SHARP®

QS-1760H
QS-2760H
QS-2770H

ELECTRONIC PRINTING CALCULATOR
CALCULADORA IMPRESORA ELECTRÓNICA

OPERATION MANUAL
MANUAL DE MANEJO

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING - FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

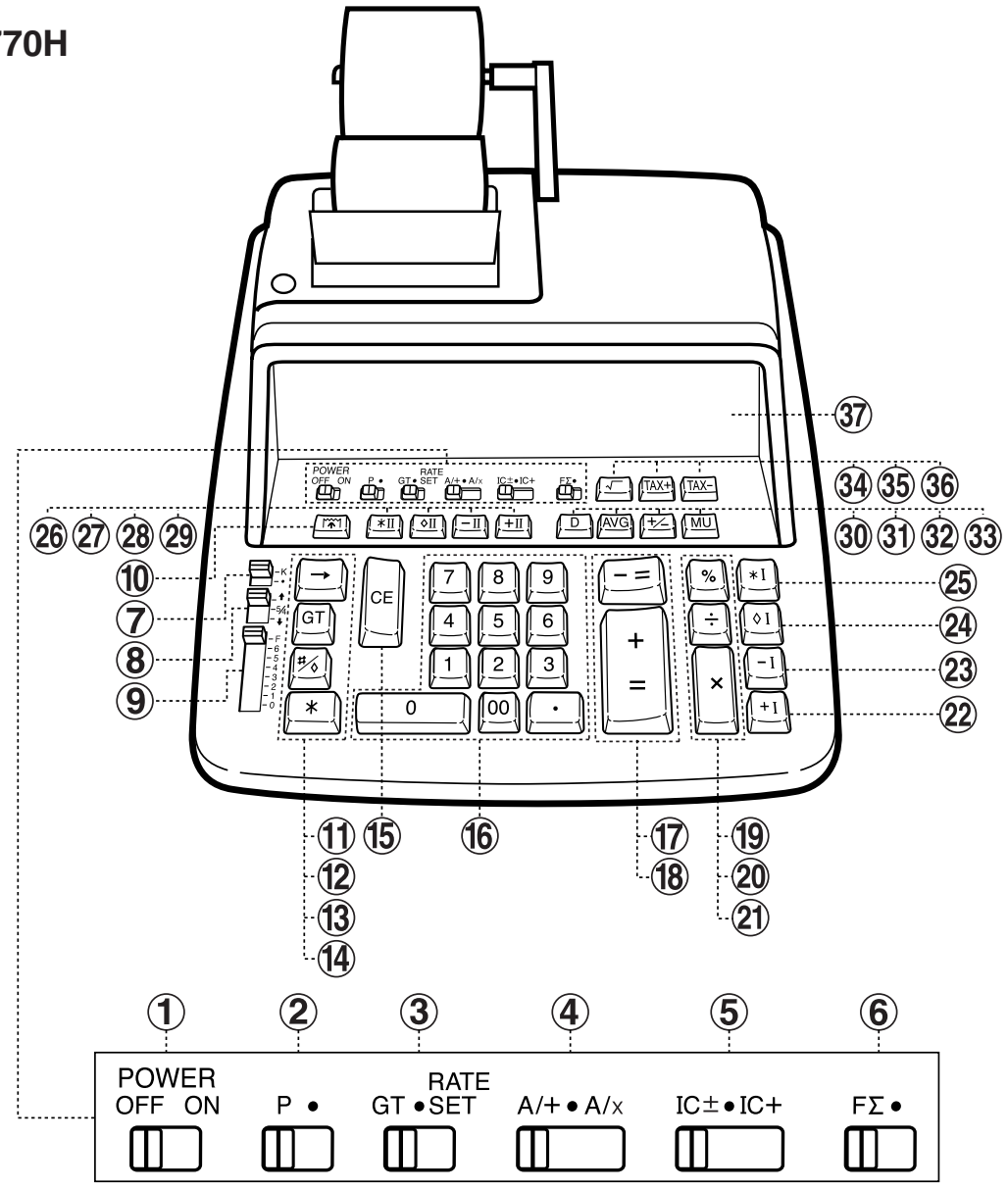
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution!
The socket outlet shall be installed near the equipment and shall be easily accessible.

Aviso!
El tomacorriente debe estar instalado cerca del equipo y debe quedar bien accesible.

THE KEYBOARD EL TECLADO

QS-2770H



⑥, ㉚ : QS-2770H only
Sólo en la QS-2770H

QS-1760H
QS-2760H

ENGLISH

INTRODUCTION

Thank you for your purchase of the SHARP electronic calculator, model QS-1760H/2760H/2770H. Your SHARP calculator is specially designed to save work and increase efficiency in all business applications and general office calculations. Careful reading of this manual will enable you to use your new SHARP to its fullest capability.

OPERATIONAL NOTES

To insure trouble-free operation of your SHARP calculator, we recommend the following:

1. The calculator should be kept in areas free from extreme temperature changes, moisture, and dust.
2. A soft, dry cloth should be used to clean the calculator. Do not use solvents or a wet cloth.
3. Turn off the power switch prior to connecting or disconnecting the AC cord.
4. 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.
5. If you pull out the power cord to cut electricity completely, the presently stored tax rate will be cleared.
6. If service should be required on this equipment, use only a SHARP servicing dealer, a SHARP approved service facility or SHARP repair service where available.
7. Do not wind the AC cord around the body or otherwise forcibly bend or twist it.

Note: Unless otherwise specified, the text material applies to all three models.

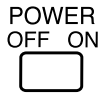
SHARP will not be liable nor responsible for any incidental or consequential economic or property damage caused by misuse and/or malfunctions of this product and its peripherals, unless such liability is acknowledged by law.

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.

CONTENTS

OPERATING CONTROLS

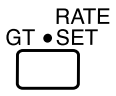
① 

POWER SWITCH:
When the power switch is turned on, the calculator is ready for operation.

② 

PRINT MODE SELECTOR:
"P" position: The calculator functions as a print/display calculator. (Print mode)
"•" position: The calculator functions as a display calculator. (Non-print mode)

Mode change print:
When changing the print mode selector, the following print will appear.
"• • • .... • • • –P" (red print): When changing the selector from P to •.
"• • • .... • • • +P" (red print): When changing the selector from • to P.

③ 

GRAND TOTAL / RATE SETTING MODE SELECTOR:
"GT" position: This selector will accumulate the following:
(The symbol "∗+" will be printed.)
1. Addition and subtraction totals obtained with the [∗] or [AVG] key.
2. Product and quotient totals obtained with the [±=] or [-=] key.
3. Answers obtained with the [%] or [MU] key.

"•" position: Neutral, GT OFF

" RATE SET " position:
- Enter the adding tax rate, then press [TAX+].
- To store a discount rate, press [+/-] before pressing [TAX+].

- 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 an each rate.
- Only one rate can be stored. If you enter a new rate, the previous rate will be cleared.

④ [A/+ • A/×] **ADD MODE SELECTOR:**

"A/+" position – **Effective only in addition and subtraction:**

Use of the A/+ mode permits addition and subtraction of numbers without an entry of the decimal point. When the A/+ mode is activated, the decimal point is automatically positioned according to the decimal selector setting.

EXAMPLES: Set A/+- • -A/x to A/+

A. Set decimal to 2
   Enter 123456 [±] Tape prints 1,234.56 +
B. Set decimal to 3
   Enter 123456 [±] Tape prints 123.456 +

Use of the [·], [×], and [÷] keys will automatically override the Add mode and decimally correct answers will be printed at the preset decimal position.

EXAMPLES: Set A/+- • -A/x to A/+, 5/4

A. Set decimal to 2

Enter	.1234 [×]	Tape prints	0.1234 ×
	100 [±]		100. =
			12.34 ∗

B. Set decimal to 3

Enter	2 [÷]	Tape prints	2. ÷
	3 [±]		3. =
			0.667 ∗

C. Set decimal to 2

Enter	123 [±]	Tape prints	1.23 +
	10 [·] [±]		10.00 +
	[∗]		11.23 ∗

Note that decimal point was entered.

"A/x" position – **Multiplication and division:**

When the A/x mode is activated, the number entered before [×] or [÷] key will override the add mode. But the

number entered following [×] or [÷] key and before [±] (or [−=], [+I], [−I], [−II], [+II]) key will obey the decimal setting. This is useful for invoicing.

EXAMPLE: Set A/+- • -A/x to A/x

Set decimal to 2

Enter	7	[×]	Tape prints	7· ×
	3	[±]		0·03 =
				0·21 ∗

Note: Use of the [•] key will automatically override the A/x mode.

Addition and subtraction:

The A/x mode functions same as the A/+ mode.

"•" position: Neutral

⑤ [IC± • IC+] **ITEM COUNT MODE SELECTOR:**

"IC±" position: 1) The counter will count the number of times that the [±] key has been pressed in addition.

Note:
- Each time the [−=] 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 [∗], [×], [÷], [AVG] or [MU] key clears the counter.

2) When the grand total mode selector is in the ON position (GT), the counter will count the number of times that the calculation results 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 [+I] key has been pressed in the addition.

Note:
- Each time the [−I] 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 [∗I] key clears the counter.

"IC+" position: 1) The counter will count the number of times that the [±] or [−=] has been pressed in addition and subtraction.

Note:
- The count is printed when the calculated result is obtained.

- Pressing of the [∗], [×], [÷], [AVG] or [MU] key clears the counter.

2) When the grand total mode selector is in the ON position (GT), the counter will count the number of times that the calculation results 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 [+I] or [−I] key has been pressed in addition and subtraction.

Note:
- The count is printed when the memory is recalled.
- Pressing of the [∗I] key clears the counter.

"•" position: Neutral, counter is turned off.

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.

⑥ FΣ• **FIRST FACTOR ACCUMULATION SELECTOR: (Only QS-2770H)**

"FΣ" position: The first factor is automatically added to or subtracted from the memory. A first factor means the first number in multiplication and division and each number is printed with "×I" and "÷I" respectively.

Ex. $\underline{2} \times 3 \times 5 \div 6 =$
$\underline{12} \div 7 \times 9 =$
$\underline{-56} \times 4 \times 0.5 =$

"•" position: Neutral

⑦ K• **CONSTANT MODE SELECTOR:**

"K" position: The following constant functions will be performed:

Multiplication: The calculator will automatically remember the first number entered (the multiplicand) and the [×] instruction.

Division: The calculator will automatically remember the second number entered (the divisor) and the [÷] instruction.

Add-on/Discount/Mark up:
The calculator will automatically remember the first entered number and key functions for Add-on/Discount/Mark up calculation.

"•" position: Neutral

⑧ ↑ 5/4 ↓ **ROUNDING SELECTOR:**

"↑" position: An answer is rounded up.

"5/4" position: An answer is rounded off.

"⬇" position: An answer is rounded down.

EXAMPLE: 10.005 ÷ 5 = 2.001

Set decimal to 2, ⬆

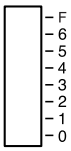
10.005 [÷] 5 [±=] → 2·01 ∗

Set decimal to 2, 5/4

10.005 [÷] 5 [±=] → 2·00 ∗

Note: The decimal point floats during successive calculation by the use of [×] or [÷] key.

In floating decimal point system, an answer is rounded down.

⑨ 

DECIMAL SELECTOR:

Presets the number of decimal places in the answer.

In the "F" position, the answer is displayed in the floating decimal system.

⑩ [⇑] **PAPER FEED KEY:**

When pressed, advances the paper roll.

Note: You can also pull the paper manually.

⑪ [→] **RIGHT SHIFT KEY:**

Operation of this key in entered numbers or calculated results shifts the number one digit to the right together with the decimal point. Used for one digit correction.

⑫ [GT] **GRAND TOTAL KEY:**

Prints and clears the "GT" memory contents.

⑬ [#/◊] **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 [±=] or [−=] 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 with the symbol "P".

⑭ [∗] **TOTAL KEY:**

Prints the total of addition and subtraction with the symbol "∗". This key also serves as a clear key for the calculation register and resets an error condition.

⑮ [CE] **CLEAR ENTRY KEY:**

Clears number entered prior to use of a function key.
Also used to clear an overflow error caused by an entry.

Ex. $123 \times \underline{455} \rightarrow 123 \times \underline{456} =$

Press 123 [×] 455 [CE] 456 [±=]

⑯ [0] ~ [9] [•] [00] **NUMERAL KEYS**

⑰ [−=] **MINUS EQUALS KEY:**

Prints the entered number with a "–" symbol and subtracts the number from the contents of the calculation register. This key is also used to obtain the product/quotient in negative multiplication and division and prints it with the symbol "∗".

⑱ [±=] **PLUS EQUALS KEY:**

Prints the entered number with a "+" symbol and adds the number to the contents of the calculation register. This key is also used to obtain the results in multiplication and division and prints the product/quotient with the symbol "∗".

⑲ [%] **PERCENT KEY**

⑳ [÷] **DIVISION KEY**

㉑ [×] **MULTIPLICATION KEY**

㉒ [+I] **FIRST MEMORY PLUS KEY**

㉓ [−I] **FIRST MEMORY MINUS KEY**

㉔ [◊I] **FIRST RECALL MEMORY KEY**

㉕ [∗I] **FIRST RECALL AND CLEAR MEMORY KEY**

㉖ [∗II] **SECOND RECALL AND CLEAR MEMORY KEY**

㉗ [◊II] **SECOND RECALL MEMORY KEY**

㉘ [−II] **SECOND MEMORY MINUS KEY**

㉙ [+II] **SECOND MEMORY PLUS KEY**

㉚ [D] **DATE KEY: (only QS-2770H)**

Can be used to store and display/print or recall the date or any other factor for repeated use in an application.

㉛ [AVG] **AVERAGE KEY:**

Used to calculate the average.

㉜ [+/−] **CHANGE SIGN KEY:**
Changes the algebraic sign of a number (i.e., positive to negative or negative to positive).

㉝ [MU] **MULTIPLE USE KEY:**
Used to perform mark-ups, percent change and automatic add-on/discount.

㉞ [√‾] **SQUARE ROOT KEY:**
To obtain a square root of a negative number, this calculator will first obtain a square root of an absolute number of the given number; the calculation result will then be converted to a negative value.

㉟ [TAX+] **TAX-INCLUDING KEY**

㊱ [TAX−] **PRE-TAX KEY**

㊲ DISPLAY

Display format:

(QS-1760H)

(QS-2760H)

(QS-2770H)

Calculation display (main):

Item counter display (sub):

Symbols:

I : First memory symbol
Appears when a number has been stored in First memory.

II : Second memory symbol
Appears when a number has been stored in Second memory.

– : Minus symbol
Appears when a number is negative.

E : Error symbol
Appears when an overflow or other error is detected.

• : Grand total memory symbol
Appears when a number is in the grand total memory.

INK RIBBON REPLACEMENT

1. Remove the paper roll from the calculator. (Tear the paper and remove it from the print mechanism by using [⌇].)
2. **Set the power switch at OFF position.**
   Make sure that the print wheel has stopped.
3. Remove the printer cover by sliding it towards the back of the calculator. (Fig. 1)
4. Remove the used ribbon.
5. Install 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. Make sure that the reel is securely in place.
7. Thread the ribbon around the outside of the metal guides. (Fig. 2)
8. Insert the right reel securely.
9. Take up any slack by manually turning one of the reels.
10. Replace the printer cover.
11. Replace the paper roll.

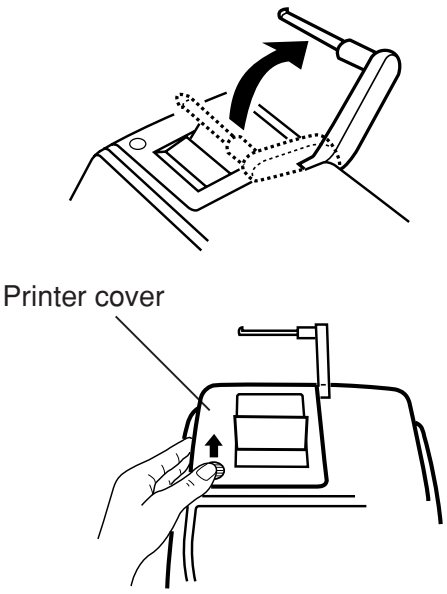


Fig. 1

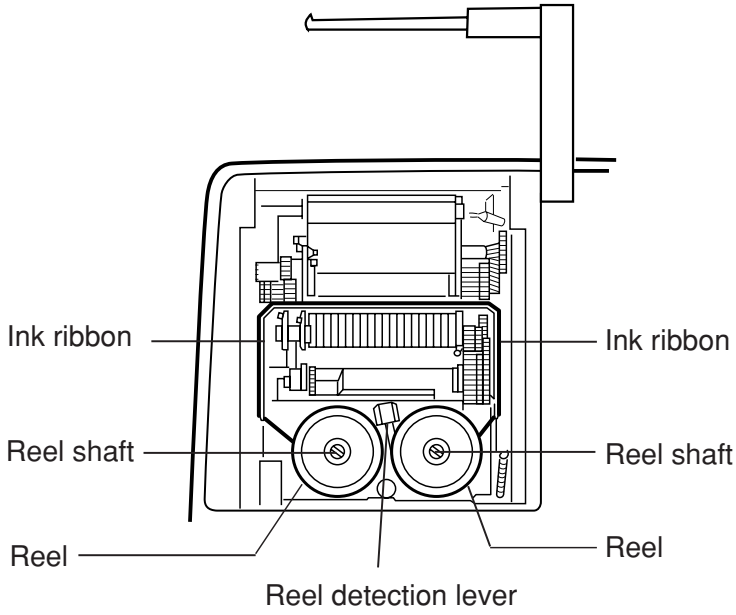
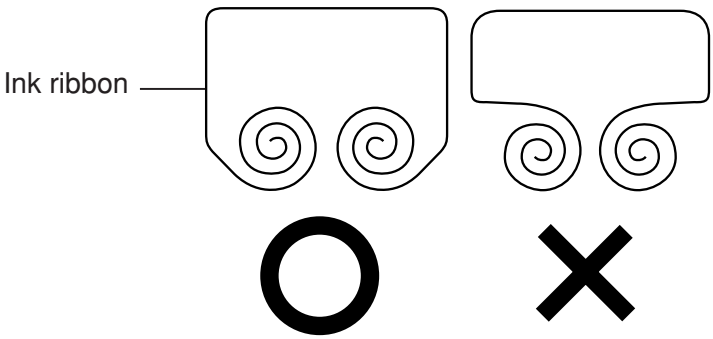
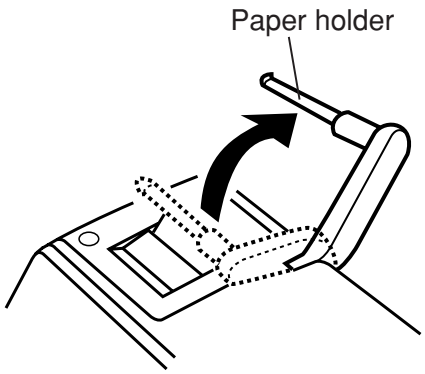


Fig. 2



PAPER ROLL REPLACEMENT

1. Lift the paper holder up. (Fig. 1)
2. Fold the leading edge of the paper roll 3 to 5 cm. (Do not fold it slantwise.) (Fig. 2)
3. Insert the paper roll from the left side of the paper holder and make sure the paper roll is set in the proper direction (with the paper feeding from the bottom). (Fig. 3)
4. Insert the leading edge of the paper into the opening directly behind the print mechanism. (Fig. 4)
5. Press the paper feed key and feed the paper under the edge of the paper cutter. (Fig. 5)



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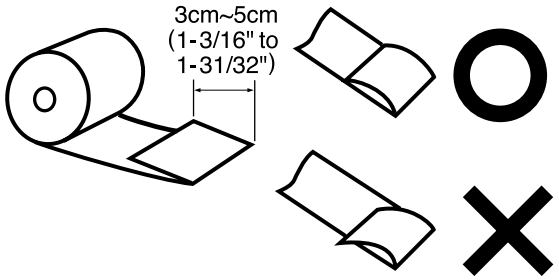

Fig. 2

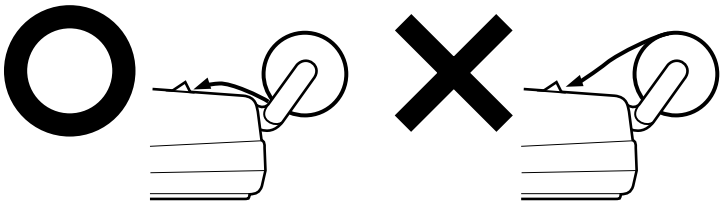

Fig. 3

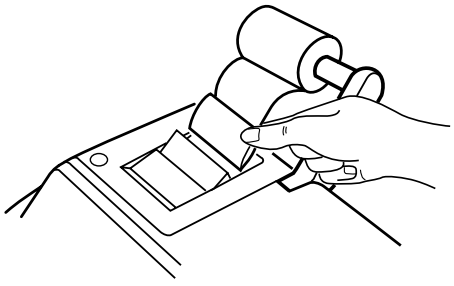

Fig. 4

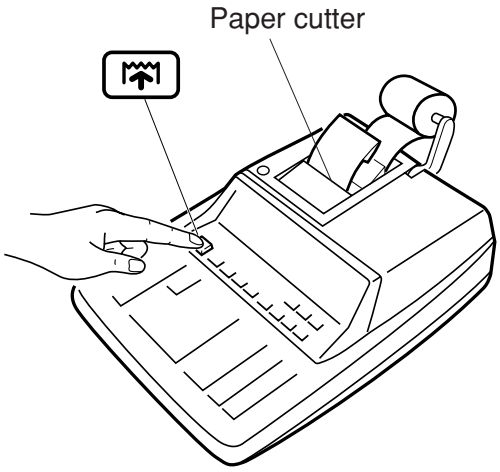

Fig. 5

DO NOT PULL THE PAPER BACKWARDS AS THIS MAY DAMAGE THE PRINTER MECHANISM.

ERRORS

There are several situations which will cause an overflow or an error condition. When this occurs, the error symbol “E” will be displayed and all keys will electronically lock. The contents of the memory at the time of the error are retained.
If an “0·E” is printed on the tape at the time of the error, the [*] key must be used to clear the calculator. If an “E” with any numerals except zero is printed on the tape or if an “E” is not printed on the tape, the error may be cleared with the [CE] or [→] key and the calculation can still be continued.

Error conditions:

1. Entry of more than 10 digits or 9 decimals. (QS-1760H)
   Entry of more than 12 digits or 11 decimals. (QS-2760H/2770H)
   This error can be cleared with the [CE] or [→] key.
2. When the integer portion of an answer exceeds 10 digits. (QS-1760H)
   When the integer portion of an answer exceeds 12 digits. (QS-2760H/2770H)
3. When the integer portion of the contents of the memory exceeds 10 digits. (QS-1760H) (Ex. [*I] 9999999999 [+I] 1 [+I])
   When the integer portion of the contents of the memory exceeds 12 digits. (QS-2760H/2770H) (Ex. [*I] 999999999999 [+I] 1 [+I])
4. When any number is divided by zero. (Ex. 5 [÷] 0 [±=])

DECIMAL SYSTEM

Input override decimal feature

The calculator operates on a principle of floating decimal entries with preset decimal answers.

1. An entry may contain up to 9 decimal places, regardless of the decimal selector setting. (QS-1760H)
   An entry may contain up to 11 decimal places, regardless of the decimal selector setting. (QS-2760H/2770H)
2. Answers will be printed to the preset decimal position except when an underflow condition prevails.

SPECIFICATIONS

Type:	Electronic print/display calculator
Power source:	AC: 120V, 60Hz
Display:	Fluorescent display
Operating capacity:	10 digits (QS-1760H) 12 digits (QS-2760H/2770H)
Display/Print capacity:	With symbol and 3-digit punctuations 11 digits (display), 16 digits (printing) (QS-1760H) 13 digits (display), 18 digits (printing) (QS-2760H) 13 digits (main display) + 4 digits (sub display), 18 digits (printing) (QS-2770H)
Decimal point:	Automatic decimal point positioning by preset decimal selector (0–1–2–3–4–5–6–F) with Add mode (A/+, A/x)
Calculations:	Four arithmetic calculations, constant multiplication and division, power calculation, add-on/discount calculation, repeat addition and subtraction, square root calculation, reciprocal calculation, grand total calculation, item count calculation, markup calculation, average calculation, memory calculation, first factor accumulation calculation (only QS-2770H), etc.
Components:	LSI, etc.

PRINTING SECTION

Printer:	Mechanical printer
Printing speed:	Approx. 4.8 lines/sec.
Paper feed speed:	Approx. 14.4 lines/sec.
Printing paper:	57 mm (2-1/4") ~ 58 mm (2-9/32") wide 80 mm (3-5/32") in diameter (max.)
Operating temperature:	0°C ~ 40°C (32°F ~ 104°F)
Power consumption:	195 mA
Dimensions:	254 (W) × 338 (D) × 75.5 (H) mm 10-1/32" (W) × 13-5/16" (D) × 2-31/32" (H)
Weight:	Approx. 2.2 kg (4.85 lb.)
Accessories:	1 paper roll, 1 ink ribbon and operation manual

In case of abnormal conditions

When this unit is exposed to strong RF noise and/or extreme physical shock during the operation, or when the power cord is plugged into the AC outlet, the unit may start functioning abnormally which, in some rare occasions, all keys – including the power key and the CE key – cease to respond.

If such abnormal conditions are observed, unplug the AC cord from the socket. Keep the unit unplugged for about 5 seconds, reconnect the AC plug, then turn on the power.