

Sears

INSTRUCTION
MANUAL

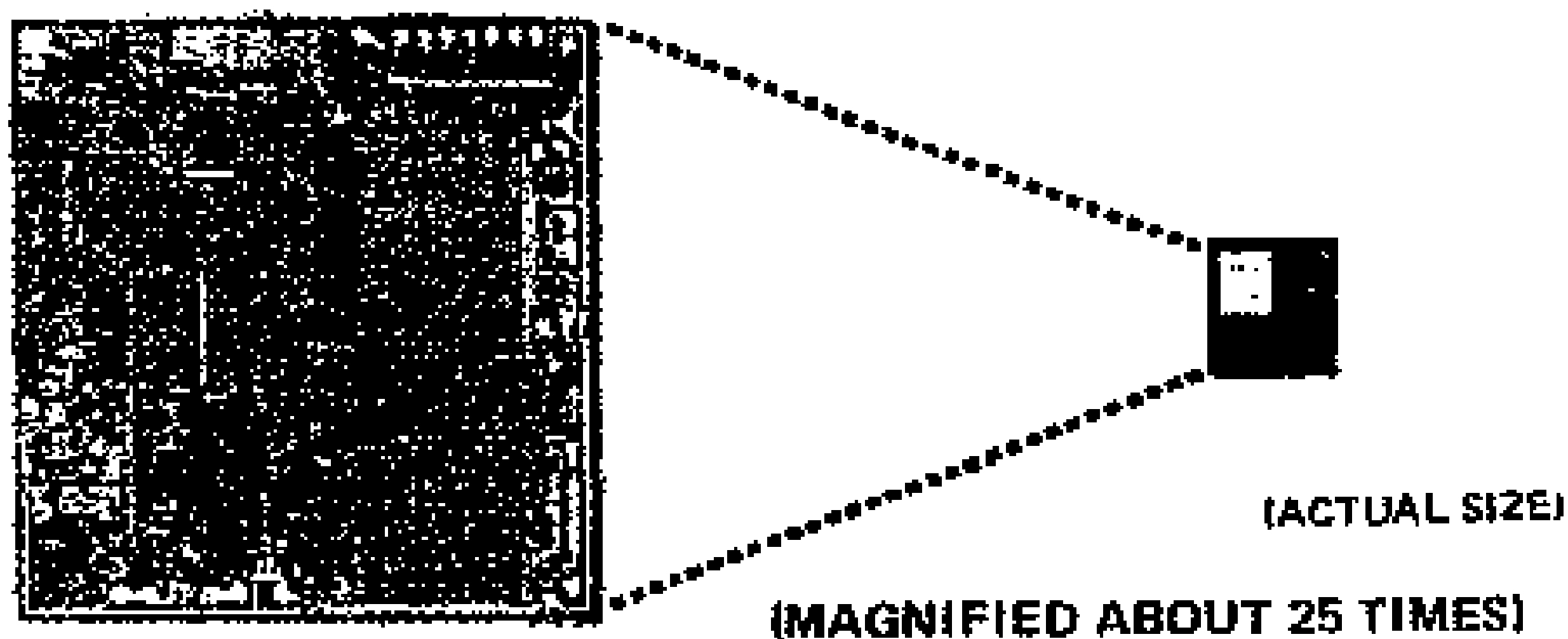


8 DIGIT
UNIVERSAL
CONVERTER

TABLE OF CONTENTS

Before Operating Your Calculator	3
Operating Power	3
Battery Charging	3
Battery Replacement	4
Warranty	4
Special Care and Precautions	5
Principal Conversion Constants Contained in	
Your Universal Converter	6
Changing Fractions to Decimals	7
Explanations (Keyboard and Operating Conditions)	8
Numeral and Function Keys	8
Length Conversion Keys	8
Weight Conversion Keys	9
Liquid Measure Conversion Keys	9
Temperature Conversion Keys	10
Programmable Conversion Keys	10
Memory Operation Keys	10
Miscellaneous Controls and Indicators	11
Machine Capacity	12
Operating Examples	13
Basic Arithmetic Operations	13
Repeated Operations	14
Constant Operations	15
Chain Operations	16
Reciprocals	16
Operations Using Memory	17
Fractional Number Entry	18
Conversion Operations	19
Length Conversions	19
Area Conversions	19
Volume Conversions	20
Weight Conversions	20
Liquid Measurement Conversions	21
Temperature Conversions	21
Programmable Conversion	22
Wrap-Around Decimal	23
Computations with Very Large or	
Very Small Numbers	24
Entry Correction	24
Recovery Techniques	24

**MICROELECTRONICS IS THE REASON WHY
YOUR SEARS UNIVERSAL CONVERTER
FIGURES MORE BUT COSTS LESS**



The calculating "brain" of your Sears Calculator is contained on a single microelectronic "chip" (see above) called a large-scale integrated circuit.

The chip in your Universal Converter contains more than 11,000 electronic elements, all solidly connected together. Hence, your Sears Calculator is solidly reliable...and is amazingly versatile.

**WHY YOU SHOULD HAVE A
UNIVERSAL CONVERTER-CALCULATOR**

Chemists, Contractors, Doctors, Engineers, Pharmacists and people of many other occupations will find the Universal Converter invaluable as an "on-the-job" aid. With a few simple key depressions, you can solve conversions otherwise requiring considerable time to perform. With the programmable conversion feature, the Universal Converter has limitless possibilities for transferring from one set of units to another.

Another unique feature of this calculator is the capability of doing arithmetic operations with fractional numbers. The Universal Converter can perform these functions in addition to performing all of the arithmetic functions which are normally performed on the best four-function calculator with memory.

You are going to be amazed at the number of situations in your daily living in which you can use your Sears Calculator to save money and have fun doing it. The following pages show you a few examples of ways in which you can get the maximum utilization out of your Sears Universal Converter-Calculator.

BEFORE OPERATING YOUR CALCULATOR

Your calculator comes with four AA size nickel cadmium rechargeable batteries and an AC/DC converter (charger). Install the batteries in your calculator per the instructions under BATTERY REPLACEMENT.

CAUTION: DO NOT OPERATE YOUR CALCULATOR UNTIL YOU HAVE FULLY CHARGED THE NICKEL CADMIUM BATTERIES. FAILURE TO DO SO CAN DAMAGE THE BATTERIES. SEE BATTERY CHARGING.

OPERATING POWER

Your calculator may be operated with either four AA size nickel cadmium rechargeable batteries (GE No. GCF 500S, or equivalent) or four AA size disposable batteries (Eveready No. E91, Sears, or equivalent). After the first full charge, you may use the calculator while the nickel cadmium batteries are being charged; however, your battery charger is not an AC adapter and should not be left plugged in indefinitely.

CAUTION: DO NOT USE THE CHARGER WITH DISPOSABLE BATTERIES.

BATTERY CHARGING

To charge the nickel cadmium batteries, simply turn the calculator "OFF," then plug the charger into the jack provided in your calculator and a conventional 110-120V, 60 Hz outlet (see Special Care and Precautions). With the calculator turned off, allow approximately five (5) hours for the batteries to be fully charged. Your calculator CAN be used while the batteries are being charged, but the time required for the batteries to become fully charged will increase. The nickel cadmium batteries will provide a minimum of three and one-half (3½) hours operating time when fully charged. The life of the batteries will be prolonged by recharging them after approximately three (3) hours operating time. The need for recharging is indicated by the display becoming dimmer.

CAUTION: DO NOT CONTINUE TO USE YOUR CALCULATOR ON BATTERY POWER ONCE THE DISPLAY BECOMES DIM. THE NICKEL CADMIUM BATTERIES MAY BE PERMANENTLY DAMAGED BY OVER-USE WITHOUT CHARGING.

BATTERY REPLACEMENT

The nickel cadmium batteries supplied with your calculator can be recharged approximately 500 times under normal service conditions before the ability of the batteries to hold their charge is impaired. With each recharging cycle, the batteries gradually lose their ability to be recharged. When the operating time between full charges decreases to an inconvenient amount, the batteries should be replaced. The batteries supplied may be replaced with batteries specified under OPERATING POWER.

CAUTION: IF THE NONRECHARGEABLE TYPE IS USED, DO NOT USE THE BATTERY CHARGER.

Not all nickel cadmium batteries are alike. The use of the charger with batteries other than the specific type of nickel cadmium rechargeable battery previously specified may damage both the calculator and the batteries. Replacement nickel cadmium batteries may be ordered from Sears customer service desk as a part for this calculator. Please furnish the model number found on the bottom of the calculator.

To replace the batteries, make sure the calculator power switch is in the "OFF" position and the battery charger is disconnected. Remove the battery access cover from the back of the calculator by sliding it toward the bottom of the machine. Remove and discard the old batteries.

WARNING: DO NOT BURN DISCARDED BATTERIES AS THEY MAY EXPLODE.

When inserting new batteries, observe the battery polarity. The (+) pole of the battery must correspond with the (+) indication in the battery compartment. NOTE: The (+) pole of the battery is the one with the tip protruding as shown pictorially in the battery compartment.

CAUTION: INCORRECT INSTALLATION OF THE BATTERIES CAN DAMAGE THE CALCULATOR.

SEARS ELECTRONIC CALCULATOR GUARANTEE

We guarantee this calculator to work properly. If it does not, simply return it to our nearest store, wherever you live in the United States, and we will:

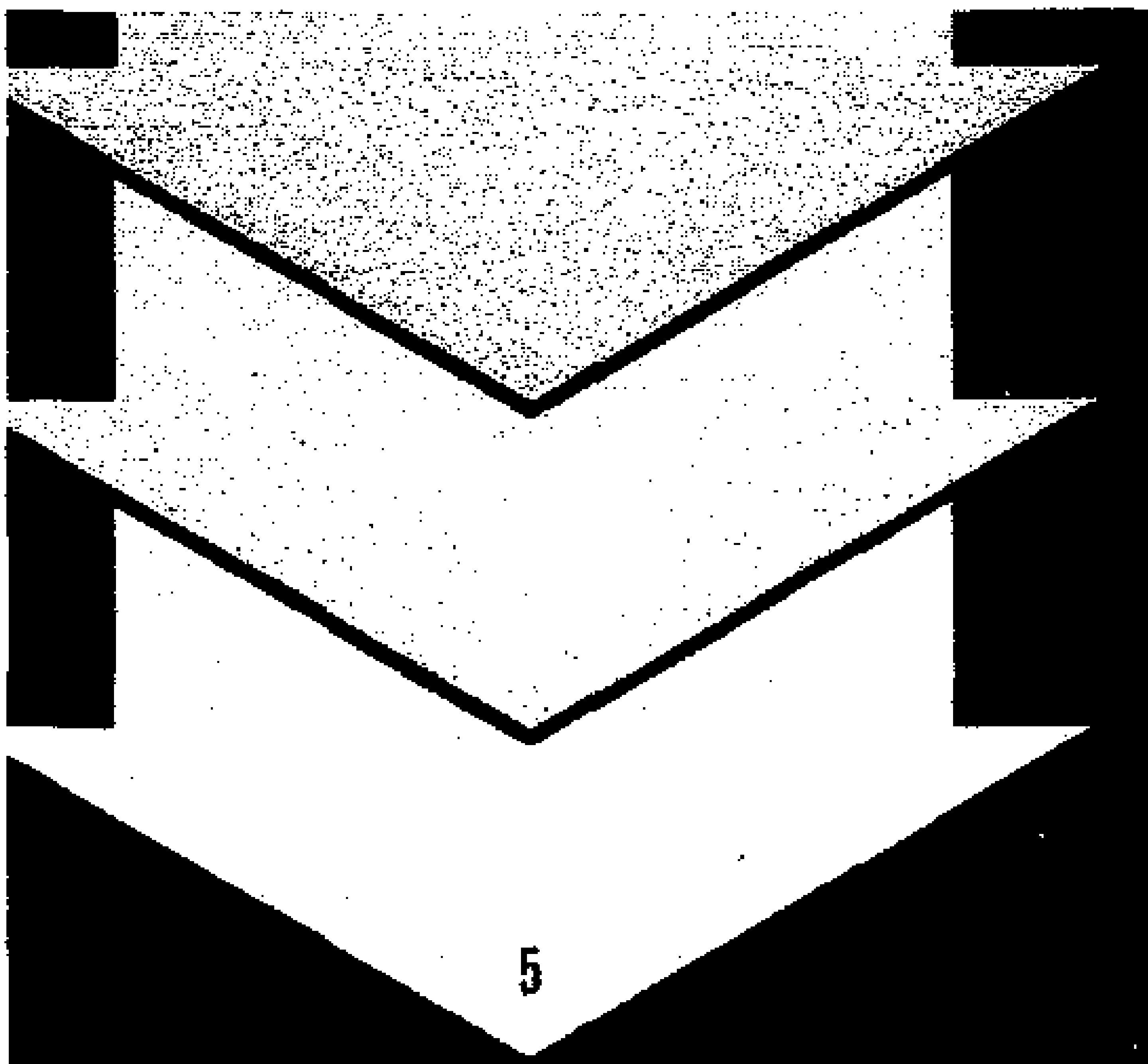
During the first year, repair it free of charge.

SEARS, ROEBUCK AND CO.

SPECIAL CARE AND PRECAUTIONS:

Observance of the following will prevent damage to and assure trouble-free service from your calculator, charger and the nickel cadmium batteries supplied with it.

1. Use only the charger furnished with your calculator.
2. Do not leave your calculator "ON" when machine is not in use.
3. Do not charge the batteries continuously for more than 72 hours as battery degradation may occur.
4. Do not use the charger with any batteries other than nickel cadmium rechargeable batteries specified under OPERATING POWER. Severe damage to your calculator may result from attempting to charge incorrect batteries.
5. Do not connect charger to calculator unless batteries are in place or calculator may be damaged.
6. Turn calculator "OFF" before connecting charger to calculator.
7. Do not expose your calculator to extreme cold or heat.
8. Do not drop or subject your calculator to heavy shock or vibration.



**PRINCIPAL CONVERSION CONSTANTS CONTAINED
IN YOUR UNIVERSAL CONVERTER**

**Nomenclature
on Calculator**

Units of mass*

{kg}	1 kilogram = 2.2046226 pounds (avop.)
{kg}	1 kilogram = 1000. grams
{lb}	1 pound (avop.) = 16. ounces (avop.)
{oz}	1 ounce (avop.) = 28.349523 grams

Units of length*

{mile}	1 nautical mile (Int.) = 1.1507795 miles (statute)
{mile}	1 mile (statute) = 1.609344 kilometers
{mile}	1 mile (statute) = 1760. yards
{km}	1 kilometer = 1000. meters
{m}	1 meter = 1000. millimeters
{yd}	1 yard = 0.9144 meter
{yd}	1 yard = 3. feet
{ft}	1 foot = 12. inches
{in}	1 inch = 25.4 millimeters

Units of Volume, Liquid Measure*

{gal}	1 gallon (U.K. liquid) = 1.2009503 gallons (U.S. liquid)
{gal}	1 gallon (U.K. liquid) = 4. quarts (U.K. liquid)
{gal}	1 gallon (U.S. liquid) = 3.3306957 quarts (U.K. liquid)
{gal}	1 gallon (U.S. liquid) = 4. quarts (U.S. liquid)
{qt}	1 quart (U.K. liquid) = 1.1365229 liters
{qt}	1 quart (U.K. liquid) = 40. ounces (U.K. liquid)
{qt}	1 quart (U.S. liquid) = 32. ounces (U.S. liquid)
{lit}	1 liter = 1.0566882 quarts (U.S. liquid)
{fl oz}	1 ounce (U.S. liquid) = 1.0408424 ounces (U.K. liquid)

* Constants obtained from:

American Society for Testing and Materials E380-72 (Dated 1972)
National Bureau of Standards Miscellaneous Publications #286
(Dated October 1972)

CHANGING FRACTIONS TO DECIMALS

DECIMAL EQUIVALENTS			
1/64	.015625	33/64	.515625
1/32	.03125	17/32	.53125
3/64	.046875	35/64	.546875
1/16	.0625	9/16	.5625
5/64	.078125	37/64	.578125
3/32	.09375	19/32	.59375
7/64	.109375	39/64	.609375
1/8	.125	5/8	.625
9/64	.140625	41/64	.640625
5/32	.15625	21/32	.65625
11/64	.171875	43/64	.671875
3/16	.1875	11/16	.6875
13/64	.203125	45/64	.703125
7/32	.21875	23/32	.71875
15/64	.234375	47/64	.734375
1/4	.25	3/4	.75
17/64	.265625	49/64	.765625
9/32	.28125	25/32	.78125
19/64	.296875	51/64	.796875
5/16	.3125	13/16	.8125
21/64	.328125	53/64	.828125
11/32	.34375	27/32	.84375
23/64	.359375	55/64	.859375
3/8	.375	7/8	.875
25/64	.390625	57/64	.890625
13/32	.40625	29/32	.90625
27/64	.421875	59/64	.921875
7/16	.4375	15/16	.9375
29/64	.453125	61/64	.953125
15/32	.46875	31/32	.96875
31/64	.484375	63/64	.984375
1/2	.5	1	1.0

**EXPLANATIONS
(KEYBOARD AND OPERATING CONDITIONS)**

NUMERAL AND FUNCTION KEYS

NUMERAL KEYS

[0] - [9]

DECIMAL POINT KEY

[.]

ARITHMETIC FUNCTION KEYS

[+], [=], [x], [÷]: These keys tell the machine what arithmetic operation to perform with the next number entered. During calculations, intermediate results are also displayed when these keys are depressed.

ANSWER KEY

[=]: This key displays the answer of the previous operations. The number entered immediately before this key is depressed is saved as a constant.

CONVERSION KEY

[C]: This key sets up the operations to convert the number in display from one set of units to another. The first of the next two keys depressed specifies the units you are converting from and the second key specifies the units you are converting to.

CLEAR AND CLEAR ENTRY KEY

[CE]: The first depression (CLEAR ENTRY) of this key clears the display without affecting the computation in progress. The second depression (CLEAR) of this key clears all computations in progress; however, neither the memory nor the general conversion factor explained later are affected.

LENGTH CONVERSION KEYS

MILE KEY

[M] (mile): This key refers either to nautical miles or statute miles by choosing the appropriate position (Land or Naut) on the Land/Naut switch.

LENGTH CONVERSION KEYS (CONTINUED)

YARDS KEY

[5] (yd)

FEET KEY

[5] (ft)

INCH KEY

[4] (in)

KILOMETER KEY

[9] (km)

METER KEY

[8] (m)

MILLIMETER KEY

[7] (mm)

WEIGHT CONVERSION KEYS

POUND KEY

[+] (lb)

OUNCE KEY

[X] (oz)

GRAMS KEY

[+] (gm)

KILOGRAMS KEY

[=] (kg)

LIQUID MEASURE CONVERSION KEYS

LITERS KEY

[L] (lit)

GALLONS KEY

[3] (gal)

QUARTS KEY

[2] (qt)

FLUID OUNCE KEY

[1] (fl oz)

} The non-metric fluid measurements can be expressed either in U.S. or Imperial units by setting the U.S./Imp switch to the appropriate position before the key is depressed.

TEMPERATURE CONVERSION KEYS

CENTIGRADE (Celsius) KEY

\square (°C)

FAHRENHEIT KEY

\square (°F)

PROGRAMMABLE CONVERSION KEYS

CONVERSION FACTOR ENTRY KEY

\square (x): This key is used to enter an arbitrary conversion factor. This is accomplished by entering the conversion factor in the display and depressing the \square key twice.

CONVERT KEY A

\square (A): First key depressed after \square key when converting from units of A to Ax. It must always be followed by the \square (Ax) key.

CONVERT KEY Ax

\square (Ax): First key depressed after \square key when converting from units of Ax to A. It must always be followed by the \square (A) key.

MEMORY OPERATION KEYS

MEMORY SELECT KEY

\square : All operations with each of the two separate memories are initiated with depression of this key. Memory 1 is automatically selected when power is turned on. The \square key may optionally be followed by a number key (\square through \square) to select one of the two memories. An odd number selects Memory 1, an even number selects Memory 2. It is recommended that 1 be used to select Memory 1 and 2 be used to select Memory 2 in order to easily remember selection.

NOTE: ONCE A MEMORY IS SELECTED, IT REMAINS THE SELECTED MEMORY UNTIL ANOTHER IS SELECTED OR CALCULATOR IS TURNED OFF.

MEMORY ADD KEY

\square (m+): Adds the contents of the display to the selected memory. The display is not altered.

MEMORY OPERATION KEYS (CONTINUED)

MEMORY SUBTRACT KEY

$\boxed{-}$ (m-): Subtracts the contents of the display from the selected memory. The display is not altered.

MEMORY RECALL KEY

\boxed{MR} (mr): Copies the selected memory into the display. The memory is not altered.

MEMORY CLEAR KEY

\boxed{MC} (mc): The selected memory is cleared. The display is not altered.

FRACTIONAL NUMBER ENTRY KEY

$\frac{\text{A}}{\text{B}} \text{ } \frac{\text{C}}{\text{D}}$: Depression of this key allows entry of fractions and mixed numbers.

DECIMAL SWITCH

The decimal switch has two positions, "f" and "2." The "f" position indicates that the final results will be left in full floating format. The "2" position will cause displayed results to be rounded off to two decimal places for operations terminated by the $\boxed{=}$ key or for programmable conversions. All other conversions will display answers in floating decimal point regardless of switch position.

LAND/NAUT SWITCH

During conversion operations, the setting of this switch determines whether the \boxed{MI} (mile) key is to be interpreted as land (statute) miles or nautical miles.

U.S./IMP SWITCH

During conversion operations, the setting of this switch determines whether the liquid measurements are to be interpreted as U.S. measurements or Imperial measurements.

NEGATIVE NUMBER INDICATOR

The negative number (Neg) indicator located at the upper right of the display lights when negative numbers are displayed.

OVERFLOW INDICATOR

The following conditions cause the overflow (Over) indicator to light and the calculator to become inoperative until the first depression of the clear key is made.

OVERFLOW INDICATOR (CONTINUED)

1. Any operation with a result in display larger than $10^8 - 1$ (99,999,999).
2. Division by zero.
3. Any operation resulting in a number larger than $10^8 - 1$ in memory.
4. Conversions between units not of the same type (e.g. converting gallons to feet).

These overflow (Over) conditions can be cleared by ONE depression of the $\left[\frac{C}{CE}\right]$ key.

Any of the above overflow conditions will fill the display with eight digits followed by decimal points. (e.g. 0.0.0.0.0.0.0., 8.8.8.8.8.8.8., 0.0.0.1.4.3.5.7.)

NOTE: See WRAPAROUND DECIMAL following the problem examples for an explanation of how the true location of the decimal point can be obtained for the overflow conditions indicated in (1) and (3) above.

MACHINE CAPACITY

1. The capacity of your calculator is $10^8 - 1$ or 99,999,999.
2. Your calculator displays whole numbers up to eight digits.
3. Your calculator displays decimal numbers up to eight digits. For decimal answers exceeding eight digits, the least significant digits are automatically suppressed to prevent overflow.
4. Your calculator displays numbers less than 1 up to seven digits. A zero always appears to the left of the decimal point if the number is less than 1.

NOTE: Computations using very large or very small numbers may be performed on your calculator utilizing scientific notation and the appropriate power of 10 determined as a second step. This method is explained in more detail in the following section.

OPERATING EXAMPLES

The examples in this manual are performed with the decimal select switch in the "f" position. If roundoff to 2 decimal places is desired, the switch should be placed in the "2" position.

BASIC ARITHMETIC OPERATIONS

ADDITION

Example: $5 + 3 = 8$

Key-in	Display	Comments
5	5.	
\oplus	5.	
3	3.	
\equiv	8.	

SUBTRACTION

Example: $5 - 3 = 2$

5	5.
\ominus	5.
3	3.
\equiv	2.

MIXED ADDITION, SUBTRACTION

Example: $2 - 6 + 9 = 5$

2	2.	
\ominus	2.	
6	6.	
\oplus	4.	NEG INDICATOR LIGHTS
9	9.	NEG INDICATOR GOES OUT
\equiv	5.	

MULTIPLICATION

Example: $4.2 \times 5.31 = 22.302$

4.2	4.2
\otimes	4.2
5.31	5.31
\equiv	22.302

DIVISION

Example: $22.302 \div 0.4 = 55.755$

22.302	22.302	
\div	22.302	
.4	0.4	No need to key in leading zero.
\equiv	55.755	

REPEATED OPERATIONS

ADDITION

Example: $2 + 3 + 3 + 3 = 11$

Key-in	Display
2	2.
$\boxed{+}$	2.
3	3.
$\boxed{+}$	5.
$\boxed{+}$	8.
$\boxed{=}$	11.

SUBTRACTION

Example: $15 - 3 - 3 - 3 = 6$

15	15.
$\boxed{-}$	15.
3	3.
$\boxed{-}$	12.
$\boxed{-}$	9.
$\boxed{-}$	6.

MULTIPLICATION

Example: $4^4 = 256$

4	4.
$\boxed{\times}$	4.
$\boxed{\times}$	16.
$\boxed{\times}$	64.
$\boxed{\times}$	256.

DIVISION

Example: $2 \div 2 \div 2 \div 2 = 0.25$

2	2.
$\boxed{\div}$	2.
$\boxed{\div}$	1.
$\boxed{\div}$	0.5
$\boxed{\div}$	0.25

CONSTANT OPERATIONS

ADDITION

Example: $3 + 5 = 8$
 $7 + 5 = 12$
 $9 + 5 = 14$

Key-in	Display
3	3.
$\boxed{+}$	3.
5	5.
$\boxed{=}$	8.
7	7.
$\boxed{=}$	12.
9	9.
$\boxed{=}$	14.

SUBTRACTION

Example: $9 - 3 = 6$
 $15 - 3 = 12$
 $21 - 3 = 18$

9	9.
$\boxed{-}$	9.
3	3.
$\boxed{=}$	6.
15	15.
$\boxed{=}$	12.
21	21.
$\boxed{=}$	18.

MULTIPLICATION

Example: $4 \times 5 = 20$
 $7 \times 5 = 35$
 $12 \times 5 = 60$

4	4.
$\boxed{\times}$	4.
5	5.
$\boxed{=}$	20.
7	7.
$\boxed{=}$	35.
12	12.
$\boxed{=}$	60.

CONSTANT OPERATIONS (CONTINUED)

DIVISION

Example: $20 \div 5 = 4$
 $35 \div 5 = 7$
 $60 \div 5 = 12$

Key-in	Display	Comments
20	20.	
\div	20.	
5	5.	
$=$	4.	
35	35.	
\div	7.	
60	60.	
\div	12.	

CHAIN OPERATIONS

The following example shows how to solve complex mathematical problems with a minimum of key depressions. It illustrates how the Arithmetic Function keys perform previous operations and cause intermediate results to be displayed.

Example: $\frac{2(3+4) - 6}{5} = 1.6$

3	3.	
$+$	3.	
4	4.	
\times	7.	(3 + 4) performed.
2	2.	
$=$	14.	2(3 + 4) performed.
6	6.	
$-$	8.	2(3 + 4) - 6 performed.
5	5.	
\div	1.6	Final result.

RECIPROCAL

Example: The reciprocal of 2 is 0.5

2	2.	
\div	2.	
\div	1.	
\div	0.5	

OPERATIONS USING MEMORY †

Example: calculate $X = \frac{(782.09/10) - (3.597)(18.72)}{(142.68/10) - (3.597)^2} = \frac{10.87}{1.33} = 8.17$

Key-in	Display	Memory 1	Memory 2	Comments
782.09	782.09	0	0	
$\frac{\square}{\square}$	782.09	0	0	
10	10.	0	0	
$\frac{\square}{\square}$	78.209	0	0	
$\frac{\square}{\square}$	78.209	0	0	
$\frac{\square}{\square}$ (m+)	78.209	78.209	0	1*
3.597	3.597	78.209	0	
$\frac{\square}{\square}$	3.597	78.209	0	
18.72	18.72	78.209	0	
$\frac{\square}{\square}$	67.33584	78.209	0	
$\frac{\square}{\square}$	67.33584	78.209	0	
$\frac{\square}{\square}$ (m-)	67.33584	10.87316	0	2*
142.68	142.68	10.87316	0	
$\frac{\square}{\square}$	142.68	10.87316	0	
10	10.	10.87316	0	
$\frac{\square}{\square}$	14.268	10.87316	0	
$\frac{\square}{\square}$	14.268	10.87316	0	
$\frac{\square}{\square}$	14.268	10.87316	0	3*
$\frac{\square}{\square}$ (m+)	14.268	10.87316	14.268	4*
3.597	3.597	10.87316	14.268	
$\frac{\square}{\square}$	3.597	10.87316	14.268	
$\frac{\square}{\square}$	12.938409	10.87316	14.268	5*
$\frac{\square}{\square}$	12.938409	10.87316	14.268	6*
$\frac{\square}{\square}$ (m-)	12.938409	10.87316	1.329591	7*
$\frac{\square}{\square}$	12.938409	10.87316	1.329591	
$\frac{\square}{\square}$	12.938409	10.87316	1.329591	8*
$\frac{\square}{\square}$ (mr)	10.87316	10.87316	1.329591	9*
$\frac{\square}{\square}$	10.87316	10.87316	1.329591	
$\frac{\square}{\square}$	10.87316	10.87316	1.329591	
$\frac{\square}{\square}$	10.87316	10.87316	1.329591	10*
$\frac{\square}{\square}$ (mr)	1.329591	10.87316	1.329591	11*
$\frac{\square}{\square}$	8.1778231	10.87316	1.329591	

COMMENTS

- | | |
|---|---|
| 1* Adds 78.209 to Memory 1. | 7* Subtracts 12.938409 from 14.268 in Memory 2. |
| 2* Subtracts 67.33584 from 78.209 in Memory 1. | 8* Selects Memory 1. |
| 3* Selects Memory 2. | 9* Recalls Memory 1 into display. |
| 4* Adds 14.268 to Memory 2. | 10* Selects Memory 2. |
| 5* Squares 3.597. | 11* Recalls Memory 2 into display. |
| 6* $\frac{\square}{\square}$ Automatically refers to Memory 2 as it was last Memory selected. | |

†Refer to memory operation keys, pages 10-11.

FRACTIONAL NUMBER ENTRY

Example: Enter 5-3/4 into machine.

Key-in	Display
$\frac{\square}{\square}$	0.
5	5.
$\frac{\text{A}}{\text{a}}$ 3	5.
$\frac{\text{A}}{\text{a}}$ 3	3.
4	4.
$\frac{\text{A}}{\text{a}}$	5.75

NOTE: When a fractional number entry is made only for the purpose of converting the fraction to a decimal number, the $\frac{\square}{\square}$ key should be depressed twice prior to number entry.

Example: $3/5 \times 5-3/4 = 3.45$

3	3.
$\frac{\text{A}}{\text{a}}$	3.
5	5.
$\frac{\text{A}}{\text{a}}$	0.6
5	5.
$\frac{\text{A}}{\text{a}}$ 3	5.
$\frac{\text{A}}{\text{a}}$ 3	3.
$\frac{\text{A}}{\text{a}}$ 4	3.
$\frac{\text{A}}{\text{a}}$	4.
$\frac{\text{A}}{\text{a}}$	3.45

Example: $5 \div 2/3 = 7.5$

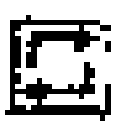



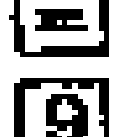









5	5.
$\frac{\text{A}}{\text{a}}$	5.
2	2.
$\frac{\text{A}}{\text{a}}$	2.
3	3.
$\frac{\text{A}}{\text{a}}$	7.500007

NOTE: When dividing any number (5 in this example) by a fraction, the divisor is converted to a decimal and is limited to seven decimal places ($2/3$ in this example becomes 0.666666). The result is calculated to an accuracy of seven digits, but the number of digits displayed to the right of the decimal point is dependent on the position of the decimal switch.

CONVERSION OPERATIONS

LENGTH CONVERSIONS

Example: Convert 5.7 nautical miles to equivalent statute miles, kilometers, feet, millimeters, centimeter.







Key-in	Display	Comments
5.7	5.7	First entry.
	5.7	Convert.
Set Land/Naut	5.7	First entry is in nautical miles.
Switch to Naut position		
 (mile)	5.7	Converting from nautical miles.
Set Land/Naut		Result desired in statute (land) miles.
Switch to Land position		
 (mile)	6.5594431	Converting to statute miles.
	6.5594431	Convert.
 (mile)	6.5594431	Converting from statute miles.
 (km)	10.5564	Converting to kilometers.
	10.5564	Convert.
 (km)	10.5564	Converting from kilometers.
 (ft)	34633.857	Converting to feet.
	34633.857	Convert.
 (ft)	34633.857	Converting from feet.
 (mm)	10556399.	Converting to millimeters.
	10556399.	
10	10.	Converting to centimeters
	1055639.9	Centimeters

NOTE: Conversion from millimeters to centimeters is easily accomplished by dividing the millimeter amount by 10.

AREA CONVERSIONS

NOTE: The following two conversions are accomplished by squaring the conversion factor in the case of the first example and cubing it in the second.

Example: Convert 3.75 square meters to square feet.

3.75	3.75	First entry.
	3.75	Convert.
 (m)	3.75	Converting from meters.
 (ft)	12.303149	Converting to feet.
	12.303149	Convert.
 (m)	12.303149	Converting from meters.
 (ft)	40.364661	Converting to feet.

VOLUME CONVERSIONS

Example: Convert 300 inches³ to meters.³

Key-in	Display	Comments
300	300.	First entry.
\square	300.	Convert.
\square (in)	300.	Converting from inches.
\square (m)	7.62	Converting to meters.
\square	7.62	Convert.
\square (in)	7.62	Converting from inches.
\square (m)	0.193548	Converting to meters.
\square	0.193548	Convert.
\square (in)	0.193548	Converting from inches.
\square (m)	0.0049161	Converting to meters.

WEIGHT CONVERSIONS

Example: Convert 200.2 kilograms to equivalent grams, ounces, pounds.

200.2	200.2	First entry.
\square	200.2	Convert.
\square (kg)	200.2	Converting from kilograms.
\square (gm)	200200.	Converting to grams.
\square	200200.	Convert.
\square (gm)	200200.	Converting from grams.
\square (oz)	7061.8472	Converting to ounces.
\square	7061.8472	Convert.
\square (oz)	7061.8472	Converting from ounces.
\square (lb)	441.36545	Converting to pounds.

LIQUID MEASUREMENT CONVERSIONS

Example: Convert 35.57 Imperial gallons to equivalent U.S. gallons, U.S. quarts, liters and Imperial fluid ounces.

Key-in	Display	Comments
Set U.S./Imp	0.	Liquid measurements will be in Imperial units.
Switch to Imp		
35.57	35.57	First entry.
\square	35.57	Convert.
\square (gal)	35.57	Converting from Imperial gallons.
Set U.S./Imp	35.57	Liquid measurements will be in U.S. units.
Switch to U.S.		
\square (gal)	42.717802	Converting to U.S. gallons.
\square	42.717802	Convert.
\square (gal)	42.717802	Converting from gallons.
\square (qt)	170.8712	Converting to quarts.
\square	170.8712	Convert.
\square (qt)	170.8712	Converting from quarts.
\square (lit)	161.70446	Converting to liters.
\square	161.70446	Convert.
Set U.S./Imp	161.70446	Liquid measurements will be in Imperial units.
Switch to Imp		
\square (lit)	161.70446	Converting from liters.
\square (fl oz)	5691.1992	Converting to fluid ounces.

TEMPERATURE CONVERSIONS

Example: Convert 0° Centigrade (Celsius) to equivalent Fahrenheit degrees.

0	0.	First entry.
\square	0.	Convert.
\square (°C)	0.	Converting from Centigrade.
\square (°F)	32.	Converting to Fahrenheit.

Example: Convert 168° Fahrenheit to equivalent Centigrade (Celsius) degrees.

168	168.	First entry.
\square	168.	Convert.
\square (°F)	168.	Converting from Fahrenheit.
\square (°C)	75.555555	Converting to Centigrade.

PROGRAMMABLE CONVERSION

The following examples illustrate the programmable conversion feature for entering special conversions not contained in your converter (e.g. conversion from pounds sterling to dollars where conversion factor varies from day to day).

A self programmed conversion factor will remain in the calculator until you replace it by programming a new conversion factor or until the calculator is turned off. This programmable conversion feature may be used to convert any international currency into any other. There is no limit to the different conversion factors you can program into your calculator.

Example: Convert 174 pounds sterling to equivalent U.S. dollars (conversion factor is \$2.17 equals one pound sterling).

Key-in	Display	Comments
2.17	2.17	
\square	2.17	Convert.
\square (x)	2.17	Factor is now stored in calculator.
174	174.	First entry.
\square	174.	Convert.
\square (A)	174.	Converting from pounds sterling.
\square (Ax)	377.58	Converting to dollars.

Example: (a) Convert 27 gills to liters (where 1 gill = 0.1183 liters).

(b) Convert 5.057 liters to gills.

0.1183	0.1183	Enter conversion factor (gill = 0.1183 liters).
\square	0.1183	Convert.
\square (x)	0.1183	Factor is now stored in calculator.
27	27.	First entry [example (a)].
\square	27.	Convert.
\square (A)	27.	Converting from gills (the \square (A) key represents gills).
\square (Ax)	3.1941	Converting to liters (the \square (Ax) key represents liters).
5.057	5.057	First entry [example (b)].
\square	5.057	Convert.
\square (Ax)	5.057	Converting from liters.
\square (A)	42.747252	Converting to gills.

WRAP-AROUND DECIMAL

There are some cases when the answer obtained exceeds the capacity of the machine (10^8 or greater). When this occurs the machine automatically displays the eight most significant digits, all decimal points, and the "Over" light illuminates.

When this occurs, the calculation can proceed after depressing the $\frac{CE}{\square}$ key once, but the decimal point will be displayed 8 digits to the left of its correct position. The answer displayed must be multiplied by 10^8 (or 100,000,000) each time this occurs during the solution of a problem. This is referred to as the "Wrap-Around Decimal" feature.

For example, if the display reads 1234.5678 and the "Over" light is on, the true position of the decimal point is eight places to the right of the position indicated, or 123456780000. If the "Over" light illuminates a second time in the solution of a problem, then the answer displayed must be multiplied by 10^{16} (or 10,000,000,000,000,000).

This Wrap-Around Decimal feature also applies to the number in memory.

Example:

Key-in	Display	Memory	Comments
99999999	99999999.	0	
$\frac{M}{\square}$	99999999.	0	
$\frac{\pm}{\square}$ (m+)	99999999.	99999999	
1	1.	99999999	
$\frac{M}{\square}$	1.	99999999	
$\frac{\pm}{\square}$ (m+)	0.0.0.0.0.0.0.1.	1.0000000	1*
$\frac{CE}{\square}$	1.	1.0000000	2*
$\frac{M}{\square}$	1.	1.0000000	
$\frac{MR}{\square}$	1.0000000	1.0000000	

COMMENTS

1* OVERFLOW LIGHT ON.
2* OVERFLOW LIGHT OUT.

COMPUTATIONS WITH VERY LARGE OR VERY SMALL NUMBERS

Computations which may exceed the eight digit capacity of the machine can be expressed in scientific notation (or entered as if they were) and the appropriate power of 10 determined as a second step.

Example: $2198765 \times 6328462 = 1.39148 \times 10^{13}$

Key-in	Display	Comments
2.198765	2.198765	Times 10^6
$\boxed{\times}$	2.198765	
6.328462	6.328462	Times 10^6
$\boxed{=}$	13.9148	Times 10^{12} Answer is 1.39148 times 10^{13}

ENTRY CORRECTION

One of the functions of the $\boxed{\text{CE}}$ key is to correct erroneous entries.

Example: $15 \times 3 = 45$

15	15.	
$\boxed{\times}$	15.	
4	4.	ERROR!! WANTED TO ENTER 3.
$\boxed{\text{CE}}$	0.	
3	3.	
$\boxed{=}$	45.	

RECOVERY TECHNIQUES

Occasionally during long calculations, an undesired arithmetic function key may be depressed. Utilizing these simple recovery techniques makes it unnecessary to begin the calculation again.

For example, if the $\boxed{\times}$ or $\boxed{+}$ keys are inadvertently depressed, simply enter a 1, depress the intended arithmetic function key and continue with your calculation. If the $\boxed{+}$ or $\boxed{-}$ keys are inadvertently depressed, enter a 0, depress the intended arithmetic function key and continue with your calculation. However, there is one exception to this technique. If the calculation in progress involves a constant, the constant will be lost and will have to be re-entered.

CAUTION

READ RULES FOR SAFE OPERATION AND INSTRUCTIONS CAREFULLY. USE ONLY THE CHARGER SUPPLIED.

SEARS SERVICE IS AT YOUR SERVICE WHEREVER YOU LIVE OR MOVE IN THE U.S.A.

The Model Number will be found stamped on the bottom of the Calculator. Always refer to the Model Number when requesting service or repair for your Calculator.

All parts may be ordered through SEARS, ROEBUCK AND CO.

Your Sears merchandise takes on added value when you discover that Sears has over 2000 Service Units throughout the country. Each is staffed by Sears trained professional technicians using Sears approved parts and methods.

MODEL NUMBER: 301-533-10

Sears, Roebuck and Co.
Chicago, Ill. 60682 U.S.A.

Printed in U.S.A.

21-107-1302-10-33K