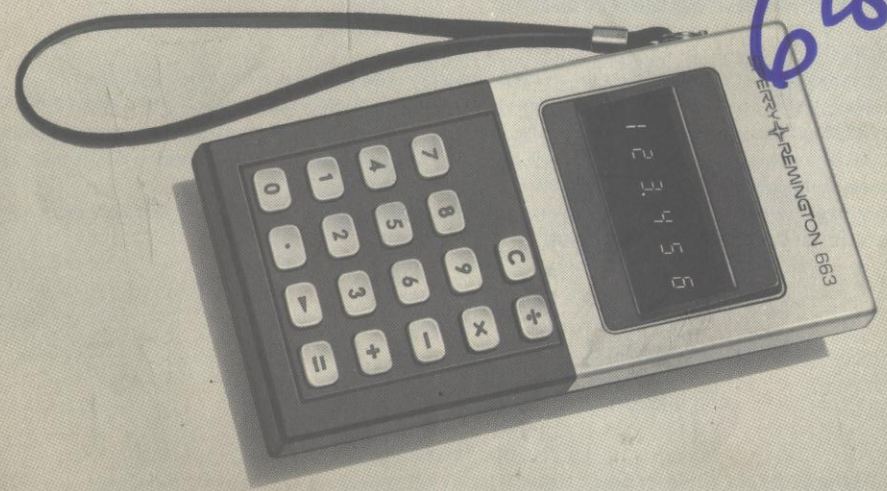
SPERRY REMINGTON

Printed in Japan

ELECTRONIC CALCULATOR

SPERRY REMINGTON 663

OPERATOR'S INSTRUCTION MANUAL



INTRODUCTION

Dear customers,

Congratulations on your purchase of this new pocket-sized personal electronic calculator.
To operate this compact yet feature-packed calculator — 6-digit capacity for entry and 12-digit for product/quotient by double length display system, floating decimal point system, zero suppression and AC/DC power source choice — no special training is required but we suggest you to take a few minutes to become familiar with this instruction manual.
It has been written to assist you in understanding the various control keys and functions of the calculator through simple examples and their applications.

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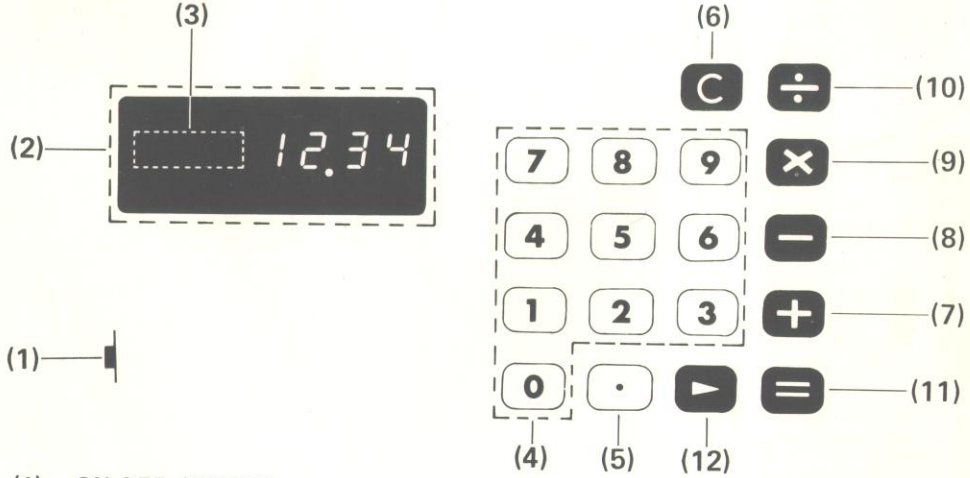
1/KEYBOARD



(1) ON-OFF SWITCH
To switch on, move the left-hand switch forward; "0." is displayed in the read-out and you can start operation immediately without depressing the C key.

(2) READ-OUT
The 6-digit capacity Digitron tube panel brightly displays each keyboard entry, each result whether final or intermediate.

(3) ZERO SUPPRESSION
Unnecessary 0's (zeros) on the left of the figures are not displayed.

(4) 0 ~ 9 NUMERAL KEYS

(5) · DECIMAL POINT KEY

(6) C CLEAR KEY
To clear keyboard entry for correction and release overflow check. The C key immediately after depression of the command key (+, −, ×, ÷ or =) clears the entire machine.

(7) + ADDITION KEY

(8) − SUBTRACTION KEY

(9) × MULTIPLICATION KEY

(10) ÷ DIVISION KEY

(11) = EQUAL & RESULT KEY

(12) ▶ FULL REGISTER VIEWING KEY
In all four functions, the significant digits of an answer are displayed by depressing the = key and the subsequent digits, if any, are shown while depressing the ▶ key. (Double length display system.) Releasing the ▶ key always displays the significant digits again.

2/DISPOSABLE DRY BATTERY OR AC OPERATION

This calculator operates on either dry batteries or AC with the use of the AC ADAPTOR.

2-1 DRY BATTERY OPERATION

With four Alkaline dry batteries (AM-3) it operates for approximately 15 hours continuously.
Even when battery power decreases, the display will merely darken but cause no miscalculation.
When you have finished your calculation, be sure to switch off the power switch to save battery power.
To change batteries, put the power switch off first. Slide open the battery cover and replace batteries.

2-2 AC OPERATION

If you are in a 117V area, for instance, use a 117V AC ADAPTOR. When you use an AC ADAPTOR of a different voltage, it may cause damage to both the AC ADAPTOR and calculator.
Plug the applicable AC ADAPTOR (100, 117, 220 or 240V) into the AC outlet and the cord into the calculator. When plugged in, battery power supply stops automatically, so battery power is not wasted.

Note: When you switch on, "0." appears in the read-out showing the calculator is in normal conditions.

When "0." does not appear:

1) IN DC OPERATION use an AC ADAPTOR and if "0." appears, battery power is too low or they have been inserted wrongly.
2) IN AC OPERATION with an AC ADAPTOR use DC power and if "0." appears, check whether the AC outlet and plug have been connected properly.

3/ENTRY OF FIGURES

Up to 6 digits of any numbers can be entered and retained for calculation even when an entry is attempted for a number having more than 6 digits.

EXAMPLE	OPERATION	READ-OUT
To enter 987654(3)	9	9.
	8	98.
	7	987.
	6	9876.
	5	98765.
	4	987654.
	3	987654. (3 cannot be entered.)

If the number includes a decimal point, it is necessary to depress the · key in its logical sequence.

EXAMPLE	OPERATION	READ-OUT
To enter 1234.56	1 2 3 4 · 5 6	1234.56

When figures having decimal places are entered as above, the floating decimal point system and underflow system work for all the calculations involving decimals. And if an answer exceeds 6 digits including decimal places (whole numbers are less than 6 digits), the least significant decimal places involved in the answer shall be dropped off from the read-out until all 6 digits are whole numbers.

4/BASIC OPERATIONAL EXAMPLES

This calculator can be operated exactly in the same sequence as the problem written in performing any calculations. Simply follow the formula and the answer is obtained by depressing the [=] key.

EXAMPLE	OPERATION	READ-OUT	
123+456−369	1 2 3 +	123.	
=210	4 5 6 −	579.	(Answer of 123 + 456)
	3 6 9 =	210.	(Final result)
3x4x6=72	3 ×	3.	
	4 ×	12.	(Answer of 3 x 4)
	6 =	72.	(Final result)
543÷12=45.25	5 4 3 ÷	543.	
	1 2 =	45.250	(Result)
2.3x14−56.8	2 · 3 ×	2.3	
=−24.6	1 4 −	32.2	(Answer of 2.3 x 14)
	5 6 · 8 =	−24.6	(Final result)
(8.9+3.21−22)x	8 · 9 +	8.9	
4.2÷1.4=−29.67	3 · 2 1 −	12.11	(Answer of 8.9 + 3.21)
	2 2 ×	−9.89	(Answer of 8.9 + 3.21 − 22)
	4 · 2 ÷	− 41.538	(Answer of −9.89 x 4.2)
	1 · 4 =	− 29.670	(Final result)

EXAMPLE	OPERATION	READ-OUT	
741.258x32.1456	7 4 1 · 2 5 8 ×	741.258	
=23828.1831648	3 2 · 1 4 5 6 =	23828.1	(Significant digits of product)
(To obtain subsequent digits)	▶	831648	(Subsequent digits of product)
159÷4.1	1 5 9 ÷	159.	
=38.780487804	4 · 1 =	38.7804	(Significant digits of quotient)
(To obtain subsequent digits)	▶	878040	(Subsequent digits of quotient)

Note: 1) Automatic clearing is given when you make a new entry immediately after obtaining the result by depressing the [=] key. Therefore, there is no need to depress the [C] key prior to starting each new calculation as in the above examples.

2) When the result is a negative number, a minus (−) sign appears on the left of the figure providing the result is less than 5 digits. If the negative result is more than 6 digits, the minus sign does not appear but the figure is processed as a negative number in further calculations.

5/CORRECTION

5-1 CORRECTION OF WRONGLY ENTERED NUMBER

Use the [C] key to clear wrongly entered number and re-enter the right number.

EXAMPLE	OPERATION	READ-OUT
11+22+32=65	1 1 +	11.
	2 2 +	33.
(Mistakenly)	3 4	34.
(To clear)	C	0.
	3 2 =	65.

5-2 CORRECTION OF COMMANDS

Any commands wrongly entered can be corrected by successive depression of the proper command key. The last command made by either [+] , [−] , [×] or [÷] key is effective.

EXAMPLE	OPERATION	READ-OUT
8−3=5	8	8.
(Mistake)	+	8.
(To correct)	−	8.
	3 −	5.

Note: The [C] key does not work to correct a command. If the [C] key is depressed immediately after a command key, it clears the entire machine.

6/RANGE OF CALCULATION

In all four functions, you can continue calculations until the whole number digits of the result exceed 6 digits and overflow takes place. The overflow is checked by disappearing of the decimal point from the read-out and functions of all the keys except the [C] and [▶] keys are locked electronically. Even in this case, the number displayed is an arithmetically correct answer and depression of the [▶] key displays the subsequent digits of the answer with the decimal point in its logical position. The [C] key releases the locked registers caused by the overflow check.

6-1 ADDITION/SUBTRACTION

Calculation range of addition/subtraction with whole numbers is 6 digits +(−) 6 digits max. and correct answer is obtained up to 7 digits, with final digit in the overflow.

EXAMPLE	OPERATION	READ-OUT	
999999	9 9 9 9 9 9 +	999999.	
+999999	9 9 9 9 9 9 =	199999	(Significant digits of answer)
1999998	▶	8.00000	(Subsequent digits of answer)
			True answer is read: 1999998
(To start new calculation)	C	0.	

In addition/subtraction involving decimal places, the range is 5 digits +(−) 5 digits max. and up to 6 digits of answer can be obtained. However, when you desire to handle figures of 6 digits and over including decimal places, the whole numbers and decimal places must be handled independently. Calculate the decimal sum first (as shown), followed by the whole numbers.

EXAMPLE	OPERATION	READ-OUT	
22.25896	· 2 5 8 9 6 +	0.25896	
963.874	· 8 7 4 +	1.13296	
+) 12.35789	· 3 5 7 8 9 +	1.49085	
998.49085	2 2 +	23.4908	
	9 6 3 +	986.490	
	1 2 =	998.490	(Significant digits of answer)
	▶	850000	(Subsequent digits of answer)

True answer is read: 998.49085

Note: After depression of the [+] or [−] key, the entry of decimal places in the succeeding entries is limited to the number of whole digits of the amount displayed subtracted from six (6).

EXAMPLE	OPERATION	READ-OUT	
12	1 2 +	12.	
13.25	1 3 · 2 5 +	25.25	
123.70	1 2 3 · 7 0 +	148.95	* (Intermediate result)
23.4567	2 3 · 4 5 6 7	23.456	(7): (4 decimal places cannot be entered)
+) :			

* 148.95 has 3 whole numbers. 6 − 3 = 3, the next entry has a maximum possibility of 3 decimals.

6-2 MULTIPLICATION

Calculation range is 6 digits × 6 digits max. and up to 12 digits of product can be obtained.
Less significant digits are shown by depressing the ▶ key.

EXAMPLE	OPERATION	READ-OUT	
999.999×8888.88	9 9 9 · 9 9 9 ×	999.999	
=8888871.11112	8 8 8 8 · 8 8 =	888887	(Significant digits of true answer.)
	▶	1.11112	(Subsequent digits of true answer.)
			True answer is read: 8888871.11112

In case of chain operations, the succeeding multiplication can be performed using the significant 6 digits of an intermediate product.

EXAMPLE	OPERATION	READ-OUT	
25.25×35.35×	2 5 · 2 5 ×	25.25	
45.45=40568.07915	3 5 · 3 5 ×	892.587	(Significant 6 digits to be used as new multiplicand.)
	▶	500000	(Subsequent digits to be dropped off in succeeding multiplication.)
	4 5 · 4 5 =	40568.0	(Significant digits of 892.587 x 45.45)
	▶	791500	(Subsequent digits 892.587 x 45.45)
			Final result is read: 40568.07915

6-3 DIVISION

Calculation range is 6 digits ÷ 6 digits max. and up to 12 digits of quotient can be obtained.
Less significant digits are shown by depressing the ▶ key.

EXAMPLE	OPERATION	READ-OUT	
123÷13	1 2 3 ÷	123.	
=9.4615384615	1 3 =	9.46153	(Significant digits of quotient.)
	▶	846150	(Subsequent digits of quotient.)
			Answer is read: 9.4615384615

In case of chain operation, the succeeding division can be performed using the whole numbers and up to 7 decimal digits of an intermediate quotient.

EXAMPLE	OPERATION	READ-OUT	
9876÷123÷12=	9 8 7 6 ÷	9876.	
=6.6910569083	1 2 3 ÷	80.2926	(Whole numbers and 4 decimal digits to be used as new dividend.)
	▶	829200	(The last three digits are dropped off in succeeding division.)
	1 2 =	6.69105	(Significant digits of 80.2926829 ÷ 12)
	▶	690830	(Subsequent digits of 80.2926829 ÷ 12)
			Final result is read: 6.6910569083

7/PRACTICAL EXAMPLES

7-1 MIXED CALCULATION

Mixed calculations can also be performed in exactly the same sequence of key operation with the problem expressed. Simply follow the formula and each intermediate answer is displayed by depressing the appropriate command keys.
The final result is obtained by depression of the ⊟ key.

EXAMPLE	OPERATION	READ-OUT
(124+456)x20÷50	1 2 4 ⊞	124.
+768=1000	4 5 6 ⊠	580.
	2 0 ÷	11600.
	5 0 ⊞	232.000
	7 6 8 ⊟	1000.

7-2 CALCULATION COMMENCING FROM NEGATIVE NUMBERS

When the first number of a calculation is a negative number, depress C ⊟ successively before entering the figure.

EXAMPLE	OPERATION	READ-OUT
(−16)x3=−48	C ⊟ 1 6 ⊠	−16.
	3 ⊟	−48.
(−30)÷2.5=−12	C ⊟ 3 0 ÷	−30.
	2 · 5 ⊟	−12.000

Note: The negative number cannot be entered in the midst of calculation. If the ⊟ key is depressed in the midst of the calculation, it always commands a subtraction from the number displayed.

7-3 HANDLING OF BIG FIGURES

Sales quantity	586,985,000
Unit price	US$59.95
Sales amount	US$35,189,750,750.00

Make multiplication disregarding three zeros and after obtaining the result shift the decimal point 3 places to the right.

OPERATION	READ-OUT
5 8 6 9 8 5 ⊠	586985.
5 9 · 9 5 ⊟	351897
▶	50.7500

Result: 35189750.7500
Shift the decimal point 3 places to the right: 35,189,750,750.0
True answer is read: US$35,189,750,750.00

7-4 HANDLING OF BIG FIGURES

Division \ Sales	Sales amount		
	Oct.	Nov.	Dec.
A	US$ 58,693,252.85	US$ 65,985,446.26	US$ 78,266,876.78
B	92,858,162.27	108,255,889.74	116,105,074.20
C	121,256,654.35	157,736,650.20	200,841,052.19
Total	US$272,808,069.47	US$331,977,986.20	US$395,213,003.17
Grand total	US$999,999,058.84		

Consider the figures less than US$1,000 as decimal places and calculate as follows:

	OPERATION	READ-OUT	
Oct.	· 2 5 2 8 5 + · 1 6 2 2 7 + · 6 5 4 3 5 +	1.06947	
	5 8 6 9 3 + 9 2 8 5 8 + 1 2 1 2 5 6 −	272808.	
	▶	069470	US$272,808,069.47
Nov.	· 4 4 6 2 6 + · 8 8 9 7 4 + · 6 5 0 2 +	1.98620	
	6 5 9 8 5 + 1 0 8 2 5 5 + 1 5 7 7 3 6 −	331977.	
	▶	986200	US$331,977,986.20
Dec.	· 8 7 6 7 8 + · 0 7 4 2 + · 0 5 2 1 9 +	1.00317	
	7 8 2 6 6 + 1 1 6 1 0 5 + 2 0 0 8 4 1 −	395213.	
	▶	003170	US$395,213,003.17
G. total	· 0 6 9 4 7 + · 9 8 6 2 + · 0 0 3 1 7 +	1.05884	
	2 7 2 8 0 8 + 3 3 1 9 7 7 + 3 9 5 2 1 3 −	999999.	
	▶	058840	US$999,999,058.84

7-5) PROFIT RATE

Unit sales price	US$492.80
Unit purchase price	US$381.92
Gross profit	US$110.88
Profit rate	22.5%

OPERATION	READ-OUT
4 9 2 · 8 −	492.8
3 8 1 · 9 2 +	110.88
4 9 2 · 8 −	0.225

Answer is read: 22.5%

7-6) SALES INCREASE/DECREASE

Formula: $\frac{\text{This month}}{\text{Last month}} - 1 = \text{Increase/decrease \%}$

Last month	US$245,680
This month	US$325,526
Increase/decrease %	+32.5%

OPERATION	READ-OUT
3 2 5 5 2 6 +	325526.
2 4 5 6 8 0 −	1.325
1 −	0.325

Answer is read: 32.5%

7-7) INTEREST

Principal	US$7,300
Interest rate (per annum)	0.075
Number of days	125
Interest	US$187.50

OPERATION	READ-OUT
7 3 0 0 ×	7300.
· 0 7 5 ×	547.5
1 2 5 +	68437.5
3 6 5 −	187.5

Answer is read: US$187.50

8/SPECIFICATIONS

OPERATIONS:
Addition, subtraction, multiplication, division, chain multiplication/division, mixed calculation and calculation involving decimal places.

CAPACITY:
Entry, display . . . . . 6 digits
Addition/subtraction . . . . 6 digits +(—) 6 digits = 7 digits max.
5 digits +(—) 5 digits = 6 digits max. (When decimal places are involved.)
Multiplication . . . . . 6 digits x 6 digits = 12 digits max.
Division . . . . . .6 digits ÷ 6 digits = 12 digits max.

DECIMAL POINT: Automatic floating decimal point system.

NEGATIVE NUMBER: Indicated by minus (—) sign up to 5 digits.

OVERFLOW: Checked by disappearance of the decimal point from read-out, locking the calculator.

READ-OUT: Green Digitron tube panel.
Unnecessary 0's (zeros) on the left of figures are suppressed.

MAIN COMPONENT: One chip LSI

POWER CONSUMPTION: 0.6W

POWER SOURCE:
AC 100, 117, 220 or 240V (±10V), 50/60Hz, with applicable AC ADAPTOR.
DC UM-3 or SUM-3 (Manganese dry battery)x 4 (pieces).
Continuous operation: Approximately 6 hours.
AM-3 (Alkaline dry battery) x 4 (pieces).
Continuous operation: Approximately 15 hours.

USABLE TEMPERATURE: 0°C ~ 40°C (32°F ~ 104°F)

DIMENSIONS: 42mmH x 81mmW x 154mmD (1-5/8"H x 3-1/8"W x 6"D)

WEIGHT: 340g (12oz) including batteries.

9/CARE OF YOUR NEW ELECTRONIC CALCULATOR

This calculator is a durable, precision-made instrument which will provide you with years of trouble-free service.
To help ensure this we recommend that the inside of the calculator not be touched. It is also inadvisable to subject the calculator to hard knocks, drops, and unduly strong key pressing.
Extreme cold (below 32°F), heat (above 104°F) and humidity may also effect the function of the calculator. When you do not use the calculator for a long period, take out the batteries and store in the carrying case to prevent damage if the batteries leak. Please make sure you switch off the power when you finish your calculations or intend to open the cover to change batteries.
Should the calculator need service, take the unit to the store where purchased or to a nearby dealer.

WARRANTY

New SPERRY REMINGTON Consumer Electronic Calculators are warranted to be in satisfactory operating condition when delivered. Should any part prove defective in material or workmanship within 90 days after delivery, replacement of same will be made without charge.
Adjustments will be provided free of charge for the warranty period. This warranty does not include replacement of parts due to misuse, neglect and damage. Should this equipment require service, contact — for service instructions — the SPERRY REMINGTON OFFICE SYSTEM and MACHINES, or Authorized Dealer from whom you purchased this equipment.
Customer is responsible for Proof of Purchase Date. Save invoice or sales slip.