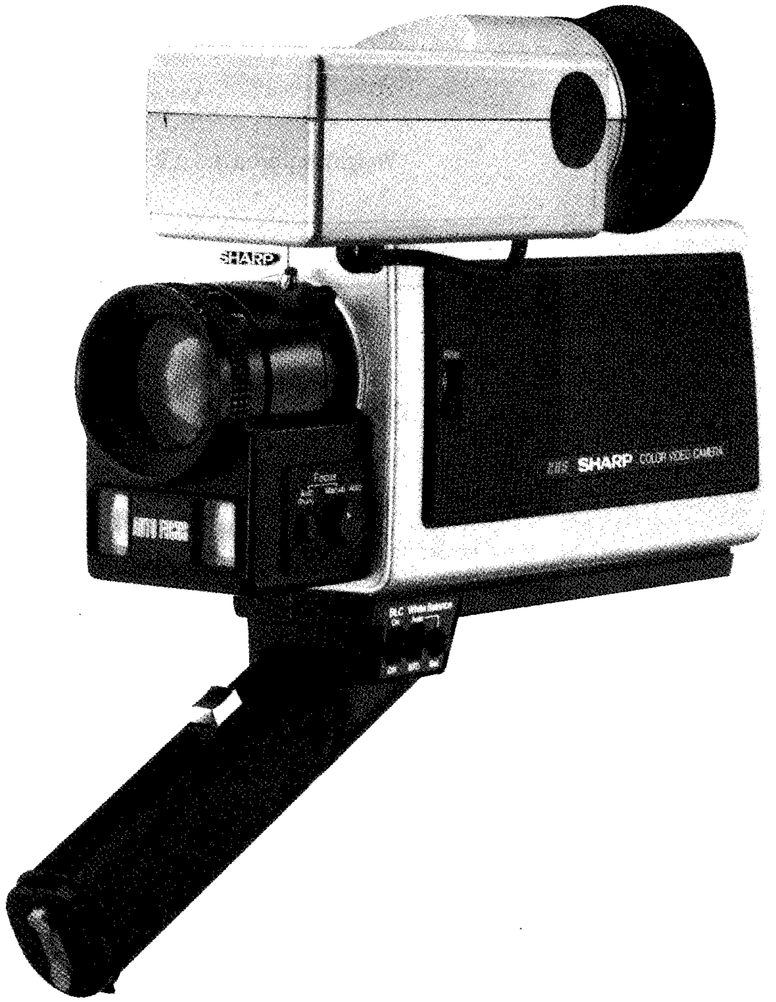
XC-40

SHARP SERVICE MANUAL

TVSM081201CMR

COLOUR CAMERA

MODEL XC-40



CONTENTS

SHARP CORPORATION OSAKA, JAPAN

SPECIFICATIONS

Optical system: Single-carrier frequency, vertical correlative separation system
Pickup tube: 2/3" SATICON (H4105)
Video output system: PAL R-Y/B-Y system
Scanning system: 625 lines, 2:1 interlace system
Video output signal: 1.0 Vp-p/75 ohms
Lens: F1.4, auto iris, 6× Power zoom (f12-72 mm), built-in daylight filter
Auto/Manual focus
Macro mechanism
Lens mount: Fixed
Resolution: Horizontal; 250 lines at center
Vertical; 300 lines at center
Video S/N ratio (Luminance): 45 dB (under standard condition)
Standard illumination: 3000 lux, 3200°K
Minimum illumination: 70 lux

Colour temperature compensation: Auto white balance/standard
Built-in microphone: Electret condensor microphone
Audio output: -20 dB/1 kohm (0dB=1 V_{p-p})
View finder: 1.5" electronic view finder
Indicators: VTR start (Green LED)
Battery alarm (Red LED)
Iris Under (Yellow LED)
Power requirement: DC 12 V
Power consumption: 12 W (at manual focus)
Ambient temperature: 0°C~40°C
Dimensions (approx.): Camera; 87 mm (W) x 288 mm (H) x 336 mm (D)
View finder; 72 mm (W) x 72 mm (H) x 228 mm (D)
Weight (approx.): 2.8 kg

CAUTIONS ON OPERATION

1. The operation must be done under the ambient temperature of 0°C to 40°C with the humidity of less than 90%.
   Another cautions must also be taken to keep the pickup tube always in the best conditions.
   - Avoid operating the set for more than 6 hours when it is at relatively high temperature (around 40°C).
   - If the set is operated at a directly sunlit place, the temperature inside the cabinet may increase to an unexpected degree, so it is preferred for you to keep it in the shade as much as possible.
   - Where the camera is in storage must also be at 0°C to 40°C.
2. Don't make the camera face directly sunlight or other strong light sources (a vehicle's headlight, etc.). Otherwise the pickup tube may be impaired.
3. Never try to operate the set for a long time with the object having too a strong contrast.
4. The set is very sturdy for any ordinary operation but be careful not to jolt on drop it.
5. Avoid operating the set at a corrosible gas emitting place or a dusty place.
6. Never place the set at a place directly exposed to a heating source like heating apparatus, radiator etc.
7. When not in use or during transportation, be sure to cover the camera lens with its cap.
8. Do not subject the set to magnetic field or strong electric waves.

OPTICAL SYSTEM

Light coming through the zoom lens is adjusted by the iris to have its proper size, then passes through the crystal filter to be applied to the pickup tube where it is converted into electrical signal across its photo conductive layer.

The crystal filter is an optical trap, and eliminates possible false signals together with the stripe filter whose pich may now and then becomes the same as that of the vertical image of an object to be picked up.

This new SATICON is designed to cause less persistence of resisdual image than the former VIDICON does: what's more, LEDs (bias light) are provided around the crystal filter to minimize the amount of residual image in the dark part.

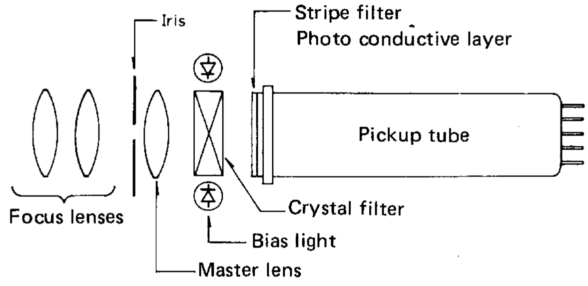


Figure 1.

PRINCIPLE OF SINGLE-CARRIER FREQUENCY, VERTICAL CORRELATIVE SEPARATION SYSTEM

The stripe filter inside the pickup tube are arranged as shown in Fig. 2. The cyan (CY) filter and yellow (YL) filter are so positioned as to have the same angle with respect to the scanning lines, and so the space frequencies caused by them are the same from each other. Supposing that incoming light is transparent in colour, we will describe how it is separated into two colours red and blue by the CY and YL filters, looking at Fig. 2.

The CY filter reflects only red colour and the YL filter only blue colour out of the incoming light, respectively.

In the n line in Fig. 2, the CY and YL filters are on the same line overlapping on each other, so that –R and –B signals will be the same in their phase: in the n + 1 line, –R signal is $\pi/2$ behind that caused in the n line while –R signal is $\pi/2$ ahead that caused in the n line: the same holds true of those generating in both n + 1 and n + 2 lines. This reflection by the filters is used to fit into the colour separator circuit of which the block diagram is shown in Fig. 3, which is intended to have the incoming light separated into red and blue signals, delivering them to the succeeding circuit.

It is inside this colour separator circuit that the n line signal is 1H delayed to have the waveform ①, and the n + 1 line having the waveform ② reaches the $-\pi/2$ phase shifter to become the new signal having the waveform ③.

Therefore:

① + ③ = 0R – 2B
① – ③ = –2R + 0B

Thus these two separated signals (blue and red) enter the detector circuit, to be changed to DC signals, respectively.

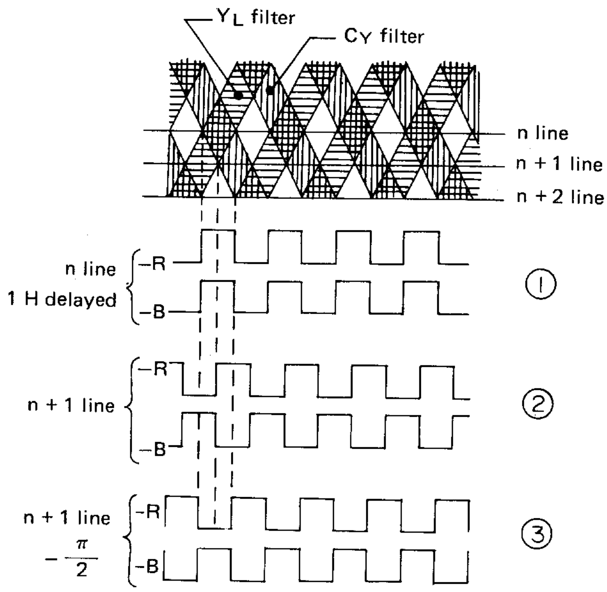


Figure 2.

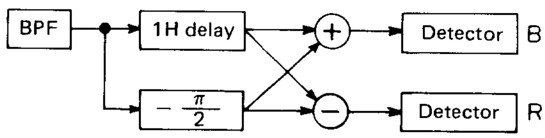


Figure 3.

PRINCIPLE OF AUTO FOCUS OPERATION

The infrared LED emits infrared ray through a distance sensor window reaching and reflecting on a subject. The reflected ray comes back to the other distance sensor window and is caught by the infrared photoconductive cell. This is called a distance sensitive type of the automatic focus mechanism. The infrared ray emitted by the infrared LED is in parallel with the optical axis of the camera lens, with the distance between them being about 50 mm. The infrared ray reflected on a subject gets back and reaches the photoconductive cell via the automatic focus lens.

The photoconductive cell includes two sensors (diodes) as shown below, both of which work to generate electromotive forces "Va" and "Vb" which vary according to the amount of incident light.

If there is caused a potential difference between "Va" and "Vb", this difference is used to decide what distance the auto focus lens must move to attain the proper focus point. The focus ring of the auto focus lens is mechanically connected to the photoconductive cell, which means that the photoconductive cell can move together with the focus ring. As the auto focus lens moves, there will be a point where "Va" and "Vb" are equal to each other, and this point is regarded as an ideal focus point.

The auto focus lens moves in both directions in the following way:

- In the case of "Va" > "Vb", the lens moves in the direction "∞".
- In the case of "Va" < "Vb", the lens moves in the direction "n".
- In the case of "Va" = "Vb", the lens stops to move.

When the focus point is decided in this way, the infrared LED, which has so far emitted light continuously, now begins to emit it intermittently about every 0.3 second. The infrared ray emitting angle is kept at 3°, and the distance between the LED and the subject is a factor with which the infrared-ray-hitting area of the subject is decided in the relation shown in Fig. 5.

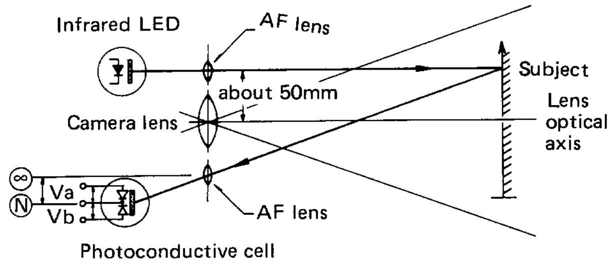


Figure 4.

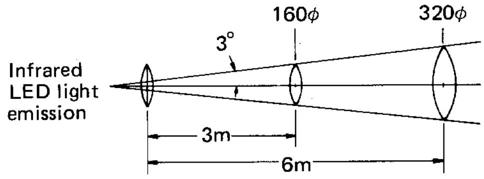
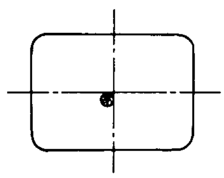
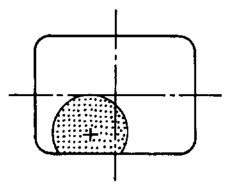
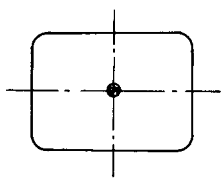
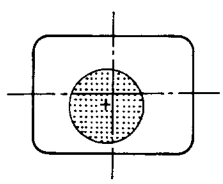


Figure 5.

However, there is a positional difference of 50 mm between the emitted infrared ray and the lens's optical axis, and therefore the actual focus point is within the range about 50 mm away from the central point of the subject. And this focus area (within 50 mm) varies according to the set positions of the view finder's control and the subject's distance. The electronic view finder can be set at two positions "WIDE" 12 mm" and "TELE 72 mm", and the focus setting area in each position is as shown in Fig. 6.

Figure 6. Focus setting area in each position

Focal distance / Subject's distance	f12mm	f72mm
1.5m		
6.0m		

PREAMPLIFIER CIRCUIT

This preamplifier, receiving the signal of as feeble as 0.25 μAp-p, amplifies it to be good enough as a signal which ensures the set with desired colour reproduction: considering the multiple colour signal, its band characteristic is extended to cover the signal of as high as 4 MHz, making its output as flat as possible.

The signal enters pin ⑤ of hybrid IC (HM101) and goes out of pin ②

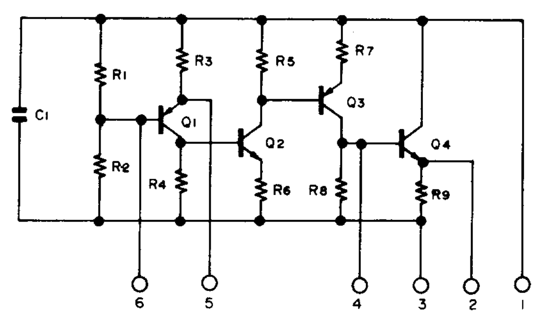


Figure 7. HM101

SIGNAL PROCESSOR CIRCUIT

(A) Luminance signal processor circuit

- AGC amplifier

  Coming from the preamplifier circuit, the signal arrives at AGC amplifier made up of Q204 to Q210.

  The AGC amplifier works only when an object is picked up in a lower illumination, so that it boosts the gain of the output signal for better reproduction despite the lower illumination.

  Operational amplifier IC605 causes the AGC amplifier to start operating, when the signal gain suffers the lower illumination even with the auto iris fully opening.

- **3.58 MHz trap circuit**

  The Y signal is made clean by the trap circuit made up of L204 and C240, which removes its modulated component.

- **Cleaning/clamp/black clip circuit**

  Y signal is applied to Q214 where its cleaning is completed for its blanking period. It is then delivered via C303 to pin ④ of HM301, and here its clamping occurs. To pin ⑥ of HM301 is applied BL pulse which is adjustable with VR16 so as to provide Y signal with black clipping.

- **γ correction circuit**

  At pin ⑥ of HM301, Y signal undergoes γ correction, going out of pin ⑦: R268 and VR14 here are connected with HM201 and HM202, respectively.

- **0.7 μsec delay/aperture correction circuit**

  Coming from the γ correction circuit, Y signal passes through the delay element DL201 and DL401 so that its phase is delayed by 0.7 μsec to be the same as that of the colour signal then entering the encoder circuit.

  Then Y signal arrives at HM401 in which its aperture correction is performed: its horizontal correction is made by DL402. Y signal is mixed with the signal which has come from HM601 to enter pin ⑦ of HM401, so that it is converted into a vertical aperture signal: this is YH signal which is then applied to the encoder circuit.

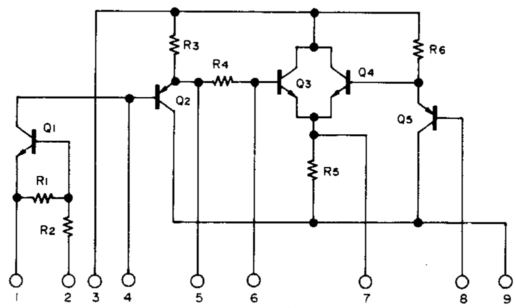


Figure 8. HM301

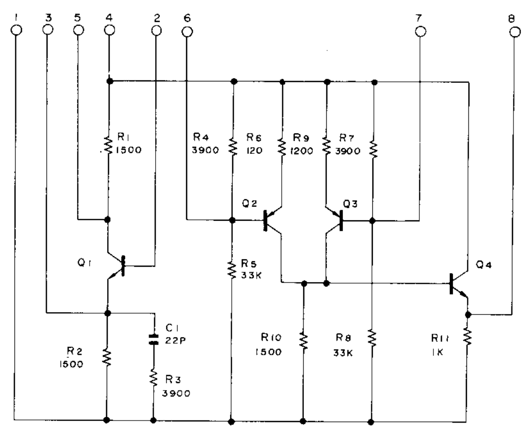


Figure 9. HM401

- **YL circuit**

One part of Y signal, which has come out of pin ⑦ of HM301, is applied to the low-pass filter L303 so that its bandwidth and waveform are the same as those of the colour signal: the resultant signal is called YL signal.

YL signal enters pin ② of HM302 while R signal is applied to pin⑦, so that they are processed with YL-R signal which then appears at pin⑪.

The resultant signal is $Y'_L = Y_L + \alpha(Y_L - R)$ in which $\alpha < 1$.

The colour difference signals are expressed by:

$$R - Y_L \rightarrow R - Y'_L = (R - Y_L)(1 + \alpha)$$
$$B - Y_L \rightarrow B - Y'_L = B - Y_L + \alpha(R - Y_L)$$

This is further expressed by a vector diagram shown in Fig. 8, which shows that green-magenta zone and red-cyan zone are improved in hue and tint, respectively.

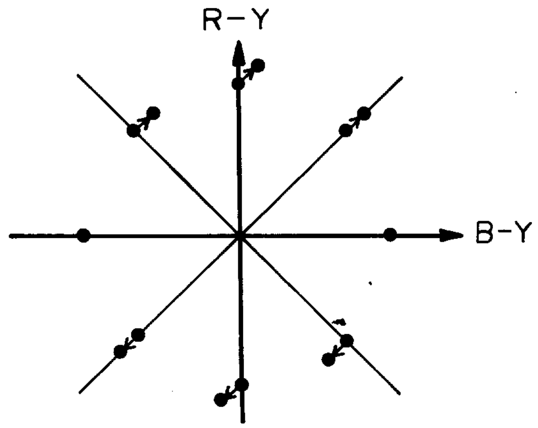


Figure 10

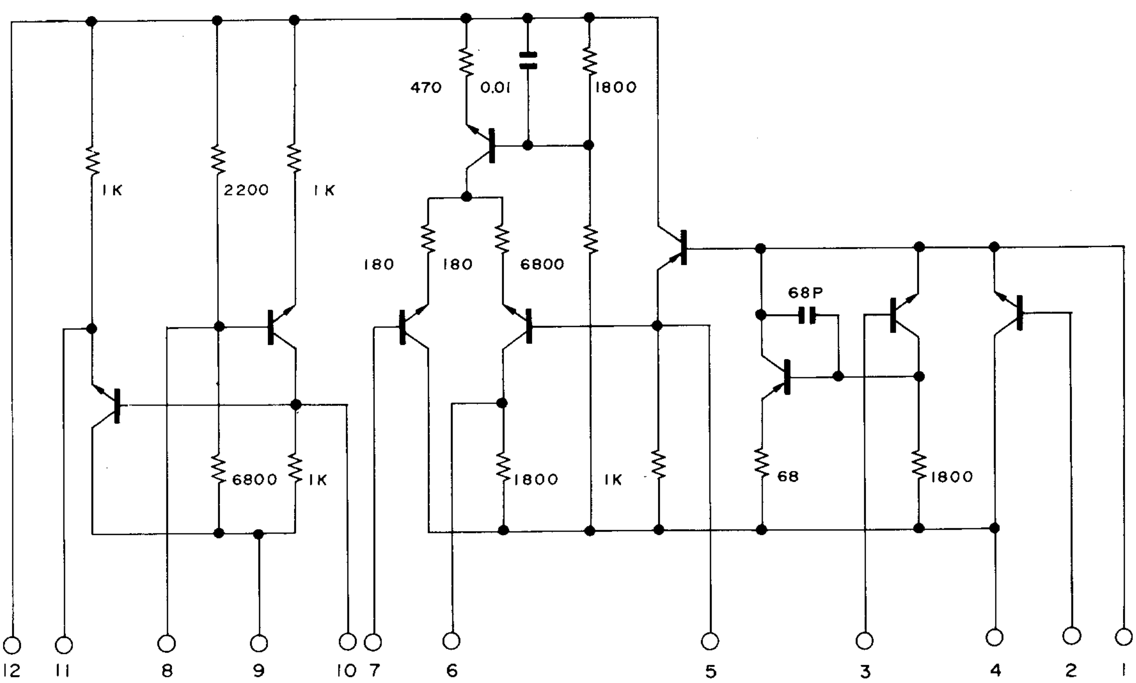


Figure 11. HM302

(B) Vertical edge correction circuit

YLsignal is applied to IC612 where it is modulated at the frequency of 4.43 MHz, and it passes through the delay element DL601 (1H delay) to be detected by HM601. This 1H delayed YLsignal is mixed with the other YL signal, not delayed one, which then arrives at pin ⑤ of HM601, and so the resultant signal becomes an edge pulse. The edge pulse is delivered to pin ⑦ of HM401, then is applied as a vertical aperture correction signal to pin ⑯ of IC201 (colour separator circuit) via Q221 and Q222, so that it cancels the false component which may be caused at the vertical edge of the colour signal.

(C) Colour signal circuit

- Band-pass filter/colour separator circuit

  Coming from AGC amplifier, the colour signal is applied to the band-pass filter L203 in which its only carrier component is picked up to be amplified by Q216 and Q217.

  The 1H delayed signal from the delay element DL202 is applied to pin ⑰ of IC201 while the signal passing through the phase shifter made of C216 and VR4 is applied to pin ⑱ of IC201. Both signals experience such colour separation as mentioned in the page 3, going out of pins ⑤ and ⑭ of IC201 respectively, and enter the detector circuit to be turned into low frequency signals to appear at TP7 and TP8.

  Besides there are shading correction signals to be applied to pins ③ and ⑮ of IC201, and white balance correction signals to be applied to pins ④ and ⑬ of IC201. 3.3V is produced by Q223 to activate IC201.

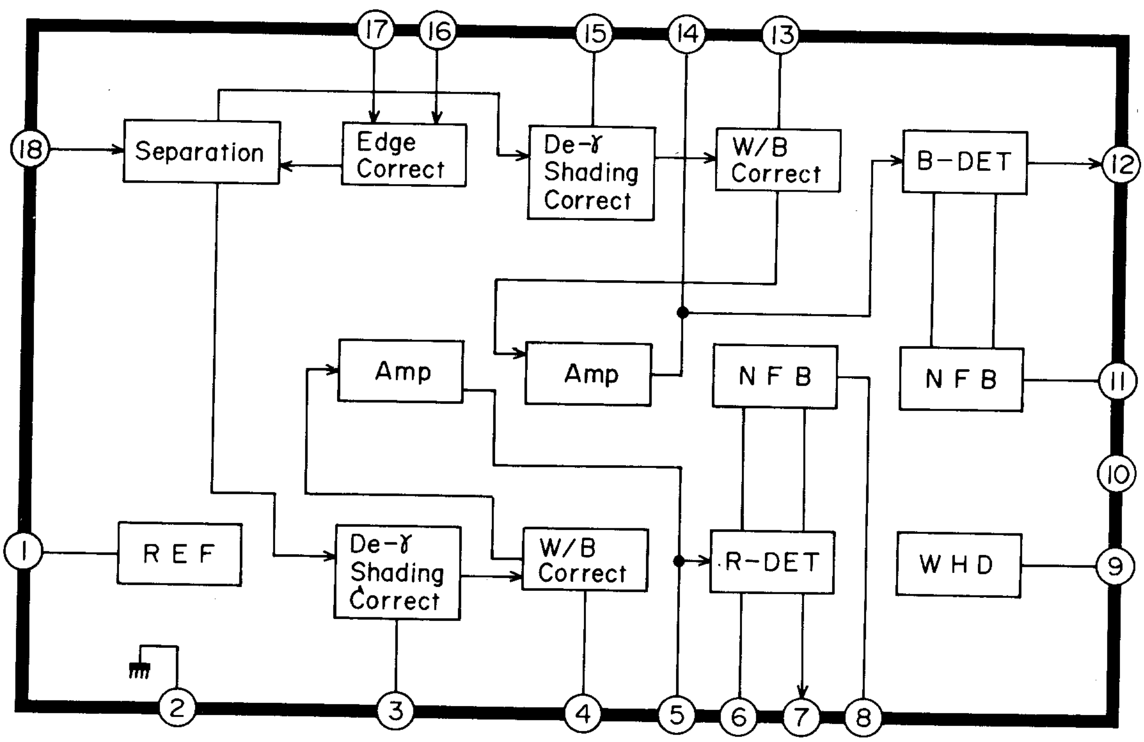


Figure 12. IC201

- **Colour clamp/black clip/γ correction circuit**

HM201 and HM202 process R signal and B signal, respectively.

The signal applied to pin ② is amplified, then clamped by C226 (or C228) and black-clipped by VR10 (or VR11): BL pulse is applied to pin ⑨ at the time. The resultant signal is γ-corrected by VR9 and VR13 (or VR8 and VR12) to go out of pin⑩.

- **Colour difference signal circuit**

In the previous stage (with γ correction included), Y_L, R and B signals have been made the same in their waveforms, and here they are processed by HM402 to be colour difference signals   and   , which are then applied together burst flag pulse to the encoder circuit. The colour difference signals going out of pins ② and ⑫ of HM402 are transferred to the automatic white balance circuit.

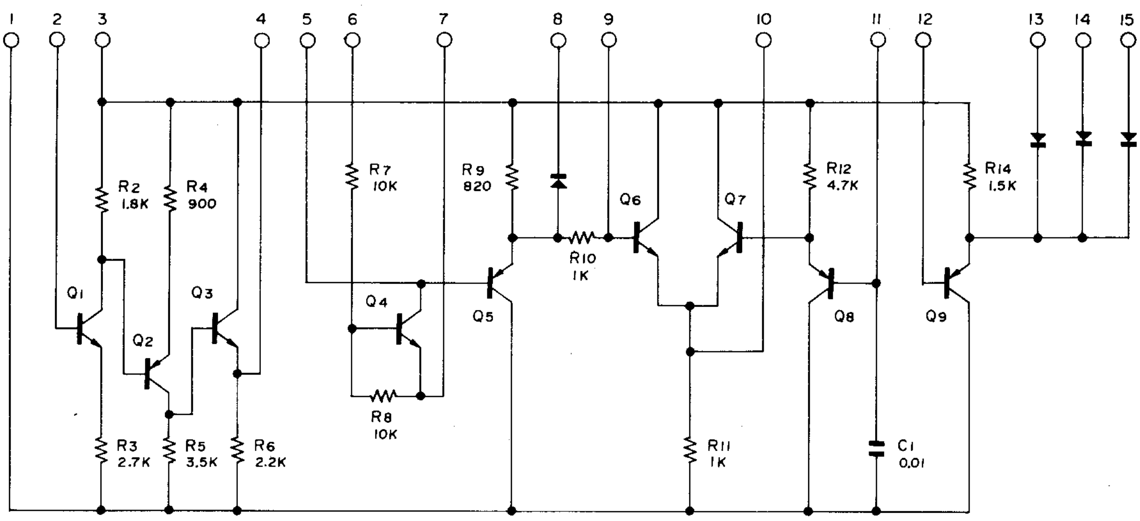


Figure 13. HM201, HM202

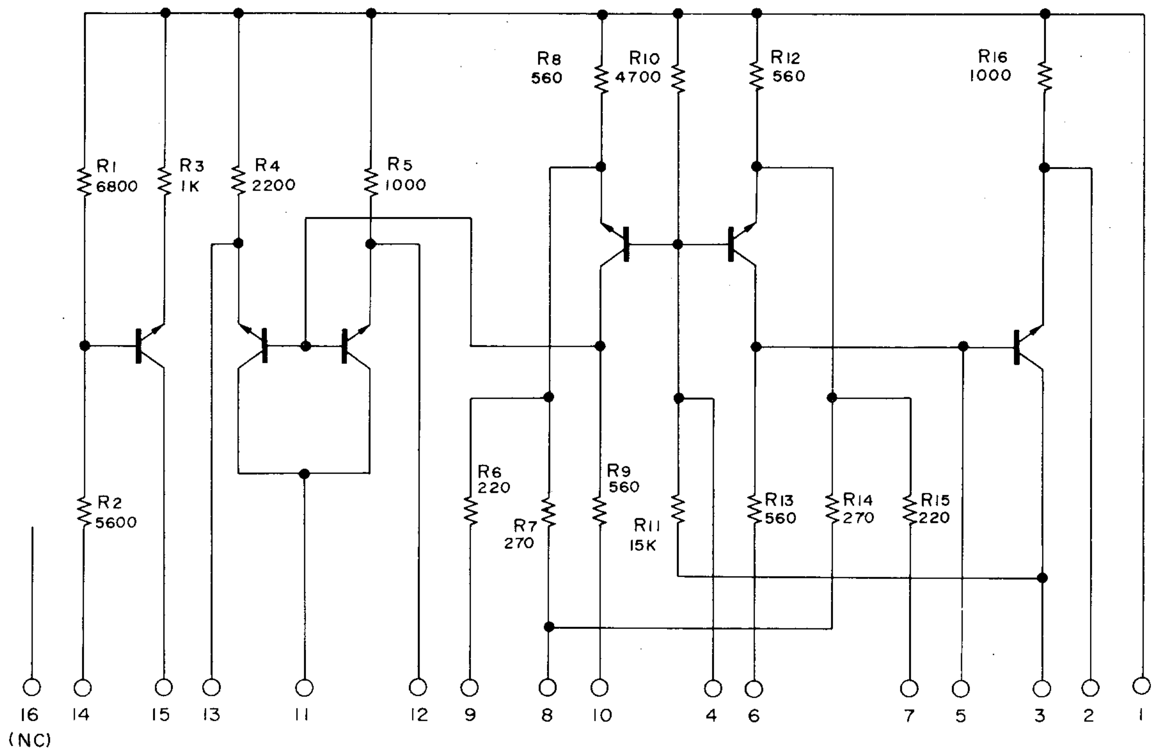


Figure 14. HM402

ENCODER/VIDEO OUTPUT CIRCUIT

- **Encoder circuit**

  YH signal is applied via clamp capacitor C407 to pin ⑨ of IC503, and here it is mixed with chroma signal to go out of pin⑧.

  R-Y and B-Y signals are applied to pins ⑩ and ⑫ of IC503 respectively, and are balance-modulated at the subcarriers which are found at pins⑮and⑯of IC503 at the time, and the resultant signal is a chroma signal to go out of pin③.

  The chroma signal passes through HM501 and is applied via band-pass filter L510 to pin ⑤ of IC503, where it is mixed with Y signal.

- **Green killer circuit**

  There is a timing difference between Y signal and colour signal when they are subject to beam cut-off operation due to 1-electrode system of the set. The green killer circuit eliminates the highlighted green colour caused by that timing difference. Q403 and Q404 are a detector of the highlighted green, and Q504 is a switch to cancel the chroma signal.

- **Video output circuit**

  A video signal delivered at pin⑧of IC503 is interwoven in HM502 with a synchronizing signal impressed from pin⑥, appearing as a video output signal at Q506.

- **Video return circuit**

  If the VCR enters the play mode, the video output stage experiences a rise in direct current potential at TP18 to actuate the switching circuit of HM502, which cuts off the connection with Q506. This interrupts any signal from the camera and allows instead VCR's playback signals alone to arrive at the view finder, thus enabling to monitor tape-recorded images through the view finder.

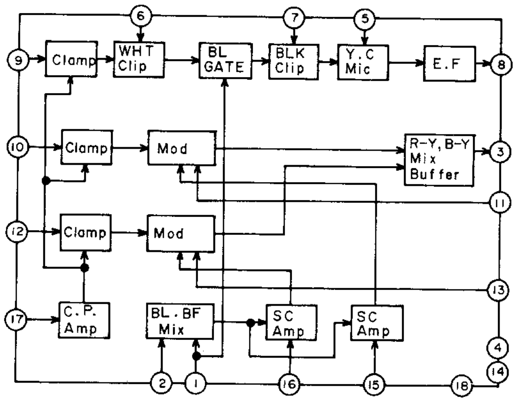


Figure 15. IC503

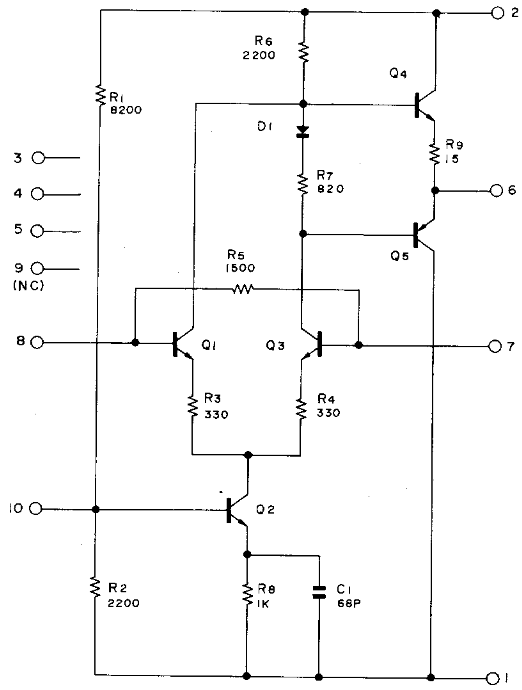


Figure 16. HM501

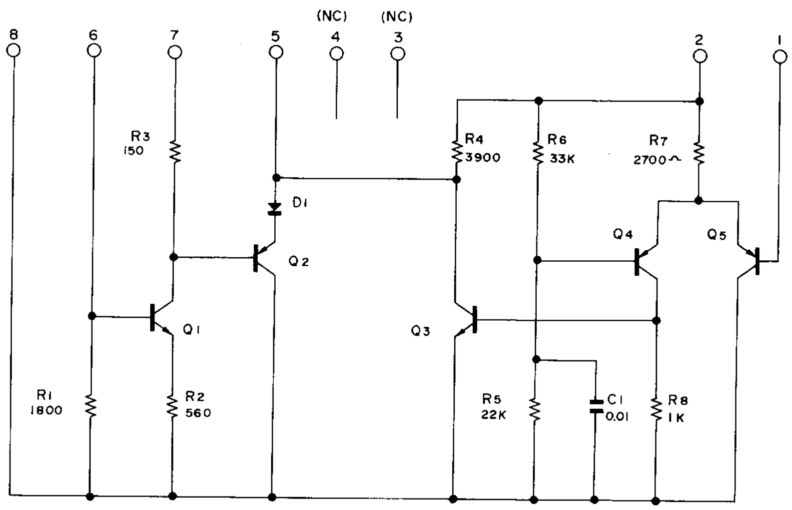


Figure 17. HM502

AUTO IRIS/AUTO WHITE CIRCUIT

- **Auto iris circuit**

A Y signal sent from pin ⑤ of HM301 undergoes γ correction at D308, then rectification at D303, R314, and C309 in order for its direct current voltage to reach a value corresponding to a specified video level. The resulting direct current voltage is compared with the reference voltage at VR38 and then amplified as necessary by operational amplifier IC604, thus driving the iris meter through the driving circuit Q603.

- **Iris delay circuit**

Even when the camera is energized, no electron beam flow occurs before the pick-up tube's heater heats enough, when the iris remains open because any video output won't develop. If the pick-up tube is then subjected to a radiation of intensive light, it suffers sticking. This camera, in order to overcome such a drawback, has an iris delay circuit to keep the iris shut till the development of video output.

This circuit, while there develops no iris Y signal at Q303, maintains the output at pin ① of operational amplifier IC302 at a low level and cuts off the connection with Q605 through D305, thereby shutting the iris, whereas the circuit, when an electron beam flow occurs and the resulting bias light causes Q303 to deliver an iris Y signal, permits an output to appear at pin ① of IC302 and the then output to be rectified in D304 and C310, which turns Q605 on to activate the iris.

- **Iris under circuit**

Another operational amplifier IC604 switches on the iris under LED – yellow one – the moment the video level gets smaller than the reference voltage at VR41.

- **Auto white balance circuit**

R-Y and B-Y signals individually delivered at pins ② and ⑫ of HM402 are each clamped in C616, C611, Q602, and Q601, then undergo an integrating-amplification in IC603 to form the direct current equivalent. (The output voltage is controlled by VR36 and VR37 that are maintained in level at a reference voltage.)

Setting the white balance change-over switch SW602 to the AUTO side impresses the resulting detection voltage on pin ⑤ of memory IC601 · IC602. Pressing the setting switch SW603 thereafter raises the voltage at pin ① – RLY terminal – up to 9V, thus making the above memory to store the impressed voltage.

Releasing the pressed switch SW603 sends the stored voltage through pin ③ to the white balance terminal of IC201 to hold the white balance.

SSG CIRCUIT

The SSG circuit is given a voltage of +7V by IC502 through the +12V terminal because IC501, which belongs to the SSG circuit, is designed to operate with a voltage of +7V.

IC501 provides an oscillation at two different frequencies: 17.7 MHz, and 4.41 MHz. The 17.7 MHz oscillation is created by crystal oscillator XC501 and divided in terms of frequency into four, thereby generating 4.43 MHz sub-carrier signals. These subcarrier signals are sent from pin ㉖ of IC501 to pin ⑮ of IC503. Each of them serves as an R-Y subcarrier and is inverted 180 degrees at intervals of 1H.

The above signals are also sent, as B-Y subcarriers, from pin ㉗ of IC501 to pin ⑯ of IC503 by way of tank circuit L504 and phase shift circuit composed of Q503 and Q502.

Another oscillation, 4.41 MHz one, is created by L509. Signals carrying such oscillation are individually compared in phase with a 17.7 MHz frequency-divided signal, each being controlled by D505 so as to always hold certain relations with the 17.7 MHz one.

The 4.41 MHz signal is divided in frequency to create a variety of pulses such as VD, HD, BL, BFP, SYNC, and FH/2.

HD pulse is sent through the buffer of Q511 to H-DEF, or impressed on the H saw-tooth generator circuit after subjected to inverted buffering between pins ⑪ and ⑫ of IC511.

VD pulse is impressed on V-DEF after it has undergone inverted buffering between pins ⑨ and ⑩ of IC511. Besides, combined VD and HD create beam BL pulse at NOR of IC511; BF and B-BL pulses create together BL pulse for signal processing stage at NAND of IC512, and clamp pulse – CP-1 – at NOR of IC512.

BFP, SYNC, and C-BL pulses are supplied to each specific circuit with their arrival deferred by a corresponding delay.

FH/2 pulse forms a positive or negative pulse in IC511, sent to the HV converter.

Figure 20 shows what relations aforesaid pulses have with each other.

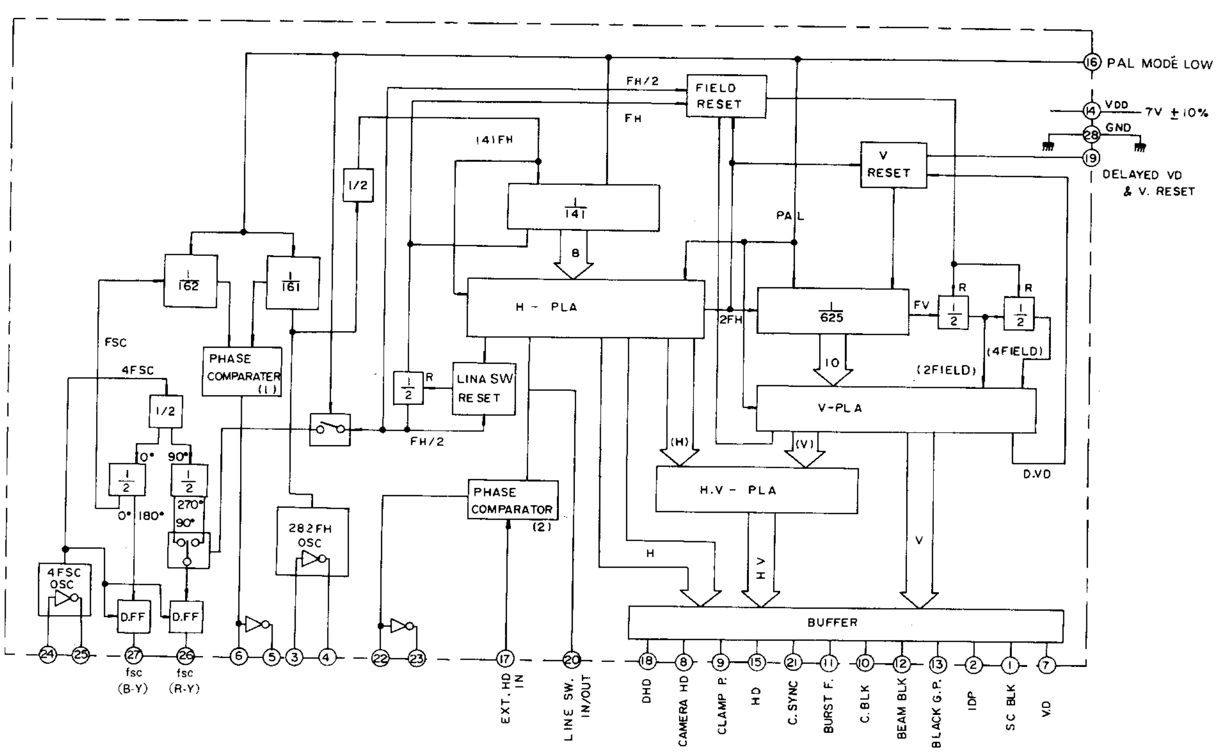


Figure 18. IC501

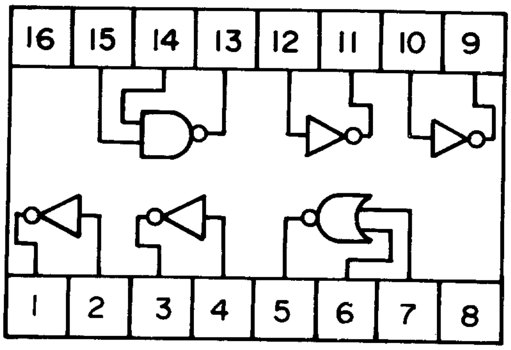


Figure 19. IC511, IC512

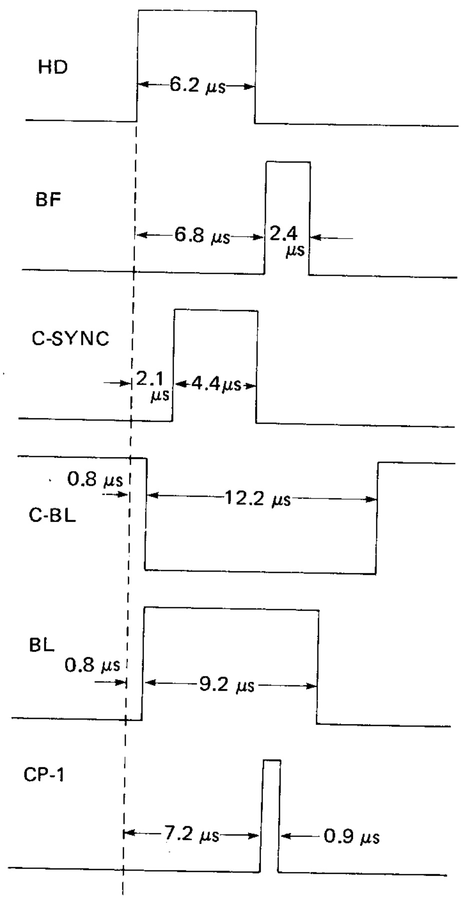


Figure 20. Pulses have with each other

HIGH VOLTAGE CIRCUIT

The purpose of the high voltage circuit is to drive switching transistors Q802 and Q803 with positive and negative FH/2 pulses the SSG circuit generates and boost each pulse sent at intervals of 1H, thereby creating a voltage necessary for each specific electrode.

In detail, a voltage of 1.4kV DC is developed at pin ⑪ of high voltage transformer T801 through the internal voltage multiplexer rectifier circuit, 700 V DC at pin ⑩ , 350V DC at pin ⑨ , –175V DC at pin ⑥, and –50V DC for cathode BL at pin ④. And the primary pulse is rectified to make a voltage of +17 V DC, which is supplied to the +9 V stabilizing circuit.

Shown below are the electrode layout in the pick-up bute, and electrode voltages.

Beam protector circuit

In other words, the instant vertical deflection is interrupted, the vertical deflection current detector resistor R793 refuses to send any signal to pin ② of IC605, which makes high the level at pin ① of IC605 to cut off the connection with Q805. As a result the voltage at G_1 reaches –175 V to shut off beam current, thus protecting the pick-up tube.

H	:	Heater 6.3 V, 95 mA
K	:	Cathode –48 V (57 Vp-p blanking pulse)
G_1	:	1st grid –20 to –150 V (for beam adjustment)
G_2	:	2nd grid +350 V
G_4	:	4th grid +180 to +270 V (for focus control)
G_5	:	5th grid +700 V
G_3,G_6	:	3rd and 6th grids +1.4 kV
SJ	:	Target +1.5 V

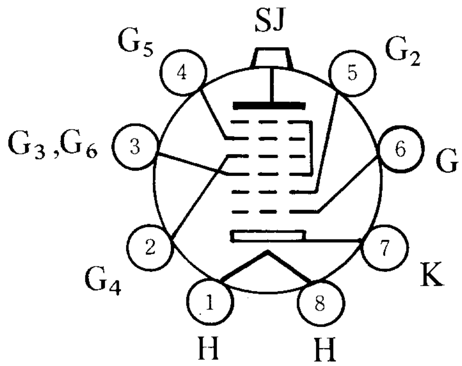


Figure 21.

DEFLECTION AND SHADING CIRCUITS

- **Vertical deflection circuit**

Q709 is switched with –VD pulse; the current is integrated through C727, C728, R788, and VR53 to form a saw-tooth current, which enters IC704 at pin②. IC704 includes an OTL output circuit; it delivers a vertical output at pin⑤, which is fed to the deflection coil in the form of saw-tooth current.
Deflection current is detected by R793, which causes negative feedback to pin ③ and LIN correction.

- **Horizontal deflection circuit**

Q707 and Q708 are switched with HD pulse to generate about 60 Vp-p FBP at the collector of Q708, causing saw-tooth current flow to the deflection coil.
Horizontal saw-tooth and parabolic wave currents sent from the shading generator are applied to pin ① of IC703, and thus LIN correction current is delivered at pin⑤, sent to the deflection coil.

- **Shading circuit**

Q702 is switched with a pulse created by differentiating – HD pulse to force the bootstrap circuit Q703 to produce horizontal saw-tooth current. Then, horizontal parabolic wave current is created in the Miller integrator composed of Q704 and Q705.
Also, vertical saw-tooth current developed in R793 is fed to IC701 at pin ⑦ and integrated there to form horizontal parabolic wave current.
These four types of shading currents are controlled by VR45, and VR46 to deliver B-shading correction signal at pin ②of operational amplifier IC701, and R-shading correction signal at pin ⑧ IC702.
The dynamic focus voltage is amplified by IC702 and Q706 to be impressed on G_4.

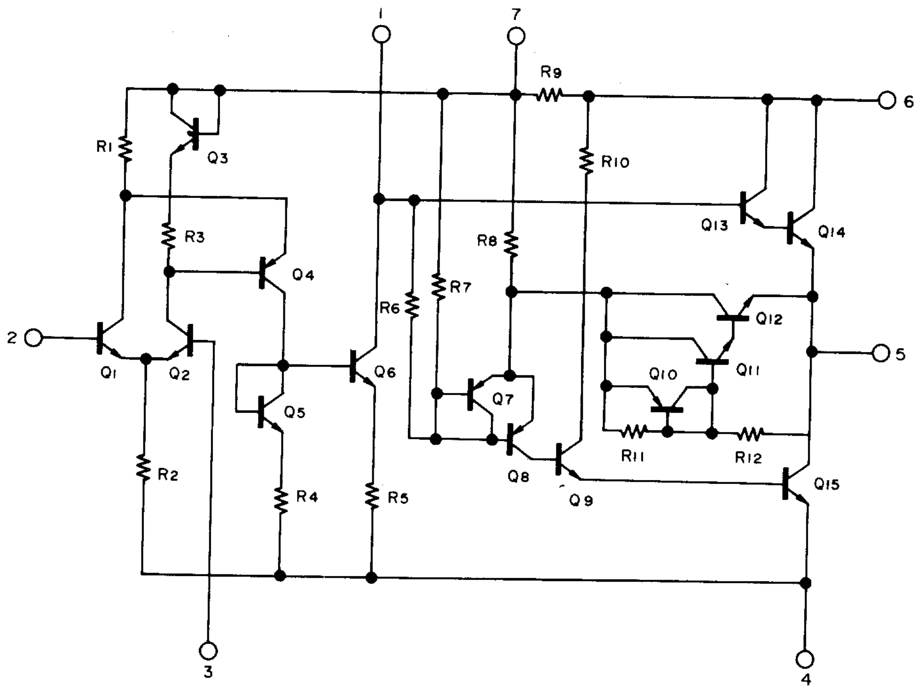


Figure 22. IC702

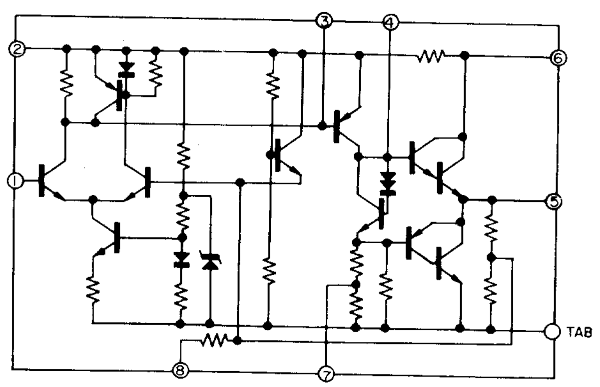


Figure 23. IC703

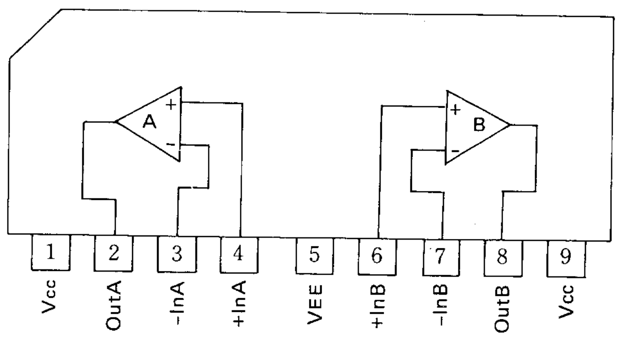


Figure 24. IC701, IC702

+9 V STABILIZING CIRCUIT

The regulator, a general one, detects an error through Q606; it consists of the control section composed of Q608 and Q609 in Darlington connection and the current limiter circuit composed of R647 and Q607.

The alarm is given by the battery alarm circuit to flicker the red LED built in the view finder the instant the voltage is decreased from +12 V down to +10.7 V through lambda diode D604 – a negative resistance element – and Q610.

OTHER CIRCUITS

- Flip-flop IC911 is inverted with a pulse generated by Non Lock SW901 to turn Q911 on, which lights the green LED in the view finder and starts the VCR.
  SW902 is provided to cope with the situation that the VCR's starting polarity (high or low) is different depending on its manufacturer.

- **Zoom motor circuit**
  IC912 transforms a voltage of 12 V into 9 V; the bridge circuit composed of Q912, Q913, D911, and D922 drives the zoom motor under control of SW903.

- **Microphone amplifier circuit**
  Sound picked up by the built-in or external microphone is input to IC902 at pin②, amplified by about 40 dB, then output at pin⑥. (Connecting any external microphone makes the built-in microphone inoperative.)

VIEW FINDER CIRCUIT

- **Deflection circuit**
  Video signal from the camera is fed to pin⑮ of IC901 – which is responsible for deflection – and appears as synchronous separation output at pin⑯.
  In the above IC, a horizontal saw-tooth wave signal from pin ⑬ – deflection output – is compared with synchronizing signal to control horizontal oscillation frequency – this control is called AFC (automatic frequency control) – and the resulting horizontal driving pulse is output at pin⑩.
  This pulse switches Q901, and Q902 to allow horizontal deflection current to flow to the deflection coil. This generates a voltage as high as 5 kV in flyback transformer T901, which is then impressed on the 1.5′ CRT.
  Synchronizing signal from pin ⑯ is integrated to be horizontal synchronizing signal, which is sent to pin⑦.
  Vertical driving voltage is developed at pin② and drives the SRPP output stage composed of Q903 and Q904, causing vertical deflection current to flow to the deflection coil. The current is detected by R926 and fed negatively back to pin③.

- **Video circuit**
  Signals controlled by VR65 are amplified by Q903 and Q907 and then impressed on G_1 of the CRT.
  Q906 refers to a blanking transistor.

- **LED**
  The view finder contains the transistors: green LED showing the start of the VCR, red LED serving as battery alarm, and yellow LED indicating "Iris Under".

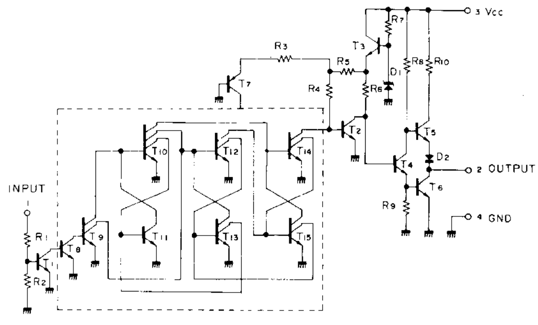


Figure 25. IC911

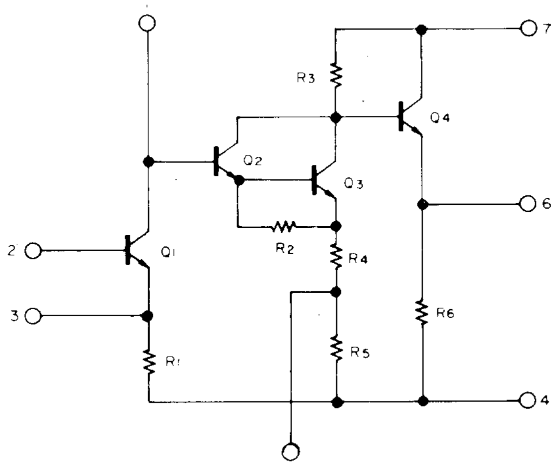


Figure 26. IC902

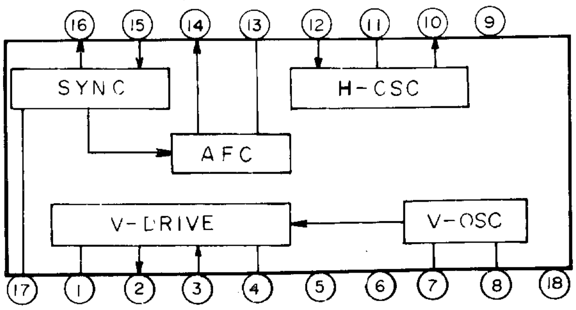


Figure 27. IC901

DISASSEMBLY OF MAJOR PARTS

A. Removal of Cabient A (CCABA4937TA02)

1. Remove two screws (XBSSC26P06000) from the accessory shoe (GDAi-3013TAFC), and pull out the upper cover (GCōVH1042TASA). (See Fig. 28)
2. Remove one screw (XBMSB30P08000) from the cabinet angle (LANGK0132TAZZ), and take off the cabinet angle. (See Fig. 29)
3. Remove five screws fromthe cabinet A–three (XUASB 30P12000) at the side and two (XBSSB30P06000) at the bottom, and take off the cabinet A. (See Fig. 30, 31)

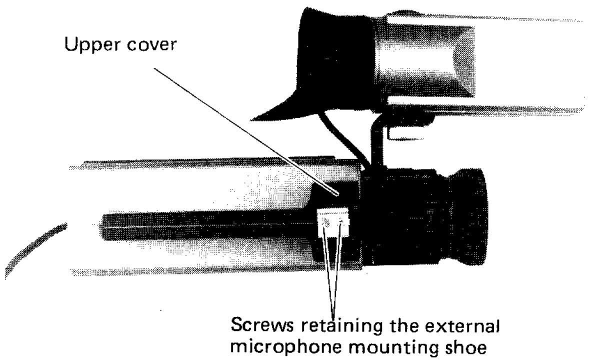


Figure 28.

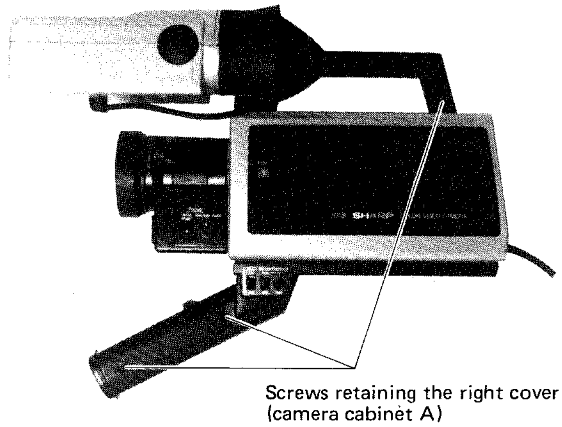


Figure 30.

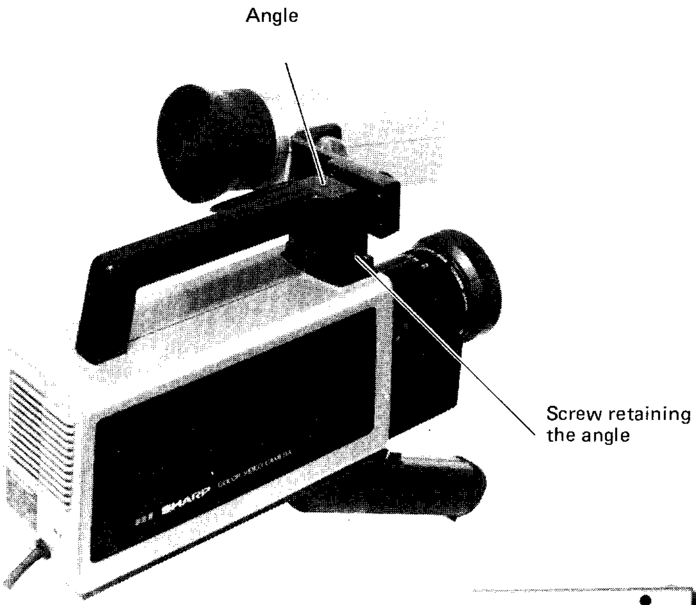


Figure 29.

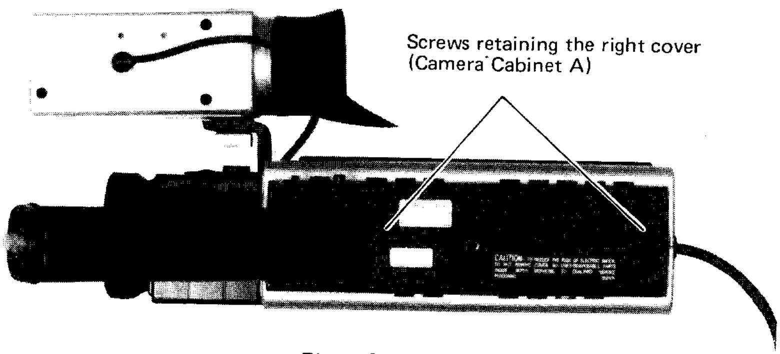


Figure 31.

B. Removal of cabinet B (CCABB4937TA02) (See Fig. 32, 33)

1. Remove one screw (XBMSD30P06000) from the lens (CLNS-0043TA01), and one screw (XTASD30P10000) from the deflection yoke holder A (LHLDZ1021TAFN).
2. Remove two screw (XTASD30P10000) from the switch PWB (DUNTK1416RA00).
3. Remove one screw (XTASD30P10000) from the PWB angle (LANGF0236TAZZ).
4. Remove two screws (SBMSD30P06000) from the signal processor PWB (DUNTK1407RA20), and open it.
5. Remove one screw (XTPSD26P08000) from the deflection yoke holder B (LHLDZ1022TAFN), and disconnect the connector from the external microphone jack (QJAKE0014TAZZ).
6. Remove one screw (XBMSD30P30000) at top of the deflection yoke holder A, detach the cord angle (LANGK0158TAZZ) and remove the cabinet B while holding the camera unit.

C. Removal of SATICON (VVVH4105///-1) and Deflection Yoke (RCiLH4088TAZZ) (See Fig. 33, 34)

1. Unsolder the target shield (PSLDM0288TAZZ) and deflection yoke (RCiLH4088TAZZ).
2. Make loose the tab which is used to retain the target shield and preamplifier shield B (PSLDM0266TAZZ), and unsolder it.
3. Remove one screw (XTPSD26P08000) from the target shield, and detach the target shield.
4. Remove one screw (XTMSD30P06000) from the preamplifier shield A (PSLDM0265TAZZ), and shift the preamplifier shield A toward the arrow direction to detach it.
5. Take out SATICON and deflection yoke while removing the sockets from them.

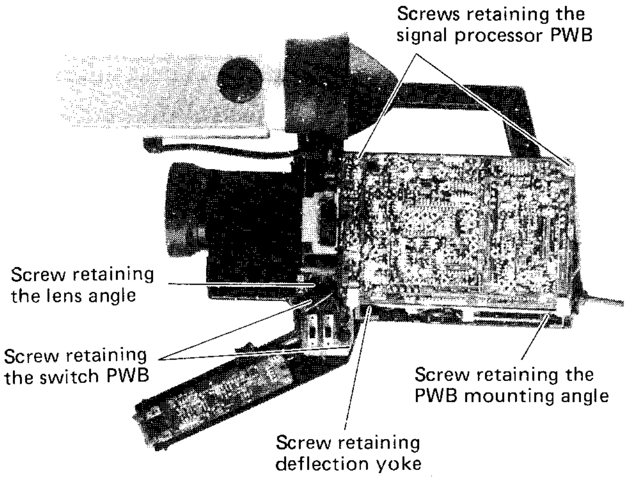


Figure 32.

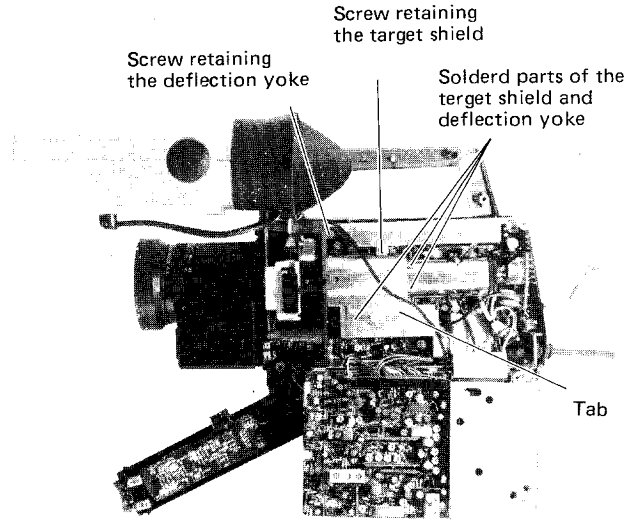


Figure 33.

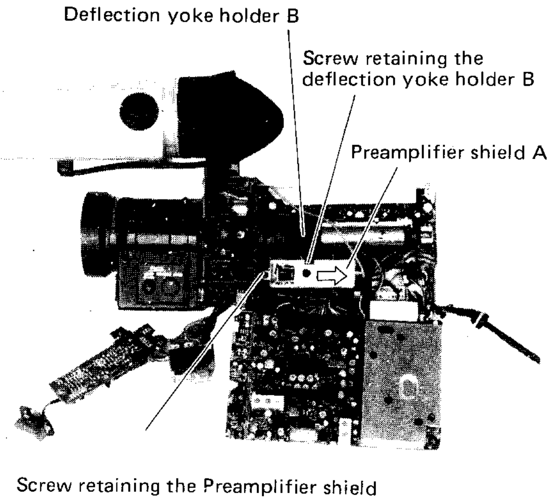


Figure 34.

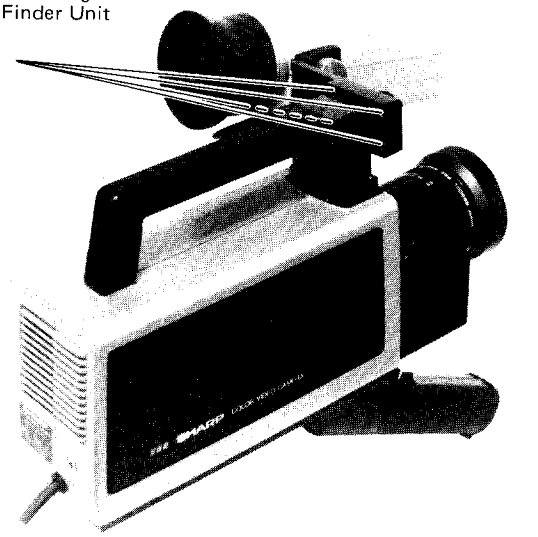


Figure 35.

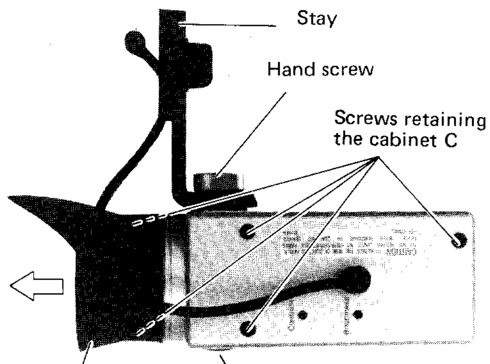


Figure 36.

D. Removal of Electronic View Finder

1. Remove two screws (XBSSC26P06000) from the accessory shoe (GDAi-3013TAFC), and pull out the upper over (GCōVH1042TASA). (See Fig. 28)
2. Remove four screws (XBMSB30P06000) from the electronic view finder, detach the cabinet angle and take the internal microphone off the microphone holder (LHLDZ-8004TA00). Then disconnect the cable connector of the view finder. (See Fig. 35)

E. Removal of Cabinet C (GCABC4788TAKB) and Cabinet D (GCABD4788TAKB) of Electronic View Finder

1. Remove the view finder tilting hand screw (LX-BZ0117 TAFC), and detach the stay (LSTYM0001TA00) from the view finder. (See Fig. 36)
2. Detach the eyepiece (GCōVH7033TASA) and side cover (GCōVH7034TASA), and remove five screws (XUASB 30P12000) from the cabinet C (GCABC4788TAKB). Then remove the cabinet C. (See Fig. 36)

F. Using of Tripod (LANGF0237TAZZ) (See Fig. 37, 38)

1. Remove the nut (LX-NZ0049TAFF) from the bottom of the cabinet B, and insert it instead into the tripod mounting metal located at the bottom of the deflection yoke holder A.
2. Then it is possible to set the camera unit on the tripod, which helps servicing the camera unit (with the cabinets A and B removed).

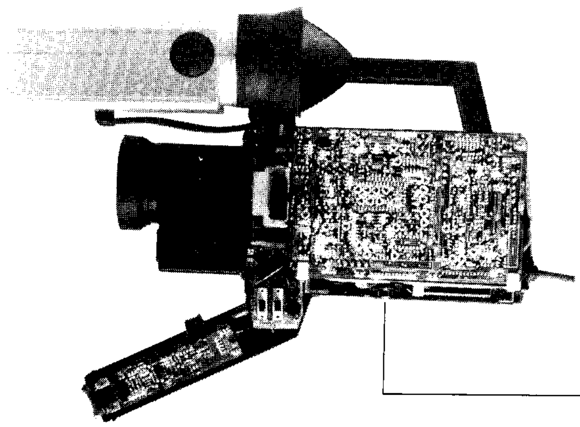


Figure 37.

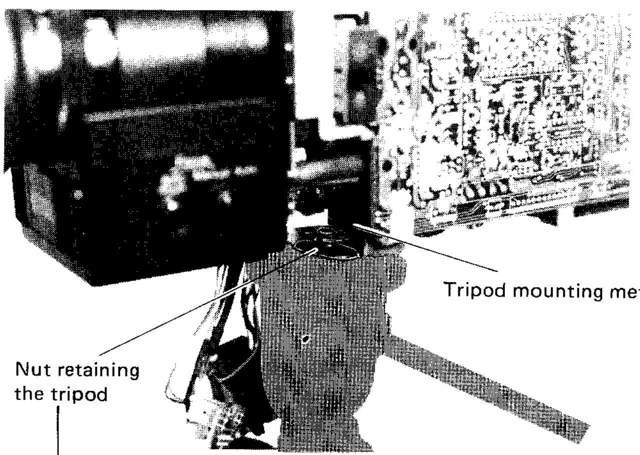


Figure. 38

ADJUSTMENT

1. **9V adjustment**
   Adjust VR39 to have 8.90 ± 0.05 V at TP 19.

2. **Subcarrier frequency adjustment**
   Adjust C517 to have 4.433619 MHz ± 10 Hz at TP 17.

3. **AFC adjustment**
   Adjust L509 to have 2 ± 0.1 V at TP 16.

4. **Deflection yoke tilt adjustment**
- Turn beam control (VR59) and iris control (VR38) to produce preamplifier's output, and adjust lens focus and electric focus to obtain better picture.
- Adjust the deflection yoke's tilting angle properly.

5. **Lens tracking adjustment**
   Place the object with a distance of 135.5 ± 1 cm from the top end of the distance sensor window of the auto focus lens. Setting the lens focus ring's index at "1.5 m", loosen the master lens retaining screw (hexagonal), and apply a bladed screwdriver to the groove of the master lens to move the master lens forward and backward so that the best lens focus is obtained: during this adjustment, change the lens setting position "TEL" and "WIDE" alternately. Finally tighten the master lens retaining screw.
   This tracking adjustment has a direct effect on the auto focus function, and so use utmost care when performing this adjustment.

6. **Alignment adjustment**
- Pick up an object (gray scale), and observe the outputs at TP 7 and TP 8 on synchroscope (H-trigger mode). Then adjust the alignment ring to obtain best tone of picture, with both outputs kept maximum in level.

7. **Beam adjustment**
- Set AGC (VR2) at "MAX" position (with preamplifier's output minimum).
- Pick up an object (gray scale), and observe the output at TP 1 on synchroscope. Setting iris control (VR38) at "open" position, adjust beam control (VR59) until the waveform at TP 1 is clipped to be 750 mVp-p. Finally adjust iris control so that the output at TP 3 is 1.0 Vp-p.

8. **Pickup tube angle adjustment**
- Pick up an object (white pattern), and observe the output at TP 6 on synchroscope (V-trigger mode). Then set synchroscope at its delay mode to observe only the central (2H) part of the output, and change the angle of pickup tube to make the waveform beating minimum. (See Fig. 39)

9. **Focus adjustment**
- Pick up an object (white pattern), and observe the output at TP 6 on synchroscope (V-trigger mode). Adjust focus control (VR60) so that the waveform at TP 6 is flat and has maximum amplitude.

10. **V-size/V-linearity adjustment**
- Pick up an object (white pattern), and observe the output at TP 6 on synchroscope (V-trigger mode). Adjust V-size control (VR53) and V-linearity control (VR54) to make zero the waveform beating as shown in the figure 40.

11. **V-position adjustment**
- Observe the output at TP 1 on synchroscope (V-trigger mode), and adjust V-position control (VR55) so that the first signal in vertical scanning just begins to disappear with optical black control.

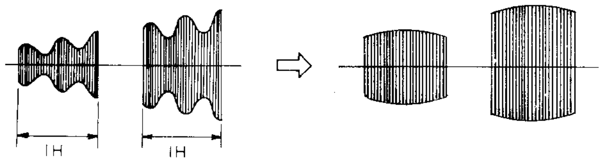


Figure 39.

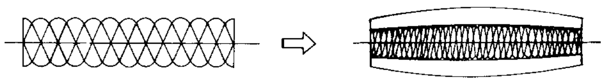


Figure 40.

12. **H-size/H-linearity adjustment**

- Pick up an object (white pattern), and observe its output at TP 6 and 3.58 MHz signal (from external signal generator) at a time on synchroscope (V-trigger mode). Making the two signals almost the same in level, add them together on synchroscope, and adjust H-size control (VR51) and H-linearity control (VR44) to make zero the resultant signal beating, the same as in "10 V-size/V-linearity adjustment."

13. **H-position adjustment**

- Pick up an object (white pattern), and observe the outputs at TP 1 and TP 20 on synchroscope (H-trigger mode). Adjust H-position control (VR52) so that the time from rising of the output at TP 20 to falling of the output at TP 1 is 10.8 μsec. After this adjustment, recheck "12. H-size/H-linearity adjustment."

14. **Iris/AGC adjustment**

- Pick up an object (gray scale), and observe the output at TP 3 on synchroscope (H-trigger mode).
- Adjust iris control (VR38) so that the output at TP 3 is 1.0 Vp-p. (See Fig. 41)
- Then observe the output at TP 1, and adjust AGC (VR2) so that the output at TP-1 is 250 mVp-p.

15. **Y-B/C and γ adjustment**

- Pick up an object (gray scale), and observe the output at TP 4 on synchroscope (H-trigger mode). With lens cap put on, adjust Y-B/C control (VR16) to make the output be 65 mVp-p: without lens cap put on, adjust Y-γ control (VR14) to make gray scale's amplitude be 380 mVp-p.

16. **V-aperture adjustment**

- Pick up an object (gray scale), and observe the output at TP 13 on synchroscope (V-trigger mode). Adjust V-aperture control (VR13) so that signal leaking is minimum: at the time, edge pulse appears only when there is no vertical correlation of the signals.

17. **Colour separation adjustment**

- Pick up an object (gray scale), and observe the outputs at TP 9 and TP 10 on synchroscope (H-trigger mode). Adjust C-gain control (VR5) and C-phase control (VR4) so that both outputs are most stabilized. At this adjustment, keep RG-1 control (VR6), BG-1 control (VR7) and C-M-gain control (VR3) at "MAX" position, and keep still the shading correction with connector chassis removed.

18. **RG-1/BG-1 adjustment**

- After "17. Colour separation adjustment", adjust C-M-gain control (VR3) to make smaller one of the outputs at TP 9 and TP 10 to be 1.4 Vp-p, and also adjust RG-1 control (VR6) or BG-1 control (VR7) to make larger one of the outputs at TP 9 and TP 10 to be 1.4 Vp-p too: either RG-1 control or BG-1 control turns out to be "MAX" position.

19. **R-B/C·γ adjustment and YL-γ adjustment**

- Pick up an object (gray scale), and add together the outputs at TP 5 and TP 12 on synchroscope. With lens cap put on, adjust R-B/C control (VR10) so that the signal in blanking period is the same in level as the signal in scanning period. At the time, keep R-γ_2 control (VR13) free.
- Without lens cap put on, adjust R-γ_2 control (VR13) to make minimum the signal leaking in scanning period.
- Adjustment only with R-γ_2 control may inevitably result in the signal leakage shown below. In this case, further adjust YL-γ control (VR18) to make it least. Otherwise, never attempt to adjust YL-γ control. (See Fig. 42)

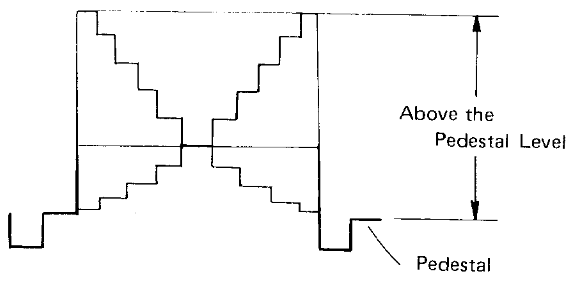


Figure 41.

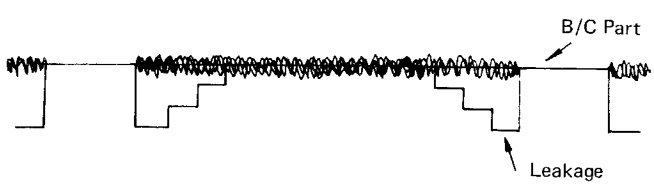


Figure 42.

B-B/C·γ adjustment

- Pick up an object (gray scale), and, with lens cap put on, add together the outputs at TP 5 and TP 11 on synchroscope. Adjust B-B/C control (VR11) so that the signal in blanking signal is the same in level as the signal in scanning period. At the time, keep B-γ_2 control (VR12) free.
- Without lens cap put on, adjust B-γ_2 control (VR12) to make least the signal leaking in scanning period.

21. **RG-2/BG-2 adjustment**

- Pick up an object (gray scale), and observe the outputs at TP 15 and TP 14 on synchroscope (H-trigger mode).
- Adjust RG-2 control (VR21) to make least the leakage of output at TP 15.
- Adjust BG-2 control (VR26) to make least the leakage of output at TP 14.

22. **Dynamic focus adjustment**

- Pick up an object (gray scale), and observe the outputs at TP 15 and TP 14 on synchroscope.
- Setting synchroscope at H-trigger mode, adjust DHP control (VR47) and DHS control (VR48) to make least signal leakage for both outputs at TP 15 and TP 14.
- Setting synchroscope at V-trigger mode, adjust DVP control (VR50) and DVS control (VR49) to make least signal leakage for both outputs at TP 15 and TP 14.

23. **Shading adjustment**

- Pick up an object (gray scale), and observe the outputs at TP 15 and TP 14 on synchroscope.
- Apply shading correction signal, with connector chassis in connection.
- Setting synchroscope at H-trigger mode, adjust RHP/RHS control (VR46) to make least signal leakage for the output at TP 15.
- Setting synchroscope at V-trigger mode, adjust RVP/RVS control (VR46) to make least signal leakage for the output at TP 15.
- Setting synchroscope at H-trigger mode, adjust BHP/BHS control (VR45) to make least signal leakage for the output at TP 14.
- Setting synchroscope at V-trigger mode, adjust BVP/BVS control (VR45) to make least signal leakage for the output at TP 14.

24. **Set-up adjustment**

- Observe the output at TP 18 on synchroscope (H-trigger mode), and, with lens cap put on, adjust set-up control (VR34) to make the output be 50 mVp-p.

25. **Carrier balance adjustment**

- Observe the output at TP 18 on vector scope, and, with lens cap put on, adjust carrier balance controls (VR32 and VR33) so that carrier peak comes at the center of vector scope.

26. **Burst adjustment**

- Pick up an object (gray scale), and observe the output at TP-18 on vector scope. Adjust R-Y burst control (VR25), B-Y burst control (VR24) and phase control (VR31) so that burst amount is 75%.

27. **Chroma adjustment**

- Pick up an object (colour bar chart), observe the output at TP 18 on synchroscope (V-trigger mode), and adjust lens zoom so that white level of the central (1H) part of the output is 600 mVp-p. Then adjust R-Y gain control (VR22) and B-Y gain control (VR23) so that its red level and its blue level are respectively 550 mVp-p and 250 mVp-p.

28. **Carrier-leak fine adjustment**

- After these adjustments, the carrier leak for the output at TP 18 may be noticeable on monitor. To avoid that, perform adjustment for carrier balance and colour difference and R·B-γ adjustment.

29. **Auto white balance adjustment**

- Pick up an object (white pattern), observe the outputs at TP 15 and TP 14 on synchroscope (H-trigger mode), and adjust auto white balance controls (VR36 and VR37) so that the output is the same whether automatic white balance switch is set at "Auto" or "Standard" position.

30. **Battery alarm adjustment**

- Reduce the voltage at camera cable terminal from DC 12V to DC 10.7V, and rotate battery alarm control (VR40) until R-LED just begins to blink.

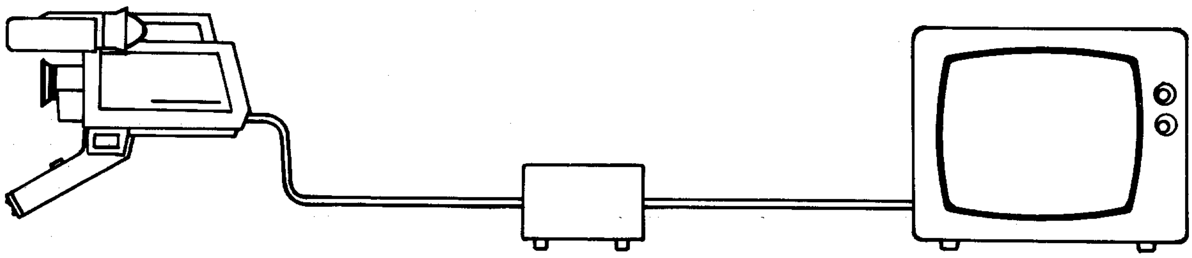
31. **Iris under level adjustment**

- Pick up an object (gray scale) under illumination of 150 lux, and rotate iris under level control (VR41) untii Y-LED just begins to lighting

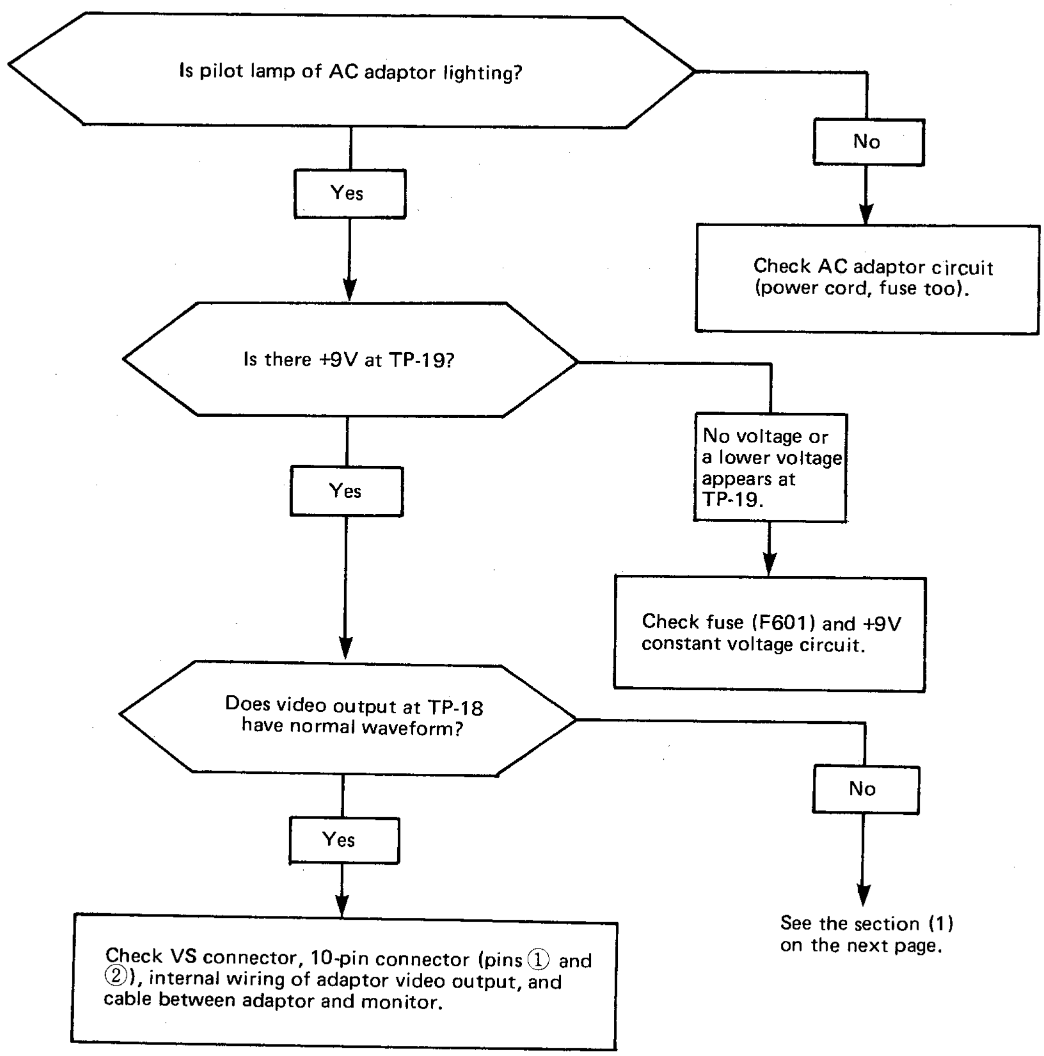
32. **Adjusting the view finder**

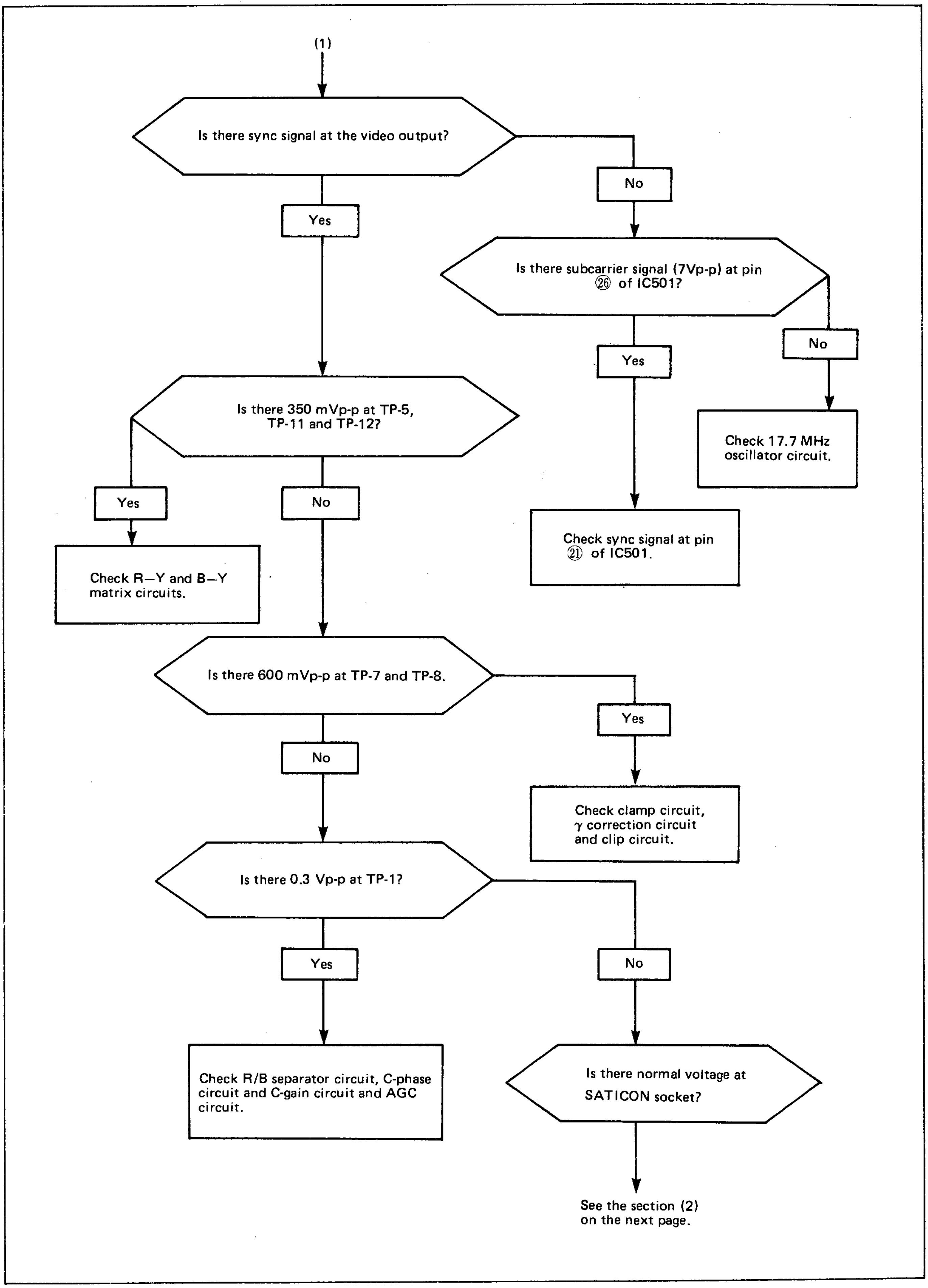
- H-size/V-size/H-linearity/V-linearity controls .... over-scan 10%
  Focus .... by lens magnification
  H-hold/V-hold controls...... at the center of draw-in range

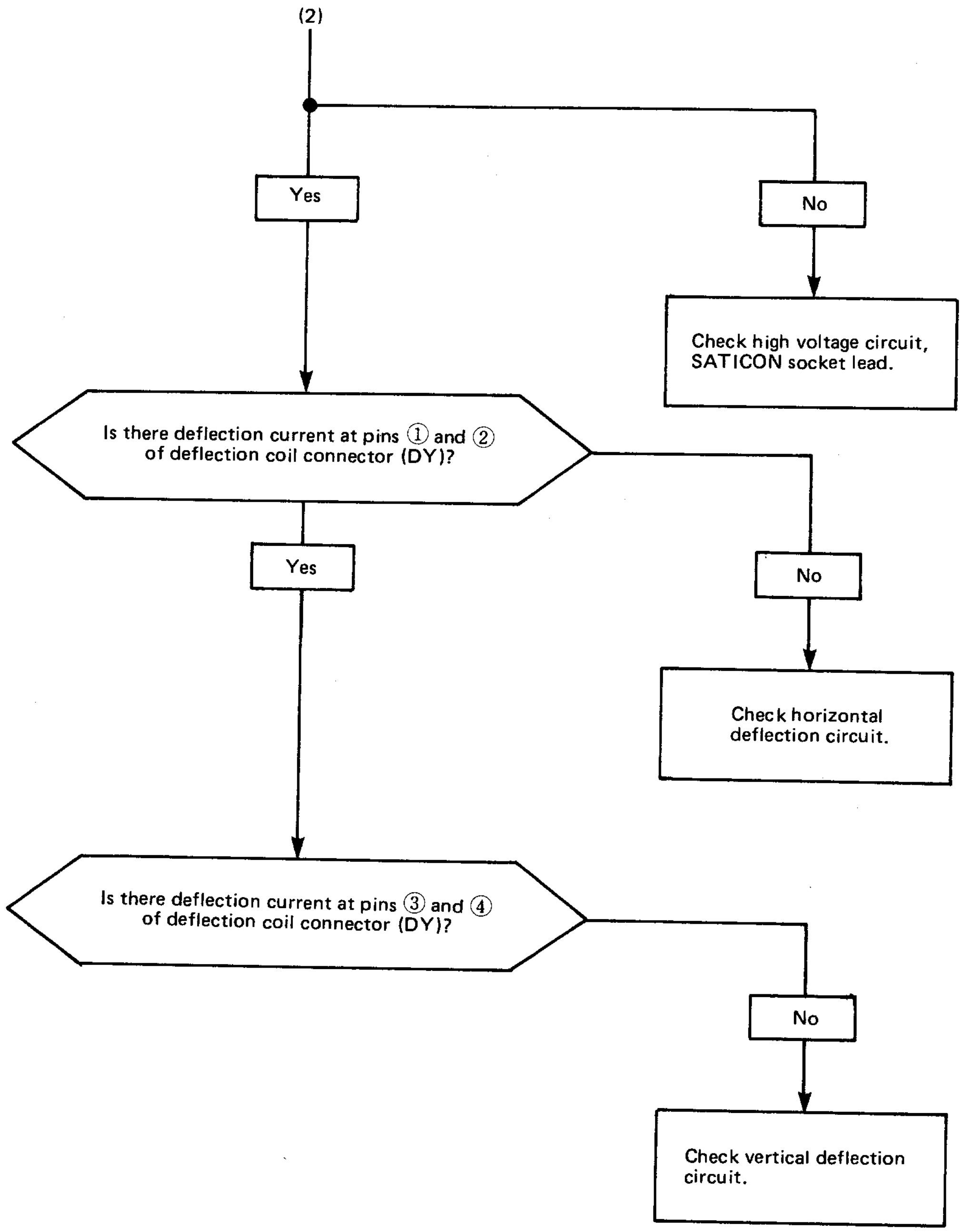
TROUBLE SHOOTING CHART



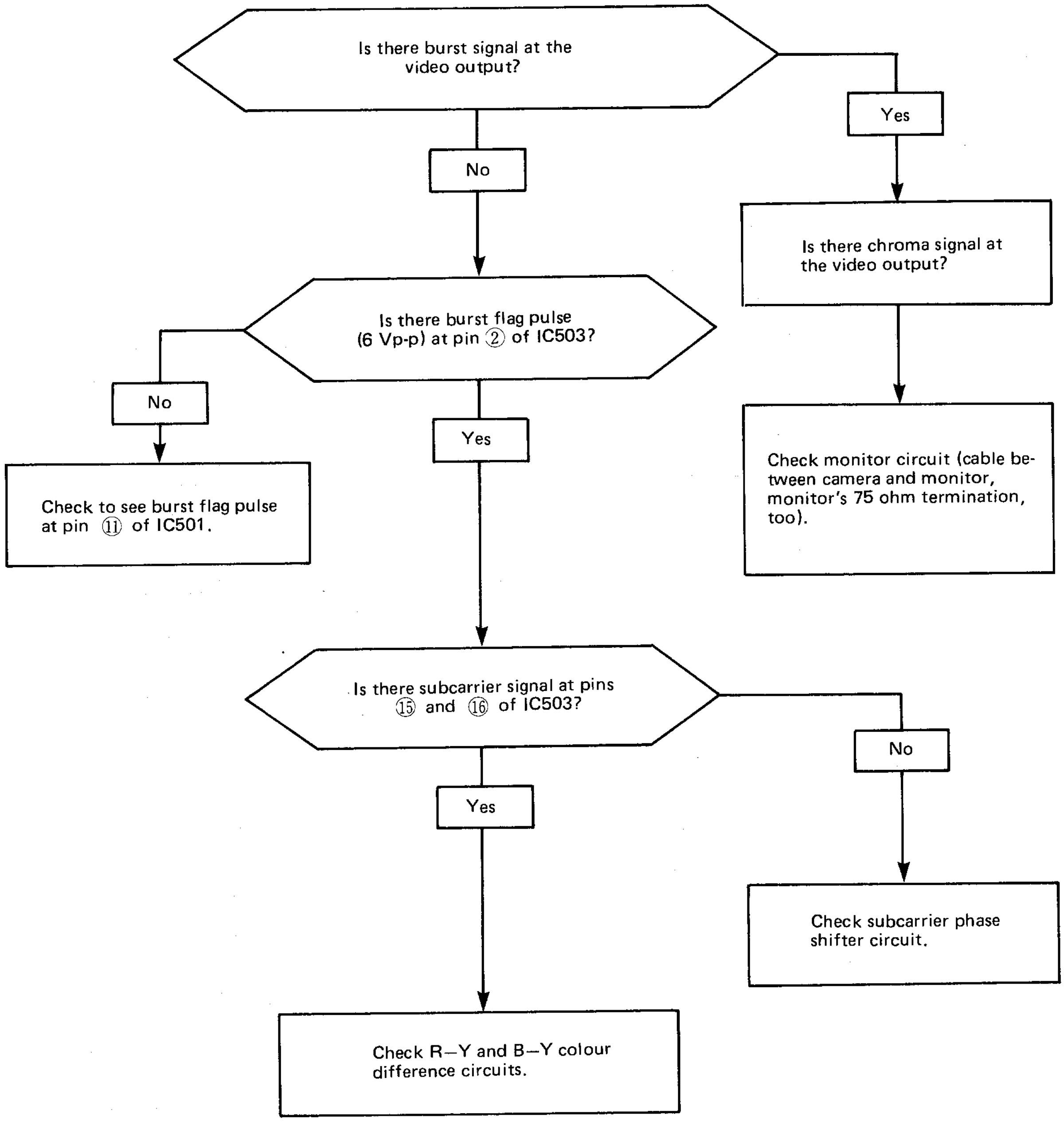
(1) No picture on Monitor TV with Mains Switch of AC Adaptor "ON"



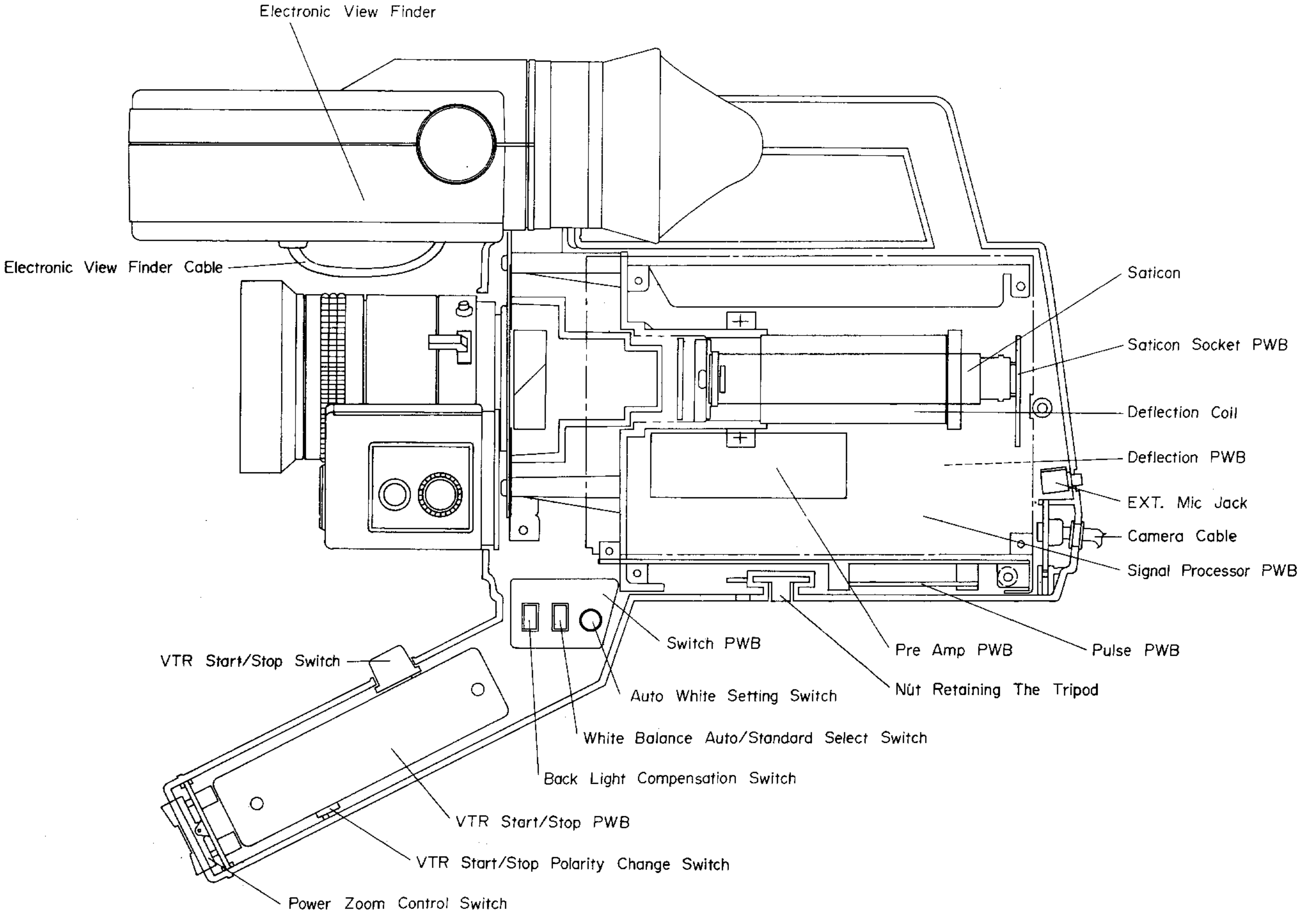

(1)
Is there sync signal at the video output?
Yes
No
Is there subcarrier signal (7Vp-p) at pin ㉖ of IC501?
Yes
No
Check 17.7 MHz oscillator circuit.
Check sync signal at pin ㉑ of IC501.
Is there 350 mVp-p at TP-5, TP-11 and TP-12?
Yes
No
Check R—Y and B—Y matrix circuits.
Is there 600 mVp-p at TP-7 and TP-8.
Yes
No
Check clamp circuit, γ correction circuit and clip circuit.
Is there 0.3 Vp-p at TP-1?
Yes
No
Check R/B separator circuit, C-phase circuit and C-gain circuit and AGC circuit.
Is there normal voltage at SATICON socket?
See the section (2) on the next page.


(2)
Yes
No
Check high voltage circuit, SATICON socket lead.
Is there deflection current at pins ① and ② of deflection coil connector (DY)?
Yes
No
Check horizontal deflection circuit.
Is there deflection current at pins ③ and ④ of deflection coil connector (DY)?
No
Check vertical deflection circuit.

(2) No Color is Reproduced on Monitor TV (Black/White is Normal)



CHASSIS LAYOUT



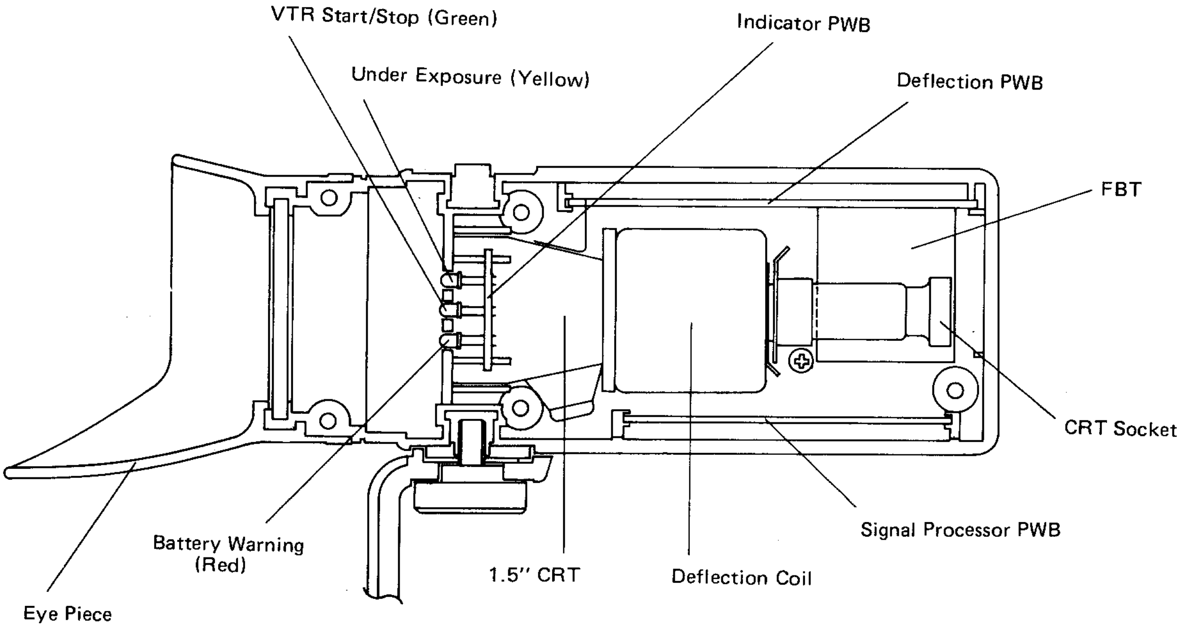


Figure 44. View Finder

BLOCK DIAGRAM (1)

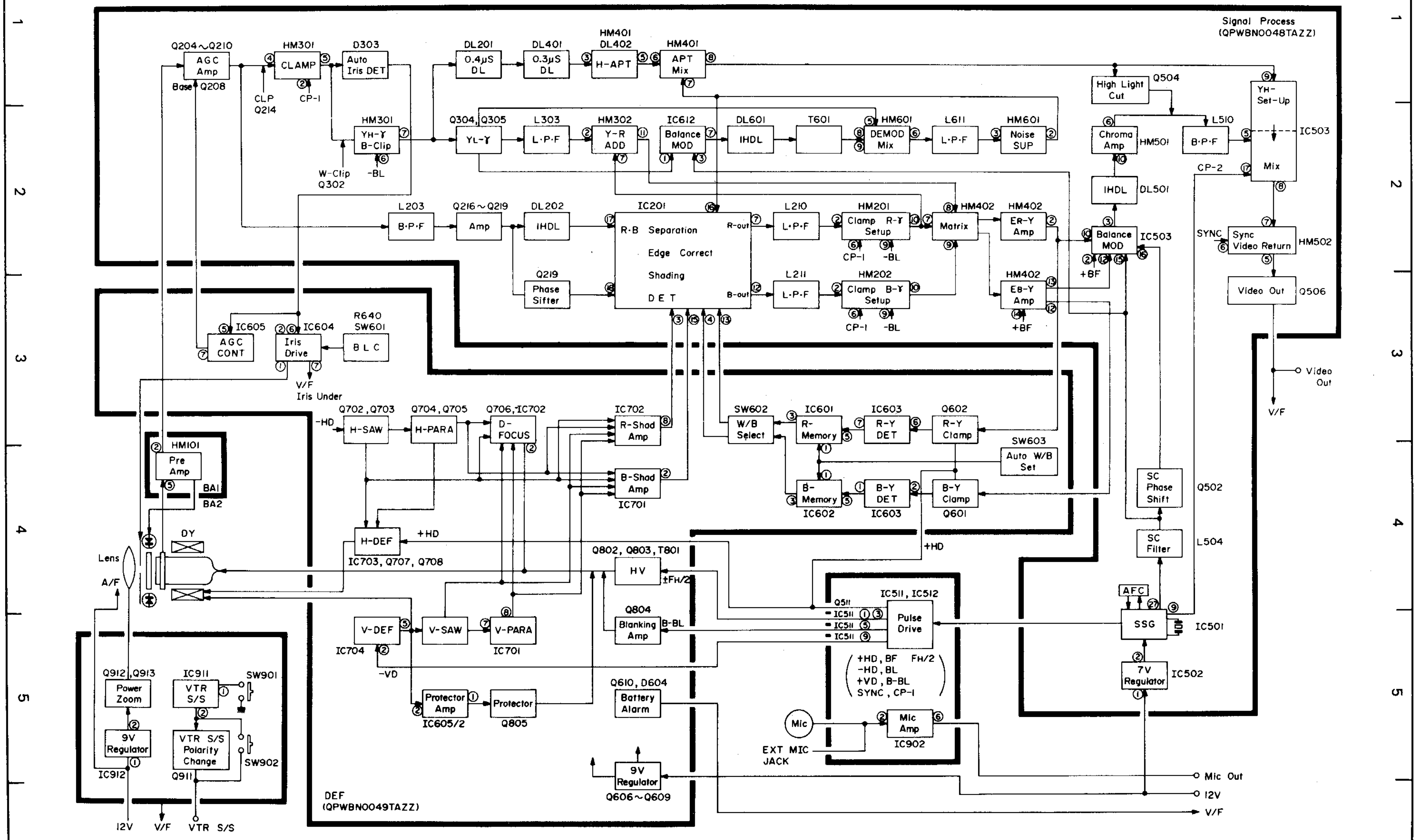


Figure 45. Block Diagram
[1st lot only]

BLOCK DIAGRAM (2)

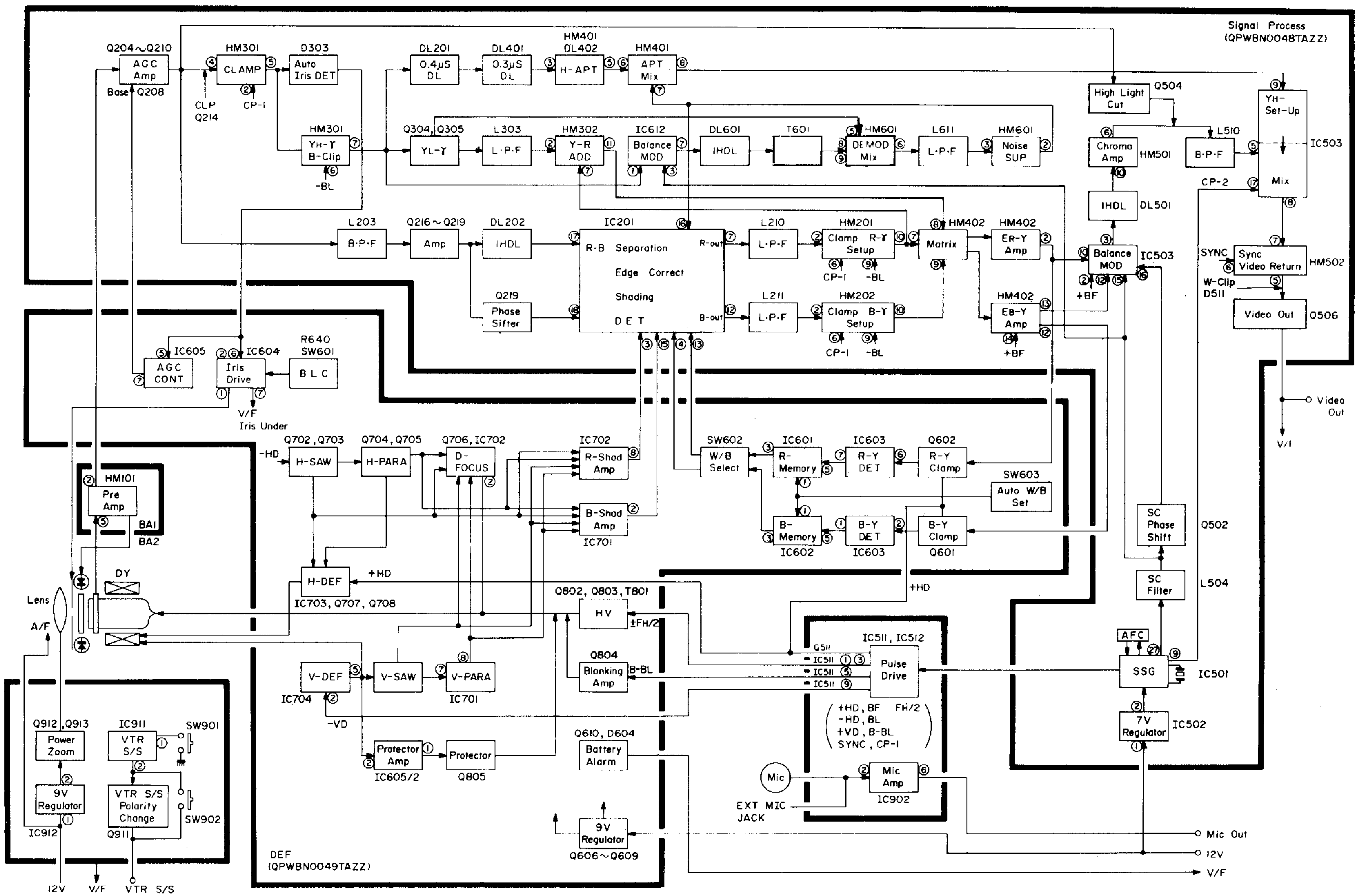


Figure 46. Block Diagram
[PWB 3 Mark: Form 2nd lot]

IMPORTANT SAFETY NOTICE:

BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET.
PARTS MARKED WITH "⚠" AND PARTS SHADED (IN BLACK) ARE ESPECIALLY IMPORTANT FOR MAINTAINING THE SAFETY AND PROTECTING ABILITY OF THE SET.
BE SURE TO REPLACE THEM WITH PARTS OF SPECIFIED PART NUMBER.

SAFETY NOTE:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

NOTE:

1. *The unit of resistance "ohm" is omitted (k=1000 ohm, M=1 Meg ohm).*
2. *All resistors are 1/4 watt, unless otherwise noted.*
3. *The unit of capacitance "F" is omitted (μ=μF, p=μμF).*

VOLTAGE MEASUREMENT CONDITIONS:

1. *DC voltages are measured between points indicated and chassis ground by VTVM, with 220V AC 50Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.*
2. *Voltage are measured with 10000μV B & W or colour signal.*

WAVEFORM MEASUREMENT CONDITIONS:
10000μV 87.5 percent modulated colour bar signal is fed into tuner.

Ⓖ: *Input signal waveform with 2500 lx illuminated gray scale chart and at the focus F4.*
Ⓒ: *Input signal waveform with colour bar chart and at the focus F8.*
Ⓑ: *Waveform with no signal given.*
No mark: Waveform not varying even with signal given.

CAUTION: This circuit diagram is original one. Therefore there may be a slight difference from yours.

AND SHADED COMPONENTS: SAFETY RELATED PARTS

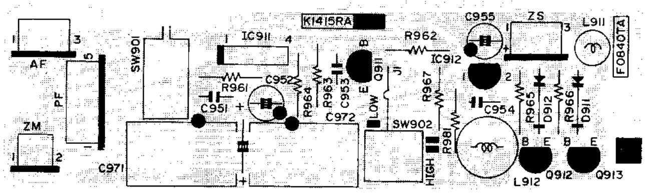


Figure 51. VTR Start/stop PWB (Component Side)

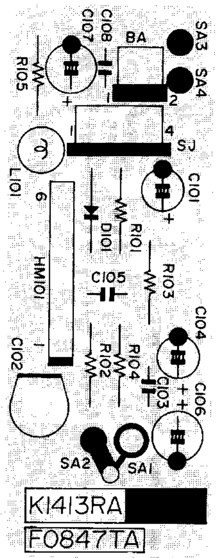


Figure 48. Pre-Amp. PWB (Component Side)

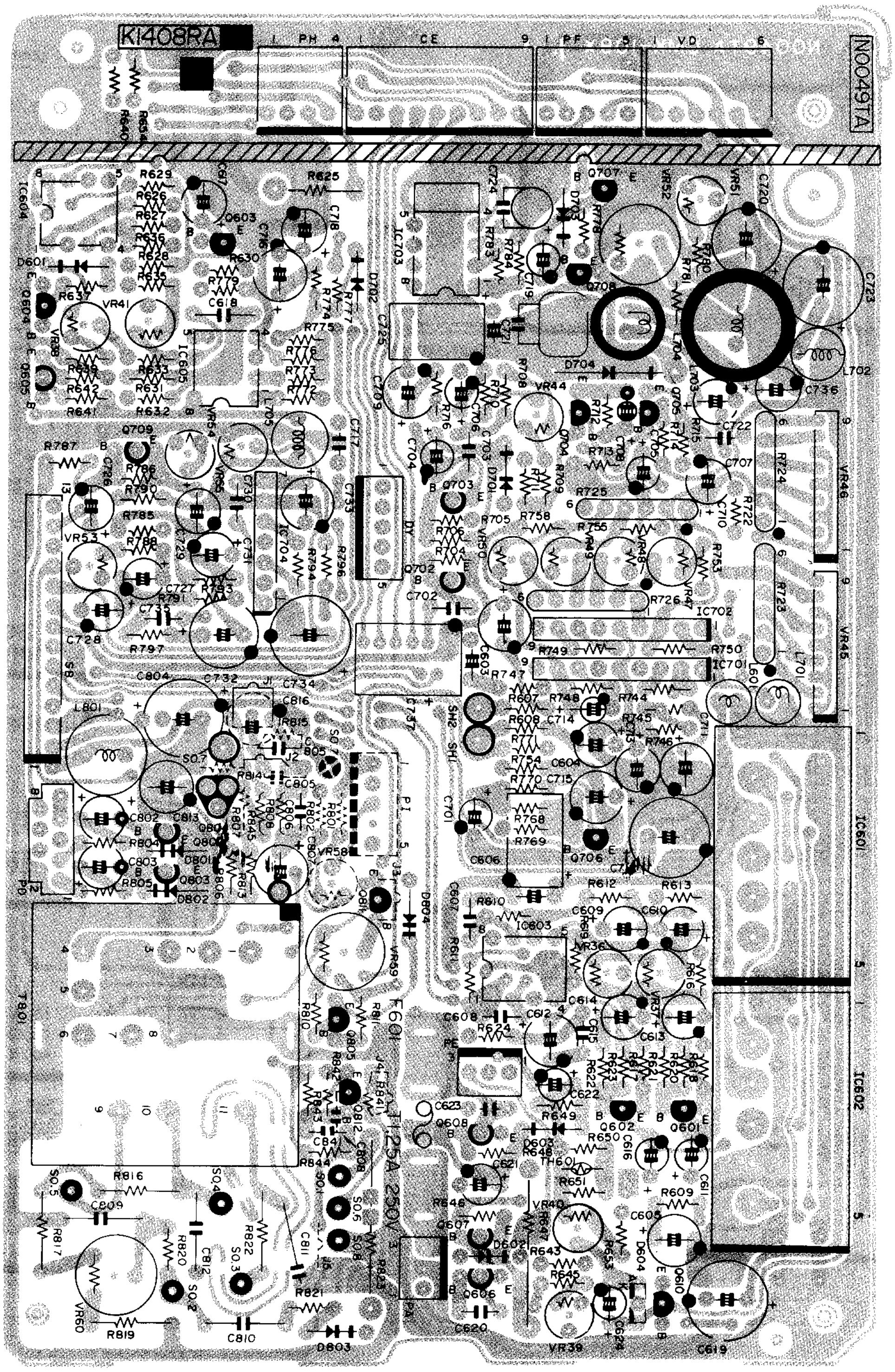


Figure 52. Deflection PWB (Component Side)
[1st lot only]

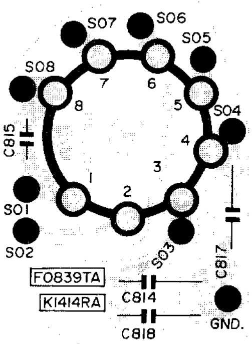


Figure 49. SATICON Socket PWB (Component Side)

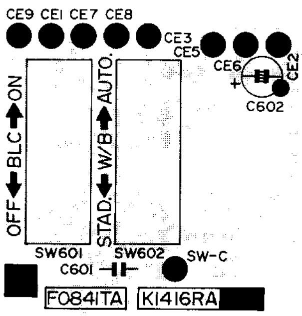
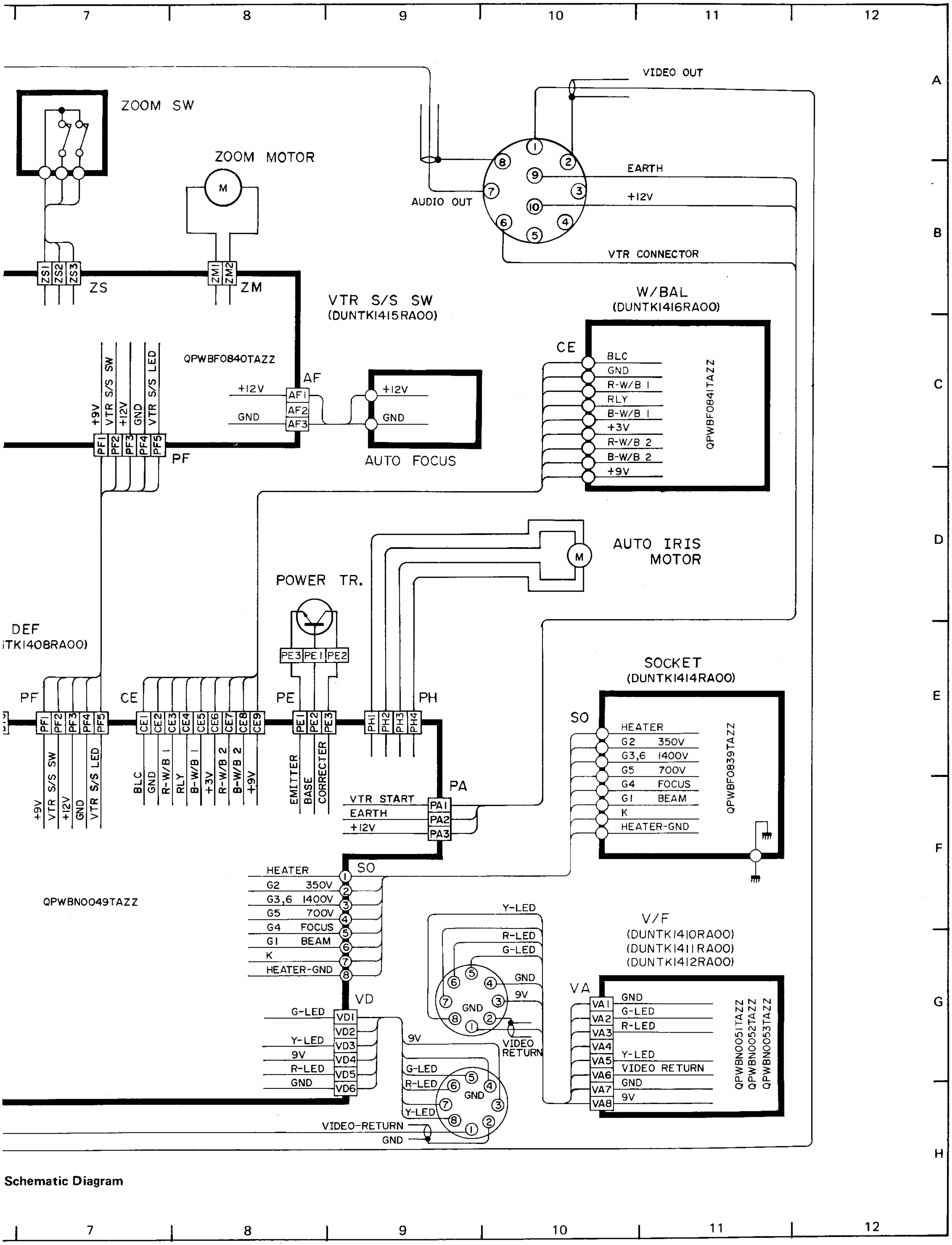


Figure 50. Switch PWB (Component Side)



Schematic Diagram

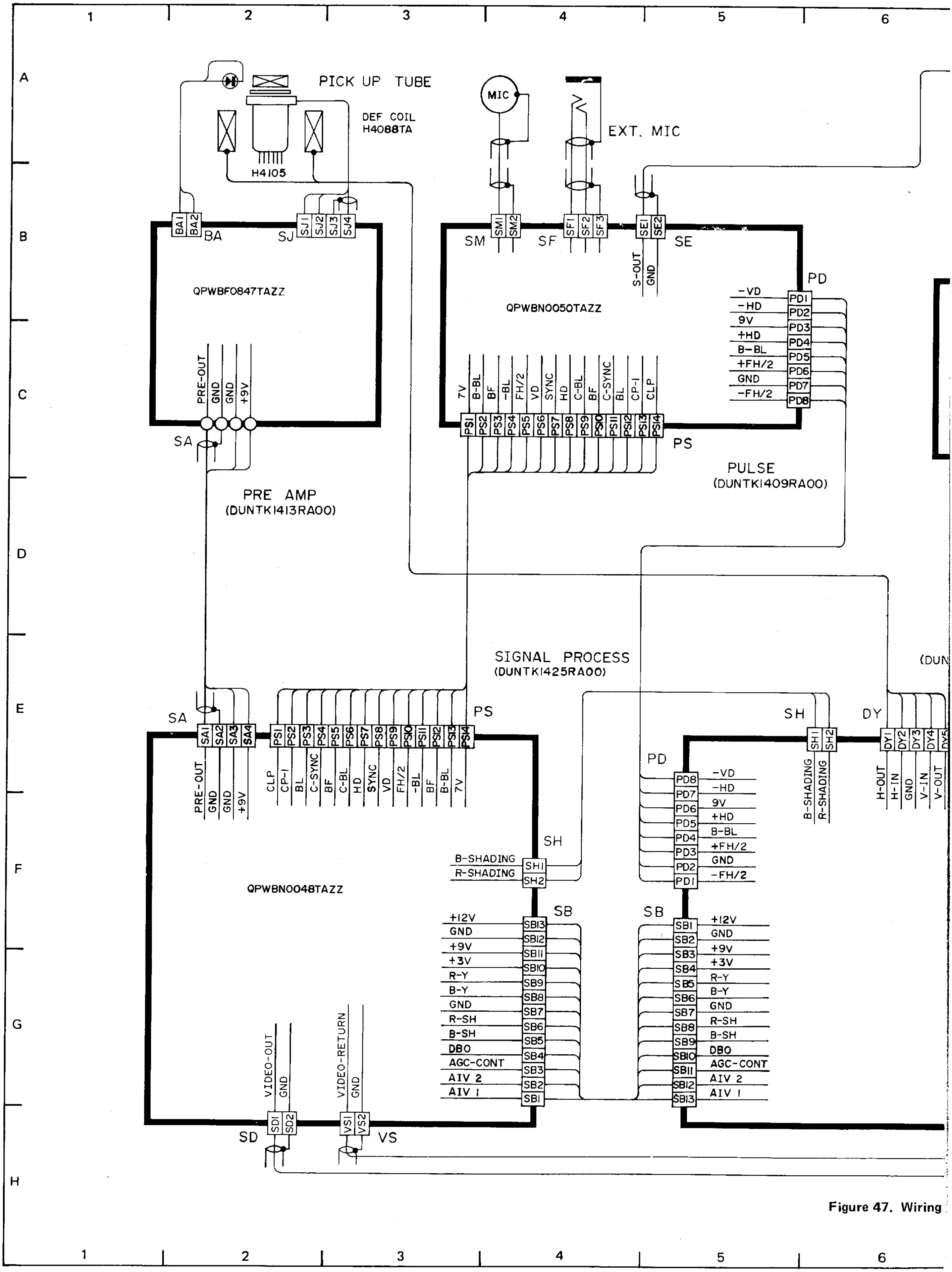


Figure 47. Wiring

7 8 9 10 11 12

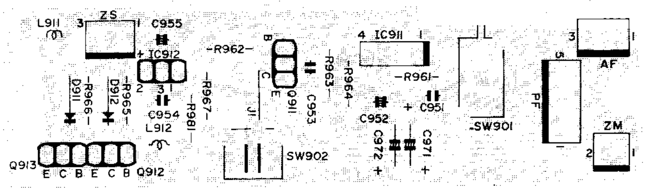


Figure 53. VTR Start/stop PWB (Wiring Side)

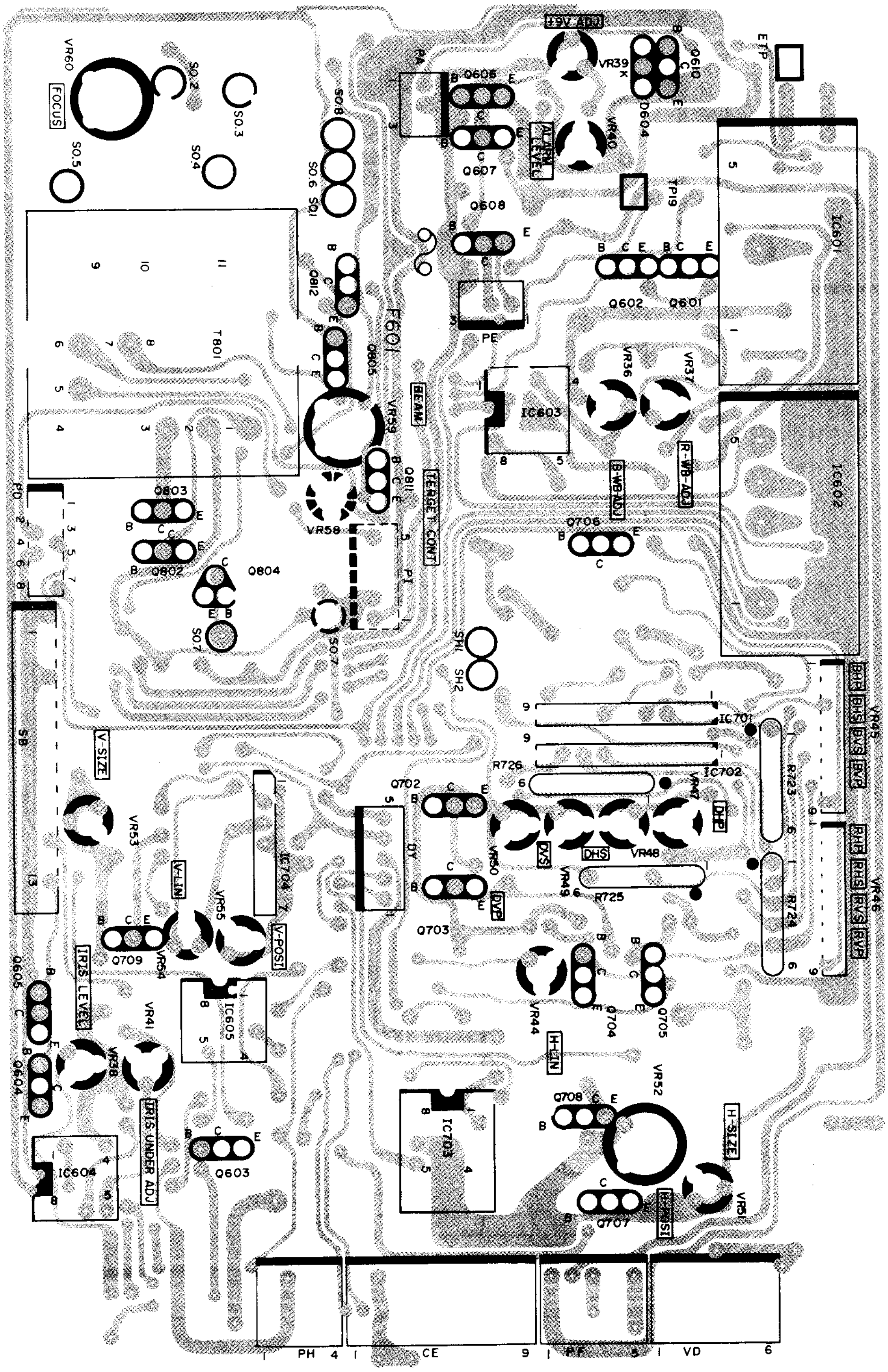


Figure 54. Deflection PWB (Wiring Side)
[1st lot only]

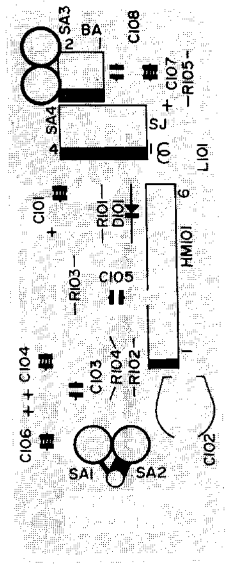


Figure 55. Pre-Amp. PWB (Wiring Side)

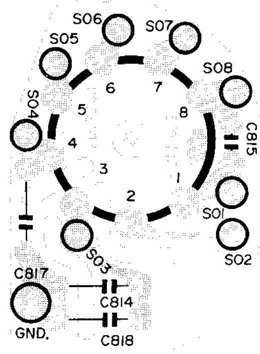


Figure 56. SATICON Socket PWB (Wiring Side)

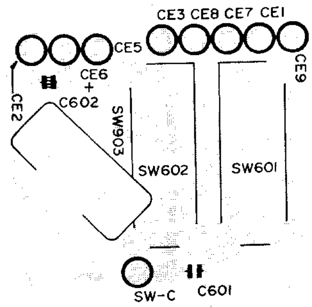
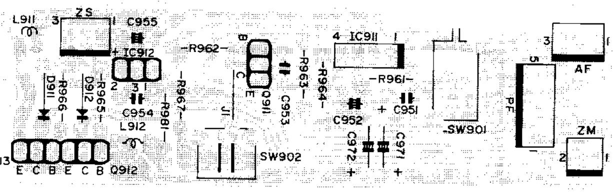


Figure 57. Switch PWB (Wiring Side)

A B C D E F G H

7 8 9 10 11 12

7 | 8 | 9 | 10 | 11 | 12



rk: From 2nd lot.

Figure 64. VTR Start/Stop PWB (Wiring Side)

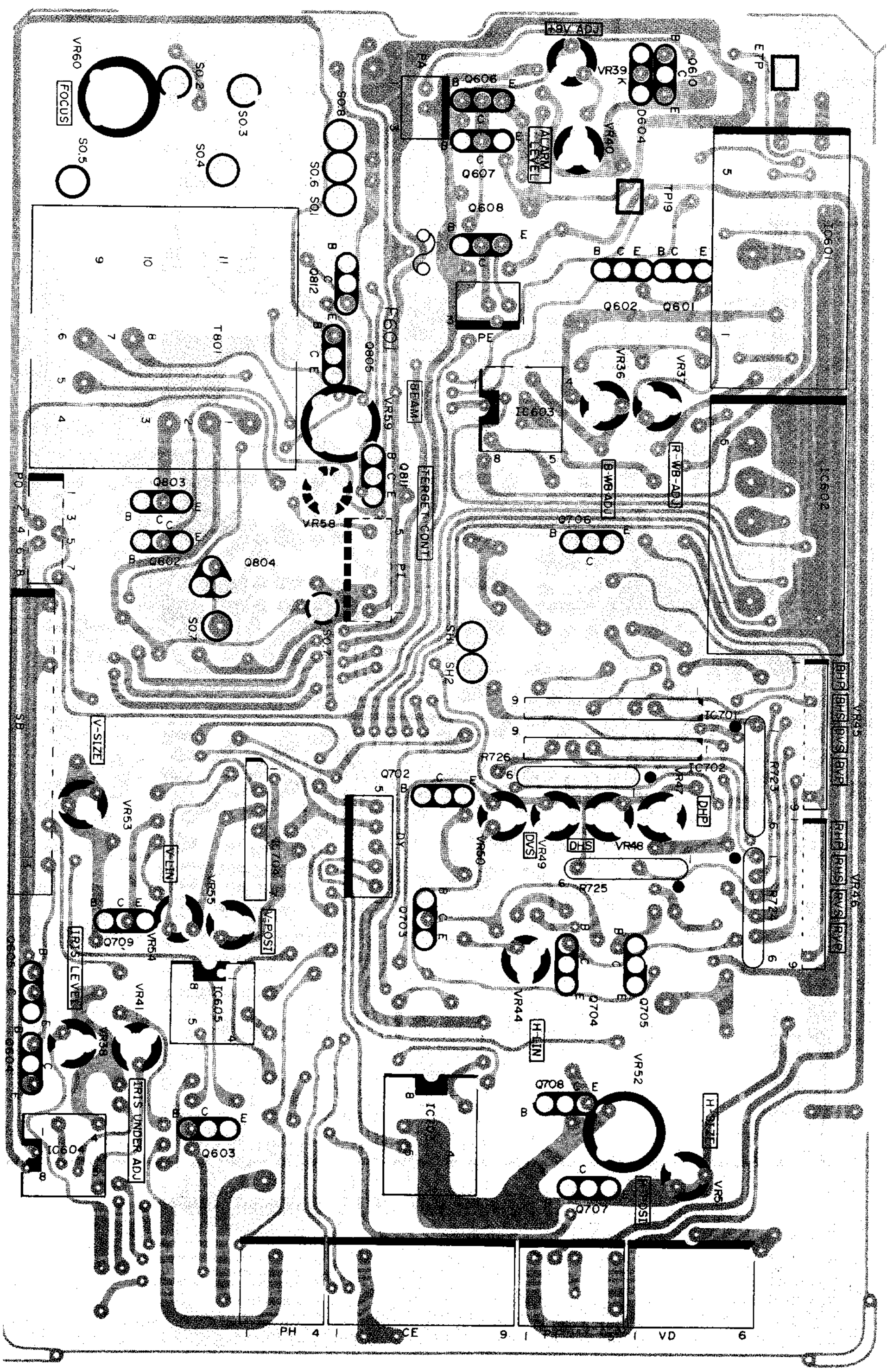


Figure 65. Deflection PWB (Wiring Side)
[PWB ⚠3 Mark: From 2nd lot]

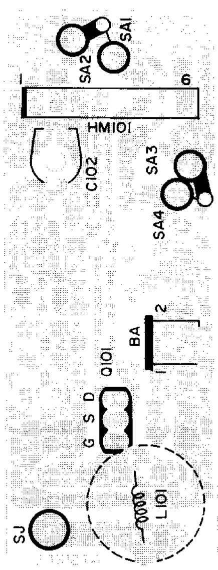


Figure 66. Pre-Amp. PWB (Wiring Side)

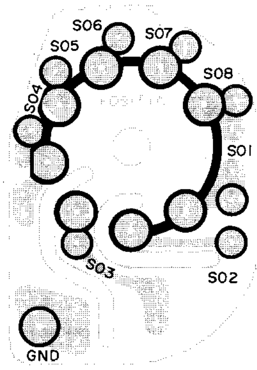


Figure 67. SATICON Socket PWB (Wiring Side)

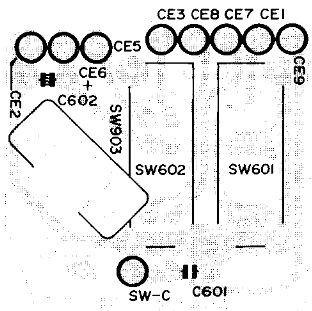


Figure 68. Switch PWB (Wiring Side)

A B C D E F G H

7 | 8 | 9 | 10 | 11 | 12

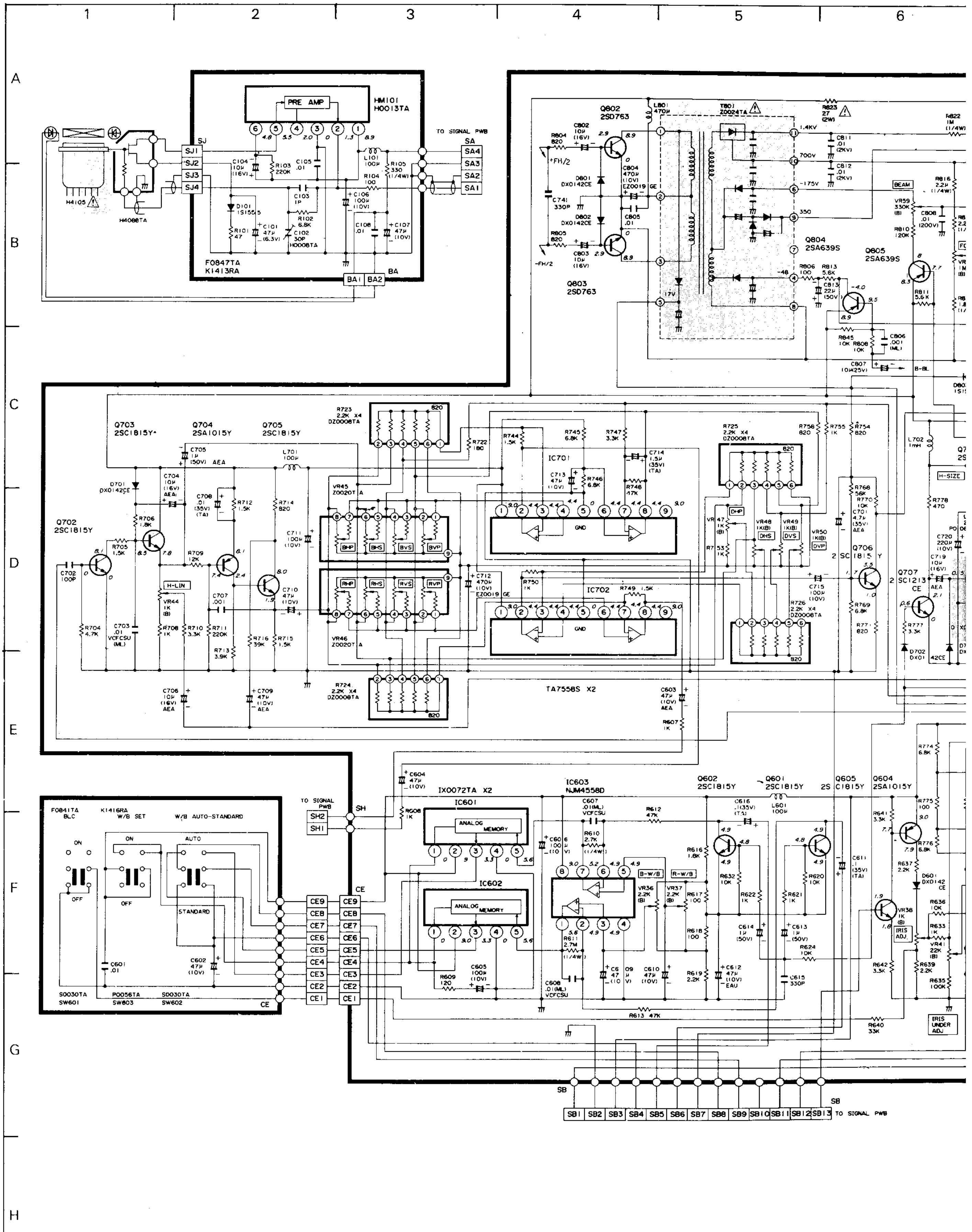
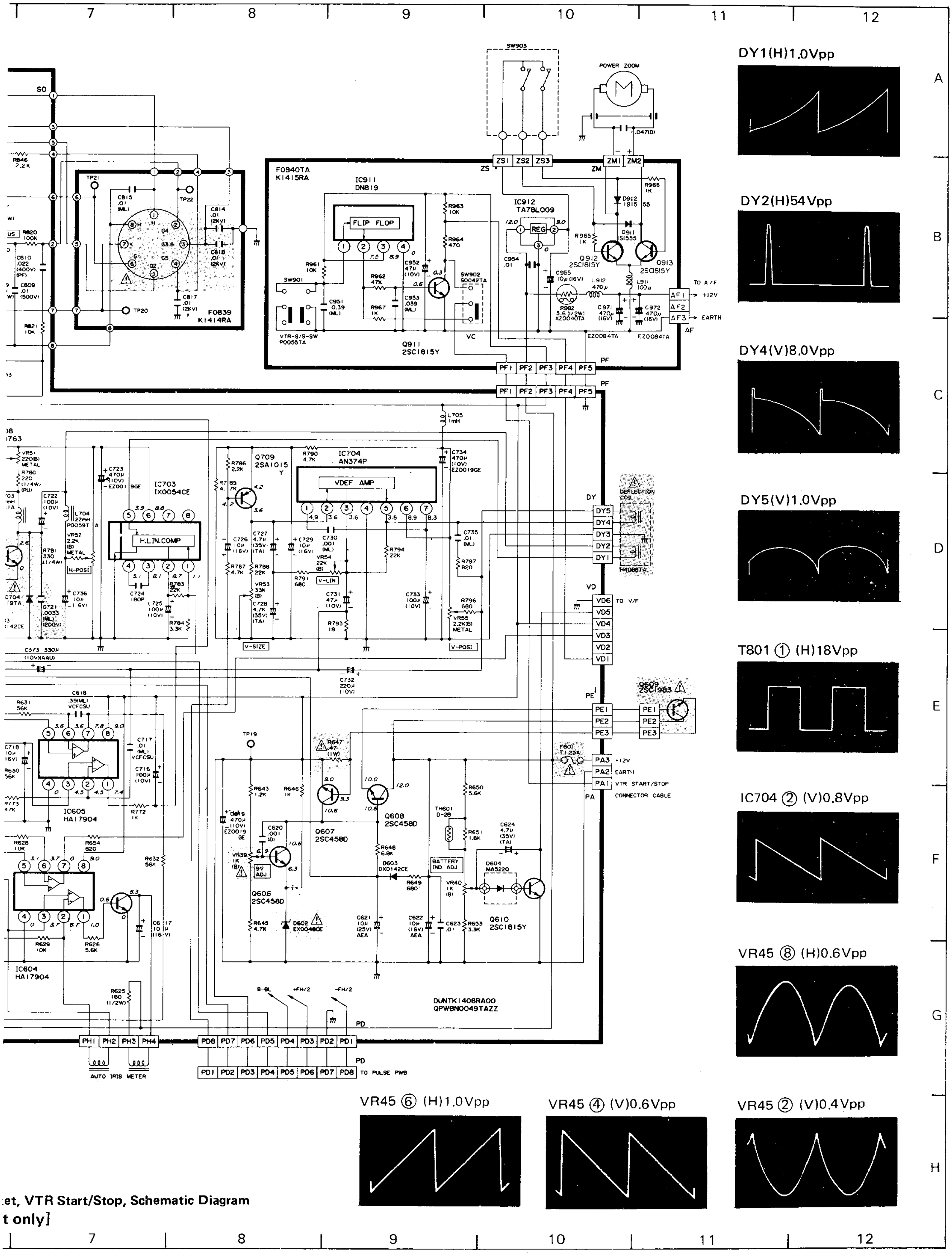


Figure 58. DEF, SW, Pre Amp. Soc

[1st lo



.et, VTR Start/Stop, Schematic Diagram
t only]

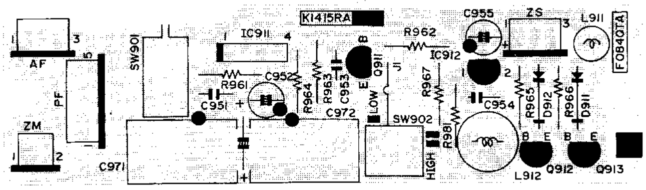


Figure 62. VTR Start/stop PWB (Component Side)

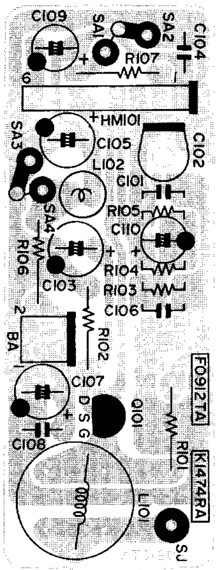


Figure 59. Pre Amp. PWB (Component Side)

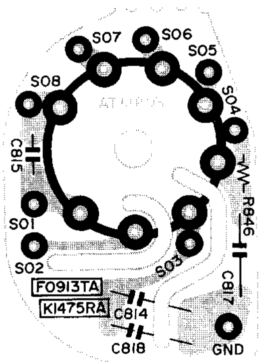


Figure 60. SATICON Socket PWB (Component Side)

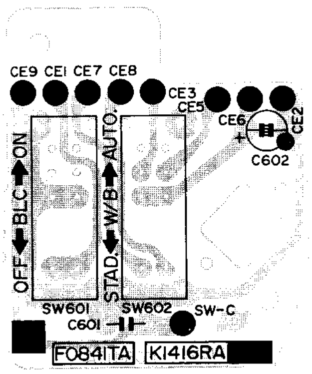


Figure 61. Switch PWB (Component Side)

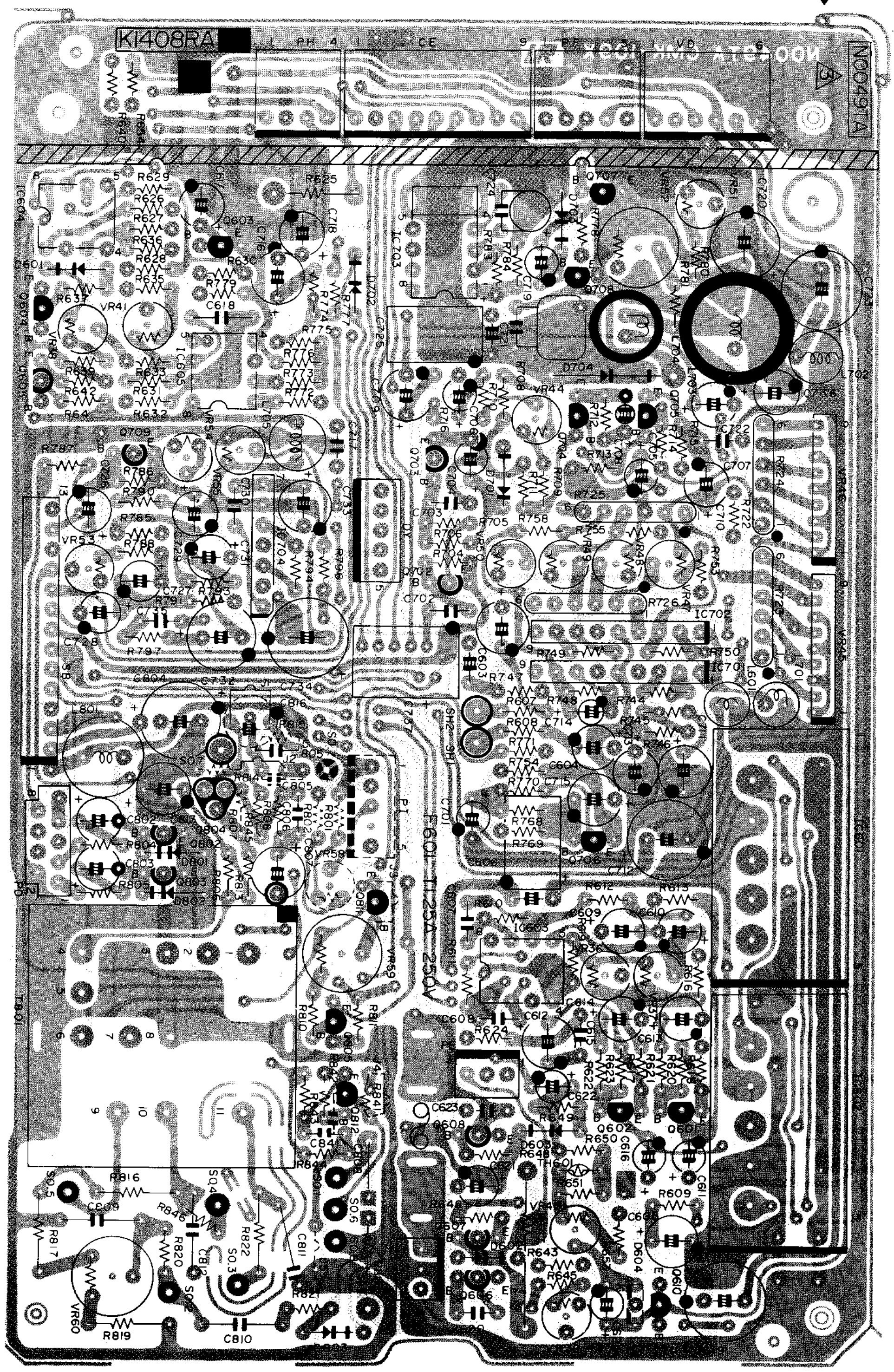


Figure 63. Deflection PWB (Component Side)
[PWB ⚠3 Mark: Form 2nd lot]

7 8 9 10 11 12

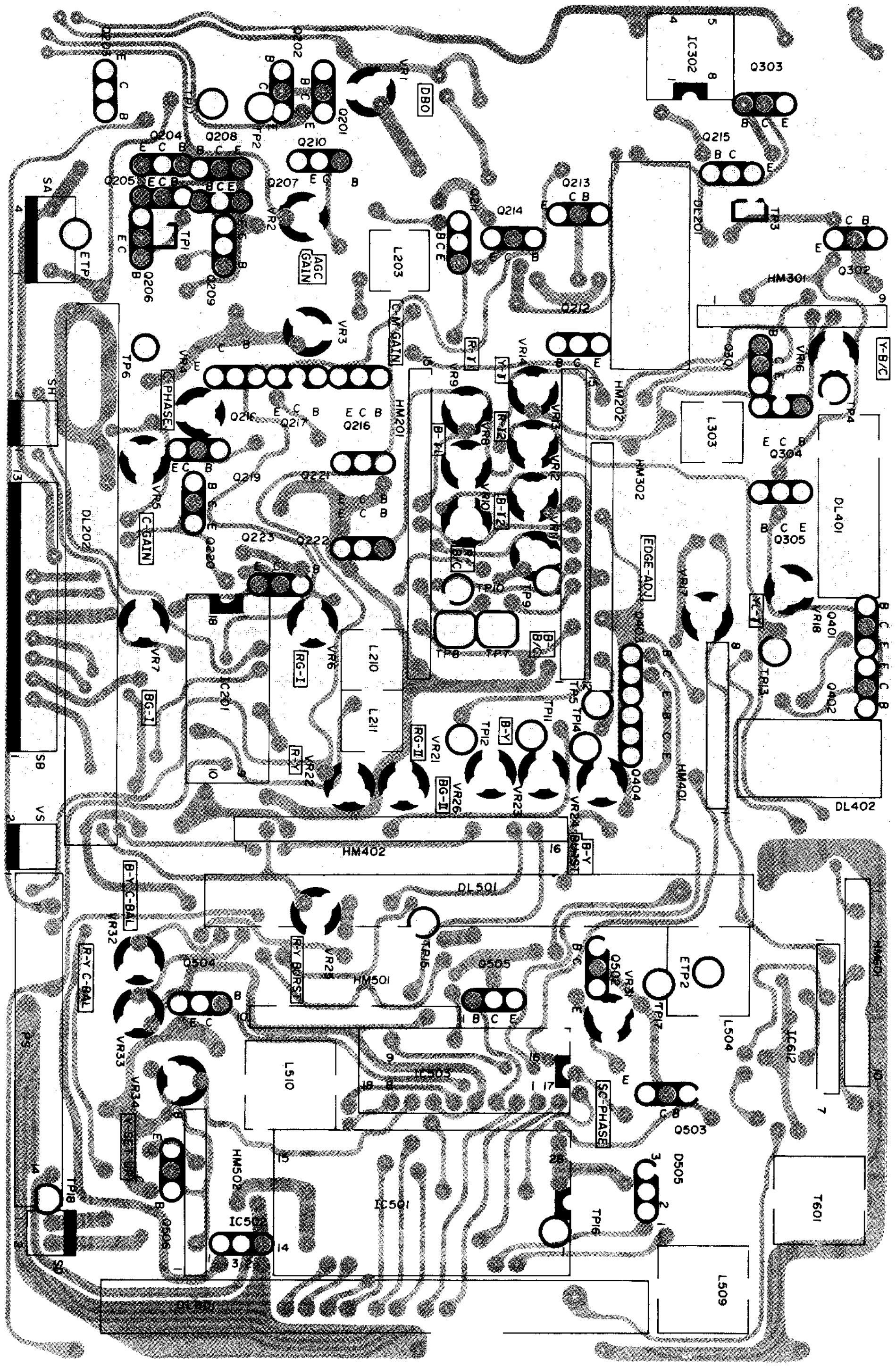


Figure 71. Signal Process PWB (Wiring Side)

[1st lot only]

7 8 9 10 11 12

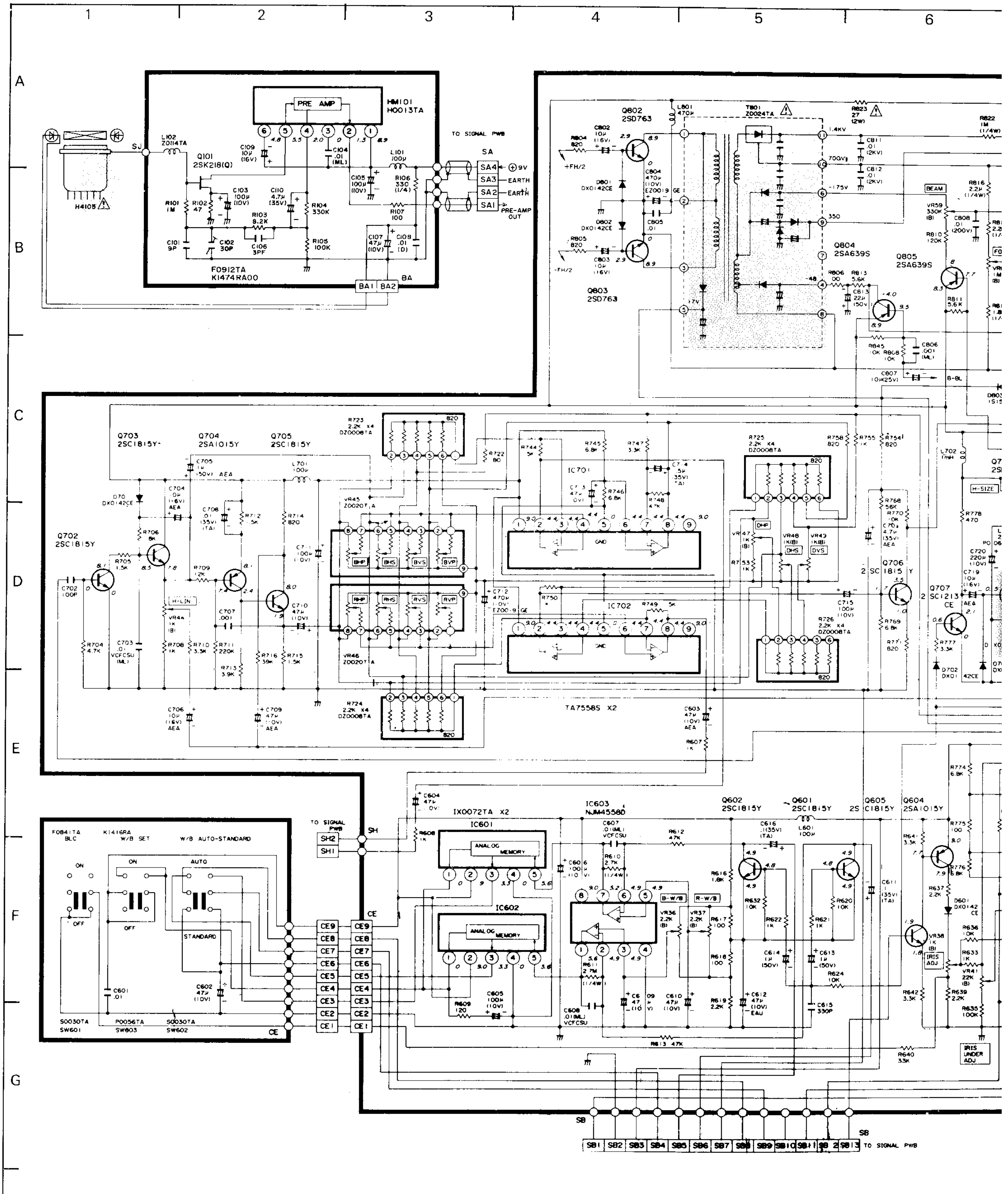
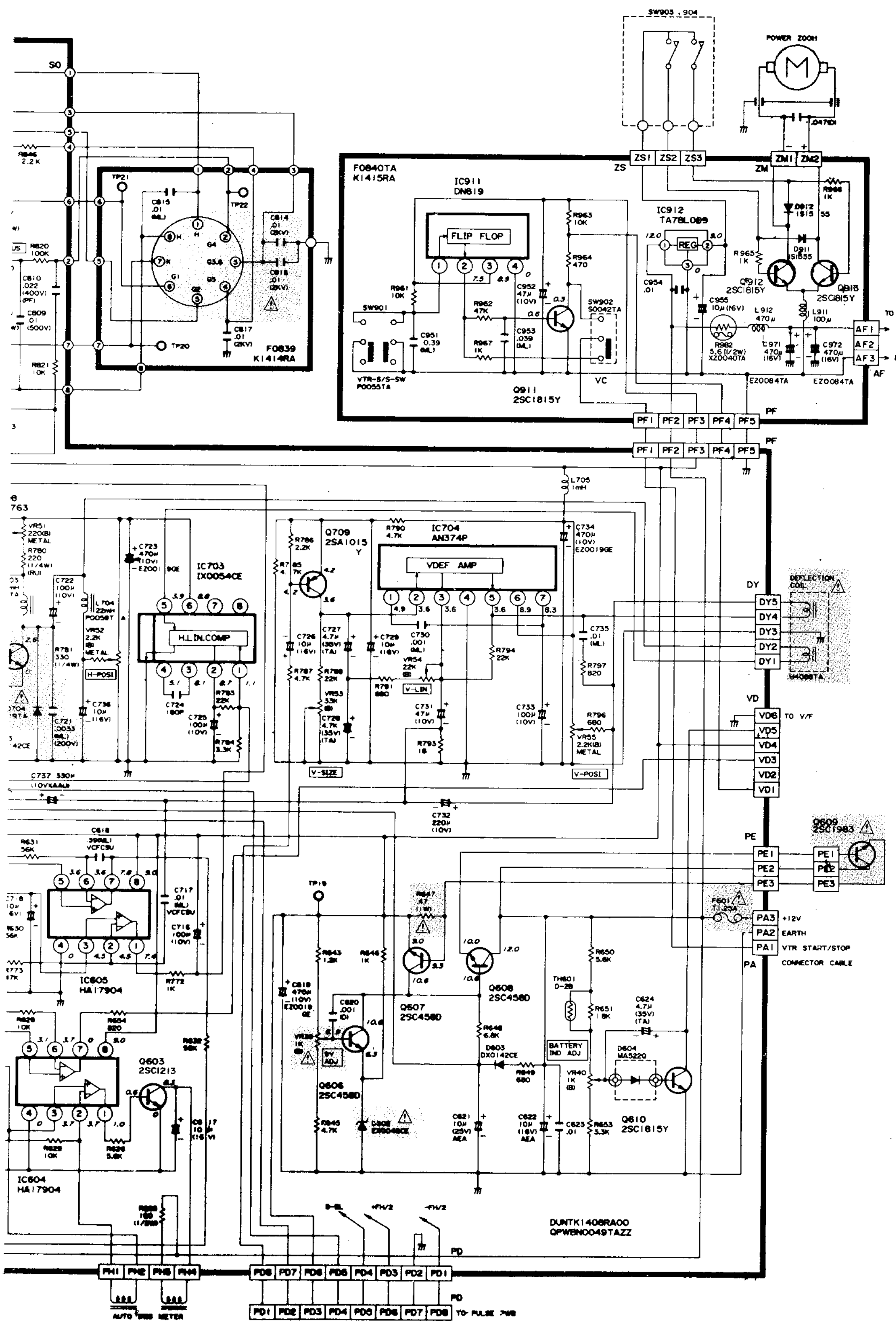


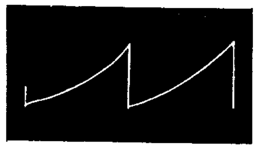
Figure 69. DEF, SW, Pre Amp. Socket, VTR Start/Sto

[PWB ⚠3 Mark: From 2nd lot]

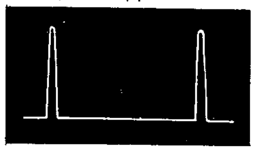
7 8 9 10 11 12



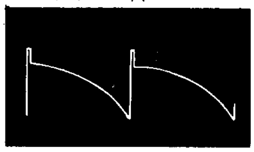
DY1(H)1.0Vpp



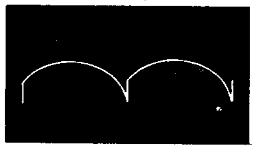
DY2(H)54Vpp



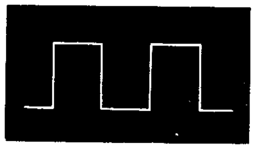
DY4(V)8.0Vpp



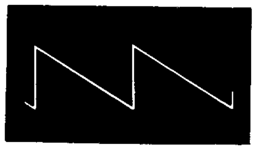
DY5(V)1.0Vpp



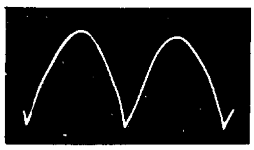
T801 ① (H)18Vpp



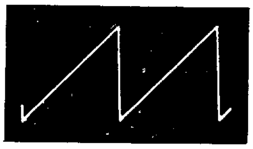
IC704 ② (V)0.8Vpp



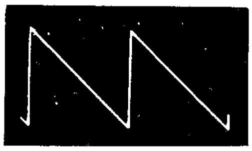
VR45 ② (H)0.6Vpp



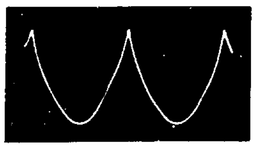
VR45 ④ (H)1.0Vpp



VR45 ⑥ (V)0.6Vpp



VR45 ⑧ (V)0.4Vpp



A B C D E F G H

p, Schematic Diagram

7 8 9 10 11 12

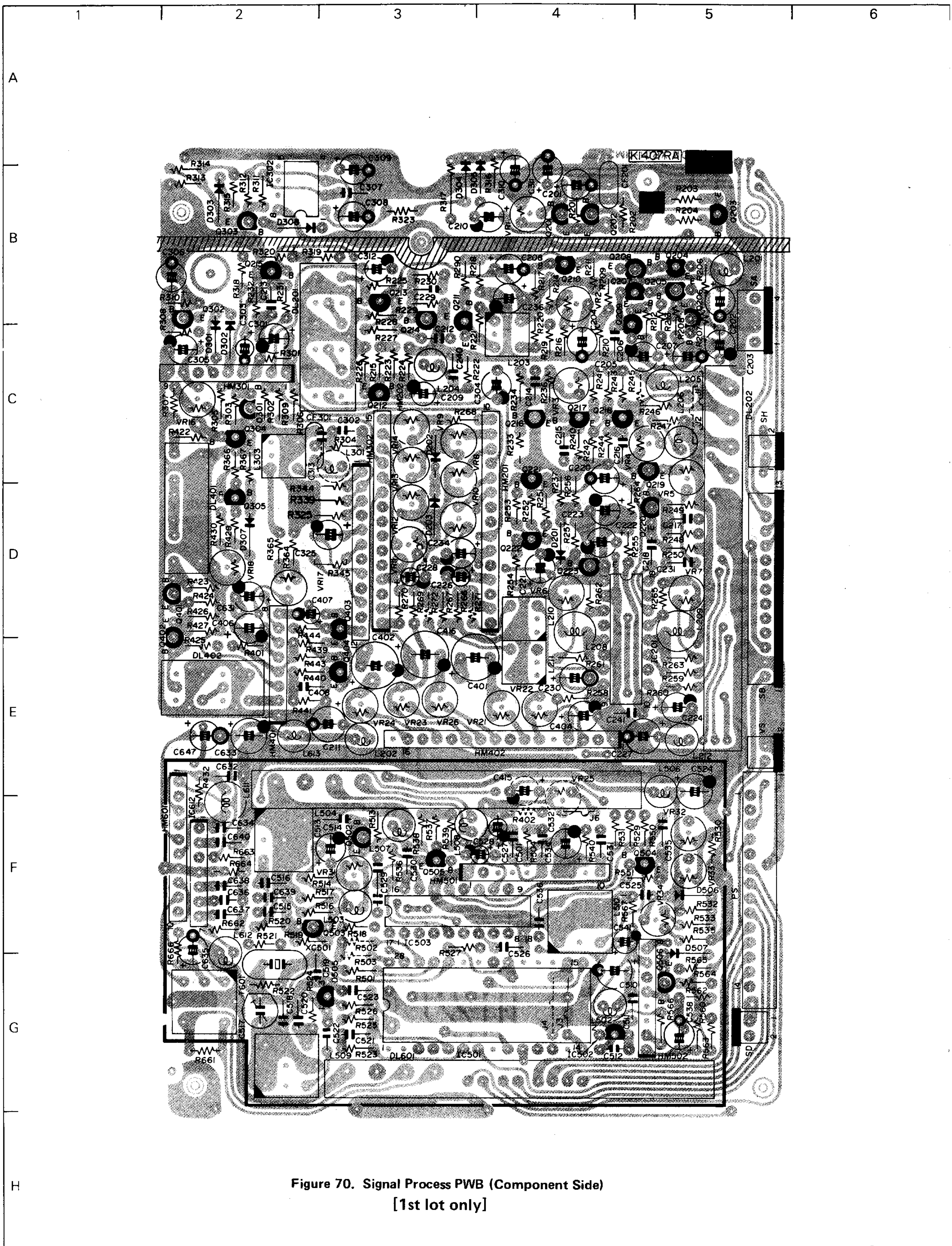


Figure 70. Signal Process PWB (Component Side)
[1st lot only]

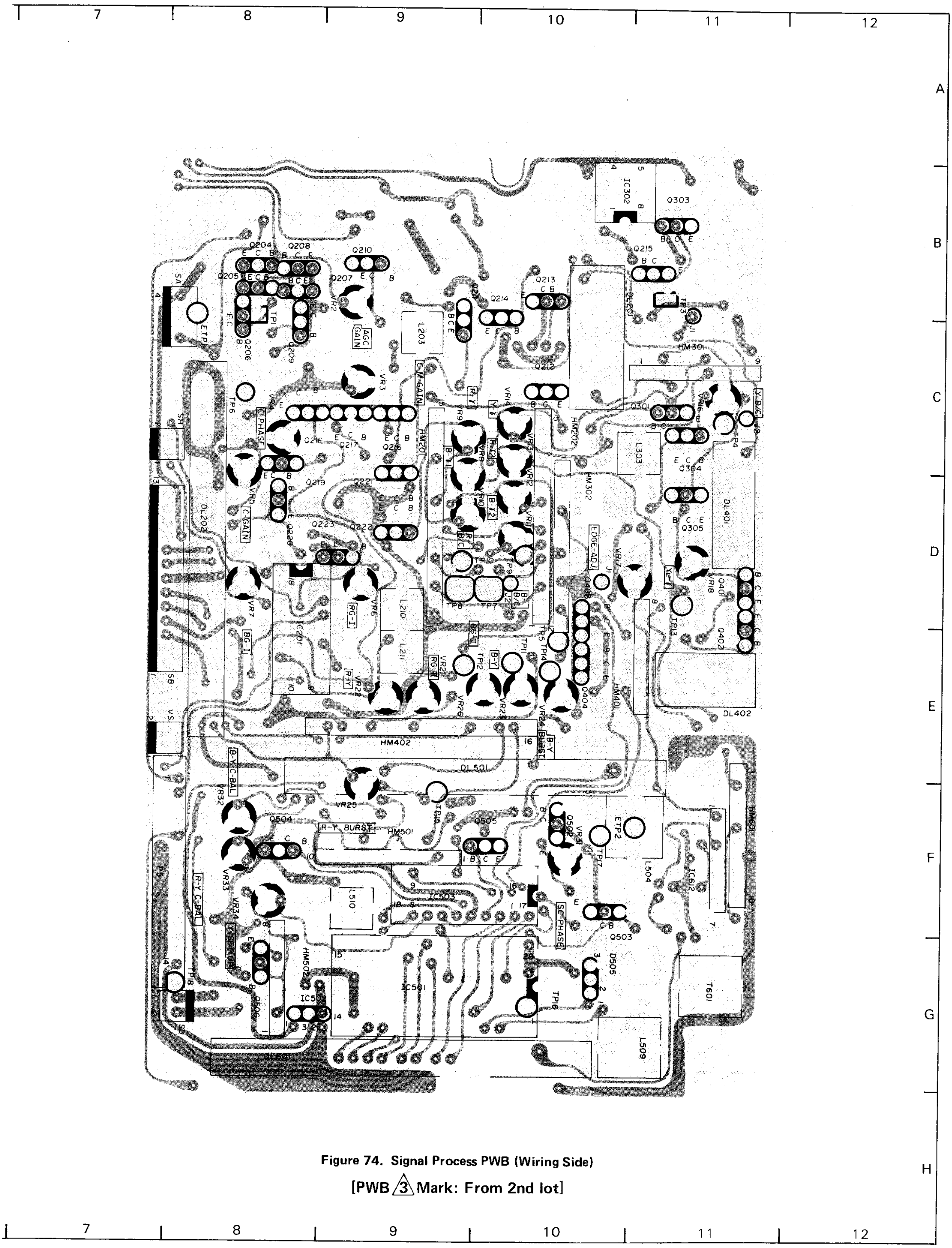


Figure 74. Signal Process PWB (Wiring Side)

[PWB ⚠3 Mark: From 2nd lot]

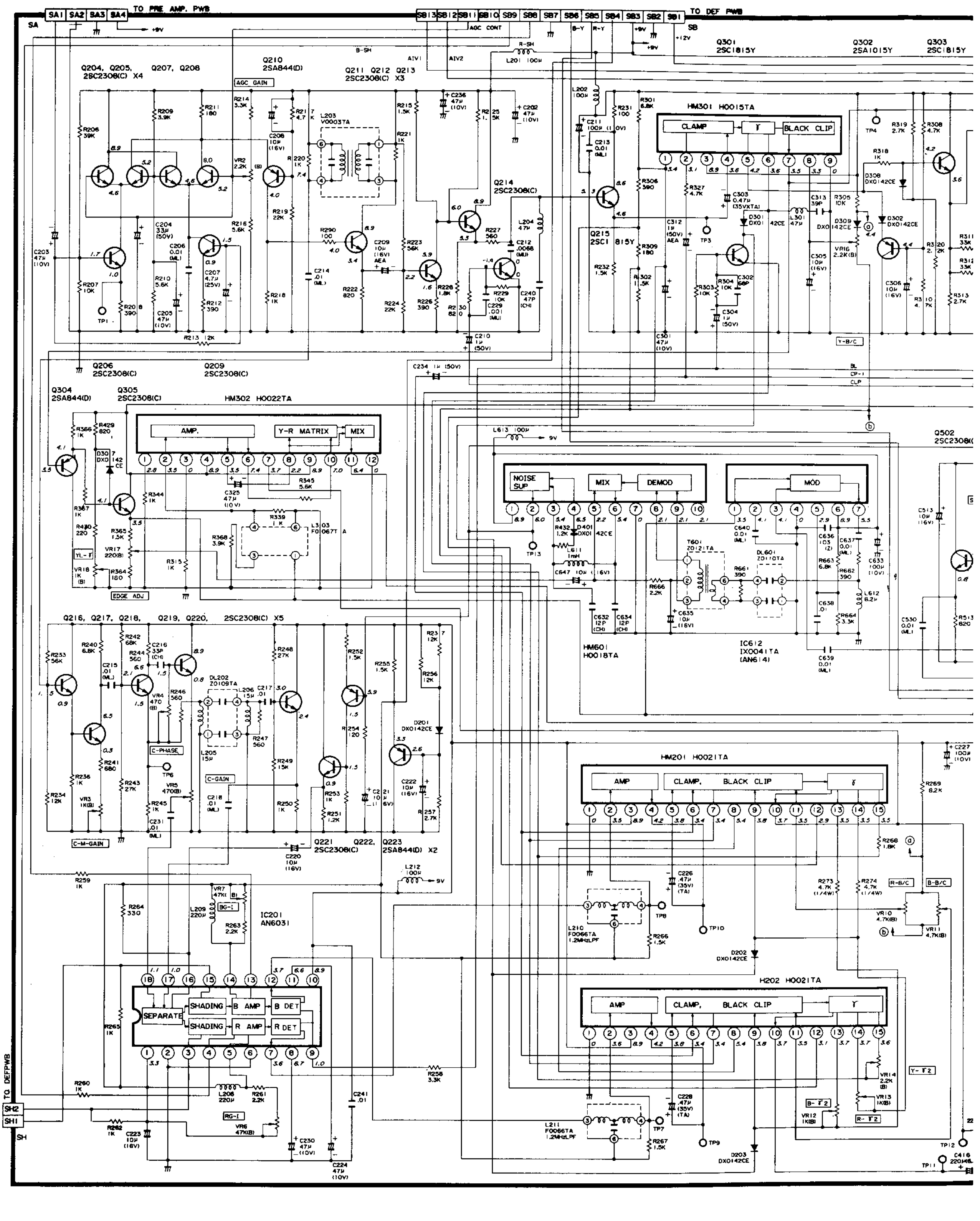
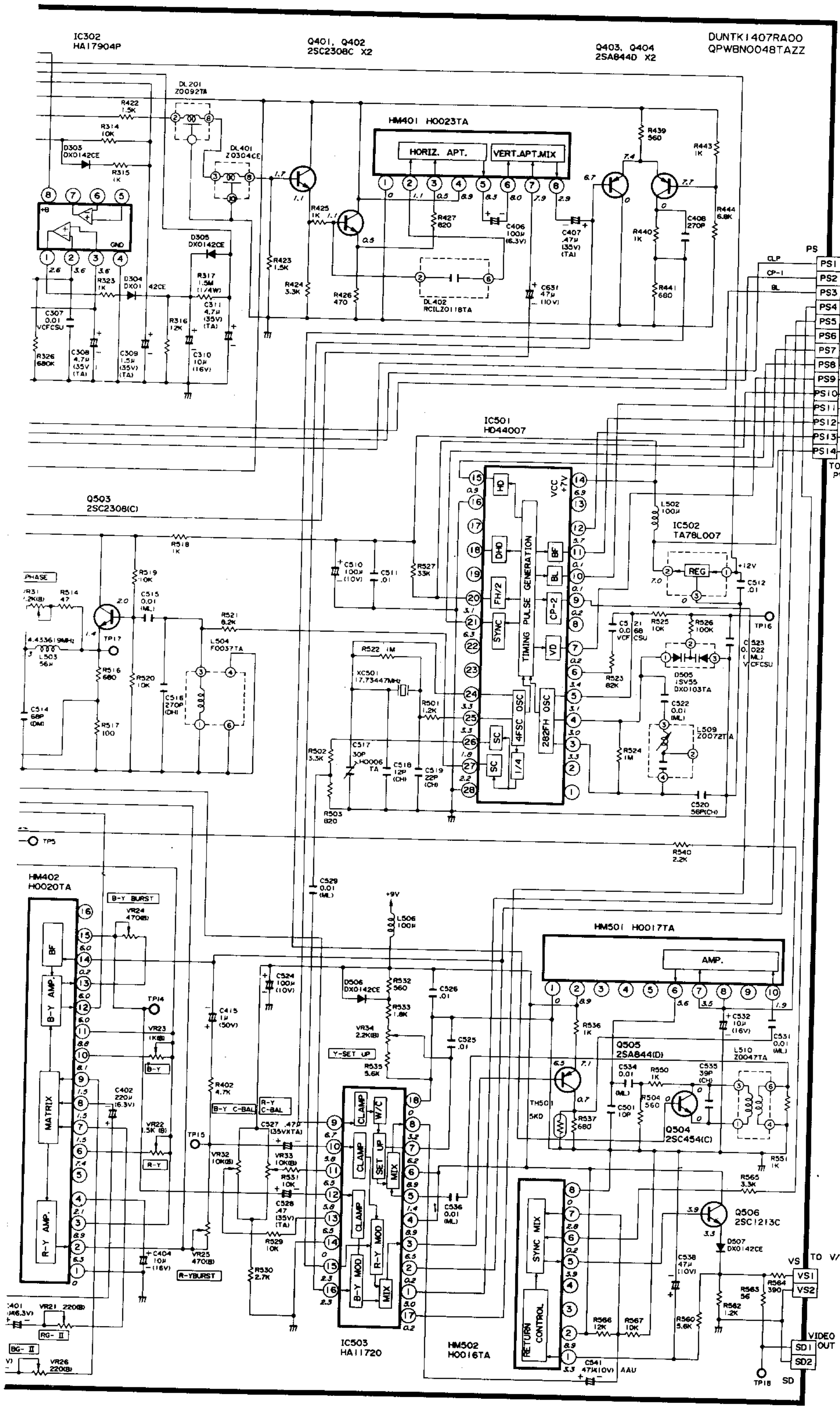
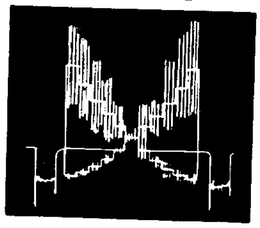


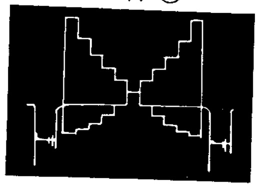
Figure 72. Signal Processor Schematic Diagram
[1st lot only]



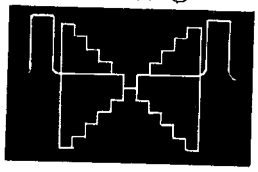
TP1(H)0.25Vpp Ⓖ



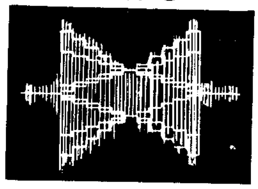
TP3(H)1.0Vpp Ⓖ



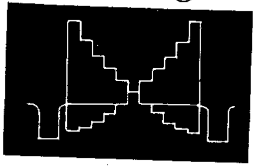
TP5(H)0.38Vpp Ⓖ



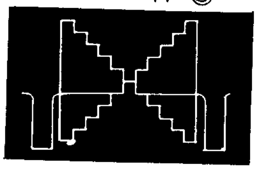
TP6(H)0.8Vpp Ⓖ



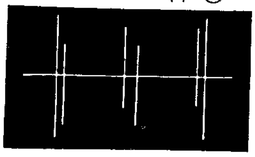
TP7(H)0.6Vpp Ⓖ
TP8(H)0.6Vpp Ⓖ
TP9(H)1.4Vpp Ⓖ
TP10(H)1.4Vpp Ⓖ



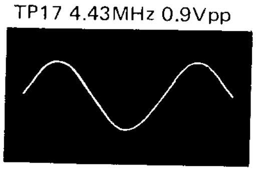
TP4(H)0.45Vpp Ⓖ
TP11(H)0.38Vpp Ⓖ
TP12(H)0.38Vpp Ⓖ



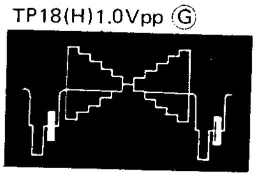
TP13 (V) 0.12Vpp Ⓖ



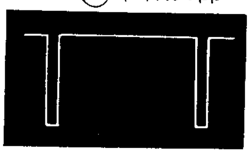
TP17 4.43MHz 0.9Vpp



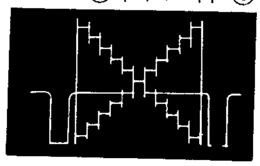
TP18(H)1.0Vpp Ⓖ



IC501 ㉑ (H)7.0Vpp



HM401 ⑧ (H)1.5Vpp Ⓖ



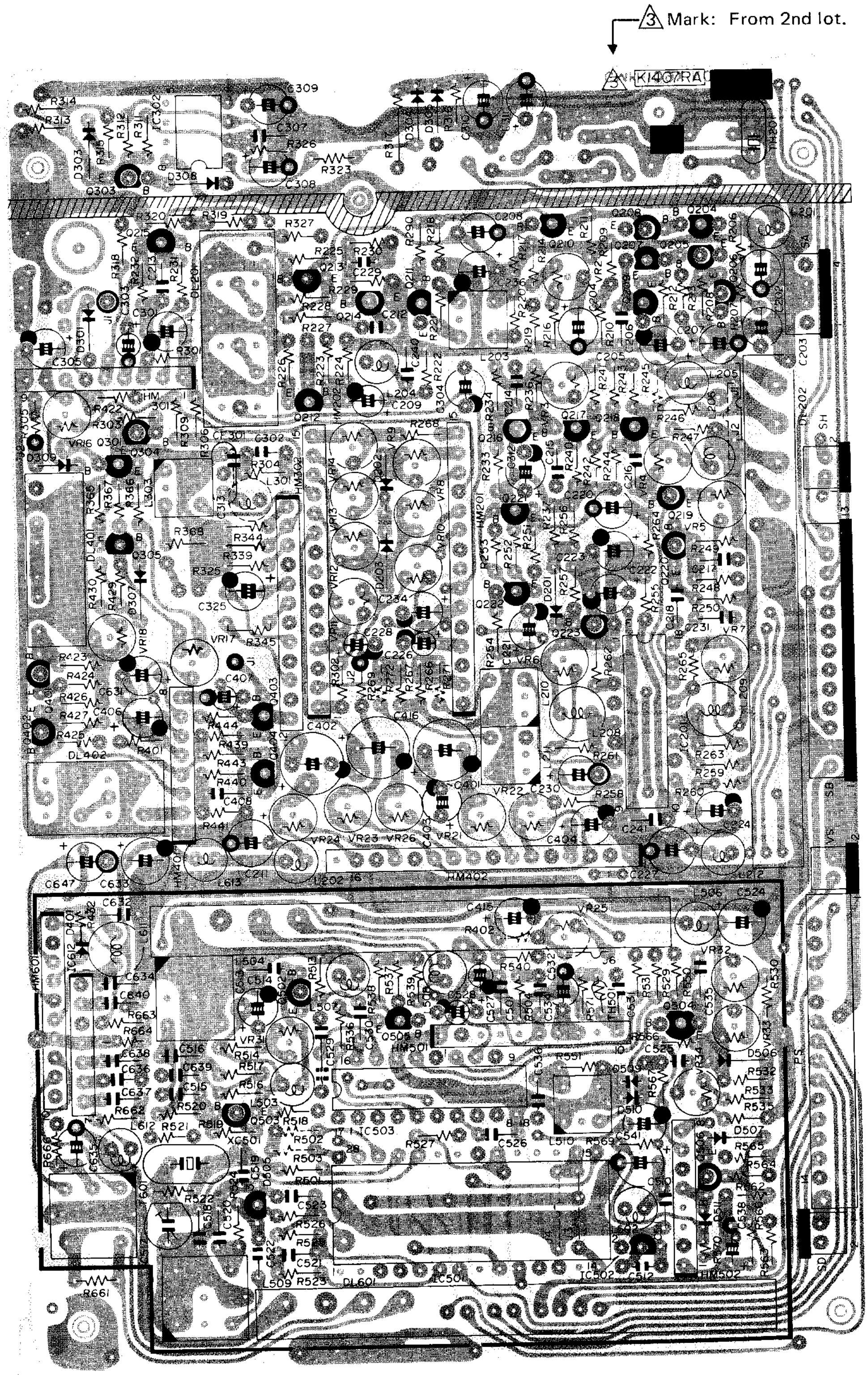


Figure 73. Signal Process PWB (Component Side)
[PWB ⚠3 Mark: From 2nd lot]

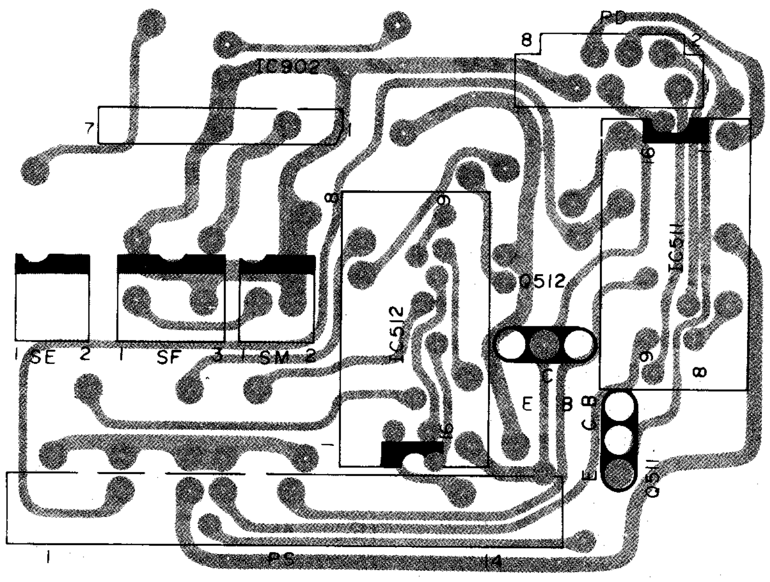


Figure 78. Pulse Unit PWB (Component Side)
[1st lot only]

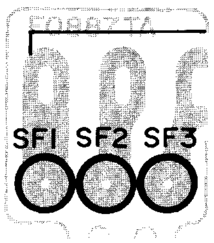


Figure 79. Ext. Mic Jack PWB (Wiring Side)

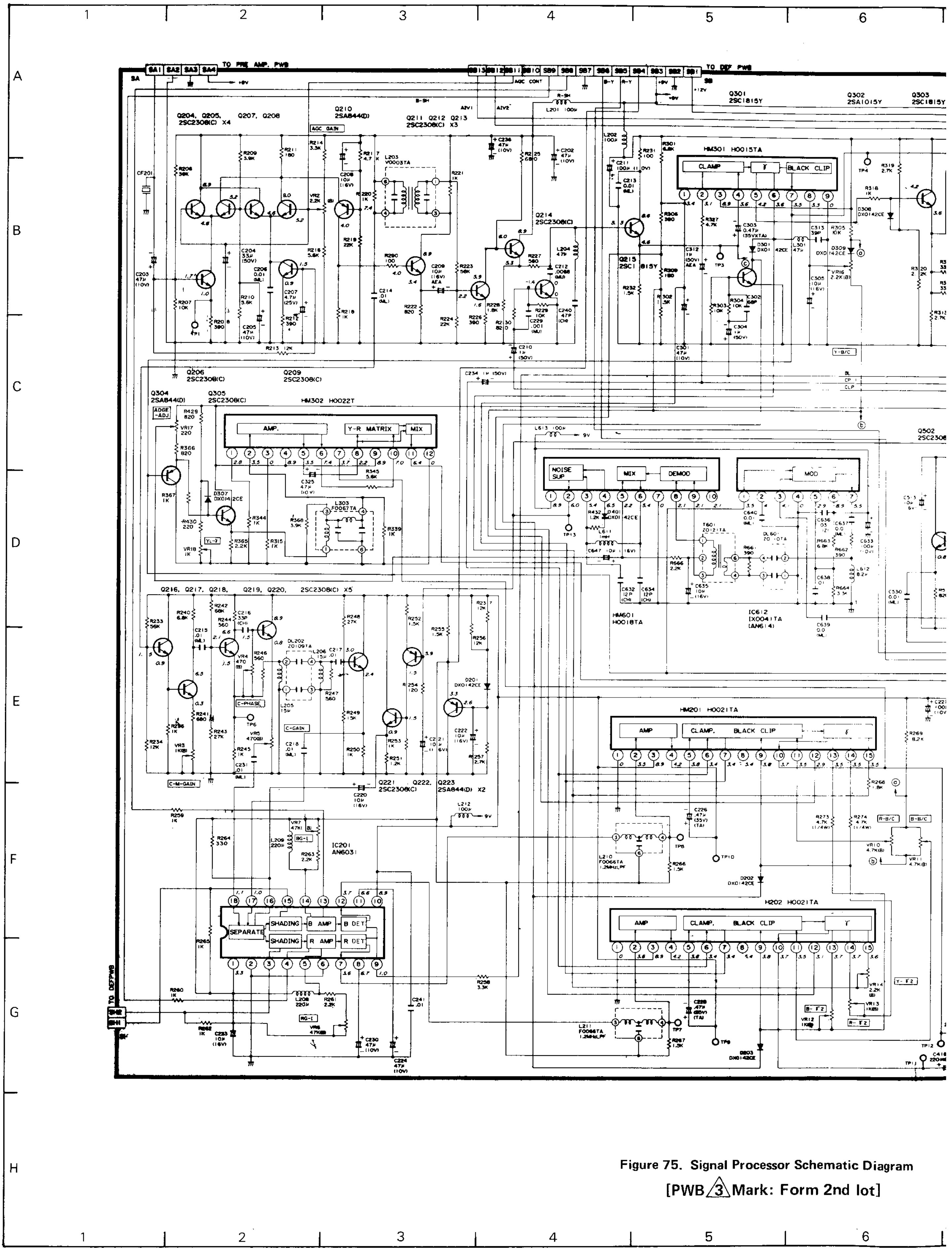
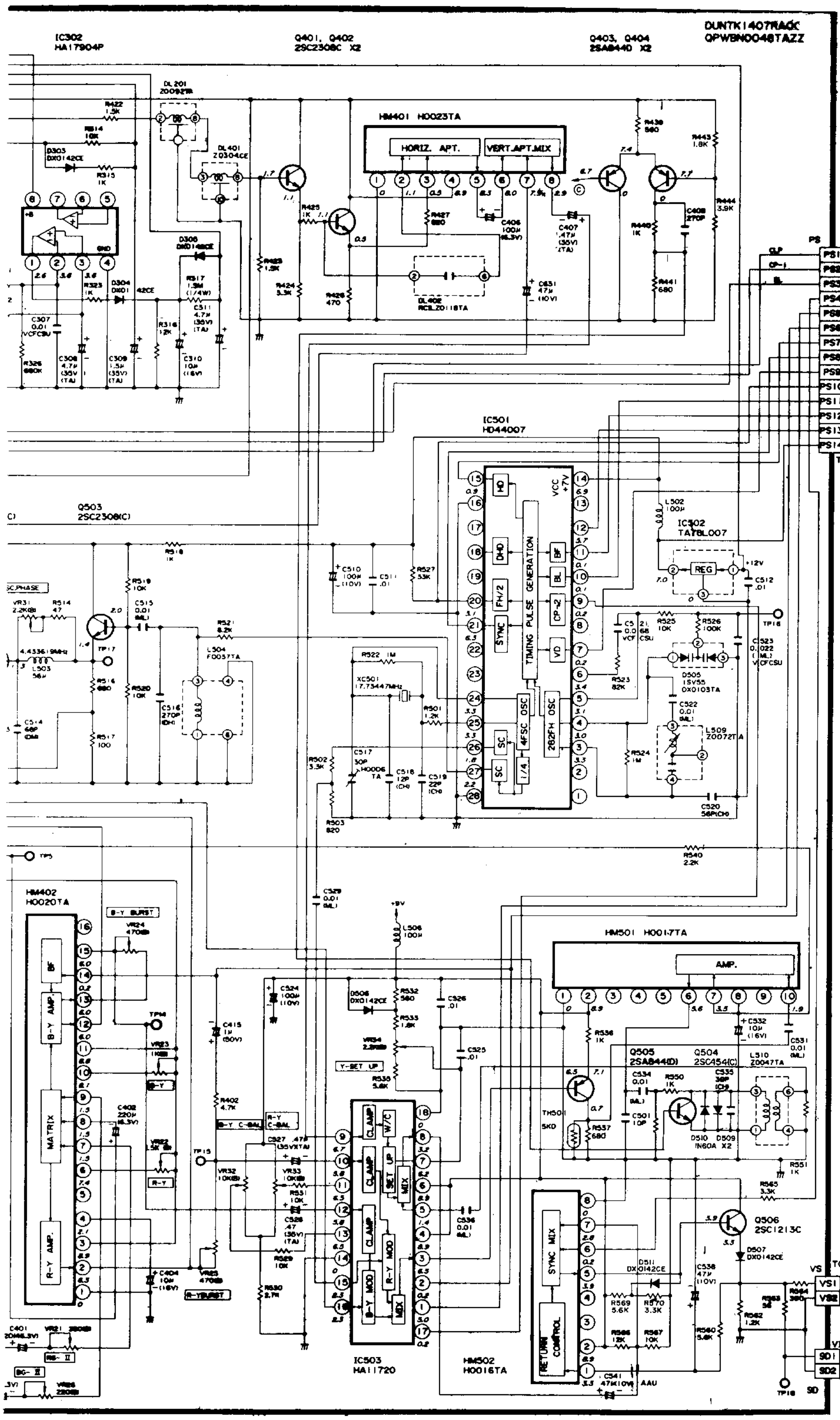
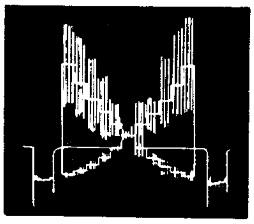


Figure 75. Signal Processor Schematic Diagram
[PWB 3 Mark: Form 2nd lot]

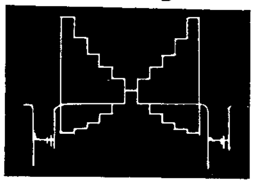
7 8 9 10 11 12



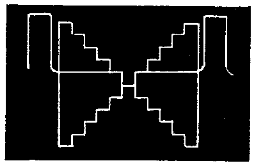
TP1(H)0.25Vpp Ⓖ



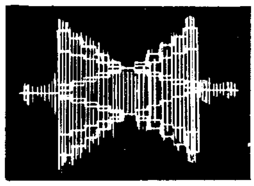
TP3(H)1.0Vpp Ⓖ



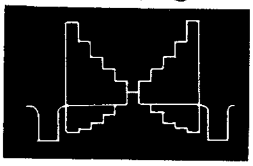
TP5(H)0.38Vpp Ⓖ



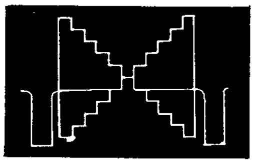
TP6(H)0.8Vpp Ⓖ



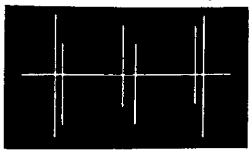
TP7(H)0.6Vpp Ⓖ
TP8(H)0.6Vpp Ⓖ
TP9(H)1.4Vpp Ⓖ
TP10(H)1.4Vpp Ⓖ



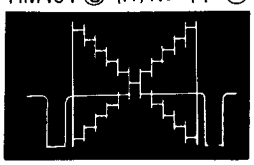
TP4(H)0.45Vpp Ⓖ
TP11(H)0.35Vpp Ⓖ
TP12(H)0.35Vpp Ⓖ



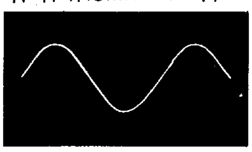
TP13 (V) 0.12Vpp Ⓖ



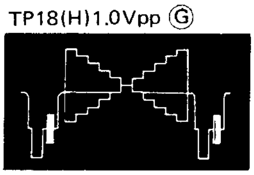
HM401 ⑧ (H)1.5Vpp Ⓖ



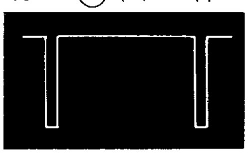
TP 17 4.43MHz 0.8Vpp



TP18(H)1.0Vpp Ⓖ



IC501 ㉑ (H)7.0Vpp



A B C D E F G H

7 8 9 10 11 12

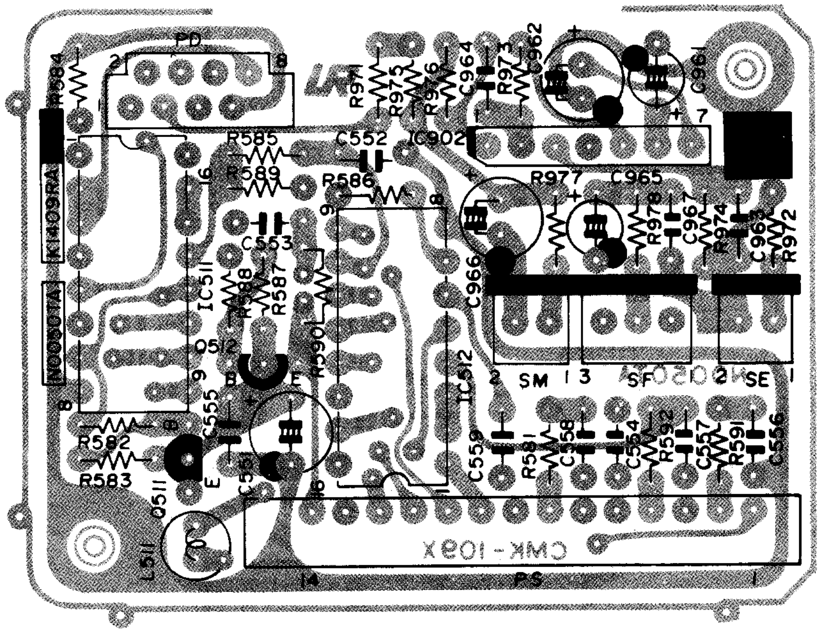


Figure 76. Pulse Unit PWB (Component Side)
[1st lot only]

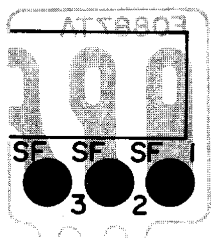
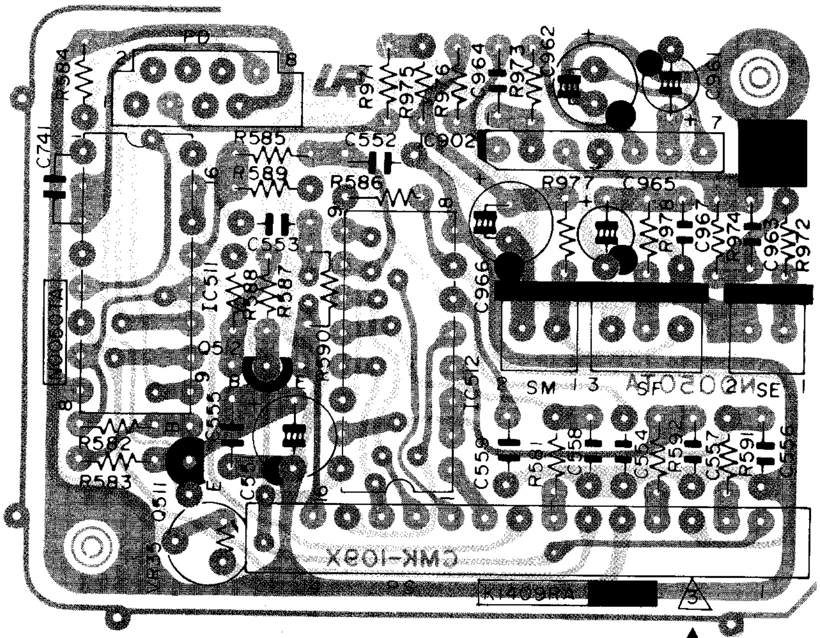


Figure 77. Ext. Mic Jack BWB (Component Side)



△3 Mark: Form 2nd lot.

Figure 81. Pulse Unit PWB (Wiring Side)
[PWB △3 Mark: From 2nd lot]

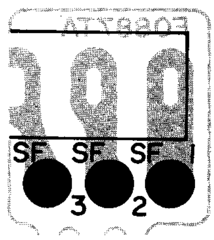
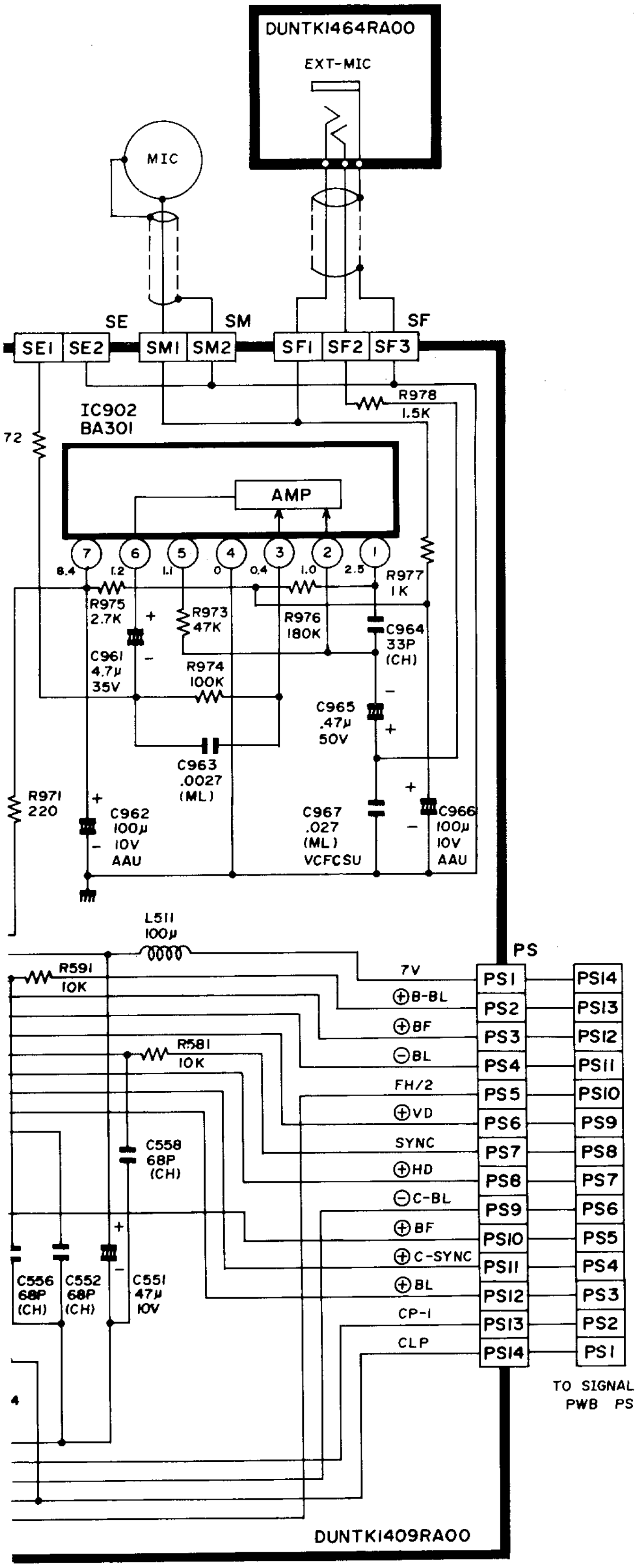
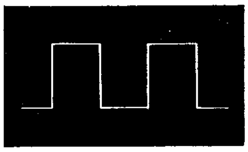


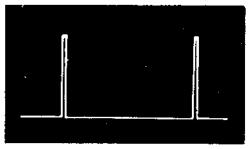
Figure 82. Ext. Mic Jack PWB (Component Side)



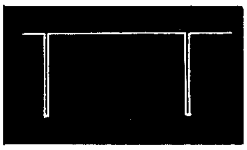
IC511 ① (H)5.5Vpp
IC511 ③ (H)5.5Vpp



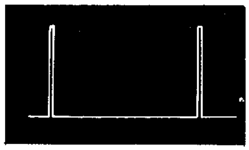
IC512 ⑨ (H)6.0Vpp



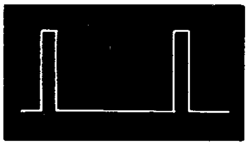
IC511 ⑨ (V)7.0Vpp



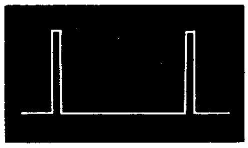
IC512 ⑤ (H)3.0Vpp



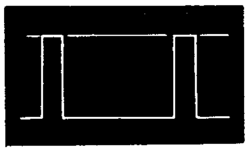
Q511 Ⓔ (H)5.5Vpp



IC512 ⑪ (H)6.2Vpp



IC512 ⑬ (H)7.0Vpp



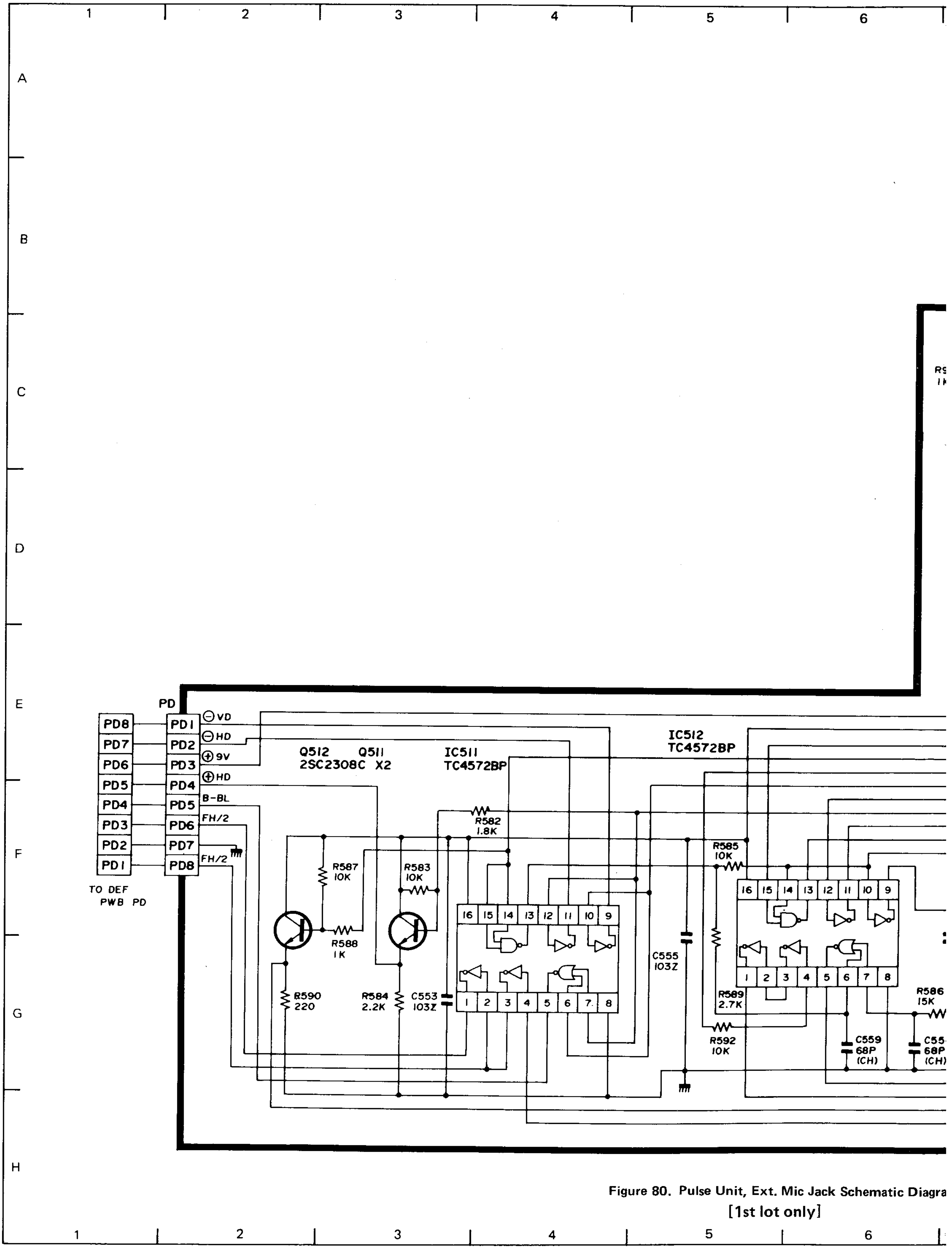


Figure 80. Pulse Unit, Ext. Mic Jack Schematic Diagra
[1st lot only]

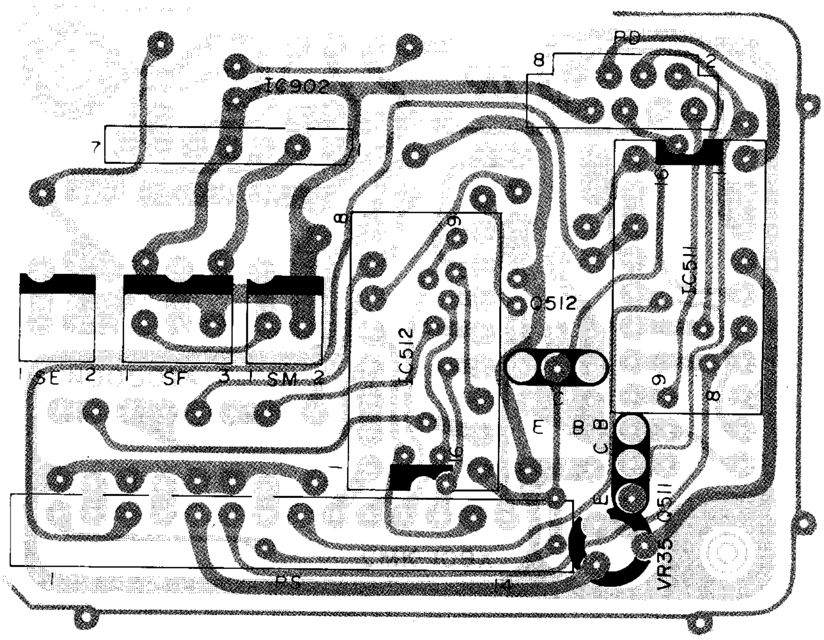


Figure 83. Pulse Unit PWB (Wiring Side)
[PWB △3 Mark: Form 2nd lot]

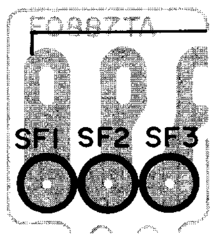


Figure 84. Ext. Mic Jack PWB (Wiring Side)

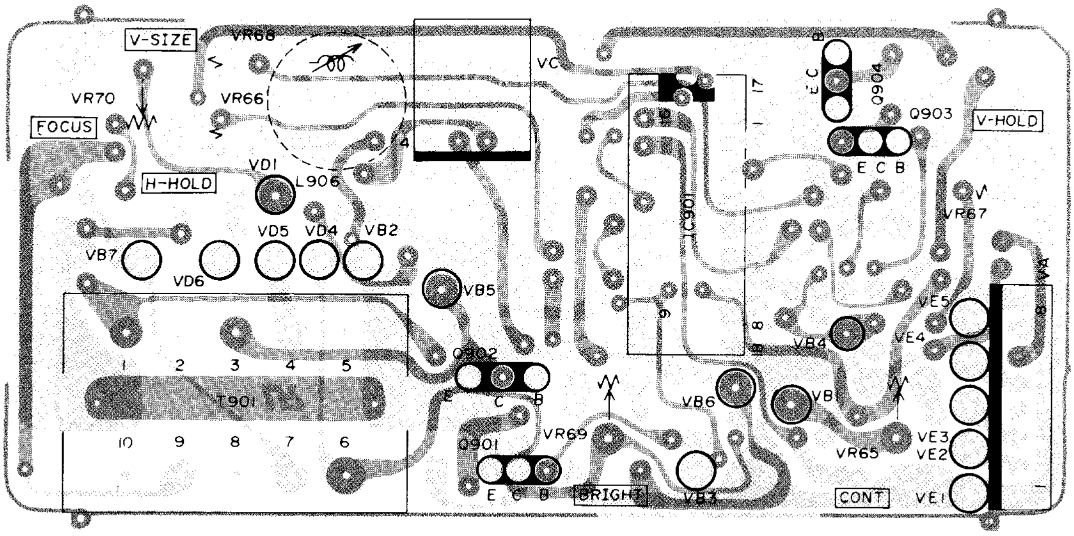


Figure 89. Deflection PWB (V/F) (Wiring Side)

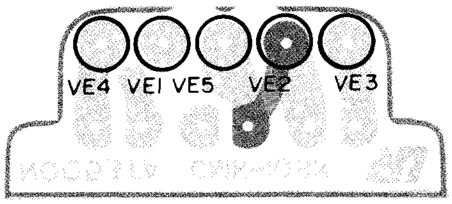


Figure 90. LED Indicator PWB (V/F) (Wiring Side)

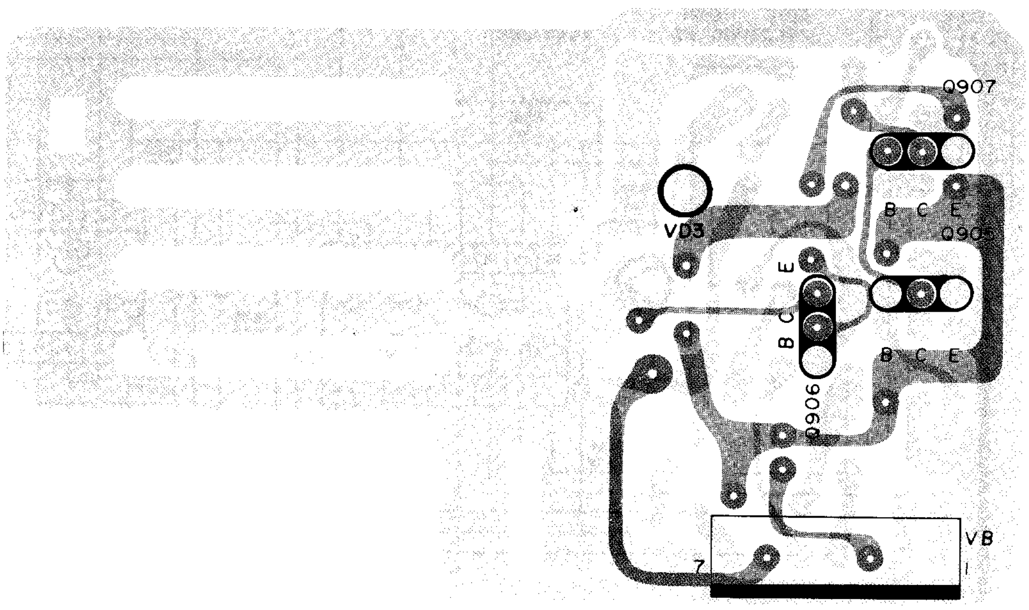


Figure 91. Signal Process PWB (V/F) (Wiring Side)

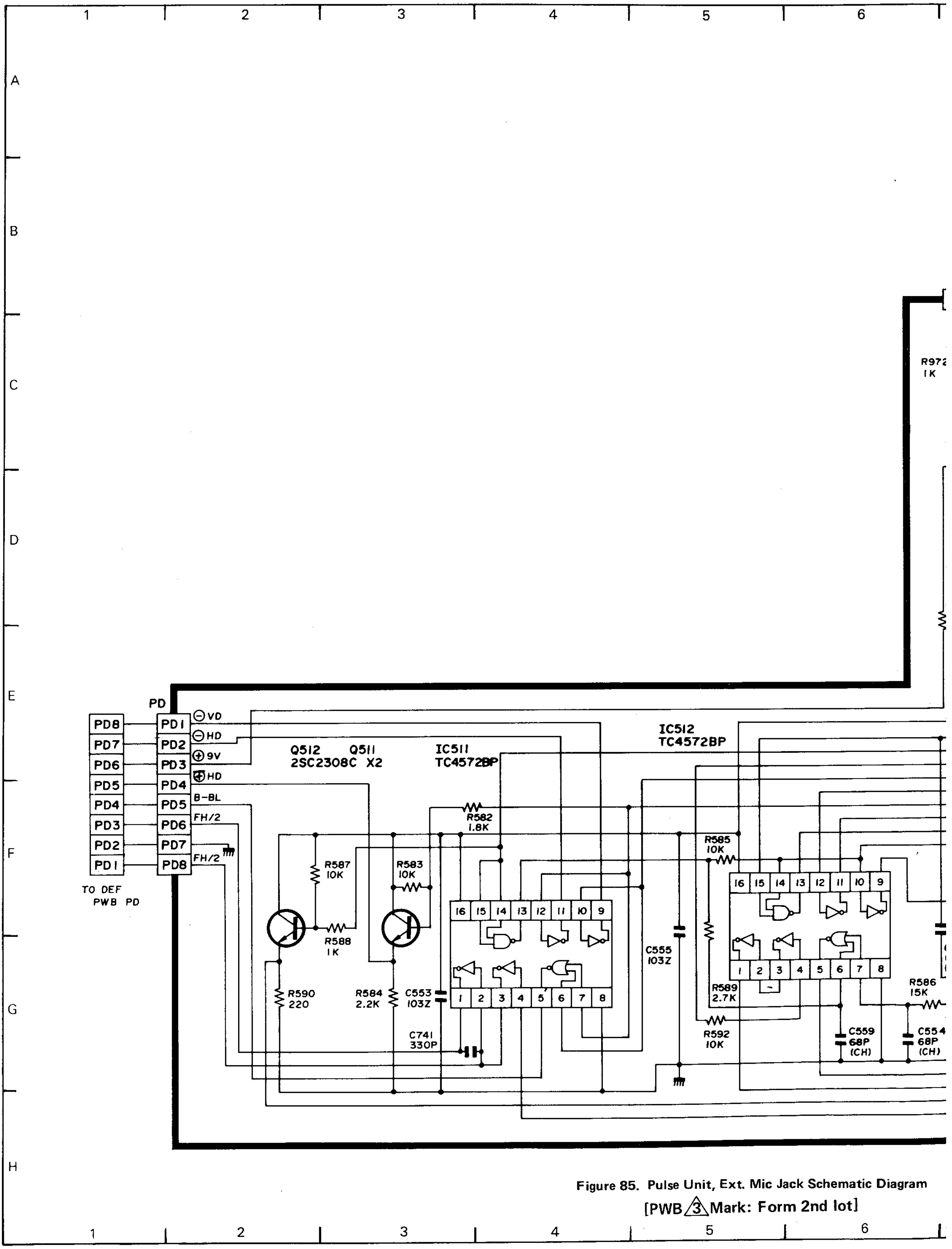
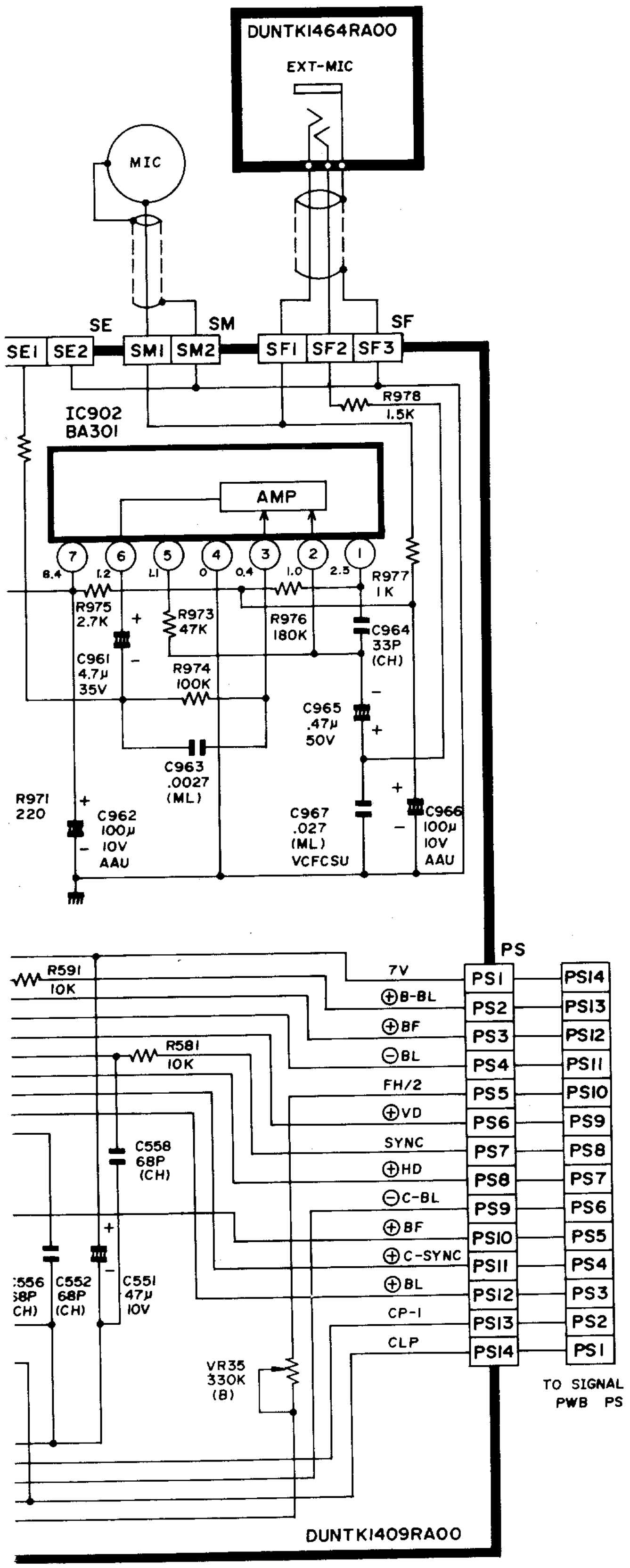
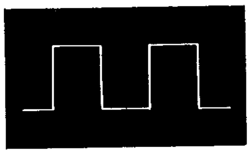


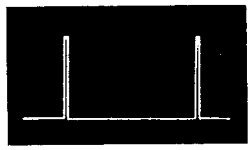
Figure 85. Pulse Unit, Ext. Mic Jack Schematic Diagram
[PWB 3 Mark: Form 2nd lot]



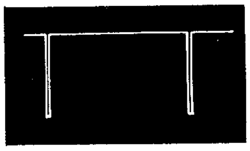
IC511 ① (H)5.5Vpp
IC511 ③ (H)5.5Vpp



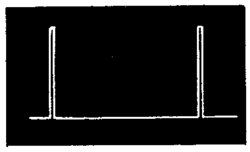
IC512 ⑨ (H)6.0Vpp



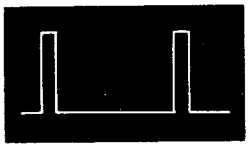
IC511 ⑨ (V)7.0Vpp



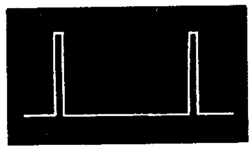
IC512 ⑤ (H)3.0Vpp



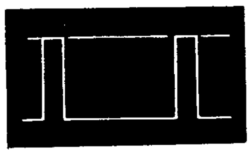
Q511 Ⓔ (H)5.5Vpp



IC512 ⑪ (H)6.2Vpp



IC512 ⑬ (H)7.0Vpp



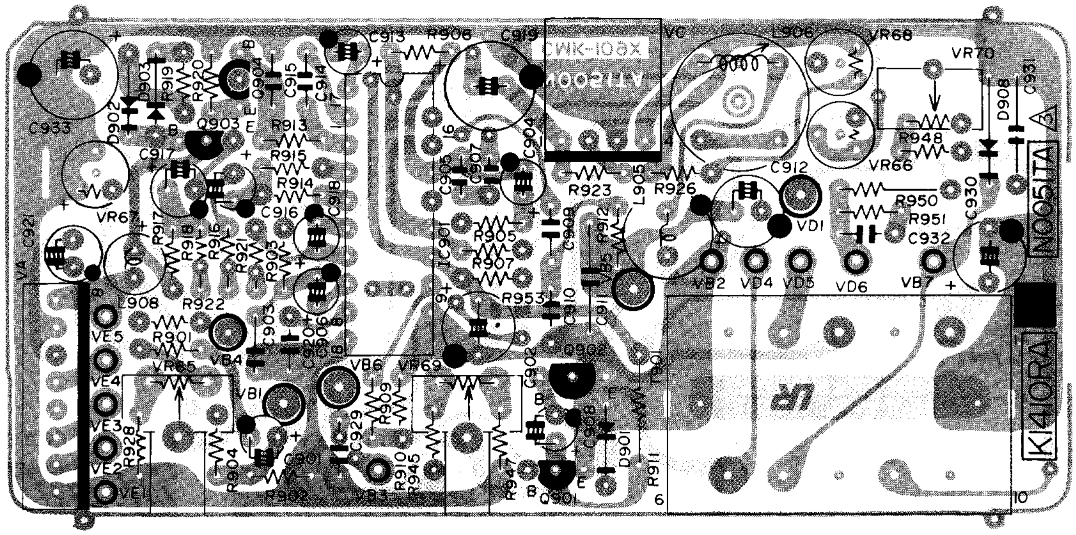


Figure 86. Deflection PWB (V/F) (Component Side)

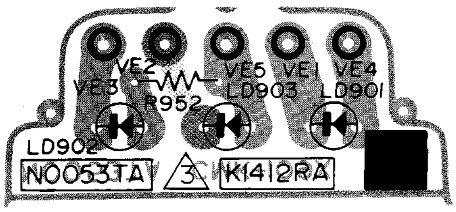


Figure 87. LED Indicator PWB (V/F) (Component Side)

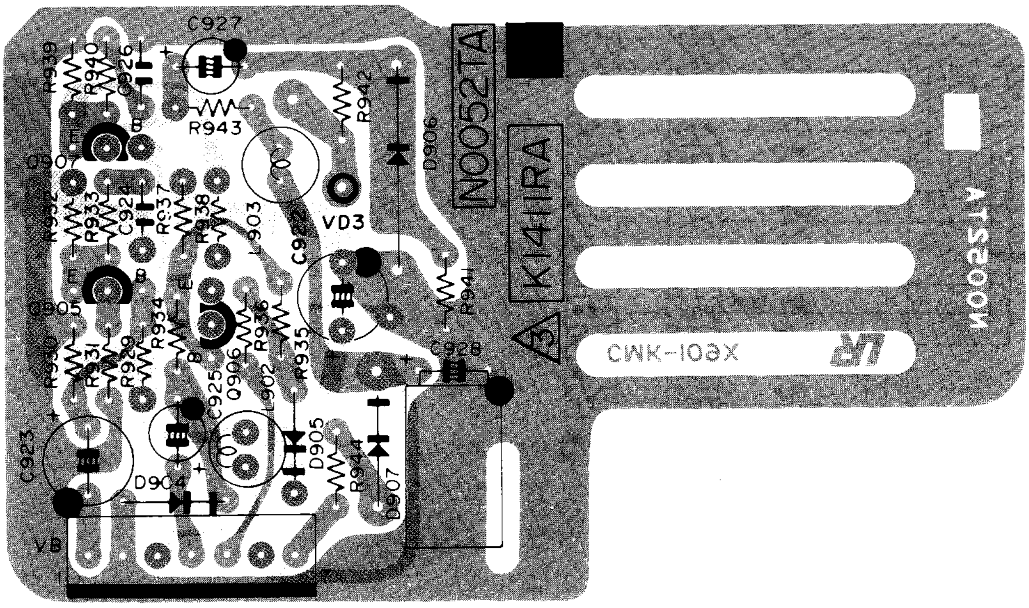


Figure 88. Signal Process PWB (V/F) (Component Side)

INTEGRATED CIRCUITS

Ref. No.	Part No.	Description	Code
IC201	VHiAN6031//-1	Chroma Separator & Detector	AS
IC302	VHiHA17904PS1	AGC Delay	AK
IC501	VHiHD44007/-1	Sync Generator	BM
IC502	RH-iX0047TAZZ	+7V Regulator	AG
IC503	VHiHA11720/-1	Encoder	AY
IC511	VHiTC4572BP-1	Pulse Former	AK
IC512	VHiTC4572BP-1	Pulse Former	AK
IC601	RH-iX0072TAZZ	Analog Memory	AZ
IC602	RH-iX0072TAZZ	Analog Memory	AZ
IC603	VHiNJM4558D-1	White Balance Op-Amp.	AH
IC604	VHiHA17904PS1	Iris Control Output	A
IC605	VHiHA17904PS1	Auto Gain Control Output	AK
IC612	RH-iX0041TAZZ	Modulator	AL
IC701	VHiTA75558S-1	Blue Shading Amp.	AH
IC702	VHiTA75558S-1	Red Shading Amp.	AH
IC703	RH-iX0054CEZZ	Horiz. Linearity Controller	AK
IC704	VHiAN374P//-1	Vert. Deflection Output	AH
IC901	RH-iX0065CEZZ	Sep. Vert. & Horiz. Osc. and Drive	AM
IC902	VHiBA301///-1	Audio Amplifier	AF
IC911	VHiDN819///-1	Flip Flop	AG
IC912	RH-iX0066TAZZ	9V Regulator Output	AH

HIMIC

Ref. No.	Part No.	Description	Code
HM101	RMPTH0013TAZZ	Pre-Amp.	AR
HM201	RMPTH0021TAZZ	Red Ch. Colour Signal Processor	AT
HM202	RMPTH0021TAZZ	Blue Ch. Colour Signal Processor	AT
HM301	RMPTH0015TAZZ	Video Signal Processor	AT
HM302	RMPTH0022TAZZ	Y_L Amp.	AR
HM401	RMPTH0023TAZZ	Horiz. Aperture Collection	AP
HM402	RMPTH0020TAZZ	R–Y, B–Y, Matrix	AQ
HM501	RMPTH0017TAZZ	Chroma Amp.	AP
HM502	RMPTH0016TAZZ	Composite Video	AP
HM601	RMPTH0018TAZZ	Vert. Aperture	AP

DIODES

Ref. No.	Part No.	Description	Code
D101	VHD1S1555//-1	Thermal Compensation	AA
D201	RH-DX0142CEZZ	Thermal Compensation	AB
D202, 203	RH-DX0142CEZZ	Clipper	AB
D301, 302	RH-DX0142CEZZ	Detector	AB
D303	RH-DX0142CEZZ	Rectifier	AB
D304, 305	RH-DX0142CEZZ	AGC Delay	AB
D307	RH-DX0142CEZZ	Gamma Correction	AB
D308	RH-DX0142CEZZ	Iris Gamma Correction	AB
D309, 401	RH-DX0142CEZZ	Thermal Compensation	AB
D505	RH-DX0103TAZZ	FH Frequency Control	AF
D506	RH-DX0142CEZZ	Thermal Compensation	AB
D507	RH-DX0142CEZZ	Switching	AB
D511	RH-DX0142CEZZ	White Clipper	AB
D601	RH-DX0142CEZZ	Thermal Compensation	AB
⚠ D602	RH-EX0048CEZZ	Zener Diode	AB
D603	RH-DX0142CEZZ	Starter	AB
D604	RH-DX0118TAZZ	Alarm Level Osc.	AE
D701	RH-DX0142CEZZ	Horiz. Sawtooth Wave Generator	AB
D702	RH-DX0142CEZZ	Driver	AB
D703	RH-DX0142CEZZ	Protector	AB
⚠ D704	RH-DX0119TAZZ	Damper	AD
D801, 802	RH-DX0142CEZZ	Protector	AB
D803	VHD1S1553//-1	Rectifier	AB
D901	RH-DX0142CEZZ	Switching	AB
D902	RH-DX0142CEZZ	Protector	AB
D903	RH-DX0142CEZZ	Bias	AB
D904	RH-DX0142CEZZ	Vert. Blanking	AB
D905	RH-DX0142CEZZ	Horiz. Blanking	AB
D906	RH-DX0038CEZZ	Rectifier	AB
D907	RH-DX0123CEZZ	Rectifier	AC
D908	RH-DX0123CEZZ	Damper	AC
D911	VHD1S1555//-1	Protector	AA
D912	VHD1S1555//-1	Protector	AA

LED AND OTHER PARTS

Ref. No.	Part No.	Description	Code
LD901	RH-PX0023TAZZ	Yellow LED, Iris Under Indicator	AD
LD902	RH-PX0012TAZZ	Red LED, Battery Alarm Indicator	AC
LD903	RH-PX0011TAZZ	Green LED VTR Start/Stop	AD
TH601	VHHD2BS////-1	Thermistor, Thermal Compensation	AB
XC501	RCRSB0008CEZZ	Crystal 17.73MHz	AP

COILS

Ref. No.	Part No.	Description	Code
⚠ D-Y	RCiLH4088TAZZ	Deflection Yoke	BH
L101	RCiLP0043TAZZ	100μH, Decoupling	AB
L102	RCiLZ0114TAZZ	Percival	AQ
L201, 202	RCiLP0043TAZZ	100μH, Decoupling	AB
L203	RCiLV0003TAZZ	3.58MHz Band Pass Filter	AF
L204	RCiLP0053TAZZ	47μH, 3.58MHz Trap Filter	AC
L205, 206	RCiLP0052TAZZ	15μH, Imp-Matching	AC
L208, 209	RCiLP0064TAZZ	220μH, Imp-Matching	AD
L210, 211	RCiLF0066TAZZ	1.2MHz Low Pass Filter	AF
L212	RCiLP0043TAZZ	100μH, Decoupling	AB
L301	RCiLP0053TAZZ	47μH, Trap	AC
L303	RCiLF0067TAZZ	1.2MHz Low Pass Filter	AF
L502	RCiLP0043TAZZ	100μH, Decoupling	AB
L503	RCiLP0062TAZZ	56μH, Phase Shift	AC
L504	RCiLF0037TAZZ	4.43 Band Pass Filter	AD
L506	RCiLP0043TAZZ	100μH, Decoupling	AB
L509	RCiLZ0072TAZZ	4.43MHz Osc.	AD
L510	RCiLZ0047TAZZ	4.43MHz Band Pass Filter	AE
L510	RCiLZ0132TAZZ	4.43MHz Band Pass Filter	AE
L511	RCiLP0043TAZZ	100μH, Decoupling	AB
L601	RCiLP0043TAZZ	100μH, Decoupling	AC
L611	RCiLP0045TAZZ	1mH, Filter	AC
L612	RCiLP0055TAZZ	8.2μH, Imp-Matching	AC
L613	RCiLP0043TAZZ	100μH, Decoupling	AB
L701	RCiLP0043TAZZ	100μH, Decoupling	AC
L702	RCiLP0045TAZZ	1mH, Decoupling	AC
L703	RCiLP0060TAZZ	22mH, Choke	AF
L704	RCiLP0059TAZZ	22mH, Choke	AE
L705	RCiLP0045TAZZ	1mH, Decoupling	AC

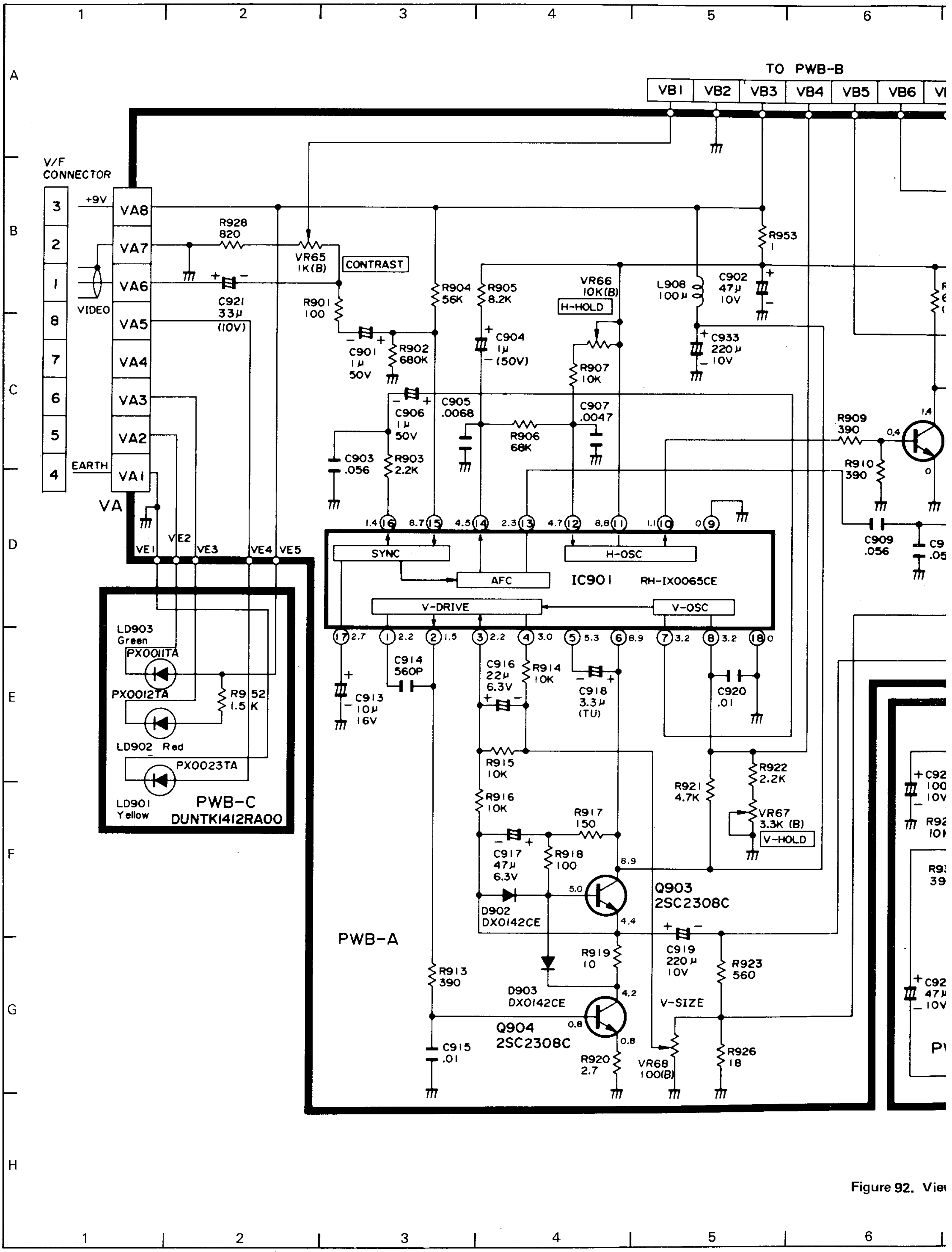
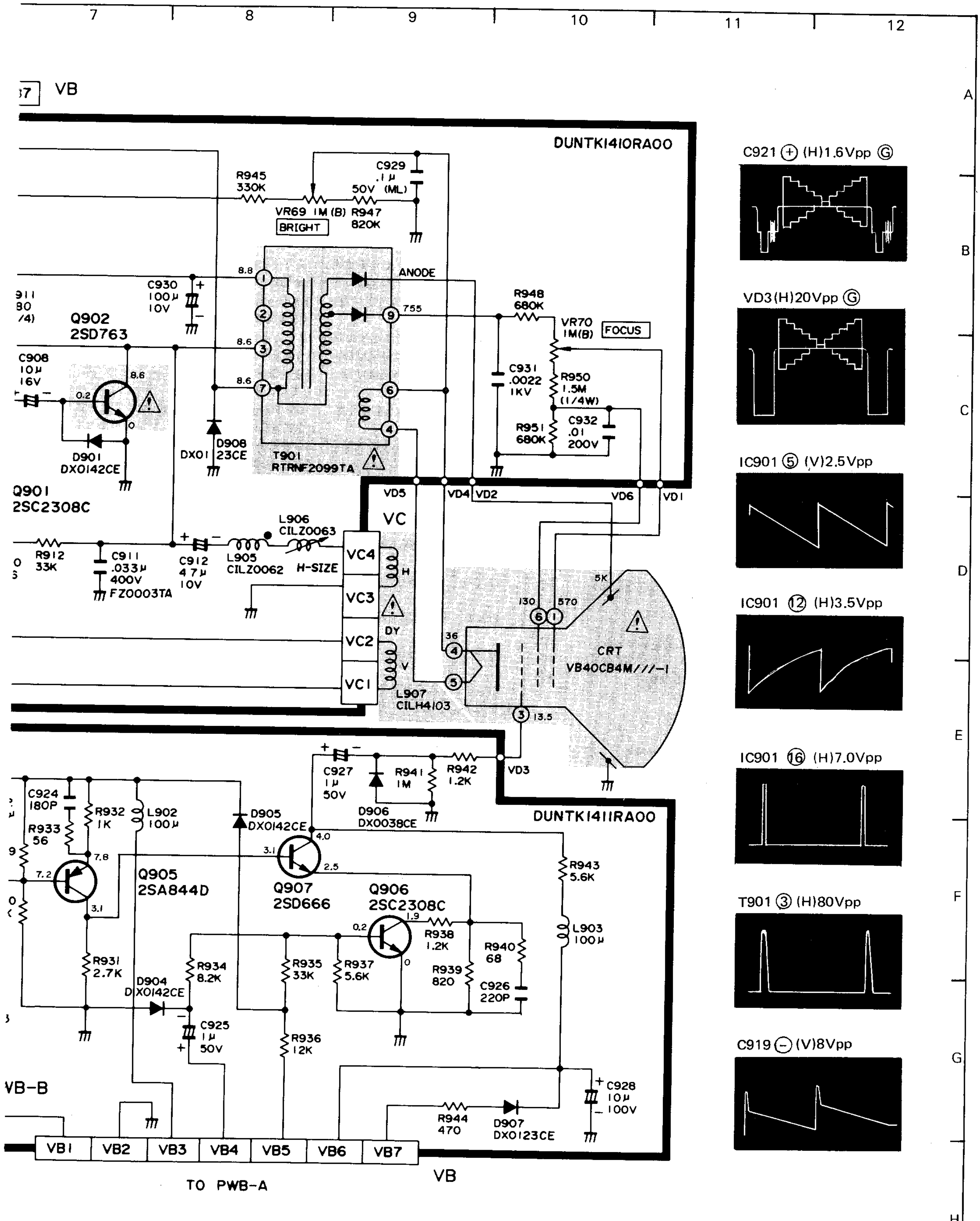


Figure 92. Vie



v Finder Schematic Diagram

REPLACEMENT PARTS LIST

It is recommended to use genuine factory SHARP replacement parts to assure fine performance.

"How to order Replacement parts"

To have your order filled promptly and correctly, please furnish the following informations.

1. Model Number
2. Ref. No.
3. Part No.
4. Description

Ref. No.	Part No.	Description	Code
		TUBE	
⚠	VVVH4105///-1	SATICON	**
⚠	VB40CB4 ///-1	CRT 1.5 inch	BR
		TRANSISTORS	
Q101,	VS2S–218-Q/1A	1st Pre-Amp. [2SK218(Q)]	AQ
Q204, 205, 206, 207, 208, 209	VS2SC2308CF1E	Auto Gain Control [2SC2308(C)]	AB
210	VS2SA844-D/-1	Auto Gain Control [2SA844(D)]	AC
211, 212, 213	VS2SC2308CF1E	Y Signal Amp. [2SC2308(C)]	AB
214	VS2SC2308CF1E	Cleaning Pulse [2SC2308(C)]	AB
215	VS2SC1815YW1E	Y Signal Amp. [2SC1815(Y)]	AB
216, 217, 218, 219	VS2SC2308CF1E	Chroma Signal Amp. [2SC2308(C)]	AB
220	VS2SC2308CF1E	Chroma Signal Output [2SC2308(C)]	AB
Q221	VS2SC2308CF1E	Edge Correction Amp. [2SC2308(C)]	AB
Q222	VS2SA844-D/-1	Edge Correction Amp. [2SA844(D)]	AC
Q223	VS2SA844-D/-1	Voltage Regulator [2SA844(D)]	AC
Q301	VS2SC1815YW1E	Blanking Pulse [2SC1815(Y)]	AB
Q302	VS2SA1015Y/2E	White Clip [2SA1015(Y)]	AC
Q303	VS2SC1815YW1E	Y Signal Amp. [2SC1815(Y)]	AB
Q304	VS2SA844-D/-1	Y Signal Amp. [2SA844(D)]	AC
Q305	VS2SC2308CF1E	Y Signal Amp. [2SC2308(C)]	AB
Q401	VS2SC2308CF1E	Aperture Collection Signal Input Amp. [2SC2308(C)]	AB
Q402	VS2SC2308CF1E	Aperture Collection Amp. [2SC2308(C)]	AB
Q403, 404	VS2SA844-D/-1	Green Killer [2SA844(D)]	AC
Q502	VS2SC2308CF1E	Subcarrier Output [2SC2308(C)]	AB
Q503	VS2SC2308CF1E	Subcarrier Input [2SC2308(C)]	AB
Q504	VS2SC454-C/3A	Green Killer [2SC454(C)]	AB
Q505	VS2SA844-D/-1	Chroma Buffer [2SA844(D)]	AC
Q506	VS2SC1213CF1E	Conpsite Video [2SC1213(C)]	AC
Q511	VS2SC2308CF1E	HD Output [2SC2308(C)]	AB
Q512	VS2SC2308CF1E	Cleaning Pulse Output [2SC2308(C)]	AB
Q601	VS2SC1815YW1E	B–Y Modulator [2SC1815(Y)]	AB
Q602	VS2SC1815YW1E	–Y Modulator [2SC1815(Y)]	AB
Q603	VS2SC1213CF1E	Iris Driver [2SC1213(C)]	AC
Q604	VS2SA1015Y/2E	Iris level Input Amp. [2SA1015(Y)]	AC
Q605	VS2SC1815YW1E	Iris Level Amp. [2SC1815(Y)]	AB
Q606	VS2SC458-D/1A	+9V Error Amp. [2SC458(D)]	AB
Q607	VS2SC458-D/1A	+9V Current Limitter [2SC458(D)]	AB
Q608	VS2SC458-D/1A	+9V Regulator Drive Amp. [2SC458(D)]	AB
⚠ Q609	VS2SC1983//-1	+9V Regulator Output [2SC1983]	AH
Q610	VS2SC1815YW1E	Battery Alarm [2SC1815(Y)]	AB
Q702	VS2SC1815YW1E	Horiz. Pulse Amp. [2SC1815(Y)]	AB
Q703	VS2SC1815YW1E	Horiz. Sawtooth Amp. [2SC1815(Y)]	AB
Q704	VS2SA1015Y/2E	Horiz. Parabora Amp. [2SA1015(Y)]	AC
Q705	VS2SC1815YW1E	Horiz. Parabora Amp. [2SC1815(Y)]	AB
Q706	VS2SC1815YW1E	Dinamic Focus Amp. [2SC1815(Y)]	AB
Q707	VS2SC1213CF1E	Horiz. Driver [2SC1213(C)]	AC
⚠ Q708	VS2SD763///1A	Horiz. Output [2SD763]	AE
Q709	VS2SA1015Y/2E	Vert. Driver [2SA1015(Y)]	AC
Q802, 803	VS2SD763///1A	High Voltage Converter Output [2SD763]	AE
Q804	VS2SA639S//1E	Saticon-Blanking Output Amp. [2SA639S]	AE
Q805	VS2SA639S//1E	Beam Protector [2SA639S]	AE
Q901	VS2SC2308CF1E	Horiz. Driver [2SC2308(C)]	AB
⚠ Q902	VS2SD763///1A	Horiz. Output [2SD763]	AF
Q903, 904	VS2SC2308CF1E	Vert. Output [2SC2308(C)]	AB
Q905	VS2SA844-D/-1	Video Buffer Amp. [2SA844(D)]	AB
Q906	VS2SC2308CF1E	Blanking Pulse Mixer [2SC2308(C)]	AB
Q907	VS2SD666-C/-1	Video Output [2SD666]	AD
Q911	VS2SC1815YW1E	VTR S/S Switching [2SC1815(Y)]	AB
Q912, 913	VS2SC1815YW1E	Power Zoom Switching [2SC1815(Y)]	AB

Ref. No.	Part No.	Description	Code
L801	RCiLP0063TAZZ	470μH, Decoupling	AE
L902	RCiLP0043TAZZ	100μH, Decoupling	AB
L903	RCiLP0043TAZZ	100μH, Filter	AB
L905	RCiLZ0062TAZZ	Horiz. – Lineality	AF
L906	RCiLZ0063TAZZ	Horiz. – Size	AG
⚠ L907	RCiLH4103TAZZ	Deflection Yoke	AX
L908	RCiLP0043TAZZ	100μH, Decoupling	AB
L911	RCiLP0043TAZZ	100μH, Decoupling	AB

DELAY LINES

Ref. No.	Part No.	Description	Code
DL201	RCiLZ0092TAZZ	0.4μ sec	AL
DL202	RCiLZ0109TAZZ	1H	AU
DL401	RCiLZ0304CEZZ	0.3μ sec	AK
DL402	RCiLZ0118TAZZ	0.15μ sec	AH
DL601	RCiLZ0110TAZZ	1H	AU

TRANSFORMERS

Ref. No.	Part No.	Description	Code
T601	RCiLZ0121TAZZ	Matching Transformer	AD
⚠ T801	RTRNZ0024TAZZ	High-Voltage Convertor	BC
⚠ T901	RTRNF2099TAZZ	High-Voltage Convertor	BD

CONTROLS

Ref. No.	Part No.	Description	Code
VR2	RVR-M7131TAZZ	2.2k ohm, AGC Gain	AC
VR3	RVR-M7129TAZZ	1k ohm, Carrier Master Gain	AC
VR4	RVR-M7127TAZZ	470 ohm, Colour Phase	AC
VR5	RVR-M7127TAZZ	470 ohm, Colour Gain	AC
VR6	RVR-B7054TAZZ	47k ohm, Red Gain I	AD
VR7	RVR-B7054TAZZ	47k ohm, Blue Gain I	AD
VR10	RVR-M7133TAZZ	4.7k ohm, Red-Black Clip	AC
VR11	RVR-M7133TAZZ	4.7k ohm, Blue-Black Clip	AC
VR12	RVR-M7131TAZZ	2.2k ohm, Blue-Gamma II	AC
VR13	RVR-M7131TAZZ	2.2k ohm, Red-Gamma II	AC
VR14	RVR-M7133TAZZ	4.7k ohm, Y-Gamma II	AC
VR16	RVR-M7131TAZZ	2.2k ohm, Y-Black Clip	AC
VR17	RVR-M7125TAZZ	220 ohm, Edge Adjustment	AC
VR18	RVR-M7129TAZZ	1k ohm, YL-γ	AC
VR21	RVR-M7125TAZZ	220 ohm, Red Gain II	AC
VR22	RVR-M7129TAZZ	1k ohm, R–Y Gain	AC
VR23	RVR-M7129TAZZ	1k ohm, B–Y Gain	AC
VR24	RVR-M7127TAZZ	470 ohm, B–Y Burst	AC
VR25	RVR-M7127TAZZ	470 ohm, R–Y Burst	AC
VR26	RVR-M7125TAZZ	220 ohm, Blue Gain II	AC
VR31	RVR-M7131TAZZ	2.2k ohm, Subcarrier Phase	AC
VR32	RVR-M7133TAZZ	10k ohm, B–Y Carrier Balance	AC
VR33	RVR-M7133TAZZ	10k ohm, R–Y Carrier Balance	AC
VR34	RVR-M7131TAZZ	2.2k ohm, Y - Set Up	AC
VR35	RVR-M7144TAZZ	300k ohm, FH/2 Phase	AC
VR36	RVR-M7131TAZZ	2.2k ohm, Blue White Balance	AC
VR37	RVR-M7131TAZZ	2.2k ohm, Red White Balance	AC
VR38	RVR-M7129TAZZ	1k ohm, Iris Adjustment	AC
⚠ VR39	RVR-M7129TAZZ	1k ohm, 9V Adjustment	AC
VR40	RVR-M7129TAZZ	1k ohm, Battery Indicator Adjustment	AC
VR41	RVR-M7137TAZZ	22k ohm, Iris Under Adjustment	AC
VR44	RVR-M7129TAZZ	1k ohm, H-Linearity	AC
VR45	RVR-Z0020TAZZ	2.2k ohm x 4, Blue Shading Control Network	AN
VR46	RVR-Z0020TAZZ	2.2k ohm x 4, Red Shading Control Network	AN
VR47	RVR-M7129TAZZ	1k ohm, Dinamic Focus Horizontal Parabola	AC
VR48	RVR-M7129TAZZ	1k ohm, Dinamic Focus Horizontal Sawtooth	AC
VR49	RVR-M7129TAZZ	1k ohm, Dinamic Focus Vertical Sawtooth	AC
VR50	RVR-M7129TAZZ	1k ohm, Dinamic Focus Vertical Parabora	AC
VR51	RVR-M7154TAZZ	220 ohm, Horiz.-Size	AE
VR52	RVR-M7083TAZZ	2.2k ohm, Horiz.-Position	AE
VR53	RVR-M7138TAZZ	33k ohm, Vert.-Size	AC
VR54	RVR-M7137TAZZ	22k ohm, Vert.-Linearity	AC
VR55	RVR-M7160TAZZ	2.2k ohm, Vert.-Position	AE
VR59	RVR-B4210CEZZ	330k ohm, Beam	AE
VR60	RVR-B4113CEZZ	1M ohm, Focus	AE
VR65	RVR-B4120CEZZ	1k ohm, Contrast	AE
VR66	RVR-B7135TAZZ	10k ohm, Horiz.-Hold	AC
VR67	RVR-M7132TAZZ	3.3k ohm, Vert.-Hold	AC
VR68	RVR-M7123TAZZ	100 ohm, Vert.-Size	AC
VR69	RVR-B4256CEZZ	1M ohm, Brightness	AD
VR70	RVR-M7196TAZZ	1M ohm, Focus	AD

CAPACITORS

Ref. No.	Part No.	Description	Code
C102	RTσ-H0008TAZZ	30pF, Trimmer Capacitor	AD
C103	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C105	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C106	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C211	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C227	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C401	VCEAAA0JW227M	220μF, 6.3V, Electrolytic	AB
C402	VCEAAA0JW227M	220μF, 6.3V, Electrolytic	AB
C406	VCEAAA0JW107M	100μF, 6.3V, Electrolytic	AB
C416	VCEAAA0JW227H	100μF, 10V, Electrolytic	AB
C510	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C514	VCMYSA2AD680J	68pF, 100V, Mica	AD
C516	VCMYSA2AD271J	270pF, 100V, Mica	AD
C517	RTσ-H0006TAZZ	30pF, Trimmer Capacitor [H0006TA]	AD
C524	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C633	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C605	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C606	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C619	RC-EZ0019GEZZ	470μF, 10V, Electrolytic	AC
C711	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C712	RC-EZ0019GEZZ	470μF, 10V, Electrolytic	AC
C715	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C716	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C720	VCEAAA1AW227M	220μF, 10V, Electrolytic	AC
⚠ C721	VCQYSH2DM332K	0.0033μF, 200V, Polyester	AB
C722	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C723	RC-EZ0019GEZZ	470μF, 10V, Electrolytic	AC
C725	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C732	VCEAAA1AW227M	220μF, 10V, Electrolytic	AC
C733	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C734	RC-EZ0019GEZZ	470μF, 10V, Electrolytic	AC
C737	VCEAAU1AW337M	330μF, 10V, Electrolytic	AB
C804	RC-EZ0019GEZZ	470μF, 10V, Electrolytic	AC
C809	VCKYPB2HE103P	0.01μF, 500V, Ceramic	AB
C810	RC-FZ0002TAZZ	0.022μF, 400V, Metilized Polyester Film	AC
C811	RC-KZ0005TAZZ	0.01μF, 2kV, Ceramic	AD
C812	RC-KZ0005TAZZ	0.01μF, 2kV, Ceramic	AD
⚠ C814	RC-KZ0005TAZZ	0.01μF, 2kV, Ceramic	AD
⚠ C817	RC-KZ0005TAZZ	0.01μF, 2kV, Ceramic	AD

Ref. No.	Part No.	Description	Code
⚠ C818	RC-KZ0005TAZZ	0.01μF, 2kV, Ceramic	AD
C911	RC-FZ0003TAZZ	0.033μF, 200V, Metallized Polyester Film	AC
C919	RC-EZ0094TAZZ	220μF, 10V, Electrolytic	AD
C922	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C928	VCEAAA2AW106M	10μF, 100V, Electrolytic	AC
C930	VCEAAA1AW107M	100μF, 10V, Electrolytic	AB
C931	VCKYPU3AB222K	0.0022μF, 1kV, Ceramic	AC
C932	VCQYSH2DM103K	0.01μF, 200V, Polyester Film	AB
C933	RC-EZ0094TAZZ	220μF, 10V, Electrolytic	AD
C962	VCEAAU1AW107M	100μF, 10V, Electrolytic	AB
C966	VCEAAU1AW107M	100μF, 10V, Electrolytic	AB
C971, 972	RC-EZ0084TAZZ	470μF, 16V, Electrolytic	AC
	RESISTORS		
⚠ R647	VRN-RU3AAR47J	0.47 ohm, 1W, 5%, Metal Coating	AB
R723, 724, 725, 726	RR-DZ0008TAZZ	2.2k ohm x 4, Resistor Network	AD
⚠ R823	VRS-PU3DB270J	27 ohm, 2W, 5%, Oxide Metal Coating	AA
R982	RR-XZ0040TAZZ	5.6 ohm, ½W, Fusing Resistor	AC
	FUSE		
⚠ F601	QFS-C1221CEZZ	T1.25A/250V	AE
	SWITCHES		
SW601	QSW-S0030TAZZ	Back Light Compensation Switch	AG
SW602	QSW-S0030TAZZ	White Balance Auto/ Standard Selector	AG
SW603	QSW-P0056TAZZ	Auto White Setting Switch	AF
SW901	QSW-P0055TAZZ	VTR Start/Stop Switch	AF
SW902	QSW-S0042TAZZ	VTR Start/Stop Indicator Inverter	AG
SW903, 904	QSW-S0062TAZZ	Power Zoom Control Switch	AG
	PRINTED WIRING BOARD ASSEMBLIES		
	DUNTK1407RA00	Signal Processor Unit	–
	DUNTK1408RA00	Deflection Unit	–
	DUNTK1409RA30	Pulse Unit	–
	DUNTK1410RA00	Deflection Unit (View Finder)	–
	DUNTK1411RA00	Signal Processor Unit (View Finder)	–
	DUNTK1412RA00	LED Indicator Unit (View Finder)	–
	DUNTK1413RA00	Pre Amp. Unit	–
	DUNTK1414RA00	Saticon Socket Unit	–
	DUNTK1415RA20	VTR Start/Stop Unit	–
	DUNTK1416RA00	Switch Unit	–
	DUNTK1464RA00	Ext. Mic Jack Unit	–
	MISCELLANEOUS		
1	CCABA4937TA02	Camera CAB-A	AY
2	CCABB4937TA02	Camera CAB-B	AX
3	GCABC4788TAKB	Electronic View Finder CAB-C	AR
4	GCABD4788TAKB	Electronic View Finder CAB-D	AQ
5	GCōVH1042TASA	Upper Cover	AL
6	GCōVH7033TASA	Eye Piece	AG

Ref. No.	Part No.	Description	Code
7	GCōVH7034TASA	Side Cover	AC
8	GCōVH9094TA00	Mic Cover	AF
9	CANGH0034RA0S	Filter Set	AG
9-1	MLEVP0002TAKA	Filter Button	AC
9-2	HiNDM0323TASA	Filter Indicator	AB
17	CSW-P0062RA0S	Power Zoom Set	AG
11	GDAi-3013TAFC	External Mic Retaining Mount	AG
12	HBDGB0023TASA	SHARP Badge	AE
13	HDECA0523TASA	Side Badge	AG
14	HiNDM0336TASA	Control Indicator	AG
15	HiNDM0342TASA	Electronic View Finder LED Indicator	AC
16	JBTN-0001TASA	Start Switch Button	AE
17	JBTN-0002TASA	Power Zoom Button	AC
18	JBTN-0003TASA	White Balance Setting Button	AB
19	LANGF0236TAZZ	Reinforcement Angle	AF
20	LANGF0237TAZZ	Tripod Angle	AC
21	LANGK0132TAZZ	CAB Retaining Angle	AC
22	LANGK0151TAFF	E-V/F Stopper Angle	AB
23	LANGK0158TAZZ	Cord Stopper Angle	AB
24	LHLDK1018TA00	Cord Bushing	AC
25	LHLDK1045CEU0	E-V/F Cord Bushing	AC
26	MHNG-0010TAZZ	PWB Hinge	AA
27	LSTYM0001TA00	E-V/F Stopper Angle	AR
28	LX-NZ0049TAFF	Nut Tripod Retaining	AB
29	LX-NZ0055TAFF	E-V/F Rotation Nut	AN
30	LX-BZ0117TAFC	E-V/F Bolt	AP
31	LX-WZ0032TAFF	E-V/F Stopper Washer	AB
32	LHLDZ8004TA00	Mic Holder	AD
33	CLNS-0043TA01	Lens (6X Auto Focus, Auto Iris Power Zoom)	**
34	PLNS-0039TAZZ	E-V/F Lens	AG
35	PRDAF0212TAFW	Heat Radiator Cover	AH
36	PSLDM0265TAZZ	Preamp. Shield-A	AD
37	PSLDM0266TAZZ	Preamp. Shield-B	AC
38	PSLDM0288TAZZ	Target Shield	AC
39	PSPAG0035TAZZ	E-V/F Friction Washer	AC
40	PSPAG0037TA00	E-V/F Spacing Washer	AB
41	GCōVH7036TA00	Control Switch Cover	AC
42	LHLDZ1030TAZZ	Finder Pipe (F pipe)	AQ
43	MLEVP0003TA00	Zoom Lever	AD
44	GCōVH1051TA00	Lens Hood	AK
45	GCōVH1052TA00	Lens Cap	AH
46	RMiCC0002TAZZ	Mic	AG
47	QSōCV0031TAZZ	1.5 inch CRT Socket	AD
48	QSōCV0036TAZZ	Saticon Socket	AF
49	QJAKE0014TAZZ	Ext. Mic Jack	AD
50	TiNSE4941TAZZ	Instract Manual	AH
51	SPAKC4941TAZZ	Packing Case (XC-40G)	AM
52	SPAKC4943TAZZ	Packing Case (XC-40H)	AM
53	SPAKC4944TAZZ	Packing Case (XC-40Z)	AM

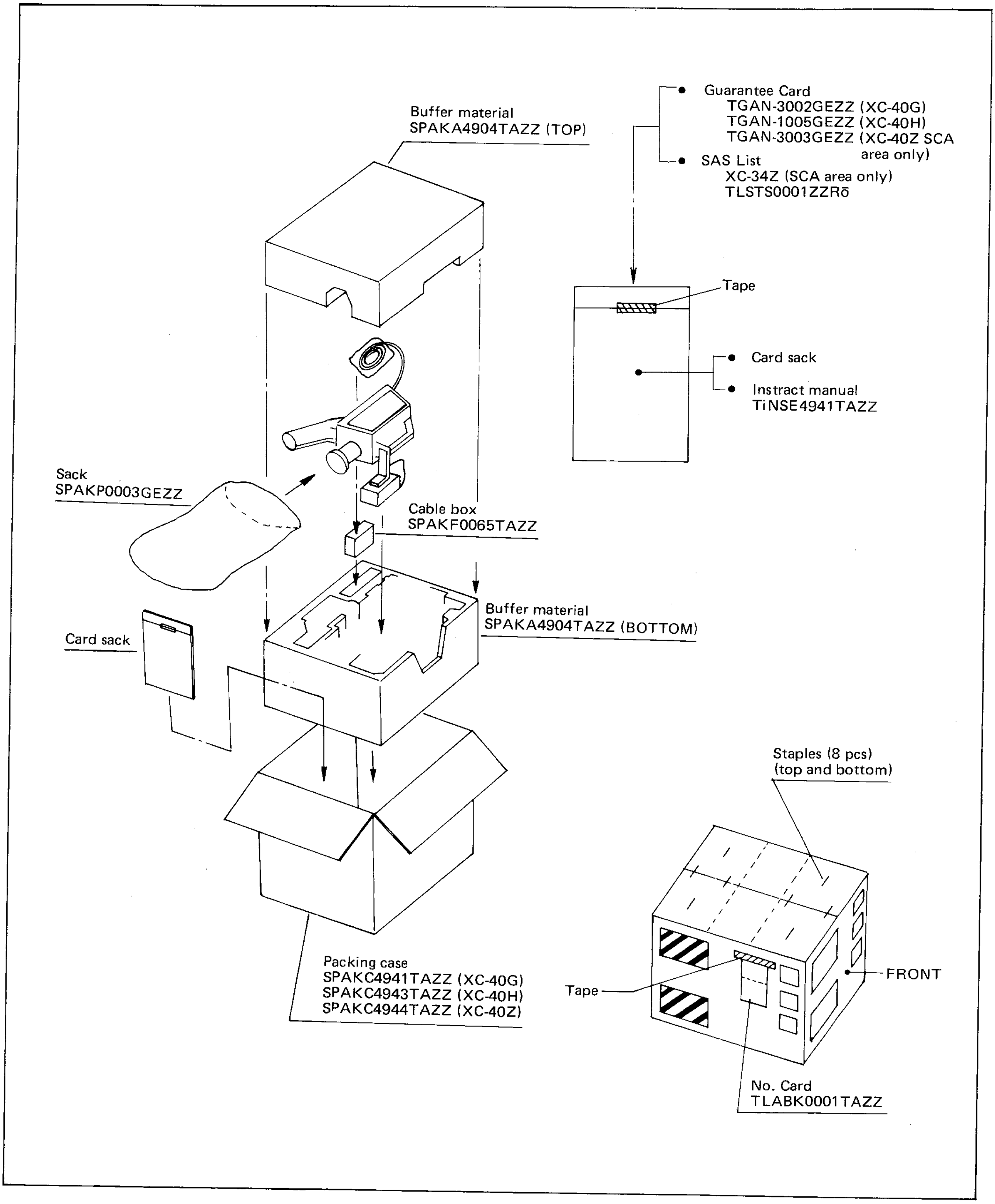
SCREWS AND NUTS

Ref. No.	Part No.	Q'ty	Location	Code
54	XTMSD30P06000	1	Preamp. Shield	AA
55	XBMSD30P30000	1	Set and DY Holder	AA
56	XUASB30P12000	5	E-V/F	AA
57	XBMSD30P06000	9	PWB Retaining Hinge	AA
58	XTPSD26P08000	2	DY Holder B	AA
59	XBMSB30P06000	4	E-V/F Stay	AA
60	XBMSB30P08000	1	Cabinet A/B Angle	AA
61	XBMSD30P06000	1	Lens Angle	AA
62	XBSSB30P06000	2	Cabinet Bottom	AA
63	XBSSC26P06000	2	Accessory Shoe	AA
64	XTASD30P10000	4	Set and Switch PWB	AA
65	XUASB30P12000	3	Cabinet A/B	AA

PACKING OF THE SET

Focus Ring	at "∞" position
Backlight compensator switch	at "off" position
VCR start/stop switch	at "stop" Position
Focus Manual/Auto Switch	at "Manual" Position

Zoom Lever	at "12mm" Position
Filter switch	at "bulb" position
White-balance set switch	at "STD" Position



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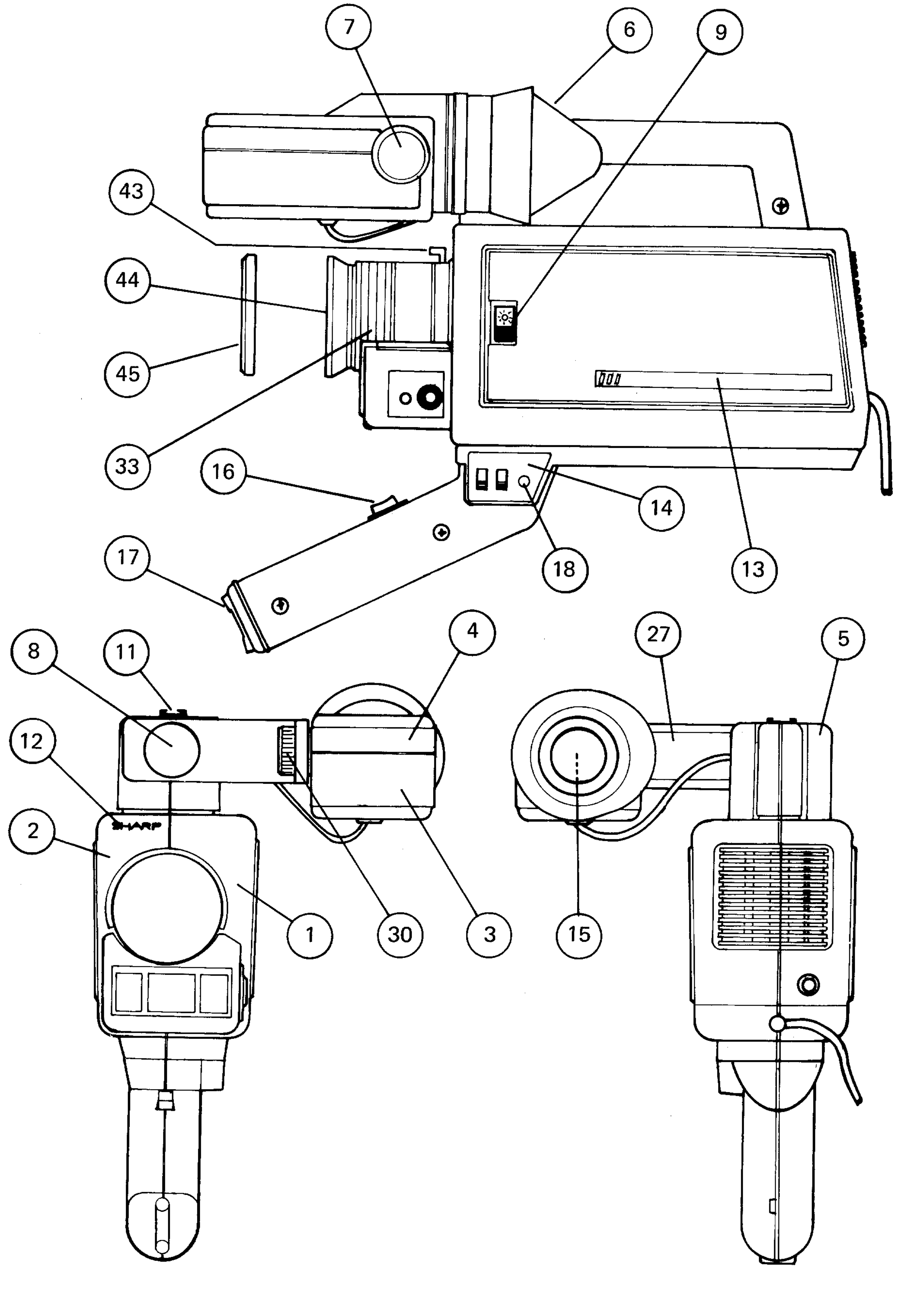

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