

OPERATION MANUAL

OPERATIONAL NOTES

- To insure trouble-free operation of your SHARP calculator, we recommend the following:
1. Keep the calculator away from extreme heat such as on a car dashboard or near a heater, and avoid exposing it to excessively humid or dusty environments.
 2. Clean with a soft, dry cloth. Do not use solvents or a wet cloth. Avoid using a rough cloth or anything else that may cause scratches.
 3. Since this product is not waterproof, do not use it or store it where fluids, for example water, can splash onto it. Raindrops, water spray, juice, coffee, steam, perspiration, etc. will also cause malfunction.
 4. If the battery for memory protection is not installed, the tax rate / discount and conversion rate will be lost when the power supply is turned off. The tax rate / discount and conversion rate will be deleted even if the battery for memory protection is removed.
 5. Do not wind the AC cord around the body or otherwise forcibly bend or twist it.
 6. Place the product near an easily accessible socket.
 7. If service should be required, use only a SHARP servicing dealer, a SHARP approved service facility or SHARP repair service.
 8. This product, including accessories, may change due to upgrading without prior notice.

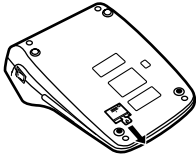
SHARP will not be liable nor responsible for any incidental or consequential economic or property damage caused by misuse and/or malfunctions of this product and its peripherals, unless such liability is acknowledged by law.

USING THE CALCULATOR FOR THE FIRST TIME

First, pull out the insulation sheet for the memory protection battery (installed for retaining the tax/discount rate and conversion rate information).

Removing the insulation sheet, and resetting

1. Pull out the insulation sheet for the memory protection battery.



2. Connect the power supply plug to an outlet, then press the RESET switch on the back of the unit after pressing the power on switch.

OPERATING CONTROLS

- POWER ON SWITCH:**
When the "I" side of the power on switch is pressed, the calculator is turned on.
- POWER OFF KEY:**
When the power off key is pressed, the calculator is turned off.
- PRINT / ITEM COUNT MODE SELECTOR:**
- *": Set to the non-print mode.
 - P: Set to the print mode.
 - P•IC: Set to the print and item count mode.
1. The counter will count the number of times that the [E] key has been pressed in addition.
Each time the [E] key is used in subtraction, 1 will be subtracted from the count.
• The count is printed when the calculated result is obtained.
• Pressing of the [C], [CE], [MC], [M+] or [M-] key clears the counter.
 2. When the grand total/rate setting mode selector is in the ON position (GT), the counter will count the number of times that the calculation results OPERATING CONTROLS have been stored in the grand total memory. To print and clear the count, press the [GT] key.
3. The memory item counter will count the number of times that the [M+] key has been pressed in the addition.
Note:
• Each time the [M+] key is used in the subtraction, 1 will be subtracted from the count.
• The count is printed when the memory is recalled.
• Pressing of the [M+] key clears the counter.
Note:
The counter has a maximum capacity of 3 digits (up to ±999). If the count exceeds the maximum, the counter will recount from zero.

- DECIMAL SELECTOR:**
Presents the number of decimal places in the answer. In the "F" position, the answer is displayed in the floating decimal system.

- CONSTANT/ADD MODE SELECTOR:**
- "K": The following constant functions will be performed:
Multiplication: The calculator will automatically remember the first number entered (the multiplicand) and [X] instruction.
Division: The calculator will automatically remember the second number entered (the divisor) and [÷] instruction.

- *": Neutral.
"A": Use of the Add mode permits addition and subtraction of numbers without an entry of the decimal point. When the Add mode is activated, the decimal point is automatically positioned according to the decimal selector setting.
Use of [D], [X] and [÷] will automatically override the Add mode and decimally correct answers will be printed at the preset decimal position.

↑ 5/4 ↓

- ROUNDING SELECTOR:**
- ↑: An answer is rounded up.
 - 5/4: An answer is rounded off.
 - ↓: An answer is rounded down.
- Note:
• The decimal point floats during successive calculation by the use of [X] or [÷].
• If the decimal selector is set to "F" then the answer is always rounded down (↓).

- GRAND TOTAL / RATE SETTING MODE SELECTOR:**
- "GT": Grand Total.
 - "*": Neutral.
 - "RATE SET": To set the tax rate, set this switch at the "RATE SET" position.

- Tax rate:**
- Enter the adding tax rate, then press [TAX].
 - To store a discount rate, press [TAX] before pressing [M+].
 - A maximum of 4 digits can be stored (decimal point is not counted as a digit).
- Note:
• Be sure to set this selector to the "*" position after storing in each rate.
• Only one rate can be stored. If you enter a new rate, the previous rate will be cleared.

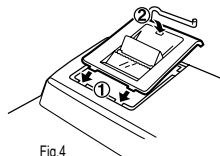
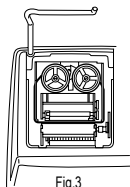
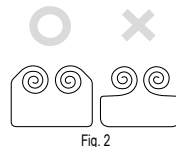
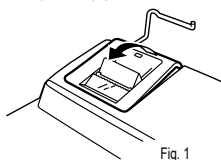
- [F]: **PAPER FEED KEY**
[C]: **LAST DIGIT CORRECTION KEY**
[GT]: **GRAND TOTAL KEY**
[CE]: **CLEAR ENTRY KEY**
[C]: **TOTAL KEY**
[±]: **CHANGE SIGN KEY**
[M+]: **MARKUP KEY**
[M-]: **MEMORY TOTAL CLEAR KEY**
[M+]/[M-]: **MEMORY SUBTOTAL RECALL KEY**
[TAX+]/[TAX-]: **MEMORY PLUS / MINUS KEY**
[%]: **TAX-INCLUDING / PRE-TAX KEY**
[%]: **PERCENT KEY**
[+]/[-]: **NON-ADD / SUBTOTAL KEY:**
Non-add: When this key is pressed right after an entry of a number in the Print mode, the entry is printed on the left-hand side with the symbol "#". This key is used to print out numbers not subjects to calculation such as code, date, etc.
Subtotal: Used to get subtotal(s) of additions and/or subtractions. When pressed following the [E] or [C] key, the subtotal is printed with the symbol "∑" and the calculation may be continued.
• By pressing this key even in the Non-print mode, the displayed number is printed without any symbol.
[AVG]: **AVERAGE KEY**

DISPLAY SYMBOLS

- M: Appears when a number is in the memory.
-: Appears when a number is negative.
E: Appears when an overflow or other error is detected.
•: Appears when a number is in the grand total memory.
• Although all available symbols are shown here for instruction purposes, these symbols will not appear on the screen simultaneously.

INK RIBBON REPLACEMENT

1. Remove the paper roll from the calculator. (Tear the paper and remove it from the print mechanism by using [F]).
2. Turn the power off before replacing ribbon.
3. Remove the printer cover. (Fig. 1)
4. Remove the old ribbon by pulling it up.
5. Insert the new ribbon.
6. With the black side of the ribbon facing upwards, place one of the reels on the reel shaft on the right. (Fig. 2) Make sure that the reel is securely in place.
7. Thread the ribbon around the outside of the metal guides. (Fig. 3)
8. Take up any slack by manually turning one of the reels.
9. Replace the printer cover. (Fig. 4)
10. Replace the paper roll.



PAPER ROLL REPLACEMENT

Never insert paper roll if torn. Doing so will cause paper to jam. Always cut leading edge with scissors first.

1. Insert the leading edge of the paper roll into the opening. (Fig. 1)
2. Turn the power on and feed the paper by pressing [F] (Fig. 2)
3. Lift the attached metal paper holder up and insert the paper roll to the paper holder. (Fig. 3)

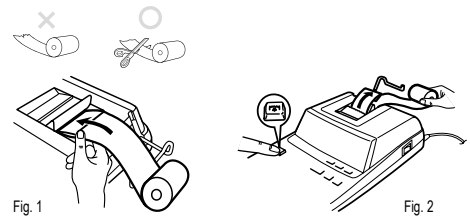


Fig. 1

Fig. 2

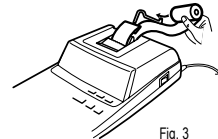


Fig. 3

DO NOT PULL PAPER BACKWARDS AS THIS MAY CAUSE DAMAGE TO PRINTING MECHANISM.

ERRORS

There are several situations which will cause an overflow or an error condition. When this occurs, "E" will be displayed. The contents of the memory at the time of the error are retained.

If an "0•E" is displayed at the time of the error, [C] must be used to clear the calculator. If an "E" with any numerals except zero is displayed, the error may be cleared with [CE] or [C] and the calculation can still be continued. Also, in rare cases, printing may stop midway and the indication "E" appear on the display. This is not a malfunction but is caused when the calculator is exposed to strong electromagnetic noise or static electricity from an external source. Should this occur, press the [E] key and then repeat the calculation from the beginning.

Error conditions:

1. Entry of more than 12 digits or 11 decimals. This error can be cleared with [CE] or [C].
2. When the integer portion of an answer exceeds 12 digits.
3. When the integer portion of the contents of the memory or grand total memory exceeds 12 digits.
(Example: [M+] 999999999999 [M+] 1 [M+])
4. When any number is divided by zero.
(Example: 5 [÷] 0 [E])

REPLACEMENT OF BATTERY FOR MEMORY PROTECTION

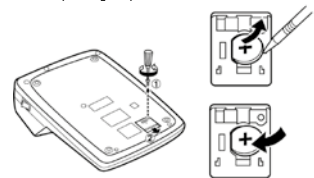
Time for battery replacement

Replace with a new battery once a year. When the battery power becomes weak, printing may be halted, and displayed images may disappear. If such symptoms are observed, replace the batteries with new ones.

Battery: lithium battery, size CR2032 × 1

When replacing the battery, the set tax / discount rate and conversion rate, the memory contents will be lost. You may want to write down the tax / discount rate and conversion rate, other important numbers on a sheet of paper.

1. Press the power off key and unplug the power supply plug from the outlet.
2. Remove the battery cover on the back of the unit.
3. Remove the exhausted battery and install one new lithium battery. Wipe the battery well with a dry cloth and place the plus "+" side upward.
4. Replace the battery cover by reversing the removal procedure.
5. Connect the power supply plug to an outlet, then press the RESET switch on the back of the unit after pressing the power on switch.



After battery replacement

- Connect the power supply plug to an outlet and press the power on switch. Check that "0•" is displayed. If "0•" is not displayed, remove the battery, reinstall it, and check the display again.
- Reset the tax / discount rate.
- In the box on the right, fill in the month/year that you changed the battery, as a reminder of when to change it again.

Precautions on battery use

- Do not leave an exhausted battery in the equipment.
- Do not expose the battery to water or flame, and do not take it apart.
- Store batteries out of the reach of small children.

SPECIFICATIONS

- Operating capacity: 12 digits
Power source: Operating: AC: 220 - 230 V, 50 Hz
Memory backup: 3V (DC) (Lithium battery CR2032 × 1)
Memory Protection Battery lifespan:
Approx. 1 year. (tested and confirmed at 25°C (77°F); may change due to usage environment)

PRINTING SECTION

- Printer: Mechanical printer
Printing speed: Approx. 4.5 lines/sec.
Printing paper: 57mm (2-1/4") - 58mm (2-9/32") wide
80mm (3-5/32") in diameter (max.)
Operating temperature: 0°C - 40°C (32°F - 104°F)
Power consumption: 82 mA
Dimensions: 222 × 327 × 78 mm
Weight: Approx. 1.9 kg (with battery)
Accessories: 1 lithium battery (installed), 1 paper roll, 1 ink ribbon (installed) and operation manual

WARNING
 THE VOLTAGE USED MUST BE THE SAME AS SPECIFIED ON THIS CALCULATOR. USING THIS CALCULATOR WITH A VOLTAGE HIGHER THAN THAT SPECIFIED IS DANGEROUS AND MAY RESULT IN A FIRE OR OTHER TYPE OF ACCIDENT CAUSING DAMAGE.
 SHARP WILL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE RESULTING FROM USE OF THIS CALCULATOR WITH OTHER THAN THE SPECIFIED VOLTAGE.

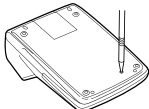
RESETTING THE UNIT

Strong impacts, exposure to electrical fields, or other unusual conditions may render the unit inoperative, and pressing the keys will have no effect. If this occurs, you will have to press the RESET switch on the bottom of the unit. The RESET switch should be pressed only when:

- an abnormal event occurs and all keys are disabled.
- you install or replace the batteries.

Notes:

- Pressing the RESET switch will clear the stored tax rate and other data stored in the memory.
- Use only a ballpoint pen to press the RESET switch. Do not use anything breakable or anything with a sharp tip, such as a needle.
- After the RESET switch is pressed, connect the AC adaptor. Turn the power switch "ON" and check that "0." is displayed.



CONSTANT

A. $62.35 \times 11.11 =$ $62.35 \times 22.22 =$ **K • A** **F 6 3 2 1 0**
 [0] [0]

62.35 [x]	62.35	62.35 ×
11.11 [±]		11.11 =K
		692.71 *
22.22 [±]	692.71	22.22 =K
		1.385.42 *
	1,385.42	

B. $11.11 \div 77.77 =$ $22.22 \div 77.77 =$ **K • A** **F 6 3 2 1 0**
 [0] [0]

11.11 [÷]	11.11	11.11 ÷
77.77 [±]		77.77 =K
		0.143 *
22.22 [±]	0.143	22.22 =K
		0.286 *
	0.286	

PERCENT

A. $100 \times 25\% =$ **K • A** **F 6 3 2 1 0**
 [0] [0]

100 [x]	100.	100. ×
25 [%]		25. %
		25.00 *
	25.00	

B. $(123 \div 1368) \times 100 =$ **F 6 3 2 1 0**
 [0]

123 [÷]	123.	123. ÷
1368 [%]		1.368. %
		8.99 *
	8.99	

CALCULATION EXAMPLES

1. Set the decimal selector as specified in each example. The rounding selector should be in the "5/4" position unless otherwise specified.
2. The constant/add mode selector and grand total/rate setting mode selector should be in the "*" position (off) unless otherwise specified.
3. The print/item count mode selector should be in the "P" position unless otherwise specified.
4. If an error is made while entering a number, press [CE] or [C] and enter the correct number.
5. Negative values are printed with "-" symbol in red.
6. Example procedures are listed in following manner unless otherwise specified:

Operation	Display	Print
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EXAMPLE: **F 6 3 2 1 0**
 $(123 + 456) \times 2 =$ [0]

123 [±]	123.00 +	
456 [±]	456.00 +	
[*]	579.00 *	
[x]	* 579.00 ×	* Re-entry of total
2 [±]	2. =	
	1.158.00 *	

ADDITION AND SUBTRACTION WITH ADD MODE

$12.45 + 16.24 + 19.35 - 5.21 =$ **K • A** **F 6 3 2 1 0**
 [0] [0]

12.45 [±]	12.45	12.45 +
16.24 [±]	28.69	16.24 +
19.35 [±]	48.04	19.35 +
5.21 [-]	42.83	5.21 -
[*]	42.83	42.83 *

*: [±] was not used in the entries

MIXED CALCULATIONS

$(240 + 180 + 180 - 75) \times 8 =$ **K • A** **F 6 3 2 1 0**
 [0] [0]

240 [±]	240.	240. +
180 [±]	420.	180. +
[±]	600.	180. +
75 [-]	525.	75. -
[x]	525. ◊	525. ◊
	525.	525. ×
8 [±]	8. =	8. =
	4.200. *	4.200. *

MARKUP AND MARGIN

Markup and Profit Margin are both ways of calculating percent profit:
 • Profit margin is percent profit vs. selling price.
 • Markup is percent profit vs. cost.
 • Cost is the cost.
 • Sell is the selling price.
 • GP is the gross profit.
 • Mkup is the percent profit based on cost.
 • Mrgn is the percent profit based on selling price.

To find	Knowing	Operation
Mrgn	Sell, Cost	Cost [-] Sell [±] [MU]
Mkup	Sell, Cost	Sell [±] Cost [-] [MU]
Sell	Cost, Mrgn	Cost [÷] Mrgn [MU]
Cost	Sell, Mrgn	Sell [x] Mrgn [÷] [MU]
Sell	Cost, Mkup	Cost [x] Mkup [MU]
Cost	Sell, Mkup	Sell [÷] Mkup [÷] [MU]

Example:

Cost	Sell	GP	Mkup	Mrgn
\$200	\$250	\$50	25%	20%

F 6 3 2 1 0
 [0]

200 [÷]	200.	200. ÷ Cost
20 [MU]		20. %M Mrgn
		250.00 * Sell
		50.00 GP GP
	50.00	

PERCENT CHANGE

Calculate the dollar difference (a) and the percent change (b) between two yearly sales figures \$1,500 in one year and \$1,300 in the previous.

F 6 3 2 1 0
 [0]

1500 [±]	1,500.00	1,500.00 +
1300 [-]	200.00	1,300.00 -
[MU]		200.00 * (a)
	15.38	15.38 %C (b)

ITEM COUNT CALCULATION

Bill No.	Number of bills	Amount
1	1	\$100.55
2	1	\$200.00
3	1	\$200.00
4	1	\$400.55
5	1	\$500.65
Total	(a)	(b)

• P P/C **F 6 3 2 1 0**
 [0] [0]

100.55 [x]	100.55	100.55 +
200 [±]	300.55	200.00 +
[±]	500.55	200.00 +
400.55 [±]	901.10	400.55 +
500.65 [±]	1,401.75	500.65 +
[x]		005 (a)
	1,401.75	1.401.75 * (b)

GRAND TOTAL

$100 + 200 + 300 =$ **• P P/C** **F 6 3 2 1 0**
 $+ 500 - 600 + 700 =$ [0]
 Grand total **GT • SET** **F 6 3 2 1 0**
 [0] [0]

100 [GT] [x]	100.	100. +
200 [±]	300.	200. +
300 [±]	600.	300. +
[*]		003
	600.	600. *+
500 [±]	500.	500. +
600 [-]	100.	600. -
700 [±]	600.	700. +
[*]		001
	600.	600. *+
GT		002
	1,200.	1.200. *G

MEMORY

$46 \times 78 =$ ① **• P P/C** **F 6 3 2 1 0**
 $+ 125 \div 5 =$ ② **GT • SET** **F 6 3 2 1 0**
 $- 72 \times 8 =$ ③ [0] [0]
 Total ④

46 [x]	46.	46. ×
78 [M+]		78. =
	3,588. ^M	3,588. +M ①
125 [÷]	125. ^M	125. ÷
5 [M+]		5. =
	25. ^M	25. +M ②
72 [x]	72. ^M	72. ×
8 [M-]		8. =
	576. ^M	576. -M ③
[M]		001
	3,037. ^M	3,037. ◊M ④
	3,037. ^M	

*: Press [M] to clear the memory before starting a memory calculation.

AVERAGING

Day	Sales
Monday	\$123.15
Tuesday	\$118.00
Wednesday	\$131.58
Thursday	\$125.02
Friday	\$158.25
Total Sales	\$656.00 for 5 days
Average Sales	\$131.20

RATE		
• P • I • C	GT • SET	K • A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12315 <input type="checkbox"/>	123.15	123•15 +
118 <input type="checkbox"/>	241.15	118•00 +
13158 <input type="checkbox"/>	372.73	131•58 +
12502 <input type="checkbox"/>	497.75	125•02 +
15825 <input type="checkbox"/>	656.00	158•25 +
<input type="checkbox"/>		005
		656•00 *
		131•20 AG
	131.20	

TAX RATE CALCULATIONS

A. Set a 5% tax rate. Calculate the total amount for adding a 5% tax to \$800.

F 6 3 2 1 0		
RATE	GT • SET	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 <input type="checkbox"/>	5.	TX
		5•000 %
	5.000	

800 <input type="checkbox"/>		800•
		40• TX
	840.	840•


B. Perform two calculations using \$840 and \$525, both of which already include tax. Calculate the tax on the total and the total without tax. (tax rate: 5%)

F 6 3 2 1 0		
RATE	GT • SET	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
840 <input type="checkbox"/>	840.	840• +
525 <input type="checkbox"/>	1,365.	525• +
		1•365• *
		TX
		65•-
	1,300.	1•300•

FOR MORE INFORMATION ABOUT SHARP CALCULATORS VISIT:

<http://www.sharp-calculators.com>

ENGLISH



Information on the Disposal of this Equipment and its Batteries

1. In the European Union
Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!
 Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment. Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.
 *) Please contact your local authority for further details.
 If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.
 By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU
 If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

Manufactured by:
SHARP CORPORATION
 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

For EU only: Imported into Europe by: MORAVIA Consulting spol. s r.o. Olomoucká 83, 627 00 Brno, Czech Republic	For UK only: Imported into UK by: MORAVIA Europe Ltd. Belmont House, Station Way, Crawley, West Sussex RH10 1JA, Great Britain
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- SAFETY PRECAUTIONS**
- CAUTION! Power Outlet**
 The socket outlet shall be installed near the equipment and shall be easily accessible.
- CAUTION! Notes for handling Lithium batteries**
- Danger of explosion if battery is incorrectly replaced.
 - Replace only with the same or equivalent type recommended by the manufacturer.
 - Dispose of used batteries according to the manufacturer's instructions.
 - Do not leave an exhausted battery in the equipment.
 - Do not expose the battery to water or flame, and do not take it apart.
 - Do not ingest battery, Chemical Burn Hazard.
 - This product contains coin cell battery. If the coin cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
 - Keep new and used batteries away from children.
 - If the battery compartment does not close securely, stop using the product and keep it away from children.
 - If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
 - This equipment is not suitable for use in locations where children are likely to be present.