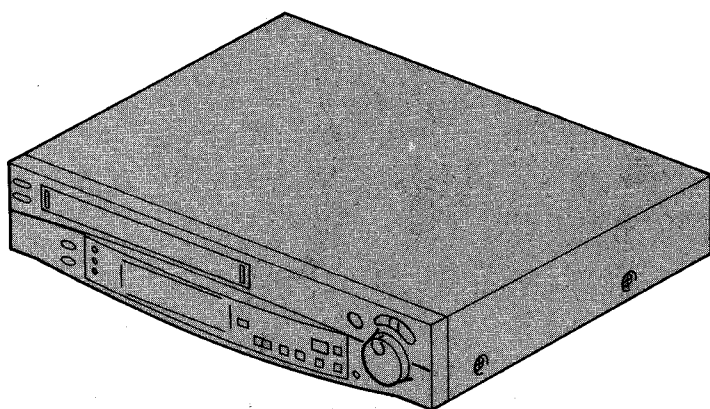


Service Manual

Video Cassette Recorder

Panasonic **VHS** **HQ**
PAL
NV-SD20EE
K-MECHANISM
SPECIFICATIONS \ **ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ**DESCRIPTIONS \ **ОБЩЕЕ ОПИСАНИЕ**ADJUSTMENT PROCEDURES \ **ПРОЦЕДУРЫ НАСТРОЙКИ**MECHANICAL ADJUSTMENT PROCEDURES \ **МЕТОДИКА МЕХАНИЧЕСКОЙ НАСТРОЙКИ**ELECTRICAL ADJUSTMENT PROCEDURES \ **МЕТОДИКА ЭЛЕКТРИЧЕСКОЙ НАСТРОЙКИ**BLOCK DIAGRAMS \ **БЛОК - СХЕМЫ**SYSTEM CONTROL & SERVO BLOCK DIAGRAM \ **БЛОК - СХЕМА СИСТЕМЫ УПРАВЛЕНИЯ И СЕРВОПРИВОДА**LUMINANCE & CHROMINANCE BLOCK DIAGRAM \ **БЛОК - СХЕМА ОБРАБОТКИ ВИДЕОСИГНАЛА**SCHEMATIC DIAGRAMS \ **ПРИНЦИПИАЛЬНЫЕ СХЕМЫ**POWER SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА БЛОКА ПИТАНИЯ**SUB SERVO SECTION IN MAIN SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА ПОДСИСТЕМЫ СЕРВОПРИВОДА (ОСНОВНАЯ ПЛАТА)**SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА СИСТЕМЫ УПРАВЛЕНИЯ И СЕРВОПРИВОДА**LUMINANCE & CHROMINANCE & AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА ОБРАБОТКИ ВИДЕО И АУДИОСИГНАЛА (ОСНОВНАЯ ПЛАТА)**LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА ОБРАБОТКИ ВИДЕОСИГНАЛА**INPUT/OUTPUT PACK SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА МОДУЛЯ ВВОДА-ВЫВОДА СИГНАЛОВ**TIMER & OPERATION SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА ТАЙМЕРА И КОНСОЛИ УПРАВЛЕНИЯ**HEAD AMP SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА УСИЛИТЕЛЯ ВИДЕОГОЛОВОК**TV DEMODULATOR PACK SCHEMATIC DIAGRAM \ **ПРИНЦИПИАЛЬНАЯ СХЕМА ДЕМОДУЛЯТОРА**EXPLODED VIEWS & MECHANICAL PARTS LIST \ **СБОРОЧНЫЕ ЧЕРТЕЖИ И СПИСОК МЕХАНИЧЕСКИХ ЗАПАСНЫХ ЧАСТЕЙ**CHASSIS PARTS SECTION (1) \ **ШАССИ, СЕКЦИЯ 1**CHASSIS PARTS SECTION (2) \ **ШАССИ, СЕКЦИЯ 2**CASING PARTS SECTION \ **КОРПУС**PACKING PARTS SECTION \ **УПАКОВОЧНЫЕ МАТЕРИАЛЫ**ELECTRICAL REPLACEMENT PARTS LIST \ **СПИСОК ЭЛЕКТРИЧЕСКИХ ЗАПАСНЫХ ЧАСТЕЙ**
Panasonic

SPECIFICATIONS

ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	SOURCE: 110~240V AC 50/60Hz	AUDIO	HEAD: 1 Stationary head (Normal Audio)
	CONSUMPTION: 21 watts		INPUT: AUDIO IN Connector (Phono type) More than -10dBV (316mV), More than 50k Ω MICROPHONE JACK -70dBV
RECORDING SYSTEM	2 rotary heads, helical scanning system PAL		OUTPUT: AUDIO OUT Connector (Phono type) -6dBV (500mV), Less than 1k Ω
TV TUNER SYSTEM	VHF I: CH1~CH5 (SECAM D, K1) CHE2~CHS3 (PAL B/SECAM B) VHF III: CH6~CH12 (SECAM D, K1) CHM1~CHU10 (PAL B/SECAM B) CH4~CH13 (PAL I) UHF: CH21~CH69 (PAL G, I/SECAM G, K) 75 Ω terminated	TAPE SPEED	SP: 23.39mm/s LP: 11.695mm/s Record/Playback Time: SP: 4 hours with 240min. type tape LP: 8 hours with 240min. type tape FF/REW Time: 2.5min. with 180min. type tape
RF OUT SYSTEM	UHF: CH38 $\pm\frac{2}{3}$ (PAL G, I/SECAM G, K) 73 \pm 3dB μ , 75 Ω terminated	DIMENSIONS	380(W) \times 89(H) \times 357(D) mm
VIDEO	HEADS: 4 rotary heads 1 pair for recording and playback (L-R heads) 1 pair for trick play (L'-R' heads)	WEIGHT	4.6kg
	INPUT: VIDEO IN Connector (Phono type) 1.0Vp-p, 75 Ω unbalanced	STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. Programme Sheet 1 pc. AC Mains Lead 1 pc. Infra-res Remote Controller
	OUTPUT: VIDEO OUT Connector (Phono type) 1.0Vp-p, 75 Ω unbalanced		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

SECTION 1

GENERAL DESCRIPTIONS

1-1. TECHNICAL INFORMATION

INITIALIZATION OF CHANNEL MEMORY IC (IC7504/M6M80021P)

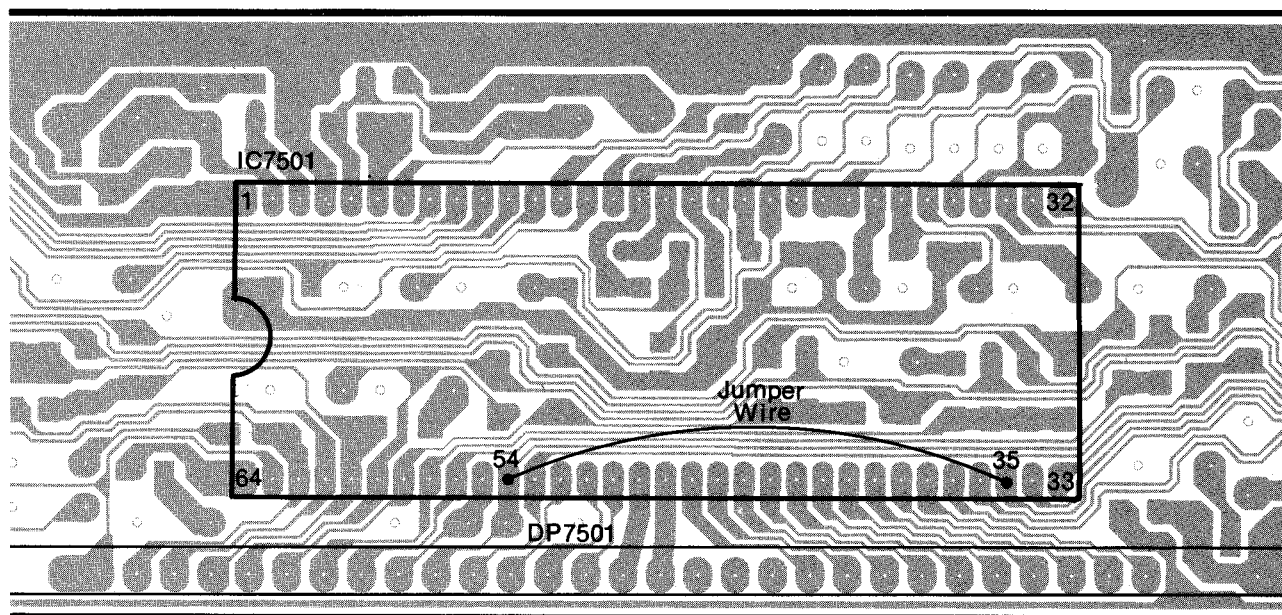
When replacing the channel memory IC (IC7504/
M6M80021P), the memory IC should be initialized to
original specifications.

Note:

- 1) This should be performed before tuner preset.
- 2) During initialization or after initialization within 1 second, do not disconnect the power source.
- 3) "INITIALIZATION" erases the "SKIP CH" and makes the POSITION CH and DISPLAY CH the same.

Method:

- 1) Press the CH UP/DOWN Button so that the Channel indicator indicates "3".
- 2) Connect a jumper wire between Pin 54 and Pin 35 of IC7501 for more than 1 second.
- 3) Channel indication should change from "3" to "1".



1-1-2. ASSEMBLY OF CAPSTAN STATOR UNIT

When replacing the CAPSTAN STATOR UNIT, the CENTRE FIXING TOOL(VFK0851) must be used to fix the centre of CAPSTAN STATOR UNIT.

Method:

- 1) Place the CAPSTAN STATOR UNIT into position.
- 2) Loosely tighten the 3 screws.
- 3) Insert the CENTRE FIXING TOOL(VFK0851) as shown in Fig.T2.
- 4) Tighten the 3 screws.

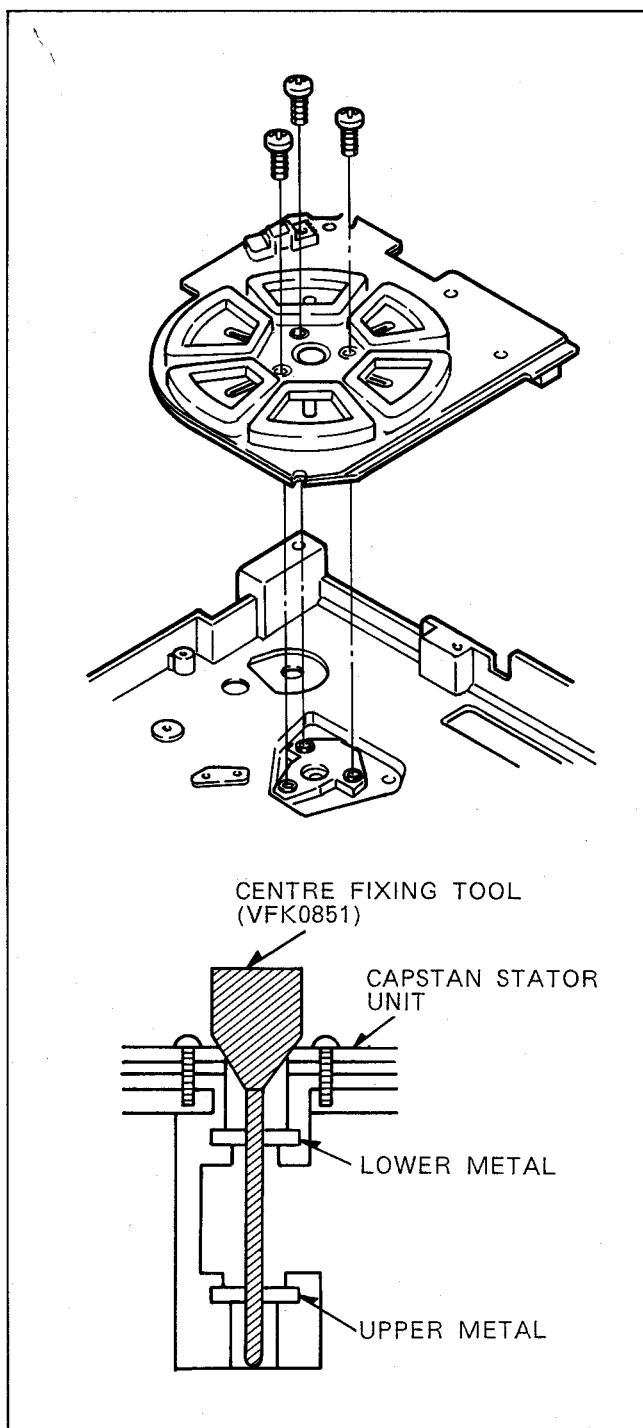


Fig. T2

1-1-3. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>

If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear will not rotate.

For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate to the carriage connection gear by hand in the direction of the arrow.

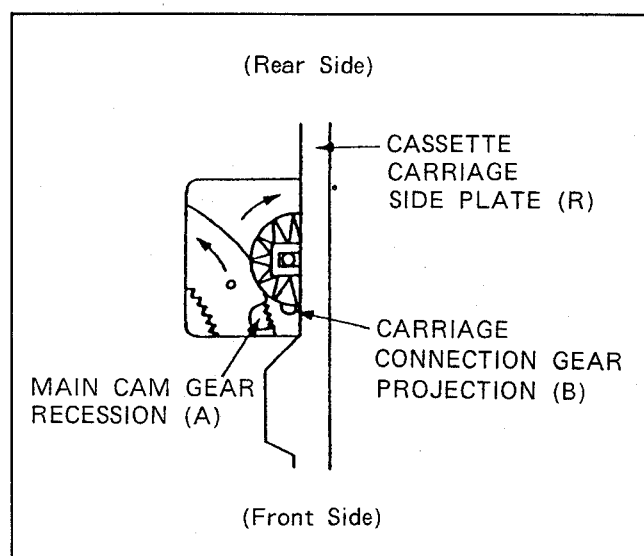


Fig. T3 Top View of Eject Operation

1-1-4. SERVICE INFORMATION DISPLAY

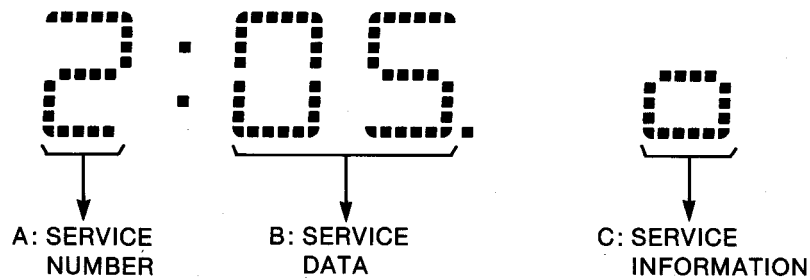
This unit can display service informations detected by the microprocessor IC6001 on the Front Indication Panel, which will help speed up troubleshooting and servicing.

Method:

- 1) Press the "EJECT" button while turning the "SHUTTLE RING" clockwise.
- 2) The counter of multi function display indicates microprocessor data approximately 1 minutes as shown in Fig.T4.

Note:

- 1) This mode can be entered even when the power is OFF.
- 2) It can also display the data when a jumper wire is connected between TP6001 and TPGND.
- 3) Press the "EJECT" button while turning the "SHUTTLE RING" clockwise to increase the service number.



A: SERVICE NUMBER	B: SERVICE DATA	CONTENTS	REMARKS
1	*0	can not detect Take-up and Supply Photo	
	*1	detect Take-up Photo	
	*2	detect Supply Photo	
	*3	detect Take-up and Supply Photo	
2	00	EJECT	
	01	CASSETTE DOWN	
	02	REVIEW	
	04	PLAY/STOP/CUE	
	06	FF/REW	
	07	During moving of each mode	
5	8*	CAPSTAN MOTOR ON	In case of the indication (8/9/U/A/-/□/□/□/□) or no indication, CAP MOTOR is turned on.
	*7	CAPSTAN MOTOR ROTATING DIRECTION	In case of the indication (0/1/2/3/4/5/6/7), CAP MOTOR is rotated in forward direction.
	*8	CAPSTAN MOTOR ROTATING DIRECTION	In case of the indication (8/9/U/A/-/□/□/□/□) or no indication, CAP MOTOR is rotated in REVERS direction.
6	1*		In case of the indication (1/3/5/7/9/A/□/□) or no indication, CYL MOTOR is turned on.

NOTE: “*”; No meaning

C: SERVICE INFORMATION

- 0: Normal
- 1: Cylinder lock (STOP)
- 2: Reel lock (STOP)
- 3: Mechanism lock during moving next position except NO. 4 or NO. 6 of service information.
(In this case, loading motor can be expected to break down.)
- 4: Mechanism lock during unloading
- 5: Less pulse of reels during unloading (In this case, capstan can be expected to break down.)
- 6: Mechanism lock during front loading (Cassette IN)
- 7: Serial data (IC6001—IC7501) can not be transmitted.

Fig. T4

2-3. MECHANICAL ADJUSTMENT PROCEDURES

2-3-1. TENSION POST POSITION ADJUSTMENT

(Equipment Required)
Hex Wrench (VFK0326)

1. Disconnect the AC plug.
2. Remove the TOP PLATE and CASSETTE HOLDER.
3. Turn the LOADING MOTOR until the loading completes.
4. Adjust the hole of TENSION BAND FASTENER by hex wrench so that the left edge of IMPEDANCE ROLLER and TENSION ARM UNIT as shown in Fig.M1.

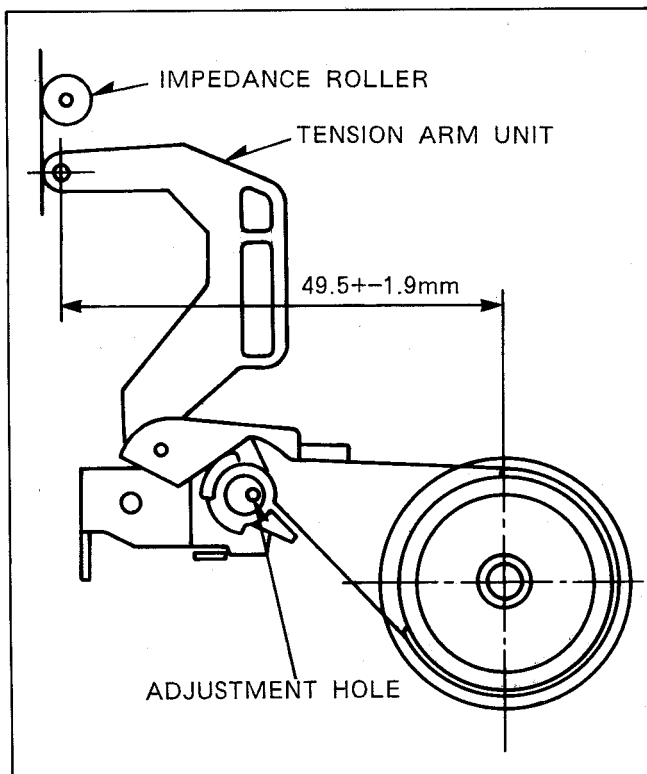


Fig. M1

2-3-2. BACK TENSION ADJUSTMENT

(Equipment Required)
Back Tension Meter (VFK0132)
VHS Cassette Tape (180 minutes tape:PAL)
(120 minutes tape:NTSC)

(Specification)
22.5-27.5g

1. Playback the cassette tape from the beginning and wait until the tape movement get the stabilization.
(for approx. 10~20 seconds)
2. Insert the Back tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig.M2.

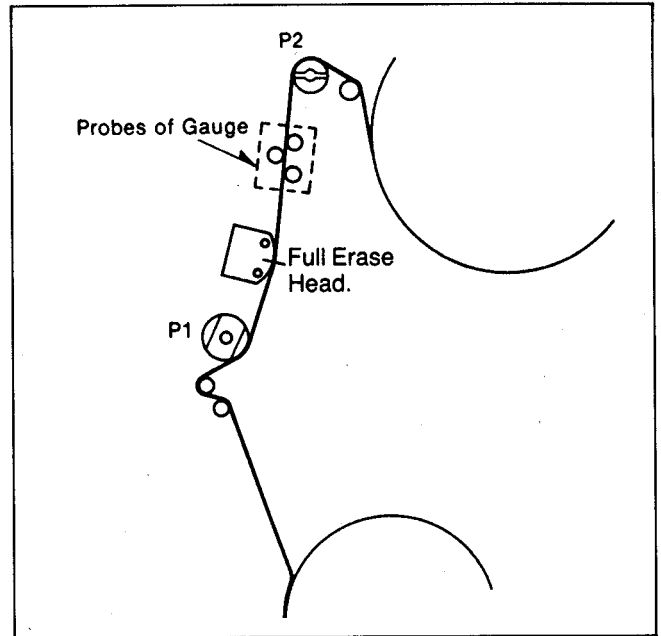


Fig. M2

3. If it is out of specification, change the spring notch as shown in Fig.M3.

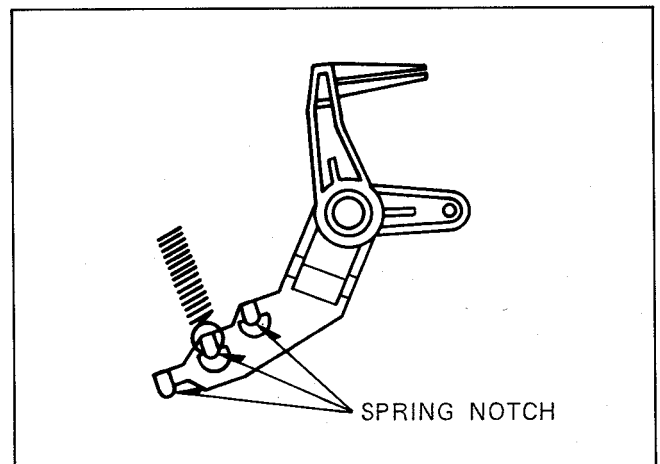


Fig. M3

2-3-3. P2 AND P3 POSTS ADJUSTMENT (PREADJUSTMENT)

(Equipment Required)
Post Adjustment Screwdriver (VFK0329)

1. Remove the TOP PLATE and CASSETTE HOLDER.
2. Turn the LOADING MOTOR until the unloading completes.
3. Loosen the fixing screw of P2 and P3 POSTS.
4. Rotate the P2 and P3 POSTS clockwise to the end.
5. Rotate the P2 and P3 POSTS twice counterclockwise.

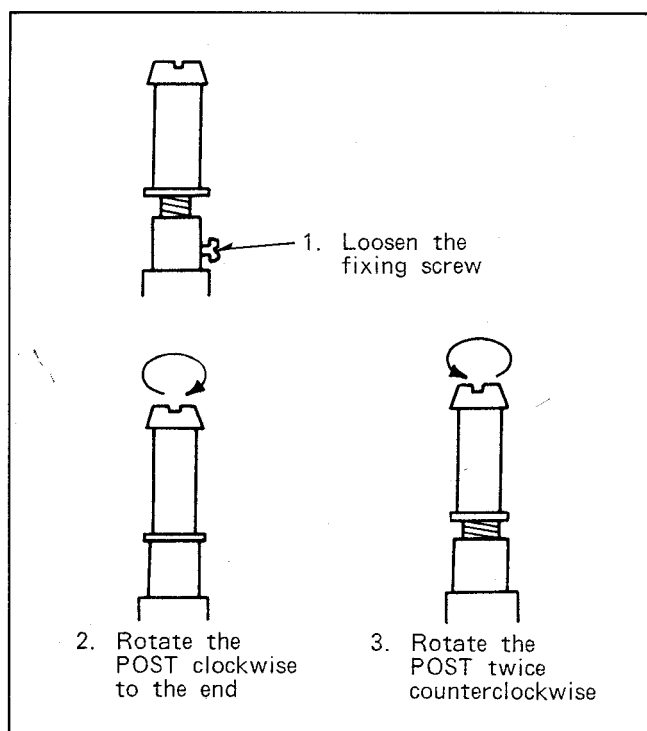


Fig. M4

6. Install the TOP PLATE and CASSETTE HOLDER.
7. Playback the cassette tape and make sure that the edges of the tape are not curling at the bottom or top end of the P1, P2, P3 and P4 POSTS as shown in Fig.M5.

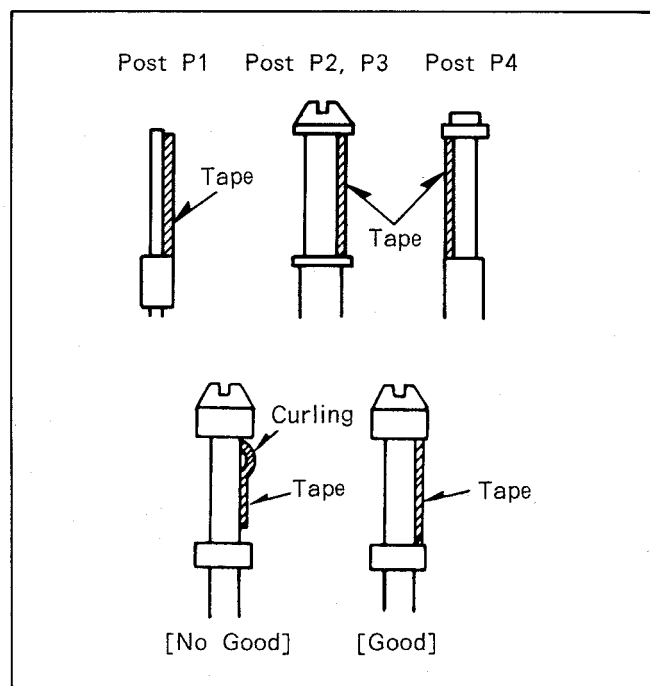


Fig. M5

8. If curling appears, readjusts the P2 and P3 POSTS.

2-3-4. TAPE INTERCHANGEABILITY ADJUSTMENT

Proceed the following procedures for Tape Interchangeability Adjustment to do it correctly and smoothly.

- (1) Adjustment of P2 and P3 Posts.
- (2) Height Adjustment of A/C Head (1).
- (3) Height Adjustment of A/C Head (2).
- (4) Fine-Adjustment of A/C Head
- (5) Horizontal Position Adjustment of A/C Head.

If the Tape Interchangeability Adjustment is not perfect, repeat the above procedures from (1) to (5).

CAUTIONS:

To make a Adjustment Mode for Tape Interchangeability, connect a Cut Jumper Wire as shown in Fig.M6.
(Auto Tracking is turned off.)

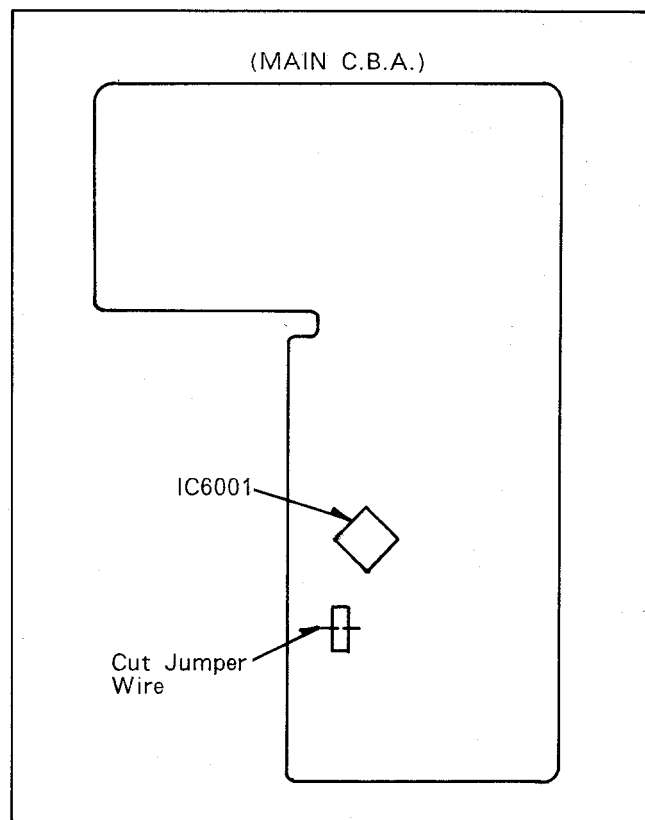


Fig. M6

(1) Adjustment of P2 and P3 Posts

(Equipment Required)
Alignment Tape(PAL/SECAM:VFJ8125H3F,
NTSC:VFM8080HQFP)
Post Adjustment Screwdriver (VFK0329)

1. Set the tracking control into the fix position. (by pressing the tracking (+) and (-) button simultaneously on the Remote Controller)
And connect the oscilloscope to the output of the Head Amp as shown in Fig.M7.

Note:

To get a stable waveform of the Head Amp output on the oscilloscope, use the head switching pulse as a triggering signal as shown in Fig.M7.

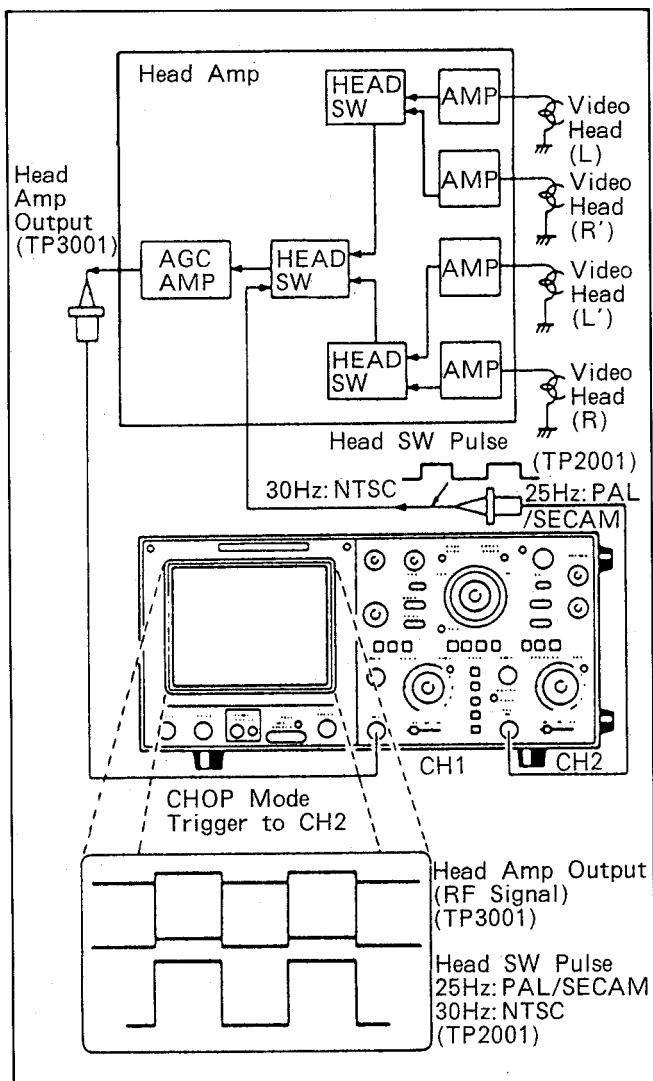


Fig. M7 Connect of Oscilloscope

2. Playback the alignment tape.
3. If the RF envelope appears like example "A" or "B" in Fig.M8 then adjustment of the tape guide post (P2:Entrance) is necessary.
4. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig.M8—"C".

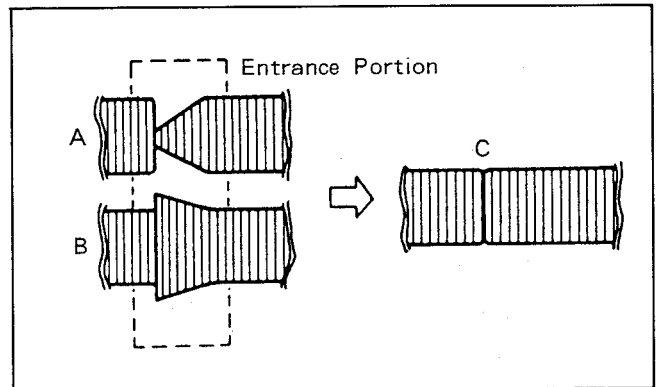


Fig. M8

5. If the RF envelope appears like example "D" or "E" in Fig.M9, then adjustment of the tape guide post (P3:Exit) is necessary.
6. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig.M9—"F".

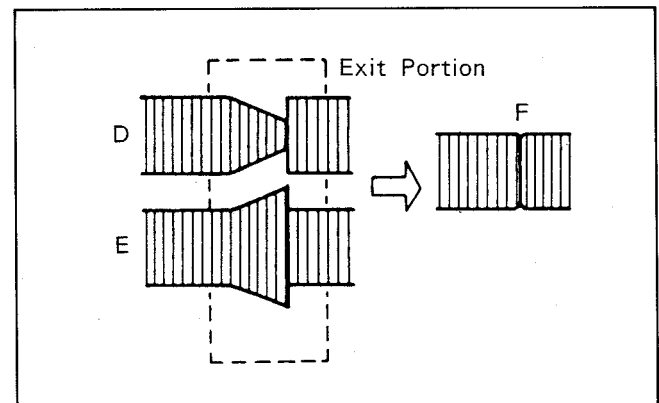


Fig. M9

7. Turn the Tracking VR fully clockwise and counter clockwise. (Keep pressing + button or - button on the Remote Controller) The output envelope should vary nearly parallel with other condition as shown in Fig.M10.
8. Set the tracking control into centre fix position and adjust for maximum RF envelope. If the RF envelope does not meet these specifications, $V1/V \geq 0.7$, $V2/V \geq 0.8$ (Refer to Fig.M12) then repeat steps 1-8 again.

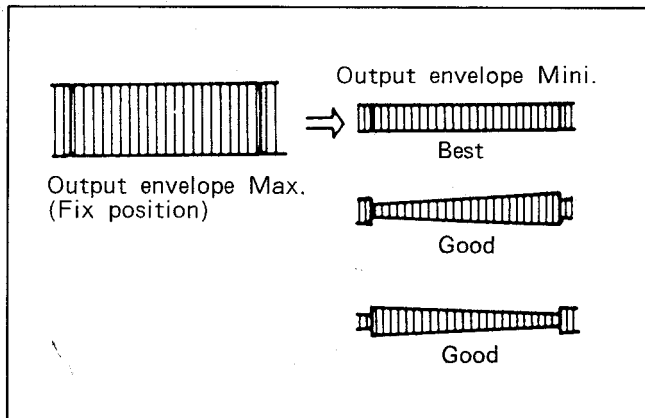


Fig. M10

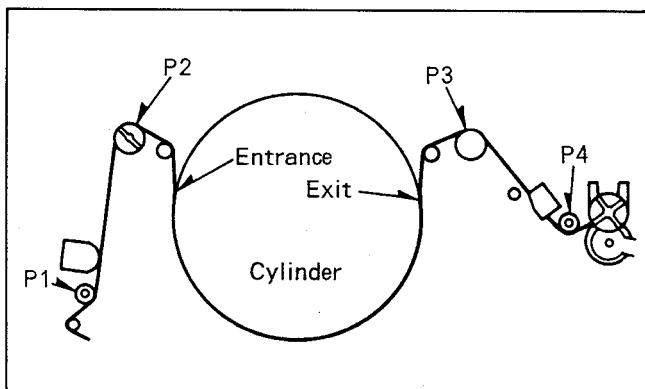


Fig. M11 Loading of Posts

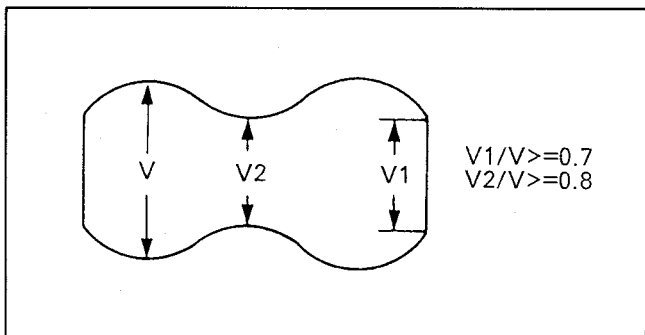


Fig. M12 Spec. of Envelope Figure

(2) Height Adjustment of A/C Head (1)

- 1) Install the A/C HEAD on the A/C HEAD BASE (E) by 3 screws (A),(B) and (C) with springs.
- 2) Tighten the screw (A) until it touches chassis and then rotate the SCREW(A) counterclockwise for approx. 1.5 times.
- 3) Rotate the 2 screws(B) and (C) until A/C HEAD BASE (D) and (E) is separate.

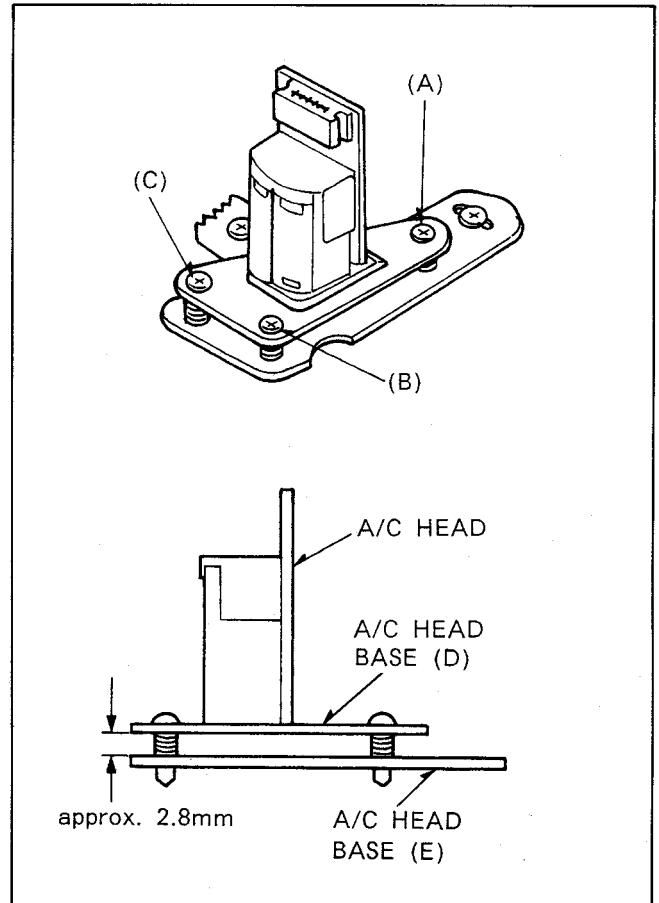


Fig. M13

(3) Height Adjustment of A/C Head (2)

- 1) Playback the alignment tape.
- 2) Rotate the screw (A) or (B) until the wrinkle appears on the lower edge of tape at P4 post.
- 3) Rotate the screw (A) or (B) until the wrinkle just disappears on the lower edge of tape at P4 post.
- 4) Connect the oscilloscope to audio output terminal.
- 5) Rotate the screw (C) until audio signal is maximized.

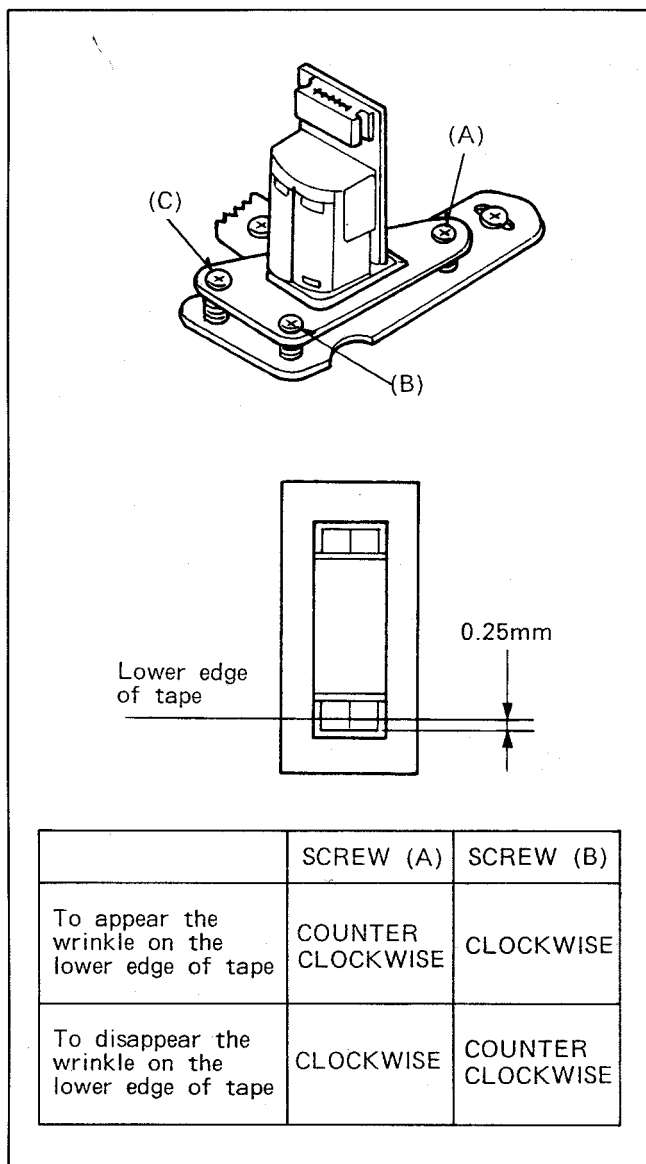


Fig. M14

(4) Fine-Adjustment of A/C HEAD

<When moving the A/C HEAD up>

- 1) Rotate the screw (A) counterclockwise until the wrinkle appears on the lower edge of tape at P4 post.
- 2) Rotate the screw (B) counterclockwise until the wrinkle just disappears on the lower edge of tape at P4 post.
- 3) Rotate the screw (C) counterclockwise until the audio signal is maximized.

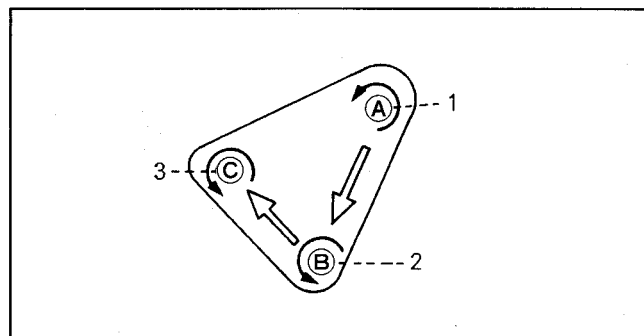


Fig. M15

<When moving the A/C HEAD down>

- 1) Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape at P4 post.
- 2) Rotate the screw (A) clockwise until the wrinkle just disappears on the lower edge of tape at P4 post.
- 3) Rotate the screw (C) clockwise until the audio signal is maximized.

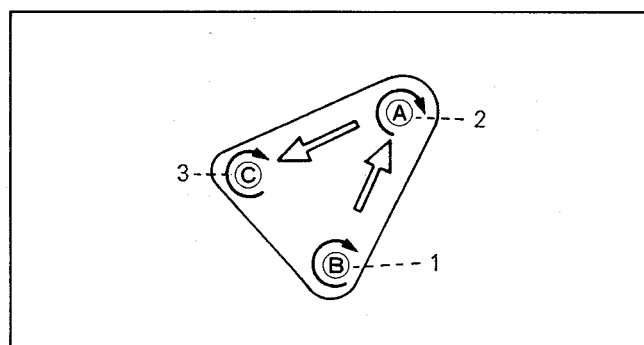


Fig. M16

(5) Horizontal Position Adjustment of A/C HEAD

- 1) Set the tracking control into the centre fix position. (by pressing the tracking (+) and (-) button simultaneously on the Remote Controller)
- 2) Connect the oscilloscope to the output of the Head Amp as shown in Fig.M7.
- 3) Playback the alignment tape.
- 4) Loosen the 2 screws (F) and (G).
- 5) Adjust the A/C HEAD BASE (E) until the RF envelope waveform is maximized.

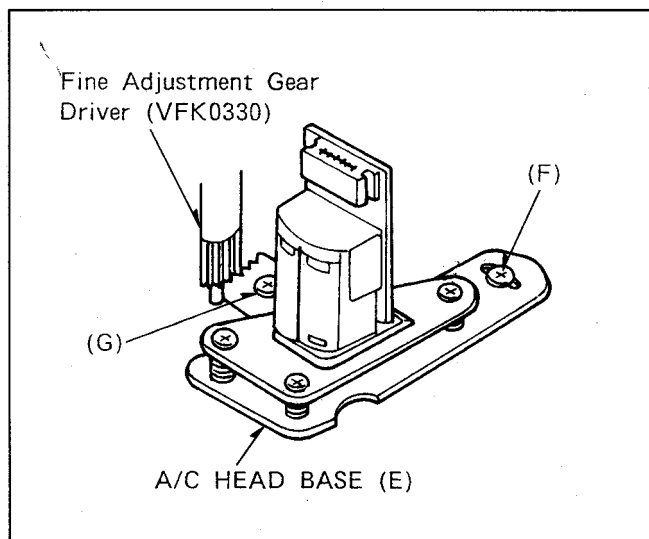


Fig. M17

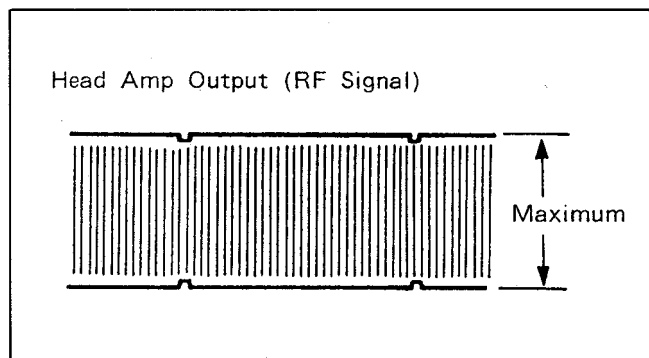
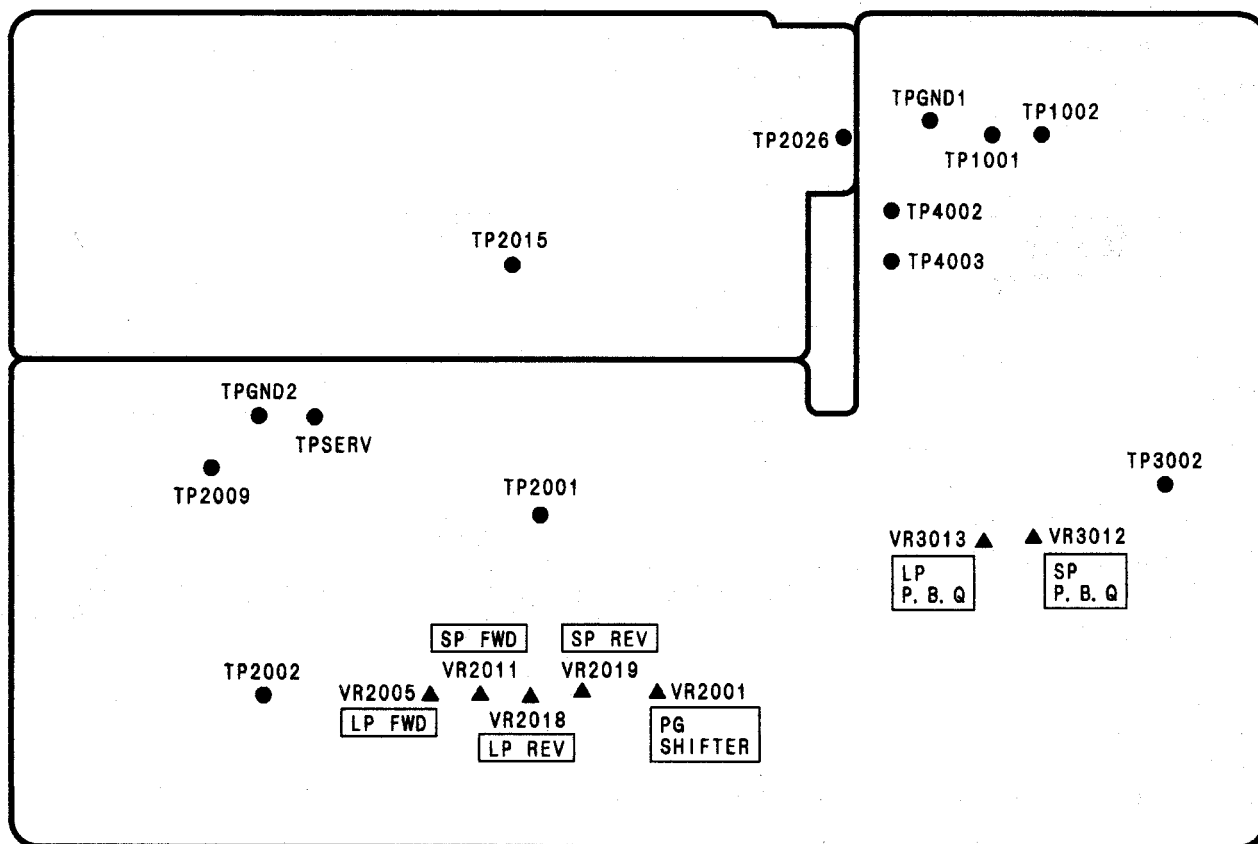
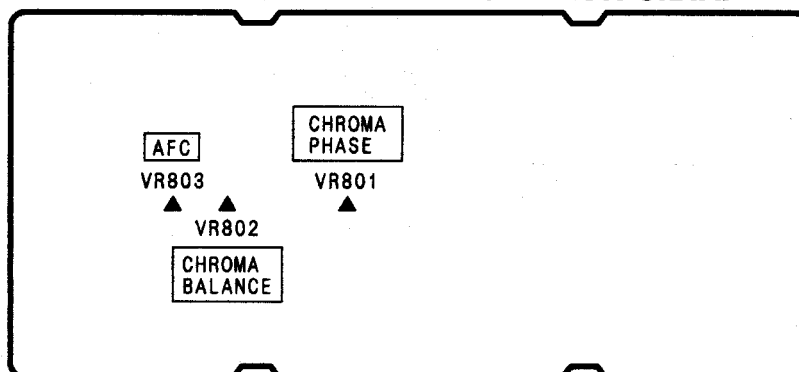


Fig. M18

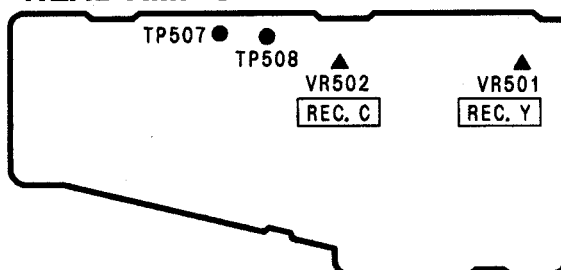
LOCATION OF TEST POINTS & CONTROLS

MAIN C.B.A.

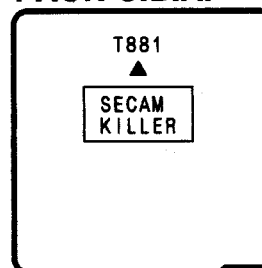
LUMINANCE & CHROMINANCE PACK C.B.A.



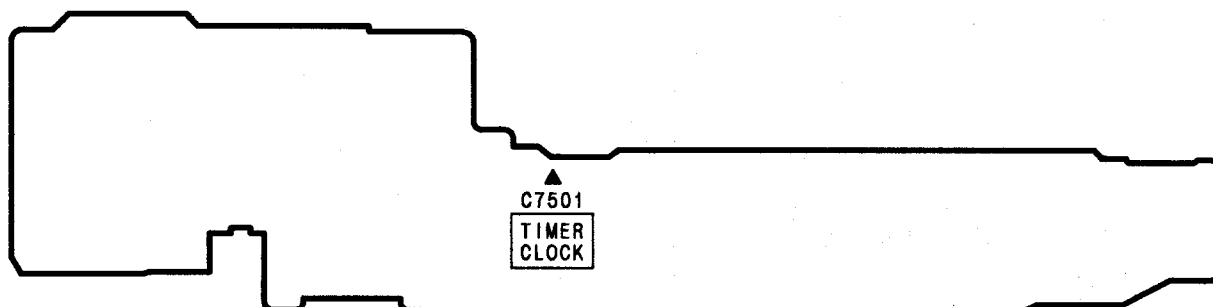
HEAD AMP C.B.A.



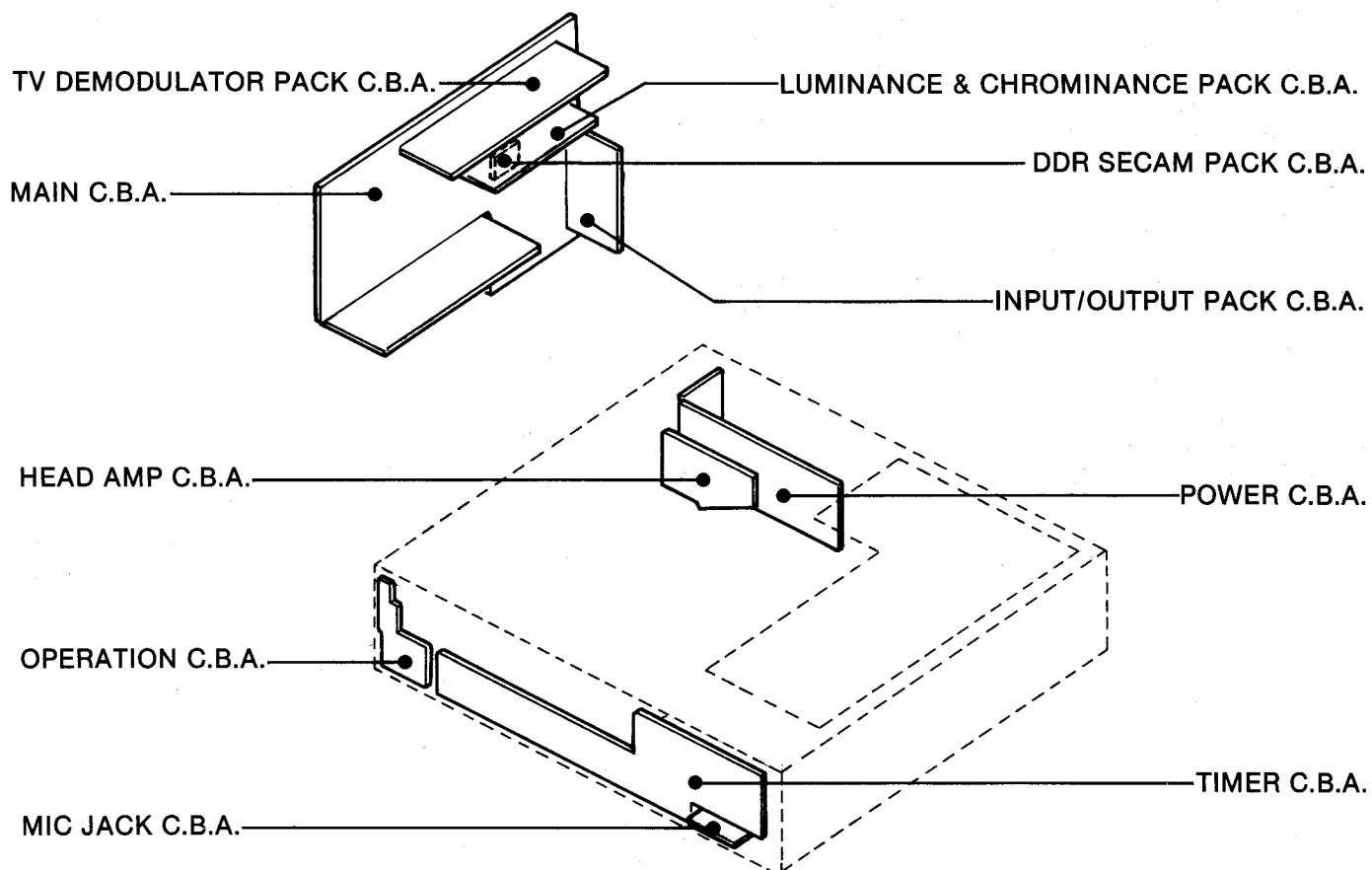
DDR SECAM PACK C.B.A.



TIMER C.B.A.



CIRCUIT BOARD LAYOUT



2-6. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete adjustment procedures required for electric circuits of VHS Video Cassette Recorders.

2-6-1. TEST EQUIPMENT

To perform electrical adjustments following equipment is required.

1. Dual-Trace Oscilloscope. (More than 35 MHz)
Voltage Range: 0.005-5V/div
Frequency Range: DC-35MHz
Probes: 10:1
2. Frequency Counter.
Frequency Range: 0-10MHz
Probes: 1:1
3. Universal Counter.
4. Vacuum Tube Volt Meter. (V.T.V.M.)
5. Video Sweep Generator.
6. Sine Wave Generator.
7. Video Pattern Generator.
8. VHS Alignment Tape. (VFJ8125H3F)
9. VHS Blank Tape.
10. Monitor.
11. Plastic Tip Driver.

2-6-2. PREPARATION

During adjustment, set each selector as follows: when no indication in the procedure.

NOISE FILTER/EDIT SW.....OFF
TEST SIGNAL SW (REAR).....OFF
TAPE SPEED.....SP

2-6-3. HOW TO READ ADJUSTMENT PROCEDURES

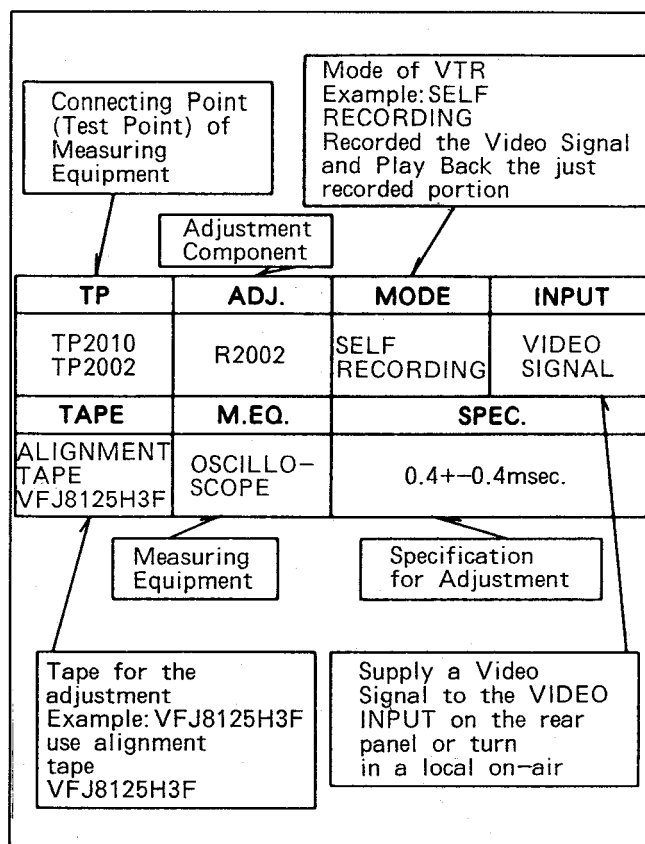


Fig. E1

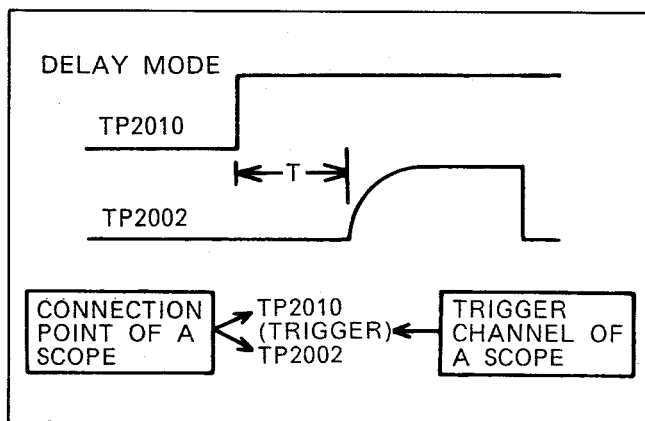


Fig. E2

SERVO SECTION

2-6-4. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP3002	VR2001	PLAYBACK	
TAPE	M. EQ.	SPEC.	
ALIGNMENT TAPE, VFJ8125H3F	OSCILLO- SCOPE	7.0+ \pm 0.5(H)	

1. Connect the oscilloscope to TP2001(H.SW) and TP3002(V.OUT)
2. Playback the alignment tape.
3. Adjust VR2001 so that phase difference between falling edge of Head SW pulse and V-Sync is 7.0+ \pm 0.5(H).

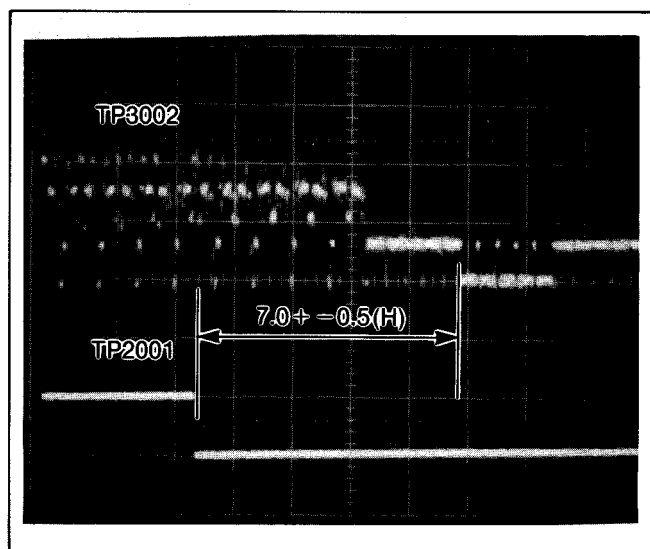


Fig. E3

2-6-5. SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2011(SP) VR2006(LP)	SP (SELF RECORDED) STILL	COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	MONITOR TV	A=B (A+B)/V<1/6	

1. Connect a cut jumper wire as shown in Fig.E4.
2. Record the colour bar in SP(LP) mode for a few minutes and playback the just recorded portion.
3. Place the unit in SLOW mode by pressing search button on Remote Controller Unit.
4. Adjust VR2011(SP)(VR2006(LP)) until noise bar on the monitor screen is minimized. (Detail specifications are shown in Fig.E5)
5. Disconnect a jumper wire.

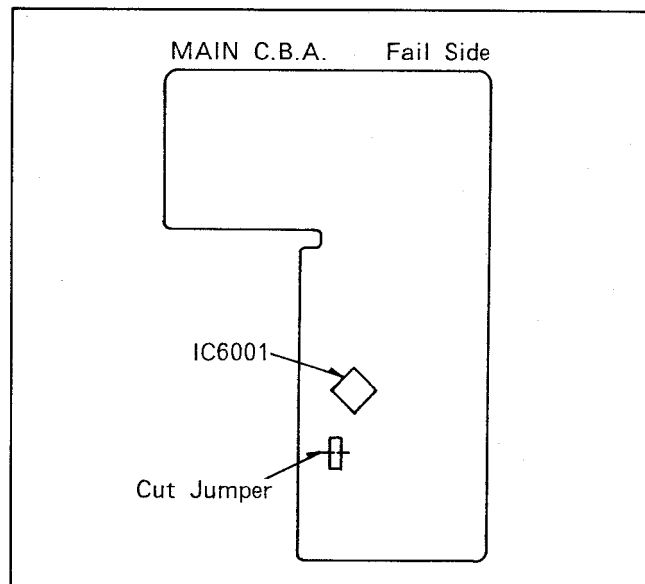


Fig. E4

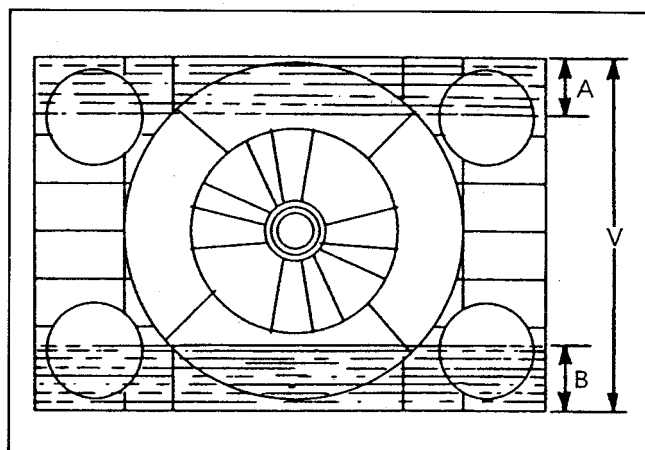


Fig. E5

2-6-6. REVERSE SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2019(SP) VR2018(LP)	REVERSE SLOW	COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	MONITOR TV	SP: $A=B$ $(A+B)/V < 1/6$ LP: $A=0$ $B/V < 1/3$	

1. Connect a cut jumper wire as shown in Fig.E4.
2. Record the colour bar in SP(LP) mode for a few minutes and playback the just recorded portion.
3. Place the unit in SLOW mode by pressing search button on Remote Controller Unit.
4. Adjust VR2019(SP)(VR2018(LP)) until noise bar on the monitor screen is minimized. (Detail specifications are shown in Fig.E5)
5. Disconnect a jumper wire.

LUMINANCE & CHROMINANCE SECTION

2-6-7. ARTIFICIAL NTSC AFC FREE RUN ADJUSTMENT

TP	ADJ.	MODE	INPUT
PIN (9) of IC802	VR803	STOP	SINEWAVE 8KHz -10dB (316mV)
TAPE	M. EQ.	SPEC.	
	FREQUENCY COUNTER SINEWAVE GENERATOR	15735 \pm 100(Hz)	

Note:

Supply +5V DC to Pin 27 of IC802.

1. Supply a sinewave (8KHz/-10dB) to Line In. (Video In)
2. Connect the frequency counter to Pin 9 of IC802.
3. Turn VR803 to maximum frequency.
4. Adjust VR803 so the frequency is 15735 \pm 100(Hz).

2-6-8. RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP507(HOT) TP508(GND)	VR501(Y) VR502(C)	SP RECORDING	COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLOSCOPE	Y: 130 \pm 5(mVp-p) C: 32 \pm 2(mVp-p)	

1. Record the colour bar.
2. Connect the oscilloscope to TP507(HOT) and TP508(GND).
3. Adjust VR501 so the amplitude of sync tip portion is 130 \pm 5mVp-p.
4. Supply +5V DC to PP3001-6 to reduce luminance component.
5. Adjust VR502 until the amplitude of Cyan is 32 \pm 2mVp-p.

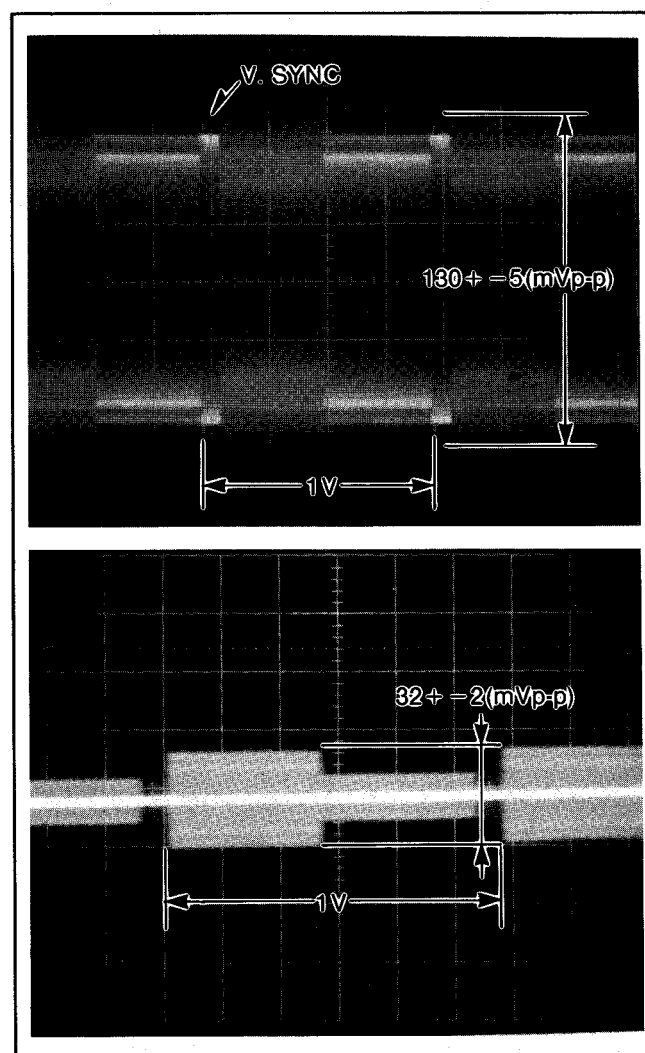


Fig. E6

2-6-9. VIDEO FREQUENCY RESPONSE
ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR3012(SP) VR3013(LP)	(SELF RECORDED) PLAYBACK (SP/LP)	VIDEO SWEEP SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE VIDEO SWEEP GENERATOR	SP: 0+-1(dB) (90 - 110%) LP: 0+-1(dB) (90 - 110%)	

Note:
 (1) Set the Video Sweep Signal as shown in Fig.E7.

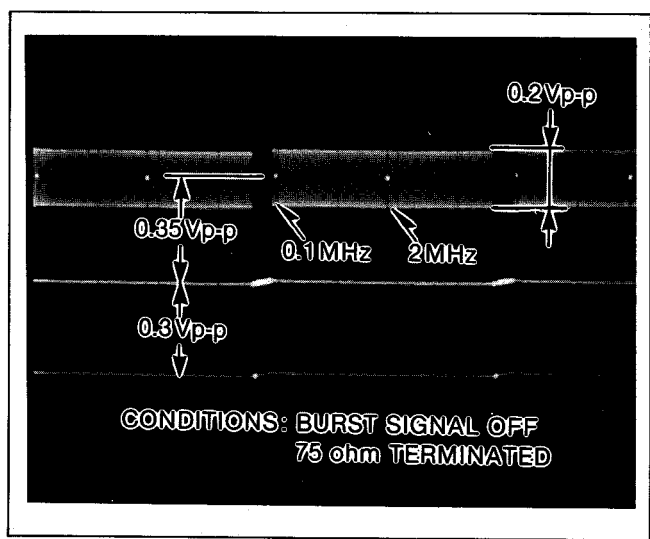


Fig. E7

1. Record the Video Sweep Signal in SP/(LP) mode for a few minutes and playback the just recorded signal.
2. Connect the oscilloscope to TP3002.
3. Adjust VR3012(SP)(VR3013(LP)) until the frequency response level is 0+-1dB at 2MHz portion by comparing with 0.1MHz portion.

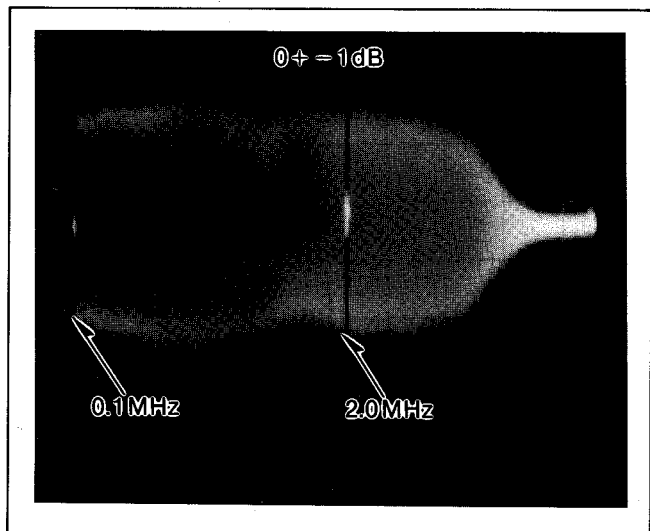


Fig. E8

2-6-10. SECAM KILLER ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC881-11	T881	SP RECORDING	SECAM COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE	MAXIMIZE AMPLITUDE ("A" PORTION: NEGATIVE PEAK)	

1. Record SECAM color bar.
2. Adjust T881 until the amplitude of the signal at the Pin 11 of IC881 is maximum.
 (To make "A" portion negative peak)

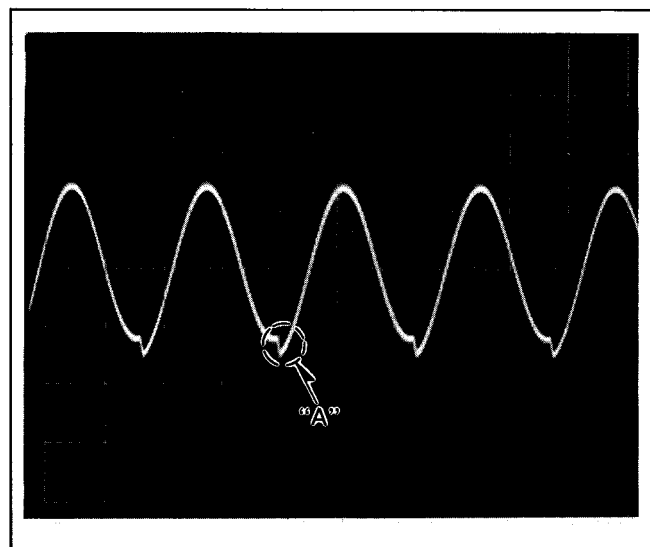


Fig. E9

2-6-11. CHROMINANCE RECURSIVE ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC301-17	VR801 VR802	SELF REC&PB	COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE	MINIMIZE AMPLITUDE	

1. Record the color bar and play back the just recorded portion.
2. Adjust VR801 and VR802 until the amplitude of the signal at the Pin 17 of IC301 is minimum.

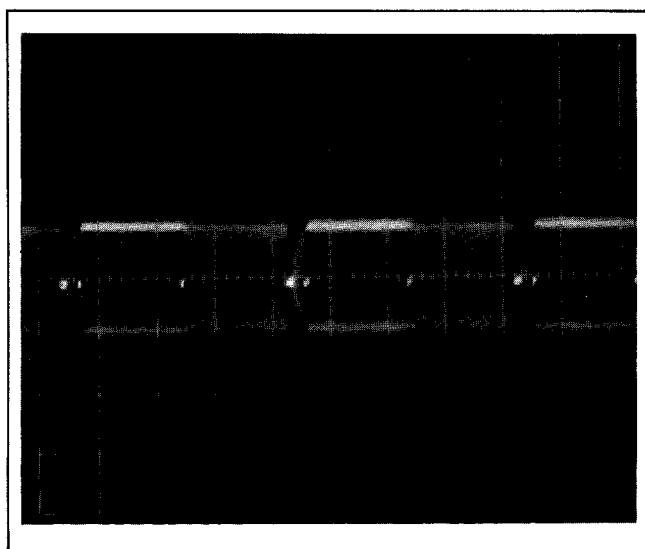


Fig. E10 Before adjustment.

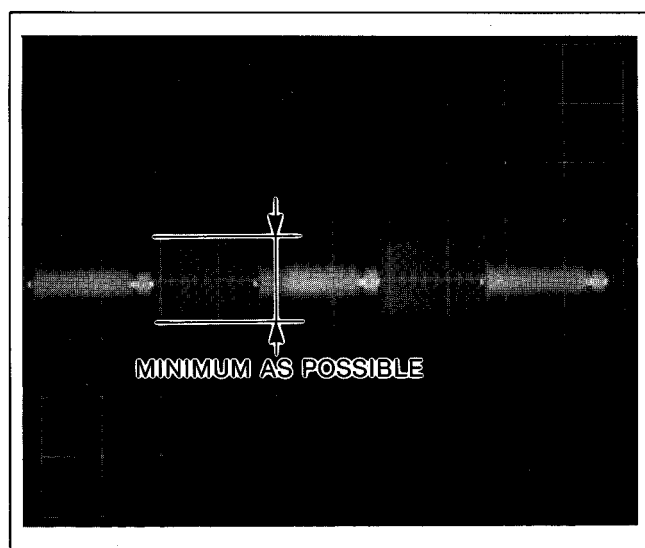


Fig. E11 After adjustment.

AUDIO SECTION

2-6-12. BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4002	RECORDING	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	V.T.V.M.	2.9+/-0.1(mVrms)	

Note:

Connect the Audio input and GND.

1. Place the unit in SP recording mode.
2. Connect the V.T.V.M. to TP4002(HOT) and TP4003(GND).
3. Adjust VR4002 so reading of V.T.V.M. is 2.9+/-0.1(mVrms).

TIMER SECTION

2-6-13. TIMER REFERENCE CLOCK ADJUSTMENT

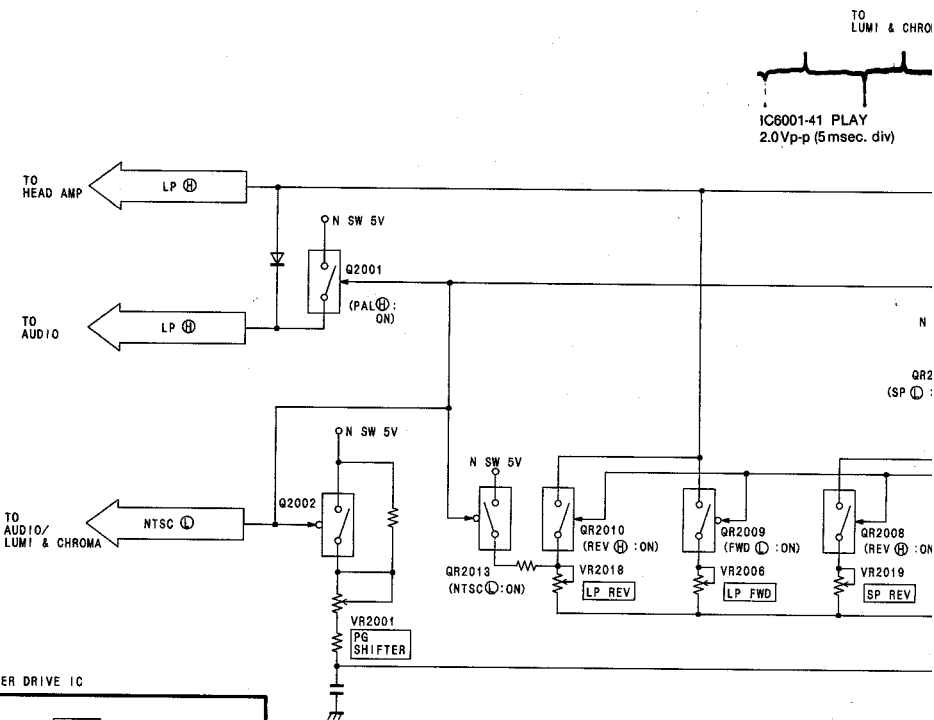
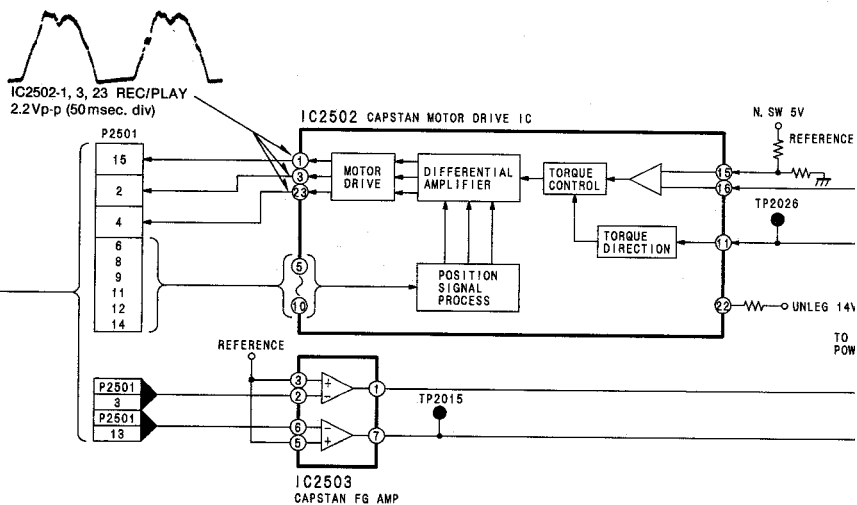
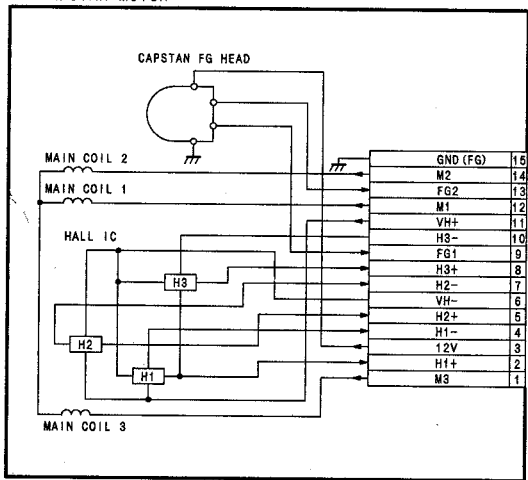
TP	ADJ.	MODE	INPUT
TP7501-28	C7501	STOP	
TAPE	M. EQ.	SPEC.	
	UNIVERSAL COUNTER	7812.5+/-0.015(us)	

1. Connect the universal counter to TP7501-28.
2. Adjust C7501 so the reading of universal counter is 7812.5+/-0.015us.

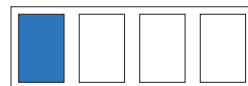
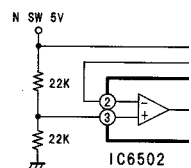
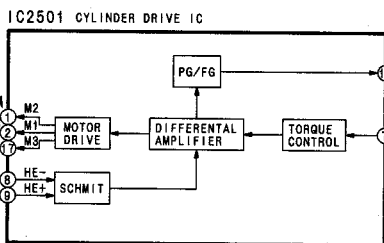
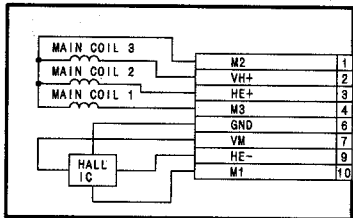
SECTION 3 BLOCK DIAGRAMS

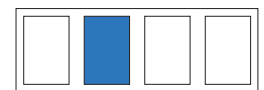
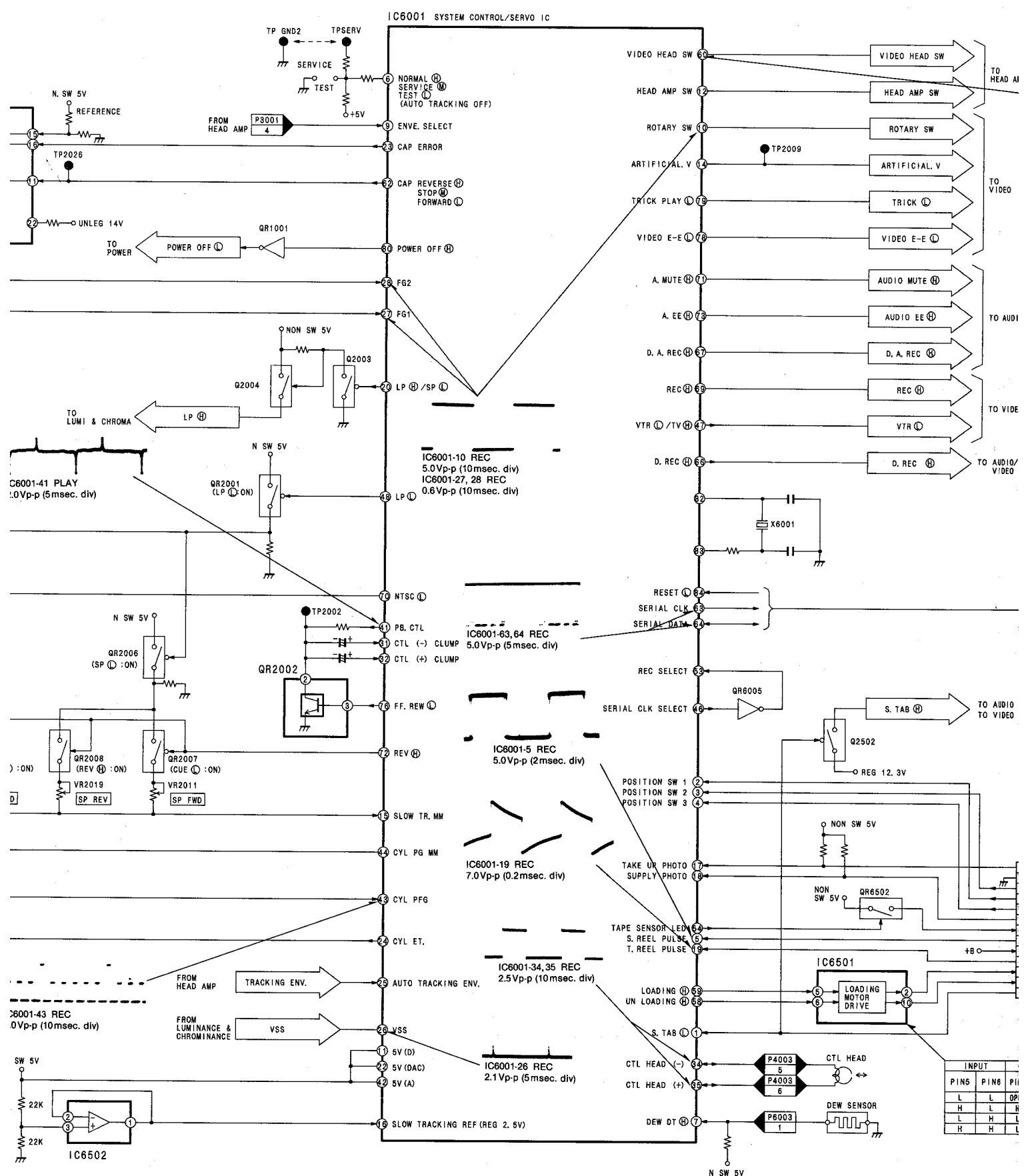
3-1. SYSTEM CONTROL & SERVO BLOCK DIAGRAM

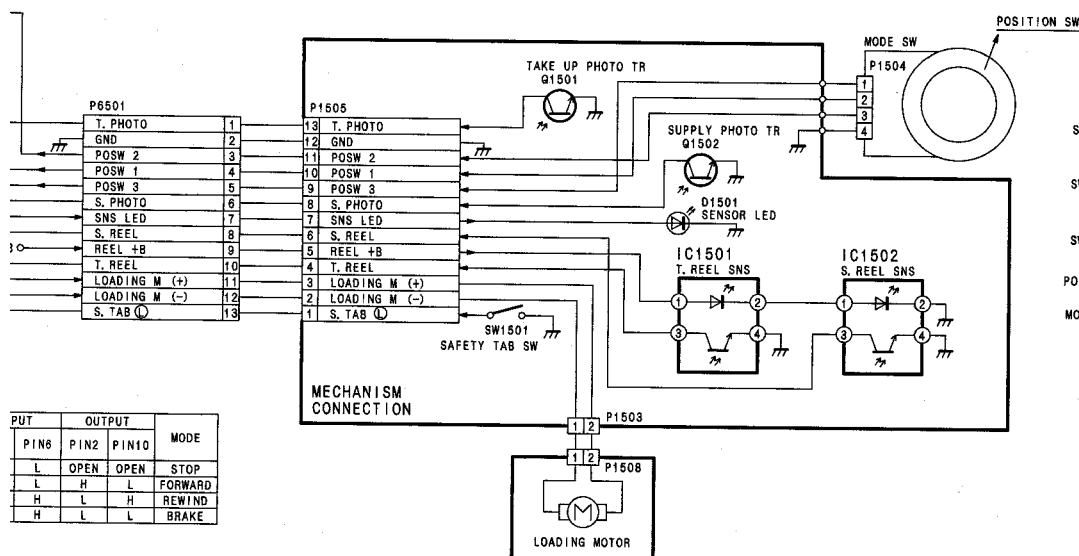
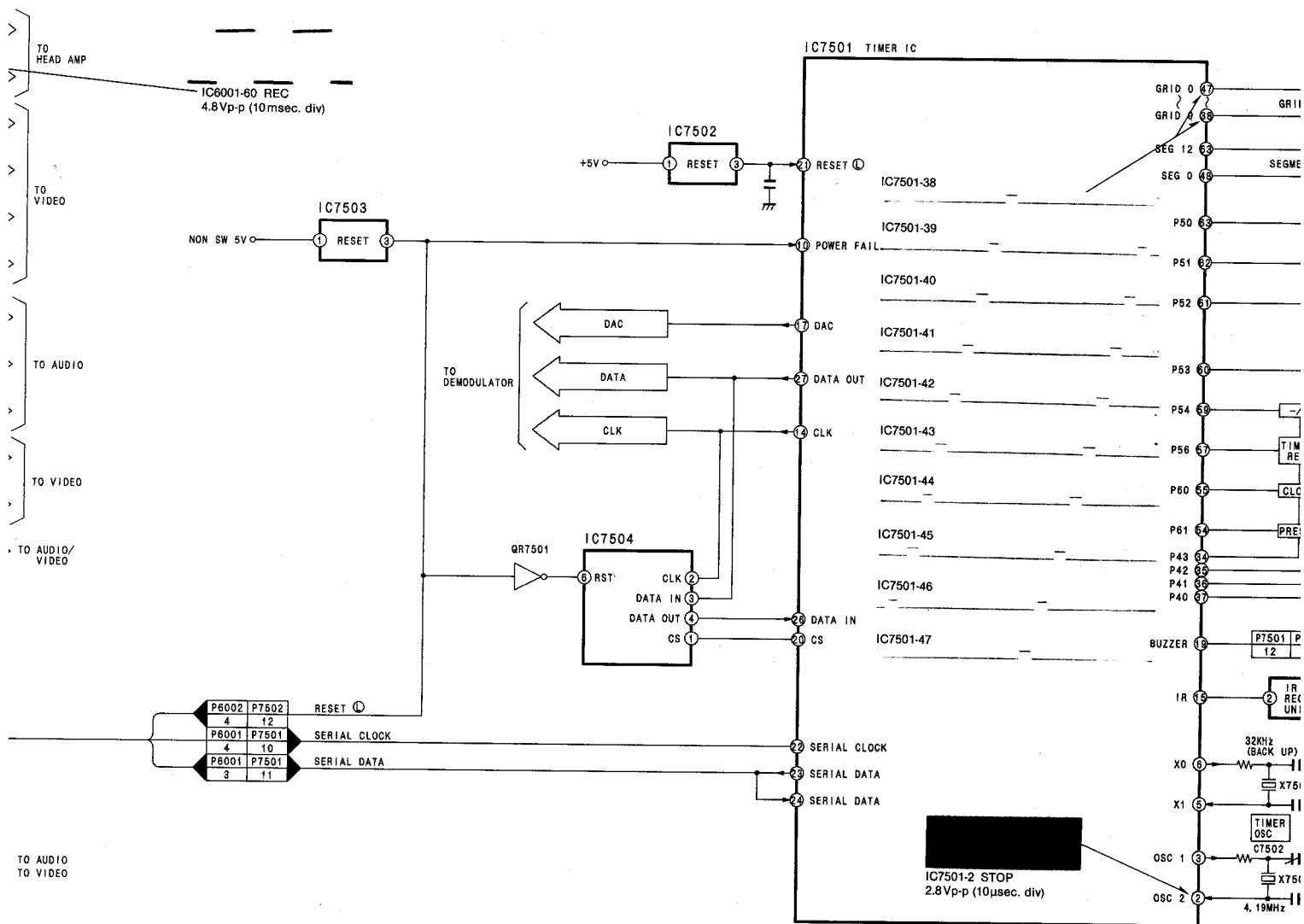
DD CAPSTAN MOTOR



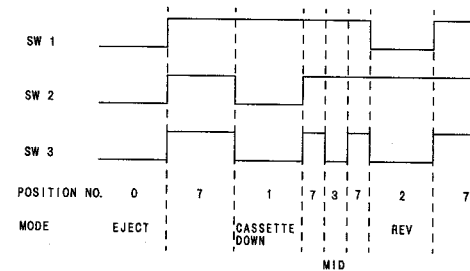
DD CYLINDER MOTOR





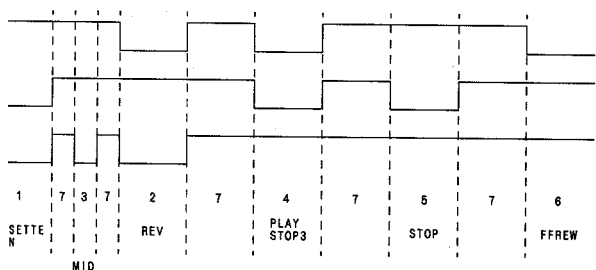
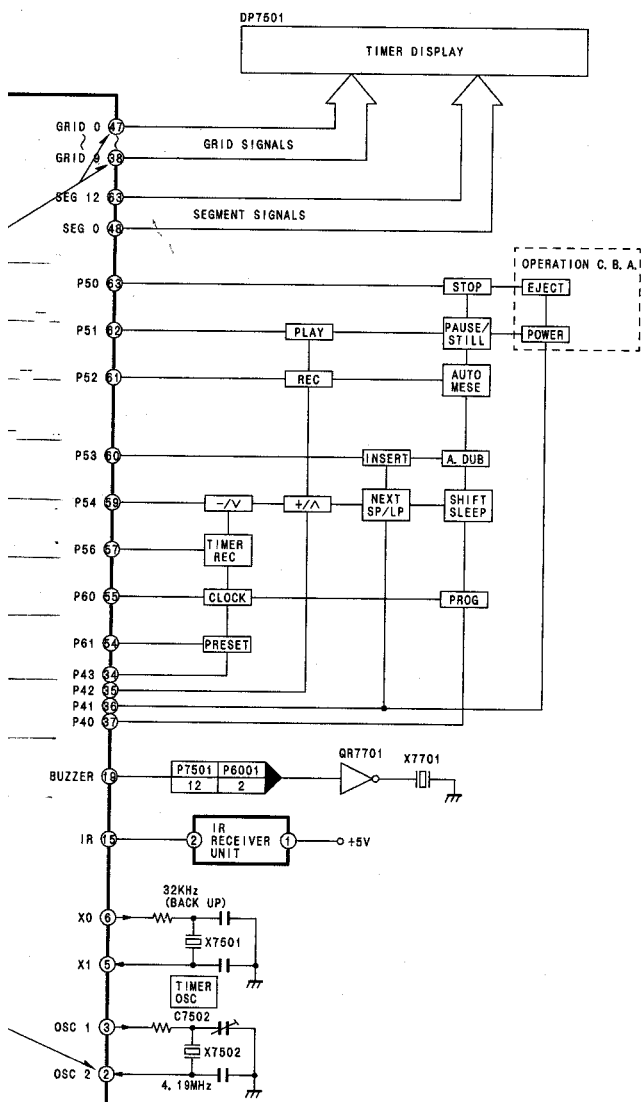






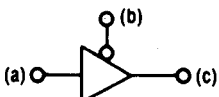
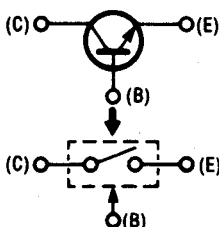
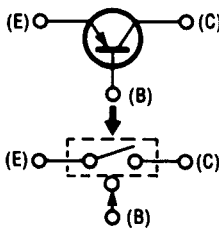
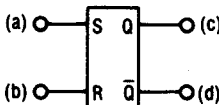



<TIMING CHART>

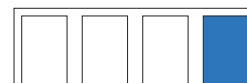


PUT	OUTPUT	MODE
PIN6	PIN2	PIN10
L	OPEN	OPEN
L	H	L
H	L	H
H	L	L
		STOP
		FORWARD
		REWIND
		BRAKE

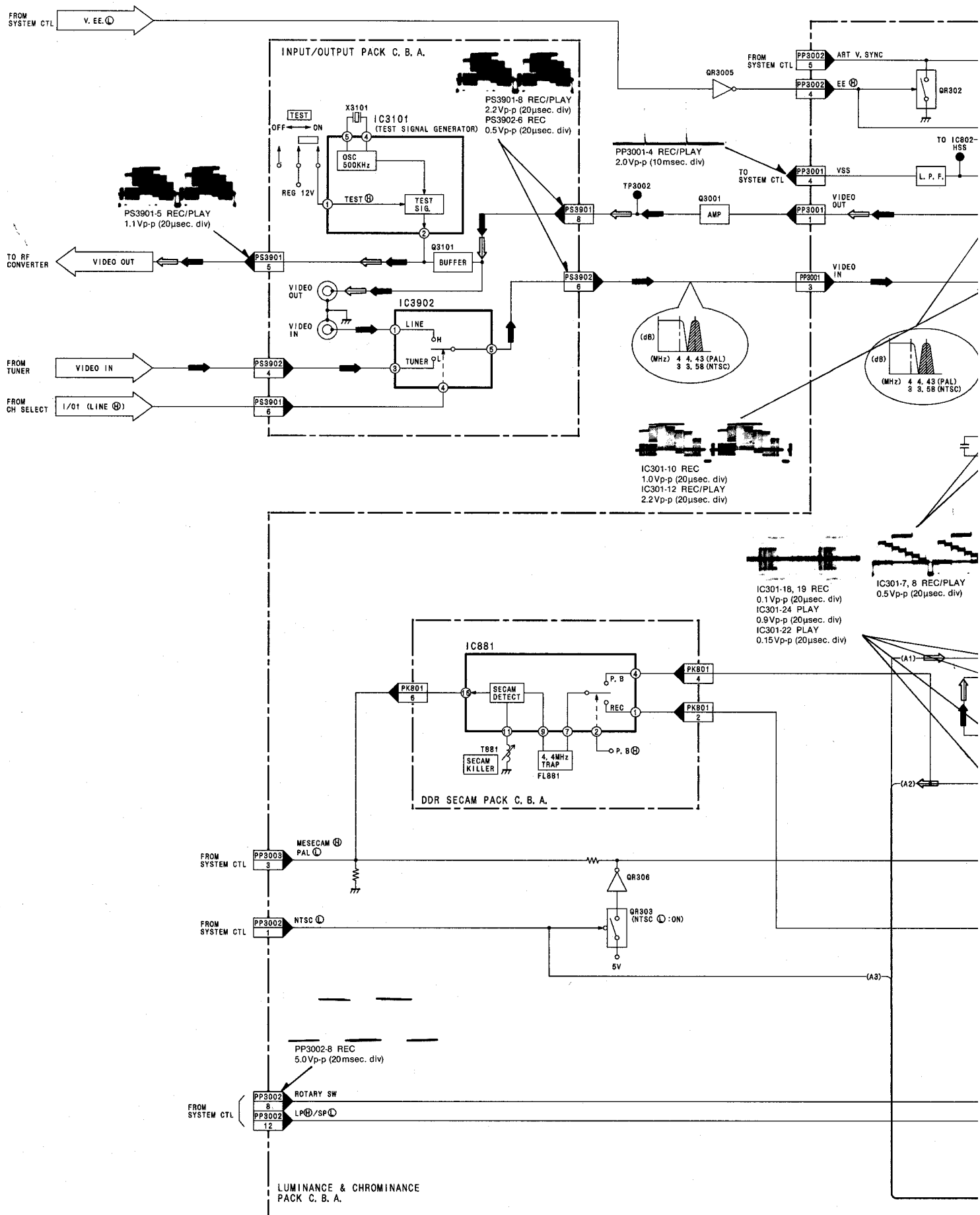


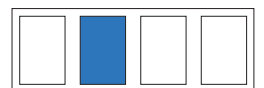
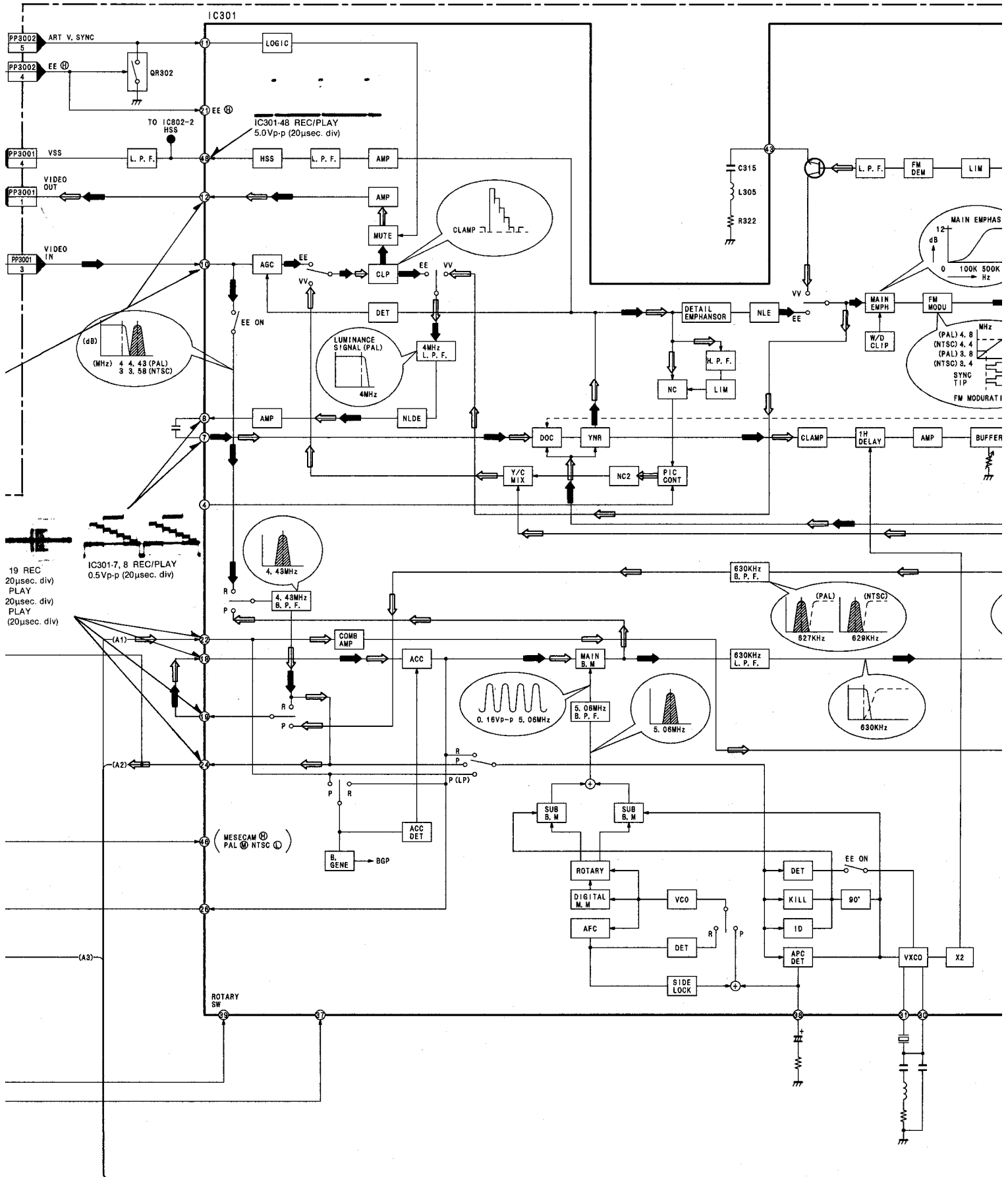


SYMBOL	TRUTH VALUE TABLE															
INVERTER 	<table><tr><td>IN</td><td>(a)</td><td>H</td><td>L</td></tr><tr><td>OUT</td><td>(b)</td><td>L</td><td>H</td></tr></table>	IN	(a)	H	L	OUT	(b)	L	H							
IN	(a)	H	L													
OUT	(b)	L	H													
COMPARTOR 	<table><tr><td>IN</td><td>(a) (b)</td><td>(a) > (b)</td><td>(a) < (b)</td></tr><tr><td>OUT</td><td>(c)</td><td>H</td><td>L</td></tr></table>	IN	(a) (b)	(a) > (b)	(a) < (b)	OUT	(c)	H	L							
IN	(a) (b)	(a) > (b)	(a) < (b)													
OUT	(c)	H	L													
AND CIRCUIT 	<table><tr><td>IN</td><td>(a) (b)</td><td>L</td><td>L</td><td>H</td><td>H</td></tr><tr><td>OUT</td><td>(c)</td><td>L</td><td>L</td><td>L</td><td>H</td></tr></table>	IN	(a) (b)	L	L	H	H	OUT	(c)	L	L	L	H			
IN	(a) (b)	L	L	H	H											
OUT	(c)	L	L	L	H											
OR CIRCUIT 	<table><tr><td>IN</td><td>(a) (b)</td><td>L</td><td>L</td><td>H</td><td>H</td></tr><tr><td>OUT</td><td>(c)</td><td>L</td><td>H</td><td>H</td><td>H</td></tr></table>	IN	(a) (b)	L	L	H	H	OUT	(c)	L	H	H	H			
IN	(a) (b)	L	L	H	H											
OUT	(c)	L	H	H	H											
THREE STATES BUFFER 	<table><tr><td>IN</td><td>(a) (b)</td><td>H</td><td>L</td><td>H or L</td></tr><tr><td>OUT</td><td>(c)</td><td>H</td><td>L</td><td>※</td></tr></table> <p>※ High Impedance</p>	IN	(a) (b)	H	L	H or L	OUT	(c)	H	L	※					
IN	(a) (b)	H	L	H or L												
OUT	(c)	H	L	※												
TR. SW (NPN TYPE) 	<table><tr><td>BASE</td><td>H</td><td>L</td></tr><tr><td>TR. SW</td><td>ON</td><td>OFF</td></tr></table>	BASE	H	L	TR. SW	ON	OFF									
BASE	H	L														
TR. SW	ON	OFF														
TR. SW (PNP TYPE) 	<table><tr><td>BASE</td><td>H</td><td>L</td></tr><tr><td>TR. SW</td><td>OFF</td><td>ON</td></tr></table>	BASE	H	L	TR. SW	OFF	ON									
BASE	H	L														
TR. SW	OFF	ON														
R-S TYPE FLIP-FLOP 	<table><tr><td>IN</td><td>(a) (b)</td><td>L</td><td>L</td><td></td></tr><tr><td>OUT</td><td>(c) (d)</td><td>※</td><td>L</td><td>H</td></tr><tr><td></td><td></td><td>◆</td><td>H</td><td>L</td></tr></table> <p>※ Initial condition is maintained. ◆ Initial condition is reversed.</p>	IN	(a) (b)	L	L		OUT	(c) (d)	※	L	H			◆	H	L
IN	(a) (b)	L	L													
OUT	(c) (d)	※	L	H												
		◆	H	L												

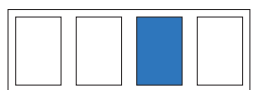
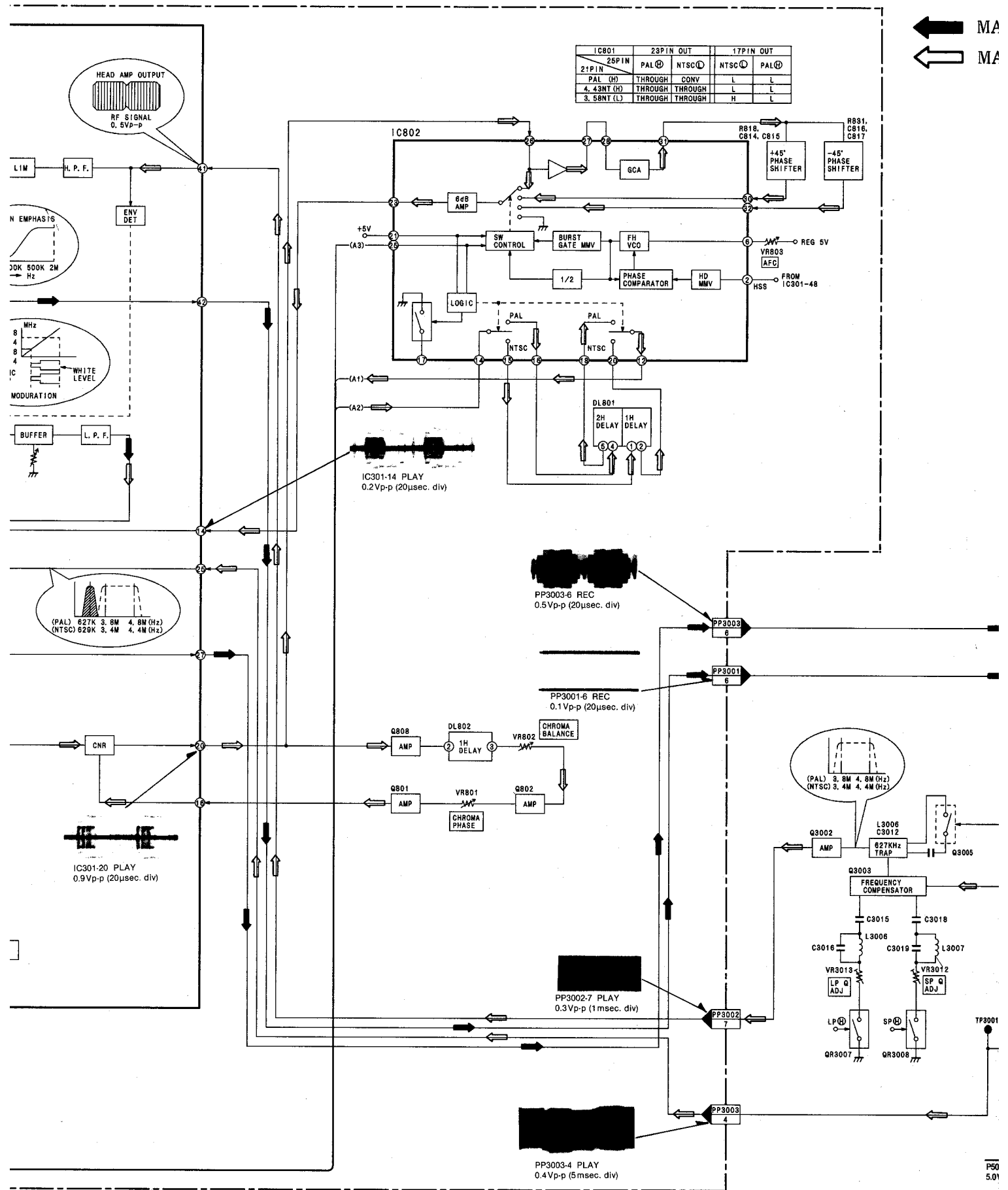




3-2. LUMINANCE & CHROMINANCE BLOCK DIAGRAM

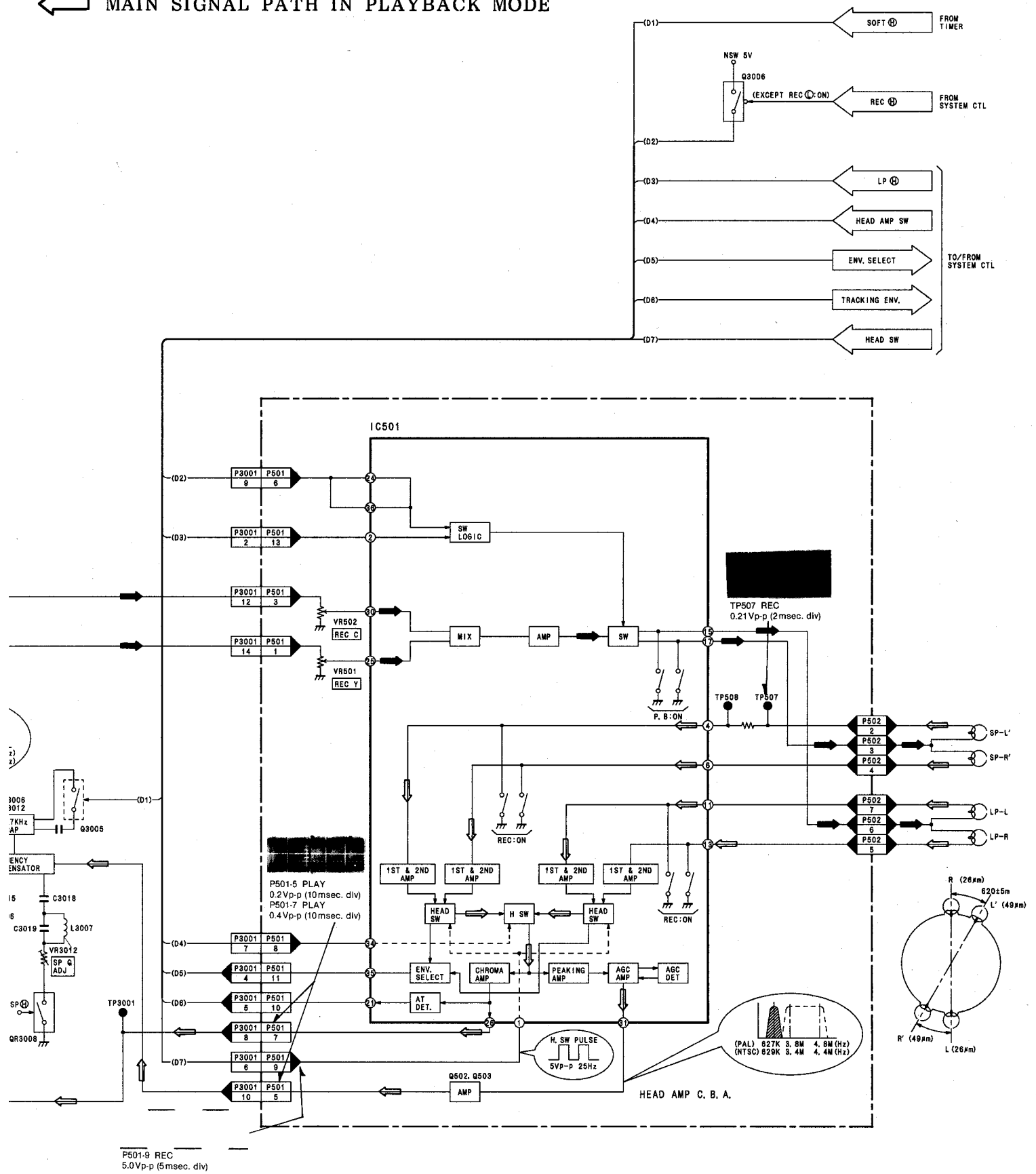




MA
MA

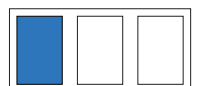
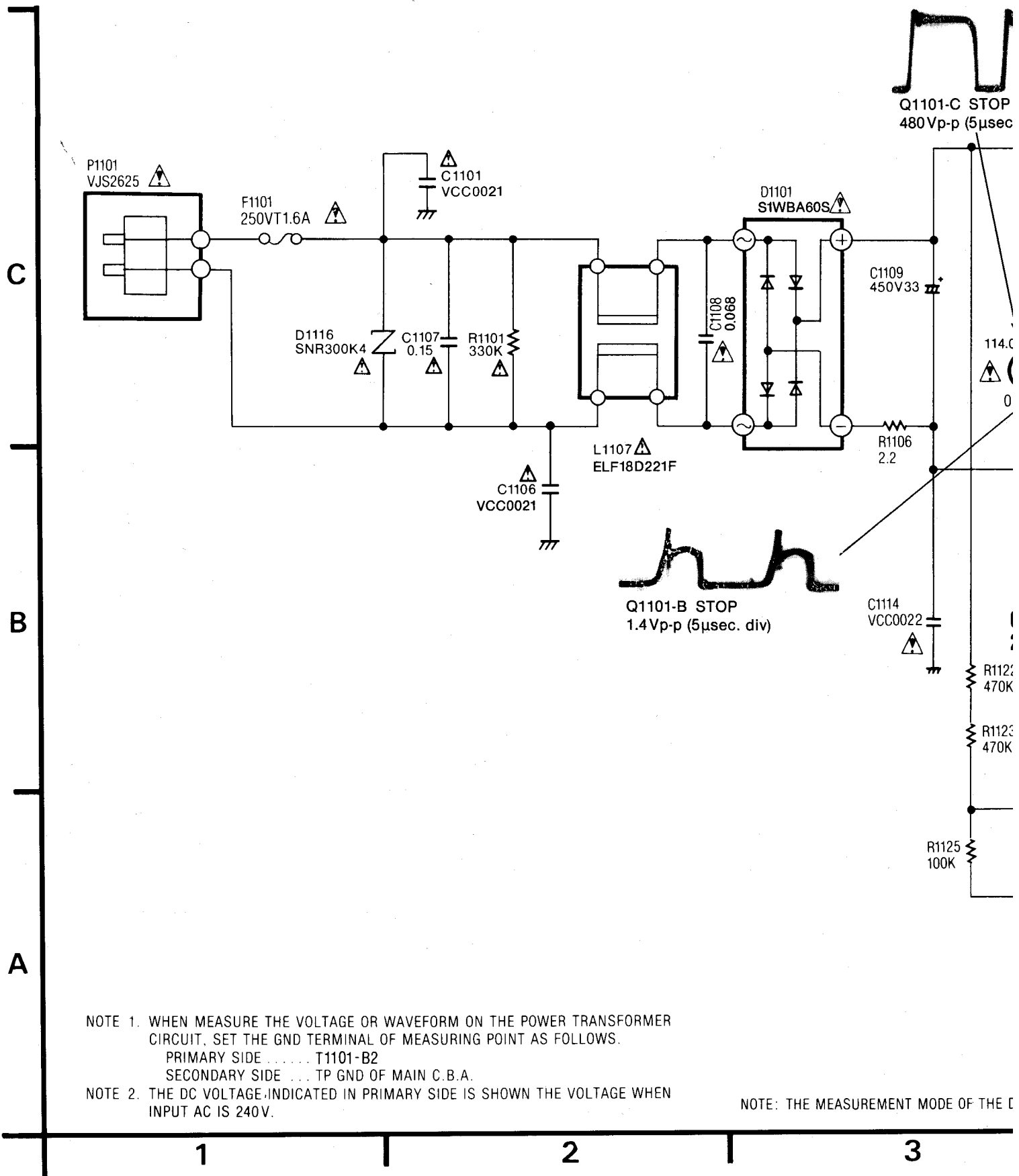


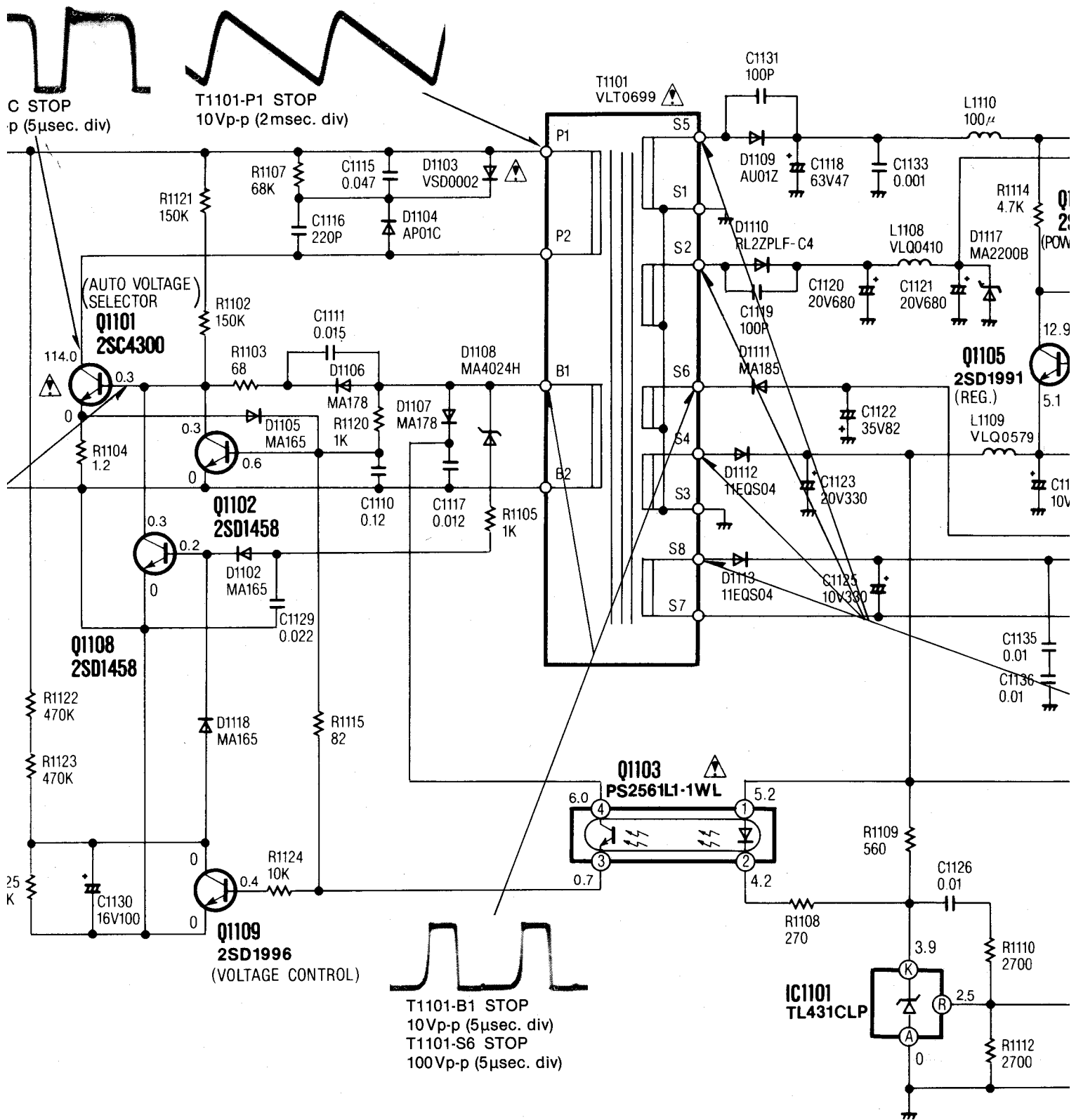
 MAIN SIGNAL PATH IN REC MODE
 MAIN SIGNAL PATH IN PLAYBACK MODE



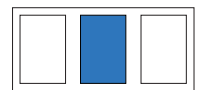
SECTION 4 SCHEMATIC DIAGRAMS

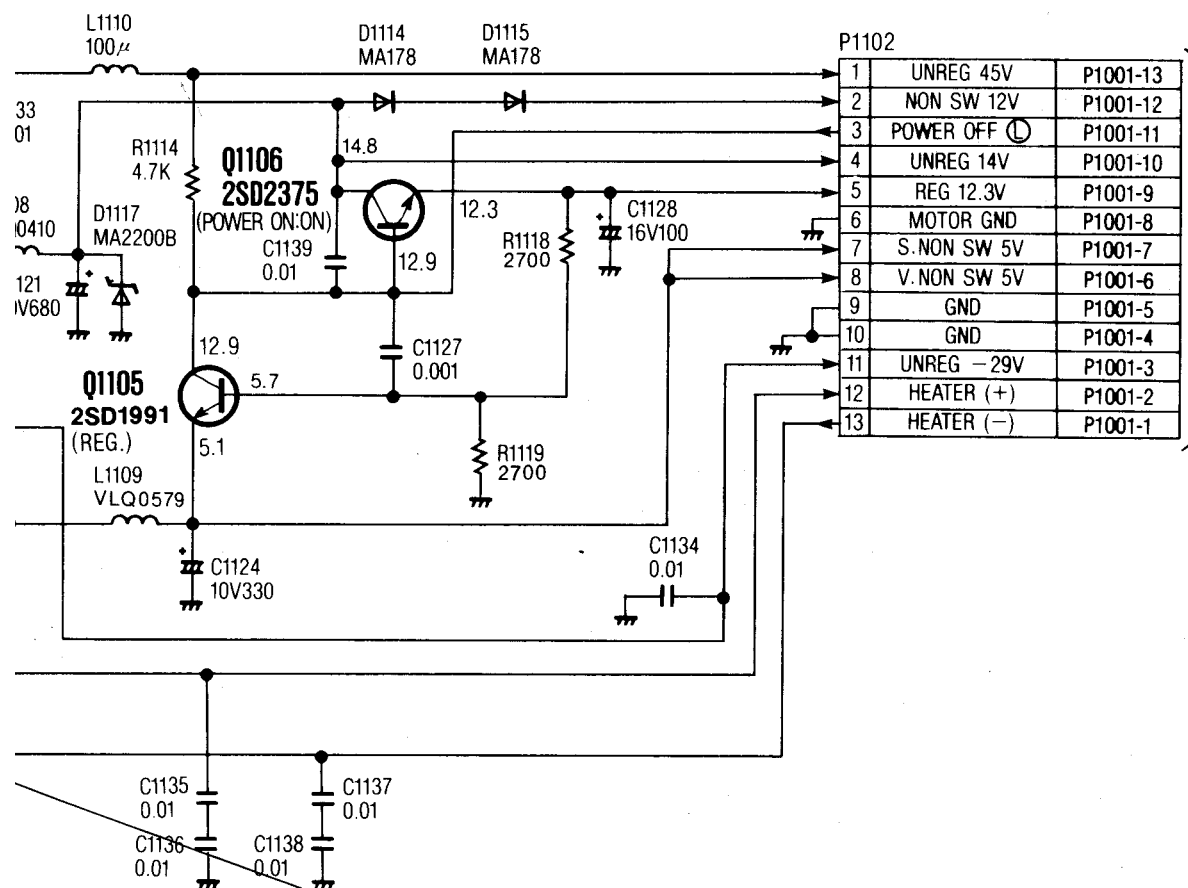
4-1. POWER SCHEMATIC DIAGRAM





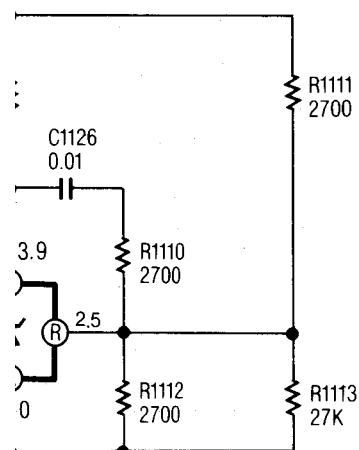
OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.





TO LUMINANCE/
CHROMINANCE & AUDIO
SECTION P1001
(Page: 4-13/F-18)

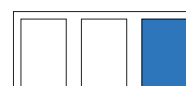
P1102		
1	UNREG 45V	P1001-13
2	NON SW 12V	P1001-12
3	POWER OFF	P1001-11
4	UNREG 14V	P1001-10
5	REG 12.3V	P1001-9
6	MOTOR GND	P1001-8
7	S. NON SW 5V	P1001-7
8	V. NON SW 5V	P1001-6
9	GND	P1001-5
10	GND	P1001-4
11	UNREG -29V	P1001-3
12	HEATER (+)	P1001-2
13	HEATER (-)	P1001-1



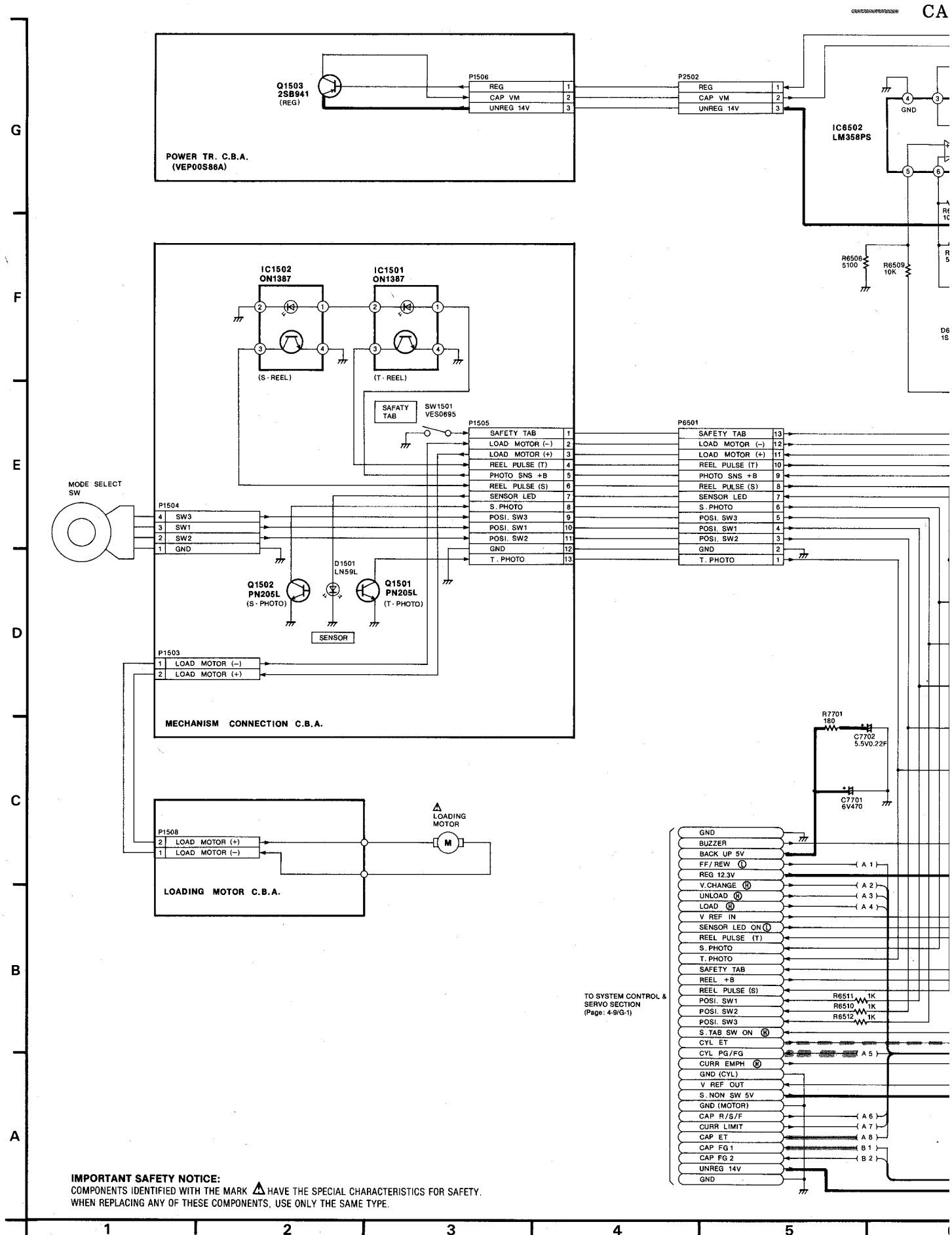
T1101-S2 STOP
50Vp-p (5μsec. div)
T1101-S4 STOP
20Vp-p (5μsec. div)
T1101-S5 STOP
125Vp-p (5μsec. div)
T1101-S8 STOP
25Vp-p (5μsec. div)


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN HAVE SPECIAL CHARACTERISTICS
IMPORTANT FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY
THE SPECIFIED PARTS.

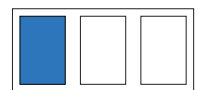
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.



4-2. SUB SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

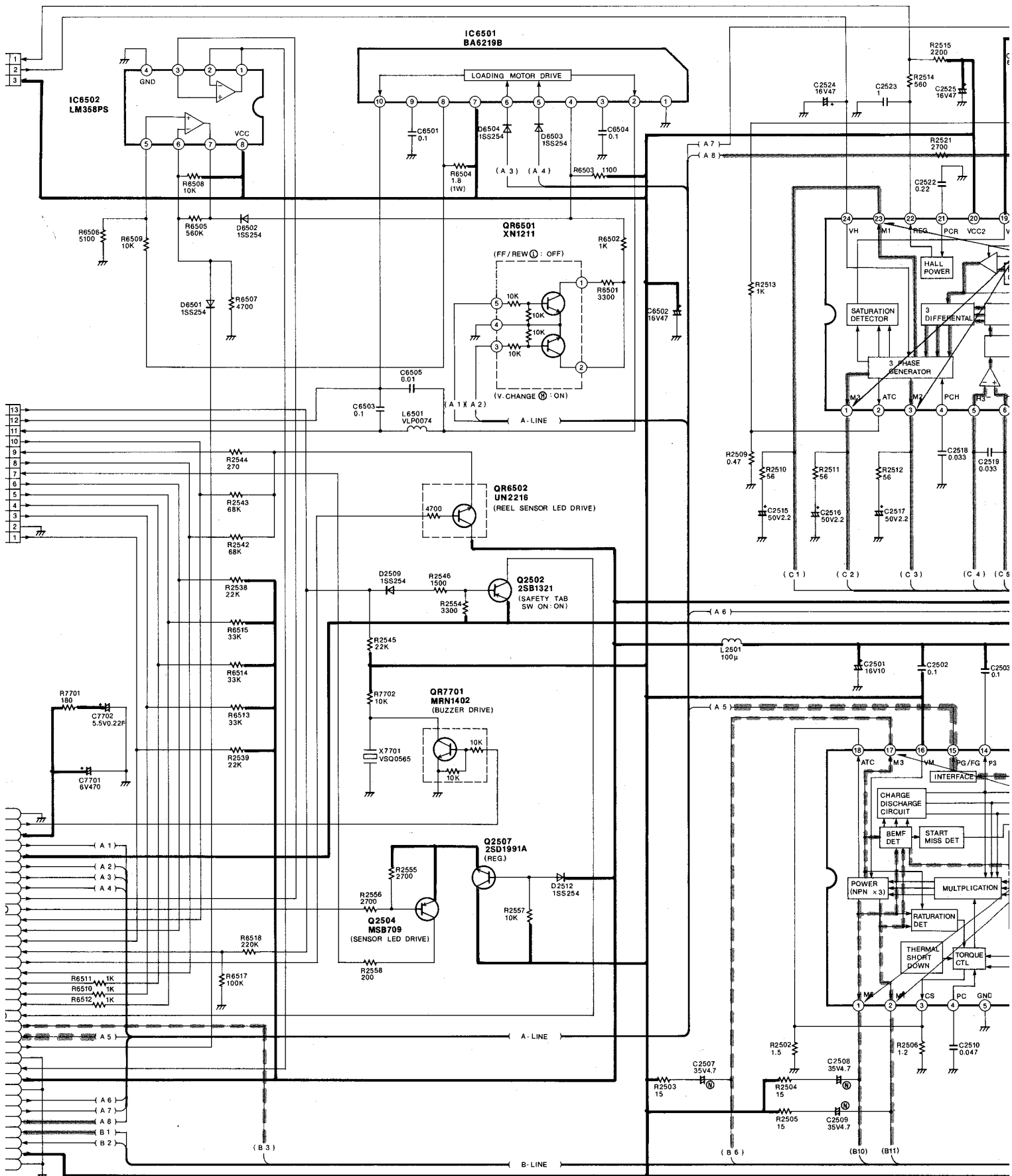


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

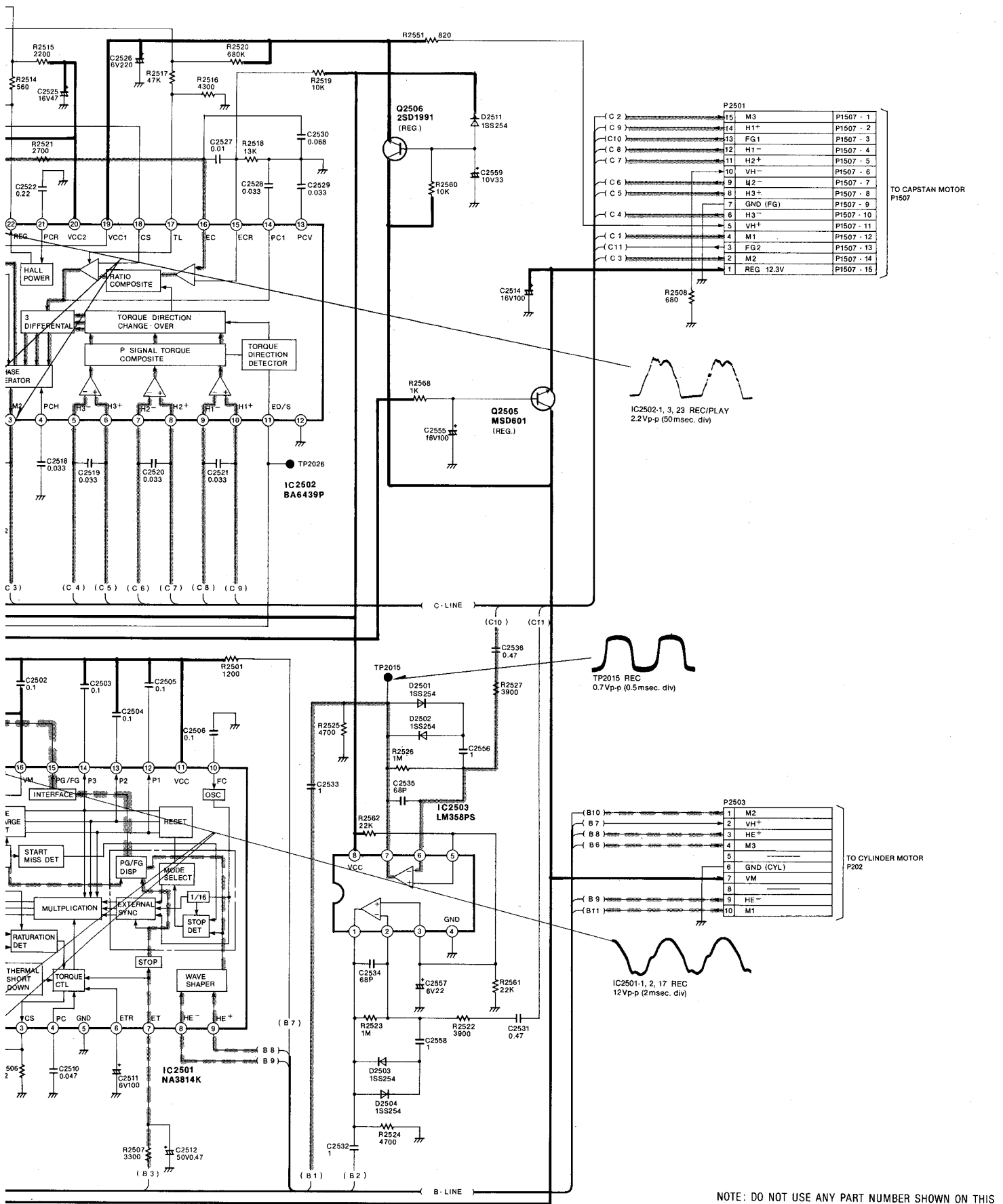


CAPSTAN SERVO SPEED LOOP

CYLINDER SERVO SPEED LOOP



LOOP CYLINDER SERVO PHASE LOOP



11

12

13

14

15

16

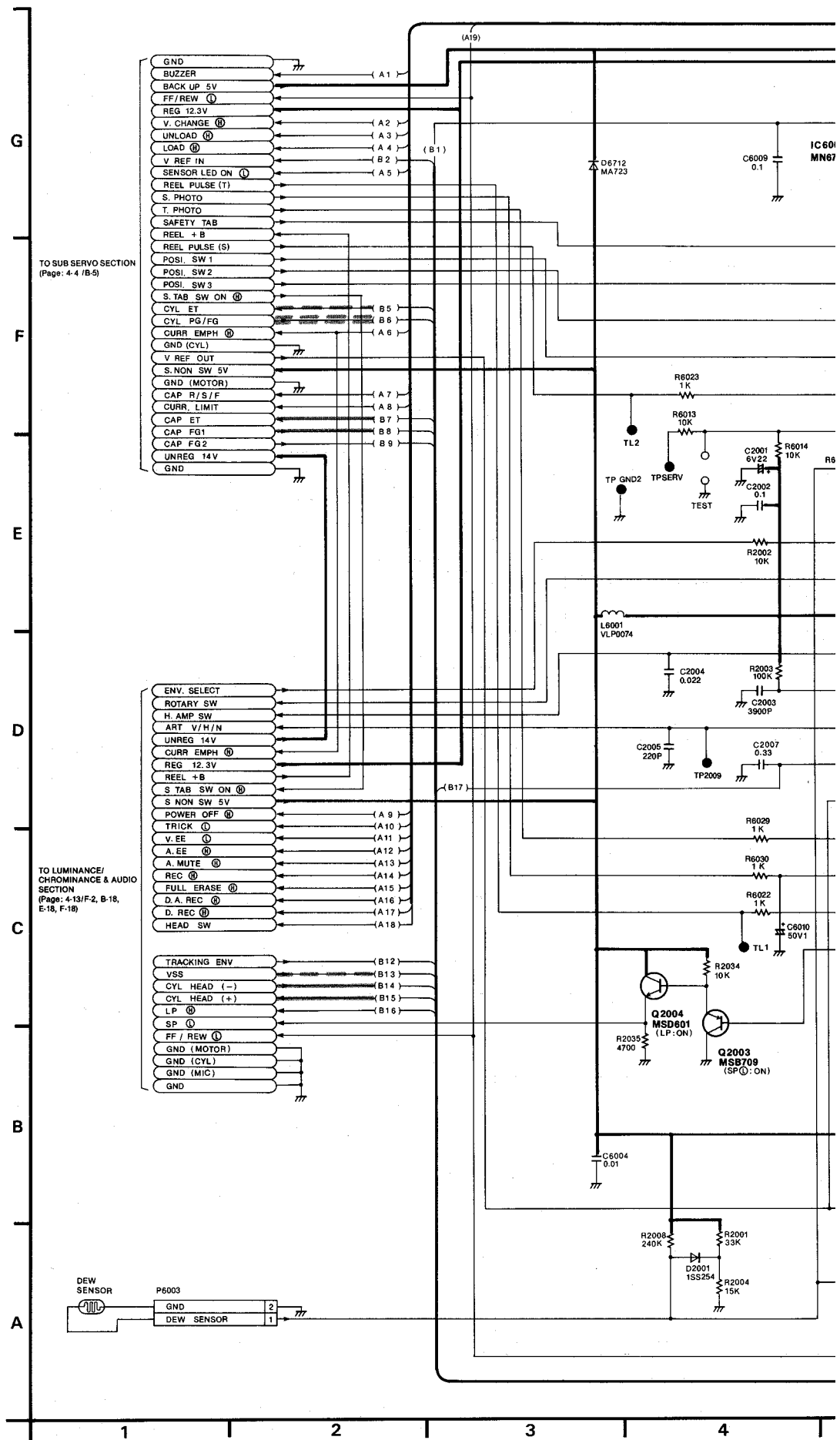
SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.4	4.9	0	4.9	0.1	2.7	0	0	0.4	5.1	5.1	0	0	0	0	2.5	4.8	5.0	5.0	0
PLAY	0.1	4.9	0	0	0.1	5.1	0	0	4.0	1.5	5.1	0	0	0	0	2.5	4.8	5.0	5.0	0
REC	0.6	5.0	0	0	4.8	5.1	0	0	4.6	5.0	5.1	0	0	0	0	2.5	5.0	5.0	5.0	0
F.F	0	5.0	4.9	0	2.4	5.1	0	0	3.0	5.1	5.1	0	0	0	0	2.5	4.9	4.9	1.6	0
REW	0	5.1	5.1	0	1.6	5.1	0	0	2.6	5.1	5.1	0	0	0	0	2.5	4.7	4.9	1.7	0
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	5.0	5.1	0.2	2.5	0.3	2.2	2.0	2.5	0	2.5	2.4	2.0	5.0	0	2.0	2.0	2.0	2.5	2.2	2.5
PLAY	5.1	5.1	2.6	2.4	3.8	2.5	2.5	2.5	0	2.5	2.7	2.4	5.0	0	0	0	2.5	2.5	0	2.8
REC	0	5.1	2.7	2.5	0.4	2.5	2.5	2.5	0	2.5	2.4	2.7	5.0	3.5	3.7	0	2.5	2.5	0	2.5
F.F	5.1	5.1	2.2	2.5	2.7	2.5	2.5	2.5	0	2.5	2.5	2.6	5.0	0	0	0	2.5	1.6	0	2.9
REW	5.1	5.1	2.3	2.4	2.1	2.8	2.1	2.3	0	2.5	2.5	2.6	5.0	2.6	2.6	2.0	2.5	1.8	0	2.9
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.5	5.1	1.4	3.6	0	4.3	0	5.1	0	0	0	5.0	1.4	5.1	5.0	5.1	0	0	0	0.3
PLAY	2.4	5.1	0.8	3.8	3.8	4.5	0	5.1	0	0	0	0	1.3	0	0	0	0	0	0	0
REC	2.5	5.1	0.8	3.8	0	4.6	0	0	0	0	0	5.1	1.3	0.1	5.1	0	0	0	0	5.1
F.F	2.5	5.1	1.5	3.7	0	4.3	0	5.1	0	0	0	5.1	1.3	0.1	0	5.1	0	0	0	5.1
REW	2.5	5.1	1.1	3.7	0	4.4	0	5.1	0	0	0	4.9	1.0	0.1	0	5.1	0	0	0	5.0
REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	5.1	2.1	4.6	4.0	0	0	0	0	0.3	5.1	0	5.1	5.1	0	0.1	5.0	0	0	5.1	0
PLAY	5.1	0	4.9	4.5	0	0	0	0	0.3	5.1	0	0	0	0	0.1	5.0	0	5.1	5.1	0
REC	5.1	0	4.6	4.4	5.1	5.1	5.1	5.1	5.1	0	0	0	5.1	0	0.1	5.0	0	0	5.1	0
F.F	5.1	0	4.6	4.6	0	0	0	0	0.3	5.1	0	0	5.1	0	0.1	0	0	0	5.1	0
REW	5.1	5.1	4.6	4.6	0	0	0	0	0.3	5.1	0	5.1	5.1	0	0.1	0	0	0	5.1	0
REF. NO.	IC6001																			
MODE	81	82	83	84																
STOP	0	2.6	2.6	3.9																
PLAY	0	2.6	2.6	4.1																
REC	0	2.6	2.6	4.3																
F.F	0	2.6	2.6	4.1																
REW	0	2.6	2.6	3.9																
REF. NO.	IC6710																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.9	5.0	5.0	5.1	5.1	0	0	0.1	0	0.1	2.2	0	0.2	0	5.1	0.1	0.1	4.8	5.1
PLAY	0	3.9	4.9	5.0	5.1	5.1	0	0	0.1	0	0.1	2.2	0	2.2	0	5.1	0.1	0.1	4.8	5.1
REC	0	4.1	5.0	5.0	5.1	5.1	0	0	0.1	0	0.1	2.2	0	0.2	0	5.1	0.1	0.1	4.8	5.1
F.F	0	3.9	5.0	5.0	5.1	5.1	0	0	0.1	0	0.1	2.2	0	0.2	0	5.0	0.1	0.1	4.8	4.8
REW	0	3.9	5.0	5.0	5.1	5.1	0	0	0.1	0	0.1	2.2	0	0.2	0	5.1	0	0.1	4.8	5.1

SYSTEM CONTROL & SERVO TRANSISTORS DC VOLTAGE CHART (SP MODE)

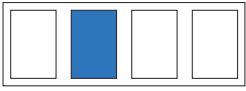
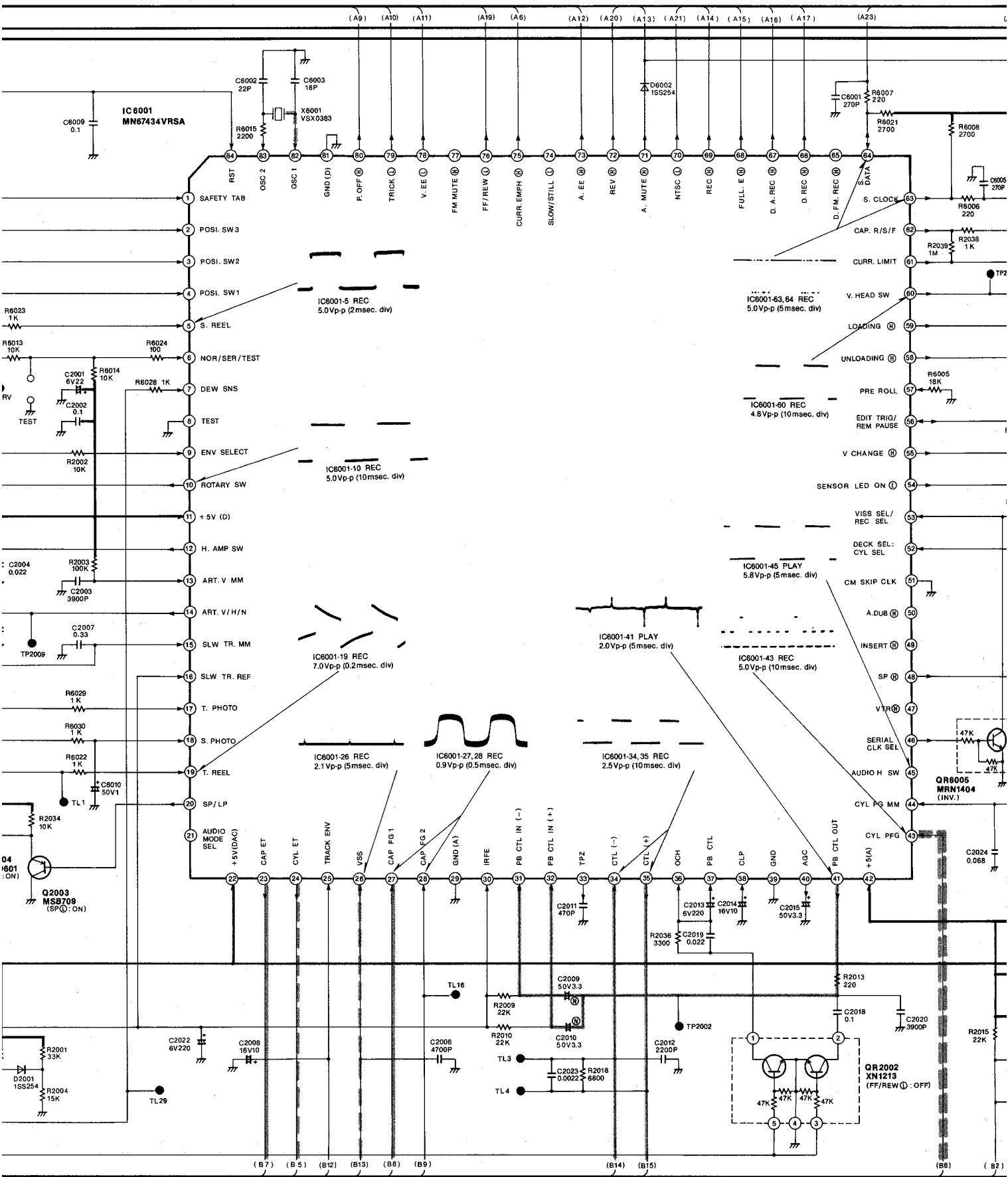
REF. NO.	Q2001			Q2002			Q2003			Q2004								
MODE	E	C	B	E	C	B	E	C	B	E	C	B						
STOP	2.9	5.1	3.4	5.1	4.8	5.1	0.6	0	0	0.3	5.1	0.6						
PLAY	2.9	5.1	3.4	5.1	4.7	5.1	0.6	0	0	0.3	5.1	0.6						
REC	2.9	5.1	3.3	5.1	4.7	5.1	0.6	0	0	0.3	5.1	0.6						
F.F	2.9	5.1	3.4	5.1	4.6	5.0	0.6	0	0	0.3	5.1	0.6						
REW	2.9	5.1	3.5	5.1	4.8	5.1	0.6	0	0	0.3	5.1	0.6						
REF. NO.	QR2001			QR2002			QR2006			QR2007			QR2008					
MODE	E	C	B	1	2	3	4	5		E	C	B	E	C	B	E	C	B
STOP	5.1	0.3	5.1	0	0	5.0	1.8	5.0		5.1	5.1	0.3	5.1	0	5.1	0	5.1	5.1
PLAY	5.1	0.2	5.1	0	0	5.0	0	5.0		0	5.1	0.2	5.1	5.1	0	0.3	5.1	0
REC	5.1	0.2	5.1	0	0	5.0	0	5.0		5.1	5.1	0.2	5.1	5.1	0	0.2	5.1	0
F.F	5.1	0.2	5.1	0	2.0	0	0	0		4.3	5.1	0.2	5.1	5.0	0	0.3	5.1	0
REW	5.1	0.3	5.1	0	1.2	0	0	0		5.1	5.1	0.3	5.1	3.0	5.1	4.5	5.1	5.1
REF. NO.	QR2009			QR2010			QR2013			QR6005			QR6710					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	0.3	-0.2	5.1	0.4	0.3	5.1	5.1	0	5.1	0	1.1	4.1	5.1	0.3	5.0			
PLAY	0.2	-0.3	0	-0.1	0.2	0	5.1	0	5.1	0	1.1	4.1	5.1	0.3	4.9			
REC	0.2	-0.2	0	-0.1	0.2	0	5.1	0	5.1	0	1.4	3.7	5.1	0.3	5.1			
F.F	0.2	-3.7	0	-0.1	0.2	0	5.1	0	5.1	0	1.4	3.5	5.1	0.3	4.9			
REW	0.4	-1.0	5.1	0.4	0.4	5.1	5.1	0	5.1	0	1.4	3.7	5.1	0.3	4.9			

4-3. SYSTEM CONTROL & SERVO SECTION IN MAIN S



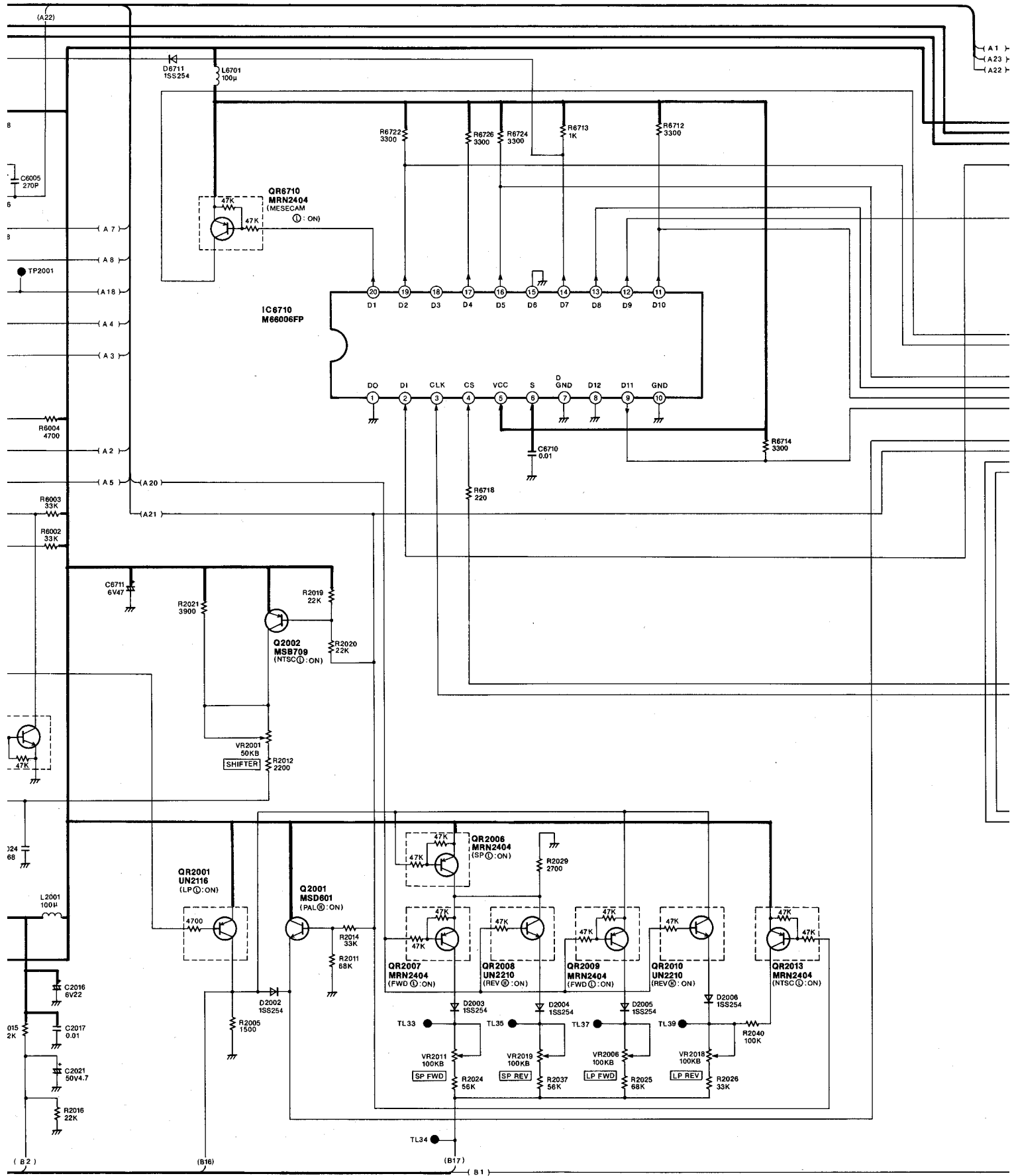
IN MAIN SCHEMATIC DIAGRAM

CAPSTAN SERVO SPEED LOOP



CAPSTAN SERVO PHASE LOOP

CYLINDER SERVO SPEED LOOP



10

11

12

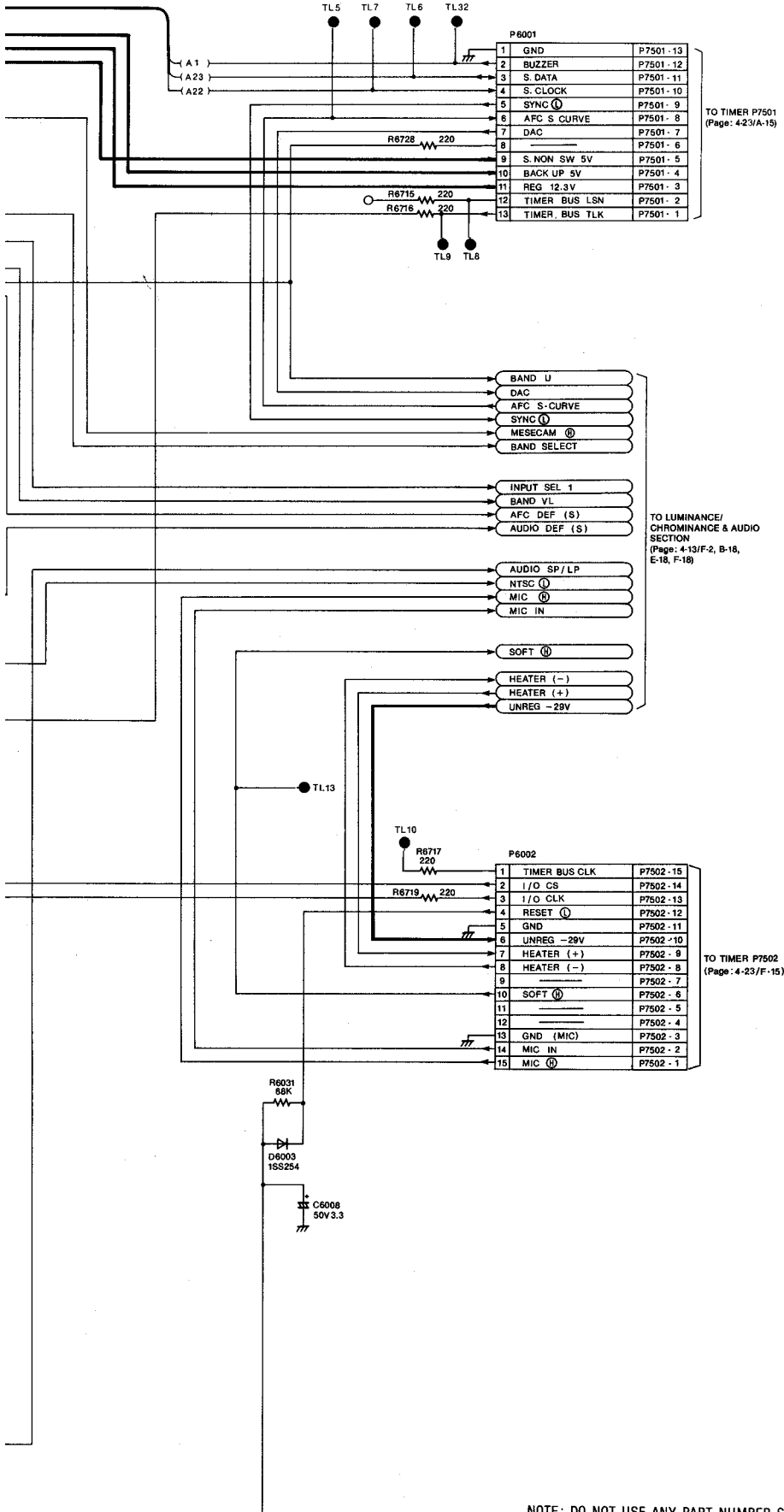
13

14

15

LOOP

CYLINDER SERVO PHASE LOOP



NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

15

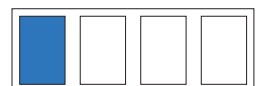
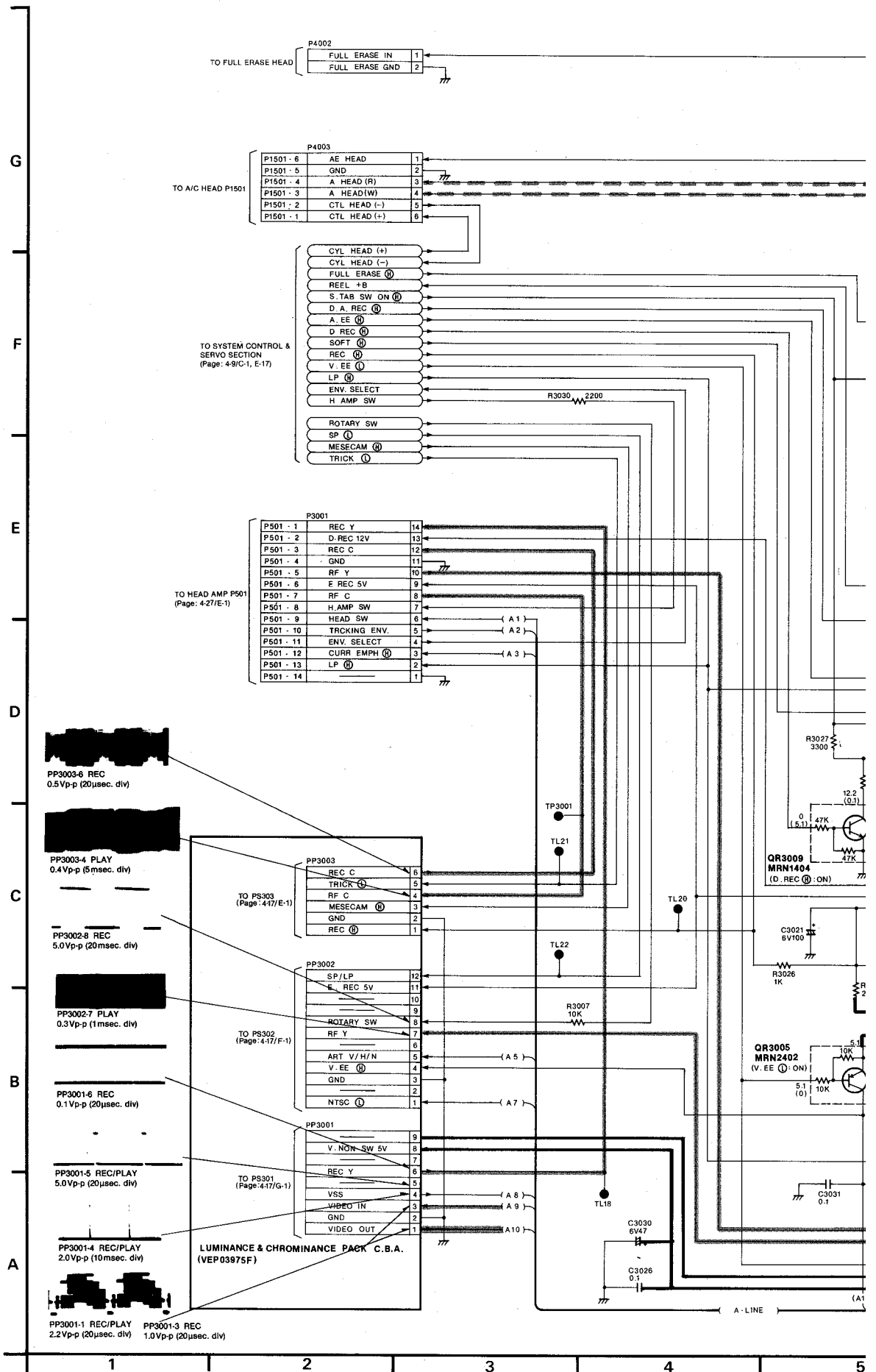
16

17

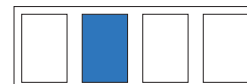
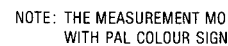
18



4-4. LUMINANCE/CHROMINANCE & AUDIO SECTION IN M

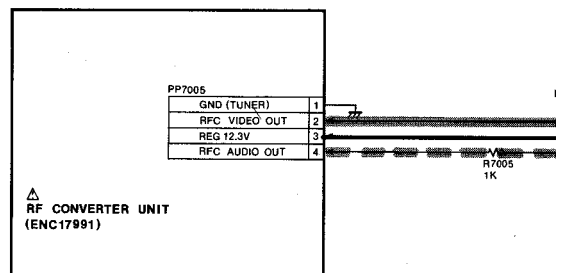
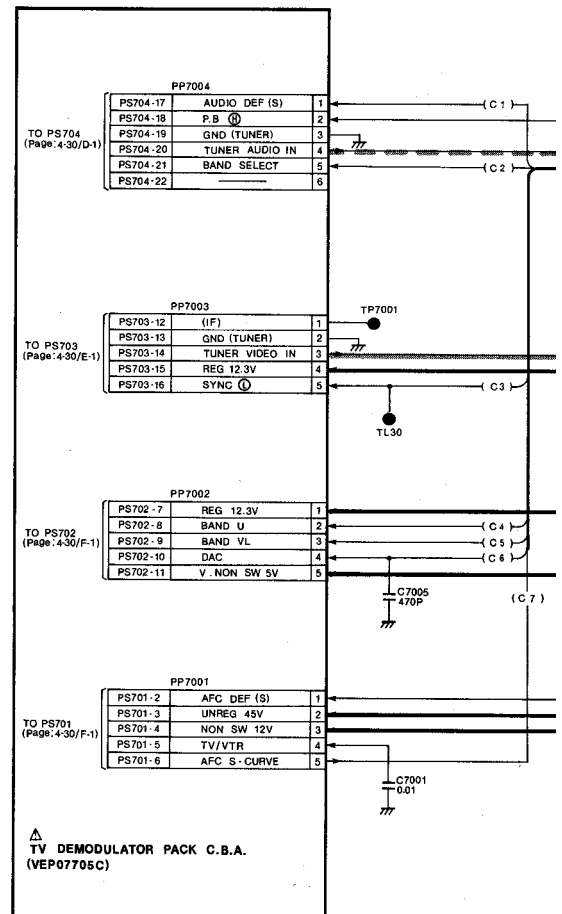
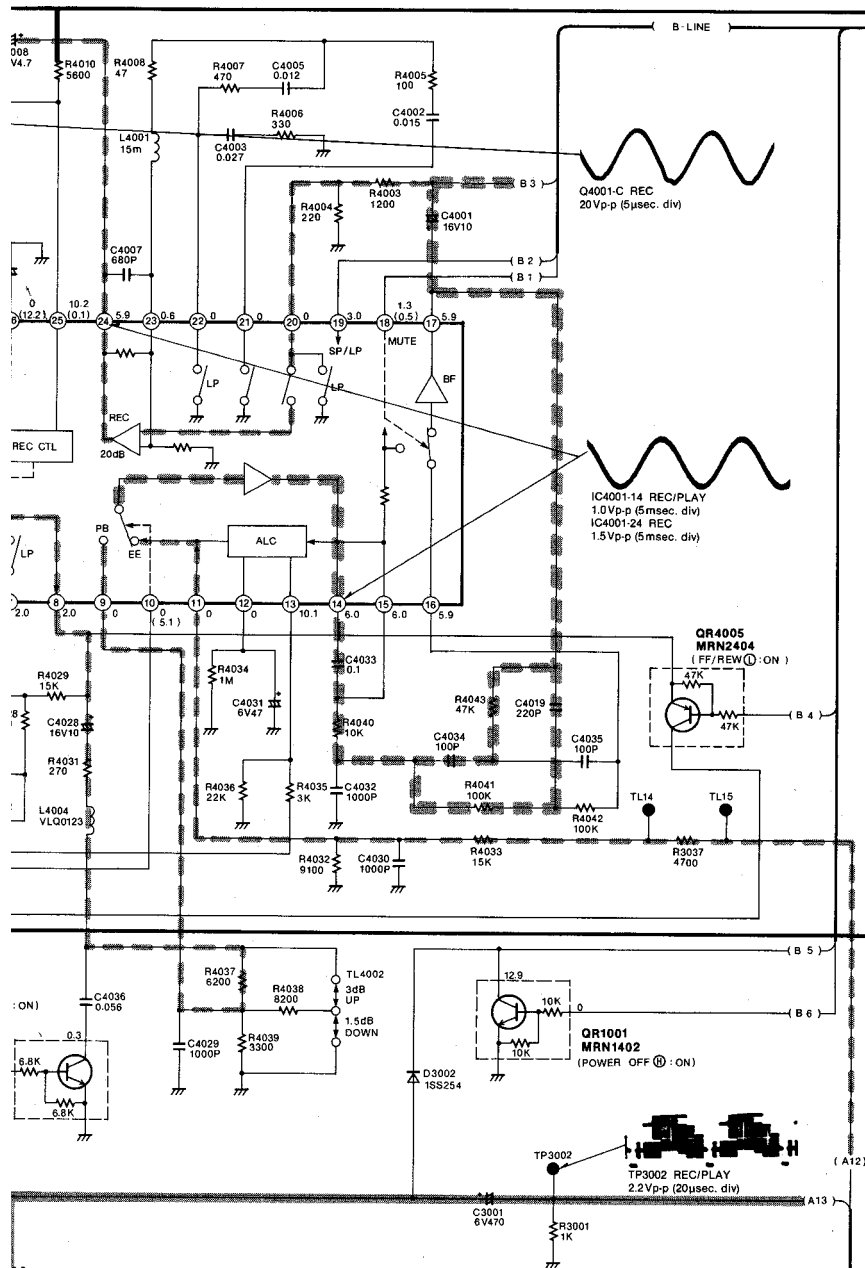


VIDEO
VIDEO



MAIN SIGNAL PATH IN REC MODE
 MAIN SIGNAL PATH IN PLAYBACK MODE

AUDIO MAIN SIGNAL PATH IN REC
 AUDIO MAIN SIGNAL PATH IN PL



MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

• LINE

10

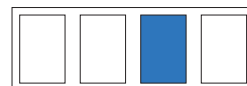
11

12

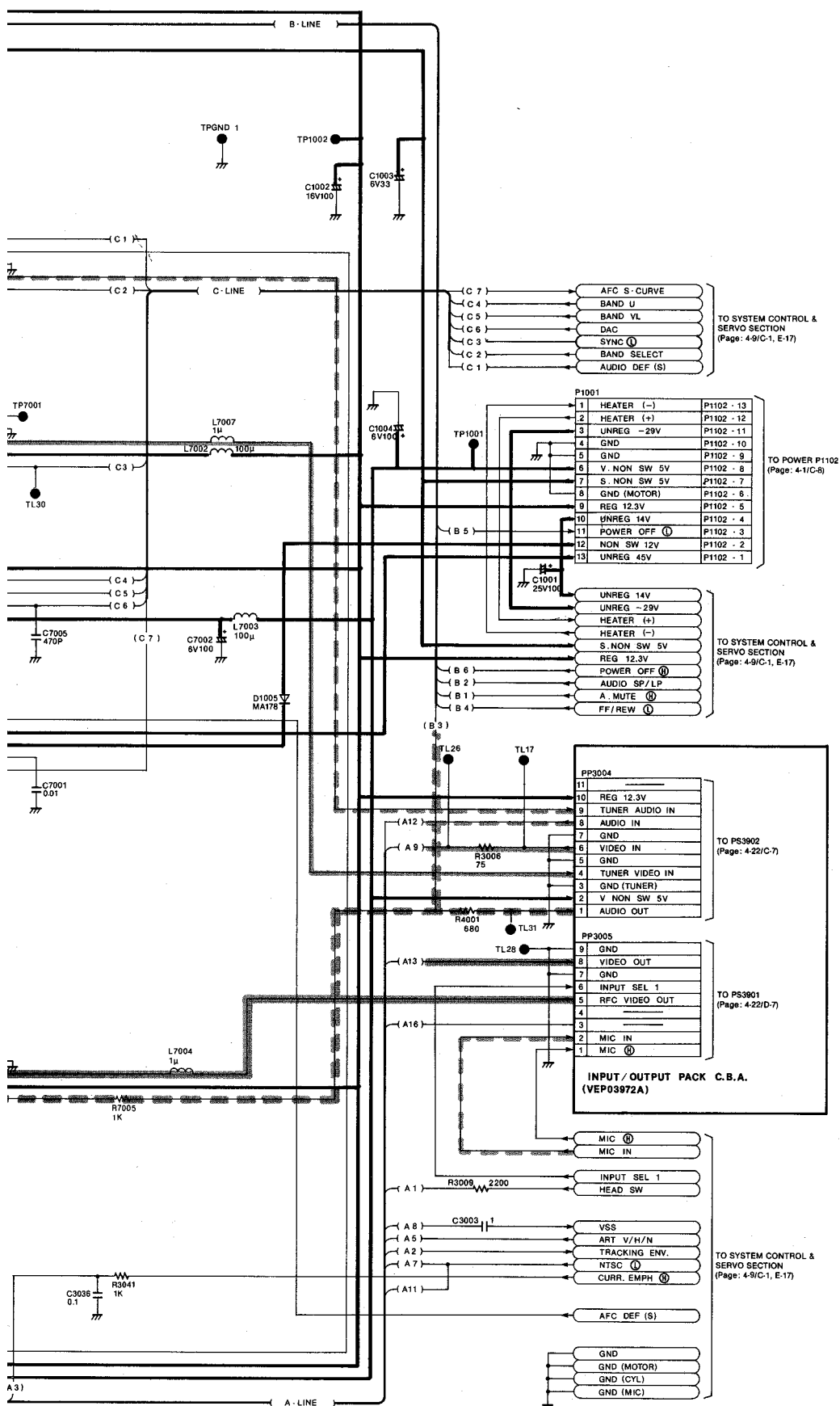
13

14

15



PATH IN REC MODE PATH IN PLAYBACK MODE



PLAYBACK MODE

• LINE IN SIGNAL LEVEL... -10dB 1kHz

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

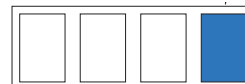
15

16

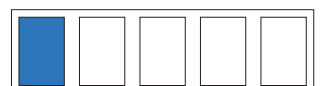
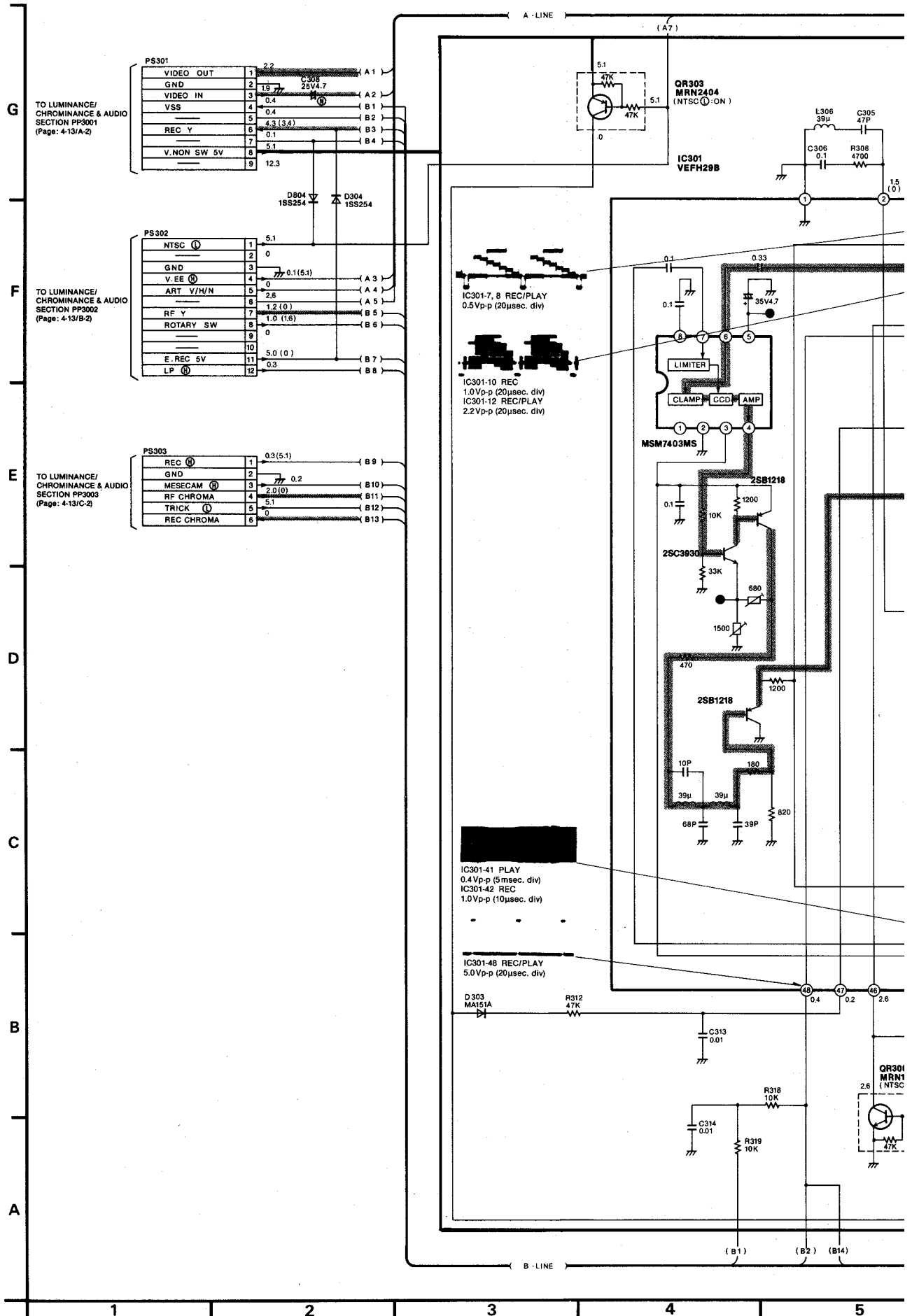
17

18

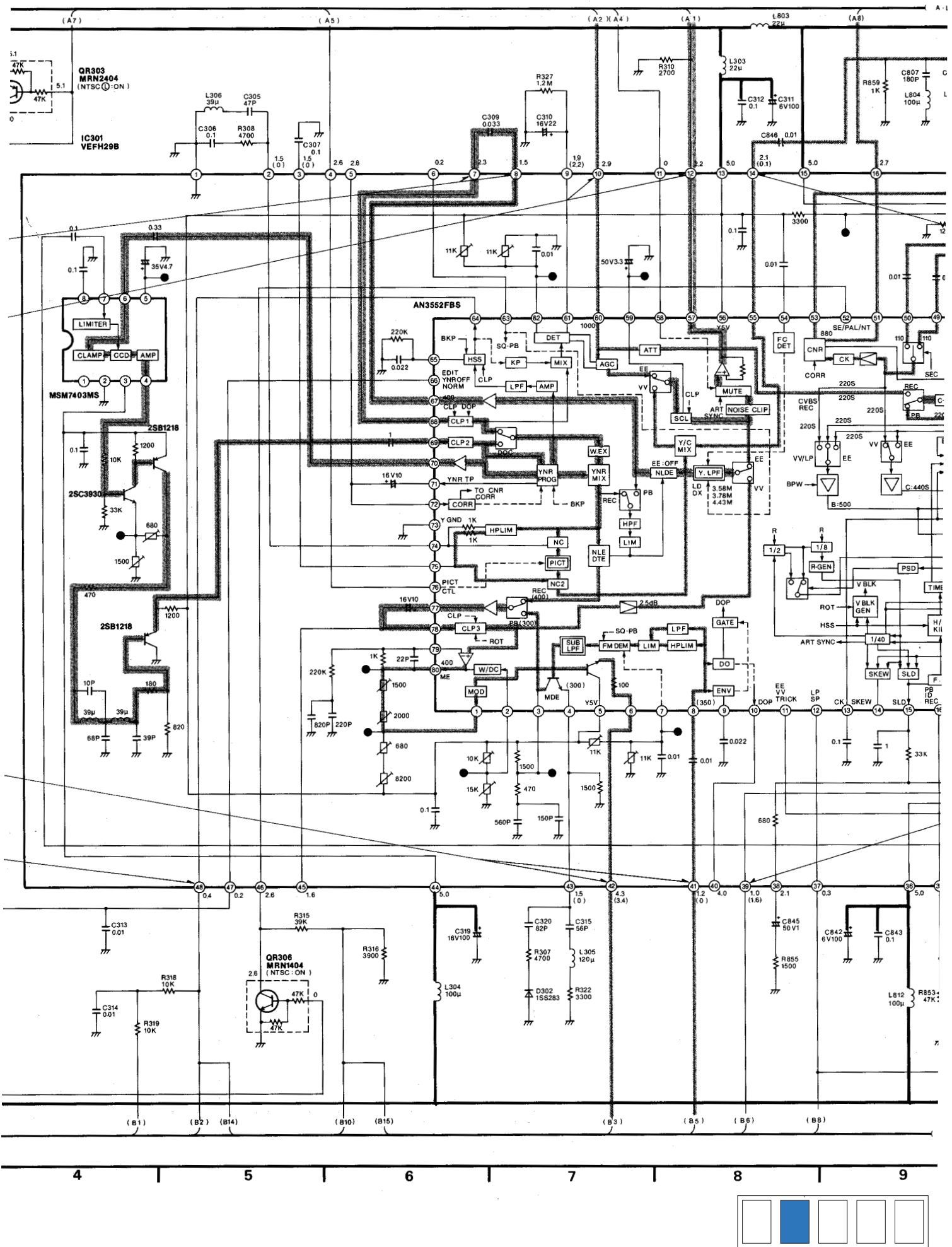
19



A
B
C
D
E
F
G

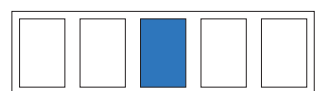
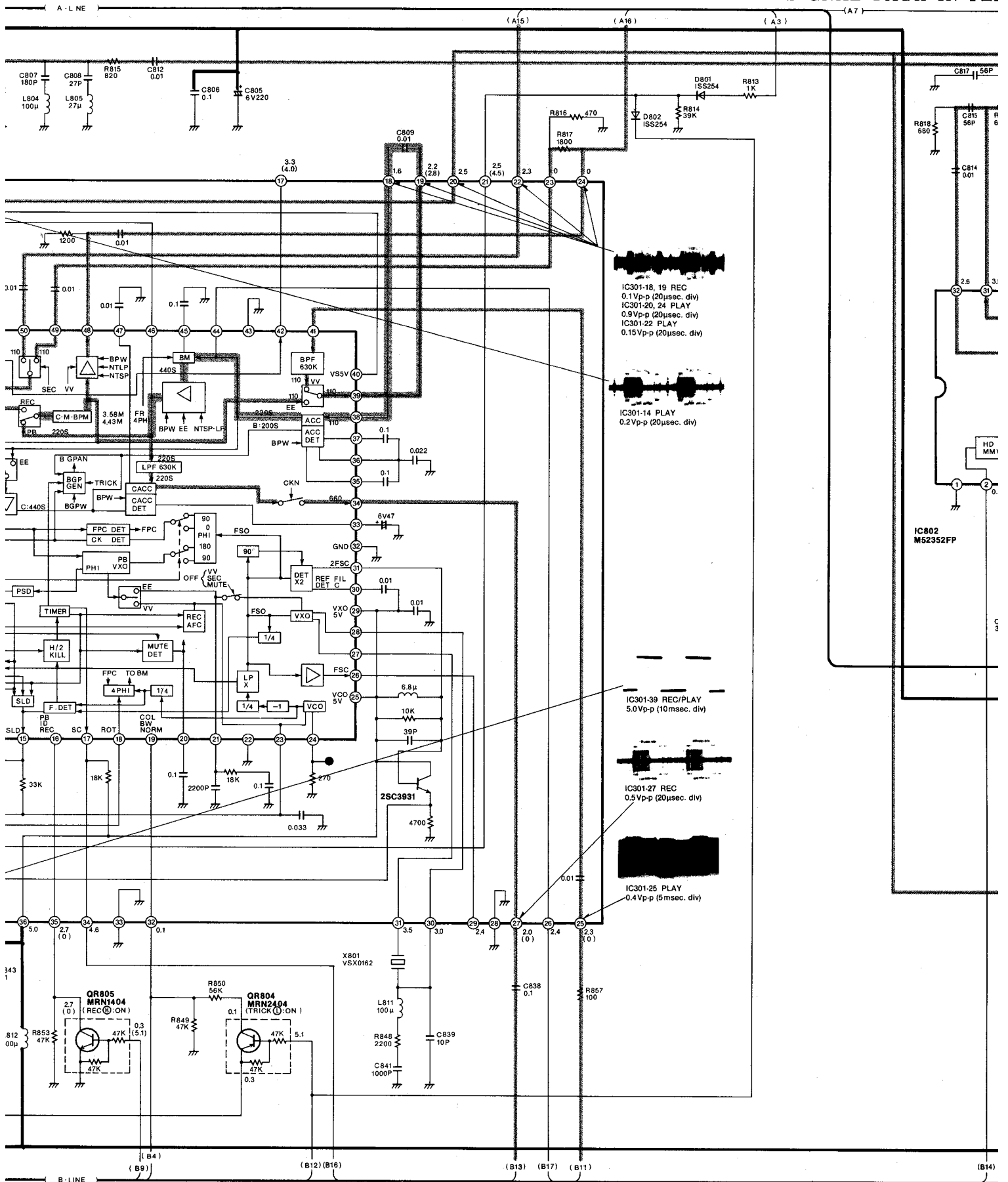


SCHEMATIC DIAGRAM

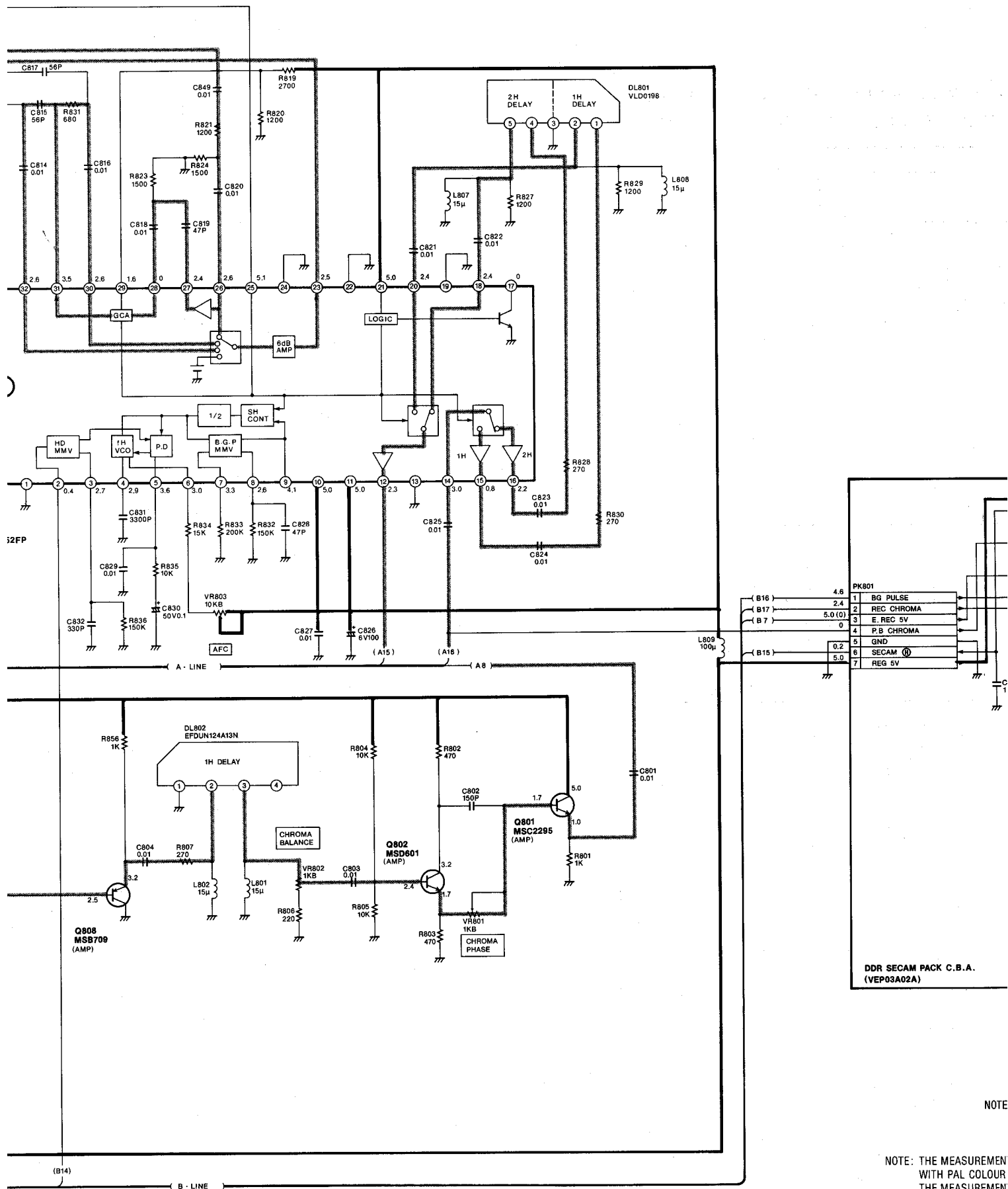


MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PL

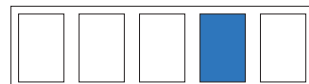


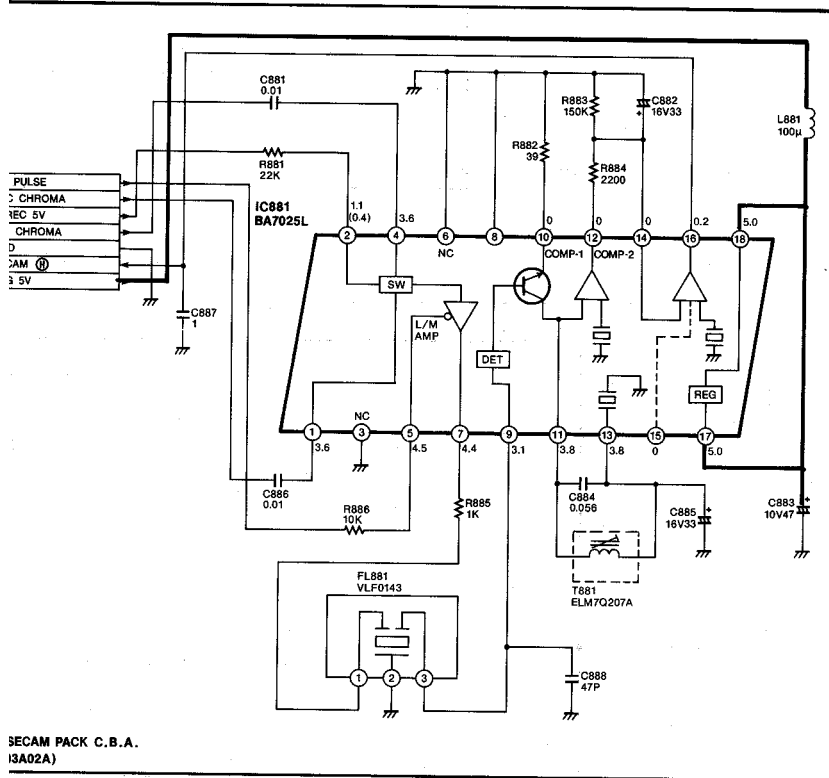
IN PLAYBACK MODE



NOTE

NOTE: THE MEASUREMENT WITH PAL COLOUR THE MEASUREMENT WITH PAL COLOUR





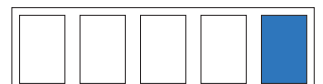
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

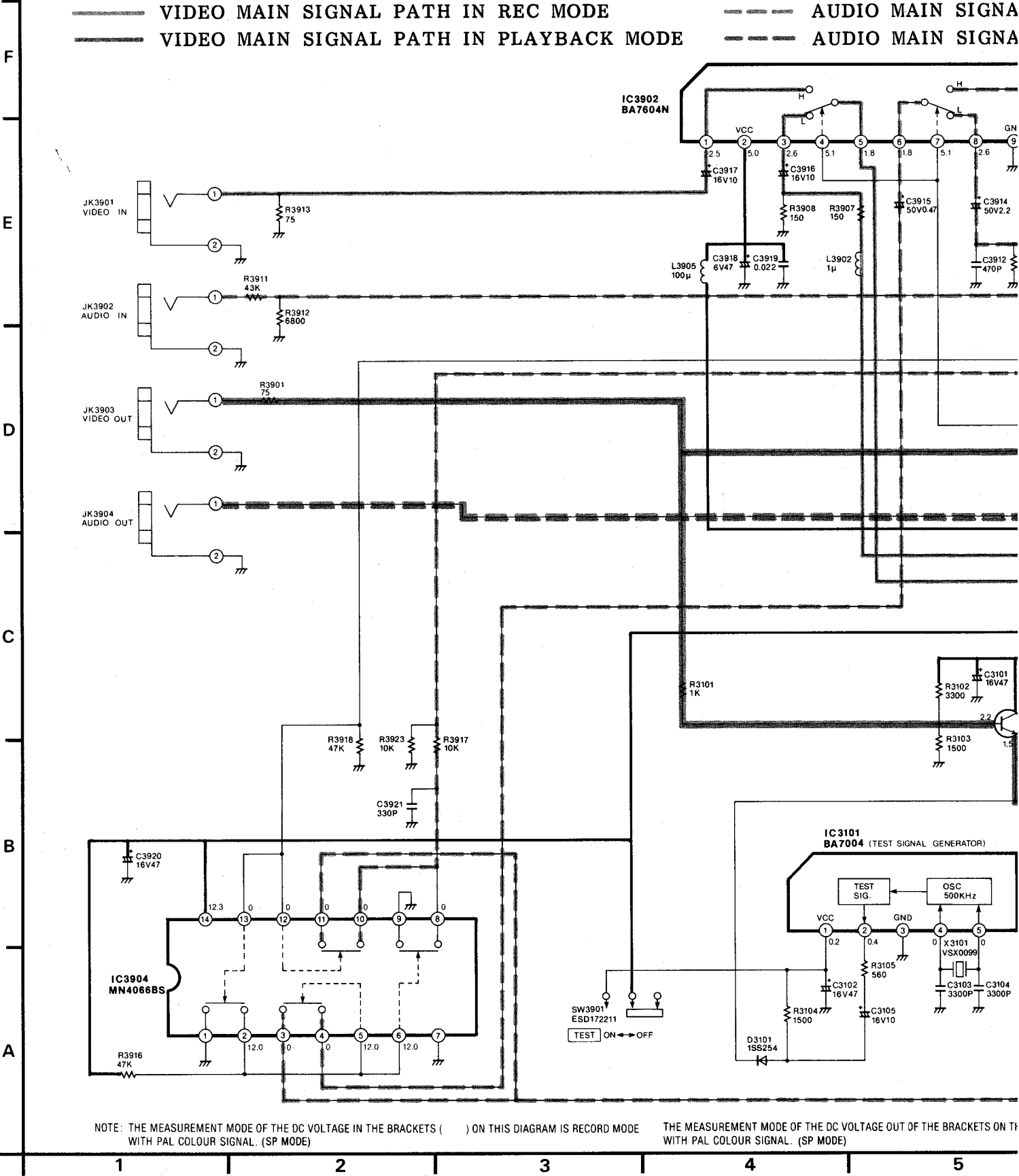
20

21

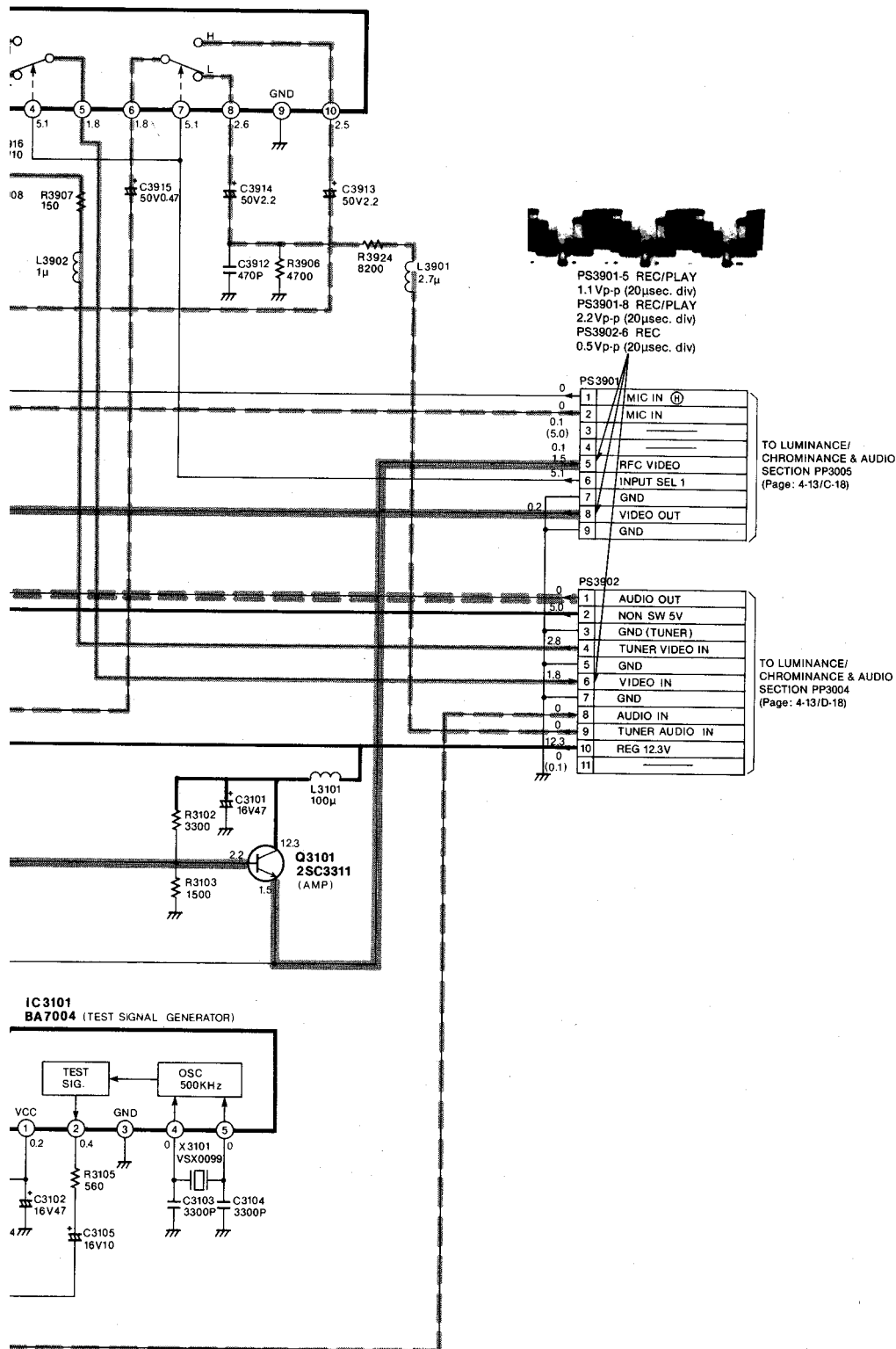
22



4.6. INPUT/OUTPUT PACK SCHEMATIC DIAGRAM

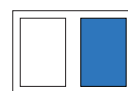


AUDIO MAIN SIGNAL PATH IN REC MODE AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



IF DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.



DP7501 VSL0271B

4G 5G 9G

VTR CATV SP SLP A.DUB INSERT REMAINWRITE MESECAMPDCVPS

REC R ON S AP COUNT OFF D AP

SU MO TU WE TH FR SA PROG

M 88 D

8G 7G 6G 4G 3G 2G 1G 0G

F- F+ S15 S14 S13 S12 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S0 0G 1G 2G 3G 4G 5G 6G 7G 8G 9G F+ F+

R7548 680 R7502 100K D7501 MA3220 C7505 50V10

R7504 100

IC7501 MN187164VTSV

IC7501-2 STOP 2.8Vp-p (10µsec. div)

IC7502-5 STOP 2.0Vp-p (10µsec. div)

IC7502-6 STOP 5.0Vp-p (10µsec. div)

VPP P50 P51 P52 P53 P54 P55 P56 P57 P60 P61 P62 P63 P64 P65 P66 P67 P70 P71 P80 P81 P82 P83 P84 P85 P86 P87 P40 P41

VDD OSC 2 OSC 1 VSS X1 X0 CURVE LED2 LED1 P24 P23 P22 P21 CLK (C.G) IR DAC P12 BUZZER EPROM CS RESET SYS S-CLK SYS S-DATA TMR CLK TMR LSN TMR TLK 128Hz TEST

IC7501-38 IC7501-39 IC7501-40 IC7501-41 IC7501-42 IC7501-43 IC7501-44 IC7501-45 IC7501-46 IC7501-47

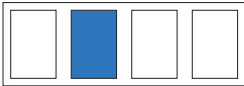
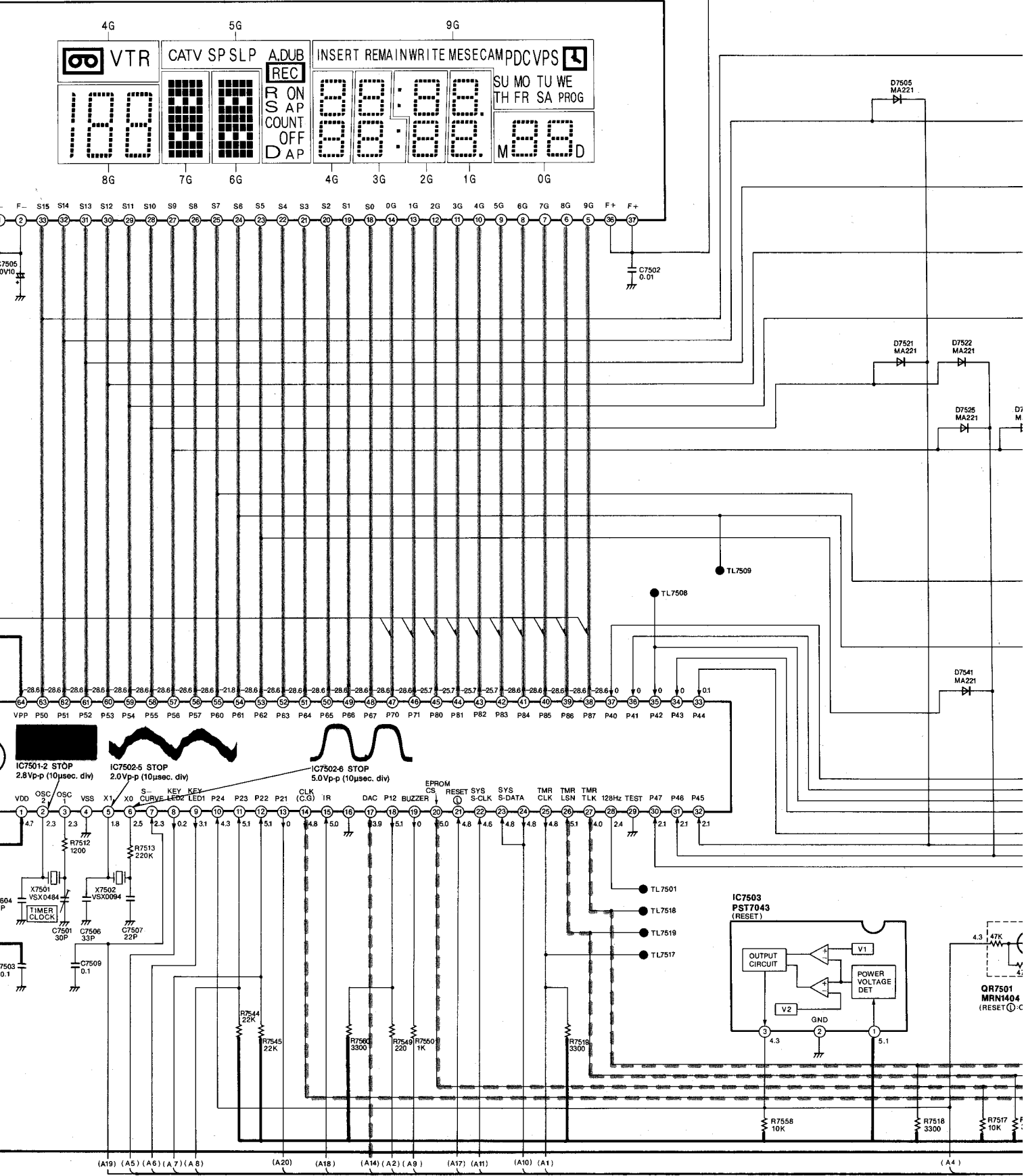
C7604 6P X7501 VXS0484 C7501 30P X7502 VXS0094 C7506 33P C7507 22P C7503 0.1 C7509 0.1 R7512 1200 R7513 220K R7544 22K R7545 22K R7500 3300 R7549 220 R7550 1K R7516 3300

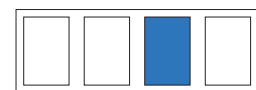
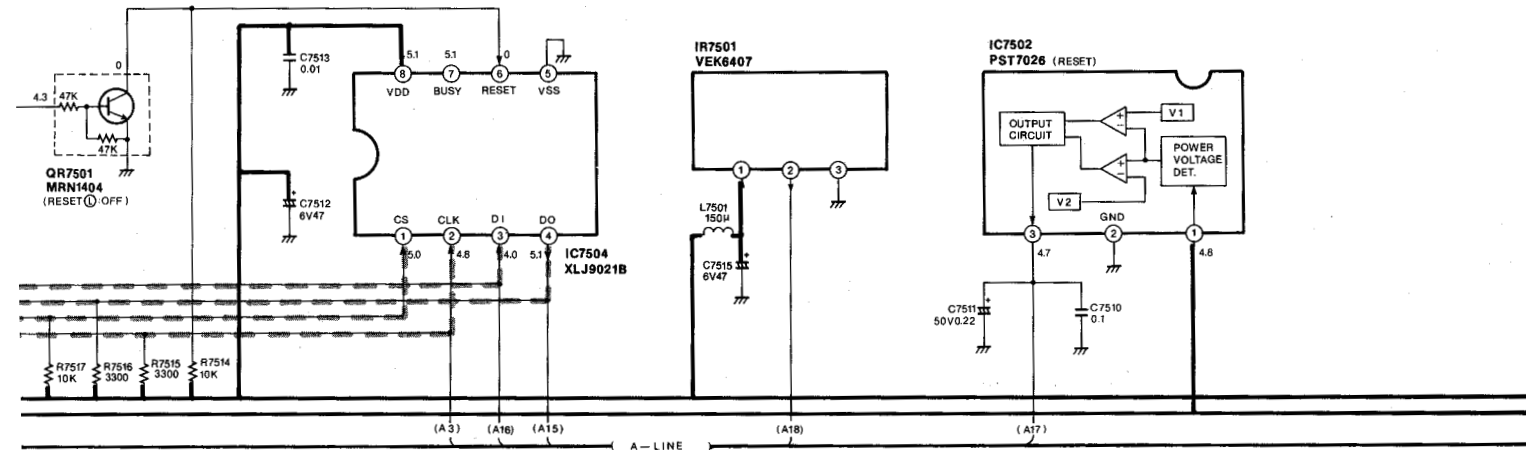
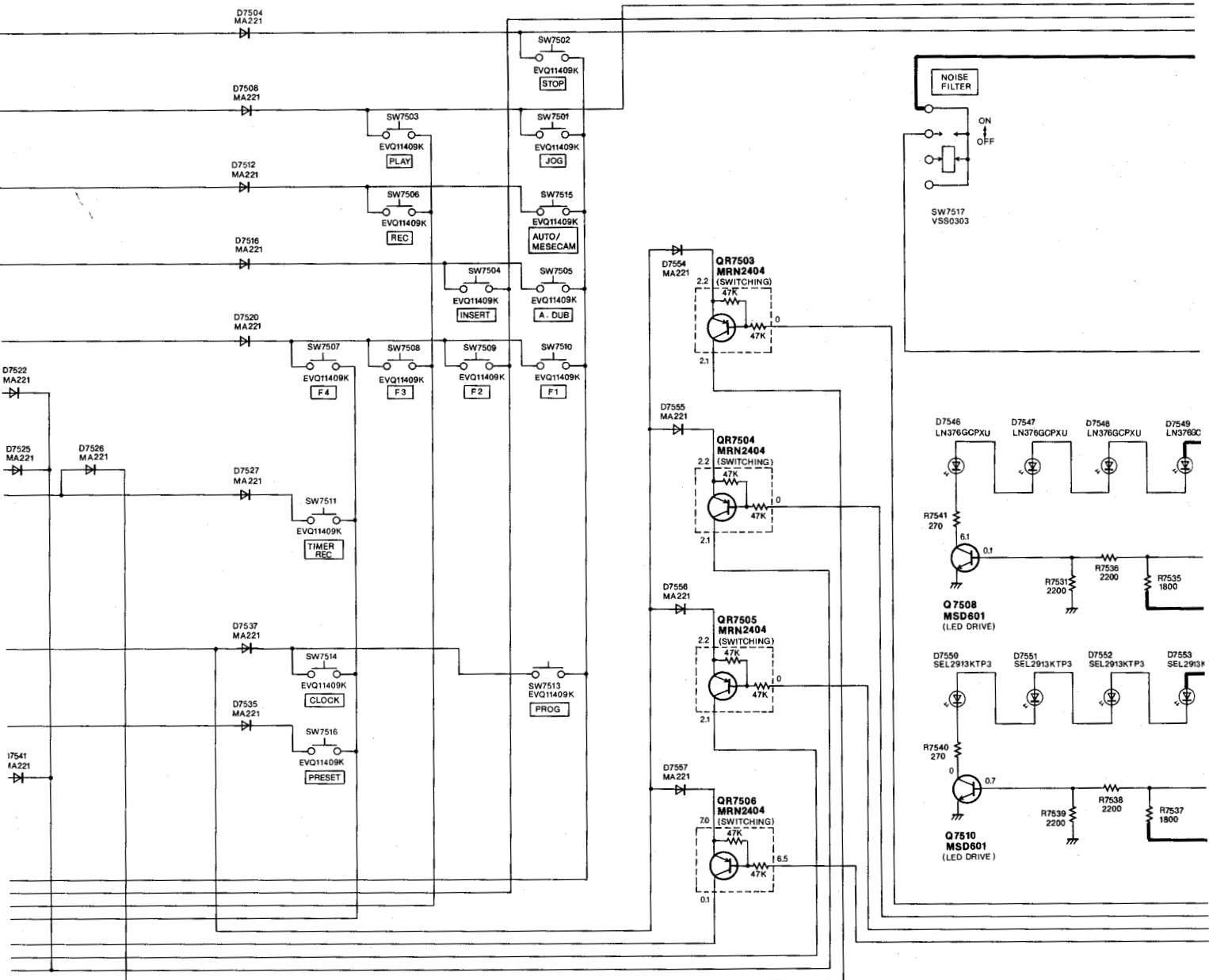
(A19) (A5) (A6) (A7) (A8) (A20) (A18) (A14) (A2) (A9) (A17) (A11) (A10) (A1)

TION SCHEMATIC DIAGRAM

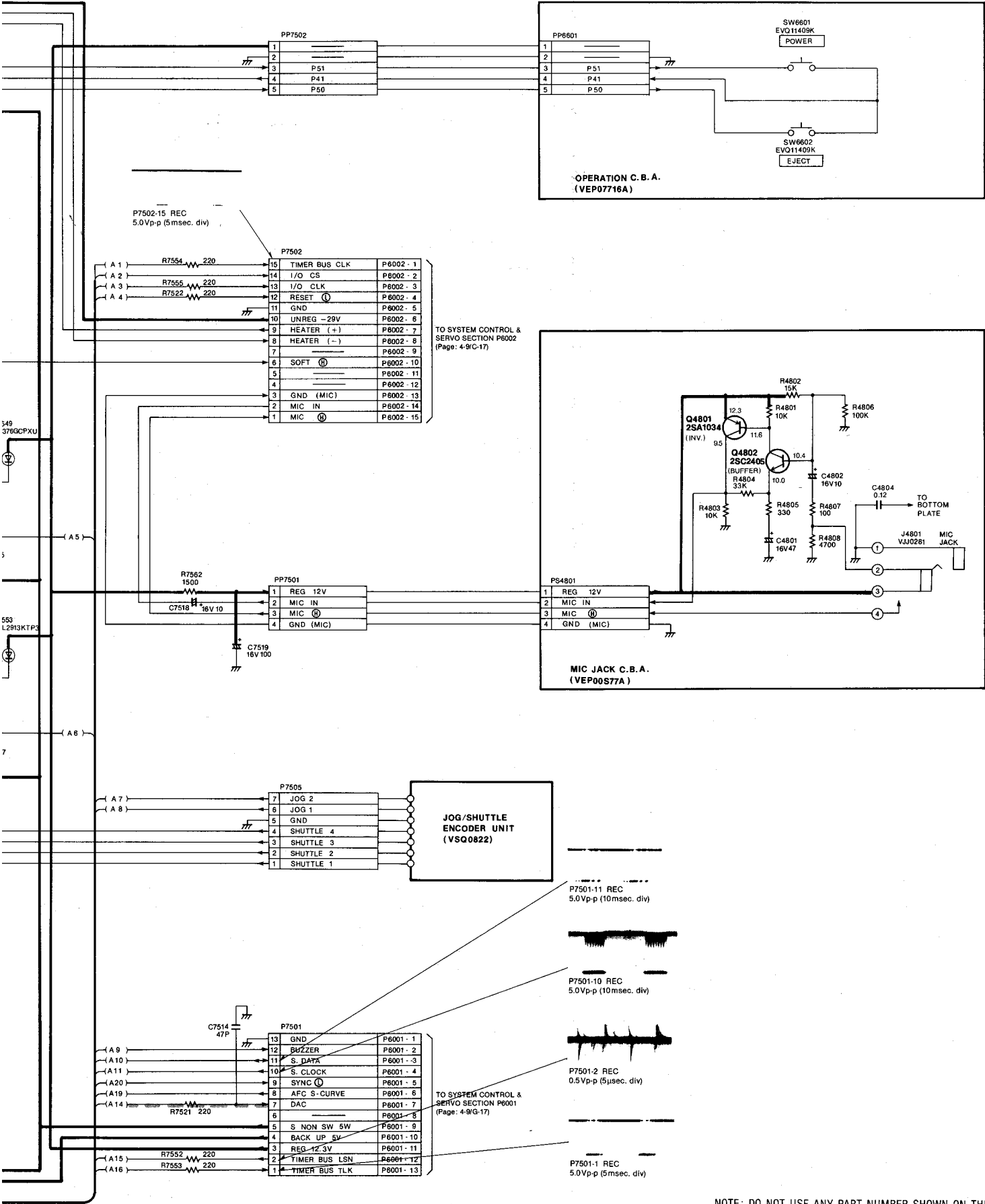
SEGMENT

VSL0271B



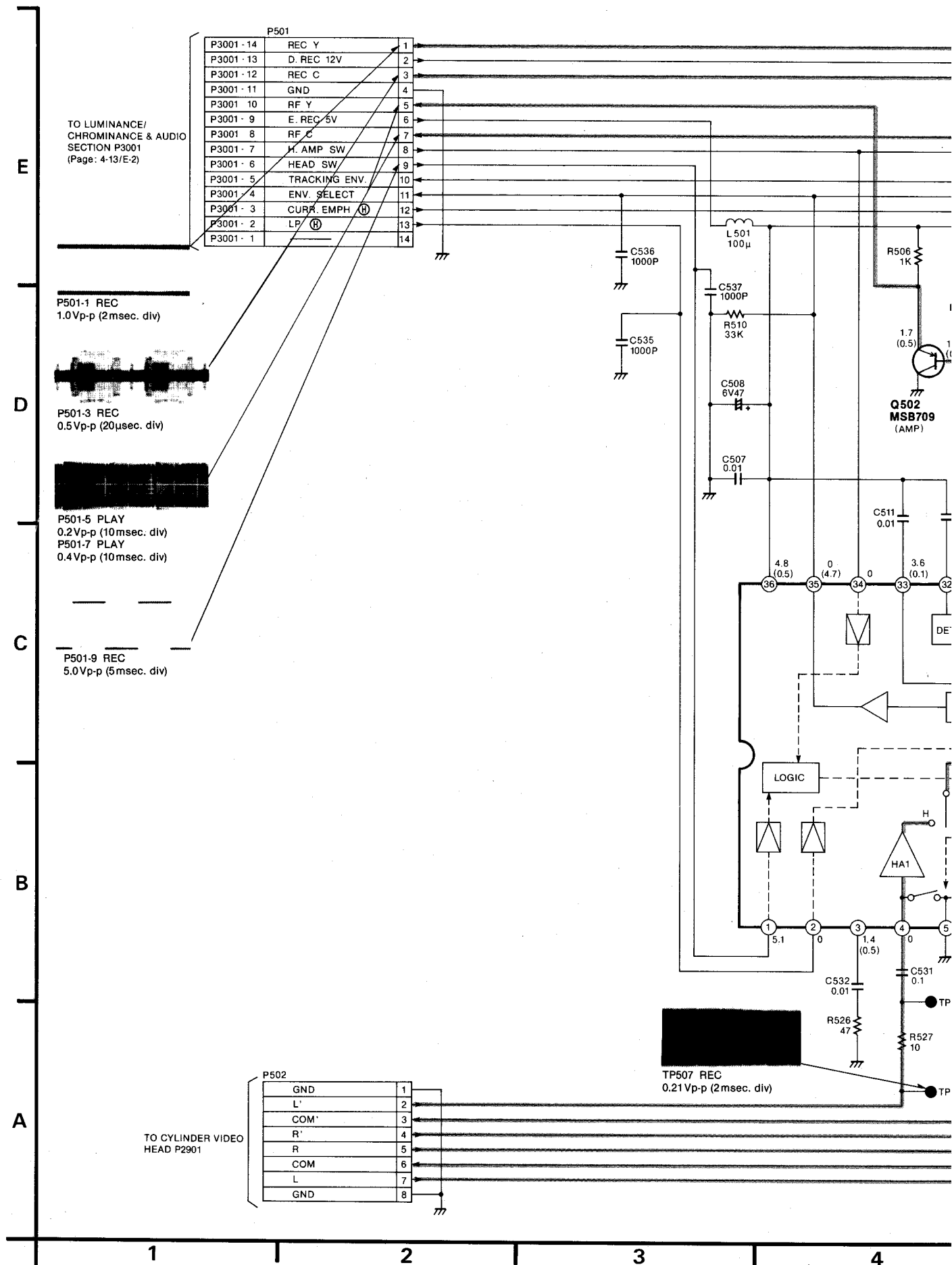


ROL SIGNAL

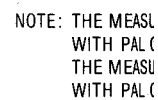


NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

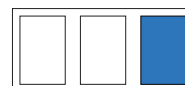
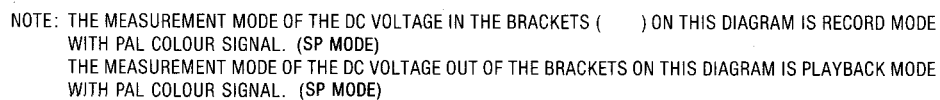
4-8. HEAD AMP SCHEMATIC DIAGRAM



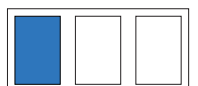
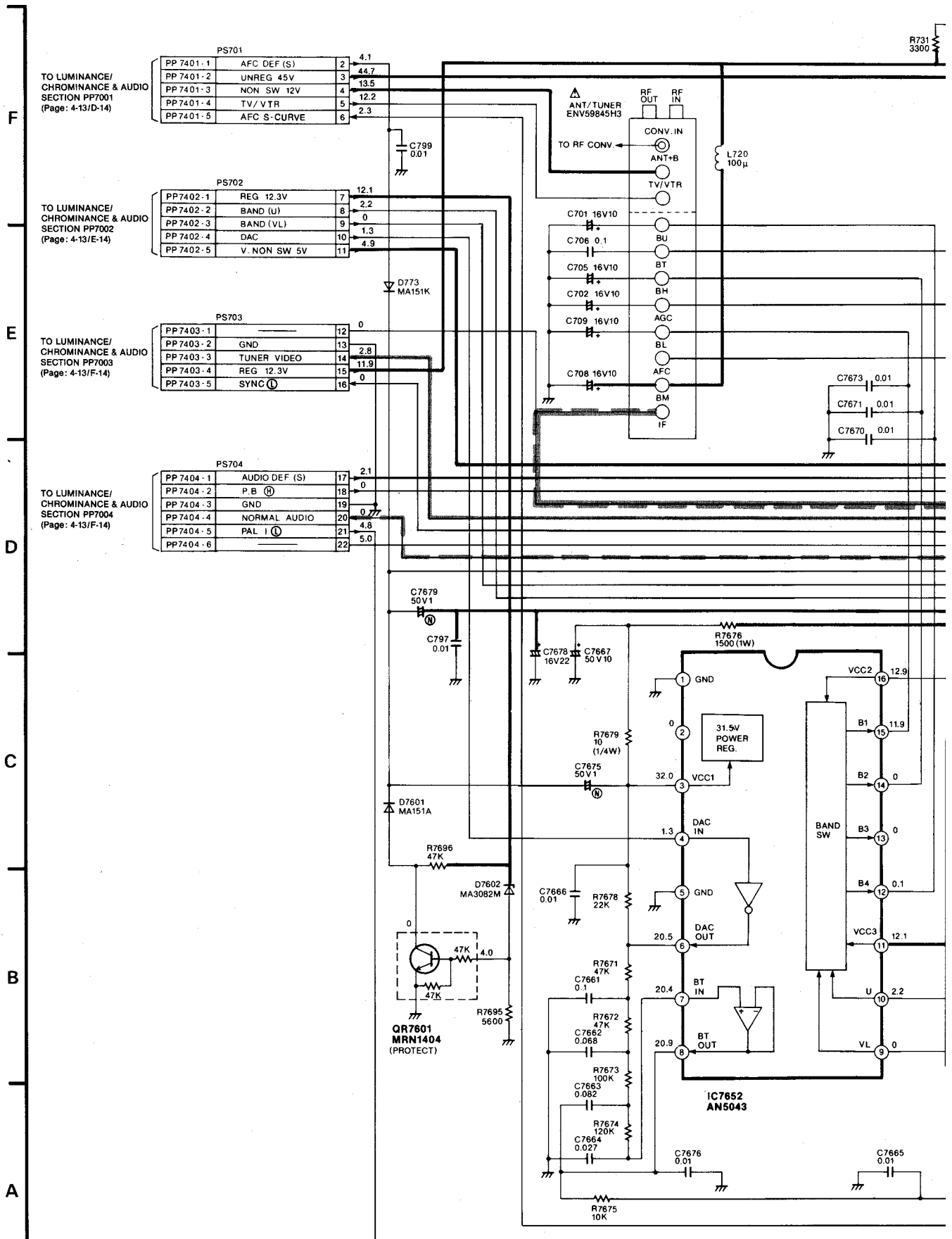
VIDEO MAIN SIGNAL PATH IN PLAYBACK



PLAYBACK MODE

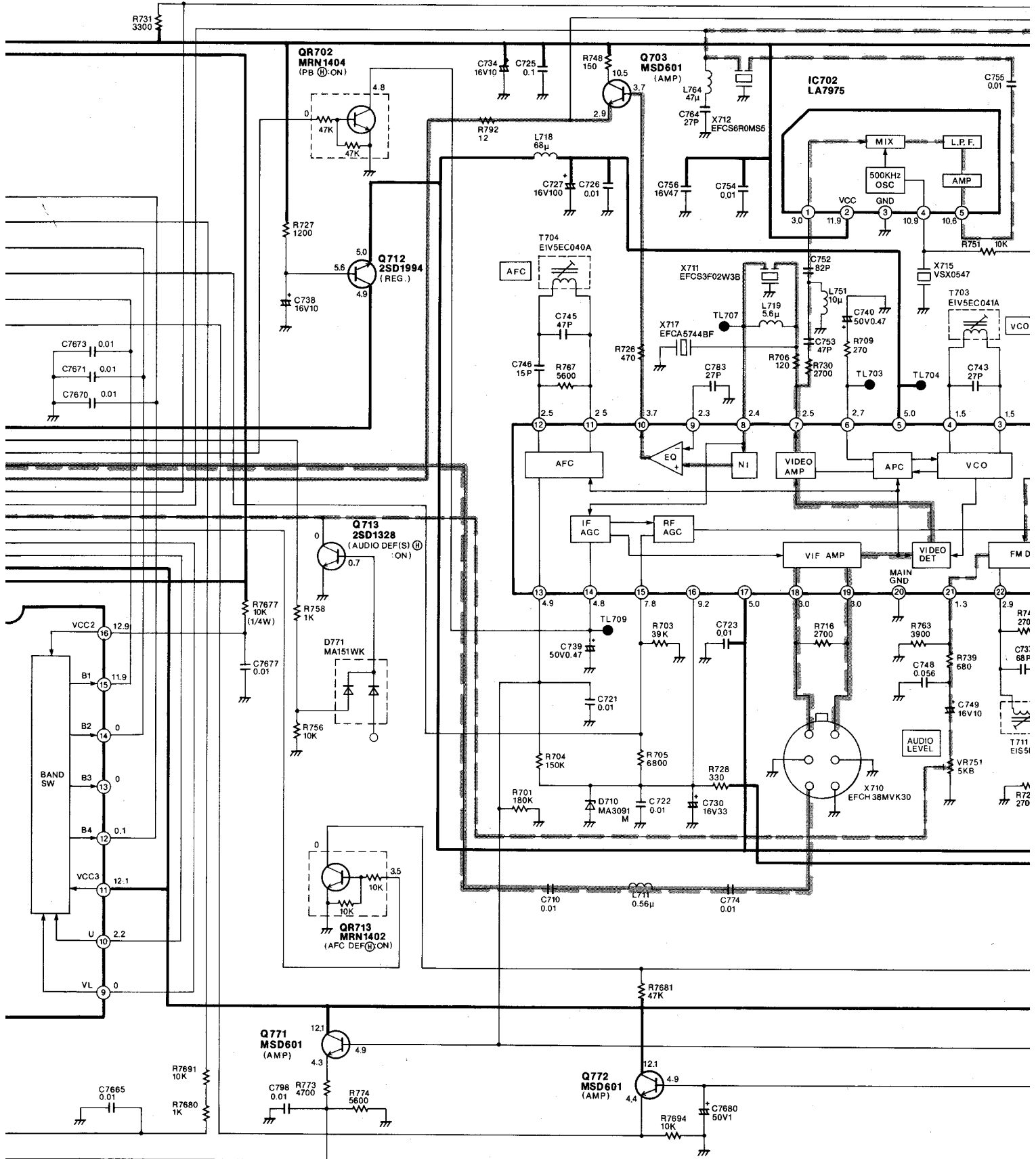


4.9. TV DEMODULATOR PACK SCHEMATIC DIAGRAM

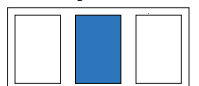


VIDEO SIGNAL PATH

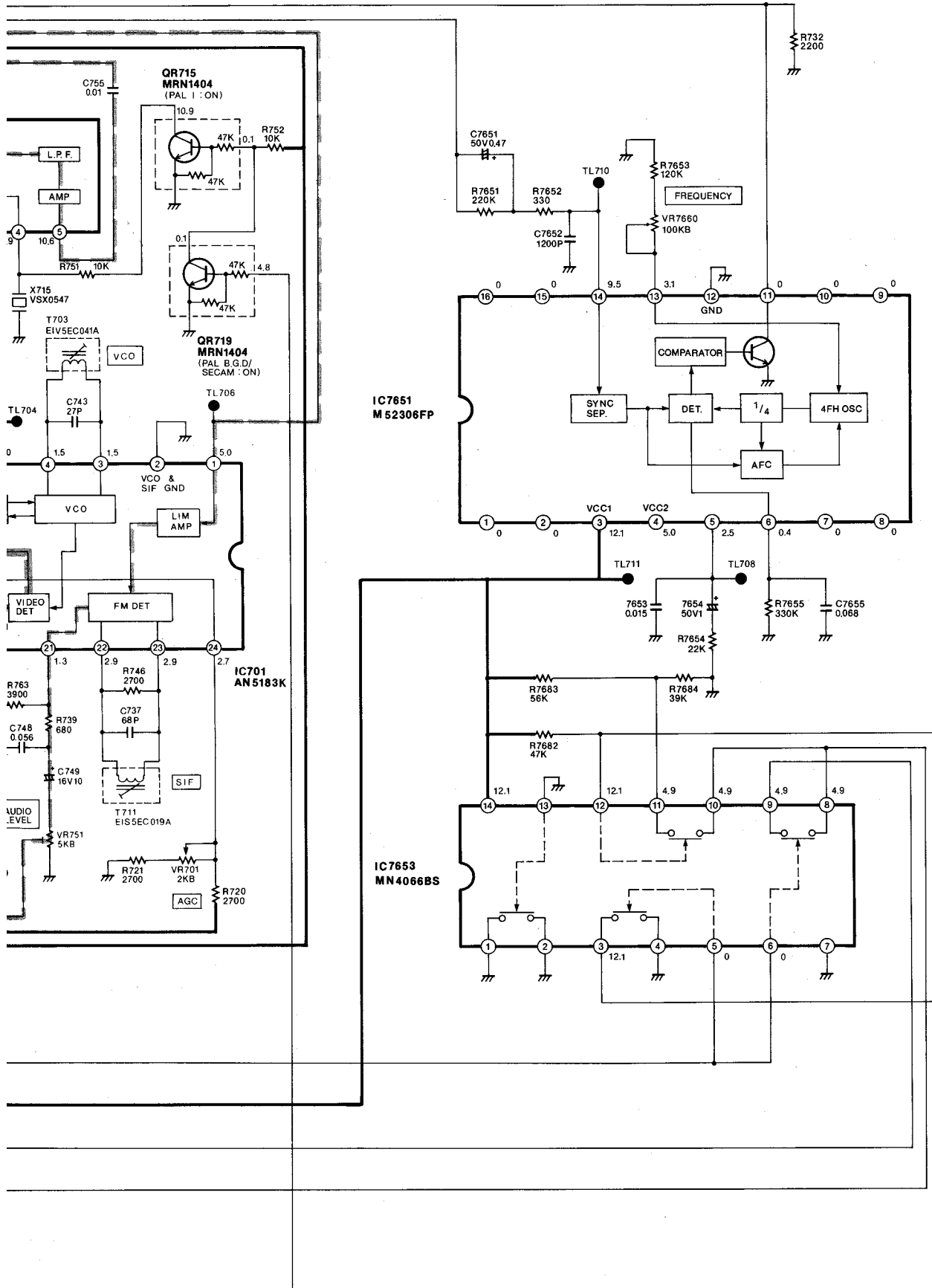
AUDI



NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.



AUDIO SIGNAL PATH



TOP MODE.

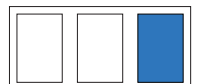
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

9

10

11

12

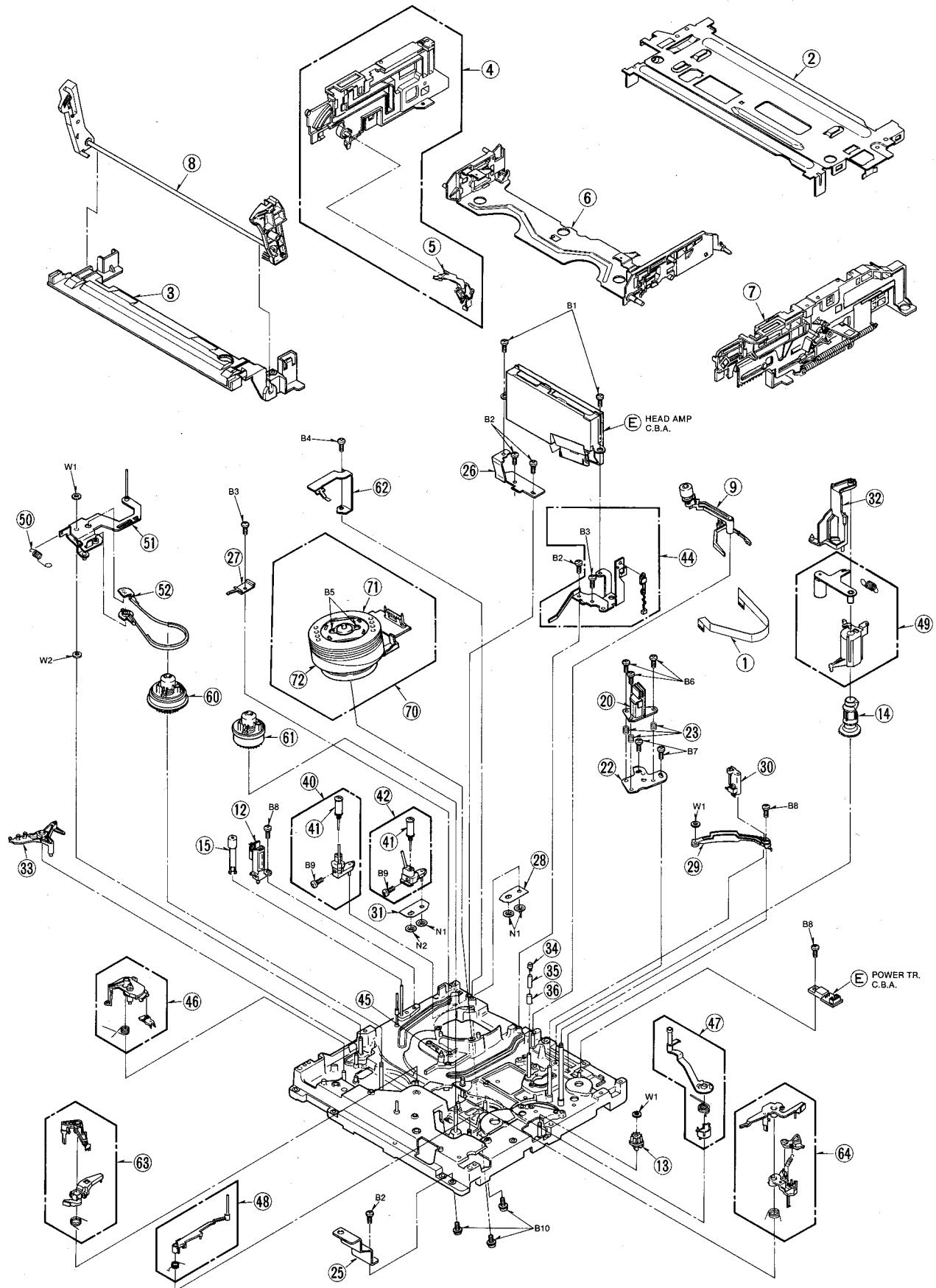


SECTION 5

EXPLODED VIEWS & PARTS LIST

5-1. EXPLODED VIEW & MECHANICAL REPLACEMENT PARTS LIST

❶ CHASSIS PARTS SECTION (1)



Note:1.* Be sure to make your orders of replacement parts according to this list.

2.IMPORTANT SAFETY NOTICE

Components identified with the mark (!) have the special characteristics for safety. When replacing any of these components, use only the same type.

Note:1.* Be sure to make your orders of replacement parts according to this list.

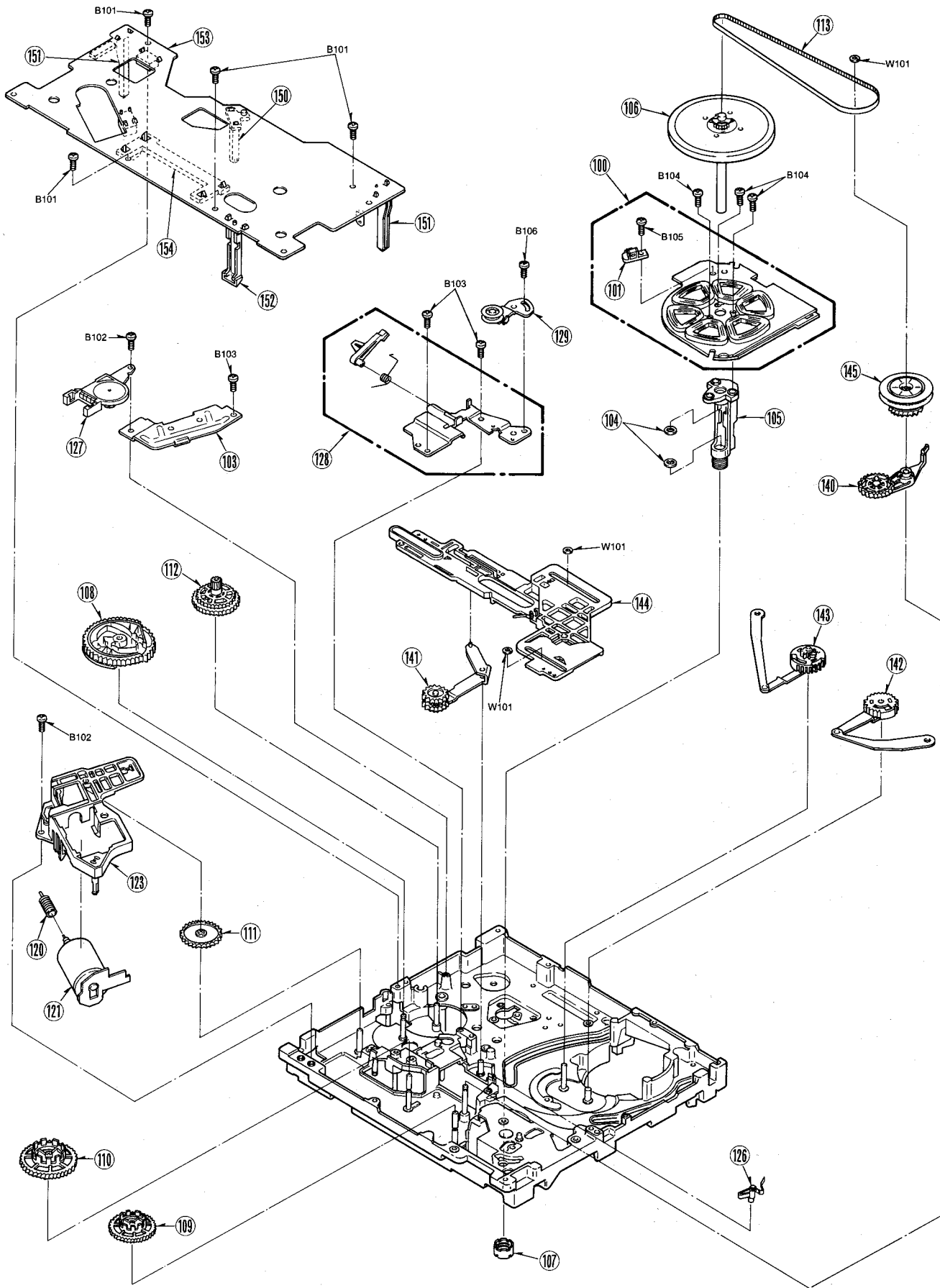
2.Important SAFETY NOTICE

Components identified with the mark (!) have the special characteristics for safety. When replacing any of these components, use only the same type.

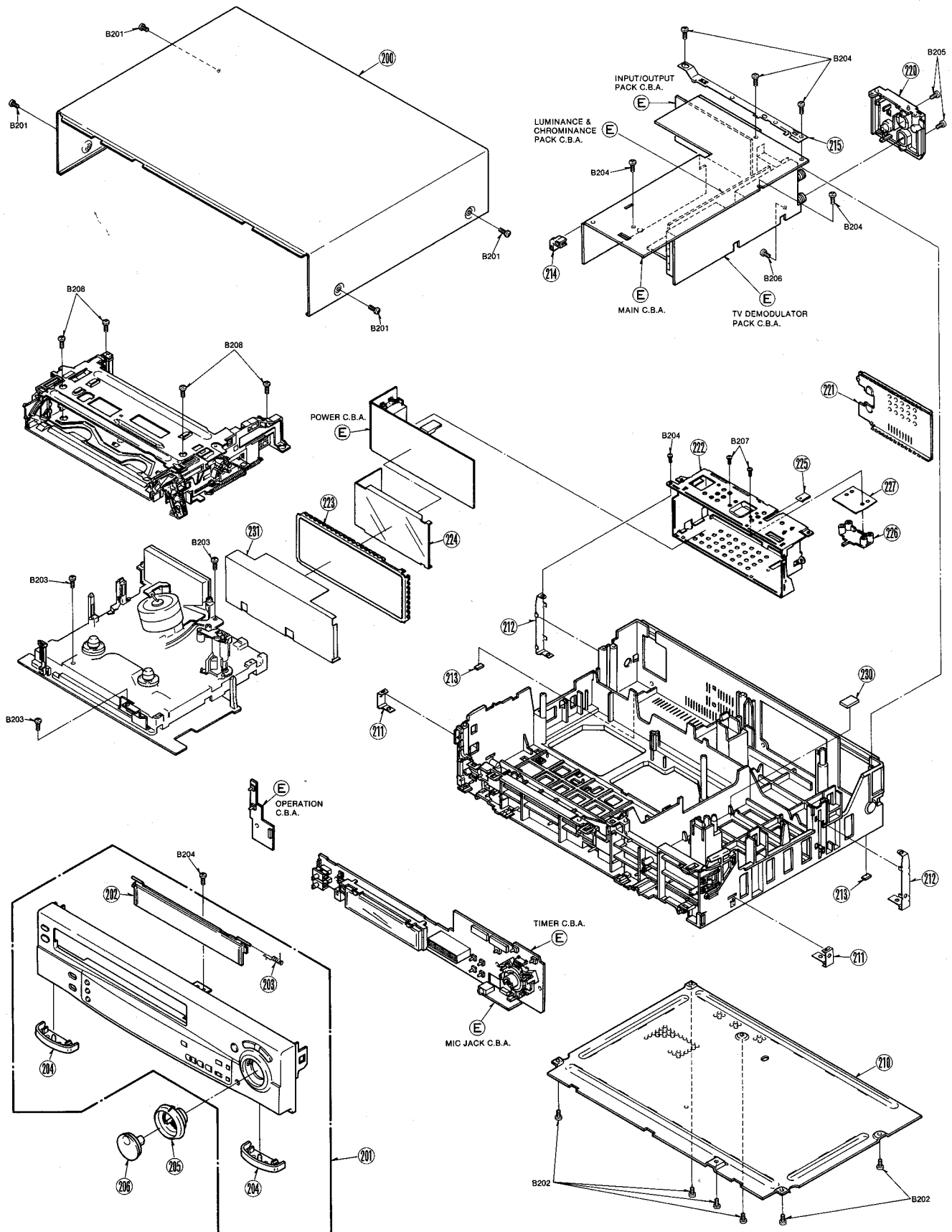
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1(1)	VWJ0653	FLEXIBLE CABLE (6P)	1	P4003-P1501
2(1)	VMA8644	TOP PLATE	1	
3(1)	VMA8787	CASSETTE GUIDE	1	
4(1)	VXA4660	SIDE PLATE (L) UNIT	1	
5(1)	VXL2250	OPENER LEVER UNIT	1	
6(1)	VXA4661	CASSETTE HOLDER PLATE UNIT	1	
7(1)	VXA4806	SIDE PLATE (R) UNIT	1	
8(1)	VXP1339	MAIN SHAFT UNIT	1	
9(1)	VXL2251	CLEANER ARM UNIT	1	
12(1)	VBS0050	FE HEAD	1	
13(1)	VDG0871	CARRIAGE CONNECTION GEAR	1	
14(1)	VDG0886	PINCH CAM GEAR	1	
15(1)	VXP1402	IMPEDANCE ROLLER UNIT	1	
20(1)	VED0182	A/C HEAD (1) UNIT	1	
22(1)	VMA8624	A/C HEAD BASE	1	
23(1)	VMB2515	A/C HEAD SPRING	3	
25(1)	VMA8761	MOUNT ANGLE	1	
26(1)	VMA8763	HEAD AMP MOUNT ANGLE (L)	1	
27(1)	VMC0917	EARTH SPRING	1	
28(1)	VMA8874	INCLIND BASE HOLDER (S)	1	
29(1)	VMD2078	P5 STOPPER BASE	1	
30(1)	VXA4927	P5 POST STOPPER	1	
31(1)	VMA8873	INCLIND BASE HOLDER (T)	1	
32(1)	VMD2101	OPENER PIECE	1	
33(1)	VML2776	TENSION SPRING ARM	1	
34(1)	VMX1544	P4 UPPER LIMITER	1	
35(1)	VMX2175	P4 SLEEVE	1	
36(1)	VMX2176	P4 LOWER LIMITER	1	
40(1)	VXA4982KIT	INCLIND BASE (S) UNIT	1	
41(1)	VXP1415	ROLLER POST (S)	1	
42(1)	VXA4984KIT	INCLIND BASE (T) UNIT	1	
44(1)	VXA4869	HEAD AMP MOUNT ANGLE (R) U.	1	
45(1)	VMS5383	CASSETTE POSITION FIXTURE	1	
46(1)	VXL2310	REVIEW ARM UNIT	1	
47(1)	VXL2306	P5 ARM UNIT	1	
48(1)	VXL2243	TAKE UP TENSION REGULATOR	1	
		ARM UNIT		
49(1)	VXL2246	PINCH ARM UNIT	1	
50(1)	VMB2434	TENSION SPRING	1	
51(1)	VXL2309	TENSION ARM (1) UNIT	1	
52(1)	VX20310	TENSION BAND UNIT	1	
60(1)	VXR0221	SUPPLY REEL TABLE UNIT	1	
61(1)	VXR0222	TAKE UP REEL TABLE UNIT	1	
62(1)	VXS0114	EARTH PLATE	1	
63(1)	VX20312	SUPPLY BRAKE ARM UNIT	1	
64(1)	VX20313	TAKE UP BRAKE ARM UNIT	1	
70(1)	VEG1023	CYLINDER UNIT	1	
71(1)	VEH0598	UPPER CYLINDER UNIT	1	
72(1)	VJR0082	RT TERMINAL	1	
B1	VHD0773	SCREW	2	
B2	XTV26+6F	SCREW	4	
B3	XTV26+4F	SCREW	2	
B4	XTN3+6FFZ	SCREW	1	
B5	VHD0425	SCREW	2	
B6	VHD0762	SCREW	3	
B7	XTV26+6FZ	SCREW	2	
B8	XTV26+8F	SCREW	3	
B9	VHD0760	SCREW	2	
B10	VHD0342	SCREW	3	
N1	VHN0192	NUT	3	
N2	VHN0193	NUT	1	
W1	WMX2208	WASHER	3	
W2	XWG/V26D5G	WASHER	1	

[illegible]

2 CHASSIS PARTS SECTION (2)



③ CASING PARTS SECTION



Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. **IMPORTANT SAFETY NOTICE**
Components identified with the mark (!) have the special characteristics for safety. When replacing any of these components, use only the
SAFETY parts.

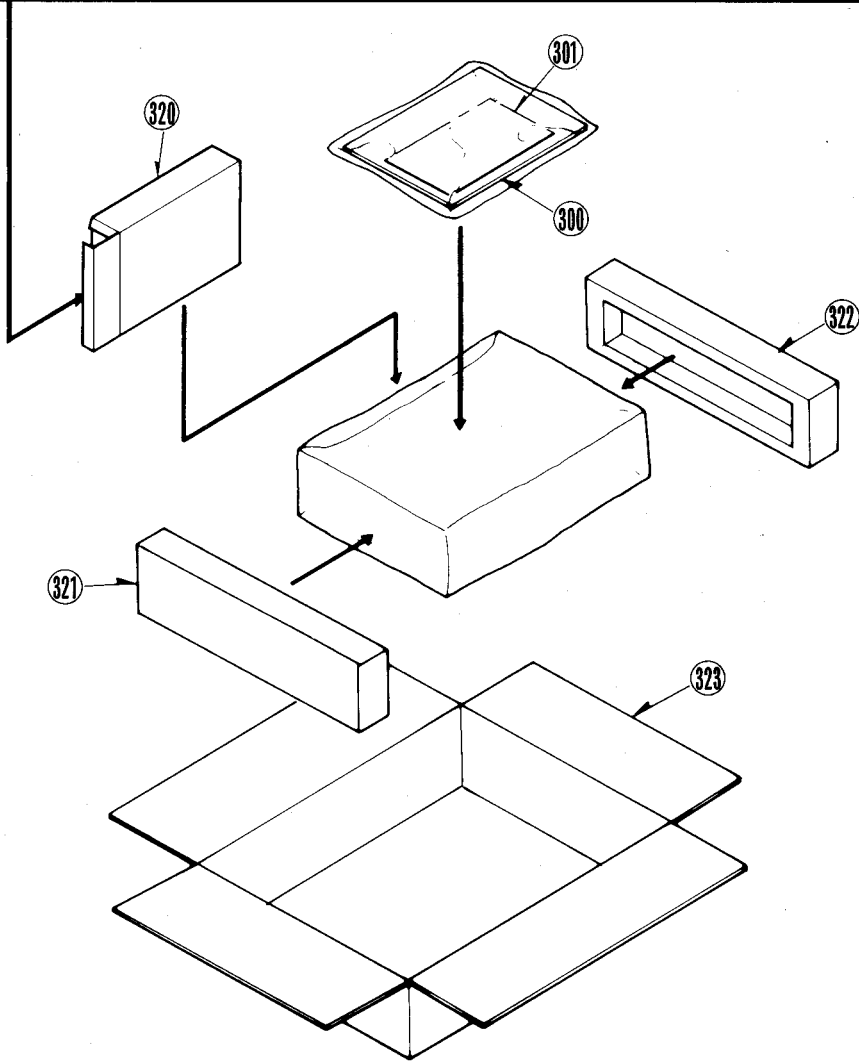
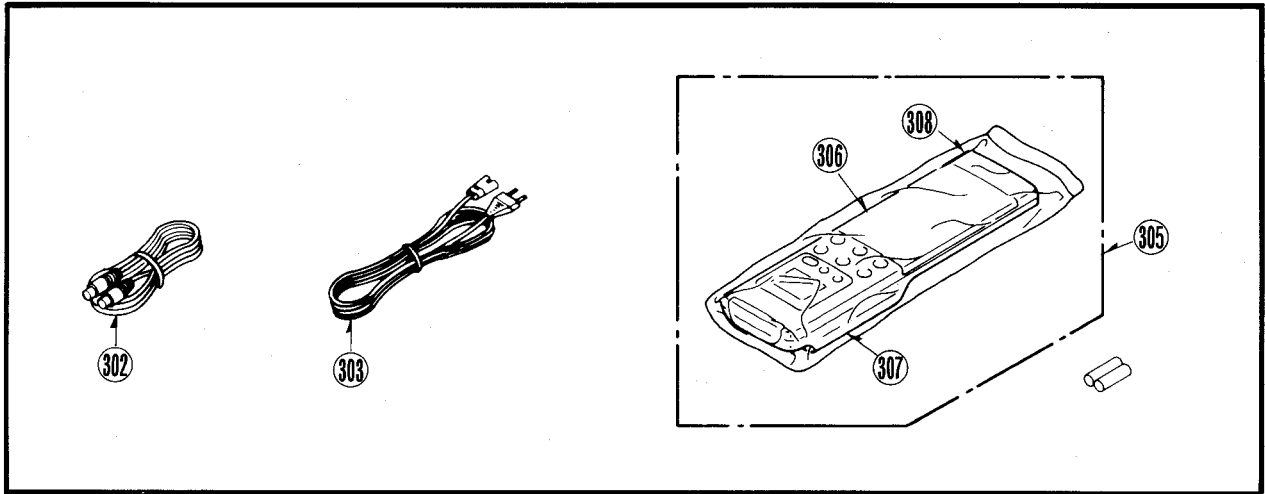
Note:1.* Be sure to make your orders of replacement parts according to this list.

2. **IMPORTANT SAFETY NOTICE**
Components identified with the mark (⚠) have the special characteristics for safety. When replacing any of these components, use only the

[illegible]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
300(4)	VQT5191	OPERATING INSTRUCTIONS (ENGLISH/GERMAN)	1	<!>
300(4)	VQT5192	OPERATING INSTRUCTIONS (RUSSIAN/POLISH/AFRICANS)	1	<!>
301(4)	VQC1839	PROGRAMME SHEET	1	
302(4)	VJA0376	DIN RF CABLE	1	
303(4)	VJA0664	AC CORD	1	
305(4)	VEQ1468	REMOTE CONTROLLER (BUILD IN DIGITAL SCANNER)	1	
306(4)	VGP3344	DOOR PANEL	1	
307(4)	VKF1977	BATTERY COVER	1	
308(4)	VQG3046	CAP	1	
320(4)	VFK0825	ACCESSORIES PACKING	1	
321(4)	VPN3542	CUSHION (L)	1	
322(4)	VPN3543	CUSHION (R)	1	
323(4)	VPG6785	PACKING	1	
		SERVICE FIXTURES & TOOLS		
	VFJ8125H3F	VHS ALIGNMENT TAPE(PAL)	1	
	VFK0335	RETAINING RING REMOVER (3mm/4mm)	1	
	VFK0329	POST ADJUSTMENT SCREWDRIER	1	
	VFK0326	HEX WRENCH SET	1	
	VFK0132	BACK TENSION METER	1	
	VFK0343	CHECK LIGHT	1	
	VFK27	HEAD CLEANING STICK	1	
	MOR265	MORLYTONE GREASE	1	
	VFK0341	UPPER CYLINDER REMOVER	1	
	VFK0680	WHITE GREASE	1	
	VFK0851	CENTRE FIXING TOOL	1	
	VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	

4 PACKING PARTS SECTION



5-2. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.Be sure to make your orders of replacement parts according to this list.
 2.IMPORTANT SAFETY NOTICE : Components identified with the mark <1> have the special characteristics for safety. When replacing any of these components,use only the same type.
 3.Unless otherwise specified, All resistors are in OHMS , K=1,000 OHMS. All capacitors are in MICRO-PARADS(uf),P=μF.
 4.The P.C.Board units marked with'■'show below the main assembled parts.
 5.The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
	VEPO3971F	MAIN C.B.A.	1	(RTL)
	VEPO3972A	INPUT/OUTPUT PACK C.B.A.	1	(RTL)
	VEPO3975F	LUMINANCE & CHROMINANCE PACK C.B.A.	1	(RTL) INCLUDING THE SECAM PACK C.B.A. (VEPO39A02A).
	VEPO3A02A	SECAM PACK C.B.A.	1	(RTL) INCLUDED IN LUMINANCE & CHROMINANCE PACK C.B.A. (VEPO3975F).
	VEPO7705C	TV DEMODULATOR PACK C.B.A.	1	(RTL)
	VEPO5180A	HEAD AMP C.B.A.	1	(RTL)
	VEPO7699B	TIMER C.B.A.	1	(RTL) INCLUDING THE MIC C.B.A. (VEPO0577A).
	VEPO0577A	MIC C.B.A.	1	(RTL) INCLUDED IN TIMER C.B.A. (VEPO7699B).
	VEPO7716A	OPERATION C.B.A.	1	(RTL)
	VEPO1518E	POWER C.B.A.	1	(RTL) <1>
	-----	MECHANISM CONNECTION C.B.A.	1	(RTL)
	VEPO0586A	POWER TRANSISTOR C.B.A.	1	(RTL)
	-----	MOTOR C.B.A.	1	(RTL)
	ENC17991	RF CONVERTER	1	<1>
	ENV59845H3	TUNER	1	<1>
F1101	XBA2C16TB0	FUSE	1	<1>
	■ VEPO3971F	MAIN C.B.A.		(RTL)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
		CAPACITORS		
C1001	ECEA1EM101	E.CAPACITOR 25V 100U	1	
C1002	ECEA1CK101	E.CAPACITOR 16V 100U	1	
C1003	ECEAOJK330	E.CAPACITOR 6.3V 33U	1	
C1004	ECEAOJK4101	E.CAPACITOR 6.3V 100U	1	
C2001	ECEAOJK220	E.CAPACITOR 6.3V 22U	1	
C2002	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C2003	ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C2004	ECUM1H2232FN	C.CAPACITOR 50V 0.022U	1	
C2005	ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C2006	ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C2007	ECQV1H334JZ	P.CAPACITOR 50V 0.33U	1	
C2008	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C2009,10	ECEA1HK3R3	E.CAPACITOR 50V 3.3U	2	
C2011	ECUM1H471JCN	C.CAPACITOR 50V 470P	1	
C2012	ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2013	ECEAOJK221	E.CAPACITOR 6.3V 220U	1	
C2014	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C2015	ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	
C2016	ECEAOJK220	E.CAPACITOR 6.3V 22U	1	
C2017	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C2018	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C2019	ECUM1H2232FN	C.CAPACITOR CH 50V 0.022U	1	
C2020	ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C2021	ECEA1HK4R7	E.CAPACITOR 50V 4.7U	1	
C2022	ECEAOJM221	E.CAPACITOR 6.3V 220U	1	
C2023	ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2024	ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C2501	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C2502	ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C2503-05	ECUM1H104KBN	C.CAPACITOR CH 50V 0.1U	3	
C2506	ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C2507-09	ECEA1VK4R7	E.CAPACITOR 35V 4.7U	3	
C2510	ECUM1H4732FN	C.CAPACITOR CH 50V 0.047U	1	
C2511	ECEAOJK101	E.CAPACITOR 6.3V 100U	1	
C2512	ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C2514	ECEA1CK101	E.CAPACITOR 16V 100U	1	
C2515-17	ECEA1HK2R2	E.CAPACITOR 50V 2.2U	3	
C2518-21	ECUM1H333KBN	C.CAPACITOR CH 50V 0.033U	4	
C2522	ECUM1E2242FN	C.CAPACITOR CH 25V 0.22U	1	
C2523	ECUM1C1052FM	C.CAPACITOR CH 16V 1U	1	
C2524,25	ECEA1CK470	E.CAPACITOR 16V 47U	2	
C2526	ECEAOJM221	E.CAPACITOR 6.3V 220U	1	
C2527	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C2528,29	ECUM1H333KBN	C.CAPACITOR CH 50V 0.033U	2	
C2530	ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C2531	ECUM1C4742FM	C.CAPACITOR CH 16V 0.47U	1	
C2532,33	ECUM1C1052FN	C.CAPACITOR CH 16V 1U	2	
C2534,35	ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C2536	ECUM1C4742FM	C.CAPACITOR CH 16V 0.47U	1	
C2555	ECEA1CK101	E.CAPACITOR 16V 100U	1	
C2556	ECUM1C1052FM	C.CAPACITOR CH 16V 1U	1	
C2557	ECEAOJK220	E.CAPACITOR 6.3V 22U	1	
C2558	ECUM1C1052FM	C.CAPACITOR CH 16V 1U	1	
C2559	ECEA1AK330	E.CAPACITOR 10V 33U	1	
C3001	ECEAOJM471	E.CAPACITOR 6.3V 470U	1	
C3003	ECUM1C1052FN	C.CAPACITOR CH 16V 1U	1	
C3004	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3005	ECEA1CK470	E.CAPACITOR 16V 47U	1	
C3006,07	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
C3011	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3012	ECUM1H681JCN	C.CAPACITOR 50V 680P	1	
C3013	ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3015	ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3016	ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3018	ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C3019	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3020	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3021	ECEAOJK101	E.CAPACITOR 6.3V 100U	1	
C3022	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3023	ECEAOJK470	E.CAPACITOR 6.3V 47U	1	
C3026	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3027	ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3028	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3029	ECEA1CK470	E.CAPACITOR 16V 47U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3030	ECEAJK470	E. CAPACITOR 6.3V 47U	1						
C3031	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	1						
C3033	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	1				INTEGRATED CIRCUITS		
C3034	ECUMIH1032FN	C. CAPACITOR CH 50V 0.01U	1		IC2501	NA3814K	IC	1	
C3036	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	1		IC2502	XRA6439P	IC	1	
C4001	ECEAIK100	E. CAPACITOR 16V 10U	1		IC2503	LM358PS	IC	1	
C4002	ECQB1H153JH	P. CAPACITOR 50V 0.015U	1		IC4001	XRA7766AS	IC	1	
C4003	ECQB1H273JH	P. CAPACITOR 50V 0.027U	1		IC6001	MN67434VRS	IC	1	
C4005	ECQB1H123JH	P. CAPACITOR 50V 0.01U	1		IC6501	BA6219B	IC	1	
C4007	ECUMIH681JCN	C. CAPACITOR 50V 680P	1		IC6502	LM358PS	IC	1	
C4008	ECEAIK4R7	E. CAPACITOR 25V 4.7U	1		IC6710	M66006FP	IC	1	
C4009	ECEAIHK010	E. CAPACITOR 50V 1U	1						
C4010	ECEAIK330	E. CAPACITOR 16V 33U	1						
C4011	ECEAIK470	E. CAPACITOR 16V 47U	1				COILS		
C4012	ECQB1H102K2	P. CAPACITOR 50V 1000P	1		L2001	ELESQ101KA	COIL 100UH	1	
C4013	ECEAI6M33	E. CAPACITOR 16V 33U	1		L2501	ELESQ101KA	COIL 100UH	1	
C4014	ECQP1222J2	P. CAPACITOR 0.0022U	1		L3002	ELESQ101KA	COIL 100UH	1	
C4015	ECQD2H181J	C. CAPACITOR 500V 180P	1		L3003	ELESQ120KA	COIL 12UH	1	
C4016	ECQB1H103JH	P. CAPACITOR 50V 0.01U	1		L3004	ELESQ101KA	COIL 100UH	1	
C4017	ECQB1H472JH	P. CAPACITOR 50V 4700P	1		L3006	ELESQ5R6KA	COIL 5.6UH	1	
C4018	ECUMIH1032FN	C. CAPACITOR CH 50V 0.01U	1		L3007	ELESQ6R8JA	COIL 6.8UH	1	
C4019	ECUMIH221JCN	C. CAPACITOR CH 50V 220P	1		L3008	ELESQ101KA	COIL 100UH	1	
C4020	ECEAIK100	E. CAPACITOR 16V 10U	1		L4001	VLQEL07F153J	COIL 15MH	1	
C4021	ECQB1H333KH	P. CAPACITOR 50V 0.033U	1		L4002	ELESQ471KA	COIL 470UH	1	
C4022	ECUMIH471JCN	C. CAPACITOR 50V 470P	1		L4003	ELESQ101KA	COIL 100UH	1	
C4023	ECEAI0M22	E. CAPACITOR 10V 22U	1		L4004	VLQ0123	COIL	1	
C4024	ECUMIH221JCN	C. CAPACITOR CH 50V 220P	1		L6001	VLPO074	COIL	1	
C4025	ECEAI6M10R	E. CAPACITOR 16V 10U	1		L6501	VLPO074	COIL	1	
C4026	ECUMIH102KBN	C. CAPACITOR CH 50V 1000P	1		L6701	ELESE101KA	COIL 100UH	1	
C4027	ECQB1H822K2	P. CAPACITOR 50V 8200P	1		L7002,03	ELESQ101KA	COIL 100UH	2	
C4028	ECEAIK100	E. CAPACITOR 16V 10U	1		L7004	ELESQ10RKA	COIL 1UH	1	
C4029	ECUMIH102KBN	C. CAPACITOR CH 50V 1000P	1						
C4030	ECUMIH1022FN	C. CAPACITOR CH 50V 1000P	1				CONNECTORS		
C4031	ECEAJK470	E. CAPACITOR 6.3V 47U	1		P202	VJS1237T	CONNECTOR (FEMALE) 10P	1	
C4032	ECQB1H102JH	P. CAPACITOR 50V 1000P	1		P1001	VJS3193B013A	CONNECTOR (FEMALE)	1	
C4033	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	1		P1506	VJS1736T	CONNECTOR (FEMALE) 3P	1	
C4034, 35	ECUMIH101JCN	C. CAPACITOR CH 50V 100P	2		P2501	VJS3193B015A	CONNECTOR (FEMALE)	1	
C4036	ECQV1H563J2	P. CAPACITOR 50V 0.056U	1		P2502	VJP1230T	CONNECTOR (MALE) 3P	1	
C6001	ECUMIH271JCN	C. CAPACITOR CH 50V 270P	1		P2502	VJS1736T	CONNECTOR (FEMALE) 3P	1	
C6002	ECUMIH220JCN	C. CAPACITOR CH 50V 22P	1		P2503	VJP1237T	CONNECTOR (MALE) 10P	1	
C6003	ECUMIH180JCN	C. CAPACITOR CH 50V 18P	1		P2503	VJS1237T	CONNECTOR (MALE) 10P	1	
C6004	ECUMIH1032FN	C. CAPACITOR CH 50V 0.01U	1		P3001	VJS3193B014A	CONNECTOR (FEMALE)	1	
C6005	ECUMIH271JCN	C. CAPACITOR CH 50V 270P	1		P4002	VJP1230T	CONNECTOR (MALE) 3P	1	
C6008	ECEAIK3R3	E. CAPACITOR 50V 3.3U	1		P4002	VJS1230T	CONNECTOR (FEMALE) 3P	1	
C6009	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	1		P4003	VJS2331	CONNECTOR (FEMALE) 6P	1	
C6010	ECEAIHK010	E. CAPACITOR 50V 1U	1		P6001	VJS3193B013A	CONNECTOR (FEMALE)	1	
C6501	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	1		P6002	VJS3193B015A	CONNECTOR (FEMALE)	1	
C6502	ECEAIK470	E. CAPACITOR 16V 47U	1		P6003	VJP1242T	CONNECTOR (MALE) 2P	1	
C6503,04	ECUMIH1042FN	C. CAPACITOR CH 50V 0.1U	2		P6501	VJS3193B013A	CONNECTOR (FEMALE)	1	
C6505	ECUMIH1032FN	C. CAPACITOR CH 50V 0.01U	1						
C6710	ECUMIH1032FN	C. CAPACITOR CH 50V 0.01U	1						
C6711	ECEAJK470	E. CAPACITOR 6.3V 47U	1						
C7001	ECUMIH1032FN	C. CAPACITOR CH 50V 0.01U	1		PF3001	VJP3044G009W	CONNECTOR (MALE)	1	
C7002	ECEAJK101	E. CAPACITOR 6.3V 100U	1		PF3002	VJP3044G012W	CONNECTOR (MALE)	1	
C7005	ECKF1H471KB	C. CAPACITOR 50V 470P	1		PF3003	VJP3044G006W	CONNECTOR (MALE)	1	
C7701	ECAJW471	E. CAPACITOR 6.3V 470U	1		PF3004	VJP3043G011W	CONNECTOR (MALE)	1	
C7702	EECS5R5T224N	E. CAPACITOR 5.5V 0.22U	1		PF3005	VJP3043G009W	CONNECTOR (MALE)	1	
					PF7001-03	VJP3043A005W	CONNECTOR (MALE) 5P	3	
					PF7004	VJP3043A006W	CONNECTOR (MALE) 6P	1	
					PF7005	VJP3043A004W	CONNECTOR (MALE) 4P	1	
		DIODES					TRANSISTORS		
D1005	MA178	DIODE	1		Q2001	MSD601	TRANSISTOR-RESISTOR	1	
D2001-06	1SS254	DIODE	6		Q2002,03	MSB709	TRANSISTOR	2	
D2501-04	1SS254	DIODE	4		Q2004	MSD601	TRANSISTOR-RESISTOR	1	
D2509	1SS254	DIODE	1		Q2502	2SB1321-R	TRANSISTOR	1 (R,S)	
D2511,12	1SS254	DIODE	2		Q2504	MSB709	TRANSISTOR	1	
D3002	1SS254	DIODE	1		Q2505	MSD601	TRANSISTOR-RESISTOR	1	
D4002,03	1SS254	DIODE	2		Q2506	2SD1991	TRANSISTOR	1	
D6002-05	1SS254	DIODE	4		Q2507	2SD1991A	TRANSISTOR	1	
D6501-04	1SS254	DIODE	4		Q3001	MSB709-R	TRANSISTOR	1	
D6711	1SS254	DIODE	1		Q3002	MSD601-R	TRANSISTOR	1	
D6712	MA723VT	DIODE	1 (VT)		Q3003	MSC2295-B	TRANSISTOR	1	
					Q3005	MSC2295	TRANSISTOR	1	
		CONNECTORS							
FE	VJS1141	CONNECTOR (FEMALE) 2P	1						

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q3006	MSB710	TRANSISTOR	1	
Q3007	MSB710-R	TRANSISTOR	1 (R,S)	
Q4001	MSD602-R	TRANSISTOR	1	
Q4002	2SB1378-R	TRANSISTOR	1 (R,S)	
Q4004	2SD1991	TRANSISTOR	1	
Q4005	MSD601	TRANSISTOR-RESISTOR	1	
		COMBINATION PARTS		
QR1001	MRN1402	TRANSISTOR-RESISTOR	1	
QR2001	UN2116	TRANSISTOR-RESISTOR	1	
QR2002	XN1213	TRANSISTOR-TRANSISTOR	1	
QR2006_07	MRN2404	TRANSISTOR-RESISTOR	2	
QR2008	UN2210	TRANSISTOR-RESISTOR	1	
QR2009	MRN2404	TRANSISTOR-RESISTOR	1	
QR2010	UN2210	TRANSISTOR-RESISTOR	1	
QR2013	MRN2404	TRANSISTOR-RESISTOR	1	
QR3005	MRN2402	TRANSISTOR-RESISTOR	1	
QR3007_08	DTC363EK	COMBI. TR-R	2	
QR3009	MRN1404	TRANSISTOR-RESISTOR	1	
QR4001_02	MRN1404	TRANSISTOR-RESISTOR	2	
QR4004	DTC363EK	COMBI. TR-R	1	
QR4005	MRN2404	TRANSISTOR-RESISTOR	1	
QR6005	MRN1404	TRANSISTOR-RESISTOR	1	
QR6501	XN1211	DIGITAL TRANSISTOR	1	
QR6502	UN2216	TRANSISTOR-RESISTOR	1	
QR6710	MRN2404	TRANSISTOR-RESISTOR	1	
QR7701	MRN1402	TRANSISTOR-RESISTOR	1	
		RESISTORS		
R2001	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R2002	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2003	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R2004	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R2005	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R2008	ERJ6GMYJ244	M.RESISTOR CH 1/10W 240K	1	
R2009_10	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2011	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R2012	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2013	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R2014	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R2015_16	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2018	ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R2019_20	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2021	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2024	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2025	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R2026	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R2029	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R2034	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2035	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R2036	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2037	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2038	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2039	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2040	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R2501	ERDS2TJ122	C.RESISTOR 1/4W 1.2K	1	
R2502	ERDS2FJ1R5	C.RESISTOR 1/4W 1.5	1	
R2503-05	ERDS2TJ150	C.RESISTOR 1/4W 15	3	
R2506	ERDS2FJ1R2	C.RESISTOR 1/4W 1.2	1	
R2507	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2508	EROS2CKG6800	M.RESISTOR 1/4W 680	1	
R2509	ERX12SJ47	M.RESISTOR CH 1/10W 0.47	1	
R2510-12	ERDS2TJ560	C.RESISTOR 1/4W 56	3	
R2513	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2514	ERDS1TJ561	C.RESISTOR 1/2W 560	1	
R2515	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2516	ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R2517	ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R2518	ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R2519	ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R2520	ERJ6GMYG684	M.RESISTOR CH 1/10W 680K	1	
R2521	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R2522	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R2523	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2524_25	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R2526	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2527	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2538_39	ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	2	
R2542_43	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R2544	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R2545	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R2546	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R2551	ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R2554	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2555_56	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R2557	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2558	ERJ6GMYG201	M.RESISTOR 1/10W 200	1	
R2560	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2561_62	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2568	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3001	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3003	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3006	ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3007	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3008	ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R3009	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3013	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3014	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3015	ERJ6GMYZ0R00	M.RESISTOR CH 1/10W 0	1	
R3016	ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3018	ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3025	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3026	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3027	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3028	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3029	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3030	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3031	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3032	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R3037	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R3038	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3040	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3041	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3043	ERJ6GMYZ0R00	M.RESISTOR CH 1/10W 0	1	
R4001	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R4003	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R4004	ERJ6GMYG221	M.RESISTOR 1/10W 220	1	
R4005	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R4006	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R4007	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R4008	ERJ6GMYJ470	M.RESISTOR CH 1/10W 47	1	
R4010_11	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	2	
R4012	ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R4013	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4014	ERJ6GMYZ0R00	M.RESISTOR CH 1/10W 0	1	
R4015	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R4016	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4017	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4019	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4023	ERJ6GMYJ100	M.RESISTOR 1/10W 10	1	
R4024	ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R4025	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R4027	ERJ6GMYJ394	M.RESISTOR CH 1/10W 390K	1	
R4028	ERJ6GMYG822	M.RESISTOR CH 1/10W 8.2K	1	
R4029	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4030	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4031	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R4032	ERJ6GMYG912	M.RESISTOR CH 1/10W 9.1K	1	
R4033	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4034	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R4035	ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R4036	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4037	ERJ6GMYG622	M.RESISTOR CH 1/10W 6.2K	1	
R4038	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R4039	ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R4040	ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R4041_42	ERJ6GMYG104	M.RESISTOR CH 1/10W 100K	2	
R4043	ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R827	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1		C797-99	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
R828	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1		C7651	ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
R829	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1		C7652	ECUM1H122KBN	C.CAPACITOR CH 50V 1200P	1	
R830	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1		C7653	ECUM1H153KBN	C.CAPACITOR CH 50V 0.015U	1	
R831	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1		C7654	ECEA1HK010	E.CAPACITOR 50V 1U	1	
R832	ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1		C7655	ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
R833	ERJ6GMYJ204	M.RESISTOR CH 1/10W 200K	1		C7661	ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
R834	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1		C7662	ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
R835	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1		C7663	ECQV1H823JZ	P.CAPACITOR 50V 0.082U	1	
R836	ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1		C7664	ECQB1H273KH	P.CAPACITOR 50V 0.027U	1	
R848	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1		C7665,66	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
R849	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1		C7667	ECEA1HKA100	E.CAPACITOR 50V 10U	1	
R850	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1		C7670,71	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
R853	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1		C7673	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
R855	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1		C7675	ECEA1HK010	E.CAPACITOR 50V 1U	1	
R856	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1		C7676,77	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
R857	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1		C7678	ECEA1CKA220	E.CAPACITOR 16V 22U	1	
R859	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1		C7679	ECEA1HK010	E.CAPACITOR 50V 1U	1	
R881	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1		C7680	ECEA1HK010	E.CAPACITOR 50V 1U	1	
R882	ERJ6GMYJ390	M.RESISTOR CH 1/10W 39	1						
R883	ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1				DIODES		
R884	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1		D710	MA3091-M	DIODE	1	
R885	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1		D771	MA151WK	DIODE	1	
R886	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1		D773	MA151K	DIODE	1	
					D7601	MA151A	DIODE	1	
		COILS			D7602	MA3082M	DIODE	1	
T881	ELM7Q207A	COIL	1						
							INTEGRATED CIRCUITS		
		VARIABLE RESISTORS			IC701	AN5183K	IC	1	
VR801,02	EVTEASA00B13	V.RESISTOR	2		IC702	LA7975	IC	1	
VR803	EVNCBAA00B14	V.RESISTOR	1		IC7651	M52306FP	IC	1	
					IC7652	AN5043	IC	1	
					IC7653	MN4066BS	IC	1	
		CRYSTAL OSCILLATORS							
X801	VSX0162	CRYSTAL OSCILLATOR	1				COILS		
					L711	VLQ0305JR56	COIL 0.56UH	1	
					L718	ELESQ680KA	COIL 68UH	1	
					L719	ELESQ5R6KA	COIL 5.6UH	1	
					L720	ELESQ101KA	COIL 100UH	1	
					L751	ELJFA100JB	COIL	1	
					L764	ELJFA470JB	COIL 47UH	1	
							CONNECTORS		
	VEPO7705C	TV DEMODULATOR PACK C.B.A.	(RTL)		PS701-03	VJS3043B005W	CONNECTOR (FEMALE) 5P	3	
					PS704	VJS3043B006W	CONNECTOR (FEMALE) 6P	1	
		CAPACITORS							
C701,02	ECEA1CK100	E.CAPACITOR 16V 10U	2				TRANSISTORS		
C705	ECEA1CK100	E.CAPACITOR 16V 10U	1		Q703	MSD601-S	TRANSISTOR	1	
C706	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1		Q712	2SD1994	TRANSISTOR	1	
C708,09	ECEA1CK100	E.CAPACITOR 16V 10U	2		Q713	2SD1328-S	TRANSISTOR	1	
C710	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1		Q771,72	MSD601-S	TRANSISTOR	2	
C721-23	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3						
C725	ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1				COMBINATION PARTS		
C726	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1		QR702	MRN1404	TRANSISTOR-RESISTOR	1	
C727	ECEA1CK101	E.CAPACITOR 16V 100U	1		QR713	MRN1402	TRANSISTOR-RESISTOR	1	
C730	ECEA1CK330	E.CAPACITOR 16V 33U	1		QR715	MRN1404	TRANSISTOR-RESISTOR	1	
C734	ECEA1CK100	E.CAPACITOR 16V 10U	1		QR719	MRN1404	TRANSISTOR-RESISTOR	1	
C737	ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1		QR7601	MRN1404	TRANSISTOR-RESISTOR	1	
C738	ECEA1CK100	E.CAPACITOR 16V 10U	1						
C739,40	ECEA1HKR47	E.CAPACITOR 50V 0.47U	2				RESISTORS		
C743	ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1		R701	ERJ6GEYJ184	M.RESISTOR CH 1/10W 180K	1	
C745	ECUM1H470JPN	C.CAPACITOR CH 50V 47P	1		R703	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
C746	ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1		R704	ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	1	
C748	ECQV1H563JZ	P.CAPACITOR 50V 0.056U	1		R705	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
C749	ECEA1CK100	E.CAPACITOR 16V 10U	1		R706	ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	1	
C752	ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1		R709	ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
C753	ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1		R716	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
C754,55	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2		R720,21	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	2	
C756	ECEA1CK470	E.CAPACITOR 16V 47U	1						
C764	ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1						
C774	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1						
C783	ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1						

[illegible]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
		CAPACITORS		
C501	ECUM1H220JCN	C. CAPACITOR CH 50V 22P	1	
C503	ECUM1H181JCN	C. CAPACITOR CH 50V 180P	1	
C504	ECUM1H680JCN	C. CAPACITOR CH 50V 68P	1	
C505	ECUM1H620JCN	C. CAPACITOR 50V 62P	1	
C507	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C508	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C511	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C512	ECUM1C1052FN	C. CAPACITOR CH 16V 1U	1	
C513, 14	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C516, 17	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C518	ECUM1H332KBN	C. CAPACITOR CH 50V 3300P	1	
C519	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C520	ECEA1HK010	E. CAPACITOR 50V 1U	1	
C521, 22	ECUM1H1042FN	C. CAPACITOR CH 50V 0.1U	2	
C523	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C524	ECUM1H1042FN	C. CAPACITOR CH 50V 0.1U	1	
C525	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C526, 27	ECUM1H1042FN	C. CAPACITOR CH 50V 0.1U	2	
C528, 29	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C530, 31	ECUM1H1042FN	C. CAPACITOR CH 50V 0.1U	2	
C532	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C535-38	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	4	
		INTEGRATED CIRCUITS		
IC501	AN3336SB	IC	1	
		COILS		
L501	ELESQ101KA	COIL 100UH	1	
L502	ELESQ151KA	COIL 150UH	1	
L503	ELESQ202KA	COIL 82UH	1	
L504	ELESQ270JA	COIL 27UH	1	
L505	ELESQ101KA	COIL 100UH	1	
		CONNECTORS		
P501	VJS1684	CONNECTOR (FEMALE)	1	
P502	VJS3069T	CONNECTOR (FEMALE)	1	
		TRANSISTORS		
Q502	MSB709	TRANSISTOR	1	
Q503	MSC2295	TRANSISTOR	1	
		COMBINATION PARTS		
QR501	IMH6	TRANSISTOR	1	
QR502	MIRN1404	TRANSISTOR-RESISTOR	1	
		RESISTORS		
R501	ERJ6QMYJ681	M.RESISTOR CH 1/10W 680	1	
R502	ERJ6QMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R503	ERJ6QMYJ102	M.RESISTOR CH 1/10W 1K	1	
R505	ERJ6QMYJ561	M.RESISTOR CH 1/10W 560	1	
R506	ERJ6QMYJ102	M.RESISTOR CH 1/10W 1K	1	
R507	ERJ6QMYJ391	M.RESISTOR CH 1/10W 390	1	
R508, 09	ERJ6QMYJ561	M.RESISTOR CH 1/10W 560	2	
R510	ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R513	ERJ6QMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R515	ERJ6QMYG752	M.RESISTOR CH 1/10W 7.5K	1	
R516	ERJ6QMYG133	M.RESISTOR CH 1/10W 13K	1	
R517	ERJ6QMYJ103	M.RESISTOR CH 1/10W 10K	1	
R518	ERJ6QMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R519	ERJ6QMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R520	ERJ6QMYJ274	M.RESISTOR CH 1/10W 270K	1	
R521	ERJ6QMYJ391	M.RESISTOR CH 1/10W 390	1	
R522	ERJ6QMYJ331	M.RESISTOR CH 1/10W 330	1	
R523-26	ERJ6QMYJ470	M.RESISTOR CH 1/10W 47	4	
R527	ERJ6QMYJ100	M.RESISTOR 1/10W 10	1	
R528	ERJ6QMYJ103	M.RESISTOR CH 1/10W 10K	1	
R530	ERJ6QMYJ182	M.RESISTOR CH 1/10W 1.8K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
		VARIABLE RESISTORS					COILS		
VR501	EVND6AA00B23	V.RESISTOR 2K	1		L7501	ELESE151K	COIL 150UH	1	
VR502	EVND6AA00B13	V.RESISTOR 1K	1				CONNECTORS		
		MISCELLANEOUS			P7501	VJS3193B013A	CONNECTOR (FEMALE)	1	
	VSC3770	SHIELD COVER (BOTTOM)	1		P7502	VJS3193B015A	CONNECTOR (FEMALE)	1	
	VSC3768	SHIELD COVER (TOP)	1		P7505	VJS3301	CONNECTOR (FEMALE)	1	
	VSC3304	SHIELD COVER (MAIN)	1						
					PP7501	VJP3042A004W	CONNECTOR (MALE)	1	
					PP7502	VJS3404A005A	CONNECTOR (FEMALE)	1	
					PS4801	VJS3042B004W	CONNECTOR (FEMALE)	1	
	VEPO7699B	TIMER C.B.A.		(RTL)			TRANSISTORS		
		CAPACITORS			Q4801	2SA1034	TRANSISTOR	1	
C4801	ECEA1CK470	E.CAPACITOR 16V 47U	1		Q4802	2SC2405	TRANSISTOR	1	
C4802	ECEA1CK100	E.CAPACITOR 16V 10U	1		Q7508	MSD601	TRANSISTOR-RESISTOR	1	
C4804	ECUM1E124ZFN	C.CAPACITOR CH 25V 0.12U	1		Q7510	MSD601	TRANSISTOR-RESISTOR	1	
C7501	ECRHA030E41	TRIMMER 3P	1				COMBINATION PARTS		
C7502	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1		QR7501	MRN1404	TRANSISTOR-RESISTOR	1	
C7503	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1		QR7503-06	MRN2404	TRANSISTOR-RESISTOR	4	
C7504	ECUM1H060DCN	C.CAPACITOR CH 50V 6P	1				RESISTORS		
C7505	ECEA1HKS100	E.CAPACITOR 50V 10U	1		R4801	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
C7506	ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1		R4802	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
C7507	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1		R4803	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
C7509,10	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2		R4804	ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
C7511	ECEA1HKS22	E.CAPACITOR 50V 0.22U	1		R4805	ERJ6GEYJ331	M.RESISTOR CH 1/10W 33K	1	
C7512	ECEA0JKS470	E.CAPACITOR 6.3V 47U	1		R4806	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
C7513	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1		R4807	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
C7514	ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1		R4808	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
C7515	ECEA0JKS470	E.CAPACITOR 6.3V 47U	1		R7501	ERJ6QM20R00	M.RESISTOR CH 1/10W 0	1	
C7518	ECEA1CK100	E.CAPACITOR 16V 10U	1		R7502	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
C7519	ECEA1CK101	E.CAPACITOR 16V 100U	1		R7503	ERJ6QM20R00	M.RESISTOR CH 1/10W 0	1	
		DIODES			R7504	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
D7501	MA3220	DIODE	1		R7512	ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
D7504,05	MA221	DIODE	2		R7513	ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
D7508	MA221	DIODE	1		R7514	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
D7512	MA221	DIODE	1		R7515,16	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	2	
D7516	MA221	DIODE	1		R7517	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
D7520-22	MA221	DIODE	3		R7518,19	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	2	
D7525-27	MA221	DIODE	3		R7521,22	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	2	
D7535	MA221	DIODE	1		R7531	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
D7537	MA221	DIODE	1		R7535	ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
D7541	MA221	DIODE	1		R7536	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
D7546-49	LN376GCPXU	DIODE	4		R7537	ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
D7550-53	SEL2913KTP3	DIODE	4		R7538,39	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	2	
D7554-57	MA221	DIODE	4		R7540,41	ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	2	
		DISPLAY TUBES			R7544,45	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	2	
DP7501	VS10271	DISPLAY TUBE	1		R7548	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
		INTEGRATED CIRCUITS			R7549	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
IC7501	MN187164VTSV	IC	1		R7550	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
IC7502	PST7026	IC	1		R7552-55	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	4	
IC7503	PST7043	IC	1		R7558	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
IC7504	XLJ9021B	IC	1		R7560	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
					R7562	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
							SWITCHES		
IR7501	VEK6407	IR RECEIVER UNIT	1		SW7501-11	EVQ11409K	SWITCH	11	
		JACKS			SW7513-16	EVQ11409K	SWITCH	4	
J4801	VJJ0281	MIC JACK	1		SW7517	VSS0303	SWITCH	1	
		CRYSTAL OSCILLATORS					CRYSTAL OSCILLATORS		
					X7501	VSK0484	CRYSTAL OSCILLATOR	1	

[illegible][illegible]

[illegible]