



1. Eight-digit display
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## GENERAL INFORMATION

**Before Operating Your Calculator:**  
Charge the batteries. Your Rockwell 24K calculator is supplied with rechargeable internal batteries and a battery charger. To charge the batteries, simply plug the charger into the jack provided on your calculator and a standard AC outlet.

**CAUTION:** Do not turn your calculator on until the batteries have been charged for at least 10 minutes. (This applies after extended storage of your calculator also.)

Do not operate your calculator without the charger until you have charged the batteries for five hours. Failure to do so may damage the batteries.

With the calculator off, allow approximately ten (10) hours for the batteries to be fully charged. You can operate your calculator while charging the batteries but the time required for the batteries to become fully charged will increase. When the batteries are fully charged, at least three hours of operating time can be expected.

**Battery Life**  
Battery life will be prolonged by recharging the batteries after approximately three

(3) hours operating time. A dim display indicates the batteries are discharged and recharging is necessary. Your charger is not an AC adapter and, consequently, should not be used continuously. Degradation of the batteries may occur if charging is continued for more than 72 hours.

To avoid possible damage to your calculator, use only the charger supplied with it.

## OPERATION

### On/Off Switch

Turning the calculator on will automatically clear the calculator (including its memory) to zero. The calculator is then immediately ready for problem solving.

### Display

Your calculator will accept and display any positive or negative number between 0.0000001 and 99,999,999. A negative number is indicated by a minus sign on the left side of the display:  $-3.1469782$ , for example. Results in excess of eight digits cause an overflow condition which is indicated by illuminating all eight decimal points:  $\boxed{1.2345678}$ , for example, and the eight most significant digits of your answer are saved. In this circumstance, all keys become inoperative except the clear key,  $\boxed{CE/C}$ . See

Clear Operations and Overflow Conditions.

If a number has been entered in the memory, a Memory Indicator dot is displayed in the far left position of the display:  $-.123.45678$  or  $.0.3334567$ , for example.

### Arithmetic Function and Answer Keys

The arithmetic function keys,  $\boxed{+}$ ,  $\boxed{-}$ ,  $\boxed{\times}$ , and  $\boxed{\div}$ , enter the desired arithmetic operation to be performed by the calculator. The answer to such an operation is obtained by depressing one of the answer keys,  $\boxed{=}$  or  $\boxed{\%}$ , or by another depression of an arithmetic function key. The decimal point is automatically placed in the correct position in your answers.

### Clear Key

$\boxed{CE/C}$ . Depressing the  $\boxed{CE/C}$  key clears the display of erroneous entries, cancels overflow conditions, or clears the calculator of stored numbers and functions. The memory contents are not affected by depression of the  $\boxed{CE/C}$  key. (See Clear Operations for detailed instructions on use of the  $\boxed{CE/C}$  key.)

### Memory Keys

Your calculator has a completely independent four-key memory. The functions of the memory operation keys are:  $\boxed{M+}$  and  $\boxed{M-}$ . Depressing the  $\boxed{M+}$ , or  $\boxed{M-}$ ,

key adds or subtracts the number in the display to, or from, the memory contents.

**MR** Depressing the **MR** key recalls the number in the memory to the display. This recalled number may be used in subsequent arithmetic operations.

**MC** Depressing the **MC** key clears the memory.

#### Square Root Key

**√** Depressing the **√** key causes the calculator to display the square root of the displayed number.

#### Change Sign Key

**+/-** Depressing the **+/-** key changes the sign of the displayed number.

#### Percent Key

**%** The **%** key operates just like the equal key, **=**, when multiplying and dividing except that it causes the last entry to be divided by 100 before the desired arithmetic operation is performed.

#### Register Exchange Key

**⇄** Depressing the **⇄** key interchanges the contents of the display and the working register.

#### Basic Calculations

Your Rockwell 24K performs arithmetic calculations with algebraic logic. This

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means your calculator works the same way you think or write a problem.

Notice that the display shows each new numerical entry as you depress the number entry keys and the result of the previous arithmetic calculation when you depress an arithmetic function key or answer key.

#### Addition, Subtraction, Multiplication and Division

Addition, subtraction, multiplication, and division operations may be intermixed, or chained, as shown below:

$$\frac{(5 + 6) 7 - 8}{9} = 7.6666666$$

Keyboard Entry	Display
5	5.
<b>+</b> 6	6.
<b>X</b>	11.
7	7.
<b>-</b>	77.
8	8.
<b>÷</b>	69.
9	9.
<b>=</b>	7.6666666

#### Repeat Operations

The repeat operation capability of your Rockwell 24K is a convenient feature that enables you to add, subtract, multiply or divide a series of identical numbers with-

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out re-entering the numbers each time. For example, grocery items with values of  $1.69 + 2.98 + 2.98 + 2.98 + 0.49 = 11.12$  would be added as follows:

Keyboard Entry	Display
1.69	1.69
<b>+</b> 2.98	2.98
<b>+</b>	4.67
<b>+</b>	7.65
<b>+</b>	10.63
.49	0.49
<b>=</b>	11.12

#### Automatic Constant

The automatic constant is another time saving feature. This feature enables you to add, subtract, multiply or divide by the same number repeatedly without re-entering the number for each new calculation. The number entered after the last arithmetic function key depressed is always saved as the constant (addend, subtrahend, multiplier, or divisor). The constant function is the last arithmetic function key depressed before depressing the **=** key. To perform multiple operations with the saved constant, enter a new augend, minuend, multiplicand or dividend, and depress the **=** key for an answer.

For example, to increase a recipe which normally serves four people to serve seven,

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multiply each item in the recipe by  $7/4$  or 1.75, as follows:

6 cups flour  $\times 1.75 = 10.5$  cups flour  
1.5 tsp salt  $\times 1.75 = 2.625$  tsp salt  
2 cups milk  $\times 1.75 = 3.5$  cups milk

Keyboard Entry	Display
6	6.
<b>X</b> 1.75	1.75
<b>=</b>	10.5
1.5	1.5
<b>=</b>	2.625
2	2.
<b>=</b>	3.5

In all instances, the constant is retained until a different number is entered after an arithmetic function key is depressed.

#### Percentage Operations

Percentage calculations are performed easily with the 24K calculator. For example, to calculate 1.5% monthly charge on a department store account balance of \$340.00, make the following entries:

Keyboard Entry	Display
340	340.
<b>X</b> 1.5	1.5
<b>%</b>	5.1

As another example, suppose you have answered 57 of 65 examination questions correctly. What is your percentage of correct answers?

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Keyboard Entry	Display
	57
$\div$	65
$\%$	87.6923

When used with the  $\div$  or  $\%$  keys, the  $\%$  key performs ADD-ON and DISCOUNT calculations automatically. This capability is another time-saving feature when you want to add or subtract a percentage of a number to that number.

To perform an add-on or discount operation, enter the number which you want to add on or discount, depress the  $\div$  key for add on or the  $\%$  key for discount, enter the desired percentage, depress the  $\%$  key to display the amount of add-on or discount, and press the  $=$  key to display the result.

Add-on and discount operations can be chained if desired. For example, if a \$ 20.00 item is discounted by 15% and a 6% sales tax is added, what is the total cost:

Keyboard Entry	Display	Comments
	20.00	
$\%$	15	
$\%$	3	Discount
$\div$	17.00	Discounted
$\%$	6	
$\%$	1.02	Sales tax
$=$	18.02	Total cost

### Register Exchange

A useful feature of your Rockwell 24K calculator is the register exchange capability. Depressing the  $\leftrightarrow$  key exchanges the number in the display with the number in the working register (the previously displayed number). One example of the convenience of this feature is illustrated by the following division problem involving a complex denominator.

$$\text{Problem: } \frac{15}{3+6} = 1.6666666$$

Keyboard Entry	Display Register	Working Register
	3	Undetermined
$\div$	3	3
$\div$	6	3
$\div$	9	6
	15	9
$\leftrightarrow$	9	15
$=$	1.6666666	9

### MEMORY OPERATIONS

Your Rockwell 24K memory lets you store or accumulate numbers in the memory without affecting, or being affected by, arithmetic operations. This feature permits you to solve complex problems without writing down intermediate answers. Problem:

$$(5 \times 7.5) + (27 \div 4.5) = 43.5$$

Keyboard Entry	Display	Memory	Memory Indicator "ON"
	5	0	
$\times$	5	0	
	7.5	0	
$=$	37.5	0	
$M+$	37.5	37.5	
	27	37.5	
$\div$	27	37.5	
	4.5	37.5	
$=$	6	37.5	
$M+$	6.0	43.5	
$MR$	* 43.5	43.5	

### CLEAR OPERATIONS

1. A single depression of the  $\text{CE/C}$  key following a number entry clears the displayed number but does not affect the stored constants or the operation in progress.
2. If there is no overflow condition a single depression of the  $\text{CE/C}$  key after an arithmetic function key or answer key clears the calculator (except the memory).
3. A double depression of the  $\text{CE/C}$  key clears any operation in progress and clears the calculator (except the memory).

4. Depressing the  $\text{CE/C}$  key during an overflow (see Overflow Conditions) cancels the overflow condition. Chain and constant operations are not affected by overflowing.

### OVERFLOW CONDITIONS

The following operations result in an overflow condition which causes the Overflow Indicator, all decimal points, to light and all keys except  $\text{CE/C}$  to become inoperative:

1. Any answer or subtotal exceeding 8 whole digits to the left of the decimal point, regardless of the arithmetic sign (absolute value greater than 99,999,999). The 8 most significant digits are displayed as follows:  $\text{X.X.X.X.X.X.X.X}$ . You may proceed with the problem solution after depressing the  $\text{CE/C}$  key once to clear the overflow condition, but you must multiply the final problem answer by  $10^8$  (100,000,000) or move the decimal point 8 places to the right. Any numbers subsequently added or subtracted must be divided by  $10^8$  before entering. If two overflows occur in the same problem, the final answer must be multi-

plied by  $10^8 \times 10^8 = 10^{16}$  and so on. A memory accumulation exceeding 8 whole digits to the left of the decimal point, regardless of the arithmetic sign. The number to be added to the memory remains in the display with leading zeroes sufficient to fill the display:

0.0.0.0.0.X.X.X.

The number in the memory is unaffected. Depressing the **CE/C** key clears the overflow condition and the number remains in the display. XXXX.

Division by zero. All zeroes and decimal points are displayed:

0.0.0.0.0.0.0.0.

### FULL ONE YEAR WARRANTY (U.S.A. and Canada)

The following warranty has been drafted to comply with the new Federal law applicable to products manufactured after July 4, 1975.

Rockwell International Corporation warrants this electronic calculator and accessories (excluding any non rechargeable battery) against defects in materials and workmanship and operating malfunctions for a period of one year from the date of retail purchase. This warranty is for the benefit of the original retail purchaser and any subsequent transferee during the warranty period.

In case of a defect, malfunction, or other failure to conform to the above warranty, Rockwell will, at its option, repair or replace the calculator without charge within a reasonable time after its receipt by our service center. The time required for repairs will be added to the warranty period. For service under this warranty, simply return the calculator prepaid within the warranty period to the nearest Rockwell Customer Service Center listed below. You must also include a copy of the sales receipt or other proof of purchase date. Calculators returned without proof of purchase date will be serviced out of warranty at our prevailing service rates.

#### Exclusions and Limitations

This warranty does not extend to any damage or malfunction resulting from misuse, neglect or accident. The remedies described above are the exclusive remedies under this warranty or any implied warranty, and IN NO EVENT SHALL ROCKWELL BE LIABLE FOR CONSEQUENTIAL DAMAGES.

#### Out-of-Warranty Service

If the calculator fails to operate satisfactorily beyond the one-year warranty period, Rockwell Customer Service Centers will repair and return the calculator to you at our prevailing service rates.

### ROCKWELL CUSTOMER SERVICE CENTERS

#### United States and Canada

Rockwell International Western Service Center  
P.O. Drawer 5077  
950 Deguigne Drive  
Sunnyvale, California 94088

### WARRANTY OUTSIDE USA AND CANADA

For warranty outside of USA and Canada see the enclosed warranty card, or ask your distributor/dealer for warranty information.

#### Service Available Outside USA and Canada British Isles

Sumlock Anita, Ltd. Service Centers are located throughout the British Isles. Consult your local telephone directory for your nearest center.

#### France and Germany

Rockwell - HWT, S.A., Paris, France  
Rockwell International, G.m.b.H., Frankfurt, Germany,

#### Other Countries

Contact your dealer or distributor.

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## Rockwell Electronic Calculators



Owner's Manual for

# the 24K