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TEKTRONIX®

PRINTER 941

OPERATORS MANUAL

DEC

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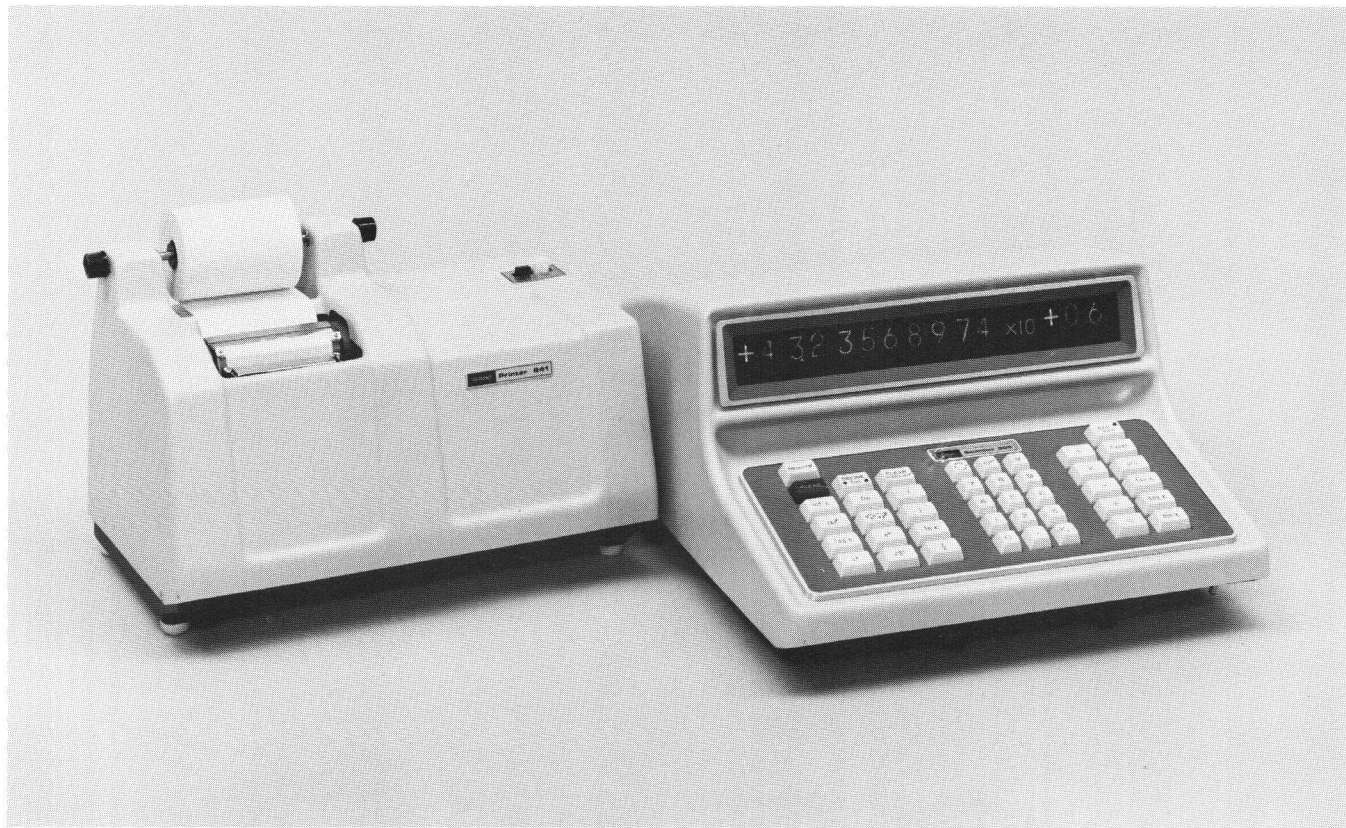
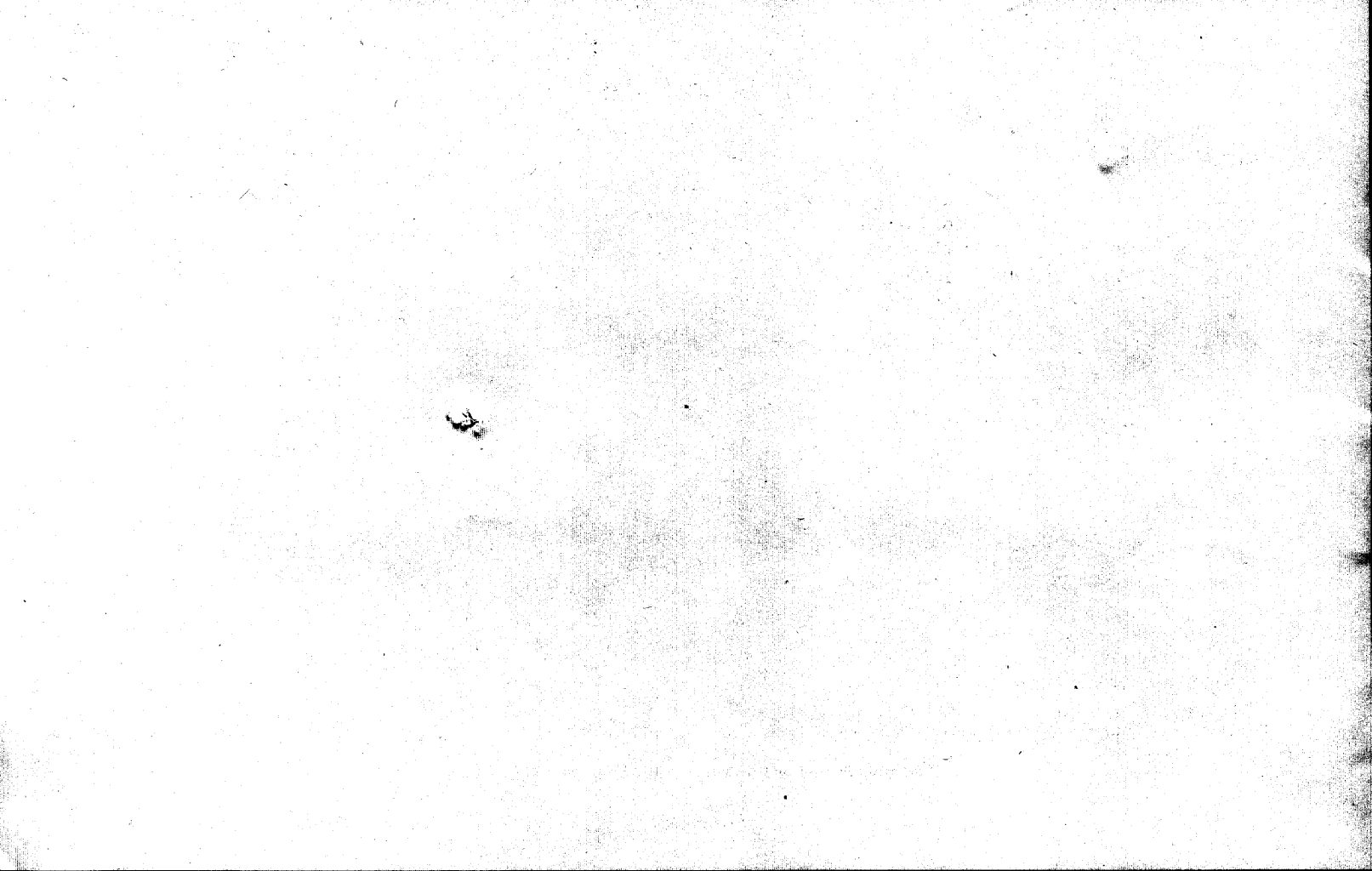


Fig. 1. Tektronix Printer 941 shown with the Scientist 909 Calculator.



PRINTER 941

Introduction

The Tektronix Printer 941 permanently records data produced by the Scientist 909 (or Statistician 911 Calculator) and Programmer 926. The 941 provides a twenty-one (21) column printed copy of numerical data including decimal point and sign displayed on Tektronix Calculators and Programmers. Print-out is on standard 3 1/2 inch wide paper wound in rolls. The Printer, an impact device, reproduces readouts in floating point or scientific notation format exactly as displayed on the Calculator, including exponent and sign of exponent. The print-out normally appears in black. However, a Calculator flashing display, indicating an out of range or illegal answer, automatically produces a print-out in red. A two digit line-identity number between 00 and 99 is assigned to each line of the print-out as shown in Figure 2.

Print-out requires a minimum of ten milliseconds of Calculator time; the maximum consecutive print-out rate is 150 lines per minute. When the Printer is addressed by the Calculator, it immediately stores the data to be printed, answers and releases the Calculator for further operations

Line-Identity Number	Mantissa	Scientific Notation Exponent
10	+0003628800	
11	+0039916800	
12	+0479001600	
13	+6227020800	
14	+8.717829120	+10
15	+1.307674368	+12
16	+2.092278989	+13
17	+3.556874281	+14
18	+6.402373706	+15
19	+1.216451004	+17
20	+2.432902008	+18
21	+5.109094217	+19

Fig. 2.

while printing is in process. The operator does not have to wait for the Printer to complete its function before continuing with the next operation. If the Calculator addresses the Printer 941 while its storage is full, Calculator operation stops and data is held until printing is complete and stored data is transferred out. Then new data is accepted into storage, thus releasing the Calculator for further operation.

The normal remote address of the Printer, 9, may be changed at the time of order to any one, two, three, or four digit number for a slight charge. This capability suits those applications where many output devices require address identification.

Operating Modes

Print-out can be initiated in several ways, as determined by the position of an AUTO-REMOTE switch, a two position pushbutton located on top of the Printer.

Remote Mode: When the switch is in the REMOTE (released) position, the Printer prints whenever the Calcu-

lator keys are pressed, or XX is pressed, when 9 is the least significant digit of the Calculator K_{xx} register.

Decimal Alignment: To align the decimal point in the printout (Fixed point notation), and avoid cutting off least significant digit zeroes, press the key before giving the print command.









Auto Mode: When the switch is in the AUTO (depressed) position, a print-out is provided as in the REMOTE mode above, and also when the Calculator key is pressed. In this mode, the line identity resets to 00 each time the Calculator key is pressed or upon reaching 99.

Paper Feed: A paper feed momentary switch permits indexing of the paper. If the Calculator addresses the Printer during paper feed, data is held off and retained until the pushbutton is released.

Listing With Programmer 926


The Printer 941 can be used in conjunction with the Tektronix Programmer 926 to provide program listing. In this case, no line-identity number is assigned. However, when the print-out contains sequential data recording followed by a listing, the line-identity number resumes following the listing with the next sequential number.

As shown in Figure 3, the first three digits of the print-out represent the step number, the middle three digits are the key code (in octal), and the last two digits are the tape block number when magnetic tape storage is used.

To list, press the     keys and listing starts at step 000. To start a list at a step other than 000, press  the 3 digit starting address,    . To stop a listing before it is

Program Print-Out		
Step Number	Key Code	Block Number
0 2 8	0 1 1	0 5
0 2 9	0 2 4	0 5
0 3 0	0 5 3	0 5
0 3 1	0 5 3	0 5
0 3 2	0 0 0	0 5
0 3 3	0 0 0	0 5
0 3 4	1 0 7	0 5
0 3 5	0 0 1	0 5
0 3 6	0 1 1	0 5
0 3 7	0 0 0	0 5
0 3 8	1 0 4	0 5
0 3 9	0 0 0	0 5

Fig. 3.

finished, press  and hold it down a few seconds to assure that the listing does not resume after the key is released.

Before Operation

Make sure the three shipping screws securing the printer mechanism are loosened 6 or 7 turns from locked position. (Do not remove screws.) This permits mechanism shock mounts to perform their function.

To Change Printer Paper

Unload paper — tear off the paper at the roll, and press the paper feed switch until paper clears the mechanism. Pull axle handles outward and remove the roll. Reload paper — Position the new roll in axle centers and secure. Paper unrolls from the top of the roll. Feed a clean edge of paper into the recess behind the print mechanism and press the paper feed button, while gently forcing the paper into place. Once the paper feeds, it will appear in the front of the mechanism. The paper shear may obstruct, and can be lifted to free any binding.

To Change Printer Ribbon

Remove the five screws securing the cover to the instrument base. Lift the ribbon carriage in its slides using the two plastic handles (with arrows on them). Refer to the decal on carriage for ribbon threading instructions. Should this decal be missing from your instrument, proceed as follows:

1. Place ribbon rolls on studs, black side toward mechanism with ribbon unrolling from top.

2. Pull ribbon under first rollers, over guides, and over rollers facing printer platen. Ribbon should not be twisted.

PRINTER 941 SPECIFICATIONS

PRINT SPEED: 150 lines per minute maximum.

ACCURACY: Same as input device.

CALCULATOR ERROR INDICATION: Prints black routinely; when calculator display is flashing (indicating out-of-range operation) printer automatically prints red.

OPERATING TEMPERATURE: 0°C to +40°C.

STORAGE TEMPERATURE: -25°C to +85°C (ribbon not included).

CHARACTER SPACING: Column spacing: 0.138 inch (3.5 mm). Line spacing: 0.201 inch (5.1 mm).

CHARACTER DIMENSIONS: Width: 0.071 inch (1.8 mm). Height: 0.114 inch (2.9 mm).

PAPER: Standard 3 1/2 inch wide adding machine paper roll.

RIBBON: Black and red adding machine ribbon (#A78 manufactured by General Ribbon Corp. or equal).

POWER REQUIREMENTS: 115/230 volts (slide switch) $\pm 10\%$, 50 to 60 Hz, 50 watts.

CONTROLS: Power switch (toggle switch located at bottom right hand corner of chassis). Paper feed momentary pushbutton switch. AUTO-REMOTE pushbutton switch.

DIMENSIONS: 9 inches high X 14 1/2 inches wide X 9 inches deep.

NET WEIGHT: 17 lbs.

SHIPPING WEIGHT: 25 lbs.

ACCESSORIES: Instrument shipped with one paper roll, one ribbon and one 941038 output cable assembly.

OPTIONS: Model 4200-01 lint-free white bond paper rolls, 200 ft. long, carton of 50. 4200-02 black and red inked nylon ribbons, 21 ft. long, carton of 12.