TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV - TV

DENSON ELECTRONICS CORPORATION

Rockville, Connecticut

Instructions Only - 50¢ - Stock No. 779

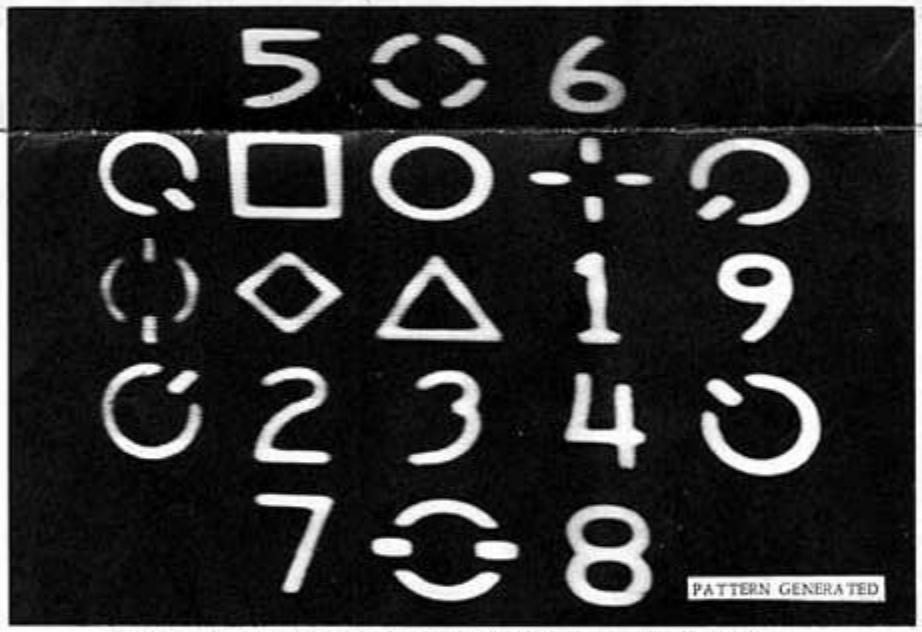
1698 MONOSCOPE

TEST PATTERN MONOSCOPE TUBES FOR CLOSED-CIRCUIT APPLICATIONS

P.O. Box 85
Longview Street
Rockville, Conn.

Telephone:
Rockville, Conn.
Area Code 203
875-5198

A NEW VIEWING CONCEPT



A NEW VIEWING CONCEPT

NEED A STABLE TEST SIGNAL SOURCE FOR ONLY $9.95

AND A FEW PARTS FROM YOUR JUNK BOX????

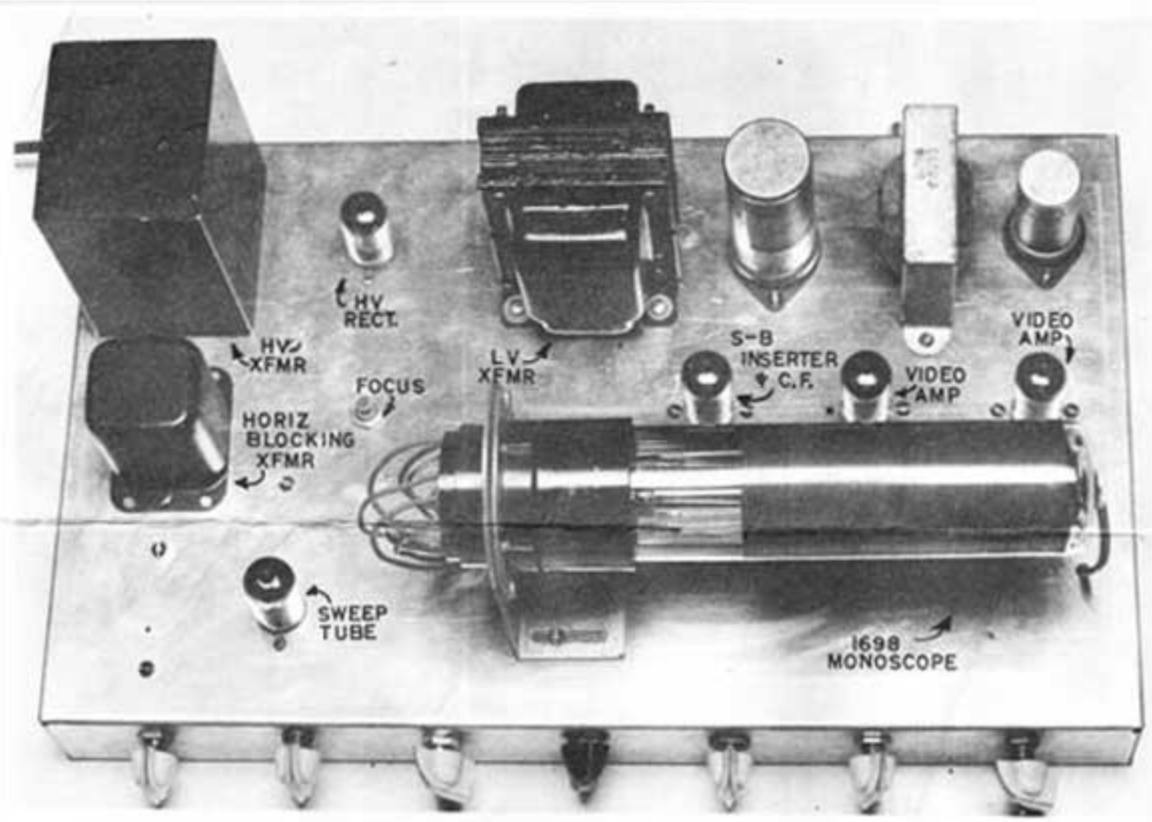
Here is the easiest way to get your Camera, Transmitter or Monitor Set up and operating properly. Our Type 1698 Test Monotron tube with a few parts from an old TV set or the usual electronic experimenters clutch pile used in the simple circuit supplied with the tube gets you started in Closed Circuit or Amateur Television Systems. Simpler than a flying spot scanner-LESS fussy than a camera, this pattern generator produces a series of figures and numbers from the self-contained pattern. Stock No. 700FA-2 ONLY Stock No. 700FA-2 ONLY $9.95 plus postage - Ship.Wt. 3 lbs., #779 Inst. ONLY 50¢

#710 6"x6" mu-metal for shield $3.95 #713 14 Pin socket w attached lead $1.50

711 Model MSN Power Trans. 18.95 716 400 MA 400 PIV Diodes for D1-D-6 45¢ea

Have you ever sat at the workbench for hours on end running final checks on a newly constructed piece of ATV gear and found yourself in dire need of a fixed video test signal? Probably so, and if you're like the rest of us quite likely you got out the vidicon camera or flying spot scanner and used it to generate the pattern. Without doubt, this works very well, but oh what a way to whittle the life out of that highly cherished pickup tube, (or CRT in the case of FSS) How much more practical this job could have been accomplished with the aid of a monoscope camera. Even though this type camera has always created interest amount ATV'ers for purposes of generating fixed test patterns, its cost until recently has been prohibitive.

CONSTRUCTION: Fig. 1 shows a complete schematic of a simple yet effective monoscope camera. All resistors are 1/2 watt and capacitors are in MFD unless otherwise stated. Component values not shown on the schematic are given in the parts list at the end of the article. Layout is not critical if several things are kept in mind. (1) Mount the monoscope such that the lead from the signal cap down to the grid of the first video amp is no longer that 6 inches. Use low capacity shielded cable for this job. (2) Keep all transformer and chokes as far from the 1698 as possible to prevent undue beam distortions. If possible use a mu-metal shielding over the tube...this will further protect against stray magnetic fields including the earth's field. (3) Use an electrostatic shield over the signal plate portion of the tube to prevent stray RF pickups such as those caused by nearby AM broadcast stations.



BEAM CENTERING HEIGHT NOT USED WIDTH HORIZ. HOLD

Function of Controls

MONOSCOPE CAMERA

DENSON ELECTRONICS CORP
ROCKVILLE, CONNECTICUT

A couple changes which were recently made for improved pix quality. They are: Grounded pin 6 of the monoscope instead of connecting it to point B on the diagram. Results in improved astigmatism with little sacrifice in gain. Changes the .002 waveshaping condenser (this is the one shown connected from the junction point of the 1K resistor and the .0015 capacitor in the horizontal osc plate circuit) to a .001. Improved the horizontal pulse by changing to this lower value. Changed the 15K which connects the 4700 ohm resistor from the plate circuitry of the vertical discharge tube to pin 7 of V-3B (sync tube) to 6800 ohms. Improved the vertical sync clipping. A little mu-metal shield is needed to prevent beam distortion. -

Additional Components Available from DEC

Stock No.	Type	Price
700D	Socket for Vidicon	$ 3.50
712	New High Resolution Vidicon Direct Drive Deflection Yoke and Focus Coil	59.95
700F	Type 5527 Electrostatic Camera Tube New	50.00
700FA-2	" 1698 - 2 inch Electrostatic Test Monotron SPEC.	9.95
700FA-3	Similar to 1698 except 3 inch NEW (Odd Patterns)	50.00
700H	Type 212 Vericon Camera Tube NEW	100.00
784	Schematic for Type 212 Vericon Camera	5.00
700B	Type 212 Vericon Deflection Yoke NEW	75.00
700A	Type 212 Vericon Deflection Yoke and Focus coil-U	100.00
700J	Type 5820 Orthicon Camera Tube-U	25.00
700L	Type 5820 Orthicon Deflection Yoke - Used	25.00
700LN	Type 5820 Orthicon Deflection Yoke NEW 210D1	100.00
700LF	Type 5820 Orthicon Focus Coil NEW	100.00

TEST PATTERN

Printed on heavy cardboard
Postpaid - Small #594 50¢
Large #595 $1.00

Stock #187 at $5.95-Excellent book on CCTV gives very comprehensive course in TV cameras and associated equipment.

FOR CLOSED-CIRCUIT APPLICATIONS VIA MONOSCOPE

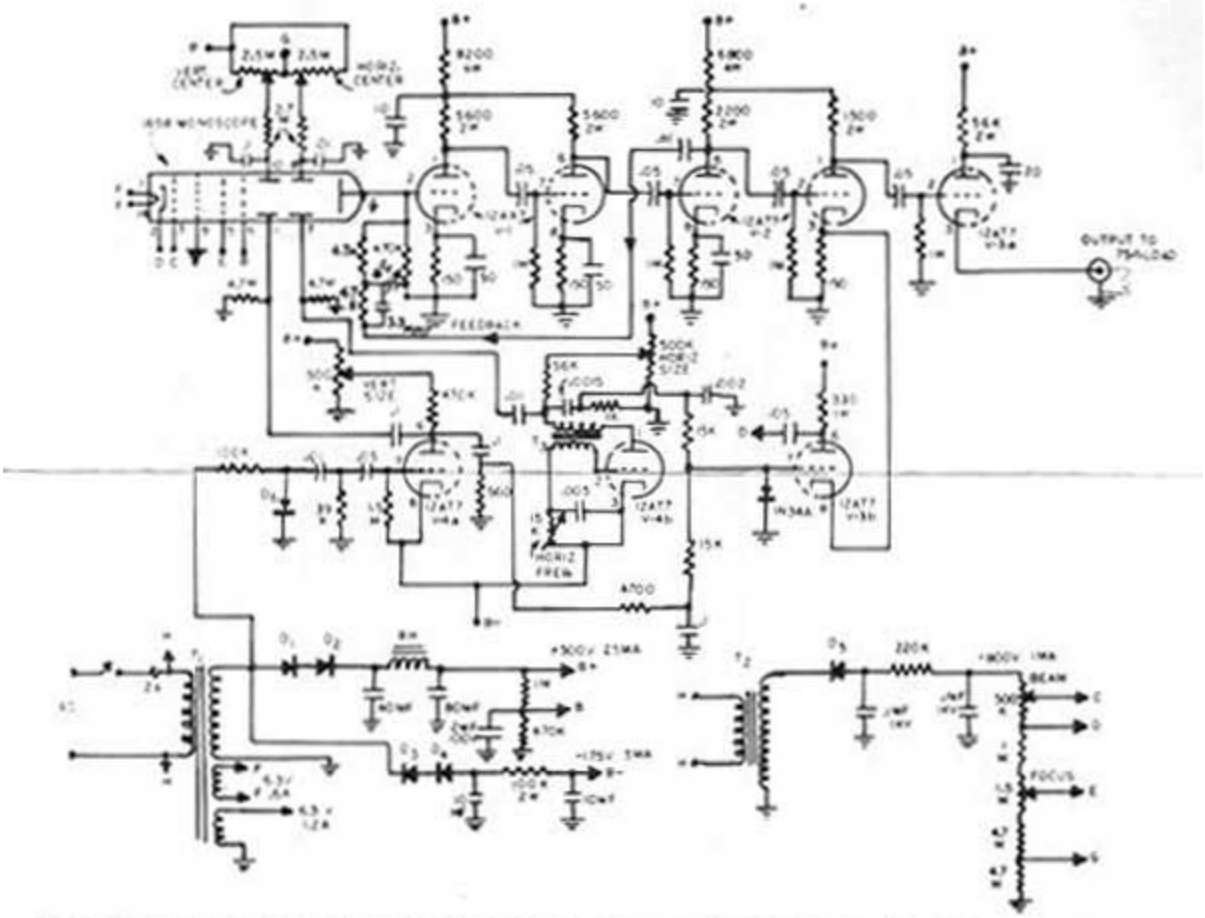


Fig. 1 - Schematic of monoscope camera. *Cf is a 4-40mmfd. compression trimmer. The sizes of the 47K and 3.3mmfd (in the feedback loop) can be altered if elimination of smear cannot be obtained within the range of C_f. Variations in individual wiring practices frequently result in such out of range situations. However, careful wiring using standard video amp practices should prevent this.

The entire unit can easily be constructed on an 11 x 17 inch chassis. A photo showing the parts layout in our original unit is shown on the front cover. This arrangement proved to be quite adequate except that we would recommend anyone duplicating it to place the low voltage power transformer more to the left rear, since in the location shown its magnetic field effects the monoscope beam with the mu-metal shield removed.

OPERATION: The minute current variations developed across the signal load resistor (470K grid resistor in first amp) are sufficiently amplified by a four stage video amplifier; the first three stages of which incorporate negative feedback to offset the capacity losses from the signal plate and signal lead to ground. The amplified signal is coupled to the 75 ohm line through the cathode follower, V3a. Sync-blanking pulses are mixed with the video in the cathode circuit of V2b. Note that the cathode of the 1698 is operated about 800 V above ground. Therefore the filament must also be operated above ground from a separate winding. Vertical sweep is obtained through a discharge stage, V4a locked to the AC line through a waveshaping and clipping network.

Horizontal sweep is obtained from a blocking oscillator, V4b. The combination sync-blanking pulse developed across the resistor in the discharge network of each deflection amp is nexed, clipped and inserted in the fourth video amp by the sync-blanking inserter, V3b. Focusing, beam current adjustment and centering controls are all conventional similar to those used in most scope circuits. The two power supplies are also quite straight-forward and should require no explanation...just one thing, it will be noticed that we have +300 and a -minus 175 instead of a single + 475. The reason being, 300 volts was desired for the video amps and sync inserter but the additional voltage was advantageous for improved sweep linearity. Voltage dropping resistors could have been used but we liked the fact that this allowed us to use readily available lower voltage capacitors both in the power supply and also in the coupling and discharge networks. The method you choose will depend on your own personal perference.

TUNE UP: Assuming no wiring errors or defective components, check out procedure is relatively simple compared to a flying spot or vidicon. Being an electrostatic type tube it's merely a matter of correctly setting the adjustment pots. Proceed in the following manner:

(1) Set all knobs except the beam (which should be set for maximum bias) to mid-range.

(2) Check to make sure monitor is properly adjusted on a local station prior to feeding video to it. (be sure it's properly terminated.)

(3) Now apply power and allow about 2 minutes for stabilization. The monitor should now be locked vertically since the vertical sweep is derived from the 60 CPS line. The horizontal osc is free running and unless you were lucky will probably not be on frequency. If this is the case, adjust the frequency pot in the camera till the monitor is properly locked.

(4) You are now ready to see if you can get a pattern. Start advancing the beam control (lowering the grid bias.) An image should immediately become visible. If so, continue bringing up the beam until a normal contrast picture is obtained. Now the centering, focus and size controls can be adjusted for best picture.