

TECHNICAL MANUAL  
FOR  
ELECTRON TUBE TEST SET  
MODEL 1234A

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THE HICKOK ELECTRICAL INSTRUMENT COMPANY  
10514 Dupont Avenue - Cleveland 8, Ohio

## STANDARD EIA GUARANTEE

The Hickok Electrical Instrument Company warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair such instruments which, under normal use and service, disclose the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing any instrument or test equipment which proves to be defective, when returned to us transportation prepaid, within 90 days from the date of original purchase, and provided the serial number has been made known to us promptly for our records.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment, to injure their stability or reliability, or which have been subject to misuse, negligence, or accident, or which have had the serial number altered, effaced or removed. Neither does this warranty apply to any of our products which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories, including all vacuum tubes not of our manufacture, used with this product are not covered by this warranty.

This warranty is in lieu of all other warranties expressed or implied, and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

Parts will be made available for a minimum period of five years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, etc., which have been furnished in the standard model.

## RETURNING EQUIPMENT FOR REPAIR

Before returning any equipment for service, under warranty or otherwise, the factory must first be contacted giving the nature of the trouble. Instructions will then be given for either correcting the trouble or returning the equipment. Upon authorization, this equipment should be forwarded directly to the Hickok factory address, 10636 Leuer Avenue, Cleveland, Ohio, or to a designated service station in your locality. All correspondence pertaining to repairs should be directed to the Hickok office address, 10514 Dupont Avenue, Cleveland 8, Ohio, or to the authorized service station designated.

## REGISTRATION CARD

The above guarantee is contingent upon the attached registration card being returned to the factory immediately upon receipt of the equipment.

THE HICKOK ELECTRICAL INSTRUMENT COMPANY  
Cleveland, Ohio

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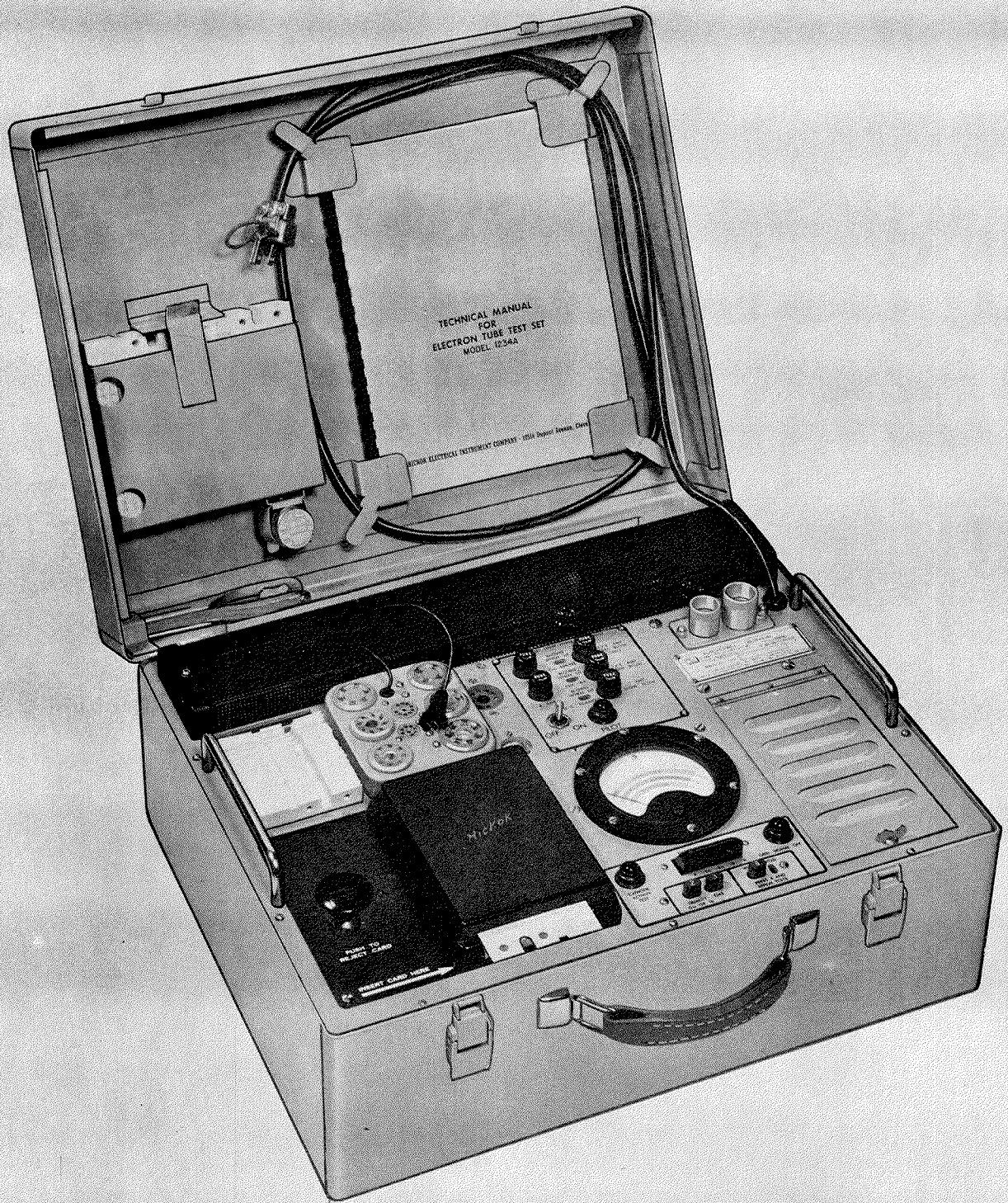


Fig. 1 Model 1234A Tube Tester



MODEL 1234A  
CARDMATIC TUBE TESTER

1. GENERAL

1.01 This instruction manual describes the Model 1234A Cardmatic Tube Tester and the methods for operating and maintaining the set.

1.02 The Model 1234A provides the necessary test sockets, circuitry, and test potentials necessary to test electron-tubes of the receiving and low power transmitting type.

1.03 The tube test conditions selected for the tube under test are as close as possible to the actual operating conditions encountered by the tube in its circuit application.

1.04 The tube test conditions are programmed on a punched code card system. A Cardmatic multiple switch automatically programs the tube test conditions when it is actuated with a code card.

1.05 The Model 1234A is manufactured by The Hickok Electrical Instrument Company, 10514 Dupont Avenue, Cleveland 8, Ohio

## 2. DESCRIPTION

### A. General

2.01 The Model 1234A Tester is self-contained in a portable aluminum carrying case with removable cover. The outside dimensions of the case are approximately 19-1/2 inches wide by 9-1/2 inches high by 16-1/2 inches deep. The weight is about 42 pounds.

2.02 A card compartment is located in the front panel of the tester which can be used for storing the most frequently used program cards.

2.03 The cover of the tester case contains brief operating instructions, brackets for storing an instruction book, the power cord, a calibration cell for checking the meter and short test, calibration cards, 50 hand punch cards and a hand punch.

### B. Description of Front Panel

2.04 The front panel is shown in Figure 2. The largest feature is the card switch which has a receptacle for receiving the program cards. When a pre-punched card is fully inserted into the switch it actuates a micro-switch which in turn actuates a solenoid to move the card switch contacts to complete the circuit. When the card switch actuates, the large knob at the left of it pops up. This PUSH TO REJECT CARD knob must be pressed to open the switch contacts and release the card. The card switch actuates only when a card is in the proper position and operates on the principle that absence of a hole in the card makes a contact.

2.05 The meter contains four scales. The upper scale is graduated from 0 to 100 for direct numerical readings. The three lower scales numbered 1, 2 and 3 are read for LEAKAGE, QUALITY and GAS respectively. Each numbered scale contains green and red areas marked GOOD and REPLACE.

2.06 Inside the small hood, directly in front of the meter, are five neon lamps which indicate shorts between tube elements.

2.07 A push button, marked 2, is used for transconductance, emission, and other quality tests which are described later. In general when this button is pressed, results are read on scale 2 of the meter.

2.08 Another button, marked 3, is used for making grid current measurements which result when gas is present in the tube vacuum. Results of this test are read on scale 3 of the meter. This button is interlocked with button 2.

2.09 A button marked 4 is used for tests of dual tubes in which both halves are alike. A neon lamp lights when button 4 is to be used.

2.10 Eleven sockets which will take all common tubes plus pin straighteners for the 7 and 9 pin miniature tubes are on the panel.

2.11 There is an ON-OFF spring-return toggle switch which turns the unit on by energizing a line slave relay, K101. A PILOT light appears next to this switch.

2.12 In the area above the ON-OFF switch there are five fuses. Three of these fuses are paired with neon lamps to indicate when they have blown. These three fuses protect portions of the circuit which are not protected by other means. The remaining two fuses protect both sides of the main power line.