Texas Instruments

portable electronic calculator
with display and printer

TI-5025

IMPORTANT

CHARGE BATTERIES FOR **20 MINUTES** WITH POWER SWITCH **OFF** BEFORE USING. See page 8 of manual.

LOW BATTERY INDICATED BY DIM DISPLAY AND PRINT OR ERRONEOUS SYMBOLS AND NUMBERS.

AFTER LOW BATTERY CONDITION, CHARGE BATTERIES FOR **20 MINUTES** WITH POWER SWITCH **OFF**.

IN CASE OF COMPLETELY DISCHARGED BATTERIES, TURN POWER SWITCH **OFF** AND CHARGE FOR **FOUR HOURS** BEFORE USING. See page 9 of manual.

USE ONLY TP-12150 THERMAL PRINTING PAPER. OTHER PAPER MAY DAMAGE YOUR CALCULATOR AND VOID WARRANTY.

IMPORTANT

Record the serial number from the bottom of the unit and purchase date in the space below. The serial number is identified by the words "SERIAL NO." on the bottom case. Always reference this information in any correspondence.

Model No.	Serial No.	Purchase Date
TI-5025		

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INTRODUCTION

The TI-5025 Printing and Display Calculator has been designed and manufactured by Texas Instruments to provide you with a versatile computational tool to help solve mathematical problems in your home or business. The 5025 provides you the versatility of a paper tape for permanent records and a large display for checking entries and performing quick calculations without printing. The TI-5025 may be operated as a portable calculator with its rechargeable battery pack or it may be operated on standard 115-volt household power while charging after an initial charge of 20 minutes with the switch off. The following features highlight the operating capabilities of the TI-5025.

FEATURES

Independent Memory — Calculation results or numbers can be summed to or subtracted from memory and recalled when needed. The memory can also be cleared without clearing the calculator.

Percent Key — Permits easy calculation of percentages, taxes, discounts, compound interest, and other similar problems.

Automatic Constant — Repetitive calculations with the same number are easily performed with the four arithmetic functions as the calculator automatically remembers the constant number.

Easy to Operate — Press the keys in the same order as the problem is written.

Fully Portable — Weighs less than 17 ounces and fits neatly in a briefcase or purse.

Electronic Printer — Quiet smooth electronic printer developed by Texas Instruments prints up to 8 digits plus audit trail. Keyboard control to turn printer off and print only selected number entries and results.

Large Bright Display — Easy to read blue-green display shows entries and results with up to 8 digits. Convenient special symbols indicate when the printer and memory are in use.

Keyboard Buffering — Enter additional numbers and functions while printer is operating.

Two-Key Roll-Over — Lets you press a second key even before the previously pressed key is released.

Long Life — Solid-state components, integrated circuitry and a vacuum fluorescent display provide dependable operation and long life.

Battery Pack — Your calculator comes complete with a fast-charge rechargeable battery pack. Under normal use, the battery pack will provide 5 to 7 hours of operation without recharging when printing 12 lines per minute. About 4 hours of recharging will restore full charge.

AC Charger — Battery pack recharge from standard voltage outlets is easily accomplished with the AC Charger model AC9172 included with the calculator. The calculator cannot be overcharged. ***Important:*** **Please refer to the "Battery Considerations" portion of this manual on page 8.**

ELECTRONIC PRINTER OPERATION

The paper used by the electronic printer is a heat-sensitive paper (TP-12150 thermal paper). The only mechanical part of the printer is a precision stepper motor which turns the rubber roller to move the thermal paper past the stationary electronic printhead. When printing, the paper is driven past the printhead in tiny steps. Between each step, small semiconductor (solid-state) elements are heated very quickly by electronic circuits and produce color spots on the thermal paper. After several steps, these spots form the numbers and symbols you can read on the thermal paper.

Since the printer is basically an electronic device, it does not require special ink ribbons or special maintenance. Using metal probes, sharp objects or lubricants may damage the printhead or rubber roller. Please refer to "Service Information" section of this manual for paper replacement instructions and actions to take when a difficulty occurs.

NOTICE

THE PRINTING ON THERMAL PAPER MAY FADE IF EXPOSED TO LIGHT OR HIGH TEMPERATURES FOR LONG PERIODS OF TIME. FOR PERMANENT STORAGE, ALWAYS FILE PRINTED TAPES AWAY FROM LIGHT AND HEAT.

OPERATING INSTRUCTIONS

SWITCHES

On/Off Switch — Located on the left side of the calculator beneath the display window. Sliding the switch back turns the calculator on and sliding it toward the front of the calculator turns the calculator off. The power-on condition is indicated by a number in the display.

KEYS

[0] — [9] **Number Keys** — Enter numbers. A maximum of eight digits can be entered to the left or right of the decimal.

[•] **Decimal Key** — Enters a decimal point. The decimal point automatically appears to the right of an entered number unless positioned elsewhere with the [•] key.

The four arithmetic keys, [+] [−] [×] [÷], will each perform an equals operation and the calculator will display an intermediate result when used in a chain calculation. Therefore, a *displayed number* called out in the following key descriptions may be an intermediate result or a newly entered number. The *next entered quantity* represents the number displayed immediately before the next arithmetic or equals key is pressed. The *next entered quantity* can be a keyboard entry, a memory recall, or a result of a special function key.

[+] **Add Key** — Instructs the calculator to add the next entered quantity to the displayed number.

[−] **Subtract Key** — Instructs the calculator to subtract the next entered quantity from the displayed number.

[×] **Multiply Key** — Instructs the calculator to multiply the displayed number by the next entered quantity.

[÷] **Divide Key** — Instructs the calculator to divide the displayed number by the next entered quantity.

[=] **Equals Key** — Instructs the calculator to complete the previously entered arithmetic operation and to display the result.

IMPORTANT: Repeated pressing of [=] following an arithmetic calculation using [+], [−], [×], or [÷] is not ignored. The last arithmetic key entry and number entry are reused by the calculator to perform an automatic constant calculation.

[CE/C] **Clear Entry/Clear Key** — Clears all number entries made into the calculator back to the last function key entry. If no number entry has been made since a function key was pressed, the display, any implied constants, and any calculations in progress will be cleared.

[%] **Percent Key** — Converts a displayed percent value to its decimal equivalent by automatically moving the decimal point two places to the left. This key can be used with the arithmetic keys to calculate percentages, add-on or discount percentages, compound interest, or the percentile of one number to another. See *Using the Percent Key* in this manual.

[M+] **Sum to Memory Key** — Adds a displayed number to the electronic memory. Note the [M+] key "adds" the displayed number to any number previously stored in the memory rather than replacing the previous number.

[M−] **Subtract from Memory Key** — Subtracts the displayed number from the number stored in the memory.

[MR] **Memory Recall Key** — Recalls the number in memory to the display. The number shown on the display is also retained by the memory until the [MC] key is depressed.

[MC] **Memory Clear Key** — Clears the calculator memory.

TAPE CONTROL KEYS

Printer On/Off Key — Each operation of this key alternately turns the printer off or on. The printer is off when the calculator is first turned on.

Paper Advance Key — Advances the paper tape until released.

DISPLAY

Power On Indication — The presence of digits in the display is indication that power is on.

Minus Sign — Appears at the left of the displayed number to indicate a negative number. Negative 8-digit numbers are underlined by the printer.

Decimal Point — Automatically appears to the right of any number entered unless positioned elsewhere by use of [•] key. A zero will precede the decimal for decimal numbers unless the decimal point is to the extreme left of the display.

Memory In Use Indication — When a number (other than zero) is stored in the memory, the symbol (M) will appear at the left of the display. This symbol will be cleared if [MC] is pressed or if the result in memory becomes zero through use of [M+], or [M−]. (The calculator has a zero in memory when it is first turned on.)

Overflow/Error Indication — "Error" will appear in the display for the following reasons:

1. The result of a calculation has more than eight digits to the left of the decimal.
2. The total in memory has more than eight digits to the left of the decimal.
3. Dividing a number by zero.

NOTE: When "Error" appears in the display, the next key push will clear the error and return the calculator to normal operation.

PRINTER OPERATION

Tape Indicator — When the tape is on, a "▫" will appear in the left-most digit of the display.

Audit Trail — Your calculator allows you to keep track of all calculations performed by printing an "audit trail" to the right of the numbers entered.

The following symbols and letters are printed:

Symbol	Meaning	Key
M+	Sum to Memory	[M+]
M−	Subtract from Memory	[M−]
M=	Memory Contents	[MR]
▫	Tape On	[▫/off]
%	Percent	[%]
=	Equals	[=]
−	Subtract	[−]
+	Add	[+]
÷	Divide	[÷]
×	Multiply	[×]
ERROR	Printed when the calculator is asked to display a number outside its limits (greater than 99999999.)	
A	Add-on %	[+] n [%] [=]
D	Discount %	[−] n [%] [=]
C	Clear	[CE/C]
MEM C	Memory Clear	[MC]
MEM ERROR	Printed when the calculator is asked to store a number outside its limits (greater than 99999999.)	

BATTERY CONSIDERATIONS

Low Battery Indication — When the battery pack is nearly discharged, the display and print will appear dim and may show erroneous symbols or numbers before fading away. At this time, the calculator should be connected to the charger to recharge the battery pack.

WARNING: Avoid leaving the calculator on for several hours after the display appears dim or other symptoms of battery discharge appear, as the battery pack may be damaged by excessive discharge in such a way that it can no longer be recharged. If the battery pack cannot be fully recharged in the normal period of time, it may be able to be restored to useful operation through a prolonged period of charging.

IMPORTANT: When the batteries are low, the calculator will not print until the batteries have been charged for 20 minutes. During this 20 minute period, the calculator should be operated in the display mode only.

Initial Turn-ON — A rechargeable battery pack can lose its charge. Therefore, before initially operating the calculator (and after a prolonged period of non-use), the calculator should be attached to the charger and the battery pack allowed to charge for one minute before setting the switch to ON. The calculator can then be operated in the display only mode while attached to the charger, if desired. **If printing is desired, the batteries should be charged for 20 minutes with the switch off before operation.** Before portable operation, however, the battery pack should be fully charged.

Periodic Recharging — For maximum rechargeable battery life, it is recommended that the calculator be operated as a portable, recharging the battery pack when necessary. The nickel-cadmium battery pack can lose its storage capability if it is not allowed to occasionally discharge. Therefore, connection of the calculator to the charger for long periods of time is not recommended; although no damage will be done to the calculator if it is left connected for a short period of time beyond that required to fully recharge the battery pack.

Recharge Time — From a discharged condition, the battery pack can be recharged in approximately 4 hours if the calculator is not operated during the recharge period. If the calculator is operated during recharging, the time needed for full recharge is approximately 10 hours.

OPERATING EXAMPLES

The following examples show how to operate the TI-5025 and should be followed to become familiar with how the calculator works:

Before using the calculator, charge the battery pack for 20 minutes. The calculator can be used while the battery pack is charging, but it is recommended that it be charged for 4 hours with the calculator turned off before portable operation.

Place ON-OFF switch in the ON position, and a zero should appear in the display.

TAPE ON/OFF KEY

The tape ON/OFF key will cause the calculator to operate in a Display/Tape or display only mode depending upon the calculator's present state. (The calculator powers up with the printer off.)

Example: Power on, 2, Tape ON/OFF, clear

Enter	Press	Display	Tape
ON		0.	
2		2.	
	[Tape On/Off]	° 2.	2.°
	[CE/C]	° 0.	C

ADDITION AND SUBTRACTION

Example: 4.23 + 4 = 8.23

Enter	Press	Display	Tape
4.23	[+]	° 4.23	4.23 +
4	[=]	° 8.23	4. =
		° 8.23	8.23

Example: 6 − 1.854 = 4.146

Enter	Press	Display	Tape
6	[−]	° 6.	6. −
1.854	[=]	° 4.146	1.854 =
		° 4.146	4.146

Example: 12.321 − 7.921 + 1.6 = 6

Enter	Press	Display	Tape
12.321	[−]	12.321	12.321 −
7.921	[+]	4.4	7.921 +
1.6	[=]	6.	1.6 =
		6.	6.

MULTIPLICATION AND DIVISION

Example: 27.2 × 18 = 489.6

Enter	Press	Display	Tape
27.2	[×]	27.2	27.2 ×
18	[=]	489.6	18. =
		489.6	489.6

Example: 12 ÷ 5 = 2.4

Enter	Press	Display	Tape
12	[÷]	12.	12. ÷
5	[=]	2.4	5. =
		2.4	2.4

Example: (4 × 7.3) ÷ 2 = 14.6

Enter	Press	Display	Tape
4	[×]	4.	4. ×
7.3	[÷]	29.2	7.3 ÷
2	[=]	14.6	2. =
		14.6	14.6

NEGATIVE RESULTS

Example: 13548627 − 23645792 = −10097165

Enter	Press	Display	Tape
13548627	[−]	13548627.	13548627. −
23645792	[=]	10097165.	23645792. =
		−10097165.	10097165.

NOTE: Negative 8-digit results are printed with an underline to show that they are negative.

ERROR CORRECTION

Occasionally, an erroneous numerical entry will be entered or an incorrect function key will be pressed. In some cases, the error can be corrected without clearing the calculator and starting the problem over again.

If an error is made in a numerical entry, the error can be corrected by immediately pressing the [CE/c] key and entering the correct number.

Example: 5 + 43 = 8

Enter	Press	Display	Tape	Remarks
5	[+]	5.	5. +	
4		4.		4 pressed incorrectly.
	[CE/c]	0.		Clear entry.
3	[=]	8.	3. =	Enter correct number
		8.	8.	and complete calculation.

If an arithmetic function key other than the desired one is pressed, the error must be corrected by pressing [CE/c] and reentering the problem.

MULTIPLICATION AND DIVISION BY A CONSTANT

The automatic constant feature of the calculator allows multiplication or division of a series of numbers by one number. A number entered after an operation key becomes the constant. The constant is erased by pressing the [CE/c] key.

Example: 5 × 4 = 20, 6 × 4 = 24, 7 × 4 = 28

Enter	Press	Display	Tape
5	[×]	5.	5. ×
4	[=]	20.	4. =
		20.	20.
6	[=]	24.	6. =
		24.	24.
7	[=]	28.	7. =
		28.	28.

Example: 12 ÷ 2 = 6, 20 ÷ 2 = 10, 44 ÷ 2 = 22

Enter	Press	Display	Tape
12	[÷]	12.	12. ÷
2	[=]	6.	2. =
		6.	6.
20	[=]	10.	20. =
		10.	10.
44	[=]	22.	44. =
		22.	22.

ADDITION AND SUBTRACTION OF A CONSTANT

A number entered after the [+] key becomes a constant add number and a number entered after the [−] key becomes a constant subtract number.

Example: 5 + 3 = 8, 9 + 3 = 12, 91 + 3 = 94

Enter	Press	Display	Tape
5	[+]	5.	5. +
3	[=]	8.	3. =
		8.	8.
9	[=]	12.	9. =
		12.	12.
91	[=]	94.	91. =
		94.	94.

Example: 8 − 6 = 2, 25 − 6 = 19, 3 − 6 = −3

Enter	Press	Display	Tape
8	[−]	8.	8. −
6	[=]	2.	6. =
		2.	2.
25	[=]	19.	25. =
		19.	19.
3	[=]	−3.	3. =
		−3.	−3.

PERFORMING MIXED CALCULATIONS

Just press the keys in the same order as the problem is written.

Example: 12 × 13 ÷ 14 + 15 − 16 = 10.142857

Enter	Press	Display	Tape
12	[×]	12.	12. ×
13	[÷]	156.	13. ÷
14	[+]	11.142857	14. +
15	[−]	26.142857	15. −
16	[=]	10.142857	16. =
		10.142857	10.142857

USING THE PERCENT KEY

It's easy to find percentages with the percent key. The following examples show how.

Example: 6% of $1,250.00 = $75.00

Enter	Press	Display	Tape
1250	[×]	1250.	1250. ×
6	[%]	75.	6. %
		75.	75.

Note that the correct answer appears after the [%] key is pressed.

Example: $578.50 equals what percent of $1500?

Enter	Press	Display	Tape
578.5	[÷]	578.5	578.5 ÷
1500	[%]	38.566667	1500 =
		38.566667	38.566667 %

Example: $65.00 plus 5% tax

Enter	Press	Display	Tape
65	[+]	65.	65. +
5	[%]	3.25	5. %
	[=]	68.25	3.25 =
		68.25	68.25 A

Example: $85.00 less 7% discount

Enter	Press	Display	Tape
85	[−]	85.	85. −
7	[%]	5.95	7. %
	[=]	79.05	5.95 =
		79.05	79.05 D

Example: $125.00 less 15% discount plus 4% tax

Enter	Press	Display	Tape
125	[−]	125.	125. −
15	[%]	18.75	15. %
	[=]	106.25	18.75 =
		106.25	106.25 D
	[+]	106.25	106.25 +
4	[%]	4.25	4. %
	[=]	110.5	4.25 =
		110.5	110.5 A

Example:

```
          19.95
         +12.95
         ------
          32.90
  -10%  -  3.29
         ------
          29.61  Subtotal
         +16.00
         - 7.95
         ------
          37.66
  - 5%  -1.883
         ------
         35.777  Grand Total
```

Enter	Press	Display	Tape
19.95	[+]	▫ 19.95	19.95 +
12.95	[−]	▫ 32.9	12.95 −
10	[%]	▫ 3.29	10. %
	[=]	▫ 29.61	3.29 =
		▫ 29.61	29.61 D
	[+]	▫ 29.61	29.61 +
16	[−]	▫ 45.61	16. −
7.95	[−]	▫ 37.66	7.95 −
5	[%]	▫ 1.883	5. %
	[=]	▫ 35.777	1.883 =
		▫ 35.777	35.777 D

Example: Compound Interest (Percentage Constant)

First Year $150 at 5% = ?
Second Year = ?
Third Year = ?

Enter	Press	Display	Tape
150	[+]	▫ 150.	150. +
5	[%]	▫ 7.5	5. %
	[=]	▫ 157.5	7.5 =
		▫ 157.5	157.5 A
	[=]	▫ 165.375	157.5 +
		▫ 165.375	7.875 =
		▫ 165.375	165.375 A
	[=]	▫173.64375	165.375 +
		▫173.64375	8.26875 =
		▫173.64375	173.64375 A

Example: Constant Discount (Percentage Constant)

56.25 − 15% = 47.8125

32.50 − 15% = 27.625

45.50 − 15% = 38.675

Enter	Press	Display	Tape
56.25	[−]	56.25	56.25 −
15	[%]	8.4375	15 %
	[=]	47.8125	8.4375 =
		47.8125	47.8125 D
32.5	[=]	27.625	32.5 −
		27.625	4.875 =
		27.625	27.625 D
45.5	[=]	38.675	45.5 −
		38.675	6.825 =
		38.675	38.675 D

USING THE MEMORY

Storing and Recalling Numbers

Example: 2 × 3 = 6 (Demonstrate memory functions)

Enter	Press	Display	Tape
	[CE/C]	0.	C
	[MC]	0.	MEM C
2	[×]	2.	2. ×
3	[=]	6.	3. =
		6.	6.
	[M+]	6.	6. M+
	[CE/C]	0.	C
	[MR]	6.	6. MR
	[MC]	6.	MEM C
	[M−]	6.	6. M−
	[MR]	−6.	−6. MR
	[CE/C]	0.	C
	[MC]	0.	MEM C

Example: $\frac{(2 \times 3) + (3 \times 5) + (6 \times 5)}{3} = 17$

Enter	Press	Display	Tape
	[CE/C]	0.	C
	[MC]	0.	MEM C
2	[×]	2.	2. ×
3	[=]	6.	3. =
		6.	6
	[M+]	6.	6. M+
3	[×]	3.	3. ×
5	[=]	15.	5. =
		15.	15.
	[M+]	15.	15. M+
6	[×]	6.	6. ×
5	[=]	30.	5. =
		30.	30.
	[M+]	30.	30. M+
	[MR]	51.	51. M=
	[÷]	51.	51. ÷
3	[=]	17.	3. =
		17.	17.
	[MC]	17.	MEM C

Group and Grand Totals

Calculate the amount to be added/subtracted in memory using the [+], [−], [×], or [÷] keys and the [=] key; then depress [M+] to add to memory or [M−] to subtract from memory.

Example:

5	4
+6	+2
+7	+9

18 − 15 = 3

Enter	Press	Display	Tape
	[CE/C]	0.	C
	[MC]	0.	MEM C
5	[+]	5.	5. +
6	[+]	11.	6. +
7	[=]	18.	7. =
		18.	18.
	[M+]	18.	18. M+
4	[+]	4.	4. +
2	[+]	6.	2. +
9	[=]	15.	9. =
		15.	15.
	[M−]	15.	15. M−
	[MR]	3.	3. M=
	[MC]	3.	MEM C

COMPLEX CALCULATIONS

Sum of Products

Example: $4 \times 11.99 = 47.96$
$6 \times 2.97 = 17.82$
$12 \times .98 = 11.76$
77.54

Enter	Press	Display	Tape	
	CE/C	0.		C
	MC	0.	MEM	C
4	×	4.	4.	×
11.99	=	47.96	11.99	=
		47.96	47.96	
	M+	47.96	47.96	M+
6	×	6.	6.	×
2.97	=	17.82	2.97	=
		17.82	17.82	
	M+	17.82	17.82	M+
12	×	12.	12.	×
.98	=	11.76	0.98	=
		11.76	11.76	
	M+	11.76	11.76	M+
	MR	77.54	77.54	M=
	MC	77.54	MEM	C

Sum of Quotients

Example: $\frac{1.98}{4} + \frac{2.27}{2} + \frac{4.98}{8} = 2.25$

Enter	Press	Display	Tape
	[CE/C]	0.	C
	[MC]	0.	MEM C
1.98	[÷]	1.98	1.98 ÷
4	[=]	0.495	4. =
		0.495	0.495
	[M+]	0.495	0.495 M+
2.27	[÷]	2.27	2.27 ÷
2	[=]	1.135	2. =
		1.135	1.135
	[M+]	1.135	1.135 M+
4.98	[÷]	4.98	4.98 ÷
8	[=]	0.6225	8. =
		0.6225	0.6225
	[M+]	0.6225	0.6225 M+
	[MR]	2.2525	2.2525 M=
	[MC]	2.2525	MEM C

Product of Sums

Example: $(2 + 3) \times (4 + 5) = 45$

Enter	Press	Display	Tape
	[CE/C]	0.	C
	[MC]	0.	MEM C
2	[+]	2.	2. +
3	[=]	5.	3. =
		5.	5.
	[M+]	5.	5. M+
4	[+]	4.	4. +
5	[×]	9.	5. ×
	[MR]	5.	5. M=
	[=]	45.	5. =
		45.	45.
	[MC]	45.	MEM C

APPENDIX A

CONVERSION FACTORS

English to Metric Conversions

To Find	Multiply	By
microns	mils	**25.4**
centimeters	inches	**2.54**
meters	feet	**0.3048**
meters	yards	**0.9144**
kilometers	miles (stat.)	**1.609344**
grams	ounces (av)	28.349523
kilograms	pounds (av)	**0.45359237**
liters	gallons (U.S.)	3.7854118
milliliters (cc)	fl. ounces (U.S.)	29.573530
sq. centimeters	sq. inches	**6.4516**
sq. meters	sq. feet	**0.09290304**
sq. meters	sq. yards	**0.83612736**
milliliters (cc)	cu. inches	**16.387064**
cu. meters	cu. feet	0.02831685
cu. meters	cu. yards	0.76455486

Boldface numbers are exact; others are given to eight significant figures.

Temperature Conversions

$$°F = \frac{9}{5}(°C) + 32$$

$$°C = \frac{5}{9}(°F - 32)$$

APPENDIX B

SERVICE INFORMATION

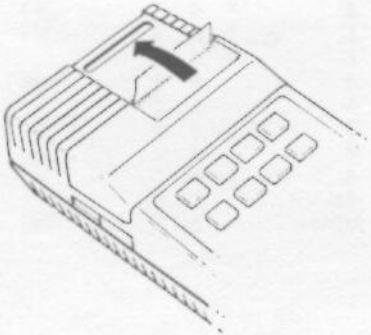
PRINTING PAPER REPLACEMENT

A roll of thermal printing paper was included with your calculator. When you near the end of the roll, a continuous stripe will appear to the right of the printout to indicate that there are only a few feet of paper left in the roll. As you continue operating the calculator, check to make sure that sufficient printing paper remains to complete your calculations.

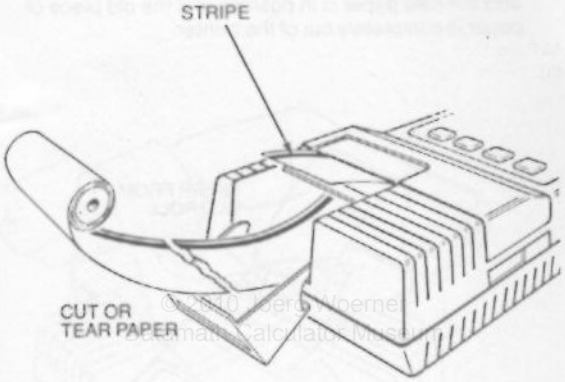
When replacing the paper in your calculator, use only TP-12150 thermal printing paper. Other thermal papers may damage your calculator and void your warranty. New paper may be obtained at the store where your calculator was purchased. If your local store is temporarily out of paper, you may order it from Texas Instruments Service Facility, P.O. Box 53, Lubbock, Texas 79408.

Follow these steps to install new paper:

1. Open the paper access door by gently pushing the top of the door toward the top of the calculator and downward.

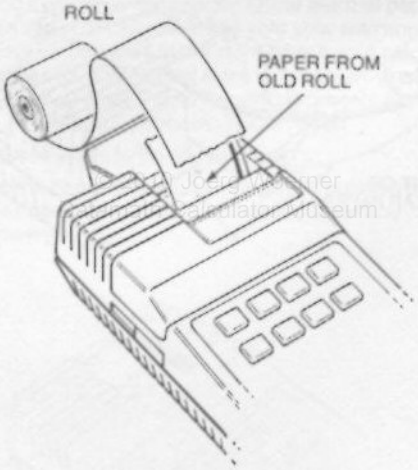


2. Lift the old roll of paper from the calculator and cut or tear the paper to separate the end of the roll from the paper remaining in the printing mechanism.



3. Place the new roll of paper in the paper compartment so that the paper unrolls from the bottom of the roll. If there is paper remaining in the printer, use this step to install paper and skip step 4. Otherwise, proceed with step 4.

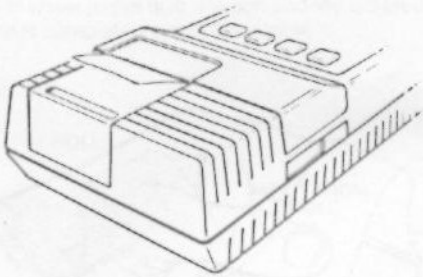
   Insert the end of the new paper between the rubber drum and the remaining paper as shown. Press [↑] until the new paper is in position and the old piece of paper is completely out of the printer.



4. Use this step to install paper when a piece of paper is NOT remaining in the printer.

   Insert the end of the roll between the rubber drum and the rounded portion of the paper cradle. Using the fingertips of your right hand, gently press the paper against the back of the rubber drum and press [↑] until paper is in position for printing.

5. Place the new roll of paper back into the paper cradle and close the paper access door to complete paper installation.



PRINTHEAD CLEANING

Occasionally, foreign particles may become trapped between the printhead and the paper which causes partial or dim printing. Since the printer is basically an electronic device, it does not require special ink ribbons or special maintenance other than periodic head cleaning. Using metal probes, sharp objects or lubricants may damage the printhead or rubber roller. The following procedure is recommended for cleaning the printhead when a printing difficulty occurs or before installing each new roll of TP-12150 thermal printing paper.

a. Remove paper as directed in step 2 on page 23.

b. Cut a 1.5-inch by 8-inch strip of standard bond typing paper or use the instruction paper slip furnished with the calculator.

c. Install the paper into the calculator the same way described for thermal paper.

d. With the calculator power switch and printer turned on:

   Press [8] eight times
   Press [MC] [M−]
   Press [MR] ten times

   The abrasive action of the bond paper cleans the printhead as indicated by the faint printing on the paper.

e. Reinstall the thermal paper as described in step 3 on page 24 and proceed normally.

IN CASE OF DIFFICULTY

1. **Be sure the calculator has been charged for at least 20 minutes with the power switch off. Presence of digits in the display indicates power on.**
2. If the difficulty involves calculation errors or the calculator does not respond to keyboard entries:
   a) Press [CL/C] twice, [MC] and [=]. The calculator should print "C" at least one time, then print "MEM C" and finally print "0.=" and "0.". The display should show only "0.". Try calculation again.
   b) Set power switch off for 10 seconds and back on again. The calculator should display "0". Try calculation again (Press [%/ON] to turn on printer).
   c) Review the operating instructions to be certain that calculations have been performed in the manner described in this book. Improper key sequences may result in incorrect answers.
3. If partial printing occurs or the printing becomes dim, foreign particles may have become lodged between the printhead and paper. Follow the PRINTHEAD CLEANING procedure to remove foreign particles. Some instances may require repeating the procedure two or three times.

If none of the above procedures corrects the difficulty, return the calculator **and charger** PREPAID and INSURED to the applicable SERVICE FACILITY listed on the back cover. For your protection, the calculator must be sent insured; Texas Instruments cannot assume any responsibility for loss of or damage to uninsured shipments.

NOTE: The P.O. box number listed for the Lubbock Service Facility is for United States parcel post shipments only. If you desire to use another carrier, the street address is: Texas Instruments Incorporated, 2305 University Avenue, Lubbock, Texas 79415.

Please include information on the difficulty experienced with the calculator, as well as return address information including name, address, city, state and zip code. The shipment should be carefully packaged and adequately protected against shock and rough handling.

Out-of-Warranty Service—Because our Service Facility serves the entire United States, it is not feasible to hold units while providing repair estimates. For simplicity of operation, we have established flat-rate charges for all out-of-warranty repairs. To obtain the correct charges for a particular model, call our toll-free number listed in this section.

CALCULATOR EXCHANGE CENTERS

If your calculator requires service, instead of returning the unit to a service facility for repair, you may elect to exchange the calculator for a factory-rebuilt calculator of the SAME MODEL at one of the exchange centers which have been established across the United States. A $3.00 charge will be made by the exchange center for in-warranty exchanges. Please call the Consumer Relations Department for further details and the location of the nearest exchange center.

IF YOU NEED SERVICE INFORMATION

If you need service information about your calculator, write the Consumer Relations Department at:

Texas Instruments Incorporated
P.O. Box 53
Lubbock, Texas 79408

or call Consumer Relations at 800-858-1802 (toll-free within all contiguous United States except Texas) or 800-692-1353 (toll-free within Texas). If outside contiguous United States call 806-747-3841. (We regret that we cannot accept collect calls at this number).

ONE-YEAR LIMITED WARRANTY

WARRANTEE

This Texas Instruments electronic calculator warranty extends to the original purchaser of the calculator.

WARRANTY DURATION

This Texas Instruments electronic calculator is warranted to the original purchaser for a period of one (1) year from the original purchase date.

WARRANTY COVERAGE

This Texas Instruments electronic calculator is warranted against defective materials or workmanship. **THIS WARRANTY IS VOID IF: (i) THE CALCULATOR HAS BEEN DAMAGED BY ACCIDENT OR UNREASONABLE USE, NEGLECT, IMPROPER SERVICE OR OTHER CAUSES NOT ARISING OUT OF DEFECTS IN MATERIAL OR WORKMANSHIP (ii) THE SERIAL NUMBER HAS BEEN ALTERED OR DEFACED.**

WARRANTY PERFORMANCE

During the above one (1) year warranty period your calculator will either be repaired or replaced with a reconditioned model of an equivalent quality (at TI's option) when the calculator is returned, postage prepaid and insured to a Texas Instruments Service facility listed below. In the event of replacement with a reconditioned model, the replacement unit will continue the warranty of the original calculator or 6 months, whichever is longer. Other than the postage and insurance requirement, no charge will be made for such repair adjustment and/or replacement.

WARRANTY DISCLAIMERS

ANY IMPLIED WARRANTIES ARISING OUT OF THIS SALE, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE ABOVE ONE (1) YEAR PERIOD. TEXAS INSTRUMENTS SHALL NOT BE LIABLE FOR LOSS OF USE OF THE CALCULATOR OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE PURCHASER.

Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you.

LEGAL REMEDIES

This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

TEXAS INSTRUMENTS CONSUMER SERVICE FACILITIES

Texas Instruments Service Facility
P.O. Box 2500
Lubbock, Texas 79408

Texas Instruments Service Facility
41 Shelley Road
Richmond Hill, Ontario, Canada

Consumers in California and Oregon may contact the following Texas Instruments offices for additional assistance or information.

Texas Instruments Consumer Service
3186 Airway Drive Bldg. K
Costa Mesa, California 92626
(714) 540-7190

Texas Instruments Consumer Service
10700 Southwest Beaverton Highway
Park Plaza West, Suite 565
Beaverton, Oregon 97005
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