

- Pattern shows scanning symmetry, vertical and horizontal resolution, shading, reproduction of isolated details, contrast and brightness
- Provision for remote control of gain and focus
- Auxiliary input for alignment purposes
- Built-in high voltage power supply
- Designed for standard rack mounting

Monoscope Camera, Type TK-1C

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 quick tube change and 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 tube 1699 may be obtained with special pattern showing station call letter, monogram, or other subject matter of the customer's choice. Type 1699 tubes are available on a custom basis.

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 out-

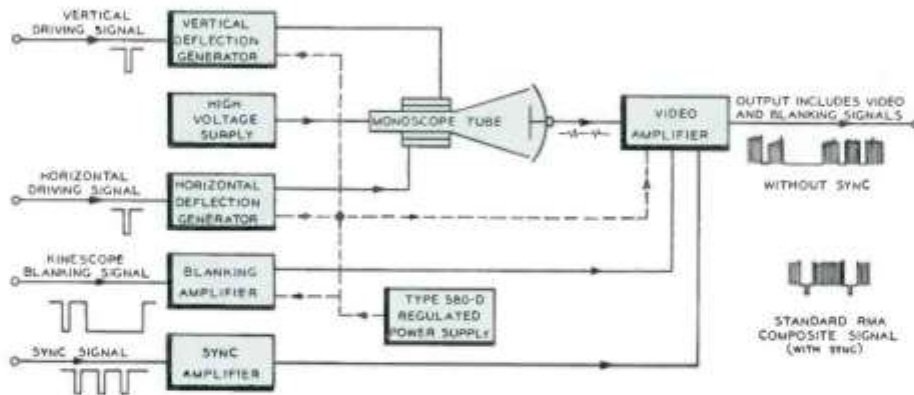
put wave and feed it to the horizontal deflecting coils of the monoscope tube.

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—to-

gether 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.



Block Diagram of TK-1C Monoscope Camera Circuit.

Specifications

Output Voltage	1.5 volts peak-to-peak
Output Impedance	75 ohms
Number of Scanning Lines	525 or 625
Field Repetition Rate	60 or 50 per sec.
Line Repetition Rate	15,750 or 15,625 per sec.
Input Pulses Required:	
Blanking, Horizontal Drive and Vertical Drive (neg. polarity)	3.5 to 5 volts

Resolution Capability.....At least 450 lines

Power Consumption:

AC Power	100 watts
280 volts, d-c	200 ma
-3 volts, d-c (centering)	300 ma

Dimensions.....17½" high, 19" wide, 11" deep
(44.45 cm high, 48.26 cm wide, 27.94 cm deep)

Weight.....55 lbs. (25 kg)

Tube Complement:

6-6AC7, 3-6AG7, 3-6SL7GT, 1-6V6-GT, 1-6Y6-G,
1-1B3-GT, 1-991, 1-2F21, 3-6SN7-GT

Ordering Information

Monoscope Camera (less Monoscope Tube)	
For 115 Volts, 50/60 Hz	M1-26030-B
For 230 Volts, 50/60 Hz	M1-P26030-B
Monoscope Tube, 2F21	M1-26657

Accessories

Special Monoscope Tube	Type 1699
Power Supply, WP-16B	
For 60 Hz AC Operation	M1-26084-B
For 50 Hz AC Operation	M1-26094-B
WP-16B Centering Current Unit	M1-26083-B