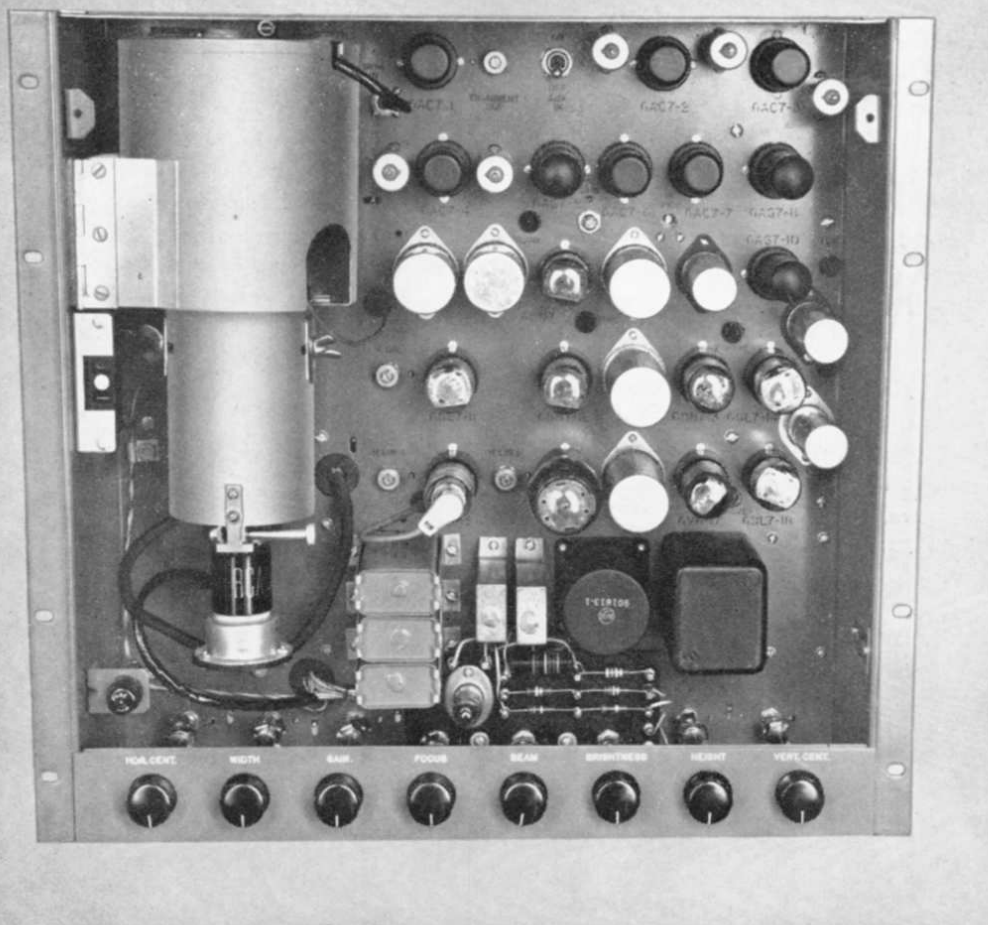


MONOSCOPE CAMERA

TYPE TK-1C



FEATURES

- Useful to television transmitting station, laboratory, factory, or service bench
- Centralized operating controls
- Compact construction; "bath tub" chassis for standard rack mounting
- Built-in high voltage power supply
- Auxiliary input for alignment purposes
- Provision for remote control of gain and focus
- Pattern shows scanning symmetry, vertical and horizontal resolution, shading, reproduction of isolated details, contrast and brightness
- Accessible arrangement

USES

The Type TK-1C Monoscope Camera is a completely self-contained television camera which produces a video signal by scanning a picture pattern built into the monoscope pickup tube. The camera may be used as a convenient means of generating a television picture signal for video testing of television transmitting equipment, or for "test pattern" transmission during warm-up and stand-by periods. In the latter case, the station call letters may be made a part of the pattern, thereby providing station identification. It may, likewise, be used in the television transmitting station as a readily available source of video signal, of high quality, to be used in place of the studio camera when making tests or adjustments on other units of the system. In the laboratory, factory, or service bench, the equipment may be used as a source of video signal to test or adjust television receivers, video amplifiers, and picture tubes.

DESCRIPTION

The TK-1C Monoscope Camera comprises the monoscope tube, the scanning generators, the video output amplifiers, and the high voltage power supply for the monoscope tube. This equipment is built on the familiar recessed "bath tub" type of chassis which fits into a standard 19-inch rack. All tubes and large components are located on the front of the chassis, while the wiring and smaller components are on the rear. The controls are grouped on a narrow control panel along the bottom of the chassis. When installed and in operation, the front is covered by a large cover plate which conceals everything but the control panel. This cover plate is interlocked to protect operating personnel from the high voltages present in the equipment.

The monoscope tube in the TK-1C is mounted in a vertical position at the left of the chassis. The upper part of the tube is enclosed in a Mumetal shield. The magnetic deflecting coils are mounted within the shield, and are attached to it. By disconnecting the tube socket, anode, and

signal leads, the whole assembly—tube, coils, and shield—may be swung outward. This arrangement allows the tube to be changed very easily, and at the same time, conserves rack space.

The monoscope tube ordinarily used in the TK-1C is an RCA 2F21. This tube provides a standard test pattern which shows the following details of the quality of reproduction in a given television system: scanning symmetry, resolution in both vertical and horizontal directions, shading and reproduction of isolated details. In addition it provides a pattern to facilitate proper adjustment of contrast and brightness. Monoscope tubes may also be obtained with special pattern showing station call letter, monogram, or other subject matter of the customer's choice. These tubes are available on a custom basis and are designated Type 1699.

The Vertical Deflection Generator consists of four tubes and associated circuits. The first of these tubes amplifies the driving signal received from the synchronizing generator and generates a saw-tooth voltage wave which is amplified in the second, third, and fourth tubes. The output is applied to the magnetic deflecting coils of the monoscope tube. Negative feedback is employed to improve scanning linearity.

The Horizontal Deflection Generator includes three tubes and associated circuits. The first tube is the driving signal input amplifier and saw-tooth voltage generator; the second and third tubes amplify the output wave and feed it to the horizontal deflecting coils of the monoscope tube.

The Blanking Amplifier is used to provide the proper level and polarity of the blanking pulses received from the synchronizing generator before these pulses are fed into the Video Amplifier for mixing with the video signal.

The Sync Amplifier is used to provide proper level and polarity of synchronizing pulses from the synchronizing generator. These pulses are fed into the video amplifier for mixing with the video signal.

The Video Amplifier includes six stages of video amplification—together with a clipper stage which is inserted between the fifth and sixth stages. The monoscope output signal is fed directly into the first stage of this amplifier, and the blanking signal is introduced in the output of the fifth stage. The output of the fifth stage (which contains both video and blanking signals) is fed to a clipper stage which adjusts the height of the blanking "pedestals". The clipper feeds an output stage which consists of two tubes having their grids tied in parallel, but with the plate circuits separate. This provides two separate outputs—one for picture output and one for monitoring purposes.

SPECIFICATIONS

Output Voltage.....	1.5 volts peak-to-peak
Output Impedance.....	75 ohms
Power Supply Required:	
Blanking, Horizontal Drive and Vertical Drive	
Pulse Inputs (neg. polarity).....	3.5 to 5 volts
Resolution Capability.....	At least 450 lines
Power Consumption:	
110-220 volts a-c 60 cycles.....	100 watts
280 volts d-c (from Type 580-D Power Supply).....	200 ma.
Dimensions.....	17½" high, 19" wide, 11" deep
Weight	55 lbs.
Tube Complement:	
6—6AC7	1—6Y6-G
3—6AG7	1—1B3-GT
3—6SL7-GT	1—991
1—6V6-GT	1—2F21
	3—6SN7-GT
Stock Identification:	
Monoscope Camera complete with tubes.....	ES-26960-B
Monoscope Camera (less tube).....	MI-26030-B

Accessories

Spare Monoscope Tube 2F21.....	MI-26657
Special Monoscope Tube.....	Type 1699
Spare Set of Tubes for Camera.....	MI-26679-A

