OPERATING INSTRUCTIONS

ELECTRONIC CALCULATOR

RICOMAC

1210P

RICOH

RICOH COMPANY LTD.

CONTENTS

TO OUR CUSTOMERS 1

1. CAUTIONS 2
2. PRINTING MECHANISM 4
3. KEYBOARD 6
4. EXPLANATION 7
5. FEATURES 8
6. SPECIAL FUNCTIONS 9

○ UNDERFLOW ○ AUTOMATIC PAPER ADVANCE ○ ITEM COUNTER

○ REMAINDER AND CONSTANT CALCULATION ○ AUTOMATIC DATA CLEARING

7. OPERATING EXAMPLES 11

1) ADDITION AND SUBTRACTION 11
2) MULTIPLICATION 11
3) DIVISION 12
4) MIXED CALCULATION (1) 12
5) POWER CALCULATION 13
6) ACCUMULATIVE MULTIPLICATION AND DIVISION 13
7) PERCENTAGE CALCULATION 14
8) DISCOUNT CALCULATION 14
9) ADD-ON CALCULATION 14
10) MIXED CALCULATION (2) 15
11) DIVISION AND REMAINDER 15
12) RECIPROCAL CALCULATION 16
13) MIXED CONSTANT MULTIPLICATION 16
14) MEAN VALUE CALCULATION 17
15) PERCENTAGE DISTRIBUTION 17
16) CORRECTION OF ERRONEOUS KEY TOUCH 18
17) KEY OPERATION AND COUNTER 19

8. SPECIFICATIONS 20

BM mark is given to the electronic desk top calculator that stands the quality recognition test instituted by Japan Business Machine Makers Association.

TO OUR CUSTOMERS

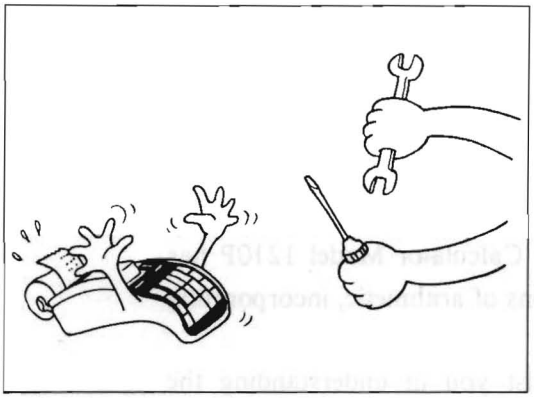
Your RICOMAC Electronic Printing Calculator Model 1210P has been designed to fulfill the five functions of arithmetic, incorporating constant and memory.

This Operating Instructions will assist you in understanding the various function keys, and the operation of the calculator.

Some practice examples have been included to enable you to gain both confidence and proficiency in the use of the calculator.

If you should ever need further advice in relation to your own particular figure work, please, contact our authorized dealer or branch.

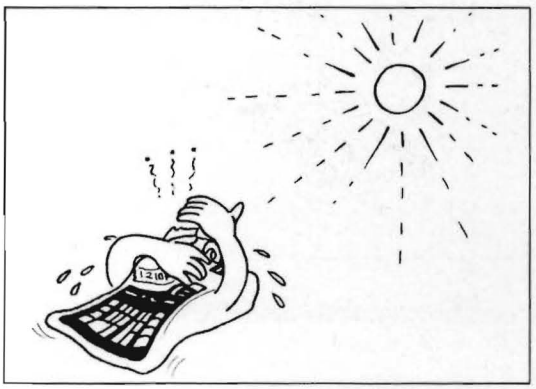
1. CAUTIONS



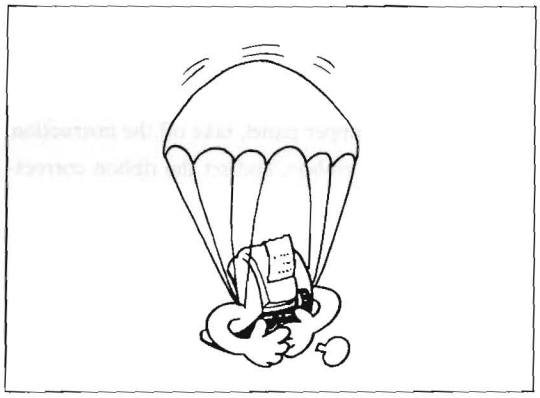
1. Never disassemble the RICOMAC 1210P.

2. Keep the RICOMAC 1210P from water and chemicals.
   Make sure your hands are dry before using the RICOMAC 1210P.

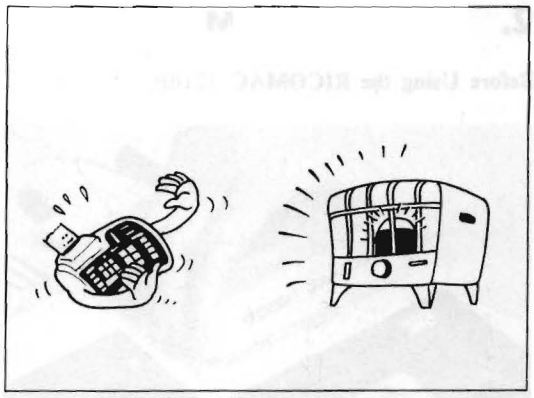
3. Operate the keys certainly, and yet do not give excessive impacts to them.



4. Do not use or leave the RICOMAC 1210P at a place subject to much dust or direct sunlight for a duration of hours.



5. Do not drop the RICOMAC 1210P. Do not shade it hard either.



6. Do not use RICOMAC 1210P near heat-generating equipment, a TV set or a radio.

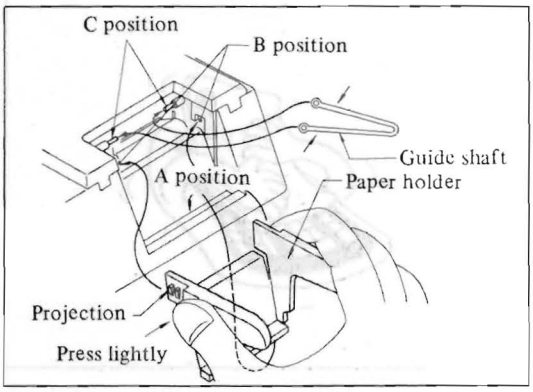
7. Be sure to supply power of the rated voltage.

8. For cleaning the RICOMAC 1210P, use the accessory silicon cloth. Do not use the cloth as dampened with water or chemicals.

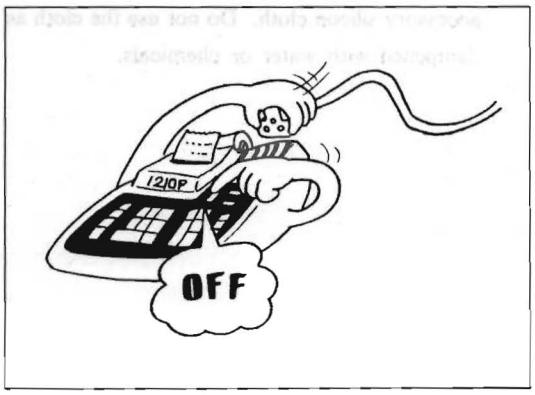
2. PRINTING MECHANISM

Before Using the RICOMAC 1210P

1. Remove the upper panel, take off the instruction tag from the ribbon, and set the ribbon correctly.

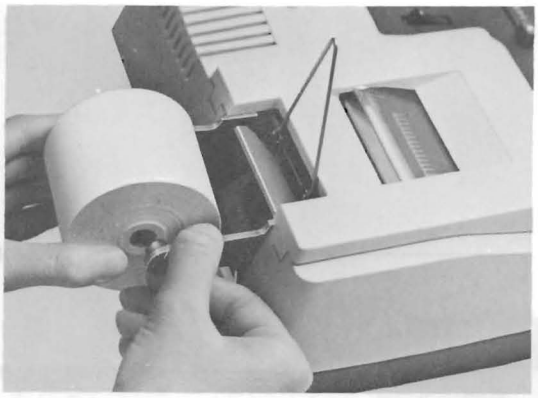


2. Pressing the upper part of the paper holder lightly, insert the lower part into A position, so that the projection on each side of the paper holder may snap precisely into B position. Nipping the guide shaft with your fingers, put it between position C right and left.



3. Check that the power switch is OFF, and then connect the accessory power cord.

How To Set Roll Paper



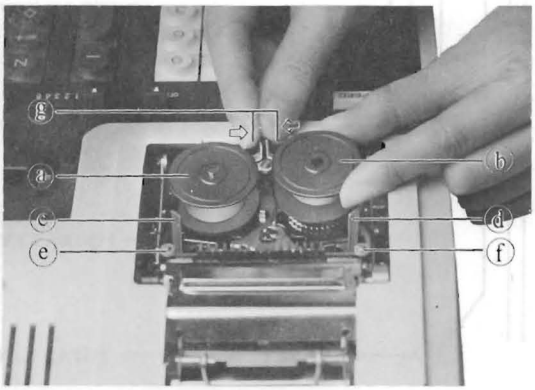
1. After placing paper holder on the machine, insert paper roll in the holder.

2.

(a) Turn on the power switch.

(b) Insert paper into the inlet above the paper tension guide, and depress [FEED] key to advance the paper until paper extends beyond plastic tear-off knife.

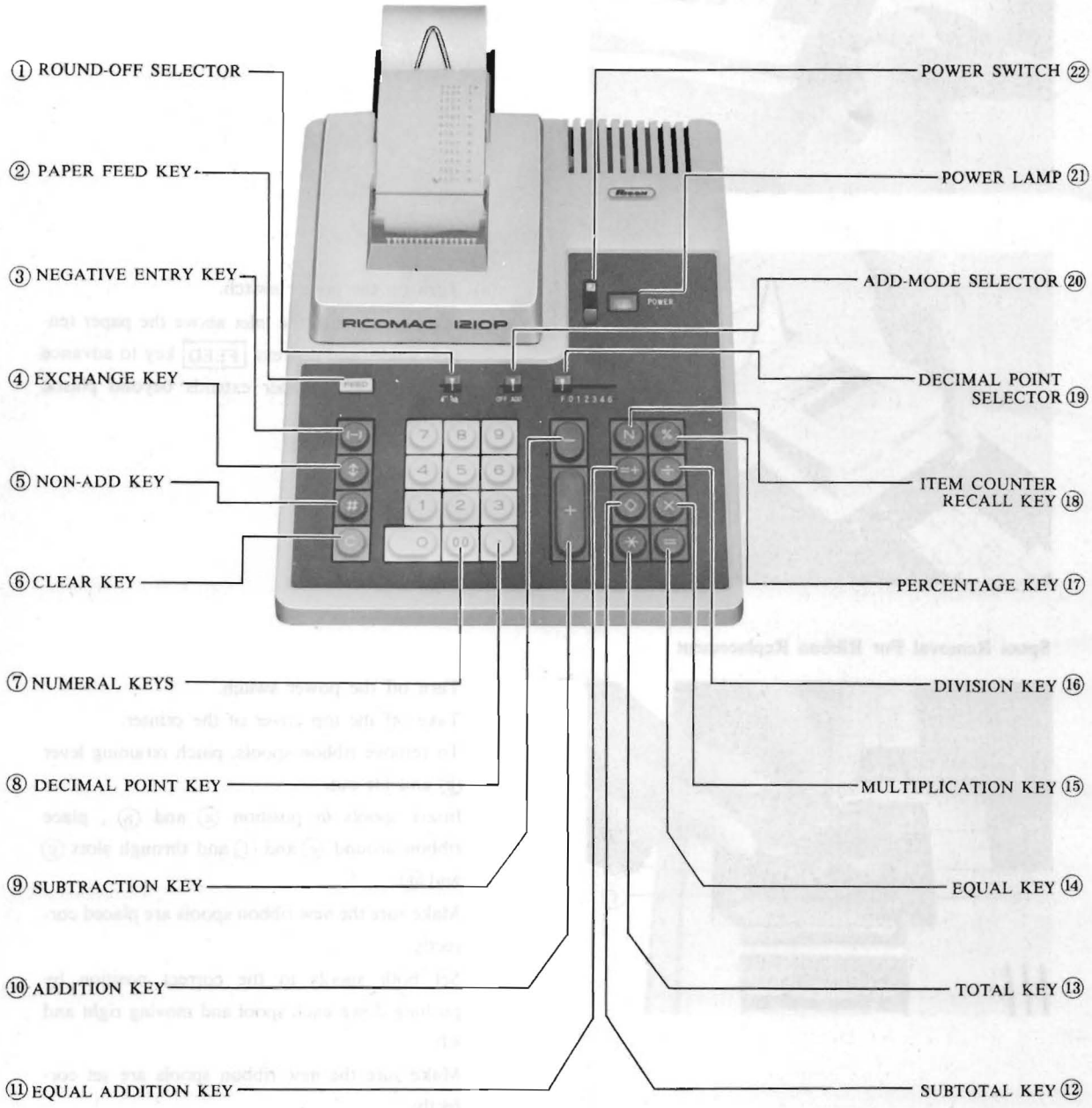
Spool Removal For Ribbon Replacement



1. Turn off the power switch.
   Take off the top cover of the printer.
2. To remove ribbon spools, pinch retaining lever ⓖ and lift out.
3. Insert spools in position ⓐ and ⓑ , place ribbon around ⓔ and ⓕ and through slots ⓒ and ⓓ.
4. Make sure the new ribbon spools are placed correctly.
5. Set both spools to the correct position by pushing down each spool and moving right and left.
6. Make sure the new ribbon spools are set correctly.

After using the RICOMAC 1210P, turn off the power switch, and put on the dust cover.

3. KEYBOARD


① ROUND-OFF SELECTOR
② PAPER FEED KEY
③ NEGATIVE ENTRY KEY
④ EXCHANGE KEY
⑤ NON-ADD KEY
⑥ CLEAR KEY
⑦ NUMERAL KEYS
⑧ DECIMAL POINT KEY
⑨ SUBTRACTION KEY
⑩ ADDITION KEY
⑪ EQUAL ADDITION KEY
POWER SWITCH ㉒
POWER LAMP ㉑
ADD-MODE SELECTOR ⑳
DECIMAL POINT SELECTOR ⑲
ITEM COUNTER RECALL KEY ⑱
PERCENTAGE KEY ⑰
DIVISION KEY ⑯
MULTIPLICATION KEY ⑮
EQUAL KEY ⑭
TOTAL KEY ⑬
SUBTOTAL KEY ⑫
RICOMAC 1210P
POWER

4. EXPLANATION

(See keyboard picture on page 6)

1. ▼ 5/4 ROUND-OFF SELECTOR
   a. ↓ Truncate or drop-off position
   b. 5/4 Round-off
2. FEED PAPER FEED KEY
   This key advances the paper.
3. ⊖ NEGATIVE ENTRY KEY
   When negative numbers are to be entered, this key must be depressed to give negative sign to entry.
4. ↕ EXCHANGE KEY
   Permits reciprocal calculation and helps to check previous entry or result.
5. # NON-ADD KEY
   Prints numbers such as dates, slip numbers etc.
6. C CLEAR KEY
   A) When this key is depressed after a entry, the first depression will clear the entry and the second depression will clear everything except memory and item counter.
   B) When this key is depressed after the function key is depressed, everything except memory and item counter will be cleared.
7. 0 ~ 9, 00 NUMERAL KEYS
8. • DECIMAL POINT KEY
9. − SUBTRACTION KEY
10. + ADDITION KEY
11. =+ EQUAL ADDITION KEY
    To add the result of multiplication or division to the memory.
12. ◇ SUBTOTAL KEY
13. ✱ TOTAL KEY
14. = EQUAL KEY
15. × MULTIPLICATION KEY
16. ÷ DIVISION KEY
17. % PERCENTAGE KEY
18. N ITEM COUNTER RECALL KEY
    Contents of the item counter are printed.
19. F ▼0 1 2 3 4 6 DECIMAL POINT SELECTOR
    a. F..... Floating
    b. 0 1 2 3 4 6 ..... Fixed decimal or Add mode
20. ▼OFF ADD ADD-MODE SELECTOR
    a. ADD Add mode
    b. OFF Fixed decimal
21. POWER POWER LAMP
22. POWER SWITCH

5. FEATURES

○ Utmost reliable due to R-LSIs.

○ The printer of new Ricoh development prints as fast as 2.7 lines/sec.

○ Completely noiseless start and stop, except printing.

○ For additions and subtractions, the adder system is used; repeat calculations are feasible as well.
For multiplications and divisions, key operations are in the same sequence as the mathematic expressions.

○ A buffer register is contained for preventing possible overflow and erroneous calculation due to hasty key operations, and for accelerating continuous calculations.

○ The percentage key simplifies percent, add-on and discount calculations.

○ A non-add key is provided for the convenience of printing dates and numbers.

○ An automatic constant system which makes an operand the constant automatically is incorporated for constant calculations.

○ Automatic 3-digit punctuation for easy reading.

○ Zero suppression for not printing unnecessary zeros.

○ Equal and round-off symbols for easy identification of exact and rounded answers.

○ Two-key rollover system for normal performance even when a key is pushed before release of the preceding key.

○ Double-zero key for faster zero inputs

○ Item counter start check function, printing a "△" symbol.

○ One-, two-, three-, four- and six-digit designated add-mode calculation functions

○ Multiplications and divisions may be continuous even if additions and subtractions are interposed. (For examples, see Item 10) Mixed Calculation (2))

6. SPECIAL FUNCTIONS

RICOMAC 1210P has the following special functions.

○ **UNDERFLOW**

When the result of an operation exceeds 12 digits, the decimal point (if it is in the result) automatically shifts toward the right, bringing the entire print with it toward the right.

Thus, such an excess does not result in ERROR.

EXAMPLE:

Problem	Instruct	Entry on Keyboard	Touch	Printing
12345679 × 18	DEC 6 OFF ↓	1 2 3 4 5 6 7 9 1 8	× =	1 2,3 4 5,6 7 9 • × 1 8 • = 2 2 2,2 2 2,2 2 2 • 0 0 0

○ **AUTOMATIC PAPER ADVANCE**

a) During printing, the paper automatically advances for line spacing (single) after each printed line.

b) If #, C, =, =+ or % key has been pressed, each line printing results in a double-line-spacing advance of the paper.

c) If ✱ key has been pressed, the printing results in a five-line-spacing advance of the paper.

○ **ITEM COUNTER**

A 3-digit counter function is provided, and printing is made by means of N key.

The counter counts the number of depressions of +, − and =+

Pressing ✱ key causes the counter to stop, holding the count at that time. By next pressing +, − and =+ keys, ITEM COUNTER is cleared for re-starting counting. At this time, item counter start mark "△" is printed.

At the count next to "999", "0" is resumed.

○ **REMAINDER AND CONSTANT CALCULATION**

If DECIMAL POINT SELECTOR has been set to 0, 1, 2, 3, 4 or 6, the constant calculation or remainder calculation is selectable by using ROUND-OFF SELECTOR.

EXAMPLES:

Problem			REMAINDER CALCULATION	CONSTANT CALCULATION
ROUND-OFF SELECTOR			↓	5/4
DEC 2 OFF	10 3	÷ =	1 0 • ÷ 3 • = 3 • 3 3	1 0 • ÷ 3 • ≃ 3 • 3 3
		=	0 • 0 1 R	3 • 3 3 ÷ 3 • ≃ 1 • 1 1

NOTE: In case of floating decimal point (F), the remainder calculation takes place at all times.

○ AUTOMATIC DATA CLEARING

1) Automatic data clearing occurs when POWER SWITCH is turned on.
2) Automatic data clearing except the memory and item counter occurs when an error occurs during calculating operation.

When clearing occurs		Printing
a) Turning on POWER SWITCH		0 • C
b) Misentry of number		
F OFF ↓	1234567890123	E
	123456789012 ×	1 2 3,4 5 6,7 8 9,0 1 2 • ×
	2 =	2 • =
		2 4 6,9 1 3,5 7 8,0 2 4 •
c) Error in result		
F OFF ↓	4500 ×	4,5 0 0 • ×
	1234567900 =	1,2 3 4,5 6 7,9 0 0 • =
		5 • 5 5 5 5 5 5 5 5 0 0 0 E 12
	123456790 =	4,5 0 0 • ×
		1 2 3,4 5 6,7 9 0 • =
		5 5 5,5 5 5,5 5 5,0 0 0 •
d) Error in memory addition		
F OFF ↓	999999999999 +	9 9 9,9 9 9,9 9 9,9 9 9 • +
	5 +	E
	◊	9 9 9,9 9 9,9 9 9,9 9 9 • ◊

7. OPERATING EXAMPLES

1) ADDITION AND SUBTRACTION

Problem	Instruct	Entry on keyboard	Touch	Printing
321 + 789	DEC 0	3 2 1	+	3 2 1 • +
	OFF	7 8 9	+	7 8 9 • +
	↵		✱	1,1 1 0 • ✱
		(5-line Feed)		
1.2 + 5.1 − 9.63	DEC 2	1 • 2	+	1 • 2 0 +
	OFF	5 • 1	+	5 • 1 0 +
	↵	9 • 6 3	−	9 • 6 3 −
			✱	3 • 3 3 −✱
		(5-line Feed)		
REPEAT ADDITION & SUBTRACTION	F	1 2 3	+	1 2 3 • +
	OFF		+	1 2 3 • +
123 + 123 − 123 + 123	↵		−	1 2 3 • −
			+	1 2 3 • +
			✱	2 4 6 • ✱
		(5-line Feed)		

2) MULTIPLICATION

Problem	Instruct	Entry on keyboard	Touch	Printing
1.25 × 9.876	F	1 • 2 5	×	1 • 2 5 ×
	OFF	9 • 8 7 6	=	9 • 8 7 6 =
	↵			1 2 • 3 4 5
CHAIN MULTIPLICATION		9 • 5 3	×	9 • 5 3 ×
9.53 × 1.9 × 3		1 • 9	×	1 • 9 ×
		3	=	3 • =
				5 4 • 3 2 1
CONSTANT MULTIPLICATION		3 6	×	3 6 • ×
36 × 12		1 2	=	1 2 • =
				4 3 2 •
36 × 65				
36 × 96		6 5	=	3 6 • ×
				6 5 • =
NOTE:				2,3 4 0 •
First entry becomes constant.		9 6	=	3 6 • ×
				9 6 • =
				3,4 5 6 •

3) DIVISION

Problem	Instruct	Entry on keyboard	Touch	Printing
36.9 ÷ 7	DEC 6 OFF ↵	3 6 • 9 7	÷ =	3 6 • 9 ÷ 7 • = 5 • 2 7 1 4 2 8
	DEC 6 OFF 5/4	3 6 • 9 7	÷ =	3 6 • 9 ÷ 7 • ≃ 5 • 2 7 1 4 2 9
CHAIN DIVISION 123 ÷ 2.5 ÷ 9	F OFF ↵	1 2 3 2 • 5 9	÷ ÷ =	1 2 3 • ÷ 2 • 5 ÷ 9 • = 5 • 4 6 6 6 6 6 6 6 6 6 6
CONSTANT DIVISION 123 ÷ 16 456 ÷ 16 789 ÷ 16 NOTE: Second entry becomes constant.	DEC 4 OFF ↵	1 2 3 1 6 4 5 6 7 8 9	÷ = = =	1 2 3 • ÷ 1 6 • = 7 • 6 8 7 5 4 5 6 • ÷ 1 6 • = 2 8 • 5 0 0 0 7 8 9 • ÷ 1 6 • = 4 9 • 3 1 2 5

4) MIXED CALCULATION (1)

Problem	Instruct	Entry on keyboard	Touch	Printing
$\frac{147 \times 25.8 + 65.4 - 789}{3.2}$	F OFF ↵	1 4 7 2 5 • 8	× =+	1 4 7 • × 2 5 • 8 = 3, 7 9 2 • 6 +△
		6 5 • 4 7 8 9	+ −	6 5 • 4 + 7 8 9
			◇	3, 0 6 9 • ◇
			÷	3, 0 6 9 • ÷
		3 • 2	=	3 • 2 =
Answer				9 5 9 • 0 6 2 5
			✳	3, 0 6 9 • ✳
		(5-line Feed)		

5) POWER CALCULATION

Problem	Instruct	Entry on keyboard	Touch	Printing
17^4	DEC 0	1 7	×	17. ×
	OFF		=	17. =
	↓			289.
			=	17. ×
				289. =
				4,913.
			=	17. ×
				4,913. =
				83,521.

6) ACCUMULATIVE MULTIPLICATION AND DIVISION

Problem	Instruct	Entry on keyboard	Touch	Printing
$12 \times 34 \div 5$	DEC 2	1 2	×	12. ×
$+) 67 \times 13 \div 4$	OFF	3 4	÷	34. ÷
Subtotal 299.35	↓	5	=+	5. =
				81.60 +
$-) 34 \times 56 \div 7$				
Total 27.35		6 7	×	67. ×
		1 3	÷	13. ÷
		4	=+	4. =
				217.75 +
Subtotal	.....	.....	◇	299.35 ◇
		3 4	×	34. ×
		5 6	÷	56. ÷
		7	=	7. =
				272.00
			−	272.00 −
Total	.....	.....	✱	27.35 ✱

(5-line Feed)

7) PERCENTAGE CALCULATION

Problem	Instruct	Entry on keyboard	Touch	Printing
5% of 123	DEC 2	1 2 3	×	1 2 3 • ×
	OFF	5	%	5 • %
	↓			6 • 1 5
42		4 2	÷	4 2 • ÷
168		1 6 8	%	1 6 8 • %
				2 5 • 0 0

8) DISCOUNT CALCULATION

Problem	Instruct	Entry on keyboard	Touch	Printing
$5800 less 15%	DEC 2	5 8 00	×	5, 8 0 0 • ×
Discount	OFF	− 1 5	%	1 5 • − %
COST $5800	↓			8 7 0 • 0 0 −
DISCOUNT $ 870				
NET $4930			%	4, 9 3 0 • 0 0 =

9) ADD-ON CALCULATION

Problem	Instruct	Entry on keyboard	Touch	Printing
$5800 plus 5% Tax	DEC 2	5 8 00	×	5, 8 0 0 • ×
COST $5800	OFF	5	%	5 • %
TAX $ 290	↓			2 9 0 • 0 0
TOTAL $6090				
			%	6, 0 9 0 • 0 0 =

10) MIXED CALCULATION (2)

Problem	Instruct	Entry on keyboard	Touch	Printing	
$2.00 + $3.15 − 23¢	DEC 2	[.] [0] [5]	×	0.05	×
plus 5% tax	ADD	[2] [.]	+	2.00	+△
	↓	[3] [1] [5]	+	3.15	+
0.05 CONSTANT		[2] [3]	−	0.23	−
Subtotal			◇	4.92	◇
			=+	4.92	=
5% tax				0.24	+
Total			✱	5.16	✱
		(5-line Feed)			
$5.00 plus 5% tax		[5] [.]	+	5.00	+△
			=+	0.05	×
				5.00	=
				0.25	+
			✱	5.25	✱
		(5-line Feed)			
No. 1776.0704		[−] [1] [7] [7] [6] [.] [0] [7] [0] [4]	#	1776.0704	−#
$50.00 + $2.50		[5] [0] [.]	+	50.00	+△
− $3.75 + 50¢		[2] [5] [0]	+	2.50	+
− $3.00 − 25¢		[3] [7] [5]	−	3.75	−
plus 5% tax		[5] [0]	+	0.50	+
		[3] [.]	−	3.00	−
		[2] [5]	−	0.25	−
Number-of-items			N	6.	N
Check			◇	46.00	◇
			=+	0.05	×
				46.00	=
				2.30	+
			✱	48.30	✱
		(5-line Feed)			

11) DIVISION AND REMAINDER

Problem	Instruct	Entry on keyboard	Touch	Printing	
500 ÷ 12	DEC 0	[5] [00]	÷	500.	÷
	OFF	[1] [2]	=	12.	=
	↓			41.	
			=	8.	R

12) RECIPROCAL CALCULATION

Problem	Instruct	Entry on keyboard	Touch	Printing
$\frac{6}{23\times4+5}$	F	2 3	×	2 3 • ×
	OFF	4	=+	4 • =
	↓			9 2 • +△
		5	+	5 • +
			◇	9 7 • ◇
			÷	9 7 • ÷
		6	↕	6 • ↕
			=	9 7 • =
Answer				.....0 • 0 6 1 8 5 5 6 7 0 1
			✳	9 7 • ✳

(5-line Feed)

13) MIXED CONSTANT MULTIPLICATION

Problem	Instruct	Entry on keyboard	Touch	Printing
$4\times5\div6\times7$	DEC 2	4	×	4 • ×
$4\times5\div6\times(-9)$	OFF	5	÷	5 • ÷
$4\times5\div6\times17$	↓	6	×	6 • ×
		7	=	7 • =
				2 3 • 3 3
		− 9	=	3 • 3 3 3 3 3 3 3 3 3 3 3 ×
				9 • − =
				2 9 • 9 9 −
		1 7	=	3 • 3 3 3 3 3 3 3 3 3 3 3 ×
				1 7 • =
				5 6 • 6 6

14) MEAN VALUE CALCULATION

Problem	Instruct	Entry on keyboard	Touch	Printing
Samples	DEC 1	3 2 . 8	+	32.8 +△
32.8	OFF	2 8 . 2	+	28.2 +
28.2	5/4	3 3 . 3	+	33.3 +
33.3		3 4 . 1	+	34.1 +
34.1		3 1 . 3	+	31.3 +
31.3			◇	159.7 ◇
			÷	159.7 ÷
			N	5. N
			=	5. ≃
MEAN VALUE.....				31.9
			*	159.7 *

(5-line Feed)

15) PERCENTAGE DISTRIBUTION

Problem	Instruct	Entry on keyboard	Touch	Printing
321 = 20.50%	DEC 4	3 2 1	+	321.0000 +△
456 = 29.12%	OFF	4 5 6	+	456.0000 +
789 = 50.38%	5/4	7 8 9	+	789.0000 +
1566 = 100.00%			÷	789.0000 ÷
			◇	1,566.0000 ◇
			=	1,566.0000 ≃
				0.5038
		4 5 6	=	456. ÷
				1,566.0000 ≃
				0.2912
		3 2 1	=	321. ÷
				1,566.0000 ≃
				0.2050
			*	1,566.0000 *

(5-line Feed)

16) CORRECTION OF ERRONEOUS KEY TOUCH

Problem	Instruct	Entry on keyboard	Touch	Printing
123 × 456	F	1 2 3	×	1 2 3 • ×
	OFF	7 8 9	C	4 5 6 • =
	↓	4 5 6	=	5 6,0 8 8 •
123 × 456		1 2 3	÷	1 2 3 • ÷
			×	×
		4 5 6	=	4 5 6 • =
				5 6,0 8 8 •
123 ÷ 4		1 2 3	×	1 2 3 • ×
			÷	÷
		4	=	4 • =
				3 0 • 7 5

17) KEY OPERATION AND COUNTER

Problem	Instruct	Entry on keyboard	Touch	Printer	Counter
Power Switch ON	F			0 • C	0
	OFF				
	↓	2	×	2 • ×	0
Multiplication		3	÷	3 • ÷	0
and Division		4	=	4 • =	0
				1 • 5	0
			C	0 • C	0
			+	0 • +△	1
Addition,		1	+	1 • +	2
Subtraction		2	−	2 • −	3
and Equal		3	×	3 • ×	3
Addition		4	=+	4 • =	3
				1 2 • +	4
Subtotal			◇	1 1 • ◇	4
		− 5	+	5 • −+	5
Total			*	6 • *	5
		(5-line Feed)			
Mean Value			÷	6 • ÷	5
Calculation			N	5 • N	5
			=	5 • =	5
				1 • 2	5
Clear			C	0 • C	5
			N	5 • N	5
		6	−	6 • −△	1
		7	×	7 • ×	1
Percentage		8	%	8 • %	1
Calculation				0 • 5 6	1
			%	7 • 5 6 *	1
			*	6 • −*	1
		(5-line Feed)			
			N	1 • N	1

8. SPECIFICATIONS

1. CAPACITY

Entry:

12 digits

Addition and Subtraction:

12 digits ± 12 digits = 12 digits

Multiplication and Division:

12 digits $\frac{\times}{\div}$ 12 digits = 12 digits

Counter:

3 digits

2. DECIMAL POINT

Entry:

Floating

Intermediate Result:

Floating

Result:

Floating (F) and Fixed (0, 1, 2, 3, 4 and 6)

Add-mode (ADD):

Add-mode can be selected at any fixed decimal place.

3. PRINTING

Number of Print Characters:

16 (12 numerals, 1 decimal point, 1 negative sign and 2 symbols)

Speed:

2.7 lines per second

Paper:

Standard roll paper

Width ..... 57 mm (2-1/4″)

Diameter ..... 70 mm Max. (2-3/4″ Max.)

Ribbon:

2-color (Black and Red)

Width ..... 13 mm (1/2″)

Length ..... 6 m (19.7 ft)

4. AUTOMATIC FUNCTION

Automatic clearing, zero suppression, automatic paper advance and automatic 3-digit punctuation.

5. SERVICE TEMPERATURE AND HUMIDITY RANGES

0°C ~ 40°C (32°F ~ 104°F)

20% ~ 90%

6. STORAGE TEMPERATURE AND HUMIDITY RANGES

−20°C ~ 60°C (−4°F ~ 140°F)

10% ~ 90%

7. POWER SUPPLY

AC 115V, 125V, 220V, 240V 50/60 Hz

8. DIMENSIONS

300 mm (W) × 240 mm (D) × 96 mm (H)

[11-13/16″ (W) × 9-7/16″ (D) × 3-25/32″ (H)]

9. WEIGHT

4.1 kg (9 lbs)

10. POWER CONSUMPTION

17W

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