	4	5	6	13	18	23	28	
2	7	1	2	3	12	17	22	27	
1	6	G	00		11	16	21	26	#/SBTL
									CA1

Fig. 2

7-5. Supplemental Descriptions for SRV Programming

- JOB CODE #901A: Number of department levels.

DEPT. SHIFT

Three kinds of shift keys (i.e. L1/L2/L3) can be provided on the key board by SRV programming.

Each key has the following function.

- L1: Shift Dept. level to L1 (Normal level) from L1, L2 and L3.
- L2: Shift Dept. level to L2 from L1, L2 and L3.
- L3: Shift Dept. level to L3 from L1, L2 and L3.

NOTE: This provides three times the volume of memory for each department related feature (i.e. totalizers, counters and presets).

When the L1 key is depressed in the L1 state, no error occurs. (same for L2 and L3)

PGM2 mode programming selects either the auto return mode in which the Dept. level will be changed automatically to L1 after the each item registration, or the manual change mode in which the Dept. level will be kept in the prior state (i.e. level) until active Dept. shift key depression. The level shift keys can be operated at any time except mid numeric entry for the manual change mode, but they are effective only prior to a department key depression for the auto return mode.

The another PGM2 mode programming selects either to allow or not to allow the Dept. shifting in the REG mode.

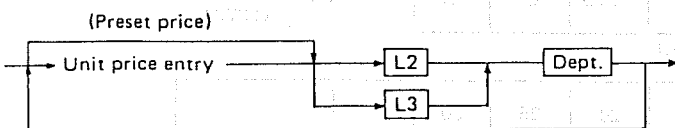
When performing the two PGM2 mode programming, there are four cases available.

Program	Auto/Manual	Mode Allowed	Application
CASE 1	AUTO	REG/MGR	L/M/S size COKE etc.
CASE 2	AUTO	MGR	Refund for each item (- preset)
CASE 3	MANUAL	REG/MGR	Dept. number expansion
CASE 4	MANUAL	MGR	Menu shift, Happy hour

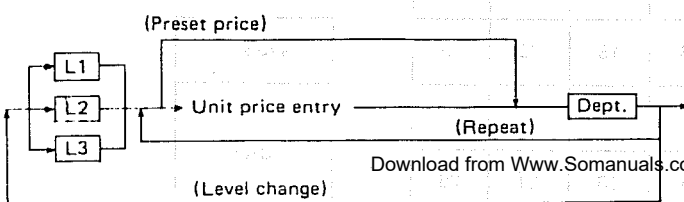
NOTE: L1 key must be installed and enabled via SRV Job #950 when "MANUAL change" mode has been selected.

Registration in the REG and MGR modes

1. AUTO RETURN MODE



2. MANUAL CHANGE MODE



- JOB CODE #903B(2): Singapore tax
Tax amount will be rounded as shown below (Ex. Round off)

BEFORE ROUNDING	AFTER ROUNDING
0.000 ~ 0.004	0.00
0.005 ~ 0.054	0.05
0.055 ~ 0.099	0.10

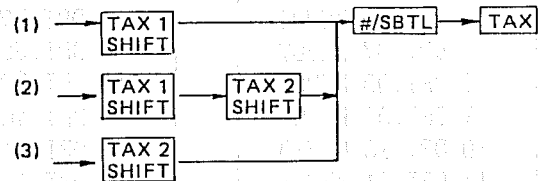
NOTE: Rounding procedure depends on programming in JOB #903.

- JOB CODE #903C(1); Tax delete operation

TAX DELETE:

If the "TAX" key is depressed without a numeric entry after obtaining a taxable sub-total, the itemizer that corresponds to a specified displayed tax sort is reset to 0 and a related message is printed.

KEY OPERATION (in the REG, MGR modes):



Notes:

- (1) Taxable 1 and refund taxable 1 sub-totals are reset to 0.
- (2) Taxable 1, refund taxable 1, taxable 2 and refund taxable 2 sub-totals are reset to 0.
- (3) Taxable 2 and refund taxable 2 sub-totals are reset to 0.

8. PGM1, PGM2 (PROGRAM) MODES

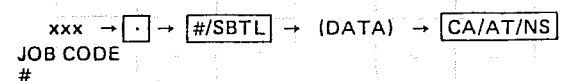
The ER-3241 allows programming in two modes: PGM1 and PGM2.

The PGM1 mode is used for programming those items that need to be changed often: Unit prices of departments, plus, and percentage.

The PGM2 mode is used for programming all PGM1 mode Programs and those items that require no frequent changes such as date, time, tax table, tax rate, and the function of each key. The programming or setting procedures of various items is described below. Program every item necessary for the store into the machine following the corresponding procedures.

* To set the mode switch to the PGM1 position, use the manager or submanager key. To set to the PGM2 position, use the manager key.

GENERAL ENTRY SEQUENCE (PGM1 and PGM2 MODE Programming)



When the secret code has been designated, it would not permit subsequent programming unless the secret code is given for the PGM1 and PGM2 modes.

8-1. Job Code List

- 110 Department price preset.
- 210 Department functions — 1.
- 211 Department functions — 2.
- 212 Department functions — 3.
- 213 Department functions — 4.
- 214 Department label assignments
- 120 PLU price preset (HALO preset for SUB).
- 121 PLU programming — 1.
- 221 PLU programming — 2.
- 224 PLU/SUB label assignments
- 130 % rate programming for %1 ~ %4
- 230 MISC. keys programming — 1.
- 231 MISC. keys programming — 2.
- 232 MISC. keys programming — 3.
- 234 MISC. keys label assignments
- 235 % ITEM/% SBTL selection
- 236 Store/Vender coupon selection
- 140 Clerk number registration
- 240 Tax tables.
- 241 % tax rate.
- 144 Clerk name presetting
- 145 Cashier name presetting
- 250 Date.
- 251 Time.
- 252 Machine number.
- 253 Consecutive number.
- 254 Logo message (Header and Footer)
- 255 Print time limitation for validating.
- 256 Optional feature selection.
- 257 Sentinel amount setting.
- 260 Media keys programming — 1.
- 261 Media keys programming — 2.
(High amount limitation for check change and check cashing.)
- 262 Media keys programming — 3.
- 263 Media keys programming — 4.
- 264 Media keys label assignments
- 274 Check validation message
The jobs which have 100 level code numbers may be programmed in both PBM1 and PGM2 mode.
The jobs which have 200 level code numbers may be programmed in the PGM2 mode only.
- 280 Secret code for PGM1 mode
- 281 Secret code for X1/Z1 mode
- 282 Secret code for X2/Z2 mode
- 284 MISC. text assignments
- 286 Stack report

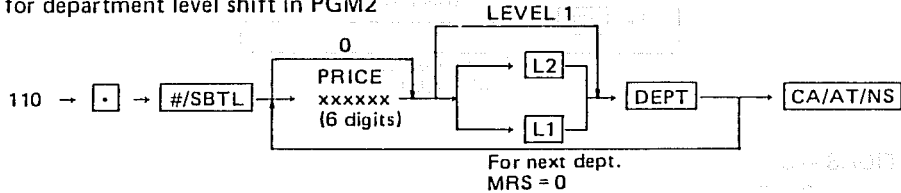
8-2. Programming

[JOB CODE #110]

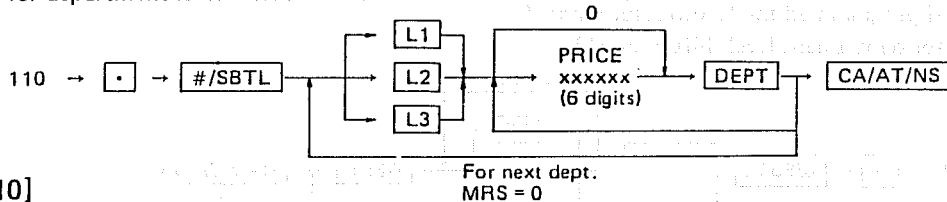
DEPARTMENT PRICE PRESET

Up to 6 digits (\$9999.99)

If programmed the "Auto return mode"
for department level shift in PGM2



If programmed the "Manual change mode"
for department level shift in PGM2



[JOB CODE #210]

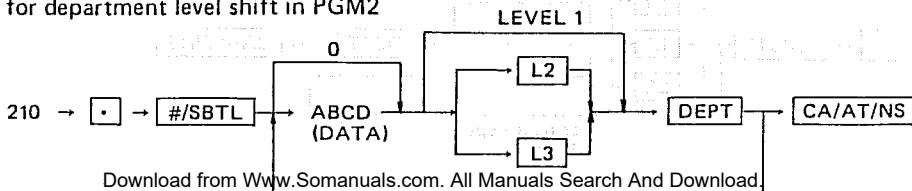
DEPARTMENT FUNCTIONS — 1

- A. Hash/Normal ^{*1} = 1/0
- B. Validation enforced. /Optional. = 1/0
- C. Single item finalize./Single item sale./Normal. = 2/1/0
- D. Open & preset./Preset./Open./Inhibit = 3/2/1/0

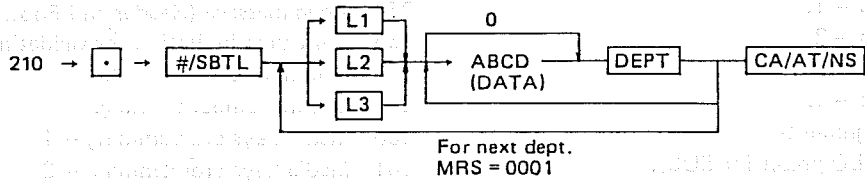
*1. The "enforced" is effective only when the validation print counter has been preset to a number (1-9, JOB #255) other than zero.

*2. If you select "Inhibit", the dept. item is print skipped on X/Z report.

If programmed the "Auto return mode"
for department level shift in PGM2



If programmed the "Manual change mode"
for department level shift in PGM2

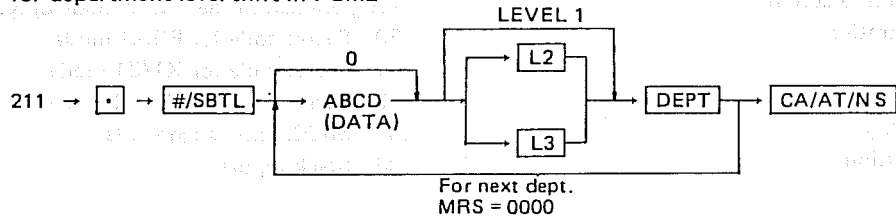


[JOB CODE #211]

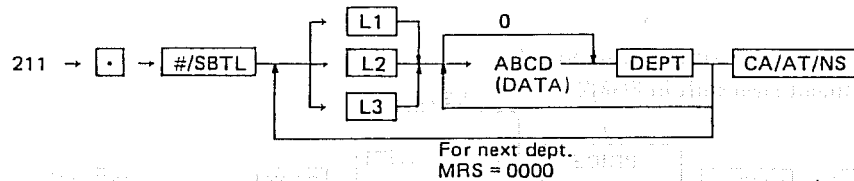
DEPARTMENT FUNCTIONS - 2

- A. -/+ sign = 1/0
- B. Food stampable./Not. = 1/0
- C. Taxable 2./Not. = 1/0
- D. Taxable 1./Not. = 1/0

If programmed the "Auto return mode"
for department level shift in PGM2



If programmed the "Manual change mode"
for department level shift in PGM2



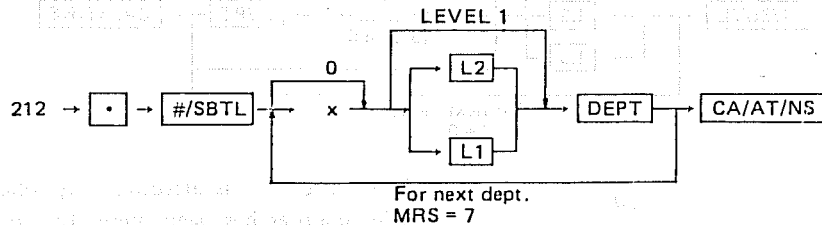
[JOB CODE #212]

DEPARTMENT FUNCTIONS - 3

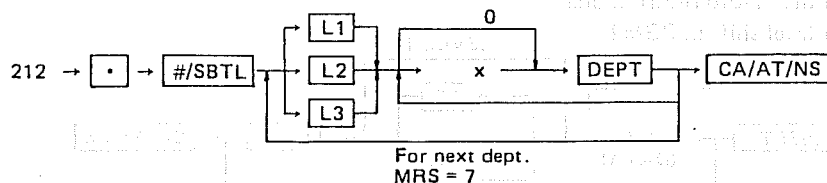
HALO digits (x) = 0 - 7

The HALO preset will be overridden in the MGR. mode.

if programmed the "Auto return mode"
for department level shift in PGM2



if programmed the "Manual change mode"
for department level shift in PGM2

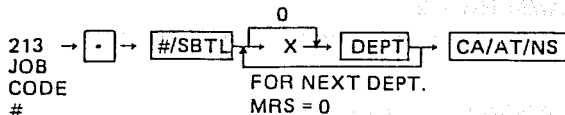


[JOB CODE #213]

DEPARTMENT FUNCTIONS - 4

SBTL (Sub total) PRINT ON THE GENERAL REPORT

- 0: Regular department
- 1: Extra one line feeding
- 2: Add to the special sub-total
- 3: Print the special sub-total



(Note)

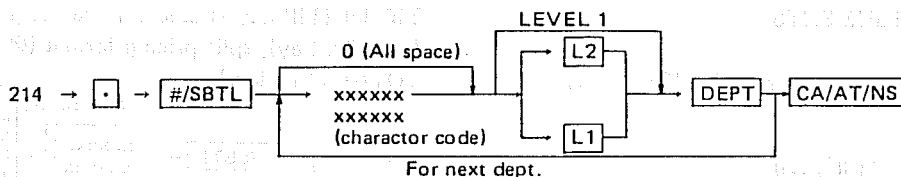
The department needs a definition of the level.
The method of the level shift is decided by the PGM2 programming JOB #256A.

[JOB CODE #214]

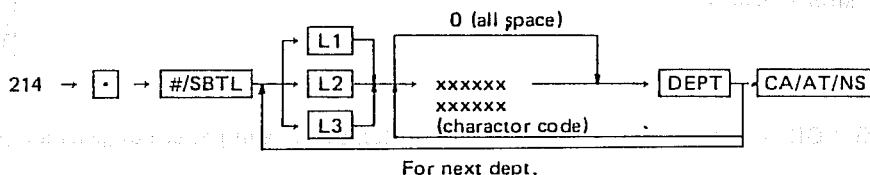
DEPARTMENT LABEL ASSIGNMENTS

(6 characters)

If programmed the "Auto return mode"
for department level shift in PGM2



If programmed the "Manual change mode"
for department level shift in PGM2



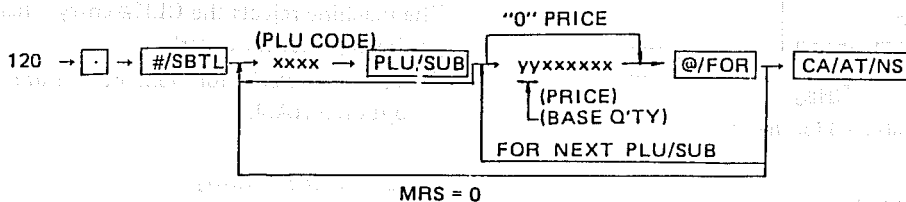
* Up to 12 digits; even digit entry only.

[JOB CODE #120]

PLU PRICE PRESET (HALO PRESET FOR SUB DEPTs)

The PLU number must have been preset by JOB #121

- Up to 6 digits for price or HALO: xxxxxx
- 2 digits for split base quantity: yy



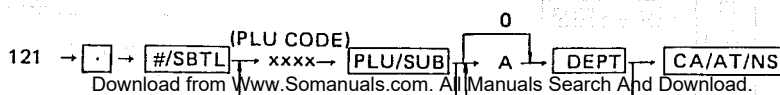
[JOB CODE #121]

PLU PROGRAMMING - 1

A. Clear out/PLU./Sub-dept./Inhibit. = 3/2/1/0

The Dept. to be used with the PLU/SUB is preset by this programming.

The "clear out" makes all the data tird to the PLU zero.

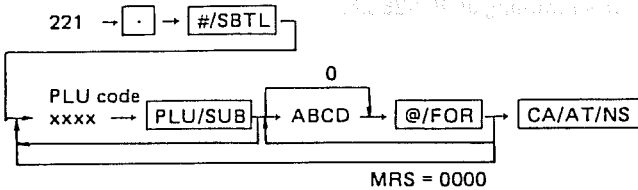


JOB CODE #221

PLU PROGRAMMING - 2

(The PLU number must have been preset by JOB #121)

- A. -./+ sign = 1/0
- B. Food stampable/Not. = 1/0
- C. Taxable 2./Not. = 1/0
- D. Taxable 1./Not. = 1/0

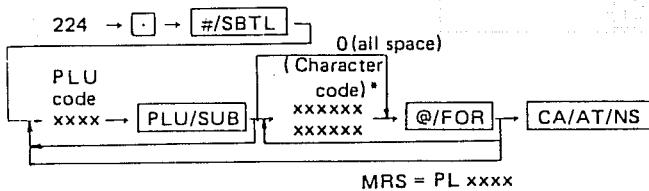


JOB CODE #224

PLU/SUB LABEL ASSIGNMENTS

(6 characters)

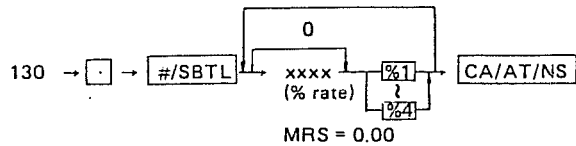
(The PLU number must have been preset by JOB #121)



JOB CODE #130

% RATE PROGRAMMING FOR %1 AND %4

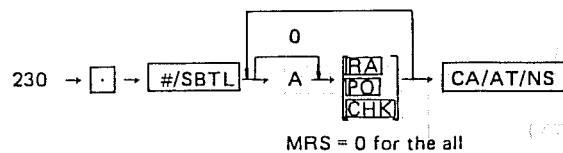
% rate: 0.01% - 99.99%



JOB CODE #230

MISC. KEYS PROGRAMMING - 1

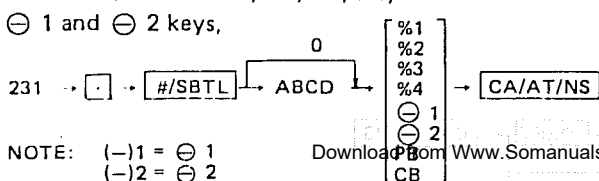
- A. Validation enforced./Optional. for RA and PO. = 1/0
- A. Non add code print enforced./Optional for cash check operation (CHK) = 1/0



JOB CODE #231

MISC. KEYS PROGRAMMING - 2

- A. -./+ sign = 1/0
- B. Food stampable./Not. = 1/0
- C. Taxable 2./Not. = 1/0
- D. Taxable 1./Not. for %1, %2, %3, %4, = 1/0

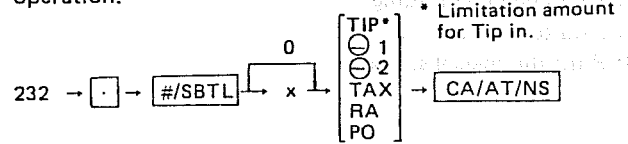


JOB CODE #232

MISC. KEYS PROGRAMMING - 3

HALO digits for (-)1, (-)2, TAX, TIP, RA and PO. = 0-7

The HALO preset will be overridden in the MGR. mode operation.



MRS = 7 for the all

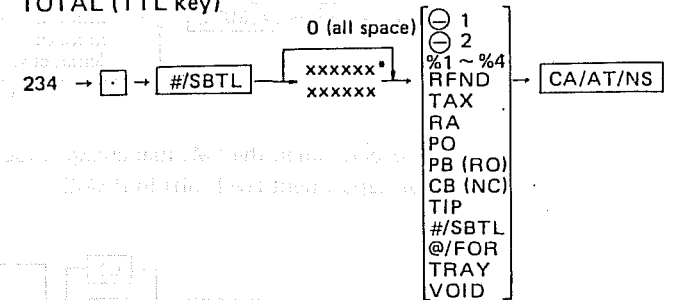
JOB CODE #234

MISC. KEYS LABEL ASSIGNMENTS

(6 characters)

for (-)1, (-)2, %1 ~ %4, RFND, TAX, RA, PO, PB and CB.

TIP IN (TIP key is used for the programming), TIP PAID (#/SBTL key), split pricing format (@/For key) and TRAY TOTAL (TTL key)

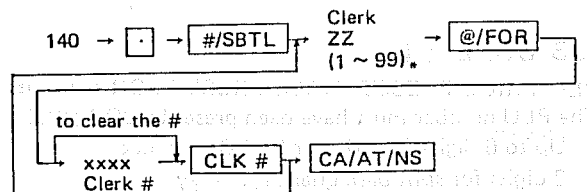


Ref. the default pattern of general report for the MRS.

JOB CODE #140

CLERK NUMBER REGISTRATION

(Four digits for each of up to 15 clerks for standard feature and 99 clerks with optional RAM)



The machine rejects the CLK# entry when the same number has been preset for a clerk.

* Up to 15 clerks for standard feature and 99 clerks with optional RAM.

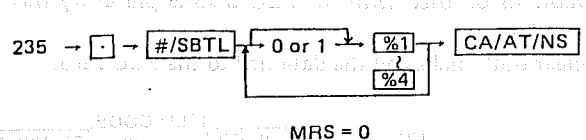
JOB CODE #235

%ITEM/%SBTL selection for %1, %2, %3 and %4.

0: % SBTL

1: % ITEM

(PROGRAMMING PROCEDURE)

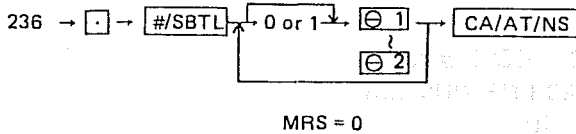


[JOB CODE #236]

Vender/Store coupon selection for ⊖ 1, ⊖ 2.

- 0: Vender
- 1: Store

(PROGRAMMING PROCEDURE)

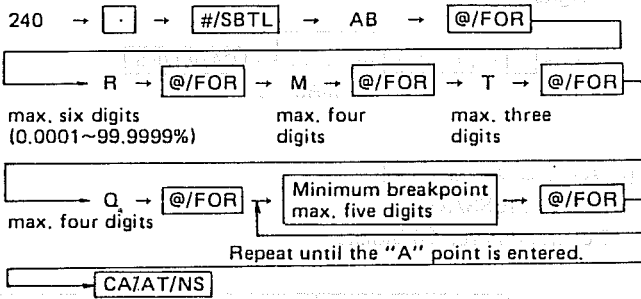


[JOB CODE #240]

TAX TABLES

72 break points can be shared for two tables.

- A. The difference between a break point and the next one is \$1.00 or more./Less than \$1.00. = 1/0
- B. Table 1 programming./Table 2. = 1/2



NOTE: If you make an incorrect entry before entering the M in programming a tax table, cancel it with the CL key; and if you make an error after entering the M, cancel it with the #/SBTL key. Then program again from the beginning correctly.

(1) Programming the tax table

- ① For this example, refer to the New Jersey tax table below (column A) New Jersey tax table: 6% rate

Tax	A		B	C
	Minimum breakpoint	Maximum breakpoint	Breakpoint difference(¢)	
.00	.01	.10	-	Non-cyclic
.01←T	.11←Q	.22	10	
.02	.23	.38	12	Cyclic (I)
.03	.39	.56	16	
.04	.57	.72	18	
.05	.73	.88	16	
.06	.89	1.10	16	Cyclic (II)
.07	1.11←"A" point	1.22	22	
.08	1.23	1.38	12	
.09	1.39	1.56	16	
.10	1.57	1.72	18	
.11	1.73	1.88	16	
.12	1.89	2.10	16	
.13	2.11	2.22	22	

The information which must be supplied to the ECR for tax table oriented calculations include the following:

- R: The Rate (R) is entered as a six-digit number (2-digit integer and 4-digit decimal). Thus, a 6% rate would be entered as 60000. If the rate is fractional (e.g. 4 3/8%), then the fractional portion (3/8) would be

resulting rate of 43750 would be entered. Note that the nominal rate (R) is generally indicated on the tax table.

The other values which must be entered for correct table-based tax calculations are as follows:

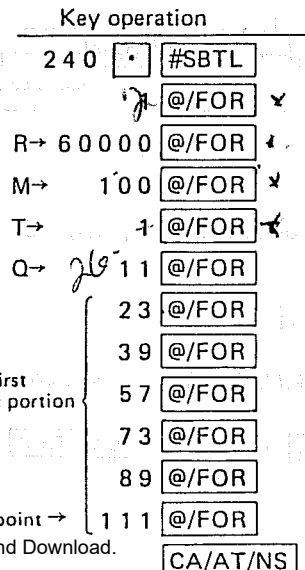
- Q: The smallest amount for which tax must be collected. In some states, there are amounts which are not subject to tax (e.g. if amounts of \$0.01 to \$0.10 are not taxed, the value of Q — being the smallest taxable amount — would be \$0.11).
- T: The amount of tax which is associated with the amount Q.
- M: The value is associated with the cyclical nature of many tax tables. In fact, the need to support tax tables as opposed to the use of a straight percentage calculation is because there are amounts where the result of applying the percentage calculation does not result in a tax amount which is the same as the related table amount. The table must, therefore, be used to obtain the data (i.e. the value M) necessary for the register to obtain the correct tax amount. The procedures to obtain this value are as follows:

The tax table must be examined in order to find repeating cycles in terms of the breakpoint differences as indicated in the preceding tax table (Note that a 'breakpoint' is that amount at which a tax amount increment takes place).

As you can see from the table, the breakpoint differences indicated by Cycle I repeat in Cycle II. I indicates the tax table's cyclical pattern and thus the value for M is determined by adding the breakpoint difference amounts associated with I (i.e. for purposes of the sample table, this value is 100).

The value of M may be viewed as the taxable amount which is covered by the cycle. Thus, it can be determined by adding all of the breakpoint differences in a cycle or by simply taking the difference between the first breakpoint of the cycle and the first breakpoint of the next cycle.

Example: Programming the sample tax table show above as tax table 1.



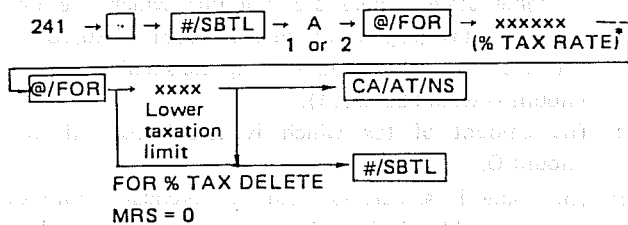
[JOB CODE #241]

% TAX RATE

A. For TAX 1 (A = 1) and TAX 2 (A = 2)

Presettable TAX RATE range = 0.0000 - 99.9999%

Maximum lower taxation limit = \$99.99



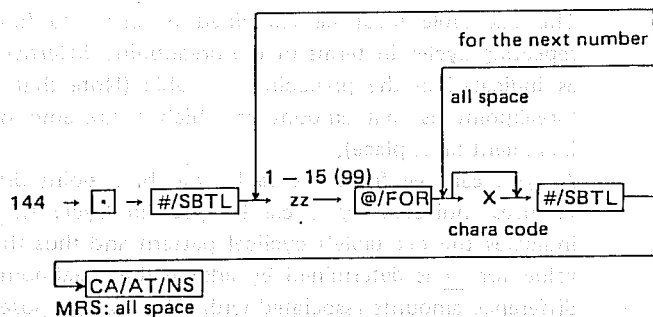
* No decimal point key is required.

[JOB CODE #144]

CLERK NAME PRESET

Six characters for each of up to 15 clerks for standard feature and 99 clerks with optional RAM.

(PROGRAMMING PROCEDURE)

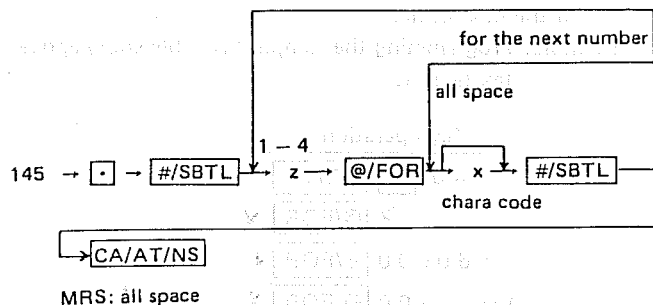


[JOB CODE #145]

CASHIER NAME PRESET

Six characters for each of four cashiers

(PROGRAMMING PROCEDURE)

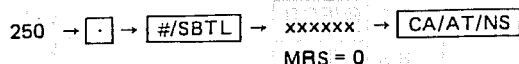


(NOTE) Chshier code (z); 1:A, 2:B, 3:D, 4:E

[JOB CODE #250]

DATE

MM/DD/YR or DD/MM/YR (Ref. to SRV. program #905D)

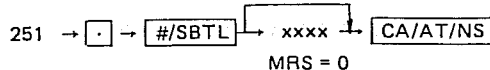


[JOB CODE #251]

TIME

Enter the time in 24-hour format.

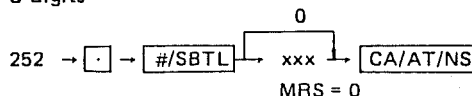
1 AM = 100 1 PM = 1300



[JOB CODE #252]

MACHINE NUMBER

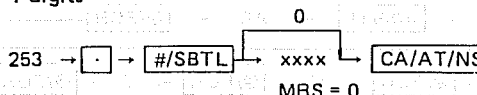
3 digits



[JOB CODE #253]

CONSECUTIVE NUMBER

4 digits

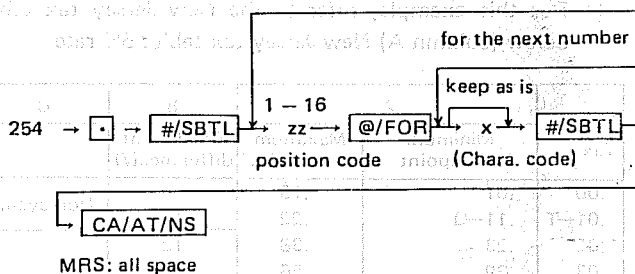


[JOB CODE #254]

LOGO MESSAGE

6 characters for 16 blocks

	1	2	3
6 lines	3	4	5
	6	7	8
	9	10	11
	11	12	13
	14	15	16



The cycle number relates to the portion of the message to be programmed.

NOTE:

1. The programmed logo message is printed on receipt only when logo printing is enabled via PGM2 mode JOB #256.
2. The cycle number relates to the portion of the message to be programmed.

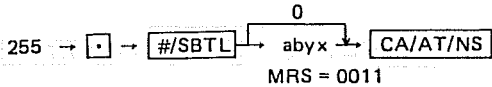
[JOB CODE #255]

LIMIT ON THE NUMBER OF TIMES OF SLIP AND VALIDATION

A number of 0 through 9 (0 means inhibition.) is pre-settable for slip and validation. The print starting point (i.e. lines from the top position of print area on a slip paper) is pre-settable for 0 to 64.

(PROGRAMMING PROCEDURE)

The "ab" stands for initial slip feed lines.
The "y" stands for slip print times.
The "x" stands for validation times.



[JOB CODE #256]

OPTIONAL FEATURE SELECTION

A. Dept. shift method.

- 0: Auto, REG & MGR mode
- 1: Auto, MGR mode only
- 2: Manual, REG & MGR mode
- 3: Manual, MGR mode only

Handwritten: = 0 - 3

B. "CLK X/Z" mode inhibited./Exists.

= 1/0

C. Inhibit past item void in REG. mode./Not.

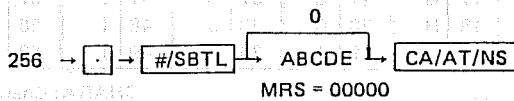
= 1/0

D. Inhibit refund in REG. mode./Not.

= 1/0

E. Journal select./Full print.

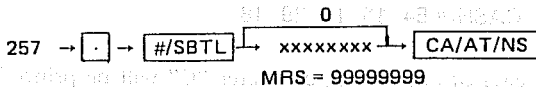
= 1/0



[JOB CODE #257]

SENTINEL AMOUNT SETTING

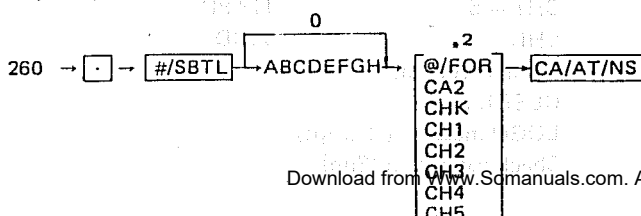
\$0.00 - \$999999.99 (Up to 8 digits)



[JOB CODE #260]

MEDIA KEYS PROGRAMMING - 1

- A. PB or CB compulsory./Not. = 1/0
- B. SLIP compulsory./Not. = 1/0
- C. VALIDATION compulsory. *1/Not. = 1/0
- D. TAX 2 delete./Not. = 1/0
- E. TAX 1 delete./Not. = 1/0
- F. DRAWER open./Not. = 0/1
- G. #/SBTL key compulsory./Not. = 1/0
- H. AMOUNT TENDERING compulsory/Optional. for cashes and check. or Compulsory.*3/Inhibited.*4 for charges 1 - 5. = 1/0



the "A" must be "0" always for CA1, CA2 and CHK

*1 The "compulsory" is effective only when the validation print counter is preset to a number (1 - 9, JOB #255) other than zero.

*2 The "@/FOR" key is used for "CA1" (i.e. CA/AT/NS) key programming.

*3 Credit card type function will be selected.

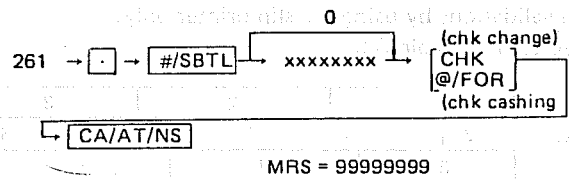
*4 House charge or new balance key type function will be selected.

[JOB CODE #261]

MEDIA KEYS PROGRAMMING - 2

HIGH AMOUNT LIMITATION FOR CHECK CHANGE AND CHECK CASHING

\$0.00 - \$999999.99



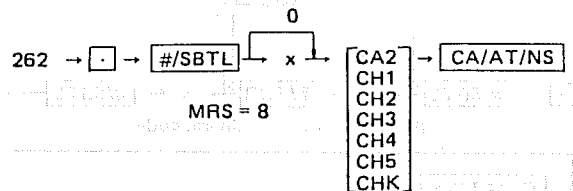
[JOB CODE #262]

MEDIA KEYS PROGRAMMING - 3

HALO digit for 5 media keys. = 0 - 8

(CA/AT/NS key has no limitation.)

The HALO preset will be overridden in the MGR. mode.



[JOB CODE #263]

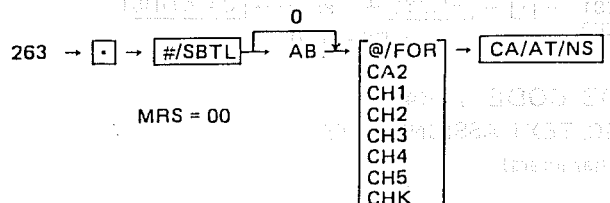
MEDIA KEYS PROGRAMMING - 4

A: Footer print exist./Not. = 1/0

B: ST print selection

ST PRINT ON THE GENERAL REPORT

- 0: Regular format
- 1: Extra one line feeding
- 2: Add to the special sub-total
- 3: Print the special sub-total

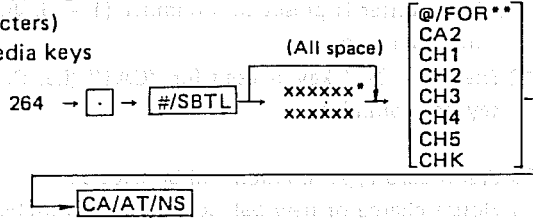


@/FOR key is used for CA1 (i.e. CA/AT/NS) key programming.

[JOB CODE #264]

MEDIA KEYS LABEL ASSIGNMENTS

(6 characters)
for 8 media keys



* Refer to following "CODE TABLE".

** @/FOR key is used for CA1 (i.e. CA/AT/NS) key programming.

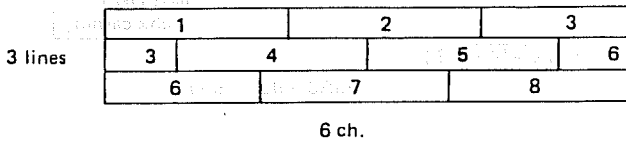
Ref. the default pattern of general report for the MRS.

[JOB CODE #274]

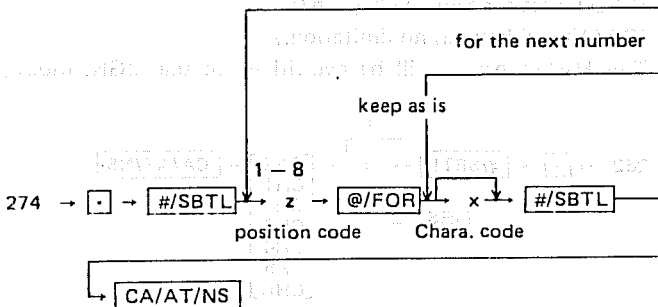
CHECK VALIDATION MESSAGE

For the validations by using the slip printer only.

6 characters for 16 blocks.



(PROGRAMMING PROCEDURE)



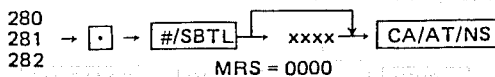
MRS = (SPACE)
(SPACE)
FOR DEPOSIT ONLY

[JOB CODE #280, 281 and 282]

Secret code (4 digits) for

- PGM1 mode: #280
- Z1 (X1/Z1 mode): #281
- Z2 (X2/Z1 mode): #282

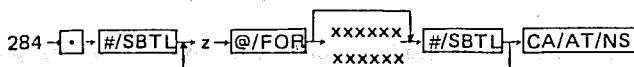
0 (no code preset)



[JOB CODE #284]

MISC. TEXT ASSIGNMENTS

(6 characters)



(NOTE):

The z indicates code number entry (i.e. 1 to 4), which stands for the each of the followings.

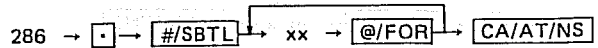
- 1: Taxable sub-total 1 (MRS = TX1 ST)
- 2: Tax 1 corrected (MRS = TAX 1)
- 3: Taxable sub-total 2 (MRS = TX2 ST)
- 4: Tax 2 correcte (MRS = TAX 2)

[JOB CODE #286]

STACKED REPORT

Maximum 5 reports can be memorized in the stack report.

(PROGRAMMING PROCEDURE)



xx: Report JOB # of 1, 4, 5, 6, 20, 30 or 60.
MRS = 1, 4, 5 and 6

8-3. Code Table for Alpha Descriptor Programing

CODE	CHARA	CODE	CHARA	CODE	CHARA	CODE	CHARA	CODE	CHARA
00	0	10	(sp)	20	J	30	T	40	&
01	1	11	A	21	K	31	U	41	'
02	2	12	B	22	L	32	V	42	.
03	3	13	C	23	M	33	W	43	*
04	4	14	D	24	N	34	X	44	^
05	5	15	E	25	O	35	Y	45	/
06	6	16	F	26	P	36	Z	46	@
07	7	17	G	27	Q	37	#	47	
08	8	18	H	28	R	38	\$	48	(
09	9	19	I	29	S	39	%	49)
								50	+
								51	-
								52	->
								53	-<
								54	DC
								55	UD
								56	UD
								57	UD
								58	UD
								59	UD

- DC: Double character code.
- UD: Undefined code.
- (SP): Space

CHARA: Character

Two figures have to be entered to designate one character.

- Ex. 1 CASH = 13 11 29 18
- Ex. 2 CASH = 54 13 11 29 18

NOTES:

1. In the case of example 2, character "C" will be printed in double character format because code #54 is entered just before code #13.
2. Alpha descriptor programming is available for the following functions.

- DEPT. keys (1 to 90) (-)1 - 2
- PLU/SUB %1 - 4
- P BAL TAX (TX1ST, TX2ST,
- C BAL NTTX1 & NTTX2)
- RA TAX (manual tax)
- PO RFND (for report only)
- CASH Q @
- CA2 TIP IN
- CH1 - 5 TIP PD
- CHK VOID
- CASHIER name
- CLERK name
- LOGO message (Receipt)
- Check validation (Slip)

8-4. Program Reading (PGM1 or PGM2 mode)
LIST OF PROGRAM READING

[JOB CODE #130]

% RATE and the other MISCELLANEOUS functions pre-sets (including MEDIAS)



JOB #	REPORT NAME
110 *1	DEPARTMENT PRESETS
120 *1	PLU/SUB PRESETS
130	% RATE AND THE OTHER MISCELLANT- OUS FUNCTION PRESETS (INCLUDING MEDIAS)
140	CLERK NUMBER LIST
240	TAX TABLE
900	FULL SRV MODE REPORT
950	KEY LAYOUT REPORT

The jobs which have 100 level code numbers are allowed to be read in both PGM1 and PGM2 modes. The jobs which have 200 level code numbers are allowed to be read in PGM2 mode only.

The jobs which have 900 level code numbers are allowed to read in the SRV mode only.

(NOTES)

*1 A reporting range must be specified for those reports indicated in the table. The standard sequence to indicate range is:



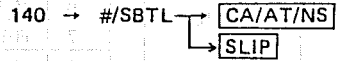
One Item

NOTE:

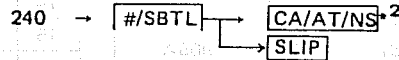
- *1. The clerk number reporting list is available only when the SRV program #902B is selected, "APPEAR NUMBER".
- *2. The CA/AT/NS key causes the report to be generated on both receipt and journal. By depressing the SLIP key instead of the CA/AT/NS key, the reports can be printed by the slip printer (i.e. the reports are printed on the slip paper and journal instead of the receipt and journal for the CA/AT/NS key case).



[JOB CODE #140]
CLERK NUMBER LIST



[JOB CODE #240]
TAX TABLES READING



[SLIP RELEASE]

Depress "SLIP" key (in the PGM1 or PGM2 mode).
 In case of emergency, slip paper may be released by hitting the "SLIP" key in the PGM1 or PGM2 mode.

[JOB CODE #110]

DEPARTMENT PRESET REPORT



[JOB CODE #120]

PLU/SUB PRESETS REPORT



9. PRINT SKIPPING ON X/Z REPORT VIA SRV/PGM2 MODE PROGRAMMINGS

9-1. Manual Selection Print Skipping List.

ITEMS TO BE PRINT SKIPPED		JOB CODE #
GT1	T	904A
GT2	T	904A
GT3 on Z report	T	904A
GT3 on X report	T	904B
Coupon PLU	Q, T	904B
Net sales SBTL	T	904B
Net txbl 1 SBTL	T	904C
TAX 1 TTL for + sales &		
TAX 1 TTL for refunds	2T	904C
Net TAX 1 TTL	T	904C
Net tabl 2 SBTL	T	904D
TAX 2 TTL for + sales &		
TAX 2 TTL for refunds	2T	904D
Net TAX 2 TTL	T	904D
Manual TAX for + sales &		
Manual TAX for refunds	2T	905A
Net manual TAX TTL	T	905A
Total TAX	T	905A
CHCG (Check change) TTL	T	905B

(NOTE)
 Q: counter
 T: total
 %: percent share

9-2. Automatic Selection Print Skipping List

No.	ITEMS TO BE PRINT SKIPPED	RELATED KEY OR FEATURE	JOB # FOR FEATURE SEL.
1	DEPARTMENTS Q, T, %	# of DEPT.	901
2	"-" DEPT. TTL T	- preset D.	211
3	⊖ 1 - ⊖ 2 Q, T	⊖ 1, ⊖ 2 keys	950
4	%1 - %4 Q, T	%1 - 4 keys	950
5	VOID 1 Q, T	VOID key	950
6	VOID2 & VOID 3 2Q, 2T	VOID mode	902A
7	REFUND Q, T	REFUND key	950
8	VAL. P. counter Q	PRINT key	950
9	CA2 Q, T	CASH 2 key	950
10	PO Q, T	PO key	950
11	RA Q, T	RA key	950
12	CH1 - CH5 Q, T	CH1 - 5 keys	950
13	CHK Q, T	CHK key	950
14	No Sale counter Q	NS function	903D
15	VD (H) & RF (H) 2Q, 2T	HASH	901
16	Hash Dept. TTL T	Hash Dept.	210
17	Hash - Dept. TTL T	Hash - Dept.	210 & 211
18	CA/CHK Q, T	zero HALO	261
19	Level 2 Depts. 30Q, 30T	L2 key	950
20	Level 3 Depts. 30Q, 30T	L3 key	950
21	SLIP P. counter Q	SLIP key	950
22	TIP 32Q, 32T	TIP key	950

9-3. Example of Print Skipping

- NOTE: The clerk number appearing last in a report is only valid if the SRV program 9803B is selected.
- The parts which have JOB # are print skipped via the programming of the JOB #.
 - The jobs which have 200 level code numbers may be programmed in the PGM2 mode.
 - The jobs which have 900 level code numbers may be programmed in the SRV1 mode.
 - The amount on this sample is incorrect.

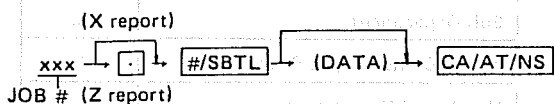
10. READING & RESETTING MODES (CLK X/Z, X1/Z1, X2/Z2)

1. REPORTS

The following categories of reports can be printed by the ECR;

- (1) CLK/ X/Z mode reports (clerk and cashier reports)
- (2) X1/Z1 mode reports (daily sales reports)
- (3) X2/Z2 mode reports (periodic sales reports)

To print reports, use the following key entry sequences:



The report will be printed on journal and receipt tapes with this procedure.

By depressing the SLIP key instead of the CA/AT/NS key in the above key sequence, the reports can be printed on slip papers and the journal.

The (DATA) part will be described in the "LIST OF REPORT".

(NOTE) - GENERAL RULE -

If the **.** key is depressed following a JOB code number entry with these procedures, data inside of the ECR will be cleared (i.e. Z reports).

(Some job code numbers do not allow the **.** key to follow.)

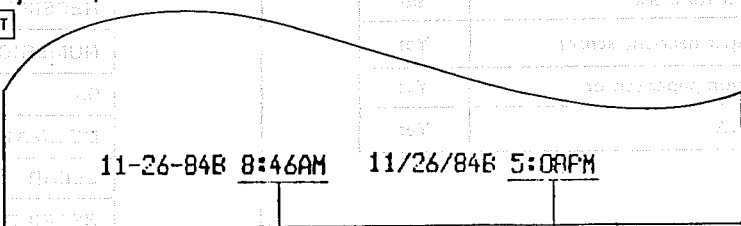
If the **.** key is not depressed following a JOB code number, data inside of the ECR will be maintained (i.e. X reports).

The **.** key is allowed only after a secret code entry when the mode switch position has been changed (i.e. when the mode switch is turned and an effective entry is entered, the effect of secret code entry is disappeared).

2. VALIDATION PRINTING OF CHECK IN AND CHECKOUT TIME

The ER-3241 allows the operator to print the employee arrival and departure times, etc. using the validation printing function. (See page 117.)

- (1) Turn the mode switch to the "CLK X/Z" position.
- (2) Put a card into the paper chute and perform the following key operation.
 - 1) Arrival time (printed on the receipt)
 Numeric key 1 → **PRINT**
 - 2) Departure time (printed on the journal)
 Numeric key 2 → **PRINT**
- (3) Sample printout



LIST OF REPORTS

JOB CODE #	REPORT NAME	MODE			(DATA FORM)
		CLK X/Z	X1/Z1 DAILY	X2/Z2 PERIODIC	
1	General Report		X1/Z1	X2/Z2 *1	- *4
2	Individual Cashier Report	X/Z	X1/Z1		Cashier key
3	Individual Clerk Report	X/Z	X1/Z1		clerk No. (Up to 4 digits)
4	Hourly TTL Report		X1		(RANGE)2 *6
			X1/Z1 *3		- *4
5	Daily All Cashier Report		X1/Z1		- *4
6	Daily All Clerk Report		X1/Z1		- *4
9	Stacked Report		X1/Z1		-
12	Manual Group Report		X1	X2 1	Dept. keys with level definition
20	PLU Report by Range		X1/Z1 *2		(RANGE)1 *5
30	CID		X1		- *4
40	TAX Report			X2/Z2	-
60	PB LOOK UP Report *1 or 2		X1		(RANGE)3 *7
			Z1		-

- *1 PLU/SUB RAM (#2 RAM) option required
 - *2 Restaurant RAM (#1 RAM) option required
 - *3 Zero Skip Printing
 - *4 - : No entry required
 - *5 (RANGE)1: xx @/FOR (xx)
 - *6 (RANGE)2: (xx) @/FOR (xx); xx = 0 - 23; No entry for 0 data
 - *7 (RANGE)3: (xx) @/FOR (xx); xx = 0 - 1344; No entry for 0
- xx: 0 ~ 23, No entry for "0" data
yy: 1 ~ 99

11. OUTLINE OF FUNCTIONS

11-1. Function List

FEATURES		NUMBER	
Number of Departments		20	
Department Expandability Max. Number of Departments		OPTION 50	
Number of PLU Expandability Max. Number of PLU's		OPTION 350	
Number of Clerks/Cashiers		99/4	
Number of Media CASH, CA2, CHECK, CHARGE1~5		8	
Number of Free Key Positions		51	
Number of Different Free Key Function Except Department		29	
Number of Digits in The Operator Display		11	
Number of Digits in The Customer Display		7	
Type of Receipt/Journal Printer (Dot)		M-220F	
Number of Drawers (Additional remote drawer)		1 (+3)	
Number of Different reports		10 (+2)	
Number of Different Reports by Option		3	
Print Skip on Reports		Yes	
Department	No. of Digits in Unit Price Preset	6	
	+/-	Yes	
	HALO digits	0 ~ 7	
	Tax Sort	2	
	(SIS) Single Item Sale	Yes	
	(SIF) Single Item Finalize	Yes	
	Inhibit and Preset	Yes	
	Validation Enforce	Yes	
	No. of Digits of Totalizer	8	
	No. of Digits of Counter	6	
	Food Stamp sort	Yes	
	Department shit level ER-45PL4 (max. 72 depts)		(3)
	Customer display		Revolv.
	Slip printer ER-46SP1		Yes
	Clerk & Cashier	Clerk (1 ~ 99)	CLK # key
Cashier (A, B, D, E)		One hole	
Clerk code preset		4Dgx99	
Totalizer for cashiers		15x4	
Totalizer for clerk		99	
Printer	Roll paper near-end sensor	Yes	
	Validation paper sensor	Yes	
Drawer Open/close sense SW		Yes	

FEATURES		NUMBER
PLU	No. of Digits of Totalizer	8
	No. of Digits of Counter	6
	No. of Digits of Unit Price	6
	+/-	Yes
	HALO	Yes
	Kind of Tax Sort	2
	Inhibit and Preset	Yes
	Sub Department	Yes
	No. of Digits of Split Price Base	2
	Number of Departments	2
MEDIAS	Food stamp sort	Yes
	Number of CASH Keys	2
	CHECK	1
	CHARGE	5
	CHECK CHANGE TOTAL	1
	Drawer OPEN DETECT (SRV SETTING)	Yes
	Validation Enforce (PGM SETTING)	Yes
KEY	Tax Delete (PGM SETTING)	Yes
	Food stamp tender	1
	Departments (Max)	50
	PLU/SUB	1
	CASH	2
	CHECK	1
	CHARGE	5
	MDSE ST	1
	VOID	1
	REFUND	1
%1 ~ %4	each 1	
⊖ 1, ⊖ 2	each 1	
TAX SHIFT 1	1	
TAX SHIFT 2	1	
MANUAL TAX	1	
RA	1	
PO	1	
PRINT	1	
JOURNAL - FEED	1	
RECEIPT - FEED	1	
NUMERIC 0 ~ 9	10	
00	1	
DECIMAL POINT	1	
CLEAR	1	
RECEIPT	1	

FEATURES		NUMBER
KEY	@/FOR	1
	#/SBTL	1
FUNCTIONS	MULTIPLICATION	Yes
	SPLIT PRICING	Yes
	⊖ 1 or 2 (NOT NET DEPT)	Yes
	⊖ 1 or 2 (NET DEPT)	Yes
	%1~4 (NOT NET DEPT)	Yes
	%1~4 (NET DEPT)	Yes
	PAST VOID, LAST VOID	Yes
	VOID MODE	Yes
	SENTINEL	Yes
	P-BAL, C-BAL	Yes
	CLOCK	Yes
	OVERRIDE	Yes
	CASH CHECK	Yes
	SEPARATE ITEMIZERS	Yes
	FOR REFUND	Yes
REPORTS	NO. OF TAX TABLES	2
	NO. OF DIGITS OF % TAX	6
	CLERK	Yes
	DAILY GENERAL	Yes
	PLU/Sub-department	OPTION
	CASH IN DRAWER	Yes
	HOURLY	Yes
	MONTHLY GENERAL	Yes
	MANUAL GROUP	Yes
	MONTHLY MANUAL GROUP	Yes

No. = Number
MONTHLY = Periodic total

11-2. New Function

SECRET CODE ENTRY

After entering the secret code by the following procedure, the Z reports are available to be printed by adding the key depressing in the report reading procedure.

The secret code is preset in the PGM2 mode. Different codes are presettable from each other of Z1 and Z2 for the individual controlling.

Once the secret code has been entered, the re-entry is not necessary to take the multiple number of Z-reports in the same mode.

If the secret number has been preset as zero, no secret code entry is necessary to print Z-report.

(PROCEDURE)

In the X1/Z1 or X2/Z2 mode,

CA/AT/NS → xxxx → CA/AT/NS

PB/CB

Manual balance pick up registration is available by using "PB" and "CB" keys in REG. and MGR. mode.

CB : For negative balance pick up.

PB : For positive balance pick up.

Maximum allowable entry digits for the amount are seven (total entry digits are eight including a check digit). The check digit is selectable to exist or not by a SRV mode preset.

No numeric entry prior a PB key depression makes zero balance entry. (This operation is not allowed for the CB key.)

PB or CB registration can be initiated at any timing before entering the tendering stage.

Allowable times of "CB" or "PB" registration is no limited in one transaction. If "PB" registration are performed twice in one transaction, totals of two previous balance will be added together.

The keys can be preset as taxable (or non-taxable), but tax shift key operations (in REG/MGR mode) are not effective to change them.

Balance file:

New check (CB) and Re-order and Settlement (PB) entries (option)

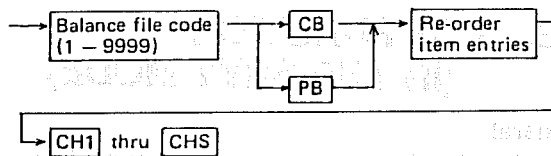
This function requires the installation of the ER-46PL1 RAM memory chip (option).

Charge sales data can be stored in a maximum of 1344 balance files (which can be specified by using 4-digit free codes 1-9999).

The stored data can be read for additional entries.

- New check key (CB):
Pressing this key after entry of a balance file code causes the ECR to open a new file.
- Re-order key (PB):
Pressing this key after entry of a balance file code causes the ECR to access a file having a non-zero balance (i.e a file that is already in use).
This key allows additional sales to be registered to a balance file.

(Procedure)



* One of the charge keys which is programmed as a service key.

TRAY TOTAL

When the TRAY TTL key is depressed during a transaction in REG or MGR mode, the contents of the TRAY TOTAL itemizer which accumulates the merchandise sub-total is printed, displayed and cleared.

If the TRAY TTL key has been depressed before the operation in the transaction, the sub-total of the registration after the prior TRAY TTL key is printed.

If the TRAY TTL key has been depressed in a transaction (i.e. not at the top of a transaction), the amount is printed

with a fixed descriptor.

The display for the other sub-totals is not affected by the depression of the TRAY TTL key (i.e. show the whole total amount).

EXAMPLE

DPT.02	\$1.50	
DPT.08	\$2.50	
T+TL	\$4.00	Tray total
DPT.07	\$8.75	
DPT.01	\$1.25	
T+TL	\$10.00	Tray total
S+T+	\$14.00	Whole total
TAX1	\$0.35	
TAX2	\$0.10	
TOTAL	\$14.45	

STACKED REPORT

The machine has the stacked report feature, which issues multiple kinds of report by one sequential operation.

This report can not include the job number of 2, 3 12 or 40. If the numbers are included in an operation the steps for the numbers are ignored (i.e. the reports for the numbers are not printed but the other reports are printed).

For reports 4 and 20, no range can be specified (i.e. always all items are printed with zero skipping).

Up to 5 kinds of report can be printed consecutively by an operation. Same report number can be included in the an operation, but if the data is changed after the former one's printing, the latter report prints the changed data (i.e. consecutive number or Z report)

12. TEST FUNCTION (IN THE SRV1 MODE)

12-1. General

1) This test function is designed to test various machine operations in the production line and during field servicing. Test programs are implemented in the ROM of the ER-3241 and executed by the CPU (UPD7801G220). The following conditions are required for the proper operation of the test program:

- a) Normal voltage levels to the logic system (+5V, \overline{POF}).
- b) All I/O signals and CPU logic should be in normal operating condition, except for PA, PB, INT0, INT2, and WAIT of the CPU. An entire KDC and part of the address decoder, address bus, data bus, and RAM1 should be in normal working condition.

2) After program initiation, test status or test command code will be printed on the receipt and journal of the M220F main printer as well for indicating execution of the test program, regardless of the RECEIPT ON/OFF switch position.

3) If power interrupt occurs during program execution, one of the following actions will take place depending on the MODE switch position at the time of power restoration:

- a) SRV1: Program Reset is performed.
- b) Other than SRV1 and SRV2: Continues program execution.
- c) SRV2: CPU does not start. Program will be reset when the mode switch is turned to SRV1.

1-2. List of test commands

Test commands must be entered in the following format in the SRV1 mode.

JOB # (xxx) → CA/AT/NS

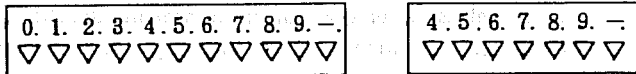
No.	JOB #	Test item	
1	100	M220F printer test	
2	101	M240 printer test	Option
3	102	M220F printer aging test	
4	103	Display test	
5	104	Key test	
6	105	Free key position code read test	
7	106	Mode/clerk switch test	
8	107	Receipt on/off switch test	
9	108	Validation paper sensor test	
10	109	Paper near-end sensor test	
11	110	BOF/TOF sensor test	Option
12	111	Drawer open sensor test	Service option
	112	Drawer open sensor test	
	113	Drawer open sensor test	
	114	Drawer open sensor test	
15	118	M240 printer aging test	Option
16	200	System ROM (7801G-220 internal ROM) test	
	201	ROM1 test 27128-029 or 27128R021A	
	202	ROM2 test 27128-130 or 27128R022A	
	203	ROM3 test 2732R001A and ER32RS ROM (2732R031A)	
17	300	RAM1 test	
	301	RAM2 test	
	302	Restaurant RAM test	Option*
	303	M-TTL RAM test (Periodic total RAM)	Option*
18	119	RS232C test	Option
19	115	Patch circuit test	

[4] Display test

(1) Key operation: 103 → CA/AT/NS

(2) Test function

The following is displayed.

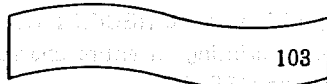


(3) Check items

- a) Check to see that display contents is correct.
- b) Check to see that display is free of blur, omission, and unevenness.

(4) Test termination

Journal key depression will terminate the test.



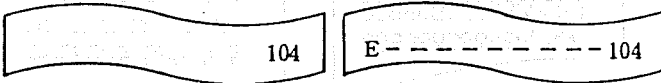
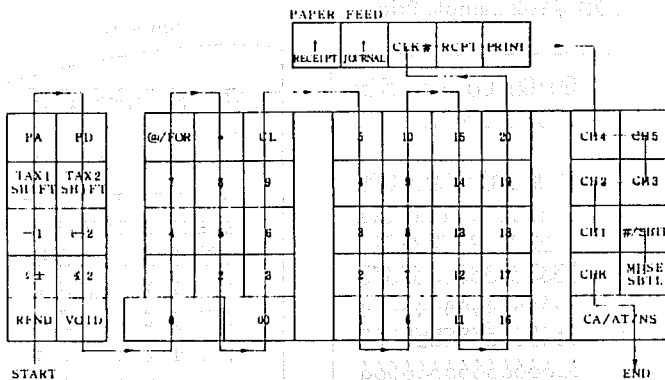
Test end message printing.

[5] Key test (standard keyboard layout)

(1) Operation: 104 → CA/AT/NS

(2) Test function

Because this test command is applicable only for the standard keyboard layout, it cannot be applied for the ER-3241 if the function key layout or key size has been changed by the free key layout function. In this test mode, keys on the keyboard must be pushed in order indicated in Figure 1. When the test is successful, the test terminates with the message on the printer. Occurrence of an error during the test will immediately produce the error message on the printer, then the test will terminate by the depression of CA/AT/NS or a series of specific keys.



End message print

Error message print

[6] Free key position code read test

(1) Key operation: 105 → CA/AT/NS

(2) This test command is used to check key position (key contact number).

When a key is depressed after the preliminary key operation (Step (1) above), the key position code of

the respective key is displayed. This function is used for the creation of the check table during free key setup.

(3) Test termination

Test will terminate by the depression of CA/AT/NS.



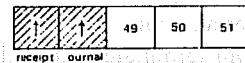
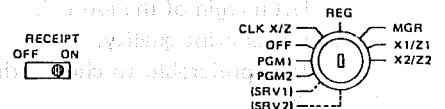
End message print

NOTE: The following chart shows the key position codes. Depression of a fixed position key (0-9, @/FOR, ., #/SBTL, etc.) will result in an error operation.* The following will result in a second type of error operation**: If two keys in the free key area are depressed simultaneously, or if two key switches are installed where one should be a key stem, when using a large sized key (1 x 2 or 2 x 2).

*: Depression of the fixed position key will put "—" on the display.

** : Simultaneous depression of more than two keys will result in "EE".

FREE KEY POSITION CODE



5	10	w/FOR	CL	15	20	25	30	35	40	45	48
4	9	7	8	9	14	19	24	29	34	39	44
3	8	4	5	6	13	18	23	28	33	38	43
2	7	1	2	3	12	17	22	27	32	37	42
1	6	0	00	11	16	21	26	31	36	41	CA/AT/NS

(Fig. 1) FREE KEY AREA

(NOTE)

- 1. 51 unique key assignments.
- 2. Asterisked areas are reserved for fixed position keys.

Fig. 2

(1) ~ (51): Free key position codes.

NOTE: Hatched area is reserved for fixed position keys.

[7] Mode/clerk switch test

(1) Key operation: 106 → CA/AT/NS

NOTE: Perform the above command entry with clerk key "A" selected or no clerk key. Otherwise,

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(2) Test function

- After the above command entry, test starts for the mode/clerk keys. Though the display may appear darkened somewhat with occasional flickering, the operation is normal.
- Change clerk key setup in order of A, B, D, and E, set the clerk switch to other than E or OFF, then proceed to change the mode switch position in the order of: SRV1 → PGM2 → PGM1 → CLK X/Z → REG → MGR → X1/Z1 → X2/Z2 → X1/Z1 → MGR → REG → CLK X/Z → PGM1 → PGM2 → SRV1. With this, the display changes from 00 in SRV1 mode to 01 in PGM1 mode, and so on until 07 is displayed at the X2/Z2 mode position. The test will terminate when it returns to the SRV1 position. Should proper sequence be ignored or a hardware error is encountered in the middle of an operation, it will immediately end with an error message printed. Hardware code is displayed.

Clerk/Mode switch	A	B	D	E	SRV 1	PGM 2
Display	01	02	03	04	00	01
	PGM 1	CLK X/Z	REG	MGR	X1/Z1	X2/Z2
	02	03	04	05	06	07

The mode switch must be rotated carefully. Since there is a possible activation of the power interrupt procedure in moving the switch over the OFF position from the PGM1 position to the CLK X/Z position, it becomes necessary before going into the REG mode to ensure activation of the display while it is in the CLK X/Z mode. Because no check is carried out after rotation past the X2/Z2 through SRV1 mode, there is no need to continue careful rotation, however care must be exerted not to pass over to the SRV2 position.

(3) Check items

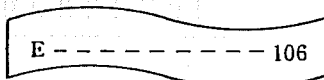
Check to see that the end message has been printed.

(4) Test termination

To terminate the test, move the mode switch to a position other than SRV1 or SRV2, then return it again to the SRV1 position.



Normal message print



Error message print

* The test may also be terminated if the mode switch is set to a position other than SRV1 during the clerk key test.

[8] Receipt on/off switch test

(1) Key operation: 107 → CA/AT/NS

(2) Test function

The state of the RECEIPT ON/OFF switch is displayed. Though the display may be darkened somewhat and flickers, this does not indicate irregular

Receipt ON stage: 0 is displayed in the first digit.
Receipt OFF stage: F is displayed in the first digit.

(3) Check item

Change the RECEIPT ON/OFF switch position and check to see that display is correct.

(4) Test termination

Journal key depression will terminate the test.



End message print

[9] Validation paper sensor test

(1) Key operation: 108 → CA/AT/NS

(2) Test function

Stage of the validation paper sensor is displayed.

- Validation paper in: CO is displayed.
- Validation paper not in: CF is displayed.

NOTE: However, CO will be displayed regardless of paper insertion, when it has no validation paper sensor.

(3) Check item

CO will be displayed when the paper is inserted.

(4) Test termination

Journal key depression will terminate the test.



End message print

[10] Paper near-end sensor test

(1) Key operation: 109 → CA/AT/NS

(2) Test function

State of the paper near-end sensor is displayed.

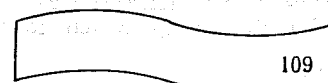
- Paper near-end on: PE is displayed in the first and second digits.
- Paper near-end not on: PO is displayed in the first and second digits.

(3) Check item

PO is displayed when the roll paper is loaded on the journal paper roll holder. PE will be displayed when it is not, PO is displayed at all times when it does not have the paper near-end sensor.

(4) Test termination

Journal key depression will terminate the test with the end message on the printer and becomes ready to receive key entry.



End message print

[11] BOF/TOF sensor test for Slip Printer (M-240) option ER-46SP1

(1) Operation: 110 → CA/AT/NS

- (2) **Test function**
 With the above command entry, the state of BOF/TOF is displayed after a paper release.

TOF sensor	BOF sensor	Display
w/o paper	w/o paper	- -
w/o paper	w/paper	- 0
w/paper	w/paper	0 0
w/paper	w/o paper	0 -

For the BOF, TOP sensor, refer to page 8 (Fig. A).

- (3) **Check item**
 Insert paper by hand and check the display for sensor response.
- (4) **Test termination**
 Journal key depression prints the end message and becomes ready for the next key entry. The end message will be printed on the M220F printer.

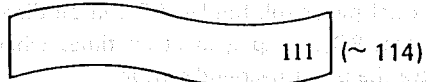


End message print

[12] **Drawer open sensor test**

- (1) **Key operation:** 111 thru 114 → **CA/AT/NS**
- (2) **Test function**
 The specified drawer opens and the state of the drawer open sensor is displayed.
 Drawer open: 0 is displayed in the first digit.
 Drawer closed: C is displayed in the first digit.
 111: Drawer 0 (main drawer)
 112: Drawer 1 (option drawer 1)
 113: Drawer 2 (option drawer 2)
 114: Drawer 3 (option drawer 3)

- (3) **Check item**
 Appearance of C on the display must be confirmed after closing the drawer.
 All drawers must be tested when option drawer is installed.
- (4) **Test termination**
 Journal key depression will terminate the test and becomes ready for the next key entry.



End message print

[13] **M240 printer aging test . . . option ER-46SP1**

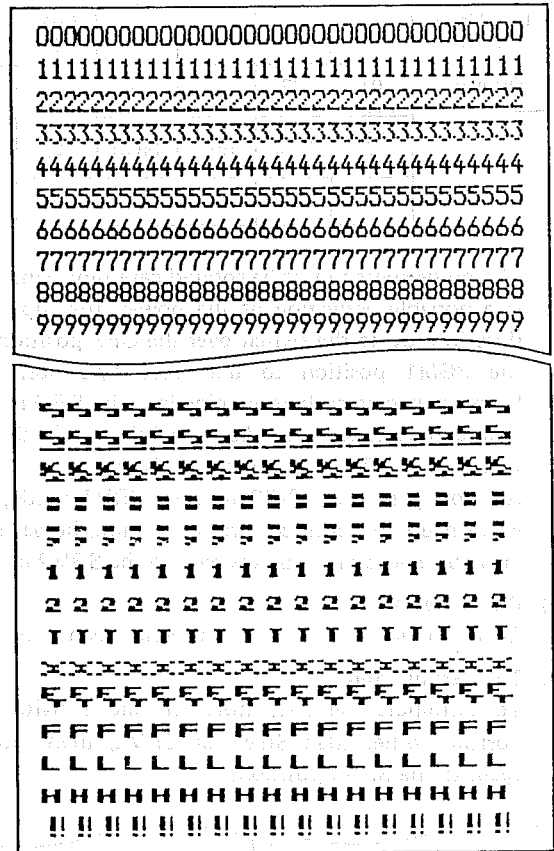
- (1) **Key operation:** 118 → **CA/AT/NS**
 NOTE: Set the receipt switch to the ON side.
- (2) **Test function**

This test command carries out the M240 printer aging test. All internal characters are printed in their order with individual character printed repeatedly on a single line.

interrogated upon printing an entire character set. If the switch is on the OFF side, the test will terminate. If the switch is on the ON side, the test will be repeated all over again from the beginning.

- (3) **Test termination**
 To terminate the test, set the RECEIPT ON/OFF switch to the OFF side.

- NOTES:
- Character code on display, however, is the hardware code.
 - In the case of a double size character, a decimal point will be placed between the first and second digits.
 - Perform the test command JOB #107 before this test to ensure that the receipt switch is properly functioning.
 - Paper detecting is not performed during the M240 printer aging test. The printing is done even without paper in the M240 printer.



[14] ROM test

(1) Key operation: 2xx → CA/AT/NS

(2) Test function

The specified ROM is tested.

ER3241

Job #	Address	ROM
200	0000(H)~0FFF(H)	Internal ROM of UPD7801-220
201	1000(H)~3FFF(H) & E000(H)~EFFF(H)	PROM1 27128-029* or 27128R021A
202	4000(H)~7FFF(H)	PROM2 27128-030* or 2712R022A
203	8000(H)~9FFF(H)	PROM3 2732R001A*

* OCT. PRO ONLY (ER3241)

(H): Hexadecimal

ER3231

Job #	Address	ROM
200	0000(H)~0FFF(H)	Internal ROM of UPD7801-220
201	1000(H)~3FFF(H) & E000(H)~EFFF(H)	PROM1 27128030-C
202	4000(H)~7FFF(H)	PROM2 27128032-C
203	8000(H)~9FFF(H)	PROM3 (NOT INSTALLED)

(H): Hexadecimal

(3) Check item

Check to see that the end message is printed normally.

(4) Test termination

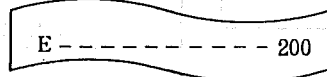
The test terminates automatically and becomes ready for the next key entry.

EX.



Normal message print

EX.



Error message print

[15] RAM test

(1) Key operation: 3xx → CA/AT/NS

NOTE: As test command 300 and 301 are for the test of the basic RAM, the master reset will be carried out automatically after this test.

Therefore, after printout occurs, there is a slight delay before the display changes.

(2) Read/write test is carried out using the test data of 55(H) and AA(H). When the test is successful, the chip select function is then tested to ensure proper chip accessing. Different data consisting of one byte is written to all RAMs to check correct recording of the data. After completion of the test, data is restored for all but the specified RAMs and the specified RAMs are cleared. However, RAM area of 9800(H) thru 99FF(H) and 9F81(H) thru 9FFF(H) is not cleared.

Job #	Address		RAM
300	9800(H)-9FFF(H)	Basic RAM1	Special Service Preset programming will be erased after master reset or JOB #301 has been executed. Before entering Special Service Preset for the unit already programmed with SSP, it needs to clear the RAM contents.
301	9000(H)-97FF(H)	Basic RAM2	
302	A000(H)-BFFF(H)	Restaurant RAM	Cleared to 0.
303	C000(H)-DFFF(H)	PLU RAM	PLU is initialized after the test.

M-TTL: Monthly (Periodic) total

(H): Hexadecimal

(3) Check item

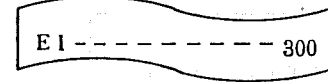
When an error is encountered during the read/write test or chip select test, the test is immediately terminated with the error message on the printer.

Check to see that the end message is printed correctly.

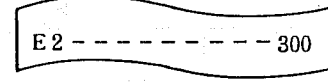
An example of RAM1 test



Normal ending message



Read/write error message



Chip select error message

(4) Test termination

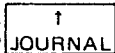

The test terminates automatically with the end message on the printer.

NOTE: AFTER INSTALLING OPTIONAL RAM (PLU RAM, MONTHLY TOTAL RAM or DEPT. SHIFT RAM), YOU MUST CLEAR/INITIALIZE THE RAM VIA THE RESPECTIVE RAM TEST FUNCTION.

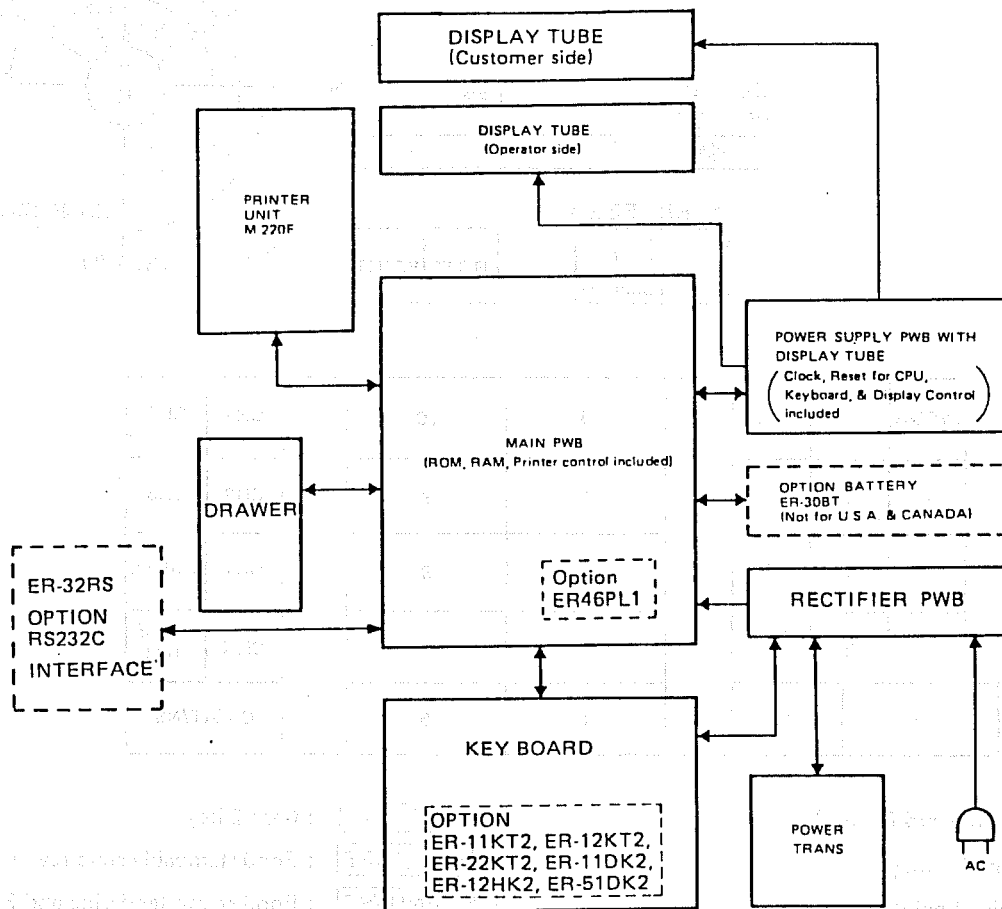
MODEL **ER3231**

CONTENTS

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NOTE: MASTER RESET (ALL MEMORIES CLEAR)
 THIS FUNCTION HAS BEEN CHANGED TO JOURNAL KEY (),
 NOT THE NUMERIC 9 KEY ()

1. INTERNAL BLOCK DIAGRAM



The items indicated within dotted line are optional devices.

2. SPECIAL SERVICE TOOLS

TOOL NAME	PARTS CODE	PRICE RANK
KEY SWITCH removal tool	UKÖG-6635RCZZ	AX
KEY TOP and DUMMY KEY, removal tool	UKÖG-6636RCZZ	AX

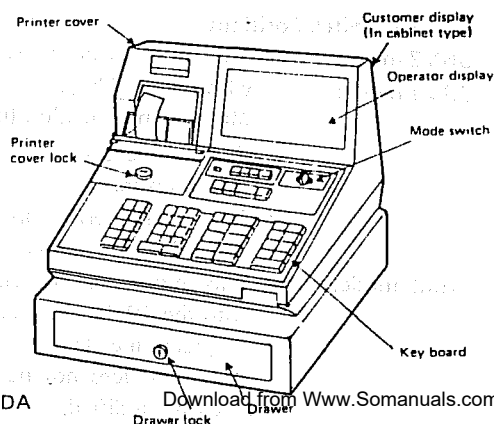
3. REFERENCE DOCUMENTS

- Cash Register Basic Manual
- Printer M-220F Service Manual (00ZM220F-SM-E)
- Options Installation Manual for ER-3241/3231.

4. SPECIFICATIONS

4-1. Appearance/Rating

1) Appearance



For U.S.A.
CANADA

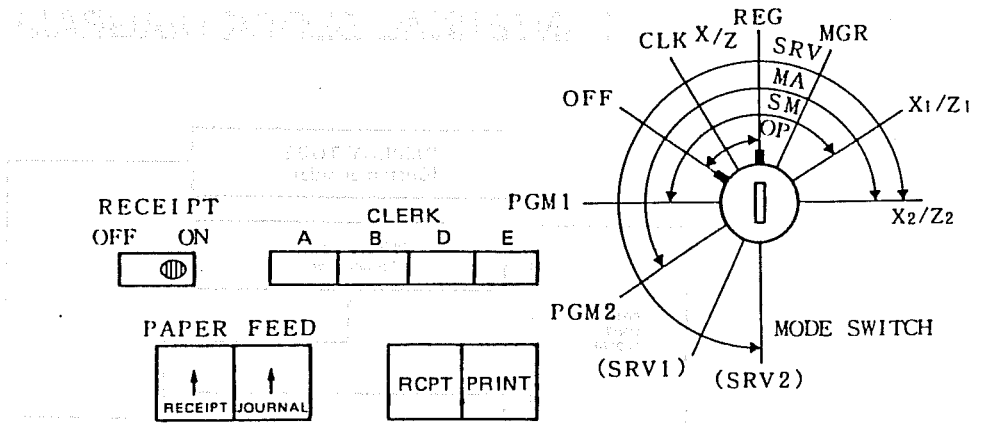
Download from www.Somanuals.com. All Manuals Search And Download.

2) Rating

Model name	ER-3231
Power source	AC 115V ± 10% 50/60 Hz
Power consumption	46W
Operating temperature	0°C to 40°C (32 to 104°F)
Overall dimensions	514 (H) x 440 (W) x 460 (D) mm 20-15/64 x 17-5/16 x 18-1/8 in (H) (W) (D)
Weight	39.5 lbs (18 kg)

4-2. Keyboard

1) Standard Keyboard Layout



RA	PO	@/FOR	•	CL	5	10	CH4	CH5
TAX1 SHIFT	TAX2 SHIFT	7	8	9	4	9	CH2	CH3
⊖ 1	⊖ 2	4	5	6	3	8	CH1	#/SBTL
% 1	% 2	1	2	3	2	7	CHK	MDSE SBTL
RFND	VOID	0	00		1	6	CA/AT/NS	

2) Key top name (With standard feature)

- 0** **00** ~ **9** : Numeric entry
- : Decimal point
- CL** : Clear
- @/FOR** : Multiplication, split pricing*
- ↑** : Paper feed (Receipt & Journal)
- #/SBTL** : Non add code print, Time display, sub-total,
- CA/AT/NS** : Cash, Amount tender, No sale
 - RA** : Received on account
 - PO** : Paid out
- TAX 1 SHIFT** **TAX 2 SHIFT** : Tax shift 1, 2
- ⊖ 1** **⊖ 2** : Discount
- RFND** : Refund
- VOID** : Void
- 1** ~ **10** : Department
- %1** **%2** : Percent 1, 2
- PLU/SUB*** : Price look up, Sub-department
- CH1** ~ **CH5** : Charge sale
- CHK** : Check
- MDSE SBTL** : Merchandise sub-total
- PRINT** : Validation print key
- RCPT** : Receipt

CASH2* : Cash 2 key

F.S. SHIFT* : Food stampable state reversal key

F.S TEND./ST* : Food stamp tendering and Food stamp subtotal key

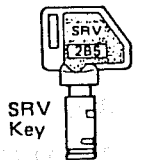
TRAY TTL* : Tray total key

TAX* : Manual tax key

NOTE: Keys marked with asterisk * do not exist on the key board of the STANDARD KEY LAYOUT.

3) Mode Select keys

- SRV : Service key (No. 2B5) LKGiM6959RCZZ
- MA : Master key (No. 6B5)
- SM : Sub-master key (No. 3B2)
- OP : Operator key (No. 0B6)



4) Mode Switch Positions

- SRV2 mode:
 - ★ This mode can be selected only with the SRV key.
 - Machine initialization (partial, full)
 - Feature selection
 - List of options
 - Special data correction GT1, GT2, Z counter, etc.
- SRV1 mode:
 - Machine initialization (partial, full)
 - Feature selection
 - List of options
 - Special data correction GT1, GT2, Z counter, etc.
- PGM2 mode:
 - ★ This mode can be selected only with the SRV or MA key.
 - Programming data of store control level that does not need to be frequently modified.

- PGM1 mode:
 - ★ This mode can be selected with any keys other than the OP key.
 - Programming of departmental unit price, PLU unit price, %1 and %2 rates, etc.
- OFF mode:
 - ★ Any key can be inserted or removed from the mode switch when it is in the "OFF mode" position.
 - Turning-off power.
- CLK X/Z mode:
 - Individual reading and resetting for clerks.
 - Attendance time will be printed.
- REG mode:
 - ★ Any key can be inserted or removed from the mode switch when it is in the "REG mode" position.
 - General registrations.
- MGR mode:
 - ★ This mode can be selected with any keys other than the OP key.
 - All REG-mode operations and transaction void.*
 - Overriding of pre-set limitation in the REG mode.
- X1/Z1 mode:
 - Reading and resetting of daily general reports.
 - Generation of various analysis reports.
- X2/Z2 mode:
 - Reading and resetting of periodical-ly accumulated reports.
 - Generation of analysis reports.

***Void mode (Transaction void)**

This mode serves to void incorrect registrations when they are noticed after the completion of a transaction or during the stage of tendering. The voiding operations for the latter case are as follows: temporarily finalize the current transaction, press the "VOID" key in the MGR. mode to set the machine to the VOID mode, then enter the whole transaction.

This mode allows even those registrations for which the past or last void is not applicable to be nullified.

The void mode is automatically cancelled whenever a transaction is finalized. Therefore, when clearing two or more transactions, it is necessary to first depress the VOID key before proceeding to the subsequent registration.

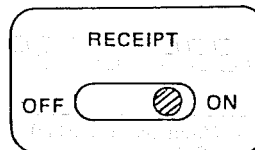
NOTE: The void mode entry is allowed only when the void mode is enabled via the SRV mode programming "JOB #902-C".

Void mode display:



Indication of void mode

5) Receipt ON-OFF switch

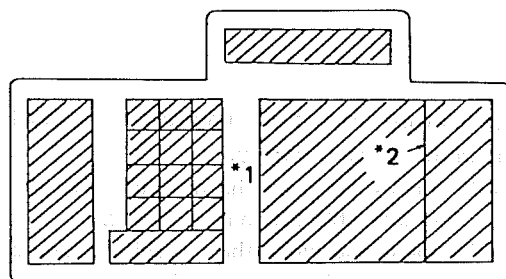


This switch permits or prohibits receipt generation. To permit printing on the journal alone without receipt generation, slide the switch to the OFF position and to permit printing on both the journal

and the receipt, slide it to the ON position.

NOTE: The register will generate receipts regardless of the position of this switch except when the mode switch is in the REG position. This means that the receipt roll must be installed even when this switch is kept in the OFF position.

6) Water-proof Keyboard Cover (GCÖVB6822RCZZ)



NOTE: The hatched areas protrude.

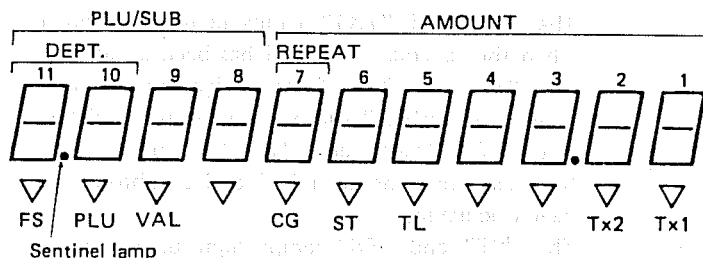
*1: Because this area does not protrude, this key cover can not be used for the key layout when this area is filled by key tops.

*2: This line does not protrude.

4-3. Display

1) Operator side display

(fluorescent display tube): 11-LT-07Z



▽: Machine state indicator lamps.

Contents of display	No. of digits	Column No.	Pattern
Numerals	Numeric input 7 digits	1 to 7	1234567890
	Amount 7 digits	1 to 7	
Symbol	1 digit	4 to 9	(-) Minus sign (floating)
	1 digit	11	(P) PGM mode
	1 digit	11	(E) Error
	1 digit	11	(□) Deficit symbol
	1 digit	11	(•) Sentinel indicator
PLU	4 digits	8 to 11	4-digit display (zero-suppressed)
Dept.	2 digits	9 to 10	2-digit display (zero-suppressed)
Repeat	1 digit	7	Endless count, starting from 2
Decimal point	1 digit	2	Decimal point (1 to 3), TAB (2 to 4)
		11	Cash in drawer has exceeded a programmed amount.

The following legends are indicated by a small triangular lamp in the operator display.

- TX1:** Lights up when the tax shift 1 key is depressed or a taxable 1 item is registered.
- TX2:** Lights up when the tax shift 2 key is depressed or a taxable 2 item is registered.
- TL:** Lights up when a registration is finalized by pressing the CA/AT/NS, CA2, CHK, or CH1 thru CH5 without any amount tendered entry.
- ST:** Lights up alone or together with other lamps when the register has computed subtotals:
 - This lamp lights up alone when the merchandise subtotal has been calculated.
 - The "ST" lamp and the deficit symbol "□" light up together when the tax-included subtotal has been calculated.
 - The "ST" and "TX1" lamps light up together when the taxable 1 subtotal has been calculated.
 - The "ST" and "TX2" lamps light up together when the taxable 2 subtotal has been calculated.
 - The "ST", "TX1" and "TX2" lamps light up together when the taxable 1 and 2 subtotal has been calculated.
 - The "ST" and "FS" lamps light up when the food stamp eligible subtotal has been calculated.
- CG:** Lights up whenever the change due amount appears in the display or when the total sale amount is negative.
- VAL:** Lights up when the machine is set for compulsory validation printing.
- PLU:** Lights up each time a PLU/SUB item is entered. (option)
- FS:** Light up when an eligible for food stamp is entered.

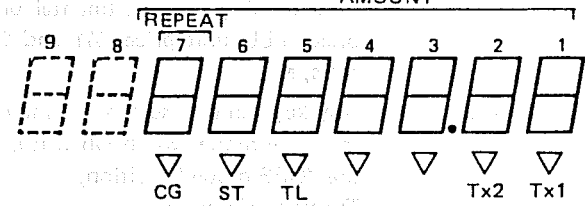
(NOTE)

The number of repeats is displayed from "2" and counted up with each repeat. When ten registrations are done, the display shows "0".

Example: (2 → 3 → 4 9 → 0)

(2) Customer side display (In-cabinet type)

Fluorescent display tube: 9-LT-03Z

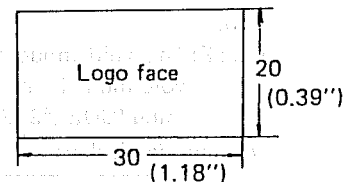


NOTE: The 8th and 9th digits are not used.

4.4. Printer (Model-220F)

1) Overview of the printer

- a. Printing system: 2-station print dot matrix printer (M-220F)
- b. Printing capacity: 16 digits in all (16 digits for both receipt and journal)
- c. Printing speed: about 2.4 lines/sec.
- d. Paper feeding speed: about 14.2 lines/sec. (receipt) about 7.1 lines/sec (journal)
- e. Functions:
 - Stamping
 - Receipt ON-OFF and journal select function.
 - Individual receipt and journal paper feeding.
 - One-line validation printing.
 - Validation paper detection (Journal side only)
 - Journal paper roll end sensing
- f. Paper width: 37.5±0.5mm 1.47" for receipt and journal, max. roll diameter: 80mm (3.14").
- g. Paper quality:
 - Receipt and journal paper: bond paper (0.07 to 0.09 mm in thickness 52.3 to 64.0g/m² in weight).
- h. Reliability: MCBF 2 mill. line. (excluding print head unit) ... Print head unit: 40 mill. characters (life)
- i. Color of print: Purple (single color)
- j. Paper cutter: Manual cutter.
- k. Ribbon cassette: Life: about 6 mill. characters.



2) Logo unit

- a. Type: Porous rubber.
- b. Color of stamp: Purple (single color)
- c. Max. logo dimensions: 30(W) x 10(H) mm 1.18" x 0.39"

3) Validation printing

- 1. Number of validation printing lines: 1 line.
- 2. Number of validation columns: 35 digits
- 3. Recommended validation card
 - (1) Type of paper: ordinary paper
 - (2) Minimum paper width: 130mm(5.12 inches)
 - (3) Paper thickness
 - ordinary paper 0.07~0.15mm

4-7. Overflow Indication

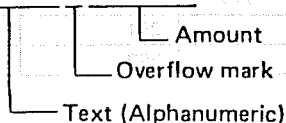
If any amount totalizer except GTs which is printed on X or Z reports has overflowed, two exclamation marks are printed for each totalizer on the report.

There is a possibility that the marks may be printed amounts less than the totalizer's capacity. (i.e. in case a negative registration after having overflowed causes the new amount to be within the totalizer's capacity, the marking is printed.)

A "!!" mark is printed in the 7th column from the most left column on the amount total line to show the overflow.

EXAMPLES:

- 1) AAAAAA!!\$12345.67
- 2) BBBBBB!!123456.78



4-8. In Case of Power Failure

When power is lost, the machine retains its memory contents and all information on sales registrations.

- (1) When a power failure is detected in either the register idling state or during registration, the machine returns to the normal state of operation after power recovery.
- (2) When power-failure is detected during a print cycle, the register prints "-----" and then carries out the correct printing procedure.

4-9. Motor Seizure Detecting Function

When motor seizure is sensed due to a paper jam inside the machine or ink ribbon jam, power to the motor is shut off to prevent the motor from overheating.

- (1) Motor seizure sensing method
After the motor starts to run, the CPU monitors printer timing pulses continuously. When a timing pulse is delayed beyond the predetermined cycle, the CPU interprets it as a motor seizure and therefore turns the motor power-on signal PA7 to low level to stop the motor.
- (2) Motor seizure alarm
The CPU issues intermittent buzzer-on signal PC4 after stopping the motor to alert the condition.
- (3) Release of the motor seized condition.
 - a) Power off.
 - b) Remove the cause of motor seizure, such as a paper jam or ink ribbon jam.
 - c) Power on.
 - d) Depress the **CL** key.

NOTE: Even in the motor lock condition, paper feed keys (Receipt/Journal) are acceptable.

5. OPTIONS

No.	Description	Model name, Parts code	RAM	Key	SRV1 setting (JOB CODE)	Note
1	PLU/SUB - Department	ER-46PL1	8K (HM6264)	-	#902-C #950	8KB RAM 1 chip
2	Key kit (1 x 1 size) x 30 pcs.	ER-11KT2	-	○	#901-C, D #950	<ul style="list-style-type: none"> • Department expandable up to 30 depts. • Flexible key layout
3	Key kit (1 x 2 size) x 30 pcs.	ER-12KT2	-	○		
4	Key kit (2 x 2 size) x 10 pcs.	ER-22KT2	-	○		
5	Key Kit (1.5 x 2 size) x 10 pcs.	ER-12HK2	-	○		
6	Dummy key (1 x 1 size) x 30 pcs.	ER-11DK2	-	○		
7	RS232C interface	ER-32RS	-	-		
8	Water proof key cover	GCÖVB6822RCZZ	-	-	-	• Service parts only
9	External option battery	ER-30BT	-	-	-	Not for USA, CANADA
10	Coin case 6B/6C	ER-33CC	-	-	-	For U.S.A. and PANAMA
11	Coin case 6B/5C	ER-33CC1	-	-	-	For CANADA
12	Key kit	ER51 DK2	-	-	-	

NOTE: For installation of options, refer to the ER-3241/3231 OPTIONS INSTALLATION MANUAL.

6. QUICK REFERENCE TO PROGRAM JOB NUMBERS AFFECTING KEYS AND FUNCTIONS

	SUBJECT	SRV JOB #	PGM2 JOB #	PGM1 JOB #
A	AMOUNT SYMBOL	905		
	AMOUNT TENDER		260	
C	CASHIR	902, 915		145
	CONSECUTIVE #	905	253	
	CA2		260, 262, 263, 264	
	CHK	905	230, 260, 261, 262, 263, 264,	
	CH1-CH5		260, 262, 263, 264	
	CLK X/Z		256	
	CUPON		235	
D	DEPARTMENT	901	210, 212, 214, 213, 211	110
	DATE	905	250	
	DRAWER	903	260	
F	FOOD STAMP	906	211, 221, 231	
	FRACTION TREATMENT	903		
	FREE KEY LAYOUT	950		
G	GT (GT1 - GT3)	904, 920, 921, 922, 923		
H	HASH	901	210	
	HALO		212, 232, 261, 262	
J	JOURNAL SELECT		256	
L	LOGO	906	254	
M	MDSE	905		
	⊖ 1 - ⊖ 2		231, 232, 234, 236	
	MACHINE NUMBER		252	
N	NON ADD CODE	906	230	
P	PLU/SUB	902, 904,	221, 224	120, 121
	% (%1 - %4)	903	231, 234, 235	130
	PO		230, 232, 234	
	PGM1		280	
	PERIODIC REPORT	902		
R	RS232C	906		
	RA	903	230, 232, 234	
	RFND		234, 256	
S	SBTL	904, 905	213, 260, 263	
	SECRET CODE	930	280, 281, 282	
	SPLIT PRICING		234	
	SENTINEL		257	
	STACK REPORT		286	

	SUBJECT	SRV JOB #	PGM2 JOB #	PGM1 JOB #
T	TAX	903, 904, 905	211, 221, 231, 232, 234, 240, 241, 260, 284	
	TRAY		234	
	TIME		251	
V	VOID MODE	902		
	VOID		234, 256	
	VALIDATION		260	
Z	Z COUNTER	910 - 915		
	Z1		281	
	Z2		282	

7. SRV (SERVICE) MODE

Service (SRV) Key is Required for use in service mode 1 or 2.

7-1. Program Reset

In the event the unit becomes "LOCKED" in a program loop, the programming may be restarted without altering memory in the following manner:

1) Method A

1. Remove the power cord from the AC outlet.
2. Turn the mode switch from the service 2 position to the service 1 position (SRV1).
3. Re-insert the AC plug into the outlet.

2) Method B

1. Turn the mode switch from the service 2 position to the service 1 position. (SRV2 to SRV1)

7-2. Master Reset (All Memories Clear)

To clear all memories and place the program in a key halt (wait) condition, do the following:

- (1) Turn the mode switch to the service 2 mode position.
- (2) Depress and hold **journal paper feed key**.
- (3) While holding the key depressed, turn the mode switch from the service 2 mode position to the service 1 mode position. (SRV2 to SRV1)

Note 1: After performing this procedure the unit must be completely reprogrammed in both the service (SRV) mode and program (PGM) mode.

Note 2: After turning the mode switch to the service 2 mode position, the memory is cleared of the date and time. Therefore the unit must be set in the PGM2 mode.

If the MASTER RESET operation is performed, the following readouts should be seen for service 1 (SRV-1) mode program and PGM mode program, See Sample Print-1 and 2.

7-3. Reading of SRV1 Mode Programming

[JOB CODE #900]

All SRV programming reports including the key layout report are printed in the SRV1 mode by JOB code #900. Key operation:

900 → [#SBTL] → CA/AT/NS

[JOB CODE #950]

The key layout report is printed in the SRV1 mode by JOB code #950.

Key operation:

950 → [#SBTL] → CA/AT/NS

SRV1 mode (JOB #900)

900 → [#SBTL] → CA/AT/NS

00/00/00 12:41AM 000A0000 000000	#0950	
#0900	1 DPT.01 KEY16	51 PLU --
901# 0010	2 DPT.02 KEY17	52 CASH2 --
902# 0000	3 DPT.03 KEY18	53 CH1 KEY43
903# 5002	4 DPT.04 KEY19	54 CH2 KEY44
904# 0200	5 DPT.05 KEY20	55 CH3 KEY47
905# 3000	6 DPT.06 KEY26	56 CH4 KEY45
906# 0000	7 DPT.07 KEY27	57 CH5 KEY48
910# Z1 0000	8 DPT.08 KEY28	58 CHECK KEY42
911# Z2 0000	9 DPT.09 KEY29	59 CST KEY46
912# Z2 0000	10 DPT.10 KEY30	60 TTL --
913# Z3 0000	11 DPT.11 --	61 VOID KEY06
914# Z1 0000	12 DPT.12 --	62 RFNG KEY01
915# Z1 0000	13 DPT.13 --	63 ?1 KEY02
920#	14 DPT.14 --	64 ?2 KEY07
921#	15 DPT.15 --	65 ?3 --
GT1	16 DPT.16 --	66 ?4 --
\$000000000.00	17 DPT.17 --	67 (-)1 KEY03
922#	18 DPT.18 --	68 (-)2 KEY08
923#	19 DPT.19 --	69 TX S1 KEY04
GT2	20 DPT.20 --	70 TX S2 KEY09
\$000000000.00	21 DPT.21 --	71 RTAX --
GT3	22 DPT.22 --	72 HLR/A KEY05
\$000000000.00	23 DPT.23 --	73 HLR/AJ KEY10
930# 0000	24 DPT.24 --	74 FS SFT --
	25 DPT.25 --	75 FS TND --
	26 DPT.26 --	76 PRINT KEY51
	27 DPT.27 --	77 RCPT KEY50
	28 DPT.28 --	
	29 DPT.29 --	
	30 DPT.30 --	

LIST OF SRV MODE PROGRAMMING

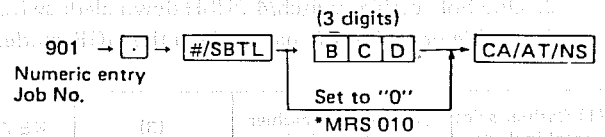
(JOB #)

- 901 Dept. programming
- 902 Optional features
- 903 Optional features
- 904 Print skipping
- 905 Printing MISC
Validation/date print format/check digit/
Amount leading symbol/key entry during RCPT issuing
- 906 Food stamp and MISC functions
- 910 Z counter setting for Z1 report
- 911 Z counter setting for Z2 report
- 912 Z counter setting for TAX report
- 913 Z counter setting for Hourly report
- 914 Z counter setting for PLU report
- 915 Z counter setting for Cashier report
- 920 GT1 upper 6 digits setting
- 921 GT1 lower 6 digits setting
- 922 GT2 upper 6 digits setting
- 923 GT2 lower 6 digits setting
- 930 Secret code for PGM2 mode
- 950 KEY LAYOUT assignment

The following explains the detail of the programming.

[JOB CODE #901]

Key operation:



* MRS means Master Reset which is the default preset after a SRV mode initialization.

- #901-B 1. Hash Dept. programming allowed in PGM2/Not.
- 2. Zero skip on department report./Not.

(1) Hash Dept Programming in PGM2	(2) Zero skip on Dept report	KEY ENTRY
Not allowed	Skip	0
	No Skip	1
Allowed	Skip	2
	No Skip	3

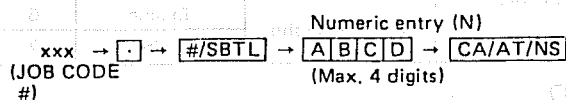
* Reports issued in the X1/Z1 and X2/Z2 modes.

#901-C, D: Number of departments

NUMBER OF DEPARTMENTS	KEY ENTRY
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
{	}
28	28
29	29
30	30

7-4. Service Mode Programming (SRV1 mode)

All programming procedures have the following key entry sequence:



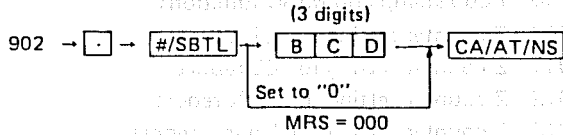
The part of [A B C D] is described in each detail item section.

As long as the decimal point key is not depressed, the programming in the machine will not change.

1. The number can be selected only in 1 - 30 if the A is not "1".
2. The number of departments can be expanded to 30 by the key option (ER11KT2, ER12KT2, ER22KT2, ER12HK2, ER11DK2). For the key top layout of the department expansion, refer to JOB #950.

[JOB CODE #902]

Key operation:



#902-B

Cashier media totals exists/Does not exist on cashier reports.

Cashier media TTLS	KEY ENTRY
Not exist	0
Exist	4

#902-C

1. Cashier sales total to include tax or not include tax.
2. One hole cashier switch/4 PUSH down clerk switch
3. Enable or inhibit of void mode in the MGR mode.

(1) Cashier sales total includes tax or not	(2) One hole cashier switch/4 push down switch	(3) void mode	KEY ENTRY
Not include	4 push clerk switch	Enable	0
		Inhibit	1
	Inhibit	Enable	2
		Inhibit	3
Includes	4 push clerk switch	Enable	4
		Inhibit	5

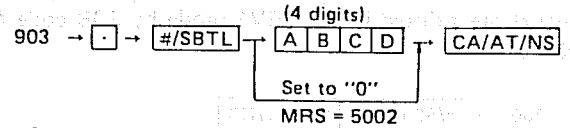
#902-D

1. Enable or disable periodic (Monthly total) report in the X2/Z2 mode.
2. Enable of disable PLU/Sub department function.
3. Zero skip on PLU report in the X1/Z1 mode.

(1) Periodic report (X2/Z2)	(2) PLU/ Sub dept.	(3) Zero skip on PLU report	KEY ENTRY
Inhibit	Inhibit	Skip	0
		Not skip	1
	Enable	Skip	2
		Not skip	3
Enable	Inhibit	Skip	4
		Not skip	5
	Enable	Skip	6
		Not skip	7

[JOB CODE #903]

Key operation:



#903-A

Fraction treatment for multiplication and % calculation.

Fraction treatment	KEY ENTRY
Round down	0
Round off	5
Round up	9

EXAMPLE

Result	Example of regist. +0.03@ 30% = *0.00 9	+0.03@ 10% = *0.00 3
Round down (0)	*0.00	*0.00
Round off (5)	*0.01	*0.00
Round up (9)	*0.01	*0.01

○ : rounded digit

#903-B

1. The key operation is possible or impossible when the drawer is open.
2. Selection of either Singapore tax or normal tax.

(1) Operation with drawer open	(2) Singapore tax* normal tax	KEY ENTRY
Disable	Normal tax	0
	Singapore tax	1
Enable	Normal tax	2
	Singapore tax	3

#903-C

1. Enable or disable tax delete function.
2. Error action for incorrect operation.

LOCK ERROR: Long error released by **CL** key. (2 seconds)

ONE SHOT ERROR: Short error

3. Enable or inhibit key catch sound.

(1) Tax delete*	(2) Error action	(3) Key catch sound	KEY ENTRY
Disable	All lock	Enable	0
		Inhibit	1
	Lock & One shot	Enable	2
		Inhibit	3
Enable	All lock	Enable	4
		Inhibit	5
	Lock & One shot	Enable	6
		Inhibit	7

#903-D

1. Received on account (RA) with tendering or Direct Received on account.

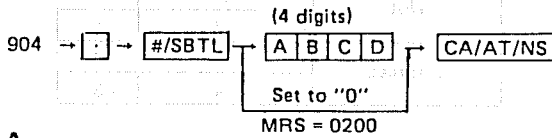
3. Enable or inhibit No sale function.

#903-D

(1) RA with tender or direct RA	(2) No sale after non add code print	(3) No sale	KEY ENTRY
With tender	Enable	Enable	0
		Inhibit	1
	Inhibit	Enable	2
		Inhibit	3
Direct	Enable	Enable	4
		Inhibit	5
	Inhibit	Enable	6
		Inhibit	7

[JOB CODE #904]

Key operation:



#904-A

- GT1 (Grand total 1) is printed on Z report or skipped.
GT1 = Grand total of plus registrations.
- GT2 (Grand total 2) is printed on Z report or skipped.
GT2 = Grand total of minus registration.
- GT3 (Grand total 3) is printed on Z report or skipped.
GT3 = Net grand total (GT1 - GT2)

(1) GT1	(2) GT2	(3) GT3	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

#904-B

- GT3 is printed on X reports./Skipped.
- Coupon PLU is printed on X, Z reports./ Skipped.
- Net sales SBTL is printed on X, Z report./Skipped.

(1) X report GT3 Print	(2) X/Z report coupon PLU Print	(3) X/Z report Nets ST Print	KEY ENTRY
Skip	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Print	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

#904-C

- Taxable 1 subtotal is printed on X, Z reports or skipped.

- Gross Tax 1 and refund Tax 1 total are printed on X, Z report or skipped.

- Net Tax 1 total is printed on X; Z reports or skipped.

(1) Taxable 1 subtotal	(2) Gross Tax 1 & Refund Tax 1 total	(3) Net Tax 1 total	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

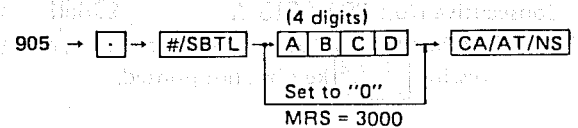
#904-D

- Taxable 2 subtotal is printed on X, Z reports or skipped.
- Gross Tax 2 and refund Tax 2 total are printed on X, Z reports or skipped.
- Net Tax 2 total is printed on X, Z reports or skipped.

(1) Taxable 2 subtotal	(2) Gross Tax 2 & Refund Tax 2 total	(3) Net Tax 2 total	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

[JOB CODE #905]

Key operation:



#905-A

- Total tax amount are printed on X, Z reports or skipped.
- Gross manual tax and refund manual tax are printed on X, Z reports or skipped.
- Net manual tax total is printed on X, Z reports or skipped.

(1) X/Z report TOTAL TAX Print	(2) X/Z report Gross manual Tax & Refund manual Tax	(3) X/Z report Net manual Tax	KEY ENTRY
Print	Print	Print	0
		Skip	1
	Skip	Print	2
		Skip	3
Skip	Print	Print	4
		Skip	5
	Skip	Print	6
		Skip	7

#905-B

1. Regular header format./With the consecutive number in larger in size.
2. Check change total is printed on X, Z reports or skipped.

(1) Special format	(2) Check change total	KEY ENTER
Regular header	Print	0
	Skip	1
Consecutive number	Print	4
	Skip	5

#905-C

1. Key entries during receipt issuing action (from depression of a transaction finalizing key CA/AT/NS, CH1~CH5 or CHK", PO or RA key to the finalizing of receipt issuing) are valid/invalid.
2. Validation print format: Date/Time or Machine No./Consecutive No.
3. Merchandise subtotal is printed or skipped.

(1) Key entry during receipt issuing	(2) Validation print format	(3) Merchandise subtotal	KEY ENTRY
Valid	Date/Time	Skip*	0
		Print	1
	M-No./C-No.	Skip*	2
		Print	3
Invalid	Date/Time	Skip*	4
		Print	5
	M-No./C-No.	Skip*	6
		Print	7

• Date/Time: 00/00/00 12:00AM CASH \$1.23
 • Machine No. / Consecutive No.: 000#0013 A CASH \$1.23
 *SKIP: Merchandise subtotal amount is displayed by depressing **MDSE** key but not printed.

#905-D

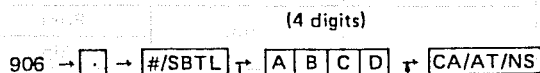
1. Date format: Day-Month-Year or Month-Day-Year
2. Amount leading symbol: * or \$.

(1) Date format*	(2) Amount leading symbol	KEY ENTRY
M-D-Y	\$	0
	*	1
D-M-Y	\$	2
	*	3

*M: Month D: Day Y: Year

[JOB CODE #906]

Key operation:



#906-A.

Tax payment in Food Stamp*

Tax payment in Food Stamp	KEY ENTRY
Enable	1
Disable	2
Tax forgiveness	3

* Food stamp function is enabled via Job #950 (enabling FS SHIFT, FS TEND keys).

#906-B.

1. Non-add code enforced./Not.
2. Maximum digits of non-add code 14 or 8.

(1) Non-add code enforced /Not	(2) Maximum digits of Non-add code	KEY ENTRY
Not	8	0
	14	1
enforced	8	2
	14	3

#906-C

1. RS232C interface exist./Not.
2. Print by #/SBTL key./Not.
3. Footer print control

Only for the case of finalization by the special media key (see JOB #263 in PGM2)./For the all receipt.

(1) RS232C	(2) SBTL Print	(3) Footer print control	KEY ENTRY
NO	Inhibit	All receipt	0
		Special media key*	1
	enable	All receipt	2
		Special media key*	3
YES	Inhibit	All receipt	4
		Special media key*	5
	enable	All receipt	6
		Special media key*	7

*: Need programming for JOB#263 In PGM2 mode.

#906-D

Logo message format

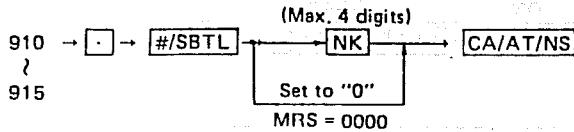
Logo message format	KEY ENTRY
No logo message (logo stamp only)	SMPL 1* 0
3 line logo message instead of stamp	SMPL 2* 1
Logo stamp and 3 line header message	SMPL 3* 2
Six line header message instead of stamp	SMPL 4* 3
Logo stamp and 3 line footer	SMPL 5* 4
3 line header, 3 line footer and stamp	SMPL 6* 6
Logo stamp and six line footer	SMPL 7* 8

NOTE: * refer to page 16.

[JOB CODE #910] ~ [JOB CODE #915]

Z counter setting (Max. 4 digit)

Key operation:

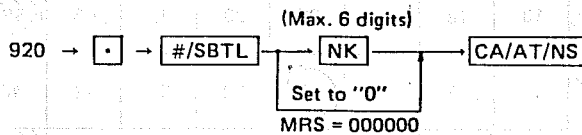


- 910: Z1 report
- 911: Z2 report
- 912: Tax report
- 913: Hourly report
- 914: PLU report
- 915: Cashier report

[JOB CODE #920]

GT1 upper 6 digits setting

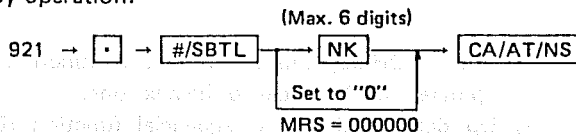
Key operation:



[JOB CODE #921]

GT1 lower 6 digits setting

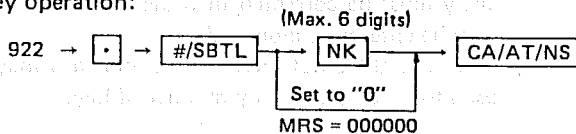
Key operation:



[JOB CODE #922]

GT2 upper 6 digits setting

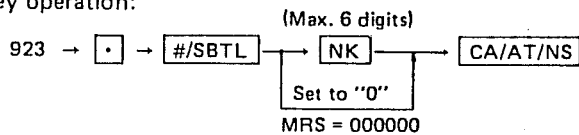
Key operation:



[JOB CODE #923]

GT2 lower 6 digits setting

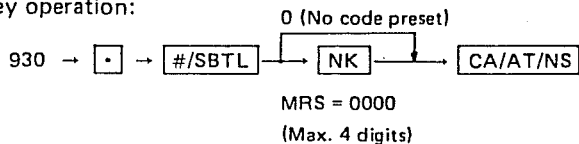
Key operation:



[JOB CODE #930]

Secret code for PGM2 mode.

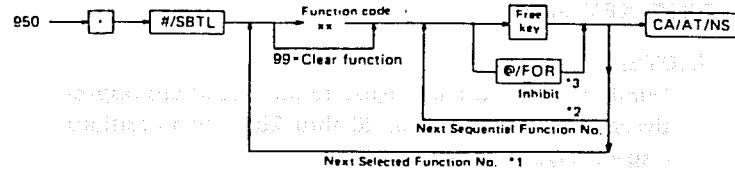
Key operation:



[JOB CODE #950]

Flexible key layout function

Up to 51 positions are reserved for free function keys. The related printing on the general reports are also defined to be printed or skipped by this programming.



① Function codes are as shown in Table.

*1. To override the automatic assignment.

*2. To update the function code automatically to a new one.

*3. To inhibit the entered function.

Be sure to inhibit every function that is not to be used.

② The function code for the free key function name LIST

FUNCTION CODE TABLE

Function Code	Free Key Function Name
1 ~ 30	DEPARTMENTS
51	PLU/SUB
52	CASH 2
53	CHARGE 1
54	CHARGE 2
55	CHARGE 3
56	CHARGE 4
57	CHARGE 5
58	CHECK
59	MDSE SBTL
60	TRAY TOTAL
61	VOID
62	REFUND
63	%1
64	%2

Function Code	Free key Function Name
65	%3
66	%4
67	⊖ 1
68	⊖ 2
69	TAX SHIFT 1
70	TAX SHIFT 2
71	TAX (MANUAL TAX)
72	RA
73	PO
74	F.S. SHIFT
75	F.S. TEND./ST
76	PRINT
77	RECEIPT
99	OPEN

③ The free key area on the keyboard

The free key area is shown in Fig. 1.

The free key may be assigned with a function and cleared of a previous assignment. There are a total of 51 keys which may be involved in the assignment process. Some of these keys are physically connected together, as indicated in Fig. 1, thus allowing for an actual total of 51 keys to be uniquely defined.

FREE KEY AREA

(NOTE)

- Numbers 1 thru 3 are assigned to three positions respectively, and numbers 4, 5, 26 thru 29 to two positions respectively.
- The hatched area is reserved for fixed key positions.

NOTE: The function code is indicated in the display.
1-51: Free keys (Free key position No.)

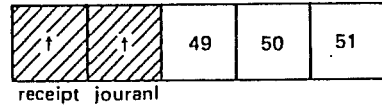


Fig. 1

5	10	@/FOR	•	CL	15	20	25	30	35	40	45	48
4	9	7	8	9	14	19	24	29	34	39	44	47
3	8	4	5	6	13	18	23	28	33	38	43	#/SBTL
2	7	1	2	3	12	17	22	27	32	37	42	46
1	6	0	00		11	16	21	26	31	36	41	CA/AT/NS

④ Key assignment procedure

- The preparation for entry involves completing the attached form and placing the desired keys on the key board.
- ID (identification) of the first function to be assigned to a key according to "The function code for the free key function name LIST".
- Department assignments are allowed only to the maximum number specified in JOB CODE #901.
- The function code indicated in the display is assigned to a key by simply depressing the function key which is to be assigned. The machine will automatically update the display with the next sequential function code.
- The fact that there are no more codes in the table for assignment or that a function code ID (identification) number greater than the largest valid code in the machine is signalled by a "99" in the display. By entering a code number prior to the function key, a new function number may be entered or the CA/AT/NS may be depressed to end the job.

- The @/FOR key is used to inhibit the function and up date the ID number to the next one.
- Up date to the next sequential function ID is handled by the machine.
- If a large number of function ID's are to be skipped before the next assignment or if a previous entry must be corrected then the new function ID may be entered as indicated.
- The code 99 is not incremented and thus may be used to quickly clear any number of keys.

NOTE: For removing key switch and key top, use the special tools (UKÖG-6635RCZZ, UKÖG-6636-RCZZ); refer to page 58.

⑤ Example of the free key assignments

(1) SRV-1 Programming Sample (for key layout shown in Fig. 1 on Page 71.)

Key Operation:

950 → #/SBTL → CA/AT/NS

00/00/00 12:36AM 000A#0005		26 DPT.26 KEY36
#0950		27 DPT.27 KEY37
1 DPT.01 KEY11		28 DPT.28 KEY38
2 DPT.02 KEY12		29 DPT.29 KEY39
3 DPT.03 KEY13		30 DPT.30 KEY40
4 DPT.04 KEY14		51 PLU KEY02
5 DPT.05 KEY15		52 CASH2 --
6 DPT.06 KEY16		53 CH1 KEY44
7 DPT.07 KEY17		54 CH2 KEY47
8 DPT.08 KEY18		55 CH3 --
9 DPT.09 KEY19		56 CH4 --
10 DPT.10 KEY20		57 CH5 --
11 DPT.11 KEY21		58 CHECK KEY43
12 DPT.12 KEY22		59 ST KEY46
13 DPT.13 KEY23		60 TTL KEY42
14 DPT.14 KEY24		61 VOID KEY06
15 DPT.15 KEY25		62 RFND KEY01
16 DPT.16 KEY26		63 Z1 KEY45
17 DPT.17 KEY27		64 Z2 KEY48
18 DPT.18 KEY28		65 Z3 --
19 DPT.19 KEY29		66 Z4 --
20 DPT.20 KEY30		67 (-)1 KEY03
21 DPT.21 KEY31		68 (-)2 KEY08
22 DPT.22 KEY32		69 TX 31 KEY04
23 DPT.23 KEY33		70 TX 52 --
24 DPT.24 KEY34		71 HTAK KEY09
25 DPT.25 KEY35		72 R/R/A KEY05
		73 R/P/D KEY10
		74 FS SFT --
		75 FS TND --
		76 PR INT KEYS1
		77 RCPT KEY50

(2) Key assignments Sample

RECEIPT
OFF ON

CLERK
A B C D

CLK
X/Z REG MGR
OFF X1/Z1
PGM1 X2/Z2
PGM2
(SRV1)
(SRV2)

↑ RECEIPT JOURNAL RCPT PRINT

RA	PO
TAX1 SHIFT	TAX
⊖1	⊖2
PLU/SUB	
RFND	VOID

@/FOR	•	CL	5	10	15	20	25	30	% 1	% 2
7	8	9	4	9	14	19	24	29	CH1	CH2
4	5	6	3	8	13	18	23	28	CHK	#/STBL
1	2	3	2	7	12	17	22	27	TRAY TTL	MDSE SBTL
0	00	1	6	11	16	21	26	CA/AT/NS		

7-5. Supplemental Descriptions for SRV Programming

- JOB CODE #903B(2): Singapore tax
Tax amount will be rounded as shown below (Ex. Round off)

BEFORE ROUNDING	AFTER ROUNDING
0.000 ~ 0.004	0.00
0.005 ~ 0.054	0.05
0.055 ~ 0.099	0.10

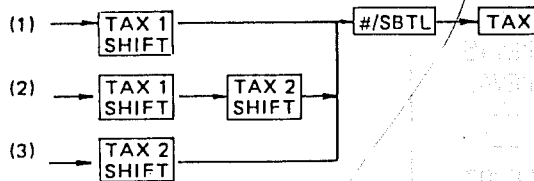
NOTE: Rounding procedure depends on programming in JOB #903A.

- JOB CODE #903C(1); Tax delete operation

TAX DELETE:

If the "TAX" key is depressed without a numeric entry after obtaining a taxable sub-total, the itemizer that corresponds to a specified displayed tax sort is reset to 0 and a related message is printed.

KEY OPERATION (in the REG, MGR modes):



Notes:

- (1) Taxable 1 and refund taxable 1 sub-totals are reset to 0.
- (2) Taxable 1, refund taxable 1, taxable 2 and refund taxable 2 sub-totals are reset to 0.
- (3) Taxable 2 and refund taxable 2 sub-totals are reset to 0.

8. PGM1, PGM2 (PROGRAM) MODES

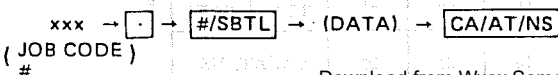
The ER-3231 allows programming in two modes: PGM1 and PGM2.

The PGM1 mode is used for programming those items that need to be changed often: Unit prices of departments, plus, and percentage.

The PGM2 mode is used for programming all PGM1 mode Programs and those items that require no frequent changes such as date, time, tax table, tax rate, and the function of each key. The programming or setting procedures of various items is described below. Program every item necessary for the store into the machine following the corresponding procedures.

* To set the mode switch to the PGM1 position, use the manager or submanager key. To set to the PGM2 position, use the manager key.

GENERAL ENTRY SEQUENCE (PGM1 and PGM2 MODE Programming)



8-1. Job Code List

- 110 Department price preset.
- 210 Department functions - 1.
- 211 Department functions - 2.
- 212 Department functions - 3.
- 213 Department functions - 4.
- 214 Department label assignments
- 120 PLU price preset (HALO preset for SUB).
- 121 PLU programming - 1.
- 221 PLU programming - 2.
- 224 PLU/SUB label assignments
- 130 % rate programming for % 1 ~ % 4.
- 230 MISC. keys programming - 1.
- 231 MISC. keys programming - 2.
- 232 MISC. keys programming - 3.
- 234 MISC. keys label assignments
- 235 % ITEM/% SBTL selection
- 236 Store/Vender coupon selection
- 140 Cashier name
- 240 Tax tables.
- 241 % tax rate.
- 145 Cashier name presetting
- 250 Date.
- 251 Time.
- 252 Machne number.
- 253 Consecutive number.
- 254 Logo massage (Header and Footer)
- 255 Print time limitation for validating.
- 256 Optional feature selection.
- 257 Sentinel amount setting.
- 260 Media keys programming - 1.
- 261 Media keys programming - 2.
(High amount limitation for check change and check cashing.)
- 262 Media keys programming - 3.
- 263 Media keys programming - 4.
- 264 Media keys label assignments
- 280 Secret code for PGM1 mode
- 281 Secret code for X1/Z1 mode
- 282 Secret code for X2/Z2 mode
- 284 MISC. text assignments
- 286 Stack report

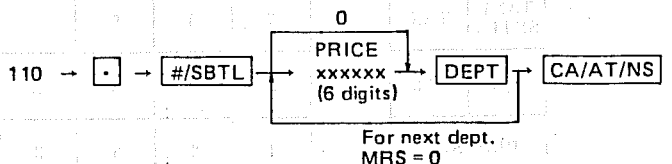
The jobs which have 100 level code numbers may be programmed in both PGM1 and PGM2 mode.
The jobs which have 200 level code numbers may be programmed in the PGM2 mode only.

8-2. Programming

[JOB CODE # 110]

DEPARTMENT PRICE PRESET

Up to 6 digits (\$9999.99)

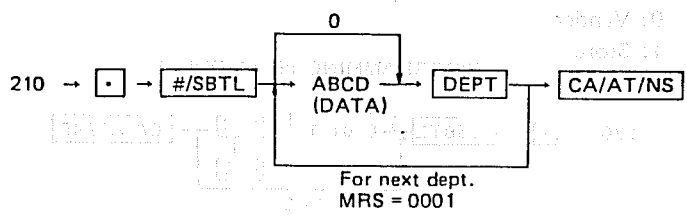


[JOB CODE #210]

DEPARTMENT FUNCTIONS - 1

- A. Hash/Normal = 1/0
- B. Validation enforced./Optional. = 1/0
- C. Single item finalize./Single item sale./Normal. = 2/1/0
- D. Open & preset./Preset./Open./Inhibit = 3/2/1/0

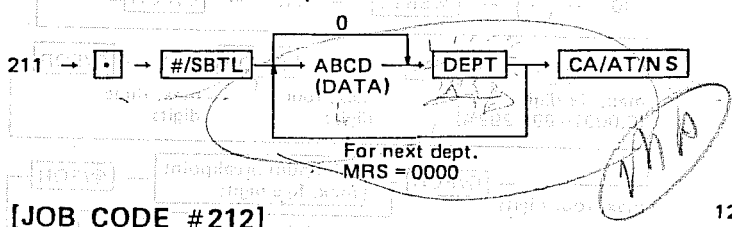
- *1. The "enforced" is effective only when the validation print counter has been preset to a number (1-9, JOB #255) other than zero.
- *2. If you select "Inhibit", the dept. item is print skipped on X/Z report.



[JOB CODE #211]

DEPARTMENT FUNCTIONS - 2

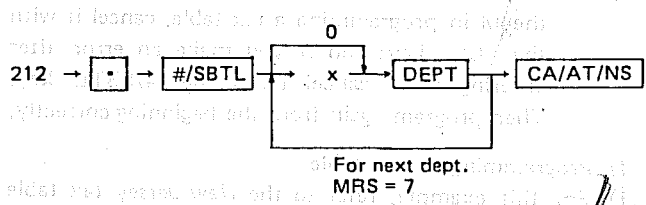
- A. -./+. sign = 1/0
- B. Food stampable./Not. = 1/0
- C. Taxable 2./Not. = 1/0
- D. Taxable 1./Not. = 1/0



[JOB CODE #212]

DEPARTMENT FUNCTIONS - 3

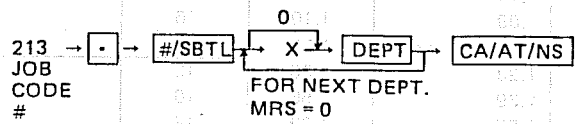
- HALO digits (x) = 0 - 7
- The HALO preset will be overridden in the MGR. mode.



[JOB CODE #213]

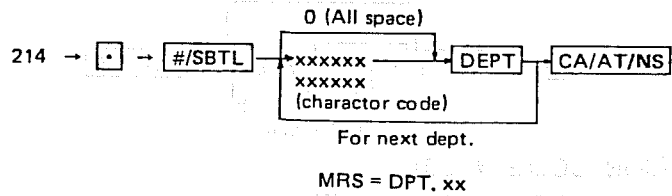
DEPARTMENT FUNCTIONS - 4
SBTL (Sub total) PRINT ON THE GENERAL REPORT

- 0: Regular department
- 1: Extra one line feeding
- 2: Add to the special sub-total
- 3: Print the special sub-total



[JOB CODE #214]

DEPARTMENT LABEL ASSIGNMENTS
(6 characters)

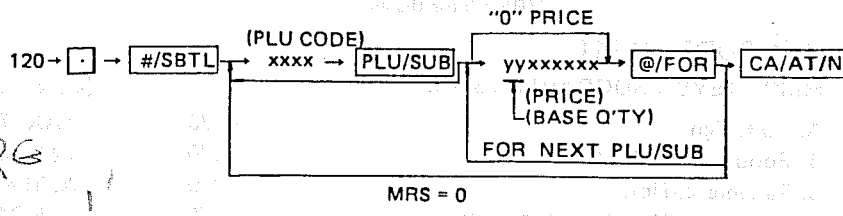


- * Up to 12 digits; even digit entry only.

[JOB CODE #120]

PLU PRICE PRESET (HALO PRESET FOR SUB DEPTs)
The PLU number must have been preset by JOB #121

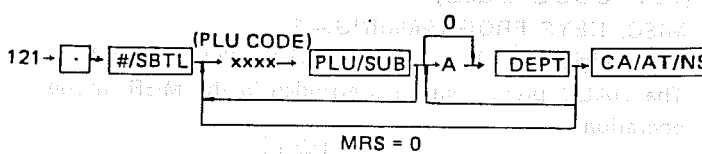
- Up to 6 digits for price or HALO: xxxxxx
- 2 digits for split base quantity: yy



[JOB CODE #121]

PLU PROGRAMMING - 1

- A. Clear out PLU./Sub-dept./Inhibit. = 3/2/1/0
- The Dept. to be used with the PLU/SUB is preset by this programming.
The "clear out" makes all the data tied to the PLU zero.

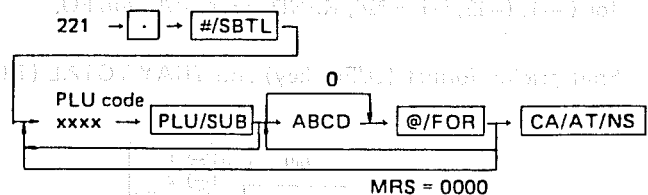


[JOB CODE #221]

PLU PROGRAMMING - 2

(The PLU number must have been preset by JOB #121)

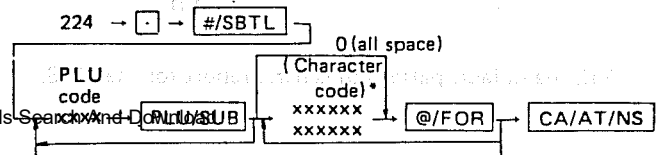
- A. -./+. sign = 1/0
- B. Food stampable/Not. = 1/0
- C. Taxable 2./Not. = 1/0
- D. Taxable 1./Not. = 1/0



[JOB CODE #224]

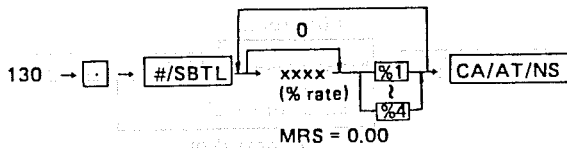
PLU/SUB LABEL ASSIGNMENTS

(6 characters)
(The PLU number must have been preset by JOB #121)



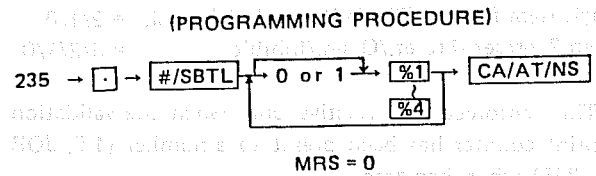
[JOB CODE #130]

% RATE PROGRAMMING FOR %1 AND %4
% rate: 0.01% - 99.99%



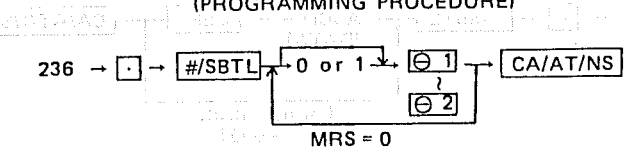
[JOB CODE #235]

%ITEM/%SBTL selection for %1, %2, %3 and %4.
0: % SBTL
1: % ITEM



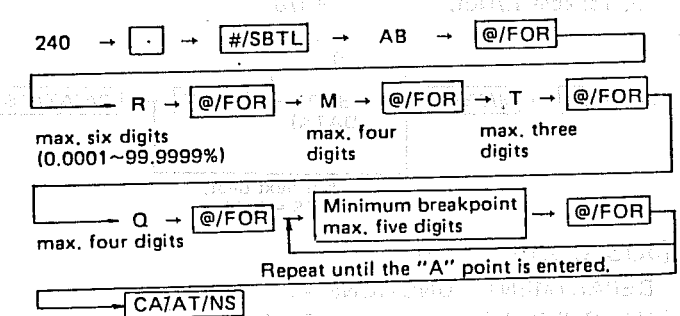
[JOB CODE #236]

Vender/Store coupon selection for ⊖ 1, ⊖ 2.
0: Vender
1: Store



[JOB CODE #240]

TAX TABLES
72 break points can be shared for two tables.
A. The difference between a break point and the next one is \$1.00 or more./Less than \$1.00. = 1/0
B. Table 1 programming./Table 2. = 1/2



NOTE: If you make an incorrect entry before entering the M in programming a tax table, cancel it with the CL key; and if you make an error after entering the M, cancel it with the #/SBTL key. Then program again from the beginning correctly.

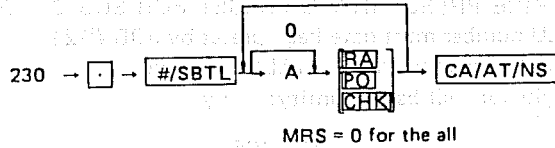
(1) Programming the tax table

① For this example, refer to the New Jersey tax table below (column A) New Jersey tax table: 6% rate

Tax	A		B	C
	Minimum breakpoint	Maximum breakpoint		
.00	.01	.10	-	Non-cyclic
.01-T	.11-Q	.22	10	
.02	.23	.38	12	Cyclic (I)
.03	.39	.56	16	
.04	.57	.72	18	
.05	.73	.88	16	
.06	.89	1.10	16	
.07	1.11-"A" point	1.22	22	
.08	1.23	1.38	12	Cyclic (II)
.09	1.39	1.56	16	
.10	1.57	1.72	18	
.11	1.73	1.88	16	
.12	1.89	2.10	16	
.13	2.11	2.22	22	

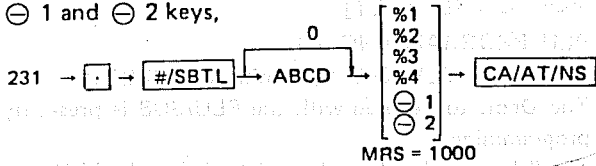
[JOB CODE #230]

MISC. KEYS PROGRAMMING - 1
A. Validation enforced./Optional. for RA and PO. = 1/0
A. Non add code print enforced./Optional for cash check operation (CHK) = 1/0



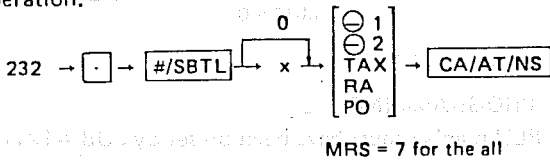
[JOB CODE #231]

MISC. KEYS PROGRAMMING - 2
A. -./+ sign = 1/0
B. Food stampable./Not. = 1/0
C. Taxable 2./Not. = 1/0
D. Taxable 1./Not. for %1, %2, %3, %4, = 1/0
⊖ 1 and ⊖ 2 keys,



[JOB CODE #232]

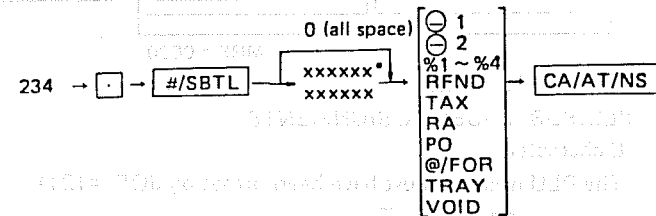
MISC. KEYS PROGRAMMING - 3
HALO digits for (-)1, (-)2, TAX, RA and PO. = 0-7
The HALO preset will be overridden in the MGR. mode operation.



[JOB CODE #234]

MISC. KEYS LABEL ASSIGNMENTS (6 characters)
for (-)1, (-)2, %1 ~ %4, RFND, TAX, RA, and PO.

Split pricing format (@/For key) and TRAY TOTAL (TTL key)



Ref. the default pattern of general report for the MRS.

The information which must be supplied to the ECR for tax table oriented calculations include the following:

R: The Rate (R) is entered as a six-digit number (2-digit integer and 4-digit decimal). Thus, a 6% rate would be entered as 60000. If the rate is fractional (e.g. 4 3/8%), then the fractional portion (3/8) would be converted to its decimal equivalent (i.e. 3750) and the resulting rate of 43750 would be entered. Note that the nominal rate (R) is generally indicated on the tax table.

The other values which must be entered for correct table-based tax calculations are as follows:

Q: The smallest amount for which tax must be collected. In some states, there are amounts which are not subject to tax (e.g. if amounts of \$0.01 to \$0.10 are not taxed, the value of Q - being the smallest taxable amount - would be \$0.11).

T: The amount of tax which is associated with the amount Q.

M: The value is associated with the cyclical nature of many tax tables. In fact, the need to support tax tables as opposed to the use of a straight percentage calculation is because there are amounts where the result of applying the percentage calculation does not result in a tax amount which is the same as the related table amount. The table must, therefore, be used to obtain the data (i.e. the value M) necessary for the register to obtain the correct tax amount. The procedures to obtain this value are as follows:

The tax table must be examined in order to find repeating cycles in terms of the breakpoint differences as indicated in the preceding tax table (Note that a 'breakpoint' is that amount at which a tax amount increment takes place).

As you can see from the table, the breakpoint differences indicated by Cycle I repeat in Cycle II. 1 indicates the tax table's cyclical pattern and thus the value for M is determined by adding the breakpoint difference amounts associated with 1 (i.e. for purposes of the sample table, this value is 100).

The value of M may be viewed as the taxable amount which is covered by the cycle. Thus, it can be determined by adding all of the breakpoint differences in a cycle or by simply taking the difference between the first breakpoint of the cycle and the first breakpoint of the next cycle.

Example: Programming the sample tax table show above as tax table 1.

Key operation

240	.	#/SBTL
	1	@/FOR
R→	60000	@/FOR
M→	100	@/FOR
T→	1	@/FOR
Q→	11	@/FOR
The first cyclic portion	23	@/FOR
	39	@/FOR
	57	@/FOR
	73	@/FOR
"A" point →	89	@/FOR
	111	@/FOR
		CA/AT/NS

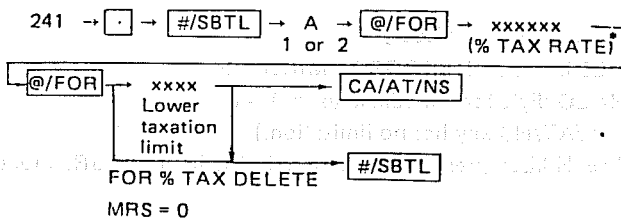
[JOB CODE #241]

% TAX RATE

A. For TAX 1 (A = 1) and TAX 2 (A = 2)

Presetable TAX RATE range = 0.0000 - 99.9999%

Maximum lower taxation limit = \$99.99

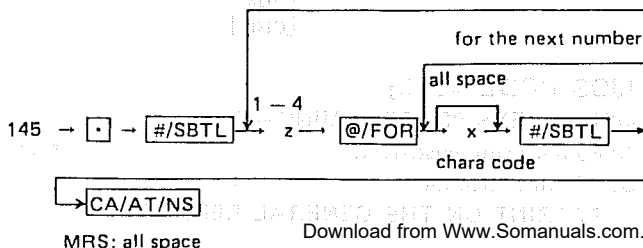


* No decimal point key is required.

[JOB CODE #145]

CASHIER NAME PRESET

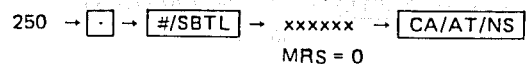
Six characters for each of four cashiers



[JOB CODE #250]

DATE

MM/DD/YR or DD/MM/YR (Ref. to SRV. program #905D)

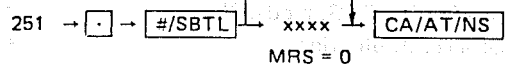


[JOB CODE #251]

TIME

Enter the time in 24-hour format.

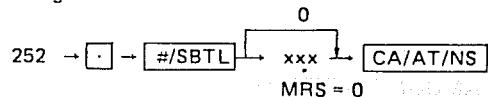
1 AM = 100 1 PM = 1300
0



[JOB CODE #252]

MACHINE NUMBER

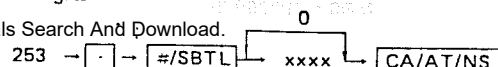
3 digits



[JOB CODE #253]

CONSECUTIVE NUMBER

4 digits

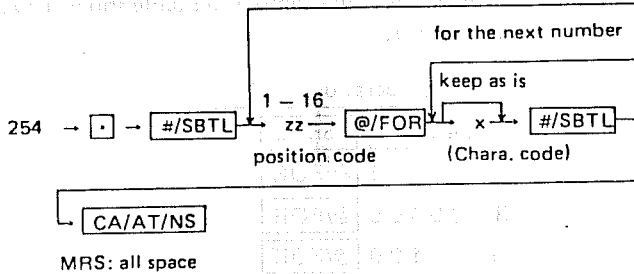


[JOB CODE #254]

LOGO MESSAGE
6 characters for 16 blocks

6 lines

1		2		3	
3	4		5		6
6		7		8	
9		10		11	
11	12		13		14
14		15		16	



The cycle number relates to the portion of the message to be programmed.

NOTE:

1. The programmed logo message is printed on receipt only when logo printing is enabled via PGM2 mode JOB #256.
2. The cycle number relates to the portion of the message to be programmed.

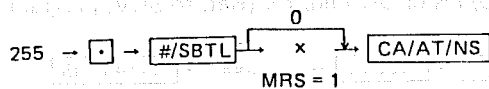
[JOB CODE #255]

LIMIT ON THE NUMBER OF TIMES OF VALIDATION

A number of 0 through 9 (0 means inhibition,) is pre-settable for validation.

(PROGRAMMING PROCEDURE)

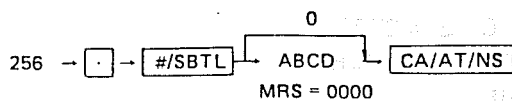
The "x" stands for validation times.



[JOB CODE #256]

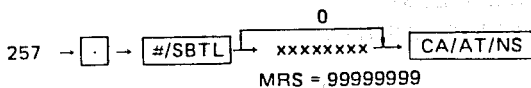
OPTIONAL FEATURE SELECTION

- | | |
|--|-------|
| A. "CLK X/Z" mode inhibited./Exists. | = 1/0 |
| B. Inhibit past item void in REG. mode./Not. | = 1/0 |
| C. Inhibit refund in REG. mode./Not. | = 1/0 |
| D. Journal select./Full print. | = 1/0 |



[JOB CODE #257]

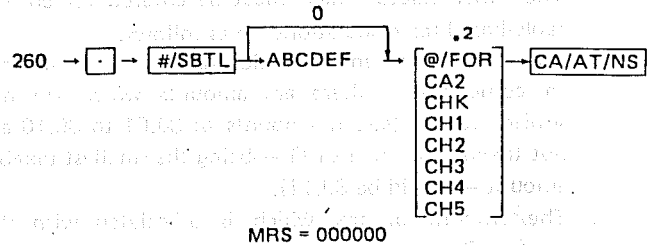
SENTINEL AMOUNT SETTING
\$0.00 - \$999999.99 (Up to 8 digits)



[JOB CODE #260]

MEDIA KEYS PROGRAMMING - 1

- | | |
|---|-------|
| A. VALIDATION compulsory. *1/Not. | = 1/0 |
| B. TAX 2 delete./Not. | = 1/0 |
| C. TAX 1 delete./Not. | = 1/0 |
| D. DRAWER open./Not. | = 0/1 |
| E. #/SBTL key compulsory./Not. | = 1/0 |
| F. AMOUNT TENDERING compulsory/Optional. for cashes and check. or Compulsory.*3/Inhibited.*4 for charges 1 - 5. | = 1/0 |



*1 The "compulsory" is effective only when the validation print counter is preset to a number (1 - 9, JOB #255) other than zero.

*2 The "@/FOR" key is used for "CA1" (i.e. CA/AT/NS) key programming.

*3 Credit card type function will be selected.

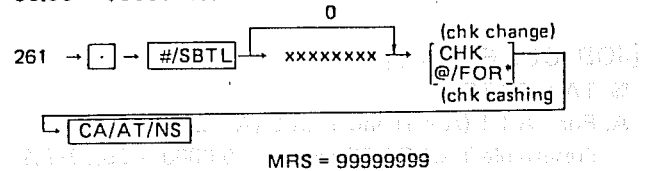
*4 House charge or new balance key type function will be selected.

[JOB CODE #261]

MEDIA KEYS PROGRAMMING - 2

HIGH AMOUNT LIMITATION FOR CHECK CHANGE AND CHECK CASHING

\$0.00 - \$999999.99



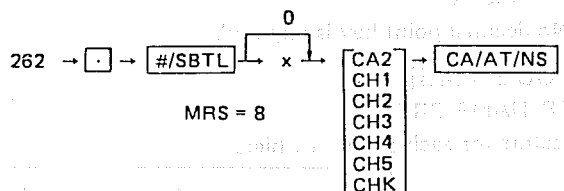
[JOB CODE #262]

MEDIA KEYS PROGRAMMING - 3

HALO digit for 5 media keys. = 0 - 8

(CA/AT/NS key has no limitation.)

The HALO preset will be overridden in the MGR. mode.



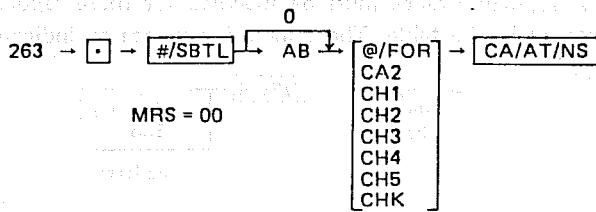
[JOB CODE #263]

MEDIA KEYS PROGRAMMING - 4

- | | |
|-----------------------------|-------|
| A: Footer print exist./Not. | = 1/0 |
| B: ST print selection | |

ST PRINT ON THE GENERAL REPORT

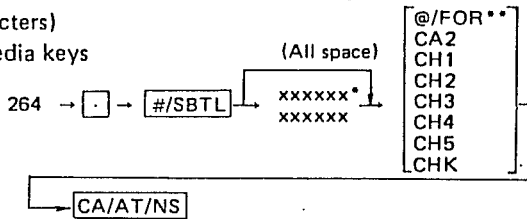
- 0: Regular format
- 1: Extra one line feeding
- 2: Add to the special sub-total
- 3: Print the special sub-total



@/FOR key is used for CA1 (i.e. CA/AT/NS) key programming.

[JOB CODE #264]

MEDIA KEYS LABEL ASSIGNMENTS
(6 characters)
for 8 media keys

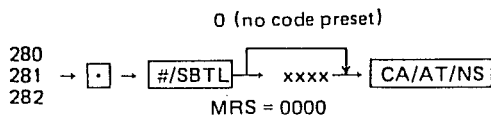


- * Refer to following "CODE TABLE".
- ** @/FOR key is used for CA1 (i.e. CA/AT/NS) key programming.
- Ref. the default pattern of general report for the MRS.

[JOB CODE #280, 281 and 282]

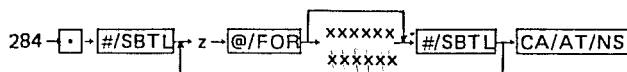
Secret code (4 digits) for

- PGM1 mode: #280
- Z1 (X1/Z1 mode): #281
- Z2 (X2/Z1 mode): #282



[JOB CODE #284]

MISC. TEXT ASSIGNMENTS
(6 characters)



(NOTE):

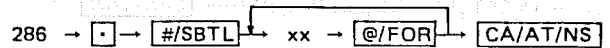
The z indicates code number entry (i.e. 1 to 4), which stands for the each of the followings.

- 1: Taxable sub-total 1 (MRS = TX1 ST)
- 2: Tax 1 corrected (MRS = TAX 1)
- 3: Taxable sub-total 2 (MRS = TX2 ST)
- 4: Tax 2 correcte (MRS = TAX 2)

[JOB CODE #286]

STACKED REPORT

Maximum 5 reports can be memorized in the stack report.



xx: Report JOB # of 1, 4, 5 20 or 30.
MRS = 1, 4 and 5.

8-3. Code Table for Alpha Descriptor Programming

CODE	CHARA	CODE	CHARA	CODE	CHARA	CODE	CHARA	CODE	CHARA	CODE	CHARA
00	0	10	(sp)	20	J	30	T	40	&	50	+
01	1	11	A	21	K	31	U	41	'	51	-
02	2	12	B	22	L	32	V	42	.	52	->
03	3	13	C	23	M	33	W	43	F	53	-<
04	4	14	D	24	N	34	X	44	*	54	DC
05	5	15	E	25	O	35	Y	45	/	55	UD*
06	6	16	F	26	P	36	Z	46	@	56	UD
07	7	17	G	27	Q	37	#	47	!	57	UD
08	8	18	H	28	R	38	\$	48	(58	UD
09	9	19	I	29	S	39	%	49)	59	UD

DC: Double character code.
UD: Undefined code.
(SP): Space

Two figures have to be entered to designate one character.

Ex. 1 CASH = 13 11 29 18

Ex. 2 CASH = 54 13 11 29 18

NOTES:

1. In the case of example 2, character "C" will be printed in double character format because code #54 is entered just before code #13.
2. Alpha descriptor programming is available for the following functions.

- DEPT. keys (1 to 30) (-)1 - 2
- PLU/SUB %1 - 4
- RA TAX (TX1ST, TX2ST,
- PO NTTX1 & NTTX2)
- CASH TAX (manual tax)
- CA2 RFND (for report only)
- CH1 - 5 Q @
- CHK VOID (for report only)
- CASHIER name
- LOGO message (Receipt)
- Check validation

000011

8-4. Program Reading (PGM1 or PGM2 mode)

LIST OF PROGRAM READING

xx → #/SBTL → (Report Range)*1 → CA/AT/NS*2
 JOB CODE #

JOB #	REPORT NAME
110 *1	DEPARTMENT PRESETS
120 *1	PLU/SUB PRESETS
130	% RATE AND THE OTHER MISCELLANT- OUS FUNCTION PRESETS (INCLUDING MEDIAS)
140	CASHIER NAME
240	TAX TABLE
900	FULL SRV MODE REPORT
950	KEY LAYOUT REPORT

[JOB CODE #110]

DEPARTMENT PRESET REPORT

110 → #/SBTL → (Report Range) → CA/AT/NS*2

[JOB CODE #120]

PLU/SUB PRESETS REPORT

120 → #/SBTL → (Report Range) → CA/AT/NS*2

[JOB CODE #130]

% RATE and the other MISCELLANEOUS functions pre-
sets (including MEDIAS)

130 → #/SBTL → CA/AT/NS*2

[JOB CODE #140]

CLERK NUMBER LIST

140 → #/SBTL → CA/AT/NS

[JOB CODE #240]

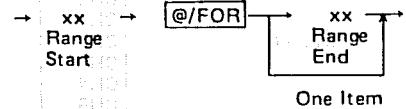
TAX TABLES READING

240 → #/SBTL → CA/AT/NS*2

The jobs which have 900 level code numbers are allowed to read in the SRV mode only.

NOTES:

*1 A reporting range must be specified for those reports indicated in the table. The standard sequence to indicate range is:



*2. The CA/AT/NS key causes the report to be generated on both receipt and journal.

The jobs which have 100 level code numbers are allowed to be read in both PGM1 and PGM2 modes. The jobs which have 200 level code numbers are allowed to be read in PGM2 mode only.

9. PRINT SKIPPING ON X/Z REPORT VIA SRV/PGM2 MODE

PROGRAMMINGS

9-1. Manual Selection Print Skipping List. 9-2. Automatic Selection Print Skipping List

ITEMS TO BE PRINT SKIPPED		JOB CODE #
GT1	T	904A
GT2	T	904A
GT3 on Z report	T	904A
GT3 on X report	T	904B
Coupon PLU	Q, T	904B
Net sales SBTL	T	904B
Net txbl 1 SBTL	T	904C
TAX 1 TTL for + sales &		
TAX 1 TTL for refunds	2T	904C
Net TAX 1 TTL	T	904C
Net tabl 2 SBTL	T	904D
TAX 2 TTL for + sales &		
TAX 2 TTL for refunds	2T	904D
Net TAX 2 TTL	T	904D
Manual TAX for + sales &		
Manual TAX for refunds	2T	905A
Net manual TAX TTL	T	905A
Total TAX	T	905A
CHCG (Check change) TTL	T	905B

No.	ITEMS TO BE PRINT SKIPPED	RELATED KEY OR FEATURE	JOB # FOR FEATURE SEL.
1	DEPARTMENTS Q, T, %	# of DEPT.	901
2	"-" DEPT. TTL T	- preset D.	211
3	⊖ 1 - ⊖ 2 Q, T	⊖ 1, ⊖ 2 keys	950
4	%1 - %4 Q, T	%1 - 4 keys	950
5	VOID 1 Q, T	VOID key	950
6	VOID2 & VOID 3 2Q, 2T	VOID mode	902A
7	REFUND Q, T	REFUND key	950
8	VAL. P. counter Q	PRINT key	950
9	CA2 Q, T	CASH 2 key	950
10	PO Q, T	PO key	950
11	RA Q, T	RA key	950
12	CH1 - CH5 Q, T	CH1 - 5 keys	950
13	CHK Q, T	CHK key	950
14	No Sale counter Q	NS function	903D
15	VD (H) & RF (H) 2Q, 2T	HASH	901
16	Hash Dept. TTL T	Hash Dept.	210
17	Hash - Dept. TTL T	Hash - Dept.	210 & 211
18	CA/CHK Q, T	zero HALO	261

(NOTE)

Q: counter
T: total
%: percent share

9-3. Example of Print Skipping

NOTE:

1. The parts which have JOB # are print skipped via the programming of the JOB #.
2. The jobs which have 200 level code numbers may be programmed in the PGM2 mode.
3. The jobs which have 900 level code numbers may be programmed in the SRV1 mode.
4. The amount on this sample is incorrect.

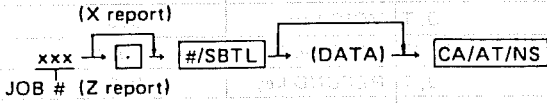
10. READING & RESETTING MODES (CLK X/Z, X1/Z1, X2/Z2)

1. REPORTS

The following categories of reports can be printed by the ECR;

- (1) CLK/ X/Z mode reports (clerk and cashier reports)
- (2) X1/Z1 mode reports (daily sales reports)
- (3) X2/Z2 mode reports (periodic sales reports)

To print reports, use the following key entry sequences:



The report will be printed on journal and receipt tapes with this procedure.

The (DATA) part will be described in the "LIST OF REPORT".

(NOTE) - GENERAL RULE -

If the key is depressed following a JOB code number entry with these procedures, data inside of the ECR will be cleared (i.e. Z reports).

(Some job code numbers do not allow the key to follow.)

If the key is not depressed following a JOB code number, data inside of the ECR will be maintained (i.e. X reports).

The key is allowed only after a secret code entry when the mode switch position has been changed (i.e. when the mode switch is turned and an effective entry is entered, the effect of secret code entry is disappeared).

Printing of the attendance time

Printing of the attendance time

With the ER3241/3231, it is possible to print the attendance time in the CLK X/Z mode.

Insert the card into the slip printing slot, similar as in validation printing to print the time.

1) Printing of the time in

Numeric key [1] + [PRINT] will print the time in on the receipt.

2) Printing of the time out

Numeric key [2] + [PRINT] will print the time out on the receipt.

LIST OF REPORTS

JOB CODE #	REPORT NAME	MODE			(DATA FORM)
		CLK X/Z	X1/Z1 DAILY	X2/Z2 PERIODIC	
1	General Report		X1/Z1	X2/Z2 *1	- *3
2	Individual Cashier Report	X/Z	X1/Z1		Cashier key
4	Hourly TTL Report		X1		(RANGE)2 *5
			X1/Z1 *2		- *3
5	Daily All Cashier Report		X1/Z1		- *3
9	Stacked Report		X1/Z1		-
12	Manual Group Report		X1	X2 *1	Dept. keys
20	PLU Report by Range		X1/Z1 *2		(RANGE)1 *4
30	CID		X1		- *3
40	TAX Report			X2/Z2	-

*1 PLU/SUB RAM (#2 RAM) option required

*2 Zero Skip Printing

*3 -: No entry required

*4 (RANGE)1: (xx) @/FOR (xx)

*5 (RANGE)2: (xx) @/FOR (xx); xx = 0 - 23;
No entry for 0 data

11. OUTLINE OF FUNCTIONS

11-1. Function List

FEATURES		NUMBER
Number of Departments		10
Department Expandability Max. Number of Departments		30
Number of PLU Expandability Max. Number of PLU's		OPTION 350
Number of Cashiers		4
Number of Media CASH, CHECK, CHARGE 1 ~ 5		8
Number of Free Key Positions		51
Number of Different Free Key Function Except Department		7
Number of Digits in The Operator Display		11
Number of Digits in The Customer Display		7
Type of Receipt/Journal Printer (Dot)		M-220F
Number of Drawers (Additional remote drawer)		1
Number of Different reports		8
Number of Different Reports by Option		1
Print Skip on Reports		Yes
No. of Digits in Unit Price Preset		6
+/-		Yes
HALO digits		0 ~ 7
Tax Sort		2
(SIS) Single Item Sale		Yes
(SIF) Single Item Finalize		Yes
Inhibit and Preset		Yes
Validation Enforce		Yes
No. of Digits of Totalizer		8
No. of Digits of Counter		6
Food Stamp sort		Yes
Customer display		In cab.
Cashier	Cashier (A, B, D, E)	Push down
	Totalizer for cashiers	4
Printer	Roll paper near-end sensor	Not
	Validation paper sensor	Not
Drawer Open/close sense SW		Not

	FEATURES	NUMBER
PLU	No. of Digits of Totalizer	8
	No. of Digits of Counter	6
	No. of Digits of Unit Price	6
	+/-	Yes
	HALO	Yes
	Kind of Tax Sort	2
	Inhibit and Preset	Yes
	Sub Department	Yes
	No. of Digits of Split Price Base	2
	Number Digits of Departments	4
MEDIAS	Food stamp sort	Yes
	CHECK	1
	CHARGE	5
	CHECK CHANGE TOTAL	1
	Drawer OPEN DETECT (SRV SETTING)	Yes
	Validation Enforce (PGM SETTING)	Yes
	Tax Delete (PGM SETTING)	Yes
	Food stamp tender	1
KEY	Departments (Max)	30
	PLU/SUB	1
	CASH	2
	CHECK	1
	CHARGE	5
	MDSE ST	1
	VOID	1
	REFUND	1
	%1 ~ %4	each 1
	⊖ 1, ⊖ 2	each 1
	TAX SHIFT 1	1
	TAX SHIFT 2	1
	MANUAL TAX	1
	RA	1
	PO	1
	PRINT	1
	JOURNAL - FEED	1
	RECEIPT - FEED	1
	NUMERIC 0 ~ 9	10
	00	1
	DECIMAL POINT	1
	CLEAR	1
	RECEIPT	1

FEATURES	NUMBER
KEY	
@/FOR	1
#/SBTL	1
FUNCTIONS	
MULTIPLICATION	Yes
SPLIT PRICING	Yes
⊖ 1 or 2 (NOT NET DEPT)	Yes
⊖ 1 or 2 (NET DEPT)	Yes
%1 ~ %4 (NOT NET DEPT)	Yes
%1 ~ %4 (NET DEPT)	Yes
PAST VOID, LAST VOID	Yes
VOID MODE	Yes
SENTINEL	Yes
P-BAL, C-BAL	Yes
CLOCK	Yes
OVERRIDE	Yes
CASH CHECK	Yes
SEPARATE ITEMIZERS	Yes
FOR REFUND	Yes
NO. OF TAX TABLES	2
NO. OF DIGITS OF % TAX	6
REPORTS	
CLERK	Yes
DAILY GENERAL	Yes
PLU/Sub-department	OPTION
CASH IN DRAWER	Yes
HOURLY	Yes
MONTHLY GENERAL	Yes
MANUAL GROUP	Yes
MONTHLY MANUAL GROUP	Yes

No. = Number

MONTHLY = Periodic total

FEATURES	NUMBER
MULTIPLICATION	Yes
SPLIT PRICING	Yes
⊖ 1 or 2 (NOT NET DEPT)	Yes
⊖ 1 or 2 (NET DEPT)	Yes
%1 ~ %4 (NOT NET DEPT)	Yes
%1 ~ %4 (NET DEPT)	Yes
PAST VOID, LAST VOID	Yes
VOID MODE	Yes
SENTINEL	Yes
P-BAL, C-BAL	Yes
CLOCK	Yes
OVERRIDE	Yes
CASH CHECK	Yes
SEPARATE ITEMIZERS	Yes
FOR REFUND	Yes
NO. OF TAX TABLES	2
NO. OF DIGITS OF % TAX	6
REPORTS	
CLERK	Yes
DAILY GENERAL	Yes
PLU/Sub-department	OPTION
CASH IN DRAWER	Yes
HOURLY	Yes
MONTHLY GENERAL	Yes
MANUAL GROUP	Yes
MONTHLY MANUAL GROUP	Yes

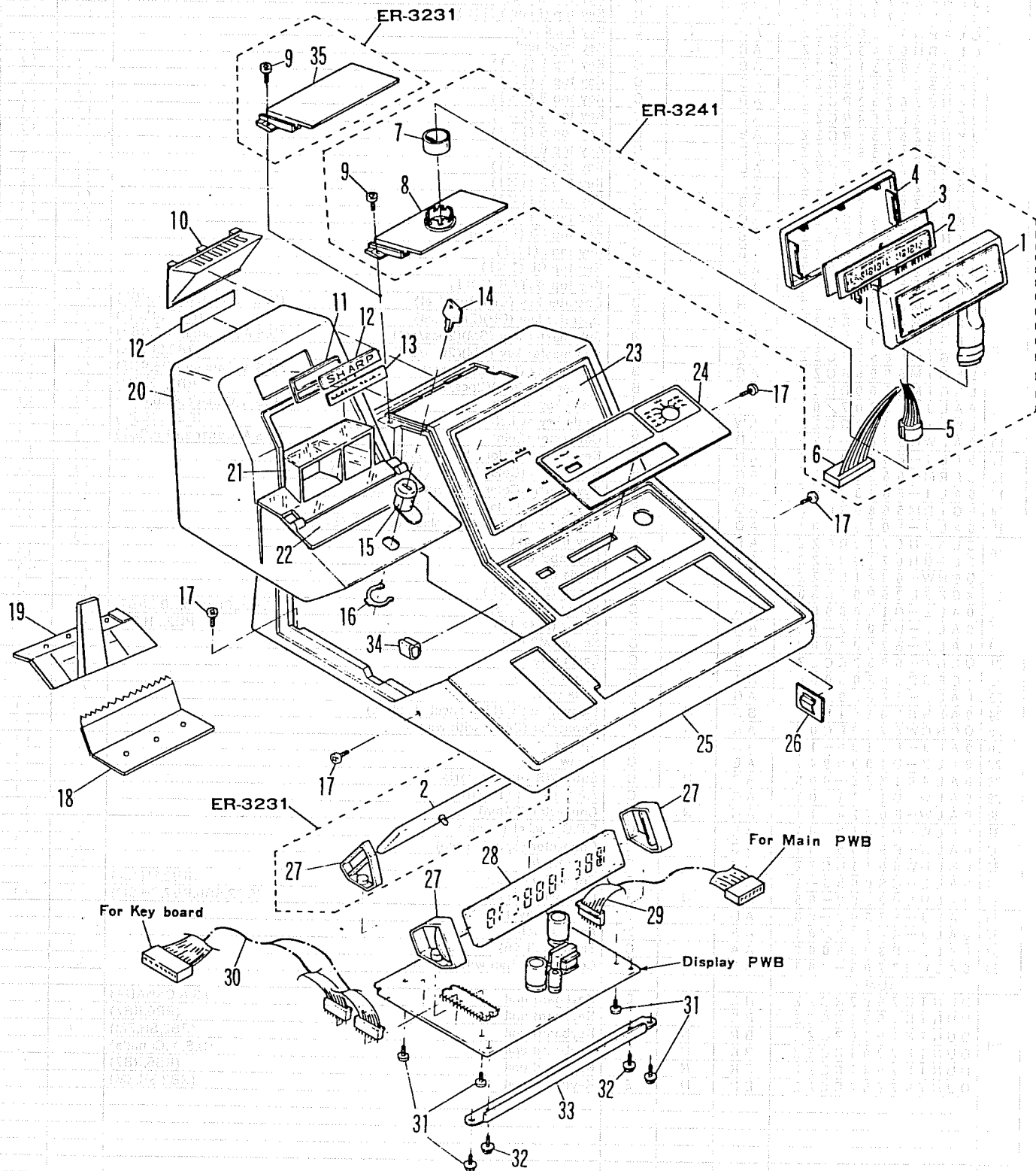
ER-3231/3241

PARTS LIST & GUIDE

1 Cabinet·Display PWB etc

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	CCABE6841RCZZ	AR	N	D	Customer cabinet unit (Front)		○
2	VVDH09LT-03Z1	AZ		B	Display tube (H09LT-03Z1)	○	○
3	QPWBF6934RCZZ	AH		C	Customer display PWB (Without parts)		○
4	GCABA6805RCZZ	AH		D	Customer cabinet (Rear)		○
5	QCNCW6845RC05	AH	N	C	Connector (8pin with wires)		○
6	QCNCW6845RC01	AL		C	Connector (12pin with wires)		○
7	PRNGP6627RCZZ	AE		C	Customer ring		○
8	GFTAB6683RCZZ	AG		D	Customer fixing cover (U.S.A.,Canada)		○
	GFTAB6672RCZZ	AF		D	Customer fixing cover (RB2,RB6,RB7,SH,SM)		○
9	XBBSC30P06000	AA		C	Screw (3×6)	○	○
	PFIW6769RCZZ	AQ	N	C	Rear filter	○	
10	GCOVA6826RCZZ	AK		D	Rear cover (U.S.A.,Canada)		○
	GCOVA6809RCZZ	AU		D	Rear cover (RB2,RB6,RB7,SH,SM)		○
11	GDAI-6629RCZZ	AC		C	Badge fitting plate	○	○
12	HBDGD6664RCZZ	AG		D	SHARP badge	○	○
13	HBDGD6784RCZZ	AC	N	D	Model badge	○	
	HBDGD6783RCZZ	AC	N	D	Model badge		○
14	LKGI6784RCZZ	AD		B	Printer cover lock key (1PC)	○	○
15	LKGIW2353RCZZ	AG		B	Lock switch key (Body)	○	○
16	MSPRK6660RCZZ	AC		C	Lock key spring	○	○
17	XBBSC30P10000	AA		C	Screw (3×10)	○	○
18	PCUT-6631RCZZ	AC		D	Paper cutter	○	○
19	GITAR6707RCZZ	AC		C	Cover plate	○	○
20	CCOVP6823RC02	AY		D	Printer cover unit (U.S.A.,Canada) (This includes No.18,19,21,22)	○	○
	CCOVP6830RC01	AX		D	Printer cover unit (RB2,RB6,RB7,SH,SM) (This includes No.18,19,21,22)	○	○
21	GCOVH6829RCZZ	AH		D	Paper cover	○	○
22	GITAT6709RCZZ	AF		C	Paper cover fitting plate	○	○
23	PFIW6768RCZZ	AP	N	D	Front filter	○	
	PFIW6767RCZZ	AP	N	D	Front filter		○
24	HPNLC6722RCZZ	AH	N	D	Key switch Dec. panel	○	
	HPNLC6721RCZZ	AH	N	D	Key switch dec. panel		○
25	CCABB6840RCZZ	BE	N	D	Upper cabinet unit (U.S.A,CANADA) (This includes No.9,10,23,35)	○	
	CCABB6845RCZZ	BC	N	D	Upper cabinet unit (RB2,RB6,RB7,SH,SM) (This includes No.9,10,23,35)	○	
	CCABB6839RCZZ	BD	N	D	Upper cabinet unit (U.S.A.,Canada) (This includes No.8,9,10,23)		○
	CCABB6844RCZZ	BB	N	D	Upper cabinet unit (RB2,RB6,RB7,SH,SM) (This includes No.8,9,10,23)		○
26	LHLDW6011HCZZ	AC		C	Wire holder	○	○
27	LHLDZ6669RCZZ	AC		C	Display holder	○	○
28	VVDH11LT-02Z1	BC	N	B	Display tube (H11LT-02Z1)	○	○
29	QCNCW6816RC13	AC	N	C	Connector (13pin with wires)	○	○
30	QCNCW6779RC07	AR	N	C	Connector (24pin with wires)	○	○
31	XUPSD30P08000	AA		C	Screw (3×8)	○	○
32	XBPSD30P06KSO	AA		C	Screw (3×6)	○	○
33	LANGK7170RCZZ	AE		C	PWB angle	○	○
34	LHLDW1098HCZZ	AB		C	Holder (Canada only)	○	○
	GFTAT6681RCZZ	AG		D	Customer cover (U.S.A,CANADA)	○	
35	GFTAT6671RCZZ	AG		D	Customer cover (RB2,RB6,RB7,SH,SM)	○	

1 Cabinet • Display PWB etc



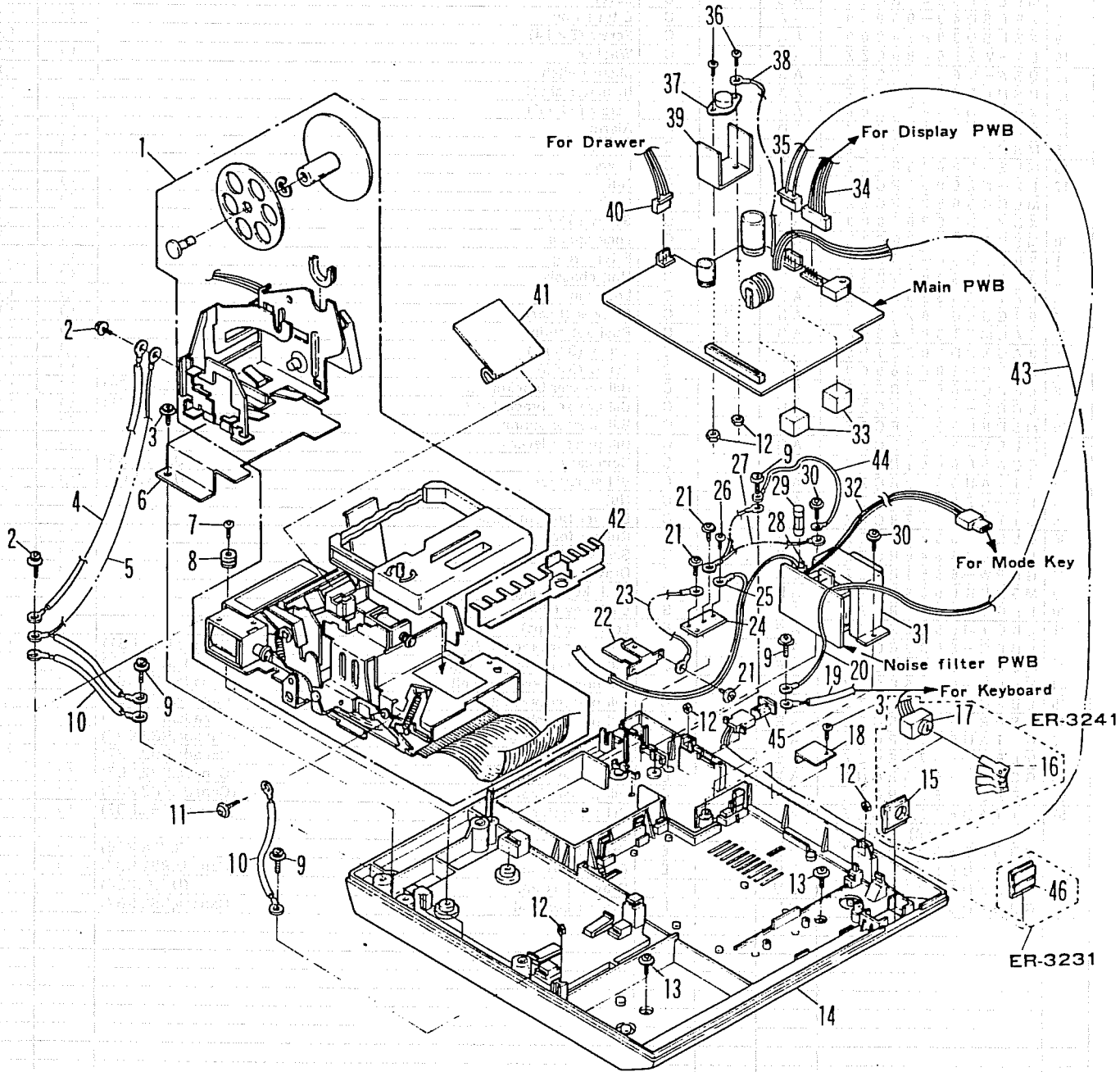
2] Keyboard unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	0ALJ-F3309-09	AE	N	C	Dummy cover (1x5)	○	○
2	JKNBZ6767RCZZ	AA		C	Key cap (1x1)	○	○
3	JKNBZ6766RCZZ	AA		C	Key top (Blank) (1x1)	○	○
4	JKNBZ6771RCZZ	AC		C	Key cap (1x2)	○	○
5	JKNBZ6770RCZZ	AC		C	Key top (Blank) (1x2)	○	○
6	CLABH6750RCZZ	AR	N	E	Key label unit	○	○
	CLABH6749RCZZ	AR	N	E	Key label unit	○	○
	JKNBZ6751RCZZ	AB		C	Key top 1 (1x1)	○	○
	JKNBZ6752RCZZ	AB		C	Key top 2 (1x1)	○	○
	JKNBZ6753RCZZ	AB		C	Key top 3 (1x1)	○	○
	JKNBZ6754RCZZ	AB		C	Key top 4 (1x1)	○	○
	JKNBZ6755RCZZ	AB		C	Key top 5 (1x1)	○	○
	JKNBZ6756RCZZ	AB		C	Key top 6 (1x1)	○	○
	JKNBZ6757RCZZ	AB		C	Key top 7 (1x1)	○	○
	JKNBZ6758RCZZ	AB		C	Key top 8 (1x1)	○	○
	JKNBZ6759RCZZ	AB		C	Key top 9 (1x1)	○	○
	JKNBZ6761RCZZ	AC		C	Key top 0 (1x2)	○	○
	JKNBZ6763RCZZ	AB		C	Key top 00 (1x1.5)	○	○
	JKNBZ6777RCZZ	AB		C	Key top . (1x1)	○	○
	JKNBZ6778RCZZ	AB		C	Key top CL (1x1)	○	○
	JKNBZ6788RCZZ	AB		C	Key top @/FOR (1x1)	○	○
	LKGI M6732RCZZ	AH		B	Operator key (OP)(2pcs/set) (U.S.A.,Canada, RB6, RB7)	○	○
	LKGI M6858RCZZ	AG		B	Operator key (OP)(2pcs/set) (RB2, SH, SM)	○	○
	LKGI M6955RCZZ	AG		B	Sub master key (SM)(2pcs/set) (U.S.A.,Canada, RB6, RB7)	○	○
	LKGI M6859RCZZ	AG		B	Sub master key (SM)(2pcs/set) (RB2, SH, SM)	○	○
	LKGI M6956RCZZ	AG		B	Master key (MA)(2pcs/set) (U.S.A.,Canada, RB6, RB7)	○	○
	LKGI M6860RCZZ	AG		B	Master key (MA)(2pcs/set) (RB2, SH, SM)	○	○
9	0ALJ-Y3807/01	BA		B	Mode key switch (U.S.A.,Canada, RB6, RB7)	○	○
	LKGI W7068RCZZ	AW	N	B	Mode key switch (RB2, SH, SM)	○	○
10	0ALWH3002-129	AD		B	Connector (2pin) (U.S.A.,Canada, RB6, RB7)	○	○
11	0ALJ-F0430/01	AD		B	Key switch (Color : black)(1x1)	○	○
12	CFRM-6632RCZZ	AG		B	Key switch (Color : black)(1x1.5)(1x2)	○	○
13	0ALJ-F0432/01	AD		B	Key switch (Color : Natural)(1x2)	○	○
14	PGIDM6680RCZZ	AD		B	Key switch (Color : blue)(1x2)	○	○
15	0ALJ-F0435/01	AD		B	Dummy switch (Color : black)(1x1.5)(1x2)	○	○
16	CLABH6719RCZZ	AF		C	Key label unit	○	○
	CLABH6720RCZZ	AG		E	Key label unit	○	○
17	QCNW-6881RCZZ	AE		C	Blade wire	○	○
18	XBPSD26P06KS0	AA		C	Screw (2.6x6KS)	○	○
	0ALZ-D1000908	AA		C	Screw (M2.6x6) (U.S.A.,Canada, RB6, RB7)	○	○
19	0ALZ-D3012-51	AA		C	Screw (M3x12) (RB2, SH, SM)	○	○
20	0ALZ-B2004002	AA		C	Screw (M2x4)	○	○
21	QCNW-6932RCZZ	AB	N	C	Earth wire	○	○
22	XCPSD30P08000	AA		C	Screw (3x8)	○	○
23	0ALJ-S4039/01	AG		B	Slide switch	○	○
24	0ALKBS0101L37	BB	N	E	Element ass'y (Film sheet + plate)	○	○
25	QCNW6779RC07	AR	N	C	Connector (24pin with wires)	○	○
26	0ALJ-F3100-10	AA		C	Spacer	○	○
27	0ALZ-D1000941	AE	N	C	Screw	○	○
28	0AL401KBS-008	AG	N	C	Sub PWB without parts	○	○
29	0ALW-D1811/01	AG	N	C	F.P.C socket (11pin)	○	○
30	0ALW-P0724/11	AH	N	C	Connector (24pin)	○	○
31	0ALW-D1012/01	AE		C	F.P.C socket (12pin)	○	○
32	0ALW-P9105/01	AC		C	Connector (5pin L Type)	○	○
33	LHLDW6011HCZZ	AC		C	Wire holder	○	○
34	0ALE-CS0053-1	AK		C	Connector (4pin) (RB2, SH, SM)	○	○
35	0ALHLP0302-05	AD	N	B	Connector (2pin) (RB2, RB6, RB7, SH, SM)	○	○
36	0ALJ-F3309-08	AD		C	Dummy cover (1x1)	○	○
37	0ALJ-K4132/01	AS		B	Multi switch	○	○
38	0ALZ-B3006002	AA		C	Screw (M3x6)	○	○
39	0ALWH8705-003	AF		C	Connector (5pin with wires)	○	○
	(Unit)						
901	DUNTK7902RCZZ	BR	N	E	Keyboard unit (U.S.A,CANADA)	○	
	DUNTK7951RCZZ	BR	N	E	Keyboard unit (RB6, RB7)	○	
	DUNTK7956RCZZ	BR	N	E	Keyboard unit (RB2, SH, SM)	○	
	DUNTK7901RCZZ	BR	N	E	Keyboard unit (U.S.A.,Canada)		○
	DUNTK7947RCZZ	BR	N	E	Keyboard unit (RB6, RB7)		○
	DUNTK7954RCZZ	BR	N	E	Keyboard unit (RB2, SH, SM)		○

3] Printer·Main PWB·Noise filter PWB unit etc

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	Ki-0B6680RCZZ	**		E	Printer unit (M220)	○	
	Ki-0B6681RCZZ	**		E	Printer unit (M220)		○
2	XBPSD40P06KS0	AA		C	Screw (4×6KS)	○	○
3	XCP3SD30P08000	AA		C	Screw (3×8)	○	○
4	QCNW-6880RCZZ	AC		C	Blade wire	○	○
5	QCNW-6859RCZZ	AC		C	Earth wire (U.S.A.,Canada,SH,RB2,SM)	○	○
6	LANGK7174RCZZ	AG		C	Winder angle	○	○
7	LX-BZ1007CCZZ	AB		C	Screw	○	○
8	PCUS-4101CCZZ	AB		C	Printer cushion	○	○
9	XBPSD30P08KS0	AA		C	Screw (3×8KS)	○	○
10	QCNW-6860RCZZ	AG		C	Shield wire	○	○
11	XBPSD40P06K00	AA		C	Screw (4×6K)	○	○
12	XNESD30-24000	AA		C	Nut	○	○
13	XBPSD40P10KS0	AA		C	Screw (4×10KS)	○	○
14	GCABA6853RCZZ	BC		D	Bottom cabinet (U.S.A.,Canada)	○	○
	GCABA6839RCZZ	BA		D	Bottom cabinet (RB2,RB6,RB7,SH,SM)	○	○
15	HPNLC6710RCZZ	AD		D	Clerk panel		○
	LKGiM6853RCZZ	AG		B	Clerk key A (2pcs/set)		○
16	LKGiM6854RCZZ	AG		B	Clerk key B (2pcs/set)		○
	LKGiM6855RCZZ	AG		B	Clerk key D (2pcs/set)		○
	LKGiM6856RCZZ	AG		B	Clerk key E (2pcs/set)		○
17	LKGiW6957RCZZ	AX		B	Clerk switch		○
18	LANGK7176RCZZ	AC		C	Angle	○	○
19	QCNW-6881RCZZ	AE		C	Blade wire	○	○
20	QCNW-6871RCZZ	AB		C	Earth wire	○	○
21	XBPSD30P06KS0	AA		C	Screw (3×6KS) (U.S.A.,Canada,SH,RB2,SM)	○	○
22	LANGK7128RCZZ	AK		C	AC cord angle	○	○
23	QCNW-6790RCZZ	AB		C	Earth wire (U.S.A.,Canada,SH,RB2,SM)	○	○
24	GiTAU6695RCZZ	AD		C	Earth plate (U.S.A.,Canada,SH,RB2,SM)	○	○
25	QTANP0004HCZZ	AB		C	Terminal for AC cord (4φ) (U.S.A.,Canada,SH,RB2,SM)	○	○
26	XBPBZ40P06K00	AA		C	Screw (4×6K) (U.S.A.,Canada,SH,RB2,SM)	○	○
27	QCNW-6830RCZZ	AC		C	Earth wire (U.S.A.,Canada,SH,RB2,SM)	○	○
28	QFSHB1003CCZZ	AB		C	Fuse holder (SN-3E) (U.S.A.,Canada,RB6,RB7)	○	○
	QFSHA1002CCZZ	AB		C	Fuse holder (RB2,SH,SM)	○	○
	QFS-B1002CCZZ	AE		A	Fuse (1.5A/125V) (U.S.A.,Canada,RB6,RB7)	○	○
29	QFS-C1018CCZZ	AE		A	Fuse (1.25A/250V) (SH)	○	
	QFS-C1021CCZZ	AF		A	Fuse (0.8A/250V) (RB2,SM)	○	
	QFS-C1021CCZZ	AF		A	Fuse (0.8A/250V) (RB2,SH,SM)	○	
30	XBPSD40P08KS0	AA		C	Screw (4×8KS)	○	○
	RTRNP6716RCZZ	BA		B	Power transformer (U.S.A.,Canada,RB6,RB7)	○	○
31	RTRNP6740RCZZ	AY		B	Power transformer (SH)	○	
	RTRNP6709RCZZ	AZ		B	Power transformer (RB2,SM)	○	
	RTRNP6709RCZZ	AZ		B	Power transformer (RB2,SH,SM)	○	○
32	QCNW6770RC03	AF		B	Connector (3pin with wires) (U.S.A.,Canada,RB6,RB7)	○	○
	QCNW6869RC01	AF		B	Connector (4pin with wires) (RB2,SH,SM)	○	○
33	PSPAY6662RCZZ	AG		C	Spacer	○	○
34	QCNW6816RC13	AC	N	C	Connector (13pin with wires)	○	○
	QCNW6838RC02	AE		B	Connector (2pin with wires) (U.S.A.,Canada)	○	○
35	QCNW6838RC03	AF		B	Connector (3pin with wires) (RB2,RB6,RB7,SH,SM)	○	○
36	XBPSD30P10K00	AA		C	Screw (3×10KS)	○	○
37	VHISI8243B/-1	AQ		B	IC (SI8243B)	○	○
38	QCNW-6779RCZZ	AB		C	Chopper wire	○	○
39	PRDAF2317RCZZ	AG		C	Heat sink for SI8243B	○	○
40	QCNW6645RC03	AF		B	Connector (2pin with wires)	○	
	QCNW6645RC02	AD		B	Connector (3pin with wires)	○	
41	GDAI-6655RCZZ	AG		C	Writing board	○	○
42	LANGK7127RCZZ	AE		C	Option cable angle	○	○
43	QCNW6730RC05	AF		B	Connector (3pin with wires) (SH,RB2,RB6,RB7,SM)	○	○
44	QCNW-6832RCZZ	AB		C	Earth wire (RB6,RB7)	○	○
45	GFTAB6264RCZZ	AB		D	Battery connector cover (SH,RB2,RB6,RB7,SM)	○	○
	GFTAT6691RCZZ	AD		D	Key switch cover (U.S.A,CANADA)	○	
46	GFTAT6684RCZZ	AD		D	Key switch cover (RB2,RB6,RB7,SH,SM)	○	

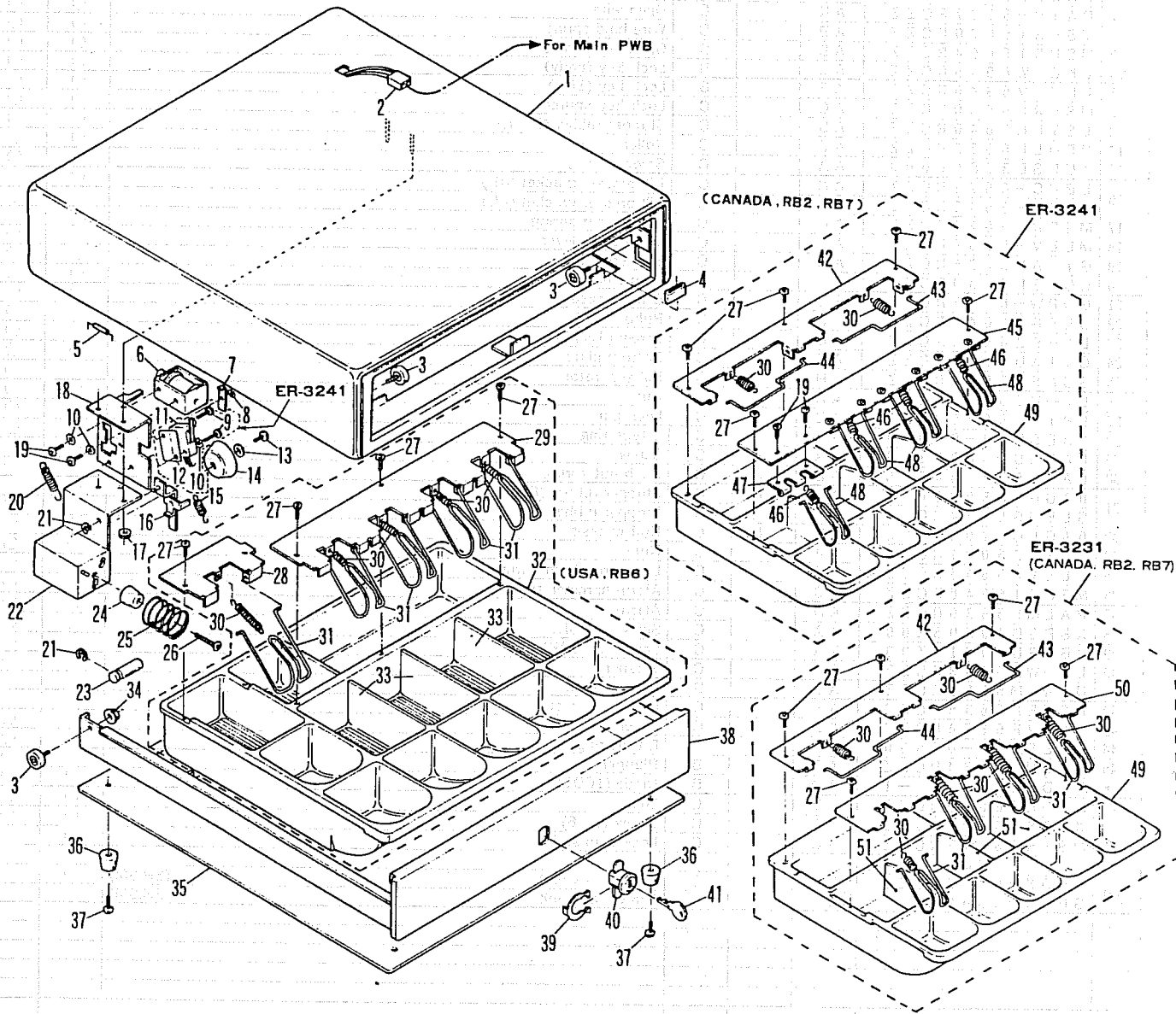
3 Printer Main PWB Noise filter PWB unit etc



4] Drawer box unit (U.S.A.,Canada, RB2, RB6, RB7)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	GCABM6856RCZZ	BF		D	Drawer cabinet	○	○
2	QCNCW6645RC03	AF		B	Connector (2pin with wires)	○	○
3	QCNCW6645RC02	AD		B	Connector (3pin with wires)	○	○
4	NR0LP6632RCZZ	AE		C	Roller	○	○
5	LSTPG6640RCZZ	AB		C	Stopper rubber (Front)	○	○
6	VHD10D1///-1	AD		B	Diode (10D1)	○	○
7	RPLU-6634RCZZ	AR		B	Plunger	○	○
8	MLEVF6642RCZZ	AC		C	Lever	○	○
9	XRES D40-05000	AA		C	E type ring	○	○
10	XBPSD30P14000	AA		C	Screw (3×14)	○	○
11	LX-WZ6648RCZZ	AA		C	Washer	○	○
12	QSW-M6659RCZZ	AS		B	Micro switch	○	○
13	PSHEP6635RCZZ	AA		C	Insulator sheet	○	○
14	XBPSD40P08K00	AA		C	Screw (4×8K)	○	○
15	RALML6636RCZZ	AD		C	Alarm	○	○
16	MSPRT6648RCZZ	AC		C	Spring	○	○
17	MLEVF6643RCZZ	AE		C	Lever	○	○
18	LX-NZ6601RCZZ	AA		C	Nut	○	○
19	MLOKS6629RCZZ	AV		C	Lock	○	○
20	XBPSD30P06000	AA		C	Screw (3×6)	○	○
21	MSPRT6647RCZZ	AC		C	Lock spring	○	○
22	XRES D50-06000	AA		C	E type ring	○	○
23	0AGLCS201MKSS	AH	N	C	Unit chassis	○	○
24	LPINS6630RCZZ	AB		C	Lock pin	○	○
25	0AGGLG8022017	AB	N	C	Stopper (Rear)	○	○
26	0AGMST805460A	AD	N	C	Pushout spring	○	○
27	0AGXBD803315S	AA		C	Screw (3×15)	○	○
28	XUPSD30P06000	AA		C	Screw (3×6)	○	○
29	LBRC-6647RCZZ	AH		C	Bill presser bracket 1B	(U.S.A.,RB6)	○
30	LBRC-6648RCZZ	AQ		C	Bill presser bracket 4B	(U.S.A.,RB6)	○
31	MSPRK6629RCZZ	AC		C	Bill presser spring	○	○
32	MLEV-6536RCZZ	AG		C	Bill presser lever	○	○
33	GCASP6641RCZZ	AV		C	Coin case	(U.S.A.,RB6)	○
34	GiTAU6642RCZZ	AE		C	Bill separator	(U.S.A.,RB6)	○
35	LX-NZ6602RCZZ	AA		C	Nut	○	○
36	GiTAU6647RCZZ	AU		C	Drawer Bottom plate	○	○
37	GLEGG6047RCZZ	AE		C	Rubber foot	○	○
38	LX-BZ6646RCZZ	AB		C	Screw (4×15)	○	○
39	GDRW-6651RCZZ	BA		C	Drawer case	○	○
40	MSPRK6669RCZZ	AD		C	Lock key spring	○	○
41	LKGIW6865RCZZ	AT		B	Lock key (Body)	○	○
42	LKGIW6866RCZZ	AP		B	Lock key (1pc)	○	○
43	LBRC-6639RCZZ	AH		C	Bill presser bracket 2B	(Canada,RB2,RB7)	○
44	MLEV-6644RCZZ	AE		C	Bill presser lever 2B Right	(Canada,RB2,RB7)	○
45	MLEV-6645RCZZ	AG		C	Bill presser lever 2B Left	(Canada,RB2,RB7)	○
46	LBRC-6649RCZZ	AQ		C	Bill presser bracket 4B	(Canada,RB2,RB7)	○
47	MSPRT6571RCZZ	AB		C	Bill presser plate	(Canada,RB2,RB7)	○
48	GiTAU6571RCZZ	AE		C	Bill presser plate	(Canada,RB2,RB7)	○
49	MLEV-6571RCZZ	AE		C	Bill presser plate	(Canada,RB2,RB7)	○
50	GCASP6643RCN1	AX		C	Coin case	(Canada,RB2,RB7)	○
51	LBRC-6638RCZZ	AQ		C	Bill presser bracket 4B	(Canada,RB2,RB7)	○
51	GiTAU6626RCZZ	AN		C	Bill separator	(Canada,RB2,RB7)	○
	(Unit)						
901	GBOXD6820RCZZ	BU		E	Drawer box unit	(U.S.A.,RB6)	○
	GBOXD6821RCZZ	BU		E	Drawer box unit	(Canada,RB2,RB7)	○
	GBOXD6823RCZZ	BU		E	Drawer box unit	(U.S.A.,RB6)	○
	GBOXD6824RCZZ	BU		E	Drawer box unit	(Canada,RB2,RB7)	○

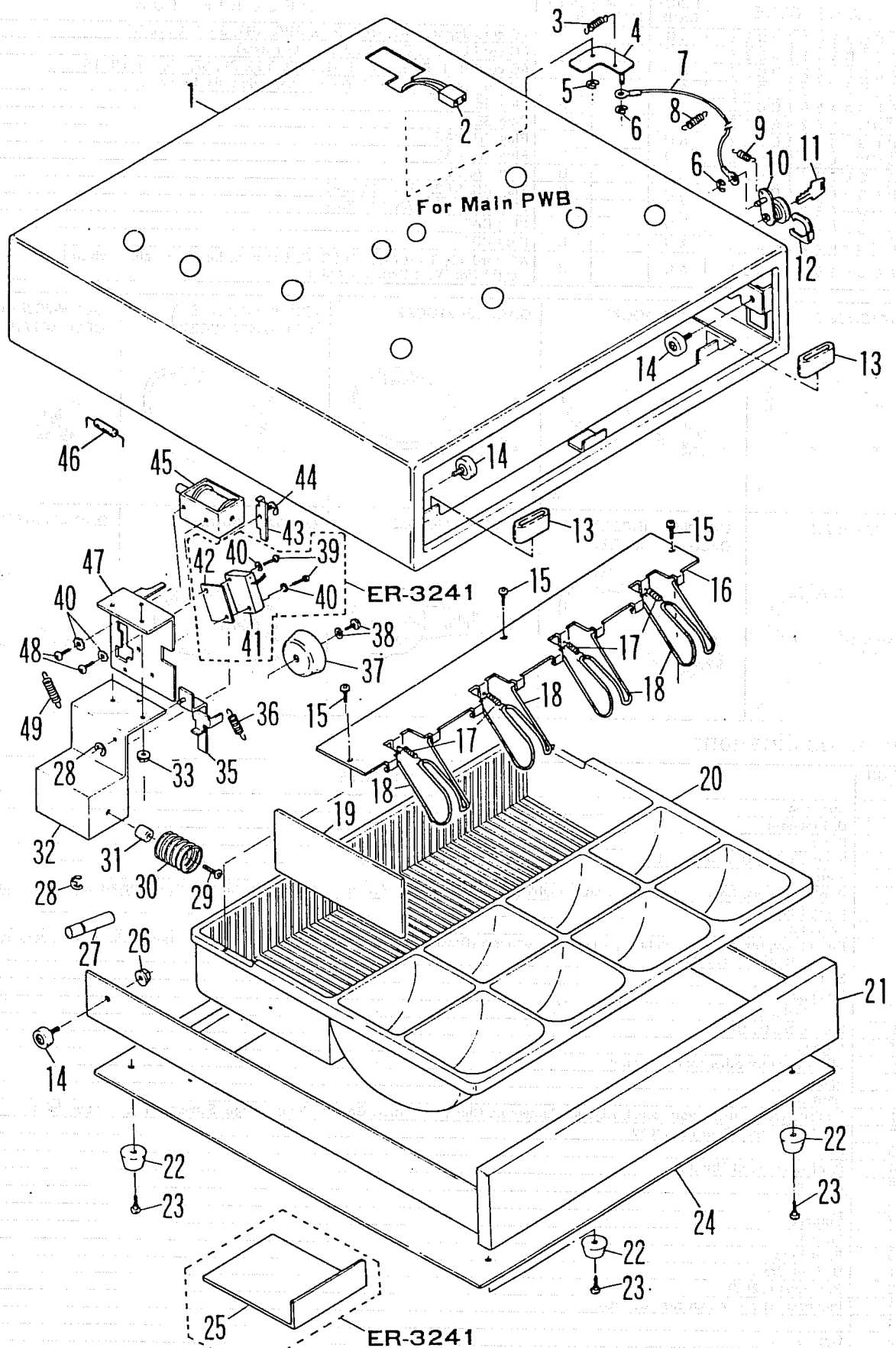
4 Drawer box unit (U.S.A.,Canada, RB2, RB6, RB7)



[5] Drawer box unit (SH,SM)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	GCABM6843RCZZ	BQ		D	Drawer cabinet	○	○
	QCNCW6645RC03	AF		B	Connector (2pin with wires)	○	
2	QCNCW6645RC02	AD		B	Connector (3pin with wires)		○
3	MSPRT6665RCZZ	AB		C	Open arm spring	○	○
4	MARMM6630RCZZ	AD		C	Open arm	○	○
5	XRES D40-06000	AA		C	E type ring	○	○
6	XRES J30-06000	AA		C	E type ring	○	○
7	PWIR-6627RCZZ	AK		C	Open wire	○	○
8	MSPRT6670RCZZ	AB		C	Wire hold spring	○	○
9	MSPRT6664RCZZ	AB		C	Open key spring	○	○
10	LKGiW6945RCZZ	AL		B	Lock key (body)	○	○
11	LKGiM6946RCZZ	AF		B	Lock key (1PC)	○	○
12	MSPRK6660RCZZ	AC		C	Lock key spring	○	○
13	LSTPG6640RCZZ	AB		C	Stopper rubber (Front)	○	○
14	NROLP6632RCZZ	AE		C	Roller	○	○
15	XUPSD30P06000	AA		C	Screw (3×6)	○	○
	LBRC-6629RCZZ	AN		C	Bill presser bracket (4B)	○	
16	LBRC-6646RCZZ	AQ		C	Bill presser bracket (4B)	○	○
17	MSPRK6629RCZZ	AC		C	Bill presser spring	○	○
18	MLEV-6536RCZZ	AG		C	Bill presser lever	○	○
19	GiTAU6626RCZZ	AN		C	Bill separator	○	○
20	GCASP6630RCZZ	AZ		C	Coin case	○	○
21	GDRW-6646RCZZ	BB		C	Drawer case	○	○
22	GLEGG6047RCZZ	AE		C	Rubber foot	○	○
23	LX-BZ6646RCZZ	AB		C	Screw (4×15)	○	○
24	GiTAU6679RCZZ	AS		C	Bottom plate	○	○
25	GCASP6020RCZZ	AH		C	Bill separator	○	○
26	LX-NZ6002RCZZ	AA		C	Nut	○	○
27	LPINS6630RCZZ	AB		C	Lock pin	○	○
28	XRES D50-06000	AA		C	E type ring	○	○
29	0AGXBD803315S	AA		C	Screw	○	○
30	0AGMST805460A	AD	N	C	Push out spring	○	○
	0AGGLG8022017	AB	N	C	Stopper rubber (Rear)	○	○
31	GLEGG6634RCZZ	AB		C	Stopper rubber (Rear)		○
32	0AGLCS201MKSS	AH	N	C	Unit chassis	○	○
33	LX-NZ6001RCZZ	AA		C	Nut	○	○
35	MLEVF6643RCZZ	AE		C	Lever for alarm hammer	○	○
36	MSPRT6648RCZZ	AC		C	Alarm hammer spring	○	○
37	RALML6636RCZZ	AD		C	Alarm	○	○
38	XBPSD40P08K00	AA		C	Screw (4×8K)	○	○
39	XBPSD30P14K00	AA		C	Screw (3×14K)	○	○
40	LX-WZ6648RCZZ	AA		C	Washer	○	○
41	QSW-M6659RCZZ	AS		B	Micro switch	○	○
42	PSHEP6635RCZZ	AA		C	Insulator sheet	○	○
43	MLEVP6674RCZZ	AB		C	Lever	○	○
44	XRES D40-05000	AA		C	E type ring	○	○
45	RPLU-6634RCZZ	AR		B	Plunger	○	○
46	VHD10D1////-1	AD		B	Diode (10D1)	○	○
47	MLOKS6629RCZZ	AV		C	Lock	○	○
48	XBPSD30P06000	AA		C	Screw (3×6)	○	○
49	MSPRT6647RCZZ	AC		C	Lock cam spring	○	○
	(Unit)						
901	GBOXD6822RCZZ	BU		E	Drawer box unit	○	
	GBOXD6809RCZZ	BV		E	Drawer box unit		○

5 Drawer box unit (SH,SM)



7 Articles of consumptions

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	DPAPR1022CSZZ	AV		S	Roll paper (5roll/1pack)	○	○
2	UINK-1001CCZZ	AK		S	Ink (5cc)	○	○
3	NRÖLR6638RCZZ	AY		S	Ink roller (TY-0232)	○	○

8 Packing material

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	SPAKA7155RCZZ	AP		D	Packing cushion (Right)	○	○
2	SPAKA7156RCZZ	AP		D	Packing cushion (Left)	○	○
3	SPAKC7329RCZZ	AT	N	D	Packing case	○	○
	SPAKC7328RCZZ	AT	N	D	Packing case		○
4	SSAKA0001SCZZ	AA		D	Vinyl bag (Instruction book) (200×300mm)	○	○
5	SSAKA2012KCZZ	AF		D	Vinyl bag (600×540×510mm)	○	○
6	SSAKH3015CCZZ	AA		D	Vinyl bag (240×360mm)	○	○
7	SSAKA5004CCZZ	AA		D	Vinyl bag (100×300mm)	○	○
8	SPAKF7025RCZZ	AC		D	AC plug cover (SH, RB2, SM)	○	○

9 Spare unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	CPWBF6974RC01	**	N	E	Main PWB unit (U.S.A, CANADA)	○	
	CPWBF6974RC04	**	N	E	Main PWB unit (RB2, RB6, RB7, SH, SM)	○	
	CPWBF6974RC02	**	N	E	Main PWB unit (U.S.A, Canada)		○
	CPWBF6974RC03	**	N	E	Main PWB unit (RB2, RB6, RB7, SH, SM)		○
2	CPWBF6975RC02	**	N	E	Power supply—display PWB unit (U.S.A, CANADA, RB2, RB6, RB7, SM)	○	
	CPWBF6975RC03	**	N	E	Power supply—display PWB unit (SH)	○	
	CPWBF6975RC01	CC	N	E	Power supply—Display PWB unit		
3	CPWBF6980RC02	BN	N	E	Noise filter PWB unit (U.S.A, Canada)	○	
	CPWBF6980RC04	BN	N	E	Noise filter PWB unit (RB6, RB7)	○	
	CPWBF6964RC04	BN	N	E	Noise filter PWB unit (SH)	○	
	CPWBF6964RC07	BN	N	E	Noise filter PWB unit (RB2, SM)	○	
	CPWBF6964RC07	BN	N	E	Noise filter PWB unit (RB2, SH, SM)		○
4	DUNTK7902RCZZ	BR	N	E	Keyboard unit (U.S.A, CANADA)	○	
	DUNTK7951RCZZ	BR	N	E	Keyboard unit (RB6, RB7)	○	
	DUNTK7956RCZZ	BR	N	E	Keyboard unit (RB2, SH, SM)	○	
	DUNTK7901RCZZ	BR	N	E	Keyboard unit (U.S.A, Canada)		○
	DUNTK7954RCZZ	BR	N	E	Keyboard unit (RB2, SH, SM)		○
	DUNTK7947RCZZ	BR	N	E	Keyboard unit (RB6, RB7)		○
5	GBOXD6820RCZZ	BU		E	Drawer box unit (U.S.A, RB6)	○	
	GBOXD6821RCZZ	BU		E	Drawer box unit (CANADA, RB2, RB7)	○	
	GBOXD6822RCZZ	BU		E	Drawer box unit (SH, SM)	○	
	GBOXD6823RCZZ	BU		E	Drawer box unit (U.S.A, RB6)		○
	GBOXD6824RCZZ	BU		E	Drawer box unit (Canada, RB2, RB7)		○
	GBOXD6809RCZZ	BV		E	Drawer box unit (SH, SM)		○
6	KI-OB6680RCZZ	**		E	Printer unit (M220) <i>Detail # 359.00</i>	○	
	KI-OB6681RCZZ	**		E	Printer unit (M220)		○

10 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	LBNDJ0004UCZZ	AA		C	Band	○	○
2	PRDAF2317RCZZ	AG		C	Heat sink for S18243B	○	○
3	QCNCM6660RCZZ	AC		B	Connector (3pin)	○	○
4	QCNCM6699RCZZ	AC		B	Connector (3pin)	○	○
5	QCNCM6823RC1C	AE		C	Connector (13pin)	○	○
6	QCNCM6823RC1H	AF		C	Connector (18pin)	○	○
7	QCNCM6851RC0C	AC		B	Connector (3pin)	○	○
8	QCNCW6854RC3A	AH		C	Connector (31pin)	○	○
9	QCNCW-6779RCZZ	AB		C	Chopper wire	○	○
10	QCNCW-6933RCZZ	AE	N	C	Earth wire	○	○
11	QSOCZ6424ACZZ	AE		C	IC socket (24pin)	○	○
12	QSOCZ6428ACZZ	AE		C	IC socket (28pin)	○	○
13	RALMB6638RCZZ	AM		B	Buzzer (KMB06)	○	○
14	RC-CZH300RCZZ	AD		C	Capacitor (50WV 30pF)	○	○
15	RC-EZL688RCHL	AR		C	Capacitor (55WV 6800μF)	○	○
16	RC-EIV228HCZU	AG		C	Capacitor (35WV 2200μF)	○	○
17	RCiLC6633RCZZ	AL		C	Coil	○	○
18	RCRSP6631RCZZ	AE		C	Coil (30MH)	○	○

10 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
19	RMPTC4123QCKJ	AB		B	Block resistor (12KΩ×4 1/16W ±10%)	○	○
20	RMPTC8102QCKB	AD		B	Block resistor (1.0KΩ×8 1/8W ±10%)	○	○
21	RMPTC8123QCKJ	AD		B	Block resistor (12KΩ×8 1/16W ±10%)	○	○
22	UBATN2183CCZZ	AV		B	Battery (151FT 3CELL)	○	○
23	VCEAAU1CW106Q	AB		C	Capacitor (16WV 10μF)	○	○
24	VCEAAU1CW226Q	AB		C	Capacitor (16WV 22μF)	○	○
25	VCEAAU1HW225Q	AB		C	Capacitor (50WV 2.2μF)	○	○
26	VCKYPU1HB101K	AA		C	Capacitor (50WV 100pF)	○	○
27	VCKYPU1HB102K	AA		C	Capacitor (50WV 1000pF)	○	○
28	VCKYPU1HB222K	AA		C	Capacitor (50WV 2200pF)	○	○
29	VCKYPU1HB331K	AA		C	Capacitor (50WV 330pF)	○	○
30	VCKYPU1HB471K	AA		C	Capacitor (50WV 470pF)	○	○
31	VCKYPU1HF223Z	AA		C	Capacitor (50WV 22000pF)	○	○
32	VCQYKU1HM103K	AB		C	Capacitor (50WV 0.01μF)	○	○
33	VCQYKU1HM333K	AB		C	Capacitor (50WV 0.033pF)	○	○
34	VCTYPU1HX104M	AC		C	Capacitor (50WV 0.1μF)	○	○
35	VCTYPU1NX104M	AB		C	Capacitor (12WV 0.1μF)	○	○
36	VHDDS1588L2-1	AB		B	Diode (DS1588L2)	○	○
37	VHD10D1///-1	AD		B	Diode (10D1)	○	○
38	VHEHZ15-1///-1	AB		B	Zener diode (HZ15)	○	○
39	VHERD33EB1/-1	AB		B	Zener diode (RD33EB1)	○	○
40	VHERD6.2EB1-1	AB		B	Zener diode (RD6.2EB1)	○	○
41	VHIFT5753M/-1	AP		B	IC (FT5753M)	○	○
42	VHIM5T4044S30	AS		B	IC (M5T4044S30)	○	○
43	VHIM54567P/-1	AK	N	B	IC (M54567P)	○	○
44	VHINJM2903N-1	AH		B	IC (NJM2903N)	○	○
45	VHISI8243B/-1	AQ		B	IC (SI8243B)	○	○
46	VHISN74LS00-1	AE		B	IC (SN74LS00)	○	○
47	VHISN74LS04-1	AE		B	IC (SN74LS04-N)	○	○
48	VHISN74LS05-1	AE		B	IC (SN74LS05-N)	○	○
49	VHISN74LS122N	AH		B	IC (SN74LS122N)	○	○
50	VHISN74LS139N	AL		B	IC (SN74LS139N)	○	○
51	VHISN74LS157N	AK		B	IC (SN74LS157N)	○	○
52	VHISN74LS32-1	AF		B	IC (SN74LS32)	○	○
53	VHISN74LS74AN	AG		B	IC (SN74LS74-N)	○	○
54	VHITC40H000P1	AF		B	IC (TC40H000P1)	○	○
55	VHIUPD449D/-1	BH		B	LSI (UPD449D)	○	○
56	VHI27128030-C	BN	N	B	LSI (27128030)	○	○
	VHI27128032-C	BN	N	B	LSI (27128032)	○	○
	VHIM2732R001A	BA	N	B	LSI (M2732R001A)	(for Oct. 1984 production only)	○
	VHI27128029-C	BN	N	B	LSI (27128029)	(for Oct. 1984 production only)	○
	VHI27128030-C	BN	N	B	LSI (27128030)	(for Oct. 1984 production only)	○
	VHI27128R021A	BN	N	B	LSI (27128R021A)	(from Nov. 1984 production only)	○
57	VHI27128R022A	BN	N	B	LSI (27128R022A)	(from Nov. 1984 production only)	○
57	VHI7801G220-1	AY		B	IC (7801G220)	○	○
58	VRD-ST2EY101J	AA		C	Resistor (1/4W 100Ω ±5%)	○	○
59	VRD-ST2EY102J	AA		C	Resistor (1/4W 1KΩ ±5%)	○	○
60	VRD-ST2EY103J	AA		C	Resistor (1/4W 10KΩ ±5%)	○	○
61	VRD-ST2EY105J	AA		C	Resistor (1/4W 1.0MΩ ±5%)	○	○
62	VRD-ST2EY122J	AA		C	Resistor (1/4W 1.2KΩ ±5%)	○	○
63	VRD-ST2EY220J	AA		C	Resistor (1/4W 22Ω ±5%)	○	○
64	VRD-ST2EY222J	AA		C	Resistor (1/4W 2.2KΩ ±5%)	○	○
65	VRD-ST2EY223J	AA		C	Resistor (1/4W 22KΩ ±5%)	○	○
66	VRD-ST2EY303G	AA		C	Resistor (1/4W 30KΩ ±2%)	○	○
67	VRD-ST2EY331J	AA		C	Resistor (1/4W 330Ω ±5%)	○	○
68	VRD-ST2EY332J	AA		C	Resistor (1/4W 3.3KΩ ±5%)	○	○
69	VRD-ST2EY333J	AA		C	Resistor (1/4W 33KΩ ±5%)	○	○
70	VRD-ST2EY392J	AA		C	Resistor (1/4W 3.9KΩ ±5%)	○	○
71	VRD-ST2EY471J	AA		C	Resistor (1/4W 470Ω ±5%)	○	○
72	VRD-ST2EY472J	AA		C	Resistor (1/4W 4.7KΩ ±5%)	○	○
73	VRD-ST2EY561J	AA		C	Resistor (1/4W 560Ω ±5%)	○	○
74	VRD-ST2EY562J	AA		C	Resistor (1/4W 5.6KΩ ±5%)	○	○
75	VRD-ST2EY563J	AA		C	Resistor (1/4W 56KΩ ±5%)	○	○
76	VRD-ST2EY682J	AA		C	Resistor (1/4W 6.8KΩ ±5%)	○	○
77	VRD-ST2HY222J	AB		C	Resistor (1/2W 2.2KΩ ±5%)	○	○
78	VRD-SU2EY151J	AA		C	Resistor (1/4W 150Ω ±5%)	○	○
79	VRD-SU2EY181J	AA		C	Resistor (1/4W 180Ω ±5%)	○	○
80	VRD-SU2EY271J	AA		C	Resistor (1/4W 270Ω ±5%)	○	○
81	VRD-SU2EY274J	AA		C	Resistor (1/4W 270KΩ ±5%)	○	○
82	VRD-SU2EY821J	AA		C	Resistor (1/4W 820Ω ±5%)	○	○
83	VRS-ST3AB911J	AA		C	Resistor (1W 910Ω ±5%)	○	○
84	VSA101-P//QC	AB		B	Transistor (JA101-P//QC)	○	○
85	VSA501-P//QC	AB		B	Transistor (JC501-P//QC)	○	○
86	VSA1115-/-1	AB		B	Transistor (2SA1115)	○	○
87	VSA673-C/-1	AE		B	Transistor (2SA673-C)	○	○
88	VSA881-/-1	AH		B	Transistor (2SB881)	○	○
89	VSD1191-/-1	AH		B	Transistor (2SD1191)	○	○
90	VSD986-/-1	AF		B	Transistor (2SD986)	(U.S.A,CANADA)	○
	VSD985-/-1	AF		B	Transistor (2SD985)	(RB2,RB6,RB7,SH,SM)	○
	VSD986-/-1	AF		B	Transistor (2SD986)		○

10 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
91	XBPSD30P08K00	AA		C	Screw (3×8K)	○	○
92	XBPSD30P10K00	AA		C	Screw (3×10K)	○	○
93	XNESD30-24000	AA		C	Nut (For heat sink)	○	○
94	QCNCM6862RC0B	AB		B	Connector (2pin) (SH,RB2,RB6,RB7,SM)	○	○
95	QCNCW6730RC05	AF		B	Connector (3pin with wires) (SH,RB2,RB6,RB7,SM)	○	○
96	VHDGSA30B//--1	AE		B	Diode (GSA30B) (SH,RB2,RB6,RB7,SM)	○	○
97	VHD1SS82//--1	AB		B	Diode (1SS82) (SH,RB2,RB6,RB7,SM)	○	○
98	RC-E2A336RCZZ	AC		C	Capacitor (33μF) (SH,RB2,RB6,RB7,SM)	○	○
99	VRD-ST2EY153G	AA		C	Resistor (1/4W 15KΩ ±2%) (SH,RB2,RB6,RB7,SM)	○	○
100	VRD-SU2EY223J	AA		C	Resistor (1/4W 22KΩ ±5%) (SH,RB2,RB6,RB7,SM)	○	○
101	VRD-ST2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	○	○
	(Unit)						
901	CPWBF6974RC01	**	N	E	Main PWB unit (U.S.A,CANADA)	○	
	CPWBF6974RC04	**	N	E	Main PWB unit (RB2,RB6,RB7,SH,SM)	○	
	CPWBF6974RC02	**	N	E	Main PWB unit (U.S.A.,Canada)		○
	CPWBF6974RC03	**	N	E	Main PWB unit (SH,RB2,RB6,RB7,SM)		○

11 Power supply-Display PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	LANGK7170RCZZ	AE		C	PWB angle	○	○
2	LHLDZ6669RCZZ	AC		C	Display holder	○	○
3	QCNCW6779RC07	AR	N	C	Connector (24pin with wires)	○	○
4	QCNCW6816RC13	AC	N	C	Connector (13pin with wires)	○	○
5	QCNCM6846RC0H	AC		C	Connector (8pin) (SH)	○	
	QCNCM6846RC0H	AC		C	Connector (8pin)		○
6	QCNCM6846RC1B	AL		C	Connector (12pin) (SH)	○	
	QCNCM6846RC1B	AL		C	Connector (12pin)		○
7	QCNCW-6904RCZZ	AB		C	Jumper wire 1 (80mm)	○	○
8	QCNCW-6923RCZZ	AB	N	C	Ground wire	○	○
9	QCNCW-6925RCZZ	AB	N	C	Ground wire	○	○
10	QCNCW-6926RCZZ	AB	N	C	Earth wire	○	○
11	QCNCW-6932RCZZ	AB	N	C	Earth wire	○	○
12	QFS-A1036CCZZ	AD		A	Fuse (1.2A)(Mini type)	○	○
13	QFSHA1002CCZZ	AB		C	Fuse holder (F-211P)	○	○
14	RC-E1C108HCZU	AD		C	Capacitor (16WV 1000μF)	○	○
15	RC-E1H227BCZU	AD		C	Capacitor (50WV 220μF)	○	○
16	RC-KZ1018CCZZ	AE		C	Capacitor (250WV 25pF)	○	○
17	RCSRPI003CCZZ	AT		B	Crystal (32KHz)	○	○
18	RMPTCB473QCKB	AD		B	Block resistor (47KΩ×12 1/8W ±10%)	○	○
19	RTRNH6727RCZZ	AP		B	Converter transformer	○	○
20	VCCPU1HH220J	AA		C	Capacitor (50WV 22pF)	○	○
21	VCEAAU1CW106Q	AB		C	Capacitor (16WV 10μF)	○	○
22	VCEAAU1HW105Q	AB		C	Capacitor (50WV 1.0μF)	○	○
23	VCEAAU1HW476Q	AC		C	Capacitor (50WV 47μF)	○	○
24	VCEAAU2AW226Q	AC		C	Capacitor (100WV 22μF)	○	○
25	VCKYPU1HB101K	AA		C	Capacitor (50WV 100pF)	○	○
26	VCKYPU1HB102K	AA		C	Capacitor (50WV 1000pF)	○	○
27	VCKYPU1HB222K	AA		C	Capacitor (50WV 2200pF)	○	○
28	VCKYPU1HB331K	AA		C	Capacitor (50WV 330pF)	○	○
29	VCKYKU1HM152K	AA		C	Capacitor (50WV 1500pF)	○	○
30	VCKYKU1HM683K	AB		C	Capacitor (50WV 0.068μF)	○	○
31	VCSATU1AE226M	AD		C	Capacitor (10WV 22μF)	○	○
32	VHDS1588L2-1	AB		B	Diode (DS1588L2)	○	○
33	VHD1SS82//--1	AB		B	Diode (1SS82)	○	○
34	VHD1S1834//--1	AE		B	Diode (1S1834)	○	○
35	VHERD5.1EL1-1	AB		B	Zener diode (RD5.1EL1)	○	○
36	VHERD6.2EB1-1	AB		B	Zener diode (RD6.2EB1)	○	○
37	VHILB1291//--1	AH	N	B	IC (LB1291)	○	○
38	VHILB1293//--1	AH	N	B	IC (LB1293)	○	○
39	VHILU55123P-1	AY	N	B	IC (LU55123P)	○	○
40	VHINJM2903N-1	AH		B	IC (NJM2903N)	○	○
41	VRD-ST2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	○	○
42	VRD-ST2EY101J	AA		C	Resistor (1/4W 100Ω ±5%)	○	○
43	VRD-ST2EY103J	AA		C	Resistor (1/4W 10KΩ ±5%)	○	○
44	VRD-ST2EY104J	AA		C	Resistor (1/4W 100KΩ ±5%)	○	○
45	VRD-ST2EY122J	AA		C	Resistor (1/4W 1.2KΩ ±5%)	○	○
46	VRD-ST2EY123J	AA		C	Resistor (1/4W 12KΩ ±5%)	○	○
47	VRD-ST2EY153G	AA		C	Resistor (1/4W 15KΩ ±2%)	○	○
48	VRD-ST2EY272J	AA		C	Resistor (1/4W 2.7KΩ ±5%)	○	○
49	VRD-ST2EY333G	AB		C	Resistor (1/4W 33KΩ ±2%)	○	○
50	VRD-ST2EY471J	AA		C	Resistor (1/4W 470Ω ±5%)	○	○
51	VRD-ST2EY473J	AA		C	Resistor (1/4W 47KΩ ±5%)	○	○
52	VRD-ST2EY562J	AA		C	Resistor (1/4W 5.6KΩ ±5%)	○	○
53	VRD-ST2EY563J	AA		C	Resistor (1/4W 56KΩ ±5%)	○	○
54	VRD-ST2EY822G	AA		C	Resistor (1/4W 8.2KΩ ±2%)	○	○

11 Power supply-Display PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
55	VRD-SU2EY100J	AA		C	Resistor (1/4W 10Ω ±5%)	○	○
56	VRD-SU2EY273J	AA		C	Resistor (1/4W 27KΩ ±5%)	○	○
57	VRD-SU2EY6R8J	AA	N	C	Resistor (1/4W 6.8Ω ±5%)	○	○
58	VSJC501-P//QC	AB		B	Transistor (JC501-P//QC)	○	○
59	VS2SA1115-//1	AB		B	Transistor (2SA1115)	○	○
60	VS2SC2334-//1	AL		B	Transistor (2SC2334)	○	○
61	VS2SC641KC-//1	AE		B	Transistor (2SC641KC)	○	○
62	VS2SD667-//1	AD		B	Transistor (2SC667)	○	○
63	VS2SK30A0-//1	AE		B	Transistor (2SK30A0)	○	○
64	VVDH11LT-02Z1	BC	N	B	Display tube (H11LT-02Z1)	○	○
65	XBPSD30P06KS0	AA		C	Screw (3×6KS)	○	○
66	XBPSD30P08K00	AA		C	Screw (3×8K)	○	○
67	XNESD30-24000	AA		C	Nut	○	○
68	XUPSD30P08000	AA		C	Screw (3×8)	○	○
69	QCNW-6905RCZZ	AB		C	Jumper wire 2 (50mm) (U.S.A.,CANADA,RB2,RB6,RB7,SM)	○	○
70	QCNW-6906RCZZ	AB		C	Jumper wire 3 (60mm) (U.S.A.,CANADA,RB2,RB6,RB7,SM)	○	○
71	QCNW-6907RCZZ	AB		C	Jumper wire 4 (70mm) (U.S.A.,CANADA,RB2,RB6,RB7,SM)	○	○
72	QCNW-6924RCZZ	AB	N	C	Ground wire (U.S.A.,CANADA,RB2,RB6,RB7,SM)	○	○
73	VVDH09LT-03Z1	AZ		B	Display tube (H09LT-03Z1)	○	○
	(Unit)						
901	CPWBF6975RC02	**	N	E	Power supply-display PWB unit (U.S.A.,CANADA,RB2,RB6,RB7,SM)	○	○
	CPWBF6975RC03	**	N	E	Power supply-display PWB unit (SH)	○	○
	CPWBF6975RC01	CC	N	E	Power supply-Display PWB unit		○

12 Noise filter PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	LBNDJ0004UCZZ	AA		C	Band	○	○
2	QCNCW6770RC03	AF		B	Connector (3pin with wires) (U.S.A.,Canada,RB6,RB7)	○	○
	QCNCW6869RC01	AF		B	Connector (4pin with wires) (RB2,SH,SM)	○	○
3	QCNCW6838RC02	AE		B	Connector (2pin with wires) (U.S.A.,Canada)	○	○
	QCNCW6838RC03	AF		B	Connector (3pin with wires) (RB2,RB6,RB7,SH,SM)	○	○
4	QCNW-6871RCZZ	AB		C	Earth wire (Noise filter-Drawer)	○	○
	QFS-B1002CCZZ	AE		A	Fuse (1.5A/125V) (U.S.A.,Canada,RB6,RB7)	○	○
	QFS-C1018CCZZ	AE		A	Fuse (1.25A/250V) (SH)	○	○
5	QFS-C1021CCZZ	AF		A	Fuse (0.8A/250V) (RB2SM)	○	○
	QFS-C1021CCZZ	AF		A	Fuse (0.8A/250V) (RB2,SH,SM)	○	○
6	QFSHB1003CCZZ	AB		C	Fuse holder (SN-3E) (U.S.A.,Canada,RB6,RB7)	○	○
	QFSHA1002CCZZ	AB		C	Fuse holder (RB2,SH,SM)	○	○
7	RC-FZ6030RCZZ	AH		C	Capacitor (125WV 0.1μF) (U.S.A.,Canada,RB6,RB7)	○	○
	VCE9HE2EP104K	AK		C	Capacitor (250WV 0.1μF) (RB2,SH,SM)	○	○
8	RCILC6629RCZZ	AK		C	Line filter	○	○
	RTRNP6716RCZZ	BA		B	Power transformer (U.S.A.,Canada,RB6,RB7)	○	○
	RTRNP6740RCZZ	AY		B	Power transformer (SH)	○	○
	RTRNP6709RCZZ	AZ		B	Power transformer (RB2,SM)	○	○
	RTRNP6709RCZZ	AZ		B	Power transformer (RB2,SH,SM)	○	○
10	VHDS4VB10-//1	AL		B	Diode (S4VB10F)	○	○
11	VRD-ST2HY394J	AB		C	Resistor (1/2W 390KΩ ±5%)	○	○
	(Unit)						
901	CPWBF6980RC02	BN	N	E	Noise filter PWB unit (U.S.A.,Canada)	○	○
	CPWBF6980RC04	BN	N	E	Noise filter PWB unit (RB6,RB7)	○	○
	CPWBF6964RC04	BN		E	Noise filter PWB unit (SH)	○	○
	CPWBF6964RC07	BN	N	E	Noise filter PWB unit (RB2,SM)	○	○
	CPWBF6964RC07	BN	N	E	Noise filter PWB unit (RB2,SH,SM)	○	○

13 Other parts

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	ER3231	ER3241
1	GCOVD6703RCZZ	AH		D	Display dust cover		○
2	GCOVD6810RCZZ	AP		D	Dust cover	○	
	GCOVD6811RCZZ	AP		D	Dust cover		○
3	TINSE6938RCZZ	AT	N	D	Instruction book (U.S.A.,RB6)	○	○
	TINSE6940RCZZ	BK	N	D	Instruction book (E,F) (CANADA,RB2,RB7,SH,SM)	○	○
	TINSE6937RCZZ	AY	N	D	Instruction book (U.S.A.,RB6)	○	○
	TINSE6939RCZZ	BP	N	D	Instruction book (E,F) (Canada,SH,RB7,RB2,SM)	○	○
4	UBNDA1008CCZZ	AA		C	AC cord band	○	○
	PSTM-6267RCZZ	AV		D	Stamp (Thank you) (U.S.A.,Canada,RB2,RB7,SM)	○	○
5	PSTM-6268RCZZ	AV		D	Stamp (Muchasgraci) (RB6)	○	○
	PSTM-6651RCZZ	AV		D	Stamp (Dankie than) (SH)	○	○
6	LKGI6959RCZZ	AS		B	Service key (SRV)(1PC) (U.S.A.,Canada,RB6,RB7)	○	○
	LKGI6861RCZZ	AG		B	Service key (SRV)(1PC) (RB2,SH,SM)	○	○
7	GCOVB6822RCZZ	AW		D	Stamp (Thank you) (U.S.A.,Canada,RB2,RB7,SM)	○	○

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