

Studio Camera Equipment, Type TK-10A

Features

- Electronic Viewfinder included as standard equipment.
- Four lens positions provided on a rotatable turret.
- Optical focusing easily accomplished by a knob on the side of the camera.
- Studio Camera is supplied as single, complete, compact package.
- Hinged doors and covers permit easy access to camera circuits and controls.
- Four tally lights, two on the front of the camera, one on rear of camera and one beside the viewfinder kinescope, indicate to the cameraman and performers when the camera is on-the-air.
- A combination microphone and headset for each operator produces program sound in one earphone and order wire conversation in the microphone and other earphone.
- Two phone jacks on camera—one for cameraman, one for production man.
- Camera mounting designed for a standard tripod, a crane type dolly or studio pedestal.

Uses

The TK-10A Studio Camera Equipment is designed to pick up scenes produced in television studios, and provide composite video signals that can be fed to a television transmitter.

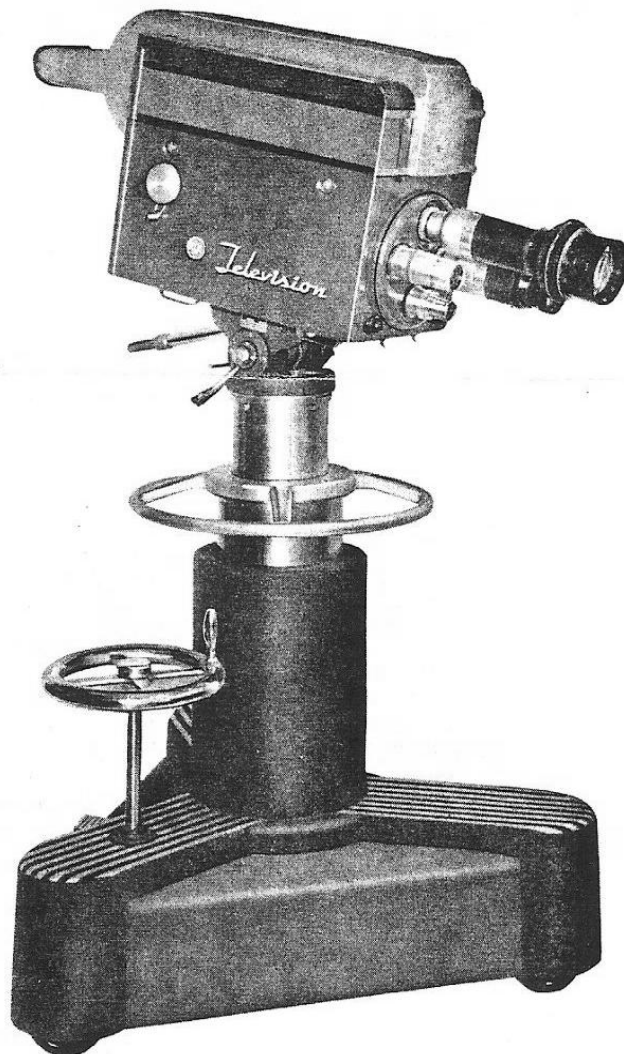
The camera uses an Image Orthicon pickup tube which requires much less light than former studio cameras. Under normal lighting conditions (75-150 foot-candles) an excellent picture is obtained.

Description

The TK-10A Studio Camera Equipment consists of the Camera itself, which can be mounted on a crane type dolly or studio pedestal, a Camera Control mounted in a desk-type console section, and power supplies designed for rack mounting. The size and general appearance of the console section is identical to that of the Film Camera Equipment and the Studio Switching System. Therefore, the studio camera control unit can be used in conjunction with other studio and film units. Any number of these console sections (one for each camera) can be bolted together to form a convenient desk-type console.

STUDIO CAMERA

The general arrangement of the controls and components of the Studio Camera resembles that of the RCA Field Camera. Like the field camera, the studio camera employs image orthicon deflection circuits, a picture preamplifier, and an electronic viewfinder which is mounted directly on the camera. The viewfinder, which enables the camera man to view the scene he is picking up, uses a 5 inch picture tube (RCA-5FP4A) which operates with an image brightness satisfactory for viewing scenes even in brightly lighted studios. Sufficient gain is available to insure a sharp viewfinder image, even when handling dark scenes. Camera circuits are arranged on either side of the tube and coil assembly. On one side, the

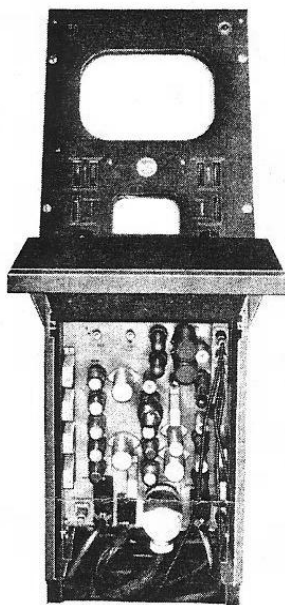


Studio Camera mounted on TD-1A Pedestal Dolly

video preamplifier tubes are mounted on a shelf with the circuit components easily accessible on a terminal board below the shelf. The deflection and high voltage pulse supply circuits are mounted in a similar manner on the other side of the camera. Hinged doors on either side of the camera swing down to provide easy access to the camera circuits.

Four EKTAR type lenses are mounted on a lens turret which can be rotated by a handle at the rear of the camera. These lenses are relatively small due to the small size of the photocathode in the pickup tube. They are available in sizes from 35 mm f3.3 to 135 mm f3.8. Optical focusing is accomplished by adjustment of a knob on the side of the camera. This knob moves the pickup tube and its focus and deflection coil assembly with respect to the lens.

Controls for the studio camera circuits are located on the rear of the camera in two rows behind hinged covers. All these controls are normally preset and do not require adjustment during a program. Communication and tally light circuits are provided in the camera cable.



Studio Camera Control Unit consisting of TM-5A Monitor and Camera Control Chassis (MI-26055) mounted in console housing (MI-26266B)

STUDIO CAMERA CONTROL. The Studio Camera Control enables the video operator to monitor and control the quality of the picture signal produced by the studio camera. It is a desk-type console section with a TM-5A camera monitor mounted in the upper part, and the control chassis mounted in the compartment below. The camera monitor has a 10-inch picture tube for displaying the picture, and a 5-inch oscillograph tube which reproduces the picture signal waveform. Controls for gain and black level setting are brought out on the monitor front panel.

The control chassis contains the necessary circuits for amplifying the video signal, establishing black level, mixing in a sawtooth correcting signal, adding picture blanking to the picture signal, adding the synchronizing signal, and providing 3 separate outputs. It is a vertically mounted chassis with a bracket projecting from the top part of the chassis supporting the operating controls. Four commonly used controls project through the desk top surface. These are:

1. Orthicon Focus
2. Beam Current
3. Target
4. Image Focus

Three less frequently used controls are recessed under a small panel in the top surface.

The control unit complete with its controls can be removed easily from the console by removing the lower front panel and sliding the unit out. All electrical connections are made with plug-in connectors.

POWER SUPPLIES

Four power supplies are required for each camera chain. These are as follows:

1. Type WP-33B to supply B+ to master monitor.
2. Type WP-33B to supply B+ to camera and viewfinder.
3. Type 580-C to supply B+ to camera control and to current regulator.
4. Current regulator to supply constant current to camera focus coil.

These four power supplies are designed for mounting in a standard rack in the studio control room.

Specifications

Number of Lines	525
Odd Line Interlacing	2 to 1
Frame Rate	30 per sec.
Field Rate	60 per sec.
Picture Signal Level	1.5 volts, peak-to-peak max. (conforms to RMA standards)
Picture Polarity at Output	Black negative
Impedance of Coaxial Transmission Line	75 ohms
Maximum Length Camera Cable	1000 ft.
Total Included Angle of Lenses:	
(a) 35 mm f3.3 Ektar	50°
(b) 50 mm f1.9 Ektar	34°
(c) 90 mm f3.5 Ektar	20°
(d) 135 mm f4.5	13°
(e) 8.5 in., f3.9 Ilex	8°
(f) 13 in., f3.5 Ilex	5°

Incident Illumination (min.) 25 foot-candles
Incident Illumination for Best Results 100 to 200 foot-candles
Power Source 117 volts, 60 cycles

Power Consumption:

(a) Heater Supply Camera Control	375 watts
(b) Two WP-33B Power Supplies	800 watts
(c) One 580-C Power Supply	370 watts
(d) Current Regulator	15 watts

Total for One Camera Chain 1560 watts

MECHANICAL SPECIFICATIONS

Camera (including Viewfinder)

Length	35"
Width	13"
Height	20"

Camera Control Console:

Depth	36"
Width	13 1/4"
Height (overall)	41"

Weights:

Camera (without lenses including Viewfinder)	105 lbs.
Camera Control Console Assembly (including Master Monitor)	140 lbs.
Camera Cable	0.4 lbs. per foot

Tube Complements

TK-10A Studio Camera—1 RCA Image Orthicon (Studio type), 1 RCA 6AG5, 3 RCA 6AK5, 1 RCA 6J6, 3 RCA 6SN7GT, 2 RCA 6SL7GT, 1 RCA 6BG6G, 1 RCA 6AS7G, 1 RCA 1B3GT/8016, 1 RCA 6V6GT, 1 RCA 6L7.

Studio View Finder—2 RCA 6AG7, 1 RCA 6J6, 1 RCA 6V6GT, 1 RCA 6H6, 2 RCA 6SN7GT, 1 RCA 6SL7GT, 1 RCA 6BG6G, 1 RCA 1B3GT/8016, 1 RCA 6AS7G, 1 RCA 5FP4A.

Studio Camera Control—6 RCA 6SN7GT, 1 RCA 6SH7, 2 RCA 6AG7, 2 RCA 6AL5, 1 RCA 6Y6G, 4 RCA 6AC7.

Tube Complement for Power Supply 580-C, WP-33A, and Current Regulator are listed elsewhere in this catalog.

Equipment Furnished

Stock Identification MI-26900
(Equipment below plus miscellaneous cables, fittings and hardware is supplied)

1 Studio Camera	MI-26000-A
1 Camera Viewfinder	MI-26005
1 Camera Control Chassis	MI-26055
1 Master Monitor TM-5A	MI-26135-A
1 Regulated Power Supply	MI-21523-B2
2 Regulated Power Supplies	MI-26985-B
1 Current Regulator	MI-26090
1 Console Housing	MI-26266-B
1 Blower	MI-26579-A
1 Lens 50mm f1.9	MI-26550-1
1 Lens 90mm f3.9	MI-26550-2
1 Lens 35mm f3.8	MI-26550-3
1 Set of Tubes for MI-26900 consisting of (1) 5CP1A, (1) 5FP4A, (1) 186P4 and (1) Image Orthicon	

Accessories

8.5 in. f3.9 Lens	MI-26550-4
35mm f3.3 Lens	MI-26550-9
13 in. f3.5 Lens	MI-26550-10
17 in. f5.0 Lens	MI-26550-7
Camera Cable (length to be specified by customer)	MI-94-C
Video Coax Cable RG 11/u	MI-83
Video Coax Cable RG 59/u	MI-75
Power Cable 12-cond., Shielded	MI-80
Inter Communication Cable 8-cond., Shielded	MI-82
Pulse Distribution Box	MI-26757
Studio Camera Dolly	MI-26040
Studio Camera Pedestal	MI-26035
Camera Friction Head	MI-26205-A
Metal Tripod TD-11A	MI-26046