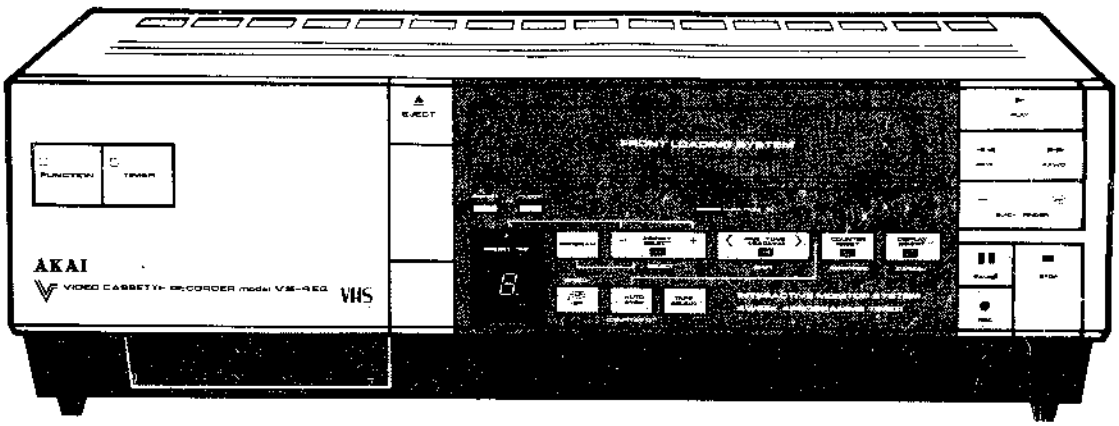
AKAI SERVICE MANUAL

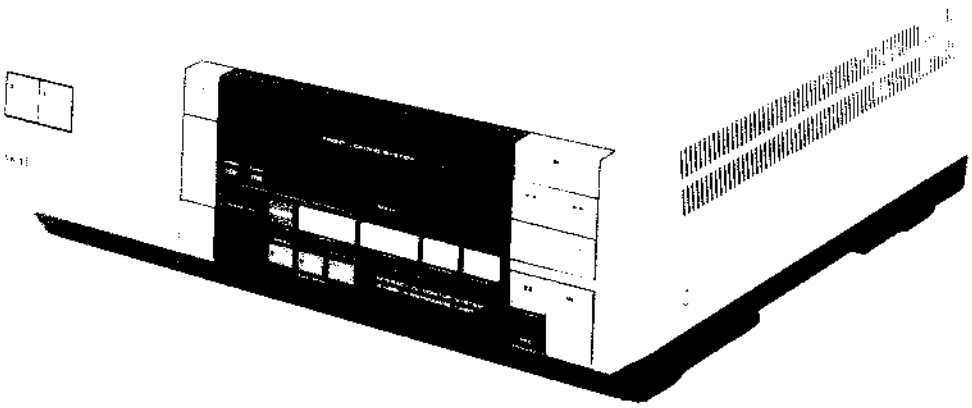


VIDEO CASSETTE RECORDER

MODEL **VS-4** EG/EK/EA/EO/
EG-G/EG-M/EO-P

ABBREVIATIONS FOR SERVICE MANUAL
MODEL VS-4EG/EK/EA/EO/EG-G/EG-M/EO-P

ABBREVIATIONS	EXPLANATION
AC	Alternating Current
ACC	Auto Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Auto Frequency Control
AGC	Auto Gain Control
ANT	ANTenna
APC	Auto Phase Control
ASSY	ASSemblY
BAL	BALance
B/C	Buzz and Charactor
BLK	BLacK
BGP	Burst Gate Pulse
B/W	Black and White
CCIR	Comité Consultatif International des Radio Communications
CH (Ch.)	Channel
CM	Capstan Motor
CTL	ConTroL
CUE	Cue
CW	Carrier Wave
DC	Direct Current
DM	Drum Motor
EE	Electronic to Electronic
EQ	EQualizer
Fig.	Figure
FM	Frequency Modulation
Fo	Resonance Frequency
FREQ.	FREQuency
GND	GrouND
H	Horizontal
IC	Integrated Circuit
LED	Light Emitting Diode
LP	Long Play
OSC	OSCillator
PAL	Phase Alternation Line
PB	Play Back
PG	Pulse Generator
Q	Quality factor
REC	RECord
REF-V	REFerence Vertical signal
REV	REView
REW	REWind
RF	Radio Frequency
SECAM	Séquentiel à Memoire
SP	Standard Play
SW	SWitch
SW'NG	SWitchinG
SYNC	SYNChronize
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
V	Vertical
VHF	Very High Frequency
VHS	Video Home System
VIDEO-J	VIDEO Judge
WHT	WHiTe



VIDEO CASSETTE RECORDER

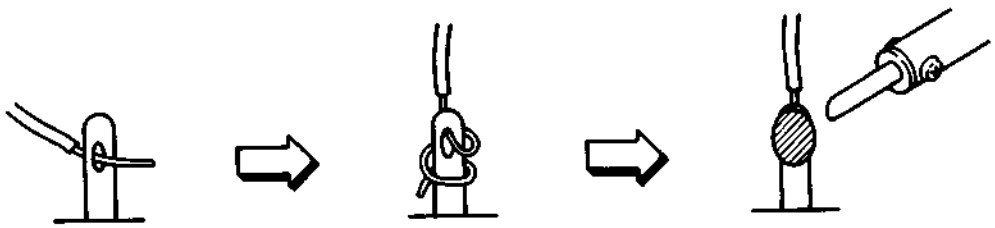
MODEL VS-4 EG/EK/EA/EO/ EG-G/EG-M/EO-P

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in out jacks etc.).

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
    Power requirements for electrical equipment differ from area to area.
    The operation voltage of VS-4 is preset to 220V (VS-4EG/EO/EG-G/EG-M) or 240V (VS-4EK/EA).
    Before connecting, check that the AC INPUT selector on the rear panel is set to the voltage for your area:
    220V, 50Hz for Europe except UK
    240V, 50Hz for UK and Australia
    110V, 200V 220V or 240V, 50 or 60Hz for other countries. (If in doubt, consult a qualified electrician.)
    If the AC INPUT is not set for your area:
    1) Confirm that the POWER Switch on the rear panel is set to OFF.
    2) Confirm that the POWER Cord is disconnected.
    3) Move the AC INPUT selector with a screwdriver so that the marker is above the voltage for your area.

VS-4 EA/EK

VS-4 EG/EO/EG-G/EG-M

Fig. 1 Voltage Conversion

SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

Format		VHS standard
Video recording systme		Rotary, slant azimuth two-head helical scan system.
Recording/Playback time		240 min. with E-240 cassette (SP model)
Tape speed SP mode LP mode		 23.39 mm/sec. 11.70 mm/sec.
Quick finder SP mode LP mode		 Approx. 3 times normal speed Approx. 5 times normal speed (Noise bars not fixed)
FF, REW time		Approx. 4 min. with E-180 cassette
RF input	VS-4EG/EG-G/EG-M	PAL, SECAM System B, G VHF Ch E2 – E4, E5 – E12 UHF Ch 21 – 69
	VS-4EA	PAL SECAM, System B, G VHF Ch 0 – 5, 5A, 6 – 11 UHF Ch 21 – 69
	VS-4EK	PAL System I UHF Ch 21 – 69
	VS-4EO	PAL System B, G, H VHF Ch 2 – 4, S1 – S3 M1 – M10, 5 – 12, U1 – U10 UHF 21 – 69
RF output	VS-4EG/EK/EO EG-G/EG-M VS-4EA	System B type modulation HF Ch 30 – 39 adjustable (preset Ch 36) System B type modulation VHF Ch. 3, 4 switchable (preset Ch 4)
Recording (Line input)		PAL, CCIR System B, G, I
Playback (Line output)		PAL, CCIR System B, G, I
Video Line input level Line output level S/N Horizontal resolution		 0.5 – 2.0 Vp-p/75 ohms, unbalanced 1.0 Vp-p/75 ohms, unbalanced More than 43 dB More than 250 lines
Audio Line input level Line output level S/N Frequency response		 –9 dBs/50 kohms, unbalanced –6 dBs/1 kohms, unbalanced More than 40 dB (SP mode) 70 Hz – 8 kHz (SP mode)
Timer Programs Clock reference		 4-week one time programs and one shutdown program Quarts crystal
Display		TV screen (Tape counter, Timer etc.)
Power requirements		110/220V AC, 50/60 Hz (VS-4EG/EO) 200/240V AC 50/60 Hz (VS-4EK/EA)
Operating temperature		5°C – 40°C
Dimensions		440 (W) × 135 (H) × 363 (D) mm (17.3 × 5.3 × 14.3 inches)
Weight		10.5 kg (23.1 lbs)

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

II. DISMANTLING OF UNIT

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

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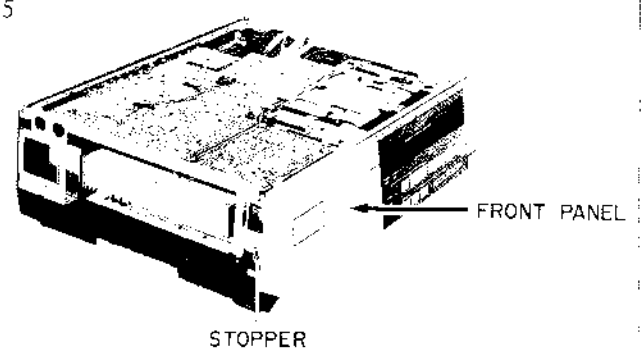

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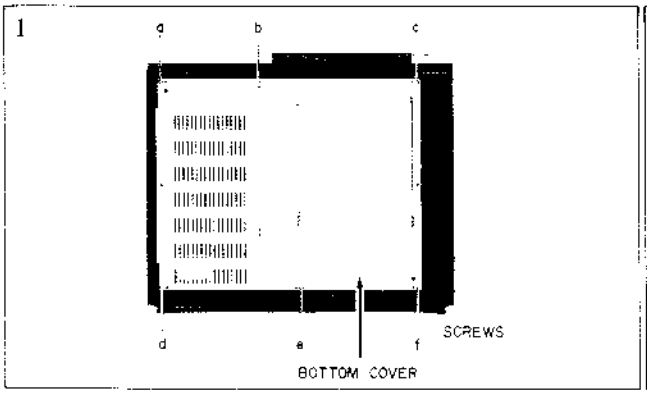

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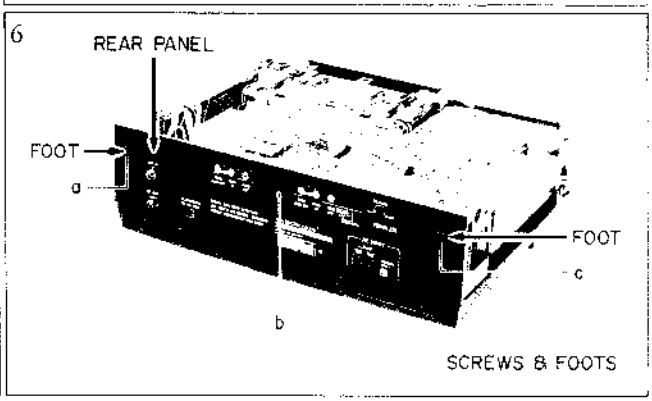

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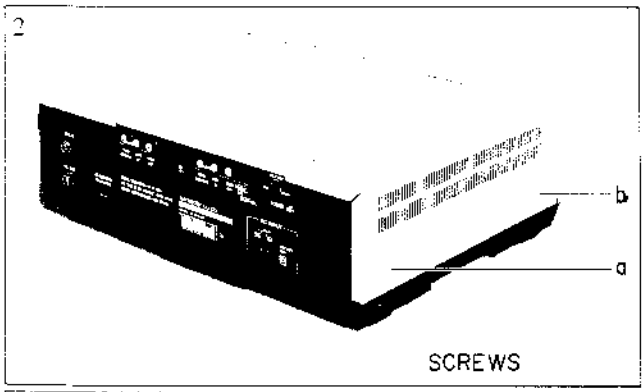

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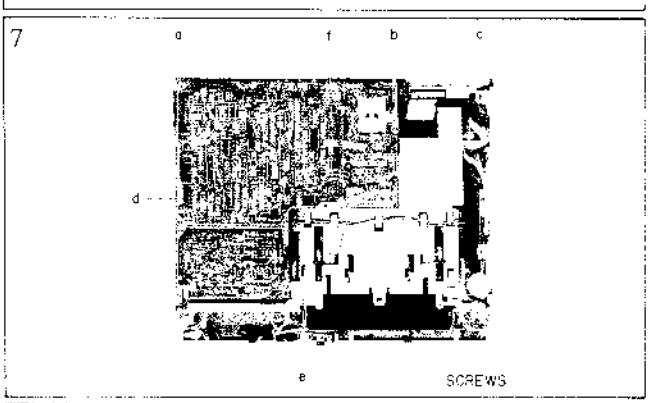

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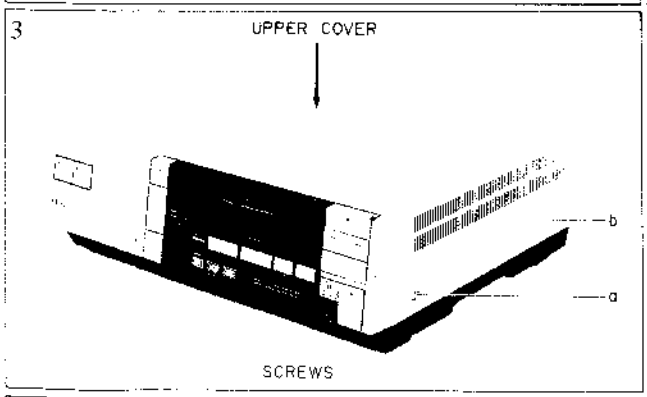

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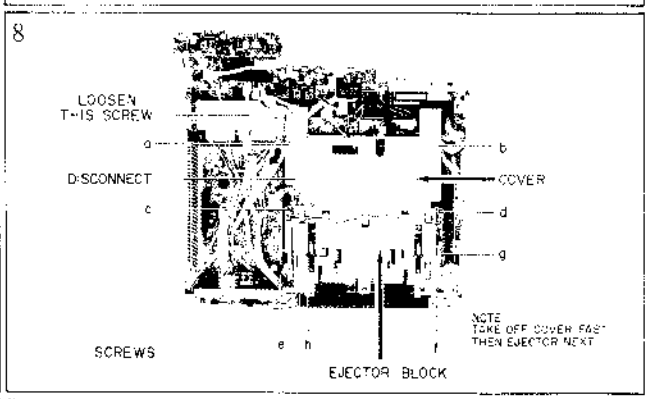

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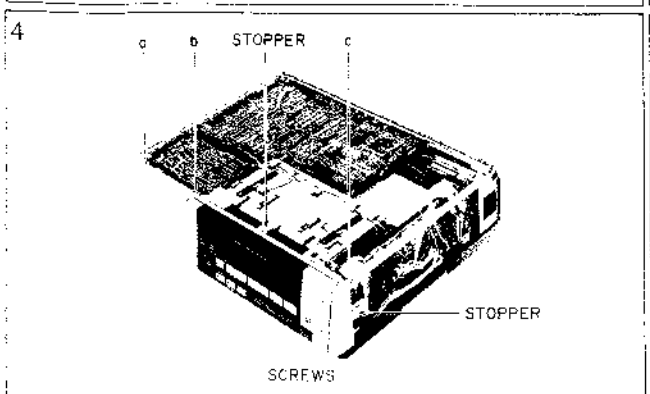

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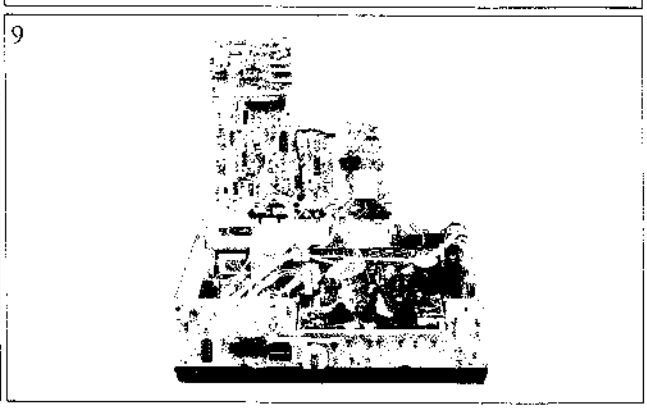


III. CONTROLS

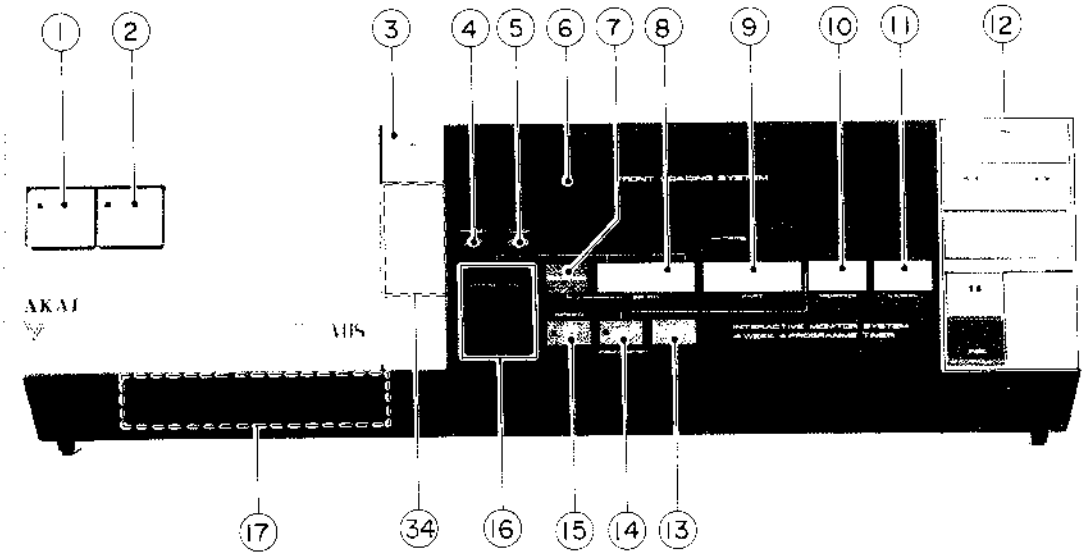


Fig. 3-1. Front View

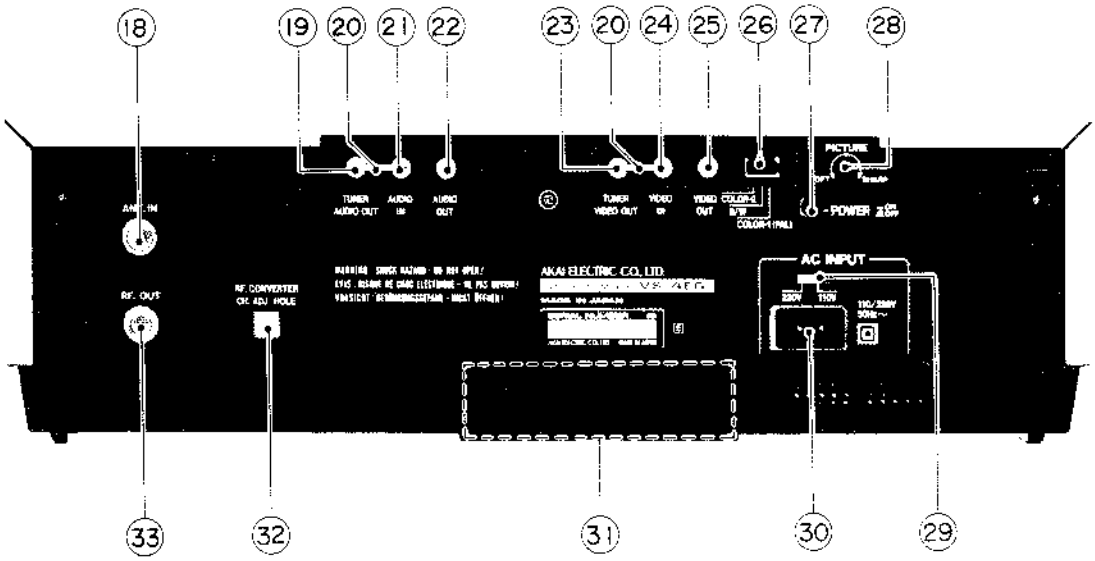


Fig. 3-2. Rear View

1. FUNCTION "ON/OFF" BUTTON
2. TIMER "ON/OFF" BUTTON
3. EJECT BUTTON
4. PRESET BUTTON (TO TUNE IN TV STATION)
5. CLOCK BUTTON (TO SET THE ACTUAL TIME AND DATE)
6. LOADING COVER
7. PROGRAM BUTTON (TO AUTOMATICALLY RECORD A TV PROGRAM)
8. PRESET SELECT [A] BUTTON
9. FINE TUNE/TRACKING [B] BUTTON
10. COUNTER RESET [C] BUTTON
11. DISPLAY SELECT [D] BUTTON
12. TAPE TRANSPORTING BUTTON
    PLAY (▶ PLAY), REWIND & FAST FORWARD (◀◀ REW, ▶▶ FWD), QUICK FINDER REVERSE & QUICK FINDER FORWARD ([◀◀] QUICK FINDER [▶▶]), PAUSE (❚❚ PAUSE), RECORDING (● REC), STOP (■ STOP)
13. TAPE SELECT BUTTON
14. COUNTER AUTO ("0") STOP BUTTON
15. SPEED (SP/LP) SELECT BUTTON
16. PRESET STATION DISPLAY
17. COMPARTMENT FOR THE REMOTE-CONTROL UNIT (RC-R4)
18. ANTENNA (ANT.) IN JACK
19. TUNER AUDIO OUTPUT JACK
20. SHORT PIN
21. AUDIO INPUT JACK
22. AUDIO OUTPUT JACK
23. TUNER VIDEO OUTPUT JACK
24. VIDEO INPUT JACK
25. VIDEO OUTPUT JACK
26. VIDEO MODE SELECTOR
27. POWER ON/OFF SWITCH
28. PICTURE CONTROL KNOB
29. AC INPUT SELECTOR
30. AC INLET
31. COMPARTMENT FOR THE BACK UP BATTERY
32. RF CONVERTER CHANNEL (CH.) ADJUSTMENT (ADJ.) HOLE
33. RF OUT JACK
34. ANTENNA SWITCH (EA MODEL ONLY)

IV. PRINCIPAL PARTS LOCATION

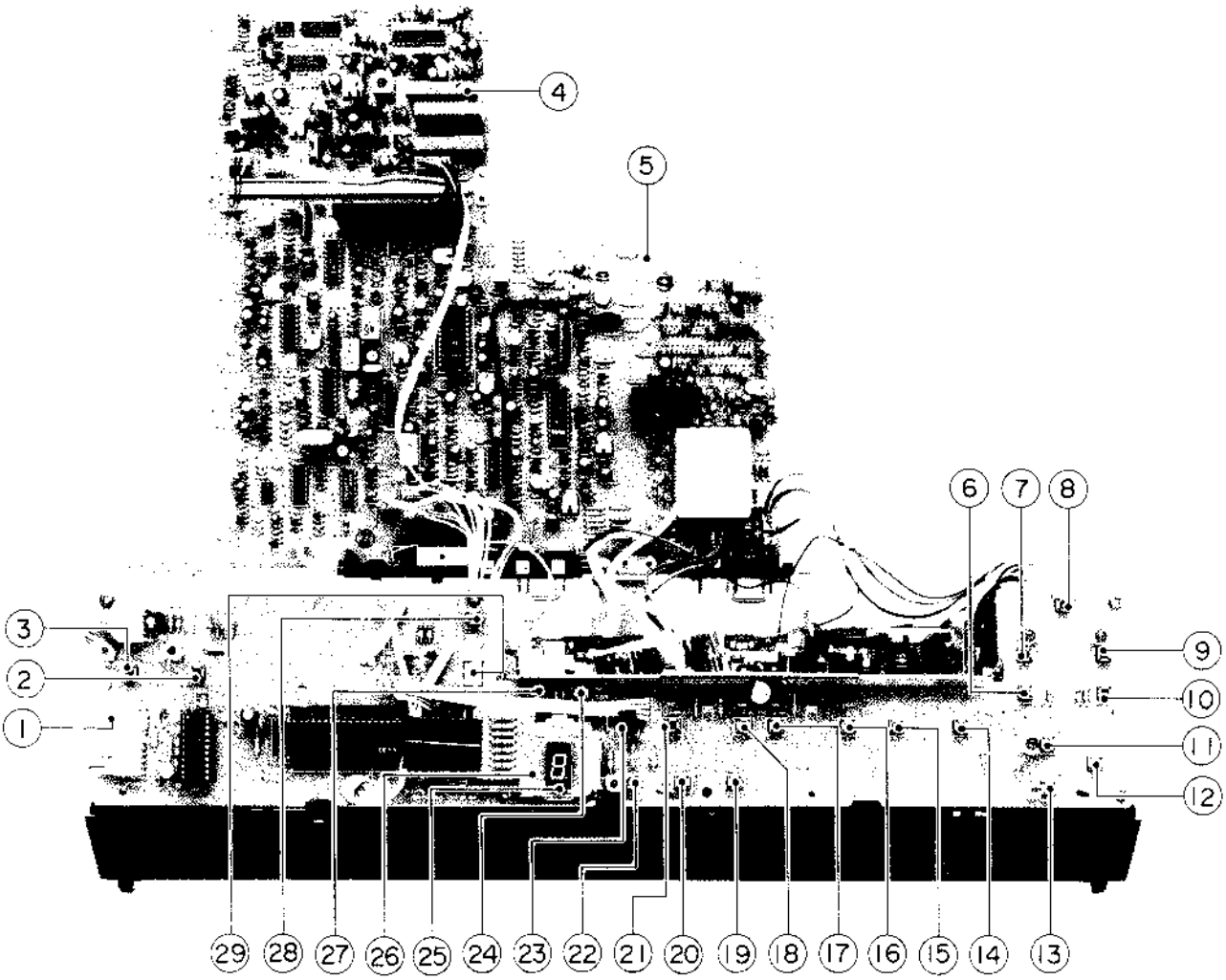


Fig. 4-1. Parts Location (Front View)

1. OPERATION P.C BOARD V1015A505A
2. TIMER "ON/OFF" SWITCH SW2
3. FUNCTION "ON/OFF" SWITCH SW1
4. SKEW JUMP PC BOARD V1017A5120
5. VIDEO PC BOARD V1017A5040
6. QUICK FINDER REVERSE SWITCH SW16
7. REWIND SWITCH SW14
8. PLAY SWITCH SW13
9. FAST FORWARD SWITCH SW15
10. QUICK FINDER FORWARD SWITCH SW17
11. PAUSE/STILL SWITCH SW18
12. STOP SWITCH SW20
13. REC SWITCH SW19
14. DISPLAY CHANGE SWITCH SW12
15. COUNTER RESET SWITCH SW11
16. FINE/TRACKING [+] SWITCH SW10
17. FINE/TRACKING [−] SWITCH SW9
18. PRESET SELECT [+] SWITCH SW8
19. TAPE SELECT SWITCH SW23
20. AUTO "O" STOP SWITCH SW22
21. PRESET SELECT [−] SWITCH SW7
22. SPEED (SP/LP) SELECT SWITCH SW21
23. PROGRAM SWITCH SW6
24. CLOCK SET SWITCH SW5
25. PRESET STATION INDICATOR DISPLAY V1015A505B (EG, EK, EA, EG-G, EG-M MODEL)
26. LED PC BOARD V1015A505C (EO MODEL)
27. PRESET SWITCH SW4
28. EJECT SWITCH SW3
29. ANTENNA SWITCH SW28 (EA MODEL ONLY)

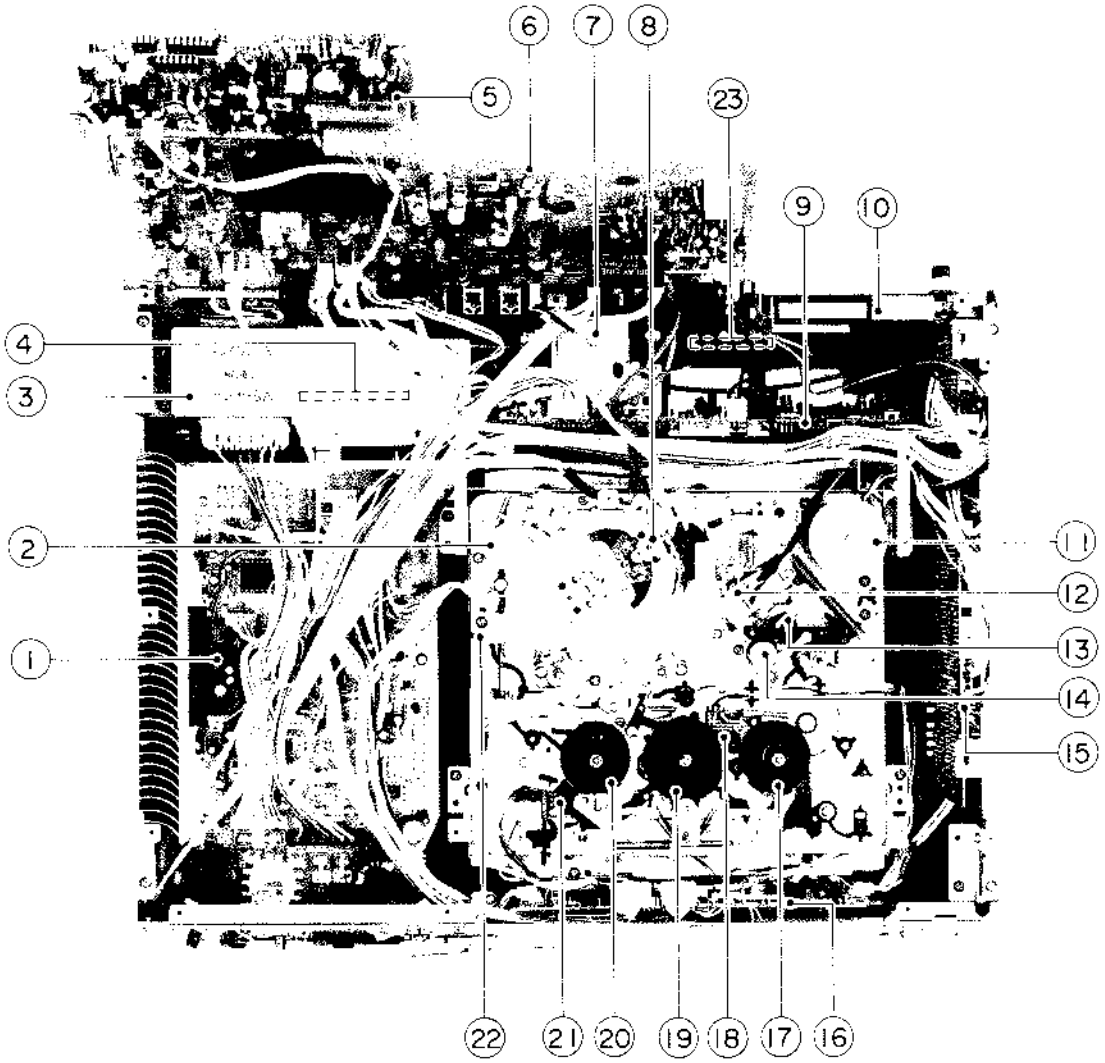


Fig. 4-2. Parts Location (Top View)

1. POWER SUPPLY & SYSTEM CONTROL P.C BOARD V1017A503
2. IMPEDANCE ROLLER
3. POWER TRANSFORMER
4. POWER FILTER PC BOARD V1017D5060
5. SKEW JUMP P.C BOARD V1017A5120
6. VIDEO P.C BOARD V1017A5040
7. TV TUNER UNIT.
8. DRUM HEAD BLOCK
9. DEMODULATOR P.C BOARD 6B00159A
10. RF MODULATOR BLOCK
11. CAPSTAN MOTOR
12. AUDIO/CONTROL HEAD
13. PINCH ROLLER
14. CAPSTAN
15. SERVO & AUDIO P.C BOARD V1017A5010
16. MECHA DRIVE PC BOARD V1015A502A
17. TAKE UP REEL
18. HALL I.C (R) P.C BOARD 5070
19. IDLER ASSY.
20. SUPPLY REEL
21. HALL I.C (L) P.C BOARD 5080
22. FULL ERASE HEAD
23. ANTENNA SWITCH P.C BOARD (V1015A505D) (EA model only)

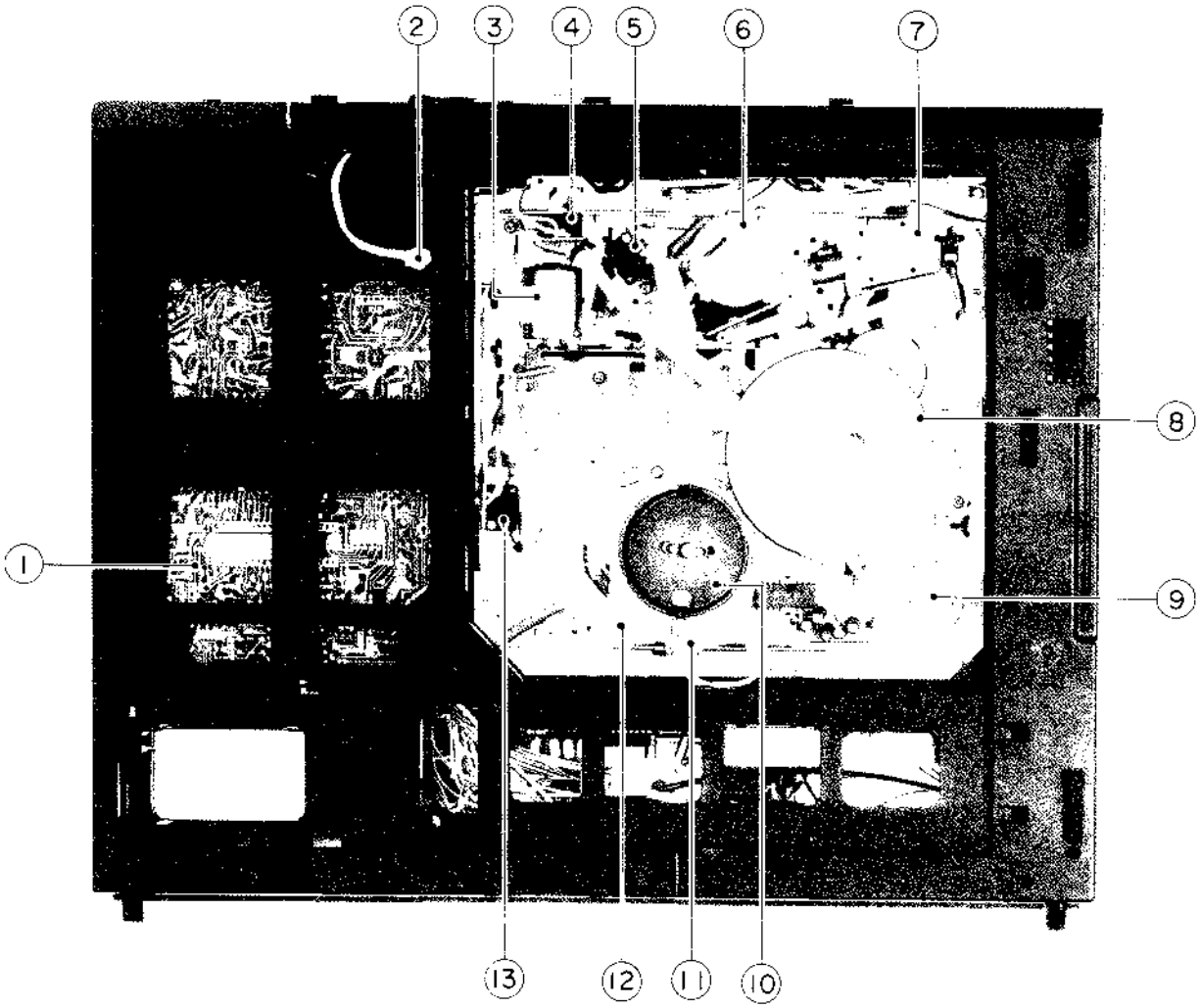


Fig. 4-3. Parts Location (Botton View)

1. POWER SUPPLY & SYSTEM CONTROL P.C BOARD V1017A5030
2. CONNECTOR FOR REMOTE CONTROL UNIT (RC-R4)
3. LOADING MOTOR
4. RECORD SAFETY SWITCH
5. LOADING SWITCH B
6. REEL DRIVE MOTOR
7. PLUNGER
8. CAPSTAN FLYWHEEL
9. CAPSTAN MOTOR
10. DRUM MOTOR
11. DRUM MOTOR PG HEAD
12. DRIVE P.C BOARD M3201C5010
13. LOADING SWITCH A

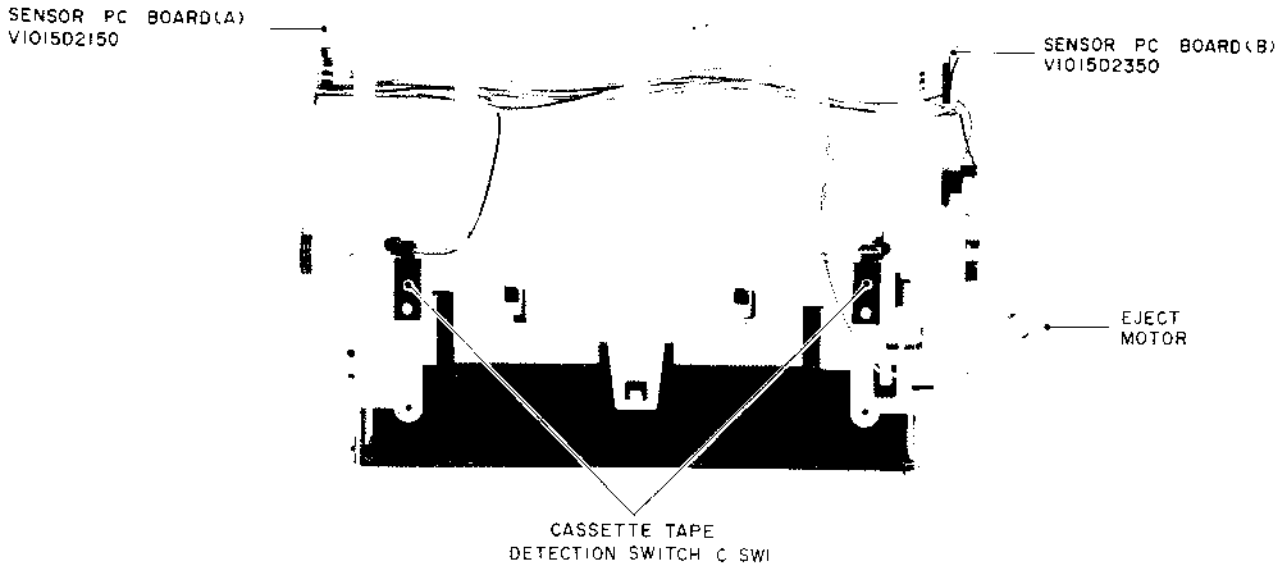


Fig. 4-4. Parts Location (Ejector Block part)

V. MECHANICAL ADJUSTMENT

5-1. BEFORE THE ADJUSTMENT

5-1-1. BUILD A DUMMY CONNECTOR

(Refer to Fig. 5-1)

Ejector block has to be removed for mechanical adjustments. Consequently, it is necessary to build a dummy connector as shown in Fig. 5-1.
The connector used for this dummy connector is PLUG 8P Connector. (Parts Number EJ-318263)

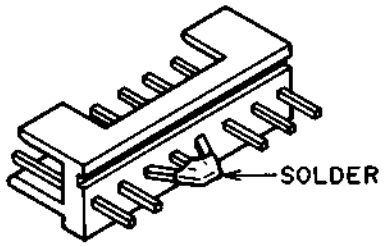


Fig. 5-1 Dummy Connector

5-1-2. CONFIRMATION OF REGULATOR OUTPUT VOLTAGE. (Refer to Fig. 5-2 and chart 5-1)

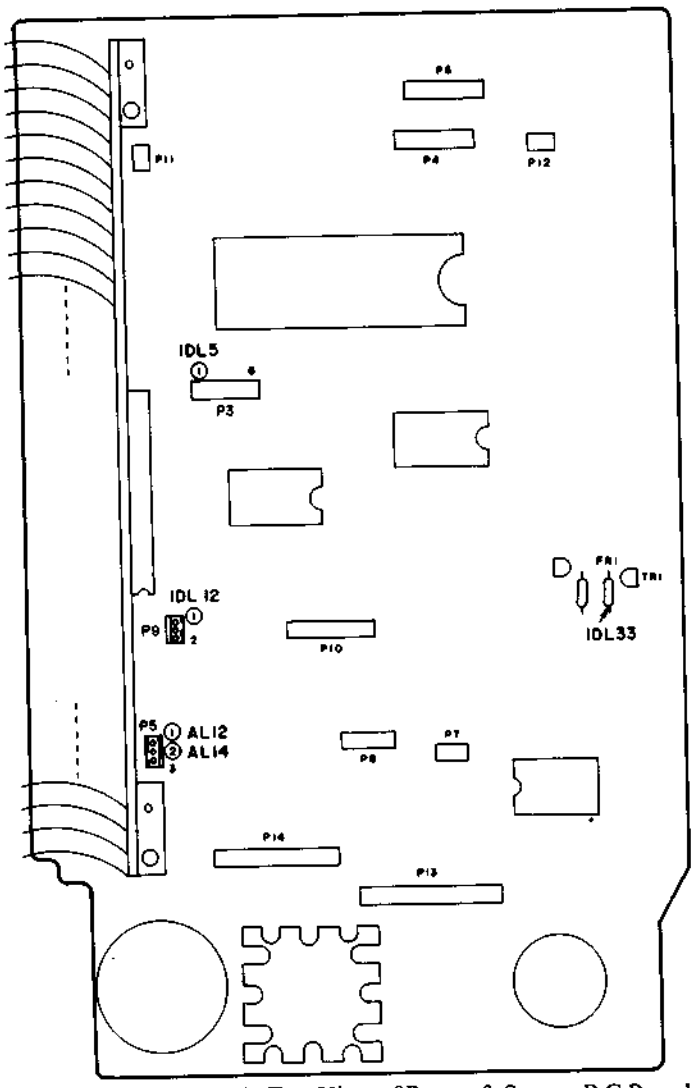


Fig. 5-2 Top View of Power & Syscon P.C Board

Confirm that the voltages measured by digital DC voltmeter at each point are as indicated in chart 5-1.

Check Points	Meter Readings
IDL 5V	5.0V ± 0.25V
IDL 12V	12.0 ± 1.0V
IDL 33V	33.0 ± 2.0V
AL 12V	12.0 ± 0.6V
AL 14V	14.0 ± 0.7V

Chart 5-1

5-2. TENSION LEVER POSITION ADJUSTMENT (Refer to Fig. 5-3)

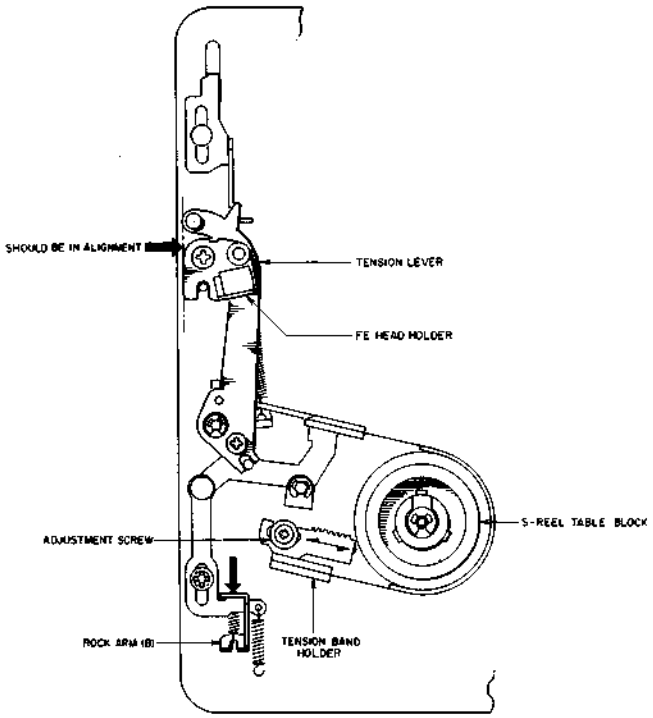


Fig. 5-3

1) Remove the EJECTOR BLOCK from Mech. chassis.
2) Disconnect the 8P connector from EJECTOR BLK and connect a Dummy plug instead of the EJECTOR BLOCK which built at Section 5-1-1.
3) Achieve PLAY mode, and switch "OFF" the power switch on the rear panel and maintain the loading position.
4) Loosen the adjustment screw and adjust the tension band holder so that the tension lever and FE head holder are in alignment as shown in Fig. 5-3, and tighten the adjustment screw.
5) After adjustment, paint-lock the adjustment screw.

5-3. BACK TENSION ADJUSTMENT (Refer to Figs. 5-4, 5-5)

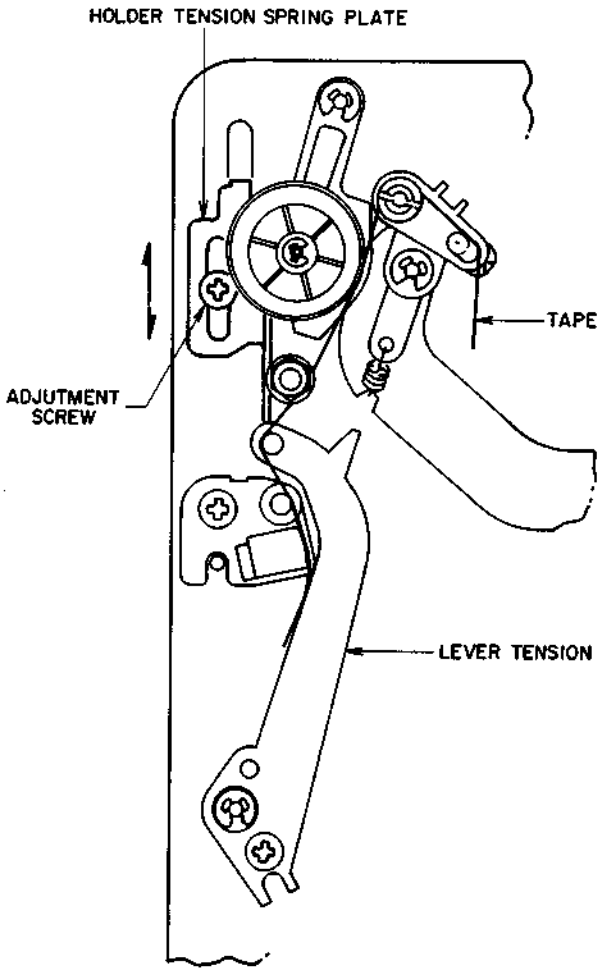


Fig. 5-4

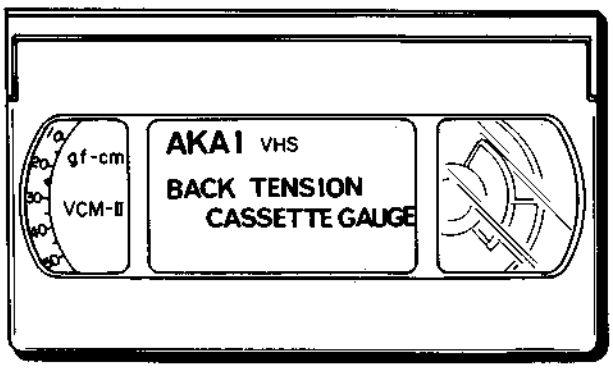


Fig. 5-5 Back Tension Jig. (AJ-751181)

1) Set the back tension Jig (AJ-751181) as shown in Fig. 5-5, and put the some weight on the back tention Jig..
2) Achieve PLAY mode.
3) Loosen the adjustment screw shown in Fig. 5-4, adjust the holder tension spring plate so that back tension will be 20 gf-cm, and tighten the adjustment screw.
4) After adjustment, paint-lock the adjustment screw.

VI. REPLACEMENT OF VIDEO HEAD ASSEMBLY

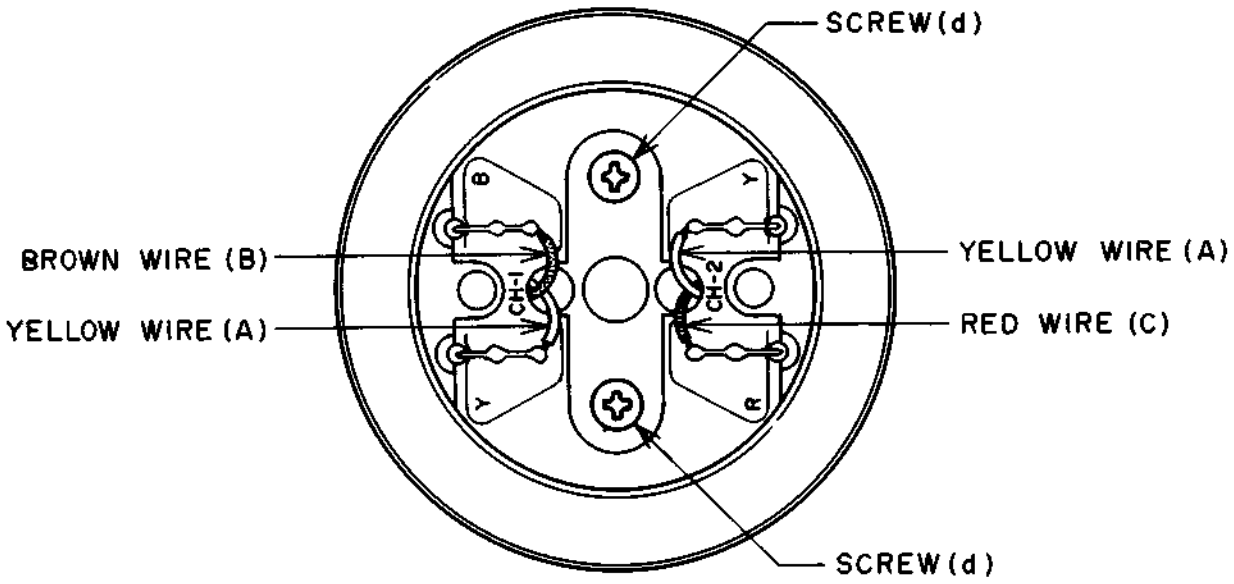


Fig. 6-1

1) UNSOLDER THE WIRE (A), THEN UNSOLDER THE BROWN WIRE (B) AND RED WIRE (C).
2) REMOVE THE TWO SCREWS (d), THEN PULL UP THE UPPER DRUM ASSEMBLY.
3) INSTALL THE NEW HEAD ASSEMBLY AND SOLDER THE WIRES AS SHOWN IN FIG. 6-1.
4) FASTEN TWO SCREWS (d).
5) AFTER REPLACEMENT, THE FOLLOWING ADJUSTMENTS ARE NECESSARY.

a) PB Tracking Adjustment (Servo & Audio P.C Board Step 4)
b) PB Switching Point Adjustment (Servo P.C Board Step 5)
c) REC Switching Point Adjustment (Servo P.C Board Step 6)
d) Video Head Q (Quality factor) and resonance Adjustment (Video P.C Board Step 12 & 13)
e) PB Y Level Adjustment (Video P.C Board Step 15)
f) PB Chroma Level Adjustment (Video P.C Board Step 18)

VII. TAPE TRANSPORT ADJUSTMENT

7-1. TAPE GUIDE (R) ADJUSTMENT (Refer to Fig. 7-1)

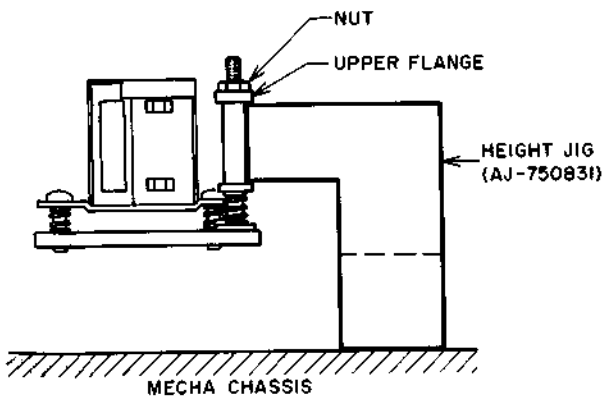


Fig. 7-1

1) Remove the Guide cap.
2) Set the height Jig (AJ-750831) on the Mecha. chassis as shown in Fig. 7-1 and check the height of the lower face of the upper flange.
If necessary, carefully adjust by turning the nut.

7-2. SUPPLY TAPE GUIDE (L) ADJUSTMENT (Refer to Fig. 7-2)

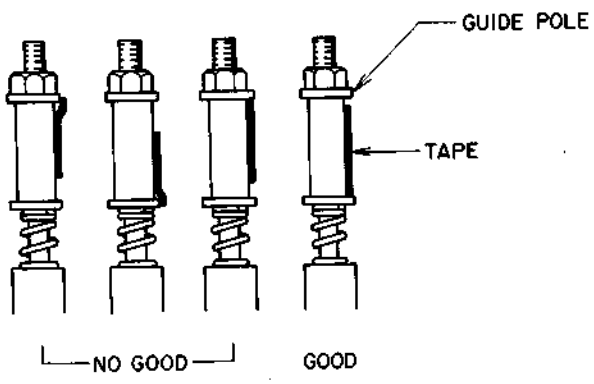


Fig. 7-2

1) Set the cassette tape and achieve PLAY mode.
2) Make adjustment with the supply guide height adjustment nut, so that the lower part of the tape will pass the lower part of the guide pole without curling as shown in Fig. 7-2.

7-3. GUIDE ROLLER HEIGHT ADJUSTMENT (Refer to Fig. 7-3 to Fig. 7-6)

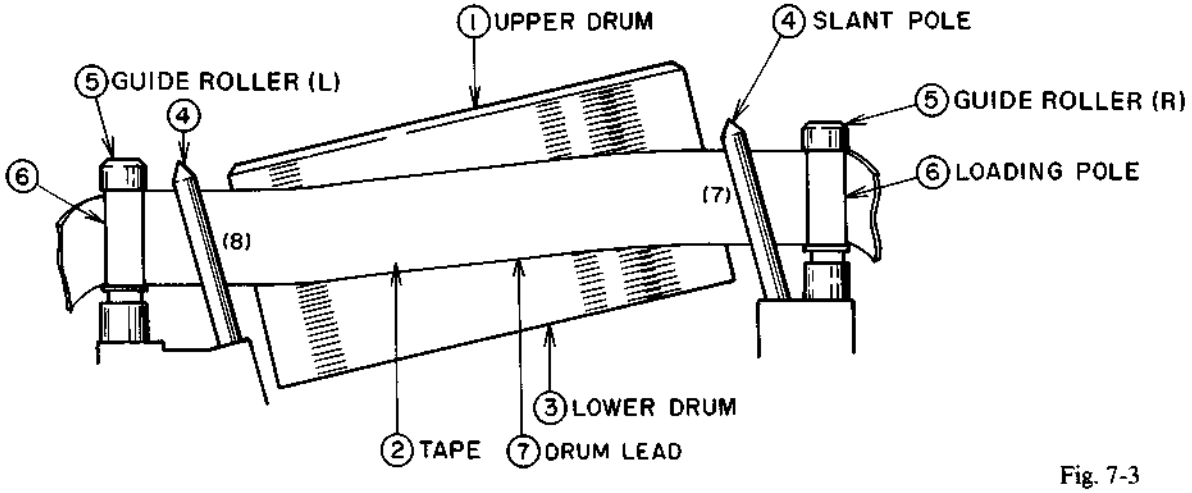


Fig. 7-3

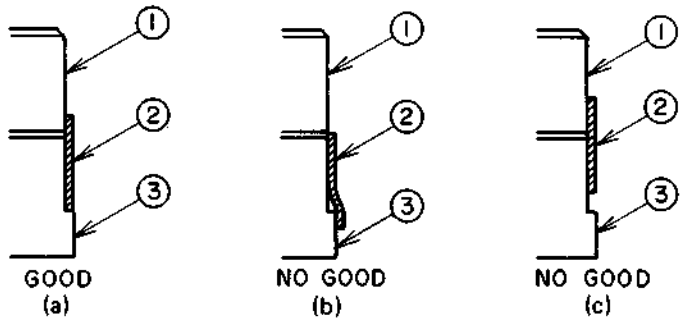


Fig. 7-4

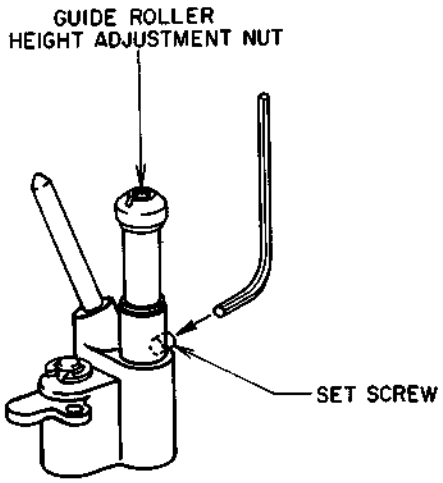


Fig. 7-6

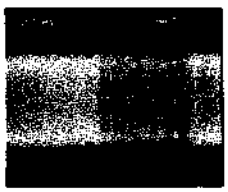


Fig. 7-5

1) Slightly loosen the set screw at the lower part of the guide roller so that the guide roller can be adjusted with reasonable tightness (See Fig. 7-6)
2) Connect an oscilloscope to TR7 (FM envelope out) of the VIDEO P.C Board.
3) Set the reference tape (AT-750795) and achieve PLAY mode.
4) Ensuring it that the oscilloscope shows such a waveform as shown in Fig. 7-5 and also watching the point (7) of Fig. 7-3, adjust the height of the guide roller (R) so that the tape runs without curling as shown in Fig. 7-4 (a).
5) Similarly, adjust the height of the guide roller (L) watching the waveform on the oscilloscope and the point (8) of Fig. 7-3.
6) Make sure that there is no shaking in the picture of the monitor TV.
7) Fix the guide roller with the set screw.

7-4. AUDIO/CONTROL HEAD HEIGHT, TILT AND AZIMUTH ADJUSTMENT

(Refer to Fig. 7-7 to Fig. 7-9)

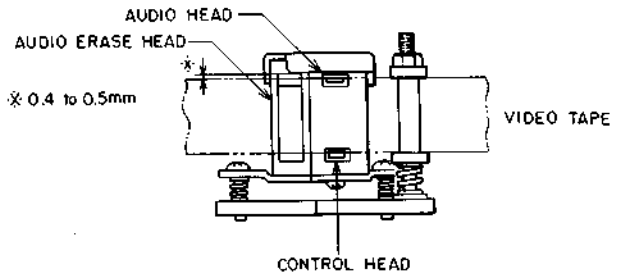


Fig. 7-7

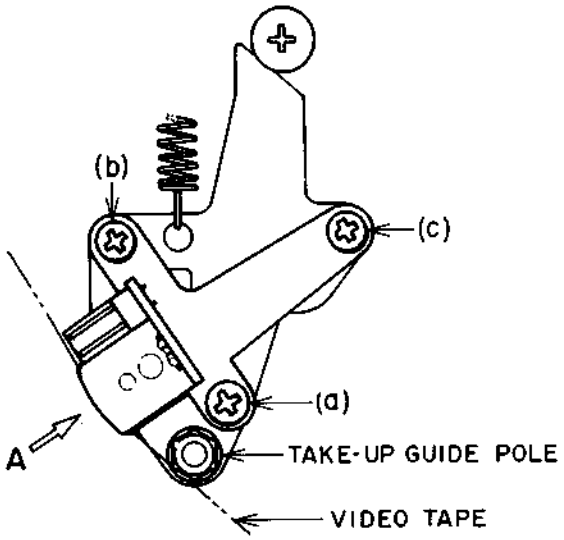


Fig. 7-8

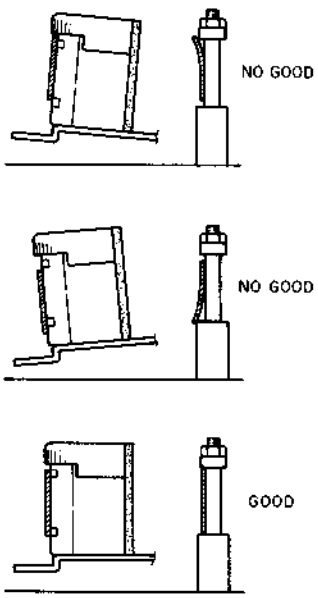


Fig. 7-9

1) Connect an AC Volt Meter to Audio Out.
2) Playback the reference tape (AT-750795).
3) Turn screw (a), (b) and (c) in order slightly but by exactly the same amount. Adjust the audio output level to its maximum. Take screw (a) as your standard and use screw (b) for azimuth adjustment. Adjust screw (c) until there is no tape wrinkle in the guide pole section, the audio output level is at maximum and there is the minimum possible level flucuation.
   Then raise and lower screw (a) very slightly and adjust (b) and (c), and set to the point for maximum output.

Notes: Repeat the adjustment of tape guide height, guide roller height and audio/CTL several times in order to achieve the perfect tape running.

7-5. CONTROL HEAD POSITION ADJUSTMENT (Refer to Fig. 7-10)

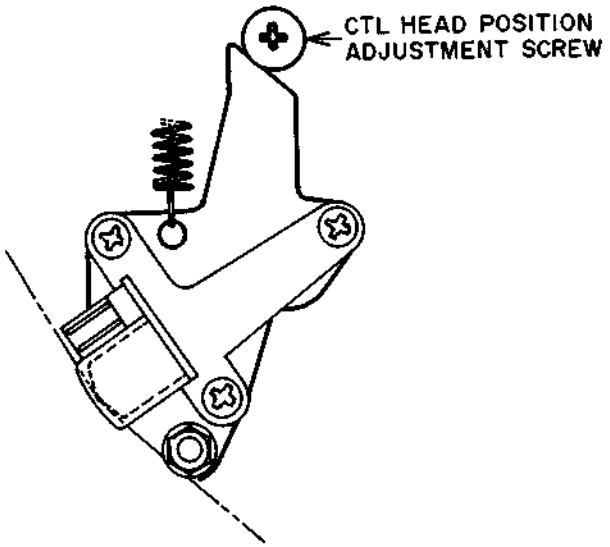


Fig. 7-10

1) Connect an oscilloscope to TR7 (pre-out) of the Video P.C Board.
2) Set the reference tape (AT-750795) and initiate the play mode.
3) While watching the waveform on the oscilloscope, all so watching the monitor screen and push the TRACKING Button on the front panel.
   Confirm the tracking marker in which direction the maximum point of the waveform is located from the center position.
4) Turn back the tracking maker to the center position, and carry out the following (a) or (b) adjustment.
   (a) If the maximum point of the waveform is reached by moving the tracing marker to Left side from the center position, turn the adjustment screw counter-clockwise and make adjustment to maximum point.
   (b) If the maximum point of the waveform is reached by moving tracking marker to Right side from the center position, turn the adjustment screw clock-wise and make adjustment to maximum point.

Note: Make these adjustments only after the tape running is competely adjusted.

7-6. ADJUSTMENT OF QUICK FINDER (REVIEW) RUN (Refer to Figs. 7-11, 7-12)

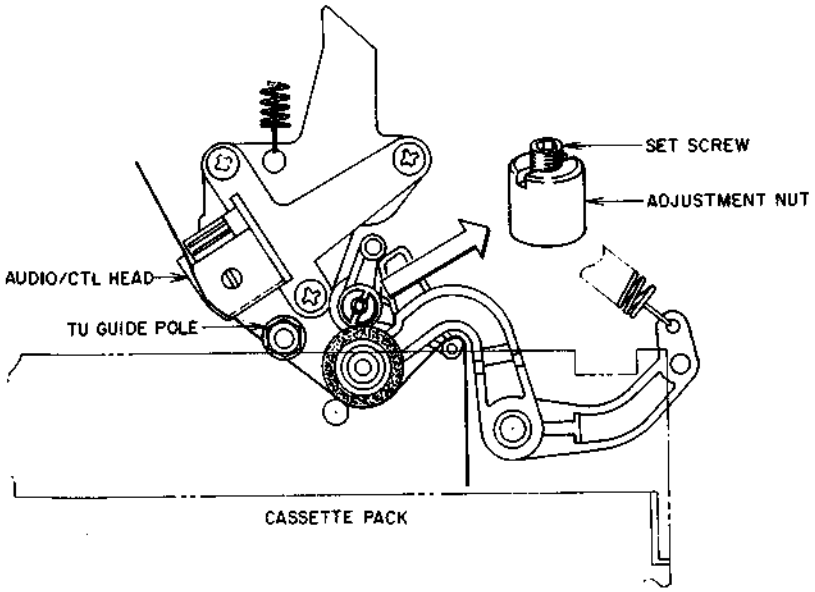


Fig. 7-11

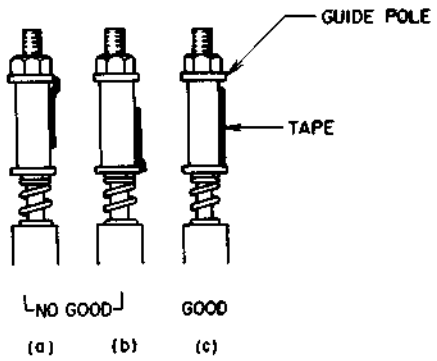


Fig. 7-12

1) Set the recording and playback tape E-240 and wind it up.
2) Press the REVIEW button to initiate the REVIEW mode.
3) Loosen the set screw in Fig. 7-11 so that the adjustment nut can be turned.
4) While watching the tape running on the take-up guide pole, turn the adjustment screw slowly so as to eliminate the curling of the tape (Fig. 7-12 (C)).
5) Tighten the set screw and fix the adjustment screw.
6) After the completion of adjustment, press the stop button once, and after unloading the tape, recheck the review run.

Note: If the adjustment nut is turned too fast, some deviation may be found after adjustment because the tape running does not follow such a fast pace.

VIII. ELECTRICAL ADJUSTMENT

8-1. SERVO ADJUSTMENT

SERVO PCB
TEST POINT (TP-1)

PIN NO.	CHECK ITEM
①	DM PG
②	REF-V
③	SW'NG PULSE
④	COLOR PHASE
⑤	DM SPEED
⑥	CTL
⑦	CM SPEED
⑧	GND

Chart 8-1.

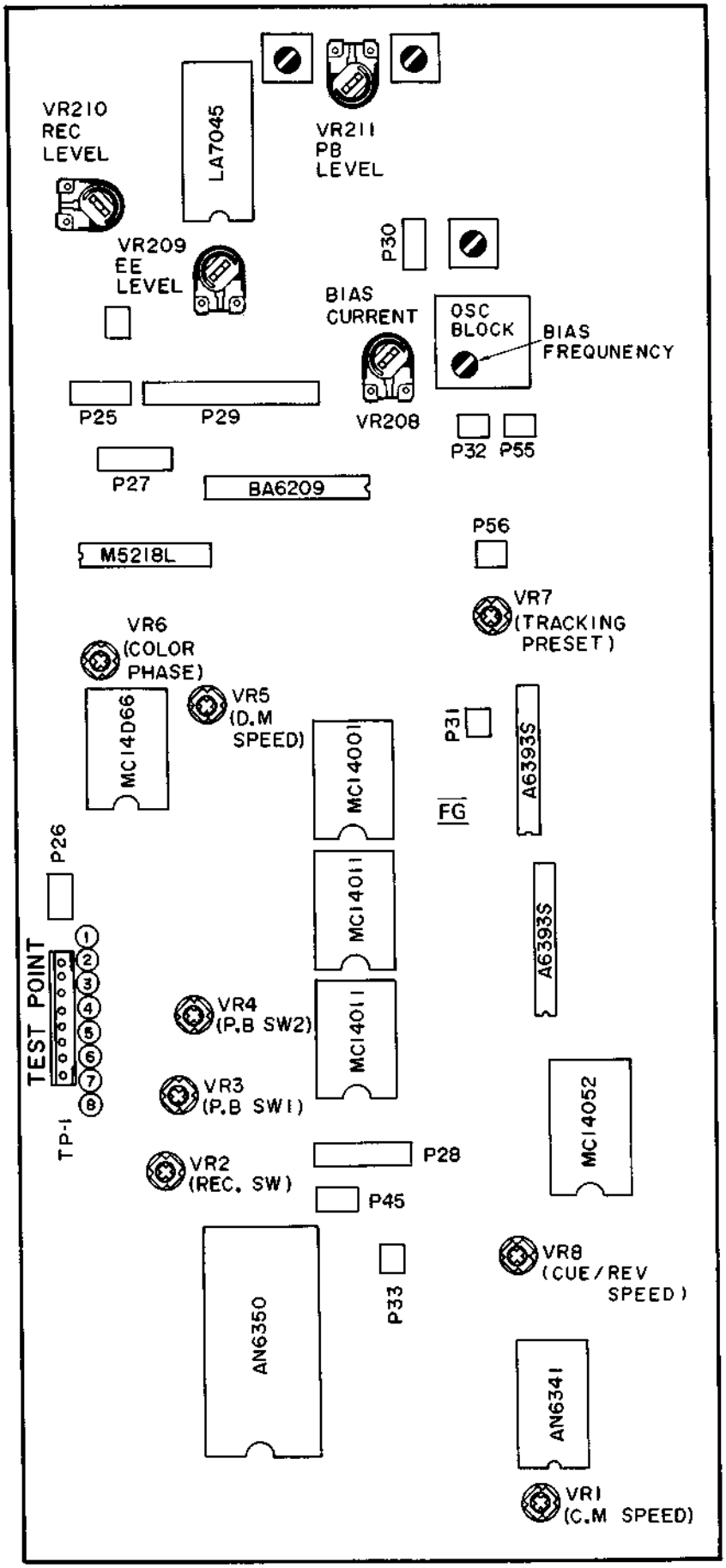
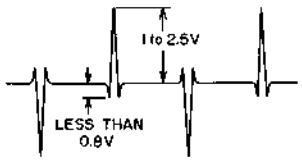
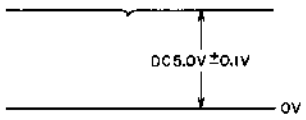
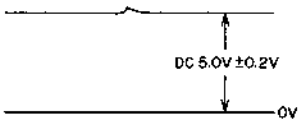
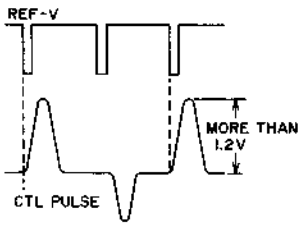
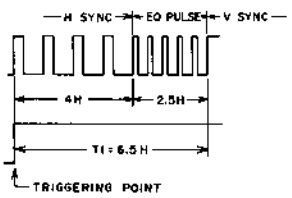
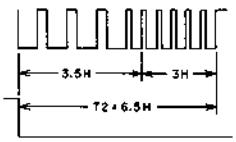
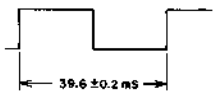
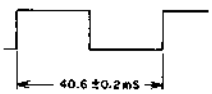
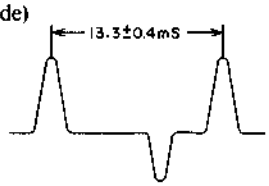
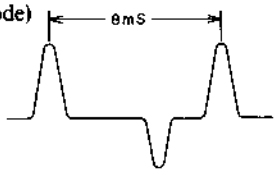
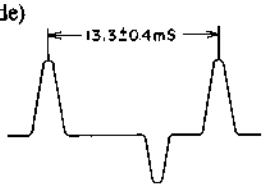
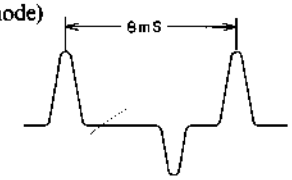


Fig. 8-1 Servo and Audio P.C Board Adjustment points

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Drum Motor PG level	Reference Tape (AT-750795)	PB	TP1 (Pin①)	Confirmation	 Confirm the PG waveform is within the levels shown above.
2	Drum Motor Normal speed	Reference Tape (AT-750759)	PB	TP1 (Pin⑤)	VR5	 Adjust so that the Drum Servo phase error voltage is within DC 5.0V ± 0.1V
3	Capstan Motor Normal speed	Reference Tape (AT-750795)	PB	TP1 (Pin⑦)	VR1	 Adjust so that the capstan servo phase error voltage is within DC 5.0V ± 0.2V
4	Tracking Preset	Reference Tape (AT-750795)	PB	TP1 (Pin②) (Pin⑥)	VR7	 Tracking marker "X" on monitor screen is set to the center of the dotted line by pressing the TRACKING BUTTON on the Front Panel.  Adjust so that the start-down waveform portion of REF-V (Servo standard signal) is lined up with the phase of CTL pulse. At this time, Confirm CTL pulse level is more than 1.2V

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
5	Switching Point	Reference Tape (AT-750795)	PB	TP2 (Video PCB) TP1 (Pin③)	VR3 VR4	(CH1) TP2 (VIDEO PCB) TP1 Pin3  (CH-2) TP2 (VIDEO PCB) TP1 Pin3  Adjust T1 with VR3 to 6.5H and T2 with VR4 The difference between T1 and T2 should be within 0.3H.
6	REC Switching Point	Color Bar from Color Bar Generator	REC	TP2 (Video PCB) TP1 (Pin③)	VR2	Adjust T1 and T2 waveforms to 6.5H ± 0.3H. As the same manner in step 5.
7	Color phase	Reference Tape (AT-750795)	PB Cue & Review (Quick Finder)	TP1 (Pin③)	VR6	Cue (Quick Finder) mode  1 At the cue mode, adjust VR6 so that the switching pulse waveform is as shown above. Review (Quick Finder) mode  2 Change to review mode, confirm that the switching pulse waveform is whithin 40.6 ± 0.2ms as shown above. 3 Confirm that color convergence is not appeared around the center (Green and magenta) of the Color Bar on the monitor screen.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
8	Capstan motor speed at Cue & Review (Quick Finder) Mode	Reference Tape (AT-750795)	Cue (Quick Finder)	TP1 (Pin ⑥)	VR8	(SP mode)  (LP mode)  1 Adjust VR8 so that the CTL pulse waveform is as shown above.
			Review (Quick Finder)	TP1 (Pin ⑥)	Confirmation	(SP mode)  (LP mode)  1 Confirm that the CTL waveform is as shown above.

8-2. AUDIO ADJUSTMENT

(For adjustment points refer to Fig. 7-1)

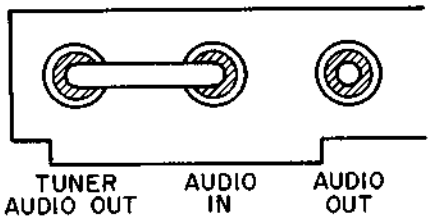


Fig. 8-2. Audio Jack

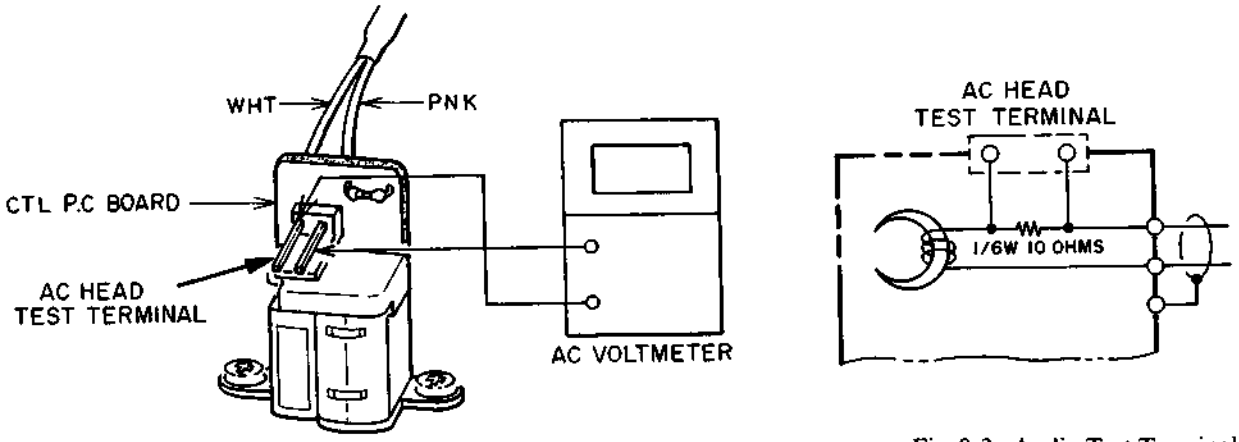


Fig. 8-3. Audio Test Terminal

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	PB level	Test Tape (AT-750800)	P.B	Audio Output	VR211	−6.0 ± 1.0 dBm
2	PB Distortion Factor	Test Tape (AT-750800)	P.B	Audio Output	Confirmation	Less than 2.0 %
3	A/C Head Azimuth	Reference Tape (AT-750795)	P.B	Audio Output	AC Head Adjustment Screw	$-7.0\ ^{+2.0}_{-4.0}$ dBm
4	EE level	Audio Input 1 kHz, −9dBm	EE	Audio Output	VR209	−6.0 ± 1.0 dBm
5	Bias OSC Frequency	No signal Input	REC	A/C Head Terminals (see Fig. 8-3)	OSC Block	1 Connect a Frequency counter to the Erase head terminals 2 Adjust the core of OSC Block, so that the Frequency counter reads 70.0 ± 1.0 kHz
6	Bias voltage	No signal Input	REC	A/C Head Terminals (see Fig. 8-3)	VR208	Connect a AC volt meter to A/C Head terminals AC 3.4 ± 0.2mV
7	REC level	No signal Input	REC	A/C Head Terminals (see Fig. 8-3)	VR210	1 Connect the OSC Block Pin⑧to GND. (stop the oscillation) 2 Connect a AC volt meter to A/C Head Terminals SP mode AC 0.22 ± 0.01mV LP mode AC 0.25 ± 0.02mV
8	Bias lead	No signal Input	REC	Audio Output	FL202	Minimum output level

Note : For adjustment points refer to Fig. 7-1.

8-3. VIDEO ADJUSTMENT

No.	CHECK ITEM
TP1	VIDEO IN
TP2	VIDEO OUT
TP3	RF OUT
TP4	REC VIDEO
TP5	AGC GAIN
TP6	PRE EMPHASIS
TP7	REC OUT
TP8	PB ACC IN
TP9	ACC OUT

No.	CHECK ITEM
TP10	5.06 MHz (APC)
TP11	PB AMP OUT
TP12	BGP.
TP13	GATED BURST
TP14	AFC
TP15	LOCAL OSC
TP16	VIDEO J
TP17	CARRIER BAL.
TP18	CW OUT

No.	CHECK ITEM
TP19	CH-1 REC CURRENT
TP20	CH-2 REC CURRENT
TP21	FM OSC OUT
TP22	APC FREQUENCY
TP23	1st PEAKING
TP24	LIMITER BAL.
TP25	SKEW JUMP OUT

Chart 8-2 VIDEO P.C Board Test Points

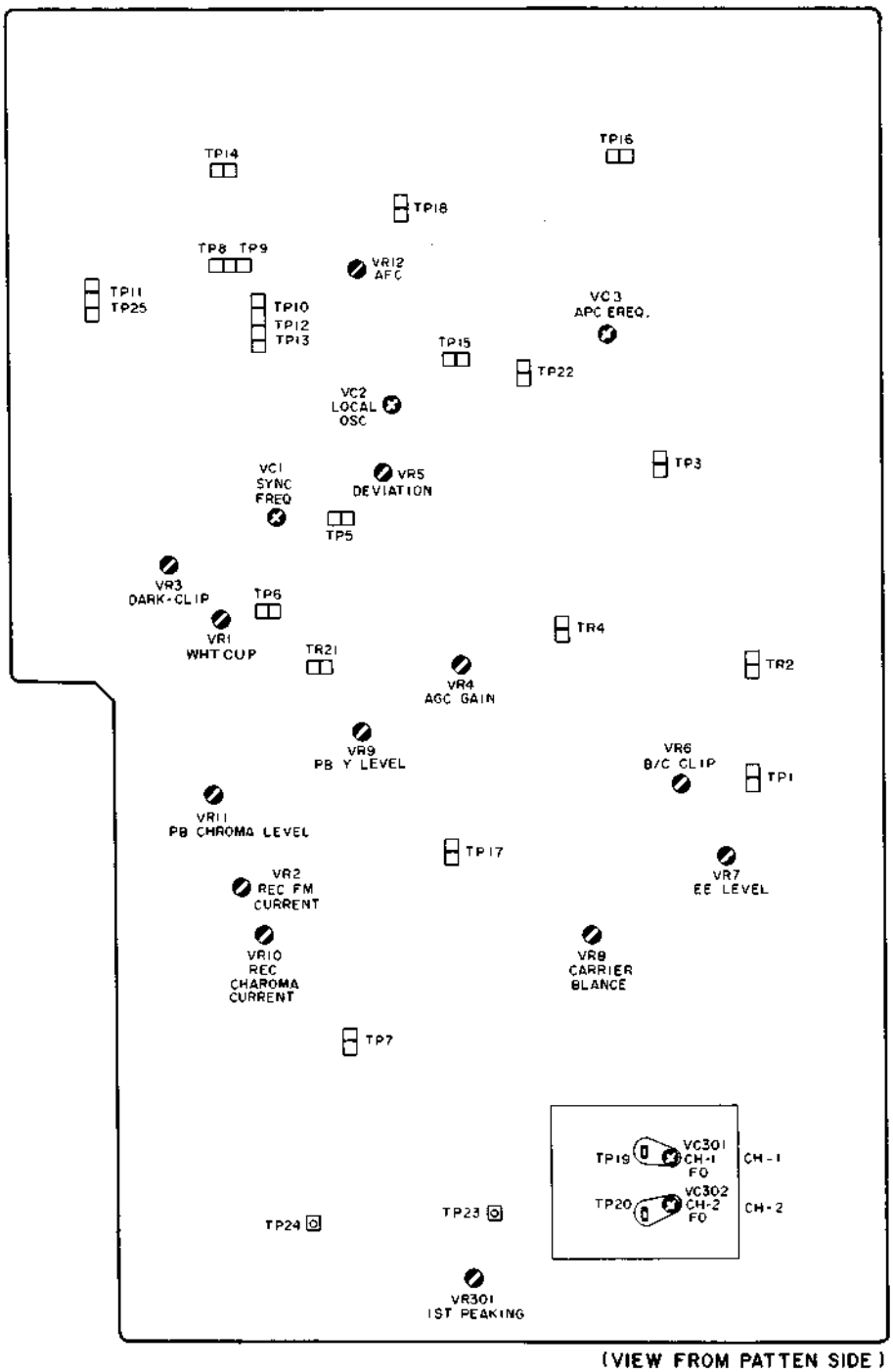


Fig. 8-4 Video P.C Board Adjustment Points

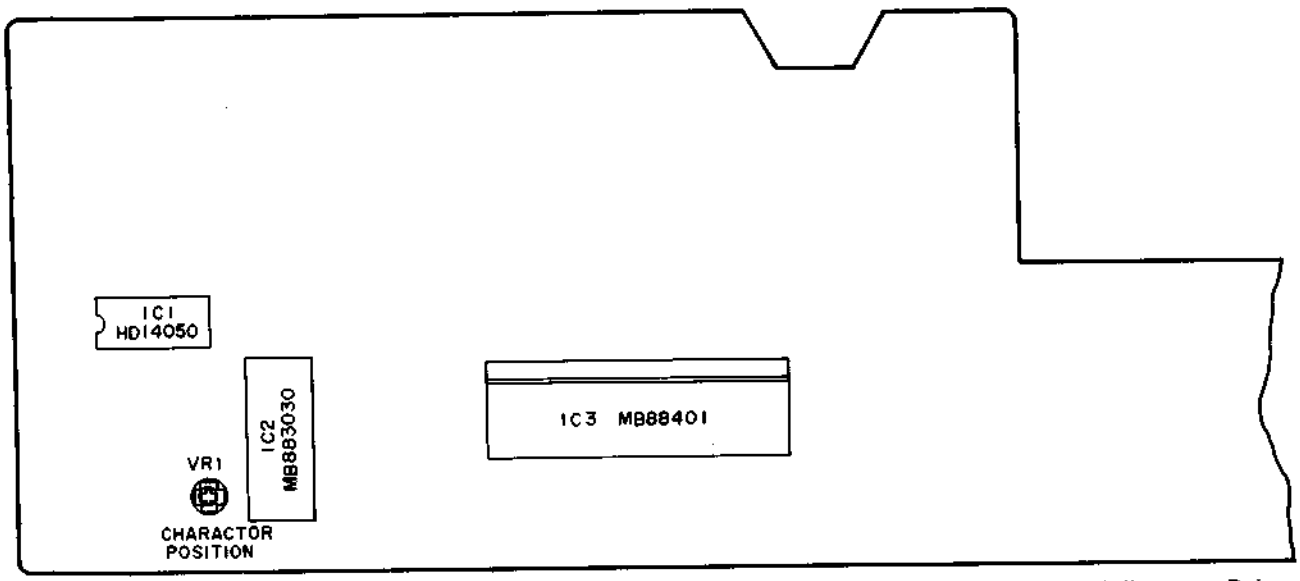
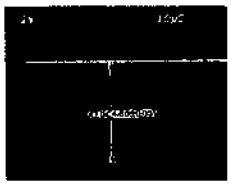
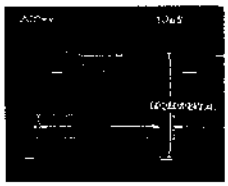
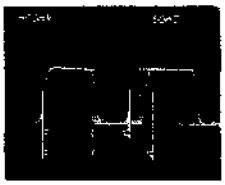
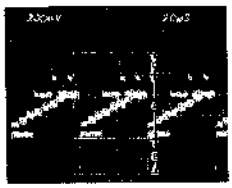
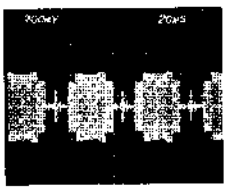
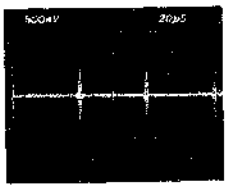
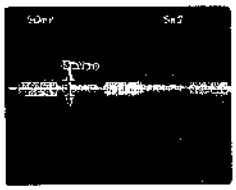
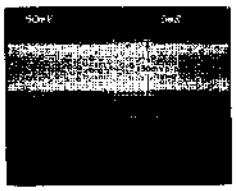
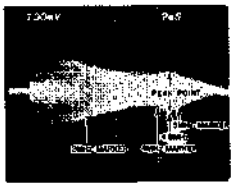
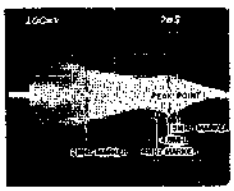
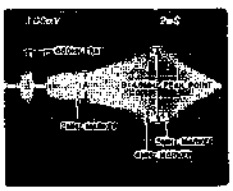
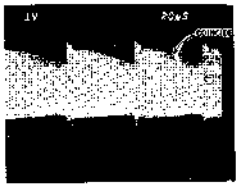
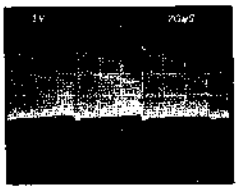
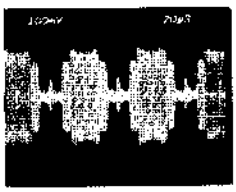
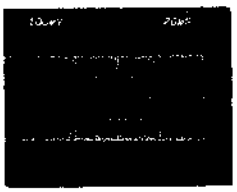
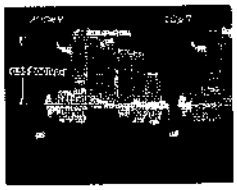


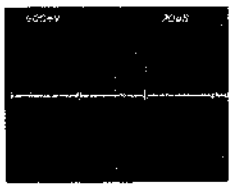
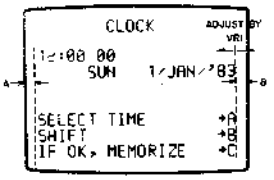
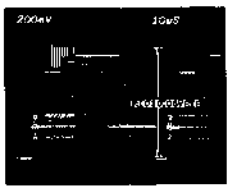
Fig. 8-5 Operation P.C Board Adjustment Points

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	AFC	Color Bar from Color Bar Generator	EE	TP14	VR12	 Adjust VR12 so that A is within DC4.6±0.05V
2	VIDEO Judge circuit check	Color Bar from Color Bar Generator	EE	TP16	Confirmation	1. At the same condition as step 1 confirm that the voltage at TP16 is about DC12V. 2. Disconnect the VIDEO Input (Non VIDEO condition) confirm that the voltage at TP16 is DC OV.
3	EE level	Color bar from Color Bar Generator	EE	TP2 TP3	VR7	 1. Adjust VR7 so that the VIDEO Output (TP2) is within 1.00±0.02vp-p. 2. Confirm that RF output (both Y & chroma signals) is appeared at TP3.
4	AGC Gain	Color Bar from Color Bar Generator	EE	TP5	VR4	 1. Adjust VR4 so that A is within 2.10±0.05Vp-p.
5	FM OSC	Color Bar from Color Bar Generator	EE	TP21	VC1 (Carrier set) VR5 (Deviation)	 Carrier set A = 0.263μS Deviation B = 0.208μS

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
6	White clip and Dark clip	Color Bar from Color Bar Generator	EE	TP6	VR1 (White clip) VR3 (Dark clip)	 1. Adjust VR1 and VR3 so that the waveform at TP6 is as shown above. White clip A:B=1.0:0.6 Dark clip A:C=1.0:0.4
7	AFC 625kHz Check	Color Bar from Color Bar Generator	EE	TP18	Confirmation	1. Mode switch to SECAM 2. Supply color bar signal to line input. 3. Connect a Frequency counter and oscilloscope to TP18. 4. Confirm that the frequency of the waveform is 625kHz of Duty 50%.
8	APC OSC	Color Bar from Color Bar Generator	EE	TP10	VC3	1. Mode switch to SECAM 2. Supply color Bar signal to line input. 3. Connect a frequency counter and oscilloscope to TP10. 4. Adjust VC3 so that the frequency reads 5.06571MHz± 10Hz. 5. Confirm that the level of the waveform is about 400mVp-p.
9	REC ACC check	Color Bar from Color Bar Generator	EE	TP9 TP25	Comfirmation	 1. Connect an oscilloscope to TP9 and confirm that the waveform is as shown above. 2. Connect an oscilloscope to TP25 and confirm that the signal disappears when Mode switch is changed to B/W position.
10	Gated Burst Check	Color bar from Color Bar Generator	EE	TP13	Confirmation	 Confirm that the color Burst signal is picked out properly as shown above.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
11	REC Current	Color Bar from Color Bar Generator	REC	TP19 or TP20	VR10 VR2	1. Turn the VR2 fully counterclockwise.  2. Adjust VR10 so that the chroma REC current waveform is 35mVp-p as shown above.  3. Adjust VR2 so that the Y REC current waveform is 130mVp-p as shown above.
12	Head peak (F0) Frequency	RF Sweep Tape (AT750802)	PB	TC-1 ③	VC301 (CH-1) VC302 (CH-2)	(CH-1)  1. Adjust VC301 (CH-1) so that the Peak Frequency is 4.8MHz as shown above. (CH-2)  2. Adjust VC302 (CH-2) so that the peak Frequency is 4.8MHz as shown above.
13	Video Head Q (Peaking)	RF Sweep Tape (AT750802)	PB	TR305 emitter (TP23)	VR301	 1. Adjust VR301 so that "Q" is set at the radio of A:B = 1:3.2±0.1 2. Confirm that the trap for 680kHz is activate as shown above.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
14	Carrier Balance	Reference Tape (AT750795)	PB	TP17	VR8	 (NO GOOD)  (GOOD) Adjust VR8 so that the waveform is as shown above.
15	PB Y level	Color Bar Tape (AT750797)	PB	TP2	VR9	 Adjust VR9 so that the video signal level at TP2 is 0.90±0.02Vp-p.
16	Local OSC	Color Bar Tape (AT750797)	PB	TP15	VR2	1. Connect a frequency counter to TP15. 2. Adjust VC2 so that the frequency counter reads 4.433619MHz±10Hz
17	PB ACC Check	Color Bar Tape (AT750797)	PB	TP9 TP10	Confirmation	  Confirm that the waveform at TP9 and TP10 are as shown above.
18	PB Chroma level	Color Bar Tape (AT750797)	PB	TP2	VR11	 Adjust VR11 so that the cyan level is within 0.55±0.01Vp-p.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
19	PB Gated Burst check	Color Bar Tape (AT750797)	PB	TP13	Confirmation	 Confirm that the color burst signal is picked out properly as shown above.
20	Character Position		EE	Monitor screen	VR1 (Operation PCB)	 1. Display the character on the monitor screen. 2. Adjust VR1 so that the space A and B are same.
21	B/C Clip level	Color Bar from Color Bar Generator	PB	TP2	VR6	 1. Display character to the monitor screen. 2. Adjust so that the Video signal level is 1.10±0.05Vp-p.

Note: The adjustment is Step 10 can be accomplished by checking of two test points (TP19 or T20), and use the another one for confirmation.

8-4. SKEW JUMP ADJUSTMENT

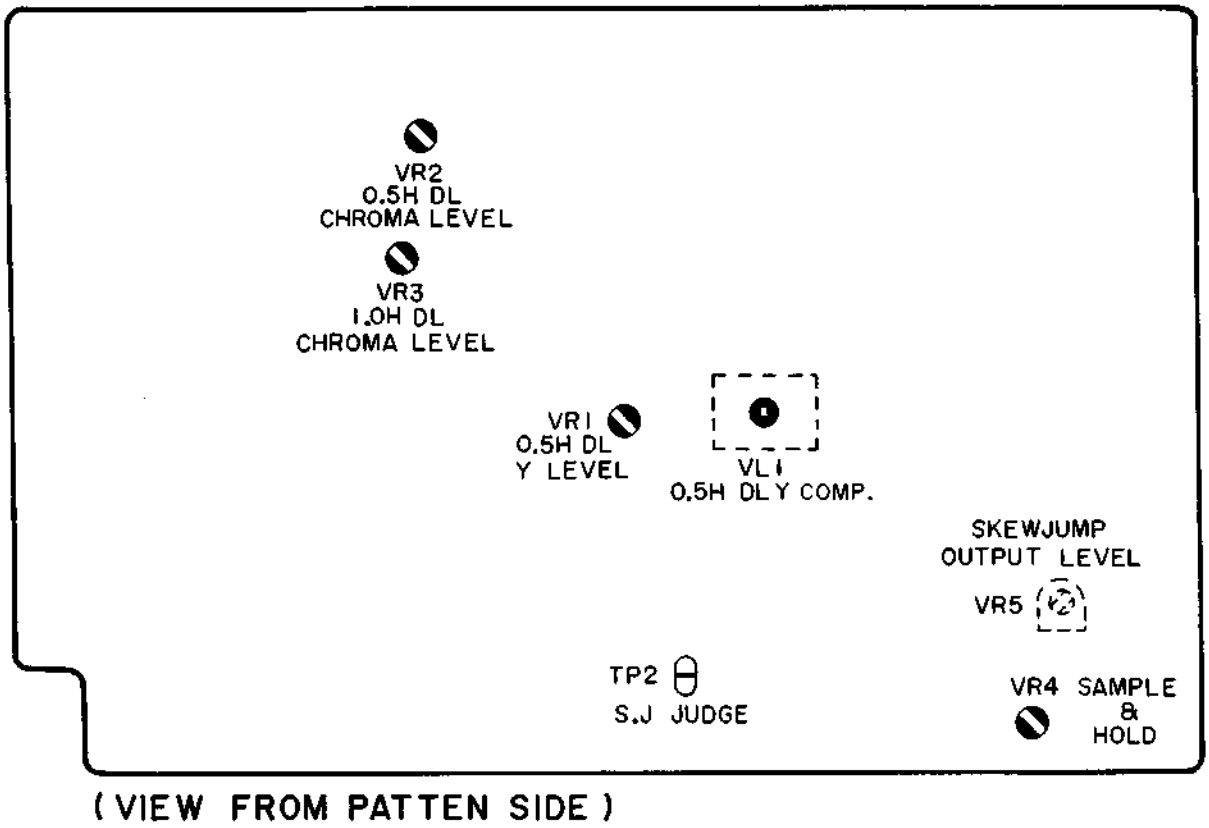
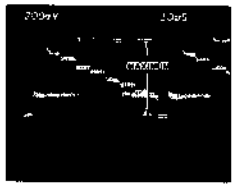
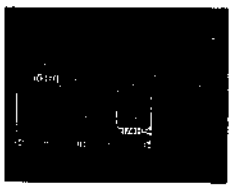
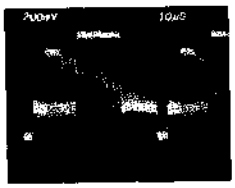
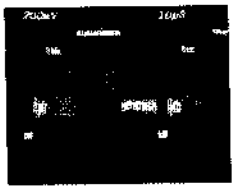
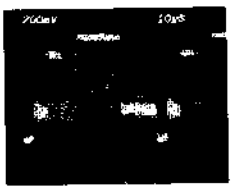


Fig. 8-6 Skew Jump P.C Board Adjustment Points

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Input Y-level	Color Bar Test Tape	PB	IC1 Pin ㉒	Confirmation	 Confirm so that the Y-level is 0.7±0.1Vp-p.
2	0.5H DL Y composition	Color Bar Test Tape	PB	IC1 Pin ⑭	VL1	 Adjust VL1 so that the Y-level is maximum.
3	0.5H DL Y-level	Self Recorded Tape at LP mode	Review (LP)	TP2 (VIDEO PCB)	VR1	 (NO GOOD)  (GOOD) Adjust VR1 so that the 0.5H delayed Y-level and through Y-leve are same.
4	Sample and Hold	Self Recorded Tape at LP mode	Review (LP)	IC1 Pin④(CH-1) Pin⑨(CH-2)	VR4	 Adjust VR4 so that the Figure is as shown above.
5	VIDEO Output level		PB	TP2 (VIDEO PCB)	VR5	 Adjust VR5 so that the Video output Y level is 1.00±0.02Vp-p.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
6	0.5H DL Chroma level	Self Recorded Tape at LP mode	Review (LP)	TP2 (VIDEO PCB)	VR2	 (NO GOOD)  (GOOD) Adjust VR2 so that the 0.5H delayed chroma level and through chroma level are same.
7	1.0H DL Chroma level	Self Recorded Tape at LP mode	Review (LP)	TP2 (VIDEO PCB)	VR3	 (NO GOOD)  (GOOD) Adjust VR3 so that the 1.0H delayed chroma level and through chroma level are same.

Notes: 1. All the skew Jump P.C Board adjustment, use the self recorded tape from Color Bar Generator at LP (6H) mode.
2. At the steps 3,4,5 and 6, two signal waveforms (Delayed signal and passed signal) are appearing at TP2.

8-5. DEMODULATOR ADJUSTMENT

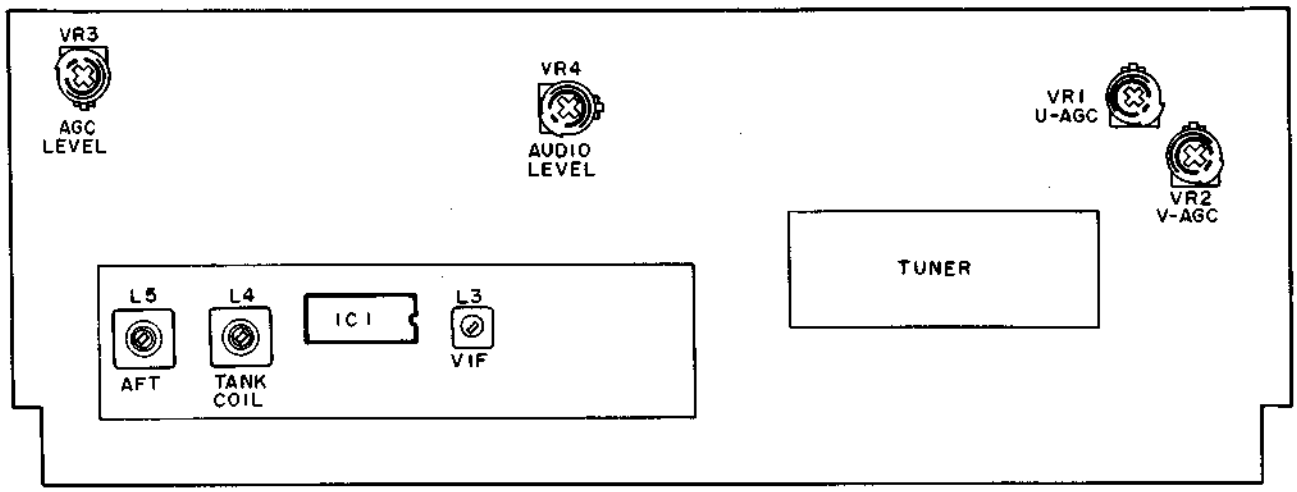


Fig. 8-7 Demodulator P.C Board Adjustment Point

8-5-1. TANK COIL ADJUSTMENT (Refer to Fig. 8-7 to Fig. 8-9)

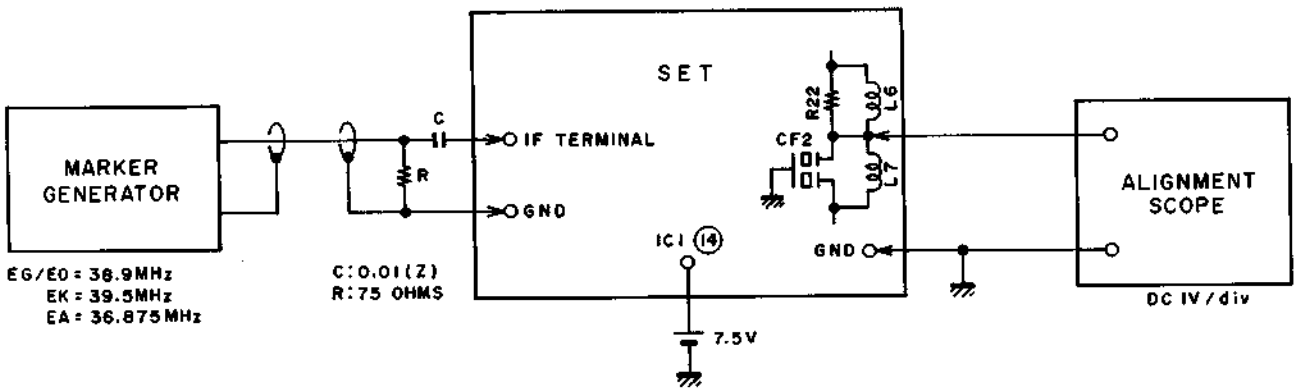


Fig. 8-8

a) Apply 50 mVp-p in IF frequency (EG/EO = 38.9 MHz, EK = 39.5 MHz, EA = 36.875 MHz).
b) Connect the alignment scope as shown in Fig. 8-8.
c) Apply DC 7.5V to Pin ⑭ of IC1.
d) Adjust L4 so that the DC voltage appearing on the alignment scope will be minimum.

* If only the TANK COIL (L4) was replaced, this adjustment can be accomplished as follows.

a) Receive a video signal (color bar, etc) and observe the video output signal.
b) Turn the TANK COIL (L4) counter-clockwise from Lower end (core moves upwards) so that the level of the burst signal becomes minimum as shown in Fig. 8-9.

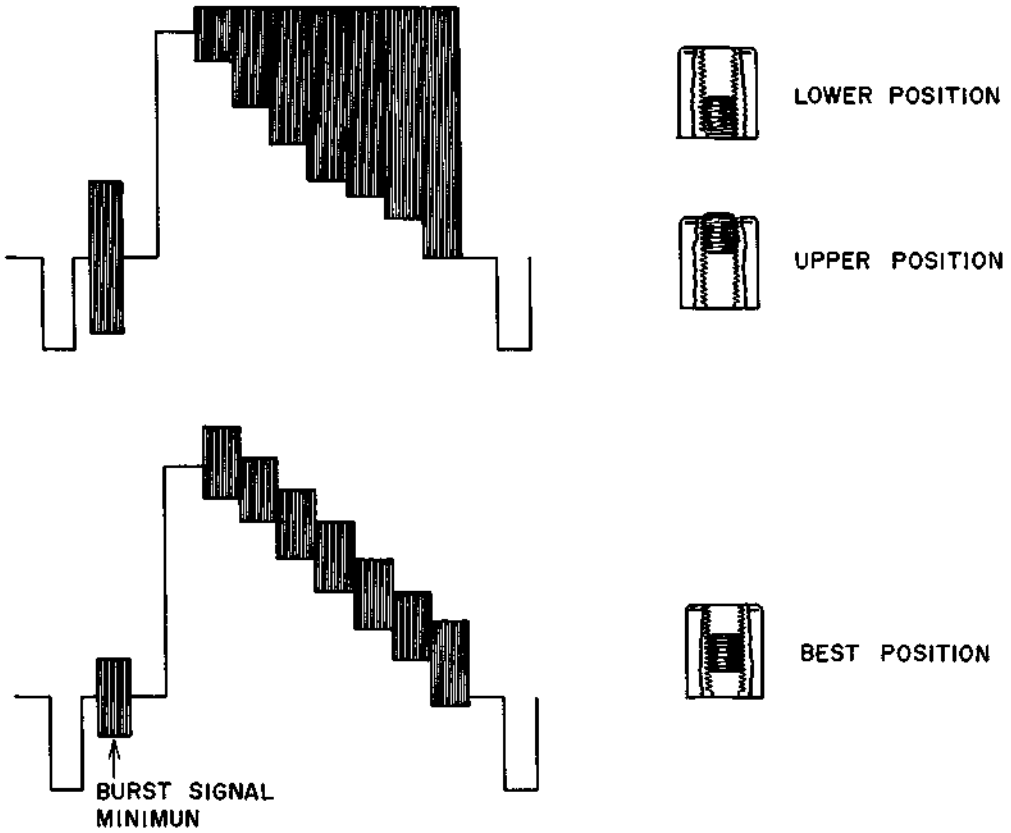


Fig. 8-9

8-5-2. AFT ADJUSTMENT (Refer to Fig. 8-10 to Fig. 8-12)

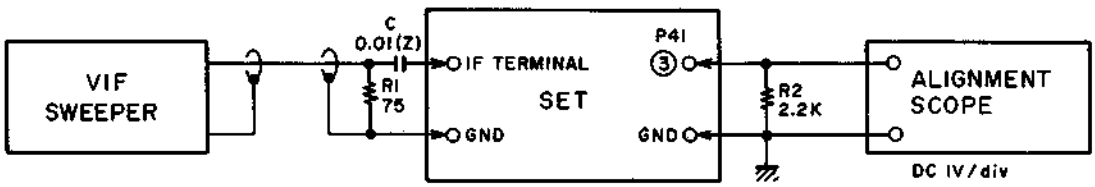


Fig. 8-10

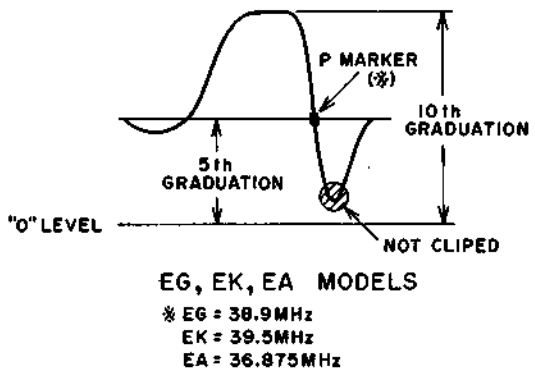


Fig. 8-11

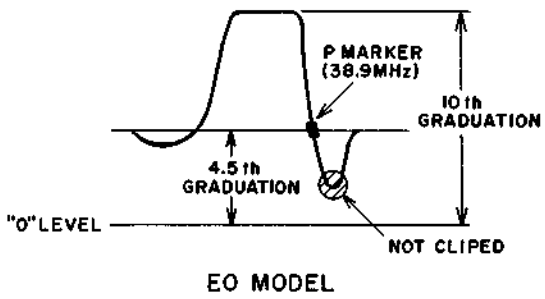


Fig. 8-12

a) Connect VIF sweeper output 70 dB to the IF terminal.
b) Connect the alignment scope to the AFT terminal (Pin③ of P 41).
c) Give an optional size to the waveform with the IF AGC volume, and make approximate adjustment with L5 so that the marker will be positioned at 5 th graduation (4.5 th Graduation for EO model) of the alignment scope.
d) Stop with IF AGC volume before the waveform is clipped.
e) Adjust with L5 so that the marker (EG/EO=38.9 MHz, EK=89.5 MHz, EA=36.875 MHz) will be at 5th graduation (4.5th graduation for EO model) of the alignment scope (Figs. 8-11, 8-12).

8-5-3. VIF ADJUSTMENT (Refer to Fig. 8-13 to 8-14)

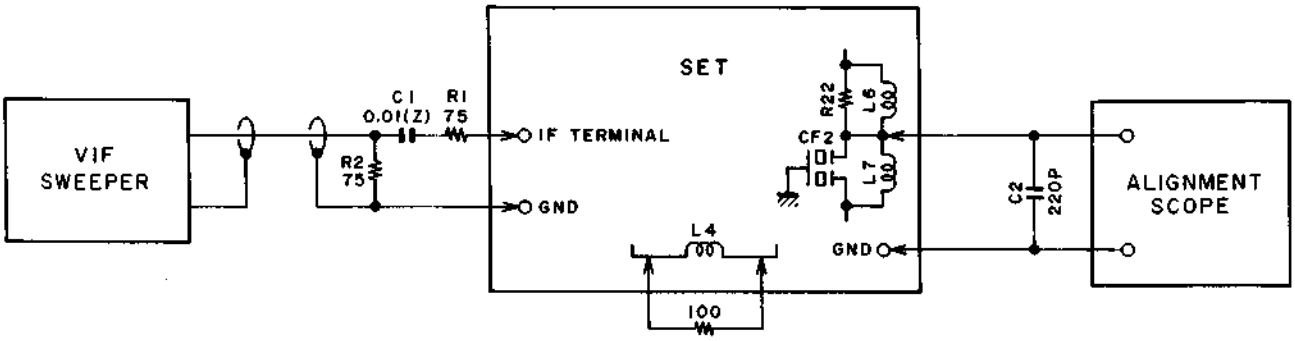
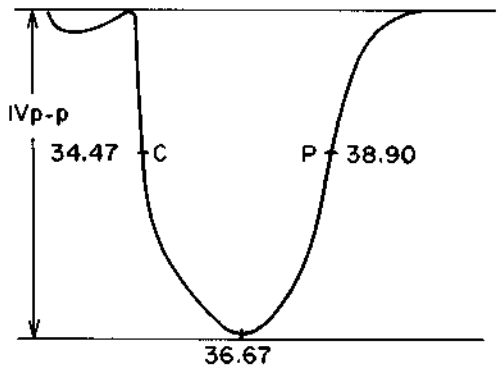
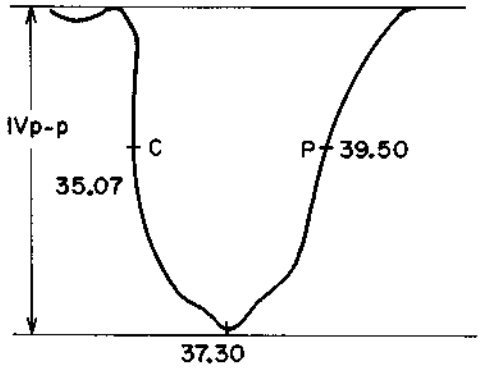


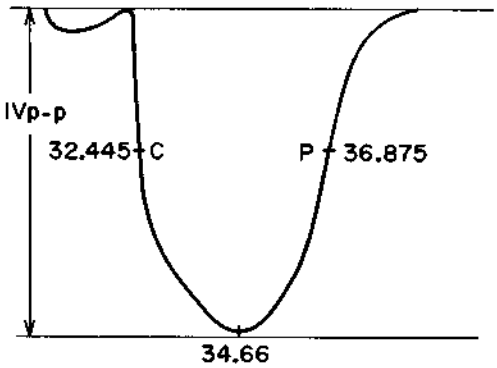
Fig. 8-13



EG, EO, EG-G, EG-M MODELS



EK MODEL



EA MODEL

Fig. 8-14

a) Apply VIF sweeper output of 70dB to IF terminal.
b) Connect the Alignment scope as shown Fig. 8-13.
c) Connect dummy resistors of 100 ohms to both ends of the tank coil (L4).
d) Set the alignment scope to 10th graduation by means of the IF AGC volume and adjust the L3 so that the center, P and C marker positions are maximum as shown in Fig. 8-14.
e) Adjust the Tuner IF coil so that the P and C level is as shown in Fig. 8-14.

8-5-4. IF AGC ADJUSTMENT

a) Tune the RF signal (EG/EO=12 CH, Color Bar, EA=6 CH Color Bar, EK=30 CH Color Bar)
b) Connect an oscilloscope to video output terminal and adjust VR3, so that the video output level is 0.9 Vp-8.

8-5-5. RF AGC ADJUSTMENT

V-AGC

a) Receive VH channel and connect oscilloscope to the video out terminal (Pin ④ of P 42).
b) Adjust VR2, so that the Noise is desappears from the Noise condition and sync. signal becomes rather small.

U-AGC

a) Receive UHF channel, and connect oscilloscope to the video output terminal (Pin ④ of P 42).
b) Adjust VR1 in the same way as U-AGC Adjustment.

8-5-6. AUDIO OUTPUT ADJUSTMENT

a) Apply DC 9.0V to Pin ② of P 1.
b) Connect an AC voltmeter and a distortion meter to Pin ② of P 42.
c) Add the following Rf signals to ANT IN.
EG/EO/EA model VHF 12 CH (Color Bar)
EK model UHF 0 CH (Philips) } 58dB
d) Adjust with VR4 so that the reading of the AC voltmeter will be – 6 dB.

IX. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number	Remarks
Video P.C Board	V1017A5040	
Skew Jump P.C Board	V1017A5120	
Servo & Audio P.C Board	V1017A5010	
Operation P.C Board	V1015A505A	
Power Supply & Syscon P.C Board	V1017A5030	
Mecha Drive P.C Board	V1015A502A	
Drive P.C Board	M3201C5010	
Power Filter P.C Board	V1017D5060	
AC Head P.C Board	V1017A5140	
L SW B P.C Board	V1015A502B	
L SW A P.C Board	V1015A502C	
RS SW P.C Board	V1015A503D	
Full Erase Head P.C Board	V1017D5130	
Demodulator P.C Board	6B00159C	
Antenna SW P.C Board	V1015A505D	EA model only
LED P.C Board	V1015A505B	
LED P.C Board	V1015A505C	EO model only
Sensor (R) P.C Board	V1015D2350	
Sensor (L) P.C Board	V1015D2150	

X. COMPOSITION OF VARIOUS P.C BOARDS

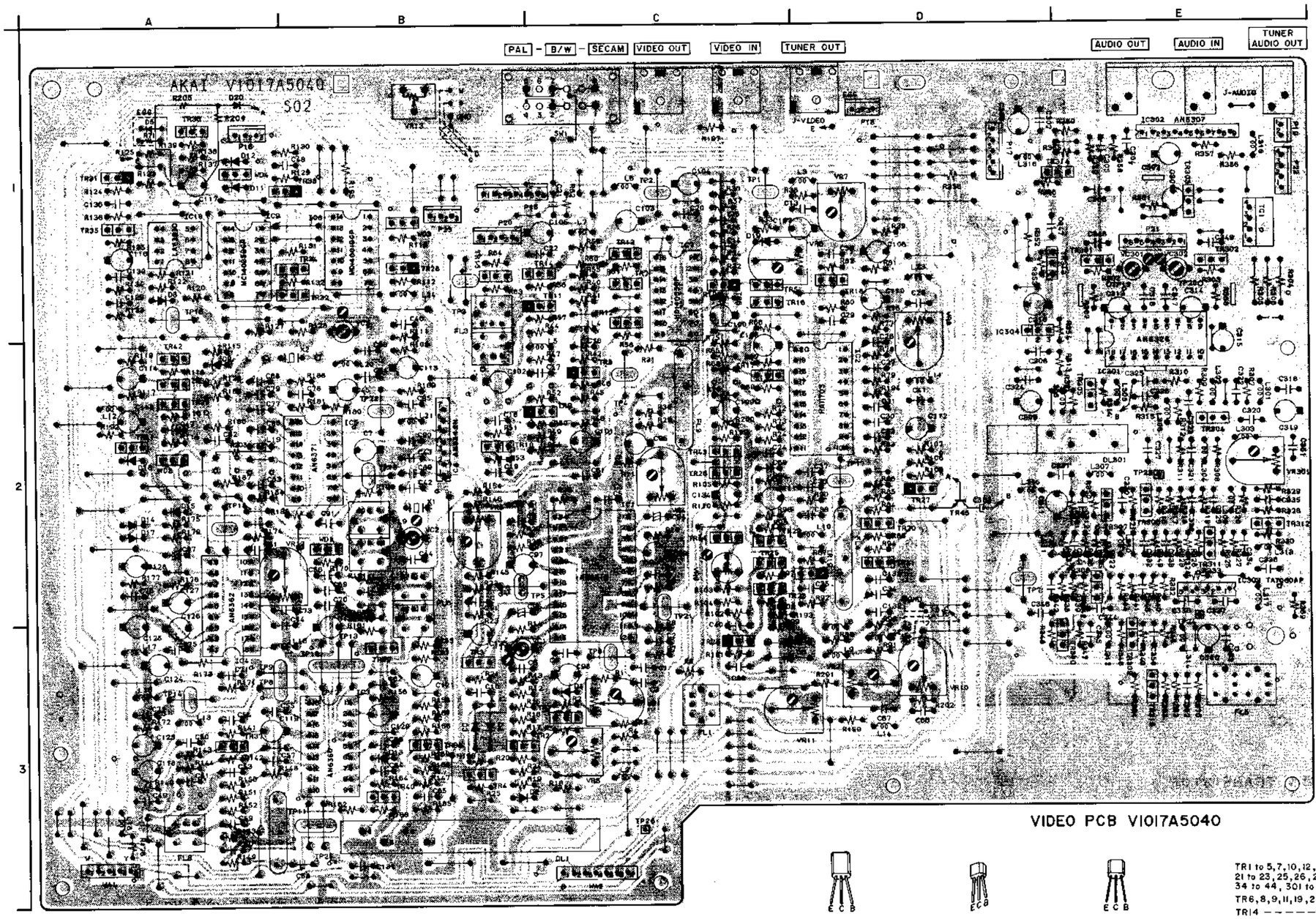
10-1. VIDEO P.C BOARD (V1017A5040)

LOCATION OF COMPONENTS

IC
IC1.....C2
IC2.....D2
IC3.....B3
IC4.....A2
IC5.....B2
IC6.....B2
IC7.....C1
IC8.....B1
IC9.....A1
IC10.....A1
IC301.....E2
IC302.....E1
IC303.....E2
IC304.....D1

TR
TR1.....C3
TR2.....B3
TR3.....B3
TR4.....B3
TR5.....C1
TR6.....C1
TR7.....C1
TR8.....C2
TR9.....C2
TR10.....B2
TR11.....C1
TR12.....C1
TR13.....C1
TR14.....C1
TR15.....B1
TR16.....C1
TR17.....C2
TR18.....D1
TR19.....D2
TR20.....D2
TR21.....D2
TR22.....C2
TR23.....C2
TR24.....C3
TR25.....C2
TR26.....C2
TR27.....D2
TR28.....B1
TR29.....A2
TR30.....A2
TR31.....A1
TR32.....B1
TR33.....B1
TR34.....B1
TR35.....A1
TR36.....A1
TR37.....A3
TR38.....B3
TR39.....B3
TR40.....B3
TR41.....A2
TR42.....A2
TR43.....C2
TR44.....C2
TR301.....E1
TR302.....E1
TR303.....E1
TR304.....E2
TR305.....E2
TR306.....E2
TR307.....E2
TR308.....E2
TR309.....E3
TR310.....E3
TR311.....E2
TR312.....E2
TR313.....E1
TR314.....E1
TR315.....E3

CONNECTOR
P15.....E1
P16.....A1
P17.....D1
P18.....D1
P19.....E1
P20.....B1
P21.....E1
P22.....E1
P23.....B1



VIDEO PCB V1017A5040

B = PNP TRANSISTOR
B = NPN TRANSISTOR

VR1.....WHT-CLIP
VR2.....REC Y CURRENT
VR3.....DARK CLIP
VR4.....AGC GAIN
VR5.....DEVIATION
VR6.....B/C CLIP
VR7.....EE LEVEL
VR8.....CARRIER BALANCE
VR9.....PB Y LEVEL
VR10....REC CHROMA CURRENT
VR11....PB CHROMA LEVEL
VR12....AFC
VR301...PEAKING
VC1.....CARRIER SET
VC2.....LOCAL OSC
VC3.....APC OSC
VC301...CH-1 FO
VC302...CH-2 FO

E C B
2SB774
2SD1010

E C B
2SA1115
2SC2603

E C B
2SC1213

TR1 to 5,7,10,12,13,15 to 18
21 to 23,25,26,29,32
34 to 44, 301 to 315 ------- 2SC2603(D,E,F)
TR6,8,9,11,19,27,28,31,33 --- 2SA1115(D,E,F)
TR14 ---------- 2SC1213(C)
TR20,30 ---------- 2SD1010(R,S,T)
TR24 ---------- 2SB774(R,S,T)

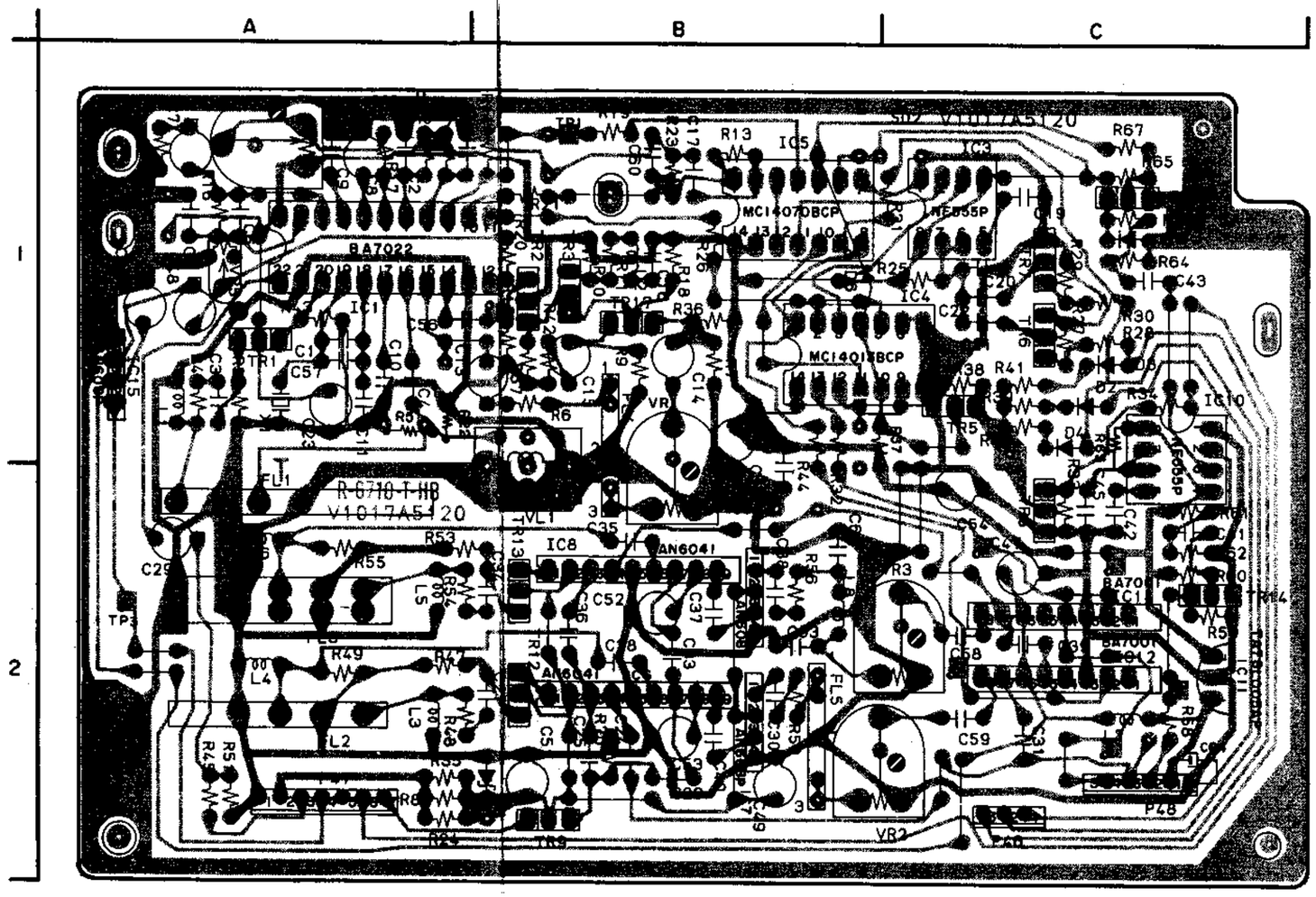
10-2. SKEW JUMP P.C BOARD (V1017A5120)

LOCATION OF COMPONENTS

IC
IC1.....A1
IC3.....C1
IC4.....B1
IC5.....B1
IC6.....B2
IC7.....B2
IC8.....B2
IC9.....B2
IC10.....C1
IC11.....C2
IC12.....C2
IC14.....C2
IC15.....A1

TR
TR1.....A1
TR2.....B1
TR3.....B1
TR5.....C1
TR6.....C1
TR7.....C1
TR8.....C2
TR9.....B2
TR12.....B2
TR13.....B2
TR14.....C2
TR15.....C1
TR17.....B1

CONNECTOR
P46.....C2
P47.....A2
P48.....C2



SKEW JUMP PCB V1017A5120

= NPN TRANSISTOR

= PNP TRANSISTOR

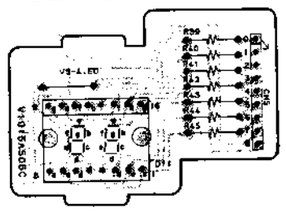
2SA1115
2SC2603

TR1, 2, 5 to 9, 12 to 15, 17 -- 2SC2603
TR3 ---------- 2SA1115

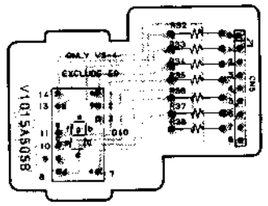
VR1...0.5H DL Y level
VR2...0.5H DL Chroma level
VR3...1.0H DL Chroma level
VR4...Sample and Hold
VR5...Skew Jump Output level
VL1...0.5H DL Comp

10-3. OPERATION P.C BOARD (V1050A505A), LED P.C BOARD (V1015A505B) AND LED P.C BOARD (EO MODEL ONLY) (V1015A505C)

(EO MODEL ONLY)
LED PCB V1015A505C



LED PCB V1015A505B



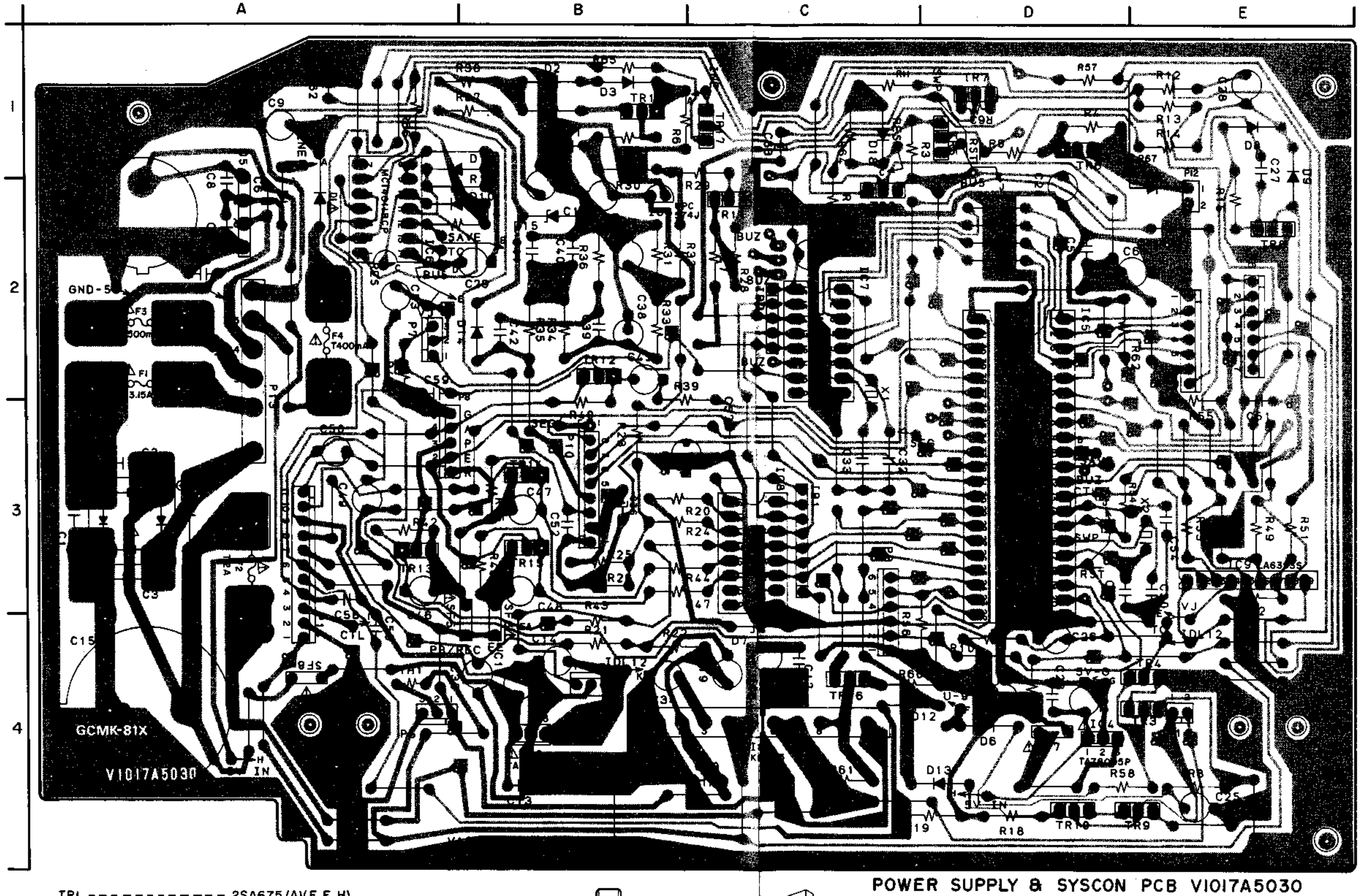
OPERATION PCB V1050A505A

B C E
= PNP TRANSISTOR

TR1 to 4 ----2SA1115

2SA1115

10-4. POWER SUPPLY/SYSCON P.C BOARD (V1017A5030)



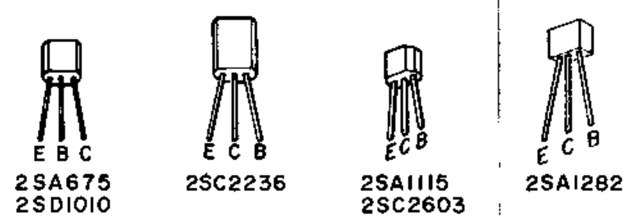
LOCATION OF COMPONENTS

TR
TR1.......B1
TR2.......C1
TR3,4.....E4
TR5to7....D1
TR8.......E2
TR9.......E4
TR10......D4
TR11......C2
TR13......A3
TR14,15...B3
TR16......C4
TR17......C1

IC
IC1.......C4
IC2.......B4
IC3.......B2
IC4.......D4
IC5.......D3
IC6.......A1
IC7.......C2
IC8.......C3
IC9.......E3

TERMINAL
P3........C3
P4........E2
P5........A4
P6........E2
P7........A2
P8........A3
P9........B4
P10.......B3
P11.......E4
P12.......E2
P13.......A2
P14.......A3

TR1 ------------ 2SA675(A)(E,F,H)
TR2.9 ----------- 2SC2236(O,Y)
TR3.4.5.8.10.11.16.17 -- 2SC2603(D,E,F)
TR6.12 ----------- 2SA1115(D,E,F)
TR7 ------------ 2SD1010(R,S,T)
TR13.14.15 --------- 2SA1282A(E,F,G)

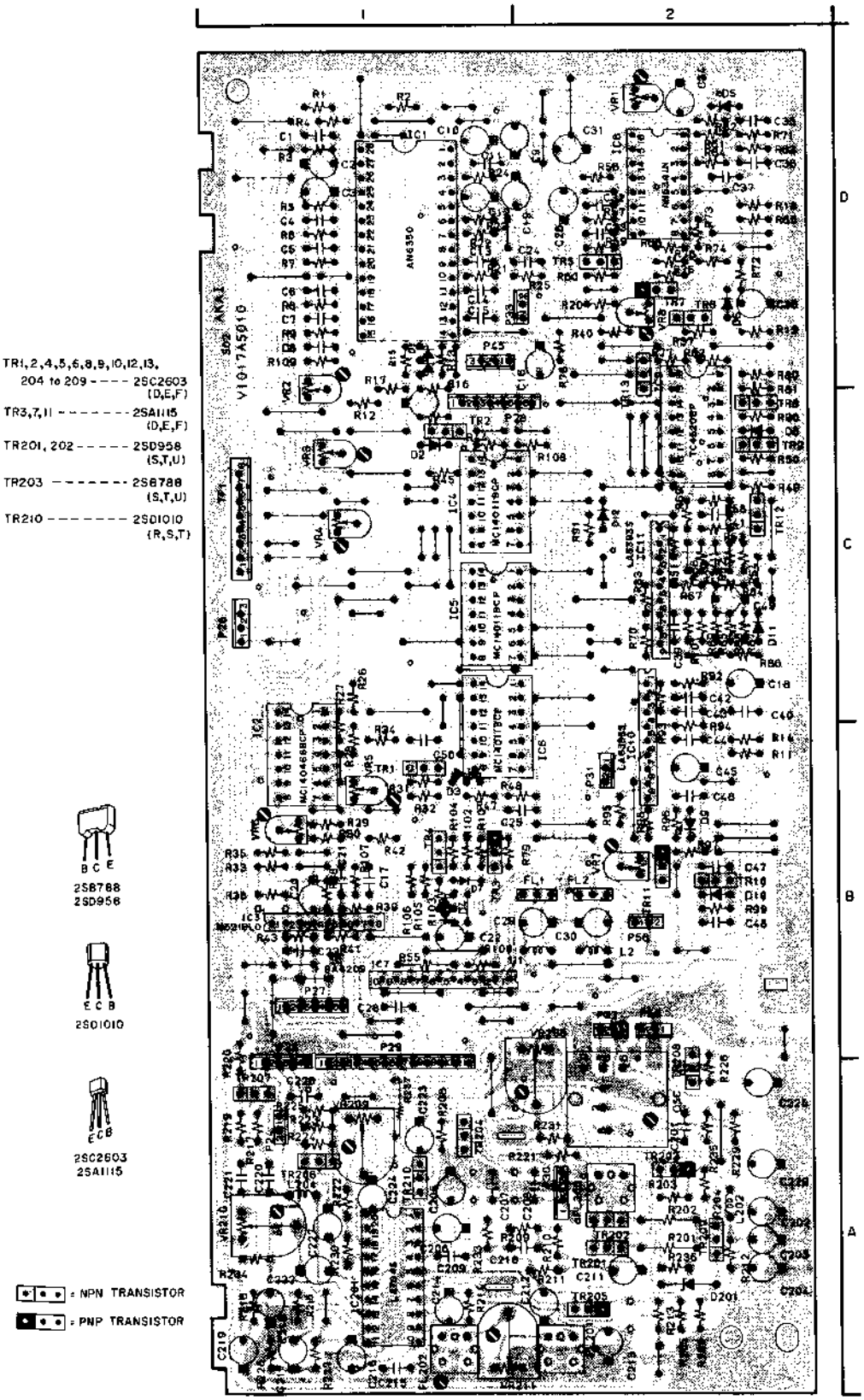


= NPN TRANSISTOR
= PNP TRANSISTOR
= GERMANUM DIODE
= SILICON DIODE

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

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

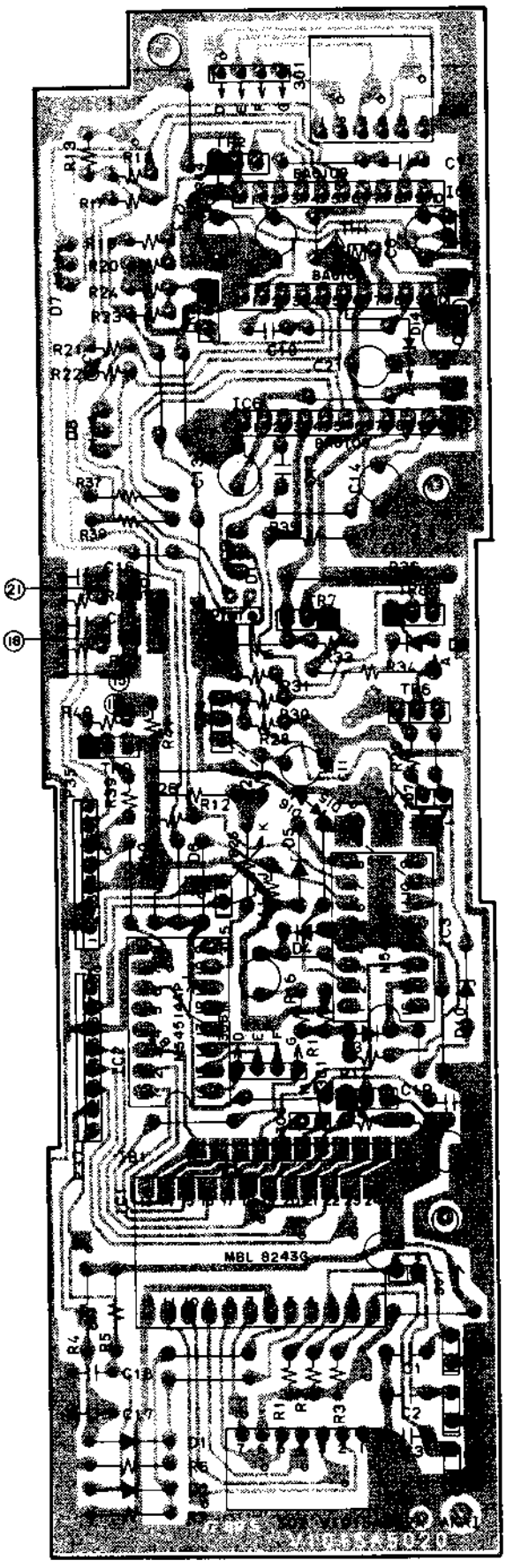
10-5. SERVO/AUDIO P.C BOARD (1017A5010)



SERVO & AUDIO PCB V1017A5010

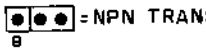
10-6. MECHA DRIVE P.C BOARD

(V1015A502A)



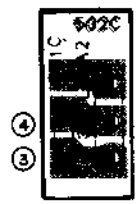
MECHA DRIVE PCB V1015A502A

TR1,2,3,8,9 - - - 2SA1309(Q,R,S)
TR4,6 - - - - - - 2SC3311(Q,R,S)
TR7 - - - - - - - 2SA1282(E,F,G)



2SA1282
2SA1309
2SC3311

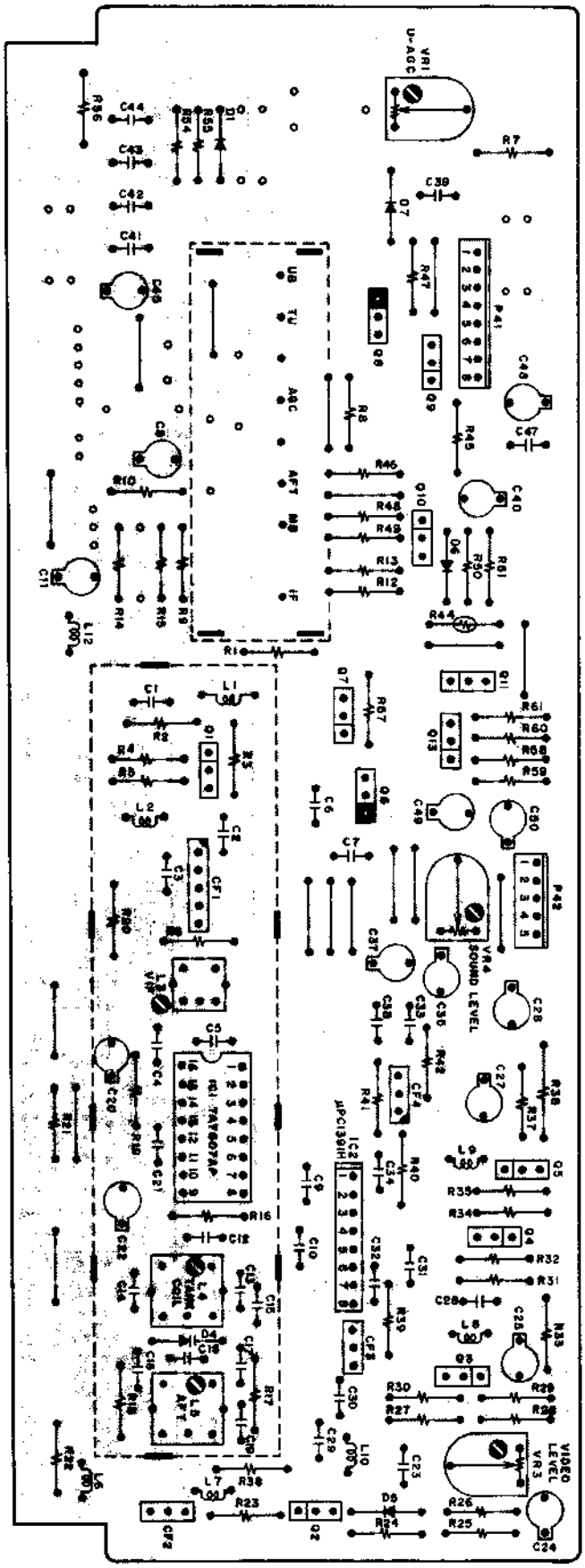
L SW B PCB
V1015A502B



L SW A PCB
V1015A502C

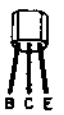
RS SW PCB
V1015A502D

10-8. DEMODULATOR P.C BOARD (EK MODEL) (6B00159C)



DEMODULATOR PCB (EK)

2SC388A



2SC1210

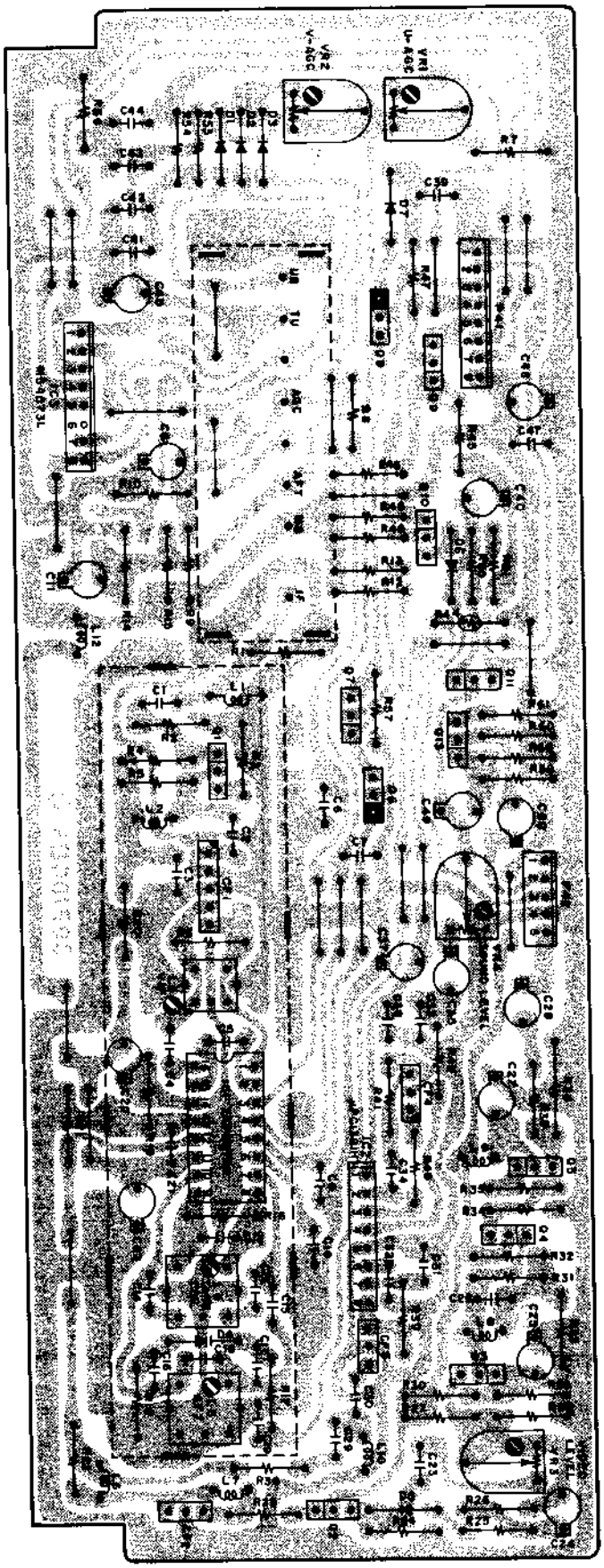
2SA1115
2SC2603

Q1 - - - - - - - - - - - - 2SC388A
Q2,3,4,7,9,10,11,13 - - 2SC2603 (D,E)
Q5 - - - - - - - - - - - - 2SC1210 (D,E)
Q6,8 - - - - - - - - - - 2SA1115 (D,E)

= PNP TRANSISTOR

= NPN TRANSISTOR

10-7. DEMODULATOR P.C BOARD (EG/EA/EG-G/EG-M MODEL) (6B00159C)



DEMODULATOR PCB (EG/EA/EG-G/EG-M)

2SC388A

2SC1210

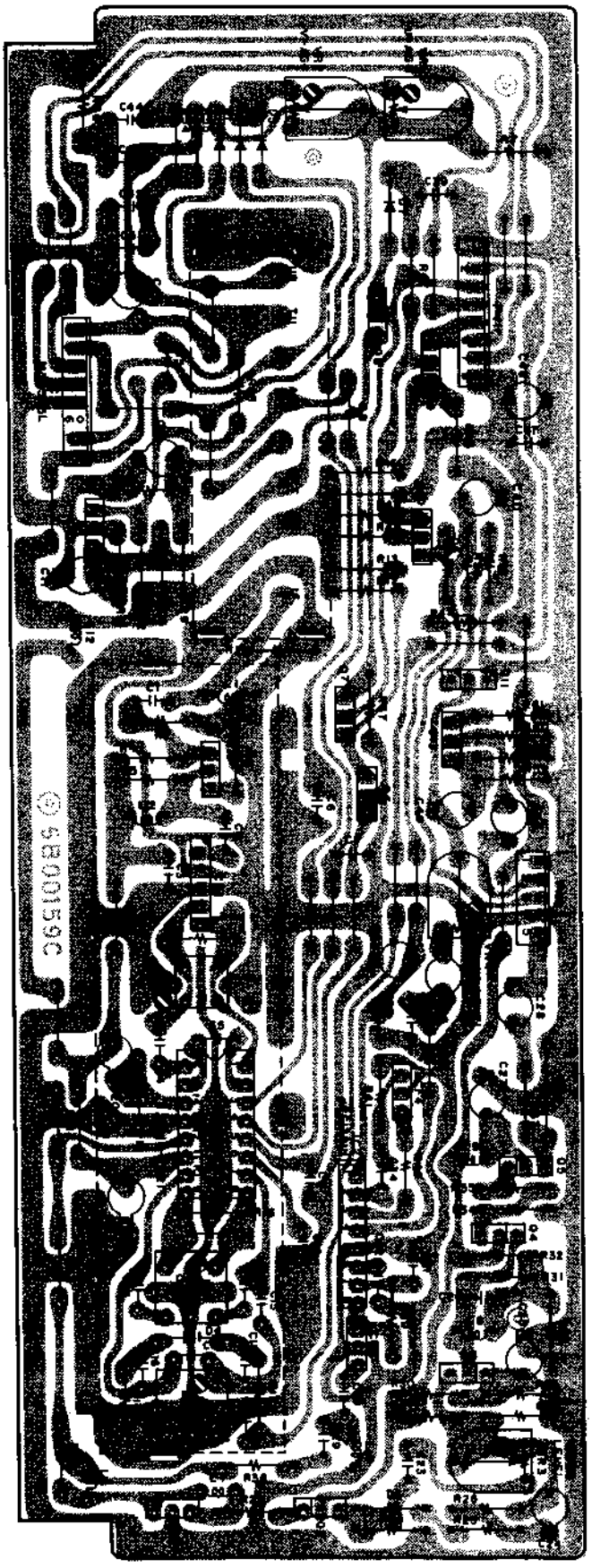
2SA1115
2SC2603

Q1 ---------- 2SC388A
Q2,3,4,7,9,10,11,13--2SC2603(D,E)
Q5 ---------- 2SC1210(D,E)
Q6,8 ---------- 2SA1115(D,E)

= PNP TRANSISTOR

= NPN TRANSISTOR

10-9. DEMODULATOR P.C BOARD (EO MODEL) (6B00159C)



DEMODULATOR PCB (EO)

2SC388A

2SC1210

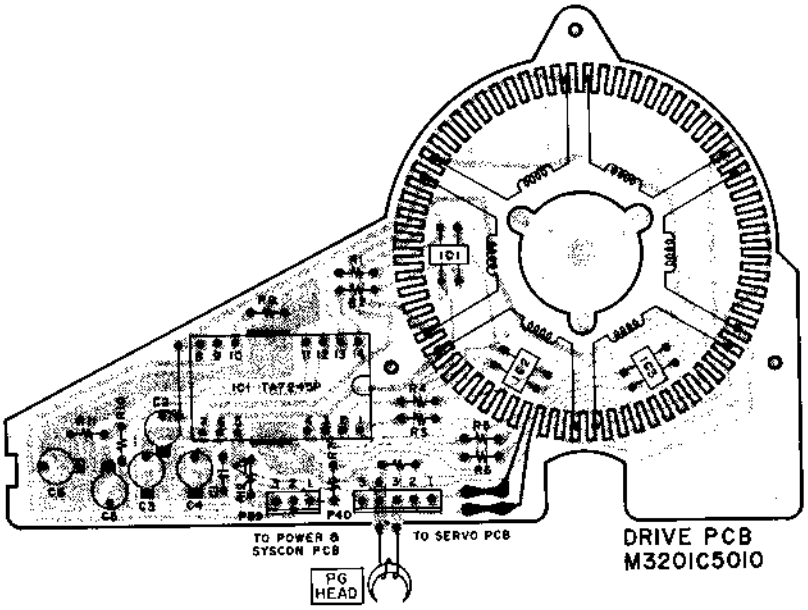
2SA1115
2SC2603

Q1 ---------- 2SC388A
Q2,3,4,7,9,10,11,13 -- 2SC2603 (D,E)
Q5 ---------- 2SC1210 (D,E)
Q6,8,12 ---------- 2SA1115 (D,E)

= PNP TRANSISTOR

= NPN TRANSISTOR

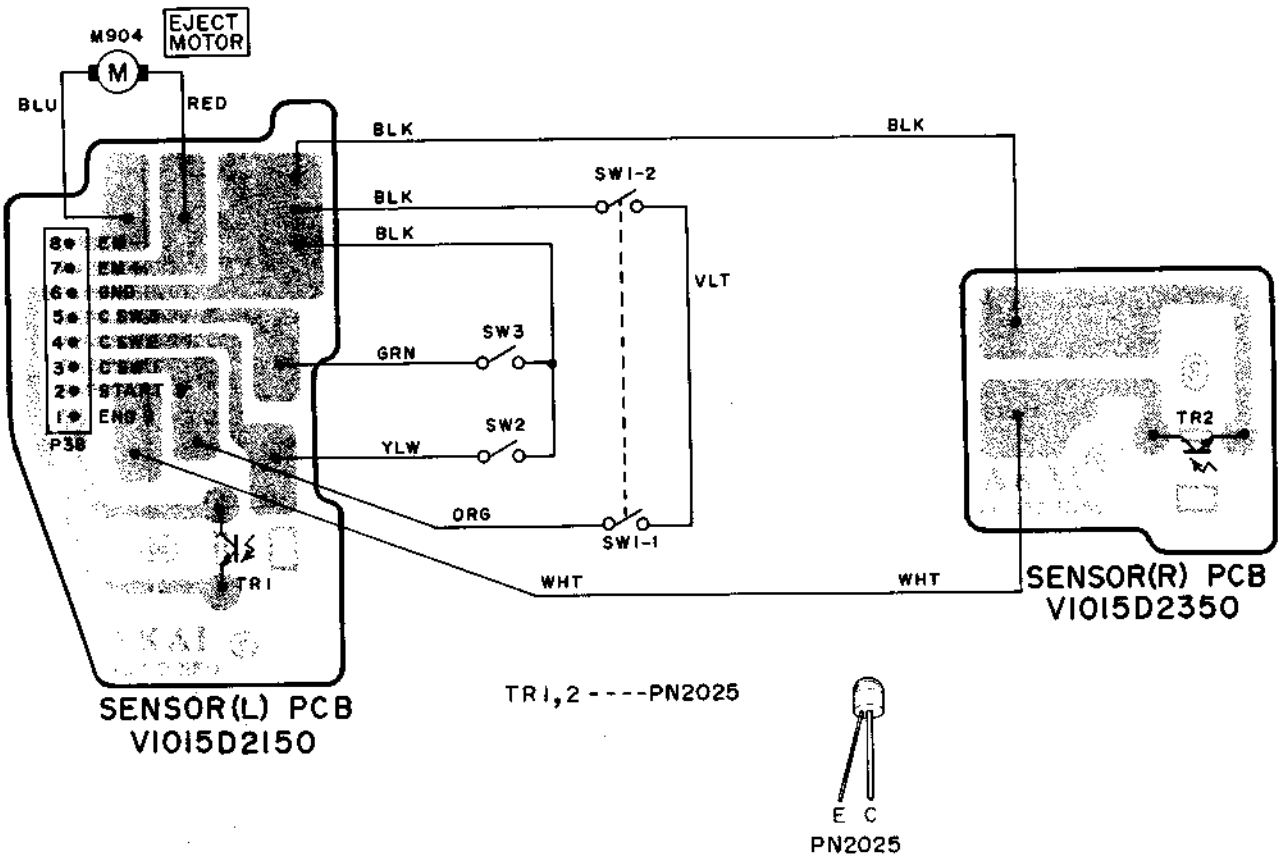
10-10. DRIVE P.C BOARD (M3201C5010)



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

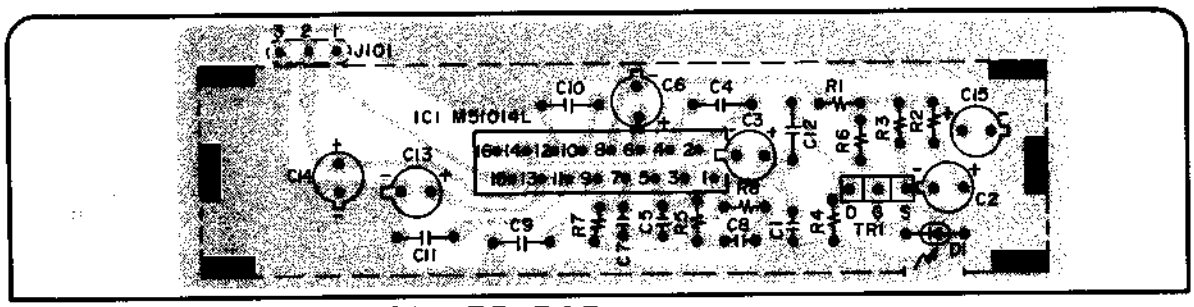
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

10-11. SENSER (L) AND (R) P.C BOARDS (V1015D2150/V1015D2350)



10-12. REMOTE CONTROL UNIT RC-V404

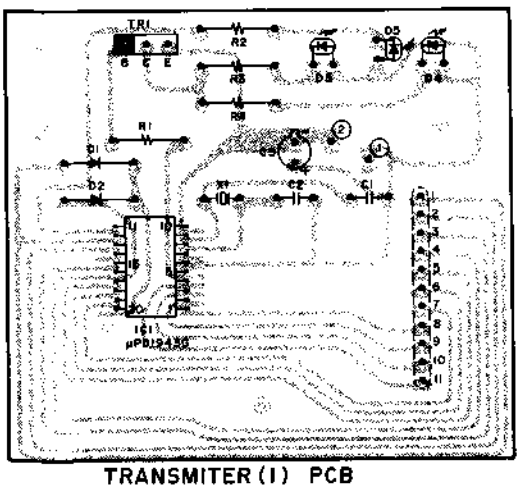
1) RECIVER (RC-R4) P.C BOARD



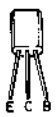
RECIVER PCB

TR1 2SJ40

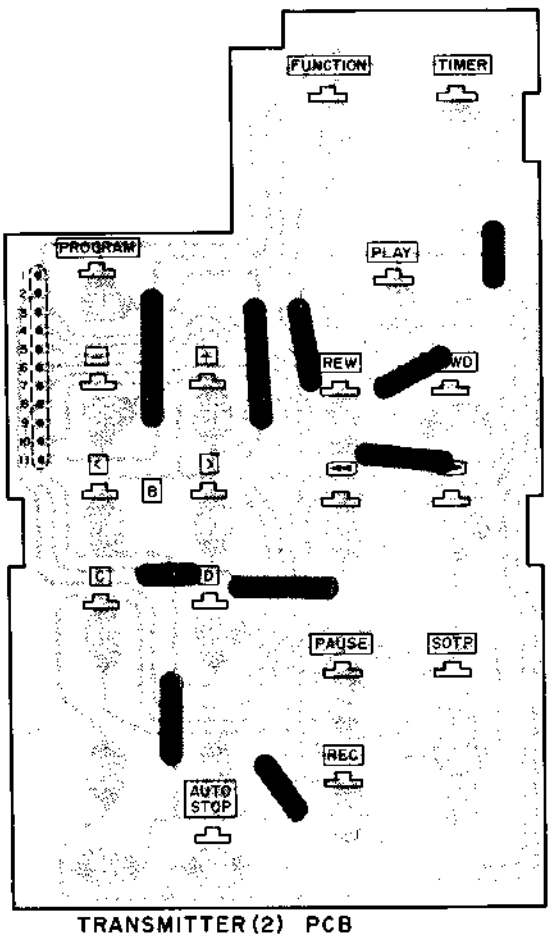
2) TRANSMITTER (RC-T4)



TRANSMITER (1) PCB



TR1 2SD545



TRANSMITTER (2) PCB

SECTION 2

PARTS LIST

TABLE OF CONTENTS

ATTENTION

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

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. 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.

WARNING

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

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

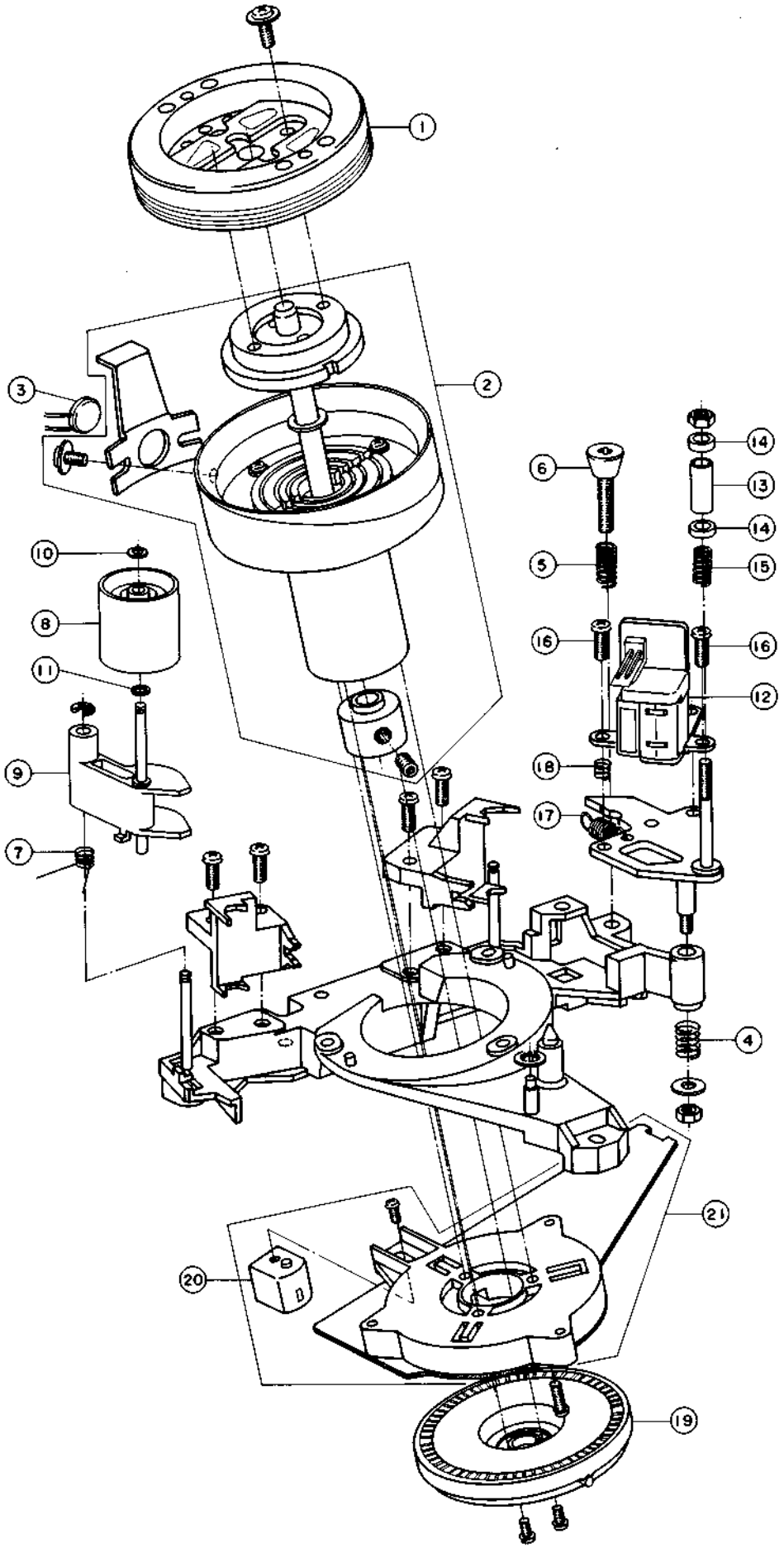
I. MODEL VS-4EG/EK/EA/EG-G/EG-M/EO/EO-P

RECOMMENDED SPARE PARTS

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

REF. NO.	PARTS NO.	DESCRIPTION
1	AV-V1017A330A	BATTERY PACK BLK VS-4EG
2	BA-M3201A020A	PC DRIVE BLK BLM-400
3	BH-V1017A170A	UPPER DRUM BLK VS-4EG
4	BM-347730	MOTOR CAPSTAN JJN3B01
5	BM-348088	MOTOR MMN-5C2RP
6	BM-345265	MOTOR REEL MJB5B51
7	BT-347997	⚠ TRANS POWER VS-4-5A (T901) (EXCEPT EK, EA)
8	BT-348517	⚠ TRANS POWER VS-4-6A (T901) (EK, EA)
9	BV-345124	RF MODULATOR MDW3-253 (EG, EG-G, EG-M)
10	BV-345125	RF MODULATOR MIW3-253 (EK)
11	BV-345129	RF MODULATOR MSW2-633 (EA)
12	BV-345126	RF MODULATOR MSW3-253 (EO, EO-P)
13	BV-327815	TU IDLER ASSY
14	EC-346765	C S-FIX H ECR-HA010A11 2.8-10
15	EC-346764	C S-FIX H ECR-HA020D11 4-20
16	ED-337617	⚠ D SILICON DBB50C-K8 200/5.0A
17	ED-322238	⚠ D SILICON LB4B41 100/1.0A
18	ED-347776	D LED BG5608S GRN
19	ED-347777	D LED BR5628S RED
20	ED-249377	D LED GL3AR1 RED
21	ED-283138	D LED GS3PG1 GRN
22	ED-347775	D LED SL2179-01 GRN
23	ED-348462	D LED SL2221T GRN
24	ED-337618	D SILICON DS135E-FB6 100/1.0A
25	ED-301911	D SILICON H DS448
26	ED-337575	D SILICON H GMA-01-4-BT T26
27	ED-523427	D SILICON H 1SS16
28	ED-604541	D SILICON H 1S2076
29	ED-624903	D SILICON H 1S2473
30	ED-316143	D SILICON H 1S2473HS F10
31	ED-200468	D SILICON V DS448-VB6
32	ED-347767	D SILICON V MC911
33	ED-347768	D SILICON V MC921
34	ED-348205	D SILICON V MC931
35	ED-705479	D SILICON 1SV70
36	ED-347899	D ZENER H HZ20CP
37	ED-346637	D ZENER H HZ3FA F10 C2
38	ED-346515	D ZENER H HZ30FA F10 1
39	ED-331667	D ZENER H HZ7 A1
40	ED-346468	D ZENER H HZ9FA F10 B1
41	ED-324937	D ZENER H 05Z6.8 Z
42	ED-348042	D ZENER V HZ9C-1S1
43	EE-345115	TV TUNER CDE1-A04 (EG, EG-G, EG-M)
44	EE-345116	TV TUNER CBE1-013 (EK)
45	EE-345118	TV TUNER CEE1-009 (EO, EO-P)
46	EE-345117	TV TUNER CSE1-017 (EA)
47	EF-347968	⚠ FUSE ICP-F10 150V 0.4A
48	EF-346880	⚠ FUSE ICP-F15 150V 0.6A
49	EF-668474	⚠ FUSE SEMKO T 250V 0.40A
50	EF-593706	⚠ FUSE SEMKO T 250V 0.50A
51	EF-601301	⚠ FUSE SEMKO T 250V 2.00A
52	EF-691007	⚠ FUSE SEMKO T 250V 3.15A
53	EH-705499	FILTER CE SFE 5.5MHz (EXCEPT EK)
54	EH-705500	FILTER CE SFE 6MHz (EK)
55	EH-749839	FILTER CE TPS 5.5MD (EXCEPT EK)
56	EH-749840	FILTER CE TPS 6.0MD (EK)
57	EH-749841	FILTER CE 5.5MC19A (EXCEPT EK)
58	EH-749842	FILTER CE 6.0MC19A (EK)
59	EH-742664	FILTER SAW SAF36.9MZ51Z (EA)
60	EH-742662	FILTER SAW SAF38.9MZ51Z (EXCEPT EK, EA)
61	EH-742663	FILTER SAW SAF39.5MZ51Z (EK)
62	EI-347757	⚠ IC STK5325
63	EI-315243	⚠ IC TA78005P
64	EI-347758	⚠ IC TA78012AP
65	EI-348223	DL MS-26H H-2K
66	EI-322365	DL EFD-EN645A11E
67	EI-337468	DL EFD-JR124A13D
68	EI-348225	DL MS-19 (L-11)
69	EI-348224	DL MS-26 (H-3K)
70	EI-341516	IC AN6041
71	EI-307616	IC AN608P
72	EI-347764	IC AN6307
73	EI-324204	IC AN6310
74	EI-347763	IC AN6326
75	EI-321604	IC AN6341N
76	EI-324203	IC AN6342N
77	EI-326044	IC AN6350
78	EI-324151	IC AN6360
79	EI-324160	IC AN6362
80	EI-324182	IC AN6371
81	EI-330352	IC BA6109
82	EI-347778	IC BA6209
83	EI-348222	IC BA7001
84	EI-348220	IC BA7022
85	EI-347733	IC DN6838
86	EI-322309	IC HA11703
87	EI-328593	IC HD14053BP
88	EI-347781	IC LA6393D
89	EI-347779	IC LA6393S
90	EI-347780	IC LA7045
91	EI-347766	IC MBL8243M
92	EI-337519	IC MB88301-A
93	EI-347773	IC MB88303M
94	EI-345133	IC MB88401-206M
95	EI-347759	IC MB88401-207K (EXCEPT EG-G)
96	EI-348737	IC MB88401-210K (EG-G)
97	EI-310183	IC MC14001BCP
98	EI-257602	IC MC14011BCP
99	EI-698703	IC MC14013BCP
100	EI-310038	IC MC14025BCP
101	EI-304475	IC MC14066BCP
102	EI-330392	IC MC14070BCP
103	EI-337228	IC M5218L0
104	EI-347769	IC M54514AP
105	EI-337503	IC M54532P
106	EI-347760	IC M54534P
107	EI-749829	IC M54573L (EXCEPT EK)
108	EI-348229	IC NE555
109	EI-307574	IC TA7060AP
110	EI-344921	IC TA7245P
111	EI-705494	IC TA7607AP
112	EI-337529	IC TA78L005AP
113	EI-300834	IC TC4520BP
114	EI-749828	IC UPC1391H
115	EI-337530	IC UPC574J
116	EI-345279	OSC CE CSA4.00MS 4.00000MHz
117	EI-347434	OSC X'TAL HC-18/U 4.194304MHz
118	EI-348543	OSC X'TAL HC-18/U 10.240000MHz
119	EI-327364	OSC X'TAL HC-33/U 4.435571MHz
120	EI-309878	OSC X'TAL 4.433619MHz
121	EJ-301513	⚠ SOCKET INLET S-I6453 E 2P (J901)
122	EO-346887	C S-FIX H ECR-HA070M11
123	EO-330240	COIL FIX I EL0606SKI 47μH K
124	EO-348206	COIL VARI I YBTKNS-28929Z 2.20μH
125	EO-347785	COIL VARI I 15.6kHz
126	EO-347786	COIL VARI I 70 kHz
127	EO-330256	OSC CE F85-006 4MHz
128	EP-345264	SOLENOID W/TAP VS-4
129	ER-742497	⚠ R FUSE 1/4W 220J
130	ER-345114	FILTER BP LJ20BP 4.43MHz×0.3 4.43MC
131	ER-324339	FILTER LC AP LCB-56
132	ER-324375	FILTER LC BP LCB-57 4.43MHz
133	ER-325807	FILTER LC BP LCB-61 5.06MHz
134	ER-330465	FILTER LC DST310-55B271M
135	ER-324305	FILTER LC HP LCB-53
136	ER-324398	FILTER LC LP LCB-58
137	ER-324469	FILTER LC LP LCB-59
138	ER-348142	FILTER LP LJ25LP 3.4MHz×4
139	ER-345113	FILTER LP LF25LP3.4MHz×3
140	ER-348368	FILTER LP LPF1.50
141	ER-348367	FILTER LP LPF500
142	ES-347911	⚠ SW PUSH ESB-8213V 01-1 (SW901)
143	ES-309312	⚠ SW SLIDE 00220459 02-2 (SW902)
144	ES-348089	SW LEAF MSW-1429C 01-1 NO
145	ES-348090	SW LEAF MSW-1434C 02-1 NO
146	ES-318284	SW LEVER SCL101R23A 1-01-02N
147	ES-332384	SW MICRO SS-5-F
148	ES-347790	SW SLIDE (EK, EA)
149	ES-348097	SW SLIDE (EXCEPT EK, EA)
150	ES-347755	SW TACT EVQ-QSE05T
151	ET-330533	⚠ POSISTER PTH61G04BD3R3N
152	ET-318308	PHOTO SENSOR PN202S
153	ET-330533	POSISTER PTH61G04BD3R3N
154	ET-307997	TR 2SA1115 D, E
155	ET-200479	TR 2SA1115 D, E, F
156	ET-347738	TR 2SA1282A E, F
157	ET-346806	TR 2SA1309 Q, R, S
158	ET-337569	TR 2SA675A E, F, H
159	ET-348931	TR 2SB774 R, S, T
160	ET-200401	TR 2SB788 S, T, U
161	ET-200402	TR 2SD958 S, T, U
162	ET-522270	TR 2SC1210 D
163	ET-321644	TR 2SC1213 C
164	ET-306719	TR 2SC2236 O, Y
165	ET-330464	TR 2SC2603 D, E
166	ET-200480	TR 2SC2603 D, E, F
167	ET-200985	TR 2SC2603 F, G
168	ET-742646	TR 2SC388A
169	ET-344999	TR 2SK1010 R, S, T
170	EV-307629	R S-FIX H H0621A 3P 0.30W 223
171	EV-336769	R S-FIX H H0621A 3P 0.30W 473
172	EV-336767	R S-FIX H H0621A 3P 0.30W 683
173	EV-332404	R S-FIX H H0651A 3P 0.05W 101
174	EV-307621	R S-FIX H H0651A 3P 0.05W 103
175	EV-307709	R S-FIX H H0651A 3P 0.05W 223
176	EV-332320	R S-FIX H H0651A 3P 0.05W 332
177	EV-307706	R S-FIX H H0651A 3P 0.05W 471
178	EV-346805	R S-FIX H H0811C309A 3P 222
179	EV-342939	R S-FIX H H0811C313A 3P 103
180	EV-336852	R S-FIX H KVSF807U 3P 102
181	EV-336853	R S-FIX H KVSF807U 3P 103
182	EV-336850	R S-FIX H KVSF807U 3P 202
183	EV-336847	R S-FIX H KVSF807U 3P 502
184	EV-341225	R S-FIX H KVSF807U 3P 503
185	EV-341224	R S-FIX H KVSF807V 3P 201
186	EV-336848	R S-FIX H KVSF807V 3P 301
187	EV-336851	R S-FIX H KVSF807V 3P 501
188	EV-346807	R S-FIX H KVSF817U 3P 104
189	EV-337957	R S-FIX H TM64K3 3P 0.30W 102
190	EV-702567	R S-FIX TT24R 202
191	EV-348413	R S-FIX V RVA0911 T3P 202
192	EV-749777	R S-FIX 502
193	EV-702569	SEMI-FIXED/VOL. TT24R 10KB
194	HC-347811	HEAD CTL HV225207SCD
195	HC-347163	HEAD PU TP306
196	HE-325273	HEAD E HV113201 V
197	MB-345018	BELT CAPSTAN
198	MB-780029	BELT LOADING
199	MI-327773	IDLER ASSY
200	MP-604531	ROLLER PINCH VS-2(NEW)
201	VT-328134	TENSION BAND ASSY

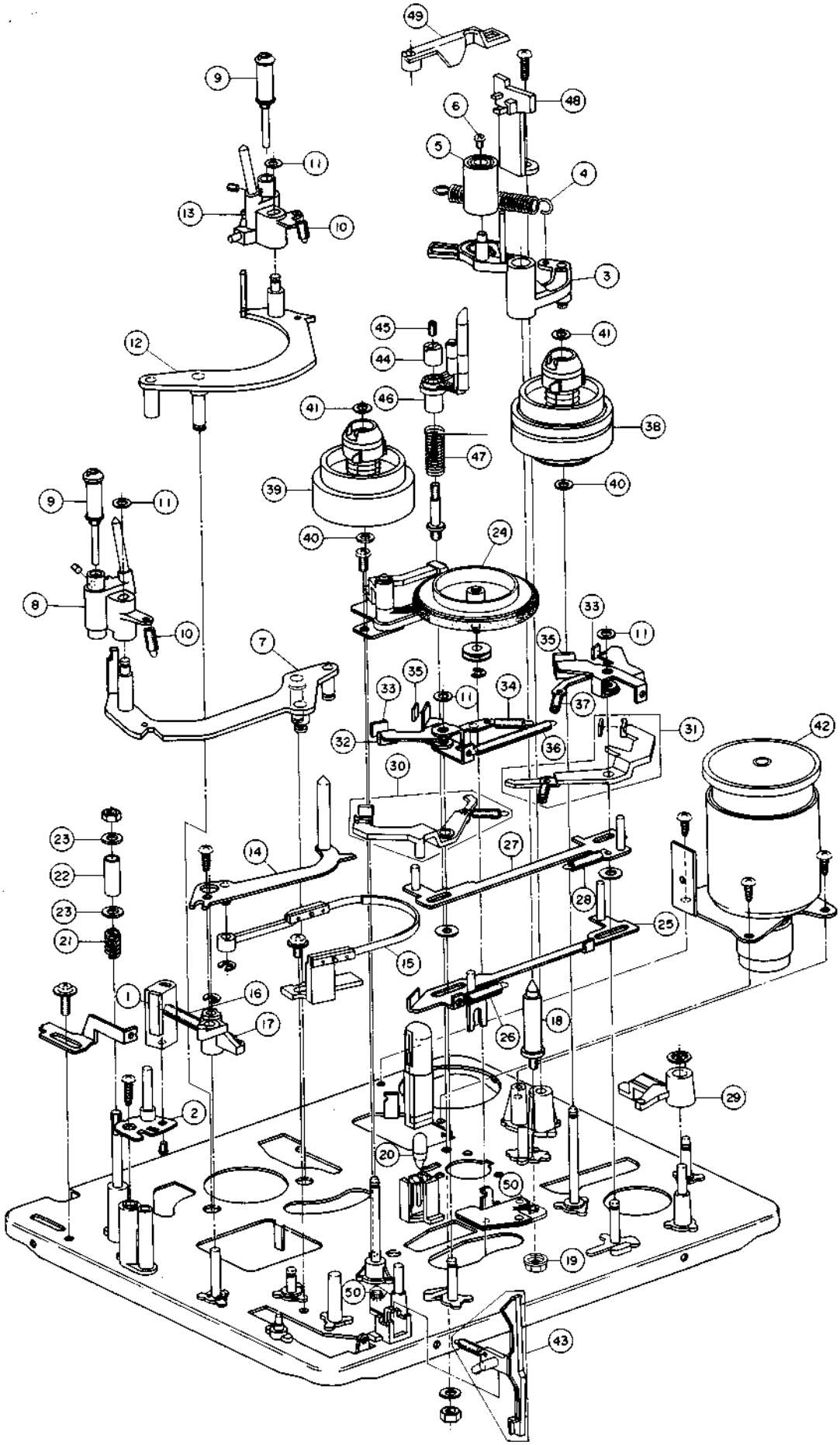
HEAD DRUM BLOCK



1. HEAD DRUM BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	UPPER DRUM BLOCK	
1-1	BH-V1017A170A	UPPER DRUM BLK VS-4EG
	LOWER DRUM BLOCK	
1-2	BH-V1017A160A	LOWER DRUM BLK VS-4EG
	HEAD DRUM BLOCK	
1-3	ET-348203	POSISTER PTH499D31BG500Q030
	DRUM BASE BLOCK	
1-4	ZG-331178	SP PUSH PRESS ACH
1-5	ZG-332979	SP PUSH CTL (B)
1-6	ZS-332978	SCREW ADJUST
1-7	ZG-327740	SP TORSION LZ
	ROLLER IMPEDANCE BLOCK	
1-8	MI-347812	ROLLER IMPEDANCE
1-9	BL-B327729	LEVER LZ PART
1-10	ZW-343120	PW17×040×025PSL
1-11	ZW-259334	PW2.05×035×025PSL
	A/C H BLOCK	
1-12	HC-347811	HEAD CTL HV225207SCD
1-13	HZ-343076	GUIDE TAPE (C)
1-14	HZ-342726	GUIDE TAPE (B)
1-15	ZG-328225	SP C-3.5/0.8-10.0G C-102G
1-16	ZS-380046	PAN30×10STL CMT
1-17	ZG-327757	SP PULL ACH SET
1-18	ZG-313257	SP C-3.5/0.8-8.0 C-101
	MOTOR BLM-400	
1-19	BM-B344824	ROTOR PART
	P.C DRIVE BLOCK	
1-20	HC-347163	HEAD PU TP306
1-21	BA-M3201A020A	PC DRIVE BLK BLM-400
1-IC	EI-344921	IC TA7245P
1-IC1 to 3	EI-336987	HALL ELEMENT DHD-H150

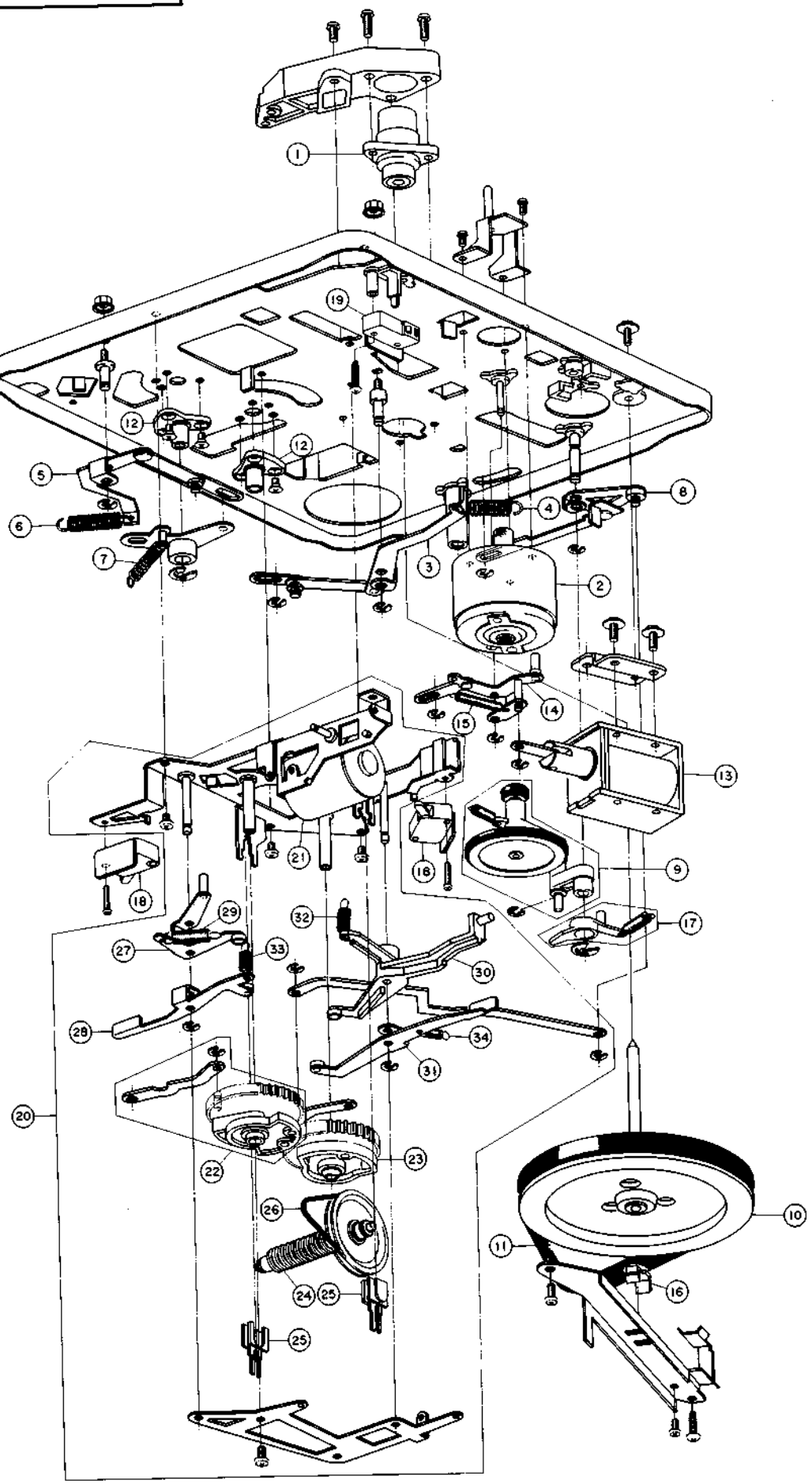
MECHA FRAME BLOCK (1)



2. MECHA FRAME BLOCK (1)

REF. NO.	PARTS NO.	DESCRIPTION
2-X	BB-V1017A070A	MECHA FRAME ASSY
	HOLDER ERASE HEAD BLOCK	
2-1	HE-325273	HEAD E HV113201V
2-2	HZ-B321740	HOLDER EH PART
	LEVER PINCH ROLLER BLOCK	
2-3	BL-B326296	LEVER PINCH ROLLER PART
2-4	ZG-330058	SP T2-6.3/0.8-45 T2-202
2-5	MP-604531	ROLLER PINCH VS-2 (NEW)
2-6	ZS-477876	PAN20×03STL CMT
	LEVER LOADING (L) BLOCK	
2-7	BL-B348989	LEVER LOADING (L) PART
2-8	VT-B319445	LOADING LEADER (L) PART
2-9	VT-317947	VERTICAL POLE PART (P)
2-10	ZG-318043	SP LEADER
2-11	ZW-344643	PW26×070×025PSL
	LEVER LOADING (R) BLOCK	
2-12	BL-B348098	LEVER LOADING (R) PART
2-13	VT-B319446	LOADING LEADER (R) PART
	TENSION ARM BLOCK	
2-14	BL-B326468	LEVER TENSION PART
2-15	VT-328134	TENSION BAND ASSY
2-16	ZG-328664	SP T2-4.0/0.4-35.5 T2-118
2-17	VT-326470	HOLDER TENSION LEVER
	MECHA FRAME BLOCK	
2-18	MH-321688	PROP 9 PINCH ROLLER LEVER
2-19	ZS-609434	N FRANGE 30STL CMT
2-20	EL-332451	PL CORD 12.0V 60MA
2-21	ZG-328225	SP C-3.5/0.8-10.0G C-102G
2-22	HZ-343076	GUIDE TAPE (C)
2-23	HZ-342726	GUIDE TAPE (B)
2-24	MI-327773	IDLER ASSY
2-25	BL-B322090	LEVER BRAKE SLIDE (B) PART
2-26	ZG-313045	SP T1-5.0/0.55-25.0 T1-158
2-27	BL-B322027	LEVER BRAKE SLIDE (A) PART
2-28	ZG-332463	SP T2-3.2/0.29-20 T2-064
2-29	ML-330640	LEVER BRAKE RELEASER
2-30	BL-V1004A090A	LEVER FF BRAKE BLK VS-5EG
2-31	BL-V1004A100A	LEVER REW BRAKE BLK VS-5EG
2-32	VT-B322286	LEVER S LOADING BRAKE PART
2-33	VT-322159	SHEET BRAKE (A)
2-34	ZG-318204	SP T2-3.2/0.29-16 T2-062
2-35	VT-322203	SHEET BRAKE (B)
2-36	ZG-344132	SP PULL BRAKE
2-37	ZG-318228	SP T2-3.2/0.29-14 T2-061
2-38	BR-347731	TU REEL TABLE BLK
2-39	BR-347732	SUPPLY REEL TABLE BLK
2-40	ZW-324417	PW31×060×050PSL
2-41	ZW-344643	PW26×070×025PSL
2-42	BM-347730	MOTOR CAPSTAN JJN3B01
2-43	BL-V1004A170B	LEVER REC SAFETY BLK VS-4EG
2-44	ZS-326246	NUT ADJUST
2-45	ZS-328608	6 SET26×030SCM PKR FP
2-46	BL-B326220	LEVER REVIEW PART
2-47	ZG-326247	SP TORSION REVIEW
2-48	VT-345031	HOLDER OPENER
2-49	VT-326477	GUIDE CAP
	HALL IC BLOCK	
2-50	EI-347733	IC DN6838

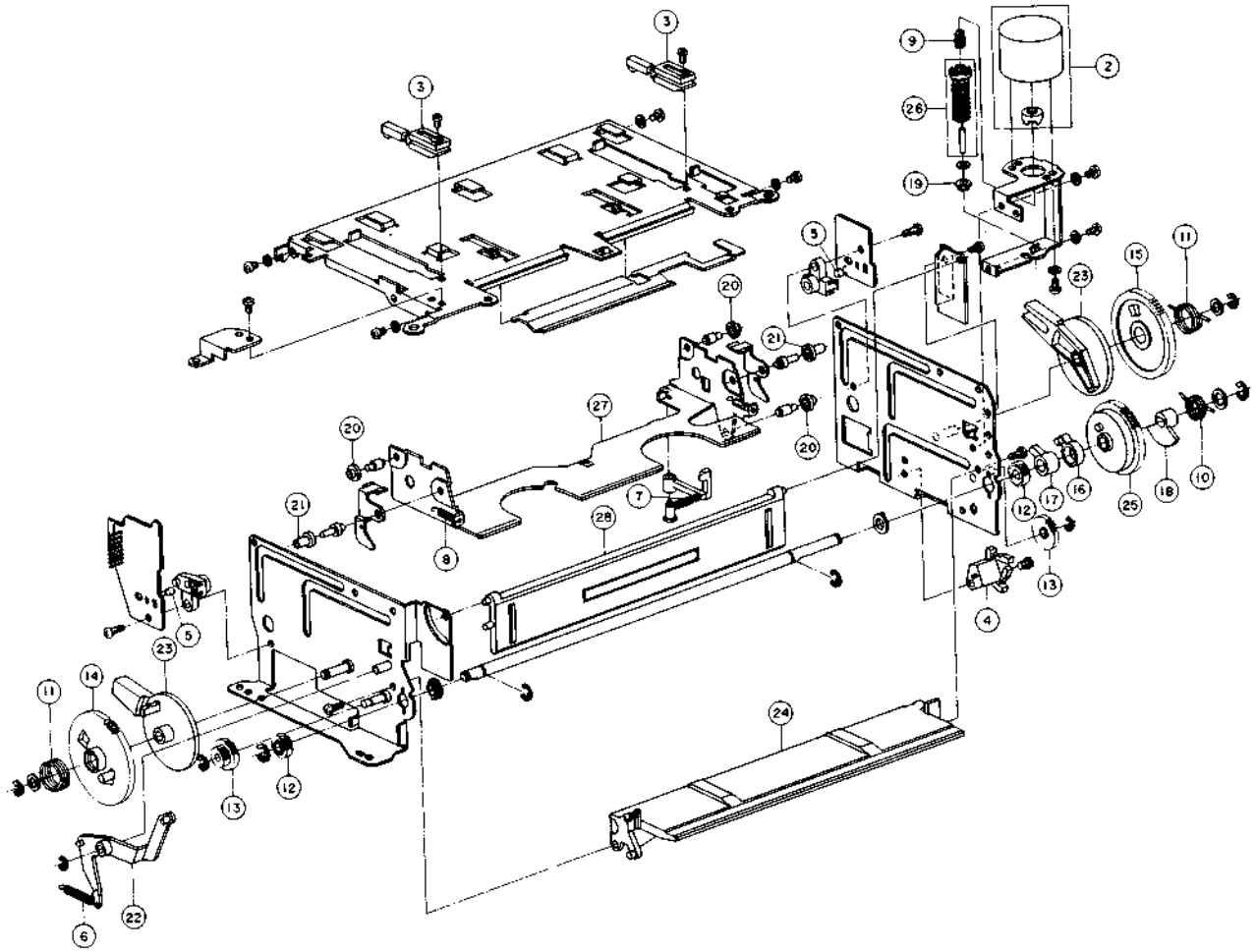
MECHA FRAME BLOCK (2)



3. MECHA FRAME BLOCK (2)

REF. NO.	PARTS NO.	DESCRIPTION
	MECHA FRAME BLOCK	
3-1	MZ-B321701	HOLDER CAPSTAN PART
3-2	BM-345265	MOTOR REEL MJB5B51
3-3	BL-B326455	LEVER TOGGLE SP (B) PART
3-4	ZG-313085	SP T1-6.3/0.8-25.0 T1-197
3-5	BL-B326453	LEVER TOGGLE SP (A) PART
3-6	ZG-328610	SP T2-6.3/0.8-28 T2-198
3-7	ZG-321769	SP T2-5.0/0.55-35.5 T2-161
3-8	BL-B326464	LEVER ROLLING PART
3-9	BV-327815	TU IDLER ASSY
3-10	MI-B328611	FLYWHEEL PART
3-11	MB-345018	BELT CAPSTAN
3-12	MV-322302	METAL LOADING
	PLUNGER BLOCK	
3-13	EP-345264	SOLENOID W/TAP 1240 PLT 15V
3-14	BL-B604437	LEVER PLUNGER PART
3-15	ZG-328661	SP T2-3.2/0.29-25 T2-066
	HOLDER FLYWHEEL BLOCK	
3-16	VT-326476	HOLDER PIVOT
	LEVER TU IDLER KICK BLOCK	
3-17	BV-V1004A220A	LEVER TU IDLER KICK BLK VS-5EG
3-18	ES-318284	SW LEVER SCL101R23A 1-01-02N (SW1)
3-19	ES-332384	SW MICRO SS-5-F (SW1)
	LOADING BLOCK	
3-20	BV-V1017A250A	LOADING BLK VS-4EG
3-21	BM-749896	L MOTOR SUB ASSY (3)
3-22	VT-780025	LOADING GEAR A ASSY
3-23	VT-780026	LOADING GEAR B SUB ASSY
3-24	VT-780027	LOADING WARM ASSY
3-25	VT-749898	HOLDER GEAR SHAFT
3-26	MB-780029	BELT LOADING
3-27	BL-780030	TENSION LEVER ASSY
3-28	BL-780031	SW LEVER A ASSY
3-29	ZG-780032	SP TENSION LEVER RETURN
3-30	BL-780033	BRAKE LEVER ASSY
3-31	BL-780034	SW LEVER B ASSY
3-32	BL-780035	SP BRAKE LEVER
3-33	ZG-780039	SP SW A
3-34	ZG-780040	SP SW B

EJECTOR ASSY



4. EJECTOR ASSY

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BV-347813	EJECTOR ASSY
	EJECTOR ASSY	
4-2	BM-348088	MOTOR MMN-5C2RP
4-3	ES-348089	SW LEAF MSW-1429C 01-1 NO
4-4	ES-348090	SW LEAF MSW-1434C 02-1 NO
4-5	ET-318308	PHOTO SENSOR PN202S
4-6	ZG-312922	SP T1-3.2/0.2-10.0 T1-039
4-7	ZG-324331	SP T2-3.2/0.2-12.5 T2-041
4-8	ZG-312944	SP T1-3.2/0.29-12.5 T1-060
4-9	ZG-313212	SP C-6.5/0.6-12.5 C-057
4-10	ZG-749705	SP (A)
4-11	ZG-749695	SP (C)
4-12	ZG-749696	GEAR (A)
4-13	MZ-749692	GEAR (B)
4-14	MZ-749694	GEAR (C)
4-15	MZ-749715	GEAR (D)
4-16	MZ-749697	COLLAR BRAKE (A)
4-17	MZ-749698	COLLAR BRAKE (B)
4-18	MZ-749894	COLLAR BANANA
4-19	MZ-749895	COLLAR WARM
4-20	MR-749685	GUIDE ROLLER (A)
4-21	MR-749686	GUIDE ROLLER (C)
4-22	ML-749691	ARM COVER
4-23	ML-749693	ARM DRIVE
4-24	MZ-749855	GUIDE FRAME
4-25	MZ-749699	WARM WHEEL
4-26	MZ-749853	WARM PART
4-27	MZ-749640	HOLDER CASSETTE
	FINAL ASSEMBLY BLOCK	
4-28EG	SP-349117A	MASK VS-4EG (EXCEPT EG-G, EG-M)
4-28EG-G	SP-349117B	MASK VS-4EG-G
4-28EG-M	SP-349117D	MASK VS-4EG-M

5. VIDEO P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1EG	BA-V1017A180A	PC VIDEO BLK VS-4EG (EG, EO, EG-M, EO-P)
5-1EK	BA-V1017A180B	PC VIDEO BLK VS-4EK
5-1EA	BA-V1017A180C	PC VIDEO BLK VS-4EA
5-1EG-G	BA-V1017A180D	PC VIDEO BLK VS-4EG-G
5-IC1	EI-324204	IC AN6310
5-IC2	EI-322309	IC HA11703
5-IC3	EI-324151	IC AN6360
5-IC4	EI-324160	IC AN6362
5-IC5	EI-324182	IC AN6371
5-IC6	EI-324203	IC AN6342N
5-IC7	EI-328593	IC HD14053BP
5-IC8	EI-310183	IC MC14001BCP
5-IC9	EI-310038	IC MC14025BCP
5-IC10	EI-347781	IC LA6393D
5-IC301	EI-347763	IC AN6326
5-IC302	EI-347764	IC AN6307
5-IC303	EI-307574	IC TA7060AP
5-IC304	EI-337529	IC TA78L005AP
5-TR1 to 5	ET-200985	TR 2SC2603 F, G
5-TR6	ET-200479	TR 2SA1115 D, E, F
5-TR7	ET-200985	TR 2SC2603 F, G
5-TR8, 9	ET-200479	TR 2SA1115 D, E, F
5-TR10	ET-200985	TR 2SC2603 F, G
5-TR11	ET-200479	TR 2SA1115 D, E, F
5-TR12, 13	ET-200985	TR 2SC2603 F, G
5-TR14	ET-321644	TR 2SC1213 C
5-TR15	ET-200985	TR 2SC2603 F, G
5-TR16	ET-200480	TR 2SC2603 D, E, F
5-TR17, 18	ET-200985	TR 2SC2603 F, G
5-TR19	ET-200479	TR 2SA1115 D, E, F
5-TR20	ET-344999	TR 2SD1010 R, S, T
5-TR21 to 23	ET-200985	TR 2SC2603 F, G
5-TR24	ET-348931	TR 2SB774 R, S, T
5-TR25, 26	ET-200985	TR 2SC2603 F, G
5-TR27, 28	ET-200479	TR 2SA1115 D, E, F
5-TR29	ET-200985	TR 2SC2603 F, G
5-TR30	ET-344999	TR 2SD1010 R, S, T
5-TR31	ET-200479	TR 2SA1115 D, E, F
5-TR32	ET-200985	TR 2SC2603 F, G
5-TR33	ET-200479	TR 2SA1115 D, E, F
5-TR34 to 39	ET-200985	TR 2SC2603 F, G
5-TR40	ET-200480	TR 2SC2603 D, E, F (EXCEPT EK, EA)
5-TR41 to 44	ET-200985	TR 2SC2603 F, G
5-TR301 to 315	ET-200985	TR 2SC2603 F, G
5-DI, 2	ED-337575	D SILICON H GMA-01-4-BT T26
5-D3, 4	ED-523427	D SILICON H 1SS16
5-D5	ED-200468	D SILICON V DS448-VB6 (EG-G)
5-D6, 7	ED-523427	D SILICON H 1SS16
5-D8 to 14	ED-337575	D SILICON H GMA-01-4-BT T26
5-D15	ED-200468	D SILICON V DS448-VB6 (EXCEPT EK, EA)
5-D17 to 19	ED-337575	D SILICON H GMA-01-4-BT T26
5-WD1 to 4	ED-347768	D SILICON V MC921
5-SW1	ES-348097	SW SLIDE 00120323 2-02-03 (EXCEPT EK, EA)
5-SW1	ES-347790	SW SLIDE 00120289 (EK, EA)
5-VR1	EV-336847	R S-FIX H KVSF807U 3P 502
5-VR2	EV-336848	R S-FIX H KVSF807V 3P 301
5-VR3, 4	EV-336847	R S-FIX H KVSF807U 3P 502
5-VR5	EV-336852	R S-FIX H KVSF807U 3P 102
5-VR6	EV-336847	R S-FIX H KVSF807U 3P 502
5-VR7	EV-336852	R S-FIX H KVSF807U 3P 102
5-VR8	EV-336853	R S-FIX H KVSF807U 3P 103
5-VR9	EV-337957	R S-FIX H TM64K3 3P 0.30W 102
5-VR10	EV-341224	R S-FIX H KVSF807V 3P 201
5-VR11	EV-336850	R S-FIX H KVSF807U 3P 202
5-VR12	EV-336852	R S-FIX H KVSF807U 3P 102
5-VR13	EV-348413	R S-FIX V RVA0911 T3P 202
5-VR301	EV-336851	R S-FIX H DVSF807V 3P 501
5-L1	EO-330240	COIL FIX I EL0606SKI 47μH K
5-L2	EO-330241	COIL FIX I EL0606SKI 220μH K
5-L3	EO-330249	COIL FIX I EL0606SKI 8.2μH K
5-L4, 5	EO-330248	COIL FIX I EL0606SKI 33μH K
5-L6, 7	EO-330241	COIL FIX I EL0606SKI 220μH K
5-L8	EO-345870	COIL FIX I EL0606SKI 15.00μH K
5-L9	EO-330242	COIL FIX I EL0606SKI 39μH K
5-L10	EO-330246	COIL FIX I EL0606SKI 56μH K
5-L11 to 13	EO-330241	COIL FIX I EL0606SKI 220μH K
5-L14	EO-330246	COIL FIX I EL0606SKI 56μH K
5-L15	EO-330241	COIL FIX I FL0606SKI 220μH K
5-L16	EO-318383	COIL FIX I FL07H 6.8MH J
5-L17	EO-330241	COIL FIX I FL0606SKI 220μH K
5-L18	EO-330252	COIL FIX I EL0606SKI 100μH K
5-L19	EO-330240	COIL FIX I EL0606SKI 47μH K
5-L20	EO-330246	COIL FIX I EL0606SKI 56μH K
5-L21	EO-330241	COIL FIX I EL0606SKI 220μH K
5-L22	EO-345867	COIL FIX I EL0606SKI 12.00μH K
5-L23, 24	EO-330241	COIL FIX I EL0606SKI 220μH K
5-L301	EO-243977	COIL FIX I EL07H 1MH J
5-L302	EO-345871	COIL FIX I EL0606SKI 18.00μH J
5-L303	EO-345865	COIL FIX I EL0606SKI 10.00μH J
5-L304	EO-345881	COIL FIX I EL0606SKI 100.00μH J
5-L305	EO-345893	COIL FIX I EL0606SKI 470μH J
5-L306, 307	EO-330249	COIL FIX I EL0606SKI 8.2μH K
5-L308	EO-345872	COIL FIX I EL0606SKI 22.00μH J
5-L309	EO-345866	COIL FIX I EL0606SKI 12.00μH J
5-L310, 311	EO-330245	COIL FIX I EL0606SKI 10μH K
5-L312	EO-345872	COIL FIX I EL0606SKI 22.00μH J
5-L313	EO-345874	COIL FIX I EL0606SKI 33.00μH J
5-L314, 315	EO-330241	COIL FIX I EL0606SKI 220μH K
5-L316	EO-345881	COIL FIX I EL0606SKI 100.00μH J
5-L317	EO-345874	COIL FIX I EL0606SKI 33.00μH J
5-L318	EO-345861	COIL FIX I EL0606SKI 3.30μH K
5-FL1	ER-324305	FILTER LC HP LCB-53
5-FL2	ER-345113	FILTER LP LJ25LP3.4MHz×3
5-FL3	ER-324339	FILTER LC AP LCB-56
5-FL4	ER-348142	FILTER LP LJ25LP 3.4MHz×4
5-FL5	ER-324469	FILTER LC LP LCB-59
5-FL6	ER-324375	FILTER LC BP LCB-57 4.43MHz
5-FL7	ER-345114	FILTER BP LJ20BP 4.43MHz×0.3 4.43 MC
5-FL8	ER-324398	FILTER LC LP LCB-58
5-FL9	ER-325807	FILTER LC BP LCB-61 5.06MHz
5-DL1	EI-337468	DL EFD-JR124A13D
5-DL301	EI-322365	DL EFD-EN645A11E
5-X1	EI-309878	OSC X'TAL 4.433619MHz
5-X2	EI-327364	OSC X'TAL HC-33/U 4.435571 MHz
5-VC1	EC-346764	C S-FIX H ECR-HA020D11 4-20
5-VC2, 3	EC-346765	C S-FIX H ECR-HA010A11 2.8-10
5-VC301, 302	EO-346887	C S-FIX H ECR-HA070M11
5-C87	EC-200949	C EC V F05 NP SM 470M 10DC
5-C94	EC-337793	C MY V F05 AMZ 182J 50DC
5-C96	EC-332052	C EC V F05 NP SM 4R7M 35DC
5-JA	EJ-347787	JACK PLATE VS-4AUDIO T5896 (PIN JACK)
5-JV	EJ-347788	JACK PLATE VIDEO YKC 21-5055 (PIN JACK)

6. SERVO AND AUDIO P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-V1017A190A	PC SERVO AUDIO BLK VS-4EG
6-IC1	EI-326044	IC AN6350
6-IC2	EI-304475	IC MC14066BCP
6-IC3	EI-337228	IC M5218L0
6-IC4, 5	EI-257602	IC MC14011BCP
6-IC6	EI-310183	IC MC14001BCP
6-IC7	EI-347778	IC BA6209
6-IC8	EI-321604	IC AN6341N
6-IC9	EI-300834	IC TC4520BP
6-IC10, 11	EI-347779	IC LA6393S
6-IC201	EI-347780	IC LA7045
6-TR1, 2	ET-200985	TR 2SC2603 F, G
6-TR3	ET-200479	TR 2SA1115 D, E, F
6-TR4 to 6	ET-200985	TR 2SC2603 F, G
6-TR7	ET-200479	TR 2SA1115 D, E, F
6-TR8 to 10	ET-200985	TR 2SC2603 F, G
6-TR11	ET-200479	TR 2SA1115 D, E, F
6-TR12, 13	ET-200985	TR 2SC2603 F, G
6-TR201, 202	ET-200402	TR 2SD958 S, T, U
6-TR203	ET-200401	TR 2SB788 S, T, U
6-TR204	ET-200985	TR 2SC2603 F, G
6-TR205	ET-200479	TR 2SA1115 D, E, F
6-TR206 to 209	ET-200985	TR 2SC 2603 F, G
6-TR210	ET-344999	TR 2SD1010 R, S, T
6-D1	ED-348205	D SILICON V MC931
6-D2	ED-337575	D SILICON H GMA-01-4-BT T26
6-D3	ED-347768	D SILICON V MC921
6-D4	ED-347767	D SILICON V MC911
6-D5	ED-200468	D SILICON V DS448-VB6
6-D6 to 12	ED-337575	D SILICON H GMA-01-4-BT T26
6-D201	ED-331667	D ZENER H HZ7 A1
6-VR1	EV-336769	R S-FIX H H0621A 3P 0.30W 473
6-VR2	EV-336767	R S-FIX H H0621A 3P 0/30W 683
6-VR3, 4	EV-336769	R S-FIX H H0621A 3P 0.30W 473
6-VR5	EV-307629	R S-FIX H H0621A 3P 0.30W 223
6-VR6	EV-307621	R S-FIX H H0651A 3P 0.05W 103
6-VR7	EV-307709	R S-FIX H H0651A 3P 0.05W 223
6-VR8	EV-307621	R S-FIX H H0651A 3P 0.05W 103
6-VR208	EV-346807	R S-FIX H KVSF817U 3P 104
6-VR209	EV-346805	R S-FIX H H0811C309A 3P 222
6-VR210, 211	EV-342939	R S-FIX H H0811 C313A 3P 103
6-L1, 2	EO-669273	COIL FIX 2 FL5R200 18μH
6-L202	EO-243977	COIL FIX 1 FL07H 1MH J
6-L204	EO-321254	COIL FIX 1 FL07H 5.60MH J
6-FL1, 2	ER-330465	FILTER LC DST310-55B271M
6-FL201	EO-347785	COIL VARI 1 15.6kHz
6-FL202, 203	EO-347786	COIL VARI 1 70kHz
6-OSC1	EO-347791	COIL OSC 1 0512033
6-R8	ER-346779	R MF V CUT 1/4W 7502F
6-R26	ER-338215	R MF H T26 1/8W 6202F
6-R27	ER-346780	R MF V CUT 1/4W 6800F
6-R28	ER-349037	R MF V CUT 1/4W 1001F
6-R55	ER-333350	R CB H SNP FS RDS 1/4W 5R6J
6-R62	ER-346791	R MF V CUT 1/4W 1803F
6-C209	EC-325054	C STY V T05 500 331J 50DC

7. OPERATION P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
7-1EG	BA-V1017A060A	PC OPERATION BLK VS-4EG (EG, EG-M)
7-1EK	BA-V1017A060B	PC OPERATION BLK VS-4EK
7-1EA	BA-V1017A060C	PC OPERATION BLK VS-4EA
7-1EO	BA-V1017A060D	PC OPERATION BLK VS-4EO (EO, EO-P)
7-1EG-G	BA-V1017A060F	PC OPERATION BLK VS-4EG-G
	OPERATION P.C BOARD	
7-IC2	EI-347773	IC MB88303M
7-IC3	EI-347759	IC MB88401-207K (EXCEPT EG-G)
7-IC3G	EI-348737	IC MB88401-210K (EG-G)
7-TR1 to 4	ET-200479	TR 2SA1115 D, E, F
7-D1 to 5	ED-624903	D SILICON H 1S2473
7-D7, 8	ED-316143	D SILICON H 1S2473HS F10
7-D9	ED-523427	D SILICON H 1SS16
7-D12	ED-347776	D LED BG5608S GRN
7-D13	ED-249377	D LED GL3AR1 RED
7-D14	ED-347776	D LED BG5608S GRN
7-D15	ED-347777	D LED BR5628S RED
7-D16	ED-249377	D LED GL3AR1 RED
7-D17, 18	ED-347777	D LED BR5628S RED
7-D19	ED-283138	D LED GL3PG1 GRN
7-D20, 22	ED-249377	D LED GL3AR1 RED
7-D26	ED-249377	D LED GL3AR1 RED
7-SW1 to 23	ES-347755	SW TACT EVQ-QSE05T
7-SW28	ES-347755	SW TACT EVQ-QSE05T (EA ONLY)
7-VR1	EV-307706	R S-FIX H H0651A 3P 0.05W 471
7-X1	EO-330256	OSC CE F85-006 4MHz
7-IB1	ER-347736	R COMP RKC 1/8 B15 4.7K J
7-IB2	ER-347737	R COMP RKC 1/8 B16 4.7K J
	LED P.C BOARD (EXCEPT EO)	
7-D10	ED-347775	D LED SL2179-01 GRN
	LED P.C BOARD (EO)	
7-D11	ED-348462	D LED SL2221T GRN
	ANT SW P.C BOARD (EA ONLY)	
7-TR101	ET-200479	TR 2SA1115 D, E, F
7-TR102	ET-200480	TR 2SC2603 D, E, F
7-TR103	ET-200479	TR 2SA1115 D, E, F
7-TR104	ET-200480	TR 2SC2603 D, E, F
7-D101, 102	ED-624903	D SILICON H 1S2473

8. POWER SUPPLY AND SYSTEM CONTROL P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1EG	BA-V1017A050A	PC POWER SYSCON BLK VS-4EG (EG, EG-G, EK, EG-M)
8-1EA	BA-V1017A050B	PC POWER SYSCON BLK VS-4EO (EA, EO, EO-P)
8-IC1	EI-347757	⚠ IC STK5325
8-IC2	EI-347758	⚠ IC TA78012AP
8-IC3	EI-337530	IC UPC574J
8-IC4	EI-315243	⚠ IC TA78005P
8-IC5	EI-345133	IC MB88401-206M
8-IC6	EI-257602	IC MC14011BCP
8-IC7	EI-337519	IC MB88301-A
8-IC8	EI-347760	IC M54534P
8-IC9	EI-347779	IC LA 6393S
8-TR1	ET-337569	TR 2SA675A E, F, H
8-TR2	ET-306719	TR 2SC2236 O, Y
8-TR3 to 5	ET-200985	TR 2SC2603 F, G
8-TR6	ET-200479	TR 2SA1115 D, E, F
8-TR7	ET-344999	TR 2SD1010 R, S, T
8-TR8	ET-200985	TR 2SC2603 F, G
8-TR9	ET-306719	TR 2SC2236 O, Y
8-TR10, 11	ET-200985	TR 2SC2603 F, G
8-TR12	ET-200479	TR 2SA1115 D, E, F
8-TR13 to 15	ET-347738	TR 2SA1282A E, F
8-TR16, 17	ET-200985	TR 2SC2603 F, G
8-D1	ED-337618	D SILICON DS135E-FB6 100/1.0A
8-D2, 3	ED-624903	D SILICON H 1S2473
8-D4	ED-337617	⚠ D SILICON DBB50C-K8 200/5.0A
8-D5	ED-322238	⚠ D SILICON 1B4B41 100/1.0A
8-D6	ED-337618	D SILICON DS135E-FB6 100/1.0A
8-D7	ED-346468	D ZENER H HZ9FA F10 B1
8-D8 to 14	ED-624903	D SILICON H 1S2473
8-D15	ED-346515	D ZENER H HZ30FA F10 1
8-D17 to 19	ED-624903	D SILICON H 1S2473
8-X1	EI-345279	OSC CE CSA4.00MS 4.00000MHz
8-X2	EI-347434	OSC X'TAL HC-18/U 4.194304MHz
8-TH1	ET-330533	POSISTER PTH61G04BD3R3N
8-SF5, 6	EF-346880	⚠ FUSE ICP-F15 150V 0.6A
8-SF7, 8	EF-347968	⚠ FUSE ICP-F10 150V 0.4A
8-IB1	ER-347743	R COMP RKC 1/8 B4 10K J
8-IB2	ER-347744	R COMP NO. 15113
8-R34	ER-337563	R MF H F10 1/4W 4751F
8-R35	ER-337563	R MF H F10 1/4W 4751F
8-R36	ER-348233	R MF H F10 1/4W 2371F
8-C38	EC-345111	C TT V EF 1R5M 50DC
8-F1	EF-691007	⚠ FUSE SEMKO T 250V 3.15A
8-F2	EF-601301	⚠ FUSE SEMKO T 250V 2.00A
8-F3	EF-593706	⚠ FUSE SEMKO T 250V 0.50A
8-F4	EF-668474	⚠ FUSE SEMKO T 250V 0.40A

9. SKEW JUMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
9-1	BA-V1017A290A	PC SKEW JUMP BLK VS-4EG
9-IC1	EI-348220	IC BA7022
9-IC3	EI-348229	IC NE555
9-IC4	EI-698705	IC MC14013BCP
9-IC5	EI-330392	IC MC14070BCP
9-IC6	EI-341516	IC AN6041
9-IC7	EI-307616	IC AN608P
9-IC8	EI-341516	IC AN6041
9-IC9	EI-307616	IC AN608P
9-IC10	EI-348229	IC NE555
9-IC11	EI-337529	IC TA78L005AP
9-IC12	EI-348222	IC BA7001
9-IC14	EI-348222	IC BA7001
9-IC15	EI-307616	IC AN608P
9-TR1, 2	ET-200985	TR 2SC2603 F, G
9-TR3	ET-200479	TR 2SA1115 D, E, F
9-TR5 to 9	ET-200985	TR 2SC2603 F, G
9-TR12 to 15	ET-200985	TR 2SC2603 F, G
9-TR17	ET-200985	TR 2SC2603 F, G
9-D1 to 4	ED-337575	D SILICON H GMA-01-4-BT T26
9-D5	ED-348042	D ZENER V HZ9C-1S1
9-D6	ED-301911	D SILICON H DS448
9-VR1 to 3	EV-336852	R S-FIX H KVSF807U 3P 102
9-VR4	EV-341225	R S-FIX H KVSF807U 3P 503
9-VR5	EV-332320	R S-FIX H H0651A 3P 0.05W 332
9-VR6	EV-332404	R S-FIX H H0651A 3P 0.05W 101
9-VL1	EO-348206	COIL VARI 1 YBTKANS-28929Z 2.20μH
9-L1	EO-330244	COIL FIX 1 EL0606SKI 2.2μH K
9-L2	EO-330242	COIL FIX 1 EL0606SKI 39μH K
9-L3 to 6	EO-330249	COIL FIX 1 EL0606SKI 8.2μH K
9-L7, 8	EO-330252	COIL FIX 1 EL0606SKI 100μH K
9-FL1	EI-348223	DL MS-26H H-2K
9-FL2	EI-348224	DL MS-26 (H-3K)
9-FL3	EI-348225	DL MS-19 (L-11)
9-FL4	ER-348367	FILTER LP LPF500
9-FL5	ER-348368	FILTER LP LPF1.50
9-X1	EI-348543	OSC X'TAL HC-18/U 10.240000MHz

10. MECHA DRIVE P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
10-1	BA-V1017A200A	PC MECHA DRIVE BLK VS-4EG
10-IC1	EI-347766	IC MBL8243M
10-IC2	EI-347769	IC M54514AP
10-IC3	EI-337503	IC M54532P
10-IC4 to 6	EI-330352	IC BA6109
10-TR1 to 3	ET-346806	TR 2SA1309 Q, R, S
10-TR4, 6	ET-330464	TR 2SC2603 D, E
10-TR7	ET-347738	TR 2SA1282A E, F
10-TR8, 9	ET-346806	TR 2SA1309 Q, R, S
10-D1, 2	ED-624903	D SILICON H 1S2473
10-D3, 4	ED-337575	D SILICON H GMA-01-4-BT T26
10-D5	ED-347899	D ZENER H HZ20CP
10-D6	ED-624903	D SILICON H 1S2473
10-D7	ED-347767	D SILICON V MC911
10-D8	ED-347768	D SILICON V MC921
10-D9	ED-337575	D SILICON H GMA-01-4-BT T26
10-D10	ED-346637	D ZENER H HZ3FA F10 C2
10-D11	ED-347768	D SILICON V MC921
10-D14, 15	ED-624903	D SILICON H 1S2473
10-D16	ED-324937	D ZENER H 05Z6.8 Z
10-D17	ED-624903	D SILICON H 1S2473
10-TH1	ET-330533	⚠ POSISTER PTH61G04BD3R3N
10-IB1	ER-347735	R COMP M-3724
10-R34	ER-306127	R CB H S15 FS RDS 1/2W 681J
10-R36	ER-333065	R OMF H SNP FS 2W 220J

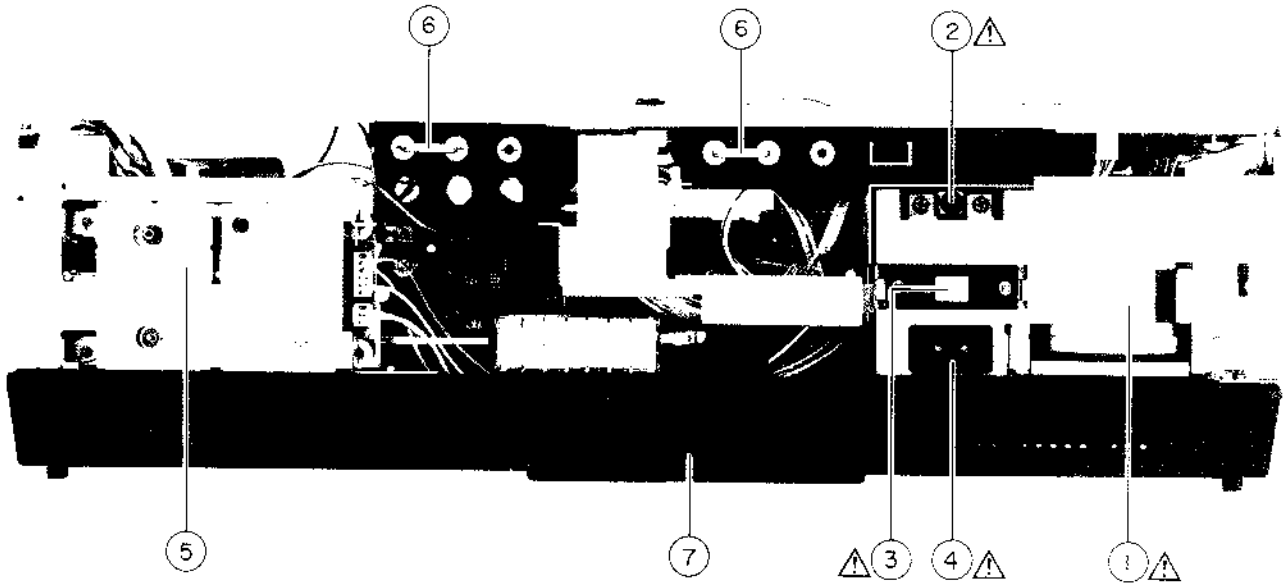
11. DEMODULATOR P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
11-1EG	BA-V1017A260A	PC DE-MODULATOR BLK VS-4EG (EG, EG-G, EG-M)
11-1EK	BA-V1017A260B	PC DE-MODULATOR BLK VS-4EK
11-1EA	BA-V1017A260C	PC DE-MODULATOR BLK VS-4EA
11-1EO	BA-V1017A260D	PC DE-MODULATOR BLK VS-4EO (EO, EO-P)
11-2EG	EE-345115	TV TUNER CDE1-A04 (EG, EG-G, EG-M)
11-2EK	EE-345116	TV TUNER CBE1-013 (EK)
11-2EA	EE-345117	TV TUNER CSE1-017 (EA)
11-2EO	EE-345118	TV TUNER CEE1-009 (EO, EO-P)
11-IC1	EI-705494	IC TA7607AP
11-IC2	EI-749828	IC UPC1391H
11-IC3	EI-749829	IC M54573L (EXCEPT EK)
11-Q1	ET-742646	TR 2SC388A
11-Q2 to 4	ET-330464	TR 2SC2603 D, E
11-Q5	ET-522270	TR 2SC1210 D
11-Q6	ET-307997	TR 2SA1115 D, E
11-Q7	ET-330464	TR 2SC2603 D, E
11-Q8	ET-307997	TR 2SA1115 D, E
11-Q9, 10	ET-330464	TR 2SC2603 D, E
11-Q11	ET-330464	TR 2SC2603 D, E
11-Q12	ET-307997	TR 2SA1115 D, E (EO ONLY)
11-Q13	ET-330464	TR 2SC2603 D, E
11-D1	ED-604541	D SILICON H 1S2076
11-D2,3	ED-604541	D SILICON H1S2076 (EXCEPT EK)
11-D4	ED-705479	D SILICON 1SV70
11-D5 to 7	ED-604541	D SILICON H 1S2076
11-VR1, 2	EV-749777	R S-FIX 502
11-VR3	EV-702567	R S-FIX TT24R 202
11-VR4	EV-702569	RS-FIX TT24R 10KB
11-L1	EV-707836	COIL FIX I 144LZ 0.39 μH K
11-L2EG	EO-742653	COIL RF 144LY 2.0 μH K (EXCEPT EK)
11-L2EK	EO-742654	COIL RF 144LY 2.2 μH K (EK)
11-L3EG	EO-749830	COIL RF 199KNAS-12593Z (EXCEPT EA)
11-L3EA	EO-749831	COIL RF 199KNAS-12594Z (EA)
11-L4	EO-742574	COIL RF P320190
11-L5EG	EO-705491	COIL TKXNS-279789NK (EXCEPT EA)
11-L5EA	EO-749843	COIL BTKXNS-28428NK (EA)
11-L6	EO-749833	COIL FIX LRL06 820K
11-L7, 8	EO-749834	COIL FIX LAL06 120K
11-L9	EO-749835	COIL FIX LAL06 101K
11-L10EG	EO-749834	COIL FIX LAL06 120K (EXCEPT EK)
11-L10EK	EO-749836	COIL FIX LRL06 100K (EK)
11-L12	EO-749837	COIL FIX LAL06 330K
11-CF1EG	EH-742662	FILTER SAW SAF38.9MZ51Z (EXCEPT EK, EA)
11-CF1EK	EH-742663	FILTER SAW SAF39.5MZ51Z (EK)
11-CF1EA	EH-742664	FILTER SAW SAF36.9MZ51Z (EA)
11-CF2EG	EH-749839	FILTER CE TPS 5.5MD (EXCEPT EK)
11-CF2EK	EH-749840	FILTER CE TPS 6.0MD (EK)
11-CF3EG	EH-705499	FILTER CE SFE5.5MHz (EXCEPT EK)
11-CF3EK	EH-705500	FILTER CE SFE 6MHz (EK)
11-CF4EG	EH-749841	FILTER CE 5.5MC19A (EXCEPT EK)
11-CF4EK	EH-749842	FILTER CE 6.0MC19A (EK)
11-R44	ER-742497	⚠ R FUSE 1/4W 220J
11-R54, 55	ER-749775	R MF RNL 1/4W 4571F
11-R56	ER-749776	R MF RNL 1/4W 2401F
11-C20	EC-749821	C TT R47M 35V
11-C28	EC-749822	C EC 102M 10V
11-C33	EC-749823	C PP 1H 153J 50DC
11-C39	EC-749824	C PP 1H683K 50DC
11-C41 to 44	EC-749825	C PP 1H683J 50DC
11-C45	EC-749826	C TT R68M 35V
11-C51	EC-749827	C PP 1H 103K 50DC (EO ONLY)

12. POWER FILTER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
12-F901	EF-623103	⚠ FUSE SEMKO T 250V 1.00A
12-C901	EF-338411	⚠ C CE V FZ 103P 400AC

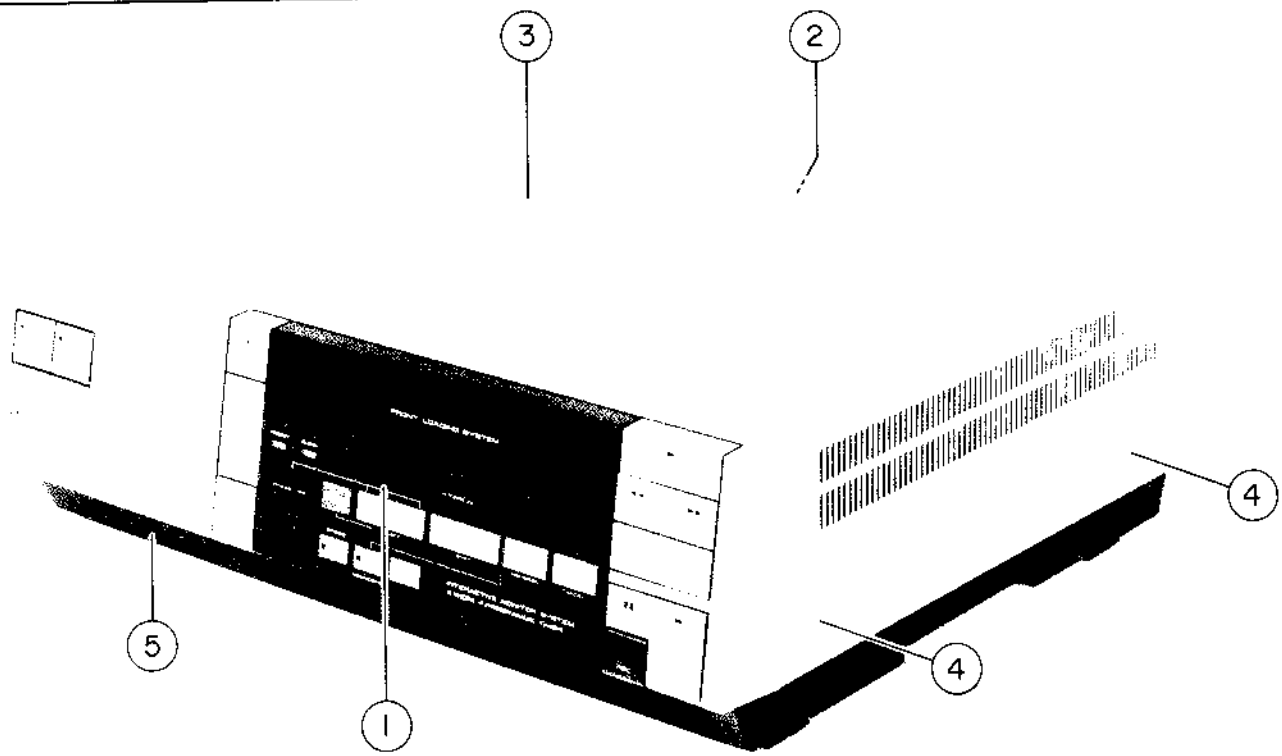
POWER AND RF BLOCK



13. POWER AND RF BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	POWER TRANS BLOCK	
13-1EG	BT-347997	⚠ TRANS POWER VS-4-5A (T901) (EXCEPT EK, EA)
13-1EK	BT-348517	⚠ TRANS POWER VS-4-6A (T901) (EK, EA)
13-2	ES-347911	⚠ SW PUSH ESB-8213V 01-1 (SW901)
13-3	ES-309312	⚠ SW SLIDE 00220459 02-2 (SW902)
13-4	EJ-301513	⚠ SOCKET INLET S-16453 E 2P (J901)
	RF BOOSTER BLOCK	
13-5EG	BV-345124	RF MODULATOR MDW3-253 (EG, EG-G, EG-M)
13-5EK	BV-345125	RF MODULATOR MIW3-253 (EK)
13-5EA	BV-345129	RF MODULATOR MSW2-633 (EA)
13-5EO	BV-345126	RF MODULATOR MSW3-253 (EO, EO-P)
13-6	EJ-348218	PLUG SHORT PIN P2138
13-7	SP-343189	HOLDER BATTERY

FINAL ASSEMBLY BLOCK



14. FINAL ASSEMBLY BLOCK

REF NO	PARTS NO.	DESCRIPTION
14-1EG	BD-B345033	PANEL FRONT EG PART
14-1EG-G	BD-B345033F	PANEL FRONT EG-G PART
14-1EK	BD-B345033C	PANEL FRONT EK PART
14-1EA	BD-B345033B	PANEL FRONT EA PART
14-1EO	BD-B345033E	PANEL FRONT EO PART
14-1EG-M	BD-B345033G	PANEL FRONT EG-M PART
14-1EO-P	BD-B345033H	PANEL FRONT EO-P PART
14-2EG	SP-345055	PANEL REAR VS-4EG/EG-M
14-2EG-G	SP-345055H	PANEL REAR VS-4 EG-G
14-2EK	SP-345055C	PANEL REAR VS-4EK
14-2EA	SP-345055B	PANEL REAR VS-4EA
14-2EO	SP-345055D	PANEL REAR VS-4EO
14-3EG	SP-345054	CASE UPPER (EXCEPT EG-M, EO-P)
14-3EG-M	SP-345054B	CASE UPPER EG-M
14-3EO-P	SP-345054C	CASE UPPER EO-P
14-4	ZS-321783	ST BID40×10STL NI3
14-5	SP-343188	COVER FRONT JACK
14-6XEG	EW-347673	⚠ AC CORD 2CORES SP22-12460/CEE (EXCEPT EK, EA)
14-6XEK	EW-302995	⚠ AC CORD 2CORES VM-0112 B (EK)
14-6XEA	EW-322401	⚠ AC CORD 2 CORES SP22-12460/CEE (EXCEPT EK, EA)
14-7X	AV-V1017A330A	BATTERY PACK BLK VS-4EG

II. REMOTE CONTROL UNIT RC-V404

1. TRANSMITTER RC-T4

REF. NO.	PARTS NO.	DESCRIPTION
1-1	AV-749976	TRANSMITTER RC-T4-E (ENGLISH) (EG, EK, EA, EO)
1-2	AV-749992	TRANSMITTER RC-T4-G (GERMAN) (EG-G)
1-3	AV-749987	TRANSMITTER RC-T4-EM (ENGLISH) (EG-M)
1-4	AV-749989	TRANSMITTER RC-T4-EP (ENGLISH) (EO-P)
1-5	AV-749977	COVER BATTERY
1-6	AV-749978	RUBBER BUTTON SHEET CONTACT (ENGLISH) (EG, EK, EA, EO)
1-7	AV-749993	RUBBER BUTTON SHEET CONTACT (GERMAN) (EG-M)
1-8	AV-749988	RUBBER BUTTON SHEET CONTACT (ENGLISH) (EO-P, EG-M)
1-9	AV-749979	TERMINAL BATTERY A (+)
1-10	AV-749980	TERMINAL BATTERY B (–)
1-11	AV-749981	TERMINAL BATTERY C (+–)
1-12	AV-749982	PC SWITCH (CONTACT)
1-IC1	EI-749983	IC UPD1943G
1-X1	EI-749984	OSC CE KBR455BAT
1-TR1	ET-318604	TR 2SD545NP E, F
1-D1, 2	ED-557447	D SILICON H 1S1588
1-D3, 4	ED-710035	D LED TLN105
1-D5	ED-780019	D LED SEL1123W

2. RECEIVER RC-R4

REF. NO.	PARTS NO.	DESCRIPTION
2-1	AV-749986	RECEIVER RC-R4-E (ENGLISH) (EXCEPT EG-G)
2-2	AV-749994	RECEIVER RC-R4-G (GERMAN) (EG-G)
2-IC1	EI-348897	IC M51014L
2-TR1	IT-348898	TR FET 2SJ40 C, D, E
2-D1	ET-330238	PHOTO SENSOR302

1. VS-4EG/EK/EA/EO/EG-G/EG-M/EO-P

PARTS NO.	REF. NO.
AV-V1017A330A	14-7x
BA-M3201A020A	1-21
BA-V1017A050A	8-1EG
BA-V1017A050B	8-1EA
BA-V1017A060A	7-1EG
BA-V1017A060B	7-1EK
BA-V1017A060C	7-1EA
BA-V1017A060D	7-1EO
BA-V1017A060F	7-1EG-G
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2. REMOTE CONTROL UNIT RC-V404

SECTION 3

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SCHEMATIC DIAGRAM OF ICs

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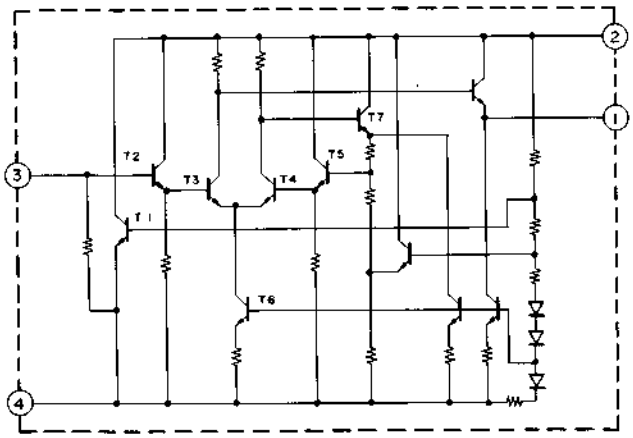

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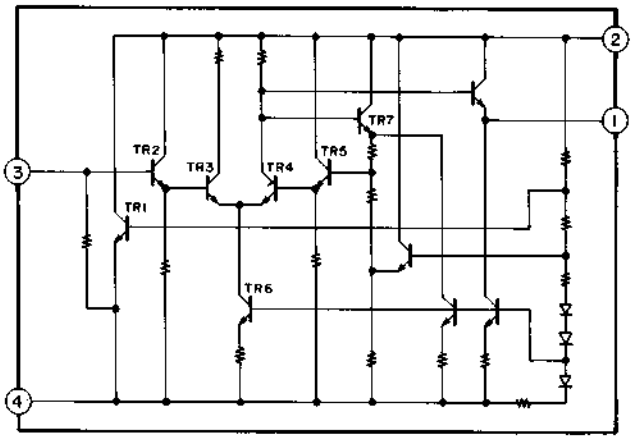

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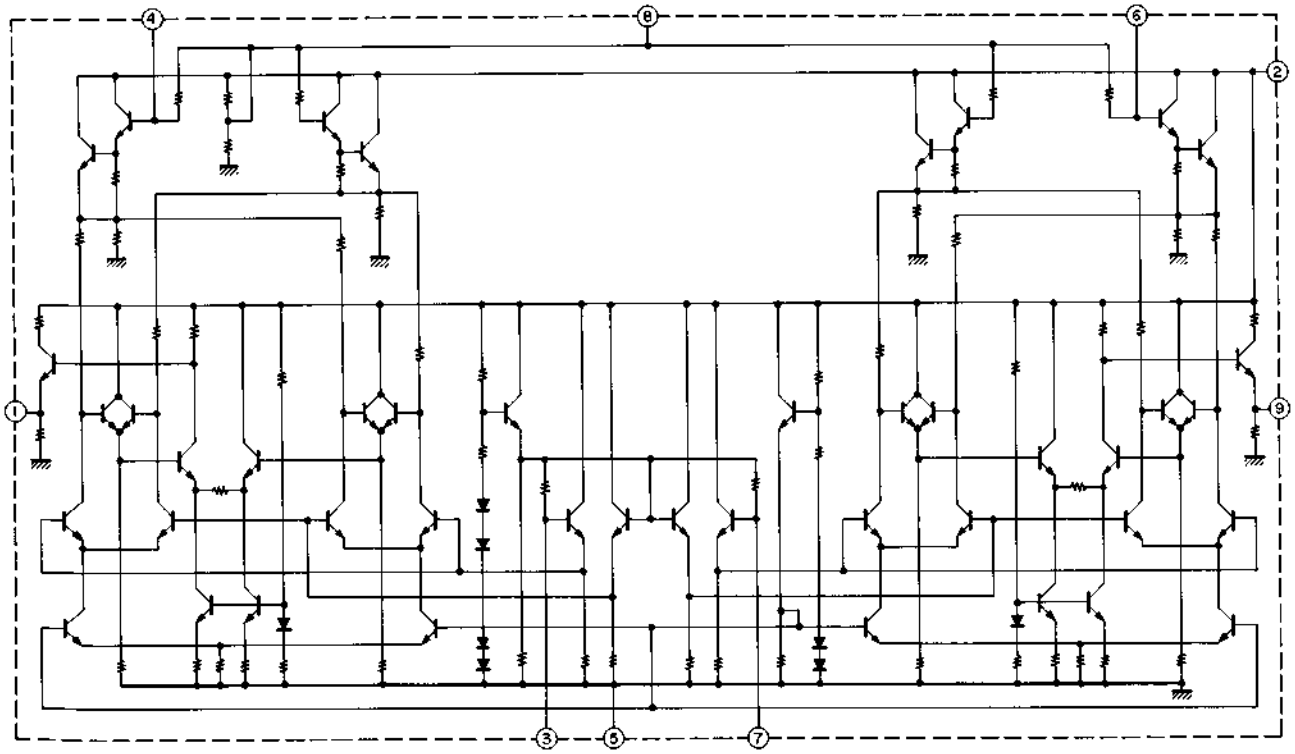

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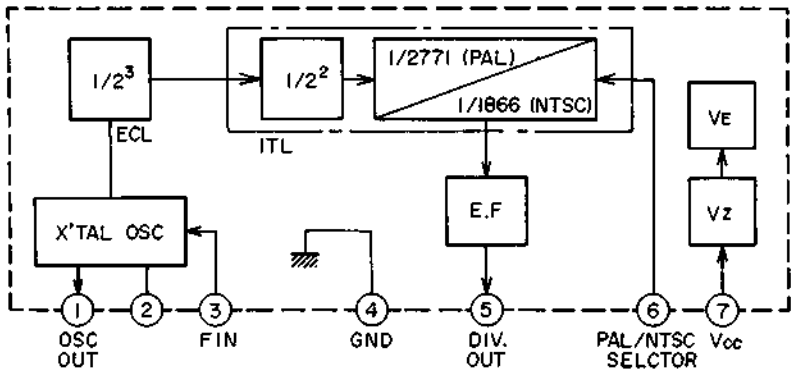

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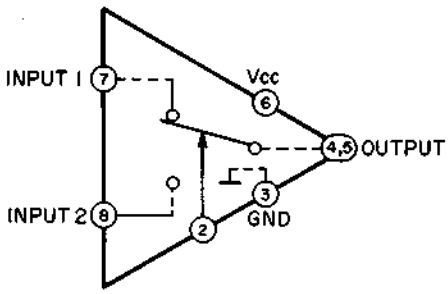
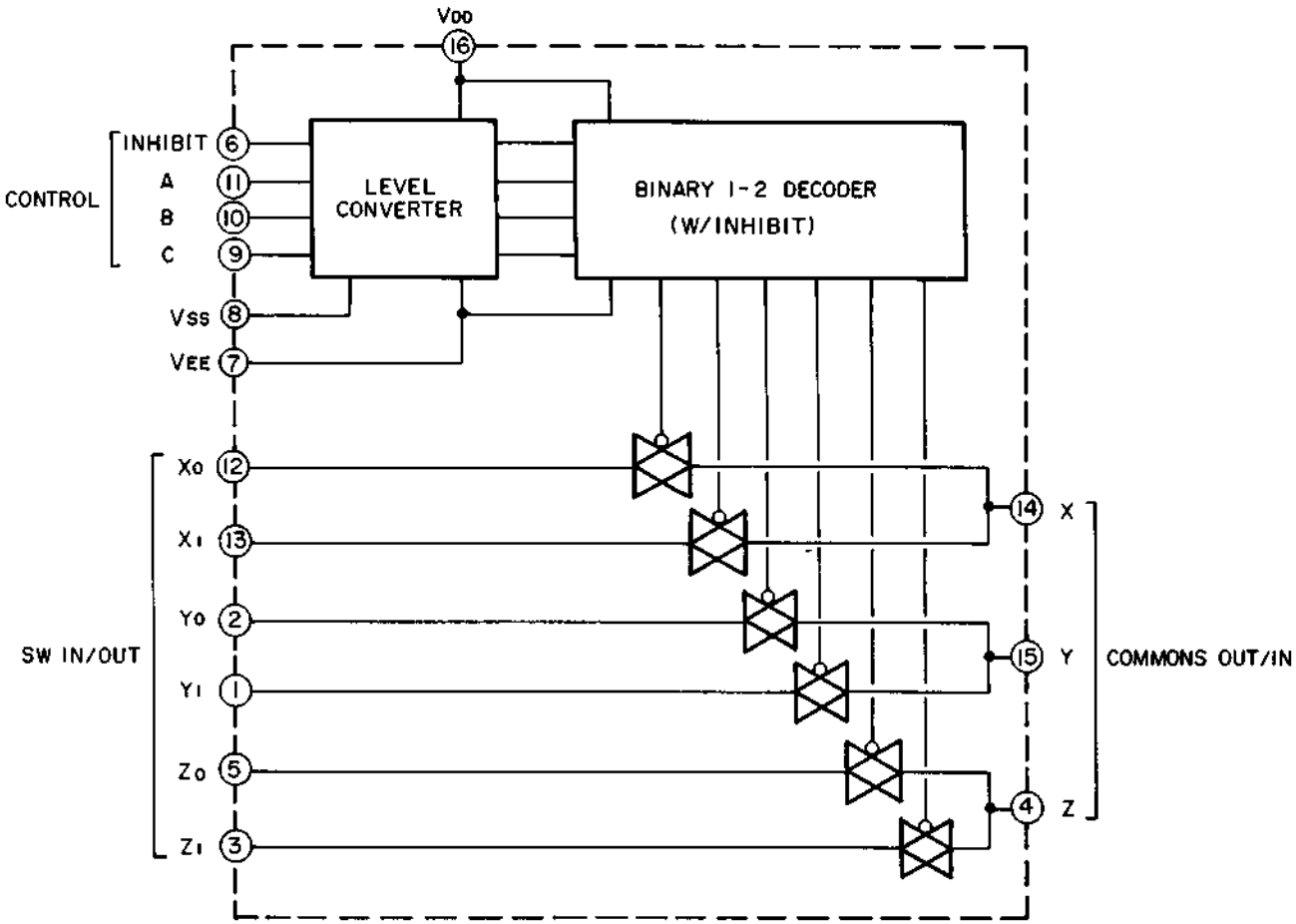
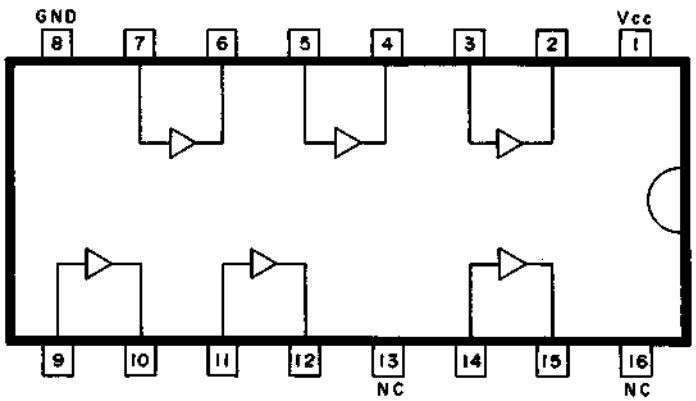


HD14053BP



HD14050B



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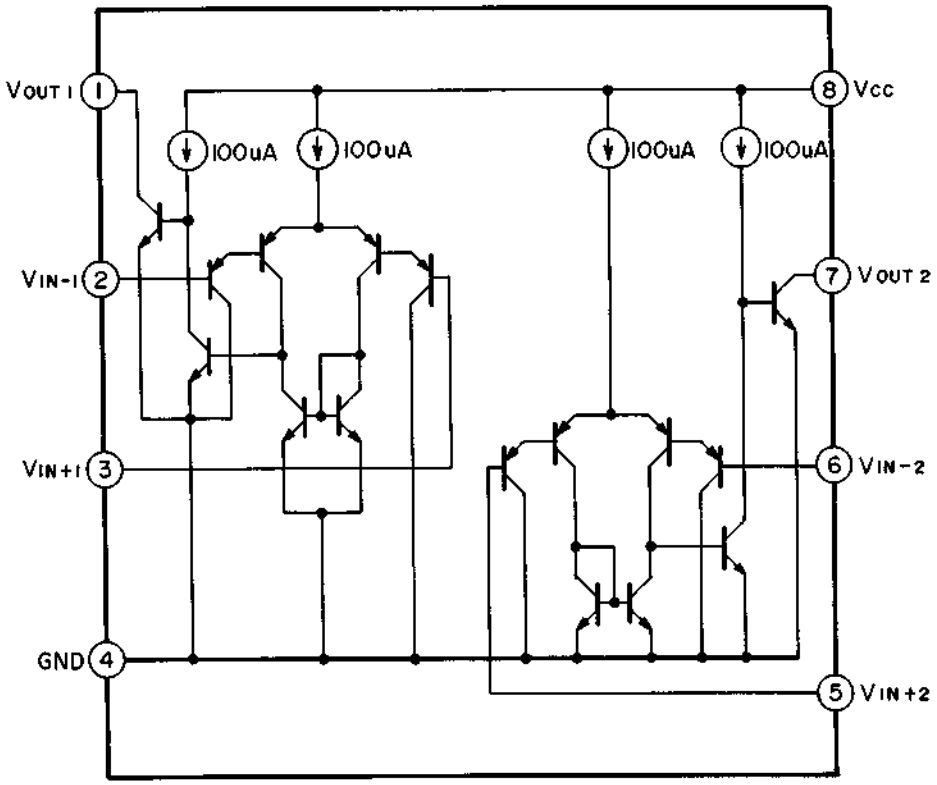

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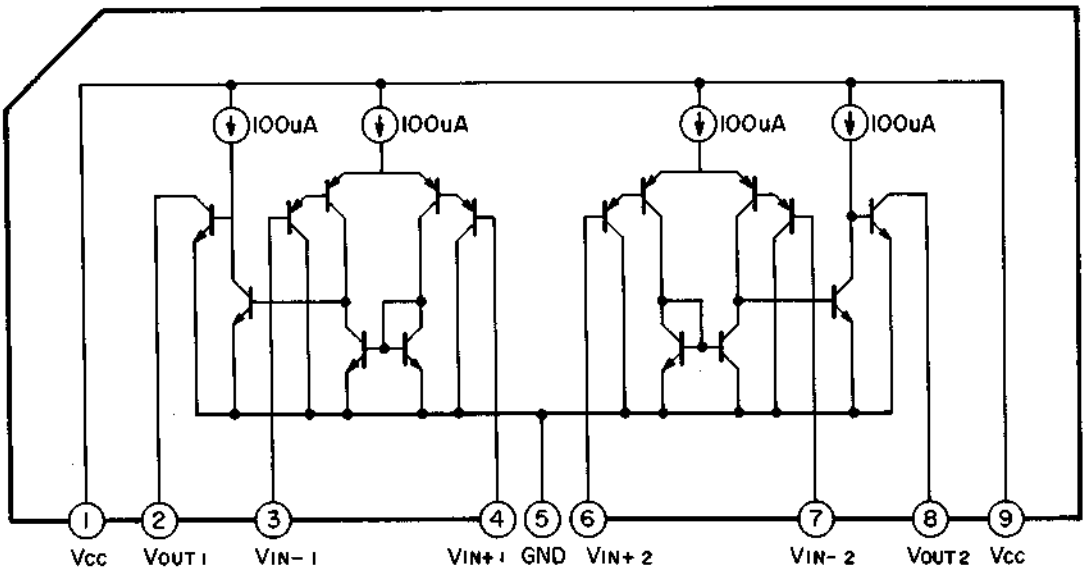

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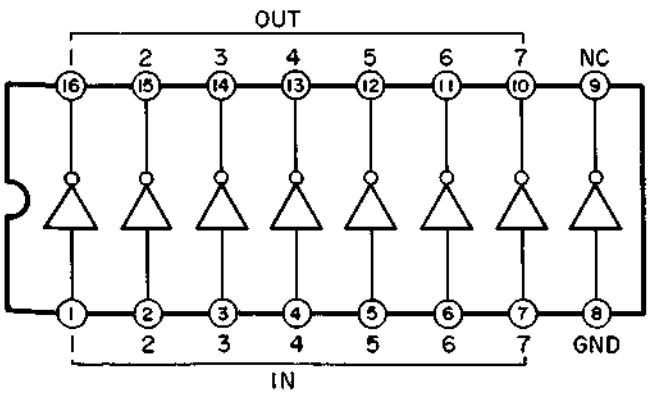

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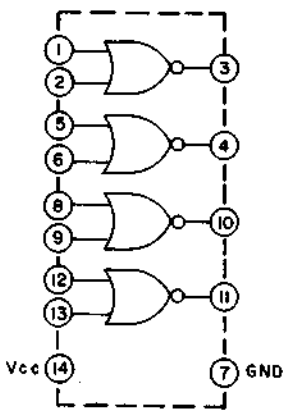
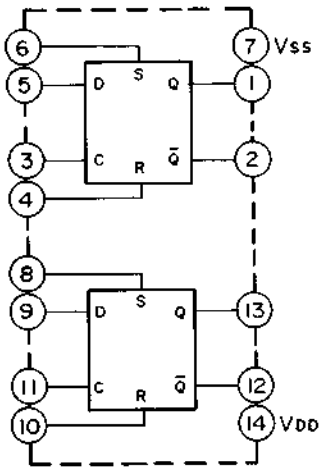


MC14013BCP



TRUTH TABLE

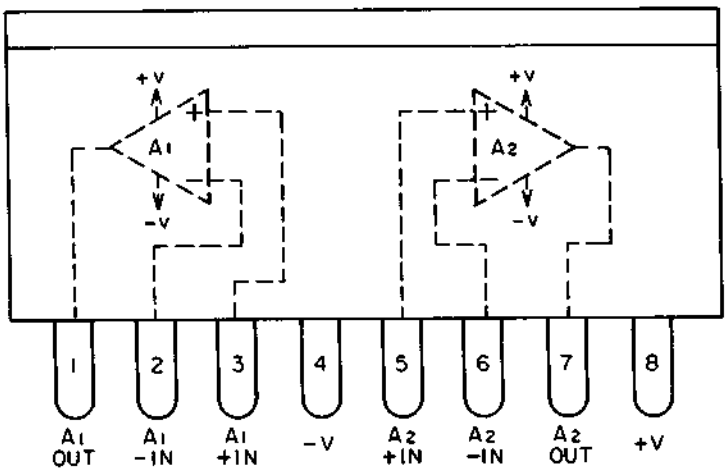
INPUTS				OUTPUTS	
CLOCK↑	DATA	RESET	SET	Q	Q̄
⌐	0	0	0	0	1
⌐	1	0	0	1	0
⌐	X	0	0	Q	Q̄
X	X	1	0	0	1
X	X	0	1	1	0
X	X	1	1	1	1

NO CHANGE

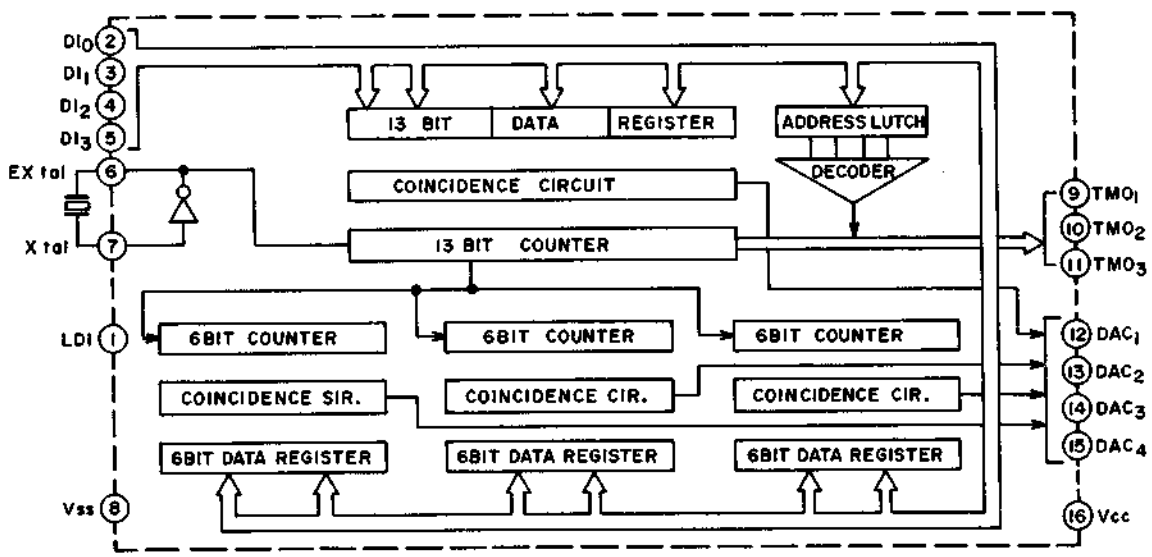
X : DON'T CARE

↑ : LEVEL CHANGE

M5218LO



MB88301P



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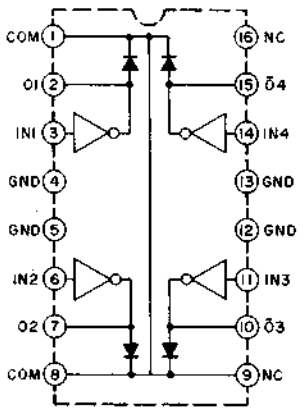
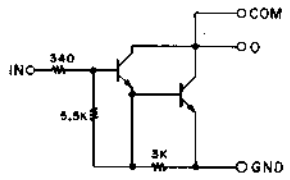
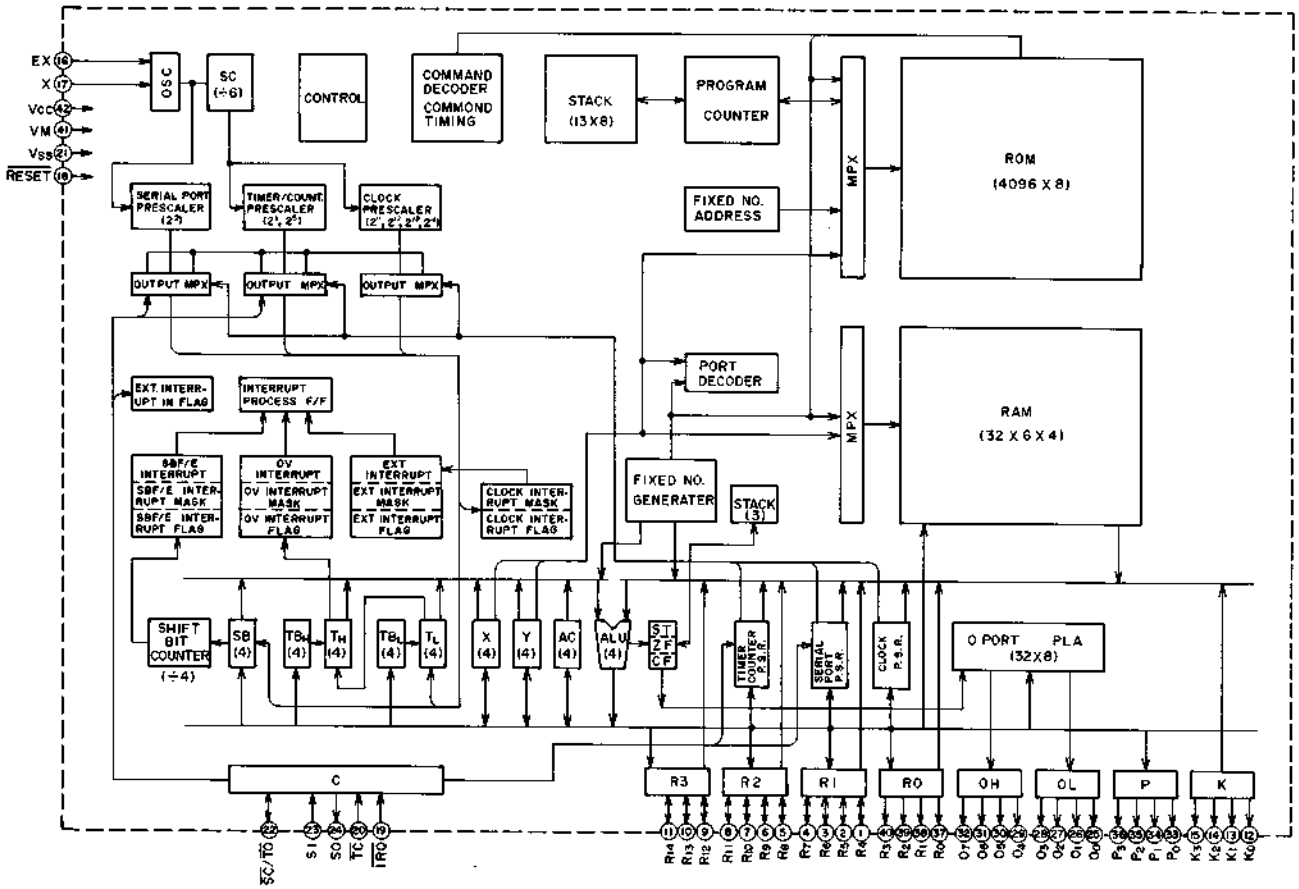




ALL GND CONECTED IN INSIDE

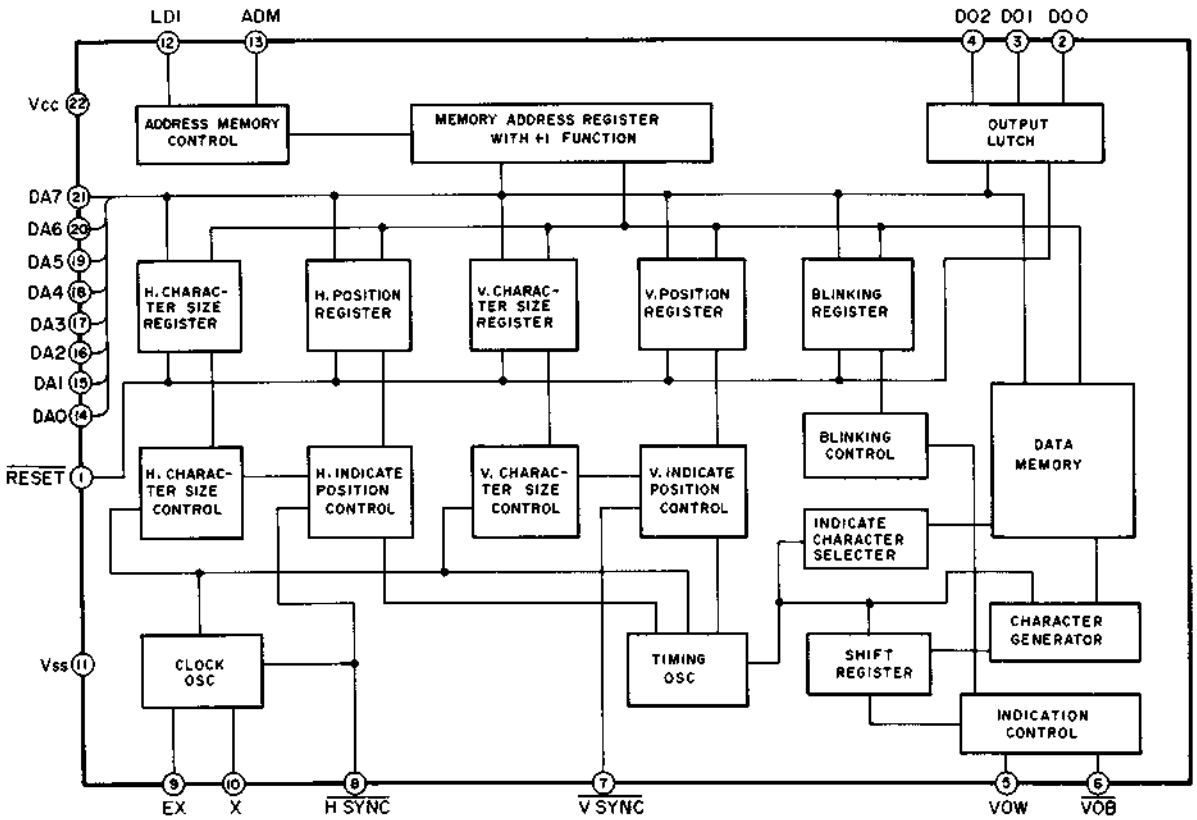
MB88401-206M/MB88401-207K



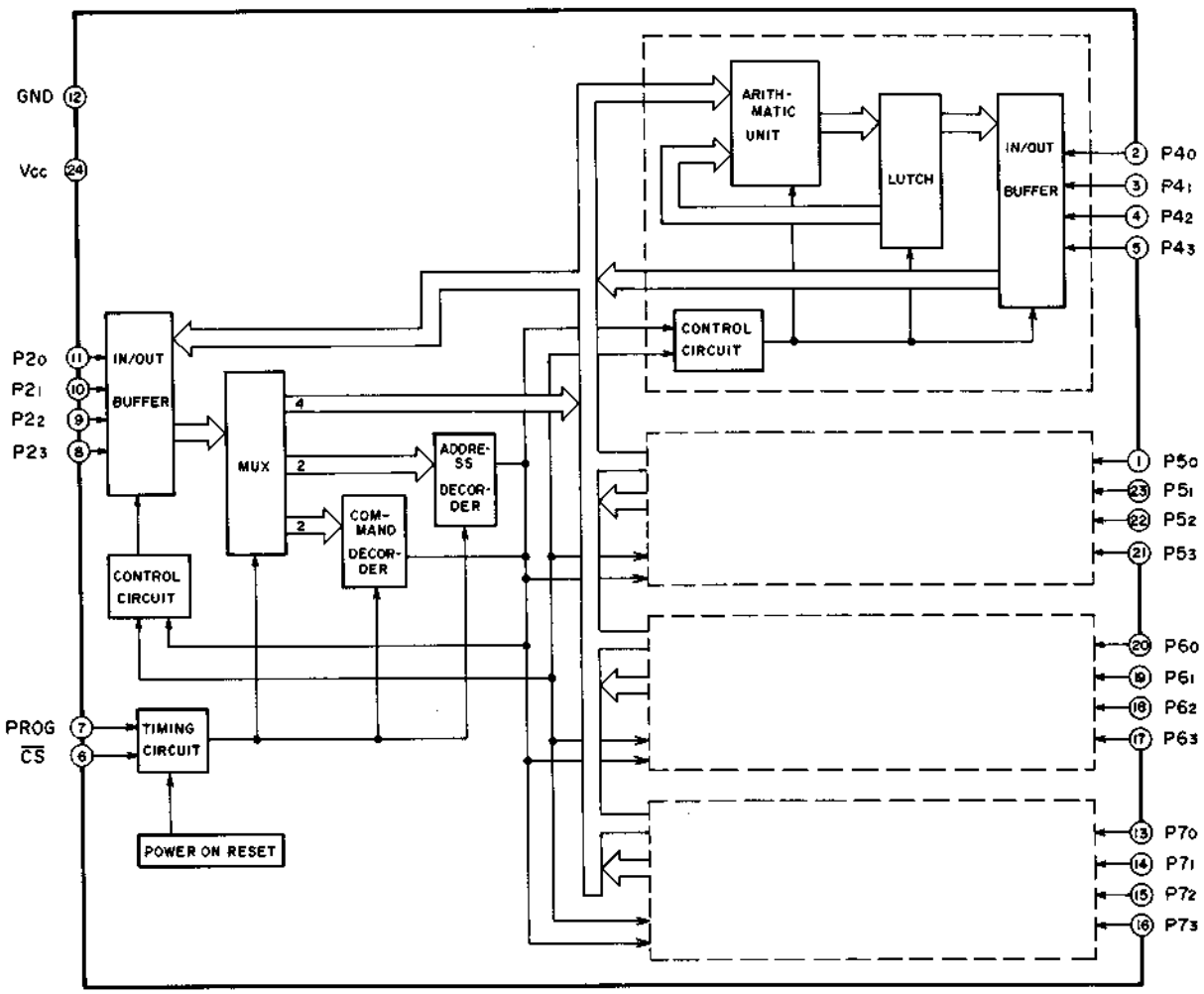
Description of IC(MB88401-206k) Terminals		
Pin No.	Symbol	Description
1 2 3 4	DATA I/0	○ DATA output to DAC IC7 (MB88301A) and input/output of EXPANDER IC1 (MBL8243) of MECH DRIVE PCB.
5	B DOWN	○ At "L" level all the motors and plangers are turned off, and turn in the state of Function –OFF.
6	$\overline{\text{NTSC}}$	○ At "C" level, DATA display of the tape remainings is switched into DATA for NTSC. (not used)

Pin No.	Symbol	Description
7 8	VIDEO J AFT	○ These are terminals for TV search to which "H" is input when VIDEO signal is in normal, "L" in abnormal.
9	$\overline{\text{LRQEN}}$	○ Types except VS-4EO, SEG are controlled depending on whether both differential inputs of switching pulse are input to pin 19 (IRQ) or not. ○ VS-4EO, SEG MODEL has 12 channels and 2 programes by means of turning this terminal to "C" level.
10	$\overline{\text{SAVE END}}$	○ At Power down, "L" level is output, and a RESET functions.
11	$\overline{\text{TEST}}$	
12 13 14 15	TRP SRP CTL SWP	These terminals are used for controlling Reel STOP and the judgements of Drum MOTOR STOP SP/LP MODE by means of inputting TAKE-UP Reel Pulse, Supply Reel Pulse, CTL Pulse and Switching Pulse.
16 17	EX X	Clock oscillator terminal Clock oscillator terminal
18	$\overline{\text{RESET}}$	At "H" level, RESET is removed.
19	$\overline{\text{IRQ}}$	For triger input to make a dummy V-Sync at TRIC Mode.
20	$\overline{\text{TC}}$	When the power down detector detects a power down, it turns to "L" level and saves the data in the RAM. After that, "L" level outputs at pin 10 save end and a Reset functions.
21	VSS	GND
22 23 24	S CLK S IN/OUT S OUT/IN	These terminals are used for data TRANSFER between the terminals of IC_2 MB88401 of operation PCB.
25 26 27 28	EE REC PB12 $\overline{\text{AL}}$	○ EE12 ○ REC12 ○ PB12 ○ AL12 These are control signal output terminals which control EE12V, REC12V, PB12V and AL12V.
29	$\overline{\text{SERVO}}$	Only when DRUM MOTOR stops, it turns "H" level and Drum Heater turns on.
30	MUTE	
31 32	BS 2 BS 1	These are the terminals for signal outputs of band selector control which select VHF-High, VHF-Low and UHF, according to the combination of "H" output and "L" at BS1 and BS2.
33 34 35 36	PAL/SECAM $\overline{\text{DOLBY}}$ $\overline{\text{TEST}}$ $\overline{\text{LP}}$/SP	Not used.
37	O MUTE	For control signal output which controls the Mute circuit of Audio signal ("H" = MUTE)
38	$\overline{\text{PRG2}}$	This is the control signal output which controls 8 input terminals and 8 output terminals of expander IC_1 (MBL8243) at MECH DRIVE PCB.
39	VP	This terminal outputs a dummy V-Sync at Tric Mode.
40	LDI	This terminal outputs the address of $DACIC_7$ (MB88301) and the data of out-read/out-control signals.
41	VM	When RESET input is at "L" level, the content of RAM is maintained if more than 3V of power is supplied.
42	VDD	Power input

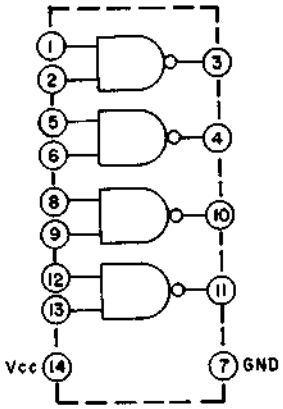
MB88303



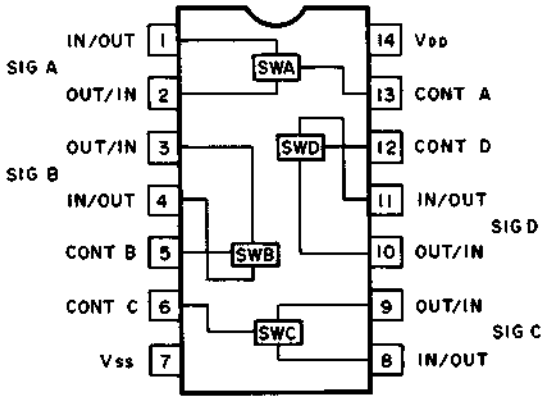
MB8243



MC14011BCP



MC14066BCP



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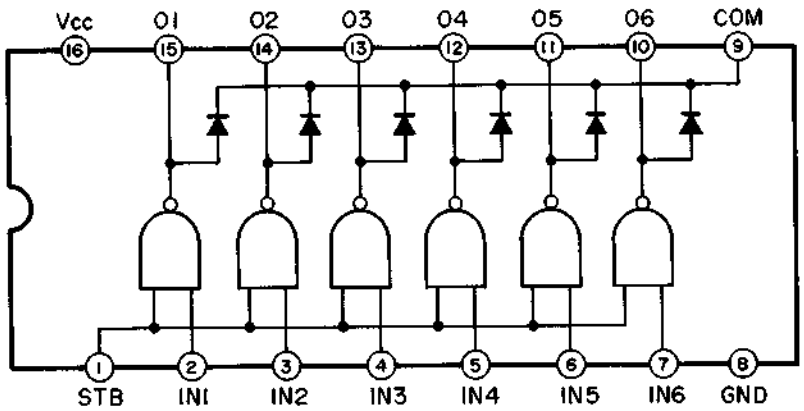

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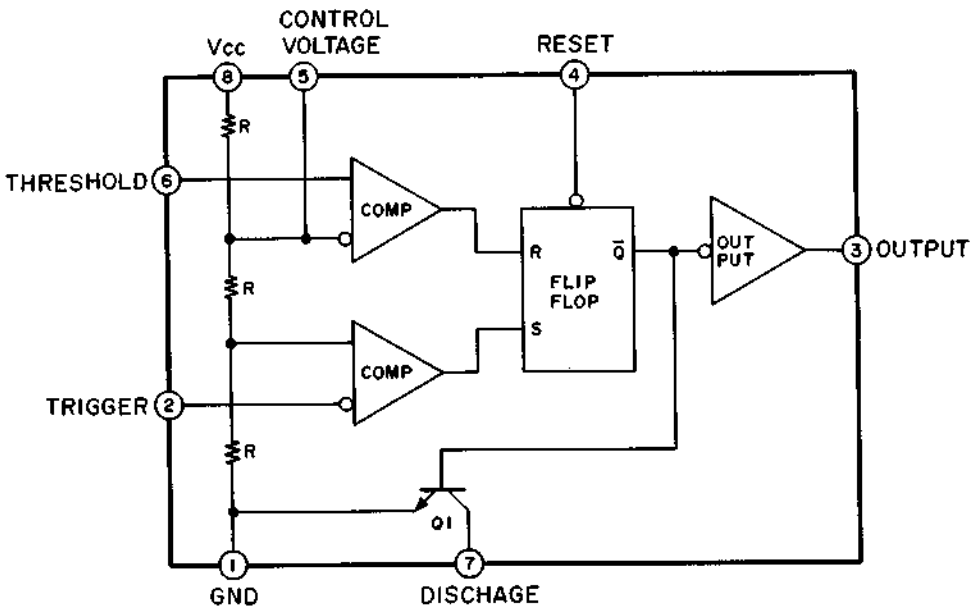
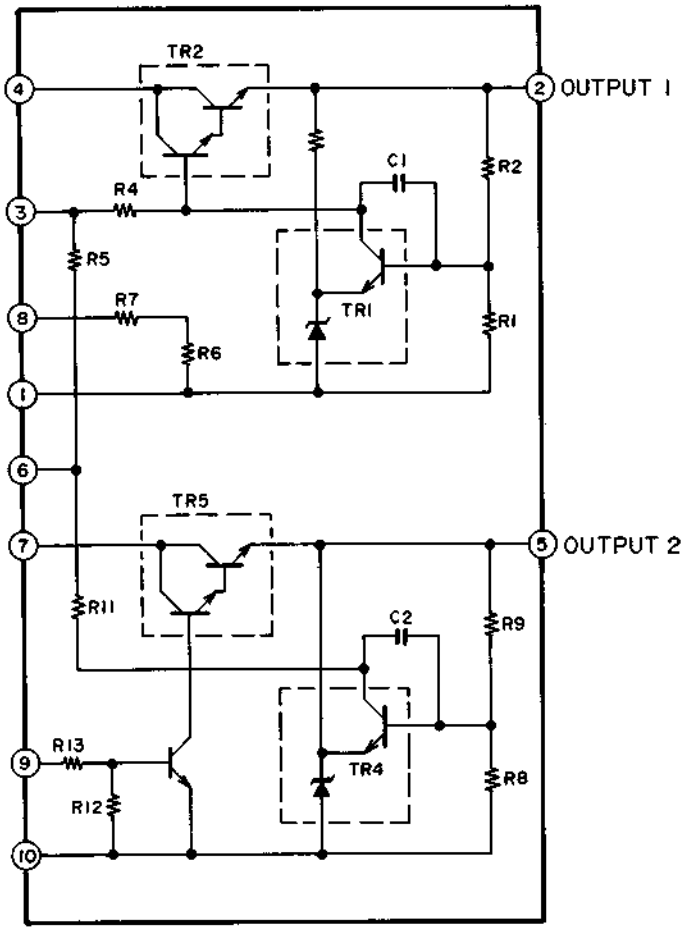
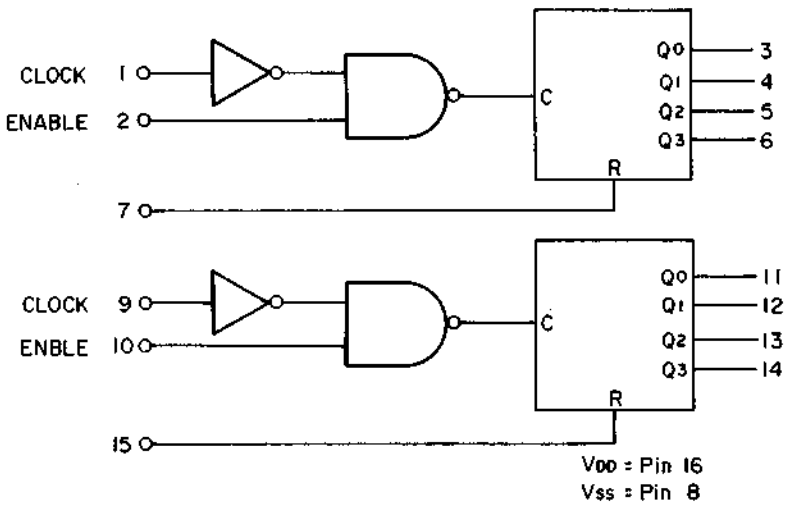


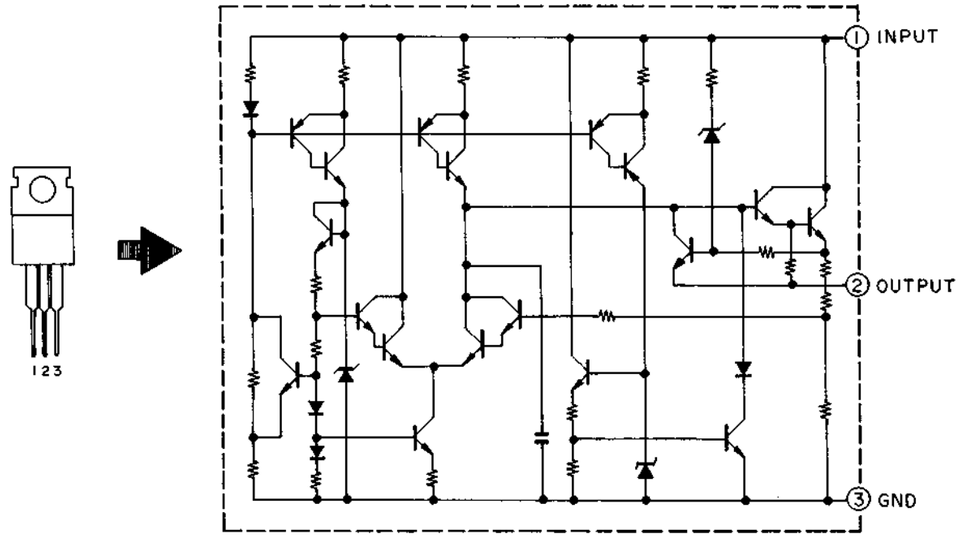
STK-5325



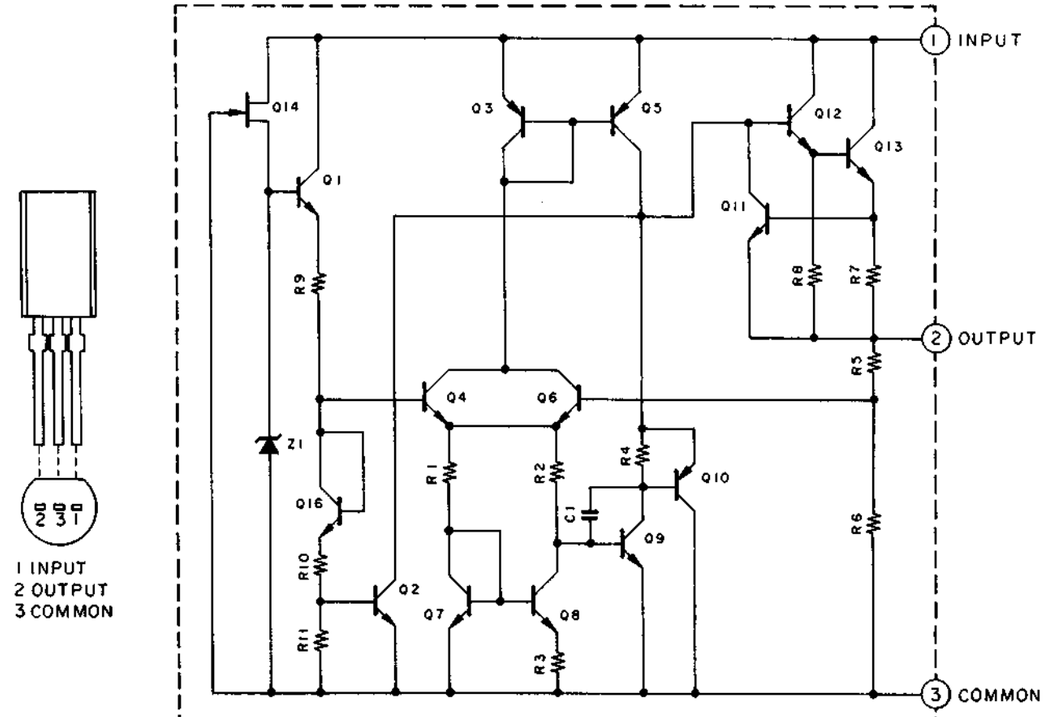
TC4520BP



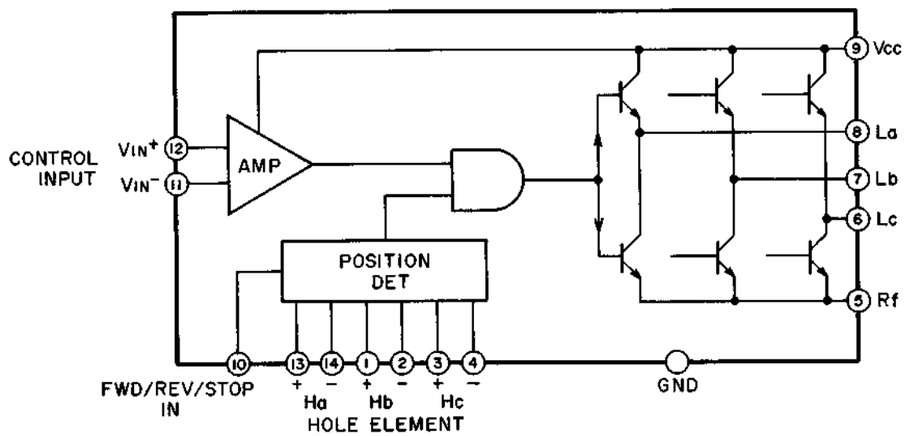
TA78005P



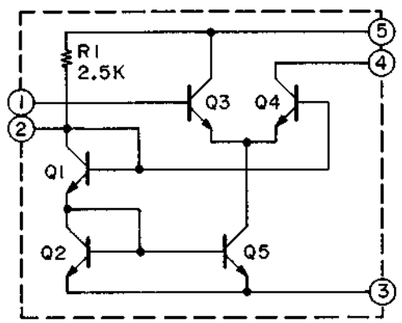
TA78L005AP



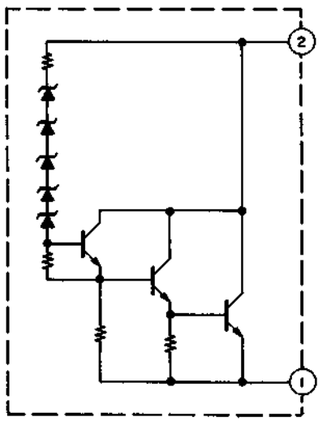
TA7245P



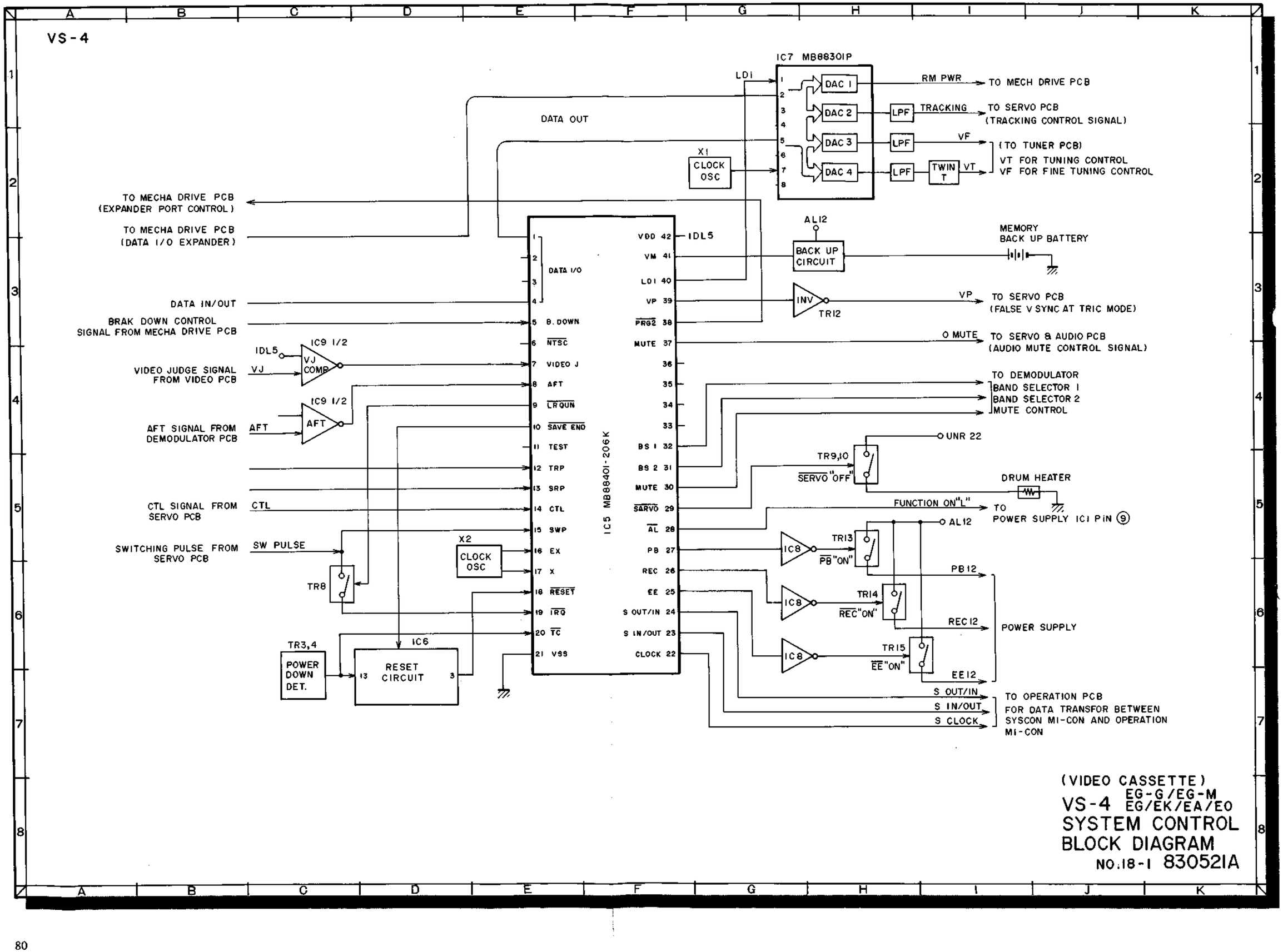
TA7060AP



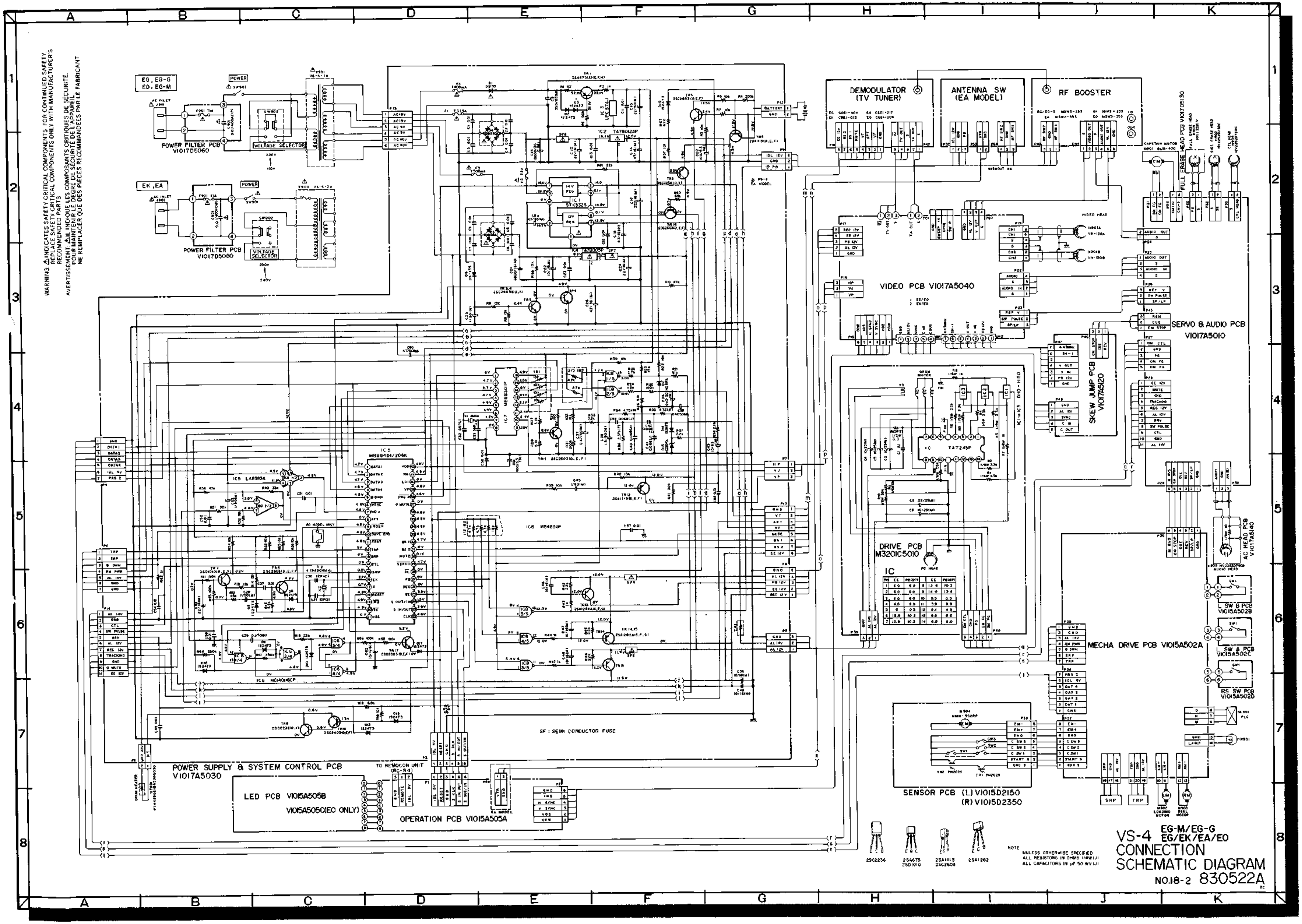
μPC574J



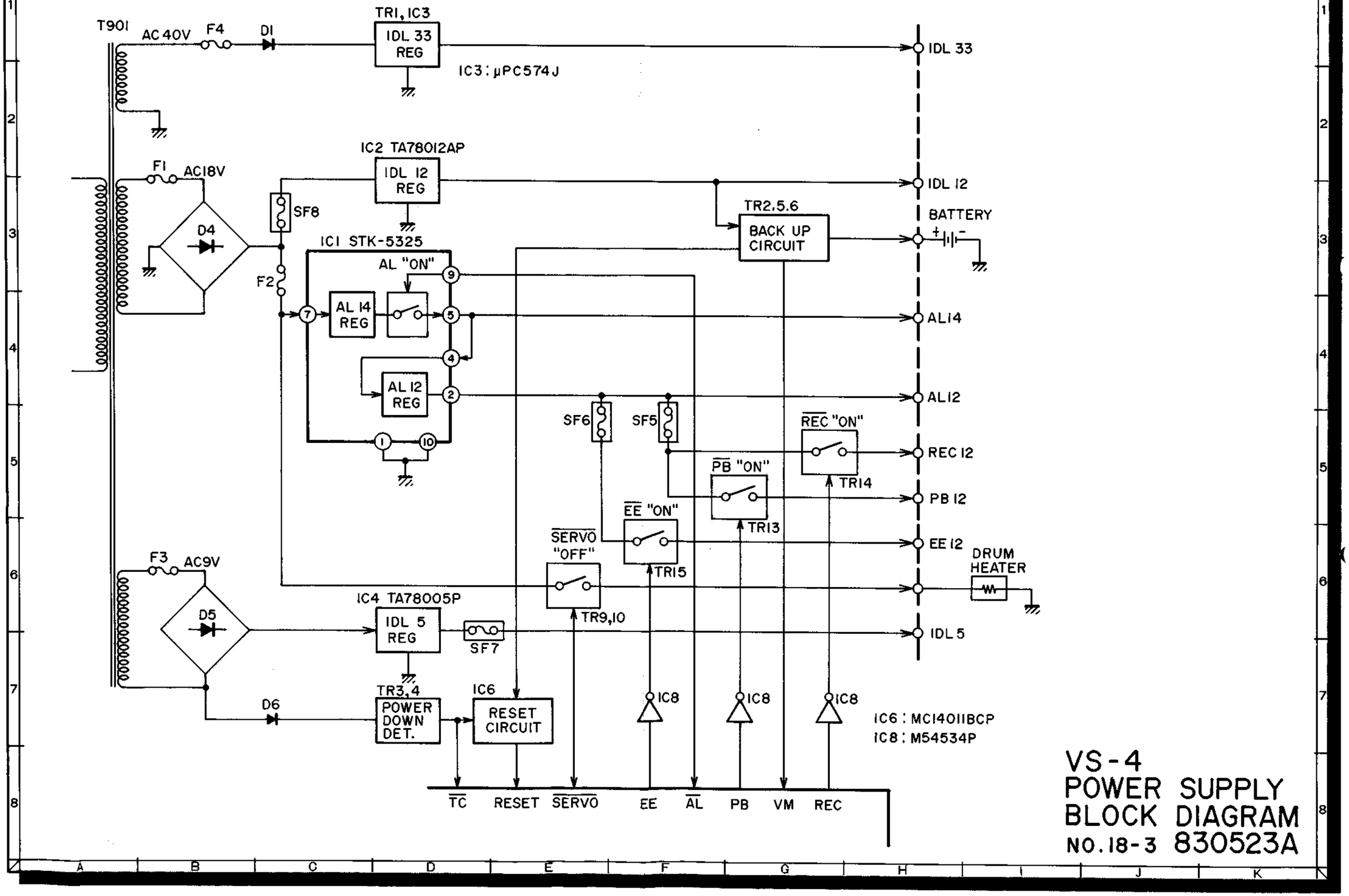
VS-4



(VIDEO CASSETTE)
EG-G/EG-M
VS-4 EG/EK/EA/EO
SYSTEM CONTROL
BLOCK DIAGRAM
NO.18-1 830521A

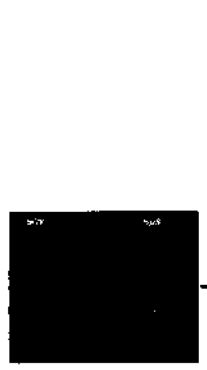

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT
EG, EG-G
EO, EG-M
EK, EA
POWER
POWER FILTER PCB
VI017D5060
VOLTAGE SELECTOR
DEMODULATOR
(TV TUNER)
ANTENNA SW
(EA MODEL)
RF BOOSTER
FULL ERASE HEAD PCB VI017D5130
VIDEO PCB VI017A5040
SERVO & AUDIO PCB
VI017A5010
SKEW JUMP PCB
VI017A5120
DRIVE PCB
M3201C5010
MECHA DRIVE PCB VI015A502A
L SW B PCB
VI015A502B
L SW A PCB
VI015A502C
RS SW PCB
VI015A502D
AC HEAD PCB
VI017A5140
SENSOR PCB (L) VI015D2150
(R) VI015D2350
POWER SUPPLY & SYSTEM CONTROL PCB
VI017A5030
LED PCB VI015A505B
VI015A505C(EO ONLY)
OPERATION PCB VI015A505A
TO REMOCON UNIT
(RC-R4)
SF = SEMI CONDUCTOR FUSE
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)
VS-4 EG-M/EG-G
EG/EK/EA/EO
CONNECTION
SCHEMATIC DIAGRAM
NO.18-2 830522A

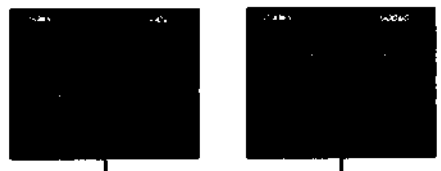
VS-4

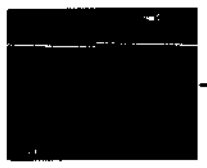


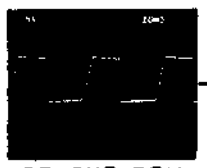
VS-4 POWER SUPPLY BLOCK DIAGRAM NO. 18-3 830523A

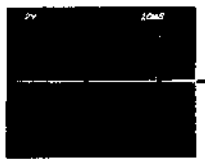
VS-4

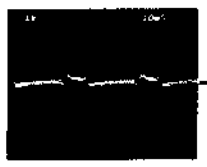


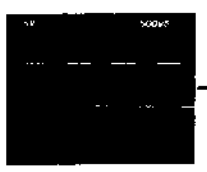


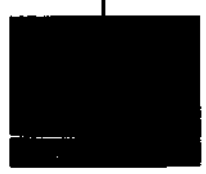


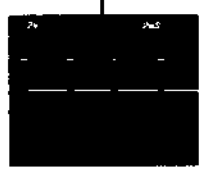


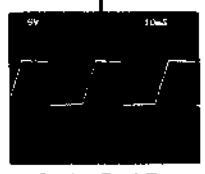


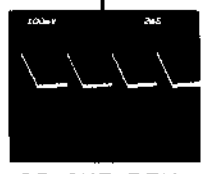






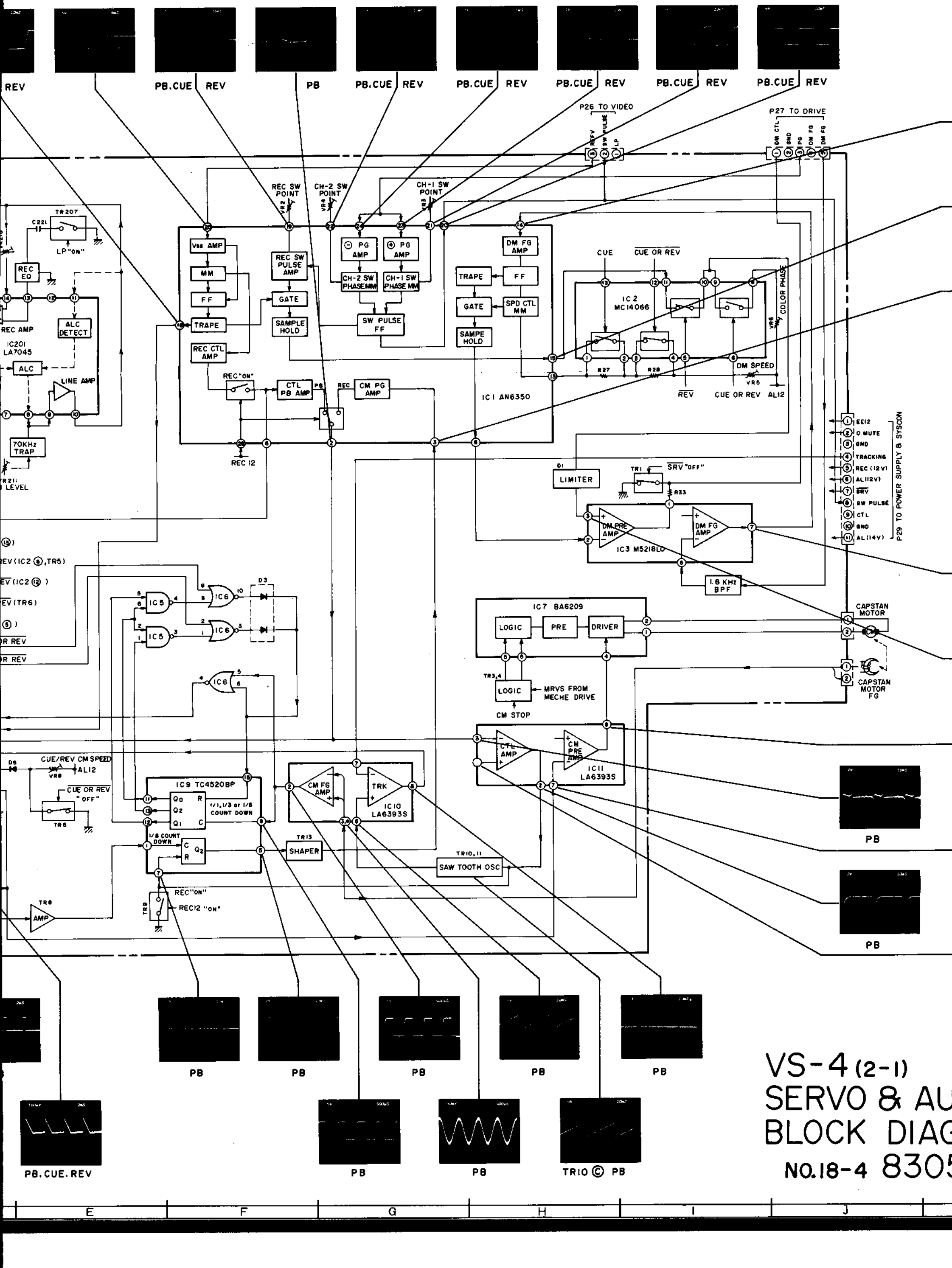




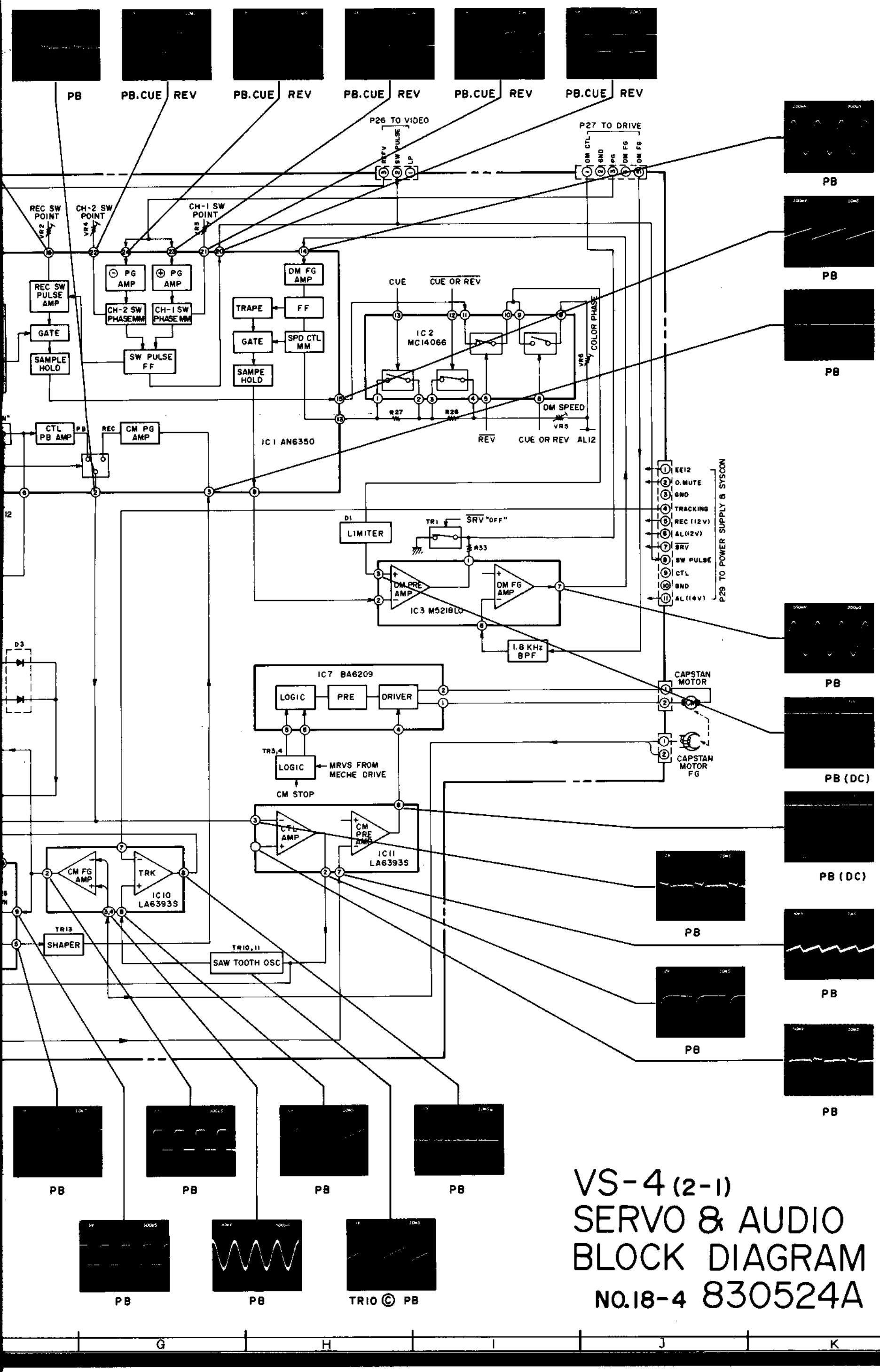


NOTE

1. (DC) INDICATES THE WAVEFORM OBSERVED AT DC RANGE
2. THE LINE ON THE PHOTOGRAPH SHOWN BELOW INDICATES DC 0V LINE



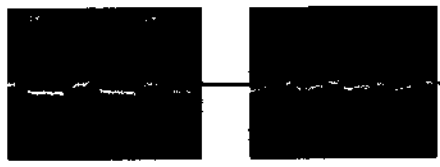
VS-4 (2-1)
SERVO & AU
BLOCK DIAG
NO.18-4 830



VS-4 (2-1) SERVO & AUDIO BLOCK DIAGRAM NO.18-4 830524A

VS-4

(CUE/REV MODE)



CUE.REV.(LP)

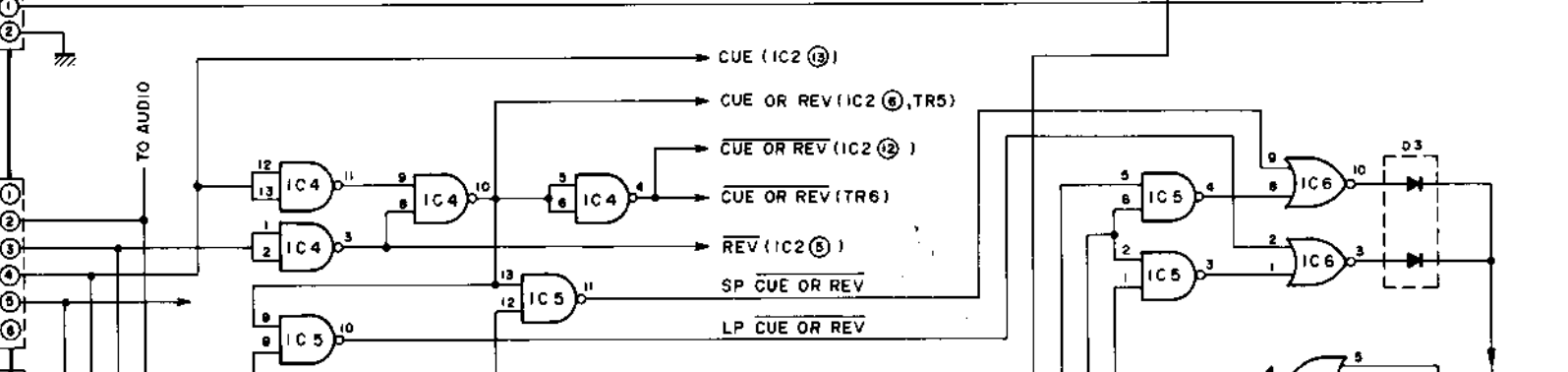
CUE.REV.(SP)

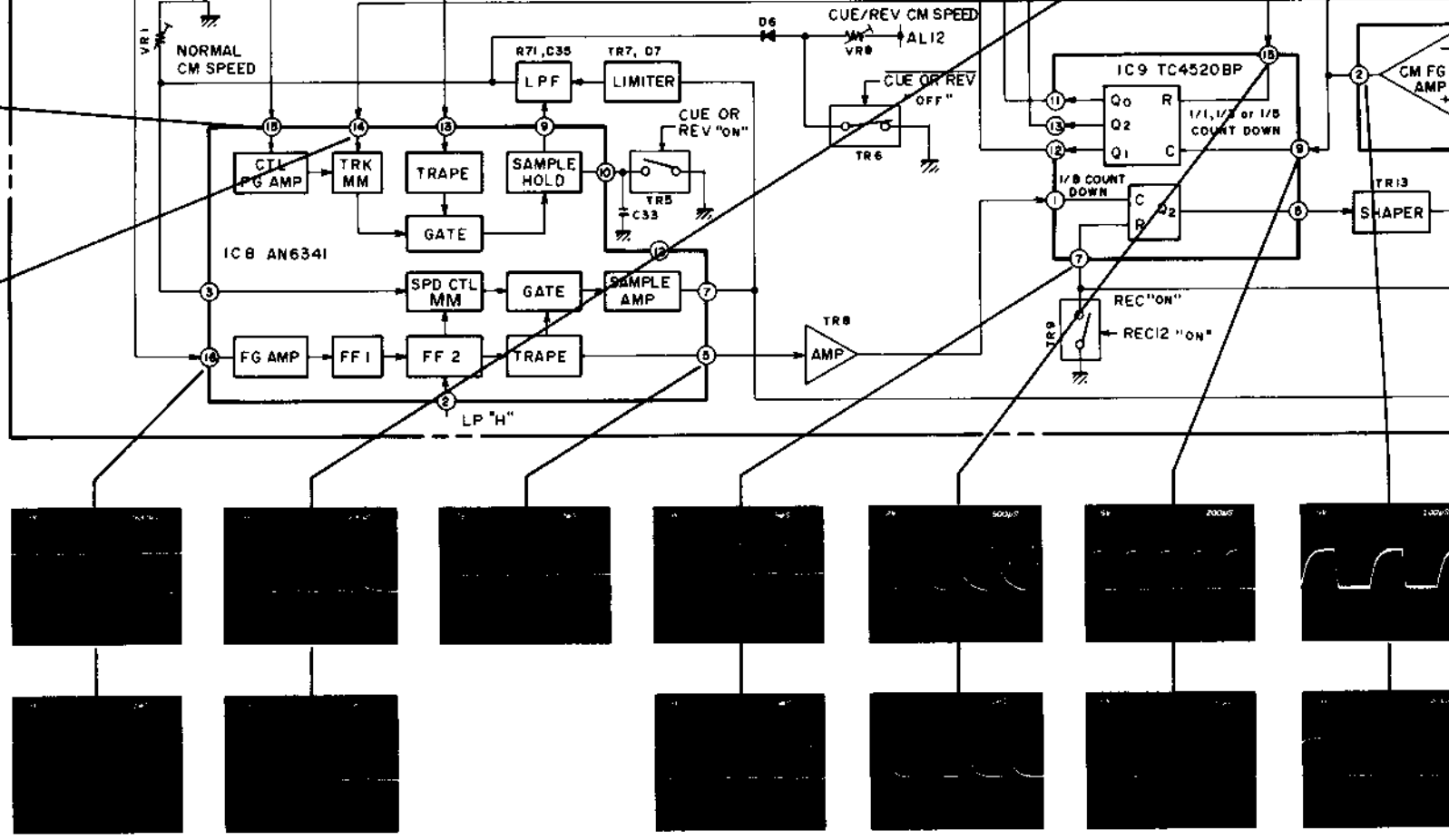
CUE.REV

CUE.REV.(LP)

CUE.REV.(SP)

CUE.REV.(LP)(DC)





CUE.REV.(SP)

CUE.REV.(LP)

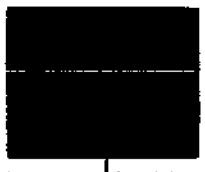
NOTE

1. (DC) INDICATES THE WAVEFORM OBSERVED AT DC RANGE
2. THE LINE ON THE PHOTOGRAPH SHOWN RIGHT SIDE INDICATES DC 0V LINE

CUE. REV. (LP)

CUE. REV. (SP)

CUE. REV (SP)(DC)



CUE. REV (SP)(DC)

P26 TO VIDEO

REFV
SW PULSE
LP

P27 TO DRIVE

DM CTL
GND
FG
DM FG
DM FG

REC SW POINT VR2
CH-2 SW POINT VR4
CH-1 SW POINT VR3

Vss AMP
MM
FF
TRAPE
REC CTL AMP
REC SW PULSE AMP
GATE
SAMPLE HOLD
⊖ PG AMP
⊕ PG AMP
CH-2 SW PHASE MM
CH-1 SW PHASE MM
SW PULSE FF
DM FG AMP
TRAPE
FF
GATE
SPD CTL MM
SAMPE HOLD
IC1 AN6350

CUE
CUE OR REV
IC2 MC14066
R27
R28
REV
CUE OR REV
ALI2
DM SPEED VR5
COLOR PHASE VR6

D1 LIMITER
TR1
SRV "OFF"
R33
DM PRE AMP
DM FG AMP
IC3 M5218LO
1.8 KHz BPF

TR210
REC 12 "ON"
REC LEVEL VR210
C221
TR207
LP "ON"
REC EQ
EE "L" THER "H"
O. MUTE
MUTE CTL
REC AMP
ALC DETECT
IC201 LA7045
ALC
LINE AMP
REC 12V
15.625 KHz TRAP
70KHz TRAP
VR211 PB LEVEL
TR205
LP "OFF"

REC "ON"
CTL PB AMP
PB
REC
CM PG AMP
REC 12

IC7 BA6209
LOGIC
PRE
DRIVER
TR3,4
LOGIC
MRVS FROM MECHE DRIVE
CM STOP
CTL AMP
CM PRE AMP
IC11 LA6393S

CUE (IC2 ⑬)
CUE OR REV (IC2 ⑥, TR5)
CUE OR REV (IC2 ⑫)
CUE OR REV (TR6)
REV (IC2 ⑤)
SP CUE OR REV
LP CUE OR REV

IC5
IC6
D3

CUE/REV CM SPEED
D6
VR8
ALI2
TR7, D7
LIMITER
CUE OR REV "ON"
CUE OR REV "OFF"
TR5
C33
TR6

IC9 TC4520BP
1/1, 1/2 or 1/5 COUNT DOWN
1/8 COUNT DOWN
CM FG AMP
TRK
IC10 LA6393S
TR13
SHAPER
TR10, 11
SAW TOOTH OSC
SAMPLE AMP
TR8
AMP
TR9
REC "ON"
REC12 "ON"

(TRIO ⓒ)
(DC)
(TRIO ⓒ)
(DC)

VS-4
SERVO
BLOCK

NO.18-

D E F G H I J

CUE.REV (SP)(DC)

CUE.REV (SP)(DC)

P26 TO VIDEO

REFV

SW PULSE

LP

P27 TO DRIVE

DM CTL

GND

PG

DM FG

DM FG

REC SW POINT VR2

CH-2 SW POINT VR4

CH-1 SW POINT VR3

⊖ PG AMP

⊕ PG AMP

DM FG AMP

REC SW PULSE AMP

CH-2 SW PHASE MM

CH-1 SW PHASE MM

TRAPE

FF

GATE

SPD CTL MM

SAMPLE HOLD

SW PULSE FF

GATE

SAMPE HOLD

CUE

CUE OR REV

IC 2 MC14066

COLOR PHASE VR6

R27

R28

REV

CUE OR REV

AL12

DM SPEED VR5

CTL PB AMP

PB

REC

CM PG AMP

IC1 AN6350

D1 LIMITER

TR1 SRV "OFF"

R33

DM PRE AMP

DM FG AMP

IC3 M5218LO

1.8 KHz BPF

P29 TO POWER SUPPLY & SYSCON

1 EE12

2 O.MUTE

3 GND

4 TRACKING

5 REC (12V)

6 AL(12V)

7 SRV

8 SW PULSE

9 CTL

10 GND

11 AL(14V)

IC7 BA6209

LOGIC

PRE

DRIVER

CAPSTAN MOTOR

CAPSTAN MOTOR FG

TR3,4

LOGIC

MRVS FROM MECHE DRIVE

CM STOP

CTL AMP

CM PRE AMP

IC11 LA6393S

CM FG AMP

TRK

IC10 LA6393S

TR13 SHAPER

TR10,11 SAW TOOTH OSC

CUE. (SP)

REV. (SP)

CUE. (SP)

REV. (SP)

CUE. REV. (SP)

CUE. REV. (LP)

CUE. REV. (SP) (DC)

CUE. REV. (SP) (DC)

CUE. REV. (SP)

CUE. REV. (LP)

CUE. REV. (SP)

CUE. REV. (LP)

(TRIO©)

(DC)

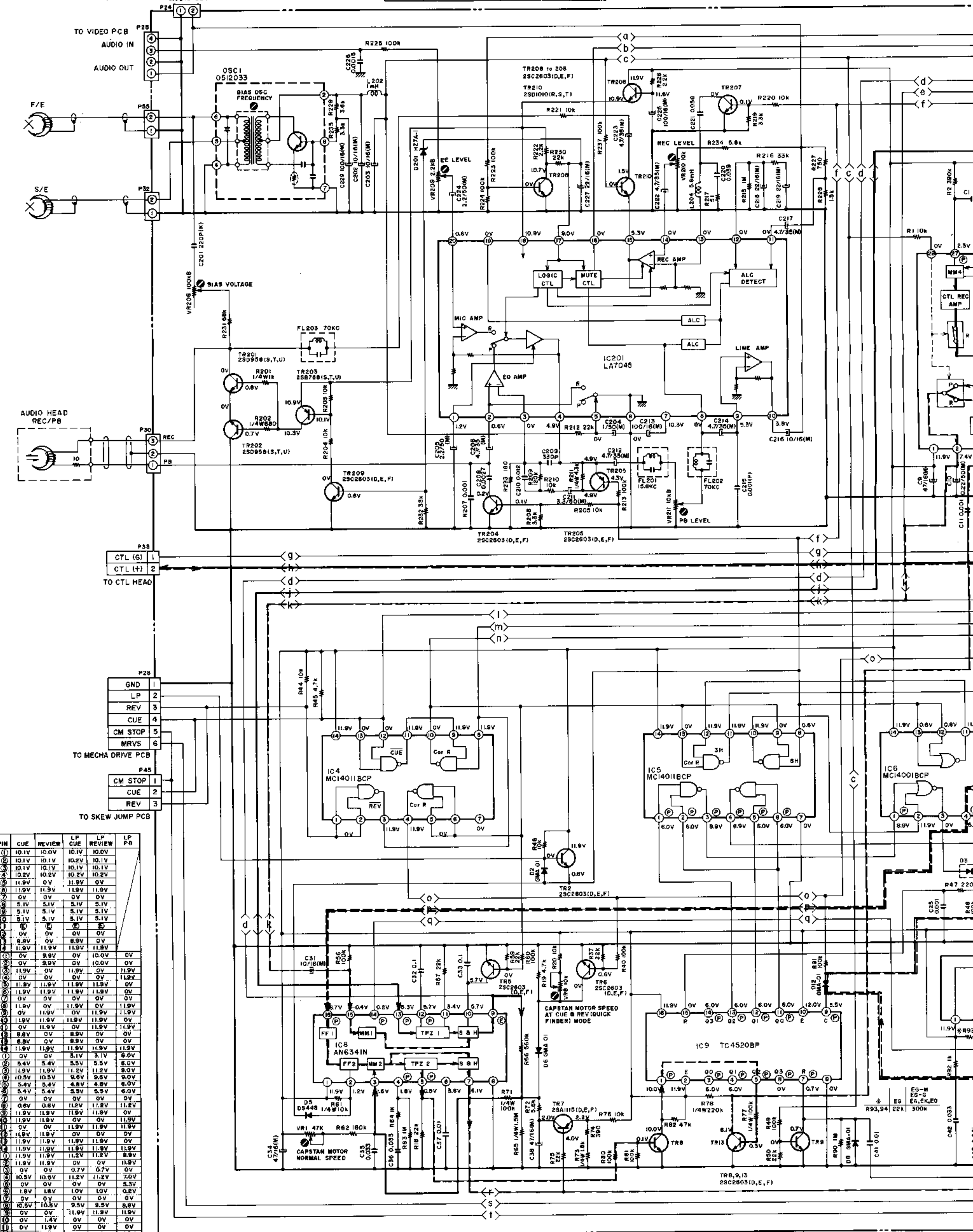
(TRIO©)

(DC)

VS-4 (2-2)
SERVO & AUDIO BLOCK DIAGRAM
NO.18-4 830524A

F G H I J K

		DRUM MOTOR		CAPSTAN MOTOR	
		Ref	Comp	Ref	Comp
PHASE CONT.	REC	SYNC SEP V	DRUM PG	SYNC SEP V	C/D SP:1/32 LP:1/16 FG
	PB	X-TAL V	DRUM PG	NORMAL: X-TAL C/R: DC	CTL
SPEED CONT.					



IC	PIN	CUE	REVIEW	LP CUE	LP REVIEW	LP PB
IC2	1	10.1V	10.0V	10.1V	10.0V	
	2	10.1V	10.1V	10.2V	10.1V	
	3	10.1V	10.1V	10.1V	10.1V	
	4	10.2V	10.2V	10.2V	10.2V	
	5	11.9V	0V	11.9V	0V	
	6	11.9V	11.9V	11.9V	11.9V	
	7	0V	0V	0V	0V	
	8	5.1V	5.1V	5.1V	5.1V	
	9	5.1V	5.1V	5.1V	5.1V	
	10	5.1V	5.1V	5.1V	5.1V	
	11	Ⓔ	Ⓔ	Ⓔ	Ⓔ	
	12	0V	0V	0V	0V	
	13	8.8V	0V	8.9V	0V	
	14	11.9V	11.9V	11.9V	11.9V	
IC4	1	0V	9.9V	0V	10.0V	0V
	2	0V	9.9V	0V	10.0V	0V
	3	11.9V	0V	11.9V	0V	11.9V
	4	0V	0V	0V	0V	11.9V
	5	11.9V	11.9V	11.9V	11.9V	0V
	6	11.9V	11.9V	11.9V	11.9V	0V
	7	0V	0V	0V	0V	0V
	8	11.9V	0V	11.9V	0V	11.9V
	9	0V	11.9V	0V	11.9V	11.9V
	10	11.9V	11.9V	11.9V	11.9V	0V
	11	0V	11.9V	0V	11.9V	11.9V
	12	8.8V	0V	8.9V	0V	0V
	13	8.8V	0V	8.9V	0V	0V
	14	11.9V	11.9V	11.9V	11.9V	11.9V
IC5	1	0V	0V	3.1V	3.1V	6.0V
	2	5.4V	5.4V	5.5V	5.5V	6.0V
	3	11.9V	11.9V	11.2V	11.2V	9.0V
	4	10.5V	10.5V	9.6V	9.6V	9.0V
	5	5.4V	5.4V	4.8V	4.8V	6.0V
	6	5.4V	5.4V	5.5V	5.5V	6.0V
	7	0V	0V	0V	0V	0V
	8	0.6V	0.6V	11.2V	11.2V	11.2V
	9	11.9V	11.9V	11.9V	11.9V	0V
	10	11.9V	11.9V	0V	0V	11.9V
	11	0V	0V	11.9V	11.9V	11.9V
	12	11.9V	11.9V	0V	0V	0V
	13	11.9V	11.9V	11.9V	11.9V	0V
	14	11.9V	11.9V	11.9V	11.9V	11.9V
IC6	1	11.9V	11.9V	11.2V	11.2V	8.9V
	2	11.9V	11.9V	0V	0V	11.9V
	3	0V	0V	0.7V	0.7V	0V
	4	10.5V	10.5V	11.2V	11.2V	7.0V
	5	0V	0V	0V	0V	5.3V
	6	1.8V	1.8V	1.0V	1.0V	0.2V
	7	0V	0V	0V	0V	0V
	8	10.5V	10.5V	9.5V	9.5V	8.8V
	9	0V	0V	11.9V	11.9V	11.9V
	10	0V	1.4V	0V	0V	0V
	11	0V	11.9V	0V	0V	0V
	12	0.6V	0.6V	11.2V	11.2V	11.2V
	13	0.6V	0.6V	11.2V	11.2V	11.2V
	14	11.9V	11.9V	11.9V	11.9V	11.9V

SERVO/AUDIO PCB V1017B5010

A	B	C	D	E	F

TP1: 8 GND, 7 CM SPEED, 6 CTL, 5 DM SPEED, 4 COLOR PHASE, 3 SW PULSE, 2 REFV, 1 DPG

P26: 1 LP, 2 SW PULSE, 3 REFV — TO VIDEO PCB

P27: 1 DM CTL, 2 GND, 3 PG, 4 DM FG, 5 DM FG — TO DRIVE PCB

P29: 1 EI, 2 O, 3 G, 4 T, 5 R, 6 A, 7, 8, 9, 10, 11 — TO 8

P33: 1 CM FG, 2 CM FG — TO CAPSTAN MOTOR

IC1 AN6350

IC2 MC14066BCP

IC3 M5218LO

IC5 MC14011BCP

IC6 MC14001BCP

IC7 BA6209

IC9 TC4520BP

IC10 LA6393S

IC11 LA6393S

TR		CUE	REVIEW	LP CUE	LP REVIEW	LP PB
TR2	B	0V	0V	11.9V	11.9V	11.9V
	C	11.9V	11.9V	11.9V	11.9V	11.9V
	E	0.6V	0.6V	11.2V	11.2V	11.2V
TR3	B	10.6V	11.9V	10.6V	11.9V	10.6V
	C	11.2V	0V	11.2V	0V	11.2V
	E	11.3V	11.7V	11.3V	11.8V	11.3V
TR4	B	0.7V	0V	0.7V	0V	0.7V
	C	0.1V	9.5V	0.1V	9.5V	0.1V
	E	0V	0V	0V	0V	0V

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPO
REPLACE SAFETY CRITICAL COMPONE
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS
POUR MAINTENIR LE DEGRÉ DE SÉCUR
NE REMPLACER QUE DES PIECES REC

2SA1115 2SC2603 — E C B

2SD1010 — E C B

NOTE

UNLESS OTHERWISE SPECIF
ALL RESISTORS IN OHMS 1/
ALL CAPACITORS IN μF 50
(FS) = FAIL SAFE RESISTOR

VS-4 EG-G/ EG/EK
SERVO & A
SCHEMATIC
NO.18-5

TP1	
8	GND
7	CM SPEED
6	CTL
5	DM SPEED
4	COLOR PHASE
3	SW PULSE
2	REFV
1	DPG

P26	
1	LP
2	SW PULSE
3	REFV

TO VIDEO PCB

P27	
1	DM CTL
2	GND
3	PG
4	DM FG
5	DM FG

TO DRIVE PCB

P29	
1	EE 12
2	O. MUTE
3	GND
4	TRACKING
5	REC (12V)
6	AL (12V)
7	$\overline{SRV}$
8	SW PULSE
9	CTL
10	GND
11	AL (14V)

TO POWER SUPPLY & SYSCON PCB

P56	
1	CM (+)
2	CM (−)

TO CAPSTAN MOTOR

P51	
1	CM FG
2	CM FG

TO CAPSTAN MOTOR

TR		CUE	REVIEW	LP CUE	LP REVIEW	LP PB
TR2	B	0V	0V	11.8V	11.8V	11.8V
	C	11.9V	11.9V	11.9V	11.9V	11.9V
	E	0.6V	0.6V	11.2V	11.2V	11.2V
TR3	B	10.6V	11.9V	10.6V	11.9V	10.6V
	C	11.2V	0V	11.2V	0V	11.2V
	E	11.3V	11.7V	11.3V	11.8V	11.3V
TR4	B	0.7V	0V	0.7V	0V	0.7V
	C	0.1V	9.5V	0.1V	9.5V	0.1V
	E	0V	0V	0V	0V	0V

Ⓔ : ERROR OUT VOLTAGE
Ⓟ : PULSE
Ⓦ : WAVE FORM

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

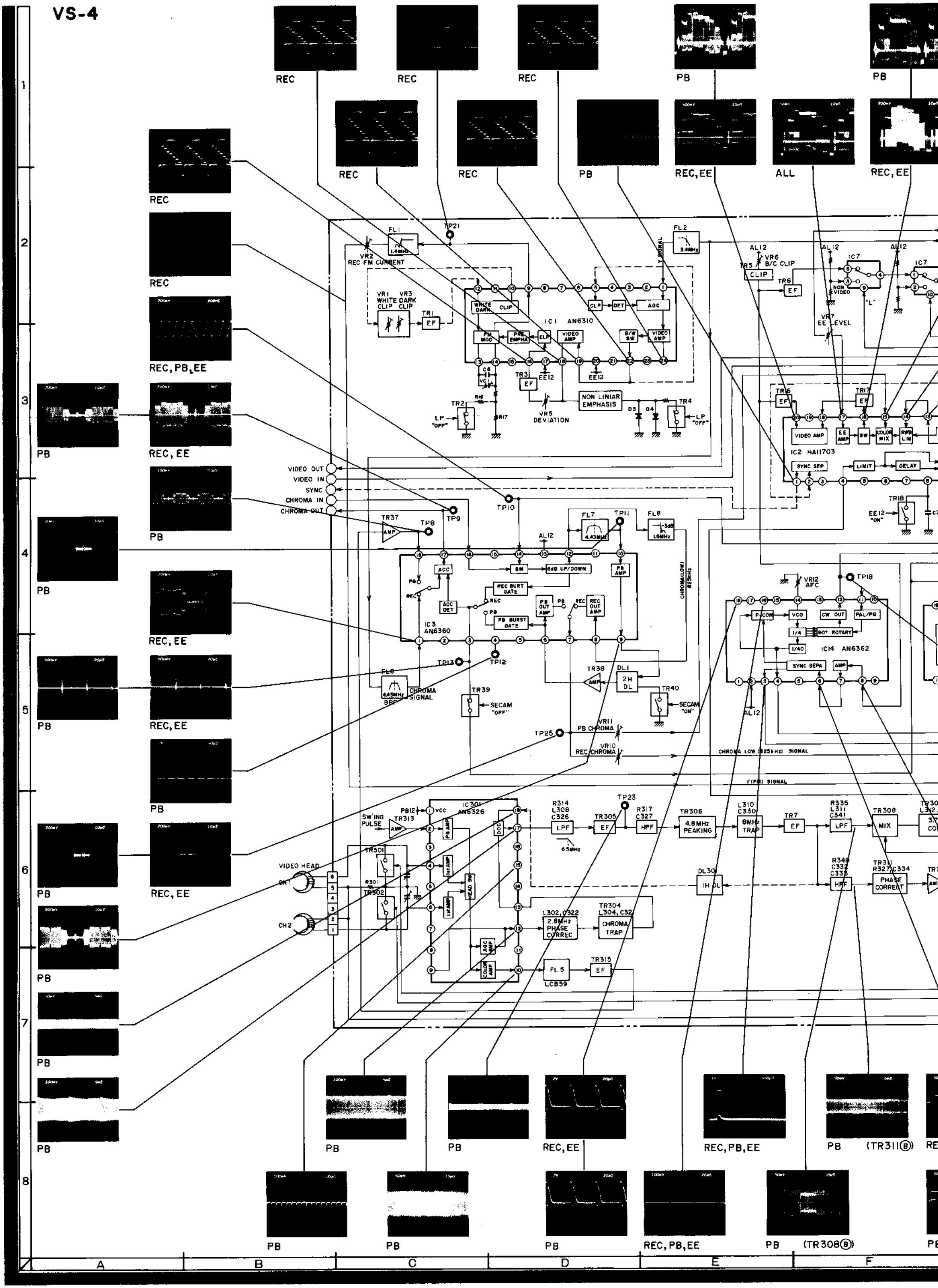
AVERTISSEMENT ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

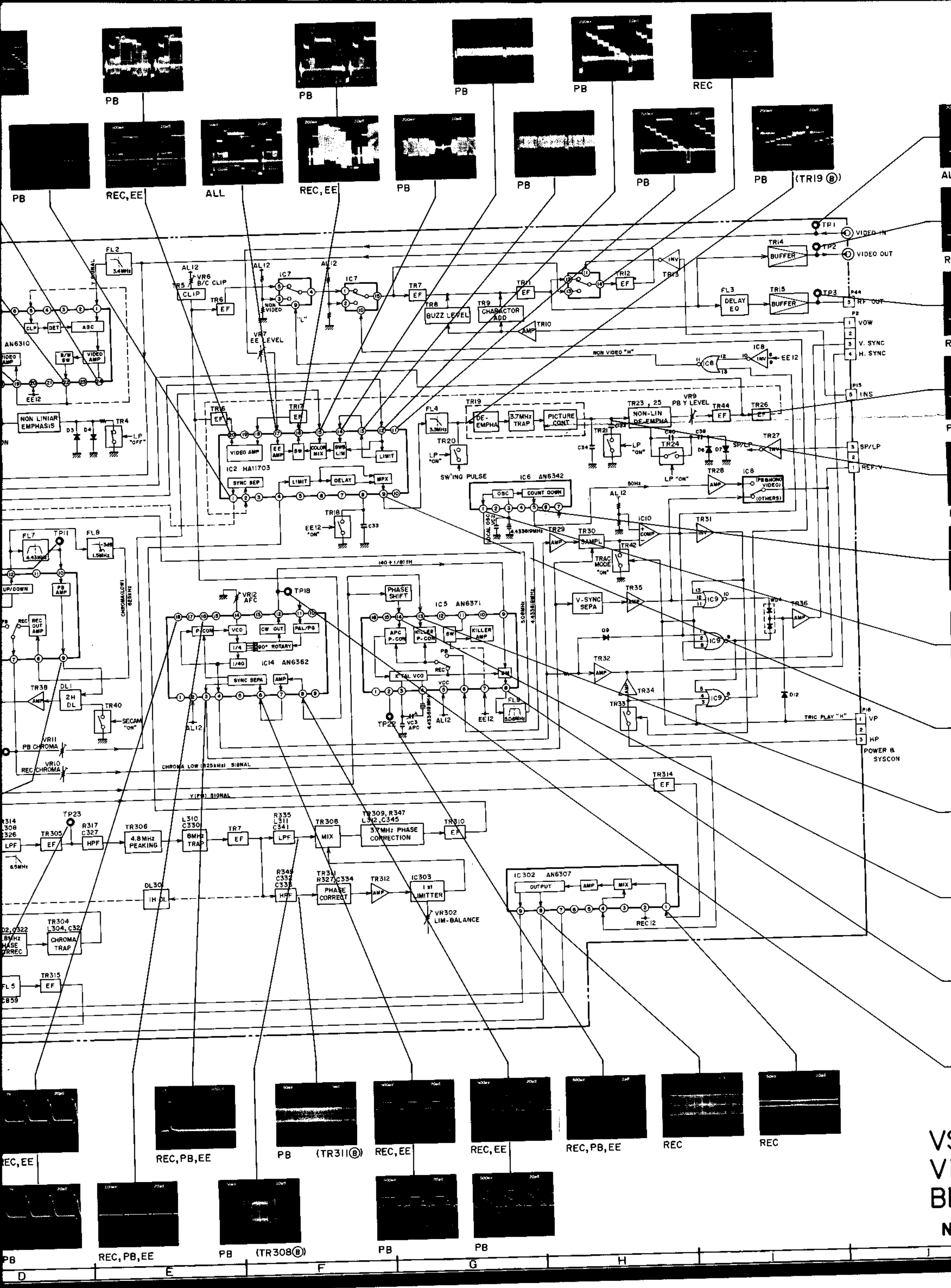
2SA1115
2SC2603
2SD1010
2SB788
2SD958

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) : FAIL SAFE RESISTORS

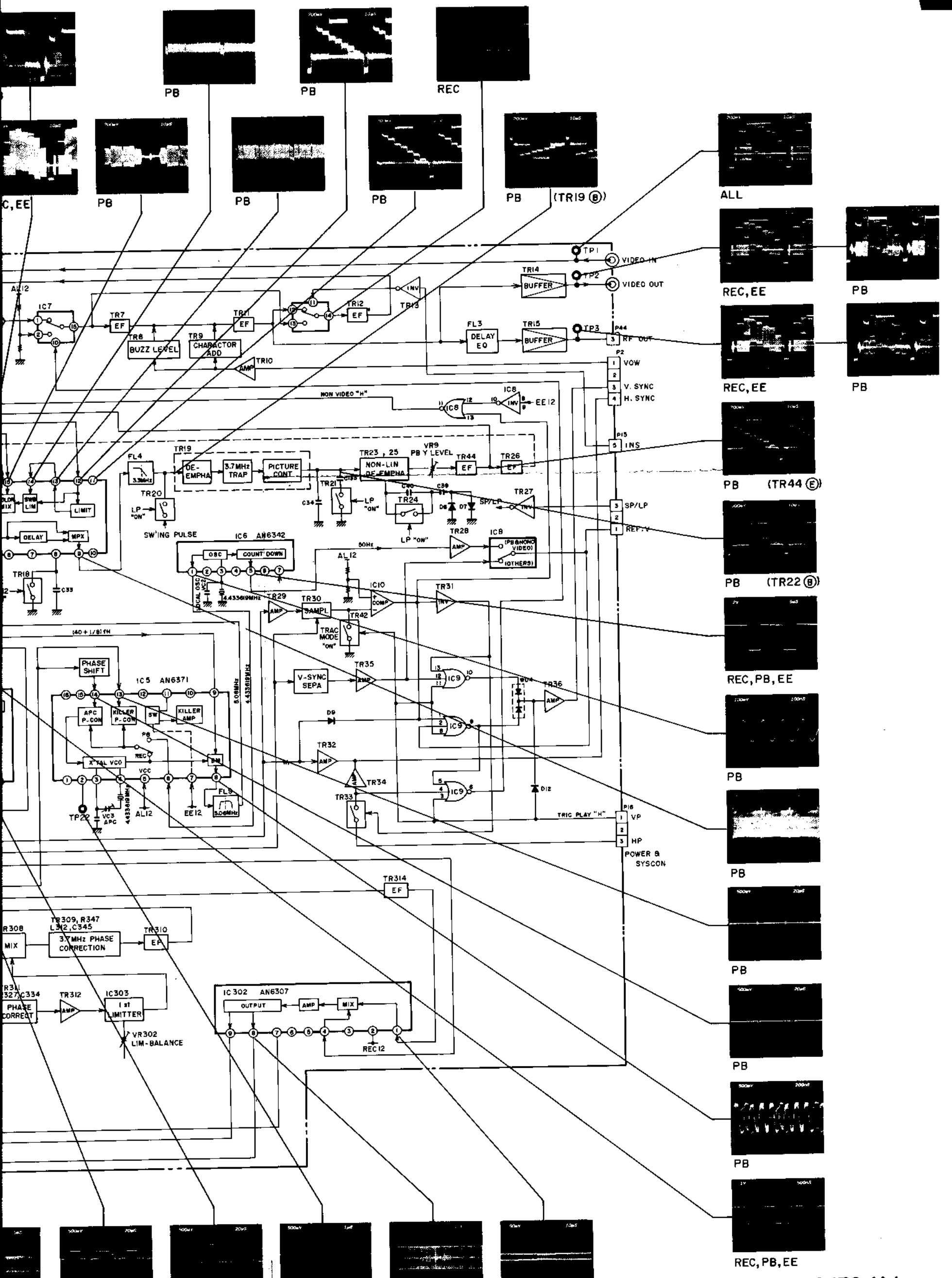
VS-4 EG-G/EG-M/EG/EK/EO/EA
SERVO & AUDIO SCHEMATIC DIAGRAM
NO.18-5 830525A

VS-4

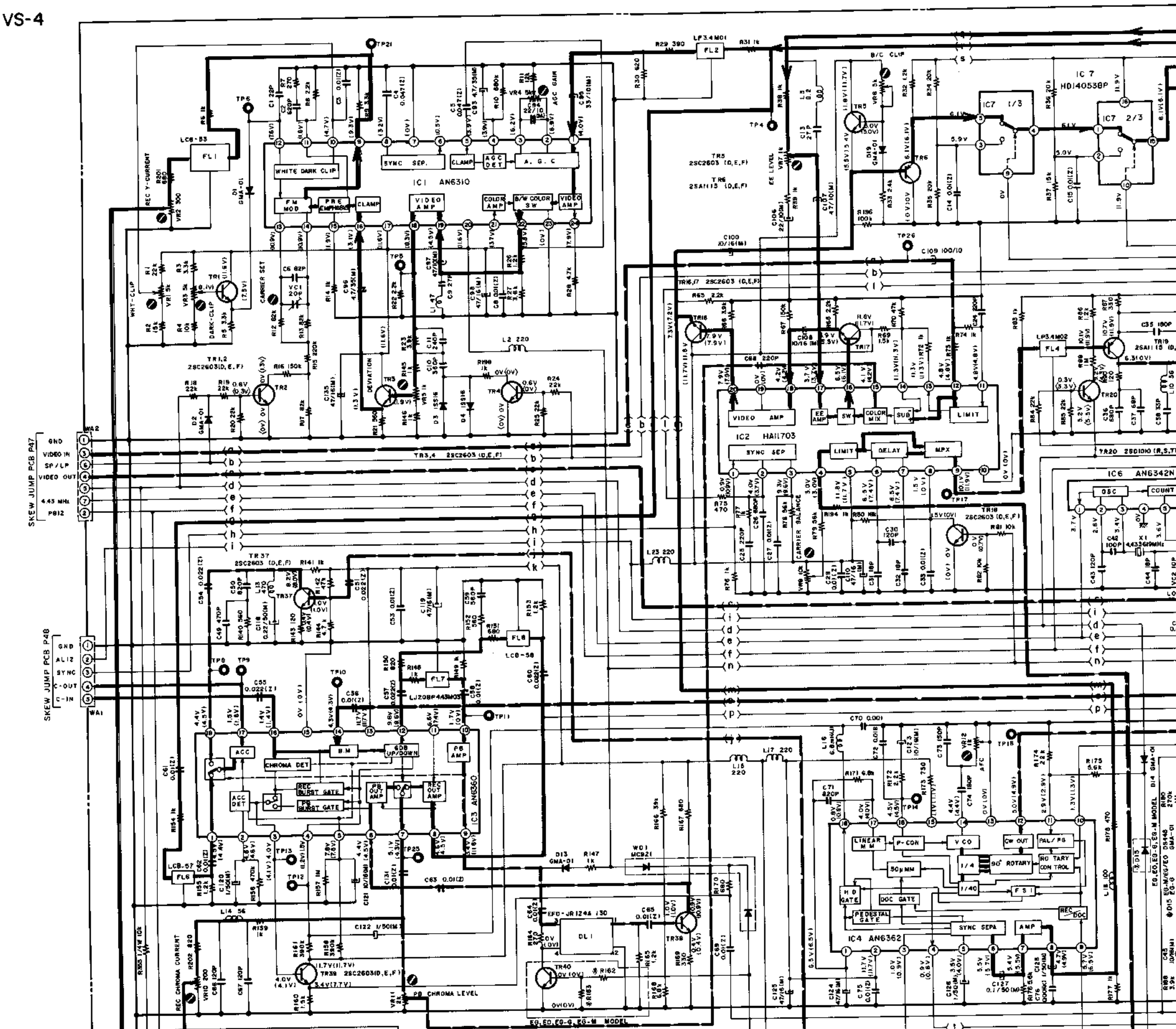

REC
REC
REC
PB
PB
REC
REC
PB
REC, EE
ALL
REC, EE
REC
REC
REC, PB, EE
PB
REC, EE
PB
REC, EE
PB
REC, EE
PB
REC, EE
PB
REC, EE
PB
PB
PB
PB
PB
PB
PB
PB
REC, PB, EE
PB
(TR311Ⓑ)
PB
PB
PB
REC, EE
REC, PB, EE
PB
(TR308Ⓑ)
VIDEO OUT
VIDEO IN
SYNC
CHROMA IN
CHROMA OUT
FL1
1.4MHz
VR2
REC FM CURRENT
TP21
VR1 WHITE CLIP
VR3 DARK CLIP
TR1
EF
IC1 AN6310
WHITE CLIP
DARK CLIP
CLP
DET
AGC
FM MOD
PRE EMPHA
CLP
VIDEO AMP
B/W SW
VIDEO AMP
C6
VC
TR3
EF
EE12
EE12
TR2
LP "OFF"
R17
VR5
DEVIATION
NON LINIAR EMPHASIS
D3
D4
TR4
LP "OFF"
FL2
3.4MHz
Y SIGNAL
AL12
VR6
B/C CLIP
TR5
CLIP
TR6
EF
AL12
IC7
NON VIDEO
"L"
VR7
EE LEVEL
AL12
IC7
TR16
EF
TR17
EF
VIDEO AMP
EE AMP
SW
COLOR MIX
SW& LIM
IC2 HA11703
SYNC SEP
LIMIT
DELAY
TR18
EE12 "ON"
TP10
TP9
TP8
TR37
AMP
TP11
FL7
4.43MHz
FL8
5.5MHz
AL12
ACC
8M
6dB UP/DOWN
PB AMP
REC BURST GATE
ACC DET
PB BURST GATE
PB OUT AMP
REC OUT AMP
IC3 AN6360
CHROMA LOW 625kHz
TP13
TP12
FL6
4.43MHz BPF
CHROMA SIGNAL
TR39
SECAM "OFF"
TR38
AMP
DL1
2H DL
TR40
SECAM "ON"
TP25
VR11
PB CHROMA
VR10
REC CHROMA
CHROMA LOW (625kHz) SIGNAL
Y (PB) SIGNAL
VR12
AFC
TP18
P.CON
VCO
CW OUT
PAL/PB
1/4
90° ROTARY
1/40
IC14 AN6362
SYNC SEPA
AMP
AL12
SW'ING PULSE
TR313
AMP
PB12
VCC
IC301 AN6326
PB AMP
DOC
R314
L308
C326
LPF
6.5MHz
TR305
EF
R317
C327
HPF
TR306
4.8MHz PEAKING
L310
C330
6MHz TRAP
TR7
EF
R335
L311
C341
LPF
TR308
MIX
TR309
VIDEO HEAD
CH1
CH2
TR301
TR302
R301
1st AMP
HEAD SW
AGC AMP
COLOR AMP
L302, C322
2.8MHz PHASE CORREC
TR304
L304, C324
CHROMA TRAP
FL5
LCB59
TR315
EF
DL301
1H DL
R349
C332
C333
HPF
TR310
R327, C334
PHASE CORRECT
TR311


PB
REC, EE
ALL
REC
PB (TR19 ⑧)
TP1
VIDEO IN
TP2
VIDEO OUT
TR14 BUFFER
TR15 BUFFER
TP3
FL3 DELAY EQ
RF OUT
VOW
V. SYNC
H. SYNC
INS
SP/LP
REF. V
FL2 3.4MHz
Y SIGNAL
AN6310
CLP
DET
AGC
VIDEO AMP
B/W SW
EE12
NON LINIAR EMPHASIS
D3
D4
TR4
LP "OFF"
AL12
VR6 B/C CLIP
TR5 CLIP
TR6 EF
IC7
NON VIDEO
VR7 EE LEVEL
"L"
TR7 EF
TR8 BUZZ LEVEL
TR9 CHARACTOR ADD
TR10 AMP
TR11 EF
TR12 EF
TR13 INV
NON VIDEO "H"
IC8
INV
EE 12
TR16 EF
TR17 EF
EE AMP
SW
COLOR MIX
SWB LIM
LIMIT
IC2 HA11703
SYNC SEP
DELAY
MPX
TR18
EE12 "ON"
C33
FL4 3.3MHz
TR19
DE-EMPHA
3.7MHz TRAP
PICTURE CONT
TR20
LP "ON"
SW'ING PULSE
TR23, 25 NON-LIN DE-EMPHA
VR9 PB Y LEVEL
TR44 EF
TR26 EF
TR21
C34
C133
C40
C39
TR24
LP "ON"
D6
D7
TR27 INV
IC6 AN6342
OSC
COUNT DOWN
LOCAL OSC
VC2
4.433619MHz
50Hz
TR28 AMP
IC8 (PB&MONO VIDEO) (OTHERS)
IC10 COMP
TR29 AMP
TR30 SAMPL
TR42
TRAC MODE "ON"
TR31 INV
V-SYNC SEPA
TR35 AMP
IC9
WD4
TR36 AMP
D9
TR32 AMP
TR34 AMP
TR33
D12
TRIC PLAY "H"
VP
HP
POWER & SYSCON
FL7 4.43MHz
TP11
FL8 -3dB 1.5MHz
UP/DOWN
PB AMP
REC OUT AMP
CHROMA(LOW) 625kHz
TR38 AMP
DL1 2H DL
TR40
SECAM "ON"
VR11 PB CHROMA
VR10 REC CHROMA
CHROMA LOW (625kHz) SIGNAL
Y(FM) SIGNAL
VR12 AFC
TP18
P-CON
VCO
CW OUT
PAL/PG
1/4
90° ROTARY
1/40
IC14 AN6362
SYNC SEPA
AMP
(40 + 1/8) fH
PHASE SHIFT
IC5 AN6371
APC P-CON
KILLER P-CON
KILLER AMP
X'TAL VCO
TP22
VC3 APC
VCC
5.06MHz
FL9 5.06MHz
TR314 EF
R314 L308 C326
LPF
6.5MHz
TP23
TR305 EF
R317 C327 HPF
TR306 4.8MHz PEAKING
L310 C330 6MHz TRAP
TR7 EF
R335 L311 C341 LPF
TR308 MIX
TR309, R347 L312, C345 3.7MHz PHASE CORRECTION
TR310 EF
R349 C332 C333 HPF
TR311 R327, C334 PHASE CORRECT
TR312 AMP
IC303 1st LIMITTER
VR302 LIM-BALANCE
DL301 1H DL
IC302 AN6307
OUTPUT
MIX
REC 12
TR304 L304, C321 CHROMA TRAP
4.8MHz PHASE CORREC
TR315 EF
FL5
C859
REC, PB, EE
PB (TR311 ⑧)
PB (TR308 ⑧)
D
E
F
G
H
I
J
VS
VI
BI
N

VS-4 EG-G/EG-M/ EG/EK/EA/EO VIDEO BLOCK DIAGRAM NO.18-6 830526A 2C

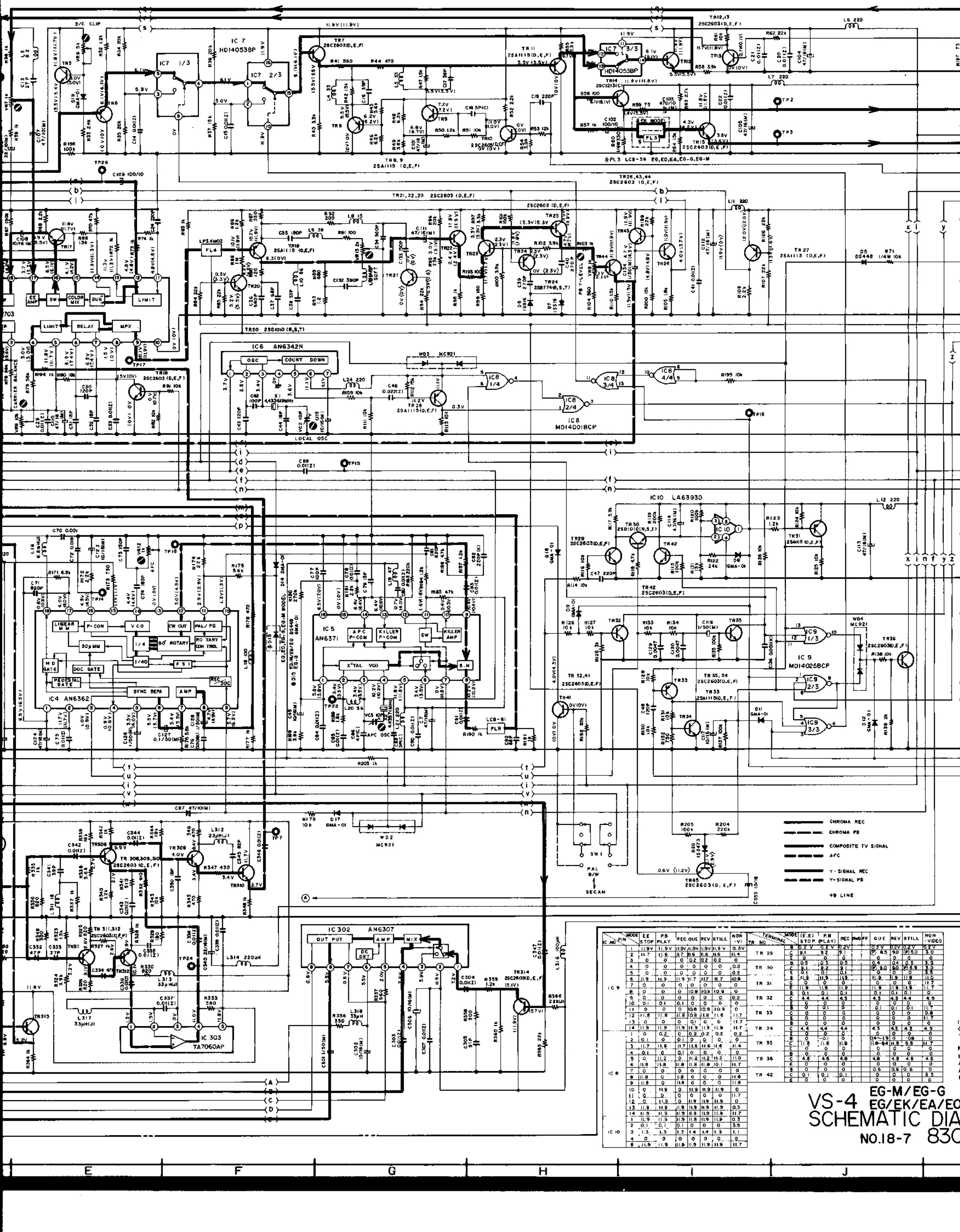


VS-4



VIDEO PCB VI017A5040

001373



IC NO	PIN	MODE	EE STOP	PB PLAY	REC QUE	REV	STILL	NON-VI
IC 9	1		11.9V	11.9V	11.9V	11.9V	11.9V	0.3V
	2		11.7	11.6	11.7	11.6	11.6	11.4
	3		0	0	0	0.2	0.2	0.2
	4		0	0	0	0	0	0
	5		0	0	0	0	0	0.2
	6		11.9	11.9	11.9	11.7	11.7	10.9
	7		0	0	0	0	0	0
	8		0	0	0	10.8	10.9	10.9
	9		0	0	0	0	0	0.2
	10		0.1	0.1	0.1	0	0	0
	11		0	0	0	10.8	10.9	10.9
	12		11.8	11.8	11.8	10.8	11.8	11.7
	13		0	0	0	0.1	0	0
	14		11.9	11.9	11.9	11.9	11.9	11.7
IC 8	1		0	0.2	0	0.2	0.2	0.2
	2		0.1	0	0.1	0	0	0
	3		11.7	11.6	11.7	11.6	11.6	11.4
	4		0.1	0	0.1	0	0	0
	5		0	11.2	0	11.2	11.2	11.0
	6		11.8	11.8	11.8	11.8	10.1	11.7
	7		0	0	0	0	0	0
	8		11.8	0	11.8	0	0	11.6
	9		11.8	0	11.8	0	0	11.8
	10		0	11.9	0	11.9	11.9	0
	11		0	0	0	0	0	11.7
	12		0	11.9	0	11.9	11.9	0
	13		11.9	11.9	11.9	11.9	11.9	0.3
	14		11.9	11.9	11.9	11.9	11.9	11.7
IC 10	1		11.9	11.9	11.9	11.8	11.9	11.9	0.3
	2		0.1	0.1	0.1	0	0	0	3.5
	3		1.3	1.3	1.3	1.4	1.4	1.3	1.1
	4		0	0	0	0	0	0	0
	5		11.9	11.9	11.9	11.9	11.9	11.8	11.7

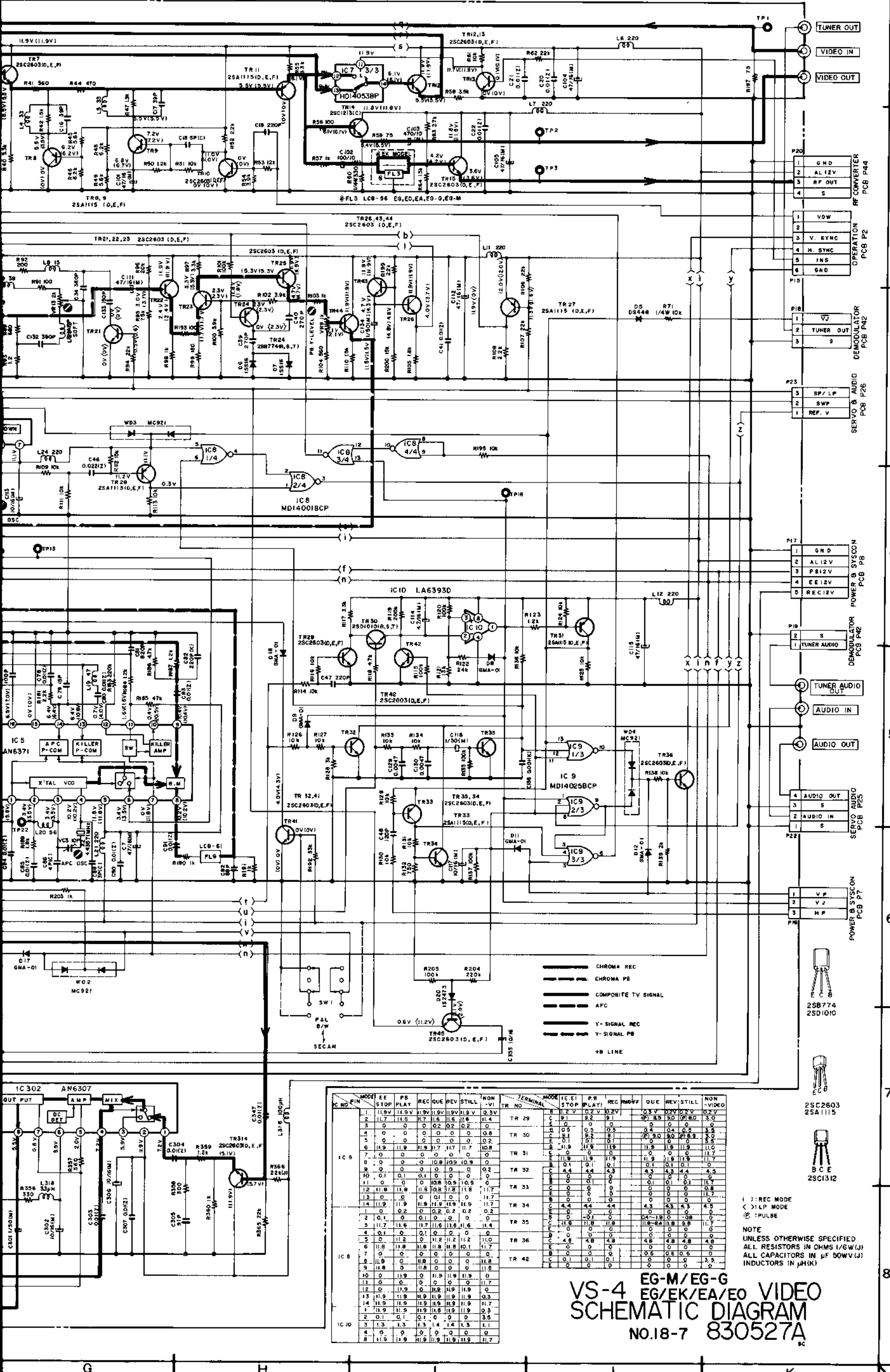
TR NO	MODE	(E,E) STOP	P.B (PLAY)	REC	PAUSE	QUE	REV	STILL	NON-VIDEO
TR 29	B	0.2 V	0.2 V	0.2V		0.5 V	0.2V	0.2 V	0.2 V
	C	9.1	9.2	9.1		(P) 8.5	9.0	(P) 8.0	3.0
	E	0	0	0		0	0	0	0
TR 30	B	0.9	0.5	0.5		0.4	0.4	0.5	3.5
	C	9.1	9.2	9.1		(P) 9.0	9.0	(P) 8.9	3.0
	E	0.1	0.1	0.1		0	0	0	3.5
TR 31	B	11.9	11.9	11.9		11.9	11.9	11.9	11.0
	C	0	0	0		0	0	0	11.7
	E	11.9	11.9	11.9		11.9	11.9	11.9	11.7
TR 32	B	0.1	0.1	0.1		0.1	0.1	0.1	0
	C	4.4	4.4	4.3		4.3	4.3	4.4	4.3
	E	0	0	0		0	0	0	0
TR 33	B	0	0.1	0		0.1	0.1	0.1	11.7
	C	0	0	0		0	0	0	0.8
	E	0	0	0		0	0	0	11.7
TR 34	B	0	0	0		0	0	0	0
	C	4.4	4.4	4.3		4.3	4.3	4.3	4.3
	E	0	0	0		0	0	0	0
TR 35	B	0	0	0		0.4~1.9	0	-0.6	0
	C	11.8	11.8	11.8		11.8~0.4	11.8	9.8	11.7
	E	0	0	0		0	0	0	0
TR 36	B	0	0	0		0	0	0	0
	C	4.8	4.8	4.8		4.8	4.8	4.8	4.8
	E	0	0	0		0	0	0	0
TR 42	B	0	0	0		0.6	0.6	0.6	0
	C	0.1	0	0.1		0	0	0	3.5
	E	0	0	0		0	0	0	0

EG-M/EG-G

VS-4 EG/EK/EA/EO

SCHEMATIC DIA

NO.18-7 830



IC NO	PIN \ MODE	EE STOP	PB PLAY	REC	QUE	REV	STILL	NON-VI
IC 9	1	11.9V	11.9V	11.9V	11.9V	11.9V	11.9 V	0.3V
	2	11.7	11.6	11.7	11.6	11.6	11.6	11.4
	3	0	0	0	0.2	0.2	0.2	0
	4	0	0	0	0	0	0	0.8
	5	0	0	0	0	0	0	0.2
	6	11.9	11.9	11.9	11.7	11.7	11.7	10.8
	7	0	0	0	0	0	0	0
	8	0	0	0	10.8	10.9	10.9	0
	9	0	0	0	0	0	0	0.2
	10	0.1	0.1	0.1	0	0	0	0
	11	0	0	0	10.8	10.9	10.9	0
	12	11.8	11.8	11.8	10.8	11.8	11.8	11.7
	13	0	0	0	0.1	0	0	11.7
	14	11.9	11.9	11.9	11.9	11.9	11.9	11.7
IC 8	1	0	0.2	0	0.2	0.2	0.2	0.2
	2	0.1	0	0.1	0	0	0	0
	3	11.7	11.6	11.7	11.6	11.6	11.6	11.4
	4	0.1	0	0.1	0	0	0	0
	5	0	11.2	0	11.2	11.2	11.2	11.0
	6	11.8	11.8	11.8	11.8	11.8	10.1	11.7
	7	0	0	0	0	0	0	0
	8	11.8	0	11.8	0	0	0	11.8
	9	11.8	0	11.8	0	0	0	11.8
	10	0	11.9	0	11.9	11.9	11.9	0
	11	0	0	0	0	0	0	11.7
	12	0	11.9	0	11.9	11.9	11.9	0
	13	11.9	11.9	11.9	11.9	11.9	11.9	0.3
	14	11.9	11.9	11.9	11.9	11.9	11.9	11.7
IC 10	1	11.9	11.9	11.9	11.8	11.9	11.9	0.3
	2	0.1	0.1	0.1	0	0	0	3.5
	3	1.3	1.3	1.3	1.4	1.4	1.3	1.1
	4	0	0	0	0	0	0	0
	8	11.9	11.9	11.9	11.9	11.9	11.9	11.7

TR NO	TERMINAL \ MODE	(E.E) STOP	P.B (PLAY)	REC	RWDFF	QUE	REV	STILL	NON-VIDEO
TR 29	B	0.2 V	0.2 V	0.2V		0.3 V	0.2V	0.2 V	0.2 V
	C	9.1	9.2	9.1		(P) 8.5	9.0	(P) 8.0	3.0
	E	0	0	0		0	0	0	0
TR 30	B	0.5	0.5	0.5		0.4	0.4	0.5	3.5
	C	8.1	9.2	8.1		(P) 9.0	9.0	(P) 6.9	3.0
	E	0.1	0.1	0.1		0	0	0	3.5
TR 31	B	11.9	11.9	11.9		11.9	11.9	11.9	11.0
	C	0	0	0		0	0	0	11.7
	E	11.9	11.9	11.9		11.9	11.9	11.9	11.7
TR 32	B	0.1	0.1	0.1		0.1	0.1	0.1	0
	C	4.4	4.4	4.3		4.3	4.3	4.4	4.5
	E	0	0	0		0	0	0	0
TR 33	B	0	0.1	0		0.1	0.1	0.1	11.7
	C	0	0	0		0	0	0	0.8
	E	0	0	0		0	0	0	11.7
TR 34	B	0	0	0		0	0	0	0
	C	4.4	4.4	4.4		4.3	4.3	4.3	4.5
	E	0	0	0		0	0	0	0
TR 35	B	0	-0.1	0		0.4~1.9	0	-0.8	0
	C	11.8	11.8	11.8		11.8~8.4	11.8	9.8	11.7
	E	0	0	0		0	0	0	0
TR 36	B	0	0	0		0	0	0	0
	C	4.8	4.8	4.8		4.8	4.8	4.8	4.8
	E	0	0	0		0	0	0	0
TR 42	B	0	0	0		0.6	0.6	0.6	0
	C	0.1	0.1	0.1		0	0	0	3.5
	E	0	0	0		0	0	0	0

( ) : REC MODE
< > : LP MODE
(P) : PULSE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
INDUCTORS IN μH(K)

VS-4 EG-M/EG-G EG/EK/EA/EO VIDEO SCHEMATIC DIAGRAM

NO.18-7 830527A

VS-4

EA MODEL

P49

VTR	1
GND	2

TO ANT. SW PCB

EA MODEL

P1

IDL 5V	1
RESET	2
GND	3
S CLK	4
S IN/OUT	5
S OUT/IN	6

TO POWER SUPPLY & SYSCON

P2

VOW	1
VOB	2
V SYNC	3
H SYNC	4
INS	5
GND	6

TO VIDEO

REMOTE	1
GND	3
VCC	2

TO REMOCON UNIT

EA MODEL

IDL 5

D26

IC2
MB88303

1 RESET
4 DO2
5 VOW
6 VOB
7 VS
8 VH
9 EX'TAL
10 X'TAL
Vcc 22
DA7 21 7
DA6 20 6
DA5 19 5
DA4 18 4
DA3 17 3
DA2 16 2
DA1 15 1
DA 14 0
ADM 13
LDI 12

R18
VR1(470)
CHARCTOR POSITION

EO MODEL

EK MODEL

IC3
MB88401/207K(ENGLISH)
/210K(GERMAN)
/211K(FRENCH)

IDL5

0 1 2 3 4 5 6 7 — KEY OUTPUT CRT ADDRESS/DATA OUT
9 EO IN
10 EK.SEG IN
11 VS-4 IN
12 13 14 15 — KEY OUTPUT
18 RESET
19 IRQ
16 EX'TAL
17 X'TAL
21 GND

VDD 42
VM 41
LDI OUT 40
ADM OUT 39
VTR OUT 38
33 34 35 36 — LED OUT
32 31 30 29 28 27 26 25 — LED IN
S.DATA OUT 24
S.DATA IN 23
S.CLK IN 22

XI
4.00MC

0 1 2 3 4 6 7

TAPE SW23	CUE SW17	REVW SW16	T-ON/OFF SW2	F-ON/OFF SW1
EJECT SW3	FF SW15	REW SW14	STOP SW20	PLAY SW13
※ ANT SW28	CLOCK SW5	PRESET SW4	C SW11	
LP/SP SW21	0-STOP SW22		PROGRAM SW6	

※ ANT : EA MODEL ONLY

EA MODEL

IDL 5

D26

TRI

BUFFER

DIO

EG, EK, EA, EG-G, EG-M MO

EO MODEL

TR2

BUFFER

IC3

MB88401 / 207K (ENGLISH)

/ 210K (GERMAN)

/ 211K (FRENCH)

IDL 5

Vcc 22

DA 7 21 7

DA 6 20 6

DA 5 19 5

DA 4 18 4

DA 3 17 3

DA 2 16 2

DA 1 15 1

DA 14 0

ADM 13

LDI 12

0 1

1 2

2 3

3 4

4 5

5 6

6 7

7 8

KEY OUTPUT

CRT ADDRESS / DATA OUT

V_{DD} 42

V_M 41

LDI OUT 40

ADM OUT 39

$\overline{VTR}$ OUT 38

TR3

BUFFER

TR4

BUFFER

LED OUT 33 34 35 36

LED IN 32 31 30 29 28 27 26 25

S. DATA OUT 24

S. DATA IN 23

$\overline{S.CLK}$ IN 22

9 $\overline{EO}$ IN

10 $\overline{EK.SEG}$ IN

11 VS-4 IN

12 13 14 15 KEY OUTPUT

18 $\overline{RESET}$

19 $\overline{IRQ}$

16 EX'TAL

17 X'TAL

21 GND

XI

4.00MC

LED DISPLAY DI2 to 22

O-STOP

EJECT

REC

PLAY

LONG

PAUSE / STILL

POWER

FF

REW

TIMER

DII

EO MODEL

0 1 2 3 4 6 7

	0	1	2	3	4	5	6
0	TAPE SW23	CUE SW17	REVW SW16	T-ON/OFF SW2	F-ON/OFF SW1	D SW12	PAUSE /STILL SW18
1	EJECT SW3	FF SW15	REW SW14	STOP SW20	PLAY SW13		REC SW19
2	※ ANT SW28	CLOCK SW5	PRESET SW4	C SW11		A- SW7	B- SW9
3	LP/SP SW21	O-STOP SW22		PROGRAM SW6		A+ SW8	B+ SW10

L ONLY

VS-
OPE
BLO
NO. 1

D E F G H I J

ODEL

026

5

TR1

BUFFER

EO MODEL

TR2

BUFFER

TR3

BUFFER

TR4

BUFFER

LED DISPLAY DI2 to 22

O-STOP

EJECT

REC

PLAY

LONG

PAUSE/STILL

POWER

FF

REW

TIMER

DIO

a f g b e c d

10 c — 6

7 e — 5

8 d — 4

13 2 1 11

g — 3

a — 2

f — 1

b — 0

EG, EK, EA, EG-G, EG-M MODELS

DI1

4 5

13 14 15 16 3 2 1 12 11 10 9 6 7 8

0 b

f

2 a

3 g

4 d

5 e

6 c

EO MODEL

N/OFF

VI

4

D

SW12

5

PAUSE /STILL

SW18

6

LAY

13

REC

SW19

A-

SW7

B-

SW9

A+

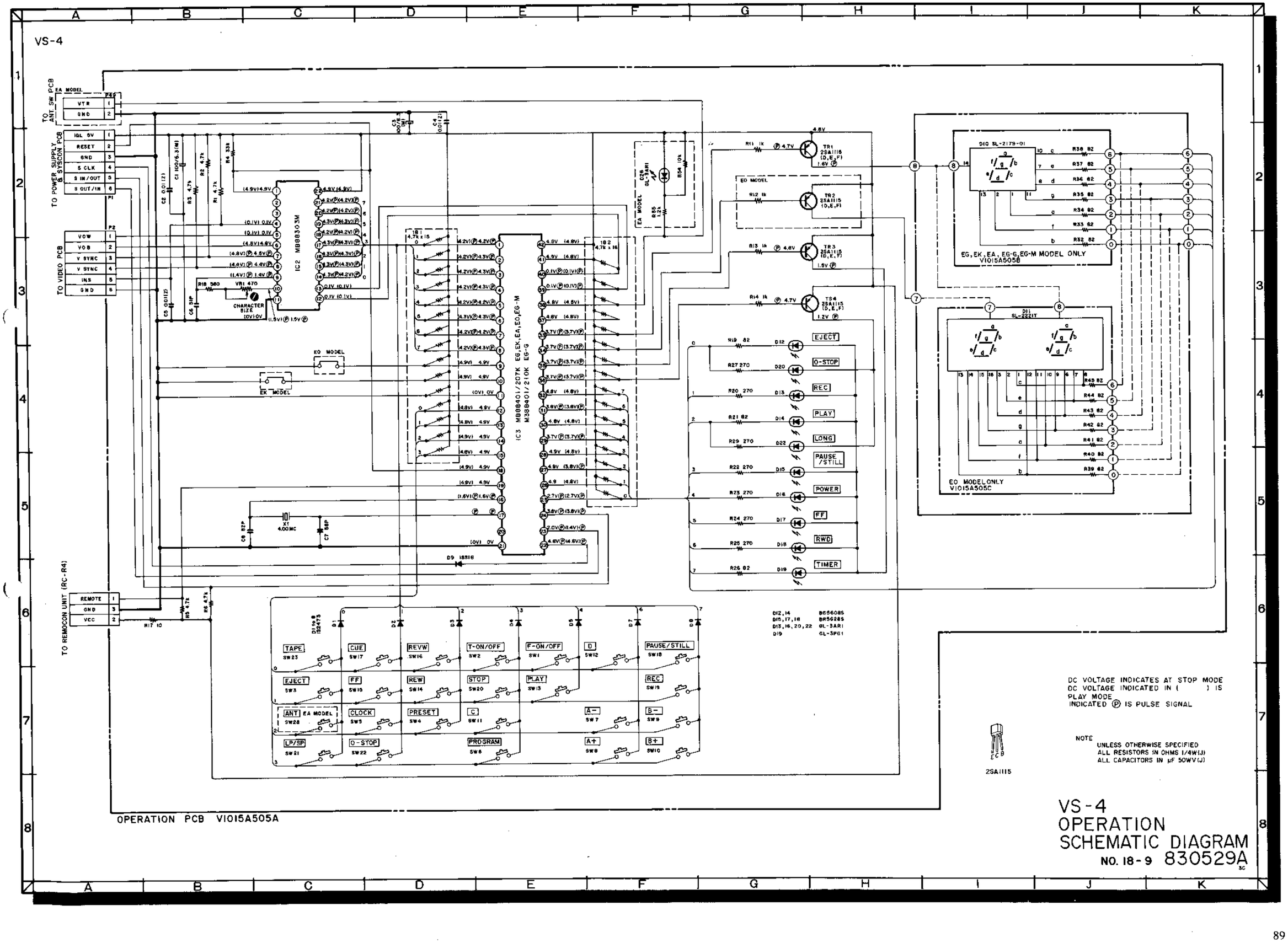
SW8

B+

SW10

VS-4
OPERATION
BLOCK DIAGRAM
NO. 18-8 830528A

F G H I J K

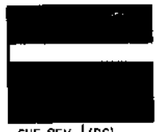


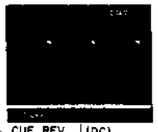
VS-4 OPERATION SCHEMATIC DIAGRAM

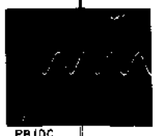
NO. 18-9 830529A 3C

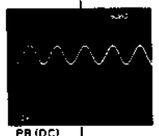
VS-4

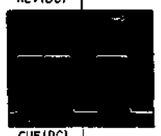
NOTE
1. (AC) INDICATES THE WAVEFORM OBSERVED AT AC RANGE
2. (DC) INDICATES THE WAVEFORM OBSERVED AT DC RANGE
3. THE LINE ON THE PHOTOGRAPH SHOWN RIGHT SIDE INDICATES DC 0V

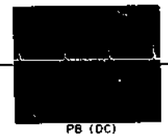


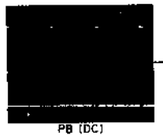


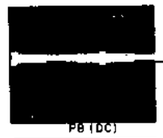


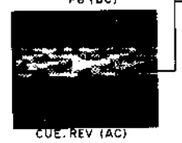


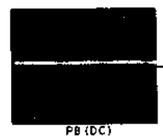


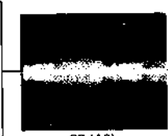


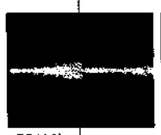


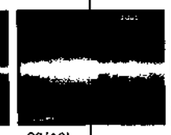






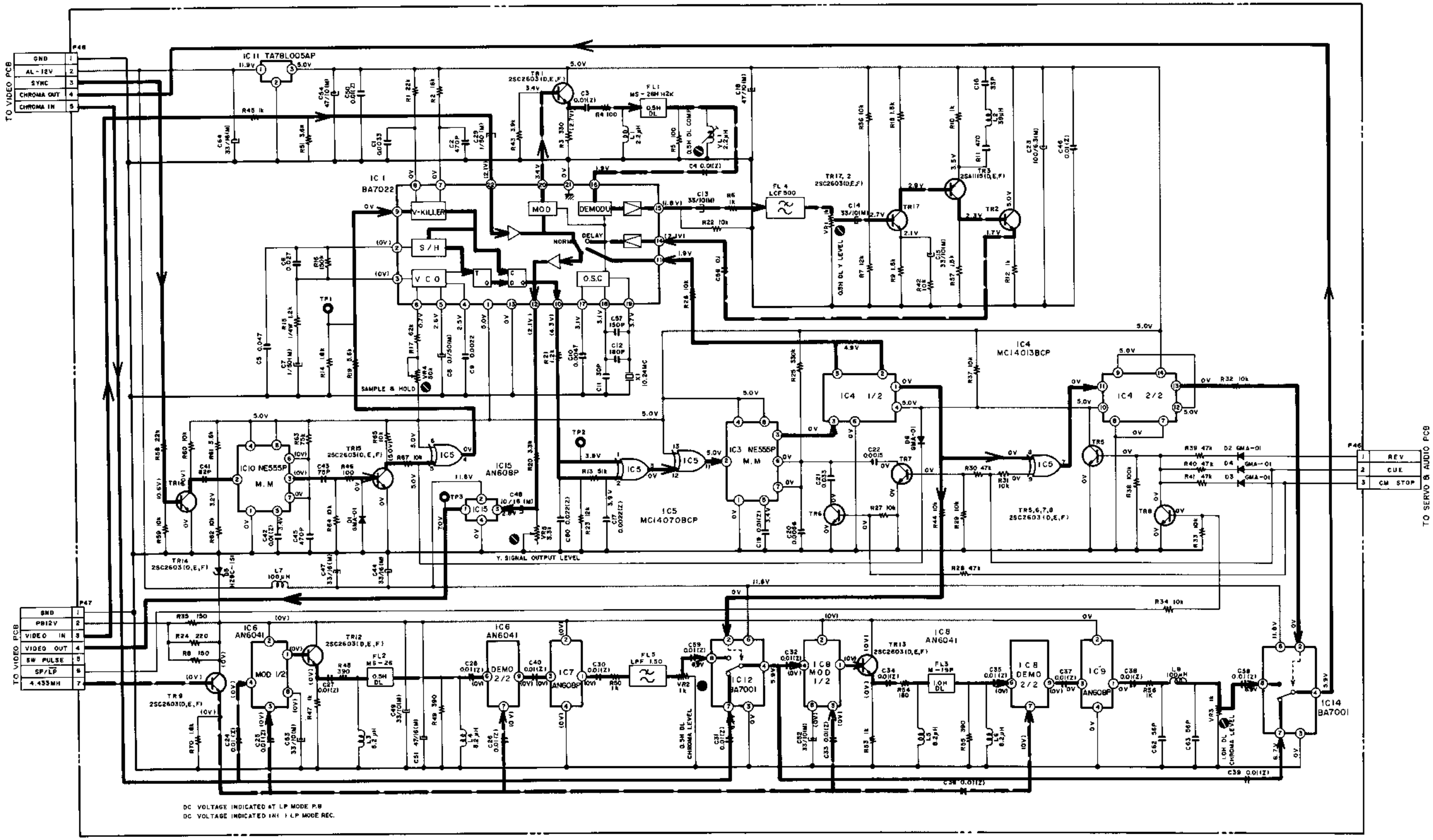






VS-4
SKEW JUMP
BLOCK DIAGRAM
NO.18-10 830530A

VS-4



CHROMA SIGNAL (SP MODE)
CHROMA SIGNAL (LP MODE)
SKEW JUMP PULSE GENERATOR
4.433MHz
Y. SIGNAL (SP MODE)
Y. SIGNAL (LP MODE)
B (POWER SUPPLY) LINE

49(175)

2SA1115
2SC2603

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)

VS-4 SKEW JUMP SCHEMATIC DIAGRAM

NO.18-11 830531A

001376

VS-4

TO EJECTER

EM (-)	8
EM (+)	7
GND	6
CSW 3	5
CSW 2	4
CSW 1	3
START SENSOR	2
END SENSOR	1

P38 P37

M904 EJECT MOTOR

IC 1 M8L8243M

RS SW, LSW A2, LSW B1

REC SAFETY, LSW A2, LSW B1, $\overline{SS}$, $\overline{ES}$, PRG 2, DATA 4, 3, 2, 1, 3/$\overline{6}$, REVW, $\overline{CUE}$

Vcc, CSW 1, CSW 2, CSW 3, M.$\overline{RVS}$, EM.STP, LM.STP, PL-$\overline{ON}$, CM.STP

IDL5

TO POWER & SYS CON

PRG 2	7
IDL5V	6
DATA 4	5
DATA 3	4
DATA 2	3
DATA 1	2
GND	1

P4 P34

IC4 BA6109 — V OUT 1, V OUT 2, F IN, R IN, VR

IC5 BA6109 — V OUT 1, V OUT 2, F IN, R IN, VR

IC6 BA6109 — V OUT 2, Vcc, V OUT 1, VR, F IN, R IN

IC3 M5453P

TR1, TR2, TR3, TR4, TR5, TR7, TR8, TR9

EF

D3, D5, D6, D7, D8, D9, D10, D11, D13, D14, D15, D16, D18

C4, C12

AL14, AL14 "ON"

SL901 PINCH ROLLER PLUNGER

M902 LOADING MOTOR

M903 REEL MOTOR

UN LOADING "ON"

T.R.P, S.R.P

IN901 OPEN "OFF"

IN901

TO SERVO & AUDIO

M.RVS	1
CM STOP	2
CUE	3
REV	4
SP/LP	5
GND	6

P28 P36

TO POWER & SYS CON

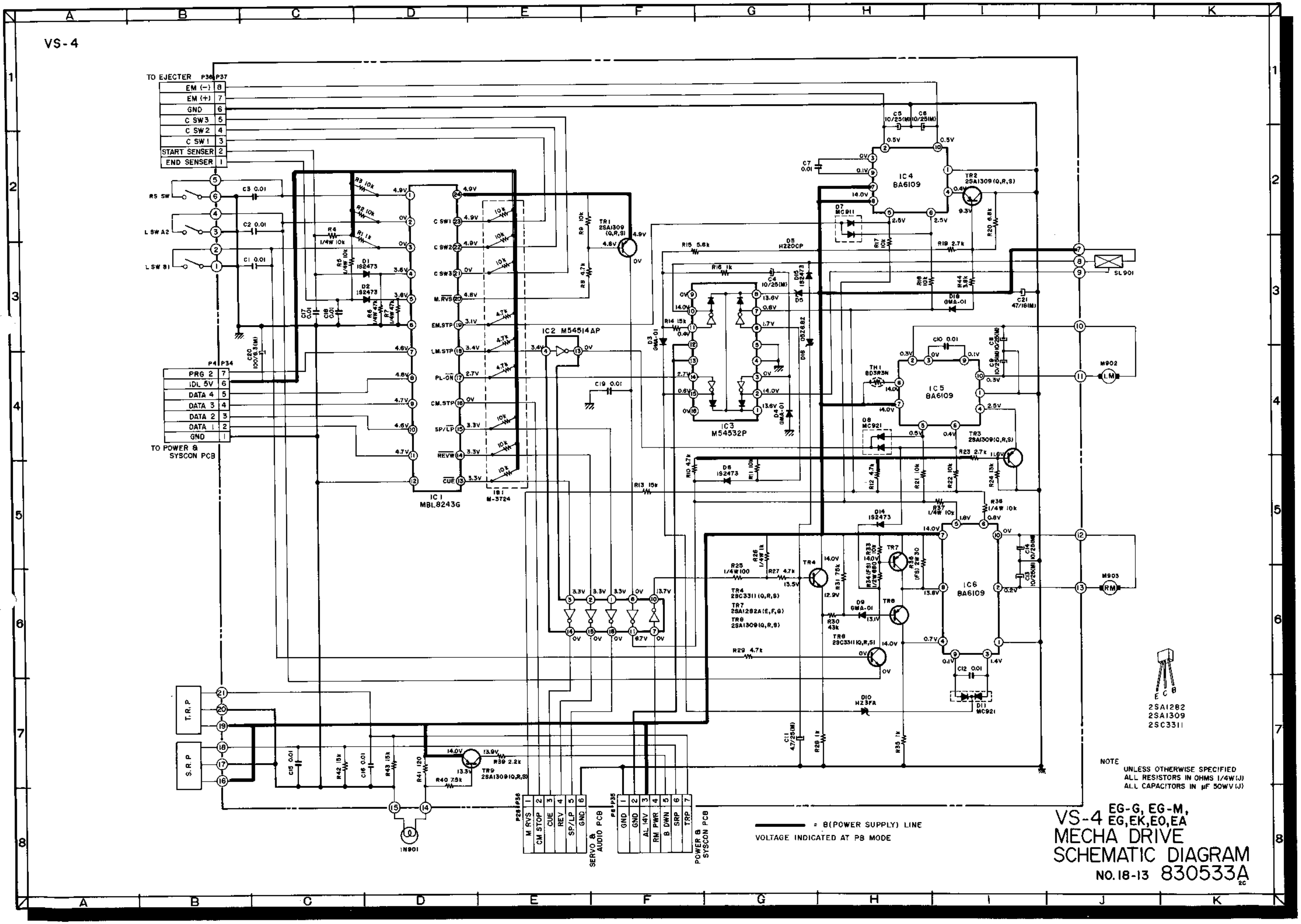
GND	1
GND	2
AL 14V	3
RM PWR	4
B DWN	5
SRP	6
TRP	7

P6 P35

VS-4 EG-M/EG-G EG/EK/EA/EO

MECHA DRIVE BLOCK DIAGRAM

NO.18-12 830532A

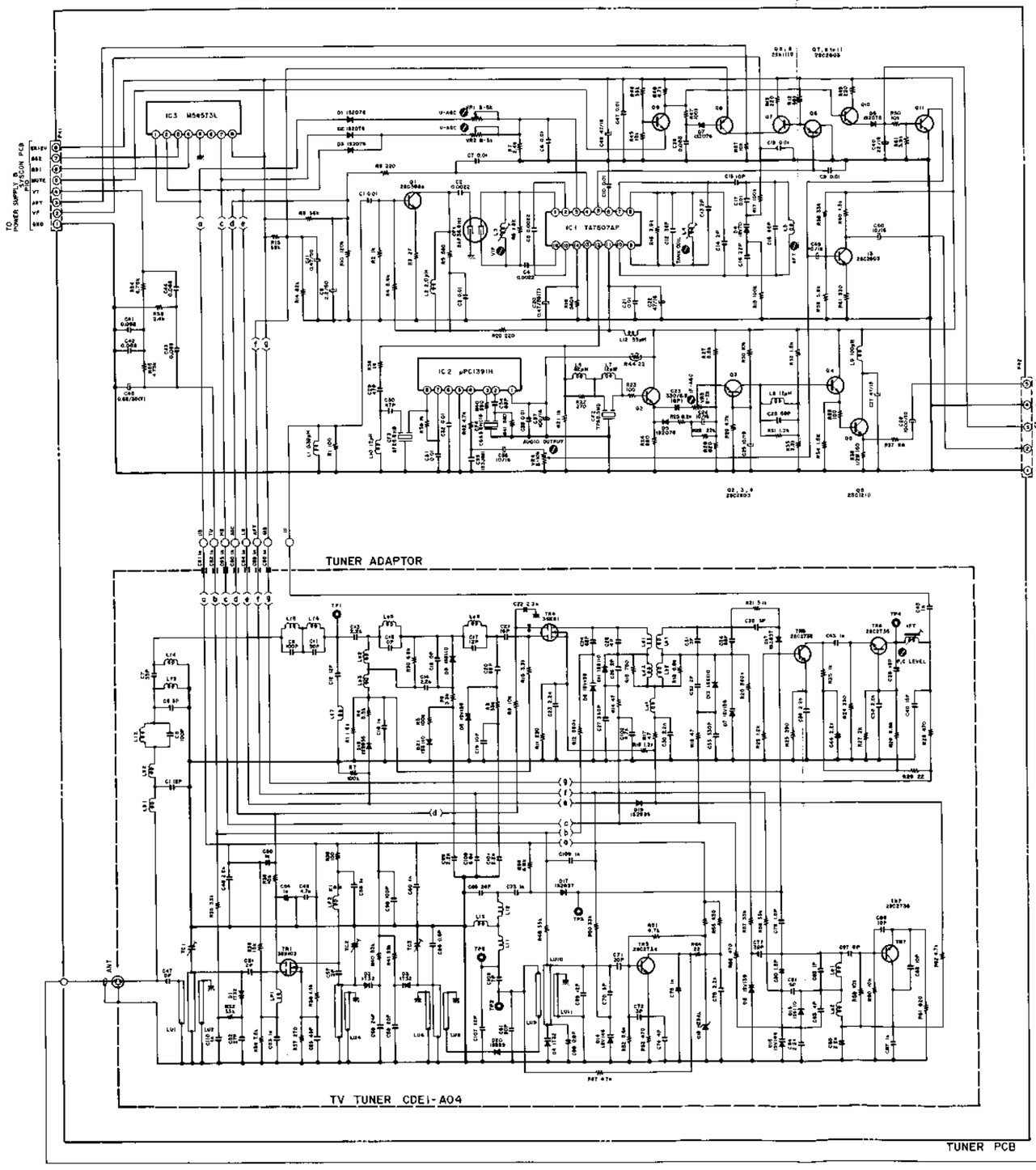


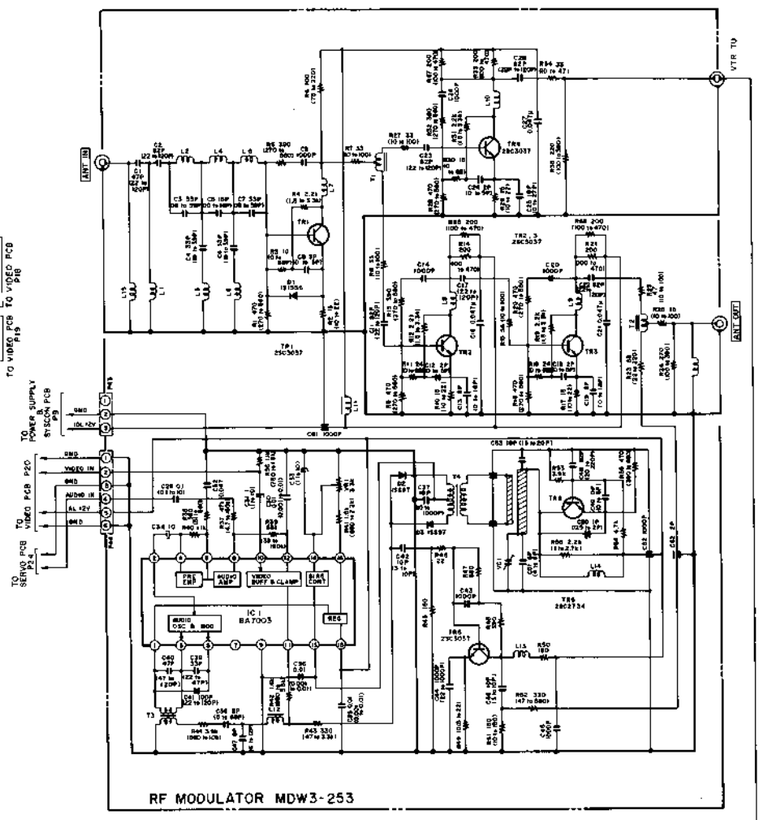
NOTE UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

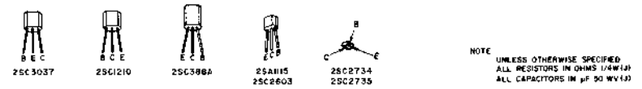
VS-4 EG-G, EG-M, EG, EK, EO, EA MECHA DRIVE SCHEMATIC DIAGRAM

NO.18-13 830533A

VS-4







NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W±5%
ALL CAPACITORS IN μF 50 WV±5%

VS-4 EG/EG-M/EG-G
DEMODULATOR
SCHEMATIC DIAGRAM
NO. 18-14 830534A

VS-4

TO POWER SUPPLY & SYSCON PCB P10

IC1 TA7607AP

IC2 μPC1391H

TV TUNER

TUNER ADAPTOR

UHF ANT

VTR TU

ANT IN

ANT OUT

TO VIDEO PCB P18

TO VIDEO PCB P19

TO POWER & SYSCON PCB P9

TO VIDEO PCB P20

TO SERVO PCB P24

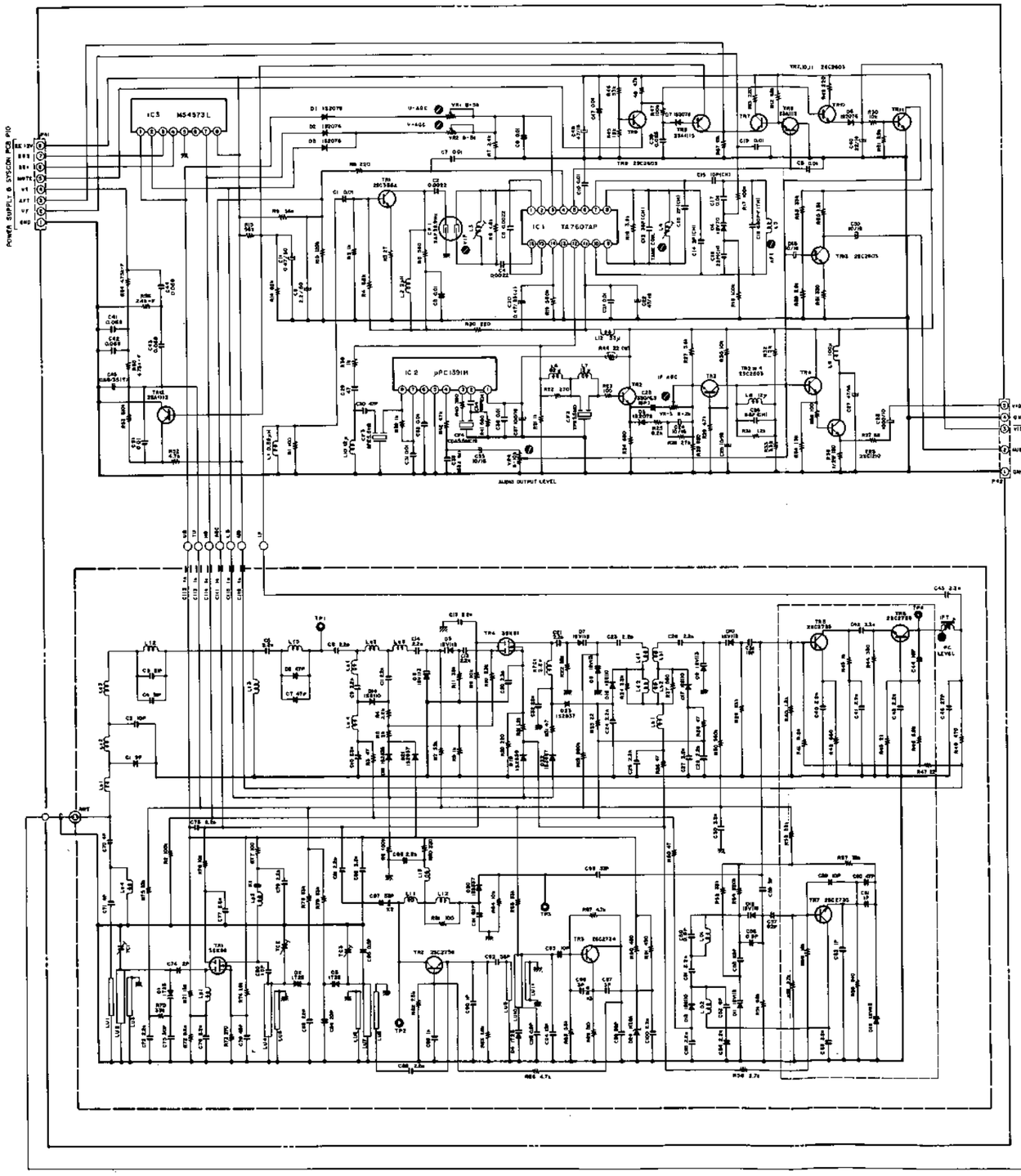
RF MODULATOR

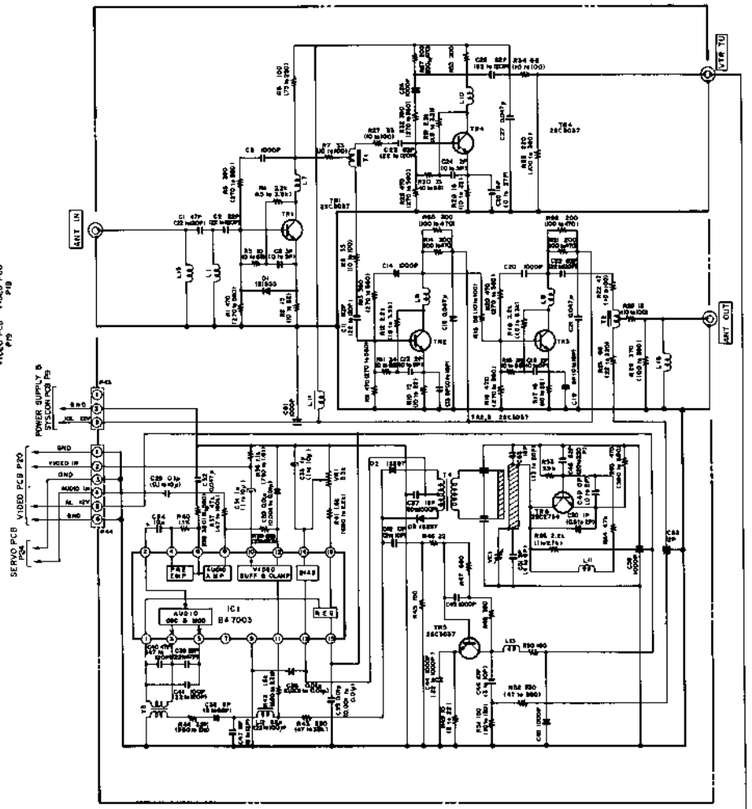
2SC1210 2SC3037 2SC388A 2SA1115 2SC2603 2SC2734 2SC2735 2SC2736 35K88

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W±J%
ALL CAPACITORS IN μF 50WV±J%

VS-4EK
DEMODULATOR
SCHEMATIC DIAGRAM
NO.18-15 830535A

VS-4



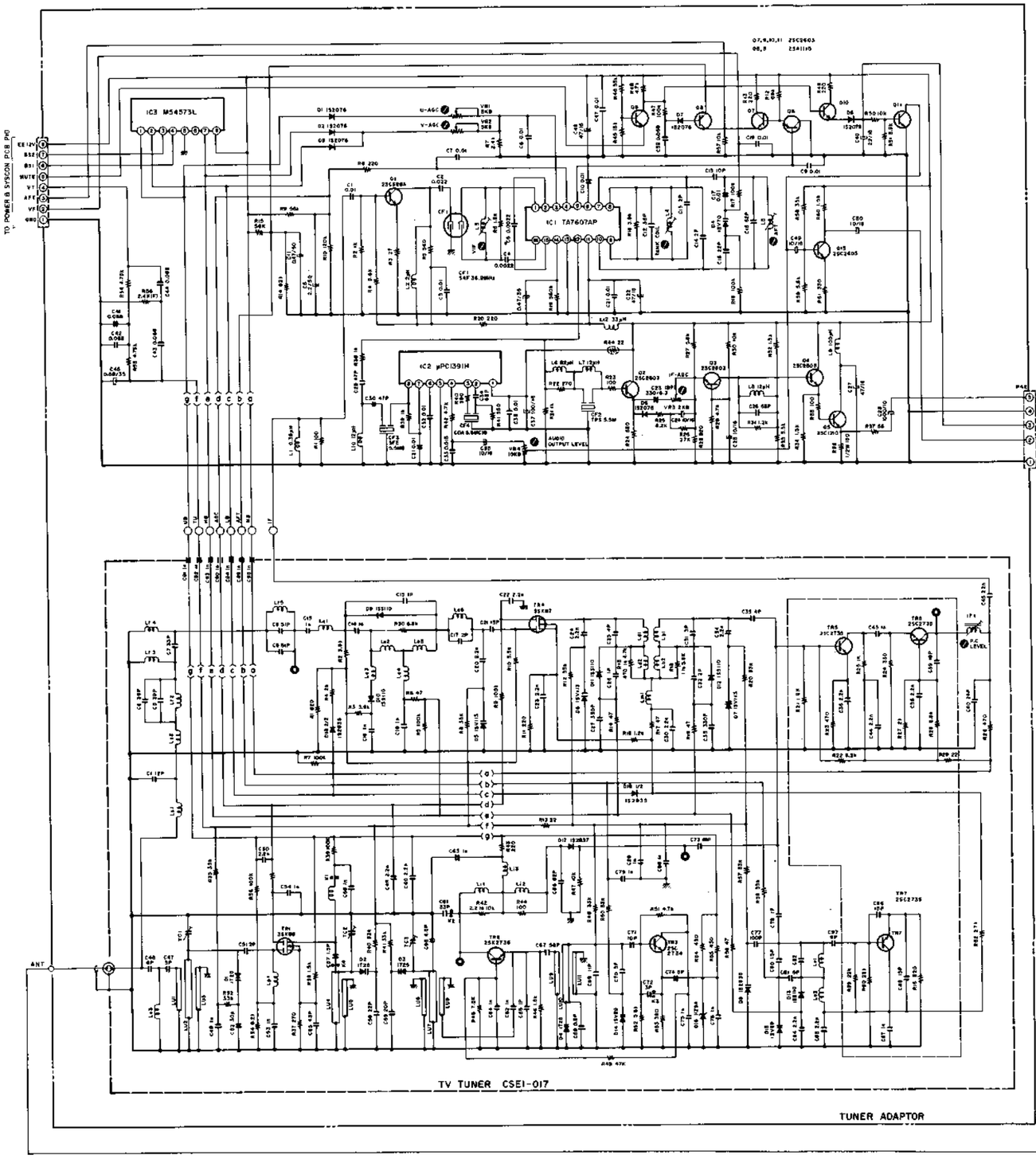


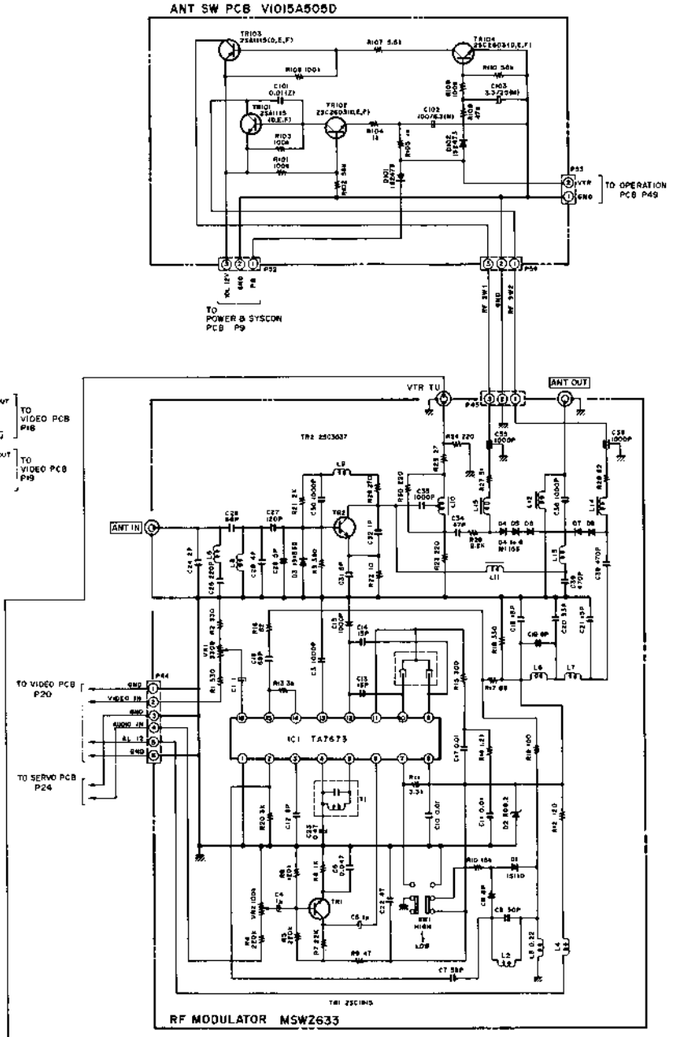
NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50 WV (J)

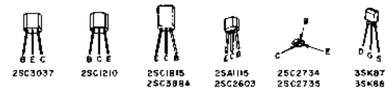
VS-4 EO DEMODULATOR SCHEMATIC DIAGRAM

NO.18-16 830536A

VS-4





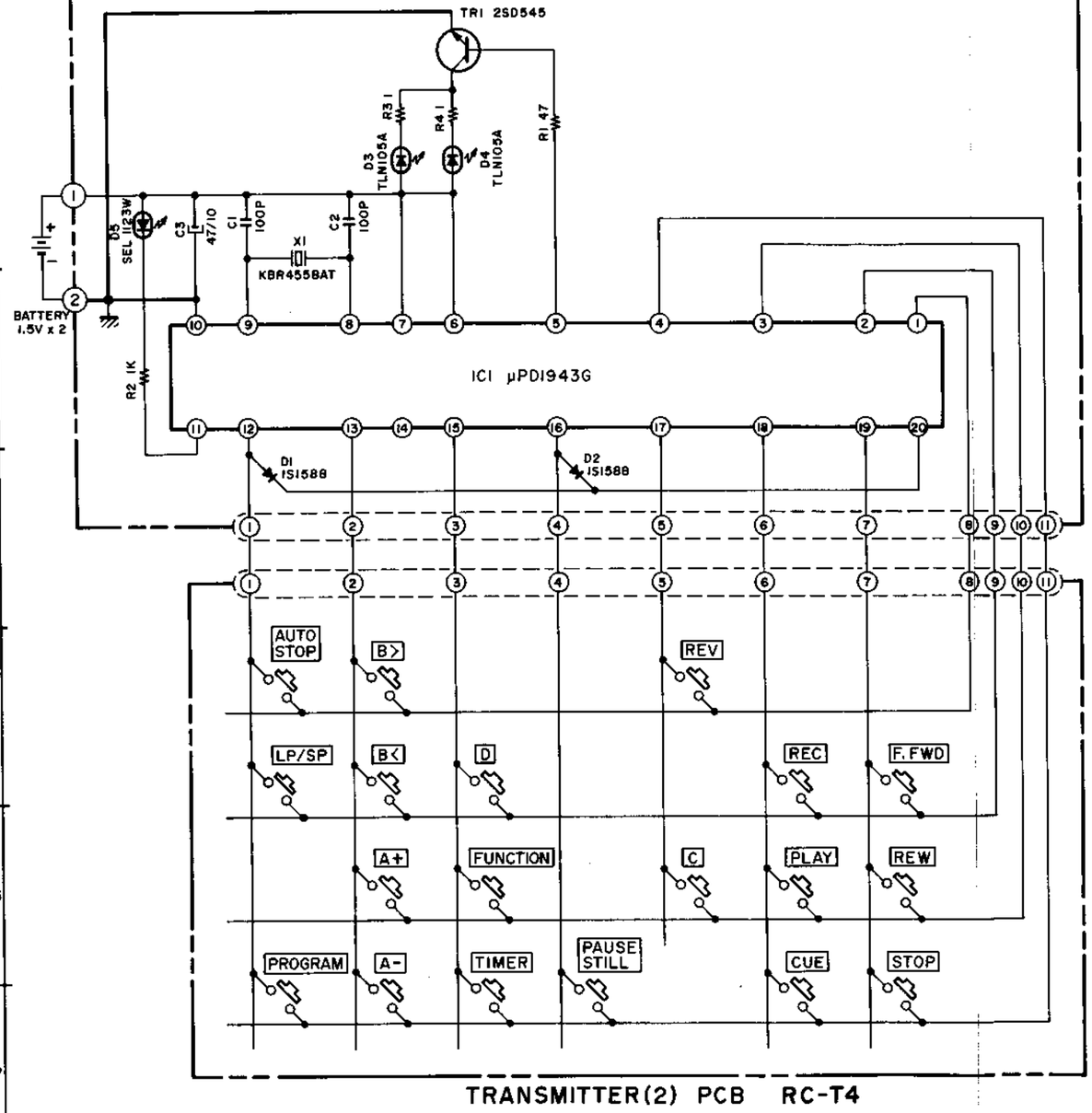


NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS (1/4W)(J)
ALL CAPACITORS IN μF 50WV(J)

VS-4EA DEMODULATOR SCHEMATIC DIAGRAM

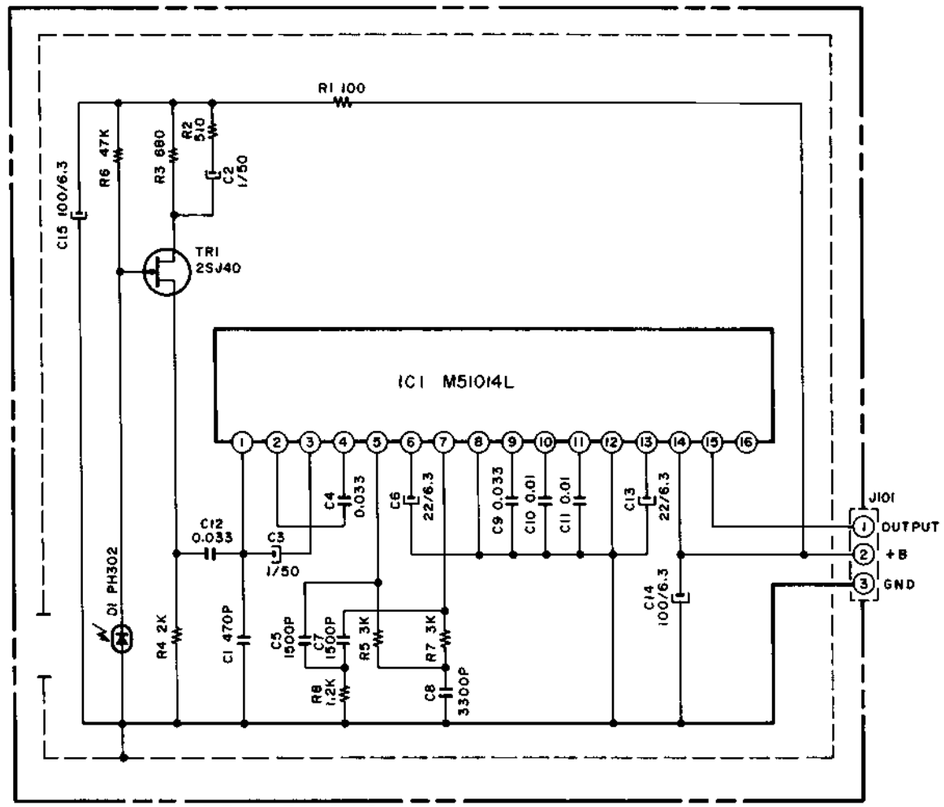
NO.18-17 830537A 2C

TRANSMITTER (1) PCB

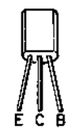


TRANSMITTER(2) PCB RC-T4

CUE : QUICK FINDER ▷▷
REV : QUICK FINDER ◁◁
LP/SP : REC TIME LP/SP



RECIVER PCB RC-R4



2SD545

2SJ40

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

RC-V404 (RC-T4/RC-R4)
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.18-18 830538A