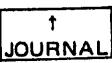


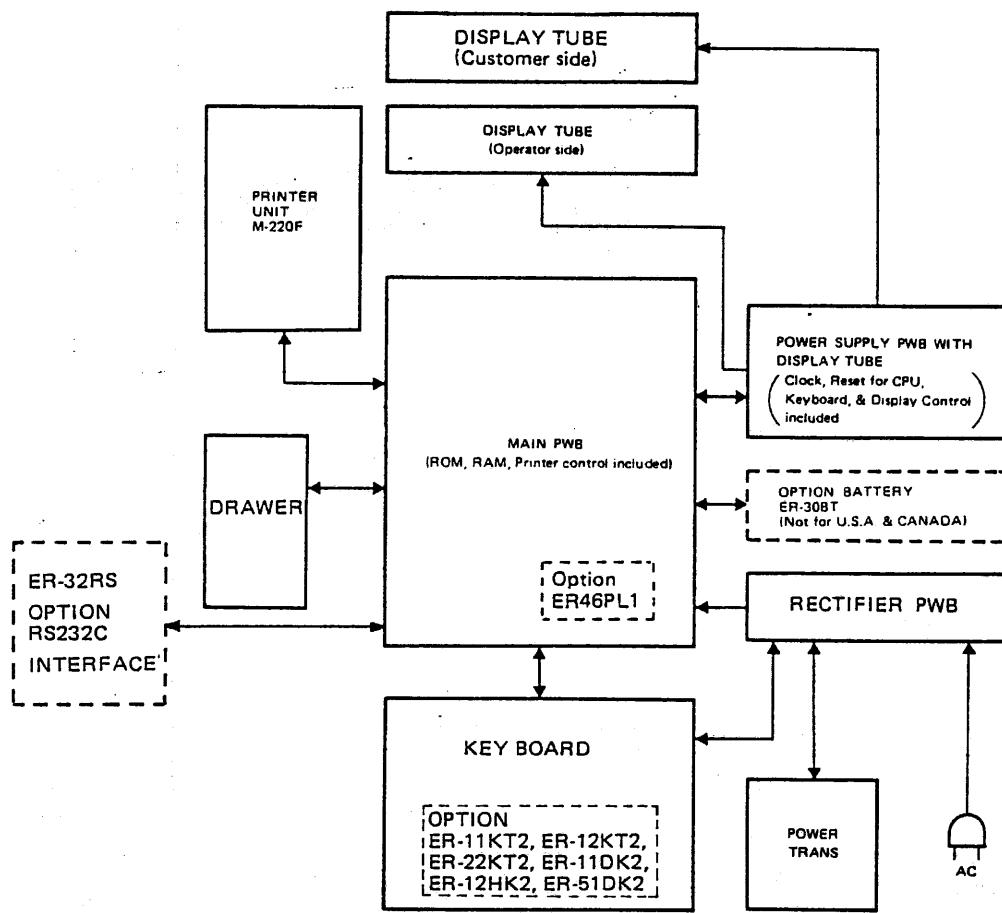
MODEL **ER3231**

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

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	UKOG-6635RCZZ	AX
KEY TOP and DUMMY KEY, removal tool	UKOG-6636RCZZ	AX

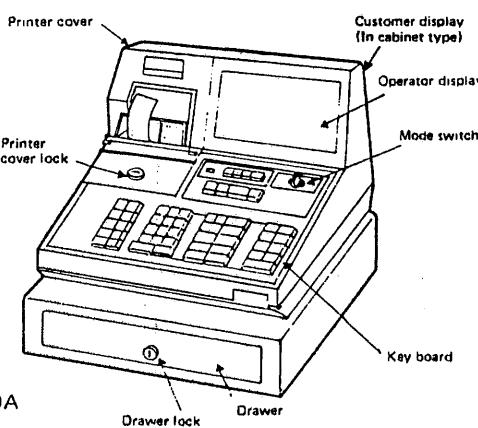
3. REFERENCE DOCUMENTS

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

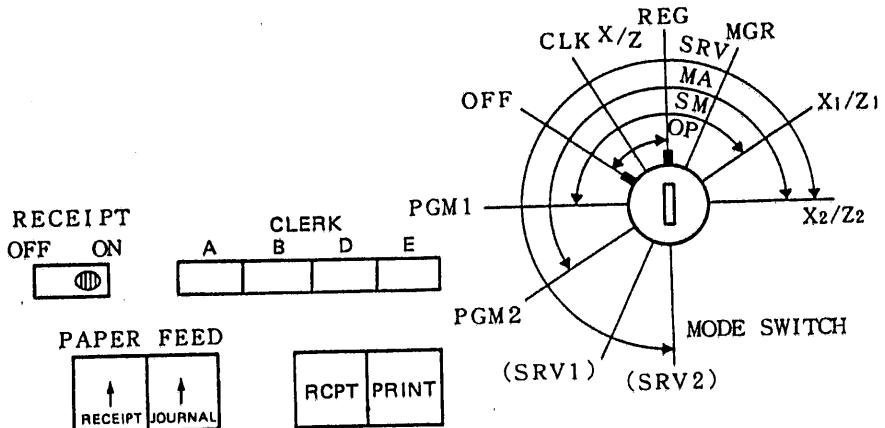


2) Rating

Model name	ER-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
TAX1 SHIFT	TAX2 SHIFT
⊖ 1	⊖ 2
% 1	% 2
RFND	VOID

@/FOR	•	CL		5	10		CH4	CH5
7	8	9		4	9		CH2	CH3
4	5	6		3	8		CH1	#/SBTL
1	2	3		2	7		CHK	MDSE SBTL
0	00			1	6			CA/AT/NS

2) Key top name (With standard feature)

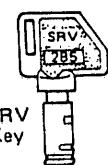
- 0** ~ **9**: Numeric entry
- : Decimal point
- CL**: Clear
- @/FOR**: Multiplication, split pricing
- ↑**: Paper feed (Receipt & Journal)
- #/SBTL**: Non add code print, Time display, subtotal,
- CA/AT/NS**: Cash, Amount tender, No sale
- RA**: Received on account
- PO**: Paid out
- TAX 1 SHIFT** **TAX 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)



SRV Key

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:	<ul style="list-style-type: none"> ★ 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:	<ul style="list-style-type: none"> ★ 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:	<ul style="list-style-type: none"> ● Individual reading and resetting for clerks. ● Attendance time will be printed.
REG mode:	<ul style="list-style-type: none"> ★ Any key can be inserted or removed from the mode switch when it is in the "REG mode" position. ● General registrations.
MGR mode:	<ul style="list-style-type: none"> ★ 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:	<ul style="list-style-type: none"> ● Reading and resetting of daily general reports. ● Generation of various analysis reports.
X2/Z2 mode:	<ul style="list-style-type: none"> ● Reading and resetting of periodically accumulated reports. ● Generation of analysis reports.

Void mode (Transaction void)

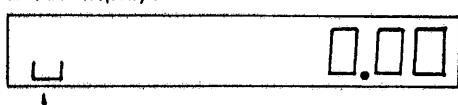
This mode serves to void incorrect registrations when they are noticed after the completion of a transaction or \sim ing the stage of tendering. The voiding operations for the latter case are as follows: temporarily finalize the current transaction, press the "VOID" key in the MGR. mode to set the machine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

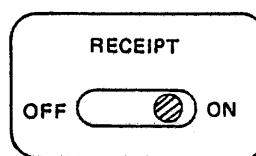
NOTE: The void mode entry is allowed only when the void mode is enabled via the SRV mode programming "JOB #902-C".

Void mode display:



Indication of void mode

5) Receipt ON-OFF switch

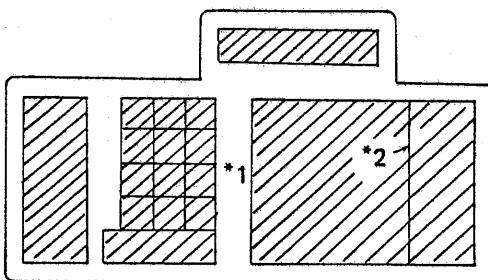


This switch permits or prohibits receipt generation. To permit printing on the journal alone without receipt generation, slide the switch to the OFF position and to permit printing on both the journal

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 (GC0VB6822RCZZ)



NOTE: The hatched areas protrude.

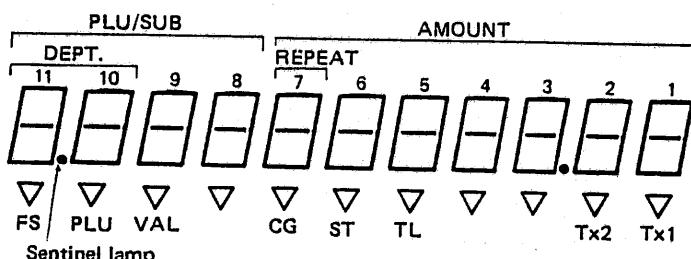
*1: Because this area does not protrude, this key cover can not be used for the key layout when this area is filled by key tops.

*2: This line does not protrude.

4-3. Display

1) Operator side display

(fluorescent display tube): 11-1 T-077



▽: 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)

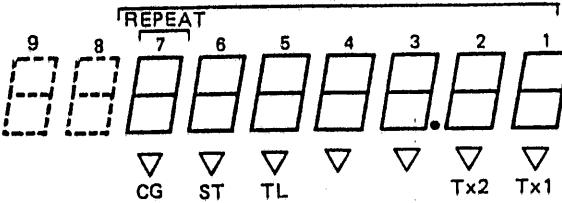
The number of repeats is displayed from "2" and counted up with each repeat. When ten registrations are done, the display shows "0".

Example: (2 → 3 → 4 9 → 0 → 1 → 2

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

Fluorescent display tube: 9-LT-03Z

AMOUNT

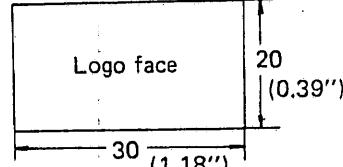


NOTE: The 8th and 9th digits are not used.

4-4. Printer (Model-220F)

1) Overview of the printer

- Printing system: 2-station print dot matrix printer (M-220F)
- Printing capacity: 16 digits in all (16 digits for both receipt and journal) about 2.4 lines/sec.
- Printing speed: about 14.2 lines/sec. (receipt) about 7.1 lines/sec (journal)
- Paper feeding speed: ● Stamping
- Functions: ● 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
- Paper width: 37.5±0.5mm 1.47" for receipt and journal, max. roll diameter: 80mm (3.14").
- Paper quality: ● Receipt and journal paper: bond paper (0.07 to 0.09 mm in thickness 52.3 to 64.0g/m² in weight).
- Reliability: MCBF 2 mill. line. (excluding print head unit) ... Print head unit: 40 mill. characters (life)
- Color of print: Purple (single color)
- Paper cutter: Manual cutter.
- Ribbon cassette: Life: about 6 mill. characters.



2) Logo unit

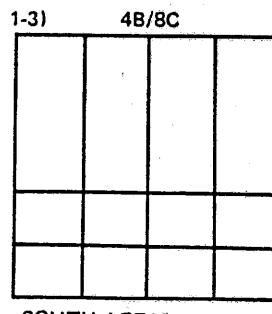
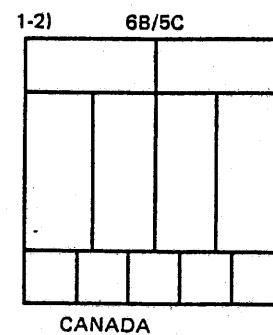
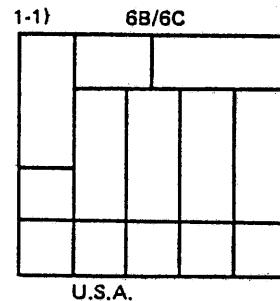
- Type: Porous rubber.
- Color of stamp: Purple (single color)
- Max. logo dimensions: 30(W) x 10(H) mm 1.18" x 0.39"

3) Validation printing

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

5. Drawer/Lock**Drawer****• Metallic drawer**

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

(COMPARTMENT LAYOUTS)**Locks****-1) DRAWER LOCK Key No. B01**

(For USA and Canada)

LOCK: 180° counter clockwise

UNLOCK: 180° clockwise

(For South Africa)

OPEN: 90° clockwise

-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	6Dg x 30 S	6Dg x 30* 1Dg x 30* 1 x 30 1 x 30 1 x 30 1 x 30 1 x 30 6 ch x 30 1 x 30 1 x 30 1Dg x 30	*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

Item	Totalizer	Counter	Preset	Note
NET	8Dg x 3 S			
VOID	8Dg x 4	4Dg x 4	6 ch 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 ch x 1*	Normal & hash RFND *Alpha numeric
P/O	8Dg x 1 S	4Dg x 1 S	6 ch x 1*	*Alpha numeric
R/A	8Dg x 1 S	4Dg x 1 S	1 x 1 6 ch 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 ch x 8* 8Dg x 1* 1Dg x 8	*Alpha numeric *Sentinel Flag for report
(-)	8Dg x 2 S	4Dg x 2 S	6 ch x 2*	*Alpha numeric
%	8Dg x 4 S	4Dg x 4 S	4Dg x 4* 1 x 4 6 ch 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 ch x 2*	*Alpha numeric
CHK CHANGE	8Dg x 1		8Dg x 1*	*HALO
PLU TTL	8Dg x 1 S	4Dg x 1 S		
FS SALE	8Dg x 1	4Dg x 1		
FS CHANGE	8Dg x 1			
no sale		4Dg x 1		
validation		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 x 4	4Dg x 1 x 4	*	*Same descriptor with the general report.
CID	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	*	

(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

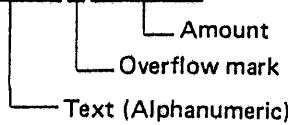
If any amount totalizer except GTs which is printed on X or Z reports has overflowed, two exclamation marks are printed for each totalizer on the report.

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) AAAAAAA!!\$12345.67
- 2) BBBB!!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	• Department expandable up to 30 depts.
3	Key kit (1 x 2 size) x 30 pcs.	ER-12KT2	—	○		• Flexible key layout
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	—	—	#906-C	
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
	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
	% (%1 - %4)	903	231, 234, 235
	PO		130
	PGM1		230, 232, 234
	PERIODIC REPORT	902	280
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 DOE #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	#0950
000A#0000 000000	
#0900	1 DPT.01 KEY16
901# 0010	2 DPT.02 KEY17
902# 0000	3 DPT.03 KEY18
903# 5002	4 DPT.04 KEY19
904# 0200	5 DPT.05 KEY20
905# 3000	6 DPT.06 KEY26
906# 0000	7 DPT.07 KEY27
910# Z1 0000	8 DPT.08 KEY28
911# Z2 0000	9 DPT.09 KEY19
912# Z2 0000	10 DPT.10 KEY30
913# Z1 0000	11 DPT.11 --
914# Z1 0000	12 DPT.12 --
915# Z1 0000	13 DPT.13 --
920#	14 DPT.14 --
921#	15 DPT.15 --
GT1	16 DPT.16 --
\$0000000000.00	17 DPT.17 --
922#	18 DPT.18 --
923#	19 DPT.19 --
GT2	20 DPT.20 --
\$0000000000.00	21 DPT.21 --
GT3	22 DPT.22 --
\$0000000000.00	23 DPT.23 --
930# 0000	24 DPT.24 --
	25 DPT.25 --
	26 DPT.26 --
	27 DPT.27 --
	28 DPT.28 --
	29 DPT.29 --
	30 DPT.30 --

7-4. Service Mode Programming (SRV1 mode)

All programming procedures have the following key entry sequence:

Numeric entry (N)

xxx → **[]** → **#/SBTL** → **A B C D** → **CA/AT/NS**

(JOB CODE #)

(Max. 4 digits)

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.

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

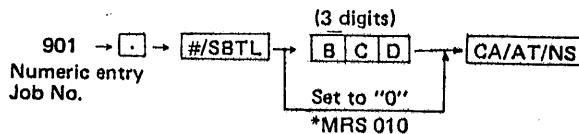
930 Secret code for PGM2 mode

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.

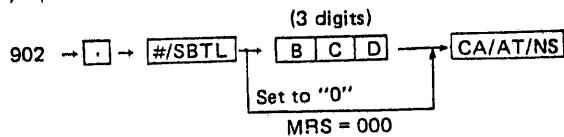
#901-C, D: Number of departments

NUMBER OF DEPARTMENTS	KEY ENTRY
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
9	09
28	28
29	29
30	30

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

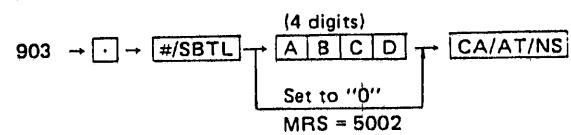
#902-D

1. Enable or disable periodic (Monthly total) report in the X2/Z2 mode.
2. Enable or 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

Example of regist.	*0.03@ 30% = *0.00 (9)	*0.03@ 10% = *0.00 (3)
Result		
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
Enable	Lock & One shot	Enable	2
		Inhibit	3
Enable	All lock	Enable	4
		Inhibit	5
Enable	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.

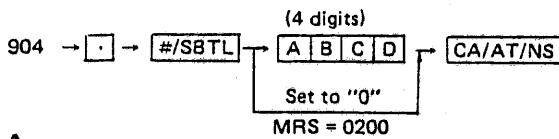
3. Enable or inhibit No sale function.

#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.

(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

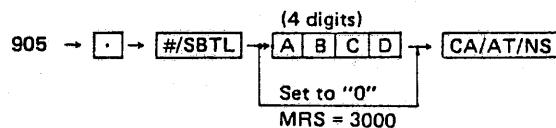
#904-D

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

1. Total tax amount are printed on X, Z reports or skipped.
2. Gross manual tax and refund manual tax are printed on X, Z reports or skipped.
3. 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. / Date

Consecutive No.: 000#0013 A CASH \$1.23

*SKIP: Merchandise subtotal amount is displayed by depressing **MDSE** key but not printed.

#905-D

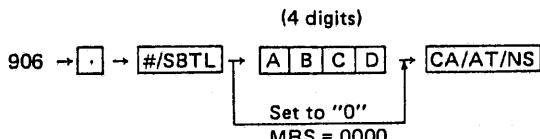
1. Date format: Day-Month-Year or Month-Day-Year
2. Amount leading symbol: * or \$.

(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

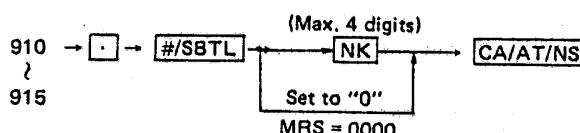
Logo message format	KEY ENTRY
No logo message (logo stamp only)	SMPL 1*
3 line logo message instead of stamp	SMPL 2*
Logo stamp and 3 line header message	SMPL 3*
Six line header message instead of stamp	SMPL 4*
Logo stamp and 3 line footer	SMPL 5*
3 line header, 3 line footer and stamp	SMPL 6*
Logo stamp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

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

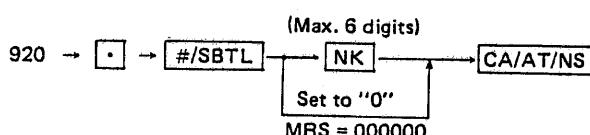
914: PLU report

915: Cashier report

[JOB CODE #920]

GT1 upper 6 digits setting

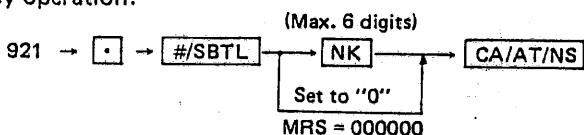
Key operation:



[JOB CODE #921]

GT1 lower 6 digits setting

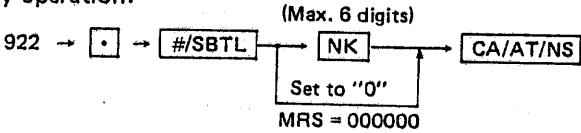
Key operation:



[JOB CODE #922]

GT2 upper 6 digits setting

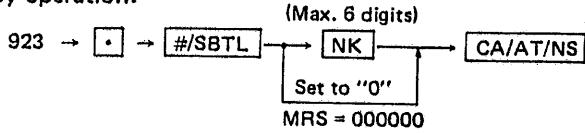
Key operation:



[JOB CODE #923]

GT2 lower 6 digits setting

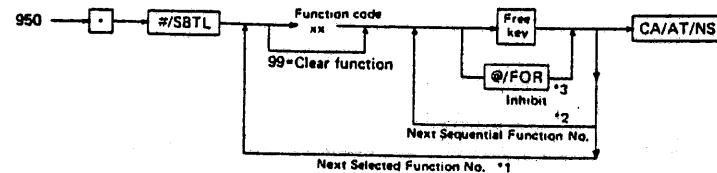
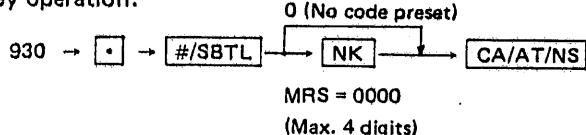
Key operation:



[JOB CODE #930]

Secret code for PGM2 mode.

Key operation:



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	Function Code	Free Key Function Name
1 ~ 30	DEPARTMENTS	65	%3
51	PLU/SUB	66	%4
52	CASH 2	67	(-) 1
53	CHARGE 1	68	(-) 2
54	CHARGE 2	69	TAX SHIFT 1
55	CHARGE 3	70	TAX SHIFT 2
56	CHARGE 4	71	TAX (MANUAL TAX)
57	CHARGE 5	72	RA
58	CHECK	73	PO
59	MDSE SBTL	74	F.S. SHIFT
60	TRAY TOTAL	75	F.S. TEND./ST
61	VOID	76	PRINT
62	REFUND	77	RECEIPT
63	%1	99	OPEN
64	%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 51 keys to be uniquely defined.

[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.

FREE KEY AREA

(NOTE)

1. Numbers 1 thru 3 are assigned to three positions respectively, and numbers 4, 5, 26 thru 29 to two positions respectively.

2. The hatched area is reserved for fixed key positions.

RECEIPT
OFF ON

CLERK
A B D E

1	1	49	50	51
receipt	jouranl			

NOTE: The function code is indicated in the display.

1-51: Free keys (Free key position No.)

5	10
4	9
3	8
2	7
1	6

Fig. 1

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

(4) Key assignment procedure

- (1) The preparation for entry involves completing the attached form and placing the desired keys on the key board.
- (2) ID (identification) of the first function to be assigned to a key according to "The function code for the free key function name LIST".
- (3) Department assignments are allowed only to the maximum number specified in JOB CODE #901.
- (4) 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.
- (5) 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.

(6) The @/FOR key is used to inhibit the function and update the ID number to the next one.

(7) Up date to the next sequential function ID is handled by the machine.

(8) 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.

(9) 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 (UKOG-6635RCZZ, UKOG-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

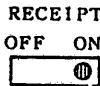
00/00/00 12:36AM
000A#0005

#0950

1 DPT.01 KEY11
2 DPT.02 KEY12
3 DPT.03 KEY13
4 DPT.04 KEY14
5 DPT.05 KEY15
6 DPT.06 KEY16
7 DPT.07 KEY17
8 DPT.08 KEY18
9 DPT.09 KEY19
10 DPT.10 KEY20
11 DPT.11 KEY21
12 DPT.12 KEY22
13 DPT.13 KEY23
14 DPT.14 KEY24
15 DPT.15 KEY25
16 DPT.16 KEY26
17 DPT.17 KEY27
18 DPT.18 KEY28
19 DPT.19 KEY29
20 DPT.20 KEY30
21 DPT.21 KEY31
22 DPT.22 KEY32
23 DPT.23 KEY33
24 DPT.24 KEY34
25 DPT.25 KEY35

Function code	Function name	Free key position No.
26	DPT.26 KEY36	
27	DPT.27 KEY37	
28	DPT.28 KEY38	
29	DPT.29 KEY39	
30	DPT.30 KEY40	
51	PLU KEY02	
52	CASH2 --	
53	CH1 KEY44	
54	CH2 KEY47	
55	CH3 --	
56	CH4 --	
57	CH5 --	
58	CHECK KEY43	
59	ST KEY46	
60	TTL KEY42	
61	VOID KEY06	
62	RFND KEY01	
63	11 KEY45	
64	12 KEY48	
65	13 --	
66	14 --	
67	(-)1 KEY03	
68	(-)2 KEY08	
69	TX S1 KEY04	
70	TX S2 --	
71	MTAX KEY09	
72	***R/A KEY05	
73	***P/D KEY10	
74	FS SFT --	
75	FS TND --	
76	PR INT KEY51	
77	RCPT KEY50	

(2) Key assignments Sample

RECEIPT
OFF ONCLERK
A B C D

↑	↑		RCPT	PRINT
RECEIPT	JOURNAL			

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

RA	PO
TAXI 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

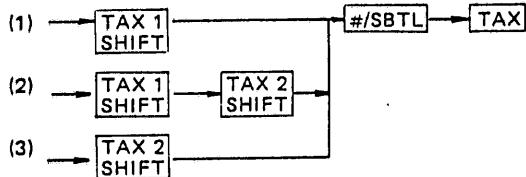
NOTE: Rounding procedure depends on programming in JOB #903A.

- 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)

xxx → [] → #/SBTL → (DATA) → CA/AT/NS
(JOB CODE) #

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/Vendor coupon selection
- 140 Cashier name
- 240 Tax tables.
- 241 % tax rate.
- 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
- 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.

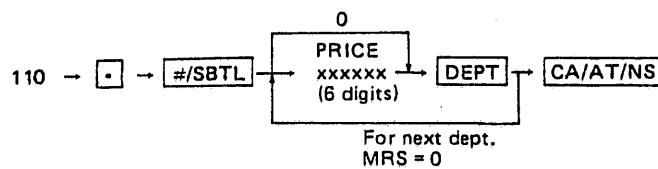
The jobs which have 200 level code numbers may be programmed in the PGM2 mode only.

8-2. Programming

[JOB CODE #110]

DEPARTMENT PRICE PRESET

Up to 6 digits (\$9999.99)

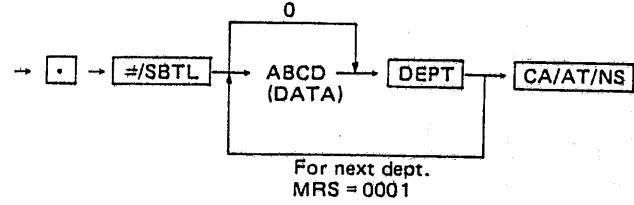


JOB CODE #210]

DEPARTMENT FUNCTIONS - 1

Hash/Normal	= 1/0
Validation enforced. /Optional.	= 1/0
Single item finalize./Single item sale./Normal.	= 2/1/0
Open & preset./Preset./Open./Inhibit	= 3/2/1/0
	*2

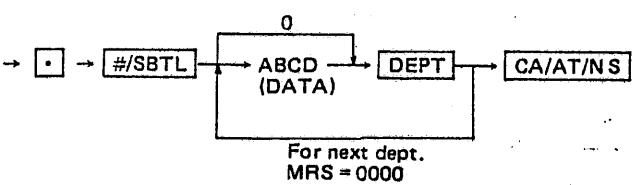
1. The "enforced" is effective only when the validation print counter has been preset to a number (1-9, JOB #255) other than zero.
2. If you select "Inhibit", the dept. item is print skipped on X/Z report.



JOB CODE #211]

DEPARTMENT FUNCTIONS - 2

-.+/ sign	= 1/0
Food stampable./Not.	= 1/0
Taxable 2./Not.	= 1/0
Taxable 1./Not.	= 1/0

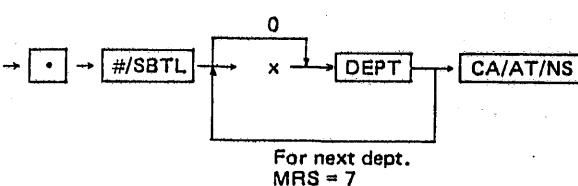


JOB CODE #212]

DEPARTMENT FUNCTIONS - 3

PLU digits (x) = 0 - 7

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



JOB CODE #213]

DEPARTMENT FUNCTIONS - 4

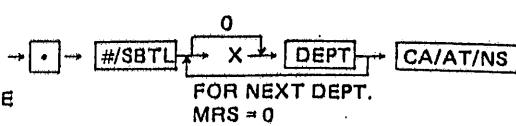
PLU (Sub total) PRINT ON THE GENERAL REPORT

Regular department

Extra one line feeding

Add to the special sub-total

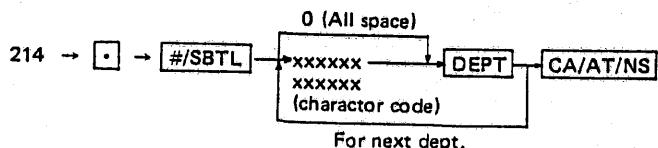
Print the special sub-total



[JOB CODE #214]

DEPARTMENT LABEL ASSIGNMENTS

(6 characters)



For next dept.

MRS = DPT. xx

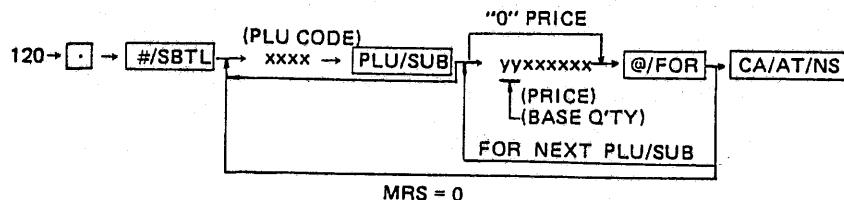
* Up to 12 digits; even digit entry only.

[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: xxxxxxx
- 2 digits for split base quantity: yy



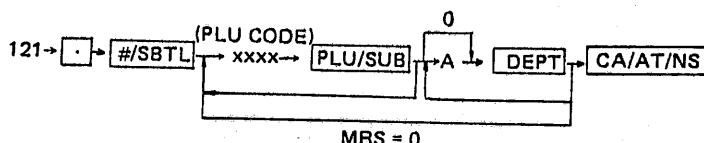
[JOB CODE #121]

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.

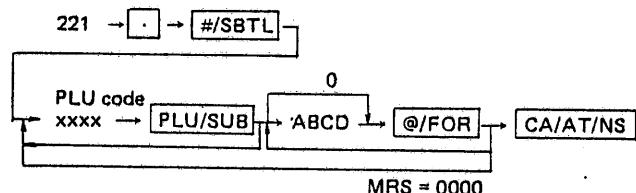


[JOB CODE #221]

PLU PROGRAMMING - 2

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

- .+/ sign = 1/0
- Food stampable/Not. = 1/0
- Taxable 2./Not. = 1/0
- Taxable 1./Not. = 1/0

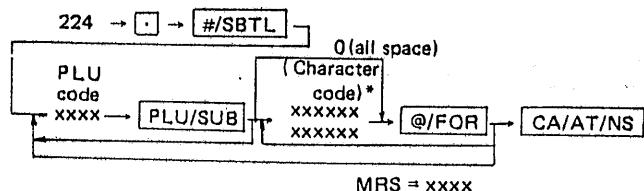


[JOB CODE #224]

PLU/SUB LABEL ASSIGNMENTS

(6 characters)

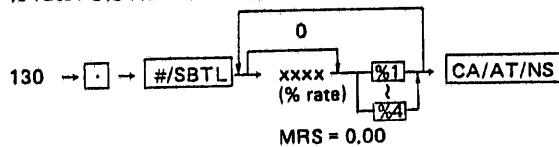
(The PLU number must have been preset by JOB #121)



[JOB CODE #130]

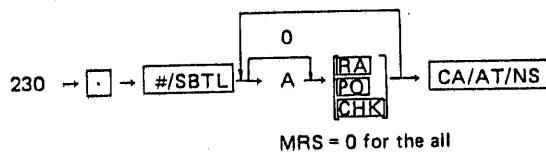
% RATE PROGRAMMING FOR %1 AND %4

% rate: 0.01% - 99.99%

**[JOB CODE #230]**

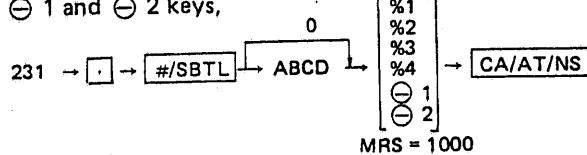
MISC. KEYS PROGRAMMING - 1

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]**

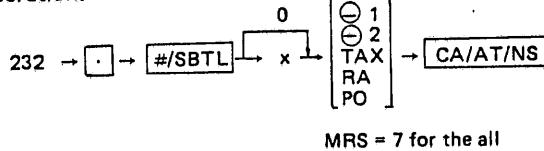
MISC. KEYS PROGRAMMING - 2

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 and ⊖ 2 keys, = 1/0

**[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.

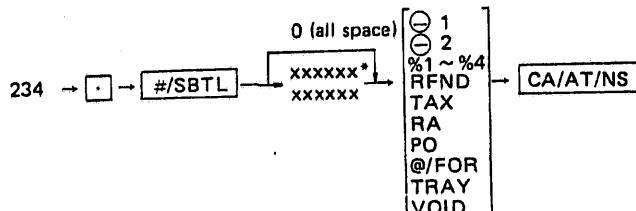
**[JOB CODE #234]**

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.

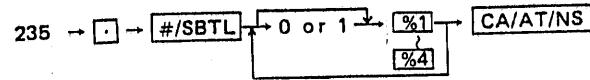
[JOB CODE #235]

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

0: %SBTL

1: %ITEM

(PROGRAMMING PROCEDURE)

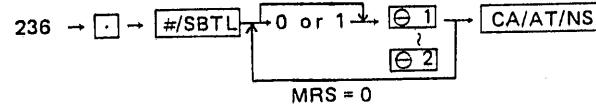
**[JOB CODE #236]**

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

0: Vender

1: Store

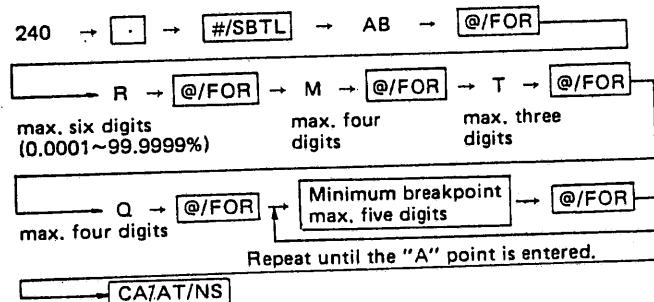
(PROGRAMMING PROCEDURE)

**[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(d)	
.00	.01	.10	—	Non-cyclic
.01←T	.11←Q	.22	10	
.02	.23	.38	12	
.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	
.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	
				Cyclic (II)
				Cyclic (III)

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. 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 shown above as tax table 1.

Key operation

2 4 0	•	#SBTL
1	@/FOR	
R→	6 0 0 0 0	@/FOR
M→	1 0 0	@/FOR
T→	1	@/FOR
Q→	1 1	@/FOR
	2 3	@/FOR
	3 9	@/FOR
The first cyclic portion	5 7	@/FOR
	7 3	@/FOR
	8 9	@/FOR
"A" point →	1 1 1	@/FOR
		CA/AT/NS

JOB CODE #241]

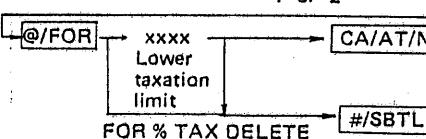
% TAX RATE

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

241 → [] → #/SBTL → A → @/FOR → xxxxxx → (% TAX RATE)*



* No decimal point key is required.

JOB CODE #145]

ASHIER NAME PRESET

x characters for each of four cashiers

145 → [] → #/SBTL → 1 → 4 → z → @/FOR → for the next number → all space → x → #/SBTL → chara code → CA/AT/NS

MRS: all space

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)

250 → [] → #/SBTL → xxxxxx → CA/AT/NS
MRS = 0

[JOB CODE #251]

TIME

Enter the time in 24-hour format.

1 AM = 100 1 PM = 1300
0

251 → [] → #/SBTL → xxxx → CA/AT/NS
MRS = 0

[JOB CODE #252]

MACHINE NUMBER

3 digits

252 → [] → #/SBTL → 0 → xxx → CA/AT/NS
MRS = 0

[JOB CODE #253]

CONSECUTIVE NUMBER

4 digits

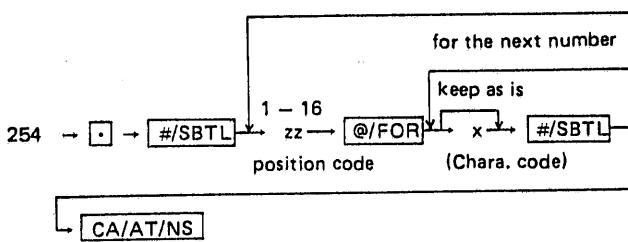
253 → [] → #/SBTL → 0 → xxxx → CA/AT/NS
MRS = 0

[JOB CODE #254]

LOGO MESSAGE

6 characters for 16 blocks

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



MRS: all space

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.

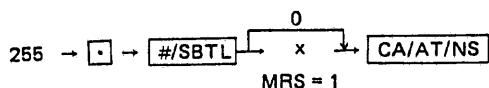
[JOB CODE #255]

LIMIT ON THE NUMBER OF TIMES OF VALIDATION

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

(PROGRAMMING PROCEDURE)

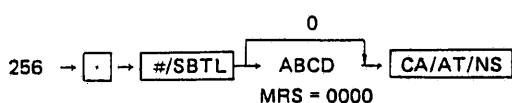
The "x" stands for validation times.



[JOB CODE #256]

OPTIONAL FEATURE SELECTION

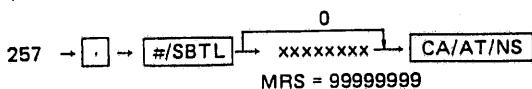
A. "CLK X/Z" mode inhibited./Exists. = 1/0
 B. Inhibit past item void in REG. mode./Not. = 1/0
 C. Inhibit refund in REG. mode./Not. = 1/0
 D. Journal select./Full print. = 1/0



[JOB CODE #257]

SENTINEL AMOUNT SETTING

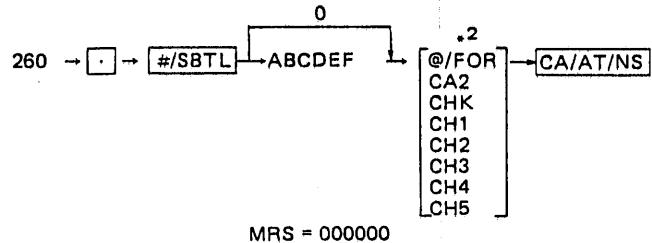
\$ 0.00 - \$999999.99 (Up to 8 digits)



[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.

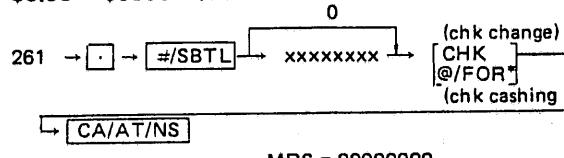
*⁴ House charge or new balance key type function will be selected.

[JOB CODE #261]

MEDIA KEYS PROGRAMMING - 2

HIGH AMOUNT LIMITATION FOR CHECK CHANGE AND CHECK CASHING

\$0.00 - \$999999.99



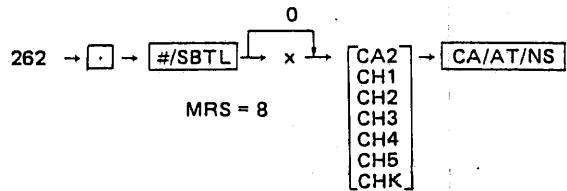
[JOB CODE #262]

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]

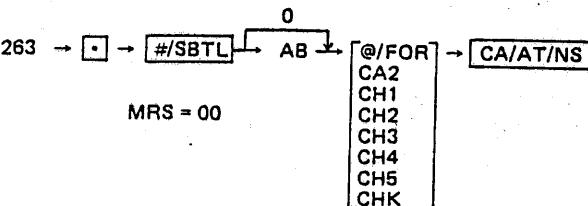
MEDIA KEYS PROGRAMMING - 4

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



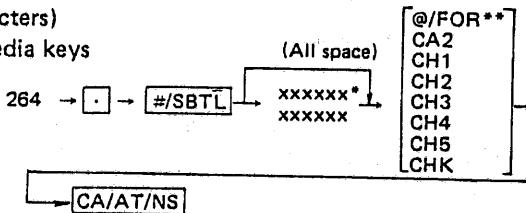
@/FOR key is used for CA1 (i.e. CA/AT/NS) key programming.

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]

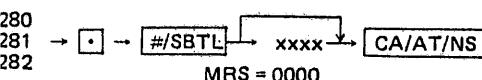
cret code (4 digits) for

M1 mode: #280

(X1/Z1 mode): #281

(X2/Z1 mode): #282

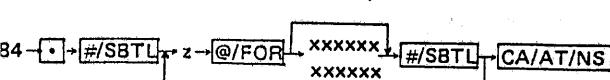
0 (no code preset)



JOB CODE #284]

SC. TEXT ASSIGNMENTS

(characters)



NOTE):

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

: Taxable sub-total 1 (MRS = TX1 ST)

: Tax 1 corrected (MRS = TAX 1)

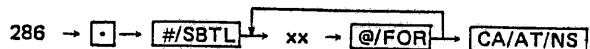
: Taxable sub-total 2 (MRS = TX2 ST)

: 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										
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

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

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

LIST OF PROGRAM READING

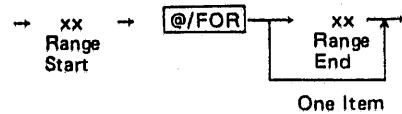
xx → **#[SBTL]** → (Report Range)*1 → **CA/AT/NS***2
 JOB CODE #

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

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.

[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 presets (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 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	— preset D.	211
3	⊖ 1 — ⊖ 2	⊖ 1, ⊖ 2 keys	950
4	%1 — %4	%1 — 4 keys	950
5	VOID 1	VOID key	950
6	VOID2 & VOID 3	2Q, 2T VOID mode	902A
7	REFUND	REFUND key	950
8	VAL. P. counter	PRINT key	950
9	CA2	CASH 2 key	950
10	PO	PO key	950
11	RA	RA key	950
12	CH1 — CH5	CH1 — 5 keys	950
13	CHK	CHK key	950
14	No Sale counter	NS function	903D
15	VD (H) & RF (H)	2Q, 2T HASH	901
16	Hash Dept. TTL	Hash Dept.	210
17	Hash — Dept. TTL	Hash — Dept.	210 & 211
18	CA/CHK	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.

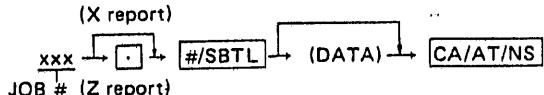
10. READING & RESETTING MODES (CLK X/Z, X1/Z1, X2/Z2)

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:



JOB # (Z report)

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
KEY	Food stamp tender	1
	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