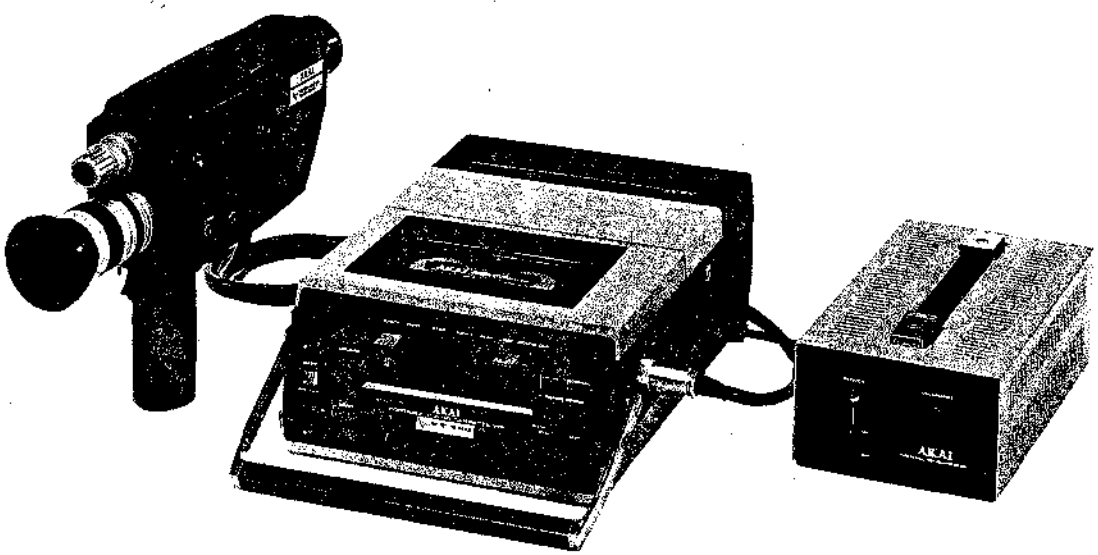
SERVICE MANUAL

PARTS LIST

MODEL VTS-400

AKAI



PORTABLE COLOR CASSETTE VTR SET

MODEL VTS-400

SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

I. TECHNICAL DATA

1-1. VT-400

TV SIGNAL	NTSC Standard (or PAL Standard)
RECORDING SYSTEM	Twin rotating head, Helical scanning frequency modulation system
RECORDING TIME	About 30 minutes (with VK-30)
TAPE SPEED	69.1 mm per second (PAL 67.9 mm/sec)
TAPE WIDTH	12.5 mm (1/2 inch)
HORIZONTAL RESOLUTION	More than 240 lines
VIDEO SIGNAL TO NOISE RATIO	Better than 40 dB
VIDEO INPUT	1Vp-p, 75 ohms
VIDEO OUTPUT	1Vp-p, 75 ohms
AUDIO INPUT	0.1V RMS
AUDIO OUTPUT	1.0V RMS
AUDIO FREQUENCY BAND WIDTH	100 Hz to 10,000 Hz
AUDIO SIGNAL TO NOISE RATIO	Better than 43 dB
TAPE USED	VK-30
BATTERIES	Two rechargeable 6V batteries
BATTERY USING TIME	More than 40 minutes continuous (in color with VC-400)
DIMENSIONS	263(W) x 124(H) x 365(D) mm, (10.4 x 4.9 x 14.4")
WEIGHT	6.9 kg (15.2 lbs) not including batteries

*** For improvement purposes, specifications and design are subject to change without notice.**

1-2. VC-400

COLOR SYSTEM	NTSC (PAL) two tube frequency Multiplex System
VIDICON TUBE	Luminance channel: 2/3" electrostatic focusing electromagnetic deflection type vidicon (20EP20C) Chrominance channel: 2/3" electrostatic focusing, electromagnetic deflection type vidicon (H9303)
VIEWFINDER	1.5" type built-in electronic mono-chrome viewfinder
RECORDING INDICATOR LAMP	Built-in luminous diode inside viewfinder
LENS	6x (12.5 to 75 mm) zoom lens, F2 to closed
APERTURE	Automatic and manual aperture systems
SCANNING SYSTEM	525 (PAL 625) lines, 2:1 interlace system
SYNCHRONIZATION SYSTEM	External synchronization system (utilizes VT-400)
HORIZONTAL FREQUENCY	15.750 (PAL 15.625) kHz
VERTICAL FREQUENCY	60 (50) Hz
HORIZONTAL RESOLUTION	More than 350 lines (center)
SIGNAL-TO-NOISE RATIO	Better than 40 dB
WHITE BALANCE	White Balance Switch (Automatic Digital Memory System)
IDEAL SUBJECT LIGHTING DENSITY	1,000 Lux
MINIMUM SUBJECT LIGHTING DENSITY	300 Lux (F2)
AUTOMATIC SENSITIVITY CONTROL RANGE	300 (F2) to 20,000 Lux (ND-4 standard accessory: 1,200 to 80,000 Lux ND-8 optional accessory: 2,400 to 160,000 Lux)
MICROPHONE	600 ohms non-directional electret condenser microphone
VIDEO OUTPUT	1.0Vp-1, 75 ohms
FILTER SIZE	49 mmϕ
OPERATING TEMPERATURE TOLERANCE RANGE	0° to 40°C (32° to 104°F)
POWER CONSUMPTION	DC9V, 900 mA
BATTERY WAMING	Flashing picture at recording
POWER REQUIREMENTS	DC9V (supplied form VT-400)
DIMENSIONS	88(W) x 234(H) x 335(D) mm, (3.5 x 9.3 x 13.2") including lens hood and hand grip
WEIGHT	2.62 kg (5.76 lbs)

*** For improvement purposes, specifications and design are subject to change without notice.**

1-3. VA-400

POWER SUPPLY	100V, 50/60 Hz for JPN 120V/60 Hz for Canada and U.S.A. 220V/50 Hz for Europe except U.K. 240V/50 Hz for U.K. and Australia 100/110/120/220/240V, 50/60 Hz for other countries
DIMENSIONS	150(W) x 114(H) x 255(D) mm, (5.9 x 4.5 x 10.0")
WEIGHT	4.8 kg (10.6 lbs)

*** For improvement purposes, specifications and design are subject to change without notice.**

II. BLOCK DIAGRAM

2-1. VT-400 (NTSC)

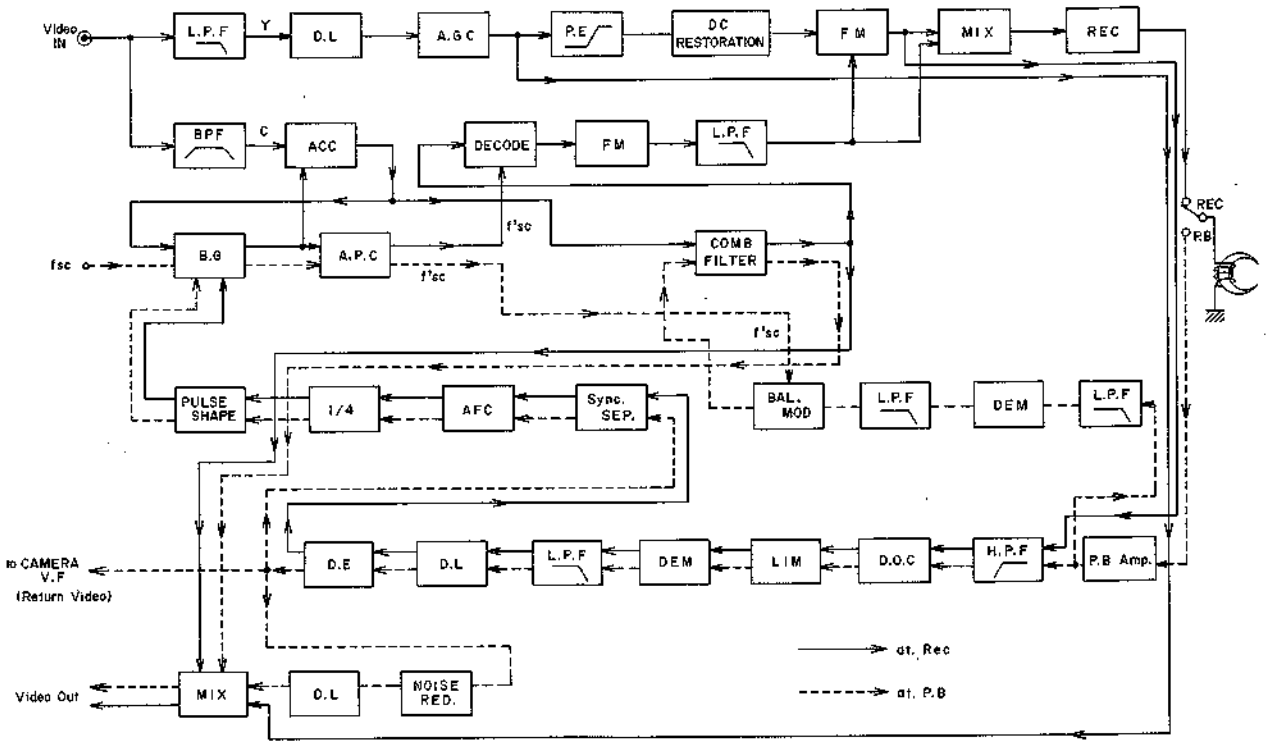


Fig. 2-1

2-2. VT-400 (PAL)

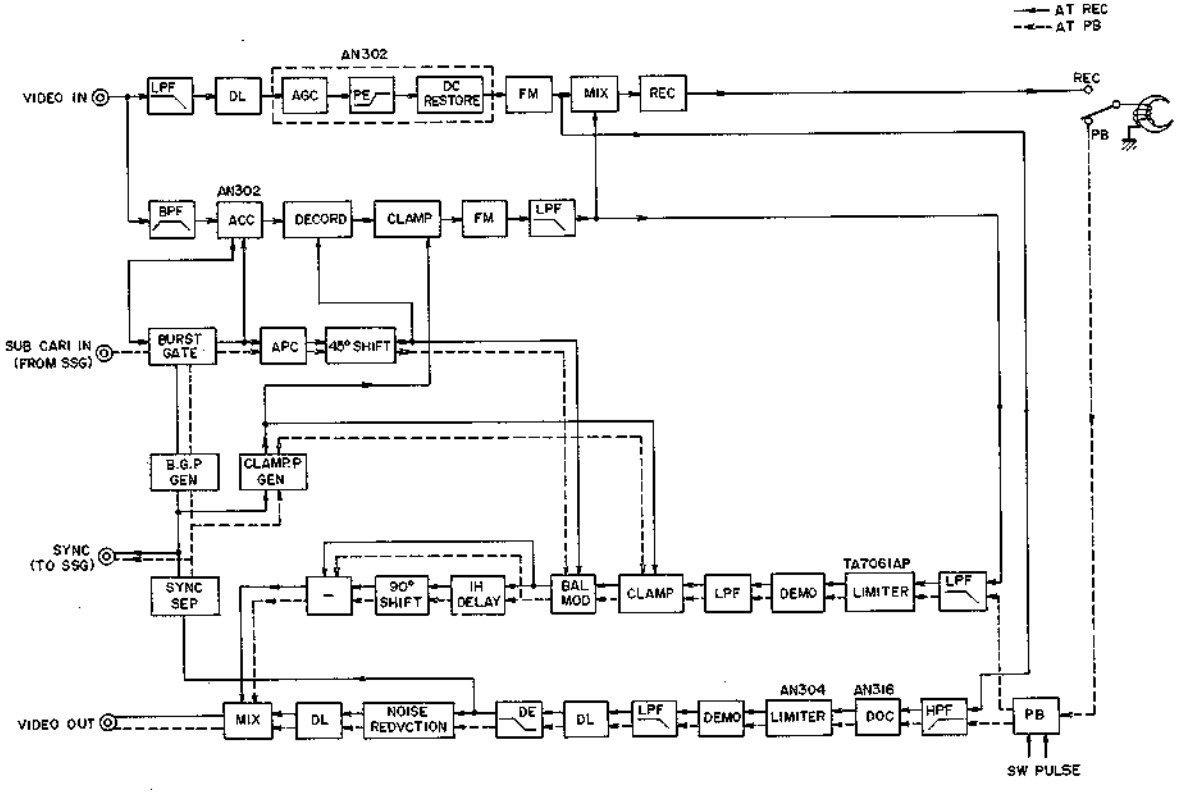


Fig. 2-2

2-3. VC-400

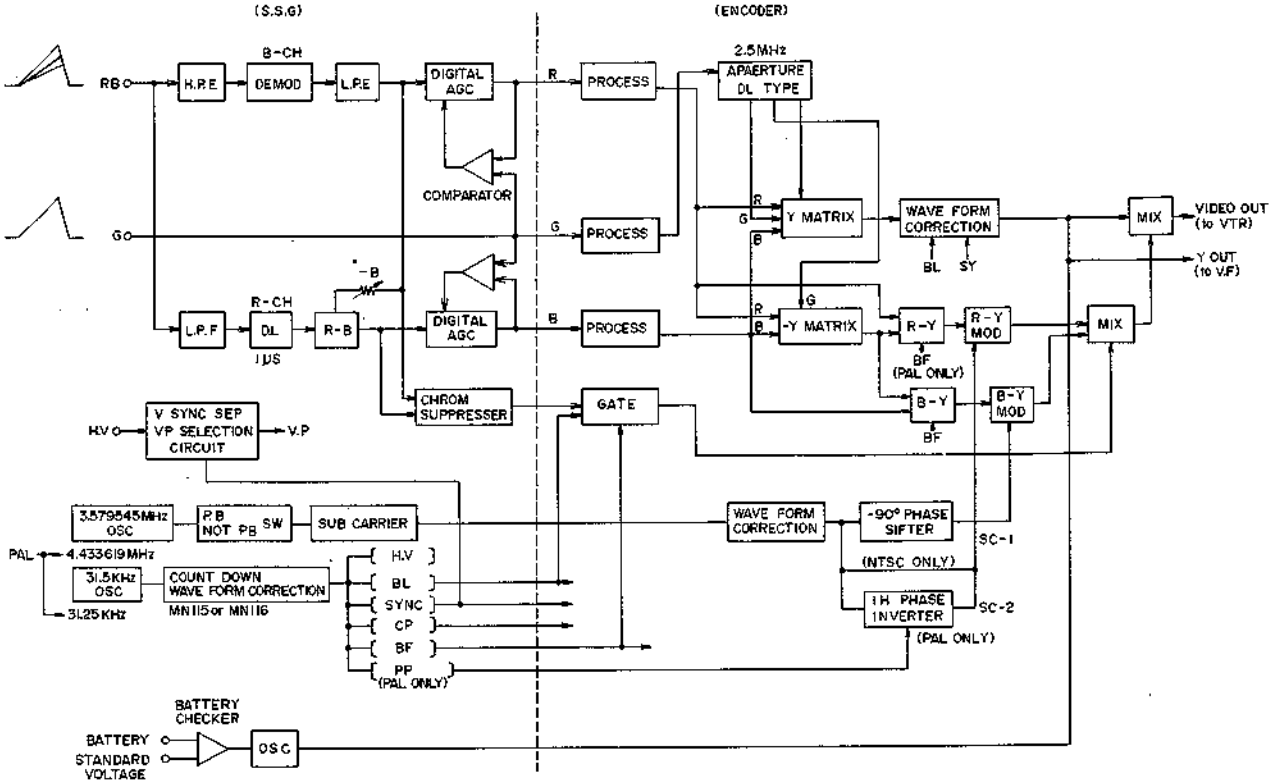


Fig. 2-3

III. CIRCUIT OPERATION

3-1. VT-400

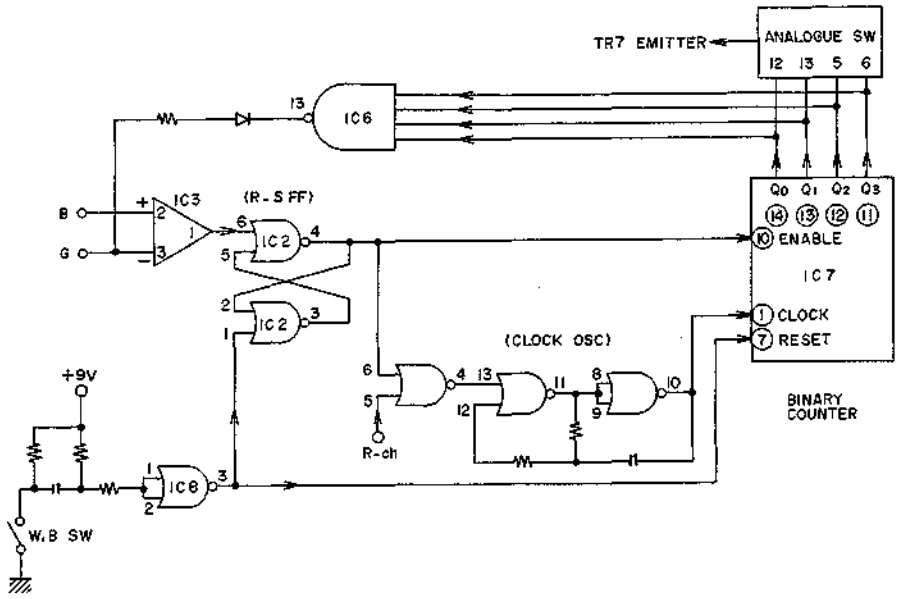


Fig. 3-1

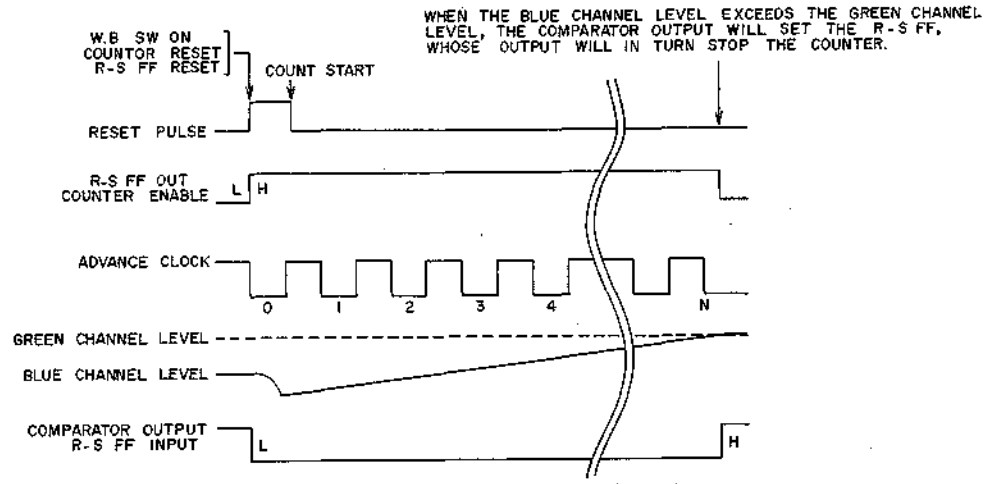


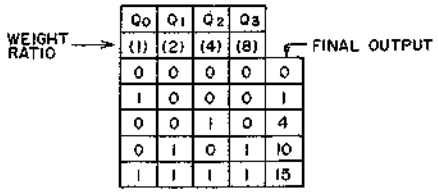
Fig. 3-2

3-1-1. SSG P.C BOARD

(1) Outline of Red, Green and Blue Signal Systems by Channel

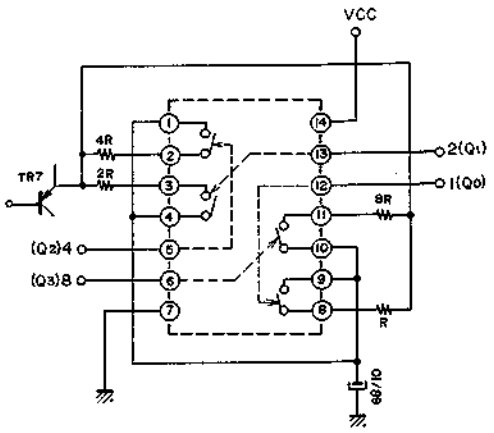
The red and blue signals sent from the camera head are supplied to terminal ②.

- In the blue channel, the signal amplified in TR1 passes through the HPF (L1, 2, 3, C2, 4 and 5) and the emitter follower of TR2. Then, the signal level is adjusted on a blue channel level by VR1 and the signal is taken out of the collector in TR3, passing through the demodulation circuit which comprises T1 (differentiation transformer) → D1 and D2 (both wave rectifiers) → LPF. After that, the signal passes through TR6, 7 and 8 so that the blue channel output is delivered from terminal ③ and supplied to the process P.C Board.
  This signal enters the white balance circuit and the white balance is held when the comparated green channel output is fed back and applied to the emitter in TR7 and the blue channel level exceeds the green channel level with the AC gain changed.
- In the red channel, the signal enters the base on TR9 and passes through LPF (L8, 9, 10, C25 and 26), the emitter follower in TR10, the delay line (DL-1) and TR11, 12 and 13, so that the red channel output is delivered from terminal ①.
  Meanwhile, the -B/2 passes through VR2 and is applied to the red channel.
- The difference amplifier in TR16 and 17 is a Chroma suppressor circuit. The Chroma suppressor will function with TR16 and 18 positioned at ON when the red channel level is twice the blue channel level (red channel level exceeds blue channel level) with the red and blue channel signals applied to the bases of TR16 and 17 respectively.



Q_0	Q_1	Q_2	Q_3	
(1)	(2)	(4)	(8)	
0	0	0	0	0
1	0	0	0	1
0	0	1	0	4
0	1	0	1	10
1	1	1	1	15

MC14520B
Binary Counter
Fig. 3-3



M14066BCP
Analogue SW.
Fig. 3-4

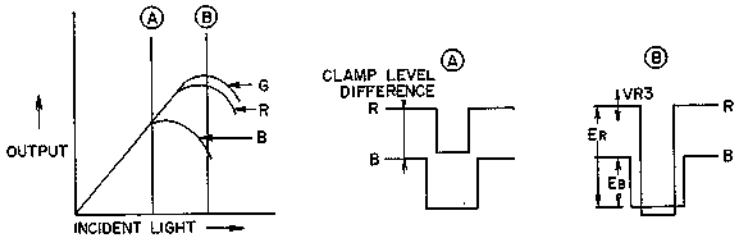


Fig. 3-5

(2) Digital white balance circuit

Press the WHITE BALANCE Switch and NOR ① and ② in IC8 will go "L" while NOR ③ will go "H". The latter "H" signal enters as a reset pulse into ⑦ in IC7 and resets the binary counter. The "H" signal enters terminal ① in R-S FF comprising NOR ①, ②, ③, ④, ⑤ and ⑥ in IC2. On the other hand, the green channel signal enters ② of the comparator in IC3 and the blue channel signal which has dropped to the low level at the same time as resetting enters in comparator ③ in IC3. As long as the green channel level is higher than the blue channel level, therefore, output ① is at the low level, entering ⑥ of R-S FF, while output ④ is at the high level, entering NOR ⑥ in IC8. Input ⑤ is for the red channel and output ④ will be at the low level with either red or blue channel signal at the high level. This output will then enter ⑬ in the clock oscillator which comprises NOR ⑪, ⑫, ⑬, ⑧, ⑨ and ⑩. With ⑬ at the low level, oscillation will start. The clock oscillator output comes out of ⑩ and enters clock input terminal ① in IC7. Besides, the high level output of R-S FF enters ENABLE input terminal ⑩. While the hight level is being held by the ENABLE signal, the clock oscillator output causes the binary counter to go on counting.

Outputs Q_0 thru Q_3 put the IC1 (analogue switch) in operation in accordance with the truth table given in Fig. 3-3. The analogue output is finally connected to the emitter in TR7, changing the AC gain. When the blue channel level exceeds the green channel level, the comparator output will charge its level from L (low) to H (high). The R-S FF will have an "L" output also. In addition, the ENABLE input level will becomes low too. Thus, counting will be ceased.

Even when NOR ⑥ (blue channel) in IC8 is at the low level, the clock oscillator will continue to oscillate as long as NOR ⑤ (red channel) remains at "H" (red channel level is not in excess of the green channel level). With both NOR inputs at the low level, the binary counter will stop counting.

Should it become impossible for the blue channel level to exceed the green channel level, the present counter which is capable of counting 16 at the maximum will be reset when the NAND circuit in IC6 operates under the condition mentioned above.

(3) Chroma suppressor circuit

In case where the incident light is large in VC-150, blue appears yellow due to the beam clogging of chroma signal.

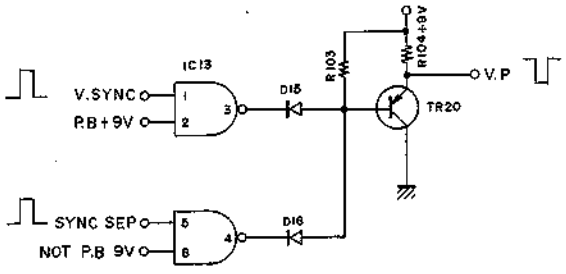


Fig. 3-6

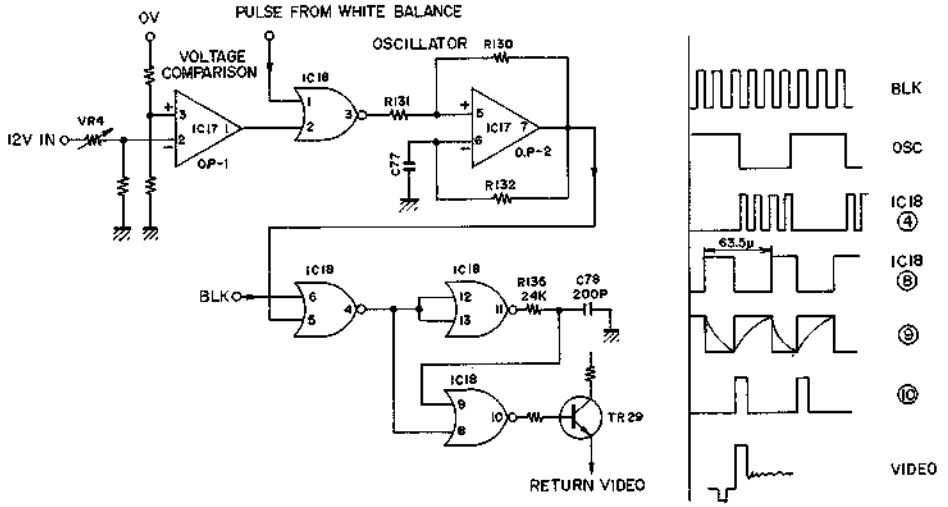


Fig. 3-7

Therefore, the red channel level is compared with the blue channel level and the chroma signal will be cut off, with the Y signal only available, when the red channel level exceeds the blue channel signal ($E_R = 2E_B$). In reality, the red channel clamp level is kept higher than that in the blue channel. When the clamp level of red channel exceeds the blue channel level over the difference in DC level, the chroma suppressor circuit will function.

(4) V pulse (for servo) selector circuit

In recording, the SYNC SEP. input enters and comes out at NAND ④, being inverted. Upon playback, the V SYNC input enters and comes out at NAND ③ being inverted. Then the signal passes through TR20, being supplied as V pulse to the servo circuit.

(5) Battery alarm circuit

With 12V lowered to 10.7V, the OP-1 (IC17) voltage comparator will have an "H" level output while NOR ③ in the IC18 will be "L". With OP-2 (IC17) input ⑤ at the "L" level too, the oscillator will begin functioning. The oscillator output enters NOR ⑤ in IC18 while the BLK enters ⑥ in IC18. The outputs shown in Fig. 3-7 are taken out at output IC18 ④; one is inverted in NOR ⑪, ⑫ and ⑬ and integrated in R135 and C78, thus entering NOR input ⑨ in IC18, while the other enters ⑧ in IC18 as it is. The output is taken out at ⑩ in IC18 and supplied to the return video and flashing the View Finder through the emitter follower in TR29. In the meantime, the white balance flashing signal also enters NOR input ① in IC18.

(6) Pulse generator circuit

This circuit generates such pulses as C. SYNC, C. BLK, BF, CP and HV. Explanations about the circuit are omitted herein.

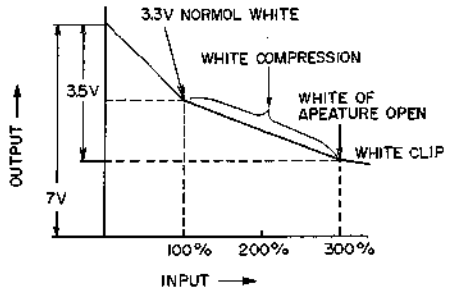


Fig. 3-8

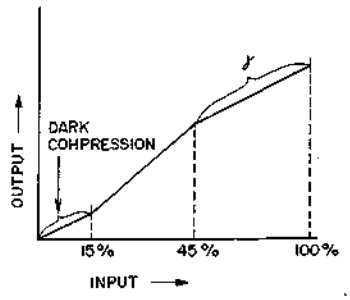


Fig. 3-9

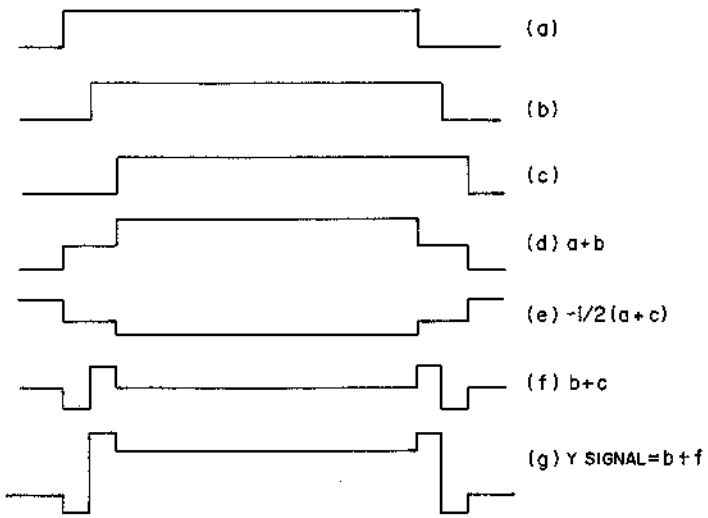


Fig. 3-10

3-1-2. PROCESSOR AND ENCODER P.C BOARD

Each of the R (red), G (green) and B (blue) signals sent from the SSG P.C Board is supplied to the processor circuit.

Since the circuit is commonly applicable to each channel, the explanations given herein pertain to the G channel. The G channel signal is supplied to terminal ⑥ and adjusted in terms of gain by VR1, then passed through the emitter follower in TR1. After that, the signal is clamped in TR2 and amplified in TR3 and TR4. The collector (TP-2) output in TR4 is white-compressed in TR7 and white-clipped in TR6, passing through the emitter follower in TR5. After that, the signal is clamped (setup level is zeroed by VR3) in TR21 and passes through TR9 and TR10. In TR12, the signal is dark-compressed and γ corrected in terms of in TR13 so that the G channel signal output is delivered through the emitter follower in TR14. In TR11, meanwhile, HD enters into the base and the noise during that period is grounded on an AC basis through TR11.

One of the G channel output signals is applied through DL201 to the DL-type aperture compensating circuit. The TR201 output is branched into two; one passes through TR202 and 203, being connected to the emitter in TR207, and the other passes through DL202 (0.2 μs), then comes out from the emitter in TR204, where the signal is also branched into three. The first goes to the Y matrix, the second to the emitter in TR207 through VR11 and the third is amplified in TR205 and passes through DL203 (0.2 μs), being connected from the emitter follower in TR206 to the emitter in TR207. Finally, (f) in Fig. 3-10 is taken out at the collector in TR207 and passes through VR10 (aperture compensation stroke) and the emitter follower in TR209. With the noise so reduced, the signal is supplied to the Y matrix.

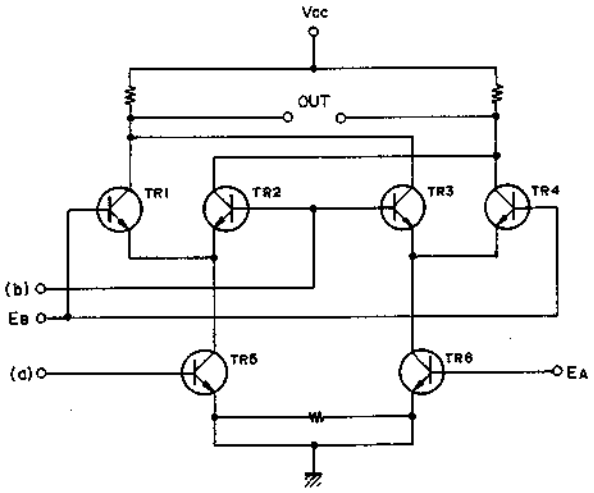


Fig. 3-11

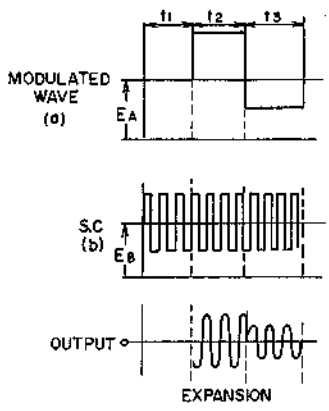


Fig. 3-12

Each of the R, G and B signals has its resistance divided and is outputted at the collector in TR20 at a ratio of $E_Y = 0.59E_G + 0.30E_R + 0.11E_B$. VR12 is used to adjust the Y level.

The signal is clamped in TR212 and passes through TR213 and 214. With BLK mixed from TR215 (VR13 setup level), the SYNC signal is mixed from TR216 (VR14 SYNC level). The signal passes through inverter amplifiers TR217, TR218 and TR219 and through the LPF (R259, C225, 226 and L205). One of the TR221 emitter output signals returns to the camera as the return video signal after passing through the emitter follower in TR222, while the other is overlapped in TR223 with the CHROMA signals from the DMB (Double Balanced Modulator) and outputted as the CAMERA OUT signal. In the -Y matrix circuit, each of the R, G and B signals is applied to the base in TR226, while the G channel signal is applied as GL through the LPF (L202, 203, C212, R230, 500 kHz).

Through inverter amplifier TR226, TR227 and TR228, one is made into B-Y in TR229 and sent to the DBM through the emitter follower in TR230, while the other is made into R-Y in TR231 and sent to the DBM through the emitter follower in TR232. The IC201 is a 2.5V regulator.

We shall now refer to the CHROMA modulation circuit. In the VT-150, the circuit is a ring modulation type, while the VT-400 employs the double balance difference amplifier which is a combination of two difference amplifiers with identical characteristics.

The SC (Sub Carrier) sent from the SSG enters into terminal ⑭. One of the TR244 emitter output signals passes through the emitter follower in TR246 and goes to the R-Y modulator (IC205), while the other enters the B-Y modulator (IC204) through the 90°PS (Phase shift) in L212, C268, TC201 and C269. VR18 and VR19 are used for carrier output zero point adjustment while the VR20 is used to adjust the R-Y amplitude. The CHROMA signal which is a mixture of R-Y and B-Y passes through the emitter follower in TR240 and enters the base of TR241.

When the CHROMA suppressor enters, the D208, 209 210 and 211 will be reversely biased so that no chroma signal will be available.

The signal passes through the LPF (L211, C260 and 261) and through the emitter follower in TR242, being overlapped with the Y signal already referred to.

Double Balance Difference Amplifier

- During period t_1, no signal is available and neither TR5 nor TR6 operate, with output nil.
- During period t_2, a positive signal is available and TR5 is positioned at ON. When TR1 and TR2 become dominant, the signal will be outputted.
- During period t_3, a negative signal is available and TR6 is positioned at ON. When TR3 and TR4 become dominant, the signal will be inverted by 180° and outputted.

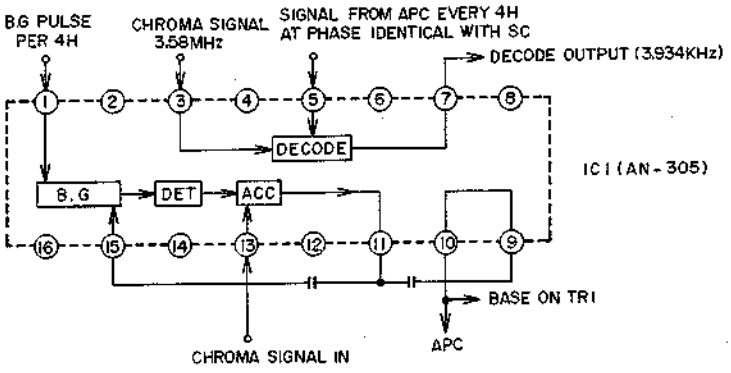


Fig. 3-13

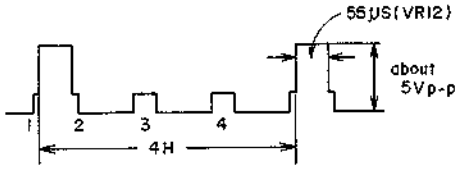


Fig. 3-14

3-1-3. CHROMA P.C BOARD

(1) Recording System

The video signal is supplied to terminal ④ and passes through the BPF (L1,2,3, C1,2 and 3). Then, the CHROMA signal alone enters ⑬ in IC1 (AN-305).

The CHROMA signal is ACCed and its outputs are delivered from ⑩. One of them enters the base on the TR6 and is sent to the APC. The other passes through the emitter follower in TR1 and the Y signal alone is made negative by the 1H DL comb type filter. This signal passes through TR16 and the LPF (L16, C78 and 80) and is taken out of the emitter follower in TR17. One enters as the E-E signal into the emitter in TR20 through VR9 (CHROMA level). In this emitter, the signal is mixed with the E-E Y signal and delivered as VIDEO OUT from the emitter follower in TR22. On the other hand, the TR17 emitter output enters ③ in the IC1 again. In ⑤, fsc' = 3.583479 MHz whose phase is identical with that of the burst signal enters every 4H and is decoded, being outputted from ⑦. After that, the signal passes through the LPF (L5, C17 and 18) and is carrier-set by VR2, with the frequency modulated in the TR4 and TR5 non-stable multi (900k ±300 kHz). Then, the signal passes through the LPF (L7, 8, C25, 26, 27 and 28) and is adjusted on a CHROMA recording level basis by VR3. The signal is mixed with the Y signal in the signal p.c board, going to the video head.

In the APC system, first of all, the E-E Y signal enters input terminal ⑮ in the IC5 (μPC570C) and is Sync-separated, with AFC carried out. Thus, the H sync is taken out at output ②, while 1/4 pulse (one pulse per 4 H) is taken out at TR27 and TR28 stable multi.

Thus, one of the TR29 collector outputs passes through the R167 and enters terminal ① in the IC1 and into the ACC burst gate.

The other TR29 collector output passes through TR30 and a BG pulse enters the TR6 burst gate circuit every 4 H. On the collector side, a burst signal is extracted every 4 H and compared in phase with 3.583479 MHz oscillated by the X-tal in the APC. Thus, from the TR9 emitter output, fsc' = 3.583479 MHz identical in phase with the burst signal enters ⑤ in the IC1, being decoded.

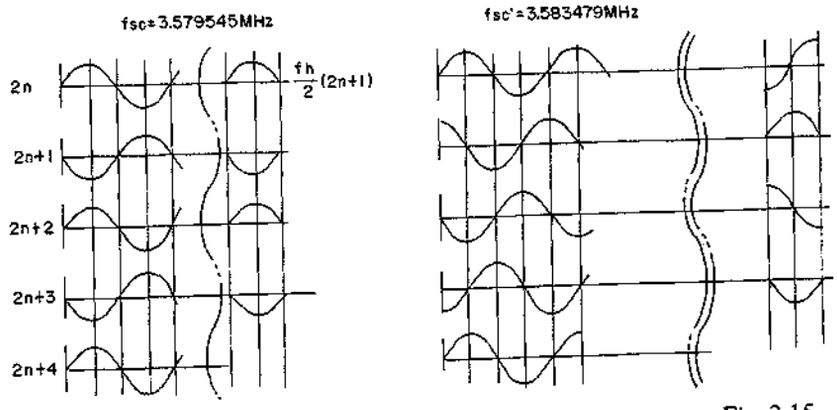
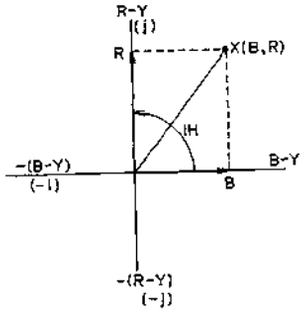


Fig. 3-15



	1H	2H	3H	4H	5H	6H	7H	---
(1) DETECTION AXIS	(B-Y)	(R-Y)	-(B-Y)	-(R-Y)	(B-Y)	(R-Y)	-(B-Y)	
(2) DETECTION SIGNAL	B	R	-B	-R	B	R	-B	
(3) MODULATION CARRIER	1	j	-1	-j	1	j	-1	
(4) MODULATED WITH (2) ABOVE	B	jR	B	jR	B	jR	B	
(5) 1H DELAY		B	jR	B	jR	B	jR	
(6) (4)+(5)		B+jR	B+jR	B+jR	B+jR	B+jR	B+jR	

Fig. 3-16

- Since fsc' has a continuous 90° deviation every 1H, the phases will coincide between 2n and 2n+4. Therefore, the phases are compared every 4H in the APC.
- The modulation carrier in ③ is locked at 0° every four cycles with H Sync.
- From the above, it is apparent that the VT-400 has the following more advantageous features than those of the VT-150:
  1) ID pulse is not required.
  2) Carrier switch circuit (line switch) is not required.
  3) DC restoration is not required.

(2) Playback System

The PB FM IN signal enters terminal ⑧ and passes through the LPF (L9, 10, C49, 50 and 51). After that, the signal is limited in the IC3 (TA-7061AP), thus entering the demodulation circuit. Through differentiation transformer → D4 and D5 (both wave rectifier) → LPF (L12, 13, 14, C61, 62 and 63) and emitter follower in TR14, the signal enters ⑩ in IC4 (TA71589). The APC output whose phase has been compared with SC in X1 (3.583479 MHz) appears in ⑪. The signal is Double Balance Modulated in IC4 and the output is delivered from ②. One passes through the 1H DL Comb type filter while the other through C76 and R98, both being mixed again. After that, the signal is supplied to the TR20 emitter from the emitter follower in TR17 through the VR9 (CHROMA level).

On the other hand, the PB Y IN signal is supplied from terminal ⑥ and mixed with the CHROMA signal through the D7 and D8 noise reduction delay line (DL-2). After passing through the emitter follower in TR22, the PB Y IN signal is taken out as VIDEO OUT.

3-2. VC-400

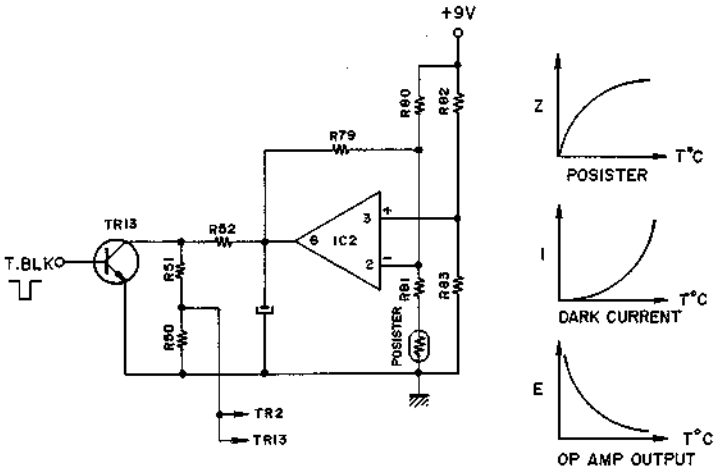


Fig. 3-17

3-2-1. MIC AMP P.C BOARD

The Mic Amp P.C Board is built in the camera head, with a gain of 40 ±3 dB in the IC1 (TA7120P), so as to heighten the signal to noise ratio.

3-2-2. POWER SUPPLY P.C BOARD

This P.C Board is composed of OP AMP IC1 (MC1741CP) and IC2 (μPC305C). The power transistor, which is liable to generate heat, is built in the video tape recorder body.

3-2-3. DEFLECTION 1 P.C BOARD

(1) G channel and RB channel signal systems

The G channel signal sent from the preamplifier is supplied to terminal ⑦ and enters the difference amplifier in TR1 and TR2. A voltage proportional to the OP amplifier output in the dark current compensator circuit is applied to the base in TR2 only during the BLK period, thus determining the gain of TR2. Consequently, TR2 has a constant video output.

Subsequently, the signal enters the difference amplifier in TR3 and TR4 and has the gain adjusted in VR1 (2 kB), with the setup level zeroed in VR2 (10k). After that, the G channel signal passes through the emitter follower in TR5 and is sent as G OUT to the SSG.

At the same time, the G channel signal serves as the input signal of the automatic aperture circuit. The RB channel has the same circuit composition as mentioned above.

Dark Current Compensator Circuit

TR13 is positioned at OFF during the BLK period only.

A voltage proportional to the OP AMP output appears at the center (E_V) between R51 and R50 so as to determine the gain of TR2 and TR12 during the BLK period. Since E_V is therefore as shown in Fig. 3-17, TR2 and the TR12 have a constant VIDEO OUT.

(2) HD/VD Separator and C BLK Circuit

The HD and VD signals, which are supplied from the SSG as mixed, must be separated.

The HD signal appears at TP-1 through TR21 and TR22, while the VD appears at TP2 through TR23. Since the width of these pulses is narrow, however, they may be determined to the BLK width by the Mono Multi of the IC3 (NOR 11-12-13, 8-9-10).

Subsequently, the HD and V BLK enter into ⑤ and ⑥ in IC3 (NOR 4-5-6), respectively, and are mixed, so that the COMP BLK enters TP-3.

The COMP BLK is also supplied to the cathodes in G and C tubes through TR17 and 18.

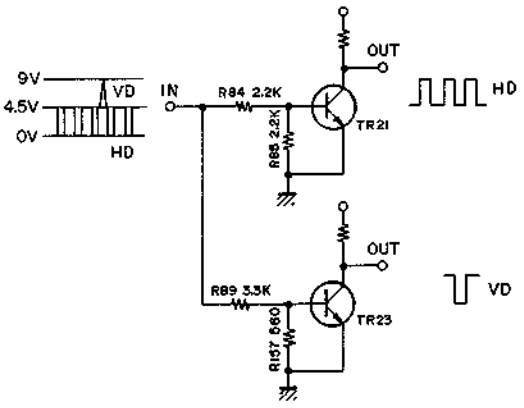


Fig. 3-18

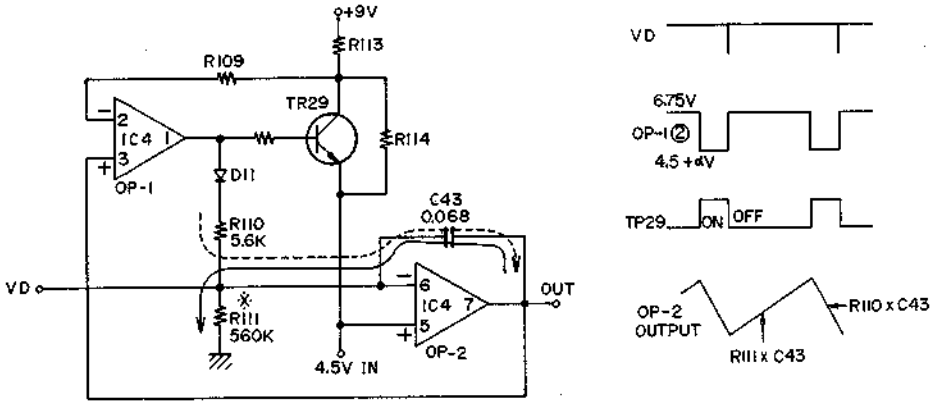


Fig. 3-19

HD/VD Separator Circuit

When no signal is in the circuit (4.5V), TR21 and the TR23 are kept at the ON and OFF positions, respectively. Only when the HD pulse enters, the inverted HD pulse can be taken out at the output terminal of TR21. Only when the VD pulse enters, likewise, can the VD pulse be taken out at the output terminal of TR23.

(3) Vertical Deflection Circuit

This is a Miller integrated circuit of the OP AMP IC4, producing a saw tooth wave of high linearity. This wave is supplied to terminal ⑫ (G channel) in output circuit OP AMP IC4 and to ⑩ (RB channel) in the IC4, thus flowing to their respective vertical yokes. The OP AMP IC5 (5-6-7) is a 4.5V regulator.

On the other hand, the saw tooth wave output passes through the OP AMP IC6 (1-2-3) inverter circuit and is also supplied to the vertical shading compensator circuit (VR12 and 13).

The VR11 is a skew compensating control, supplying the saw tooth wave signal to the Def 2 through the output circuit of the OP AMP IC5 (1-2-3).

Vertical Oscillator and Saw Tooth Wave Generator Circuit

If input ⑤ in OP-2 is higher than ⑥, output ⑦ will be at the H level, thus charging C43. With output ⑦ connected to input ③, input ② has a voltage of 6.75V with TR29 positioned at OFF. When this level is exceeded the input ③, output ① in OP-1 will be at the H level.

TR29 will be positioned at ON, lowering input ② in OP-1 and holding it at 4.5V +αV. Through D11 and R110, input ⑥ in OP-2 will be at the H level while output ⑦ will be at the L level.

C43 will discharge and when output ⑦ in OP-2 becomes lower than the OP-1 input ② of 4.5V + αV., output ① in OP-1 will be at the L level. With TR29 and D11 positioned at OFF, input ⑥ in OP-2 will be at the L level and will start charging C43 at output ⑦. The trigger, meanwhile, enters input ⑥ in OP-2.

(4) Automatic Aperture Circuit

- The G channel signal is clamped in TR6 and detected in D1 to remove the presser effect. At the same time, the signal is smoothed in R25 and C12 so as to avoid a peak detection (mean detection) and is made to enter input 6 in the OP AMP IC1.
- The motor is connected between output ⑦ in the OP AMP IC1 and output ①, that is, inverted and amplified output ⑦.
- The sensitivity is changed over by heightening and lowering the DC level of ⑤ (non-inverted input) in the OP AMP IC1 by use of an external change-over switch.
- Now, assume that there is only a small amount of incident light. Then, input ⑥ in the OP AMP IC1 is at L while output ⑦ is at H, thus positioning TR7 at ON. With input ② in the OP AMP IC1 at H, output ① will be at L, thus positioning TR10 at ON. In the motor, the electric current flows in the order of +B → TR7 → Ⓜ → TR10. When the aperture is opened, the IRIS switch will be positioned at ON. With D4 at ON, the OP AMP IC1 (1-2-3) will have no gain, thus stopping the motor. An increase in incident light under the above-mentioned conditions will position D4 at OFF. If the switch is positioned at ON, the OP AMP IC1 (1-2-3) will have gain, thus causing the motor to start running.

(5) VC-400 Block Diagram (DEF 1)

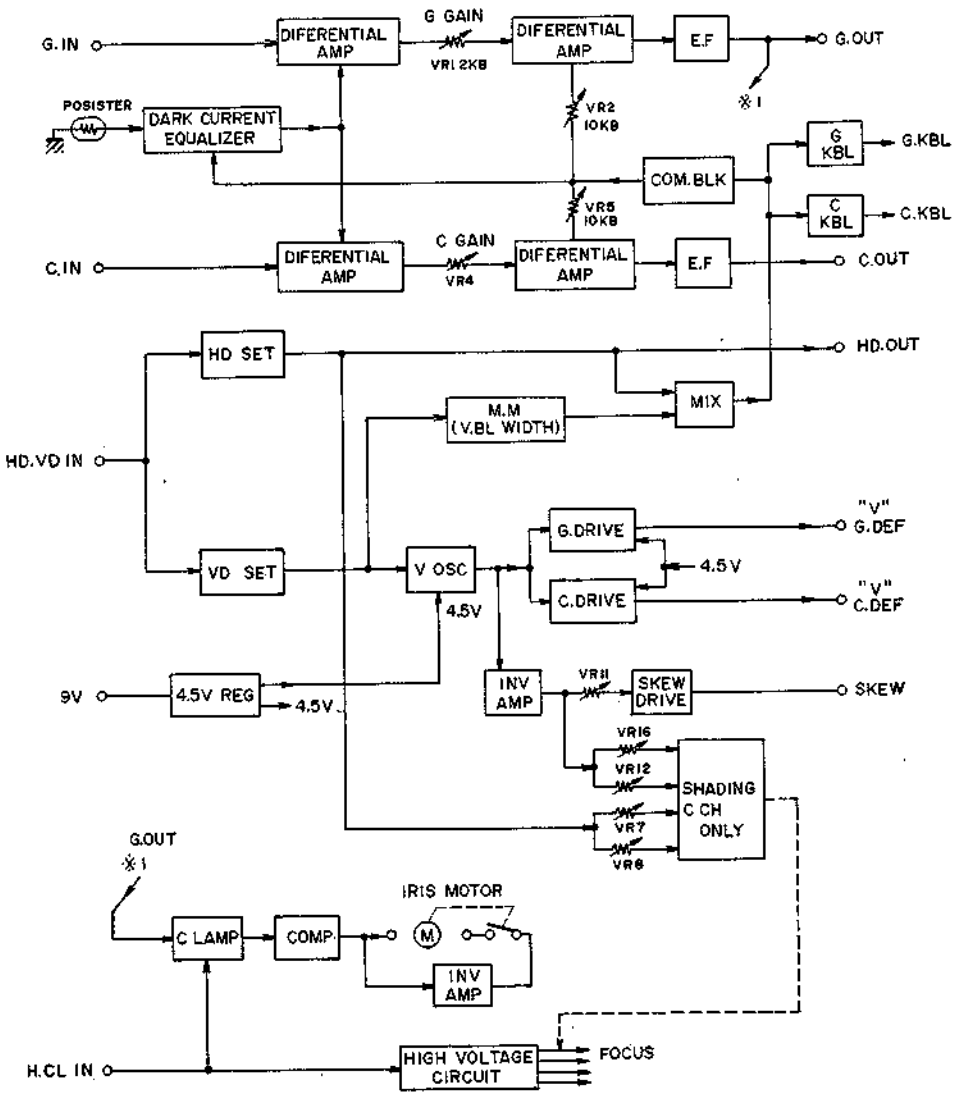


Fig. 3-20

IV. ADJUSTMENT

4-1. VT-400

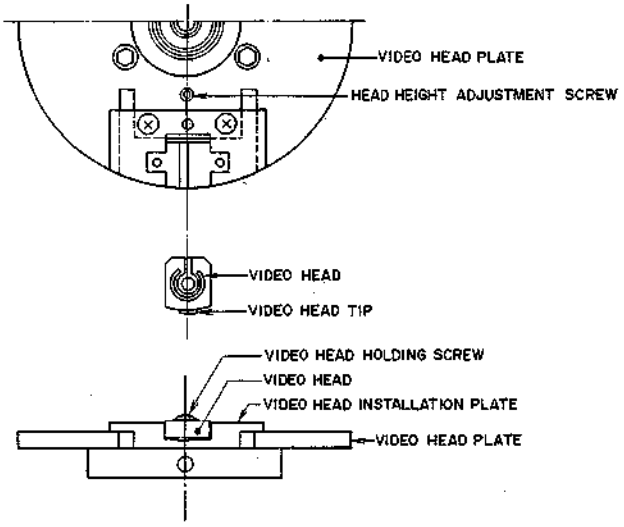


Fig. 4-1

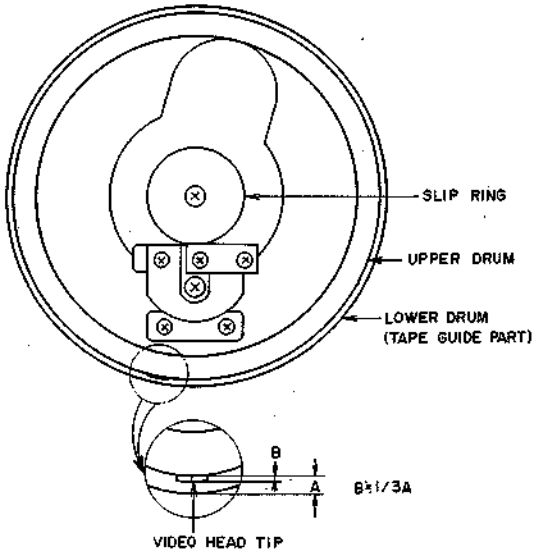


Fig. 4-2 Top View of Video Head Block

4-1-1. VIDEO HEAD ASSEMBLY ADJUSTMENT

(1) Video Head Replacement (Refer to Fig. 4-1)

Replace the video head following the procedure described below.

1) Remove the head metal shield.
2) Disconnect the two lead wires from the video head.
3) Remove the video head holding screw.
4) Remove the video head by lifting it with tweezers and then pulling it towards the center of the drum.
5) Hold the new video head being installed with tweezers and insert it into the video head installation plate while taking care to prevent the video tip from touching the drum.
6) Temporarily fix the video head with the holding screw.

(2) Head Tip Protrusion Adjustment

To accurately perform the video head tip protrusion adjustment, it is necessary to use a video head adjustment microscope. If this microscope is not available, the adjustment can be carried out as follows. Using a magnifying glass (for example, the VF-300 lens), view the video head block from above as shown in Fig. 4-2 and adjust the video head tip protrusion until B ≒ 1/3 A.

For adjustment, loosen the video head retaining screws and adjust by shifting the video head gradually.

NOTE: The tape guide (i.e. A in Fig. 4-2) should be approx 200μ and the video head tip protrusion approx. 60 to 70μ above the upper edge of the lower drum.

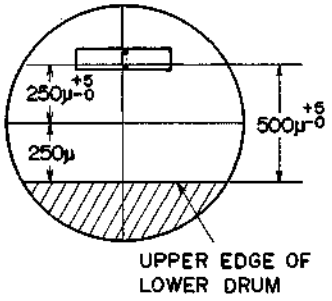


Fig. 4-3

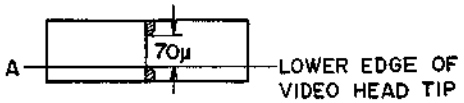


Fig. 4-4

(3) Video Head Height Adjustment

1) View the video head through the microscope and align the transverse axis of the microscope scale with the upper edge of the lower drum.
2) Adjust the microscope until the upper edge of the lower drum is 250μ below the center of the microscope scale as shown in Fig. 4-3.
3) Adjust the head height adjustment screw until the height of the R channel video head (to which red leads are connected) is 250μ as shown in Fig. 4-3. The video head is shown in Fig. 4-4. Be sure to align A with the 250μ level.
4) Turn the video head and adjust the height of the Y channel head (with yellow leads) as in step 3-4).

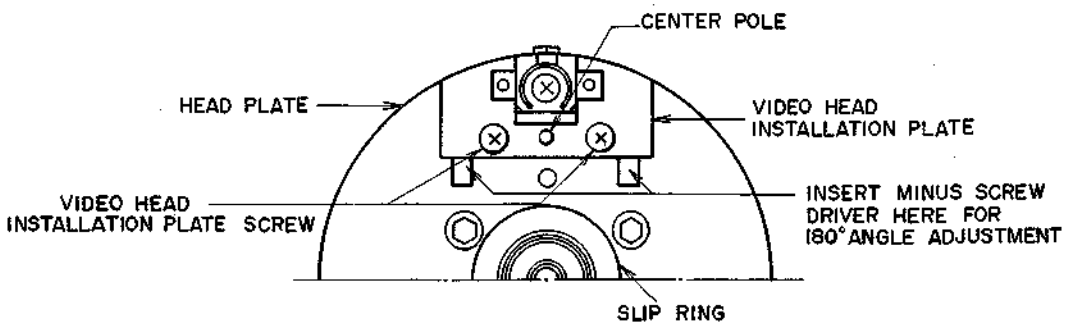


Fig. 4-5

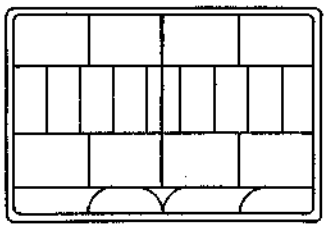


Fig. 4-6

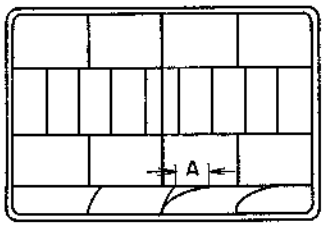


Fig. 4-7

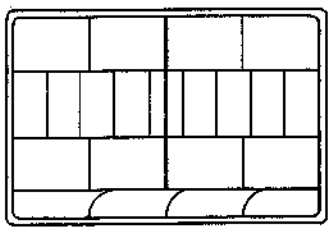


Fig. 4-8

(4) **180° Angle Adjustment**

If vertical lines at switching points are as shown in Fig. 4-6 and 4-7 when playing back a reference tape, the 180° angle adjustment of the video head is incorrect and readjustment is necessary. Adjust as follows:

1) Loosen the two video head installation plate screws on the Y channel head and tighten them temporarily to 1 kg using a torque screwdriver.
2) Insert a ⊖ screwdriver into the gap under the video head installation plate or the head plate and turn the screwdriver slightly.
3) If the video head angle is modified, playback the reference tape and ascertain that only one vertical line appears at a switching point as shown in Fig. 4-8. If the line is still as shown in Fig. 4-6 or Fig. 4-7, readjust the angle. If portion A in Fig. 4-7 is 1.5 cm on a 1.9 inch monitor TV, no readjustment is required.
4) When the vertical line at a switching point is composed of a single line as in Fig. 4-8 or portion A in Fig. 4-7 is within 1.5 cm, the 180° angle adjustment is displaced incorrectly by 1H if the upper part of the picture sways or the BLK line is 1H too much or too little at the beginning or end of the V BLK on the monitor TV. If this is the case, readjust until the phenomenon is eliminated. After adjustment, tighten the screws to 1.5 kg using a torque screwdriver.

NOTE: On the AKAI cassette VTR reference tape, one frame each is recorded for the right half and the left half of the picture. Therefore, if the 180° angle adjustment is incorrect (Fig. 4-6 and 4-7), there are two vertical lines in the center of the picture but one line each on the right and left.
(The right and left halves of the picture are recorded through the Y-channel video heads respectively.)

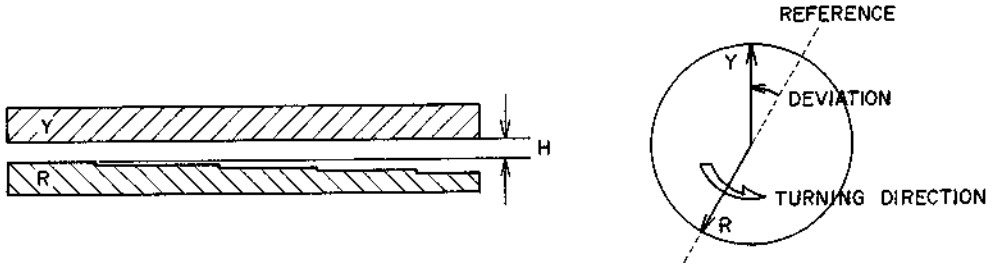


Fig. 4-9

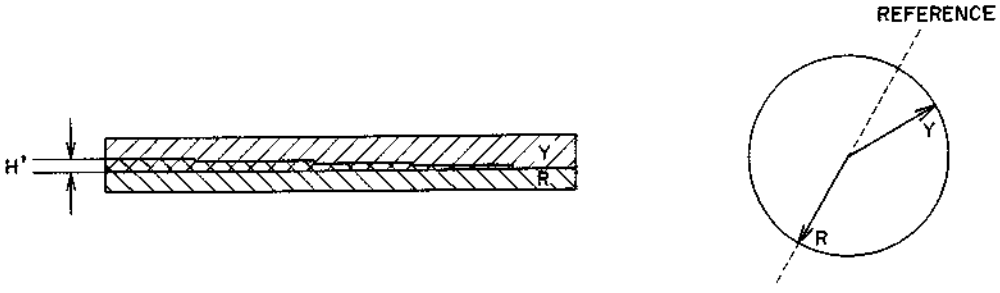


Fig. 4-10

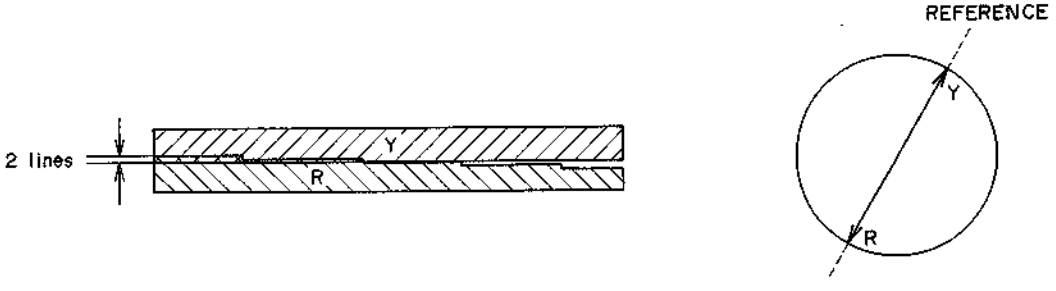


Fig. 4-11

For Reference:
The H alignment signal is recorded on the reference tape provided with the VT-400. It can be conveniently used for the 180° angle adjustment of the video head.

(1) On the VT-400, alignment is made by using the R head as the reference as in the case with conventional VTRs. That is, the Y head must be moved to achieve alignment.

(2) If the Y head has gone beyond the reference, H lines of the white signal appear on the monitor TV as the H alignment signal as shown in the figure below.

(3) If the Y head is behind the reference, BLK of H lines appear on the monitor TV as the H alignment signal.

(4) If the Y head is just on the reference, 2 lines of the H alignment signal at the R portion is overlapped on the Y portion.

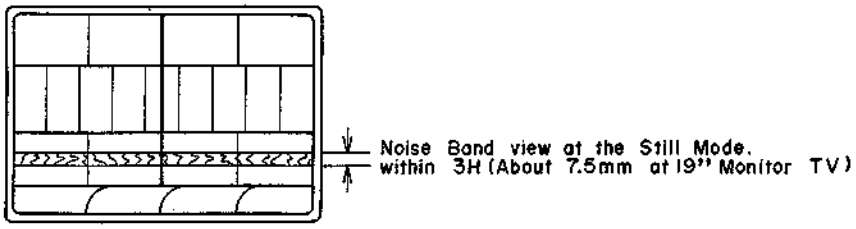


Fig. 4-12

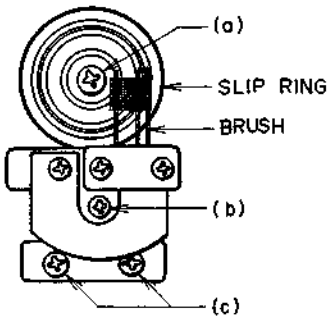


Fig. 4-13

(5) Video Head Height Confirmation

When head height and 180° angle adjustments are complete, confirm the head height as follows.

1) Playback the reference tape in the Still mode and confirm that the noise bandwidth shown in Fig. 4-12 is within 3H (approx 7.5 mm).
2) When the noise bandwidth is over 3H (approx. 7.5 mm), the R-channel and Y-channel video head heights are incorrect. If so, fine-adjust the height of the Y-channel video head, while viewing the screen, until the noise bandwidth is within 3H. However, the noise bandwidth varies slightly according to the tape position. First, find the tape position which permits the widest noise band, and then ascertain that the bandwidth is within 3H.
3) Connect an oscilloscope to TP-5 on the PZ Signal P.C Board (PY-5400) and playback the reference tape so that an RF envelope wave can be seen.
4) Turn on the tracking VR control and turn it gradually to ascertain that the RF envelope wave becomes larger and smaller symmetrically. If the waveform is not symmetrical, the heights of the two video heads are incorrect. If so, readjust the video head height.

(6) Slip Ring and Brush Adjustment

1) Mount the slip ring using screw (a) in Fig. 4-13 in a position which ensures correct and smooth rotation of the ring.
2) Secure the brush using screw (c) in Fig. 4-13 in such a way that the end of the brush is aligned with the groove in the slip ring.
3) When the end of the brush comes into contact with the slip ring, turn screw (b) by one fourth of a turn.
   This positions the brush correctly.
   However, if brush noise appears on the monitor TV, fine-adjust screw (b).

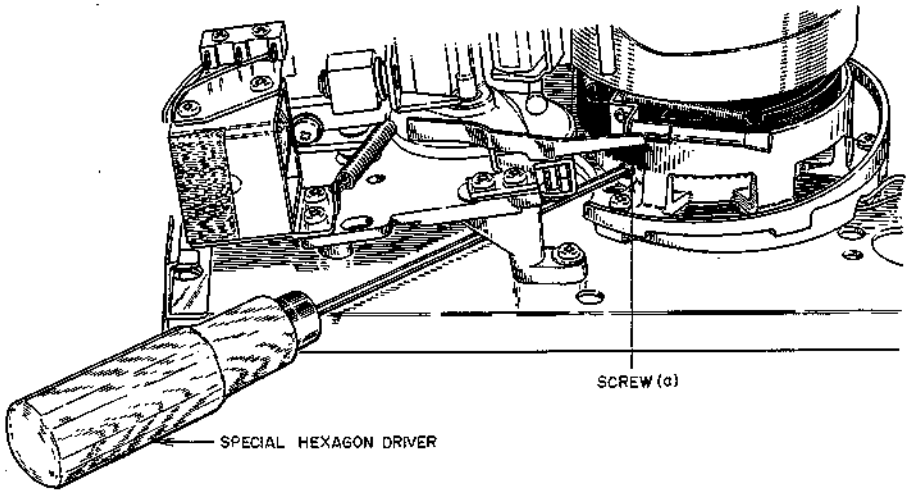


Fig. 4-14

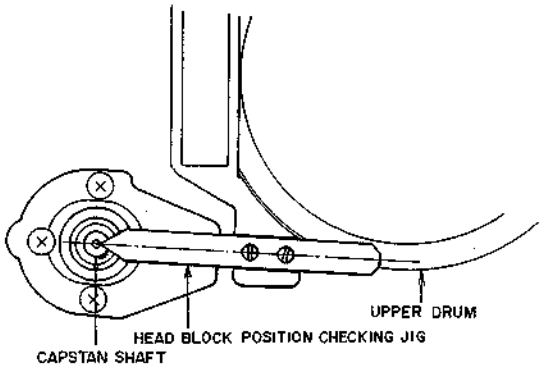


Fig. 4-15

(7) Video Head Block Positioning Adjustment

If the drum holder is removed from the video head block, positioning adjustment will be necessary. Adjust as follows.

1) Remove the Chroma P.C Board and Process and Encoder P.C Board with the metal holder for p.c board and a shield plate from VT-400.
2) Remove the video head block from the VT-400.
3) Remove the gear motor from the drum holder.
4) Remove two of the three 2 mm hexagon screws retaining the drum holder and tighten screw (a) in Fig. 4-14 provisionally.
5) Install the video head block.
6) Shift the head block by hand until the end of the head block position checking jig is aligned with the center of the capstan shaft as shown in Fig. 4-15.
7) After they are correctly positioned, tighten screw (a) only tighten by hand using the special hexagon screwdriver shown in Fig. 4-11.
8) Remove the head block again and tighten the three 2 mm hexagon screws on the drum holder using an ordinary hexagonal wrench.
9) Install the head block and ascertain that positioning is correct as shown in Fig. 4-15.

CAUTION: Avoid using the special hexagon screwdriver to remove 2 mm hexagonal screws fixing the drum holder. The special hexagon screwdriver has limited strength. Use it exclusively for tightening screws by hand in step 7).

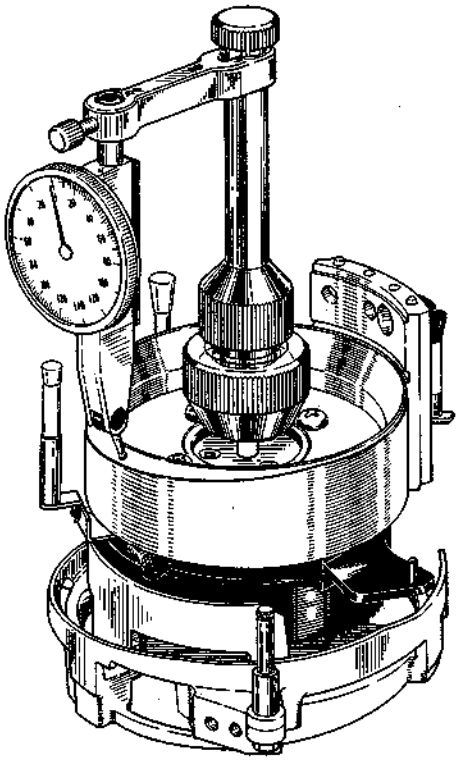


Fig. 4-16

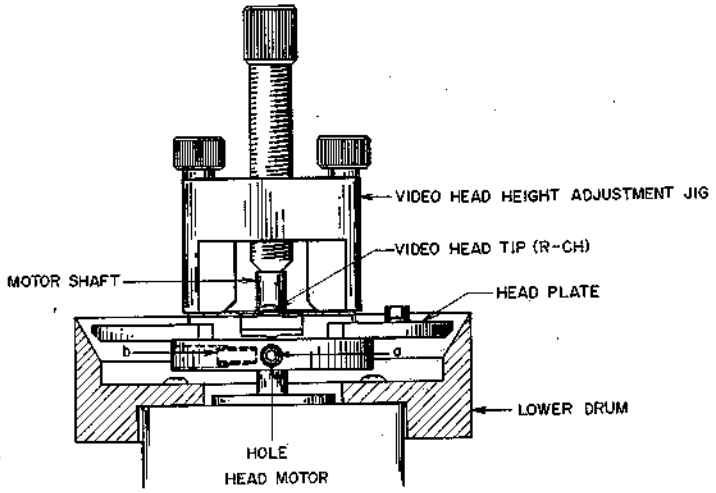


Fig. 4-18

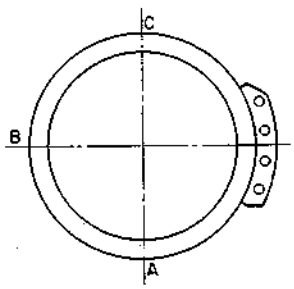


Fig. 4-17

(8) Drum and Head Plate Adjustment

1) Lower Drum Adjustment

a) Mount the lower drum on the drum support with its base fitting completely. Check by fitting a razor blade, etc. onto the bottom of the drum support and lower drum. The three screw holes for fixing the drum support have a small play to the right and left. Tighten the screws in the center of each hole.

b) Mount the lower drum on the drum motor and tighten the four screws provisionally.

c) Use a dial gauge, adjust until point B is within $+5\mu/-0$ from points A and C, then secure the lower drum by tightening the four screws inserted in step b).

2) Head Plate Height Adjustment

a) Fit the video head height adjustment jig to the head plate.

b) Mount the head plate on the motor shaft as shown in Fig. 4-18.

c) Using a microscope and the video head height adjustment jig, adjust until the head plate is 500μ above the upper edge of the lower drum.

d) Bring the R-channel video head to the hole in the lower drum.

e) Tighten the 1.5 mm hexagon screw (a) in Fig. 4-18.

f) Tighten another screw (b) (1.5 mm hexagon screw) located on the opposite side of the R-channel head, 90° counterclockwise from the head plate.

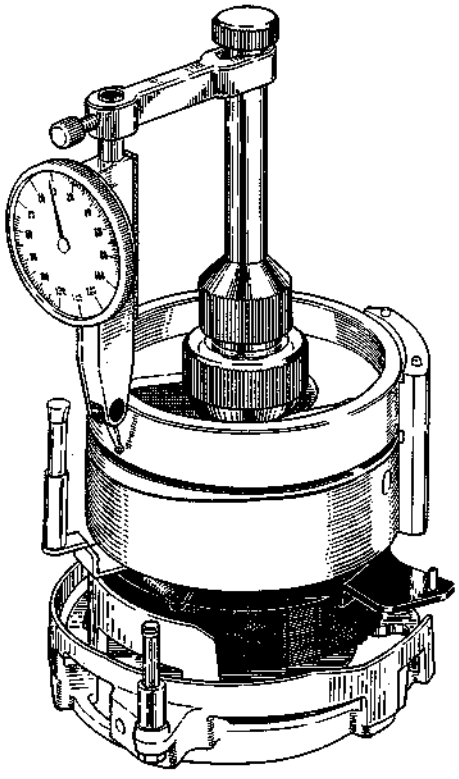


Fig. 4-19

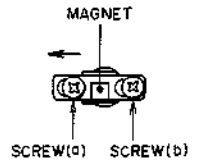


Fig. 4-21

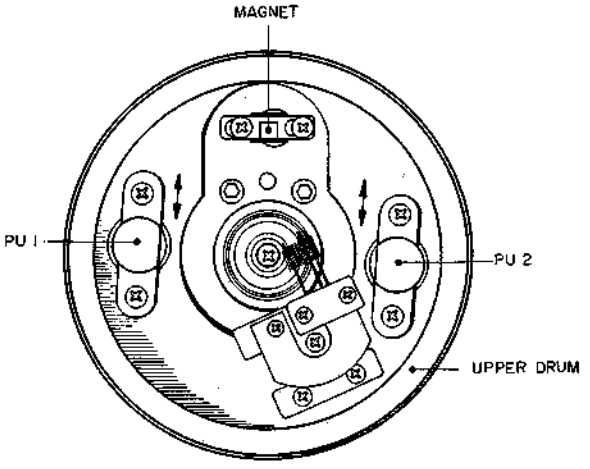


Fig. 4-22

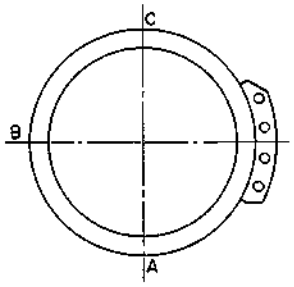


Fig. 4-20

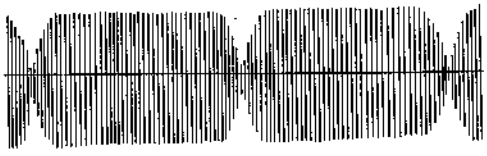


Fig. 4-23

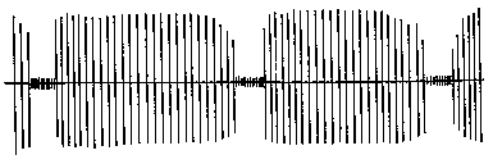


Fig. 4-24

3) Upper Drum Adjustment
   a) Mount the upper drum on the drum support. Take great care not to touch the video head. Ascertain that the upper drum runs level with the upper side of the drum support.
   b) Ascertain that points A and C are within -15μ $\pm 5\mu$ from point B in Fig. 4-20 and errors at points A and C are within 3μ.
   c) If not, adjust the play of the three screws on the upper side of the drum support. If this still fails to obtain the correct relationship between points A, B and C, adjust by inserting a piece of audio tape in the gap between the drum support and the upper drum.

   NOTE: The tape width varies according to the type of the tape. Choose a suitable one.

(9) Magnet and PU Head Adjustment
1) Turn the magnet fully counterclockwise and secure it by tightening screws (a) and (b) as shown in Fig. 4-21 and Fig. 4-22.
2) Connect an oscilloscope to the test point TP-5 on the PZ Signal P.C Board and view the waveform while playing back a reference tape.
3) If the waveform at TP-5 has no signal elements as in Fig. 4-24, adjust the positions of the two PU heads until signal elements are included as in Fig. 4-23.

4-1-2. P.C BOARD LOCATION

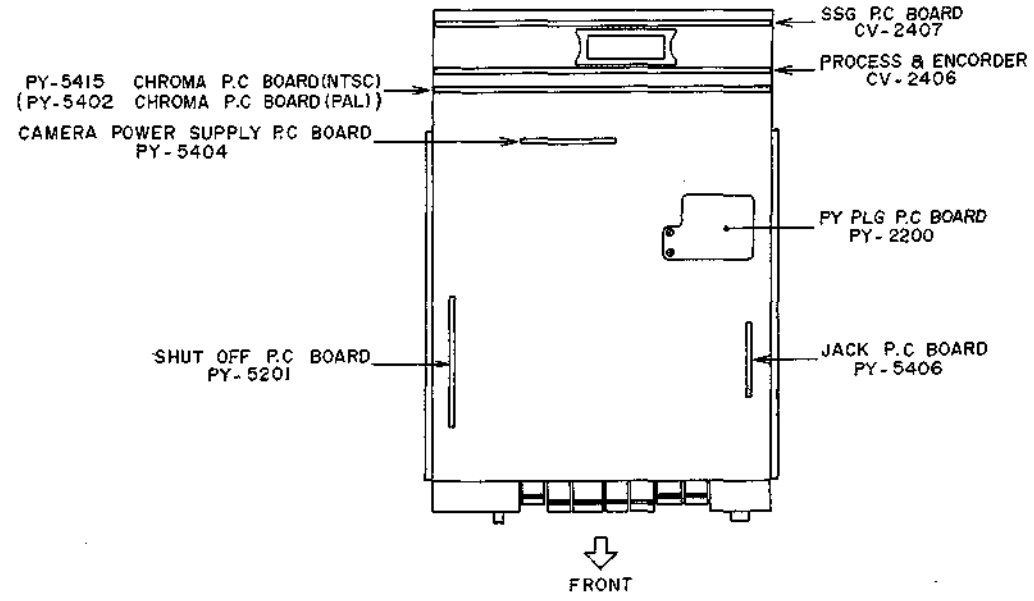


Fig. 4-25 Top View

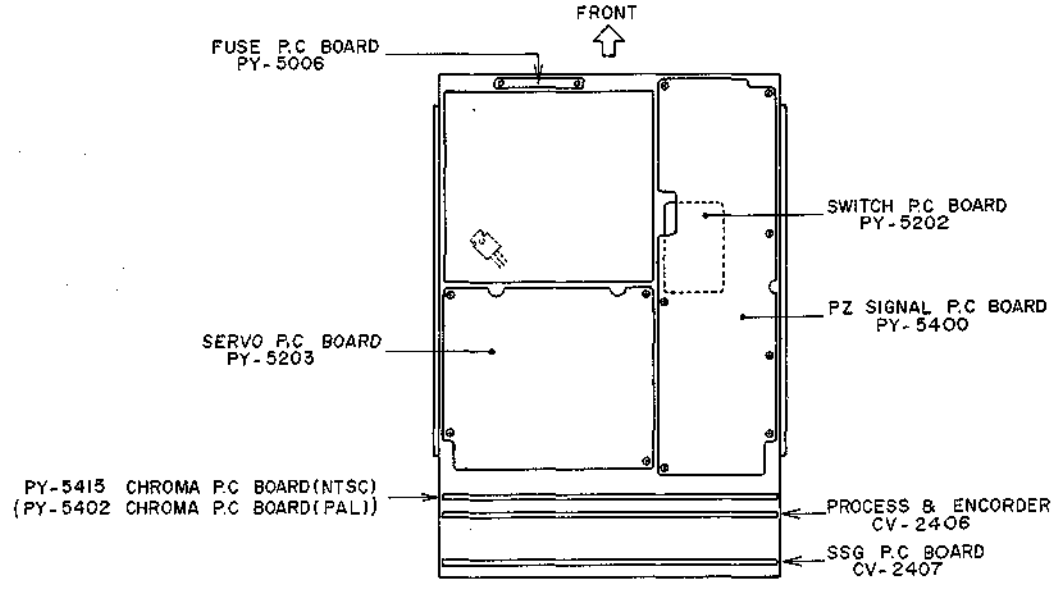


Fig. 4-26 Bottom View

4-1-3. SERVO P.C BOARD (PY-5203)

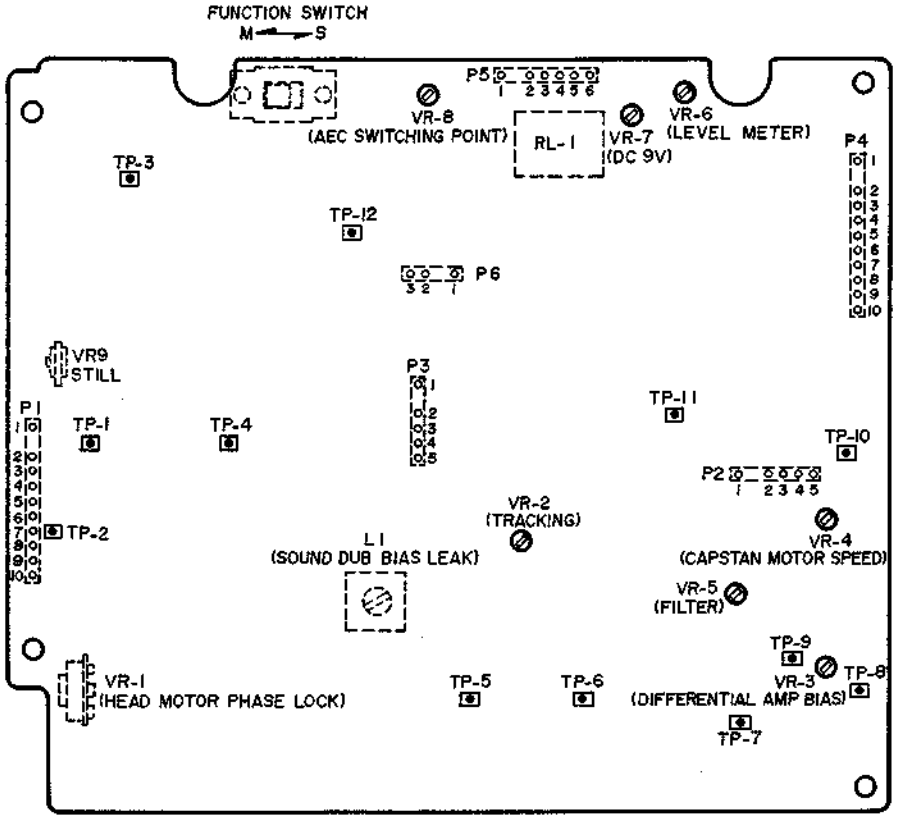
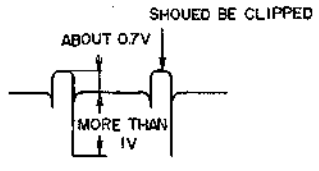
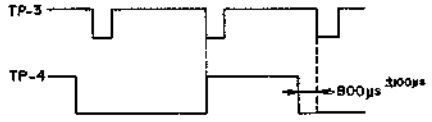
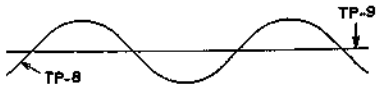
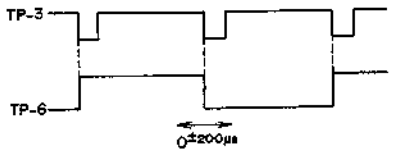
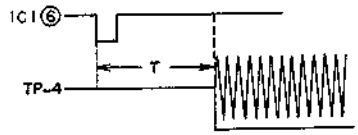
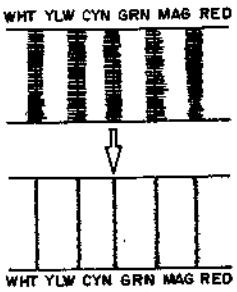


Fig. 4-27 Servo P.C Board (PY-5203) (Pattern side view)

* Set to Function Switch to "S" position.

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Result
1	DC12V	P4 ⑥	VR1 (300B) of VA-300	E-E	DC12V ±0.02V
2	Battery Checker	TP-12	VR7 500B	E-E	DC10V ±0.1V
		Level Meter	VR6 500B		Meter needle Points to a Position between red and white zone.
3	DC9V	TP-12	VR7 500B		DC9V ±0.1V
4	PU Head Output	TP-1 TP-2	Confirmation	E-E	
5	Head Motor Phase Lock	TP-3 TP-4	VR1 2 kB	E-E	 (NOTE 1)

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Result
6	Differential Amp Bias	TP-8 TP-9	VR3 200B	PB (Reference Tape)	 Adjust the DC voltage of TP-9 to the center of TP-8 wave.
7	Filter	TP-11	VR5 10 kB	PB (Reference Tape)	Make the flat waveform as near to DC as possible and obtain the minimum voltage possible.
8	Capstan Motor Speed	TP-10	VR4 20 kB	E-E	Connect Frequency Counter to TP-10. US: about 866 Hz CCIR: about 848 Hz (NOTE 2)
9	Tracking	TP-3 TP-6	VR2 50 kB	PB (Reference Tape)	
10	Sound Dub Bias Leak	TP-5	L1 22 mH	Sound Dub	Adjust Bias leak to minimum.
11	AEC Switching Point	IC1.⑥ (PY-5203) TP-4 (PY-5022)	VR8	E-E Rec	 T: 15.5 ms ±0.5 ms (US) T: 19.0 ms ±0.5 ms (CCIR) (NOTE 3)
12	Still	Monitor TV	VR9	Still (Reference Tape)	 Adjust to minimum blur between color and color on monitor TV.

NOTES:
1. For the last stage of this adjustment, adjust VR-1 (2 kB) until the switching point is 7.5H from the V sync.
2. This is an electrical speed adjustment.
   Finally, set the Function Switch to "M", playback a US 1,000 Hz standard tape and adjust VR4 (20 kB) until the output is within 993 to 1,003 Hz (US) and 977 to 986 Hz (CCIR).
3. The recording current increases only once after the recording power is turned on. If the increase is to be checked again, turn off the power, then turn it on again. The increase waveform can be seen only once on the oscilloscope at the moment when the recording starts in the E-E mode.

4-1-4. SSG P.C BOARD (CV-2407)

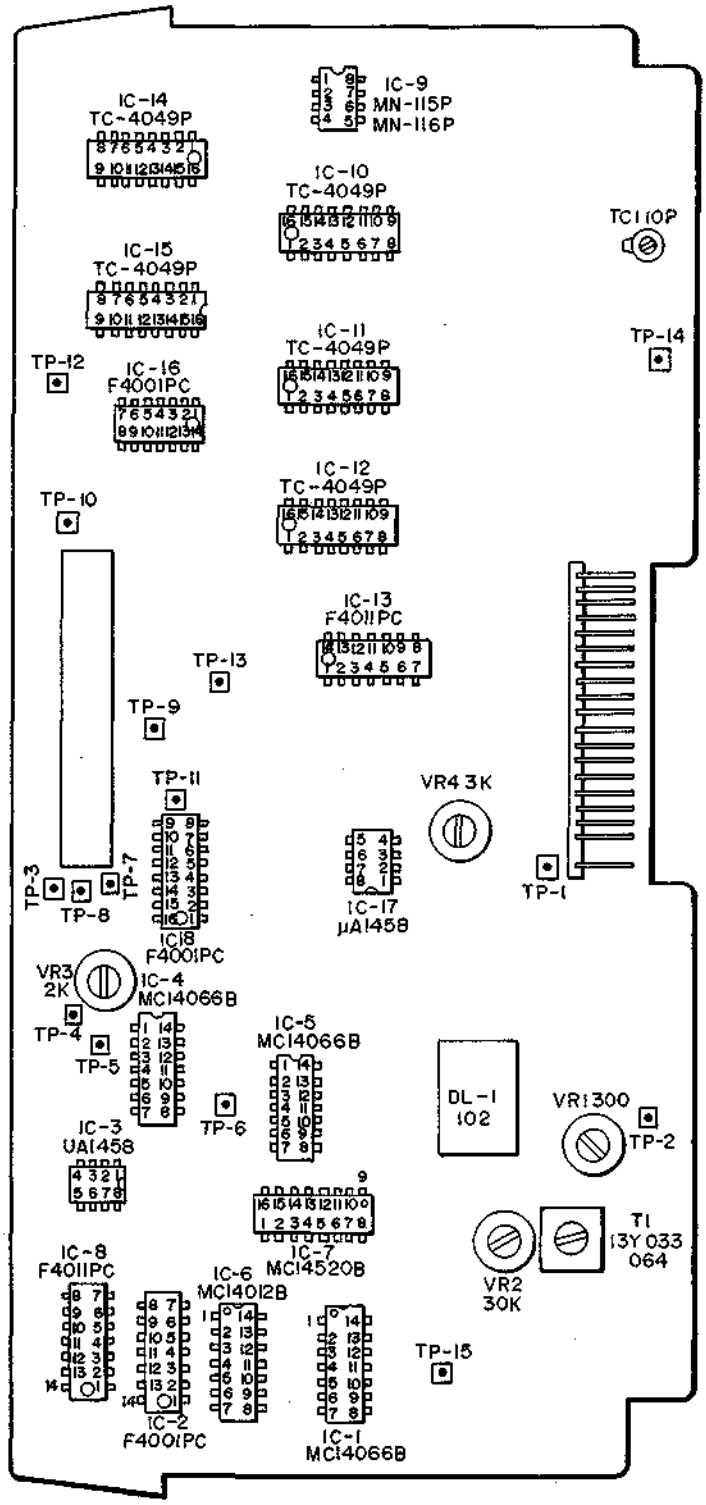
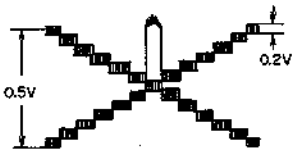
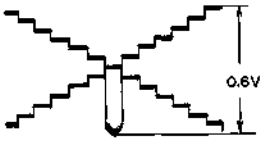
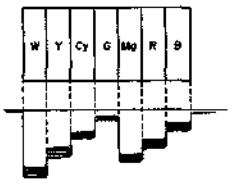
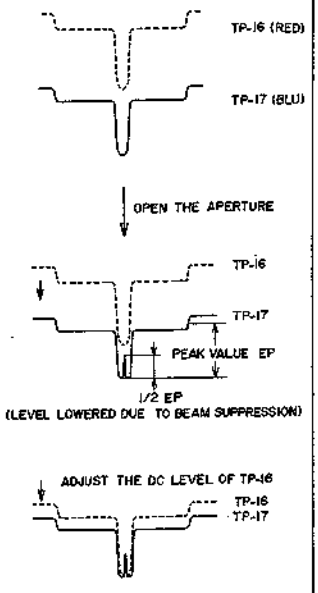
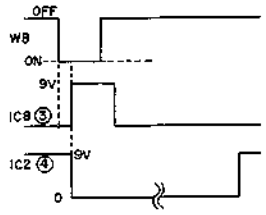
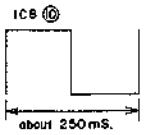


Fig. 4-28

NOTE: If the camera head does not function properly, adjust the camera head and then perform the SSG adjustment.

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
1	PB input checking	TP-1		E-E	○ 300°K, 2000 Lux and grey scale. ○ Adjust the level with the VR on the camera head DEF 1. ○ Initial set-up should be "zero". (Adjust the camera head if necessary)	
2	G input checking	TP-8		E-E	Same as step 1.	
3	Blue level	TP-2	VR1	E-E	① Picture the grey scale. ② Set the aperture ring according to step 1. ③ Adjust the level of TP-2 to 3Vp-p.	
4	Checking of blue demodulation output	TP-15			After adjusting VR1 by carrying out step 3, make sure that the output of TP-15 is 0.55p-p. (use the grey scale.)	
5	-B/2 adjustment	TP-16	VR2	E-E	① Picture the color bar pattern. ② By moving VR2, change the waveform shown in the figure below into that shown in the "Results" column. ③ The pattern as shown below should be pictured on the monitor TV.  TP-16 BEFORE ADJUSTMENT TP-16 before adjustment	Make adjustment so that the levels of cyanogen, green and blue come as near to the zero level as possible. In particular, the blue level should be brought nearest to the level.  TP-16 AFTER ADJUSTMENT TP-16 after adjustment

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
6	Chroma-Suppress	TR16 Base (Red) TR17 Base (Blue)	VR3	E-E	① Set the zoom to the widest position. ② Picture a fluorescent lamp on the monitor TV. ③ When the aperture is gradually opened by manual, the level of TR17 falls due to suppression of beam after reaching the peak. ④ Fix the aperture when the level of TR17 has reached about half of the peak level. ⑤ Using VR3, set the DC level of TR16 to the point at which the peak level of TR16 exceeds the blue peak level a little. NOTE: Use the oscilloscope in the DC mode.	
7	Checking of white balance reset signal	IC8 ③		E-E	Depress and then release the white balance switch and ascertain that the result pulse as shown in the figure is transmitted.	
8	Checking of clock pulse	IC8 ⑩		E-E	While depressing the white balance switch, make sure that the clock pulse as shown in the figure is sent out.	
9	Checking of normal level estimation	IC3 ⑦ (Red) IC3 ① (Blue)		E-E	When the automatic white balance adjustment is over, the levels of IC3 7 and IC3 1 are changed over from 2.0V to 8.2V.	8.2VDC

4-1-5. PROCESS AND ENCODER P.C BOARD (CV-2406)

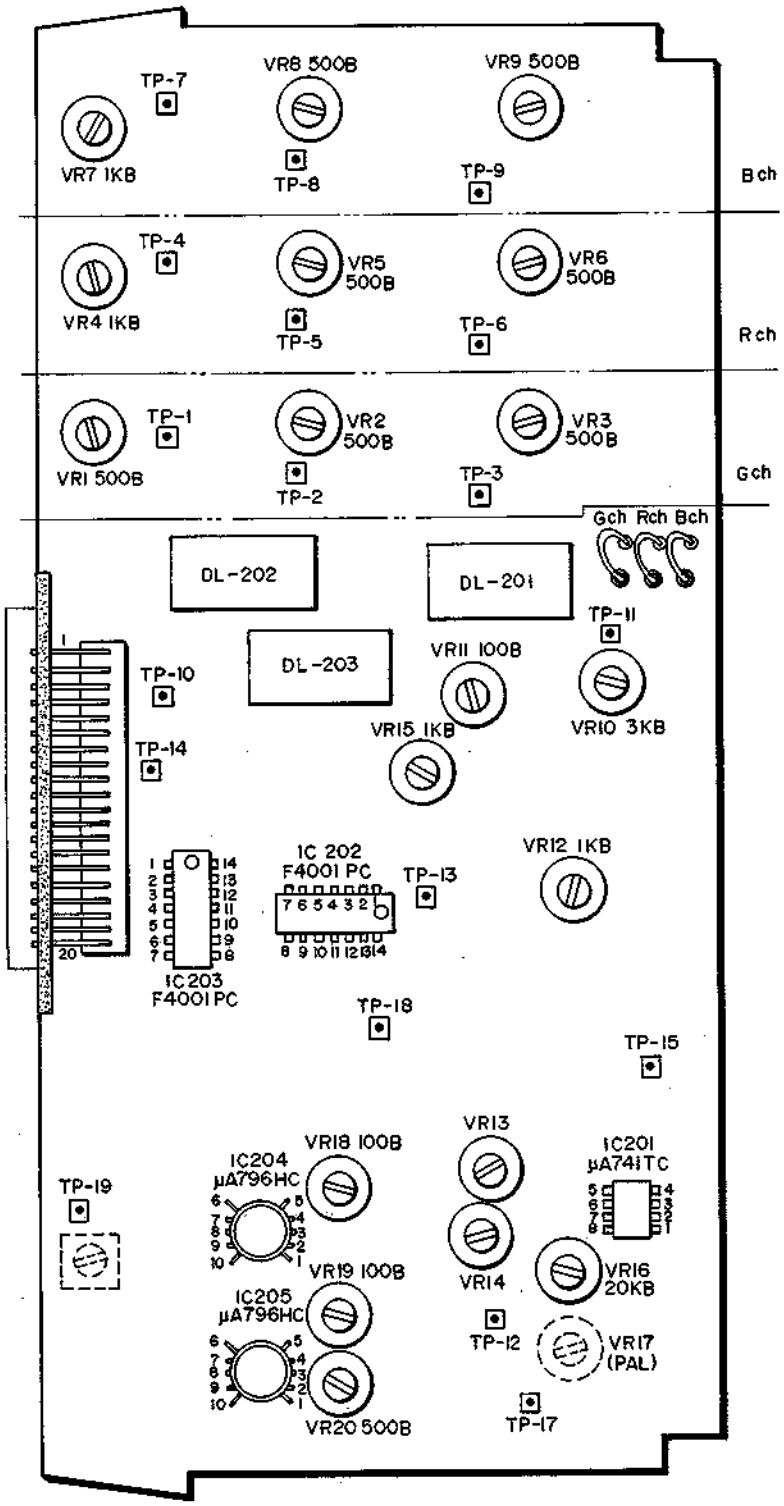
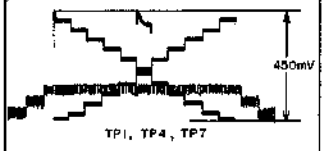
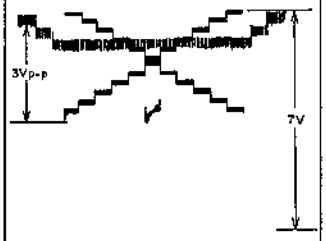
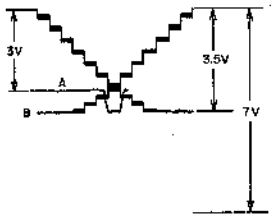
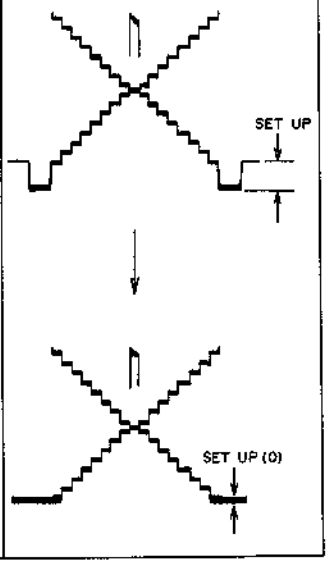
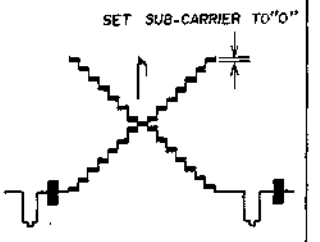


Fig. 4-29

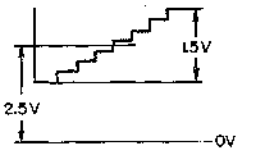
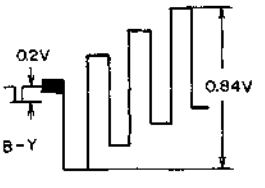
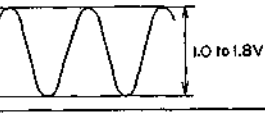
(1) Process Section

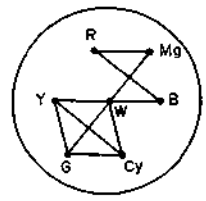
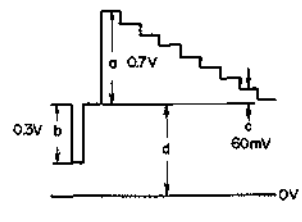
Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
1	Input level	TP-1(G) TP-4(R) TP-7(B)	VR1 VR4 VR7	E-E	① Use the 2,000 Lux grey scale. ② Adjust the aperture ring, so that the level of G channel on SSG becomes 500 mVp-p. ③ Adjust the each volume, so that the output of each test point become 450 mVp-p.	
2	White compression and white clip	TP-2(G) TP-5(R) TP-8(B)	VR2 VR5 VR8	E-E	① The conditions are same as step 1. ② Set the DC level to 7V with VR2, 5 and 8. ③ Ascertain that the grey scale "white" is set to 3Vp-p. Carry out readjustment by performing step 1 if necessary.	
3	Checking of operations of white compression and white clip	TP-2(G) TP-5(R) TP-8(B)		E-E	① Use the 2,000 Lux grey scale. ② Open the aperture on the camera to set the levels of TP1, 4 and 7 to 1Vp-p. ③ In this condition, make sure that the waveform conforms to the figure given. Level(A): Starting point of white compression. Level(B): Starting point of white clip.	
4	Set-up	TP-3(G) TP-6(R) TP-9(B)	VR3 VR6 VR9		① Same as step 1 above. ② Using each VR, set the set-up level to zero.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
5	Fine adjustment of white balance	Video out	VR1 to VR9		① Same as step 1 above. ② Perform fine adjustment with VR of each channel by using the G-channel as standard so that the sub-carrier of the video output signal comes. ③ Make sure that the sub-carrier is set to "0" even when the aperture is opened.	

(2) Encoder Section

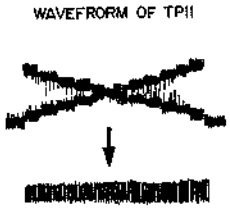
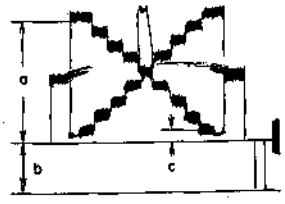
1) Adjustment with color bar signal

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
1	Checking of −Y signal	TP-15		E-E	① Disconnect the jumper wires from the encoder input (R, G and B) terminal. ② Sent R, G, B (2Vp-p) to the terminal and from ACB-1. (ACB-1 is a special color bar generator of AKAI made) ③ Ascertain that the waveform confirms to the figure given in the "Results" column.	
2	Burst level	TP-16 TP-17	VR16 VR17 (PAL)		① Set the burst level to 0.2V with VR16. ② Make sure that all the other waveforms are similar to that shown in the figure. ③ Ascertain that the off set corresponding to the white portion is below 15mV. (Take care because the offset of the white portion becomes great when there is a difference in the test signal levels.)	 
3	Sub-carrier level	TP-19	T-202	E-E	Make adjustment so that the amplitude of the sub-carrier becomes maximum.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
4	Carrier balance	TP-18	VR18 VR19		Make adjustment so that the carriers at the white and BLK portions become zero.	
5	Amplitude of R-Y modulated wave		VR20	E-E	① Perform adjustment with each VR/TC so that each bright point lies within " ⊞ " on the vectorscope. ② By moving T-202, make adjustment so that the transient characteristic from each dot to dot become linear. (The vectorscope must be set to the 100% range.)	
6	Phase of B-Y modulated wave		TC-201	E-E		
7	Chroma level		VR15	E-E		
8	Video-out	TP-14	VR12 VR14 VR13	E-E	ⓐ Adjust the Y level with VR12. ⓑ Adjust the sync level with VR14. ⓒ Adjust the set-up level with VR13. ⓓ Check the DC level.	
9	Aperture correction	TP-10	Checking	E-E	Make sure that the level of the color bar test signal for G channel is 1/4 of that of the input signal. G_H = 0.5V	
		TP-11	VR11	E-E	Using VR11, adjust so that the low frequency components become zero.	

2) Adjustment with camera

Adjustments other than those mentioned in steps 2, 3, 8 and 9 are impossible unless a color bar generator is available. Do not move VRs unless it is absolutely necessary to do so.

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
1	Aperture correction	G.R and B jumper terminal	Checking (Adjustment of aperture)	E-E	① 2,000 Lux and grey scale. ② Adjust the camera aperture so that the levels of input terminals G, R and B (jumper terminals) become 2Vp-p.	
		TP-11	VR11	E-E	Using VR11, make adjustment so that the "0" level becomes straight as seen in the figure.	
2	Video Out	TP-14	VR12 VR14 VR13		ⓐ Adjust the Y level to 0.7V with VR12. ⓑ Adjust the sync level to 0.3V with VR14. ⓒ Adjust the set-up level to 60 mV with VR13.	 ⓐ Y level ⓑ Sync level ⓒ Set-up level

4-1-6. CHROMA P.C BOARD (NTSC) (PY-5415)

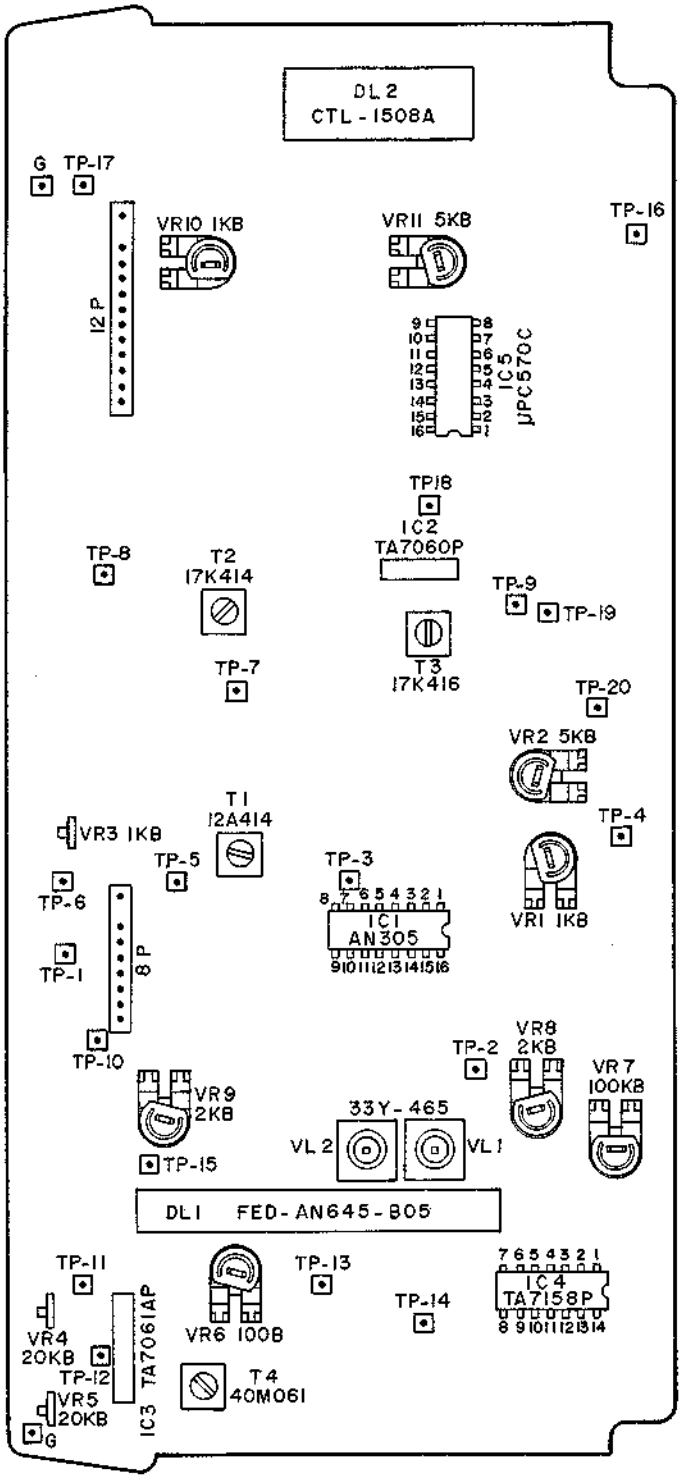
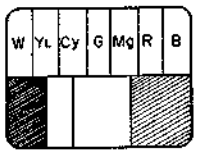
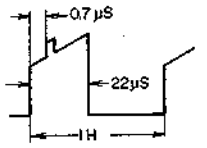
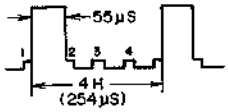
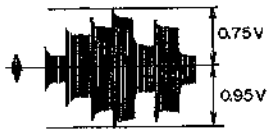
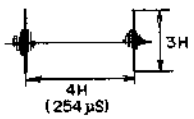
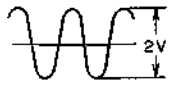
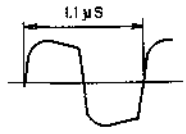
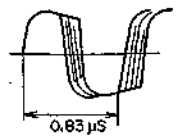
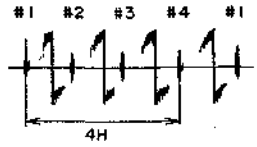


Fig. 4-30

(1) Chroma P.C Board (NTSC)

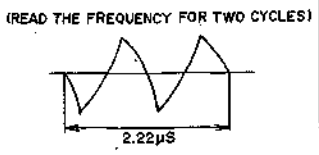
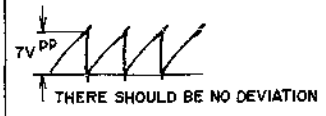
1) E-E/Rec Mode

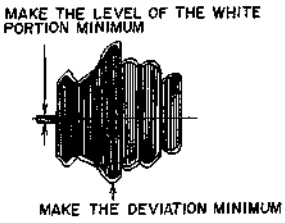
Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
0	Measuring instrument set			E-E (Camera)	① Disconnect the camera from the VTR unit. ② Remove the process encoder P.C Board from the VTR unit. ③ Apply 1Vp-p 75% color bar signal to TP-1. (Adjustment of E-E system by the steps below should be performed with the above-mentioned set-up unless otherwise specified in "NOTE".)	 (Monitor picture)
1	A.F.C.	TP-18	VR11	E-E (Camera)	Using VR11, make adjustment so that the waveform present the phase relations as shown in the figure. (If no input signal is present or if A.F.C. is not applied, it is impossible to check the waveform of H sync.)	
2	1/4 counter	TP-19	VR12	E-E (Camera)	① By turning VR12, set the pulse width to 55μS. ② Ascertain that the pulse width is 4H.	
3	Chroma A.G.C.	TP-2	Checking	E-E (Camera)	Make sure that level is 0.75 to 0.95Vp-p.	
4	Burst gate	TP-7	Checking	E-E (Camera)	Ascertain that the burst signal emerges at an interval of 4H.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
5	A.P.C.	TP-8	T-3		① Measure the DC level of TP-8 when the input signal is off. This level is represented by Ev (=4 to 6.5V). ② Apply the input signal and make adjustment with T-3 so that the DC voltage of TP-8 becomes (E-0.7)v (3.3 to 5.8)v. ③ Perform the steps ① and ② several times. ④ Apply the input signal and make sure that no ripple is caused when the voltage of TP-8 is DC4 to 6.5V.	Ripple (1 to 5 mS, 0.2Vp-p) is caused if locking is cleared.
6	A.P.C. oscillation	TP-9	Checking	E-E	① Make sure that sine wave (2Vp-p) is on. ② Frequency: 3.583479 MHz	
7	FM Deviation (900kHz ± 300kHz)	TP-5 TP-3	VR2 VR1		① Move VR1 fully counter clockwise. ② Make adjustment with VR2 so that the cycle of the waveform of TP-5 is 1.1μS. (900 kHz) ③ Using VR1, set the highest frequency to 0.83μS (1.2 MHz). ④ Make sure that the waveform of TP-3 has the 4H cycle. (2 to 2.5Vp-p) ⑤ Because the level changes upon adjustment of the comb-shaped filter, it is necessary to perform step 3 again after adjustment of the reproduction system.	  
8	Rec level (chroma)	TP-6	VR3		Set it to 0.3Vp-p.	
9	Output level (Y signal)	TP-17	VR10		Set it to 1.0Vp-p (100% white).	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
10	Output level (chroma)	TP-17	VR9		Make adjustment so that the burst level becomes 0.3Vp-p. (Adjustment must be performed again after adjustment of the reproduction system because the level changes upon adjustment of the comb-shaped filter.	

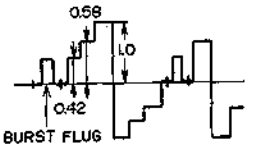
2) PB Mode

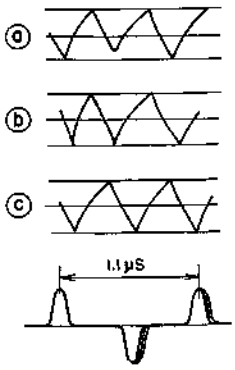
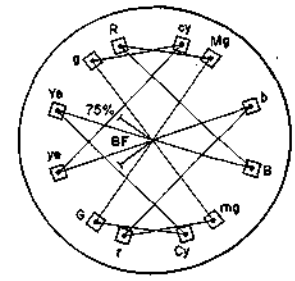
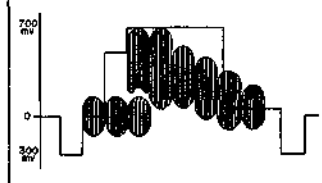
Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
0					Adjustment of the PB system should be made by playback the REF-tape (or by recording and playback the color bar signal.)	
1	A.P.C.	TP-8 TP-9	checking	PB	① Make sure that the DC level of TP-8 is the same as that in the E-E mode. ② Ascertain that the frequency of TP-9 is 3.583479 MHz.	
2	PB Chroma correction	TP-11	VR4	PB	① Disconnect the PB FM signal input circuit R1. ② Make adjustment with VR4 so that the waveform becomes 900 kHz.	(Read the frequency for two cycles.) 
3	Carrier balance	TP-13	VR5 VR6	PB	① Disconnect the PB FM signal input circuit R1. ② Adjust with VR so that the waveform becomes even.	 There should be no deviation.

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
4	Comb-shaped filter	TP-15	VR7 VR8 VL1 VL2	PB	① Make adjustment with VR7 so that the level of the white portion of the color bar becomes minimum. ② Make adjustment with VR8, VL1 and VL2 so that the difference between the chroma signal subjected to 1H Delay and the direct chroma signal is minimum. (in case of the vector-scope, make the zero point vector minimum and put it within the " ⊞ " frame. ±5°, ±10%)	Make the level of the white portion minimum.  Make the deviation minimum. (NOTE: Use the color bar signal on the REF tape at 100%).
5	E-E system level	TP-5 TP-17	VR1 VR9	E-E	Carry out readjustment by performing step 7- ③ and 10 described in "Adjustment of E-E System".	
6	PB level (Y level)	TP-17	T-202	PB	Adjust T-202 on the signal P.C Board to set the output level to 1.0Vp-p.	
7	PB level (chroma)	TP-17	T-4	PB	Set the upper limit of the chroma signal for the yellow of the 75% color bar to 1Vp-p 100% white level.	

(2) Chroma P.C Board (PAL)

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
0	Measuring instrument			E-E (Camera)	① Desconnect the camera from the VTR unit. ② Remove the process/ encoder P.C Board on the VTR unit. ③ Apply 1Vp-p 75% color bar signal to TP-1. ④ Set the VT/camera switch to the "camera" position.	
1	Burst gate pulse	TP-20	Checking	E-E	Make sure that the pulse width is 4.0μS ± 0.5μS.	
2	Clamp pulse	TP-21	Checking	E-E	Ascertain that the pulse width is 2μS.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
3	A.C.C.	TP-2	VR4	E-E	① Make adjustment with VR4 so that the level of the burst portion of TP-2 becomes about 0.5Vp-p.	
		TP-2	T3	E-E	② Make adjustment with T3 so that the size of the waveform of TP-2 becomes minimum.	
		TP-2	VR4	E-E	③ Again adjust with VR4 so that the level of the burst portion becomes 0.5Vp-p.	
4	A.P.C.	TP-8	T4	E-E	① Remove the input video and measure the DC voltage of TP-8 with the DC range of the oscilloscope. ② Connect the color bar signal to the input terminal. Make adjustment with T4 so that the voltage becomes equal to the value measured in step 3-①. 3 Repeat 1 and 2 so that the voltages coincide with each other. (NOTE: Then, the voltage of TP-8 should be 4 to 6.5V.)	
5	Adjustment of decoder phase	TP-6	T2	E-E	Make adjustment with T2 so that the ratio of the output waveform of TP-6 conforms to the figure.	
6	FM modulation				① Temporarily set the VR3 fully counterclockwise.	
		TP-3	VR1	E-E	② Make adjustment with VR1 so that the waveform of TP-3 becomes 1.1μS (900 kHz).	
		TP-3	VR3	E-E	③ Make adjustment with VR3 so that the cycle of the highest frequency becomes 0.83μS (1.3 MHz). NOTE: The cycle of the lowest frequency should be 1.63μS (600 kHz).	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
7	Rec level	TP-4	VR2	E-E	Again set VR2 so that the level of TP-4 becomes 0.2Vp-p.	
8	FM limiter demodulator	TP-14	T5	E-E	① Make adjustment with T5 so that the level of TP-14 becomes 2.0Vp-p.	
		TP-13	VR5 VR7	E-E	② Remove the VIDEO IN and make adjustment with VR5 and VR7 so that the balance of the waveform conforms to the figure ⓒ in result column.	
		TP-11	VR6	PB	③ No using the cassette tape, put the PB mode, then make adjust the VR6 so that the waveform at TP-11 becomes 1.1μS (900 kHz).	
9	Encoder	TP-16	VR9 VR8	E-E	① Temporarily set VR9 by turning it fully counter-clockwise. Make adjustment with VR8 so that the sub-carrier of the blanking portion of the TP-16 waveform becomes minimum. ② By using VR9, make the levels at each 1H even.	
10	Vector Adjustment		VR9 T8 T9	E-E	① Connect the vectorscope to the VIDEO OUT terminal on the VTR. ② Move VR9, T8 and T9 by turns so that the bright points of colors become focused on a point and come within " ⊞ ". Allowable error is ±4° and ±7%. NOTE: The " ⊞ " mark shows the phase deviation of ±3° and amplitude deviation of ±5%.	
		TP-8 (Video Amp)			③ When adjustment in step 2 above is completed, observe the waveform at the VIDEO OUT on the video amp P.C Board and make sure that it conforms to the figure.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
11	Chroma output level	TP-16	VR10	E-E	Make adjustment with VR10 so that the level of yellow coincides with the level of 100% white of the Y signal.	
12	REC level		VR2	REC/ PB (B/W)	Record the color bar and playback it on B/W. Make adjustment with VR2 so that no outstand-chroma signal (oblique streak) appears on the screen).	

4-1-7. PZ SIGNAL P.C BOARD (PY-5400)

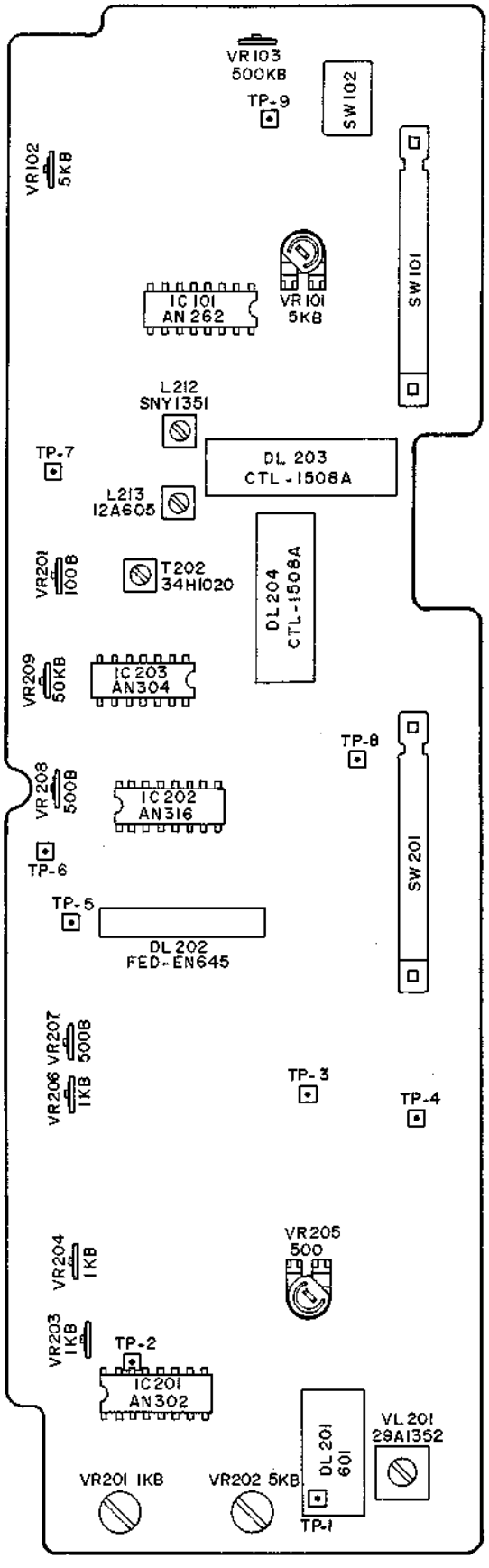
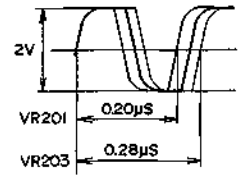
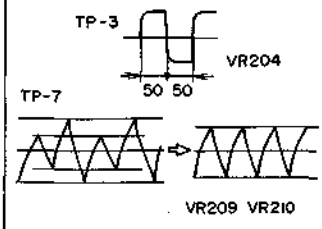
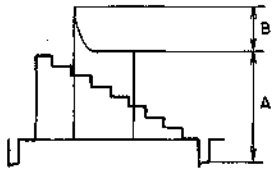
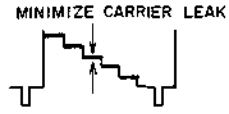
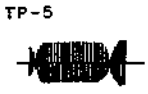


Fig. 4-31

Video Circuit (Signal P.C Board)

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
0					① Apply the color bar signal to the VIDEO IN. ② Set the mode to TV and B/W.	
1	FM carrier set	TP-3	VR201 VR203	E-E	① Turn VR202 fully counterclockwise. (White clip off) ② 0.20μS at VR201. ③ 0.28μS at VR203. ④ Make sure that the output level is about 2Vp-p.	
2	Carrier balance	TP-3	VR204 VR209 VR210	E-E	① Remove the video input. ② Adjust the duty ratio to 50%. ③ By moving VR209 and VR210, balance the waveform.	
3	Video output level	TP-8	T-5	E-E	Adjust the output to 1Vp-p with T5.	
4	White clip	TP-2	VR202	E-E	① Make adjustment so that B=1/3A in the figure. ② Make sure that A≒1.3V.	
5	Chroma trap	TP-4	T202	E-E	Make adjustment to that the chroma becomes minimum.	
6	Recording current	TP-5	VR205	REC PB	Adjust VR205 so that the playback output becomes maximum.	
7	Head output balance	TP-5	VR206	PB	Make adjustment so that the playback outputs of CH1 head and CH2 head become equal to one another.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
8	D.O.C. level	TP-6	VR208	PB	① Remove the solder on the P.C Board for D.O.C. operation checking. ② Record the color bar signal and adjust the output level to about 1Vp-p. ③ Connect the D.O.C. check pattern and check the normal D.O.C. operation with the monitor TV.	

4-2. VC-400

4-2-1. DEFLECTION 1 P.C BOARD

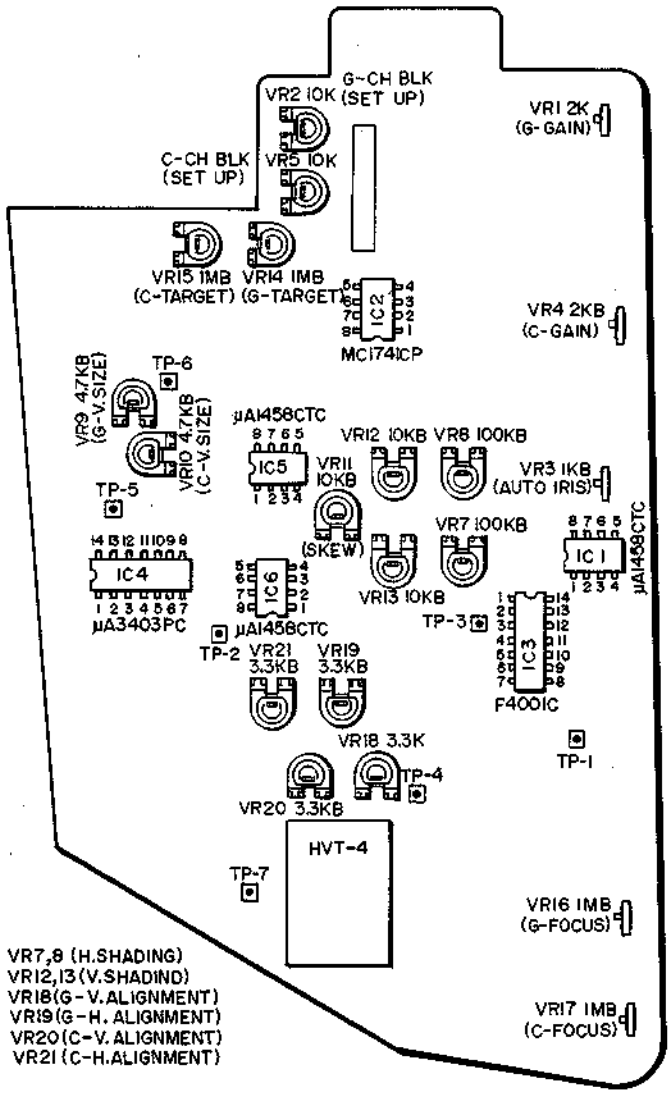
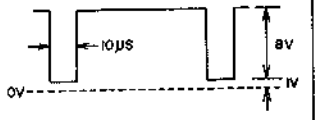
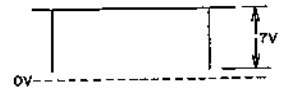
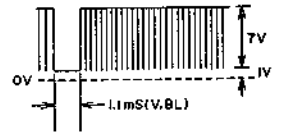
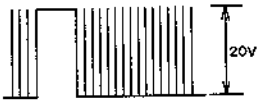
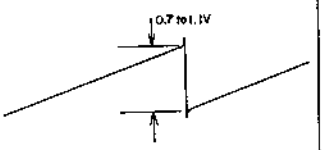
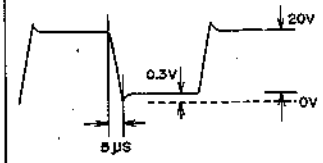
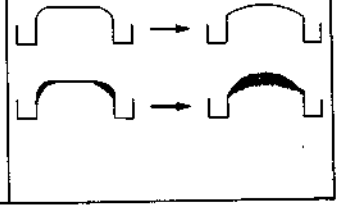
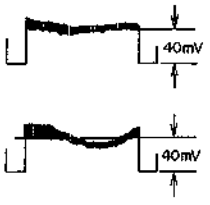
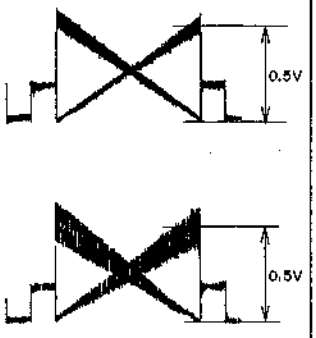
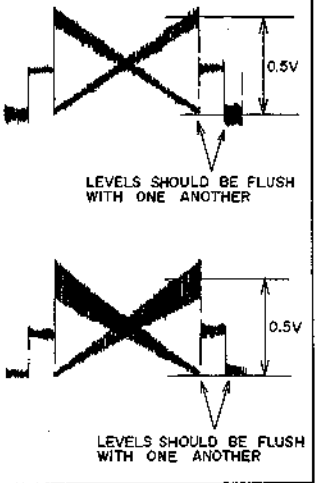


Fig. 4-32

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
1	9V output (power supply P.C Board)	IC1 7	VR1	E-E	Adjust the 9V output to 9V ±30 mV.	+9V DC
2	Checking of H.D. pulse (DEF-1)	TP-1		E-E	Make sure that HD is separated and that the level is about 8Vp-p.	
3	Checking of V pulse (DEF-1)	TP-2		E-E	Make sure that the V pulse is separated and that the level is about 7Vp-p.	
4	Checking of BLK pulse (DEF-1)	TP-3		E-E	Make sure that the size of the BLK is 7Vp-p and that the V.BL is about 1mS.	
5	Checking of K.BLK (DEF-1)	TR17 collector TR18 collector		E-E	Make sure that the size of K.BLK is 20Vp-p.	
6	H.DEF deflecting waveform (DEF-1)	TP-5 (G-ch) TP-6 (C-ch)	VR9 VR10	E-E	While observing the screen, adjust VR9 (G-ch) and VR10 (C-ch) so that the levels of G-ch and C-ch become equal. NOTE: on VC-400, no adjustment of linearity is made.	
7	DC-DC converter input waveform (DEF-1)	TP-7			The level should be 20Vp-p and the DC level as measured from the ground should be less than 0.3V.	
8	DC-DC converter output voltage	R151 R153 D20 VR16,17 VR14,15 D21 D22		E-E	High input resistor above 100Mohms. D20 anode voltage VR16,17 middle point VR14,15 D21 cathode voltage D22 anode voltage	500V±10V 300V±5V −95V±5V more than 60 to 85V. more than 0 to 43V. 23 to 25V −9V±0.5V
9	Amount of beam	G-ch pre-out C-ch pre-out	VR2 VR1	E-E	① 2,000 Lux, white pattern ② Lens aperture open. ③ Set VR2 and VR1 to such a point at which the pre-out waveform in G-ch and C-ch does deviate.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
10	Dark current	G-ch pre-out C-ch pre-out	VR14 VR15	E-E	① Lens aperture closed. ② Cause the waveform of pre-out to be 40mV (mean value). ③ Measure in the V range.	
11	Camera head output	TR15 Emitter TR16 Emitter	VR1 VR2	E-E	① 2,000 Lux, grey scale. ② Lens aperture F4. ③ Adjust the zoom so that the outside frame of the pattern just fits on the Monitor TV screen. ④ Adjust so that the size at the right is 0.5V.	
12	Set-up	TR15 Emitter TR16 Emitter	VR5 VR2	E-E	① Same as step 13 above. ② Make adjustment so that the level of the black portion is just the same as that of the BLK portion. ③ If the level is below 0.5V, readjust the set-up by moving VR1 and 4.	
13	Automatic aperture	TR16 Emitter	VR3	E-E	① 2,000 Lux, resolution chart. ② Lens aperture should be set to the "automatic" position (level "2") ③ Move VR3 so that the level of C-ch out becomes 0.5Vp-p. ④ Change over the response switch (from the level 1 to level 3 and vice versa) and ascertain that the aperture changes by about 0.5 to 1.0 F.	

Step	Adjustment Item	Test Point	Adjustment Parts	Mode	Description	Result
14	G-ch focus	Monitor TV	VR16 VR18 VR19	E-E	① 2,000 Lux, resolution chart. ② Lens aperture: Auto "2". ③ Using VR16 (G-ch focus), VR18 (G-ch H alignment) and VR19 (G-ch V alignment), optimize the focus at the center and its vicinity.	
15	Resistration	Monitor TV	VR9 VR10 VR11 Rear VR x2	E-E	① 2,000 Lux, resolution chart. ② Lens aperture: Auto "2". ③ Optimize the registration by adjusting VR9 (G-ch size), VR10 (C-ch size), VR11 (skew) and two rear VRs.	
16	Shading	SSG P.C Board TP-2 or Monitor TV	VR7 VR8 VR12 VR13 VR17 VR20 VR21	E-E	① 2,000 Lux, white pattern. ② Lens focus: Auto "2". ③ To obtain the best shading, adjust: VR7, 8, 12 and 13 (VRs for shading adjustment) VR17 (C-ch focus) VR20 and 21 (C-ch alignment).	TP-2 OUTPUT WAVEFORM 

V. CLASSIFICATION OF VARIOUS P.C BOARDS

5-1. P.C BOARD TITLES AND IDENTIFICATION NUMBER

(1) VT-400

P.C Board Title	P.C Board Number
Process & Encoder P.C Board	CV-2406
SSG P.C Board	CV-2407
PY PLG P.C Board	PY-2200
Fuse P.C Board	PY-5006
Shut-off P.C Board	PY-5201
Switch P.C Board	PY-5202
Servo P.C Board	PY-5203
PZ Signal P.C Board	PY-5400
Chroma (PAL) P.C Board	PY-5402
Chroma (NTSC) P.C Board	PY-5415
Camera Power Supply P.C Board	PY-5404
Joint P.C Board	PY-5405
Jack P.C Board	PY-5406

(2) VC-400

P.C Board Title	P.C Board Number
Pre Amp P.C Board	CV-2003
Rear Volume P.C Board	CV-2007
Deflection 2 P.C Board	CV-2002
Deflection 1 P.C Board	CV-2401
Power Supply P.C Board	CV-2402
Rec Indicator P.C Board	CV-2403
Mic Amp P.C Board	CV-2404
Iris Intermediate P.C Board	CV-2413

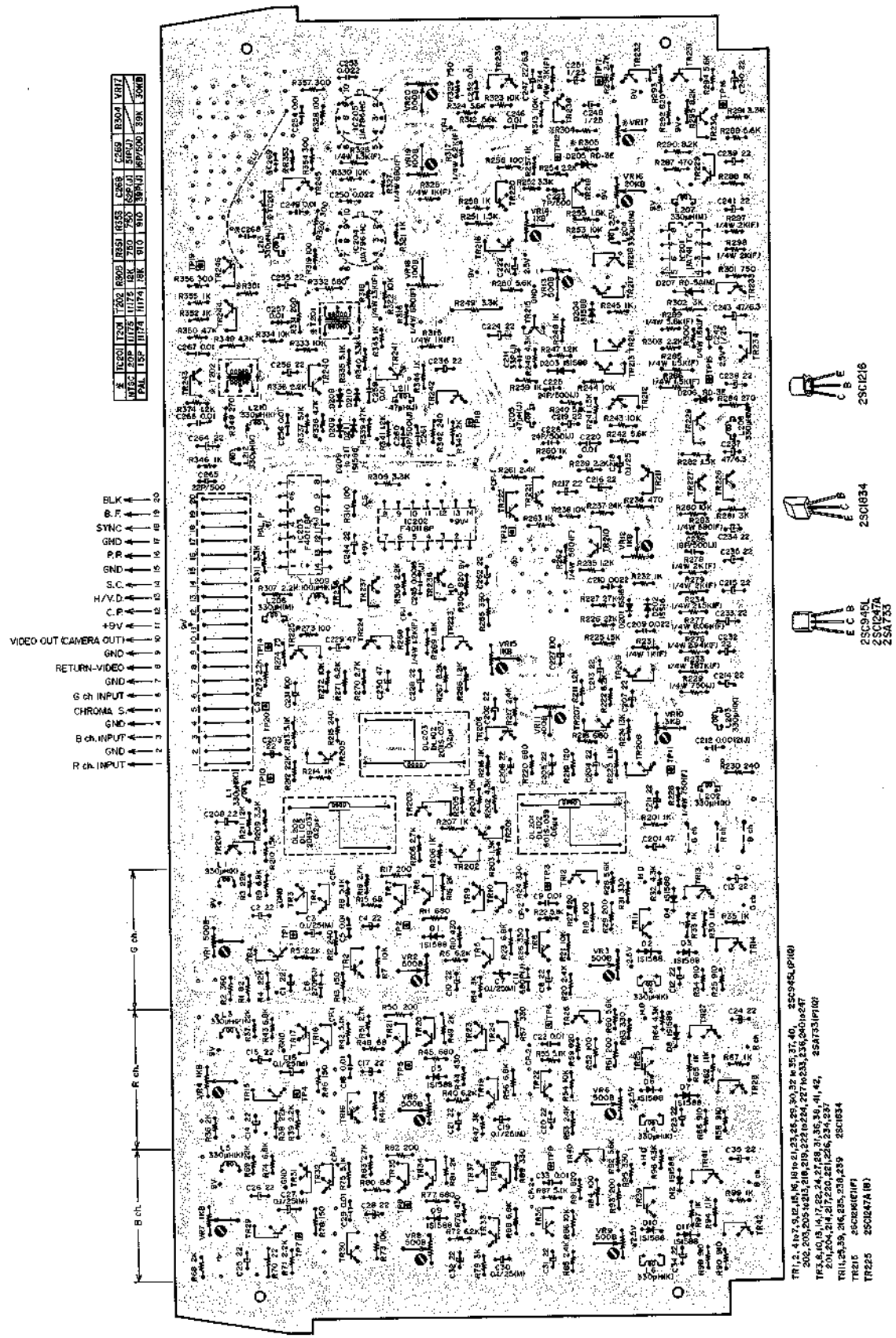
(3) VA-400

P.C Board Title	P.C Board Number
Power Supply P.C Board	PY-4400

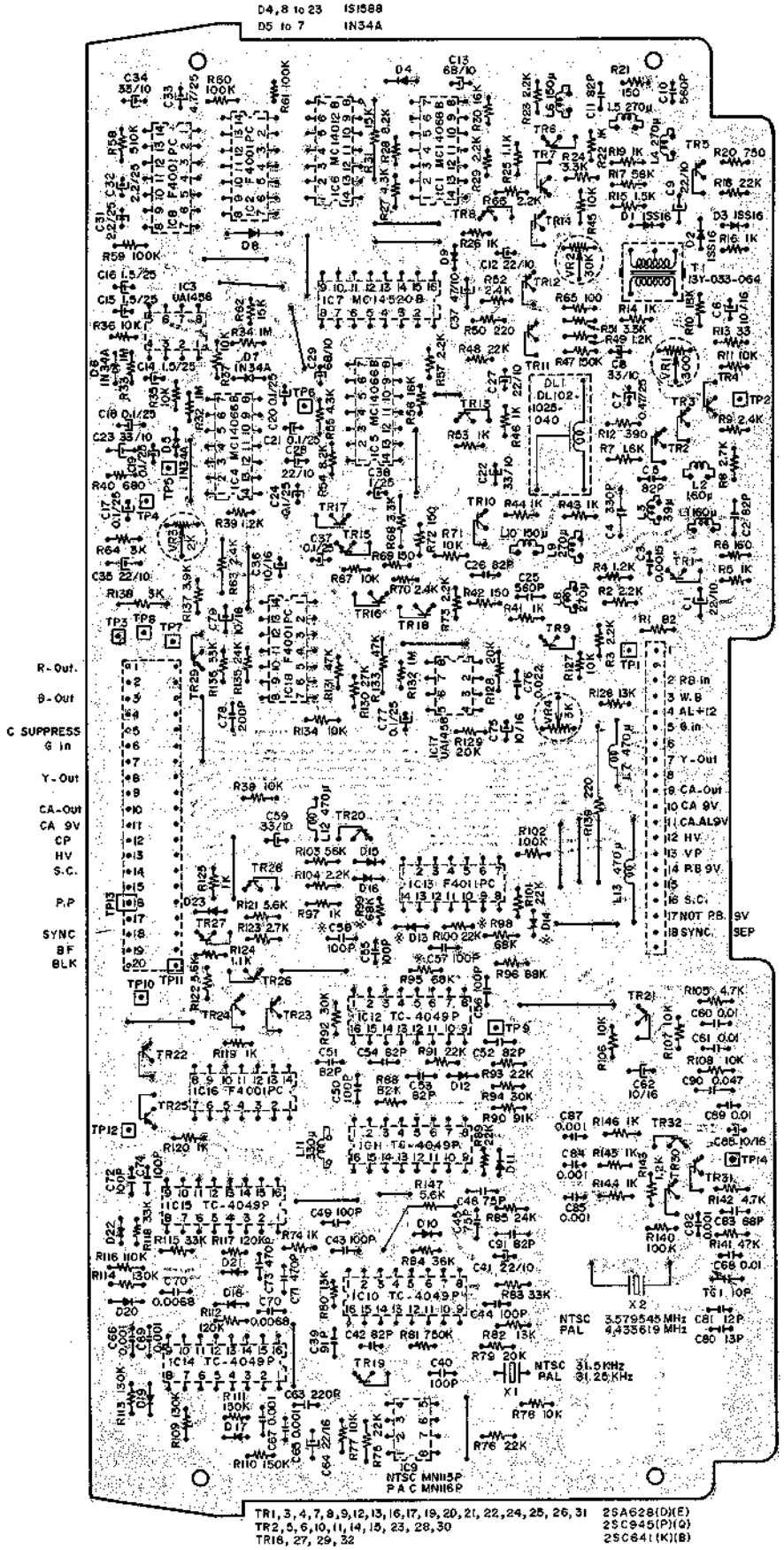
5-2. COMPOSITION OF VARIOUS P.C BOARDS

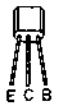
(1) VT-400

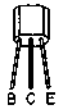
1) PROCESS & ENCODER P.C BOARD (CV-2406)



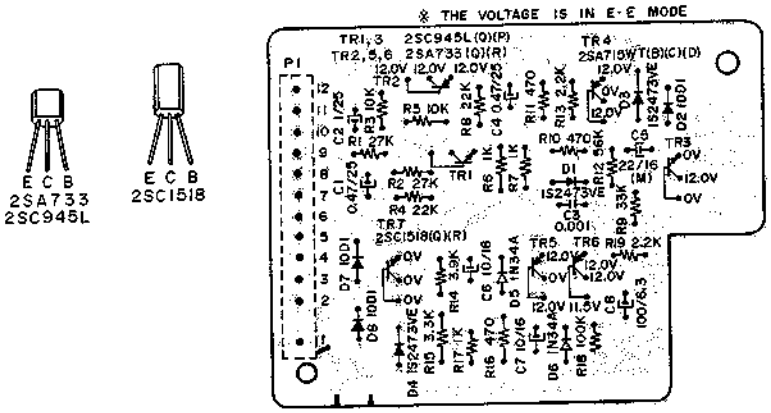
2) SSG P.C BOARD (CV-2407)



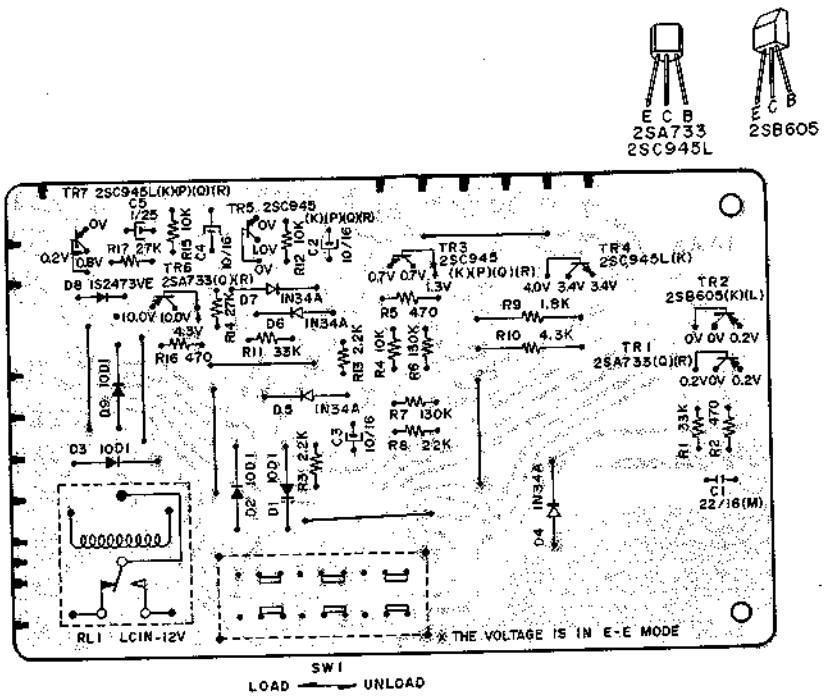




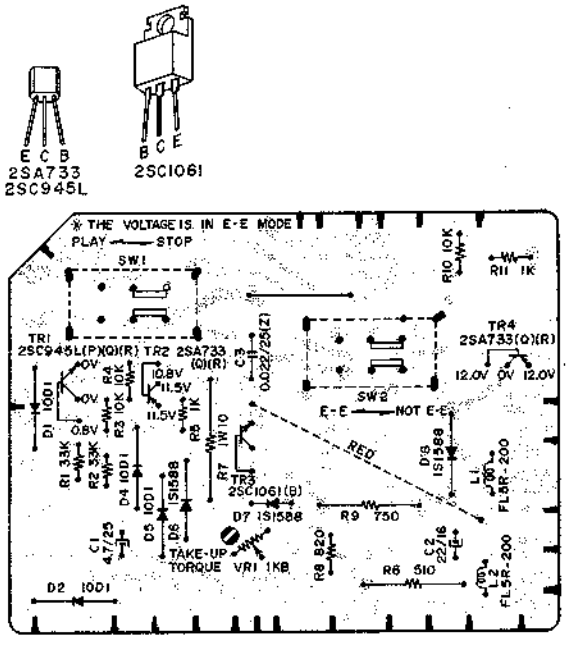
3) PY PLG P.C BOARD (PY-2200)



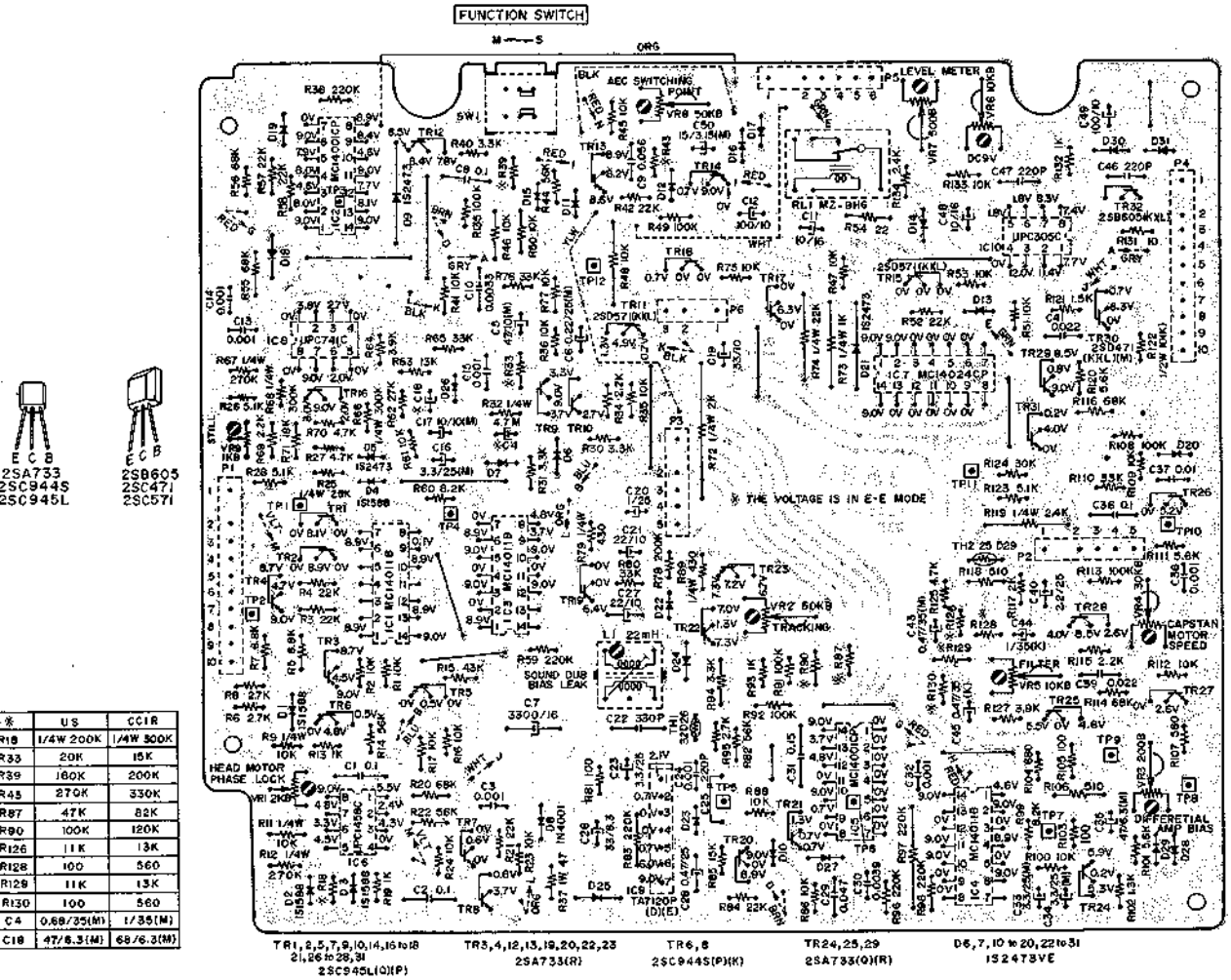
4) SHUT-OFF P.C BOARD (PY-5201)



5) SWITCH P.C BOARD (PY-5202)

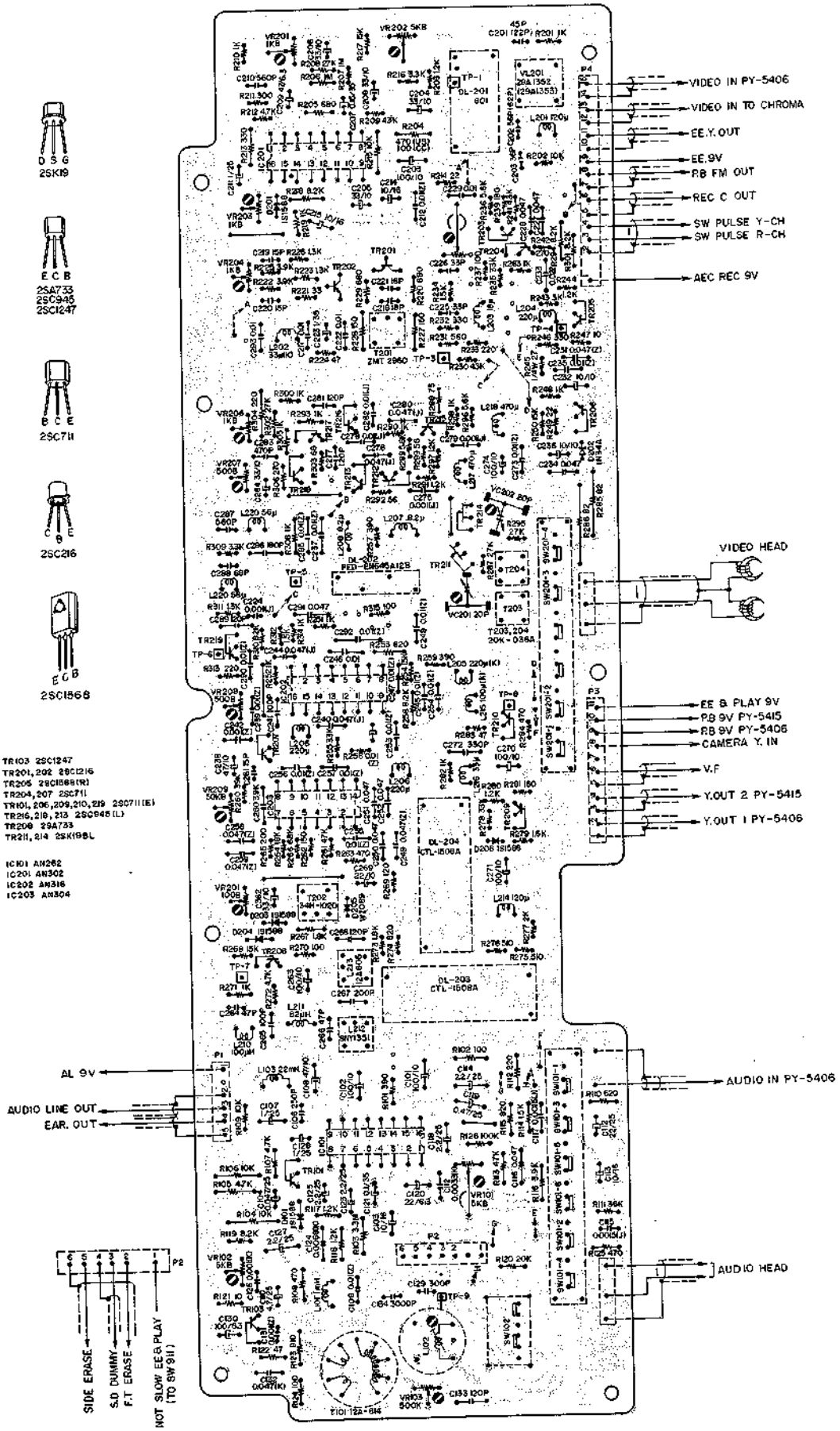


6) SERVO P.C BOARD (PY-5203)

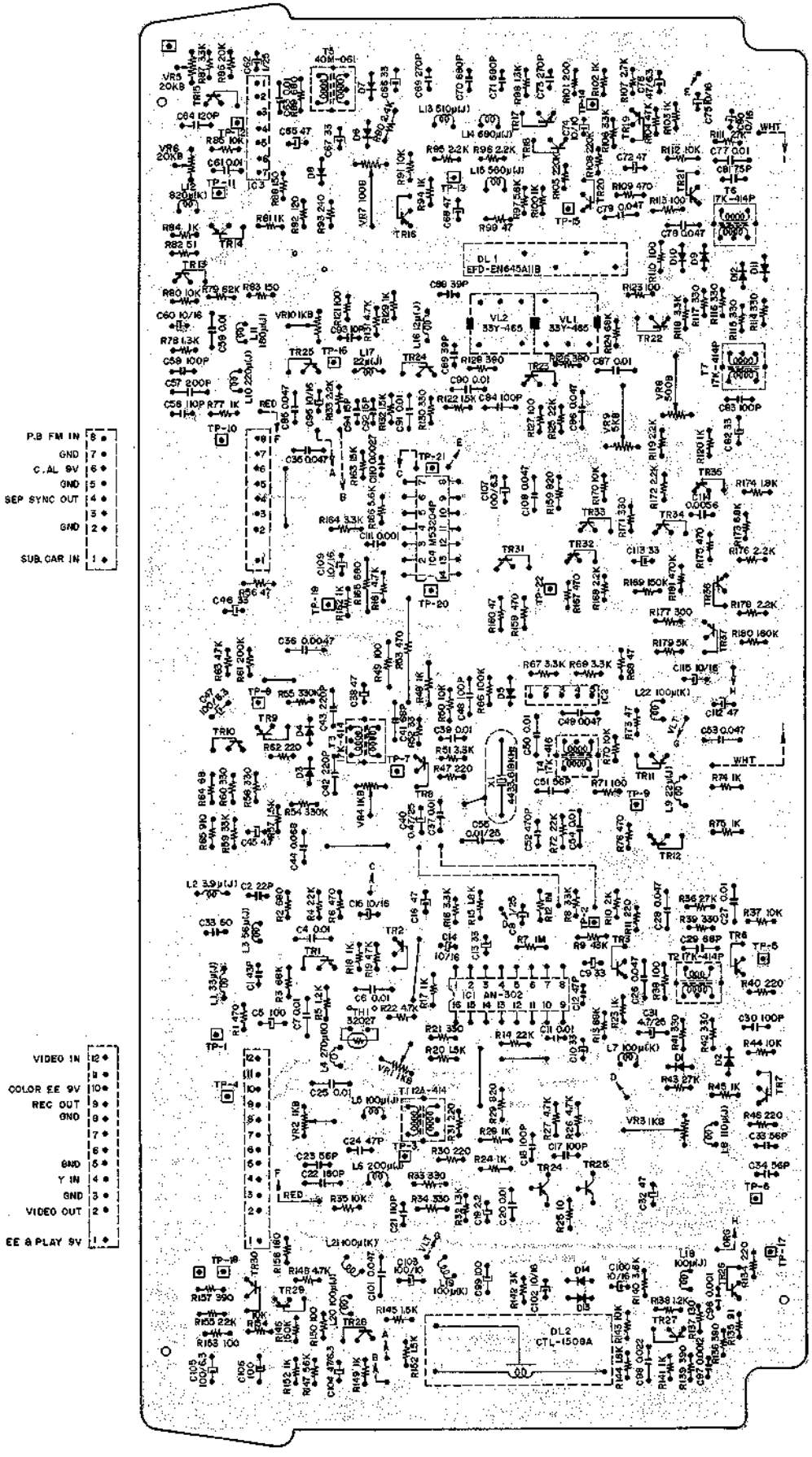


*	US	CCIR
R18	1/4W 200K	1/4W 300K
R33	20K	15K
R39	160K	200K
R45	270K	330K
R87	47K	82K
R90	100K	120K
R126	11K	13K
R128	100	560
R129	11K	13K
R130	100	560
C4	0.68/35(M)	1/35(M)
C18	47/6.3(M)	68/6.3(M)

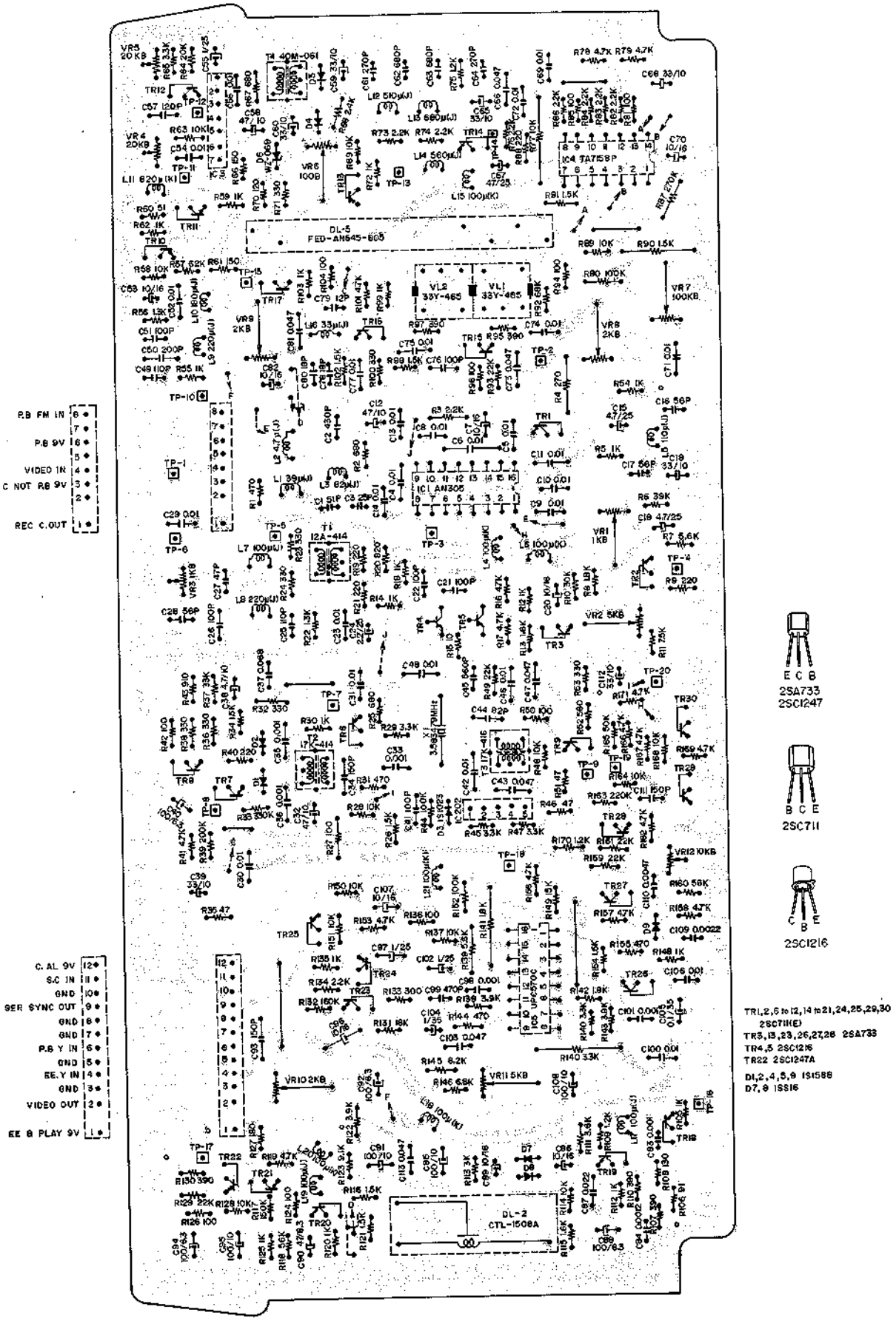
7) PZ SIGNAL P.C BOARD (PY-5400)



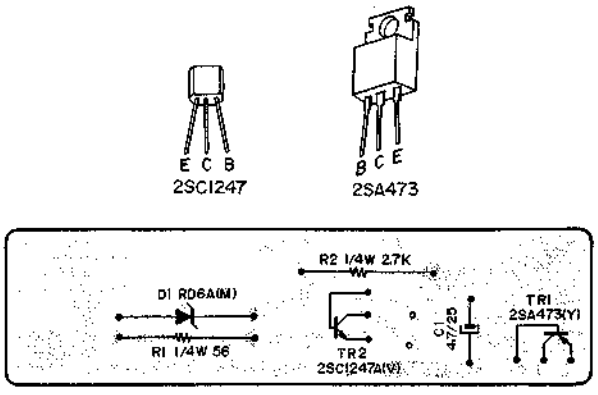
8) CHROMA (PAL) P.C BOARD (PY-5402)



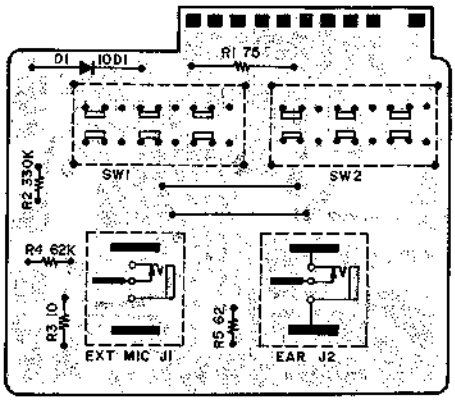
9) CHROMA (NTSC) P.C BOARD (PY-5415)



10) CAMERA POWER SUPPLY P.C BOARD (PY-5404)

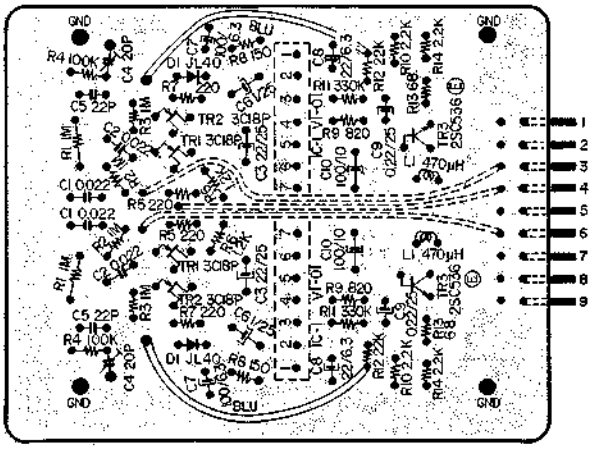


11) JACK P.C BOARD (PY-5406)

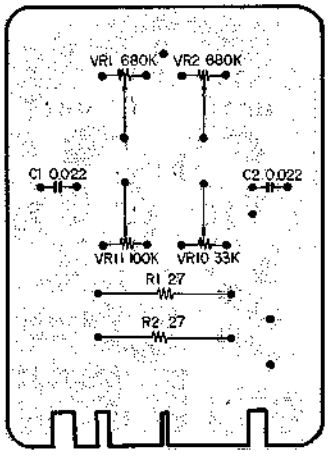


(2) VC-400

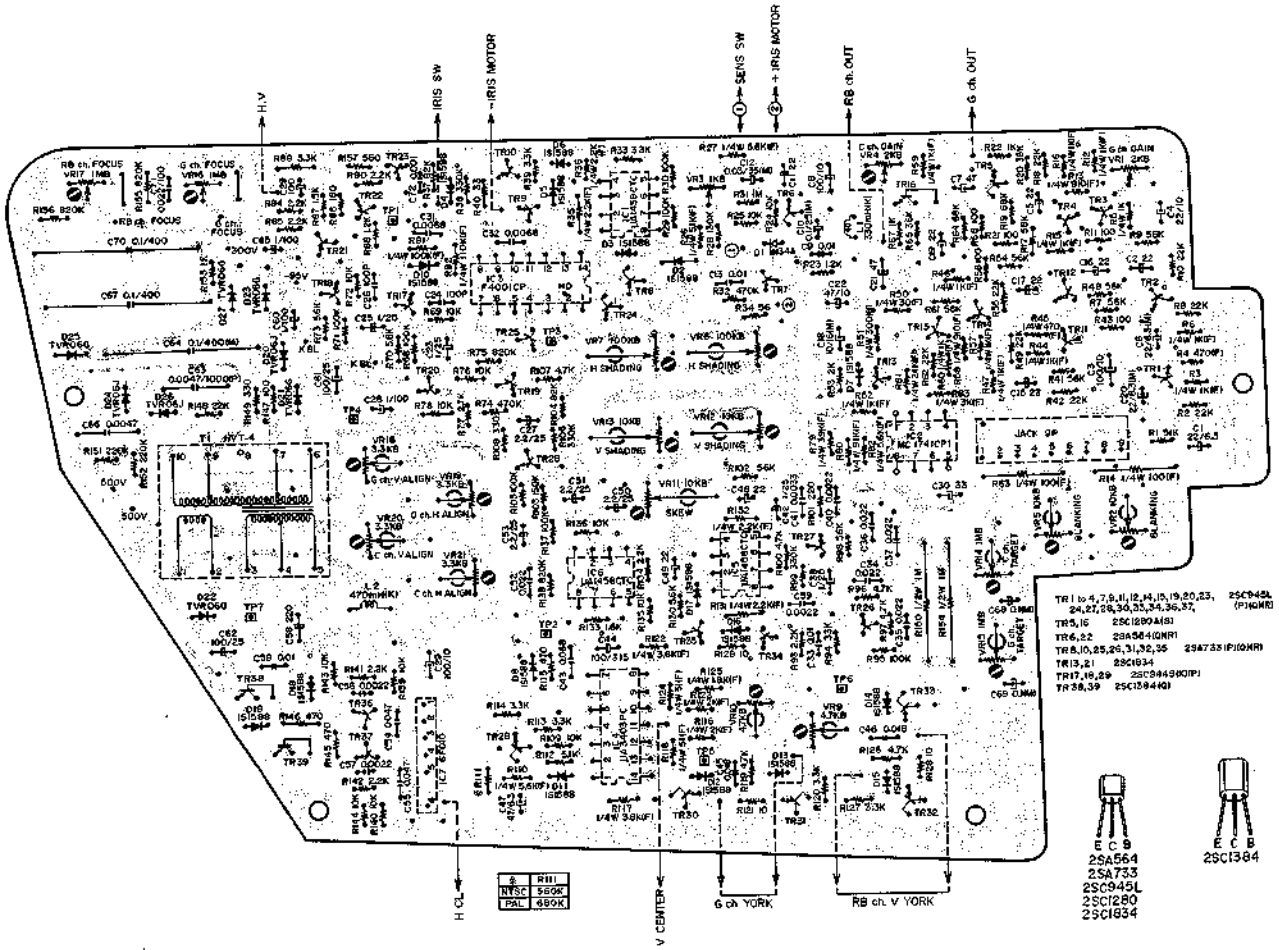
1) PRE AMP P.C BOARD (CV-2003)



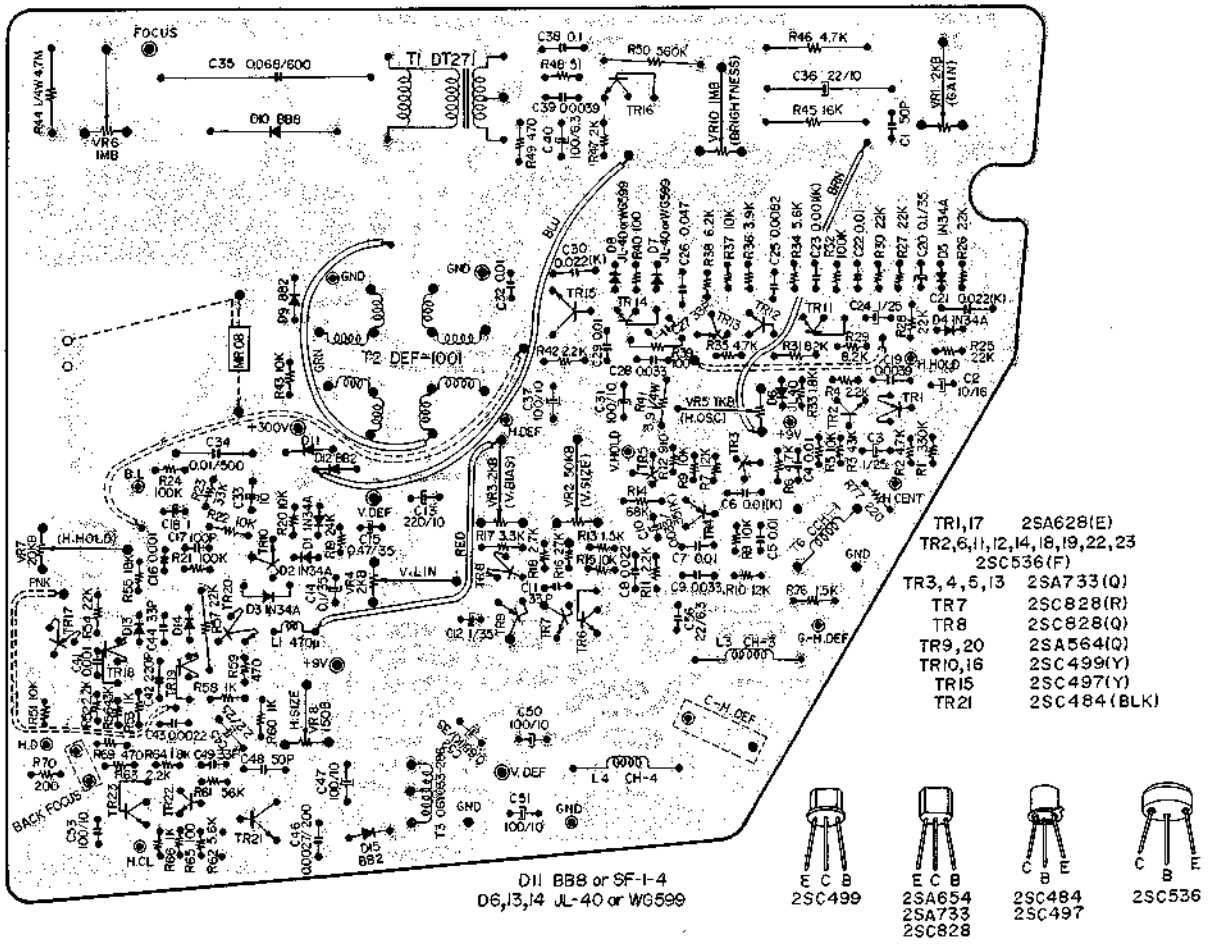
2) REAR VOLUME P.C BOARD (CV-2007)



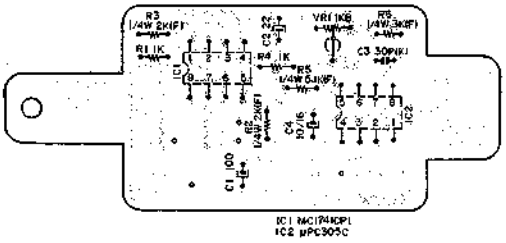
3) DEFLECTION 1 P.C BOARD (CV-2401)



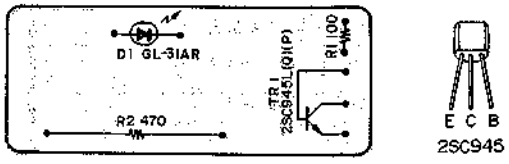
4) DEFLECTION 2 P.C BOARD (CV-2002)



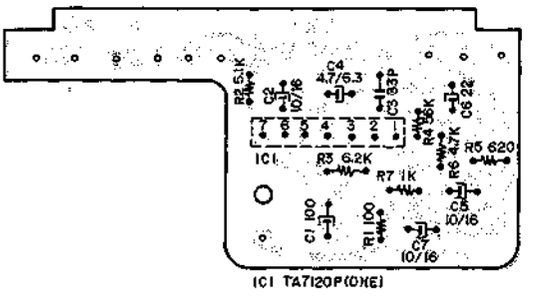
5) POWER SUPPLY P.C BOARD (CV-2402)



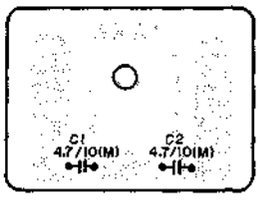
6) REC INDICATOR P.C BOARD (CV-2403)



7) MIC AMP P.C BOARD (CV-2404)

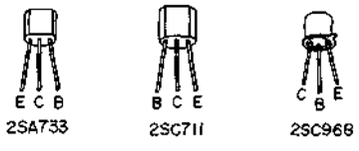


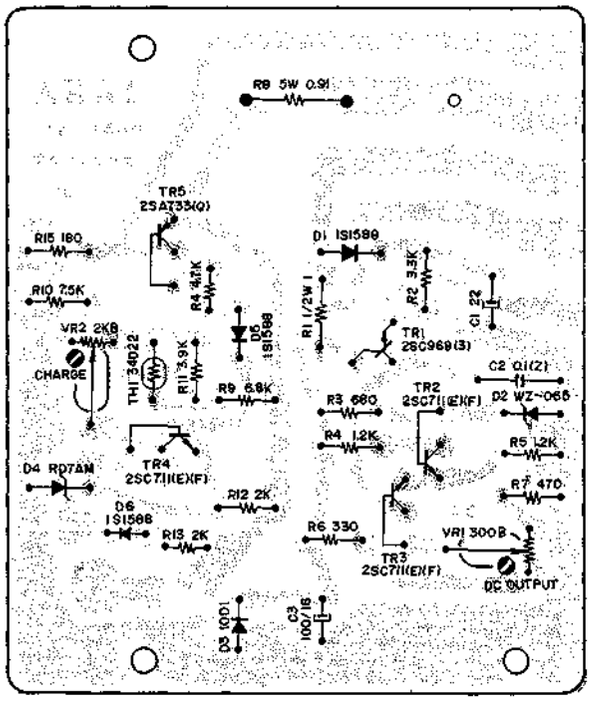
8) IRIS INTERMEDIATE P.C BOARD (CV-2413)



(3) VA-400

1) POWER SUPPLY P.C BOARD (PY-4400)





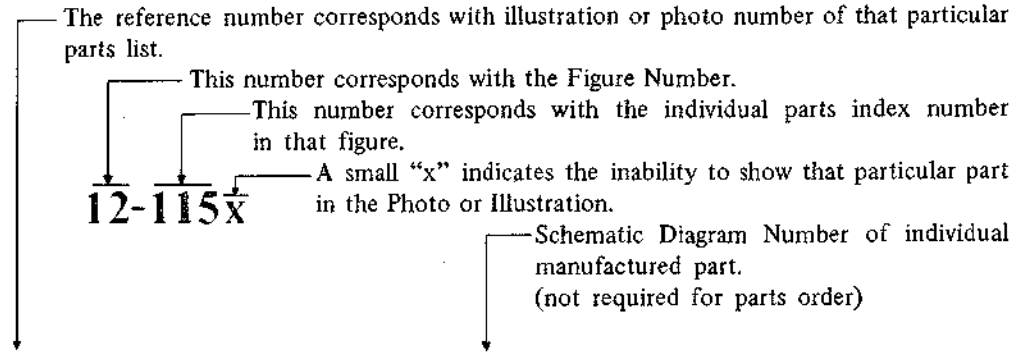
SECTION 2

PARTS LIST

TABLE OF CONTENTS

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List



Ref. No.	Parts No.	Description	Schematic No.
		FLYWHEEL BLOCK #13	
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13
12-116	244506	Flywheel Only	RD-233
12-117x	244754	Felt, Flywheel	RD-275
12-118	251324	Main Metal Case	RD-236
12-119	253080	Main Metal	RD-237

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:
1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

AC INLET SYSTEM

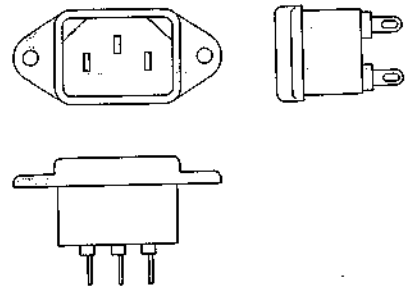
This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.
Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

AC INLET SYSTEM CHART

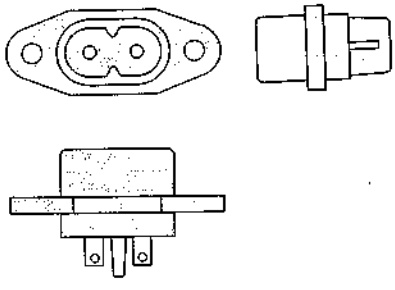
CLASS I

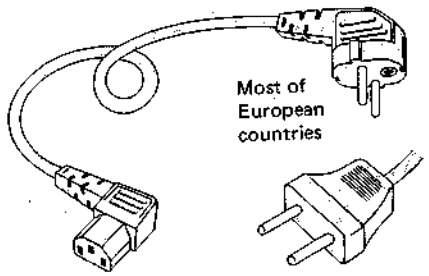
CLASS II

▣ This mark indicating double insulation will be attached to machine's rear panel

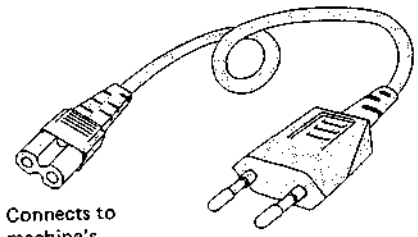


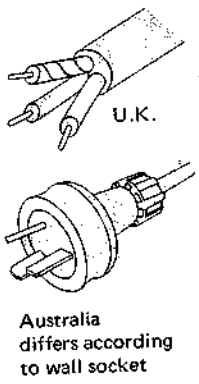
Picture 1
AC INLET to be installed on machines

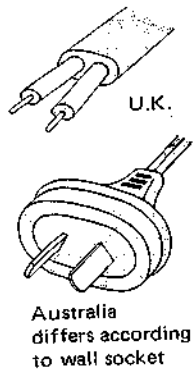




Picture 2
AC (mains) cord







Parts List for AC (mains) Cord Set

Standard		Description	Type of AC Inlet	Parts No.
Class I	CEE	Cord Set CEE (3 cores)	3P	EW302993
	BEAB	Cord Set BEAB (3 cores)	3P	EW302994
	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
Class II	CEE	Cord Set CEE (2 cores)	2P	EW638144
	BEAB	Cord Set BEAB (2 cores)	2P	EW302995
	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

VT-400

Parts No.	Description	Note
BA303351	Shut Off P.C Board Comp. VT-350	
BA304072	SSG P.C Board Comp. VT-400 (NTSC)	
BA304073	SSG P.C Board Comp. VT-400 (PAL)	
BA304721	Servo P.C Board Comp. VT-400 (NTSC)	
BA304722	Servo P.C Board Comp. VT-400 (PAL)	
BA304390	Signal P.C Board Comp. VT-400 (NTSC)	
BA304392	Signal P.C Board Comp. VT-400 (PAL)	
BA304906	Process & Encoder P.C Board Comp. VT-400 (NTSC)	
BA304907	Process & Encoder P.C Board Comp. VT-400 (PAL)	
BA304902	Chroma P.C Board Comp. VT-400 (NTSC)	
BA304903	Chroma P.C Board Comp. VT-400 (PAL)	
BA303350	PLG P.C Board Comp. VT-350	
BH305841	Video Head VH-400 (NTSC)	
BH310932	Video Head VH-400 (PAL)	
BM300851	Gear Motor Assy PY	
BM291183	Motor Block Comp. VT-300	
BM302672	Capstan Motor Block Comp. VT-350 (GSM-200)	
BM303919	Motor Block Comp. VT-350 (GSM-310)	
BM304397	Rotary Head Block Comp. VT-400 (NTSC)	
BV304398	Rotary Head Block Comp. VT-400 (PAL)	
BV305843	Ejector Block Comp. VT-400	
EF561791	Fuse 4A 125V (NTSC)	
EF300608	Fuse (FST) 4AT (PAL)	
EI304475	IC MC14066BCP	CV-2407
EI304496	IC F4001CP	CV-2407
EI302171	IC μA1458CTC	CV-2407
EI304474	IC MC14012BCP	CV-2407
EI304476	IC MC14520BCP	CV-2407
EI301381	IC MN-115P (NTSC)	CV-2407
EI301382	IC MN-116P (PAL)	CV-2407
EI305456	IC TC4049BP	CV-2407
EI250727	IC F4011PC	CV-2407, CV-2406
EI257602	IC MC14011B	PY-5203
EI639505	IC MC14001CP	PY-5203
EI301748	IC μPC1458C	CV-2407, PY-5203
EI639483	IC MC14024BCP	PY-5203
EI301749	IC μPC741C	PY-5203
EI302172	IC TA7120P (D) (E)	PY-5203
EI213827	IC μPC305C	PY-5203

Parts No.	Description	Note
EI572681	IC AN-302	PY-5400, PY-5402
EI297180	IC AN-316	PY-5400
EI572692	IC AN-304	PY-5400
EI634454	IC AN262	PY-5400
EI301744	IC μA741TC	CV-2406
EI304479	IC μA796HC	CV-2406
EI304845	IC AN-305	PY-5415
EI573838	IC TA7060P	PY-5415, PY-5402
EI485291	IC TA7061AP	PY-5415, PY-5402
EI304840	IC TA7158P	PY-5415
EI231366	IC μPC570C	PY-5415
EI573840	IC M53204P	PY-5402
EJ522900	Connector 12P RK12SRF	
EL256893	Lamp (Cord Type) 12V 60mA (150mm x 2)	
EP303906	Plunger Solenoid 1028TLTI-1	
EP303575	Plunger Solenoid 0840PHT1	
HC261292	Audio, CTL Head VTR-1X2R-P22-004	
HE271541	F.T ERASE HEAD EF-300	
HE271552	SIDE ERASE HEAD ES-300	
MB253574	Flywheel Belt	
MB253866	Counter Belt	
MC256792	Counter KMP388	
MI253776	Flywheel	
MP256184	Pinch Roller VT-300	
MR253787	Motor Pulley VT-300	
VT357041	Slip Ring (1400 Type)	
VT258838	Brush N01330C	

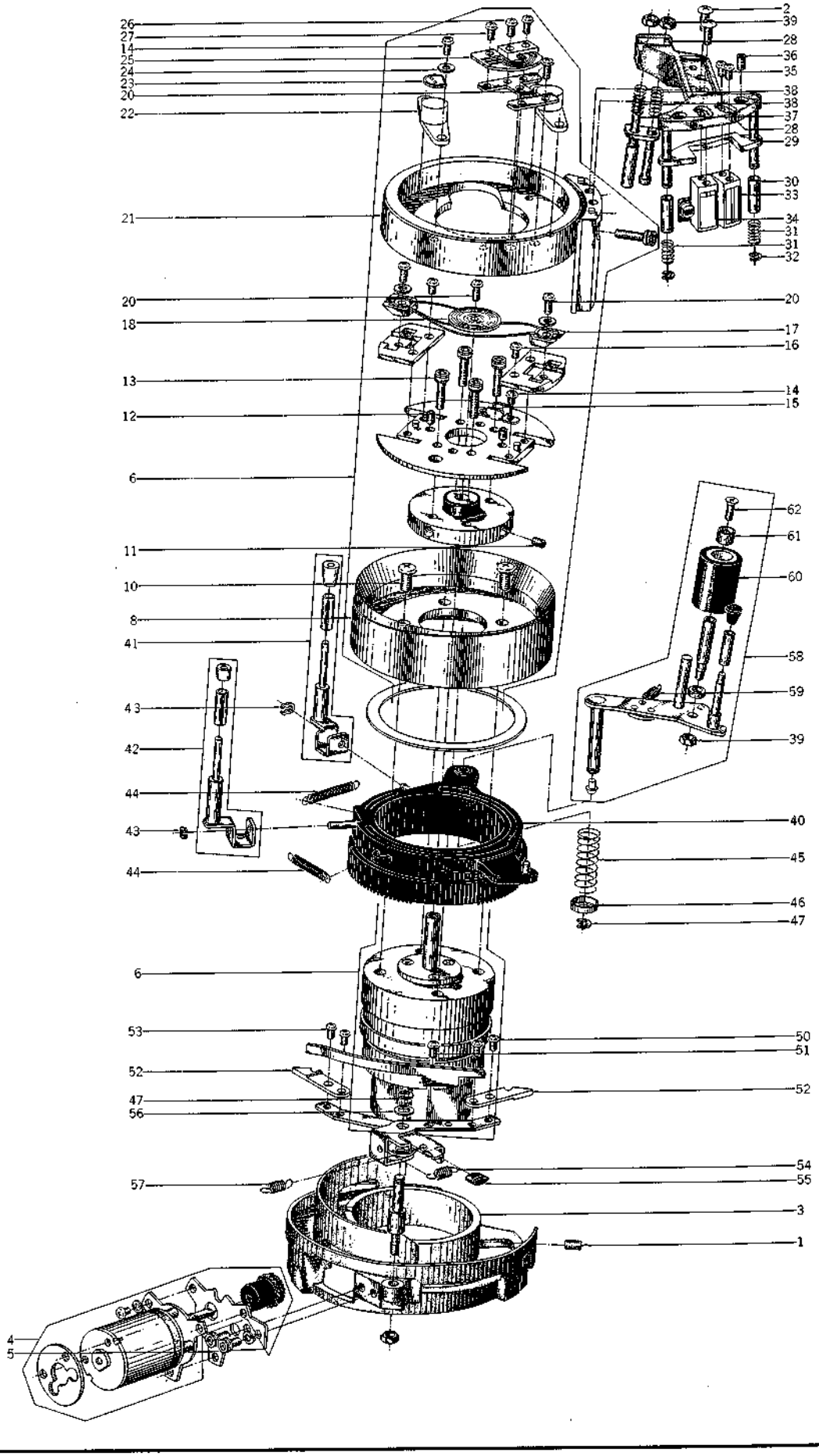
VC-400

Parts No.	Description	Note
BA304534	Pre Amp P.C Board Comp. VC-400	
BA304538	Deflection (1) P.C Board Comp. VC-400 (PAL)	
BA304537	Deflection (1) P.C Board Comp. VC-400 (NTSC)	
BA304539	Deflection (2) P.C Board Comp. VC-400	
BA304531	Power Supply P.C Board Comp. VC-400	
ED591333	LED GL-31AR	CV-2403
EI522134	IC VI-01	CV-2401
EI623171	IC MC1741CP1	CV-2402
EI304717	IC μA3403PC	CV-2401
EI464848	IC 6F010	CV-2401
EU288358	Vidicon 20PE20C	
EU288360	Vidicon H9303	

VA-400

Parts No.	Description	Note
BA304517	Power Supply P.C Board Comp. VA-400	
ED300740	LED SLP-710F	
EF602616	⚠ Fuse 2A 125V	JPN
EF277413	⚠ Fuse ST-6 2A	CSA, AAL
EF486134	Fuse ULFM61ML125V 0.1A	CSA, AAL
EF300604	⚠ Fuse (FST) 1AT	CEE, UK
EF301160	⚠ Fuse (FST) 2AT	CEE, UK
EL304801	Lamp (Cord Type) 12V 70 mA (280mm x 2)	

2. ILLUSTRATION OF VIDEO HEAD BLOCK

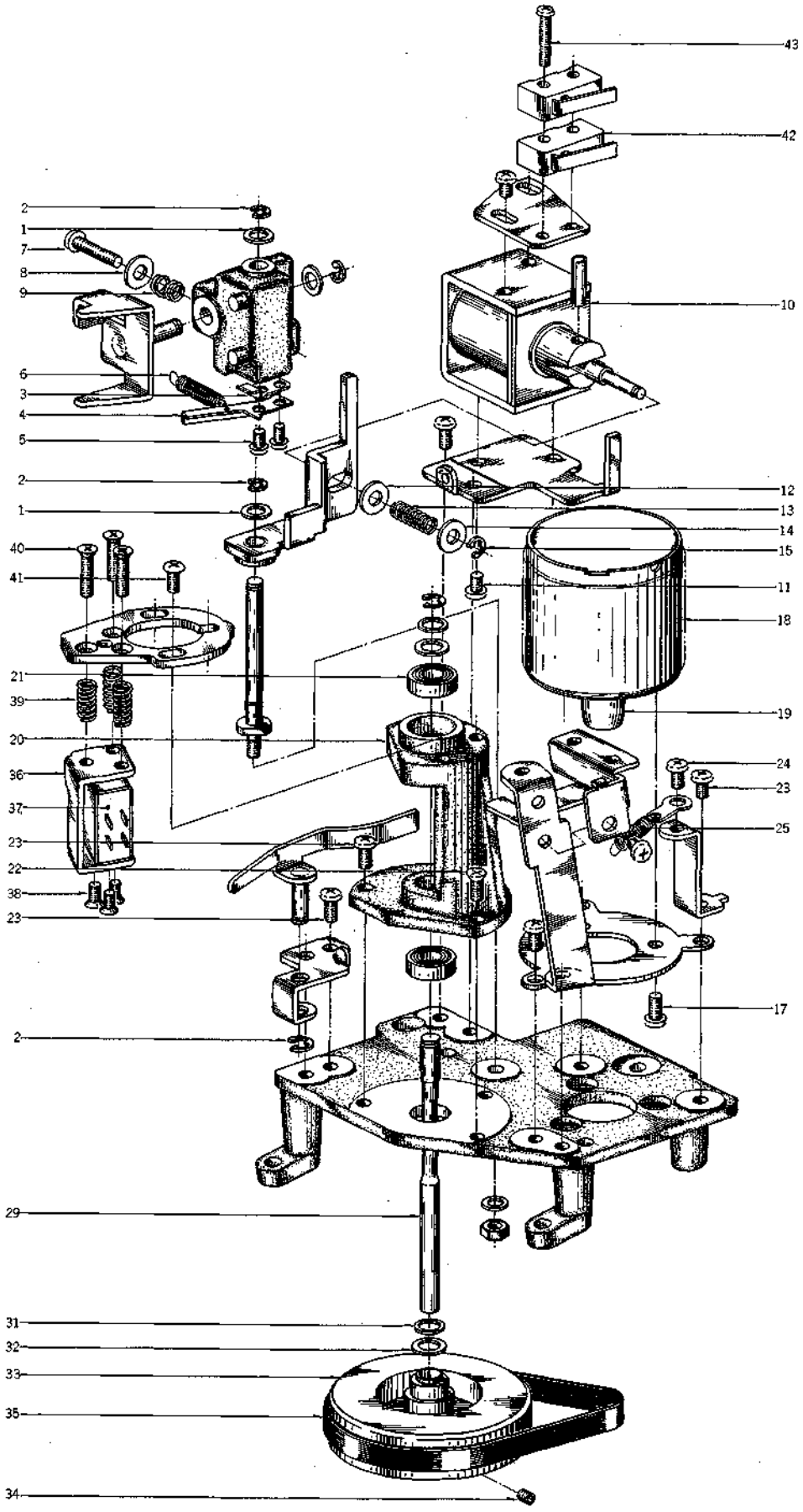


2) VIDEO HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	DRUM BLOCK		
2-1	ZS269267	Set Screw, hexagon socket 4x6 (CONE/P.)	
2-2	ZS269256	Screw, truss head 2.6x8	
	DRUM HOLDER BLOCK		
2-3	VT280866	Drum Holder Part VT-300	PY-8015
2-4	BM300851	Gear Motor Assy PY	
2-5	ZW258840	Hexagon Bolt 3x6	
	ROTARY HEAD BLOCK		
2-6	BV304397	Rotary Head Block Comp. VT-400 (NTSC)	
2-7x	BV304398	Rotary Head Block Comp. VT-400 (PAL)	
2-8	VT253945	Lower Drum	PY-8050
2-9	VT304611	Drum Shield Plate	PY-8002
2-10	ZS201194	Screw, truss head 4x10	
2-11	ZS261336	Set Screw, hexagon socket 3x4 (CUP/P.)	
2-12	ZS356804	Set Screw, hexagon socket 3x4 (CUP/P.)	
2-13	ZS419938	Hexagon socket bolt, 3x8(Knurl)	
2-14	ZS201418	Screw, pan head 2.3x4	
2-15	VT253260	Magnet Shield Part VT-300	
2-16	ZS201936	Screw, binding head 2.3x6	
2-17	BH305841	Video Head VH-400 (NTSC)	
2-18x	BH310932	Video Head VH-400 (PAL)	
2-19	VT357041	Slip Ring (1400 Type)	52-1-3
2-20	ZS419940	Screw, pan head 2.3x6	
2-21	VT303368	Upper Drum (A)	PY-8074
2-22	VT303291	PU Head (B) T5821	37-2-13
2-23	EA301753	PG P.C Board	PY-8066
2-24	ZW438557	Washer (BSP) D2.3x6x0.3t	
2-25	VT258838	Brush N01330C	52-1-36
2-26	ZS356837	Screw, pan head 2x5	
2-27	ZS201475	Screw, pan head 2x3	
	FIXATION HEAD BASE BLOCK		
2-28	HZ280056	Fixation Head Base Part VT-300	PY-8033
2-29	VT255227	Tape Guide Plate	PY-8035
2-30	MS254193	S Guide	PY-8034
2-31	ZG252000	Spring, S guide	PY-8036
2-32	ZW270088	'E' Ring 1.9M	6-1-9
2-33	HE271541	F.T ERASE HEAD EF-300	
2-34	HE271552	SIDE ERASE HEAD ES-300	
2-35	ZS460440	Screw, pan head 2x4	
2-36	ZS285750	Adjust Screw	PY-8065
2-37	MS254204	T Guide (A)	PY-8038
2-38	ZG252033	Spring, T guide	PY-8039
2-39	ZW273756	Nut M3, #1	
	LOADING RING BLOCK		
2-40	VT253552	Loading Ring	PY-8007
2-41	ML305971	Guide Pin Arm (A) Assy VT-350	
2-42	ML305979	Guide Pin Arm (B) Assy VT-300	
2-43	ZW356657	'E' Ring 1.5M	6-1-9
2-44	ZG251998	Spring, regular pin	PY-8014
2-45	ZG304711	Clamp Spring (B)	PY-8218
2-46	MZ802980	Spring Holder	RD-276
2-47	ZW270101	'E' Ring 3M	6-1-9
2-48x	ZW381644	Washer (Polyslider) D2.1x4.0x0.13t	
2-49x	ZW305546	Washer (Polyslider) D2.1x4x0.25t	
	MOTOR BLOCK		
2-50	BM291183	Motor Block Comp. VT-300	
	LOCK ARM BLOCK		
2-51	ZS417216	Screw, pan head 3x4	
2-52	VT238421	Lock Arm (B) Piece	PY-8055
2-53	ZS417161	Screw, pan head 2.3x4	
2-54	ZG303752	PV Lock Arm (B) Spring	PY-8213
2-55	VT253732	Rubber Bush	PY-1030
2-56	ZW259738	Washer (Polyslider) D4.1x7x0.25t	
2-57	VT238432	Lock Arm (A) Spring	PY-8060
	PINCH ROLLER ARM BLOCK		
2-58	BV311896	Pinch Roller Arm Block Comp. VT-400	
2-59	ZG306645	Pinch Roller Arm Return Spring	PY-8411
2-60	MP256184	Pinch Roller VT-300	PY-8025
2-61	VT254171	Pinch Roller Support	PY-8028
2-62	ZS433315	Screw, countersunk head 2.3x8	
2-63x	ZW273802	Toothed Lock Washer, M3	

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

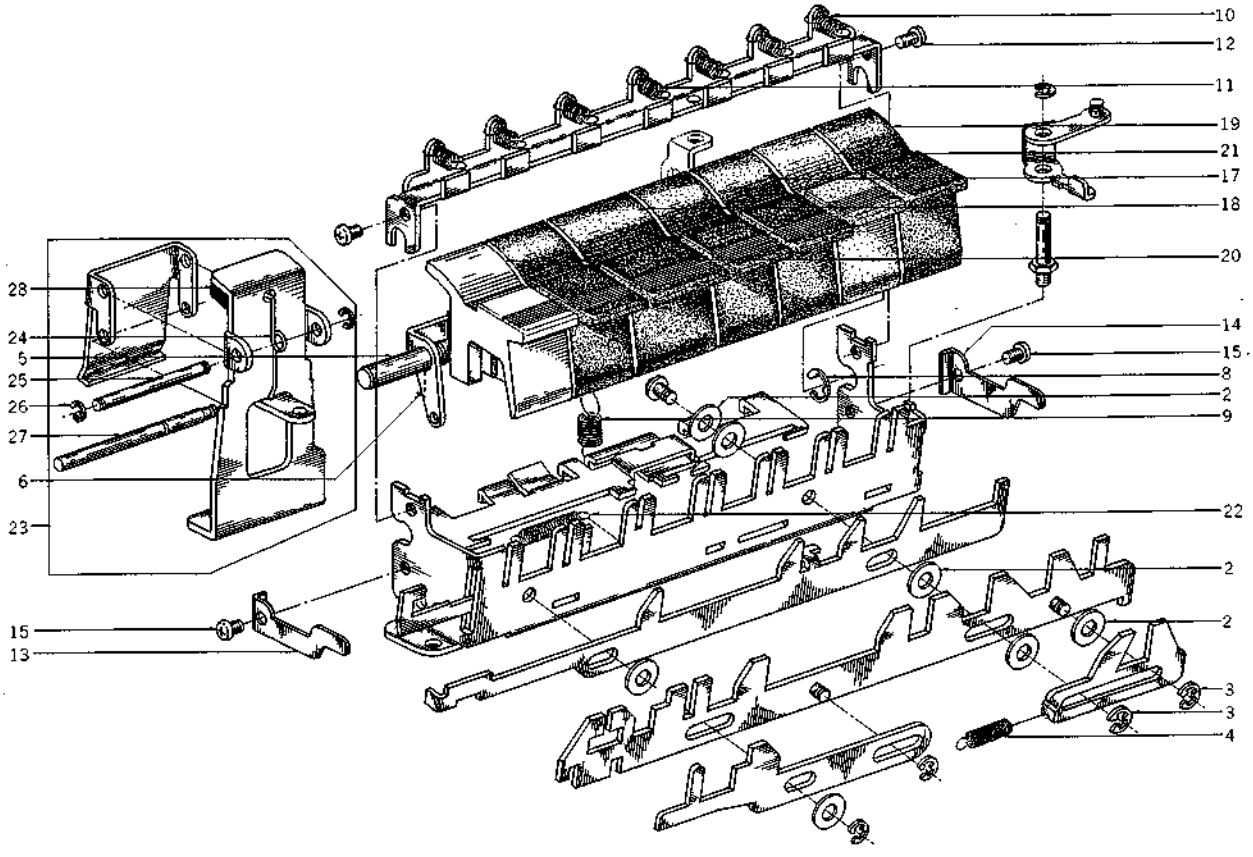
3. ILLUSTRATION OF CAPSTAN BLOCK



3) CAPSTAN BLOCK

Ref. No.	Parts No.	Description	Schematic No.
		MAIN PLUNGER BLOCK	
3-1	ZW259738	Washer (Polyslider) D4.1x7x0.25t	
3-2	ZW270101	'E' Ring 3M	6-1-9
3-3	ZG252898	Pinch Roller Guide Spring (B)	PY-2092
3-4	ZG252865	Pinch Roller Guide Spring (A)	PY-2091
3-5	ZS417161	Screw, pan head 2.3x4	
3-6	ZG251943	Pinch Roller Return Spring	PY-2083
3-7	ZS305504	Screw, bind head 3x15	
3-8	ZW402287	Washer (SPC) D3.1x8x0.5t	
3-9	ZG362801	CTL Angle Adjust Spring	PX-816
3-10	EP261180	Plunger Solenoid 1229THT	44-1-85
3-11	ZS417216	Screw, pan head 3x4	
3-12	ZW306068	Washer (BSP) D3.3x6x0.5t	
3-13	ZG251954	Pinch Roller Return Spring	PY-2100
3-14	ZW302332	Washer (BSP) D3.1x8x0.5t	
3-15	ZW270088	'E' Ring 1.9M	6-1-9
3-16x	ZW414145	Washer (Polyslider) D4.1x7x0.13t	
		CAPSTAN MOTOR BASE BLOCK	
3-17	ZS432843	Screw, pan head 2.6x4	
		CAPSTAN MOTOR BLOCK	
3-18	BM302672	Capstan Motor Block Comp. VT-350 (GSM-200)	
3-19	MR305258	Capstan Motor Pulley (B)	PY-2080
		CAPSTAN MT. BASE BLOCK	
3-20	MV300808	Capstan Case Part PY	
3-21	MV261246	Bearing SRM115ZZSMC2EP6PS2	
3-22	ZS414033	Screw, countersunk head 3x8	
3-23	ZS379350	Screw, pan head 3x6	
3-24	ZS422076	Screw, pan head 3x5	
3-25	ZG251976	Tension Arm Spring	PY-2122
3-26	VT280001	Pinch Roller Guide Plate Part VT-300	PY-2095
3-27x	ZW273802	Toothed Lock Washer, M3	
3-28x	ZW273756	Nut M3, #1	
3-29	MS254845	Capstan Shaft	PY-2073
3-30x	ZW270123	'E' Ring 4M	6-1-9
3-31	VT256127	Damper, capstan	PY-2076
3-32	ZW288764	Washer D5.1x7.8x0.2t	
3-33	MI253776	Flywheel	PY-2074
3-34	ZS391476	Set Screw, hexagon socket 4x4 (CUP/P.)	
3-35	MB253574	Flywheel Belt	PY-2081
3-36	VT252808	Audio Head Base (A)	PY-2077
3-37	HC261292	Audio, CTL Head VTR-1X2R-P22-004	37-2-3
3-38	ZS524812	Screw, countersunk head 2x4	
3-39	ZG251875	Spring, audio head PY-2079	
3-40	ZS262260	Screw, countersunk head 2.6x12	
3-41	ZS269627	Screw, truss head 2.6x6	
3-42	ES477966	Micro SW. SS-5GL	25-1-23
3-43	ZS670004	Screw, pan head 2.3x16	

4. ILLUSTRATION OF KEYBOARD BLOCK

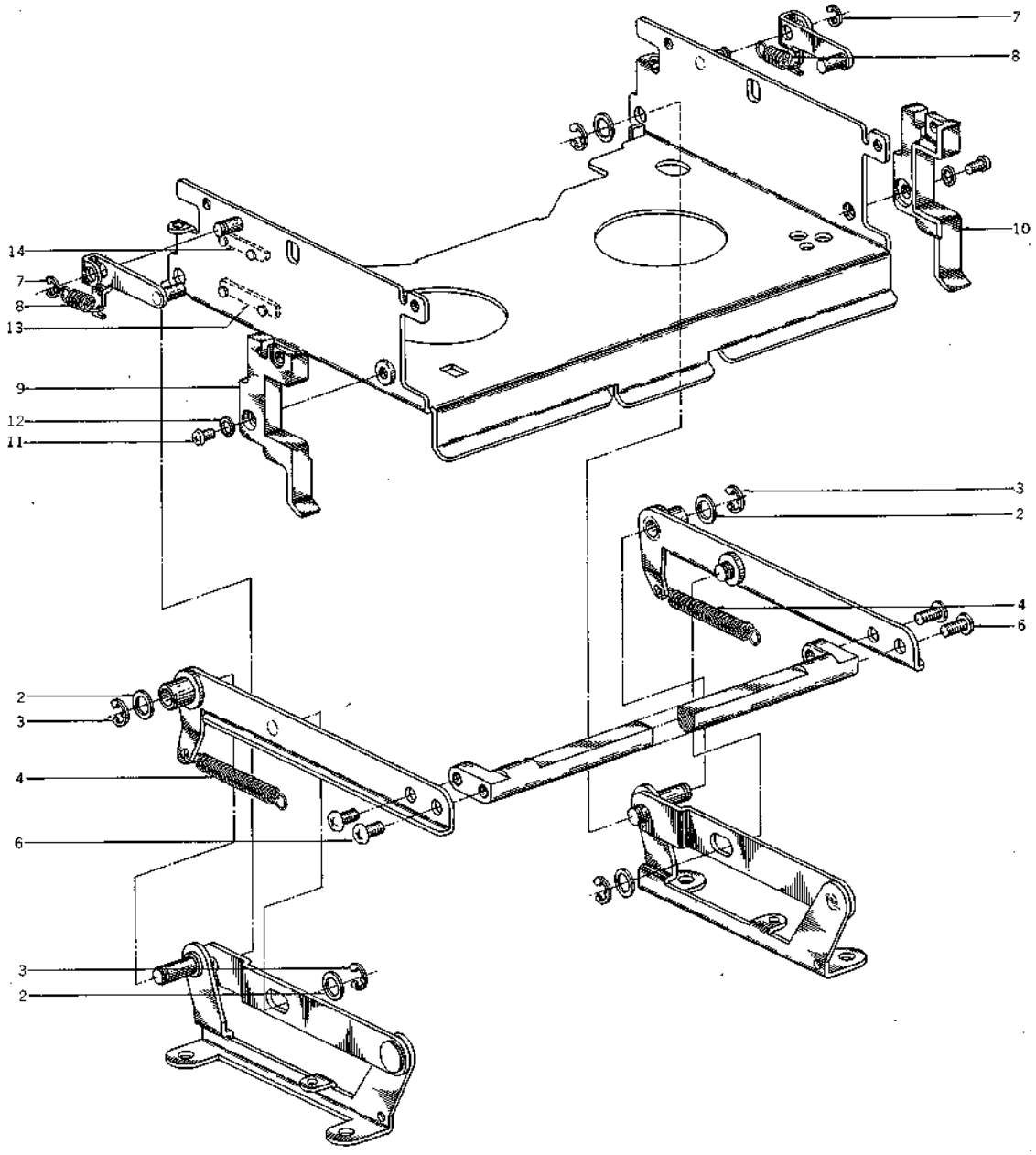


4) KEYBOARD BLOCK

Ref. No.	Parts No.	Description	Schematic No.
4-1x	BK303479	Keyboard Block Comp. VT-350	13-2-52
4-2	ZW460787	Washer (Polyslider) D3.1x8x0.25t	
4-3	ZW357164	'E' Ring 2.3M	6-1-9
4-4	ZG303730	Return Spring	PY-2212
4-5	MS251818	Keyboard Shaft	PY-2049
4-6	ZG303741	PV Key Spring (A)	PY-2224
4-7x	MH251763	Operation Pin	PY-2046
4-8	ZW270123	'E' Ring 4M	6-1-9
4-9	ZG251662	Lock Plate Spring	PY-2033
4-10	ZG385571	REC Safety Spring (B)	CS-1048
4-11	ZG251965	Keyboard F.F. Spring	PY-2112
4-12	ZS417161	Screw, pan head 2.3x4	
4-13	ZG255857	Plate Spring (A)	PY-2040
4-14	ZG251234	Plate Spring (B)	PY-2040
4-15	ZS201407	Screw, pan head 2.3x3	
4-16x	ZW300888	Washer D2.3x6x0.4t	
4-17	SK253822	Operation Button (A)	PY-2041
4-18	SK253833	Operation Button (B)	PY-2042
4-19	SK253844	Operation Button (C)	PY-2043
4-20	SK251278	Operation Button (C-E)	PY-2043
4-21	SK251256	Operation Button (C-R)	PY-2043
4-22	ZG451574	Slider Pull Spring	RCC-1207B
4-23	VT300638	Eject Stopper Assy VT-300	PY-9709
4-24	ZG251504	Ejector Lock Spring	PY-1042
4-25	MS254035	Ejector Lock Shaft (A)	PY-1044
4-26	ZW356657	'E' Ring 1.5M	6-1-9
4-27	MS254542	Ejector Lock Shaft (B)	PY-1045
4-28	VT253901	Sponge	PY-1043

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

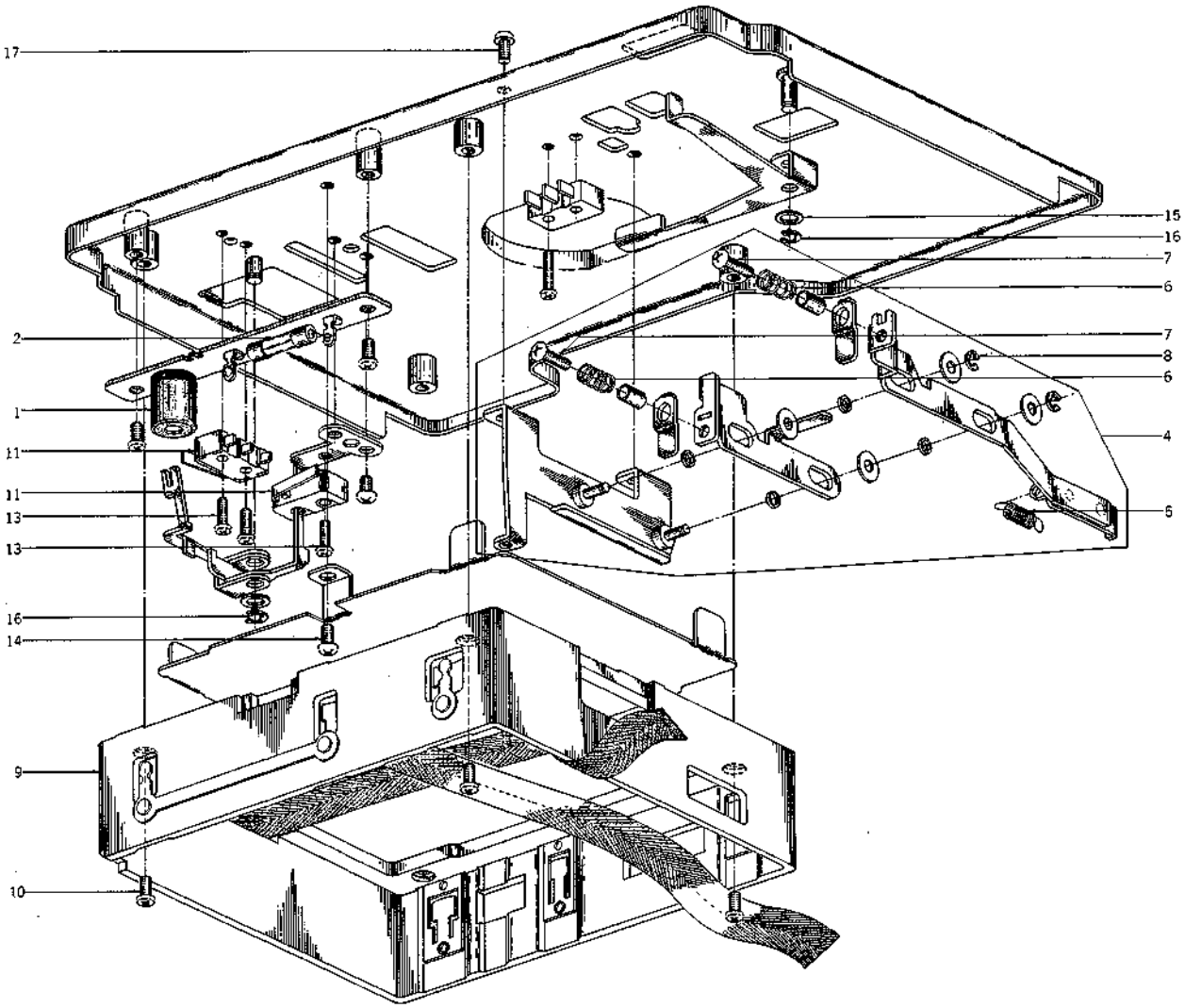
5. ILLUSTRATION OF EJECTOR BLOCK



5) EJECTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.
5-1x	BV305843	Ejector Block Comp. VT-400	PY-9729
5-2	ZW259738	Washer (Polyslider) D4.1x7x0.25t	
5-3	ZW270101	'E' Ring 3M	6-1-9
5-4	VT305582	Eject Spring (B)	PY-2414
5-5x	VT254384	Ejector Bar	PY-2064
5-6	ZS383951	Screw, truss head 3x5 (Black)	
5-7	ZW301319	'E' Ring 2.3M (Black)	6-1-9
5-8	ZG251853	Hold Spring	PY-2063
5-9	VT253585	Ejector Piece (A)	PY-2062
5-10	VT253618	Ejector Piece (B)	PY-2062
5-11	ZS267254	Screw, pan head 2.3x4 (Black)	
5-12	ZW267232	Washer D2.4x4.5x0.5t	
5-13	VT253890	Release Claw (A)	PY-2060
5-14	VT253631	Release Claw (B)	PY-2061

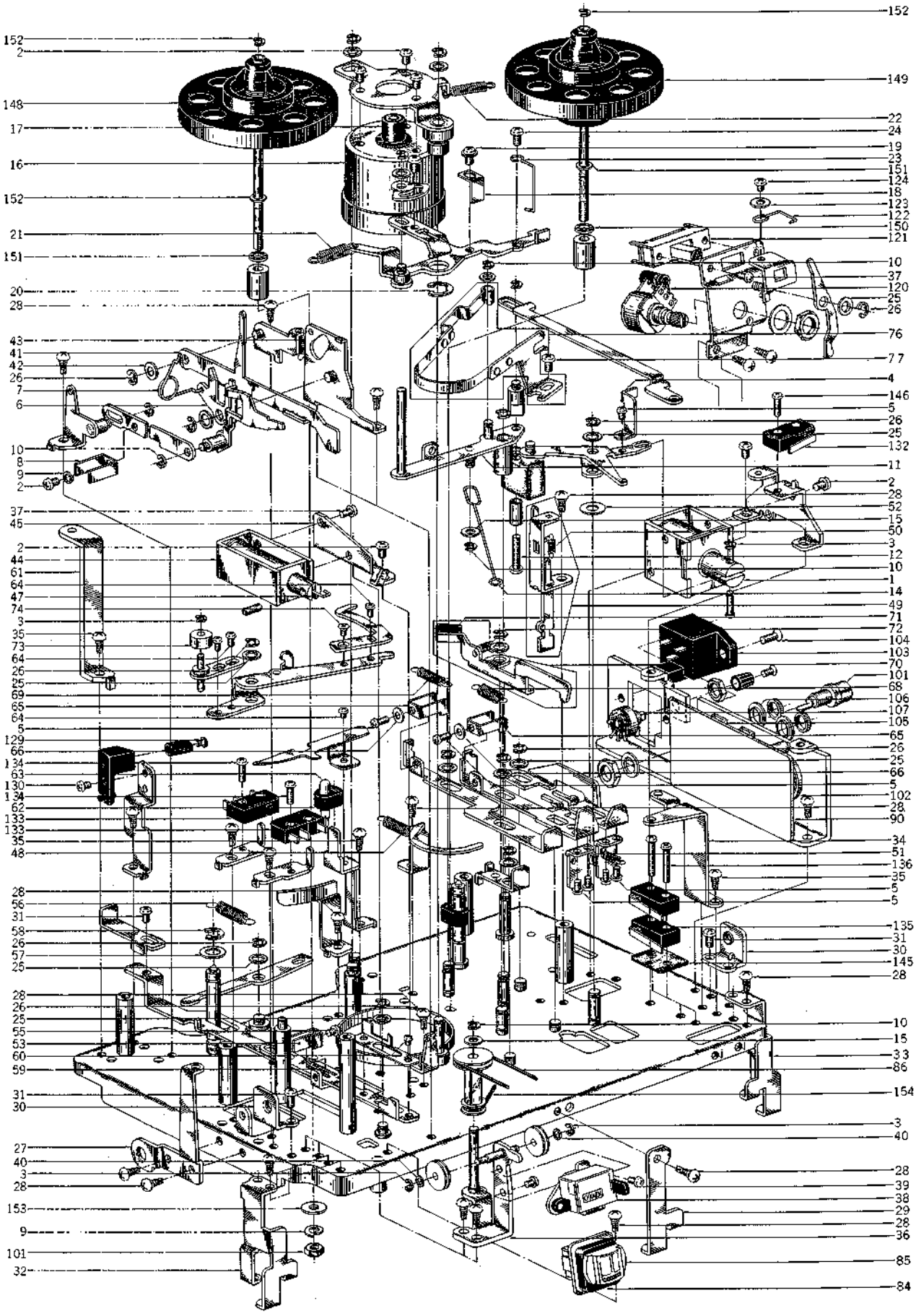
6. ILLUSTRATION OF BATTERY CASE BLOCK

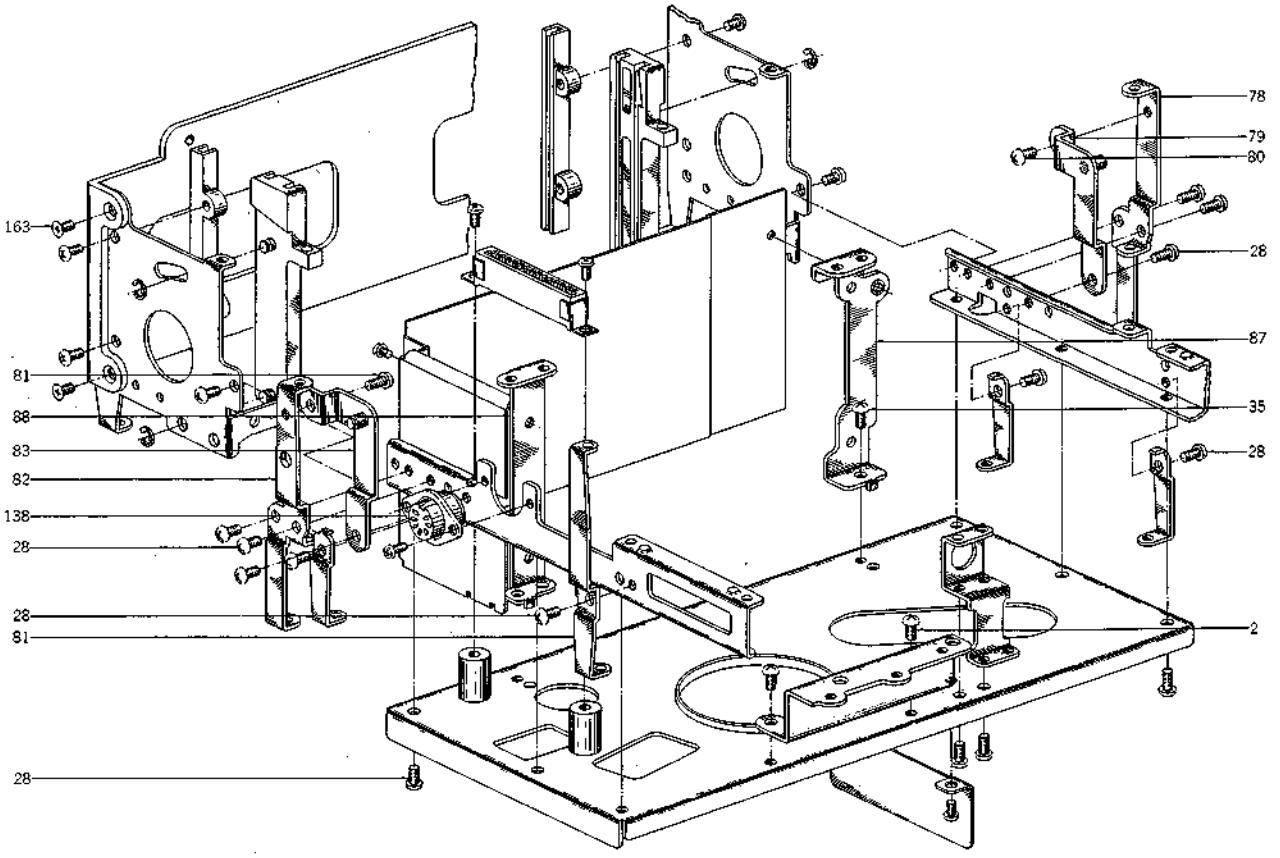


6) BATTERY CASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	FUSE P.C BOARD BLOCK		
6-1	EO257321	Inductor 182 1.8MH(K)	23-1-267
6-2	EF561791	Fuse 4A 125V (NTSC)	39-1-44
6-3x	EF300608	Fuse (FST) 4AT (PAL)	39-1-61
	SLIDE LEVER BLOCK		
6-4	BL271372	Slide Lever Block Comp. VT-300	PY-9723
6-5	ZG251447	SW. Push Lever (A) Spring	PY-2118
6-6	ZG251458	SW. Push Lever (B) Spring	PY-2117
6-7	ZS481454	Screw, truss head 3x12	
6-8	ZW270088	'E' Ring 1.9M	6-1-9
	BATTERY CASE BLOCK		
6-9	BC430637	Battery Case Block Comp. VT-110, 150, PW	PX-A406
6-10	ZS422076	Screw, pan head 3x5	
6-11	ES477966	Micro SW. SS-5GL	25-1-23
6-12x	ZW300888	Washer D2.3x6x0.4t	
6-13	ZS487091	Screw, pan head 2.3x8	
6-14	ZS447761	Tapping Screw #2, 3x6(BR) (Black)	
6-15	ZW259738	Washer (Polyslider) D4.1x7x0.25t	
6-16	ZW270101	'E' Ring 3M	6-1-9
6-17	ZS379350	Screw, pan head 3x6	

7. ILLUSTRATION OF VT-400 ASSEMBLY BLOCK

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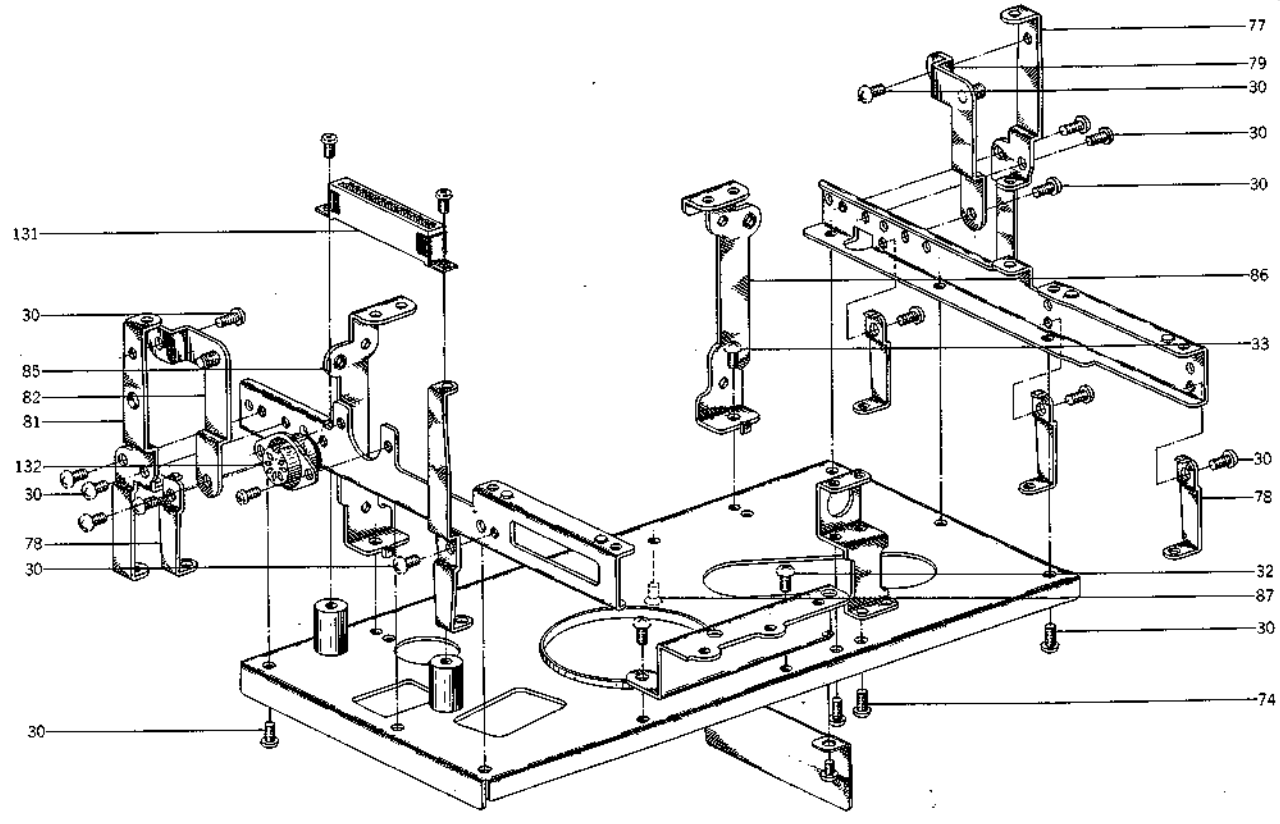
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7) VT-400 ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	REWIND PLUNGER BLOCK		
7-1	EP303906	Plunger solenoid 1028TLTI-1	44-1-96
7-2	ZS417216	Screw, pan head 3x4	
7-3	ZW356657	'E' Ring 1.5M	6-1-9
7-4	VT303807	Actuater	PY-1218
7-5	ZS201407	Screw, pan head 2.3x3	
	LOADING LEVER BLOCK		
7-6	ML303912	Loading Lever Part VT-350	PY-1225
7-7	ZG303817	Loading Spring	PY-1228
7-8	VT303886	Slide SW. Spring, loading	PY-1230
7-9	ZW273745	Spring Washer M3	
7-10	ZW357164	'E' Ring 2.3M	6-1-9
	TENSION ARM BLOCK		
7-11	ML266308	Tension Arm Part VT-300	PY-2001
7-12	ZS590073	Screw, pan head 3x14	
7-13x	ZW273914	Spring Washer M4	
7-14	VT303809	Pull Bar	PY-1220
7-15	ZW269954	Washer D3.1x7x0.25t	
	MOTOR BLOCK		
7-16	BM303919	Motor Block Comp. (GSM-310) VT-350	
7-17	MR253787	Motor Pulley VT-300	PY-2009
	REEL MOTOR TABLE BLOCK		
7-18	ZG252720	FF Spring	PY-2016
7-19	ZS608321	Screw, pan head 3x6, W=8	
7-20	ZW334653	'E' Ring 7M	6-1-9
7-21	ZG303711	Push Lever Spring	PY-1232
7-22	ZG516418	Eject Spring	CG-1238
7-23	VT303726	SW. Push Wire	PY-2208
7-24	ZS422076	Screw, pan head 3x5	
7-25	ZW259738	Washer (Polyslider) D4.1x7x0.25t	
7-26	ZW270101	'E' Ring 3M	6-1-9
	MECHA FRAME BLOCK		
7-27	ML255341	Case Angle (N)	PY-1024
7-28	ZS325495	Tapping Screw #2, 3x6 (BR)	
7-29	ML255418	Case Angle (C)	PY-1020
7-30	ML252617	Stop Pin Angle	PY-1017
7-31	ZS379350	Screw, pan head 3x6	
7-32	ML255453	Case Angle (B)	PY-1018
7-33	ML255442	Case Angle (A)	PY-1018
7-34	VT255407	Case Bracket (A)	PY-1021
7-35	ZS609120	Tapping Screw #2, 3x6 (Pan)	
7-36	MZ302272	Relay Pulley Assy VT-300 (B)	PY-9730
7-37	ZS432843	Screw, pan head 2.6x4	
7-38	MC256792	Counter KMP388	9-1-47
7-39	ZS460440	Screw, pan head 2x4	
7-40	ZW381644	Washer (Polyslider) D2.1x4.0x0.13t	
7-41	ML252336	Key Lock Lever (B)	PY-1074
7-42	ZW414145	Washer (Polyslider) D4.1x7x0.13t	
7-43	ZG456120	Setting Lever Spring	CS-1187
7-44	EP303575	Plunger Solenoid 0840PHT1	44-1-92
7-45	VT252393	Release Plunger Bracket	PY-1057
7-46x	ED624903	Silicon Diode 1S2473	45-3-28
7-47	VT303719	PV Joint Wire	PY-1241
7-48	ZG303752	PV Lock Arm (B) Spring	PY-8213
7-49	VT300551	Safety Bracket Assy VT-300	PY-9715
7-50	ZG251537	Safety Spring	PY-1079
7-51	ZG451574	Slider Pull Spring	RCC-1207B
7-52	ZW305556	Washer D4.3x11x0.25t	
7-53	VT303798	Micro SW. Spring (B)	PY-1210
7-54x	ZW300888	Washer D2.3x6x0.4t	
7-55	ZS201407	Screw, pan head 2.3x3	
7-56	VT305570	Key Lock Slide Plate Spring(B)	PY-1249
7-57	ZW396437	Washer (Polyslider) D5.1x10.3x0.25t	
7-58	ZW270123	'E' Ring 4M	6-1-9
7-59	ZG303801	Clamp Spring	PY-1213
7-60	ZS303936	Screw, pan head 2x2	
	ASSEMBLY BLOCK		
7-61	ML255374	Case Angle (D)	PY-1023
7-62	VT253877	Lamp Bush	PY-1028
7-63	EL256893	Lamp (Cord Type) 12V 60mA (150mmx2)	28-2-51
7-64	ZS417161	Screw, pan head 2.3x4	
7-65	ZG252630	Slide SW. Spring	PY-1016
7-66	ZW623687	Washer (SPC) D2.3x6x0.4t	
7-67x	ZW306178	Washer D4.3x11x0.25t	
7-68	ZG251605	REC Return Spring	PY-1108
7-69	ZG301379	Play Return Spring	PY-1119
7-70	MZ303922	Brake Lever Assy VT-350	PY-9705
7-71	VT303717	PV Brake Shoe	PY-1239
7-72	ZG305162	Brake Spring	PY-1245
7-73	MR253642	Cam Roller	PY-1084
7-74	ZS483456	Screw, countersunk head 2.3x4	
7-75x	ZS327835	Screw, countersunk head 3x5	
7-76	VT265680	Brake Band Holder Part VT-300	PY-1117
7-77	ZS323728	Screw, binding head 3x5	
7-78	ML255677	Case Angle (I)	PY-1095
7-79	ML304324	Case Angle (M) Part VT-300	PY-1124
7-80	ZS432674	Screw, pan head 3x3	
7-81	ML255554	Case Angle (E)	PY-1098
7-82	ML255543	Case Angle (H)	PY-1099
7-83	ML304222	Case Angle (L) Part VT-300	PY-1124
7-84	MZ302949	Meter Bush (B)	PY-1123
7-85	EM304443	Level Meter D12A59R	46-1-185
7-86	MB253866	Counter Belt	PY-1038
7-87	ML251223	Case Angle (G)	PY-1103
7-88	ML304612	Case Angle	PY-1401
7-89	ZS200676	Tapping Screw #2, 3x6 (Countersunk)	
7-90	BA305155	SW. P.C Board Comp. VT-400	
7-91x	ES257231	Slide SW. SSB02219	25-3-122
7-92x	EO669273	Inductor FL5R-200	23-1-248
7-93x	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
7-94x	ET557965	Transistor 2SA733(Q)(R)	45-1-124
7-95x	ET362261	Transistor 2SC1061(B)	45-1-96
7-96x	ED224526	Silicon Diode 10D1	45-2-11
7-97x	ED557447	Silicon Diode 1S1588	45-3-22
7-98x	ER658124	Metal Oxide Film/R. 1W 10 ohms(J)	35-15-17
7-99x	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	36-10-267
7-100x	ZW273756	Nut M3, #1	
7-101	EJ238342	PIN Jack	31-1-181
7-102	EJ522900	Connector 12P RK12SRF	31-1-94
7-103	EJ238318	3P SW. Socket S-16947	31-1-162
7-104	ZS425992	Screw, countersunk head 3x8 (Black)	
7-105	EJ238331	Jack SJ-357-1-3	31-2-78
7-106	VT422537	Nylon Collar for Jack D3.5	PX-A147
7-107	EV238375	Vol. (w/SW) V23M4-IS 7.5T-300 kB	36-25-6
7-108x	ES422471	Slide SW. SL-B262B	25-3-38
7-109x	EJ257433	Mini Connect. Plug 5048-10A	42-1-99
7-110x	ZS419850	Screw, countersunk head 2.6x5	
7-111x	BA303351	Shut Off P.C Board Comp. VT-350	
7-112x	ES302282	Slide SW. SSP06211	25-3-138
7-113x	EP257940	Relay LC1N-12V	47-1-27
7-114x	ET666415	Transistor 2SB605(K)(L)	45-1-225
7-115x	ET635218	Transistor 2SC945L(K)(P)(Q)(R)	45-1-85
7-116x	ET658102	Transistor 2SC945L(K)	45-1-85
7-117x	ED219464	Germanium Diode 1N34A	45-3-1
7-118x	ED560913	Silicon Diode 1S2473 VE	45-3-23
7-119x	EC575188	Tantalum/C. (DTS Type) 22μF(M) 16WV	24-15-8
7-120	EV303763	Vol. V16L4S 1 kB	36-22-32
7-121	ES302287	Slide SW. SSC-362B	25-3-139
7-122	VT303724	Slow SW. Push Wire	PY-2204
7-123	ZW550697	Washer (SPC) D2.9x7.4x0.5t	
7-124	ZS592378	Screw, pan head 2.6x3	

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

Ref. No.	Parts No.	Description	Schematic No.
7-125x	ET591570	Transistor 2SA473(Y)	45-1-177
7-126x	ET520288	Transistor 2SC1247A(V)	45-1-131
7-127x	ED356534	Zener Diode RD-6A(M)	45-6-71
7-128	VT303803	CDS Cover	PY-1215
7-129	ET303828	CDS P201D-5R B	45-9-4
7-130	ZS499331	Screw, pan head 2.3x5	
7-131x	ET362261	Transistor 2SC1061(B)	45-1-96
7-132	ES477966	Micro SW. SS-5GL	25-1-23
7-133	ES304788	Micro SW. SSL08-U	25-1-47
7-134	ZS487091	Screw, pan head 2.3x8	
7-135	ES246598	Micro SW. SS-5GL-111	25-1-38
7-136	ZS670004	Screw, pan head 2.3x16	
7-137x	EJ232132	RF Converter Connector 100-010-006	31-4-27
7-138	EJ238162	Monitor Connector TCS0279-01-020	31-1-160
7-139x	ER312418	Metal Oxide Film/R. 1/4W 0 ohm	35-10-16
7-140x	EJ306820	Touch Terminal 170262-1	32-1-90
7-141x	EJ306821	Touch Terminal 170263-1	32-1-91
7-142x	EJ281057	Mini Connect. Terminal 2759-PBT2	32-1-77
7-143x	ZS421806	Screw, pan head 3x8	
7-144x	ZW632226	Insulator Washer (Bush M)	45-16-27
7-145	ZW303789	Micro SW. Washer	PY-1112
7-146x	ZS262607	Tapping Screw #2, 2.3x10(BR)	
7-147x	ZW414145	Washer (Polyslider) D4.1x7x0.13t	
7-148	BR301746	Reel Table (L) Block Comp. VT-300	13-2-33
7-149	BR301745	Reel Table (R) Block Comp. VT-300	13-2-32
7-150	MV303576	Thrust Bearing SKT3.2-8	
7-151	ZW511457	Washer (Polyslider) D3.3x6x0.25t	
7-152	ZW301319	'E' Ring 2.3M (Black)	6-1-9
7-153	ZW305549	Washer D3.5x10x1t	
7-154	MB422267	Counter Belt (A) D55.6x1.1x1.1	PX-A115
7-155x	ZW394086	Washer (Nylon) D4.1x7x1t	
7-156x	ZS608444	Screw, pan head 3x16	
7-157x	ZS344305	Screw, pan head 3x10	
7-158x	ZW616004	Washer D3.1x8x1t	
7-159x	ZS553983	Screw, pan head 2.6x6	
7-160x	ZS421806	Screw, pan head 3x8	
7-161x	ZW550642	Washer, (SPC) D3.1x8x0.5t	
7-162x	ZS447568	Tapping Screw #1, 3x6 (Truss) (Black)	
7-163x	BA304837	Joint P.C Board Comp. VT-400	PY-9817

8. P.C BOARDS

(1) SSG P.C BOARD (CV-2407) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(1)-1	BA304072	SSG P.C Board Comp. VT-400(NTSC)	
(1)-2	BA304073	SSG P.C Board Comp. VT-400(PAL)	
(1)-IC1	EI304475	IC MC14066BCP	45-8-243
(1)-IC2	EI304496	IC F4001CP	45-8-201
(1)-IC3	EI302171	IC μA1458CTC	45-8-228
(1)-IC4,5	EI304475	IC MC14066BCP	45-8-243
(1)-IC6	EI304474	IC MC14012BCP	45-8-242
(1)-IC7	EI304476	IC MC14520BCP	45-8-256
(1)-IC8	EI304496	IC F4001CP	45-8-201
(1)-IC9	EI301381	IC MN-115P (NTSC)	45-8-223
(1)-IC9	EI301382	IC MN-116P (PAL)	45-8-224
(1)-IC10to12	EI305456	IC TC4049BP	45-8-261
(1)-IC13	EI250727	IC F4011PC	45-8-199
(1)-IC14,15	EI305456	IC TC4049BP	45-8-261
(1)-IC16	EI304496	IC F4001CP	45-8-201
(1)-IC17	EI302171	IC μA1458CTC	45-8-228
(1)-IC18	EI304496	IC F4001CP	45-8-201
(1)-X1	EI309427	Crystal OSC 31.5 kHz (NTSC)	53-1-144
(1)-X1	EI309426	Crystal OSC 31.25 kHz (PAL)	53-1-144
(1)-X2	EI485460	Crystal OSC 3.579545 MHz (NTSC)	53-1-58
(1)-X2	EI564592	Crystal OSC 4433.619 kHz (PAL)	53-1-93
(1)-TR1	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR2	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR3,4	ET538110	Transistor 2SA628(D) (E)	45-1-94
(1)-TR5,6	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR7to9	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR10,11	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR12,13	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR14,15	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR16,17	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR18	ET564568	Transistor 2SC641K(B)	45-1-167
(1)-TR19to22	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR23	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR24to26	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR27	ET564568	Transistor 2SC641K(B)	45-1-167
(1)-TR28	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR29	ET564568	Transistor 2SC641K(B)	45-1-167
(1)-TR30	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR31	ET538110	Transistor 2SA628(D)(E)	45-1-94
(1)-TR32	ET564568	Transistor 2SC641K(B)	45-1-167
(1)-DL1	EI304613	Delay Line DL102-102S-040	58-1-10
(1)-D1to3	ED523427	Silicon Diode 1SS16	45-3-20
(1)-D4	ED557447	Silicon Diode 1S1588	45-3-22
(1)-D5to7	ED219464	Germanium Diode 1N34A	45-3-1
(1)-D8to12	ED557447	Silicon Diode 1S1588	45-3-22
(1)-D13,14	ED557447	Silicon Diode 1S1588 (PAL)	45-3-22
(1)-D15to23	ED557447	Silicon Diode 1S1588	45-3-22
(1)-T1	BT523168	Trans. 13Y-033-064	23-1-167
(1)-L1,2	EO574514	Inductor FS0810S 160μH(J)	23-1-119
(1)-L3	EO361890	Inductor FS0810S 39μH(J)	23-1-119
(1)-L4,5	EO464501	Inductor FS0810S 270μH(J)	23-1-119
(1)-L6	EO574503	Inductor FS0810S 150μH(J)	23-1-119
(1)-L7	EO304477	Ferri Inductor FL7H 470μH(K)	23-1-3
(1)-L8,9	EO464501	Inductor FS0810S 270μH(J)	23-1-119
(1)-L10	EO574503	Inductor FS0810S 150μH(J)	23-1-119
(1)-L11	EO350796	Ferri Inductor FL5H 330μH(K)	23-1-2
(1)-L12,13	EO304477	Ferri Inductor FL7H 470μH(K)	23-1-3
(1)-VR1	EV574457	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 300 ohms(B)	36-28-1
(1)-VR2	EV206908	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 30 kB	36-28-1
(1)-VR3	EV523170	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 2 kB	36-28-1
(1)-VR4	EV564783	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 3 kB	36-28-1
(1)-P1	EJ305218	Mini Connect. Plug 5049-19A	42-1-120
(1)-TC1	EC523552	Trimmer/C. DT05C-100 10PF	24-2-22
(1)-J1	EJ304473	CIS Connector 20P C-1-163683-9	52-1-37
(1)-R80	ER304494	Metal Oxide Film/R. EF1/4W 13k(F)	35-17-8
(1)-R82	ER304494	Metal Oxide Film/R. EF1/4W 13k(F)	35-17-8
(1)-R83,84	ER304491	Metal Oxide Film/R. EF1/4W 33k(F)	35-17-8
(1)-R85	ER304493	Metal Oxide Film/R. EF1/4W 20k(F)	35-17-8
(1)-R88	ER304487	Metal Oxide Film/R. EF1/4W 82k(F)	35-17-8
(1)-R89	ER304492	Metal Oxide Film/R. EF1/4W 22k(F)	35-17-8
(1)-R90	ER695351	Metal Oxide Film/R. EF1/4W 91k(F)	35-17-8
(1)-R91	ER304493	Metal Oxide Film/R. EF1/4W 20k(F)	35-17-8
(1)-R92	ER304488	Metal Oxide Film/R. EF1/4W 30k(F)	35-17-8
(1)-R93	ER304493	Metal Oxide Film/R. EF1/4W 20k(F)	35-17-8
(1)-R94	ER304488	Metal Oxide Film/R. EF1/4W 30k(F)	35-17-8
(1)-R95,96	ER304489	Metal Oxide Film/R. EF1/4W 68k(F)	35-17-8
(1)-R109 to 111	ER304486	Metal Oxide Film/R. EF1/4W 130K(F)	35-17-8
(1)-R112	ER304485	Metal Oxide Film/R. EF1/4W 120k(F)	35-17-8
(1)-R113,114	ER304486	Metal Oxide Film/R. EF1/4W 130k(F)	35-17-8
(1)-R115	ER304491	Metal Oxide Film/R. EF1/4W 33k(F)	35-17-8
(1)-R116	ER304482	Metal Oxide Film/R. EF1/4W 110k(F)	35-17-8
(1)-R117	ER304485	Metal Oxide Film/R. EF1/4W 120k(F)	35-17-8
(1)-R118	ER304491	Metal Oxide Film/R. EF1/4W 33k(F)	35-17-8
(1)-R126	ER304494	Metal Oxide Film/R. EF1/4W 13k(F)	35-17-8
(1)-R127	ER301387	Metal Oxide Film/R. EF1/4W 10k(F)	35-17-8
(1)-R128,129	ER304493	Metal Oxide Film/R. EF1/4W 20k(F)	35-17-8
(1)-C10	EC435690	Styrol/C. (Vert. Type) 560PF(J) 50WV	24-11-3
(1)-C13	EC266681	Tantalum/C. (DTS Type) 68μF(M) 10WV	24-15-8
(1)-C14to16	EC304614	Tantalum/C. (Vert. Type) 1.5μF(M) 25WV	24-15-8

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

Symbol No.	Parts No.	Description	Schematic No.
(1)-C17to21	EC523282	Solid Aluminum/C. (Vert. Type) 0.1μF(M) 25WV	24-19-2
(1)-C24	EC654153	Tantalum/C. (DTS Type) 0.1μF(M) 25WV	24-15-8
(1)-C25	EC435690	Styrol/C. (Vert. Type) 560PF(J) 50WV	24-11-3
(1)-C29	EC266681	Tantalum/C. (DTS Type) 68μF(M) 10WV	24-15-8
(1)-C30	EC301380	Tantalum/C. (DTS Type) 47μF(M) 10WV	24-15-8
(1)-C31,32	EC522551	Tantalum/C. (DTS Type) 2.2μF(M) 25WV	24-15-8
(1)-C37	EC654153	Tantalum/C. (DTS Type) 0.1μF(M) 25WV	24-15-8
(1)-C38	EC522516	Tantalum/C. (DTS Type) 1μF(M) 25WV	24-15-8
(1)-C63	EC513955	Styrol/C. (Vert. Type) 220PF(J) 50WV	24-11-3
(1)-C64	EC574086	Tantalum/C. (DTS Type) 22μF(M) 10WV	24-15-8
(1)-C71	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV	24-11-3
(1)-C73	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV	24-11-3
(1)-C77	EC654153	Tantalum/C. (DTS Type) 0.1μF(M) 25WV	24-15-8

(2) SERVO P.C BOARD (PY-5203) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(2)-1	BA304721	Servo P.C Board Comp. VT-400(NTSC)	
(2)-2	BA304722	Servo P.C Board Comp. VT-400(PAL)	
(2)-IC1to4	EI257602	IC MC14011B	45-8-173
(2)-IC5	EI639505	IC MC14001CP	45-8-121
(2)-IC6	EI301748	IC μPC1458C	45-8-230
(2)-IC7	EI639483	IC MC14024BCP	45-8-123
(2)-IC8	EI301749	IC μPC741C	45-8-229
(2)-IC9	EI302172	IC TA7120P(D)(E)	45-8-149
(2)-IC10	EI213827	IC μPC305C	45-8-190
(2)-D1to4	ED557447	Silicon Diode 1S1588	45-3-22
(2)-D5to7	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-D8	ED511097	Silicon Diode 1N4001	45-2-50
(2)-D9	ED624903	Silicon Diode 1S2473	45-3-28
(2)-D10to20	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-D21	ED624903	Silicon Diode 1S2473	45-3-28
(2)-D22to31	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-TR1,2	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR3,4	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(2)-TR5	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR6	ET304710	Transistor 2SC944S(K)(P)	45-1-286
(2)-TR7	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR8	ET304710	Transister 2SC944S(K)(P)	45-1-286
(2)-TR9,10	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR11	ET666404	Transistor 2SD571(K)(L)	45-1-218
(2)-TR12,13	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(2)-TR14	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR15	ET666404	Transistor 2SD571(K)(L)	45-1-218
(2)-TR16to18	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR19,20	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(2)-TR21	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR22,23	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(2)-TR24,25	ET538378	Transistor 2SA733(R)	45-1-124
(2)-TR26to28	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR29	ET538378	Transistor 2SA733(R)	45-1-124
(2)-TR30	ET302169	Transistor 2SD471(K)(L)(M)	45-1-283
(2)-TR31	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR32	ET666415	Transistor 2SB605(K)(L)	45-1-225
(2)-SW1	ES601806	Slide SW. SSC222A	25-3-102
(2)-RL1	EP302294	Relay MZ-9HG	47-2-29
(2)-TH1	ED302293	Thermister 32D26	45-5-24
(2)-TH2	ED302292	Thermister 25D29	45-5-28
(2)-VR1	EV592277	Semi-fixed/Vol. (Metalized Film) TM10K(PH) 2 kB	36-28-3
(2)-VR2	EV464220	Semi-fixed/Vol. V8K4-1 50 kB	36-10-266
(2)-VR3	EV589408	Semi-fixed/Vol. V8K4-1 200 ohms(B)	36-10-266
(2)-VR4	EV464218	Semi-fixed/Vol. V8K4-1 30 kB	36-10-266
(2)-VR5,6	EV520806	Semi-fixed/Vol. V8K4-1 10 kB	36-10-266
(2)-VR7	EV523620	Semi-fixed/Vol. V8K4-1 500 ohms(B)	36-10-266
(2)-VR8	EV464231	Semi-fixed/Vol. V8K4-1 100 kB	36-10-266
(2)-VR9	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	36-10-267
(2)-L1	EO346230	Inductor RX 22 MH	23-1-15
(2)-P1	EJ257433	Mini Connect. Plug 5048-10A	42-1-99
(2)-P2,3	EJ257488	Mini Connect. Plug 5048-05A	42-1-99
(2)-P4	EJ257433	Mini Connect. Plug 5048-10A	42-1-99
(2)-P5	EJ257556	Mini Connect. Plug 5048-06A	42-1-99
(2)-P6	EJ257861	Mini Connect. Plug 5048-03A	42-1-99
(2)-R9	ER302289	Metal Oxide Film/R. EF1/4W 10k(J)	35-17-8

Symbol No.	Parts No.	Description	Schematic No.
(2)-R11	ER302289	Metal Oxide Film/R. EF1/4W 10k(J)	35-17-8
(2)-R12	ER302291	Metal Oxide Film/R. EF1/4W 270k(J)	35-17-8
(2)-R18	ER302290	Metal Oxide Film/R. EF1/4W 200k(J) (NTSC)	35-17-8
(2)-R18	ER258085	Metal Oxide Film/R. EF1/4W 300k(J) (PAL)	35-17-8
(2)-R25	ER302156	Metal Oxide Film/R. EF1/4W 4.7k(J)	35-17-8
(2)-R26	ER302157	Metal Oxide Film/R. EF1/4W 5.1k(J)	35-17-8
(2)-R37	ER303840	Metal Oxide Film/R. 1W 47 ohms(J)	35-15-17
(2)-R66	ER258085	Metal Oxide Film/R. EF1/4W 300k(J)	35-17-8
(2)-R67	ER302291	Metal Oxide Film/R. EF1/4W 270k(J)	35-17-8
(2)-R68	ER258085	Metal Oxide Film/R. EF1/4W 300k(J)	35-17-8
(2)-R122	ER302168	Metal Oxide Film/R. 1/2W 10 ohms(K)	35-15-12
(2)-C4	EC497946	Tantalum/C. (DTS Type) 0.68μF(M) 35WV(NTSC)	24-15-8
(2)-C4	EC496877	Tantalum/C. (DTS Type) 1μF(M) 35WV(PAL)	24-15-8
(2)-C5	EC301380	Tantalum/C. (DTS Type) 47μF(M) 10WV	24-15-8
(2)-C6	EC522167	Solid Aluminum/C. (Vert. Type) 0.22μF(M) 25WV	24-19-2
(2)-C7	EC307260	Elect./C. (Vert. Type) 3300μF 16WV	24-12-30
(2)-C16	EC593065	Tantalum/C. (DTS Type) 3.3μF(M) 25WV	24-15-8
(2)-C17	EC574075	Tantalum/C. (DTS Type) 10μF(M) 10WV	24-15-8
(2)-C18	EC572444	Tantalum/C. (DTS Type) 47μF(M) 6.3WV(NTSC)	24-15-8
(2)-C18	EC302298	Tantalum/C. 68μF(M) 6.3WV(PAL)	24-15-8
(2)-C33,34	EC593065	Tantalum/C. (DTS Type) 3.3μF(M) 25WV	24-15-8
(2)-C35	EC572444	Tantalum/C. (DTS Type) 47μF(M) 6.3WV	24-15-8
(2)-C43	EC601841	Tantalum/C. (DTS Type) 0.47μF(K) 35WV	24-15-8
(2)-C44	EC536207	Tantalum/C. (DTS Type) 1μF(K) 35WV	24-15-8
(2)-C45	EC601841	Tantalum/C. (DTS Type) 0.47μF(K) 35WV	24-15-8
(2)-C50	EC305289	Tantalum/C. (D Type) 15μF(M) 3.15WV	24-15-12

(3) SIGNAL P.C BOARD (PY-5400) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(3)-1	BA304390	Signal P.C Board Comp. VT-400(NTSC)	
(3)-2	BA304392	Signal P.C Board Comp. VT-400(PAS)	
(3)-IC101	EI634454	IC AN262	45-8-150
(3)-IC201	EI572681	IC AN-302	45-8-98
(3)-IC202	EI297180	IC AN-316	45-8-215
(3)-IC203	EI572692	IC AN-304	45-8-91
(3)-TR101	ET453486	Transistor 2SC711(E)(F)	45-1-67
(3)-TR103	ET520288	Transistor 2SC1247A(V)	45-1-131
(3)-TR201, 202	ET572703	Transistor 2SC1216(F)	45-1-169
(3)-TR203	ET655740	Transistor 2SC1674(L)	45-1-206
(3)-TR204	ET380834	Transistor 2SC711(E)	45-1-67
(3)-TR205	ET304659	Transistor 2SC1568(R)	45-1-287
(3)-TR206, 207	ET380834	Transistor 2SC711(E)	45-1-67
(3)-TR208	ET522268	Transistor 2SA733(Q)	45-1-124
(3)-TR209, 210	ET380834	Transistor 2SC711(E)	45-1-67
(3)-TR211	ET423224	FET 2SK19(BL)	45-12-3
(3)-TR212	ET655740	Transistor 2SC1674(L)	45-1-206
(3)-TR213	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
(3)-TR214	ET423224	FET 2SK19(BL)	45-12-3
(3)-TR215	ET655740	Transistor 2SC1674(L)	45-1-206
(3)-TR216	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
(3)-TR217	ET655740	Transistor 2SC1674(L)	45-1-206
(3)-TR218	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
(3)-TR219	ET380834	Transistor 2SC711(E)	45-1-67
(3)-D101	ED560913	Silicon Diode 1S2473 VE	45-3-23
(3)-D201	ED557447	Silicon Diode 1S1588	45-3-22
(3)-D202	ED219464	Germanium Diode 1N34A	45-3-1
(3)-D203,204	ED557447	Silicon Diode 1S1588	45-3-22
(3)-D205	ED591568	Zener Diode WZ-069	45-6-67
(3)-D206	ED557447	Silicon Diode 1S1588	45-3-22
(3)-L101	EO443722	Ferri Inductor FL9H 1MH(J)	23-1-4
(3)-L102	EO496361	Inductor 6070GE 23MH	23-1-163
(3)-L103	EO244012	Ferri Inductor FL9H 22MH(J)	23-1-4
(3)-L201	EO464490	Inductor FS0810S 120μH(J)	23-1-119
(3)-L202	EO304650	Ferri Inductor FL5H 33μH(K)	23-1-2
(3)-L203	EO306194	Inductor LS-7 18μH(J)	23-1-297
(3)-L204 to 206	EO485278	Ferri Inductor FL5H 220μH(K)	23-1-2
(3)-L207,208	EO306195	Inductor LS-7 8.2μH(J)	23-1-297
(3)-L209	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(3)-L210	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(3)-L211	EO423731	Inductor FS0810S 82μH(J)	23-1-119
(3)-L212	BT361833	Trans. SNY-033-1351	23-1-34
(3)-L213	BT269346	Trans. 12A-605	23-1-270
(3)-L214	EO464490	Inductor FS0810S 120μH(J)	23-1-119
(3)-L215	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(3)-L216	EO304650	Ferri Inductor FL5H 33μH(K)	23-1-2
(3)-L217,218	EO303254	Inductor FS0810S 470μH(J)	23-1-119
(3)-L219	EO304652	Inductor LF-1 68μH(J)	23-1-177
(3)-L220	EO523563	Inductor LF-1 56μH(J)	23-1-177
(3)-T101	EO261797	OSC Coil 12A-614	23-4-39
(3)-T201	BT203062	Trans. ZMT-2960	23-1-258
(3)-T202	EO304647	RF Coil 34H-1020	23-1-282
(3)-T203,204	EO574525	Coil 20K-036A	23-1-207
(3)-VR101	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	36-10-266

(4) PROCESS & ENCODER P.C BOARD (CV-2406) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(3)-VR102	EV523214	Semi-fixed/Vol. V8K1-1 5 kB	36-10-267
(3)-VR103	EV257523	Semi-fixed/Vol. V8K1-1 500 kB	36-10-267
(3)-VR201	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(3)-VR202	EV522630	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 5 kB	36-28-1
(3)-VR203, 204	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	36-10-267
(3)-VR205	EV523620	Semi-fixed/Vol. V8K4-1 500 ohms(B)	36-10-266
(3)-VR206	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	36-10-267
(3)-VR207, 208	EV523708	Semi-fixed/Vol. V8K1-1 500 ohms(B)	36-10-267
(3)-VR209	EV464264	Semi-fixed/Vol. V8K1-1 50 kB	36-10-267
(3)-VR210	EV572747	Semi-fixed/Vol. V8K1-1 100 ohms(B)	36-10-267
(3)-SW101	ES257567	Slide SW. CL-106BA8 (Audio only)	25-3-125
(3)-SW201	ES257332	Slide SW. CL-106B-B5 (Video only)	25-3-124
(3)-P1	EJ306823	6P Perpendicular Post 171825-6	42-1-143
(3)-P2	EJ306822	7P Perpendicular Post 171825-7	42-1-143
(3)-P3	EJ306825	12P Perpendicular Post 1-171825-2	42-1-143
(3)-P4	EJ304655	Mini Connect. Plug 5048-15A	42-1-99
(3)-TC201, 202	EC257354	Trimmer/C. ECV-1ZW 20×44 20PF	24-2-39
(3)-C106	EC572793	Styrol/C. (Vert. Type) 250PF(J) 50WV	24-11-3
(3)-C119	EC496866	Tantalum/C. (DTS Type) 0.47μF(M) 35WV	24-15-8
(3)-C121	EC497924	Tantalum/C. (DTS Type) 0.1μF(M) 35WV	24-15-8
(3)-C129	EC514012	Styrol/C. (Vert. Type) 300PF(J) 50WV	24-11-3
(3)-C134	EC304048	Styrol/C. (w/rubber) 3000PF(J) 500WV	24-11-13
(3)-C206	EC303037	Tantalum/C. (D Series) 33μF(M) 10WV	24-15-12
(3)-C207	EC304709	Tantalum/C. (D Type) 0.15μF(M) 35WV	24-15-12
(3)-C210	EC435690	Styrol/C. (Vert. Type) 560PF(J) 50WV	24-11-3
(3)-C216	EC261808	Through Type/C. CK-472F2H 102SY (NTSC) (Video only)	24-21-2
(3)-C223	EC305429	Tantalum/C. (D Type) 1μF(M) 25WV	24-15-12
(3)-C232	EC305427	Tantalum/C. (D Type) 10μF(M) 10WV	24-15-12
(3)-C236	EC305427	Tantalum/C. (D Type) 10μF(M) 10WV	24-15-12
(3)-C262	EC303037	Tantalum/C. (D Series) 33μF(M) 10WV	24-15-12
(3)-C274	EC590310	Tantalum/C. (DTS Type) 100μF(M) 10WV	24-15-6
(3)-C283	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV	24-11-3
(3)-C284	EC303037	Tantalum/C. (D Series) 33μF(M) 10WV	24-15-12
(3)-C285	EC374218	Ceramic/C. TLD06F 0.01μF(Z) 25WV	24-5-52
(3)-C286	EC350638	VFM/C. 180PF(J) 50WV	24-6-2
(3)-C287	EC435690	Styrol/C. (Vert. Type) 560PF(J) 50WV	24-11-3

Symbol No.	Parts No.	Description	Schematic No.
(4)-1	BA304906	Process & Encoder P.C Board Comp. VT-400 (NTSC)	
(4)-2	BA304907	Process & Encoder P.C Board Comp. VT-400 (PAL)	
(4)-IC201	EI301744	IC μA741TC	45-8-206
(4)-IC202, 203	EI250727	IC F4011PC	45-8-199
(4)-IC204, 205	EI304479	IC μA796HC	45-8-209
(4)-TR1,2	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR3	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR4to7	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR8	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR9	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR10	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR11	ET304734	Transistor 2SC1834	45-1-284
(4)-TR12	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR13,14	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR15,16	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR17	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR18to21	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR22	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR23	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR24	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR25	ET304734	Transistor 2SC1834	45-1-284
(4)-TR26	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR27,28	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR29,30	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR31	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR32to35	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR36	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR37	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR38	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR39	ET304734	Transistor 2SC1834	45-1-284
(4)-TR40	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR41,42	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR201	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR202, 203	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR204	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR205to 213	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR214	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR215	ET590286	Transistor 2SC1216(E)(F)	45-1-169
(4)-TR216	ET304734	Transistor 2SC1834	45-1-284
(4)-TR217	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR218, 219	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR220, 221	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR222to 224	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR225	ET520277	Transistor 2SC1247A(B)	45-1-131
(4)-TR226	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR227to 233	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR234	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR235	ET304734	Transistor 2SC1834	45-1-284
(4)-TR236	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR237	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(4)-TR238, 239	ET304734	Transistor 2SC1834	45-1-284
(4)-TR240to 246	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(4)-TR247	ET639437	Transistor 2SC945L(Q)(P) (PAL)	45-1-85
(4)-D1to12	ED557447	Silicon Diode 1S1588	45-3-22
(4)-D201,202	ED523427	Silicon Diode 1SS16	45-3-20
(4)-D203,204	ED557447	Silicon Diode 1S1588	45-3-22
(4)-D205,206	ED304683	Zener Diode RD-3E	45-6-72
(4)-D207	ED357794	Zener Diode RD-5A(M)	45-6-71

Symbol No.	Parts No.	Description	Schematic No.
(4)-D208to 211	ED557447	Silicon Diode 1S1588	45-3-22
(4)-D212to 219	ED557447	Silicon Diode 1S1588 (PAL)	45-3-22
(4)-VR1to3	EV523181	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 500 ohms(B)	36-28-1
(4)-VR4	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(4)-VR5,6	EV523181	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 500 ohms(B)	36-28-1
(4)-VR7	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(4)-VR8,9	EV523181	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 500 ohms(B)	36-28-1
(4)-VR10	EV564783	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 3 kB	36-28-1
(4)-VR11	EV695430	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 100 ohms(B)	36-28-1
(4)-VR12	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(4)-VR13	EV523181	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 500 ohms(B)	36-28-1
(4)-VR14,15	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(4)-VR16	EV638548	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 20 kB	36-28-1
(4)-VR17	EV206908	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 30 kB(PAL)	36-28-1
(4)-VR18,19	EV695430	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 100ohms(B)	36-28-1
(4)-VR20	EV523181	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 500 ohms(B)	36-28-1
(4)-L1to6	EO350796	Ferri Inductor FL5H 330μH(K)	23-1-2
(4)-L201	EO350796	Ferri Inductor FL5H 330μH(K)	23-1-2
(4)-L202,203	EO304741	Inductor FS0810S 330μH(J)	23-1-119
(4)-L204	EO304739	Ferri Inductor FL5H 330μH(M)	23-1-2
(4)-L205	EO574110	Inductor FS0810S 47μH(J)	23-1-119
(4)-L206	EO304737	Ferri Inductor FL7H 330μH(M)	23-1-3
(4)-L207,208	EO304739	Ferri Inductor FL5H 330μH(M)	23-1-2
(4)-L209	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(4)-L210	EO350796	Ferri Inductor FL5H 330μH(K)	23-1-2
(4)-L211	EO574110	Inductor FS0810S 47μH(J)	23-1-119
(4)-L212	EO350796	Ferri Inductor FL5H FL5H 330μH(K)	23-1-2
(4)-L213	EO590308	Inductor FS0810S 33μH(J)	23-1-119
(4)-DL201	EI304666	Delay Line DL102 601S-039	58-1-12
(4)-DL202, 203	EI304668	Delay Line DL102 201S-037	58-1-11
(4)-J1	EJ304473	CIS Connector 20P C1-1-163683-9	52-1-37
(4)-TC201	EC304732	Trimmer/C. DT05C-100 20PF (NTSC)	24-2-22
(4)-TC201	EC304731	Trimmer/C. DT05C-100 15PF (PAL)	24-2-22
(4)-C3	EC523282	Solid Aluminum/C. (Vert. Type) 0.1μF(M) 25WV	24-19-2
(4)-C6	EC513988	Styrol/C. (Vert. Type) 270PF(J) 50WV	24-11-3
(4)-C7	EC523282	Solid Aluminum/C. (Vert. Type) 0.1μF(M) 25WV	24-19-2
(4)-C16	EC523282	Solid Aluminum/C. (Vert. Type) 0.1μF(M) 25WV	24-19-2
(4)-C27	EC523282	Solid Aluminum/C. (Vert. Type) 0.1μF(M) 25WV	24-19-2
(4)-C30	EC523282	Solid Aluminum/C. (Vert. Type) 0.1μF(M) 25WV	24-19-2
(4)-C218	EC619650	Solid Aluminum/C. (Vert. Type) 0.1μF(K) 25WV	24-19-2
(4)-C237	EC304736	Tantalum/C. (DTS Type) 47μF(K) 6.3WV	24-15-8
(4)-C242	EC536207	Tantalum/C. (DTS Type) 1μF(K) 35WV	24-15-8
(4)-C243	EC304736	Tantalum/C. (DTS Type) 47μF(K) 6.3WV	24-15-8
(4)-C244	EC231625	Tantalum/C. (DTS Type) 22μF(K) 10WV	24-15-8
(4)-C247	EC231625	Tantalum/C. (DTS Type) 22μF(K) 10WV	24-15-8
(4)-C248	EC536207	Tantalum/C. (DTS Type) 1μF(K) 35WV	24-15-8
(4)-C251	EC536207	Tantalum/C. (DTS Type) 1μF(K) 35WV	24-15-8
(4)-C264	EC231625	Tantalum/C. (DTS Type) 22μF(K) 10WV	24-15-8
(4)-R228,229	ER304670	Metal Oxide Film/R. EF1/4W 750 ohms(F)	35-17-8
(4)-R231	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
(4)-R233	ER304673	Metal Oxide Film/R. EF1/4W 7.87k(F)	35-17-8
(4)-R234	ER304674	Metal Oxide Film/R. EF1/4W 21.5k(F)	35-17-8
(4)-R262	ER304669	Metal Oxide Film/R. EF1/4W 560 ohms(F)	35-17-8
(4)-R268	ER304671	Metal Oxide Film/R. EF1/4W 1.2k(F)	35-17-8
(4)-R276	ER304678	Metal Oxide Film/R. EF1/4W 2.94k(F)	35-17-8
(4)-R277	ER304680	Metal Oxide Film/R. EF1/4W 8.06k(F)	35-17-8
(4)-R278,279	ER696306	Metal Oxide Film/R. EF1/4W 2k(F)	35-17-8
(4)-R283	ER304677	Metal Oxide Film/R. EF1/4W 680 ohms(F)	35-17-8
(4)-R285,286	ER304675	Metal Oxide Film/R. EF1/4W 1.5k(F)	35-17-8
(4)-R297,298	ER696306	Metal Oxide Film/R. EF1/4W 2k(F)	35-17-8
(4)-R299	ER304679	Metal Oxide Film/R. EF1/4W 3.6k(F)	35-17-8
(4)-R300	ER304676	Metal Oxide Film/R. EF1/4W 1.6k(F)	35-17-8

Symbol No.	Parts No.	Description	Schematic No.
(4)-R314	ER695384	Metal Oxide Film/R. EF1/4W 3k(F)	35-17-8
(4)-R315	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
(4)-R316	ER304677	Metal Oxide Film/R. EF1/4W 680 ohms(F)	35-17-8
(4)-R317	ER304682	Metal Oxide Film/R. EF1/4W 6.2k(F)	35-17-8
(4)-R318	ER304681	Metal Oxide Film/R. EF1/4W 1.3k(F)	35-17-8
(4)-R325	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
(4)-R326	ER304681	Metal Oxide Film/R. EF1/4W 1.3k(F)	35-17-8
(4)-R327	ER304677	Metal Oxide Film/R. EF1/4W 680 ohms(F)	35-17-8

(5) CHROMA P.C BOARD (PY-5415) BLOCK (NTSC)

Symbol No.	Parts No.	Description	Schematic No.
(5)-1	BA304902	Chroma P.C Board Comp. VT-400 (NTSC)	
(5)-IC1	EI304845	IC AN-305	45-8-247
(5)-IC2	EI573838	IC TA7060P	45-8-97
(5)-IC3	EI485219	IC TA7061AP	45-8-56
(5)-IC4	EI304840	IC TA7158P	45-8-248
(5)-IC5	EI231366	IC μPC570C	45-8-205
(5)-DL1	EI574301	1H Delay Line EFD-AN645-B05	58-1-7
(5)-DL2	EZ574560	Delay Line CTL-1508A	58-1-8
(5)-TR1,2	ET380834	Transistor 2SC711(E)	45-1-67
(5)-TR3	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(5)-TR4,5	ET590286	Transistor 2SC1216(E)(F)	45-1-169
(5)-TR6to12	ET380834	Transistor 2SC711(E)	45-1-67
(5)-TR13	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(5)-TR14to21	ET380834	Transistor 2SC711(E)	45-1-67
(5)-TR22	ET520288	Transistor 2SC1247A(V)	45-1-131
(5)-TR23	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(5)-TR24,25	ET380834	Transistor 2SC711(E)	45-1-67
(5)-TR26to28	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(5)-TR29,30	ET380834	Transistor 2SC711(E)	45-1-67
(5)-D1,2	ED557447	Silicon Diode 1S1588	45-3-22
(5)-D3	ED573873	Vari-cap Diode 1SI923	45-3-26
(5)-D4,5	ED557447	Silicon Diode 1S1588	45-3-22
(5)-D6	ED591568	Zener Diode WZ-069	45-6-67
(5)-D7,8	ED523427	Silicon Diode 1SS16	45-3-20
(5)-D9	ED557447	Silicon Diode 1S1588	45-3-22
(5)-T1	BT304844	Trans. 12A-414	23-1-283
(5)-T2	BT574211	Trans. 17K-414	23-1-203
(5)-T3	BT574222	Trans. 17K-416	23-1-266
(5)-T4	BT203073	Trans. 40M-061	23-1-261
(5)-VL1,2	EO574266	Coil 33Y-465 (Orange)	23-1-201
(5)-X1	EI304842	Crystal Osc. 3.583479MHz	53-1-118
(5)-VR1	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	36-10-266
(5)-VR2	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	36-10-266
(5)-VR3	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	36-10-267
(5)-VR4,5	EV572422	Semi-fixed/Vol. V8K1-1 20 kB	36-10-267
(5)-VR6	EV464185	Semi-fixed/Vol. V8K4-1 100 ohms (B)	36-10-266
(5)-VR7	EV464231	Semi-fixed/Vol. V8K4-1 100 kB	36-10-266
(5)-VR8to10	EV464196	Semi-fixed/Vol. V8K4-1 2 kB	36-10-286
(5)-VR11	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	36-10-266
(5)-VR12	EV475470	Semi-fixed/Vol. V8K1-1 10 kB	36-10-267
(5)-L1	EO361890	Inductor FS0810S 39μH(J)	23-1-119
(5)-L2	EO306196	Inductor LS-7 4.7μH(J)	23-1-297
(5)-L3	EO423731	Inductor FS0810S 82μH(J)	23-1-119
(5)-L4	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(5)-L5	EO574492	Inductor FS0810S 110μH(J)	23-1-119
(5)-L6	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(5)-L7	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(5)-L8,9	EO423246	Inductor FS0810S 220μH(J)	23-1-119
(5)-L10	EO361888	Inductor FS0810S 180μH(J)	23-1-119
(5)-L11	EO243966	Ferri Inductor FL5H 820μH(K)	23-1-2
(5)-L12	EO304843	Inductor FS0810S 510μH(J)	23-1-119

(6) CHROMA P.C BOARD (PY-5402) BLOCK (PAL)

Symbol No.	Parts No.	Description	Schematic No.
(5)-L13	EO574143	Inductor FS0810S 680μH(J)	23-1-119
(5)-L14	EO574132	Inductor FS0810S 560μH(J)	23-1-119
(5)-L15	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(5)-L16	EO306197	Inductor LS-7 33μH(J)	23-1-297
(5)-L17	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(5)-L18	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(5)-L19	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(5)-L20,21	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(5)-P1	EJ303383	Mini Connect. Plug 5048-08A	42-1-99
(5)-P2	EJ257927	Mini Connect. Plug 5048-12A	42-1-99
(5)-2	ZS609074	Tapping Screw #2, 2×5 (Pan)	
(5)-C2	EC516868	Styrol/C. (Vert. Type) 430PF(J) 50WV	24-11-3
(5)-C38	EC574064	Tantalum/C. (DTS Type) 4.7μF(M) 10WV	24-15-8
(5)-C45	EC435690	Styrol/C. (Vert. Type) 560PF(J) 50WV	24-11-3
(5)-C61	EC513988	Styrol/C. (Vert. Type) 270PF(J) 50WV	24-11-3
(5)-C62,63	EC434070	Styrol/C. (Vert. Type) 680PF(J) 50WV	24-11-3
(5)-C64	EC513988	Styrol/C. (Vert. Type) 270PF(J) 50WV	24-11-3
(5)-C99	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV	24-11-3
(5)-C100	EC304864	Styrol/C. (Vert. Type) 10000PF(J) 50WV	24-11-3
(5)-C104	EC522516	Tantalum/C. (DTS Type) 1μF(M) 25WV	24-15-8
(5)-C105	EC654153	Tantalum/C. (DTS Type) 0.1μF(M) 25WV	24-15-8

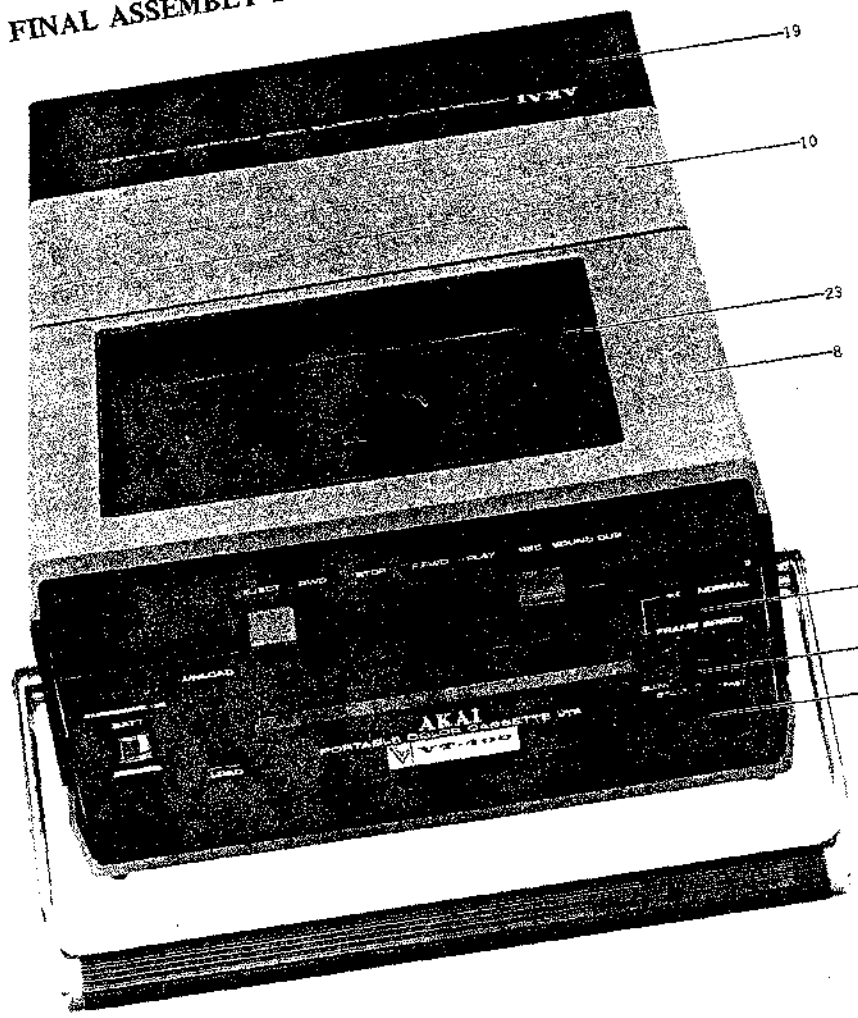
Symbol No.	Parts No.	Description	Schematic No.
(6)-1	BA304903	Chroma P.C Board Comp. VT-400 (PAL)	
(6)-IC1	EI572681	IC AN-302	45-8-98
(6)-IC2	EI573838	IC TA7060P	45-8-97
(6)-IC3	EI485291	IC TA-7061AP	45-8-56
(6)-IC4	EI573840	IC M53204P	45-8-106
(6)-DL1	EI304839	Delay Line EFD-EN645A11B	58-1-13
(6)-DL2	EZ574560	Delay Line CTL-1508A	58-1-8
(6)-TR1,2	ET380834	Transistor 2SC711(E)	45-1-67
(6)-TR3	ET557965	Transistor 2SC733(Q)(R)	45-1-124
(6)-TR4,5	ET590286	Transistor 2SC1216(E)(F)	45-1-169
(6)-TR6to15	ET380834	Transistor 2SC711(E)	45-1-67
(6)-TR16	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(6)-TR17to29	ET380834	Transistor 2SC711(E)	45-1-67
(6)-TR30	ET520288	Transistor 2SC1247A(V)	45-1-131
(6)-TR31	ET520288	Transistor 2SC1247A(V)	45-1-131
(6)-TR32	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(6)-TR33,34	ET380834	Transistor 2SC711(E)	45-1-67
(6)-TR35	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(6)-TR36	ET380834	Transistor 2SC711(E)	45-1-67
(6)-TR37	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(6)-D1to4	ED557447	Silicon Diode 1S1588	45-3-22
(6)-D5	ED573873	Vari-Cap Diode 1S1923	45-3-26
(6)-D6,7	ED557447	Silicon Diode 1S1588	45-3-22
(6)-D8	ED591568	Zener Diode WZ-069	45-6-67
(6)-D9to12	ED665886	Germanium Diode 1N60-VF	45-3-39
(6)-D13,14	ED523427	Silicon Diode 1SS16	45-3-20
(6)-TH1	EO304836	Thermister 32D27	45-5-29
(6)-T1	BT304844	Trans. 12A-414	23-1-283
(6)-T2	BT574244	Trans. 17K-414P	23-1-204
(6)-T3	BT574211	Trans. 17K-414	23-1-203
(6)-T4	BT574222	Trans. 17K-416	23-1-206
(6)-T5	BT203073	Trans. 40M-061	23-1-261
(6)-T6,7	BT574244	Trans. 17K-414P	23-1-204
(6)-VL1,2	EO574266	Coil 33Y-465 (Orange)	23-1-201
(6)-X1	EI564592	Crystal OSC 4433.619 kHz	53-1-93
(6)-VR1,2	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(6)-VR3	EV478686	Semi-fixed/Vol. V8K401 1 kB	36-10-266
(6)-VR4	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(6)-VR5,6	EV572422	Semi-fixed/Vol. V8K1-1 20 kB	36-10-267
(6)-VR7	EV464185	Semi-fixed/Vol. V8K4-1 100 ohms(B)	36-10-266
(6)-VR8	EV523620	Semi-fixed/Vol. V8K4-1 500 ohms(B)	36-10-266
(6)-VR9	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	36-10-266
(6)-VR10	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
(6)-L1	EO306197	Inductor LS-7 33μH(J)	23-1-297
(6)-L2	EO306198	Inductor LS-7 3.9μH(J)	23-1-297
(6)-L3	EO361866	Inductor FS0810S 56μH(J)	23-1-119
(6)-L4	EO485504	Ferri Inductor FL5H 270μH(K)	23-1-2
(6)-L5	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(6)-L6	EO423246	Inductor FS0810S 220μH(J)	23-1-119
(6)-L7	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(6)-L8	EO574492	Inductor FS0810S 110μH(J)	23-1-119
(6)-L9	EO306199	Inductor LS-7 22μH(J)	23-1-297

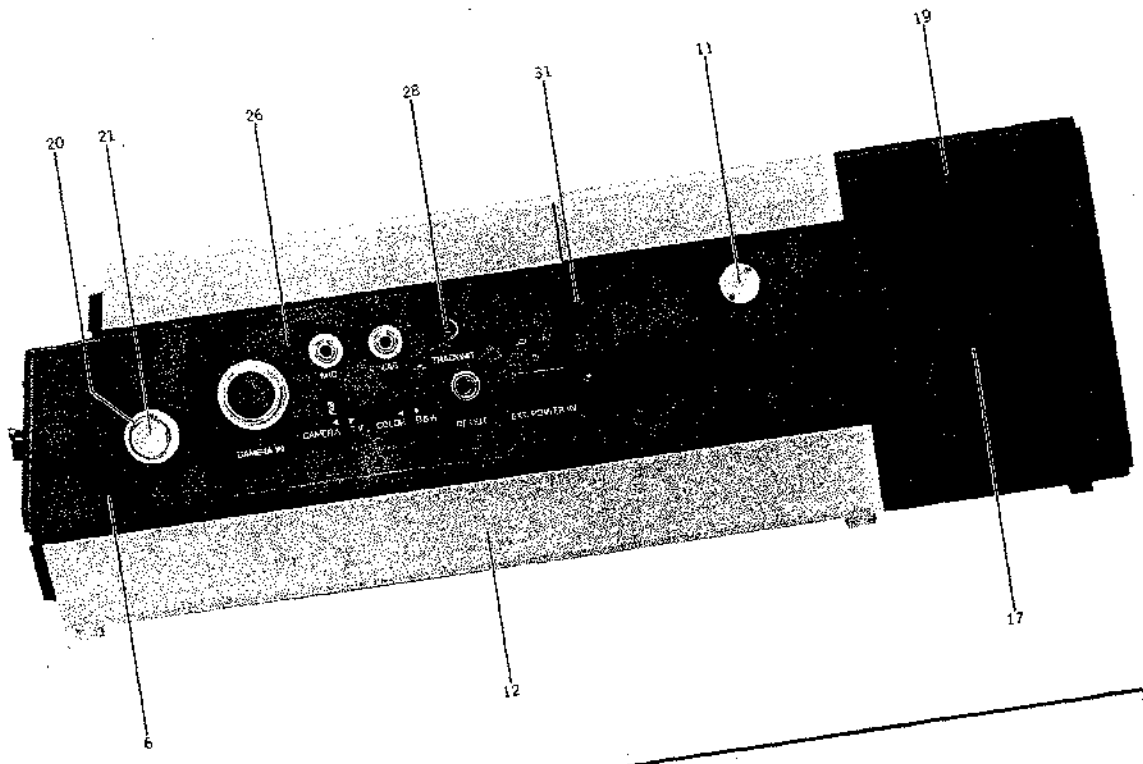
Symbol No.	Parts No.	Description	Schematic No.
(6)-L10	EO423246	Inductor FS0810S 220μH(J)	23-1-119
(6)-L11	EO361888	Inductor FS0810S 180μH(J)	23-1-119
(6)-L12	EO243966	Ferri Inductor FL5H 820μH(K)	23-1-2
(6)-L13	EO304843	Inductor FS0810S 510μH(J)	23-1-119
(6)-L14	EO574143	Inductor FS0810S 680μH(J)	23-1-119
(6)-L15	EO574132	Inductor FS0810S 560μH(J)	23-1-119
(6)-L16	EO306200	Inductor LS-7 12μH(J)	23-1-297
(6)-L17	EO306199	Inductor LS-7 22μH(J)	23-1-297
(6)-L18	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(6)-L19	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(6)-L20	EO357772	Inductor FS0810S 100μH(J)	23-1-119
(6)-L21,22	EO357287	Ferri Inductor FL5H 100μH(K)	23-1-2
(6)-P1	EJ303383	Mini Connect. Plug 5048-08A	42-1-99
(6)-P2	EJ257927	Mini Connect. Plug 5048-12A	42-1-99
(6)-R158	ER695485	Metal Oxide Film/R. EF1/4W 470 ohms(F)	35-17-8
(6)-R159	ER304835	Metal Oxide Film/R. EF1/4W 820 ohms(F)	35-17-8
(6)-C3	EC304849	Styrol/C. (Vert. Type) 360PF(J) 50WV	24-11-3
(6)-C8	EC522516	Tantalum/C. (DTS Type) 1μF(M) 25WV	24-15-8
(6)-C45	EC574064	Tantalum/C. (DTS Type) 4.7μF(M) 10WV	24-15-8
(6)-C52	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV	24-11-3
(6)-C69	EC513988	Styrol/C. (Vert. Type) 270PF(J) 50WV	24-11-3
(6)-C70,71	EC434070	Styrol/C. (Vert. Type) 680PF(J) 50WV	24-11-3
(6)-C73	EC513988	Styrol/C. (Vert. Type) 270PF(J) 50WV	24-11-3
(6)-C74	EC574075	Tantalum/C. (DTS Type) 10μF(M) 10WV	24-15-8
(6)-2	ZS609074	Tapping Screw #2, 2×5 (Pan)	

(7) PLG P.C BOARD (PY-2200) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(7)-1	BA303350	PLG P.C Board Comp. VT-350	PY-9808
(7)-TR1	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(7)-TR2	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(7)-TR3	ET635220	Transistor 2SC945L(K)(P)	45-1-85
(7)-TR4	ET238735	Transistor 2SA715WT(C)(D)	45-1-255
(7)-TR5,6	ET557965	Transistor 2SA733(Q)(R)	45-1-124
(7)-TR7	ET634421	Transistor 2SC1518(Q)(R)	45-1-210
(7)-D1	ED560913	Silicon Diode 1S2473 VE	45-3-23
(7)-D2	ED224526	Silicon Diode 10D1	45-2-11
(7)-D3,4	ED560913	Silicon Diode 1S2473 VE	45-3-23
(7)-D5,6	ED219464	Germanium Diode 1N34A	45-3-1
(7)-D7,8	ED224526	Silicon Diode 10D1	45-2-11
(7)-P1	EJ257927	Mini Connect. Plug 5048-12A	42-1-99
(7)-C5	EC575188	Tantalum/C. (DTS Type) 22μF(M) 16WV	24-15-8

9. PHOTO OF VT-400 FINAL ASSEMBLY BLOCK





9) VT-400 FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
9-1	SE301750	Slide SW. Mask	PY-1238
9-2x	BV305889	Damper Comp. VT-400	13-2-43
9-3	BC304838	Front Case Block Comp. VT-400	PY-9802
9-4x	ZS422076	Screw, pan head 3×5	
9-5x	ZS421806	Screw, pan head 3×8	
9-6	BC238623	Side Case (R)	PY-6003
9-7x	BC238645	Side Case (L)	PY-6003
9-8	BC238680	Upper Case (A)	PY-6005
9-9x	BC281485	Upper Case (A-1) (PAL)	PY-6005
9-10	BC304851	Upper Case (D)	PY-6006
9-11	ZS304320	Decorative Screw (B)	PY-6076
9-12	BC238713	Bottom Case	PY-6007
9-13x	ZS201150	Screw, truss head 3×6 (Black)	
9-14x	VT260853	Battery Case Lid	PY-6008
9-15x	VT356580	Nylatch Grommet H322-2-1	
9-16x	EP356591	Nylatch Plunger H323-2-3-1	
9-17	BC304641	Color Case (B)	PY-6402
9-18x	ZS201183	Screw, truss head 3×8 (Black)	
9-19	BC304636	Color Case (A)	PY-6401/6406
9-20	MH579633	Stop Pin	CV-1100
9-21	ZS579835	Handle Holder Screw	CV-1099
9-22x	MZ579824	Tube	CV-1098
9-23	VT280405	Ejector Panel Part VT-300	PY-9813
9-24x	ZS608152	Screw, pan head 2.3×6 (Black)	
9-25x	ZS267254	Screw, pan head 2.3×4 (Black)	
9-26	SP304633	Decorative Panel (A)	PY-6400/6405
9-27x	SP304634	Decorative Panel (B) (PAL)	PY-6400/6405
9-28	SK458583	Tracking Knob	PX-A181
9-29x	ZS466773	Screw, countersunk head 1.7×6 P=0.35 (Black)	
9-30x	MZ584335	Select Plate	CV-1040
9-31	ZS591254	Screw, truss head 2.3×6 (Black)	
9-32x	HZ303288	Rotary Head Shield Plate (B)	PY-8067
9-33x	ZS201396	Screw, pan head 2.3×3	
9-34	SK303745	Control Knob	PY-6202

10. PRE AMP P.C BOARD (CV-2003) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
10-1	BA304534	Pre Amp P.C Board Comp. VC-400	
10-IC1	EI522134	IC VI-01	45-8-82
10-TR1,2	ET423426	FET 3C18P	45-12-1
10-TR3	ET261923	Transistor 2SC536(E)	45-1-55
10-D1	ED514721	Silicon Diode WG-599	45-3-17
10-L1	EO419602	Ferri Inductor FL5H 470μH(K)	23-1-2
10-C4	EC313299	Trimmer/C. DTM050 D200A	24-2-22
10-C7	EC646402	Tantalum/C. (DTS Type) 100μF(M) 6.3WV	24-15-8
10-C9	EC522167	Solid Aluminum/C. (Vert Type) 0.22μF(M) 25WV	24-19-2

11. DEFLECTION (1) P.C BOARD (CV-2401) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
11-1	BA304538	Deflection (1) P.C Board Comp. VC-400 (PAL)	
11-2	BA304537	Deflection (1) P.C Board Comp. VC-400 (NTSC)	
11-IC1	EI302941	IC MA1458CTC	45-8-228
11-IC2	EI623171	IC MC1741CP1	45-8-119
11-IC3	EI304496	IC F4001CP	45-8-201
11-IC4	EI304717	IC μA3403PC	45-8-244
11-IC5,6	EI302941	IC MA1458CTC	45-8-228
11-IC7	EI464848	IC 6F010	45-8-44
11-TR1to4	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR5	ET241356	Transistor 2SC1280A(S)	45-1-249
11-TR6	ET538154	Transistor 2SA564(Q)(R)	45-1-44
11-TR7	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR8	ET539122	Transistor 2SA733(P)(Q)(R)	45-1-124
11-TR9	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR10	ET539122	Transistor 2SA733(P)(Q)(R)	45-1-124
11-TR11to12	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR13	ET304734	Transistor 2SC1834	45-1-284
11-TR14,15	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR16	ET241356	Transistor 2SC1280A(S)	45-1-249
11-TR17,18	ET304710	Transistor 2SC944S(K)(P)	45-1-286
11-TR19,20	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR21	ET304734	Transistor 2SC1834	45-1-284
11-TR22	ET538154	Transistor 2SA564(Q)(R)	45-1-44
11-TR23,24	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR25,26	ET539122	Transistor 2SA733(P)(Q)(R)	45-1-124
11-TR27,28	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR29	ET304710	Transistor 2SC944S(K)(P)	45-1-286
11-TR30	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR31,32	ET539122	Transistor 2SA733(P)(Q)(R)	45-1-124
11-TR33,34	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR35	ET539122	Transistor 2SA733(P)(Q)(R)	45-1-124
11-TR36,37	ET515733	Transistor 2SC945L(P)(Q)(R)	45-1-85
11-TR38,39	ET241334	Transistor 2SC1384(Q)	45-1-173
11-D1	ED219464	Germanium Diode 1N34A	45-3-1
11-D2to8	ED557447	Silicon Diode 1S1588	45-3-22
11-D10to19	ED557447	Silicon Diode 1S1588	45-3-22
11-D20to23	ED231524	Silicon Diode TVR06G	45-2-73
11-D24	ED243483	Silicon Diode TVR06J	45-2-73
11-D25	ED231524	Silicon Diode TVR06G	45-2-73
11-D26	ED243483	Silicon Diode TVR06J	45-2-73
11-D27	ED231524	Silicon Diode TVR06G	45-2-73
11-VR1	EV633857	Semi-fixed/Vol. RJ-6S 2 kB	36-28-5
11-VR2	EV618131	Semi-fixed/Vol. CR19R 10 kB	36-28-4
11-VR3	EV633846	Semi-fixed/Vol. RJ-6S 1 kB	36-28-5
11-VR4	EV633857	Semi-fixed/Vol. RJ-6S 2 kB	36-28-5
11-VR5	EV618131	Semi-fixed/Vol. CR19R 10 kB	36-28-4
11-VR7,8	EV464231	Semi-fixed/Vol. V8K4-1 100 kB	36-10-266
11-VR9,10	EV618120	Semi-fixed/Vol. CR19R 4.7 kB	36-28-4

Symbol No.	Parts No.	Description	Schematic No.
11-VR11to13	EV520806	Semi-fixed/Vol. V8K4-1 10 kB	36-10-266
11-VR14,15	EV304766	Semi-fixed/Vol. CR19R 1 MB	36-28-4
11-VR16,17	EV695441	Semi-fixed/Vol. RJ6S 1 MB	36-28-5
11-VR18to21	EV304880	Semi-fixed/Vol. CR19R 3.3 kB	36-28-4
11-L1	EO419613	Ferri Inductor FL7H 330μH(K)	23-1-3
11-L2	EO464668	Ferri Inductor FL9H 470μH(K)	23-1-4
11-T1	BT288371	Converter Trans. HVT-4	23-1-272
11-J1	EJ522696	Connector 9P 163080-7	52-1-12
11-R3	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R4	ER695485	Metal Oxide Film/R. EF1/4W 470 ohms(F)	35-17-8
11-R5,6	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R12	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R13	ER304719	Metal Oxide Film/R. EF1/4W 910 ohms(F)	35-17-8
11-R14	ER695417	Metal Oxide Film/R. EF1/4W 100 ohms(F)	35-17-8
11-R15,16	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R26	ER238792	Metal Oxide Film/R. EF1/4W 5.1k(F)	35-17-8
11-R27	ER695373	Metal Oxide Film/R. EF1/4W 5.6k(F)	35-17-8
11-R35,36	ER304720	Metal Oxide Film/R. EF1/4W 2.2k(F)	35-17-8
11-R44	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R45	ER695485	Metal Oxide Film/R. EF1/4W 470 ohms(F)	35-17-8
11-R46,47	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R50	ER304742	Metal Oxide Film/R. EF1/4W 30 ohms(F)	35-17-8
11-R51	ER304743	Metal Oxide Film/R. EF1/4W 300 ohms(F)	35-17-8
11-R52	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R57	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R58	ER304719	Metal Oxide Film/R. EF1/4W 910 ohms(F)	35-17-8
11-R59,60	ER204298	Metal Oxide Film/R. EF1/4W 1k(F)	35-17-8
11-R63	ER695417	Metal Oxide Film/R. EF1/4W 100 ohms(F)	35-17-8
11-R79	ER695395	Metal Oxide Film/R. EF1/4W 39k(F)	35-17-8
11-R80	ER695351	Metal Oxide Film/R. EF1/4W 91k(F)	35-17-8
11-R81	ER695362	Metal Oxide Film/R. EF1/4W 24k(F)	35-17-8
11-R82	ER695373	Metal Oxide Film/R. EF1/4W 5.6k(F)	35-17-8
11-R83	ER695384	Metal Oxide Film/R. EF1/4W 3k(F)	35-17-8
11-R91	ER304744	Metal Oxide Film/R. EF1/4W 100k(F)	35-17-8
11-R92	ER304482	Metal Oxide Film/R. EF1/4W 110k(F)	35-17-8
11-R110	ER695373	Metal Oxide Film/R. EF1/4W 5.6k(F)	35-17-8
11-R116	ER696306	Metal Oxide Film/R. EF1/4W 2k(F)	35-17-8
11-R117	ER304679	Metal Oxide Film/R. EF1/4W 3.6k(F)	35-17-8
11-R118	ER304745	Metal Oxide Film/R. EF1/4W 51 ohms(F)	35-17-8
11-R122	ER304679	Metal Oxide Film/R. EF1/4W 3.6k(F)	35-17-8
11-R123	ER696306	Metal Oxide Film/R. EF1/4W 2k(F)	35-17-8
11-R124	ER304745	Metal Oxide Film/R. EF1/4W 51 ohms(F)	35-17-8
11-R125	ER304438	Metal Oxide Film/R. EF1/4W 1.8k(F)	35-17-8
11-R131,132	ER304720	Metal Oxide Film/R. EF1/4W 2.2k(F)	35-17-8
11-R150	ER304785	Metal Oxide Film/R. EF1/2W 1M(J)	35-17-10
11-R154	ER304785	Metal Oxide Film/R. EF1/2W 1M(J)	35-17-10
11-R155,156	ER304786	Metal Oxide Film/R. EF1/2W 820k(J)	35-17-10
11-C1	EC205165	Tantalum/C. (DTS Type) 22μF(M) 6.3WV	24-15-8
11-C6	EC205165	Tantalum/C. (DTS Type) 22μF(M) 6.3WV	24-15-8
11-C10	EC497924	Tantalum/C. (DTS Type) 0.1μF(M) 35WV	24-15-8
11-C12	EC522527	Tantalum/C. (DTS Type) 0.33μF(M) 35WV	24-15-8
11-C14	EC574075	Tantalum/C. (DTS Type) 10μF(M) 10WV	24-15-8
11-C18	EC572613	Tantalum/C. (DTS Type) 10μF(M) 16WV	24-15-8
11-C20	EC205165	Tantalum/C. (DTS Type) 22μF(M) 6.3WV	24-15-8
11-C44	EC245160	Tantalum/C. (DTS Type) 100μF(K) 3.15WV	24-15-8
11-C63	EC522584	Ceramic/C. DD6200YZ 0.0047μF(Z) 1kWV	24-5-22
11-C64	EC522595	Metalized Film/C. (Tub. Type) 0.1μF(M) 400WV	24-16-3
11-C66	EC522584	Ceramic/C. DD6200 YZ 0.0047μF(P) 1kWV	24-5-22
11-C67	EC522595	Metalized Film/C. (Tub. Type) 0.1μF(M) 400WV	24-16-3
11-C68,69	EC268020	Tantalum/C. (DTS Type) 0.1μF(M) 50WV	24-15-8
11-C70	EC522595	Metalized Film/C. (Tub. Type) 0.1μF(M) 400WV	24-16-3

12. DEFLECTION (2) P.C BOARD (CV-2002) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
12-1	BA304539	Deflection (2) P.C Board Comp. VC-400	
12-CR1	EI512190	Compound Parts MR-08	41-1-53
12-TR1	ET516554	Transistor 2SA628(E)	45-1-94
12-TR2	ET370607	Transistor 2SC536(F)	45-1-55
12-TR3to5	ET522268	Transistor 2SA733(Q)	45-1-124
12-TR6	ET370607	Transistor 2SC536(F)	45-1-55
12-TR7	ET234933	Transistor 2SC828(R)	45-1-23
12-TR8	ET402794	Transistor 2SC828(Q)	45-1-23
12-TR9	ET350335	Transistor 2SA564(Q)	45-1-44
12-TR10	ET464534	Transistor 2SC499(Y)	45-1-117
12-TR11,12	ET370607	Transistor 2SC536(F)	45-1-55
12-TR13	ET522268	Transistor 2SA733(Q)	45-1-124
12-TR14	ET370607	Transistor 2SC536(F)	45-1-55
12-TR15	ET357006	Transistor 2SC497(Y)	45-1-76
12-TR16	ET464534	Transistor 2SC499(Y)	45-1-117
12-TR17	ET516554	Transistor 2SA628(E)	45-1-94
12-TR18,19	ET370607	Transistor 2SC536(F)	45-1-55
12-TR20	ET350335	Transistor 2SA564(Q)	45-1-44
12-TR21	ET300931	Transistor 2SD600K(E)(F)	45-1-278
12-TR22,23	ET370607	Transistor 2SC536(F)	45-1-55
12-D1to5	ED219464	Germanium Diode 1N34A	45-3-1
12-D6to8	ED514721	Silicon Diode WG-599	45-3-17
12-D9	ED464613	Silicon Diode BB-2	45-2-41
12-D10	ED522437	Silicon Diode BB-8	45-2-46
12-D11	ED522450	Silicon Diode BB-4	45-2-45
12-D12	ED464613	Silicon Diode BB-2	45-2-41
12-D13,14	ED514721	Silicon Diode WG-599	45-3-17
12-D15	ED464613	Silicon Diode BB-2	45-2-41
12-VR1	EV464196	Semi-fixed/Vol. V8K4-1 2 kB	36-10-266
12-VR2	EV464220	Semi-fixed/Vol. V8K4-1 50 kB	36-10-266
12-VR3,4	EV464196	Semi-fixed/Vol. V8K4-1 2 kB	36-10-266
12-VR5	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	36-10-266
12-VR6	EV464242	Semi-fixed/Vol. V8K4-1 1 MB	36-10-266
12-VR7	EV522797	Semi-fixed/Vol. V8K4-1 20 kB	36-10-266
12-VR8	EV305137	Semi-fixed/Vol. (Metalized Film) RM6-FAN 150 ohms(B)	36-28-2
12-VR10	EV464242	Semi-fixed/Vol. V8K4-1 1 MB	36-10-266
12-L1	EO464668	Ferri Inductor FL9H 470μH(K)	23-1-4
12-L2	BT357805	Trans. 06Y-033-286	23-1-32
12-L3	EO522810	Coil CH-3	23-2-9
12-L4	EO464523	Horizontal Amplitude Coil CH-2	23-2-7
12-L5	EO522832	Centering Choke CCH-1	23-1-174
12-T1	BT563264	Fly-back Trans. DHP-1001A	23-2-13
12-C10	EC522753	Tantalum/C. (DTS Type) 0.33μF(K) 35WV	24-15-8
12-C12	EC536207	Tantalum/C. (DTS Type) 1μF(K) 35WV	24-15-8
12-C14	EC497924	Tantalum/C. (DTS Type) 0.1μF(M) 35WV	24-15-8
12-C15	EC496866	Tantalum/C. (DTS Type) 0.47μF(M) 35WV	24-15-8
12-C20	EC497924	Tantalum/C. (DTS Type) 0.1μF(M) 35WV	24-15-8
12-C24	EC522516	Tantalum/C. (DTS Type) 1μF(M) 25WV	24-15-8
12-C35	EC660868	Metalized Film/C. (Insulator Type) 0.068μF(K) 600V	24-16-3
12-C52	EC646402	Tantalum/C. (DTS Type) 100μF(M) 6.3WV	24-15-8
12-C53	EC590310	Tantalum/C. (DTS Type) 100μF(M) 10WV	24-15-8

13. POWER SUPPLY P.C BOARD (CV-2402) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
13-1	BA304531	Power Supply P.C Board Comp. VC-400	PY-9814
13-IC1	EI623171	IC MC1741CP1	45-8-119
13-IC2	EI213827	IC μPC305C	45-8-190
13-VR1	EV523192	Semi-fixed/Vol. (Metalized Film) TM10K(PV) 1 kB	36-28-1
13-R2,3	ER696306	Metal Oxide Film/R. EF1/4W 2k(F)	35-17-8
13-R5	ER238792	Metal Oxide Film/R. EF1/4W 5.1k(F)	35-17-8
13-R6	ER695384	Metal Oxide Film/R. EF1/4W 3k(F)	35-17-8

14. REC IND. P.C BOARD (CV-2403) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
14-TR1	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
14-D1	ED591333	LED GL-31AR	45-15-3

15. IRIS RELAY P.C BOARD (CV-2413) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
15-C1,2	EC574064	Tantalum/C. (DTS Type) 4.7μF(M) 10WV	24-15-8

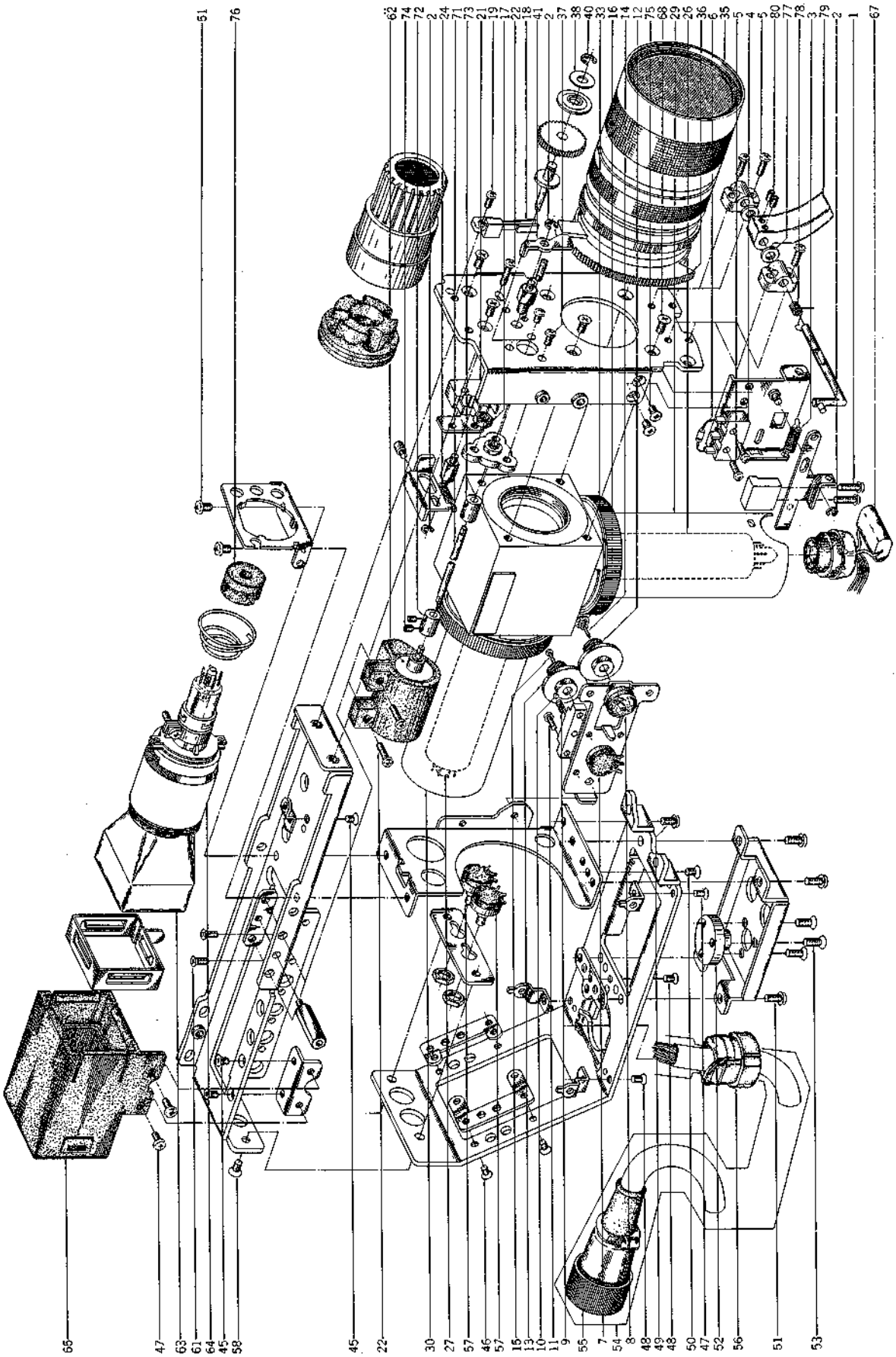
16. MIC AMP P.C BOARD (CV-2404) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
16-IC1	EJ302172	IC TA7120P(D)(E)	45-8-149

17. REAR VOL. P.C BOARD (CV-2007) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
17-VR1,2	EV522000	Semi-fixed/Vol. (Metalized Film) RM6-FAN 680 kB	36-28-2
17-VR10	EV522011	Semi-fixed/Vol. (Metalized Film) RM6-FAN 33 kB	36-28-2
17-VR11	EV521998	Semi-fixed/Vol. (Metalized Film) RM6-FAN 100 kB	36-28-2

18. ILLUSTRATION OF VC-400 ASSEMBLY BLOCK

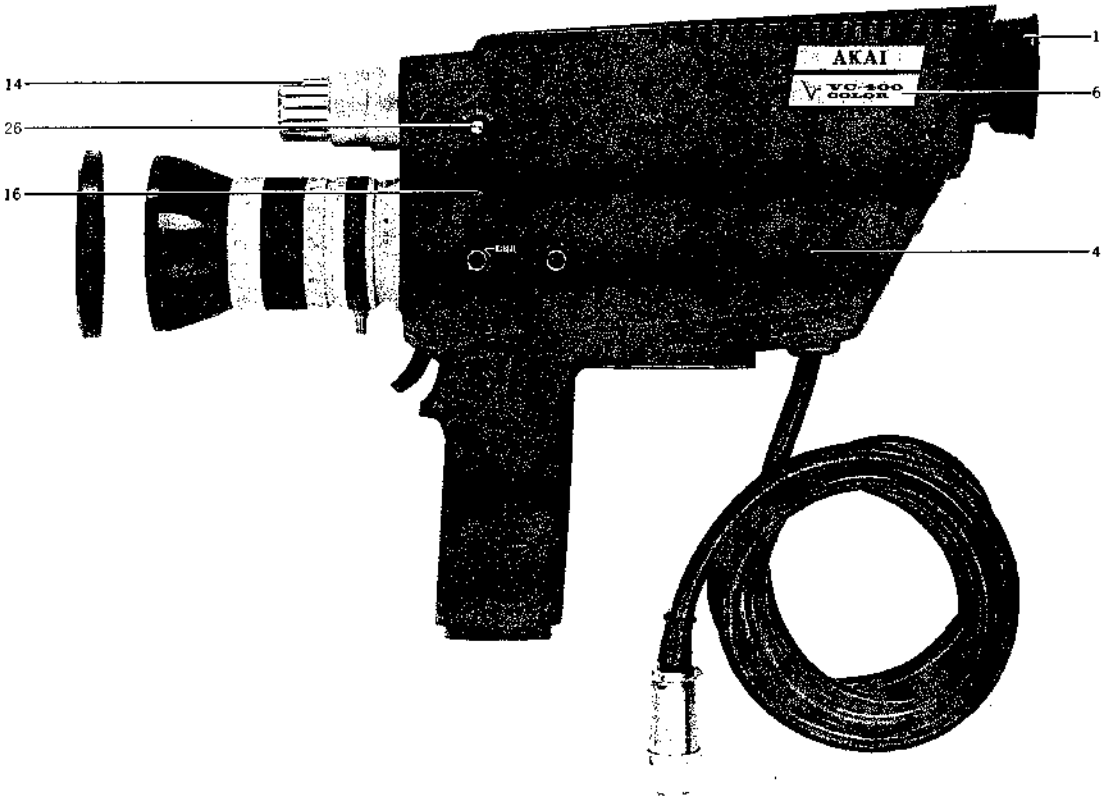


18) VC-400 ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	SW. FIXING PLATE BLOCK		
18-1	ZS484918	Screw, pan head 2×8	
18-2	ZW270088	'E' Ring 1.9M	6-1-9
18-3	ZG525993	SW. Return Spring	CV-2060
18-4	ES494188	Micro SW. SS-5GL-13	25-1-25
18-5	ZS304467	Screw, pan head 2.3×8	
18-6	ED224526	Silicon Diode 10D1	45-2-11
	VOL. FIXING PLATE BLOCK		
18-7	EV522202	Semi-fixed/Vol. (Shield Type) V12M4-1N 2 kB	36-7-10
18-8	ES522213	Vol. (w/SW.) V12M41S	36-25-4
18-9	ZG525183	Click Spring	CV-2098
18-10	MV522235	Steel Ball 3/321 inch	
18-11	ZS304767	Screw, pan head 2×6	
18-12	SK525194	Knob (1)	CV-2099
18-13	SK526735	Knob (2)	CV-2099
18-14	ZS304783	Screw, pan head 1.7×6	
18-15	ZS306182	Screw, pan head 1.7×8	
18-16	VC525205	Decorative Leather, knob	CV-2100
	OPTICAL BLOCK		
18-17	ZW416698	Nut M4, #1	
18-18	ES591276	Leaf SW. BSW-31PSB	25-10-20
18-19	ZS419951	Screw, pan head 2×5	
18-20x	ZW591300	Washer (PBP) D3.1×8×0.05t	
18-21	ES477966	Micro SW. SS-5GL	25-1-23
18-22	ZS201374	Screw, pan head 2.3×10	
18-23x	ZS304470	Screw, countersunk head 2.3×10	
18-24	ZG304596	W.B Spring	CV-2409
18-25x	ZS521943	Set Screw, hexagon socket 2×3 (CUP/P.)	
18-26	EU288358	Vidicon 20PE20C	28-4-7
18-27	EU288360	Vidicon H9303	28-4-8
18-28x	ZG209057	Filter Ring Screw	CV-2137
18-29	VC304600	Vidicon Coil KV-19FD	23-1-286
18-30	VC304471	Vidicon Coil KV-19FC	23-1-286
18-31x	VC304595	Trimming Filter	CV-2412
18-32x	ZS537041	Screw, countersunk head 2×5	
18-33	ZS526612	Fastening Screw	CV-2036
18-34x	ZS200384	Screw, countersunk head 3×6	
18-35	VC522090	Lens H6×12.5B	53-1-83
18-36	VC525295	Iris Gear (Large)	CV-2068
18-37	ZS304601	Screw, truss head 2.6×6	
18-38	ZW525892	Adjust. Washer (1)	CV-2050
18-39x	ZW525903	Adjust. Washer (2)	CV-5020
18-40	ZW270101	'E' Ring 3M	6-1-9
18-41	SL584098	Iris Lever (2)	CV-5046
18-42x	ZS459055	Tapping Screw #2, 2×5 (BR)	
18-43x	ZS201431	Screw, pan head 2.3×5	
18-44x	ED522628	Positive Thermister PHT82BM 4.7k	45-14-1
	ASSEMBLY BLOCK		
18-45	ZS304466	Screw, countersunk 2.3×4	
18-46	ZS417161	Screw, pan head 2.3×4	
18-47	ZS356681	Screw, pan head 2.3×5	
18-48	ZS423516	Screw, countersunk head 2.3×5	
18-49	ZS422076	Screw, pan head 3×5	
18-50	ZS336870	Screw, countersunk head 3×4	
18-51	ZS379350	Screw, pan head 3×6	
18-52	ZS525082	Tripod Mt. Screw	CV-2088
18-53	ZS537052	Screw, countersunk had 2.6×8	
18-54	VC304519	Camera Cable Harness VC-400	26-6-281
18-55	EJ521818	Connector 12P RD05-15-12P	42-1-58
18-56	EZ420996	Strain Relief SR-7P-2	2-7-15
18-57	EV521853	Semi-fixed/Vol. (Shield Type) V12M4-1N 2 kB	36-7-7
18-58	ZS317856	Screw, countersunk head 3×6	
18-59x	ZS468101	Tapping Screw #2, 2.6×6 (Pan)	
18-60x	ZS590804	Screw, pan head 2.3×6	
18-61	ZS537063	Tapping Screw #2, 2.3×10 (Countersunk)	
18-62	BM304468	Micro Motor W/Gear Head 15C11-105.2	9-2-16
18-63	EU465006	CRT (1.5 Type) 40CB-4	28-1-6
18-64	TV259874	CRT Yoke DY-1050K	23-1-269
18-65	VC525352	CRT Hood	CV-2077
18-66x	EJ363690	Socket, B-Tube S7-502B (M Type)	31-3-15
18-67	EC521921	Metalized Film/C. (Tub. Type) 0.068μF(M) 600WV	24-16-3
18-68	ZS200417	Screw, countersunk head 3×6	
18-69x	ZS537085	Screw, binding head 2×5	
18-70x	ZS499331	Screw, pan head 2.3×5	
18-71	VC525216	Joint Bar	CV-2101
18-72	VC525914	Joint (L=10)	CV-2051
18-73	VC537030	Joint (B) (L=9)	CV-2051
18-74	ZS521954	Set Screw, hexagon socket 2×3 (CONE/P.)	
18-75	ZS521965	Screw, countersunk head 2.6×4	
18-76	EJ563286	CRT Socket S7-506P-13	31-3-18
18-77	ZW265555	Washer D3.1×8×0.8t	
18-78	ZG525227	Safety Spring	CV-2106
18-79	VC526004	Trigger	CV-2061
18-80	ZS521987	Set Screw, hexagon socket 2.6×4 (CUP/P.)	
18-81x	ZS201418	Screw, pan head 2.3×4	

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

19. ILLUSTRATION OF VC-400 FINAL ASSEMBLY BLOCK



19) VC-400 FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	EYE HOOD BLOCK		
19-1	BV465107	Eye Hood Block Comp. VC-115, CVC-150/E	
19-2x	ZG463623	Eye Finder Spring	PX-2232
19-3x	ZS304464	Screw, pan head 2×3	
	CASE BLOCK		
19-4	BC304514	Case Block Comp. VC-400	
19-5x	ZS423516	Screw, countersunk head 2.3×5	
19-6	SM304587	Color Name Plate (Left)	CV-2405
19-7x	ZS423516	Screw, countersunk head 2.3×5	
19-8x	SM304586	Color Name Plate (Right)	CV-2405
19-9x	VC526228	Retaining Screw Holder (Tripod)	CV-2020
19-10x	ZS537052	Screw, countersunk head 2.6×8	
19-11x	VC525565	Grip Ornament Plate	CV-2022
19-12x	ZS521774	Screw, countersunk head 2.3×10	
19-13x	ZS356681	Screw, pan head 2.3×5	

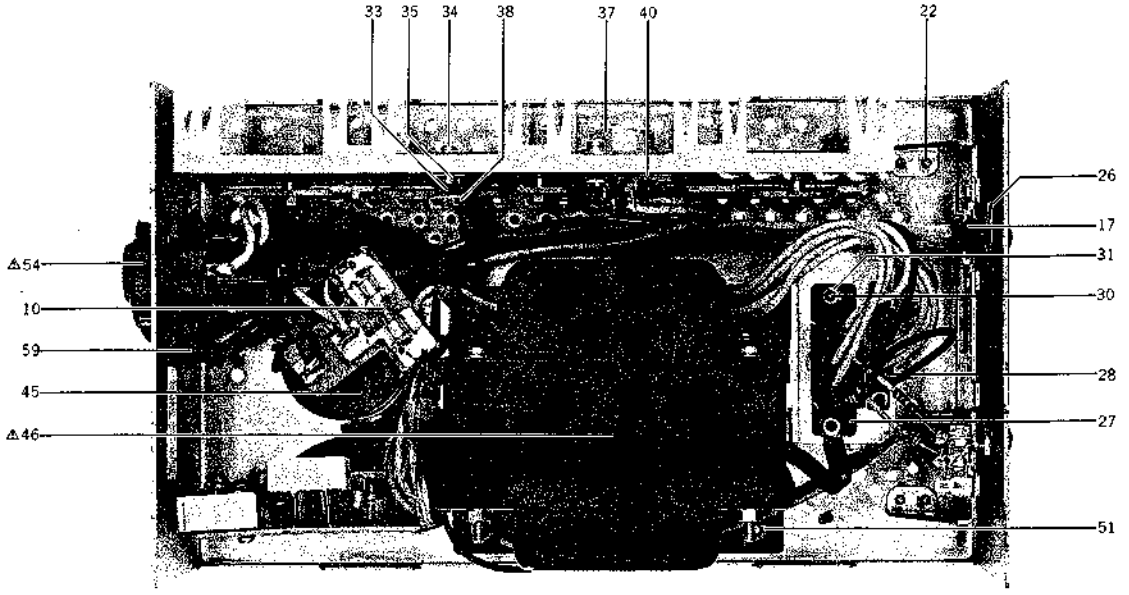
Ref. No.	Parts No.	Description	Schematic No.
19-14	VC304465	Condenser Microphone EM-4022A2	48-1-27
19-15x	ZW364364	Washer (Polyslider) D3.1×5×0.25t	
	ASSEMBLY BLOCK		
19-16	ZS525532	Decorative Screw	CV-2017
19-17x	ZS525554	Grip Mt. Screw (A)	CV-2018
19-18x	ZS525543	Grip Mt. Screw (B)	CV-2019
19-19x	ZS304462	Screw, flat fillister head 3×6	
19-20x	SM525587	Eye Name Plate	CV-2-25
19-21x	VC525598	Bush (1)	CV-2026
19-22x	VC525600	Bush (2)	CV-2026
19-23x	ZS304463	Screw, truss head 2×3	
19-24x	VM464973	Anode Cap (M1 Type) C4-501R-00	42-1-48
19-25x	ZS201914	Screw, binding head 2.3×5	
19-26	SB526746	Push Button	CV-2044

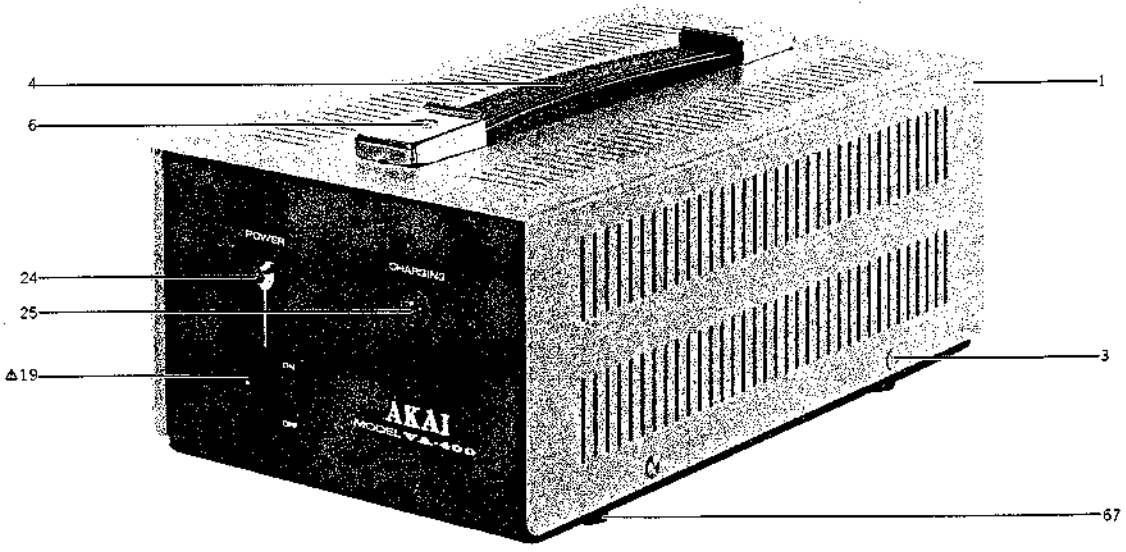
When ordering parts, please describe Parts Number, Description, and Model Number in detail.

20. POWER SUPPLY P.C BOARD (PY-4400) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
20-1	BA304517	Power Supply P.C Board Comp. VA-400	PY-9810
20-TR1	ET520288	Transistor 2SC1247A(V)	45-1-131
20-TR2to4	ET453486	Transistor 2SC711(E)(F)	45-1-67
20-TR5	ET522268	Transistor 2SA733(Q)	45-1-124
20-D1	ED557447	Silicon Diode 1S1588	45-3-22
20-D2	ED555895	Zener Diode WZ-065	45-6-67
20-D3	ED224526	Silicon Diode 10D1	45-2-11
20-D4	ED523078	Zener Diode RD-7A(M)	45-6-71
20-D5,6	ED557447	Silicon Diode 1S1588	45-3-22
20-TH1	ED572760	Thermister 34D22	45-5-14
20-VR1	EV663535	Semi-fixed/Vol. V8K4-1 300 ohms(B)	36-10-266
20-VR2	EV464196	Semi-fixed/Vol. V8K4-1 2 kB	36-10-266
20-R8	ER305489	Cement/R. 5W 0.91 ohm(J)	35-16-80
20-2	ZS325495	Tapping Screw #2, 3x6(BR)	
20-3	ZW273802	Toothed Lock Washer, M3	

21. PHOTO OF CHARGER ASSEMBLY BLOCK





21) CHARGER ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
21-1	VT304589	Power Chassis Cover (A) Comp. PZ	CV-3010
21-2x	ZS201183	Screw, truss head 3x8 (Black)	
21-3	ZS335147	Screw, truss head 3x5	
21-4	VC637086	Grip	2-17-9
21-5x	MZ647550	Reinforcement Plate	CV-3023
21-6	ZS645478	Screw, countersunk head 4x14	
21-7x	EW244844	⚠ AC Cord (JPN)	26-3-48
21-8x	EF563703	⚠ Fuse 2A 250V (U/T)	39-1-50
21-9x	EF310455	⚠ Fuse 1.25A 250V (U/T)	39-1-50
21-10	EF300594	Fuse (FST) 100 mAT (U/T, JPN, CEE, UK)	39-1-61
21-11x	EF602616	⚠ Fuse 2A 125V (JPN)	39-1-52
21-12x	EF277413	⚠ Fuse ST-6 2A (CSA, AAL)	39-1-63
21-13x	EF486134	Fuse ULMF61ML125V 0.1A (CSA, AAL)	39-1-40
21-14x	EF300604	⚠ Fuse (FST) 1AT (CEE, UK)	39-1-61
21-15x	EF301160	⚠ Fuse (FST) 2AT (CEE, UK)	39-1-61
21-16x	ZS417216	Screw, pan head 3x4	
21-17	VT421200	Lamp Holder	PX-A3005
21-18x	EL304801	Lamp (Cord Type) 12V 70 mA (280mm×2)	28-2-68
21-19	ES480857	⚠ Seesaw SW. JA-07 TV-3 (w/loose hole) (U/T, JPN, CSA, AAL)	25-2-29
21-20x	ES291238	⚠ Seesaw SW. SDE3SFBE (CEE, UK)	25-2-45
21-21x	ZS379350	Screw, pan head 3x6	
21-22	ZS201150	Screw, truss head 3x6 (Black)	
21-23x	ED557447	Silicon Diode 1S1588	45-3-22
21-24	ED300740	LED SLP-710F	45-15-17
21-25	SE421222	Charger Lamp Escutcheon	PX-A3004
21-26	ZW421233	Speed Nut	PX-A3006
21-27	ED659621	Silicon Diode 4B10Y	45-2-65
21-28	ED574345	Silicon Diode 5B1	45-2-28
21-29x	ZW590051	Insulated Washer D3.2x10x1t	
21-30	ZS312221	Screw, truss head 3x15 (Black)	
21-31	ZW273756	Nut M3, #1	
21-32x	ZW382588	Insulator Washer	RD-A307
21-33	ED250323	Thyristor CR2AM-1 (1)–(3)	45-13-3
21-34	ZS380046	Screw, pan head 3x10	
21-35	ZW273756	Nut M3, #1	
21-36x	ZW302332	Washer (BSP) D3.1x8x0.5t	
21-37	ET304796	Transistor 2SD424 (R)	45-1-243
21-38	EJ304813	Mini. Connector 3P Housing Part PZ	
21-39x	ZW563218	Washer (BAKE) D3.2x10x1t	
21-40	EJ601492	Power Transistor Socket S-A3915	31-1-121
21-41x	ZW305270	Washer (BSP) D3.2x10x0.5t	
21-42x	ZS422965	Screw, pan head 3x15	
21-43x	ZS590073	Screw, pan head 3x14	
21-44x	ZS593201	Screw, pan head 3x16	
21-45	EC574356	Elect./C. (Lug Type) 4700μF 35WV	24-10-92
21-46	BT304695	⚠ Power Trans. CCVT-5 (U/T)	38-4-516
21-47x	BT304699	⚠ Power Trans. CCVT-4 (JPN)	38-4-515
21-48x	BT304812	⚠ Power Trans. CCVT-7 (CSA, AAL)	38-4-560
21-49x	BT304789	⚠ Power Trans. CCVT-3 (CEE, UK)	38-4-538
21-50x	ZW273914	Spring Washer, M4	
21-51	ZW416698	Nut M4, #1	
21-52x	ZS366276	Screw, truss head 4x10	
21-53x	ZS481724	Screw, truss head 3x6 (CEE, BEAB)	
21-54	EJ233370	⚠ Socket (Volt. Selector) (U/T)	40-2-3
21-55x	EW374894	⚠ AC Cord U/T 3M (U/T)	26-3-19
21-56x	EW602908	⚠ AC Cord SJT VM-0033 (CSA, AAL)	26-3-36
21-57x	EW604618	⚠ AC Cord (EC) VM-0064 (CEE)	26-3-34
21-58x	EW232244	⚠ AC Cord BASEC 2 Core (UK)	26-3-46
21-59	EZ631945	Strain Relief SR-4N-4 (U/T, CEE)	2-7-49
21-60x	EZ302906	Strain Relief SR-6N-4 (CSA, AAL)	2-7-62
21-61x	EJ692908	Strain Relief SR-5N-4 (UK)	2-7-60
21-62x	EW304790	AC Cord VM-0074	26-3-54
21-63x	EZ246936	Strain Relief SR-6W-1	2-7-8
21-64x	ZW273892	Toothed Lock Washer, M4 (CSA, AAL)	
21-65x	ZS201341	Screw, truss head 4x8 (Black) (CSA, AAL)	
21-66x	ZW416698	Nut M4, #1 (CSA, AAL)	
21-67	SA421738	Rubber Foot	3-18-14
21-68x	ZW287458	Washer D3.3x6x0.3t	
21-69x	ZS355522	Screw, pan head 3x6 (Black)	

22. LIST OF INTERCHANGEABLE SEMICONDUCTORS

If, while servicing, the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SA564(Q)	ET350335	CV-2002	2SA733(Q)(R)	ET557965
2SA564(Q)(R)	ET538154	CV-2002/2401	2SA733(Q)(R)	ET557965
2SA628(E)	ET516554	CV-2002	2SA733(Q)(R)	ET557965
2SA628(D)(E)	ET538110	CV-2407		
2SA715WT(C)(D)	ET238735	PY-2200		
2SA733(Q)	ET522268	CV-2002, PY-4400/5400		
2SA733(R)	ET538378	PY-5203		
2SA733(P)(Q)	ET554657	CV-2406		
2SA733(Q)(R)	ET557965	PY-2200/5402/5415/5203		
2SB605(K)(L)	ET666415	PY-5203	2SA720(Q)(R)	ET554736
2SC497(Y)	ET357006	CV-2002		
2SC499(Y)	ET464534	CV-2002	2SC2229(O)(Y)	ET310168
2SC536(E)	ET361923	CV-2003	2SC1815(O)(Y)	ET306705
2SC536(F)	ET370607	CV-2002		
2SC641K(B)	ET564568	CV-2407		
2SC711(E)	ET380834	PY-5400/5402/5415		
2SC711(E)(F)	ET453486	PY-4400/5400		
2SC828(R)	ET234933	CV-2002		
2SC828(Q)	ET402794	CV-2002		
2SC944S(K)(P)	ET304710	CV-2401, PY-5203	2SC536(E)(F)(G)(H)	ET246846
2SC945L(K)	ET658102	PY-5201	2SC536(E)(F)(G)(H)	ET246846
2SC945L(Q)(P)	ET639437	CV-2403/2406/2407 PY-2200		
2SC945L(P)(Q)(R)	ET515733	CV-2401, PY-5400		
2SC945L(K)(P)(Q)(R)	ET635218	PY-5201	2SC536(E)(F)(G)(H)	ET246846
2SC1061(B)	ET362261			
2SC1216(F)	ET572703	PY-5400		
2SC1216(E)(F)	ET590286	PY-5402/5415		
2SC1247A(B)	ET520277	CV-2406		
2SC1247A(V)	ET520288	PY-4400/5400/5402/5415		
2SC1280A(S)	ET241356	CV-2401		
2SC1384(Q)	ET241334	CV-2401		
2SC1518(Q)(R)	ET634421	PY-2200	2SC1449(K)(L)(M)	ET635815
2SC1568(R)	ET304659	PY-5400	2SC1449(K)(L)(M)	ET635815
2SC1674(L)	ET655740	PY-5400		
2SC1834	ET304734	CV-2401/2406	2SC2274(E)(F)	ET309353

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SD424(R)	ET304796			
2SD471(K)(L)(M)	ET302169	PY-5203	2SD400K(D)(E)	ET631877
2SD571(K)(L)	ET666404	PY-5203	2SC1384(Q)(R)	ET565852
2SD600K(E)(F)	ET300931	CV-2002		
1N34A	ED219464	CV-2002/2401/2407 PY-2200/5400		
1N60-VF	ED665886	PY-5402		
1N4001		PY-5203	10D1	ED224526
1SS16	ED523427	CV-2406/2407 PY-5402/5415		
1S1588	ED557447	CV-2401/2406/2407 PY-4400/5400/5402 5203/5415	1S2473	ED624903
1S1923	ED573873	PY-5402/5415		
1S2473	ED624903	PY-5203	1S1588	ED557447
1S2473VE	ED560913	PY-2200/5203/5400	1S1588	ED557447
4B10Y	ED659621			
5B1	ED574345	5B2	ED432191	
10D1	ED224526	PY-2200/4400	10D2	ED557447
BB-2	ED464613	CV-2002	HF-1	ED558033
BB-4	ED522450	CV-2002	SF-1-4	ED523631
BB-8	ED522437	CV-2002	SF-1-8	ED523618
TVR06G	ED231524	CV-2401	RMP5040	ED618085
TVR06J	ED243483	CV-2401	RMP5020	ED618074
WG-599	ED514721	CV-2002/2003	JL-40	ED464602

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ZW414145	7-42						
ZW414145	7-147x						
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ZW416698	21-51						
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ZW550642	7-161x						
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ZW563218	21-39x						
ZW590051	21-29x						
ZW591300	18-20x						
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ZW623687	7-66						
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SECTION 3

SCHEMATIC DIAGRAM

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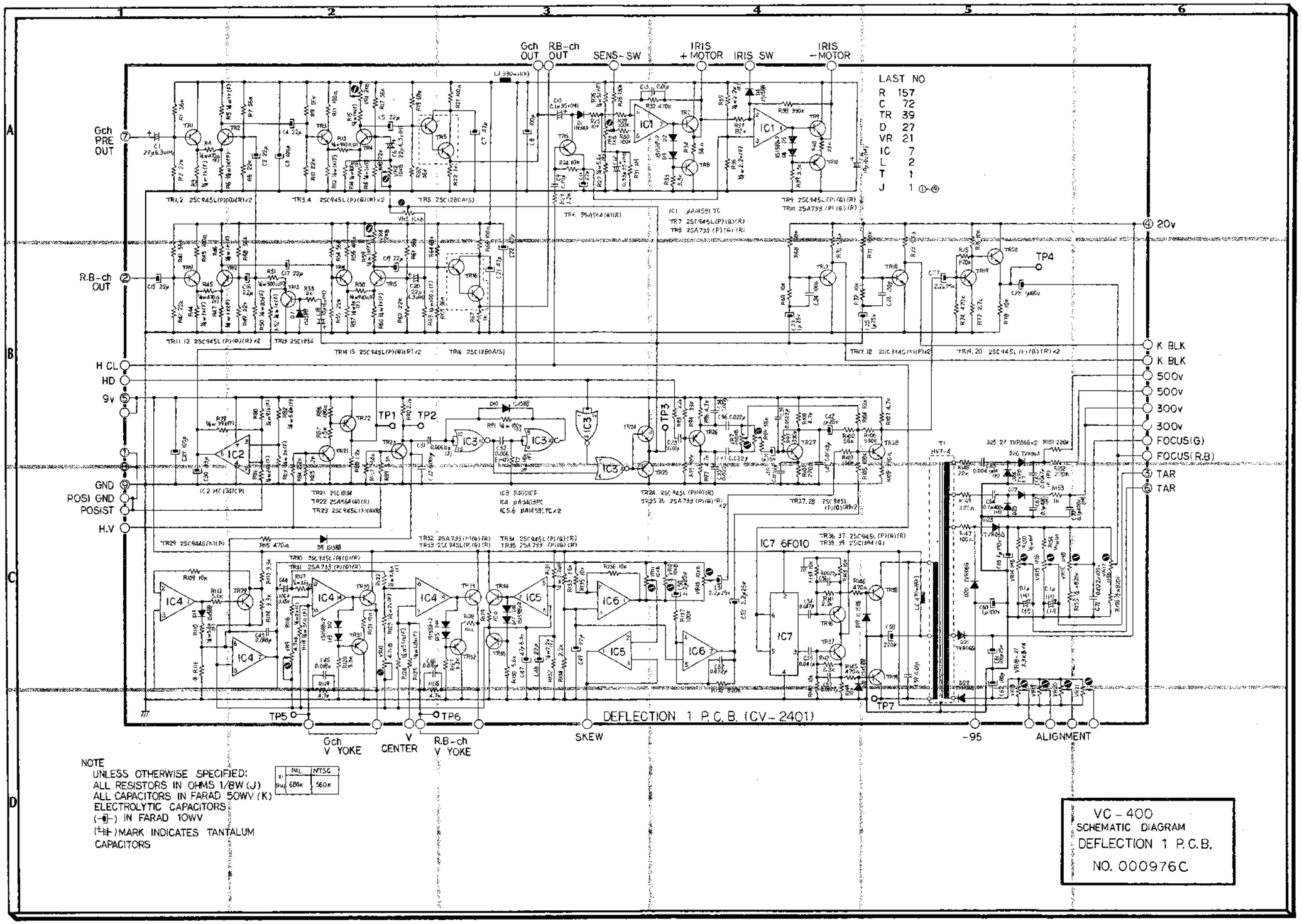
2. VC-400 SSG P.C.B. NO. 000972G SCHEMATIC DIAGRAM
3. VT-350/VT-400 SERVO P.C.B. (PY-5203) NO. 000960L SCHEMATIC DIAGRAM
4. VT-400 PZ SIGNAL P.C.B. NO. 000968H SCHEMATIC DIAGRAM
5. VT-400 PROCESS & ENCODER P.C.B. NO. 000973B SCHEMATIC DIAGRAM
6. VT-400 CHROMA (NTSC) P.C.B. NO. 000970F SCHEMATIC DIAGRAM
7. VT-400 CHROMA (PAL) P.C.B. NO. 000971C SCHEMATIC DIAGRAM
8. VC-400 NO. 000974A CONNECTION DIAGRAM
9. VC-400 DEFLECTION 1 P.C.B. NO. 000976C SCHEMATIC DIAGRAM
10. VC-400 (DEFLECTION-2) NO. 000975B BLOCK DIAGRAM
11. VC-400 PRE. AMP. P.C.B. NO. 000977 SCHEMATIC DIAGRAM
12. VA-400 CHARGE P.C.B. NO. 000969B CHARGE P.C.B.



NOTE
UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN FARAD 50WV (K)
ELECTROLYTIC CAPACITORS
(-▮-) IN FARAD 10WV
(+▮-)MARK INDICATES TANTALUM CAPACITORS

	PAL	NTSC
R146	680K	560K

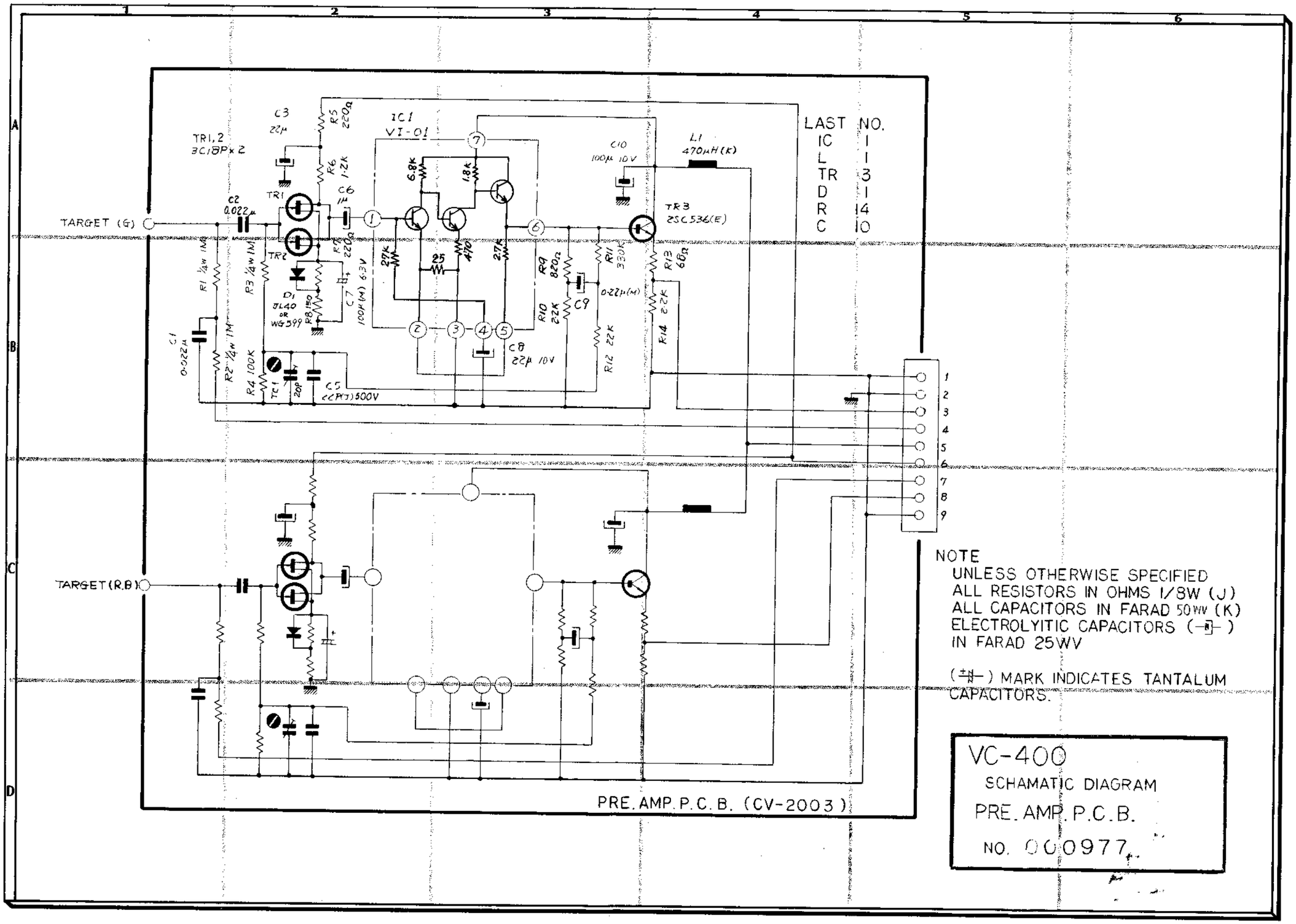
VC-400
SCHEMATIC DIAGRAM
DEFLECTION 1 P.C.B.
NO. 000976C

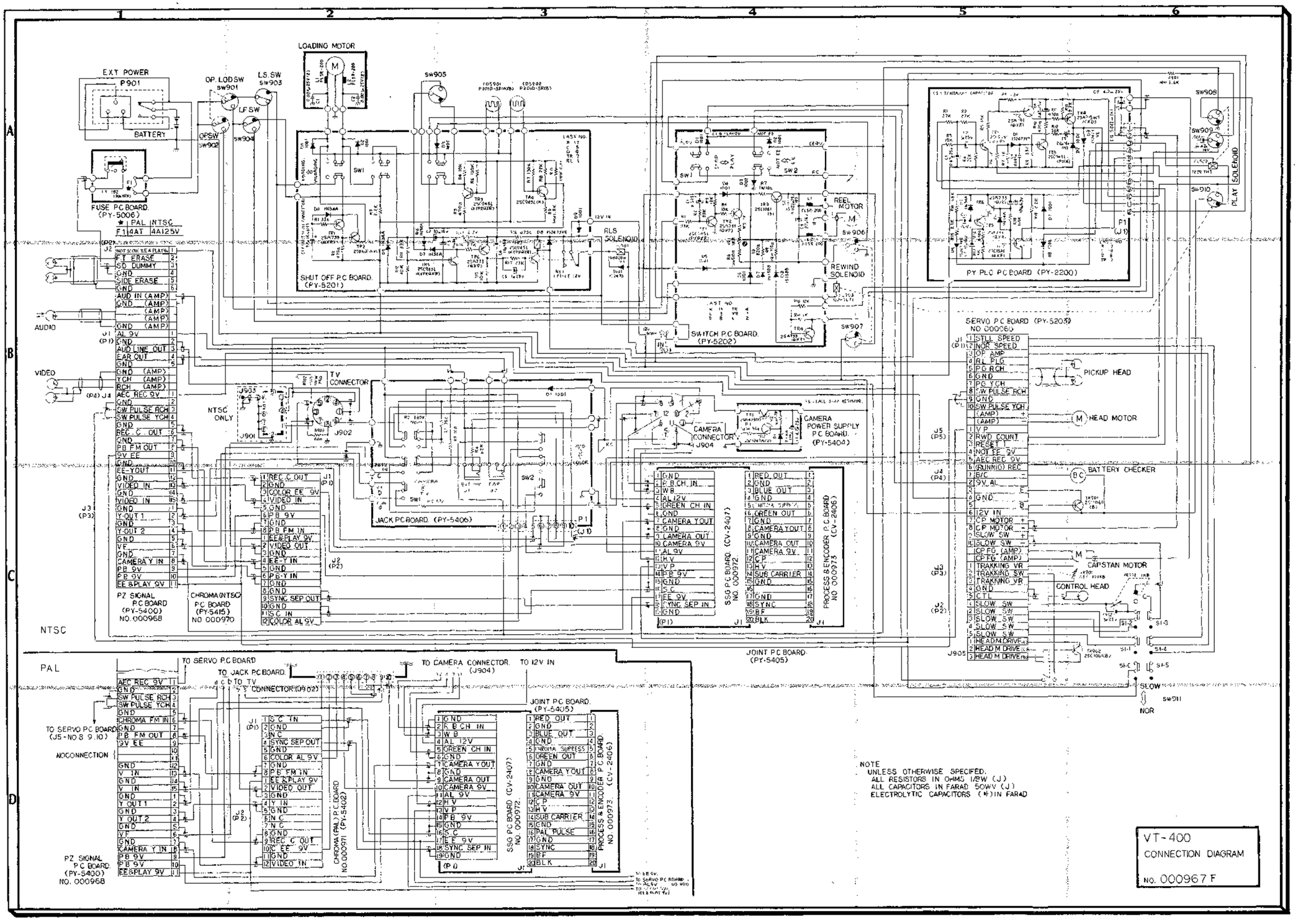
LAST NO	
R	70
C	53
TR	23
D	15
V	10
L	5
T	1
CR	1

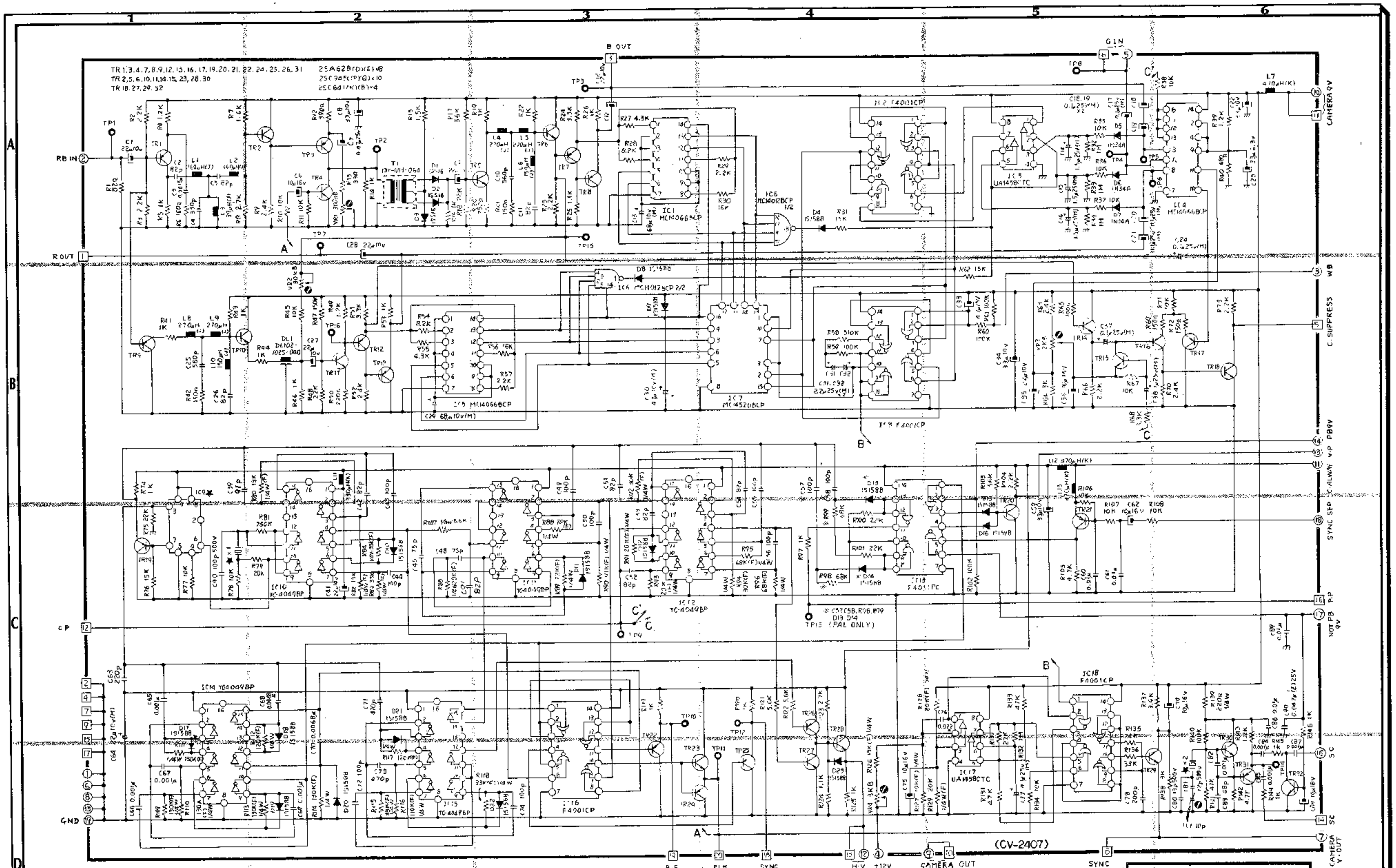
+9V
VIDEO IN
GND
GAIN
V·DEF
V·BIAS
V·SIZE
V·HOLD
V·LIN.
H·HOLD.
H·O·SC.
H·HOLD
H·SIZE
BL
H·DEF.
C.R.T. HEATER
C.R.T. ANODE
+300V
FOCUS
BRIGHTNESS
T1 DHP-1001A
L1 470μH (K)
L2 06Y033-286
L3 CH-3
L4 CH-2
L5 CCH-1
(CV-2002)
H·D
H·CL.
H·DEF.
H·CENT.
H·DEF. (BACK)

NOTE
RESISTORS IN OHMS
1/8W (J) CAPACITORS
IN FARAD 50WV (J)
(⊣⊢)MARK INDICATES
TANTALUM CAPACITOR.

VC-400 Block Diagram
(DEFLECTION-2)
NO. 000975B


TARGET (G)
TARGET (R.B)
TR1, 2
3C18P x 2
IC1
VI-01
TR3
2SC536(E)
L1
470μH(K)
C1
0.022μ
C2
0.022μ
C3
22μ
C4
1μ
C5
22P(J) 500V
C6
1μ
C7
100μ(M) 6.3V
C8
22μ 10V
C9
0.22μ(M)
C10
100μ 10V
R1 1/4w 1M
R2 1/4w 1M
R3 1/4w 1M
R4 100K
R5 220Ω
R6 1.2K
R7 220Ω
R8 150
R9 820Ω
R10 22K
R11 330K
R12 22K
R13 68Ω
R14 22K
6.8K
1.8K
27K
25
470
27K
D1
SL40
OR
WG599
TC1
20P
PRE. AMP. P.C.B. (CV-2003)
LAST NO.
IC 1
L 1
TR 3
D 1
R 14
C 10
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN FARAD 50WV (K)
ELECTROLYITIC CAPACITORS (⊣⊢)
IN FARAD 25WV
(±⊣⊢) MARK INDICATES TANTALUM CAPACITORS.
VC-400
SCHAMATIC DIAGRAM
PRE. AMP. P.C.B.
NO. 000977


LOADING MOTOR
EXT POWER
P901
BATTERY
OP. LOD SW
SW901
LS SW
SW903
OP SW
SW902
LF SW
SW904
SW905
FUSE P.C.BOARD.
(PY-5006)
* PAL INTSC.
F1 4AT 4A125V
SHUT OFF P.C.BOARD.
(PY-5201)
RLS SOLENOID
REEL MOTOR
SW906
REWIND SOLENOID
SWITCH P.C.BOARD.
(PY-5202)
SW907
PY PLC P.C BOARD (PY-2200)
SW908
SW909
SW910
PLAY SOLENOID
SERVO P.C BOARD (PY-5203)
NO 000969
PICKUP HEAD
HEAD MOTOR
BATTERY CHECKER
CAPSTAN MOTOR
CONTROL HEAD
AUDIO
VIDEO
TV CONNECTOR
NTSC ONLY
CAMERA CONNECTOR
J904
CAMERA POWER SUPPLY P.C BOARD.
(PY-5404)
JACK P.C BOARD (PY-5406)
SSG P.C BOARD (CV-2407)
NO 000972
PROCESS ENCODER P.C BOARD (CV-2406)
NO 000973
JOINT P.C BOARD.
(PY-5405)
PZ SIGNAL P.C BOARD (PY-5400) NO. 000968
CHROMA (NTSC) P.C BOARD (PY-5415) NO 000970
NTSC
PAL
TO SERVO P.C BOARD
TO JACK P.C BOARD.
TO CAMERA CONNECTOR. (J904)
TO 12V IN
TO TV CONNECTOR (J902)
CHROMA (PAL) P.C BOARD NO.000971 (PY-5402)
NOCONNECTION
NOTE
UNLESS OTHERWISE SPECIFED.
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN FARAD 50WV (J)
ELECTROLYTIC CAPACITORS (#)IN FARAD
VT-400
CONNECTION DIAGRAM
No. 000967 F



NOTE
UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN µF 50WV (J)
ELECTROLYTIC CAPACITORS (-||-) IN µF 50WV

(-||-) MARK INDICATES TANTALUM CAPACITORS.

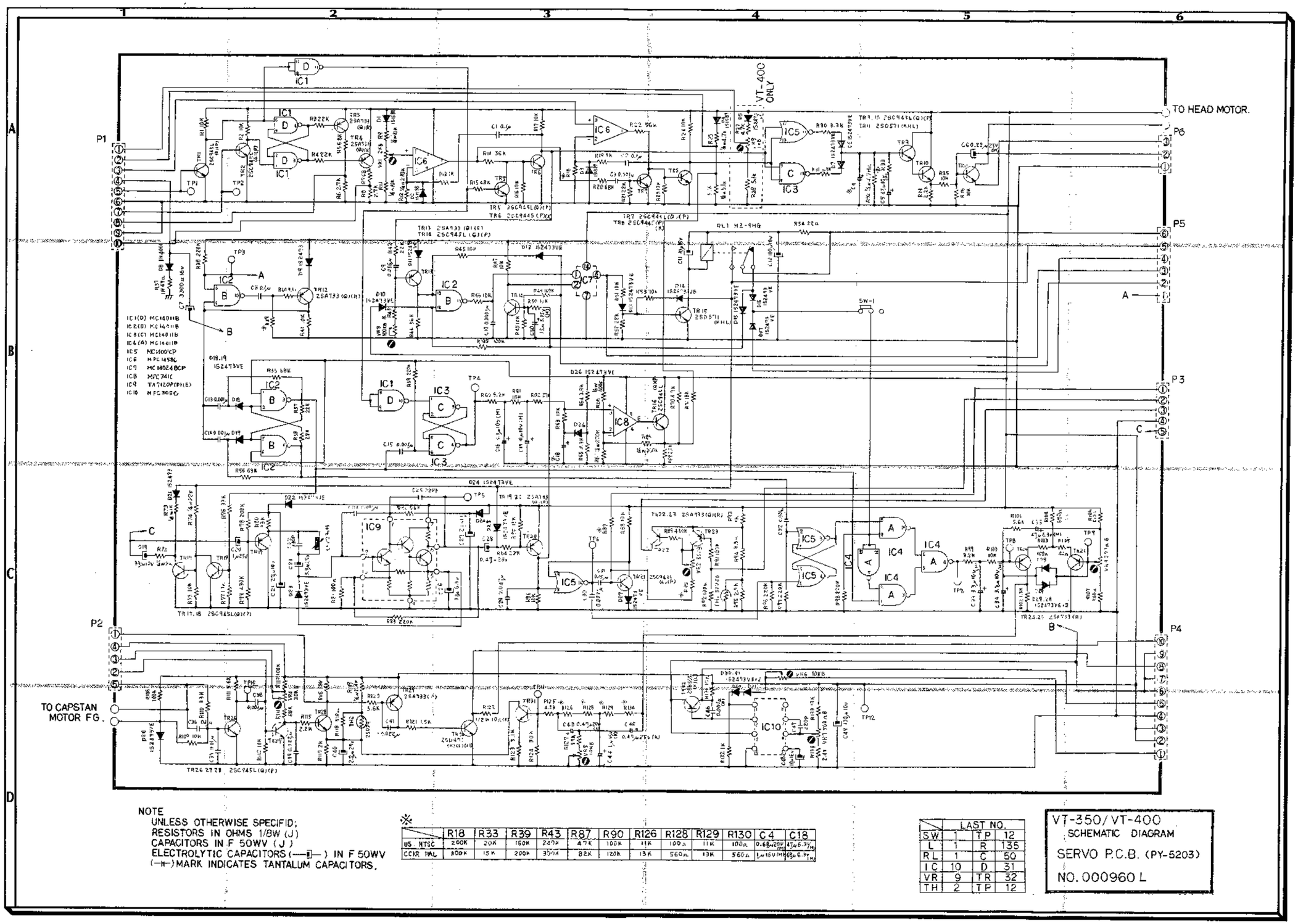
□ = J1
○ = P1

★	PAL	NTSC
IC9	MN1116P	MN-1?P
X1	31.25KHZ	31.5KHZ
X2	4433.619KHZ	3.579545MHZ

LAST NO

R	147	TR	32
C	91	X	2
VR	4	D	23
DL	1	TC	1
L	13	T	1
IC	18	TP	16

VC-400
SCHEMATIC DIAGRAM
SSG PCB
NO 000972G



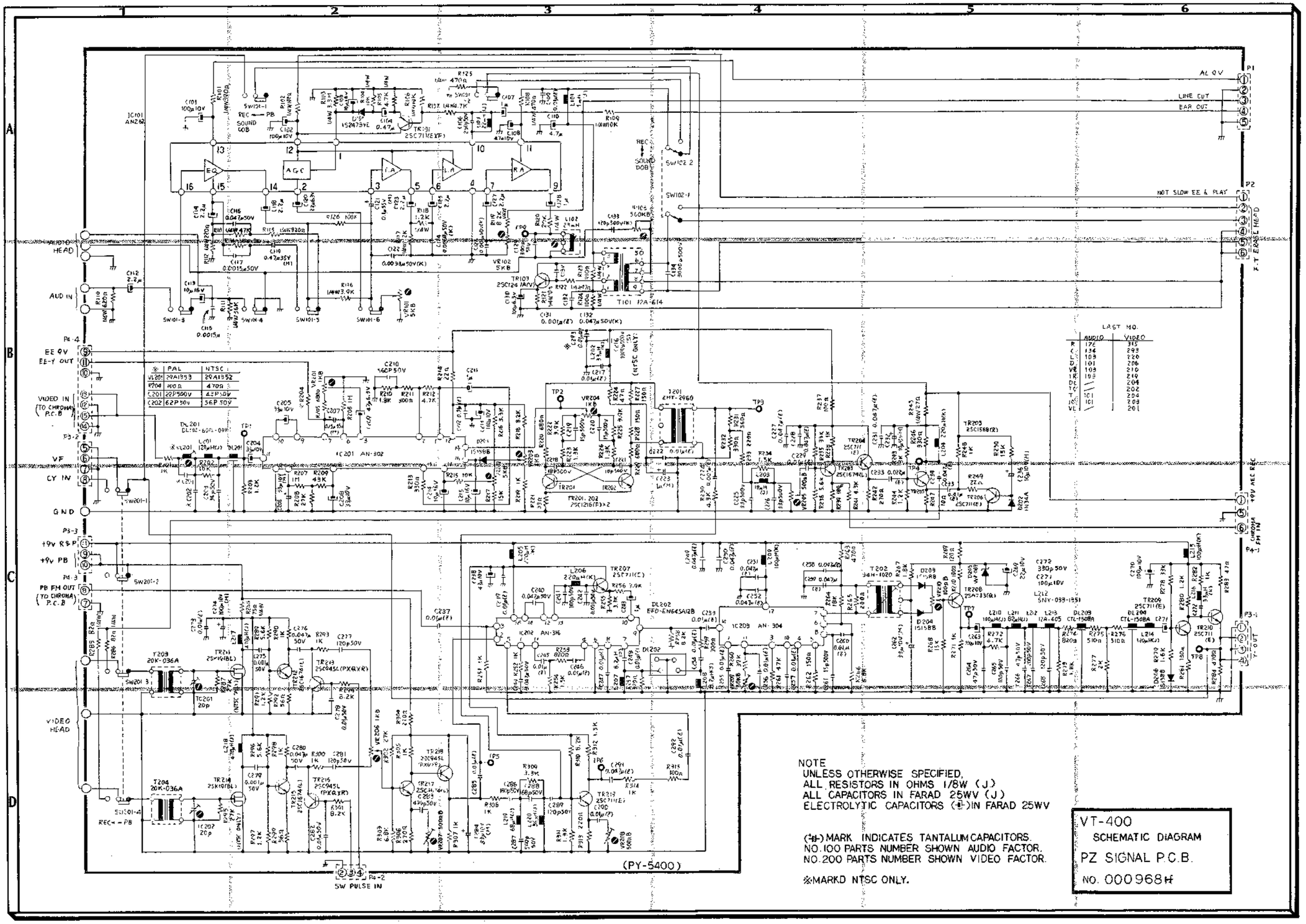
NOTE
UNLESS OTHERWISE SPECIFID;
RESISTORS IN OHMS 1/8W (J)
CAPACITORS IN F 50WV (J)
ELECTROLYTIC CAPACITORS (—▯—) IN F 50WV
(—⊣—) MARK INDICATES TANTALUM CAPACITORS.

※

	R18	R33	R39	R43	R87	R90	R126	R128	R129	R130	C4	C18
US. NTSC	200K	20K	160K	240K	47K	100K	11K	100Ω	11K	100Ω	0.68μ 20V (TAN)	47μ 6.3V (TAN)
CCIR PAL	300K	15K	200K	300K	82K	120K	13K	560Ω	13K	560Ω	1μ 16V (TAN)	68μ 6.3V (TAN)

	LAST NO.		
SW	1	TP	12
L	1	R	135
RL	1	C	50
IC	10	D	31
VR	9	TR	32
TH	2	TP	12

VT-350/VT-400
SCHEMATIC DIAGRAM
SERVO P.C.B. (PY-5203)
NO. 000960 L



※	PAL	NTSC
VL201	29A1353	29A1352
R204	100Ω	470Ω
C201	22P500V	43P50V
C202	62P50V	56P50V

LAST NO.

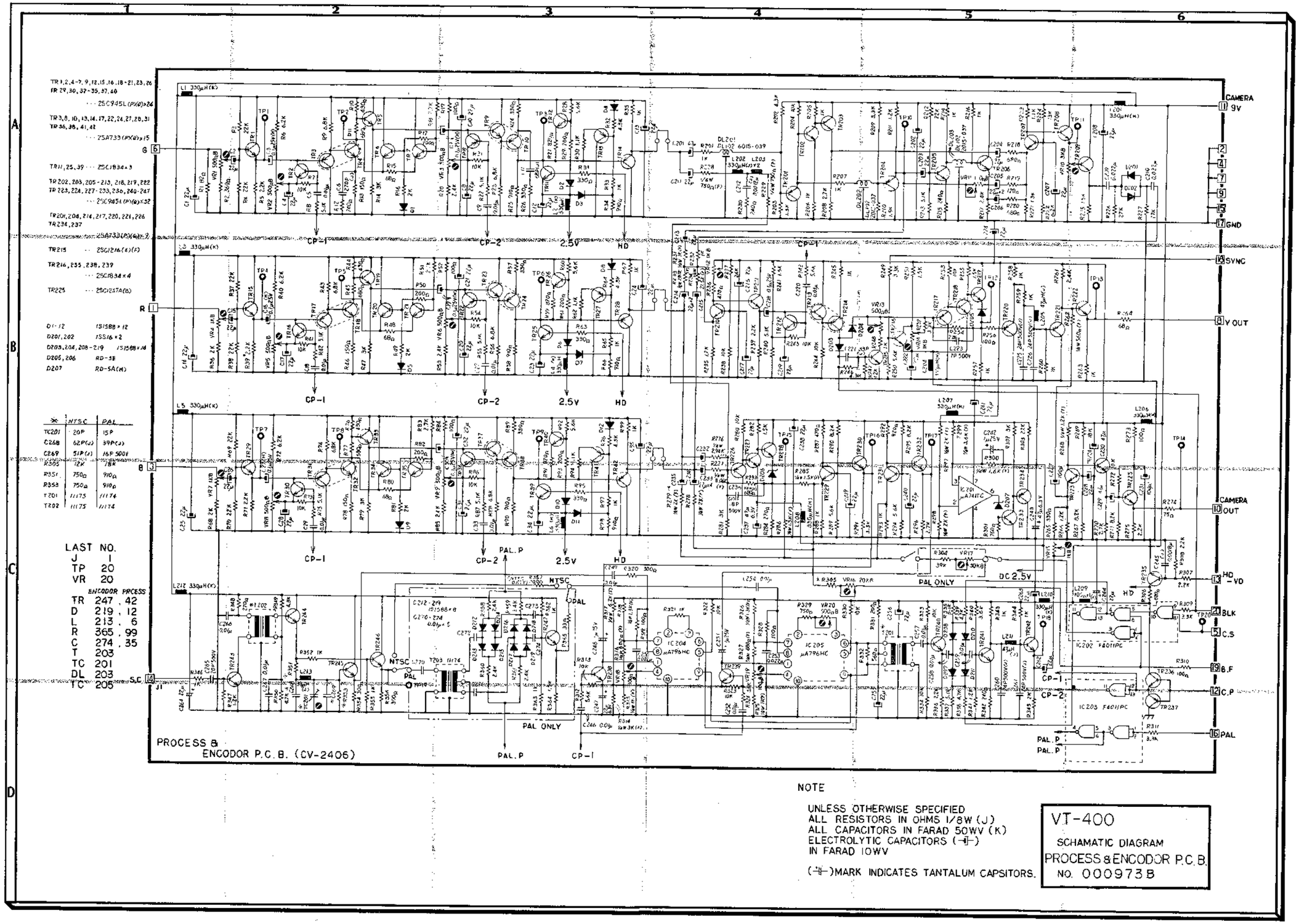
	AUDIO	VIDEO
R	176	315
C	134	293
L	103	220
D	101	206
VR	103	210
TR	103	219
DC	―	204
IC	―	202
T	101	204
IC	101	203
VL	―	201

NOTE
UNLESS OTHERWISE SPECIFIED,
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN FARAD 25WV (J)
ELECTROLYTIC CAPACITORS (⊣⊢)IN FARAD 25WV

(⊣#⊢) MARK INDICATES TANTALUM CAPACITORS.
NO.100 PARTS NUMBER SHOWN AUDIO FACTOR.
NO.200 PARTS NUMBER SHOWN VIDEO FACTOR.

※MARKD NTSC ONLY.

VT-400
SCHEMATIC DIAGRAM
PZ SIGNAL P.C.B.
NO. 000968H



*	NTSC	PAL
TC201	20P	15P
C268	62P(J)	39P(J)
C269	51P(J)	16P 500V
R305	12K	18K
R351	750Ω	910Ω
R358	750Ω	910Ω
T201	11175	11174
T202	11175	11174

LAST NO.

J	1
TP	20
VR	20

ENCODOR PROCESS

TR	247, 42
D	219, 12
L	213, 6
R	365, 99
C	274, 35
T	203
TC	201
DL	203
TC	205

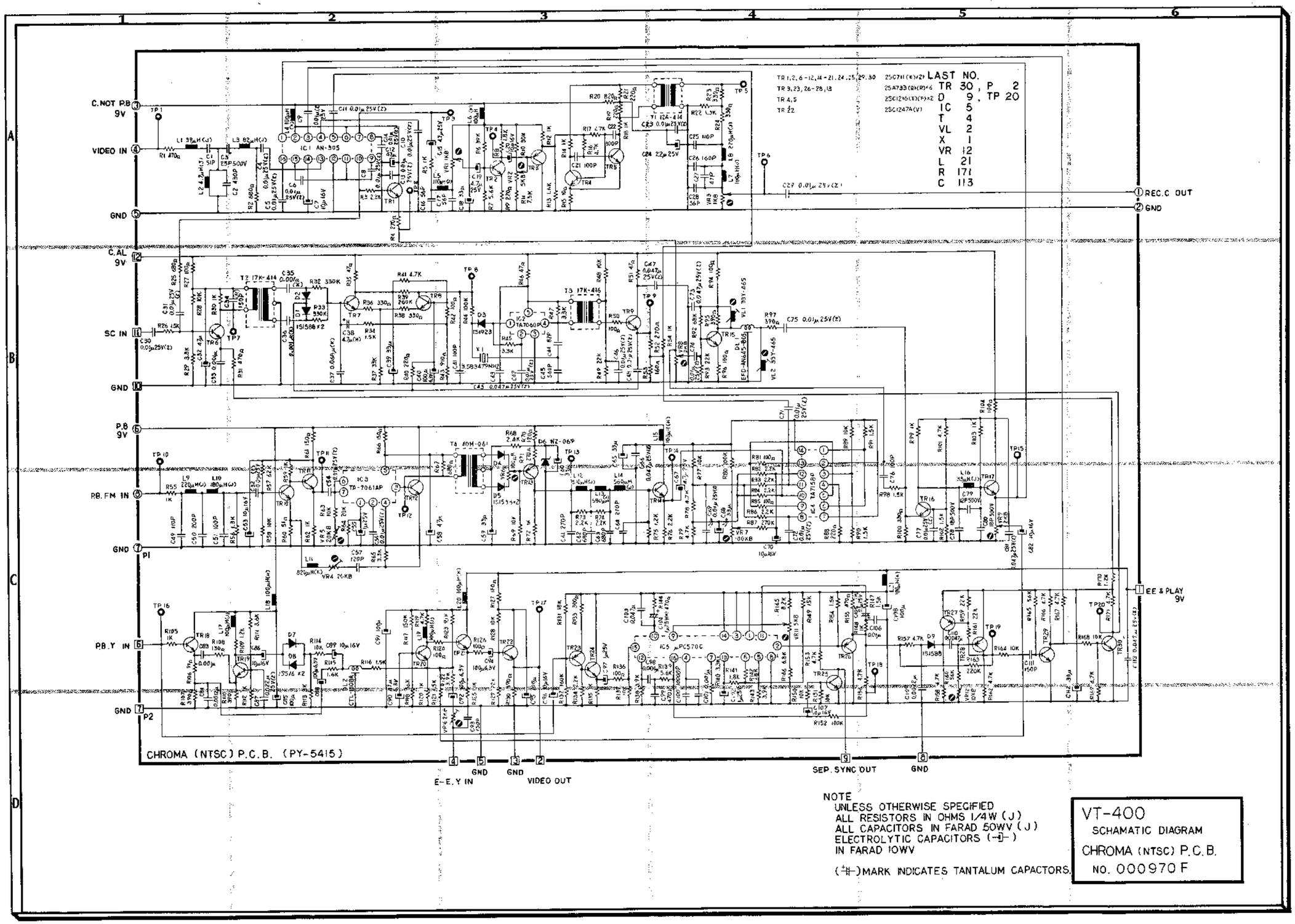
PROCESS & ENCODOR P.C.B. (CV-2406)

NOTE

UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN FARAD 50WV (K)
ELECTROLYTIC CAPACITORS (⊣⊢)
IN FARAD 10WV

(⊣⊢)MARK INDICATES TANTALUM CAPSITORS.

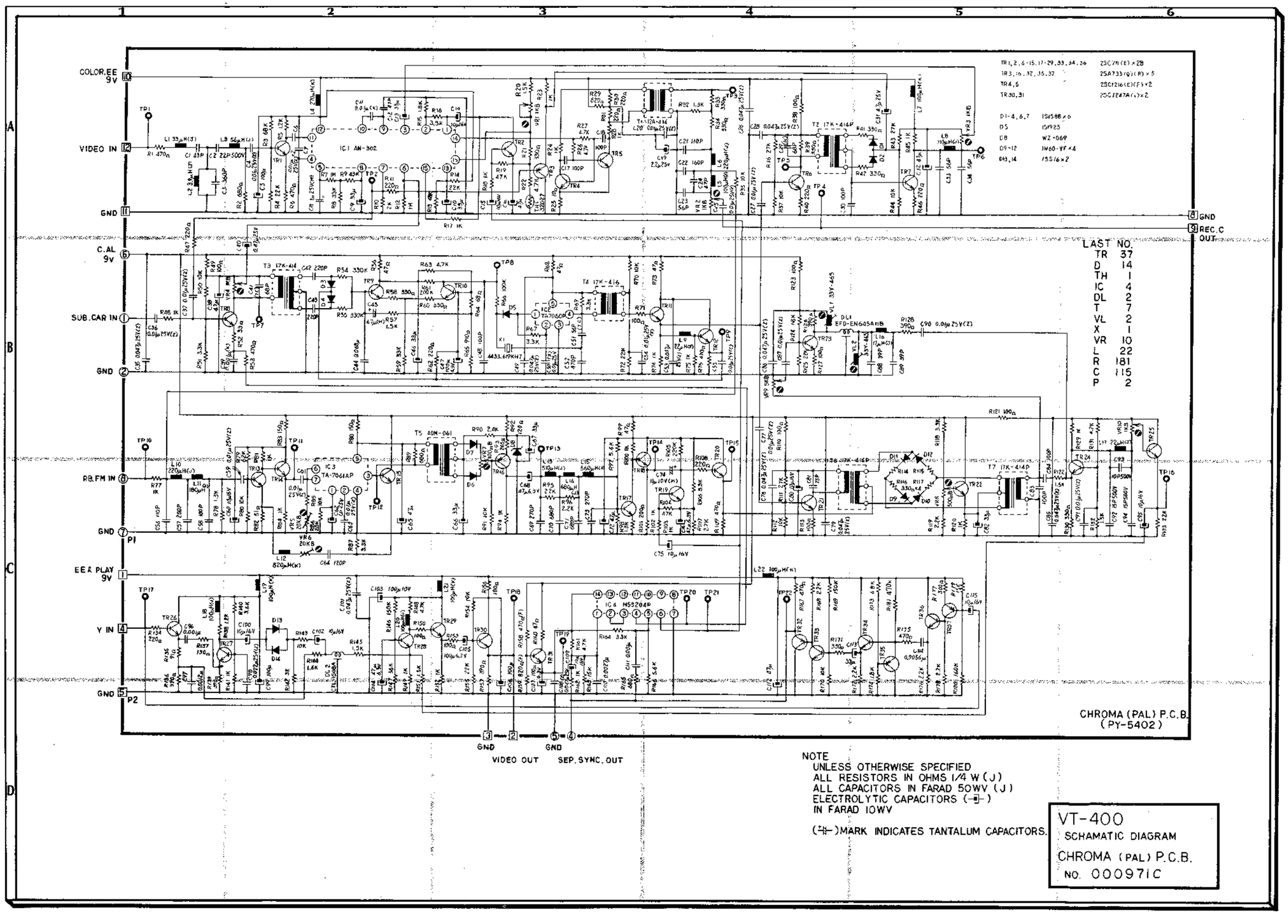
VT-400
SCHAMATIC DIAGRAM
PROCESS & ENCODOR P.C.B.
NO. 000973B



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN FARAD 50WV (J)
ELECTROLYTIC CAPACITORS (⊣⊢)
IN FARAD 10WV

(⊣⊢)MARK INDICATES TANTALUM CAPACTORS.

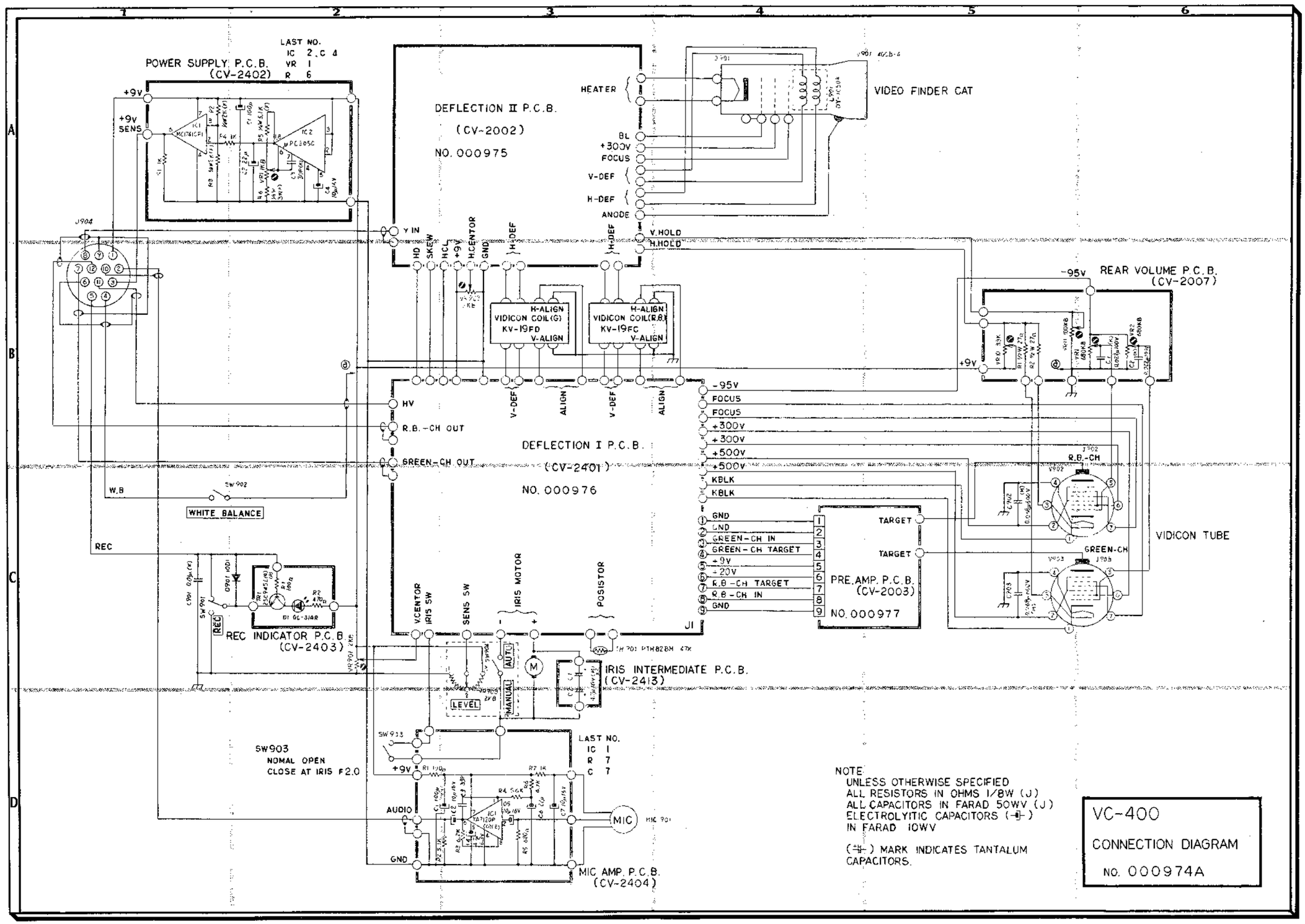
VT-400
SCHAMATIC DIAGRAM
CHROMA (NTSC) P.C.B.
NO. 000970 F



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4 W (J)
ALL CAPACITORS IN FARAD 50WV (J)
ELECTROLYTIC CAPACITORS (-|(+)-)
IN FARAD 10WV

(+)MARK INDICATES TANTALUM CAPACITORS.

VT-400
SCHAMATIC DIAGRAM
CHROMA (PAL) P.C.B.
NO. 00097IC



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN FARAD 50WV (J)
ELECTROLYITIC CAPACITORS (⊣⊢)
IN FARAD 10WV

(⊣⊢) MARK INDICATES TANTALUM CAPACITORS.

VC-400
CONNECTION DIAGRAM
No. 000974A