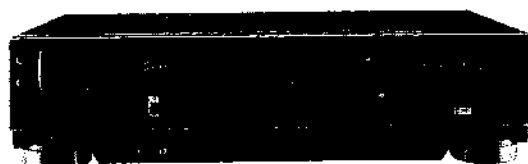


Service Service Service

For the technical data of the tape deck mechanism reference is made to the DMS4/2 Service Manual.

The IR remote control unit for this set is 22AV5662/20.



44 525 A11

Service Manual



VR6948/00 is a stereo video cassette recorder with TV reception section and electronic time circuit including the VPS-system, suited for recording and playback of TV signals which meet the CCIR-PAL B/G standard. The signals are recorded on tape according to the S-VHS-HQ+ standard. The video cassette recorder has been provided with a Hi-Fi stereo audio system for which use has been made of frequency modulation. These signals are recorded on tape using the depth multiplex (DMPX) system. Moreover this recorder is suited with the S-VHS system which allows to record luminance-signals up to 5 MHz on the tape. Furthermore the recorder is provided with 4 video-heads in order to reduce picture-search disturbances and to give a perfect still picture.

VR6948/02 this recorder is suited for recording and playback of TV signals which meet the CCIR-PAL B/G SECAM-OST standard. The rest of the technical details are identical to the above mentioned recorder VR6948/00.

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Chapter

- 1 Front view of the recorder and description of the controls.
Technical data of the set
- 2 Disassembly of the set
Electrical adjustment instructions
- 3 This chapter has been replaced by the separately available documentation of the deck (DMS 4/2)
- 4 Wiring diagram
Block diagrams
- 5 C.B.A. parts lists
C.B.A. layouts
Circuit diagrams
Survey of testpoints

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Servicio

Subject to modification
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Service Consumer Electronics

CS 20 479

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Chapter 3

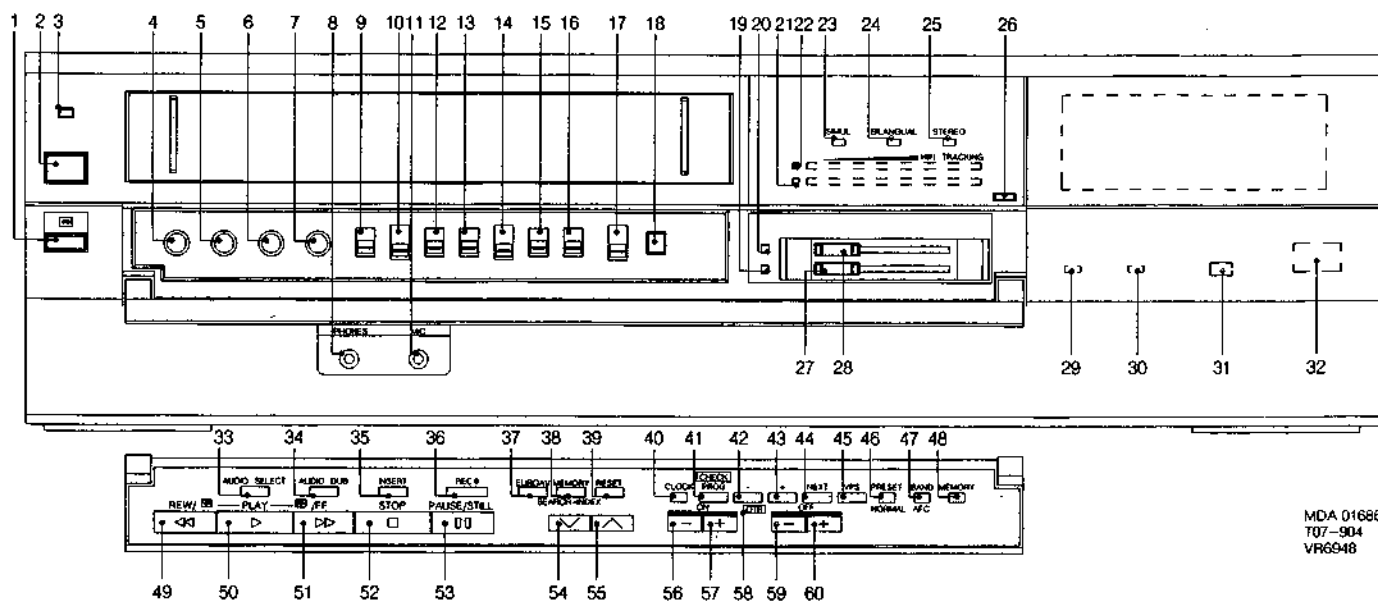
Replaced by the separate manual for the DMS 4/2

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MDA 01686
T07-904
VR6948

- | | |
|---|-------------------------------------|
| 1 Eject button and indicator | 31 S-VHS indicator |
| 2 Power on / standby button | 32 Remote control receiver |
| 3 Power on indicator | 33 Audio select (stereo/L/R/mono) |
| 4 Headphone output level control | 34 Audio dubbing button |
| 5 Tracking control | 35 Insert editing button |
| 6 Slow tracking control | 36 Record button |
| 7 Picture sharpness control | 37 Select button (Euro/Cinch) |
| 8 Headphone socket | 38 Memory / search button |
| 9 S-VHS Selector (auto/off) | 39 Reset / Index search button |
| 10 Image selector (edit/normal/detail) | 40 Set clock button |
| 11 Microphone input socket | 41 Timer button (set/check) |
| 12 Tapespeed selector (LP/SP) | 42 Timer button (Down/-) |
| 13 MPX FM-filter (on/off) | 43 Timer button (Up/+) |
| 14 Audio levelmeter (tracking/audio/off) | 44 Timer button (Next) |
| 15 Audio levelcontrol (manual/auto) | 45 Timer button (VPS) |
| 16 Simulcast recording (on/normal) | 46 Tuning button (preset/normal) |
| 17 Input signal selector (line-audio/tuner/s-video) | 48 Tuning button (band/AFC) |
| 18 Timer record button | 49 Rewind/review button |
| 19 Audio record level right | 50 Play button |
| 20 Audio record level left | 51 Wind/Cue button |
| 21 Audio level indicator right | 52 Stop button |
| 22 Audio level indicator left/tracking | 53 Pause/still/frame advance button |
| 23 Simulcast indicator | 54 Channel select button (Down) |
| 24 Biligual indicator | 55 Channel select button (Up) |
| 25 Stereo indicator | 56 OTR timer ON button (Down) |
| 26 Control panel open button | 57 OTR timer ON button (Up) |
| 27 Audio level control right | 58 OTR indicator |
| 28 Audio level control left | 59 OTR timer OFF button (Down) |
| 29 Audio dubbing indicator | 60 OTR timer OFF button (Up) |
| 30 Insert editing indicator | |

TECHNICAL DATA**General**

Mains voltage	: 220 V $\pm$ 10 %
Mains frequency	: 50/60 Hz
Power consumption	: 35 W
Dimensions	: 430 (W)x357 (D)x109.5 (H)
Weight	: $\pm$ 7.1 kg
Maximum playing time	: SP 4 Hours with E240 : LP 8 Hours with E240
Winding/Rewinding time	: $\leq$ 5.5 min (E180 tape)
Number of programmes	: 1 - 99
Number of timer programmes	: 8
Pre-programming period	: 1 Month, weekly or daily

Video

Signal-to-noise ratio	: SP $\geq$ 48 dB : LP $\geq$ 43 dB
Resolution normal	: $\geq$ 3.2 MHz ($\geq$ 260 lines)
Resolution S-VHS	: $\geq$ 5.0 MHz ($\geq$ 400 lines)
Drop-out compensation	: CCD, 5 lines

Audio

Frequency characteristic linear	: SP 100 - 10000 Hz (-6 dB) : LP 100 - 8000 Hz (-8 dB)
Frequency characteristic Hi-Fi	: 20 - 20000 Hz (-2 dB)
Signal-to-noise ratio linear	: $\geq$ 38 dB, 1 kHz
Signal-to-noise ratio Hi-Fi	: $\geq$ 86 dB

Tuner

Band I	: Channel E2 ... E4
Band III	: Channel S4 ... E12
Band H	: Channel S11 ... S41 : (PAL / SECAM B)
Band UHF	: Channel 21 ... 69 : (PAL / SECAM G)

Modulator

Adjustable modulation frequency	: Channel 32 ... 40
Output level	: 73 $\pm$ 3 dB μ V (Ro = 75 Ω)

Connections

Aerial in	: DIN 45325/IEC 169-2
Aerial out	: DIN 45325/IEC 169-2

Heads

Video heads	: 2 Double Azimuth heads (4 heads)
Audio heads	: 2 Rotating heads (Hi-Fi) : 1 Stationary head

SECTION 2

ADJUSTMENT PROCEDURES

2-1. MECHANICAL ADJUSTMENT PROCEDURES

This Mechanical Chassis of this model VR6948/02, 00 is the same as the G Mechanical Chassis.

2-2. DISASSEMBLY METHOD

2-2-1. DISASSEMBLY FLOWCHART

The above flowchart describes the order of steps for removing the cabinet parts and certain printed circuit boards in order to gain access to the items needing servicing. To reassemble the unit, follow the steps in reverse order.

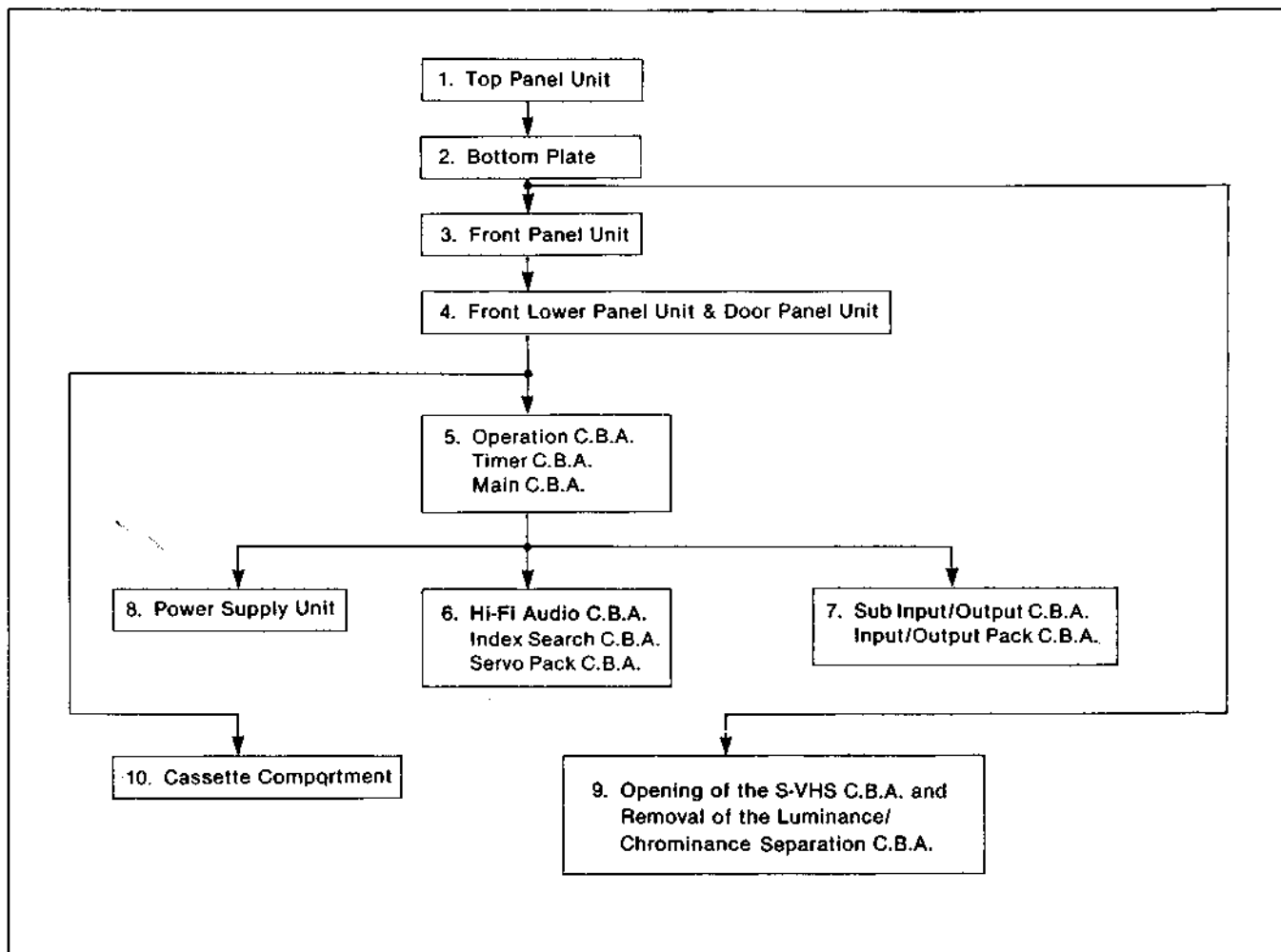
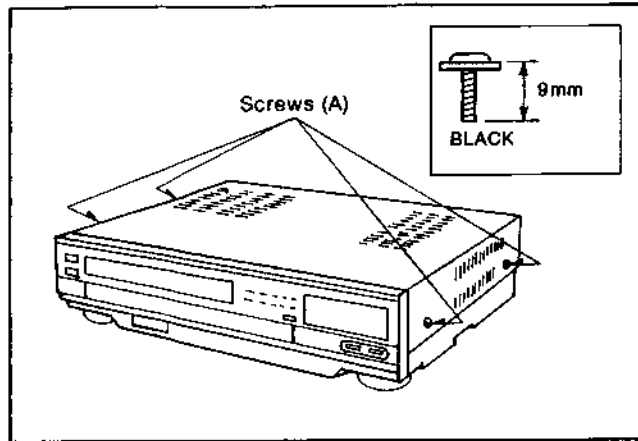


FIG.D1

2-2-2. DETAILED DISASSEMBLY METHOD

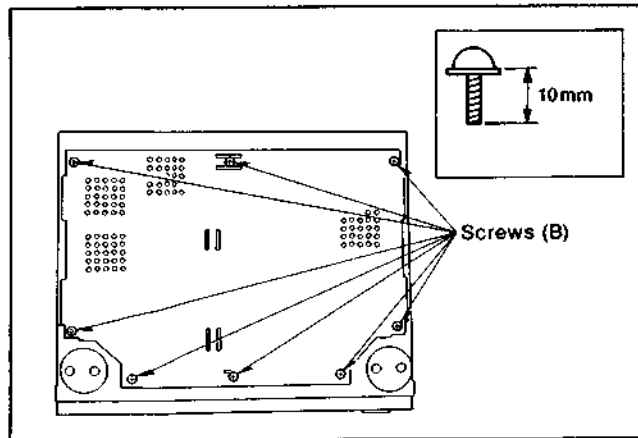
1. Removal of the Top Panel Unit

Unscrew 4 screws(A) on the Top Panel Unit and carefully lift the rear of case to remove.



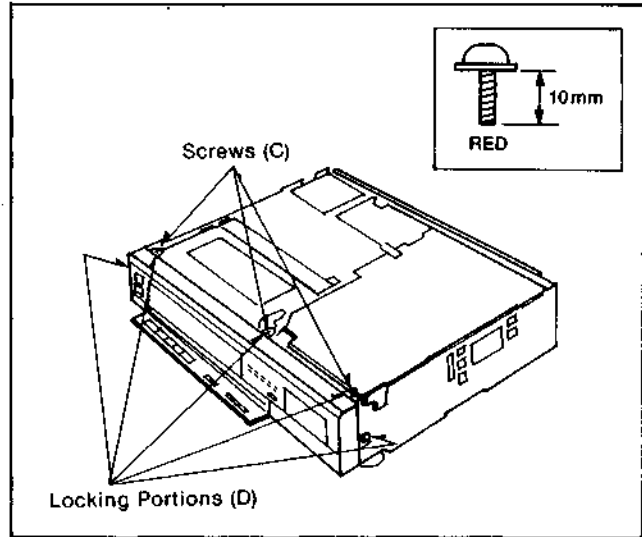
2. Removal of the Bottom Plate

Unscrew 8 screws(B) and lift off the Bottom Plate.



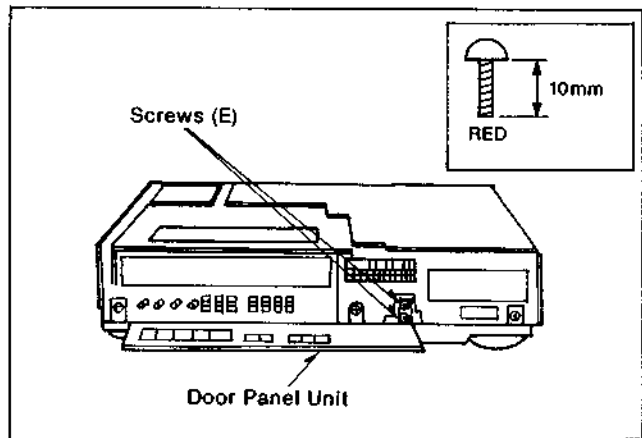
3. Removal of Front Panel Unit

Open the Door Panel Unit and unscrew 3 screws(C) and then unlock 5 locking portions(D).

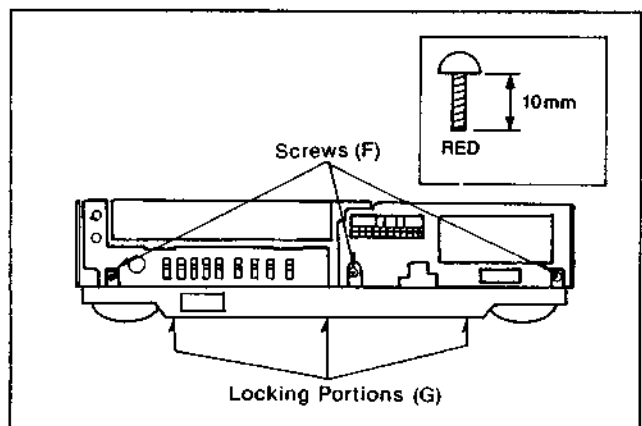


4. Removal of Front Lower Panel and Door Panel Unit

Unlock the connector lock of P7502 on the Timer C.B.A. and remove the flexible wire. Next, unscrew 2 screws (E) and carefully remove the Door Panel Unit.



Unscrew 3 screws (F) and then unlock 3 locking portions (G). Remove the Front Lower Panel Unit.



5. Opening of the Operation C.B.A., Timer C.B.A., Jack C.B.A. and Main C.B.A.
 Unscrew 3 screws(H) and unlock 6 locking portions(I).
 Then unlock 2 wire claspers and carefully open the Operation C.B.A., Timer C.B.A. and Jack C.B.A.

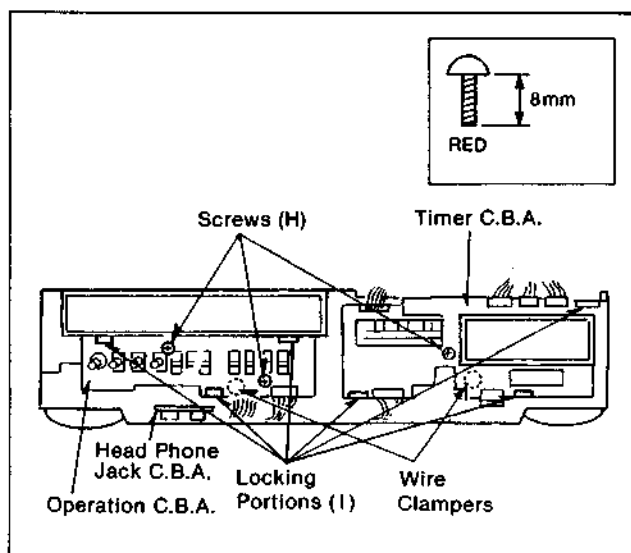


FIG. D7

Unscrew 4 screws(J) on the rear panel.

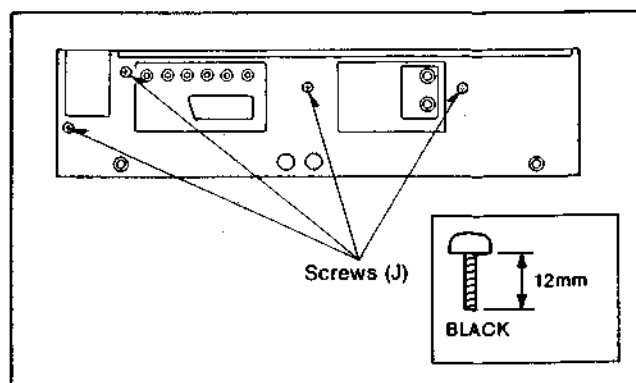


FIG. D8

Unscrew 7 screws(K) on the Main C.B.A.
 And open the Main C.B.A.

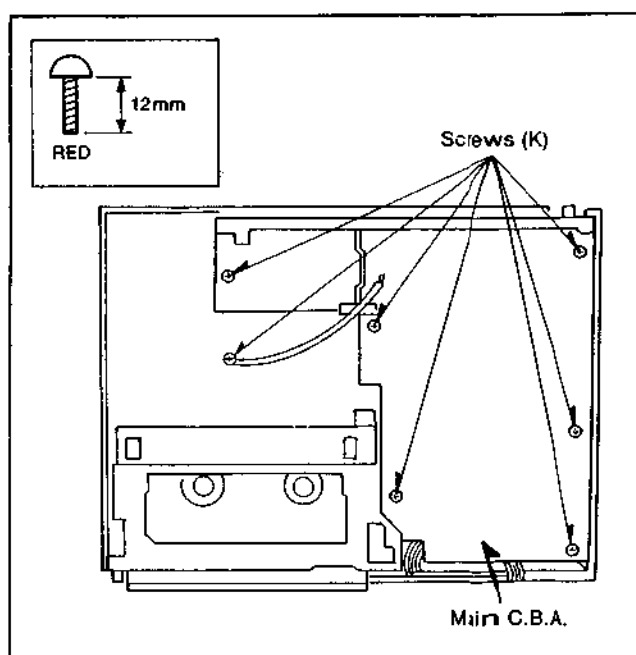


FIG. D9

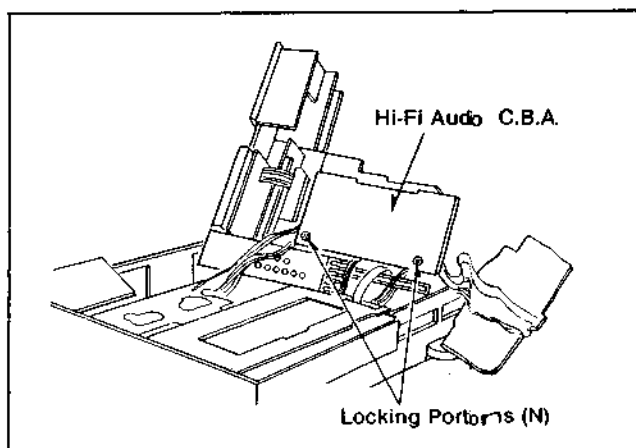


FIG. D10

6. Opening of the Hi-Fi Audio C.B.A., Index Search and Servo Pack C.B.A.

Unlock 2 locking portions(N) and open up the Hi-Fi Audio C.B.A.
Next, unlock 2 locking portions(O) and open up the Index Search C.B.A.

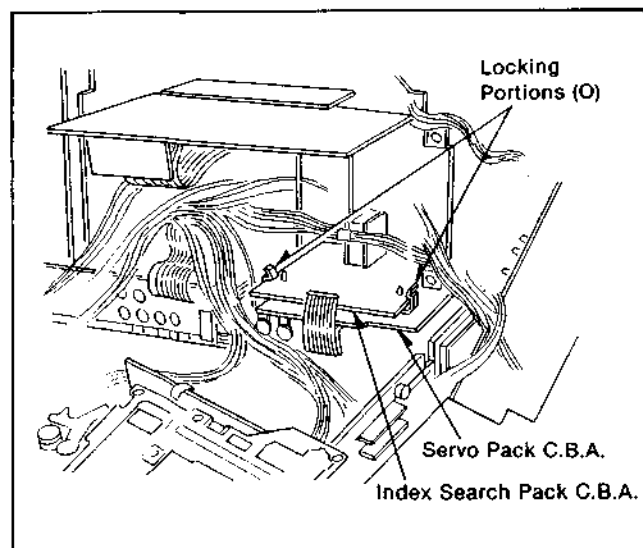


FIG. D11

7. Opening of the Sub Input / Output C.B.A. and input/Output Pack C.B.A.

Unlock 2 locking portions(P) and open the Sub Input/Output Pack C.B.A.

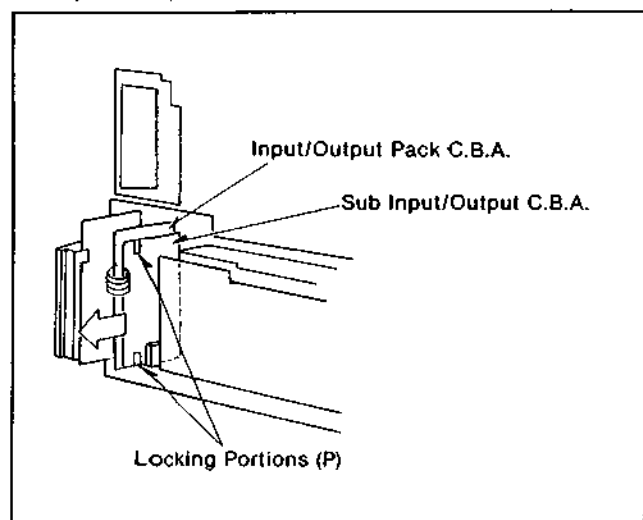


FIG. D12

8. Removal of Power Supply Unit

Remove 2 screws(Q) and take it out from the Main C.B.A.
Remove the shield case then checking can be performed.

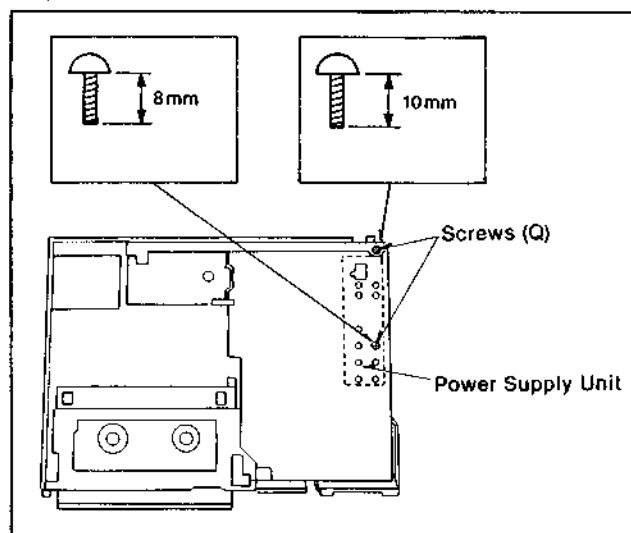


FIG. D13

9. Opening of the S-VHS C.B.A. and removal of the Luminance/Chrominance separation C.B.A.

Unscrew 5 screws(R) and Open the S-VHS C.B.A.
Next, unscrew 3 screws(S) and remove of the luminance/chrominance separation C.B.A.

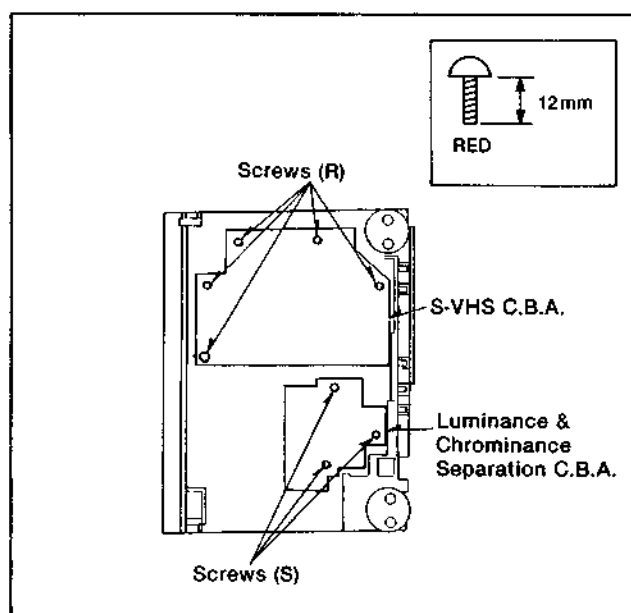


FIG. D14

2-4. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete electrical adjustment procedures which may be required for electronic circuits of S-VHS Video Cassette Recorders VR6948/02, 00.

2-4-1. TEST EQUIPMENTS

To perform the electrical adjustments completely, following equipments are required.

1. VTVM (Vacuum Tube Volt Meter) or DVM (Digital Volt Meter)
Voltage Range: 0.001~50V
2. Dual-Trace Oscilloscope
Voltage range: 0.005~50V/div.
Frequency Range: DC~30MHz
Probes: 10:1
3. Frequency counter
Frequency Range: 0~10MHz
4. Signal Generator (Sinewave)
Frequency Range: 0~500KHz
5. Video Sweep Generator
Frequency Range: 0~10MHz
6. Colour Monitor TV
7. Plastic Tip Driver
8. VHS Alignment Tape (VFJ8125H3F)
9. Pattern Generator
10. VHS Blank Tape
11. S-VHS Blank Tape

2-4-2. HOW TO READ THE ADJUSTMENT PROCEDURES

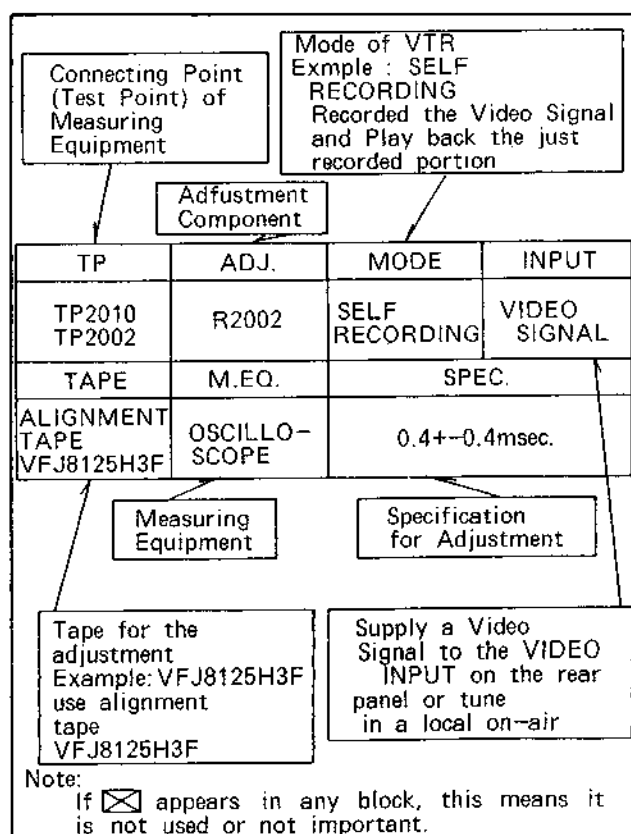


FIG. E1

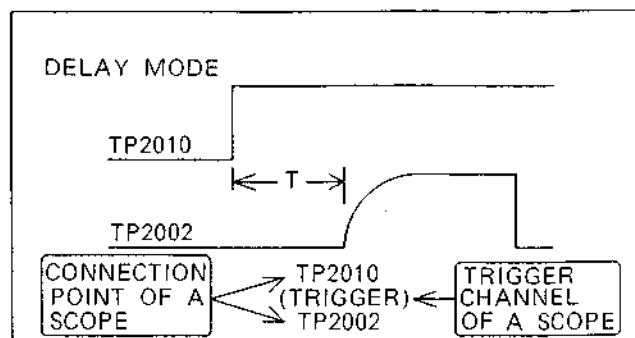


FIG. E2

Note:

Before the electrical adjustment, set the VTR as following conditions except for especial instructions in each adjustment item.

1. Tracking Control VR...Centre FIX position
2. Picture sharpness VR...Centre FIX position
3. Slow Tracking Control VR...Centre FIX position
4. S-VHS Selector...AUTO position
5. Image Selector...NORMAL position
6. Tape Speed Selector...SP position
7. Audio Rec Level Control Selector...AGC position
8. MPX Filter Switch...OFF position
9. Input Signal Selector...LINE position
10. Filter/Test Signal Switch...AUTO position
11. DBS Switch...OFF position

SERVO Section

2-4-3. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP3002	VR2001	PLAY	☒
TAPE	M.EQ.	SPEC.	
ALIGNMENT TAPE VFJ8125H3F	OSCILLOSCOPE	7.0+-0.5H	

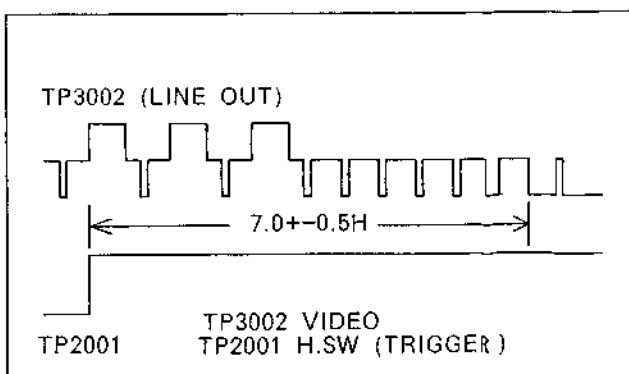


FIG. E3

2-4-4. TRACKING FIX ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE	$T=1.6\pm0.4\text{msec.}$	

1. Playback the just recorded portion.
2. Adjust VR2002 so that the period "T" becomes $1.6\pm0.4\text{msec}$ as shown in FIG. E4.

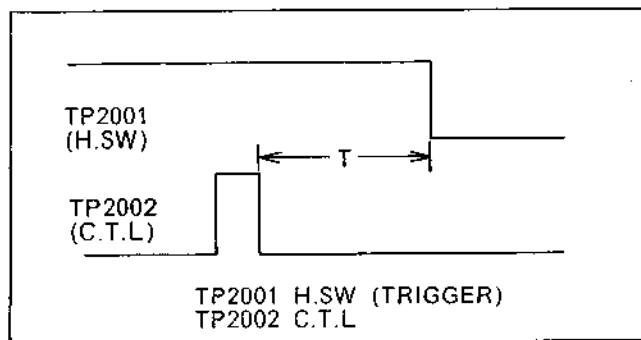


FIG. E4

2-4-5. SLOW FREE RUN ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2015	VR2013	STILL	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
BLANK TAPE. (60min type)	FREQUENCY COUNTER	$453\pm15\text{Hz}$	

1. Playback the just recorded portion and place the unit in STILL mode.
2. Connect the jumper wire between TP2025 and GND.
3. Connect the jumper wire between TP2026 and GND.
4. Connect the frequency counter to TP2015.
5. Adjust the VR2013 so that the reading of the Frequency Counter is $453\pm15\text{Hz}$.

2-4-6. SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2020 TP2002	VR2011 (SP) VR2006 (LP)	SLOW	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
BLANK TAPE (60min type)	OSCILLO- SCOPE	$T=20.0\pm2.0\text{msec. (SP)}$ $T=16.0\pm2.0\text{msec. (LP)}$	

1. Play back the just recorded portion in SLOW mode.
2. Adjust the VR2011 (SP) and VR2006 (LP) respectively as shown in FIG. E5.

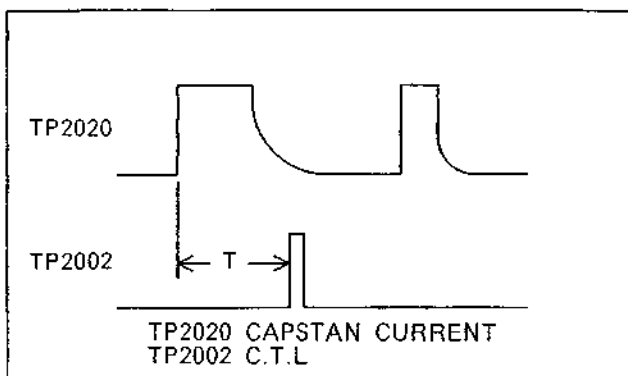


FIG. E5

2-4-7. ARTIFICIAL V-SYNC ADJUSTMENT

TP	ADJ.	MODE	INPUT
TV MONITOR	VR2010 (SP) VR2009 (LP)	STILL	VIDEO SIGNAL (MONO SCOPE)
TAPE	M.EQ.	SPEC.	
BLANK TAPE	TV MONITOR	NO V-DANCING	

1. Play back the just recorded portion in STILL mode.
2. Adjust VR2010 (SP), and VR2009 (LP) respectively on the Servo pack so that the V-dancing does not appear on the TV Monitor as shown in FIG. E6.
3. Confirm that the V-dancing does not appear in cue and Review modes. If the V-dancing is appeared on the TV Monitor, this adjustment should be repeated again.

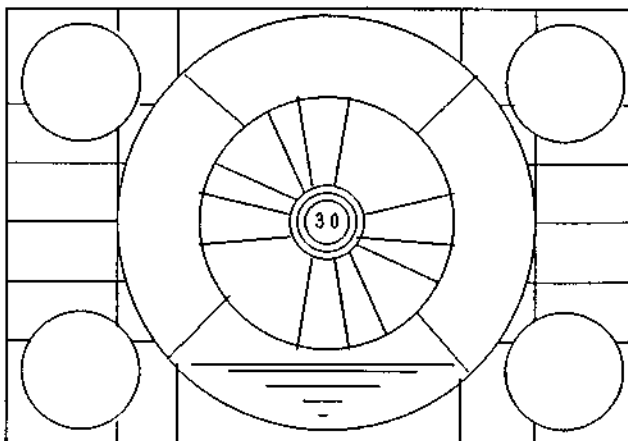


FIG. E6

LUMINANCE, CHROMINANCE & HEAD AMP Section

2-4-8. SUB-EMPHASIS LIMITER BALANCE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3401	VR3401	STOP	
TAPE	M.EQ.	SPEC.	
	D.V.M	3.48V $\pm$ 0.05V (DC RANGE)	

1. Set the Recording SW to "LP" position.
2. Connect the D.V.M to TP3401.
3. Adjust VR3401 so the the reading of D.V.M is 3.43V~3.53V in the DC range.

2-4-9. PILOT BURST PHASE ADJUSTMENT

(WITH VECTORSCOPE)

TP	ADJ.	MODE	INPUT
TP8301	C8301	STOP	COLOUR BAR SIGNAL (S-VIDEO INPUT)
TAPE	M.EQ.	SPEC.	
	VECTOR- SCOPE	-90degrees $\pm$ 5degree	

1. Set the Input Signal Selector to S-VIDEO position.
2. Supply the colour bar signal to the S-Video Input on the rear panel.
3. Connect the vectorscope to TP8301 and its external terminal for trigger to Line Output of VTR.
4. Adjust C8301 so that the pilot burst signal is placed in $-90^{\circ}\pm 5^{\circ}$ against the U-Axis on Vectorscope.

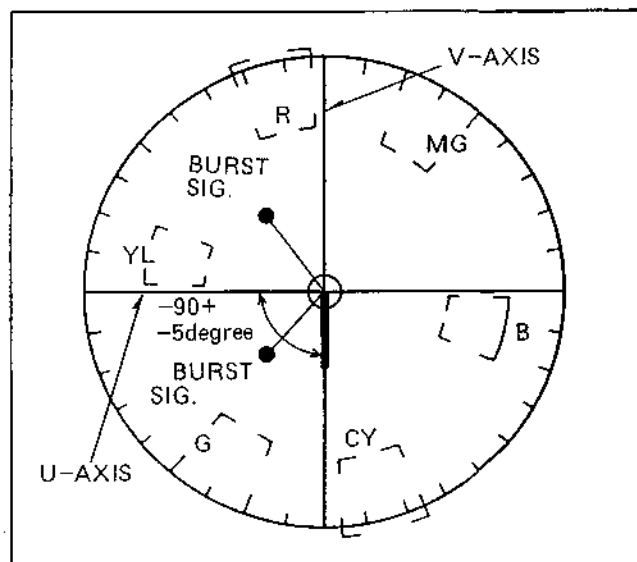


FIG. E7

Note :

HOW TO OBTAIN THE LUMINANCE AND CHROMINANCE SEPARATION SIGNAL FOR S-VIDEO INPUT

(USING NEW S-VHS VTR (VR6948))

Prepare a new S-VHS Video Tape recorder (VR6948) and use it to obtain the luminance and chrominance separation signals as shown in FIG. E8.

1. Set the Input signal selector to LINE position on prepared S-VHS VTR (VR6948)
2. Supply the Colour bar signal to Line Input or 21 PIN AV INPUT on prepared S-VHS VTR (VR6948)
3. Connect the S-Video cable (VJA0453) between S-VHS VTRs.

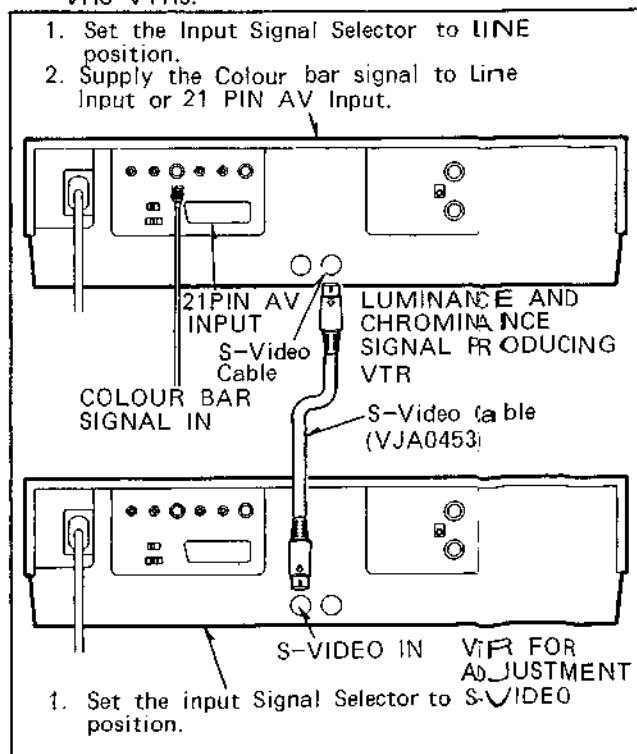


FIG. E8

1. Connect the oscilloscope to TP3002.
2. Play back the just recorded portion.
3. Confirm the level of output signal and if the output signal is out of specifications, adjust VR3403 during recording so that the playback output signal ($1.0 \pm 0.05V_{p-p}$) can be obtained by repeating the recording and playback.

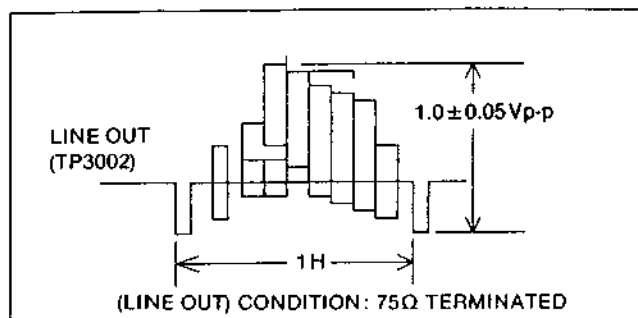


FIG. E11

Note:

This adjustment should be performed since the other adjustments of Luminance Chrominance & Head Amp have been always completed.

(ADJUSTMENT METHOD 2)

TP	ADJ.	MODE	INPUT
TP3002	VR3403	SELF RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	$1.0 \pm 0.05V_{p-p}$	

1. Record the colour bar signal.
2. Play back the just recorded portion by another prepared new S-VHS VTR (VR6948) and confirm the output level at TP3002.

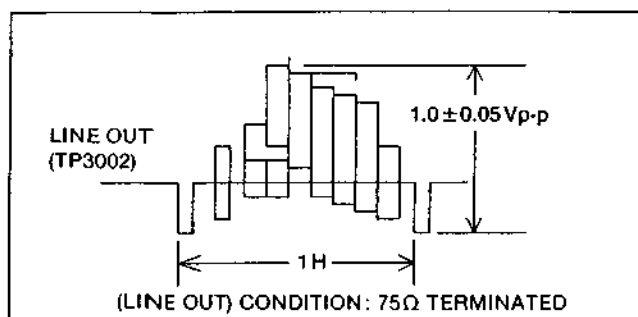


FIG. E12

3. If the output level (TP3002) is out of specification, adjust VR3403 during recording so that the output level ($1.0 \pm 0.05V_{p-p}$) is obtained on another new S-VHS VTR (VR6948).

2-4-12. CHROMINANCE & LUMINANCE RECORDING CURRENT ADJUSTMENT

* CHROMINANCE RECORDING CURRENT ADJ.

TP	ADJ.	MODE	INPUT
TP503 (HOT) TP504 (GND)	VR502	RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	$28 \pm 3mV_{p-p}$	

1. Set the Tape Speed Selector to LP position.
2. Connect the oscilloscope to TP503 (HOT) and TP504 (GND).
3. Before Chrominance recording current adjustment Luminance recording current must be closed to observe the chrominance signal. (VR501 is minimum position.)
4. Adjust VR502 for $28 \pm 3mV_{p-p}$ as shown below.

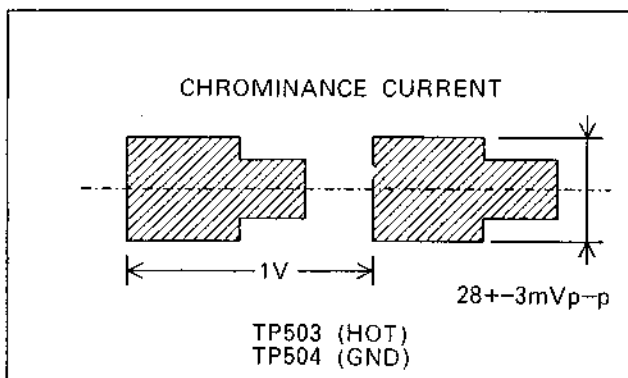


FIG. E13

* S-VHS LUMINANCE RECORDING CURRENT ADJ.

TP	ADJ.	MODE	INPUT
TP503 (HOT) TP504 (GND)	VR501	RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	$120 \pm 5mV_{p-p}$	

5. After chrominance recording current adjustment, adjust VR501 for $120 \pm 5mV_{p-p}$ as shown below.

(WITH OSCILLOSCOPE)

TP	ADJ.	MODE	INPUT
LUMINANCE/CHROMINANCE PACK-29 (CH-1) IC8301-9 (CH-2)	C8301	STOP	COLOUR BAR SIGNAL
TAPE	M.EQ.	SPEC.	
	OSCILLOSCOPE	90degrees PHASE DIFFERENCE	

1. Set the input signal selector to LINE position.
2. Supply the colour bar signal to LINE Input on the rear panel.
3. Connect the oscilloscope to luminance/chrominance pack-(29) for CH-1 and IC8301-9 for CH2.
4. Adjust C8301 so that the pilot burst signal is placed in 90degrees against the Input Colour Sub carrier as shown in FIG. E9.

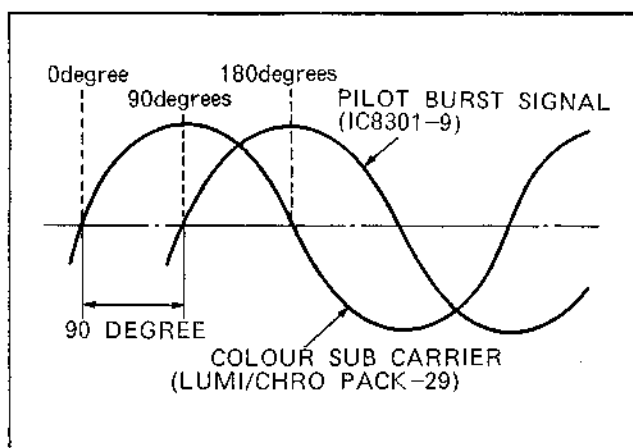


FIG. E9

2-4-10. WHITE AND DARK CLIP ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3024	VR3406 (W/C) VR3404 (D/C)	STOP	COLOUR BAR SIGNAL (S-VIDEO INPUT)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	A=210+/-5% B=170+/-5%	

1. Set the Input Signal Selector to S-VIDEO Position.
2. Set the tape Speed selector to LP position.
3. Supply the colour bar signal to S-Video Input.
4. Connect the oscilloscope to TP3024.

5. Adjust VR3406 (WHITE CLIP) and VR3404 (DARK CLIP) respectively so that the A level of white clip is $210 \pm 5\%$ and B level of dark clip is $170 \pm 5\%$ as shown in FIG. E10.

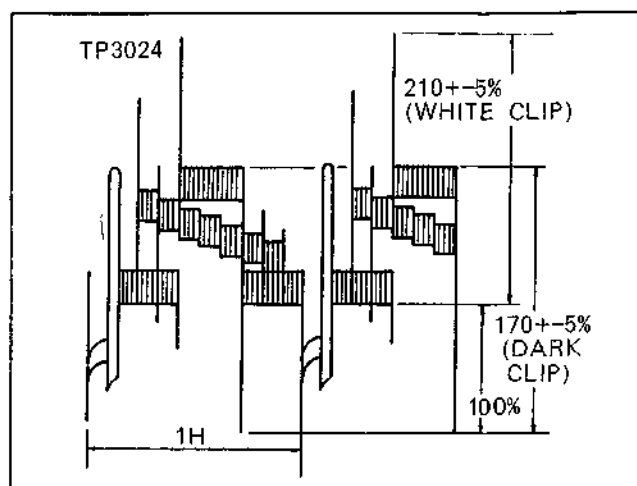


FIG. E10

Note:

Prior to Sync Tip Frequency Adjustment and Deviation Adjustment (Item 2-4-11), this adjustment must be completed.

2-4-11. SYNC TIP FREQUENCY AND DEVIATION ADJUSTMENT

(S-VHS MODE)

a. SYNC TIP FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC3402-11	VR3402	RECORDING	NO SIGNAL
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	FREQ. COUNTER	5.4MHz+0.05MHz	

1. Record the no signal with S-VHS mode using S-VHS blank tape.
2. Adjust VR3402 so that the reading of frequency counter is $5.4\text{MHz} \pm 0.05\text{MHz}$ at IC3402-11.

b. DEVIATION ADJUSTMENT

(ADJUSTMENT METHOD 1)

TP	ADJ.	MODE	INPUT
TP3002	VR3403	SELF RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	1.0+/-0.15Vp-p	

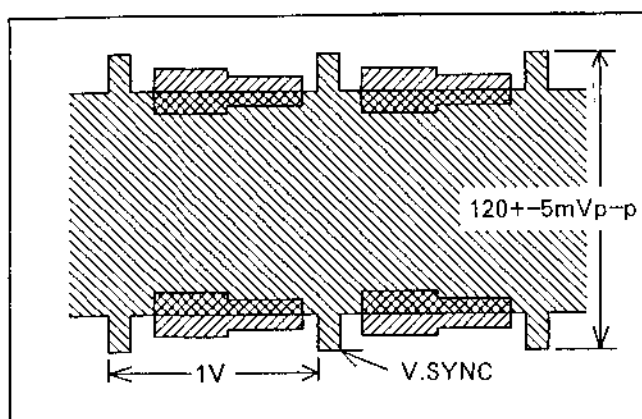


FIG. E14

* VHS LUMINANCE RECORDING CURRENT ADJ.

TP	ADJ.	MODE	INPUT
TP503(HOT) TP504(GND)	VR3104	RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
VHS BLANK TAPE	OSCILLO- SCOPE	110 ± 5 mVp-p	

1. Set the S-VHS selector to OFF position.
2. Set the Tape Speed Selector to LP position.
3. Connect the oscilloscope to TP503 (HOT) and TP504 (GND).
4. Adjust VR3104 for $110 \pm 5 \text{ mVp-p}$ as shown in FIG. E15.

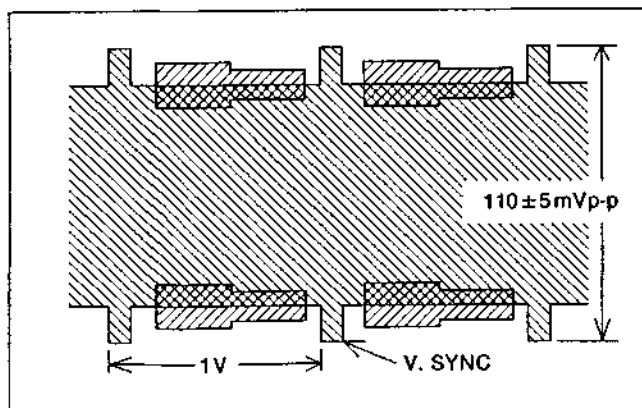


FIG. E15

Prior to Sub-Emphasis Limiter Balance Adjustment (2-4-8), White and Dark Clip Adjustment (2-4-10) and Sync Tip Frequency/Deviation Adjustment (2-4-11), this adjustment must be completed.

2-4-13. PLAYBACK VIDEO LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP3002)	VR3405(Y) VR8203(C)	SELF RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLO- SCOPE	1.0 ± 0.05 Vp-p (Y) 0.55 ± 0.1 Vp-p (C)	

1. Set the Tape Speed Selector to LP position.
2. Connect the oscilloscope to Line out (TP3002).
3. Adjust VR3405 for $1.0 \pm 0.05 \text{ Vp-p}$ and VR8203 for $0.55 \pm 0.1 \text{ Vp-p}$ as shown in FIG. E16.

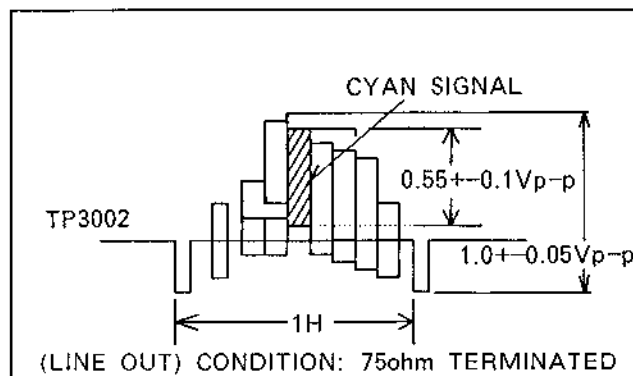


FIG. E16

Note:
"Y" means "Luminance"
"C" means "Chrominance"

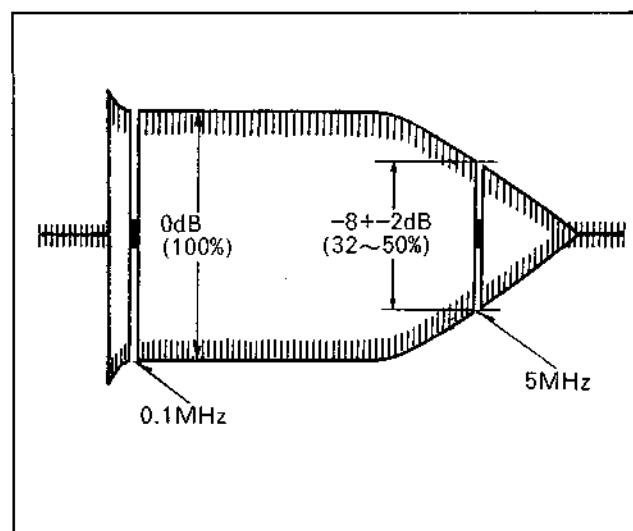


FIG. E17

2-4-14. S-VHS FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
S-VIDEO OUTPUT	VR3101	SELF RECORDING	VIDEO SWEEP
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	VIDEO SWEEP/ OSCILLOSCOPE	-8+-2dB (32~50%)	

- Set the sweep generator output as shown below.

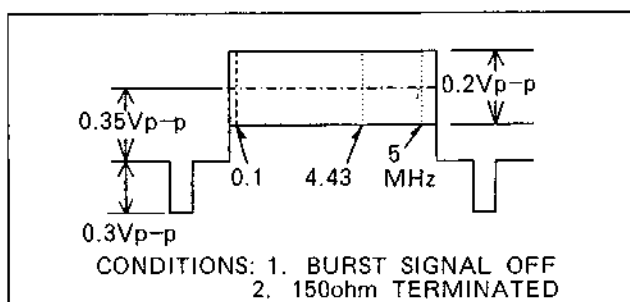


FIG. E18

- Supply the video sweep signal to S-Video Input.
- Set the Input Signal Selector to S-VHS position.
- Playback the just recorded portion.
- Adjust VR3101 so that the level at 5MHz becomes -8+-2dB (32~50%) comparing with the level at 0.1MHz as shown in FIG. E18.

2-4-15. VHS FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP3002)	VR3102 (SP) VR3103 (LP)	SELF RECORDING	VIDEO SWEEP
TAPE	M.EQ.	SPEC.	
BLANK TAPE	VIDEO SWEEP/ OSCILLOSCOPE	A=0+-1dB (90~110%):SP A=-2+-1dB (70~90%):LP	

- Set the sweep generator output as shown in FIG. 19.

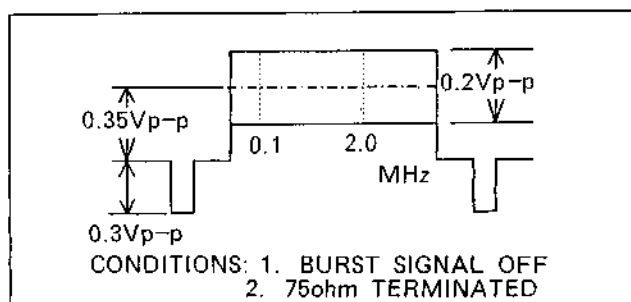


FIG. E19

- Play back the just recorded portion.
- Adjust volume VR3102(SP), VR3103(LP) respectively so that the level at 2MHz (A) becomes within specification comparing with the level at 0.1MHz as shown in FIG. E20.

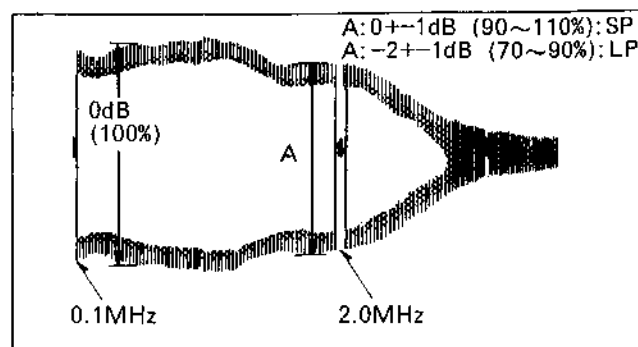


FIG. E20

2-4-16. LUMINANCE/CHROMINANCE SEPARATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3703	VR3701, VR3702	RECORDING	VIDEO SIGNAL (COLOUR BAR)
TP3701	VR3708, VR3707		VIDEO SIGNAL (MULTI BURST)
TP3702	VR3703, VR3704		VIDEO SIGNAL (MULTI BURST)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	MENTIONED BELOW	

- Connect the oscilloscope to TP3703.
- Set the VTR to recording mode.
- Adjust VR3701 and VR3702 mutually so that the chrominance level is maximized as shown in FIG. E21.

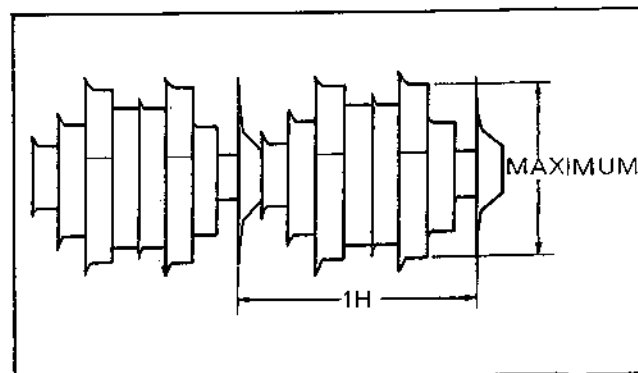


FIG. E21

- Connect the oscilloscope to TP3701.
- Adjust VR3708 and VR3707 mutually so that the chrominance level is minimized as shown in FIG. E22.

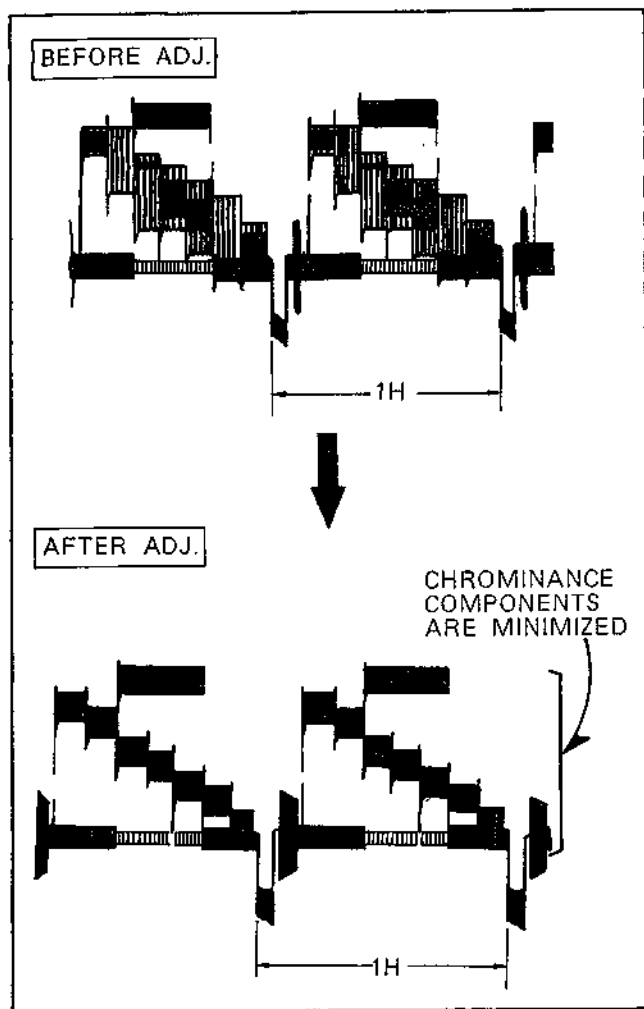


FIG. E22

6. Set the video sweep generator output as shown in FIG. E23.

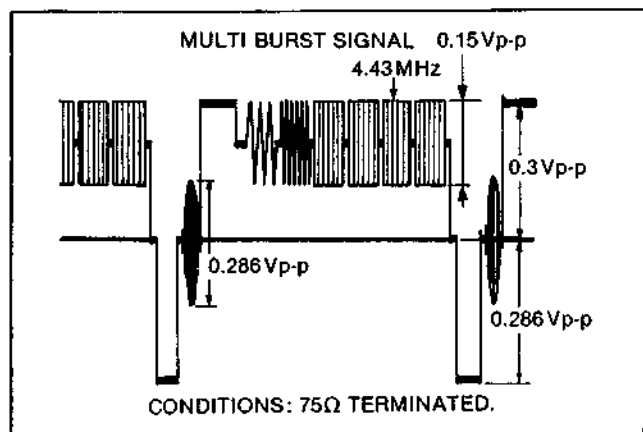


FIG. E23

7. Supply the multi burst signal from video sweep to Line Input.
8. Connect the oscilloscope to TP3702.
9. Adjust VR3703 and VR3704 mutually so that the 4.43MHz burst signal is minimized as shown in FIG. E24.

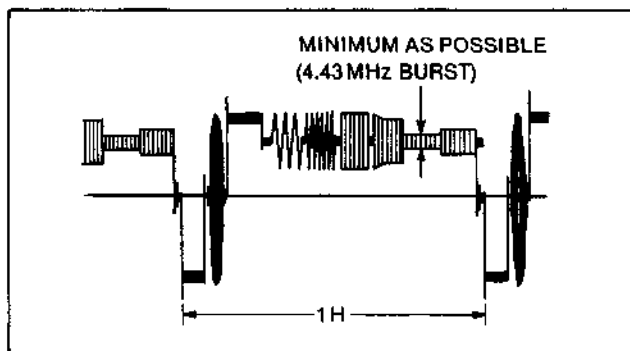


FIG. E24

2-4-17. LUMINANCE NOISE REDUCTION BLANCE ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC302-20	VR302	STOP	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
	OSCILLOSCOPE	WAVEFORM IS MINIMIZED	

1. Set the Tape Speed Selector to LP position.
2. Connect the oscilloscope to pin20 of IC302 on the Luminance & Chrominance C.B.A.
3. Adjust VR302 so that the waveform is minimized.

Note:

Prior to the above adjustment, the HQ Amp Gain adjustment should be always completed.

2-4-18. HQ AMP GAIN ADJSUTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP3002)	VR301	STOP	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
	OSCILLOSCOPE	1.0+/-0.1Vp-p	

1. Set the Tape Speed Selector to "LP" position.
2. Connect the oscilloscope to video Line out (TP3002).
3. Adjust VR301 so that the video level is 1.0+/-0.1Vp-p.

2-4-19. CHROMA RECURSIVE ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC302-7	VR801 VR802	SELF RECORDING	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
	OSCILLO- SCOPE	WAVEFORM IS MINIMIZED	

1. Play back the just recorded portion.
2. Connect the oscilloscope to pin 7 of IC302 on the Luminance & Chrominance C.B.A.
3. Adjust VR801 and VR802 mutually so that the chrominance waveform is minimized as shown in FIG. E25.

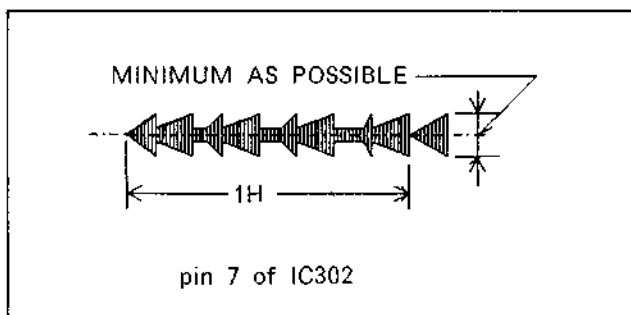


FIG. E25

2-4-20. SECAM KILLER ADJUSTMENT (VR6948/02)

TP	ADJ.	MODE	INPUT
IC851-11	T851	SELF RECORDING	SECAM VIDEO SIGNAL
TAPE	M.EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE	MINIMUM AS POSSIBLE	

1. First, remove the SECAM Pack from the Luminance & Chrominance Pack. Next, reinstall the SECAM Pack to Luminance & Chrominance Pack on foil side. Finally solder the soldering portions of the SECAM Pack.

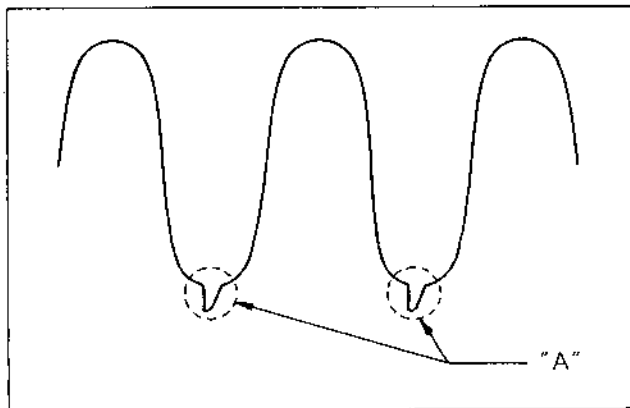


FIG. E26

2. Adjust T851 so that the points "A" becomes maximum on the waveform.

Note:

To make this adjustment, please set the SECAM Pack as shown below.

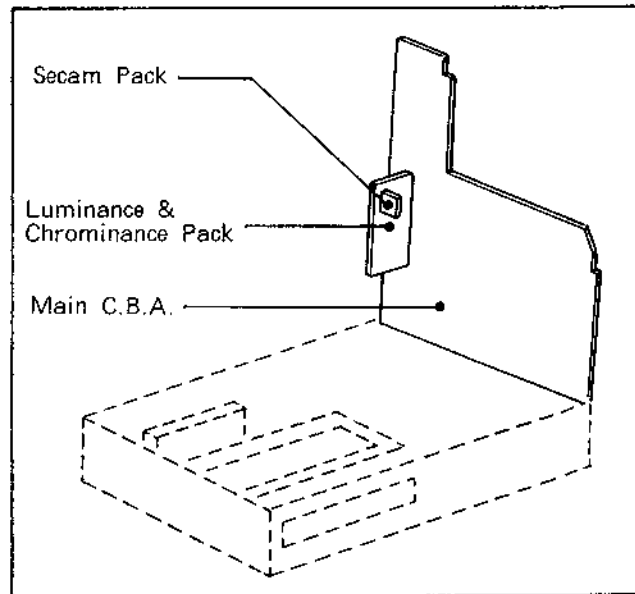


FIG. E27

2-4-21. JUMP VCO FREE RUN ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC3301-10	VR3301	STOP	
TAPE	M.EQ.	SPEC.	
	FREQUENCY COUNTER	31.25+/-0.3kHz	

1. Connect the Frequency Counter to pin 10 of IC3301 through the amplifier as shown below.

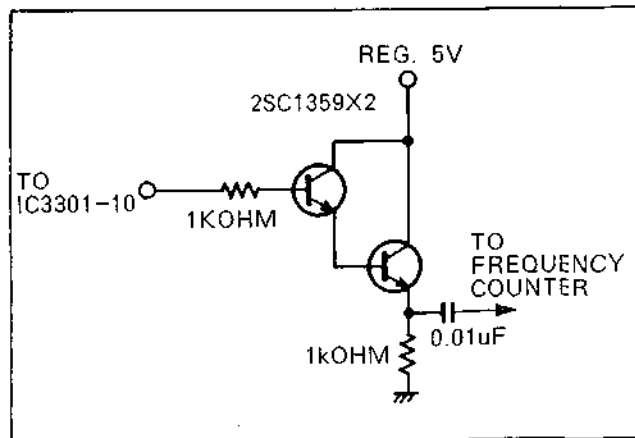


FIG. E28 Amplifier Circuit

3. Adjust VR3301 so that the reading of Frequency Counter is 31.25+/-0.3KHz.

2-4-22. CHROMA DELAY LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP3002)	VR3302	SELF RECORDING	VIDEO SIGNAL (MONO SCOPE)
TAPE	M.EQ.	SPEC.	
BLANK TAPE	OSCILLOSCOPE	FLICKER IS MINIMIZED	

1. Set the Tape Speed Selector to LP mode.
2. Play back the just recorded portion in CUE mode.
3. Adjust VR3302 so the the flicker of luminance signal is minimized as shown in FIG. E29.

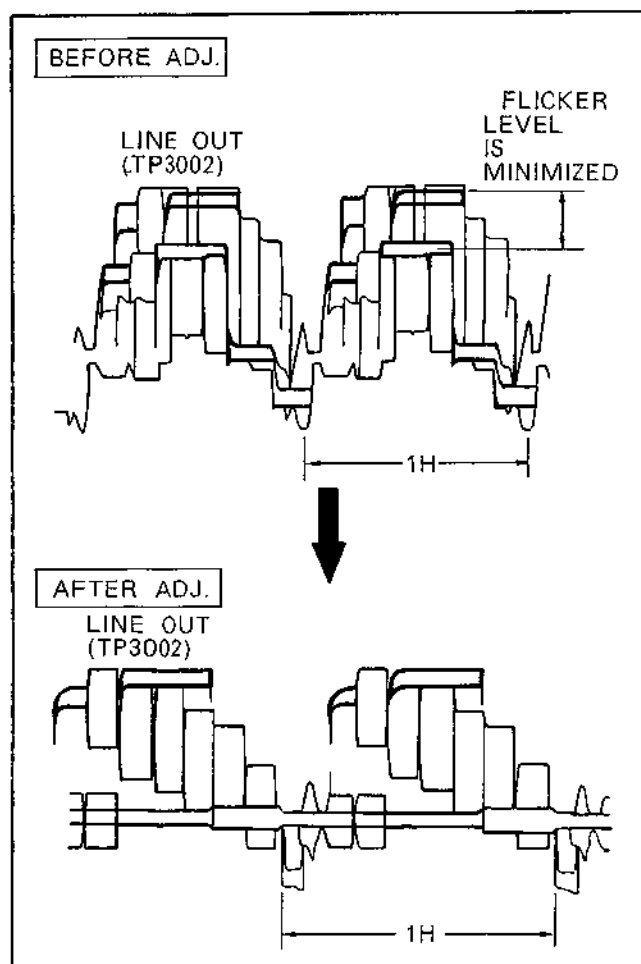


FIG. E29

Prior to Jump VCO Free Run Adjustment (2-4-21), this adjustment must be completed.

2-4-23. CHROMINANCE DELAY LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP3002)	VR8201 (STILL) VR8202 (CUE)	STILL OR CUE	VIDEO SIGNAL (COLOUR BAR)
TAPE	M.EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLOSCOPE	FLICKER (CY AN) LEVEL IS MINIMIZED	

1. Connect the oscilloscope to TP3002.
2. Play back the just recorded portion in "STILL" mode.
3. Adjust VR8201 so that the flicker (cyan) level is minimized as shown in FIG. E.
4. Next, place the VTR in CUE mode.
5. Adjust VR8202 so that the flicker (cyan) level is minimized as shown in FIG. E30.

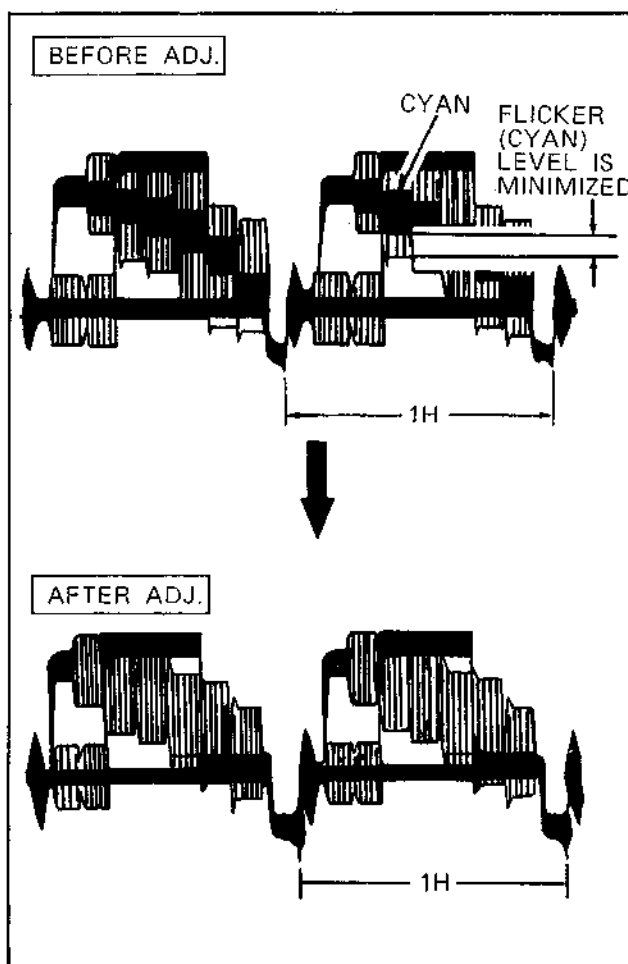


FIG. E30

NORMAL AUDIO Section

2-4-24. AUDIO BLAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002(HOT) TP4003(GND)	VR4002	RECORDING	
TAPE	M.EQ.	SPEC.	
BLANK TAPE	V.T.V.M.	2.5+/-0.1mVrms	

Note:

- 1) Make a short circuit at terminal of the Audio Input.

2-4-25. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT (TP4001)	VR4001	SELF RECORDING	1kHz, -10dB AUDIO SIGNAL VIDEO SIGNAL
TAPE	M.EQ.	SPEC.	
BLANK TAPE	SIGNAL GENERA- TOR/ V.T.V.M.	E-E LEVEL=-8+/-2dB (300mVrms~500mVrms) PLAYBACK LEVEL= E-E LEVEL+/-0.5dB (+/-20mVrms)	

1. Set the Audio Playback Mode Selector to NORMAL position. (Both the Left and Right Indicators are not lit.)
2. Playback the just recorded portion.
3. Adjust VR4001 so that the level of the playback waveform becomes E-E level+/-0.5dB (+/-20mVrms)

Note:

1. Befor this adjustment, "Tape Interchangeability Adjustment" and "Audio Bias Current Adjustment" must be completed.
2. Video signal must be connected to video input.

Hi-Fi AUDIO Section

2-4-26. LEVEL METER SENSITIVITY ADJUSTMENT

TP	ADJ.	MODE	INPUT
LEVEL METER	VR4004 (L) VR4005 (R)	STOP	1kHz, -10dB
TAPE	M.EQ.	SPEC.	
	SIGNAL GENERA- TOR	0dB indicator just lights up	

1. Set the Audio Playback Mode Selector to STEREO position. (Both the Left and Right Indicators are lit.)
2. Set the output of the Signal Generator to 1KHz and -10dB, and supply it to both Input Jacks (L) and (R).
Next, Adjust the recording level with the Audio Rec Level Controls so that the audio outputs are 400mVp-p at both Output Jacks (L) and (R).
3. Adjust VR4004 so that the 0dB indicator just lights up on the L-ch level meter as shown below.
4. Adjust VR4005 so that the 0dB indicator just lights up on the R-ch level meter as shown below.

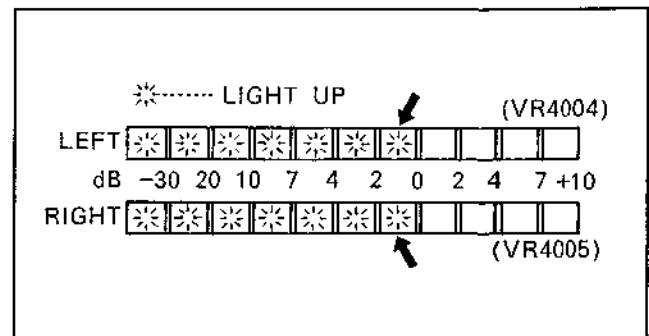


FIG. E31

2-4-27. Hi-Fi AUDIO RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4507(HOT) SHIELD CASE (GND)	VR4503	RECORDING	
TAPE	M.EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE	220+/-10 mVp-p	

1. Set the Input Select SW to LINE.
2. Set the Audio Playback Mode Selector to "STEREO" position. (Both the Left and Right Indicators are lit.)
3. Connect the OSCILLOSCOPE to TP4507 (HOT) and SHIELD CASE (GND).
4. Adjust VR4503 so that the Audio recording current become 220+/-10mVp-p as shown below.

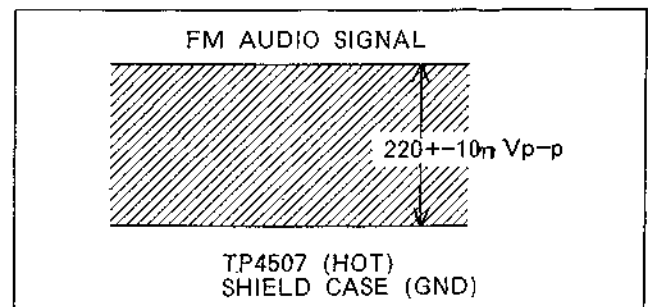


FIG. E32

Note:

Prior to HiFi Audio Muting Adjustment, this adjustment must be completed.

2-4-28. AUDIO HEAD SWITCHING SHIFTER
ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4511 TP2001	VR4510	PLAY	
TAPE	M.EQ.	SPEC.	
ALIGNMENT TAPE VFJ8 125H3F	OSCILLO- SCOPE	$T = T_2 - \frac{(T_2 - T_1)}{2}$ msec.	

1. Play back the alignment tape (VFJ8125H3F).
2. Connect the oscilloscope to TP4511 and TP2001.
3. Play back the just recorded portion.
4. Adjust VR4510 while listening to the stereo playback sound.

- (1) Confirm the "T2" time when the abnormal sound just occurs during turning clockwise on VR4510.
- (2) Confirm the "T1" time when the abnormal sound just occurs during turning counter clockwise on VR4510.
- (3) Adjust VR4510 so that the falling edge "T" of Audio H.S.W pulse becomes the center portion of the both "T2" and "T1".

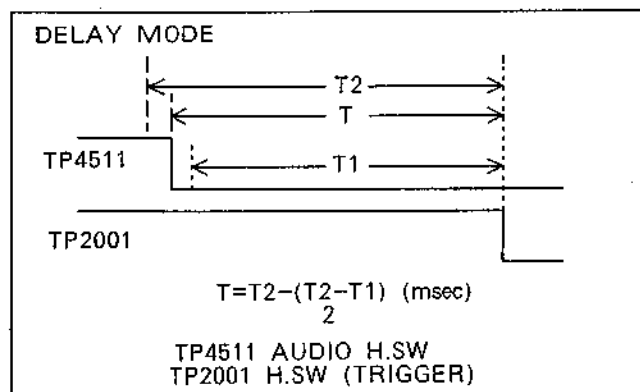


FIG. E33

2-4-29. AUDIO MUTING ADJUSTMENT

TP	ADJ.	MODE	INPUT
	VR4505	SELF RECORDING	VIDEO SIGNAL
TAPE	M.EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE	STEREO indication just lights up	

Note 1:
Before this adjustment "Tape Interchangeability Adjustment" must be completed.

Note 2:

To achieve this adjustment, the luminance recording current adjustment should be performed as follows.

First connect the oscilloscope to TP503 (HOT) and TP504 (GND) and then adjust VR501 for 150mVp-p [refer to S-VHS Luminance Recording current Adjustment (Item 2-4-12)].

After this adjustment, the luminance recording current adjustment must be returned to original position again.

1. Set Audio Playback Mode Selector to STEREO position. (Both the Left and Right Indicators are lit.)
2. Preadjust VR4505 until the Hi-Fi indicator on the front panel display turns the NORMAL indication.
3. Then slowly adjust VR4505 where the STEREO indication just lights up.
4. Confirm that the abnormal sound does not contain in the playback Hi-Fi sound.

2-4-30. Hi-Fi AUDIO CARRIER FREQUENCY
ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4502-11 (L) IC4502-20 (R)	VR4501 (L) VR4509 (R)	STOP	
TAPE	M.EQ.	SPEC.	
	FREQUE NCY COUNTER	1400+/-10KHz (L) 1800+/-10KHz (R)	

2-4-31. AUDIO DEVIATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4502-5 (L) IC4502-26 (R)	VR4502 (L) VR4507 (R)	RECORDING	1KHz, -10dB (316mVp-p) AUDIO SIGNAL
TAPE	M.EQ.	SPEC.	
BLANK TAPE	SIGNAL GENERA TOR/ D.V.M.	280mVp-p	

1. Set the Audio Rec Level Control Selector to MANUAL position. (Both the left and Right Indicators are not lit.)
2. Set the output of the Signal generator to 1KHz and -10dB, and supply it to both input Jacks (L) and (R).
Next, adjust the recording with the Audio Rec Level Controls so that the audio outputs are 400mVp-p at both Output Jacks (L) and (R).
3. Adjust VR4502 to 280mVp-p at IC4502-5 on HiFi AUDIO C.B.A. for L-Channel.
4. Adjust VR4507 to 280mVp-p at IC4502-26 on HiFi AUDIO C.B.A. for R-Channel.

2-4-32. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP3002)	VR4504 (L) VR4508 (R)	SELF RECORDING	SIGNAL GENERATOR (1kHz, -10dB)/ VIDEO SIGNAL
TAPE	M.EQ.	SPEC.	
BLANK TAPE	SIGNAL GENERATOR/ V.T.V.M	E-E LEVEL=-8+-2dB (300mVrms~500mVrms) PLAYBACK LEVEL= E-E LEVEL+-0.5dB (+-20mVrms)	

Note:
Before this adjustment, Tape Interchangeability Adjustment must be completed.

1. Play back the just recorded portion.
2. Adjust VR4504 and VR4508 volumes respectively so that the level of the playback becomes E-E level+-0.5dB (+-20mVrms).

TIMER Section

2-4-33. AN ELECTRICITY FAILURE DETECTION ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC7551-(12)	VR7502		
TAPE	M.EQ.	SPEC.	
	OSCILLOSCOPE/ 2DC POWER SUPPLIES		

Note:
1) Do not connect the AC power plug.
2) Make a short circuit at C7571 to discharge. (refer to the Technical Information)

1. Set the voltage of the DC power supply (A) for $4.6 \pm 0.05V$ and supply to IC7551-8 (+) and GND (-).
2. Set the voltage of the DC power supply (B) for $45 \pm 1V$ and supply to the Channel Select Pack C.B.A. -15.
3. Turn the VR7502 until the voltage at IC7551-(12) is High Level.
4. Turn the VR7502 slowly until the voltage at IC7551-(12) is Low Level (0V).
5. Change the voltage of the DC power supply (A) from $4.6 \pm 0.05V$ to $4.8 \pm 0.05V$.
6. Confirm the voltage at IC7551-(12) is High Level.

2-4-34. TIMER CLOCK ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC7501-(37)	C7501		
TAPE	M.EQ.	SPEC.	
	FREQUENCY COUNTER	$3906.25 \pm 0.008us$	

Note:
1) Do not connect the AC power plug.
2) Make a short circuit at C7571 to discharge.

1. Set the voltage of the DC power supply for $5.8V \pm 0.1V$ and supply it to P7506-6 (+) and GND (-).
2. Connect a jumper wire between P7506-5 and GND.
3. Connect the frequency counter to IC7501-37.
4. Adjust C7501 for $3906.25us \pm 0.008us$.

2-4-35. TIMER MUTING FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC7651-(4)	VR7660		
TAPE	M.EQ.	SPEC.	
	FREQUENCY COUNTER	$15.625 \pm 0.05KHz$	

Note:
1) To make this adjustment, please prepare the following circuit as shown below.
2) Make a short circuit at R7655.

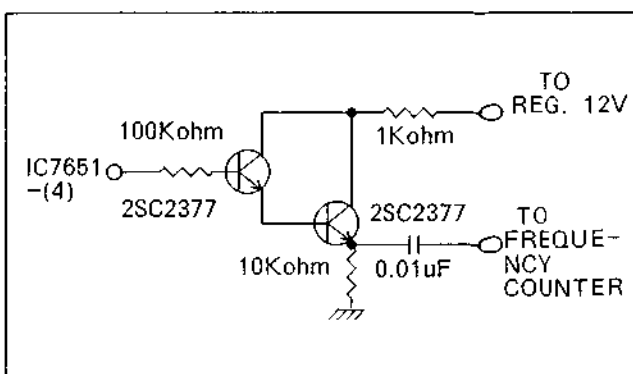
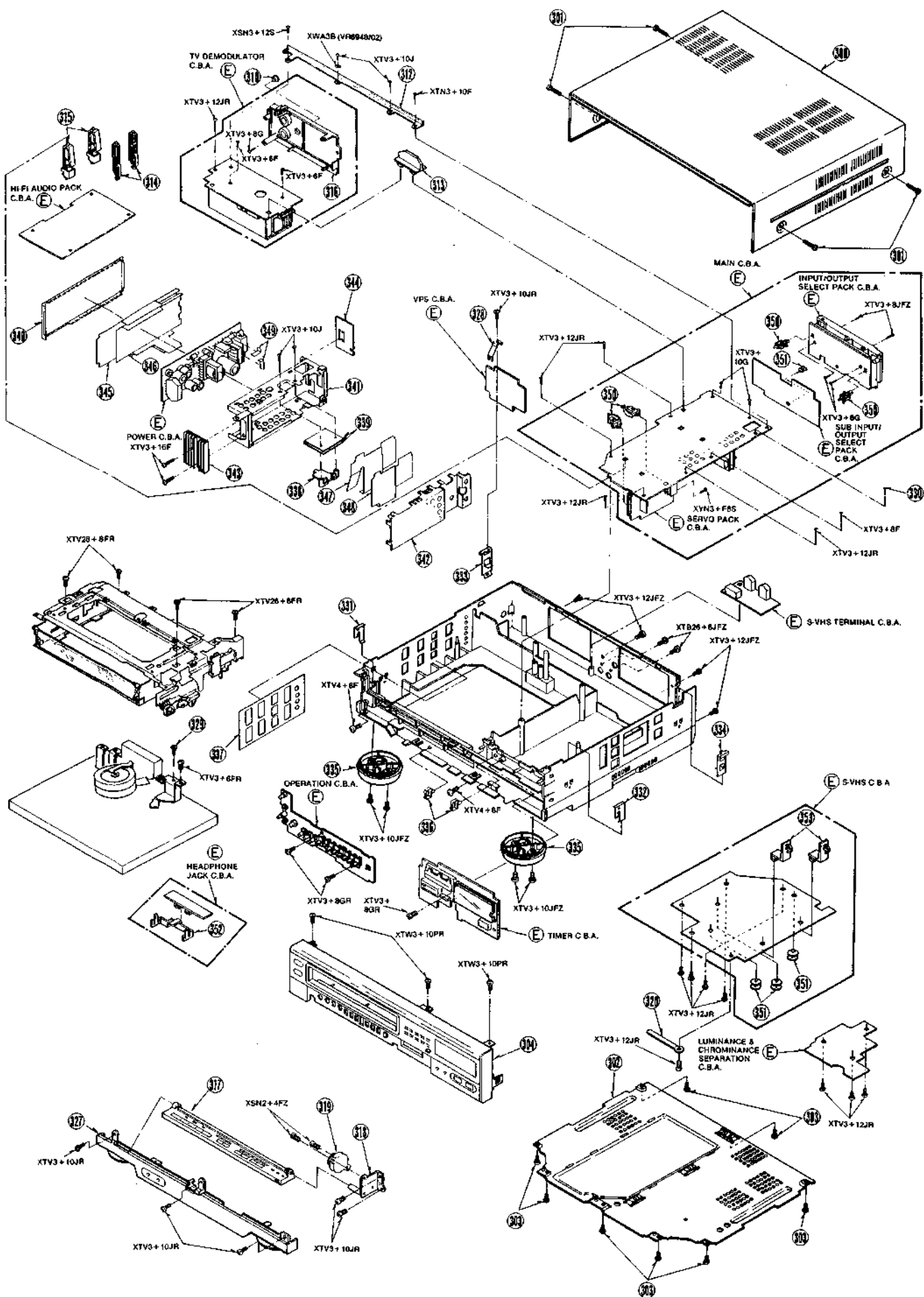


FIG. E34

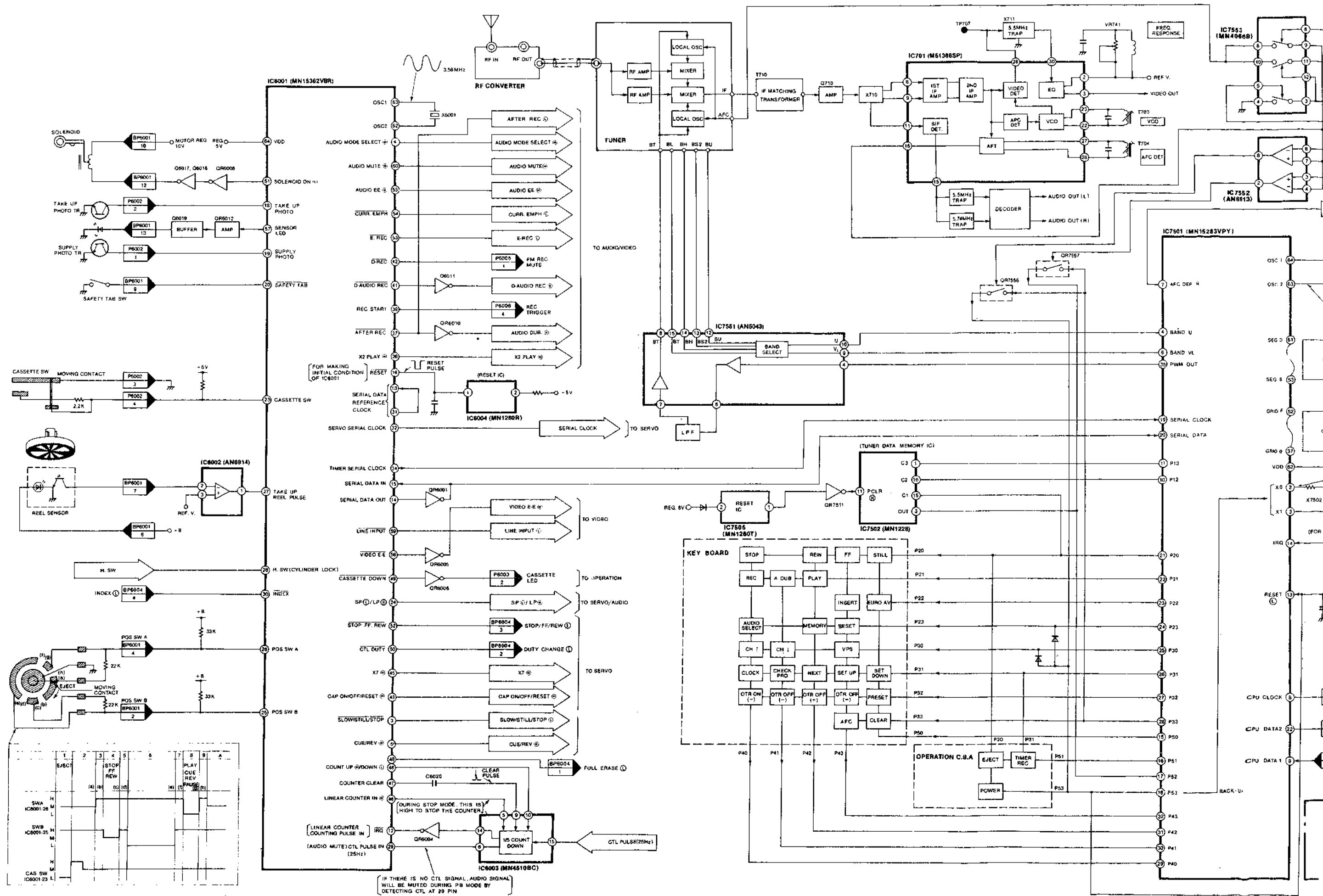


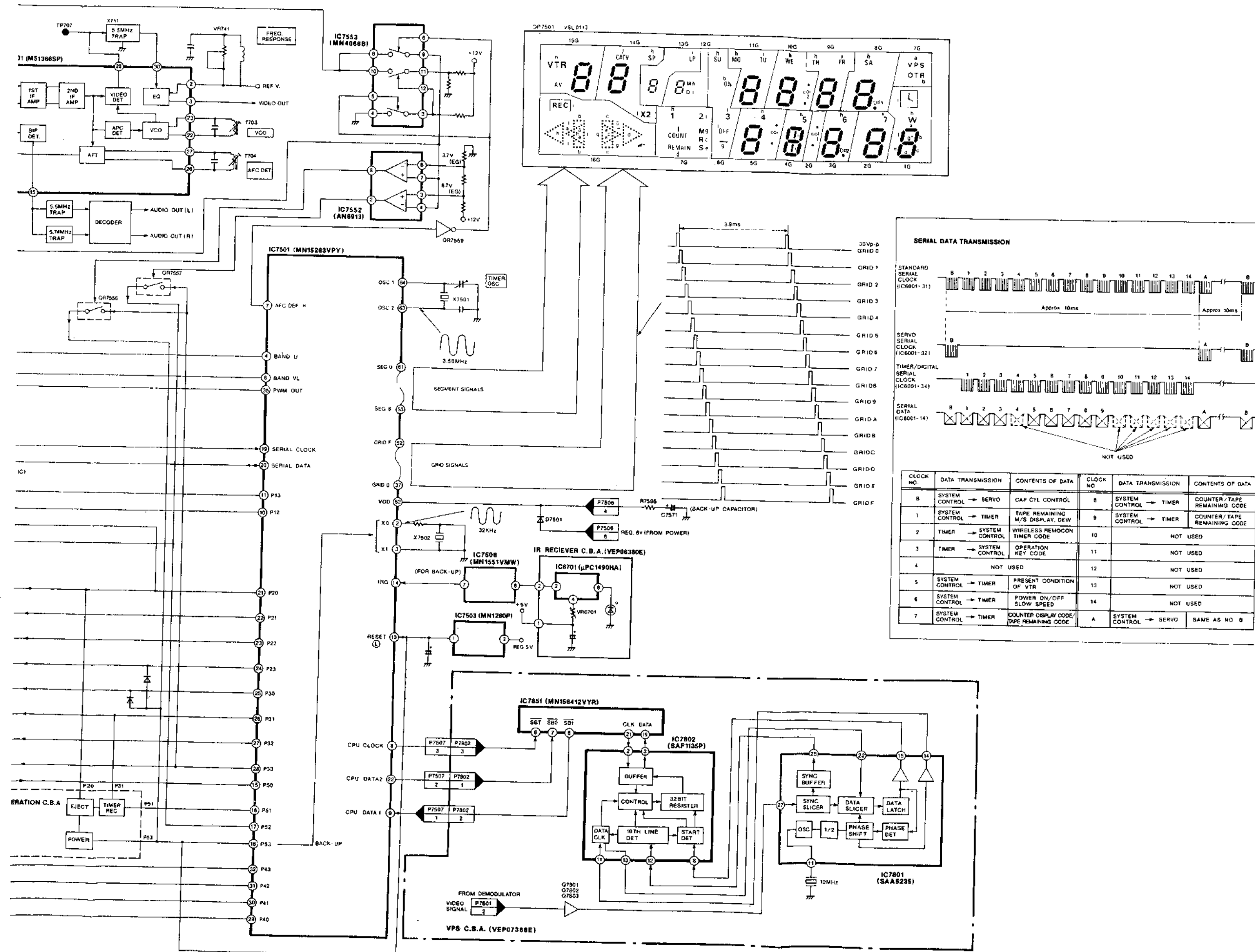
Mechanical partslist

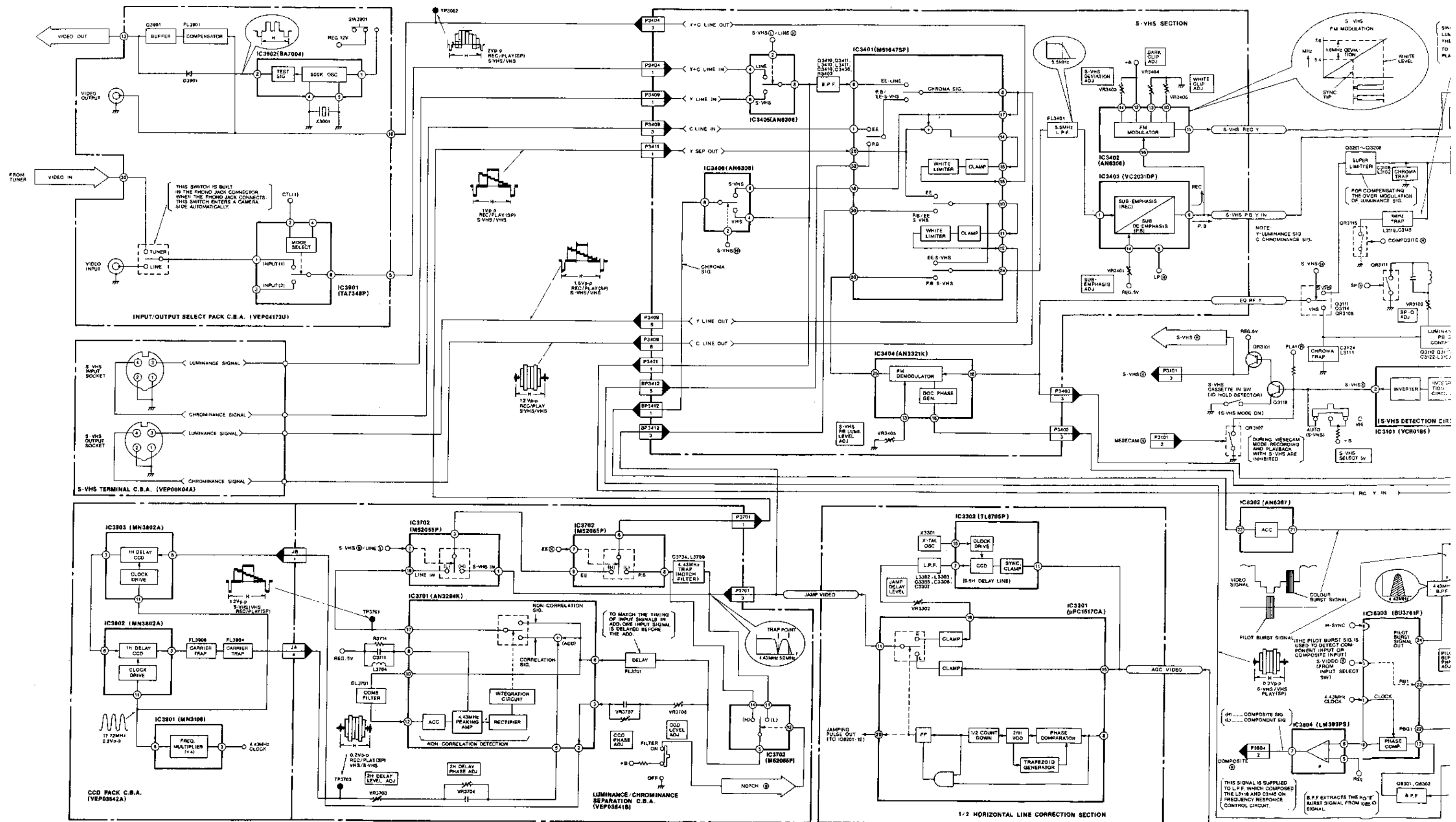
300	4822 443 62696	Top cover
301	4822 502 13239	Screw top cover
303	4822 502 11828	Screw bottom plate
304	4822 443 40772	Front panel assembly
317	4822 443 62695	Door panel assembly
327	4822 443 40773	Front lower panel
335	4822 462 41349	Foot

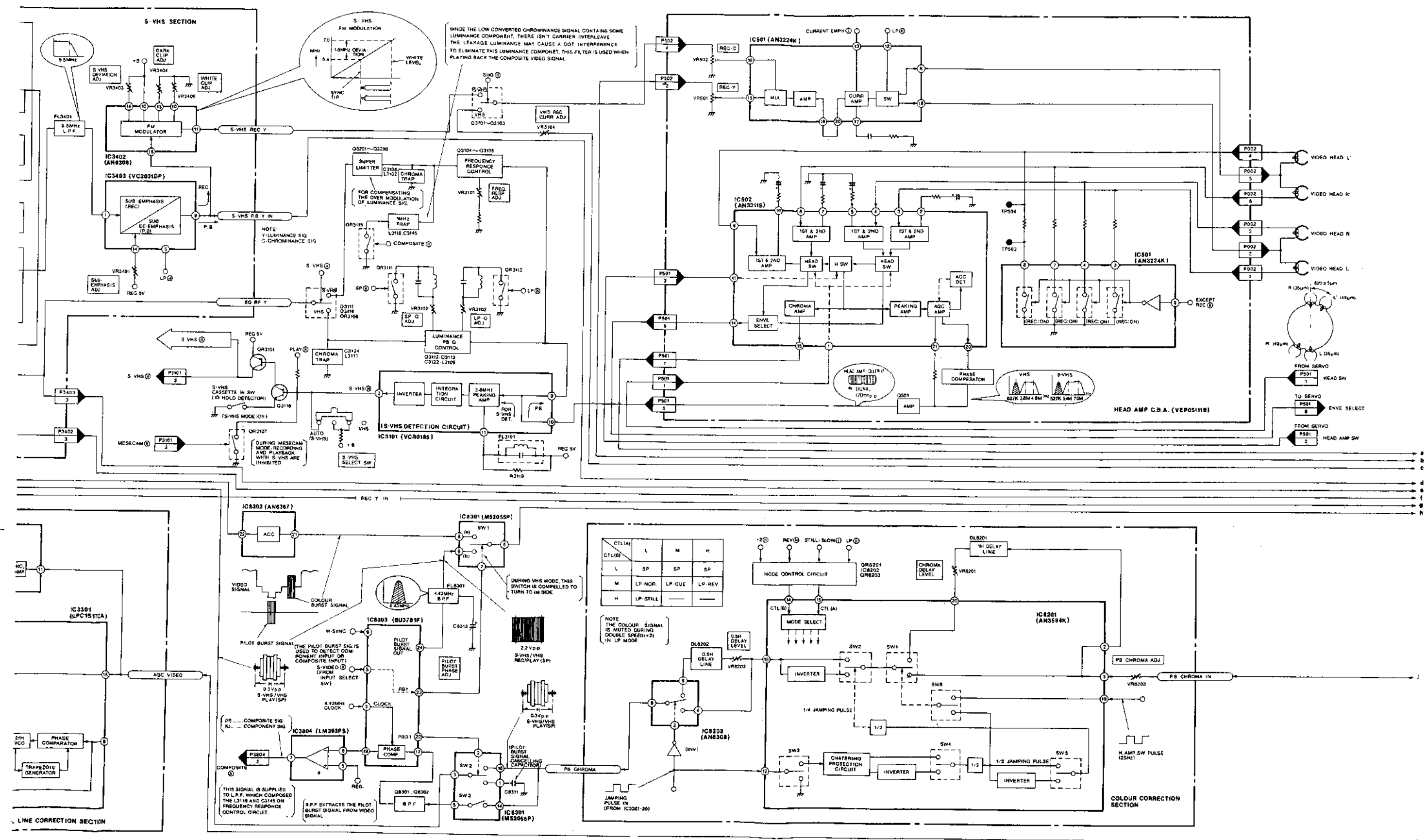
Miscellaneous

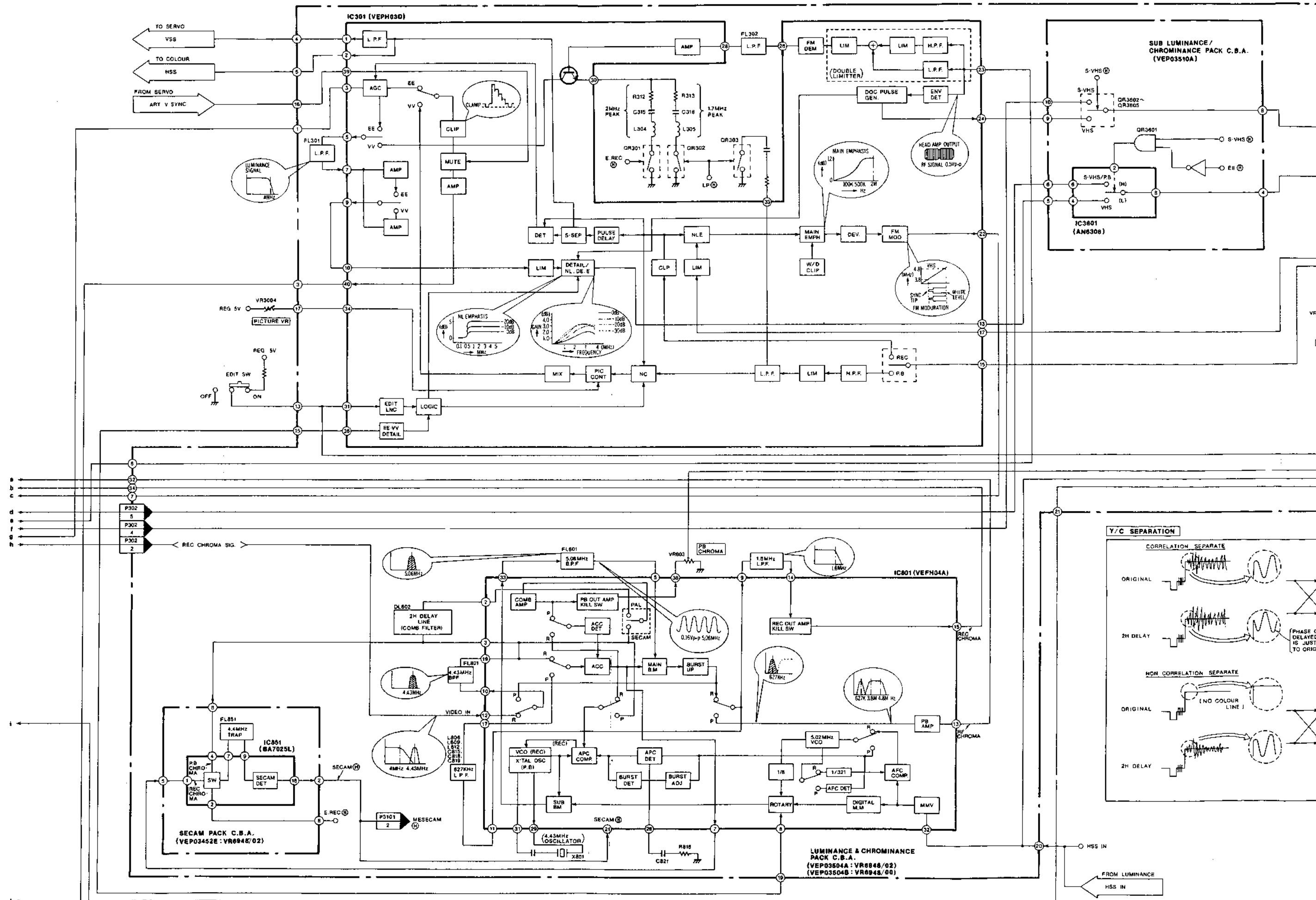
4822 321 23167	Antenna cable
4822 321 21035	Audio connection cable
4822 321 23168	S-VHS connection cable
4822 321 10608	Mains connection cable

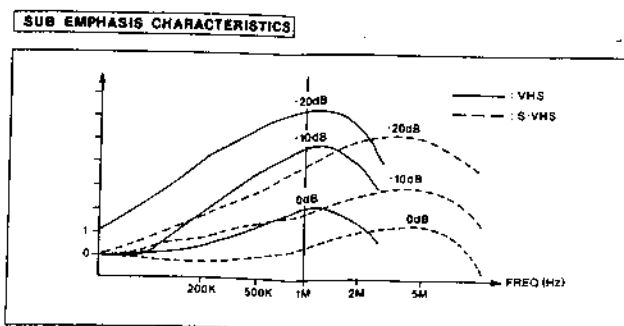
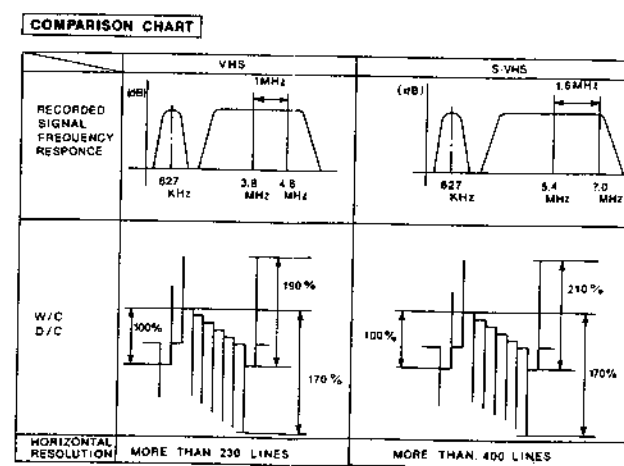
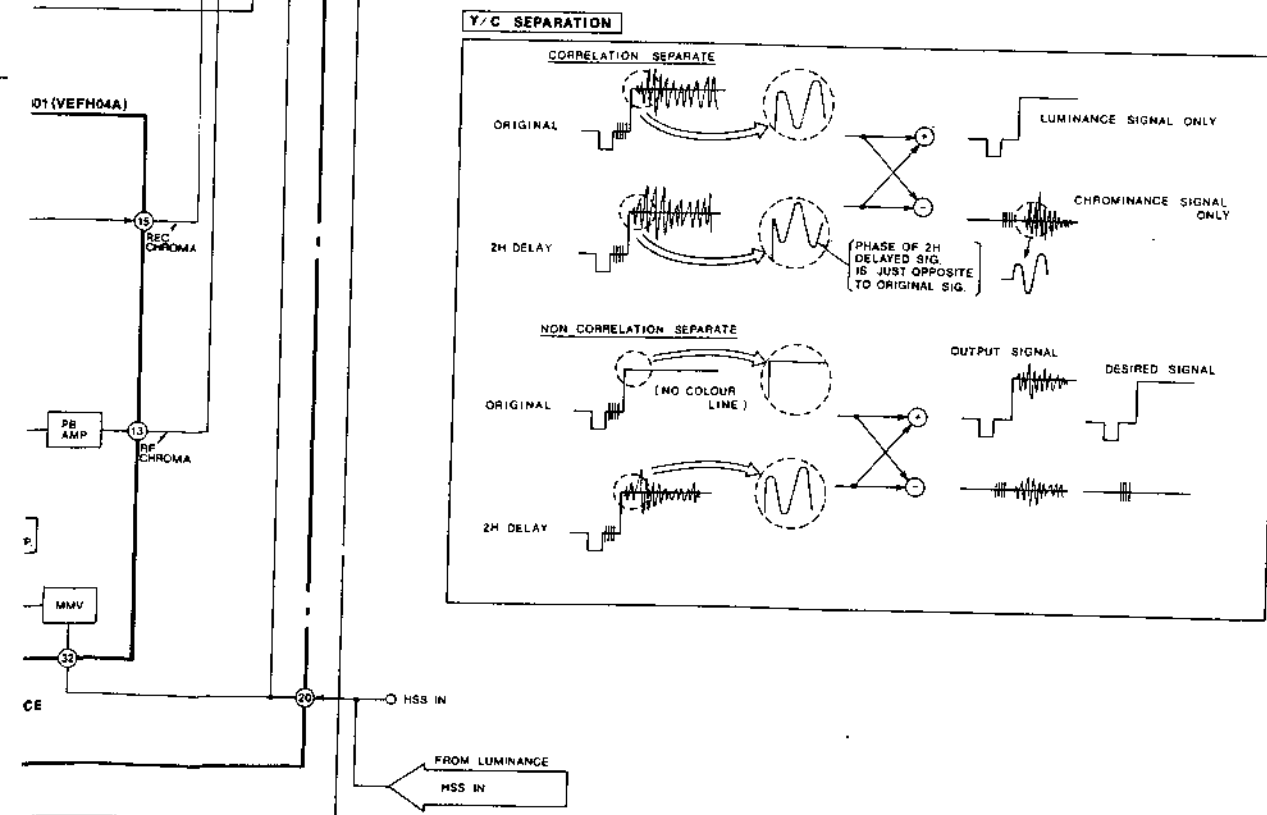
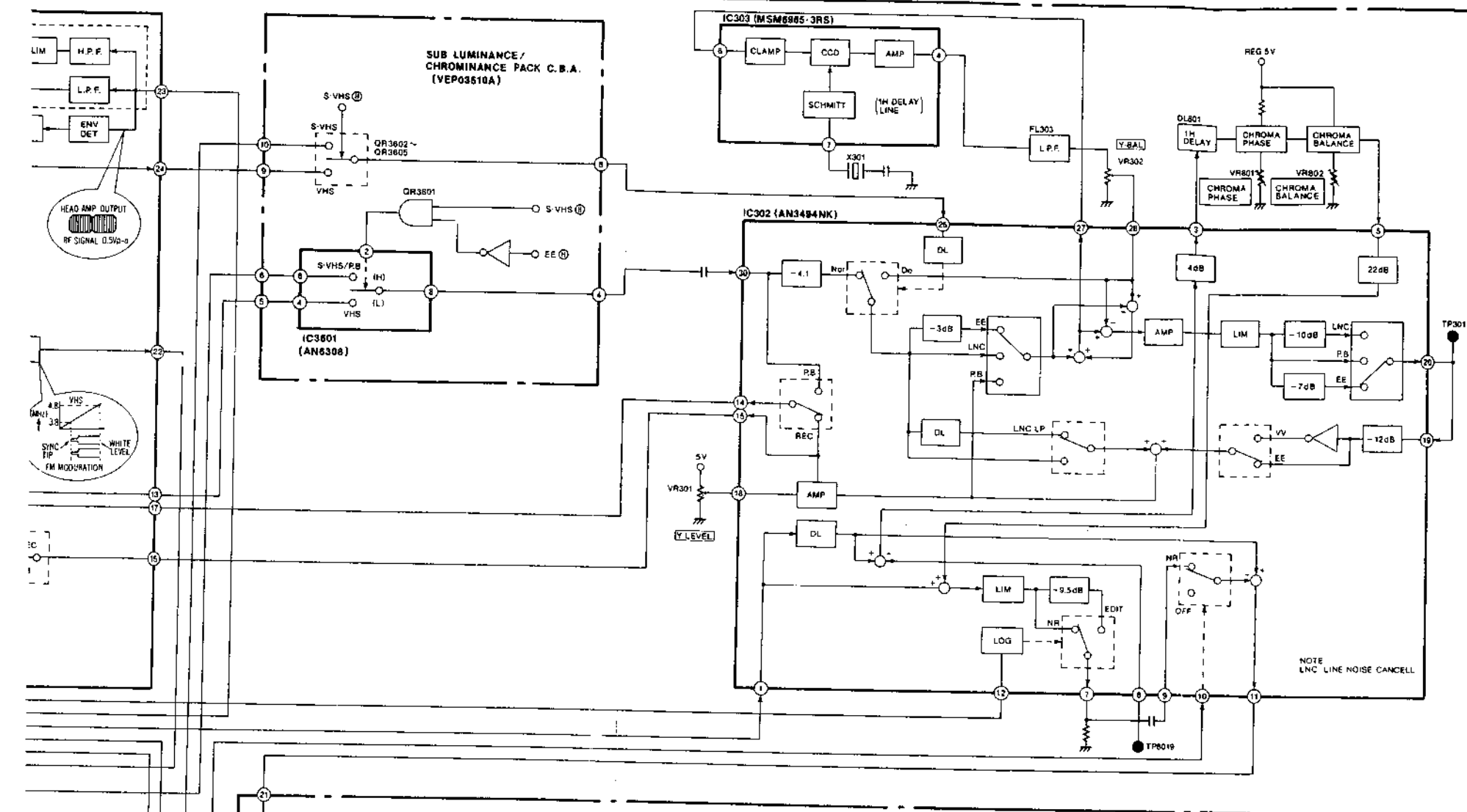


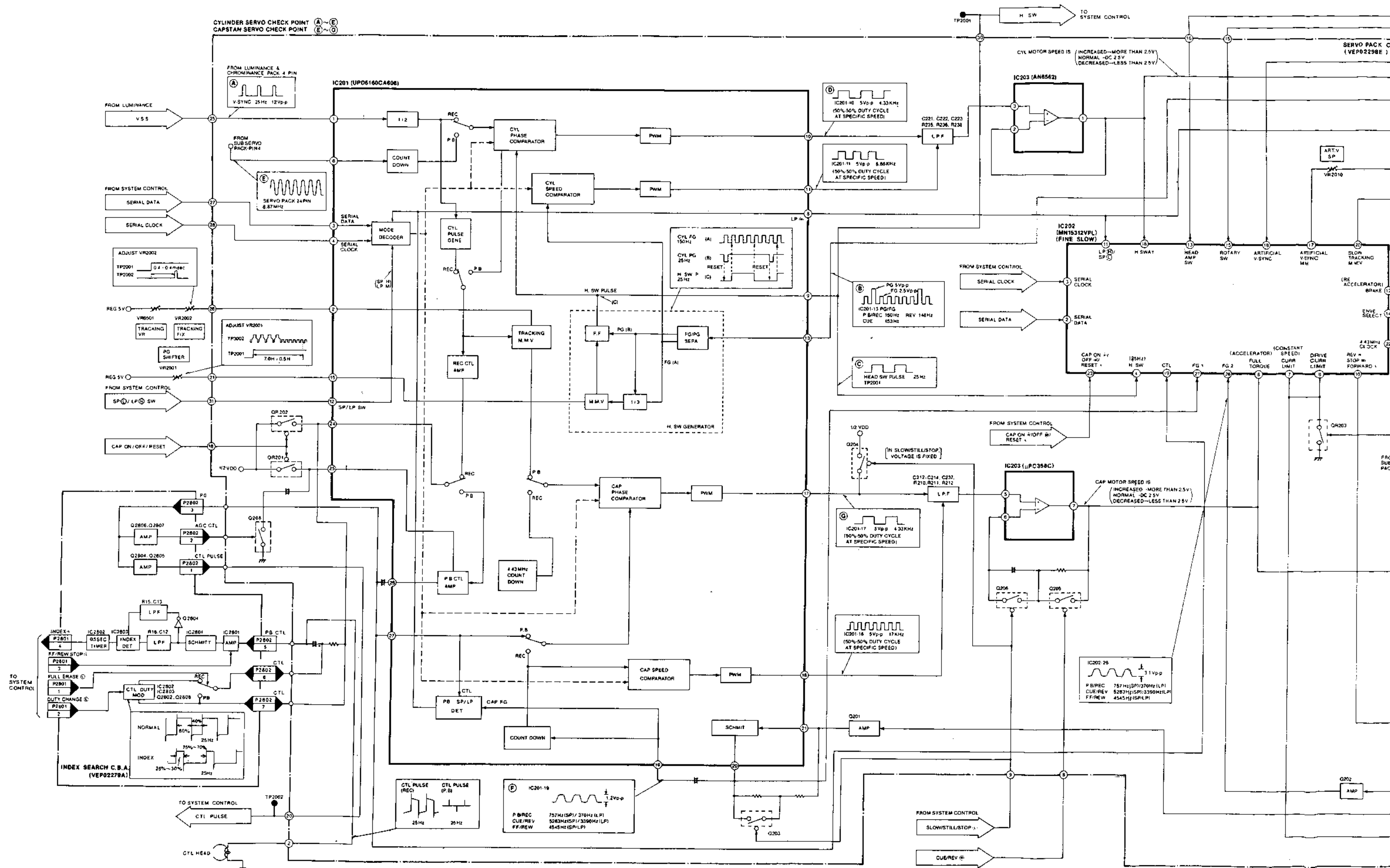


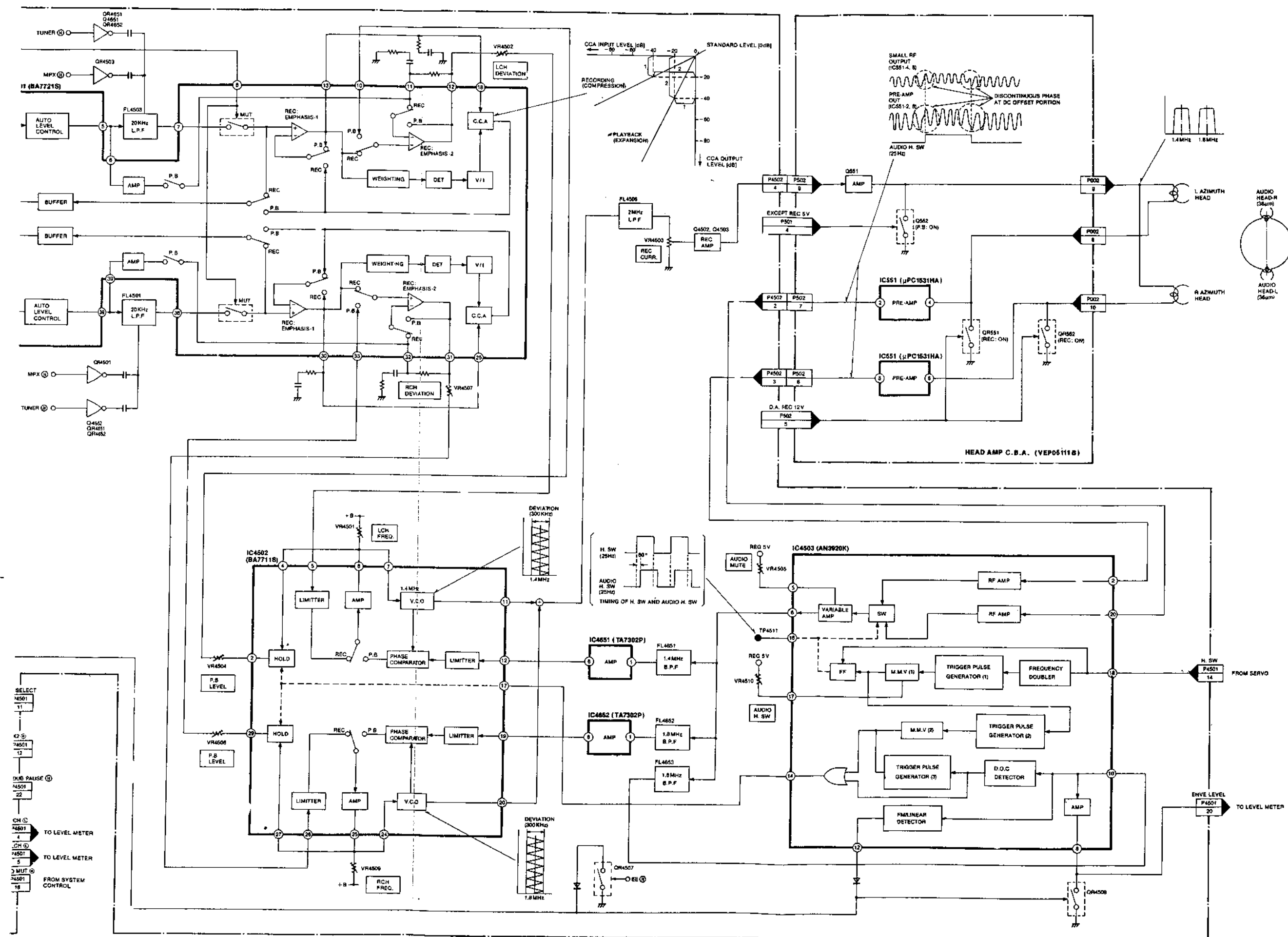


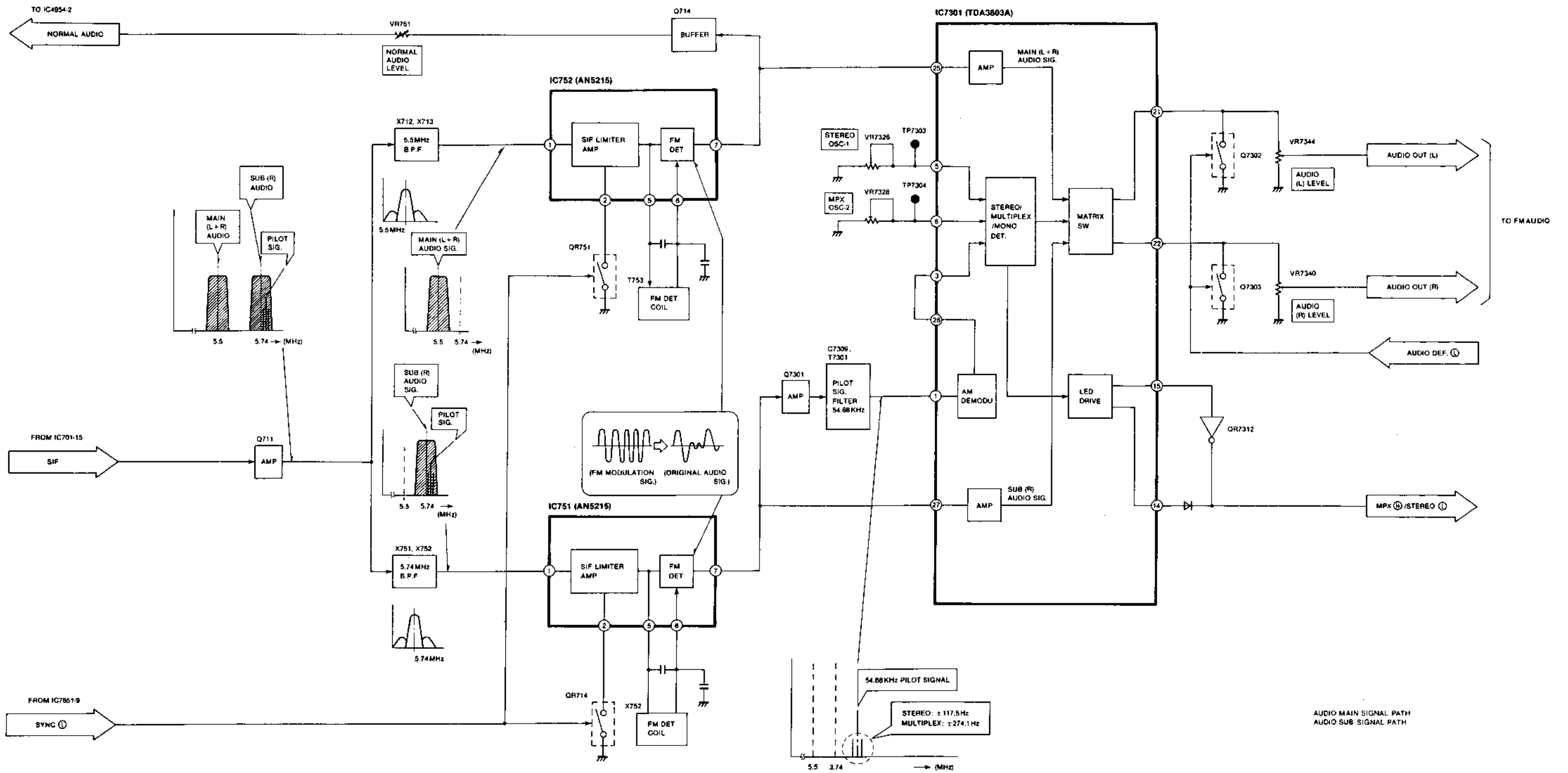


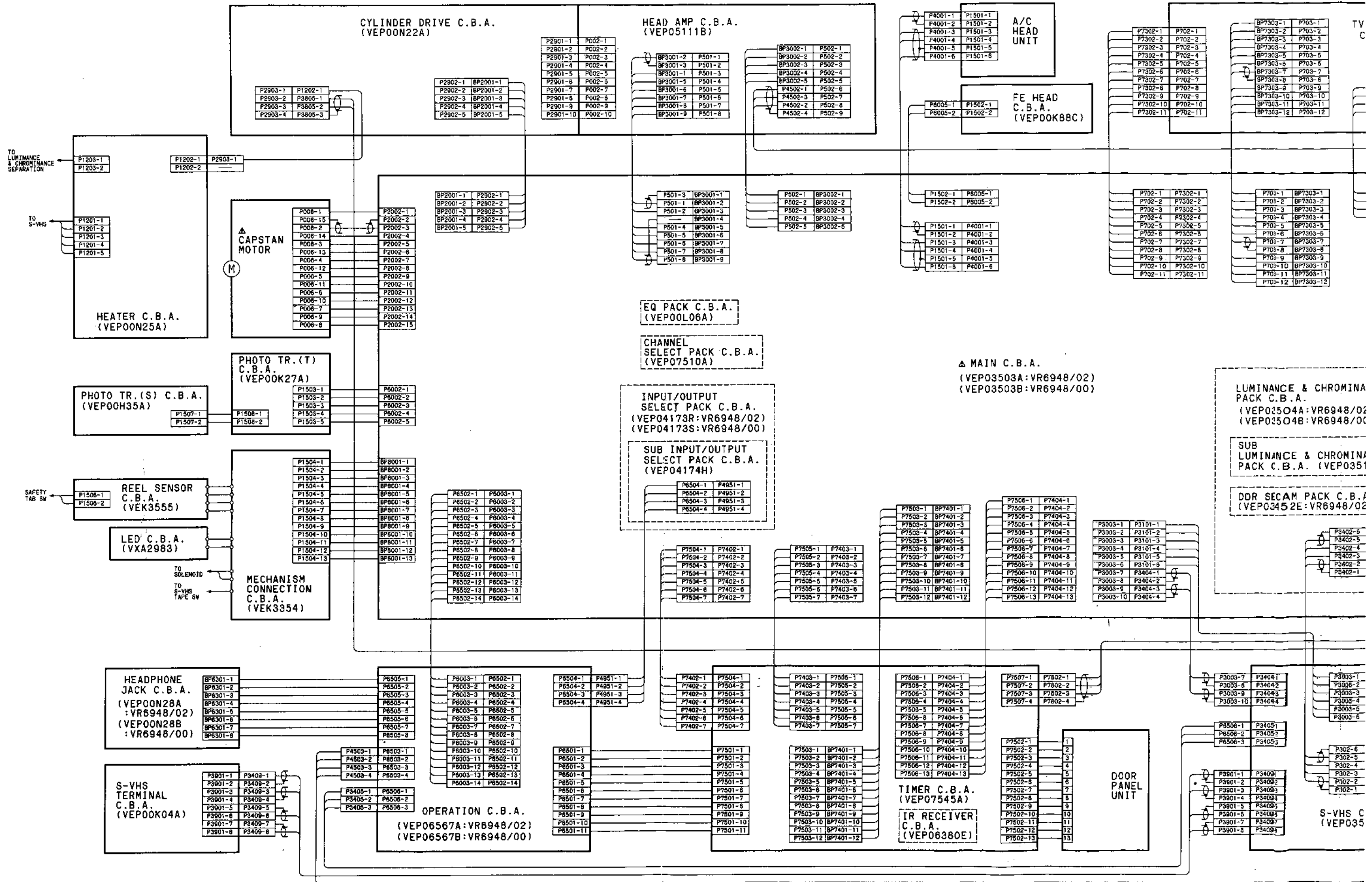


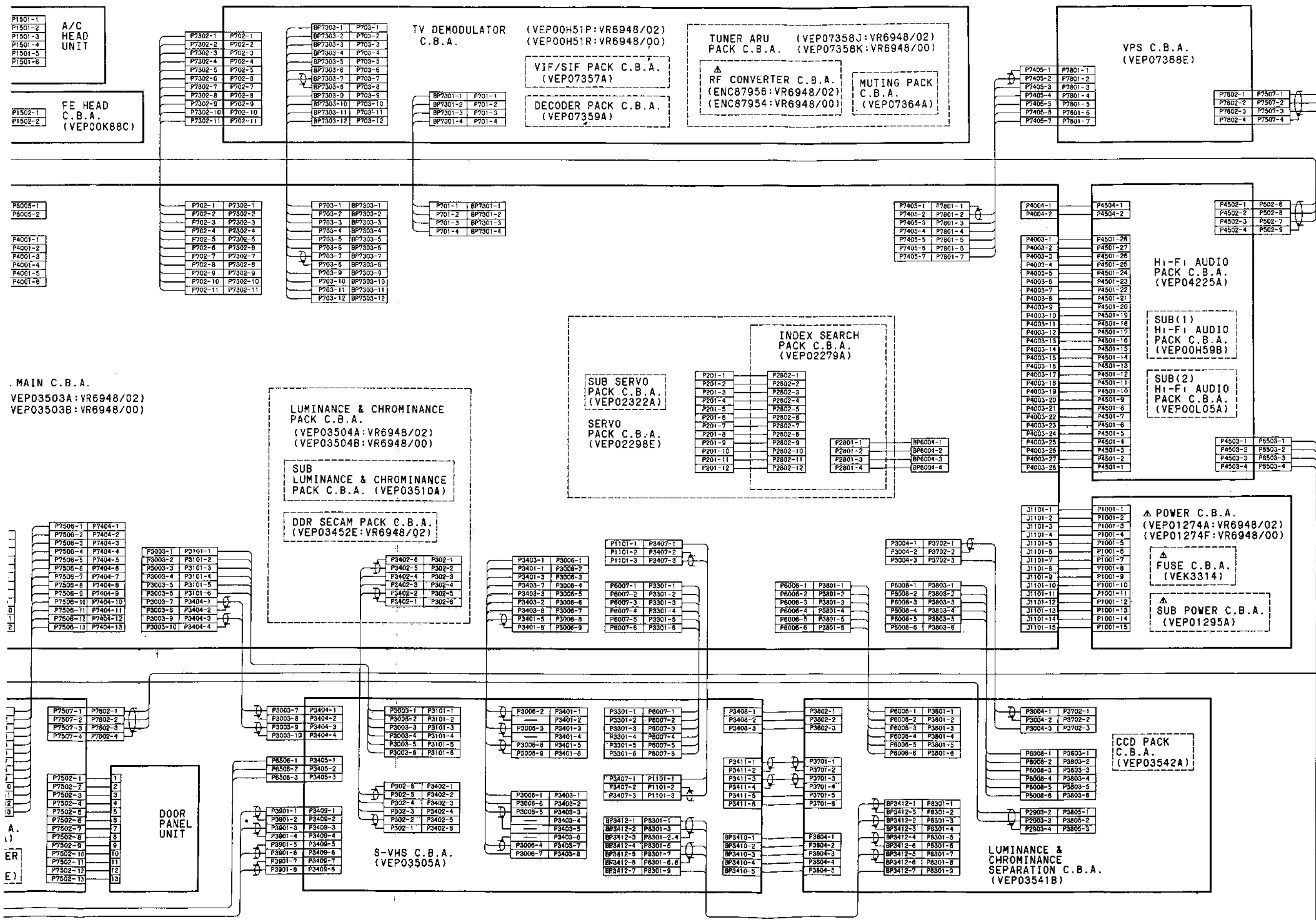




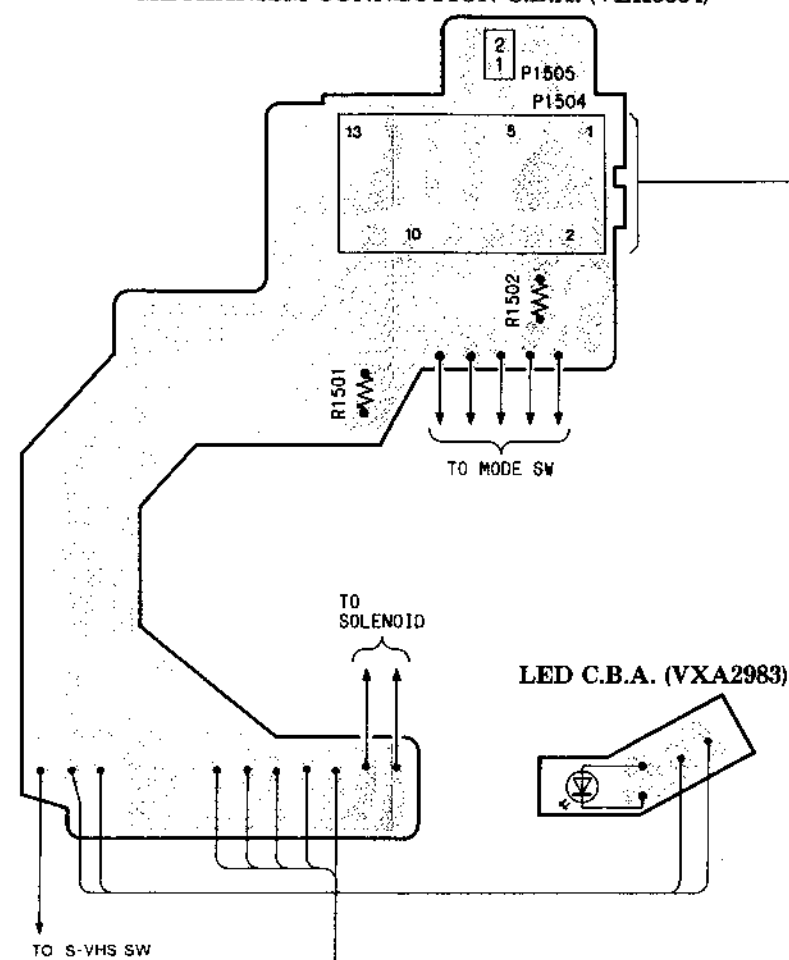








MECHANISM CONNECTION C.B.A. (VEK3354)



REEL SENSOR C.B.A. (VEK3555)

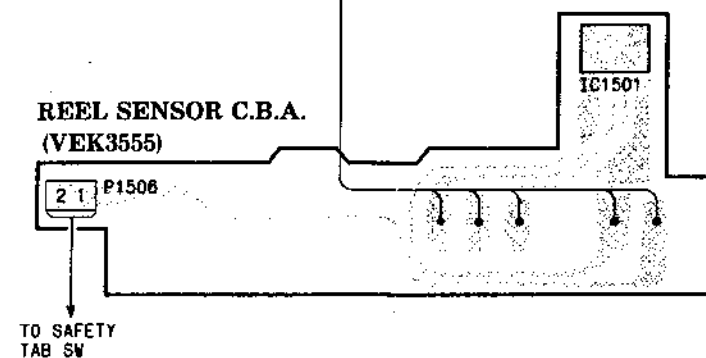


PHOTO TR. (S) C.B.A. (VEP00H35A)

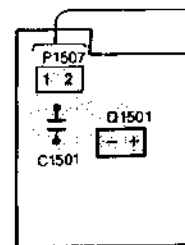
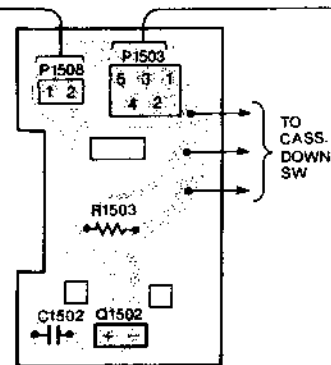
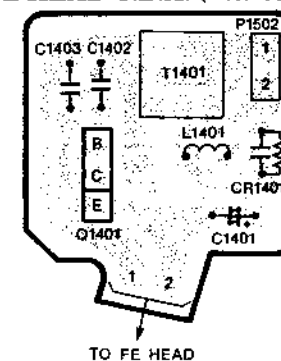


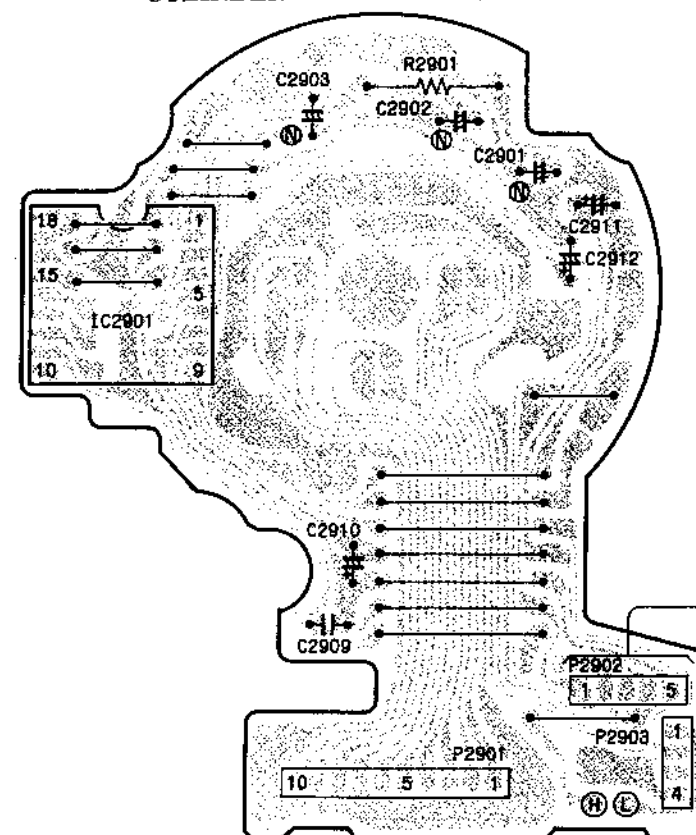
PHOTO TR. (T) C.B.A. (VEP00K27A)



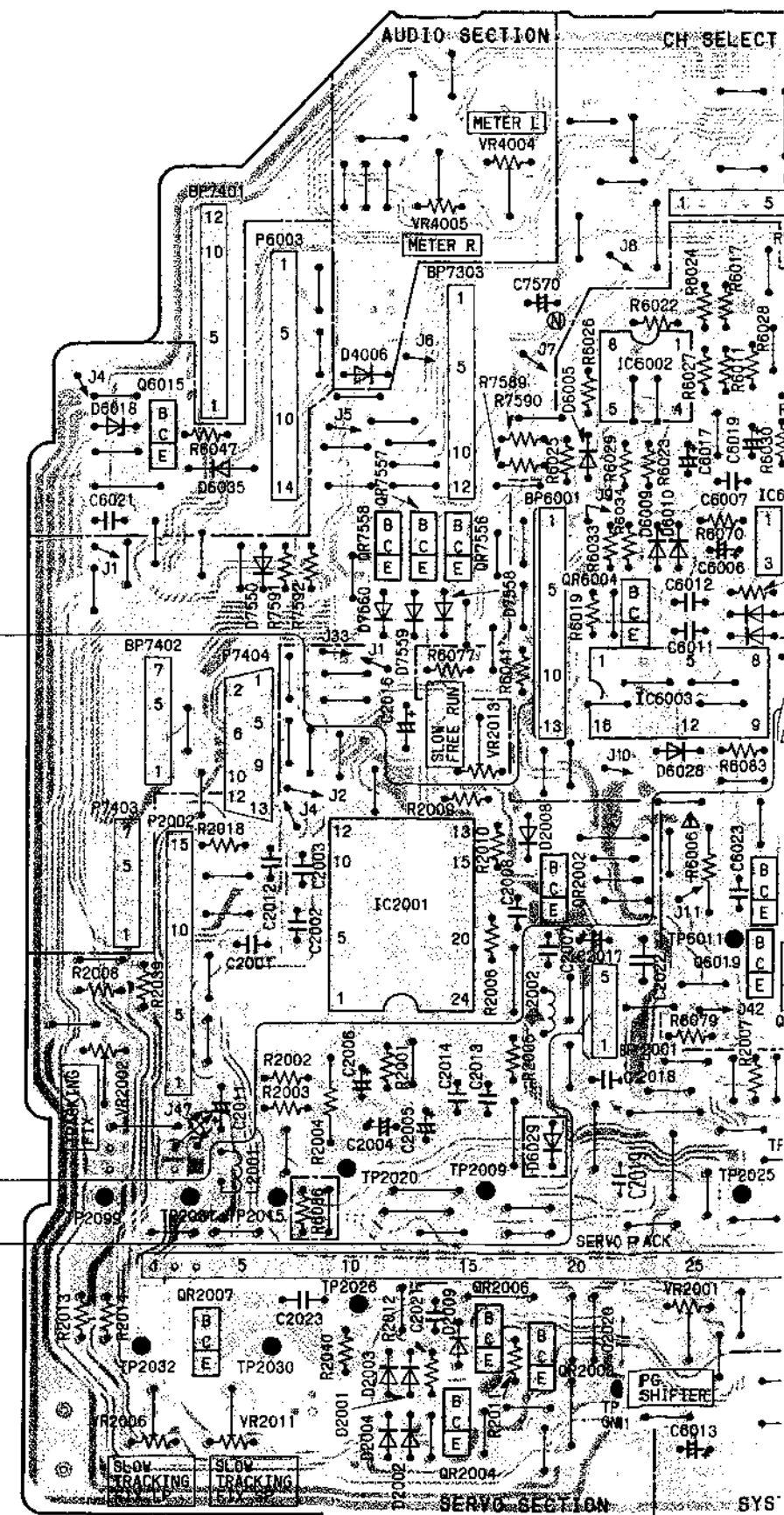
FE HEAD C.B.A. (VEP00K88C)



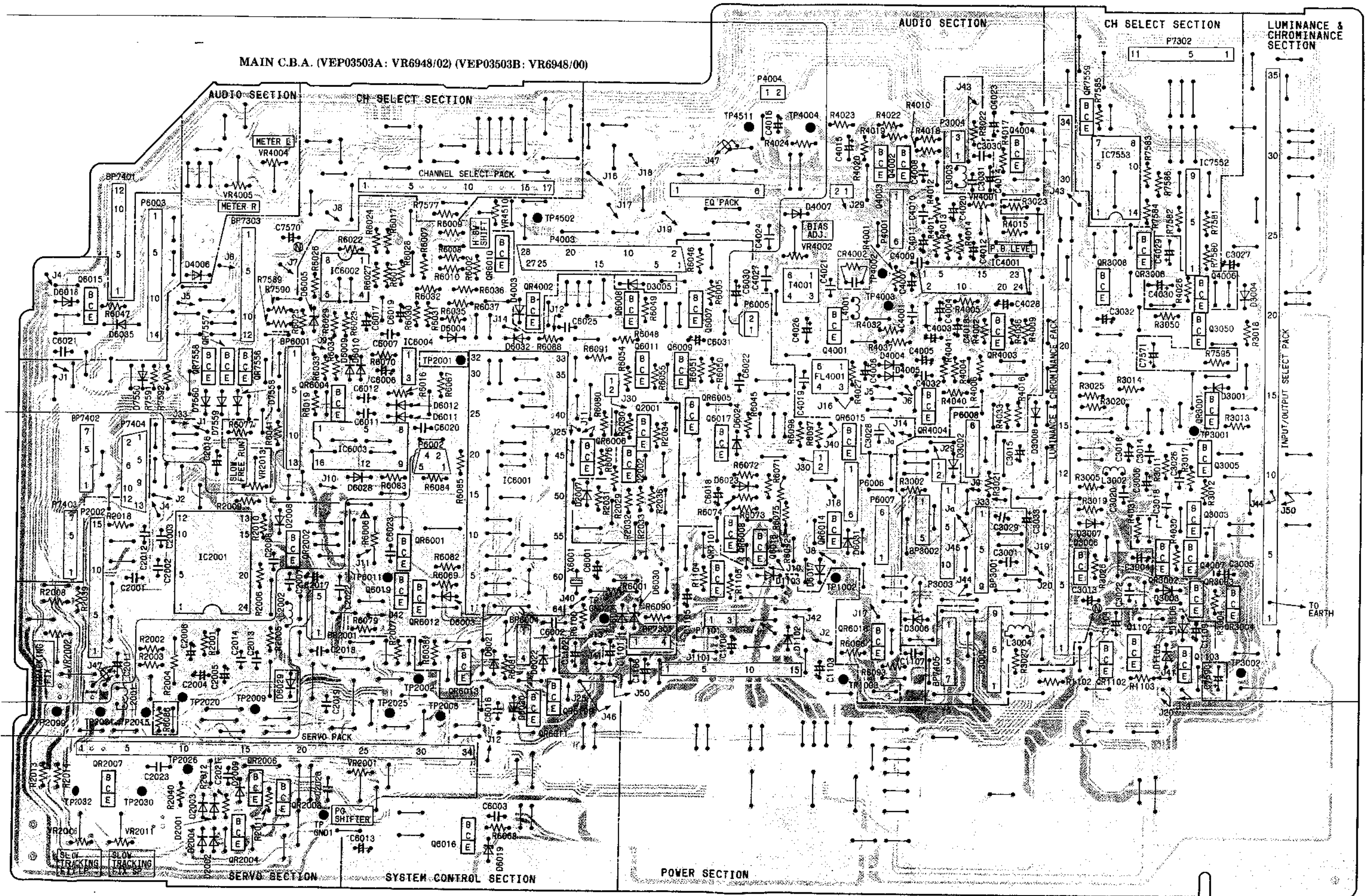
CYLINDER DRIVE C.B.A. (VEP00N22A)



MAIN C.B.A. (VEP03503A: VR69)

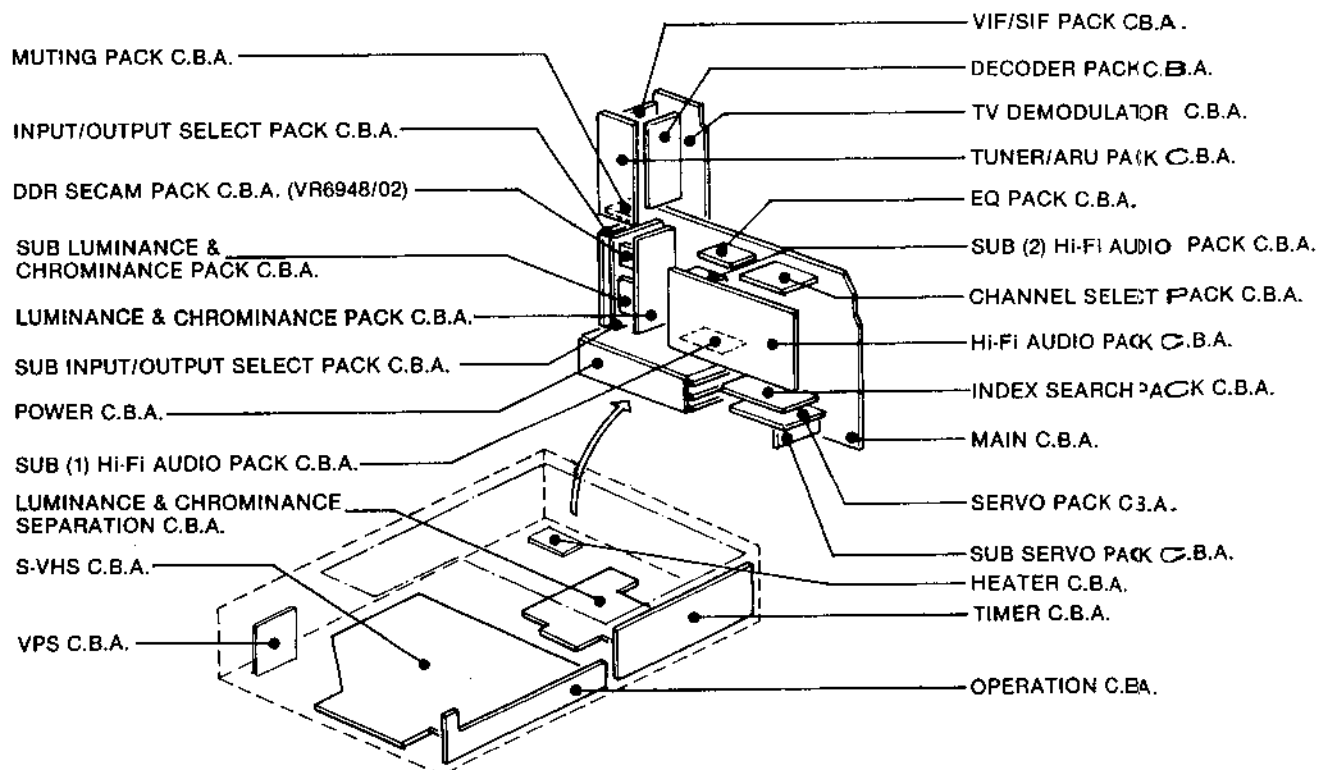


MAIN C.B.A. (VEP03503A: VR6948/02) (VEP03503B: VR6948/00)



VEP03503B	MAIN C.B.A.	VR6948/00
VEP03503A	MAIN C.B.A.	VR6948/02
VEP04173S	INPUT/OUTPUT SELECT PACK C.B.A.	VR6948/00
VEP04173R	INPUT/OUTPUT SELECT PACK C.B.A.	VR6948/02
VEP04174H	SUB INPUT/OUTPUT SELECT C.B.A.	
VEP02298E	SERVO PACK C.B.A.	
VEP02322A	SUB SERVO PACK C.B.A.	
VEP00L06A	EQUALISER PACK C.B.A.	
VEP03504B	LUMINANCE AND CHROMINANCE C.B.A.	VR6948/00
VEP03504A	LUMINANCE AND CHROMINANCE C.B.A.	VR6948/02
VEP03510A	SUB LUMINANCE & CHROMINANCE PACK	
VEP03452A	SECAM OST PACK C.B.A.	VR6948/02
VEP07510A	CHANNEL SELECT PACK C.B.A.	
VEP04225A	HI-FI AUDIO PACK C.B.A.	
VEP00H59B	SUB-1 HI-FI AUDIO PACK C.B.A.	
VEP00L05A	SUB-2 HI-FI AUDIO PACK C.B.A.	
VEP00N28B	HEAD PHONE JACK C.B.A.	
VEP00K04A	S-VHS TERMINAL C.B.A.	
VEP00N25A	HEATER C.B.A.	
VEP03505A	S-VHS C.B.A.	
VEP03541B	LUMINANCE / CHROMINANCE SEPARATION	
VEP03542A	CCD PACK C.B.A.	
VEP05111B	HEAD AMPLIFIER C.B.A.	
VEP06567B	OPERATION C.B.A.	VR6948/00
VEP06567A	OPERATION C.B.A.	VR6948/02
VEP07368E	VPS C.B.A.	
VEP00H51R	TV DEMODULATOR INTERFACE C.B.A.	VR6948/00
VEP00H51P	TV DEMODULATOR INTERFACE C.B.A.	VR6948/02
VEP07357A	VIF / SIF PACK C.B.A.	
VEP07358K	TUNER ARU PACK C.B.A.	VR6948/00
VEP07358J	TUNER ARU PACK C.B.A.	VR6948/02
VEP07364A	MUTING PACK C.B.A.	
VEP07359A	DECODER PACK C.B.A.	
VEP07545A	TIMER C.B.A.	
VEP06380E	IR RECEIVER C.B.A.	
VEP01274F	POWER C.B.A.	VR6948/00
VEP01274A	POWER C.B.A.	VR6948/02
VEP01295A	SUB POWER C.B.A.	

CIRCUIT BOARD LAYOUT

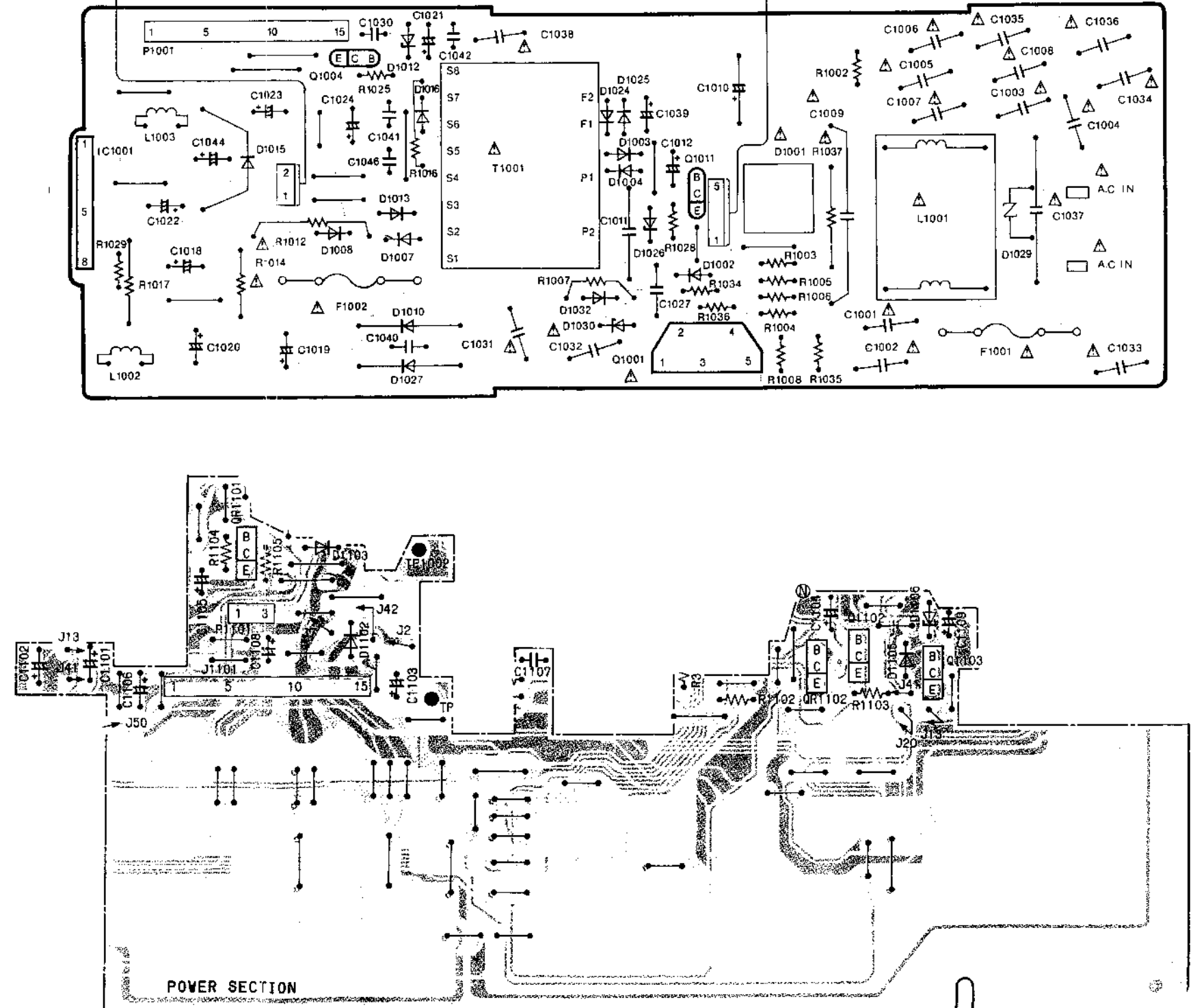


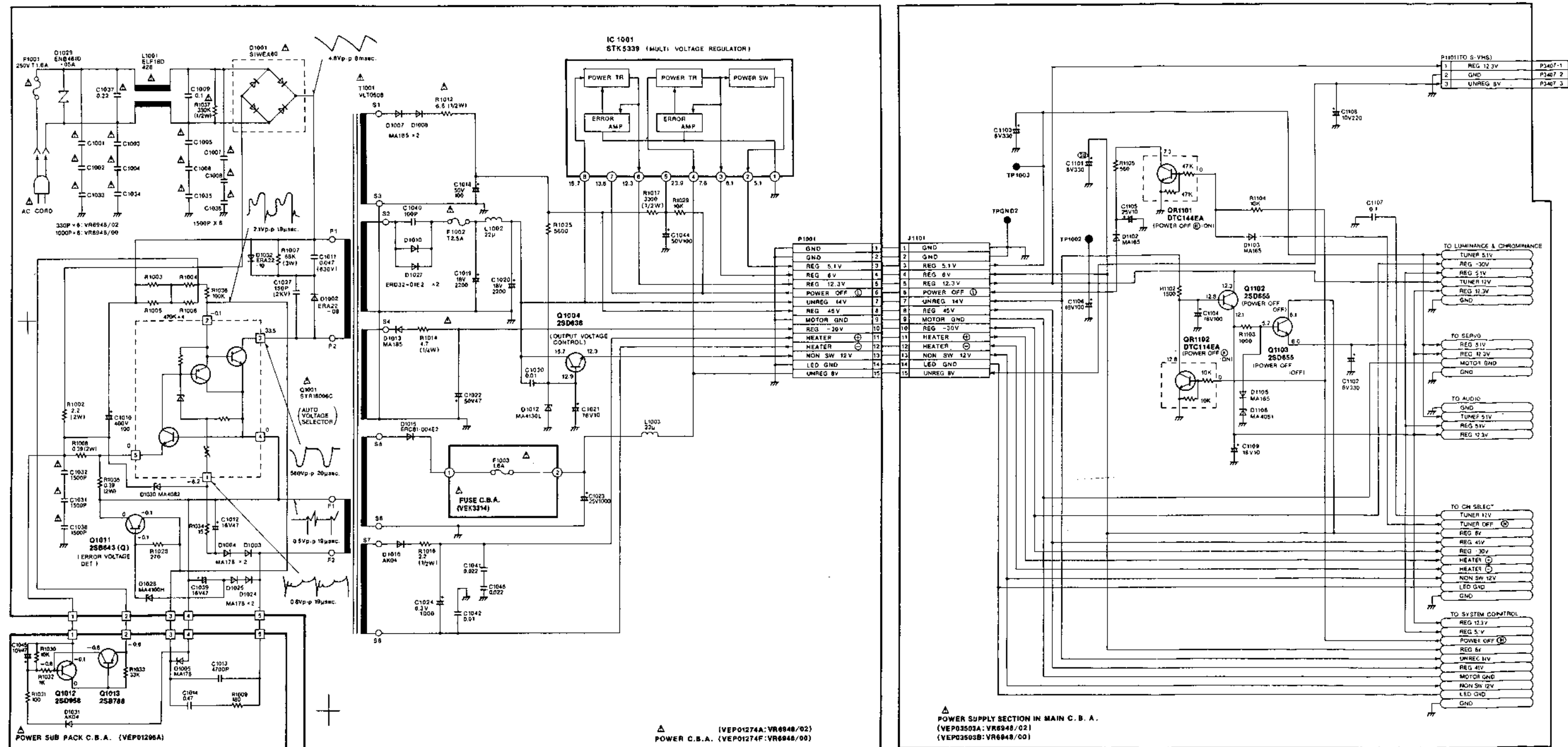
Miscellaneous					
P1001	4822 466 10572 4822 256 30399 4822 267 50912	SHIELD PLATE FUSE HOLDER CONNECTOR (FEMALE)	D1015 D1016 D1024 D1025 D1026 D1027 D1029 D1030 D1031 D1032	4822 130 32709 4822 130 81377 4822 130 81384 4822 130 81384 4822 130 81388 4822 130 81381 4822 130 80699 4822 130 81387 4822 130 81377 4822 130 81379	ERC81-004 AK04V2 MA178 MA178 MA4100H ERD32-01 ENB461D-05A MA4082 AK04V2 ERA22-10
					
C1001 C1002 C1003 C1004 C1001 C1002 C1003 C1004 C1005 C1006 C1007 C1008 C1009 C1010 C1010 C1011 C1012 C1013 C1014 C1018 C1019 C1020 C1021 C1022 C1023 C1024 C1027 C1030 C1031 C1032 C1033 C1034 C1033 C1034 C1035 C1036 C1037 C1038 C1039 C1040 C1041 C1042 C1044 C1045 C1046	4822 122 33931 4822 122 33931 4822 122 33931 4822 122 33931 4822 122 33929 4822 122 33929 4822 122 33929 4822 122 33929 4822 122 33932 4822 122 33932 4822 122 33932 4822 122 33932 4822 121 51454 4822 124 22869 4822 124 22871 4822 121 51452 4822 124 22861 4822 121 42158 4822 121 51449 4822 124 22863 4822 124 22866 4822 124 22866 4822 124 22859 4822 124 22864 4822 124 22862 4822 124 22857 4822 122 33925 4822 122 32247 4822 122 33932 4822 122 33932 4822 122 33931 4822 122 33931 4822 122 33929 4822 122 33929 4822 122 33932 4822 121 51455 4822 122 33932 4822 124 22861 4822 121 51453 4822 121 42257 4822 122 32247 4822 124 22863 4822 124 22858 4822 121 42257	C.CAP 1000P /00 C.CAP 1000P /00 C.CAP 1000P /00 C.CAP 1000P /00 C.CAP 330P /02 C.CAP 330P /02 C.CAP 330P /02 C.CAP 330P /02 C.CAP 250V 1500P C.CAP 250V 1500P C.CAP 250V 1500P C.CAP 250V 1500P P.CAP 250V 0.100 μ F E.CAP 400V 100 μ F /00 E.CAP 400V 100 μ F /02 P.CAP 630V 0.047 μ F E.CAP 16V 47 μ F P.CAP 50V 4700P P.CAP 50V 0.47 μ F E.CAP 50V 100 μ F E.CAP 18V 2200 μ F E.CAP 18V 2200 μ F E.CAP 16V 10 μ F E.CAP 50V 47 μ F E.CAP 25V 1000 μ F E.CAP 6.3V 1000 μ F C.CAP 2KV 150P C.CAP 50V 0.01 μ F C.CAP 250V 1500P C.CAP 250V 1500P C.CAP 1000P /00 C.CAP 1000P /00 C.CAP 330P /02 C.CAP 330P /02 C.CAP 250V 1500P C.CAP 250V 1500P P.CAP 250V 0.22 μ F C.CAP 250V 1500P E.CAP 16V 47 μ F P.CAP 125V 100P P.CAP 50V 0.022 μ F C.CAP 50V 0.01 μ F E.CAP 50V 100 μ F E.CAP 10V 47 μ F P.CAP 50V 0.022 μ F	IC	4822 209 60563	STK5339
					
L1001 L1002	4822 157 60007 4822 157 60006		Q1001 Q1004 Q1011 Q1012 Q1013	4822 130 61606 4822 130 41324 4822 130 61591 4822 130 42674 4822 130 42573	STR16006 2SD638 2SB643 2SD958 2SB788
					
R1002 R1003 R1004 R1005 R1006 R1007 R1008 R1009 R1012 R1014 R1016 R1017 R1025 R1028 R1029 R1030 R1031 R1032 R1033 R1034 R1035 R1036 R1037	4822 113 60192 4822 116 52285 4822 116 52285 4822 116 52285 4822 116 52285 4822 116 60536 4822 113 60193 4822 116 81419 4822 116 52594 4822 116 81418 4822 116 81426 4822 116 81421 4822 116 52289 4822 116 52217 4822 116 52233 4822 116 52233 4822 116 52175 4822 116 52204 4822 116 52271 4822 116 52211 4822 113 60193 4822 116 52234 4822 111 91728	W.RES 2W 2.2 C.RES 470 k Ω C.RES 470 k Ω C.RES 470 k Ω C.RES 470 k Ω METAL OXIDE 3W 68 k Ω WIRE WOUND 2W 0.39 M.RES 1W 180 FUSE 1/2W 6.8 C.RES 2W 4.7 M.RES 1/2W 2.2 M.RES 1/2W 3.3 k Ω C.RES 5.6 k Ω C.RES 270 C.RES 10 k Ω C.RES 10 k Ω C.RES 100 C.RES 1 k Ω C.RES 33 k Ω C.RES 15 WIRE WOUND 2W 0.39 C.RES 100 k Ω S.RES 1/2W 330 k Ω	T1001	4822 146 21424	TRANSFORMER
					
D1001 D1002 D1003 D1004 D1005 D1007 D1008 D1010 D1012 D1013	4822 130 32748 4822 130 81378 4822 130 81384 4822 130 81384 4822 130 81384 4822 130 80528 4822 130 80528 4822 130 81381 4822 130 81389 4822 130 80528	S1WBA60 AP01C MA178 MA178 MA178 MA185 MA185 ERD32-01 MA4130L MA185			

SUB POWER C.B.A. (VEP01295A)

FUSE C.B.A. (VEK3314)

POWER C.B.A. (VEP01274A: VR6948/02) (VEP01274F: VR6948/00)



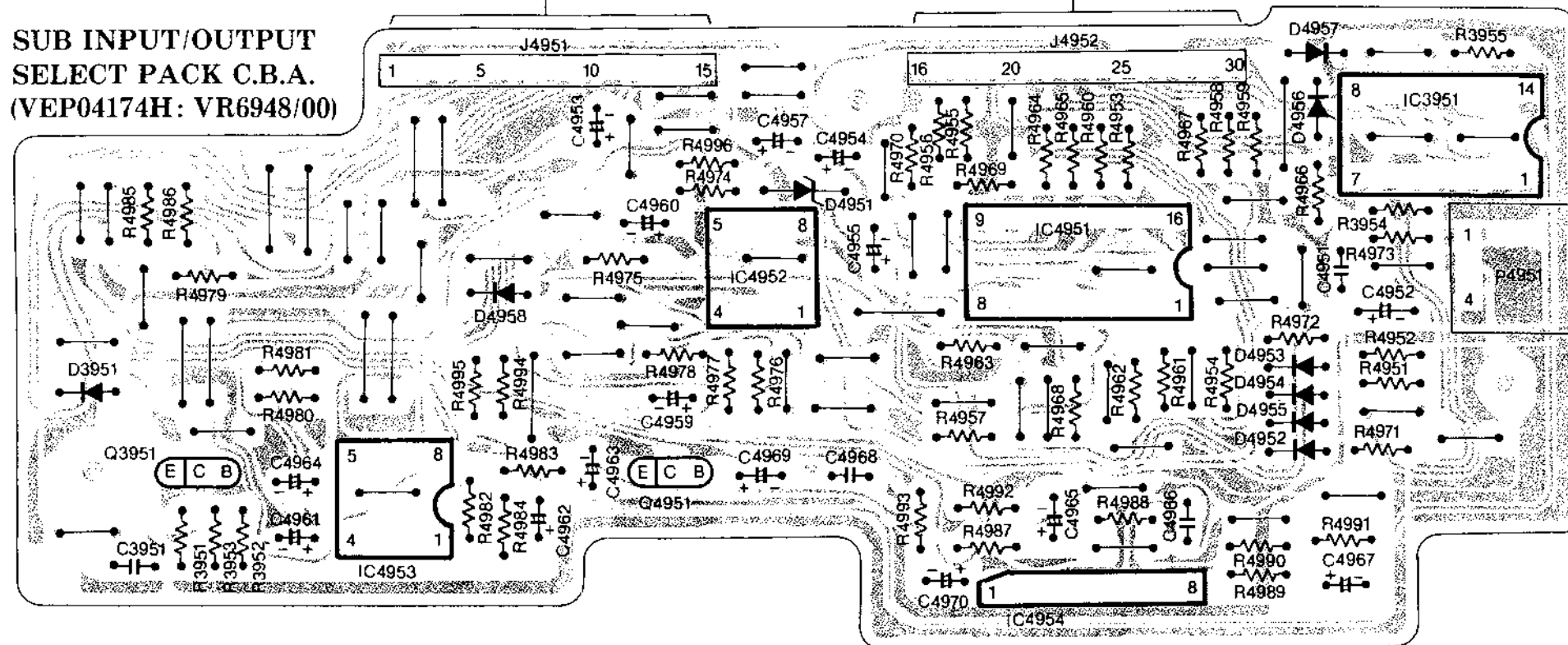


NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

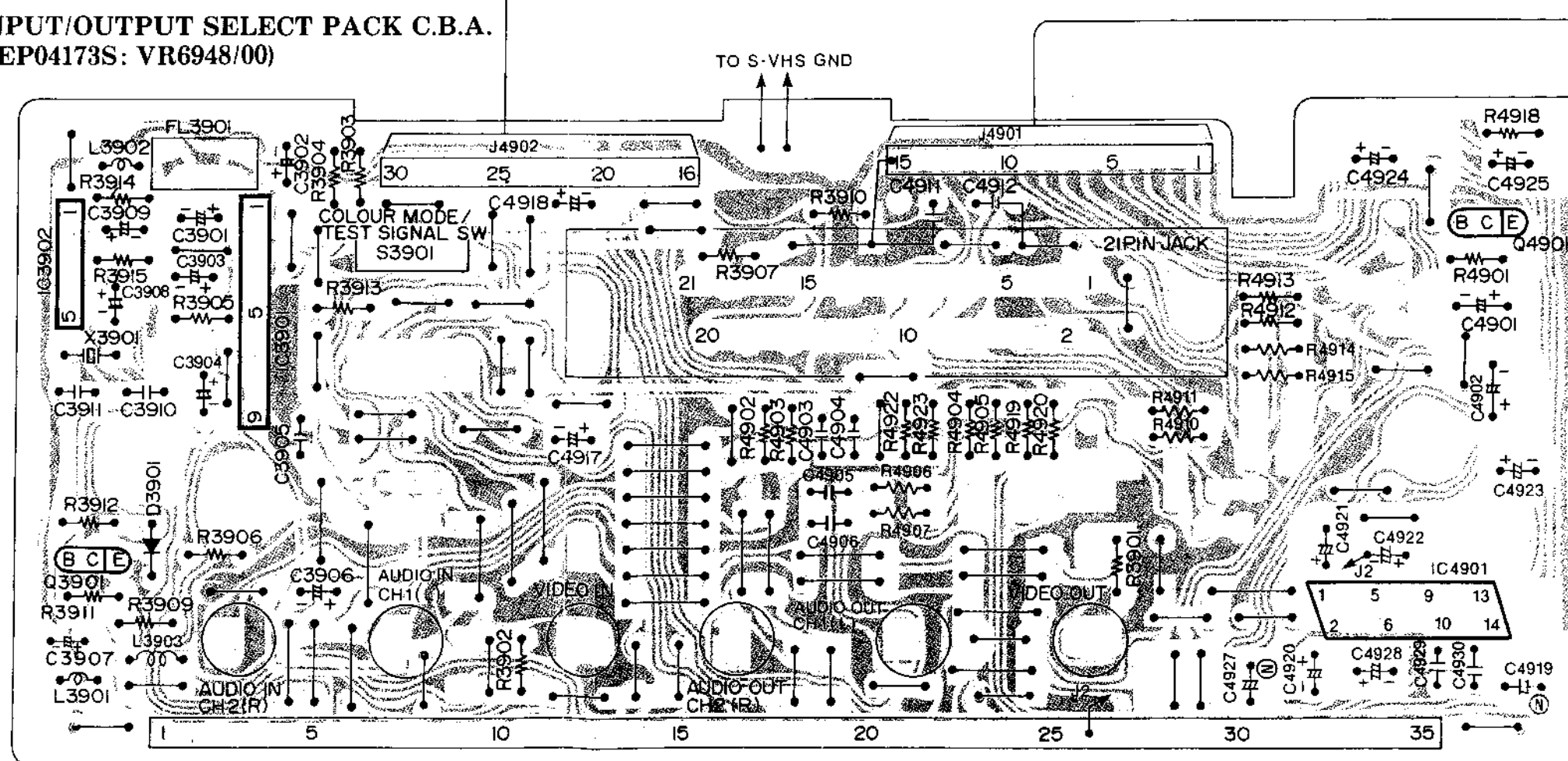
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK Δ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

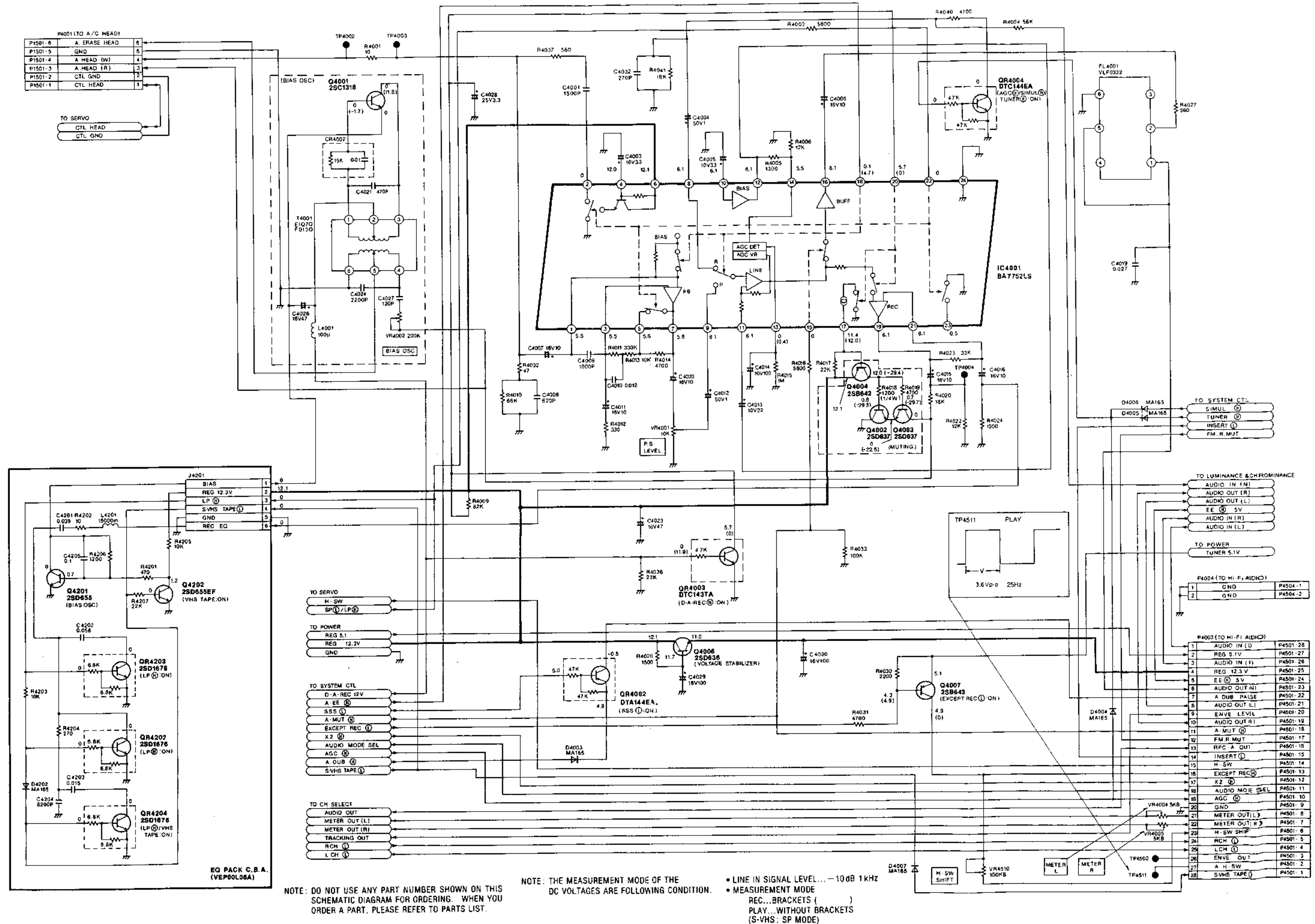
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

**SUB INPUT/OUTPUT
SELECT PACK C.B.A.**
(VEP04174H: VR6948/00)

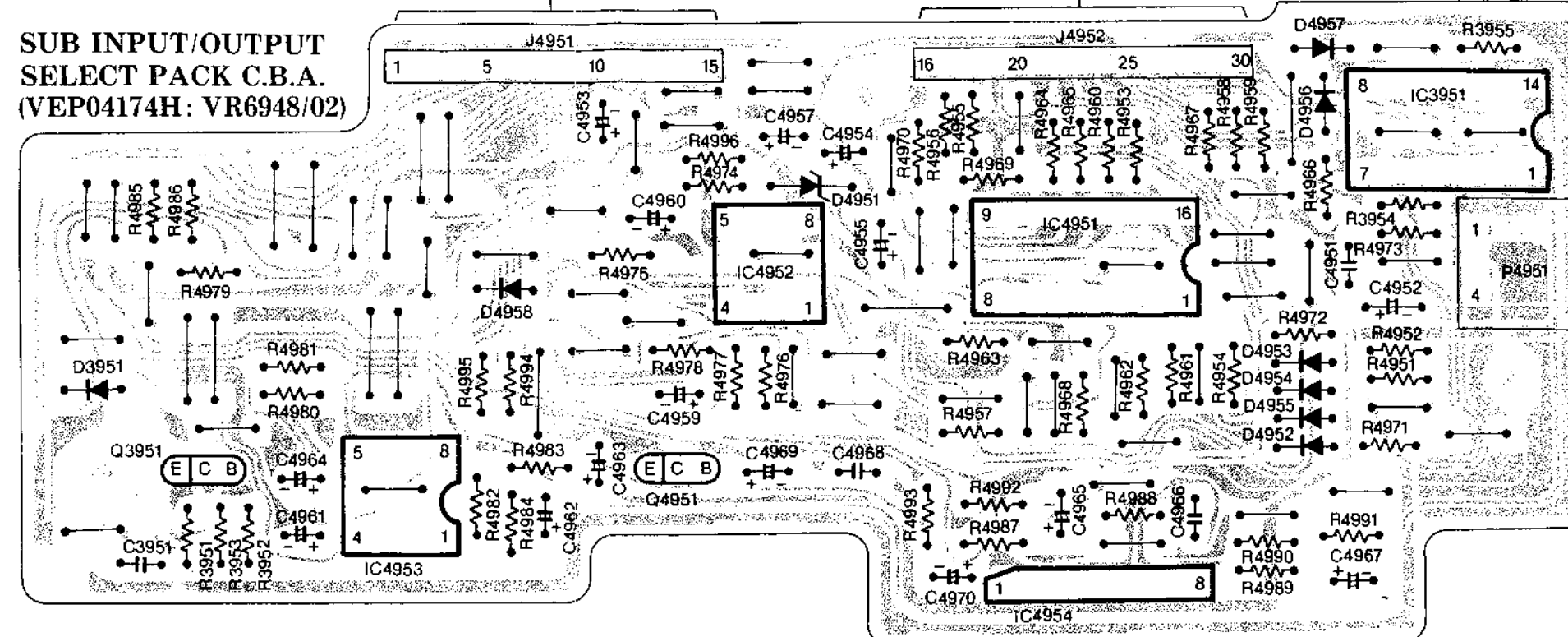


INPUT/OUTPUT SELECT PACK C.B.A.
(VEP04173S: VR6948/00)

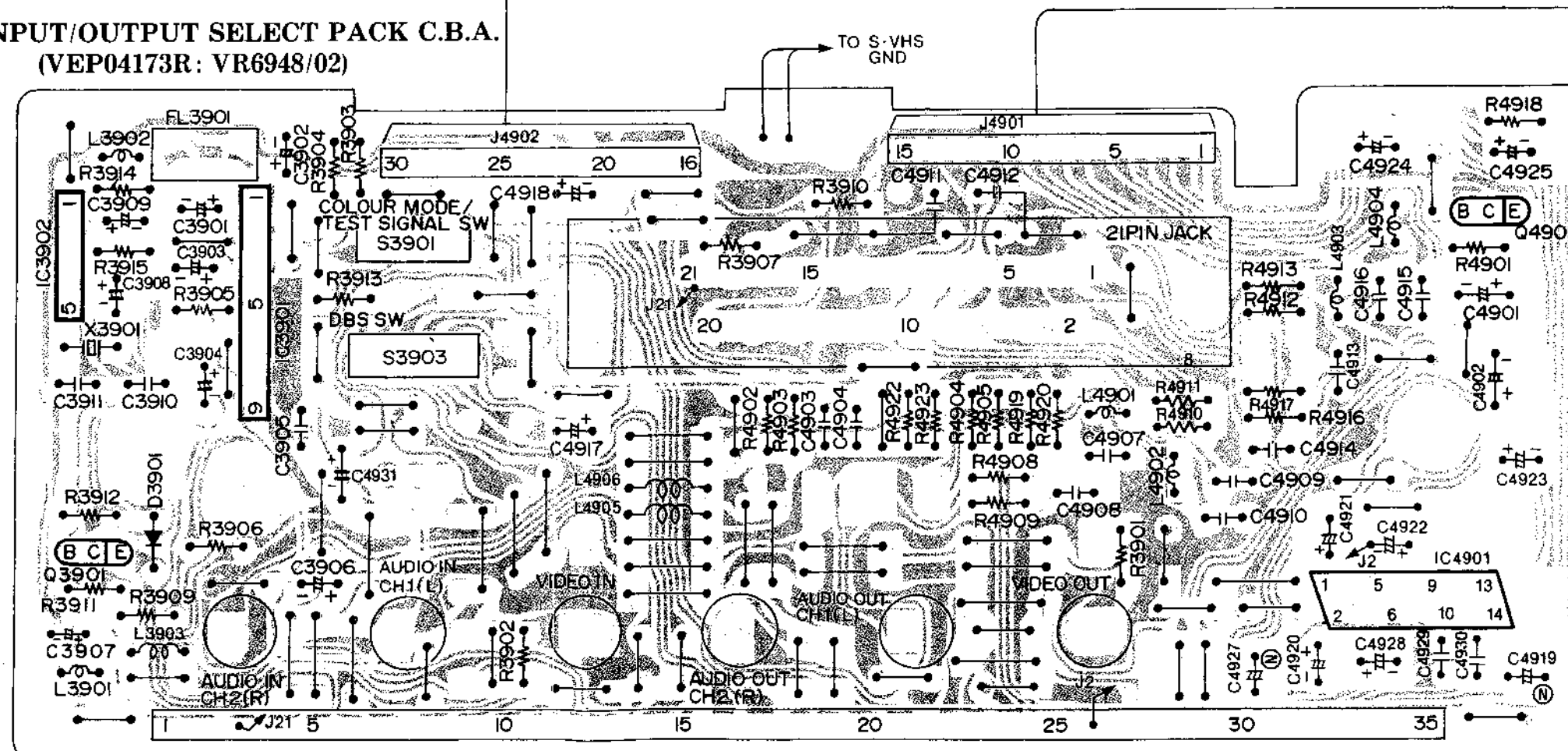


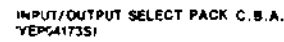


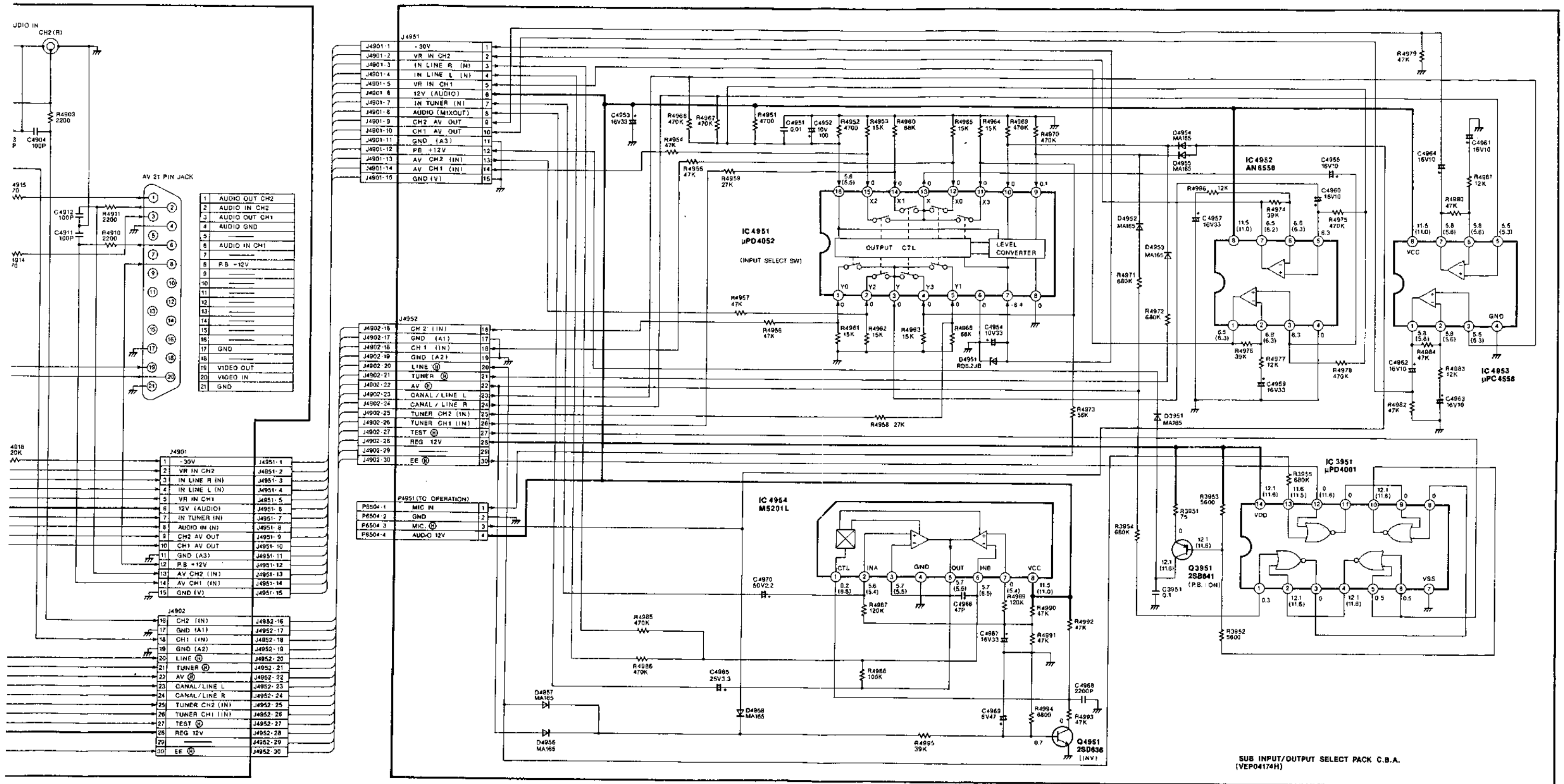
**SUB INPUT/OUTPUT
SELECT PACK C.B.A.
(VEP04174H: VR6948/02)**



**INPUT/OUTPUT SELECT PACK C.B.A.
(VEP04173R: VR6948/02)**





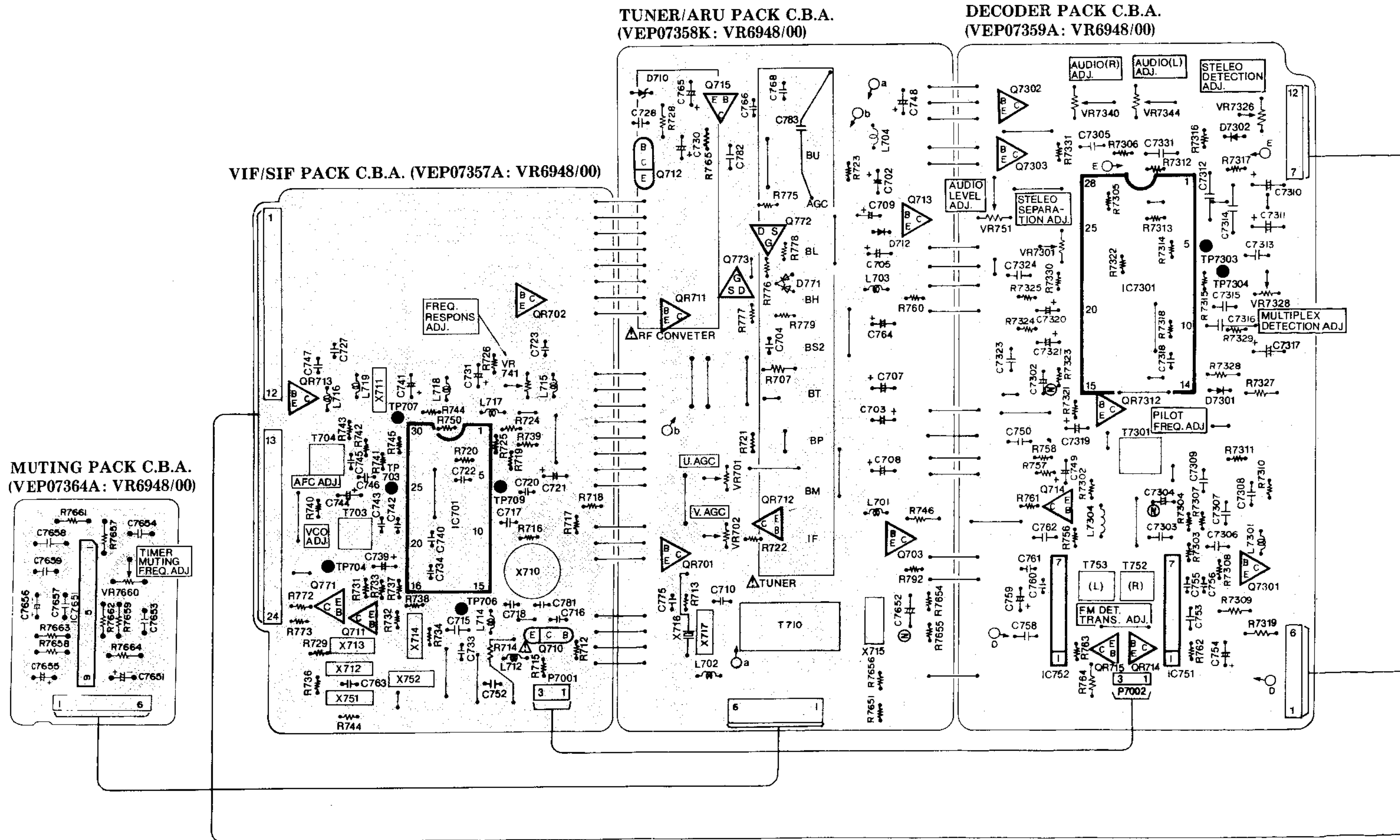


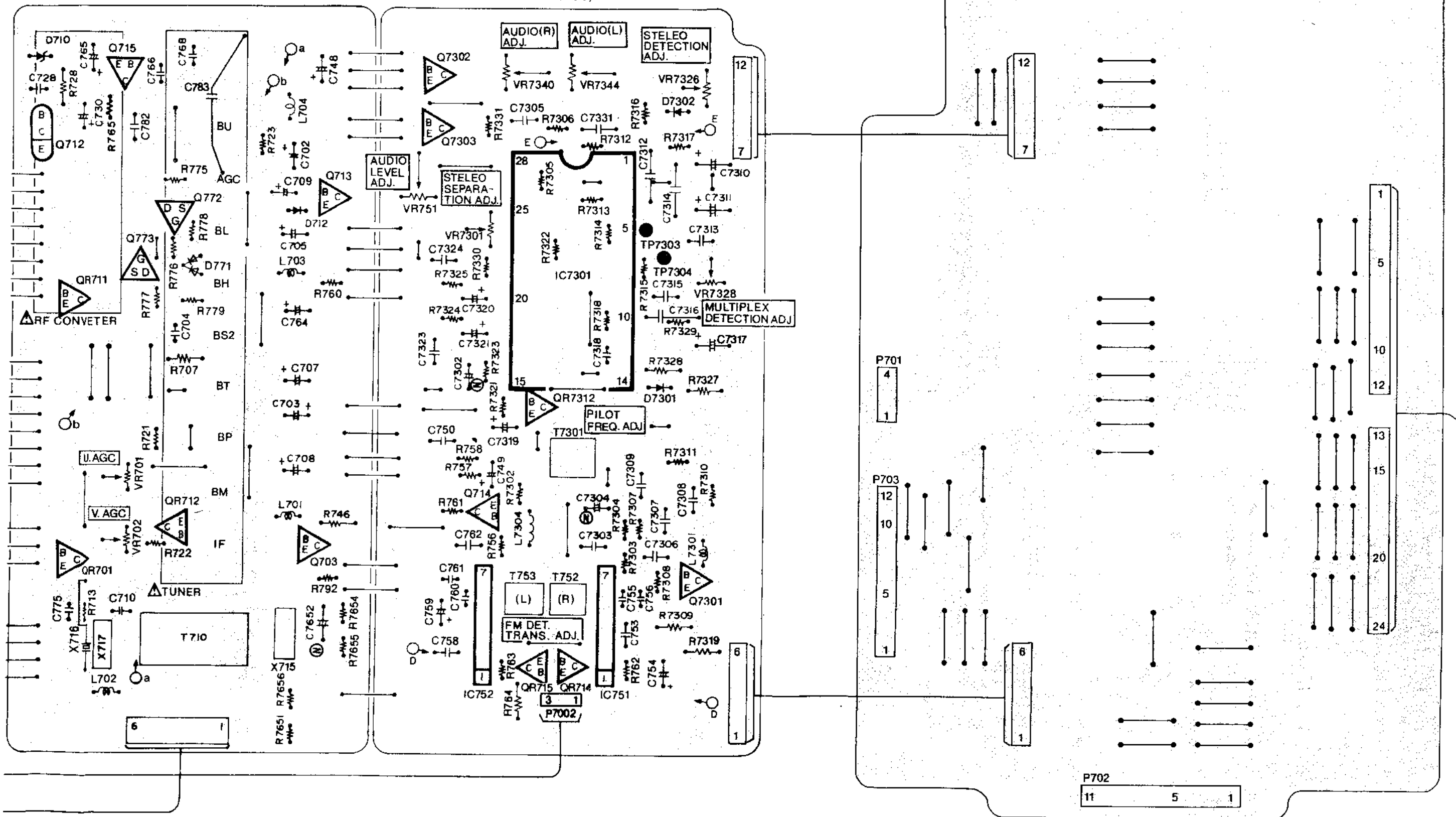
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

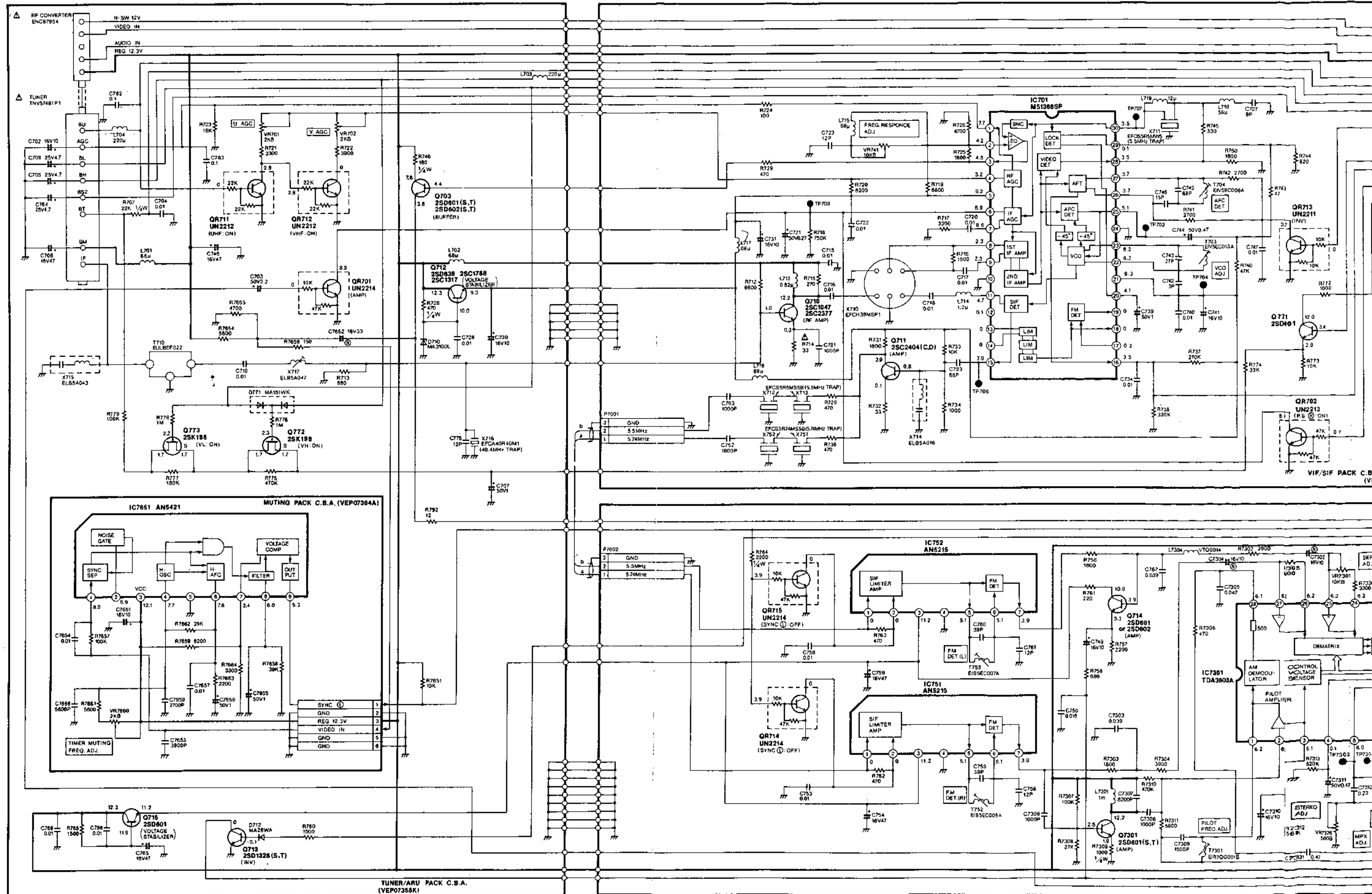
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL (S-VHS: SP MODE). THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL (S-VHS: SP MODE).

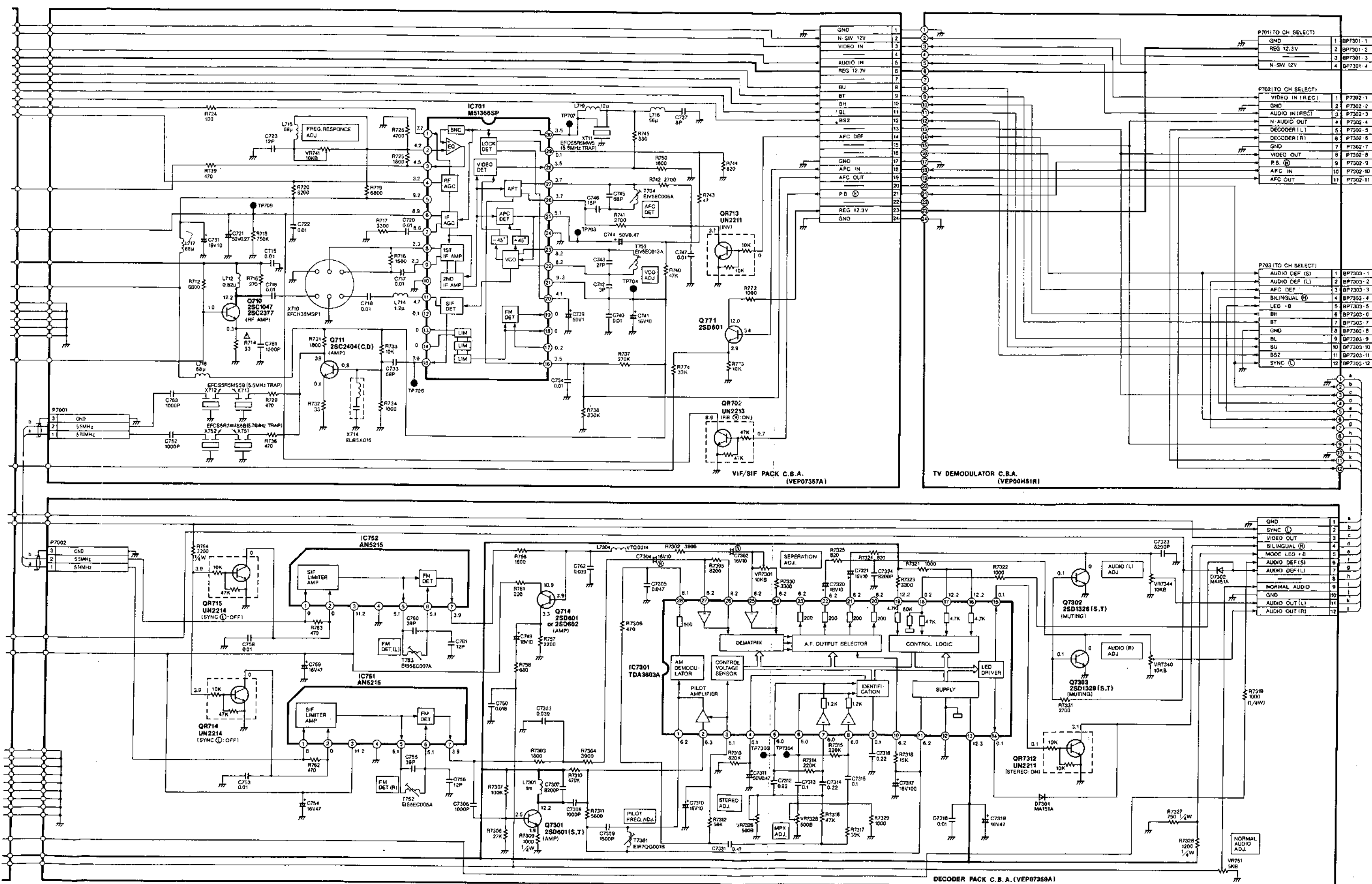
					
L701,0	4822 157 52085		R733	4822 116 81117	CHIP 10 kΩ
L703,0	4822 157 52163		R734	4822 111 91516	CHIP 1 kΩ
L712	4822 157 60008		R736	4822 116 90446	CHIP 470
L714	4822 157 60009		R737	4822 116 81403	CHIP 270 kΩ
L715	4822 157 52085		R738	4822 116 90345	CHIP 330 kΩ
L716	4822 157 51986		R739	4822 116 90446	CHIP 470
L717,1	4822 157 52085		R740	4822 111 91661	CHIP 47 kΩ
L719	4822 157 52083		R741	4822 111 91449	CHIP 2.7 kΩ
L7301	4822 157 51979		R742	4822 111 91449	CHIP 2.7 kΩ
L7304	4822 157 51974		R743	4822 116 81424	CHIP 47
			R744	4822 116 81034	CHIP 820
Q703	4822 130 42669	2SD601	R745	4822 111 91501	CHIP 330
Q710	4822 130 42258	2SC2377	R746	4822 116 52213	CHIP 180
Q711	4822 130 42468	2SC2404	R750	4822 116 81383	CHIP 1.8 kΩ
Q712	4822 130 41324	2SD638	R756	4822 116 81383	CHIP 1.8 kΩ
Q713	4822 130 42668	2SD1328	R757	4822 111 91522	CHIP 2.2 kΩ
Q714	4822 130 42669	2SD601	R758	4822 116 90463	CHIP 680
Q715	4822 130 42669	2SD601	R760	4822 111 91516	CHIP 1 kΩ
Q771	4822 130 42669	2SD601	R761	4822 116 90339	CHIP 220
Q772	4822 130 60345	2SK198	R762	4822 116 90446	CHIP 470
Q773	4822 130 60345	2SK198	R763	4822 116 90446	CHIP 470
Q7301	4822 130 42669	2SD601	R764	4822 116 52256	CHIP 2.2 kΩ
Q7302	4822 130 42668	2SD1328	R765	4822 116 90458	CHIP 1.5 kΩ
Q7303	4822 130 42668	2SD1328	R772	4822 111 91516	CHIP 1 kΩ
QR701	4822 130 61488	UN2214	R773	4822 116 81117	CHIP 10 kΩ
QR702	4822 111 90815	UN2213	R774	4822 116 81017	CHIP 33 kΩ
QR711	4822 111 90814	UN2212	R775	4822 116 90447	CHIP 470 kΩ
QR712	4822 111 90814	UN2212	R776	4822 111 91651	CHIP 1M
QR713	4822 111 91224	UN2211	R777	4822 116 90443	CHIP 180 kΩ
QR714	4822 130 61488	UN2214	R778	4822 111 91651	CHIP 1M
QR715	4822 130 61488	UN2214	R779	4822 111 91518	CHIP 100 kΩ
QR7312	4822 111 91224	UN2211	R792	4822 116 81422	CHIP 12
			R7302	4822 111 91527	CHIP 3.9 kΩ
R707	4822 116 52257	CHIP 22 kΩ	R7303	4822 116 81383	CHIP 1.8 kΩ
R712	4822 116 90464	CHIP 6.8 kΩ	R7304	4822 111 91527	CHIP 3.9 kΩ
R713	4822 116 90463	CHIP 680	R7305	4822 111 91655	CHIP 8.2 kΩ
R714	4822 116 81417	CHIP. 2W 33	R7306	4822 116 90446	CHIP 470
R715	4822 116 80882	CHIP 270	R7307	4822 111 91518	CHIP 100 kΩ
R716	4822 116 90458	CHIP 1.5 kΩ	R7308	4822 116 90342	CHIP 27 kΩ
R717	4822 111 91526	CHIP 3.3 kΩ	R7309	4822 116 52204	CHIP 1 kΩ
R718	4822 116 81425	CHIP 750 kΩ	R7310	4822 116 90447	CHIP 470 kΩ
R719	4822 116 90464	CHIP 6.8 kΩ	R7311	4822 111 91535	CHIP 5.6 kΩ
R720	4822 111 91655	CHIP 8.2 kΩ	R7312	4822 111 91535	CHIP 56 kΩ
R721	4822 111 91526	CHIP 3.3 kΩ	R7313	4822 116 90348	CHIP 820 kΩ
R722	4822 111 91527	CHIP 3.9 kΩ	R7314	4822 116 80881	CHIP 220 kΩ
R723	4822 111 91521	CHIP 180 kΩ	R7315	4822 116 80881	CHIP 220 kΩ
R724	4822 116 90441	CHIP 100	R7316	4822 111 91661	CHIP 47 kΩ
R725	4822 116 81383	CHIP 1.8 kΩ	R7317	4822 116 90445	CHIP 39 kΩ
R726	4822 111 91532	CHIP 4.7 kΩ	R7318	4822 111 91498	CHIP 15 kΩ
R728	4822 116 52224	CHIP 470	R7319	4822 116 52204	CHIP 1 kΩ
R729	4822 116 90446	CHIP 470	R7321	4822 111 91516	CHIP 1 kΩ
R731	4822 116 81383	CHIP 1.8 kΩ	R7322	4822 111 91516	CHIP 1 kΩ
R732	4822 116 81423	CHIP 33	R7323	4822 111 91526	CHIP 3.3 kΩ
			R7324	4822 116 81034	CHIP 820
			R7325	4822 116 81034	CHIP 820
			R7327	4822 116 81414	CHIP 750
			R7328	4822 116 52207	CHIP 1.2 kΩ
			R7329	4822 111 91516	CHIP 1 kΩ
			R7330	4822 111 91526	CHIP 3.3 kΩ
			R7331	4822 111 91449	CHIP 2.7 kΩ

					
R7651	4822 116 81117	CHIP 10 kΩ	T703	4822 156 11114	TRANSFORMER
R7654	4822 111 91535	CHIP 5.6 kΩ	T704	4822 156 11113	TRANSFORMER
R7655	4822 111 91532	CHIP 4.7 kΩ	T710	4822 242 72494	FILTER
R7656	4822 116 80879	CHIP 150	T7301	4822 142 40296	IF TRANSFORMER
R7657	4822 116 52234	CHIP 100 kΩ	T752	4822 156 11111	TRANSFORMER
R7658	4822 116 52277	CHIP 39 kΩ	T753	4822 156 11112	TRANSFORMER
R7659	4822 116 52303	CHIP 8.2 kΩ			
R7661	4822 116 52289	CHIP 5.6 kΩ	X710	4822 242 72487	SAW FILTER
R7662	4822 116 52277	CHIP 39 kΩ	X711	4822 242 72489	FILTER
R7663	4822 116 52256	CHIP 2.2 kΩ	X712	4822 242 72488	FILTER
R7664	4822 116 52269	CHIP 3.3 kΩ	X713	4822 242 72488	FILTER
			X714	4822 242 70908	FILTER
VR701	4822 101 30603	V.RES 2 kΩ	X715	4822 242 72492	FILTER
VR702	4822 101 30603	V.RES 2 kΩ	X716	4822 242 72486	FILTER
VR741	4822 100 10845	V.RES 10 kΩ	X717	4822 242 72493	FILTER
VR751	4822 101 30605	V.RES 5 kΩ			
VR7301	4822 100 10726	V.RES 10 kΩ			
VR7326	4822 101 30606	V.RES 500			
VR7328	4822 101 30595	V.RES 500			
VR7340	4822 101 30604	V.RES 10 kΩ			
VR7344	4822 101 30604	V.RES 10 kΩ			
VR7660	4822 100 10736	V.RES 2 kΩ			



TUNER/ARU PACK C.B.A.
(VEP07358K: VR6948/00)
DECODER PACK C.B.A.
(VEP07359A: VR6948/00)


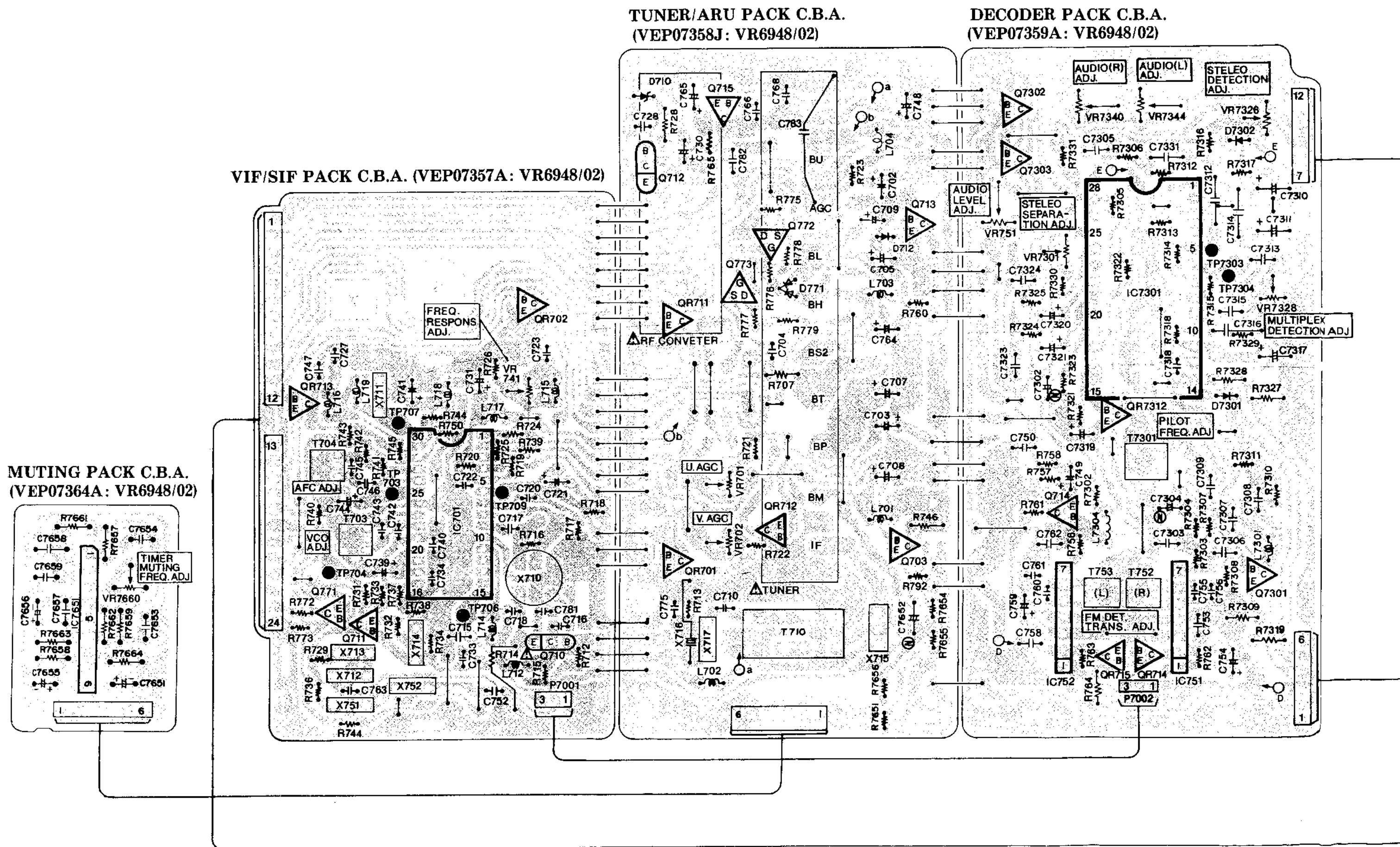


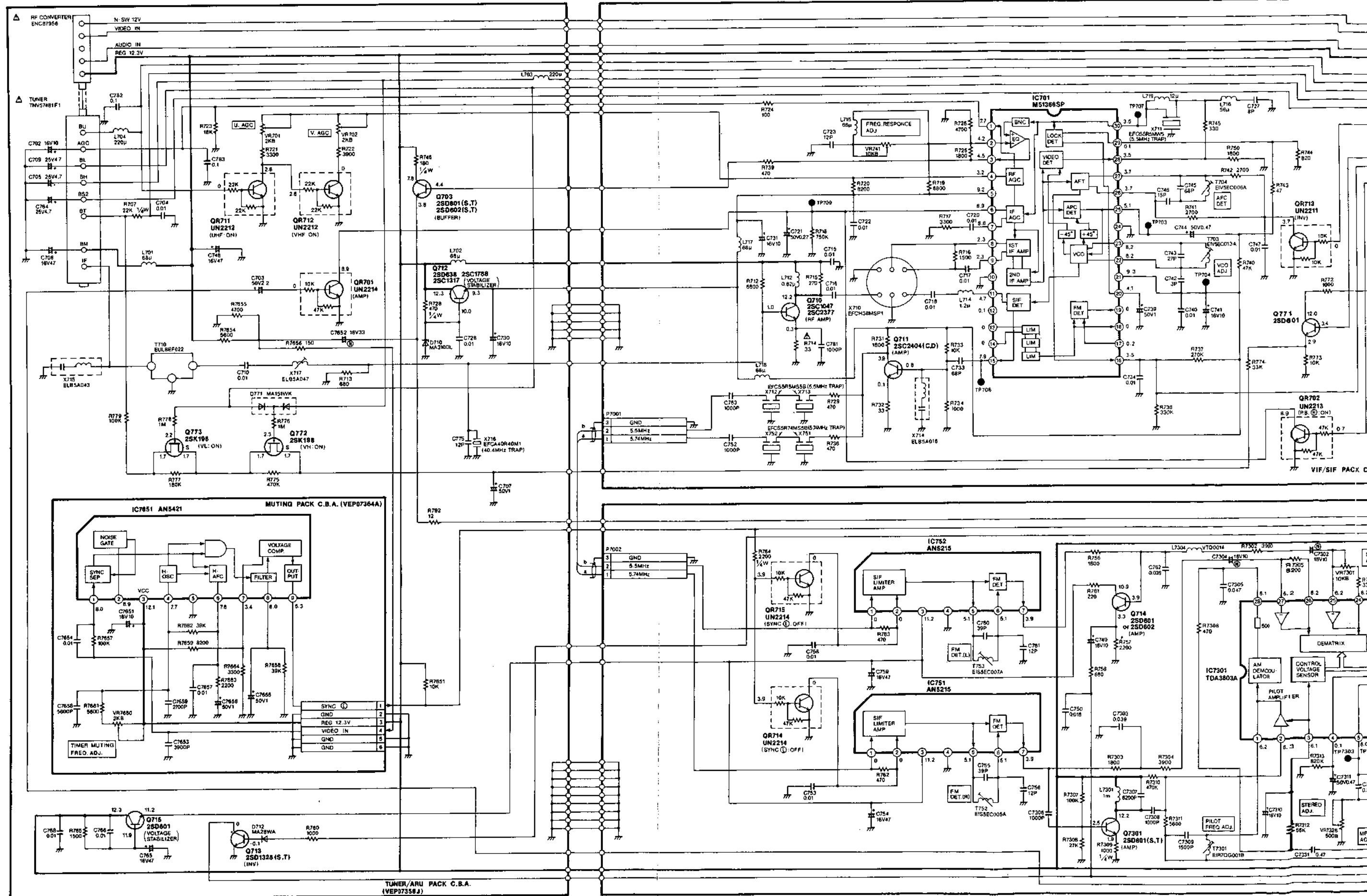


NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

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

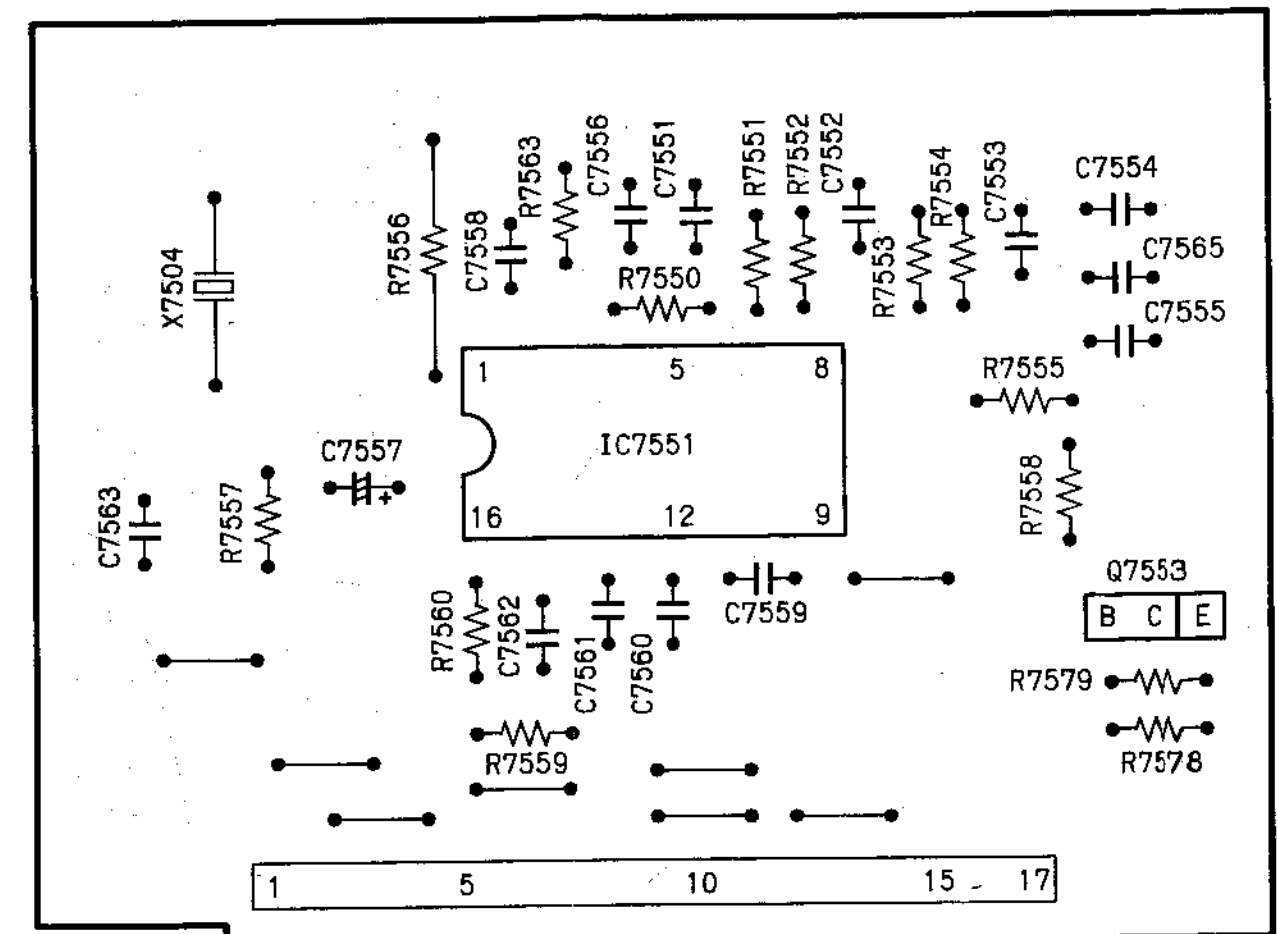
IMPORTANT SAFETY NOTICE: COMPONENTS IDENTIFIED WITH THE MARK  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.



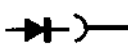


NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

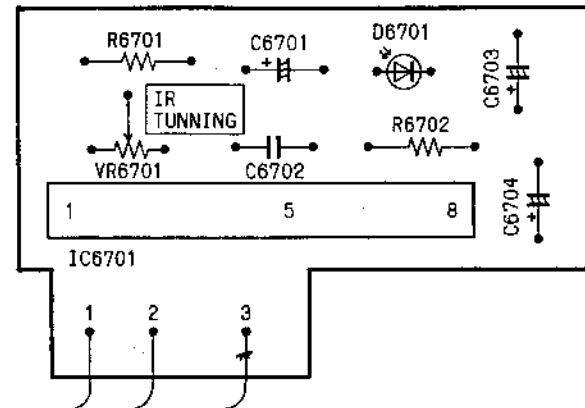
NOTE: DO NOT USE ANY PART NUMBER SI
SCHEMATIC DIAGRAM FOR ORDERING
ORDER A PART, PLEASE REFER TO P



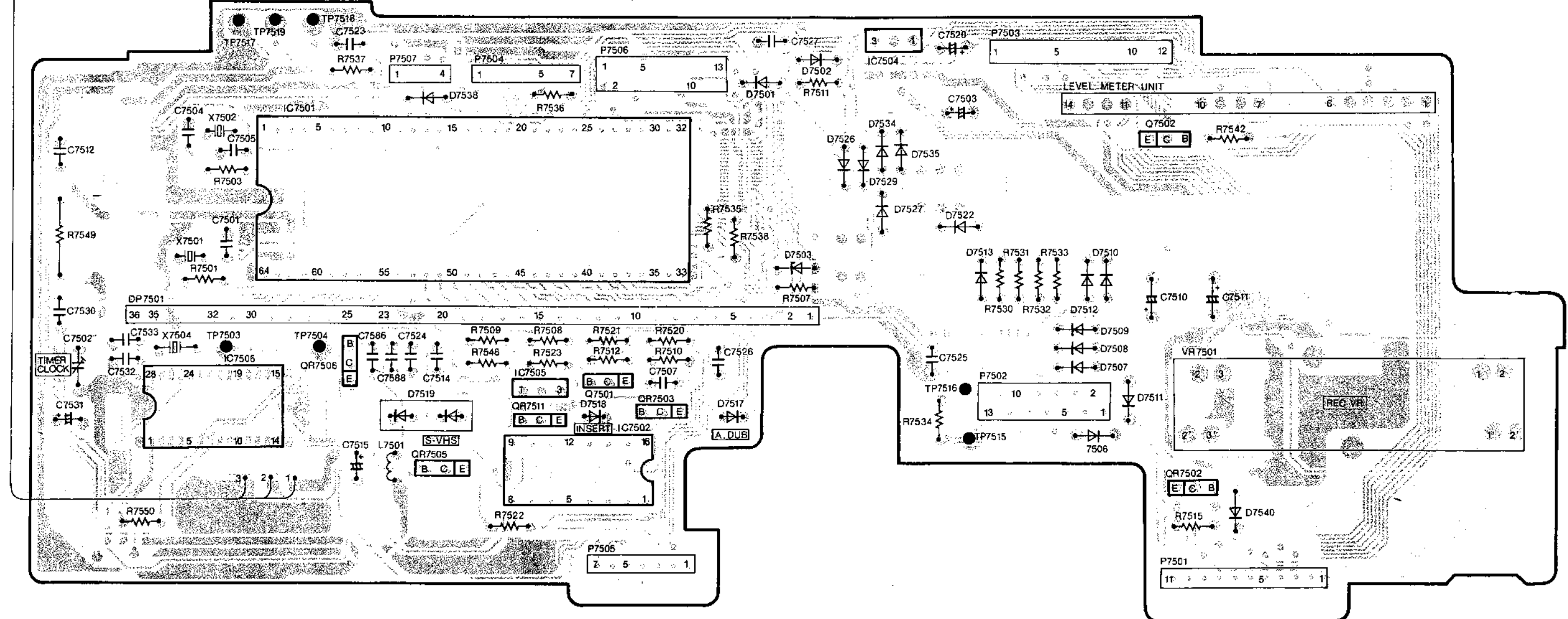
Timer circuit board assembly

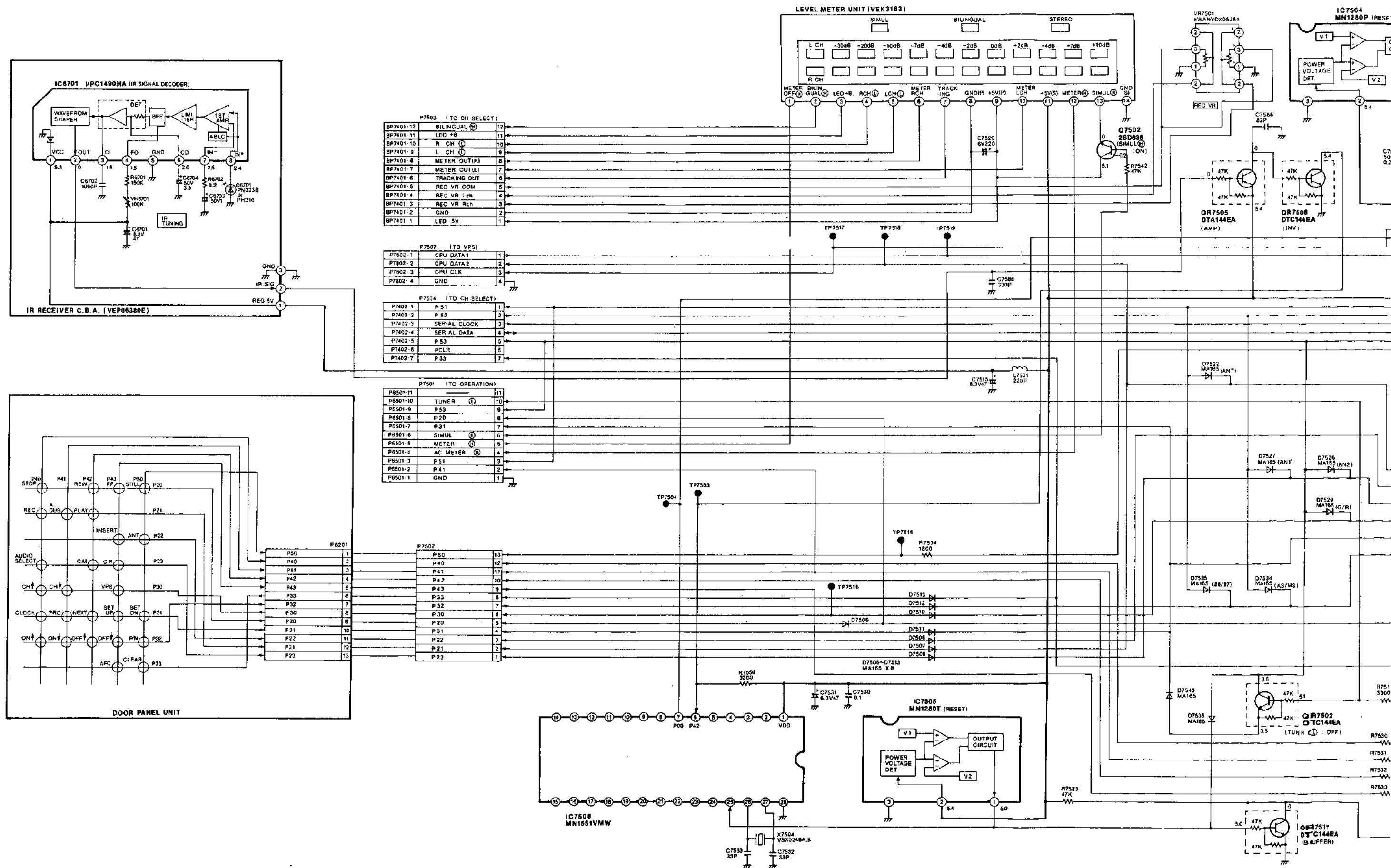
 P7501 4822 265 40853 CONNECTOR 11P P7502 4822 267 50911 CONNECTOR P7503 4822 265 40854 CONNECTOR 12P P7504, 4822 265 20268 CONNECTOR 7P P7506 4822 267 50909 CONNECTOR P7507 4822 265 30697 CONNECTOR 4P	 D6701 4822 130 81391 PN323B D7501 4822 130 81365 11ES1 D7502 4822 130 32362 MA165 D7503 4822 130 33284 MA4075 D7506 4822 130 32362 MA165 D7507 4822 130 32362 MA165 D7508 4822 130 32362 MA165 D7509 4822 130 32362 MA165 D7510 4822 130 32362 MA165 D7511 4822 130 32362 MA165 D7512 4822 130 32362 MA165 D7513 4822 130 32362 MA165 D7517 4822 130 81383 LN28RCPP D7518 4822 130 81383 LN28RCPP D7519 4822 130 81382 LN023234P2 D7522 4822 130 32362 MA165 D7526 4822 130 32362 MA165 D7527 4822 130 32362 MA165 D7529 4822 130 32362 MA165 D7534 4822 130 32362 MA165 D7535 4822 130 32362 MA165 D7538 4822 130 32362 MA165 D7540 4822 130 32362 MA165	 R6701 4822 116 52245 C.RES. 150 kΩ R6702 4822 116 81415 C.RES. 8.2 R7501 4822 116 52207 C.RES. 1.2 kΩ R7503 4822 116 52258 C.RES. 220 kΩ R7507 4822 116 52234 C.RES. 100 kΩ R7508 4822 116 52195 C.RES. 47 R7509 4822 116 52204 C.RES. 1 kΩ R7510 4822 116 52257 C.RES. 22 kΩ R7511 4822 116 52284 C.RES. 47 kΩ R7512 4822 116 52284 C.RES. 47 kΩ R7515 4822 116 52269 C.RES. 3.3 kΩ R7520 4822 116 52233 C.RES. 10 kΩ R7521 4822 116 52233 C.RES. 10 kΩ R7522 4822 116 52233 C.RES. 10 kΩ R7523 4822 116 52284 C.RES. 47 kΩ R7530 4822 116 52249 C.RES. 1.8 kΩ R7531 4822 116 52249 C.RES. 1.8 kΩ R7532 4822 116 52249 C.RES. 1.8 kΩ R7533 4822 116 52249 C.RES. 1.8 kΩ R7534 4822 116 52249 C.RES. 1.8 kΩ R7535 4822 116 52204 C.RES. 1 kΩ R7536 4822 116 52233 C.RES. 10 kΩ R7537 4822 116 52284 C.RES. 47 kΩ R7538 4822 116 52215 C.RES. 220 R7542 4822 116 52284 C.RES. 47 kΩ R7548 4822 116 52193 C.RES. 39 R7549 4822 116 81413 C.RES. 1/2W 8.2 R7550 4822 116 81416 C.RES. 3.3 kΩ
 X7501 4822 242 71693 CRYSTAL OSCILLATOR X7502 4822 242 70915 CRYSTAL OSCILLATOR X7504 4822 242 72484 CRYSTAL OSCILLATOR	 DP7501 4822 130 90649 VSL0113 Display	 VR6701 4822 101 10582 V.RES 100 kΩ VR7501 4822 101 30602 V.RES 50 kΩ
Miscellaneous 4822 255 40936 LED HOLDER 4822 532 61144 LED SPACER 4822 466 10571 REC VOLUME SLIDE PLA 4822 411 61592 REC VOLUME KNOB 4822 403 53734 LEVEL METER HOLDER 4822 403 53733 FIP HOLDER 4822 403 53732 REC VOLUME LEVER	 L7501 4822 157 52163	
 C6701 4822 124 21513 E.CAP 6.3V 47 μF C6702 4822 122 32197 C.CAP 50V 1000P C6703 4822 124 40839 E.CAP 50V 1 μF C6704 4822 124 21547 E.CAP 50V 3.3 μF C7501 4822 122 32296 C.CAP 50V 8P C7502 4822 125 60147 TRIMER 30P C7503 4822 124 40838 E.CAP 50V 0.22 μF C7504 4822 122 32216 C.CAP 50V 22P C7505 5322 122 32072 C.CAP 50V 33P C7507 4822 121 42179 P.CAP 50V 0.1 μF C7510 4822 124 21666 E.CAP 50V 22 μF C7511 4822 124 41004 E.CAP 6.3V 220 μF C7512 4822 121 42179 P.CAP 50V 0.1 μF C7514 4822 122 32247 C.CAP 50V 0.01 μF C7515 4822 124 21513 E.CAP 6.3V 47 μF C7520 4822 124 41004 E.CAP 6.3V 220 μF C7523 4822 122 32227 C.CAP 50V 68P C7524 4822 122 32457 C.CAP 50V 100P C7525 4822 122 32457 C.CAP 50V 100P C7526 4822 122 32457 C.CAP 50V 100P C7527 4822 122 32224 C.CAP 50V 56P C7530 4822 121 42179 P.CAP 50V 0.1 μF C7531 4822 124 21513 E.CAP 6.3V 47 μF C7532 5322 122 32072 C.CAP 50V 33P C7533 5322 122 32072 C.CAP 50V 33P C7586 4822 122 32231 C.CAP 50V 1000P C7588 4822 122 32308 C.CAP 50V 330P	 Q7501 4822 130 41323 2SD637 Q7502 4822 130 41605 2SD636 QR7502 4822 111 91319 UN1213 QR7503 4822 111 91222 UN1112 QR7505 4822 111 91318 UN1113 QR7506 4822 111 91319 UN1213 QR7511 4822 111 91319 UN1213	

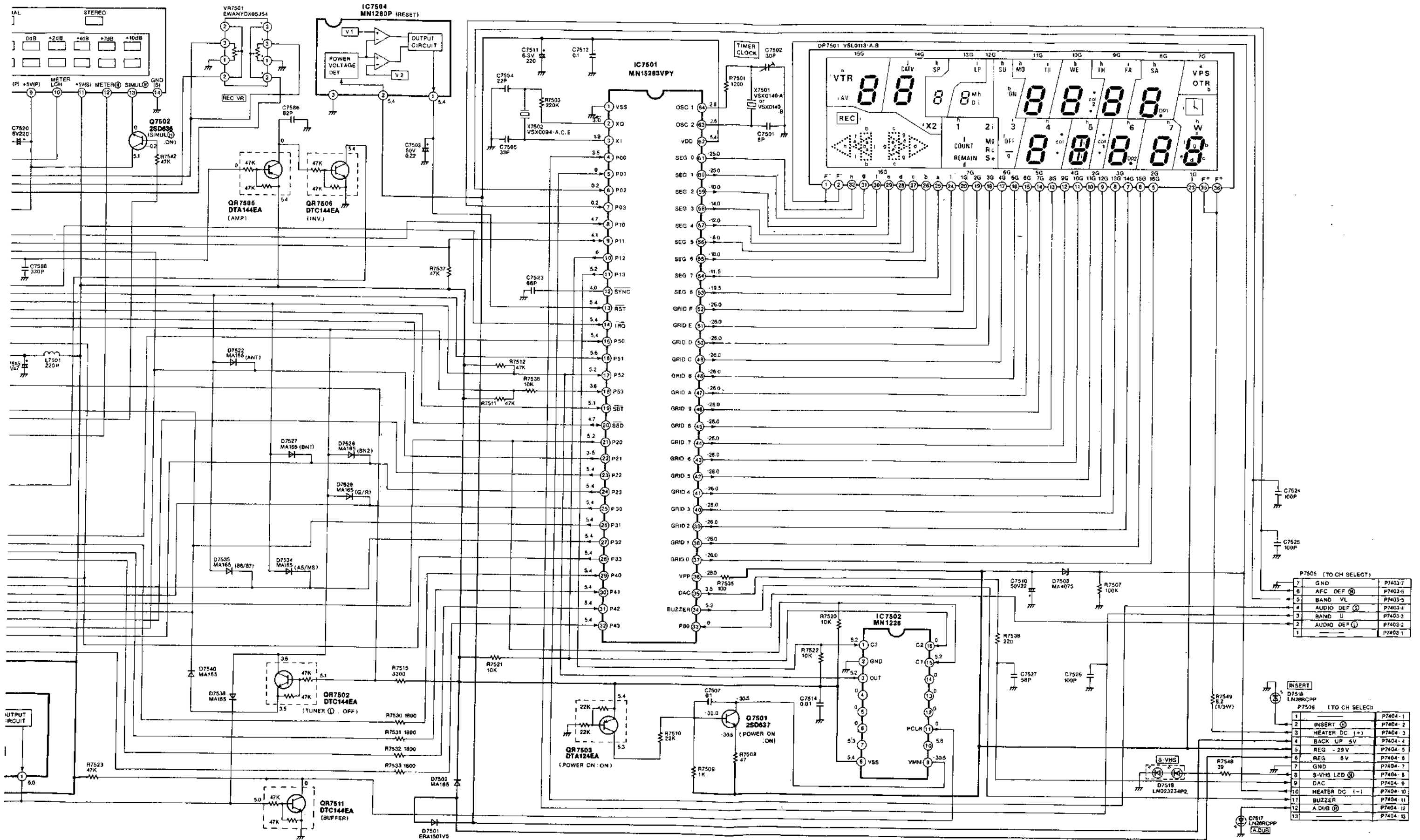
IR RECEIVER C.B.A. (VEP06380E)

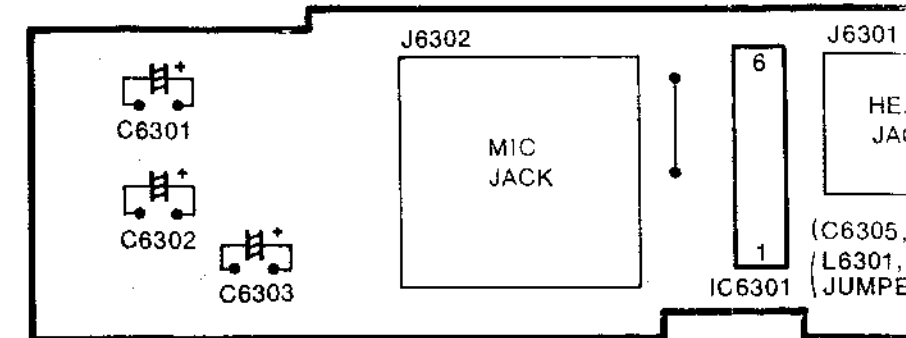


TIMER C.B.A. (VEP07545A)



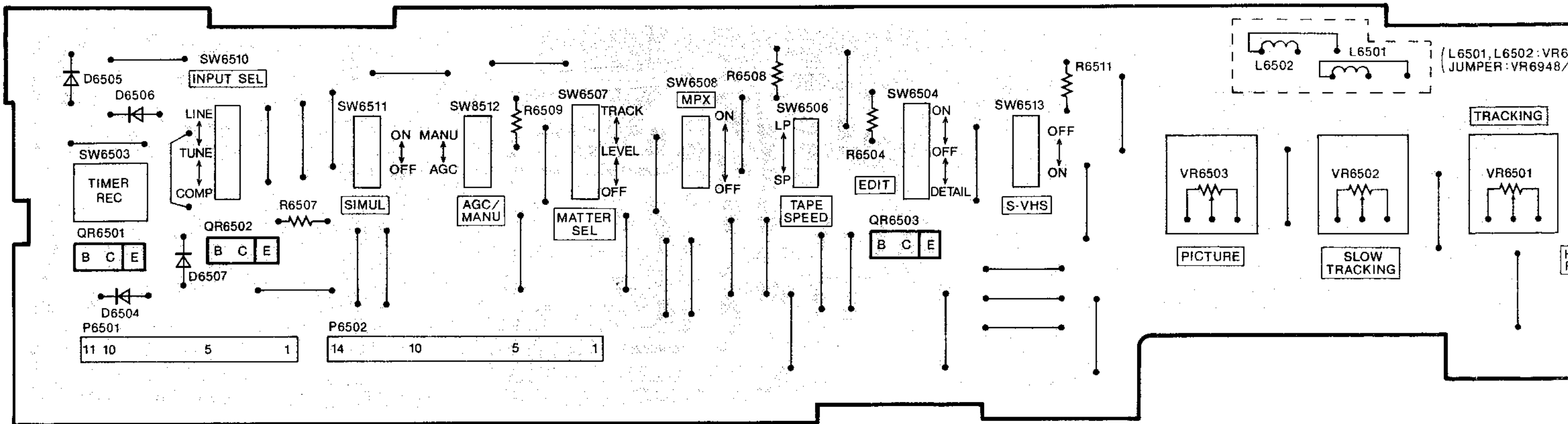


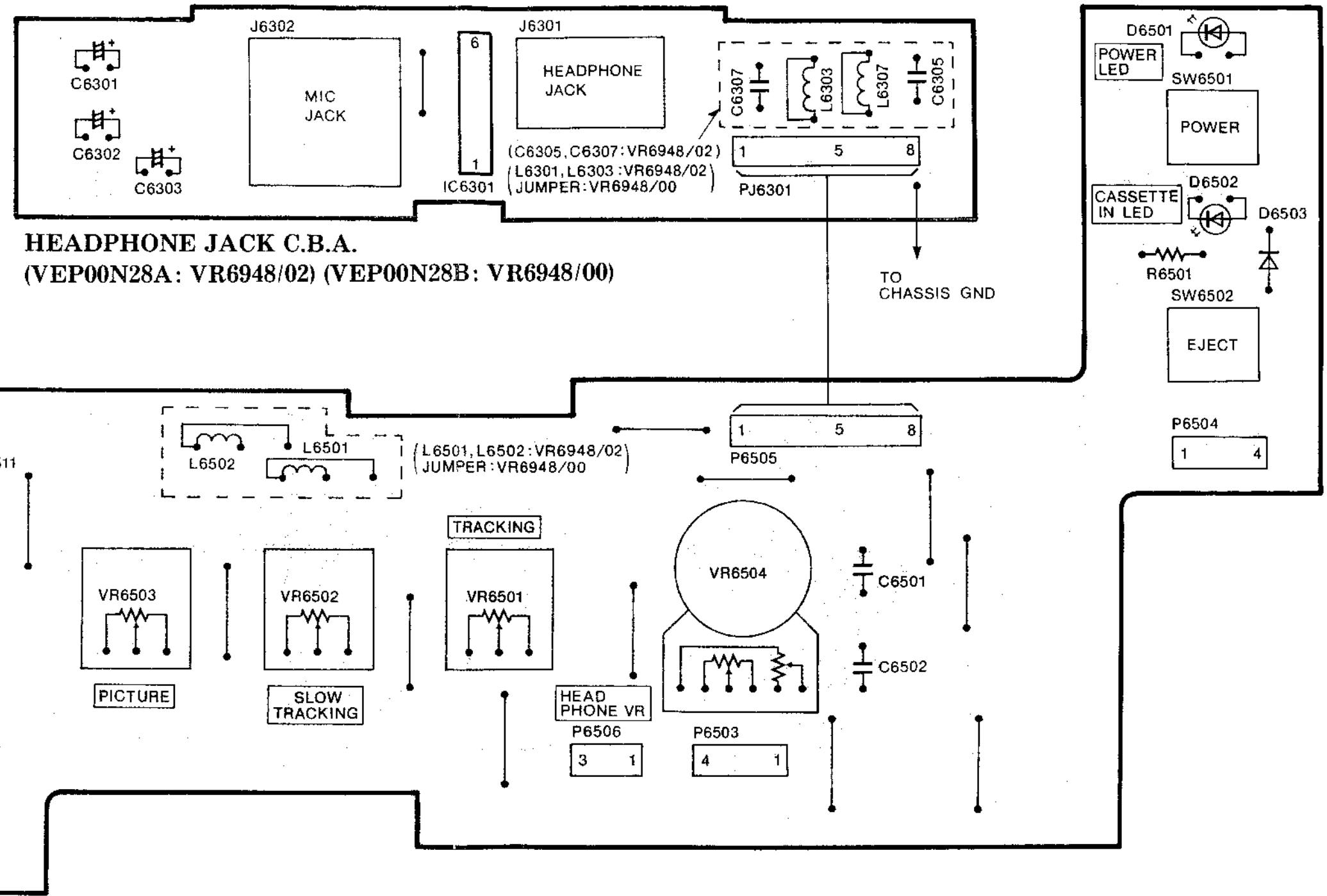




HEADPHONE JACK C.B.A.
(VEP00N28A: VR6948/02) (VEP00N28B: VR6948/00)

OPERATION C.B.A. (VEP06567A: VR6948/02) (VEP06567B: VR6948/00)





S-VHS Circuit board assembly

					
BP3408	4822 265 40855	CONNECTOR	C3211	4822 124 22828	E.CAP 16V 47 μ F
BP3410	4822 265 30692	CONNECTOR	C3212	4822 121 90053	S.CAP 16V 0.1 μ F
BP3411	4822 265 40861	CONNECTOR	C3213	4822 122 32247	C.CAP 50V 0.01 μ F
BP3412	4822 265 30693	CONNECTOR	C3214	4822 122 32247	C.CAP 50V 0.01 μ F
P1201	4822 267 40838	CONNECTOR	C3215	4822 122 32247	C.CAP 50V 0.01 μ F
P3101	4822 265 30688	CONNECTOR	C3301	4822 121 42166	P.CAP 50V 0.27 μ F
P3301	4822 265 30689	CONNECTOR	C3302	4822 124 21555	E.CAP 10V 220 μ F
P3401	4822 265 30688	CONNECTOR	C3303	4822 121 51461	P.CAP 50V 2700 pF
P3402	4822 265 30688	CONNECTOR	C3304	4822 124 40839	E.CAP 50V 1 μ F
P3403	4822 265 40858	CONNECTOR	C3305	4822 122 32213	C.CAP 50V 15 pF
P3404	4822 265 30387	CONNECTOR	C3306	4822 122 32224	C.CAP 50V 56 pF
P3405	4822 265 30429	CONNECTOR	C3307	4822 122 32213	C.CAP 50V 15 pF
P3407	4822 265 30687	CONNECTOR	C3311	4822 124 40834	E.CAP 25V 3.3 μ F
P3409	4822 265 40857	CONNECTOR	C3312	4822 124 40839	E.CAP 50V 1 μ F
P3802	4822 267 40837	CONNECTOR	C3313	4822 124 21524	E.CAP 50V 1 μ F
P3804	4822 267 50897	CONNECTOR	C3314	4822 124 22827	E.CAP 16V 33 μ F
P8301	4822 267 50902	CONNECTOR	C3315	4822 122 32247	C.CAP 50V 0.01 μ F
			C3316	4822 124 40839	E.CAP 50V 1 μ F
X3301	4822 242 72507	CRYSTAL OSCILLATOR	C3317	4822 124 40839	E.CAP 50V 1 μ F
			C3318	4822 122 32247	C.CAP 50V 0.01 μ F
C3101	4822 124 40834	E.CAP 25V 3.3 μ F	C3319	4822 122 32247	C.CAP 50V 0.01 μ F
C3102	4822 124 21513	E.CAP 6.3V 47 μ F	C3320	4822 121 42179	P.CAP 50V 0.1 μ F
C3103	4822 122 32247	C.CAP 50V 0.01 μ F	C3321	4822 124 22827	E.CAP 16V 33 μ F
C3104	4822 122 32247	C.CAP 50V 0.01 μ F	C3322	4822 122 32247	C.CAP 50V 0.01 μ F
C3105	4822 121 90053	S.CAP 16V 0.1 μ F	C3323	4822 122 32247	C.CAP 50V 0.01 μ F
C3107	4822 122 32224	C.CAP 50V 56 pF	C3324	0000 000 00000	
C3108	4822 122 32234	C.CAP 50V 1800 pF	C3325	0000 000 00000	
C3109	4822 124 21533	E.CAP 16V 10 μ F	C3326	4822 122 32247	C.CAP 50V 0.01 μ F
C3110	4822 122 32306	C.CAP 50V 82 pF	C3327	4822 122 32213	C.CAP 50V 15 pF
C3111	4822 124 21513	E.CAP 6.3V 47 μ F	C3328	4822 122 32247	C.CAP 50V 0.01 μ F
C3112	4822 122 32247	C.CAP 50V 0.01 μ F	C3330	4822 122 32247	C.CAP 50V 0.01 μ F
C3113	4822 122 32247	C.CAP 50V 0.01 μ F	C3401	4822 124 21513	E.CAP 6.3V 47 μ F
C3114	4822 122 32247	C.CAP 50V 0.01 μ F	C3402	4822 121 42179	P.CAP 50V 0.1 μ F
C3115	4822 122 32247	C.CAP 50V 0.01 μ F	C3403	4822 124 21513	E.CAP 6.3V 47 μ F
C3116	4822 121 90053	S.CAP 16V 0.1 μ F	C3404	4822 121 42262	P.CAP 50V 0.033 μ F
C3117	4822 122 32234	C.CAP 50V 1800 pF	C3405	4822 121 51458	P.CAP 50V 1000 pF
C3122	4822 122 32224	C.CAP 50V 56 pF	C3406	4822 124 22877	E.CAP 6.3V 220 μ F
C3124	4822 122 32205	C.CAP 50V 680 pF	C3407	4822 122 32247	C.CAP 50V 0.01 μ F
C3125	4822 122 32213	C.CAP 50V 15 pF	C3408	4822 124 40836	E.CAP 25V 4.7 μ F
C3126	0000 000 00000		C3409	0000 000 00000	
C3128	4822 122 32247	C.CAP 50V 0.01 μ F	C3410	0000 000 00000	
C3130	4822 122 32359	C.CAP 50V 27 pF	C3411	4822 121 42262	P.CAP 50V 0.033 μ F
C3134	4822 122 33949	C.CAP 50V 150 pF	C3412	0000 000 00000	
C3135	4822 122 33951	C.CAP 50V 180 pF	C3413	0000 000 00000	
C3136	4822 122 32359	C.CAP 50V 27 pF	C3414	4822 124 21513	E.CAP 6.3V 47 μ F
C3137	4822 122 32247	C.CAP 50V 0.01 μ F	C3415	4822 124 40836	E.CAP 25V 4.7 μ F
C3138	0000 000 00000		C3416	4822 124 40836	E.CAP 25V 4.7 μ F
C3139	4822 122 32247	C.CAP 50V 0.01 μ F	C3417	4822 124 21513	E.CAP 6.3V 47 μ F
C3143	4822 122 32247	C.CAP 50V 0.01 μ F	C3418	0000 000 00000	
C3145	4822 122 32235	C.CAP 50V 270 pF	C3419	4822 122 32437	C.CAP 50V 270 pF
C3201	4822 122 32359	C.CAP 50V 27 pF	C3420	4822 122 32437	C.CAP 50V 270 pF
C3202	4822 122 32247	C.CAP 50V 0.01 μ F	C3421	4822 122 32247	C.CAP 50V 0.01 μ F
C3203	4822 122 32209	C.CAP 50V 10 pF	C3422	4822 124 21513	E.CAP 6.3V 47 μ F
C3204	4822 122 32219	C.CAP 50V 39 pF	C3423	4822 122 32437	C.CAP 50V 270 pF
C3205	4822 122 32247	C.CAP 50V 0.01 μ F	C3424	0000 000 00000	
C3206	4822 122 32247	C.CAP 50V 0.01 μ F	C3425	4822 122 32306	C.CAP 50V 82 pF
C3207	4822 124 21536	E.CAP 50V 2.2 μ F	C3426	4822 122 32437	C.CAP 50V 270 pF
C3208	4822 122 32308	C.CAP 50V 330 pF	C3427	4822 122 32437	C.CAP 50V 270 pF
C3209	4822 124 21536	E.CAP 50V 2.2 μ F	C3428	4822 122 32247	C.CAP 50V 0.01 μ F
C3210	0000 000 00000		C3429	0000 000 00000	
			C3430	0000 000 00000	
			C3431	4822 124 21513	E.CAP 6.3V 47 μ F
			C3432	4822 121 42179	P.CAP 50V 0.1 μ F
			C3433	4822 124 21513	E.CAP 6.3V 47 μ F
			C3435	4822 124 21513	E.CAP 6.3V 47 μ F

					
R3745	4822 116 90446	CHIP 470	R3925	4822 111 91516	CHIP 1 kΩ
R3747	4822 111 91522	CHIP 2.2 kΩ	R3926	4822 111 91516	CHIP 1 kΩ
R3750	4822 111 91526	CHIP 3.3 kΩ	R3927	4822 116 90446	CHIP 470
R3753	4822 111 91533	CHIP 560	R3928	4822 111 91533	CHIP 560
R3754	4822 111 91533	CHIP 560	R3929	4822 111 91533	CHIP 560
R3755	4822 111 91535	CHIP 5.6 kΩ	R3930	4822 111 91501	CHIP 330
R3756	4822 111 91535	CHIP 5.6 kΩ	R3931	4822 116 81117	CHIP 10 kΩ
R3757	4822 111 91516	CHIP 1 kΩ	R3932	4822 111 91655	CHIP 8.2 kΩ
R3763	4822 111 91527	CHIP 3.9 kΩ	R3933	4822 111 91522	CHIP 2.2 kΩ
R3768	4822 116 90458	CHIP 1.5 kΩ	R3934	4822 116 52271	C.RES 33 kΩ
R3769	4822 111 91516	CHIP 1 kΩ	R8301	4822 111 91516	CHIP 1 kΩ
R3770	4822 116 81117	CHIP 10 kΩ	R8302	4822 111 91516	CHIP 1 kΩ
R3801	4822 116 81378	C.RES 1/2W 47	R8303	4822 111 91655	CHIP 8.2 kΩ
R3802	4822 111 91501	CHIP 330	R8304	4822 111 91655	CHIP 8.2 kΩ
R3803	4822 116 81117	CHIP 10 kΩ	R8305	4822 111 91527	CHIP 3.9 kΩ
R3804	4822 111 91522	CHIP 2.2 kΩ	R8306	4822 111 91655	CHIP 8.2 kΩ
R3805	4822 111 91516	CHIP 1 kΩ	R8307	4822 111 91516	CHIP 1 kΩ
R3806	4822 111 91516	CHIP 1 kΩ	R8309	4822 111 91532	CHIP 4.7 kΩ
R3807	4822 111 91516	CHIP 1 kΩ	R8310	4822 111 91516	CHIP 1 kΩ
R3808	4822 116 52206	C.RES 120	R8315	4822 116 81017	CHIP 33 kΩ
R3809	4822 116 90467	CHIP 22Ω	R8316	4822 116 90443	CHIP 180 kΩ
R3811	4822 111 91532	CHIP 4.7 kΩ	R8317	4822 116 90458	CHIP 1.5 kΩ
R3812	4822 111 91532	CHIP 4.7 kΩ	R8318	4822 116 80879	CHIP 150
R3813	4822 116 90445	CHIP 39 kΩ	R8319	4822 111 91526	CHIP 3.3 kΩ
R3814	4822 111 91521	CHIP 180 kΩ	R8320	4822 111 91516	CHIP 1 kΩ
R3815	4822 116 80881	CHIP 220 kΩ	R8321	4822 116 90447	CHIP 470 kΩ
R3816	4822 116 80881	CHIP 220 kΩ	R8322	4822 116 90447	CHIP 470 kΩ
R3817	4822 116 81403	CHIP 270 kΩ	R8323	4822 111 91523	CHIP 22 kΩ
R3818	4822 116 90442	CHIP 120 kΩ	R8326	4822 116 90345	CHIP 330 kΩ
R3819	4822 116 90442	CHIP 120 kΩ	R8327	4822 111 91532	CHIP 4.7 kΩ
R3821	4822 111 91526	CHIP 3.3 kΩ	R8328	4822 116 81117	CHIP 10 kΩ
R3822	4822 116 81382	CHIP 12 kΩ	R8329	4822 116 81117	CHIP 10 kΩ
R3823	4822 116 52219	C.RES 330	TH3901	4822 116 40155	THERMISTOR
R3901	4822 111 91516	CHIP 1 kΩ	TH3902	4822 116 40154	THERMISTOR 1 kΩ
R3902	4822 111 91532	CHIP 4.7 kΩ			
R3903	4822 111 91516	CHIP 1 kΩ			
R3904	4822 111 91516	CHIP 1 kΩ			
R3905	4822 116 90446	CHIP 470			
R3907	4822 116 81117	CHIP 10 kΩ			
R3908	4822 116 81117	CHIP 10 kΩ	VR3701	4822 100 10846	V.RES 20 kΩ
R3909	4822 116 81117	CHIP 10 kΩ	VR3703	4822 101 30599	V.RES 500
R3910	4822 116 81117	CHIP 10 kΩ	VR3707	4822 101 30597	V.RES 200
R3911	4822 111 91516	CHIP 1 kΩ	VR3708	4822 101 30598	V.RES 2 kΩ
R3912	4822 111 91516	CHIP 1 kΩ			
R3913	4822 116 90458	CHIP 1.5 kΩ			
R3914	4822 116 81382	CHIP 12 kΩ			
R3915	4822 111 91527	CHIP 3.9 kΩ			
R3916	4822 111 91522	CHIP 2.2 kΩ			
R3917	4822 111 91522	CHIP 2.2 kΩ			
R3918	4822 116 81034	CHIP 820			
R3919	4822 111 91516	CHIP 1 kΩ			
R3920	4822 116 90463	CHIP 680			
R3921	4822 111 91516	CHIP 1 kΩ			
R3922	4822 116 90463	CHIP 680			
R3924	4822 111 91522	CHIP 2.2 kΩ			

LUMINANCE & CHROMINANCE SEPARATION C.B.A. (VEP03541B)

(E)
C853
358

R820

Q804

C833

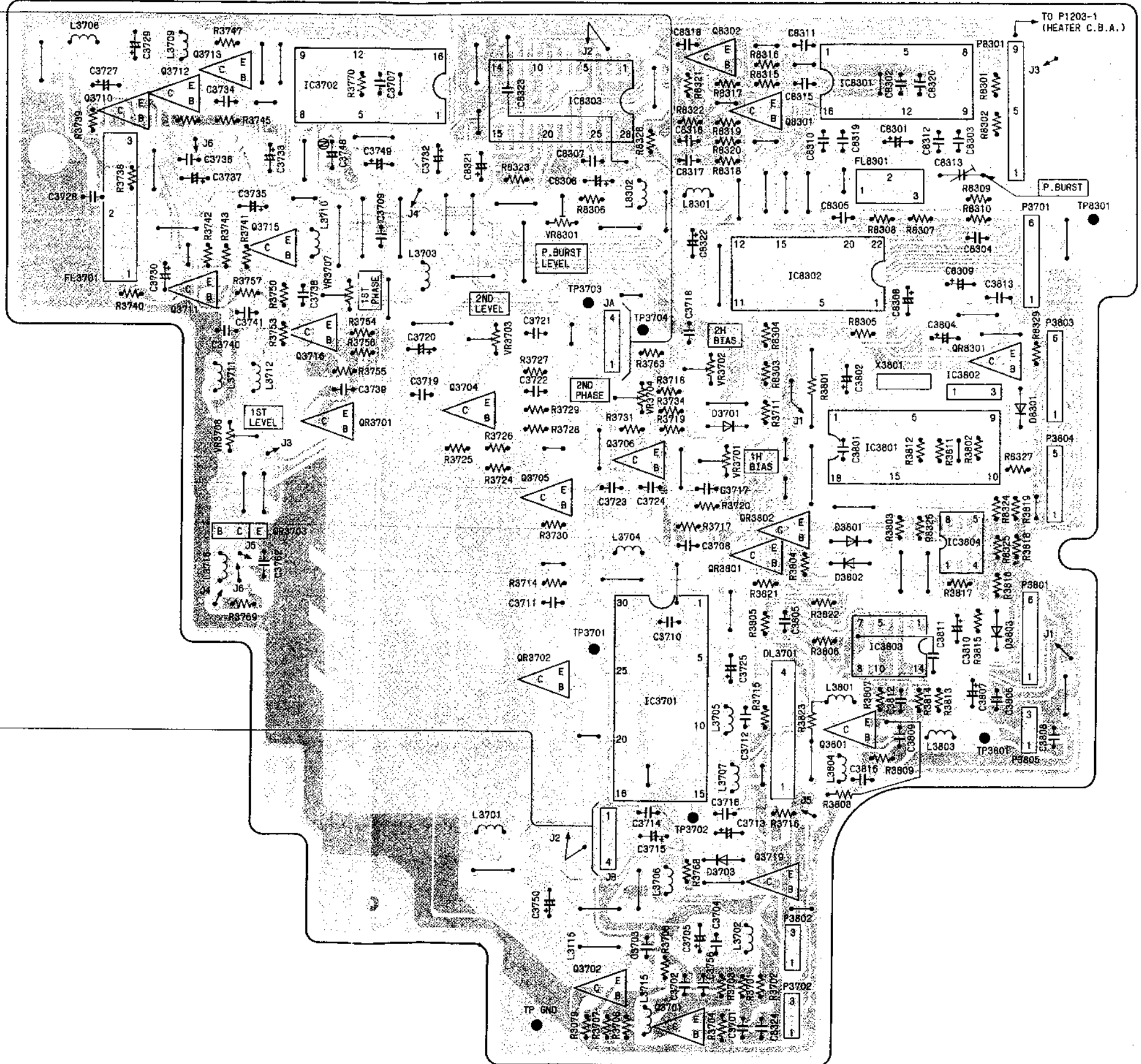
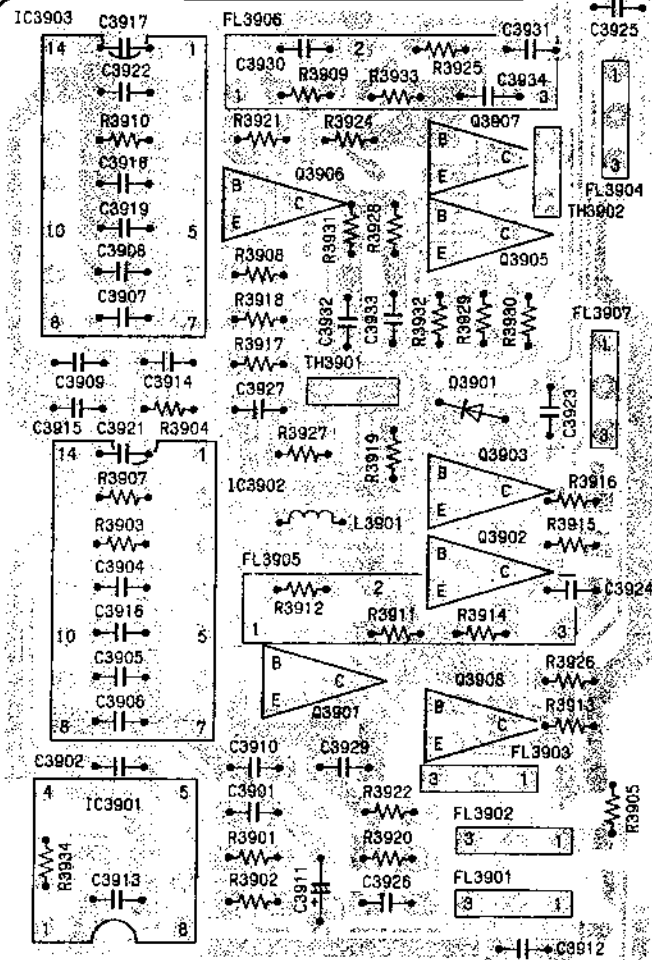
R822

Q801

C831

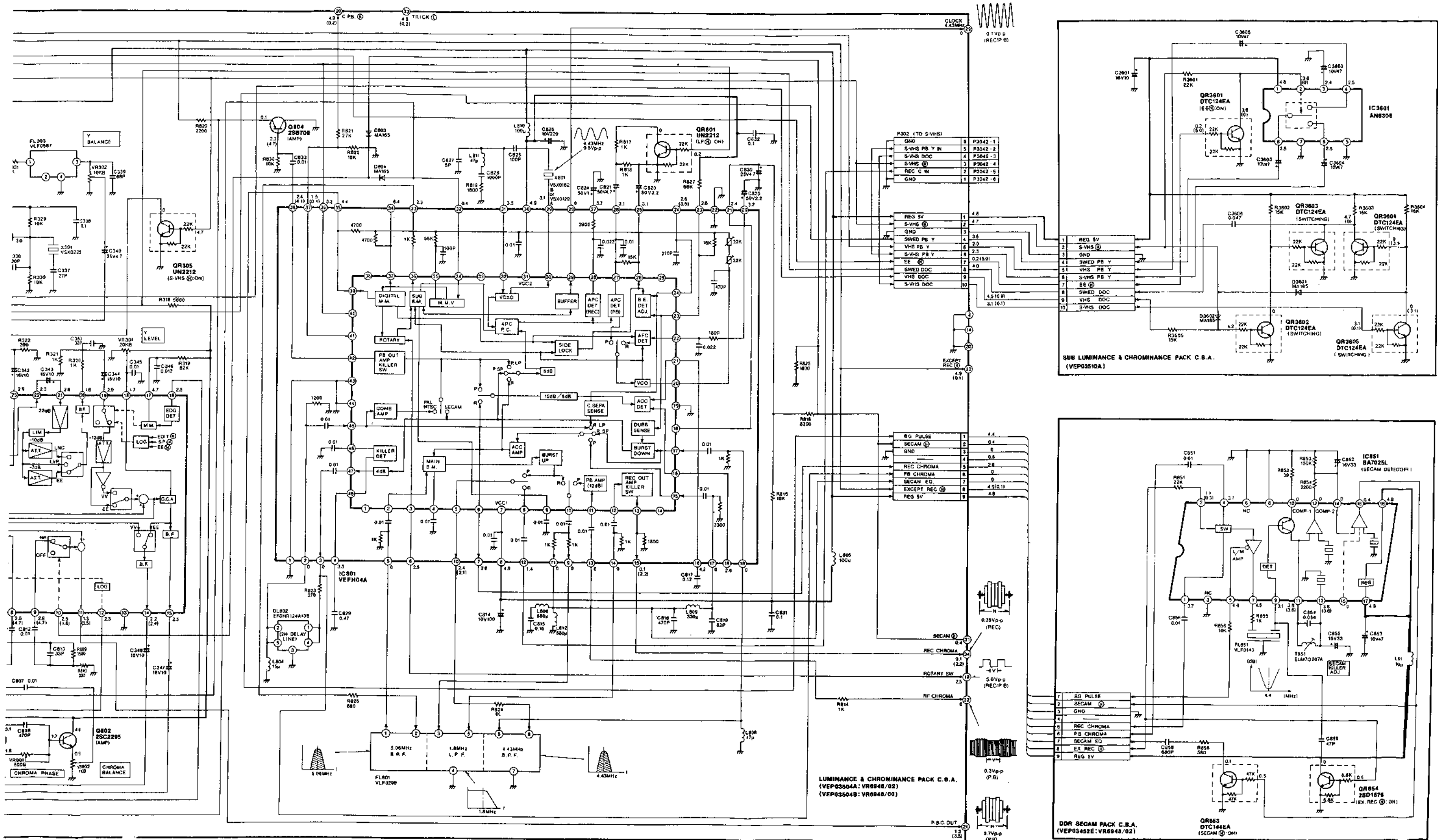
C814

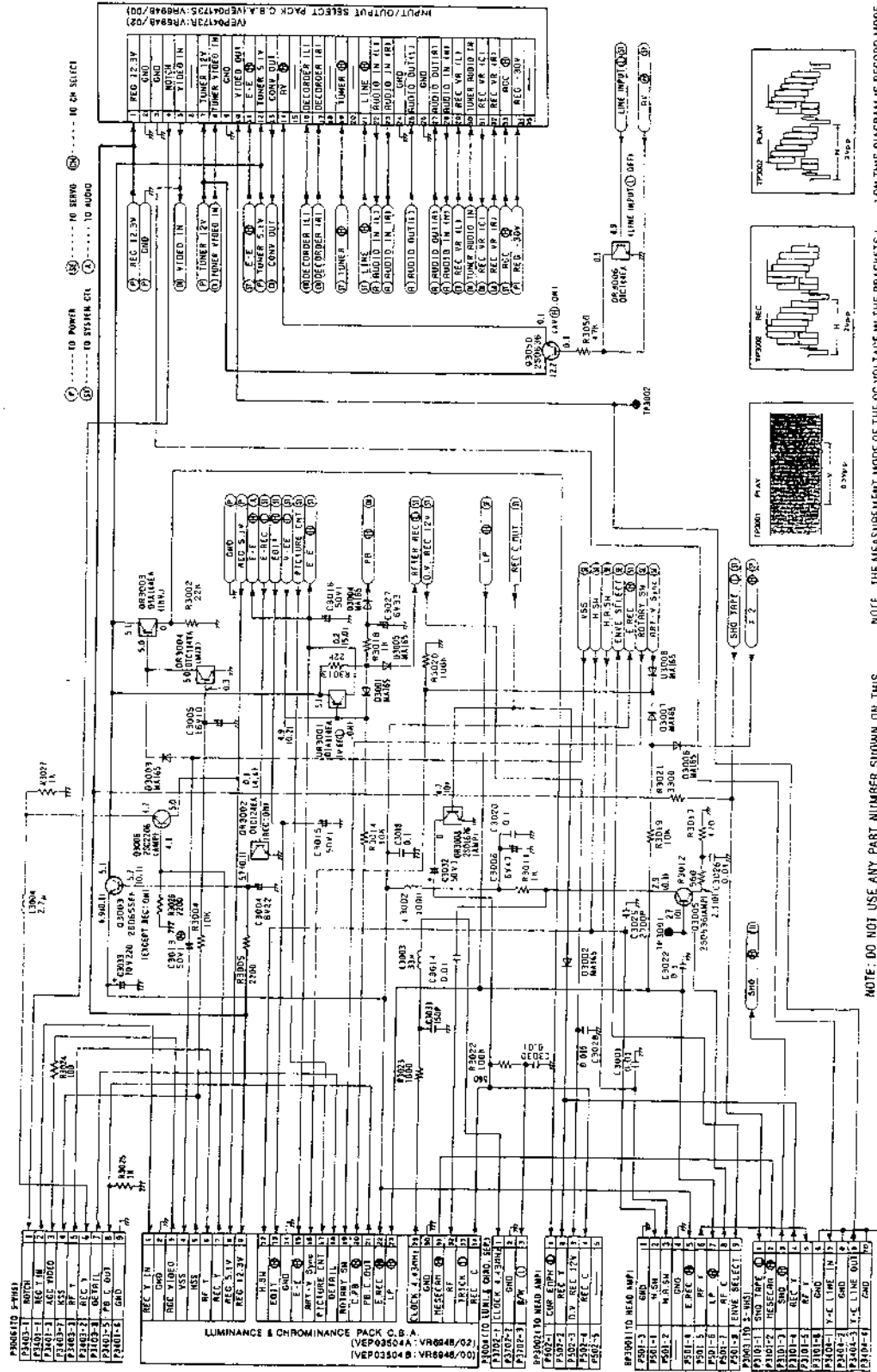
CCD PACK C.B.A. (VEP03542A)





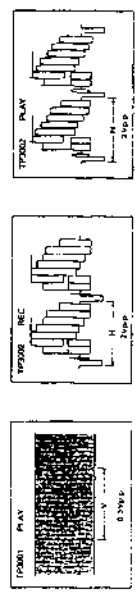
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

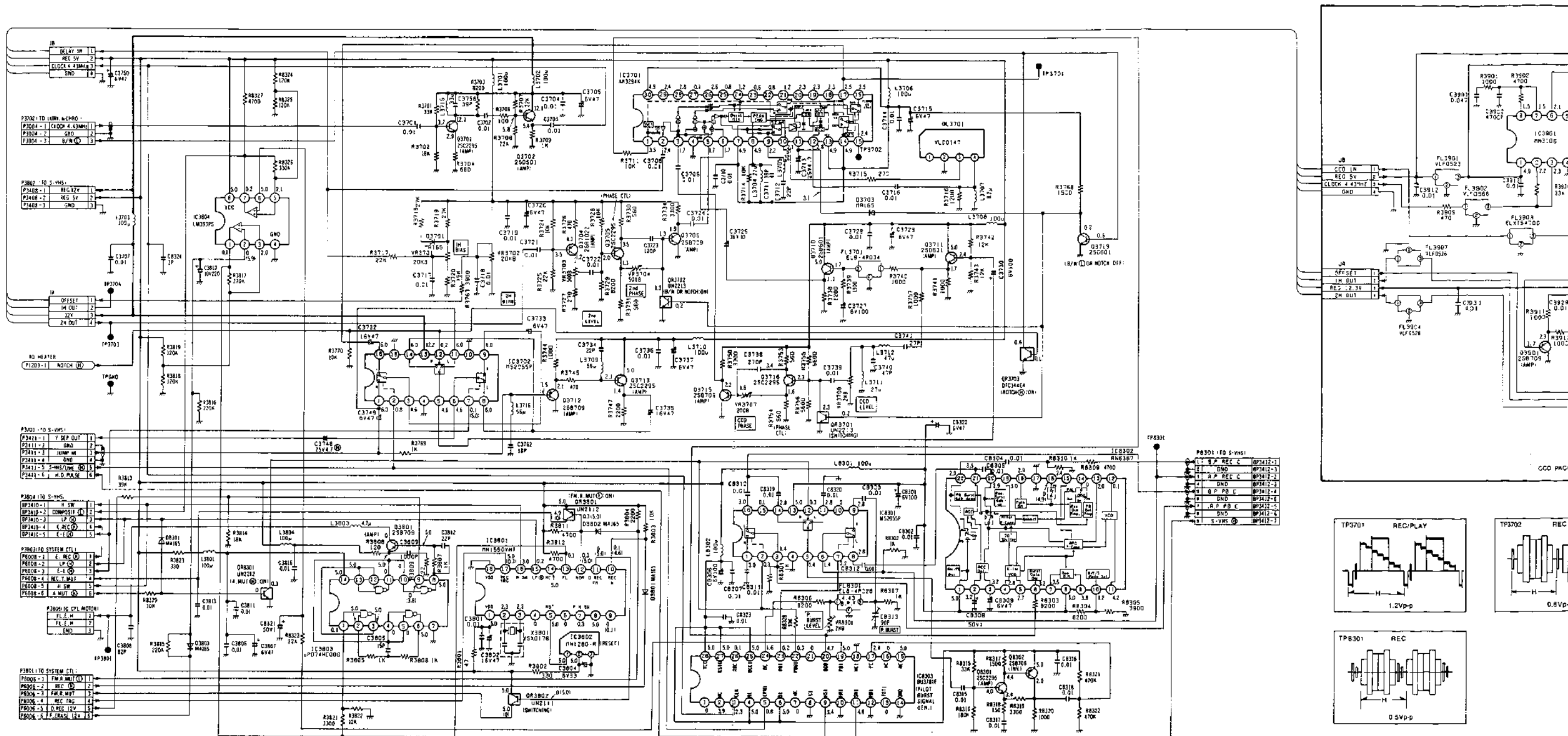


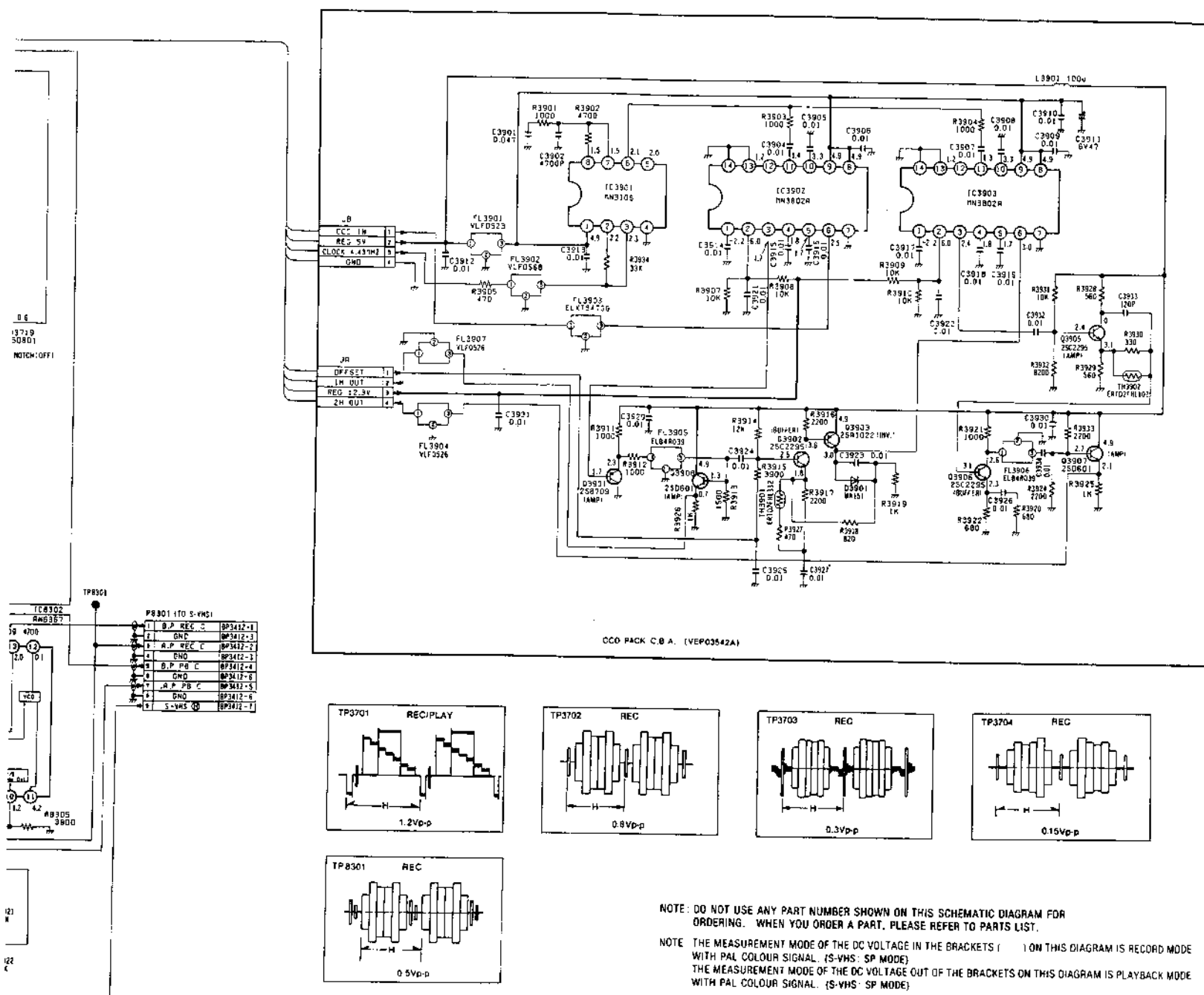


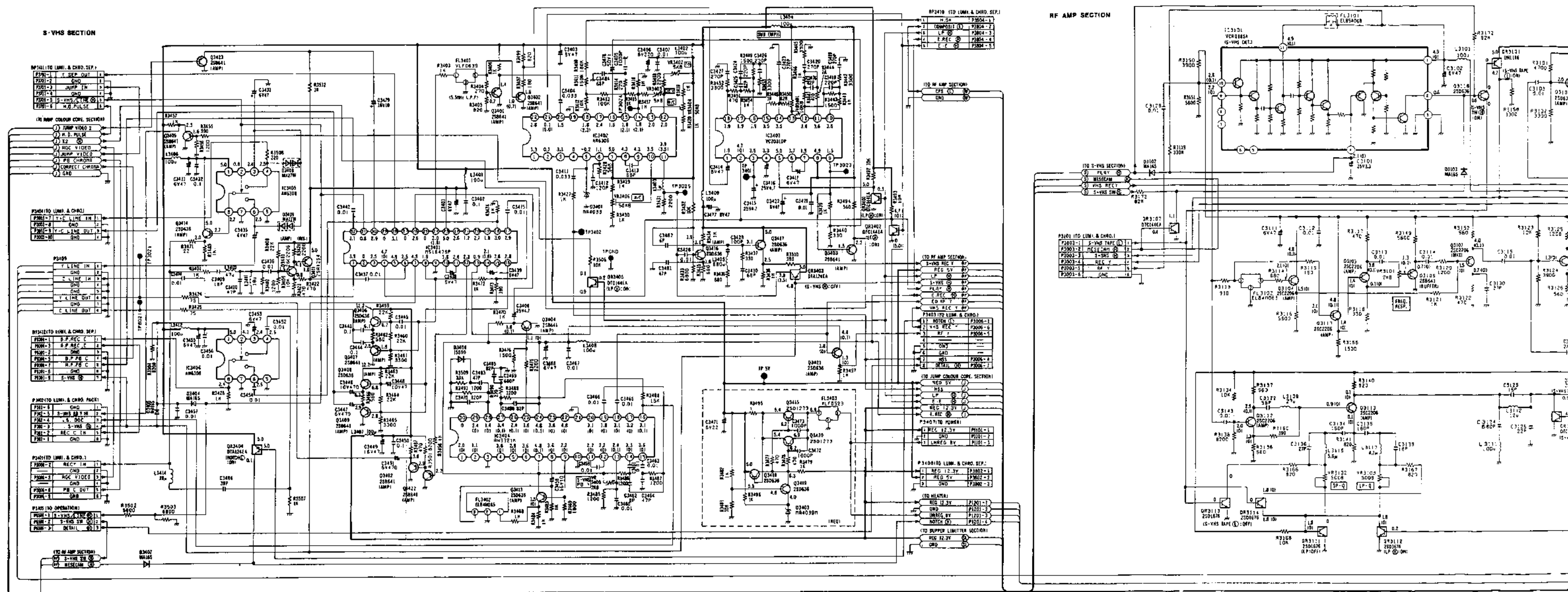
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

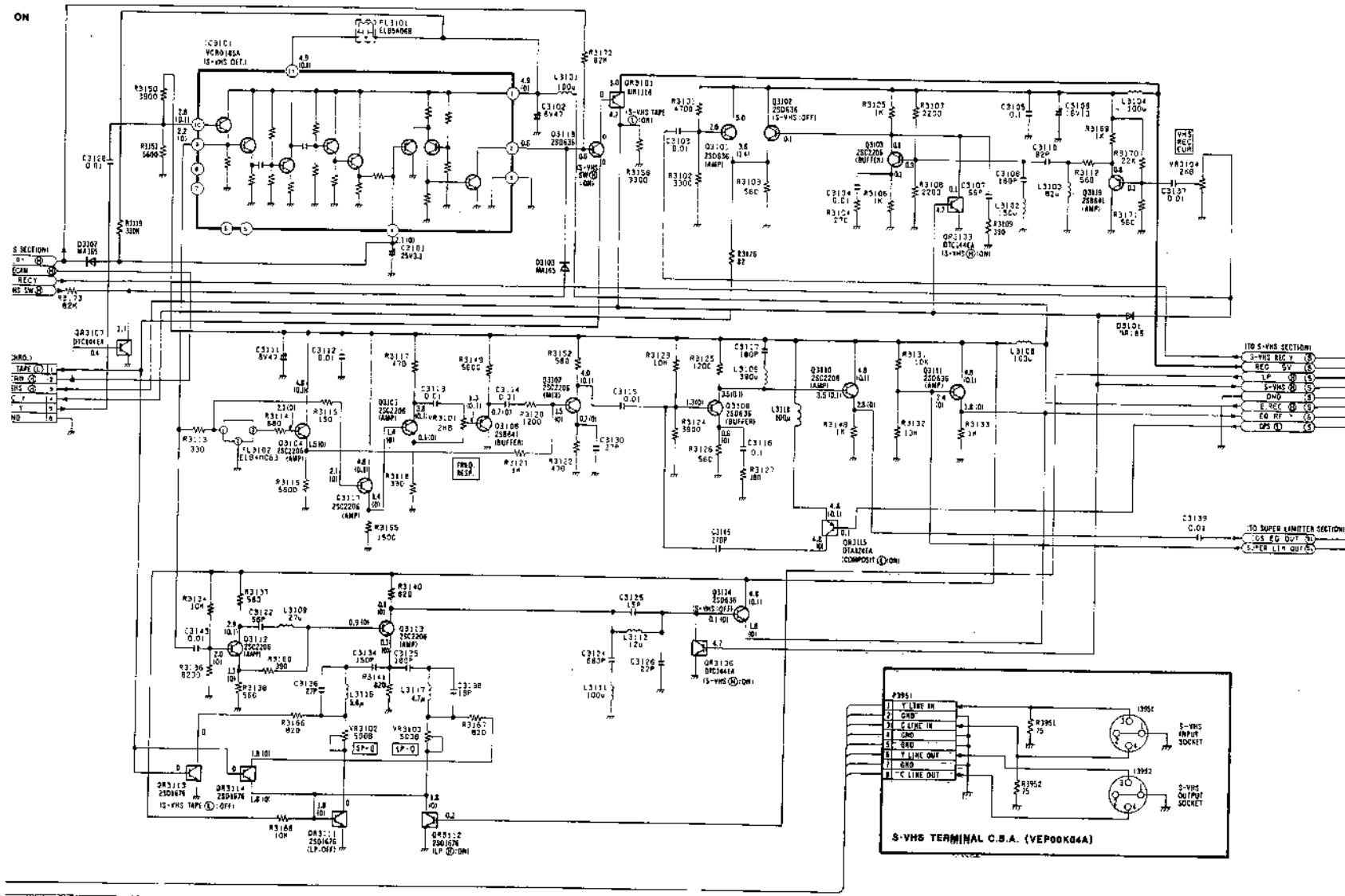
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL (S-VHS: SP MODE). THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL (S-VHS: SP MODE).







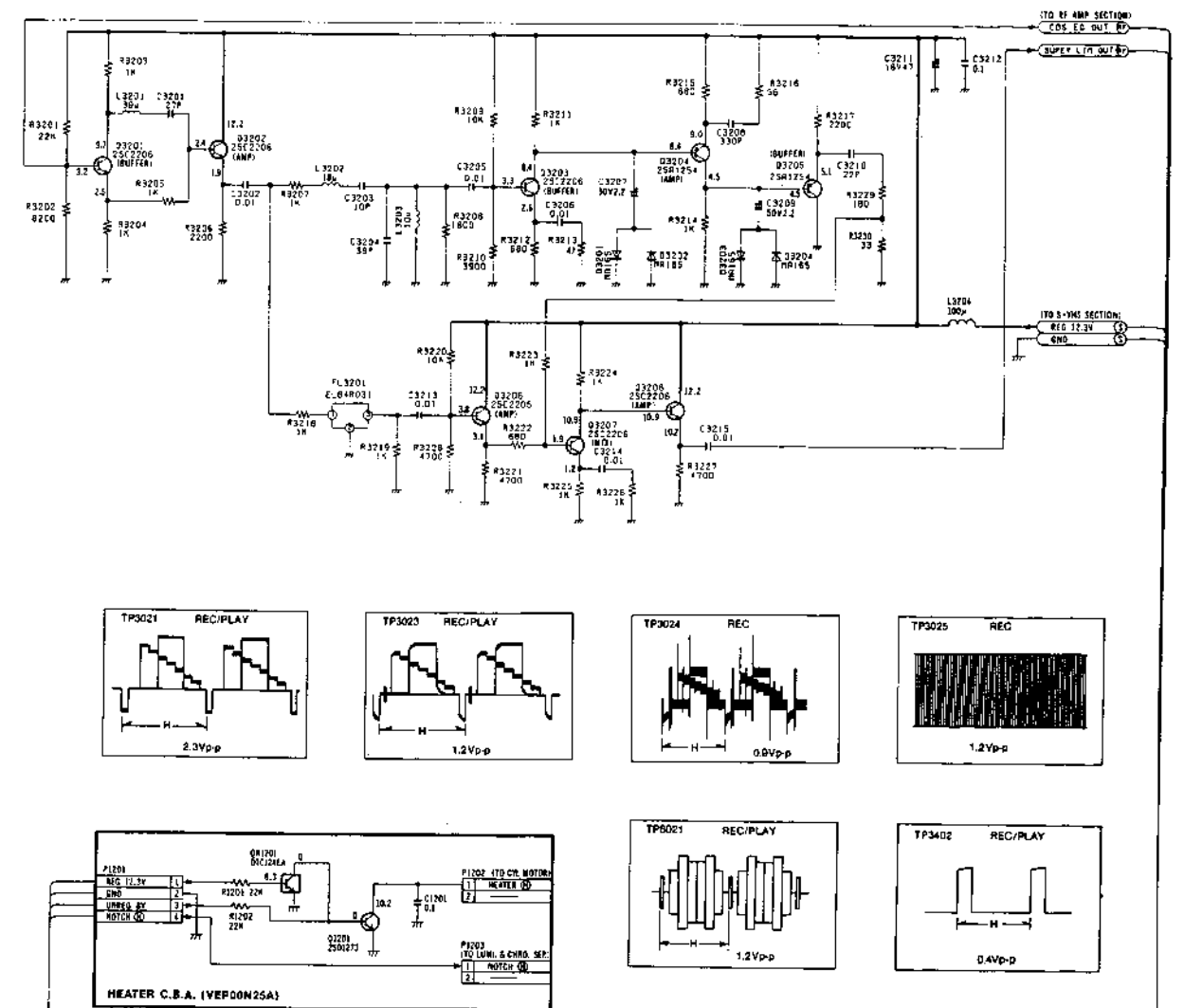




NOTE THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

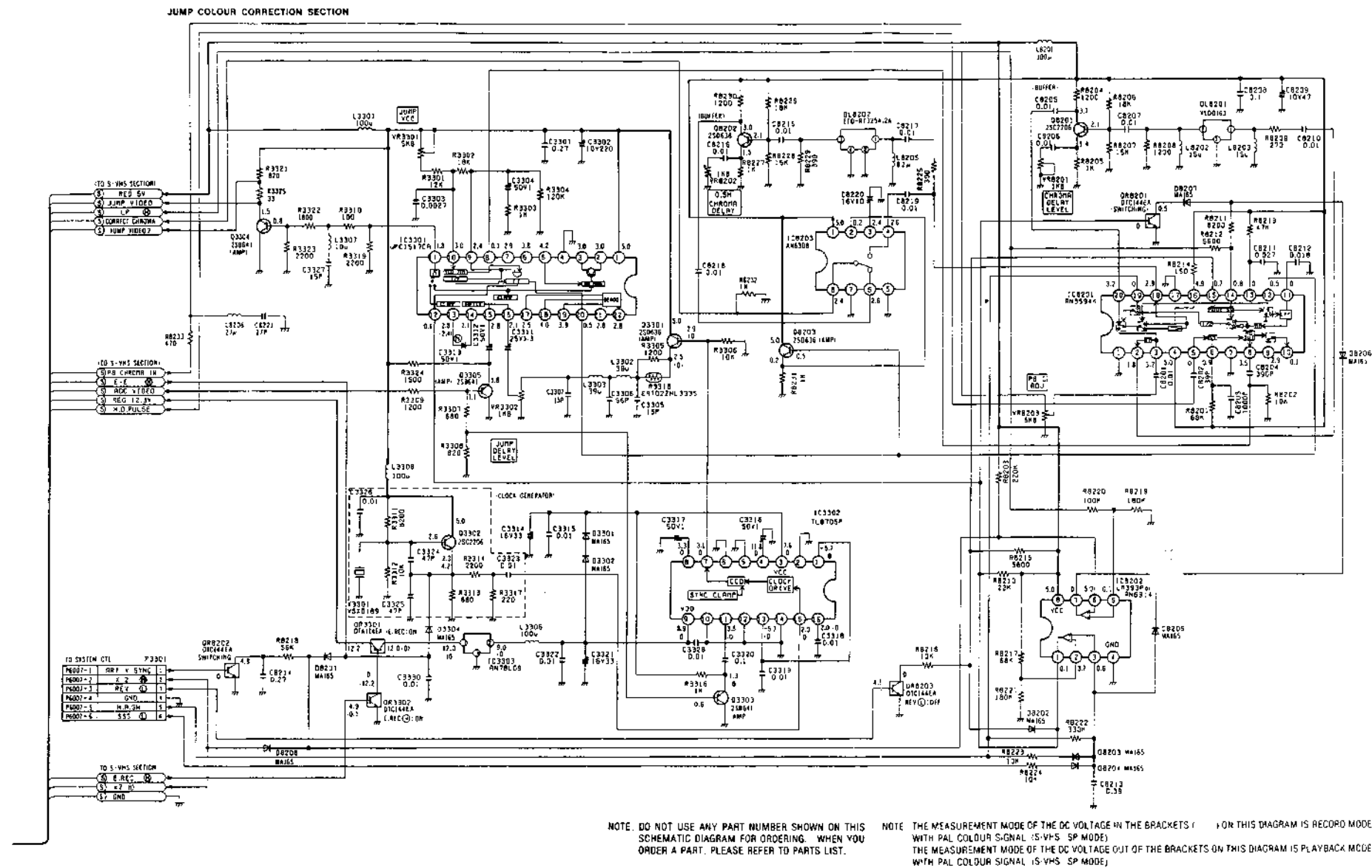
) ON THIS DIAGRAM IS RECORD MODE

SUPER LIMITER SECTION



THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL (\$-VHS: SP 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.



P002	4822 267 50913	CONNECTOR
P501	4822 265 40859	CONNECTOR
P502	4822 265 40838	CONNECTOR

C501	4822 122 33747	CHIP 50V 0.01 μ F
C505	4822 122 33747	CHIP 50V 0.01 μ F
C506	4822 124 21533	E.CAP 16V 10 μ F
C507	4822 122 33672	CHIP 25V 0.047 μ F
C508	4822 122 33731	CHIP 25V 0.1 μ F
C509	4822 122 33747	CHIP 50V 0.01 μ F
C510	4822 122 33747	CHIP 50V 0.01 μ F
C511	4822 122 33747	CHIP 50V 0.01 μ F
C512	4822 122 33747	CHIP 50V 0.01 μ F
C513	4822 124 41128	E.CAP 6.3V 22 μ F
C514	4822 121 90053	S.CAP 16V 0.1 μ F
C515	4822 122 33905	CHIP 50V 1000 pF
C517	4822 122 33747	CHIP 50V 0.01 μ F
C518	4822 124 21533	E.CAP 16V 10 μ F
C519	4822 124 21533	E.CAP 16V 10 μ F
C521	4822 122 33747	CHIP 50V 0.01 μ F
C522	4822 122 33747	CHIP 50V 0.01 μ F
C524	4822 124 21533	E.CAP 16V 10 μ F
C526	4822 122 33747	CHIP 50V 0.01 μ F
C527	4822 122 33905	CHIP 50V 1000 pF
C528	4822 122 33747	CHIP 50V 0.01 μ F
C529	4822 122 33747	CHIP 50V 0.01 μ F
C530	4822 122 33672	CHIP 25V 0.047 μ F
C531	4822 124 21513	E.CAP 6.3V 47 μ F
C534	4822 124 40839	E.CAP 50V 1 μ F
C535	4822 122 33747	CHIP 50V 0.01 μ F
C536	4822 121 90053	S.CAP 16V 0.1 μ F
C538	4822 124 21533	E.CAP 16V 10 μ F
C539	4822 122 33747	CHIP 50V 0.01 μ F
C551	4822 122 33747	CHIP 50V 0.01 μ F
C552	4822 124 21533	E.CAP 16V 10 μ F
C553	4822 122 33672	CHIP 25V 0.047 μ F
C554	4822 122 33945	C.CAP 50V 820 pF
C555	4822 124 40838	E.CAP 50V 0.22 μ F
C556	4822 122 33904	CHIP 50V 100 pF
C557	4822 122 33904	CHIP 50V 100 pF
C558	4822 124 40838	E.CAP 50V 0.22 μ F
C559	4822 122 33944	C.CAP 50V 1200 pF
C560	4822 122 33944	C.CAP 50V 1200 pF
C561	4822 124 21532	E.CAP 6.3V 33 μ F
C562	4822 122 33747	CHIP 50V 0.01 μ F
C563	4822 122 33747	CHIP 50V 0.01 μ F
C564	4822 122 33731	CHIP 25V 0.1 μ F
C565	4822 122 33731	CHIP 25V 0.1 μ F
C567	5322 122 32448	CHIP 50V 10 pF
C568	5322 122 32448	CHIP 50V 10 pF

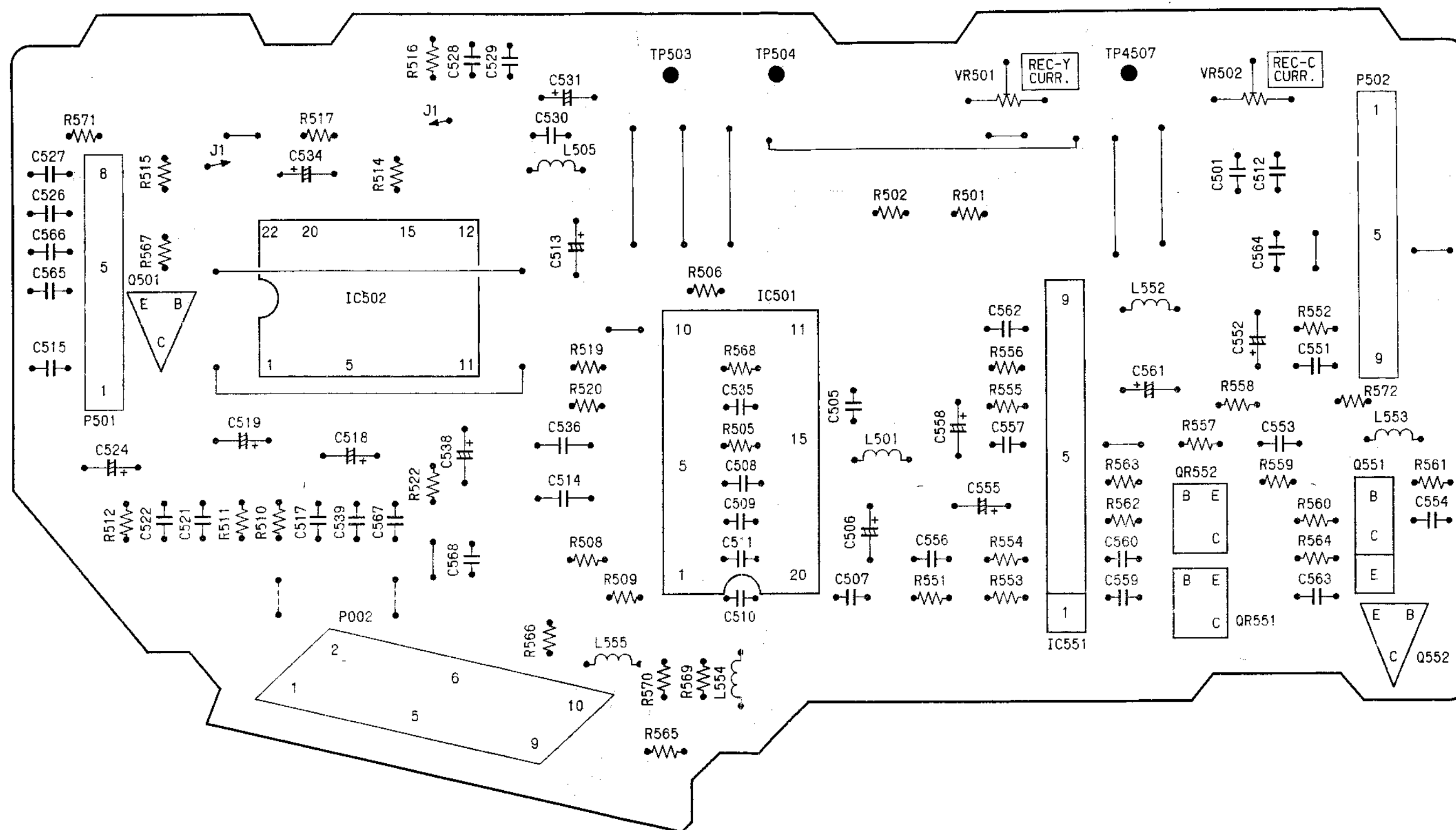
IC501	4822 209 60574	AN3224K
IC502	4822 209 72821	AN3311S
IC551	4822 209 60584	UPC1531HA

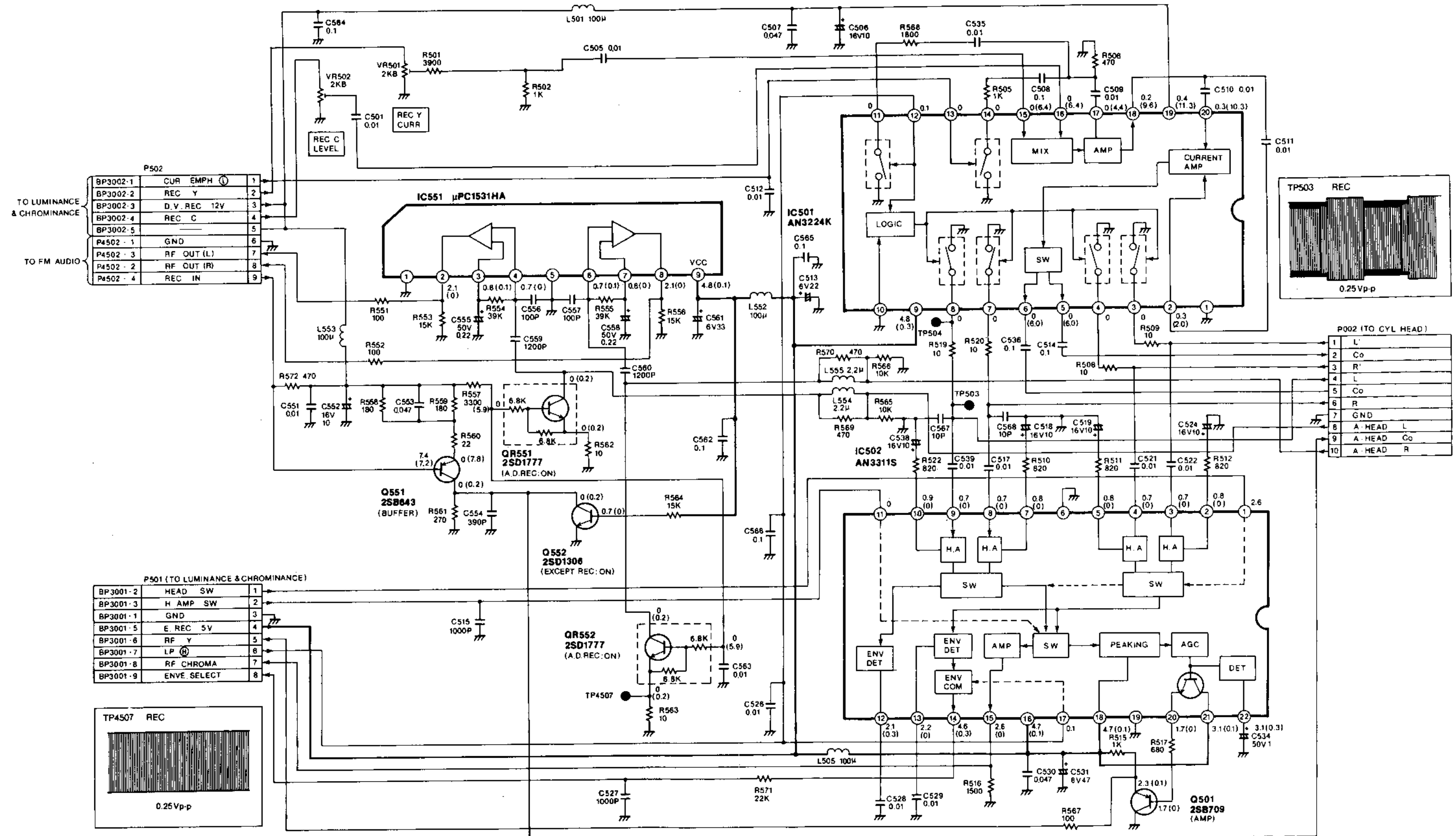
L501	4822 157 51975
L505	4822 157 51975
L552	4822 157 51975
L553	4822 157 51975
L554	4822 157 60016
L555	4822 157 60016

Q501	4822 130 42661	2SB709
Q551	4822 130 61591	2SB643
Q552	4822 130 61623	2SD1306
QR551	4822 130 61624	2SD1777C1
QR552	4822 130 61624	2SD1777C1

R501	4822 111 91527	CHIP 3.9 k Ω
R502	4822 111 91516	CHIP 1 k Ω
R505	4822 111 91516	CHIP 1 k Ω
R506	4822 116 90446	CHIP 470
R508	4822 116 90457	CHIP 10
R509	4822 116 90457	CHIP 10
R510	4822 116 81034	CHIP 820
R511	4822 116 81034	CHIP 820
R512	4822 116 81034	CHIP 820
R515	4822 111 91516	CHIP 1 k Ω
R516	4822 116 90458	CHIP 1.5 k Ω
R517	4822 116 90463	CHIP 680
R519	4822 116 90457	CHIP 10
R520	4822 116 90457	CHIP 10
R522	4822 116 81034	CHIP 820
R551	4822 116 90441	CHIP 100
R552	4822 116 90441	CHIP 100
R553	4822 111 91498	CHIP 15 k Ω
R554	4822 116 90445	CHIP 39 k Ω
R555	4822 116 90445	CHIP 39 k Ω
R556	4822 111 91498	CHIP 15 k Ω
R557	4822 111 91526	CHIP 3.3 k Ω
R558	4822 116 90438	CHIP 180
R559	4822 116 90438	CHIP 180
R560	4822 116 90467	M.RES 22
R561	4822 116 80882	CHIP 270
R562	4822 116 90457	CHIP 10
R563	4822 116 90457	CHIP 10
R564	4822 111 91498	CHIP 15 k Ω
R565	4822 111 91517	CHIP 10 k Ω
R566	4822 111 91517	CHIP 10 k Ω
R567	4822 116 90441	CHIP 100
R568	0000 000 00000	
R569	4822 116 90446	CHIP 470
R570	4822 116 90446	CHIP 470

VR501	4822 101 30607	V.RES 2 k Ω
VR502	4822 101 30607	V.RES 2 k Ω





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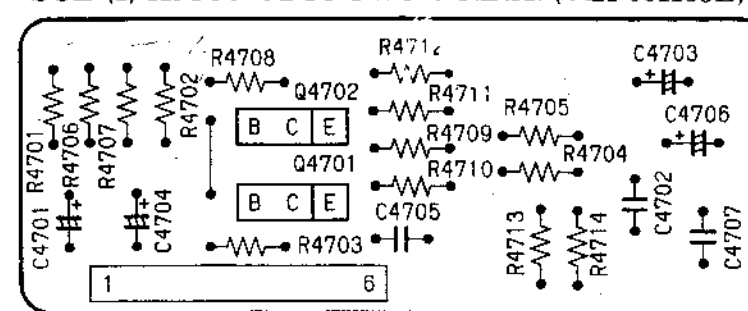
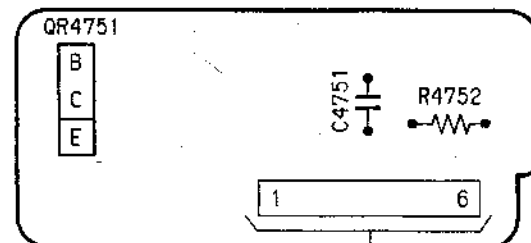
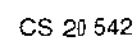
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL (S-VHS, SP MODE). THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL (S-VHS, SP MODE).

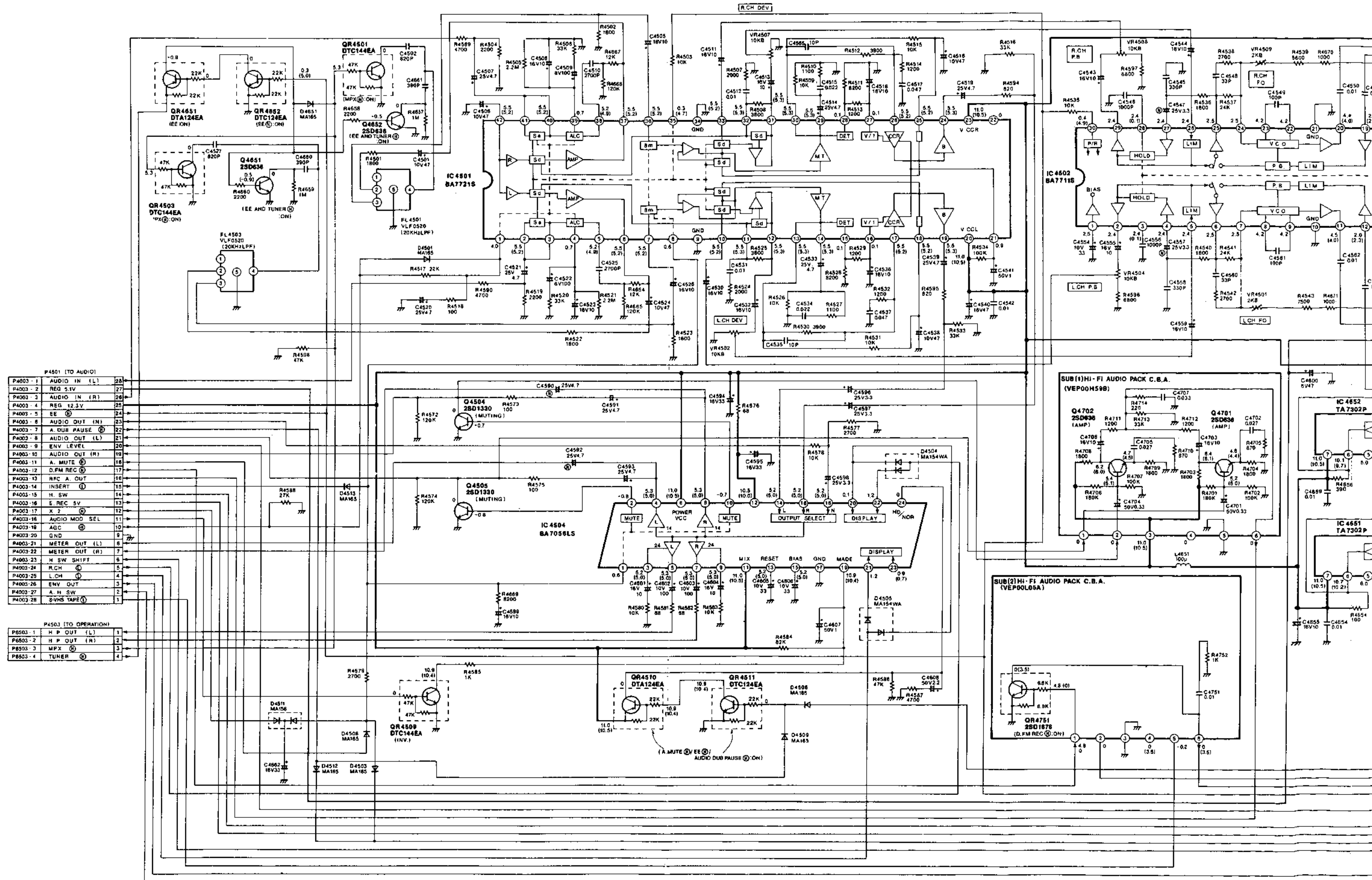
HiFi Audio circuit board assembly

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P4501	4822 267 60259	CONNECTOR	C4560	4822 122 32218	C.CAP 50V 33 pF
P4502	4822 265 30387	CONNECTOR	C4561	4822 122 32297	C.CAP 50V 100 pF
P4503	4822 265 30387	CONNECTOR	C4562	4822 122 32247	C.CAP 50V 0.01 μF
P4504	4822 267 30572	CONNECTOR	C4563	4822 122 32247	C.CAP 50V 0.01 μF
			C4564	4822 124 22892	E.CAP 6.3V 47 μF
			C4565	4822 122 32209	C.CAP 50V 10 pF
			C4566	4822 122 32247	C.CAP 50V 0.01 μF
			C4567	4822 124 22892	E.CAP 6.3V 47 μF
			C4572	4822 122 32247	C.CAP 50V 0.01 μF
			C4573	4822 124 22827	E.CAP 16V 33 μF
C4501	4822 124 22883	E.CAP 10V 47 μF	C4574	4822 122 32247	C.CAP 50V 0.01 μF
C4502	4822 121 51459	P.CAP 50V 820 pF	C4576	4822 122 32247	C.CAP 50V 0.01 μF
C4505	4822 124 22885	E.CAP 16V 10 μF	C4577	4822 121 42164	P.CAP 50V 0.15 μF
C4506	4822 124 22883	E.CAP 10V 47 μF	C4578	4822 122 33948	C.CAP 50V 220 pF
C4507	4822 124 22889	E.CAP 25V 4.7 μF	C4579	4822 122 32236	C.CAP 50V 470 pF
C4508	4822 124 21533	E.CAP 16V 10 μF	C4580	4822 121 42303	P.CAP 50V 1000 pF
C4509	4822 124 22821	E.CAP 6.3V 100 μF	C4581	4822 122 32247	C.CAP 50V 0.01 μF
C4510	4822 121 51445	P.CAP 50V 2700 pF	C4582	4822 124 22892	E.CAP 6.3V 47 μF
C4511	4822 124 22885	E.CAP 16V 10 μF	C4583	4822 122 32247	C.CAP 50V 0.01 μF
C4512	4822 121 42252	P.CAP 50V 0.01 μF	C4584	4822 124 21525	E.CAP 50V 0.1 μF
C4513	4822 124 22885	E.CAP 16V 10 μF	C4585	4822 122 32247	C.CAP 50V 0.01 μF
C4514	4822 124 22881	E.CAP 25V 4.7 μF	C4586	4822 124 21536	E.CAP 50V 2.2 μF
C4515	4822 121 42257	P.CAP 50V 0.022 μF	C4587	4822 122 32247	C.CAP 50V 0.01 μF
C4516	4822 124 21563	E.CAP 16V 10 μF	C4589	4822 121 42179	P.CAP 50V 0.1 μF
C4517	4822 121 42168	P.CAP 50V 0.047 μF	C4590	4822 124 40823	E.CAP 25V 4.7 μF
C4518	4822 124 22825	E.CAP 10V 47 μF	C4591	4822 124 22887	E.CAP 25V 4.7 μF
C4519	4822 124 22887	E.CAP 25V 4.7 μF	C4592	4822 124 40823	E.CAP 25V 4.7 μF
C4520	4822 124 40836	E.CAP 25V 4.7 μF	C4593	4822 124 22887	E.CAP 25V 4.7 μF
C4521	4822 124 22889	E.CAP 25V 4.7 μF	C4594	4822 124 22827	E.CAP 16V 33 μF
C4522	4822 124 22821	E.CAP 6.3V 100 μF	C4595	4822 124 22827	E.CAP 16V 33 μF
C4523	4822 124 21533	E.CAP 16V 10 μF	C4596	4822 124 22893	E.CAP 35V 3.3 μF
C4524	4822 124 22883	E.CAP 10V 47 μF	C4597	4822 124 22893	E.CAP 35V 3.3 μF
C4525	4822 121 51445	P.CAP 50V 2700 pF	C4598	4822 124 40834	E.CAP 25V 3.3 μF
C4526	4822 124 22885	E.CAP 16V 10 μF	C4599	4822 124 21533	E.CAP 16V 10 μF
C4527	4822 121 51459	P.CAP 50V 820 pF	C4600	4822 124 21513	E.CAP 6.3V 47 μF
C4530	4822 124 22885	E.CAP 16V 10 μF	C4601	4822 124 21533	E.CAP 16V 10 μF
C4531	4822 121 42252	P.CAP 50V 0.01 μF	C4602	4822 124 21564	E.CAP 10V 100 μF
C4532	4822 124 22885	E.CAP 16V 10 μF	C4603	4822 124 21564	E.CAP 10V 100 μF
C4533	4822 124 22889	E.CAP 25V 4.7 μF	C4604	4822 124 21533	E.CAP 16V 10 μF
C4534	4822 121 42257	P.CAP 50V 0.022 μF	C4605	4822 124 21515	E.CAP 10V 33 μF
C4535	4822 122 32209	C.CAP 50V 10 pF	C4606	4822 124 22838	E.CAP 10V 33 μF
C4536	4822 124 22885	E.CAP 16V 10 μF	C4607	4822 124 40839	E.CAP 50V 1 μF
C4537	4822 121 42168	P.CAP 50V 0.047 μF	C4608	4822 124 21536	E.CAP 50V 2.2 μF
C4538	4822 124 22825	E.CAP 10V 47 μF	C4651	4822 122 32247	C.CAP 50V 0.01 μF
C4539	4822 124 22884	E.CAP 25V 4.7 μF	C4652	4822 121 90054	S.CAP 16V 0.047 μF
C4540	4822 124 22886	E.CAP 16V 47 μF	C4653	4822 121 90054	S.CAP 16V 0.047 μF
C4541	4822 124 22891	E.CAP 50V 1 μF	C4654	4822 122 32247	C.CAP 50V 0.01 μF
C4542	4822 122 32247	C.CAP 50V 0.01 μF	C4655	4822 124 21563	E.CAP 16V 10 μF
C4543	4822 124 22885	E.CAP 16V 10 μF	C4656	4822 122 32247	C.CAP 50V 0.01 μF
C4544	4822 124 22885	E.CAP 16V 10 μF	C4657	4822 121 90054	S.CAP 16V 0.047 μF
C4545	4822 122 32308	C.CAP 50V 330 pF	C4658	4822 121 90054	S.CAP 16V 0.047 μF
C4546	4822 121 42303	P.CAP 50V 1000 pF	C4659	4822 122 32247	C.CAP 50V 0.01 μF
C4547	4822 124 22888	E.CAP 25V 3.3 μF	C4660	4822 122 32309	C.CAP 50V 390 pF
C4548	5322 122 32072	C.CAP 50V 33 pF	C4661	4822 122 32309	C.CAP 50V 390 pF
C4549	4822 122 32297	C.CAP 50V 100 pF	C4662	4822 124 22879	E.CAP 16V 33 μF
C4550	4822 122 32247	C.CAP 50V 0.01 μF	C4663	4822 124 40823	E.CAP 25V 4.7 μF
C4551	4822 122 32247	C.CAP 50V 0.01 μF	C4701	4822 124 22894	E.CAP 50V 0.33 μF
C4552	4822 122 32247	C.CAP 50V 0.01 μF	C4702	4822 121 42261	P.CAP 50V 0.027 μF
C4553	4822 124 22892	E.CAP 6.3V 47 μF	C4703	4822 124 21533	E.CAP 16V 10 μF
C4554	4822 124 22882	E.CAP 10V 33 μF	C4704	4822 124 22894	E.CAP 50V 0.33 μF
C4555	4822 124 22885	E.CAP 16V 10 μF	C4705	4822 121 42261	P.CAP 50V 0.027 μF
C4556	4822 121 42303	P.CAP 50V 1000 pF	C4706	4822 124 21533	E.CAP 16V 10 μF
C4557	4822 124 22888	E.CAP 25V 3.3 μF	C4707	4822 121 42262	P.CAP 50V 0.033 μF
C4558	4822 122 32308	C.CAP 50V 330 pF	C4751	4822 122 32247	C.CAP 50V 0.01 μF
C4559	4822 124 22885	E.CAP 16V 10 μF			

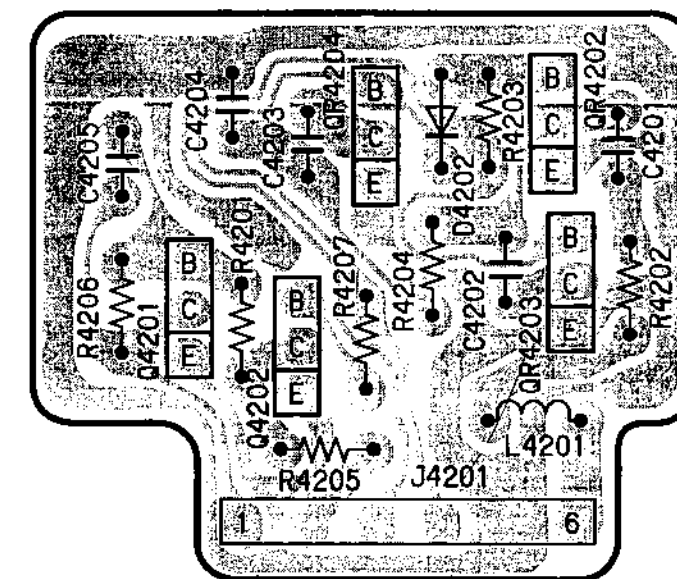
					
D4501	4822 130 32362	MA165	R4501	4822 116 81445	M.RES.1.8 kΩ
D4502	4822 130 32361	MA154WK	R4502	4822 116 81445	M.RES.1.8 kΩ
D4503	4822 130 32362	MA165	R4503	4822 116 52233	C.RES. 10 kΩ
D4504	4822 130 32714	MA154WA	R4504	4822 116 81394	M.RES.2.2 kΩ
D4505	4822 130 32714	MA154WA	R4505	4822 116 81439	C.RES.2.2 MΩ
D4506	4822 130 32362	MA165	R4506	4822 116 52271	C.RES. 33 kΩ
D4508	4822 130 32362	MA165	R4507	4822 116 81446	M.RES. 2 kΩ
D4509	4822 130 32362	MA165	R4508	4822 116 81449	M.RES.3.6 kΩ
D4511	4822 130 81393	MA156	R4509	4822 116 81442	M.RES. 10 kΩ
D4512	4822 130 32362	MA165	R4510	4822 116 81443	M.RES.1.1 kΩ
D4513	4822 130 32362	MA165	R4511	4822 116 52303	C.RES.8.2 kΩ
D4651	4822 130 32362	MA165	R4512	4822 116 81451	M.RES.3.9 kΩ
			R4514	4822 116 81444	M.RES.1.2 kΩ
FL4501	4822 242 72505	FILTER	R4515	4822 116 52233	C.RES. 10 kΩ
FL4503	4822 242 72505	FILTER	R4516	4822 116 81448	M.RES. 33 kΩ
FL4506	4822 242 72502	FILTER	R4517	4822 116 52257	C.RES. 22 kΩ
FL4651	4822 242 72503	FILTER	R4518	4822 116 52175	C.RES. 100
FL4652	4822 242 72504	FILTER	R4519	4822 116 81394	M.RES.2.2 kΩ
FL4653	4822 242 72501	FILTER	R4520	4822 116 52271	C.RES. 33 kΩ
			R4521	4822 116 81439	C.RES.2.2 MΩ
IC4501	4822 209 60579	BA7721S	R4522	4822 116 81445	M.RES.1.8 kΩ
IC4502	4822 209 60578	BA7711S	R4523	4822 116 81445	M.RES.1.8 kΩ
IC4503	4822 209 60576	AN3920K	R4524	4822 116 81446	M.RES. 2 kΩ
IC4504	4822 209 60577	BA7056LS	R4525	4822 116 81449	M.RES.3.6 kΩ
IC4651	4822 209 82516	TA7302P	R4526	4822 116 81442	M.RES. 10 kΩ
IC4652	4822 209 82516	TA7302P	R4527	4822 116 81443	M.RES.1.1 kΩ
			R4528	4822 116 52303	C.RES.8.2 kΩ
L4501	4822 157 51975		R4529	4822 116 52207	C.RES.1.2 kΩ
L4504	4822 157 52163		R4530	4822 116 81451	M.RES.3.9 kΩ
L4505	4822 157 51975		R4531	4822 116 52233	C.RES. 10 kΩ
L4506	4822 157 51975		R4532	4822 116 81444	M.RES.1.2 kΩ
L4651	4822 157 51975		R4533	4822 116 81448	M.RES. 33 kΩ
			R4534	4822 116 52234	C.RES.100 kΩ
Q4501	4822 130 41324	2SD638	R4535	4822 116 52233	C.RES. 10 kΩ
Q4502	4822 130 42251	2SB641	R4536	4822 116 52249	C.RES.1.8 kΩ
Q4503	4822 130 41605	2SD636	R4537	4822 116 81447	M.RES. 24 kΩ
Q4504	4822 130 61595	2SD1330	R4538	4822 116 52263	C.RES.2.7 kΩ
Q4505	4822 130 61595	2SD1330	R4539	4822 116 81452	M.RES.5.6 kΩ
Q4651	4822 130 41605	2SD636	R4539	4822 116 81447	M.RES. 24 kΩ
Q4652	4822 130 41605	2SD636	R4540	4822 116 52249	C.RES.1.8 kΩ
Q4701	4822 130 41605	2SD636	R4542	4822 116 52263	C.RES.2.7 kΩ
Q4702	4822 130 41605	2SD636	R4543	4822 116 81453	M.RES.7.5 kΩ
QR4501	4822 111 91319	UN1213	R4544	4822 116 52269	C.RES.3.3 kΩ
QR4503	4822 111 91319	UN1213	R4545	4822 116 52249	C.RES.1.8 kΩ
QR4507	4822 111 91223	UN1212	R4555	4822 116 52233	C.RES. 10 kΩ
QR4508	4822 130 60556	UN1211	R4556	4822 116 52283	C.RES.4.7 kΩ
QR4509	4822 111 91319	UN1213	R4558	4822 116 52283	C.RES.4.7 kΩ
QR4510	4822 111 91222	UN1112	R4559	4822 116 52204	C.RES. 1 kΩ
QR4511	4822 111 91223	UN1212	R4562	4822 116 52269	C.RES.3.3 kΩ
QR4651	4822 111 91222	UN1112	R4563	4822 116 52264	C.RES. 27 kΩ
QR4652	4822 111 91223	UN1212	R4564	4822 116 52256	C.RES.2.2 kΩ
QR4751	4822 130 60259	2SD1676	R4565	4822 116 52284	C.RES. 47 kΩ

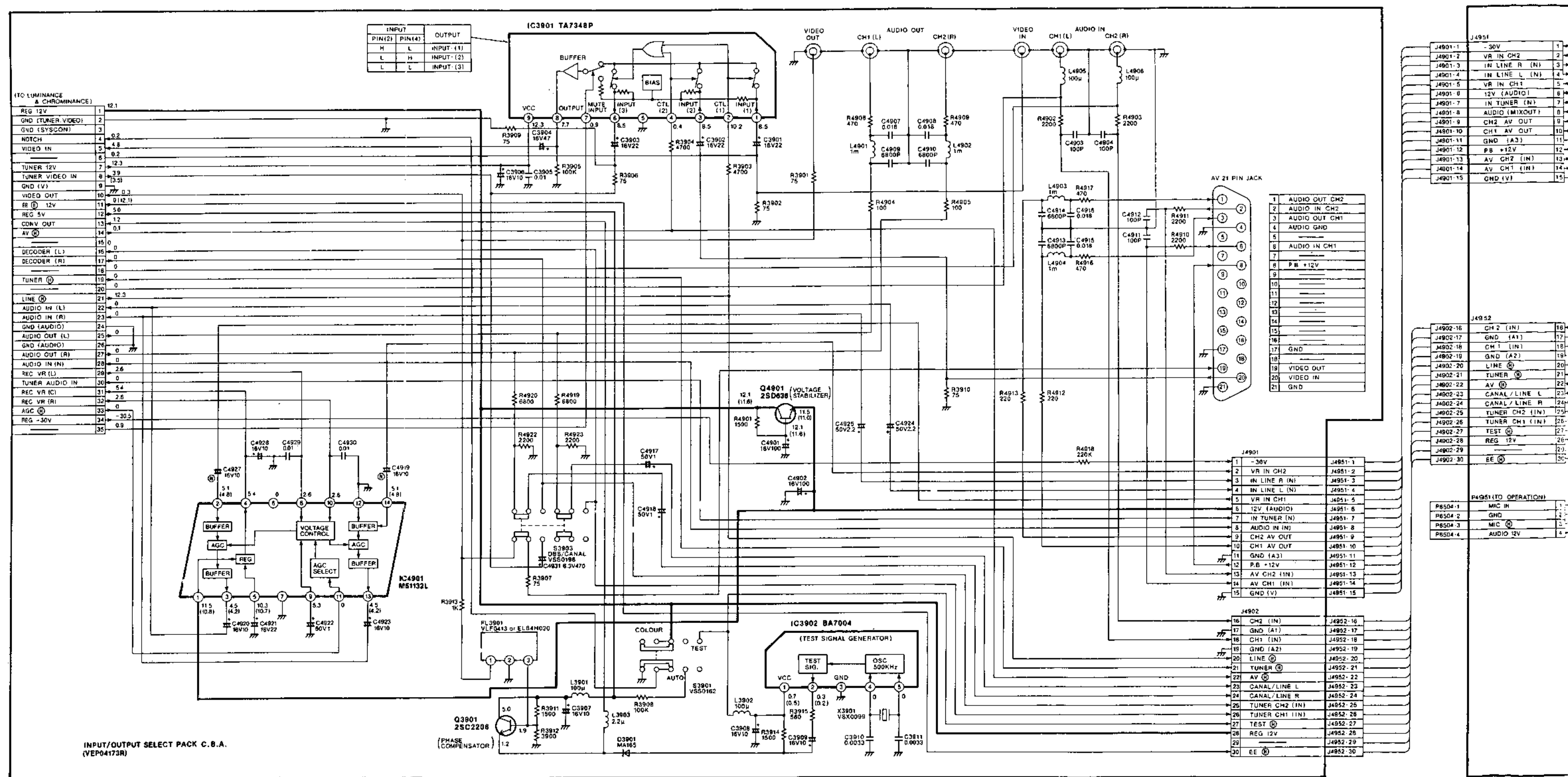
					
R4582	4822 116 52199	C.RES. 68	R4669	4822 116 52303	C.RES.8.2 kΩ
R4583	4822 116 52233	C.RES. 10 kΩ	R4670	4822 116 81441	M.RES. 2W 1 kΩ
R4584	4822 116 52304	C.RES. 82 kΩ	R4671	4822 116 81441	M.RES. 2W 1 kΩ
R4585	4822 116 52204	C.RES. 1 kΩ	R4701	4822 116 52252	C.RES.180 kΩ
R4586	4822 116 52284	C.RES. 47 kΩ	R4702	4822 116 52234	C.RES.100 kΩ
R4587	4822 116 52283	C.RES.4.7 kΩ	R4703	4822 116 52249	C.RES.1.8 kΩ
R4588	4822 116 52264	C.RES. 27 kΩ	R4704	4822 116 52249	C.RES.1.8 kΩ
R4589	4822 116 81397	M.RES.4.7 kΩ	R4705	4822 116 52217	C.RES. 270
R4590	4822 116 81397	M.RES.4.7 kΩ	R4706	4822 116 52252	C.RES.180 kΩ
R4591	4822 116 52228	C.RES. 680	R4707	4822 116 52234	C.RES.100 kΩ
R4592	4822 116 52289	C.RES.5.6 kΩ	R4708	4822 116 52249	C.RES.1.8 kΩ
R4593	4822 116 52283	C.RES.4.7 kΩ	R4709	4822 116 52249	C.RES.1.8 kΩ
R4594	4822 116 81454	M.RES. 820	R4710	4822 116 52217	C.RES. 270
R4595	4822 116 81454	M.RES. 820	R4711	4822 116 52207	C.RES.1.2 kΩ
R4596	4822 116 52296	C.RES.6.8 kΩ	R4712	4822 116 52207	C.RES.1.2 kΩ
R4597	4822 116 52296	C.RES.6.8 kΩ	R4713	4822 116 52271	C.RES. 33 kΩ
R4598	4822 116 52284	C.RES. 47 kΩ	R4714	4822 116 52215	C.RES. 220
R4599	4822 116 52233	C.RES. 10 kΩ	R4741	4822 116 52204	C.RES. 1 kΩ
R4600	4822 116 52204	C.RES. 1 kΩ			
R4602	4822 116 52207	C.RES.1.2 kΩ			
R4651	4822 116 52204	C.RES. 1 kΩ			
R4652	4822 116 52204	C.RES. 1 kΩ			
R4653	4822 116 52256	C.RES.2.2 kΩ			
R4654	4822 116 52175	C.RES. 100			
R4655	4822 116 52256	C.RES.2.2 kΩ			
R4656	4822 116 52222	C.RES. 390			
R4657	4822 116 52235	C.RES.1000 kΩ			
R4658	4822 116 52256	C.RES.2.2 kΩ			
R4659	4822 116 52235	C.RES.1000 kΩ	VR4501	4822 100 10736	V.RES. 2 kΩ
R4660	4822 116 52256	C.RES.2.2 kΩ	VR4502	4822 101 30611	V.RES.
R4664	4822 116 52238	C.RES. 12 kΩ	VR4503	4822 101 30609	V.RES. 2 kΩ
R4665	4822 116 52239	C.RES.120 kΩ	VR4504	4822 101 30611	V.RES.
R4667	4822 116 52238	C.RES. 12 kΩ	VR4505	4822 101 30612	V.RES. 50 kΩ
R4668	4822 116 52239	C.RES.120 kΩ	VR4507	4822 101 30611	V.RES.
			VR4508	4822 101 30611	V.RES.
			VR4509	4822 100 10736	V.RES. 2 kΩ

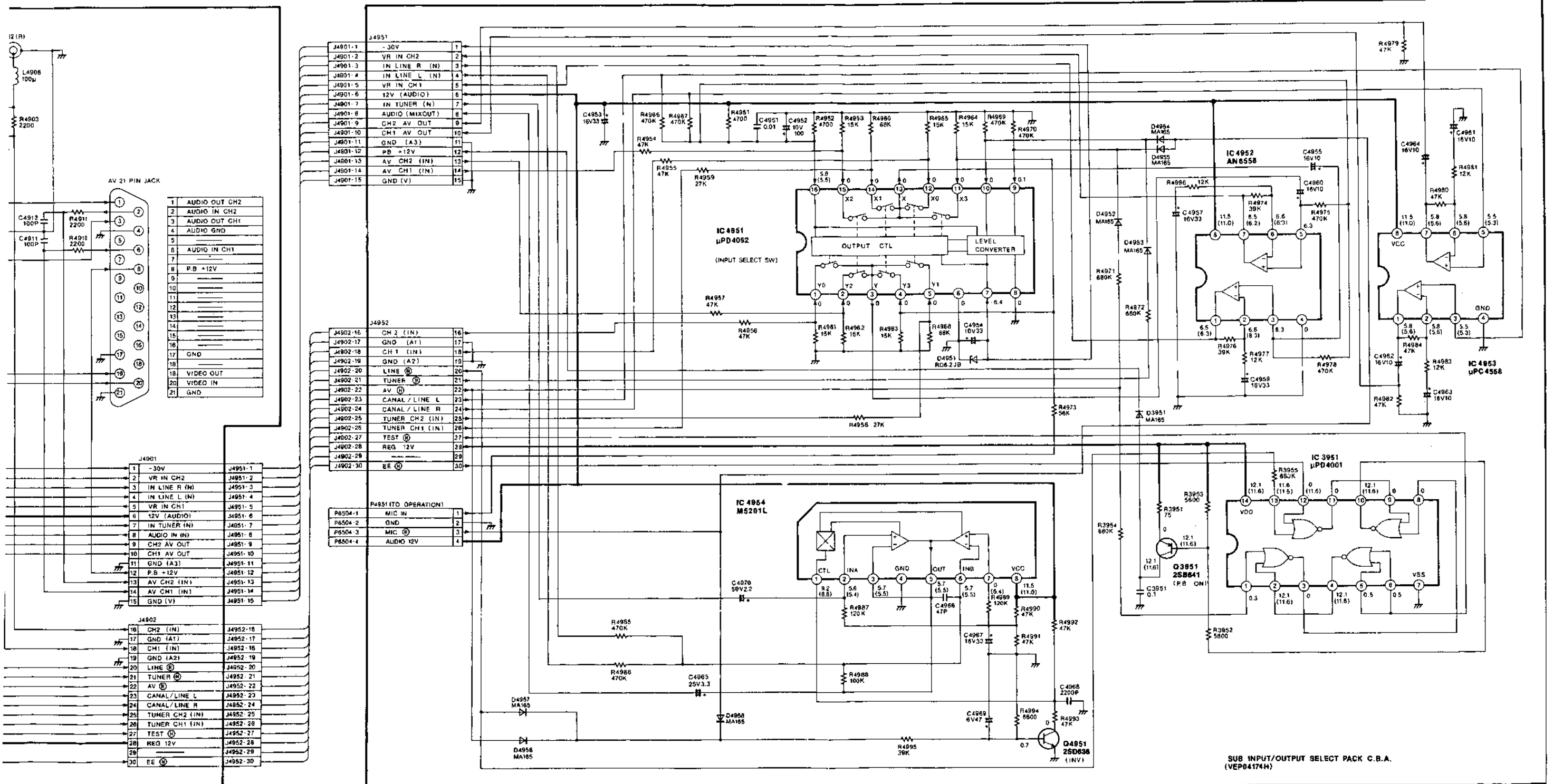
**Hi-Fi AUDIO PACK C.B.A. (VEP04225A)**



- LINE IN SIGNAL LEVEL... - 10dB 1kHz
- MEASUREMENT MODE
REC...BRACKETS ()
PLAY...WITHOUT BRACKETS
(S-VHS: SP MODE)



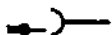




NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

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

Main circuit board assembly

					
X271	4822 242 72473	CRYSTAL OSC.	P703	4822 267 50903	CONNECTOR
X272	4822 242 72475	CRYSTAL OSC.	P7302	4822 267 50906	CONNECTOR
X301	4822 242 72475	CRYSTAL OSC.	P7403	4822 265 40837	CONNECTOR 7P
X3901	4822 242 70865	CRYSTAL OSC.	P7404	4822 267 50904	CONNECTOR
X6001	4822 242 72472	CRYSTAL OSC.	P7503	4822 267 50903	CONNECTOR
X7504	4822 242 72471	CRYSTAL OSC.	P7504	4822 267 50898	CONNECTOR
X801	4822 242 72474	CRYSTAL OSC.	P7801	4822 267 50899	CONNECTOR
			S3901	4822 276 12566	
					
BP2001	4822 265 30692	CONNECTOR	S3903	4822 276 12567	SWITCH
BP3001	4822 265 40841	CONNECTOR			
BP3002	4822 265 30692	CONNECTOR			
BP4951	4822 265 30691	CONNECTOR			
BP6001	4822 265 40843	CONNECTOR			
BP6004	4822 265 30691	CONNECTOR			
BP7301	4822 265 30691	CONNECTOR			
BP7303	4822 265 40842	CONNECTOR			
BP7401	4822 265 40842	CONNECTOR			
BP7402	4822 265 30693	CONNECTOR			
BP7405	4822 265 30693	CONNECTOR			
P002	4822 267 40838	CONNECTOR			
P1101	4822 267 40836	CONNECTOR			
P1101	4822 265 30687	CONNECTOR 3P			
P1202	4822 267 31054	CONNECTOR			
P1504	4822 265 40836	CONNECTOR			
P2002	4822 265 40845	CONNECTOR			
P201	4822 267 50905	CONNECTOR			
P271	4822 265 30694	CONNECTOR			
P2801	4822 265 30387	CONNECTOR 4P			
P2801	4822 267 40838	CONNECTOR			
P2901	4822 267 50897	CONNECTOR			
P3003	4822 265 40839	CONNECTOR 10P			
P3003	4822 265 40839	CONNECTOR			
P3004	4822 265 30429	CONNECTOR 3P			
P3004	4822 267 40835	CONNECTOR			
P3006	4822 267 50902	CONNECTOR			
P3006	4822 265 40838	CONNECTOR 9P			
P302	4822 265 30688	CONNECTOR 6P			
P302	4822 267 40839	CONNECTOR			
P3101	4822 267 40839	CONNECTOR			
P3401	4822 267 40839	CONNECTOR			
P3403	4822 267 50901	CONNECTOR			
P3404	4822 267 40838	CONNECTOR			
P3407	4822 267 40836	CONNECTOR			
P3702	4822 267 40835	CONNECTOR			
P3801	4822 267 40841	CONNECTOR			
P3803	4822 267 40839	CONNECTOR			
P3805	4822 267 40837	CONNECTOR			
P4001	4822 265 30689	CONNECTOR 6P			
P4003	4822 267 60259	CONNECTOR			
P4004	4822 267 31053	CONNECTOR			
P4004	4822 267 30572	CONNECTOR 2P			
P4502	4822 267 40838	CONNECTOR			
P4504	4822 267 31053	CONNECTOR			
P4951	4822 267 40834	CONNECTOR			
P501	4822 267 50901	CONNECTOR			
P502	4822 267 50902	CONNECTOR			
P6002	4822 267 40842	CONNECTOR			
P6003	4822 265 40844	CONNECTOR			
P6005	4822 267 30572	CONNECTOR 2P			
P6006	4822 267 40841	CONNECTOR			
P6006	4822 265 30689	CONNECTOR 6P			
P6007	4822 265 30689	CONNECTOR 6P			
P6008	4822 265 30688	CONNECTOR 6P			
P6008	4822 267 40839	CONNECTOR			
P701	4822 267 40838	CONNECTOR			
					
			C202	4822 124 21561	E.CAP. 50V 0.47 μ F
			C203	4822 122 32646	CHIP 50V 5600P
			C204	4822 124 22829	E.CAP. 16V 10 μ F
			C205	4822 121 90054	S.CAP 16V 0.047 μ F
			C206	4822 124 21533	E.CAP 16V 16 μ F
			C207	4822 124 21533	E.CAP 16V 16 μ F
			C208	4822 124 21524	E.CAP 50V 1 μ F
			C209	4822 124 21524	E.CAP 50V 1 μ F
			C210	4822 124 21532	E.CAP 6.3V 33 μ F
			C212	4822 121 42179	P.CAP 50V 0.1 μ F
			C213	4822 121 42183	P.CAP 50V 0.068 μ F
			C214	4822 122 33905	CHIP 50V 1000P
			C215	4822 124 22834	E.CAP 50V 0.33 μ F
			C216	4822 121 42179	P.CAP 50V 0.1 μ F
			C217	4822 124 21561	E.CAP 50V 0.47 μ F
			C218	4822 122 32642	CHIP 50V 4700P
			C219	4822 121 42269	P.CAP 50V 0.33 μ F
			C221	4822 121 42179	P.CAP 50V 0.1 μ F
			C222	4822 122 32646	CHIP 50V 5600P
			C223	4822 121 42257	P.CAP 50V 0.022 μ F
			C224	4822 124 21513	E.CAP 6.3V 47 μ F
			C225	4822 124 21513	E.CAP 6.3V 47 μ F
			C226	4822 122 33905	CHIP 50V 1000P
			C227	4822 122 33771	CHIP 50V 3300P
			C229	4822 121 51445	P.CAP 50V 2700P
			C230	4822 124 21567	E.CAP 16V 10 μ F
			C231	4822 124 40839	E.CAP 50V 1 μ F
			C232	4822 124 21533	E.CAP 16V 10 μ F
			C234	4822 122 33905	CHIP 50V 1000P
			C237	4822 121 51447	P.CAP 50V 5600P
			C238	4822 124 22821	E.CAP 6.3V 100 μ F
			C239	4822 124 41004	E.CAP 6.3V 220 μ F
			C240	4822 124 22835	E.CAP 16V 10 μ F
			C241	4822 124 21513	E.CAP 6.3V 47 μ F
			C242	4822 122 33747	CHIP 50V 0.01 μ F
			C243	4822 122 33747	CHIP 50V 0.01 μ F
			C244	4822 124 40836	E.CAP 25V 4.7 μ F
			C245	4822 122 32646	CHIP 50V 5600P
			C246	4822 121 42179	P.CAP 50V 0.1 μ F
			C247	4822 124 21533	E.CAP 16V 10 μ F
			C248	4822 122 33905	CHIP 50V 1000P
			C254	4822 121 90054	S.CAP 16V 0.047 μ F
			C255	4822 122 32462	C.CAP 50V 3300P
			C258	4822 122 33747	CHIP 50V 0.01 μ F
			C261	4822 122 33747	CHIP 50V 0.01 μ F
			C262	4822 121 42179	P.CAP 50V 0.1 μ F
			C271	4822 124 21513	E.CAP 6.3V 47 μ F
			C281	4822 122 33747	CHIP 50V 0.01 μ F
			C282	4822 122 33747	CHIP 50V 0.01 μ F
			C284	4822 122 33907	CHIP 50V 22P



QR6006	4822 130 61585	UN1111
QR6008	4822 130 61585	UN1111
QR6010	4822 130 61585	UN1111
QR6011	4822 111 91223	UN1212
QR6012	4822 111 91318	UN1113
QR6013	4822 111 91319	UN1213
QR6014	4822 111 91319	UN1213
QR6015	4822 111 91223	UN1212
QR6016	4822 130 61585	UN1111
QR6199	4822 130 61586	UN1210
QR7556	4822 111 91319	UN1213
QR7557	4822 111 91319	UN1213
QR7558	4822 111 91319	UN1213
QR7559	4822 111 91319	UN1213

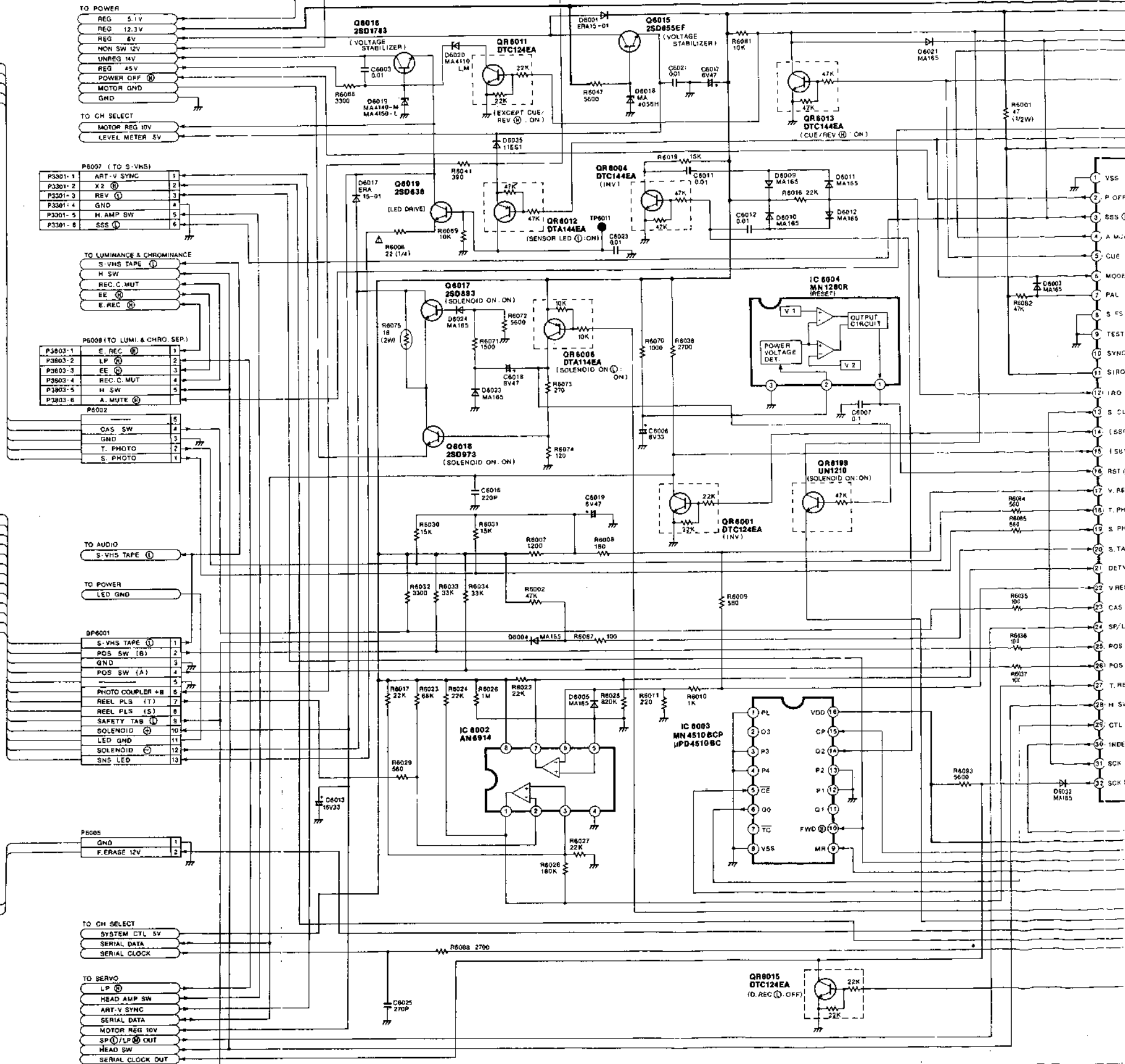
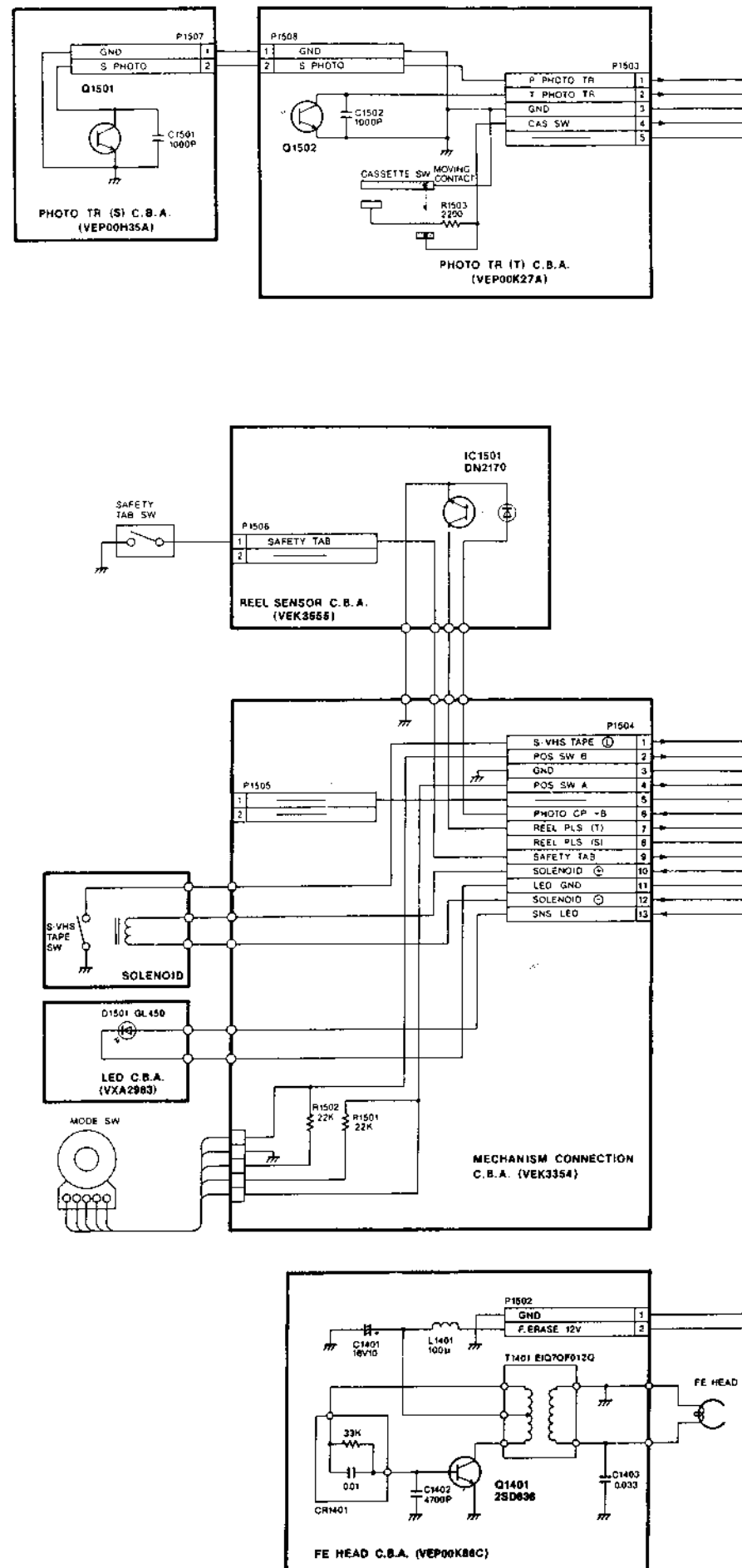


R201	4822 116 90445	CHIP 39 kΩ
R202	4822 116 90458	CHIP 1.5 kΩ
R203	4822 116 81117	CHIP 10 kΩ
R204	4822 116 90339	CHIP 220
R205	4822 111 91516	CHIP 1 kΩ
R206	4822 111 91527	CHIP 3.9 kΩ
R207	4822 111 91661	CHIP 47 kΩ
R208	4822 111 91522	CHIP 2.2 kΩ
R209	4822 116 90464	CHIP 6.8 kΩ
R210	4822 116 81403	CHIP 270 kΩ
R211	4822 111 91535	CHIP 56 kΩ
R212	4822 116 90459	CHIP 150 kΩ
R213	4822 116 90459	CHIP 150 kΩ
R214	4822 116 80881	CHIP 220 kΩ
R215	4822 111 91449	CHIP 2.7 kΩ
R216	4822 116 81117	CHIP 10 kΩ
R217	4822 116 90347	CHIP 68 kΩ
R218	4822 116 81017	CHIP 33 kΩ
R219	4822 116 81017	CHIP 33 kΩ
R220	4822 116 81403	CHIP 270 kΩ
R222	4822 111 91526	CHIP 3.3 kΩ
R223	4822 111 91526	CHIP 3.3 kΩ
R224	4822 111 91533	CHIP 560
R225	4822 111 91522	CHIP 2.2 kΩ
R226	4822 111 91516	CHIP 1 kΩ
R227	4822 116 81117	CHIP 10 kΩ
R228	4822 116 90445	CHIP 39 kΩ
R229	4822 116 90339	CHIP 220
R230	4822 116 90458	CHIP 1.5 kΩ
R231	4822 116 90458	CHIP 1.5 kΩ
R232	4822 111 91535	CHIP 56 kΩ
R233	4822 111 91535	CHIP 56 kΩ
R234	4822 111 91532	CHIP 4.7 kΩ
R235	4822 116 81017	CHIP 33 kΩ
R236	4822 116 90459	CHIP 150 kΩ
R237	4822 116 90459	CHIP 150 kΩ
R238	4822 116 90442	CHIP 120 kΩ
R239	4822 111 91527	CHIP 3.9 kΩ
R240	4822 116 81017	CHIP 33 kΩ
R241	4822 116 81032	CHIP 680 kΩ

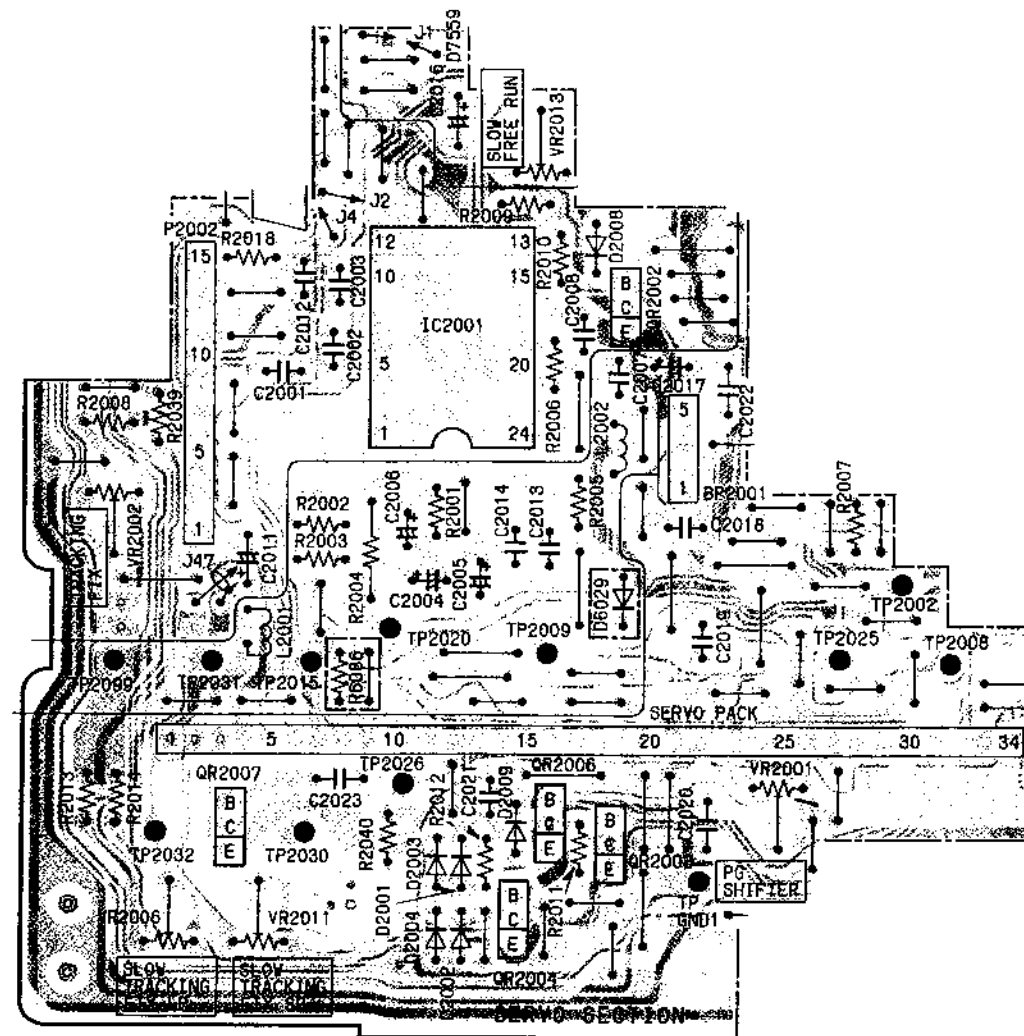


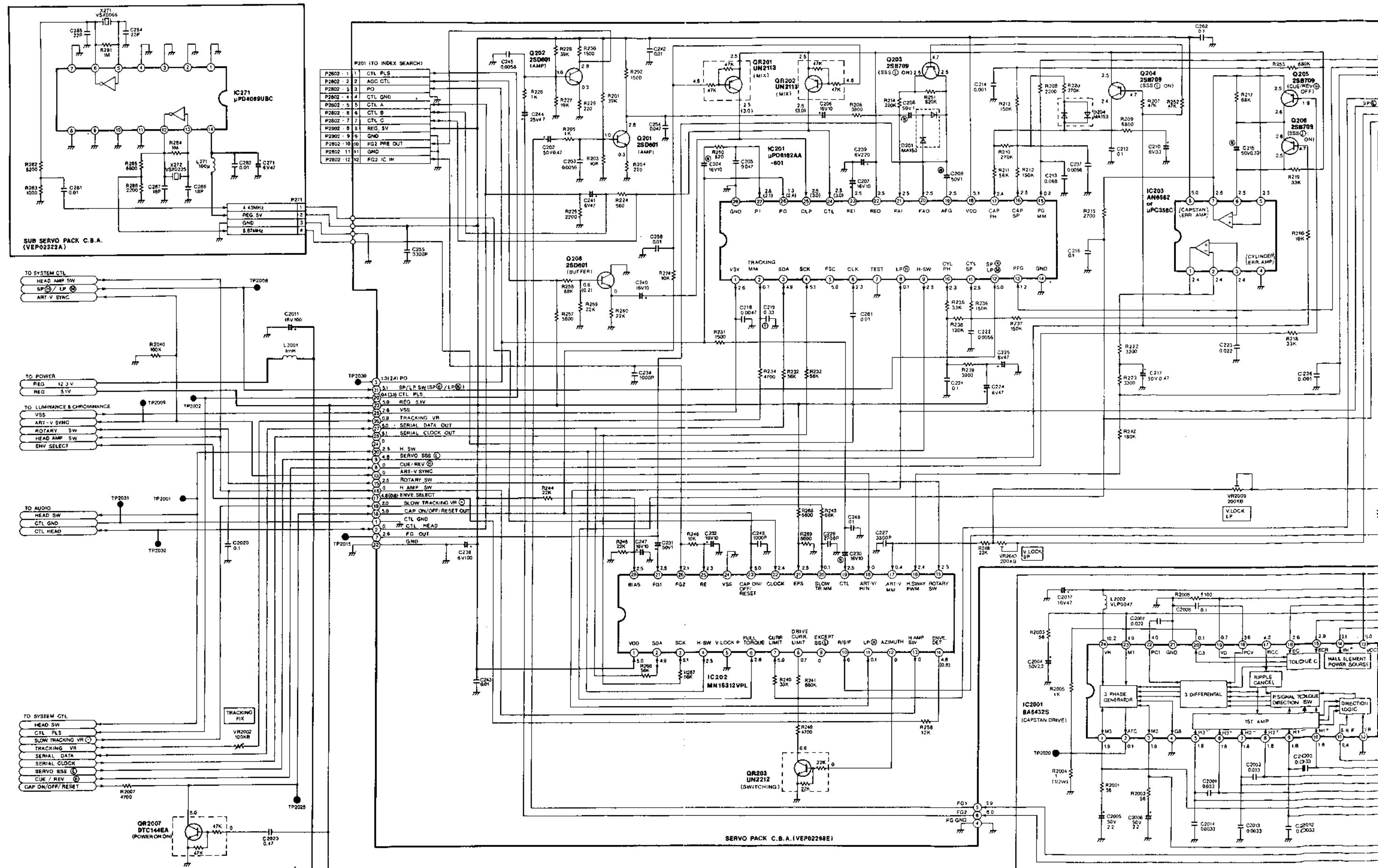
R242	4822 116 90443	CHIP 180 kΩ
R243	4822 116 90347	CHIP 68 kΩ
R244	4822 111 91523	CHIP 22 kΩ
R245	4822 111 91523	CHIP 22 kΩ
R246	4822 116 81117	CHIP 10 kΩ
R247	4822 111 91527	CHIP 3.9 kΩ
R248	4822 111 91523	CHIP 22 kΩ
R249	4822 111 91532	CHIP 4.7 kΩ
R250	4822 116 81034	CHIP 820
R251	4822 116 90348	CHIP 820 kΩ
R252	4822 111 91661	CHIP 47 kΩ
R253	4822 116 81032	CHIP 680 kΩ
R256	4822 116 81382	CHIP 12 kΩ
R257	4822 111 91535	CHIP 5.6 kΩ
R258	4822 116 90347	CHIP 68 kΩ
R259	4822 111 91523	CHIP 22 kΩ
R260	4822 111 91523	CHIP 22 kΩ
R266	4822 111 91535	CHIP 56 kΩ
R267	4822 111 91535	CHIP 56 kΩ
R268	4822 111 91535	CHIP 5.6 kΩ
R269	4822 111 91535	CHIP 5.6 kΩ
R274	4822 116 81117	CHIP 10 kΩ
R281	4822 111 91651	CHIP 1M
R282	4822 111 91655	CHIP 8.2 kΩ
R283	4822 111 91516	CHIP 1 kΩ
R284	4822 111 91651	CHIP 1M
R285	4822 116 90464	CHIP 6.8 kΩ
R286	4822 111 91522	CHIP 2.2 kΩ
R301	4822 116 80877	CHIP 102 kΩ
R302	4822 116 81029	CHIP 390
R303	4822 116 81117	CHIP 10 kΩ
R304	4822 111 91516	CHIP 1 kΩ
R305	4822 116 90348	CHIP 820 kΩ
R306	4822 116 90458	CHIP 1.5 kΩ
R307	4822 111 91516	CHIP 1 kΩ
R308	4822 116 81382	CHIP 12 kΩ
R309	4822 111 91449	CHIP 2.7 kΩ
R310	4822 116 81117	CHIP 10 kΩ
R311	4822 111 91527	CHIP 3.9 kΩ
R312	4822 111 91532	CHIP 4.7 kΩ
R313	4822 116 81117	CHIP 10 kΩ
R314	4822 116 81117	CHIP 10 kΩ
R316	4822 111 91518	CHIP 100 kΩ
R318	4822 111 91535	CHIP 5.6 kΩ
R319	4822 116 81389	CHIP 82 kΩ
R320	4822 111 91516	CHIP 1 kΩ
R321	4822 111 91516	CHIP 1 kΩ
R322	4822 116 81029	CHIP 390
R323	4822 116 90446	CHIP 470
R324	4822 116 90458	CHIP 1.5 kΩ
R325	4822 116 80879	CHIP 150
R326	4822 111 91655	CHIP 8.2 kΩ
R327	4822 111 91526	CHIP 3.3 kΩ
R328	4822 111 91449	CHIP 2.7 kΩ
R329	4822 116 81117	CHIP 10 kΩ
R330	4822 111 91521	CHIP 180 kΩ
R331	4822 111 91516	CHIP 1 kΩ
R332	4822 111 91522	CHIP 2.2 kΩ
R334	4822 111 91516	CHIP 1 kΩ

							
R6006	4822 111 41142	C.RES 2W 22		R7551	4822 116 52284	C.RES 47 kΩ	
R6007	4822 116 52207	C.RES 1.2 kΩ		R7552	4822 116 52284	C.RES 47 kΩ	
R6008	4822 116 52213	C.RES 180		R7553	4822 116 52234	C.RES 100 kΩ	
R6009	4822 116 52226	C.RES 560		R7554	4822 116 52239	C.RES 120 kΩ	
R6010	4822 116 52204	C.RES 1 kΩ		R7555	4822 116 52233	C.RES 10 kΩ	
R6011	4822 116 52215	C.RES 220		R7556	4822 116 81379	C.RES 1W 1.5 kΩ	
R6016	4822 116 52257	C.RES 22 kΩ		R7557	4822 116 52233	C.RES 10 kΩ	
R6017	4822 116 52257	C.RES 22 kΩ		R7558	4822 116 52204	C.RES 1 kΩ	
R6019	4822 116 52244	C.RES 15 kΩ		R7559	4822 116 52269	C.RES 3.3 kΩ	
R6022	4822 116 52257	C.RES 22 kΩ		R7560	4822 116 52257	C.RES 22 kΩ	
R6023	4822 116 52297	C.RES 68 kΩ		R7563	4822 116 52176	C.RES 10	
R6024	4822 116 52257	C.RES 22 kΩ		R7577	4822 116 52233	C.RES 10 kΩ	
R6025	4822 116 52305	C.RES 820 kΩ		R7578	4822 116 52233	C.RES 10 kΩ	
R6026	4822 116 52235	C.RES 1000 kΩ		R7579	4822 116 52233	C.RES 10 kΩ	
R6027	4822 116 52257	C.RES 22 kΩ		R7580	4822 116 52233	C.RES 10 kΩ	
R6028	4822 116 52252	C.RES 180 kΩ		R7581	4822 116 52289	C.RES 5.6 kΩ	
R6029	4822 116 52226	C.RES 560		R7582	4822 116 52296	C.RES 6.8 kΩ	
R6030	4822 116 52244	C.RES 15 kΩ		R7583	4822 116 52284	C.RES 47 kΩ	
R6031	4822 116 52244	C.RES 15 kΩ		R7584	4822 116 52277	C.RES 39 kΩ	
R6032	4822 116 52269	C.RES 3.3 kΩ		R7585	4822 116 52284	C.RES 47 kΩ	
R6033	4822 116 52271	C.RES 33 kΩ		R7586	4822 116 52291	C.RES 56 kΩ	
R6034	4822 116 52271	C.RES 33 kΩ		R7589	4822 116 52269	C.RES 3.3 kΩ	
R6035	4822 116 52175	C.RES 100		R7590	4822 116 52269	C.RES 3.3 kΩ	
R6036	4822 116 52175	C.RES 100		R7591	4822 116 52269	C.RES 3.3 kΩ	
R6037	4822 116 52175	C.RES 100		R7592	4822 116 52269	C.RES 3.3 kΩ	
R6038	4822 116 52263	C.RES 2.7 kΩ		R7595	4822 116 52213	C.RES 180	
R6041	4822 116 52222	C.RES 390					
R6042	4822 116 52269	C.RES 3.3 kΩ					
R6045	4822 116 52289	C.RES 5.6 kΩ		VR2001	4822 101 30594	V.RES 50 kΩ	
R6046	4822 116 52243	C.RES 1.5 kΩ		VR2002	4822 101 30589	V.RES 100 kΩ	
R6047	4822 116 52289	C.RES 5.6 kΩ		VR2006	4822 101 30589	V.RES 100 kΩ	
R6048	4822 116 52271	C.RES 33 kΩ		VR2009	4822 101 30587	V.RES 200 kΩ	
R6049	4822 116 52271	C.RES 33 kΩ		VR2011	4822 101 30589	V.RES 100 kΩ	
R6050	4822 116 52289	C.RES 5.6 kΩ		VR2013	4822 100 11146	V.RES 2 kΩ	
R6051	4822 116 52269	C.RES 3.3 kΩ		VR301	4822 101 30591	V.RES 20 kΩ	
R6054	4822 116 52289	C.RES 5.6 kΩ		VR302	4822 100 10845	V.RES 10 kΩ	
R6055	4822 116 52269	C.RES 3.3 kΩ		VR4001	4822 101 30588	V.RES 10 kΩ	
R6067	4822 116 52175	C.RES 100		VR4002	4822 101 30592	V.RES 200 kΩ	
R6068	4822 116 81377	C.RES 1/2W 3.3 kΩ		VR4004	4822 101 30593	V.RES 5 kΩ	
R6069	4822 116 52233	C.RES 10 kΩ		VR4510	4822 101 30596	V.RES 100 kΩ	
R6070	4822 116 52204	C.RES 1 kΩ		VR801	4822 101 30595	V.RES 500	
R6071	4822 116 52243	C.RES 1.5 kΩ		VR802	4822 100 10776	V.RES 1 kΩ	
R6072	4822 116 52289	C.RES 5.6 kΩ					
R6073	4822 116 52217	C.RES 270					
R6074	4822 116 52206	C.RES 120					
R6075	4822 116 81381	C.RES 2W 18					
R6076	4822 116 52213	C.RES 180					
R6077	4822 116 52217	C.RES 270					
R6079	4822 116 52233	C.RES 10 kΩ					
R6080	4822 116 52263	C.RES 2.7 kΩ					
R6081	4822 116 52233	C.RES 10 kΩ					
R6082	4822 116 52284	C.RES 47 kΩ					
R6083	4822 116 52234	C.RES 100 kΩ					
R6084	4822 116 52226	C.RES 560					
R6085	4822 116 52226	C.RES 560					
R6086	4822 116 52233	C.RES 10 kΩ					
R6088	4822 116 52263	C.RES 2.7 kΩ					
R6090	4822 116 52231	C.RES 820					
R6091	4822 116 52289	C.RES 5.6 kΩ					
R6093	4822 116 52289	C.RES 5.6 kΩ					
R6096	4822 116 52217	C.RES 270					
R6097	4822 116 52256	C.RES 2.2 kΩ					
R6098	4822 116 52283	C.RES 4.7 kΩ					
R6100	4822 116 52233	C.RES 10 kΩ					
R7550	4822 116 52257	C.RES 22 kΩ					



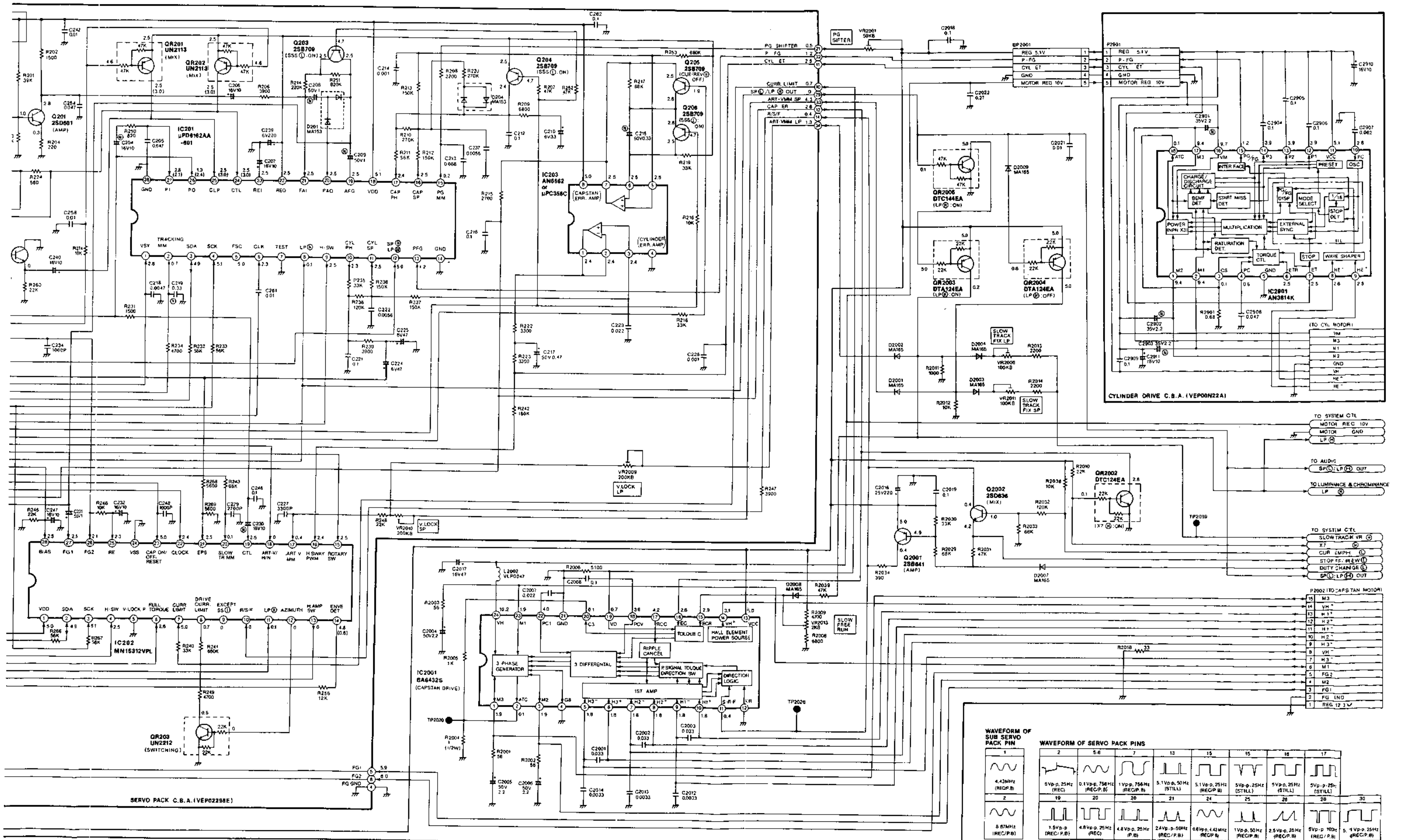
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.





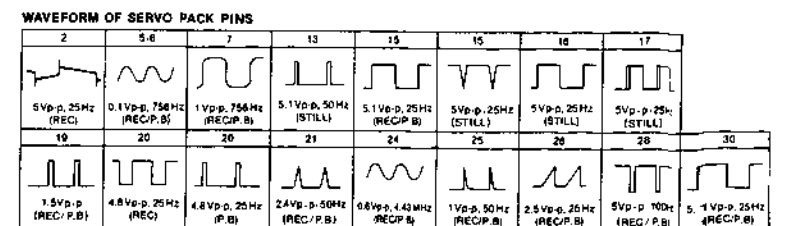
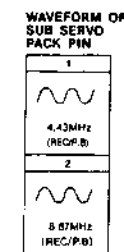
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

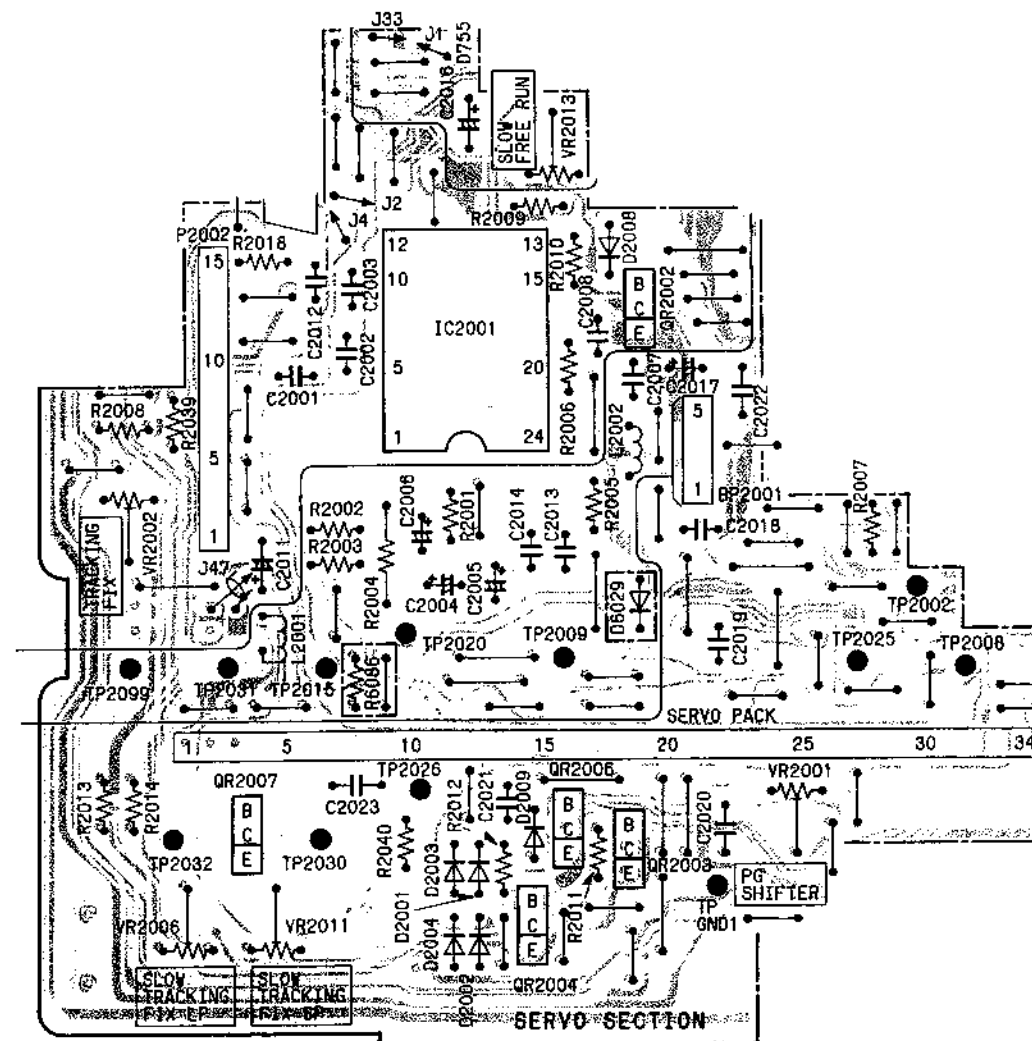
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN 1 WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE). THE MEASUREMENT MODE OF THE DC VOLTAGE OUT WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE).

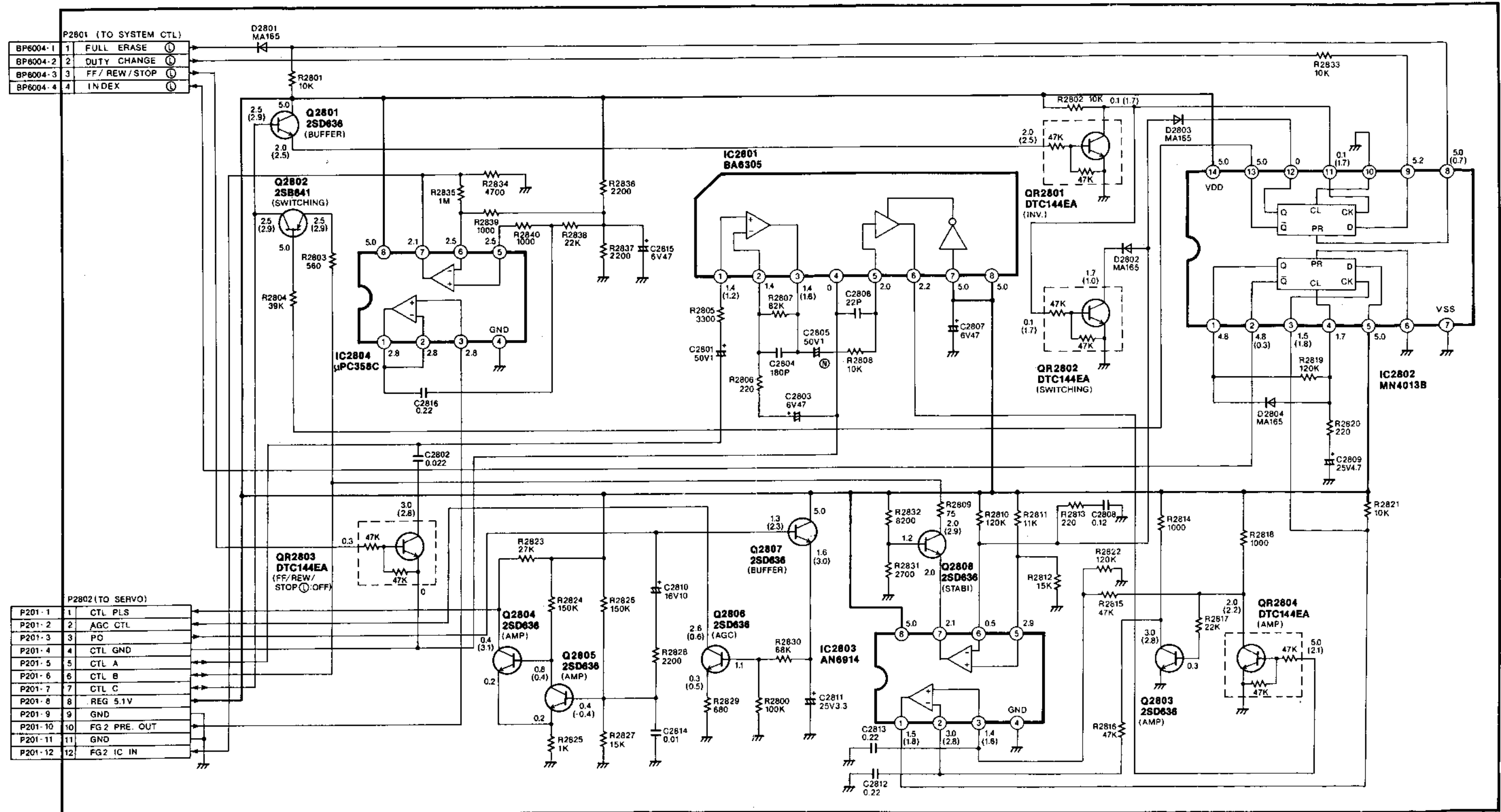


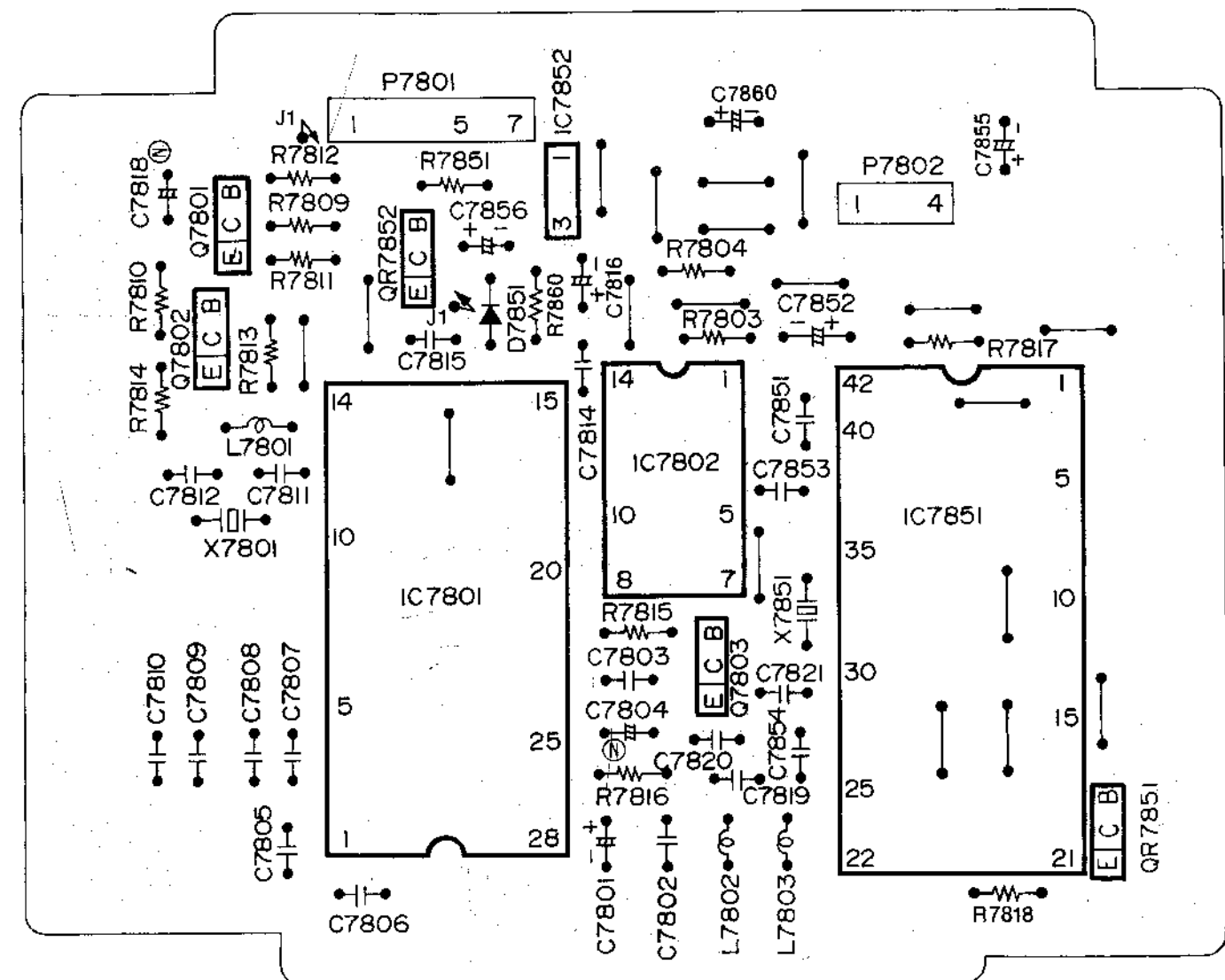
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

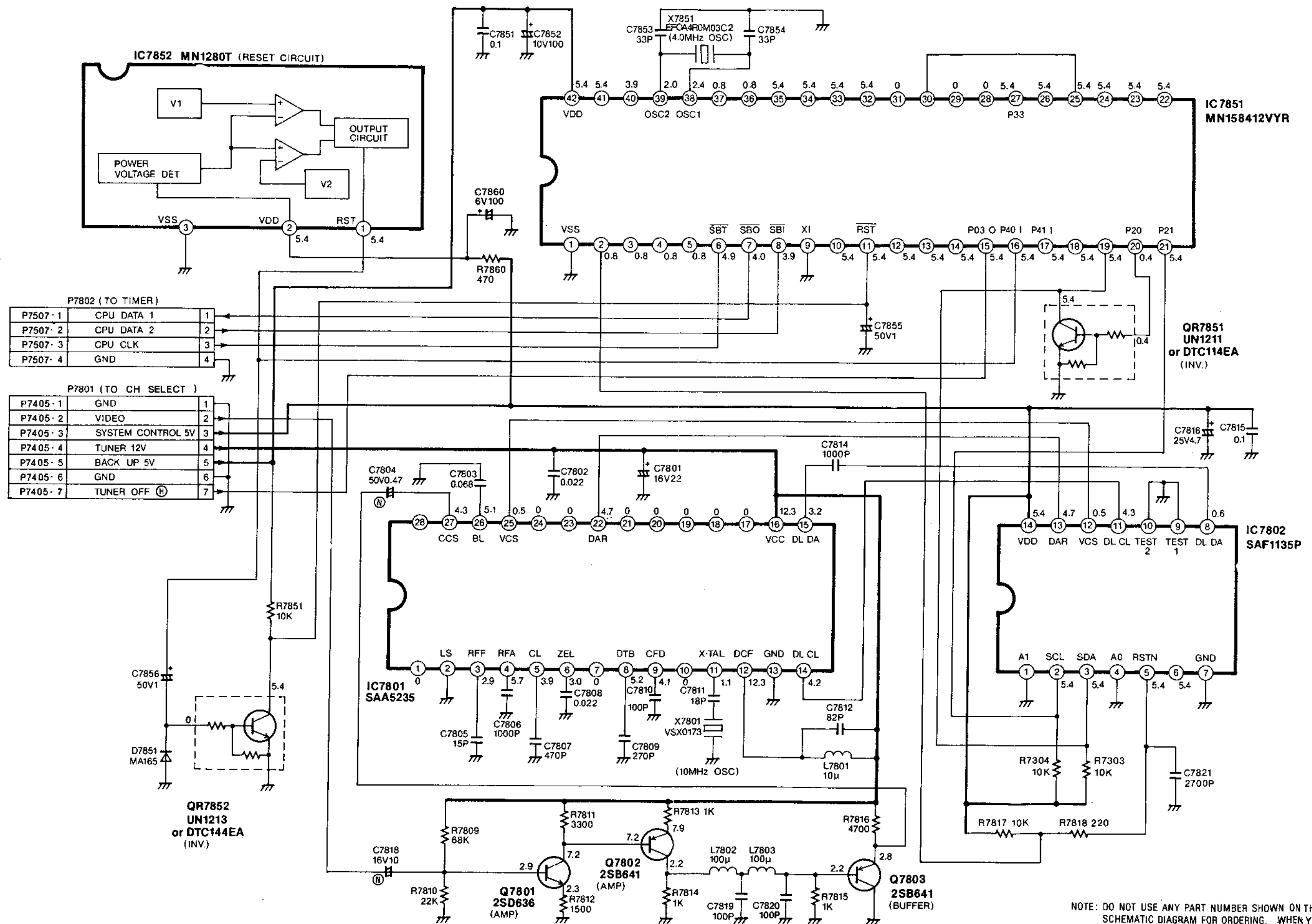
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE). THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE).

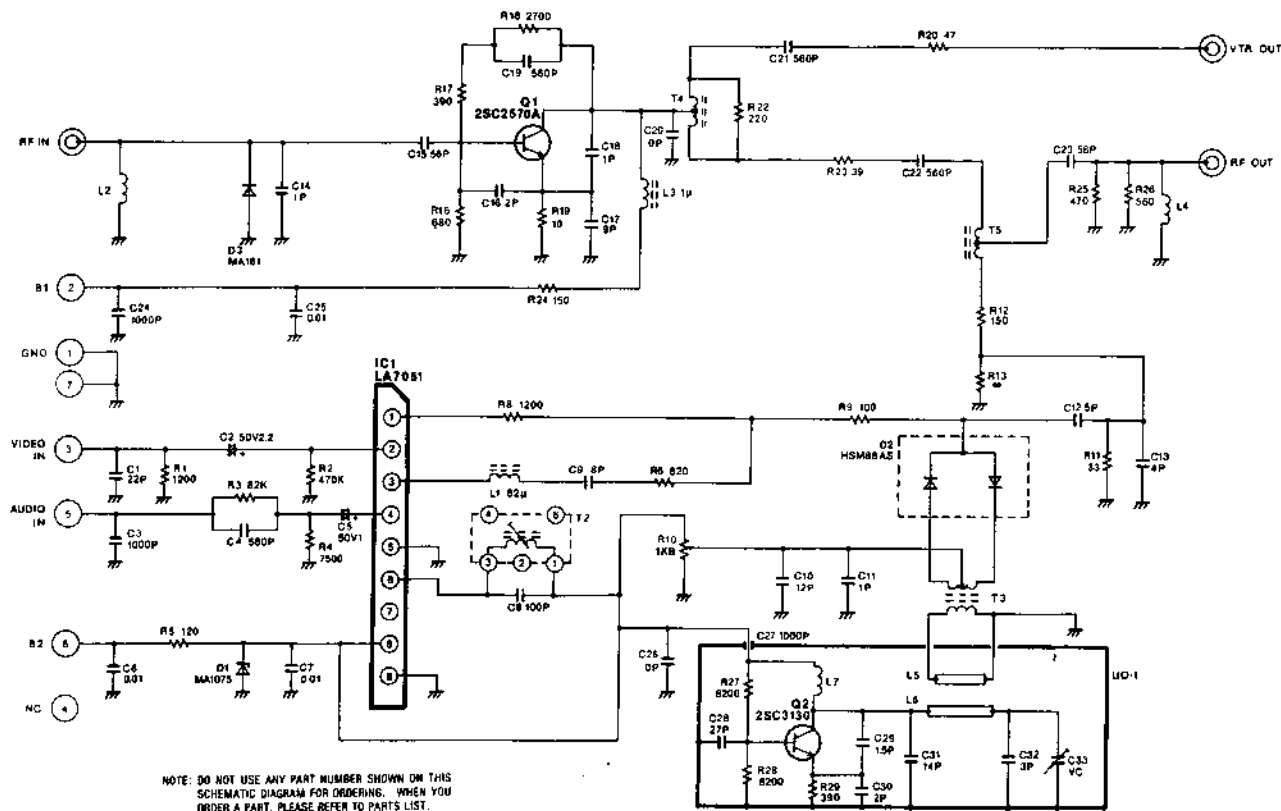














V14333

G-Tape deck DM 4/0

Service
Service
Service

DM 4/2
DMP 4/0
DMP 4/2
DMS 4/2

Service Manual



PAL/SECAM

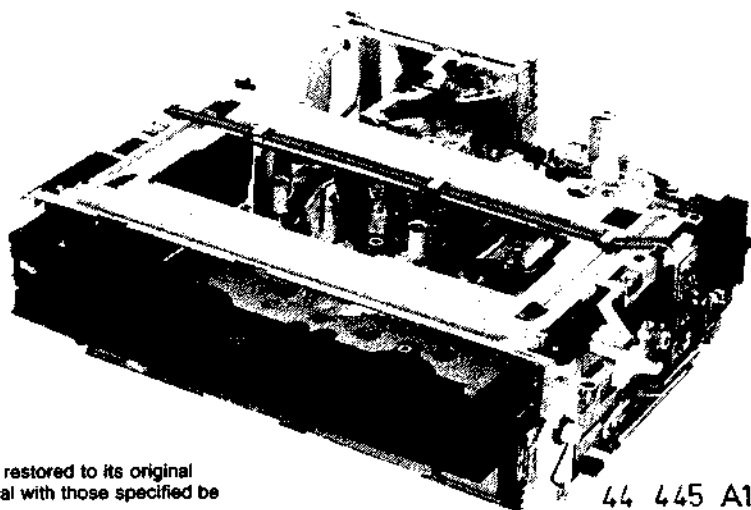
DM 4/0 is a G-tape deck (DM=Deck Mechanism) with four video heads on the head disc, suitable for "perfect still". Furthermore this tape-deck is suitable for "long play" and meets the half loading requirements.

DM 4/2 is a G-tape deck (DM=Deck Mechanism) with four video and two audio heads on the head disc, suitable for "perfect still" and FM audio. Furthermore this tape-deck is suitable for "long play" and meets the half loading requirements.

DMP 4/0 is identical to the DM 4/0, however this tape-deck has been equipped with a different scanning unit.

DMP 4/2 is identical to the DM 4/2, however this tape-deck has been equipped with a different scanning unit.

DMS 4/2 is a G-tape deck (DMS=Deck mechanism S-VHS) with four video and two audio heads on the head disc, suitable for "perfect still", FM audio and to record or play back video signals via the S-VHS system. Furthermore this tape-deck is suitable for "long play" and meets the half loading requirements.



Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

44 445 A11

Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Servicio

Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne.

Subject to modification
4822 726 14533

Published by
Service Consumer Electronics

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CS 23 560 GB

INTRODUCTION

This Service Manual describes the mechanical adjustment procedures needed for properly adjusting the G-Tape Deck. Mechanical adjustment procedures needed for video recorders incorporating the G-Tape Deck are described in chapter 2 "Mechanical Adjustment Procedures".

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Service Information

* VR86-16

* Service information included in this documentation.

1. SERVICE INFORMATION

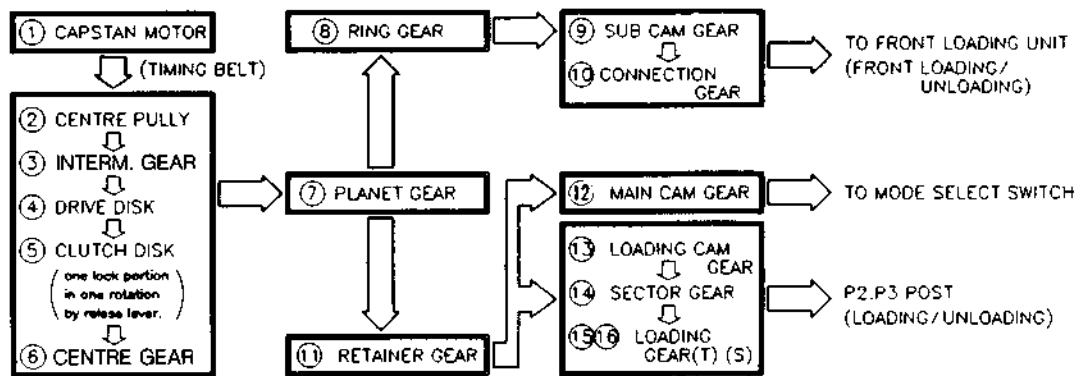
1.1 The phase of G-tape deck

The capstan motor of the G-tape deck works as a loading (threading) motor and a front loading motor in a conventional tape deck. This capstan motor controls all mechanical components of the G-tape deck. Therefore the phase of the mechanical condition becomes very important. Pay much attention to the phase of the tape deck, when reinstall any components of the tape deck, refer to chapter 4.

Adjustment procedures, should be performed, even after installation of the cassette compartment.

The mechanical movement from the drive source (capstan motor) to all other main mechanical components is shown in following flow chart, see Fig. 1-1.

Fig 1-2 shows the loading movement direction.



※ Switching of Loading and Front Loading is performed by Detent Arm.

Fig. 1-1

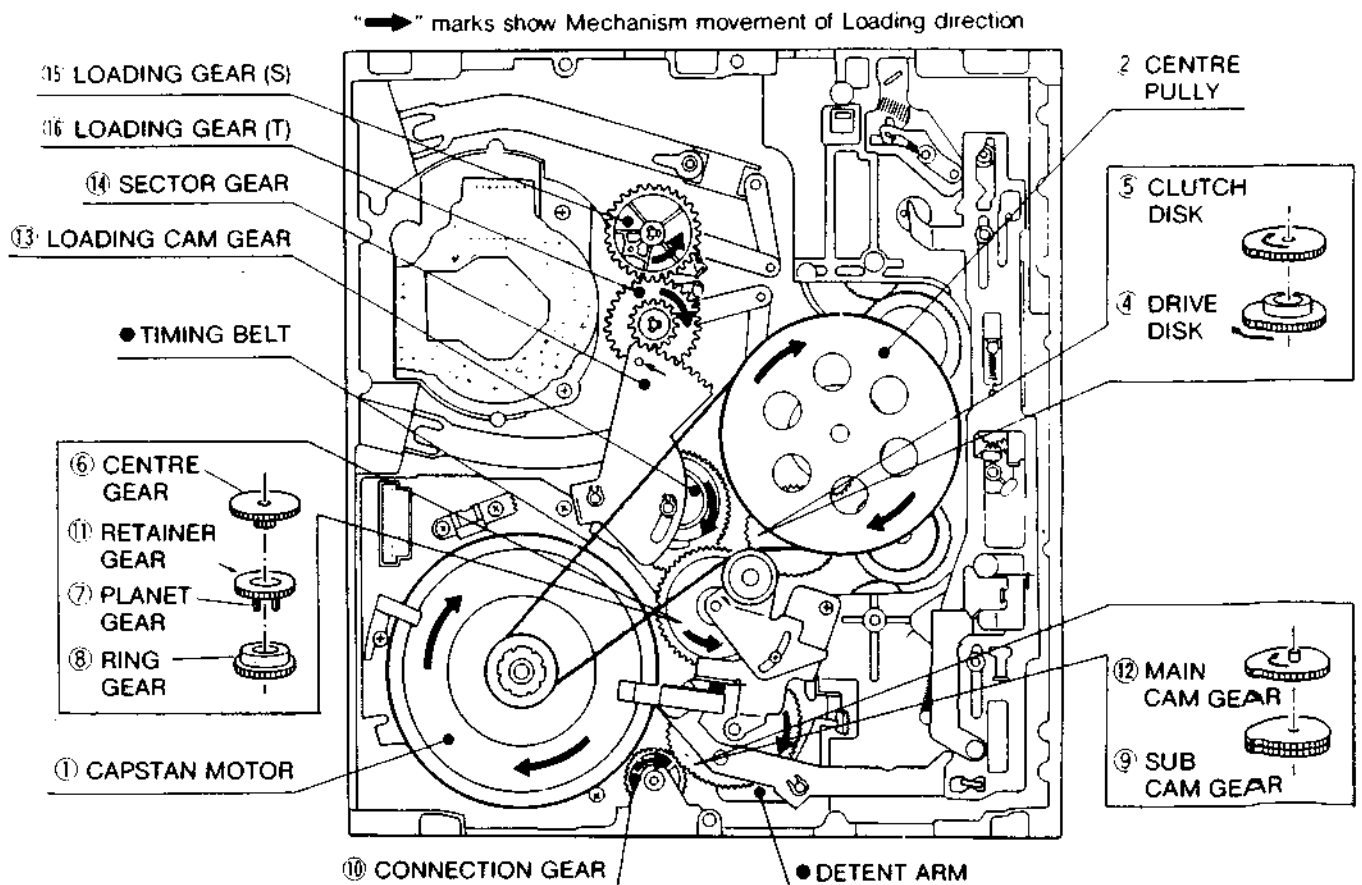


Fig. 1-2

1.2 How to eject manually

When the electrical circuit is defective and the unloading and front unloading section don't work properly, it is possible to eject manually as follows.

- Disconnect the mains supply.
- Release change lever pos. no 122(2) by pushing it to arrow mark direction as shown in Fig. 1-3.

- Slowly turn the capstan motor counter clockwise until the clutch disk is locked.
(Clutch Disk is locked once in one rotation).
- Release the change lever again when the clutch disk is locked.
- Repeat points (2) and (3) until the cassette is ejected.

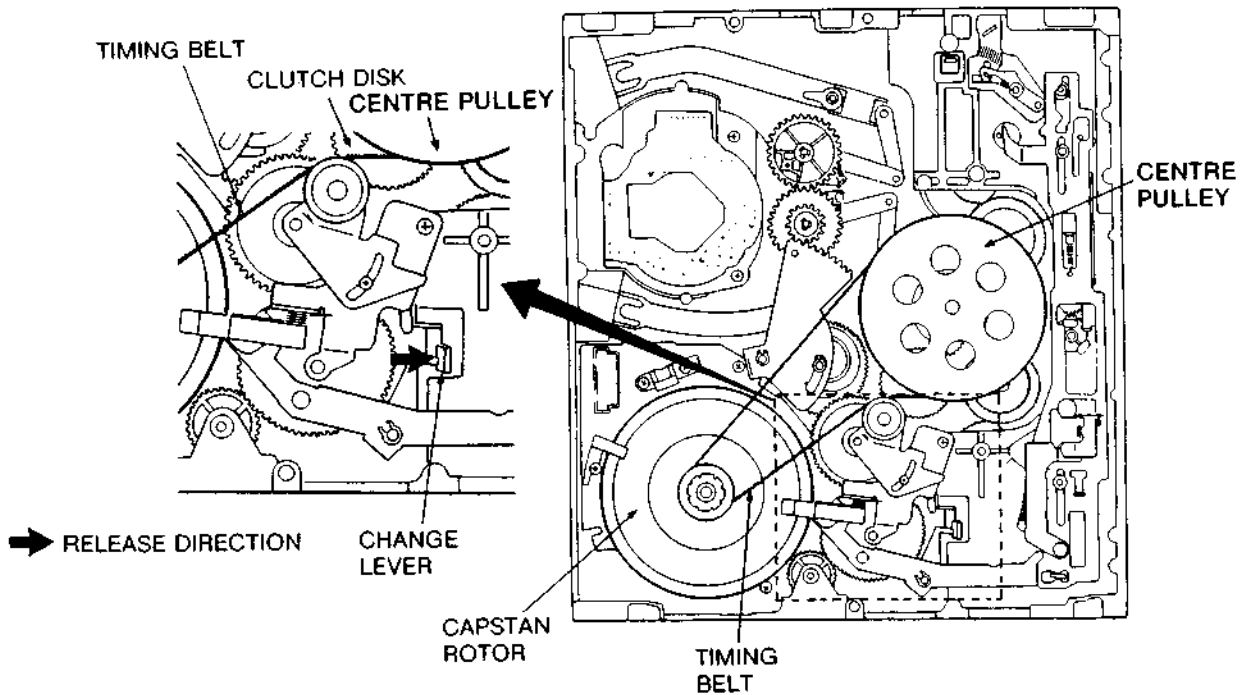


Fig. 1-3

1.3 How to place the Cassette compartment in the down condition without a cassette.

In the Cassette compartment up condition, the VCR can not be operated. To place the Cassette compartment in the down position without a cassette use the following procedure.

Method 1

- Remove the top case and front panel then, connect AC plug.
- First insert a ruler against the bottom right side of the cassette up unit so it lies over the cassette opener to keep it in the down condition as shown in Fig. 1-4.
- With the ruler in place, extend the left middle finger outside the cassette up unit to cover the hole in the cassette compartment top plate as shown in Fig. 1-4, while pressing the cassette holder unit into the loading condition with the left thumb.
- Hold the ruler and middle finger firmly in position until the cassette holder unit clears the locking tab of the side plate (L) and passes beyond the cassette reject slot of the side plate (R). After clearing the locking tab and the cassette reject slot, the cassette holder unit will move into the down position by itself.

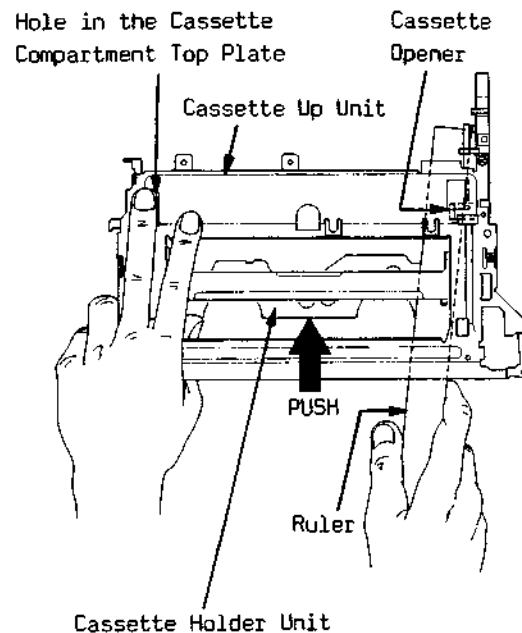


Fig. 1-4

1.6 Replacement of the scanning unit

Note:

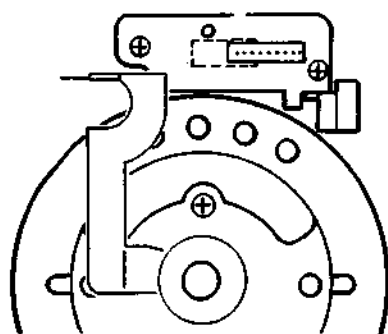
Work with extreme care when removing or replacing scanning unit pos. no. 6(1), since there is very little clearance between scanning unit and chassis. Do not touch the video head with bare hands during servicing.

Use nylon gloves (5322 395 94022).

- Place the set left side down.
- Remove grounding plate pos. no. 5(1) and the head amplifier, see Fig. 1-8.
- Remove screws (B), see Fig. 1-9.
- Lift the scanning unit out of the chassis, and disconnect the plug from P1502.

Note:

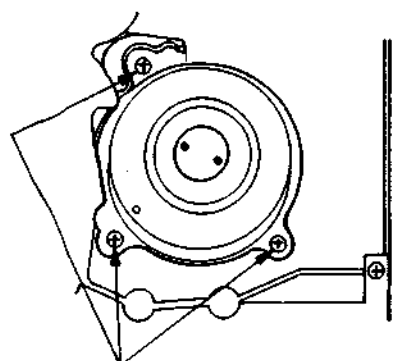
When reinstalling the new scanning unit, fit the new scanning unit to the chassis by turning it clockwise. Confirm after reinstalling the scanning unit the "Gap position" adjustment, see the relevant service Manual.



Top View

44 471 A11

Fig. 1-8



Screws (B)

Bottom View

44 472 A11

Fig. 1-9

1.7 Replacement of scanning unit (DMS 4/2)

Work with extreme care when removing or replacing the scanning unit. Do not touch the video heads during servicing.

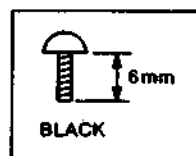
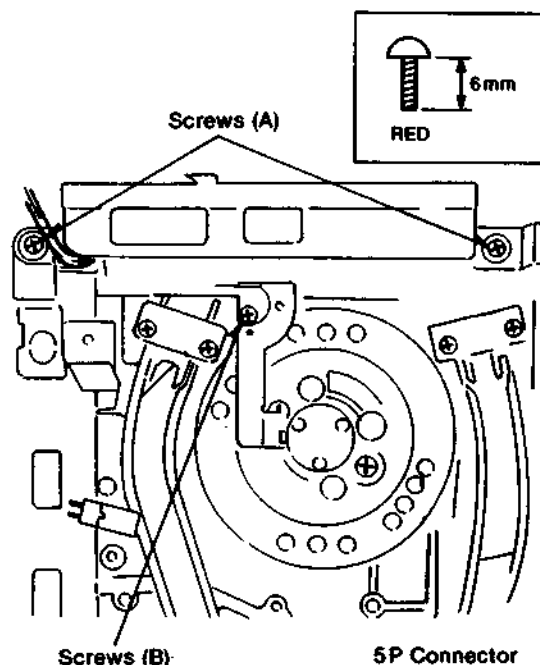


Fig. 1-10

- Remove screws (A) to take out the head amp, see Fig. 1-10.
- Remove screw (B) to take out the earth holder.
- Disconnect the 5P connector on the cylinder drive CBA.
- Remove the 3 screws (C) to take out the scanning unit (with the cylinder drive CBA) see Fig. 1-11.

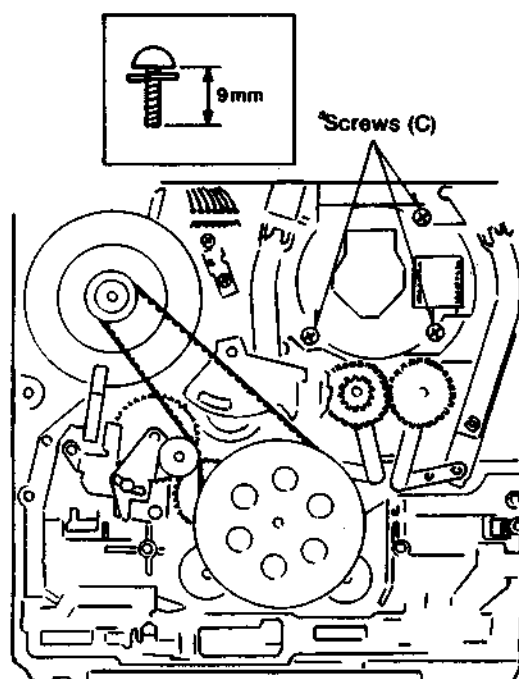


Fig. 1-11

note:

Since there is very little clearance between the scanning unit and the chassis, remove the scanning unit gently and carefully.

- Reinstall the new scanning unit, tighten the screws (C) and reinstall the earth holder with screw (B).
- Reconnect the head amplifier and 5P connector and tighten screws (A).

note:

After replacement, confirm the performance.

If any further maintenance is required, perform the nominal tape path adjustments (see chapter 2.8) and the 'Gap position' adjustment, see the relevant manual.

1.8 Replacement of the cylinder drive CBA (DMS 4/2)

- Remove the scanning unit refer to chapter 1.7.
- Place the scanning unit upside down.
- Unsolder the soldered portion (E) for shield case to take it out, see Fig. 1-12.
- Unsolder the soldered portion (D) indicated by an arrow mark (including the soldered portion inside the shield case).
- Remove screws (F) to remove the cylinder drive CBA.
- Reinstalling is the reverse way of above mentioned procedure.

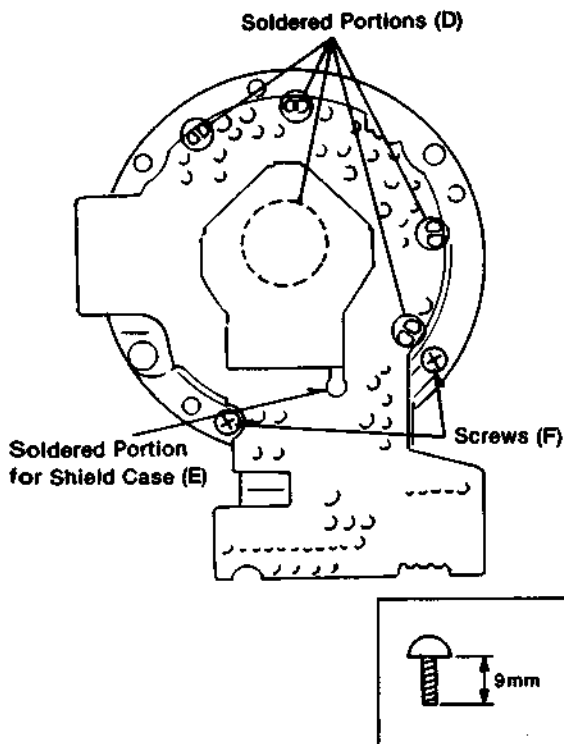


Fig. 1-12

1.9 Replacement of the upper cylinder (DM4/0, DM4/2)

The upper cylinder remover is useful to remove the upper cylinder easily, especially when it is too hard to remove by hand.

- Remove 2 screws (A), then unsolder the soldered portions indicated by arrows as shown in Fig. 1-13.
- Set the screws of upper cylinder remover into holes (B) then tighten the screws of upper cylinder remover fully.
- Turn the handle of upper cylinder remover clockwise holding the upper cylinder firmly until it removes. (Upper cylinder is lifted up gradually during turning the handle).

Note:

- Work gently and carefully when removing the upper cylinder unit.
- Do not touch the video heads with bare hands during servicing. Use nylon gloves (5322 395 94022).
- Do not remove the rotor (flywheel) of the scanning unit. The position of the flywheel is exactly adjusted in the factory.

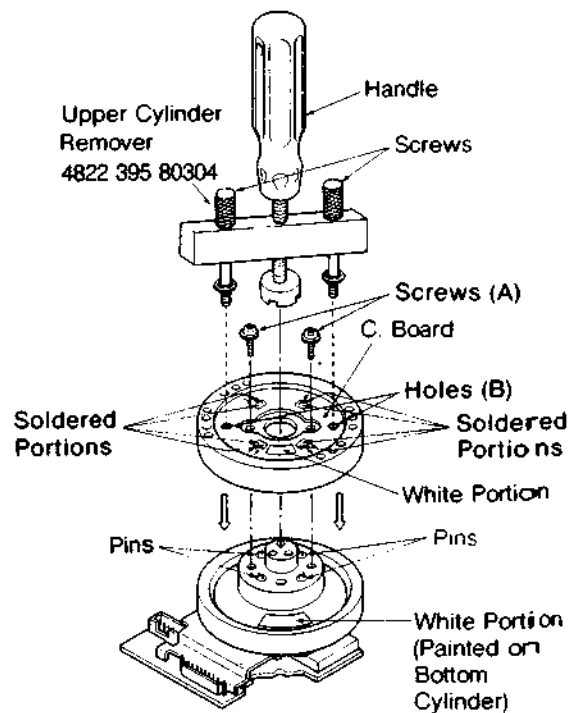


Fig. 1-13

Only for DM4/0, DM4/2 and DMS4/2

1.10 Replacement of the upper cylinder (DMS 4/2)

- Remove the two screws as shown in Fig. 1-14.
- Unsolder the soldered portion indicated by an arrow on the board.
- Remove the upper cylinder by lifting it upward.

Note:
Soldered portions can be removed easily by using solder sucking wire, etc.

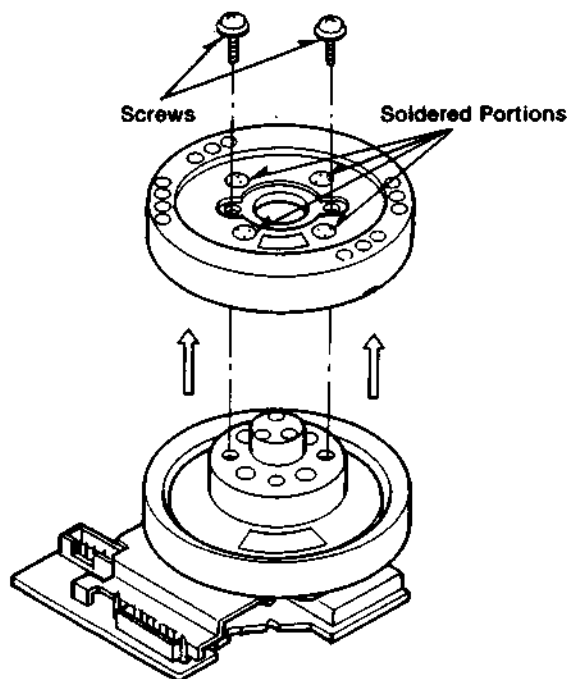
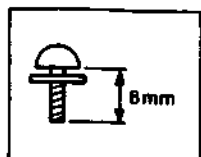


Fig. 1-14

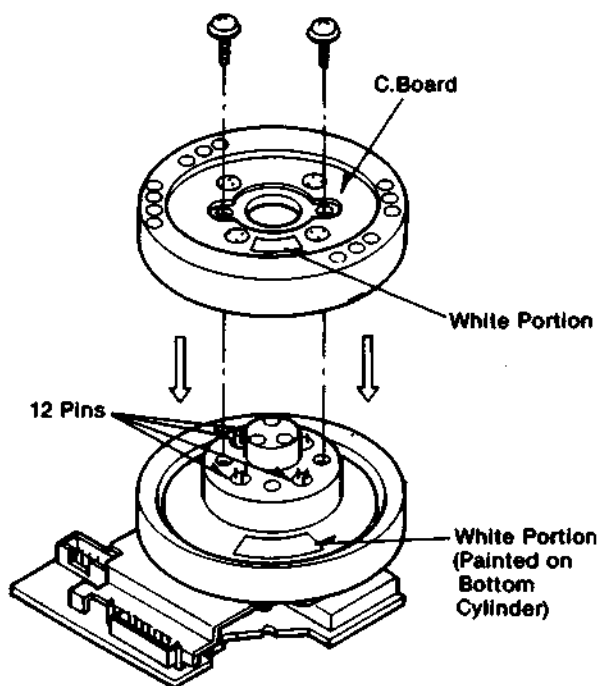


Fig. 1-15

Note:

- If the upper cylinder is reversely installed, no colour would appear when playing back a pre-record tape.
- Do not loosen the 3 small screws on the top of the scanning unit, see Fig. 1-16. If these screws are loosened the scanning unit is broken and can not be restored.

- The upper cylinder unit can be reinstalled by reversing the removal procedure, however, when the upper cylinder is reinstalling, be extremely carefull so that the white portion of the cylinder board correctly matches the white portion of the bottom cylinder as shown in Fig. 1-15.

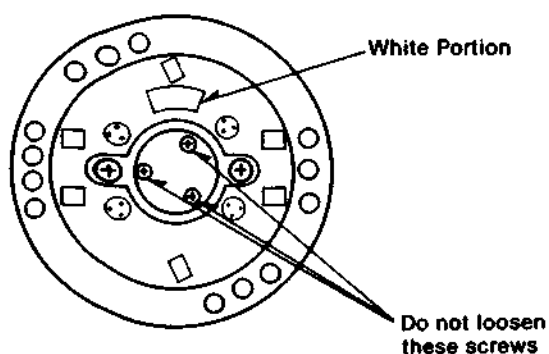


Fig. 1-16

1.11 Replacement of the upper cylinder (DMP 4/0, DMP 4/2)

Demounting

- Push the locking pin (one is supplied with each service replacement upper cylinder) through the bottom hole of the scanner motor, line it up with the hole in the rotor by rotating the upper cylinder. Apply enough pressure to snap it home, see Fig. 1-17
- Loosen clamping screw A of the upper cylinder with 2 or 3 turns to the left.
- Carefully pull the upper cylinder from the drum motor. Do not touch the upper cylinder with bare hands, use nylon gloves (5322 395 94022).

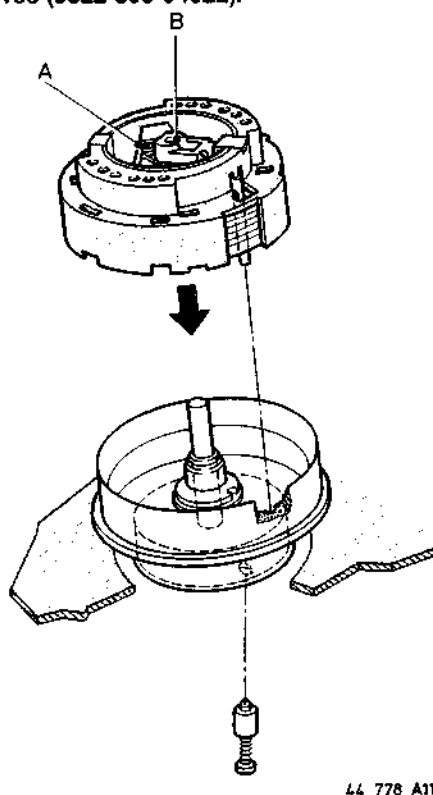


Fig.1-17

Mounting

- Before mounting the new upper cylinder, check that the axle of the drum motor is clean and undamaged (the axle should be free from grease, do not touch it with bare hands).
- Position the upper cylinder on the scanner axle.

Attention:

The upper protective cover and the two 0.15 mm mylar foils remain on the upper cylinder during this operation, see Fig.xxxxx.

- Press down the upper cylinder in the centre B, see Fig.xxxx with a force of 1 N (centre of the protective cover).
- Turn fixing screw A clockwise with a torque of 20 Ncm.
- Pull protective cover from the upper cylinder.
- Pull out the two mylar foils at the side.
- Remove the rotor fixing pin.

Note:

After replacement of the upper cylinder the following checks have to be performed:

- Video switching point.
- Tape path inspection.
- Write current adjustment.

See for these adjustments the Service Manual of the relevant set.

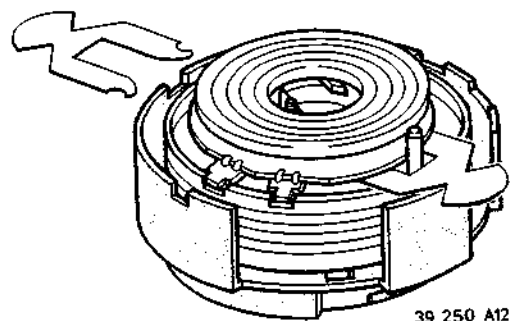


Fig. 1-18

1.12 Procedure for cleaning of upper cylinder unit

- Position the video head to permit access for cleaning and hold the upper cylinder to keep it from turning while cleaning, see Fig. 1-19.
- Gently rub the video head in direction of tape travel with a head cleaning stick.
- Repeat for the other video head.

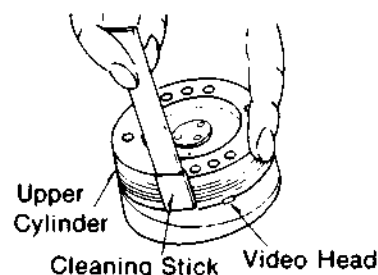


Fig. 1-19

1.13 How to use the disassembly chart

STEP No.	START No.	PART	POS.		REMOVAL		INSTALLATION
					Fig. No.	REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER	ADJUSTMENT CONDITION
1	1	D.D cylinder unit	6(1)	T	DM2	3(S-1)	See, chapter 1.6
2	2	A/C head unit	34(1)	T	DM1 DM3	(n-1),(W-1),*(P-1) *Wires at FE	(+) See, chapter 2.8B
4	4	Pinch cam cap	44(1)	T	DM1 DM4	*(L-1)	
5	4	Pressure roller unit	45(1)	T	DM1 DM4		(+) <Note 1>

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Order of steps in procedure
When reassembling, perform the step(s) in the reverse order.
These number are also used as the identification (location) no. of parts in Figures DM (Deck Mechanism).
- ② Starting no. followed by corresponding part which can be removed at this stage.
See example below.
Example: A/C Head Unit can be removed without removing and other parts. But pressure roller pinch unit can be removed only after removing pinch cam cap (no. 4.).
- ③ Part to be removed or installed.
- ④ Pos. no. of the part in the exploded view. The number between brackets indicates the number of the exploded view.
(1) = Top view tapedeck
(2) = bottom view tapedeck
(3) = cassette compartment.
- ⑤ Location of part.
T = Top B = Bottom
- ⑥ Fig. no. showing procedure.
- ⑦ Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring W = Washer
C = Cut Washer R = Retaining Ring
N = Nut S = Screw
* = Unhook, unlock or release
3 (S-1) = 3 Screws (S-1)
- ⑧ Adjustment information for installation.
= condition for adjustment
(+): Refer to Exploded Views for Lubrication information.

1.14 Connection of the flexible cable to trap connector P1504 and P1508

(Removal or installation of flexible cable)

1. Removal:

On the trap connector, pull out both ends of the locking tab surrounding the cable end to release the trap connector.

Then pull flexible cable out to remove as shown in Fig. 1-18.

2. Installation:

- ★ Insert the end of the flexible cable into the trap connector so it lays smoothly across the slot.
- ★ Press the middle of the cable firmly against the trap connector slot, and hold it there securely.
- ★ Without pinching the cable press the locking tabs in against the trap connector until both ends snap into their locked positions.
- ★ Pull lightly on the cable to check for positive connection.

Note:

Take care when removing or installing the flexible cable to prevent cable damage.

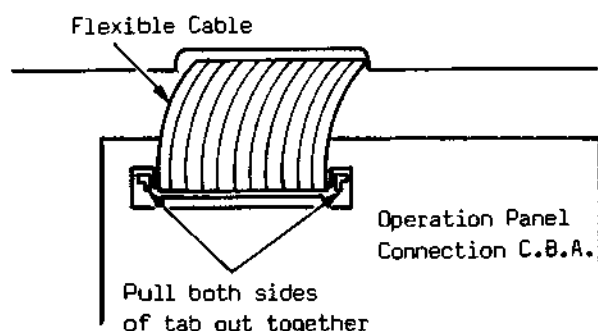
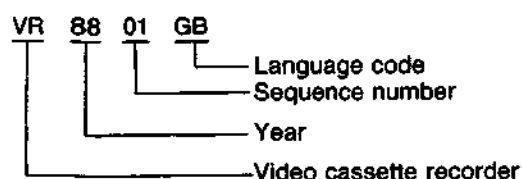


Fig. 1-18

1.15 Description of the system used for publishing modification data and supplements to the Service Manual

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.

Each Service Information has a number, for example:



A service Information bulletin consists of a yellow front sheet. As the case may be followed by supplementary and/or replacement sheets.

Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are identified by an additional letter after the page number, for example 1a. Page 1a then takes the place of page 1.

Supplement sheets are inserted between the existing sheets in the Service manual. These sheets can be identified by an additional figure following the page number, for example 1-1.

Sheet 1-1 should be inserted after page 1.

Each Service Information is accompanied by an updated list of contents per page.

For each page added or each page replaced the list of contents indicates with which Service Information the relevant page has been published.

- Description of the system by means of which modifications are indicated in the recorder

The tape deck is provided with a sticker.

This sticker specifies a number of product data.

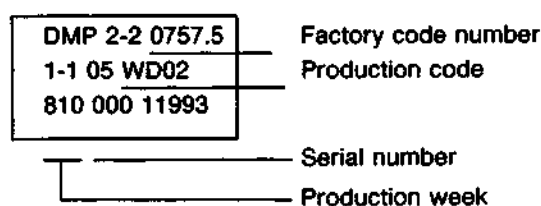
The meaning of this data will now be explained.

Tape deck

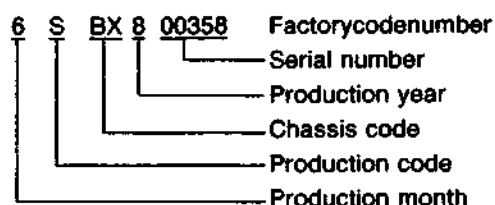
Location of the sticker: to the upside of the chassis between the reel tables.

Example

For tape deck DMP



For tape deck DM or DMS



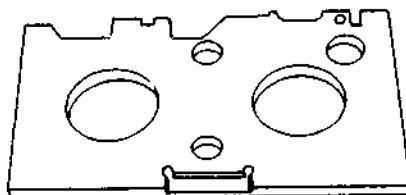
Note:

The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate of the set.

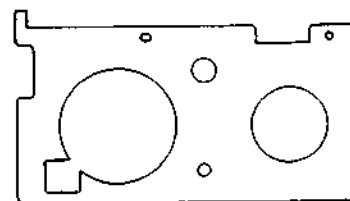
1.16 Auxiliary fixtures and tools for tape deck adjustments



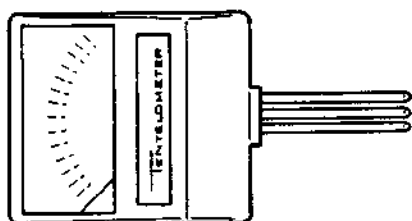
Alignment cassette
4822 397 30103



Post adjustment plate
4822 395 80184



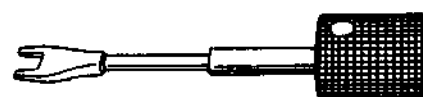
Tension post adj. fixture
4822 395 90587



Back tension meter
4822 395 90584



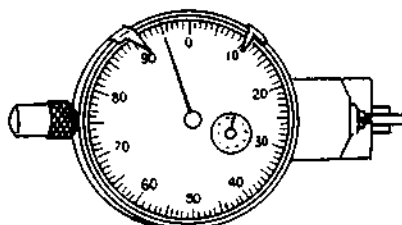
Retaining ring remover
4822 395 40055



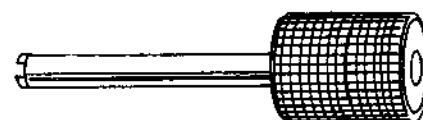
H. position screwdriver
4822 395 50274



Check light
4822 395 90585



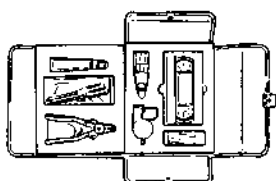
Micro meter
4822 395 90238



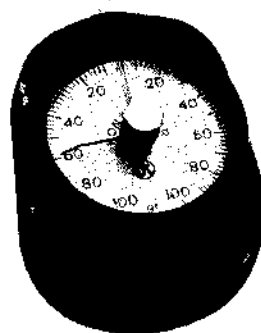
Post adjustment screwdriver
4822 395 50275



Height adjustment fixture
4822 395 90586

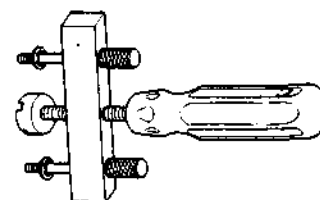


Tool kit
4822 395 90253



38682A12

Spring pressure meter
5322 395 84011



Upper cylinder remover
4822 395 80304



44 787 A11

Center pin
4822 395 60044

Fig. 1-19

2. MECHANICAL ADJUSTMENT PROCEDURES

2.1 Tension adjustment of timing belt

(Equipment Required)

Spring pressure meter

5322 395 84011

(Specification $40 \pm 5g$)

1. Loosen screw (A) slightly by using a screwdriver.
2. Set the spring pressure meter 5322 395 84011 to the direction indicated by the arrow (B) as shown in Fig. 2-1.
3. Tighten screw (A) when the reading of the spring pressure meter 5322 395 84011 becomes within $40 \pm 5g$.

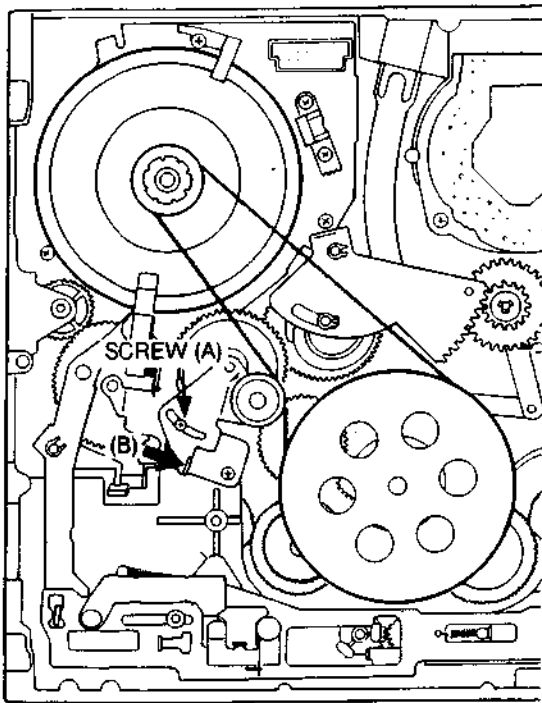


Fig. 2-1

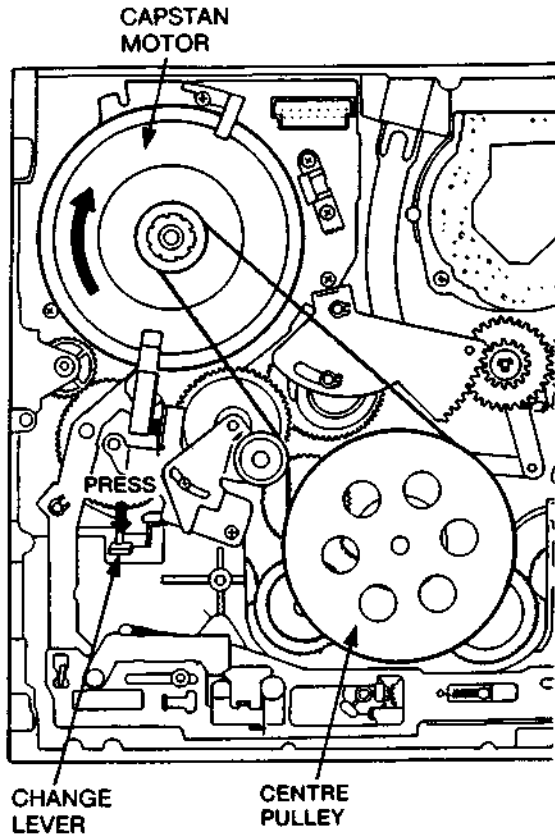


Fig. 2-2

2.2 Position adjustment of tension post pos. nr. 11(1)

(Equipment Required)

Tension post adjustment plate

4822 395 90587

Hex. Wrench: 2mm

- Disconnect the mains supply.
- Remove the cassette compartment and disconnect the flexible cable from P1508, see chapter 1.4.
- Turn the capstan motor clockwise while pushing change lever pos. no. 122(2) until loading is completed as shown in Fig. 2-2.
- Place the adjustment plate and insert the hex wrench into the hole of tension band fastener pos. no. 11(1), as shown in Fig. 2-3.
- Adjust the tension band fastener by using the hex wrench so that the outside edge of the tension post just touches the fixture of adjustment plate.
- After the adjustment, turn the capstan motor counter clockwise until the unloading is completed.

Note:

For assembling the cassette compartment, refer to chapter 4.10 "Reinstallation of cassette compartment".

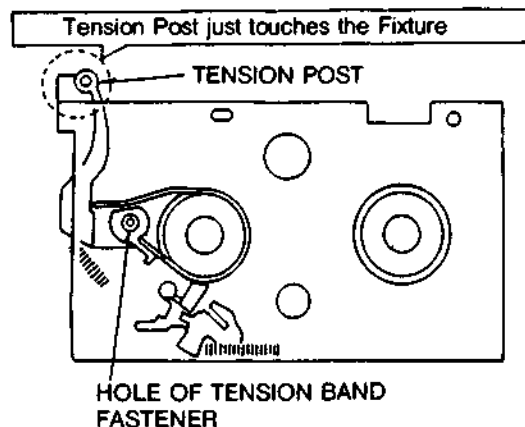


Fig. 2-3

2.3 Measurement and adjustment of the tape tension

(Equipment Required)

Back tension meter 4822 395 90584

VHS cassette (180 minutes tape)

(Specification 20 ... 25g)

1. Playback the cassette tape from the beginning and wait approx. 10 ... 20 seconds. until the tape movement has been stabilized.
2. Insert the back tension meter in tape path and measure the back tension to be within specification as shown in Fig. 2-4.

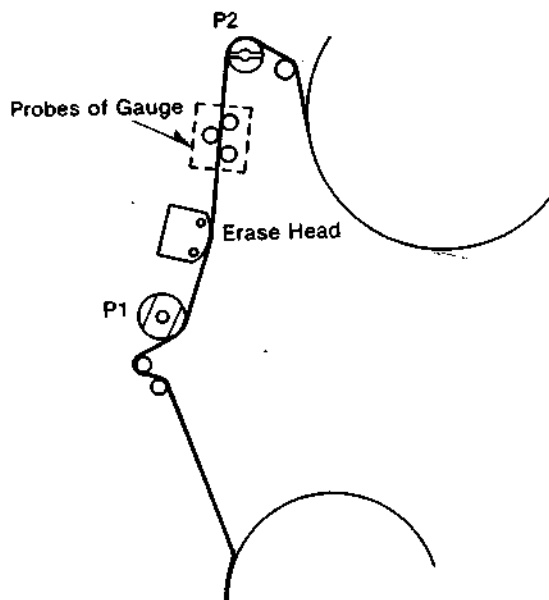
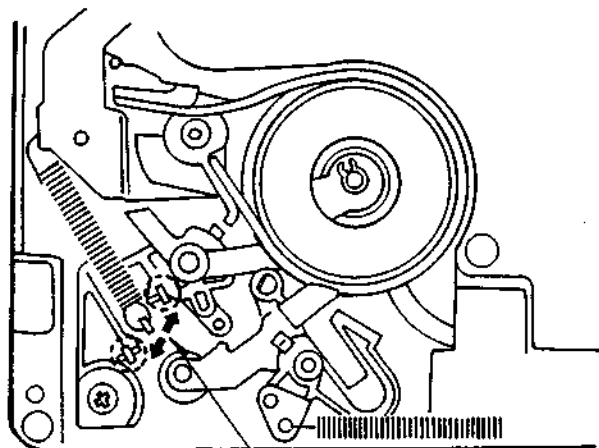


Fig. 2-4

Note:

- While measuring, make sure that the three probes of the meter are all in solid contact with the tape.
- As the tension meter is very sensitive, it is recommended to take 3 separate measurements.
- If the measurement is out of specification, re-position spring pos. no. 12(1) on the tension arm base teeth as shown in Fig. 2-5.
- Re-position tension spring toward front side to tighten tension, toward rear to loosen tension.
- Reinstall a cassette and verify tension with the meter once again.



CHANGE THE SPRING NOTCH

Fig. 2-5

2.4 Height adjustment of the reel tables

(Equipment Required)

Post adjustment plate

4822 395 80184

Micrometer

4822 395 90238

(Specification 0 ... 0.2mm)

- Remove the cassette compartment, see chapter 1.4.
- Place the post adjustment plate over the reel tables.
- Place the foot on the adjustment plate so that the foot of the meter touches the cut-out portion of the plate. Set the meter to zero "0" (reference setting) as shown in Fig. 2-6.

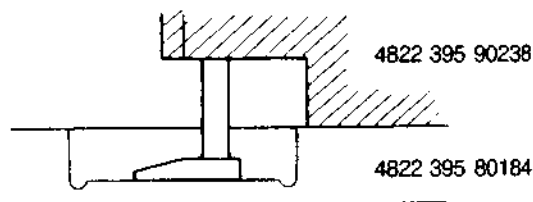


Fig. 2-6

- Measure the top surface of the reel table as shown in Fig. 2-7, and compare the difference against the result of the reference setting. Do the same for the other reel table.
- If the difference is more than 0.2mm (higher or lower), replace the poly washer located under the reel table with one of the appropriate thickness. Reel washers are available in thickness of 0.2 mm, 0.3mm and 0.5mm.

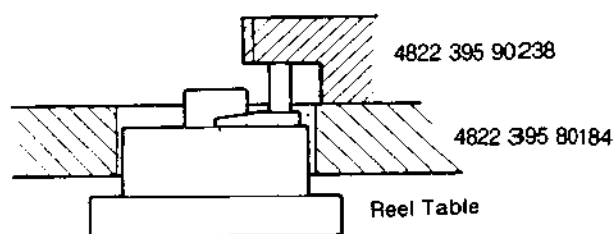


Fig. 2-7

Washer Thickness	Part No.
0.2mm	4822 532 52057
0.3mm	4822 532 52058
0.5mm	4822 532 52055

2.5 Adjustment of the capstan thrust gap

(Equipment Required)

Micro meter 4822 395 90238

Height adjustment fixture 4822 395 90586

(Specification 0.5 ... 0.55mm)

- Place the tape deck upside down.
- Turn the thrust adjust screw pos. no. 41(1) slightly until the capstan rotor unit just touches the coil of the capstan stator unit, see Fig. 2-8

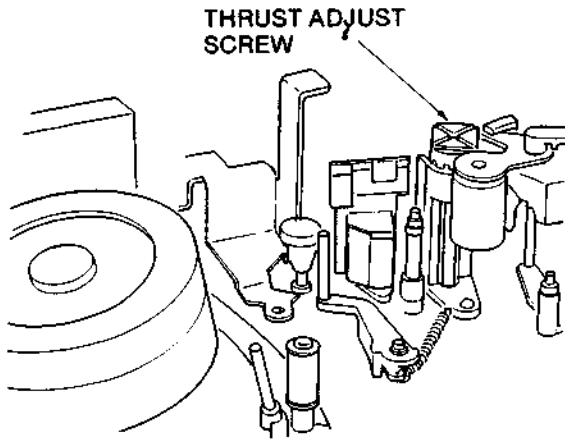


Fig. 2-8

- Set the height adjustment fixture on the capstan rotor unit, see Fig. 2-9.
- Place the height fixture on the tape deck chassis and the foot on the longest side of the height fixture. Set the meter to "0" (reference position), see Fig. 2-9.
- Adjust thrust screw pos. no. 41(1) so that the thrust gap becomes 0.5 ... 0.55mm, see Fig. 2-10.

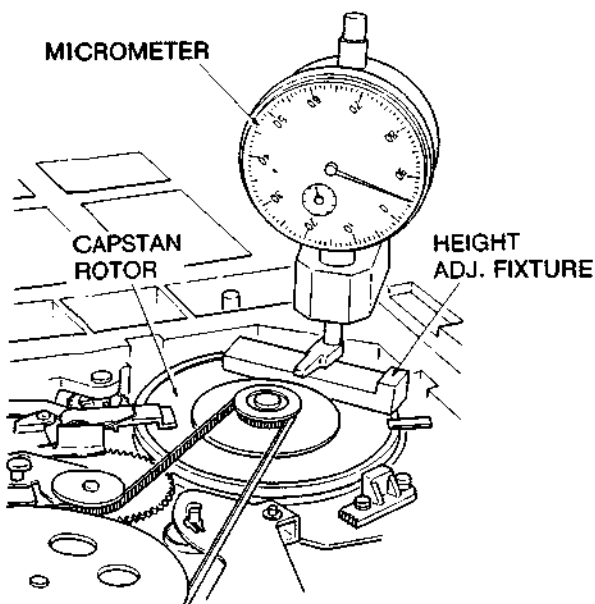


Fig. 2-9

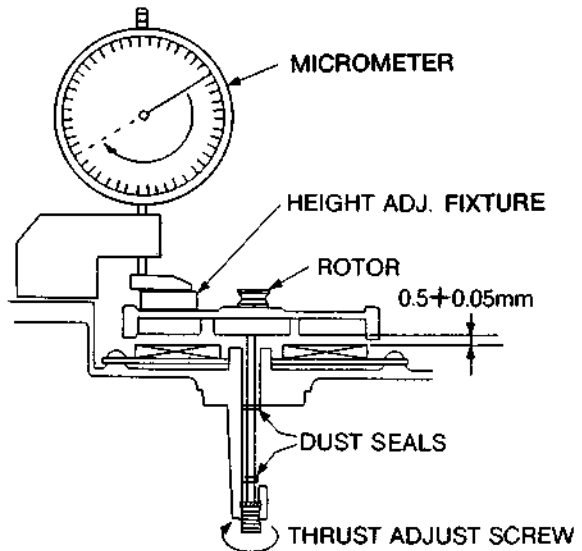


Fig. 2-10

2.6 Height adjustment of tape guide posts P2 and P5

(Equipment Required)

Post adjustment plate 4822 395 80184

Micro meter 4822 395 90238

Post adjustment screwdriver 4822 395 50275

- Remove the cassette compartment, see chapter 1.4.
- Place the post adjustment plate over the reel tables. Confirm that the post adjustment plate is firmly seated as shown in Fig. 2-11.

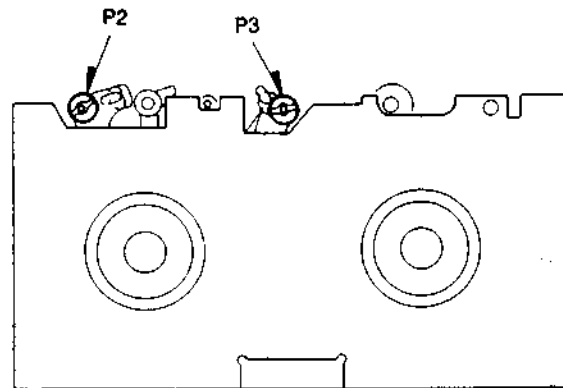


Fig. 2-11

- First lower all posts to match the height condition as shown in Fig. 2-12. The upper edge of the lower tape guide on each post should be below the bottom of the foot. Loosen lock screws located at lower position of post P2 & P3 using a lock screw wrench, then turn the posts with post adjustment screwdriver.

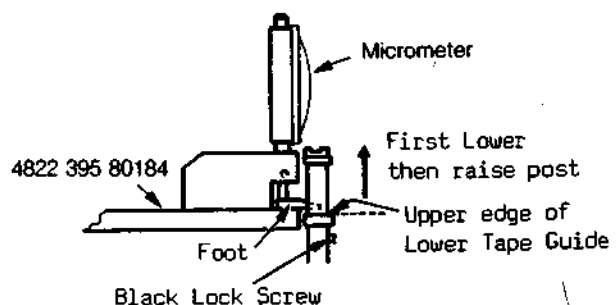


Fig. 2-12

- Place the fixture on the adjustment plate and fit the foot to the adjustment plate as shown in Fig. 2-12. (The foot of the fixture should be fully lowered till it touches the plate.)
- Set the fixture to '0' and slowly raise the post until it touches the foot. When the foot touches the post, it should fit as shown in Fig. 2-13. For adjustment of P2 and P3, use the post adjustment screwdriver.

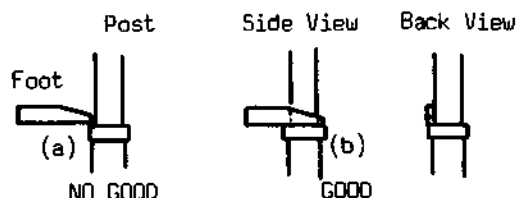


Fig. 2-13

Note:

After the adjustment, install the cassette compartment referring to chapter 4.10 "Reinstallation of cassette compartment".

2.7 Height adjustment of pull-out post P5**(Equipment Required)**

Post adjustment plate

4822 395 80184

Micrometer

4822 395 90238

Nut driver 5.5 mm

specification ($-0.06 + \pm 0.01\text{mm}$)

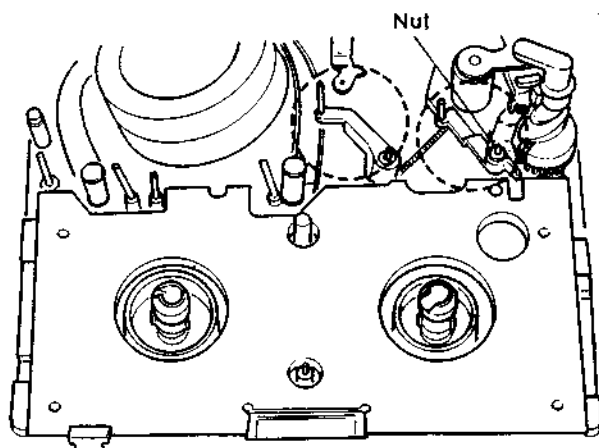


Fig. 2-14

Note:

Unless replacement or adjustment of this post is required, adjustment nut pos. no. 52(1) should not be performed.

- Remove the cassette compartment, see chapter 1.4.
 - Place the post adjustment plate over the reel tables.
 - Turn the capstan motor counter clockwise (loading direction) until the mechanical position becomes as shown in Fig. 2-14.
 - Place the micrometer on the post adjustment plate and set the meter to zero "0" as shown in Fig. 2-15.
 - Slightly raise the P5 post above the plate by turning the 5.5 mm Nut counter clockwise.
- Place the foot on the post as shown in Fig. 2-15.

- Now slowly turn the 5.5 mm Nut clockwise until the meter reads the specified height.
- After the adjustment, install the cassette compartment, (refer to chapter 4.10 "Reinstallation of cassette compartment").
- Play back a cassette tape and make sure that the edges of the tape are not curling at the bottom or top side of posts P1, P2, P3, P4 and pull out post P5 as shown in Fig. 2-16.
- If curling appears, readjust each post, except P1 and P4

Note:

The heights of posts P1 and P4 are exactly adjusted in the factory.

Do not disassemble these posts otherwise the nominal tape path will be completely unserviceable.

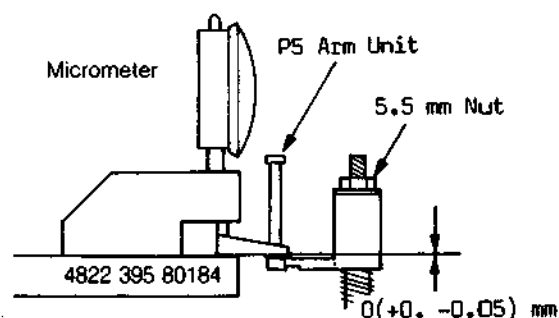


Fig. 2-15

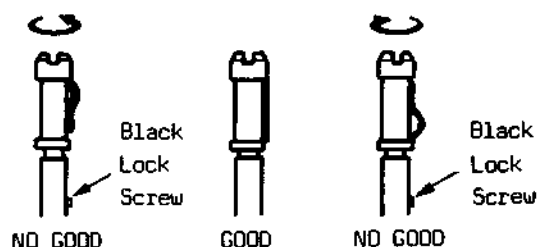


Fig. 2-16

2.8 Nominal tape path adjustment**Note:**

Perform following procedures for nominal tape path adjustment. Do it correctly and smoothly.

- Confirmation and adjustment of P2 and P3 posts.
- Height adjustment of A/C head.
- Tilt adjustment of A/C head.
- Azimuth adjustment of A/C head.
- Horizontal position of A/C head.
- Confirmation of the tape path adjustment.

If the tape Path adjustment is not perfect, repeat the above procedures from A to F. Fig. 2-17 shows the position of the tape guide posts.

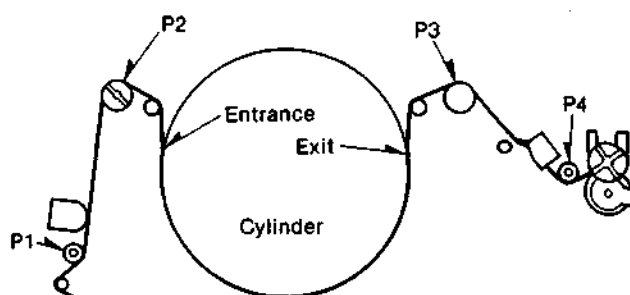


Fig. 2-17

A. confirmation and adjustment of P2 and P3 posts

(Equipment Required)

Alignment tape

4822 397 30103

Post adjustment screwdriver

4822 395 50275

- Switch the set off and on again (By switching the set off and on the tracking control will be adjusted to a nominal value).
 - Connect the oscilloscope to the output of the head amp as shown in Fig. 2-18.
- For the connecting points make reference to the relevant service Manual.

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. 2-18.

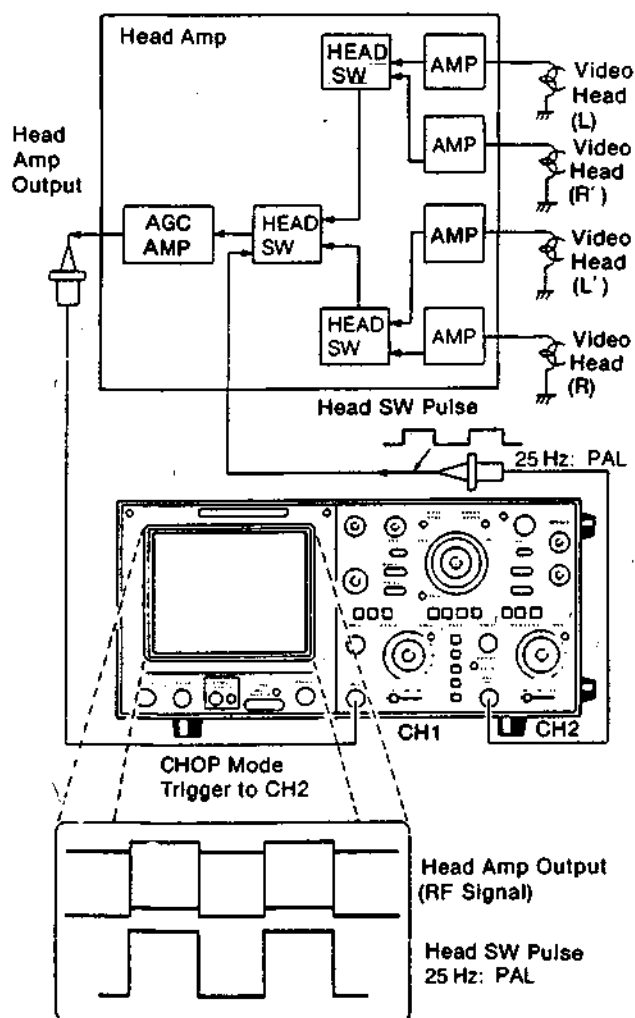


Fig. 2-18

44 463 B11

- Play back the alignment tape.
- If a FM envelope appears like example "A" or "B" in Fig. 2-19 then adjustment of the tape guide post is necessary (P2: entrance).
- Adjust tape guide post P2 with the post adjustment screwdriver so that the FM envelope waveform at the entrance portion becomes flat as shown in Fig. 2-19.
- If the FM envelope appears like example "D" or "E" in Fig. 2-20, then adjustment of the tape guide post (P3: Exit) is necessary.
- 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. 2-20.

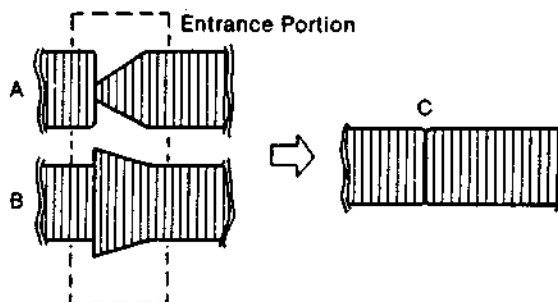


Fig. 2-19

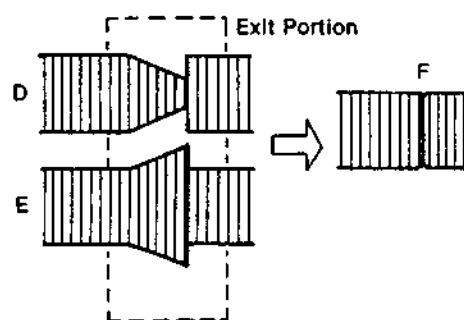


Fig. 2-20

B. Height adjustment of A/C head

Note:

This procedure should be performed only when the A/C head is replaced.

(Equipment Required)

Check Light

4822 395 90:85

Nut driver 7 mm

- With the tape running, look at the lower edge of the control head by using the check light and check if the lower edge of the tape runs along the lower edge of the control head, see Fig. 2-21.
- If it doesn't, slightly turn nut C behind the A/C head (Fig. 2-21) to either lower or raise the A/C head so that the tape runs along the lower edge of the control head.
- Turn the nut C clockwise to lower the head, and counter-clockwise to raise it.

Note:

The mark on the A/C head indicates the lower edge. Screw marked (*) pressures the A/C head to the bottom plate. Do not tighten the screw to fast otherwise the AC head alignments can not be reached.

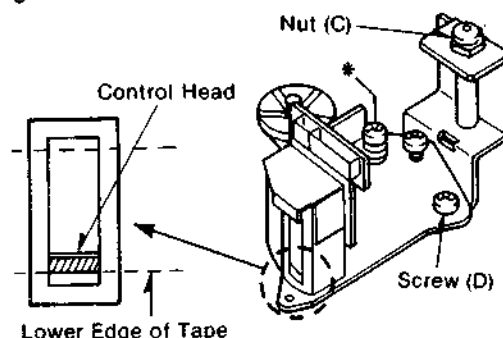


Fig. 2-21

44 456 A1

C. Tilt adjustment of A/C head

Note:

This procedure should be performed after replacing the A/C head or pressure roller pos. no. 45(1).

- Playback the beginning portion of a blank cassette tape and confirm that the tape runs between the lower and upper limiter of P4 post. If there is waving or curling in the lower edge or top edge of the tape, correct the tilt of the a/c head by turning screw B, see Fig. 2-22 located behind the A/C head. Fig. 2-23 shows the direction how the turn to correct curling.

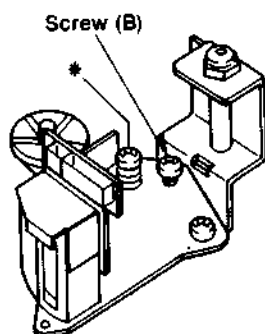


Fig. 2-22

44 466 A11

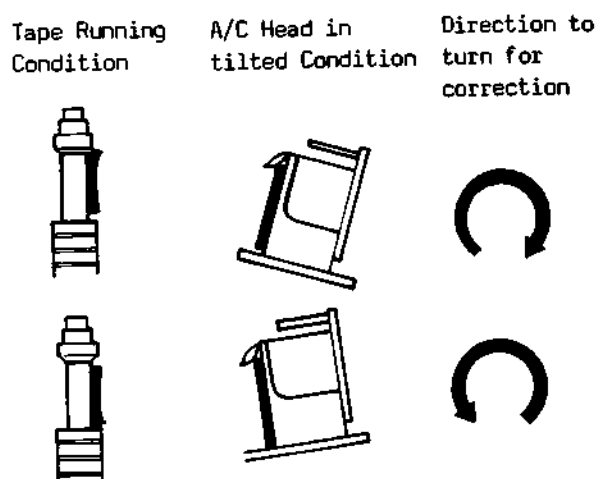


Fig. -23

Note:

After tilt adjustment of the A/C head, height adjustment of A/C head is required.

D. Azimuth adjustment of A/C head

Note:

This procedure should be performed only when the A/C head is replaced and posts height are readjusted.

(Equipment Required)

Alignment tape 4822 397 30103

- Connect the oscilloscope to the audio output on the rear panel.
- Playback the 2nd portion (normal audio 6KHz) of the alignment tape.
- Adjust screw D so that the output level becomes maximum, see Fig. 2-24

AUDIO OUTPUT

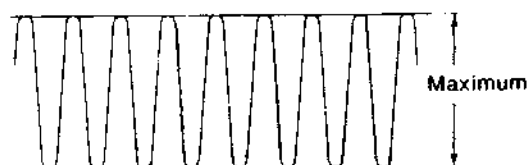


Fig. 2-24

44 458 A11

E. Horizontal position adjustment of A/C head

Note:

This procedure should be performed only when the A/C head is replaced, and after performing the tape path adjustment.

(Equipment Required)

H-Position adjustment screwdriver 4822 395 50274
Alignment tape 4822 397 30103

- Switch the set off and on again (By switching the set off and on the tracking control will be adjusted to a nominal value).
- Connect the oscilloscope to the output of the head amp as shown in Fig. 2-18. For the connecting points make reference to the relevant service Manual.
- Play back the alignment tape
- Adjust horizontal position screw pos. no. 36(1) of the A/C head, see Fig. 2-25 so that the RF signal becomes maximum, see Fig. 2-26.

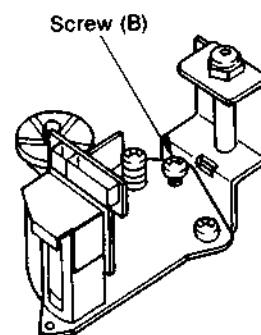


Fig. 2-25

F. Confirmation of the tape path adjustment.

- Switch the set off and on again to perform a nominal tracking position control.
- Connect the oscilloscope to the output of the head amplifier as shown in Fig. 2-18.
- The symmetry of the FM envelope, can be checked after pressing the "TRACKING" button. The output level must be almost equal as shown in Fig. 2-26.
- If the FM envelope does not meet the specification ($V1/V \geq 0.7$; $V2/V \geq 0.8$) see Fig. 2-27, repeat above mentioned adjustments A to F.

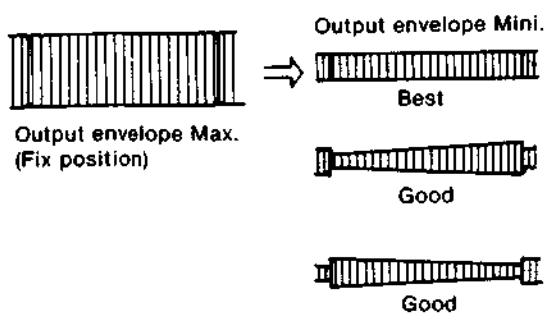


Fig. 2-26

2.9 Adjustment of FG head

(Equipment required)

Oscilloscope

Feeler gauge 0.1-0.13 mm

- Place the unit upside down.
 - Slightly loosen screws A, see Fig. 2-28.
 - Adjust the FG head until the distance between capstan rotor and Fb head is 0.1-0.13 mm.
 - Tighten screws A.
 - Confirm that the FG head output level is more than 10 mVpp.
- If the level is not more than 10 mVpp, re-adjust the FG head gap so that the FG head output level is more than 10 mVpp

Note:

Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

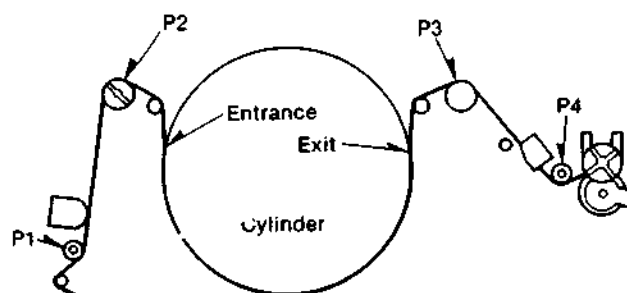


Fig. 2-27

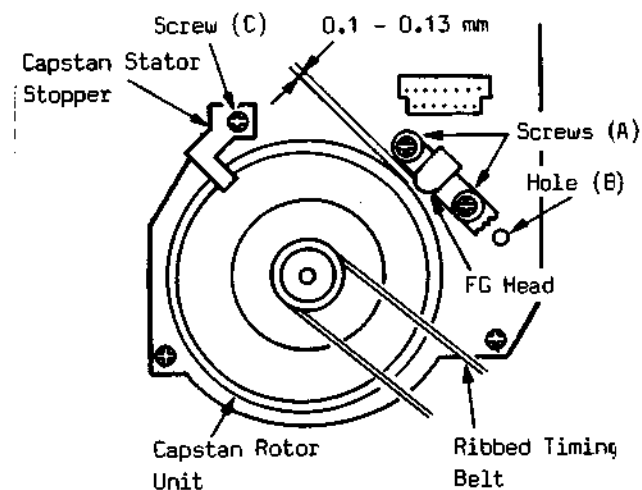
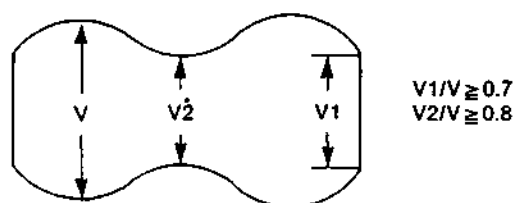


Fig. 2-28



$$\begin{aligned} V1/V &\geq 0.7 \\ V2/V &\geq 0.8 \end{aligned}$$

44 465 B11

3. DISASSEMBLY CHART AND PROCEDURES

3.1 Chassis

This procedure starts with the condition that the cabinet parts, front C.B.A., Cassette and head Amp assy have been removed.

Also, all the following procedures for adjustment and part replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reserve order.

STEP No.	START No.	PART	POS.		REMOVAL		INSTALLATION
					Fig. No.	REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER	ADJUSTMENT CONDITION
1	1	D.D scanning unit	6(1)	T	DM2	3(S-1)	See, chapter 1.6
2	2	A/C head unit	34(1)	T	DM1 DM3	(N-1), *(P-1) *Wires at FE	(+) See, chapter 2.8B
3	3	Sub loading arm unit	39(1)	T	DM1	(R-1),*(P-2)	(+) See, Fig. DM17
4	4	Pinch cam cap	44(1)	T	DM1 DM4	*(L-1)	
5	4	Pressure roller unit	45(1)	T	DM1 DM4		(+) <Note 1>
6	5	Pinch cam	51(1)	T	DM1 DM4		See, chapter 4.9
7	6	Pinch speed down gear	64(1)	T	DM1 DM4	(C-8)	(+) See, chapter 4.2
8	8	Connection gear	65(1)	T	DM1 DM4	(C-1) <note 2>	(+) See, chapter 4.7
9	9	Main brake units	24(1) 27(1)	T	DM1 DM5	2(C-2),*2(P-3),*(P-4) <note 2>	(+) See, setting condition in Fig. DM5
10	9	Tension band unit	13(1)	T	DM1 DM6	*(P-5),*(L-2)	(+) See, chapter 2.2
11	11	Takeup reel table	71(1)	T	DM1	(R-2)	<note 5>
12	10	Supply reel table	14(1)	T	DM1	(R-3)	(+) See, chapter 2.4
13	5	P5 sector gear	50(1)	T	DM1 DM7	*(L-3)	See, chapter 4.8
14	13	P5 unit	53(1)	T	DM1 DM7	(N-2),(W-2),*(P-6)	(+) Stop (half loading)<note 3> and see chapter 2.7
15	15	SS brake unit	105(2)	B	DM2	(C-4)	<note 2>
16	16	Tension roller unit	108(2)	B	DM2	(S-2)	
17	16	Brake base	107(2)	B	DM2	(S-3)	
18	18	Cam follower arm unit	109(2)	B	DM2	(R-5)	<note 4>
19	18	Main/sub lever	103(2) 104(2)	B	DM2 DM9	2(C-3),2(W-4)	See, setting condition in Fig. DM9
20	19	Center pulley unit	137(2)	B	DM2 DM10	(C-4),(W-5) Ribbed timing belt <note 2>	(+) See, Fig. DM10
21	20	Clutch disk ass'y	116(2)	B	DM2 DM11	(C-5) <note 2>	See, chapter 4.4
22	20	Stopper base	131(2)	B	DM12	(S-4)	
23	17	Centre gear	113(2)	B	DM2 DM11	(C-6)	(+) See, chapters 4.4
24	17,18	Main cam gear	111(2)	B	DM2 DM11	(R-6)	(+) See, chapters 4.2 and 4.3
25	24	Detent arm	110(2)	B	DM11		(+)
26	25	Sub cam gear	112(2)	B	DM4 DM11		(+) See, chapter 4.1

STEP No.	START No.	PART	POS.	REMOVAL		INSTALLATION	
				Fig. No.	REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER	ADJUSTMENT CONDITION	
27	26	Release lever unit	125(2)	B	DM13	(S-5)	See, setting condition in Fig. DM13
28	27	Intermediate gear	146(2)	B	DM14	(C-7),(W-6)	
29	28,30	Drive disk	119(2)	B	DM14		
30	30	Sector gear unit	141(2)	B	DM2 DM11	2 (R-6)	(+) See, chapter 4.6 <note 7>
31	30,23	Loading cam gear	142(2)	B	DM11		(+) See chapter 4.3 <note 7>
32	31	Play arm unit	147(2)	B	DM14		
33	32	Play control arm	144(2)	B	DM14	*(L-4)	
34	31	Retainer gear	114(2)	B	DM11		(+) See, chapter 4.3
35	33	Ring gear	120(2)	B	DM11		(+) See, chapter 4.1
36	30,20	Loading arm-S unit	145(2)	B	DM2 Dm11	*(L-5)	(+) See, chapter 4.6
37	30,20	Loading arm-T unit	140(2)	B	DM2 DM11	*(L-6)	
38	12	Tension arm base unit	18(1)	T	DM1 DM2	(S-6), *(L-7)	(+) See, chapter 2.2
39	7	Housing unit	72(1)	T	DM1	3(S-7)	(+)
40	39,3	Flex C.B.A.		T	DM1 DM15	3(S-8) *Connection	
41	6	Mode switch	55(1)	T	DM1	(S-9) *Connections	See, chapter 4, 8
42	40	Shield plate	56(1)	T	DM15		
43	43	Solenoid unit	66(1)	T	DM16	(S-10), *Connections	
44	43	Solenoid lever unit	68(1)	T	DM16	*(L-8)	(+)
45	45	Post stopper (L,R)	60(1)	T	DM1	4(S-11)	<note 6>
46	45,36	Inclined base unit (S)	58(1)	T	DM1		(+) See chapter 2.6
47	45,37	Inclined base unit (T)	62(1)	T	DM1		

List of Abbreviations:

C.B.A. = Circuit Board Assembly

T = Top; B = Bottom

(R-1) = Retaining Ring(R-1);

(W-1) = Washer (W-1);

(N-1) = Nut (N-1);

(+): Refer to Exploded Views for Lubrication information.

(P-1) = Spring (P-1);

2(S-2) = 2 Screws (S-2);

(L-1) = locking Tab (L-1)

(S-1) = Screw (S-1);

(C-1) = Cut Washer (C-1);

TOP VIEW

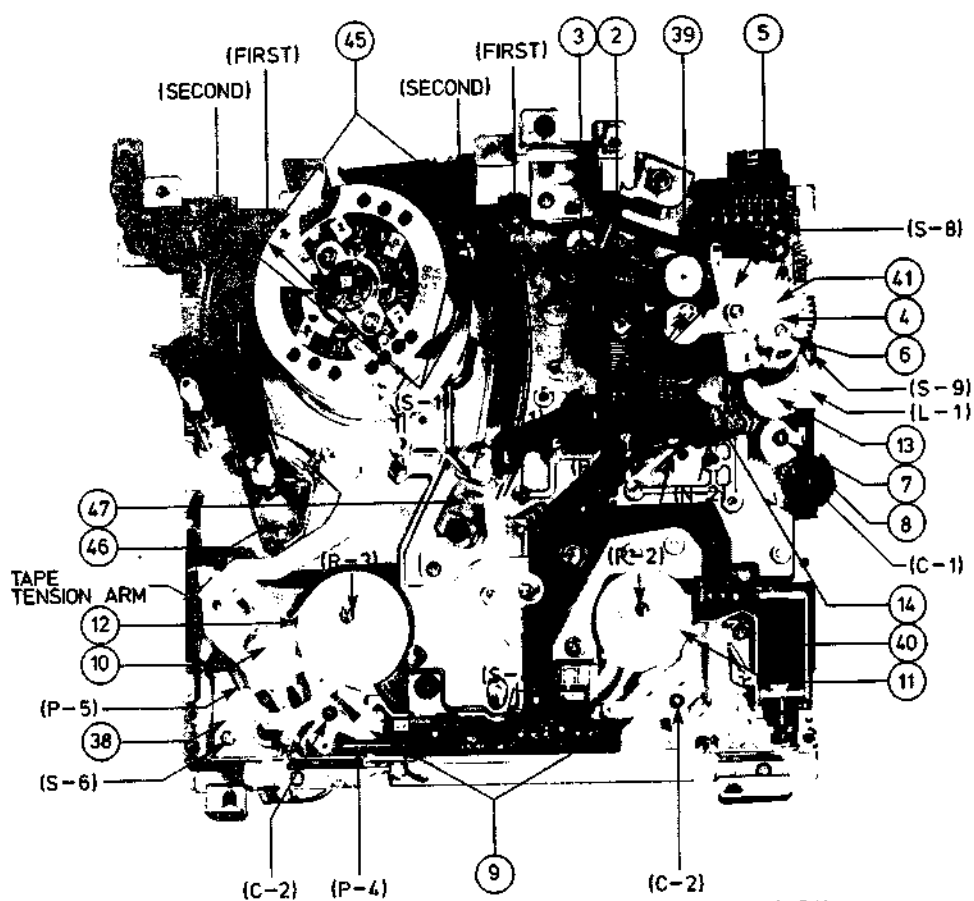


Fig. DM1

BOTTOM VIEW

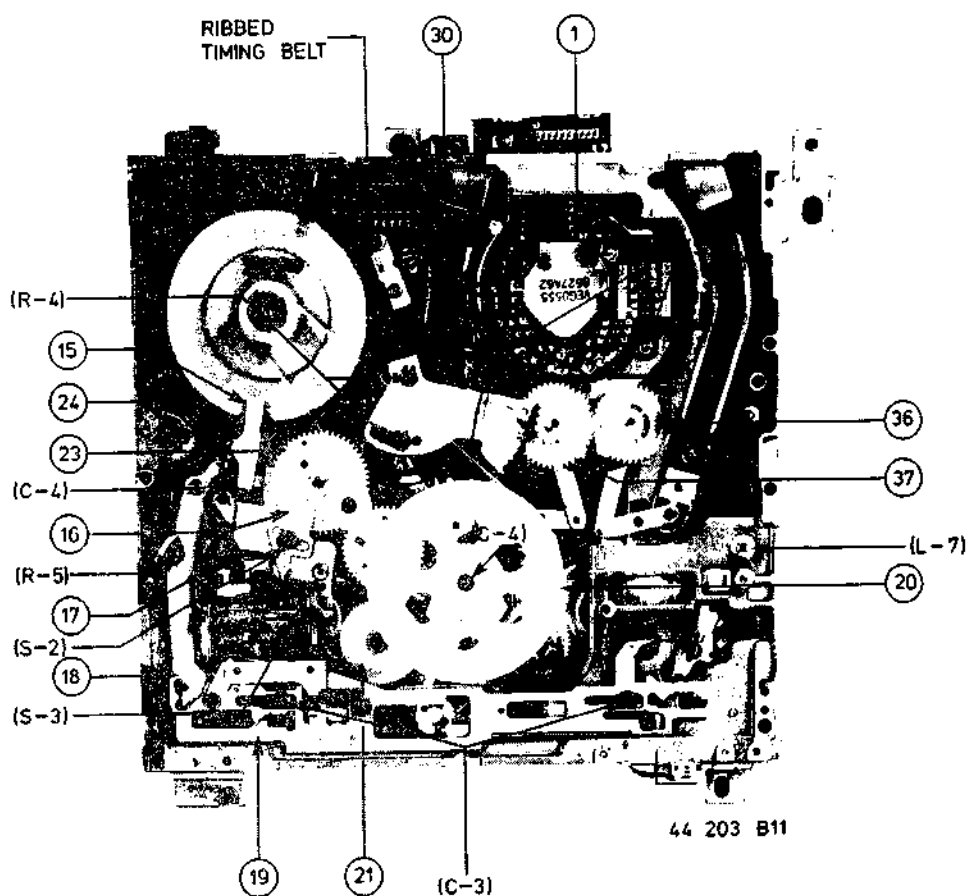


Fig. DM2

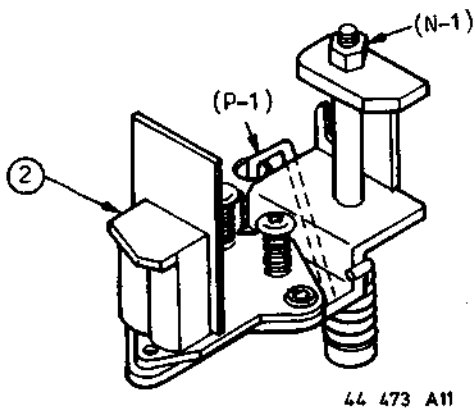


Fig. DM3

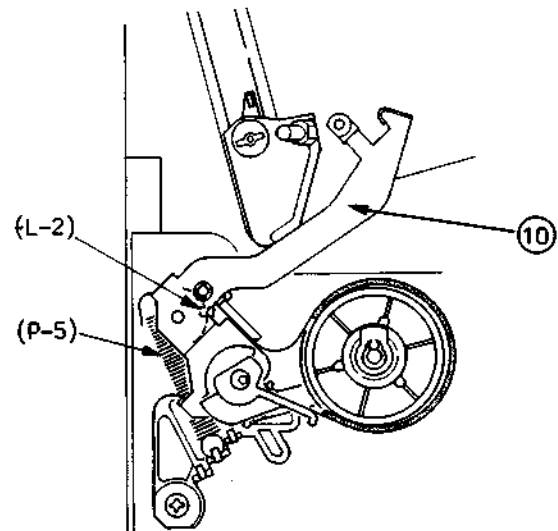


Fig. DM6

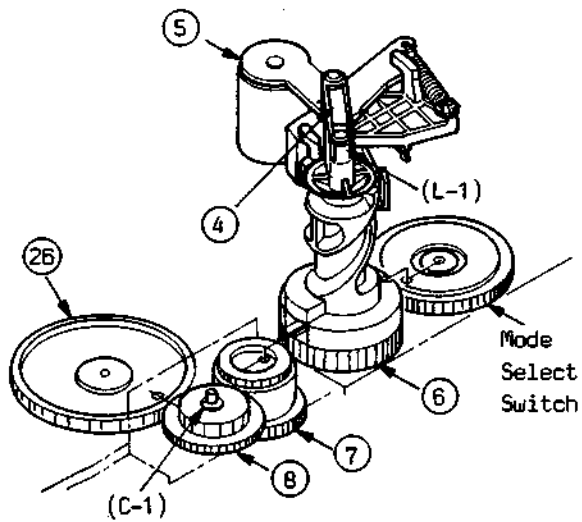


Fig. DM4

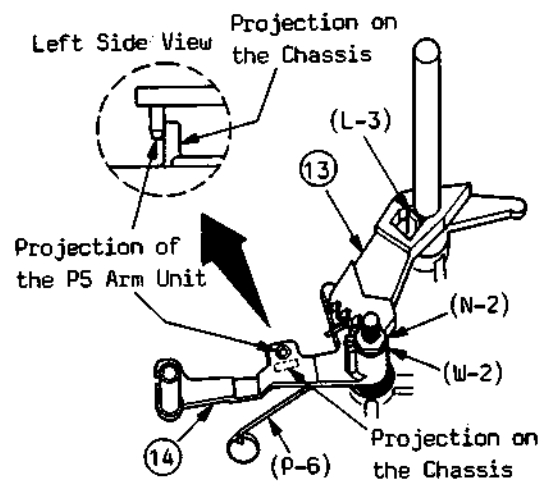


Fig. DM7

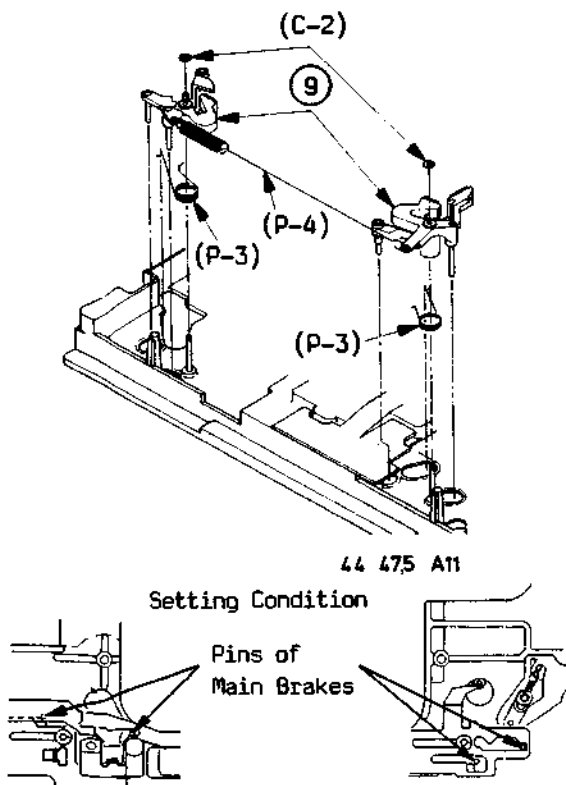


Fig. DM5

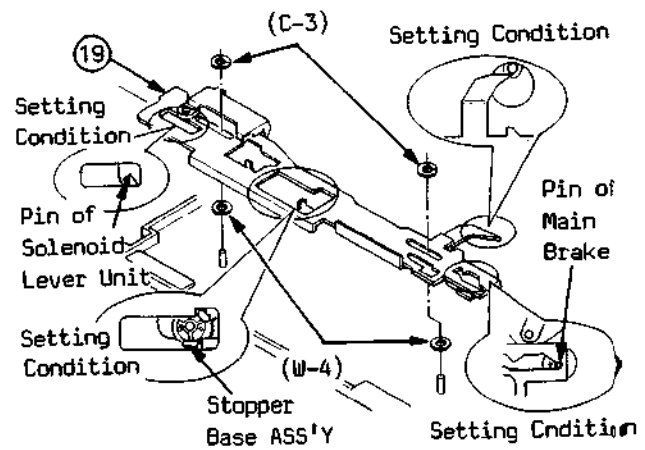


Fig. DM9

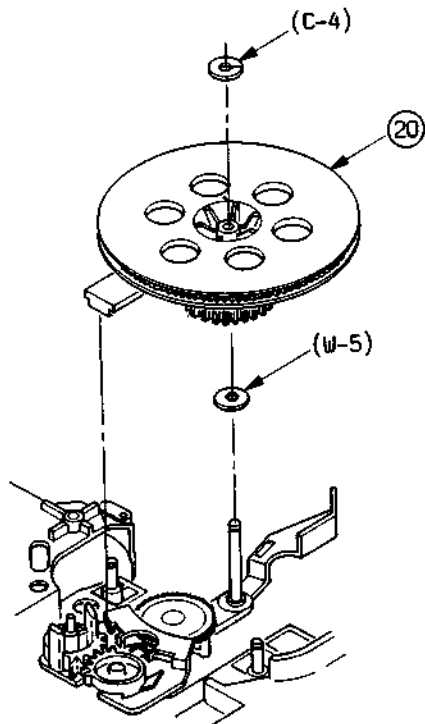


Fig. DM10

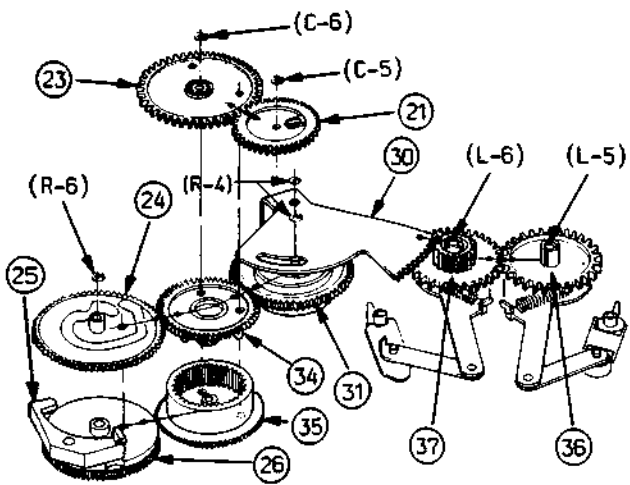


Fig. DM11

44 480 A11

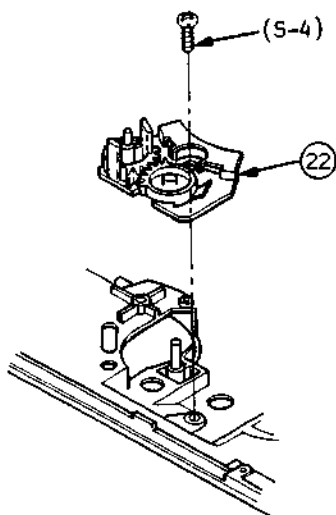


Fig. DM12

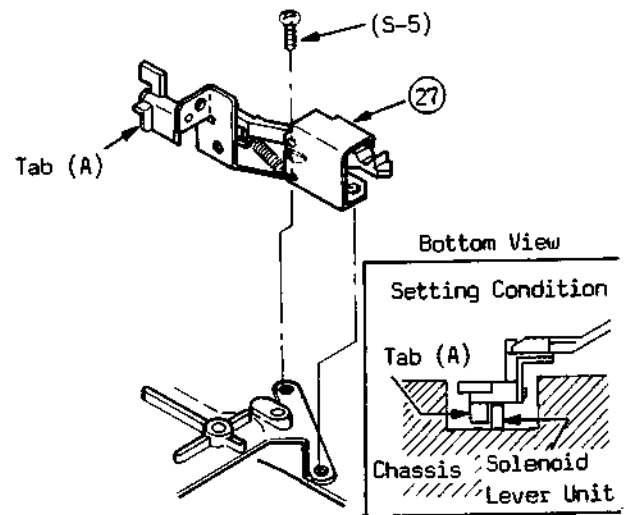


Fig. DM13

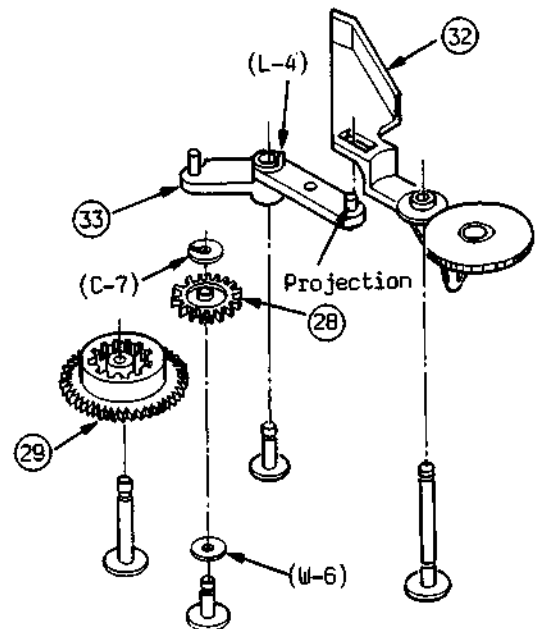


Fig. DM14

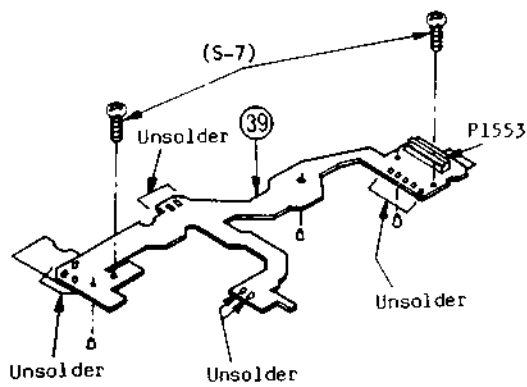
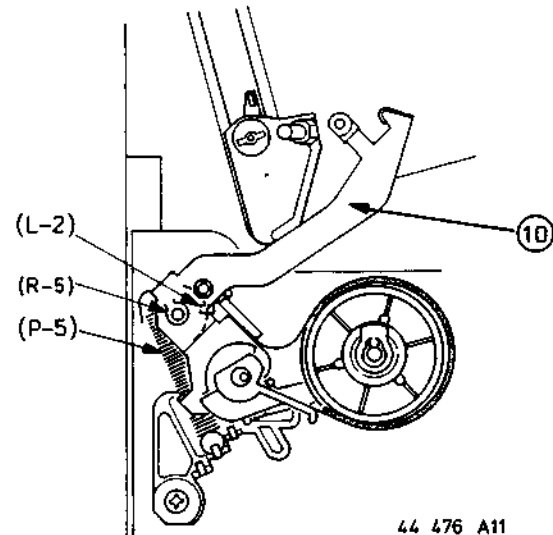


Fig. DM15



44 476 A11

Fig. DM17

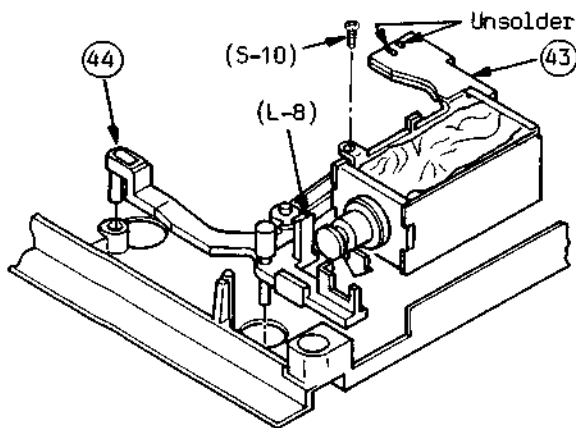


Fig. DM16

Reference notes in the disassembly chart:

1. Wiggle it sideways to properly seat the pressure roller arm unit.
2. Cut washers are not reuseable.
If removed, install a new one.
3. Install the P5 arm unit so that the projection of the P5 arm unit seats in front of the projection on the chassis as shown in Fig. DM7.
4. Install the cam follower arm unit so that the pin on the cam follower meets the inner slot of the main cam gear.
5. When reinstalling the supply and take-up reel tables, clean the rotating surface of them with a soft cloth.
6. When reinstalling the V stopper (L,R), fit the V stopper (L,R) to the chassis by turning it clockwise.
And then, tighten the screws in order indicated in the diagram. (refer to Fig. DM1)
7. Ensure the tape tension arm is positioned as shown in Fig. DM1 for STOP mode.

3.1 CASSETTE COMPARTMENT

A. Right Side

First, remove the cassette compartment from chassis.

This procedure starts with the condition that the cassette compartment top plate and cassette holder unit have been removed. When reassembling, perform the step(s) in the reverse order.

STEP No.	START No.	PART	POS.		REMOVAL		INSTALLATION
					Fig. No.	REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER	ADJUSTMENT CONDITION
1	1	Cassette Guide -R-	234(3)	R	DA1	*3(L-1)	
2	2	Sub wiper arm -R-	232(3)	R	DA1	*Sub wiper Spring -R- *(L-2)	
3	3	Slider switch unit	221(3)	R	DA1	*3(L-3)	Align the movable projection (A) and (B)
4	4	Down support lever	222(3)	R	DA1	*(L-4)	
5	1,2,3	Rack Ass'y	224(3)	R	DA1		(+) Align the Triangle Marks

List of Abbreviations:

R = Right; 3(L-1) = Locking Clip (L-1)

(+): Refer to Exploded View for Lubrication information.

B. Left Side

STEP No.	START No.	PART	POS.		REMOVAL		INSTALLATION
					Fig. No.	REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER	ADJUSTMENT CONDITION
1	1	Cassette Guide -L-	234(3)	L	DA2	*3(L-1)	
2	2	Wiper arm -L-	231(3)	L	DA2		
3	3	Opener lever	218(3)	L	DA2	*(L-2)	

List of Abbreviations:

L = Left; 3(L-1) = Locking Clip (L-1)

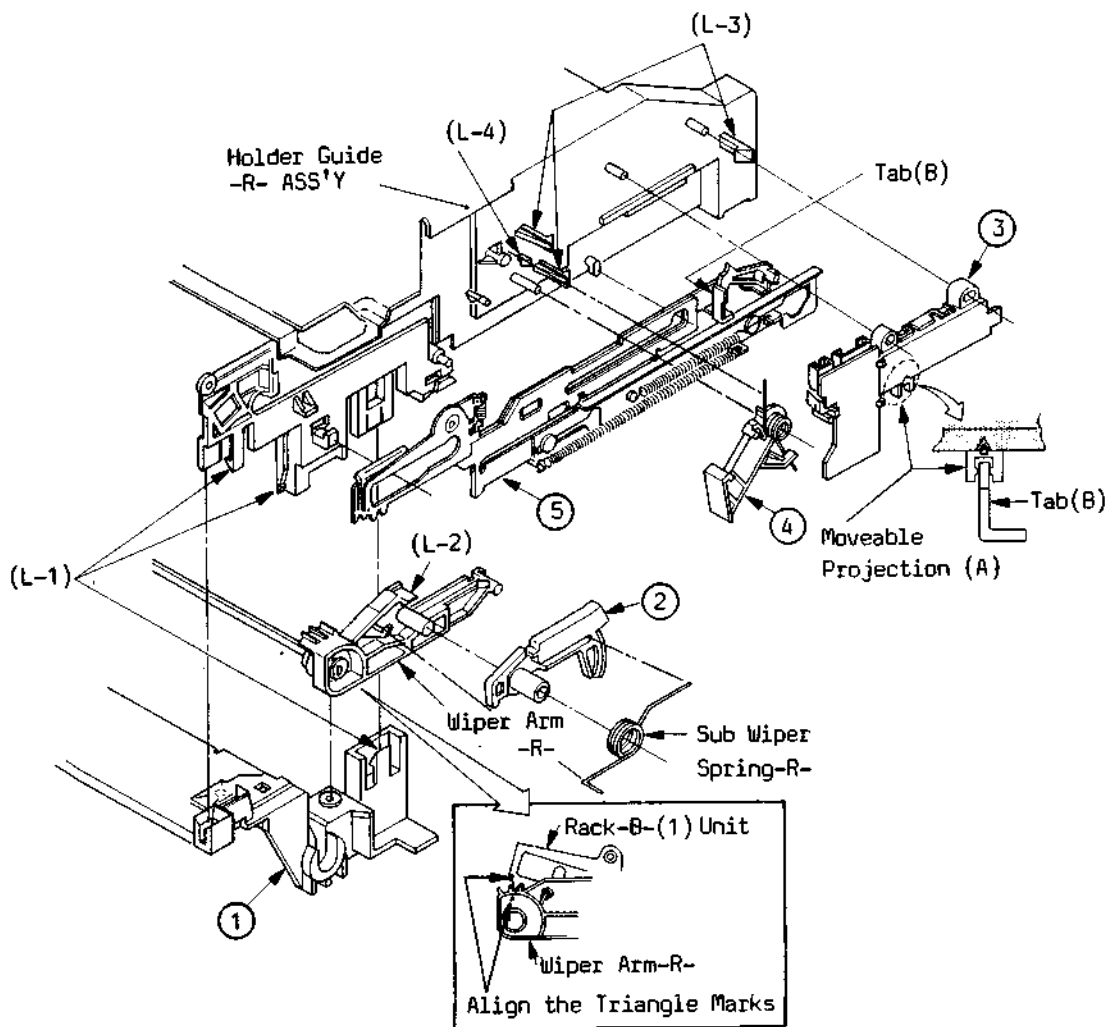


Fig. DA1

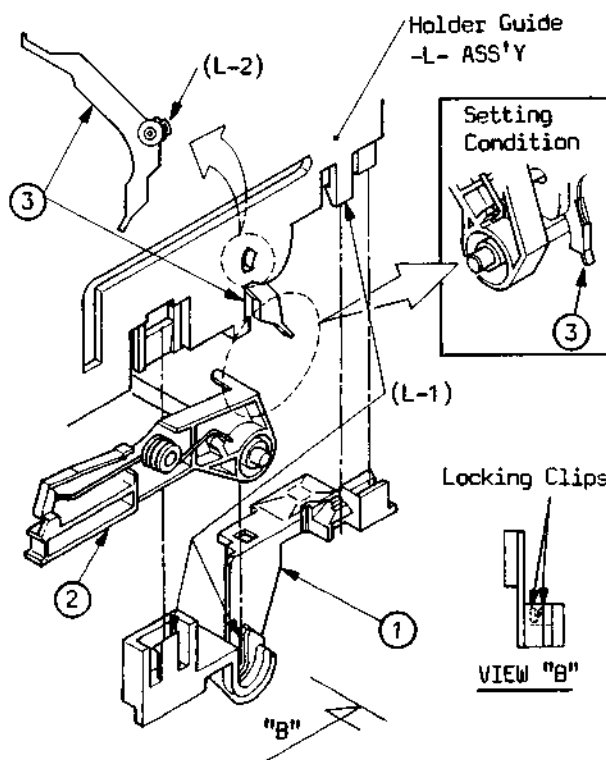


Fig. DA2

4 ASSEMBLY AND ADJUSTMENT PROCEDURES OF MECHANISM

The G-tape deck is mostly engaged to the system control circuit, through the mode select switch, pos. no. 55(1). Therefore the relation between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.

If these parts are not aligned properly, the unit will be unloaded or stopped.

It may result in damage mechanical or electrical parts.

The detail of mechanical condition will be described later.

Note:

The phase relevant gears have been provided with holes or a protection mark. For a proper alignment of the gears refer to Fig. 4-1 (bottom view) and Fig. 4-2 (top view).

This mechanical adjustment is performed in the STOP mode, while the numerically sequence shows the assembly procedure.

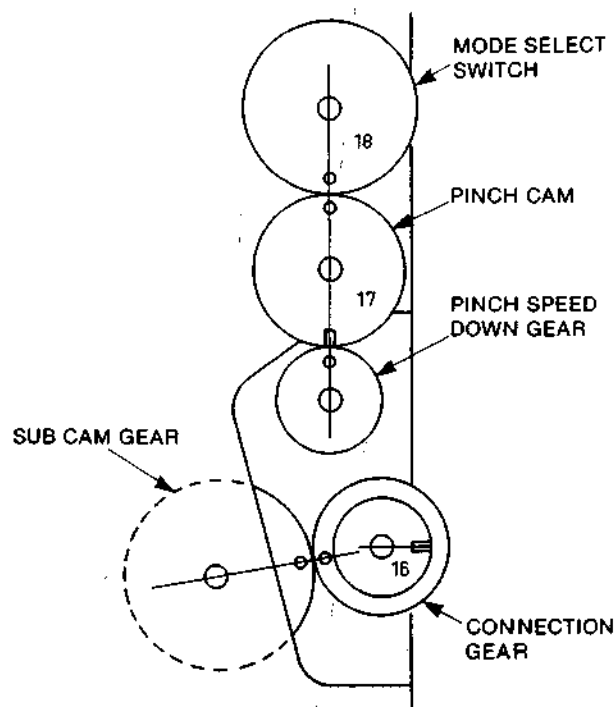


Fig. 4-1

44 460 B11

Bottom view of overall mechanical condition

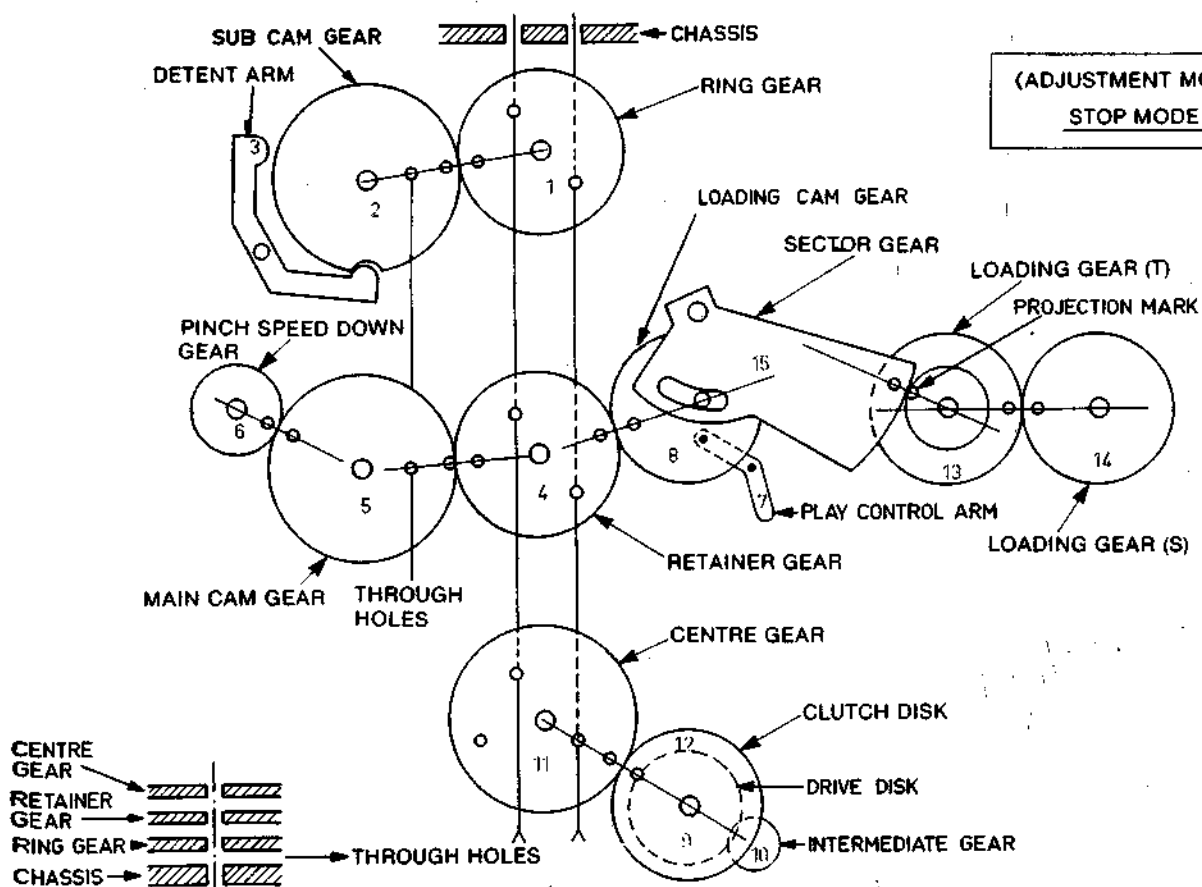


Fig. 4-2

44 459 C

Top view of overall mechanical condition

4.1 Assembly procedures of sub cam gear, ring gear and detent arm

- Install ring gear pos. no. 120(2) so that the hole on ring gear is exactly in line with the hole of chassis as shown in Fig. 4-3.
- Install sub cam gear pos. no. 112(2) so that the hole on sub cam gear is exactly in line with the hole on chassis, at the same time, the small hole (located just outside of large hole) on sub cam gear is exactly in line with the hole on ring gear.
- Install detent arm, pos. no. 110(2).

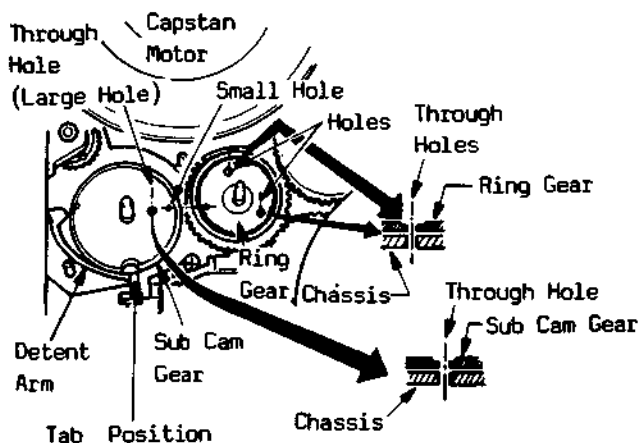


Fig.4-3

44 481 A11

4.2 Assembly procedures of main cam gear and pinch speed down gear

- Install pinch speed down gear pos. no. 64(1) from top side of chassis.
- Install main cam gear pos. no. 111(2) on to sub cam gear pos. no. 112(2) so that the small hole on main cam gear is exactly in line with the small hole of pinch speed down gear. And the large hole on main cam gear is exactly in line with the large hole of sub cam gear and the hole on the chassis, as shown in Fig. 4-4. To facilitate aligning the three holes use a small hex wrench or a metal pin.

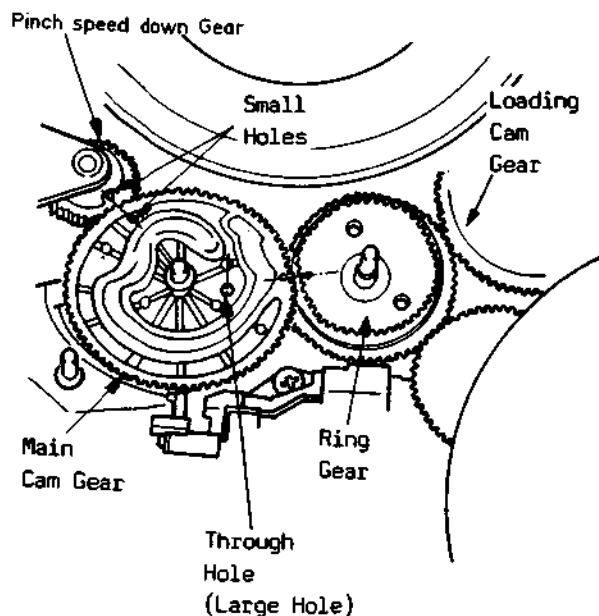


Fig.4-4

44 482 B11

4.3 Assembly procedures of loading cam gear and retainer gear

- Install loading cam gear pos. no. 142(2) so that the end of sub loading arm pos. no. 39(1) comes to rift A of loading cam gear as shown in Fig. 4-5.

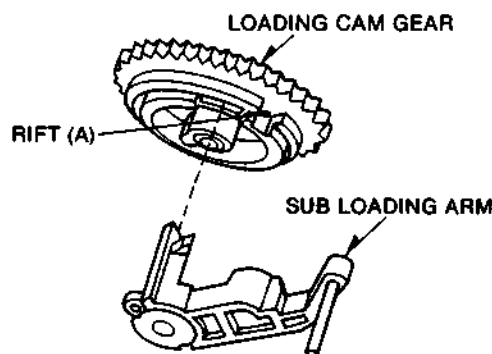


Fig.4-5

- Install retainer gear pos. no. 114(2) on to the ring gear so that the hole of the retainer gear is exactly in line with the hole of main cam gear, at this time, this hole of retainer gear also is exactly in line with the hole of ring gear, and the hole on the chassis. Now, another hole of retainer gear is exactly in line with the hole of loading cam gear as shown in Fig. 4-6. To facilitate aligning the holes use a small hex wrench or a metal pin.

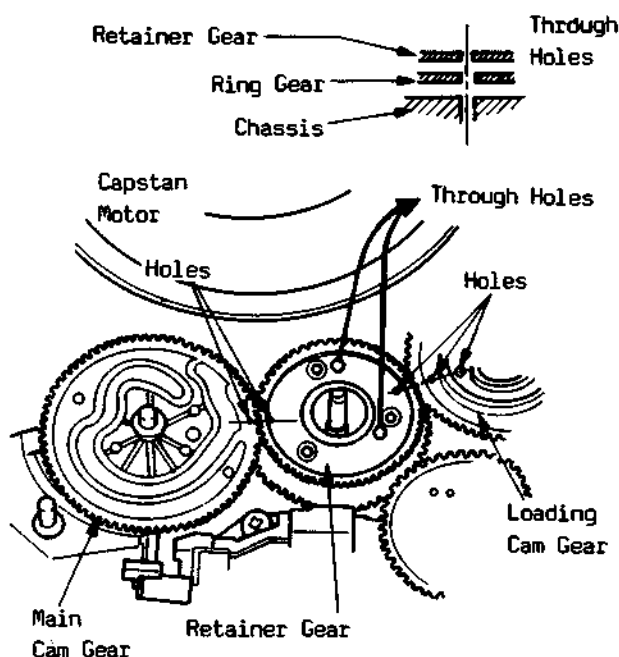


Fig.4-6

44 483 B1

4.4 Assembly procedures of centre gear

- Install centre gear pos. no. 113(2) on to retainer gear pos. no. 114(2) so that the hole of centre gear is exactly in line with the hole of retainer gear, ring gear and the hole in the chassis, see Fig. 4-7. At this time another hole of the centre gear is exactly in line with the small hole of clutch disk pos. 116(2), see Fig. 4-7, then insert cut washer pos. no. 100(2).

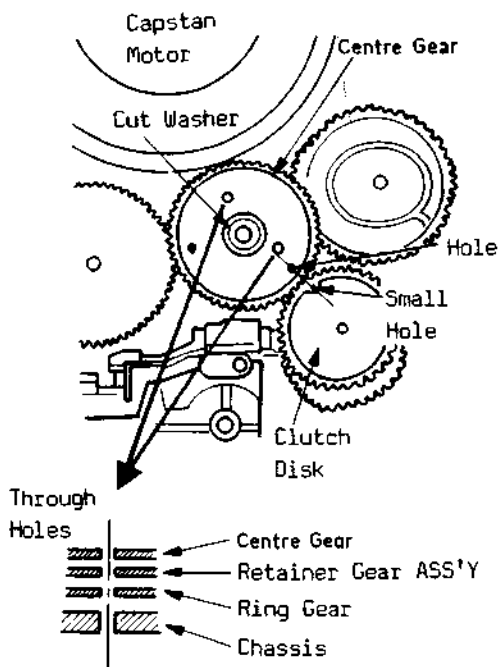


Fig. 4-7

44 484 B11

4.5 Assembly procedures of main lever (1) unit and cam follower arm unit

- Install cam follower arm unit pos. no. 109(2) so that the pin of cam follower arm insert to the groove of main cam gear then insert a retaining ring (5322 530 74076).
- Install main lever unit (1) pos. no. 103(2) unit and then insert cut washers pos. no. 100(2) as shown in Fig. 4-8.

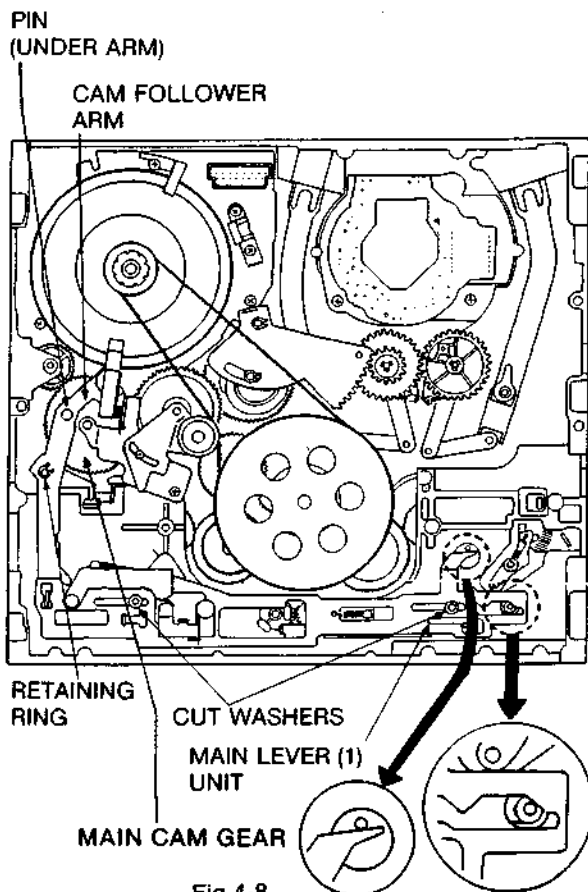


Fig. 4-8

4.6 Assembly procedures of loading gear (T), loading gear (S) sector gear and tension roller

- Set the P2 and P3 posts to unloading position, then install the loading gear (T) pos. no. 138(2) and (S) pos. no. 143(2) so that the hole of loading gear (T) is exactly in line with the hole of loading gear (S), see Fig. 4-9.
- Install sector gear pos. no. 141(2) so that the hole of sector gear is exactly in line with the projection mark on loading gear (T). Then insert the retaining rings.
- Install tension roller unit pos. no. 108(12) and SS brake unit pos. no's 105-107, then tighten the screws.

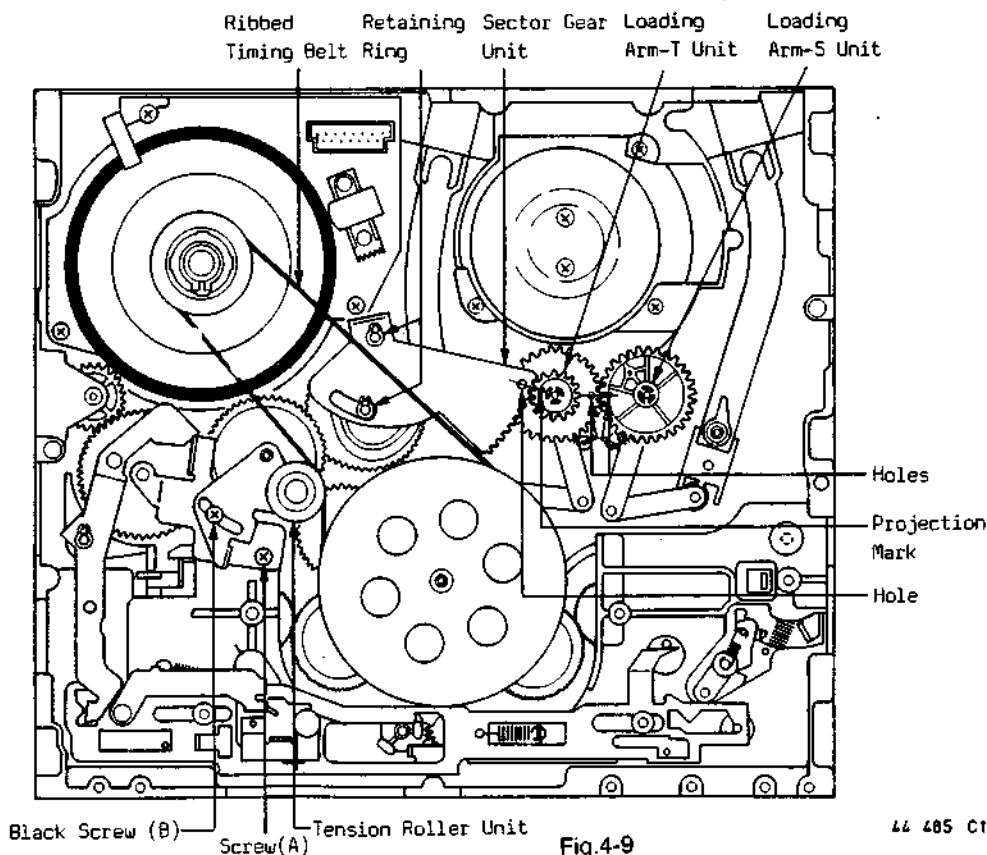


Fig. 4-9

44 485 C11

CS 19 964

4.7 Assembly procedures of connection gear

Note:

Before this alignment, sub cam gear position (and positions of bottom side gears) must be in their correct alignment position for STOP mode as previously described.

Push down to seat the sector gear.

Install the connection gear pos. no. 65(1) so that the small hole of connection gear is exactly in line with the small hole of sub cam gear as shown in Fig. 4-10.

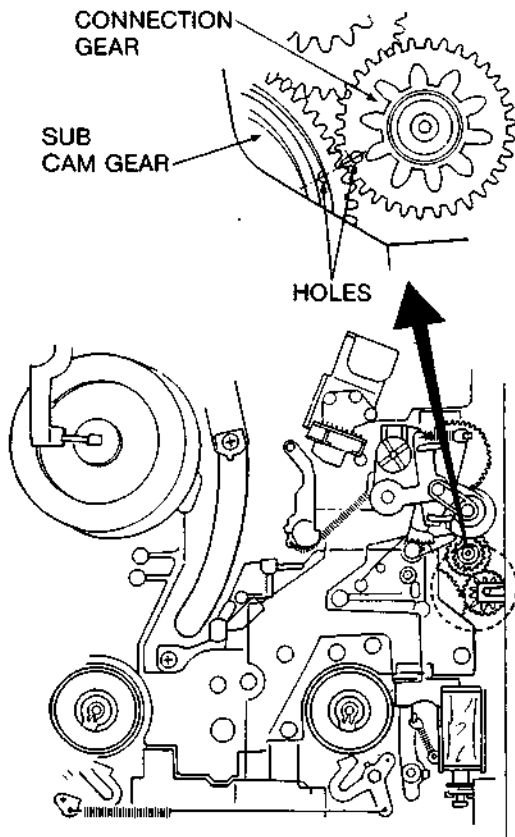


Fig.4-10

4.8 Assembly procedures of mode select switch and P5 pull out sector gear

- Install mode select switch pos. no. 55(1) and tighten the screw, then solder the 5 solder portions.
- Install the P5 pull out sector gear so that the hole of the P5 pull out sector gear aligns with the cog of edge at P5 gear as shown in Fig. 4-11.

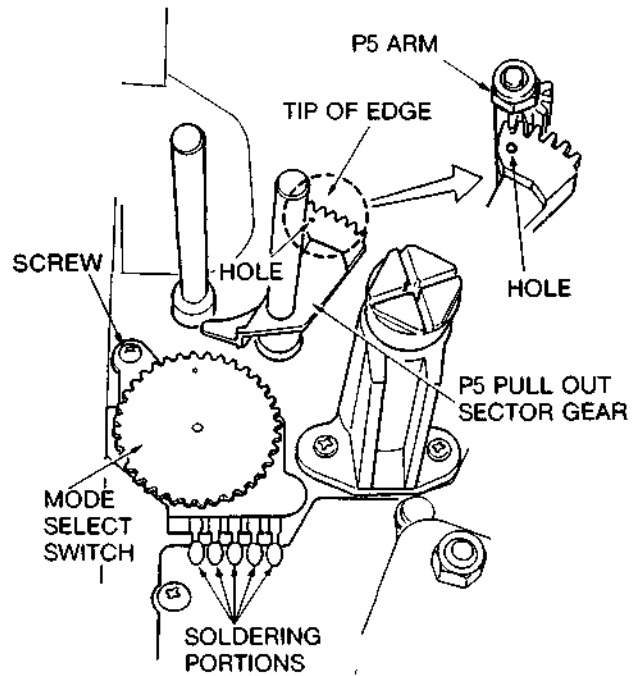


Fig.4-11

4.9 Assembly procedures of pinch cam and pressure roller unit

- Push P5 arm unit clockwise until it stops and hold it in this position.
- install pinch cam pos. no. 51(1) so that the edge of P5 arm comes into the rift of pinch cam and the projection of pinch cam is exactly in line with the hole of pinch speed down gear, at this time, the hole of mode select switch pos. no. 55(1) is exactly in line with the hole of pinch cam as shown in Fig. 4-12.
- Install the pressure roller unit, then install the pinch cam cap.

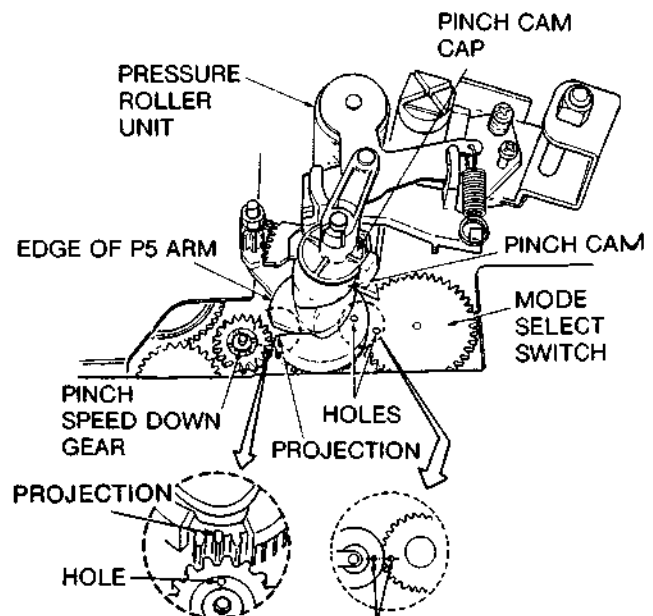


Fig.4-12

4.10 REINSTALLATION OF CASSETTE COMPARTMENT

When re-installing the cassette compartment, mechanical adjustment (alignment) should be performed for proper operation as follows.

And then, before reinstalling the cassette compartment ensure wiper arm (R) is aligned as shown in box, Fig. 4-13.

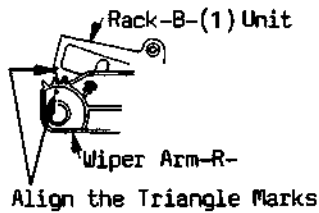
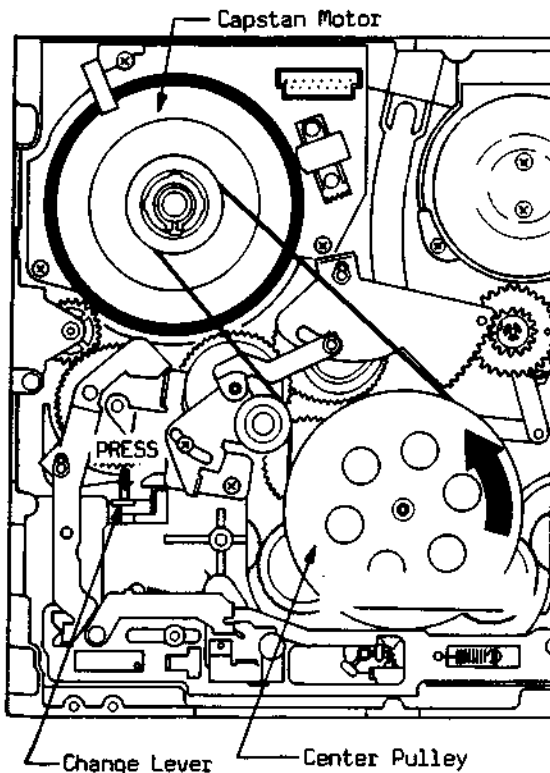


Fig.4-13

A. Reinstalling the cassette compartment from EJECT position

1. Press the change lever pos. 122(2) to the direction indicated by arrow as shown in Fig. 4-14 (to release the lock).
2. Turn the capstan motor or centre pulley counter clockwise until the mechanism is placed fully into the EJECT position and maintain this position.



44 470 B11

Fig.4-14

3. Memorize the position of the marking or hole on the connection gear (located on top right side, as shown in Fig. 4-15). Turn the capstan motor clockwise while watching the connection gear so that marking or hole of the connection gear rotates one revolution.

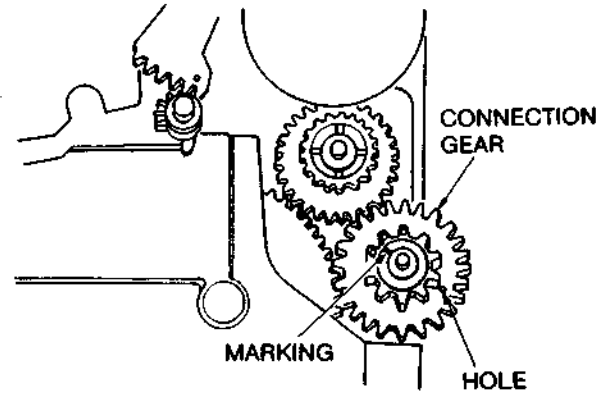
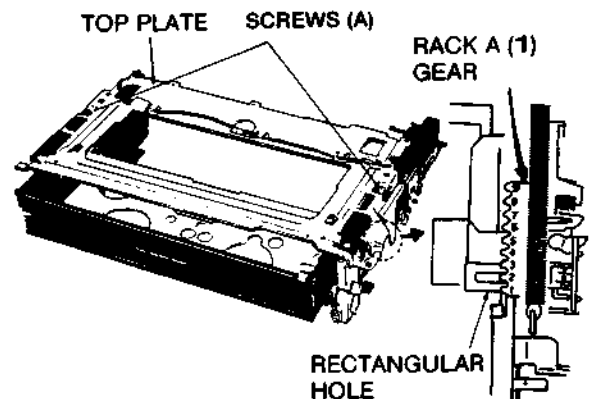
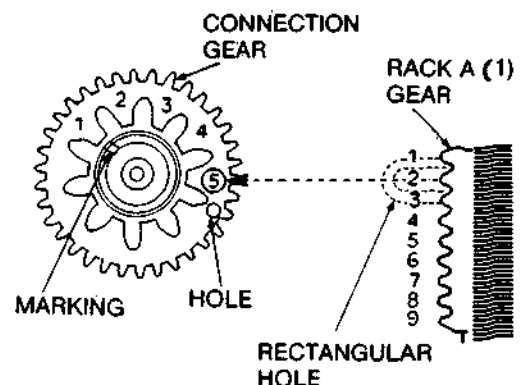


Fig.4-15

4. Slide the cassette holder (with wiper arm (R), see Fig. 4-20) just a little so that the second tooth of rack A (1) gear (located on the bottom side of cassette compartment) comes to center of the rectangular hole as shown in Fig. 4-16
5. Remove the 2 screws (A) and carefully remove the top plate from the cassette compartment (so connection gear and rack A (1) gear can be seen when reinstalling). Fig. 4-16 shows the bottom view of the cassette compartment.
6. Slowly install the cassette compartment to chassis so that the second tooth of rack a (1) gear fits into the fifth slot of the connection gear as shown in Fig. 4-17. If it does not fit, slide the cassette holder a little bit to mesh the gear teeth.



Bottom view of cassette compartment
Fig. 4-16



Top view of cassette compartment

7. Reinstall the top plate and tighten the 2 screws (A), then tighten the 4 screws (B) and (C) as shown in Fig. 4-18

Re-connect the flexible cable to P1508.

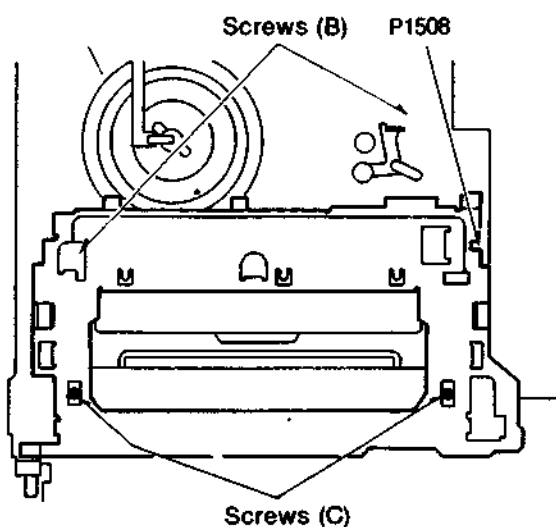


Fig. 4-18

Note:

If mechanism doesn't work correctly, carefully repeat above procedure of chapter 4.10 "Reinstallation of cassette compartment".

B. Reinstallation of cassette compartment from STOP (FF/REW) position

1. Set the mechanism into STOP (FF/REW) position by means of turning the capstan motor (refer to chapter 1.5).
2. Remove the 2 screws (A) as shown in Fig. 4-16.
3. Take the top plate out.
4. Take out the cassette holder unit as shown in Fig. 4-19.

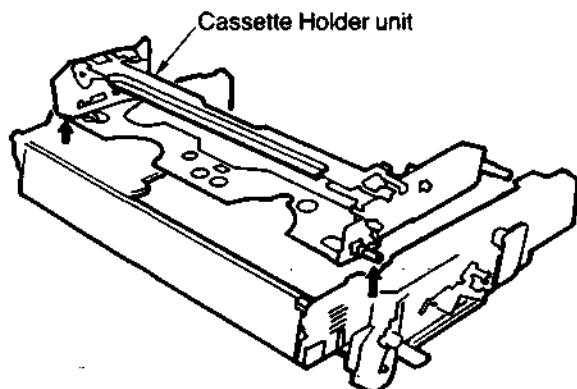


Fig. 4-19

5. Press the sub wiper arm (R) to direction indicated by the arrow as shown in Fig. 4-20 so that the sub wiper arm (R) comes to cassette down position completely and hold this position.

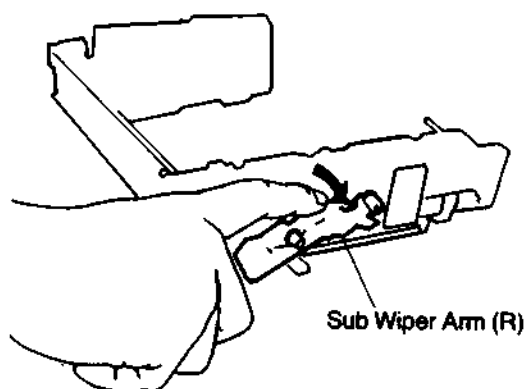


Fig. 4-20

6. Reinstall the cassette compartment (without cassette holder) to chassis so that the first tooth of rack gear A (1) aligns with the marking slot of the connection gear as shown in Fig. 4-21
7. Tighten the 4 screws (D) as shown in Fig. 4-22.
8. Press the change lever and turn the capstan motor counter clockwise until the mechanism is placed in the EJECT position as shown in Fig. 4-14.
9. Reinstall the cassette holder unit in the reverse order of item 4, Fig. 4-19.
10. Reinstall the top plate in the reverse order of item 3, Fig. 4-16.

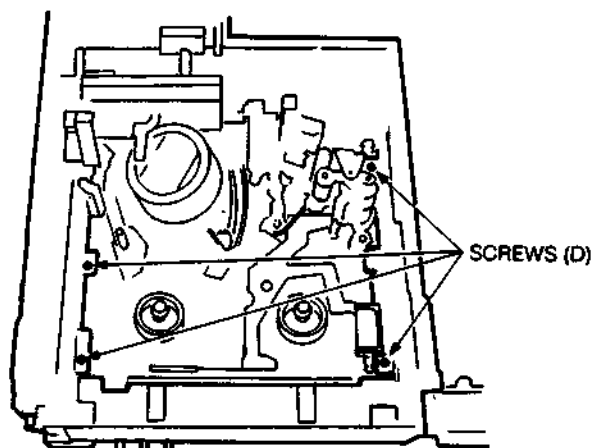


Fig. 4-22

Fig. 4-23 shows the right side of the cassette compartment, with alignments marks

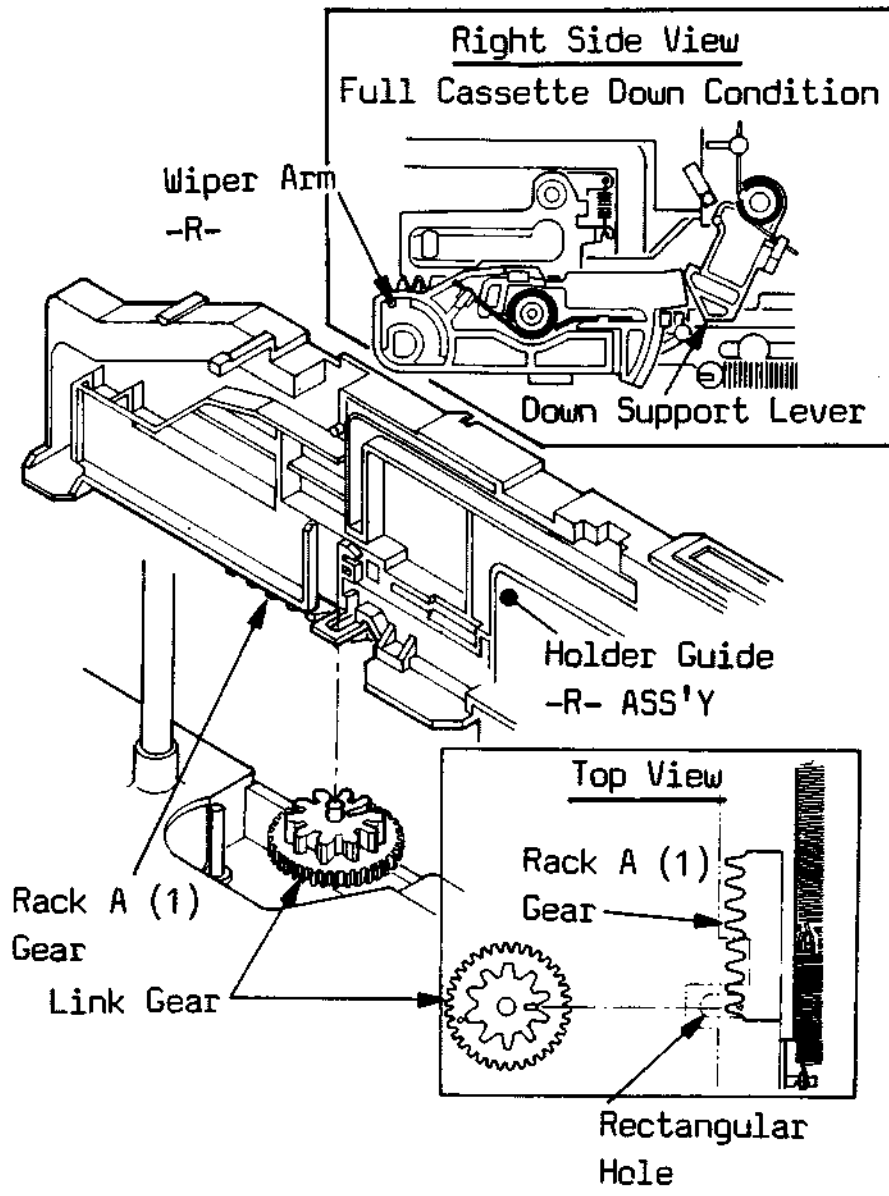
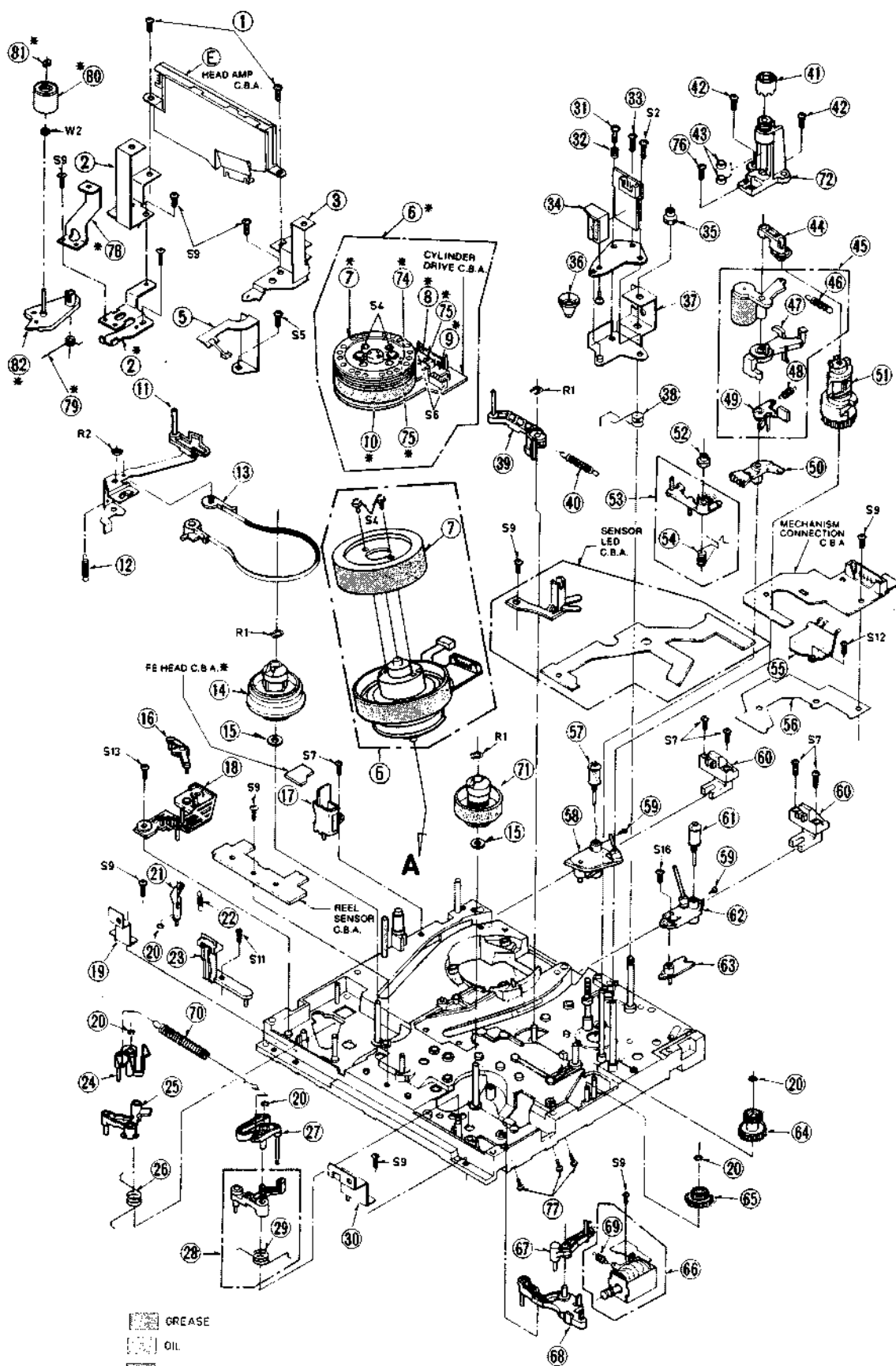


Fig.4-21

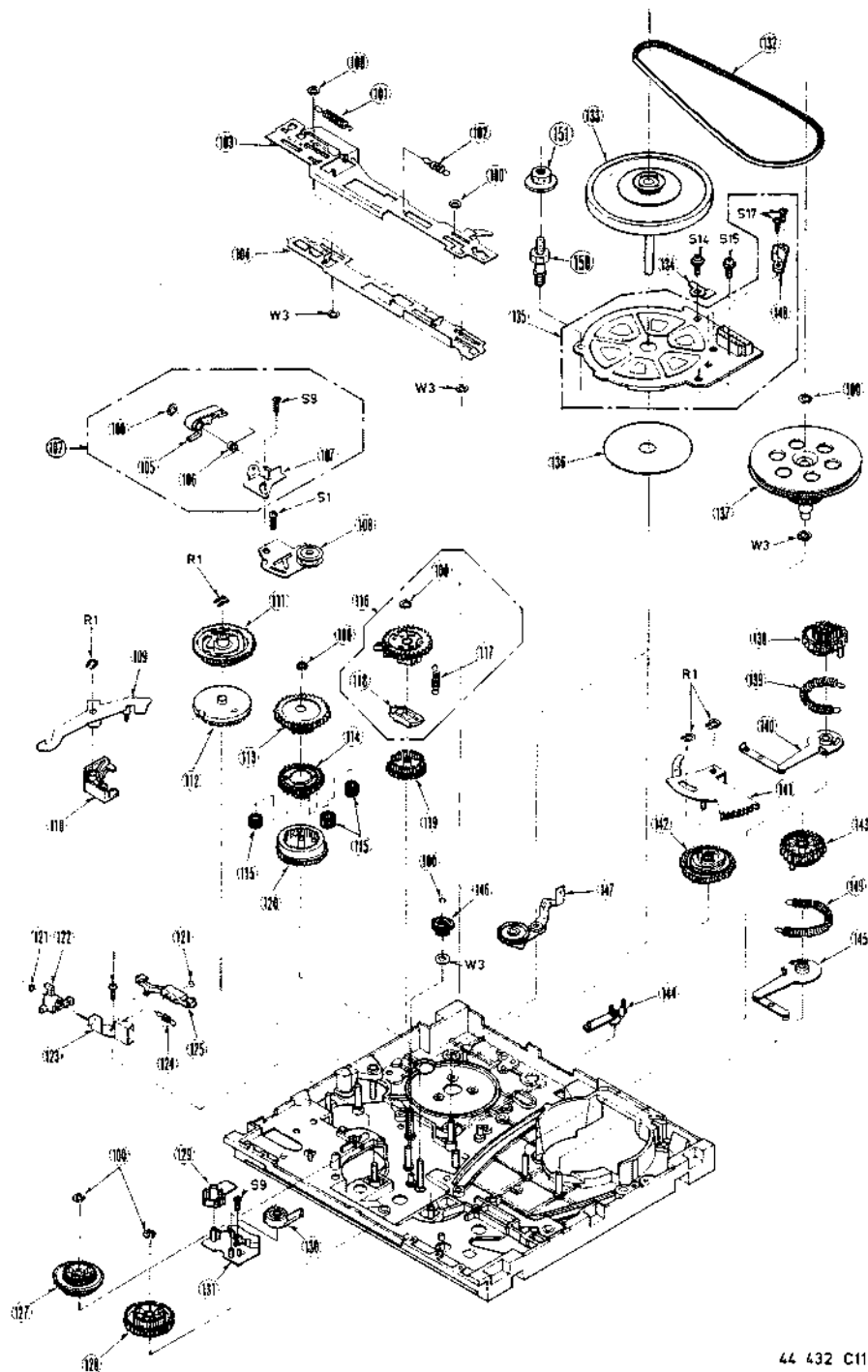
5. EXPLODED VIEWS AND PARTSLIST

5.1 Exploded view 1 (top view)



44 434 C11

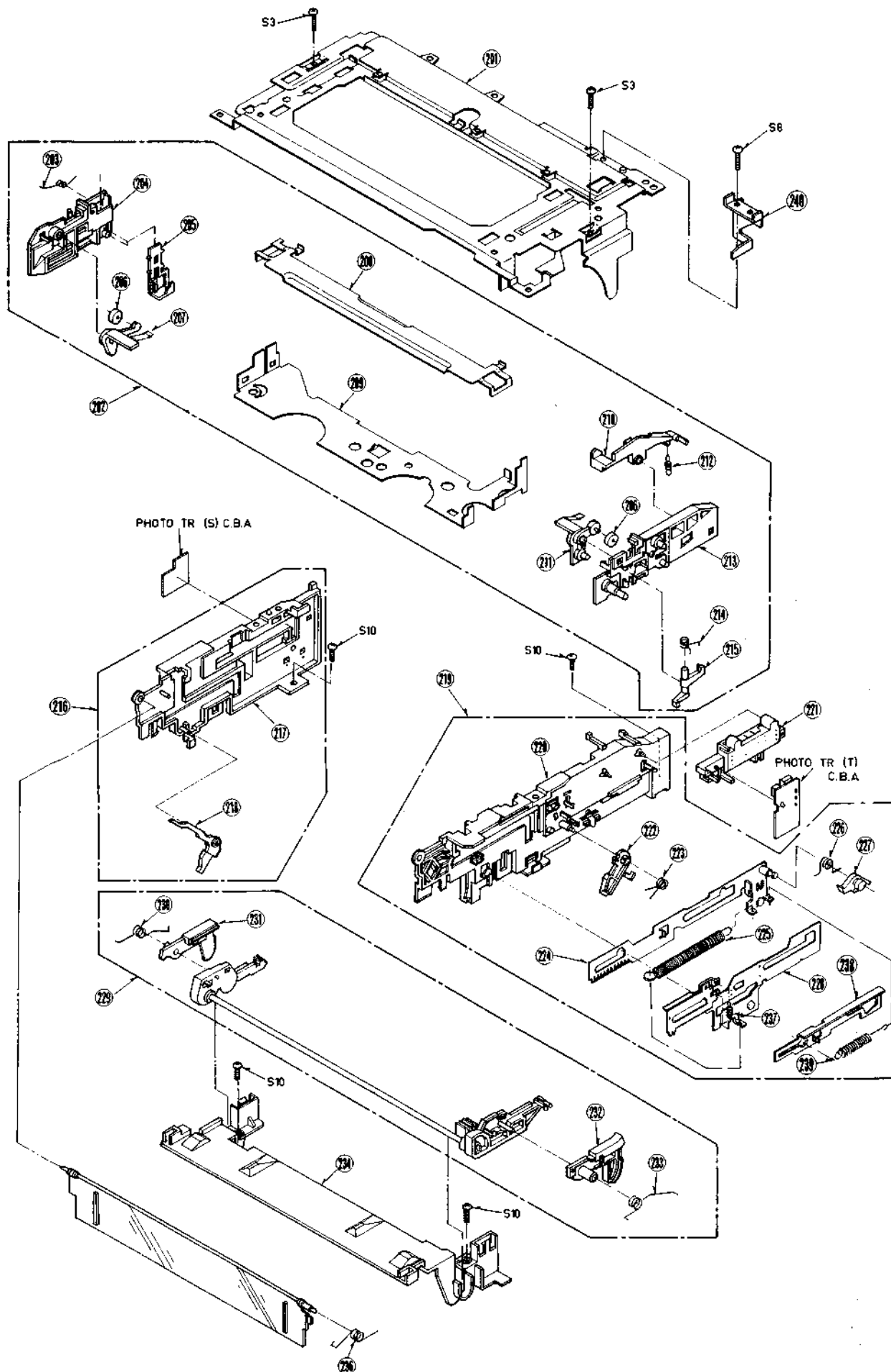
5.2 Exploded view 2 (bottom view)



44 432 C11

- GREASE
 OIL
 CLEANING SET
 4822 309 50106 FREON TMS (100ml)
 4822 406 91591 FIBRE TISSUE (10pcs)

5.3 Exploded view 3 (cassette-compartment)



5.4 Partslist

1(1)	4822 502 13241	Screw	56(1)		not for (*) (##)!!
2(1)	4822 403 53564	Mount angle (L)	57(1)	4822 528 90699	Roller post unit
2(1)	4822 403 53724	Mount angle (L) (***)	58(1)	4822 256 91349	Inclind base (S)
3(1)	4822 403 53565	Mount angle (R)	59(1)	4822 502 11831	Roller post screw
5(1)	4822 466 82418	Earth plate	60(1)	4822 403 53571	post stopper
5(1)	4822 403 53727	Earth plate	61(1)	4822 528 90698	Roller post unit
6(1)	4822 691 20499	Scanning unit (*)	62(1)	4822 403 53602	Inclind base (T)
6(1)	4822 691 20508	Scanning unit (**)	63(1)	4822 466 82389	Adjust plate
6(1)	4822 691 20505	Scanning unit (***)	64(1)	4822 522 32529	Pinch speed down gear
6(1)	4822 361 21264	Scanning unit (#)	65(1)	4822 522 32512	Connection gearrad
6(1)	4822 361 21263	Scanning unit (##)	66(1)	4822 526 20151	Solenoid unit
7(1)	4822 691 20501	Upper cylinder (*)	67(1)	4822 403 53603	Kick rod unit
7(1)	4822 691 20509	Upper cylinder (**)	68(1)	4822 403 53569	Solenoid lever
7(1)	4822 691 20506	Upper cylinder (***)	69(1)	4822 492 32908	Kick rod spring
7(1)	4822 691 20527	Upper cylinder (#)	70(1)	4822 492 32913	Main brake spring
7(1)	4822 691 20528	Upper cylinder (##)	71(1)	4822 528 10718	Take up reel table
8(1)	4822 259 90132	Element (***)	72(1)	4822 691 20483	Housing unit
9(1)	4822 403 53723	Main holder (***)	74(1)	4822 255 40929	Cooling block (***)
10(1)	4822 466 82419	Cover (***)	75(1)	4822 502 13242	Screw (***)
11(1)	4822 403 53614	Tension arm	76(1)	4822 502 13169	Screw
12(1)	4822 492 32912	Tension spring	77(1)	4822 502 13243	Screw (***)
13(1)	4822 401 11201	Tension band	78(1)	4822 403 53725	Mount angle(***)
14(1)	4822 528 10717	Supply reel	79(1)	4822 492 42324	Spring (***)
15(1)	4822 532 52057	Reel washer (0,2mm)	80(1)	4822 528 70578	Impedance role (***)
15(1)	4822 532 52058	Reel washer (0,3mm)	81(1)	4822 530 70449	Stopper (***)
15(1)	4822 532 52055	Reel washer (0,5mm)	82(1)	4822 403 53728	Impedance roller arm (***)
16(1)	4822 403 53615	Tension release arm	83(1)	4822 492 70087	Spring (***)
17(1)	4822 249 20076	FE head	100(2)	4822 532 52054	Cut washer
18(1)	4822 403 53605	Tansion arm base	101(2)	4822 492 32917	Release spring
19(1)	4822 403 53562	Mount angle (L)	102(2)	4822 492 70085	Lever spring
20(1)	4822 532 52054	Cut washer	103(2)	4822 403 53604	Main lever
21(1)	4822 403 53616	Release arm	104(2)	4822 403 53594	Sub lever
22(1)	4822 492 32916	Release spring	105(2)	4822 403 53617	SS brake unit (*, **, ***)
23(1)	4822 271 30638	Safety switch	106(2)	4822 492 42303	SS brake spring (*, **, ***)
24(1)	4822 403 53622	Main brake unit (S)	107(2)	4822 403 53598	SS brake base (*, **, ***)
25(1)	4822 403 53621	Soft brake unit (S)	107(2)	4822 403 53843	SS brake base(##)(##-#)
26(1)	4822 492 42296	Spring	108(2)	4822 528 90697	Tension roller
27(1)	4822 403 53623	Take up main brake (T)	109(2)	4822 403 53618	Cam follower arm
28(1)	4822 403 53619	Take up soft brake (T)	110(2)	4822 403 53581	Detent arm
29(1)	4822 492 42295	Spring	111(2)	4822 522 32518	Main cam gear
30(1)	4822 403 53563	Mount angle (R)	112(2)	4822 522 32516	Sub cam gear
31(1)	4822 502 13168	Adjust screw	113(2)	4822 522 32519	Centre gear
32(1)	4822 492 52043	Adjust spring	114(2)	4822 522 32526	Retainer gear
33(1)	4822 502 11834	Azimuth adjust screw	115(2)	4822 522 32517	Planet gear
34(1)	4822 249 10373	A/C head	116(2)	4822 522 32521	Clutch disk (*, **, ***)
35(1)	4822 505 10945	Nut (nylon)	116(2)	4822 522 32792	Clutch disk (##)(##)
36(1)	4822 505 10944	Adjust nut	117(2)	4822 492 32911	Clutch spring (*, **, ***)
37(1)	4822 403 53601	Head base unit	118(2)	4822 403 53561	Lock slide gear (*, **, ***)
38(1)	4822 492 42297	A/C head spring	119(2)	4822 522 32513	Drive disk
39(1)	4822 403 53608	Sub loading arm	120(2)	4822 522 32515	Ring gear
39(1)	4822 403 53842	Sub loading arm (##)(##-#)	121(2)	4822 532 52052	Cut washer
40(1)	4822 492 32907	Sub post spring	122(2)	4822 403 53578	Change lever
41(1)	4822 502 13171	Thrust screw	123(2)	4822 403 53599	Release lever
42(1)	4822 502 13167	Housing screw	124(2)	4822 492 32909	Release spring
43(1)	4822 532 52053	Oil seal	125(2)	4822 403 53579	Release lever
44(1)	4822 403 53596	Pinch cam cap	127(2)	4822 522 32532	Take up real gear (T)
45(1)	4822 528 81245	Pressure roller	128(2)	4822 522 32527	Supply up real gear (S)
46(1)	4822 492 32914	Pin pressure spring	129(2)	4822 403 53577	Return lever (R)
47(1)	4822 403 53582	Pinch lift arm	130(2)	4822 403 53576	Return lever (L)
48(1)	4822 492 32915	Release spring	131(2)	4822 403 53572	Stopper base
49(1)	4822 403 53583	Pinch lift arm	132(2)	4822 358 30881	Timing belt
50(1)	4822 522 32522	P5 sector gear	133(2)	4822 691 20484	Rotor unit
51(1)	4822 522 32525	Pinch cam	134(2)	4822 403 53568	Rotor stopper
52(1)	4822 505 10737	Nut (nylon)	135(2)	4822 691 20482	Stator unit
53(1)	4822 403 53609	P5 unit	136(2)	4822 466 92285	Sub plate
54(1)	4822 492 70088	P5 spring	137(2)	4822 528 81246	Centre pulley
55(1)	4822 276 12496	Mode switch	138(2)	4822 522 32524	Loading gear (T)
56(1)	4822 403 53597	Shield plate	139(2)	4822 492 32923	Loading spring

140(2)	4822 403 53612	Loading arm (T)	Fixing material Screws S(1) 4822 502 13217 S(2) 4822 502 11283 S(3) 4822 502 30531 S(4) 4822 502 30552 S(5) 4822 502 30553 S(6) 4822 502 30551 S(7) 4822 502 30556 S(8) 4822 502 30557 S(9) 4822 502 11968 S(10) 4822 502 30559 S(11) 4822 502 30558 S(12) 4822 502 30554 S(13) 4822 502 30555 S(14) 4822 502 30562 S(15) 4822 502 30561 S(16) 4822 502 13219 S(17) 4822 502 13218
141(2)	4822 522 32531	Sector gear	
142(2)	4822 522 32528	Loading cam gear	
143(2)	4822 522 32523	Loading gear (S)	
144(2)	4822 403 53575	Play control arm	
145(2)	4822 403 53611	Loading arm (S)	
146(2)	4822 522 32514	Intermediate gear	
147(2)	4822 403 53613	Play-arm (*,**,***)	
147(2)	4822 403 53841	Play-arm (#)(##)	
148(2)	4822 249 20075	FG head	
149(2)	4822 492 32918	Loading spring	
201(3)	4822 443 30737	Top plate	
202(3)	4822 256 91348	Cassette holder (*,**,***)	
202(3)	4822 256 91536	Cassette holder (#)(##)	
203(3)	4822 492 42299	Mount lever spring (*,**,***)	
204(3)	4822 403 53573	Holder guide (L) (*,**,***)	
205(3)	4822 403 53595	Mount lever (*,**,***)	
206(3)	4822 528 90696	Roller (*,**,***)	
207(3)	4822 403 53589	Pressure lever (L) (*,**,***)	Retaining rings R(1) 5322 530 74076 R(2) 4822 530 70122 Washers W(1) 4822 532 11703 W(2) 4822 532 11704 W(3) 4822 532 11705 Circuit board assemblies (C.B.As) Mechanism connection C.B.A. 4822 214 32534 (*,**)(#,#) Mechanism connection C.B.A. 4822 214 52531 (***) Sensor LED C.B.A. 4822 214 32536 Sensor LED C.B.A. 4822 214 32532 NOT for (***) Tacho circuit board 4822 214 32535 (***) Tacho circuit board 4822 214 32543 NOT for (***) Tacho circuit board 4822 214 32541 (***) Erasehead circuit board 4822 214 32508 (***) Control circuit head servo 4822 214 32509 (***)
208(3)	4822 403 53567	Holder angle (*,**,***)	
209(3)	4822 403 53566	Cassette holder (*,**,***)	
210(3)	4822 403 53588	Opener lever (*,**,***)	
211(3)	4822 403 53591	Pressure lever (R) (*,**,***)	
212(3)	4822 492 70086	Lever spring (*,**,***)	
213(3)	4822 403 53574	Holder guide (R) (*,**,***)	
214(3)	4822 492 42302	Release spring (*,**,***)	
215(3)	4822 403 53587	Release lever (*,**,***)	
216(3)	4822 443 40718	Side plate (L)	
217(3)	4822 443 40716	Side plate (L)	
218(3)	4822 403 53586	Opener lever	
219(3)	4822 443 40719	Side plate (R) (*,**)	
219(3)	4822 691 20507	Side plate (R) (***)	
219(3)	4822 443 40817	Side plate (#)(##)	
220(3)	4822 443 40717	Side plate (R) (*,**,***)	
221(3)	4822 277 21257	Slide switch	
222(3)	4822 403 53593	Down support lever (*,**,***)	
223(3)	4822 492 42301	Down support spring (*,**,***)	
224(3)	4822 403 53607	Rack (A) (*,**,***)	
225(3)	4822 492 32919	Clutch spring (*,**,***)	
226(3)	4822 492 42304	Lock spring (*,**,***)	
227(3)	4822 403 53592	Lock lever(*,**,***)	
228(3)	4822 403 53606	Rack (B) (*,**,***)	
229(3)	4822 535 92528	Main shaft	
230(3)	4822 492 42298	Wiper spring (L)	
231(3)	4822 403 53584	Wiper arm (L)	
232(3)	4822 403 53585	Wiper arm (R)	
233(3)	4822 492 42306	Wiper spring	
234(3)	4822 403 53626	Cassette guide	
235(3)	4822 443 62697	Cassette cover(***)	
236(3)	4822 492 42305	Blinder spring	
237(3)	4822 492 32922	Rack (C) spring (*,**,***)	
238(3)	4822 403 53628	Connection rod (*,**,***)	
239(3)	4822 492 32921	Rod spring (*,**,***)	
240(3)	4822 403 53627	Cassette holder angle	

* only for DM 4/0
** only for DM 4/2
*** only for DMS 4/2

only for DMP 4/0
only for DMP 4/2