VT-120

SERVICE MANUAL

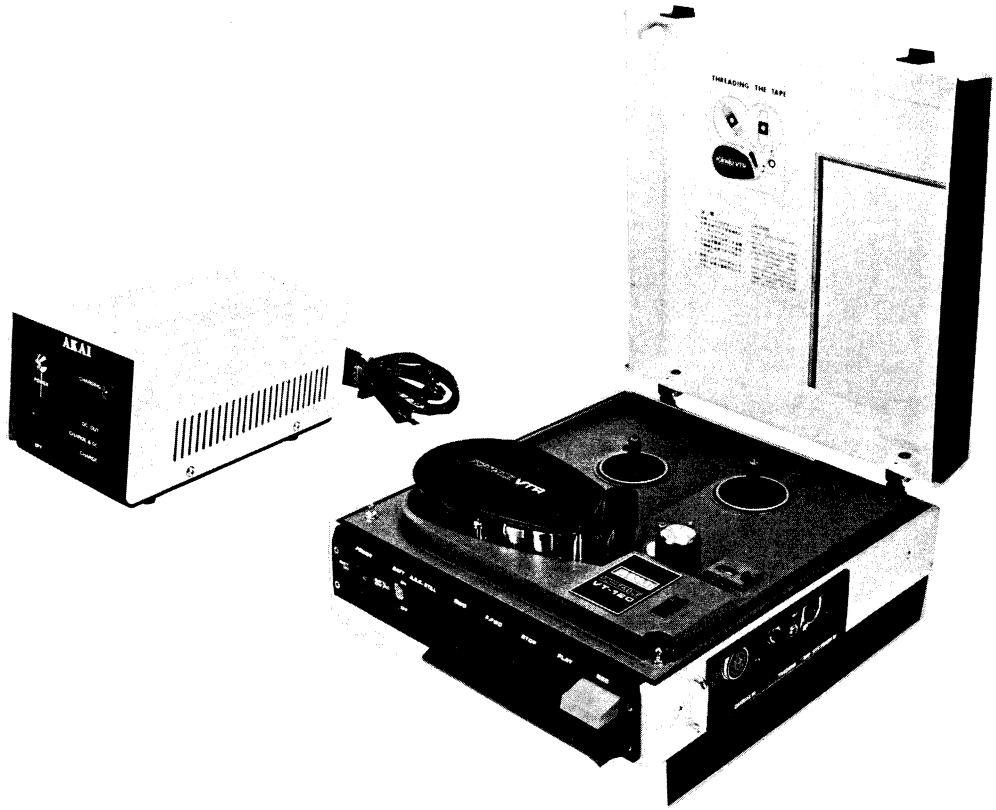
PARTS LIST

PRIDE IN QUALITY

AKAI PORTABLE VIDEO TAPE RECORDER

MODEL **VT-120**

THIS MANUAL MUST BE USED AS A SET TOGETHER WITH SEPARATELY PUBLISHED VTS-110 SERVICE MANUAL



PORTABLE VIDEO TAPE RECORDER

MODEL VT-120

THIS MANUAL MUST BE USED AS A SET TOGETHER
WITH SEPARATELY PUBLISHED VTS-110 SERVICE MANUAL

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SECTION 1

SERVICE MANUAL

THIS MANUAL MUST BE USED AS A SET TOGETHER
WITH SEPARATELY PUBLISHED VTS-110 SERVICE MANUAL

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I. ADJUSTMENT OF TAPE TRANSPORT MECHANISM

1. MECHANISM SPECIFICATIONS

(1)	MAIN PINCH ROLLER PRESSURE		1.5 kg ± 0.1 kg
(2)	SUB PINCH ROLLER PRESSURE		30 to 35g
(3)	SPACE BETWEEN CAPSTAN AND PINCH ROLLER	MAIN	1.5 to 2 mm
		SUB	2 to 3 mm
(4)	TAKE-UP TORQUE	WITH TAPE BEING ROLLED ONTO REEL	60 to 110g
		WITH TAPE BEING ROLLED OFF OF REEL	above value +10 to 20g
(5)	TAPE HOLD-BACK TENSION		8 to 10g
(6)	FAST FORWARD TORQUE	WITH TAPE BEING ROLLED ONTO REEL	200 to 300g
(7)	REWIND TORQUE	WITH TAPE BEING ROLLED ONTO REEL	200 to 300g
(8)	A. E. C. Rewind Torque	WITH TAPE BEING ROLLED ONTO REEL	200 to 300g
(9)	BRAKE TORQUE	SUPPLY SIDE	80 to 130g
		TAKE-UP SIDE	80 to 120g
(10)	DRIVE IDLER PRESSURE		300 to 400g
(11)	REEL TABLE CLEARANCE		0.2 to 0.5 mm
(12)	CAPSTAN SHAFT CLEARANCE		0.2 to 0.5 mm
(13)	SPACE BETWEEN TAKE-UP PULLEY AND TAKE-UP DRUM		about 1 mm
(14)	SPACE BETWEEN BRAKE SHOE AND TAKE-UP DRUM		about 1 mm
(15)	TAPE SPEED DEVIATION	1000 HZ TAPE PLAYBACK	Less than ± 0.5%
(16)	WOW AND FLUTTER	3000 HZ TAPE PLAYBACK	Less than 0.17 r.m.s.

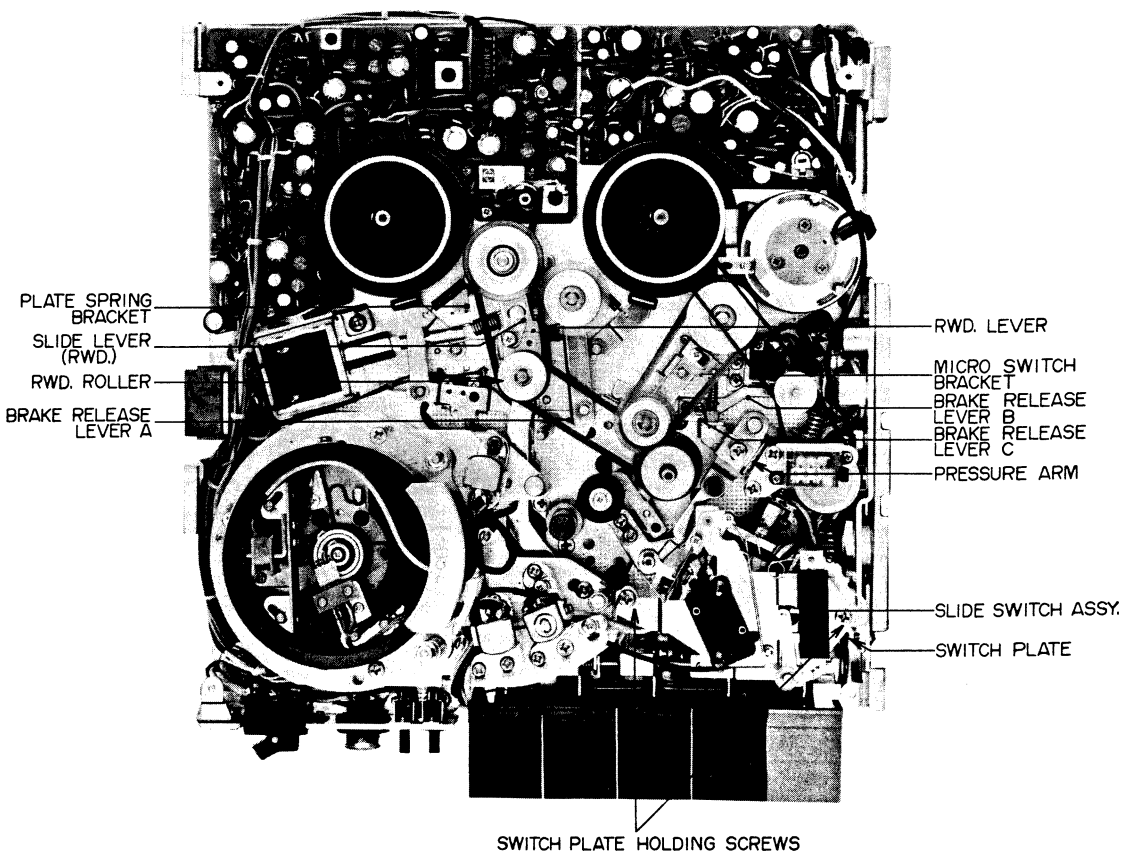


Fig. 1-1

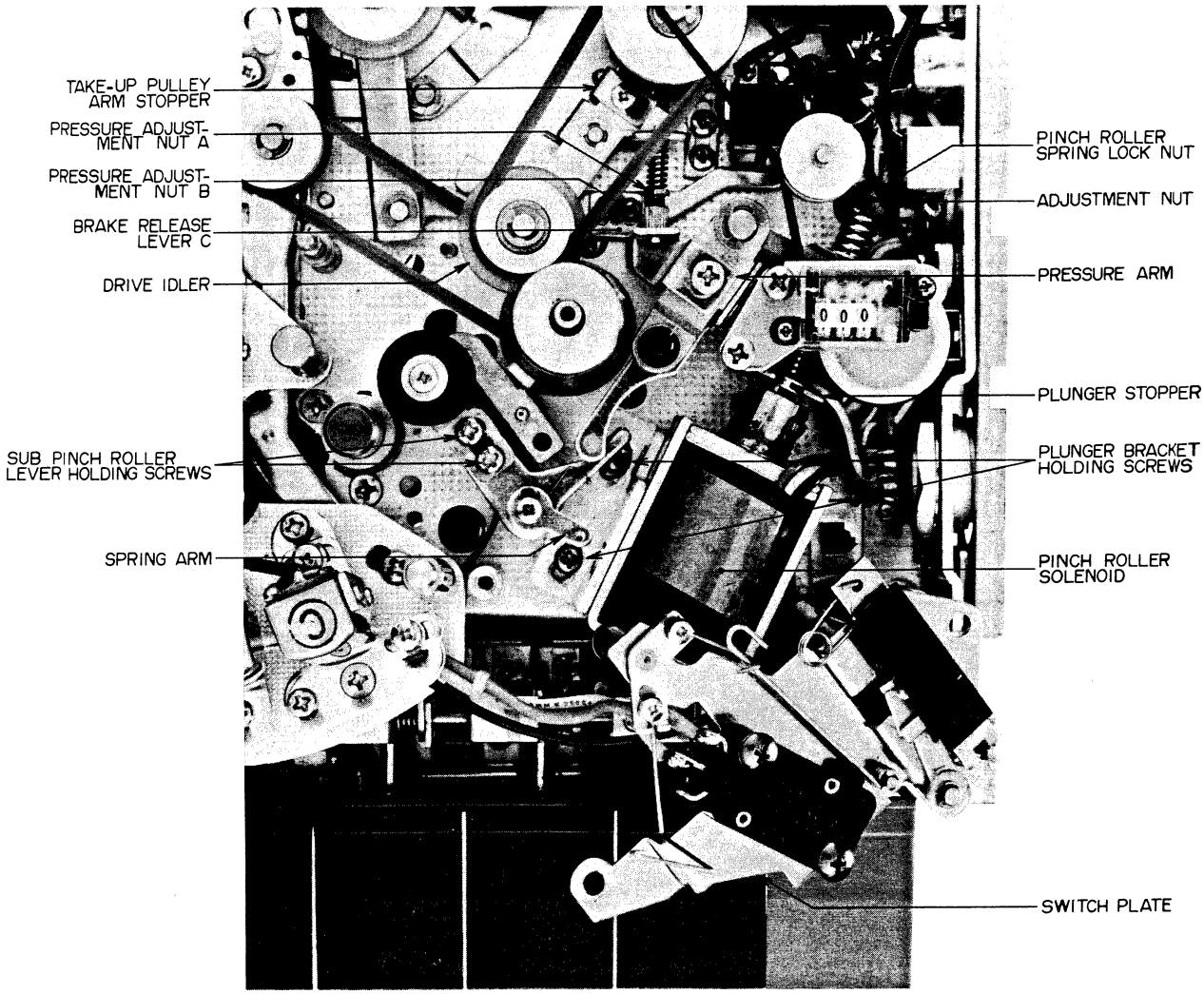


Fig. 1-2

2. MECHANICAL ADJUSTMENT

(1) MAIN PINCH ROLLER PRESSURE ADJUSTMENT

a) Remove the two switch plate holding screws (Refer to Fig. 1-1) and move the slide switch assembly as shown in Fig. 1-2.

b) Loosen the pressure arm holding screw and set plunger bracket holding screw to center of oval hole.

c) Set plunger stopper at furtherest position from pinch roller solenoid.

d) As shown in Fig. 1-3, at playback mode, use a 0 to 2 kg. spring gauge and measure the pinch roller pressure when pinch roller rotation stops. Loosen pinch roller spring lock nut and adjust pressure to about 2 kg by turning adjustment nut. Tighten lock nut following adjustment. (When tightening lock nut, be careful not to rotate adjustment nut as this will change the pressure).

e) Adjust plunger stopper position and set so that the space between capstan and pinch roller is about 2 mm and the entire solenoid shaft is rectilineal.

f) Adjust pressure arm position and set so that the space between Drive Idler and Capstan Pulley is about 1 mm.

g) After the above adjustments have been completed, measure pinch roller pressure again as outlined in Item(d) and confirm that it is 1.5 kg ± 0.1 kg. In case pinch roller pressure is not within these specifications, re-adjust with adjustment nut.
When pinch roller pressure is changed, because this also changes the width of the space between the capstan and pinch roller, adjust plunger stopper position according to necessity.

NOTE: The adjustments outlined in times (i) through (f) above are necessary only when replacing the pinch roller solenoid. For adjustment of pinch roller pressure only, make adjustment outlined in item (g).

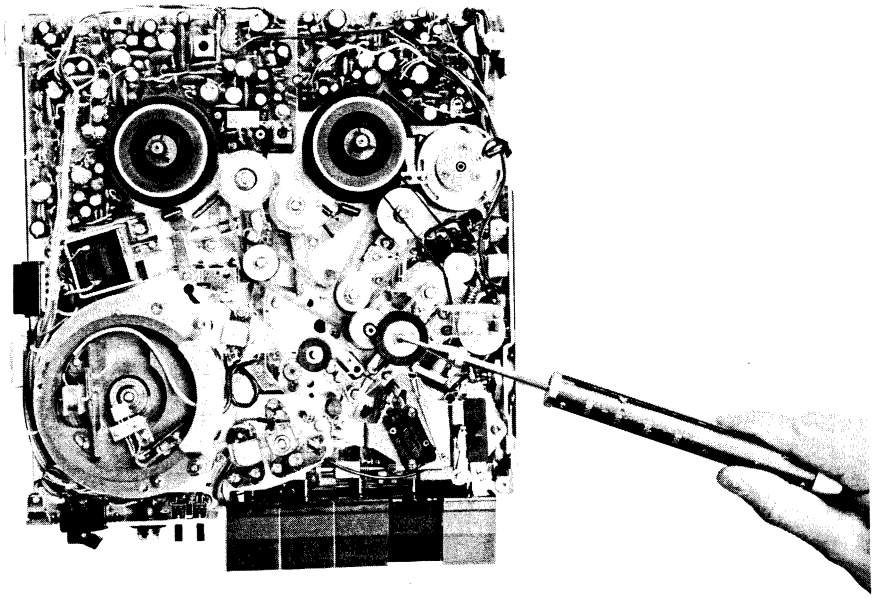


Fig. 1-3

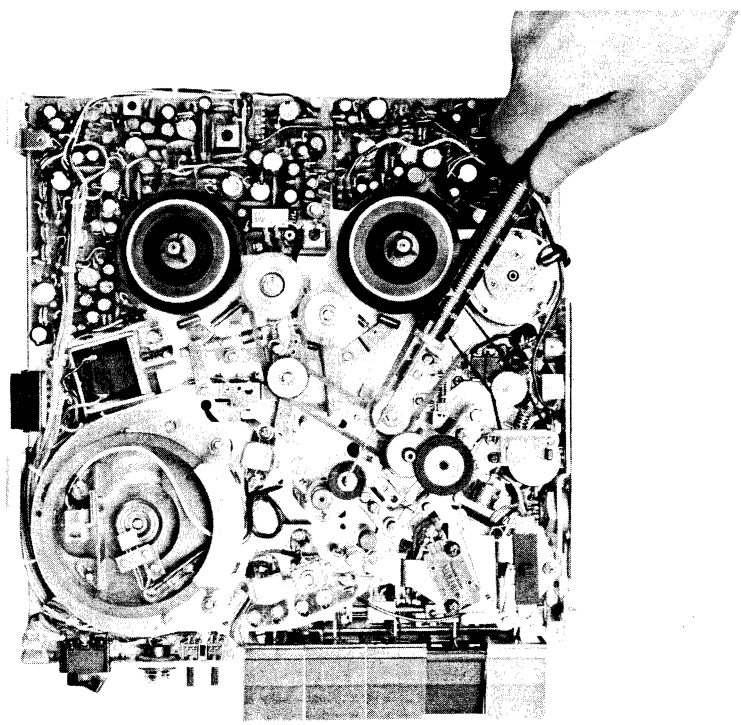


Fig. 1-4

(2) SUB PINCH ROLLER PRESSURE ADJUSTMENT

a) Set sub pinch roller lever holding screw so that at stop mode, the space between sub pinch roller and sub capstan is 2 to 3 mm.

b) As shown in Fig. 1-4, at playback mode, connect a 0 to 50g spring gauge to the sub pinch roller shaft and measure pressure at point at which pinch roller rotation stops.

c) Adjust spring arm for 30 to 35g pressure. (Pressure becomes weaker when spring arm is turned clockwise and stronger when turned counter-clockwise).

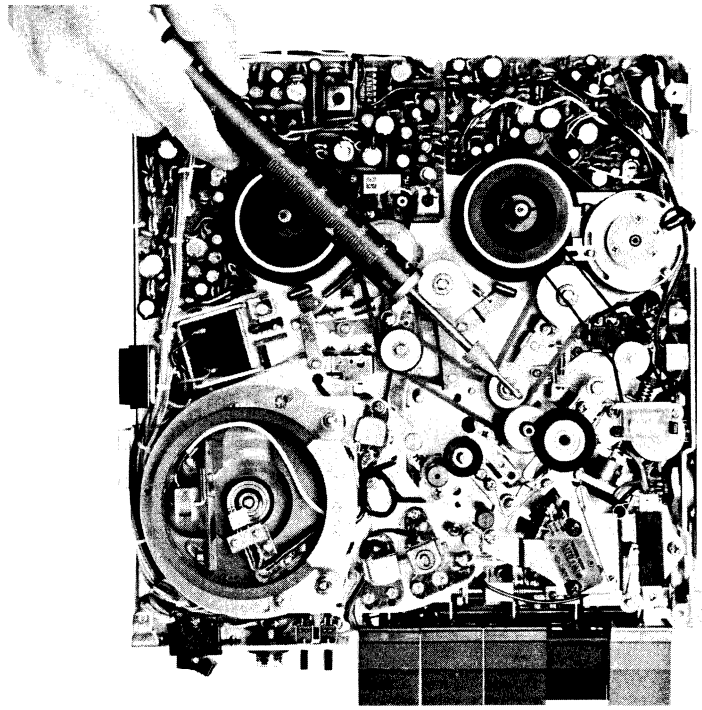


Fig. 1-5

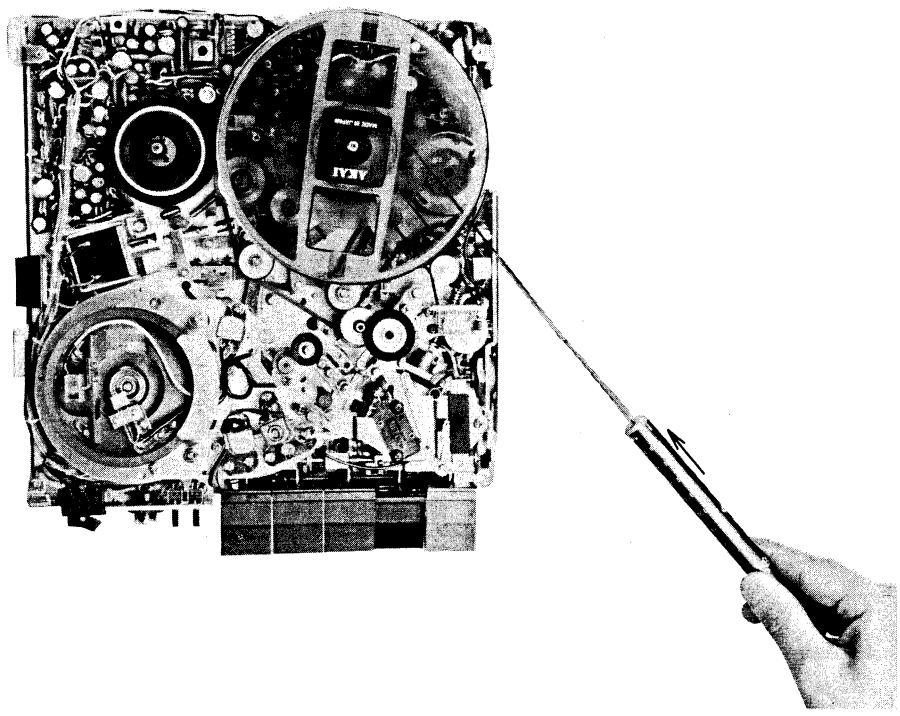
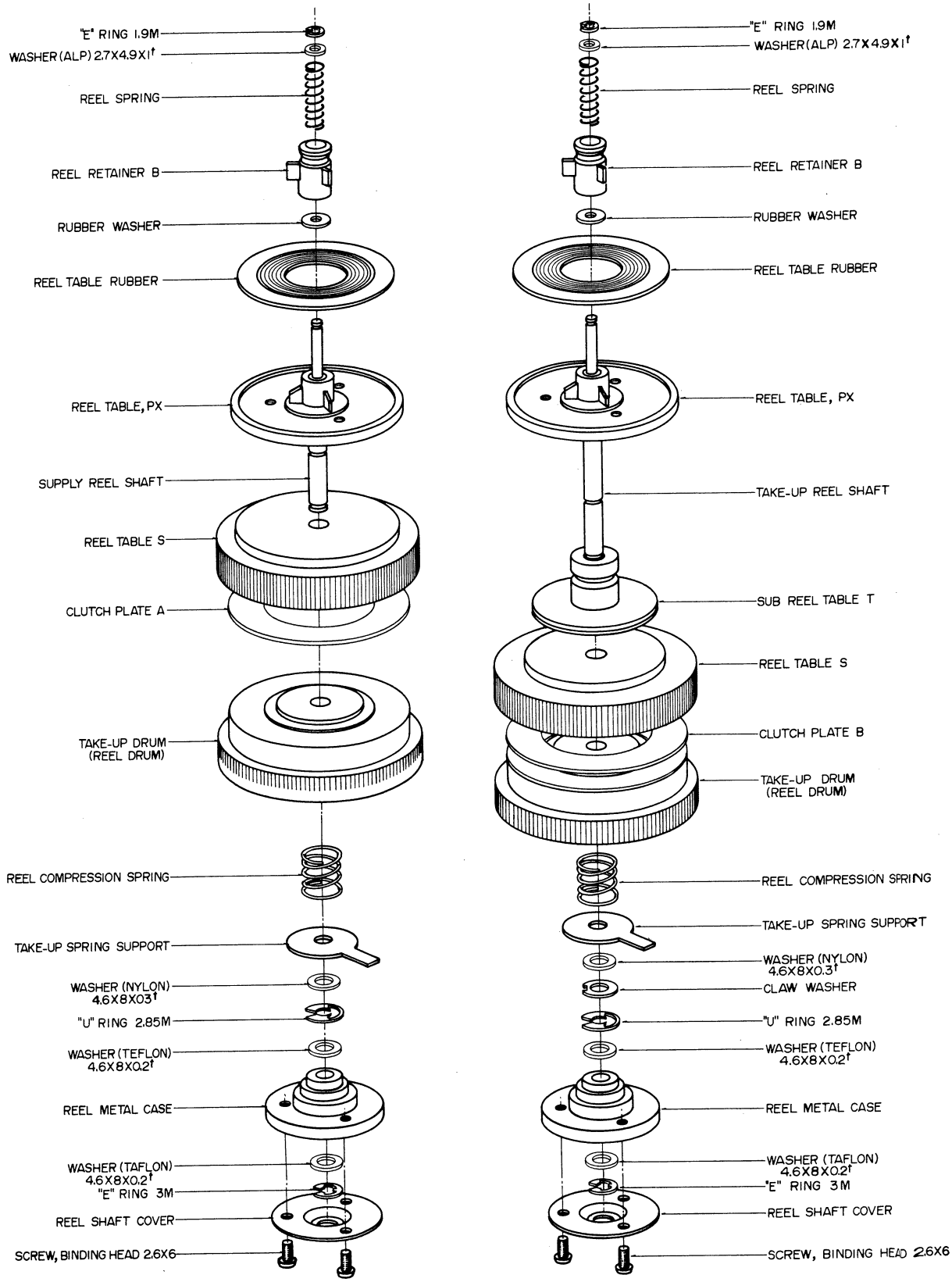


Fig. 1-6



SUPPLY REEL SPINDLE

TAKE-UP REEL SPINDLE

Fig. 1-7

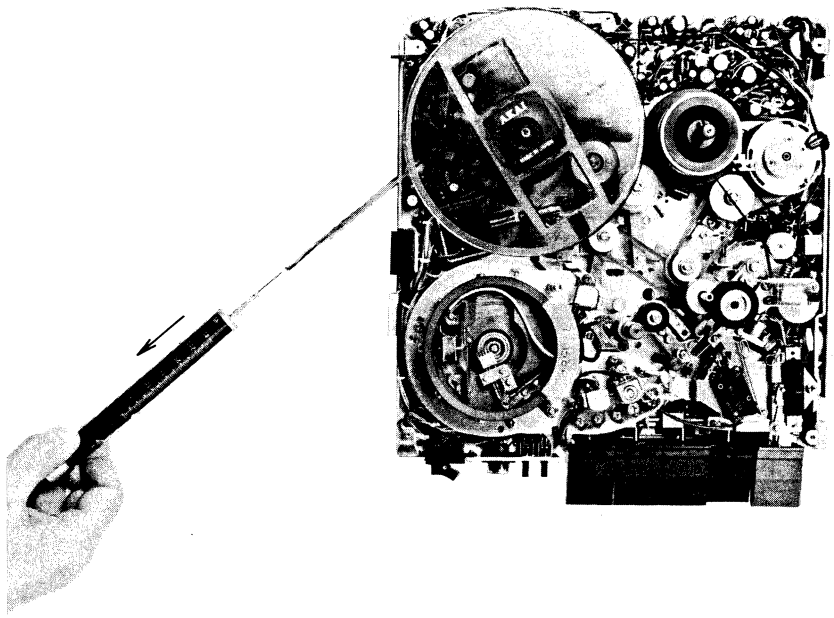


Fig. 1-8

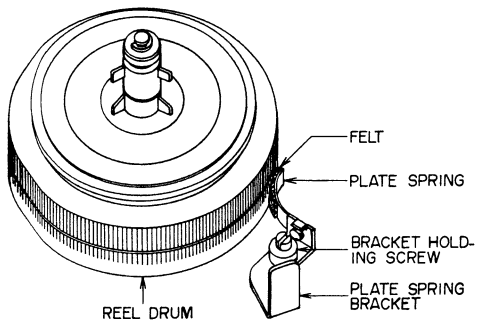


Fig. 1-9

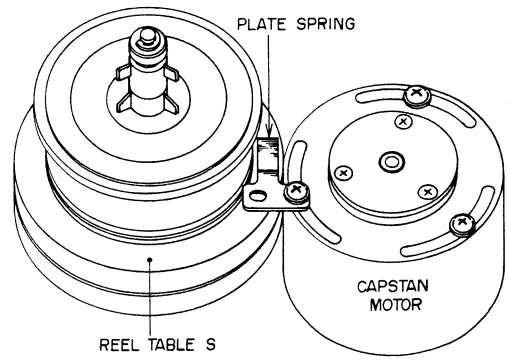


Fig. 1-10

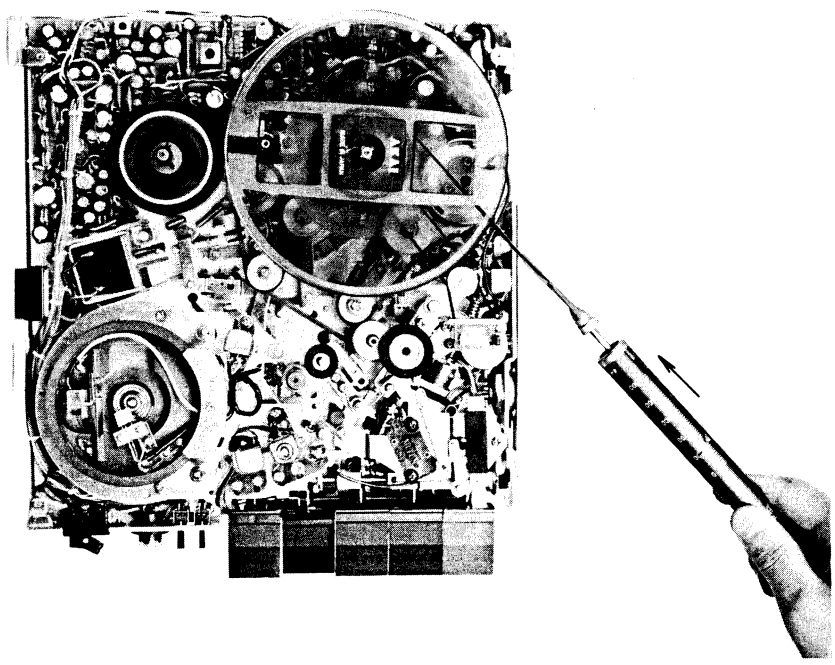


Fig. 1-11

(3) DRIVE IDLER AND TAKE-UP PULLEY ADJUSTMENT

a) At stop mode, confirm that the space between Drive Idler and Capstan Pulley is about 1 mm. (Refer to Part (1), Item (f) above).

b) Adjust take-up pulley arm stopper so that the space between Take-Up Pulley and reel drum of Take-Up Reel Talbe is about 1 mm.

c) As shown in Fig. 1-5, at playback mode, connect a 0 to 500g spring gauge to upper part of the drive idler shaft and measure the pressure when drive idler rotation stops.

d) With pressure adjustment nut "A" at a stabilized position, adjust drive idler pressure to 300 to 400g by turning nut "B".

e) After completing the above adjustments, at playback mode, confirm that when the take-up reel rotation is stopped by hand, the drive idler and take-up pulley rotate smoothly.

(4) BRAKE RELEASE AND MICRO SWITCH ADJUSTMENT

a) Adjust Brake release lever "C" so that at playback mode, the brake shoe separates from the reel table drum by about 1 mm, and at stop mode, brake lever "B" does not touch lever "A". (Refer to Fig. 1-1)
Confirm that at Fast Forward and Rewind modes, the brake shoe separates from the reel table pulley by more than 1 mm.

c) Adjust the micro switch bracket so that brake tension lever "B" pushes the 2 micro switches perfectly at playback mode, and the 2 micro switches are turned off perfectly at stop mode. (Refer to Fig. 1-1)

NOTE: Be careful that at playback mode, lever "B" does not push the micro switches too much.

(5) TAKE-UP TORQUE ADJUSTMENT

a) As shown in Fig. 1-6, use a 50 mm diameter of tape wound on a 5" reel and with 0 to 300g tension gauge, measure the take-up torque at playback mode.

b) It is satisfactory if the value is 60 to 110g with tape being rolled onto reel and this value plus 10 to 20g when the tape is pulled away from the reel table. Because the take-up torque value is determined by the take-up spring inside the take-up reel table, if the torque is not correct, adjust by regulating the strength of this spring. (Refer to Fig. 1-7)

(6) TAPE HOLD-BACK TENSION ADJUSTMENT

a) As shown in Fig. 1-8, using the same reel as described in Paet (5), Item(a), set reel on supply reel table and with a 0 to 50g spring gauge, measure the supply reel table hold-back tension at playback mode.

b) Adjust tension to 8 to 10g by changing the angle of the plate spring bracket. (Refer to Fig. 1-9)

c) Using the measuring method outlined in Item(a) above, set the same reel on the take-up reel table and measure the hold-back tension at rewind mode.

d) Adjust tension to 8 to 10g by changing the angle of the plate spring installed on upper part of capstan motor. (Refer to Fig. 1-10)

(7) FAST FORWARD AND REWIND TORQUE MEASUREMENT

a) As shown in Fig. 1-11, use the same reel described in Part (5), Item (a), and set reel on take-up reel table. Using a 0 to 500g spring gauge, and being careful not to induce tape slack, read gauge value at fast forward mode while the tape is being rolled onto reel. It is satisfactory if fast forward torque is within 200 to 300g.

b) As shown in Fig. 1-12, use the same reel as in Item (a) above and set on supply reel table. Also, using the same method as in Item (a) above, measure torque at rewind mode. It is satisfactory if rewind torque is within 200 to 300g.

c) In case fast forward or rewind torque is insufficient, check for idler slippage, belt stretch, etc.

(8) REWIND PLUNGER ADJUSTMENT

a) Bring the rewind plunger fully to the left and stationary so that the plunger shaft is rectilineal.

b) With VTR at REC mode and A.E.C. Switch at ON position, when Camera/TV Switch is switched from TV to Camera position, the rewind plunger operates for about 2 seconds. Measure rewind torque during plunger operating period. Rewind torque measuring method and specifications are the same as described in Part 7, Item (b) above.

c) A.E.C. rewind torque adjustment is made by changing the angle of the slide lever on the rewind lever.
As shown in Fig. 1-13, when the pin of adjustment driver (Refer to Fig. 1-14) is fitted in hole Ⓐ of rewind lever and the slide lever holding screw is at a slightly loosened condition, rewind torque can be adjusted by turning the adjustment driver and changing the angle of the slide lever. If rewind torque is within specifications, tighten slide lever holding screw.

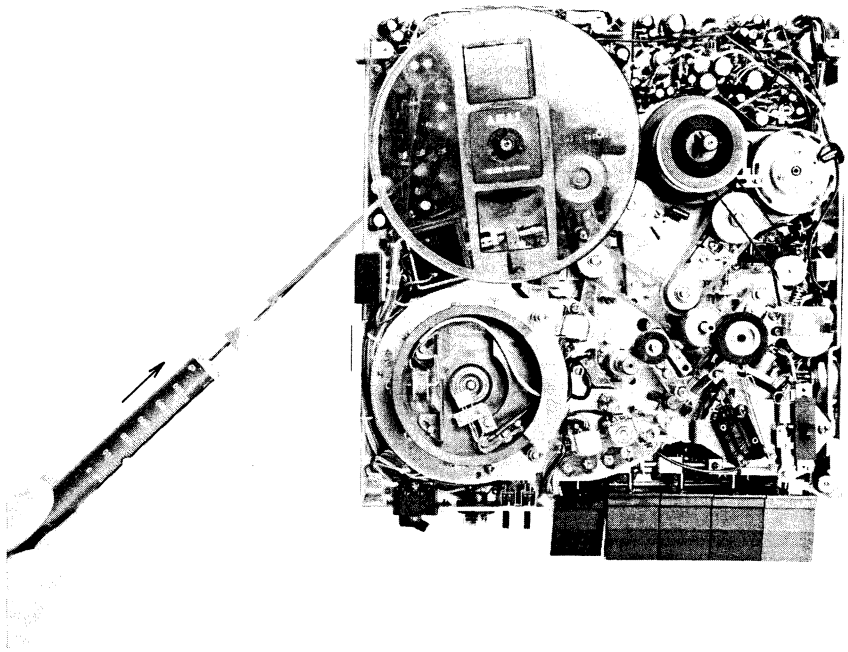


Fig. 1-12

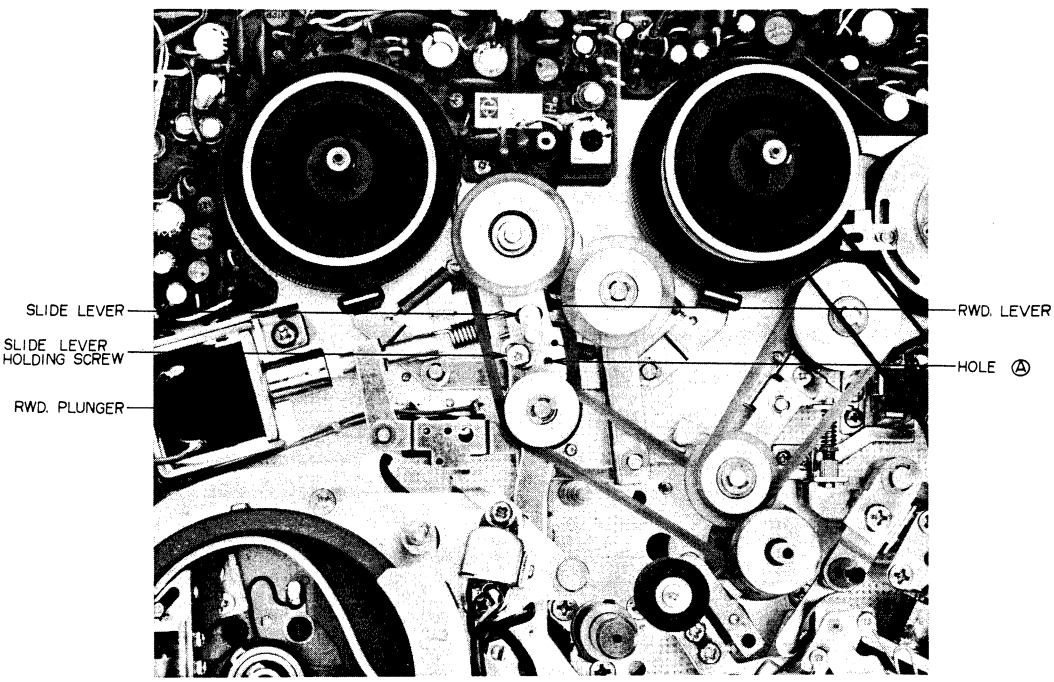


Fig. 1-13

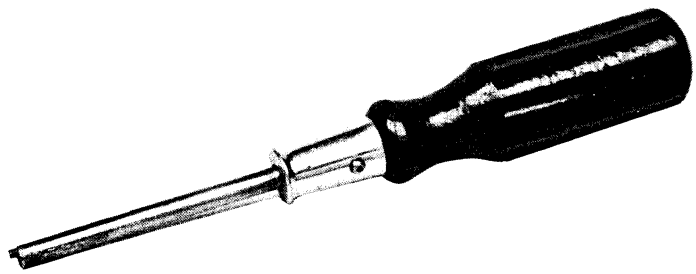


Fig. 1-14

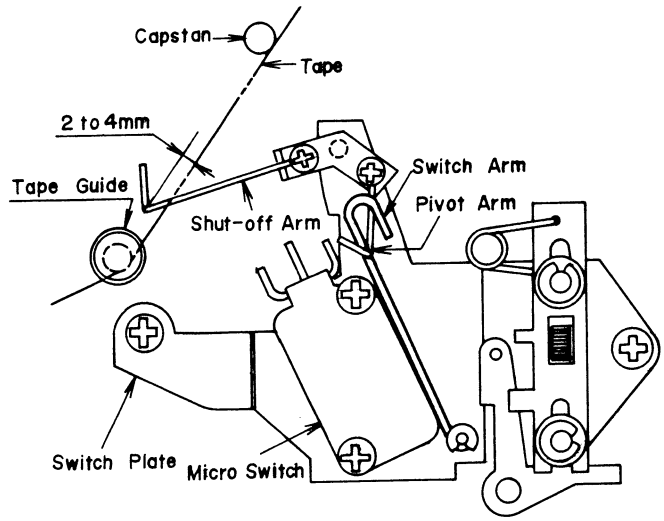


Fig. 1-15

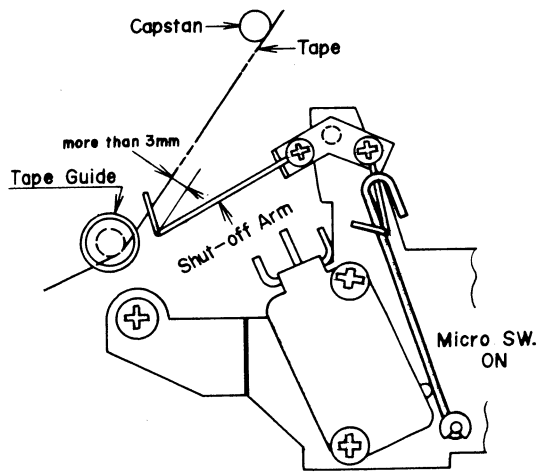


Fig. 1-16

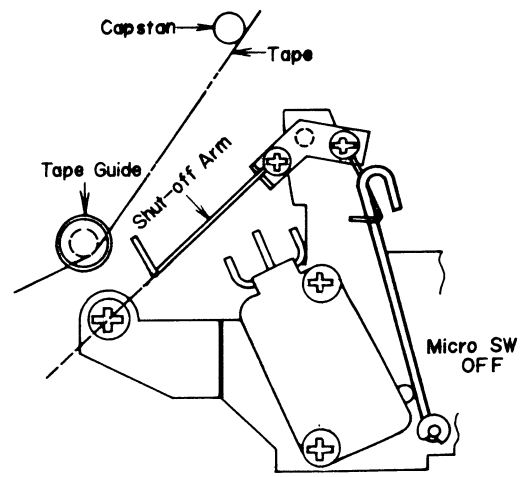


Fig. 1-17

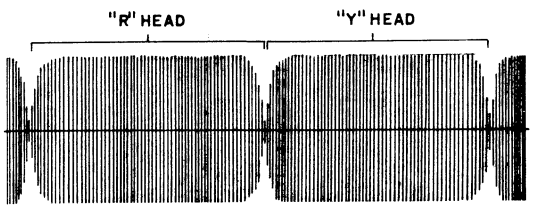


Fig. 1-18

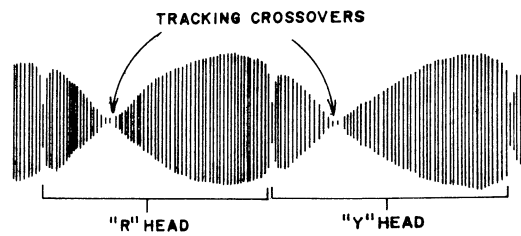


Fig. 1-19

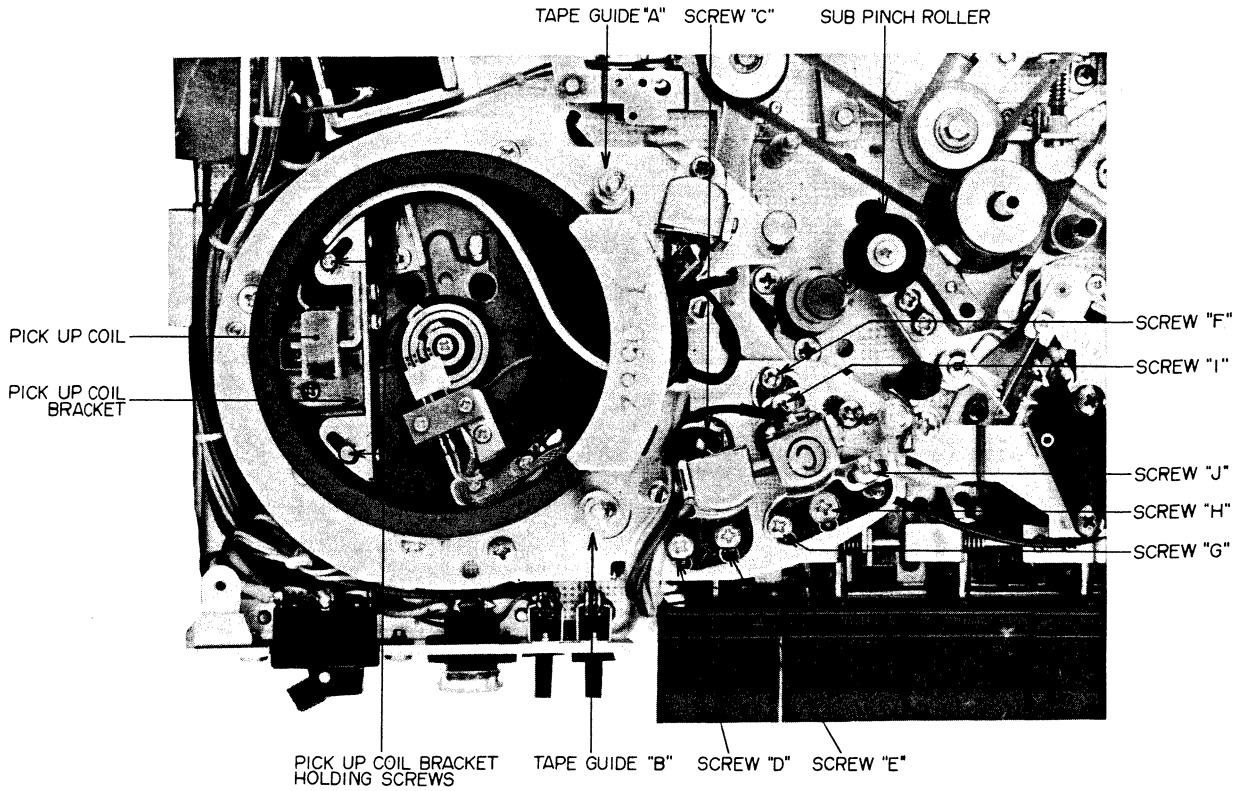


Fig. 1-20

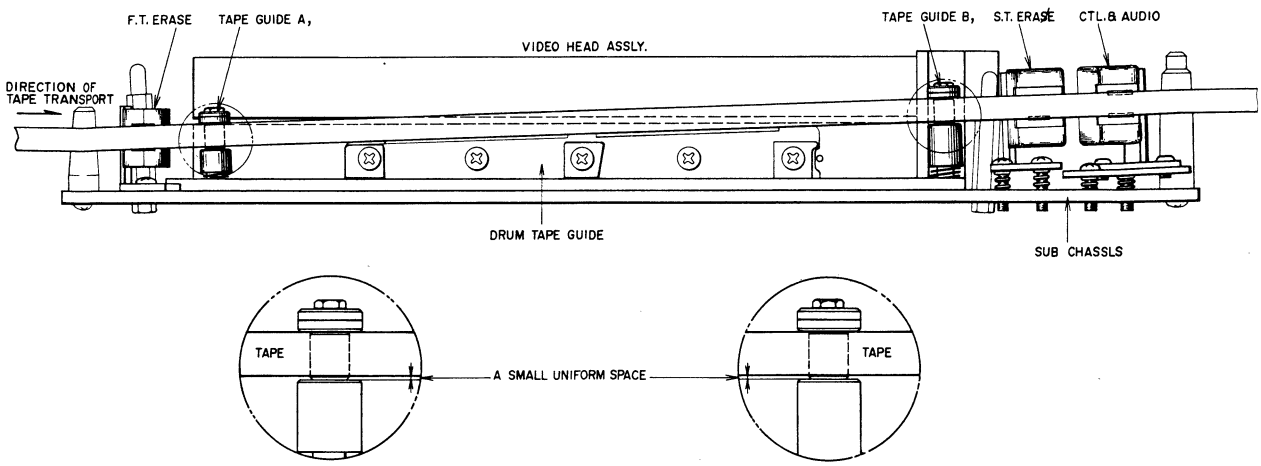
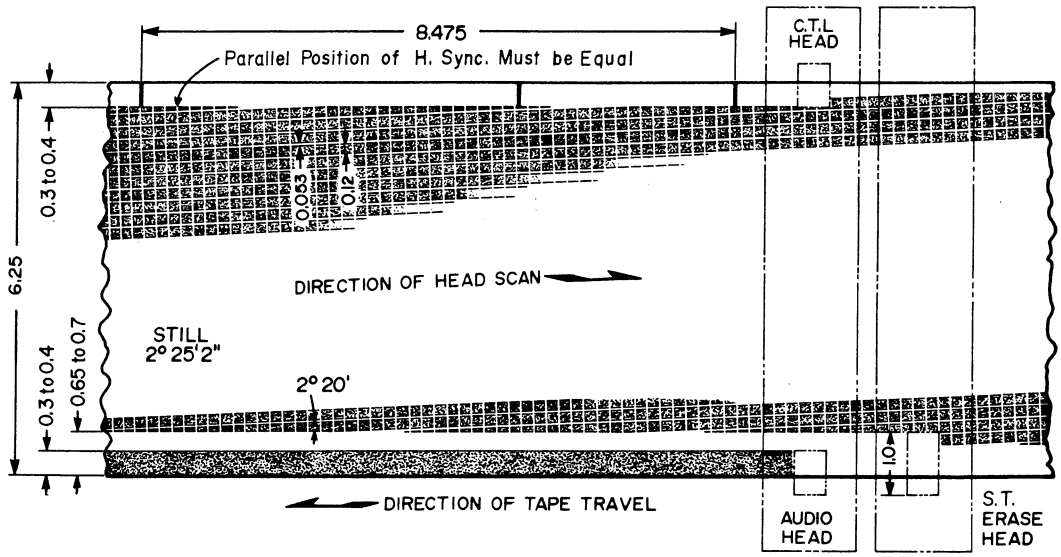


Fig. 1-21

(9) BRAKE TORQUE MEASUREMENT

a) At stop mode, measure the supply reel and take-up reel brake torque using the same reel as in Part (5), Item (a). The supply reel side should be 80 to 130g and the take-up side 80 to 120g.

b) As brake torque is determined by the strengh of the take-up spring inside the reel assembly, adjust take-up spring according to necessity. (Refer to Fig. 1-7)



RECORDED PATTERN OF VIDEO TAPE
(Viewed From Center of Head Drum)

Fig. 1-22

(10) SHUT-OFF MECHANISM ADJUSTMENT

a) Adjust pivot arm so that the position of the shut-off arm is 2 to 4 mm from the tape surface when the micro switch is depressed by the switch arm. (Refer to Fig. 1-15)

b) Return shut off switch to OFF position and move gently by hand. Confirm that the micro switch is turned ON at a distance of more than 3 mm before the shut-off arm reaches the tape surface (Refer to Fig. 1-16).
Next, remove your hand after the shut-off arm has reached the tape surface and confirm that the position of the shut-off arm when the micro switch is turned OFF is in the vicinity of the center of the left hand side switch plate holding screw. (Refer to Fig. 1-17)
In case switch ON and OFF positions are not as described above, adjust by slightly moving position of micro switch.

(11) TAPE TRAVEL AND HEAD HEIGHT ADJUSTMENT

a) Sub pinch roller shaft angle adjustment
Load a tape and adjust angle of sub pinch roller shaft so that the tape runs in the same position on the pinch roller at all modes (fast forward, rewind, and playback). Also confirm that at playback mode, the tape travels over the tape guide smoothly and without causing up and down movement of the center of the head drum.

b) Connect an oscilloscope to video amp P.C. Board test point TP-5 (Refer to Fig. 2-30) Playback a video reference tape and while ovserving RF Envelope, adjust the height of tape guides "A" and "B" (Refer to Fig. 1-20) to obtain as square a waveform as possible as shown in Fig. 1-18.

c) Loosen screws "I" and "J" (Refer to Fig. 1-20). Move CTL head to left and right and fix at position at which RF Envelope displays maximum amplitude and is square. If even by adjustment of the CTL head, tracking cross-over appears as shown in Fig. 1-19, readjust tape guides "A" and "B".

d) In case RF Envelope amplitude fluctuation exists even after the above adjustments have been made, because tape travel is causing vertical movement of the tape guide band on the outer circumference of the head drum, adjust the angle of sub pinch roller or the forward and backward slant of the side track erase head and/or CTL head so that the tape contacts the upper part of tape guides "A" and "B" as shown in Fig. 1-21 and runs smoothly on the tape guide band. When making this adjustment, at the same time adjust tape guides "A" and "B" to obtain a square RF Envelope. RF Envelope fluctuation must be within 10% of peak to peak value.

e) For side track erase head and CTL and audio head height adjustment, adjust the respective head holding screws (screws C,D,E, and F,G,H) and set to obtian pattern shown in Fig. 1-22.

f) Record and playback a test pattern signal and confirm that RF Envelope output is stabilized (does not fluctuate). R.F. Envelope amplitude must exceed 0.6V peak to at recording/playback and the difference in amplitude of the two heads should be less than 3dB.

II. P. C. BOARD ADJUSTMENT

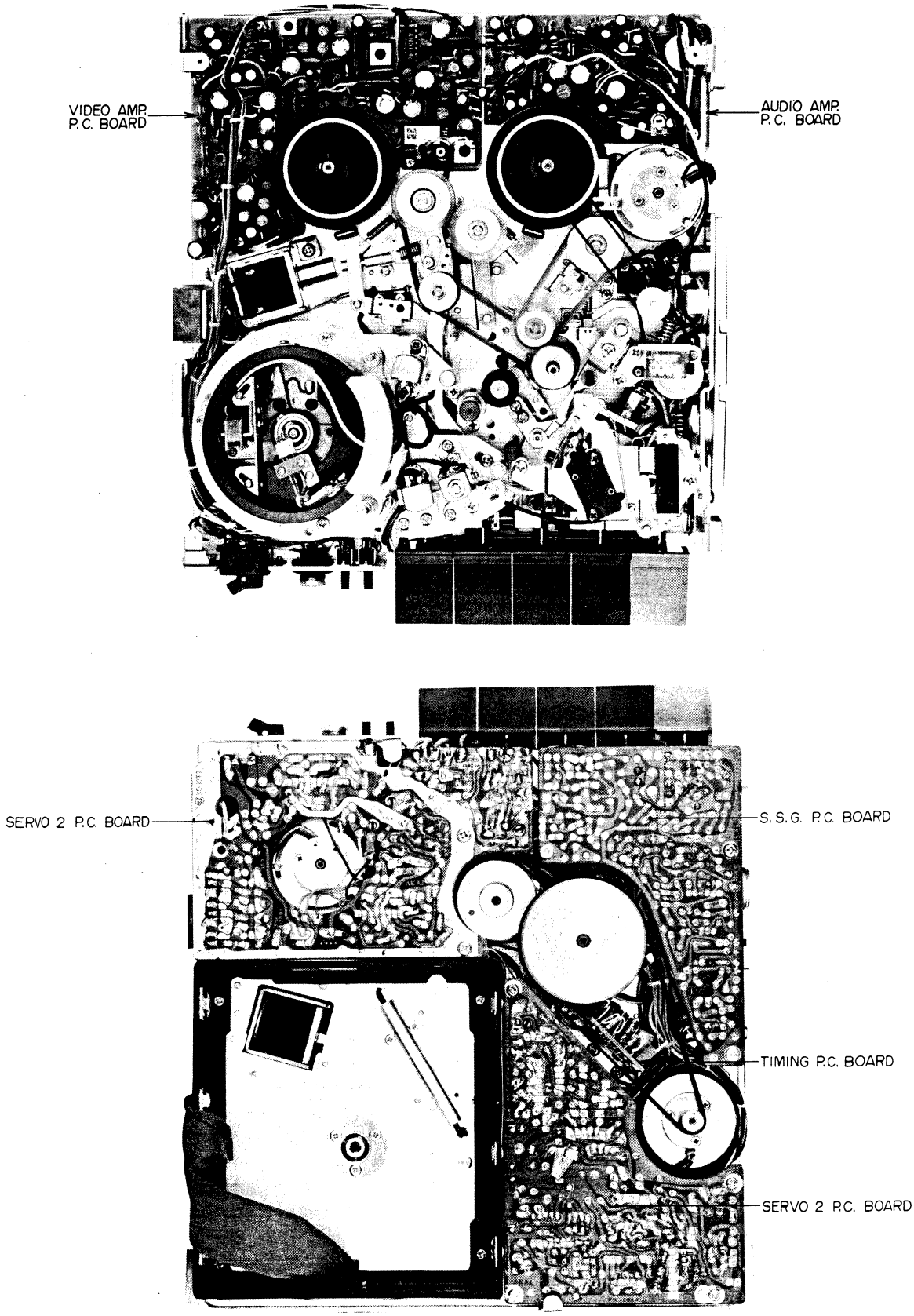


Fig. 2-1 P.C. BOARD LOCATION.

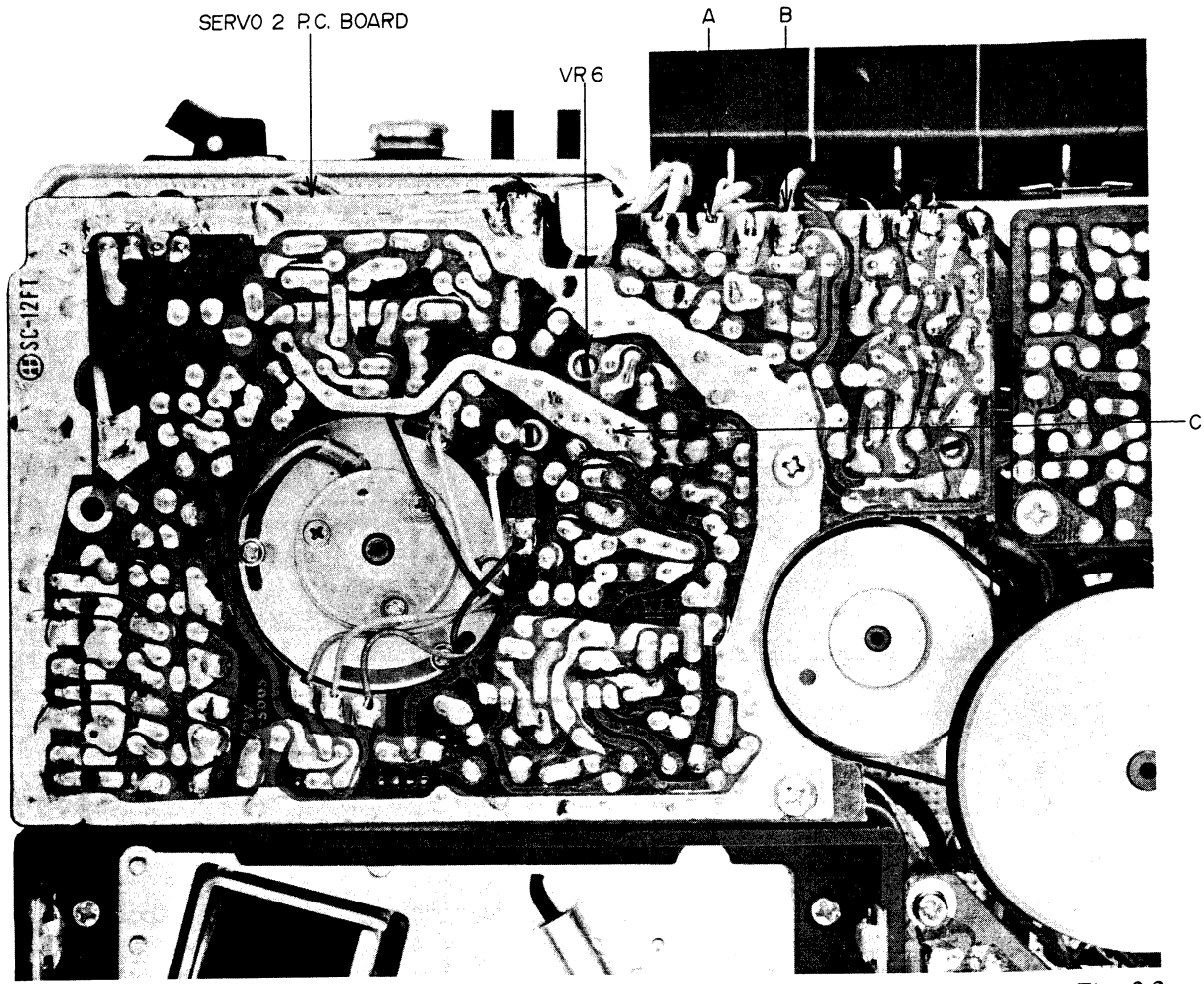

SERVO 2 P.C. BOARD
A
B
VR 6
C
SC-12FT

Fig. 2-2

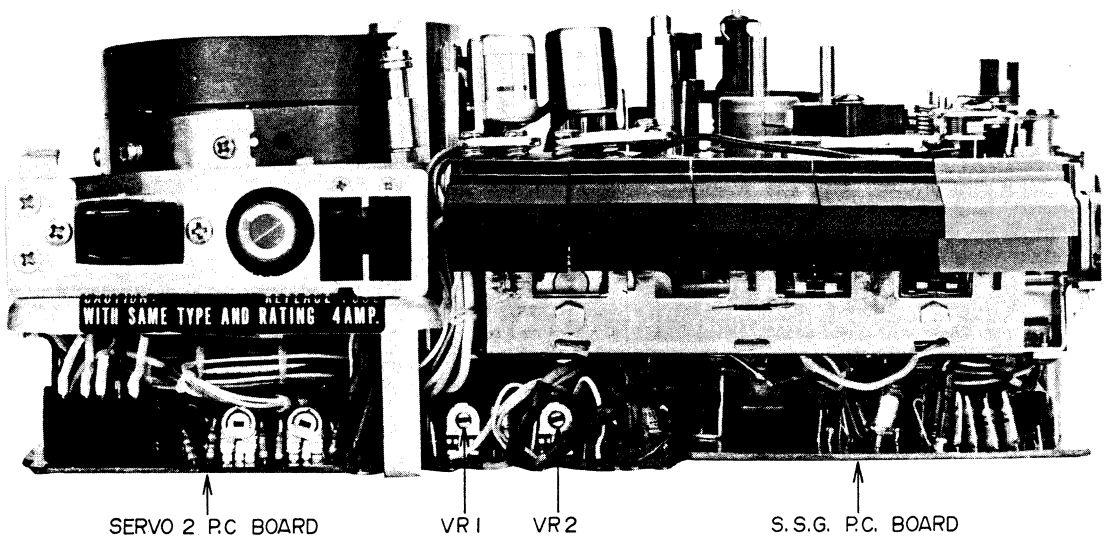

WITH SAME TYPE AND RATING 4AMP.
SERVO 2 P.C BOARD
VR 1
VR 2
S.S.G. P.C. BOARD

Fig. 2-3

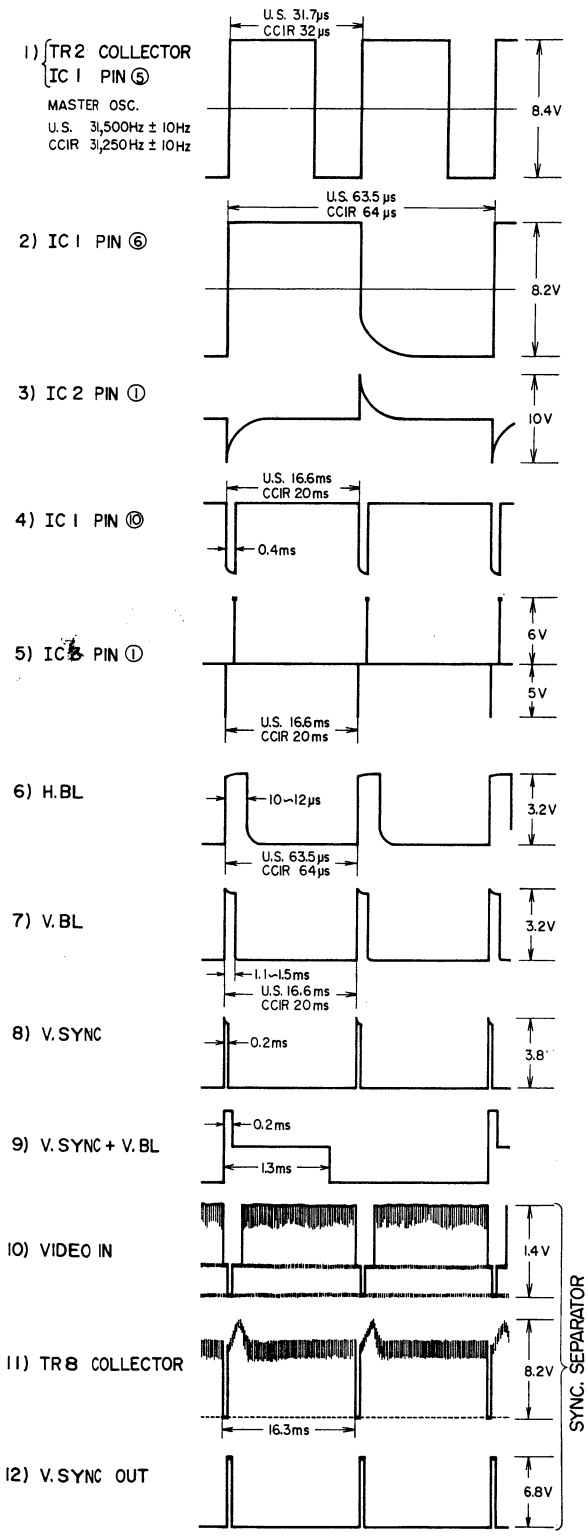


Fig. 2-4 S.S.G. CIRCUIT REFERENCE WAVEFORM.

1. POWER SUPPLY CIRCUIT
(Refer to Figs. 2-2 and 2-3)

(1) Connect AC Adapter VA-110 to VTR and connect a D.C. Voltmeter to A point of Servo 2 P.C. Board. Adjust VA-110 semi-fixed volume VR-1 (Refer to VT-110 Service Manual) so that the voltage at this point is 12V ± 0.2V.

(2) Next, connect the D.C. Voltmeter to B point of Servo 2 P.C. Board and adjust Servo 2 P.C. Board VR2 so that the voltage at this point is $9V \pm {}^{0.2}_{0}V$. Then, connect D.C. Voltmeter to C point and adjust VR6 in the same way until C point voltage is 9V ± 0.2V.

(3) Connect the D.C. Voltmeter to A point again and adjust VA-110 VR-1 until the voltage is 11V ± 0.2V. At this condition, adjust Servo 2 P.C. Board VR1 so that the Battery Level Meter indication is in the center between red and green.
Following this adjustment, reset A point voltage to 12V.

2. S.S.G. P.C. BOARD

Because the S.S.G. P.C. Board employs IC's, there are no adjustable items except the oscillation frequency of the Master Oscillator.
S.S.G. Circuit reference waveform is shown in Fig. 2-4.

(1) Confirmation of Master Oscillator Frequency
Connect a frequency counter to Pin ⑤ of IC I and confirm that the oscillation frequency is 31,500 Hz (CCIR 31,250 Hz) ±10 Hz. If frequency differs, adjust to specifications by turning the core of Transformer T1.

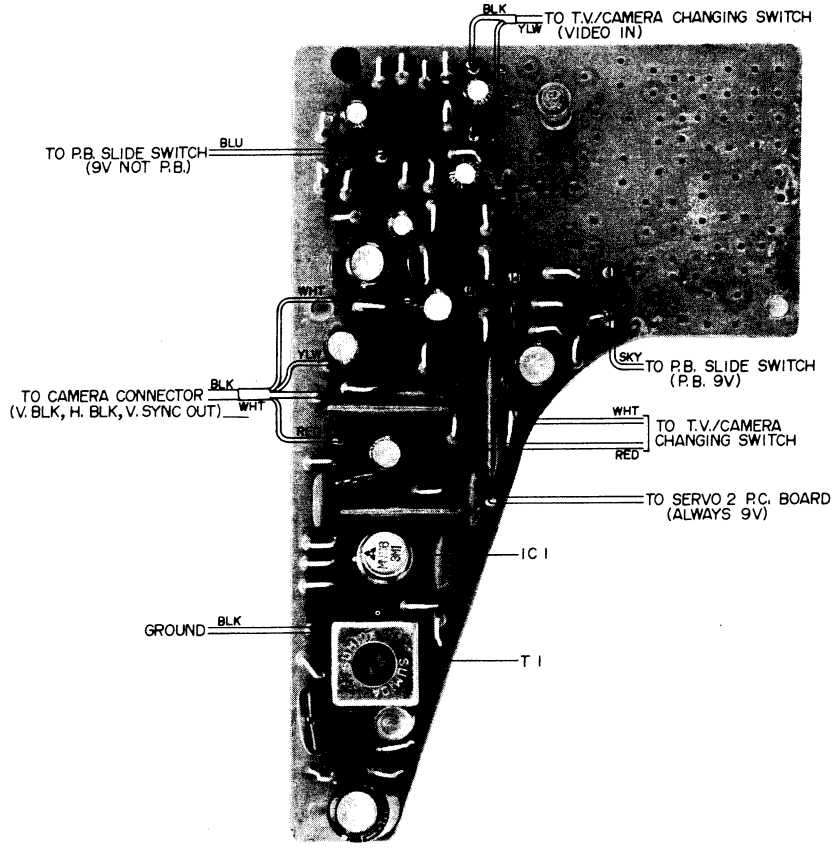

BLK
YLW
TO T.V./CAMERA CHANGING SWITCH (VIDEO IN)
TO P.B. SLIDE SWITCH (9V NOT P.B.)
BLU
WHT
YLW
BLK
WHT
RED
TO CAMERA CONNECTOR (V. BLK, H. BLK, V. SYNC OUT)
SKY
TO P.B. SLIDE SWITCH (P.B. 9V)
WHT
RED
TO T.V./CAMERA CHANGING SWITCH
TO SERVO 2 P.C. BOARD (ALWAYS 9V)
IC 1
GROUND
BLK
T 1

Fig. 2-5

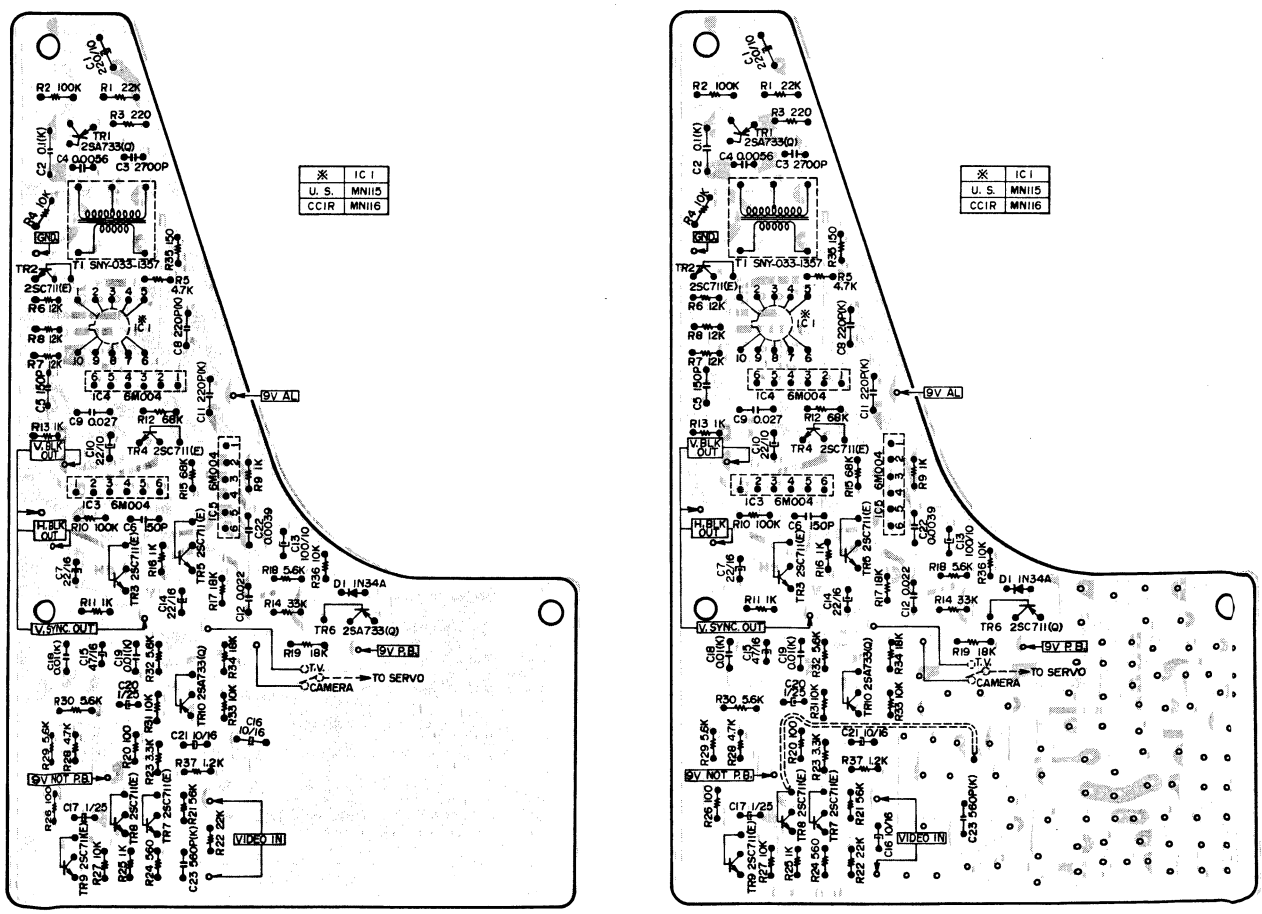

※ IC 1
U. S. MN115
CCIR MN116
T1 SNY-033-1357
IC1
IC2 6M004
IC3 6M004
IC4 6M004
TR1 2SA733(Q)
TR2 2SC711(E)
TR3 2SC711(E)
TR4 2SC711(E)
TR5 2SC711(E)
TR6 2SA733(Q)
TR7 2SC711(E)
TR8 2SC711(E)
TR9 2SC711(E)
TR10 2SA733(Q)
D1 1N34A
9V ALL
9V P.B.
9V NOT P.B.
V. SYNC OUT
H. BLK OUT
V. BLK OUT
T.V.
CAMERA
TO SERVO
VIDEO IN

Fig. 2-6

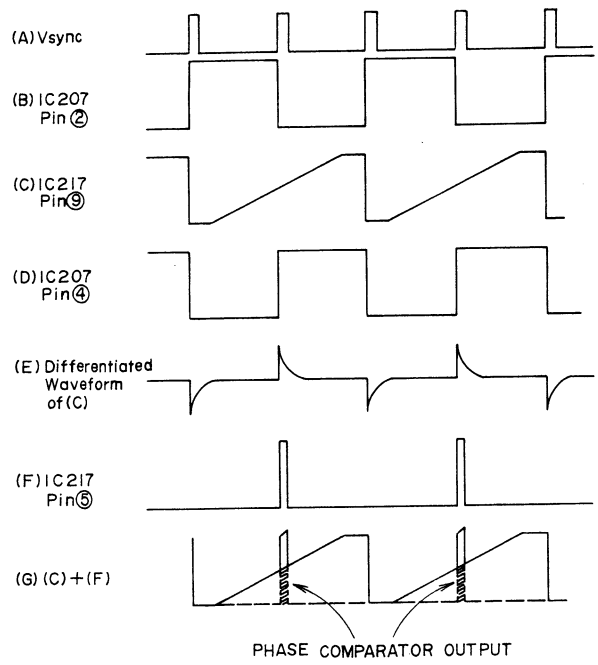


Fig. 2-7

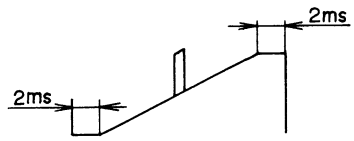


Fig. 2-8

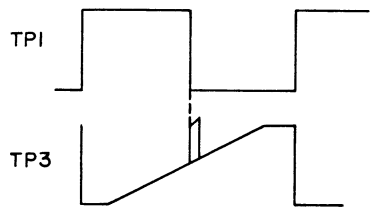


Fig. 2-9

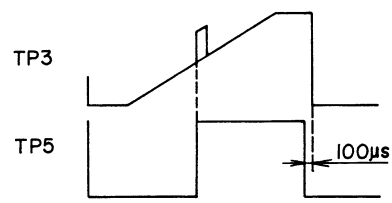


Fig. 2-10

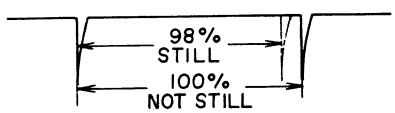


Fig. 2-11

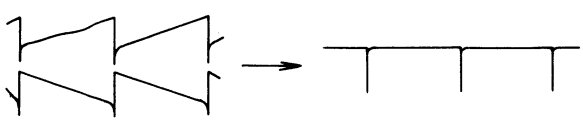


Fig. 2-12

3. SERVO CIRCUIT

(1) Operating Principles (Refer to Schematic Diagrams No.5-2 1500845A and No.5-3 1500846A).

The servo circuit is comprised of Servo 1 P.C. Board and Servo 2 P.C. Board Drive Amplifier Circuit.

Because of the built in A.E.C. (automatic editing control) system, both the Head Motor and the Capstan Motor are controlled by V.Sync as the basic signal at recording and playback mode.

At recording mode the V. Sync from the S.S.G. P.C. Board is amplified at IC6 and becomes the differential waveform and enters IC7 Flip Flop circuit. Here the 60 Hz (50Hz-CCIR) V.Sync becomes the 30 Hz (25Hz-CCIR) square waves and is emitted from IC7 pins ② and ④ The 30 Hz (25Hz-CCIR) square wave to Pin ② enters the IC9 trapezoid wave generator circuit and a 30 Hz (25Hz-CCIR) trapezoid wave is produced. This trapezoid wave is sent to the head motor phase comparator IC2 and the capstan motor phase comparator IC17.

The square wave from Pin ② is also supplied to the CTL head through IC8 REC CTL pulse amp and is recorded on the tape as the control signal. The square wave from IC7 Pin ④ (the same as the waveform to Pin ②, but reverse phased) is differentiated and is amplified at IC10, passes the "not P.B. Pulse Amp" and is sent to IC17 phase comparator pulse generator circuit. This pulse and the trapezoid wave which entered Pin ⑨ is phase compared at IC17 and the emitted phase comparator output is sent to the Capstan Motor Drive Amp. Because both the sampling pulse produced at the pulse generator and the trapezoid wave to Pin ⑨ were produced from the V. Sync, the sampling pulse appears in the center of the trapezoid wave as shown in Fig. 2-7.

At this condition, the capstan motor rotates at a stabilized speed. At the head motor circuit, the pick-up pulse generated by the pick-up coil is amplified at IC1, sent to IC2 phase comparator, and drives the pulse generator to produce the sampling pulse. Then the trapezoid waveform to IC 2 Pin⑨and the sampling pulse is compared, and when the sampling pulse reaches the center of the trapezoid slope, the Head Motor rotates, maintaining stabilized phase relation and speed.

The various circuit functions at playback mode are the same as at recording mode except for the capstan motor control circuit.

Regarding the Capstan Motor Control Circuit operation at playback mode, the CTL signal picked up by the CTL head passes IC12 Switch circuit (this does not work at recording mode) is amplified at IC13, phase inverted at IC14, and sent to the IC15 Mono Multi Circuit. Because the sampling pulse produced at IC17 Pulse Generator is triggered by the pulse produced at this Mono Multi, the width of the pulse produced at the Mono-Multi is determined by VR-3 in order for the sampling pulse to appear in the center of the trapezoid wave in the same way as at recording mode.

If the head motor or capstan motor phase is "off" at playback mode. The sampling pulse which should be on the center of the trapezoid wave appears before or after the center of the trapezoid wave and the phase comparator output is changed. Then, in accordance with this change, the motor speed is controlled and at the point of in-phase, the sampling pulse again comes to the center of the trapezoid wave and motor speed is stabilized.

Regarding the operating principle of Servo 2 P.C. Board Motor Drive Circuit, because the capstan motor circuit and the head motor circuit are the same, the following explanation of Capstan Motor Drive Circuit is given as the example. TR21, TR22 circuit and TR23, TR24 circuit (the two circuits inside IC2 differential amp) are the phase control amp and the speed control amp circuits respectively. One of the differential amplifier circuits, TR21 and TR22 in IC2, is a phase control amplifier and the other one, TR23 and 24, is a speed control amplifier.

Because of fixed voltage feedback to TR23 base through D4, D5 and D6 from the motor drive amplifier, motor revolutions are adjusted for constant speed by the volume of TR24 base circuit.

At TR21 and 22 circuit, the Servo 1 P.C. Board phase comparator output is applied to the base of TR21 and the volume to TR22 base circuit is adjusted for stabilized motor speed at an in-phase condition.

Ordinarily, the above described condition is maintained. However, in case the motor speed is changed by the influence of fluctuation in power source voltage, or motor load, etc., the voltage from the motor drive amp which passes D4, 5, 6 for feedback at the base of TR23 is changed and also TR24 collector output is changed. For this reason the base voltage of the TR4 200 kHz oscillator circuit is changed, the oscillation output amplitude changes, and motor revolutions are controlled for proper speed.

In the same way, if capstan motor phase is "off", because Servo 1 P.C. Board comparator output is changed, TR21 base voltage changes, and TR22 collector output changes. Then the 200 kHz oscillator output amplitude is controlled, and at this moment only, motor speed changes and when proper phasing occurs TR21 base voltage is locked for phase and speed.

Servo 1 P.C. Board IC3, IC4 circuit is for the purpose of Automatic Editing Control.

Because during automatic editing, if the previously recorded picture and the new recorded picture switching takes place at the vicinity of center of screen, switching noise will become obviously visible, IC7 30 Hz (25Hz-CCIR) output waveform pulse is adjusted at IC3 Mono-Multi circuit for switching a little before vertical blanking.

IC4 is a switch circuit for the purpose of delaying power source supply to the video amp etc. for about the first 0.6 seconds of recording mode when the AEC Swtich is turned on and recording in started.

TR5 inside IC4 circuit is turned OFF for about 0.5 seconds after recording start and TR7 base electrical potential rises. Thus theoretically, there is a possibility of TR7 conducting, but because at this point, TR6 is OFF, conduction cannot take place. However, at this condition, because the pulse produced at IC3 is introduced to TR6, when this pulse reaches rise-up point TR6 is turned ON, collector current flows to TR6 and TR7, TR8 base voltage declines and TR8 is turned ON, and Relay RL1 functions. Then, at this point, +9V is supplied to the Video Amp, Audio Amp etc. and actual recording begins.

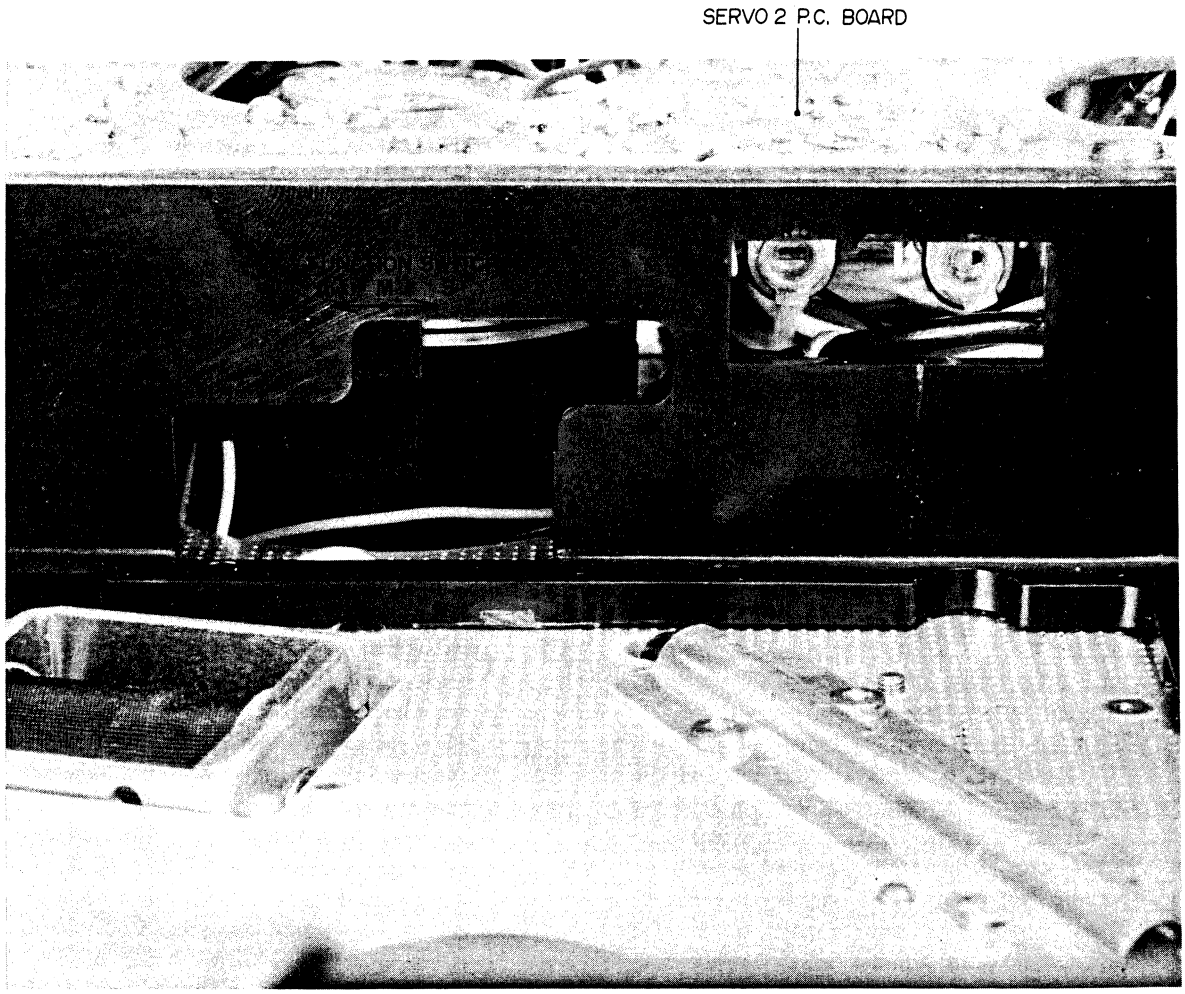


Fig. 2-13

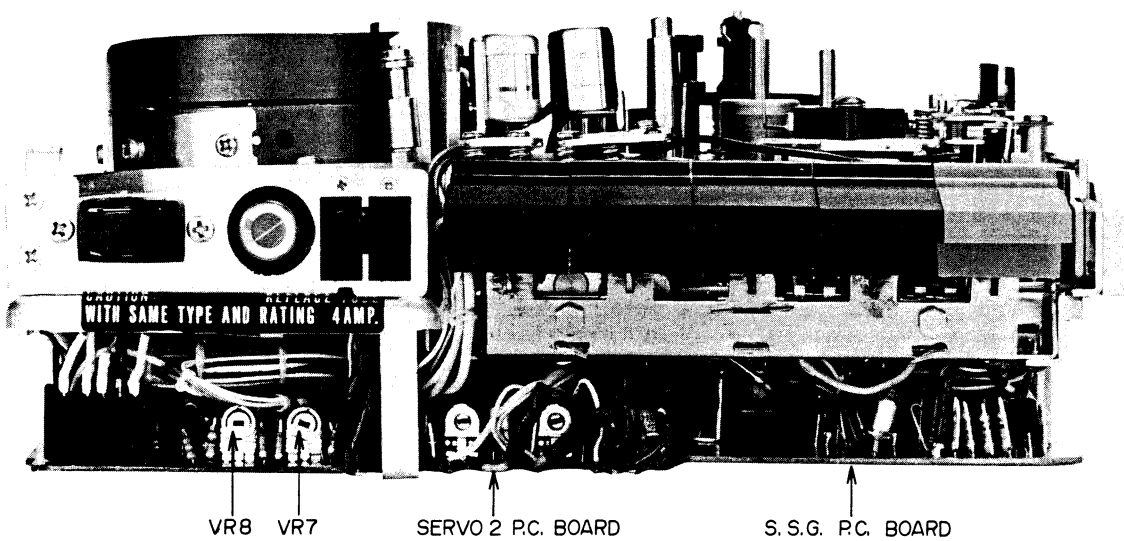


Fig. 2-14

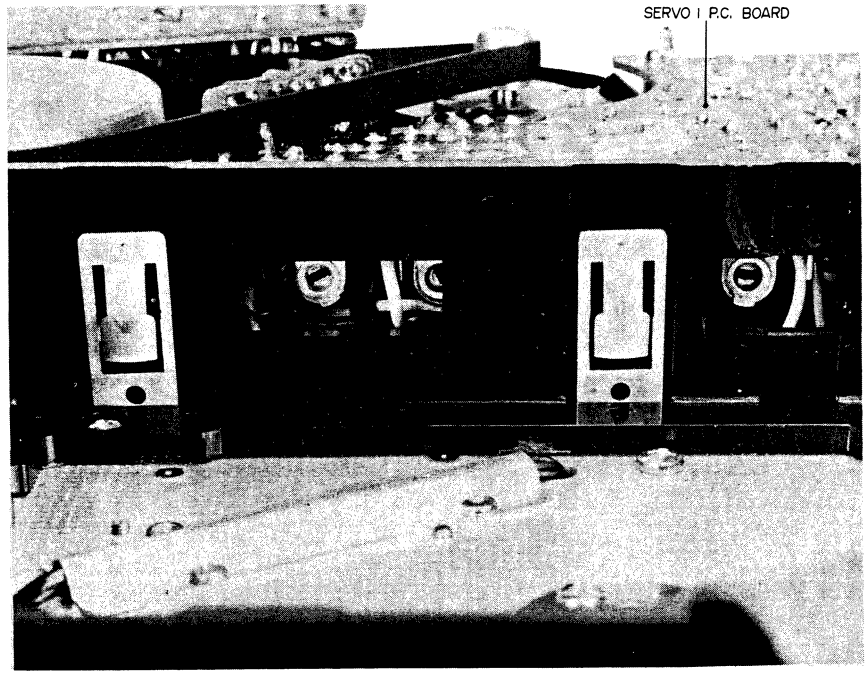


Fig. 2-15

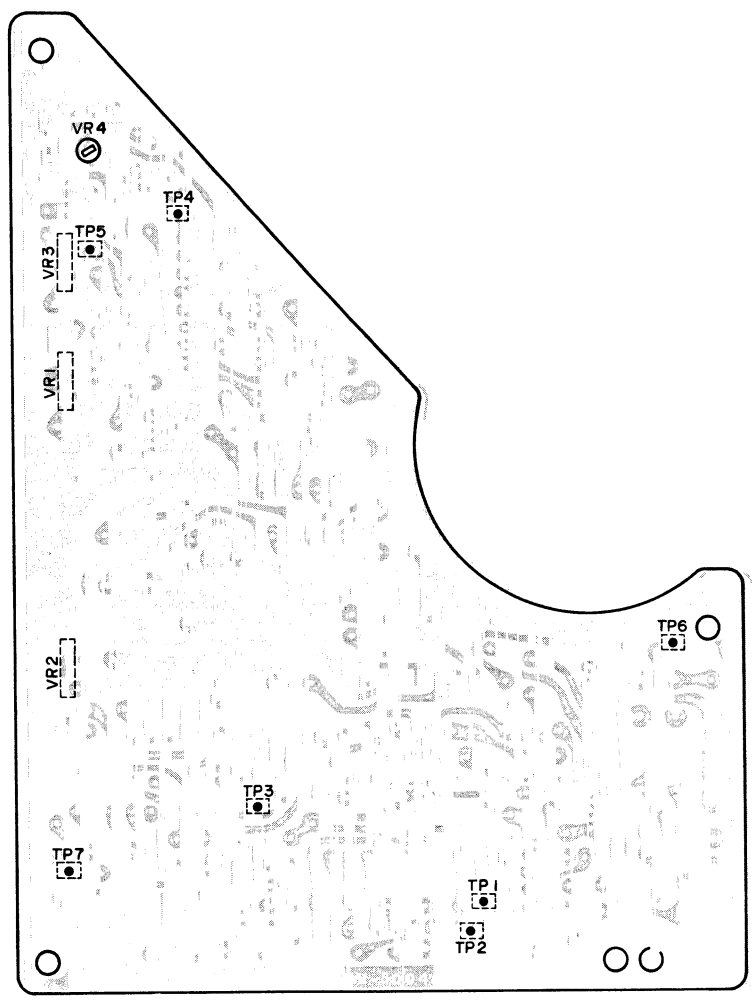


Fig. 2-16

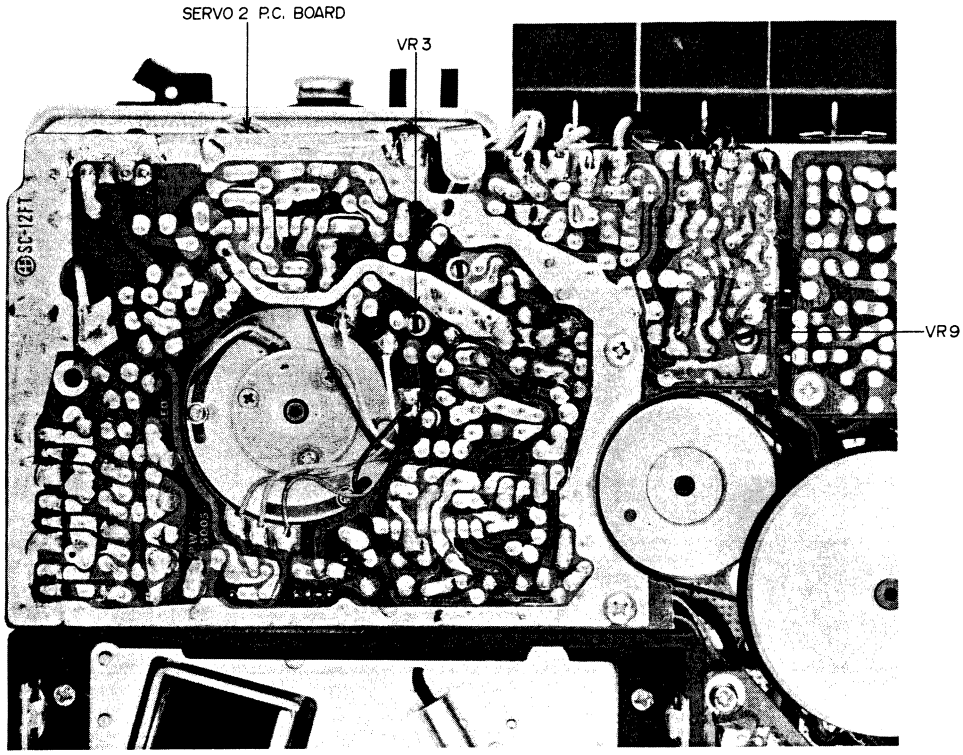


Fig. 2-17

(2) Servo Circuit Adjustment

NOTE: Set Camera/T.V. Switch to Camera prior to making servo circuit adjustments. Also make sure that the Function Switch installed on Servo 2 P.C. Board is correctly positioned during each adjusmtent (Refer to Fig. 2-13).

a) Head Motor Servo Control Circuit Adjustment

i) Connect an Oscilloscope to Servo 1 P.C. Board Test Point TP-3 (Fig. 2-16). Set Servo 2 P.C. Board Function Switch to position A and observe waveform. Adjust Servo 2 P.C. Board VR8 (Fig. 2-14) so that the sampling pulse on the trapezoid wave assumes nearly a stand-still condition.
Next, set Function Switch to M and adjust Servo 1 P.C. Board VR2 (Fig. 2-15) so that the part at the top of trapezoid wave slope is 2 ms ±0.2 ms. At this time confirm that the bottom surface part of the trapezoid wave is 2 ms.

ii) Set Oscilloscope to Dual Trace and connect Ch 1 probe to Servo 1 P.C. Board Test point TP 1 and Ch 2 probe to TP3. Adjust Servo 2 P.C. Board VR 7 (Fig. 2-14) so that the rise up part of the sampling pulse on the trapezoid wave appealing at TP3 displays uniformity in relation to the rise-up part of the pulse appearing at TP1. Deviation must be less than ±100 μs. (Adjustment carried out with Function Switch at M position).

b) A.E.C. Switching Point Adjustment
Connect Oscilloscope to Servo 1 P.C. Board Test Point TP2 and adjust Servo 1 P.C. Board VR1 (Fig. 2-15) so that the pulse width of the minus side of the waveform is 13 ms ±0.2 ms (CCIR 16 ms ±0.2 ms) (Position of Function Swtich irrelevant).

c) Capstan Motor Servo Control Circuit Adjustment

i) Connect a frequency counter to 8P connector Audio Output terminal (pins J and H) and playback a 1 kHz test tape. Set Function Switch to position A and adjust Servo 2 P.C. Board VR5 (Fig.2-13) to obtain a frequency counter indication of 1 kHz ± 5Hz.

ii) Under these same conditions, set Function Switch to position M and adjust VR4 to obtain the same tape speed described in item i).

NOTE: Because the tape speed fluctuates somewhat at beginning, middle, and end of tape winding, adjust to obtain 1 kHz ±5 Hz at all positions.

d) Tracking Adjustment
Use a dual trace oscilloscope and connect Ch 1 and Ch 2 probes to Servo 1 P.C. Board Test Points TP3 and TP5 respectively. Adjust Servo 1 P.C. Board VR3 (Fig. 2-15) so that there is about a 100μ difference in phase between the drop point (where waveform begins to decend) of TP3 trapezoid waveform and TP5 pulse as shown in Fig. 2-10.

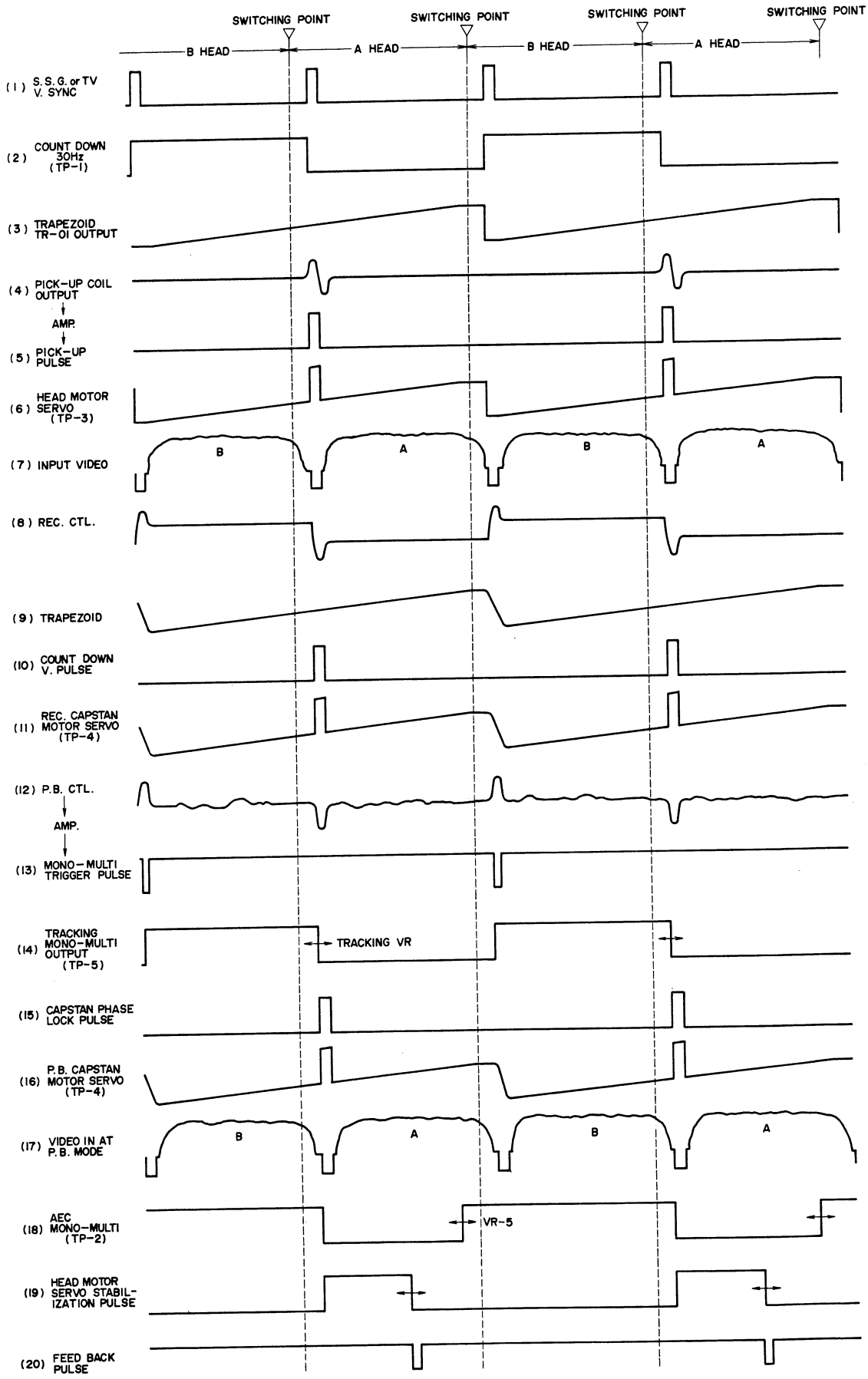

SWITCHING POINT
SWITCHING POINT
SWITCHING POINT
SWITCHING POINT
B HEAD
A HEAD
B HEAD
A HEAD
(1) S.S.G. or TV V. SYNC
(2) COUNT DOWN 30Hz (TP-1)
(3) TRAPEZOID TR-01 OUTPUT
(4) PICK-UP COIL OUTPUT
AMP.
(5) PICK-UP PULSE
(6) HEAD MOTOR SERVO (TP-3)
(7) INPUT VIDEO
B
A
B
A
(8) REC. CTL.
(9) TRAPEZOID
(10) COUNT DOWN V. PULSE
(11) REC. CAPSTAN MOTOR SERVO (TP-4)
(12) P.B. CTL.
AMP.
(13) MONO-MULTI TRIGGER PULSE
(14) TRACKING MONO-MULTI OUTPUT (TP-5)
TRACKING VR
(15) CAPSTAN PHASE LOCK PULSE
(16) P.B. CAPSTAN MOTOR SERVO (TP-4)
(17) VIDEO IN AT P.B. MODE
B
A
B
A
(18) AEC MONO-MULTI (TP-2)
VR-5
(19) HEAD MOTOR SERVO STABILIZATION PULSE
(20) FEED BACK PULSE

Fig. 2-18

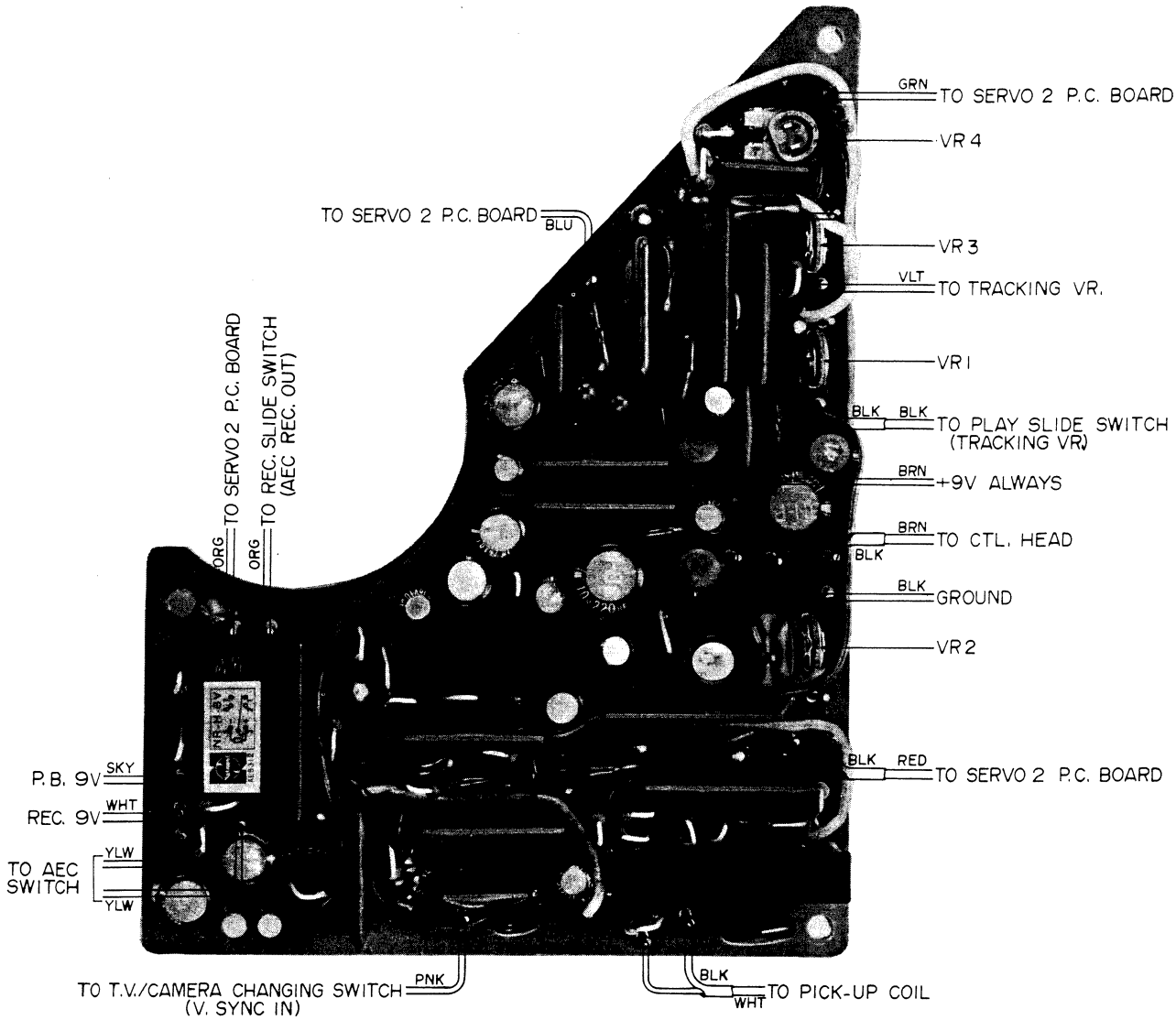


Fig. 2-19

e) Head Motor Speed Adjustment at Still Mode
Connect Oscilloscope to Servo 1 P.C. Board Test Point TP7 and read the pulse period. Next, set Still Swtich to ON position and adjust Servo 2 P.C. Board VR3 (Fig. 2-17) until the pulse period is 2% shorter as shown in Fig. 2-11. (Adjustment carried out with Function Switch at position S).
(Adjustment carried out with Function Swtich at position S).
NOTE: When Making above adjustment, set Oscilloscope Sweep Time to "uncalibration" and at non-still time, adjust so that one pluse period covers the entire horizontal scale. (Refer to Fig. 2-11)

f) Video Head Switching Point Adjustment
Connect Video Camera VC-110 or VC-115 and Monitor TV to the VT-120 and record and playback an idela subject. Loosen pick-up coil bracket holding screw (Fig. 1-20) and adjust and stationary so that the position of the monitor screw switching point is comes to about 10 horizontal lines above the V. Sync. (Adjustment carried out with Function Switch at position S).

g) Capstan Motor Servo Output Balance Adjustment
Connect Oscilloscope to Servo 1 P.C. Board TR4 Emitter (Fig. 2-16, point Ⓐ) and adjust Servo 1 P.C. Board VR4 (Fig. 2-16) so that the output waveform is as shown in Fig. 2-12 Ⓑ.
(Position of Function Switch irrelevant).
NOTE: After Servo Circuit Adjustments have been completed be sure to set Function Switch to Position S.

ASTERISK MARKED (*)	R 9	R19	R21
U . S	33K	24K	15K
C C I R	39K	33K	33K

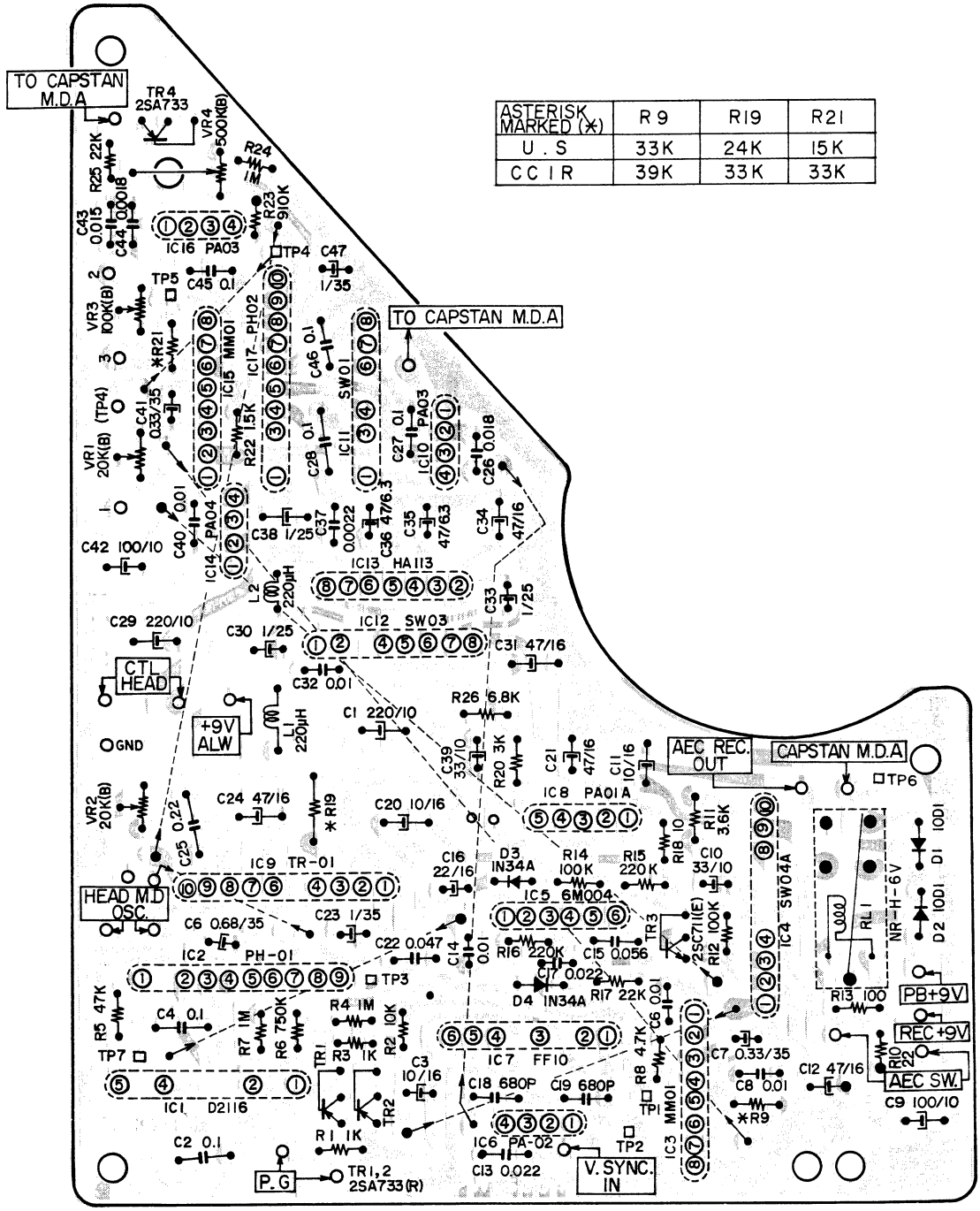


Fig. 2-20

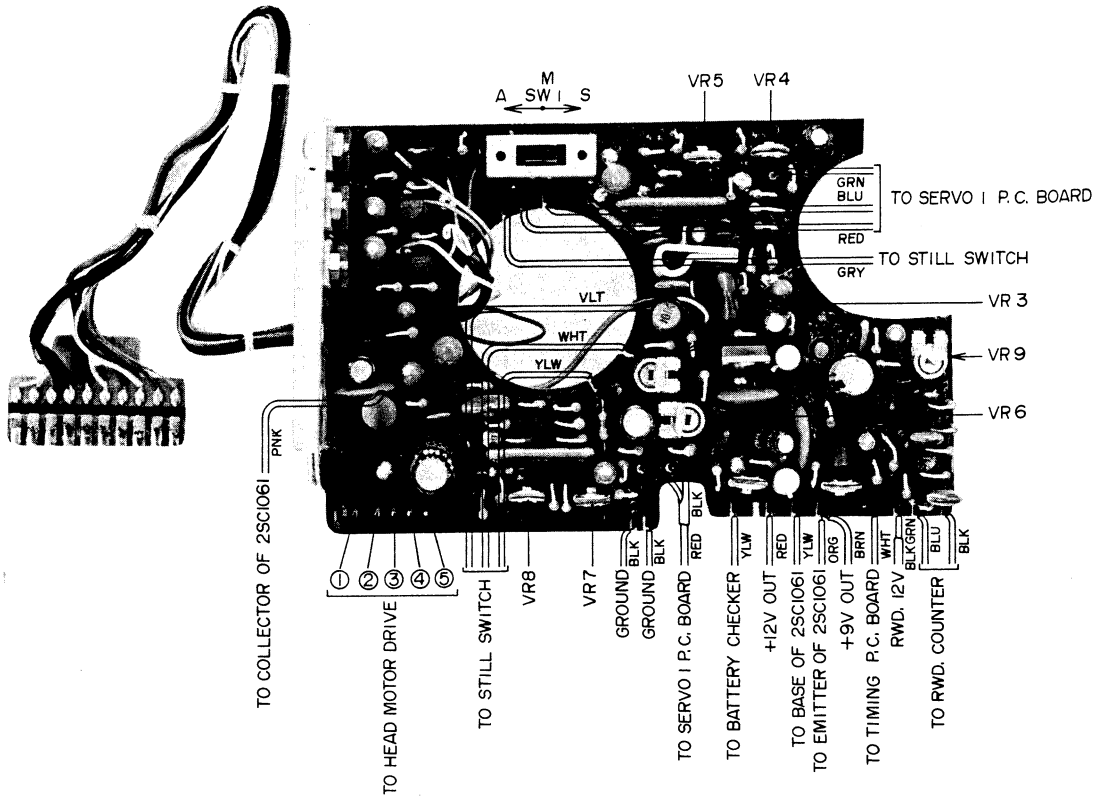


Fig. 2-21

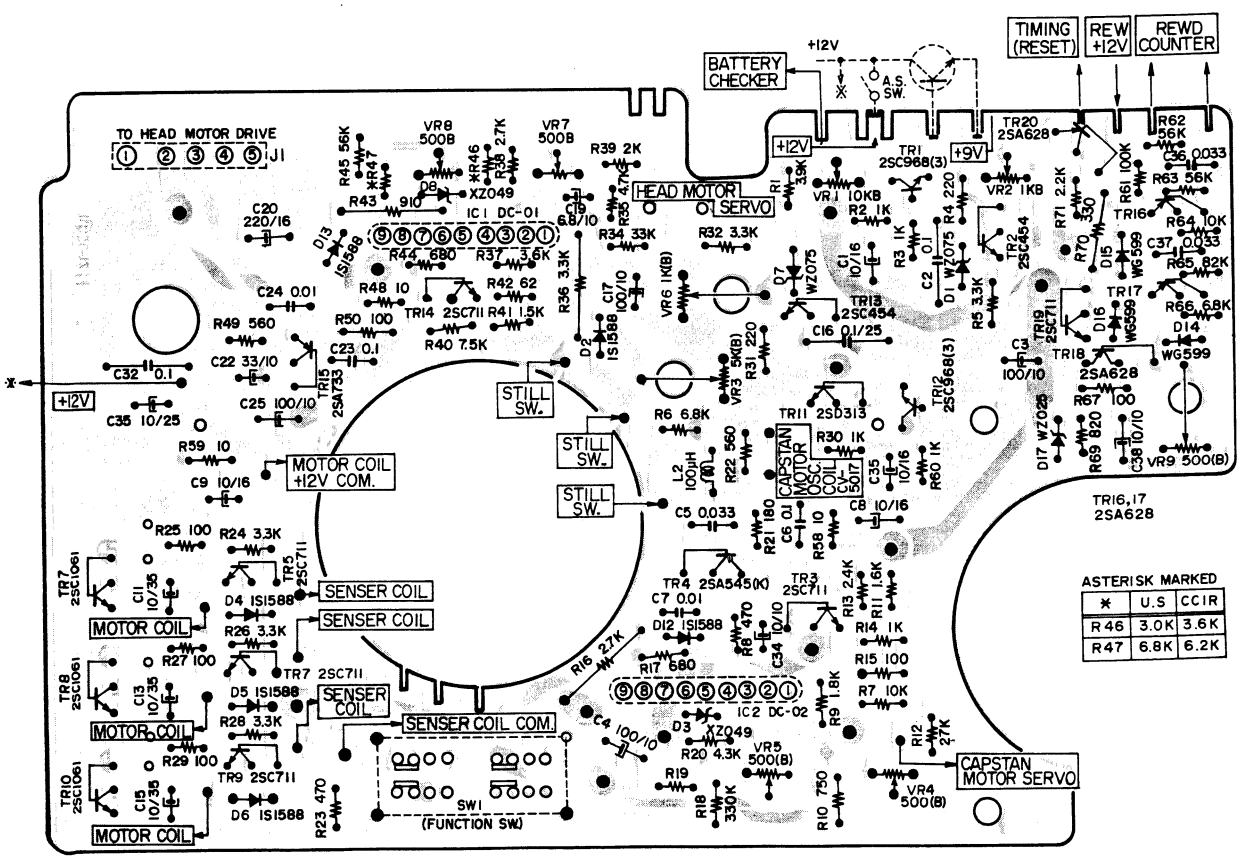


Fig. 2-22

4. TIMING P.C. BOARD AND RWD COUNTER CIRCUIT

(1) Operating Principles (Refer to Schematic Diagram No.5-1 1500844A)

The Timing P.C. Board is the circuit which controls the Play Plunger and RWD Plunger.

Because at playback mode and recording mode only each switch operation differs, the example below is at Rec. Mode with A.E.C. Switch at ON position. With TV/Camera Switch at CAMERA, when the Rec. Button is depressed and the Camera Grip Start Button depressed, the Play Plunger ground makes contact and the circuit functions. At starting instant, voltage is supplied to the base of TR3 and TR3 is turned OFF, but when C3 charge current becomes below the fixed value, the base voltage approaches OV, TR3 is turned ON and collector current flows. When this happens, TR4 is turned ON, TR5 is turned ON, a large current flows to a part of the play plunger coil, and the plunger energizes. Because C4 is at the base of TR4, C4 is gradually charged by the base current, TR4 base voltage increases and TR4 is turned OFF, and TR5 is turned OFF. Then, Current flows to the entire coil and the current becomes only the amount necessary to hold the plunger for preventing unnecessary power consumption and burining out the coil.

The slight delaying of plunger operation at TR3 is to prevent tape stretch caused by the play plunger energizing when the play button is depressed at the same time that A.E.C. Rewind plunger is being released.

Play Plunger Micro Switches 1 and 2 are turned ON while the Play Plunger Functions (Schematic diagram shows micro switches at OFF position) and because the Rec. Button is depress, Rec Micro Swtich is also turned ON. Accordingly, during recording, C101 is charged with 9V through Rec. Micro Switch, and Play Plunger Micro Switches 1 and 2. Then, because when the Camera Grip Start Button is released, the play plunger is releases and Micro Switches 1 and 2 return to OFF position, the 9V charged at C101 begins to discharge, and Voltage is supplied to the base of TR2 and TR2 is turned ON. When this happens, because TR1 is also turned ON, 12V flows to the RWD plunger through TR1 and the A.E.C. Switch, and A.E.C. Rewind begins.

When TR1 is turned on, the 12V power source is supplied to the Servo 2 P.C. Board Counter Circuit as Rewind Output from the Timing P.C. Board.

When the tape begins to rewind, the Rwd Counter, which is interconnected with the Sub Pinch Roller Shaft, rotates.

Because 12V is supplied to the Rwd. Counter through R61 100 kΩ, a minus pulse appears at the base of TR16 when the RWD counter is shorted.

This pulse is amplified, rectified, and charged at condenser C38 located at TR18 Emitter. Consequenty, rectified voltage is supplied to TR19 in accordance with the number of pulse, and until this voltage reaches TR19 conducting voltage, TR19 is turned ON and TR20 is also turned ON and detected output is emitted at the collector.

Because TR20 collector is connected to the base of Timing P.C. Board TR1 and TR2 collector through 470Ω respectively, TR1 base voltage is raised and TR1 is turned OFF, and the Rwd Plunger is released.

When it has been determined at what time (after how many pulses produced by the Rwd Counter) the Rewind Plunger is to be released, a fixed amount of tape will be rewound depending upon the number of sub pinch roller revolutions.

The length of rewound tape can be adjusted with VR9 of the RWD Counter Circuit (Servo 2 P.C. Board).

In the manner outlined above, at A.E.C. Recording mode, when the tape is stopped, a fixed amount of tape is automatically rewound, and as was explained in Servo Circuit Operating Principles, when the recording is re-started, playback mode is maintained for about 0.6 sec by means of Servo 1[st] P.C. Board IC3, 4 control circuit. Within this period, capstan motor and Head Motor revolutions become constant with the signal recorded on the tape, and because the actual recording begins after the servo circuit becomes completely synchronized with the previously recorded signal, there is no disturbance where the stopped and restarted picture is joined.

There is no adjustment point at Timing P.C. Board.

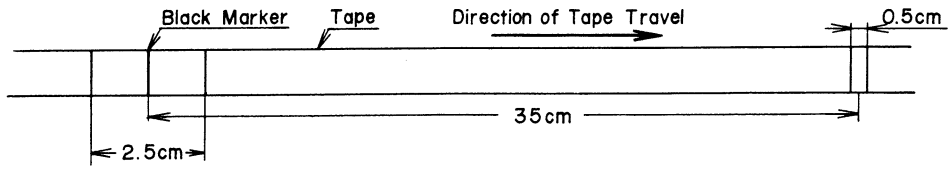


Fig. 2-23

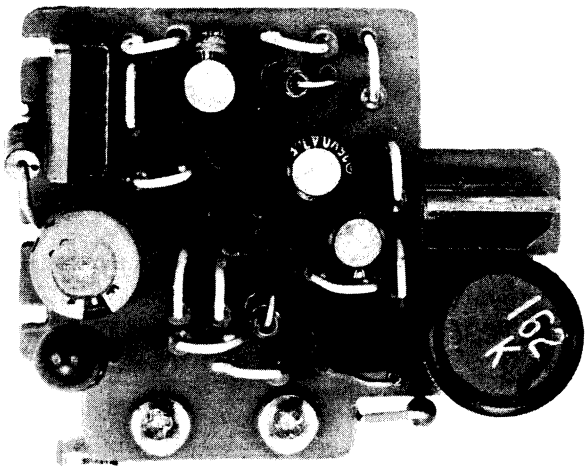


Fig. 2-24

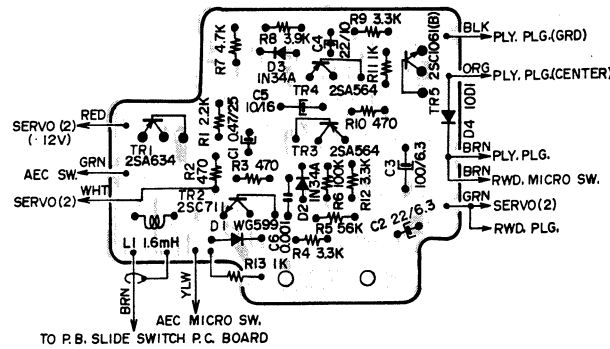


Fig. 2-25

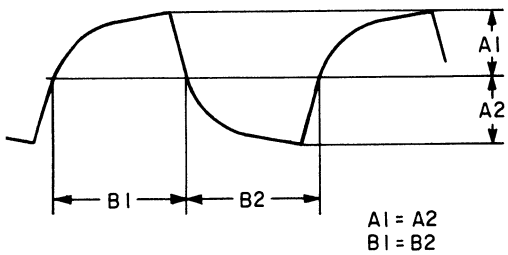


Fig. 2-26

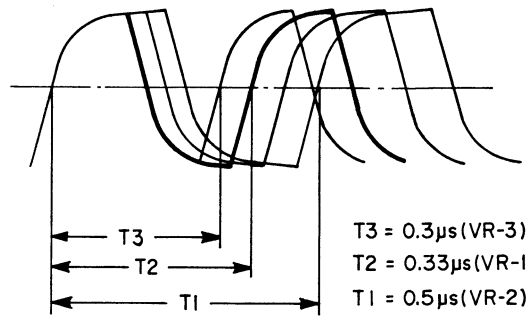


Fig. 2-27

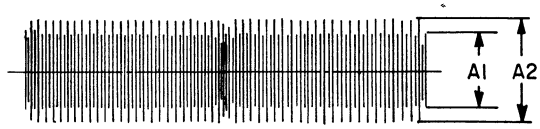


Fig. 2-28

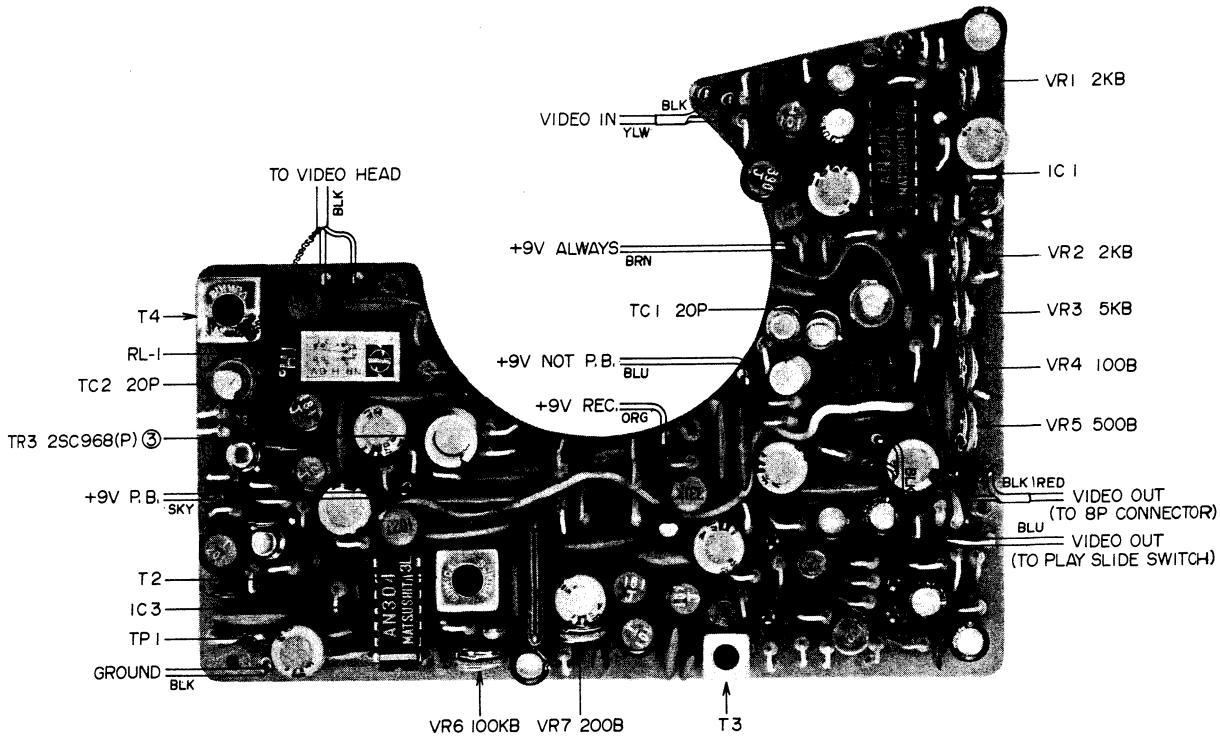


Fig. 2-29

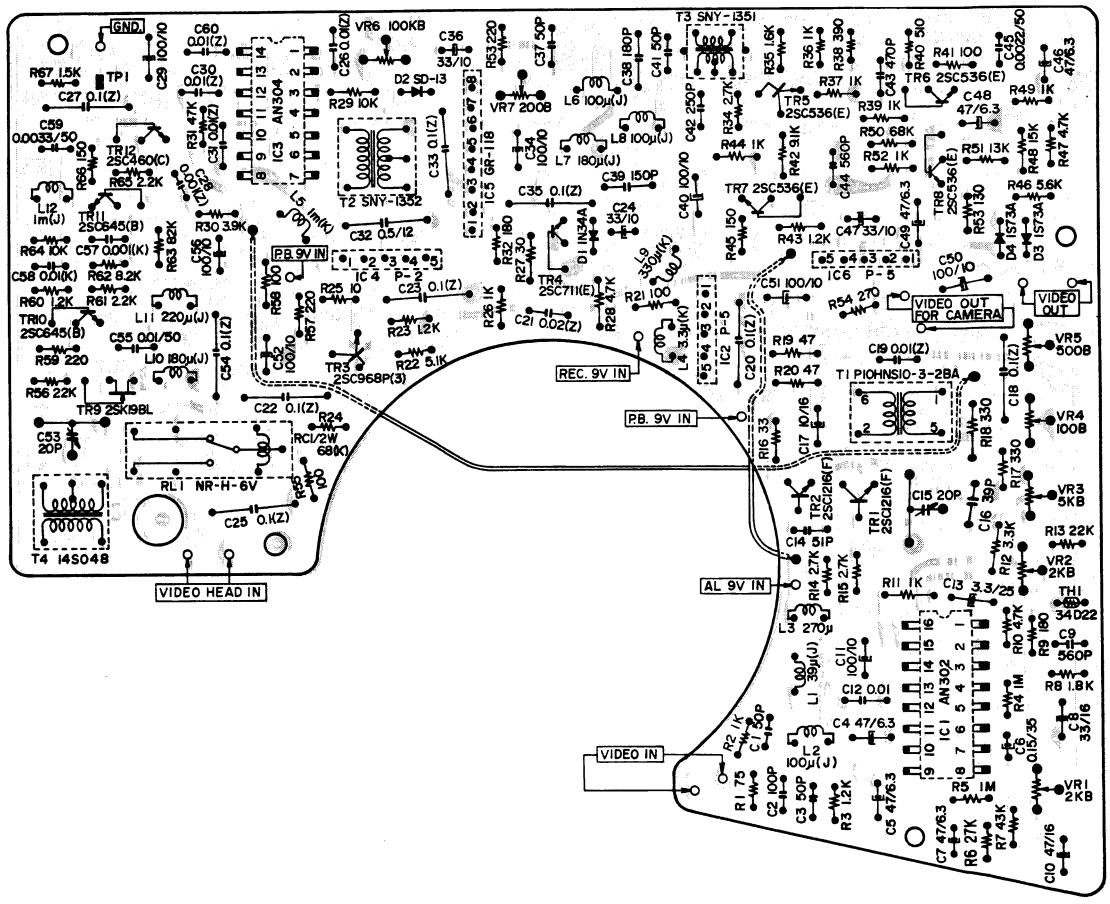


Fig. 2-30

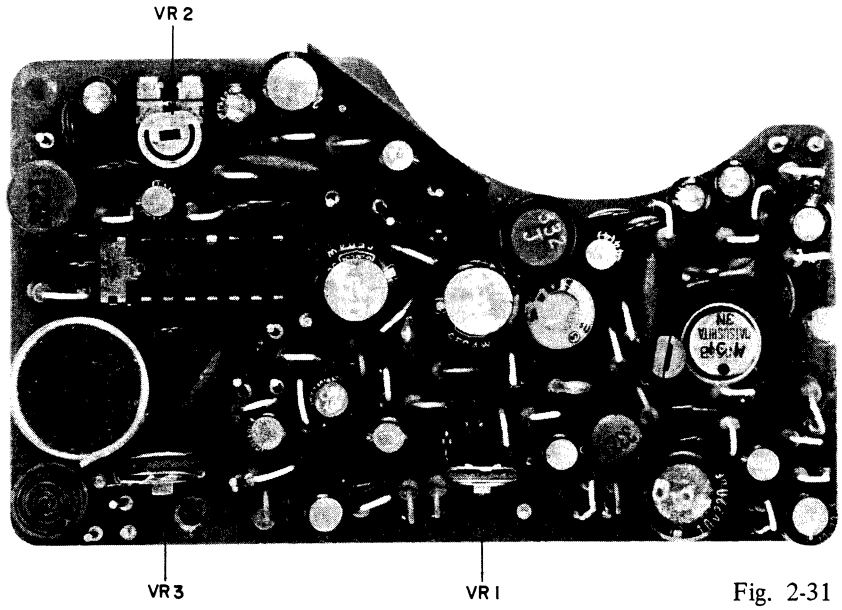


Fig. 2-31

(2) Rewind Counter Circuit Adjustment

For precision Rewind Counter Circuit adjustment, a Strage type counter is used, but practically the same results can be accomplished with the adjustment method described below: As shown in Fig. 2-23, affix a 2.5 cm and an 0.5 cm piece of white splicing tape to the tape at 35 cm apart and make a black mark in the center of the 2.5 cm length of splicing tape. Connect camera to the VTR of Set TV/ Camera Switch to TV. Then load a tape and run at A.E.C. recording mode. When the black mark on the splicing tape comes to the center of the CTL head, stop the tape and allow A.E.C. rewind to take place. Then adjust Servo 2 P.C. Board VR9 (Fig. 2-17) so that when rewind stops, the 0.5 mm length of spling tape is above the CTL head.

After this adjustment, stop and start tape 2 or 3 times and confirm that A.E.C. rewind stops around the same place each time (when depressing the Stop Button to effect stop from A.E.C. Rec. mode, if the Stop Button is depressed when the right edge of the 2.5 cm length of splicing tape is in the vicinity of the center of the CTL head, Rewing should begin at exactly the time the mark reaches the center of the CTL Head).

5. VIDEO AMP P.C. BOARD

(1) MODULATOR BALANCE ADJUSTMENT (Stop Mode)

a) Connect Oscilloscope to TP1.

b) Turn VR1 fully counter-clockwise and VR3 fully clockwise. Set VR2 and VR4 to center point.

c) Adjust TC1 so that the positive and negative part of waveform is equal as shown in Fig. 2-26.

(2) FREQUENCY DEVIATION ADJUSTMENT (Stop Mode)

a) Connect a Test Pattern Signal (1.4V p-p) supplied from a monoscope between Pin "B" of Monitor Connector and Chassis (Pin "D"). (If a monoscope is not available, with Vidicon Camera VC-110 or VC-115, photograph the resolution chart. Intensity of chart must be 1,000 lux and video signal 1.4V p-p).

b) Connect Oscilloscope to TP1.

c) Adjust VR2 so that T_1 in Fig. 2-27 is 0.5 μs (2 MHz).

d) Adjust VR1 so that T_2 in Fig. 2-27 is 0.33 μs (3 MHz).

e) Adjust VR3 so that T_3 in Fig. 2 is 0.3 μs (3.3 MHz).

CAUTION: T_3 is white clip level adjustment and because the line which appears on the oscilloscope is extremely thin and hard to see, aim camera at a particularly bright subject and alternately put on and remove lens cover to confirm function of white clip at 0.3 μs.

(3) CARRIER LEAK ADJUSTMENT (Modulator Balance, Limiter Balance, Demodulator Balance)

a) Disconnect Video Input Signal.

b) Connect Oscilloscope to Video Output Terminal or Pin "F" of Monitor Connector (8P). Set Oscilloscope Vertical Gain Control to maximum.

c) Adjust TC1, VR6, and VR7 so that the amplitude of the waveform appearing on oscilloscope is minimum. (It is ideal for the waveform to be a single thin horizontal line).

CAUTION: If carrier leak cannot be adjusted with TC1, VR6, and VR7, try adjusting VR4 also.

(4) VIDEO OUTPUT LEVEL ADJUSTMENT

a) Supply a 1.4V p-p Video Signal from camera or monoscope.

b) Connect Oscilloscope to Video Output Terminal or Pin "F" of Monitor Connector (8P).

c) Adjust core of Demodulator Transformer T2 so that the video output signal amplitude is 1.4V p-p.

CAUTION: In case the video input signal is less than 1.4V p-p, adjust so that video output is the same amplitude as the input signal.

(5) PLAYBACK CIRCUIT EQUALIZATION ADJUSTMENT

a) Connect Oscilloscope to TP1.

b) Play bakc of Standard Video Reference Tape. Adjust TC 2 so that R.F. Envelope Amplitude is maximum and also the error between A_1 (part at which brightness is intense) and A_2 (part at which brightness is faint) is an small as possible (Refer to Fig. 2-28).

c) It is ideal for R.F. Envelope to be more than 0.2V p-p, but this varies depending upon the quality of video head tip and CTL Head adjustment.

(6) RECORDING LEVEL ADJUSTMENT

a) Record and play back a Test Pattern Signal (or photographed Resolution Chart Signal) and adjust recording level so that R.F. Envelope amplitude is maximum.

b) At recording mode, connect Oscilloscope to the Heat Sink of Transistor TR3 (2SC968P (3)) and measure the recording level.

c) With recording waveform amplitude within a 2V to 3V range, adjust VR5 to optimum value.

CAUTION: Adjust recording level so that error between A_1 and A_2 of R.F. envelope shown in Fig. 3 is non-existent.

(7) CARRIER LEAK ADJUSTMENT AT RECORDING AND PLAYBACK MODE

a) Connect VC-110 or VC-115 Vidicon Camera and record and playback a scene in which light and dark difference is considerable and observe whether or not a carrier leak appears on the monitor screen.

b) If a carrier leak appears, at playback mode, attempt to eliminate carrier leak stripe by adjusting both VR6 and VR7 slightly.

c) If VR6 or VR7 is adjusted, make carrier leak adjustment outlined in Item (3) above again.

d) Finally, record and play back a signal supplied from TV or camera and check picture quality.

6. AUDIO P.C. BOARD

(1) RECORDING BIAS VOLTAGE ADJUSTMENT

a) Connect a V.T.V.M. (107 A Type) to the Audio Head Terminal.

b) Adjust VR3 (100 kB) so that at recording mode, the Bias Voltage is 20V rms.

(2) PLAYBACK OUTPUT LEVEL ADJUSTMENT AND NOISE LEVEL CHECK

a) Connect a High Sensitivity V.T.V.M. between Pin "J" of Monitor Connector (8P) and Chassis.

b) Playback an Audio Level Test Tape (1,000 Hz, "O" VU recorded tape) and adjust VR2 so that the V.T.V.M. indication is 1V rms.

c) With tape removed, confirm that at playback mode the noise level is less that -45 dB.

(3) RECORDING LEVEL (AGC Level) ADJUSTMENT

a) Connect an Audio Oscillator to the External Microphone Jack and supply a 1,000 Hz. -60 dB sinewave signal.

b) Connect a High Sensitivity V.T.V.M. between Pin "J" of Monitor Connector (8P) and Chassis.

c) Adjust VR1 (50 dB) so that the V.T.V.M. indication is 1V rms.

d) Under this condition, record, and then playback to check whether or not the V.T.V.M. indication is within a 1V ±0.3V range.
whether or not the V.T.V.M. indication is within a 1V ±0.3V range.
If not within specified range, readjust VR1 and set so that the recording/playback level is within 1V ± 0.3V.

CAUTION: If recording/Playback level is still not within specified value in spite of having adjusted VR1, with VR3, alter the bias voltage somewhat and recheck.

e) Playback the tape recorded in item d) above, with a distortion meter, check whether or not the distortion level is less than 6%

(4) FREQUENCY RESPONSE CHECK

a) Connect an Audio Oscillator to the External Microphone Jack. Record a 1 kHz, a 10 kHz, and 100 Hz sine wave signal (about 10 seconds each) at -60 dB recording level.

b) Rewind and playback tape. Compare the 100 Hz and 10 kHz output level with the 1 kHz output level and check whether or not the error is within a ±5 dB range.

CAUTION: If frequency response is not within specifications, change the Bias Voltage slightly and recheck.

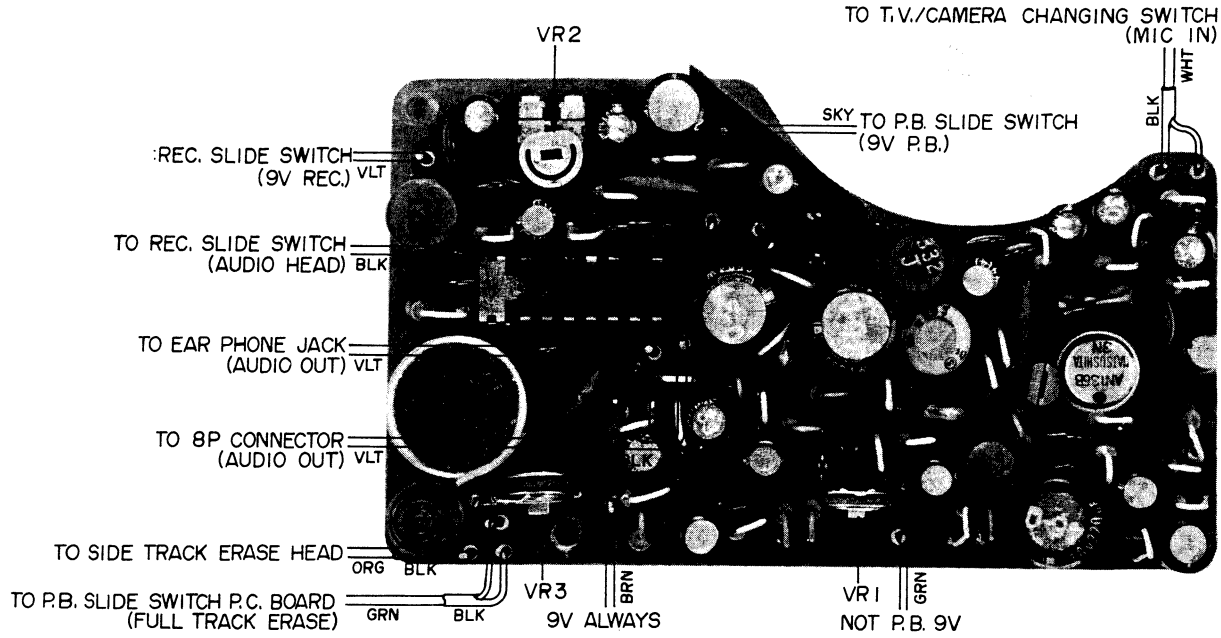


Fig. 2-32

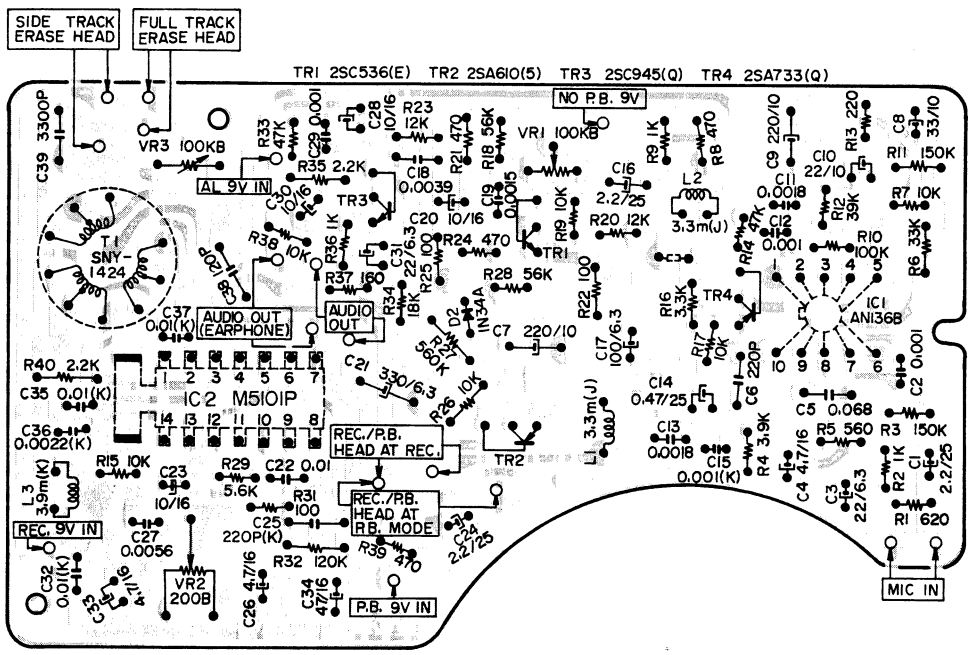


Fig. 2-33

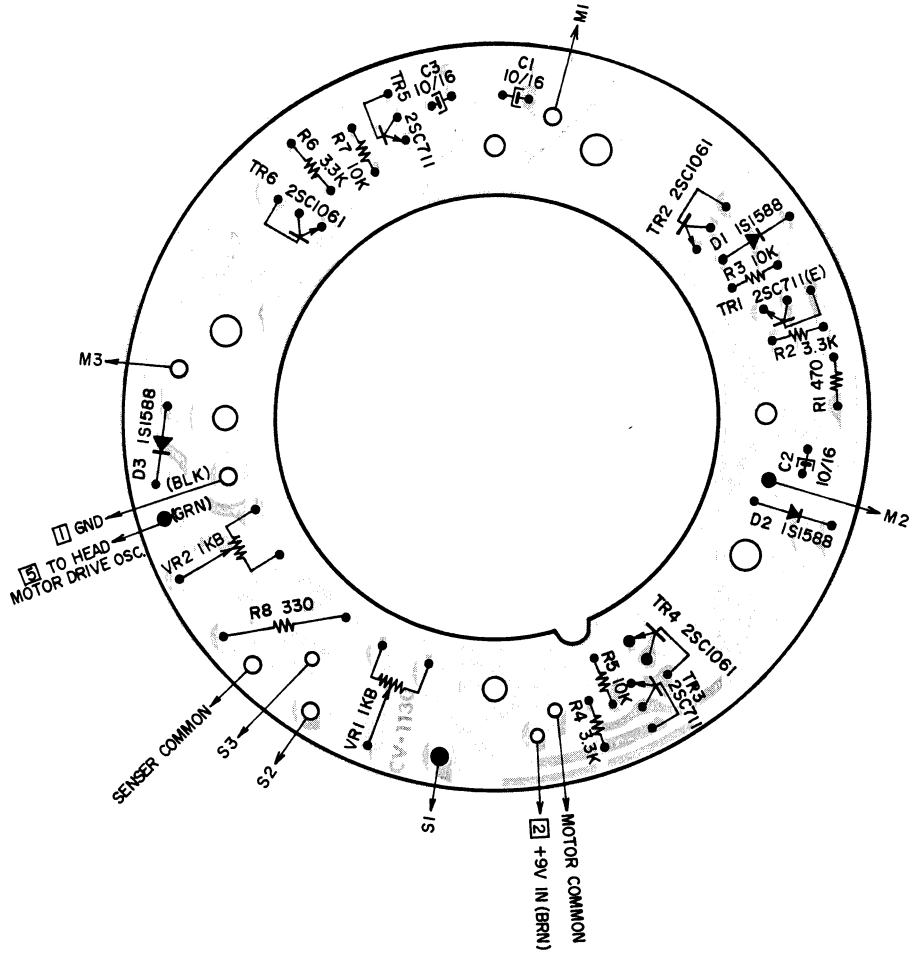


Fig. 2-34

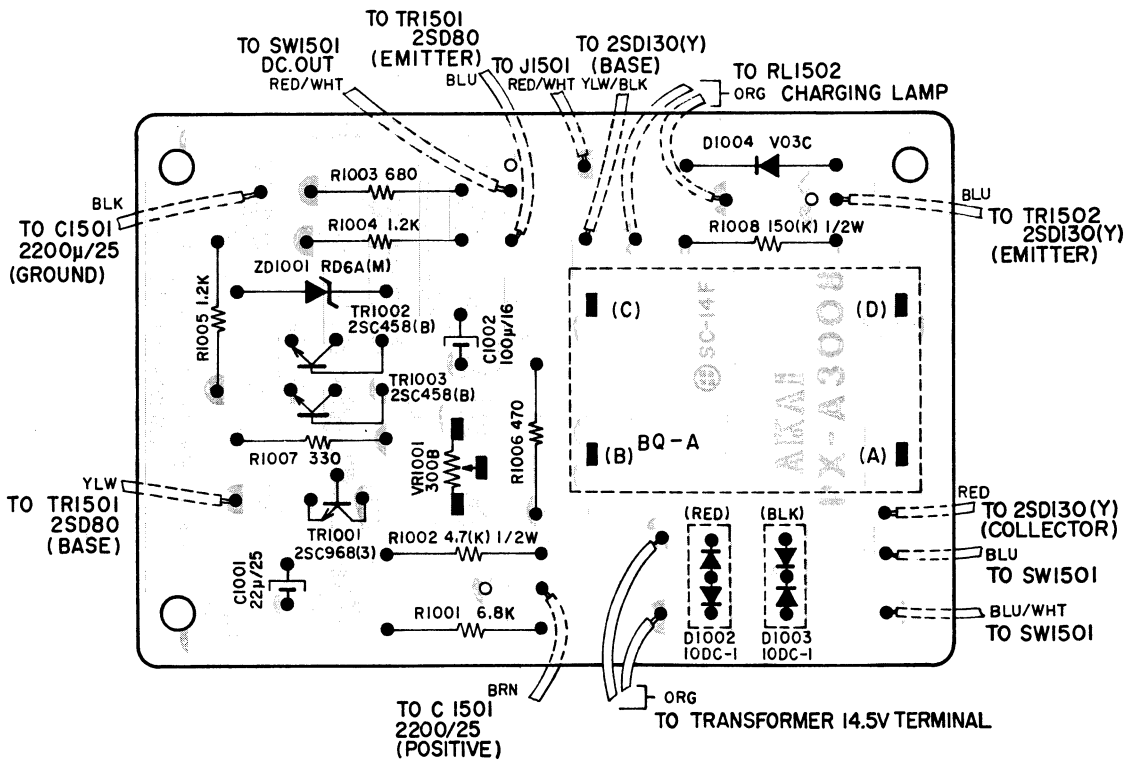


Fig. 2-35

SECTION 2

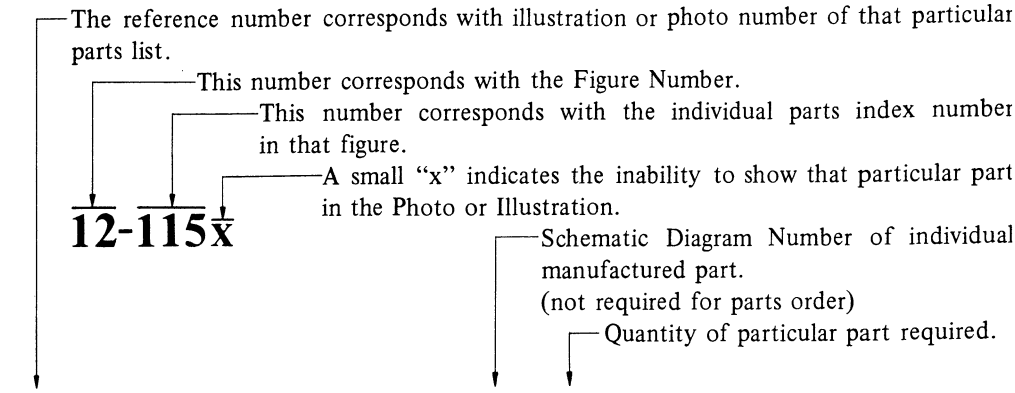
PARTS LIST

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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.	Q'ty
		FLYWHEEL BLOCK #13		
12-115x	800425	Flywheel Block Assy. Comp.	RDG#13	1
12-116	244506	Flywheel Only	RD-233	1
12-117x	244754	Felt, Flywheel	RD-275	1
12-118	251324	Main Metal Case	RD-236	1
12-119	253080	Main Metal	RD-237	1

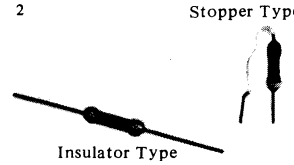
4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Please utilize separate "Common List for Service Parts" for Resistor parts orders.
8. 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).
9. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

ELECTRICAL PARTS TABLE

Because the indication of resistors and capacitors in the P. C. Board photos are being eliminated, please confirm parts name and shape by comparing them with the parts shown in this table.

1

Solid Resistor

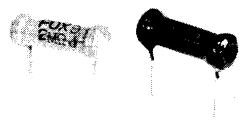
2 Stopper Type

Insulator Type
Carbon Resistor

3

Metal Oxide Film Resistor

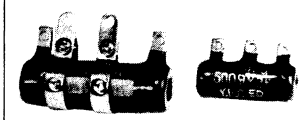
4

Cement Resistor

5

Wire-Wound Resistor

6

Thermister

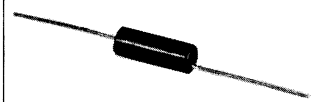
7

Enamel Resistor

1

MP Capacitor (Tubular Type)

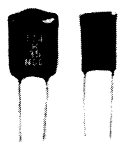
2

Plastic Capacitor

3

Mylar Capacitor

4

VFM (Hi-Q) Capacitor

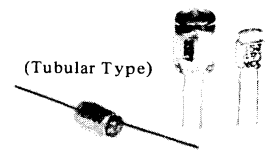
5

Mylar Capacitor

6

Tantalum Capacitor

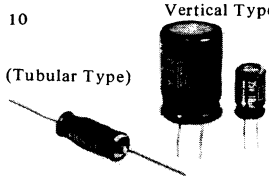
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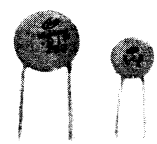

Oil Capacitor (Tubular Type)

8 Vertical Type
(Tubular Type)

Styrol Capacitor

9

Electrolytic Capacitor (Tubular Type)

10 Vertical Type
(Tubular Type)

Electrolytic Capacitor

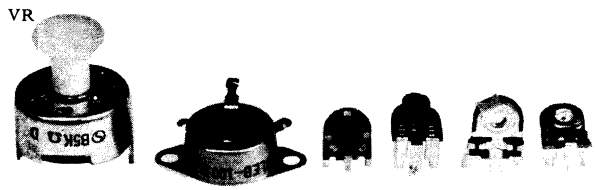
11

Ceramic Capacitor

12

Metalized Mylar (Paper) Capacitor

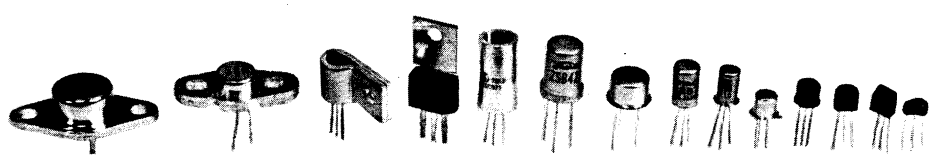
13

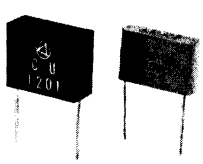
Trimmer Condenser

VR

Semi-Fixed Volume

L

Ferri Inductor

TR

Transistor

CR

Spark Quencher

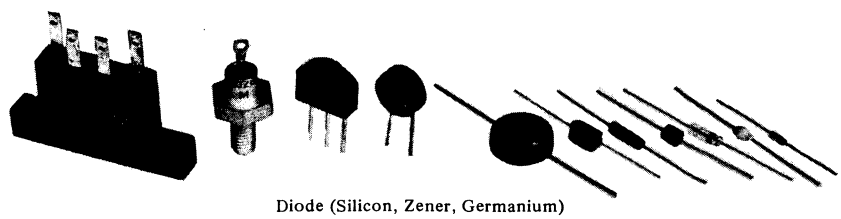
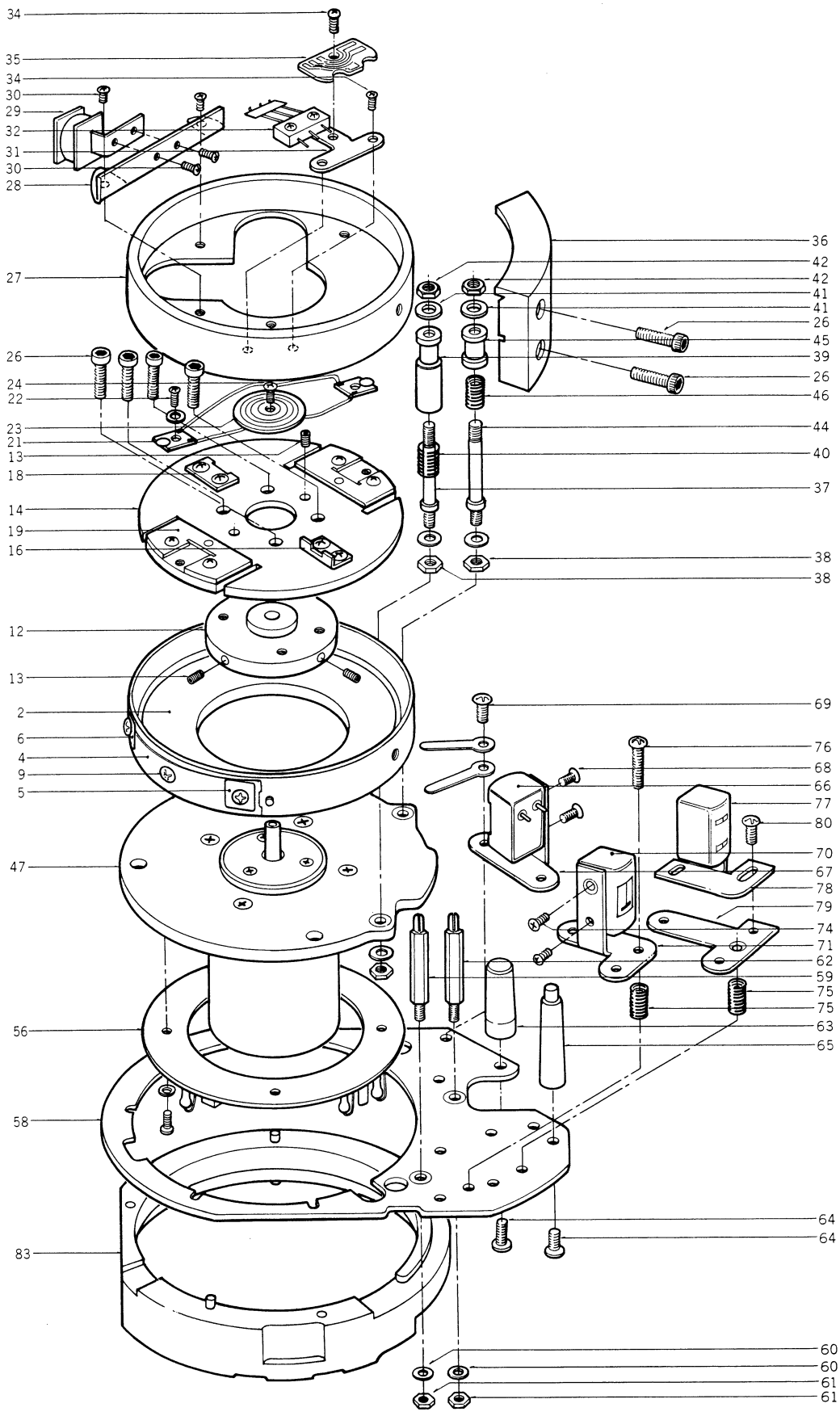
D

Diode (Silicon, Zener, Germanium)

FIG. 1 ILLUSTRATION OF VIDEO HEAD BLOCK



VIDEO HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	ROTARY HEAD BLOCK			
1-1x	BV573153	Rotary Head Block Comp.	PW	1
1-2	VM361394	Lower Drum	PX-802	1
1-3x	VM362867	Head Plate Mt. Pin	PX-824	1
1-4	VM362878	Drum Tape Guide	RX-809	1
1-5	VM404943	Guard Band Supporting Plate (A), PX	PX-833	1
1-6	VM404954	Guard Band Supporting Plate (B), PX	PX-834	1
1-7x	VM404965	Guard Band Supporting Plate (C), PX	PX-835	1
1-8x	ZW259560	Washer (BSP) D3.3x5.8x0.25t		2
1-9	ZS419927	Screw, round head 3x5		5
1-10x	VM361405	Drum Shield Plate	PX-803	1
1-11x	ZS589770	Screw, pan head 4x8		4
1-12	VM407531	Head Plate Supporter C	PA-838	1
1-13	ZS356804	Set Screw, hexagon socket 3x4 (cup/p.)		4
1-14	VM395425	Head Plate	PX-830	1
1-15x	VM362902	Head Plate pin	RX-820	2
1-16	MZ577394	PU Plate A	PW-8003	1
1-17x	ZS201903	Screw, binding head 2.3x4		4
1-18	MZ577405	PU Plate B	PW-8003	1
1-19	VM362891	Head Table Base	RX-819	2
1-20x	ZS201431	Screw, pan head 2.3x5		4
1-21	HR573164	VIDEO HEAD VH-21	PW	2
1-22	ZS202307	Screw, round head 2.3x6		2
1-23	VM357041	Slip Ring (1400 Type)	52-1-3	1
1-24	ZS419940	Screw, pan head 2.3x6		1
1-25x	ZW273778	Earth Lug M3		3
1-26	ZS419938	Hexagon Socket Bolt, w/hole 3x8		10
1-27	VM595888	Upper orum	PW-8005	1
1-28	EZ577383	Coil Bracket	PW-8002	1
1-29	VM403806	Pick up Coil	23-1-106	1
1-30	ZS201418	Screw, pan head 2.3x4		4
1-31	VM362946	Brush Bracket	RX-811	1
1-32	VM357063	Brush (1330 Type)	52-1-4	1
1-33x	ZS419951	Screw, pan head 2x5		2
1-34	ZS419940	Screw, pan head 2.3x6		3
1-35	EA627996	Brush P.C. Board	PW-8006	1
1-36	VM362700	Drum Support	PX-807	1
1-37	VM375175	Guide Prop T	PX-822	1
1-38	ZW273756	Nut M3		2
1-39	VM375186	Tape Guide T	PX-823	1
1-40	ZG375197	Guide Spring T	PX-824	1
1-41	VM375208	Tape Guide Cap	PX-828	2
1-42	ZW273835	Nut M3 #1		2
1-43x	ZW273745	Spring Washer M3		2
1-44	VM375210	Guide Prop S	PX-825	1
1-45	VM375221	Tape Guide S	PX-826	1
1-46	ZG375232	Guide Spring S	PX-827	1
1-47	BM573175	Drum Motor Block Comp.	PW, CV	1
1-48x	MV590995	Bearing 605ZZSMC2EP6PS2		1
1-49x	ZW577348	Washer 3 (Hicar) D10x13.8x0.5t	PW-7511	1
1-50x	ZW577315	Washer 2 (Mylar) D10x13.8x0.1t	PW-7504	3
1-51x	ZW577304	Washer 1 (Mylar) D10x13.8x0.15t	PW-7504	3
1-52x	MV590984	Bearing 604ZZSMC2EP5PS2		1
1-53x	ZW572815	Motor Washer D8x11.9x0.4t	PX-712	1
1-54x	ZW578902	Motor Washer D8x11.9x0.15t	PX-712	3
1-55x	ZW361337	Motor Washer D8x11.9x0.1t	PX-712	3
1-56	BA575403	motor Drive P.C. Board Comp.	CV-1130	1

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	HEAD BASE BLOCK			
1-57x	BV573186	Head Base Block Comp.	PW	1
1-58	VM362711	Head Assy. Base	PX-808	1
1-59	VM419297	Head Cover Post A (L=38)	PX-A801	1
1-60	ZW272261	Spring Washer M3		2
1-61	ZW273756	Nut M3		2
1-62	VM419308	Head Cover Post B (L=40)	PX-A801	1
1-63	VM419310	Taper Pole S	PX-A802	1
1-64	ZS423527	Screw, binding head 3x8		2
1-65	VM419321	Taper Pole T	PX-A803	1
1-66	HF358740	FULL TRACK ERASE HEAD	PW, PX	1
1-67	VM419332	Master Erase Mt. Plate	PX-A804	1
1-68	ZS201508	Screw, pan head 2x4		5
1-69	ZS356793	Screw, pan head 3x5		2
1-70	HS358727	SIDE TRACK ERASE HEAD	PW, PX	1
1-71	HZ578542	Side Erase Head Angle	CV-1067	1
1-72x	VM347883	Shield Case	1-09-15	2
1-73x	VM347894	Shield Cover	1-09-14	2
1-74	ZS344351	Screw, countersunk head 2x4		1
1-75	ZG375197	Guide Spring T	PX-824	6
1-76	ZS434610	Screw, pan head 3x13	PW, CV, PX	5
1-77	HC418735	CONTROL/AUDIO HEAD		1
1-78	VM417982	AC Head Angle	VC-0008	1
1-79	VM362812	Audio CTL Head Base	PX-817	1
1-80	ZS410231	Screw, pan head 2.6x5		2
1-81x	ZW355443	Washer (SPC) D3.3x5.8x0.25t		2
1-82x	ZS434621	Screw, countersunk head 3x13		1
1-83	VM394560	Head Assy. Base Talbe B, w/pin	PX-177	1
1-84x	ZS379405	ISO Screw, binding head 3x6		4
1-85x	ZS419804	Set Screw 4x5 (flat/p.)		2

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

FIG. 2 ILLUSTRATION OF SUB. MAIN CAPSTAN/CAPSTAN MOTOR BLOCK

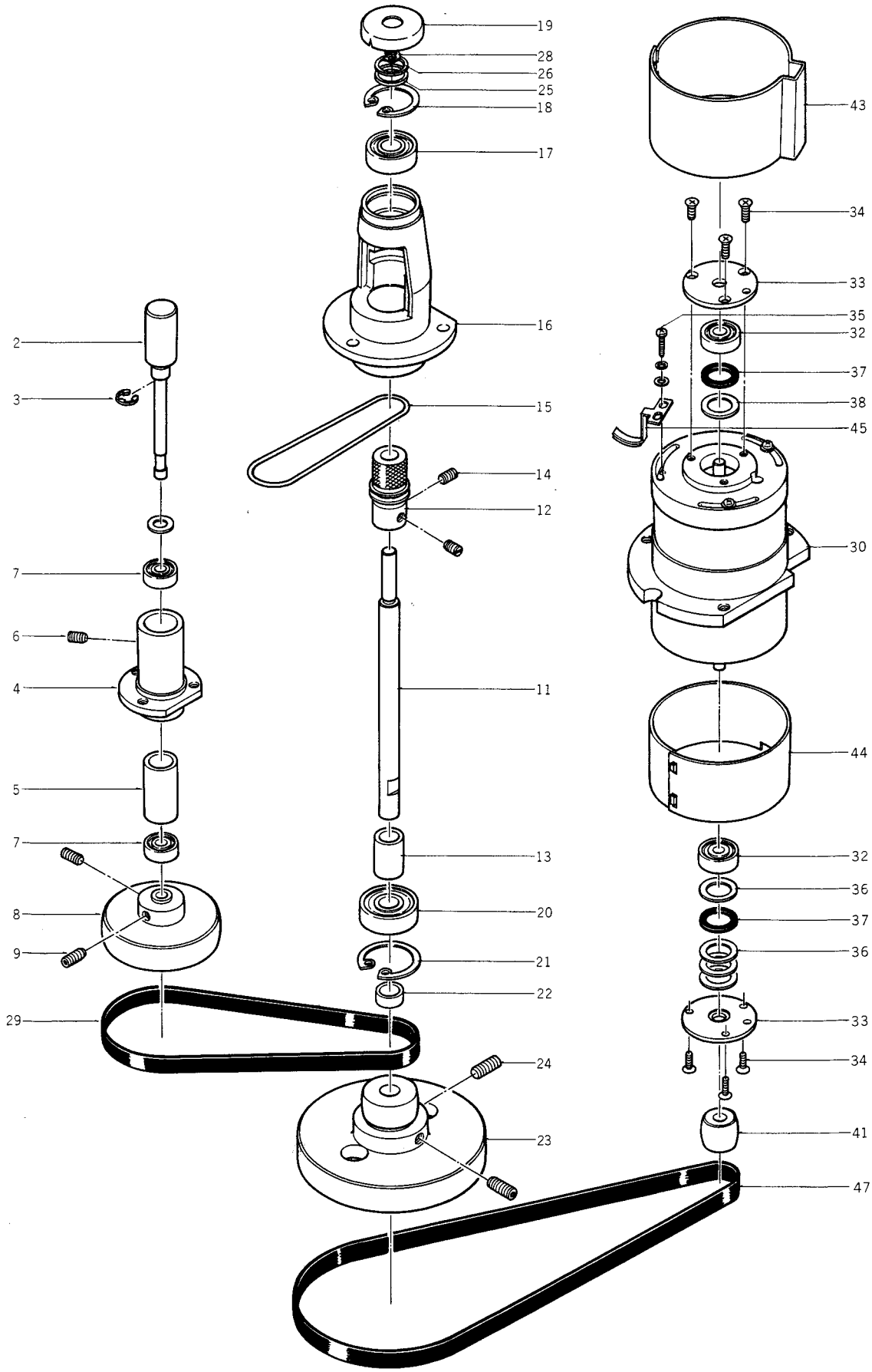


FIG. 3 ILLUSTRATION OF REEL TABLE BLOCK

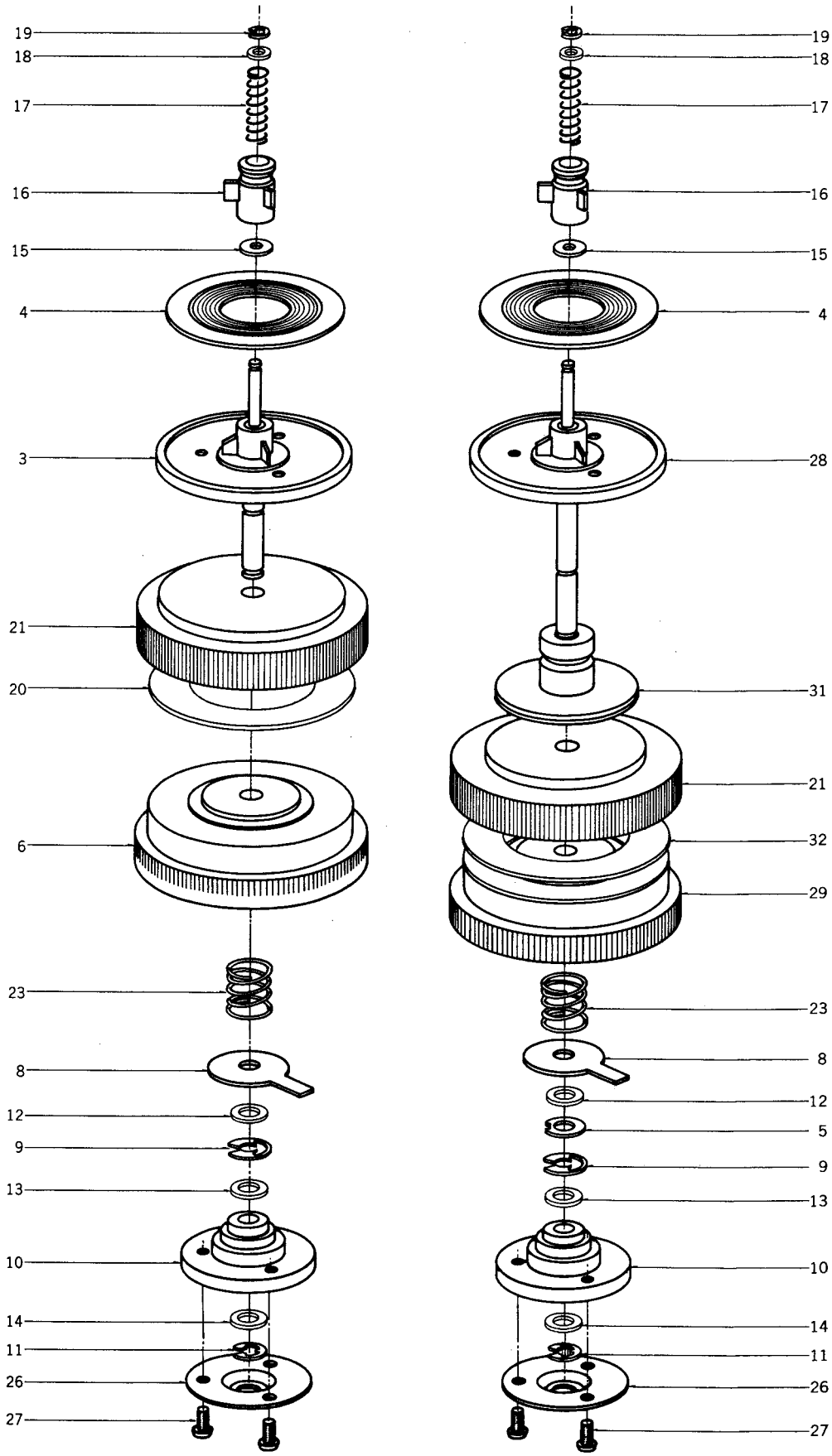
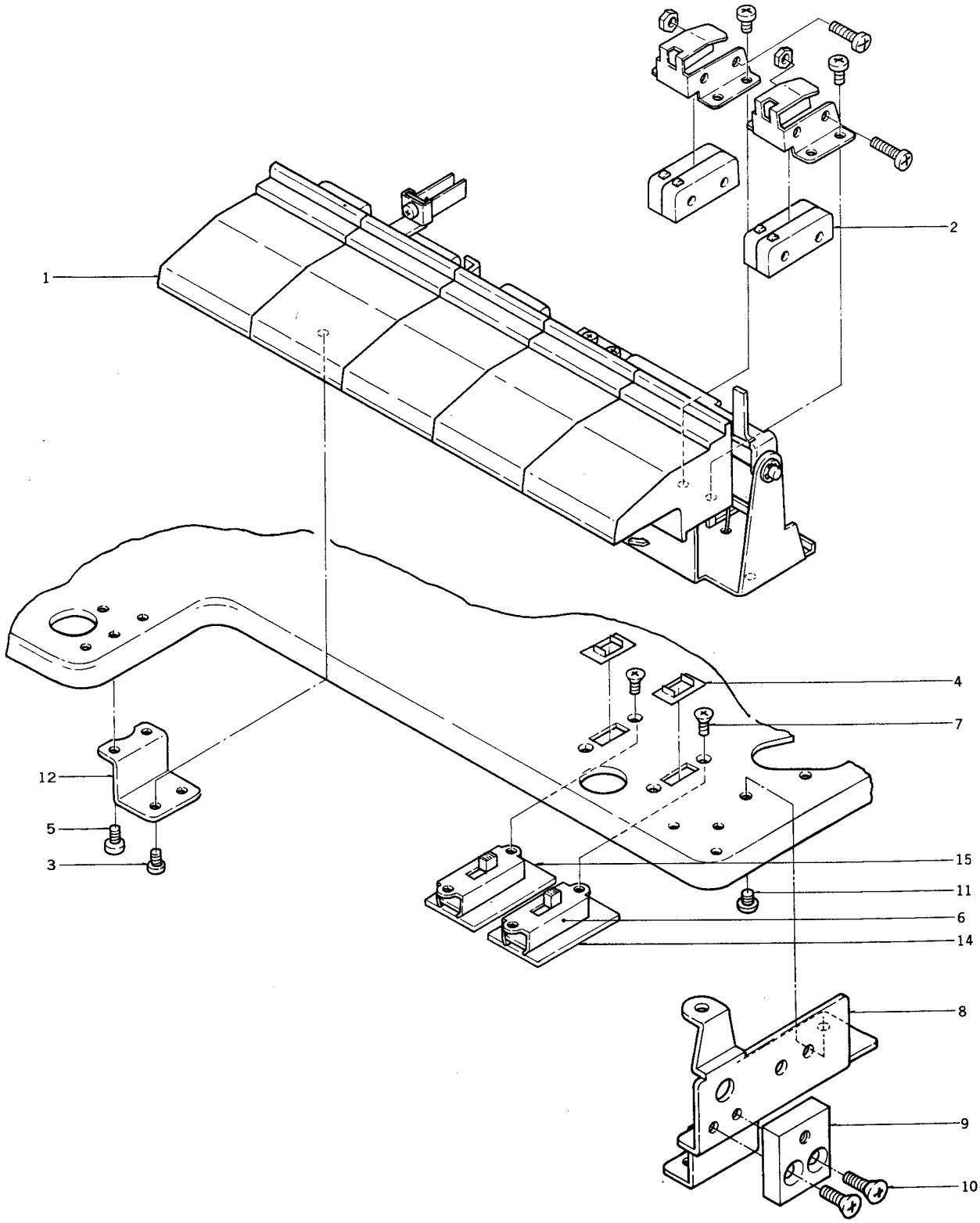


FIG. 4 ILLUSTRATION OF KEYBOARD BLOCK



SUB MAIN CAPSTAN/CAPSTAN MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		SUB CAPSTAN BLOCK		
2-1x	BZ589961	Sub Capstan Block Comp.	PW, PX	1
2-2	VM360112	Sub Capstan Shaft	PX-219	1
2-3	ZW270101	'E' Ring 3M	6-1-9	1
2-4	VM585461	Sub Capstan Case	PW-2090	1
2-5	VM360134	Bearing Collar	PX-221	1
2-6	ZS434160	Set Screw, hexagon Socket 3x3 (cup/p.)		1
2-7	MV589915	Bearing 684ZZSMC2EP6PS2		2
2-8	VM360145	Sub Flywheel	PX-222	1
2-9	ZS356815	Set Screw, hexagon Socket 3x6 (cup/p.)		1
		MAIN CPASTAN BLOCK		
2-10x	BV573041	Main Capstan Block Comp.	PW	1
2-11	MY577214	Main Capstan Shaft	PW-2003	1
2-12	MR569812	Cpastan Pulley	PW-2006	1
2-13	MZ577225	Capstan Collar B	PW-2004	1
2-14	ZS609221	Set Screw 3x3 (cup/p.)		2
2-15	MB576123	Rewind Belt A	PW-2007	1
2-16	MZ576753	Bearing Case	PW-2001	1
2-17	MV589926	Bearing 696ZZSMC2EP6PS2		1
2-18	ZW572174	'C' Ring RTW-15		1
2-19	VM435824	Metal Cap	PX-218	1
2-20	MV356624	Bearing 606ZZSMC2P6PS2		1
2-21	ZW356635	'C' Ring (hollow) MFG PTW-17	6-1-2	1
2-22	VM360066	Flywheel Collar	PX-214	1
2-23	VM360044	Main Flywheel	PX-212	1
2-24	ZS444240	Set Screw, hexagon socket 4x8 (cup/p.)		2
2-25	ZW628097	Capstan Spacer B	PW-1097	1
2-26	ZW628053	Washer A, Capstan	PW-1096	1
2-27x	ZW628086	Washer B, Capstan	PW-1096	1
2-28	ZW623283	'E' Ring 4M	6-1-13	1
2-29	MB359886	Sub Capstan Belt D48x5x1	PX-171	1
		CAPSTAN MOTOR BLOCK		
2-30	BM573118	Capstan Motor Block Comp.	PW	1
2-31x	BM573120	Capstan Motor Block Comp. (CCIR)	PW	1
2-32	MV590984	Bearing 604ZZSMC2EP5PS2		2
2-33	VM361247	BRG Plate A	PX-703	2
2-34	ZS355577	Screw, countersunk head 2x6		6
2-35	ZW572804	Screw, pan head 2x10		3
2-36	ZW577282	Washer	PW-7014	3
2-37	ZW361348	Motor Washer D8x11.9x0.5t	PX-712	1
2-38	ZW572815	Motor Washer D8x11.9x0.4t	PX-712	1
2-39x	ZW361326	Motor Washer D8x11.9x0.2t	PX-712	3
2-40x	ZW361337	Motor Washer D8x11.9x0.1t	PX-712	3
2-41	VM361372	Capstan Motor Pulley	PX-715	1
2-42x	VM395370	Capstan Motor Pulley (CCIR)	PX-716	1
2-43	MZ577293	Capstan Motor Shield Plate	PW-7017	1
2-44	MZ412852	Capstan Motor Shield Plate (Lower)	VC-1034	1
2-45	VM611335	Back Tension Plate Spring R	PW-1095	1
2-46x	VM422820	Bakc Tension Felt	PX-A151	2
2-47	MB359875	Flywheel Belt D85x6x1	PX-170	1
2-48x	MB407542	Flywheel Belt D84x6x1 (CCIR)	PX-181	1

REEL TABLE BLOCK

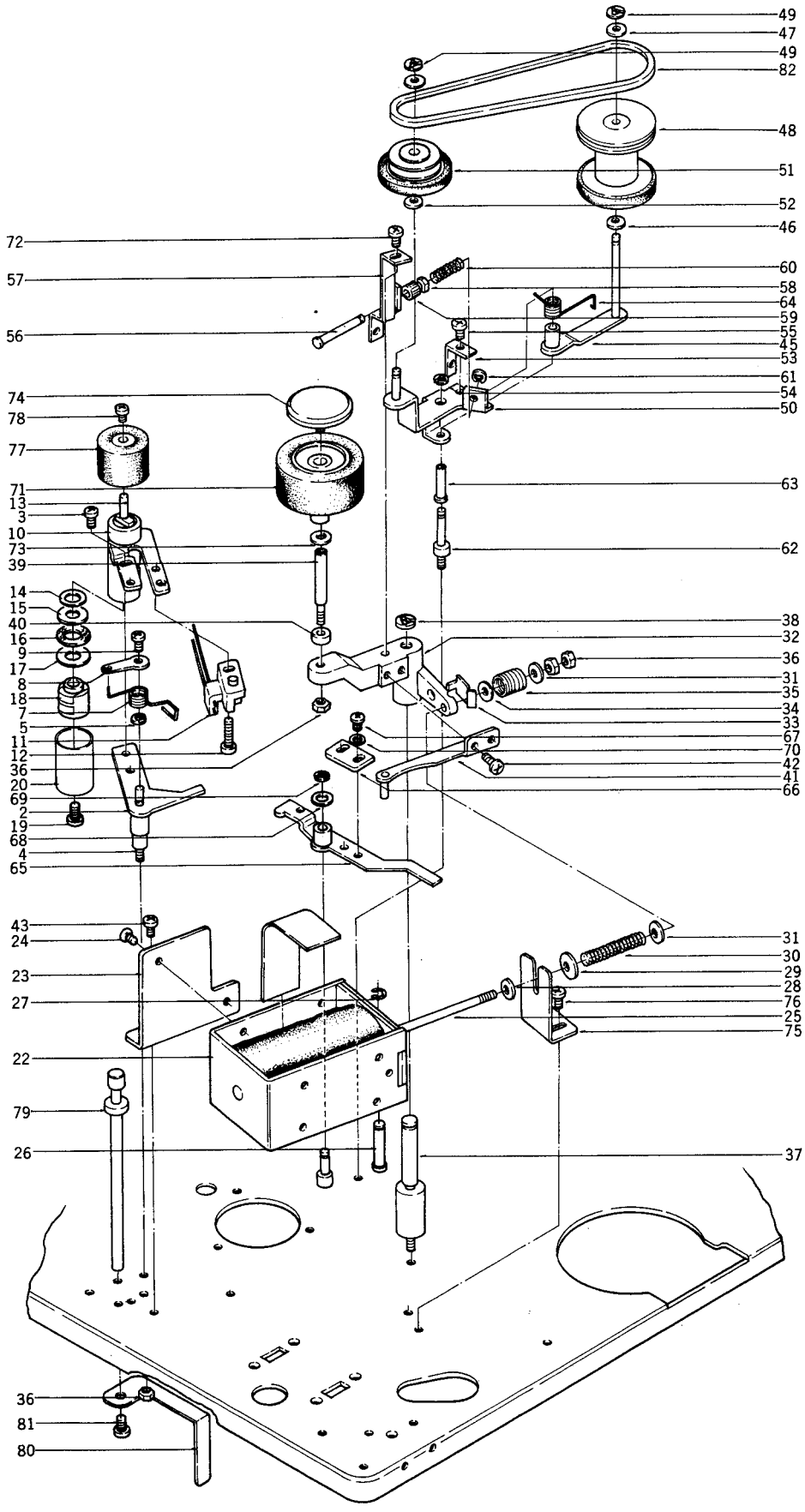
Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1x	BR573131	Supply Reel Table Block Comp.	PW	1
3-2x	BR573142	Take-up Reel Table Block Comp.	PW	1
3-3	VM423483	Supply Reel Shaft, w/reel table	PX-296	1
3-4	VM359932	Reel Table Rubber	PX-203	1
3-5	ZW422742	Washer, w/claw (SUP)	PX-293B	1
3-6	VM456300	Take-up Drum	PX-291	1
3-7x	VM422706	Take-up Felt	PX-293	1
3-8	VM422752	Take-up Spring Support	PX-295	1
3-9	ZW290283	'U' Ring 2.85M	6-1-1	1
3-10	BC446455	Reel Metal Case, w/metal T	PX-297B	1
3-11	ZW270101	'E' Ring 3M	6-1-9	1
3-12	ZW479597	Washer (Nylon) D4.6x8x0.3t		1
3-13	ZW483221	Washer (Teflon) D4.6x8x0.2t		2
3-14	ZW479608	Washer (Luminer) D4.6x8x0.125t		1
3-15	ZW222390	Rubber Washer	BT-113	1
3-16	MT256138	Reel Table B	RT-110	1
3-17	ZG255622	Reel Spring	RT-111	1
3-18	ZW259413	Washer (A1P3) D2.7x4.9x1t	BT-112	1
3-19	ZW270088	'E' Ring 1.9M	6-1-9	1
3-20	MZ577721	Clutch Plate A	PW-2077	1
3-21	MT393200	Reel Table S	PW-2066	1
3-22x	ZW572826	Washer (Luminer) D4.6x7x0.13t		1
3-23	ZG578744	Reel Pressure Spring	PW-2088	1
3-24x	ZW620234	Washer (Nylon) D4.6x13x1t		1
3-25x	ZW620245	Washer (Nylon) D4.6x13x0.5t		2
3-26	VM422831	Reel Shaft Cover	PX-149	1
3-27	ZW555726	Screw, binding head 2.6x6		3
3-28	VM423494	Take-up Reel Shaft, w/reel table	PX-296B	1
3-29	VM493198	Take-up Drum	PX-300	1
3-30x	MT484144	Take-up Felt	PW-2089	1
3-31	MT579655	Sub Reel Table T	CV-1126	1
3-32	MZ583233	Clutch Palte B	PW-2077	1

KEYBOARD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
4-1	ES573311	Keyboard SW. ME-S40	25-5-65	1
4-2	ES356916	Micro SW. SL-2 AC5A 125V	25-1-17	4
4-3	ZS417227	Screw, binding head 2.3x5		2
4-4	VM359864	SW. Retaining Plate	PX-169	2
4-5	ZS379405	ISO Screw, binding head 3x6		3
4-6	ES422447	Slide SW. S-4900	25-3-42	2
4-7	ZS344351	Screw, countersunk head 2x4		4
4-8	MZ576887	Connection Angle D	PW-1015	1
4-9	VM576742	Connection Piece B	PW-1054	1
4-10	ZS414033	Screw, countersunk head 3x8		2
4-11	ZS379350	ISO Screw, pan head 3x6		2
4-12	VM422021	Button Guide Fixing Plate (L)	PX-A134	1
4-13x	ZW562476	Farth Lug M3		1
4-14	EA576461	Rec. SW. P.C. Board	PW-5013	1
4-15	EA577890	PB. SW. P.C. Board	PW-5014	1
4-16x	EA577541	Harness P.C. Board	PW-5018	1
4-17x	EO574187	Ferri Inductor FL5H 100μH(M)	23-1-2	1

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

FIG. 5 ILLUSTRATION OF SUB. MAIN PINCH ROLLER/TAKE-UP ROLLER BLOCK



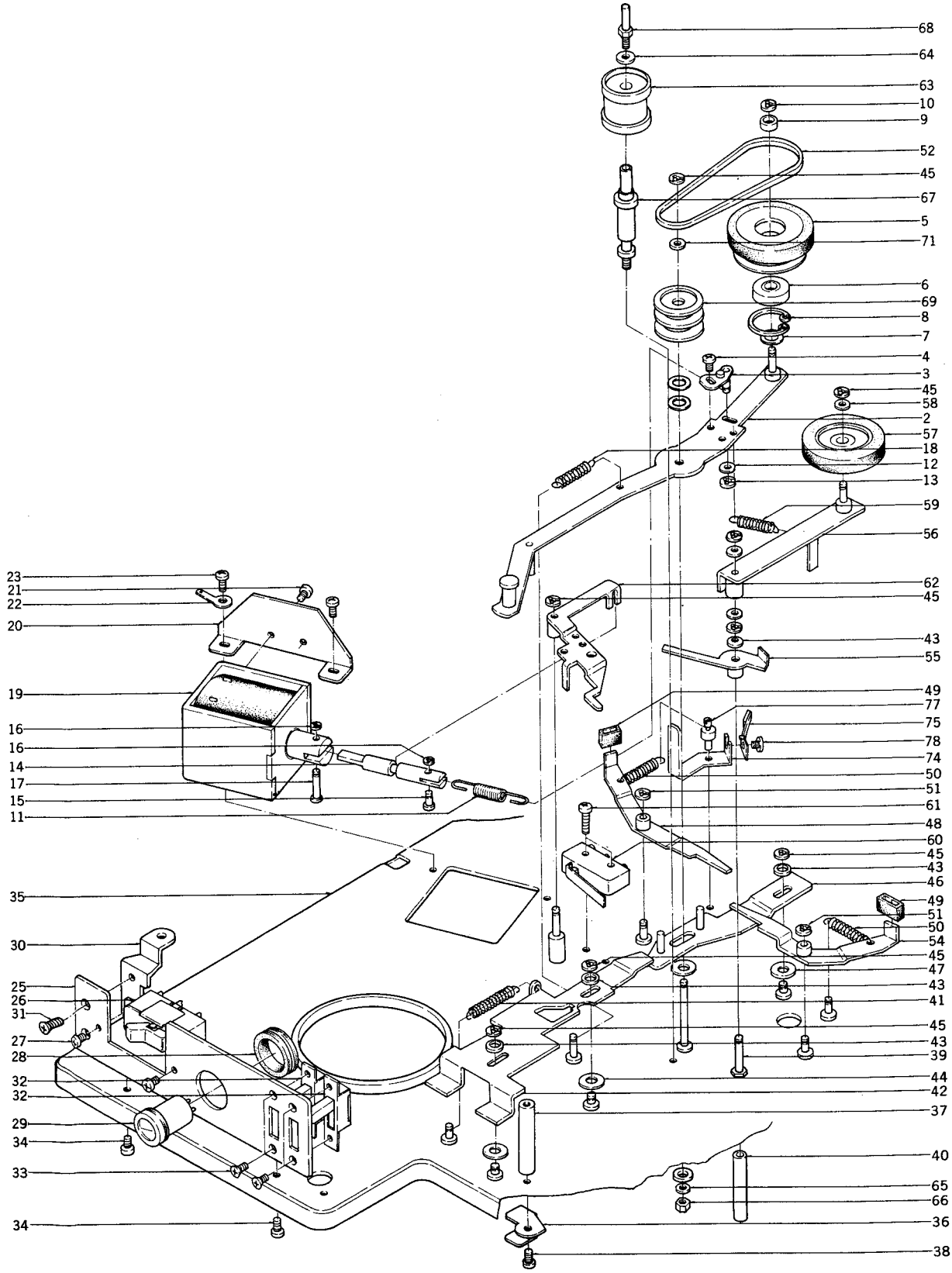
SUB. MAIN PINCH ROLLER/TAKE-UP ROLLER BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	SUB PINCH ROLLER BLOCK			
5-1x	BV573096	Sub Pinch Roller Block Comp.	PW, CV	1
5-2	MZ576393	Sub Pinch Roller Arm, w/metal	PW-2039	1
5-3	ZS422076	Screw, pan head 3x5		2
5-4	MS576685	Sub Pinch Roller Arm Shaft	PW-2041	1
5-5	ZW270101	'E' Ring 3M	6-1-9	1
5-6x	ZW259738	Washer (Polyslider) D4.1x7x0.25t		1
5-7	ZG359730	Sub Pinch Roller Spring	PX-156	1
5-8	VM359741	Spring Arm	PX-157	1
5-9	ZS417227	Screw, binding head 2.3x5		1
5-10	MZ585472	Sub Pinch Roller Arm, w/metal	CV-1141	1
5-11	VM585630	Brush	CV-1143	1
5-12	ZS417328	Screw, binding head 2.3x10		1
5-13	MS585505	Sub Pinch Roller Shaft	CV-1027	1
5-14	ZW414145	Washer (Polyslider) D4.1x7x0.13t		2
5-15	ZW555693	Washer (SPC) D3.2x8x0.5t		1
5-16	MZ585494	Oil Seal	CV-1145	1
5-17	ZW439604	Washer (SPC) D4.2x9x0.5t		1
5-18	VM585450	Slip Ring	CV-1147	1
5-19	ZS464703	Screw, binding head 2x4		1
5-20	SP585538	Dust Cover	CV-1148	1
	MAIN PINCH ROLLER BLOCK			
5-21x	BV573085	Main Pinch Roler Block Comp.	PW	1
5-22	EP571050	Plunger Solenoid 1240FLT (RGE-AD1114B)	44-1-65	1
5-23	MZ576371	Plunger Bracket	PW-2037	1
5-24	ZS444330	ISO Screw, countersunk head 3x4		2
5-25	VM360246	Pinch Roller Lever	PX-232	1
5-26	MH577631	Pinch Roller Joint Pin	PW-2063	1
5-27	ZW270088	'E' Ring 1.9M	6-1-9	1
5-28	ZW399958	Washer (PBP) D3.1x8x0.5t		1
5-29	ZW572231	Washer (SPC) D3.1x10x0.5t		1
5-30	ZG360292	Pinch Roller Return Spring	PX-234	1
5-31	ZW259503	Washer (Nylon) D3.1x8x0.5t		2
5-32	MZ576360	Main Pinch Roller Arm	PW-2036	1
5-33	MZ577642	Universal Spacer	PW-2064	1
5-34	ZW425002	Washer (SPC) D3.1x8x0.5t		1
5-35	ZG360303	Pinch Rolelr Spring	PX-235	1
5-36	ZW273756	Nut M3		3
5-37	MS576382	Pinch Roler Arm Shaft	PW-2038	1
5-38	ZW270123	'E' Ring 4M	6-1-9	1
5-39	VM360167	Pinch Roller Shaft	PX-224	1
5-40	ZW360178	Pinch Roller Washer	PX-225	1
5-41	VM360213	Pinch Roller Plate, w/pin	PX-229	1
5-42	ZS356668	Screw, binding head 2.3x4		2
5-43	ZS417137	Screw, binding head 3x4		2
	TAKE UP ROLLER BLOCK			
5-44x	BV573107	Take-up Roller Block Comp.	PW	1
5-45	VM422548	Take-up Pulley Arm, w/shaft	PX-243	1
5-46	ZW259773	Washer (Nylon) D4.1x7x0.5t		4
5-47	ZW572130	Washer (luminer) D4.1x7x0.1t		2
5-48	VM422605	Take-up Pulley	PX-282	1
5-49	ZW270101	'E' Ring 3M	6-1-9	2
5-50	MZ576426	Take-up Roller Arm, w/shaft	PW-2047	1
5-51	VM360584	Drive idler	PX-262	1
5-52	ZW394086	Washer (Nylon) D4.1x7x1t		1
5-53	VM422572	Take-up Roller Adjust Plate	PX-245B	1
5-54	ZW357164	'E' Ring 2.3M	6-1-9	1
5-55	ZS417251	Screw, binding head 2.3x3		1
5-56	VM360628	Joint Shaft	PX-266	1
5-57	MZ576448	Pressure Arm	PW-2049	1
5-58	ZS360630	Take-up Torque Adjust Screw A (Nut)	PX-267	1
5-59	ZS360641	Take-up Torque Adjust Screw B (Knurling Nut)	PX-268	1

Ref. No.	Part No.	Description	Schematic No.	Q'ty
5-60	ZG360652	Take-up Idler Spring	PX-269	1
5-61	ZW356657	'E' Ring 1.5M	6-1-9	1
5-62	VM427127	Take-up Roller Arm Shaft	PX-A160	1
5-63	VM427116	Take-up Roller Arm Shaft Collar	PX-A161	1
5-64	ZG422550	Take-up Arm Spring A	PX-244	1
	ASSEMBLY BLOCK			
5-65	ML499645	Brake Release Lever B, w/metal	PW-1023	1
5-66	ML576933	Brake Release Lever C	PW-1025	1
5-67	ZS201475	Screw, pan head 2x3		2
5-68	ZW572130	Washer (Luminer) D4.1x7x0.1t		2
5-69	ZW357164	'E' Ring 2.3M	6-1-9	1
5-70	ZW577282	Washer (A1P3-1) D2.1x0.5t	PW-7014	2
5-71	MP360180	Pinch Roller, PX D=25	PX-226	1
5-72	ZS323728	Screw, binding head 3x5		1
5-73	ZW414145	Washer (Polyslider) D4.1x7x0.13t		1
5-74	SK355691	Pinch Roller Cap	PX-605	1
5-75	VM359460	Pinch Roller Lever Stopper	PX-129	1
5-76	ZS201925	Screw, binding head 2.3x5		2
5-77	MP579374	Sub Pinch Roller D=16	CV-1025	1
5-78	ZS355601	Screw, binding head 2x5		1
5-79	VM359291	Tape Guide	PX-114	1
5-80	EZ510366	Wire Support B	PX-1092	1
5-81	ZS421806	Screw, pan head 3x8		1
5-82	MB422627	Take-up Belt D42.3x2x2	PX-182	1

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

FIG. 6 ILLUSTRATION OF REWIND LEVER/POWER SW. ANGLE BLOCK



REWIND LEVER/POWER SW. ANGLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		REWING LEVER BLOCK		
6-1x	BV573063	Rewind Lever Block Comp.	PW, CV	1
6-2	ML499656	Rewind Lever, w/metal	PW-2023	1
6-3	ML577754	Slide Lever, w/pin	PW-2081	1
6-4	ZS442585	Screw, binding head 2.6x4		1
6-5	MI576270	Rewind Roller	PW-2026	1
6-6	MV589948	Bearing 624ZZSMC1EP6PS2		1
6-7	ZW414145	Washer (Polyslider) D4.1x7x0.13t		1
6-8	ZW572185	'C' Ring RTW-13		1
6-9	MZ576292	Rewind Roller Color	PW-2027	1
6-10	ZW270101	'E' Ring 3M	6-1-9	1
6-11	ZS576325	Rewind Spring	PW-2032	1
6-12	ZW572196	Washer (SUP) D3.4x7.8x0.3t		1
6-13	ZW357164	'E' Ring 2.3M	6-1-9	1
6-14	VM576707	Rewind Connection Rod	PW-2031	1
6-15	MH577776	Connection Rod Pin	PW-2083	1
6-16	ZW356657	'E' Ring 1.5M	6-1-9	2
6-17	MH576336	Plunger Pin	PW-2033	1
6-18	ZS576303	Rewind Lever Spring	PW-2028	1
6-19	EP601931	Plunger Solenoid SDC01029THT1	44-1-67	1
6-20	MZ576347	Rewind Plunger Bracket	PW-2034	1
6-21	ZS323728	Screw, binding head 3x5		2
6-22	ZW273778	Earth Lug M3		1
6-23	ZS417137	Screw, binding head 3x4		2
		POWER SW. ANGLE BLOCK		
6-24x	BV573300	Power SW. Angle Block Comp.	PW	1
6-25	MZ576876	Power SW. Angle	PW-1014	1
6-26	ES358097	Seesaw SW. SJ-1253(SA2050N)	25-2-10	1
6-27	ZS323728	ISO Screw, binding head 3x5		2
6-28	VM359831	Checker Fastener	PX-166	1
6-29	EM428670	Battery Checker MO-50 (KL-255A-19)	46-1-13	1
6-30	MZ577135	Setting Angle B	PW-1049	1
6-31	ZS200384	Screw, countersunk head 3x6		2
6-32	ES572220	Slide SW. MFS-201N(Special)	25-3-87	2
6-33	ZS344351	Screw, countersunk head 2x4		2
6-34	ZS379405	ISO Screw, binding head 3x6		2
		ASSEMBLY BLOCK		
6-35	MZ578070	Mech. Frame, w/shaft	PW-1001	1
6-36	EZ610378	Wire Support C	PW-1093	1
6-37	VM421986	Assy. Base Prop	PX-A153	1
6-38	ZS321298	ISO Screw, binding head 3x8		1
6-39	MS576797	Brake Release Shaft	PW-1003	1
6-40	VM359414	P.C. Board Prop A	PX-126	4
6-41	ZG577945	FF Slide Lever Spring	PW-1022	1
6-42	ML578035	Slide Lever A	PW-1021	1
6-43	ZW259773	Washer (Nylon) D4.1x7x0.5t		4
6-44	ZW260201	Washer (Nylon) D6.2x13x1t		3
6-45	ZW270101	'E' Ring 3M	6-1-9	5
6-46	ML576900	Slide Lever B, w/pin	PW-1019	1
6-47	ZW260188	Washer (Nylon) D6.2x13x0.5t		1
6-48	ML499678	Brake Lever A, w/metal	PW-1028	1
6-49	VM422673	Brake Rubber Bush	PX-299	2
6-50	ZG360437	Brake Spring	PX-248	2
6-51	ZW357164	'E' Ring 2.3M	6-1-9	4
6-52	MB577056	Rewind Belt B	PW-1040	1
6-53x	ZW402557	Washer (Nylon) D4.1x7x0.2t		6
6-54	ML499680	Brake Lever B, w/metal	PW-1029	1
6-55	ML499667	Brake Release Lever A, w/metal	PW-1026	1
6-56	ML499691	FF Idler Lever, w/shaft	PW-1031	1
6-57	MI576977	FF Idler	PW-1033	1
6-58	ZW572130	Washer (Luminer) D4.1x7x0.1t		2
6-59	ZS576314	FF Idler Spring	PW-2030	1
6-60	ES477966	Micro SW. SS-5GL	25-1-23	1
6-61	ZS201868	Screw, binding head 2.3x10		2
6-62	ML499702	Rewind Brake Lever, w/metal	PW-2029	1
6-63	VM422087	Guide Roller B	PX-A137	1
6-64	ZW572141	Washer (Luminer) D4.1x7x0.25t		1
6-65	ZW273802	Toothed Lock Washer M3		1
6-66	ZW273756	Nut M3		1
6-67	VM422010	Guide Roller Shaft	PX-A138	1
6-68	ZW606982	Nut, Guide Roller	PX-A191	1
6-69	VM577034	Idler Pulley	PW-1038	1
6-70x	MV589915	Bearing 684ZZSMC2EP6PS2		2
6-71	MZ577045	Idler Pulley Collar	PW-1039	1
6-72x	ZW402557	Washer (Nylon) D4.1x7x0.2t		4
6-73x	ZW620166	Washer (Nylon) D5.5x8.8x0.2t		1
6-74	VM576718	Back Tension Angle	PW-1062	1
6-75	VM576731	Back Tension Spring	PW-1063	1
6-76x	VM576696	Back Tension Felt	PW-1064	1
6-77	VM576720	Angle Point Screw	PW-1065	1
6-78	ZS417251	Screw, binding head 2.3x3		1
6-79x	VM421615	Drum Holder	RX-827	1
6-80x	ZW418511	Protector Retaining Screw	VC-8001	2

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

FIG. 7 ILLUSTRATION OF SLIDE SW./VIDEO CHANGE SW. BLOCK

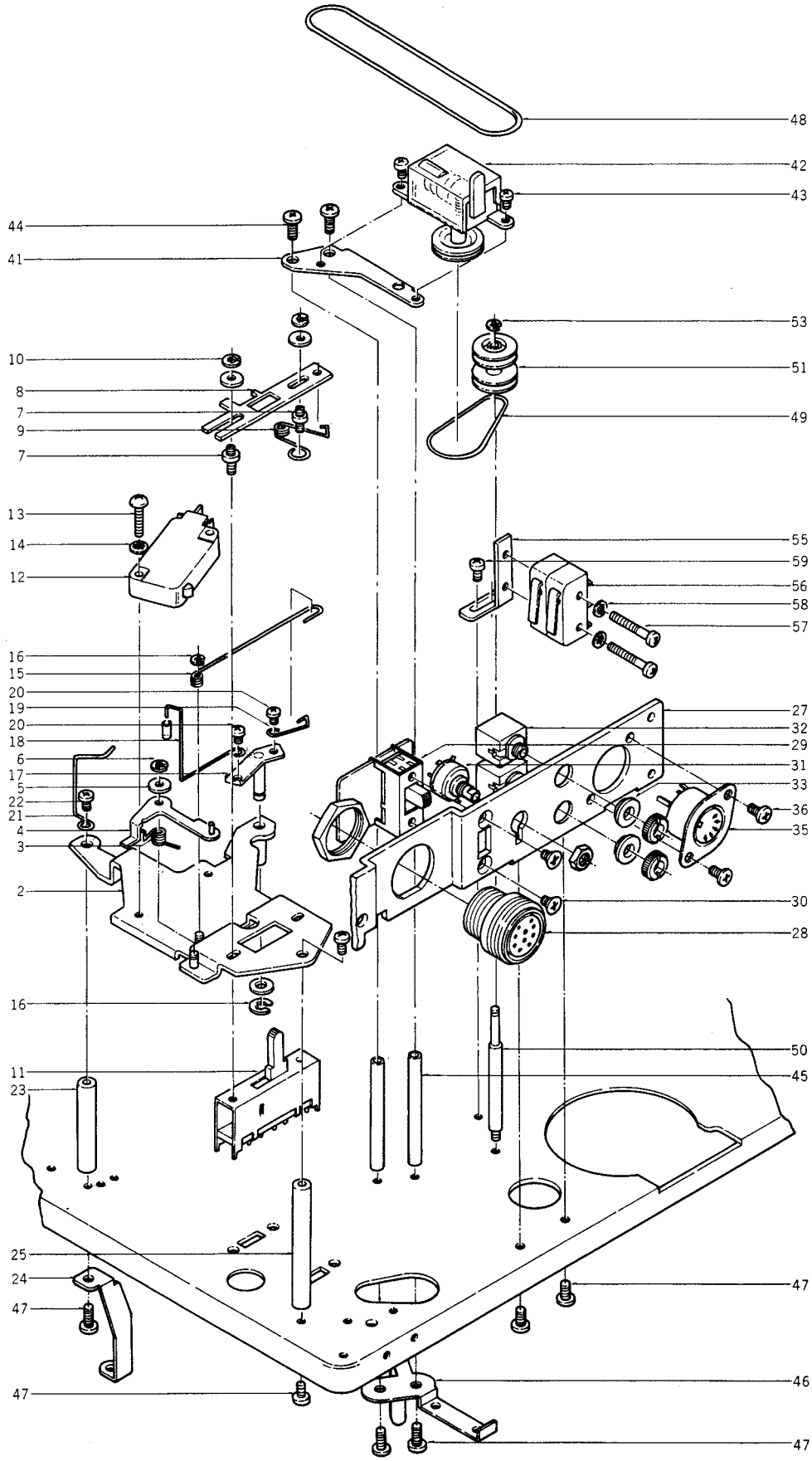


FIG. 8 ILLUSTRATION OF ASSEMBLY BLOCK

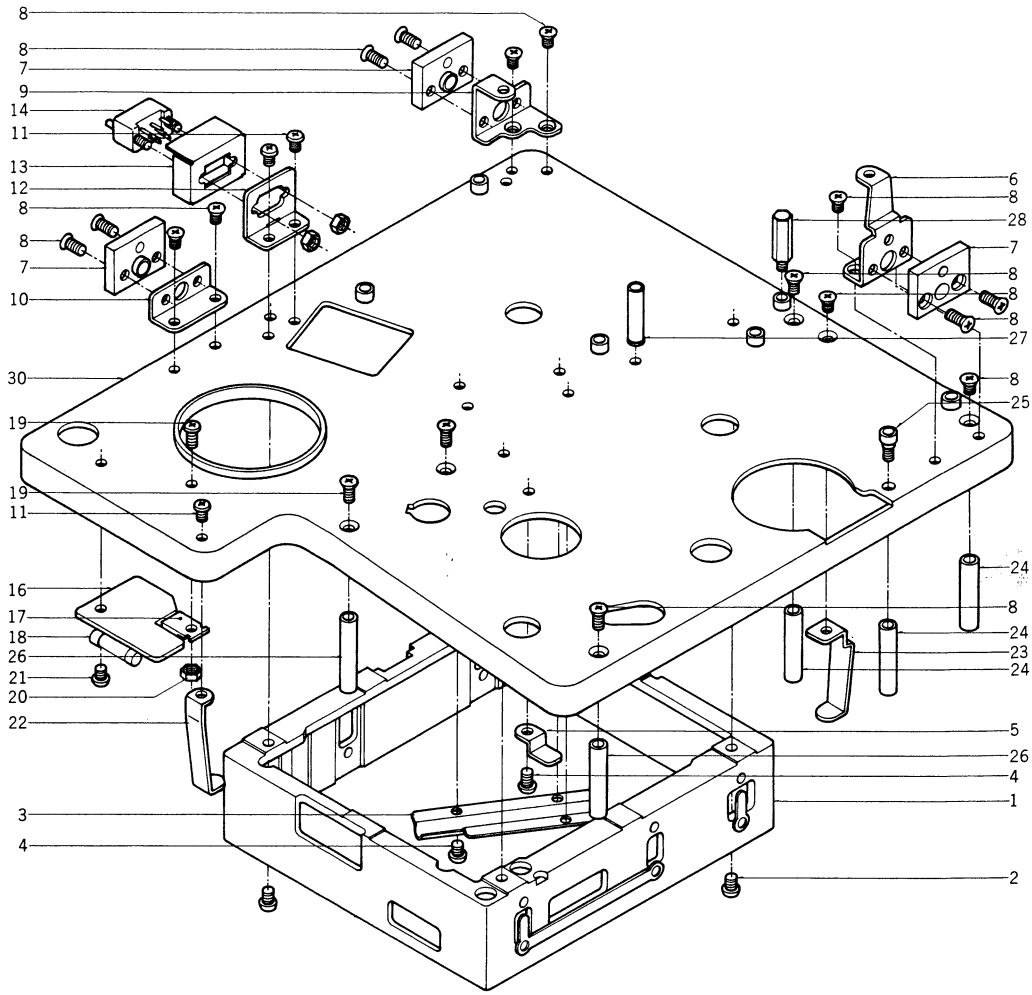
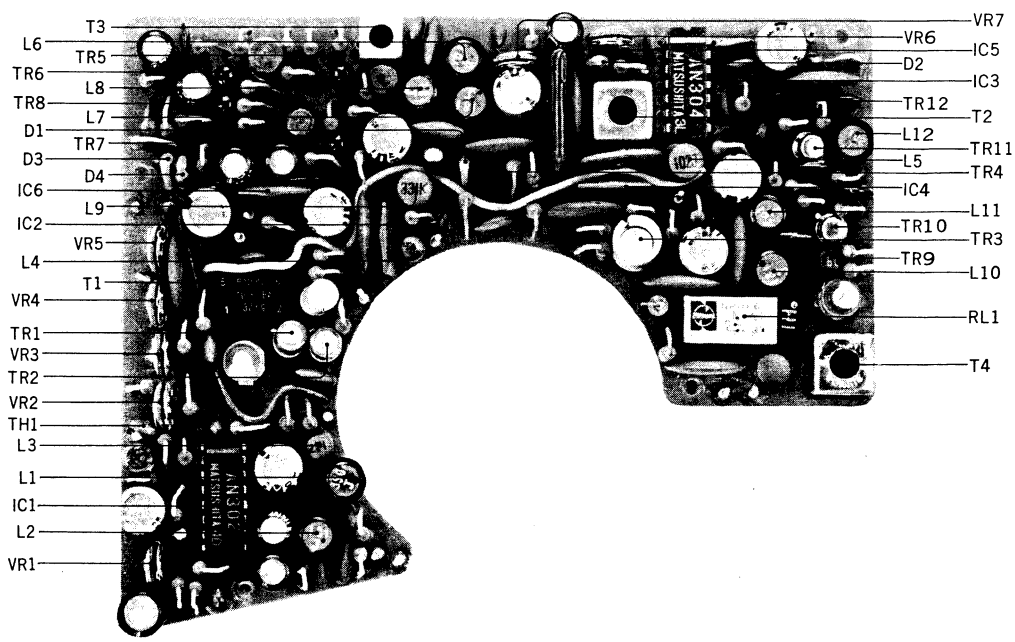


FIG. 9 PHOTO OF VIDEO P.C. BOARD (PW-5002) BLOCK



SLIDE SW./VIDEO CHANGE SW. BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		SLIDE SW. BLOCK		
7-1x	BV573197	Slide SW. Block Comp.	PW	1
7-2	MZ584368	SW. Plate, w/shaft	CV-1043	1
7-3	ZG422368	Lock Arm Spring	PX-A203	1
7-4	MZ577618	Lock Arm, w/pin	PW-2058	1
7-5	ZW430446	Washer (Nylon) D3.1x8x0.25t		3
7-6	ZW270088	'E' Ring 1.9M	6-1-9	1
7-7	VM422381	Slide Plate Shaft	PX-A206	2
7-8	VM422370	Slide Plate	PX-A208	1
7-9	ZG422392	Slide SW. Return Spring	PX-A207	1
7-10	ZW357164	'E' Ring 2.3M	6-1-9	2
7-11	ES510748	Slide SW. SL242B-4DW	25-3-82	1
7-12	ES589972	Micro SW. MT-20	25-1-32	1
7-13	ES393726	SCrew, truss head 3x10		2
7-14	ZW273802	Toothed Lock Washer M3		2
7-15	EZ577574	Micro SW. Arm	PW-2053	1
7-16	ZW356657	'E' Ring 1.5M	6-1-9	2
7-17	ML577585	Shut-off Lever, w/shaft	PW-2054	1
7-18	MZ577956	Shut-off Arm	PW-2057	1
7-19	MZ577607	Pivot Arm	PW-2056	1
7-20	ZS394525	Screw, binding head 2x3		2
7-21	MZ579644	Tape Protector	CV-1125	1
7-22	ZS379405	ISO Screw, binding head 3x6		4
7-23	MH579262	SW. Plate Prop B	CV-1014	1
7-24	MZ576898	Card Angle	PW-1017	1
7-25	MH577168	SW. Plate Prop	PW-1055	1
		VIDEO CHANGING SW. BLOCK		
7-26x	BV573074	Video Changing SW. Block Comp.	PW	1
7-27	SP576358	Connector Panel	PW-2035	1
7-28	EJ499792	10P Connector RD02-15-10S	31-1-87	1
7-29	ES422471	Slide SW. SL-B262B	25-3-38	1
7-30	ZS430413	Screw, countersunk head 2.6x4		2
7-31	EV422482	Vol., w/sw. V12M41S 100 kB	36-25-2	1
7-32	EJ464995	Jack SJ-296	31-2-42	2
7-33	VM422537	Nylon Collar For Jack D3.5	PX-A147	2
7-34x	ZW430402	Washer (Nylon) D6.2x10x0.5t		2
7-35	EJ378990	Jack, 5P Din S-1 8123	31-1-1	1
7-36	ZS202061	Screw, binding head 3x5		2
7-37x	EA577552	SW. P.C. Board	PW-5010	1
7-38x	ER450101	Carbon/R. RD1/4 330k(J) (Insu. Type)	35-9-5	1
7-39x	ZW432347	Washer D6.2x13x0.125t (Luminar)		1
7-40x	ES572220	Slide SW. MFS-201N (Special)	25-3-87	1
		ASSEMBLY BLOCK		
7-41	VM422234	Counter Bracket	PX-A114	1
7-42	MC422280	Counter KMP-3836	9-1-15	1
7-43	ZW572152	Screw, round head 2x4		2
7-44	ZS379350	ISO Screw, pan head 3x6		2
7-45	VM422245	Counter Bracket Column	PX-A106	2
7-46	MZ577203	Relay P.C. Board Parts	PW-1061	1
7-47	ZS379405	ISO Screw, binding head 3x6		6
7-48	MB422267	Counter Belt A D55.6x1.1x1.1	PX-A115	1
7-49	MB422278	Counter Belt B D35.8x1.1x1.1	PX-A116	1
7-50	VM422256	Middle Pulley Shaft	PX-A107	1
7-51	VM422291	Middle Pulley	PX-A113	1
7-52x	ZW374534	Washer (Nylon) D3x5x0.5t		1
7-53	ZW270088	'E' Ring 1.9M	6-1-9	1
7-54x	ZW357658	Nut M2.6		1
7-55	MZ576955	Micro SW. Bracket	PW-1030	1
7-56	ES477966	Micro SW. SS-5GL	25-1-23	2
7-57	ZS356670	Screw, binding head 2.3x15		2
7-58	ZW269785	Toothed Lock Washer M2.3		2
7-59	ZS201925	Screw, binding head 2.3x5		2
7-60x	ER213030	Carbon/R, RD1/4 5.6k(J) (Stop. Type)	35-10-1	1
7-61x	EC320040	Elect./C. 47μF 16WV (Vert. Type)	24-12-9	1

ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
8-1	BZ430637	Battery Case Comp.	PW, CV, PX	1
8-2	ZS422076	Screw, pan head 3x5		5
8-3	MZ577732	Read Wire Cover	PW-2078	1
8-4	ZS365940	Screw, binding head 2.3x3		3
8-5	EZ610356	Wire Support A	PW-1091	1
8-6	MZ576843	Connection Angle A	PW-1011	1
8-7	MZ615183	Connection Peace C	PW-1094	2
8-8	ZS200384	Screw, countersunk head 3x6		11
8-9	MZ576854	Connection Angle B	PW-1012	1
8-10	MZ576865	Connection Angle C	PW-1013	1
8-11	ZS379405	ISO Screw, binding head 3x6		7
8-12	VM359820	connector Mt. Plate (L)	PX-165	1
8-13	VM359818	Connctor Cover	PX-164	1
8-14	VM358086	Connector 8P MB-8S-7.5A-1	31-1-63	1
8-15x	ZW562476	Earth Lug M3		1
8-16	BA573298	Fuse P.C. Board Comp.	PW-5009	1
8-17	ET375603	Transistor 2SC1061(B)(C)	45-1-96	1
8-18	EF358031	Fuse 125V 4A (Lead Type)	39-1-31	1
8-19	ZS321298	ISO Screw, binding head 3x8		6
8-20	ZW273756	Nut M3		1
8-21	ZS417273	Screw, binding head 2.3x4		1
8-22	MZ577124	Setting Angle A	PW-1048	1
8-23	MZ577146	Setting Angle C	PW-1050	1
8-24	VM359414	P.C. Board Prop A	PX-126	3
8-25	VM359447	P.C. Board Prop E, PX	PX-127	1
8-26	VM359425	P.C. Board Prop B	PX-126	4
8-27	VM359280	Mech. Panel Prop, PX	PX-113	1
8-28	MZ577157	Setting Pole	PW-1051	1
8-29x	ZS344351	Screw, countersunk head 2x4		2
8-30	MZ578070	Mech. Frame, w/shaft	PW-1001	1
8-31x	FZ577686	SW. Shield Cover	PW-2073	1
8-32x	MZ577708	Shield Sheet 1	PW-2075	1
8-33x	MZ577710	Shield Sheet 2	PW-2075	1
8-34x	ZS201925	Screw, binding head 2.3x5		4
8-35x	MZ577113	Video P.C. Board Spacer	PW-1047	1

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

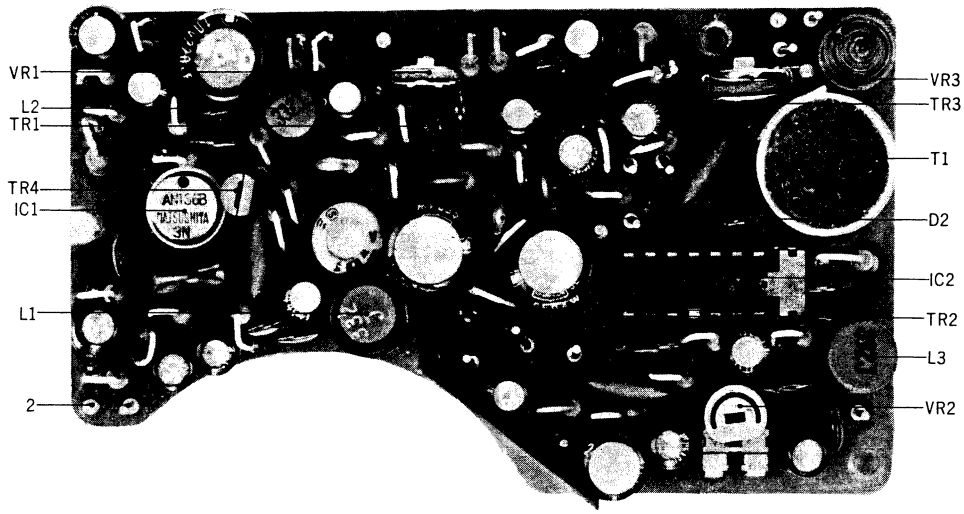
VIDEO P.C. BOARD (PW-5002) BLOCK

Symbol No.	Parts No.	Description	Q'ty
9-1x	BA573276	Video P.C. Board Comp. (PW-5002)	1
9-IC1	EI572681	I.C. AN-302	1
9-IC2	EI357917	I.C. P-5 (AE-163)	2
9-IC3	EI572692	I.C. AN-304	1
9-IC4	EI361462	I.C. P-2	1
9-IC5	EI564298	I.C. GR-118	1
9-IC6	EI357917	I.C. P-5 (AE-163)	2
9-TR1,2	ET572703	Transistor 2SC1216(F)	2
9-TR3	ET475503	Transistor 2SC968P(3)	1
9-TR4	ET380834	Transistor 2SC711(E)	1
9-TR5to8	ET361923	Transistor 2SC536(E)	4
9-TR9	ET423224	FET 2SK19(BL)	1
9-TR10,11	ET350392	Transistor 2SC645(B)	2
9-TR12	ET380430	Transistor 2SC460(C)	1
9-D1	ED219464	Germanium Diode 1N34A	1
9-D2	ED374692	Silicon Diode SD-13	1
9-D3,4	ED572714	Germanium Diode 1S73A	2
9-T1	BT355746	Trans. P10HNS10-3.2BA	1
9-T2	BT361822	Trans. SNY-033-1352	1
9-T3	BT361833	Trans. SNY-033-1351	1
9-T4	EO423235	RF Coil 14SO48	1
9-RL1	EP524801	Relay NR-H-6V	1
9-L1	EO361890	Inductor FS0810S 39μH(J)	1
9-L2	EO357772	Inductor FS0810S 100μH(J)	1
9-L3	EO485504	Ferri Inductor FL5H 270μH(K)	1
9-L4	EO355847	Ferri Inductor FL4H 3.3μH(K)	1
9-L5	EO419635	Ferri Inductor FL7H 1μH(K)	1
9-L6	EO357772	Inductor FS0810S 100μH(J)	1
9-L7	EO361888	Inductor FS0810S 180μH(J)	1
9-L8	EO357772	Inductor FS0810S 100μH(J)	1
9-L9	EO419613	Ferri Inductor FL7H 330μH(K)	1
9-L10	EO361888	Inductor FS0810S 180μH(J)	1
9-L11	EO423246	Inductor FS0810S 220μH(J)	1
9-L12	EO428703	Inductor FS0810S 1μH(J)	1
9-VR1,2	EV464253	Semi-fixed/Vol. V8K1-1 2 kB	2
9-VR3	EV523214	Semi-fixed/Vol. V8K1-1 5 kB	1
9-VR4	EV572747	Semi-fixed/Vol. V8K1-1 100ΩB	1
9-VR5	EV523708	Semi-fixed/Vol. V8K1-1 500ΩB	1
9-VR6	EV522663	Semi-fixed/Vol. V8K1-1 100 kB	1
9-VR7	EV572758	Semi-fixed/Vol. V8K1-1 200ΩB	1
9-TH1	ED572760	Thermister 34D22	1
9-2	EJ350447	Test Terminal	2
9-3	EJ363126	P.C. Board Terminal	2
9-R24	ER361686	Solid/R. RC1/2W 68Ω(K)	1
		Capacitor Vertical Type	
9-C1	EC350616	VFM 50PF(J) 50WV	1
9-C2	EC290520	VFM 100PF(J) 50WV	1
9-C3	EC350616	VFM 50PF(J) 50WV	1
9-C4,5	EC329771	Elect. 47μF 6.3WV	2
9-C6	EC572771	Tantalum 0.15μF(K) 35WV (DTS Type)	1
9-C7	EC572444	Tantalum 47μF(M) 6.3WV (DTS Type)	1
9-C8	EC573322	NP/C. 33μF 16WV	1
9-C9	EC435690	Styrol 560PF(J) 50WV	1
9-C10	EC320040	Elect. 47μF 16WV	1
9-C11	EC220105	Elect. 100μF 10WV	1
9-C12	EC374218	Ceramic TLD07F 0.01μF(Z) 25WV	1
9-C13	EC593065	Tantalum 3.3μF(M) 25WV (DTS Type)	1
9-C14	EC469686	VFM 51PF(J) 50WV	1
9-C15	EC522145	Trimmer/C. DT07D200 20P	1
9-C16	EC402388	VFM 39PF(J) 50WV	1
9-C17	EC320051	Elect. 10μF 16WV	1
9-C18	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C19	EC374218	Ceramic TLD07F 0.01μF(Z) 25WV	1
9-C20	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C21	EC423797	Ceramic TLD08F 0.02μF(Z) 25WV	1
9-C22	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C23	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C24	EC536905	Tantalum 33μF(K) 10WV (DTS Type)	1
9-C25	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C26	EC374218	Ceramic TLD7F 0.01μF(Z) 25WV	1
9-C27	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C28	EC361710	Ceramic TLD04F 0.001μF(Z) 25WV	1
9-C29	EC220105	Elect. 100μF 10WV	1
9-C30,31	EC374218	Ceramic TLD07F 0.01μF(Z) 25WV	2
9-C32	EC361732	Ceramic DD620 BC 0.5μF(Z) 12WV	1
9-C33	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C34	EC220105	Elect. 100μF 10WV	1
9-C35	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C36	EC220590	Elect. 33μF 10WV	1
9-C37	EC350616	VFM 50PF(J) 50WV	1
9-C38	EC350638	VFM 180PF(J) 50WV	1
9-C39	EC451462	VFM 150PF(J) 50WV	1
9-C40	EC220105	Elect. 100μF 10WV	1
9-C41	EC350616	VFM 50PF(J) 50WV	2
9-C42	EC572793	Styrol 250PF(J) 50WV	1
9-C43	EC405898	Styrol 470PF(J) 50WV	1
9-C44	EC435690	Styrol 560PF(J) 50WV	1
9-C45	EC250683	Mylar 0.0022μF(J) 50WV	1
9-C46	EC329771	Elect. 47μF 6.3WV	1
9-C47	EC220590	Elect. 33μF 10WV	1
9-C48,49	EC329771	Elect. 47μF 6.3WV	2
9-C50,51,52	EC220105	Elect. 100μF 10WV	3
9-C53	EC522145	Trimmer DT07D200 20P	1
9-C54	EC350594	Ceramic TLD14F 0.1μF(Z) 25WV	1
9-C55	EC250885	Mylar 0.01μF(K) 50WV	1
9-C56	EC220105	Elect. 100μF 10WV	1
9-C57	EC250604	Mylar 0.001μF(K) 50WV	1
9-C58	EC250885	Mylar 0.01μF(K) 50WV	1
9-C59	EC391004	Mylar 0.0033μF(J) 50WV	1
9-C60	EC374218	Ceramic TLD07F 0.01 F(Z) 25WV	1

Carbon Resistor Omitted.

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

FIG. 10 PHOTO OF AUDIO P.C. BOARD (PW-5001) BLOCK



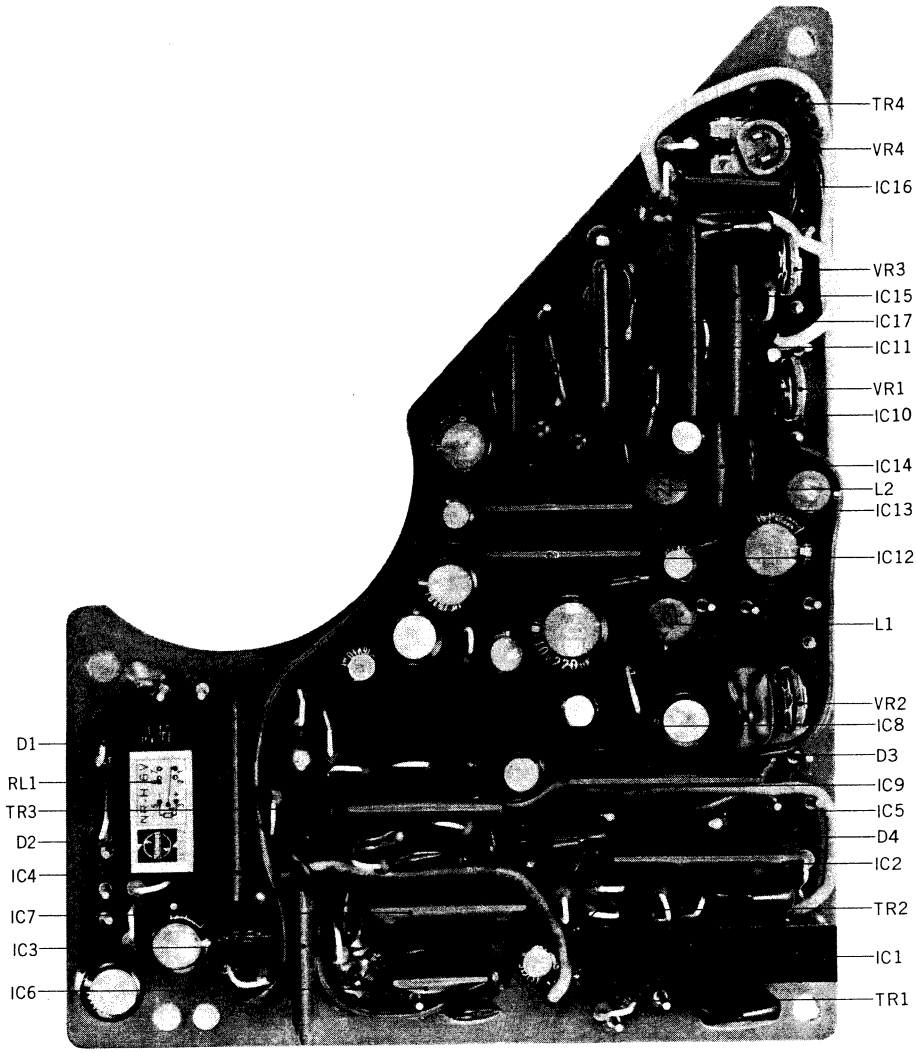
AUDIO P.C. BOARD (PW-5001) BLOCK

Symbol No.	Parts No.	Description	Q'ty
10-1x	BA573265	Audio P.C. Board Comp. (PW-5001)	1
10-IC1	EI329207	I.C., Line Amp. AN136B(Q)	1
10-IC2	EI361934	I.C. M5101P	1
10-TR1	ET361923	Transistor 2SC536(E)	1
10-TR2	ET564974	Transistor 2SA610(5)	1
10-TR3	ET399846	Transistor 2SC945(Q)	1
10-TR4	ET522268	Transistor 2SA733(Q)	1
10-D2	ED219464	Germanum Diode 1N34A	1
10-L1	EO362092	Inductor FS1012S 3.3MH(J)	1
10-L2	EO243988	Ferri Inductor FL7H 3.3MH(J)	1
10-L3	EO572670	Ferri Inductor FL9H 3.9MH(K)	1
10-VR1	EV522663	Semi-fixed/Vol. V8K1-1 100kB	1
10-VR2	EV589408	Semi-fixed/Vol. V8K4-1 200ΩB	1
10-VR3	EV362081	Semi-fixed/Vol. EVL-TOA 100 kB	1
10-T1	BT362114	Trans, SNY-1424	1
10-2	EJ363126	P.C. Board Terminal	17
10-3	MZ576527	Audio Shield Plate A	1
		Capacitor, Vertical Type	
10-C1	EC220432	Elect.2.2μF 25WV	1
10-C2	EC250604	Mylar 0.001μF(K) 50WV	1
10-C3	EC220465	Elect. 22μF 6.3WV	1
10-C4	EC350706	Elect. 4.7μF 16WV	1
10-C5	EC313323	Mylar 0.068μF(K) 50WV	1
10-C6	EC290564	VFM 220PF(K) 50WV	1
10-C7	EC329782	Elect. 220μF 10WV	1
10-C8	EC220590	Elect. 33 μF 10WV	1
10-C9	EC329782	Elect. 220μF 10WV	1
10-C10	EC523271	Elect. 22μF 10WV	1
10-C11	EC424708	Mylar 0.0018μF(J) 50WV	1
10-C12	EC250841	Mylar 0.01μF(J) 50WV	1
10-C13	EC424708	Mylar 0.0018μF(J) 50WV	1
10-C14	EC368256	Elect. 0.47μF 25WV	1
10-C15	EC250604	Mylar 0.001μF(K) 50WV	1
10-C16	EC220432	Elect. 2.2μF 25WV	1
10-C17	EC336104	Elect. 100μF 6.3WV	1
10-C18	EC357232	Mylar 0.0039μF(K) 50WV	1
10-C19	EC250661	Mylar 0.0015μF(K) 50WV	1
10-C20	EC320051	Elect. 10μF 16WV	1
10-C21	EC343236	Elect. 330μF 6.3WV	1
10-C22	EC250841	Mylar 0.01μF(J) 50WV	1
10-C23	EC320051	Elect. 10μF 16WV	1
10-C24	EC220432	Elect. 2.2μF 25WV	1
10-C25	EC290564	VFM 220PF(K) 50WV	1
10-C26	EC350706	Elect. 4.7μF 16WV	1
10-C27	EC362125	Mylar 0.0056μF(K) 50WV	1
10-C28	EC320051	Elect. 10μF 16WV	1
10-C29	EC250604	Mylar 0.001μF(K) 50WV	1
10-C30	EC320051	Eelct. 10μF 16WV	1
10-C31	EC220465	Elect. 22μF 6.3WV	1
10-C32	EC250885	Mylar 0.01μF(K) 50WV	1
10-C33	EC350706	Elect. 4.7μF 16WV	1
10-C34	EC320040	Elect. 47μF 16WV	1
10-C35	EC250885	Mylar 0.01μF(K) 50WV	1
10-C36	EC250716	Mylar 0.0022μF(K) 50WV	1
10-C37	EC250885	Mylar 0.01μF(K) 50WV	1
10-C38	EC571061	FM 120PF(K) 500WV	1
10-C39	EC375456	Plastic Film 3300PF(J) 250WV	1

Carbon Resistor Omitted.

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

FIG. 11 PHOTO OF SERVO P.C. BOARD (1) (PW-5004) BLOCK



SERVO P.C. BOARD (1) (PW-5004) BLOCK

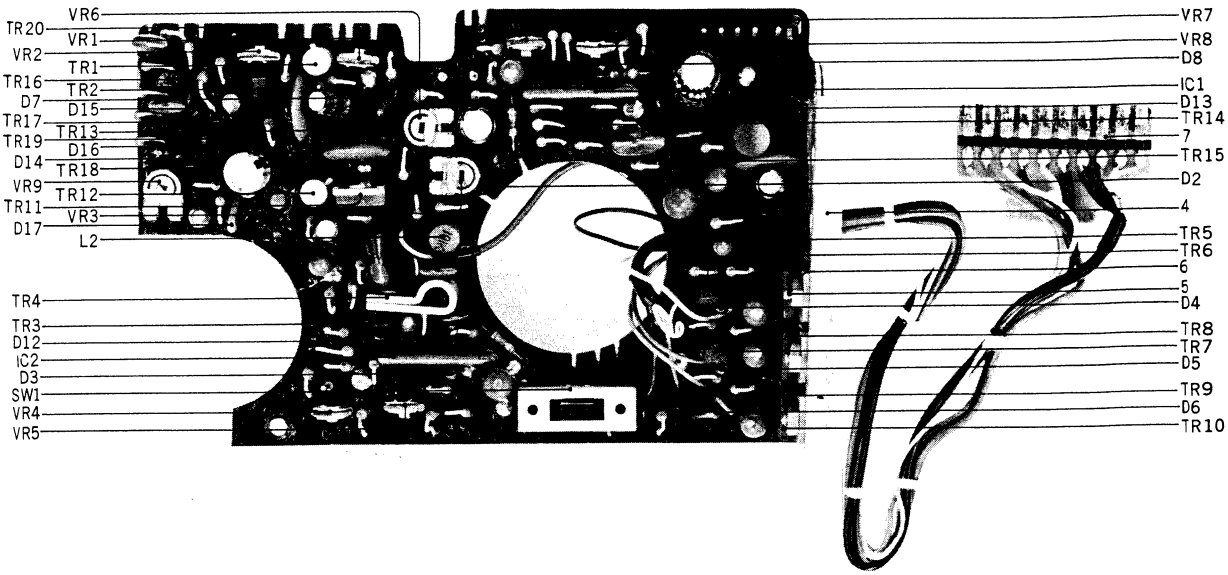
Symbol No.	Parts No.	Description	Q'ty
11-1x	BA573208	Servo P.C. Board (1) Comp. (PW-5004)	1
11-2x	BA573210	Servo P.C. Board (1) Comp. (PW-5004)(PAL)	1
11-IC1	EI362395	I.C. D-2116	1
11-IC2	EI572308	I.C. PH-01	1
11-IC3	EI572321	I.C. MM-01	1
11-IC4	EI572310	I.C. SW-02	1
11-IC5	EI476796	I.C. 6M004	1
11-IC6	EI572275	I.C. PA-02	1
11-IC7	EI362362	I.C. FF-10	1
11-IC8	EI575065	I.C. PA-01A	1
11-IC9	EI572286	I.C. TR-01	1
11-IC10	EI572264	I.C. PA-03	1
11-IC11	EI572332	I.C. SW-01	1
11-IC12	EI572343	I.C. SW-03	1
11-IC13	EI564287	I.C. HA-113	1
11-IC14	EI572253	I.C. PA-04	1
11-IC15	EI572321	I.C. MM-01	1
11-IC16	EI572264	I.C. PA-03	1
11-IC17	EI572297	I.C. PH-02	1
11-TR1,2	ET538378	Transistor 2SA733(R)	1
11-TR3	ET380834	Transsistor 2SC711(E)	1
11-TR4	ET538378	Transistor 2SA733(R)	1
11-D1,2	ED224526	Silicon Diode 10D1	2
11-D3,4	ED219464	Germanium Diode 1N34A	2
11-VR1,2	EV572422	Semi-fixed/Vol. V8K1-1 20 kB	2
11-VR3	EV522663	Semi-fixed/Vol. V8K1-1 100 kB	1
11-VR4	EV572433	Sem i-fixed/Vol. V8K4-1 500 kB	1
11-L1,2	EO374681	Ferri Inductor FL7H 220μH(K)	2
11-RL1	EP124801	Relay NR-H-6V	1
11-3	EJ363126	P.C. Board Terminal	22
11-4	EJ363150	Test Terminal	6
		Capacitor, Vertical Type	
11-C1	EC329782	Elect. 220μF 10WV	1
11-C2	EC251291	Mylar 0.1μF(K) 50WV	1
11-C3	EC320051	Elect. 10μF 16WV	1
11-C4	EC251291	Mylar 0.1μF(K) 50WV	1
11-C5	EC496901	Tentalum 0.6μF(K) 35WV (DTS Type)	1
11-C6	EC250885	Mylar 0.01μF(K) 50WV	1
11-C7	EC522753	Tantalum 0.33μF(K) 35WV	1
11-C8	EC250885	Mylar 0.01μF(K) 50WV	1
11-C9	EC220105	Elect. 100μF 10WV	1
11-C10	EC536905	Tantalum 33μF(K) 10WV (DTS Type)	1
11-C11	EC320051	Elect. 10μF 16WV	1
11-C12	EC320040	Elect. 47μF 16WV	1

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

Symbol No.	Parts No.	Description	Q'ty
11-C13	EC251087	Mylar 0.022μF(K) 50WV	1
11-C14	EC250885	Mylar 0.01μF(K) 50WV	1
11-C15	EC251190	Mylar 0.056μF(K) 50WV	1
11-C16	EC331705	Elect. 22μF 16WV	1
11-C17	EC251087	Mylar 0.022μF(K) 50WV	1
11-C18,19	EC572455	Ceramic 680PF(K) 50WV	2
11-C20	EC320051	Elect. 10μF 16WV	1
11-C21	EC320040	Elect. 47μF 16WV	1
11-C22	EC379214	Mylar 0.047μF(J) 50WV	1
11-C23	EC536207	Tantalum 1μF(K) 35WV (DTS Type)	1
11-C24	EC320040	Elect. 47μF 16WV	1
11-C25	EC334620	Mylar 0.22μF(K) 50WV	1
11-C26	EC389485	Mylar 0.018μF0J) 50WV	1
11-C27,28	EC251291	Mylar 0.1μF(K) 50WV	2
11-C29	EC329782	Elect. 220μF 10WV	1
11-C30	EC450055	Elect. 1μF 25WV	1
11-C31	EC320040	Elect. 47μF 16WV	1
11-C32	EC250885	Mylar 0.01μF(K) 50WV	1
11-C33	EC450055	Elect. 1μF 25WV	1
11-C34	EC320040	Elect. 47μF 16WV	1
11-C35,36	EC572444	Tantalum 47μF(M) 6.3WV (DTS Type)	1
11-C37	EC250716	Mylar 0.0022μF(K) 50WV	1
11-C38	EC450055	Elect. 1μF 25WV	1
11-C39	EC220590	Elect. 33μF 10WV	1
11-C40	EC250885	Mylar 0.01μF(K) 50WV	1
11-C41	EC522753	Tantalum 0.33μF(K) 35WV (DTS Type)	1
11-C42	EC220105	Elect.100μF10WV	1
11-C43	EC250975	Mylar 0.015μF(J) 50WV	1
11-C44	EC424708	Mylar 0.0018μF(J) 50WV	1
11-C45,46	EC251291	Mylar 0.1μF(K) 50WV	1
11-C47	EC536207	Tantalum 1μF(K) 35WV (DTS Type)	1

Carbon Resistor Omitted.

FIG. 12 PHOTO OF SERVO P.C. BOARD (2) (PW-5005) BLOCK



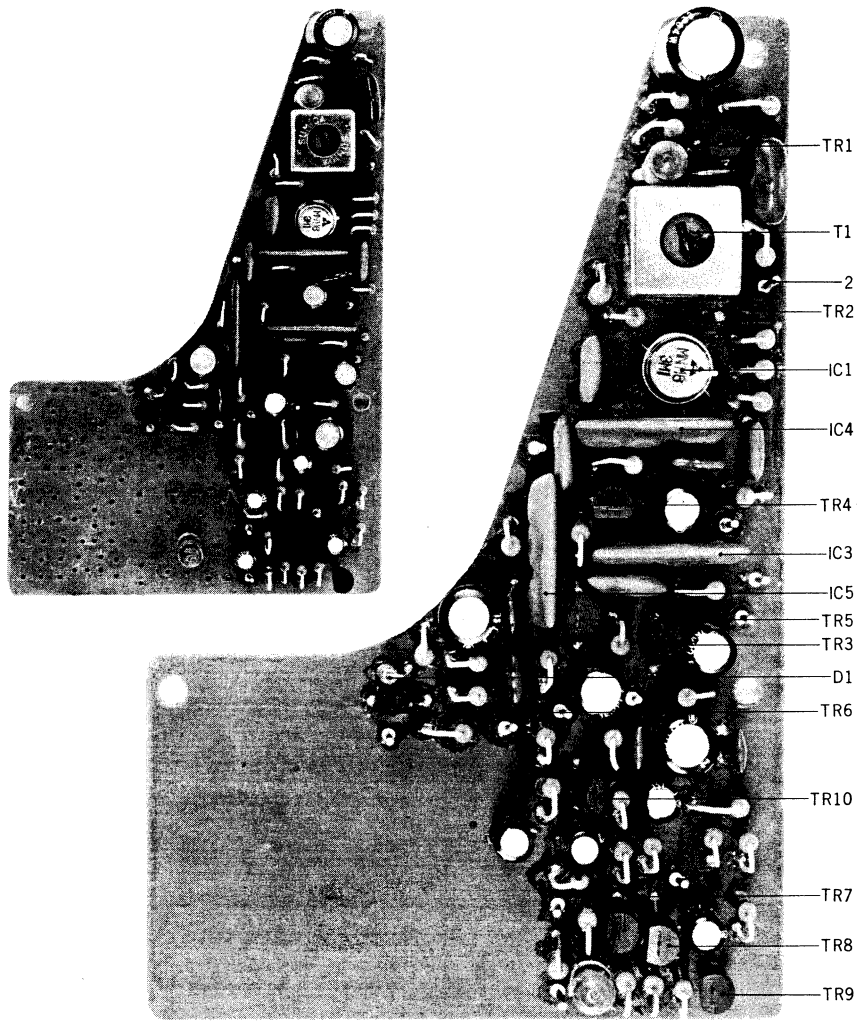
SERVO P.C. BOARD (2) (PW-5005) BLOCK

Symbol No.	Parts No.	Description	Q'ty
12-1x	BA573221	Servo P.C. Board (2) Comp. (PW-5005)	1
12-2x	BA573232	Servo P.C. Board (2) Comp. (PW-5005)(CCIR)	1
12-IC1	EI572477	I.C. D4532	1
12-IC2	EI572488	I.C. D4533	1
12-TR1	ET338894	Transistor 2SC968(3)	1
12-TR2	ET345802	Transistor 2SC454(B)	1
12-TR3	ET380834	Transistor 2SC711(E)	1
12-TR4	ET572466	Transistor 2SA545(K)	1
12-TR5	ET380834	Transistor 2SC711(E)	1
12-TR6	ET362261	Transistor 2SC1061(B)	1
12-TR7	ET380834	Transistor 2SC711(E)	1
12-TR8	ET362261	Transistor 2SC1061(B)	1
12-TR9	ET380834	Transistor 2SC711(E)	1
12-TR10	ET362261	Transistor 2SC1061(B)	1
12-TR11	ET522911	Transistor 2SD313(D)(E)(F)	1
12-TR12	ET338894	Transistor 2SC968(3)	1
12-TR13	ET345802	Transistor 2SC454(B)	1
12-TR14	ET380834	Transistor 2SC711(E)	1
12-TR15	ET522268	Transistor 2SA733(Q)	1
12-TR16to18	ET523056	Transistor 2SA628(D)	3
12-TR19	ET380834	Transistor 2SC711(E)	1
12-TR20	ET523056	Transistor 2SA628(D)	1
12-D1	ED570475	Zener Diode WZ-075	1
12-D2	ED557447	Silicon Diode 1S1588	1
12-D3	ED570521	Zener Diode XZ-049	1
12-D4,5,6	ED557447	Silicon Diode 1S1588	3
12-D7	ED570475	Zener Diode WZ-075	1
12-D8	ED570521	Zener Diode XZ-049	1
12-D12,13	ED557447	Silicon Diode 1S1588	2
12-D14to16	ED514721	Silicon Diode WG-599	3
12-D17	ED591030	Zener Diode WZ-052	1
12-VR1	EV475470	Semi-fixed/Vol. V8K1-1 10kB	1
12-VR2	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	1
12-VR3	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	1
12-VR4, 5	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	2
12-VR6	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	1
12-VR7, 8	EV522404	Semi-fixed/Vol. V8K1-1 1 kB	2
12-VR9	EV523620	Semi-fixed/Vol. V8K4-1 500ΩB	1
12-L2	EO575651	Ferri Inductor FL7H 100μH(K)	1
12-SW1	ES572624	Slide SW. SSC243C	1

Symbol No.	Parts No.	Description	Q'ty
12-J1	EJ575425	Pin Connector 128-05-10-2819	1
12-3	EJ363126	P.C. Board Terminal	3
12-4	EZ577822	Heat-sink Plate	1
12-5	ZS421806	Screw, pan head 3x8	3
12-6	ZW273756	Nut M3	3
12-7	BA577877	Relay P.C. Board	1
		Capacitor, Vertical Type	
12-C1	EC320051	Elect. 10μF 16WV	1
12-C2	EC523530	Ceramic TLD14F 0.1μF(Z) 25WV	1
12-C3	EC220105	Elect. 100μF 10WV	1
12-C4	EC522562	Tantalum 100μF (K) 10WV (DT Type)	1
12-C5	EC379157	Mylar 0.033μF(J) 50WV	1
12-C6	EC379170	Mylar 0.1μF(J) 50WV	1
12-C7	EC250841	Mylar 0.01μF(J) 50WV	1
12-C8,9	EC572613	Tantalum 10μF(M) 16WV (DTS Type)	2
12-C11	EC588418	Tantalum 10μF(M) 25WV (DT Type)	1
12-C13	EC588418	Tantalum 10μF(M) 25WV (DT Type)	1
12-C15	EC588418	Tantalum 10μF(M) 25WV (DT Type)	1
12-C16	EC523530	Ceramic TLD14F 0.1μF(Z) 25WV	1
12-C17	EC220105	Elect. 100μF 10WV	1
12-C19	EC572578	Tantalum 68μF(K) 10WV (DT Type)	1
12-C20	EC321208	Elect. 220μF 16WV	1
12-C22	EC536905	Tantalum 33μF(K) 10WV (DTS Type)	1
12-C23	EC379170	Mylar 0.1μF(J) 50WV	1
12-C24	EC250841	Mylar 0.01μF(J) 50WV	1
12-C25	EC522786	Tantalum 100μF(M) 10WV (DT Type)	1
12-C32	EC523530	Ceramic TLD14F 0.1μF(Z) 25WV	1
12-C33	EC220994	Elect. 10μF 25WV	1
12-C34	EC575436	Tantalum 10μF(K) 10WV (DTS Type)	1
12-C35	EC320051	Elect. 10μF 16WV	1
12-C36,37	EC379157	Mylar 0.033μF(J) 50WV	2
12-C38	EC574075	Tantalum 10μF(M) 10WV (DTS Type)	1

Carbon Resistor Omitted.

FIG. 13 PHOTO OF S.S.G. P.C. BOARD (PW-5003) BLOCK



S.S.G. P.C. BOARD (PW-5003) BLOCK

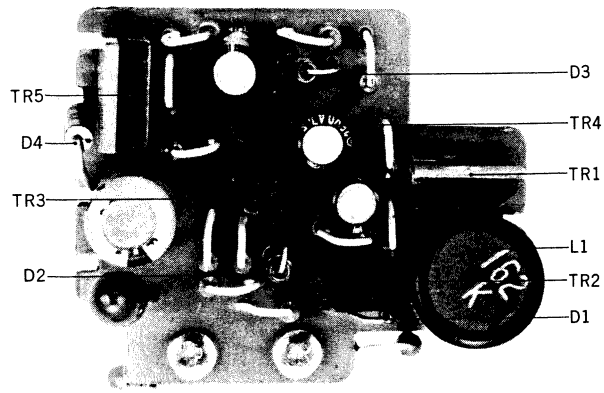
Symbol No.	Parts No.	Description	Q'ty
13-1x	BA573243	S.S.G. P.C. Board Comp. (PW-5003)	1
13-2x	BA573254	S.S.G. P.C. Board Comp. (CCIR)	1
13-IC1	EI476818	I.C. MOS MN-115	1
13-IC1	EI572657	I.C. MOS MN-116(CCIR)	1
13-IC3,4,5	EI476796	I.C. 6MOO4	3
13-TR1	ET522268	Transistor 2SA733(Q)	1
14-TR2 to 5	ET380834	Transistro 2SC711(E)	4
13-TR6	ET522268	Transistor 2SA733(Q)	1
13-TR7,8,9	ET380834	Transistor 2SC711(E)	3
13-TR10	ET522268	Transistor 2SA733(Q)	1
13-D1	ED219464	Germanium Diode 1N34A	1
13-T1	BT362147	Trans. SNY-033-1357	1
13-3	EJ363126	P.C. Board Terminal	12

Symbol No.	Parts No.	Description	Q'ty
		Capacitor, Vertical Type	
13-C1	EC329782	Elect. 220μF 10WV	1
13-C2	EC251291	Mylar 0.1μF(K) 50WV	1
13-C3	EC412615	Styrol 2700PF(J)50WV	1
13-C4	EC329883	Mylar 0.0056μF(J) 50WV	1
13-C5, 6	EC451462	VFM 150PF(J) 50WV	2
13-C7	EC331705	Elect. 22μF 16WV	1
13-C8	EC290564	VFM 220PF(K) 50WV	1
13-C9	EC329861	Mylar 0.027μF(J) 50WV	1
13-C10	EC331705	Elect. 22μF 16WV	1
13-C11	EC290564	VFM 220PF(K) 50WV	1
13-C12	EC251087	Mylar 0.022μF(K) 50WV	1
13-C13	EC220105	Elect. 100μF 10WV	1
13-C14	EC331705	Elect. 22μF 16WV	1
13-C15	EC320040	Elect. 47μF 16WV	1
13-C16	EC320051	Elect. 10μF 16WV	1
13-C17	EC450055	Elect. 1μF 25WV	1
13-C18, 19	EC250885	Mylar 0.01μF(K) 50WV	1
13-C20	EC450055	Elect. 1μF 25WV	1
13-C21	EC320051	Elect. 10μF 16WV	1
13-C22	EC379787	Mylar 0.0039μF(J) 50WV	1
13-C23	EC515834	Styrol 560PF(K) 50WV	1

Carbon Resistor Omitted.

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

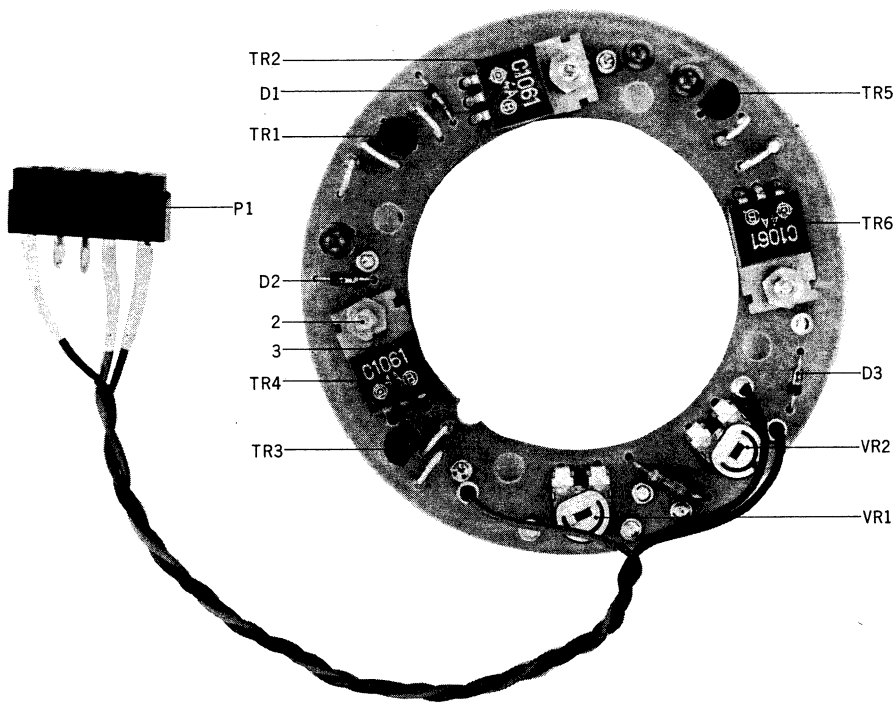
FIG. 14 PHOTO OF TIMING P.C. BOARD (PW-5007) BLOCK



TIMING P.C. BOARD (PW-5007) BLOCK

Symbol No.	Parts No.	Description	Q'ty
14-1x	BA573287	Timing P.C. Board Comp. (PW-5007)	1
14-TR1	ET453600	Transistor 2SA634(L)(K)	1
14-TR2	ET380834	Transistor 2SC711(E)	1
14-TR3,4	ET350335	Transistor 2SA564(Q)	2
14-TR5	ET362261	Transistor 2SC1061(B)	1
14-D1	ED516420	Silicon Diode WG-599	1
14-D2, 3	ED219464	Germanium Diode 1N34A	2
14-D4	ED224526	Silicon Diode 10D1	1
14-L1	EO572938	Inductor FS1215S 1.6MH(K)	1
14-2	MZ577833	Timing P.C. Board Angle	1
14-3	ZS417273	Screw, binding head 2.3x4	2
		Capacitor, Vertical Type	
14-C1	EC368256	Elect. 0.47μF 25WV	1
14-C2	EC575188	Tantalum 22μF(M) 16WV (DTS Type)	1
14-C3	EC336104	Elect. 100μF 6.3WV	1
14-C4	EC220465	Elect. 22μF 6.3WV	1
14-C5	EC320051	Elect. 10μF 16WV	1
14-C6	EC302264	Mylar 0.001μF(K) 50WV	1
		Carbon Resistor Omitted.	

FIG. 15 PHOTO OF MOTOR DRIVE P.C. BOARD (CV-1130) BLOCK



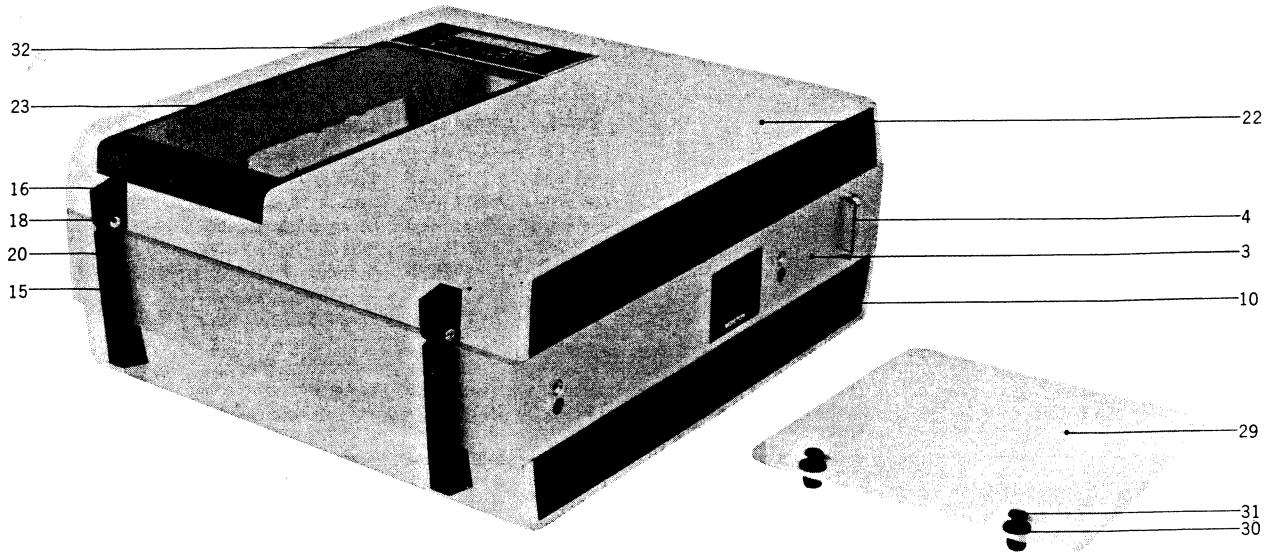
MOTOR DRIVE P.C. BOARD (CV-1130) BLOCK

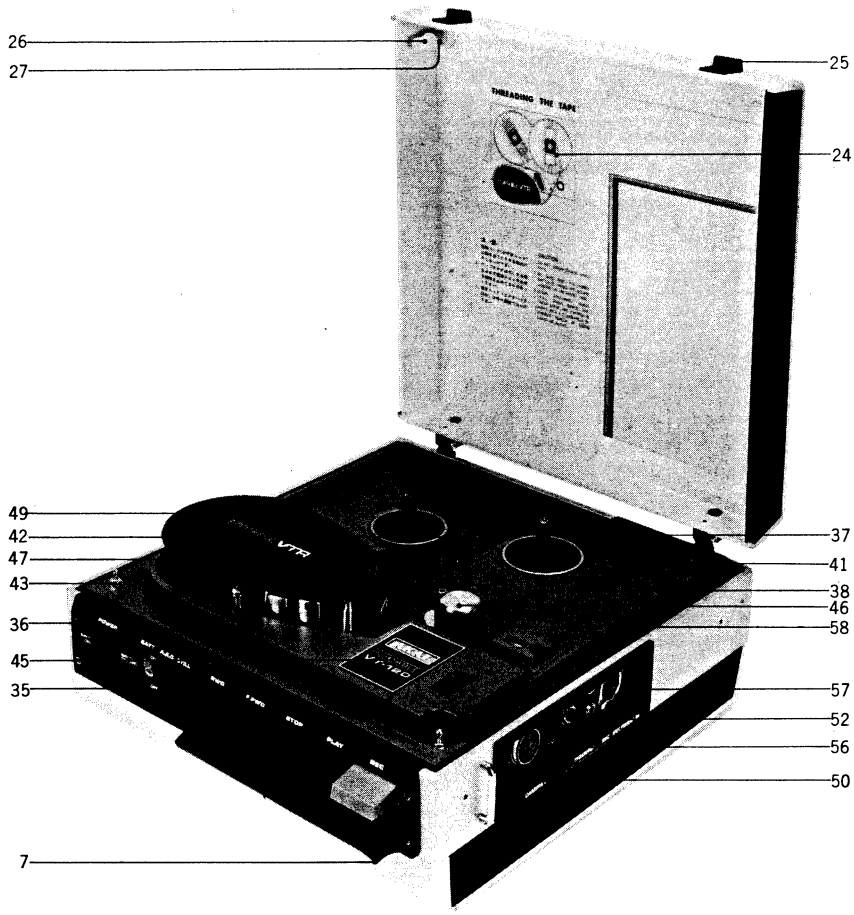
Symbol No.	Parts No.	Description	Q'ty
15-1x	BA575403	Motor Drive P.C. Board Comp. (CV-1130)	1
15-TR1	ET380834	Transistor 2SC711(E)	1
15-TR2	ET362261	Transistor 2SC1061(B)	1
15-TR3	ET380834	Transistor 2SC711(E)	1
15-TR4	ET362261	Transistor 2SC1061(B)	1
15-TR5	ET380834	Transistro 2SC711(E)	1
15-TR6	ET362261	Transistor 2SC1061(B)	1
15-D1,2,3	ED557447	Silicon Diode 1S1588	3
15-P1	EJ575381	Pin Connector 128-05-10-281S	1

Symbol No.	Paets No.	Description	Q'ty
15-VR1,2	EV478686	Semi-fixed/Vol. V8K4-1 1kB	2
15-2	ZC575392	Screw, pan head 2.6x8	3
15-3	ZW609322	Nut M2.6 #1	3
		Capacitor, DTS Type	
15-C1,2,3	EC572613	Tantalum 10μF(M) 16WV	3
15-C4	EC522516	Tantalum 1μF(M) 25WV	1
15-D5,6,7	EC251087	Mylar 0.022μF(K) 50WV (Vert Type)	3
		Carbon Resistor Omitted.	

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

FIG. 16 PHOTO OF FINAL ASSEMBLY BLOCK



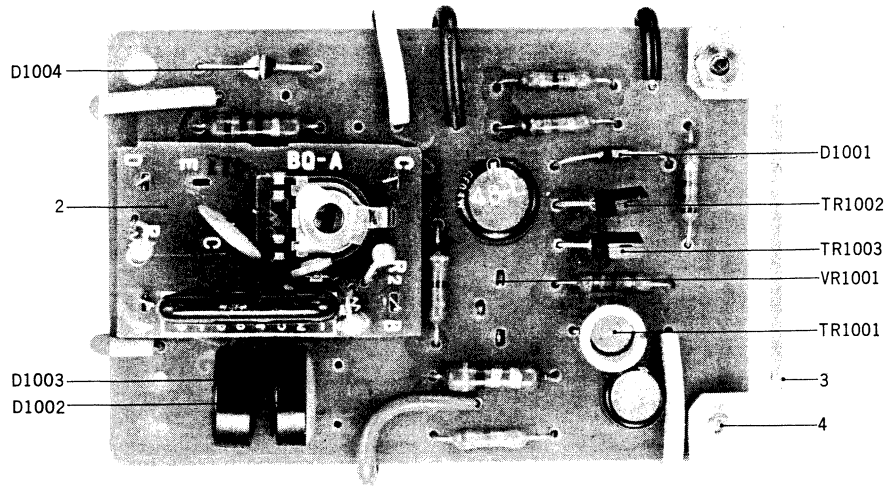


FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	CASE BLOCK			
16-1x	BC573006	Case Block Comp.	PW	1
16-2x	BC573017	Case Block Comp. (CCIR)	PW	1
16-3	ZS578430	Frame B-1	PX-A401	1
16-4	VM360988	Belt Holder	PX-402	2
16-5x	ZW273756	Nut M3		4
16-6x	VM360990	Safety Lock Plate	PX-403	1
16-7	SB361001	Safety Button (Rec.)	PX-404	1
16-8x	ZG361012	Safety Spring	PX-405	1
16-9x	VM361023	Lock Shaft	PX-406	1
16-10	VM421931	Case Bottom	PW-6007	1
16-11x	SZ577844	Case Stopper	PW-6004	9
16-12x	ZS444330	IDO Screw, countersunk head 3x4		9
16-13x	ZS379405	ISO Screw, binding head 3x6		2
16-14x	SZ609985	Case Hold Cover	PW-6013	4
16-15	VM361078	Hinge A	PX-411	2
16-16	VM361080	Hinge B	PX-412	2
16-17x	VM361091	Hinge Shaft	PX-413	2
16-18	ZW570374	Screw, binding head 2.6x4		4
16-19x	ZW535882	ISO Screw, binding head 3x10(Black)		2
16-20	ZS421806	Screw, pan head 3x8		2
16-21x	ZS201183	Screw, truss hea 3x8 (Black)		2
16-22	BC578103	Case Cover	PW-6001	1
16-23	BC577484	Acrylic Wind	PW-6003	1
16-24	SM578057	Threading The Tape Illustration	PW-6009	1
16-25	SK361168	Case Knob	PX-420	2
16-26	VM361170	Case Fastener	PX-421	2
16-27	VM361181	Fastener Retaining	PX-422	2
16-28x	ZS434160	Set Screw, hexagon socket 3x3 (cup/p.)		4
16-29	VM471014	Battery Case Cover	PX-A403	1
16-30	VM356580	Nylatch Grommet H322-2-1		2
16-31	EP356591	Nylatch Plunger H323-2-3-1		2
16-32	SM578068	Case Name Plate VT-120	PW-6002	1
16-33x	SM577361	Rear Name Plate VT-120(US)	PW-6010	1
16-34x	SM577372	Rear Name Plate VT-120 (CCIR)	PW-6010	1
	ASSEMBLY BLOCK			
16-35	SE578081	Button Escutcheon B	PW-6012	1
16-36	ZS433934	Screw, countersunk head 3x6 D=5		4
16-37	SP577506	Mech. Panel	PW-6005	1
16-38	VM355680	Panel Post	PX-604	1
16-39x	ZW273690	Nut M2.3		1
16-40x	ZW438557	Washer (BSP) D2.4x6x0.3t		1
16-41	ZW468336	Screw, binding head 2.3x6 w/washer (Black)		2
16-42	ZS201947	Screw, binding head 2.3x6 (Black)		1
16-43	VM355702	Fastener Holder	PX-606	2
16-44x	ZW572128	Washer (BSP) D2.9x7.4x0.5t		2
16-45	SM576641	Panel Name Plate VT-120	PW-6006	1
16-46	SK355691	Pinch Roller Cap	PX-605	1
16-47	SC421863	Guide Roller Cover	PX-A605	1
16-48x	ZS342088	Set Screw, hexagon socket 3x8		1
16-49	SC355724	Head Cover	PX-608	1
16-50	SE421830	Escutcheon R	PX-A604	1
16-51x	SE421841	Escutcheon L	PX-A607	1
16-52	SK458583	Tracking knob	PX-A181	1
16-53x	ZW466773	Screw, countersunk head 1.7x6 P=0.35		1
16-54x	SE577653	SW. Mask B	PW-2069	1
16-55x	SE577664	SW. Mask AEC	PW-2070	2
16-56	SZ577675	Decorative Plate VT-120	PW-2071	1
16-57	ZS356668	Screw, binding head 2.3x4 (Black)		3
16-58	MP360180	Pinch Roler, PX D=25	PX-226	1
16-59x	MP579374	Sub Pinch Roller D=16	CV-1025	1

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

FIG. 17 PHOTO OF POWER SUPPLY P.C. BOARD (PX-A3008) BLOCK



POWER SUPPLY P.C. BOARD (PX-A3008) BLOCK

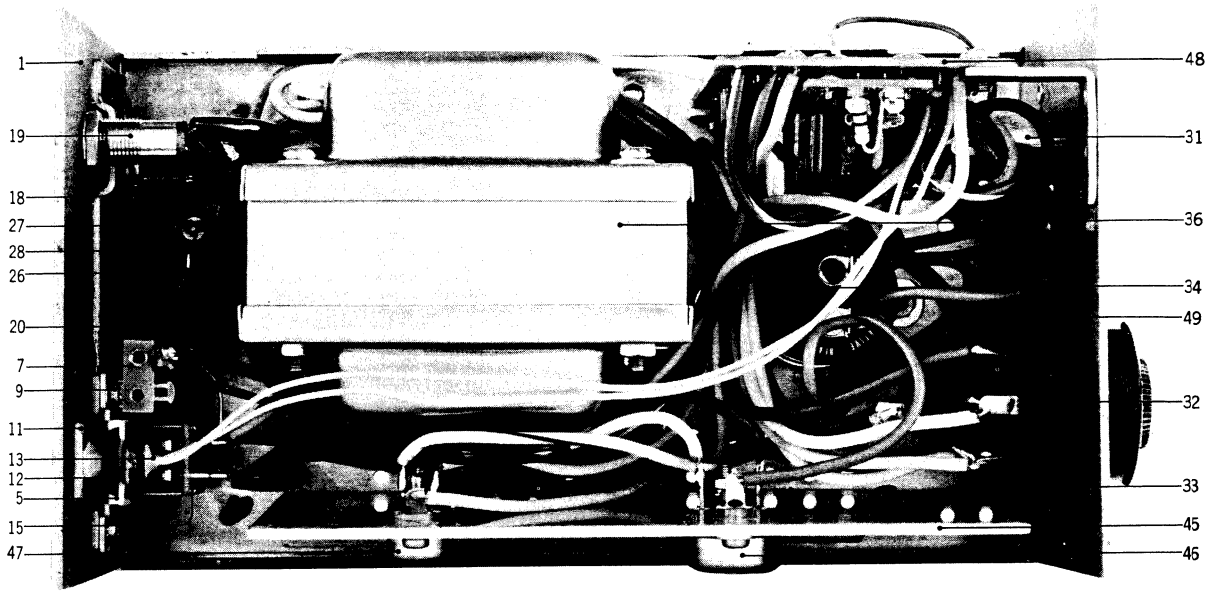
Symbol No.	Parts No.	Description	Q'ty
17-1x	BA423314	Power Supply P.C. Board Comp. (PX-A3008)	1
17-TR1001	ET304255	Transistor 2SC971(2)(3) (Red)	1
17-TR1002,3	ET234753	Transistor 2SC458(B)	2
17-D1001	ED356534	Zener Diode RD-6A(M)	1
17-D1002	ED329128	Silicon Diode 10DC-1 (Red)	1
17-D1003	ED329130	Silicon Diode 10DC-1(Black)	1
17-D1004	ED421795	Silicon Diode VO3C	1
17-VR1001	EV403132	Semi-fixed/Vol. TR12R 300ΩB	1
17-2	BA421762	Charger Unit BQ-A	1
17-3	VM356051	Rec P.C. Board Mt. Metal B	1
17-4	ZS609208	Tapping Screw 3x8 pan head	2
17-5	ZW273802	Toothed Lock Washer M3	2
		Capacitor, Vertical Type	
17-C1001	EC350684	Elect. 22μF 25WV	1
17-C1002	EC220127	Elect. 100μF 16WV	1
		Carbon Resistor Omitted.	

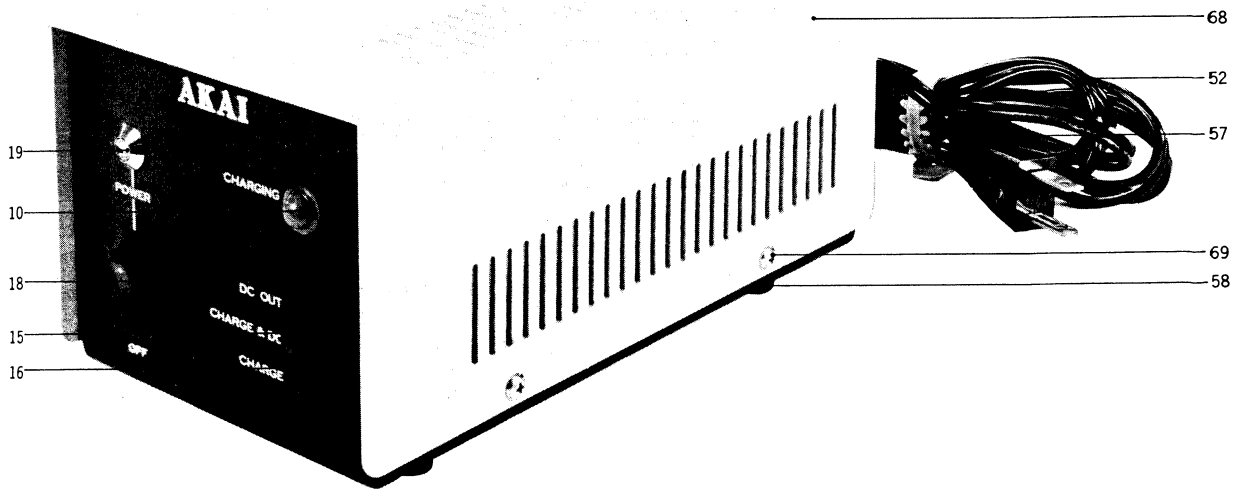
CHARGER ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
18-1	VM421187	Power Chassis	PX-A3001	1
18-2x	VM628042	Power Chassis C (CSA)	PX-A3001	1
18-3x	VM628031	Power Chassis D (CEE)	PX-A3001	1
18-4x	VM582816	Power Chassis B (JPN)	PX-A3001	1
18-5	VM421198	Lamp Retaining Parts	PX-A3003	1
18-6x	VM454948	Power Lamp Retaining Parts (CEE)	PX-3026	1
18-7	EJ255082	Lug Plate VBL2	33-4-10	1
18-8x	EJ255115	Lug Plate VB2L2 (CEE)	33-4-3	1
18-9	ZS417216	Screw, pan head 3x4		2
18-10	VM421222	Charger Lamp Top Cover (Red)	PX-A3004	1
18-11	ZW421233	Speed Nut	PX-A3006	1
18-12	VM421200	Lamp Holder	PX-A3005	1
18-13	EL421211	Lamp 12V 70MA(190MMx2)	28-2-17	1
18-14x	EZ480925	Fuse Terminal Plate 3 (CSA)	33-2-10	1
18-15	ES356343	Slide SW. ESD-282DU	25-3-34	1
18-16	VM356038	Slide SW. Mask	PX-3011	1
18-17x	ZS422076	Screw, pan head 3x5		4
18-18	ES356365	Seesaw SW. T-127U/L	25-2-9	1
18-19	ED618816	Luminous Diode SLP-710H	45-15-4	1
18-20	ED224526	Silicon Diode 10D1	45-2-11	1
18-21x	EJ459426	VA Fuse Plate B (CEE)	PX-A3013	1
18-22x	EF375658	Fuse 200MAT (T Type) (CEE)		1
18-23x	EF375660	Fuse 1AT (T Type) (CEE)		1
18-24x	EF459437	Fuse 315MAT (T Type) (CEE)		1
18-25x	EF480903	Fuse 1A 125V (JPN)	39-1-44	1
18-26	ED356354	Silicon Diode 5B05	45-2-31	1
18-27	ZW535882	ISO Screw, binding head 3x10		2
18-28	ZW273756	Nut M3		4
18-29x	ER622956	Solid/R. RC1/2W 1.2k (K)	35-5-4	1
18-30x	ER229476	Solid/R. RD1/2W 680Ω(K) (CEE)	35-5-4	1
18-31	EJ299316	Jack, 5P Din	31-1-24	1
18-32	EJ233370	Socket S-18010 (Volt Selector)	40-2-3	1
18-33	ZS201183	Screw, truss head 3x8 (Black)		2
18-34	EC362632	Elect./C. 2200μF 25WV (Lug type)	24-10-57	1
18-35x	ZW535882	ISO Screw, binding head 3x10		2
18-36	BT421244	Power Trans. PXT-7	38-4-118	1
18-37x	BT557346	Power Trans. PXT-10 (CSA)	38-4-232	1
18-38x	BT459448	Power Trans. PXT-8 (CEE)	38-4-139	1
18-39x	BT574975	Power Trans. PXT-12(JPN)	38-4-272	1
18-40x	EZ582772	Heat-sink A (JPN)	PX-A3020	1
18-41x	EZ582783	Heat-sink B (JPN)	PX-A3021	1
18-42x	EZ609917	Heat-sink Retaining Plate (JPN)	PX-A3024	1
18-43x	ZS201341	Screw, truss head 4x8		4
18-44x	ZW413188	Nut M4		4
18-45	VM356062	Transistor Heat-sink Plate	PX-3009	1
18-46	ET377098	Transistor 2SD80, w/accessory	45-1-82	1

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

FIG. 18 PHOTO OF CHARGER ASSEMBLY BLOCK





Ref. No.	Parts No.	Description	Schematic No.	Q'ty
18-47	ET350313	Transistor 2SD130(Y), w/accessory	45-1-46	1
18-48	BA423314	Power Supply P.C. Board Comp. VA-110	PX-A3008	1
18-49	EZ382263	Strain Relief SR-4K-4	2-7-12	1
18-50x	EZ246936	Strain Relief SR-6W-1 (WG, 3 core)	2-7-8	1
18-51x	EZ602313	Strain Relief SR-6N3-4 (CSA)	2-7-44	1
18-52	EW540112	AC Cord 2.5M (CUL)	26-3-19	1
18-53x	EW524845	AC Cord (J) 2.5M (JPN)	26-3-31	1
18-54x	EW315448	Australia Cord (3 core)	26-3-11	1
18-55x	EW571735	Cord (3 core) (CEE)	26-3-38	1
18-56x	EJ602908	AC Cord SJT VM-0033 (CSA)	26-3-36	1
18-57	VM356400	AC Cord Clamp		1
18-58	VM421738	Rubber Foot	3-18-14	4

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18-59x	ZS421740	Screw, pan bead 3x8 (Black)		4
18-60x	EZ480925	Fuse Terminal Plate 3 (CSA)	33-2-10	1
18-61x	VM421716	Rear Name Plate (VA-110)	PX-A3007	1
18-62x	VM421727	Rear Name Plate (VA-110) (CCIR)	PX-A3007	1
18-63x	SM571702	Rear Name Plate (VA-110) (CSA)	PX-A610	1
18-64x	EF480903	Fuse 1A 125V (CSA)	39-1-44	1
18-65x	EF277402	Fuse ST-2 1A	39-1-26	1
18-66x	EF371698	Fuse ST-4 0.5A	39-1-28	1
18-67x	EF467144	Fuse ST-1 1.2A	39-1-25	1
18-68	VM356073	Power Supply Cover	PX-3012	1
18-69	ZS335147	Screw, truss head 3x5		4
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BA573254	13-2x	EC250885	9-C58	EC350616	9-C37	ED219464	9-D1	EJ459426	18-21x
BA573265	10-1x	EC250885	10-C32	EC350616	9-C41	ED219464	10-D2	EJ464995	7-32
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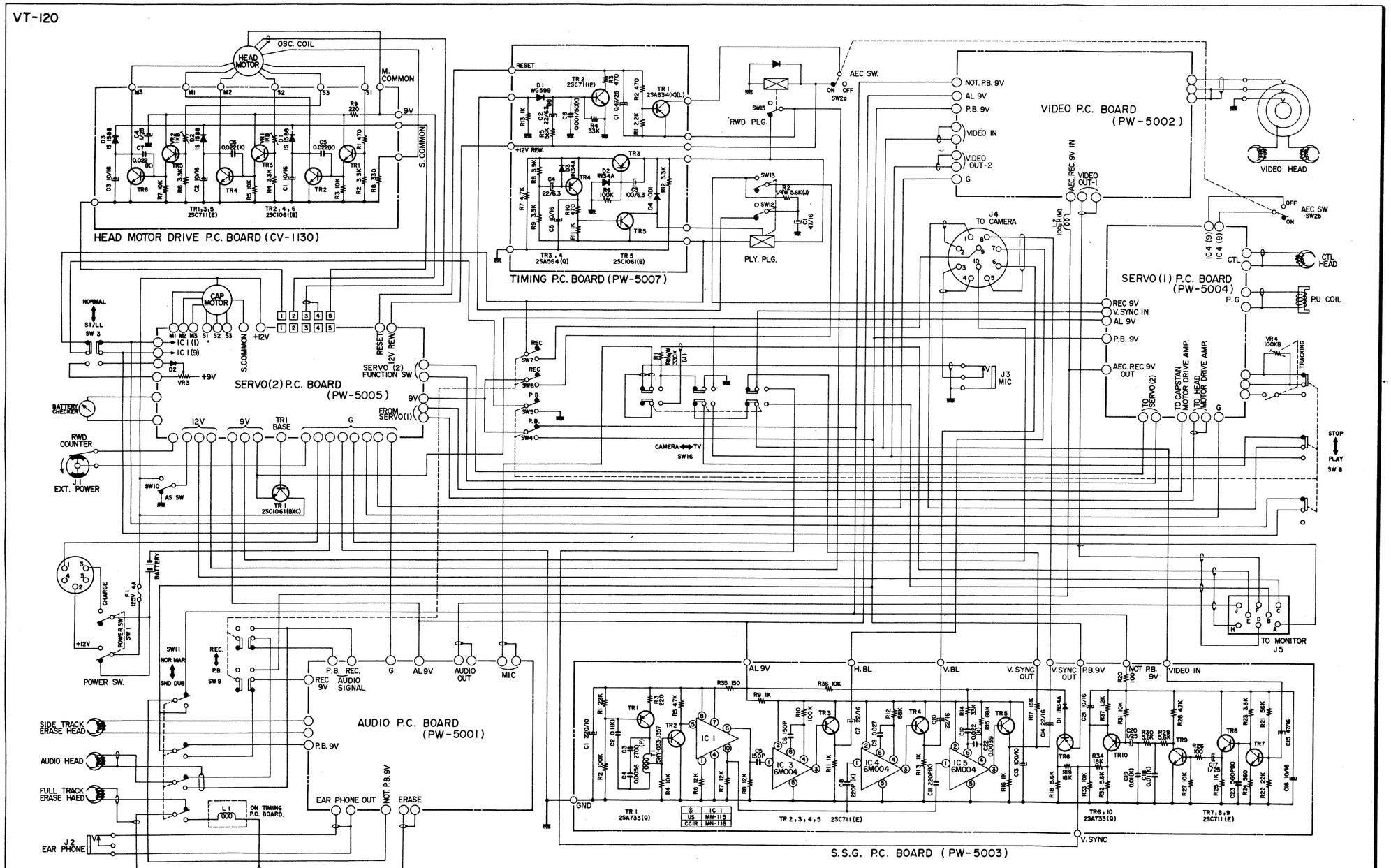
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HC418735	1-77	MZ577394	1-16	VM360988	16-4	VM576731	6-75	ZS417137	6-23
HF358740	1-66	MZ577405	1-18	VM360990	16-6x	MV576742	4-9	ZS417216	18-9
HR573164	1-21	MZ577607	7-19	VM361023	16-9x	VM577034	6-69	ZS417227	4-3
HS358727	1-70	MZ577618	7-4	VM361078	16-15	VM582816	18-4x	ZS417227	5-9
HZ578542	1-71	MZ577642	5-33	VM361080	16-16	VM585450	5-18	ZS417251	5-55
MB359875	2-47	MZ577708	8-32x	VM361091	16-17x	VM585461	2-4	ZS417251	6-78
MB359886	2-29	MZ577710	8-33x	VM361170	16-26	VM585630	5-11	ZS417273	8-21

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
ZS417273	14-3	ZW357164	6-51						
ZS417328	5-12	ZW357164	7-10						
ZS419804	1-85x	ZW357658	7-54x						
ZS419927	1-9	ZW360178	5-40						
ZS419938	1-26	ZW361326	2-39x						
ZS419940	1-24	ZW361337	1-55x						
ZS419940	1-34	ZW361337	2-40x						
ZS419951	1-33x	ZW361348	2-37						
ZS421740	18-59x	ZW374534	7-52x						
ZS421806	5-81	ZW394086	5-52						
ZS421806	12-5	ZW399958	5-28						
ZS421806	16-20	ZW402557	6-53x						
ZS422076	5-3	ZW402557	6-72x						
ZS422076	8-2	ZW413188	18-44x						
ZS422076	18-17x	ZW414145	5-14						
ZS423527	1-64	ZW414145	5-73						
ZS430413	7-30	ZW414145	6-7						
ZS433934	16-36	ZW418511	6-80x						
ZS434160	2-6	ZW421233	18-11						
ZS434160	16-28x	ZW422741	3-5						
ZS434610	1-76	ZW425002	5-34						
ZS434621	1-82x	ZW430402	7-34x						
ZS442585	6-4	ZW430446	7-5						
ZS444240	2-24	ZW432347	7-39x						
ZS444330	5-24	ZW438557	16-40x						
ZS444330	16-12x	ZW439604	5-17						
ZS575392	15-2	ZS464703	5-19						
ZS576303	6-18	ZW466773	16-53x						
ZS576314	6-59	ZW468336	16-41						
ZS576325	6-11	ZW479597	3-12						
ZS589770	1-11x	ZW479608	3-14						
ZS609208	17-4	ZW483221	3-13						
ZS609221	2-14	ZW535882	16-19x						
ZW222390	3-15	ZW535882	18-27						
ZW259413	3-18	ZW535882	18-35x						
ZW259503	5-31	ZW555693	5-15						
ZW259560	1-8x	ZW 555726	3-27						
ZW259738	5-6x	ZW562476	4-13x						
ZW259773	5-46	ZW562476	8-15x						
ZW259773	6-43	ZW570374	16-18						
ZW260188	6-47	ZW572128	16-44x						
ZW260201	6-44	ZW572130	5-47						
ZW269785	7-58	ZW572130	5-68						
ZW270088	3-19	ZW572130	6-58						
ZW270088	5-27	ZW572141	6-64						
ZW270088	7-6	ZW572152	7-43						
ZW270088	7-53	ZW572174	2-18						
ZW270101	2-3	ZW572185	6-8						
ZW270101	3-11	ZW572196	6-12						
ZW270101	5-5	ZW572231	5-29						
ZW270101	5-49	ZW572804	2-35						
ZW270101	6-10	ZW572815	1-53x						
ZW270101	6-45	ZW572815	2-38						
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ZW272261	1-60	ZW577282	2-36						
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ZW273745	1-43x	ZW577304	1-51x						
ZW273756	1-38	ZW577315	1-50x						
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ZW273756	5-36	ZW578902	1-54x						
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ZW273756	16-5x	ZW620234	3-24x						
ZW273756	18-28	ZW620245	3-25x						
ZW273778	1-25x	ZW623283	2-28						
ZW273778	6-22	ZW628053	2-26						
ZW273802	6-65	ZW628086	2-27x						
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ZW273802	17-5								
ZW273835	1-42								
ZW290283	3-9								
ZW355443	1-81x								
ZW356635	2-21								
ZW356657	5-61								
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ZW357164	6-13								

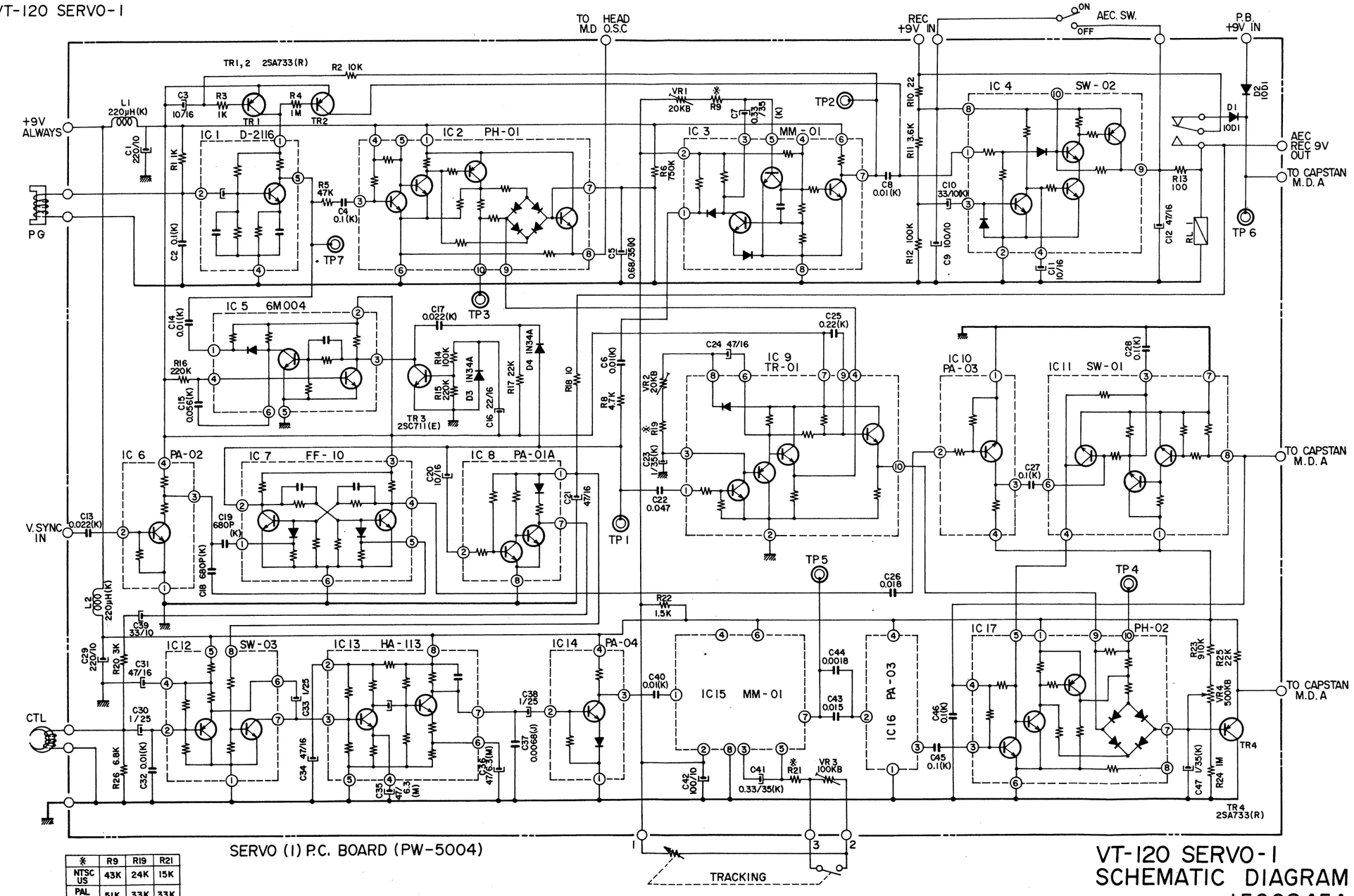
VT-120



VT-120
CONNECTION DIAGRAM

NO. 5-1 1500844A

VT-120 SERVO-1



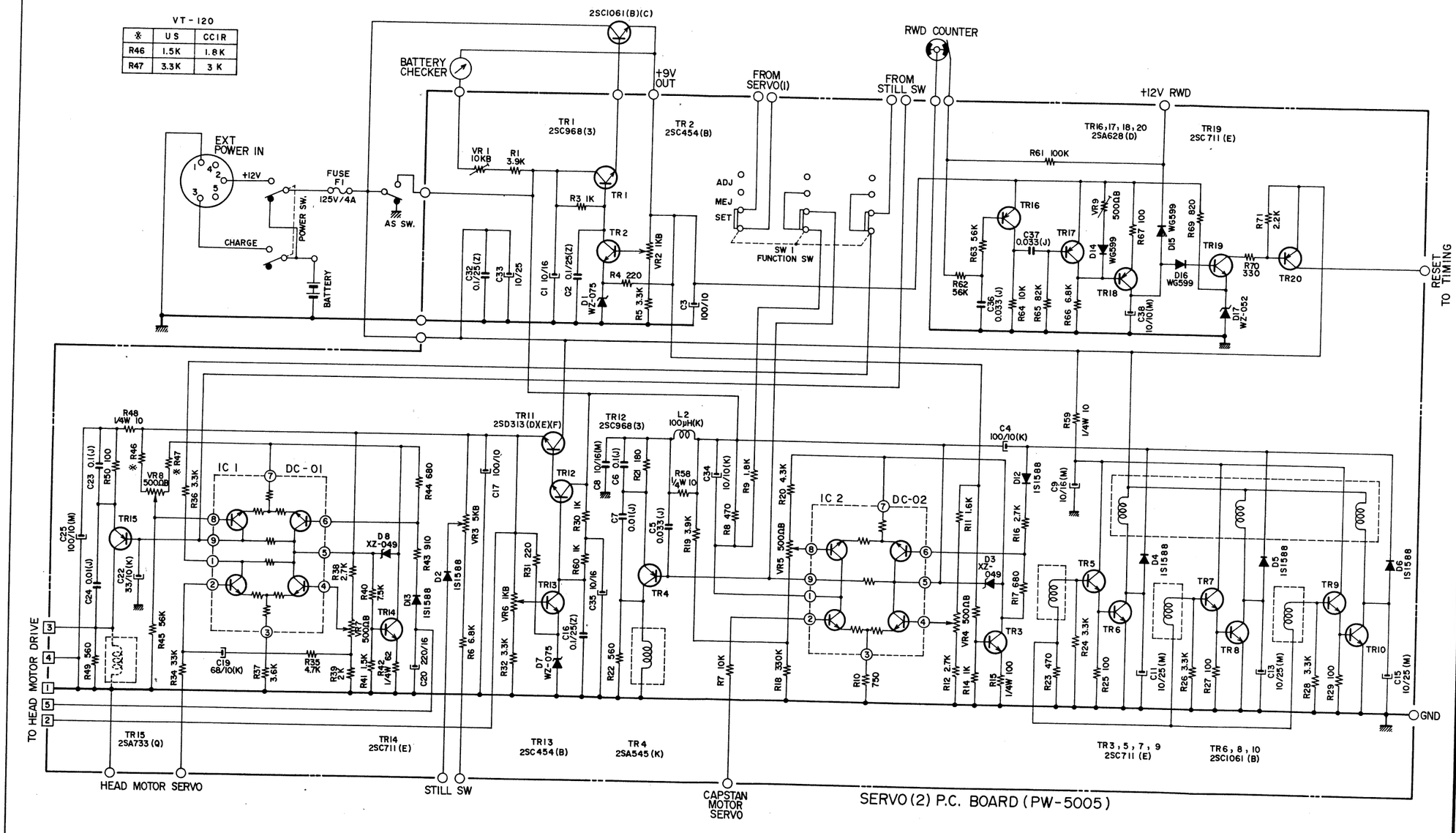
※	R9	R19	R21
NTSC US	43K	24K	15K
PAL CCIR	51K	33K	33K

SERVO (1) P.C. BOARD (PW-5004)

VT-120 SERVO-1
SCHEMATIC DIAGRAM
NO. 5-2 1500845A

VT-120 SERVO-2

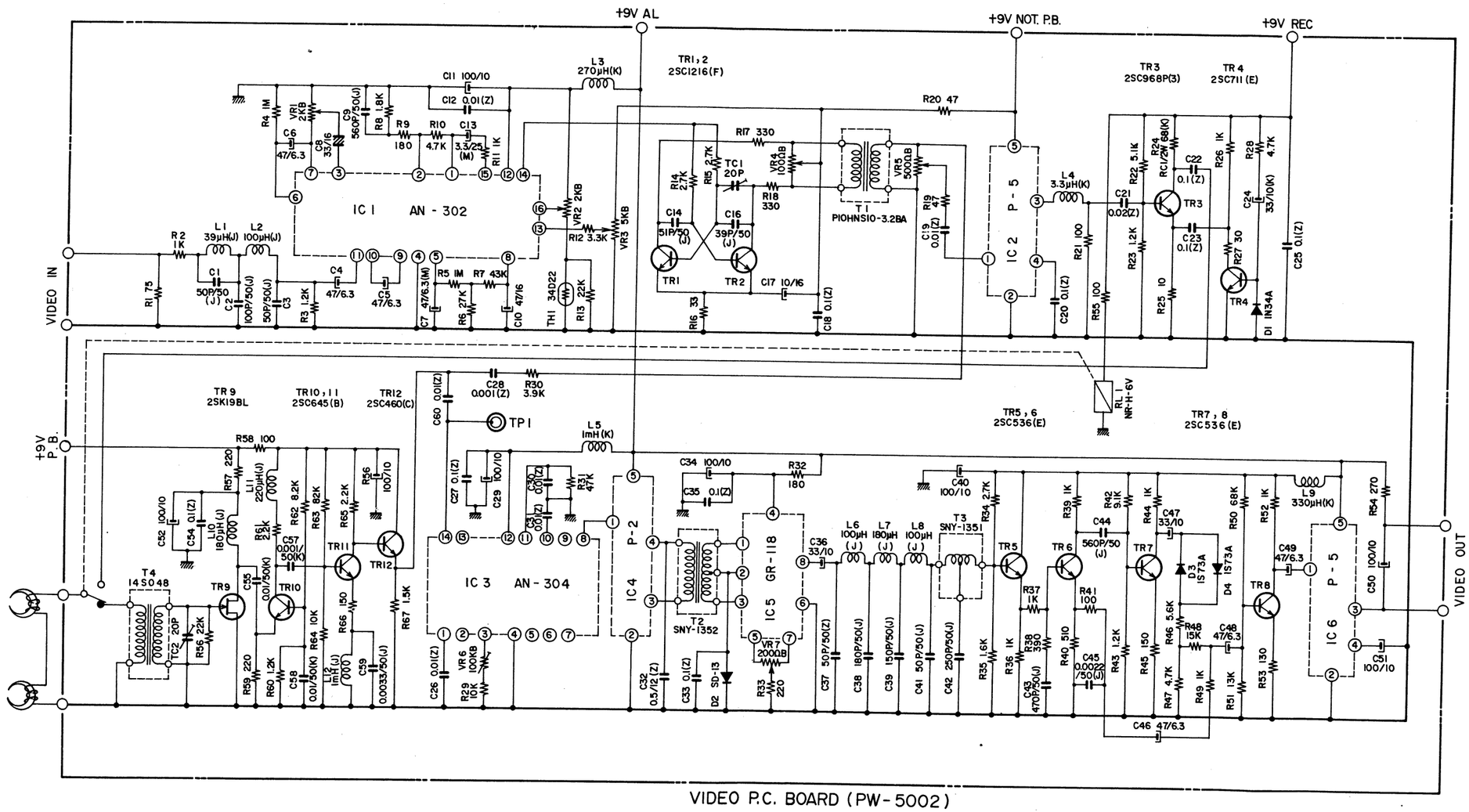
VT-120		
※	US	CCIR
R46	1.5K	1.8K
R47	3.3K	3 K



VT-120 SERVO-2 SCHEMATIC DIAGRAM

NO.5-3 1500846A

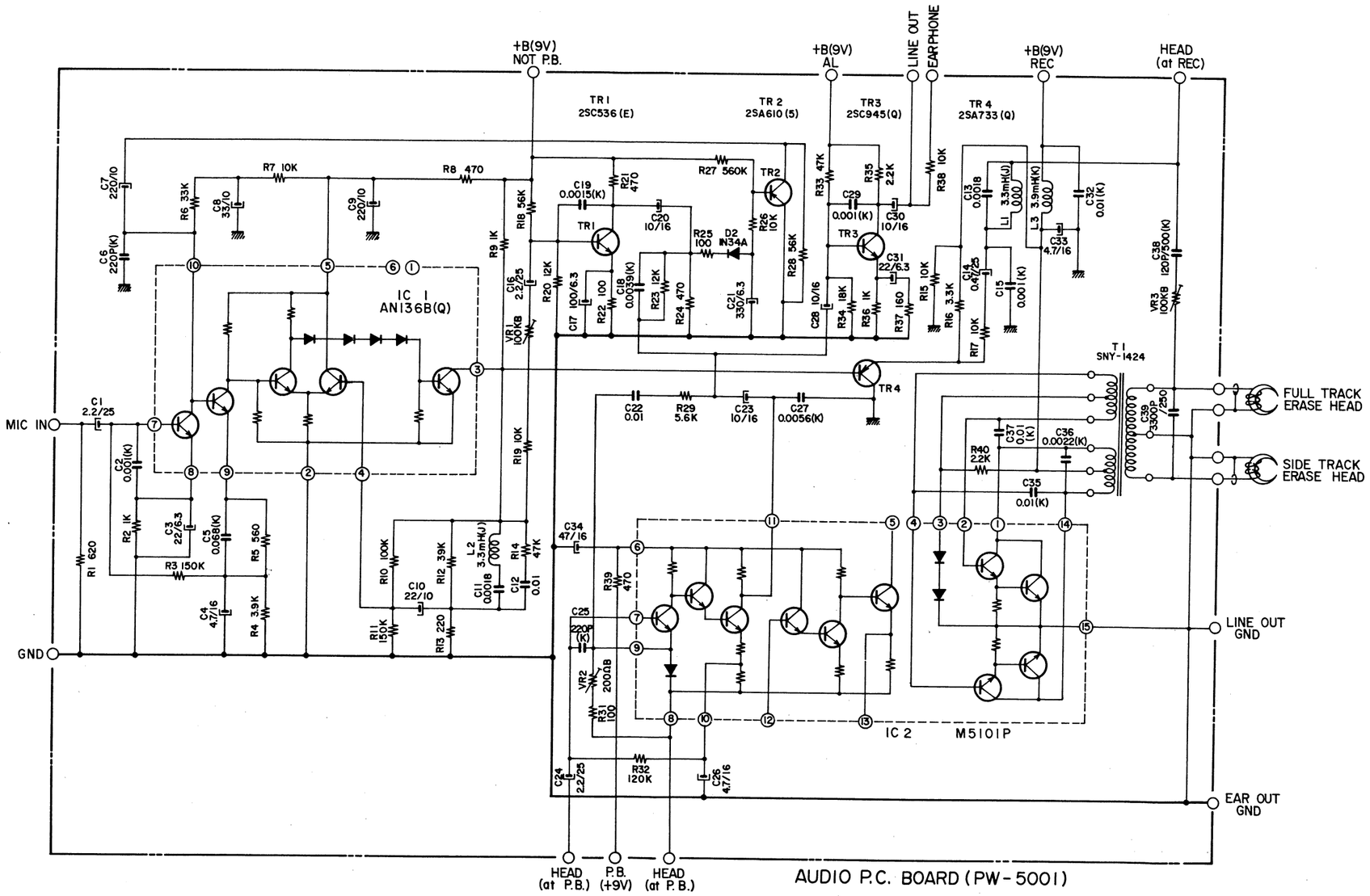
VT-120 VIDEO AMP.



VIDEO P.C. BOARD (PW-5002)

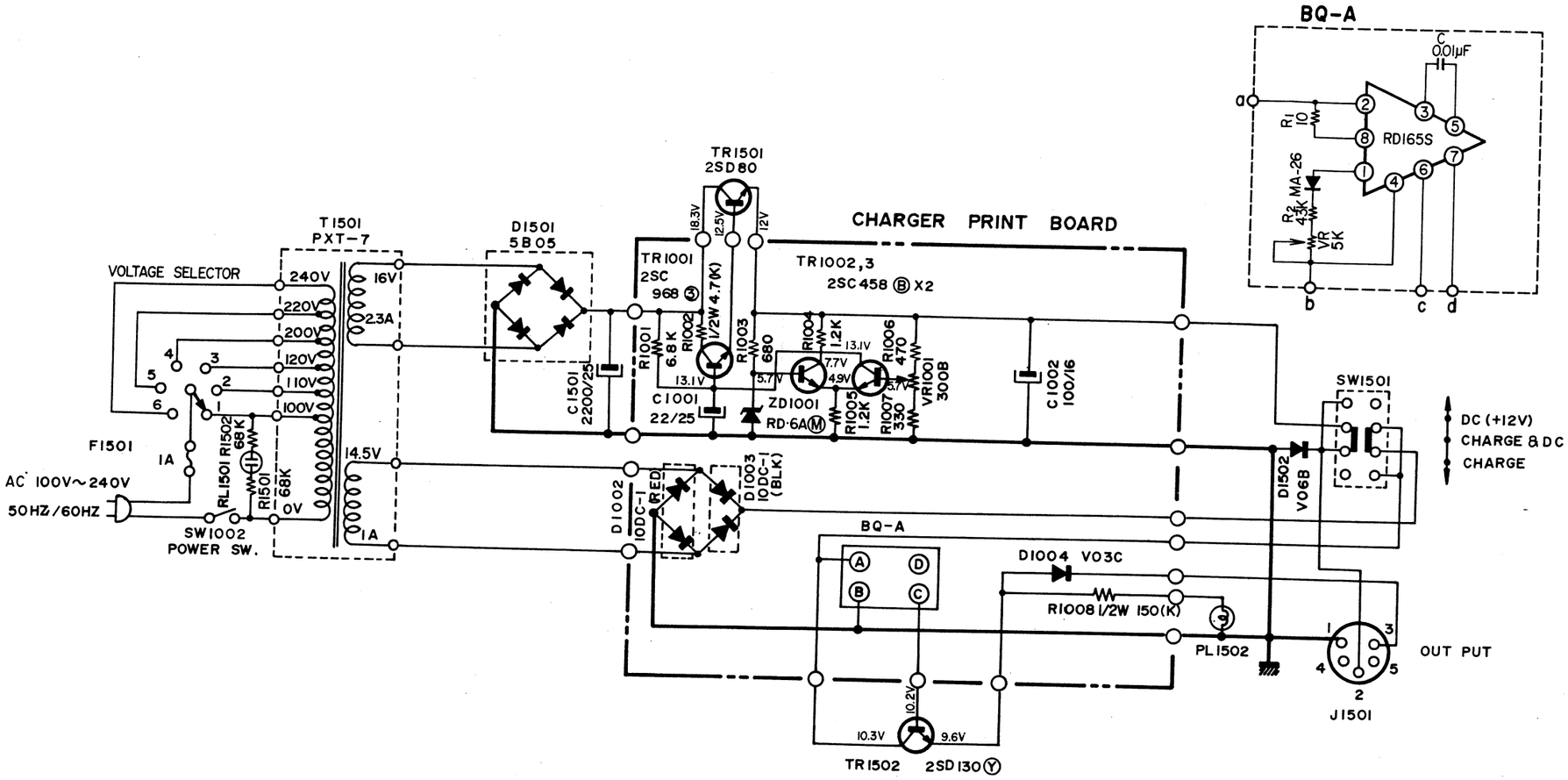
VT-120 VIDEO AMP.
SCHEMATIC DIAGRAM
NO. 5-4 1500847A

VT-120 AUDIO AMP.



VT-120 AUDIO AMP.
SCHEMATIC DIAGRAM
NO. 5-5 1500848A

VA-110 VA-110S VA-100S



NOTE

UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4WJ

ALL CAPACITORS IN MFD. 50WV K

VA-110 (AC. ADAPTOR)
SCHEMATIC DIAGRAM
NO. 1421020A

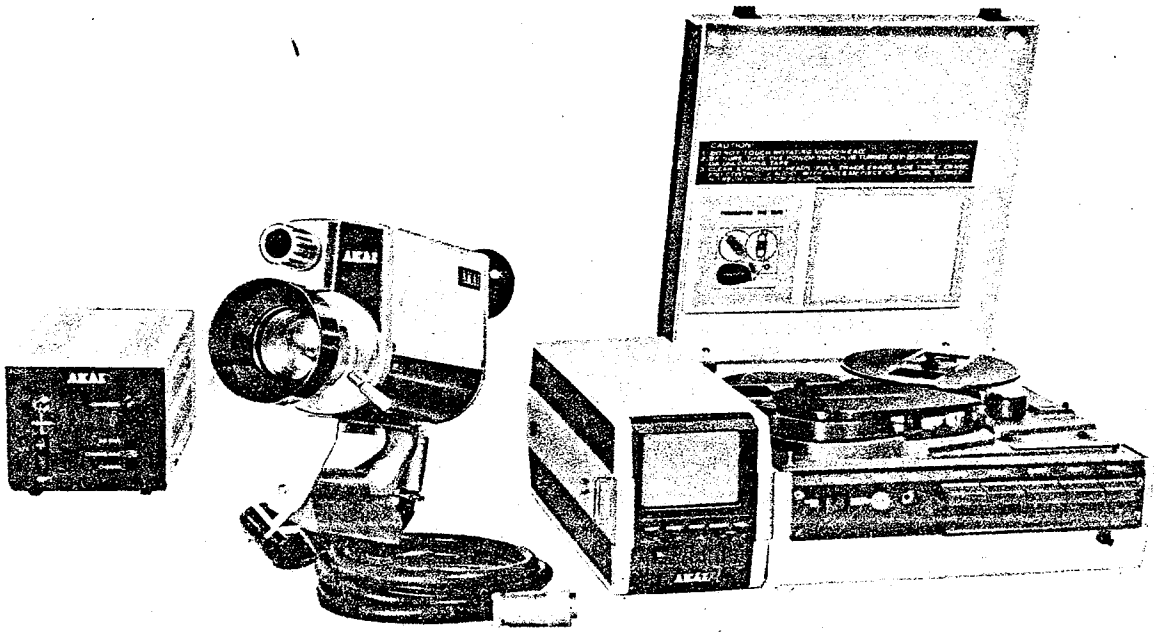
2C

SERVICE MANUAL

AKAI PORTABLE VIDEO TAPE RECORDER SET

MODEL VTS-110

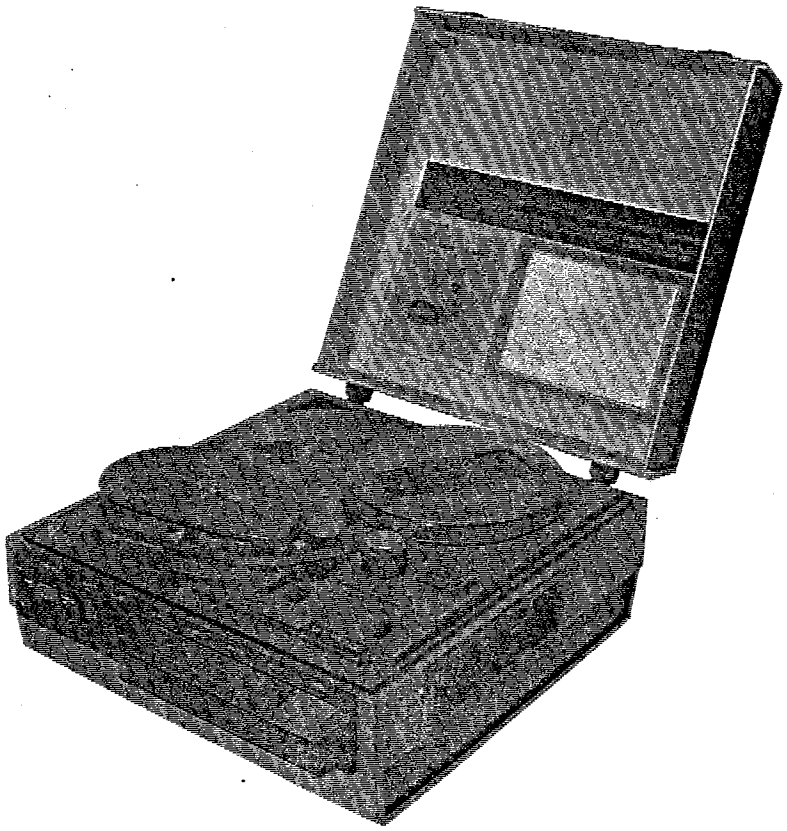
ALSO APPLICABLE TO MODEL **VTS-110DX** & **VTS-100S**



PORTABLE VIDEO TAPE RECORDER SET

MODEL VTS-110

SECTION 1 RECORDER (VT-110) REPAIR AND ALIGNMENT 1
SECTION 2 CAMERA (VC-110) REPAIR AND ALIGNMENT 43
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SECTION 1

RECORDER (VT-110) REPAIR AND ALIGNMENT

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When placing order for parts, please use Separate
PARTS LIST or PRICE LIST FOR PARTS.

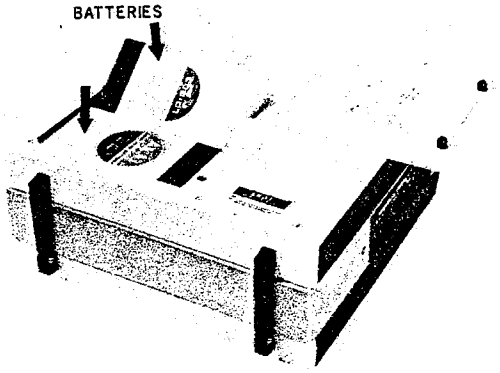
I. SPECIFICATIONS (Video Tape Recorder)

TV SIGNAL	:	U.S. Standard TV Signal or C.C.I.R. Standard TV Signal
RECORDING SYSTEM	:	Twin Rotating Heads (Helical Scan format)
RECORDING TIME	:	20 minutes using a 1,100 ft. tape (C.C.I.R. type 24 minutes)
TAPE SPEED	:	U.S. Type 11-1/4 ips (plus/minus 0.7%) C.C.I.R. Type 23.85 cm/sec. (plus/minus 0.7%)
TAPE WIDTH	:	1/4 inch tape
HORIZONTAL RESOLUTION	:	200 lines
VIDEO SIGNAL TO NOISE RATIO	:	Better than 40 dB
VIDEO INPUT LEVEL	:	1.4 V p-p (composite video signal, 75Ω) (0.5 to 2 V p-p acceptable)
VIDEO OUTPUT LEVEL	:	1.4 V p-p, 75Ω (Monitor Connector)
AUDIO BAND WIDTH	:	100 Hz to 10,000 Hz (plus/minus 3 dB)
AUDIO SIGNAL TO NOISE RATIO	:	Better than 38 dB
MIC. INPUT LEVEL	:	−60 dB, 600Ω (External Microphone Jack)
AUDIO OUTPUT LEVEL	:	1 V r.m.s. plus/minus 3 dB (Monitor Connector)
EARPHONE IMPEDANCE	:	More than 10 kΩ
AUDIO DISTORTION LEVEL	:	Less than 6%
WOW AND FLUTTER	:	Less than 0.17% r.m.s.
FAST FORWARD AND REWIND TIME	:	5 minutes using a 1,100 ft. tape
POWER SOURCE	:	DC 12 V (AC Adapter VA-110 or Batteries)
BATTERIES	:	Two rechargeable batteries (6 V ea) (AKAI LC-303 or Zonnen Shine 3G x 3/U)
WEIGHT	:	5 Kg (11 lbs.)
DIMENSIONS	:	255(W) x 122(H) x 263(D) mm (10 x 44 x 10.3")

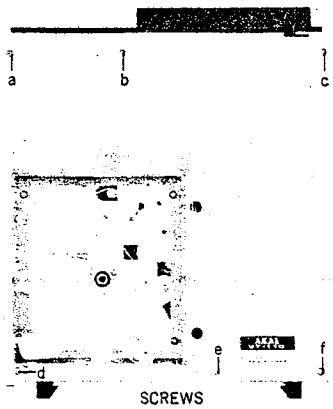
II. CASE REMOVAL

In case of trouble, etc, necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

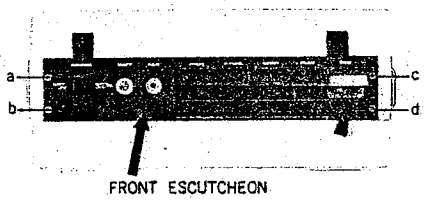
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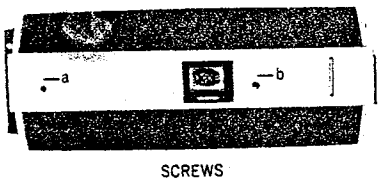
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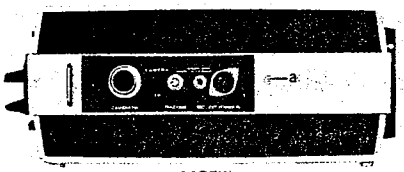
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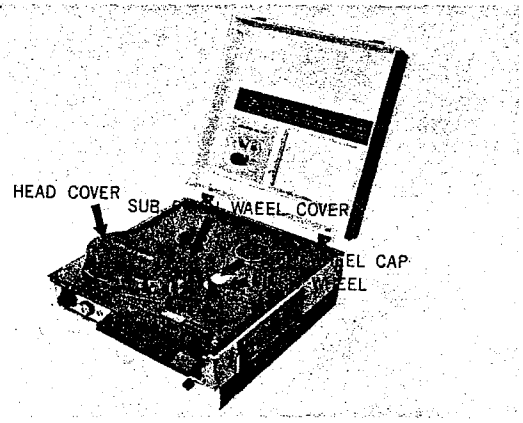
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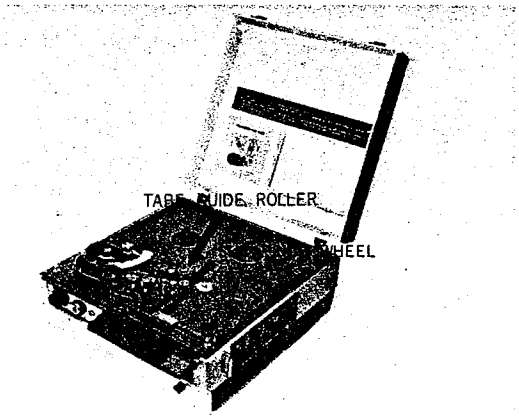
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a
SCREW

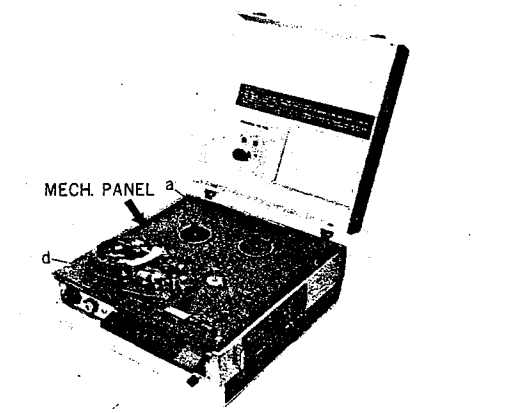
6


HEAD COVER
SUB
WAEEL COVER
EL CAP
EEL

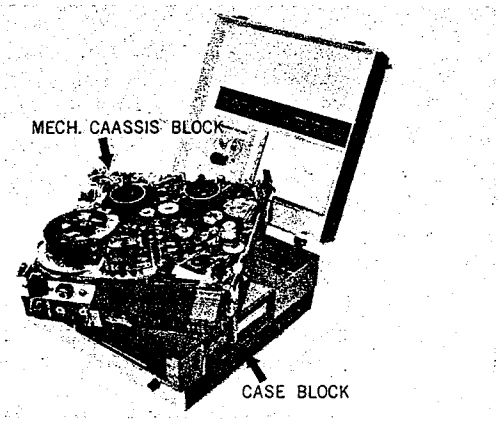
7


TAPE GUIDE ROLLER
WHEEL

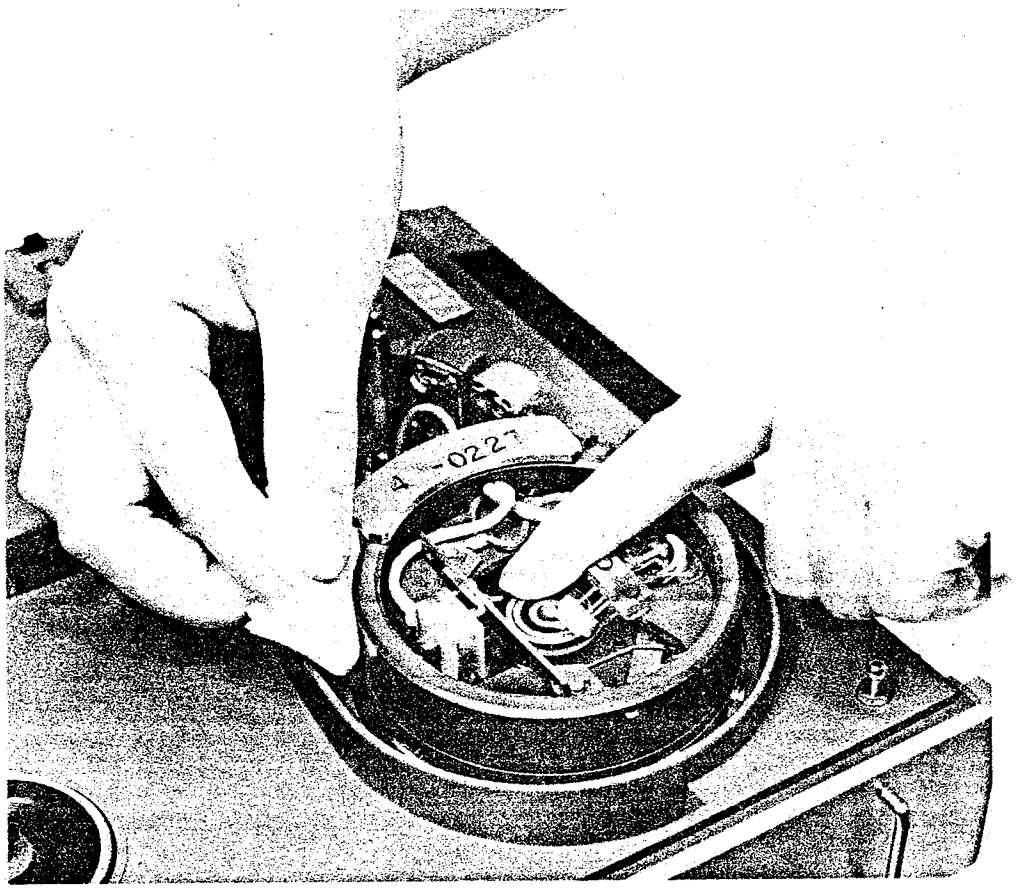
8


MECH. PANEL a
d

9


MECH. CAASSIS BLOCK
CASE BLOCK

III. CLEANING THE HEADS



Sudden fading out of picture on monitor screen during playback or at the beginning of playback after the tape has been rewound due to a dirty video head is very common.

When cleaning video or other heads and tape guide, etc., please proceed as follows :

(1) Remove Video Head Cover.

(2) Soak a small piece of chamois with Freon Liquid or alcohol and clean the outer part of the video head drum by touching very lightly (ref. above figure).

(3) With rotating motion, pass finger lightly over the slip ring part of the video head center, so that the surface of the chamois passes over the video head tip.

(4) Clean the entire surface of the video head drum and the upper part of the drum guide band with chamois.

(5) Clean surfaces of full track erase head, side track erase head, and control and audio heads.

(6) If oxide deposits, etc. are adhering to tape guide, clean tape guide.

1. CALIBRATION OF THE MICROSCOPES

(a) As shown in Fig. 1, to adjust the position of the microscopes, with the prop positioned in the center of the microscopes, align the center line of the microscopes (microscopes attached to fixture plate) (A and A') with the mark on the fixture (ref. Fig. 2).

Confirm that when the fixture is rotated 180°, the mark is within 10 μ from the center line.

(b) Adjust microscopes (B and B') so that the edge of the fixture overlaps the center lines by 50 μ.

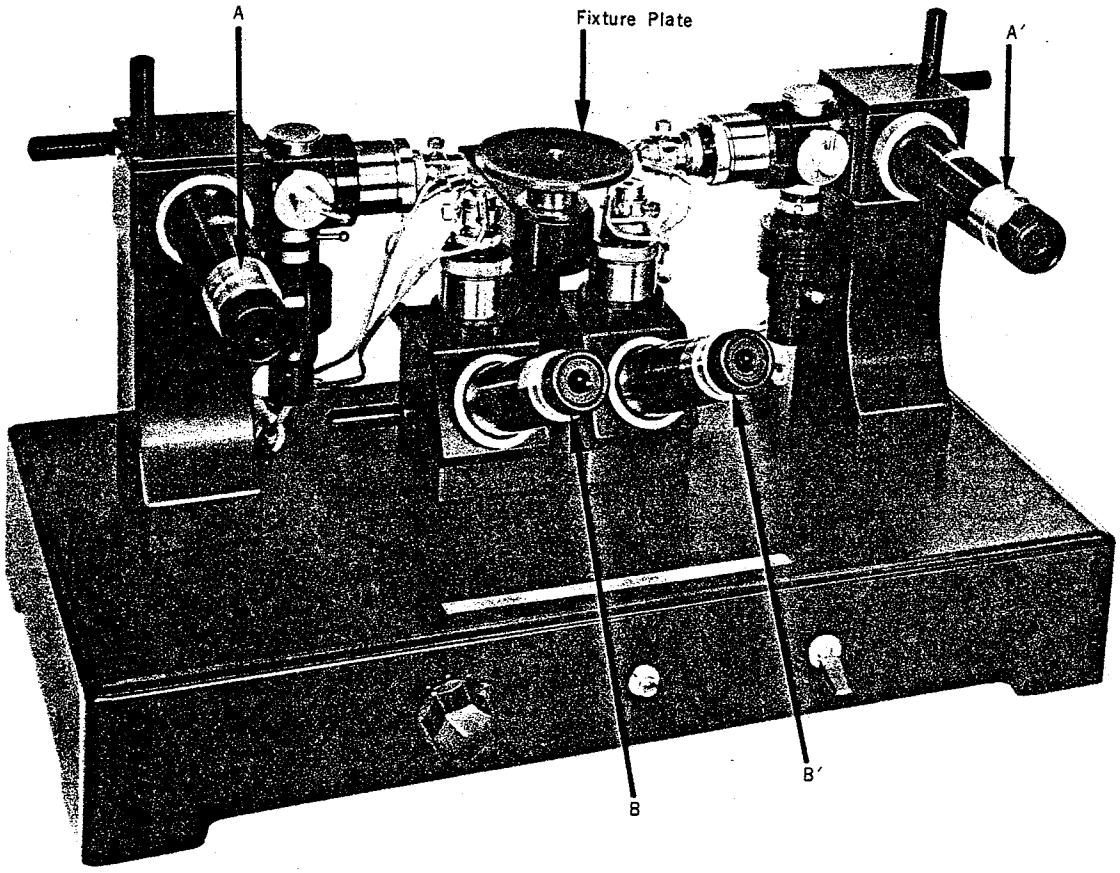


Fig. 1

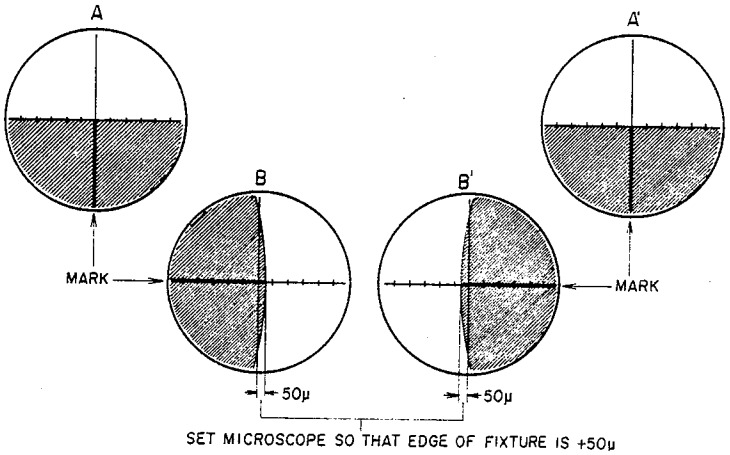


Fig. 2 Microscopic Views of Fixture

2. 180° SPACING AND PROTRUSION OF VIDEO HEAD TIPS

(a) Screw down the head plate at the center part of the microscope, positioning the brass plate so that it is located on the forward side of the head plate as shown in Figs. 3, 4, and 5.

(b) Adjust the protrusion of the head tips so that they are aligned with the center line of microscopes (B) and (B') as shown in Fig. 4.

(c) In case the left hand head gap comes above the center line of microscope (A), adjust by bringing the right hand head gap 236 μ (±10 μ) to the left of the microscope's center line.

(d) Rotate the head plate 180°. When the position of the left and right head tips are reversed, verify that the position of the right hand head gap is 236 μ (±10 μ) away from the microscope's center line.

Note : In case the position of the head gap is further away from this position (236 μ), this means there is a discrepancy in the calibration of the microscope.

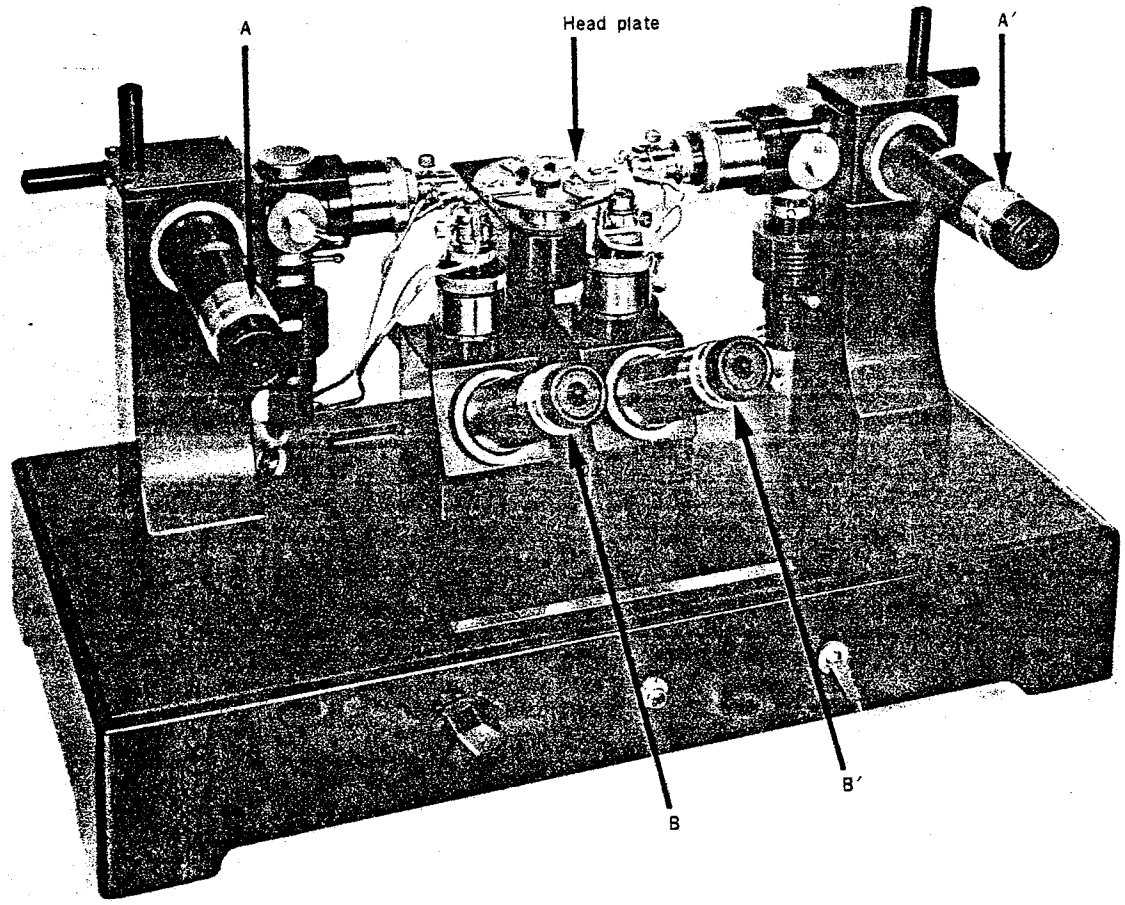


Fig. 3

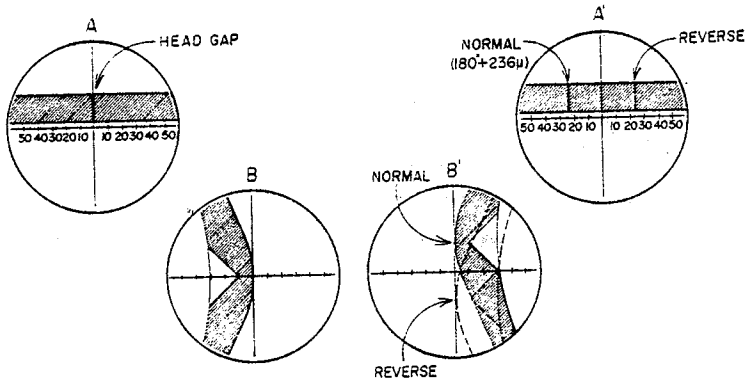


Fig. 4 Microscopic Views of Head Tip

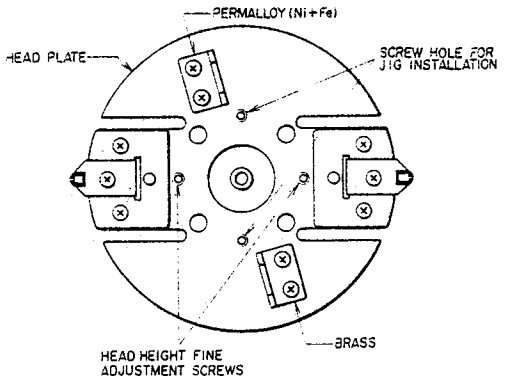


Fig. 5 Video Head Plate

3. DEGREE OF ROUNDNESS OF VIDEO HEAD'S LOWER DRUM (Ref. Fig. 6)

(a) A 0.002 mm Dial Gauge is used to check the lower drum's degree of roundness.
(b) The limited tolerance of roundness of the lower drum's outside circumference is within 5 μ.
(c) In case the variation of the outside circumference exceeds 5 μ, loosen the 4 lower drum holding screws and correct the discrepancy.

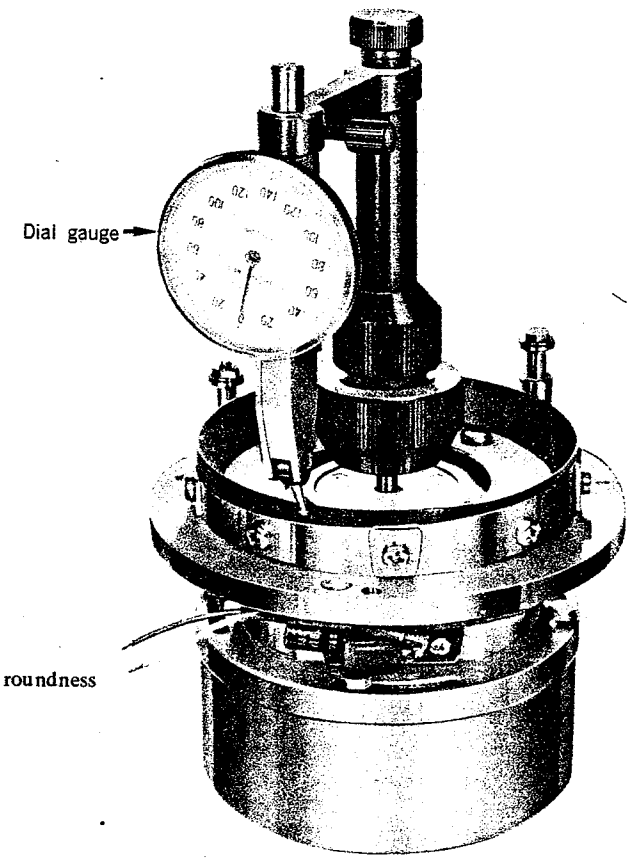


Fig. 6 Check the lower drum's degree of roundness

4. VIDEO HEAD HEIGHT ADJUSTMENT

Video Head Height Adjustment can be made using either a Single Microscope or Double Microscope.

A. Single Microscope Method

(a) Fit the head height adjustment jig to the head plate (made for angle and protrusion adjustments). As per Fig. 7 and 8, fit head plate to upper part of head motor (Screw (b) of height adjustment jig should be at lowest position).

(b) Loosen screw (b) of height adjustment jig slightly and lower position of head plate slightly. With height adjustment microscope, observe the spacing between the lower end of the head tip and the upper end of the lower drum.

Caution : If the position of the head plate is too low, the head tip will come in contact with the lower drum and become irreparably damaged.

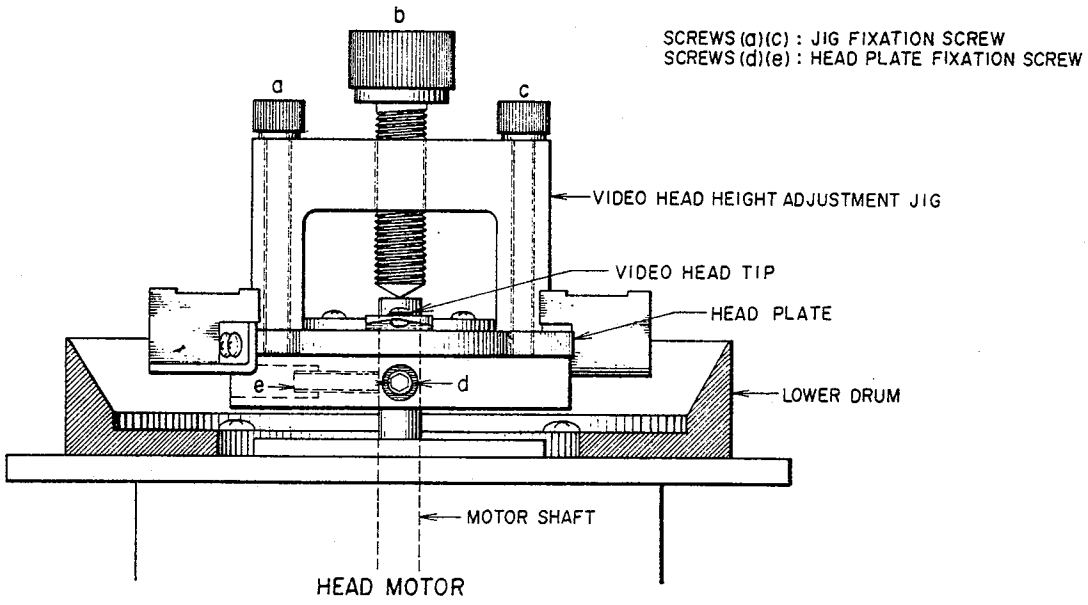


Fig. 7 Video Head Height Adjustment

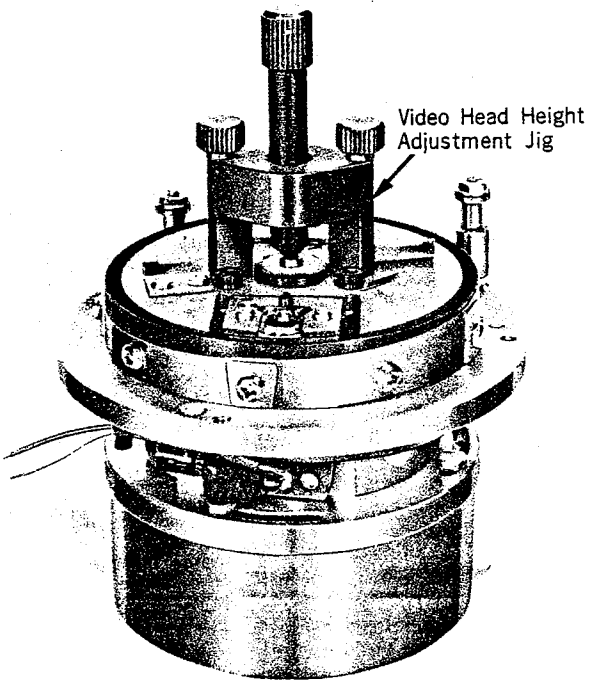


Fig. 8

(c) At the point where the lower end of the head tip is positioned at 430 μ from the top of the lower drum, tighten the two hexagonal screws on the lower part of the head plate (under brass pick-up plate and to right of this position). After the hexagonal screws have been tightened and the head plate secured to motor shaft, remove the height adjustment jig.

(d) Regulate each of the head tip height fine adjustment screws so that the head tip height is within a range of from 450 μ to 460 μ from the upper end of the lower drum. (Ref. Figs. 9 and 10).

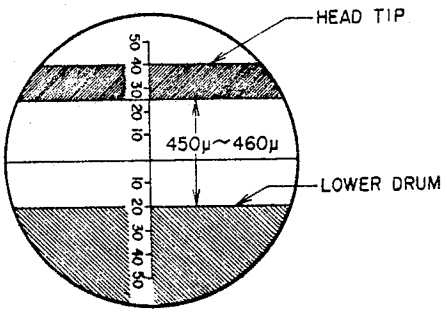


Fig. 10 Microscopic View of Head Height

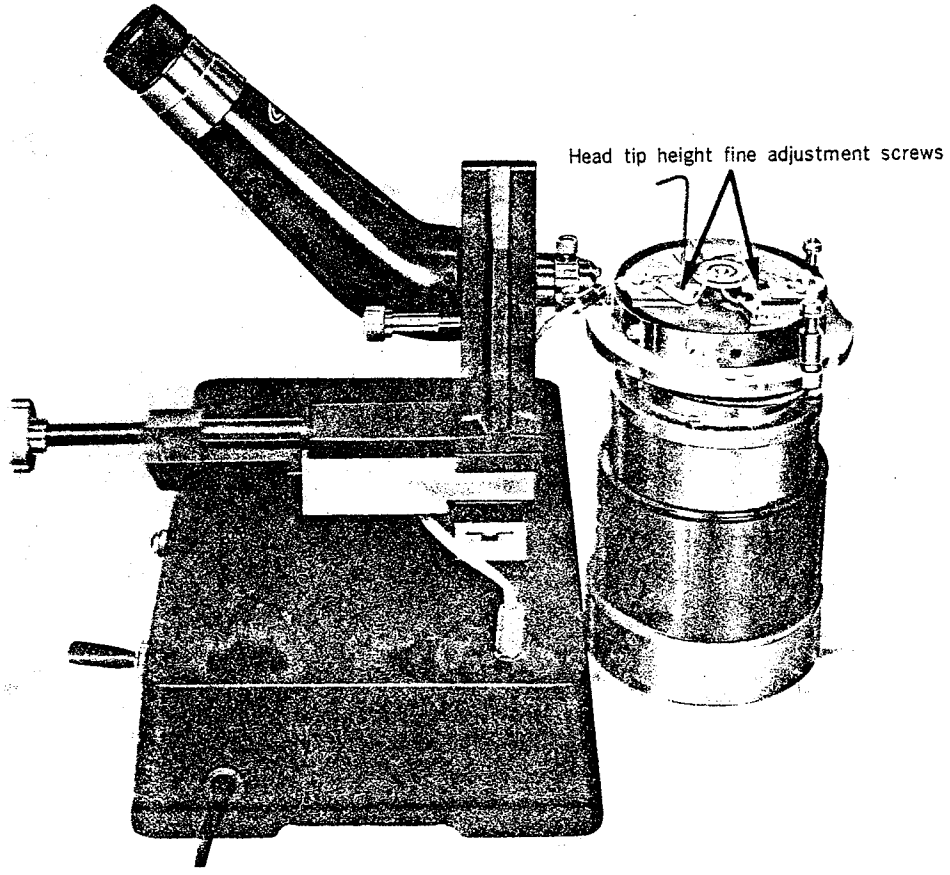


Fig. 9 Head Height Adjustment

B. Double Microscope Method

(a) Use a Master Gauge as shown in Fig. 11 and adjust Knob "C" so that the edge of the Master Gauge can be seen above the center lines of both microscopes A and B.

(b) Next, remove Master Gauge and set Video Head Assembly.

(c) With Knob "C", adjust microscope height so that the motor flange edge can be seen above the center line of microscope A as shown in Fig. 12.

(d) Fit the Head Height Adjustment Jig to the head plate and fix the head plate to motor shaft at position at which the lower end of the head tip is 10 μ to 20 μ below the center line of microscope B (Refer to Fig. 7).

(e) After head plate has been fixed at proper position, remove Head Height Adjustment Jig.

(f) Adjust each of the various Head Tip Height Fine Adjustment Screws until the lower end of head tip can be seen above the center line of Microscope B as shown in Fig. 12.

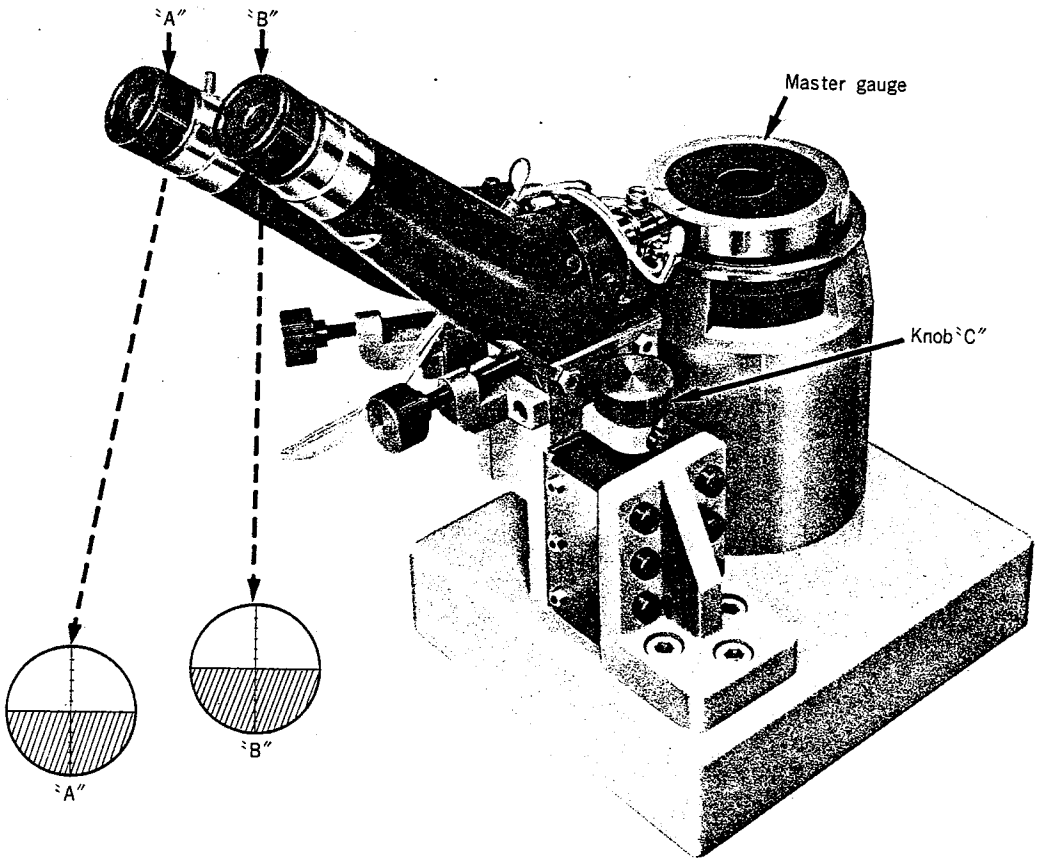


Fig. 11 Microscopic Views of Master Gauge

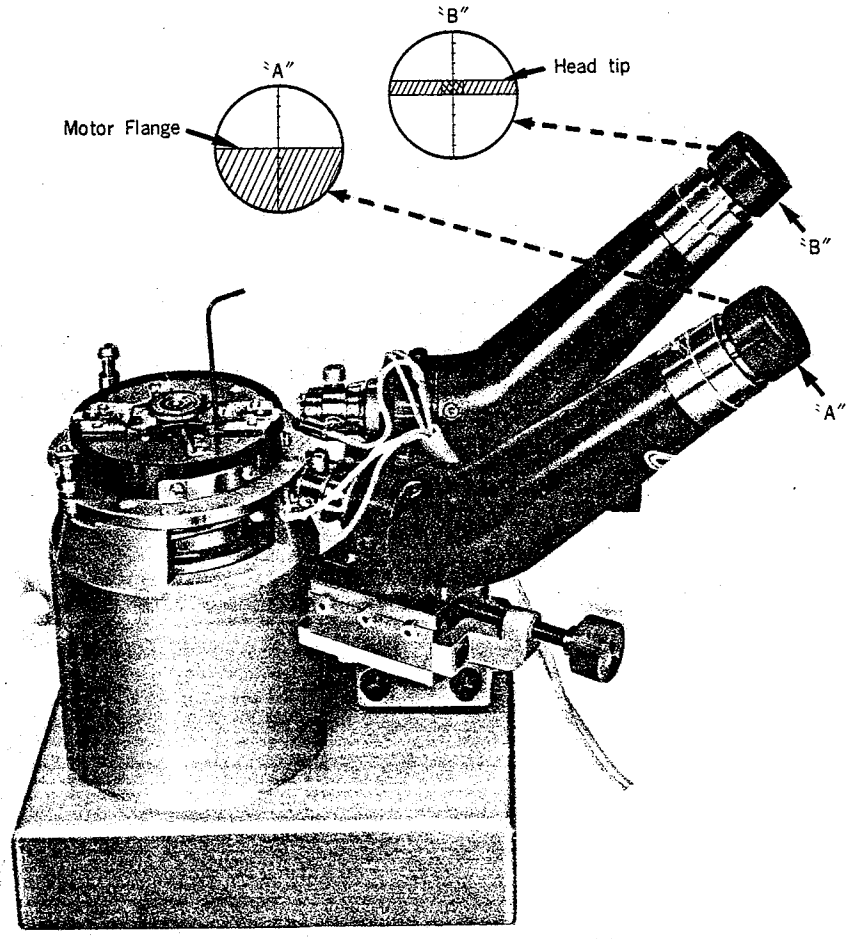


Fig. 12 Microscopic Views of Head Height

5. UPPER DRUM PROTRUSION

(a) After completion of head tip height adjustment, fit Dial Gauge (0.002 mm scale) to motor shaft in the upper drum and check the protrusion of the upper drum (Refer to Fig. 13).

(b) The necessary protrusion is from 0 to 10 μ at the center part of the upper drum.

(c) In case the protrusion is not within the necessary range, insert a spacer between the drum and drum support and adjust.

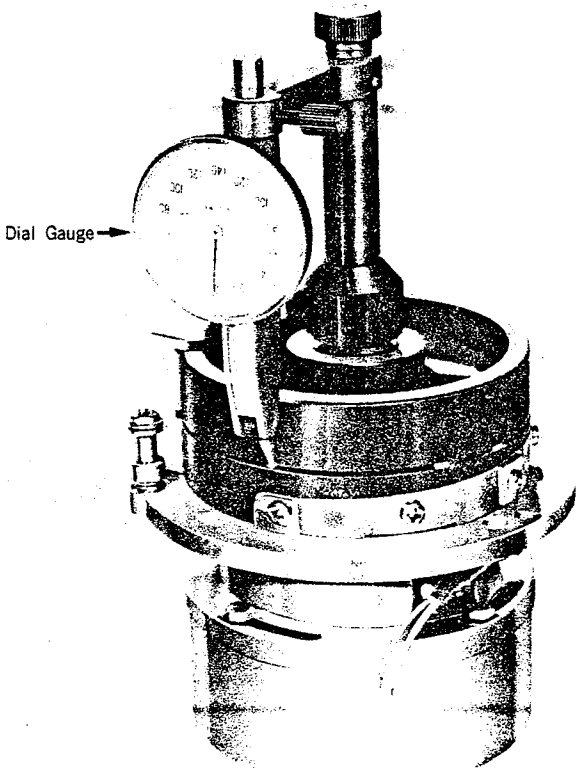


Fig. 13 Upper Drum Protrusion

6. WIRING ON SLIP RING

(a) Be careful that the slip ring is positioned so that it does not slide around as the shaft rotates.

(b) The color of the wire closest to the brass pick-up plate is yellow (wire on opposite side is red). (Refer to Fig. 14).

7. BRUSH TENSION ADJUSTMENT

(a) Adjust brush tension by tightening tension adjustment screw (from place where brushes touch surface of slip ring) about 1/4 turn. (Refer to Fig. 15).

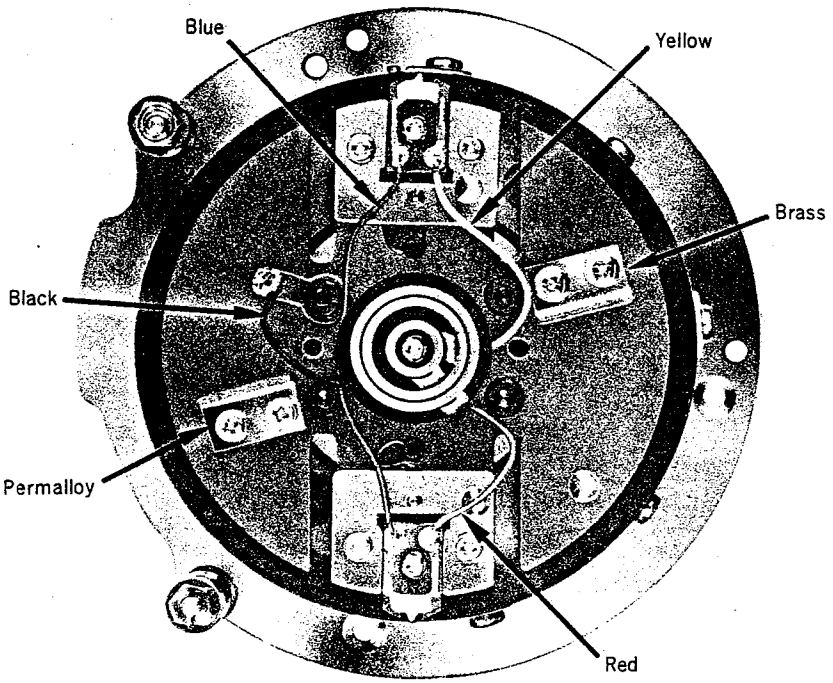


Fig. 14

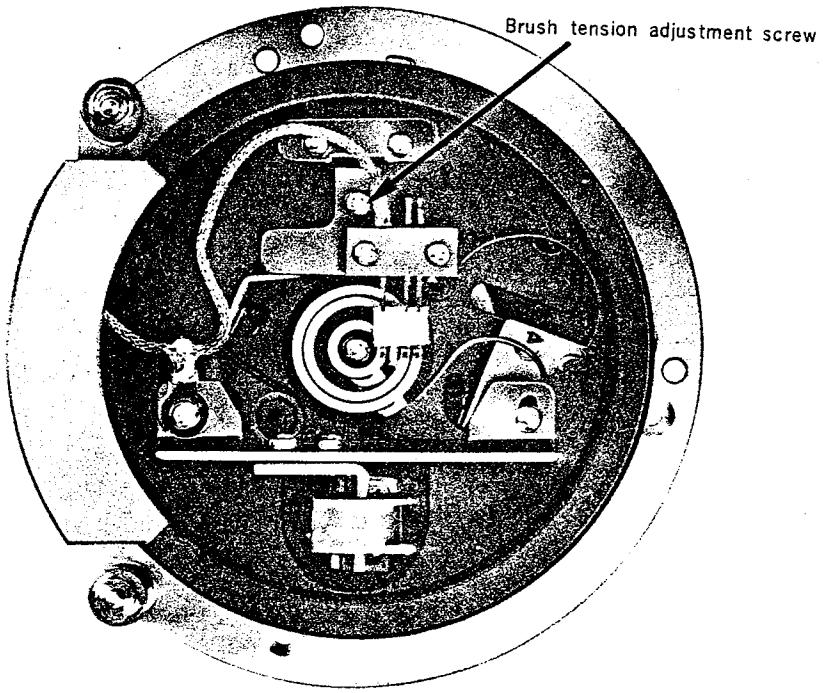


Fig. 15

V. ADJUSTMENT OF TAPE TRANSPORT MECHANISM

1. MECHANISM SPECIFICATIONS

(a) Main Pinch Roller Pressure 1.3 to 1.5 Kgr.
(b) Sub Pinch Roller Pressure 40 to 50 gr.
(c) Space between Pinch Roller and Capstan
Main : 1.5 to 2 mm
Sub : 2 to 3 mm
(d) Take-up Torque (with tape being rolled off of reel) 80 to 100 gr.
(e) Drive Idler Pressure 280 to 350 gr.
(f) Tape Hold-back Tension 8 to 10 gr.
(g) Fast Forward and Rewind Torque (while winding tape back on reel) more than 120 gr.
(h) Brake Torque
Supply Side : 80 to 130 gr.
Take-up Side : 60 to 80 gr.
(i) Reel Shaft Clearance 0.2 to 0.5 mm
(j) Capstan Shaft Clearance 0.3 to 0.5 mm
(k) Space between Drive Idler and Capstan Pulley 1 mm
(l) Space between Take-up Pulley and Take-up Drum 1 mm
(m) Space between Brake Shoe and Take-up Drum 1 mm
(n) Gap between Brake Lever and Brake Arm 0.1 mm
(o) Tape Speed (at playback of a 1,000 Hz tape) less than ±0.7%
(p) Wow and Flutter (at playback of a 3,000 Hz tape) less than 0.17% rms
(Wow should be less than 0.07%)

2. MECHANISM ADJUSTMENT

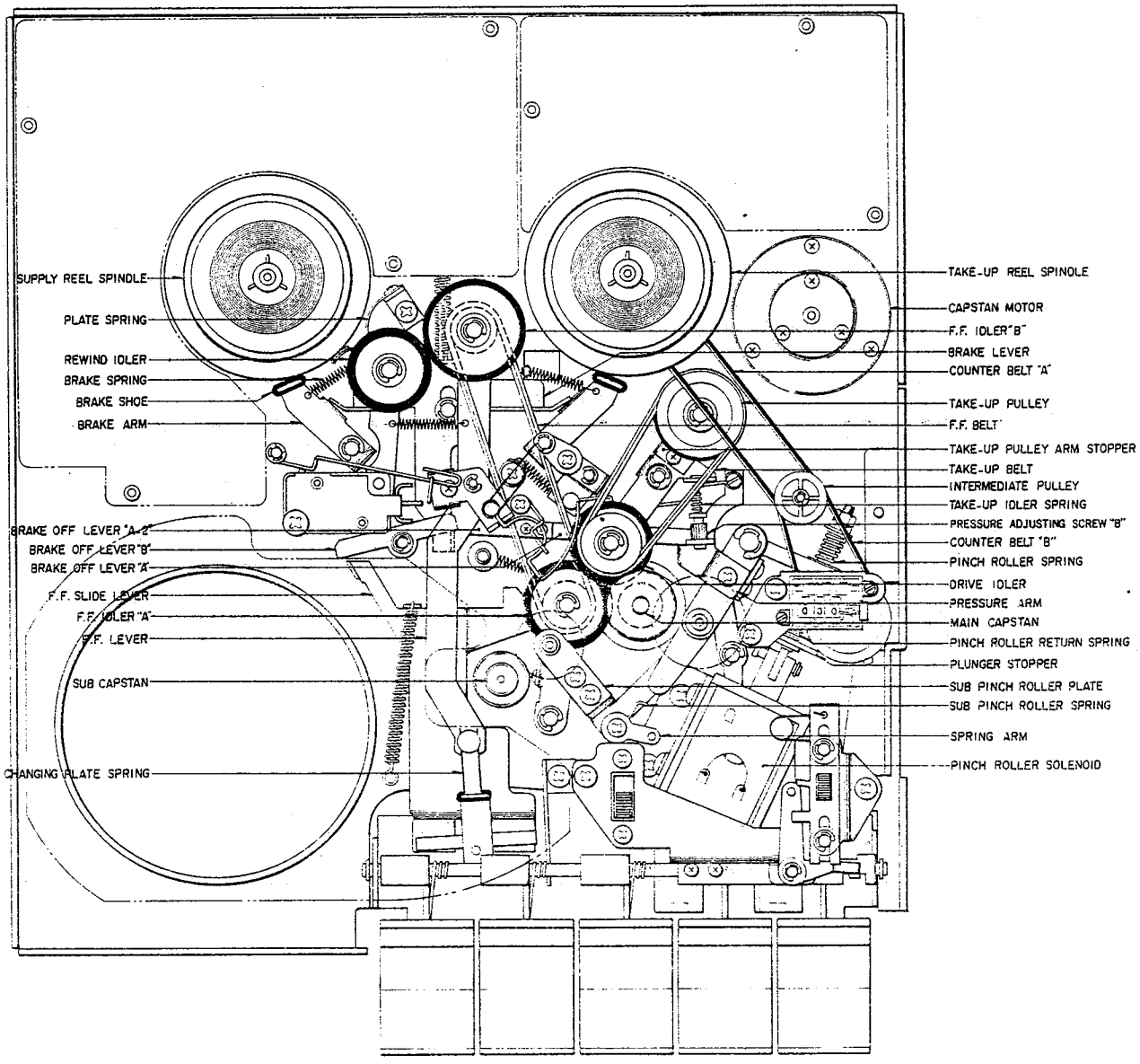


Fig. 1 Tape Transport Mechanism

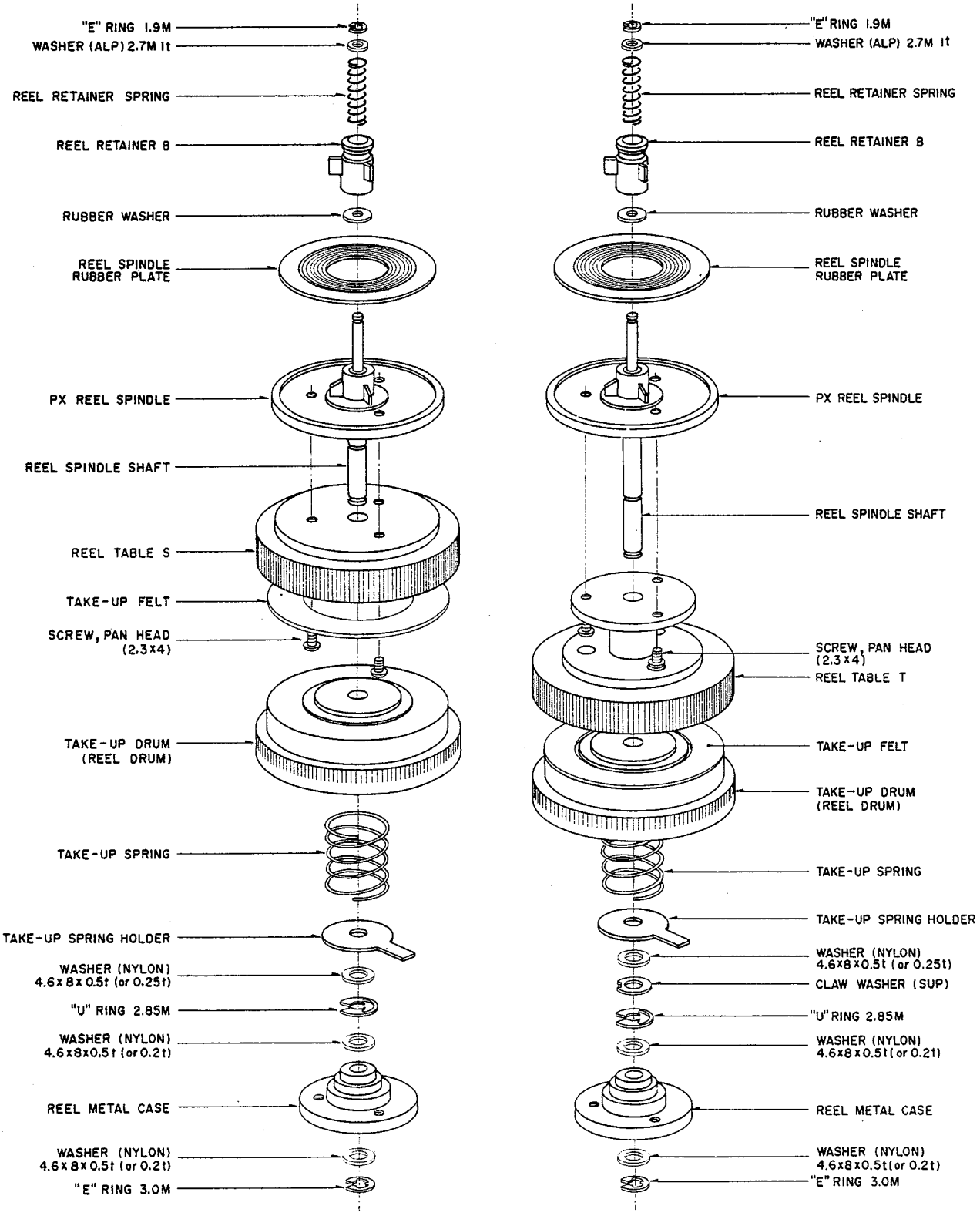


Fig. 2 Reel Spindle Assembly

(1) **Main Pinch Roller Pressure Adjustment**

(a) To position Pinch Roller Solenoid, loosen Solenoid Bracket Holding Screws and reset to center of oval shaped holes.

(b) Adjust position of Plunger Stopper so that the space between Pinch Roller and Capstan is 1.5 to 2 mm.

(c) At playback mode, measure Pinch Roller Pressure by connecting a 0 to 2 Kg. Spring Gauge to the Pinch Roller Shaft as shown in Fig. 3. Read the value on the Spring Gauge the moment the pinch roller revolutions stop. Specified value is 1.3 to 1.5 grams.

(d) At playback mode, loosen Pinch Roller Spring Lock Nut, and adjust pressure with Adjustment Nut. After adjustment has been made, tighten Lock Nut.

CAUTION : When Pinch Roller Pressure is adjusted, because the space between Pinch Roller and Capstan is sometimes altered, readjust Plunger Stopper.

(2) **Sub Pinch Roller Adjustment**

(a) At stop mode, set Sub Pinch Roller Plate Holding Screw so that the space between Sub Pinch Roller and Sub Capstan is 2 to 3 mm.

(b) Measure Sub Pinch Roller Pressure by connecting a 0 to 50 gram Spring Gauge to the Sub Pinch Roller Shaft as shown in Fig. 4. Specified value is 40 to 50 grams.

(c) Pressure is adjusted by changing the angle of the Spring Arm (at playback mode). Refer to Fig. 1.

(3) **Drive Idler Pressure Adjustment**

(a) At stop mode, set Pressure Arm Holding Screw (Refer to Fig. 1) so that the space between Drive Idler and Capstan Pulley is 1 mm.

(b) Measure Drive Idler Pressure by connecting a 0 to 500 gram Spring Gauge to the upper part of Drive Idler Shaft as shown in Fig. 5. At playback mode, the moment the Drive Idler Revolutions stop, read the value on the Spring Gauge. Specified value is 280 to 350 grams.

(c) Adjust pressure by rotating Pressure Adjustment Screw "B" (shown in Fig. 1).

(d) Brake Off Lever Adjustment

At playback mode, set Brake Off Lever "A" and Brake Off Lever "A-2" Holding Screws so that the space between Brake Shoe and Take-up Drum (reel drum) is about 1 mm.

CAUTION : At stop mode, confirm that there is a clearance of more than 0.1 mm between Pressure Arm and Brake Off Lever "A".

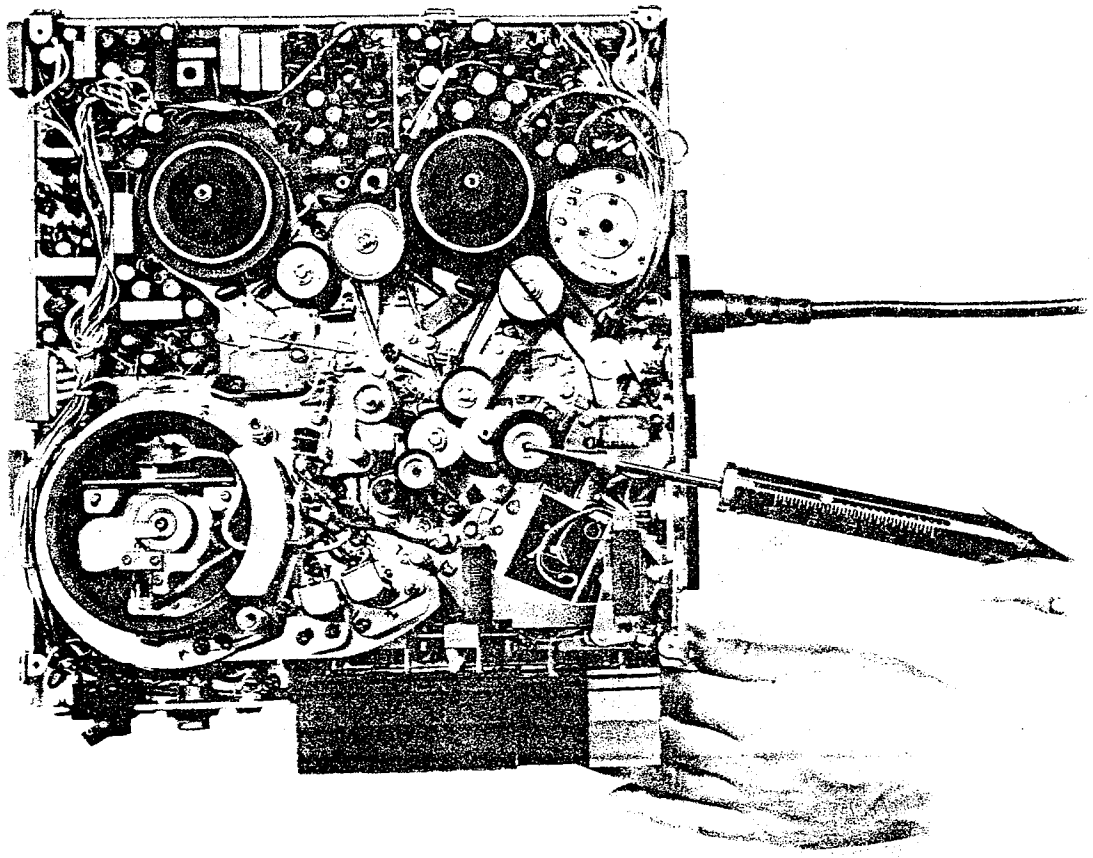


Fig. 3 Pinch Roller Pressure Measurement

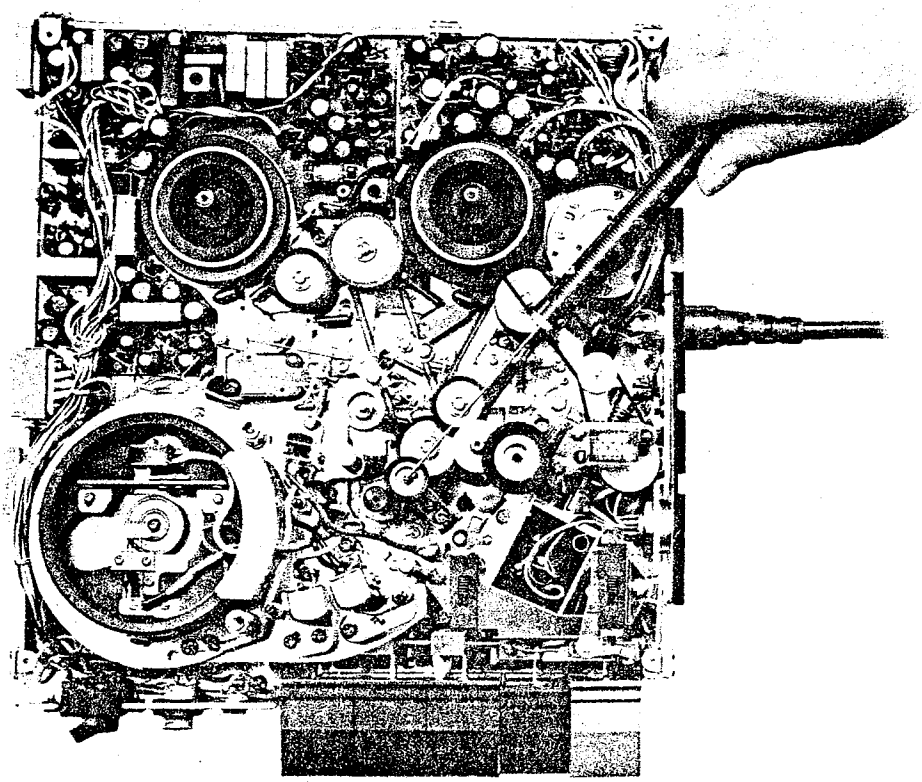


Fig. 4 Sub Pinch Roller Pressure Measurement

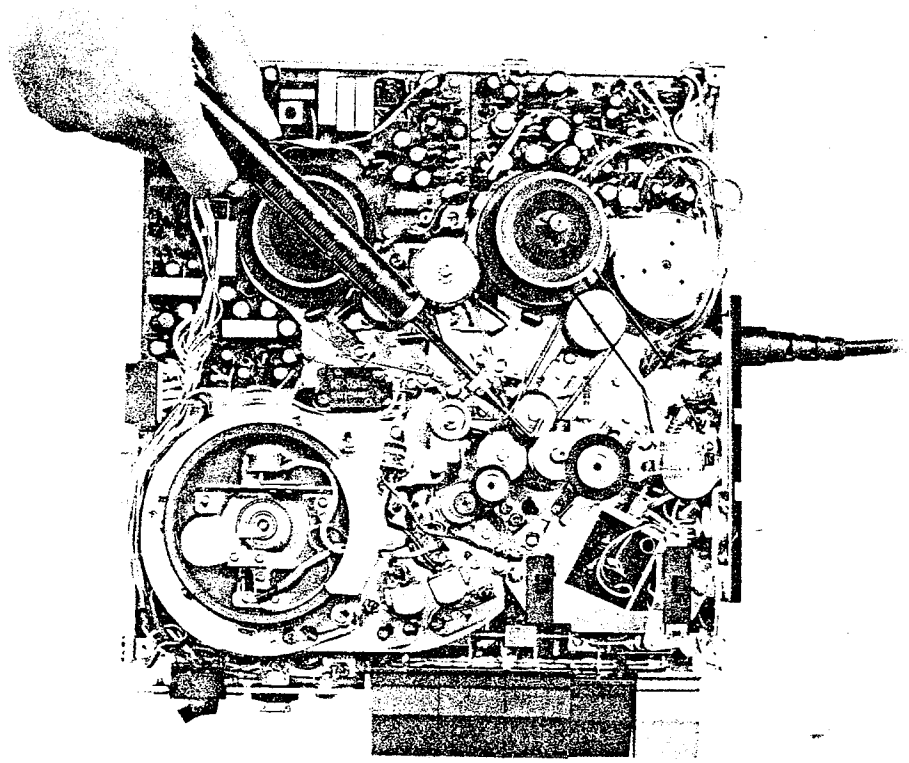


Fig. 5 Drive Idler Pressure Measurement

(4) Take-Up Torque Adjustment

(a) At stop mode, set Take-Up Pulley Arm Stopper Holding Screw so that the space between Take-up Pulley and Take-Up Drum (reel drum) is about 1 mm. (Refer to Fig. 1 and Fig. 6).

(b) Take-up Torque is determined mostly by the Take-up Spring inside the Take-up Reel Spindle Assembly. Consequently, if the torque is not within specifications, adjust by regulating Take-up Spring Tension.

(5) Tape Hold-Back Tension Adjustment

(a) As shown in Fig. 7, measure Tape Hold-Back Tension by connecting a 0 to 50 gram Spring Gauge to a 50 mm diameter tape. Specified tension is 8 to 10 grams.

(b) Adjust tension by changing the angle of Plate Spring Bracket (See Fig. 8).

CAUTION : At this time, be sure not to bend the Plate Spring.

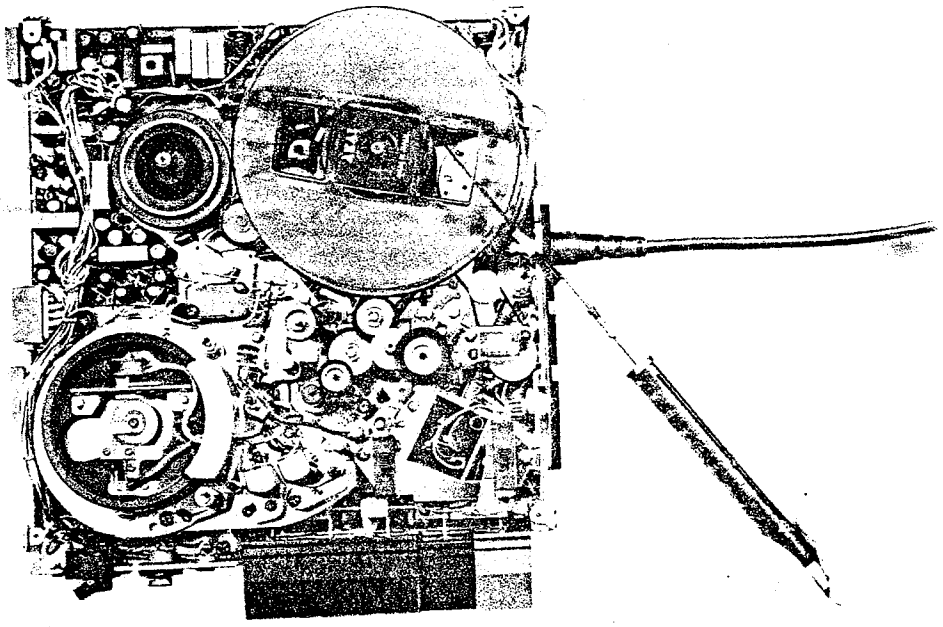


Fig. 6 Take up Torque Measurement

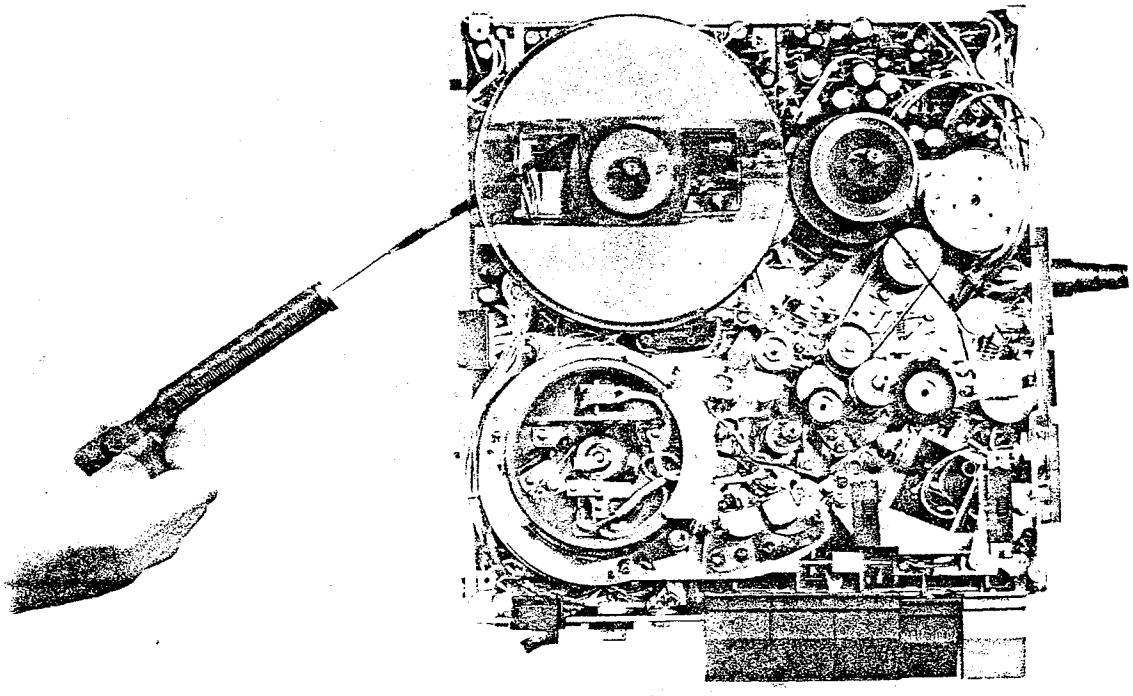


Fig. 7 Tape Hold Back Tension Measurement

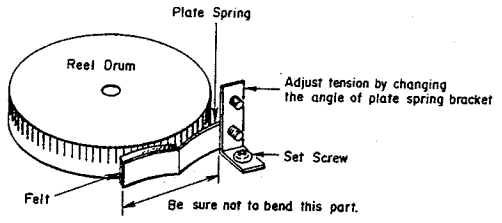


Fig. 8

(6) **Fast Forward and Rewind Torque Measurement**

(a) Utilize a 50 mm diameter tape and a 0 to 500 gram Spring Gauge to measure both Fast Forward and Rewind Torque.
CAUTION : Read gauge value while winding tape back on reel.
Specified value is more than 120 grams.

(b) In the event that Fast Forward or Rewind Torque is below the specified value, check to see whether the Fast Forward Belt is stretched or whether there is oil or other foreign matter adhering to FF Idler "A" or "B".

(c) If at Fast Forward or Rewind Mode, tape travel is slow in spite of FF and Rewind Torque being above specified value, check to see whether mechanisms relative to tape travel are working properly (check tape guide height, whether reel spindle is rotating smoothly, etc.).

(7) **Brake Torque Measurement**

(a) At stop mode, confirm that the gap between Brake Lever and Brake Arm is about 0.1 to 0.2 mm. In case the gap is too wide or too narrow, adjust by bending the tip of Brake Lever.

(b) Utilize a 50 mm diameter tape and a 0 to 300 gram Spring Gauge to measure Brake Torque.
Specified value (supply side) 80 to 130 grams
(take-up side) 60 to 80 grams

(c) Because Brake Torque is determined by the Take-Up Spring inside the Reel Spindle Assembly, in case brake torque is not within specifications, adjust Take-Up Spring.

(8) **Shut-Off Mechanism Adjustment (Ref. Figs. 9, and 10)**

(a) Position of Shut-Off Arm "C"
At stop mode, set Shut-Off Arm and tighten Screw (1) so that when the Play Key is gently depressed to the point at which the tip of Play Key is about 3 mm downward from normal position, the Release Arm begins to operate.

(b) Position of Release Arm
Set Release Arm position and tighten Screw (2) so that when Play, Fast Forward, Rewind, or Record Key is depressed, Tension Bar "A" lowers to position indicated by the dotted lines in Fig. 9, and at stop mode, Tension Bar "A" contacts Tension Bar "A" Stopper.

(c) Position of Tension Bar "A" Stopper
Set Tension Bar A stopper and tighten Screw (3) so that the space between Tension Bar A and Drive Idler is 2 mm. (stop mode).

(d) Position of Tension Adjuster
Set Tension Adjuster and tighten Screw (4) so that when the tip of Tension Bar A reaches the center line (lined up with the center of Sub Capstan and Center of Guide Roller Shaft, as shown in Fig. 10) the microswitch is turned "off".

CAUTION : At this time (after Tension Bar "A" is at stop condition), confirm that when Tension Bar A is pressed with your finger toward direction of Guide Roller, the microswitch clicks "off".

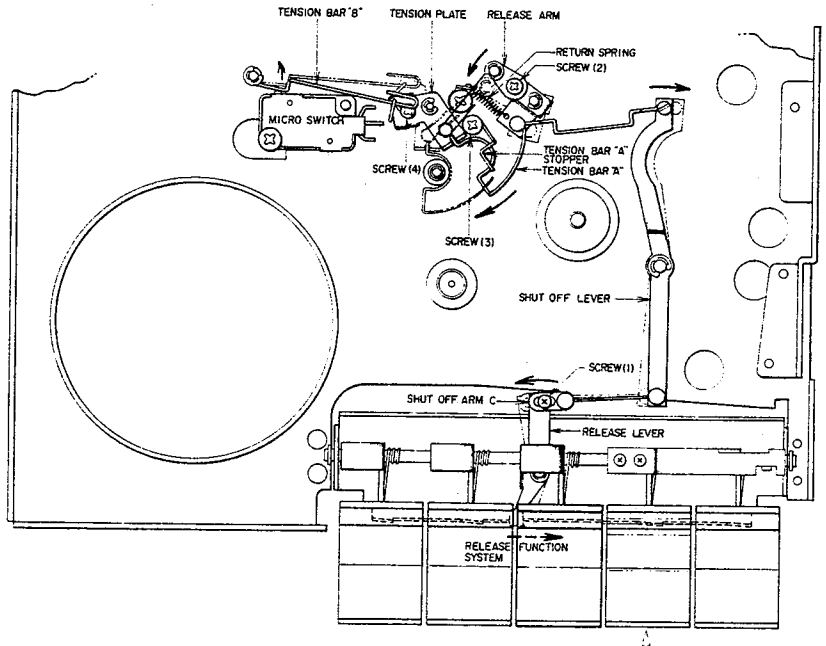


Fig. 9 Shut-off Mechanism

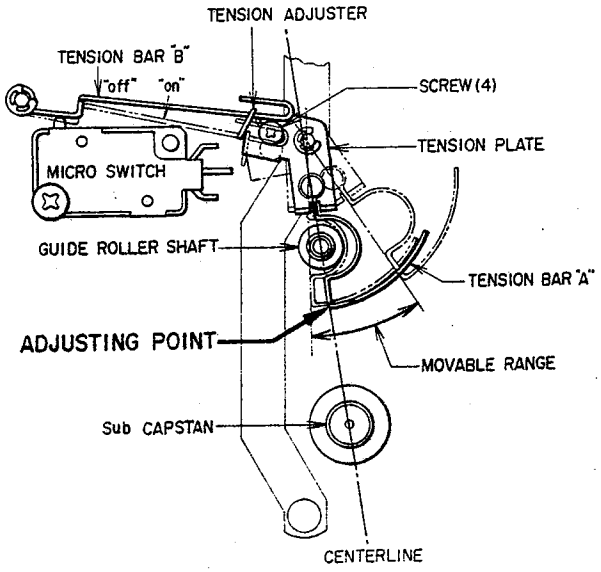


Fig. 10 Shut-off Function Adjustment

(9) Tape Travel and Head Height Adjustment

(a) Sub Pinch Roller Shaft Angle Adjustment
Load a tape and adjust angle of Sub Pinch Roller Shaft so that the tape runs on the same part of Sub Pinch Roller at all operating modes (Fast Forward, Rewind, and Playback) and also during playback mode, the tape enters the tape guide smoothly and runs in the center of the outer circumference of the Head Drum with no up and down movement.

(b) Connect an Oscilloscope to Video Amp P.C. Board TP-1.

(c) Play back a Video Reference Tape and observe R.F. Envelope.

(d) Try to maintain an almost square shaped R.F. Envelope as shown in Fig. 11 (amplitude fluctuation should be very small).

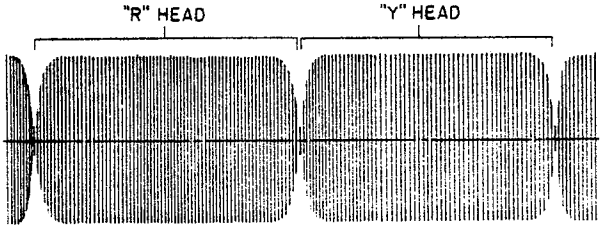


Fig. 11

(e) If Tracking Crossover appears on R.F. Envelope as shown in Fig. 12, adjust height of Tape Guides 'A' and 'B' (Refer to Fig. 13.).

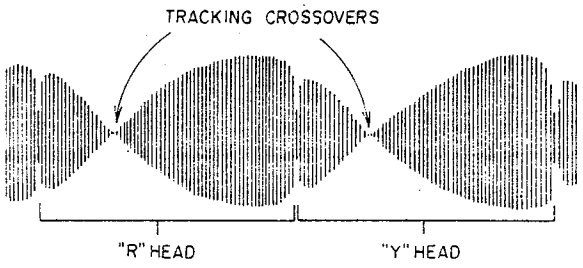


Fig. 12

(f) Loosen Screws 'E' and 'F' (Fig. 13) and move position of CTL Head to right and left. Set at position at which the RF Envelope amplitude is maximum and almost square shaped.

(g) If RF Envelope amplitude fluctuates, the source is up and down movement of the tape at the center of the outer circumference of the Head Drum during tape travel. In this case, carefully adjust the angle of Sub Pinch Roller Shaft as well as height of Tape Guides 'A' and 'B' so that the R.F. Envelope amplitude fluctuation is minimum. (RF Envelope amplitude fluctuation must be within 10% of peak to peak value).

(h) If R.F. Envelope amplitude fluctuation still exists even after the above adjustments have been carefully completed, loosen Video Head Assembly Holding Screw and turn Screws 'G' and 'H' clockwise 1/2 or 1 turn (Fig. 13). At this condition, again carry out adjustment described in item (g) above.

(i) If leading edges of R.F. Envelope are not square, adjust height of Tape Guide 'B' as well as the slant of Side Track Erase Head and CTL Head.

(j) For proper Head Height (Side Track Erase Head, as well as CTL and Audio Head), adjust to position as shown in Fig. 2-15.
CAUTION : To properly judge each head height, the recorded tape must be dipped in developing solution, developed, and observed with a microscope. However, head height can also be judged by visually checking the position of each head or repeating recording/playback and observing R.F. Envelope.

(k) Record and playback a Test Pattern Signal and observe R.F. Envelope. Confirm that amplitude is stable (does not fluctuate).
R.F. Envelope amplitude must exceed 0.6 V peak to peak at recording/playback and the difference in amplitude of the two heads should be less than 3 dB.

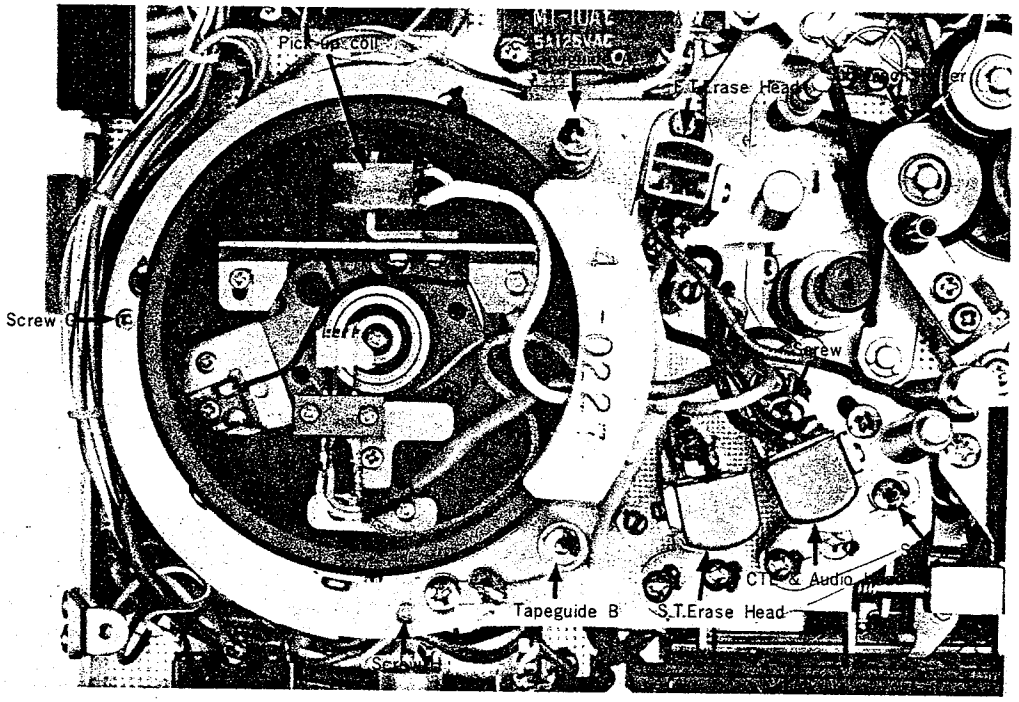


Fig. 13

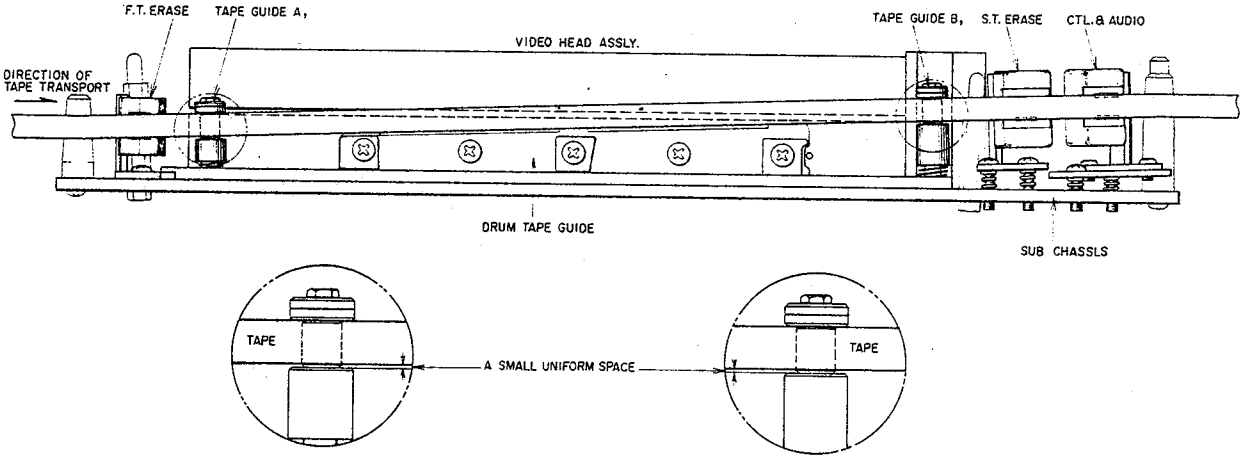


Fig. 14 Adjustment of Tape Guide

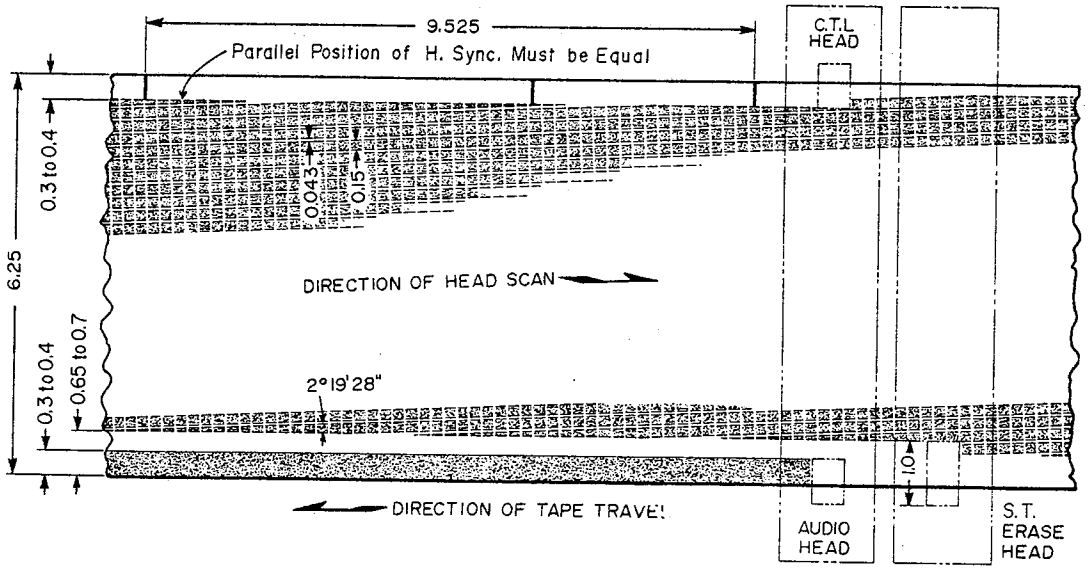
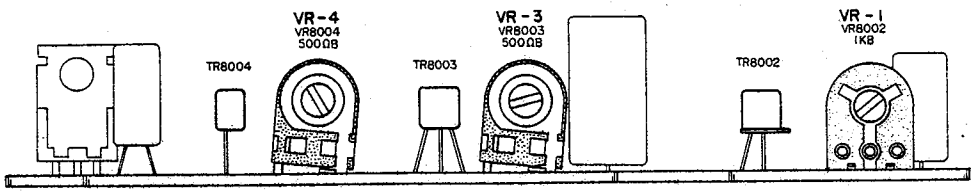


Fig. 15 Recorded Pattern of Video Tape (Viewed from center of head drum)

VI. POWER SUPPLY AND CAPSTAN MOTOR DRIVE P.C. BOARD PX513 or PX515

P.C. Boards PX513 and PX515 include three separate circuits. These are the Power Voltage Regulator Circuit, the Capstan Motor Drive Circuit, and the last stage (only) of the Head Motor Drive Circuit.



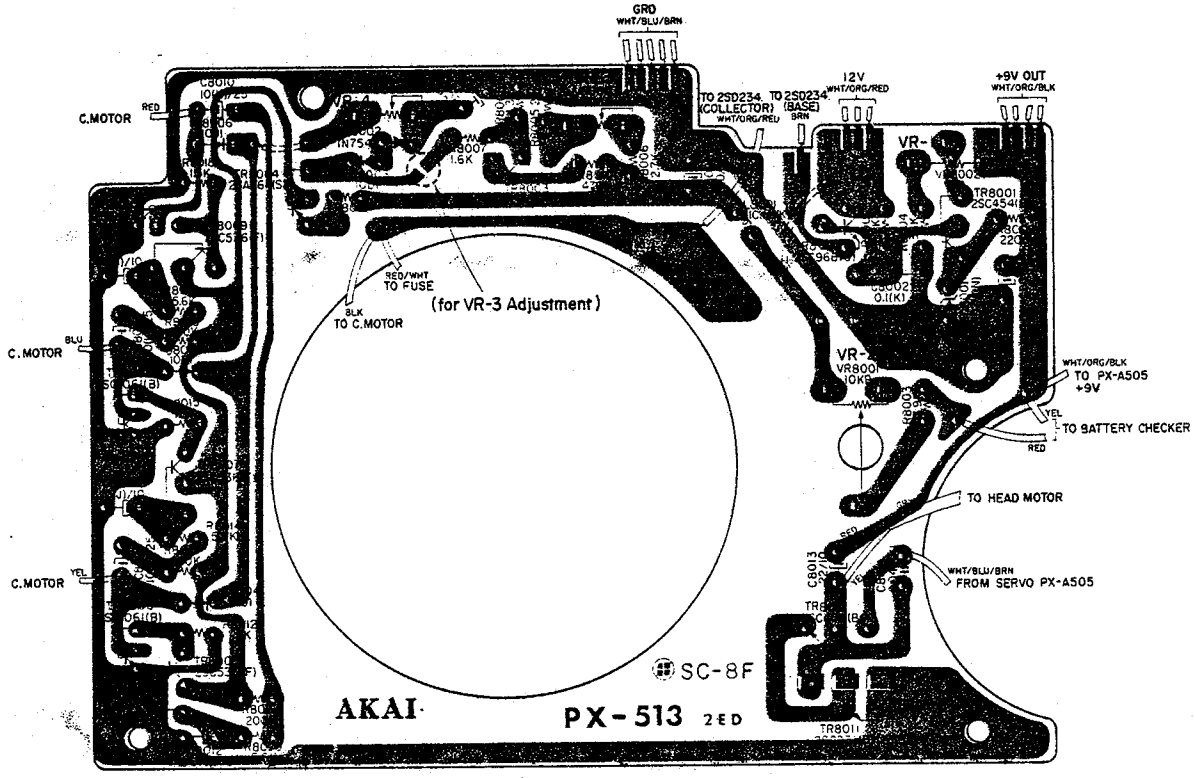


Fig. 1 C.M.C. P.C. Board (PX-513)

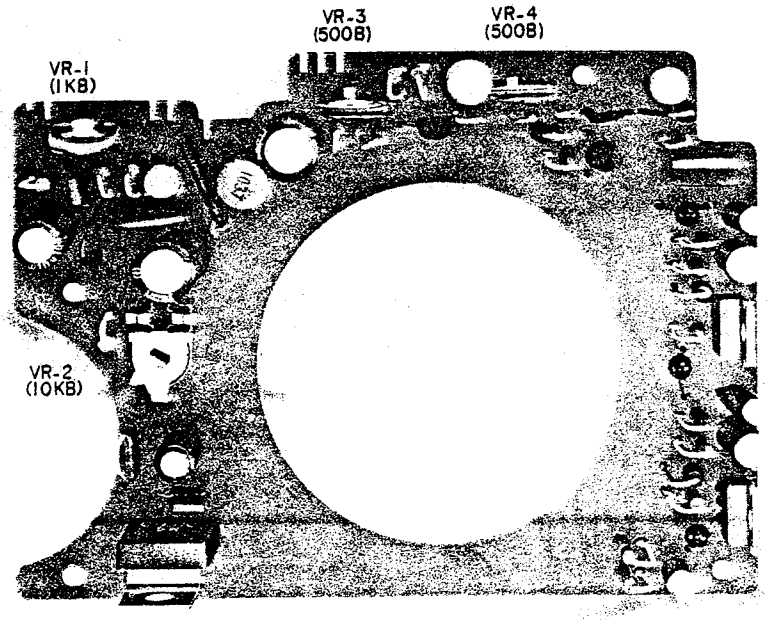


Fig. 2 C.M.D. P.C. Board (PX-513)

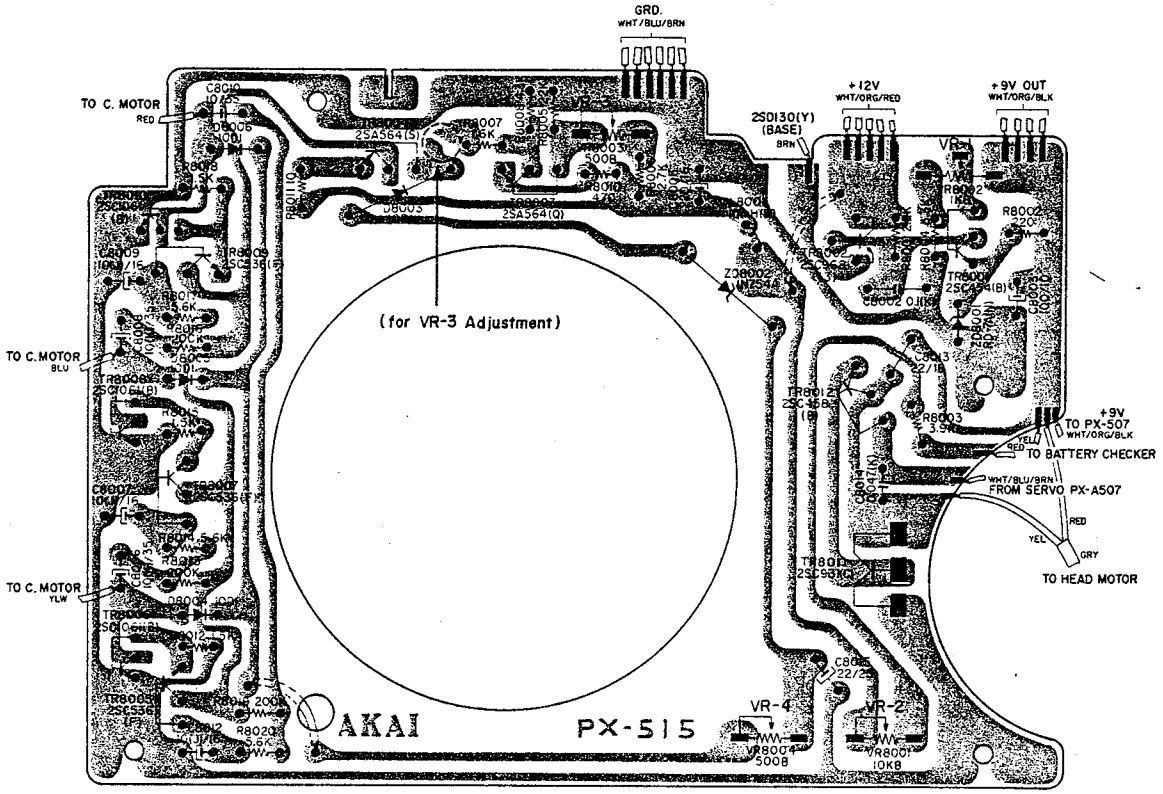


Fig. 3 C.M.D. P.C. Board (PX-515)

1. POWER VOLTAGE REGULATOR CIRCUIT

(a) Connect a High Sensitivity D.C. Voltmeter or a V.T.V.M. (must be calibrated) between the +12 V Terminal of PX-513 and the chassis and confirm that the meter indication is within a 12 V ± 0.2 V range. (Refer to Figs. 1 and 2).
CAUTION : In case this voltage is not within specifications, adjust with AC Adapter Potentiometer VR 1001 (300 Ω B).

(b) Connect a D.C. Voltmeter or V.T.V.M. to the 9 V Terminal of PX-513 and adjust VR-1 (1 KB) so that the meter indicates 9 V.
Following this adjustment, confirm that at both Recording and Playback Mode, the meter indication is within a 9 V ± 0.1 V range.

(c) Battery Checker Adjustment
(Adjust only in case of absolute necessity)
With AC Adapter Potentiometer VR 1001 (300 Ω B), set +12 V Terminal Voltage to 11 Volts. Next, with PX-513 VR-2 (10 KB), adjust so that position of battery checker indicator needle is at the dividing point between red zone and green zone. Then reset terminal voltage to 12 V (AC Adapter VR 1001).

2. TAPE SPEED ADJUSTMENT

(a) Connect a Frequency Counter between Pin "J" of 10P Monitor Connector (J3005) and chassis.

(b) Play back a Tape Speed Test Tape (1000 Hz pre-recorded tape).

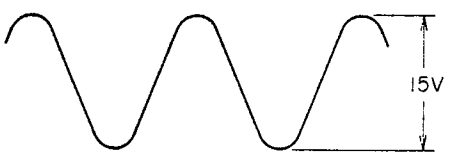
(c) Adjust VR 4 (500 Ω B) or PX-513 or PX-515 so that the values indicated on the Frequency Counter Meter are as follows :

Using AC Adapter : 999 Hz. at beginning of tape winding.
992 Hz. at end of tape winding.

Using Batteries : 1000 Hz ± 7 Hz from beginning to end of tape winding.

(d) In case of tape speed instability
Remove the solder from the place marked ◌ on printed pattern PX-513 or PX-515 and connect a V.T.V.M. between B+ circuit and TR8003 Collector. Adjust VR-3 (500 Ω B) so that the V.T.V.M. indication is 5.3 V. After adjustment has been made, resolder at ◌. Adjust tape speed again with VR-4.

(e) When the tape speed has been properly adjusted, the AC current waveform flowing to the capstan motor coil becomes about an 83.3 Hz sinewave as shown in Fig. 4. In case motor revolutions are unstable, connect an Oscilloscope to Collector of Transistor 2SC 1061 Ⓑ (TR 8006, TR 8008, TR 8010) and check this waveform and frequency.



2SC1061(B) COLLECTOR WAVEFORM
(83.3Hz)

Fig. 4 2SC 1061 (B) Collector Waveform (83.3 Hz.)

VII. S.S.G. (Sync. Signal Generator) PX-A504

When making S.S.G. P.C. Board Adjustments, solder Test Pin to Test Point (Refer to Fig. 1).

The waveform and frequency at each part of S.S.G. P.C. Board is as shown in Fig. 3 as well as Fig. 4.

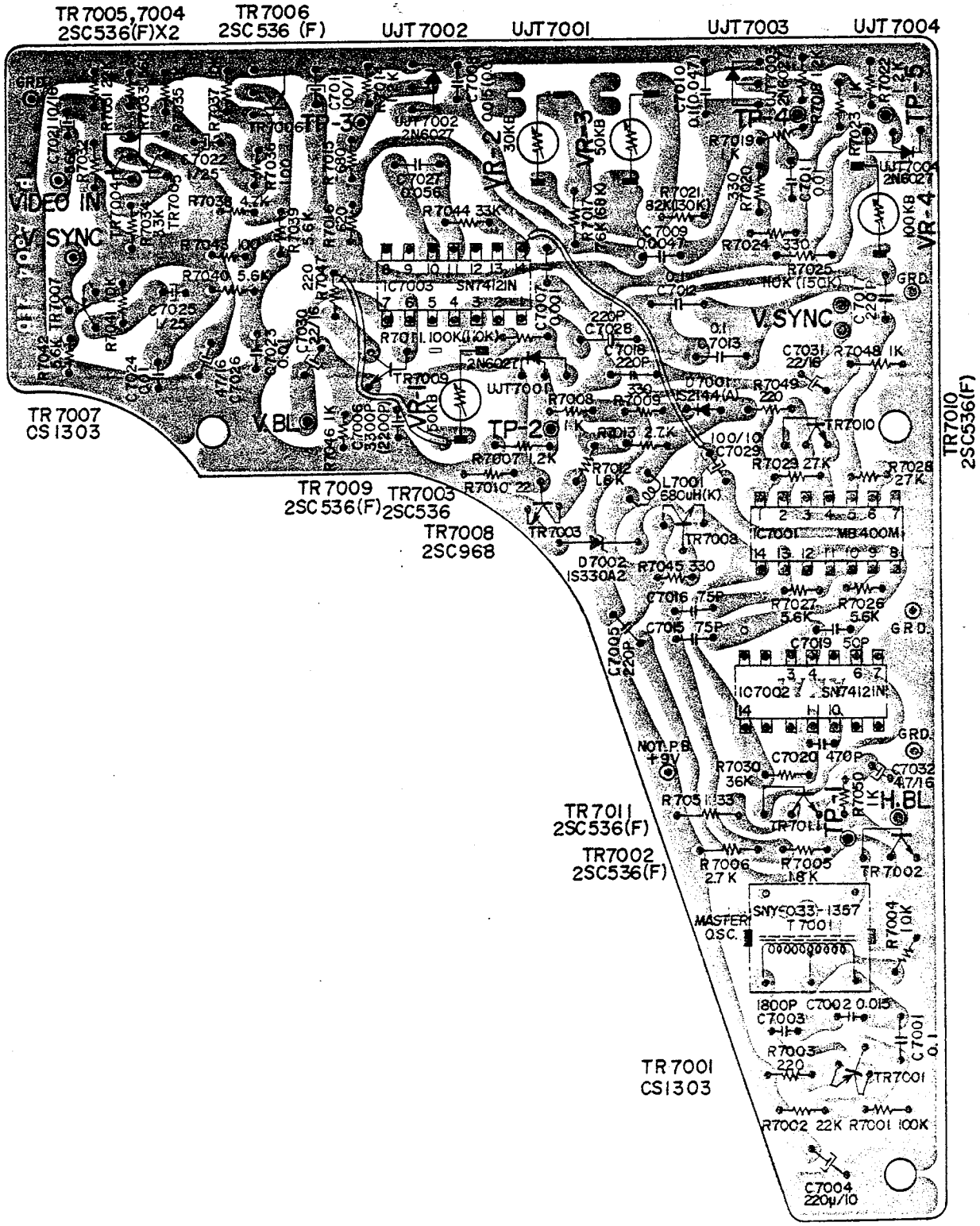


Fig. 1 S.S.G. P.C. Board (PX-A504)

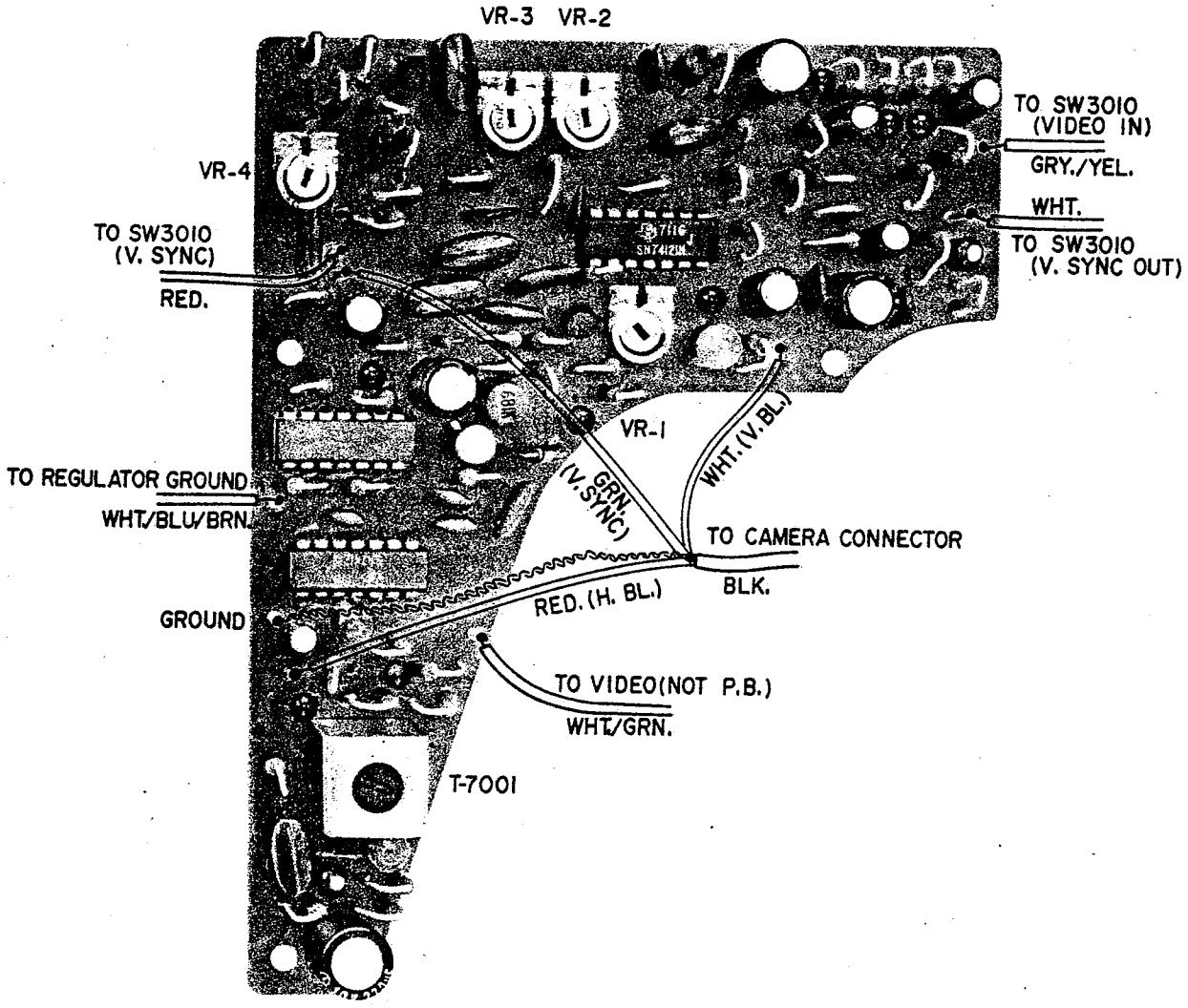


Fig. 2 S.S.G. P.C. Board (PX-A504)

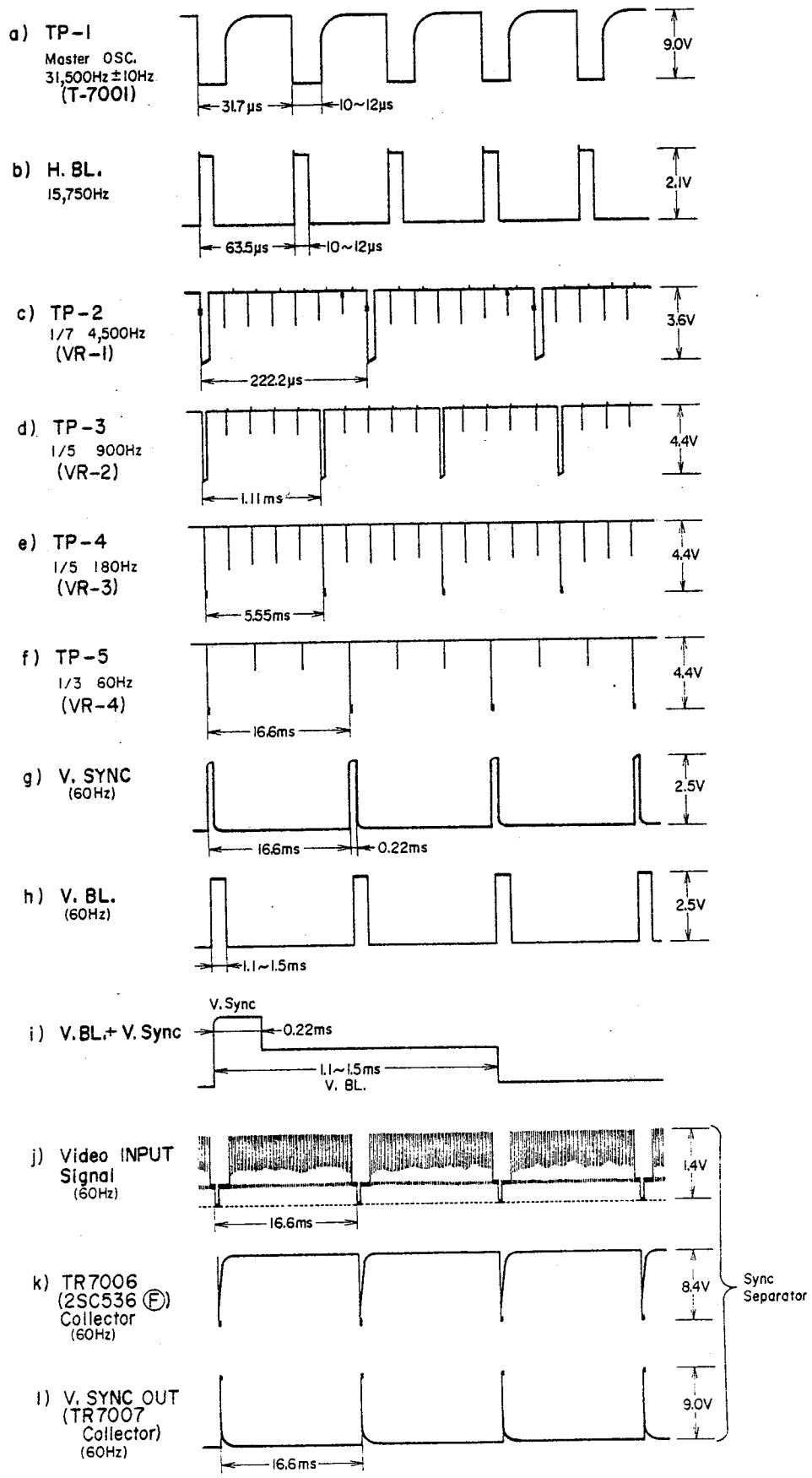


Fig. 3 S.S.G. Waveforms (PX-A504) U.S. Standard Type

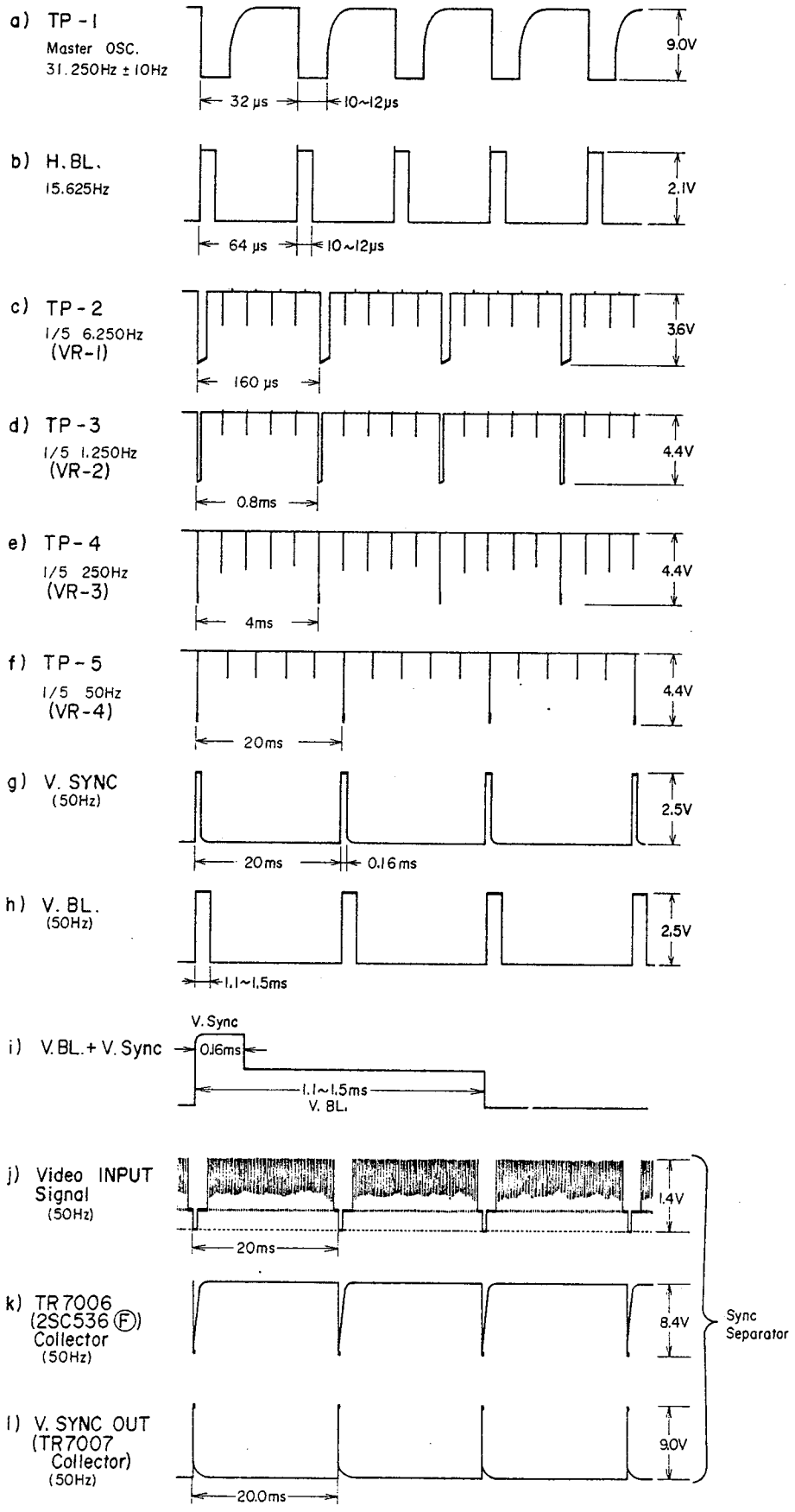


Fig. 4 S.S.G. Waveforms (PX-A504) C.C.I.R Type

1. MASTER OSCILLATOR ADJUSTMENT

(a) Connect an Oscilloscope to TP-1 of S.S.G. P.C. Board (PX-A504) and connect a Frequency Counter to the Signal Out Terminal of the Oscilloscope.
CAUTION : When the Frequency Counter is connected directly to TP-1, the oscillation frequency of the Master Oscillator changes, and proper adjustment cannot be made.

(b) Adjust the core of Oscillator Coil (T-7001) to obtain the waveform and frequency as shown in Fig. 5.

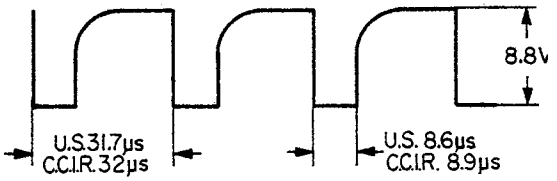


Fig. 5

2. FREQUENCY DIVIDER ADJUSTMENT

(a) Because the waveform which appears at TP-2 is as shown in Fig. 6, adjust VR-1 so that triggering takes place at the 7th pulse (C.C.I.R. Type 5th pulse). When making VR-1 adjustment, give special attention to the points outlined in Fig. 6.

Confirm that the frequency of the waveform appearing at TP-2 is :

U.S. Type :	4,500 Hz.
C.C.I.R. Type :	6,250 Hz.

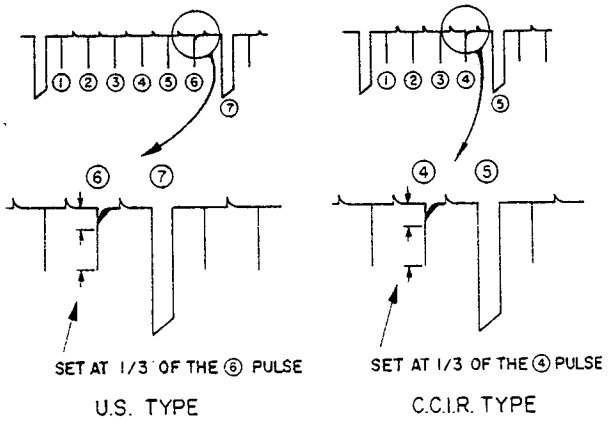


Fig. 6

(b) Because the waveform which appears at TP-3 is as shown in Fig. 7, adjust VR-2 so that triggering takes place at the 5th pulse.
At this time, because the amplitude fluctuation of the overlapping bright pulse (5th pulse) varies when VR-2 is rotated, set VR-2 so that the tip of the overlapping bright pulse is positioned near the center of its variable range. (See Fig. 7).
Confirm that the frequency of the waveform appearing at TP-3 is :

U.S. Type :	900 Hz.
C.C.I.R. Type :	1,250 Hz.

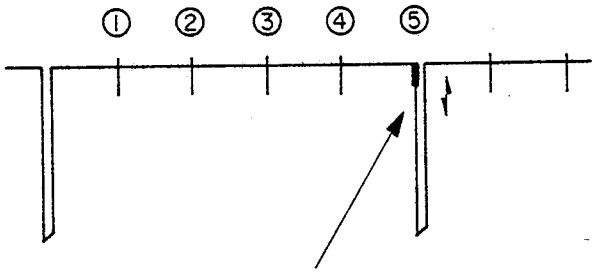


Fig. 7

(c) Because the waveform which appears at TP-4 is as shown in Fig. 8, adjust VR-3 so that triggering takes place at the 5th pulse.
As in item (b) above, set VR-3 so that the tip of overlapping bright pulse at the 5th pulse is positioned at the center of the variable range.
Confirm that the frequency of the waveform appearing at TP-4 is :

U.S. Type :	180 Hz.
C.C.I.R. Type :	250 Hz.

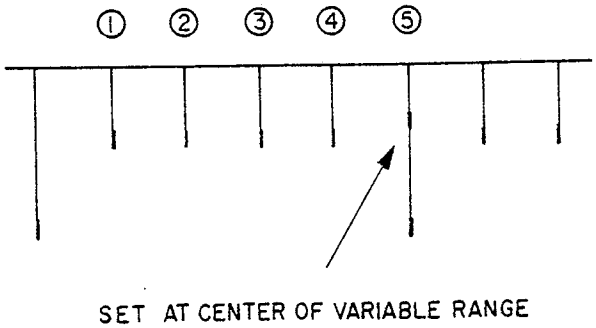


Fig. 8

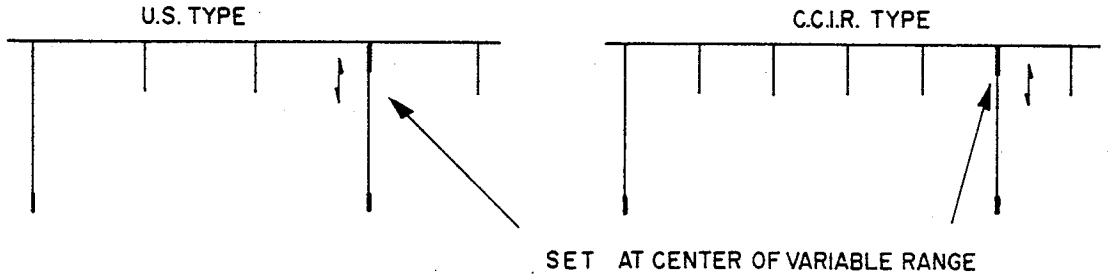


Fig. 9

(d) Because the waveform which appears at TP-5 is as shown in Fig. 9, adjust VR-4 so that triggering takes place at the 3rd pulse (C.C.I.R. Type 5th pulse). In this case also set VR-4 so that the overlapping bright pulse at the 3rd pulse (or 5th pulse) is at the center of the variable range.
Confirm that the frequency of the waveform appearing at TP-4 is :
U.S. Type : 60 Hz.
C.C.I.R. Type : 50 Hz.

3. CONFIRMATION OF VERTICAL SYNC. SIGNAL

Connect Oscilloscope to the Vertical Sync. Terminal of P.C. Board (PX-A504). Confirm that the Vertical Sync. Signal Pulse width and intervals are as shown in Fig. 3 (g) and Fig. 4 (g).

4. CONFIRMATION OF VERTICAL BLANKING SIGNAL

Connect Oscilloscope to the Vertical Blanking Terminal of PC Board (PX-A504) and confirm that the vertical blanking signal pulse width and intervals as shown in Fig. 3 (h) and Fig. 4 (h).

5. CONFIRMATION OF SYNC. SEPARATOR OPERATION

(a) Connect Monitor TV to Monitor Connector and set Camera/TV Selector to "TV" position.
(b) Connect Oscilloscope to the Vertical Sync. Out Terminal of P.C. Board (PX-A504). Confirm that the vertical sync. appears as shown in Fig. 3 (l) and Fig. 4 (l).

VIII. SERVO (Head Motor Servo Circuit) PX-A505 or PX-A507

The waveforms of the various parts of the Servo Circuit are shown in Fig. 4 and 5 and are also indicated in the Schematic Diagram marked (a) through (q) as well as (A) through (J).

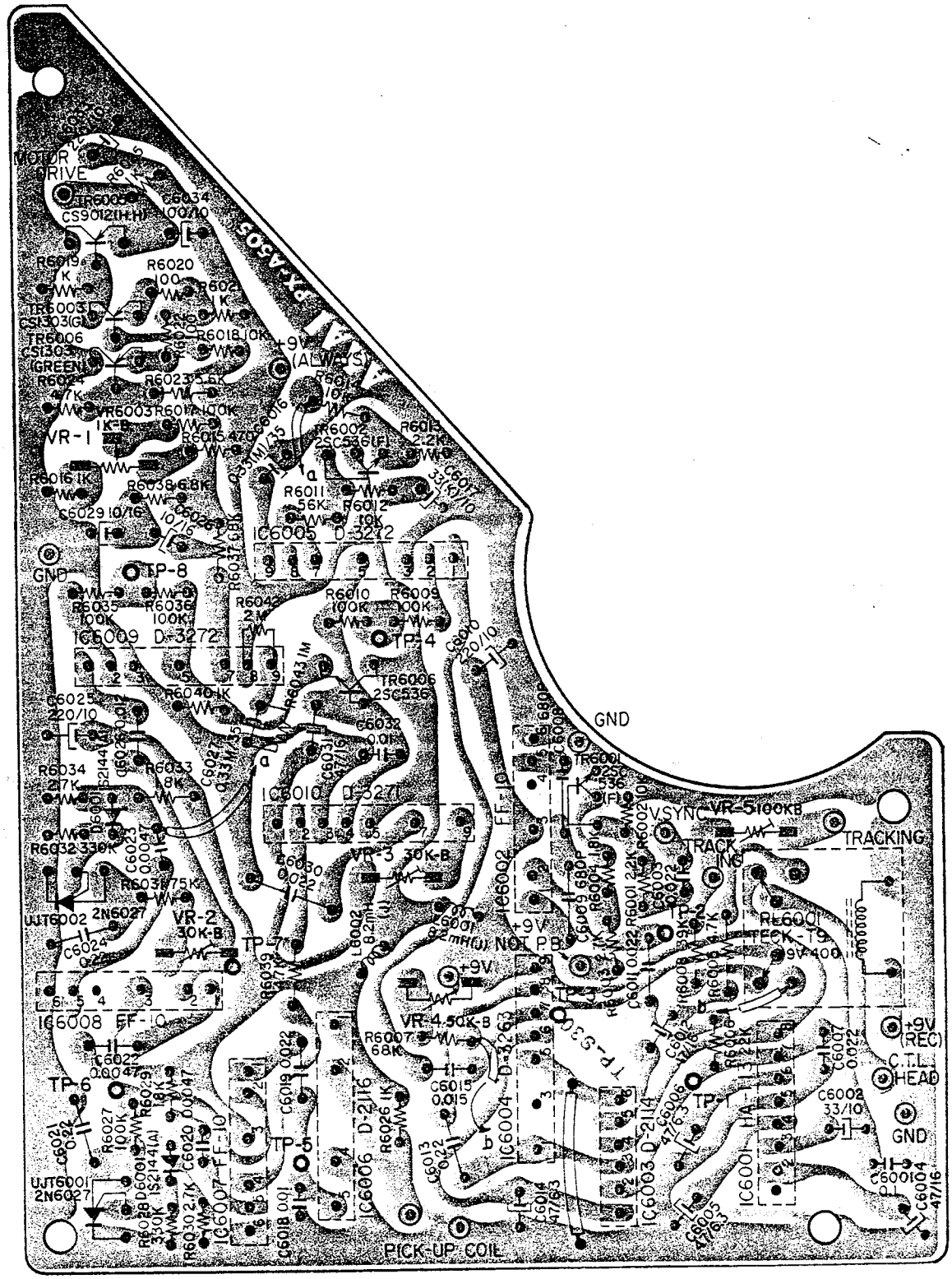


Fig. 1 Servo P.C. Board (PX-A505)

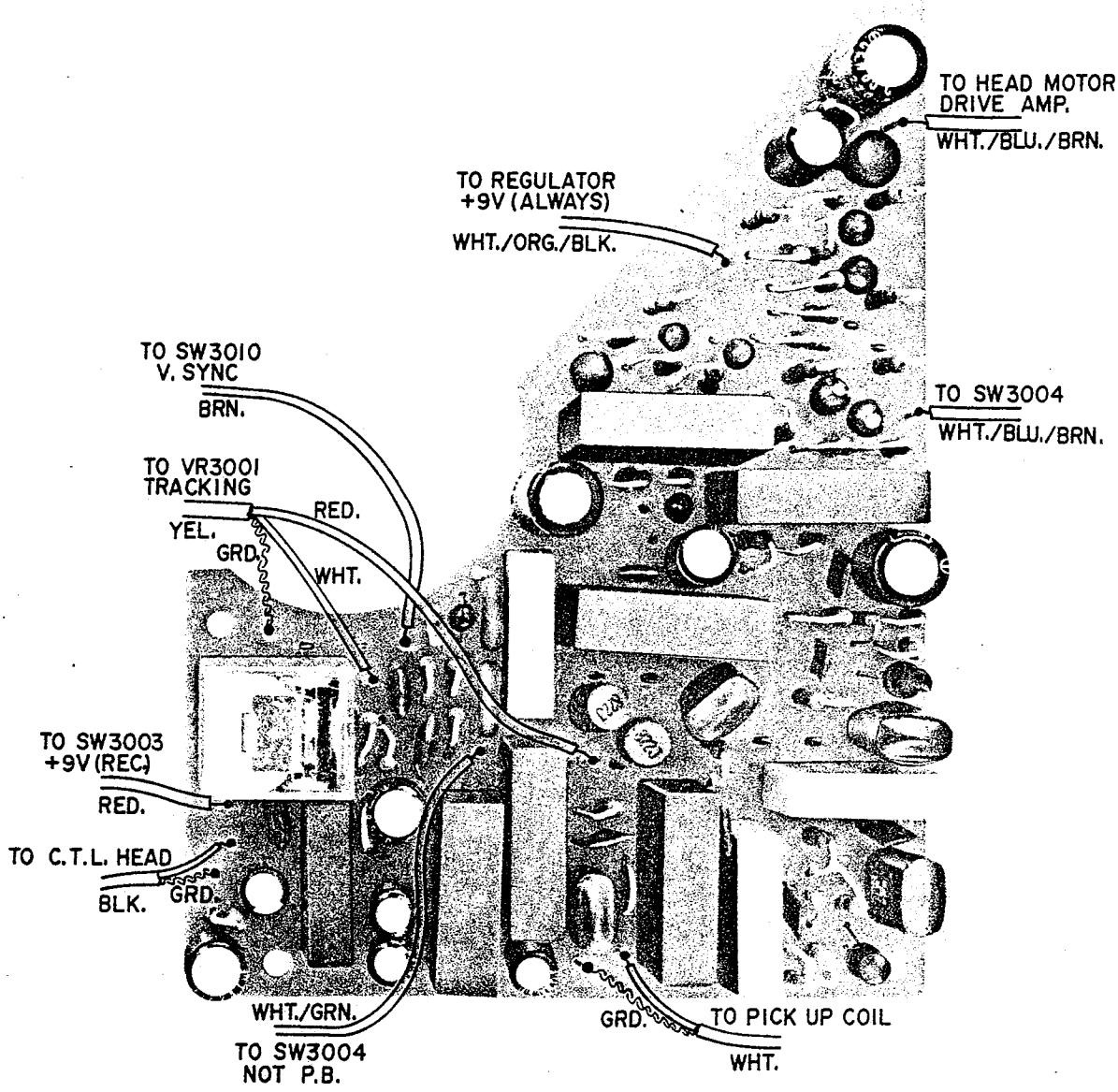


Fig. 2 Servo P.C. Board (PX-A505)

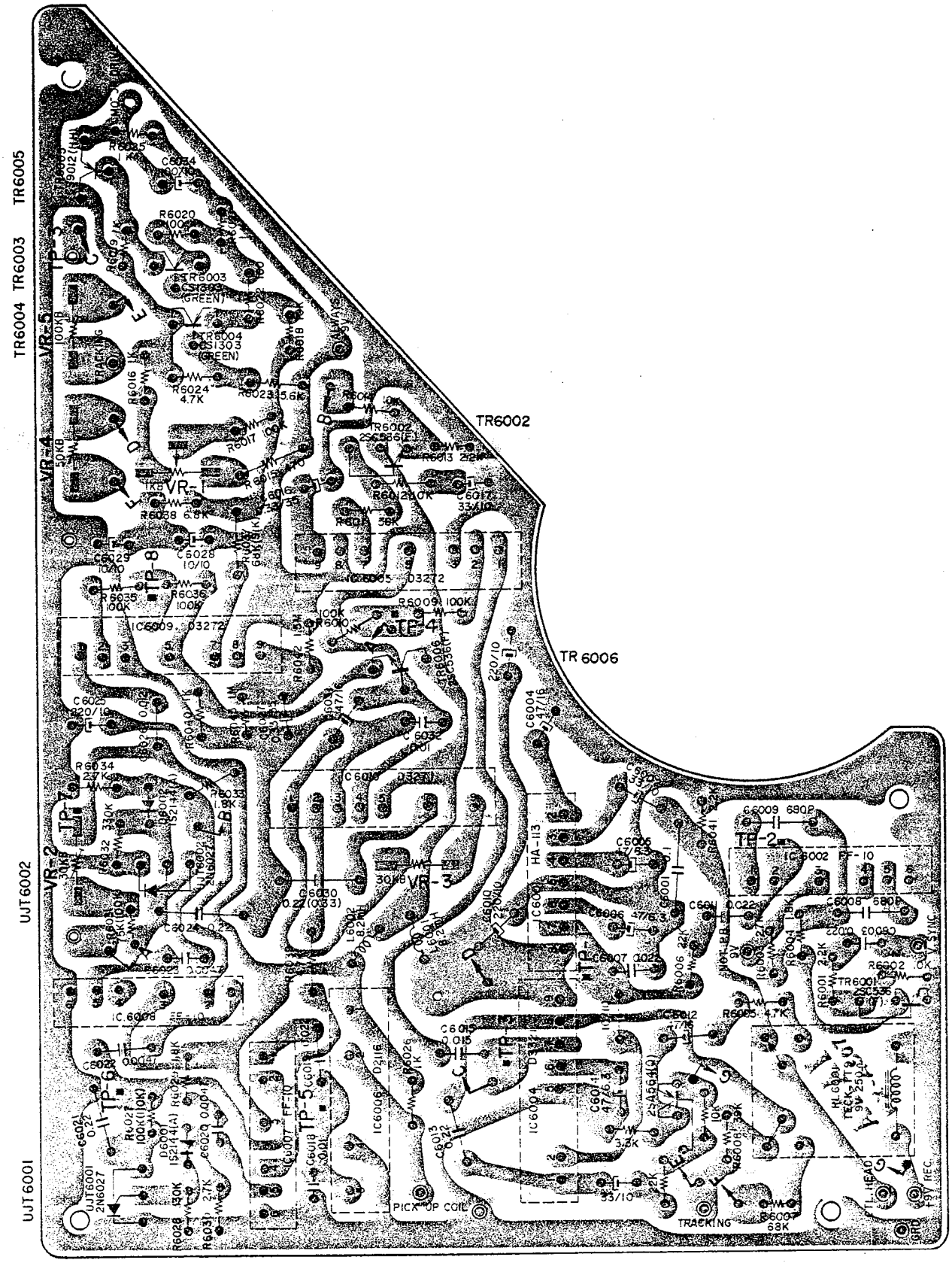


Fig. 3 Servo P.C. Board (PX-A507)

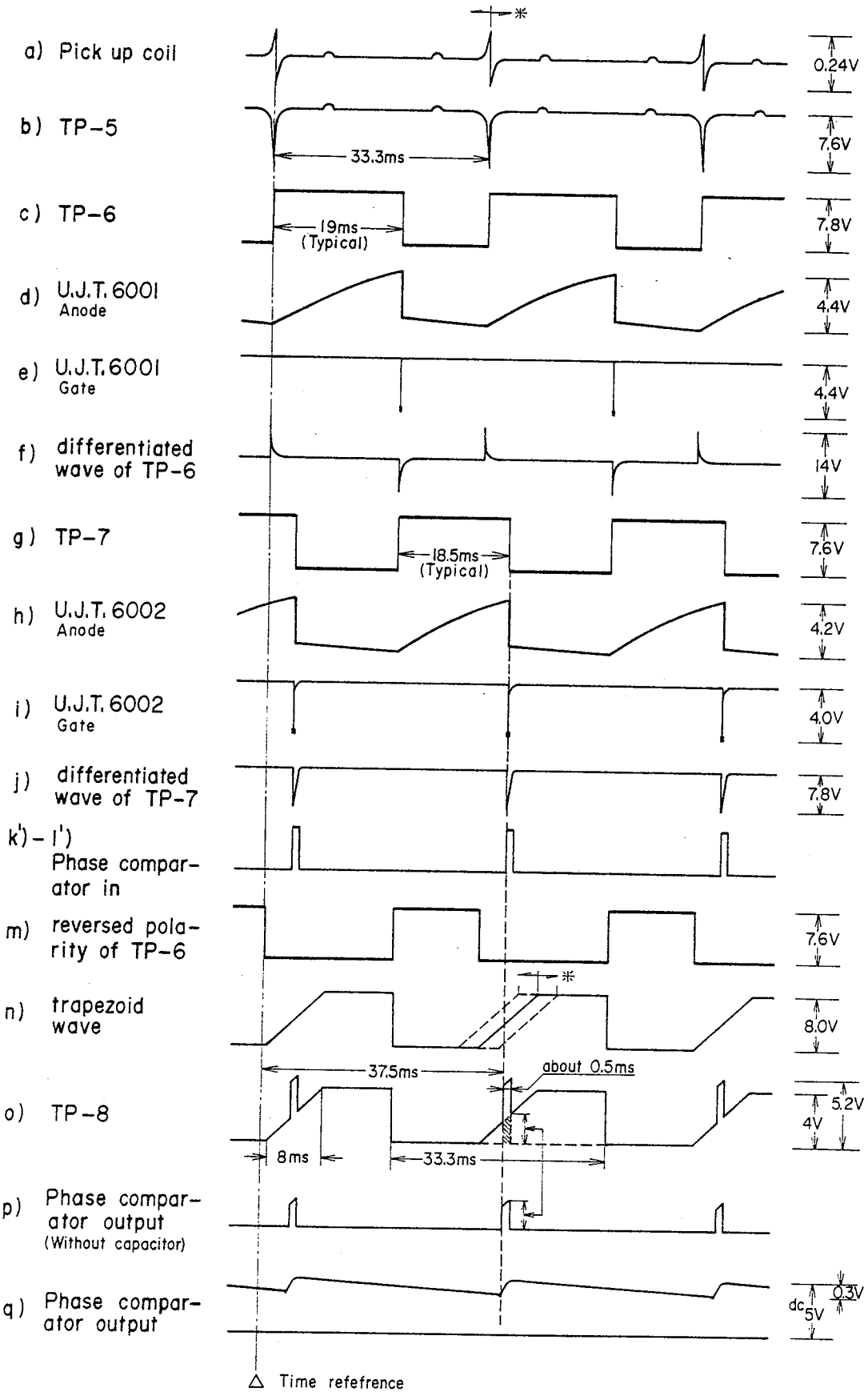


Fig. 4 (A) SERVO $\left(\begin{matrix}\text{PX-A505}\\ \text{PX-A507}\end{matrix}\right)$ Waveforms. ①Speed Control (U.S. Standard Type)

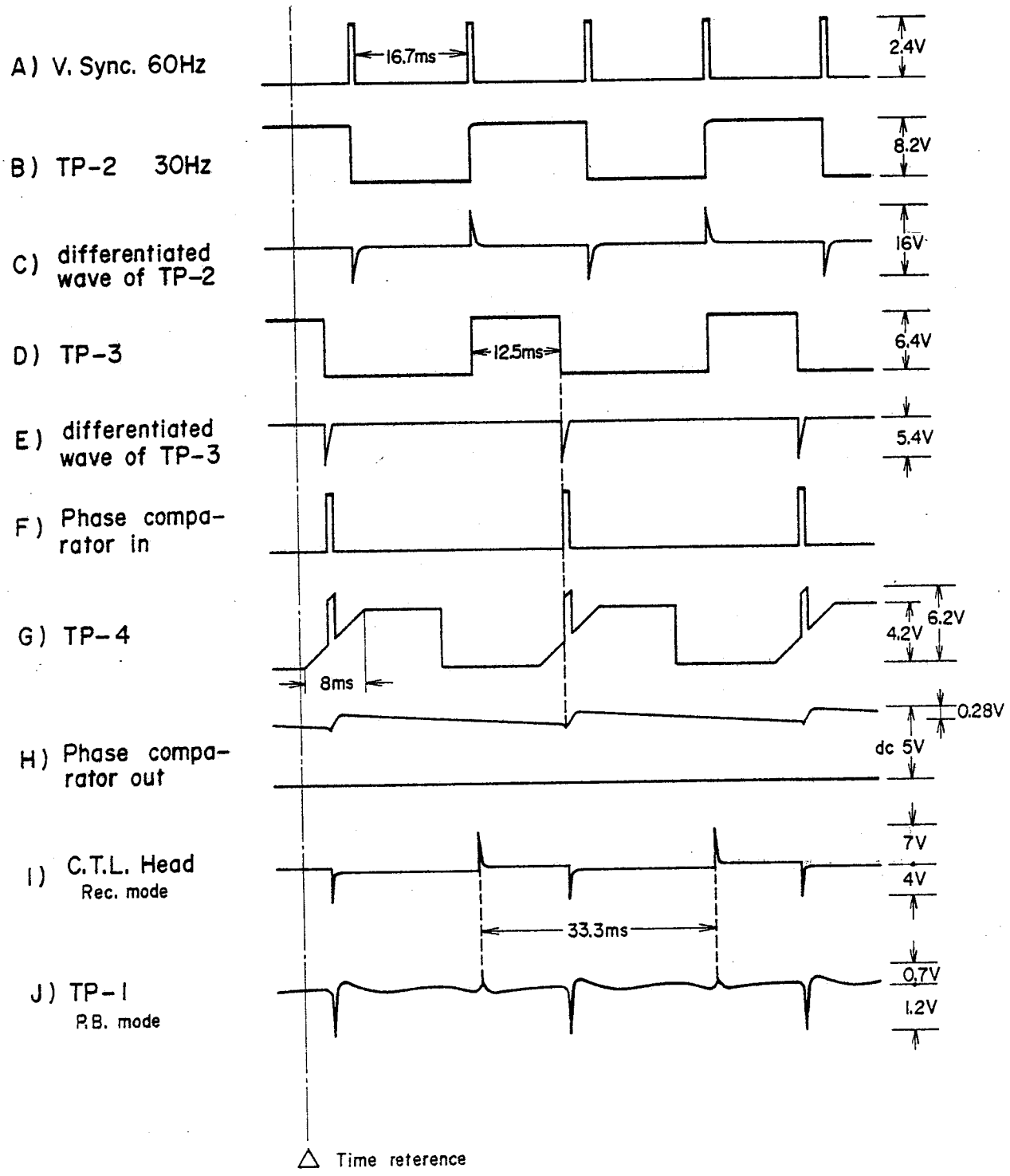


Fig. 4 (B) SERVO (PX-A505 / PX-A507) Waveforms. ②Phase Control (U.S. Standard Type)

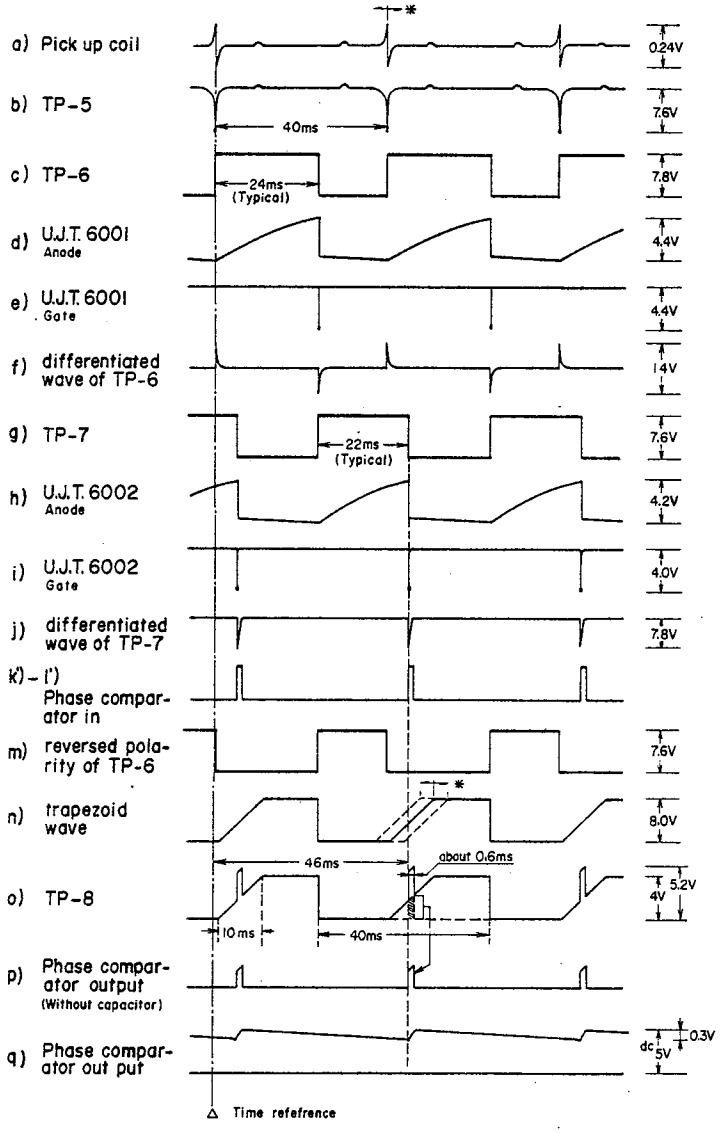


Fig. 5 (A) SERVO (PX-A505 / PX-A507) Waveforms. ① Speed Control (C.C.I.R. Type)

5-1 Adjustment at Stop Mode

(1) Connect Oscilloscope to TP-2 and confirm that the waveform obtained is as shown in Fig. 6.
CAUTION : Set Camera/TV Selector Switch to "Camera" position.

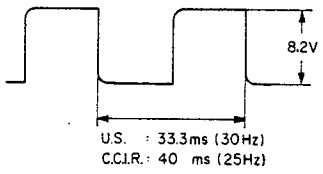


Fig. 6

(2) Connect Oscilloscope to TP-3 and adjust VR-5 (100 KB) to obtain a waveform as shown in Fig. 7.
CAUTION : This is the preliminary adjustment and VR-5 must be readjusted as outlined in Item 5-2 (2) below.

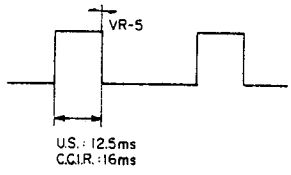


Fig. 7

(3) Connect Oscilloscope to TP-5 and confirm that the pick-up pulse amplitude is more than 7 V. as shown in Fig. 8 and that the pulse peaks are clipping.
(In case the amplitude is less than 7 V, or the pulse peaks are not clipping, adjust the angle of the pick up coil in the upper part of the head drum and adjust the gap between the pick up coil and pick up plate).

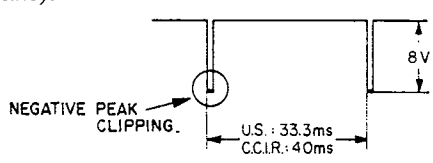


Fig. 8

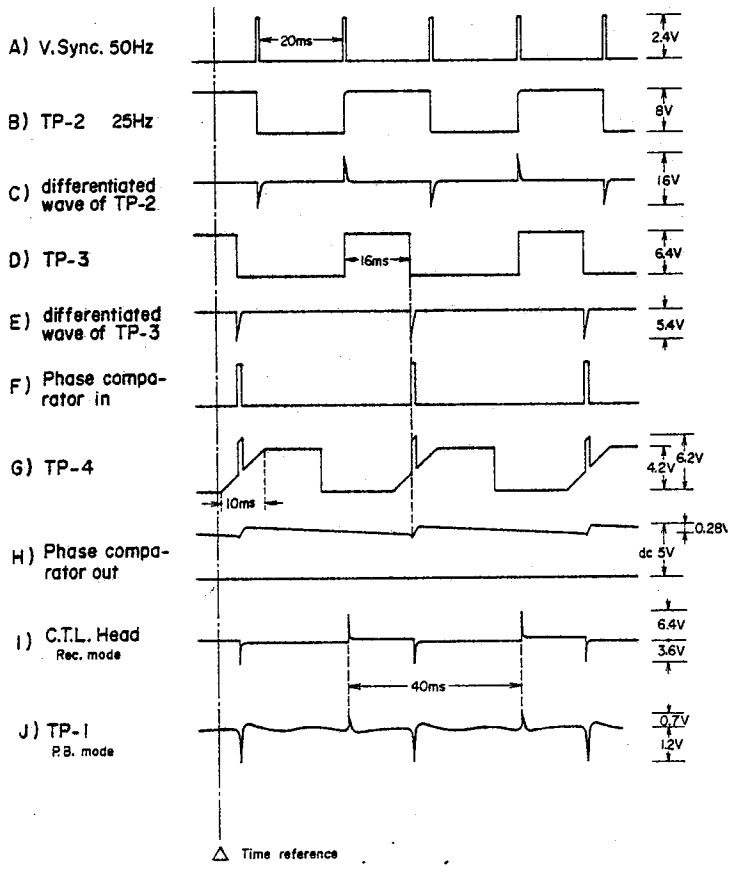


Fig. 5 (B) SERVO (PX-A505 / PX-A507) Waveforms. ② Phase Control (C.C.I.R. Type)

(4) Connect Oscilloscope to TP-8 and adjust VR-3 (30 KB) so that the Trapezoid Wave Ramp Slope is 8 ms (C.C.I.R. 10 ms) as shown in Fig. 9. Further, adjust VR-1 (1 KB) so that the Speed Control Sampling Pulse is positioned slightly below the center of the Ramp Slope.

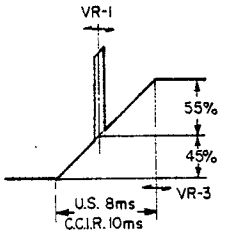


Fig. 9

(5) Connect Oscilloscope to TP-4. Adjust VR-2 (30 KB) so that the Phase Control Sampling Pulse is positioned in the center of the Ramp Slope as shown in Fig. 10.

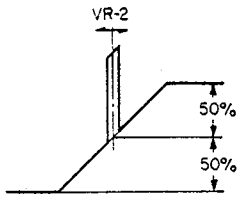


Fig. 10

5-2 Adjustments at Recording and Playback Modes

PLAYBACK MODES

(1) Video Head Switching Point Adjustment

Record and play back a signal supplied from TV or Camera and observe monitor screen.

Adjust VR-4 (50 KB) so that the Video Head Switching Point is 5 to 10 horizontal lines above the vertical blanking.

(2) After Item (1) above has been perfected, connect Oscilloscope to TP-3 and at recording mode, and measure the width of the positive part of the square wave.

Next, at stop mode, adjust VR-5 (100 KB) so that the width of the positive part of the square wave equals the above measured value (Ref. to Fig. 11).

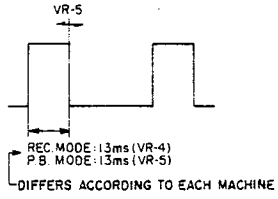


Fig. 11

IX. VIDEO AMPLIFIER P.C. BOARD (PX-A503)

(35)

TR4001-1S048, TR4002 TR4003-2SC645, TR4004 TR4005-2SC460, TR4006-2SC458, TR4007-2SC711(E)
TR4008-2SC968(3) D4001. D4002-1S2144Ⓐ X2

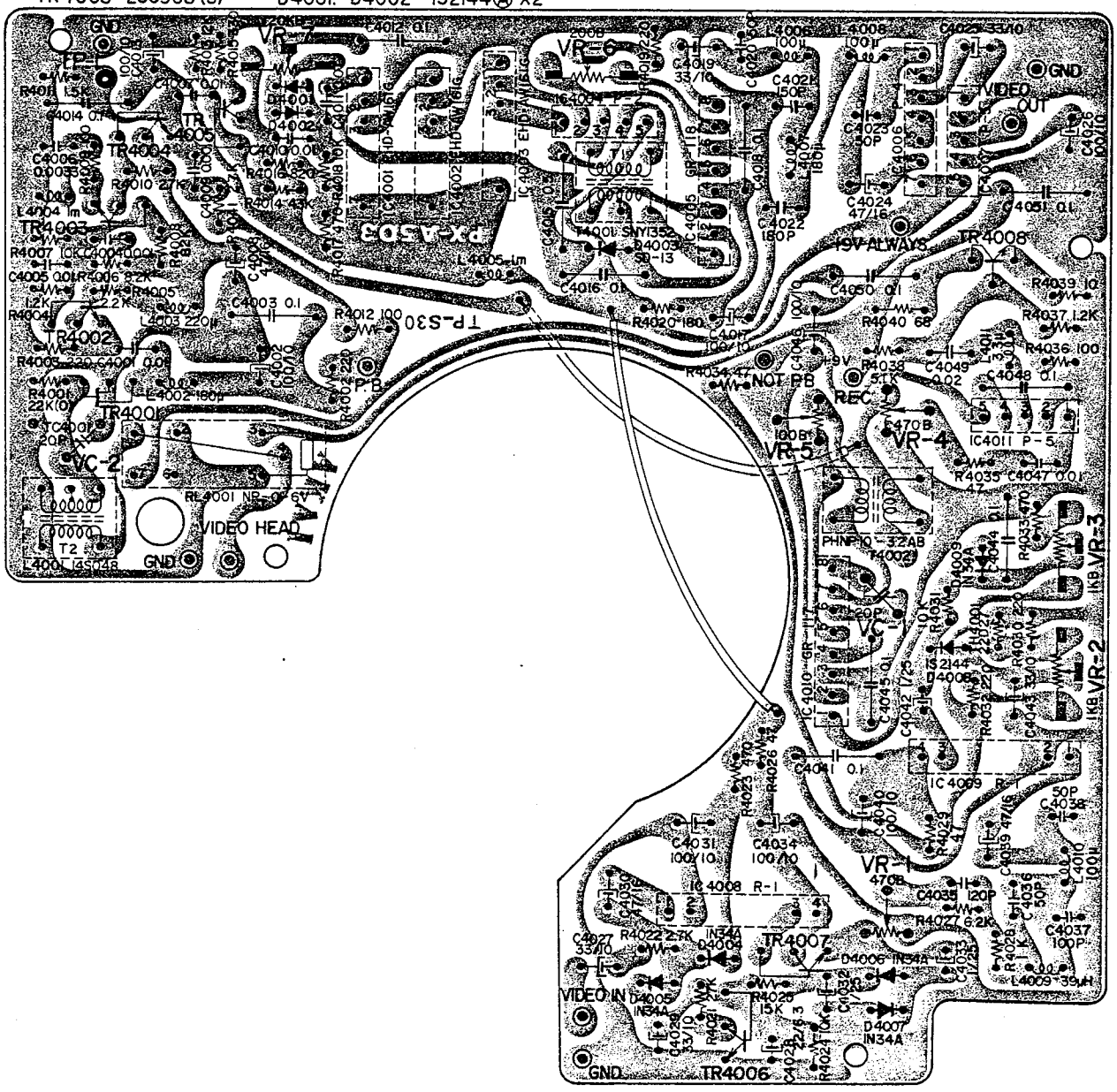


Fig. 1 Video Amp. P.C. Board (PX-A503)

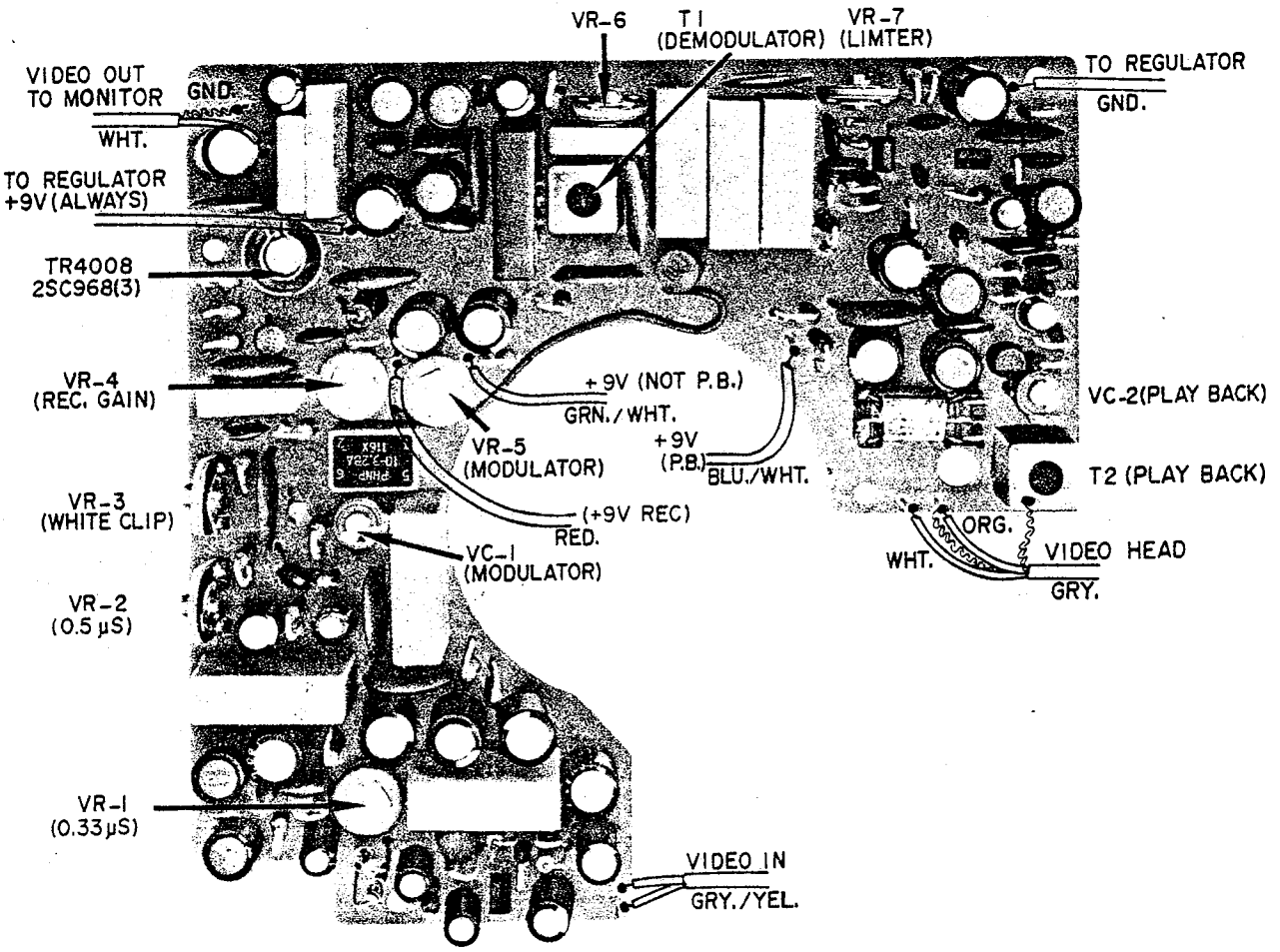


Fig. 2 Video Amp. P.C. Board (PX-A503)

1. MODULATOR BALANCE ADJUSTMENT (Stop Mode)

(a) Connect Oscilloscope to TP-1.
(b) Turn VR-1 fully counter-clockwise and VR-3 fully clockwise. Set VR-2 and VR-5 to center point.
(c) Adjust VC-1 so that the positive and negative part of waveform is equal as shown in Fig. 3.

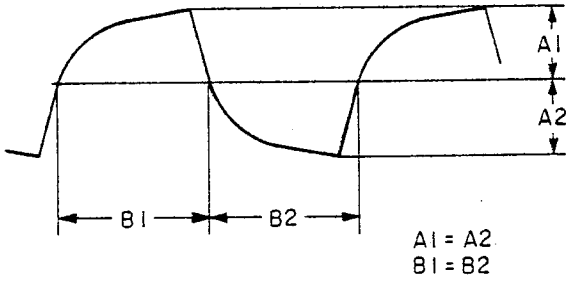


Fig. 3

2. FREQUENCY DEVIATION ADJUSTMENT (Stop Mode)

(a) Connect a Test Pattern Signal (1.4 V p-p) supplied from a monoscope between Pin "B" of Monitor Connector and Chassis (Pin "D").
(If a monoscope is not available, with Vidicon Camera VC-110, photograph the resolution chart (intensity of chart must be 1000 lux and video signal 1.4 V p-p).
(b) Connect Oscilloscope to TP-1.
(c) Adjust VR-2 so that T_1 in Fig. 4 is 0.5 μs (2 MHz).
(d) Adjust VR-1 so that T_2 in Fig. 4 is 0.33 μs (3 MHz).

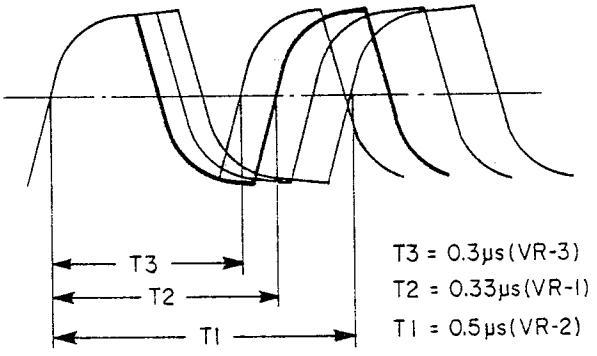


Fig. 4

(e) Adjust VR-3 so that T_3 in Fig. 4 is 0.3 μs (3.3 MHz).
CAUTION : T_3 is white clip level adjustment and because the line which appears on the oscilloscope is extremely thin and hard to see, aim camera at a particularly bright subject and alternately put on and remove lens cover to confirm function of white clip at 0.3 μs.

3. CARRIER LEAK ADJUSTMENT (Modulator Balance, Limiter Balance, Demodulator Balance)

(a) Disconnect Video Input Signal.
(b) Connect Oscilloscope to Video Output Terminal or Pin "F" of Monitor Connector (8P). Set Oscilloscope Vertical Gain Control to maximum.
(c) Adjust VC-1, VR-6, and VR-7 so that the amplitude of the waveform appearing on oscilloscope is minimum. (It is ideal for the waveform to be a single thin horizontal line).
CAUTION : If carrier leak cannot be adjusted with VC-1, VR-6, and VR-7, try adjusting VR-5 also.

4. VIDEO OUTPUT LEVEL ADJUSTMENT

(a) Supply a 1.4 V p-p Video Signal from camera or monoscope.
(b) Connect Oscilloscope to Video Output Terminal or Pin "F" of Monitor Connector (8P).
(c) Adjust core of Demodulator Transformer T_1 so that the video output signal amplitude is 1.4 V p-p.
CAUTION : In case the video input signal is less than 1.4 V p-p, adjust so that video output is the same amplitude as the input signal.

5. PLAYBACK CIRCUIT EQUALIZATION ADJUSTMENT

(a) Connect Oscilloscope to TP-1.
(b) Play back a Standard Video Reference Tape. Adjust VC-2 so that R.F. Envelope Amplitude is maximum and also the error between A_1 (part at which brightness is intense) and A_2 (part at which brightness is faint) is as small as possible (Refer to Fig. 5).



RF ENVELOPE

Fig. 5

(c) It is ideal for R.F. Envelope to be more than 0.4 V p-p, but this varies depending upon the quality of video head tip and CTL Head adjustment.

6. RECORDING LEVEL ADJUSTMENT

(a) Record and play back a Test Pattern Signal (or photographed Resolution Chart Signal) and adjust recording level so that the R.F. Envelope amplitude is maximum.
(b) At recording mode, connect Oscilloscope to the Heat Sink of Transistor TR-4008 (2SC 968) and measure the recording level.
(c) With recording waveform amplitude within a 2 V to 3 V range, adjust VR-4 to optimum value.
CAUTION : Adjust recording level so that error between A_1 and A_2 of R.F. envelope shown in Fig. 5 is non-existent.

7. CARRIER LEAK ADJUSTMENT AT RECORDING AND PLAYBACK MODE

(a) Connect VC-110 Vidicon Camera and record and playback a scene in which light and dark difference is considerable and observe whether or not a carrier leak appears on the monitor screen.
(b) If a carrier leak appears, at playback mode, attempt to eliminate carrier leak stripe by adjusting both VR-6 and VR-7 slightly.
(c) If VR-6 or VR-7 is adjusted, make carrier leak adjustment outlined in Item (3) above again.
(d) Finally, record and play back a signal supplied from TV or camera and check picture quality.

X. AUDIO AMPLIFIER P.C. BOARD (PX-A502)

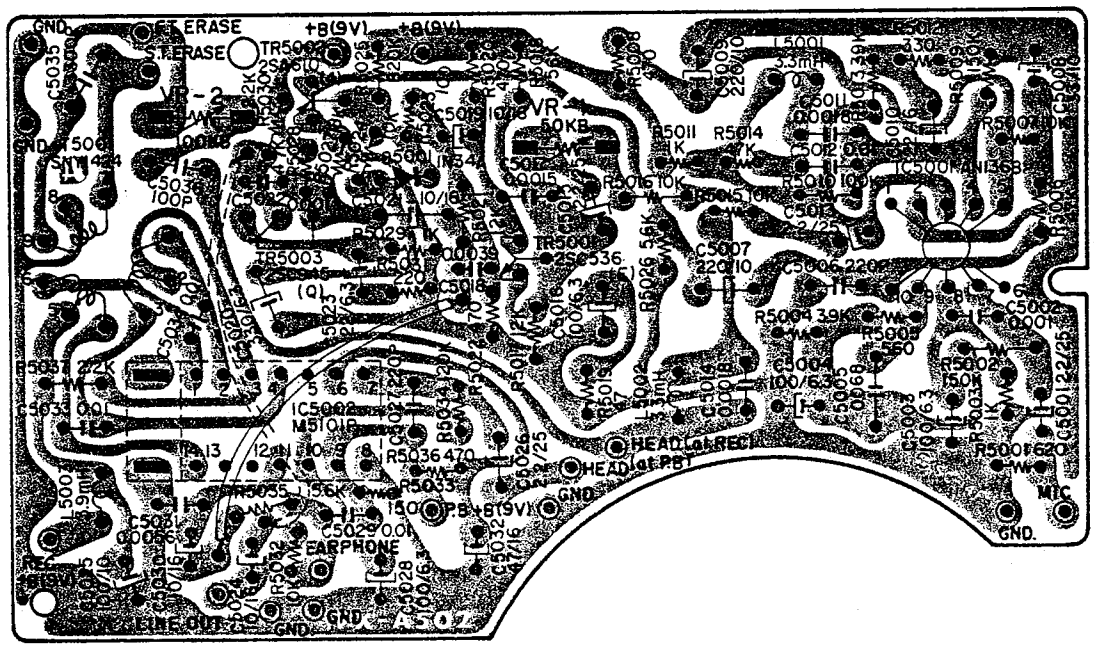


Fig. 1 Audio Amp. P.C. Board (PX-A502)

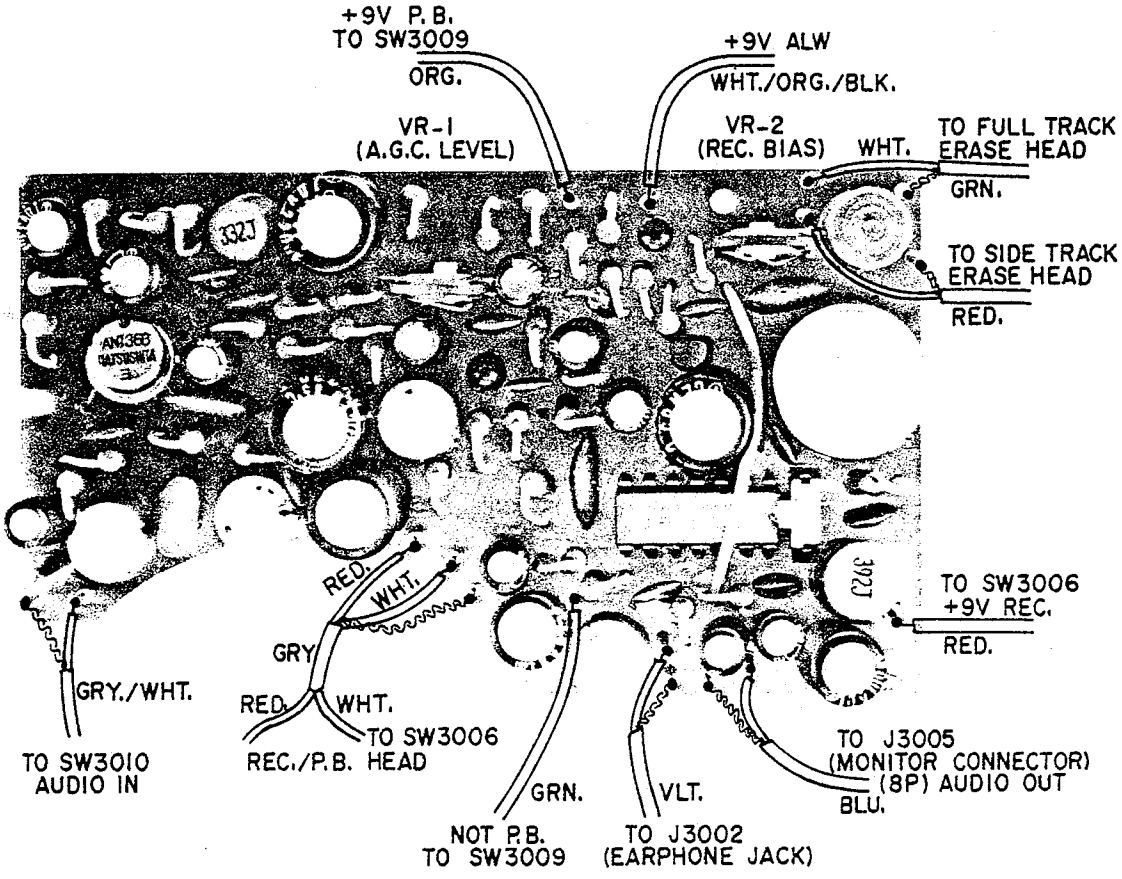


Fig. 2 Audio Amp. P.C. Board (PX-A502)

1. RECORDING BIAS VOLTAGE ADJUSTMENT

(a) Connect a V.T.V.M. (107 A Type) to the Audio Head Terminal.
(b) Adjust VR-2 (100 KB) so that at recording mode, the Bias Voltage is 20 V rms.

2. PLAYBACK OUTPUT LEVEL AND NOISE LEVEL CHECK

(a) Connect a High Sensitivity V.T.V.M. between Pin "J" of Monitor Connector (8 P) and Chassis.
(b) Play back an Audio Level Test Tape (700 Hz, "0" VU recorded tape) and confirm that the V.T.V.M. indication is within a range of 1 V rms ± 0.3 V.
CAUTION : If audio playback level is not within specifications, check playback head height.
(c) With tape removed, confirm that at playback mode the noise level is less than −36 dB.

3. RECORDING LEVEL (AGC Level) ADJUSTMENT

(a) Connect an Audio Oscillator to the External Microphone Jack and supply a 1,000 Hz. −60 dB sine-wave signal.
(b) Connect a High Sensitivity V.T.V.M. between Pin "J" of Monitor Connector (8 P) and Chassis.
(c) Adjust VR-1 (50 KB) so that the V.T.V.M. indication is 1 V rms.
(d) Under this condition, record, and then play back to check whether or not the V.T.V.M. indication is within a 1 V ± 0.3 V range.
If not within specified range, readjust VR-1 and set so that the recording/playback level is within 1 V ± 0.3 V.
CAUTION : If recording/playback level is still not within specified value in spite of having adjusted VR-1, with VR-2, alter the bias voltage somewhat and recheck.
(e) Playback the tape recorded in item (d) above and, with a distortion meter, check whether or not the distortion level is less than 6%.

4. FREQUENCY RESPONSE CHECK

(a) Connect an Audio Oscillator to the External Microphone Jack. Record a 1 kHz, a 10 kHz, and 100 Hz sine wave signal (about 10 seconds each) at −60 dB recording level.
(b) Rewind and play back tape. Compare the 100 Hz and 10 kHz output level with the 1 kHz output level and check whether or not the error is within a ±5 dB range.
CAUTION : If frequency response is not within specifications, change the Bias Voltage slightly and recheck.

XI. PINCH ROLLER SOLENOID CONTROL CIRCUIT (PX-508)

The purpose of this circuit is to reduce the battery discharge current as per following function :
At the moment the play key or the record key is depressed, the maximum current (about 0.7 amperes) passes through part of the pinch roller solenoid. After the solenoid is energized (within about 3 seconds), the holding current, (about 0.15 amperes) passes through the pinch roller solenoid, thus reducing the battery discharge current.

There is no adjustment part in this circuit. However, if the current flowing through the pinch roller solenoid does not change after 3 seconds, condenser C-9001 (22/6.3) is shorted.

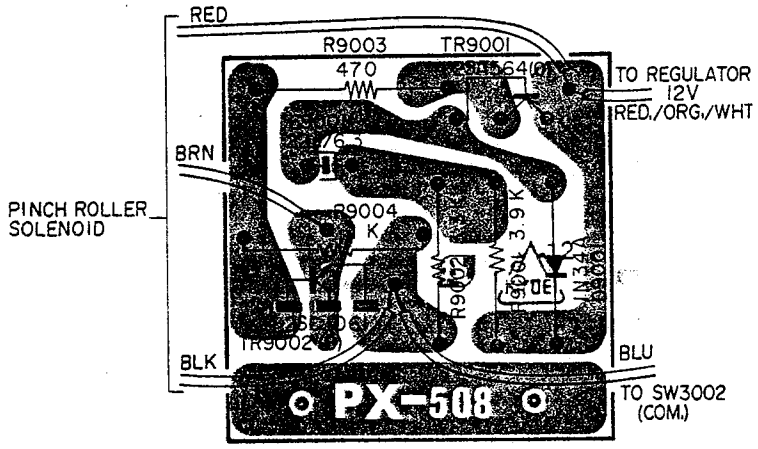


Fig. 1 Pinch Roller Solenoid Control P.C. Board (PX-508)

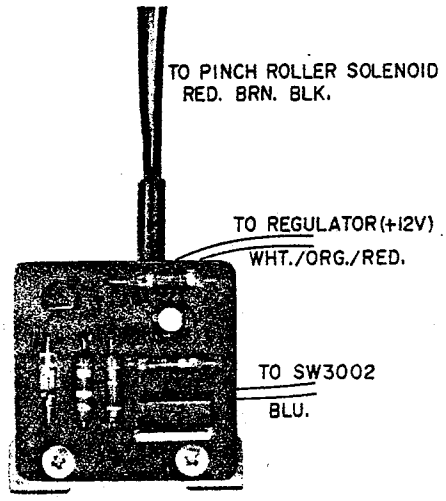


Fig. 2 Pinch Roller Solenoid Control P.C. Board (PX-508)

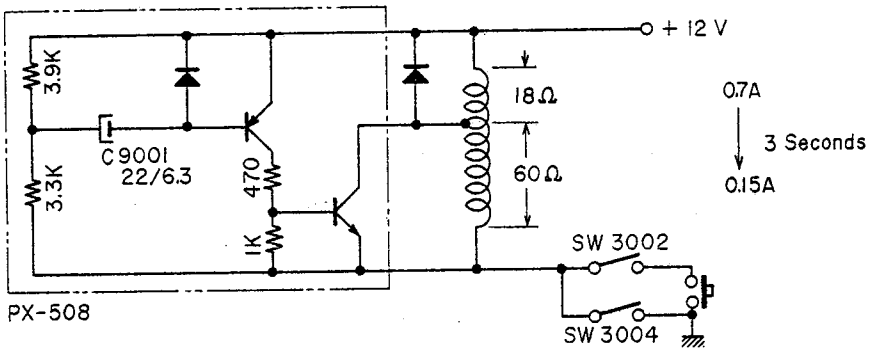


Fig. 3 Pinch Roller Solenoid Control P.C. Board (PX-508)

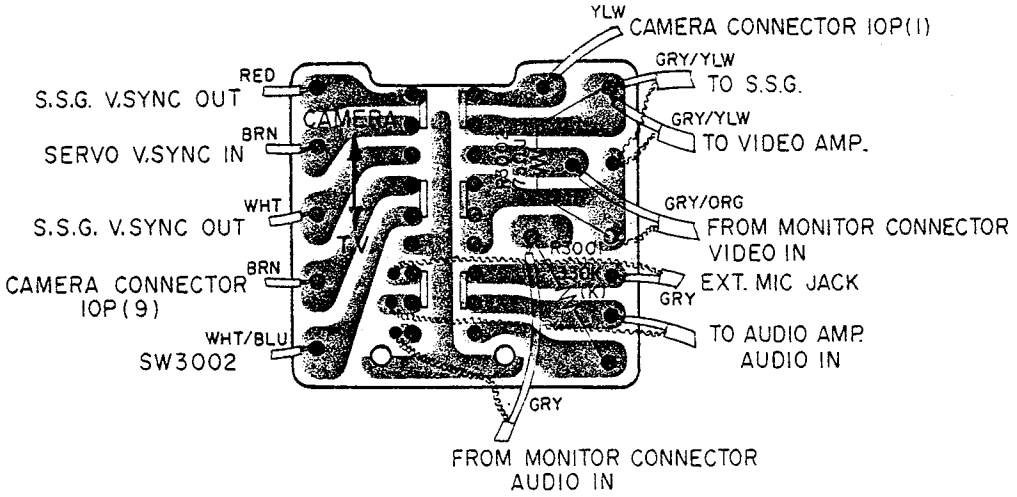
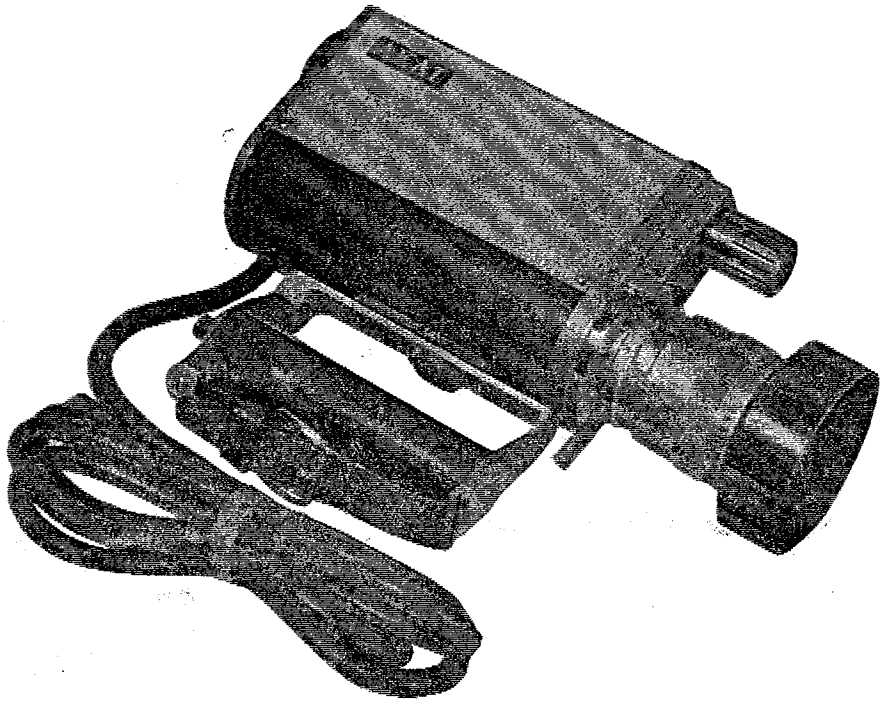


Fig. 4 Camera & TV Selector P.C. Board (PX-A148)

VT-110 RECORDER
SCHEMATIC DIAGRAM

1. BLOCK DIAGRAM
2. VIDEO SHEMATIC DIAGRAM
3. S.S.G. SCHEMATIC DIAGRAM
4. SERVO SCHEMATIC DIAGRAM
5. AUDIO SCHEMATIC DIAGRAM
6. MOTOR DRIVE SCHEMATIC DIAGRAM

7. BLOCK DIAGRAM (VT-100S)
8. S.S.G. SCHEMATIC DIAGRAM (VT-100S)



SECTION 2

CAMERA (VC-110) REPAIR AND ALIGNMENT

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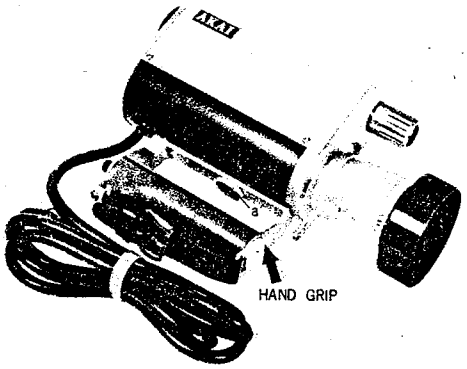
I. SPECIFICATIONS

VIDICON	:	2/3" Separate Mesh Vidicon Tube
SCANNING SYSTEM	:	External Sync. Signal (Supplied from Recorder)
VIDEO OUTPUT	:	1.4 Vp-p Conposite Video Negative Sync.
VIDEO S/N RATIO	:	Better than 40 dB
HORIZONTAL RESOLUTION	:	More than 400 lines
HORIZONTAL FREQUENCY	:	U.S. type : 15,75 kHz, CCIR. type : 15.625 kHz
VERTICAL FREQUENCY	:	U.S. type : 60 Hz, CCIR. type : 50 Hz
APERTURE SELECTOR	:	F1.8 and 5.6 with Automatic Light Compensator System
LENS	:	Zoom Lens (10 to 40 mm F1.8) or (9 to 54 mm F1.8)
VIEW FINDER	:	One-Eye reflex system
POWER SOURCE	:	DC 9 V (460 mA) (Supplied from Recorder)
MICROPHONE	:	600 Ω, −60 dB (built-in microphone)

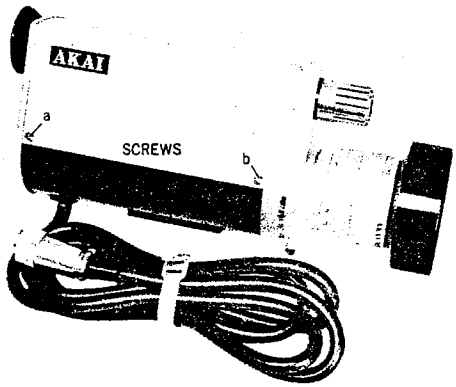
II. CASE REMOVAL

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

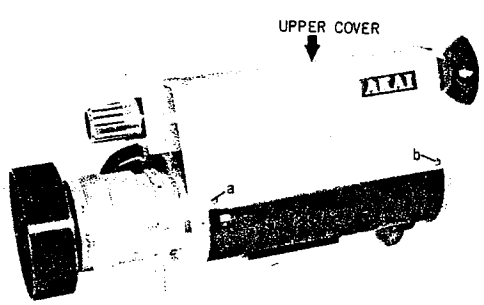
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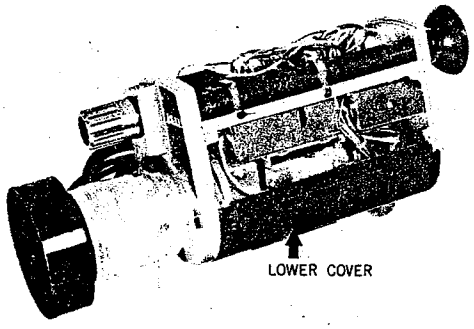
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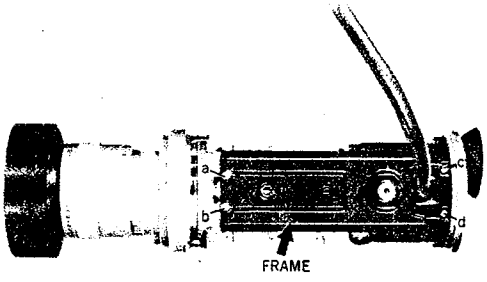
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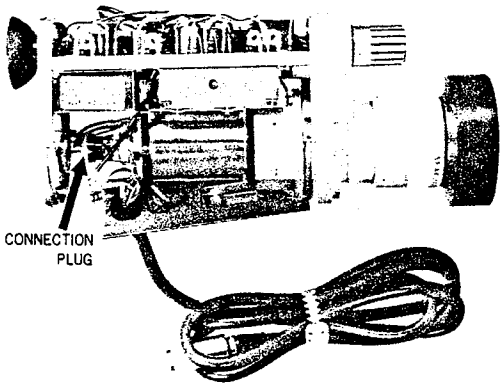
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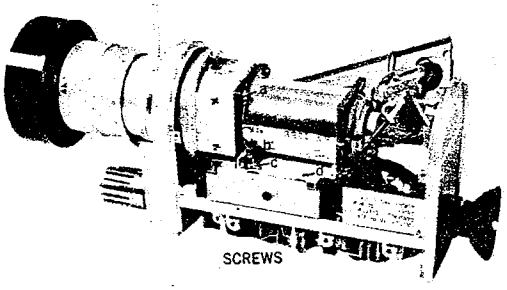
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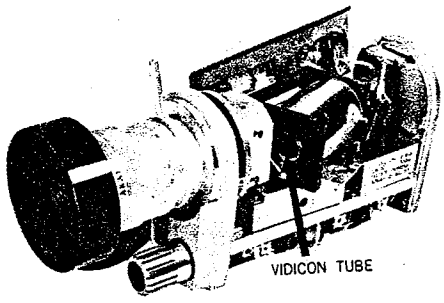
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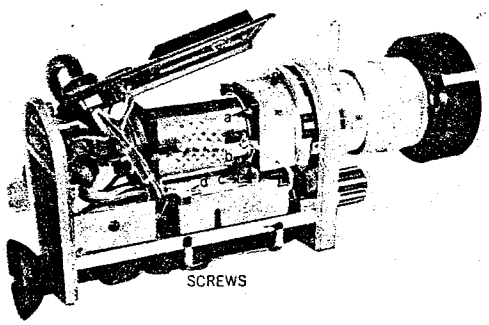
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9



8



III. ADJUSTMENT PROCEDURE

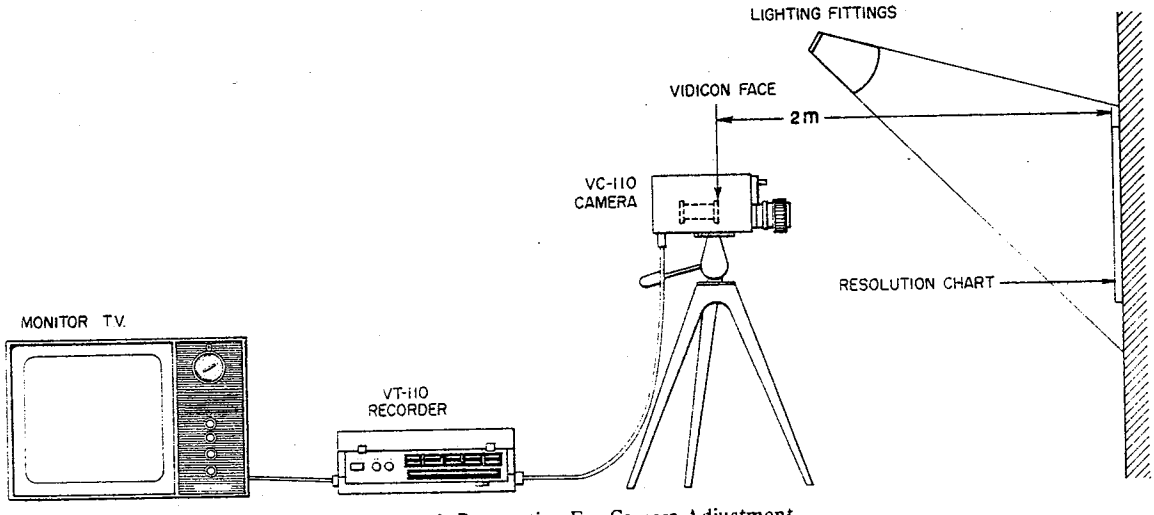
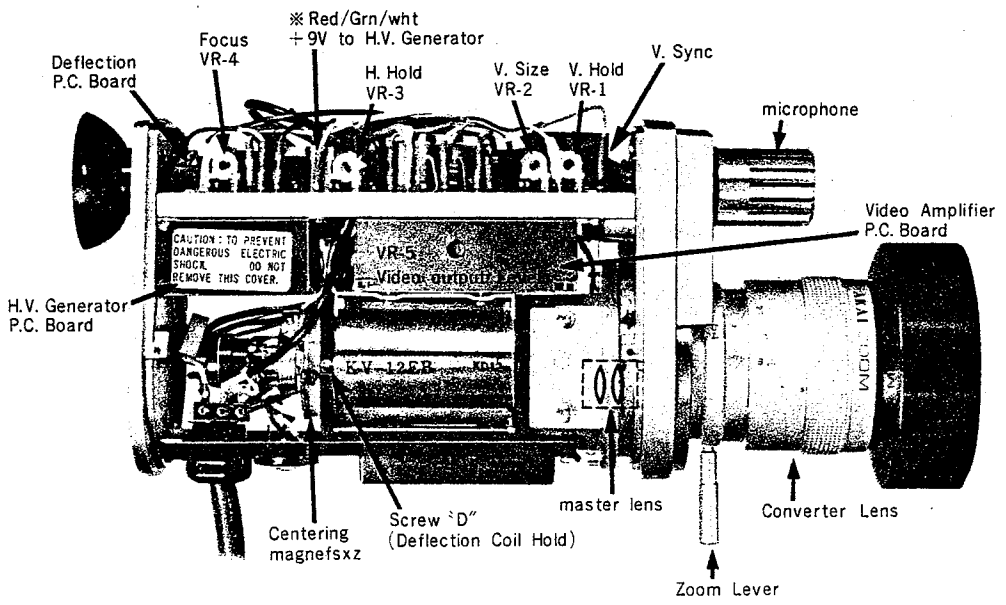


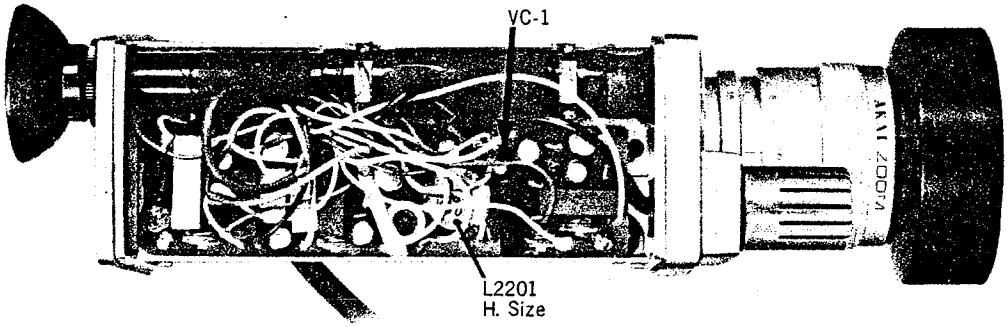
Fig. 1 Preparation For Camera Adjustment

1. As in Fig. 1, hang a resolution chart on a wall and try to obtain a lighting intensity of 1000 Lux.
2. Position of Camera
   Set camera at position where vidicon face is 2 meters (1.8 yards) away from the resolution chart.
3. Set camera Aperture Selector to "5.6" or "1.8".
4. Position Zoom Lever
   Set Zoom Lever to TELE (40 mm or 54 mm).

IV. ADJUSTMENTS

1. CONFIRMATION OF DEFLECTION
(To prevent Vidicon Tube from sticking)





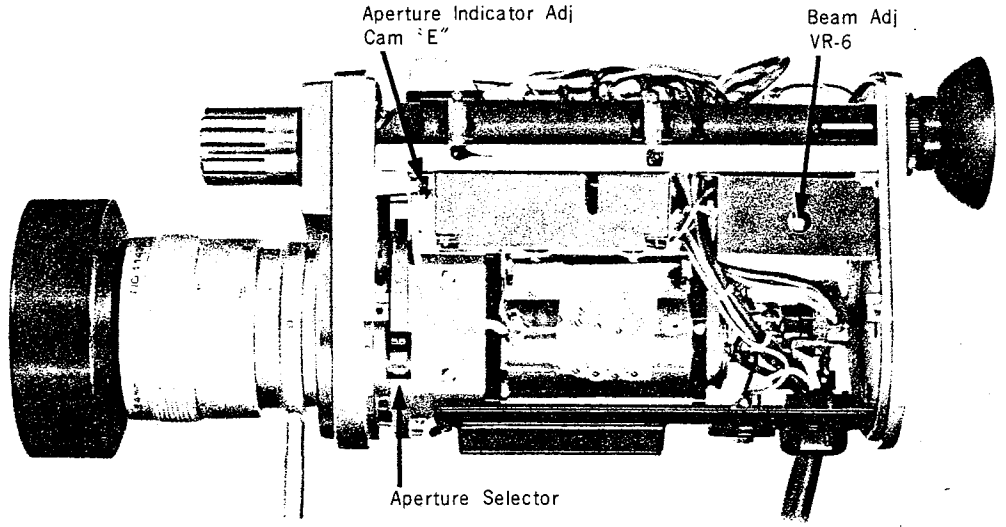


Fig. 2

(a) Disconnect Red/Grn/Wht +9 V voltage supply lead wire from Deflection P.C. Board to High Voltage Generator P.C. Board (marked "※" at upper part of Fig. 2).

(b) Connect Oscilloscope between P.C. Board V. Yoke Terminal (Green) and chassis and confirm that the waveform appearing is as shown in Fig. 3.

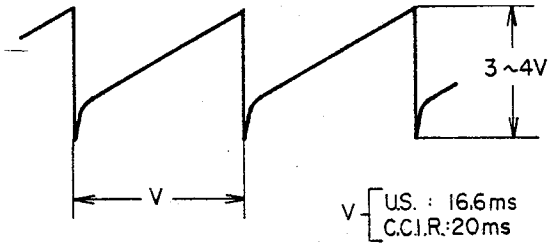


Fig. 3 Vertical Deflection Waveforms

(c) Connect Oscilloscope between P.C. Board H. Yoke Terminal and chassis and confirm that the waveform appearing is as shown in Fig. 4.

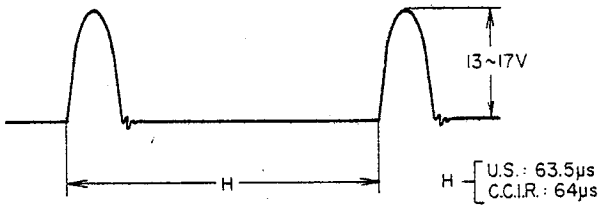


Fig. 4 Horizontal Deflection waveforms

(d) If waveforms are as described in items (b) and (c) above, re-connect Red/Grn/Wht wire (disconnected in item (a)) and proceed with the next adjustment.
CAUTION : In case the waveforms as outlined in items (b) and (c) above do not appear, the Deflection P.C. Board must be repaired.

2. CENTERING ADJUSTMENT

(a) Set camera so that the center part of the resolution chart appears in the center of the monitor screen.

(b) Disconnect Deflection P.C. Board focus coil lead wire (Wht or Brn). Adjust centering magnet so that the center of the faded picture is in the center of the monitor screen.
CAUTION : At this time, set Zoom Lever to "TELE" (40 mm or 54 mm) position.

(c) Connect focus coil lead wire (disconnected in item (b) above). Fine adjust centering magnet so that the picture on monitor screen does not deviate from center position when VR-4 is turned from minimum to maximum.

(d) With zoom lever at "Tele" position, set camera so that the center part of the resolution chart is at the center of monitor screen.
While turning lever from Tele to Wide, center of picture should not move from the center of monitor screen. In case of a shift from center of monitor screen, move Deflection Coil Assembly up and down and to the left and right while moving zoom lever from Tele to Wide and tighten coil holding screw at position at which the center of picture is perfectly centered.

3. FOCUS ADJUSTMENT

(a) Focus Current Adjustment
Rotate converter lens and focus. Turn VR-4 to obtain clearest picture on monitor screen.

(b) Master Lens Adjustment
Under conditions shown in Fig. 1, set converter lens distance scale to 2 meter position. Rotate master lens until picture image is focused. Deviation of indicator line must be within 1.5 mm from the center of the numeral "2" as shown in Fig. 5.

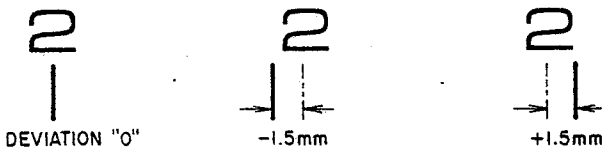


Fig. 5

4. DEFLECTION COIL POSITION ADJUSTMENT

If picture on monitor screen is tilted as shown in Fig. 6, loosen deflection coil holding screw (Screw "D", Fig. 2), and turn deflection coil until picture is straight.

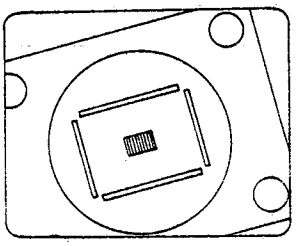


Fig. 6 Tilted picture

5. BEAM ADJUSTMENT

(a) Aim camera at something like a flat part of a white wall surface. Turn VR-6 fully counterclockwise (to increase beam current to maximum).

(b) When VR-6 is turned clockwise little by little, a thin black horizontal line will appear on the upper part of the monitor screen and gradually come downward and disappear when it reaches about the middle of the screen. Set VR-6 at point at which this black line disappears.

(c) As the black horizontal line described above is very thin, it may be extremely difficult to see on the monitor screen. In this case, photograph a florescent light. Move zoom lever from Tele to Wide and set VR-6 at point at which the white part of the picture is clearest (within the range in which white part is not out of focus).

6. VERTICAL HOLD ADJUSTMENT

(Proper Vertical Hold adjustment using the following method will assure protection against trouble resulting from change in climatic conditions).

(a) Connect Frequency Counter to V. Yoke (Grn and Yel). Turn VR-1 clockwise to the point at which picture on monitor screen begins to flow downward.

(b) At this point, disconnect vertical sync lead wire and read Frequency Counter indication.
The value at this time is the lower limit of the vertical oscillator free running frequency.

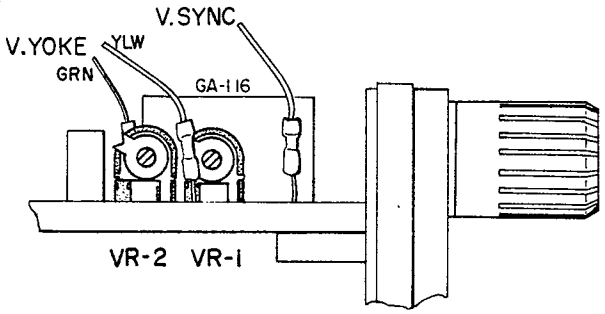


Fig. 7

(c) Connect the vertical sync lead wire and turn VR-1 counterclockwise to the point at which the picture on monitor screen starts to flow upward.

(d) Disconnect vertical sync lead wire and read value of frequency counter. The value at this time is the upper limit of the vertical oscillator free running frequency.

(e) For the most stable triggering, it is ideal to set the free running frequency at 52 to 54 Hz (U.S. Type) or 42 to 44 Hz (CCIR Type). Therefore, set VR-1 to obtain a frequency near the center dividing point of the frequency readings in items (b) and (d) within the range of 52 to 54 Hz (US.) or 42 to 44 Hz (CCIR).
EXAMPLE :
(b) lower limit : 46 Hz
(d) upper limit : 58 Hz

$$58-46 = 12$$

$$\frac{12}{2} = 6$$

$$46 + 6 = 52$$

In this case, set VR-1 to obtain a frequency of 52 Hz.

(f) After VR-1 adjustment has been completed, reconnect V. Sync lead wire.

7. HORIZONTAL HOLD ADJUSTMENT

(a) Set monitor to under-scanning condition (so that a of the raster can be seen on monitor screen). (Se Fig. 8)
As VR-3 is turned clockwise, the line at left side o raster will gradually move inward. Adjust VR-3 s that on a 19" screen a thin line appears at the le hand side of the raster about 1 cm away from th left hand edge of the screen.

(b) In case under-scanning cannot be attained, whil observing monitor screen, adjust VR-3 as follows Set VR-3 fully counter-clockwise (picture will b very unstable). Then, turn VR-3 clockwise to th point at which picture is perfectly stable. From thi point, again turn VR-3 further clockwise 90 beyond the stable position and set at this point

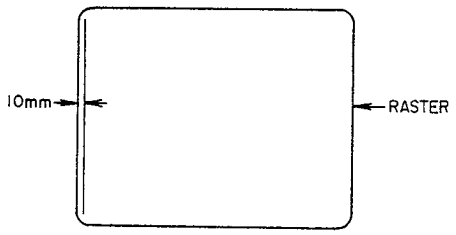


Fig. 8

8. VERTICAL SIZE AND HORIZONTAL SIZE

(a) Vertical Size is adjusted with VR-2, and Horizontal Size is adjusted by rotating the round metal plate at the upper part of L-2201 (See Fig. 9).

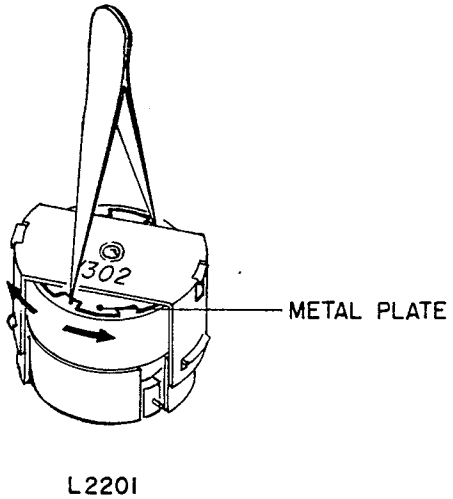


Fig. 9

(b) Photograph resolution chart and adjust VR-2 and L-2201 so that the picture on monitor screen and through view finder are the same size.
At this time the height/width ratio of monitor picture should be adjusted to 3 : 4.

9. VIDEO OUTPUT LEVEL ADJUSTMENT

(a) Connect Oscilloscope to VTR (VT-110) 10P camera connector Pin 1.

(b) Under conditions in Fig. 1, with a lighting intensity of 1000 Lux at resolution chart, turn VR-5 fully clockwise (at this time, the composite video signal amplitude becomes maximum).
From this condition, turn VR-5 counter-clockwise until the composite video signal amplitude becomes 1.4 V p-p.

10. VIDEO AMP CHARACTERISTIC ADJUSTMENT

While observing monitor screen, adjust VC-1 so that a smeared or shiny white line does not appear following the thick black line on resolution chart. (See Fig. 10)
(VC-1 is located on the Video Amp P.B. Board, but can be adjusted through the opening on Deflection P.C. Board as shown in Fig. 2).

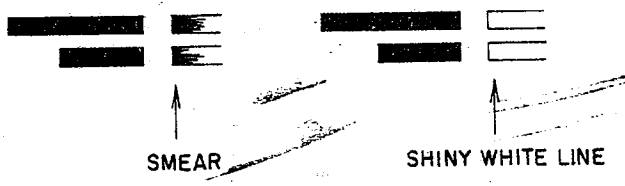


Fig. 10

V. OPTICAL ADJUSTMENTS (View Finder)

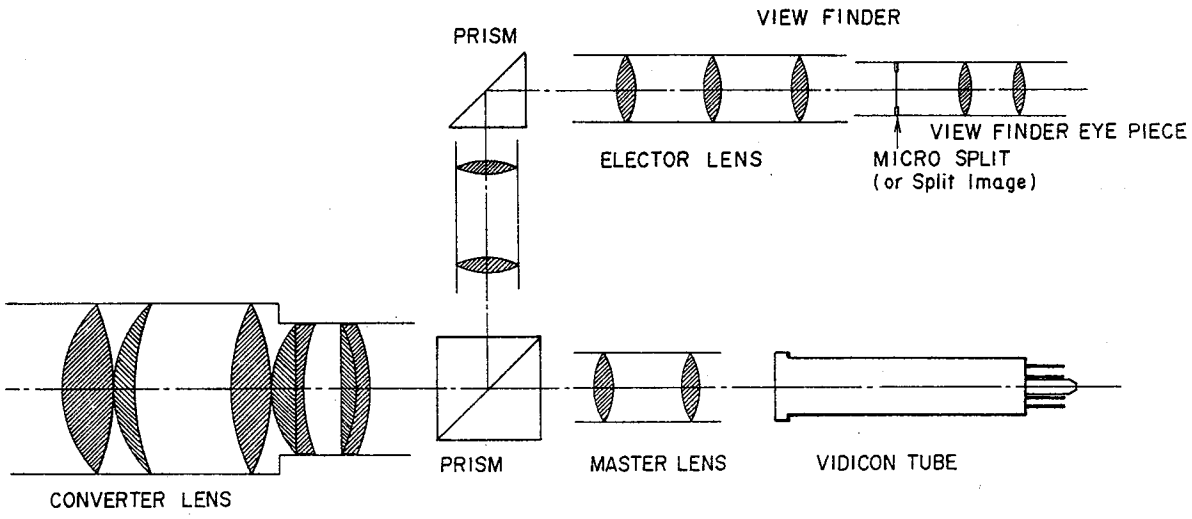


Fig. 11 Optical Diagram

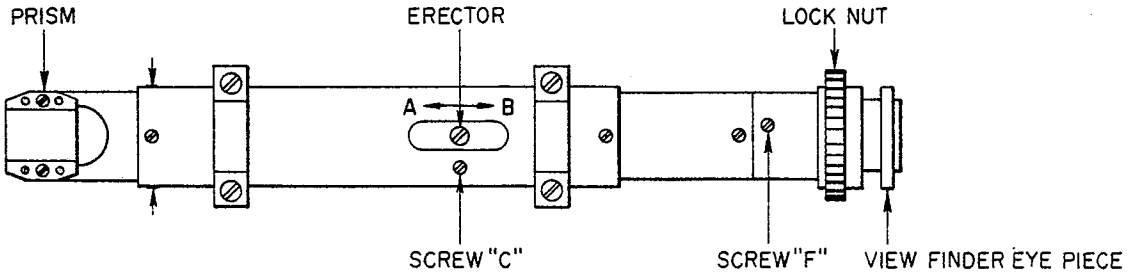


Fig. 12 View Finder

Ref. Fig. 11 and 12

1. Under conditions shown in Fig. 1, set camera so that picture of resolution chart is positioned in the center part of monitor screen.
   Look at scene through view finder. If picture reflected in view finder is the same as that on monitor screen, optical adjustment is not necessary.

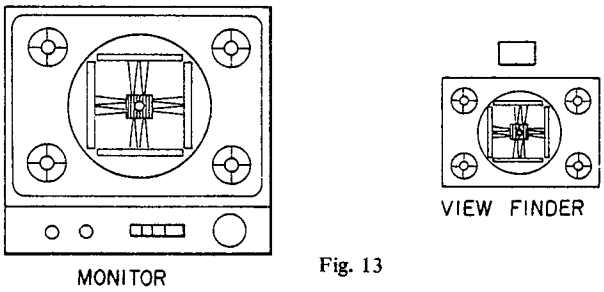


Fig. 13

2. View Finder eye piece is adjustable to individual eye sight. Adjust View Finder eye piece so that Micro-split or Split Image in center of view finder is clearly visable.

   Caution

   Before adjustment of view finder eye piece, loosen lock nut. After adjustment, tighten lock nut to hold at adjusted position.

3. Loosen Screw "C" (shown in Fig. 12) and adjust erector so that the vertical stripe on resolution chart is clearly visable. At this time the monitor picture must be focused. Move erector position between points A and B (Fig. 12) until perfectly focused points are found and tighten Screw "C". (Ref. Fig. 15.)

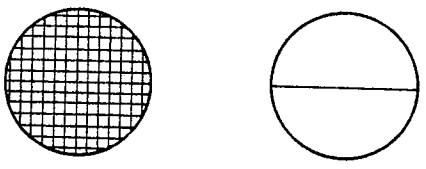


Fig. 14

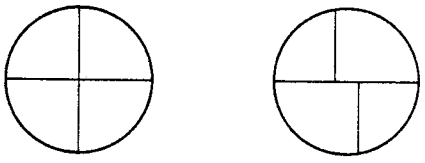


Fig. 15

4. When camera is set so that the center of monitor picture is in center of screen, if picture in view finder is not aligned, proceed with the following adjustments :
   (a) If picture in view finder is tilted as shown in Fig. 16, loosen three screws (j, k, l) and adjust angle of prism block until picture is properly positioned.

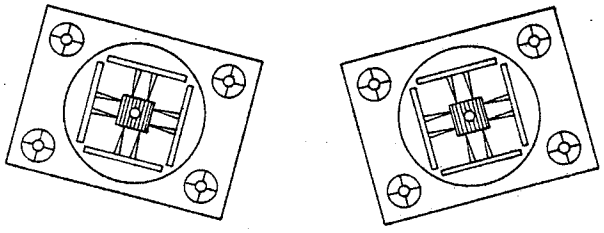


Fig. 16 Tilted View Finder Picture

   (b) If picture is not in center of view finder, loosen Screw "m" (shown in Fig. 17) and adjust angle of prism by turning screws O.P.Q.R. until picture is in center of view finder.

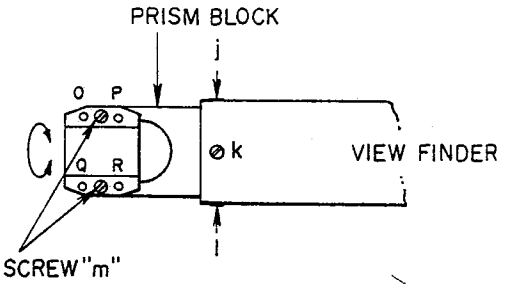


Fig. 17

5. Aperture Indicator
   When Aperture Selector is switched from F 1.8 to F 5.6, a red aperture indicator will appear in top part of view finder.
   If aperture indicator appears as shown in Fig. 18 (B) or (C), properly position by turning Cam "E" (Fig. 2).

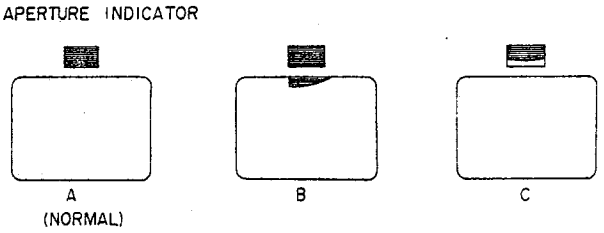


Fig. 18

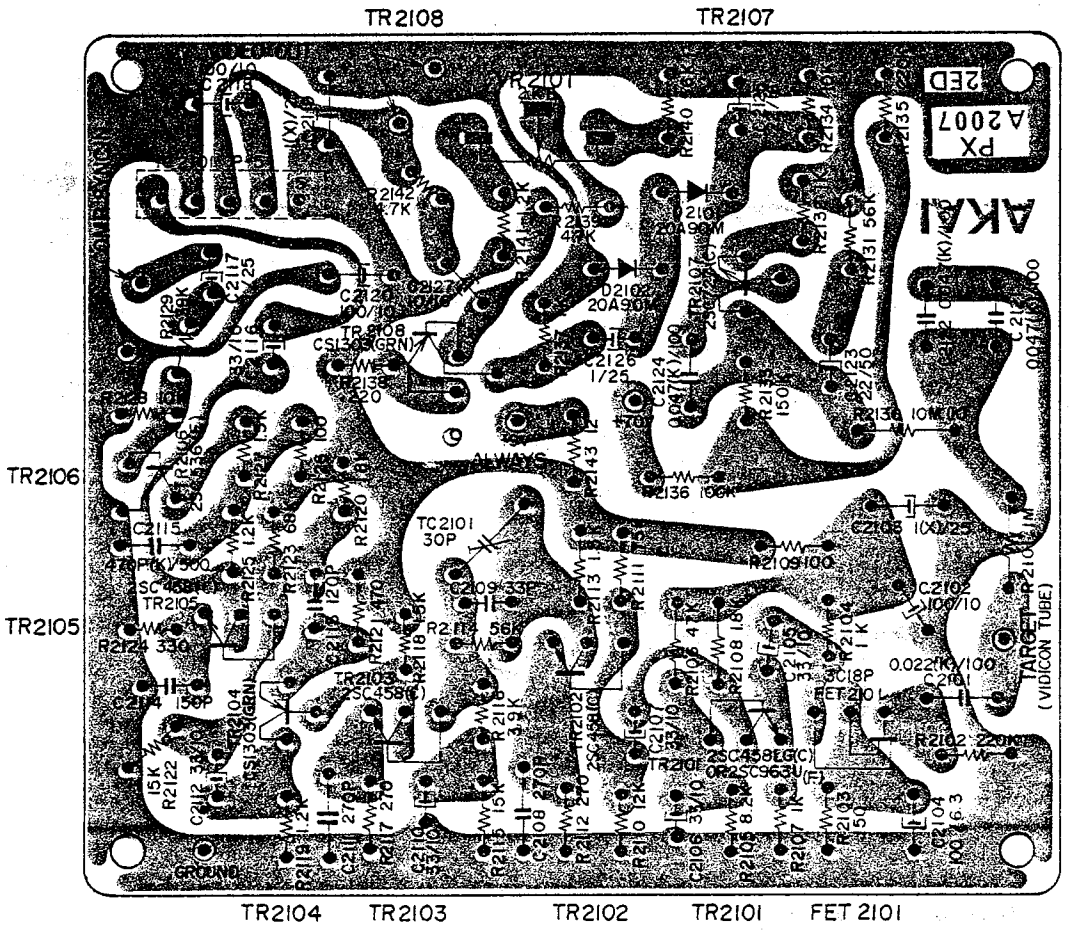


Fig. 19 Video Amp. P.C. Board (PX-A2007)

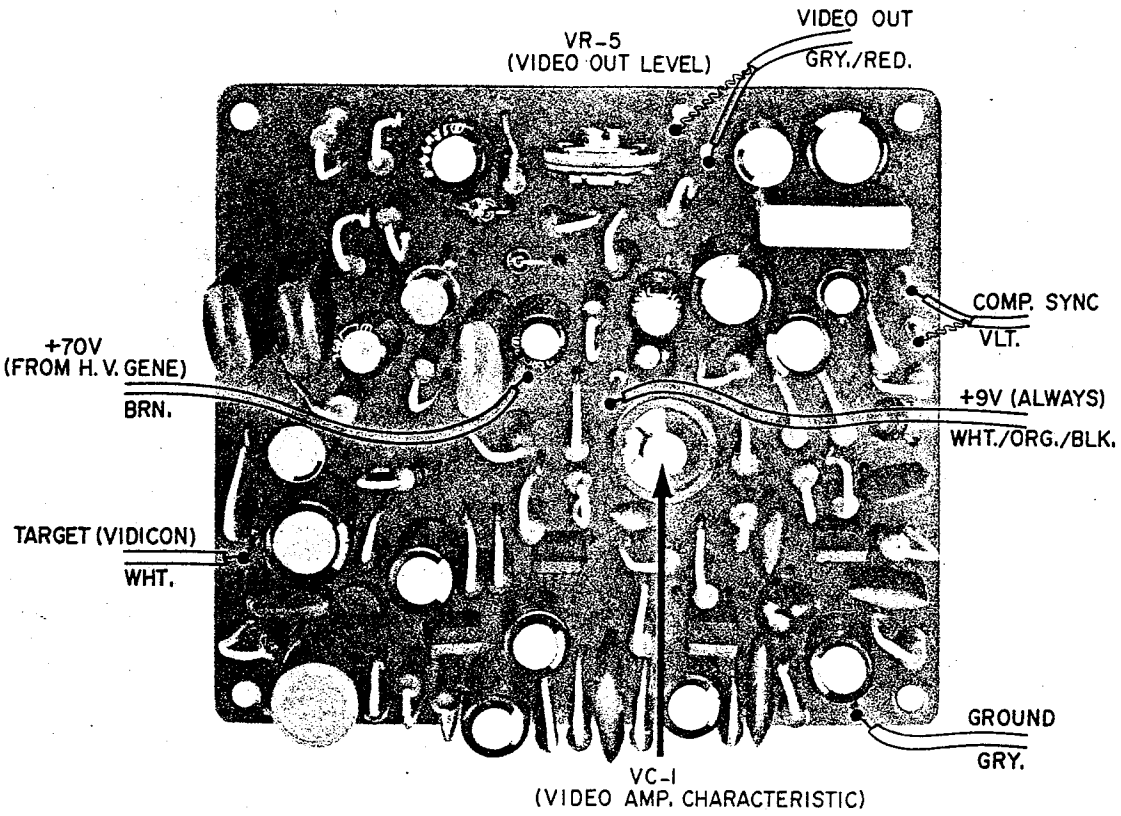


Fig. 20 Video Amp. P.C. Board (PX-A2007)

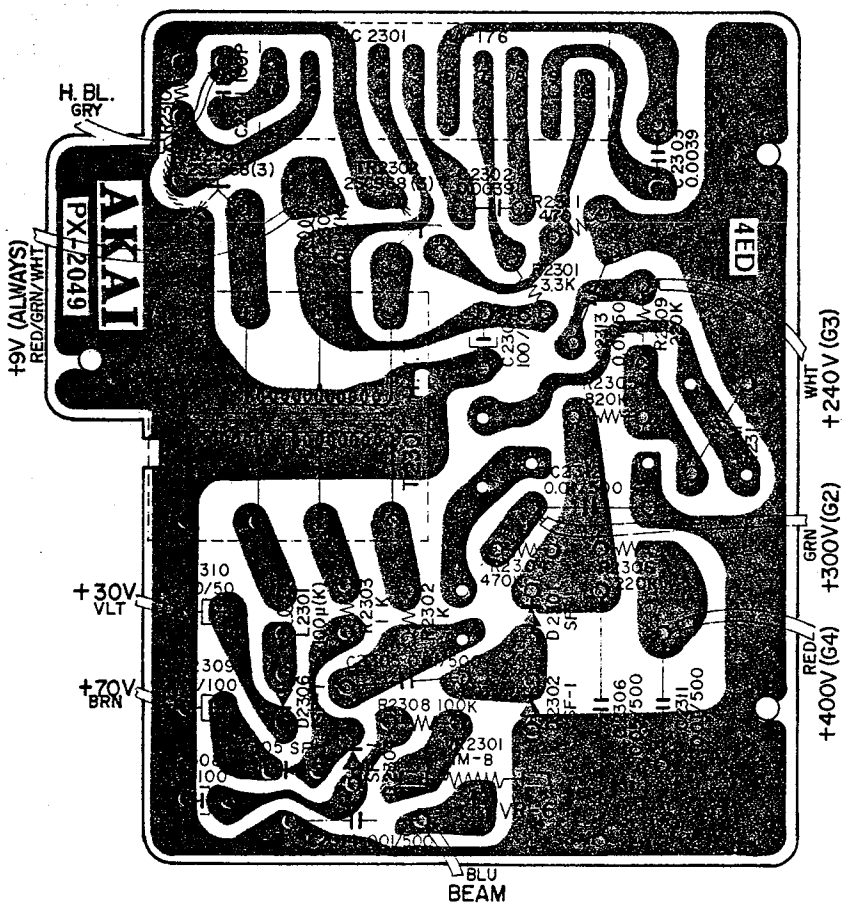


Fig. 21 H.V. Generator P.C. Board (PX-2049 4ED)

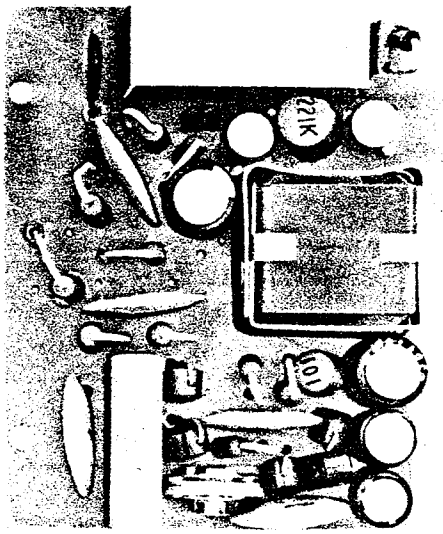


Fig. 22 H.V. Generator P.C. Board (PX-2049) (4ED)

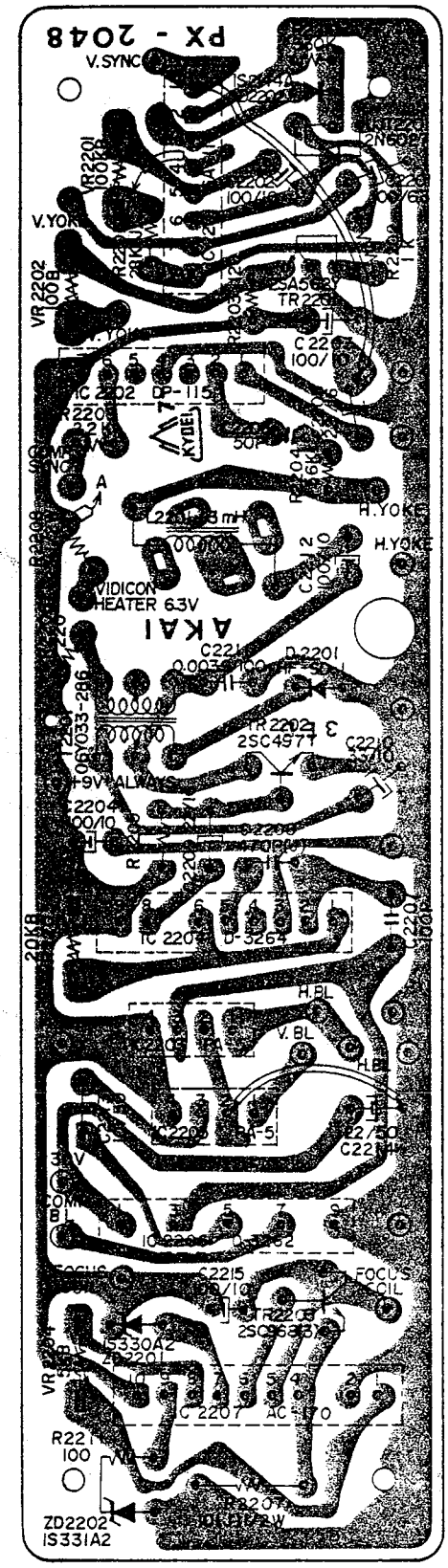


Fig. 23 Deflexion P.C. Board (PX-2048) (3ED)

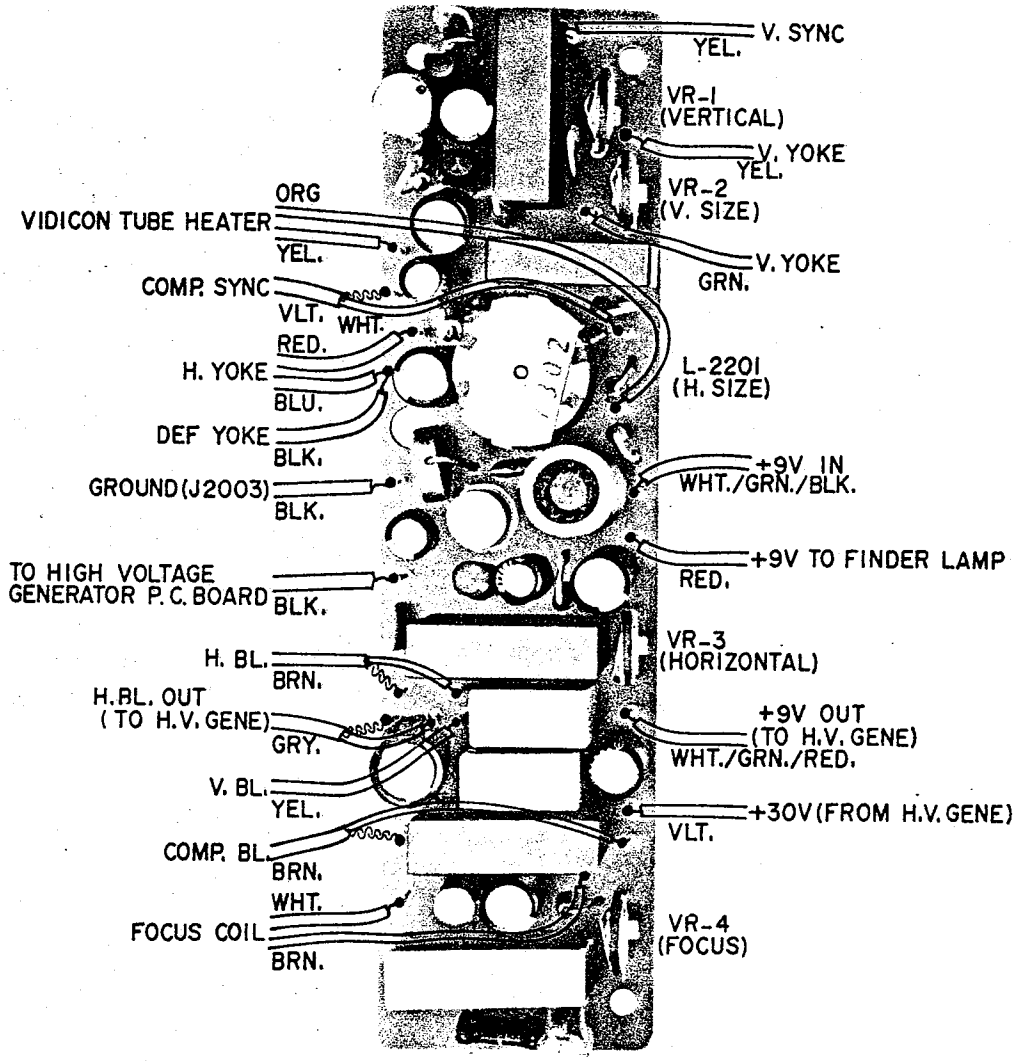
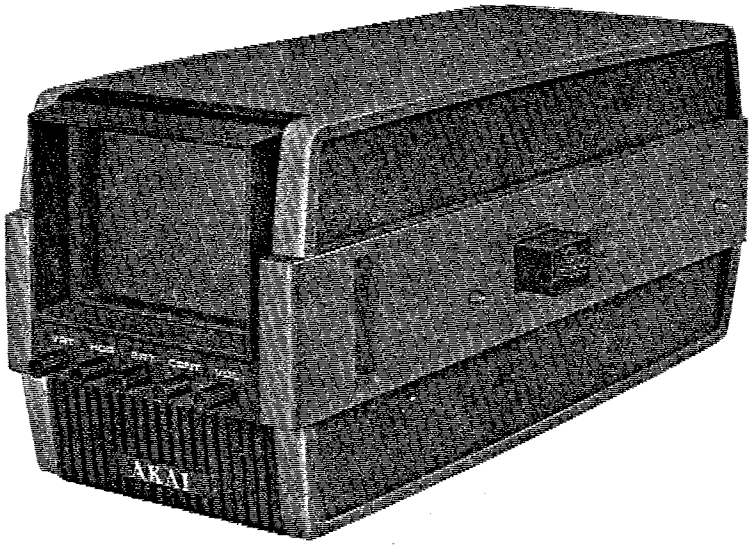


Fig. 24 Deflexion P.C. Board (PX-2048) (3ED)

VC-110 CAMERA
SCHEMATIC DIAGRAM

1. BLOCK DIAGRAM
2. VIDEO PRE-AMP. SCHEMATIC DIAGRAM
3. HIGH VOLTAGE SCHEMATIC DIAGRAM
4. DEFLEXION SCHEMATIC DIAGRAM



SECTION 3

MONITOR (VM-110) REPAIR AND ALIGNMENT

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III. ADJUSTMENTS 60
SCHEMATIC DIAGRAMS 62

I. SPECIFICATIONS (Video Monitor)

(1) Main Structure

EFFECTIVE PICTURE SIZE
: 3"

CATHODE RAY TUBE DEFLECTION ANGLE
: 55 degrees

SYSTEM OF GUN : Uni-potentional

SYSTEM OF HEATER : Direct (1.8 V peak to peak)

POWER SOURCE : DC 12 V (supplied from recorder)

SPEAKER : 3" x 1.7" oval type

(2) Electrical Specifications

LUSTER DISTORTION : 3% max.

NON LINEARITY

(HORIZONTAL) : 20% max.

(VERTICAL) : 10% max.

RESOLUTION

(HORIZONTAL) : 250 lines

(VERTICAL) : 350 lines

SYNC. HOLDING RANGE

(HORIZONTAL) : 300 Hz. min.

(VERTICAL) : 7 Hz. min.

VIDEO INPUT LEVEL : 1.0 to 1.6 V p-p (Negative Sync.)

VIDEO INPUT IMPEDANCE
: 75 ohms

CONTRAST CONTROLLED RATIO
: 12 dB min.

SOUND FIDELITY (−6 dB point)
: 300 Hz to 2,000 Hz

SOUND INPUT LEVEL AND IMPEDANCE
: 1 V r.m.s. 10 K ohms

SOUND MAX. OUTPUT : 100 mW min.

SOUND NORMAL OUTPUT
: 80 mW (10% dis.)

OVER SCANNING : 15%

OPERATION STARTING VOLTAGE
: 8.5 V p-p (max.)

HEAT-UP TIME : 2.5 seconds (max.)

VOLTAGE FOR FULL SCANNING
: 10.5 V (max.)

USABLE POWER SOURCE VOLTAGE
: 16.5 V (max.)

RIPPLE CONTENTS (USABLE)
: 0.1 V p-p (max.)

MAXIMUM POWER CONSUMPTION
: 3.5 W max.

TEMPERATURE CHARACTERISTICS
: −5° to +45° centigrade
(23° to 113°F)

(3) Dimensions and Weight

DIMENSIONS : 3.8"H x 10.3" D x 4.4"W

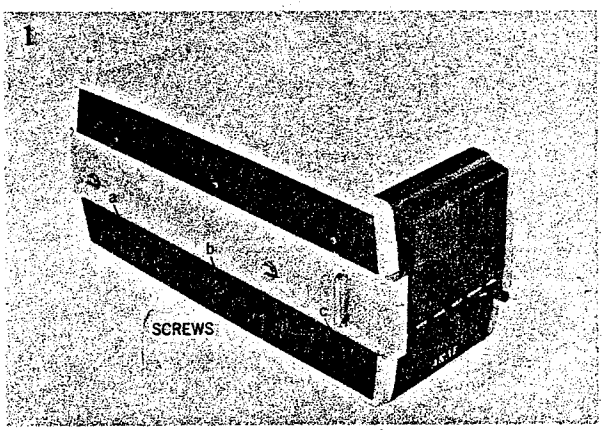
WEIGHT : 3.4 lbs. (1.6 kg)

II. CASE REMOVAL

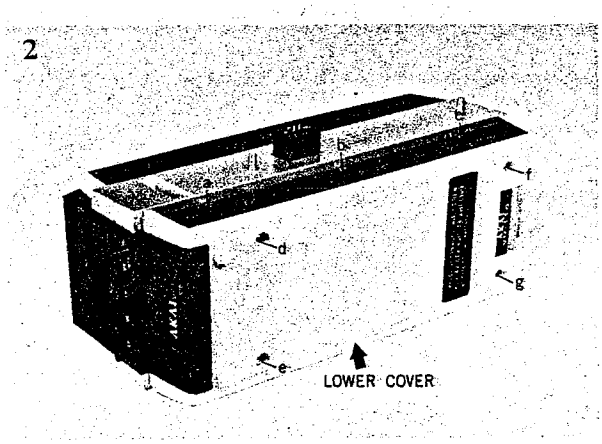
(59)

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

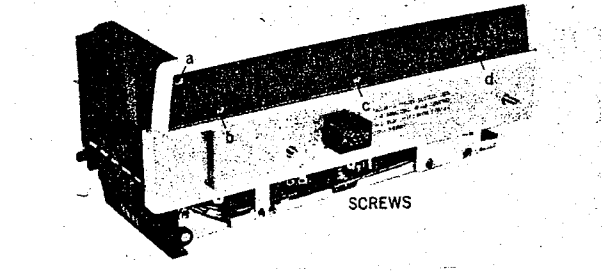
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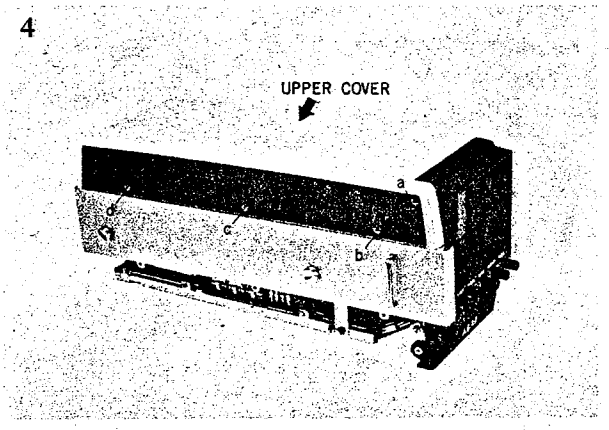
2



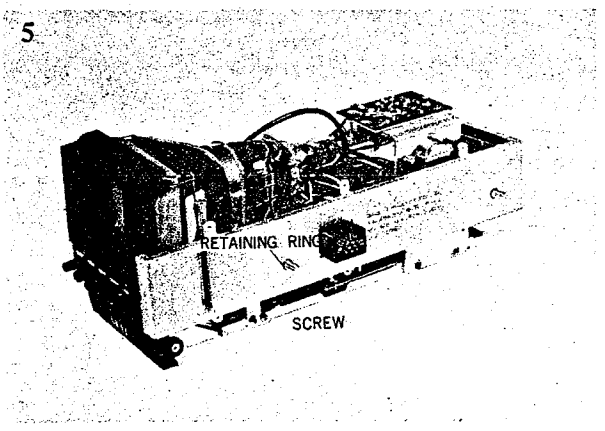
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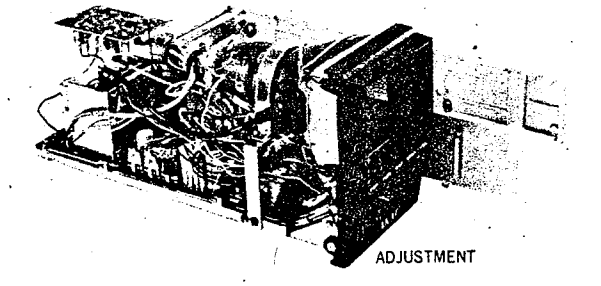
4



5



6



III. ADJUSTMENTS

1. ADJUSTMENT OF VOLTAGE REGULATOR

(a) **Instrument Connections**
Remove the under cover and connect the V.T.V.M. as shown in Fig. 1.

(b) **Adjustment**
Adjust VR-601 so that the V.T.V.M. Indicator is at 10 V. This adjustment must be made while picture or raster is on screen.

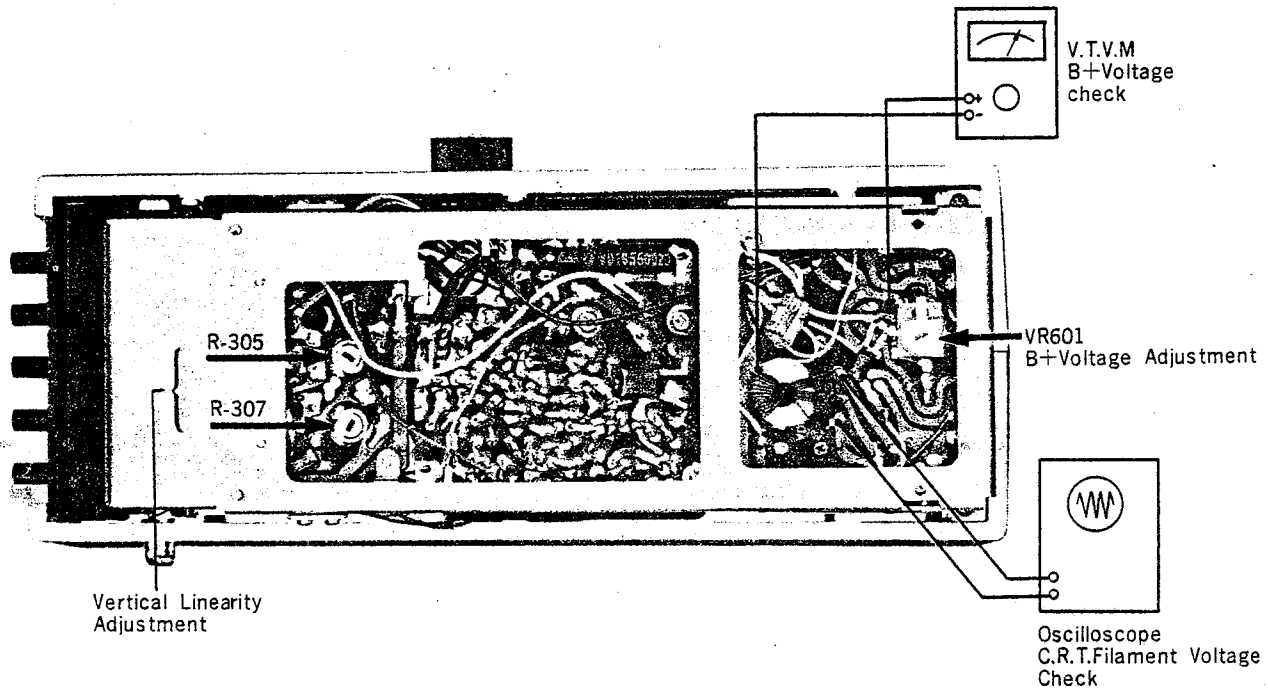


Fig. 1

2. ADJUSTMENT OF VERTICAL HOLD AND HORIZONTAL HOLD RANGE

(A) **Vertical Hold Range Adjustment**

(a) Set "VRT" (Vertical Hold) Knob on front panel to half way of its movable range.

(b) Adjust R-518 (5K-VR). Fix at position at which picture is stationary (Ref. Fig. 2).

(c) After adjustment is completed, rotate VRT Knob. Confirm that the picture rolls (downward) when knob is at maximum clockwise position.

(B) **Horizontal Hold Range Adjustment**

(a) Set "HOR" (Horizontal Hold) Knob on front panel to half-way range (half-way of its movable range).

(b) Adjust R-532 (5K-VR). Fix at point at which the picture synchronizes into one picture. After adjustment has been made, rotate HOR Knob. Confirm that the horizontal synchronization is stable at all points within the rotable range of the HOR Knob. (See Fig. 2).

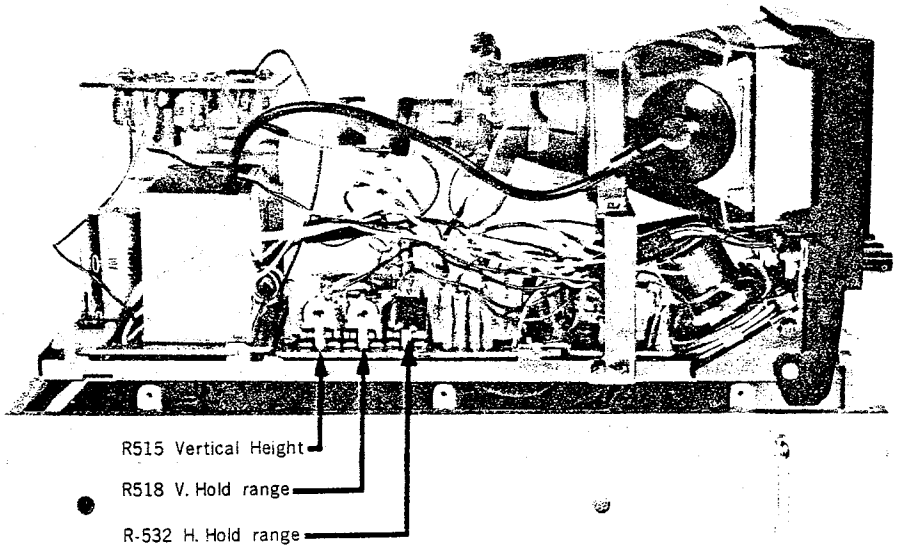


Fig. 2

3. ADJUSTMENT OF VERTICAL LINEARITY AND HEIGHT

Using a perfectly adjusted camera (VC-110), Aim camera at a Test pattern chart and while viewing monitor screen, adjust R-305 (500K-VR), R-307 (10K-VR), and R-515 (5K-VR) (See Fig. 1 and 2). Try to obtain pattern as shown in Fig. 3.

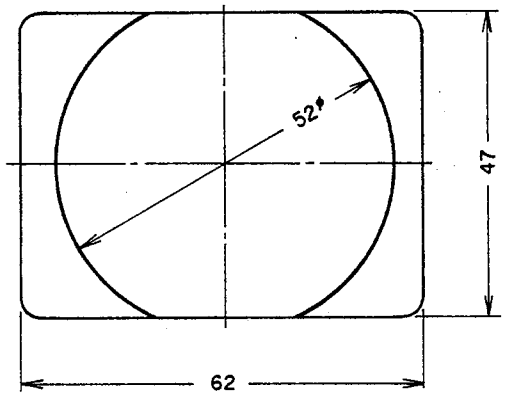


Fig. 3

After these adjustments have been made, if focus is not good or if picture is not centered in middle of screen, with the centering magnet of deflection yoke, focus, and adjust so that the pattern appears at the center part of the picture.

4. FOCUS ADJUSTMENT

Under same conditions in Item 3, Aim camera at a Test pattern chart. While viewing picture appearing on monitor screen, adjust R-530 (1M-VR) to a focused point (See Fig. 4).

5. CATHODE RAY TUBE FILAMENT VOLTAGE CHECK

In case Fly-back Transformer has been replaced, check the voltage supply to cathode ray tube (See Fig. 1). With an oscilloscope, measure voltage of secondary transformer T-602. Voltage is normal at 1.8 V p-p ± 0.1 V.

If voltage is too high or too low, it can be adjusted by changing the winding ratio of primary and secondary transformer (T-602).

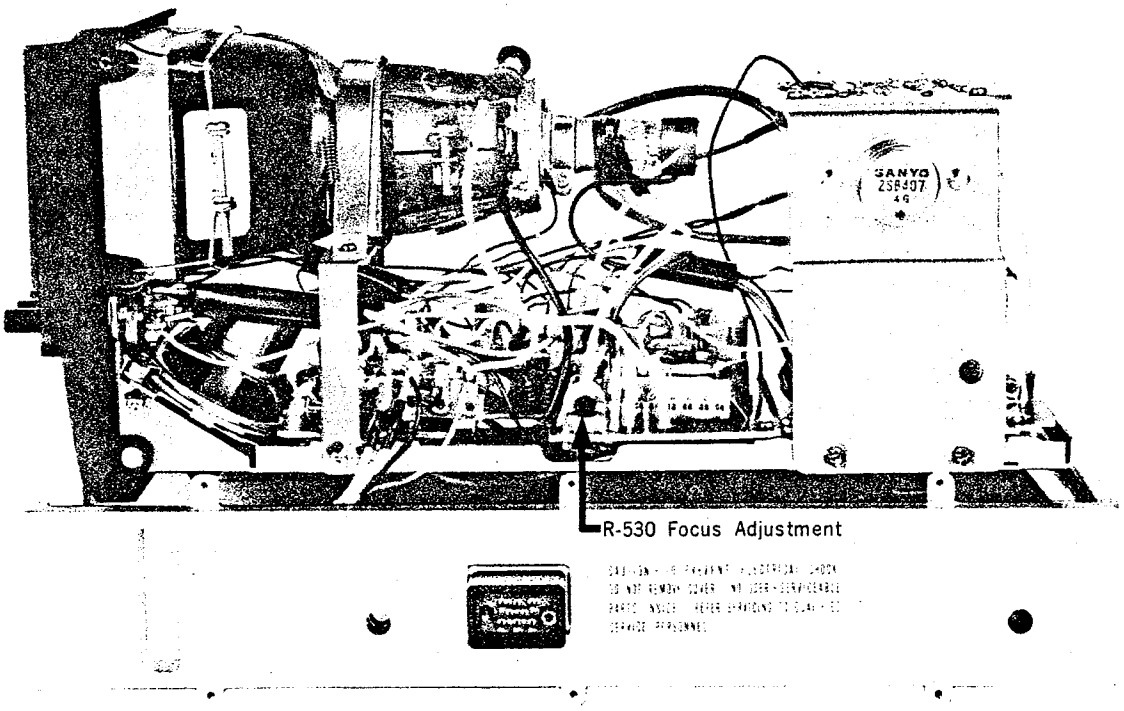
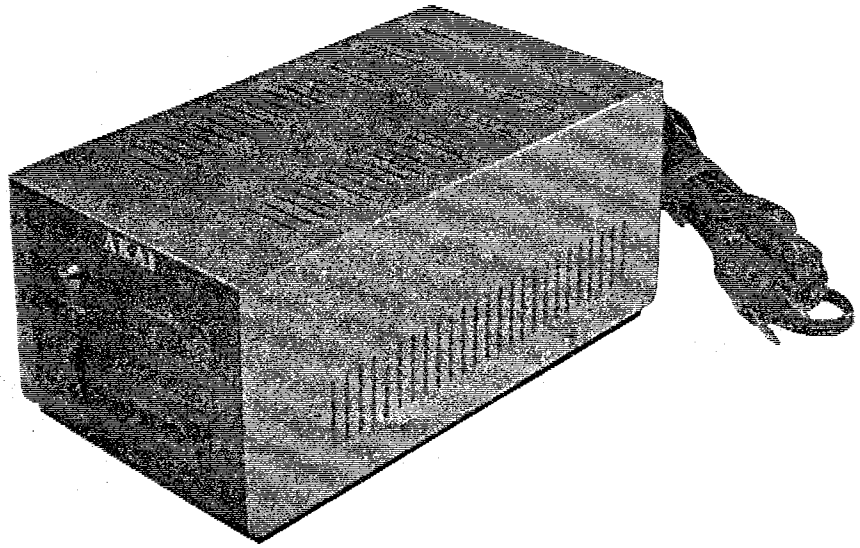


Fig. 4



SECTION 4

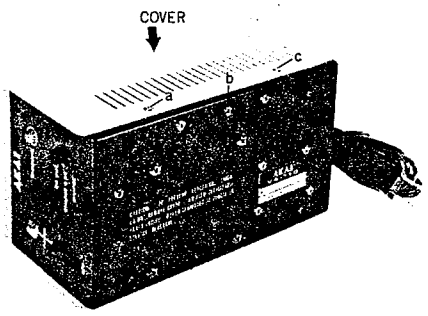
AC ADAPTER/ BATTERY CHARGER (VA-110)

I. CASE REMOVAL 64
II. ADJUSTMENTS OF OUTPUT VOLTAGE 64
III. BATTERY CHARGING CIRCUIT 65
SCHEMATIC DIAGRAM

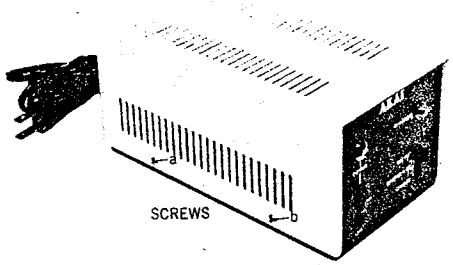
I. CASE REMOVAL

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

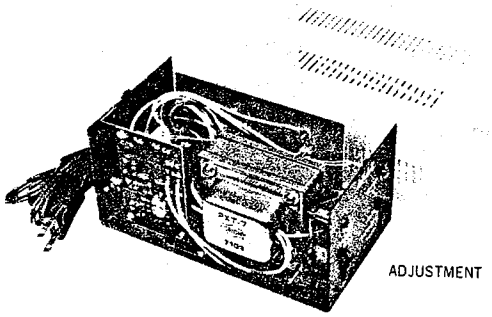
2



1



3



II. ADJUSTMENT OF OUTPUT VOLTAGE

1. INSTRUMENT CONNECTIONS

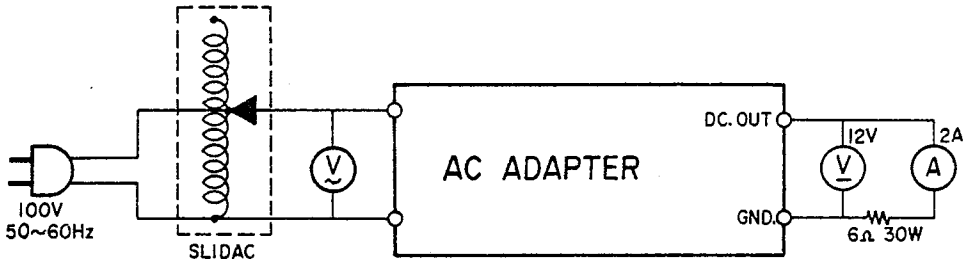


Fig. 1

2. ADJUSTMENTS

(1) Connect AC Adapter Power Cord to Slidac and connect Slidac to power source. Adjust Slidac and set to 100 V.

(2) With Power Switch turned "On", and DC Voltmeter connected to DC Output Terminal, adjust potentiometer (VR-1001, 300 ΩB) of printed board so that the Voltmeter reading is 12 V (Ammeter reading is about 2 A).

(3) When DC Output has been set to 12 V, adjust Slidac so that AC input voltage is ±10% (from 100 V) and confirm that Voltmeter and Ammeter reading is unchanged. (Even when input voltage is changed ±10%, the voltage should be 12 V ± 0.2 V).

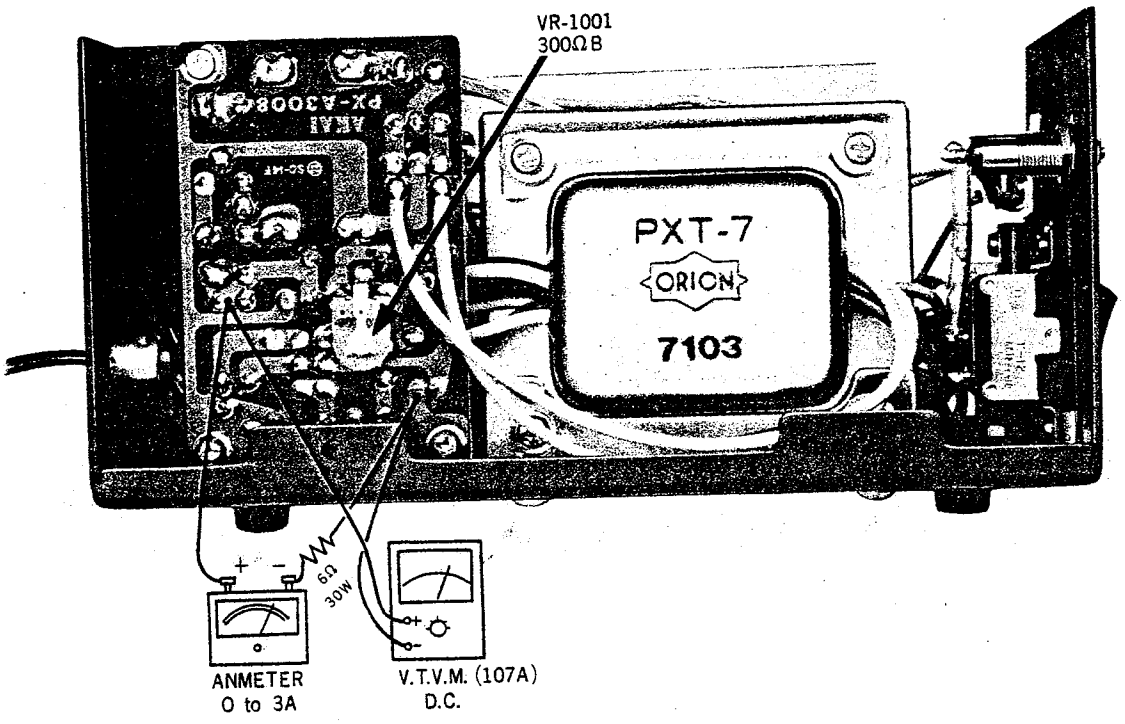


Fig. 2

III. BATTERY CHARGING CIRCUIT

1. BATTERY CHARGING CIRCUIT

(1) The Battery Charging Circuit is composed of Integrated Circuit "BQ-A" and a Charging Indicator Lamp.

(2) Because "BQ-A" has already been adjusted at the factory, it is not necessary to re-adjust.

2. BATTERY CHARGING CIRCUIT TROUBLE

When the batteries are in the battery case, if the lamp does not light and the battery charging circuit does not operate properly, replace batteries with new ones and re-check.

If circuit does not operate properly, clean battery case terminal and check connection cord.

If after checking above, the circuit still does not operate properly, replace Integrated circuit "BQ-A".

3. BATTERY COMPARISON

Comparison of Sonnenschein batteries and AKAI, LC-303 batteries charging and discharging characteristics are shown in Figs. 3 and 4.

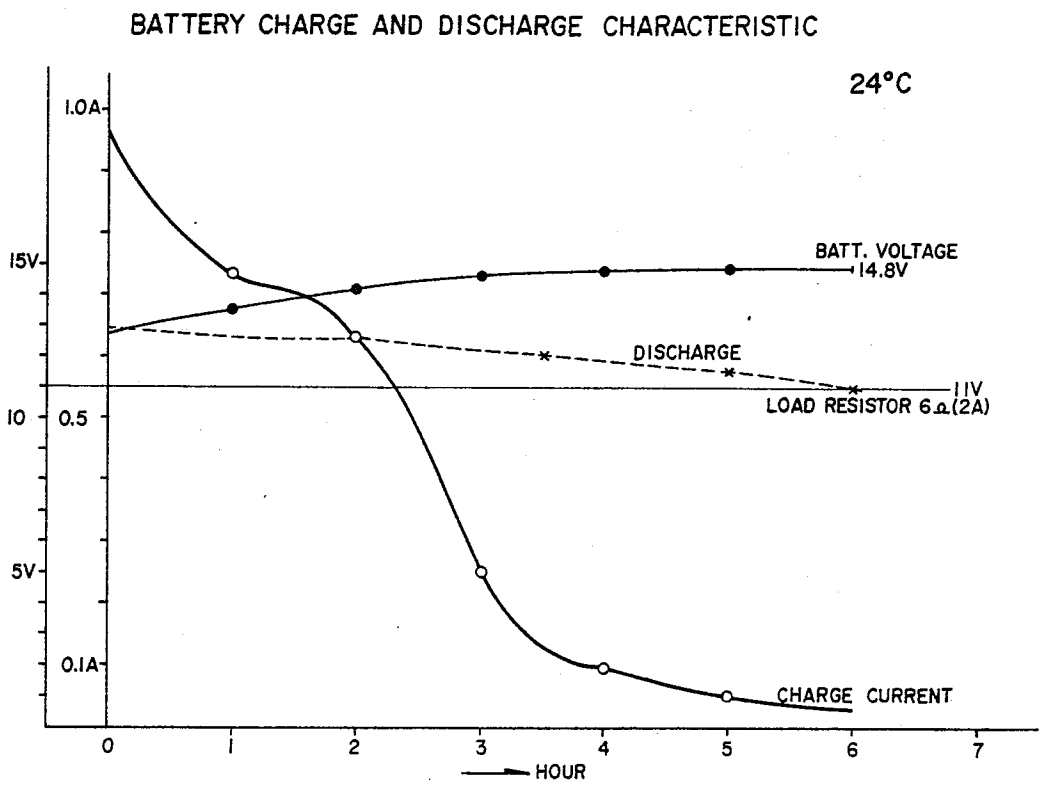


Fig. 3 AKAI, LC 303

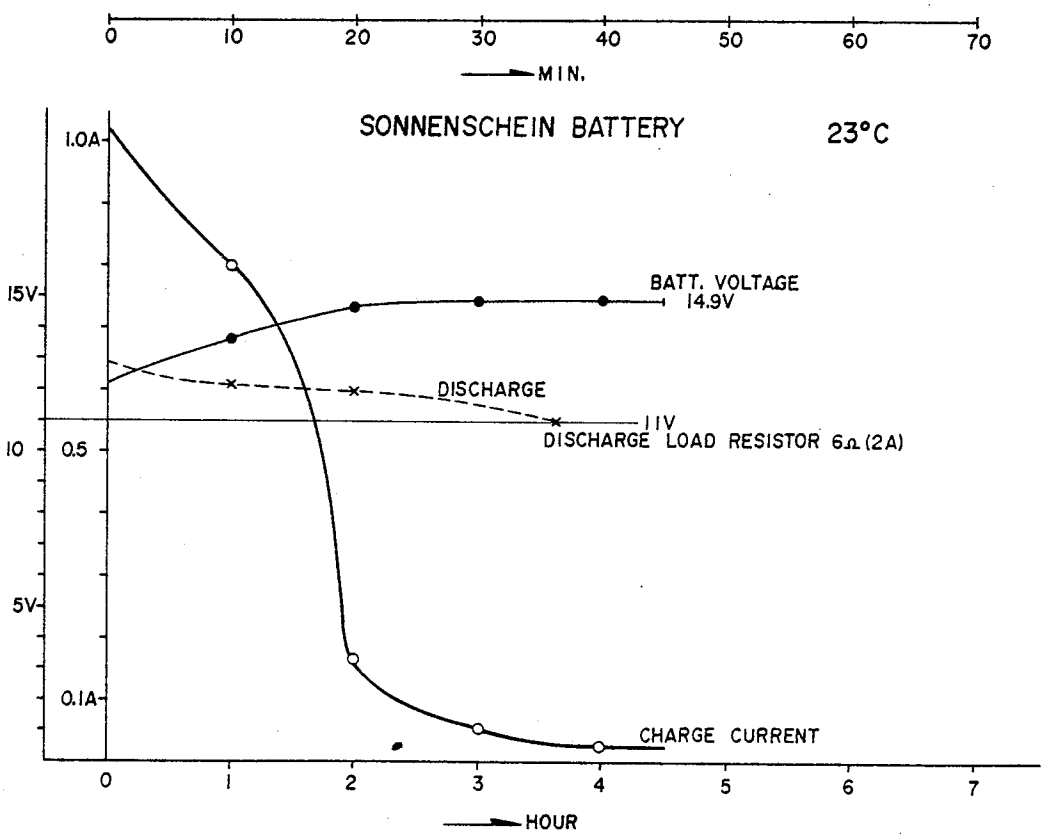


Fig. 4 Sonnenschein

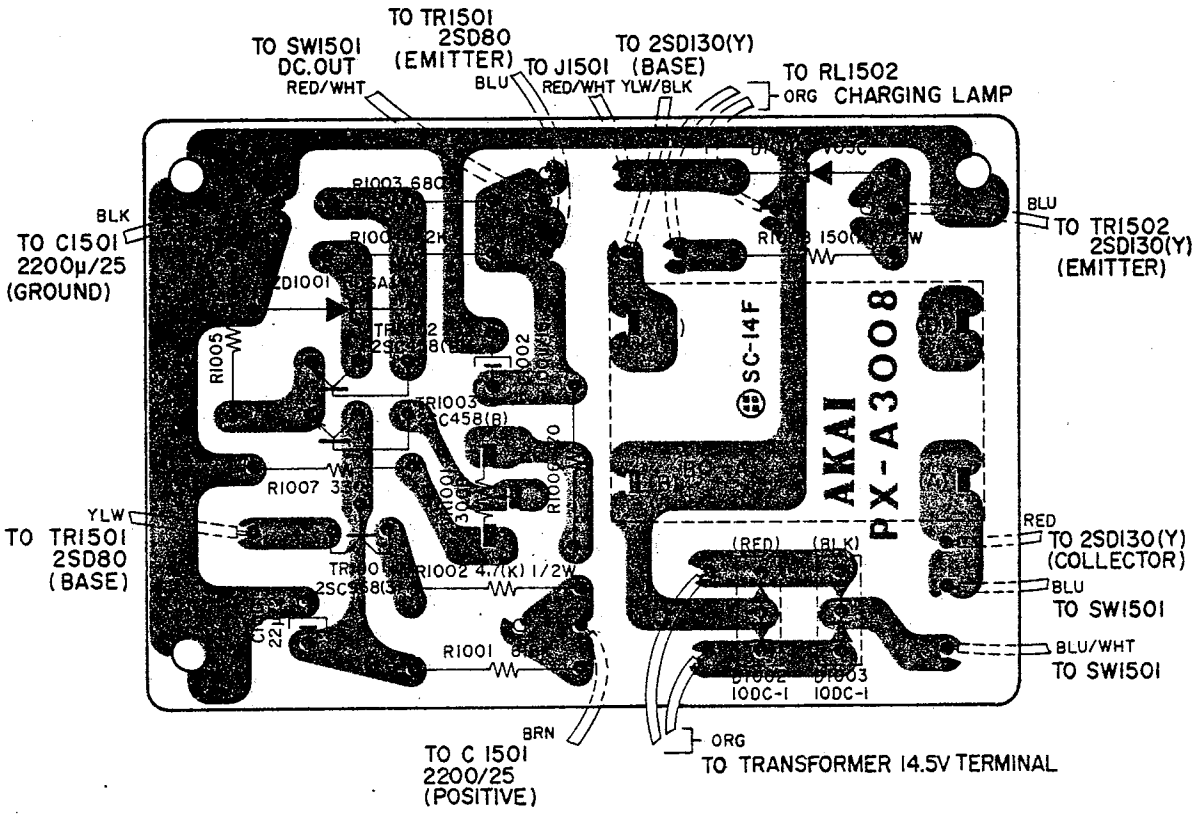
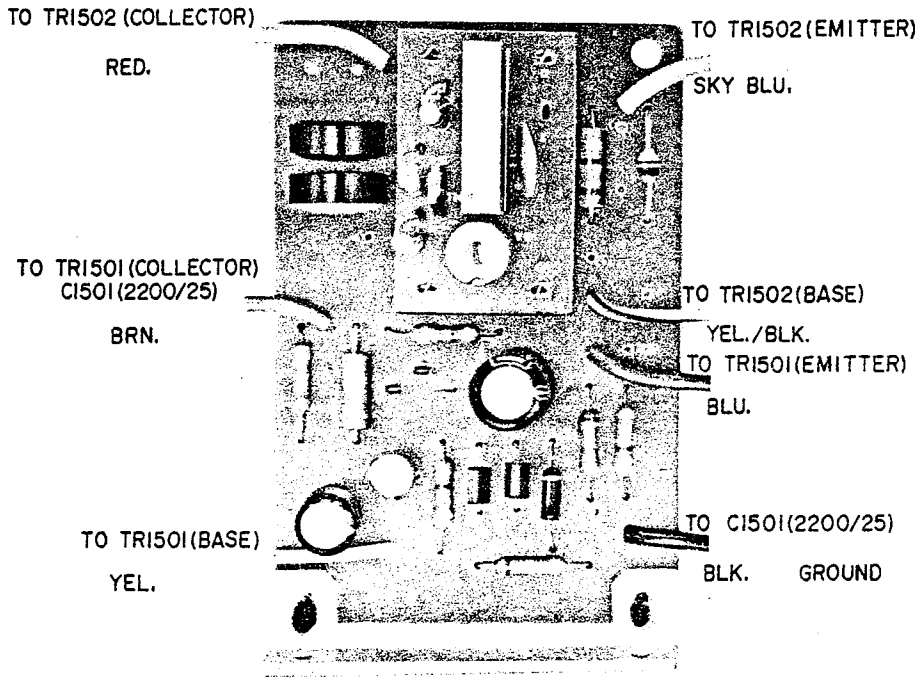


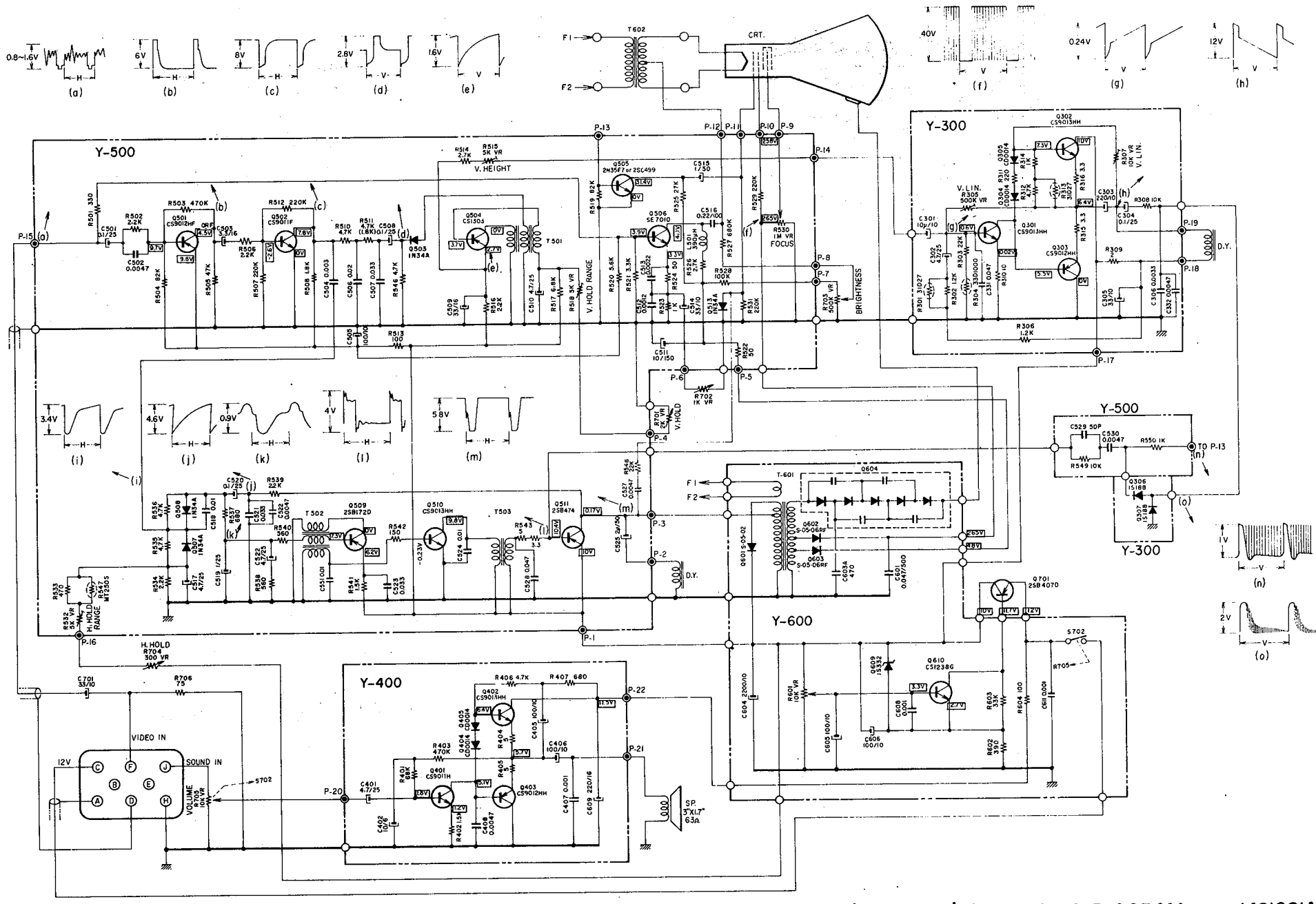
Fig. 5 Charger P.C. Board (PX-A3008)



TRI501: 2SD80
TRI502: 2SDI30(Y)

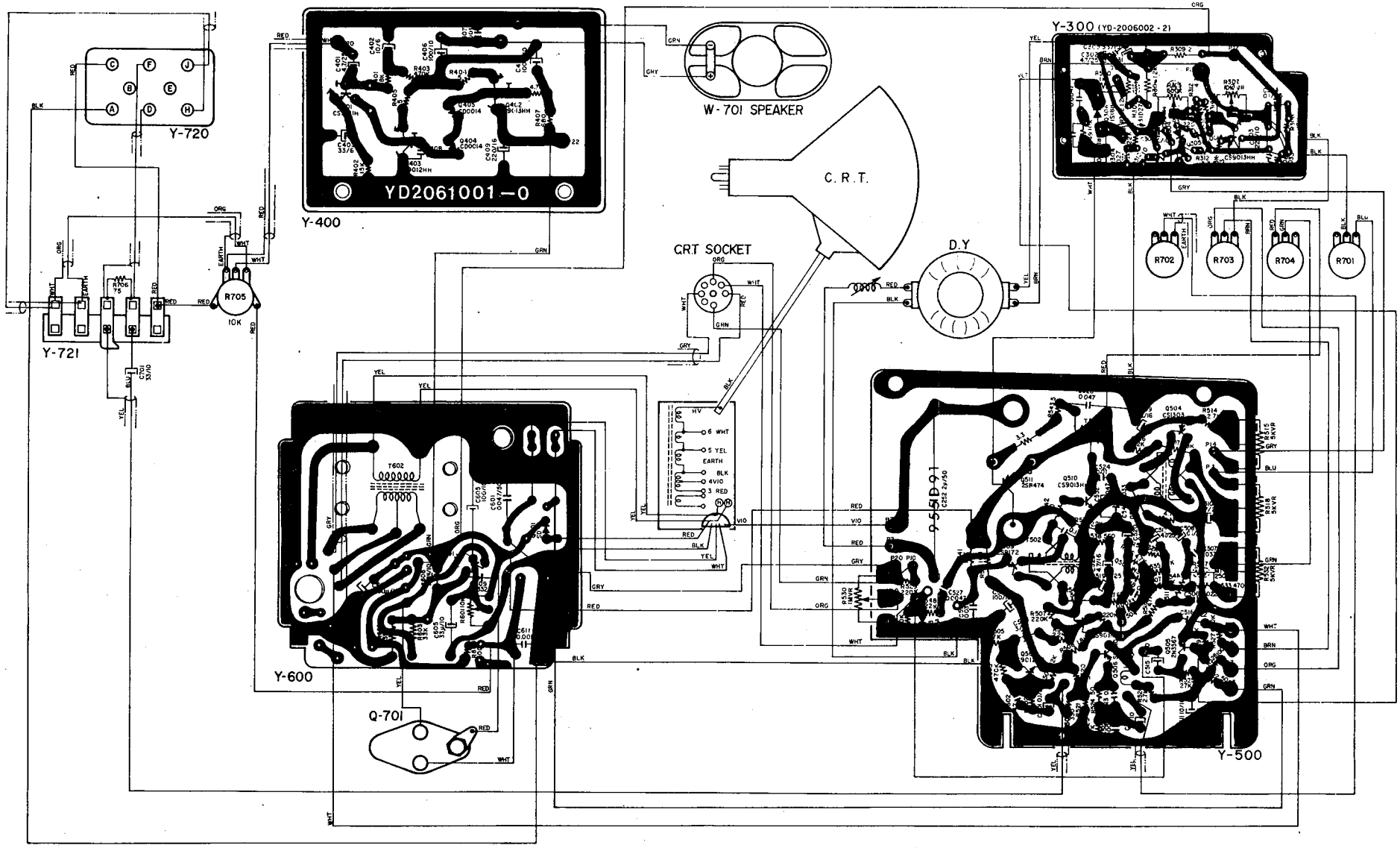
Fig. 6 Charger P.C. Board (PX-A3008)

VM-110.VM-100S.

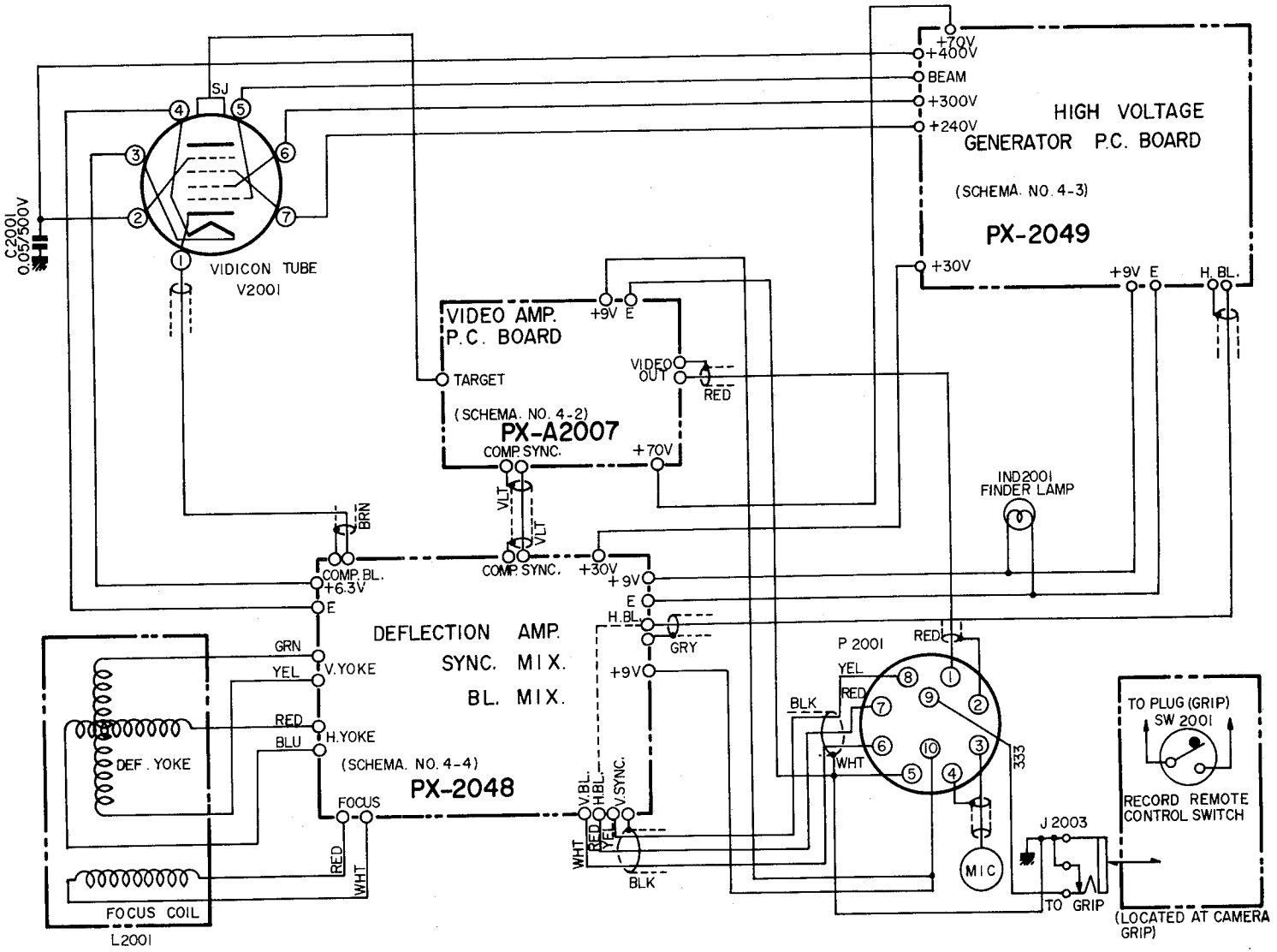


VM-110 (MONITOR) SCHEMATIC DIAGRAM NO.2-1 1421021A 2C

VM-100S. VM-110.

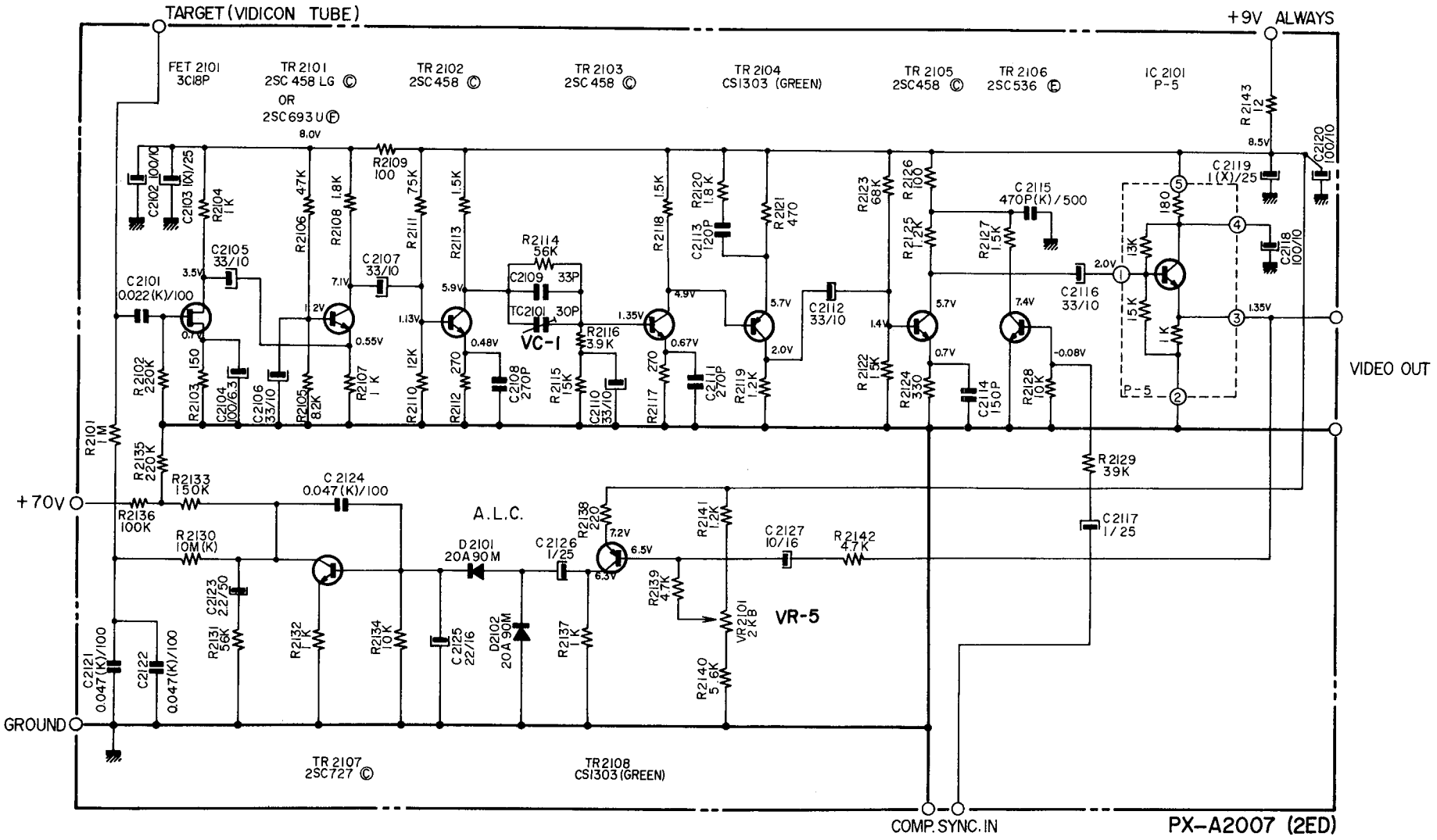


VM-110 (MONITOR) SCHEMATIC DIAGRAM NO.2-2 1421022A



VC-110 (CAMERA BLOCK) SCHEMATIC DIAGRAM NO.4-1 1421016A

VC-110 VC-110S VC-100S



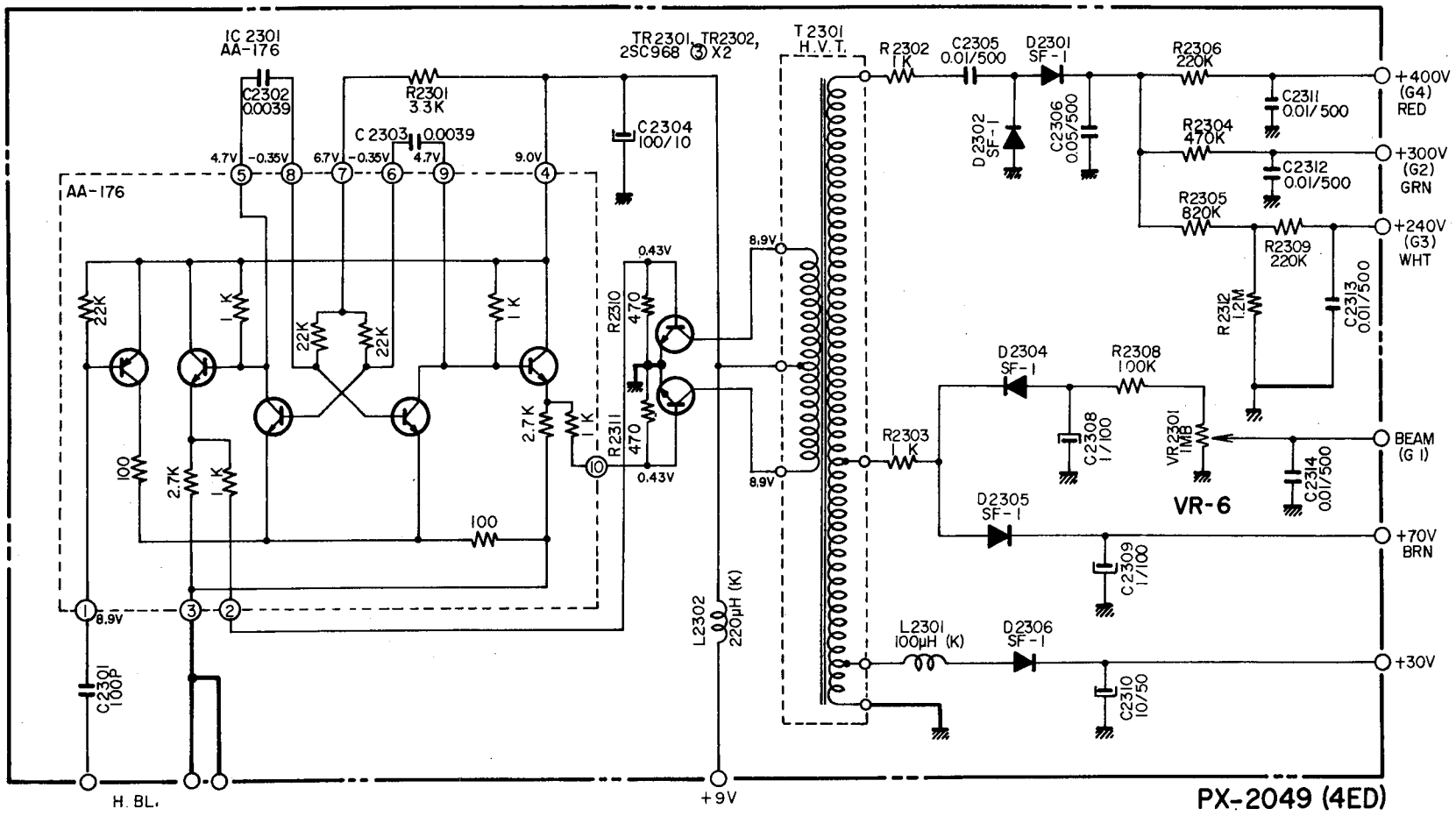
NOTE

UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4W J

ALL CAPACITORS IN MFD 50WV J
(P = M · MFD)

VC-110 (VIDEO PRE. AMP.) SCHEMATIC DIAGRAM NO.4-2 1421017A



NOTE

UNLESS OTHERWISE SPECIFIED

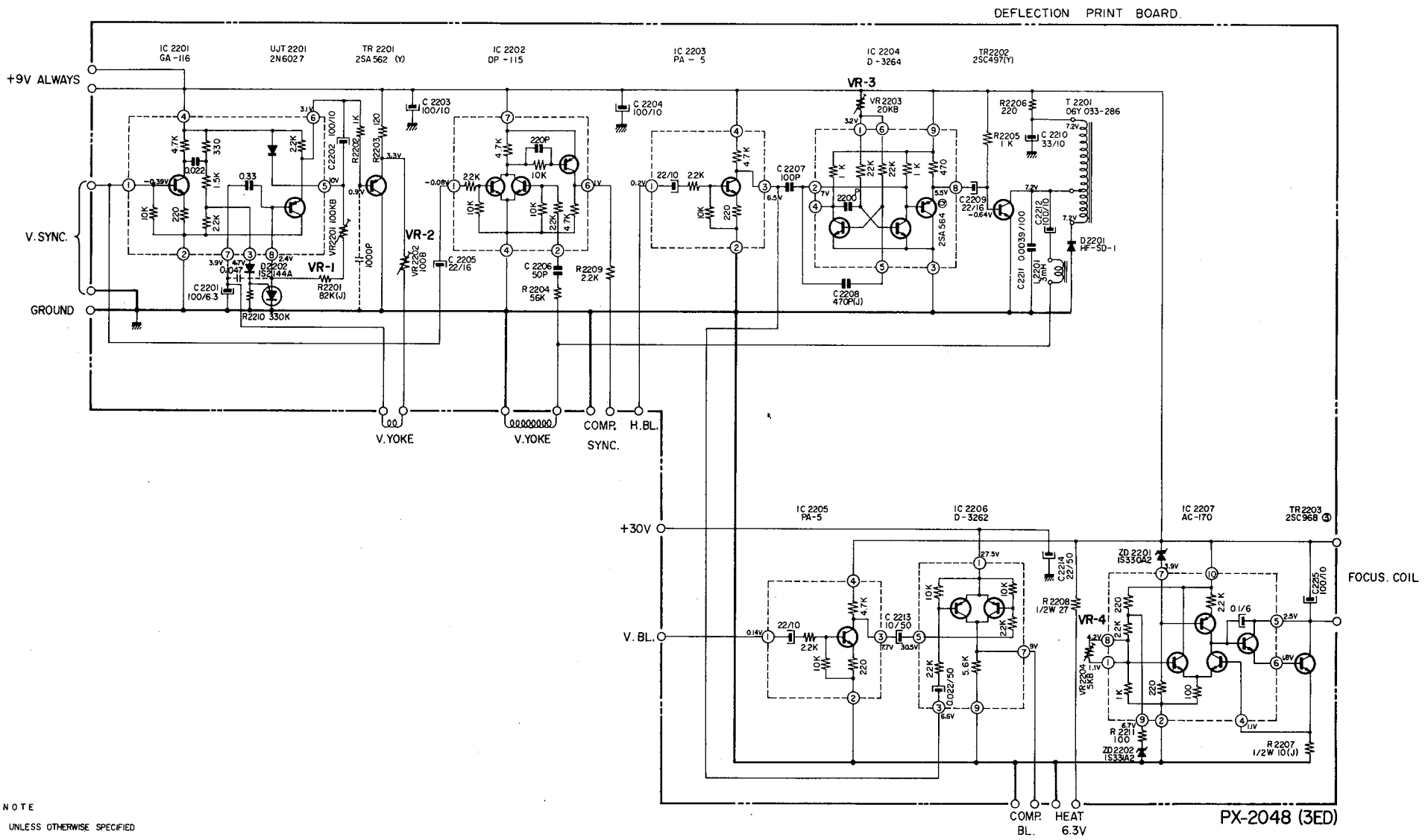
ALL RESISTORS IN OHMS 1/4W J.

ALL CAPACITORS IN MFD K 50WV

MFD / WV, (P = M·MFD)

VC-110
(HIGH VOLTAGE) SCHEMATIC DIAGRAM NO.4-3 1421018A

VC-110 VC-110S VC-100S



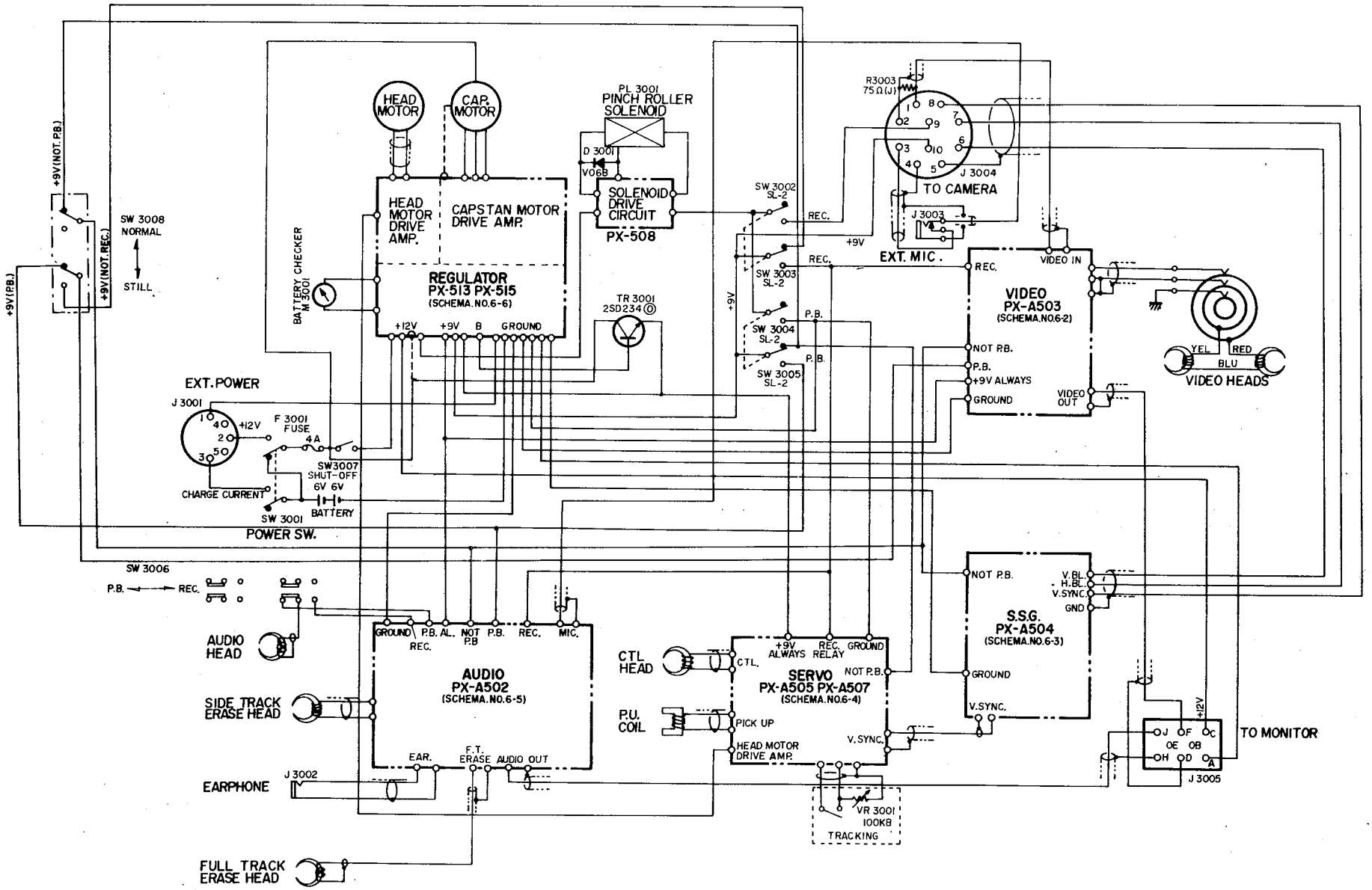
NOTE

UNLESS OTHERWISE SPECIFIED

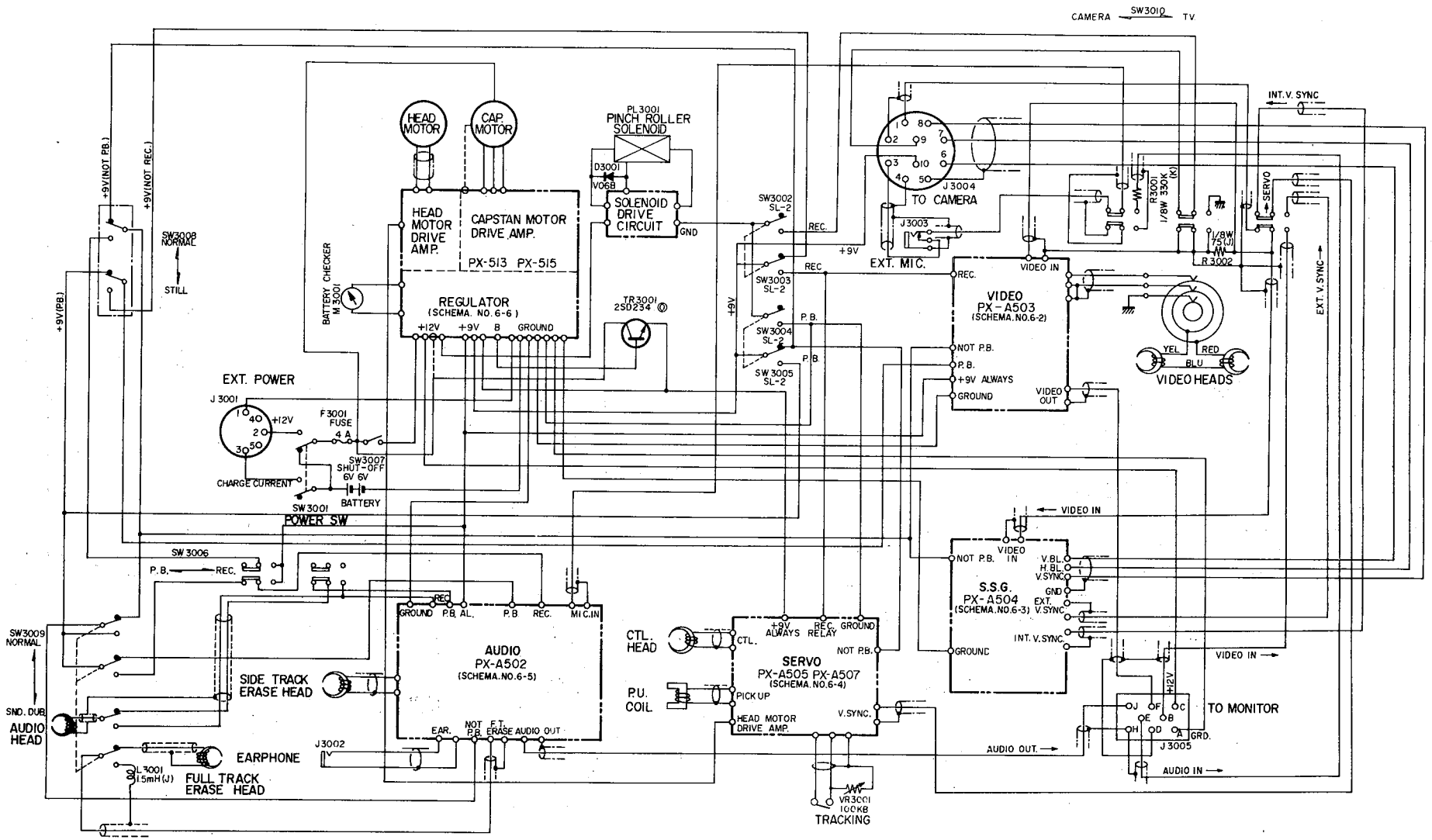
ALL RESISTORS IN OHMS 1/4W K.

ALL CAPACITORS IN MFD MFD/WV.

VC-110 (DEFLECTION) SCHEMATIC DIARAM NO. 4-4 1421019A

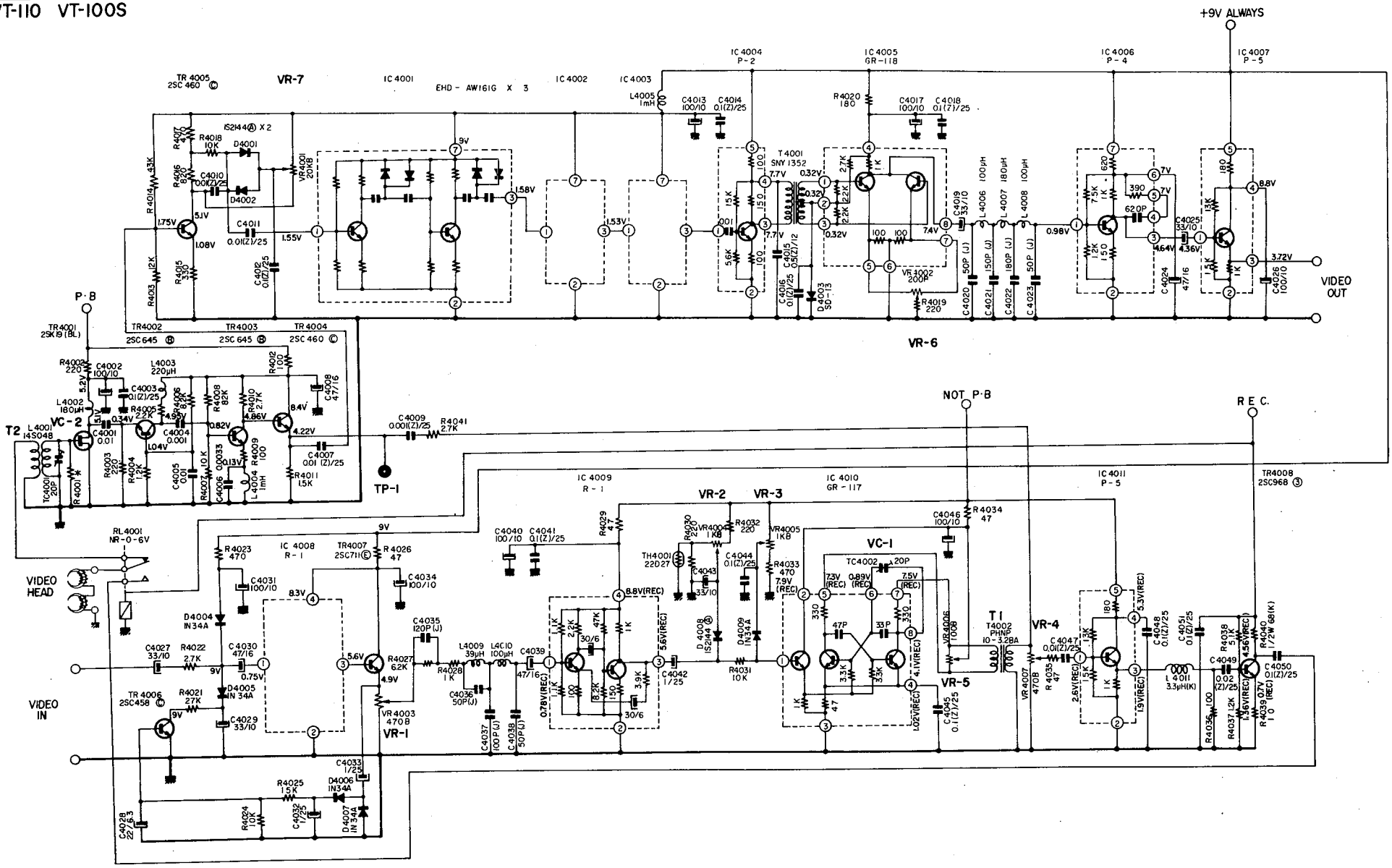


VT-100S
(BLOCK DIAGRAM) SCHEMATIC DIAGRAM NO.6-1 1421028A



VT-110 (BLOCK DIAGRAM) SCHEMATIC DIAGRAM NO.6-1 1421010A

VT-110 VT-100S



NOTE

UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4W J.

ALL CAPACITORS IN MFD 50WV K,

MFD / WV.

ALL INDUCTORS IN HENRY J. (P = M·MFD)

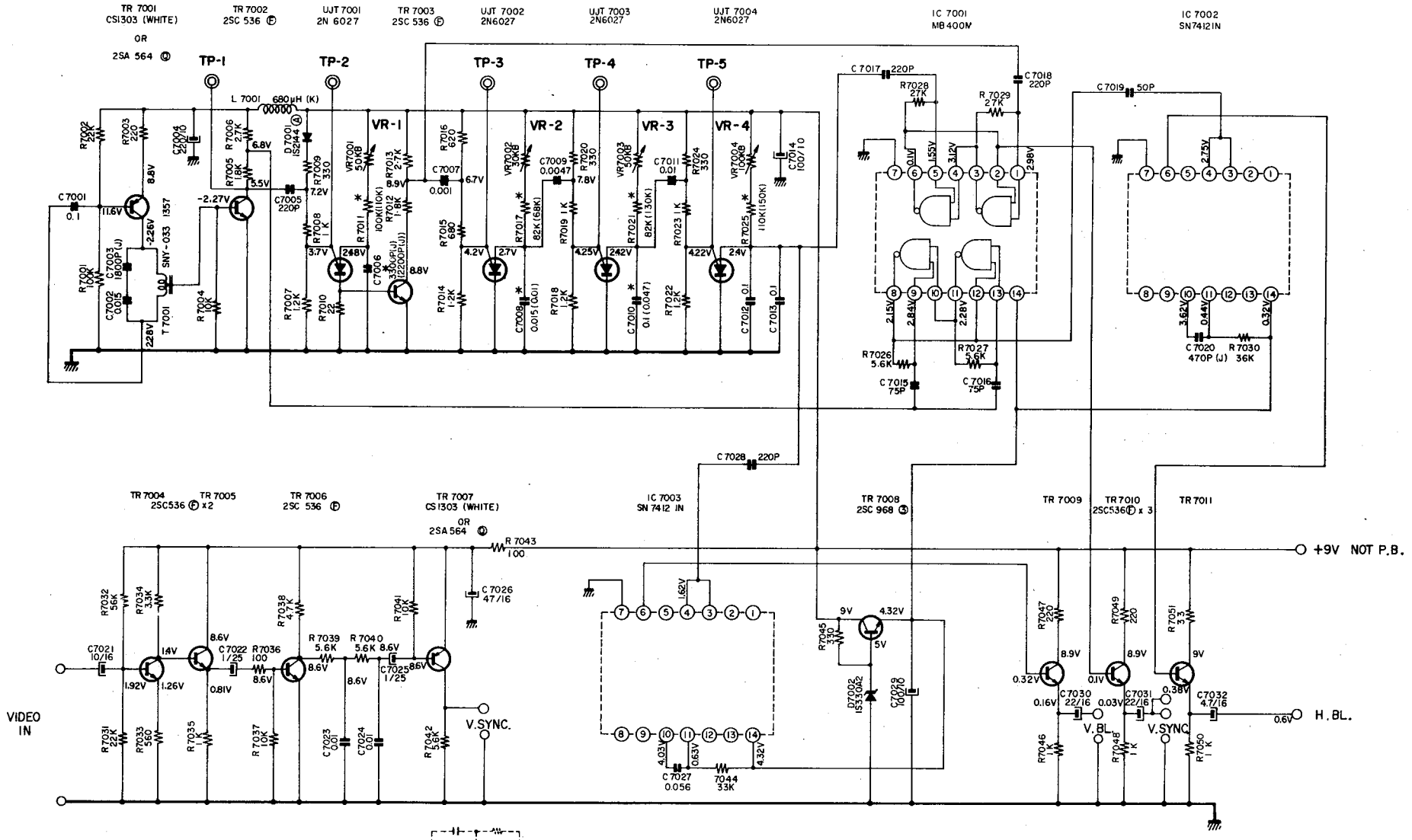
ASTERISK MARK (*) R4001 22K (US)
" UNNECESSARY (CCIR)

PX-A503

VT-110 (VIDEO) SCHEMATIC DIAGRAM NO.6-2 1421011A

2C

VT-110



NOTE

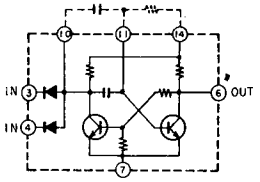
UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4W (J)

ALL CAPACITORS IN MFD. 50WV (K)

(P = M·MFD)

SEE LIST (1), (2) IF ASTERISK MARK (*) IS SHOWN.



SN7412IN equivalent circuit

LIST (1)

PARTS NO	U S	C C I R
R 7011	100 K	(110 K)
R 7017	82 K	(68K)
R 7021	82 K	(130K)
R 7025	110K	(150K)

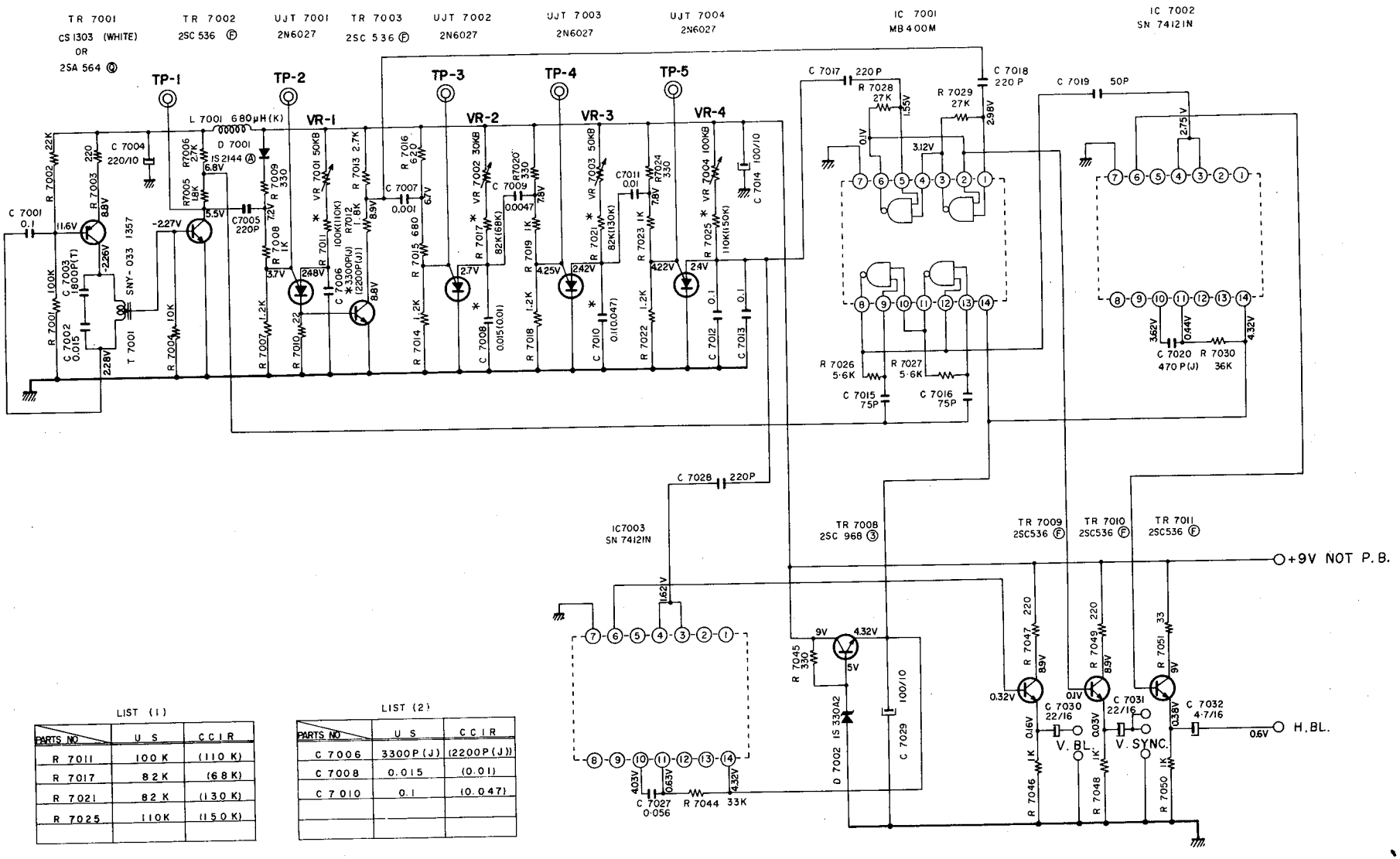
LIST (2)

PARTS NO	U S	C C I R
C 7006	3300 P (J)	(2200 P (J))
C 7008	0.015	(0.01)
C 7010	0.1	(0.047)

PX-A504

VT-110 (S.S.G.) SCHEMATIC DIAGRAM NO.6-3 1421012A

2C



LIST (1)

PARTS NO	U S	C C I R
R 7011	100 K	(110 K)
R 7017	82 K	(68 K)
R 7021	82 K	(130 K)
R 7025	110K	(150 K)

LIST (2)

PARTS NO	U S	C C I R
C 7006	3300 P (J)	(2200 P (J))
C 7008	0.015	(0.01)
C 7010	0.1	(0.047)

NOTE

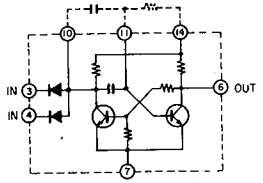
UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4W(J)

ALL CAPACITORS IN MFD. 50WV(K) (P=M·MFD)

SEE LIST(1),(2)

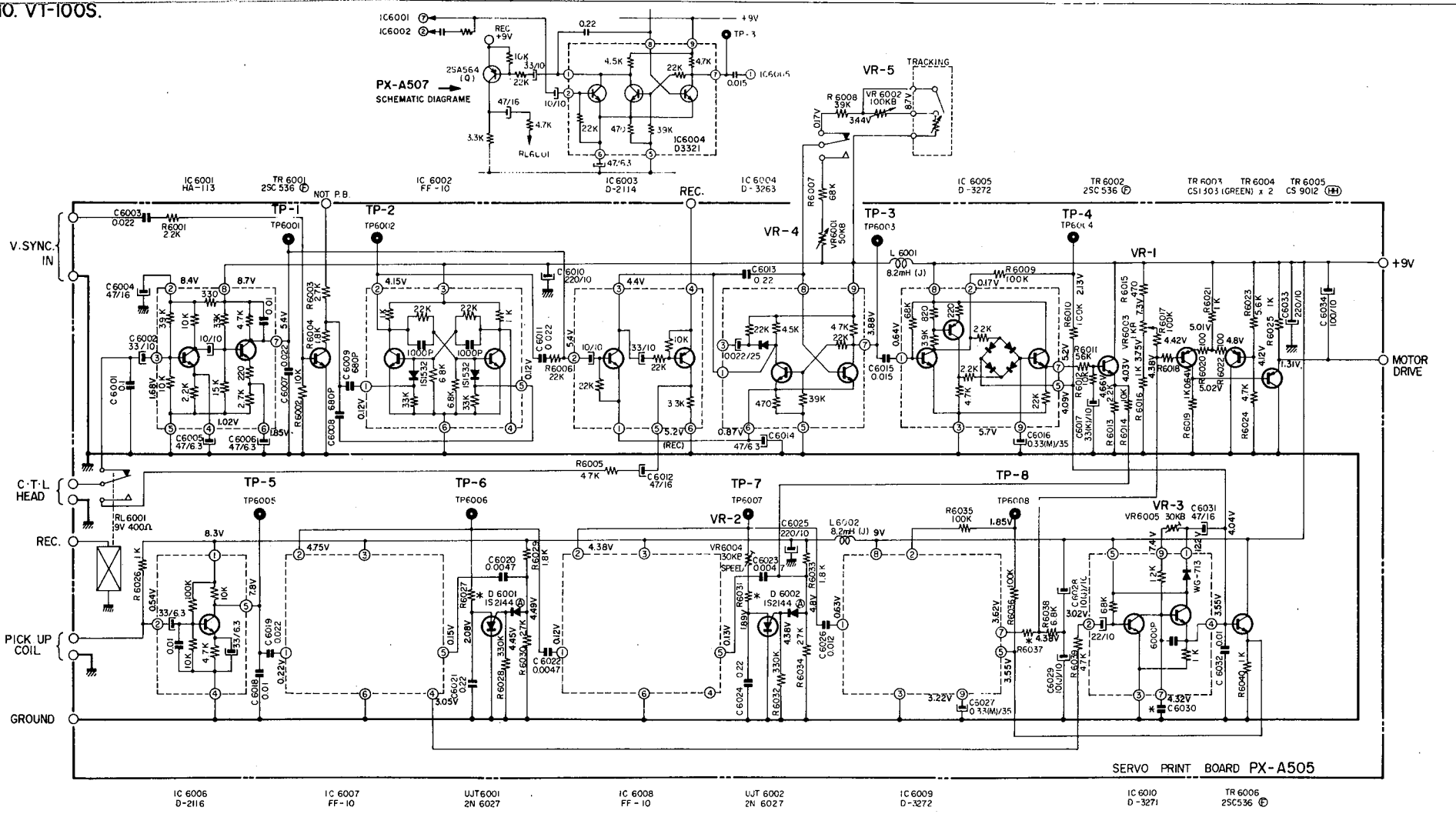
IF ASTERISK MARK (*) IS SHOWN.



SN74121N equivalent circuit

PX-A504

VT-100S (S.S.G.) SCHEMATIC DIAGRAM NO.6-3 1421030A



NOTE

UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4 W (J)

ALL CAPACITORS IN MFD 50WV (K)

(P = M MFD)

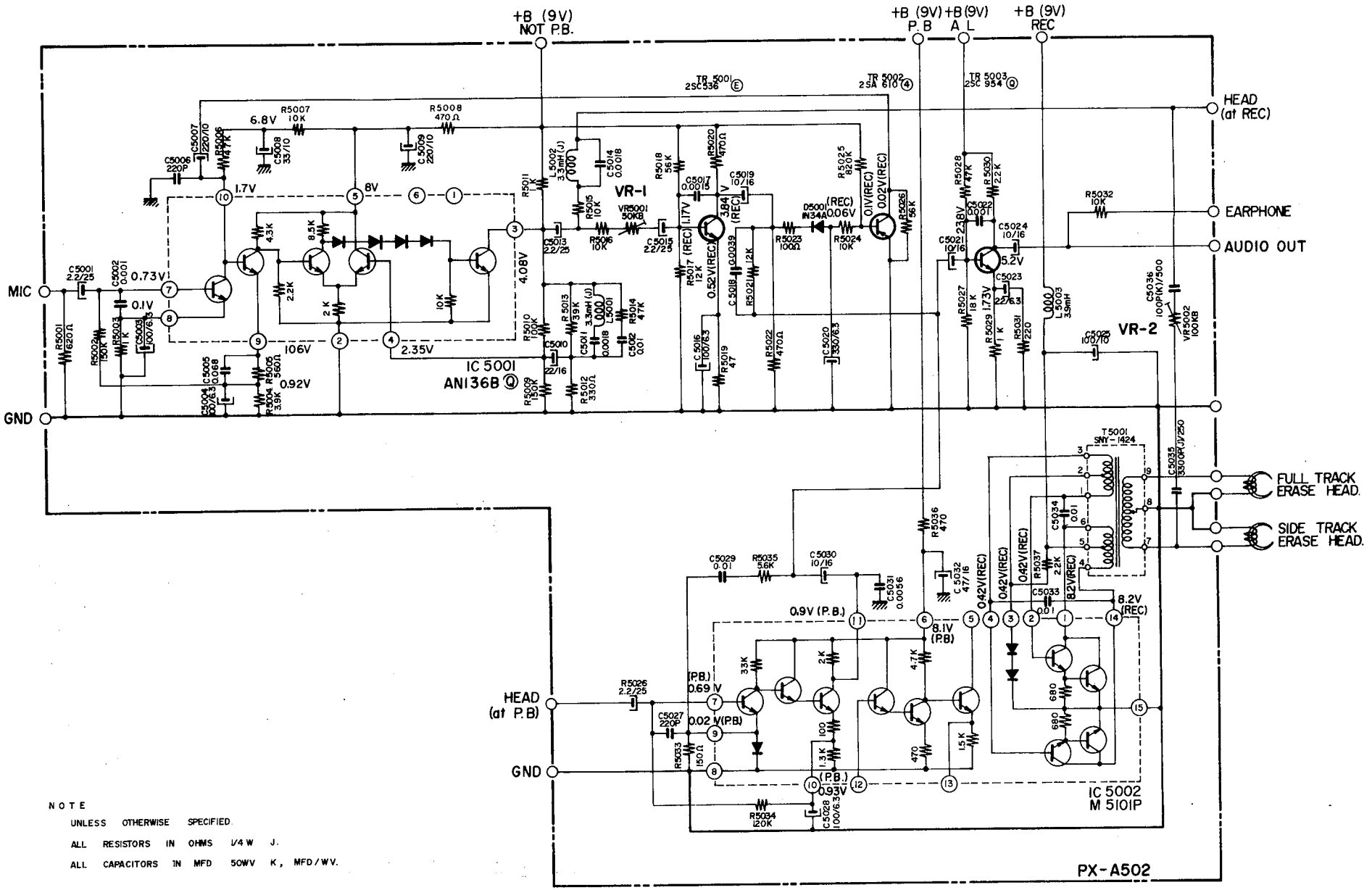
SEE LIST (1) IF ASTERISK MARK (*) IS SHOWN.

LIST (1)

PARTS NO	U S	C C I R
R 6027	100 K	(110 K)
R 6031	75 K	(91 K)
R 6037	68 K	(91 K)
C 6030	0.22	(0.33)

VT-110 (SERVO) SCHEMATIC DIAGRAM NO.6-4 1421013A

VT-110



NOTE

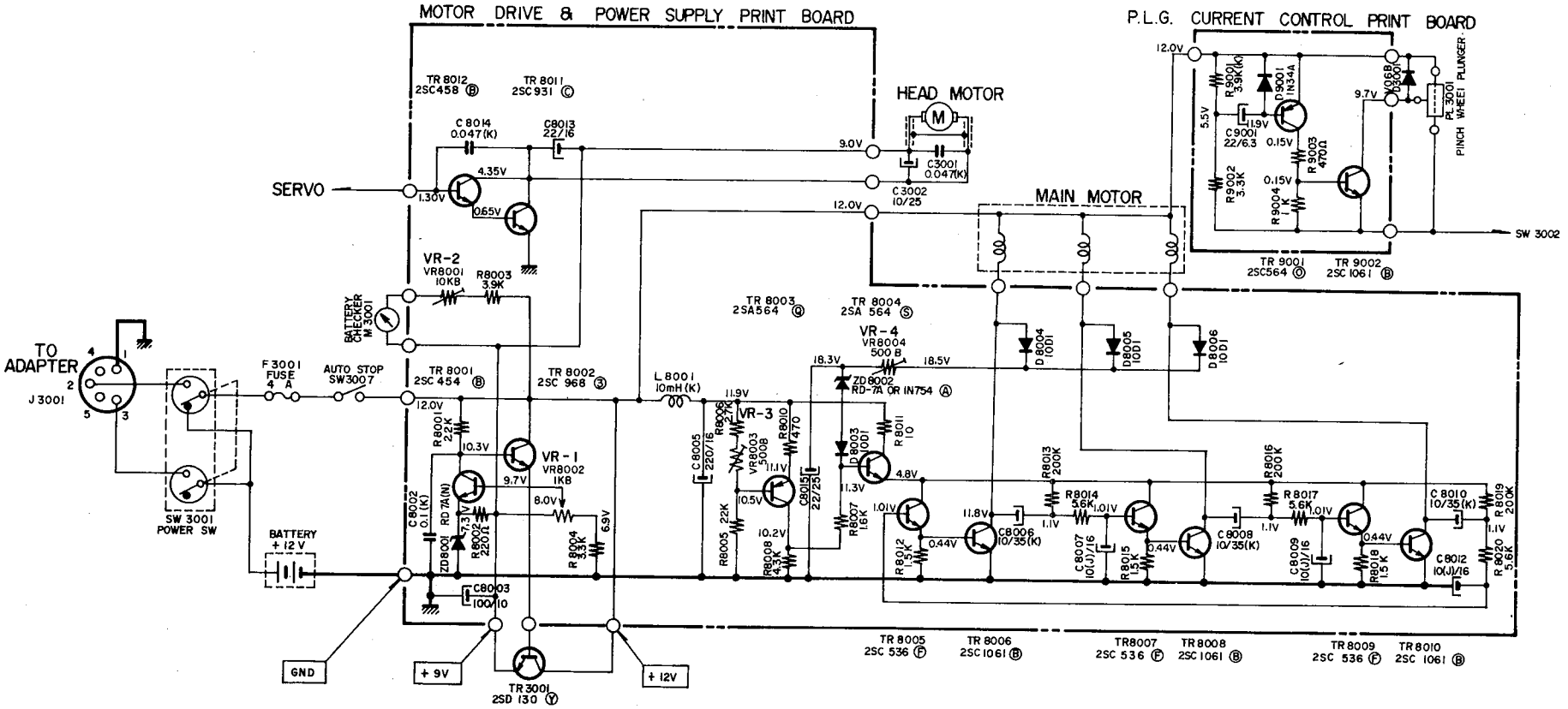
UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4 W J.

ALL CAPACITORS IN MFD 50WV K, MFD/WV.

VT-110 AUDIO SCHEMATIC DIAGRAM NO.6-5 1421014A

2C



NOTE

UNLESS OTHERWISE SPECIFIED.

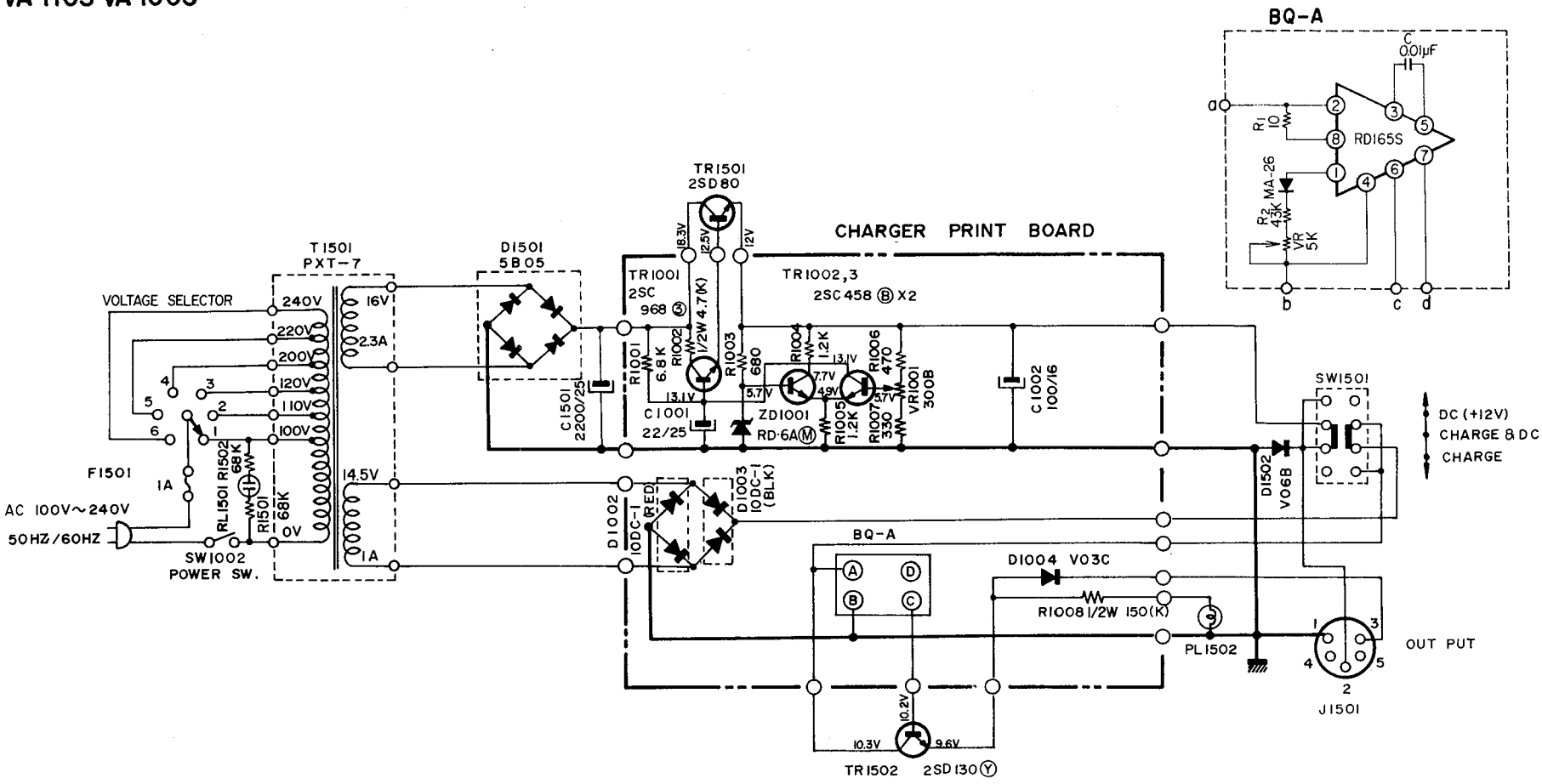
ALL RESISTORS IN OHMS 1/4W J.

ALL CAPACITORS IN MFD 50WV, MFD/WV. (P = M MFD.)

VT-110 CAPSTAN MOTOR DRIVE SCHEMATIC DIAGRAM

PX-513 PX-515 NO.6-6 1421015A

2C



NOTE

UNLESS OTHERWISE SPECIFIED

ALL RESISTORS IN OHMS 1/4WJ

ALL CAPACITORS IN MFD. 50WV K

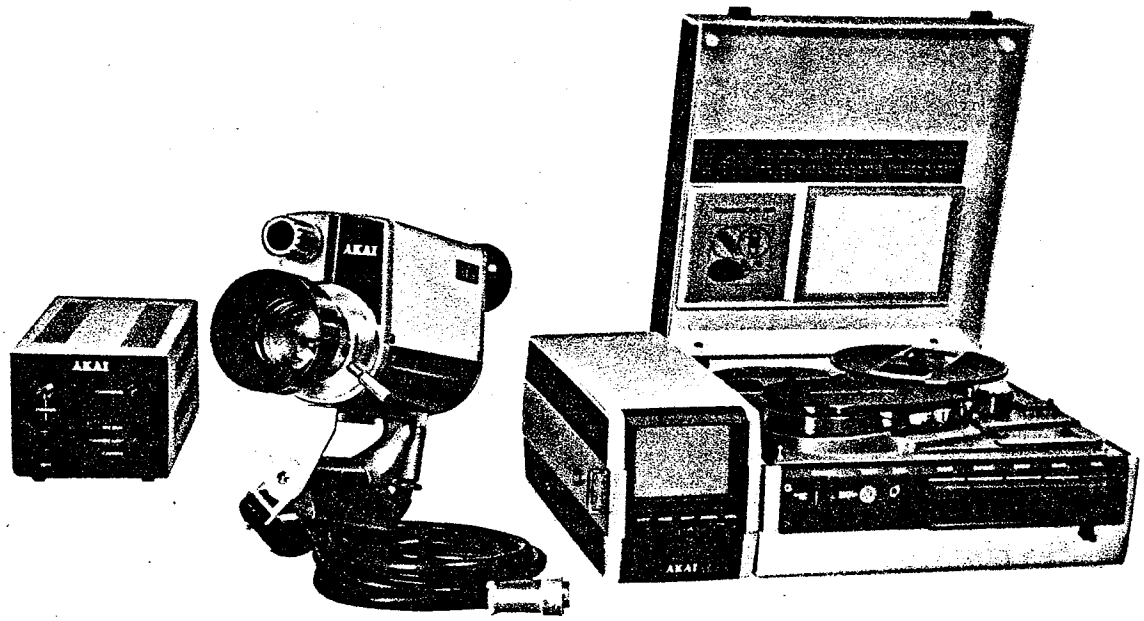
VA-110 (ADAPTER) SCHEMATIC DIAGRAM 1421020A

PRICE LIST FOR PARTS

AKAI PORTABLE VIDEO TAPE RECORDER SET

MODEL VTS-110

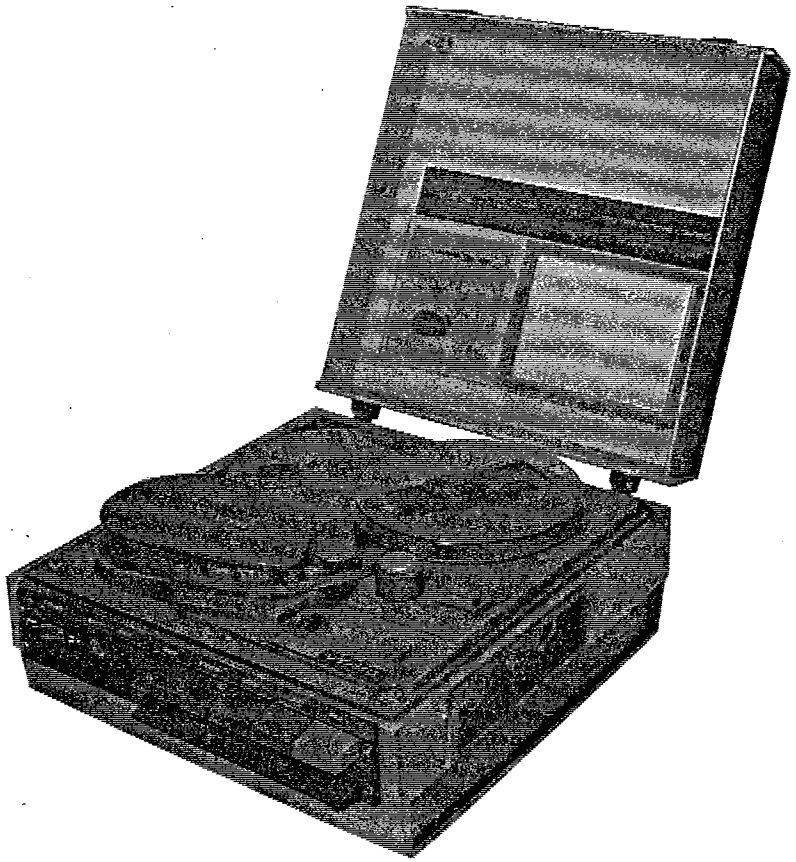
ALSO APPLICABLE TO MODEL **VTS-110DX** & **VTS-100S**



WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

REPLACEMENT PARTS TABLE

SECTION 1 RECORDER COMPONENT PARTS 1
SECTION 2 CAMERA COMPONENT PARTS 25
SECTION 3 MONITOR COMPONENT PARTS 33
SECTION 4 AC ADAPTER/BATTERY CHARGER 42



SECTION 1

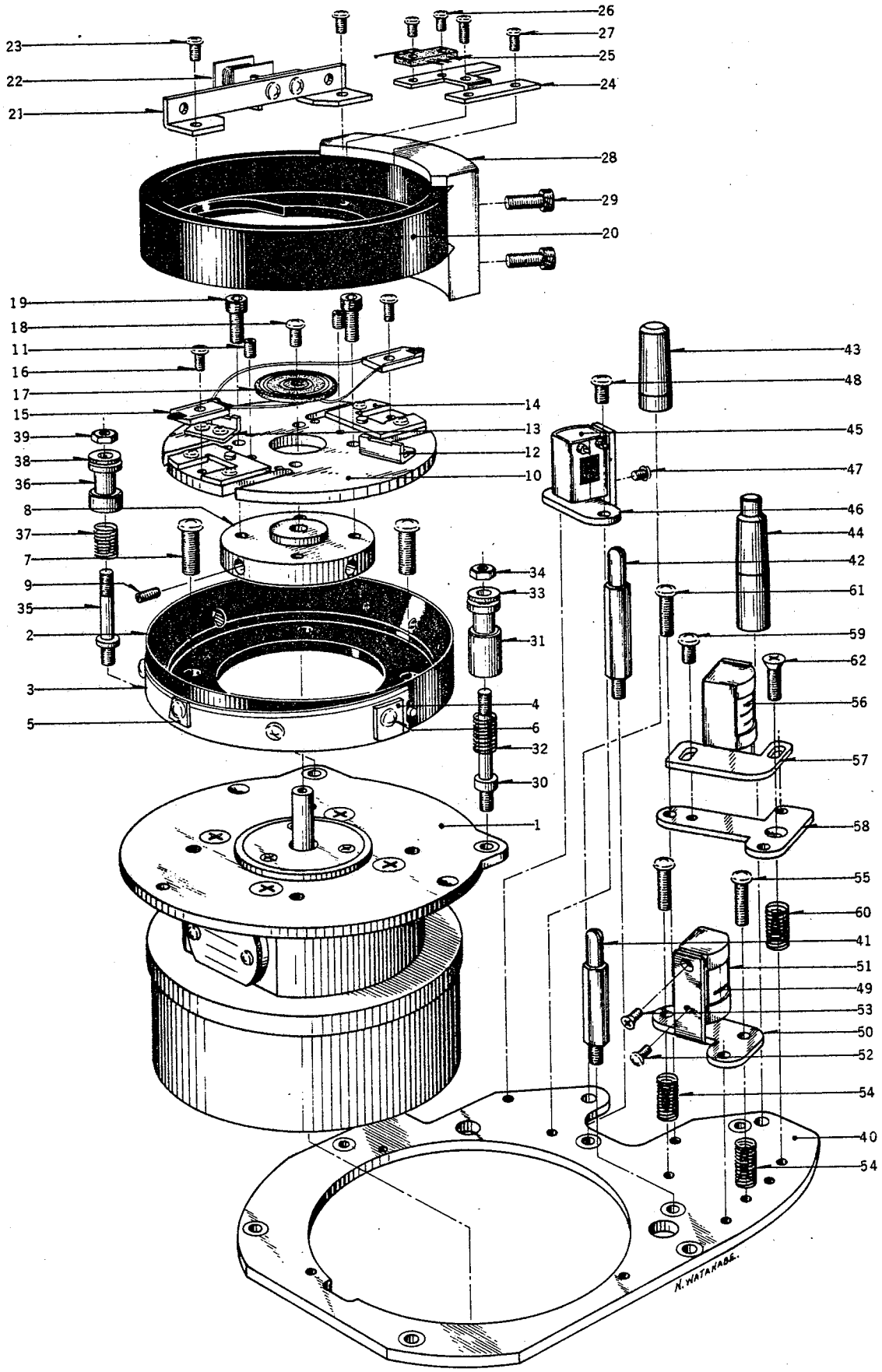
RECORDER COMPONENT PARTS

WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

ROTARY HEAD BLOCK 3
HEAD BASE BLOCK 3
SUB CAPSTAN BLOCK 5
MAIN CAPSTAN BLOCK 5
CAPSTAN MOTOR BLOCK 5
SUPPLY REEL TABLE BLOCK 7
TAKE-UP REEL TABLE BLOCK 7
KEYBOARD BLOCK 7
ASSEMBLY BLOCK 9
VIDEO P.C. BOARD (PX-A503) BLOCK 13
AUDIO P.C. BOARD (PX-A502) BLOCK 15
SERVO P.C. BOARD (PX-A505) BLOCK 17
MOTOR DRIVE P.C. BOARD (PX-513) BLOCK 18
PLG. CURRENT LIMITATION P.C. BOARD (PX-508) BLOCK 19
SSG. P.C. BOARD (PX-A504) BLOCK 21
CASE BLOCK 23
FINAL ASSEMBLY BLOCK 24

NOTE : * mark shows more than 10 pieces

ILLUSTRATION OF VIDEO HEAD BLOCK



ROTARY HEAD BLOCK

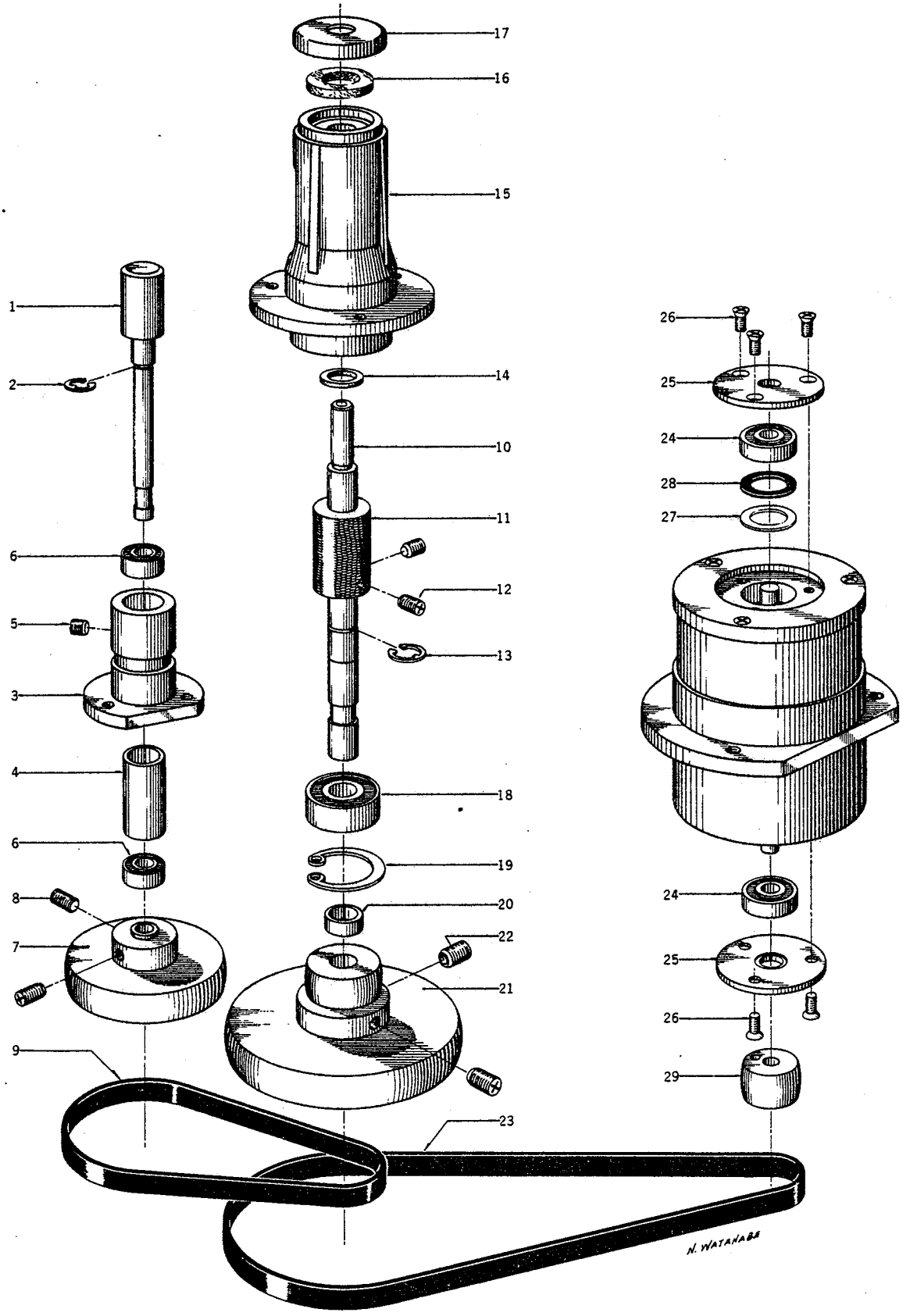
Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	A-418724	Rotary Head Block Assy. Comp.	VC,PXA	
1	A-418746	Drum Motor Block Assy. Comp.	VC,PXA	
–	A-357153	Ball Bearing #604 ZZC2P6B325		
–	A-364678	Ball Bearing #605 ZZC2P6B325		
–	A-358154	Brush MH-50	13-1-1	
2	A-361394	Lower Drum,w/pin	PX-802	
–	A-362867	Head Plate Retaining Pin	PX-824	
3	A-362878	Drum Tape Guide	PX-809	
4	A-404943	PX Guard Band Retaining Plate (A)	PX-833	
5	A-404954	PX Guard Band Retaining Plate (B)	PX-834	
–	A-404965	PX Guard Band Retaining Plate (C)	PX-835	
–	A-259560	Washer (BSP) 3.3 x 5.8 x 0.25t		
6	A-419927	Screw, round head 3 x 5		
–	A-361405	Drum Shield Plate	PX-803	
7	A-413234	Screw, pan head 4 x 12		
8	A-407531	Head Plate Holder C, w/metal	PX-838	
9	A-356804	Set Screw, hexagon socket 3 x 4		
10	A-395425	Head Plate, w/pin	PX-830	
–	A-362902	Pin, Head Plate	RX-280	
11	A-356804	Set Screw, hexagon socket 3 x 4		
12	A-395436	PU Plate C (Brass)	PX-831	
13	A-395447	PU Plate D (Permalloy)	PX-832	
–	A-201903	Screw, binding head 2.3 x 4		
14	A-362891	Head Guide Base	PX-819	
–	A-201431	Screw, pan head 2.3 x 5		
15	A-358716	VIDEO HEAD PX	VC,PX	
16	A-202307	Screw, round head 2.3 x 6		
17	A-357041	Slip Ring, Type 1400	52-1-3	
18	A-419940	Screw, pan head 2.3 x 6		
–	A-273778	M3 Earth Lug		
19	A-419938	Screw, hexagon socket head 3 x 8		
20	A-362698	Upper Drum	PX-806	
21	A-362913	PC Bracket	RX-833	
22	A-403806	Pick-Up Coil, w/core	23-1-106	
23	A-201418	Screw, pan head 2.3 x 4		
–	A-273778	M3 Earth Lug		
24	A-362946	Bracket, Brush	RX-811	
25	A-357063	Brush, Type 1330	52-1-4	
26	A-419951	Screw, pan head 2 x 5		
27	A-419940	Screw, pan head 2.3 x 6		
28	A-362700	Drum Support	PX-807	
29	A-419938	Screw, hexagon socket head 3 x 8		
30	A-375175	Guide Prop T	PX-822	
–	A-273756	M3 Nut		
31	A-375186	Tape Guide T	PX-823	
32	A-375197	Guide Spring T	PX-824	
33	A-375208	Tape Guide Cap	PX-828	
34	A-273835	M3 Nut		
35	A-375210	Guide Prop S	PX-825	
36	A-375221	Tape Guide S	PX-826	
37	A-375232	Guide Spring S	PX-827	
38	A-375208	Tape Guide Cap	PX-828	
39	A-273835	M3 Nut		

HEAD BASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	A-458921	Head Base Block Assy. Comp.	VC,PXA	
40	A-362711	Head Assembly Base	PX-808	
41	A-419297	Head Cover Post A	PX-A801	
–	A-272261	M3 Spring Washer		
–	A-273756	M3 Nut		
42	A-419308	Head Cover Post B	PX-A801	
43	A-419310	Taper Pole S	PX-A 802	
–	A-423527	Screw, binding head 3 x 8		
44	A-419321	Taper Pole T	PX-A803	
45	A-358740	FULL TRACK ERASE HEAD	PX,VC	
46	A-419332	Master Erase Retaining Plate	PX-A804	
47	A-201508	Screw, pan head 2 x 4		
48	A-356793	Screw, pan head 3 x 5		
49	A-358727	SIDE TRACK ERASE HEAD	VC,PX	
50	A-362790	Side Erase Head Angle	PX-815	
51	A-347883	Shield Case	1-09-15	
–	A-347894	Shield Cover (Back)	1-09-14	
52	A-201508	Screw, pan head 2 x 4		
53	A-344351	Screw, countersunk head 2 x 4		
54	A-375197	Guide Spring T	PX-824	
55	A-434610	Screw, pan head 3 x 13		
56	A-418735	CONTROL/AUDIO HEAD	VC,PXA	
57	A-417982	AC Head Angle	VC-0008	
–	A-201508	Screw, pan head 2 x 4		
58	A-362812	Audio CTL Head Base	PX-817	
59	A-410231	Screw, pan head 2.6 x 5		
–	A-355442	Washer (SPC) 3.3 x 5.8 x 0.25t		
60	A-375197	Guide Spring T	PX-824	
61	A-434610	Screw, pan head 3 x 13		
62	A-434621	Screw, countersunk head 3 x 13		

(4)

ILLUSTRATION OF SUB CAPSTAN/MAIN CAPSTAN/CAPSTAN MOTOR BLOCK



SUB CAPSTAN BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	B-358582	Sub Capstan Block Assy. Comp.	PX,VC	
1	B-360112	Sub Capstan Shaft	PX-219	
2	B-270101	"E" Ring 3.0M	6-1-9	
3	B-360123	Sub Capstan Case	PX-220	
4	B-360134	Bearing Collar	PX-221	
5	B-200711	Set Screw 3 x 3		
6	B-356646	Ball Bearing NSK684ZZSP6 C2 B325		
7	B-360145	Sub Flywheel	PX-222	
8	B-355588	Set Screw 3 x 6		
9	B-359886	Sub Capstan Belt	PX-171	

MAIN CAPSTAN BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	B-358593	Main Capstan Block Assy. Comp.	PX	
10	B-360033	Main Capstan Shaft	PX-211	
11	B-360055	Capstan Pulley	PX-213	
12	B-200733	Set Screw 3 x 4		
13	B-270123	"E" Ring 4.0M	6-1-9	
14	B-419826	Washer (Fiver)6.2x10x1t		
15	B-360077	Bearing Case, w/Metal	PX-215.6	
16	B-360090	Capstan Felt	PX-217	
17	B-435824	Metal Cap	PX-218	
18	B-356624	Ball Bearing NSK606ZZP6 C2 B325		
19	B-206021	"C" Ring D22	6-1-2	
20	B-360066	Flywheel Collar	PX-214	
21	B-360044	Main Flywheel	PX-212	
22	B-355533	Set Screw 4 x 8		
23	B-359875	Flywheel Belt	PX-170	
–	B-407542	Flywheel Belt (CCIR)	PX-181	

CAPSTAN MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	B-358661	Capstan Motor (US) Assy. Comp.	PX	
–	B-402570	Capstan Motor (CCIR) Assy. Comp.	PX	
24	B-357153	Ball Bearing #604 ZZC2P6B325		
25	B-361247	BRG Plate A	PX-703	
26	B-355577	Screw, countersunk head 2 x 6		
27	B-361326	Motor Washer (Mylar) 0.2t	PX-712	
–	B-361337	Motor Washer (Mylar) 0.1t	PX-712	
28	B-361348	Motor Washer (Rubber) 0.5t	PX-712	
29	B-361372	Capstan Motor Pulley (US)	PX-715	
–	B-395370	Capstan Motor Pulley (CCIR)	PX-716	

ILLUSTRATION OF SUPPLY & TAKE-UP REEL TABLE BLOCK

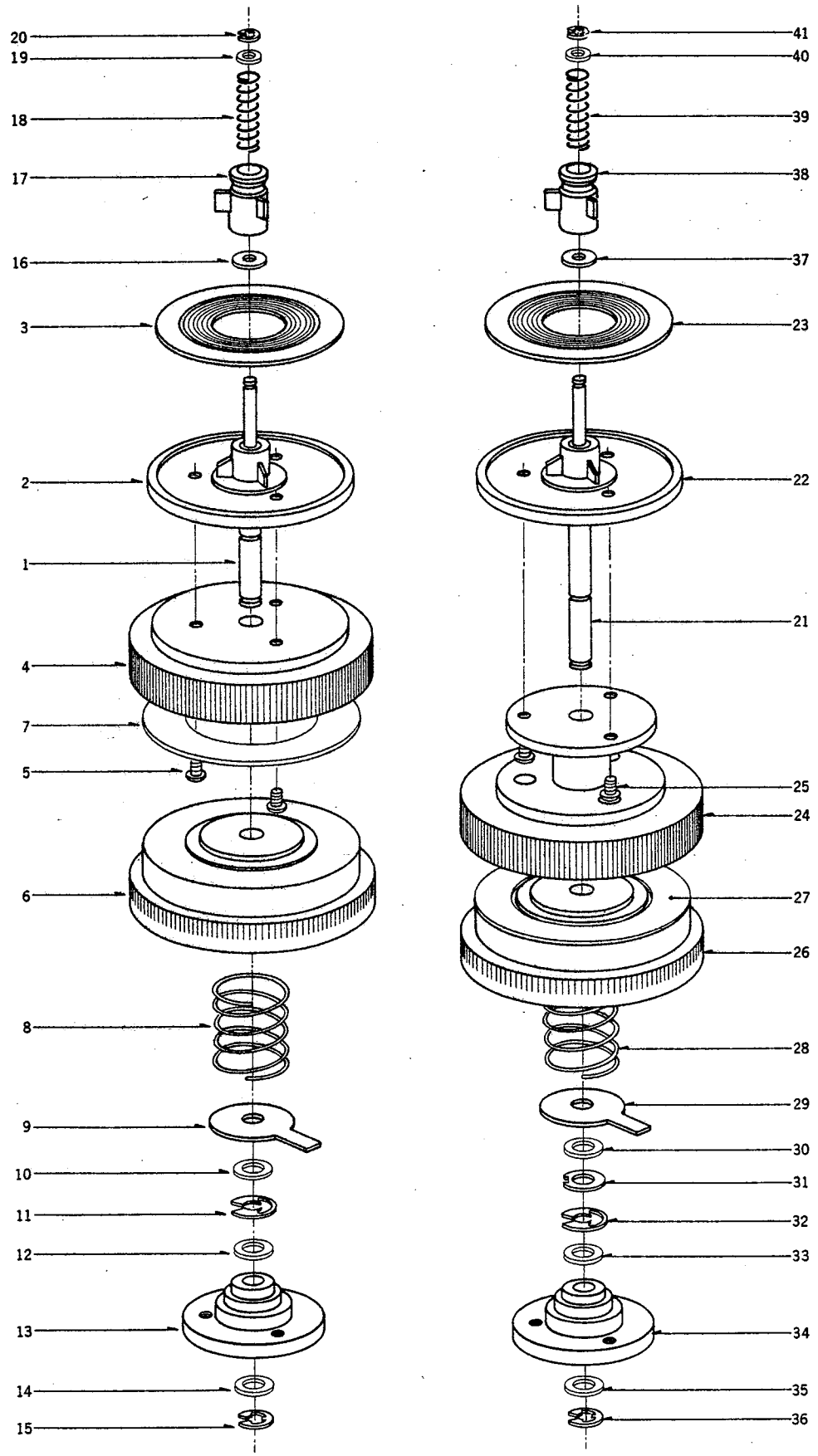
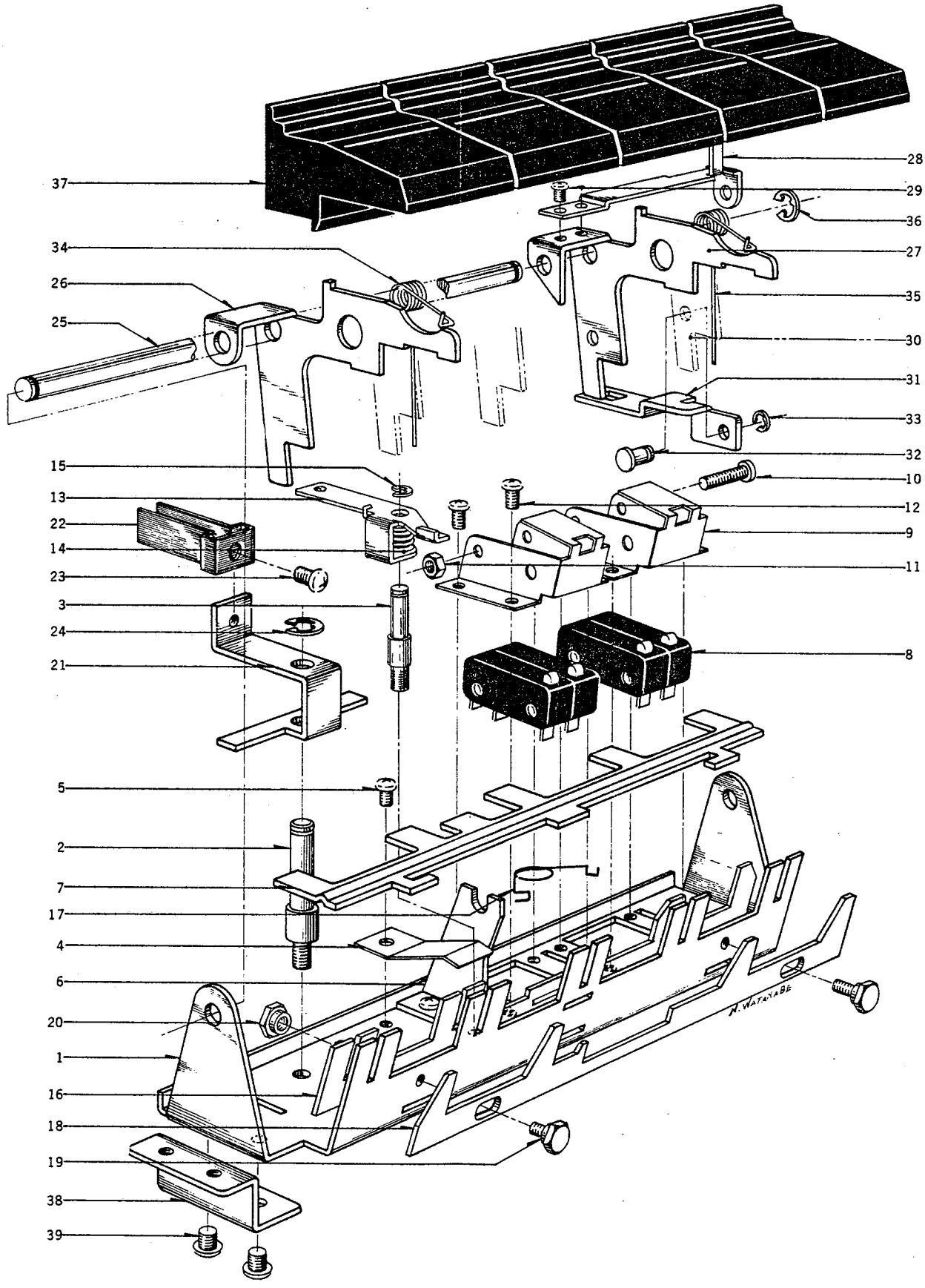


ILLUSTRATION OF KEYBOARD BLOCK



SUPPLY REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	C-423404	Supply Reel Table Block Comp.	PXA	
1	C-423483	Supply Reel Shaft	PX-296	
2	C-359921	PX Reel Table, w/bush	PX-202	
3	C-359932	Reel Table Rubber Plate	PX-203	
4	C-422684	Reel Table S	PX-292	
5	C-356782	Screw, pan head 2.3 x 4		
6	C-422695	Take-up Drum	PX-291	
7	C-422706	Take-up Felt	PX-293	
8	C-422717	Take-up Spring	PX-294	
9	C-422752	Take-up Spring Holder	PX-295	
10	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		
11	C-290283	"U" Ring 2.85M	6-1-1	
12	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		
13	C-422774	Reel Metal Case, w/Metal T	PX-297B	
14	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		
15	C-270101	"E" Ring 3.0M	6-1-9	
16	C-222390	Rubber Washer 0.5t	BT-113	
17	C-256138	Reel Retainer B	BT-110	
18	C-255622	Reel Spring	BT-111	
19	C-259413	Washer (APL) 2.7x4.9x1t	BT-112	
20	C-270088	"E" Ring 1.9M	6-1-9	

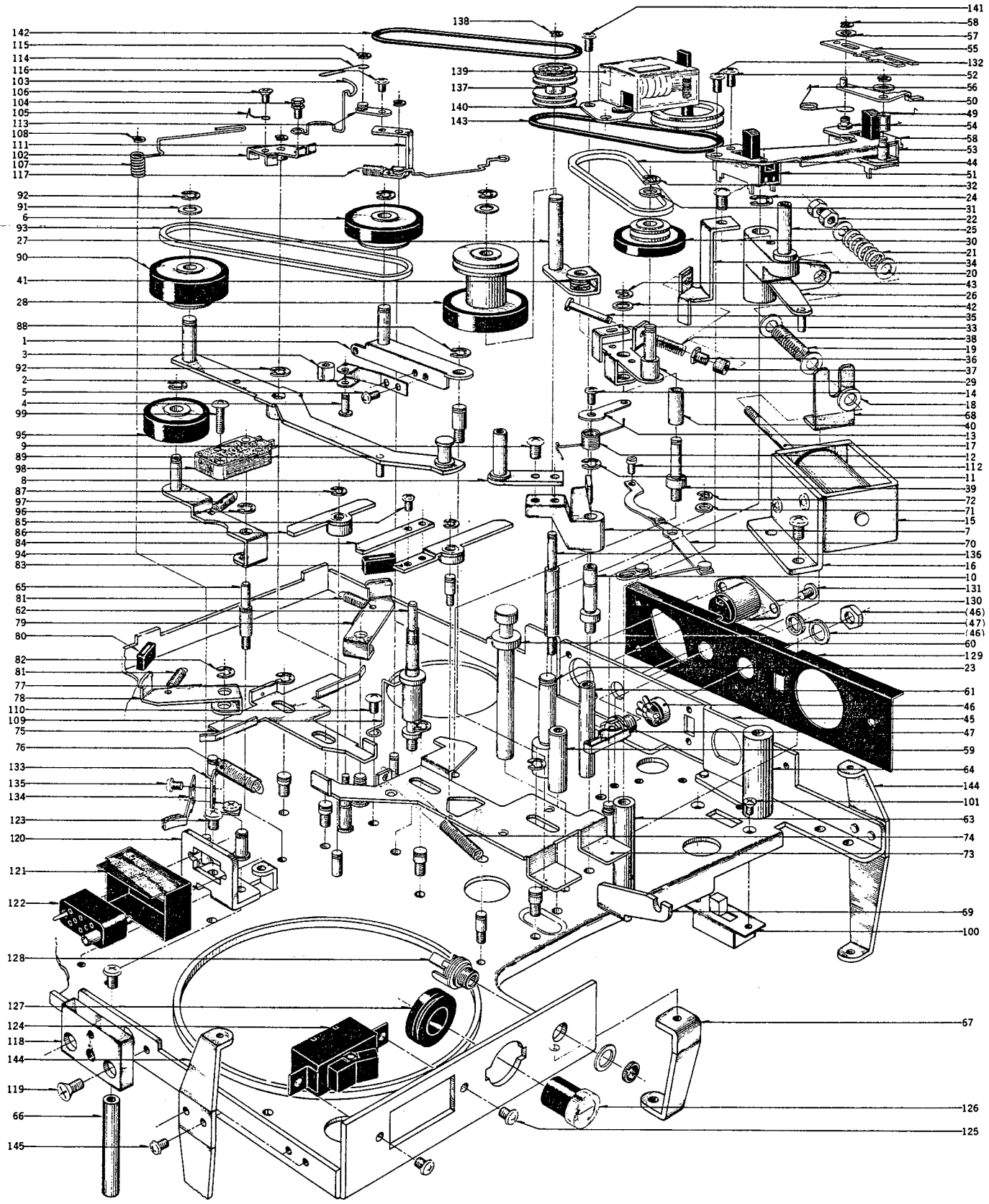
TAKE-UP REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	C-423415	Take-up Reel Table Block Comp.	PXA	
21	C-423494	Take-up Reel Shaft	PX-296B	
22	C-359921	PX Reel Table, w/bush	PX-202	
23	C-359932	Reel Table Rubber Plate	PX-203	
24	C-422730	Reel Table T	PX-292B	
25	C-356782	Screw, pan head 2.3 x 4		
26	C-422695	Take-up Drum	PX-291	
27	C-422706	Take-up Felt	PX-293	
28	C-422717	Take-up Spring	PX-294	
29	C-422752	Take-up Spring Holder	PX-295	
30	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		
31	C-422741	Claw Washer (SUP) 0.25t	PX-293B	
32	C-290283	"U" Ring 2.85M	6-1-1	
33	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		
34	C-422774	Reel Metal Case, w/Metal T	PX-297B	
35	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		
36	C-270101	"E" Ring 3.0M	6-1-9	
37	C-222390	Rubber Washer 0.5t	BT-113	
38	C-256138	Reel Retainer B	BT-110	
39	C-255622	Reel Spring	BT-111	
40	C-259413	Washer (ALP) 2.7x4.9x1t	BT-112	
41	C-270088	"E" Ring 1.9M	6-1-9	

KEYBOARD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	D-430615	Keyboard Block (VT-110) Assy. Comp.	PXA	
–	D-438434	Keyboard Block (VT-100S) Assy. Comp.	PXS	
1	D-435060	Button Guide B	PX-A311	
2	D-360797	FF Changing Shaft	PX-302	
–	D-273756	M3 Nut		
3	D-422098	Release Lever Shaft	PX-A305	
4	D-360808	Plate Spring	PX-303	
5	D-356668	Screw, binding head 2.3 x 4		
6	D-360810	Supporting Plate	PX-304	
7	D-360832	Button Lock Plate A	PX-306	
8	D-356916	Micro Switch SL-2 AC5A 125V	25-1-17	
9	D-360821	Switch Mounting Plate	PX-305	
10	D-356670	Screw, binding head 2.3 x 15		
11	D-273668	M2.3 Nut		
12	D-201475	Screw, pan head 2 x 3		
13	D-422875	Release Lever	PX-A306	
14	D-428635	Release Lever Spring	PX-A307	
15	D-270088	"E" Ring 1.9M	6-1-9	
16	D-434351	Slide Plate A	PX-A310	
17	D-360854	Slide Plate Spring	PX-308	
18	D-422853	Slide Plate B	PX-A301	
19	D-432584	Draduated Screw, Slide Plate	PX-A309	
20	D-432911	Nut, Slide Plate	PX-A308	
21	D-360944	FF Changing Plate	PX-317	
22	D-360955	Changing Plate Spring	PX-318	
23	D-356668	Screw, binding head 2.3 x 4		
24	D-270101	"E" Ring 3.0M	6-1-9	
25	D-360876	Button Guide Shaft	PX-310	
26	D-360898	Button Lock Plate C	PX-312	
27	D-360887	Button Lock Plate B-1 (VT-110)	PX-311	
28	D-422886	Sub Lock Plate (VT-110)	PX-A303	
29	D-391386	Screw, pan head 2.3 x 3 (VT-110)		
30	D-435115	Button Lock Plate B-2 (VT-110)	PX-311	
–	D-435115	Button Lock Plate B-2 (VT-100S)	PX-311	
31	D-360900	Switch Changing Plate	PX-313	
32	D-360911	Switch Changing Shaft	PX-314	
33	D-356657	"E" Ring 1.5M	6-1-9	
34	D-360922	Button Spring	PX-315	
35	D-360933	REC Return Spring	PX-316	
36	D-357164	"E" Ring 2.3M	6-1-9	
37	D-360966	Operation Button	PX-319	
38	D-422021	Button Guide Mounting Plate (Left)	PX-A134	
–	D-422032	Button Guide Mounting Plate (Right)	PX-A136	
39	D-201925	Screw, binding head 2.3 x 5		
–	D-323728	Screw, binding head 3 x 5		

ILLUSTRATION OF ASSEMBLY BLOCK



ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
		FF IDLER LEVER (A) BLOCK		
–	E-358615	FF Idler Lever (A) Block Comp.	PX	
1	E-360663	FF Idler A Lever, w/Shaft	PX-270,1	
2	E-360685	Pressure Plate	PX-272	
3	E-360696	Pressure Roller	PX-273	
4	E-360707	Pressure Roller Shaft	PX-274	
–	E-356657	"E" Ring 1.5M	6-1-9	
5	E-355544	Screw, binding head 2 x 4		
–	E-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
6	E-360718	FF Idler A	PX-275	
–	E-259740	Washer (SUP) 4.1 x 7 x 0.25t		
–	E-270101	"E" Ring 3.0M	6-1-9	
–	E-359638	FF Idler A Spring	PX-146	
		SUB PINCH ROLLER BLOCK		
–	F-358637	Sub Pinch Roller Block Comp.	PX	
7	F-360314	Sub Pinch Roller Arm	PX-236	
8	F-360325	Sub Pinch Roller Plate	PX-237	
9	F-422076	Screw, pan head 3 x 5		
–	F-360336	Sub Pinch Roller Shaft	PX-238	
–	F-355590	Screw, countersunk head 2.6 x 6		
10	F-359313	Sub Pinch Roller Arm Prop	PX-116	
11	F-270101	"E" Ring 3.0M	6-1-9	
12	F-359730	Sub Pinch Roller Spring	PX-156	
13	F-359741	Spring Arm	PX-157	
14	F-417227	Screw, binding head 2.3 x 5		
		MAIN PINCH ROLLER BLOCK		
–	G-358626	Main Pinch Roller Block Assy. Comp.	PX	
15	G-374602	Plunger Solenoid 1040FHT	44-1-44	
–	G-375592	Silicon Diode V06B	45-2-35	
16	G-360235	Plunger Bracket	PX-231	
–	G-424124	Screw, countersunk head 3 x 5		
17	G-360246	Pinch Roller Lever	PX-232	
–	G-360257	Pinch Roller Joint Pin	PX-233	
–	G-270088	"E" Ring 1.9M	6-1-9	
18	G-259514	Washer (Nylon) 3.1 x 8 x 1t	BT-104	
–	G-259503	Washer (Nylon) 3.1 x 8 x 0.5t	BT-104	
19	G-360292	Pinch Roller Return Spring	PX-234	
20	G-360156	Pinch Roller Arm	PX-223	
21	G-360303	Pinch Roller Spring	PX-235	
22	G-273756	M3 Nut		
23	G-359302	Pinch Roller Arm Prop	PX-115	
24	G-270123	"E" Ring 4.0M	6-1-9	
25	G-360167	Pinch Roller Shaft	PX-224	
–	G-360178	Pinch Roller Washer	PX-225	
26	G-360213	Pinch Roller Plate, w/Pin	PX-229	
–	G-201925	Screw, binding head 2.3 x 5		

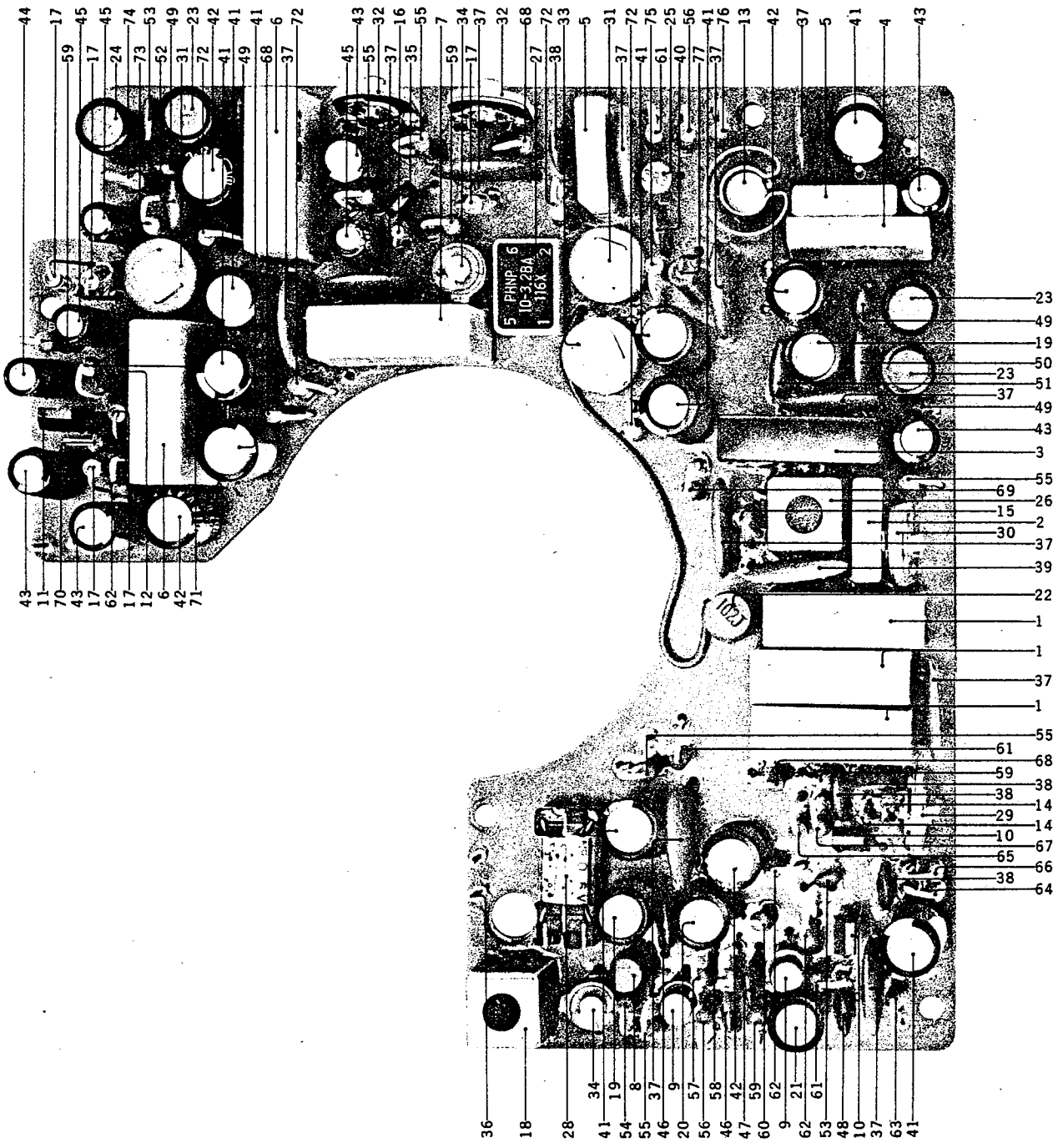
Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
		TAKE-UP ROLLER BLOCK		
–	H-423371	Take-up Roller Block Comp.	PXA	
27	H-422548	Take-up Pulley Arm, w/Shaft	PX-243	
28	H-422605	Take-up Puller	PX-282	
–	H-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
–	H-270101	"E" Ring 3.0M	6-1-9	
29	H-422561	Take-up Roller Arm B, w/Shaft B	PX-245	
30	H-360584	Drive Idler	PX-262	
31	H-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
32	H-270101	"E" Ring 3.0M	6-1-9	
33	H-422572	Take-up Roller Arm Adjusting Plate	PX-245B	
–	H-356668	Screw, binding head 2.3 x 4		
34	H-360617	Pressure Arm	PX-265	
35	H-360628	Joint Shaft	PX-266	
36	H-360630	Take-up Torque Adjusting Screw A	PX-267	
37	H-360641	Take-up Torque Adjusting Screw B	PX-268	
38	H-360652	Take-up Idler Spring	PX-269	
–	H-321513	Washer (Nylon) 2.6 x 8 1t		
–	H-356657	"E" Ring 1.5M	6-1-9	
39	H-427127	Take-up Roller Arm Shaft	PX-A160	
40	H-427116	Take-up Roller Arm Shaft Collar	PX-A161	
41	H-422550	Take-up Arm Spring A	PX-244	
42	H-402557	Washer (Nylon) 4.1 x 7 x 0.2t		
43	H-357164	"E" Ring 2.3M	6-1-9	
44	H-422627	Take-up Belt	PX-182	
		VIDEO CHANGING SWITCH BLOCK		
45	I-422458	Connector Panel	PX-A108	
–	I-358064	10P Connector RM15TRG-10S	31-166	
–	I-422471	Slide Switch SL-B262B	25-3-38	
–	I-422493	Video Changing Switch P.C. Board	PX-A148	
–	I-422515	Carbon Resistor RD1/8 330K K	35-9-13	
–	I-422504	Carbon Resistor RD1/8 75Ω J	35-9-13	
–	I-430413	Screw, countersunk head 2.6 x 4		
46	I-422482	Volume V12M4-1S (SJ) 7S-B 100K	36-25-2	
47	I-207358	Earphone Jack D3.5	31-2-15	
–	I-422537	Nylon Collar, Jack D3.5	PX-A147	
–	I-430402	Washer (Nylon) 6.2 x 10 x 0.5t		
		SLIDE SWITCH BLOCK		
–	J-430626	Slide Switch Block Comp. (VT-110)	PXA	
–	J-438423	Slide Switch Block Comp. (VT-100S)	PXS	
48	J-422324	Switch Mounting Plate A, w/Shaft ,	PX-A201	

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
49	J-422368	Lock Arm Spring	PX-A203	
50	J-422346	Lock Arm, w/Pin	PX-A204	
–	J-430446	Washer (Nylon) 3.1 x 8 x 0.25t		
–	J-270088	"E" Ring 1.9M	6-1-9	
51	J-422436	Slide Switch SL-222B4C	25-3-40	
52	J-365940	Screw, binding head 2.3 x 3		
53	J-422414	Slide Switch SL-242B4BD	25-3-39	
–	J-331435	Lug Plate VB2L	33-4-6	
54	J-422381	Slide Plate Shaft	PX-A206	
55	J-422370	Slide Plate	PX-A208	
56	J-422392	Slide Switch Return Spring	PX-A207	
57	J-430446	Washer (Nylon) 3.1 x 8 x 0.25t		
58	J-357164	"E" Ring 2.3M	6-1-9	
–	J-439650	Switch Mounting Plate B (VT-100S)	PX-A201	
–	J-422436	Slide Switch SL-222B4C	25-3-40	
–	J-365940	Screw, binding head 2.3 x 3		
		ASSEMBLY BLOCK		
59	K-421986	Assembly Base Prop	PX-A153	
–	K-413741	Screw, binding head 3 x 8		
–	K-359280	Mech. Panel Prop	PX-113	
–	K-323728	Screw, binding head 3 x 5		
60	K-359291	Tape Guide	PX-114	
61	K-422245	Counter Bracket Column	PX-A106	
–	K-413155	Screw, binding head 3 x 6		
62	K-422010	Guide Roller Shaft	PX-A138	
–	K-273756	M3 Nut		
63	K-422313	Switch Retaining Collar A	PX-A105	
64	K-422302	Switch Retaining Collar B	PX-A105	
65	K-422100	RWD Lever Shaft	PX-A104	
–	K-359414	P.C. Board Prop A (L=26)	PX-126	
–	K-359425	P.C. Board Prop B (L=30)	PX-126	
66	K-359436	P.C. Board Prop C (L=34)	PX-126	
–	K-359447	PX P.C. Board Prop E	PX-127	
–	K-200384	Screw, countersunk head 3 x 6		
–	K-323728	Screw, binding head 3 x 5		
67	K-359190	Mech. Retaining Angle A	PX-104	
–	K-359458	P.C. Board Retaining Angle	PX-128	
68	K-359460	Pinch Roller Lever Stopper	PX-129	
–	K-201925	Screw, binding head 2.3 x 5		
69	K-422043	Keyboard Supporting Angle B	PX-A135	
–	K-323728	Screw, binding head 3 x 5		
70	K-434294	Shut-off Lever Comp.	PX-A176 to 179	
–	K-402557	Washer (Nylon) 4.1 x 7 x 0.2t		
71	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
72	K-270101	"E" Ring 3.0M	6-1-9	
–	K-394560	Head Assy. Base Table B	PX-177	
–	K-413155	Screw, binding head 3 x 6		
73	K-359504	FF Slide Lever	PX-133	
74	K-359515	FF Slide Lever Spring	PX-134	
–	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
–	K-260201	Washer (Nylon) 6.2 x 13 x 1t		

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	K-270101	"E" Ring 3.0M	6-1-9	
75	K-399238	Brake Lever	PX-289	
76	K-360437	Brake Spring	PX-248	
–	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
–	K-260201	Washer (Nylon) 6.2 x 13 x 1t		
77	K-270101	"E" Ring 3.0M	6-1-9	
78	K-422651	Brake Lever A	PX-242	
79	K-422662	Brake Lever B	PX-242	
80	K-422673	Brake Rubber Bush	PX-299	
81	K-360437	Brake Spring	PX-248	
82	K-270101	"E" Ring 3.0M	6-1-9	
–	K-434395	Brake Off Lever Comp.	PX-A174	
83	K-359526	Brake Off Lever A, w/Metal	PX-135.6	
84	K-359548	Brake Off Lever A-2	PX-137	
85	K-394525	Screw, binding head 2 x 3		
86	K-359550	Brake Off Lever B, w/Metal	PX-138.9	
87	K-270088	"E" Ring 1.9M	6-1-9	
–	K-259738	Washer (Polyslider) 4.1 x 7 x 0.25t		
88	K-270101	"E" Ring 3.0M	6-1-9	
–	K-434428	FF Idler B Lever Comp.	PX-A172	
89	K-359583	FF Lever, w/Metal	PX-141.3	
90	K-359640	FF Idler B	PX-147	
91	K-402557	Washer (Nylon) 4.1 x 7 x 0.2t		
92	K-270101	"E" Ring 3.0M	6-1-9	
93	K-394852	FF Belt	PX-150	
–	K-434430	RWD Idler Comp.	PX-A171	
94	K-422054	RWD Lever, w/Shaft	PX-A112	
–	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		
95	K-359706	RWD Idler	PX-153	
96	K-270101	"E" Ring 3.0M	6-1-9	
97	K-360437	Brake Spring	PX-248	
98	K-422111	Micro Switch MT-10AT	25-1-21	
99	K-393726	Screw, truss head 3 x 10		
100	K-422447	Slide Switch S-4900	25-3-42	
101	K-344351	Screw, countersunk head 2 x 4		
–	K-434406	Tension Plate Comp.	PX-A173	
102	K-422144	Tension Plate, w/Collar	PX-A125.6	
103	K-422188	Tension Bar A	PX-A127	
104	K-422177	Tension Bar Holder	PX-A128	
105	K-422190	Tension Adjuster	PX-A129	
106	K-356668	Screw, binding head 2.3 x 4		
107	K-422122	Tension Bar B	PX-A131	
108	K-270088	"E" Ring 1.9M	6-1-9	
109	K-427105	Tension Bar A Stopper	PX-A159	
110	K-417216	Screw, pan head 3 x 4		
111	K-422897	Release Arm Plate, w/Arm A	PX-A139	
112	K-360865	Slide Plate Shaft	PX-309	
113	K-422201	Release Arm, w/Shaft	PX-A123	
114	K-422166	Tension Plate Wire	PX-A130	
115	K-357164	"E" Ring 2.3M	6-1-9	
116	K-356668	Screw, binding head 2.3 x 4		
117	K-422223	Return Spring	PX-A132	

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
118	K-359493	Connection Metal Fitting	PX-132	
119	K-414033	Screw, contersunk head 3 x 8		
–	K-434441	Monitor Connector Comp.	PX-A170	
120	K-359820	Connector Mounting Plate L	PX-165	
121	K-359818	Connector Cover	PX-164	
122	K-358086	8P Connector MB-8S-7.5A-1	31-1-63	
123	K-323728	Screw, binding head 3 x 5		
124	K-358097	Seesaw Switch SJ-1253 (SA2050N)	25-2-10	
125	K-371856	ISO Screw, binding head 3 x 5		
126	K-361440	Battery Checker MO-48	46-1-13	
127	K-359831	Checker Fastener	PX-166	
128	K-358075	Earphone Jack	31-2-15	
129	K-422460	Decorative Plate (VT-110)	PX-A109	
–	K-438197	Decorative Plate (VT-100S)	PX-A109	
130	K-379001	5P DIN Jack S-I 8123	31-1-24	
131	K-323728	Screw, binding head 3 x 5		
–	K-419848	Screw, binding head 2.3 x 3		
–	K-359864	Switch Retaining Plate	PX-169	
132	K-413255	Screw, binding head 3 x 6		
133	K-423505	Back Tension Supporting Plate	PX-A152	
134	K-422818	Plate Spring, Back Tension	PX-A150	
–	K-422820	Felt, Back Tension	PX-A151	
135	K-394525	Screw, binding head 2 x 3		
–	K-422831	Reel Shaft Cover	PX-A149	
–	K-255082	Lug Plate VBL2	33-4-10	
–	K-349558	Ferri-Inductor FL9H 1.5MH (J)	23-1-4	
–	K-434452	Intermediate Pulley Comp.	PX-A168	
136	K-422256	Intermediate Pulley Shaft	PX-A107	
137	K-422291	Intermediate Pulley	PX-A113	
–	K-374534	Washer (Nylon) 3x5x0.5t		
138	K-270088	"E" Ring 1.9M	6-1-9	
–	K-357658	M2.6 Nut		
139	K-422280	Tape Counter KMP-393 TCS-2219113	9-1-15	
140	K-422234	Counter Bracket	PX-A114	
–	K-430773	Screw, round head 2 x 4		
141	K-417352	Screw, pan head 3 x 6		
142	K-422267	Counter Belt A	PX-A115	
143	K-422278	Counter Belt B	PX-A116	
–	K-430784	Fuse Retaining Plate Comp.	PX-A166	
–	K-429456	Fuse Retaining Plate	PX-A163	
–	K-358031	Fuse 125V 4A	39-1-31	
–	K-359785	Fuse Retaining P.C. Board	PX-161	
–	K-356668	Screw, binding head 2.3 x 4		
–	K-403053	Transistor 2SD234 (O) (Power Supply)	45-1-81	
–	K-314403	Nylon Clip HP-2N		
–	K-359201	Mech. Retaining Angle B (Rear Centre)	PX-105	
–	K-359223	Mech. Retaining Angle D (Rear Left)	PX-107	
–	K-359234	Mech. Retaining Angle E (Rear Right)	PX-108	
144	K-422008	Mech. Retaining Angle	PX-A133	
145	K-355500	Screw, binding head 2.6 x 5		

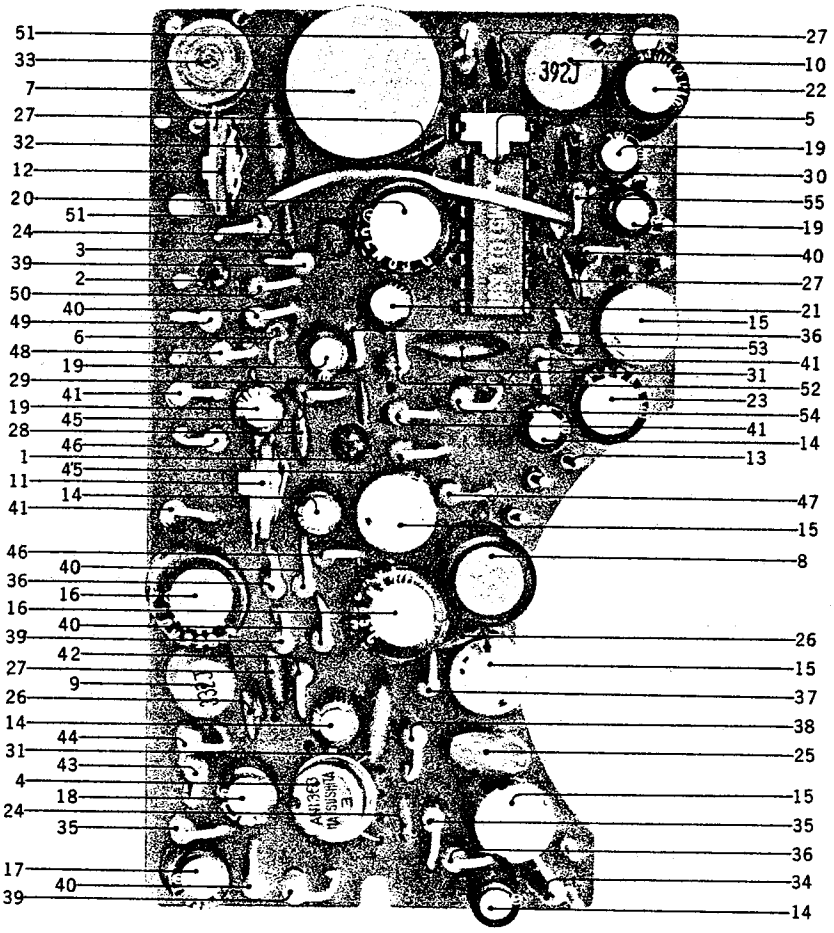
PHOTO OF VIDEO P.C. BOARD (PX-A503)



VIDEO P.C. BOARD (PX-A503) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	L-423360	Video P.C. Board (US) Assy. Comp.	PX-A503	
–	L-430716	Video P.C. Board (CCIR) Assy. Comp.	PX-A503	
1	L-423123	I.C. EHD-AW161G	IC4001,2,3	
2	L-361462	I.C. P-2	IC4004	
3	L-361473	I.C. GR-118	IC4005	
4	L-361484	I.C. P-4	IC4006	
5	L-357917	I.C. P-5 (AE-163)	IC4007,11	
6	L-361506	I.C. R-1	IC4008,9	
7	L-361517	I.C. GR-117	IC4010	
8	L-423224	Transistor 2SK19BL	TR4001	
9	L-350392	Transistor 2SC645(B)	TR4002,3	
10	L-380430	Transistor 2SC460(C)	TR4004,5	
11	L-329218	Transistor 2SC458(C)	TR4006	
12	L-380834	Transistor 2SC711(E)	TR4007	
13	L-338894	Transistor 2SC968(3)	TR4008	
–	L-361697	Heat-Sink Plate R-1A	45-7-2	
14	L-420120	Silicon Doide 1S2144(A) (Special)	D4001,2	
15	L-374692	Silicon Diode SD-13	D4003	
16	L-373432	Silicon Diode 1S2144(A)	D4008	
17	L-219464	Germanium Diode 1N34A	D4004 to 7,9	
18	L-423235	RF Ciol 14S048	L4001	
19	L-361888	Inductor FS0810S 180μH J	L4002,7	
20	L-423246	Inductor FS0810S 220μH J	L4003	
21	L-428703	Inductor FS0810S 1mH	L4004	
22	L-243977	Ferri-Inductor FL7H 1mH J	L4005	
23	L-357772	Inductor FS0810S 100μH J	L4006,8,10	
24	L-361890	Inductor FS0810S 39μH J	L4009	
25	L-375581	Ferri-Inductor FL4H 3.3μH K	L4011	
26	L-361822	Transformer SNY-1352	T4001	
27	L-355746	Transformer PHNP1O-32BA	T4002	
28	L-375625	Relay NR-0-6V	RL4001	
29	L-423257	Semi-variable Volume V101KR 20KB	VR4001	
30	L-399993	Semi-variable Volume V101KR 200ΩB	VR4002	
31	L-361800	Semi-variable Volume SV10KR 470ΩB	VR4003,7	
32	L-402513	Semi-variable Volume V101KR 1KB	VR4004,5	
33	L-361798	Semi-variable Volume SV10KR 100ΩB	VR4006	
34	L-423268	Trimmer Condenser CV09 D200 20PF	TC4001,2	
35	L-361844	Thermistor 22D27	TH4001	
36	L-376648	P.C Board Terminal	PX-501	
–	L-350447	Test Terminal	PX-544	
		Capacitor, Vertical Type	C	
37	L-350594	Ceramic TLD14F 0.1μZ 25WV	4003,12,14, 16,18,41,44, 45,48,50,51	
38	L-374218	Ceramic TLD07F 0.01μZ 25WV	4007,10,11, 47	
39	L-361732	Ceramic DD620BC-12 0.5μF 12WV	4015	
40	L-423797	Ceramic TLD08F. 0.02μZ 25WV	4049	
41	L-220105	Electrolytic 100μF 10WV	4002,13,17, 26,31,34,40, 46	
42	L-320040	Electrolytic 47μF 16WV	4008,24,30, 39	
43	L-220590	Electrolytic 33μF 10WV	4019,25,27, 29,43	
44	L-220465	Electrolytic 22μF 6.3WV	4028	
45	L-450055	Electrolytic 1μF 25WV	4032,33,42	
46	L-250885	Mylar 0.01μF (K) 50WV	4001,5	
47	L-250604	Mylar 0.001μF (K) 50WV	4004	
48	L-250582	Mylar 0.0033μF (K) 50WV	4006	
49	L-350616	VFM 50PF (J) 50WV	4020,23,36, 38	
50	L-350638	VFM 180PF (J) 50WV	4021	
51	L-451462	VFM 150PF (J) 50WV	4022	
52	L-310792	VFM 120PF (J) 50WV	4035	
53	L-290520	VFM 100PF (J) 50WV	4037	
		Carbon Resistor, Stopper Type	R	
54	L-212264	RD1/4 22K J	4001	
55	L-357412	RD1/4 220Ω J	5002,3,19, 30,32	
56	L-306843	RD1/4 1.2K J	4004,37	
57	L-357456	RD1/4 2.2K J	4005	
58	L-349942	RD1/4 8.2KJ	4006	
59	L-336442	RD1/4 10K J	4007,18,24, 31	
60	L-357491	RD1/4 82K J	4008	
61	L-211667	RD1/4 100Ω J	4009,12,36	
62	L-343078	RD1/4 2.7K J	4010,22,41	
63	L-211320	RD1/4 1.5K J	4011	
64	L-211858	RD1/4 12K J	4013	
65	L-419556	RD1/4 43K J	4014	
66	L-212681	RD1/4 330Ω J	4015	
67	L-213467	RD1/4 820Ω J	4016	
68	L-304402	RD1/4 470Ω J	4017,23,33	
69	L-361563	RD1/4 180Ω J	4020	
70	L-342933	RD1/4 27K J	4021	
71	L-306887	RD1/4 15K J	4025	
72	L-361642	RD1/4 47Ω J	4026,29,34, 35	
73	L-380755	RD1/4 6.2K J	4027	
74	L-211465	RD1/4 1K J	4028	
75	L-324202	RD1/4 5.1K J	4038	
76	L-304290	RD1/4 10Ω J	4039	
77	L-361686	Solid RC1/2W 68Ω K	4040	

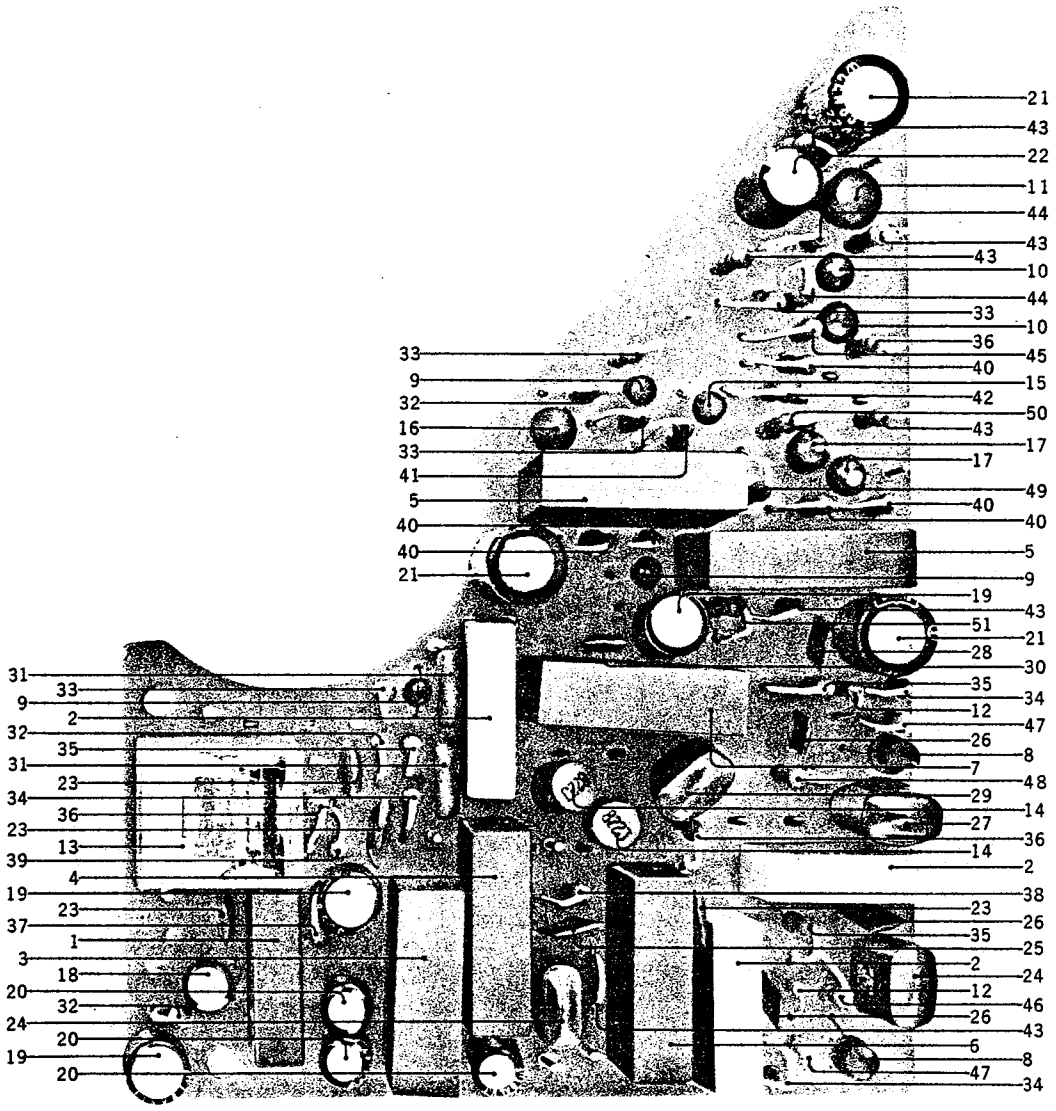
PHOTO OF AUDIO P.C. BOARD (PX-A502)



AUDIO P.C. BOARD (PX-A502) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	M-423358	Audio P.C. Board Assy. Comp.	PX-A502	
1	M-361923	Transistor 2SC536(E)	TR5001	
2	M-423180	Transistor 2SA610(4)	TR5002	
3	M-399846	Transistor 2SC945(Q)	TR5003	
4	M-329207	I.C. Line Amp. AN136B(Q)	IC5001	
5	M-361934	I.C. M5101P	IC5002	
6	M-219464	Germanium Diode 1N34A	D5001	
7	M-362114	Transformer SNY-1424	T5001	
8	M-362092	Inductor FS1012S 3.3MH (J) 332J	L5002	
9	M-243988	Ferri-Inductor FL7H 3.3MH (J)	L5001	
10	M-362103	Ferri-Inductor FL9H 3.9MH (J)	L5003	
11	M-357873	Semi-variable Volume EVL-TOA 50KB	VR5001	
12	M-362081	Semi-variable Volume EVL-TOA 100KB	VR5002	
13	M-376648	P.C. Board Terminal	PX-501	
		Capacitor, Vertical Type	C	
14	M-220432	Electrolytic 2.2μF 25WV	5001,13,15,26	
15	M-220364	Electrolytic 100μF 6.3WV	5003,4,16,28	
16	M-329782	Electrolytic 220μF 10WV	5007,9	
17	M-220590	Electrolytic 33μF 10WV	5008	
18	M-331705	Electrolytic 22μF 16WV	5010	
19	M-320051	Electrolytic 10μF 16WV	5019,21,24,3[illegible]	
20	M-343236	Electrolytic 330μF 6.3WV	5020	
21	M-220465	Electrolytic 22μF 6.3WV	5023	
22	M-220105	Electrolytic 100μF 10WV	5025	
23	M-335485	Electrolytic 47μF 16WV	5032	
24	M-250604	Mylar 0.001μF (K) 50WV	5002,22	
25	M-313323	Mylar 0.068μF (K) 50WV	5005	
26	M-362068	Mylar 0.0018μF (K) 50WV	5011,14	
27	M-250885	Mylar 0.01μF (K) 50WV	5012,29,33,34	
28	M-250661	Mylar 0.0015μF (K) 50WV	5017	
29	M-357232	Mylar 0.0039μF (K) 50WV	5018	
30	M-362125	Mylar 0.0056μF (K) 50WV	5031	
31	M-290564	VFM 220PF (K) 50WV	5006,27	
32	M-363688	FM 100P (K) 500WV	5036	
33	M-423191	Styrol 3300PF (J) 250WV	5035	
		Carbon Resistor, Stopper Type	R	
34	M-361980	RD1/4 620Ω J	5001	
35	M-357570	RD1/4 150K J	5002,9	
36	M-211465	RD1/4 1K J	5003,11,29	
37	M-352045	RD1/4 3.9K J	5004	
38	M-363644	RD1/4 560Ω J	5005	
39	M-346601	RD1/4 47K J	5006,14,28	
40	M-336442	RD1/4 10K J	5007,15,16,24, 32	
41	M-304402	RD1/4 470Ω J	5008,20,22,36	
42	M-211757	RD1/4 100K J	5010	
43	M-212681	RD1/4 330Ω J	5012	
44	M-357535	RD1/4 39K J	5013	
45	M-450865	RD1/4 12K J	5017,21	
46	M-361528	RD1/4 56K J	5018,26	
47	M-361642	RD1/4 47Ω J	5019	
48	M-211667	RD1/4 100Ω J	5023	
49	M-362024	RD1/4 820K J	5025	
50	M-346994	RD1/4 18K J	5027	
51	M-357456	RD1/4 2.2K J	5030,37	
52	M-357412	RD1/4 220Ω J	5031	
53	M-212016	RD1/4 150Ω J	5033	
54	M-450011	RD1/4 120K J	5034	
55	M-213030	RD1/4 5.6K J	5035	

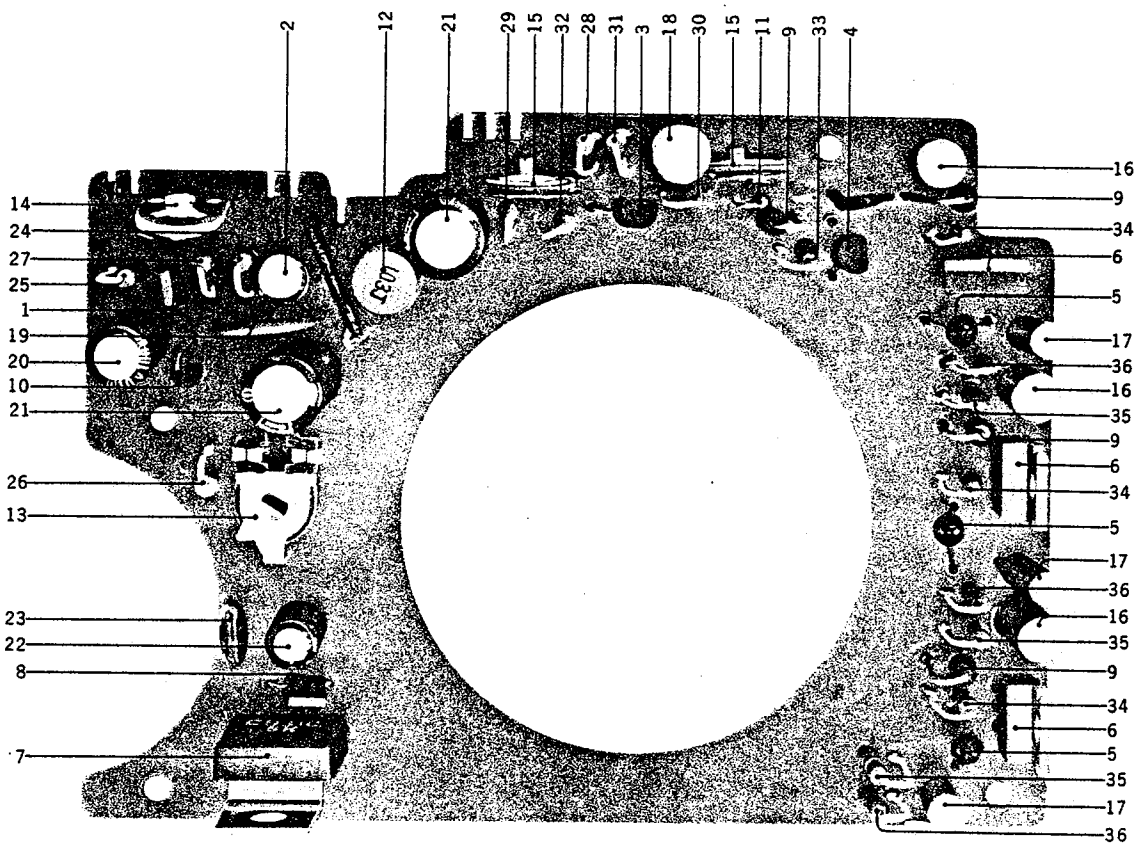
PHOTO OF SERVO P.C. BOARD (PX-A505)



SERVO P.C. BOARD (PX-A505) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	N-423336	Servo P.C. Board (US) Assy. Comp.	PX-A505	
–	N-430683	Servo P.C. Board (CCIR) Assy. Comp.	PX-A505	
1	N-362351	I.C. HA-113	IC6001	
2	N-362362	I.C. FF-10	IC6002,7,8	
3	N-362373	I.C. D-2114	IC6003	
4	N-362193	I.C. D-3263	IC6004	
5	N-362384	I.C. D-3272	IC6005,9	
6	N-362395	I.C. D-2116	IC6006	
7	N-362406	I.C. D-3271	IC6010	
8	N-362136	Uni-junktion Transistor 2N6027	UjT6001,2	
9	N-370607	Transistor 2SC536 (F)	TR6001,2,6	
10	N-421154	Transistor CS1303 (Green)	TR6003,4	
11	N-423022	Transistor CS9012HH	TR6005	
12	N-373432	Silicon Diode 1S2144 (A)	D6001,2	
13	N-423077	Relay TECK-TT9-OH 9V 250Ω	RL6001	
14	N-379923	Ferri-Inductor FL7H 8.2MH (J)	L6001,2	
–	N-423055	Semi-variable Volume V10K4H3-1 50KB	VR6001	
–	N-423066	Semi-variable Volume V10K4H3-1 100KB	VR6002	
–	N-399971	Semi-variable Volume V101KR-1 1KB	VR6003	
–	N-423044	Semi-variable Volume V10K4H3-1 30KB	VR6004,5	
–	N-363126	P.C. Board Terminal	PX-501	
–	N-363150	Test Terminal	PX-502	
		Capacitor, Vertical Type	C	
15	N-362417	Tantalum 0.33μF(M) 35WV	6016,27	
16	N-251785	Tantalum 33μF (K) 10WV	6017	
17	N-251640	Tantalum 10μF (J) 10WV	6028,29	
18	N-220590	Electrolytic 33μF 10WV	6002	
19	N-320040	Electrolytic 47μF 16WV	6004,12,31	
20	N-329771	Electrolytic 47μF 6.3WV	6005,6,14	
21	N-329782	Electrolytic 220μF 10WV	6010,25,33	
22	N-220105	Electrolytic 100μF 10WV	6034	
23	N-251087	Mylar 0.022μF (K) 50WV	6003,7,11,19	
24	N-334620	Mylar 0.22μF (K) 50WV	6013,21	
25	N-250997	Mylar 0.015μF (K) 50WV	6015	
26	N-362158	Mylar 0.0047μF (K) 50WV	6020,22,23	
27	N-334631	Mylar 0.22μF (K) 50WV	6024,30	
28	N-250964	Mylar 0.012μF (K) 50WV	6026	
29	N-334631	Mylar 0.22μF (K) 50WV (US)	6030	
–	N-395504	Mylar 0.33μF (K) 50WV (CCIR)	6030	
30	N-250885	Mylar 0.01μF (K) 50WV	6001,18,32	
31	N-423033	VFM 680PF (K) 50WV	6008,9	
		Carbon Resistor, Stopper Type	R	
32	N-357456	RD1/4 2.2K J	6001,13	
33	N-336442	RD1/4 10K J	6002,12,14,18	
34	N-343078	RD1/4 2.7K J	6003,39,34	
35	N-362441	RD1/4 1.8K J	6004,29,33	
36	N-212883	RD1/4 4.7K J	6005,24,39	
37	N-212264	RD1/4 22K J	6006	
38	N-350100	RD1/4 68K J	6007	
39	N-357535	RD1/4 39K J	6008	
40	N-211757	RD1/4 100K J	6009,10,17, 35,36	
41	N-361528	RD1/4 56K J	6011	
42	N-304402	RD1/4 470Ω J	6015	
43	N-211465	RD1/4 1K J	6016,19,21,25,26,40	
44	N-211667	RD1/4 100Ω J	6020,22	
45	N-213030	RD1/4 5.6K J	6023	
46	N-211757	RD1/4 100K J (US)	6027	
–	N-379552	RD1/4 110K J (CCIR)	6027	
47	N-362485	RD1/4 330K J	6028,32	
48	N-362520	RD1/4 75K J (US)	6031	
–	N-391961	RD1/4 91K J (CCIR)	6031	
49	N-350100	RD1/4 68K J (US)	6037	
–	N-391961	RD1/4 91K J (CCIR)	6037	
50	N-306360	RD1/4 6.8K J	6038	
51	N-407417	RD1/4 1M J	6043	

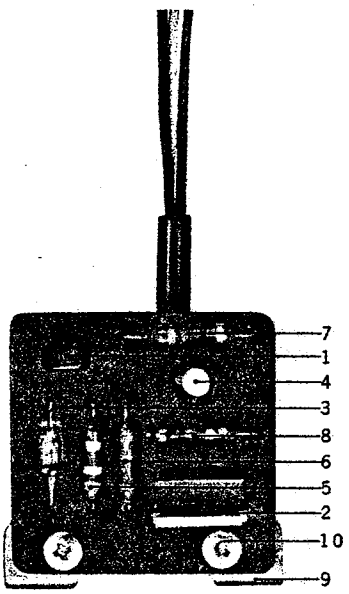
PHOTO OF MOTOR DRIVE P.C. BOARD (PX-513)



MOTOR DRIVE P.C. BOARD (PX-513) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	O-358806	Motor Drive P.C. Board Assy. Comp.	PX-513	
1	O-345802	Transistor 2SC454 (B)	TR8001	
2	O-338894	Transistor 2SC968 (3)	TR8002	
3	O-394413	Transistor 2SA564 (S)	TR8003	
4	O-350335	Transistor 2SA564 (Q)	TR8004	
5	O-370607	Transistor 2SC536 (F)	TR8005,7,9	
6	O-362261	Transistor 2SC1061 (B)	TR8006,8,10	
7	O-362586	Transistor 2SC931 (C)	TR8011	
8	O-234753	Transistor 2SC458 (B)	TR8012	
9	O-224526	Silicon Diode 10D1	D8003 to 6	
10	O-350471	Zener Diode RD7A N	ZD8001	
11	O-362597	Zener Diode RD7A (Special)	ZD8002	
12	O-244001	Ferri-Inductor FL9H 10mH (J)	L8001	
13	O-362338	Semi-variable Volume EVL-S3A 10KB	VR8001	
14	O-402513	Semi-variable Volume V101KR 1KB	VR8002	
15	O-384974	Semi-variable Volume V10K4A-5-2 500ΩB	VR8003,4	
		Capacitor, Vertical Type	C	
16	O-362327	Tantalum 10μF (K) 25WV	8006,8,10	
17	O-251640	Tantalum 10μF (J) 10WV	8007,9,12	
18	O-394514	Tantalum 22μF (K) 35WV	8015	
19	O-350594	Ceramic TLD14F 0.1μZ 25WV	8002	
20	O-220105	Electrolytic 100μF 10WV	8003	
21	O-321208	Electrolytic 220μF 16WV	8004,5	
22	O-331705	Electrolytic 22μF 16WV	8013	
23	O-308711	Mylar 0.047μF (K) 50WV	8014	
		Carbon Resistor, Stopper Type	R	
24	O-357456	RD1/4 2.2K J	8001	
25	O-357412	RD1/4 220Ω J	8002	
26	O-352045	RD1/4 3.9K J	8003	
27	O-212477	RD1/4 3.3K J	8004	
28	O-212264	RD1/4 22K J	8005	
29	O-343078	RD1/4 2.7K J	8006	
30	O-343135	RD1/4 1.6K J	8007	
31	O-212872	RD1/4 4.3K J	8008	
32	O-304402	RD1/4 470Ω J	8010	
33	O-304290	RD1/4 10Ω J	8011	
34	O-211320	RD1/4 1.5K J	8012,15,18	
35	O-362272	RD1/4 200K J	8013,16,19	
36	O-213030	RD1/4 5.6K J	8014,17,20	

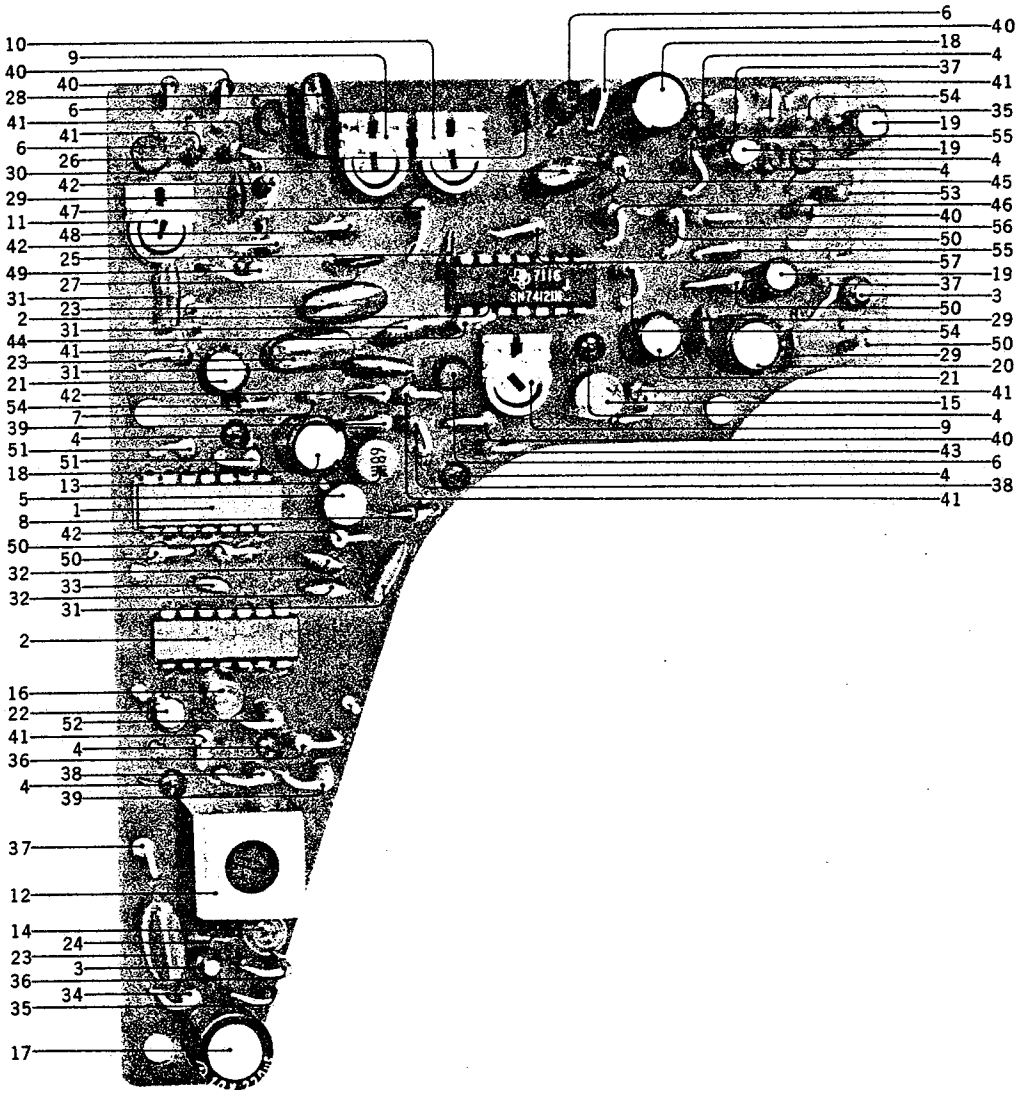
PHOTO OF PLG. CURRENT LIMITATION P.C. BOARD (PX-508)



PLG. CURRENT LIMITATION P.C. BOARD (PX-508) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	P-358773	PLG. Current Limitation P.C. Board Comp.	PX-508	
1	P-362250	Transistor 2SA564 (O)	TR9001	
2	P-362261	Transistor 2SC1061 (B)	TR9002	
3	P-219464	Germanium Diode 1N34A	D9001	
4	P-220465	Electrolytic Capacitor 22μF 6.3WV	C9001	
5	P-430211	Carbon Resistor RD1/4 3.9K J	R9001	
6	P-364948	Carbon Resistor RD1/4 3.3K J	R9002	
7	P-214402	Carbon Resistor RD1/4 470Ω J	R9003	
8	P-324641	Carbon Resistor RD1/4 1K J	R9004	
9	P-363104	PLG. P.C. Board Holder	PX-503	
10	P-201925	Screw, binding head 2.3 x 5		

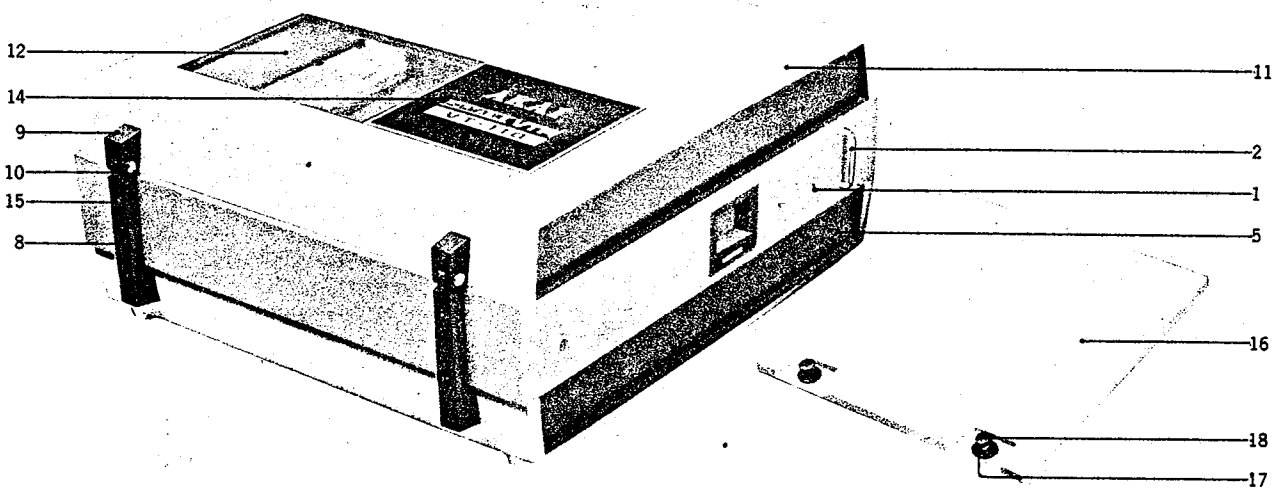
PHOTO OF SSG. P.C. BOARD (PX-A504)

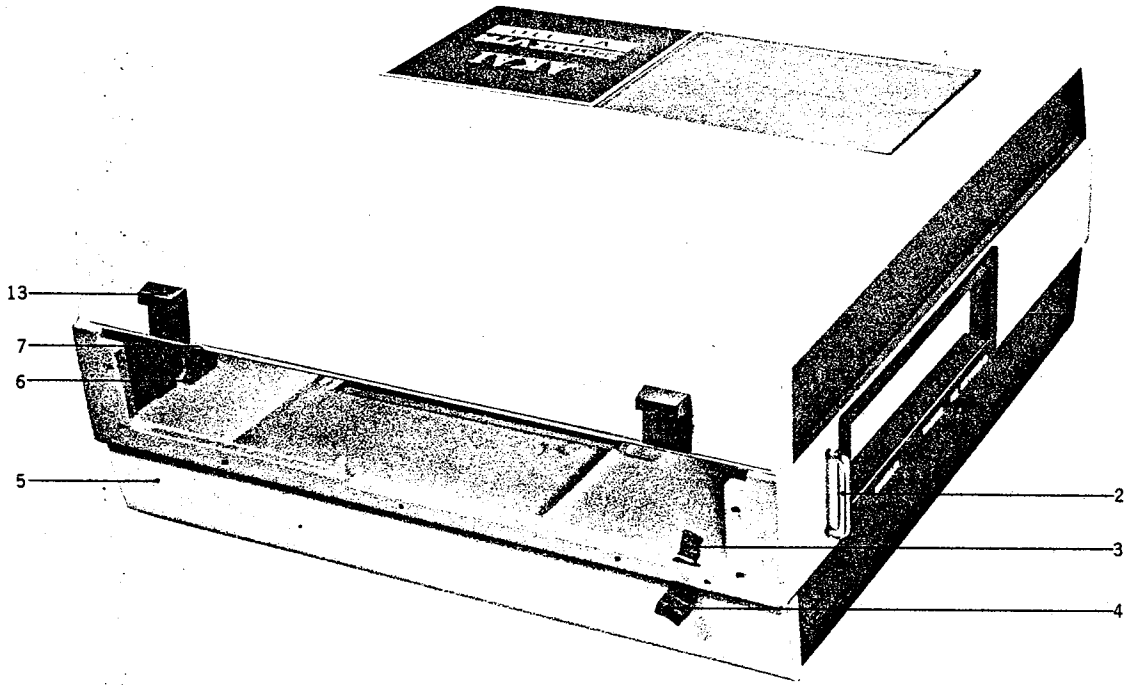


SSG. P.C. BOARD (PX-A504) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	Q-423347	SSG. P.C. Board (VTS-110 US) Assy. Comp.	PX-A504	
–	Q-430874	SSG. P.C. Board (VTS-110 CCIR) Assy. Comp.	PX-A504	
–	Q-438456	SSG. P.C. Board (VTS-100S US) Assy. Comp.	PX-A504	
–	Q-438467	SSG. P.C. Board (VTS-100S CCIR) Assy. Comp.	PX-A504	
1	Q-423101	I.C. MB400M	IC7001	
2	Q-423090	I.C. SN74121N	IC7002,3	
3	Q-350335	Transistor 2SA564 (Q)	TR7001,7	
4	Q-370607	Transistor 2SC536 (F)	TR7002 to 6,9,10,11	
5	Q-338894	Transistor 2SC968 (3)	TR7008	
6	Q-362136	Uni-Junktion Transistor 2N6027	UJT7001 to 4	
7	Q-373432	Silicon Diode 1S2144 (A)	D7001	
8	Q-392128	Zener Diode 1S330A2	D7002	
9	Q-403165	Semi-variable Volume RVLC1-0301 50KB	VR7001,3	
10	Q-428332	Semi-variable Volume RVLC1-0301 30KB	VR7002	
11	Q-403176	Semi-variable Volume RVLC1-0301 100KB	VR7004	
12	Q-362147	Transformer SNY-033 1357	T7001	
13	Q-423156	Ferri-Inductor FL7H 680μH (K)	L7001	
–	Q-363126	P.C. Board Terminal	PX-501	
		Capacitor, Vertical Type	C	
14	Q-412604	Styrol 1800P (J) 50WV	7003	
15	Q-423808	Styrol 3300P (J) 50WV (US)	7006	
–	Q-423810	Styrol 2200P (J) 50WV (CCIR)	7006	
16	Q-353643	Styrol 470PF (J) 50WV	7020	
17	Q-329782	Electrolytic 220μF 10WV	7004	
18	Q-220105	Electrolytic 100μF 10WV	7014,29	
19	Q-450055	Electrolytic 1μF 25WV	7021,22,25	
20	Q-320040	Electrolytic 47μF 16WV	7026	
21	Q-331705	Electrolytic 22μF 16WV	7030,31	
22	Q-350706	Electrolytic 4.7μF 16WV	7032	
23	Q-251291	Mylar 0.1μF (K) 50WV	7001,12,13	
24	Q-250997	Mylar 0.015μF (K) 50WV	7002	
25	Q-250604	Mylar 0.001μF (K) 50WV	7007	
26	Q-250997	Mylar 0.015μF (K) 50WV (US)	7008	
–	Q-250885	Mylar 0.01μF (K) 50WV (CCIR)	7008	
27	Q-362158	Mylar 0.0047μF (K) 50WV	7009	
28	Q-335340	Mylar 0.1μF (K) 50WV (US)	7010	
–	Q-379214	Mylar 0.047μF (J) 50WV (CCIR)	7010	
29	Q-250885	Mylar 0.01μF (K) 50WV	7011,23,24	
30	Q-251190	Mylar 0.056μF (K) 50WV	7027	
31	Q-290564	VFM 220PF (K) 50WV	7005,17,18, 28	
32	Q-423145	VFM 75PF (K) 50WV	7015,16	
33	Q-357827	VFM 50PF (K) 50WV	7019	
		Carbon Resistor, Stopper Type	R	
34	Q-211757	RD1/4 100K J	7001	
35	Q-212264	RD1/4 22K J	7002,31	
36	Q-380913	RD1/4 33Ω J	7003,51	
37	Q-336442	RD1/4 10K J	7004,37,41	
38	Q-362441	RD1/4 1.8K J	7005,12	
39	Q-343078	RD1/4 2.7K J	7006,13	
40	Q-306843	RD1/4 1.2K J	7007,14,18,22,34	
41	Q-211465	RD1/4 1K J	7008,19,23,35,46, 48,50	
42	Q-212681	RD1/4 330Ω J	7009,20,24,45	
43	Q-407463	RD1/4 22Ω J	7010	
44	Q-211757	RD1/4 100K J (US)	7011	
–	Q-379552	RD1/4 110K J (CCIR)	7011	
45	Q-213300	RD1/4 680Ω J	7015	
46	Q-361980	RD1/4 620Ω J	7016	
47	Q-357491	RD1/4 82K J (US)	7017	
–	Q-350100	RD1/4 68K J (CCIR)	7017	
48	Q-357491	RD1/4 82K J (US)	7021	
–	Q-211950	RD1/4 130K J (CCIR)	7021	
49	Q-379552	RD1/4 110K J (US)	7025	
–	Q-357570	RD1/4 150K J (CCIR)	7025	
50	Q-213030	RD1/4 5.6K J	7026,39,40,42	
51	Q-342933	RD1/4 27K J	7028,29	
52	Q-420322	RD1/4 36K J	7030	
53	Q-357491	RD1/4 82K J	7023	
54	Q-357412	RD1/4 220Ω J	7033,47,49	
55	Q-211667	RD1/4 100Ω J	7036,43	
56	Q-212883	RD1/4 4.7K J	7038	
57	Q-349907	RD1/4 33K J	7044	

PHOTO OF CASE BLOCK

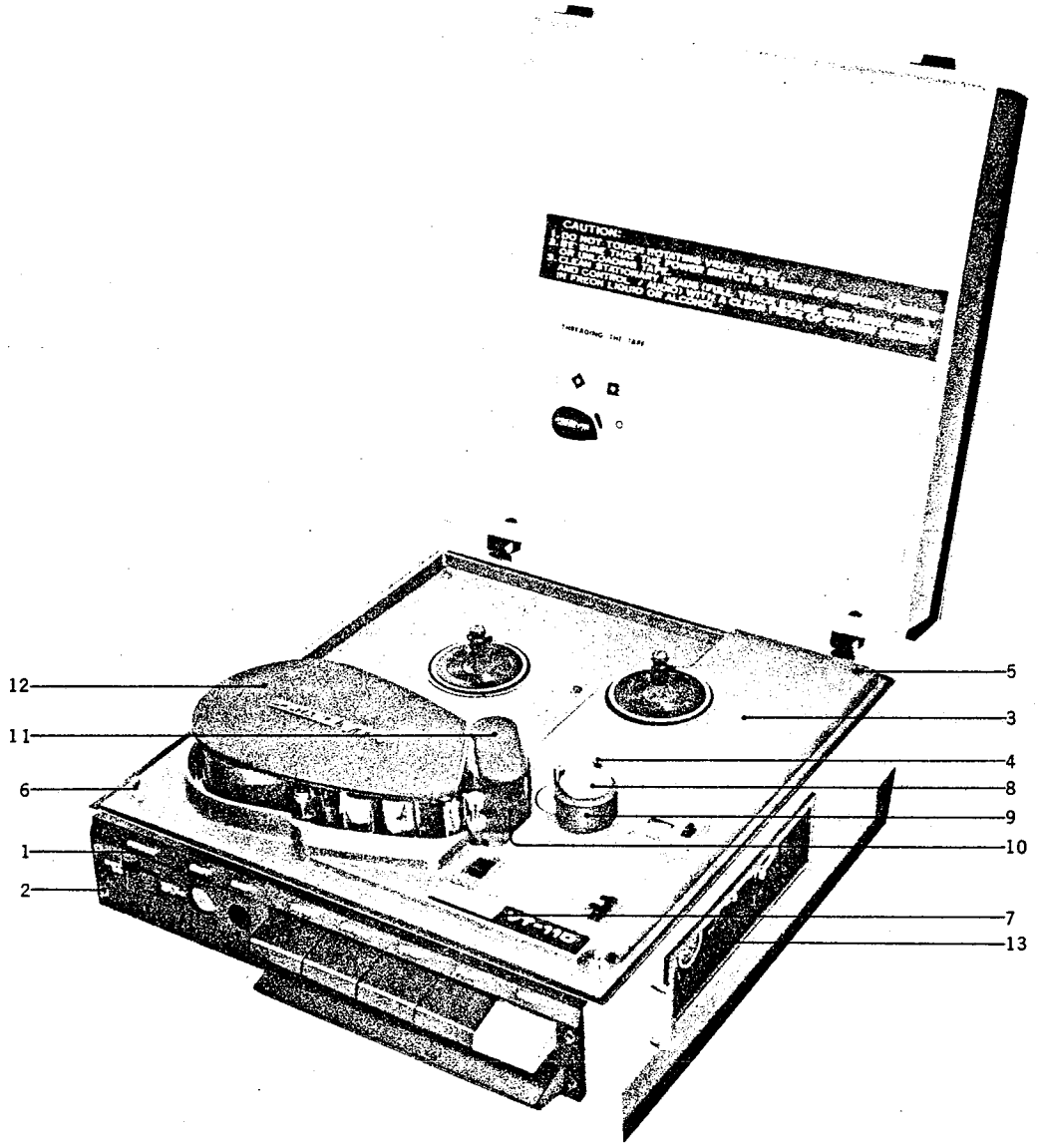




CASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	R-430582	VT-110 US Case Block Assy. Comp.	PXV-US	
–	R-430650	VT-110 CCIR Case Block Assy. Comp.	PXV-CCIR	
–	Q-438401	VT-100S US Case Block Assy. Comp.	PXV-US	
–	R-438412	VT-100S CCIR Case Block Assy. Comp.	PXV-CCIR	
1	R-421920	Case Frame B	PX-A401	
2	R-360988	Band Hang	PX-402	
–	R-273756	M3 Nut		
3	R-360990	Safety Lock Plate	PX-403	
4	R-361001	Safety Button	PX-404	
–	R-361012	Safety Spring	PX-405	
–	R-361023	Lock Shaft	PX-406	
5	R-421931	Lower Case	PX-A402	
6	R-361067	Case Retainer	PX-410	
7	R-417137	Screw, binding head 3 x 4		
–	R-413155	Screw, binding head 3 x 6		
–	R-200384	Screw, countersunk head 3 x 6		
–	R-434474	Hinge Comp.	PX-A408	
8	R-361078	Hinge A	PX-411	
9	R-361080	Hinge B	PX-412	
–	R361091	Hinge Shaft	PX-413	
10	R-430380	Screw, binding head 2.6 x 4		
11	R-361102	Case Cover	PX-414	
12	R-403964	Reel Cover	PX-415	
13	R-361168	Case Knob	PX-420	
–	R-361170	Case Fastener	PX-421	
–	R-361181	Fastener Retaining	PX-422	
–	R-200711	Set Screw 3 x 3		
14	R-421918	Name Plate (VT-110)	PX-A404	
–	R-438074	Name Plate (VT-100S)	PX-B401	
15	R-421806	Screw, pan head 3 x 8		
–	R-355487	Screw, binding head 3 x 10		
–	R-421953	Rear Name Plate (NT-110)	PX-A602	
–	R-421964	Rear Name Plate (VT-110 CCIR)	PX-A602	
–	R-438085	Rear Name Plate (VT-100S)	PX-B601	
–	R-438096	Rear Name Plate (VT-100S CCIR)	PX-B601	
16	R-421942	Battery Case Cover	PX-A403	
17	R-356580	Nylach Grommet H322-2-1		
18	R-356591	Nylach Plunger H323-2-3-1		

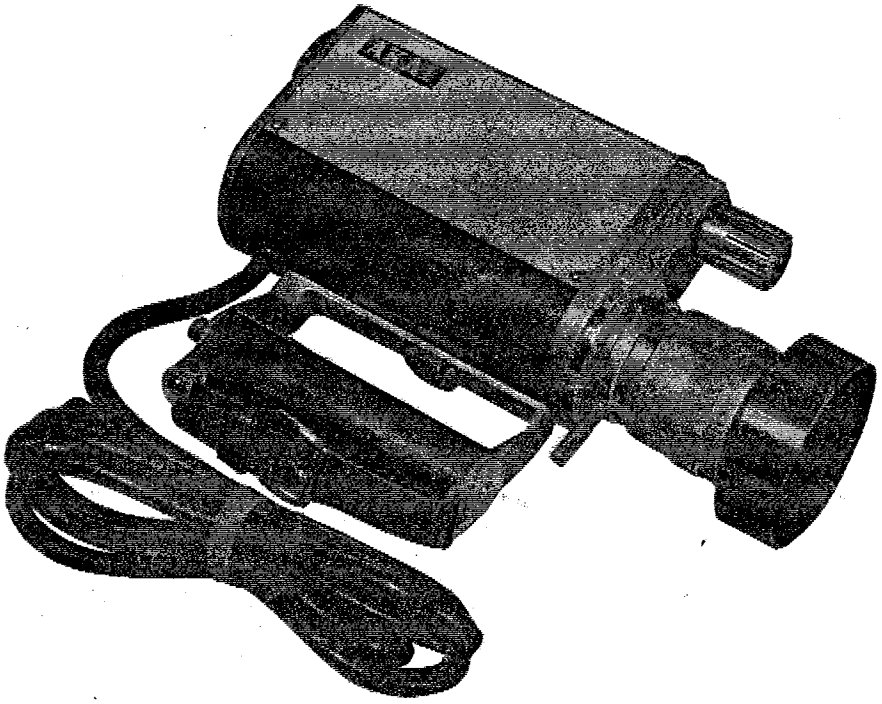
PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	S-430637	Battery Case Comp.	PXA	
1	S-355667	Button Escutcheon	PX-609	
2	S-433934	Screw, countersunk head 3 x 6 D = 5		
3	S-421828	Mechanism Panel (VT-110)	PX-A601	
–	S-438028	Mechanism Panel (VT-100S)	PX-A601	
4	S-355680	Panel Post	PX-604	
–	S-273688	M2.3 Nut		
5	S-317327	Screw, binding head 2.3 x 6		
–	S-259367	Washer (BSP) 2.4x4.2x0.3t		
6	S-355702	Fastener Holder	PX-606	
–	S-355454	Washer (BSP) 2.9x7.4x0.5t		
7	S-421852	Mech. Panel Name Plate (VT-110)	PX-A606	
–	S-438030	Mech. Panel Name Plate (VT-100S)	PX-B602	
8	S-355691	Pinch Wheel Cap	PX-605	
9	S-360180	Pinch Wheel PX	PX-226	
10	S-360347	Sub Pinch Wheel	PX-239	
–	S-422087	Guide Roller B	PX-A137	
11	S-421863	Guide Roller Cover	PX-A605	
–	S-421817	Set Screw 3 x 8		
12	S-355724	Head Cover	PX-608	
13	S-421830	Escutcheon R	PX-A604	
–	S-421841	Escutcheon L	PX-A607	
–	S-356736	Tapping Screw #2 2 x 5		
–	S-356286	Carrying Belt	VSB-1	
–	S-421874	Battery LC-303	56-1-2	

When you order these parts, Please describe their Parts No. and Serial No. in detail.



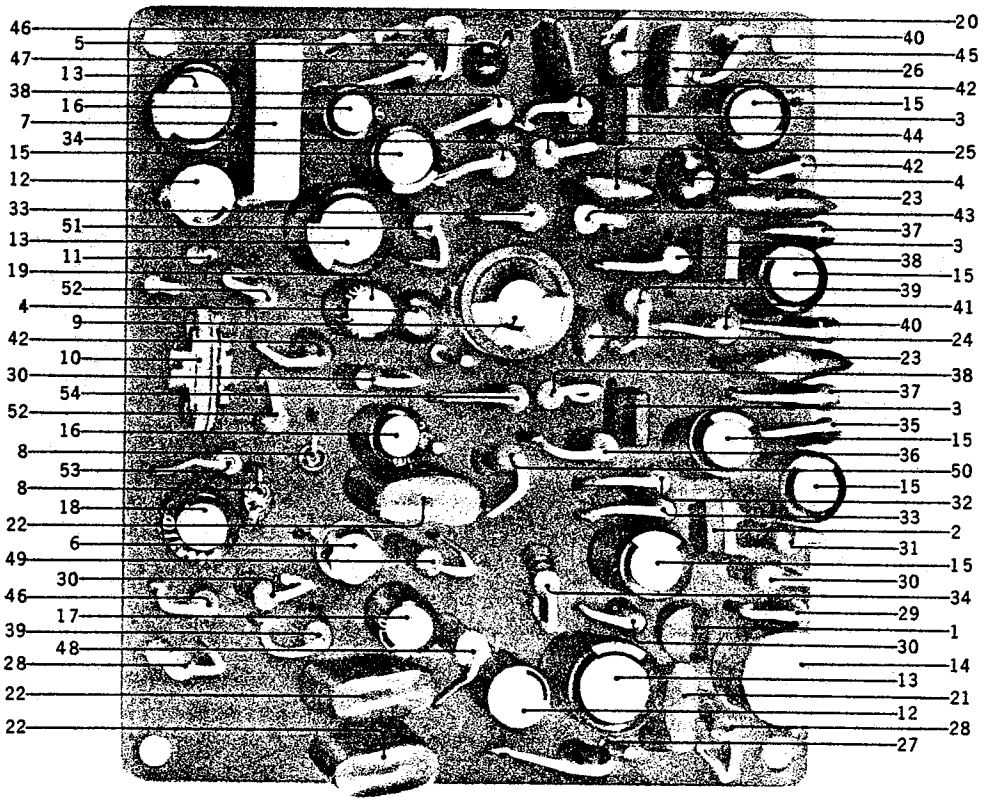
SECTION 2

CAMERA COMPONENT PARTS

**WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL**

PRE-AMP. P.C. BOARD (PX-A2007) BLOCK 27
DEFLEXION P.C. BOARD (PX-2048) BLOCK 28
H.V. GENERATOR P.C. BOARD (PX-2049) BLOCK 29
ASSEMBLY BLOCK 32

PHOTO OF PRE-AMP. P.C. BOARD (PX-A2007)

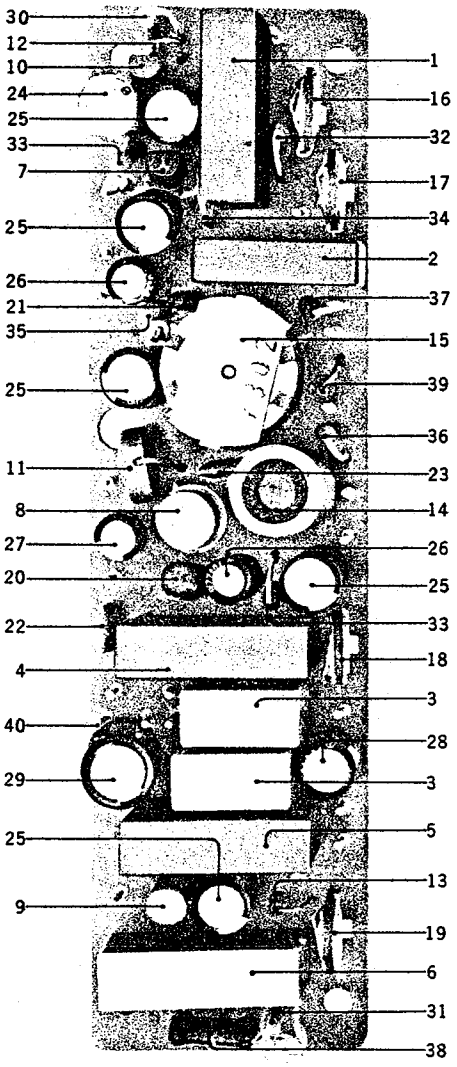


PRE-AMP. P.C. BOARD (PX-A2007) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	T-423303	Pre-Amp. P.C. Board Assy. Comp.	PX-A2007	
1	T-423426	Transistor 3C18P	FET2101	
2	T-234854	Transistor 2SC458LG (C)	TR2101	
3	T-329218	Transistor 2SC458 (C)	TR2102.3.5	
4	T-421154	Transistor CS1303 (Green)	TR2104.8	
5	T-361923	Transistor 2SC536 (E)	TR2106	
6	T-356973	Transistor 2SC727 (C)	TR2107	
7	T-357917	I.C. P-5 (AE-163)	IC2101	
8	T-402502	Germanium Diode 20A90M	D2101.2	
9	T-357750	Trimmer Condenser CVO3D 30P	TC2101	
10	T-403143	Semi-variable Volume V101KR 2KB	VR2101	
11	T-363126	P.C. Board Terminal	PX-501	
–	T-363363	Pre-Amp. Shield Case	PX-2024	
–	T-400408	Pre-Amp. Insulation Plate	PX-2059	
–	T-356736	Tapping Screw #2 2 x 5		
		Capacitor, Vertical Type	C	
12	T-421165	Aluminum Solid 1μF (X) 25WV	2103.19	
13	T-220105	Electrolytic 100μF 10WV	2102.18.20	
14	T-220364	Electrolytic 100μF 6.3WV	2104	
15	T-220590	Electrolytic 33μF 10WV	2105.6.7.10. 12.16	
16	T-450055	Electrolytic 1μF 25WV	2117.26	
17	T-354947	Electrolytic 2.2μF 50WV	2123	
18	T-331705	Electrolytic 22μF 16WV	2125	
19	T-320051	Electrolytic 10μF 16WV	2127	
20	T-357704	Ceramic CFD08JYP 470PK 500WV	2115	
21	T-357737	Mylar 0.022μF (K) 100WV	2101	
22	T-357715	Mylar 0.047μF (K) 100WV	2121.22.24	
23	T-336194	VFM 270PF (J) 50WV	2108.11	
24	T-399690	VFM 33PF (J) 50WV	2109	
25	T-310792	VFM 120PF (J) 50WV	2113	
26	T-451462	VFM 150PF (J) 50WV	2114	

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
		Carbon Resistor, Stopper Type	R	
27	T-419040	RD1/4 1M J	2101	
28	T-380711	RD1/4 220K J	2102.35	
29	T-212016	RD1/4 150Ω J	2103.	
30	T-211465	RD1/4 1K J	2104.7.32.37	
31	T-349942	RD1/4 8.2K J	2105	
32	T-346601	RD1/4 47K J	2106	
33	T-362441	RD1/4 1.8K J	2108.20	
34	T-211667	RD1/4 100Ω J	2109.26	
35	T-211858	RD1/4 12K J	2110	
36	T-362520	RD1/4 75K J	2111	
37	T-347038	RD1/4 270Ω J	2112.17	
38	T-211320	RD1/4 1.5K J	2113.18.27	
39	T-361528	RD1/4 56K J	2114.31	
40	T-306887	RD1/4 15K J	2115.22	
41	T-352045	RD1/4 3.9K J	2116	
42	T-306843	RD1/4 1.2K J	2119.25.41	
43	T-304402	RD1/4 470Ω J	2121	
44	T-350100	RD1/4 68K J	2123	
45	T-212681	RD1/4 330Ω J	2124	
46	T-336442	RD1/4 10K J	2128.34	
47	T-357535	RD1/4 39K J	2129	
48	T-405551	RD1/4 10M K	2130	
49	T-357570	RD1/4 150K J	2133	
50	T-211757	RD1/4 100K J	2136	
51	T-357412	RD1/4 220Ω J	2138	
52	T-212883	RD1/4 4.7K J	2139.42	
53	R-213030	RD1/4 5.6K J	2140	
54	R-407103	RD1/4 12Ω J	2143	

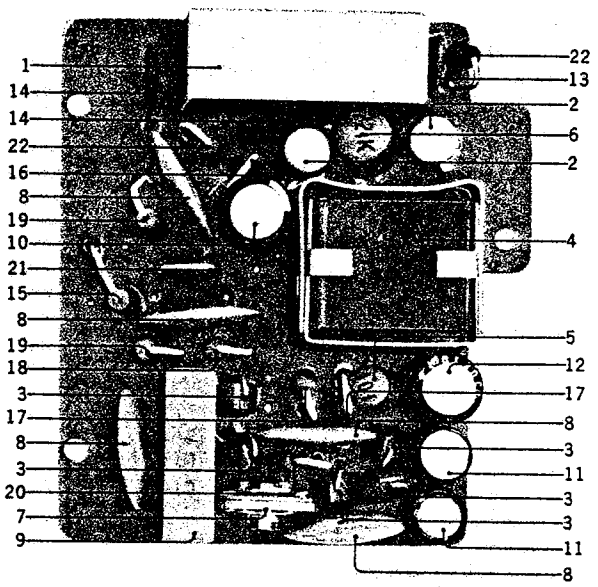
PHOTO OF DEFLEXION P.C. BOARD (PX-2048)



DEFLEXION P.C. BOARD (PX-2048) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	U-373544	Deflexion P.C. Board Assy. Comp.	PX-2048	
1	U-357928	I.C. GA-116	IC2201	
2	U-357930	I.C. DP-115	IC2202	
3	U-357963	I.C. PA-5 (AP-174)	IC2203.5	
4	U-357952	I.C. D-3264	IC2204	
5	U-357941	I.C. D-3262	IC2206	
6	U-357974	I.C. AC-170	IC2207	
7	U-357017	Transistor 2SA562 (Y)	TR2201	
8	U-357006	Transistor 2SC497 (Y)	TR2202	
9	U-338894	Transistor 2SC968 (3)	TR2203	
10	U-362136	Uni-junktion Transistor 2N6027	UJT2201	
11	U-357783	Silicon Diode HF-SD-1Z	D2201	
12	U-373432	Silicon Diode 1S2144 (A)	D2202	
13	U-392128	Zener Diode 1S330A2	ZD2201	
–	U-392130	Zener Diode 1S331A2	ZD2202	
14	U-357805	Transformer 06Y 033-286	T2201	
15	U-357816	Inductor 3mH V-302	L2201	
16	U-362081	Semi-variable Volume EVL-TOA 100KB	VR2201	
17	U-357895	Semi-variable Volume EVL-T7A 100ΩB	VR2202	
18	U-357862	Semi-variable Volume EVL-TOA 20KB	VR2203	
19	U-357884	Semi-variable Volume EVL-TOA 5KB	VR2204	
		Capacitor, Vertical Type	C	
20	U-353643	Styrol 470PF (J) 50WV	2208	
21	U-357827	VFM 50PF (K) 50WV	2206	
22	U-290531	VFM 100PF (K) 50WV	2207	
23	U-357838	Mylar 0.0039μF (K) 100WV	2211	
24	U-220364	Electrolytic 100μF 6.3WV	2201	
25	U-220105	Electrolytic 100μF 10WV	2202,3,4,12, 15	
26	U-338512	Electrolytic 22μF 16WV	2205,9	
27	U-220590	Electrolytic 33μF 10WV	2210	
28	U-450213	Electrolytic 10μF 50WV	2213	
29	U-357840	Electrolytic 22μF 50WV	2214	
		Carbon Resistor, Stopper Type	R	
30	U-362485	RD1/4 330K J	2210	
31	U-324808	RD1/4 100Ω J (Insulation)	2211	
32	U-357491	RD1/4 82K J	2201	
33	U-211465	RD1/4 1K J	2202.5	
34	U-429974	RD1/4 120Ω K	2203	
35	U-361528	RD1/4 56K J	2204	
36	U-357412	RD1/4 220Ω J	2206	
37	U-357456	RD1/4 2.2K J	2209	
38	U-357906	Wire-Wound Resistor 1/2WL 10Ω J	2207	
39	U-357030	Solid Resistor RC1/2W 27Ω K	2208	
40	U-363126	P.C. Board Terminal	PX-501	

PHOTO OF H.V. GENERATOR P.C. BOARD (PX-2049)

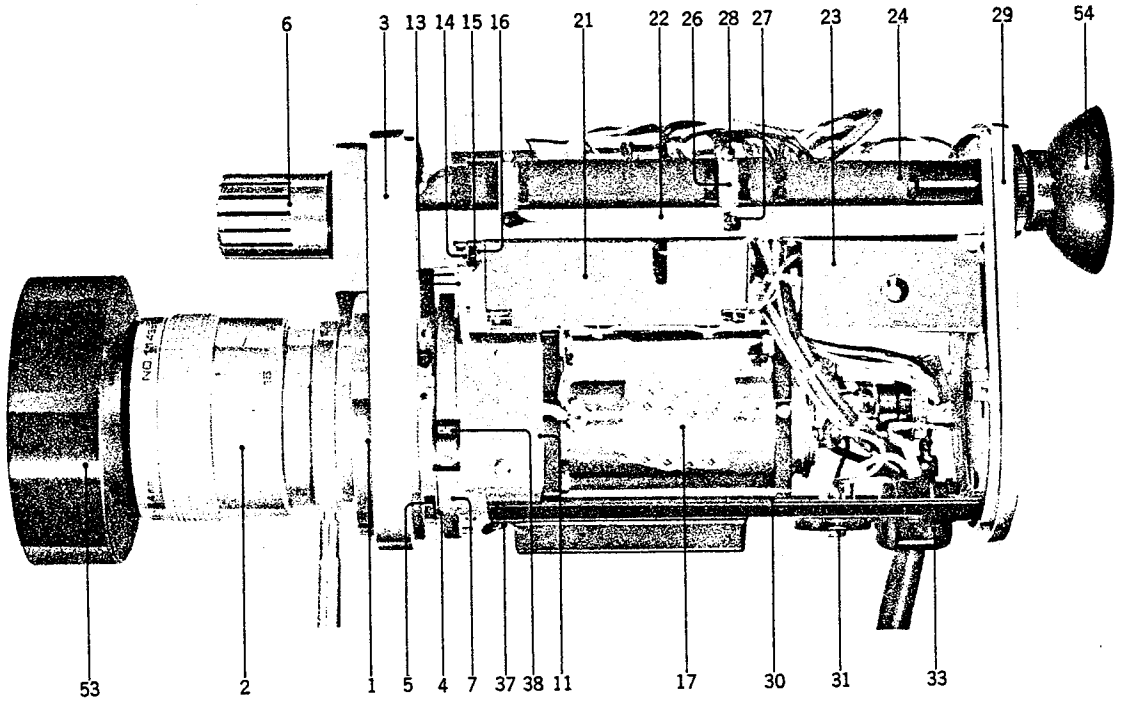


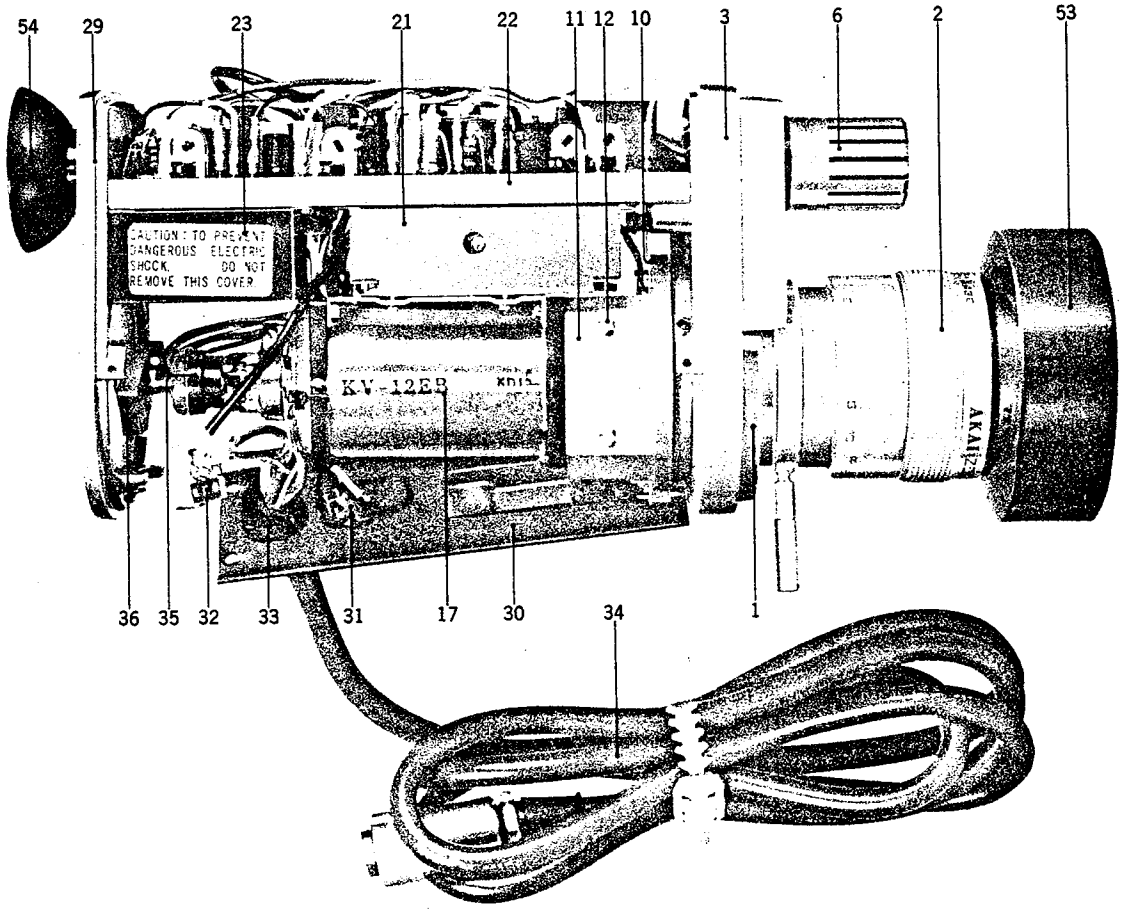
H.V. GENERATOR P.C. BOARD (PX-2049) BLOCK

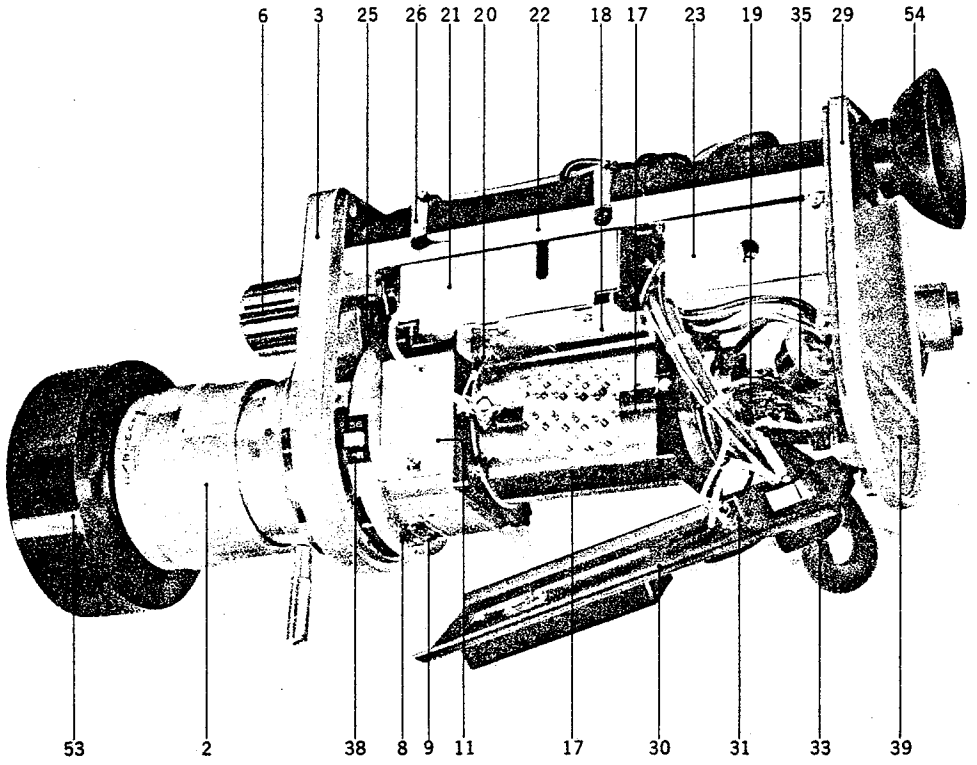
Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	V-373555	H.V. Generator P.C. Board Assy. Comp.	PX-2049	
1	V-357985	I.C. AA-176	IC2301	
2	V-338894	Transistor 2SC968(3)	TR2301.2	
3	V-357210	Silicon Diode SF-1	D2301 to 6	
4	V-357221	Transformer HVT (EP-17)	T2301	
5	V-357287	Ferri-Inductor FL5H 100μH (K)	L2301	
6	V-374681	Ferri-Inductor FL7H 220μH (K)	L2302	
7	V-357276	Semi-variable Volume V10K-5 1MB	VR2301	
–	V-363418	H.V. Shield Case	PX-2029	
–	V-392321	Tapping Screw #2 2 x 5		
		Capacitor, Vertical Type	C	
8	V-357254	Ceramic Z5U 0.01μP 500WV	2305.11 to 14	
9	V-357298	Metalized Paper 0.047μF (M) 500WV	2306	
10	V-220105	Electrolytic 100μF 10WV	2304	
11	V-357265	Electrolytic 1μF 100WV	2308.9	
12	V-450213	Electrolytic 10μF 50WV	2310	
13	V-290531	VFM 100PF (K) 50WV	2301	
14	V-357232	Mylar 0.0039μF (K) 50WV	2302.3	

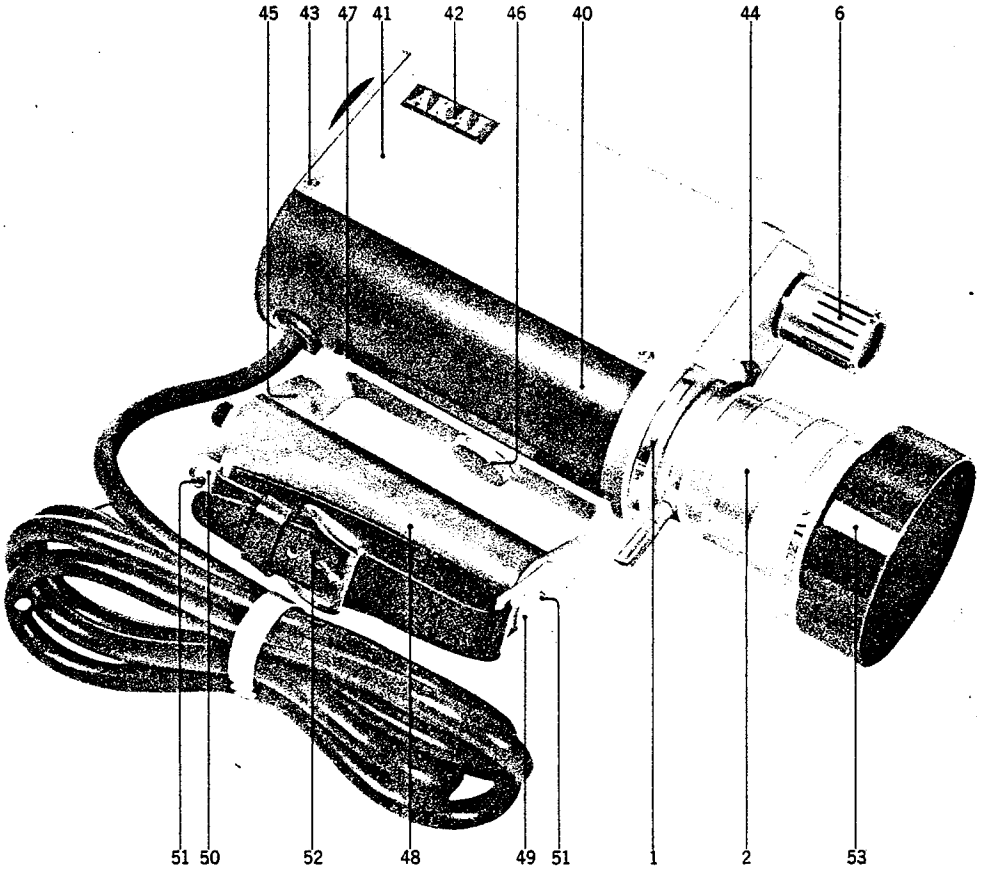
Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
		Carbon Resistor, Stopper Type	R	
15	V-423753	RD1/4 1.2M J	2312	
16	V-212477	RD1/4 3.3K J	2301	
17	V-211465	RD1/4 1K J	2302.3	
18	V-429996	RD1/4 470K J	2304	
19	V-380711	RD1/4 220K J	2306.9	
20	V-211757	RD1/4 100K J	2308	
21	V-362024	RD1/4 820K J	2305	
22	V-304402	RD1/4 470Ω J	2310.11	

PHOTO OF ASSEMBLY BLOCK



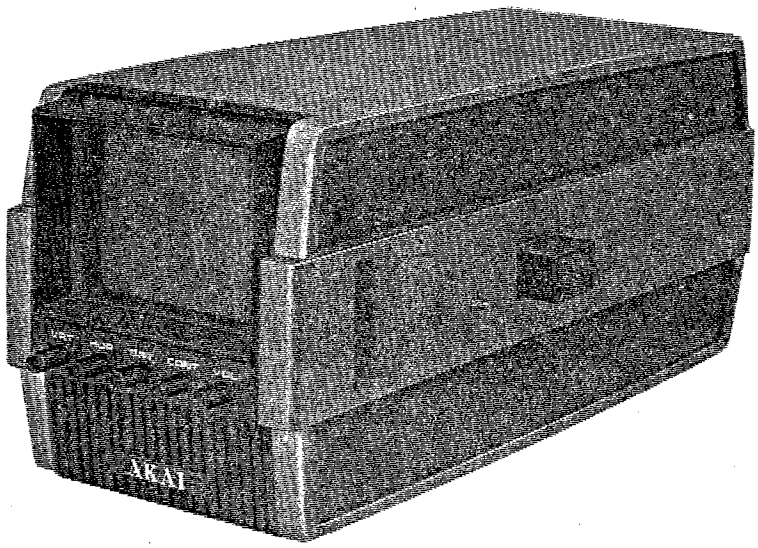



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ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
1	W-433855	Lens Ring 6 (DX)	PX-A2101	
–	W-356128	Lens Ring 4 (S)	PX-2001	
2	W-438142	Zoom Lens 6 (2081) (DX)		
–	W-429895	Zoom Lens 4 (2411) (S)	53-1-2	
–	W-429906	Master Lens (2412)	53-1-2	
–	W-374130	Set Screw 3 x 5		
3	W-356130	Front Frame	PX-2003	
–	W-356141	Finder A Retaining Plate	PX-2004	
–	W-323728	Screw, binding head 3 x 5		
–	W-356152	Compression Spring	PX-2005	
–	W-363205	Compression Spring, Aperture Selector	PX-2007	
4	W-363216	Aperture Plate	PX-2008	
5	W-363194	Rotation Shaft, Aperture Plate	PX-2006	
–	W-373443	Set Screw 3 x 5		
6	W-420851	Microphone UD-908	48-1-6	
–	W-363251	Mic. Lock Nut	PX-2012	
7	W-420862	Aperture Selector Ring Comp.	PX-A2012	
8	W-363273	Stopper Plate B	PX-2014	
9	W-201508	Screw, pan head 2 x 4		
–	W-357208	Steel Ball D = 2		
10	W-363295	Stopper Plate A	PX-2016	
–	W-323728	Screw, binding head 3 x 5		
11	W-363306	Side Cover	PX-2017	
12	W-323728	Screw, binding head 3 x 5		
13	W-429917	Aperture Indicater Plate Comp.	PX-A2013	
14	W-363330	Indicater Plate Retaining Spring	PX-2021	
15	W-363341	Indicater Plate Adjusting Ring	PX-2022	
–	W-439018	Washer (SPC) 3 x 6 x 0.3t		
16	W-429862	Hexagon Bolt 3 x 8		
–	W-420895	Vidicon Coil Comp.	PX-A2011	
17	W-356940	Vidicon Coil KV-12EA	23-1-31	
18	W-363352	Bridge	PX-2023	
–	W-273778	M3 Earth Lug		
–	W-421806	Screw, pan head 3 x 8		
–	W-273756	M3 Nut		
19	W-356938	VIDICON TUBE 8823	28-4-2	
20	W-434632	Screw, binding head 3 x 12 w/washer		
21	W-363363	Pre-Amp. Shield Case	PX-2024	
–	W-356736	Tapping Screw #2 2 x 5		
22	W-363396	Base Plate, w/prop	PX-2027,8	
–	W-323728	Screw, binding head 3 x 5		
–	W-420941	Lamp P.C. Board	PX-A2004	
–	W-420928	Miniature Lamp 9V 10MA	28-2-16	
–	W-356668	Screw, binding head 2.3 x 4		
23	W-363418	H.V. Shield Case	PX-2029	
–	W-201475	Screw, pan head 2 x 3		
24	W-420952	Finder 2413	53-1-30	
25	W-373904	Finder Master 2415	53-1-30	
–	W-420963	Power Indicater Head Cover	PX-A2005	
26	W-370596	Finder Cramper B	PX-2056	
27	W-344351	Screw, countersunk head 2 x 4		
28	W-201508	Screw, pan heas 2 x 4		
29	W-363431	Rear Frame	PX-2031	
–	W-429930	Lower Plate Comp.	PX-A2018	
30	W-420974	Lower Plate	PX-A2003	
31	W-358075	Earphone Jack	31-2-15	
32	W-331435	Lug Plate VB2L	33-4-6	
33	W-420996	Cable Clamp 7P-2	2-7-15	
34	W-420985	Camera Cable	51-1-38	
35	W-363690	M Type B Tube Socket S7-502B	31-3-15	
36	W-438491	PSS Capacitor 0.05μF 500WV	24-9-43	
37	W-417352	Screw, pan head 3 x 6		
–	W-424620	Screw, pan head 3 x 10		
–	W-273745	M3 Spring Washer		
–	W-273756	M3 Nut		
38	W-363464	Aperture Name Plate	PX-2034	
39	W-433991	Name Plate B (VC-110S)	PX-A2103	
–	W-434002	CCIR Name Plate B (VC-110S)	PX-A2103	
–	W-421121	Name Plate B'(VC-110)	PX-A2006	
–	W-421132	CCIR Name Plate B' (VC-110)	PX-A2006	
40	W-363475	Lower Cover	PX-2035	
41	W-363486	Upper Cover	PX-2036	
42	W-363600	Camera Name Plate	PX-2051	
43	W-335147	Screw, truss head 3 x 5		
–	W-429873	Washer (SUS) 3 x 7 x 0.2t		
44	W-363508	Name Plate A'	PX-2038	
–	W-429963	Grip Assy. Comp.	PX-A2017	
45	W-363510	Handle, Metal Parts	PX-2039	
46	W-363521	Cramp Screw	PX-2040	
–	W-421143	Washer (BSP) 7.1 x 13.6 x 0.5t		
–	W-270123	"E" Ring 4.0M	6-1-9	
47	W-357355	Plug, Single Head	42-1-33	
–	W-363532	Nut, Plug Retaining	PX-2041	
–	W-357377	Micro Switch PL-1-1	25-5-27	
48	W-357388	Grip	2-17-3	
–	W-203084	Screw, oval countersunk head 3 x 8		
–	W-356771	Screw, countersunk head 3 x 10		
49	W-363543	Belt Holder A	PX-2042	
50	W-363554	Belt Holder B	PX-2043	
51	W-201216	Screw, truss head 4 x 12		
52	W-373847	Hand Grip Belt		
53	W-438131	Camera Lens Hood 6 (DX)		
–	W-356207	Camera Lens Hood 4 (S)	2-23-4	
54	W-356218	Eye Cup	3-4-20	



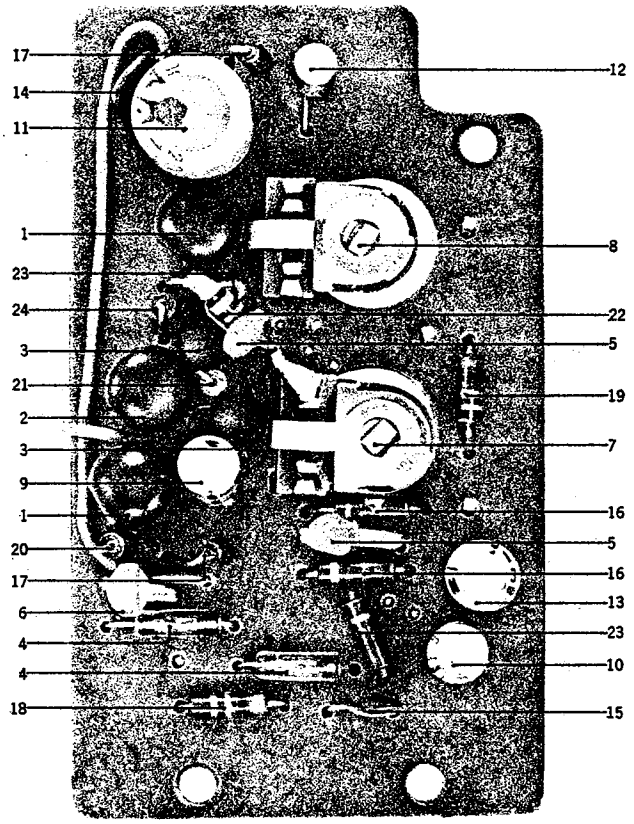
SECTION 3

MONITOR COMPONENT PARTS

WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

V. OUT. P.C. BOARD (Y-300) BLOCK 34
AUDIO P.C. BOARD (Y-400) BLOCK 35
SYNC. & VIDEO AMP. P.C. BOARD (Y-500) BLOCK 36
H.V. P.C. BOARD (Y-600) BLOCK 38
ASSEMBLY BLOCK 40
FINAL ASSEMBLY BLOCK 41

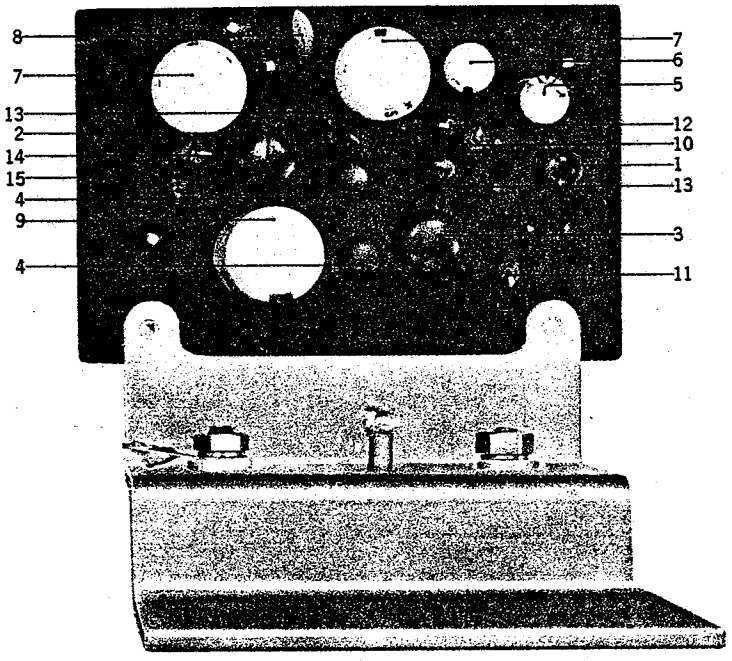
PHOTO OF V. OUT. P.C. BOARD (Y-300)



V. OUT. P.C. BOARD (Y-300) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.	Unit Price (US)
–	VM-P101	V. Out. P.C. Board Assy. Comp.	Y-300	YD20060024	
1	VM-P102	Transistor CS1295H	Q301,2	HT80019IH0	
2	VM-P103	Transistor CS1294H	Q303	HT60001IH0	
3	VM-P104	Varistor CD0014	Q304,5	HT80007100	
4	VM-P105	Diode 1S188	Q306,7	HD10003030	
5	VM-P106	Thermistor 31D27	R301,12	HH00002120	
6	VM-P107	Thermistor 33D1000	R304	HH00001120	
7	VM-P108	Semi-Fixed Resistor 500K	R305	RA05040050	
8	VM-P109	Semi-Fixed Resistor 10K	R307	RA01030090	
		Capacitor, Vertical Type			
9	VM-P110	Electrolytic 10μF 10WV	C301	EA10601010	
10	VM-P111	Electrolytic 5μF 15WV	C302	EA47501610	
11	VM-P112	Electrolytic 200μF 10WV	C303	EA22701020	
12	VM-P113	Electrolytic 0.1μF 25WV	C304	EM10402510	
13	VM-P114	Electrolytic 30μF 10WV	C305	EA33601010	
14	VM-P115	Mylar 0.003μF	C306	DF17332010	
–	VM-P116	Mylar 0.047μF	C331	DF17473010	
15	VM-P117	Mylar 0.0047μF	C332	DF17472010	
		Solid Resistor			
16	VM-P118	1/4W 1.2K	R302,6	RC10122140	
17	VM-P119	1/4W 22K	R303	RC10223140	
18	VM-P120	1/4W 10K	R308	RC10103140	
19	VM-P121	1/4W 2Ω	R309	RC10020140	
20	VM-P122	1/4W 10Ω	R310	RC10100140	
21	VM-P123	1/4W 220Ω	R311	RC10221140	
22	VM-P124	1/4W 4.7K	R313	RC10472140	
23	VM-P125	1/4W 1K	R314	RC10102140	
24	VM-P126	1/4W 3.3Ω	R315,16	RC10033140	

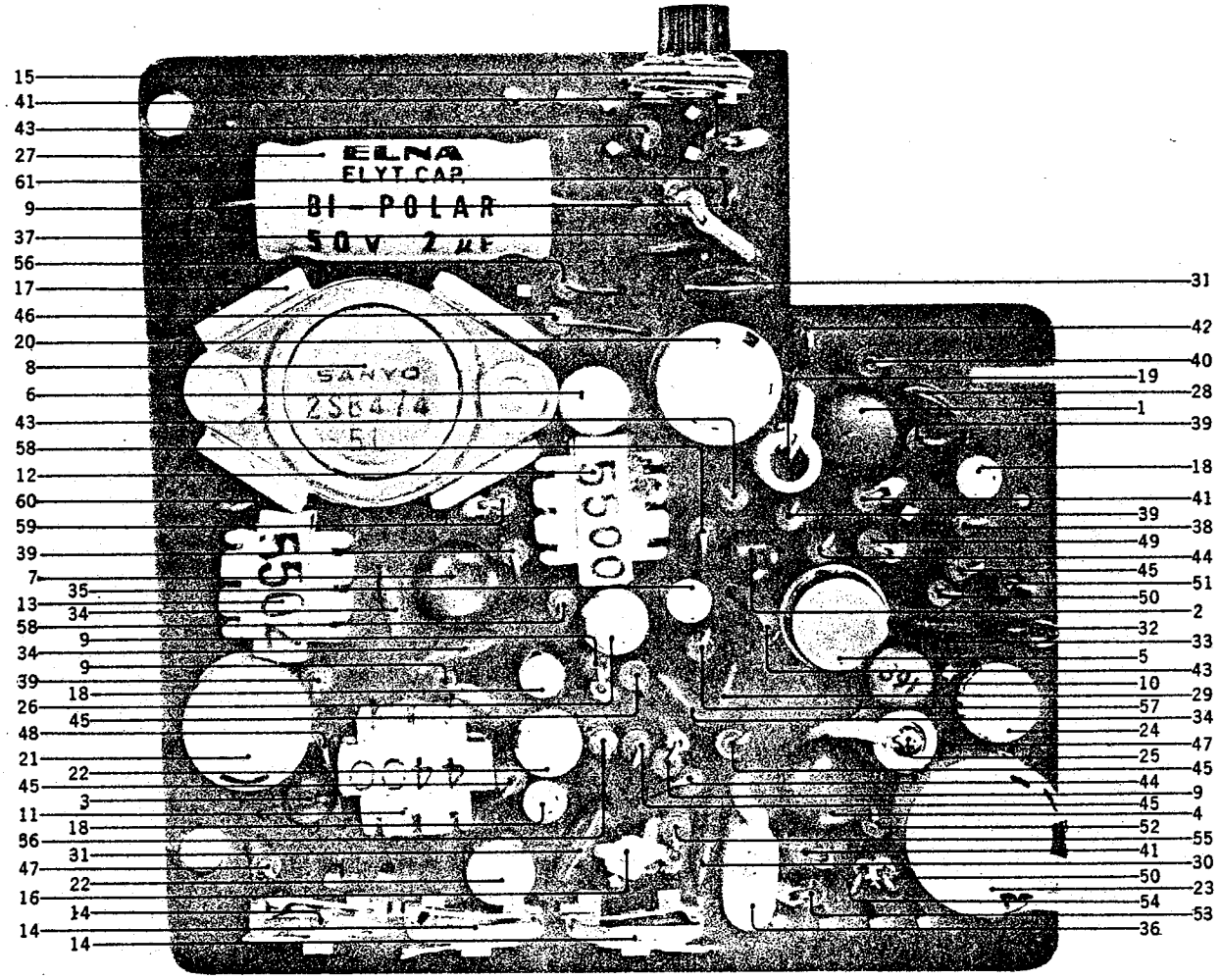
PHOTO OF AUDIO P.C. BOARD (Y-400)



AUDIO P.C. BOARD (Y-400) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.	Unit Price (US)
–	VM-P201	Audio P.C. Board Assy. Comp.	Y-400	YD20610010	
1	VM-P202	Transistor CS1238H	Q401	HT800011H0	
2	VM-P203	Transistor CS1295H	Q402	HT800191H0	
3	VM-P204	Transistor CS1294H	Q403	HT600011H0	
4	VM-P205	Varistor CD0014	Q404.5	HT80007100	
		Capacitor, Vertical Type			
5	VM-P206	Electrolytic 5μF 15WV	C401	EA47501610	
6	VM-P207	Electrolytic 10μF 6WV	C402	EA10600610	
7	VM-P208	Electrolytic 100μF 10WV	C405.6	EA10701010	
8	VM-P209	Ceramic 0.001μF	C407	DK18102010	
9	VM-P210	Film 0.0047μF	C408	DF17472010	
		Solid Resistor			
10	VM-P211	1/4W 68K	R401	RC10683140	
11	VM-P212	1/4W 1.5K	R402	RC10152140	
12	VM-P213	1/4W 470K	R403	RC10474140	
13	VM-P214	1/4W 5Ω	R404.5	RC10050140	
14	VM-P215	1/4W 4.7K	R406	RC10472140	
15	VM-P216	1/4W 680Ω	R407	RC10681140	

PHOTO OF SYNC. & VIDEO AMP. P.C. BOARD (Y-500)

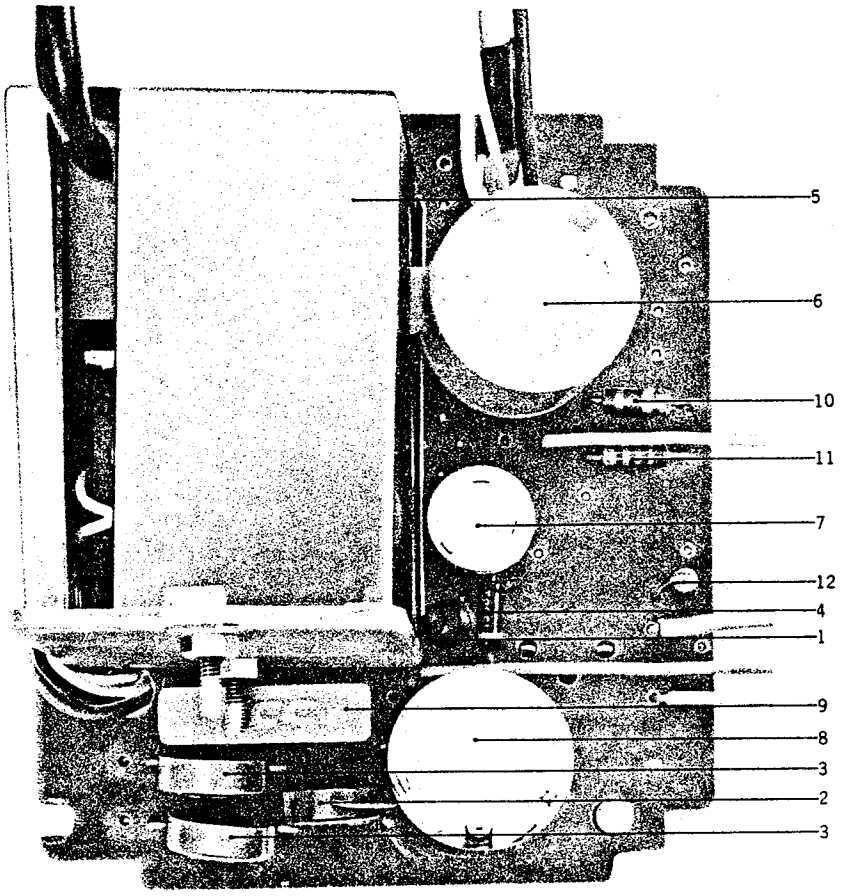


SYNC. & VIDEO AMP. P.C. BOARD (Y-500) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.	Unit Price (US)
–	VM-P301	Sync. & Video Amp. P.C. Board Assy. Comp.	Y-500	YD19550022	
1	VM-P302	Transistor CS1294 (E,F)	Q501	HT600011F0	
2	VM-P303	Transistor CS1238F	Q502	HT800100F0	
3	VM-P304	Transistor CJ5209	Q504	HT60002100	
4	VM-P305	Transistor CJ5210	Q505	HT80012100	
5	VM-P306	Transistor SE7010	Q506	HT81010000	
6	VM-P307	Transistor 2SB172D	Q509	HT201721D0	
7	VM-P308	Transistor CJ5211	Q510	HT80013100	
8	VM-P309	Transistor 2SB467	Q511	HT20467100	
9	VM-P310	Diode 1N34A	Q503,7,8,13	HD10001010	
10	VM-P311	Peaking Coil 390μH	L501	LC13940010	
11	VM-P312	V-OSC. Transformer LA4400	T501	TR11404010	
12	VM-P313	H-OSC. Transformer LA5500	T502	TQ11404010	
13	VM-P314	H-Drive Transformer LA5502	T503	TQ11404030	
14	VM-P315	Semi-Fixed Resistor 5K	R515,18,32	RA05020040	
15	VM-P316	Semi-Fixed Resistor 1M	R530	RA01050050	
16	VM-P317	Thermistor MT250S	R547	HH00007020	
17	VM-P318	Heat-Sink for Transistor		1955267020	

Ref. No.	Parts No.	Description	Schematic No.	Maker No.	Unit Price (US)
		Electrolytic Capacitor, Vertical Type			
18	VM-P319	0.1μF 25WV	C501.8.20	EM10402510	
19	VM-P320	3μF 15WV	C503	ED33501610	
20	VM-P321	100μF 10WV	C505	EA10701010	
21	VM-P322	30μF 16WV	C509	EA33601610	
22	VM-P323	5μF 15WV	C510.17	EA47501610	
23	VM-P324	10μF 150WV	C511	EA10616010	
24	VM-P325	30μF 10WV	C154	EA33601010	
25	VM-P326	1μF 50WV	C515	ED10505010	
26	VM-P327	4.7μF 6WV	C522	EM47500620	
27	VM-P328	2μF 50WV	C525	ER20505010	
		Mylar Capacitor, Vertical Type			
28	VM-P329	0.005μF	C502.27.52.	DF17472010	
29	VM-P330	0.003μF	C504	DF17332010	
30	VM-P331	0.02μF	C506	DF17223010	
31	VM-P332	0.03μF	C507.23	DF17333010	
32	VM-P333	0.001μF	C512	DF17102010	
33	VM-P334	0.002μF	C513	DF17222010	
34	VM-P335	0.01μF	C518.21.24.51	DF17103010	
35	VM-P336	0.1μF	C519	EM10402510	
36	VM-P337	Metalized Capacitor 0.22μF 100WV	C516	DG07224500	
–	VM-P338	Film Capacitor 0.047μF	C528	DF17473010	
37	VM-P339	Film Capacitor 0.0047μF	C530	DF17472010	
–	VM-P340	VFM Capacitor 50PF	C529	DD16500013	
		Solid Resistor			
38	VM-P341	1/4W 330Ω	R501	RC10331140	
39	VM-P342	1/4W 2.2K	R502.6.16.39	RC10222140	
40	VM-P343	1/4W 470K	R503	RC10474140	
41	VM-P344	1/4W 82K	R504.19	RC10823140	
42	VM-P345	1/4W 47K	R505	RC10473140	
43	VM-P346	1/4W 220K	R507.12.29.31	RC10224140	
44	VM-P347	1/4W 1.8K	R508.11	RC10182140	
45	VM-P348	1/4W 4.7K	R510.35.36.46	RC10472140	
46	VM-P349	1/4W 100Ω	R513	RC10101140	
47	VM-P350	1/4W 2.7K	R514.26	RC10272140	
48	VM-P351	1/4W 6.8K	R517	RC10682140	
49	VM-P352	1/4W 5.6K	R520	RC10562140	
–	VM-P353	1/4W 3.3K	R521	RC10332140	
50	VM-P354	1/4W 50Ω	R522.24	RC10500140	
51	VM-P355	1/4W 1K	R523.50	RC10102140	
52	VM-P356	1/4W 27K	R525	RC10273140	
53	VM-P357	1/4W 680K	R527	RC10684140	
54	VM-P358	1/4W 100K	R528	RC10104140	
55	VM-P359	1/4W 470Ω	R533	RC10471140	
56	VM-P360	1/4W 1.5K	R534.41	RC10152140	
57	VM-P361	1/4W 680Ω	R537	RC10681140	
58	VM-P362	1/4W 560Ω	R538.40	RC10561140	
59	VM-P363	1/4W 150Ω	R542	RC10151140	
60	VM-P364	1/4W 3.3Ω	R543	RT10331140	
61	VM-P365	1/4W 22K	R548	RC10223140	
–	VM-P366	1/4W 10K	R549	RC10103140	

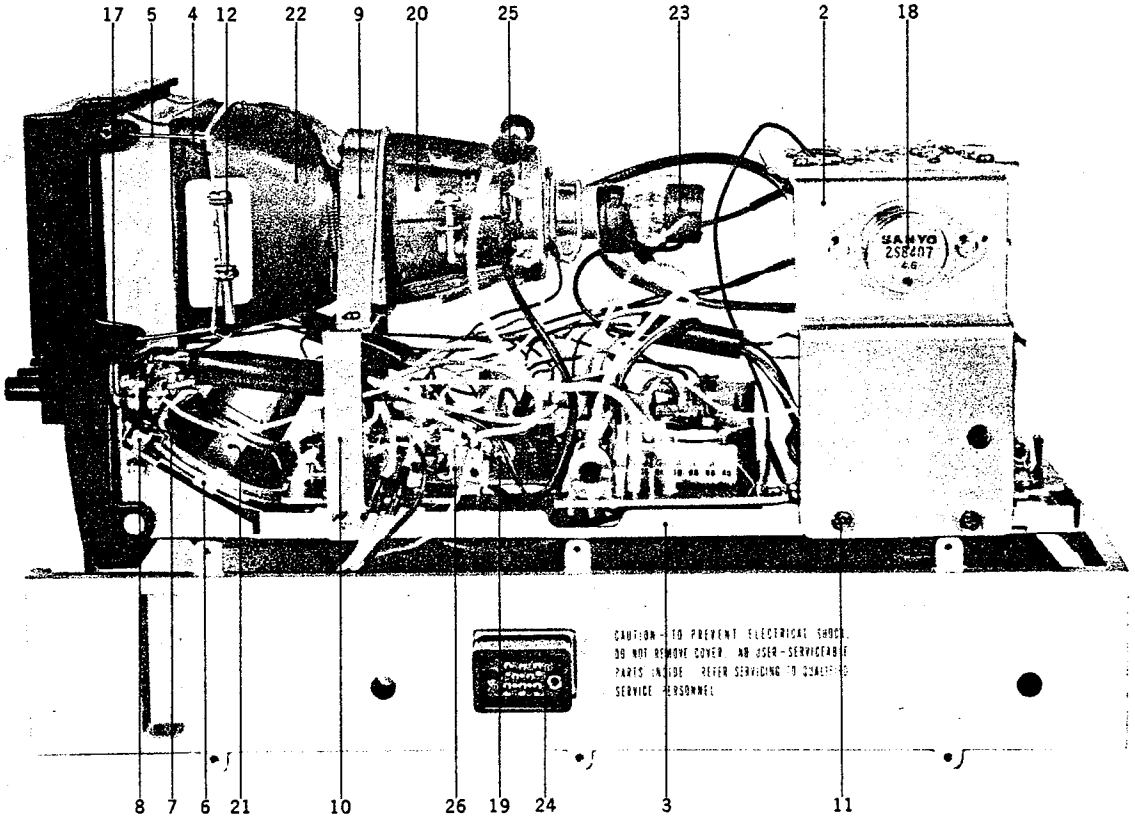
PHOTO OF H.V. P.C. BOARD (Y-600)

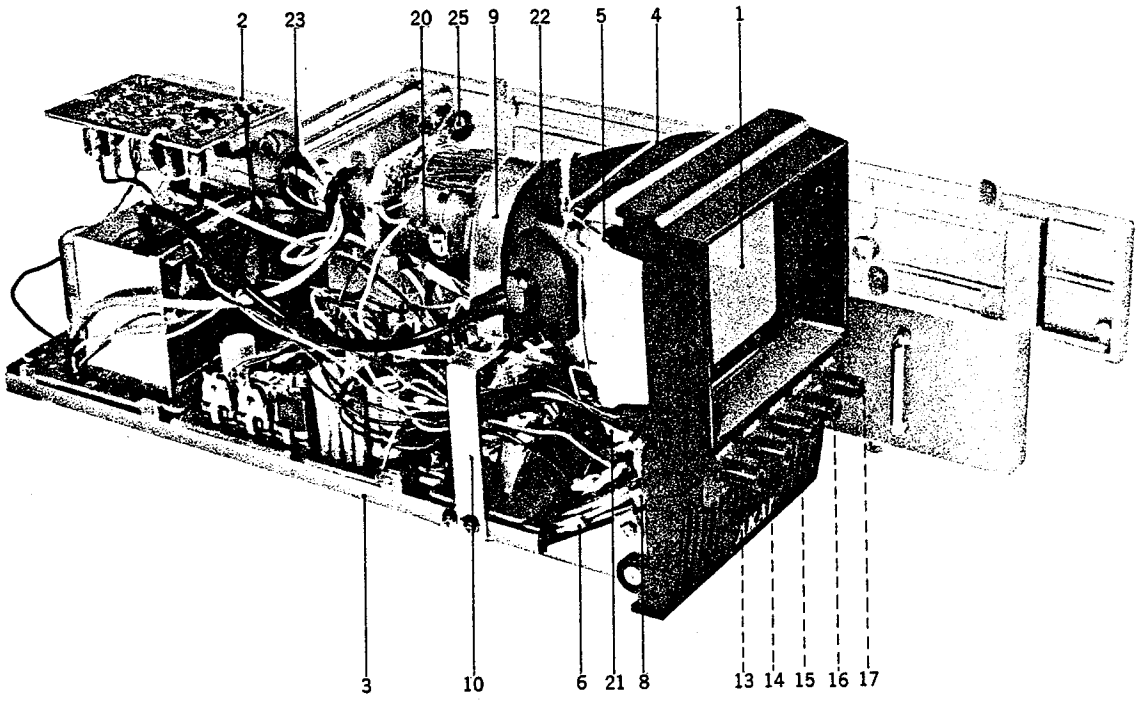


H.V. P.C. BOARD (Y-600) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.	Unit Price (US)
–	VM-P401	H.V. P.C. Board Assy. Comp.	Y-600	YD19550013	
1	VM-P402	Transistor CS1238G	Q610	HT80001000	
2	VM-P403	Diode SD-1	Q601	HD20001080	
3	VM-P404	Diode SD-1HF	Q602,3	HD20003080	
4	VM-P405	Diode 1S332	Q609	HD30003080	
5	VM-P406	Fly Back Transformer Comp.		ZZ20610010	
–	VM-P407	F.B. Transformer LA6600	T601	TF03060010	
–	VM-P408	Heater Transformer FC1045	T602	FC50140010	
–	VM-P409	Semi-Fixed Resistor 10K	R601	RC01030100	
–	VM-P410	Cap Complete	Q604	BH10200010	
–	VM-P411	Cover		2006109010	
–	VM-P412	Insulater		2062120010	
		Capacitor, Vertical Type			
6	VM-P413	Electrolytic 2000μF 10WV	C604	EA20801010	
–	VM-P414	Electrolytic 30μF 10WV	C605	EA33601010	
7	VM-P415	Electrolytic 100μF 10WV	C606	EA10701010	
8	VM-P416	Electrolytic 1000μF 20WV	C607	EA10802010	
–	VM-P417	Electrolytic 200μF 15WV	C609	EA22701610	
9	VM-P418	Metaliezed Capacitor 0.047μF 500WV	C601	DG17473510	
–	VM-P419	Mylar Capacitor 0.001μF	C608,11	DF17102010	
–	VM-P420	Electrolytic 100μF 6.3WV	C613	EA10700610	
		Solid Resistor			
10	VM-P421	1/4W 390Ω	R602	RC10391140	
11	VM-P422	1/4W 33K	R603	RC10333140	
12	VM-P423	1/4W 100Ω	R604	RC10101140	

PHOTO OF ASSEMBLY BLOCK

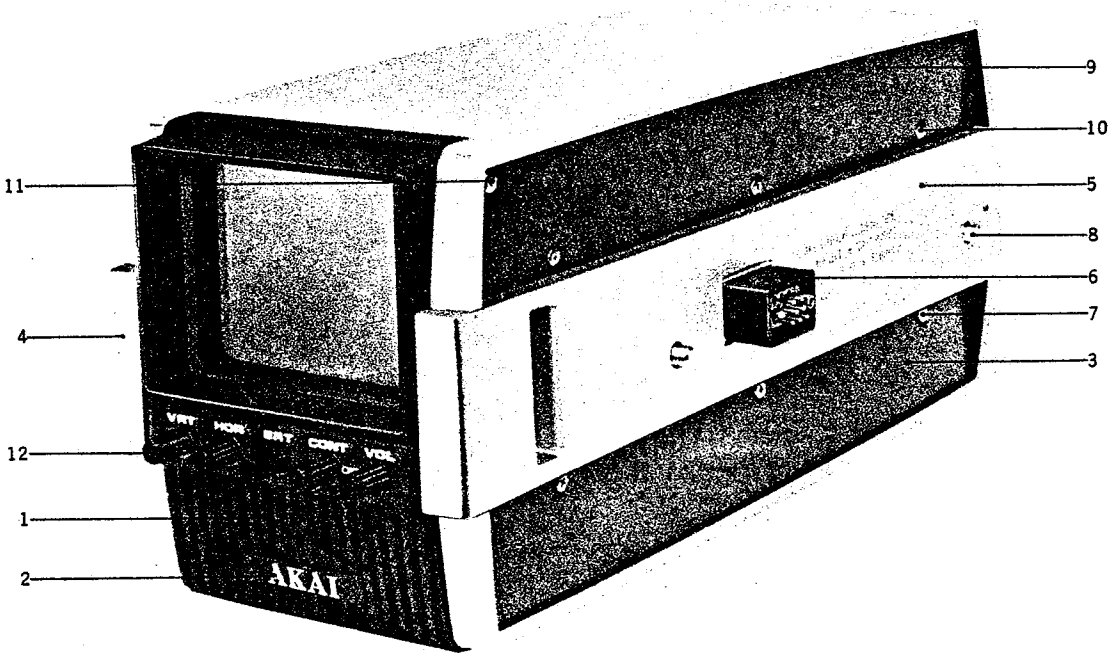




ASSEMBLY BLOCK

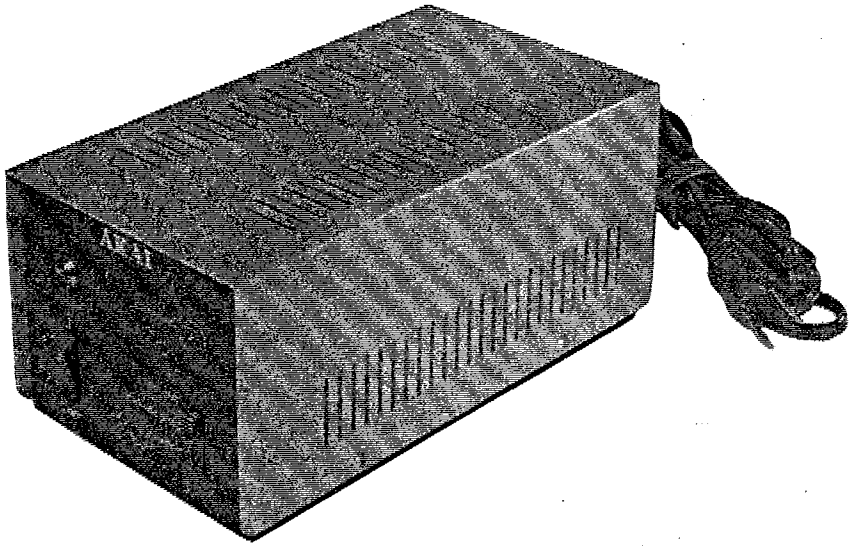
Ref. No.	Parts No.	Description	Maker No.	Unit Price (US)
–	VM-M101	Sheet for Speaker	2061107010	
1	VM-M102	Window for Picture Tube	1474158022	
–	VM-M103	Indicator for Specification	2061265010	
2	VM-M104	Heat-Sink for Transistor	2061267012	
3	VM-M105	Chassis	2061105012	
4	VM-M106	Retainer for Picture Tube	2061104010	
5	VM-M107	Clamper for Picture Tube	2061005010	
6	VM-M108	Bracket for Speaker	206116012	
7	VM-M109	Clamper for Speaker	1118005010	
8	VM-M110	Collar for Speaker	2061055010	
–	VM-M111	R.H.M. Screw for Picture Tube 2.6 x 6	51022606E0	
9	VM-M112	Retainer for Picture Tube	2006104020	
10	VM-M113	Holder for Picture Tube	1955271012	
–	VM-M114	Collar for Complete Unit	2061055020	
–	VM-M115	Screw for Complete Unit	51077039F0	
–	VM-M116	Cover for P.C. Board	1914053012	
–	VM-M117	R.H.M. Screw for Speaker 2 x 6	51020206E0	
–	VM-M118	R.H.M. Screw for P.C. Board 2.6 x 4	51022604E0	
11	VM-M119	F.H.M. Screw for Heat-Sink 2.6 x 4	51042604E0	
12	VM-M120	Hexagon Nut for Picture Tube	53110303E0	
–	VM-M121	Earth Lug	62261204E0	
–	VM-M122	Cover for Picture Tube	1914053070	
–	VM-M123	Resistor 1/4W 75Ω (R706)	RC10750140	
13	VM-M124	Variable Resistor 2K (R701)	RK02020052	
14	VM-M125	Variable Resistor 1K (R702)	RK01020062	
15	VM-M126	Variable Resistor 500K (R703)	RK05040052	
16	VM-M127	Variable Resistor 300Ω (R704)	RK03010022	
17	VM-M128	Variable Resistor 10K w/Switch (R705)	RK11030152	
18	VM-M129	Transistor 2SB407D (Q701)	HT204071D0	
–	VM-M130	Transistor Kit	KT20610010	
19	VM-M131	Elect. Capacitor 33μF 10WV (C701)	EA33601010	
20	VM-M132	Deflection Yoke (L701)	LD05013010	
21	VM-M133	Speaker (W701)	GJ80503010	
22	VM-M134	Picture Tube (V701)	VB00313010	
23	VM-M135	Socket (Y714)	YJ05000012	
24	VM-M136	Plug (Y720)	YP10000740	
25	VM-M137	Ferrite Core	FC50140010	
26	VM-M138	Lug Plate 2L2	YL01050030	

PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
1	X-358918	Monitor Front Panel	PX-1001	
2	X-358931	Monitor Name Plate	PX-1003	
3	X-358942	Monitor Case Lower Cover	PX-1004	
4	X-358986	Monitor Frame 1 (Left)	PX-1007	
–	X-360988	Band Hanger	PX-402	
–	X-273756	M3 Nut		
5	X-358975	Monitor Frame 2 (Right)	PX-1006	
6	X-358997	Monitor Connecter Cover	PX-1009	
7	X-375423	Screw, binding head 2.3 x 5		
–	X-359032	Connection Plate, Frame	PX-1012	
8	X-359010	Connecting Bolt	PX-1011	
–	X-364803	Washer (Nylon) 5.1 x 10.3 x 0.1t		
–	X-359021	Bolt Collar	PX-1013	
–	X-359008	Stopper Ring	PX-1010	
9	X-359043	Monitor Case Upper Cover	PX-1014	
10	X-375423	Screw, binding head 2.3 x 5		
11	X-375412	Screw, binding head 2.3 x 8		
–	X-259738	Washer (Polyslider) 4.1 x 7 x 0.25t		
12	X-359054	Monitor Knob	PX-1015	



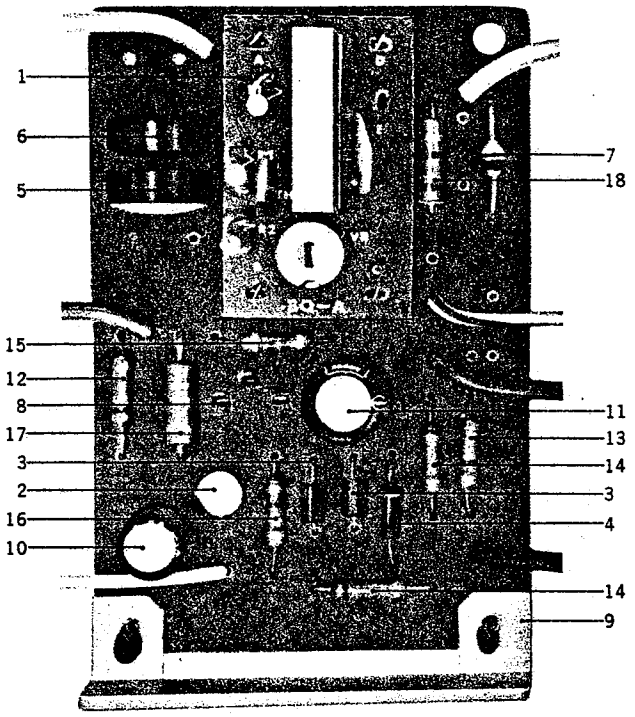
SECTION 4

AC ADAPTER/BATTERY CHARGER COMPONENT PARTS

WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

POWER SUPPLY P.C. BOARD (PX-A3008) BLOCK 43
ASSEMBLY BLOCK 45

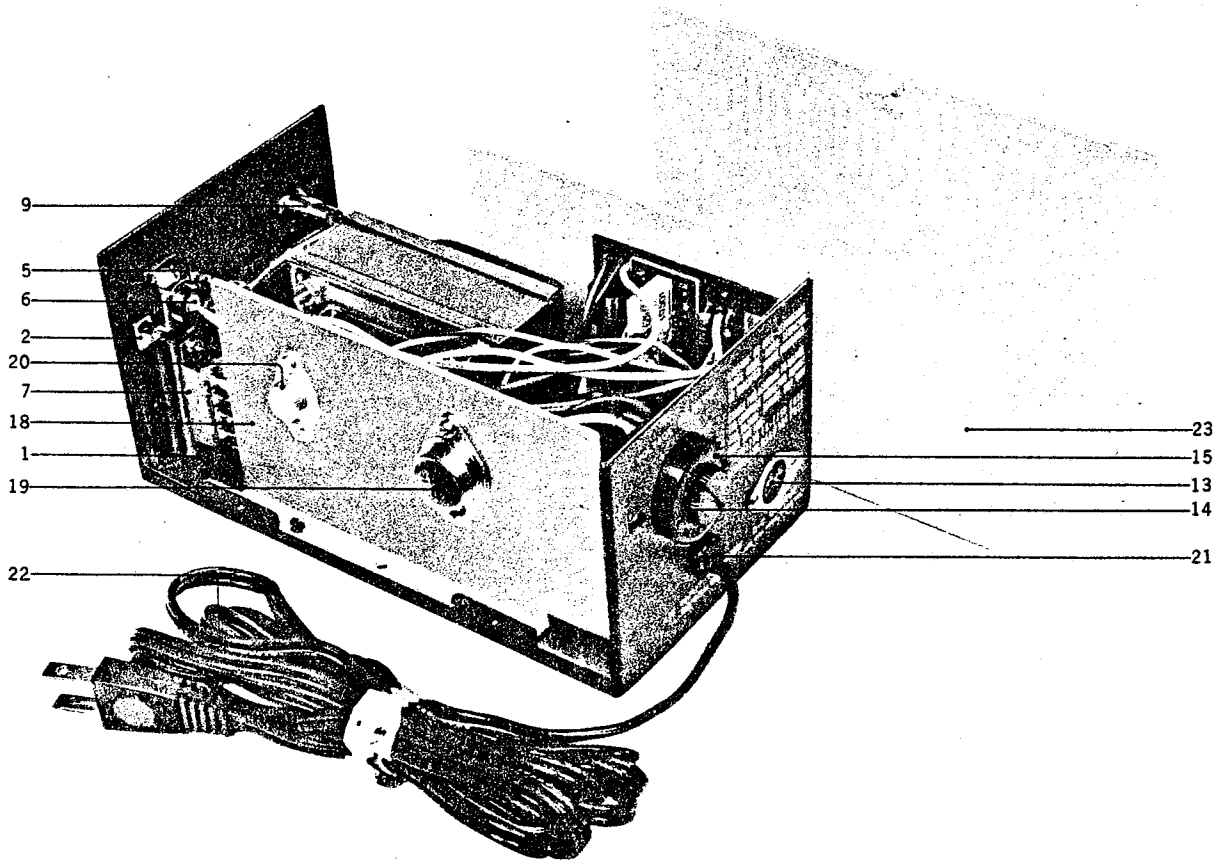
PHOTO OF POWER SUPPLY P.C. BOARD (PX-A3008)

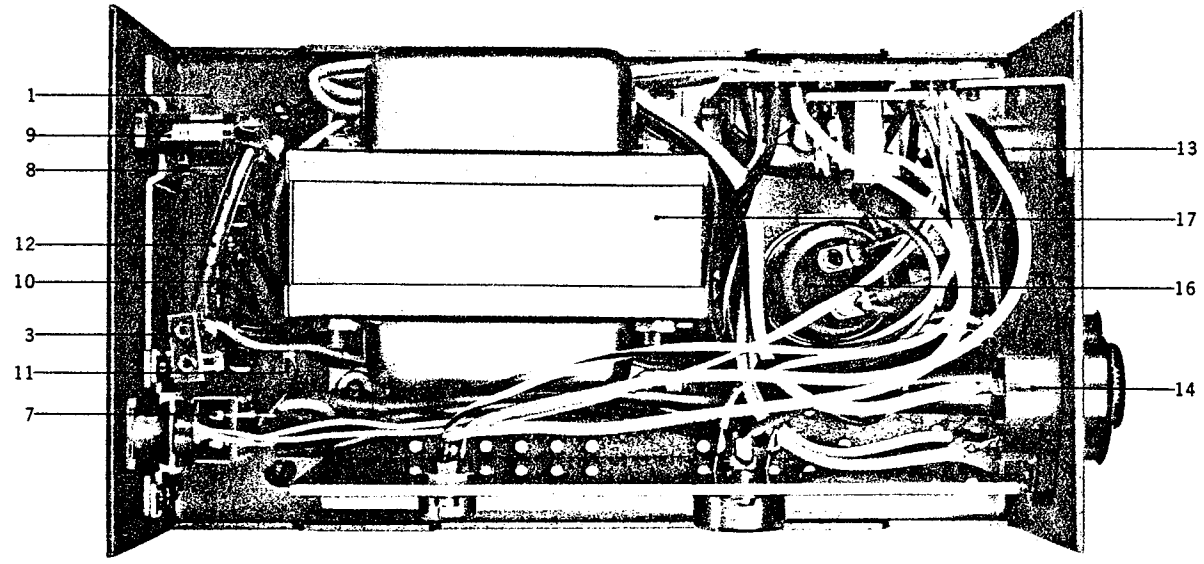


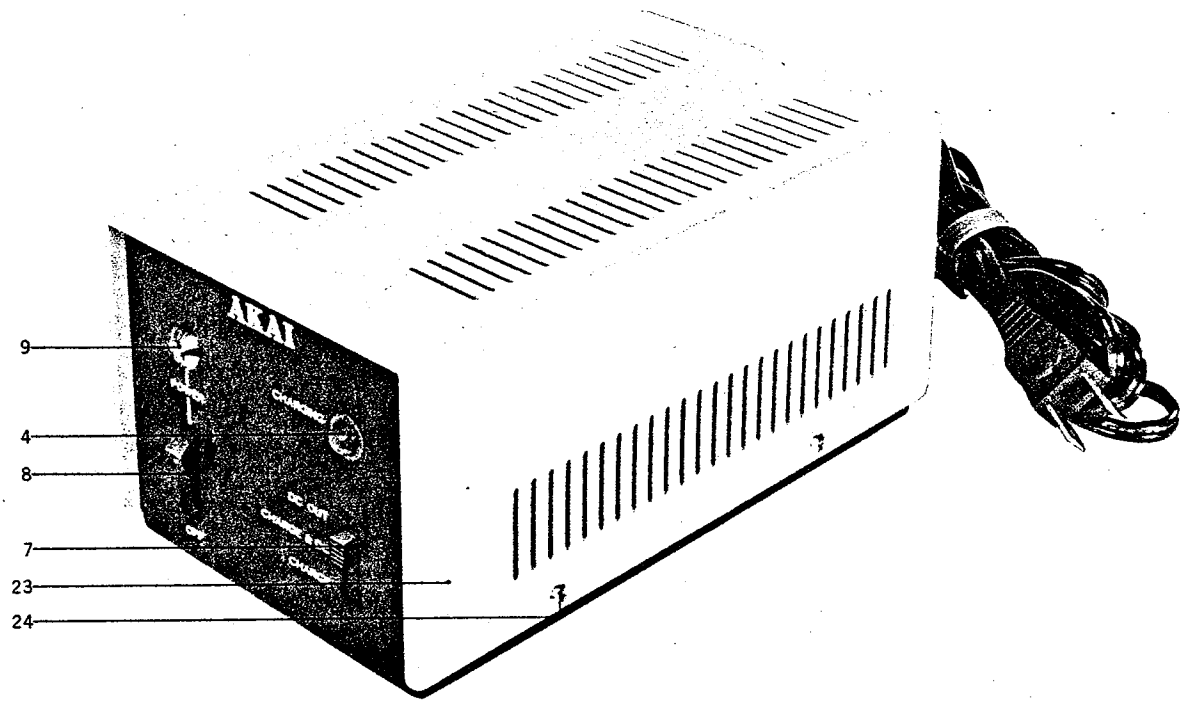
POWER SUPPLY P.C. BOARD (PX-A3008) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
–	Y-423314	Power Supply P.C. Board Assy. Comp.	PX-A3008	
1	Y-421762	Charger P.C. Board Unit BQ-A	56-1-2	
2	Y-338894	Transistor 2SC968(3)	TR1001	
3	Y-234753	Transistor 2SC458(B)	TR1002,3	
4	Y-356534	Zener Diode RD-6A M	D1001	
5	Y-329128	Silicon Diode 10DC-1 (Red)	D1002	
6	Y-329130	Silicon Diode 10DC-1 (Black)	D1003	
7	Y-421795	Silicon Diode V03C	D1004	
8	Y-403132	Semi-variable Volume V101KR-1 300ΩB	VR1001	
9	Y-356051	REG P.C. Board Mounting Plate B	PX-3010	
–	Y-200687	Tapping Screw #2 3 x 6		
		Capacitor, Vertical Type	C	
10	Y-350684	Electrolytic 22μF 25WV	1001	
11	Y-220127	Electrolytic 100μF 16WV	1002	
		Carbon Resistor, Insulator Type	R	
12	Y-214536	RD1/4 6.8K J	1001	
13	Y-430288	RD1/4 680Ω J	1003	
14	Y-364961	RD1/4 1.2K J	1004.5	
15	Y-214402	RD1/4 470Ω J	1006	
16	Y-364950	RD1/4 330Ω J	1007	
17	Y-320106	RD1/2P 4.7Ω K (P Type)	1002	
18	Y-215627	RD1/2P 150Ω K (P Type)	1008	

PHOTO OF ASSEMBLY BLOCK







ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Unit Price (US)
1	Z-421187	Power Chassis	PX-A3001	
2	Z-421198	Lamp Mounting Angle	PX-A3003	
3	Z-369077	Lug Plate VBL1	33-4-7	
–	Z-417216	Screw, pan head 3 x 4		
4	Z-421222	Charger Lamp Indicator	PX-A3004	
–	Z-421233	Speed Nut	PX-A3006	
5	Z-421200	Lamp Holder	PX-A3005	
6	Z-421211	Lamp12V70MA190MM x 2	28-2-17	
7	Z-356343	Slide Switch ESD-282DU	25-3-34	
–	Z-356038	Slide Switch Mask	PX-3011	
–	Z-422076	Screw, pan head 3 x 5		
8	Z-356365	Seesaw Switch T-127 U/L	25-2-9	
–	Z-422076	Screw, pan head 3 x 5		
9	Z-356376	Neon Lamp BNA-2	28-3-7	
10	Z-356354	Silicon Diode 5B05	45-2-31	
–	Z-355487	Screw, binding head 3 x 10		
–	Z-273756	M3 Nut		
11	Z-375592	Silicon Diode V06B	45-2-35	
12	Z-345756	Carbon Resistor RD1/4 68K J	35-9-5	
13	Z-299305	5P DIN Jack	31-1-1	
14	Z-233370	Power Consent (Voltage Selector) S-18010	40-2-3	
15	Z-374128	ISO Screw, truss head 3 x 8		
16	Z-362632	Electrolytic Capacitor 2200μF 25WV	24-10-57	
–	Z-355511	Screw, binding head 3 x 6		
–	Z-273756	M3 Nut		
17	Z-421244	Power Transformer PXT-7	38-4-118	
–	Z-201341	Screw, truss head 4 x 8		
–	Z-413188	M4 Nut		
18	Z-356062	Transistor Heat-Sink Plate	PX-3009	
19	Z-377098	Transistor 2SD80	45-1-82	
20	Z-350313	Transistor 2SD130(Y)	45-1-46	
21	Z-382263	Strin Relief SR-4K-4	2-7-12	
22	Z-374894	UL AC Cord 3M	26-3-19	
–	Z-356400	AC Cord Cramp		
–	Z-421738	Rubber Foot	3-18-14	
–	Z-421740	Screw, pan head 3 x 8		
–	Z-277402	Fuse ST-2 1A	39-1-26	
–	Z-371698	Fuse ST-4 0.5A	39-1-28	
23	Z-356073	Power Source Cover	PX-3012	
–	Z-355511	Screw, binding head 3 x 6		
24	Z-335147	Screw, truss head 3 x 5		
–	Z-356242	Power Source Cable VCA-100	51-1-20	

When you order these parts, Please describe their Parts No. and Serial No. in detail

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PARTS LIST

AKAI PORTABLE VIDEO TAPE RECORDER SET

MODEL VTS-110

ALSO APPLICABLE TO MODEL **VTS-110DX** & **VTS-100S**



WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

REPLACEMENT PARTS TABLE

SECTION 1 RECORDER COMPONENT PARTS 1
SECTION 2 CAMERA COMPONENT PARTS 25
SECTION 3 MONITOR COMPONENT PARTS 33
SECTION 4 AC ADAPTER/BATTERY CHARGER 42



SECTION 1

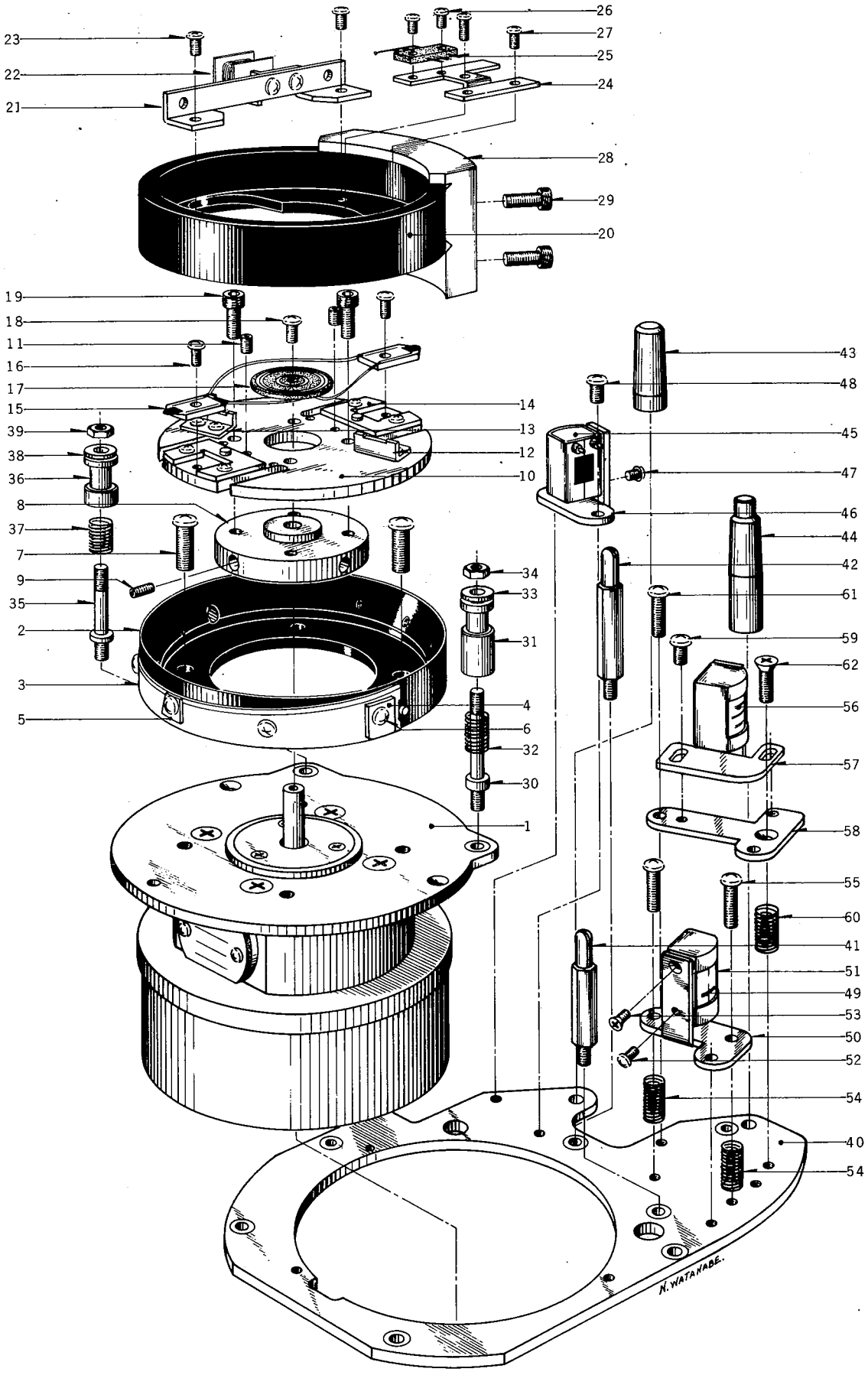
RECORDER COMPONENT PARTS

WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

ROTARY HEAD BLOCK 3
HEAD BASE BLOCK 3
SUB CAPSTAN BLOCK 5
MAIN CAPSTAN BLOCK 5
CAPSTAN MOTOR BLOCK 5
SUPPLY REEL TABLE BLOCK 7
TAKE-UP REEL TABLE BLOCK 7
KEYBOARD BLOCK 7
ASSEMBLY BLOCK 9
VIDEO P.C. BOARD (PX-A503) BLOCK 13
AUDIO P.C. BOARD (PX-A502) BLOCK 15
SERVO P.C. BOARD (PX-A505) BLOCK 17
MOTOR DRIVE P.C. BOARD (PX-513) BLOCK 18
PLG. CURRENT LIMITATION P.C. BOARD (PX-508) BLOCK 19
SSG. P.C. BOARD (PX-A504) BLOCK 21
CASE BLOCK 23
FINAL ASSEMBLY BLOCK 24

NOTE : * mark shows more than 10 pieces

ILLUSTRATION OF VIDEO HEAD BLOCK



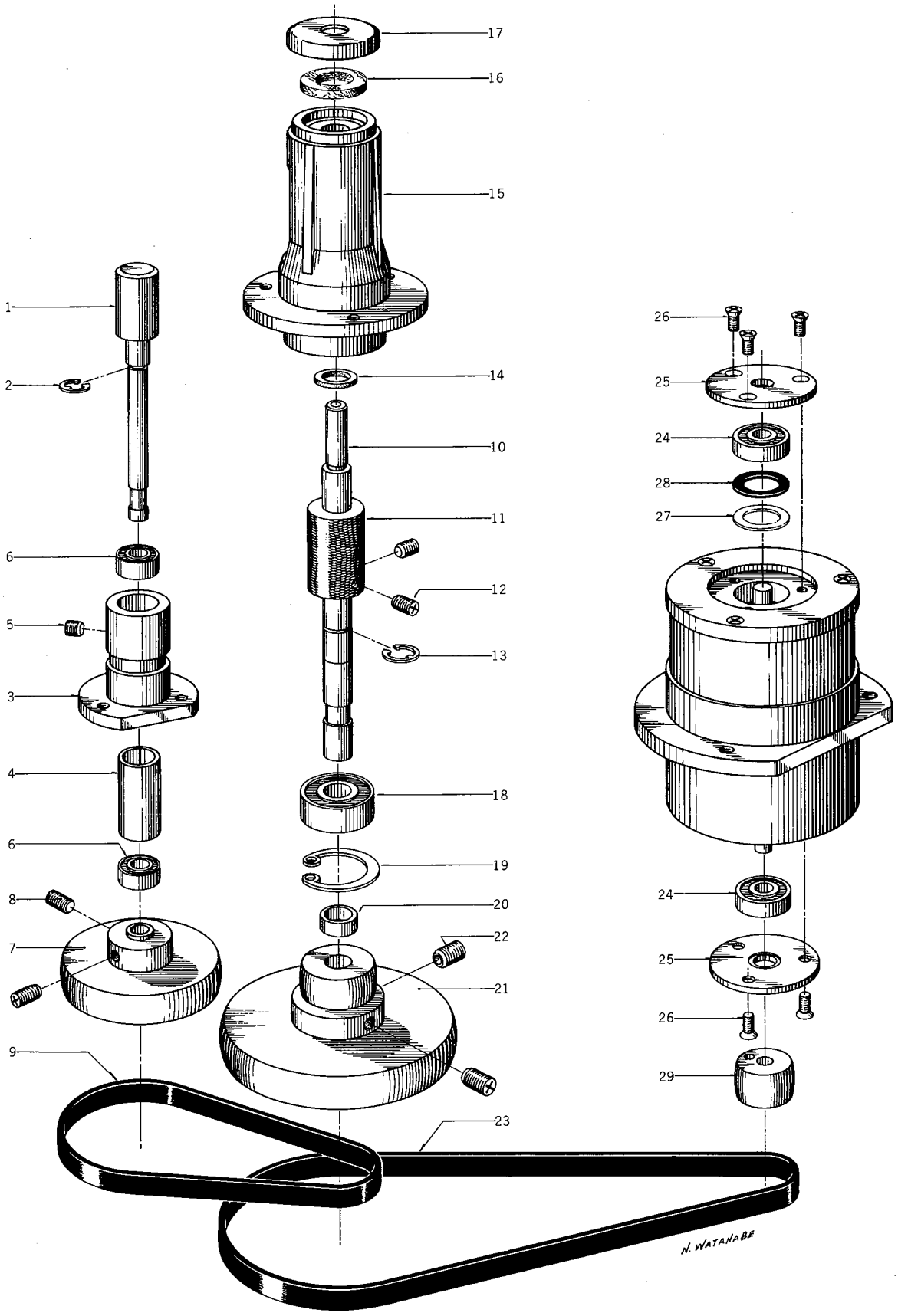
ROTARY HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	A-418724	Rotary Head Block Assy. Comp.	VC,PXA	1
1	A-418746	Drum Motor Block Assy. Comp.	VC,PXA	1
–	A-357153	Ball Bearing #604 ZZC2P6B325		1
–	A-364678	Ball Bearing #605 ZZC2P6B325		1
–	A-358154	Brush MH-50	13-1-1	2
2	A-361394	Lower Drum,w/pin	PX-802	1
–	A-362867	Head Plate Retaining Pin	PX-824	1
3	A-362878	Drum Tape Guide	PX-809	1
4	A-404943	PX Guard Band Retaining Plate (A)	PX-833	1
5	A-404954	PX Guard Band Retaining Plate (B)	PX-834	1
–	A-404965	PX Guard Band Retaining Plate (C)	PX-835	1
–	A-259560	Washer (BSP) 3.3 x 5.8 x 0.25t		2
6	A-419927	Screw, round head 3 x 5		5
–	A-361405	Drum Shield Plate	PX-803	1
7	A-413234	Screw, pan head 4 x 12		4
8	A-407531	Head Plate Holder C, w/metal	PX-838	1
9	A-356804	Set Screw, hexagon socket 3 x 4		2
10	A-395425	Head Plate, w/pin	PX-830	1
–	A-362902	Pin, Head Plate	RX-280	2
11	A-356804	Set Screw, hexagon socket 3 x 4		2
12	A-395436	PU Plate C (Brass)	PX-831	1
13	A-395447	PU Plate D (Permalloy)	PX-832	1
–	A-201903	Screw, binding head 2.3 x 4		4
14	A-362891	Head Guide Base	PX-819	2
–	A-201431	Screw, pan head 2.3 x 5		4
15	A-358716	VIDEO HEAD PX	VC,PX	2
16	A-202307	Screw, round head 2.3 x 6		2
17	A-357041	Slip Ring, Type 1400	52-1-3	1
18	A-419940	Screw, pan head 2.3 x 6		1
–	A-273778	M3 Earth Lug		1
19	A-419938	Screw, hexagon socket head 3 x 8		4
20	A-362698	Upper Drum	PX-806	1
21	A-362913	PC Bracket	RX-833	1
22	A-403806	Pick-Up Coil, w/core	23-1-106	1
23	A-201418	Screw, pan head 2.3 x 4		2
–	A-273778	M3 Earth Lug		1
24	A-362946	Bracket, Brush	RX-811	1
25	A-357063	Brush, Type 1330	52-1-4	1
26	A-419951	Screw, pan head 2 x 5		2
27	A-419940	Screw, pan head 2.3 x 6		3
28	A-362700	Drum Support	PX-807	1
29	A-419938	Screw, hexagon socket head 3 x 8		6
30	A-375175	Guide Prop T	PX-822	1
–	A-273756	M3 Nut		1
31	A-375186	Tape Guide T	PX-823	1
32	A-375197	Guide Spring T	PX-824	1
33	A-375208	Tape Guide Cap	PX-828	1
34	A-273835	M3 Nut		1
35	A-375210	Guide Prop S	PX-825	1
36	A-375221	Tape Guide S	PX-826	1
37	A-375232	Guide Spring S	PX-827	1
38	A-375208	Tape Guide Cap	PX-828	1
39	A-273835	M3 Nut		1

HEAD BASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	A-458921	Head Base Block Assy. Comp.	VC,PXA	1
40	A-362711	Head Assembly Base	PX-808	1
41	A-419297	Head Cover Post A	PX-A801	1
–	A-272261	M3 Spring Washer		2
–	A-273756	M3 Nut		2
42	A-419308	Head Cover Post B	PX-A801	1
43	A-419310	Taper Pole S	PX-A 802	1
–	A-423527	Screw, binding head 3 x 8		2
44	A-419321	Taper Pole T	PX-A803	1
45	A-358740	FULL TRACK ERASE HEAD	PX,VC	1
46	A-419332	Master Erase Retaining Plate	PX-A804	1
47	A-201508	Screw, pan head 2 x 4		2
48	A-356793	Screw, pan head 3 x 5		2
49	A-358727	SIDE TRACK ERASE HEAD	VC,PX	1
50	A-362790	Side Erase Head Angle	PX-815	1
51	A-347883	Shield Case	1-09-15	1
–	A-347894	Shield Cover (Back)	1-09-14	1
52	A-201508	Screw, pan head 2 x 4		1
53	A-344351	Screw, countersunk head 2 x 4		1
54	A-375197	Guide Spring T	PX-824	3
55	A-434610	Screw, pan head 3 x 13		3
56	A-418735	CONTROL/AUDIO HEAD	VC,PXA	1
57	A-417982	AC Head Angle	VC-0008	1
–	A-201508	Screw, pan head 2 x 4		2
58	A-362812	Audio CTL Head Base	PX-817	1
59	A-410231	Screw, pan head 2.6 x 5		2
–	A-355442	Washer (SPC) 3.3 x 5.8 x 0.25t		2
60	A-375197	Guide Spring T	PX-824	3
61	A-434610	Screw, pan head 3 x 13		2
62	A-434621	Screw, countersunk head 3 x 13		1

ILLUSTRATION OF SUB CAPSTAN/MAIN CAPSTAN/CAPSTAN MOTOR BLOCK



SUB CAPSTAN BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	B-358582	Sub Capstan Block Assy. Comp.	PX,VC	1
1	B-360112	Sub Capstan Shaft	PX-219	1
2	B-270101	"E" Ring 3.0M	6-1-9	1
3	B-360123	Sub Capstan Case	PX-220	1
4	B-360134	Bearing Collar	PX-221	1
5	B-200711	Set Screw 3 x 3		1
6	B-356646	Ball Bearing NSK684ZZSP6 C2 B325		2
7	B-360145	Sub Flywheel	PX-222	1
8	B-355588	Set Screw 3 x 6		2
9	B-359886	Sub Capstan Belt	PX-171	1

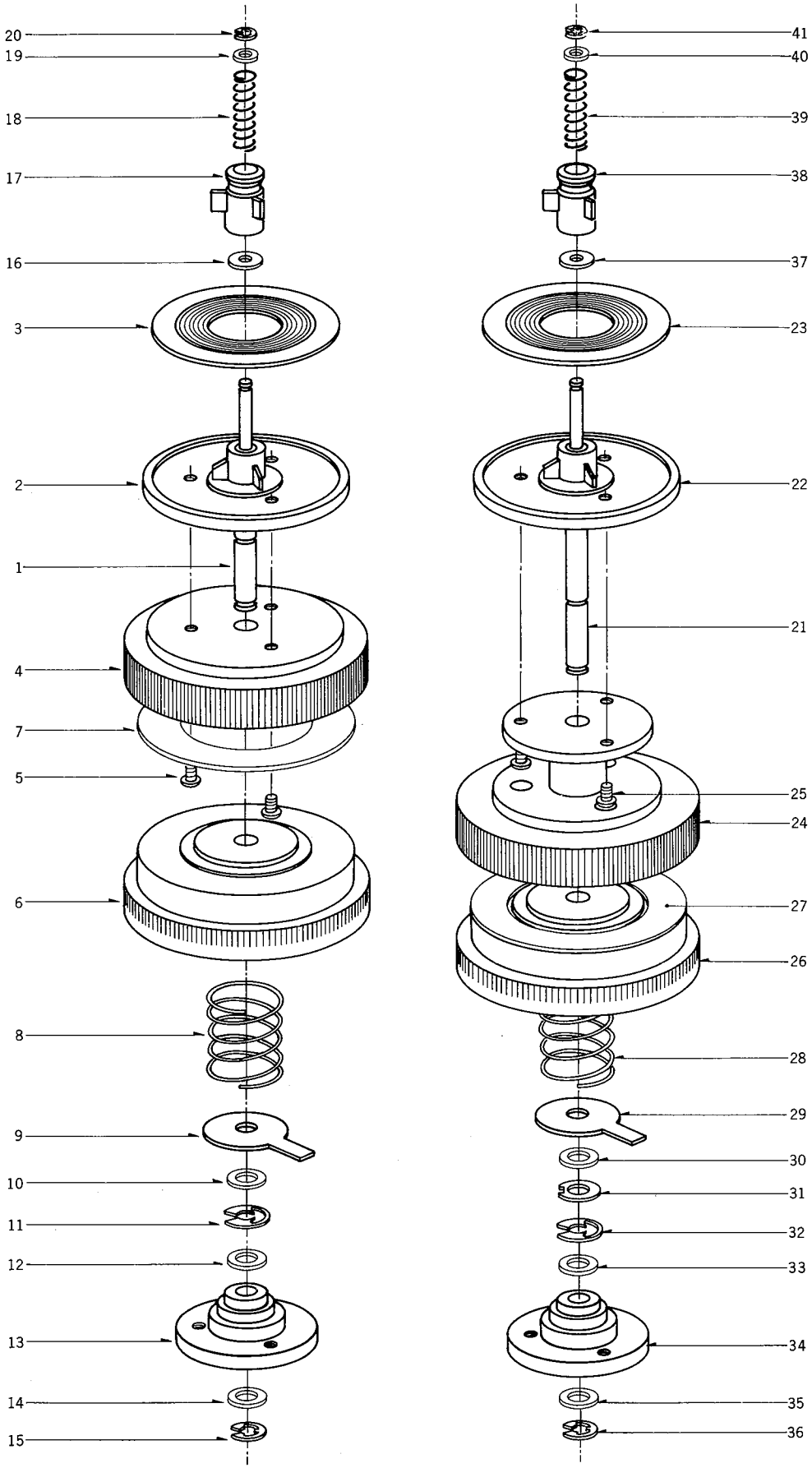
MAIN CAPSTAN BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	B-358593	Main Capstan Block Assy. Comp.	PX	1
10	B-360033	Main Capstan Shaft	PX-211	1
11	B-360055	Capstan Pulley	PX-213	1
12	B-200733	Set Screw 3 x 4		2
13	B-270123	"E" Ring 4.0M	6-1-9	1
14	B-419826	Washer (Fiver)6.2x10x1t		1
15	B-360077	Bearing Case, w/Metal	PX-215,6	1
16	B-360090	Capstan Felt	PX-217	1
17	B-435824	Metal Cap	PX-218	1
18	B-356624	Ball Bearing NSK606ZZP6 C2 B325		1
19	B-206021	"C" Ring D22	6-1-2	1
20	B-360066	Flywheel Collar	PX-214	1
21	B-360044	Main Flywheel	PX-212	1
22	B-355533	Set Screw 4 x 8		2
23	B-359875	Flywheel Belt	PX-170	1
–	B-407542	Flywheel Belt (CCIR)	PX-181	1

CAPSTAN MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	B-358661	Capstan Motor (US) Assy. Comp.	PX	1
–	B-402570	Capstan Motor (CCIR) Assy. Comp.	PX	1
24	B-357153	Ball Bearing #604 ZZC2P6B325		2
25	B-361247	BRG Plate A	PX-703	2
26	B-355577	Screw, countersunk head 2 x 6		6
27	B-361326	Motor Washer (Mylar) 0.2t	PX-712	3
–	B-361337	Motor Washer (Mylar) 0.1t	PX-712	3
28	B-361348	Motor Washer (Rubber) 0.5t	PX-712	1
29	B-361372	Capstan Motor Pulley (US)	PX-715	1
–	B-395370	Capstan Motor Pulley (CCIR)	PX-716	1

ILLUSTRATION OF SUPPLY & TAKE-UP REEL TABLE BLOCK



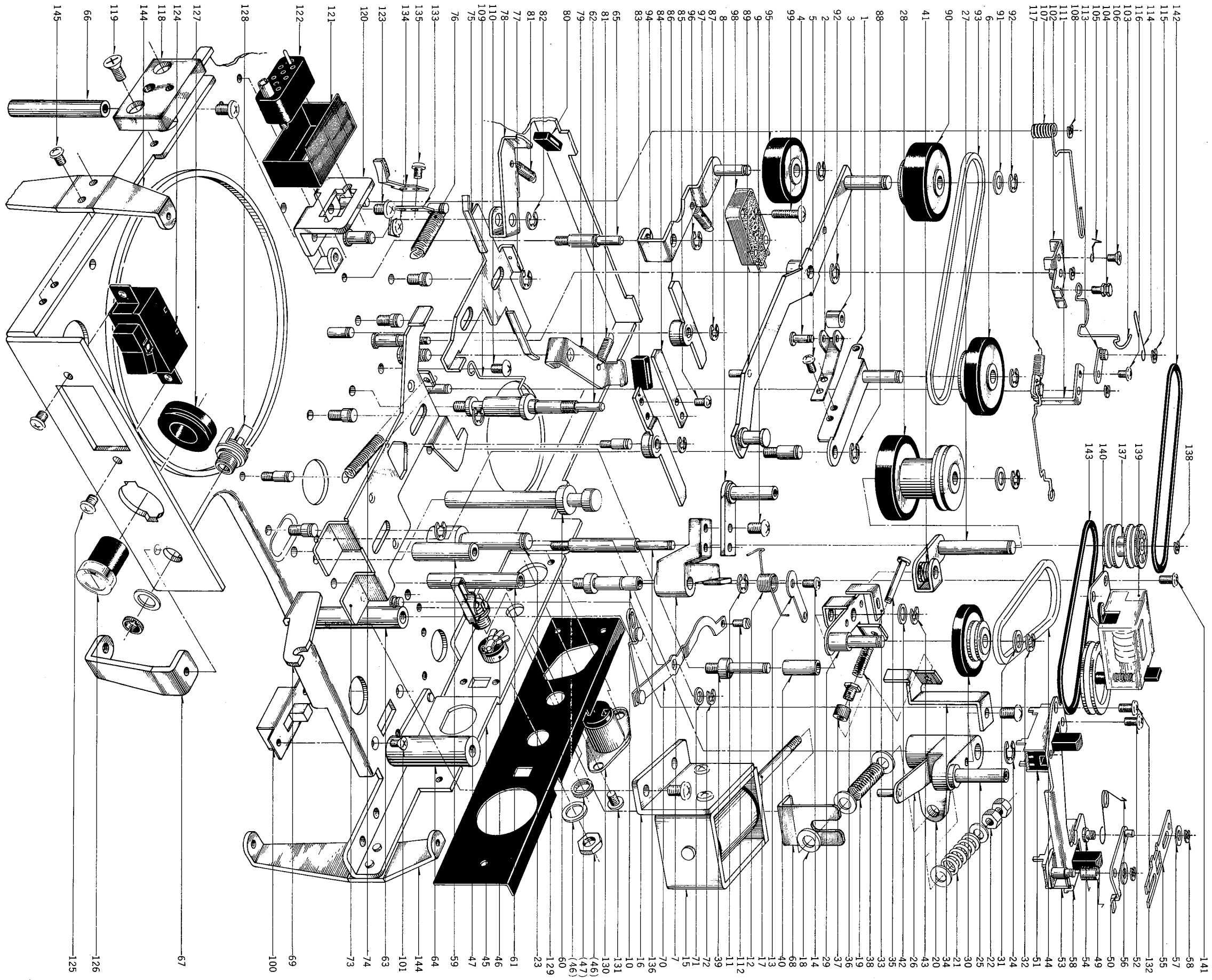


ILLUSTRATION OF ASSEMBLY BLOCK

SUPPLY REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	C-423404	Supply Reel Table Block Comp.	PXA	1
1	C-423483	Supply Reel Shaft	PX-296	1
2	C-359921	PX Reel Table, w/bush	PX-202	1
3	C-359932	Reel Table Rubber Plate	PX-203	1
4	C-422684	Reel Table S	PX-292	1
5	C-356782	Screw, pan head 2.3 x 4		3
6	C-422695	Take-up Drum	PX-291	1
7	C-422706	Take-up Felt	PX-293	1
8	C-422717	Take-up Spring	PX-294	1
9	C-422752	Take-up Spring Holder	PX-295	1
10	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		1
11	C-290283	"U" Ring 2.85M	6-1-1	1
12	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		1
13	C-422774	Reel Metal Case, w/Metal T	PX-297B	1
14	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		1
15	C-270101	"E" Ring 3.0M	6-1-9	1
16	C-222390	Rubber Washer 0.5t	BT-113	1
17	C-256138	Reel Retainer B	BT-110	1
18	C-255622	Reel Spring	BT-111	1
19	C-259413	Washer (APL) 2.7x4.9x1t	BT-112	1
20	C-270088	"E" Ring 1.9M	6-1-9	1

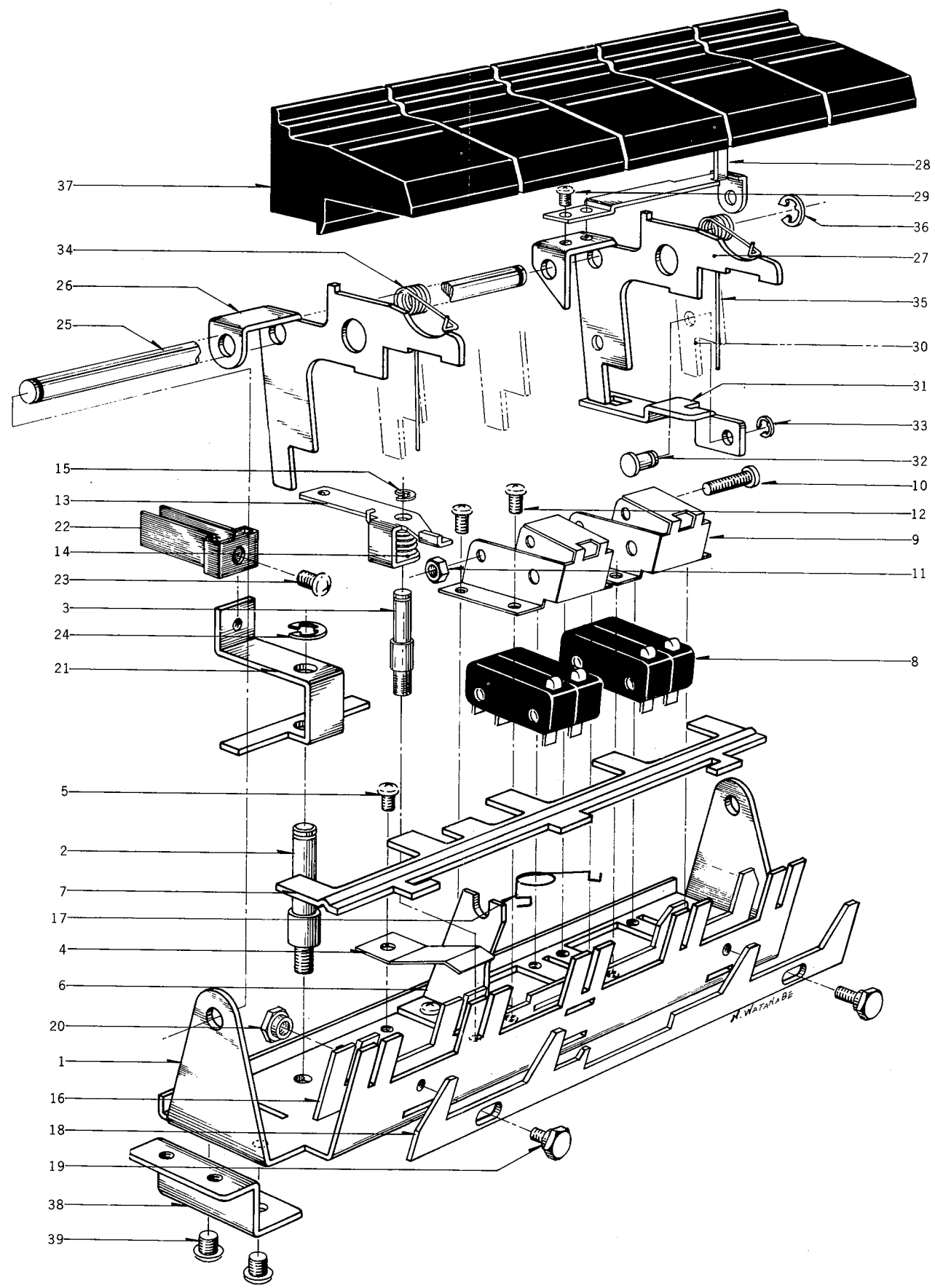
TAKE-UP REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	C-423415	Take-up Reel Table Block Comp.	PXA	1
21	C-423494	Take-up Reel Shaft	PX-296B	1
22	C-359921	PX Reel Table, w/bush	PX-202	1
23	C-359932	Reel Table Rubber Plate	PX-203	1
24	C-422730	Reel Table T	PX-292B	1
25	C-356782	Screw, pan head 2.3 x 4		3
26	C-422695	Take-up Drum	PX-291	1
27	C-422706	Take-up Felt	PX-293	1
28	C-422717	Take-up Spring	PX-294	1
29	C-422752	Take-up Spring Holder	PX-295	1
30	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		1
31	C-422741	Claw Washer (SUP) 0.25t	PX-293B	1
32	C-290283	"U" Ring 2.85M	6-1-1	1
33	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		1
34	C-422774	Reel Metal Case, w/Metal T	PX-297B	1
35	C-422796	Washer (Nylon) 4.6 x 8 x 0.5t		1
36	C-270101	"E" Ring 3.0M	6-1-9	1
37	C-222390	Rubber Washer 0.5t	BT-113	1
38	C-256138	Reel Retainer B	BT-110	1
39	C-255622	Reel Spring	BT-111	1
40	C-259413	Washer (ALP) 2.7x4.9x1t	BT-112	1
41	C-270088	"E" Ring 1.9M	6-1-9	1

KEYBOARD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	D-430615	Keyboard Block (VT-110) Assy. Comp.	PXA	1
–	D-438434	Keyboard Block (VT-100S) Assy. Comp.	PXS	1
1	D-435060	Button Guide B	PX-A311	1
2	D-360797	FF Changing Shaft	PX-302	1
–	D-273756	M3 Nut		2
3	D-422098	Release Lever Shaft	PX-A305	1
4	D-360808	Plate Spring	PX-303	1
5	D-356668	Screw, binding head 2.3 x 4		2
6	D-360810	Supporting Plate	PX-304	1
7	D-360832	Button Lock Plate A	PX-306	1
8	D-356916	Micro Switch SL-2 AC5A 125V	25-1-17	4
9	D-360821	Switch Mounting Plate	PX-305	2
10	D-356670	Screw, binding head 2.3 x 15		4
11	D-273668	M2.3 Nut		4
12	D-201475	Screw, pan head 2 x 3		8
13	D-422875	Release Lever	PX-A306	1
14	D-428635	Release Lever Spring	PX-A307	1
15	D-270088	"E" Ring 1.9M	6-1-9	1
16	D-434351	Slide Plate A	PX-A310	1
17	D-360854	Slide Plate Spring	PX-308	1
18	D-422853	Slide Plate B	PX-A301	1
19	D-432584	Draduated Screw, Slide Plate	PX-A309	2
20	D-432911	Nut, Slide Plate	PX-A308	2
21	D-360944	FF Changing Plate	PX-317	1
22	D-360955	Changing Plate Spring	PX-318	1
23	D-356668	Screw, binding head 2.3 x 4		1
24	D-270101	"E" Ring 3.0M	6-1-9	1
25	D-360876	Button Guide Shaft	PX-310	1
26	D-360898	Button Lock Plate C	PX-312	3
27	D-360887	Button Lock Plate B-1 (VT-110)	PX-311	1
28	D-422886	Sub Lock Plate (VT-110)	PX-A303	1
29	D-391386	Screw, pan head 2.3 x 3 (VT-110)		2
30	D-435115	Button Lock Plate B-2 (VT-110)	PX-311	1
–	D-435115	Button Lock Plate B-2 (VT-100S)	PX-311	2
31	D-360900	Switch Changing Plate	PX-313	1
32	D-360911	Switch Changing Shaft	PX-314	1
33	D-356657	"E" Ring 1.5M	6-1-9	1
34	D-360922	Button Spring	PX-315	4
35	D-360933	REC Return Spring	PX-316	1
36	D-357164	"E" Ring 2.3M	6-1-9	2
37	D-360966	Operation Button	PX-319	5
38	D-422021	Button Guide Mounting Plate (Left)	PX-A134	1
–	D-422032	Button Guide Mounting Plate (Right)	PX-A136	1
39	D-201925	Screw, binding head 2.3 x 5		4
–	D-323728	Screw, binding head 3 x 5		4

ILLUSTRATION OF KEYBOARD BLOCK



When you order these parts, Please describe their Parts No. and Serial No. in detai.

ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
		FF IDLER LEVER (A) BLOCK		
–	E-358615	FF Idler Lever (A) Block Comp.	PX	1
1	E-360663	FF Idler A Lever, w/Shaft	PX-270,1	1
2	E-360685	Pressure Plate	PX-272	1
3	E-360696	Pressure Roller	PX-273	1
4	E-360707	Pressure Roller Shaft	PX-274	1
–	E-356657	"E" Ring 1.5M	6-1-9	1
5	E-355544	Screw, binding head 2 x 4		2
–	E-259773	Washer (Nylon) 4.1 x 7 x 0.5t		1
6	E-360718	FF Idler A	PX-275	1
–	E-259740	Washer (SUP) 4.1 x 7 x 0.25t		1
–	E-270101	"E" Ring 3.0M	6-1-9	1
–	E-359638	FF Idler A Spring	PX-146	1
		SUB PINCH ROLLER BLOCK		
–	F-358637	Sub Pinch Roller Block Comp.	PX	1
7	F-360314	Sub Pinch Roller Arm	PX-236	1
8	F-360325	Sub Pinch Roller Plate	PX-237	1
9	F-422076	Screw, pan head 3 x 5		2
–	F-360336	Sub Pinch Roller Shaft	PX-238	1
–	F-355590	Screw, countersunk head 2.6 x 6		1
10	F-359313	Sub Pinch Roller Arm Prop	PX-116	1
11	F-270101	"E" Ring 3.0M	6-1-9	1
12	F-359730	Sub Pinch Roller Spring	PX-156	1
13	F-359741	Spring Arm	PX-157	1
14	F-417227	Screw, binding head 2.3 x 5		1
		MAIN PINCH ROLLER BLOCK		
#	G-358626	Main Pinch Roller Block Assy. Comp.	PX	1
15	G-374602	Plunger Solenoid 1040FHT	44-1-44	1
–	G-375592	Silicon Diode V06B	45-2-35	1
16	G-360235	Plunger Bracket	PX-231	1
–	G-424124	Screw, countersunk head 3 x 5		2
17	G-360246	Pinch Roller Lever	PX-232	1
–	G-360257	Pinch Roller Joint Pin	PX-233	1
–	G-270088	"E" Ring 1.9M	6-1-9	1
18	G-259514	Washer (Nylon) 3.1 x 8 x 1t	BT-104	1
–	G-259503	Washer (Nylon) 3.1 x 8 x 0.5t	BT-104	4
19	G-360292	Pinch Roller Return Spring	PX-234	1
20	G-360156	Pinch Roller Arm	PX-223	1
21	G-360303	Pinch Roller Spring	PX-235	1
22	G-273756	M3 Nut		3
23	G-359302	Pinch Roller Arm Prop	PX-115	1
24	G-270123	"E" Ring 4.0M	6-1-9	1
25	G-360167	Pinch Roller Shaft	PX-224	1
–	G-360178	Pinch Roller Washer	PX-225	1
26	G-360213	Pinch Roller Plate, w/Pin	PX-229	1
–	G-201925	Screw, binding head 2.3 x 5		2

Ref. No.	Parts No.	Description	Schematic No.	Quantity
		TAKE-UP ROLLER BLOCK		
–	H-423371	Take-up Roller Block Comp.	PXA	1
27	H-422548	Take-up Pulley Arm, w/Shaft	PX-243	1
28	H-422605	Take-up Puller	PX-282	1
–	H-259773	Washer (Nylon) 4.1 x 7 x 0.5t		2
–	H-270101	"E" Ring 3.0M	6-1-9	1
29	H-422561	Take-up Roller Arm B, w/Shaft B	PX-245	1
30	H-360584	Drive Idler	PX-262	1
31	H-259773	Washer (Nylon) 4.1 x 7 x 0.5t		2
32	H-270101	"E" Ring 3.0M	6-1-9	1
33	H-422572	Take-up Roller Arm Adjusting Plate	PX-245B	1
–	H-356668	Screw, binding head 2.3 x 4		1
34	H-360617	Pressure Arm	PX-265	1
35	H-360628	Joint Shaft	PX-266	1
36	H-360630	Take-up Torque Adjusting Screw A	PX-267	1
37	H-360641	Take-up Torque Adjusting Screw B	PX-268	1
38	H-360652	Take-up Idler Spring	PX-269	1
–	H-321513	Washer (Nylon) 2.6 x 8 1t		1
–	H-356657	"E" Ring 1.5M	6-1-9	1
39	H-427127	Take-up Roller Arm Shaft	PX-A160	1
40	H-427116	Take-up Roller Arm Shaft Collar	PX-A161	1
41	H-422550	Take-up Arm Spring A	PX-244	1
42	H-402557	Washer (Nylon) 4.1 x 7 x 0.2t		1
43	H-357164	"E" Ring 2.3M	6-1-9	1
44	H-422627	Take-up Belt	PX-182	1
		VIDEO CHANGING SWITCH BLOCK		
45	I-422458	Connector Panel	PX-A108	1
–	I-358064	10P Connector RM15TRG-10S	31-166	1
–	I-422471	Slide Switch SL-B262B	25-3-38	1
–	I-422493	Video Changing Switch P.C. Board	PX-A148	1
–	I-422515	Carbon Resistor RD1/8 330K K	35-9-13	1
–	I-422504	Carbon Resistor RD1/8 75Ω J	35-9-13	1
–	I-430413	Screw, countersunk head 2.6 x 4		2
46	I-422482	Volume V12M4-1S (SJ) 7S-B 100K	36-25-2	1
47	I-207358	Earphone Jack D3.5	31-2-15	1
–	I-422537	Nylon Collar, Jack D3.5	PX-A147	1
–	I-430402	Washer (Nylon) 6.2 x 10 x 0.5t		1
		SLIDE SWITCH BLOCK		
–	J-430626	Slide Switch Block Comp. (VT-110)	PXA	1
–	J-438423	Slide Switch Block Comp. (VT-100S)	PXS	1
48	J-422324	Switch Mounting Plate A, w/Shaft ,	PX-A201	1

When you order these parts, Please describe their Parts No. and Serial No. in detail

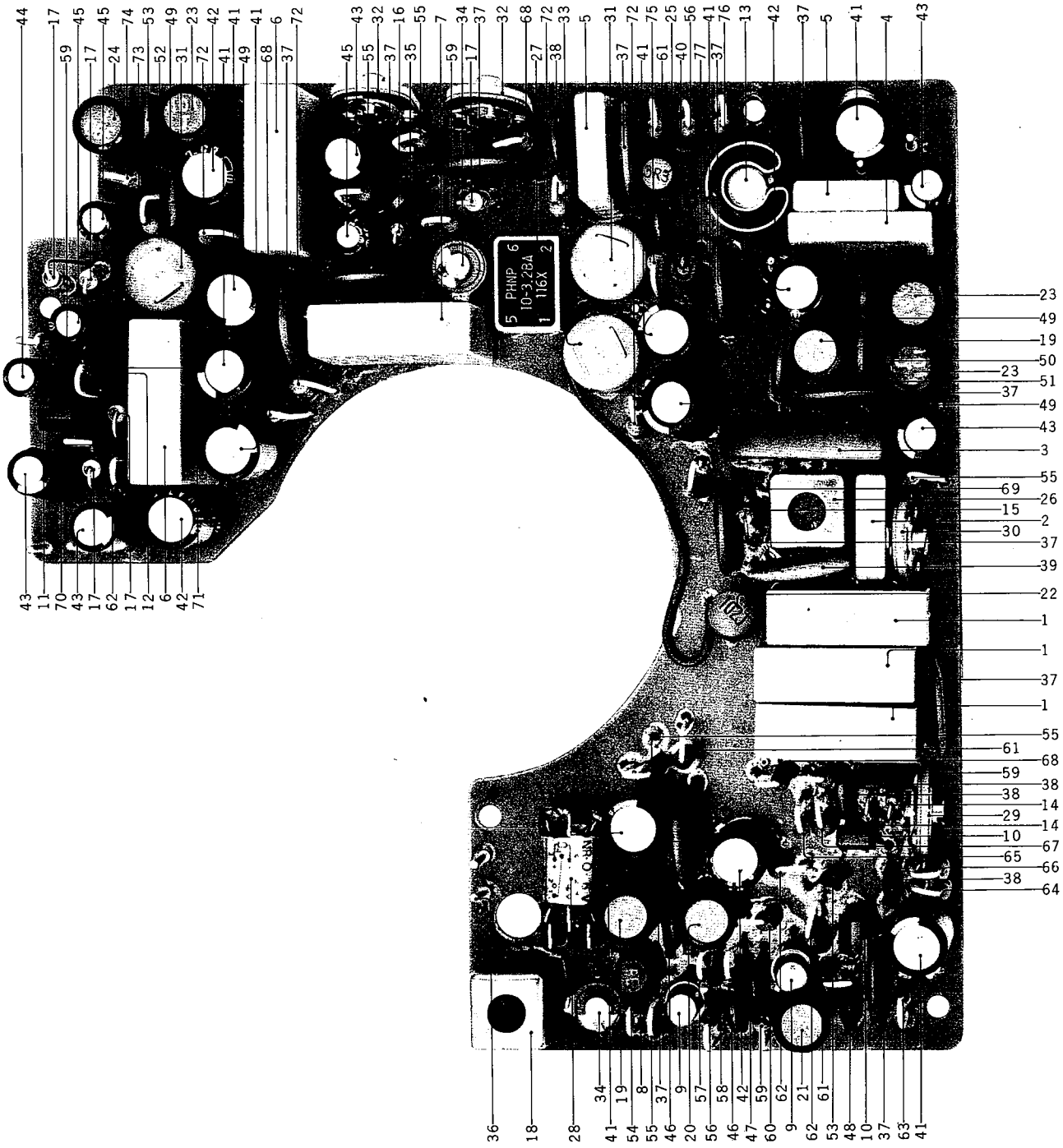
Ref. No.	Parts No.	Description	Schematic No.	Quantity
49	J-422368	Lock Arm Spring	PX-A203	1
50	J-422346	Lock Arm, w/Pin	PX-A204	1
–	J-430446	Washer (Nylon) 3.1 x 8 x 0.25t		1
–	J-270088	"E" Ring 1.9M	6-1-9	1
51	J-422436	Slide Switch SL-222B4C	25-3-40	1
52	J-365940	Screw, binding head 2.3 x 3		2
53	J-422414	Slide Switch SL-242B4BD	25-3-39	1
–	J-331435	Lug Plate VB2L	33-4-6	1
54	J-422381	Slide Plate Shaft	PX-A206	2
55	J-422370	Slide Plate	PX-A208	1
56	J-422392	Slide Switch Return Spring	PX-A207	1
57	J-430446	Washer (Nylon) 3.1 x 8 x 0.25t		2
58	J-357164	"E" Ring 2.3M	6-1-9	2
–	J-439650	Switch Mounting Plate B (VT-100S)	PX-A201	1
–	J-422436	Slide Switch SL-222B4C	25-3-40	1
–	J-365940	Screw, binding head 2.3 x 3		2
		ASSEMBLY BLOCK		
59	K-421986	Assembly Base Prop	PX-A153	1
–	K-413741	Screw, binding head 3 x 8		1
–	K-359280	Mech. Panel Prop	PX-113	1
–	K-323728	Screw, binding head 3 x 5		2
60	K-359291	Tape Guide	PX-114	1
61	K-422245	Counter Bracket Column	PX-A106	2
–	K-413155	Screw, binding head 3 x 6		4
62	K-422010	Guide Roller Shaft	PX-A138	1
–	K-273756	M3 Nut		1
63	K-422313	Switch Retaining Collar A	PX-A105	1
64	K-422302	Switch Retaining Collar B	PX-A105	1
65	K-422100	RWD Lever Shaft	PX-A104	1
–	K-359414	P.C. Board Prop A (L=26)	PX-126	4
–	K-359425	P.C. Board Prop B (L=30)	PX-126	2
66	K-359436	P.C. Board Prop C (L=34)	PX-126	4
–	K-359447	PX P.C. Board Prop E	PX-127	1
–	K-200384	Screw, countersunk head 3 x 6		6
–	K-323728	Screw, binding head 3 x 5		5
67	K-359190	Mech. Retaining Angle A	PX-104	1
–	K-359458	P.C. Board Retaining Angle	PX-128	1
68	K-359460	Pinch Roller Lever Stopper	PX-129	1
–	K-201925	Screw, binding head 2.3 x 5		2
69	K-422043	Keyboard Supporting Angle B	PX-A135	1
–	K-323728	Screw, binding head 3 x 5		1
70	K-434294	Shut-off Lever Comp.	PX-A176 to 179	1
–	K-402557	Washer (Nylon) 4.1 x 7 x 0.2t		1
71	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		1
72	K-270101	"E" Ring 3.0M	6-1-9	1
–	K-394560	Head Assy. Base Table B	PX-177	1
–	K-413155	Screw, binding head 3 x 6		4
73	K-359504	FF Slide Lever	PX-133	1
74	K-359515	FF Slide Lever Spring	PX-134	1
–	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		2
–	K-260201	Washer (Nylon) 6.2 x 13 x 1t		2

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	K-270101	"E" Ring 3.0M	6-1-9	2
75	K-399238	Brake Lever	PX-289	1
76	K-360437	Brake Spring	PX-248	1
–	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		2
–	K-260201	Washer (Nylon) 6.2 x 13 x 1t		2
77	K-270101	"E" Ring 3.0M	6-1-9	2
78	K-422651	Brake Lever A	PX-242	1
79	K-422662	Brake Lever B	PX-242	1
80	K-422673	Brake Rubber Bush	PX-299	2
81	K-360437	Brake Spring	PX-248	2
82	K-270101	"E" Ring 3.0M	6-1-9	2
–	K-434395	Brake Off Lever Comp.	PX-A174	1
83	K-359526	Brake Off Lever A, w/Metal	PX-135,6	1
84	K-359548	Brake Off Lever A-2	PX-137	1
85	K-394525	Screw, binding head 2 x 3		2
86	K-359550	Brake Off Lever B, w/Metal	PX-138,9	1
87	K-270088	"E" Ring 1.9M	6-1-9	1
–	K-259738	Washer (Polyslider) 4.1 x 7 x 0.25t		1
88	K-270101	"E" Ring 3.0M	6-1-9	1
–	K-434428	FF Idler B Lever Comp.	PX-A172	1
89	K-359583	FF Lever, w/Metal	PX-141,3	1
90	K-359640	FF Idler B	PX-147	1
91	K-402557	Washer (Nylon) 4.1 x 7 x 0.2t		2
92	K-270101	"E" Ring 3.0M	6-1-9	2
93	K-394852	FF Belt	PX-150	1
–	K-434430	RWD Idler Comp.	PX-A171	1
94	K-422054	RWD Lever, w/Shaft	PX-A112	1
–	K-259773	Washer (Nylon) 4.1 x 7 x 0.5t		2
95	K-359706	RWD Idler	PX-153	1
96	K-270101	"E" Ring 3.0M	6-1-9	2
97	K-360437	Brake Spring	PX-248	1
98	K-422111	Micro Switch MT-10AT	25-1-21	1
99	K-393726	Screw, truss head 3 x 10		1
100	K-422447	Slide Switch S-4900	25-3-42	1
101	K-344351	Screw, countersunk head 2 x 4		2
–	K-434406	Tension Plate Comp.	PX-A173	1
102	K-422144	Tension Plate, w/Collar	PX-A125,6	1
103	K-422188	Tension Bar A	PX-A127	1
104	K-422177	Tension Bar Holder	PX-A128	1
105	K-422190	Tension Adjuster	PX-A129	1
106	K-356668	Screw, binding head 2.3 x 4		1
107	K-422122	Tension Bar B	PX-A131	1
108	K-270088	"E" Ring 1.9M	6-1-9	2
109	K-427105	Tension Bar A Stopper	PX-A159	1
110	K-417216	Screw, pan head 3 x 4		1
111	K-422897	Release Arm Plate, w/Arm A	PX-A139	1
112	K-360865	Slide Plate Shaft	PX-309	1
113	K-422201	Release Arm, w/Shaft	PX-A123	1
114	K-422166	Tension Plate Wire	PX-A130	1
115	K-357164	"E" Ring 2.3M	6-1-9	1
116	K-356668	Screw, binding head 2.3 x 4		1
117	K-422223	Return Spring	PX-A132	1

When you order these parts, Please describe their Parts No. and Serial No. in detail

Ref. No.	Parts No.	Description	Schematic No.	Quantity
118	K-359493	Connection Metal Fitting	PX-132	3
119	K-414033	Screw, contersunk head 3 x 8		6
–	K-434441	Monitor Connector Comp.	PX-A170	1
120	K-359820	Connector Mounting Plate L	PX-165	1
121	K-359818	Connector Cover	PX-164	1
122	K-358086	8P Connector MB-8S-7.5A-1	31-1-63	1
123	K-323728	Screw, binding head 3 x 5		2
124	K-358097	Seesaw Switch SJ-1253 (SA2050N)	25-2-10	1
125	K-371856	ISO Screw, binding head 3 x 5		2
126	K-361440	Battery Checker MO-48	46-1-13	1
127	K-359831	Checker Fastener	PX-166	1
128	K-358075	Earphone Jack	31-2-15	1
129	K-422460	Decorative Plate (VT-110)	PX-A109	1
–	K-438197	Decorative Plate (VT-100S)	PX-A109	1
130	K-379001	5P DIN Jack S-I 8123	31-1-24	1
131	K-323728	Screw, binding head 3 x 5		2
–	K-419848	Screw, binding head 2.3 x 3		3
–	K-359864	Switch Retaining Plate	PX-169	1
132	K-413255	Screw, binding head 3 x 6		2
133	K-423505	Back Tension Supporting Plate	PX-A152	1
134	K-422818	Plate Spring, Back Tension	PX-A150	1
–	K-422820	Felt, Back Tension	PX-A151	1
135	K-394525	Screw, binding head 2 x 3		2
–	K-422831	Reel Shaft Cover	PX-A149	1
–	K-255082	Lug Plate VBL2	33-4-10	1
–	K-349558	Ferri-Inductor FL9H 1.5MH (J)	23-1-4	1
–	K-434452	Intermediate Pulley Comp.	PX-A168	1
136	K-422256	Intermediate Pulley Shaft	PX-A107	1
137	K-422291	Intermediate Pulley	PX-A113	1
–	K-374534	Washer (Nylon) 3x5x0.5t		1
138	K-270088	"E" Ring 1.9M	6-1-9	1
–	K-357658	M2.6 Nut		1
139	K-422280	Tape Counter KMP-393 TCS-2219113	9-1-15	1
140	K-422234	Counter Bracket	PX-A114	1
–	K-430773	Screw, round head 2 x 4		2
141	K-417352	Screw, pan head 3 x 6		2
142	K-422267	Counter Belt A	PX-A115	1
143	K-422278	Counter Belt B	PX-A116	1
–	K-430784	Fuse Retaining Plate Comp.	PX-A166	1
–	K-429456	Fuse Retaining Plate	PX-A163	1
–	K-358031	Fuse 125V 4A	39-1-31	1
–	K-359785	Fuse Retaining P.C. Board	PX-161	1
–	K-356668	Screw, binding head 2.3 x 4		2
–	K-403053	Transistor 2SD234 (O) (Power Supply)	45-1-81	1
–	K-314403	Nylon Clip HP-2N		3
–	K-359201	Mech. Retaining Angle B (Rear Centre)	PX-105	1
–	K-359223	Mech. Retaining Angle D (Rear Left)	PX-107	1
–	K-359234	Mech. Retaining Angle E (Rear Right)	PX-108	1
144	K-422008	Mech. Retaining Angle	PX-A133	2
145	K-355500	Screw, binding head 2.6 x 5		10

PHOTO OF VIDEO P.C. BOARD (PX-A503)

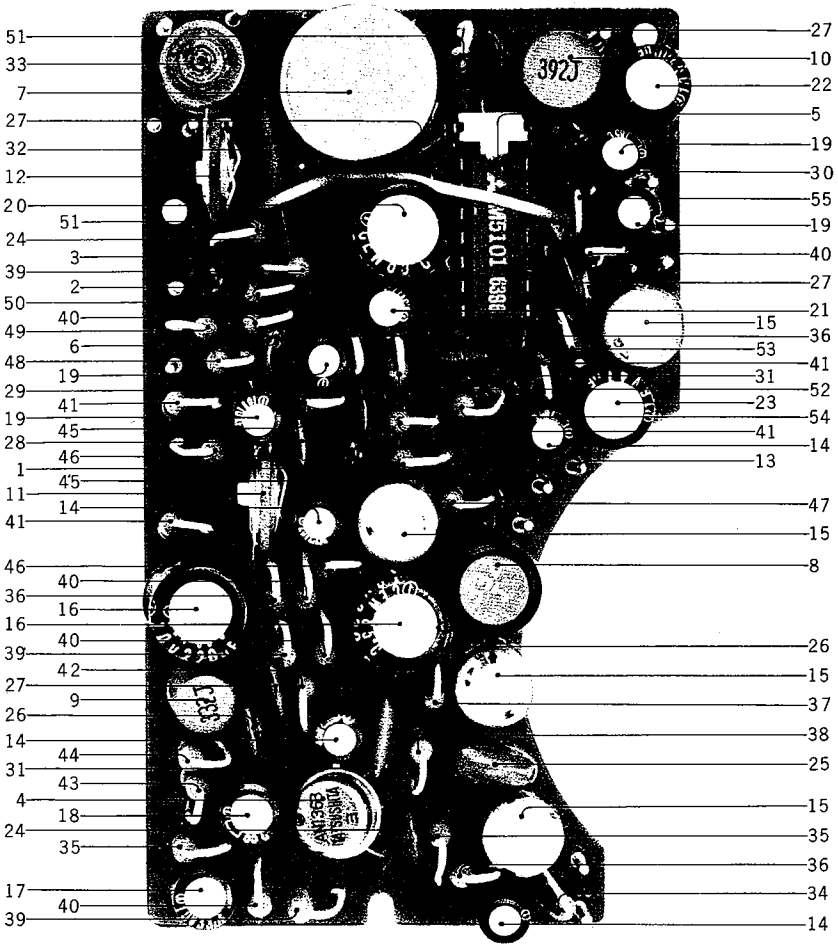


VIDEO P.C. BOARD (PX-A503) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	L-423360	Video P.C. Board (US) Assy. Comp.	PX-A503	1
–	L-430716	Video P.C. Board (CCIR) Assy. Comp.	PX-A503	1
1	L-423123	I.C. EHD-AW161G	IC4001,2,3	3
2	L-361462	I.C. P-2	IC4004	1
3	L-361473	I.C. GR-118	IC4005	1
4	L-361484	I.C. P-4	IC4006	1
5	L-357917	I.C. P-5 (AE-163)	IC4007,11	2
6	L-361506	I.C. R-1	IC4008,9	2
7	L-361517	I.C. GR-117	IC4010	1
8	L-423224	Transistor 2SK19BL	TR4001	1
9	L-350392	Transistor 2SC645(B)	TR4002,3	2
10	L-380430	Transistor 2SC460(C)	TR4004,5	2
11	L-329218	Transistor 2SC458(C)	TR4006	1
12	L-380834	Transistor 2SC711(E)	TR4007	1
13	L-338894	Transistor 2SC968(3)	TR4008	1
–	L-361697	Heat-Sink Plate R-1A	45-7-2	1
14	L-420120	Silicon Doide 1S2144(A) (Special)	D4001,2	2
15	L-374692	Silicon Diode SD-13	D4003	1
16	L-373432	Silicon Diode 1S2144(A)	D4008	1
17	L-219464	Germanium Diode 1N34A	D4004 to 7,9	5
18	L-423235	RF Ciol 14S048	L4001	1
19	L-361888	Inductor FS0810S 180μH J	L4002,7	2
20	L-423246	Inductor FS0810S 220μH J	L4003	1
21	L-428703	Inductor FS0810S 1mH J	L4004	1
22	L-243977	Ferri-Inductor FL7H ·1mH J	L4005	1
23	L-357772	Inductor FS0810S 100μH J	L4006,8,10	3
24	L-361890	Inductor FS0810S 39μH J	L4009	1
25	L-375581	Ferri-Inductor FL4H 3.3μH K	L4011	1
26	L-361822	Transformer SNY-1352	T4001	1
27	L-355746	Transformer PHNP1O-32BA	T4002	1
28	L-375625	Relay NR-0-6V	RL4001	1
29	L-423257	Semi-variable Volume V101KR 20KB	VR4001	1
30	L-399993	Semi-variable Volume V101KR 200ΩB	VR4002	1
31	L-361800	Semi-variable Volume SV10KR 470ΩB	VR4003,7	2
32	L-402513	Semi-variable Volume V101KR 1KB	VR4004,5	2
33	L-361798	Semi-variable Volume SV10KR 100ΩB	VR4006	1
34	L-423268	Trimmer Condenser CV09 D200 20PF	TC4001,2	2
35	L-361844	Thermistor 22D27	TH4001	1
36	L-376648	P.C Board Terminal	PX-501	11
–	L-350447	Test Terminal	PX-544	1
		Capacitor, Vertical Type	C	
37	L-350594	Ceramic TLD14F 0.1μZ 25WV	4003,12,14, 16,18,41,44, 45,48,50,51	11
38	L-374218	Ceramic TLD07F 0.01μZ 25WV	4007,10,11, 47	4
39	L-361732	Ceramic DD620BC-12 0.5μF 12WV	4015	1
40	L-423797	Ceramic TLD08F. 0.02μZ 25WV	4049	1
41	L-220105	Electrolytic 100μF 10WV	4002,13,17, 26,31,34,40, 46	8
42	L-320040	Electrolytic 47μF 16WV	4008,24,30, 39	4
43	L-220590	Electrolytic 33μF 10WV	4019,25,27, 29,43	5
44	L-220465	Electrolytic 22μF 6.3WV	4028	1
45	L-450055	Electrolytic 1μF 25WV	4032,33,42	3
46	L-250885	Mylar 0.01μF (K) 50WV	4001,5	2
47	L-250604	Mylar 0.001μF (K) 50WV	4004	1
48	L-250582	Mylar 0.0033μF (K) 50WV	4006	1
49	L-350616	VFM 50PF (J) 50WV	4020,23,36, 38	4
50	L-350638	VFM 180PF (J) 50WV	4021	1
51	L-451462	VFM 150PF (J) 50WV	4022	1
52	L-310792	VFM 120PF (J) 50WV	4035	1
53	L-290520	VFM 100PF (J) 50WV	4037	1
		Carbon Resistor, Stopper Type	R	
54	L-212264	RD1/4 22K J	4001	1
55	L-357412	RD1/4 220Ω J	5002,3,19, 30,32	5
56	L-306843	RD1/4 1.2K J	4004,37	2
57	L-357456	RD1/4 2.2K J	4005	1
58	L-349942	RD1/4 8.2KJ	4006	1
59	L-336442	RD1/4 10K J	4007,18,24, 31	4
60	L-357491	RD1/4 82K J	4008	1
61	L-211667	RD1/4 100Ω J	4009,12,36	3
62	L-343078	RD1/4 2.7K J	4010,22,41	3
63	L-211320	RD1/4 1.5K J	4011	1
64	L-211858	RD1/4 12K J	4013	1
65	L-419556	RD1/4 43K J	4014	1
66	L-212681	RD1/4 330Ω J	4015	1
67	L-213467	RD1/4 820Ω J	4016	1
68	L-304402	RD1/4 470Ω J	4017,23,33	3
69	L-361563	RD1/4 180Ω J	4020	1
70	L-342933	RD1/4 27K J	4021	1
71	L-306887	RD1/4 15K J	4025	1
72	L-361642	RD1/4 47Ω J	4026,29,34, 35	4
73	L-380755	RD1/4 6.2K J	4027	1
74	L-211465	RD1/4 1K J	4028	1
75	L-324202	RD1/4 5.1K J	4038	1
76	L-304290	RD1/4 10Ω J	4039	1
77	L-361686	Solid RC1/2W 68Ω K	4040	1

When you order these parts, Please describe their Parts No. and Serial No. in detail

PHOTO OF AUDIO P.C. BOARD (PX-A502)

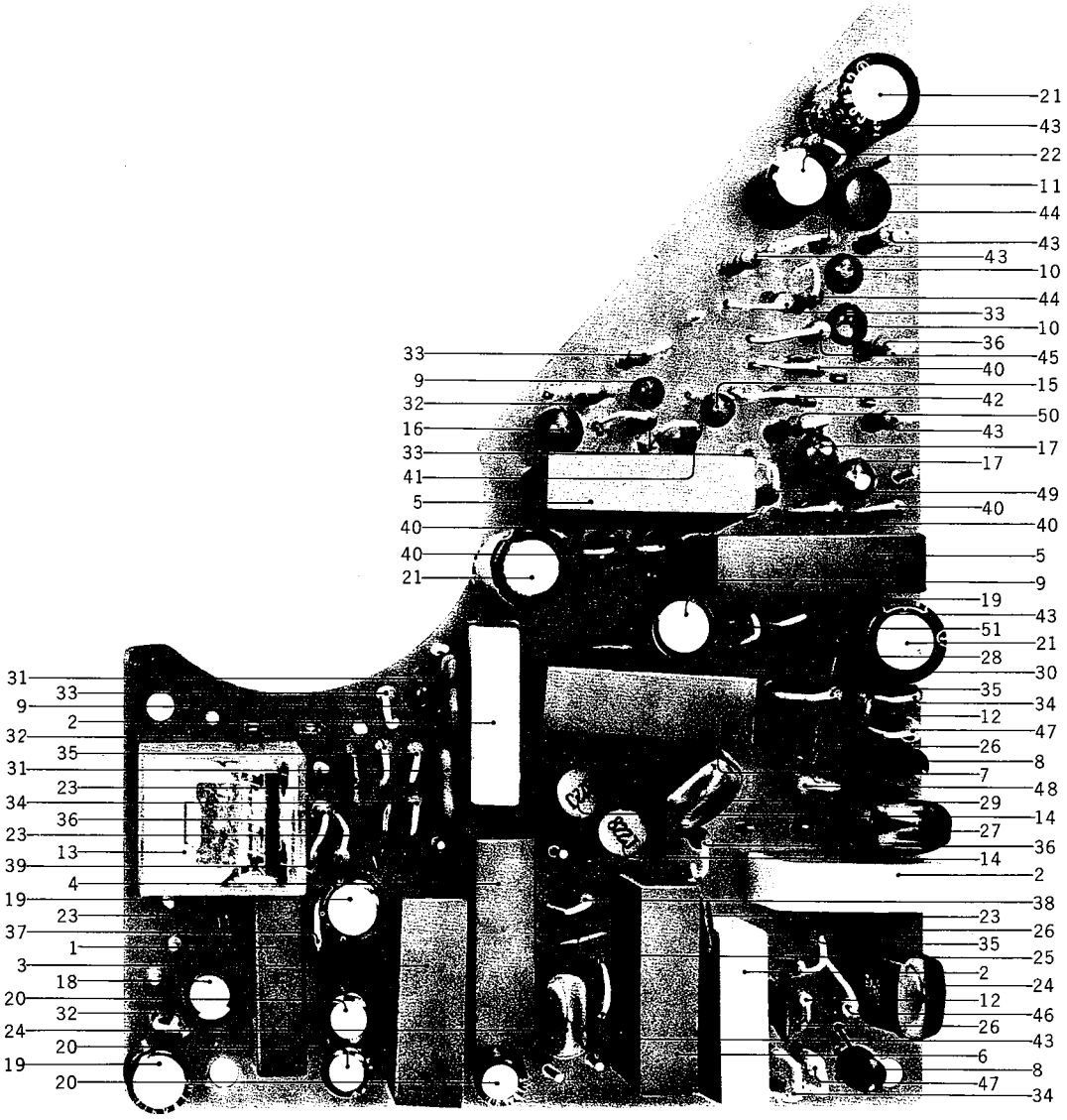


AUDIO P.C. BOARD (PX-A502) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	M-423358	Audio P.C. Board Assy. Comp.	PX-A502	1
1	M-361923	Transistor 2SC536(E)	TR5001	1
2	M-423180	Transistor 2SA610(4)	TR5002	1
3	M-399846	Transistor 2SC945(Q)	TR5003	1
4	M-329207	I.C. Line Amp. AN136B(Q)	IC5001	1
5	M-361934	I.C. M5101P	IC5002	1
6	M-219464	Germanium Diode 1N34A	D5001	1
7	M-362114	Transformer SNY-1424	T5001	1
8	M-362092	Inductor FS1012S 3.3MH (J) 332J	L5002	1
9	M-243988	Ferri-Inductor FL7H 3.3MH (J)	L5001	1
10	M-362103	Ferri-Inductor FL9H 3.9MH (J)	L5003	1
11	M-357873	Semi-variable Volume EVL-TOA 50KB	VR5001	1
12	M-362081	Semi-variable Volume EVL-TOA 100KB	VR5002	1
13	M-376648	P.C. Board Terminal	PX-501	17
		Capacitor, Vertical Type	C	
14	M-220432	Electrolytic 2.2μF 25WV	5001,13,15,26	4
15	M-220364	Electrolytic 100μF 6.3WV	5003,4,16,28	4
16	M-329782	Electrolytic 220μF 10WV	5007,9	2
17	M-220590	Electrolytic 33μF 10WV	5008	1
18	M-331705	Electrolytic 22μF 16WV	5010	1
19	M-320051	Electrolytic 10μF 16WV	5019,21,24,30	4
20	M-343236	Electrolytic 330μF 6.3WV	5020	1
21	M-220465	Electrolytic 22μF 6.3WV	5023	1
22	M-220105	Electrolytic 100μF 10WV	5025	1
23	M-335485	Electrolytic 47μF 16WV	5032	1
24	M-250604	Mylar 0.001μF (K) 50WV	5002,22	2
25	M-313323	Mylar 0.068μF (K) 50WV	5005	1
26	M-362068	Mylar 0.0018μF (K) 50WV	5011,14	2
27	M-250885	Mylar 0.01μF (K) 50WV	5012,29,33,34	4
28	M-250661	Mylar 0.0015μF (K) 50WV	5017	1
29	M-357232	Mylar 0.0039μF (K) 50WV	5018	1
30	M-362125	Mylar 0.0056μF (K) 50WV	5031	1
31	M-290564	VFM 220PF (K) 50WV	5006,27	2
32	M-363688	FM 100P (K) 500WV	5036	1
33	M-423191	Styrol 3300PF (J) 250WV	5035	1
		Carbon Resistor, Stopper Type	R	
34	M-361980	RD1/4 620Ω J	5001	1
35	M-357570	RD1/4 150K J	5002,9	2
36	M-211465	RD1/4 1K J	5003,11,29	3
37	M-352045	RD1/4 3.9K J	5004	1
38	M-363644	RD1/4 560Ω J	5005	1
39	M-346601	RD1/4 47K J	5006,14,28	3
40	M-336442	RD1/4 10K J	5007,15,16,24,32	5
41	M-304402	RD1/4 470Ω J	5008,20,22,36	4
42	M-211757	RD1/4 100K J	5010	1
43	M-212681	RD1/4 330Ω J	5012	1
44	M-357535	RD1/4 39K J	5013	1
45	M-450865	RD1/4 12K J	5017,21	2
46	M-361528	RD1/4 56K J	5018,26	2
47	M-361642	RD1/4 47Ω J	5019	1
48	M-211667	RD1/4 100Ω J	5023	1
49	M-362024	RD1/4 820K J	5025	1
50	M-346994	RD1/4 18K J	5027	1
51	M-357456	RD1/4 2.2K J	5030,37	2
52	M-357412	RD1/4 220Ω J	5031	1
53	M-212016	RD1/4 150Ω J	5033	1
54	M-450011	RD1/4 120K J	5034	1
55	M-213030	RD1/4 5.6K J	5035	1

When you order these parts, Please describe their Parts No. and Serial No. in detail

PHOTO OF SERVO P.C. BOARD (PX-A505)

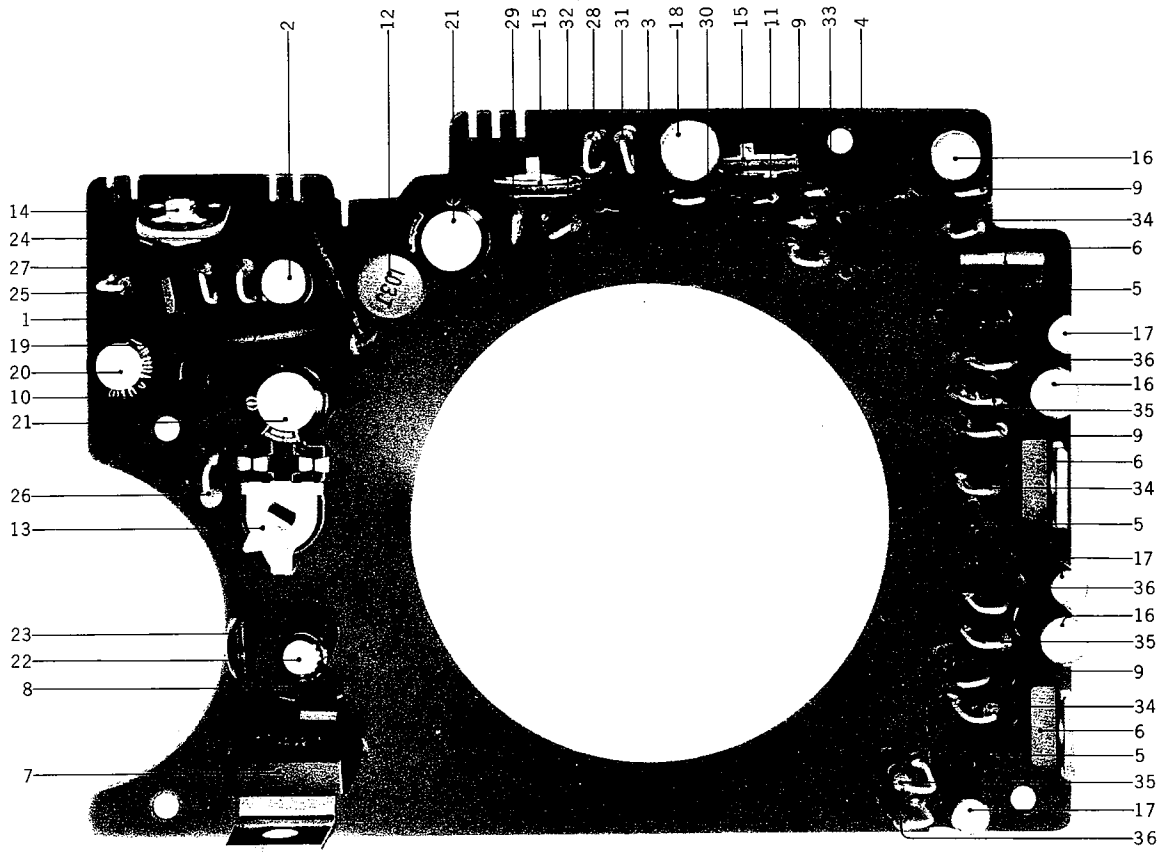


SERVO P.C. BOARD (PX-A505) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	N-423336	Servo P.C. Board (US) Assy. Comp.	PX-A505	1
–	N-430683	Servo P.C. Board (CCIR) Assy. Comp.	PX-A505	1
1	N-362351	I.C. HA-113	IC6001	1
2	N-362362	I.C. FF-10	IC6002,7,8	3
3	N-362373	I.C. D-2114	IC6003	1
4	N-362193	I.C. D-3263	IC6004	1
5	N-362384	I.C. D-3272	IC6005,9	2
6	N-362395	I.C. D-2116	IC6006	1
7	N-362406	I.C. D-3271	IC6010	1
8	N-362136	Uni-junktion Transistor 2N6027	UjT6001,2	2
9	N-370607	Transistor 2SC536 (F)	TR6001,2,6	3
10	N-421154	Transistor CS1303 (Green)	TR6003,4	2
11	N-423022	Transistor CS9012HH	TR6005	1
12	N-373432	Silicon Diode 1S2144 (A)	D6001,2	2
13	N-423077	Relay TECK-TT9-OH 9V 250Ω	RL6001	1
14	N-379923	Ferri-Inductor FL7H 8.2MH (J)	L6001,2	2
–	N-423055	Semi-variable Volume V10K4H3-1 50KB	VR6001	1
–	N-423066	Semi-variable Volume V10K4H3-1 100KB	VR6002	1
–	N-399971	Semi-variable Volume V101KR-1 1KB	VR6003	1
–	N-423044	Semi-variable Volume V10K4H3-1 30KB	VR6004,5	2
–	N-363126	P.C. Board Terminal	PX-501	14
–	N-363150	Test Terminal	PX-502	8
		Capacitor, Vertical Type	C	
15	N-362417	Tantalum 0.33μF(M) 35WV	6016,27	2
16	N-251785	Tantalum 33μF (K) 10WV	6017	1
17	N-251640	Tantalum 10μF (J) 10WV	6028,29	2
18	N-220590	Electrolytic 33μF 10WV	6002	1
19	N-320040	Electrolytic 47μF 16WV	6004,12,31	3
20	N-329771	Electrolytic 47μF 6.3WV	6005,6,14	3
21	N-329782	Electrolytic 220μF 10WV	6010,25,33	3
22	N-220105	Electrolytic 100μF 10WV	6034	1
23	N-251087	Mylar 0.022μF (K) 50WV	6003,7,11,19	4
24	N-334620	Mylar 0.22μF (K) 50WV	6013,21	2
25	N-250997	Mylar 0.015μF (K) 50WV	6015	1
26	N-362158	Mylar 0.0047μF (K) 50WV	6020,22,23	3
27	N-334631	Mylar 0.22μF (K) 50WV	6024,30	2
28	N-250964	Mylar 0.012μF (K) 50WV	6026	1
29	N-334631	Mylar 0.22μF (K) 50WV (US)	6030	1
–	N-395504	Mylar 0.33μF (K) 50WV (CCIR)	6030	1
30	N-250885	Mylar 0.01μF (K) 50WV	6001,18,32	3
31	N-423033	VFM 680PF (K) 50WV	6008,9	2
		Carbon Resistor, Stopper Type	R	
32	N-357456	RD1/4 2.2K J	6001,13	2
33	N-336442	RD1/4 10K J	6002,12,14,18	4
34	N-343078	RD1/4 2.7K J	6003,39,34	3
35	N-362441	RD1/4 1.8K J	6004,29,33	3
36	N-212883	RD1/4 4.7K J	6005,24,39	3
37	N-212264	RD1/4 22K J	6006	1
38	N-350100	RD1/4 68K J	6007	1
39	N-357535	RD1/4 39K J	6008	1
40	N-211757	RD1/4 100K J	6009,10,17, 35,36	5
41	N-361528	RD1/4 56K J	6011	1
42	N-304402	RD1/4 470Ω J	6015	1
43	N-211465	RD1/4 1K J	6016,19,21,25,26,40	6
44	N-211667	RD1/4 100Ω J	6020,22	2
45	N-213030	RD1/4 5.6K J	6023	1
46	N-211757	RD1/4 100K J (US)	6027	1
–	N-379552	RD1/4 110K J (CCIR)	6027	1
47	N-362485	RD1/4 330K J	6028,32	2
48	N-362520	RD1/4 75K J (US)	6031	1
–	N-391961	RD1/4 91K J (CCIR)	6031	1
49	N-350100	RD1/4 68K J (US)	6037	1
–	N-391961	RD1/4 91K J (CCIR)	6037	1
50	N-306360	RD1/4 6.8K J	6038	1
51	N-407417	RD1/4 1M J	6043	1

When you order these parts, Please describe their Parts No. and Serial No. in detail

PHOTO OF MOTOR DRIVE P.C. BOARD (PX-513)

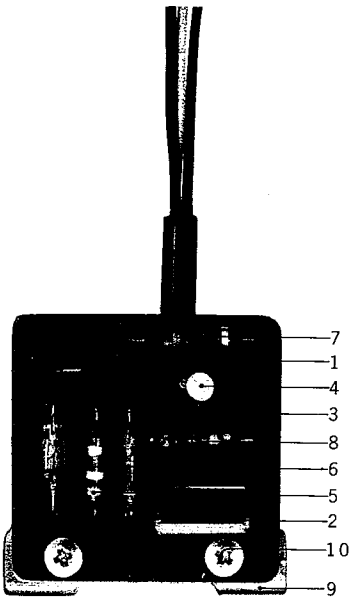


MOTOR DRIVE P.C. BOARD (PX-513) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	O-358806	Motor Drive P.C. Board Assy. Comp.	PX-513	1
1	O-345802	Transistor 2SC454 (B)	TR8001	1
2	O-338894	Transistor 2SC968 (3)	TR8002	1
3	O-394413	Transistor 2SA564 (S)	TR8003	1
4	O-350335	Transistor 2SA564 (Q)	TR8004	1
5	O-370607	Transistor 2SC536 (F)	TR8005,7,9	3
6	O-362261	Transistor 2SC1061 (B)	TR8006,8,10	3
7	O-362586	Transistor 2SC931 (C)	TR8011	1
8	O-234753	Transistor 2SC458 (B)	TR8012	1
9	O-224526	Silicon Diode 10D1	D8003 to 6	4
10	O-350471	Zener Diode RD7A N	ZD8001	1
11	O-362597	Zener Diode RD7A (Special)	ZD8002	1
12	O-244001	Ferri-Inductor FL9H 10mH (J)	L8001	1
13	O-362338	Semi-variable Volume EVL-S3A 10KB	VR8001	1
14	O-402513	Semi-variable Volume V101KR 1KB	VR8002	1
15	O-384974	Semi-variable Volume V10K4A-5-2 500ΩB	VR8003,4	2
		Capacitor, Vertical Type	C	
16	O-362327	Tantalum 10μF (K) 25WV	8006,8,10	3
17	O-251640	Tantalum 10μF (J) 10WV	8007,9,12	3
18	O-394514	Tantalum 22μF (K) 35WV	8015	1
19	O-350594	Ceramic TLD14F 0.1μZ 25WV	8002	1
20	O-220105	Electrolytic 100μF 10WV	8003	1
21	O-321208	Electrolytic 220μF 16WV	8004,5	2
22	O-331705	Electrolytic 22μF 16WV	8013	1
23	O-308711	Mylar 0.047μF (K) 50WV	8014	1
		Carbon Resistor, Stopper Type	R	
24	O-357456	RD1/4 2.2K J	8001	1
25	O-357412	RD1/4 220Ω J	8002	1
26	O-352045	RD1/4 3.9K J	8003	1
27	O-212477	RD1/4 3.3K J	8004	1
28	O-212264	RD1/4 22K J	8005	1
29	O-343078	RD1/4 2.7K J	8006	1
30	O-343135	RD1/4 1.6K J	8007	1
31	O-212872	RD1/4 4.3K J	8008	1
32	O-304402	RD1/4 470Ω J	8010	1
33	O-304290	RD1/4 10Ω J	8011	1
34	O-211320	RD1/4 1.5K J	8012,15,18	3
35	O-362272	RD1/4 200K J	8013,16,19	3
36	O-213030	RD1/4 5.6K J	8014,17,20	3

When you order these parts, Please describe their Parts No. and Serial No. in detail

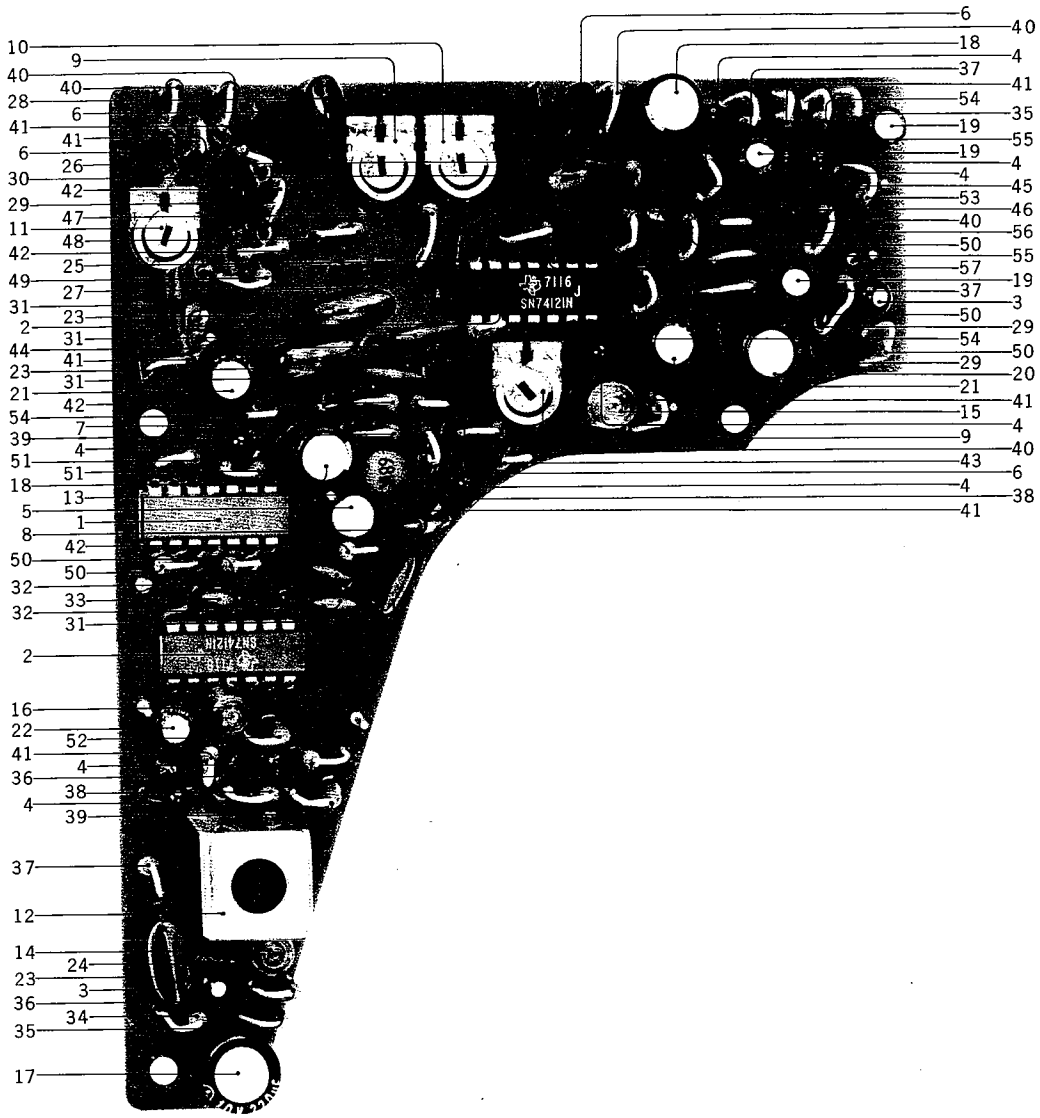
PHOTO OF PLG. CURRENT LIMITATION P.C. BOARD (PX-508)



PLG. CURRENT LIMITATION P.C. BOARD (PX-508) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
—	P-358773	PLG. Current Limitation P.C. Board Comp.	PX-508	1
1	P-362250	Transistor 2SA564 (O)	TR9001	1
2	P-362261	Transistor 2SC1061 (B)	TR9002	1
3	P-219464	Germanium Diode 1N34A	D9001	1
4	P-220465	Electrolytic Capacitor 22μF 6.3WV	C9001	1
5	P-430211	Carbon Resistor RD1/4 3.9K J	R9001	1
6	P-364948	Carbon Resistor RD1/4 3.3K J	R9002	1
7	P-214402	Carbon Resistor RD1/4 470Ω J	R9003	1
8	P-324641	Carbon Resistor RD1/4 1K J	R9004	1
9	P-363104	PLG. P.C. Board Holder	PX-503	1
10	P-201925	Screw, binding head 2.3 x 5		2

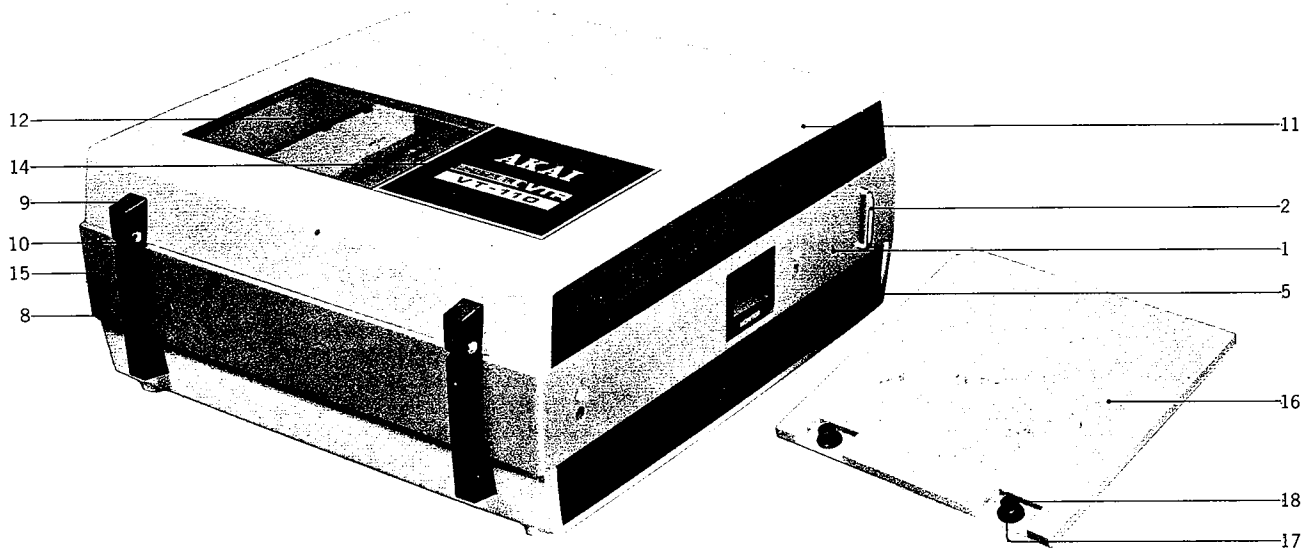
PHOTO OF SSG. P.C. BOARD (PX-A504)

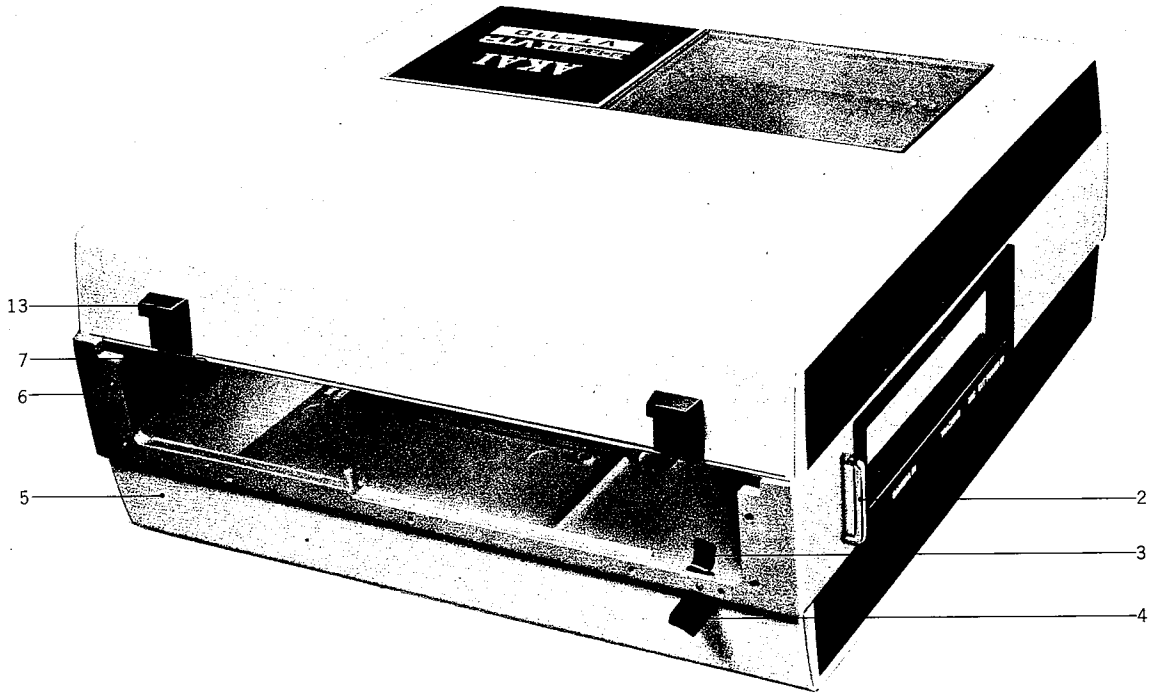


SSG. P.C. BOARD (PX-A504) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	Q-423347	SSG. P.C. Board (VTS-110 US) Assy. Comp.	PX-A504	1
–	Q-430874	SSG. P.C. Board (VTS-110 CCIR) Assy. Comp.	PX-A504	1
–	Q-438456	SSG. P.C. Board (VTS-100S US) Assy. Comp.	PX-A504	1
–	Q-438467	SSG. P.C. Board (VTS-100S CCIR) Assy. Comp.	PX-A504	1
1	Q-423101	I.C. MB400M	IC7001	1
2	Q-423090	I.C. SN74121N	IC7002,3	2
3	Q-350335	Transistor 2SA564 (Q)	TR7001,7	2
4	Q-370607	Transistor 2SC536 (F)	TR7002 to 6,9,10,11	8
5	Q-338894	Transistor 2SC968 (3)	TR7008	1
6	Q-362136	Uni-Junktion Transistor 2N6027	UJT7001 to 4	4
7	Q-373432	Silicon Diode 1S2144 (A)	D7001	1
8	Q-392128	Zener Diode 1S330A2	D7002	1
9	Q-403165	Semi-variable Volume RVLC1-0301 50KB	VR7001,3	2
10	Q-428332	Semi-variable Volume RVLC1-0301 30KB	VR7002	1
11	Q-403176	Semi-variable Volume RVLC1-0301 100KB	VR7004	1
12	Q-362147	Transformer SNY-033 1357	T7001	1
13	Q-423156	Ferri-Inductor FL7H 680μH (K)	L7001	1
–	Q-363126	P.C. Board Terminal	PX-501	12
		Capacitor, Vertical Type	C	
14	Q-412604	Styrol 1800P (J) 50WV	7003	1
15	Q-423808	Styrol 3300P (J) 50WV (US)	7006	1
–	Q-423810	Styrol 2200P (J) 50WV (CCIR)	7006	1
16	Q-353643	Styrol 470PF (J) 50WV	7020	1
17	Q-329782	Electrolytic 220μF 10WV	7004	1
18	Q-220105	Electrolytic 100μF 10WV	7014,29	2
19	Q-450055	Electrolytic 1μF 25WV	7021,22,25	3
20	Q-320040	Electrolytic 47μF 16WV	7026	1
21	Q-331705	Electrolytic 22μF 16WV	7030,31	2
22	Q-350706	Electrolytic 4.7μF 16WV	7032	1
23	Q-251291	Mylar 0.1μF (K) 50WV	7001,12,13	3
24	Q-250997	Mylar 0.015μF (K) 50WV	7002	1
25	Q-250604	Mylar 0.001μF (K) 50WV	7007	1
26	Q-250997	Mylar 0.015μF (K) 50WV (US)	7008	1
–	Q-250885	Mylar 0.01μF (K) 50WV (CCIR)	7008	1
27	Q-362158	Mylar 0.0047μF (K) 50WV	7009	1
28	Q-335340	Mylar 0.1μF (K) 50WV (US)	7010	1
–	Q-379214	Mylar 0.047μF (J) 50WV (CCIR)	7010	1
29	Q-250885	Mylar 0.01μF (K) 50WV	7011,23,24	3
30	Q-251190	Mylar 0.056μF (K) 50WV	7027	1
31	Q-290564	VFM 220PF (K) 50WV	7005,17,18, 28	4
32	Q-423145	VFM 75PF (K) 50WV	7015,16	2
33	Q-357827	VFM 50PF (K) 50WV	7019	1
		Carbon Resistor, Stopper Type	R	
34	Q-211757	RD1/4 100K J	7001	1
35	Q-212264	RD1/4 22K J	7002,31	2
36	Q-380913	RD1/4 33Ω J	7003,51	2
37	Q-336442	RD1/4 10K J	7004,37,41	3
38	Q-362441	RD1/4 1.8K J	7005,12	2
39	Q-343078	RD1/4 2.7K J	7006,13	2
40	Q-306843	RD1/4 1.2K J	7007,14,18,22,34	5
41	Q-211465	RD1/4 1K J	7008,19,23,35,46, 48,50	7
42	Q-212681	RD1/4 330Ω J	7009,20,24,45	4
43	Q-407463	RD1/4 22Ω J	7010	1
44	Q-211757	RD1/4 100K J (US)	7011	1
–	Q-379552	RD1/4 110K J (CCIR)	7011	1
45	Q-213300	RD1/4 680Ω J	7015	1
46	Q-361980	RD1/4 620Ω J	7016	1
47	Q-357491	RD1/4 82K J (US)	7017	1
–	Q-350100	RD1/4 68K J (CCIR)	7017	1
48	Q-357491	RD1/4 82K J (US)	7021	1
–	Q-211950	RD1/4 130K J (CCIR)	7021	1
49	Q-379552	RD1/4 110K J (US)	7025	1
–	Q-357570	RD1/4 150K J (CCIR)	7025	1
50	Q-213030	RD1/4 5.6K J	7026,39,40,42	4
51	Q-342933	RD1/4 27K J	7028,29	2
52	Q-420322	RD1/4 36K J	7030	1
53	Q-357491	RD1/4 82K J	7023	1
54	Q-357412	RD1/4 220Ω J	7033,47,49	3
55	Q-211667	RD1/4 100Ω J	7036,43	2
56	Q-212883	RD1/4 4.7K J	7038	1
57	Q-349907	RD1/4 33K J	7044	1

PHOTO OF CASE BLOCK





CASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	R-430582	VT-110 US Case Block Assy. Comp.	PXV-US	1
–	R-430650	VT-110 CCIR Case Block Assy. Comp.	PXV-CCIR	1
–	Q-438401	VT-100S US Case Block Assy. Comp.	PXV-US	1
–	R-438412	VT-100S CCIR Case Block Assy. Comp.	PXV-CCIR	1
1	R-421920	Case Frame B	PX-A401	1
2	R-360988	Band Hang	PX-402	2
–	R-273756	M3 Nut		4
3	R-360990	Safety Lock Plate	PX-403	1
4	R-361001	Safety Button	PX-404	1
–	R-361012	Safety Spring	PX-405	1
–	R-361023	Lock Shaft	PX-406	1
5	R-421931	Lower Case	PX-A402	1
6	R-361067	Case Retainer	PX-410	9
7	R-417137	Screw, binding head 3 x 4		9
–	R-413155	Screw, binding head 3 x 6		1
–	R-200384	Screw, countersunk head 3 x 6		2
–	R-434474	Hinge Comp.	PX-A408	2
8	R-361078	Hinge A	PX-411	2
9	R-361080	Hinge B	PX-412	2
–	R361091	Hinge Shaft	PX-413	2
10	R-430380	Screw, binding head 2.6 x 4		4
11	R-361102	Case Cover	PX-414	1
12	R-403964	Reel Cover	PX-415	1
13	R-361168	Case Knob	PX-420	2
–	R-361170	Case Fastener	PX-421	2
–	R-361181	Fastener Retaining	PX-422	2
–	R-200711	Set Screw 3 x 3		2
14	R-421918	Name Plate (VT-110)	PX-A404	1
–	R-438074	Name Plate (VT-100S)	PX-B401	1
15	R-421806	Screw, pan head 3 x 8		4
–	R-355487	Screw, binding head 3 x 10		2
–	R-421953	Rear Name Plate (NT-110)	PX-A602	1
–	R-421964	Rear Name Plate (VT-110 CCIR)	PX-A602	1
–	R-438085	Rear Name Plate (VT-100S)	PX-B601	1
–	R-438096	Rear Name Plate (VT-100S CCIR)	PX-B601	1
16	R-421942	Battery Case Cover	PX-A403	1
17	R-356580	Nylach Grommet H322-2-1		2
18	R-356591	Nylach Plunger H323-2-3-1		2

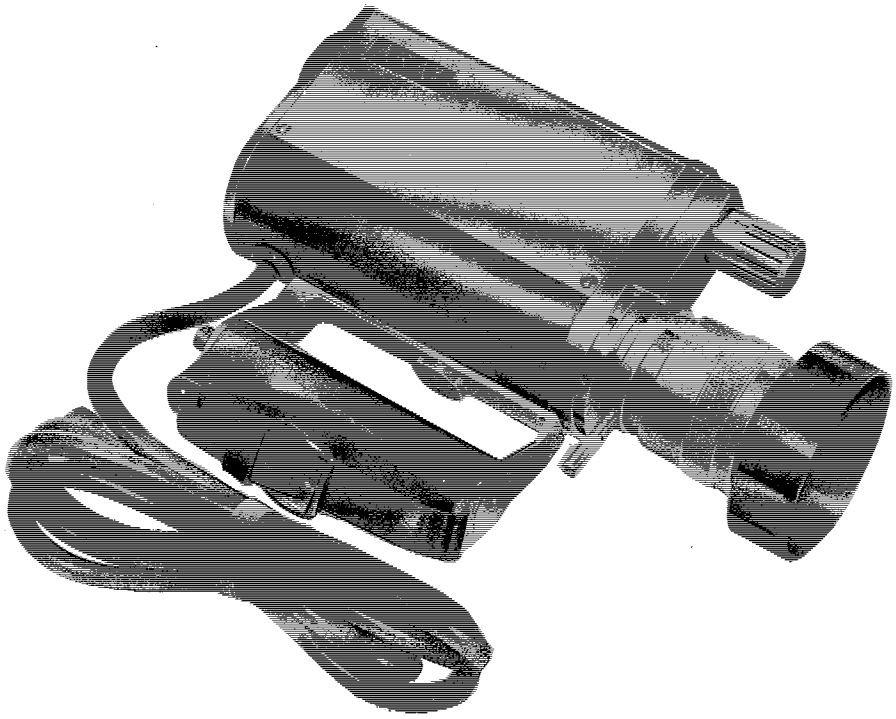
PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	S-430637	Battery Case Comp.	PXA	1
1	S-355667	Button Escutcheon	PX-609	1
2	S-433934	Screw, countersunk head 3 x 6 D = 5		4
3	S-421828	Mechanism Panel (VT-110)	PX-A601	1
–	S-438028	Mechanism Panel (VT-100S)	PX-A601	1
4	S-355680	Panel Post	PX-604	1
–	S-273688	M2.3 Nut		1
5	S-317327	Screw, binding head 2.3 x 6		3
–	S-259367	Washer (BSP) 2.4x4.2x0.3t		3
6	S-355702	Fastener Holder	PX-606	2
–	S-355454	Washer (BSP) 2.9x7.4x0.5t		2
7	S-421852	Mech. Panel Name Plate (VT-110)	PX-A606	1
–	S-438030	Mech. Panel Name Plate (VT-100S)	PX-B602	1
8	S-355691	Pinch Wheel Cap	PX-605	1
9	S-360180	Pinch Wheel PX	PX-226	1
10	S-360347	Sub Pinch Wheel	PX-239	1
–	S-422087	Guide Roller B	PX-A137	1
11	S-421863	Guide Roller Cover	PX-A605	1
–	S-421817	Set Screw 3 x 8		1
12	S-355724	Head Cover	PX-608	1
13	S-421830	Escutcheon R	PX-A604	1
–	S-421841	Escutcheon L	PX-A607	1
–	S-356736	Tapping Screw #2 2 x 5		1
–	S-356286	Carrying Belt	VSB-1	1
–	S-421874	Battery LC-303	56-1-2	2

When you order these parts, Please describe their Parts No. and Serial No. in detail



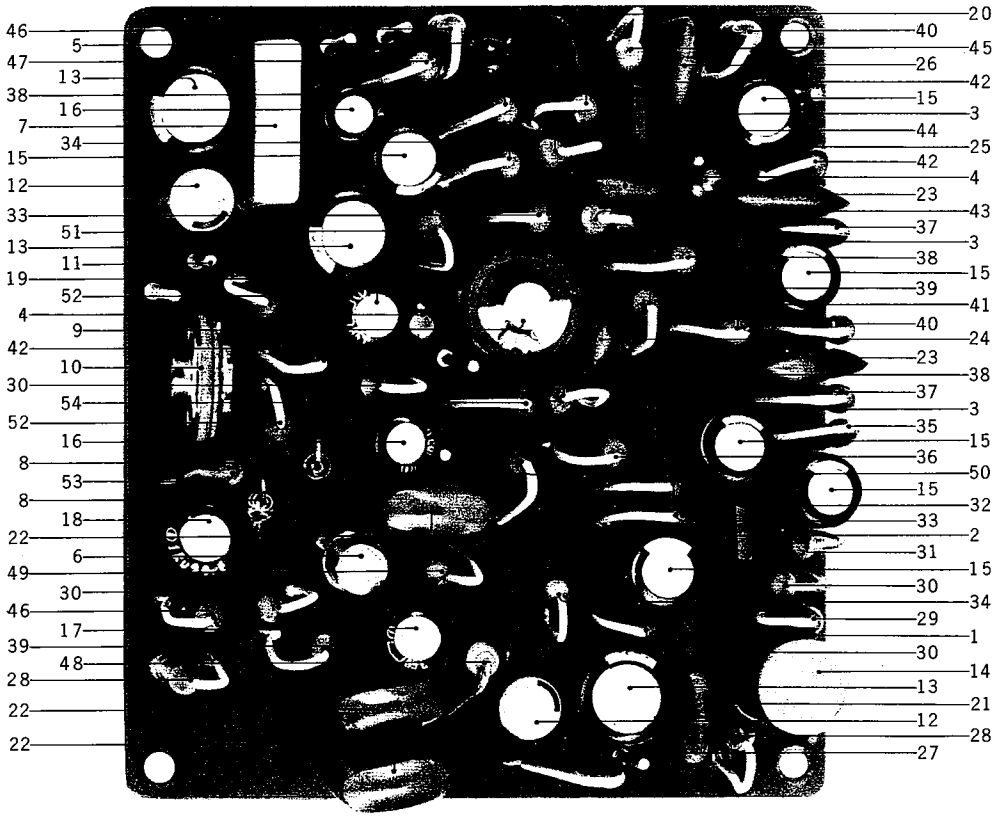
SECTION 2

CAMERA COMPONENT PARTS

**WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL**

PRE-AMP. P.C. BOARD (PX-A2007) BLOCK 27
DEFLEXION P.C. BOARD (PX-2048) BLOCK 28
H.V. GENERATOR P.C. BOARD (PX-2049) BLOCK 29
ASSEMBLY BLOCK 32

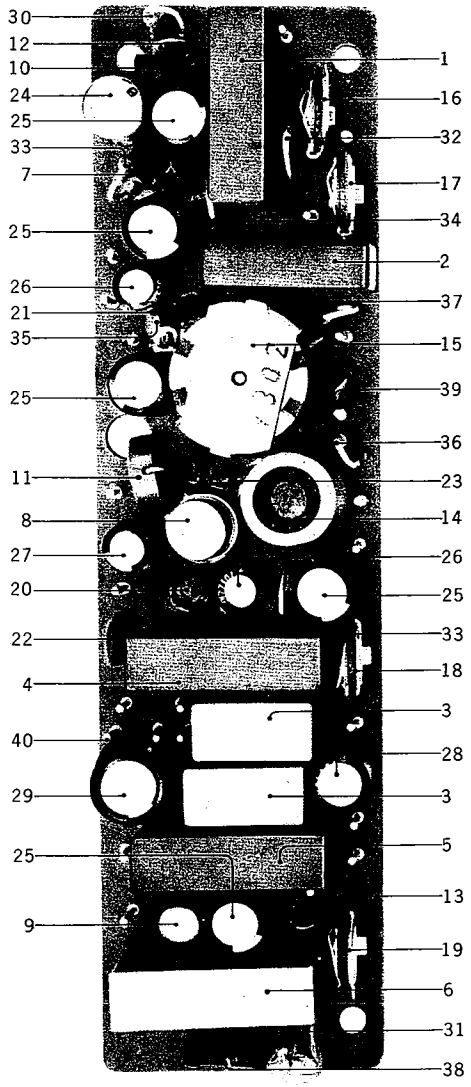
PHOTO OF PRE-AMP. P.C. BOARD (PX-A2007)



PRE-AMP. P.C. BOARD (PX-A2007) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	T-423303	Pre-Amp. P.C. Board Assy. Comp.	PX-A2007	1
1	T-423426	Transistor 3C18P	FET2101	1
2	T-234854	Transistor 2SC458LG (C)	TR2101	1
3	T-329218	Transistor 2SC458 (C)	TR2102,3,5	3
4	T-421154	Transistor CS1303 (Green)	TR2104,8	2
5	T-361923	Transistor 2SC536 (E)	TR2106	1
6	T-356973	Transistor 2SC727 (C)	TR2107	1
7	T-357917	I.C. P-5 (AE-163)	IC2101	1
8	T-402502	Germanium Diode 20A90M	D2101,2	2
9	T-357750	Trimmer Condenser CVO3D 30P	TC2101	1
10	T-403143	Semi-variable Volume V101KR 2KB	VR2101	1
11	T-363126	P.C. Board Terminal	PX-501	8
–	T-363363	Pre-Amp. Shield Case	PX-2024	1
–	T-400408	Pre-Amp. Insulation Plate	PX-2059	1
–	T-356736	Tapping Screw #2 2 x 5		4
		Capacitor, Vertical Type	C	
12	T-421165	Aluminum Solid 1μF (X) 25WV	2103,19	2
13	T-220105	Electrolytic 100μF 10WV	2102,18,20	3
14	T-220364	Electrolytic 100μF 6.3WV	2104	1
15	T-220590	Electrolytic 33μF 10WV	2105,6,7,10, 12,16	6
16	T-450055	Electrolytic 1μF 25WV	2117,26	2
17	T-354947	Electrolytic 2.2μF 50WV	2123	1
18	T-331705	Electrolytic 22μF 16WV	2125	1
19	T-320051	Electrolytic 10μF 16WV	2127	1
20	T-357704	Ceramic CFD08JYP 470PK 500WV	2115	1
21	T-357737	Mylar 0.022μF (K) 100WV	2101	1
22	T-357715	Mylar 0.047μF (K) 100WV	2121,22,24	3
23	T-336194	VFM 270PF (J) 50WV	2108,11	2
24	T-399690	VFM 33PF (J) 50WV	2109	1
25	T-310792	VFM 120PF (J) 50WV	2113	1
26	T-451462	VFM 150PF (J) 50WV	2114	1
		Carbon Resistor, Stopper Type	R	
27	T-419040	RD1/4 1M J	2101	1
28	T-380711	RD1/4 220K J	2102,35	2
29	T-212016	RD1/4 150Ω J	2103,	1
30	T-211465	RD1/4 1K J	2104,7,32,37	4
31	T-349942	RD1/4 8.2K J	2105	1
32	T-346601	RD1/4 47K J	2106	1
33	T-362441	RD1/4 1.8K J	2108,20	2
34	T-211667	RD1/4 100Ω J	2109,26	2
35	T-211858	RD1/4 12K J	2110	1
36	T-362520	RD1/4 75K J	2111	1
37	T-347038	RD1/4 270Ω J	2112,17	2
38	T-211320	RD1/4 1.5K J	2113,18,27	3
39	T-361528	RD1/4 56K J	2114,31	2
40	T-306887	RD1/4 15K J	2115,22	2
41	T-352045	RD1/4 3.9K J	2116	1
42	T-306843	RD1/4 1.2K J	2119,25,41	3
43	T-304402	RD1/4 470Ω J	2121	1
44	T-350100	RD1/4 68K J	2123	1
45	T-212681	RD1/4 330Ω J	2124	1
46	T-336442	RD1/4 10K J	2128,34	2
47	T-357535	RD1/4 39K J	2129	1
48	T-405551	RD1/4 10M K	2130	1
49	T-357570	RD1/4 150K J	2133	1
50	T-211757	RD1/4 100K J	2136	1
51	T-357412	RD1/4 220Ω J	2138	1
52	T-212883	RD1/4 4.7K J	2139,42	2
53	R-213030	RD1/4 5.6K J	2140	1
54	R-407103	RD1/4 12Ω J	2143	1

PHOTO OF DEFLEXION P.C. BOARD (PX-2048)

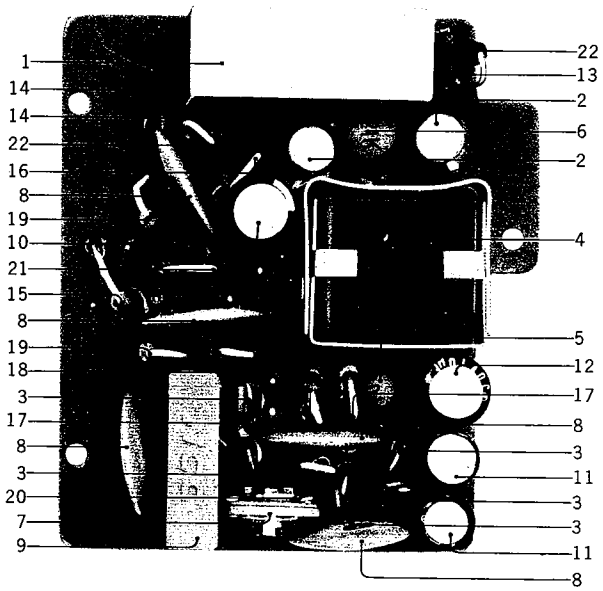


DEFLEXION P.C. BOARD (PX-2048) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
—	U-373544	Deflexion P.C. Board Assy. Comp.	PX-2048	1
1	U-357928	I.C. GA-116	IC2201	1
2	U-357930	I.C. DP-115	IC2202	1
3	U-357963	I.C. PA-5 (AP-174)	IC2203,5	2
4	U-357952	I.C. D-3264	IC2204	1
5	U-357941	I.C. D-3262	IC2206	1
6	U-357974	I.C. AC-170	IC2207	1
7	U-357017	Transistor 2SA562 (Y)	TR2201	1
8	U-357006	Transistor 2SC497 (Y)	TR2202	1
9	U-338894	Transistor 2SC968 (3)	TR2203	1
10	U-362136	Uni-junktion Transistor 2N6027	UJT2201	1
11	U-357783	Silicon Diode HF-SD-1Z	D2201	1
12	U-373432	Silicon Diode 1S2144 (A)	D2202	1
13	U-392128	Zener Diode 1S330A2	ZD2201	1
—	U-392130	Zener Diode 1S331A2	ZD2202	1
14	U-357805	Transformer 06Y 033-286	T2201	1
15	U-357816	Inductor 3mH V-302	L2201	1
16	U-362081	Semi-variable Volume EVL-TOA 100KB	VR2201	1
17	U-357895	Semi-variable Volume EVL-T7A 100ΩB	VR2202	1
18	U-357862	Semi-variable Volume EVL-TOA 20KB	VR2203	1
19	U-357884	Semi-variable Volume EVL-TOA 5KB	VR2204	1
		Capacitor, Vertical Type	C	
20	U-353643	Styrol 470PF (J) 50WV	2208	1
21	U-357827	VFM 50PF (K) 50WV	2206	1
22	U-290531	VFM 100PF (K) 50WV	2207	1
23	U-357838	Mylar 0.0039μF (K) 100WV	2211	1
24	U-220364	Electrolytic 100μF 6.3WV	2201	1
25	U-220105	Electrolytic 100μF 10WV	2202,3,4,12, 15	5
26	U-338512	Electrolytic 22μF 16WV	2205,9	2
27	U-220590	Electrolytic 33μF 10WV	2210	1
28	U-450213	Electrolytic 10μF 50WV	2213	1
29	U-357840	Electrolytic 22μF 50WV	2214	1
		Carbon Resistor, Stopper Type	R	
30	U-362485	RD1/4 330K J	2210	1
31	U-324808	RD1/4 100Ω J (Insulation)	2211	1
32	U-357491	RD1/4 82K J	2201	1
33	U-211465	RD1/4 1K J	2202,5	2
34	U-429974	RD1/4 120Ω K	2203	1
35	U-361528	RD1/4 56K J	2204	1
36	U-357412	RD1/4 220Ω J	2206	1
37	U-357456	RD1/4 2.2K J	2209	1
38	U-357906	Wire-Wound Resistor 1/2WL 10Ω J	2207	1
39	U-357030	Solid Resistor RC1/2W 27Ω K	2208	1
40	U-363126	P.C. Board Terminal	PX-501	24

When you order these parts, Please describe their Parts No. and Serial No. in detail

PHOTO OF H.V. GENERATOR P.C. BOARD (PX-2049)

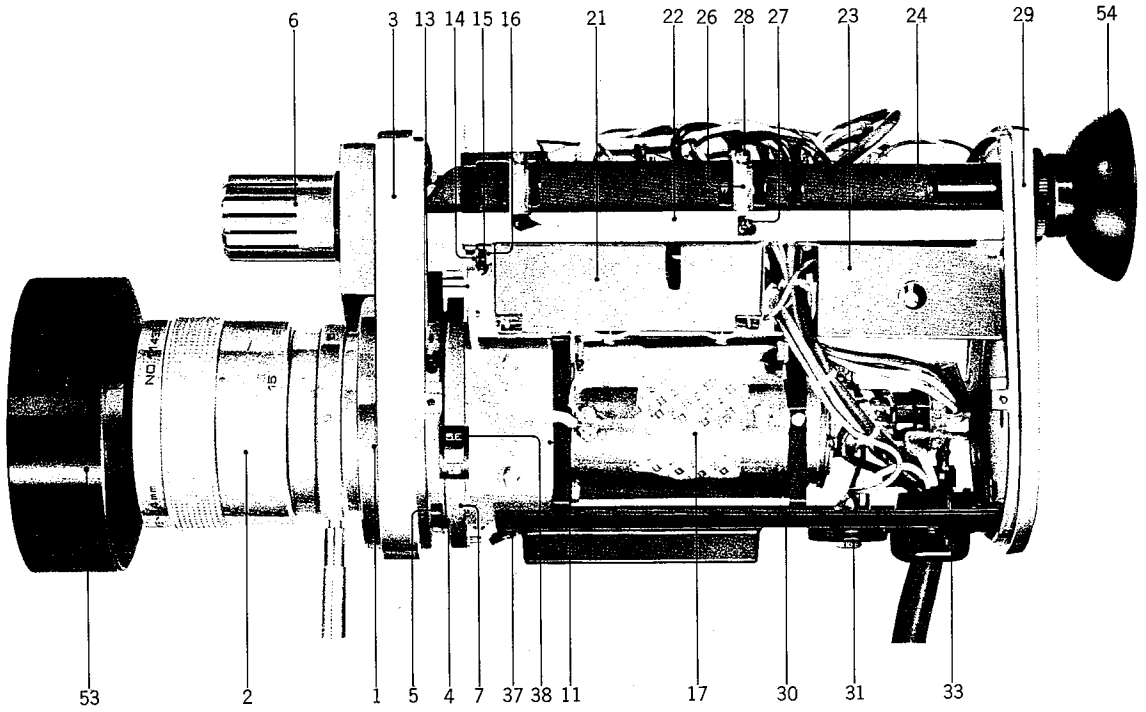


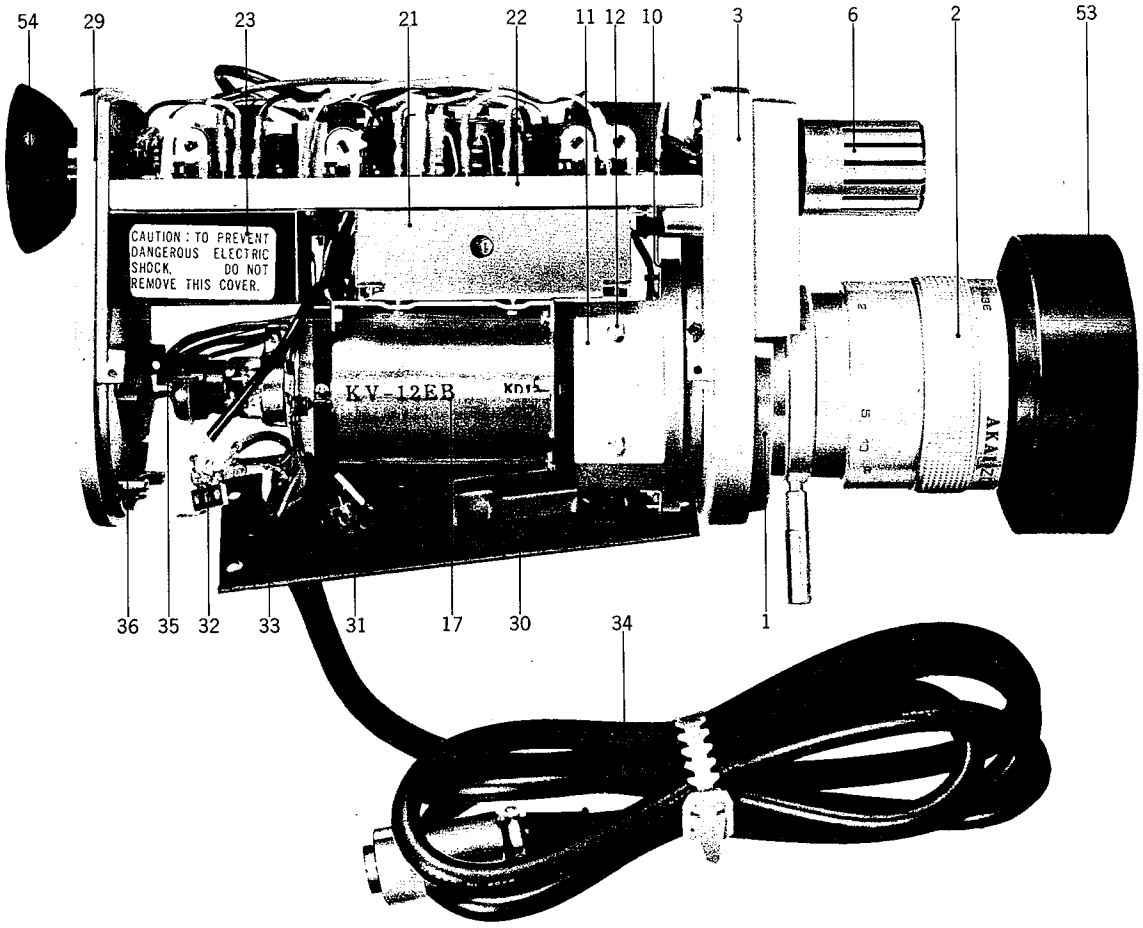
H.V. GENERATOR P.C. BOARD (PX-2049) BLOCK

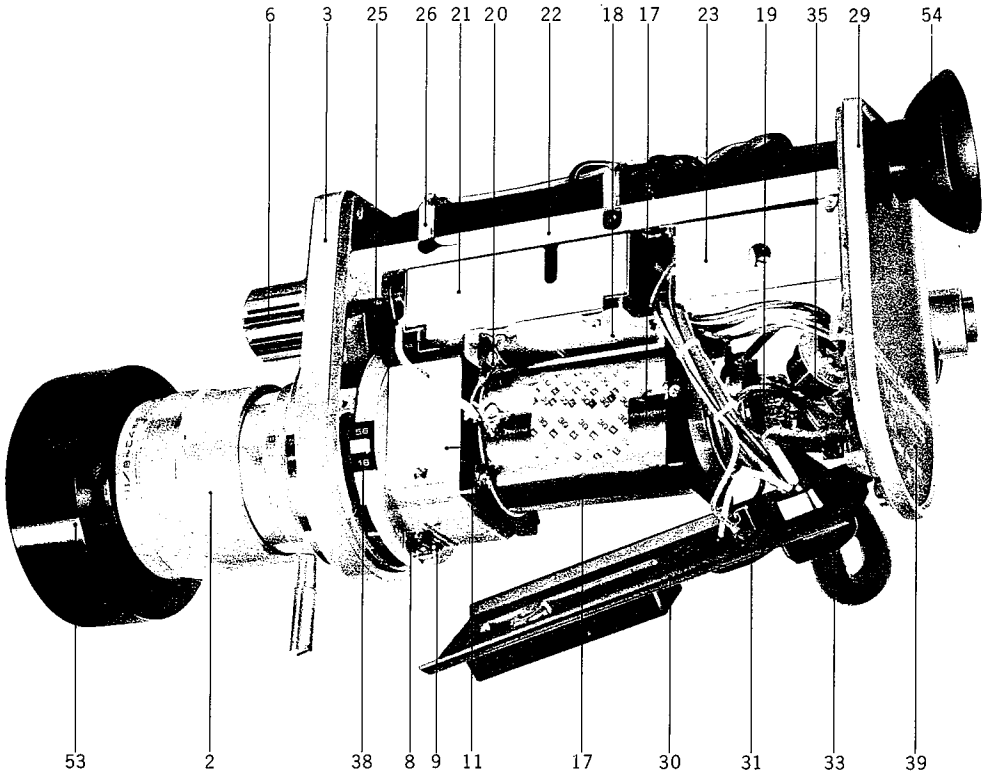
Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	V-373555	H.V. Generator P.C. Board Assy. Comp.	PX-2049	1
1	V-357985	I.C. AA-176	IC2301	1
2	V-338894	Transistor 2SC968(3)	TR2301,2	2
3	V-357210	Silicon Diode SF-1	D2301 to 6	5
4	V-357221	Transformer HVT (EP-17)	T2301	1
5	V-357287	Ferri-Inductor FL5H 100μH (K)	L2301	1
6	V-374681	Ferri-Inductor FL7H 220μH (K)	L2302	1
7	V-357276	Semi-variable Volume V10K-5 1MB	VR2301	1
–	V-363418	H.V. Shield Case	PX-2029	1
–	V-392321	Tapping Screw #2 2 x 5		3
		Capacitor, Vertical Type	C	
8	V-357254	Ceramic Z5U 0.01μP 500WV	2305,11 to 14	5
9	V-357298	Metalized Paper 0.047μF (M) 500WV	2306	1
10	V-220105	Electrolytic 100μF 10WV	2304	1
11	V-357265	Electrolytic 1μF 100WV	2308,9	2
12	V-450213	Electrolytic 10μF 50WV	2310	1
13	V-290531	VFM 100PF (K) 50WV	2301	1
14	V-357232	Mylar 0.0039μF (K) 50WV	2302,3	2

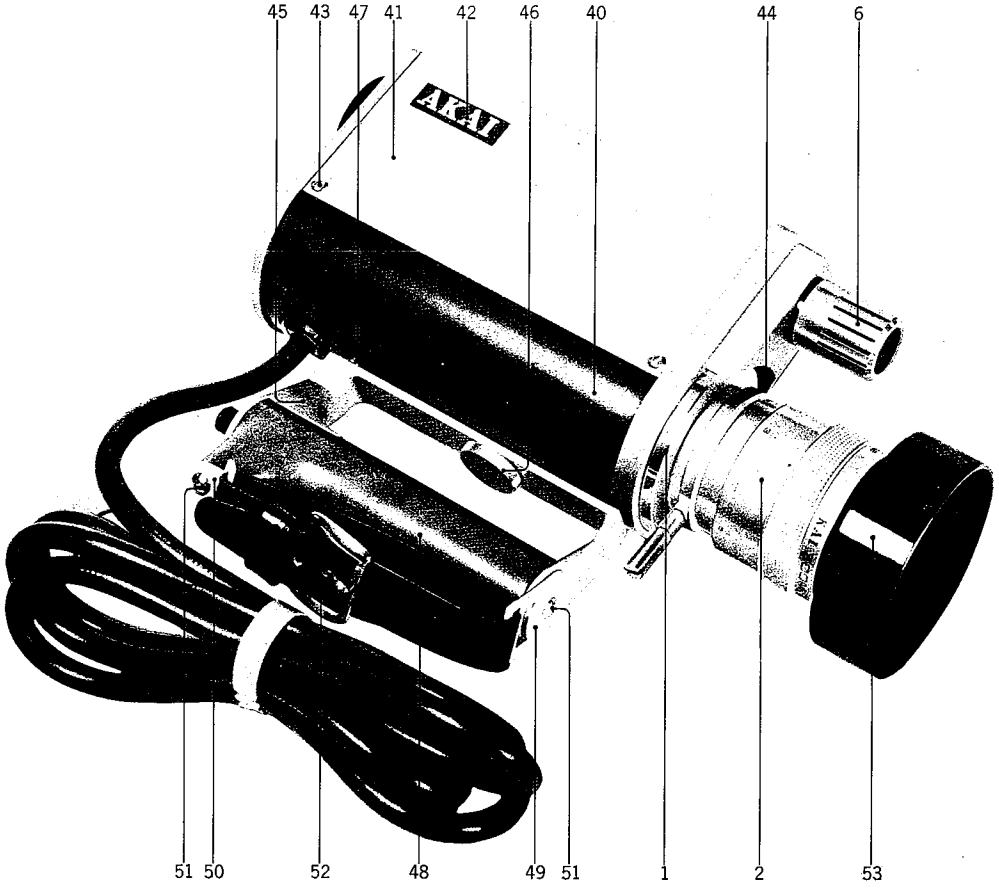
Ref. No.	Parts No.	Description	Schematic No.	Quantity
		Carbon Resistor, Stopper Type	R	
15	V-423753	RD1/4 1.2M J	2312	1
16	V-212477	RD1/4 3.3K J	2301	1
17	V-211465	RD1/4 1K J	2302,3	2
18	V-429996	RD1/4 470K J	2304	1
19	V-380711	RD1/4 220K J	2306,9	2
20	V-211757	RD1/4 100K J	2308	1
21	V-362024	RD1/4 820K J	2305	1
22	V-304402	RD1/4 470Ω J	2310,11	2

PHOTO OF ASSEMBLY BLOCK





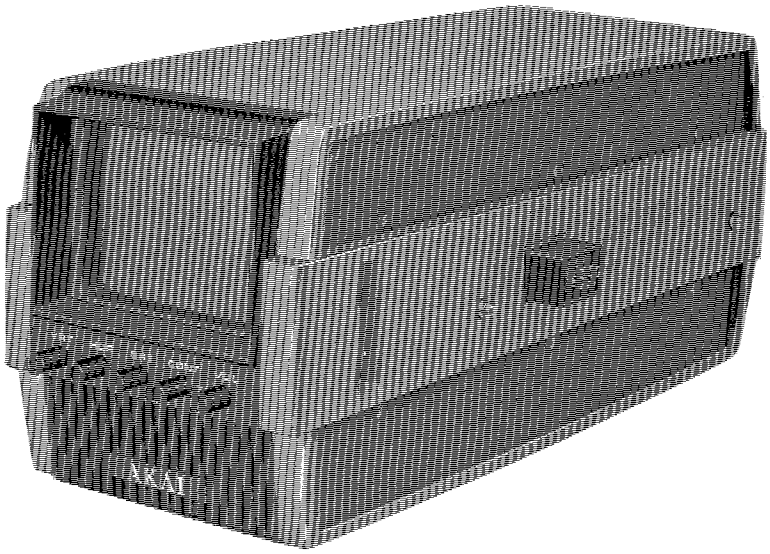

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ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
1	W-433855	Lens Ring 6 (DX)	PX-A2101	1
–	W-356128	Lens Ring 4 (S)	PX-2001	1
2	W-438142	Zoom Lens 6 (2081) (DX)		1
–	W-429895	Zoom Lens 4 (2411) (S)	53-1-2	1
–	W-429906	Master Lens (2412)	53-1-2	1
–	W-374130	Set Screw 3 x 5		4
3	W-356130	Front Frame	PX-2003	1
–	W-356141	Finder A Retaining Plate	PX-2004	1
–	W-323728	Screw, binding head 3 x 5		1
–	W-356152	Compression Spring	PX-2005	1
–	W-363205	Compression Spring, Aperture Selector	PX-2007	1
4	W-363216	Aperture Plate	PX-2008	1
5	W-363194	Rotation Shaft, Aperture Plate	PX-2006	1
–	W-373443	Set Screw 3 x 5		3
6	W-420851	Microphone UD-908	48-1-6	1
–	W-363251	Mic. Lock Nut	PX-2012	1
7	W-420862	Aperture Selector Ring Comp.	PX-A2012	1
8	W-363273	Stopper Plate B	PX-2014	1
9	W-201508	Screw, pan head 2 x 4		2
–	W-357208	Steel Ball D = 2		1
10	W-363295	Stopper Plate A	PX-2016	1
–	W-323728	Screw, binding head 3 x 5		2
11	W-363306	Side Cover	PX-2017	2
12	W-323728	Screw, binding head 3 x 5		4
13	W-429917	Aperture Indicater Plate Comp.	PX-A2013	1
14	W-363330	Indicater Plate Retaining Spring	PX-2021	1
15	W-363341	Indicater Plate Adjusting Ring	PX-2022	1
–	W-439018	Washer (SPC) 3 x 6 x 0.3t		1
16	W-429862	Hexagon Bolt 3 x 8		1
–	W-420895	Vidicon Coil Comp.	PX-A2011	1
17	W-356940	Vidicon Coil KV-12EA	23-1-31	1
18	W-363352	Bridge	PX-2023	1
–	W-273778	M3 Earth Lug		1
–	W-421806	Screw, pan head 3 x 8		2
–	W-273756	M3 Nut		2
19	W-356938	VIDICON TUBE 8823	28-4-2	1
20	W-434632	Screw, binding head 3 x 12 w/washer		4
21	W-363363	Pre-Amp. Shield Case	PX-2024	1
–	W-356736	Tapping Screw #2 2 x 5		4
22	W-363396	Base Plate, w/prop	PX-2027,8	1
–	W-323728	Screw, binding head 3 x 5		6
–	W-420941	Lamp P.C. Board	PX-A2004	1
–	W-420928	Miniature Lamp 9V 10MA	28-2-16	1
–	W-356668	Screw, binding head 2.3 x 4		1
23	W-363418	H.V. Shield Case	PX-2029	1
–	W-201475	Screw, pan head 2 x 3		2
24	W-420952	Finder 2413	53-1-30	1
25	W-373904	Finder Master 2415	53-1-30	1
–	W-420963	Power Indicater Head Cover	PX-A2005	1
26	W-370596	Finder Cramper B	PX-2056	2
27	W-344351	Screw, countersunk head 2 x 4		4
28	W-201508	Screw, pan heas 2 x 4		4
29	W-363431	Rear Frame	PX-2031	1
–	W-429930	Lower Plate Comp.	PX-A2018	1
30	W-420974	Lower Plate	PX-A2003	1
31	W-358075	Earphone Jack	31-2-15	1
32	W-331435	Lug Plate VB2L	33-4-6	1
33	W-420996	Cable Clamp 7P-2	2-7-15	1
34	W-420985	Camera Cable	51-1-38	1
35	W-363690	M Type B Tube Socket S7-502B	31-3-15	1
36	W-438491	PSS Capacitor 0.05μF 500WV	24-9-43	1
37	W-417352	Screw, pan head 3 x 6		3
–	W-424620	Screw, pan head 3 x 10		1
–	W-273745	M3 Spring Washer		1
–	W-273756	M3 Nut		1
38	W-363464	Aperture Name Plate	PX-2034	1
39	W-433991	Name Plate B (VC-110S)	PX-A2103	1
–	W-434002	CCIR Name Plate B (VC-110S)	PX-A2103	1
–	W-421121	Name Plate B'(VC-110)	PX-A2006	1
–	W-421132	CCIR Name Plate B' (VC-110)	PX-A2006	1
40	W-363475	Lower Cover	PX-2035	1
41	W-363486	Upper Cover	PX-2036	1
42	W-363600	Camera Name Plate	PX-2051	2
43	W-335147	Screw, truss head 3 x 5		4
–	W-429873	Washer (SUS) 3 x 7 x 0.2t		4
44	W-363508	Name Plate A'	PX-2038	1
–	W-429963	Grip Assy. Comp.	PX-A2017	1
45	W-363510	Handle, Metal Parts	PX-2039	1
46	W-363521	Cramp Screw	PX-2040	1
–	W-421143	Washer (BSP) 7.1 x 13.6 x 0.5t		1
–	W-270123	"E" Ring 4.0M	6-1-9	1
47	W-357355	Plug, Single Head	42-1-33	1
–	W-363532	Nut, Plug Retaining	PX-2041	1
–	W-357377	Micro Switch PL-1-1	25-5-27	1
48	W-357388	Grip	2-17-3	1
–	W-203084	Screw, oval countersunk head 3 x 8		2
–	W-356771	Screw, countersunk head 3 x 10		2
49	W-363543	Belt Holder A	PX-2042	1
50	W-363554	Belt Holder B	PX-2043	1
51	W-201216	Screw, truss head 4 x 12		2
52	W-373847	Hand Grip Belt		1
53	W-438131	Camera Lens Hood 6 (DX)		1
–	W-356207	Camera Lens Hood 4 (S)	2-23-4	1
54	W-356218	Eye Cup	3-4-20	1

When you order these parts, Please describe their Parts No. and Serial No. in detail



SECTION 3

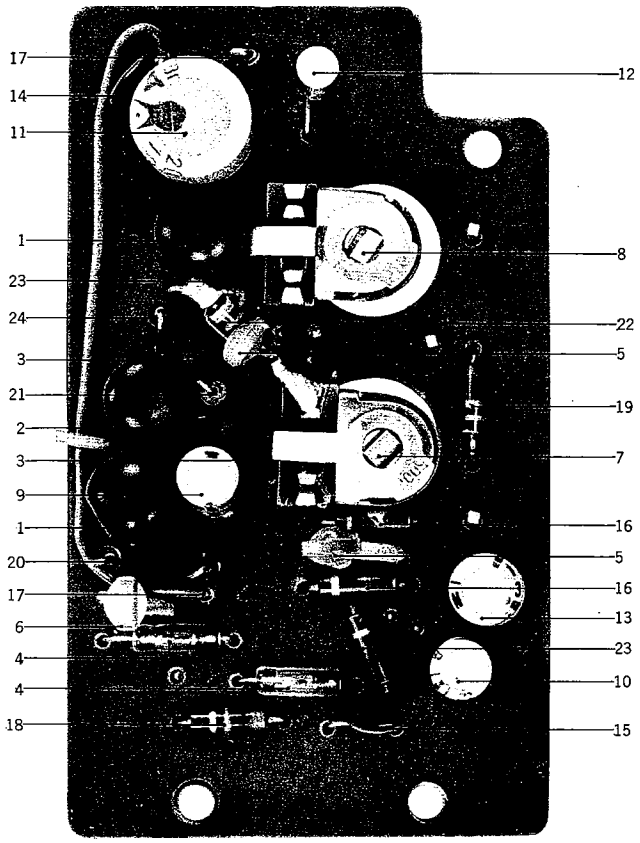
MONITOR COMPONENT PARTS

WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

V. OUT. P.C. BOARD (Y-300) BLOCK 34
AUDIO P.C. BOARD (Y-400) BLOCK 35
SYNC. & VIDEO AMP. P.C. BOARD (Y-500) BLOCK 36
H.V. P.C. BOARD (Y-600) BLOCK 38
ASSEMBLY BLOCK 40
FINAL ASSEMBLY BLOCK 41

NOTE : * mark shows more than 10 pieces

PHOTO OF V. OUT. P.C. BOARD (Y-300)

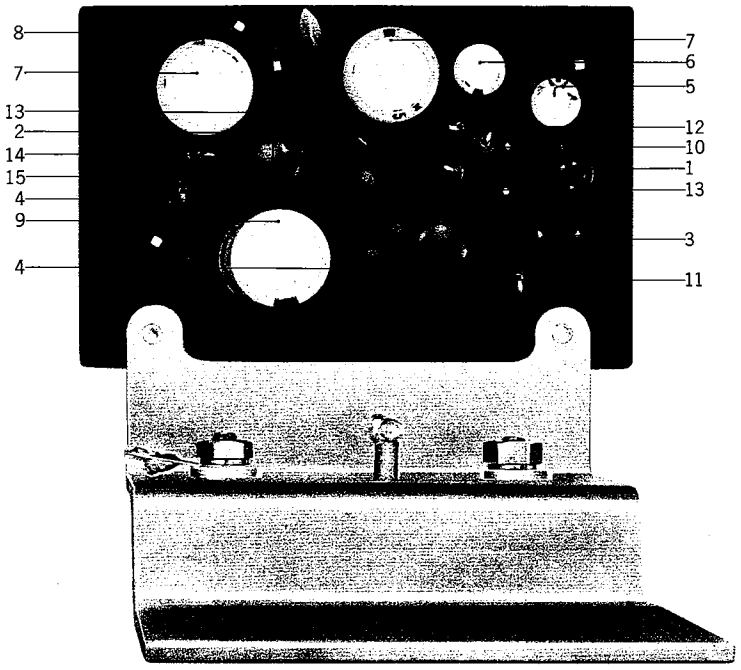


V. OUT. P.C. BOARD (Y-300) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.
–	VM-P101	V. Out. P.C. Board Assy. Comp.	Y-300	YD20060024
1	VM-P102	Transistor CS1295H	Q301,2	HT800191H0
2	VM-P103	Transistor CS1294H	Q303	HT600011H0
3	VM-P104	Varistor CD0014	Q304,5	HT80007100
4	VM-P105	Diode 1S188	Q306,7	HD10003030
5	VM-P106	Thermistor 31D27	R301,12	HH00002120
6	VM-P107	Thermistor 33D1000	R304	HH00001120
7	VM-P108	Semi-Fixed Resistor 500K	R305	RA05040050
8	VM-P109	Semi-Fixed Resistor 10K	R307	RA01030090
		Capacitor, Vertical Type		
9	VM-P110	Electrolytic 10μF 10WV	C301	EA10601010
10	VM-P111	Electrolytic 5μF 15WV	C302	EA47501610
11	VM-P112	Electrolytic 200μF 10WV	C303	EA22701020
12	VM-P113	Electrolytic 0.1μF 25WV	C304	EM10402510
13	VM-P114	Electrolytic 30μF 10WV	C305	EA33601010
14	VM-P115	Mylar 0.003μF	C306	DF17332010
–	VM-P116	Mylar 0.047μF	C331	DF17473010
15	VM-P117	Mylar 0.0047μF	C332	DF17472010
		Solid Resistor		
16	VM-P118	1/4W 1.2K	R302,6	RC10122140
17	VM-P119	1/4W 22K	R303	RC10223140
18	VM-P120	1/4W 10K	R308	RC10103140
19	VM-P121	1/4W 2Ω	R309	RC10020140
20	VM-P122	1/4W 10Ω	R310	RC10100140
21	VM-P123	1/4W 220Ω	R311	RC10221140
22	VM-P124	1/4W 4.7K	R313	RC10472140
23	VM-P125	1/4W 1K	R314	RC10102140
24	VM-P126	1/4W 3.3Ω	R315,16	RC10033140

When you order these parts, Please describe their Parts No. and Serial No. in detail

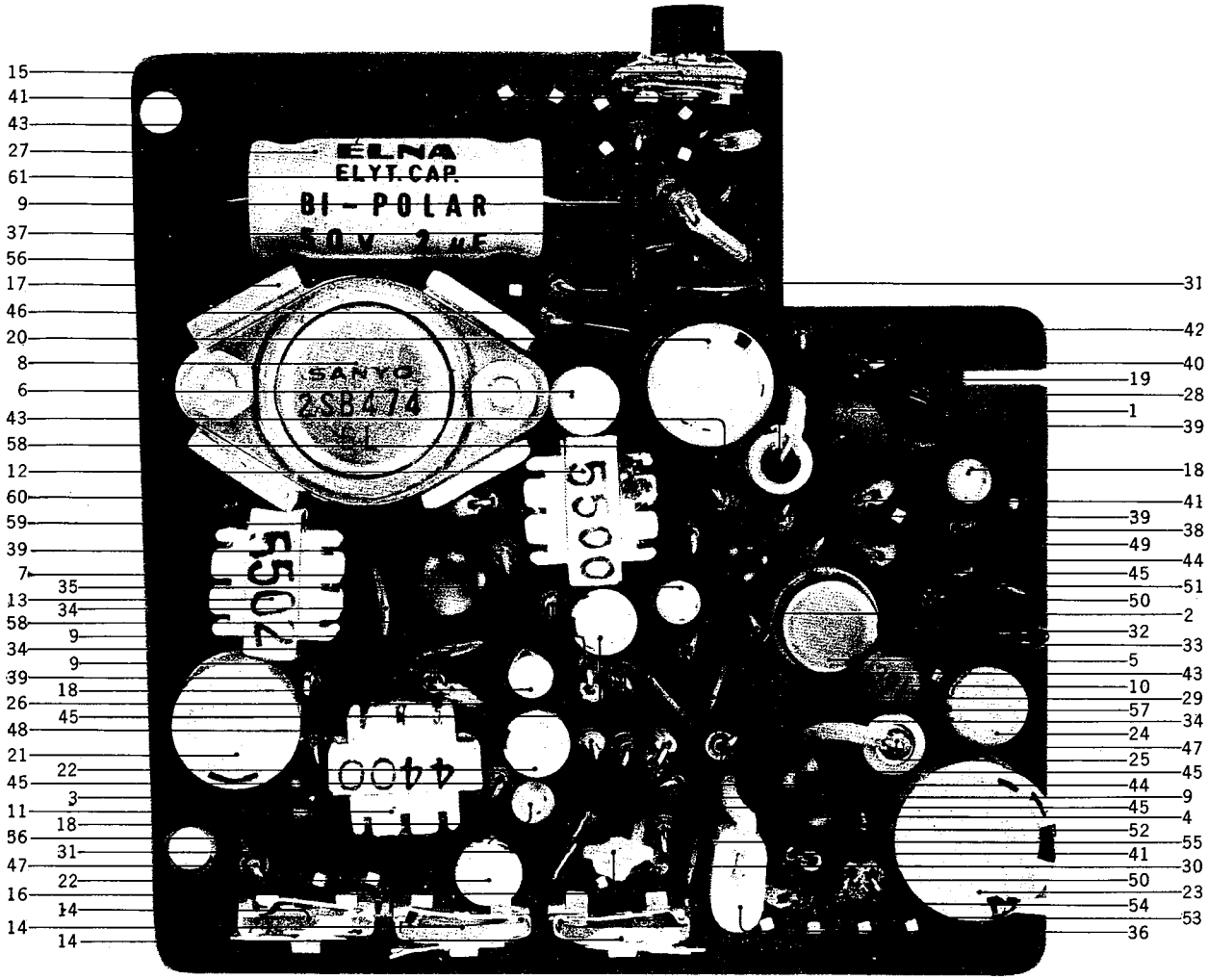
PHOTO OF AUDIO P.C. BOARD (Y-400)



AUDIO P.C. BOARD (Y-400) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.
—	VM-P201	Audio P.C. Board Assy. Comp.	Y-400	YD20610010
1	VM-P202	Transistor CS1238H	Q401	HT800011H0
2	VM-P203	Transistor CS1295H	Q402	HT800191H0
3	VM-P204	Transistor CS1294H	Q403	HT600011H0
4	VM-P205	Varistor CD0014	Q404,5	HT80007100
		Capacitor, Vertical Type		
5	VM-P206	Electrolytic 5μF 15WV	C401	EA47501610
6	VM-P207	Electrolytic 10μF 6WV	C402	EA10600610
7	VM-P208	Electrolytic 100μF 10WV	C405,6	EA10701010
8	VM-P209	Ceramic 0.001μF	C407	DK18102010
9	VM-P210	Film 0.0047μF	C408	DF17472010
		Solid Resistor		
10	VM-P211	1/4W 68K	R401	RC10683140
11	VM-P212	1/4W 1.5K	R402	RC10152140
12	VM-P213	1/4W 470K	R403	RC10474140
13	VM-P214	1/4W 5Ω	R404,5	RC10050140
14	VM-P215	1/4W 4.7K	R406	RC10472140
15	VM-P216	1/4W 680Ω	R407	RC10681140

PHOTO OF SYNC. & VIDEO AMP. P.C. BOARD (Y-500)

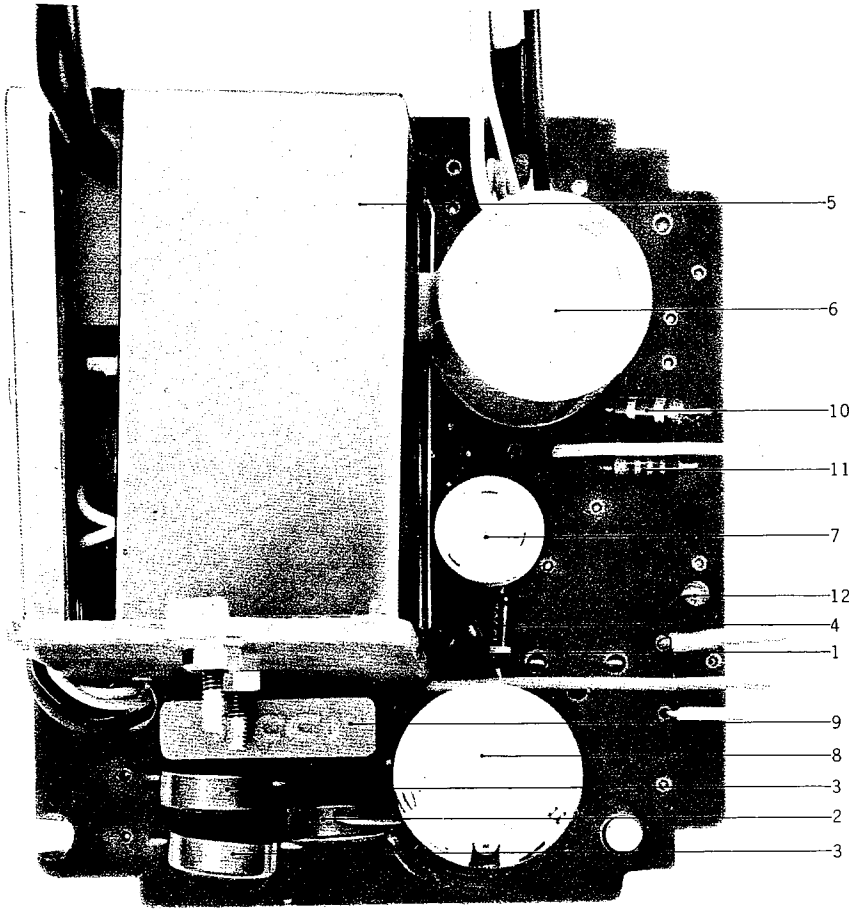


SYNC. & VIDEO AMP. P.C. BOARD (Y-500) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.
–	VM-P301	Sync. & Video Amp. P.C. Board Assy. Comp.	Y-500	YD19550022
1	VM-P302	Transistor CS1294 (E,F)	Q501	HT600011F0
2	VM-P303	Transistor CS1238F	Q502	HT800100F0
3	VM-P304	Transistor CJ5209	Q504	HT60002100
4	VM-P305	Transistor CJ5210	Q505	HT80012100
5	VM-P306	Transistor SE7010	Q506	HT81010000
6	VM-P307	Transistor 2SB172D	Q509	HT201721D0
7	VM-P308	Transistor CJ5211	Q510	HT80013100
8	VM-P309	Transistor 2SB467	Q511	HT20467100
9	VM-P310	Diode 1N34A	Q503, 7, 8, 13	HD10001010
10	VM-P311	Peaking Coil 390μH	L501	LC13940010
11	VM-P312	V-OSC. Transformer LA4400	T501	TR11404010
12	VM-P313	H-OSC. Transformer LA5500	T502	TQ11404010
13	VM-P314	H-Drive Transformer LA5502	T503	TQ11404030
14	VM-P315	Semi-Fixed Resistor 5K	R515,18,32	RA05020040
15	VM-P316	Semi-Fixed Resistor 1M	R530	RA01050050
16	VM-P317	Thermistor MT250S	R547	HH00007020
17	VM-P318	Heat-Sink for Transistor		1955267020

Ref. No.	Parts No.	Description	Schematic No.	Maker No.
		Electrolytic Capacitor, Vertical Type		
18	VM-P319	0.1μF 25WV	C501,8,20	EM10402510
19	VM-P320	3μF 15WV	C503	ED33501610
20	VM-P321	100μF 10WV	C505	EA10701010
21	VM-P322	30μF 16WV	C509	EA33601610
22	VM-P323	5μF 15WV	C510,17	EA47501610
23	VM-P324	10μF 150WV	C511	EA10616010
24	VM-P325	30μF 10WV	C154	EA33601010
25	VM-P326	1μF 50WV	C515	ED10505010
26	VM-P327	4.7μF 6WV	C522	EM47500620
27	VM-P328	2μF 50WV	C525	ER20505010
		Mylar Capacitor, Vertical Type		
28	VM-P329	0.005μF	C502,27,52,	DF17472010
29	VM-P330	0.003μF	C504	DF17332010
30	VM-P331	0.02μF	C506	DF17223010
31	VM-P332	0.03μF	C507,23	DF17333010
32	VM-P333	0.001μF	C512	DF17102010
33	VM-P334	0.002μF	C513	DF17222010
34	VM-P335	0.01μF	C518,21,24,51	DF17103010
35	VM-P336	0.1μF	C519	EM10402510
36	VM-P337	Metalized Capacitor 0.22μF 100WV	C516	DG07224500
–	VM-P338	Film Capacitor 0.047μF	C528	DF17473010
37	VM-P339	Film Capacitor 0.0047μF	C530	DF17472010
–	VM-P340	VFM Capacitor 50PF	C529	DD16500013
		Solid Resistor		
38	VM-P341	1/4W 330Ω	R501	RC10331140
39	VM-P342	1/4W 2.2K	R502,6,16,39	RC10222140
40	VM-P343	1/4W 470K	R503	RC10474140
41	VM-P344	1/4W 82K	R504,19	RC10823140
42	VM-P345	1/4W 47K	R505	RC10473140
43	VM-P346	1/4W 220K	R507,12,29,31	RC10224140
44	VM-P347	1/4W 1.8K	R508,11	RC10182140
45	VM-P348	1/4W 4.7K	R510,35,36,46	RC10472140
46	VM-P349	1/4W 100Ω	R513	RC10101140
47	VM-P350	1/4W 2.7K	R514,26	RC10272140
48	VM-P351	1/4W 6.8K	R517	RC10682140
49	VM-P352	1/4W 5.6K	R520	RC10562140
–	VM-P353	1/4W 3.3K	R521	RC10332140
50	VM-P354	1/4W 50Ω	R522,24	RC10500140
51	VM-P355	1/4W 1K	R523,50	RC10102140
52	VM-P356	1/4W 27K	R525	RC10273140
53	VM-P357	1/4W 680K	R527	RC10684140
54	VM-P358	1/4W 100K	R528	RC10104140
55	VM-P359	1/4W 470Ω	R533	RC10471140
56	VM-P360	1/4W 1.5K	R534,41	RC10152140
57	VM-P361	1/4W 680Ω	R537	RC10681140
58	VM-P362	1/4W 560Ω	R538,40	RC10561140
59	VM-P363	1/4W 150Ω	R542	RC10151140
60	VM-P364	1/4W 3.3Ω	R543	RT10331140
61	VM-P365	1/4W 22K	R548	RC10223140
–	VM-P366	1/4W 10K	R549	RC10103140

PHOTO OF H.V. P.C. BOARD (Y-600)

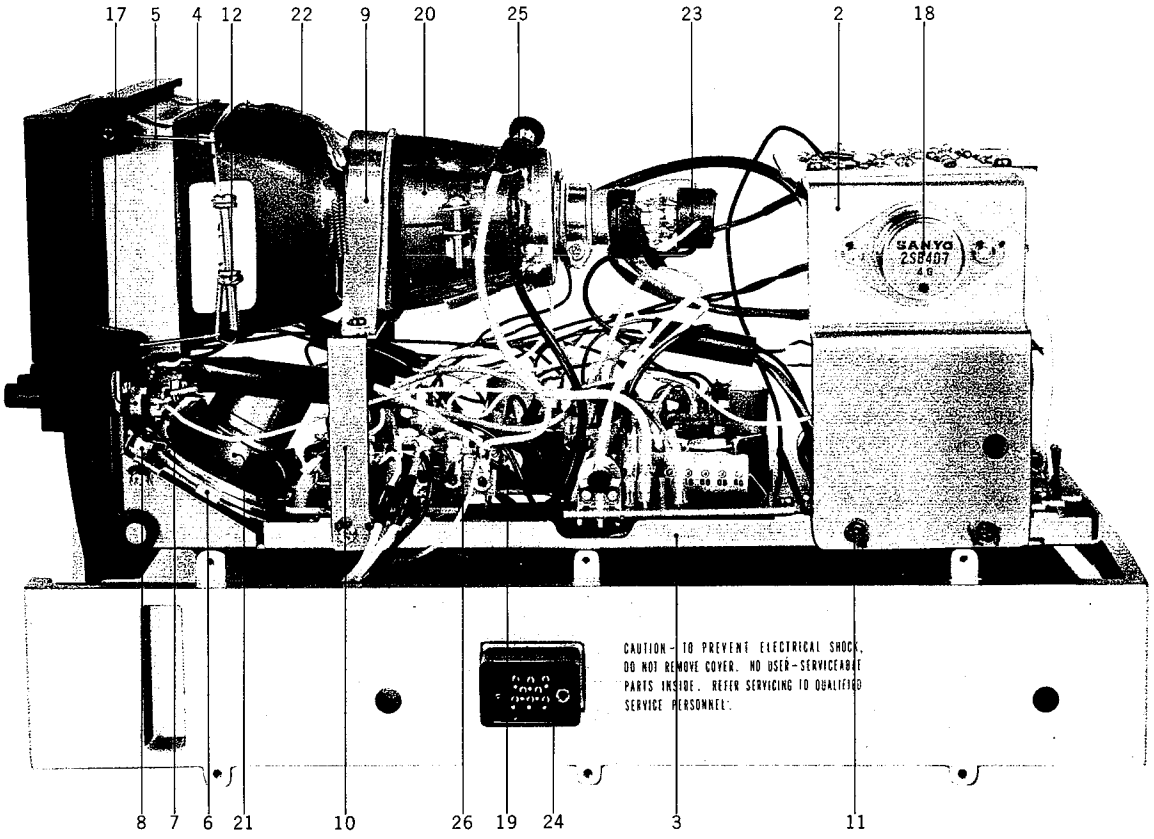


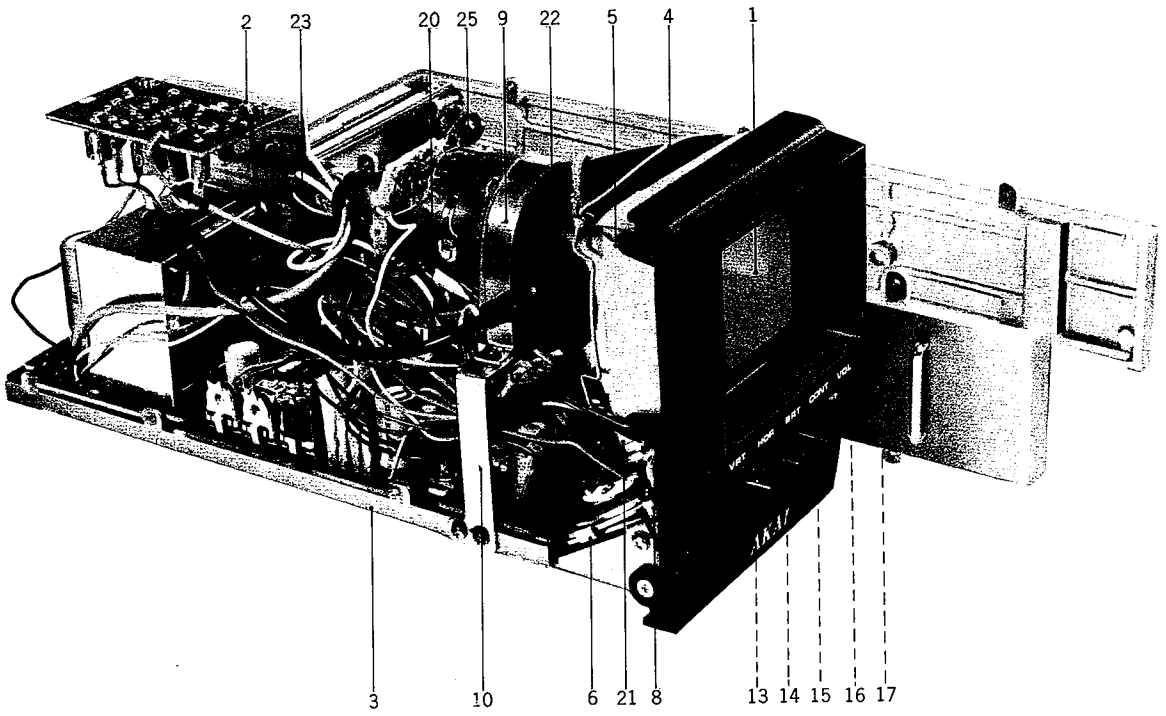
H.V. P.C. BOARD (Y-600) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Maker No.
–	VM-P401	H.V. P.C. Board Assy. Comp.	Y-600	YD19550013
1	VM-P402	Transistor CS1238G	Q610	HT80001000
2	VM-P403	Diode SD-1	Q601	HD20001080
3	VM-P404	Diode SD-1HF	Q602,3	HD20003080
4	VM-P405	Diode 1S332	Q609	HD30003080
5	VM-P406	Fly Back Transformer Comp.		ZZ20610010
–	VM-P407	F.B. Transformer LA6600	T601	TF03060010
–	VM-P408	Heater Transformer FC1045	T602	FC50140010
–	VM-P409	Semi-Fixed Resistor 10K	R601	RC01030100
–	VM-P410	Cap Complete	Q604	BH10200010
–	VM-P411	Cover		2006109010
–	VM-P412	Insulater		2062120010
		Capacitor, Vertical Type		
6	VM-P413	Electrolytic 2000μF 10WV	C604	EA20801010
–	VM-P414	Electrolytic 30μF 10WV	C605	EA33601010
7	VM-P415	Electrolytic 100μF 10WV	C606	EA10701010
8	VM-P416	Electrolytic 1000μF 20WV	C607	EA10802010
–	VM-P417	Electrolytic 200μF 15WV	C609	EA22701610
9	VM-P418	Metaliezed Capacitor 0.047μF 500WV	C601	DG17473510
–	VM-P419	Mylar Capacitor 0.001μF	C608,11	DF17102010
–	VM-P420	Electrolytic 100μF 6.3WV	C613	EA10700610
		Solid Resistor		
10	VM-P421	1/4W 390Ω	R602	RC10391140
11	VM-P422	1/4W 33K	R603	RC10333140
12	VM-P423	1/4W 100Ω	R604	RC10101140

When you order these parts, Please describe their Parts No. and Serial No. in detail

PHOTO OF ASSEMBLY BLOCK



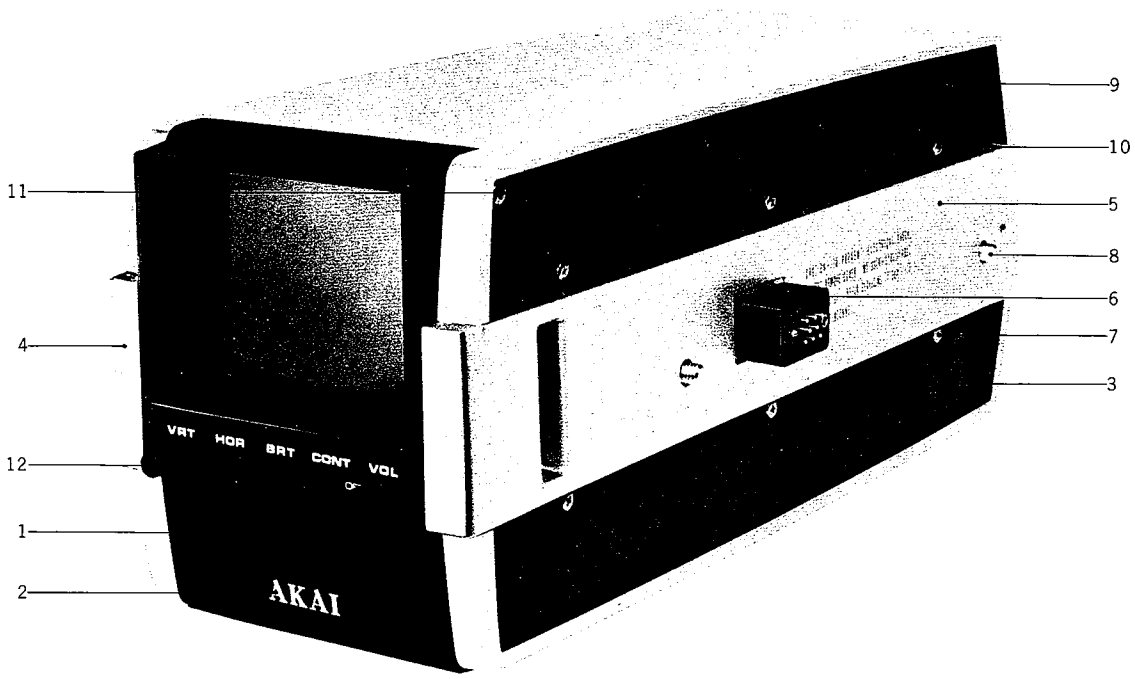


ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Maker No.
–	VM-M101	Sheet for Speaker	2061107010
1	VM-M102	Window for Picture Tube	1474158022
–	VM-M103	Indicator for Specification	2061265010
2	VM-M104	Heat-Sink for Transistor	2061267012
3	VM-M105	Chassis	2061105012
4	VM-M106	Retainer for Picture Tube	2061104010
5	VM-M107	Clamper for Picture Tube	2061005010
6	VM-M108	Bracket for Speaker	206116012
7	VM-M109	Clamper for Speaker	1118005010
8	VM-M110	Collar for Speaker	2061055010
–	VM-M111	R.H.M. Screw for Picture Tube 2.6 x 6	51022606E0
9	VM-M112	Retainer for Picture Tube	2006104020
10	VM-M113	Holder for Picture Tube	1955271012
–	VM-M114	Collar for Complete Unit	2061055020
–	VM-M115	Screw for Complete Unit	51077039F0
–	VM-M116	Cover for P.C. Board	1914053012
–	VM-M117	R.H.M. Screw for Speaker 2 x 6	51020206E0
–	VM-M118	R.H.M. Screw for P.C. Board 2.6 x 4	51022604E0
11	VM-M119	F.H.M. Screw for Heat-Sink 2.6 x 4	51042604E0
12	VM-M120	Hexagon Nut for Picture Tube	53110303E0
–	VM-M121	Earth Lug	62261204E0
–	VM-M122	Cover for Picture Tube	1914053070
–	VM-M123	Resistor 1/4W 75Ω (R706)	RC10750140
13	VM-M124	Variable Resistor 2K (R701)	RK02020052
14	VM-M125	Variable Resistor 1K (R702)	RK01020062
15	VM-M126	Variable Resistor 500K (R703)	RK05040052
16	VM-M127	Variable Resistor 300Ω (R704)	RK03010022
17	VM-M128	Variable Resistor 10K w/Switch (R705)	RK11030152
18	VM-M129	Transistor 2SB407D (Q701)	HT204071D0
–	VM-M130	Transistor Kit	KT20610010
19	VM-M131	Elect. Capacitor 33μF 10WV (C701)	EA33601010
20	VM-M132	Deflection Yoke (L701)	LD05013010
21	VM-M133	Speaker (W701)	GJ80503010
22	VM-M134	Picture Tube (V701)	VB00313010
23	VM-M135	Socket (Y714)	YJ05000012
24	VM-M136	Plug (Y720)	YP10000740
25	VM-M137	Ferrite Core	FC50140010
26	VM-M138	Lug Plate 2L2	YL01050030

When you order these parts, Please describe their Parts No. and Serial No. in detail

PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
1	X-358918	Monitor Front Panel	PX-1001	1
2	X-358931	Monitor Name Plate	PX-1003	1
3	X-358942	Monitor Case Lower Cover	PX-1004	1
4	X-358986	Monitor Frame 1 (Left)	PX-1007	1
–	X-360988	Band Hanger	PX-402	1
–	X-273756	M3 Nut		2
5	X-358975	Monitor Frame 2 (Right)	PX-1006	1
6	X-358997	Monitor Connecter Cover	PX-1009	1
7	X-375423	Screw, binding head 2.3 x 5		6
–	X-359032	Connection Plate, Frame	PX-1012	2
8	X-359010	Connecting Bolt	PX-1011	2
–	X-364803	Washer (Nylon) 5.1 x 10.3 x 0.1t		2
–	X-359021	Bolt Collar	PX-1013	2
–	X-359008	Stopper Ring	PX-1010	2
9	X-359043	Monitor Case Upper Cover	PX-1014	1
10	X-375423	Screw, binding head 2.3 x 5		6
11	X-375412	Screw, binding head 2.3 x 8		2
–	X-259738	Washer (Polyslider) 4.1 x 7 x 0.25t		5
12	X-359054	Monitor Knob	PX-1015	5



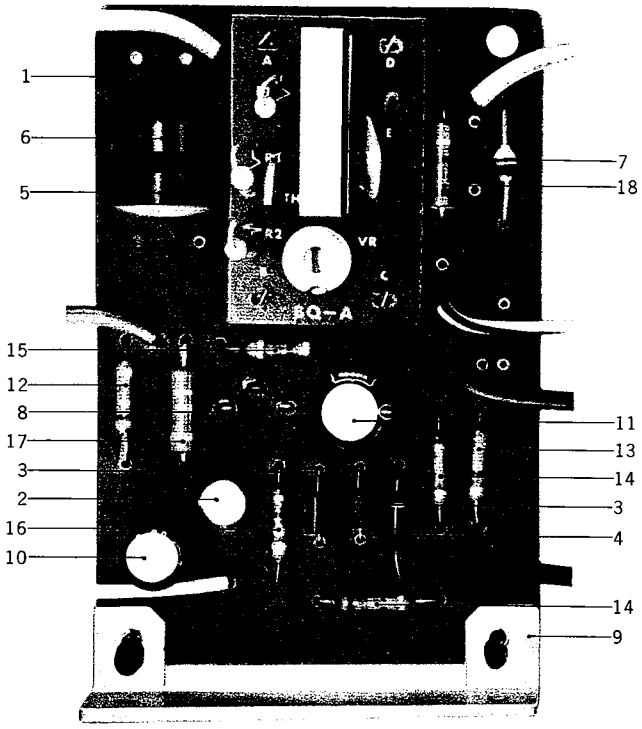
SECTION 4

AC ADAPTER/BATTERY CHARGER COMPONENT PARTS

WHEN YOU ORDER THESE PARTS,
PLEASE DESCRIBE THEIR PARTS NO.
AND SERIAL NO. IN DETAIL

POWER SUPPLY P.C. BOARD (PX-A3008) BLOCK 43
ASSEMBLY BLOCK 45

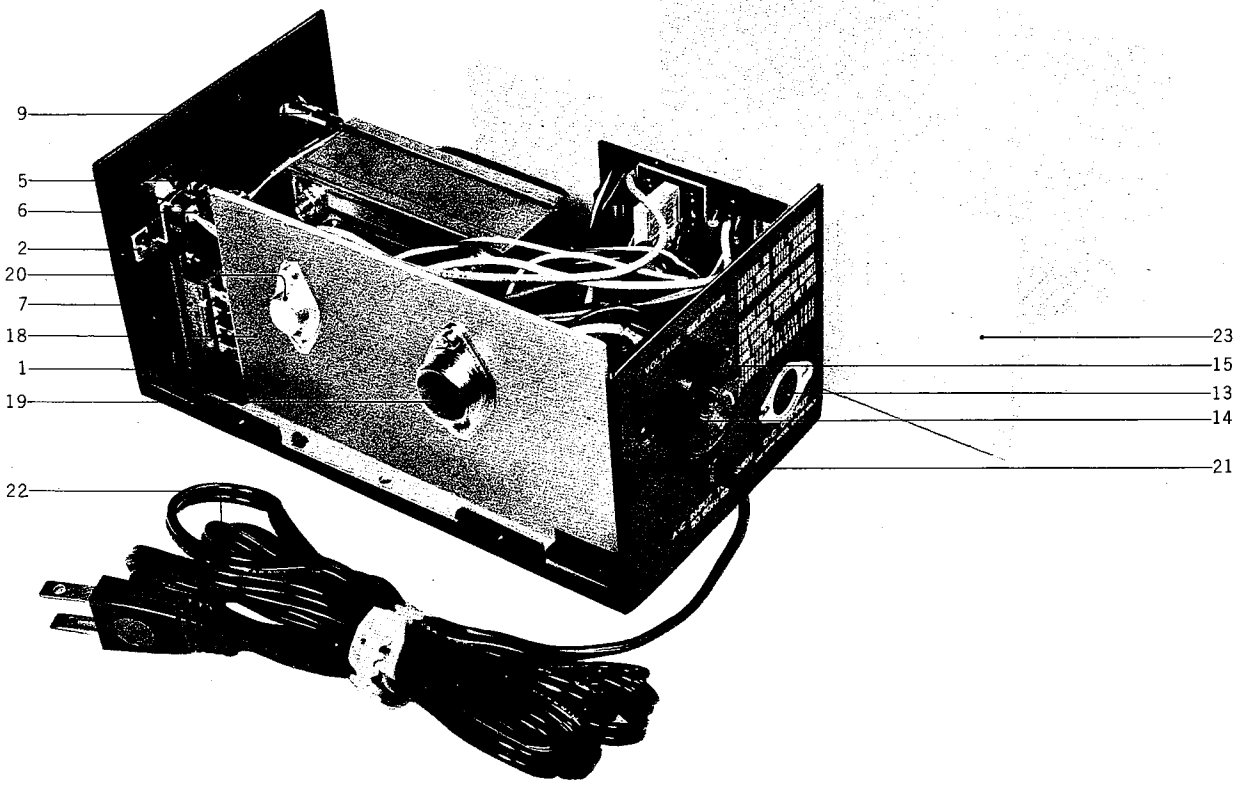
PHOTO OF POWER SUPPLY P.C. BOARD (PX-A3008)

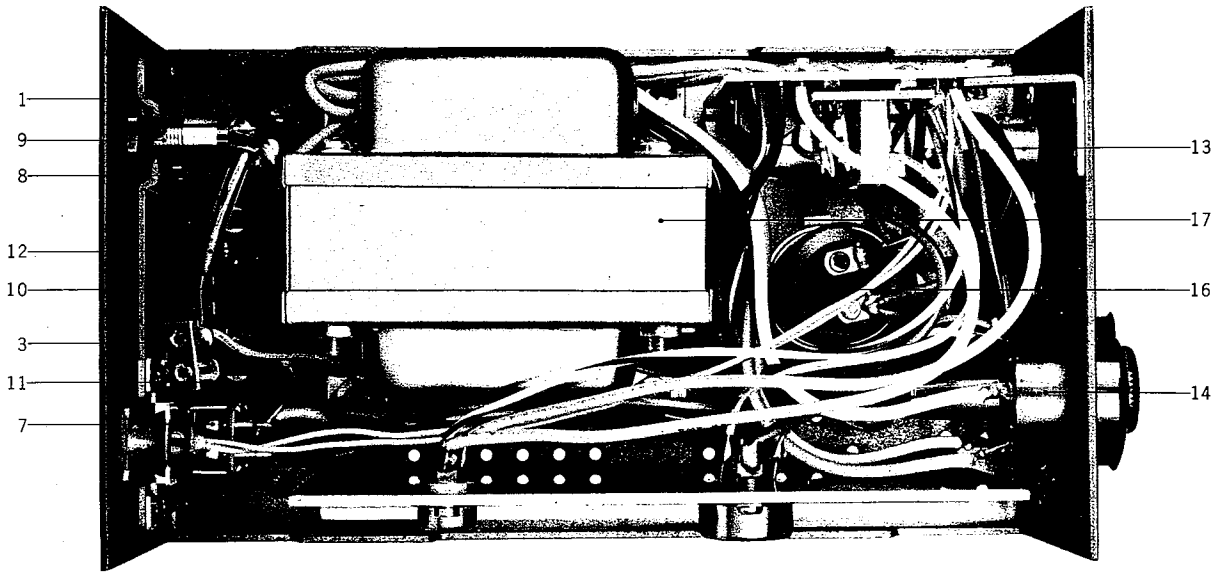


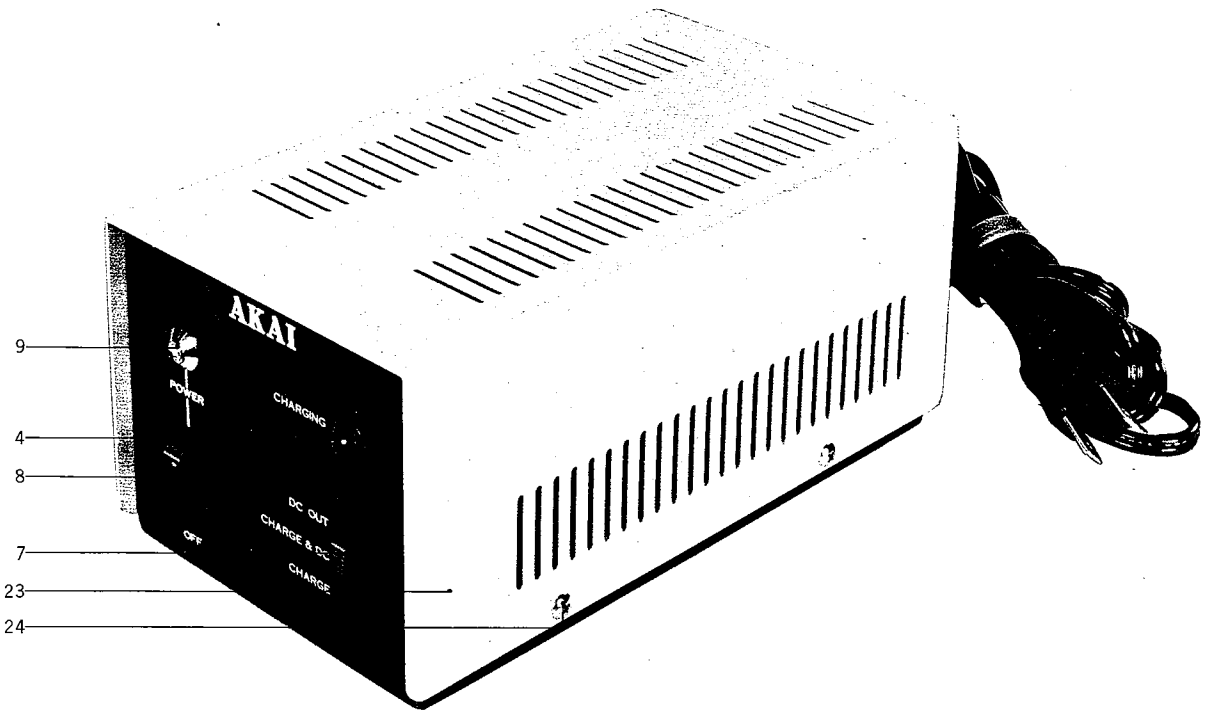
POWER SUPPLY P.C. BOARD (PX-A3008) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
–	Y-423314	Power Supply P.C. Board Assy. Comp.	PX-A3008	1
1	Y-421762	Charger P.C. Board Unit BQ-A	56-1-2	1
2	Y-338894	Transistor 2SC968(3)	TR1001	1
3	Y-234753	Transistor 2SC458(B)	TR1002,3	2
4	Y-356534	Zener Diode RD-6A M	D1001	1
5	Y-329128	Silicon Diode 10DC-1 (Red)	D1002	1
6	Y-329130	Silicon Diode 10DC-1 (Black)	D1003	1
7	Y-421795	Silicon Diode V03C	D1004	1
8	Y-403132	Semi-variable Volume V101KR-1 300ΩB	VR1001	1
9	Y-356051	REG P.C. Board Mounting Plate B	PX-3010	1
–	Y-200687	Tapping Screw #2 3 x 6		2
		Capacitor, Vertical Type	C	
10	Y-350684	Electrolytic 22μF 25WV	1001	1
11	Y-220127	Electrolytic 100μF 16WV	1002	1
		Carbon Resistor, Insulator Type	R	
12	Y-214536	RD1/4 6.8K J	1001	1
13	Y-430288	RD1/4 680Ω J	1003	1
14	Y-364961	RD1/4 1.2K J	1004,5	2
15	Y-214402	RD1/4 470Ω J	1006	1
16	Y-364950	RD1/4 330Ω J	1007	1
17	Y-320106	RD1/2P 4.7Ω K (P Type)	1002	1
18	Y-215627	RD1/2P 150Ω K (P Type)	1008	1

PHOTO OF ASSEMBLY BLOCK







ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Quantity
1	Z-421187	Power Chassis	PX-A3001	1
2	Z-421198	Lamp Mounting Angle	PX-A3003	1
3	Z-369077	Lug Plate VBL1	33-4-7	1
–	Z-417216	Screw, pan head 3 x 4		2
4	Z-421222	Charger Lamp Indicator	PX-A3004	1
–	Z-421233	Speed Nut	PX-A3006	1
5	Z-421200	Lamp Holder	PX-A3005	1
6	Z-421211	Lamp12V70MA 190MM x 2	28-2-17	1
7	Z-356343	Slide Switch ESD-282DU	25-3-34	1
–	Z-356038	Slide Switch Mask	PX-3011	1
–	Z-422076	Screw, pan head 3 x 5		2
8	Z-356365	Seesaw Switch T-127 U/L	25-2-9	1
–	Z-422076	Screw, pan head 3 x 5		2
9	Z-356376	Neon Lamp BNA-2	28-3-7	1
10	Z-356354	Silicon Diode 5B05	45-2-31	1
–	Z-355487	Screw, binding head 3 x 10		2
–	Z-273756	M3 Nut		2
11	Z-375592	Silicon Diode V06B	45-2-35	1
12	Z-345756	Carbon Resistor RD1/4 68K J	35-9-5	2
13	Z-299305	5P DIN Jack	31-1-1	1
14	Z-233370	Power Consent (Voltage Selector) S-18010	40-2-3	1
15	Z-374128	ISO Screw, truss head 3 x 8		2
16	Z-362632	Electrolytic Capacitor 2200μF 25WV	24-10-57	1
–	Z-355511	Screw, binding head 3 x 6		2
–	Z-273756	M3 Nut		2
17	Z-421244	Power Transformer PXT-7	38-4-118	1
–	Z-201341	Screw, truss head 4 x 8		4
–	Z-413188	M4 Nut		4
18	Z-356062	Transistor Heat-Sink Plate	PX-3009	1
19	Z-377098	Transistor 2SD80	45-1-82	1
20	Z-350313	Transistor 2SD130(Y)	45-1-46	1
21	Z-382263	Strin Relief SR-4K-4	2-7-12	1
22	Z-374894	UL AC Cord 3M	26-3-19	1
–	Z-356400	AC Cord Cramp		1
–	Z-421738	Rubber Foot	3-18-14	4
–	Z-421740	Screw, pan head 3 x 8		4
–	Z-277402	Fuse ST-2 1A	39-1-26	1
–	Z-371698	Fuse ST-4 0.5A	39-1-28	1
23	Z-356073	Power Source Cover	PX-3012	1
–	Z-355511	Screw, binding head 3 x 6		1
24	Z-335147	Screw, truss head 3 x 5		4
–	Z-356242	Power Source Cable VCA-100	51-1-20	1

When you order these parts, Please describe their Parts No. and Serial No. in detail

MEMO