



HITACHI SERVICE MANUAL

TK

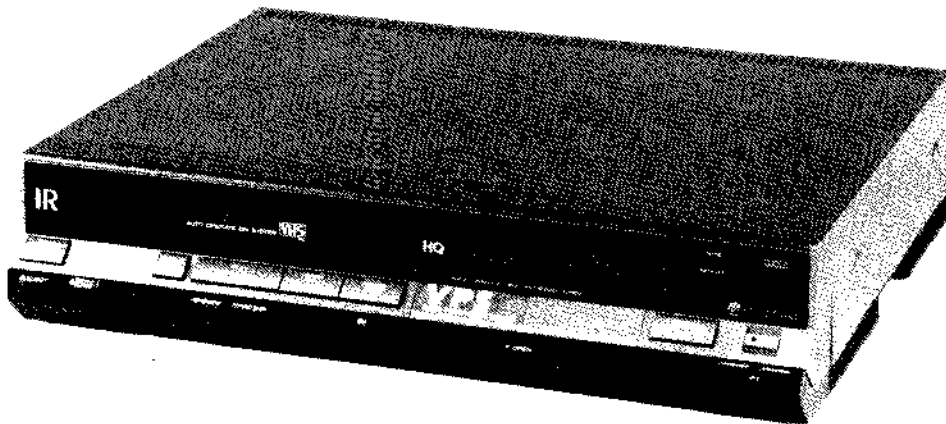
No. 2431E

**VT-125E(VPS)
VT-135E(VPS)**

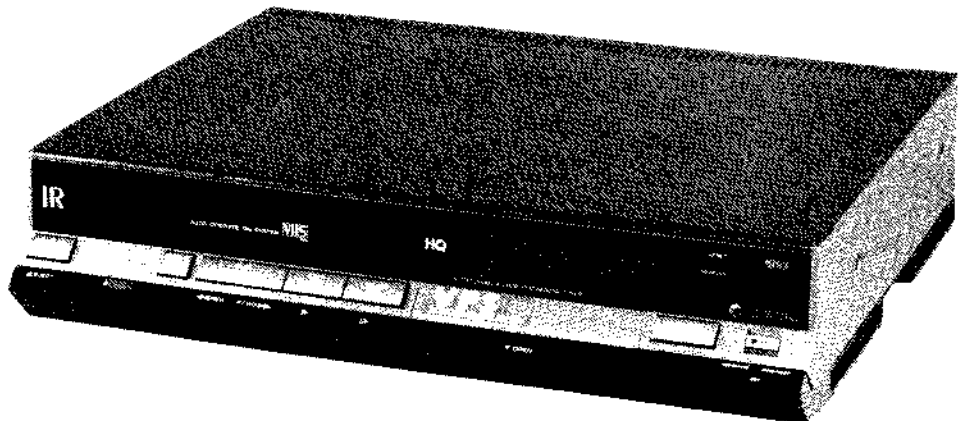
Auvicoelectronics
Service GmbH
Hans-Bredow Str. 19
28307 Bremen
Tel: 0421 40 40 02
FAX 42 39 60



Technical Data



— VT-125E(VPS) —



— VT-135E(VPS) —

VHS

THIS VIDEO DECK IS A
VHS TYPE VIDEO RE-
CORDER.
FOR PROPER OPERA-
TION, ONLY THE VHS
TYPE CASSETTE MUST
BE USED.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

VIDEO CASSETTE RECORDER

April 1986

TOKAI WORKS

TABLE OF CONTENTS

CHAPTER 1

SPECIFICATIONS	1-3
LIST OF DIFFERENCES	1-4
CONTROLS AND FUNCTIONS	1-5
VIDEO CHANNEL SETTING	1-7
PRE-TUNING OF BUILT-IN TV TUNER	1-7
CLOCK TIME SETTING	1-9
INSTANT RECORDING TIMER	1-10
TIMER RECORDING	1-11
REMOTE OPERATION	1-13
VPS (Video Programme System) FUNCTION	1-17

CHAPTER 2

DISASSEMBLY

1. NAMES AND LOCATIONS OF CIRCUIT BOARDS	2-1
2. NAMES AND LOCATIONS OF MAIN MECHANICAL COMPONENTS	2-3
3. CASE REMOVAL	
1. Preset Door	2-7
2. Top Cover	2-7
3. Bottom Cover	2-7
4. Front Panel	2-8
5. Shield Cover	2-8
6. Remote Controller	2-8
4. CIRCUIT BOARD REMOVAL	
1. Main Circuit Board Block	2-9
2. Operation Switch Circuit Board	2-9
3. Timer Input Key Circuit Board	2-9
4. Regulator Circuit Board	2-10
5. Preamp Circuit Board	2-10
6. VPS Circuit Board	2-10
5. CASSETTE LOADING MECHANISM REMOVAL	
1. Cassette Door	2-11
2. Supply End Sensor	2-11
3. Chassis Holder	2-11
4. Cassette Loading Mechanism	2-12
5. Gear Cover	2-12
6. Door Arm	2-12
7. Drive Gear (L)	2-12
8. Motor Block	2-13
9. Cassette Loading Motor	2-13
10. Drive Gear (R)	2-13
11. Cassette Holder	2-14
6. MAIN MECHANICAL COMPONENTS REMOVAL	
1. Upper Cylinder (Video Heads)	2-15
2. Impedance Roller and FE Head	2-15
3. A/C Head	2-16
4. Cylinder Assembly	2-16
5. Capstan Motor	2-17
6. Loading Motor	2-17
7. End Lamp	2-18
8. Reel Sensor	2-18
9. Mechanism State Switch	2-18

10. Safety Tab Switch	2-18
11. Main Brakes	2-18
12. Supply Subbrake	2-18
13. Supply Guide Pole	2-18
14. Take-Up Guide Pole	2-18
15. Reel Drive Gear	2-18
16. Take-Up Reel Disk	2-19
17. Load Pulley	2-19
18. Tension Arm and Tension Band	2-20
19. Guide Roller	2-20
20. Supply Reel Disk	2-20
21. Pressure Roller	2-20
22. Arm Bracket Assembly	2-20
23. Guide Base and Loading Link	2-20
24. Clutch Plate Assembly	2-22
25. Brake Slider	2-22
26. Capstan Flywheel	2-22
27. Loading Gear Assembly	2-23

CHAPTER 3

ELECTRIC CIRCUIT ADJUSTMENT COMPONENTS LOCATIONS ON CIRCUIT BOARDS

3-3

VT-125E (VPS)

1. SERVO CIRCUIT ADJUSTMENTS	
1. Reference Oscillation Frequency	3-5
2. Switching Point	3-6
3. Tracking Preset	3-7
4. V-Jitter	3-8
4. AUDIO CIRCUIT ADJUSTMENTS	
1. Audio Playback Level	3-9
2. Audio Bias Level	3-10

VT-135E (VPS)

1. SERVO CIRCUIT ADJUSTMENTS	
1. Reference Oscillation Frequency	3-11
2. Head Switching Point	3-12
3. Tracking Preset	3-13
4. Slow Tracking Preset	3-14
5. Slow Stability	3-15
6. V-Jitter	3-16
2. AUDIO CIRCUIT ADJUSTMENTS	
1. Audio Playback Level	3-17
2. Audio Bias Level	3-18
3. Y/CHROMA CIRCUIT ADJUSTMENTS	
1. CCD Level	3-19
2. Rec Chroma Level	3-20
3. Secam Detect Level	3-21
4. TIMER CIRCUIT ADJUSTMENT	
1. 4.19 MHz Crystal	3-22

CHAPTER 4

MECHANISM ADJUSTMENT

SERVICING JIGS AND TOOLS.....	4-1
LIST OF ADJUSTMENT LOCATIONS.....	4-2
MECHANICAL COMPONENT ADJUSTMENT	
1. Mechanism State Switch.....	4-3
TAPE TRANSPORT SYSTEM ADJUSTMENT	
1. Reel Disk Height.....	4-5
2. Tension/Tension Pole Position.....	4-6
3. Guide Pole Height.....	4-7
4. Guide Roller Height.....	4-8
5. Audio and Control Head.....	4-10
6. X value.....	4-12
7. Adjustments After Replacing Cylinder (Video Head).....	4-14
8. Checking Tension and Torque.....	4-16

CHAPTER 5

SCHEMATIC/CIRCUIT BOARD DIAGRAM

INTERNAL WIRING DIAGRAM.....	5-2
TUNER UNIT	
Schematic diagram.....	5-6
IF UNIT	
Schematic diagram.....	5-4
V.S TUNING	
Schematic diagram.....	5-7
Circuit board diagram.....	5-9
VPS (VIDEO PROGRAMME SYSTEM)	
Schematic diagram.....	5-10
Circuit board diagram VT-125E (VPS).....	5-11
VT-135E (VPS).....	5-12
TIMER/OPERATION SWITCH	
Schematic diagram.....	5-13
Circuit board diagram.....	5-16

VT-125E (VPS)

SYSTEM CONTROL

Schematic diagram.....	5-19
Circuit board diagram	
Main.....	5-30
Peripheral board.....	5-22

REMOTE CONTROL

Schematic diagram.....	5-23
------------------------	------

AUDIO/JACK

Schematic diagram.....	5-25
Circuit board diagram.....	5-30

RF CONVERTER

Schematic diagram.....	5-28
------------------------	------

PREAMP

Schematic diagram.....	5-29
------------------------	------

SERVO

Schematic diagram.....	5-38
Circuit board diagram.....	5-30
Waveform.....	5-36

Y/CHROMA

Schematic diagram.....	5-41
Circuit board diagram.....	5-48
Waveform.....	5-44

VT-135E (VPS)

SYSTEM CONTROL

Schematic diagram.....	5-51
Circuit board diagram	
Main.....	5-62
Peripheral board.....	5-54

REMOTE CONTROL

Schematic diagram.....	5-55
Circuit board diagram.....	5-56

AUDIO/JACK

Schematic diagram.....	5-57
Circuit board diagram.....	5-62

RF CONVERTER

Schematic diagram.....	5-60
------------------------	------

PREAMP

Schematic diagram.....	5-61
------------------------	------

SERVO

Schematic diagram.....	5-70
Circuit board diagram.....	5-62
Waveform.....	5-68

Y/CHROMA

Schematic diagram.....	5-73
Circuit board diagram.....	5-80
Waveform.....	5-76

REGULATOR

Schematic diagram.....	5-82
Circuit board diagram.....	5-84

CHAPTER 6

REPLACEMENT PARTS LIST

ELECTRICAL PARTS LIST.....	6-1
----------------------------	-----

MECHANICAL PARTS LIST

Cabinet Section.....	6-7
Chassis/Cassette Loading Mechanism/ Cylinder Motor Section.....	6-7

EXPLODED VIEWS

CABINET ASSEMBLY.....	6-9
REMOTE CONTROL UNIT.....	6-11
CHASSIS (I) ASSEMBLY.....	6-12
CHASSIS (II) ASSEMBLY.....	6-14
CASSETTE LOADING MECHANISM ASSEMBLY.....	6-15
CYLINDER MOTOR ASSEMBLY.....	6-16

SPECIFICATIONS

Format:	VHS PAL Standard
Recording:	Rotary Two-Head Helical Scan Azimuth Recording
Tape Speed:	23.39 mm/sec.
Tape Width:	12.7 mm
Operation Temperature:	5°C to 40°C
Video:	PAL colour (system B & G) & CCIR monochrome signals 625 lines
Recording Time:	240 min. (with Hitachi E-240 cassette)
Aerial Input:	VHF channels 2 – 12 CATV channels S1 – S20 UHF channels 21 – 69
RF Output:	UHF channels 37 (30 – 39 adjustable) (System G)
Video Input:	0.5 to 1.5V p-p 75 ohm Unbalanced
Video Output:	1V p-p 75 ohm Unbalanced
S/N Ratio (Video):	40 dB
S/N Ratio (Audio):	43 dB
Horizontal Resolution:	Colour 240 lines
Audio Input:	–2 dBm 50 Kohm
Audio Output:	–2 dBm 10 Kohm
Audio Frequency Range:	70 Hz to 12 kHz
Power:	AC 220V 50 Hz
Power Consumption:	36W (including timer) (VT-125E) 37W (including timer) (VT-135E)
Timer:	24 hour digital indication
Cabinet Size:	435 mm(W) x 95 mm(H) x 344 mm(D)
Weight:	7.0 kg
Accessory Included:	1 – Aerial cable 2 – Programme sheets 1 – Infrared Remote control unit

* Design and specifications are subject to change without notice.

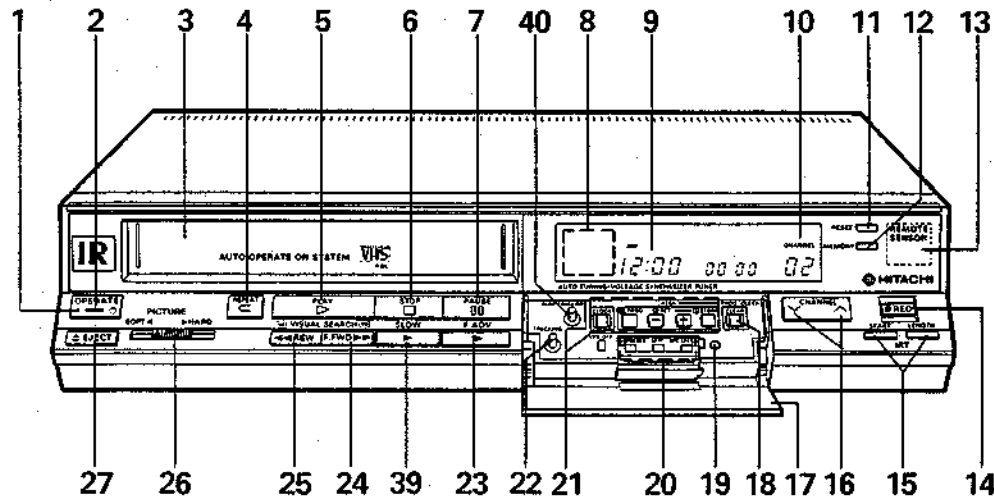
SAFETY PRECAUTIONS

- The following precautions should be observed when servicing.
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers'. Critical parts are marked with Δ in the schematic diagram and circuit board diagram.
 2. Before returning repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

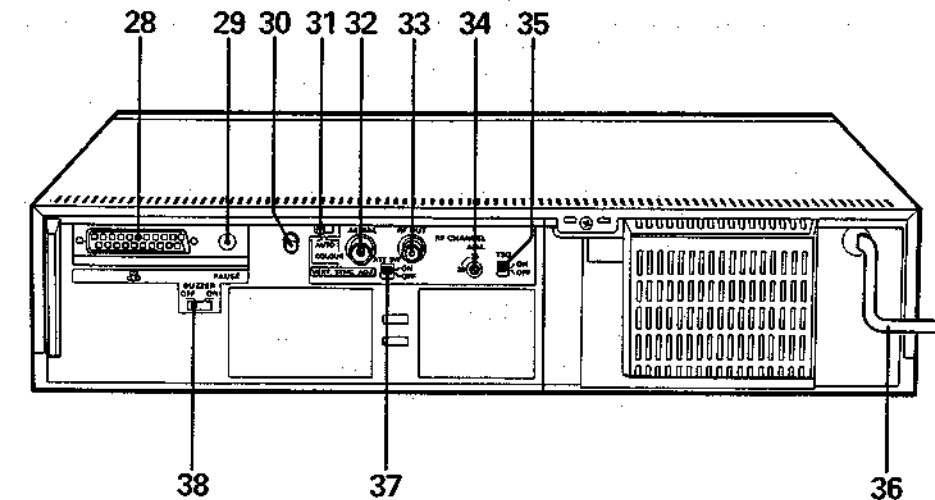
LIST OF DIFFERENCES

	ITEM	VT-135E (VPS)	VT-125E (VPS)
FEATURES	HQ (HIGH QUALITY)	USED	USED
	TRICK PLAY	<input type="radio"/> VISUAL SEARCH <input type="radio"/> PAUSE <input type="radio"/> F. ADV (By Remote Control) <input type="radio"/> REPEAT <input type="radio"/> SLOW	<input type="radio"/> VISUAL SEARCH <input type="radio"/> PAUSE <input type="radio"/> F. ADV (By Remote Control) <input type="radio"/> REPEAT
	AUTO OPERATE ON FUNCTION	YES	YES
	NOISE LOCK SEARCH FUNCTION	YES	YES
	REMOTE CONTROL	WIRELESS	WIRELESS
	TIMER RECORDING PROGRAMS	4 PROGRAMMES/2 WEEKS	4 PROGRAMMES/2 WEEKS
	TIMER BACKUP POWER	ABOUT 5 MINUTES	ABOUT 5 MINUTES
	TIMER PROGRAMMED TIME DISPLAY	START AND STOP SIMULTANEOUSLY	START AND STOP SIMULTANEOUSLY
	IRT	CAN SET START TIME AND LENGTH	CAN SET START TIME
	TAPE COUNTER INDICATOR	INDEPENDENT	INDEPENDENT
	MEMORY STOP OPERATION MODE	REWIND AND FORWARD	REWIND AND FORWARD
	CHANNEL TUNING FUNCTION	VOLTAGE SYNTHESIZER (AUTO TUNING)	VOLTAGE SYNTHESIZER (AUTO TUNING)
	INPUT SELECT SWITCH	NONE	NONE
	PLAYBACK PICTURE CONTROL	HIGH FREQUENCY CONTROL	HIGH FREQUENCY CONTROL
	ONE BUTTON RECORDING	YES	YES
	SLOW TRACKING	YES	NO
	VPS (VIDEO PROGRAMME SYSTEM)	YES	YES
	CHASSIS	BASIC CHASSIS TYPE	UY
CYLINDER MOTOR		THREE-PHASE OUTER ROTOR FG: 300 Hz	THREE-PHASE OUTER ROTOR FG: 300 Hz
VIDEO HEAD		3 HEADS CH-1/CH-2: 65 μ m, CH-3: 33 μ m CONNECTOR TYPE	2 HEADS CH-1/CH-2: 65 μ m CONNECTOR TYPE
HEATER		NONE (USED HEAT SINK)	NON (USED HEAT SINK)
DEW SENSOR		NO	NO
MAIN CONTROLS	VIDEO SYSTEM	Y-SIGNAL PROCESS CHROMA SIGNAL PROCESS REC/PB AMP AND CORRECTOR PICTURE CONTROL	HT4727AP (IC203) HT4539 (IC301) HT4708 (IC205) HA11852 (IC1) MSM6965RS (IC204)
	AUDIO SYSTEM	BA5115L (IC402)	BA5115L (IC402)
	SERVO SYSTEM	SPEED/PHASE CONTROL CYLINDER MOTOR DRIVE CAPSTAN MOTOR DRIVE TRICK PLAY CONTROL	M54898AP (IC601) HA13403 (IC1651) M54648L-B (IC602) M51483P (IC608)
	SYSTEM CONTROL	SYSTEM CONTROL μ P LOADING MOTOR DRIVE	HD614042SD37 (IC901) M54649L (IC902)
	TIMER	TIMER μ P	HD614085SA15 (IC751)
	CH-TUNING SYSTEM	TUNING μ P BAND SWITCHING	M50161-354SP (IC801) LA7934 (IC802)
	POWER SUPPLY	REGULATOR	STK5471 (IC851)
	VPS	VPS (VIDEO PROGRAMME SYSTEM) μ P	SAA 5235 (IC1101) SAF 1134P (IC1102)

CONTROLS AND FUNCTIONS



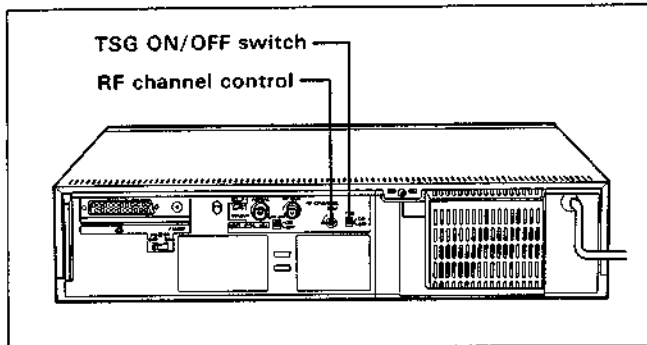
- 1. OPERATE SWITCH**
Turn system power on and off.
- 2. OPERATE INDICATOR**
- 3. CASSETTE COMPARTMENT**
Insert a cassette in through the door, and loading will be completed automatically.
Note: Power is turned on automatically when the cassette is loaded.
- 4. REPEAT BUTTON**
Press this button after pressing the PLAY button to repeat the scene you have just viewed during playback. The tape is rewound to the position where PLAY button was pressed, then the tape is played back from that position.
- 5. PLAY BUTTON**
- 6. STOP BUTTON**
The STOP button must be pressed between "RECORD" and any other operation.
- 7. PAUSE BUTTON**
Press to pause during recording.
Press to view a still picture during playback.
Press again to release.
- 8. MODE INDICATORS**
 - " [] " appears when a cassette is in the compartment.
 - " [PLAY] " appears during the playback mode.
 - " [REC] " appears during the record mode.
 - " [REW] " appears during the rewind mode and flashes during rewind visual search mode.
 - " [FF] " appears during the fast forward mode and flashes during forward visual search mode.
 - " [] " appears during the play/record pause mode.
 - " [] " appears when turning the power off after programming the timer.
- 9. DIGITAL DISPLAY**
This shows the time with a 24-hour display and shows the tape position.
- 10. CHANNEL INDICATOR DISPLAY**
This shows the channel number corresponding to the channel selected.
- 11. COUNTER RESET BUTTON**
To reset counter to "0000".
- 12. MEMORY BUTTON**
Press this button so "M" is indicated in the display, then fast forward or rewind the tape. The tape stops when the counter reaches approximately "0000".
Note: Press the button again to switch off the "M" indicator.
- 13. INFRARED RAY RECEIVING SECTION**
Receives infrared rays from remote control unit.
- 14. RECORD BUTTON**
Press RECORD button to record.
- 15. INSTANT RECORDING TIMER BUTTONS (IRT)**
This allows unattended recording.
Timer will switch the VTR off automatically at a pre-selected time. This is convenient when you go out during recording.
- 16. CHANNEL SELECT BUTTONS**
Select the channels you wish to view or record by pressing these buttons.
And you can also select the "AUX" position* by pressing this button to record or watch the programme input at the PERI jack.
* One channel position either higher or lower outside the range of your preset channels.
- 17. SECONDARY CONTROL DOOR**
- 18. PROGRAMME CLEAR BUTTON**
Press the button to clear the programming information.



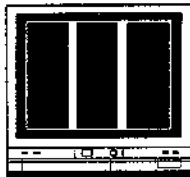
- 19. TIMER RESET SWITCH**
Press this switch if the digital display malfunctions or no display appears to reset the display. Set the correct present time for the clock then programme the timer.
- 20. CHANNEL PRESET BUTTONS**
- 21. TIME SET BUTTONS**
- 22. TRACKING CONTROL**
To minimize noise in playback.
- 23. FRAME ADVANCE BUTTON**
When you hold FRAME ADVANCE button down during still playback mode, tape will be played back frame by frame. Operates only after PAUSE button has been pressed.
- 24. FAST FORWARD/VISUAL SEARCH BUTTON**
Press to activate fast forward.
Press this button during playback and forward playback picture at high speed can be seen.
- 25. REWIND/VISUAL SEARCH BUTTON**
Press to start rewind.
Press this button during playback and reverse playback picture at high speed can be seen.
- 26. PICTURE CONTROL**
Adjust the picture so it is easy to see.
- 27. EJECT BUTTON**
Press to remove cassette. The STOP button must be pressed before "EJECT".
- 28. PERI JACK**
For connection with a TV with a PERI or DIN jack using an exclusive cable. See your dealer for details.
- 29. CAMERA PAUSE JACK**
Connect Camera pause cable.
- 30. VERTICAL SYNC. ADJUSTMENT CONTROL**
If you see vertical shaking on the TV screen in the still playback mode, rotate this control to minimize shaking.
- 31. AUTO/COLOUR SWITCH**
AUTO: Circuits are automatically switched to colour or black/white mode. Set to this position when playing or recording PAL signal.
COLOUR: When recording PAL signal in the area very far from broadcasting station, the recorded picture may lose colour. In this case set to this position in recording and playback.
- 32. AERIAL INPUT SOCKET**
Connect external aerial.
- 33. RF OUTPUT**
Connect to TV aerial input.
- 34. RF CHANNEL CONTROL**
Turn TSG ON/OFF switch to "ON" and rotate this control to set the video channel correctly.
- 35. TSG ON/OFF SWITCH**
Set to ON and check that the video channel of your TV set is correct. After setting, set this switch to OFF.
- 36. MAINS LEAD**
- 37. ATTENUATOR SWITCH**
Generally set to the NORMAL position.
Set to "ATT-ON" when interference occurs in an area with a strong signal.
- 38. BUZZER SWITCH**
When this switch is on, a beep sound will be heard when any VTR operation button is pressed. This is a convenience allowing you to operation.
To stop this function, turn the switch off.
- 39. SLOW BUTTON (Only for VT-135E)**
Press SLOW button during playback, and the tape is played back in the forward direction approximately 10 times slower than the normal speed.
- 40. SLOW TRACKING CONTROL (Only for VT-135E)**
Rotate this control to minimize noise in SLOW playback.

VIDEO CHANNEL SETTING

The RF converter changes the video and audio signals from a previously recorded video tape during playback to the same type of signal used for TV broadcasts. The RF converter output in this unit is pre-set prior to shipment to UHF channel 37.



1. Turn the TV on and select an unused channel (CH37) (in some cases this may be marked A/V).
2. Turn the OPERATE switch on.
3. Set the TSG ON/OFF switch to "ON". Then tune the TV until the test pattern shown below is received.



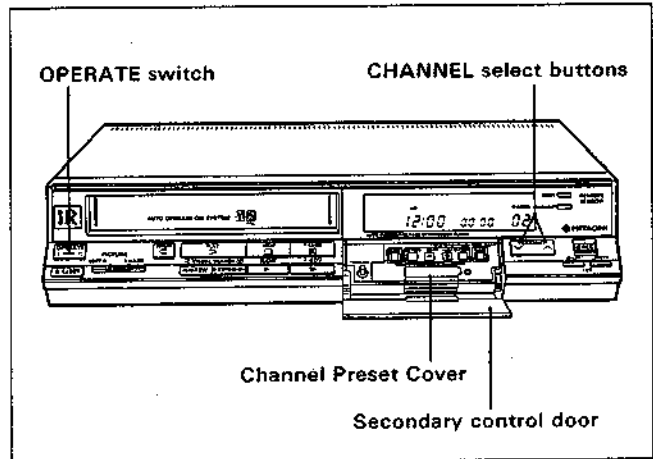
4. If it is not possible to correctly tune to the test pattern or channel 37 is used for broadcasting in your area, adjust the RF converter output with the RF channel control using a small screwdriver and re-adjust your TV until the test pattern is observed. For higher channel numbers, turn counterclockwise. For a lower channel, turn clockwise.
5. Having completed the adjustment, set the TSG ON/OFF switch to "OFF".

When connecting the VTR to a TV set provided with auto-tuning and the video channel cannot be set, operate as follows:

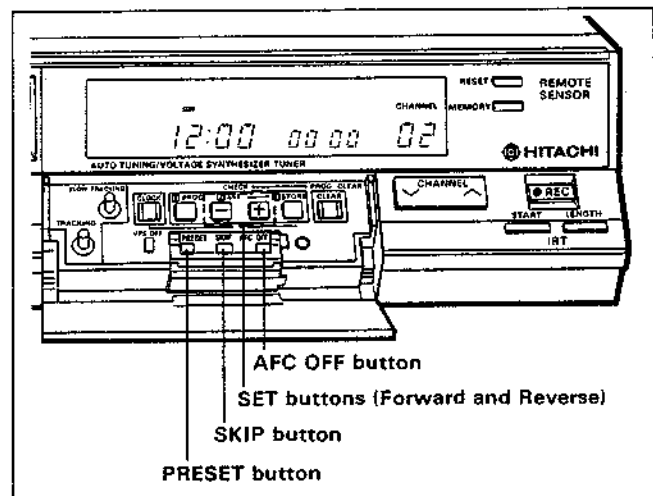
1. Remove the aerial cable from the AERIAL terminal on the VTR.
2. Leave the TSG ON/OFF switch "OFF".
3. Playback a blank tape.
4. Press the PAUSE button to obtain the pause mode.
5. Press the Auto-tuning button.
6. Auto-tuning starts and it stops at video channel 37.
Note: The auto-tuning indicator of the TV set changes to an exact tuning indicator.
7. Set the channel memory of the TV to ON and store the channel which was set in item 6.
8. Set the TSG ON/OFF switch to "ON" and check that the picture appears on the TV screen.
Now, the video channel of TV has been set properly.
9. Return the TSG ON/OFF switch to "OFF".
10. Reconnect the aerial cable to the VTR.

PRE-TUNING OF BUILT-IN TV TUNER

This VTR incorporates a complete television tuner with the required tuning controls. Once you have pre-tuned to preferred stations, you can select any of them by merely pressing the CHANNEL select button.



1. Turn the TV on and select the pre-tuned video channel.
2. Turn the OPERATE switch of the VTR on.
3. Open the Secondary control door to access the Pre-tuning controls.
4. Open the Channel Preset Cover.



5. Press the PRESET button once.
The display indication changes from the clock time display to the band indicator display.
Note: Pressing the button twice will lock the display. If you have pressed it twice, press it once more.
6. Press the CHANNEL select button on VTR to select the channel to be memorized.

Notes:

1. The Channel Number Display can be now consecutively selected from "00" through "73" and then "95" through "99" and "AUX" by pressing the CHANNEL select button either upward or downward. In this case, Channel Number may be any number.
2. When "AFC" is not indicated in the display, press AFC OFF button to display "AFC".



For example, the above diagram shows that channel 4 has been selected.

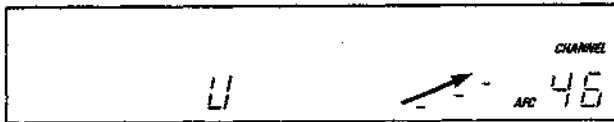
7. Press the SET button (Forward or Reverse) to start tuning.

At a station that is broadcasting, the picture appears on the TV screen. If the station received is different from the channel to be preset, press SET button (Forward or Reverse) again.

At the next station, the searching will stop and the new station can be preset. Repeat this until the desired station is reached. By repeating this, the Band indicator on the display will change in sequence L, H, U, L....

Notes:

- Press SET button (Forward); channels are searched in the order, VHF (1 – 12) → CATV (S1 – S20) → UHF (21 – 69), and “—” appears in sequence in the direction of the arrow during searching.



- Press SET button (Reverse); channels are searched in the reverse order to the above, and “—” appears in sequence in the direction of the arrow.



8. Follow the same steps as explained in steps 6 and 7 above for other channels.

You can preset up to 79 channels in memory.

9. After having completed tuning all channel memories you want, press the PRESET button once again.

These channels preset in memory as shown in the above can be selected by the CHANNEL select buttons on the VTR.

The provided sheet is used to list the programmes to which you pre-tune your VTR. List the programmes and paste the sheet on the side panel, etc. so as not to hinder you when you operate the VTR.

AFC (Automatic Frequency Control)

Since this unit has an AFC circuit, when a channel is preset following the above procedure, the AFC turns on automatically and you can receive the signal in optimum condition.

If a TV channel signal is marginal due to graininess or ghosting, the picture may sometimes be improved by manually tuning for best picture and then defeating the AFC action. To turn AFC off, follow the procedure below.

1. Select the desired channel by pressing CHANNEL select button.
2. Press the PRESET button once.
3. Press the AFC OFF button. “AFC” disappears from the display.

Note: Pressing the button once again will turn the AFC on.

4. Tap on the SET button (Forward or Reverse) alternately for fine tuning.
5. Press the PRESET button once again.

Channel selection

The channel up and down controls on the VTR permit advancing the tuner directly to the next higher or lower programmed channel.

Eliminating unwanted preset channels

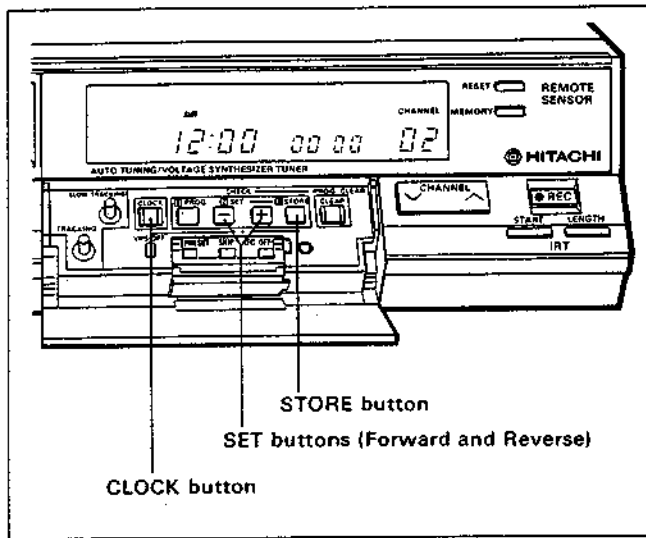
You can rearrange the desired channels by eliminating unwanted preset channels for channel up/down tuning.

1. Press the PRESET button once.
2. Press the CHANNEL select buttons until an unwanted channel is found.
3. Press the SKIP button once.
Sound will go off indicating the channel has been erased from memory.
4. Repeat steps 2 and 3 until all unwanted channels have been erased.
5. After eliminating them, press the PRESET button once again.

Note: To restore the erased channel, repeat the above steps 1 through 3.

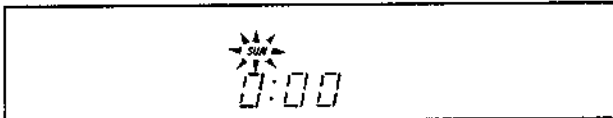
CLOCK TIME SETTING

The built-in digital clock is based on a 24 hour cycle and gives you a constant readout of the time and day.

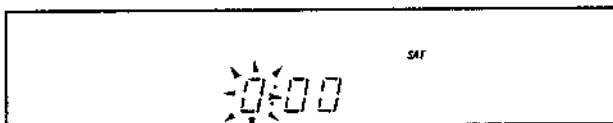


- When the MAINS lead is plugged in for the first time, "--:--" will appear on the display.

1. Press the CLOCK button.
"SUN" flashes on and off and "0:00" lights.

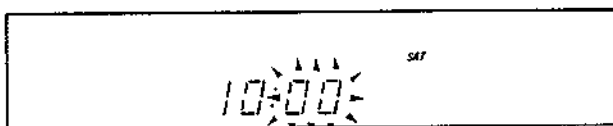


2. Press the SET button (Forward or Reverse) to select the present day of the week.
Hold the button down to advance rapidly.
When the present day of the week appears, press the STORE button. "0" hour starts flashing.



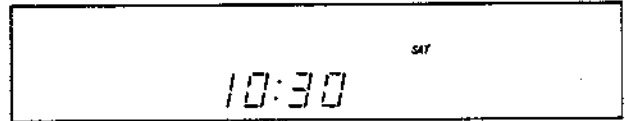
For example, the above diagram shows that Saturday (SAT) has been set.

3. Press the SET button (Forward or Reverse) to set the present hour.
Hold the button down to advance rapidly. Press the STORE button when the present hour appears.
"00" minutes starts flashing.



For example, the diagram shows that "10" hour has been set.

4. Press the SET button (Forward or Reverse) to set the minute.
Hold the button down to advance rapidly. Press the STORE button when the present minute appears.



For example, the diagram shows that "30" minutes has been set.

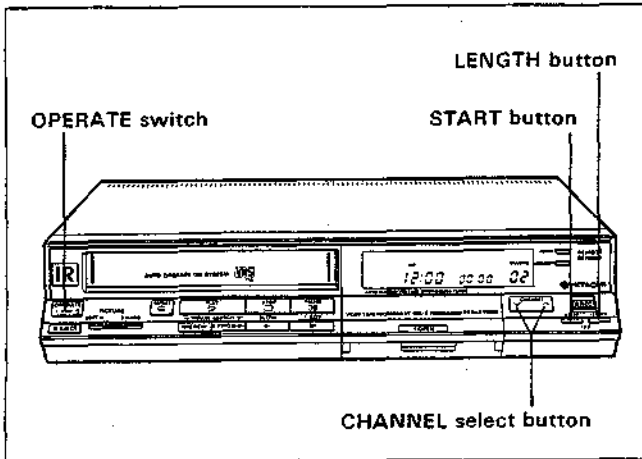
Now the clock has been set to the correct time of day.

Notes:

- This VTR has a built-in power failure compensation circuit. If power interruption of less than 5 minutes occurs, the clock time and programming will not be lost.
- The digital display is bright when the OPERATE switch is turned ON and automatically becomes dim when the switch is off.

INSTANT RECORDING TIMER (IRT)

Instant Recording Timer allows you to make simplified timer recording without using the programme timer. There are two simplified methods as explained below.



■ FOR IMMEDIATE RECORDING

1. Insert the cassette (one with the erase prevention tab intact) into the cassette loading door.
2. Press CHANNEL select button to select the channel to be recorded.
3. Press LENGTH button to set the timer to "0:00". Then press LENGTH once again to indicate the recording time on the display. The time changes in hours and minutes in the order of 0:30, 1:00, 1:30, 2:00, 3:00 and 4:00 every time the button is pressed. Recording starts when 0:30 is displayed. During recording, the remaining time is displayed.
4. At the end of recording the display reads 0:00; the VTR will automatically stop recording.

Note: The IRT feature does not operate during play and after a program timer recording has started. During rewind mode, the IRT recording will automatically start after the tape is rewound fully to the end.

■ FOR SIMPLIFIED TIMER RECORDING

1. First perform Steps 1 and 2 of "FOR IMMEDIATE RECORDING".
2. Press START button to select the start time. Each press will change the clock display (the start time) by increments of 10 minutes from the nearest 10 minutes of the hour.
3. Press LENGTH button for the recording time. The counter display is reset to hours and minutes in the order of 0:00, 0:30, 1:00, 1:30, 2:00, 3:00 and 4:00 every time the button is pressed.
4. Press OPERATE switch off, and the "⊕" indication will appear on the Display. The recording will start at the time you have selected and will automatically stop when the recording time display reads "0:00".

Notes:

1. The recording time can be extended any time during IRT by pressing LENGTH button. The recording time display will be reset to 0:30, 1:00, 1:30, 2:00, 3:00 or 4:00 as selected.
2. To stop the VTR during IRT, press LENGTH button until the recording time display reads 0:00, or press OPERATE switch and the STOP button within ten seconds.
3. To change the IRT program, the previous information must be first cleared.
4. If IRT and the program timer recording overlap, the former will override the latter.

To recall the IRT program

Press START or LENGTH button for recalling the start time and the recording time. In about 8 seconds the displays return to the present time of day.

Note: To recall the start time or the recording time, press LENGTH button only once. Pressing more will change the recording time and cause a need for resetting.

To cancel Instant Recording

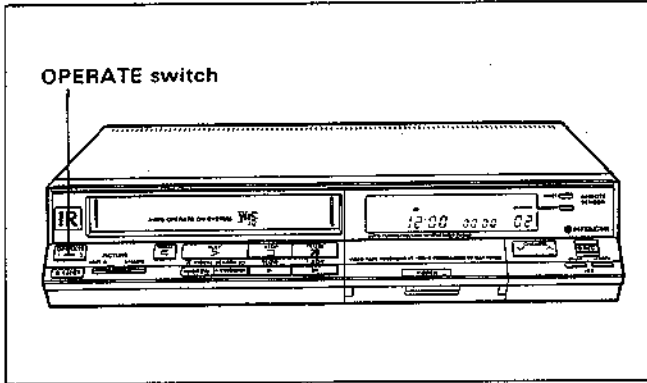
Press LENGTH button as many as may be required to indicate "0:00" on the display. After approximately 8 seconds the display will return to the present time of day, and IRT has been now cleared.

Note: OPERATE switch may be on or off.

TIMER RECORDING

The programmable electronic clock/timer permits the unattended recording of 4 preselected programmes within a period of 14 consecutive days, including the same programme(s) repeated on every day and the same programme(s) every week. It turns the unit on and off and selects the channel automatically.

Preparations for timer recording

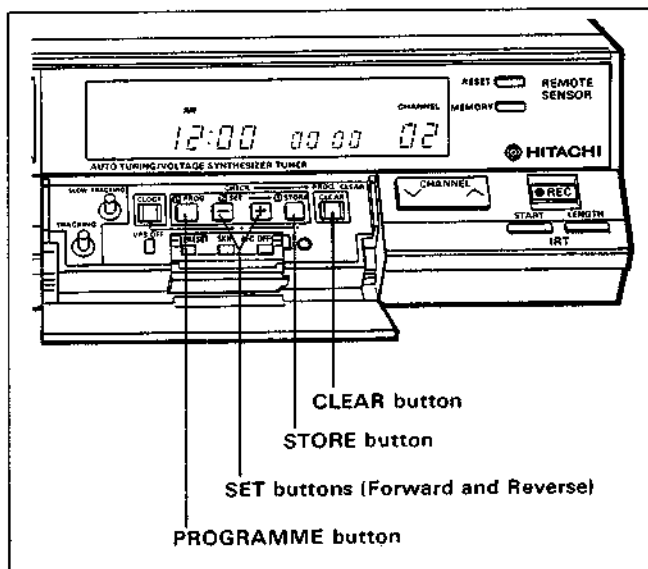


- Your TV does not have to be on to make a recording because the VTR records TV programmes without the aid of your TV. Its only use is for monitoring.

1. Make sure that the clock shows the present time and day correctly.
2. Insert a cassette.
Be sure to check that the record safety tab is not missing. If the record safety tab is missing, recording will not begin.
3. Programme the timer.

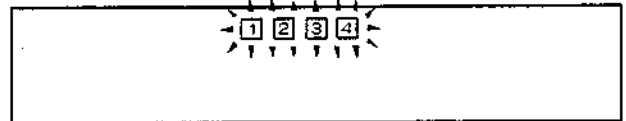
Programming the timer for unattended recording

For unattended recording the timer needs to know what day to make the recording, the time to start, the time to stop, and the channel to be recorded.



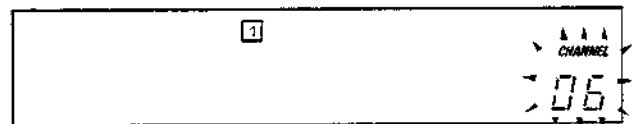
Note: If you input erroneous information by mistake when programming the timer, press the CLEAR button and input the correct information again.

1. Press the PROGRAMME button.
Programme indicators (1 through 4) flash to indicate which memory positions have not been programmed. If a memory has been programmed, its indicator will not flash.



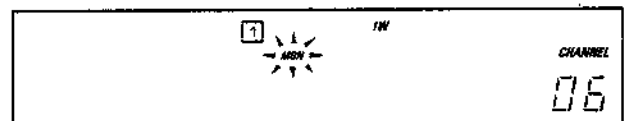
Note: You should determine which memory positions have not been programmed before entering new programming information. New information automatically erases previous programming.

2. Press the SET button (Forward) until the desired programme indicator lights. Programme indicators (1 through 4) light, in sequence, across top of digital display. Press the STORE button when the desired programme number is displayed. Channel number starts flashing.

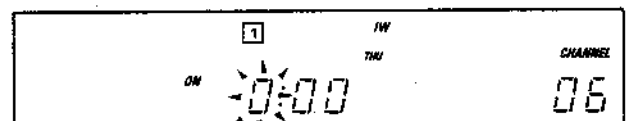


For example, above diagram shows programme "1" has been set.

3. Choose the channel to be recorded by pressing the SET or CHANNEL select button. Then press the STORE button.
"1W" appears and the present day flashes.



4. Press the SET button (Forward or Reverse) to select the day of recording. Make sure desired Week indicator (1W or 2W) lights. Continuing forward will advance timer to Week Two.
Press the STORE button after selecting the day of recording. "0" hour starts flashing.



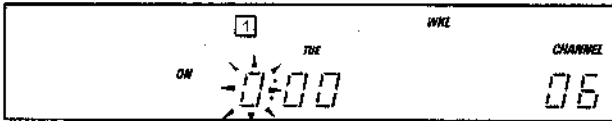
For example, above diagram shows recording on Thursday within 1 week from today.

Notes :

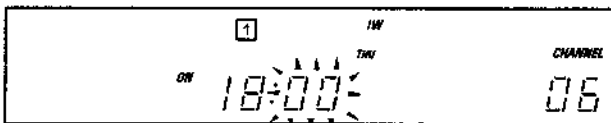
1. To record same time every day of the week:
Press the SET button (Forward or Reverse) until all day indicators light. Hold down the button to advance rapidly. Then press the STORE button.



2. To record on a specified day at the same time each week:
Press the SET button (Forward or Reverse) until the "WKL" indicator lights. Hold down the button to advance rapidly. Then press the STORE button.

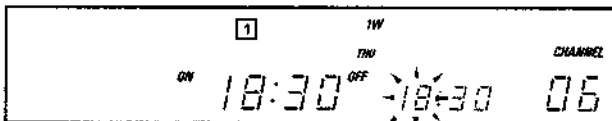


5. Select the hour for recording to start by pressing the SET button (Forward or Reverse). Hold down the button to advance rapidly. Press the STORE button after selecting the hour for recording to start. "00" minutes starts flashing.



For example, the above diagram shows "18" hours has been set.

6. Select the minutes for recording to start by pressing the SET button (Forward or Reverse). Hold down button to advance rapidly. Press the STORE button after selecting the minute for recording to start. "OFF" will appear and "18" hour starts flashing.



For example, the above diagram shows "30" minutes has been set.

7. Select the hour and minute to stop recording in the same procedures described in steps 5 and 6. Be sure to press the STORE button after selecting the minute.

Now, one programming has been completed. After few seconds the display returns the clock time display together with letters "1" automatically.

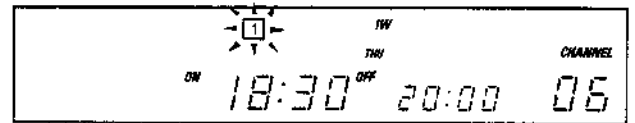
8. Turn off the OPERATE switch. The "⊕" indicator will come on.

Notes:

1. If the erase prevention tab is removed, the cassette is ejected automatically and "⊕" indication will flash. Stick a piece of cellophane tape over the erase prevention hole on the cassette to enable recording.
2. The "⊕" indication will flash, if a cassette is not inserted.

To clear a programme

1. Press the SET button (Forward) until desired programme indicator flashes. Then start and stop time appear on the display.



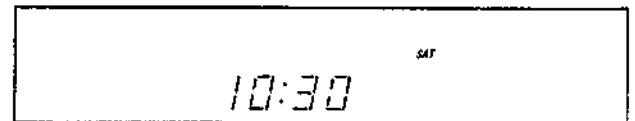
2. Press the CLEAR button.

The display returns the clock time display to show that the programming has been cleared. Be sure to press the CLEAR button while the display shows the start and stop time. The programming does not clear if the CLEAR button is pressed when the display returns the clock time display.

To check programming

Press the SET button (Forward).

The programme indicator "1" flashes. If the programme No. 1 has been already programmed, both start and stop times are displayed in a few seconds. The display then automatically returns to the present time of day.



Programming errors

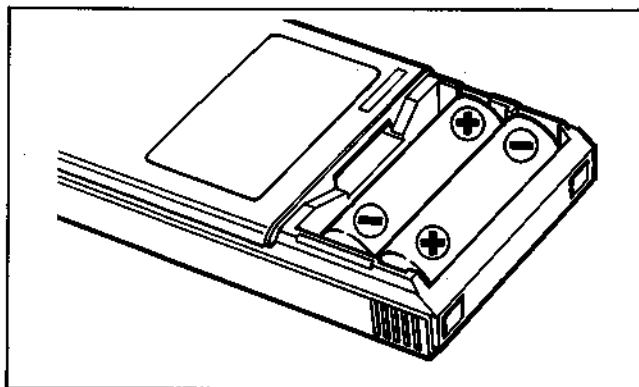
If programmes overlap, the VTR will select the programme with the earliest start time. When that programme is over, the VTR will switch to the next programme. If the start times are the same, the VTR will select the programmes in numerical order.

REMOTE OPERATION

You can operate the VTR from a distance using the Infrared Remote Control unit which performs the same functions as the corresponding buttons on the VTR — except for its REMOTE ON/OFF switch, TIMER SET and RECORD buttons.

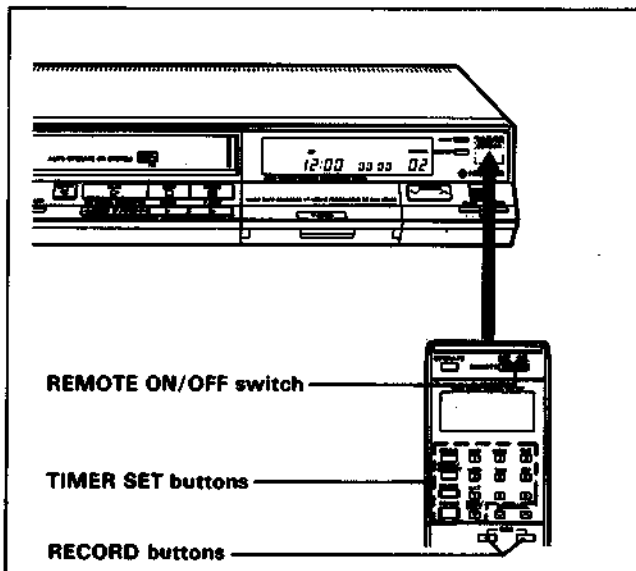
Power source of infrared remote control unit

The infrared remote control unit is powered by two batteries (size IEC standard R6). The life of the batteries is about a year although it depends on the numbers of times the unit is used. Replace the batteries when operation is not possible or when the distance becomes too small.



Operation of remote control

To use the infrared remote control unit aim it at the receiver on the front panel of the VTR and set REMOTE ON/OFF switch to ON.

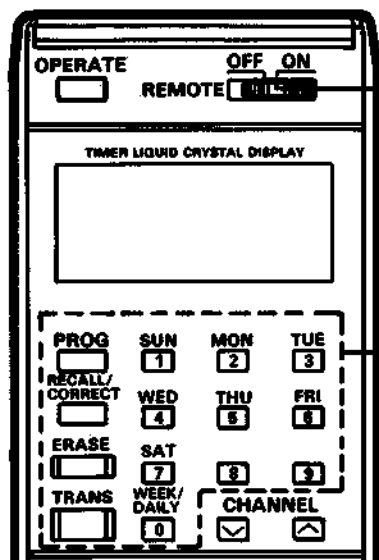


Notes:

1. Press RECORD buttons simultaneously on the remote control unit to record.
2. The infrared rays will bounce off the walls and eventually reach the receiver on the VTR, but for best results transmit rays directly to the receiver.

The timer can be programmed from this Remote Control Unit as well as using the operation buttons on the VTR. The channels of the VTR can also be selected directly using this Remote Control Unit.

■ Programming the timer for unattended recording using Remote Control Unit



1. Set REMOTE ON/OFF switch to ON.

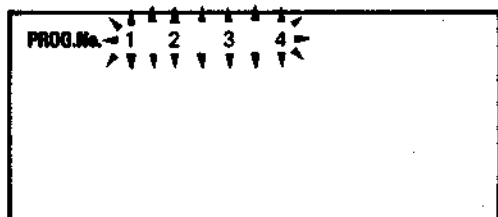
2. Turn on VTR.

3. Programme the timer by pressing these buttons. (See below.)

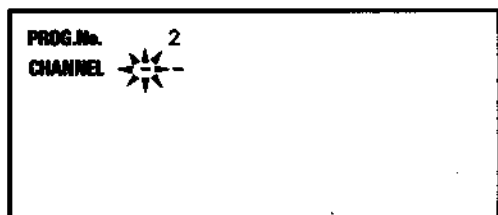
Note: If you input erroneous information by mistake when programming the timer, press BECALL/CORRECT button and input the correct information.

To programme the timer

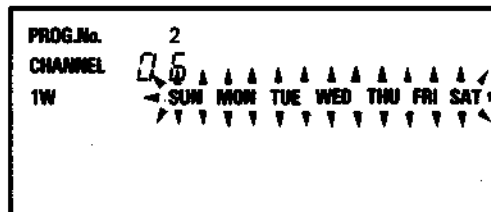
1. Press PROG button once.
"PROG. No." appears and "1" through "4" flash on the Display.



2. Press one of buttons [1] to [4] to select a Programme No.
For example, press button [2] to select Programme No. 2.

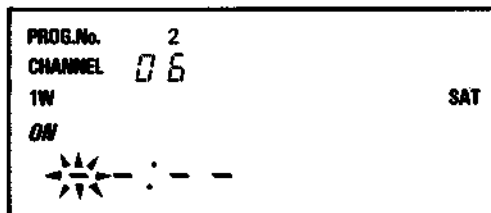


3. Press 10-key buttons [1] to [0] to select the channel to be recorded.
Note: For single-digit channel numbers, first press [0] and then the channel number [1] through [9].



For example, the above diagram shows that "CHANNEL 06" has been set.

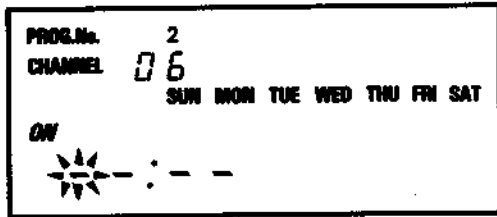
4. Select the day for recording.
For example, to select this Saturday, press [7] (SAT).



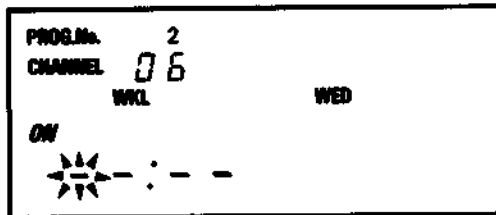
Notes:

1. Display "1W" if the day for recording is within 7 days including today. Display "2W" if the day for recording is between 8th and 14th days. Every time button [0] (WEEK/DAILY) is pressed, 1W changes to 2W, WKL (weekly) and SUN through SAT (daily) in sequence.

2. To record at same time every day of the week:
Press **[0]** (WEEK/DAILY) repeatedly so all the day indicators light.

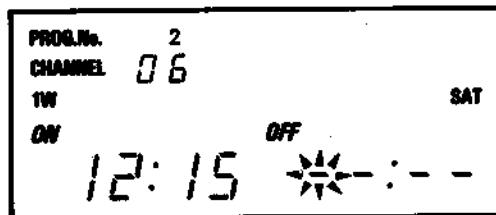


3. To record on a specified day at the same time each week:
Press **[0]** (WEEK/DAILY) repeatedly so the WKL indicator lights and then press **[1]** through **[7]** to select the day.



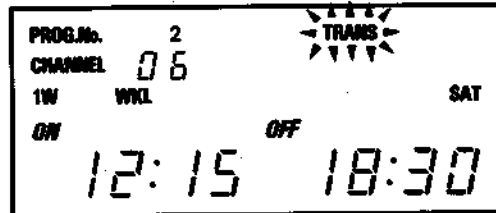
For example, the above diagram shows "WED" on every week has been set.

5. Select the hour and minute for the recording to start by pressing **[1]** through **[0]** buttons.
For example, to set "12:15", press buttons **[1]**, **[2]**, **[1]**, **[5]** in this order.



Note: For a single-digit hour or minute press **[0]** before entering the hour or minute.

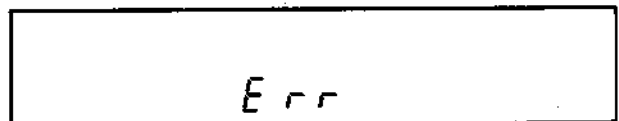
6. Select the hour and minute for recording to stop by pressing **[1]** through **[0]** buttons.
For example, to set "18:30", press buttons **[1]**, **[8]**, **[3]**, **[0]** in this order.



7. Aim the Remote Control Unit at the receiver in the front panel of the VTR and press TRANS button.
Now the programme No. on the display of the VTR will flash for a few seconds and then change to steady lighting.
Programming one event is completed.
Check that a cassette has been loaded in the VTR, then turn off the VTR power.

Notes:

1. The information in the Display of the Remote Control Unit goes off automatically after approx. one minute.
2. Even when the REMOTE ON/OFF switch on the Remote Control Unit is set to OFF after transmitting the programmed information to the VTR, the information is stored in the memory of the VTR.
3. If you select a channel which is not transmitting a signal (a channel which is not displayed if the channel select button on the VTR is pressed) in step 3, "Err" is displayed by the VTR when the TRANS button is pressed.



In this case, correct the channel as follows.

1. Press RECALL/CORRECT button repeatedly until the channel digits flash.
2. Input the correct channel.
3. Press RECALL/CORRECT button repeatedly until "TRANS" flashes.
4. Press TRANS button.

To check the programming

1. Press RECALL/CORRECT button.

The programmed information is shown by the Display.

Note: When 2 or more programmes are stored in memory, only the last programmed information is displayed.

To clear the programming

1. Press RECALL/CORRECT button.

The last programmed information is displayed.

2. Press ERASE button.

The programmed information is erased from the Display.

Note: The programmed information which has already been transmitted to the VTR is not erased.

Erase it by using the operation buttons of the VTR.

To change the programming information

When you find a mistake after transmitting the programmed information, correct it as follows and transmit the corrected information again to the VTR.

1. Press RECALL/CORRECT button to display the programmed information on the display.
2. Press RECALL/CORRECT button repeatedly until the digit to be corrected flashes.
3. Correct the error.
4. Press RECALL/CORRECT button until "TRANS" flashes.
5. Press TRANS button.

Now the programmed information which was previously transmitted is erased and the correct information is stored in the memory of the VTR.

■ To select a channel directly using the Remote Control Unit

Press 10-key buttons [1] to [0] to select a channel of the VTR directly.

For example, to select channel No. 18, press [1] and then [8].

Notes:

1. For single-digit channel numbers, first press [0] and then channel number [1] through [9].
2. Using the Remote Control Unit, you can also directly select the channel which was erased by pressing the SKIP button of the VTR. For example, when channel No. 5 was previously skipped, the channel is not displayed even if the channel select button on the VTR is pressed, however, it can be displayed when buttons [0] and [5] are pressed.

VPS (Video Programme System) FUNCTION

This VTR incorporates the VPS function.

If the VTR is tuned to a TV station transmitting the VPS signal, the VTR automatically takes any delay or extension of the programme into account and can record the specified programme.

For example, assume that you programme the timer for a football game on channel 8 from 19:00 to 20:45 on Saturday and the football game which is broadcast is changed to 21:00 to 23:00, the VPS function works and the VTR records the football game automatically from 21:00 to 23:00.

When the VTR is tuned to a station transmitting a VPS signal, "VPS" automatically appears in the display of the VTR.

Programming the timer for unattended recording automatically turns on the VPS function.

NOTES:

1. To switch off the VPS function, press the VPS OFF switch once during programming of the timer so the "VPS" display disappears.

Pressing the switch again turns VPS on.

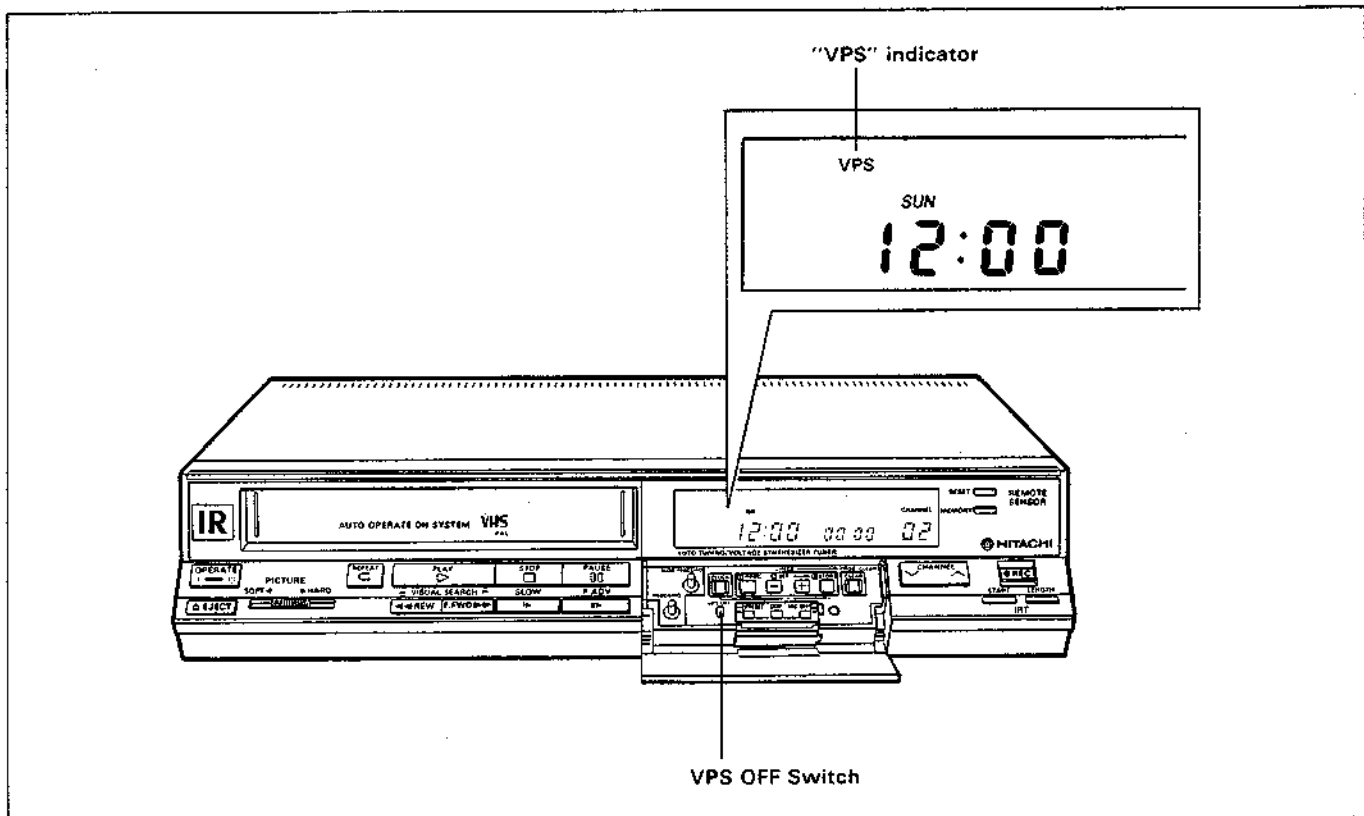
2. Always programme the timer for one TV programme to record the programme with the VPS function turned on. If you programme the timer for a football game and a movie on channel 3 sequentially from 10:00 to 14:00 for example, only the football game will be recorded but the movie will not.

In this case, programme the timer with the VPS off or input the other programme using another programme number to turn the VPS function on again.

3. The VPS function also takes a programme that is early by 10 minutes into account and starts recording automatically 10 minutes earlier than the scheduled time.

4. When the VTR is tuned to a station transmitting a VPS signal but the signal conditions are poor, "VPS" will flash in the display.

In this case, if you programme the timer with VPS turned on, the VPS function does not operate normally.



DISASSEMBLY

1. NAMES AND LOCATIONS OF CIRCUIT BOARDS

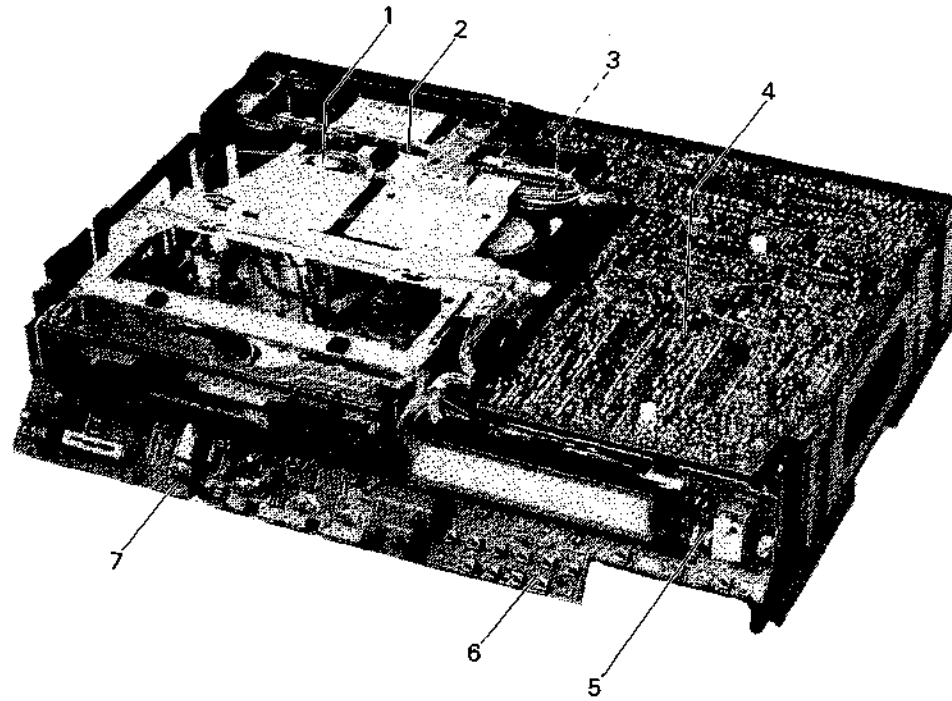


Fig. 1 Top View

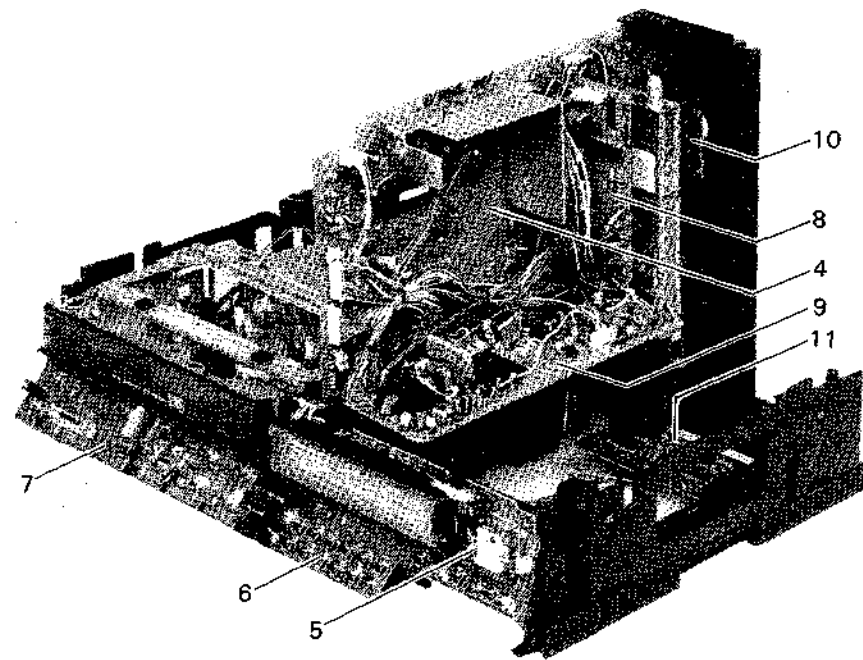


Fig. 2 Top View (with main circuit board open)

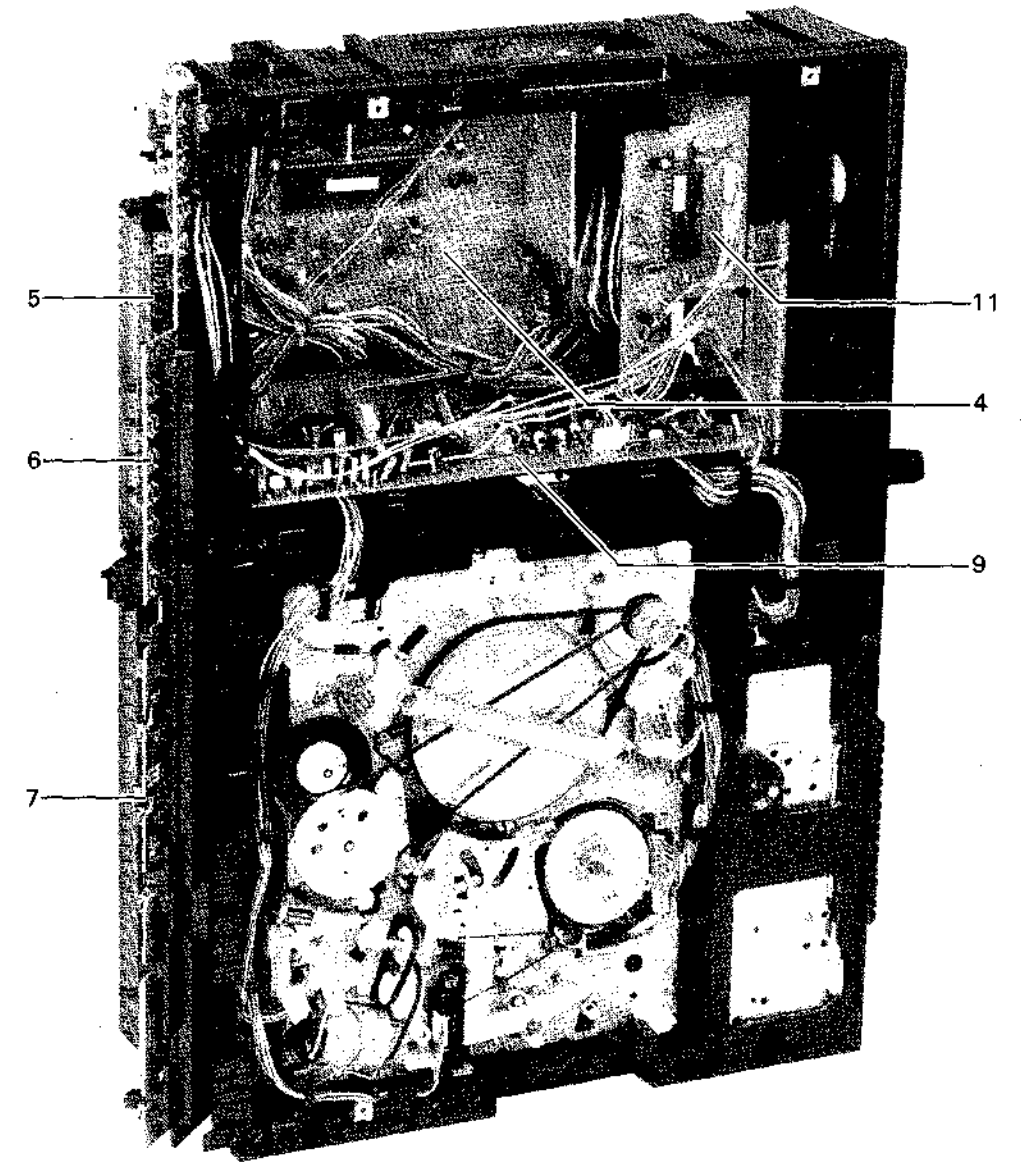


Fig. 3 Bottom View

1. Preamp circuit board
2. Regulator circuit board
3. Cylinder motor driver circuit board
4. Main circuit board
5. Timer circuit board
6. Input key circuit board
7. Operation switch circuit board
8. VS tuning circuit board
9. Y/chroma circuit board
10. Buzzer circuit board
11. VPS circuit board

(See page 2-9 for details on removing these circuit boards.)

2. NAMES AND LOCATIONS OF MAIN MECHANICAL COMPONENTS

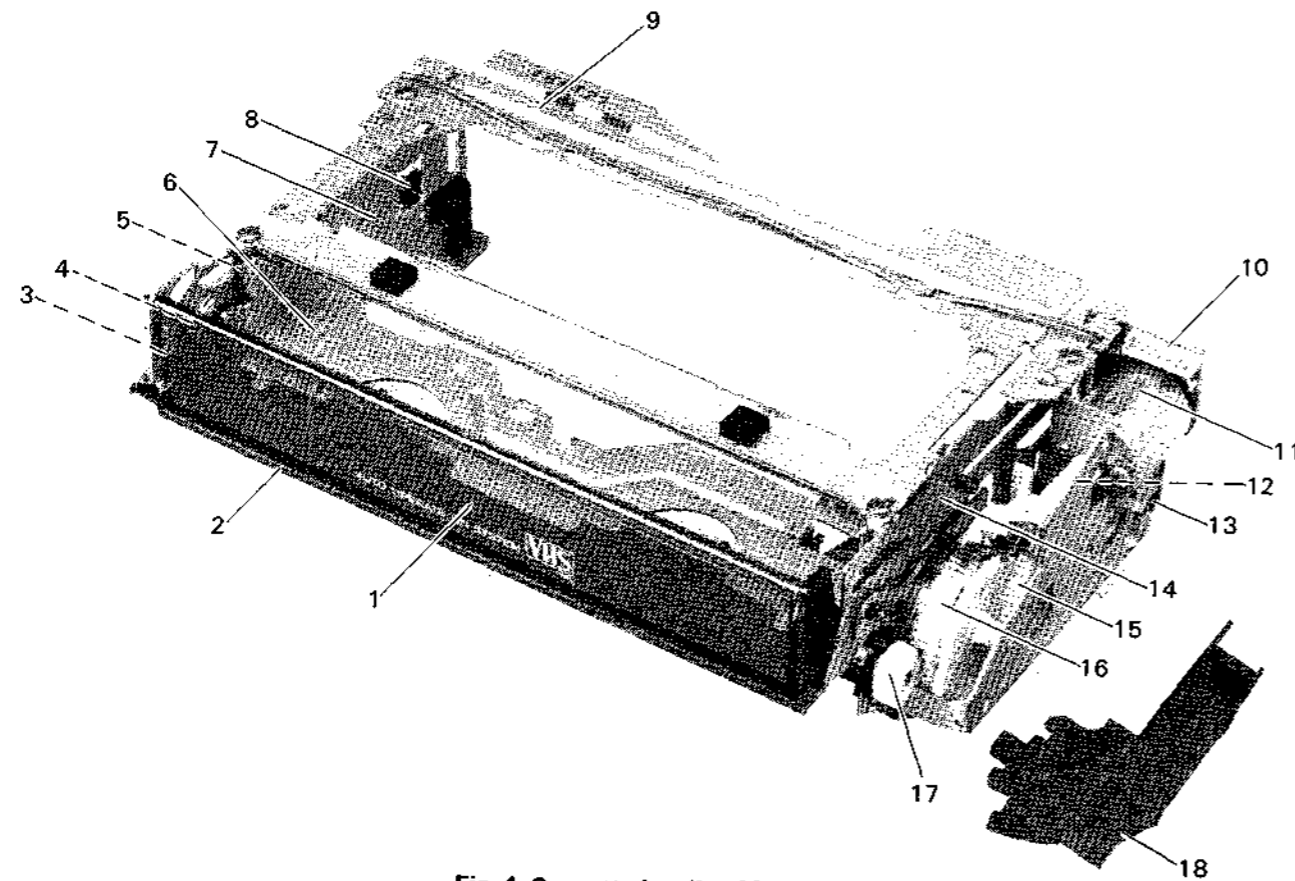


Fig. 4 Cassette Loading Mechanism

- | | |
|----------------------|--|
| 1. Cassette door | 10. Cassette loading motor circuit board |
| 2. Front holder | 11. Cassette loading motor |
| 3. Synchro gear (L) | 12. Cassette-in switch |
| 4. Door arm | 13. Cassette-up switch |
| 5. Drive gear (L) | 14. Side chassis (R) |
| 6. Cassette holder | 15. Drive gear (R) |
| 7. Side chassis (L) | 16. Clutch gear |
| 8. Supply end sensor | 17. Synchro gear (R) |
| 9. Chassis holder | 18. Gear cover |

(See page 2-11 for details on removing the above components.)

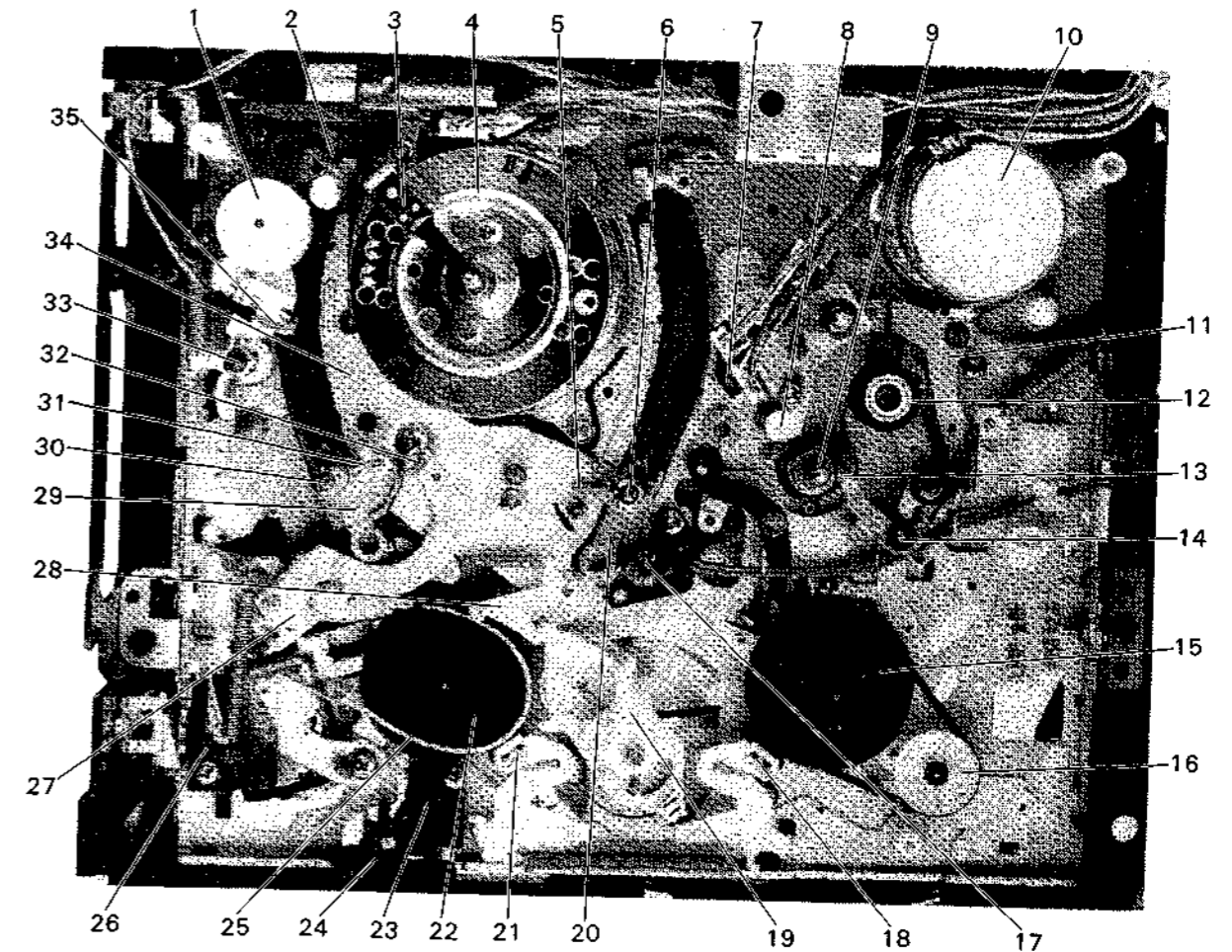


Fig. 5 Top View of Mechanism

- | | |
|---------------------------------------|-------------------------------|
| 1. Impedance roller | 18. Main brake (take-up) |
| 2. Catcher/cylinder base | 19. Reel drive gear |
| 3. Ground brush | 20. Take-up guide roller base |
| 4. Upper cylinder (video heads) | 21. Main brake (supply) |
| 5. Inclined guide (take-up) | 22. Supply reel disk |
| 6. Take-up guide roller | 23. Safety tab switch |
| 7. A/C (audio/control) head | 24. Record prevention arm |
| 8. Take-up guide pole | 25. Tension band |
| 9. Capstan shaft | 26. Spring hanger |
| 10. Capstan motor | 27. Tension arm |
| 11. Arm bracket | 28. Supply sub brake |
| 12. Pressure roller | 29. Supply guide roller base |
| 13. Draw pin (only for VT-135E (VPS)) | 30. Supply guide roller |
| 14. Draw arm (only for VT-135E (VPS)) | 31. Inclined guide (supply) |
| 15. Take-up reel disk | 32. Tension pole |
| 16. Load pulley | 33. Supply guide pole |
| 17. End lamp | 34. Subchassis |
| | 35. FE (full-erase) head |

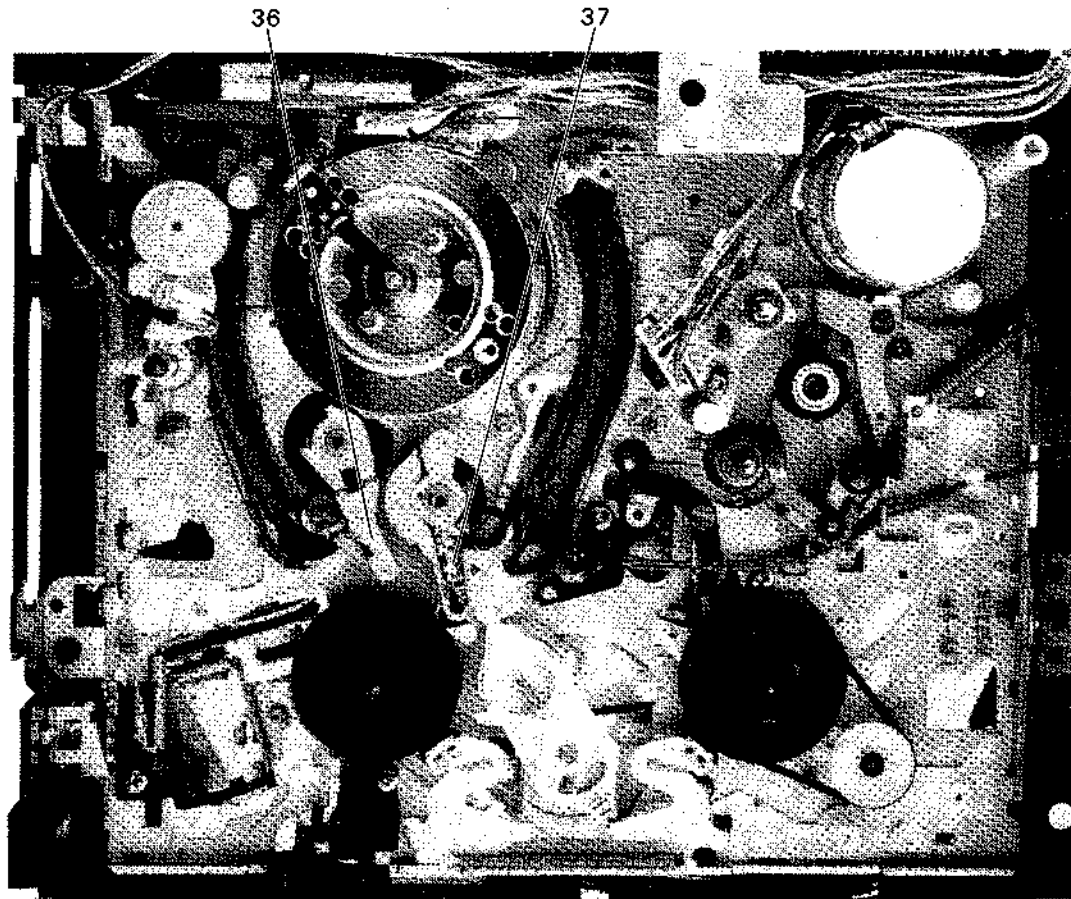


Fig. 6 Top View of Mechanism (with subchassis removed)

- 36. Supply loading link
- 37. Take-up loading link

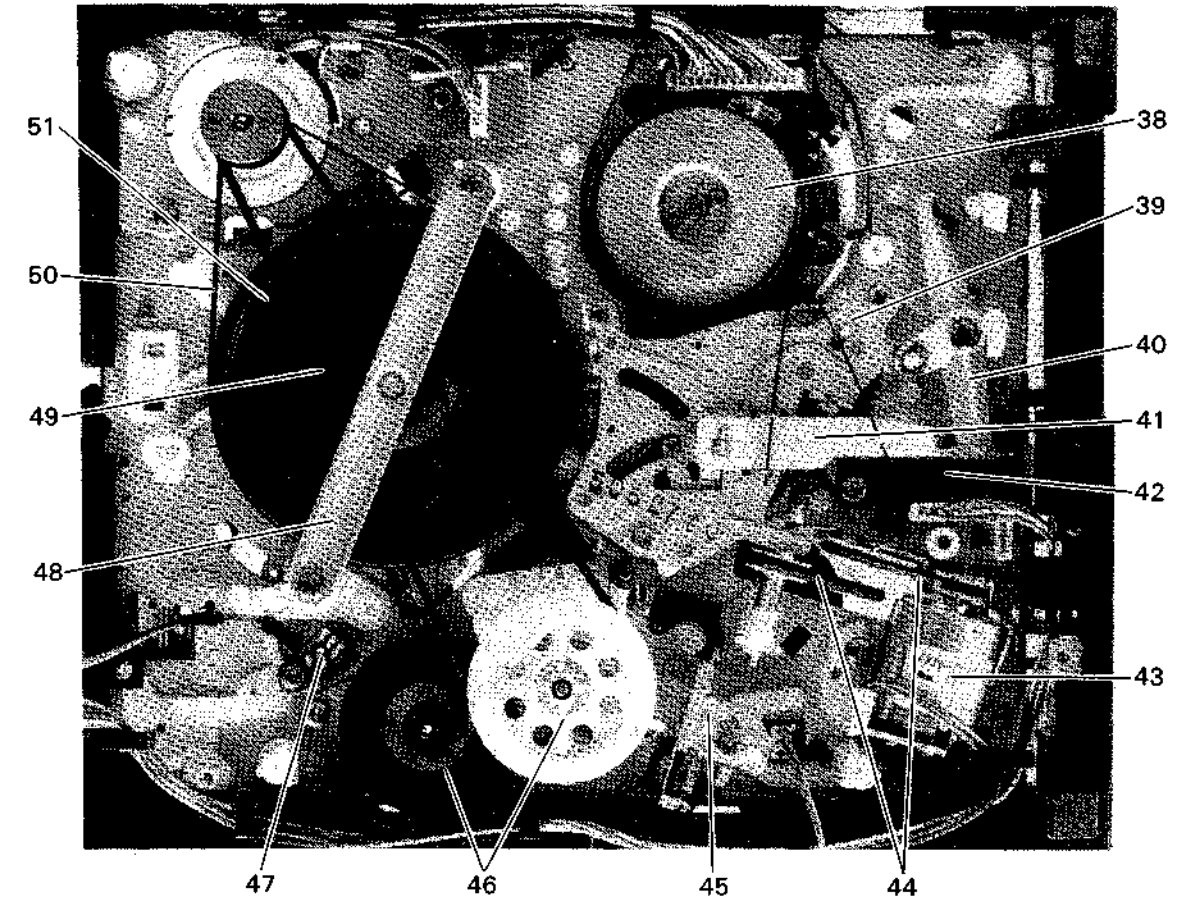


Fig. 7 Bottom View of Mechanism

- 38. Cylinder motor
- 39. Loading gear assembly
- 40. Tension release arm
- 41. Switch slider
- 42. Mechanism state switch
- 43. Loading motor
- 44. Loading belt
- 45. Brake slider
- 46. Clutch plate assembly
- 47. Reel sensor
- 48. Flywheel retainer bar
- 49. Reel belt
- 50. Capstan belt
- 51. Capstan flywheel

(See page 2-14 for details on removing the above components.)

3. CASE REMOVAL

1. Preset door
2. Top cover
3. Bottom cover
4. Front panel
5. Shield cover
6. Remote controller

1. Preset Door

- 1) Open the preset door. Press down on the attachment holder and pull outward in the direction of the arrow.

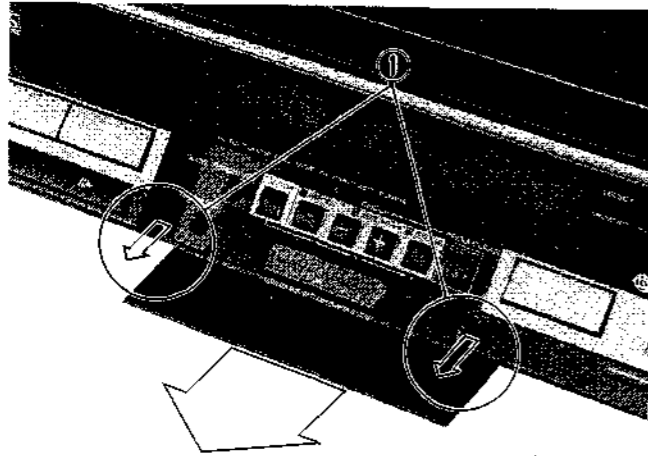


Fig. 1 Preset Door

2. Top Cover

- 1) Remove the 5 screws.
- 2) Lift the rear of the top cover upward. Slide the entire cover to the rear.

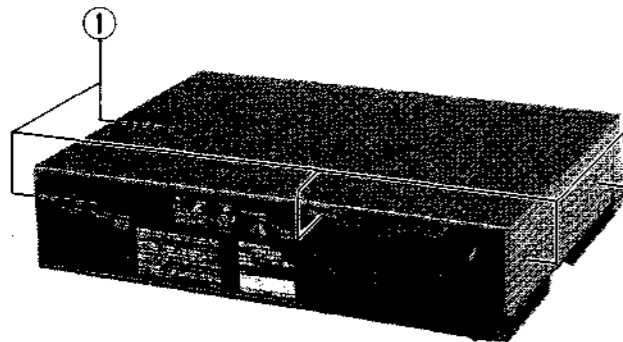


Fig. 2 Top Cover

3. Bottom Cover

- 1) Remove the 6 screws.

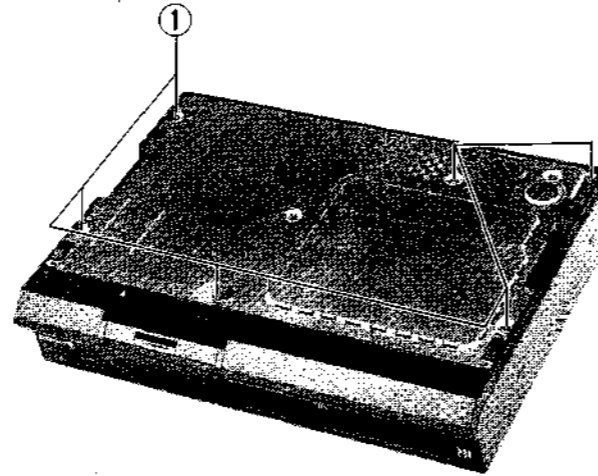


Fig. 3 Bottom Cover

4. Front Panel

- 1) Remove top and bottom covers (see items 2 and 3).
- 2) Remove the screw.
- 3) Release the 5 stoppers.
- 4) Tilt the top toward you and pull out the entire front panel.

[Cautions during reassembly]

- * Make sure the picture control slide lever on the operation switch circuit board is correctly inserted into the picture control knob on the back of the front panel.
- * Removing the tracking control knob first will simplify reassembly.

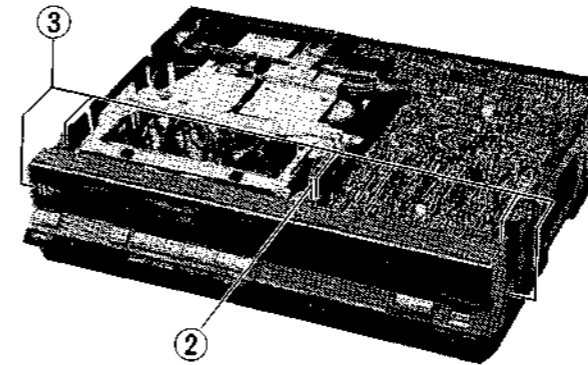


Fig. 4 Front Panel

5. Shield Cover 1, 2

- 1) Remove the top cover (see item 2).
- 2) Remove the screw holding the shield cover 1.
- 3) Remove the screw holding shield cover 2.

[Cautions during reassembly]

- * Make sure the rear of the shield cover 1 correctly fits over the preamp circuit board's shield case.

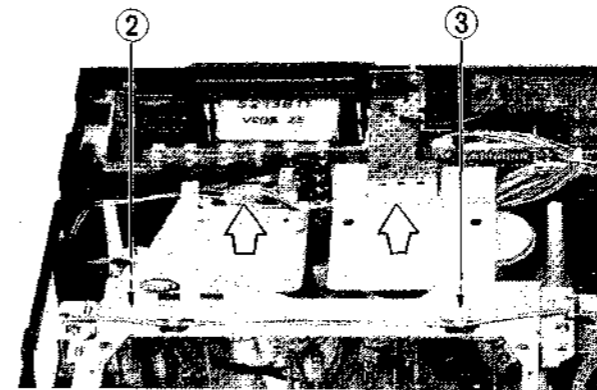


Fig. 5 Shield Cover 1, 2

6. Remote Controller

- 1) Remove the screw.
- 2) Release 8 stoppers.

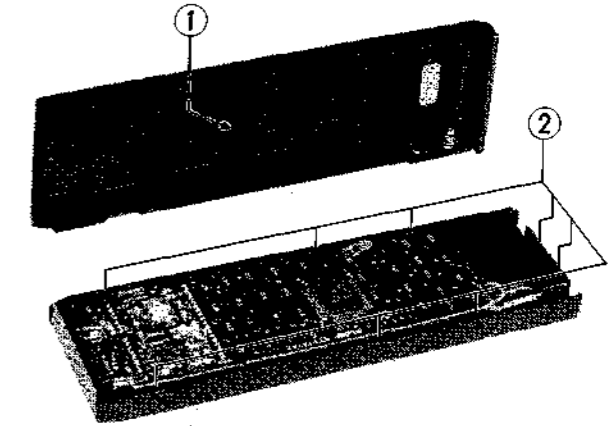


Fig. 6 Remote Controller

4. CIRCUIT BOARD REMOVAL

1. Main Circuit Board Block (Main, Y/chroma, VS tuning)
2. Operation Switch Circuit Board
3. Timer Input Key Circuit Board
4. Regulator Circuit Board
5. Preamp Circuit Board

1. Main Circuit Board Block

- 1) Remove the top and bottom covers (see items 2 and 3 in the section on case removal.)
- 2) Release the 2 stoppers.
- 3) Remove the 2 screws.
- 4) Push the circuit board holder in the direction of the arrow. Then lift up the entire circuit board.
- 5) The circuit board can now be opened in the direction of the arrow.

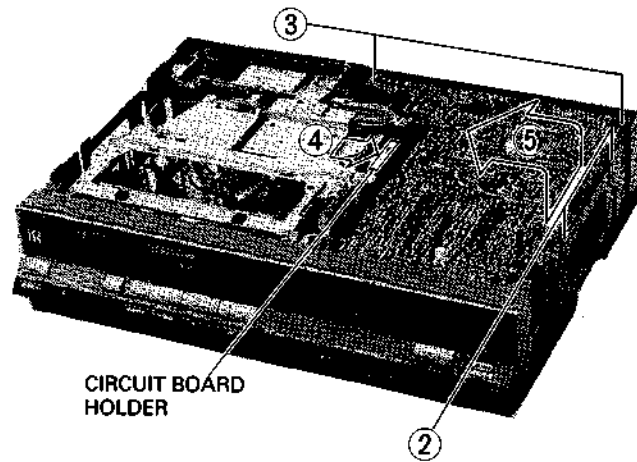


Fig. 1 Main Circuit Board Block

2. Operation Switch Circuit Board (Figs. 2 and 4)

- 1) Remove the top and bottom covers and the front panel (see items 2, 3 and 4 in the section on case removal.)
- 2) Disconnect the connector.
- 3) Release the 5 upper and lower stoppers.

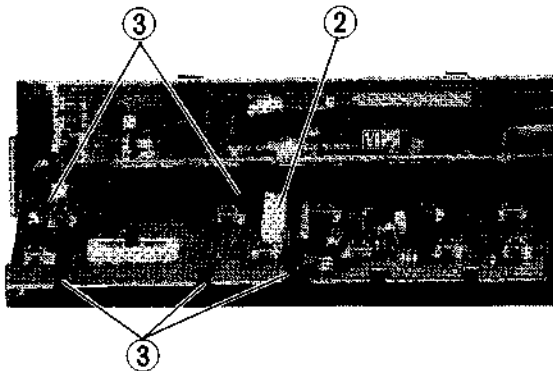


Fig. 2 Operation Switch Circuit Board

3. Timer Input Key Circuit Board (Figs. 3 and 4)

- 1) Remove the top and bottom covers and the front panel (see items 2, 3 and 4 in the section on case removal.)
- 2) Disconnect the connector.
- 3) Release the 7 upper and lower stoppers.
- 4) Remove the 5 screws.

[Cautions while working]

* Since the backup capacitor retains its charge for approx. 5 minutes after the AC power lead has been unplugged, press the reset switch to discharge the capacitor.

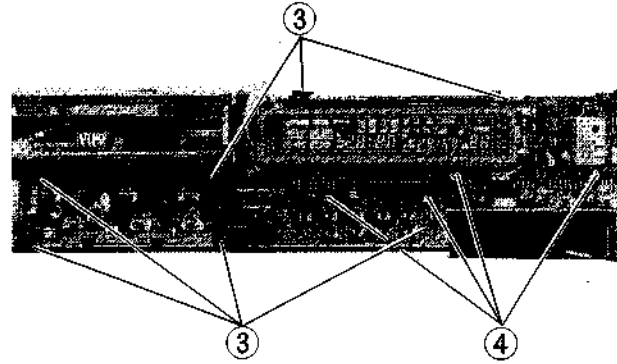


Fig. 3 Timer Input Key Circuit Board

4. Regulator Circuit Board (Figs. 4 and 5)

- 1) Remove the top cover (see item 2 in the section on case removal).
- 2) Remove the 2 screws from the bottom cover.
- 3) Remove the screw holding the heat sink. Remove the heat sink.
- 4) Remove the 2 screws on the transformer holder.
- 5) Lift up in the direction of the arrow.

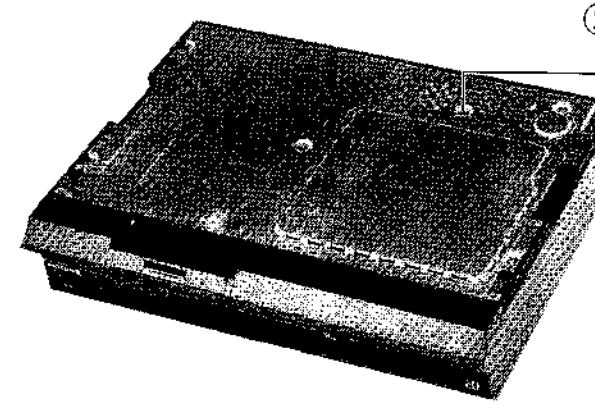


Fig. 4 Bottom Cover

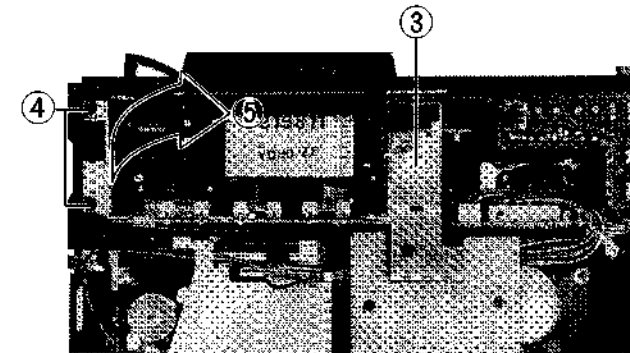


Fig. 5 Regulator Circuit Board

5. Preamp Circuit Board

- 1) Remove the top cover and the shield cover (see items 2 to 5 in the section on case removal).
- 2) Pull out and up.

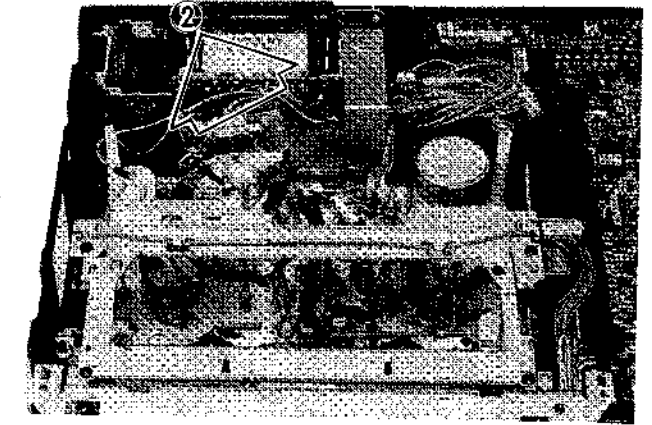


Fig. 6 Preamp Circuit Board

6. VPS Circuit Board

- 1) Remove the bottom cover (see item 3 in the section on case removal).
- 2) Remove the 2 screws.

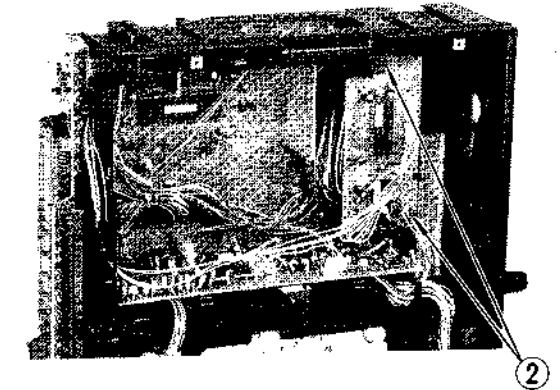


Fig. 7 VPS Circuit Board

5. CASSETTE LOADING MECHANISM REMOVAL

1. Cassette Door
2. Supply End Sensor
3. Chassis Holder

* Components listed below will be described as if the top and bottom covers, front panel and shield cover have already been removed. (See items 2, 3, 4, and 5 in the section on case removal.)

4. Cassette Loading Mechanism
5. Gear Cover
6. Door Arm
7. Drive Gear (L)

1. Cassette Door

- 1) Remove the top and bottom covers and the front panel (see items 2, 3 and 4 in the section on case removal).
- 2) Push and spread apart the front holder in the direction indicated by the arrow. Remove the cassette door.

[Cautions during reassembly]

* Make sure the pin on the door arm fit into the groove in the cassette door.

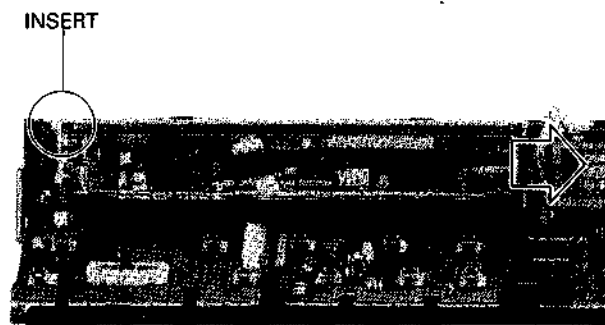


Fig. 1 Cassette Door

8. Motor Block
9. Cassette Loading Motor
10. Drive Gear (R)
11. Cassette Holder

2. Supply End Sensor

- 1) Remove the top cover (see item 2 in the section on case removal).
- 2) Release the stopper.

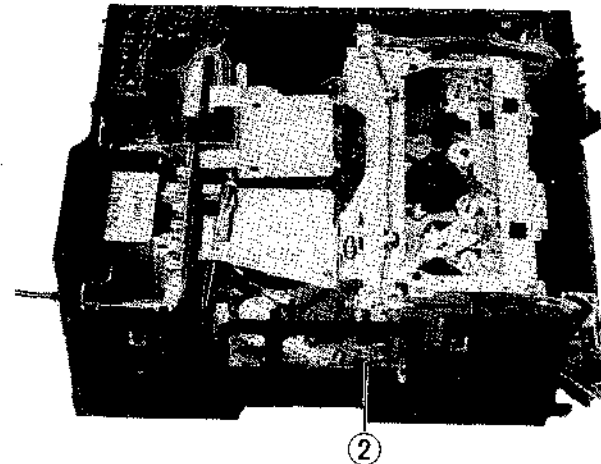


Fig. 2 Supply End Sensor

3. Chassis Holder

- 1) Remove the top and bottom covers (see items 2 and 3 in the section on case removal).
- 2) Remove the supply end sensor (see item 2).
- 3) Release the supply end sensor cord from the chassis holder.
- 4) Remove the 4 screws.

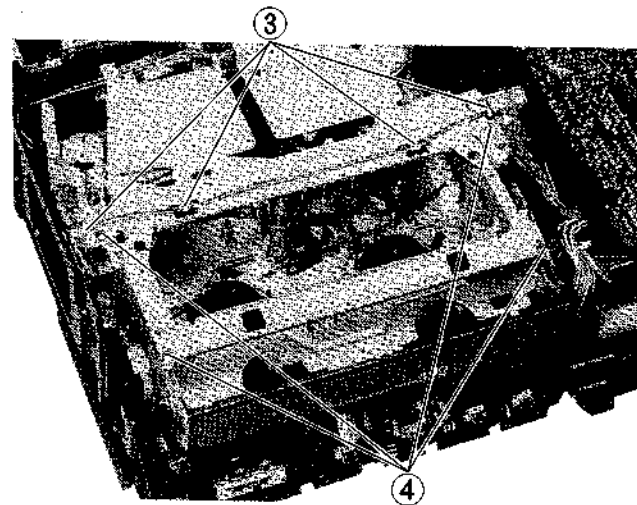


Fig. 3 Chassis Holder

4. Cassette Loading Mechanism

- 1) Push the reinforcing plate in the direction of the arrow, and lift upward.
- 2) Disconnect the connector.
- 3) Remove the 2 screws.
- 4) Lift the rear end of the mechanism upwards and release the engagement fitting on the bottom front.

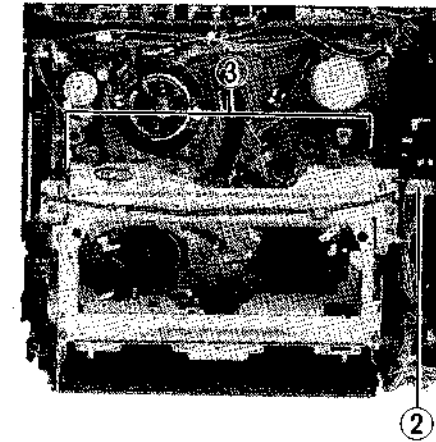


Fig. 4 Cassette Loading Mechanism

5. Gear Cover

- 1) Remove the cassette loading mechanism (see item 4).
- 2) Lift section (A) up slightly. Then pull the entire gear cover unit forward.

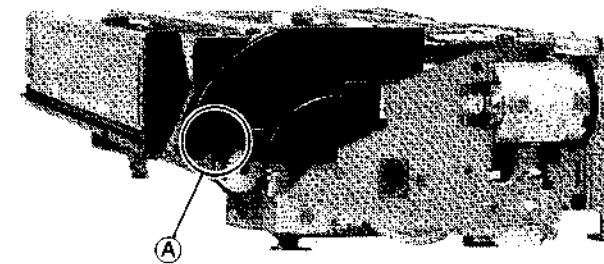


Fig. 5 Gear Cover

6. Door Arm

- 1) Remove the cassette loading mechanism (see item 4.)
- 2) Remove the spring.
- 3) Release the 2 stoppers.

[Cautions during reassembly]

* Insert the pin on the front edge of the door arm into the groove in the cassette door.

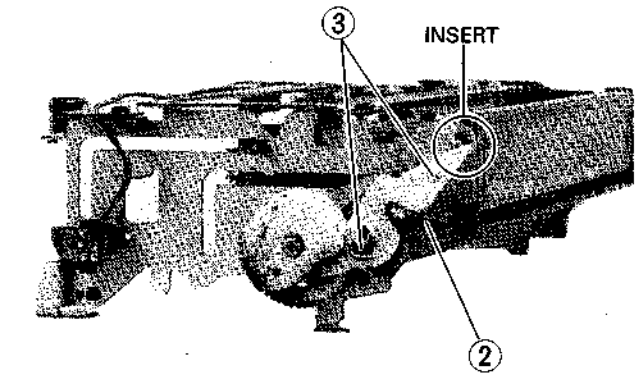


Fig. 6 Door Arm

7. Drive Gear (L)

- 1) Remove the cassette loading mechanism and the door arm (see items 4 and 6).
- 2) Release the stopper and pull out the drive gear (L).

[Cautions during reassembly]

* Align the triangular mark on the drive gear (L) with the triangular mark on the synchro gear (L).

* Insert the pin on the cassette holder into the groove in the drive arm.

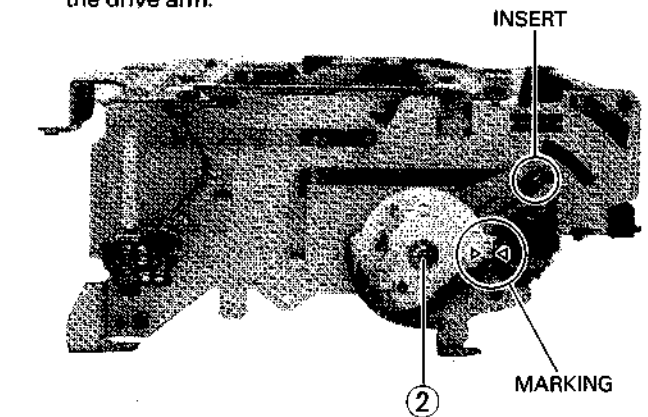


Fig. 7 Drive Gear (L)

8. Motor Block

- 1) Remove the cassette loading mechanism, the gear cover, the supply end sensor and the chassis holder (see items 4, 5, 2 and 3).
- 2) Remove the 2 screws holding the motor block.

[Cautions during reassembly]

- * Place the cassette holder in the unloaded position (prior to cassette insertion). Align the triangular markings on the synchro gear and the clutch gear.
- * Insert the slide pin on the cassette holder into the groove in the clutch gear's drive arm.

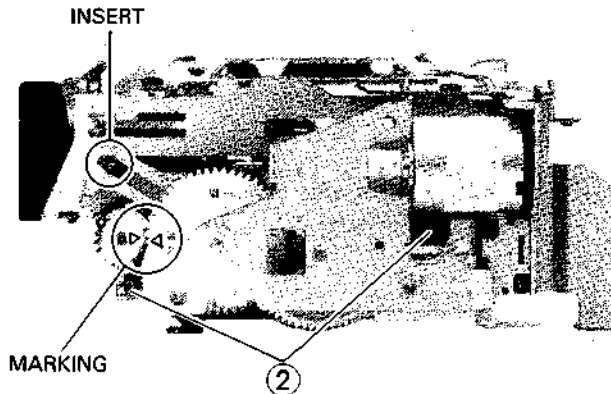


Fig. 8 Cassette Loading Motor Block

9. Cassette Loading Motor

- 1) Remove the cassette loading mechanism, the gear cover, the supply end sensor, the chassis holder and the motor block (see items 4, 5, 2, 3 and 8).
- 2) Remove the 2 screws holding the cassette loading motor.

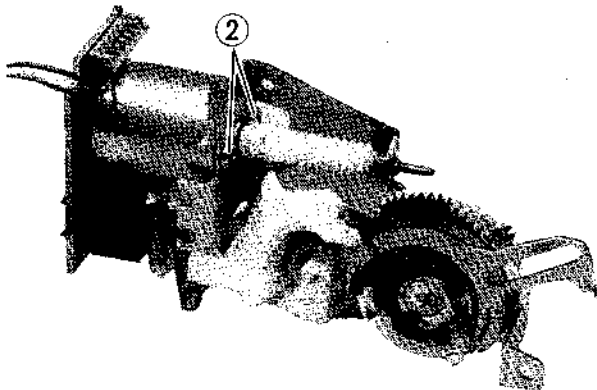


Fig. 9 Cassette Loading Motor

10. Drive Gear (R) (Figs. 10, 11 and 12)

- 1) Remove the cassette loading mechanism, the gear cover, the supply end sensor, the chassis holder and the motor block (see items 4, 5, 2, 3 and 8).
- 2) Remove the 2 springs. Pull the switch lever out.
- 3) Turn the drive arm counterclockwise and pull the clutch gear out.
- 4) Release the stopper. Pull out another gear.
- 5) Remove the screw holding the gear holder.

[Cautions during reassembly]

- * Position the triangular marking on the drive gear (R) so that it faces the worm gear. (See Fig. 11). The (O) and triangle can also be seen from the outside so that correct position can be checked after reassembling the motor block. (See Fig. 12)
- * Align marking (▷) on drive gear (R) with projection (⊖) on the clutch gear. (See Fig. 11)
- * Attach the spring on the clutch gear to both gears (See Fig. 11)

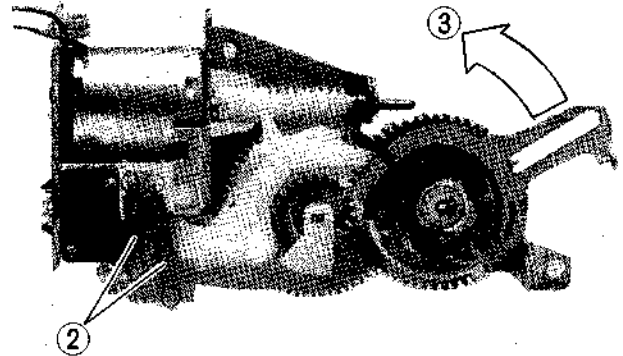


Fig. 10 Drive Gear (I)

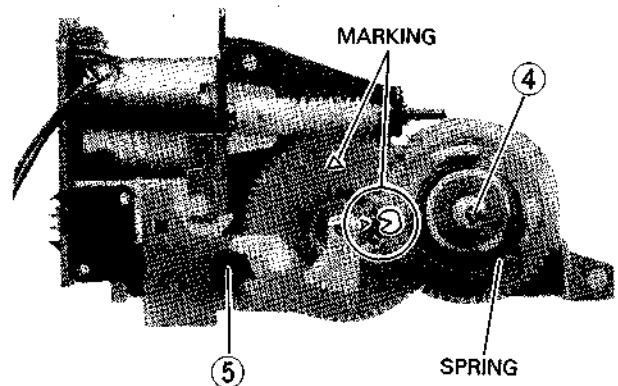


Fig. 11 Drive Gear (II)

6. MAIN MECHANICAL COMPONENTS REMOVAL

Heads

1. Upper Cylinder (Video Heads)
2. Impedance Roller and FE (Full Erase) Head
3. A/C (Audio Control) Head

Motors

4. Cylinder Assembly
Rotor Magnet
FG Coil
5. Capstan Motor
6. Loading Motor

Sensors, Switches

7. End Lamp
8. Reel Sensor
9. Mechanism State Switch
10. Safety Tab Switch

Others

11. Main Brake
12. Subbrake
13. Supply Guide Pole
14. Take-up Guide Pole
15. Reel Drive Gear
16. Take-up Reel Disk
17. Load Pulley
18. Tension Arm/Tension Band
19. Guide Roller
20. Supply Reel Disk
21. Pressure Roller
22. Arm Bracket
23. Guide Base and Loading Link
24. Clutch Plate Assembly
25. Capstan Flywheel
26. Brake Slider
27. Loading Gear Assembly

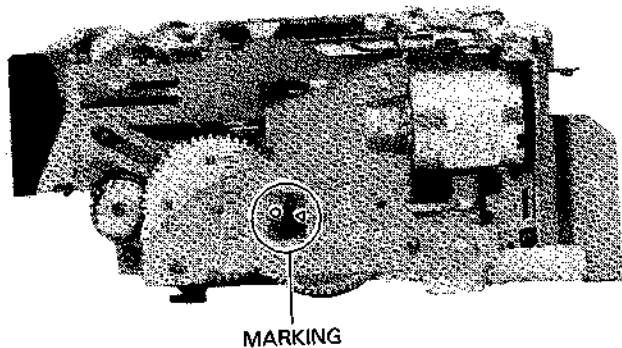


Fig. 12 Marking on Gear

11. Cassette Holder

- 1) Remove the cassette loading mechanism, the gear cover, the supply end sensor, the chassis holder and the motor block (see items 4, 5, 2, 3 and 8).
- 2) Remove the screw on top of the front holder. Remove the side chassis (R).

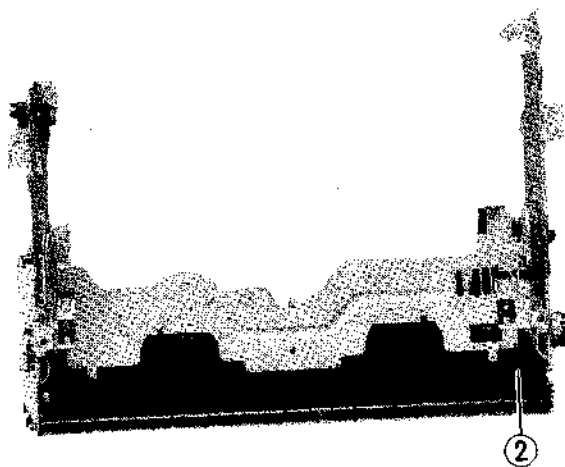


Fig. 13 Cassette Holder

1. Upper Cylinder (Video Heads) (Figs. 1 and 2)

- 1) Remove the top cover and shield cover (see items 2 and 5 in the section on case removal)
- 2) Remove the screw holding the brush. Remove the earth brush.
- 3) Remove the 2 screws holding the upper cylinder. Pull the upper cylinder out.

[Cautions while working]

- * Since the upper cylinder has connectors, do not apply pressure in the direction of rotation. Pull the cylinder vertically upward in the direction of cylinder attachment.
- * Do not touch the video head tips with fingers or tools.

[Cautions during reassembly]

- * Insert so that the arrow on the rotary transformer matches the blue side of the video head connector.
- * Alternately tighten the 2 screws holding the upper cylinder.

[Adjustments after reassembly]

- Adjustments after replacing the cylinder

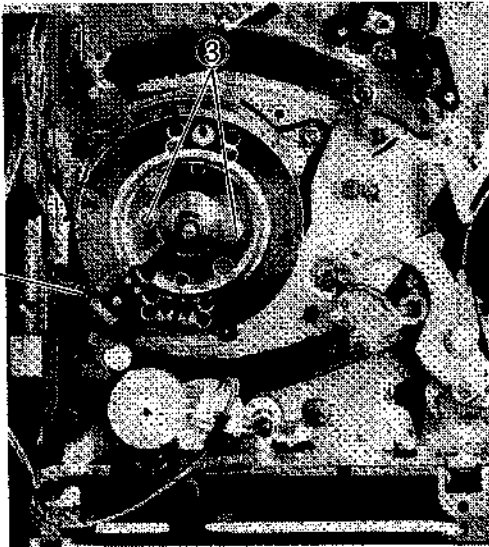


Fig. 1 Video Head

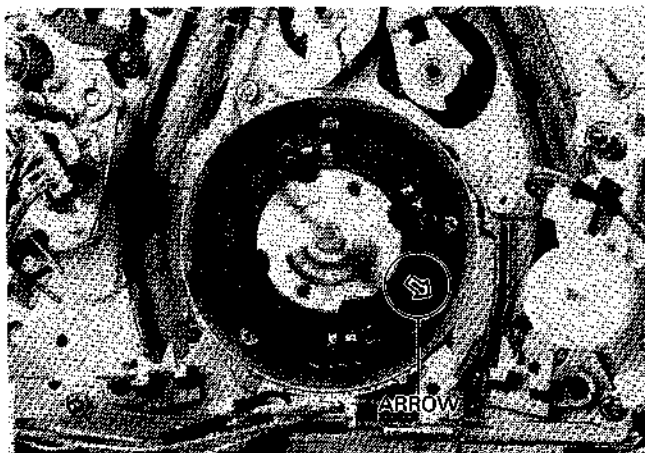


Fig. 2 Rotary Transformer

2. Impedance Roller and FE (Full Erase) Head

- 1) Remove top cover and shield cover (see items 2 and 5 in the section on case removal).
- 2) Disconnect the connector.
- 3) Remove the spring attached between the FE head base and the chassis.
- 4) Remove the lock nut on the guide pole and then pull the guide pole, spring and washer out.
- 5) Pull up the FE head together with the base and out.
- 6) Then with the FE head removed, remove the screw on the back of the base.

[Adjustments after reassembly]

- Guide pole height adjustment

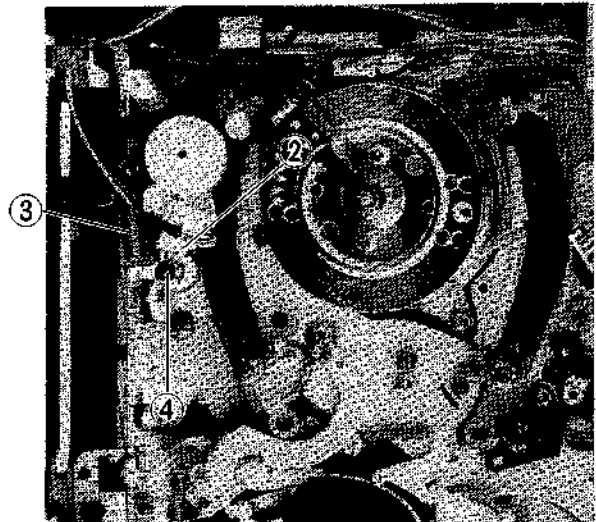


Fig. 3 FE Head

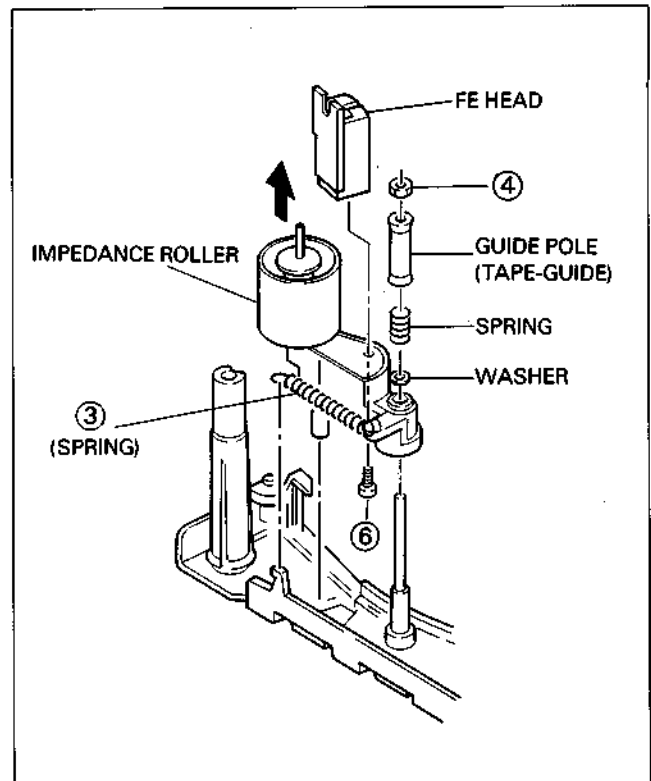


Fig. 4 FE Head

3. A/C (Audio/Control) Head (Figs. 5 and 6)

- 1) Remove the top cover (see item 2 in the section on case removal).
- 2) Pull out the connector.
- 3) Remove the lock nut and washer from the head base. Pull up the base and out.
 - * Apply the bottom of the spring under the head base to the stopper on the chassis, the top of the spring to the stopper on the base. (Fig. 6)

[Cautions during reassembly]

- * Make sure the tip of the A/C head lock screw protrudes 3 to 4 mm from the top surface of head base 1.
- * Make sure that head base 1 and head base 2 are parallel.

[Adjustments after reassembly]

- A/C head adjustment
- X value adjustment
- Audio playback level adjustment
- Audio bias level adjustment

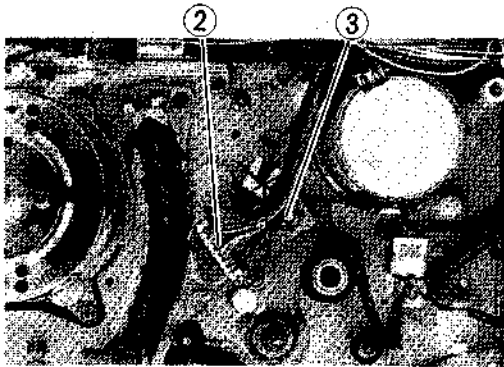


Fig. 5 AC Head

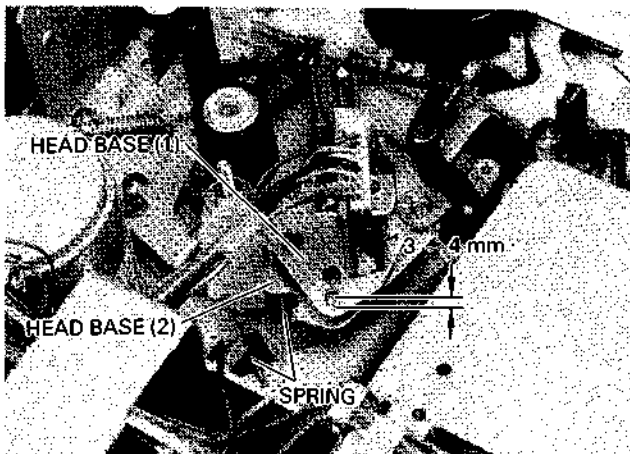


Fig. 6 Spring and Lock Screw

4. Cylinder Assembly

- 1) Remove the top cover and shield cover (see items 2 and 5 in the section on case removal).
- 2) Pull out the preamp circuit board.
- 3) Remove the bottom cover (see item 3 in the section on case removal.)
- 4) Disconnect the connector from the FG circuit board.
- 5) Remove the 3 screws holding the cylinder.
- 6) Remove the cylinder assembly from the top.

[Cautions during reassembly]

- * Since the screws position on the back of the assembly, place the unit with the left side down to remove the screws.
- * Do not touch the video head tips with fingers or tools.

[Adjustments after reassembly]

- Adjustments after replacing the cylinder

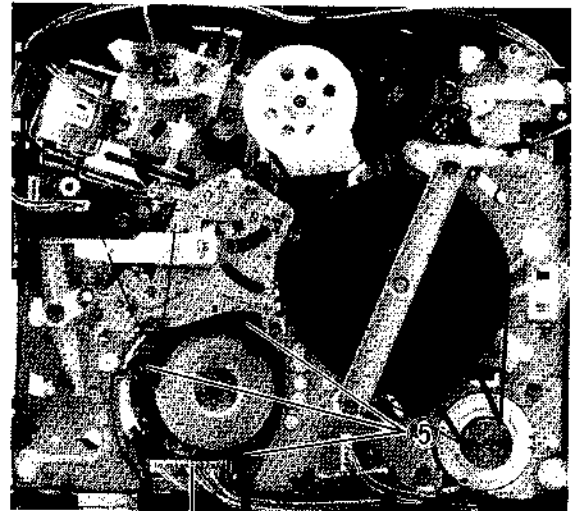


Fig. 7 Cylinder Assembly

[Removing only the rotor magnet and FG coil]

(Figs. 8 and 9)

- a) Remove the bottom cover (see item 3 in the section on case removal).
- b) Remove the 2 screws on the rotor. Pull the rotor magnet out.
- c) Remove the 3 screws holding the FG coil.

[Cautions during reassembly]

* Fit the slot on the cylinder rotating spindle into the protrusion on the rotor side, then lock the rotor magnet with the screws.

[Adjustments after reassembly]

- Switching point adjustment

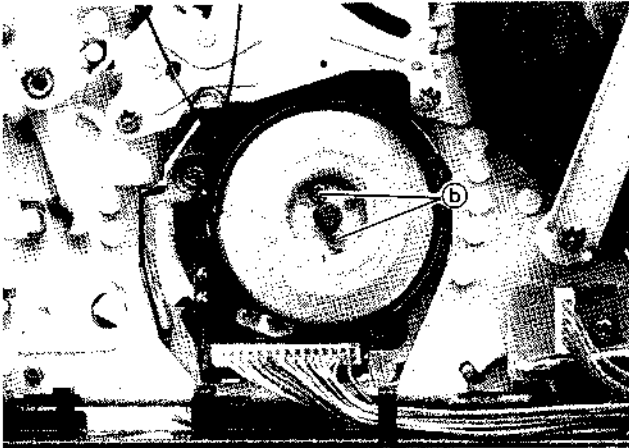


Fig. 8 Rotor Magnet

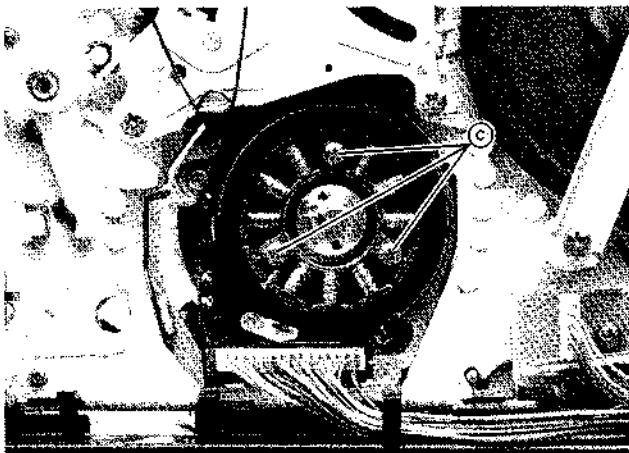


Fig. 9 FG Coil

5. Capstan Motor

- 1) Remove bottom cover (see item 3 in the section on case removal).
- 2) Remove the reel belt.
- 3) Remove the flywheel belt.
- 4) Disconnect the connector from the capstan motor circuit board.
- 5) Remove the 2 screws holding the capstan motor holder. Pull out the capstan motor holder.

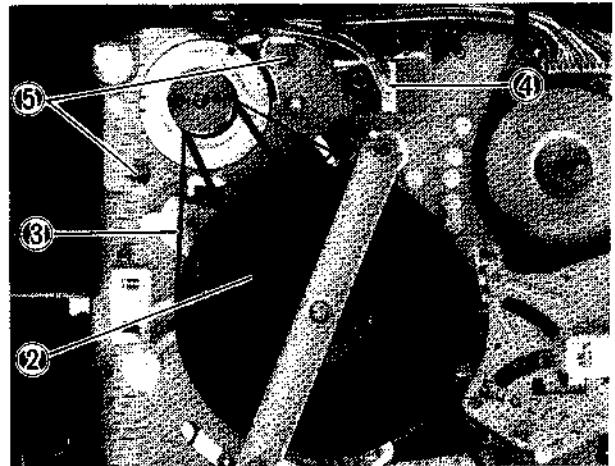


Fig. 10 Capstan Motor

6. Loading Motor

- 1) Remove the bottom cover (see item 3 in the section on case removal.)
- 2) Remove the loading belt.
- 3) Disconnect the connector from the loading motor circuit board.
- 4) Remove the screw holding the loading motor.

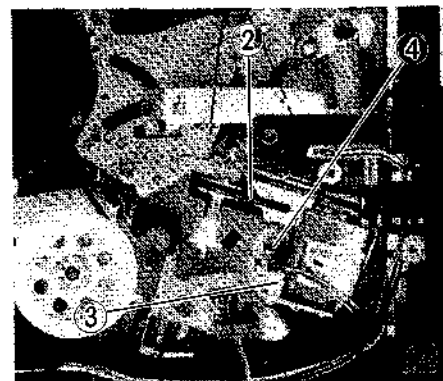


Fig. 11 Loading Motor

7. End Lamp (Fig. 13)

- 1) Remove the top cover (see item 2 in the section on case removal).
- 2) Remove the screw holding the end lamp.

8. Reel Sensor (Fig. 12)

- 1) Remove the bottom cover (see item 3 in the section on case removal).
- 2) Remove the screw holding the reel sensor.

9. Mechanism State Switch (Fig. 12)

- 1) Remove the bottom cover (see item 3 in the section on case removal).
- 2) Disconnect the connectors
- 3) Remove the screw holding the mechanism state switch.

[Adjustments after reassembly]

- Mechanism state switch adjustment

10. Safety Tab Switch (Figs. 12 and 13)

- 1) Remove the top and bottom covers (see items 2 and 3 in the section on case removal).
- 2) Disconnect the connector from the bottom side.
- 3) Remove the screw holding the safety tab switch.

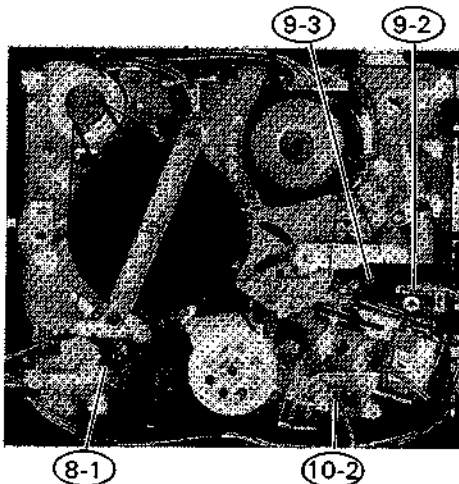


Fig. 12 Bottom View of Mechanism

* Components in items 11 to 17 are described as if the top cover has already been removed. See item 2 in the section on case removal.

11. Main Brakes (Fig. 13)

- 1) Remove the spring between the supply and take-up brakes.
- 2) Release each section engaged with the chassis.

12. Supply Subbrake (Fig. 13)

- 1) Remove the spring between the subchassis and the brake.
- 2) Release the section engaging the brake spindle.

13. Supply Guide Pole (Fig. 13)

- 1) Remove the screw holding the guide pole.

[Cautions during reassembly]

* Make sure the washer and spring are inserted in the guide pole attachment shaft.

[Adjustments after reassembly]

- Guide pole height adjustment

14. Take-up Guide Pole (Fig. 13)

- 1) Remove the cap. Remove the screw holding the guide pole.

[Cautions during reassembly]

* Make sure the spring is inserted in the guide pole attachment shaft.

[Adjustments after reassembly]

- Guide pole height adjustment

15. Reel Drive Gear (Fig. 13)

- 1) Push the spring holder in the direction of arrow to pull the spring holder up and out.

16. Take-up Reel Disk (Fig. 13)

- 1) Remove the rubber belt across the load pulley and reel disk.
- 2) Remove the washer from the top of the disk.

[Cautions during reassembly]

- * Make sure the washer is inserted in the reel disk attachment shaft.

[Adjustments after reassembly]

- Reel disk height adjustment

17. Load Pulley (Fig. 13)

- 1) Remove the rubber belt across the pulley and the reel disk.
- 2) Remove the washer from the top of the pulley.

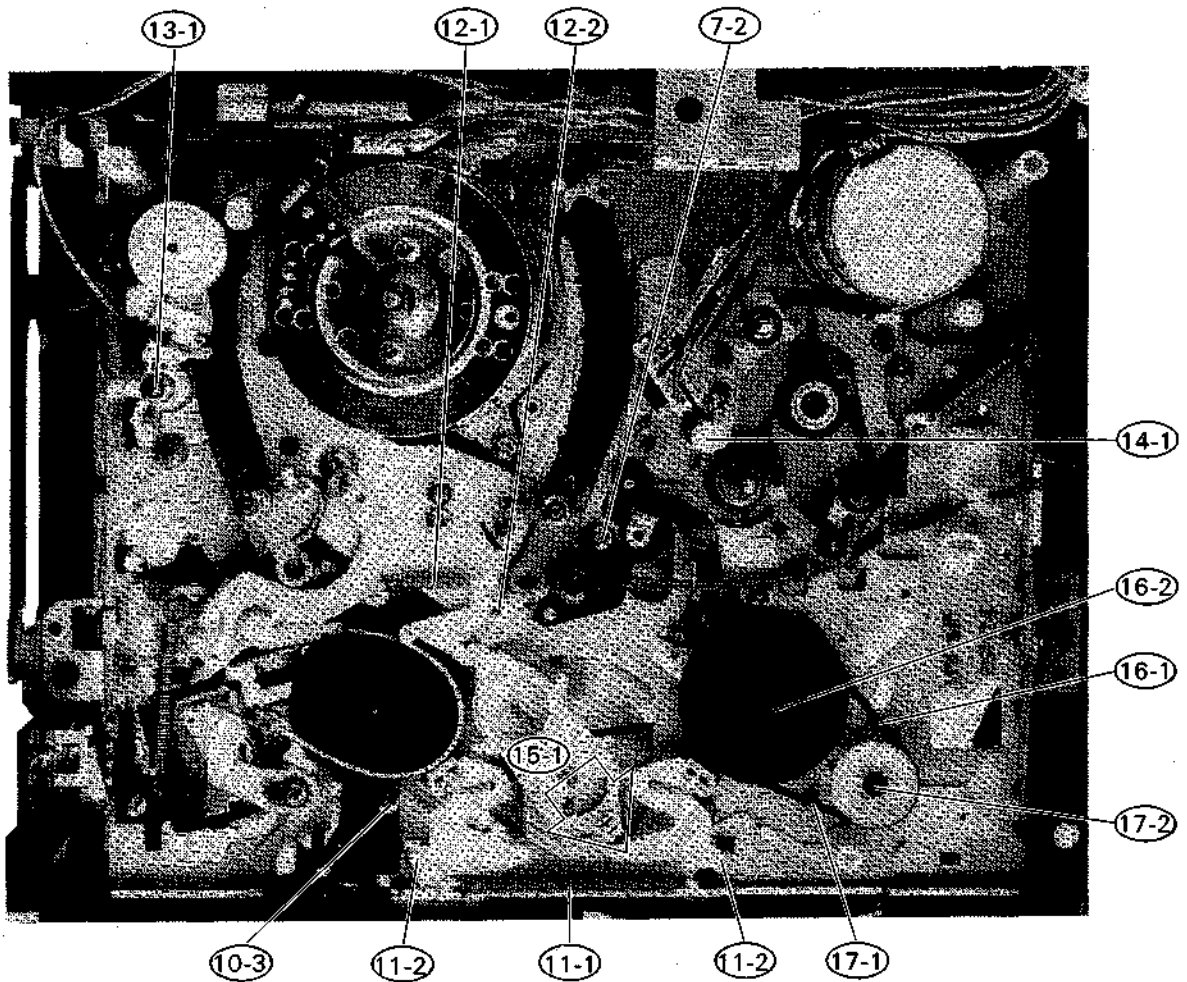


Fig. 13 Top View of Mechanism

* Components in items 18 to 23 are described as if the top and bottom covers, the front panel, the shield cover, and cassette loading mechanism have already been removed. See item 4 in the section on cassette loading mechanism removal and items 2, 3, 4 and 5 in the section on case removal.

18. Tension Arm/Tension Band (Fig. 14)

- 1) Remove spring (18-1) across the tension arm and spring holder.
- 2) Remove the screw holding the tension band.
- 3) Release the engagement section with the tension arm. Pull out the tension arm and tension band.

[Adjustments after reassembly]

- Tension/tension pole position Adjustments

19. Guide Roller (Fig. 14)

* Remove the supply and take-up sides in the same way.

- 1) Loosen the hex lock nut on the guide roller.
- 2) Turn the guide roller counterclockwise to remove.

[Adjustments after reassembly]

- Guide roller height adjustment

20. Supply Reel Disk (Fig. 14)

- 1) Remove the supply subbrake and tension arm/tension band (see items 12 and 18).
- 2) Remove the washer from the top of the disk.

[Cautions during reassembly]

* Make sure the washer and collar are inserted in the reel disk attachment shaft.

[Adjustments after reassembly]

- Tension/tension pole position Adjustments
- Reel disk height adjustment

21. Pressure Roller (Fig. 14)

- 1) Remove washer.

22. Arm Bracket Assembly (Fig. 14)

- 1) Remove the take-up reel disk and pressure roller (see items 16 and 21).
- 2) Release the 2 leads from the chassis.
- 3) Remove the 2 screws. Pull out the arm bracket assembly.

[Cautions during reassembly]

- * Insert operation arm spindle into slot in take-up brake operation arm.
- * Insert drive arm spindle into slot in link piece.

23. Guide Base/Loading Link (Fig. 14)

- 1) Remove supply subbrake and tension band/tension arm. (See items 12 and 18)
- 2) Remove the 3 screws holding the subchassis. Remove the subchassis and guide base.

[Cautions during reassembly]

- * When reinstalling the loading link, make sure that the projection on the loading gear is aligned with the groove in the loading link.
- * When reinstalling the guide base, make sure that the pin on the back of the guide base is inserted into the slot in the loading link.

[Adjustments after reassembly]

- Tension/tension pole position Adjustments

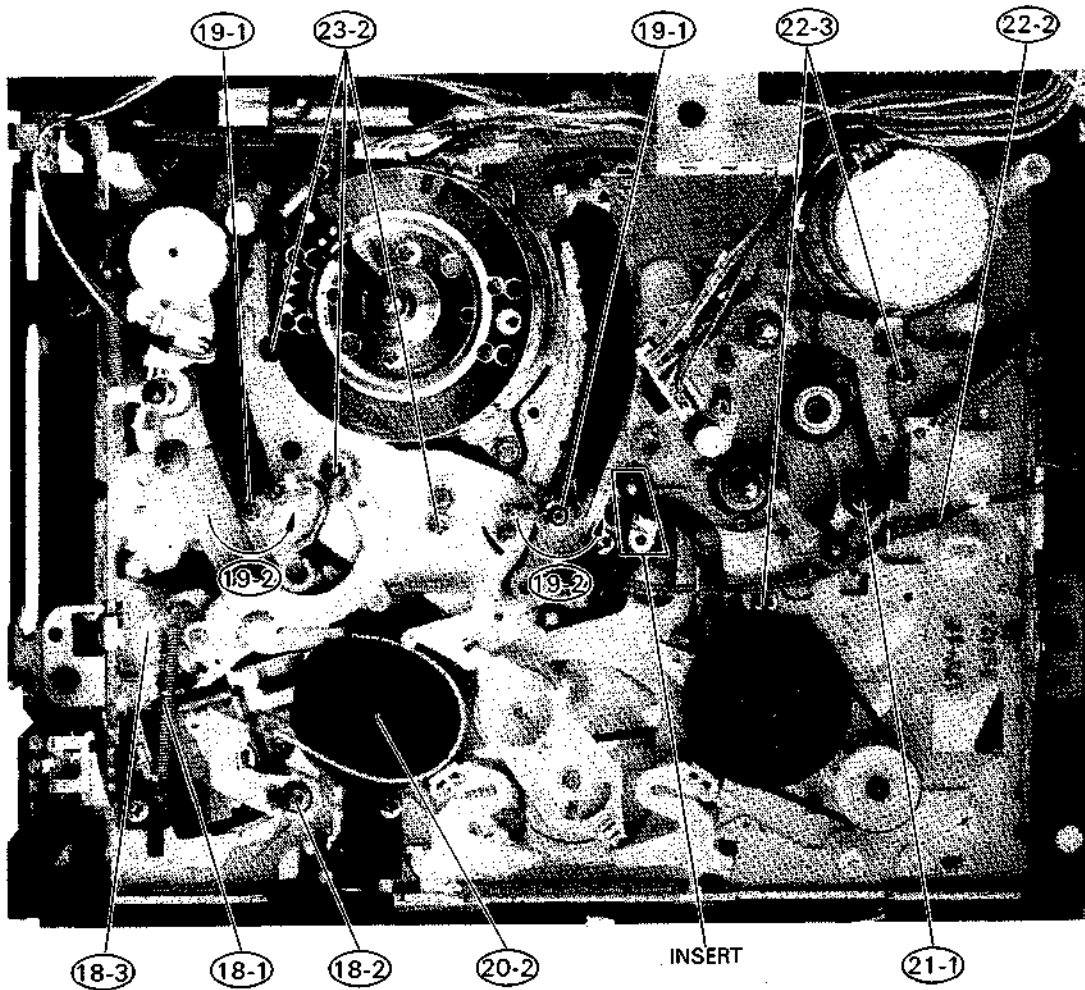


Fig. 14 Top View of Mechanism

* Components in items 24 to 26 are described as if the top and bottom covers have already been removed. (See items 2 and 3 in the section on case removal)

24. Clutch Plate Assembly (Fig. 15)

- 1) Remove the reel drive gear (see item 15).
- 2) Remove reel belt.
- 3) Remove the 2 screws holding the clutch plate assembly.

25. Brake Slider (Fig. 15)

- 1) Remove the reel drive gear and clutch plate assembly (See items 15 and 24).
- 2) Remove the screw holding the brake slider.

[Cautions during reassembly]

- * Make sure the pin on the brake drive arm is inserted into the groove on the slider operating section.

26. Capstan Flywheel (Fig. 15)

- 1) Remove the 2 screws holding the flywheel retainer bar. Remove the flywheel retainer bar.
- 2) Remove the nylon washer from the top of the capstan shaft.
- 3) Remove the reel belt and flywheel belt. Remove the flywheel.

[Cautions during reassembly]

- * Make sure the washer is inserted between the bottom side of the chassis and the flywheel.

[Adjustments after reassembly]

- Reference oscillation frequency adjustment

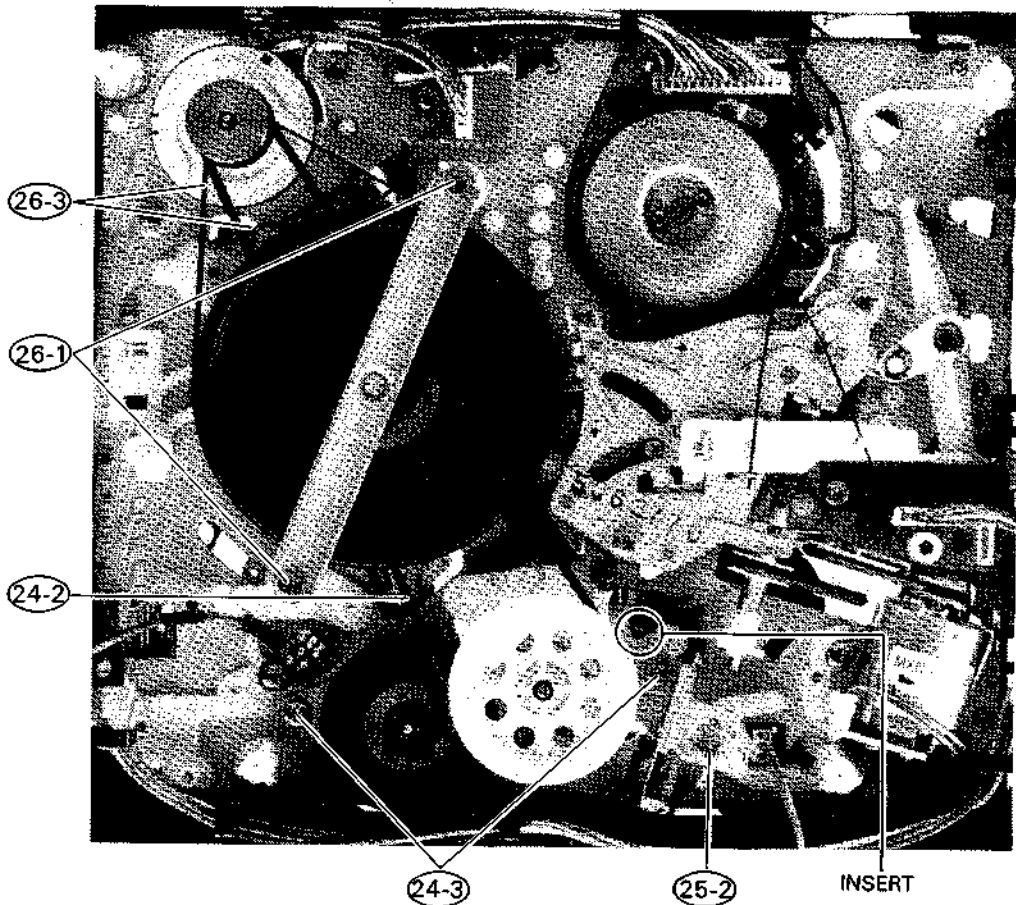


Fig. 15 Bottom View of Mechanism

27. Loading Gear Assembly (Figs. 16 and 17)

- 1) Remove the top and bottom covers (see items 2 and 3 in the section on case removal).

Top Side

- 2) Remove the 2 screws from the top of the subchassis.
- 3) Remove the reel drive gear. (See item 15)

Bottom Side

- 4) Remove the mechanism state switch, clutch plate assembly, brake slider and capstan flywheel. (See items 9, 24, 25 and 26.)
- 5) Remove the spring and switch slider from the loading gear assembly.
- 6) Remove tension release arm.
- 7) Remove loading belt.
- 8) Remove the 3 screws holding the loading gear assembly.

[Cautions during reassembly]

- * Insert the pin on the take-up subbrake drive arm into the slot on the take-up subbrake operation arm.
- * Insert the pin on the pressure roller drive arm into the slot on the pressure roller operation arm.

[Adjustments after reassembly]

- Mechanism state switch adjustment

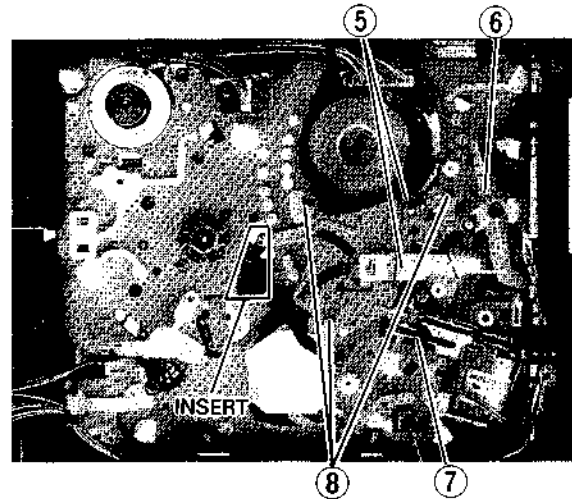


Fig. 17 Loading Gear Assembly
(with items in 9, 24, 25 and 26 removed)

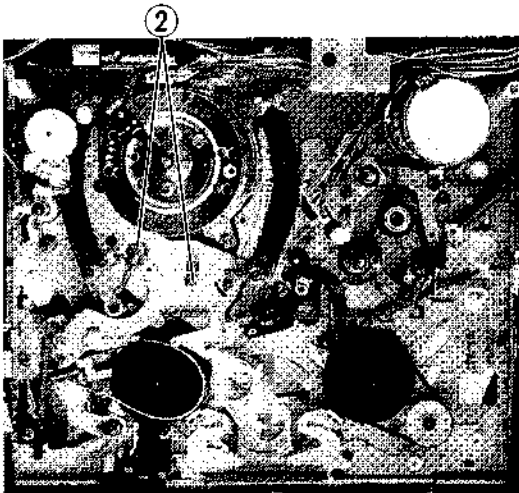


Fig. 16 Top View of Mechanism

ELECTRIC CIRCUIT ADJUSTMENT

Test equipment and tapes necessary for adjustment.

- 1) Oscilloscope
- 2) Colour bar generator
- 3) VTVM
- 4) Frequency counter
- 5) Monitor TV
- 6) Alignment tape
- 7) Blank tape

Cautions on adjustments

- 1) If there are no special instructions, the following conditions apply:
 - Oscilloscope probe: 10 : 1
 - Oscilloscope synchronization: Auto-Sync
 - Tracking control: center click.
- 2) When making more than one adjustment, make those adjustments in the order listed.

Resetting microprocessors

All microprocessors installed in the unit will be reset once the AC power lead is removed from the wall socket. However, the timer microprocessor's back-up circuit keeps it from resetting until about five minutes after power off.

The timer microprocessor can be reset by switch S759 on the timer circuit board. (Switch S759 can be operated by inserting a screwdriver into the round slot adjacent to the PRESET switch even when the front panel is attached.)

Adjust the main circuit board (servo and audio circuits) with the main circuit board open as show in Fig. 1.

Adjust the Y/chroma circuit board with the left side down and the circuit board open as show in Fig. 2.

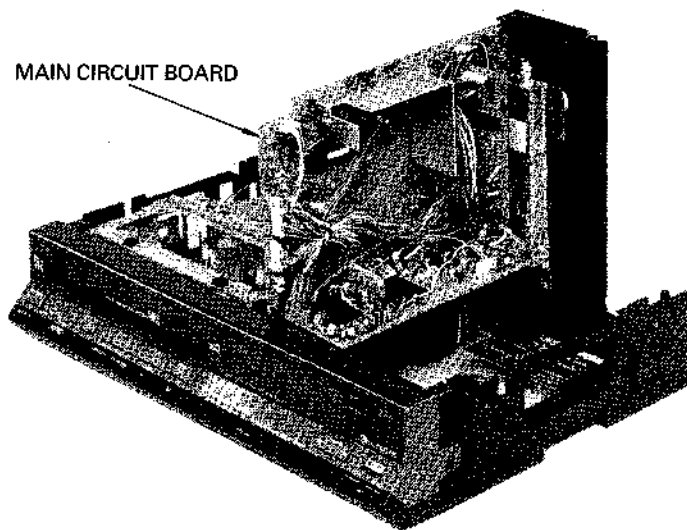


Fig. 1 Ready to Adjust Main Circuit Board

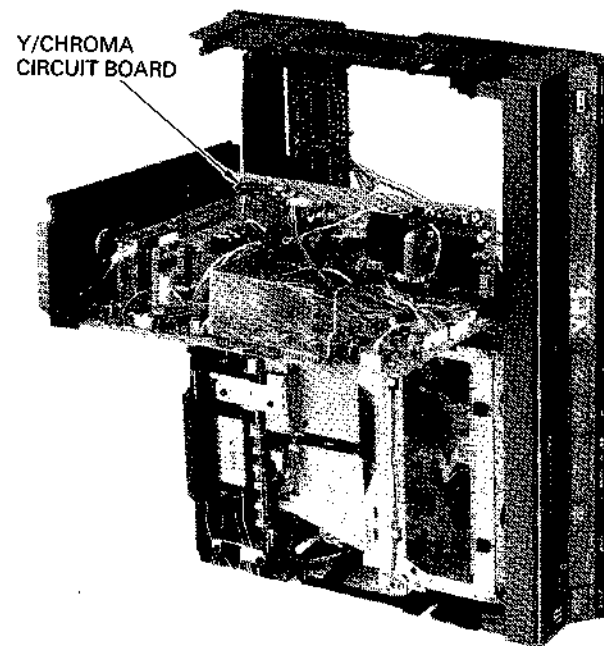


Fig. 2 Ready to Adjust Y/Chroma circuit Board

COMPONENTS LOCATIONS ON CIRCUIT BOARDS

VT-125E (VPS)

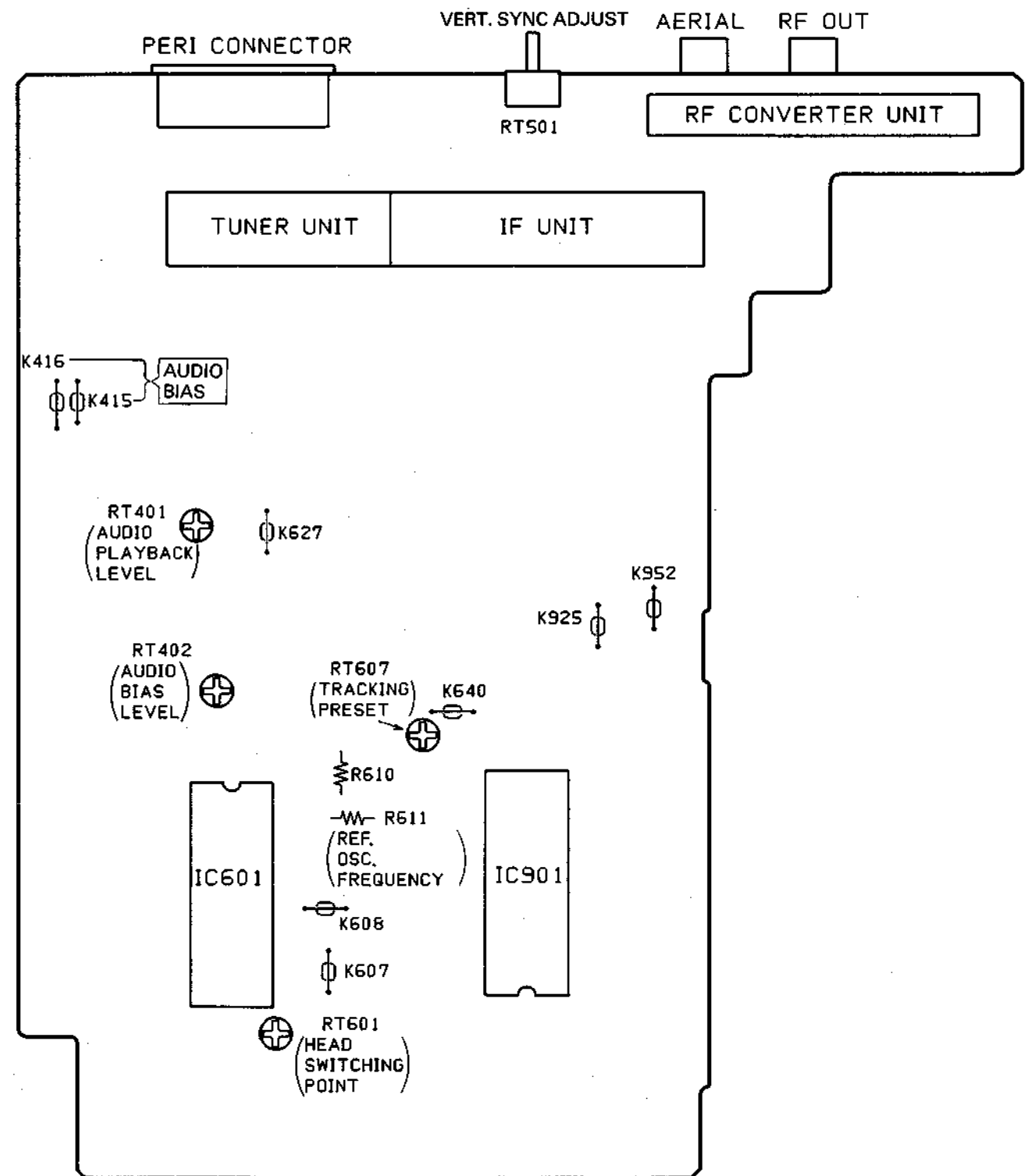


Fig. 3 Components on Main Circuit Board (Component Side)

* See item 1 in chapter 2 on circuit board removal, for details on main circuit board removal.

COMPONENTS LOCATIONS ON CIRCUIT BOARDS

VT-135E (VPS)

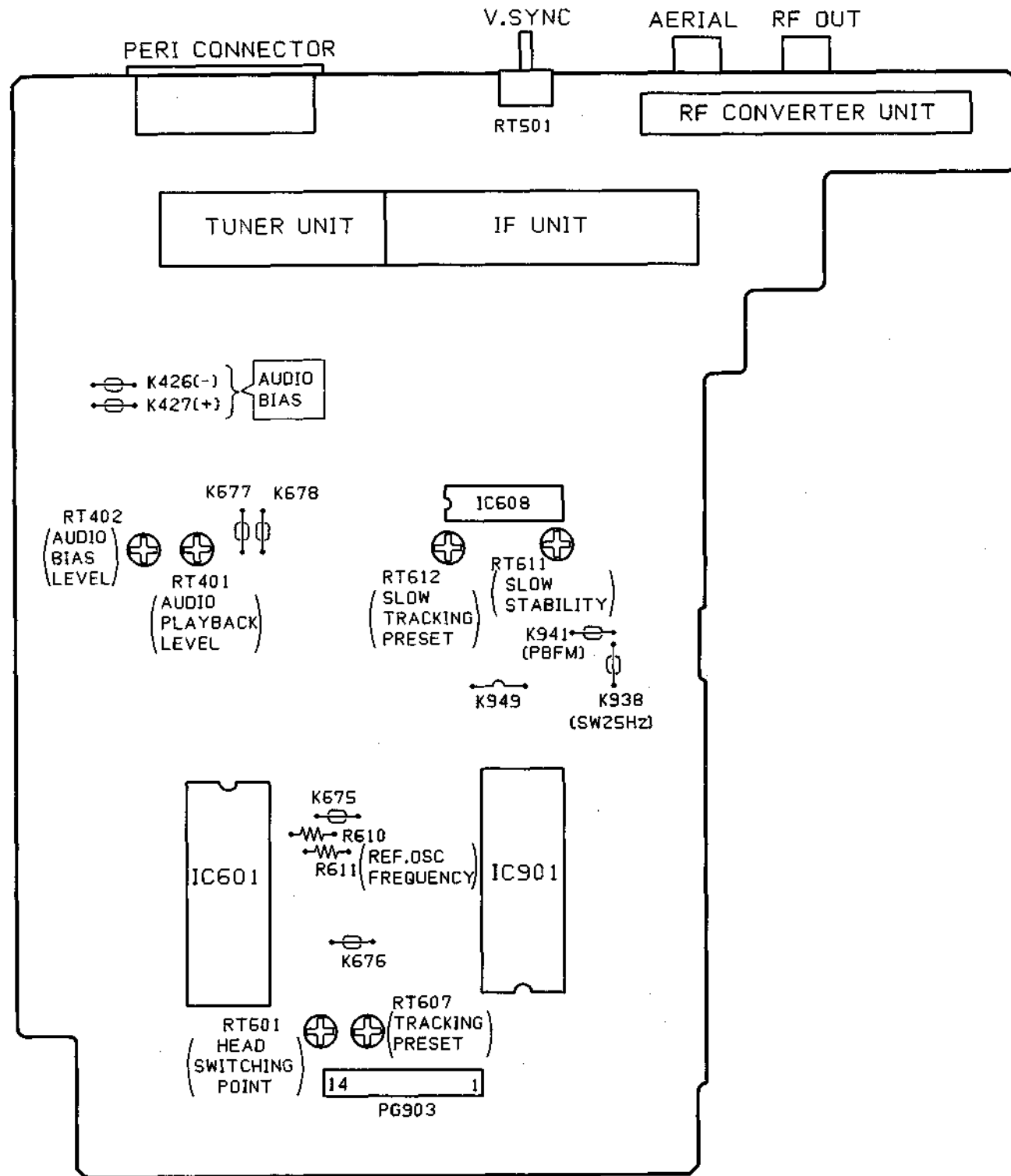


Fig. 3 Components on Main Circuit Board (Component Side)

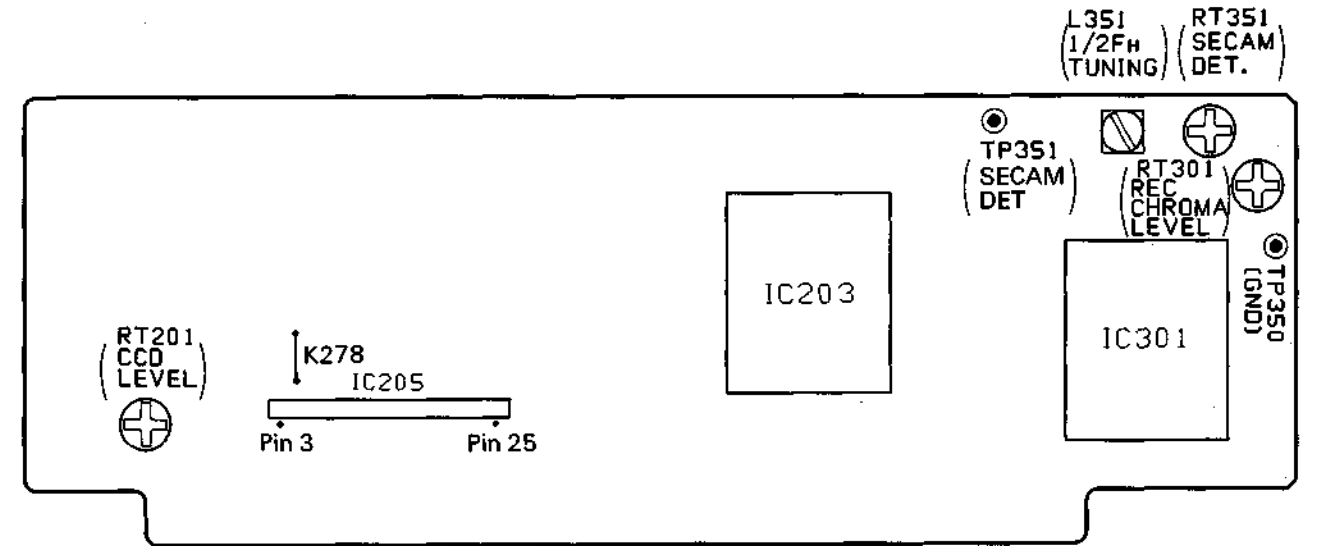


Fig. 4 Components on Y/Chroma Circuit Board (Component Side)

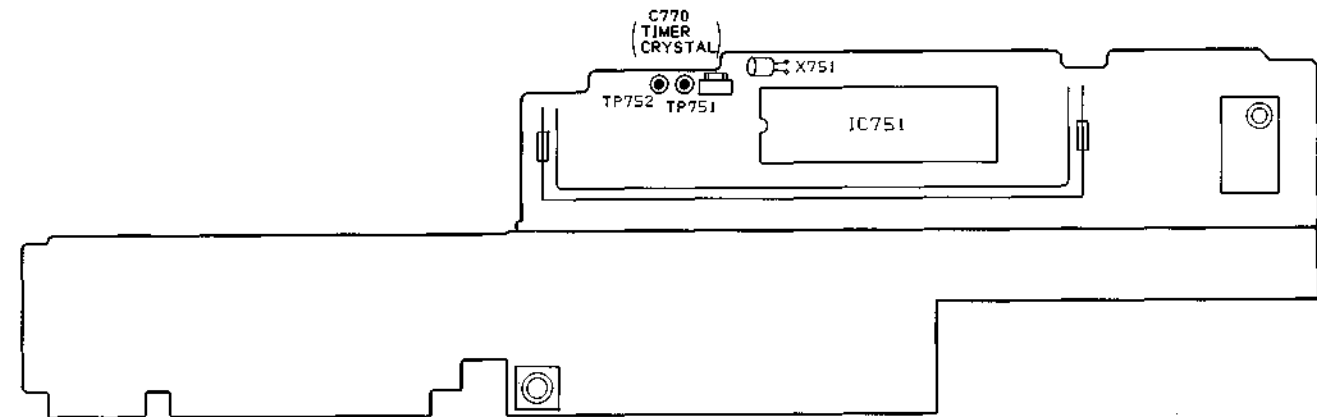


Fig. 5 Components on Timer Circuit Board (Component Side)

1. SERVO CIRCUIT ADJUSTMENTS

1. Reference Oscillation Frequency Adjustment

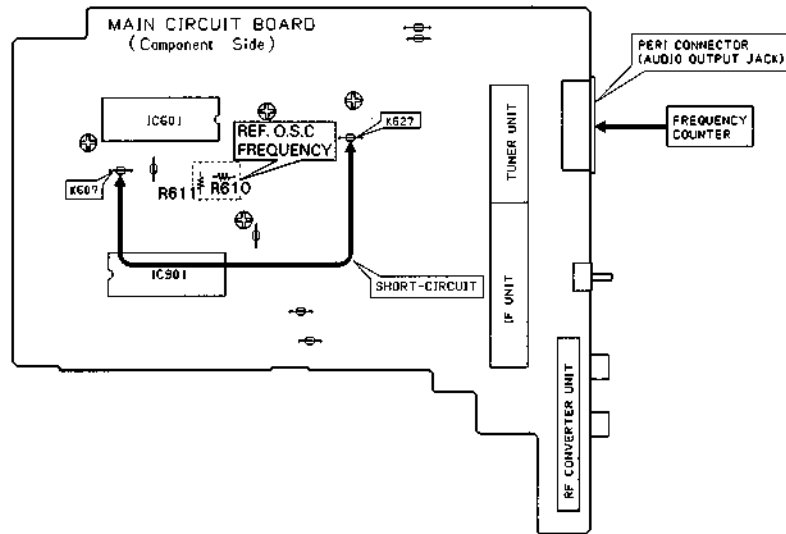
Purpose of adjustment and fault occurring if incomplete

Purpose: Fine tune the reference oscillation frequency (REF25 Hz) in the phase control loop to correct variations in diameters of flywheel, pulley, etc.

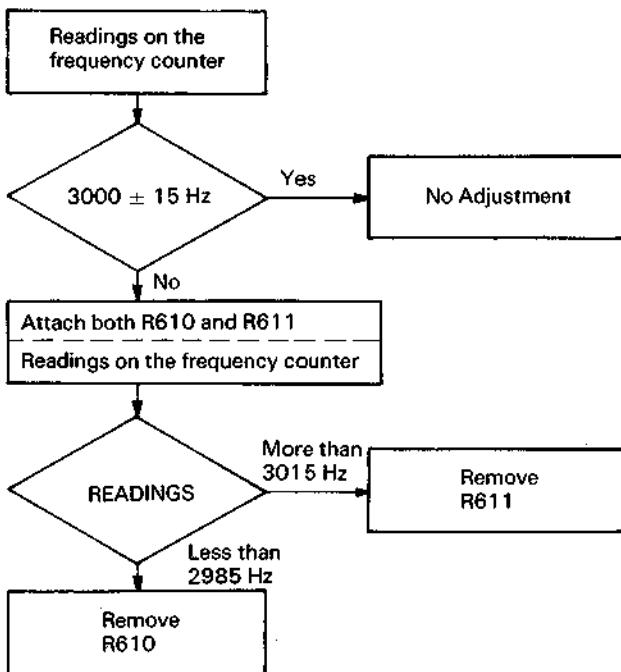
Fault: ○ Noise appears in picture.
○ Tracking cannot be optimized.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment point
<ul style="list-style-type: none"> ● Frequency counter ● Alignment tape 	<ul style="list-style-type: none"> ● Audio output jack 	Alignment tape: Play back 3 kHz portion	<ul style="list-style-type: none"> ● R610 (4.7K) ● R611 (3.9K) <div style="border: 1px solid black; padding: 2px; display: inline-block;">REF. O.S.C. FREQUENCY</div>

Connection Diagram



Adjustment Procedure



Note: There are some units in which R610 or R611 is removed when shipped from the factory.

2. Switching Point Adjustment

Purpose of adjustment and fault occurring if incomplete

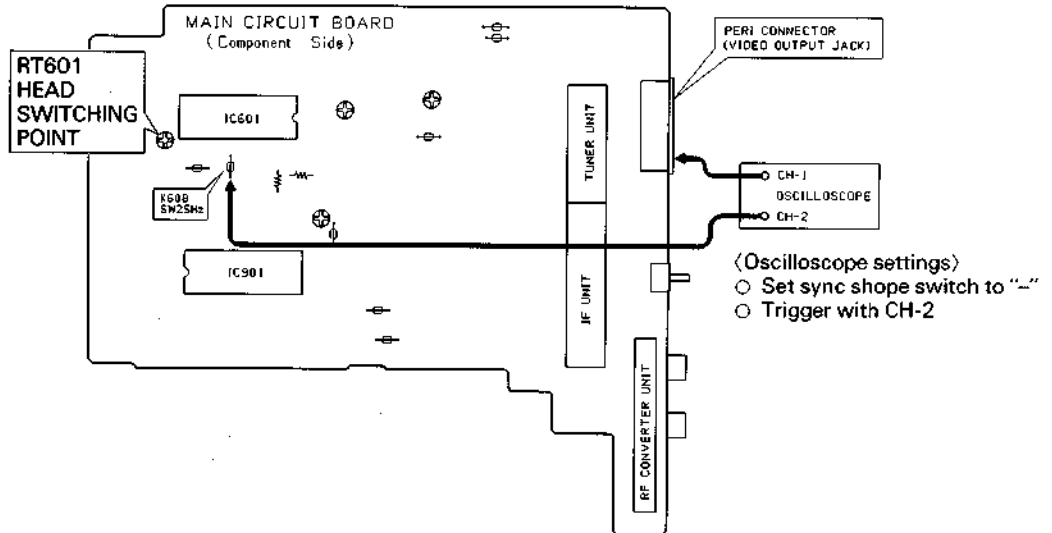
Purpose: Set the video head switching point to almost centre where the CH-1 and CH-2 envelopes overlap each other during playback.

Fault: ○ The vertical sync signal is degraded and vertical jitter occurs.

○ Switching noise occurs in lower part of picture.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tape 	<ul style="list-style-type: none"> ● CH-1: video output jack ● CH-2: K608 	<ul style="list-style-type: none"> ● Play back alignment tape 	<ul style="list-style-type: none"> ● RT601 HEAD SWITCHING POINT

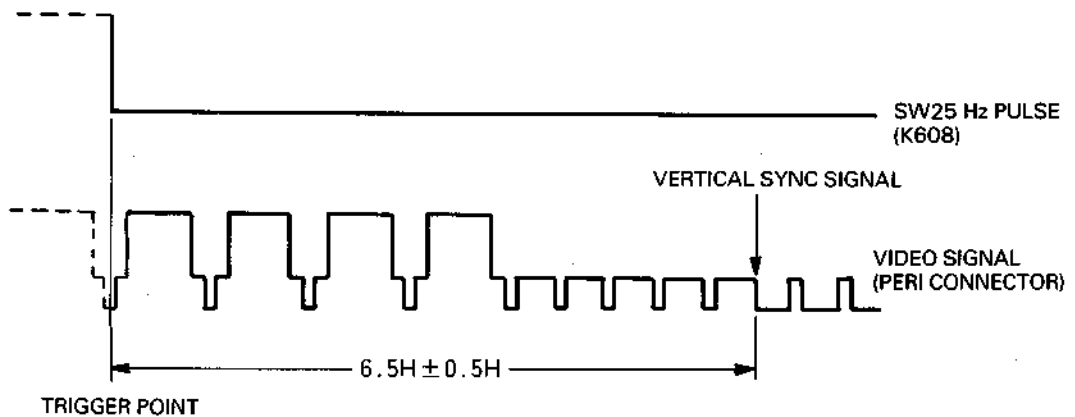
Connection Diagram



Adjustment Procedure

Vertical sync signal:
 $6.5H \pm 0.5H$ from trailing edge (trigger point) of SW25 Hz pulse.

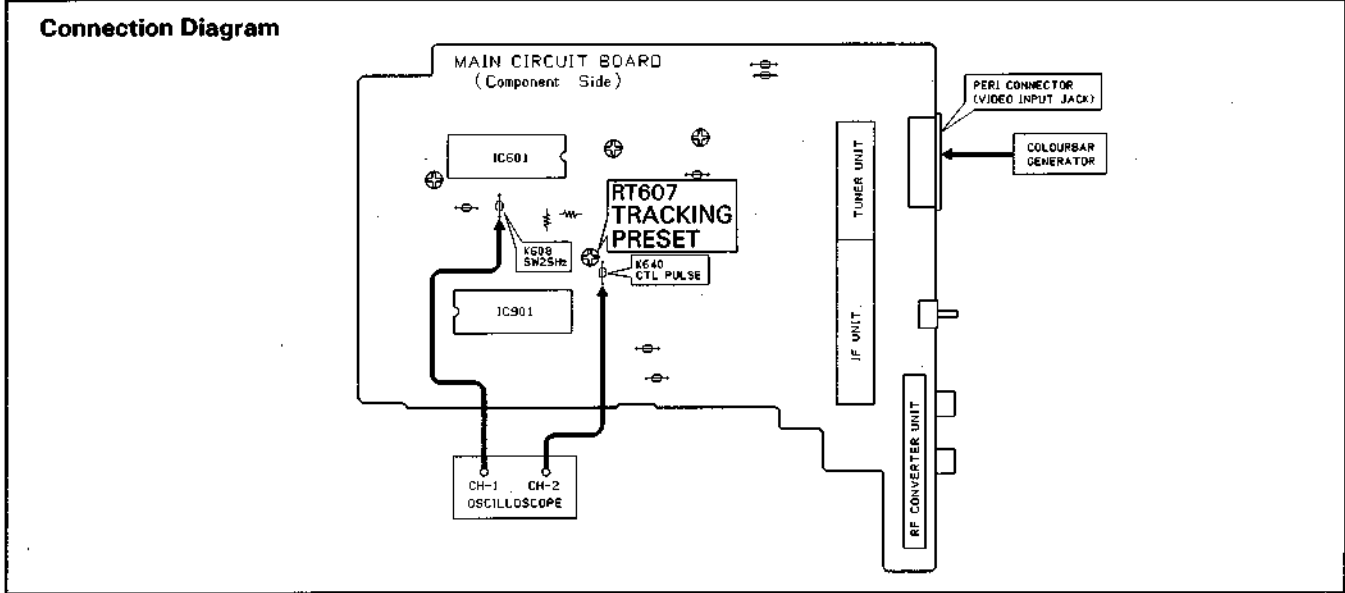
Waveform



3. Tracking Preset Adjustment

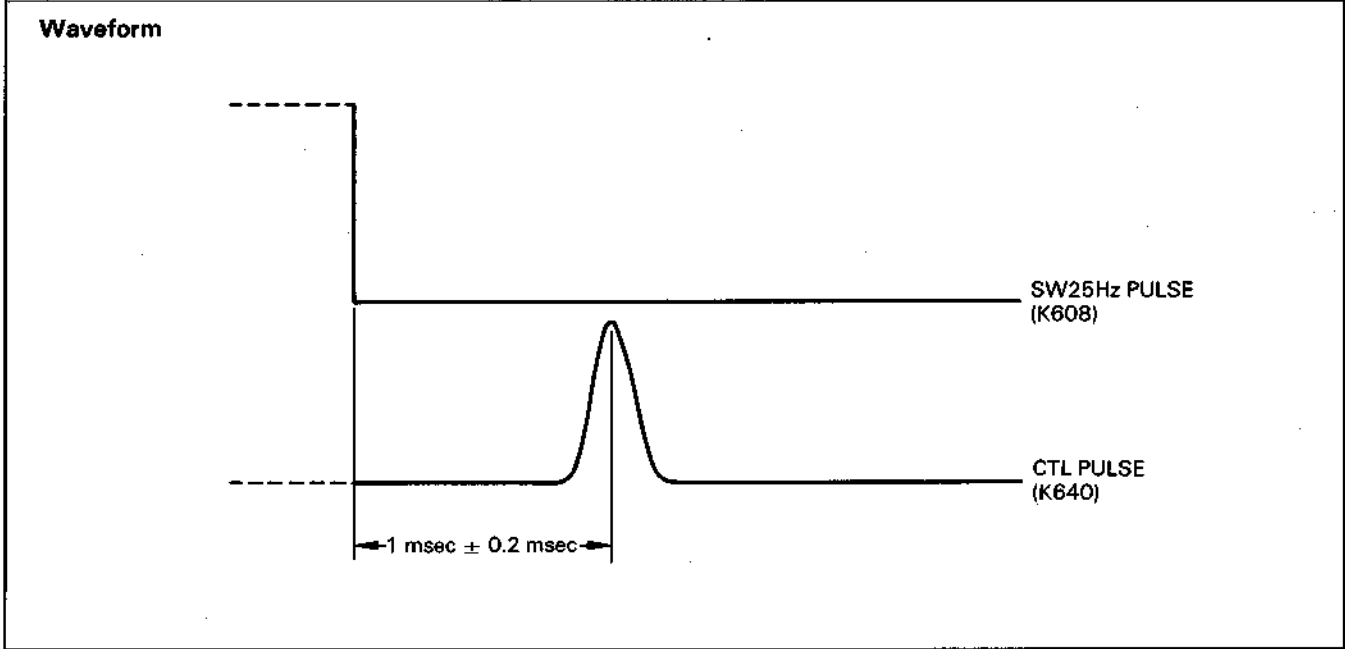
Purpose of adjustment and fault occurring if incomplete
Purpose: Optimize tracking when playing back a tape recorded by this unit.
Fault: ○ Noise occurs even with tracking control centred.
 ○ Noise cannot be removed by turning the tracking control.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Colour bar generator (or receive TV programme) ● Blank tape 	<ul style="list-style-type: none"> ● CH-1: K608 ● CH-2: K640 	<ul style="list-style-type: none"> ● Record colour bar signal and play it back with this unit. 	<ul style="list-style-type: none"> ● RT607 (TRACKING PRESET)



Adjustment Procedure

- 1) Tracking control: centred
- 2) It is 1 msec ± 0.2 msec from the fall of SW 25 Hz to the peak of CTL pulse.



4. V Jitter Adjustment

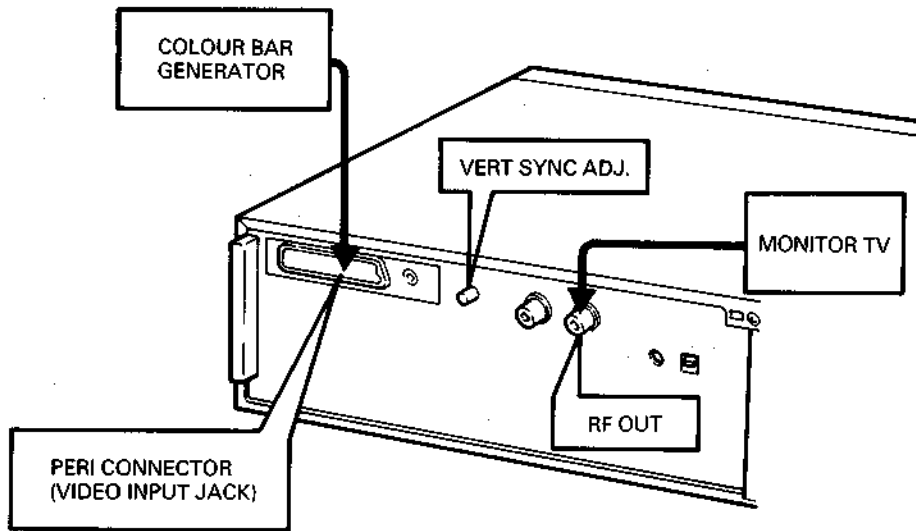
Purpose of adjustment and fault occurring if incomplete

Purpose: Change timing for adding vertical drive pulse and suppress vertical jitter in picture during trick play.

Fault: Vertical jitter during trick play.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Monitor TV ● Colour bar generator (or receive TV programme) ● Blank tape 	<ul style="list-style-type: none"> ● Check with monitor TV 	<ul style="list-style-type: none"> ● Record colour bar signal, play it back with this unit in F.ADV mode. 	<ul style="list-style-type: none"> ● RT501 { VERT } SYNC } ADJ.

Connection Diagram (Can be adjusted without removing any covers)



Adjustment Procedure

Suppress vertical jitter in picture.

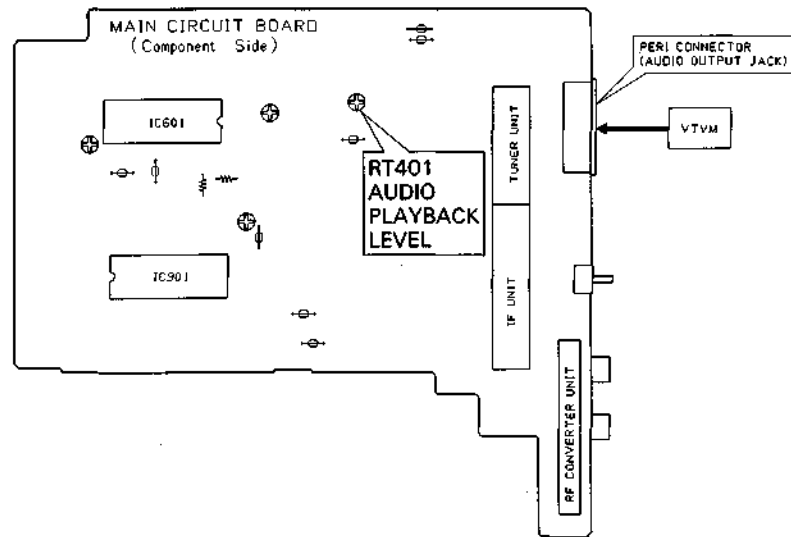
2. AUDIO CIRCUIT ADJUSTMENTS

1. Audio Playback Level Adjustment

Purpose of adjustment and fault occurring if incomplete
Purpose: Set the audio playback level to the specified value.
Fault:

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● VTVM ● Alignment tape 	<ul style="list-style-type: none"> ● Audio output jack 	<ul style="list-style-type: none"> ● Play back alignment tape 	<ul style="list-style-type: none"> ● RT401 [AUDIO] PLAYBACK] LEVEL

Connection Diagram



Adjustment Procedure
 The VTVM reads $-8 \text{ dBm} + 1 \text{ dBm}$

2. Audio Bias Level Adjustment

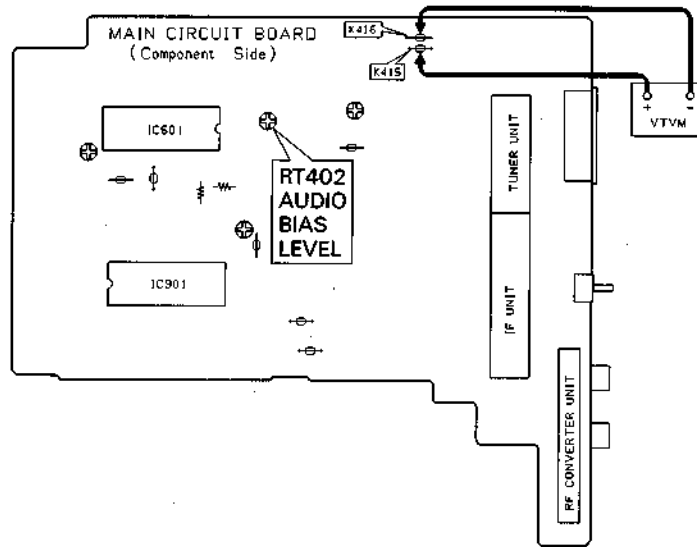
Purpose of adjustment and fault occurring if incomplete

Purpose: Set audio bias during recording to optimum level.

- Fault:**
- Bias too deep: High-frequency response deteriorates.
 - Bias too shallow: Sound tends to be distorted.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● VTVM ● Blank tape 	<ul style="list-style-type: none"> ● K415 ● K416 	<ul style="list-style-type: none"> ● Non-signal recording 	<ul style="list-style-type: none"> ● RT402 AUDIO BIAS LEVEL

Connection Diagram



Adjustment Procedure

The VTVM reads $2.3 \text{ mV} \pm 0.1 \text{ mVrms}$.

1. SERVO CIRCUIT ADJUSTMENTS

1. Reference Oscillation Frequency Adjustment

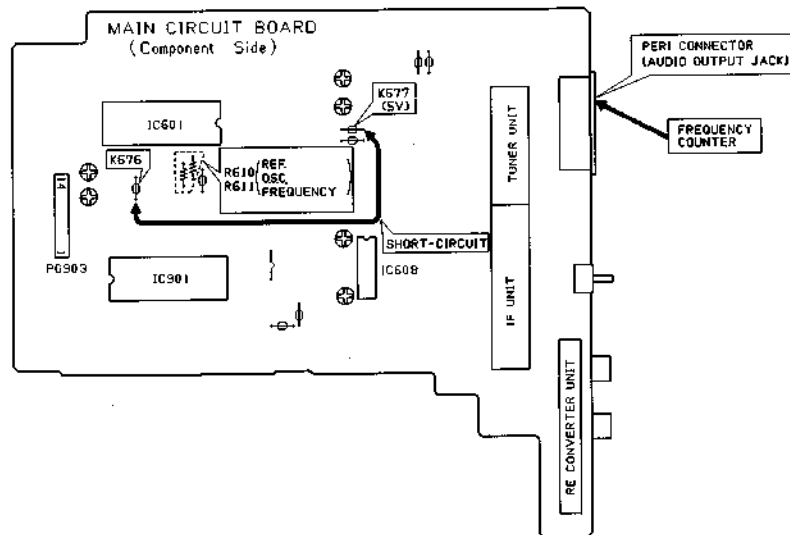
Purpose of adjustment and fault occurring if incomplete

Purpose: Fine tune the reference oscillation frequency (REF25 Hz) in the phase control loop to correct variations in diameters of flywheel, pulley, etc.

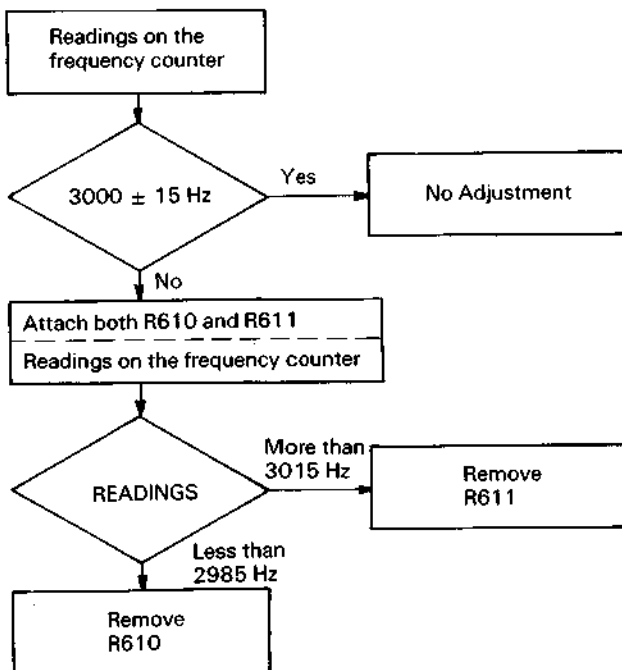
Fault: ○ Noise appears in picture.
○ Tracking cannot be optimized.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment point
<ul style="list-style-type: none"> ● Frequency counter ● Alignment tape 	<ul style="list-style-type: none"> ● Audio output jack 	Alignment tape: Play back 3 kHz portion	<ul style="list-style-type: none"> ● R610 (4.7K) ● R611 (3.9K) [REF. O.S.C FREQUENCY]

Connection Diagram



Adjustment Procedure



Note: There are some units in which R610 or R611 is removed when shipped from the factory.

2. Head Switching Point Adjustment

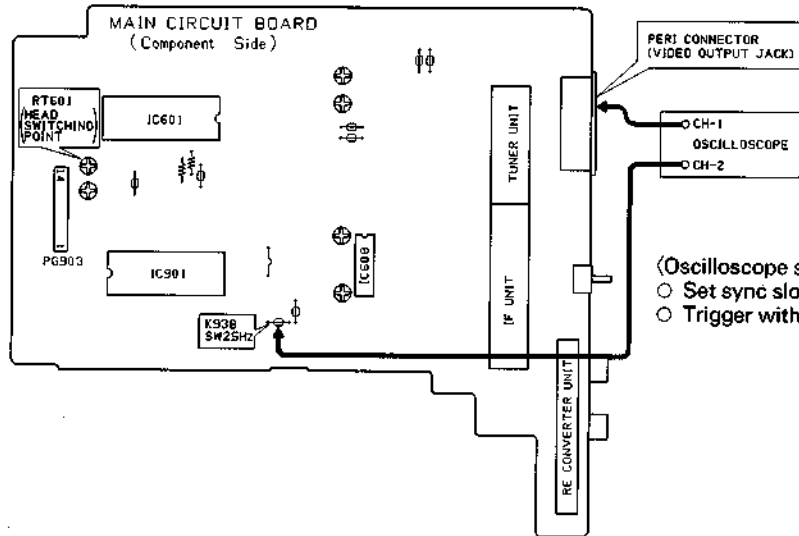
Purpose of adjustment and fault occurring if incomplete

Purpose: Set the video head switching point to almost centre where the CH-1 and CH-2 envelopes overlap each other during playback.

Fault: ○ The vertical sync signal is degraded and vertical jitter occurs.
 ○ Switching noise occurs in lower part of picture.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tape 	<ul style="list-style-type: none"> ● CH-1: video output jack ● CH-2: K938 (SW25Hz) 	<ul style="list-style-type: none"> ● Play back alignment tape 	<ul style="list-style-type: none"> ● RT601 (HEAD SWITCHING POINT)

Connection Diagram

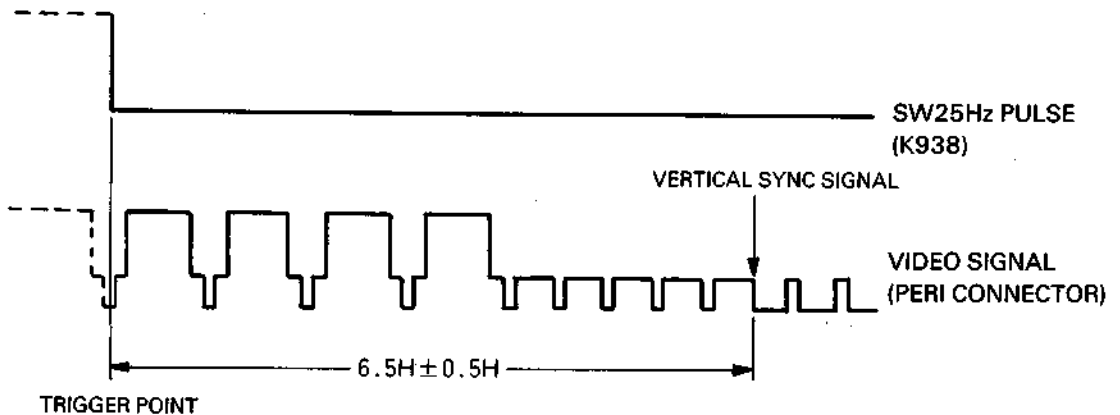


⟨Oscilloscope settings⟩
 ○ Set sync slope switch to “-”.
 ○ Trigger with CH-2.

Adjustment Procedure

Vertical sync signal:
 6.5H ± 0.5H from trailing edge (trigger point) of SW25 Hz pulse.

Waveform

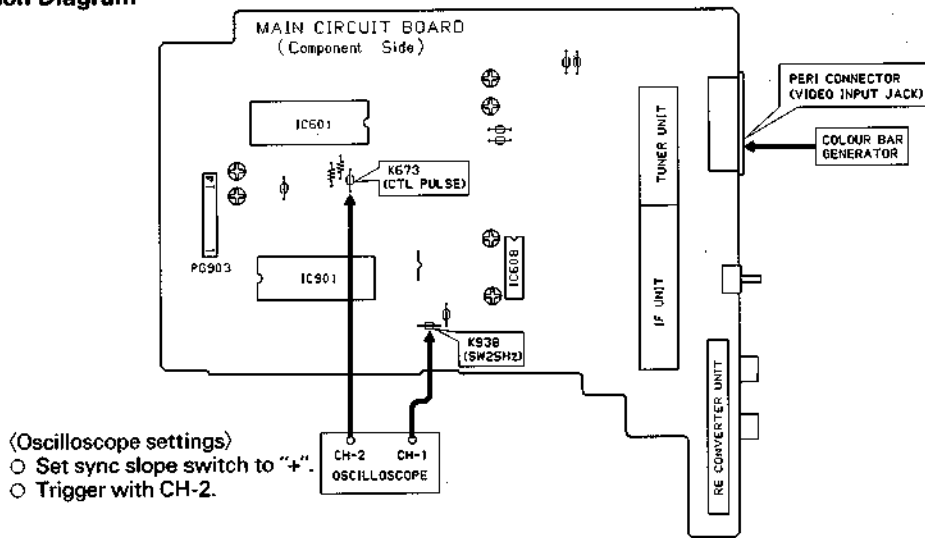


3. Tracking Preset Adjustment

Purpose of adjustment and fault occurring if incomplete
Purpose: Optimize tracking when playing back a tape recorded by this unit.
Fault: ○ Noise occurs even with tracking control centred.
 ○ Noise cannot be removed by turning the tracking control.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Colour bar generator (or receive TV programme) ● Blank tape 	<ul style="list-style-type: none"> ● CH-1: K938 (SW25Hz) ● CH-2: K673 (CTL PULSE) 	<ul style="list-style-type: none"> ● Record colour bar signal and play it back with this unit. 	<ul style="list-style-type: none"> ● RT607 (TRACKING) (PRESET)

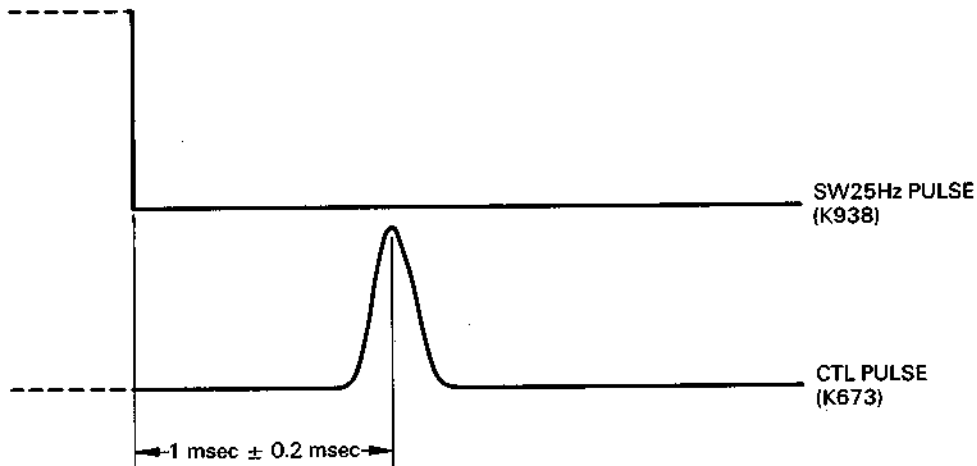
Connection Diagram



Adjustment Procedure

- 1) Tracking control: centred
- 2) It is 1 msec ± 0.2 msec from the fall of SW 25 Hz to the peak of CTL pulse.

Waveform



4. Slow Tracking Preset Adjustment

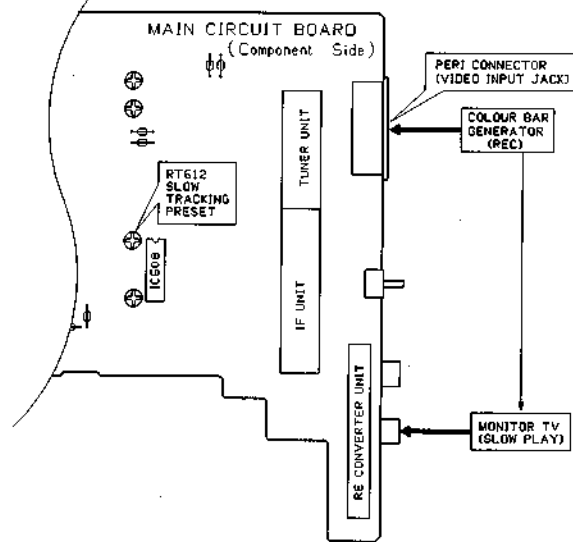
Purpose of adjustment and fault occurring if incomplete

Purpose: Optimize tracking during slow play.

Fault: A noise bar appears in the picture during slow play.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Monitor TV ● Colour bar generator (or receive TV programme) ● Blank tape 	<ul style="list-style-type: none"> ● Check with monitor TV 	<ul style="list-style-type: none"> ● Record colour bar signal, play it back with this unit in slow mode. 	<ul style="list-style-type: none"> ● RT612 <p style="text-align: center;">(SLOW TRACKING PRESET)</p>

Connection Diagram



Adjustment Procedure

- 1) Slow tracking control: centered
- 2) More than 12 frames are advanced intermittently until the noise bar flows from the bottom to top and disappears.

5. Slow Stability Adjustment

<p>Purpose of adjustment and fault occurring if incomplete Purpose: Suppress the horizontal jitter in the picture during slow play. Fault: Horizontal jitter occurs in the picture during slow play.</p>			
Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Monitor TV ● Colour bar generator (or receive TV programme) ● Blank tape 	<ul style="list-style-type: none"> ● Check with monitor TV 	<ul style="list-style-type: none"> ● Record colour bar signal, play it back with this unit in slow mode. 	<ul style="list-style-type: none"> ● RT607 { SLOW STABILITY }
<p>Connection Diagram</p> <p>The diagram illustrates the internal components of the VTR's main circuit board on the component side. Key elements include: <ul style="list-style-type: none"> PERI CONNECTOR (VIDEO INPUT JACK): Located at the top right, connected to a COLOUR BAR GENERATOR. TUNER UNIT: A vertical component in the center. IF UNIT: A vertical component below the tuner unit. SLOW STABILITY: An adjustment point on the left side of the board, near the IF unit. RF CONVERTER UNIT: A vertical component at the bottom, connected to a MONITOR TV (SLOW PLAY). </p>			
<p>Adjustment Procedure</p> <ol style="list-style-type: none"> 1) Slow tracking control: centered 2) Minimize horizontal jitter in the picture. 			

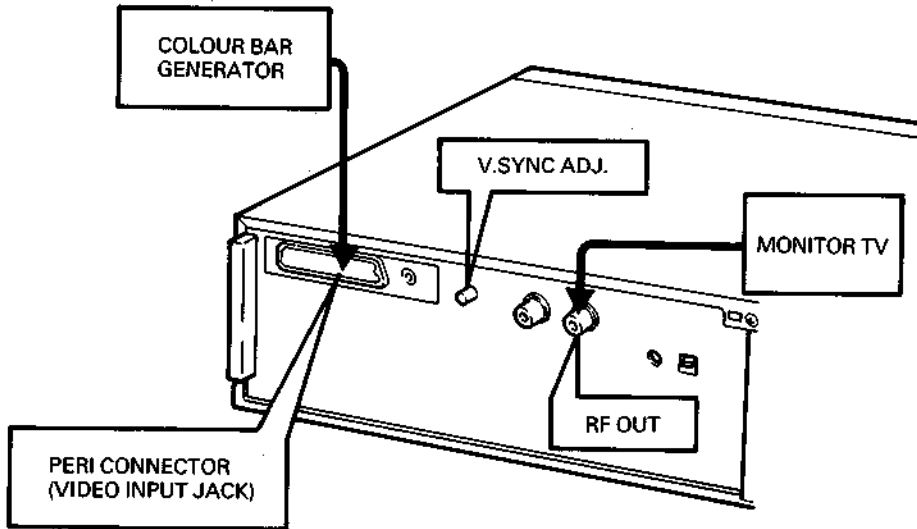
6. V Jitter Adjustment

Purpose of adjustment and fault occurring if incomplete

Purpose: Change timing for adding vertical drive pulse and suppress vertical jitter in picture during trick play.
Fault: Vertical jitter during trick play.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Monitor TV ● Colour bar generator (or receive TV programme) ● Blank tape 	<ul style="list-style-type: none"> ● Check with monitor TV 	<ul style="list-style-type: none"> ● Record colour bar signal, play it back with this unit in F.ADV mode. 	<ul style="list-style-type: none"> ● RT501 (V JITTER)

Connection Diagram (Can be adjusted without removing any covers)



Adjustment Procedure

Suppress vertical jitter in picture.

2. AUDIO CIRCUIT ADJUSTMENTS

1. Audio Playback Level Adjustment

<p>Purpose of adjustment and fault occurring if incomplete Purpose: Set the audio playback level to the specified value. Fault:</p>			
Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● VTVM ● Alignment tape 	<ul style="list-style-type: none"> ● Audio output jack 	<ul style="list-style-type: none"> ● Play back alignment tape 	<ul style="list-style-type: none"> ● RT401 (AUDIO PLAYBACK LEVEL)
<p>Connection Diagram</p>			
<p>Adjustment Procedure The VTVM reads $-8 \text{ dBm} \pm 1 \text{ dBm}$</p>			

2. Audio Bias Level Adjustment

Purpose of adjustment and fault occurring if incomplete

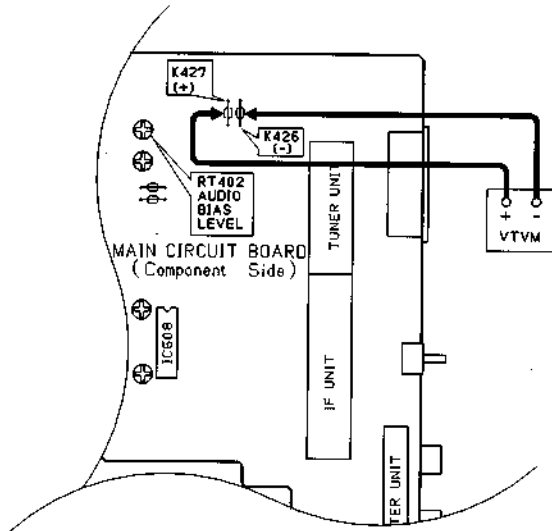
Purpose: Set audio bias during recording to optimum level.

Fault: ○ Bias too deep: High-frequency response deteriorates.

○ Bias too shallow: Sound tends to be distorted.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● VTVM ● Blank tape 	<ul style="list-style-type: none"> ● K426 (-) ● K427 (+) 	<ul style="list-style-type: none"> ● Non-signal recording 	<ul style="list-style-type: none"> ● RT402 [AUDIO BIAS LEVEL]

Connection Diagram



Adjustment Procedure

The VTVM reads $2.1 \text{ mV} \pm 0.1 \text{ mVrms}$.

3. Y/CHROMA CIRCUIT ADJUSTMENT

1. CCD Level Adjustment

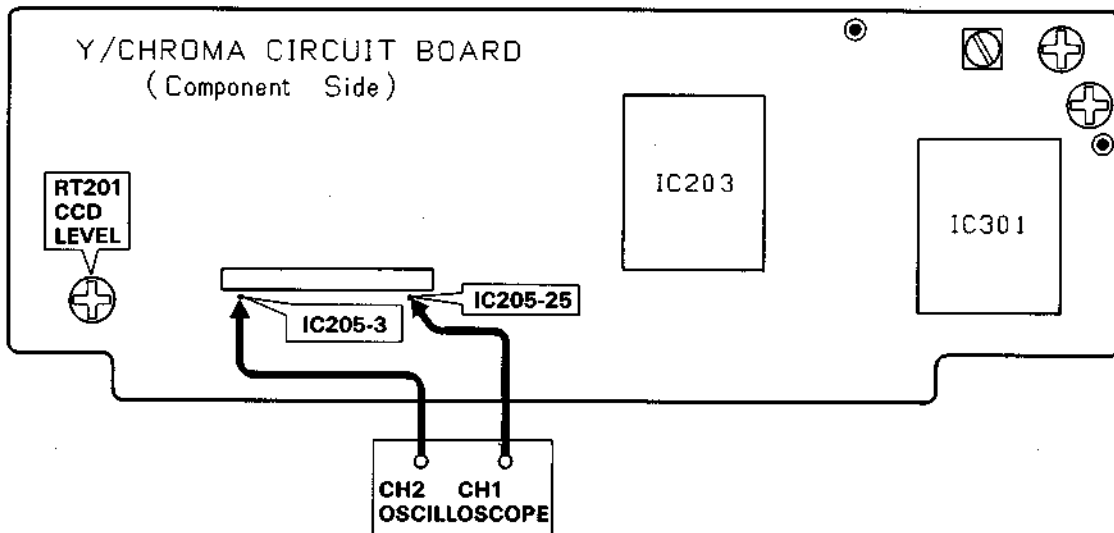
Purpose of adjustment and fault occurring if incomplete

Purpose: Makes the input and output levels of the CCD 1H delay line the same.

Fault: Switching noise is conspicuous when dropout is compensated.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tape 	<ul style="list-style-type: none"> ● CH-1: IC205-25 ● CH-2: IC205-3 	<ul style="list-style-type: none"> ● Play back alignment tape 	<ul style="list-style-type: none"> ● RT201 (CCD LEVEL)

Connection Diagram

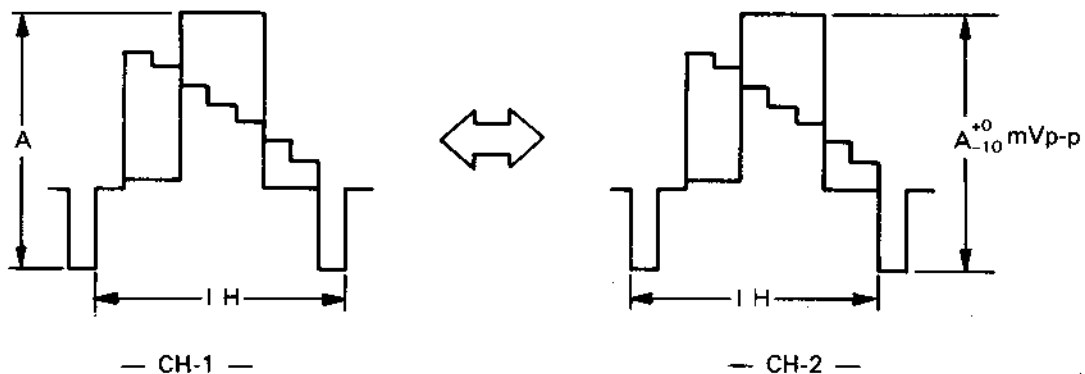


Adjustment Procedure

Align the CH-1 and CH-2 levels.

$$CH-2 = CH-1 \pm_{-10}^{+0} \text{ mVp-p}$$

Note: CH-2 level is less than CH-1 level.



2. Rec Chroma Level Adjustment

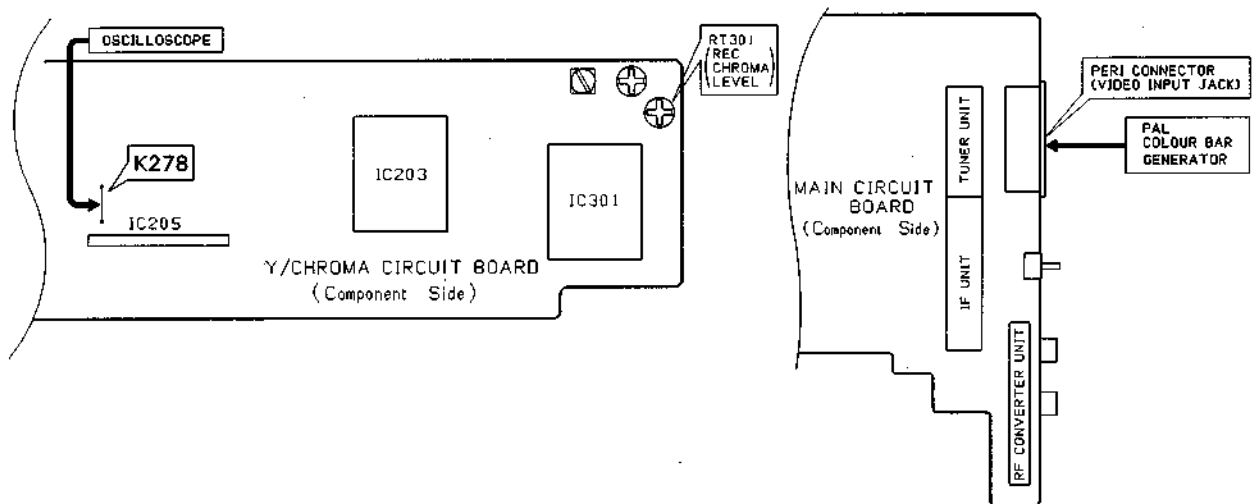
Purpose of adjustment and fault occurring if incomplete

Purpose: Set the chroma record level to an optimum value.

Fault: The diamond beats occur in the played back picture or coloring becomes poor.

Test Equipment/Jigs	Test Equipment Connection Points	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Colour bar generator ● Oscilloscope 	<ul style="list-style-type: none"> ● K278 	<ul style="list-style-type: none"> ● E-E mode 	<ul style="list-style-type: none"> ● RT301 [REC CHROMA LEVEL]

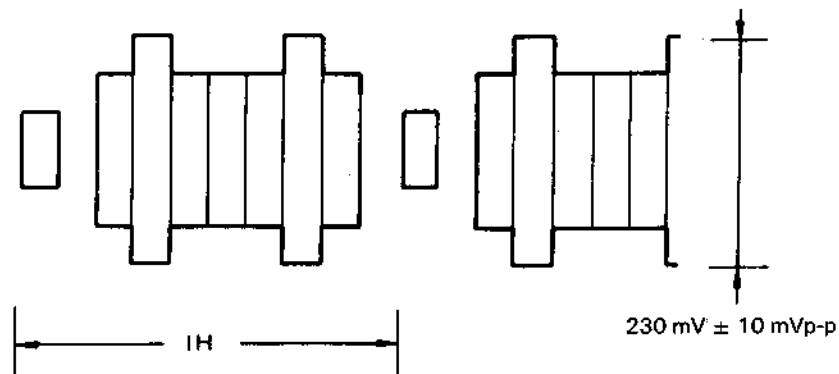
Connection Diagram



Adjustment Procedure

The oscilloscope reads $230 \text{ mV} \pm 10 \text{ mVp-p}$

Waveform



3. Secam Detect Level Adjustment

Purpose of adjustment and fault occurring if incomplete Purpose: Set the secam detect level to the specified value Fault:			
Test Equipment/Jigs <ul style="list-style-type: none"> ● SECAM colour bar generator ● Oscilloscope 	Test Equipment Connection Points <ul style="list-style-type: none"> ● TP351 ● TP350 (GND) 	VTR State <ul style="list-style-type: none"> ● EE mode 	Adjustment Point <ul style="list-style-type: none"> ● RT351 (SECAM DETECT LEVEL)
Connection Diagram			
Adjustment Procedure <pre> graph TD A[RT351: Fully counterclockwise.] --> B{L351: Sine wave MAX. level} B -- less than 5Vp-p --> C[RT351: Sine wave level is 5.0 ± 0.1Vp-p] B -- greater than 5Vp-p --> D[L351: Sine wave level is 5Vp-p.] </pre>		Wave form	

4. TIMER CIRCUIT ADJUSTMENTS

1. 4.19 MHz Crystal Adjustment

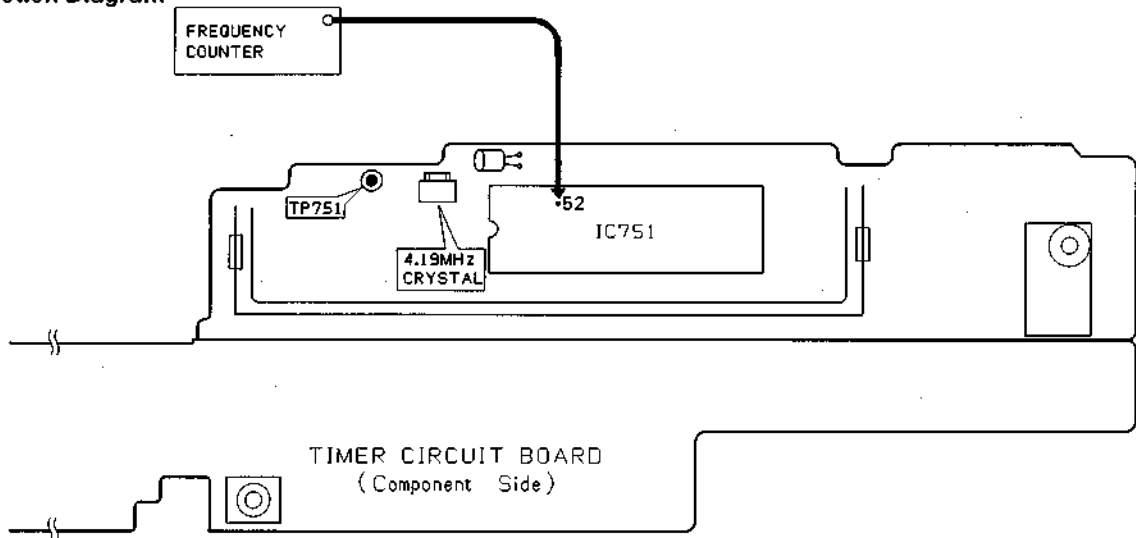
Purpose of adjustment and fault occurring if incomplete

Purpose: Suppress the time gain or lag of the timer less than 0.2 seconds per day.

Fault:

Test Equipment/Jig	Test Equipment Connection Points	VTR State	Adjustment Point
● Frequency counter	● TP751 (-) ● IC751 PIN 52	● Stop mode	● C770 (4.19 MHz) (CRYSTAL)

Connection Diagram

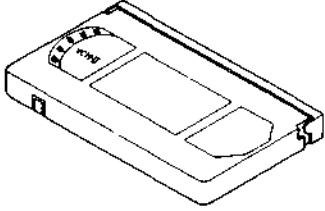
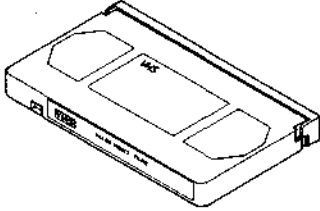
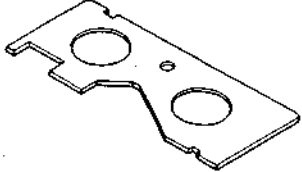
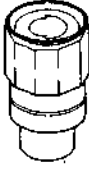

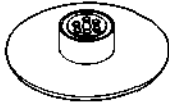
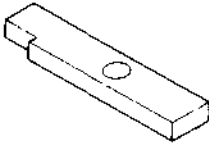
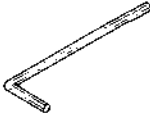
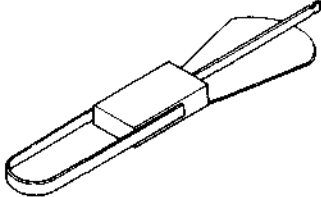


Adjustment Procedure

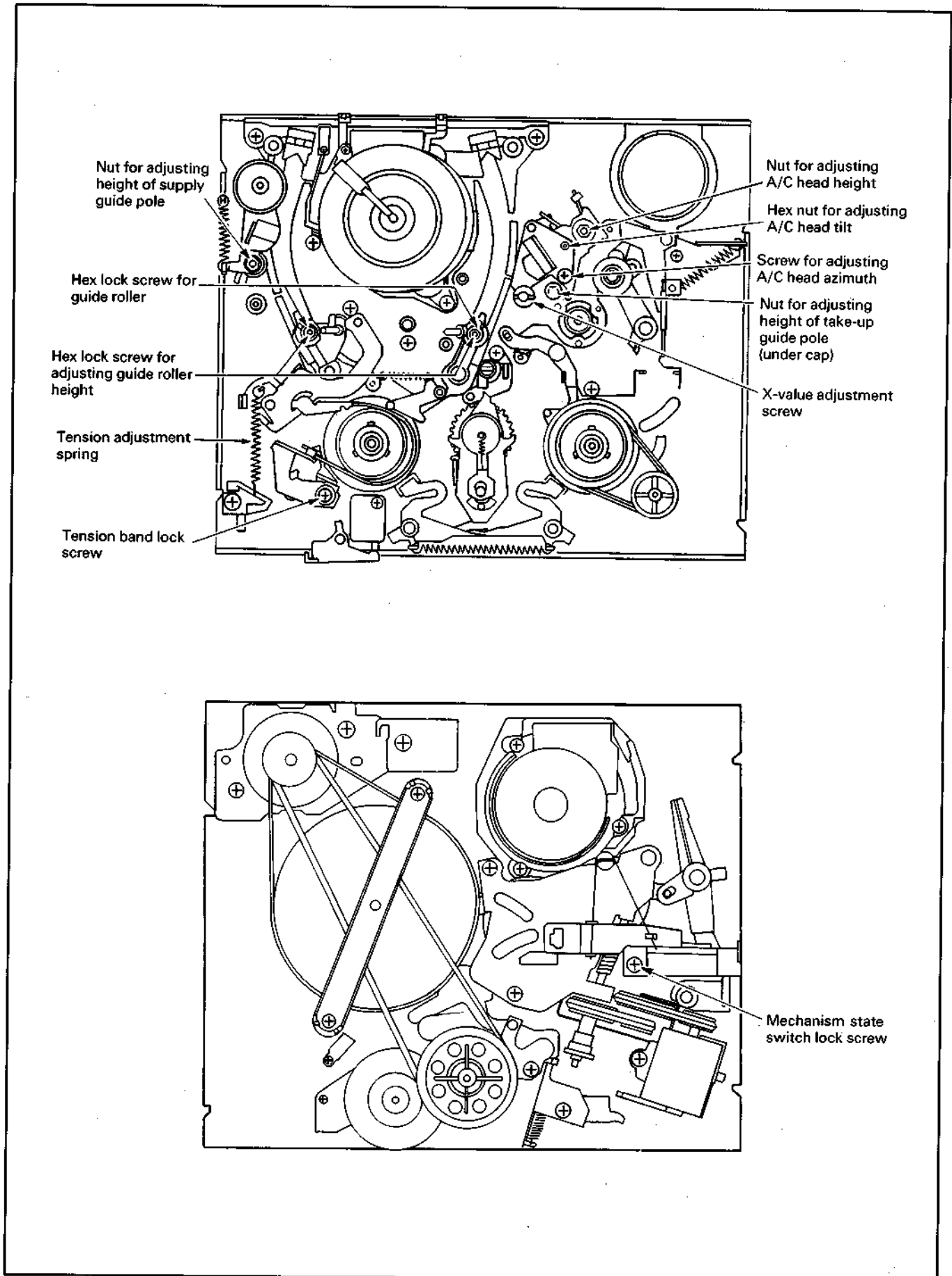
- 1) Set the counter gate time to 10 seconds.
- 2) When performing measurement with the probe attached to the oscillation circuit, a delay of 2.35 seconds per day occurs. (It is not possible to adjust directly.)
- 3) Perform measurement using a frequency counter with 6 or more effective digits, taking the drift of probe into account.
- 4) Set the adjustment frequency to $f = 4.194190$.
 - ① Frequency counter with 7 effective digits
 $f = 4.194190$
 Error range: $f = 4.1914189 - 4.194191$
 Difference per day: ± 0.021 second
 - ② Frequency counter with 6 effective digits
 $f = 4.19419$
 Error range: $f = 4.19418 - 4.19420$
 Difference per day: $+0.207$ seconds
 -0.206

Note: Set the probe to 10:1 (18 pF ~ 22 pF) for use.

MECHANISM ADJUSTMENT**SERVICING JIGS AND TOOLS**

<p>1. Back tension meter Parts No. 7099004</p> 	<p>2. Alignment tape Parts No. 7099052</p> 	<p>3. Height reference plate (master plane) Parts No. 7099041</p> 
<p>4. Torque gauge Parts No. 7099039</p> 	<p>5. Torque gauge adaptor Parts No. 7099035</p> 	<p>6. Dummy reel Parts No. 7099043</p> 
<p>7. Reel disk height jig Parts No. 7099038</p> 	<p>8. 1.5 mm hexagonal wrench</p> 	<p>9. Fan-shaped tension gauge</p> 

LIST OF ADJUSTMENT LOCATIONS



MECHANICAL COMPONENT ADJUSTMENT

1. Mechanism State Switch Adjustment

Purpose: Accurately detect mechanism states and prevent malfunction.

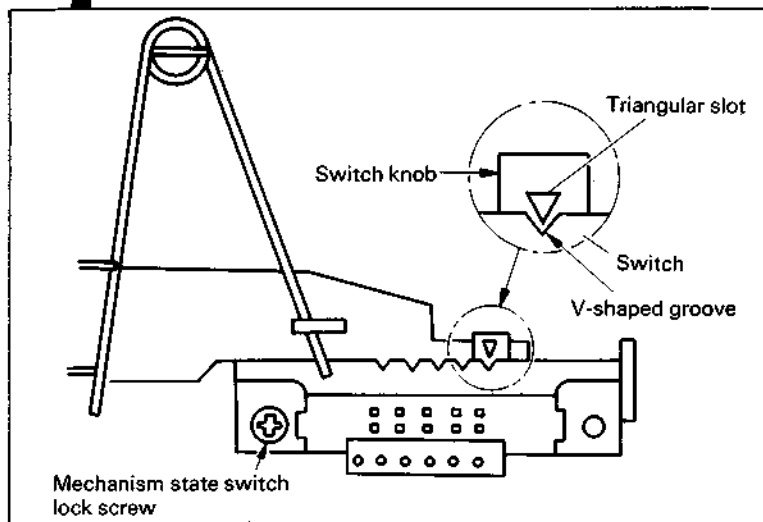
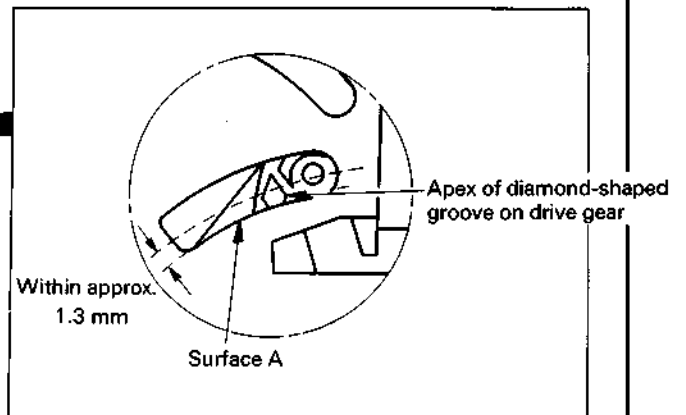
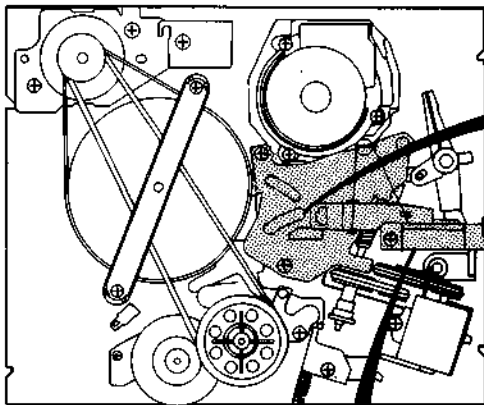
Test Equipment/Jigs	VTR State	Adjustment Point
● Blank tape	● Stop mode	● Mechanism state switch lock screw

Adjustment Procedure

- 1) Turn the worm pulley by hand. Position the apex of the diamond-shaped groove on the drive gear so that it is within 1.3 mm from the A surface of the gear plate.
- 2) Loosen the lock screw on the mechanism state switch. Slide the switch so that the apex of the triangular slot on the switch knob is aligned with the V-shaped groove on the extreme outside of the switch.

- 3) Loosen the lock screw. Insert the blank tape in the cassette holder. Check to make sure that all unloading and loading operations are correct.

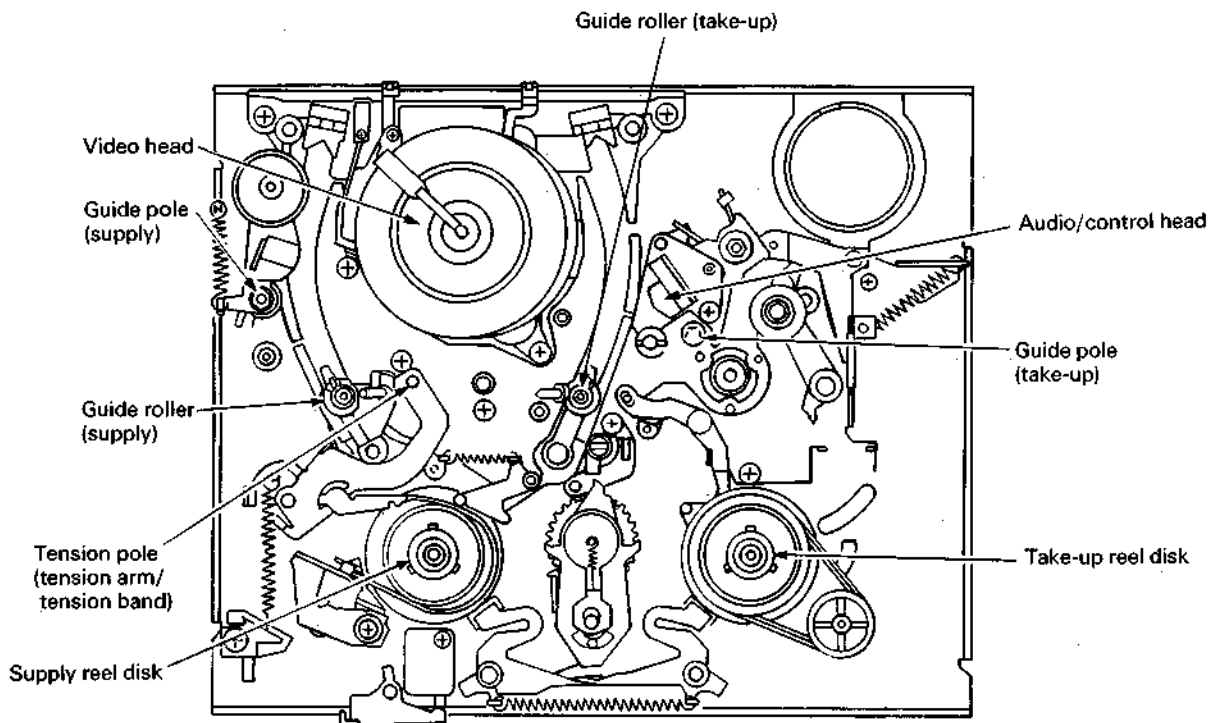
Adjustment Diagram



TAPE TRANSPORT SYSTEM ADJUSTMENT

The transport system is the system in which tape moves from the supply reel disk, over the video head and then to the take-up reel disk. The components in the tape transport system must be perfectly clean, particularly those that come in contact with the tape.

These components must have no scratches, no dust, no oil on them. The tape transport system is adjusted at the factory prior to shipping. When components need to be replaced, accurately adjusting the new components ensures that the tape transport system will operate stably.



Components Adjusted in Tape Transport System

1. Reel Disk Height Adjustment

Purpose: Determine correct tape height by setting cassette tape reel to the specified height.

Test Equipment/Jigs	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Master plane ● Reel disk height jig 	<ol style="list-style-type: none"> 1) Remove chassis holder 2) Mount master plane and place reel disk height jig on it. 	<ul style="list-style-type: none"> ● Spacers in supply and take-up reel disks.

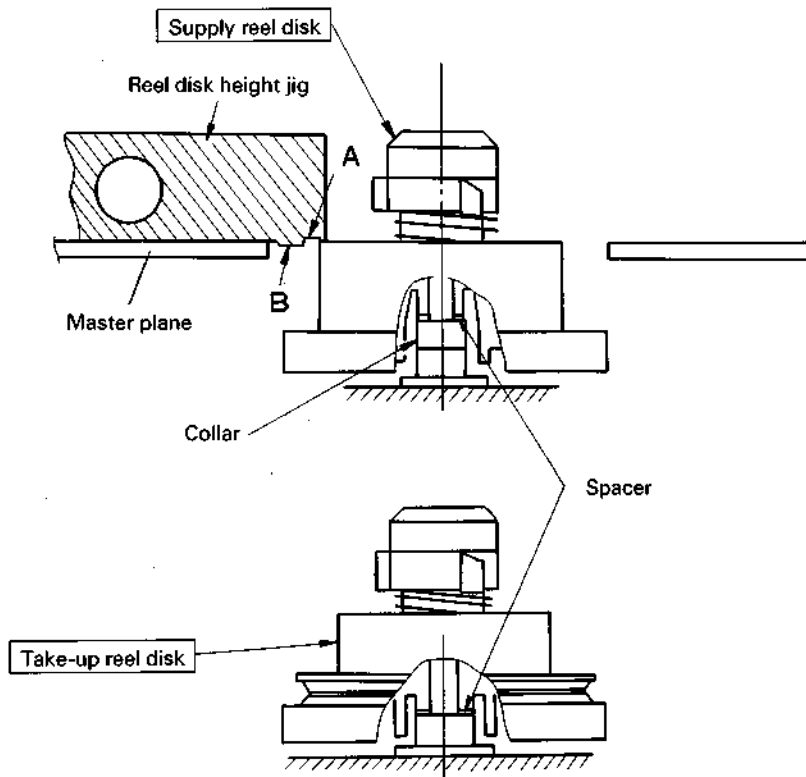
Adjustment Procedure

- 1) Make sure the reel disk is correctly positioned between points A and B on the reel disk height jig.
- 2) If the reel disk will not fit between points A and B, replace the spacer in the reel disk or adjust the number of spacers (0.25 mm and 0.5 mm thicknesses).

Caution:

If the tension arm/tension band have been removed, adjust the tension pole's position and tension after reassembling.

Adjustment Diagram



2. Tension/Tension Pole Position Adjustments

<p>Purpose: Stabilize contact between video head and tape being supplied so that the tape tension is uniform throughout.</p>		
<p>Test Equipment/Jigs</p> <ul style="list-style-type: none"> ● Flat-bladed screwdriver ● Tension cassette 	<p>VTR State</p> <ol style="list-style-type: none"> 1) Remove top cover 2) Place VTR in loading state without cassette insertion (see 4-17). <p>Tension adjustment</p> <ol style="list-style-type: none"> 3) Play tension cassette 	<p>Adjustment Point</p> <p>Position adjustment: Tension band lock screw</p> <p>Tension: Tension spring hook position</p>
<p>Adjustment Procedure</p>		
<p>Position Adjustment</p> <ol style="list-style-type: none"> 1) Loosen lock screw on tension band. Insert flat bladed screwdriver in slot in bracket and chassis. 2) Use the screwdriver to slide the bracket for a 1 ~ 2 mm interval between the tension pole and chassis. 3) Tighten the lock screw on the tension band. 4) After adjusting, reload without inserting the tape and recheck the position of the tension pole. 	<p>Tension Adjustment</p> <p>Reading of tension cassette: 30 ~ 40 g-cm. (reference value)</p> <p>If tension is higher than the reference value, move the spring in direction A.</p> <p>If tension is lower than the reference value, move the spring in direction B.</p> <p>Caution: If a 6 g-cm or larger change is made in tension position, recheck tension pole position. If the position is off, readjust the tension pole's position and tension.</p>	
<p>Adjustment Diagram</p> <p>The diagram illustrates the mechanical components for tension adjustment. The main view shows the tension arm, tension pole, tension spring, and tension band lock screw. A circular inset shows a close-up of the tension pole and chassis with a 1-2 mm gap. A separate view shows the tension band bracket being adjusted with a screwdriver. Arrows (A) and (B) indicate the direction of spring movement for tension adjustment.</p>		

3. Guide Pole Height Adjustment

Purpose: Control tape height.		
Test Equipment/Jigs	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Master plane ● Reel disk height jig ● Blank tape 	<ol style="list-style-type: none"> 1) Remove chassis holder 2) Mount master plane and place the reel disk height jig on it. 	<ul style="list-style-type: none"> ● Nut for adjusting height of supply and take-up guide poles (take-up pole is under cap).
Adjustment Procedure		
<ol style="list-style-type: none"> 1) Adjust gap between guide pole's upper flange and reel disk height jig to 0 ~ 0.2 mm. 2) Load and run the blank tape. Check to make sure the tape does not ride over the pole's upper or lower flange. 		<ol style="list-style-type: none"> 3) If the tape does ride over, adjust guide pole height. If tape rides over upper flange, turn adjustment nut counterclockwise. If tape rides over lower flange, turn adjustment nut clockwise.
Adjustment Diagram		

4. Guide Roller Height Adjustments

Purpose: Control tape height so the tape's bottom edge runs along the cylinder's tape guideline.

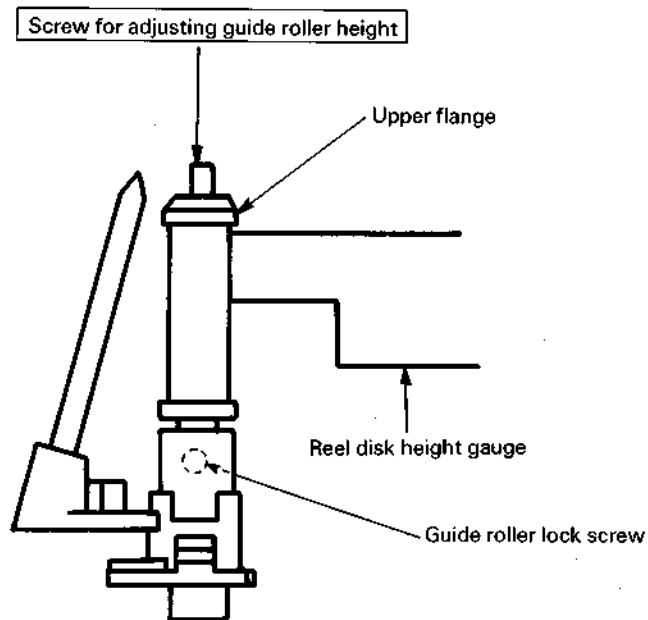
Coarse Adjustment

Test Equipment/Jigs	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Master plane ● Reel disk height jig ● 1.5 mm hexagonal wrench 	<ol style="list-style-type: none"> 1) Remove chassis holder 2) Mount master plane and place reel disk height jig on it. 	<ul style="list-style-type: none"> ● Screws for adjusting height of supply and take-up guide roller

Adjustment Procedure

- | | |
|---|--|
| <ol style="list-style-type: none"> 1) Loosen guide roller lock screw so that the guide roller does not turn during loading, unloading and playback. 2) Set the upper edge of the reel disk height jig to the same level as the guide roller's upper flange. | <ol style="list-style-type: none"> 3) Now make precision adjustments. |
|---|--|

Adjustment Diagram

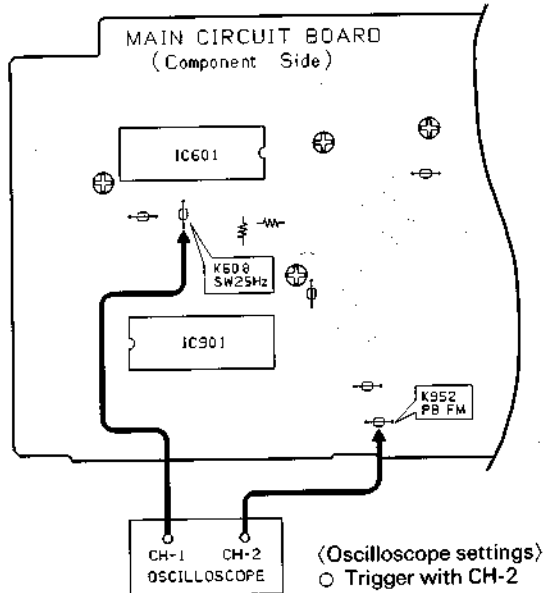


Precision Adjustment

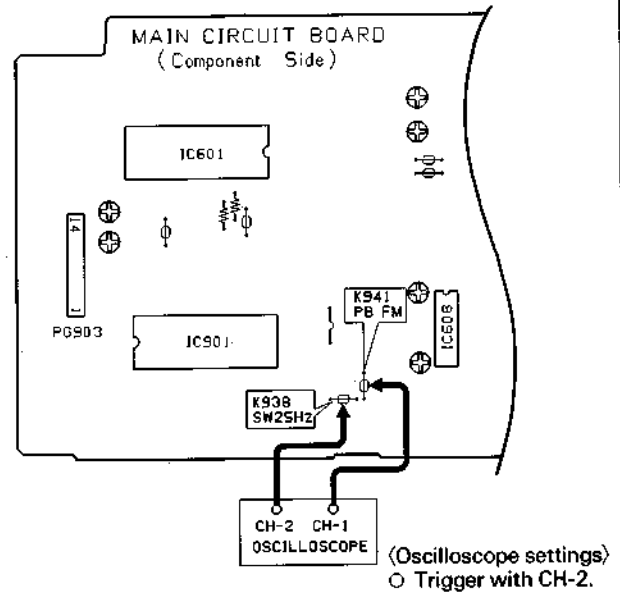
Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tape ● Hexagonal wrench 	VT-125E (VPS) <ul style="list-style-type: none"> ● CH-1: K952 ● CH-2: K608 VP-135E (VPS) <ul style="list-style-type: none"> ● CH-1: K941 ● CH-2: K938 	<ul style="list-style-type: none"> ● Playback alignment tape 	<ul style="list-style-type: none"> ● Screw for adjusting guide roller height

Connection Diagram

VT-125E (VPS)



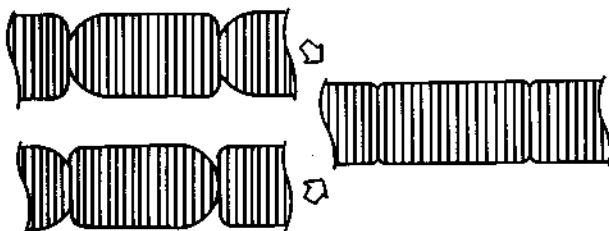
VT-135E (VPS)



Adjustment Procedure

- 1) Tracking control: centered (when making this adjustment after replacing the cylinder, set the tracking control so the FM output is maximum.
- 2) Turn height adjustment screw to flatten the FM waveform.
- 3) Turn the tracking control clockwise.
- 4) Make sure that FM drops at the head and tail.
- 5) Tighten lock screw.

Waveform



Turn guide roller height adjustment screw a little at a time to flatten waveform.

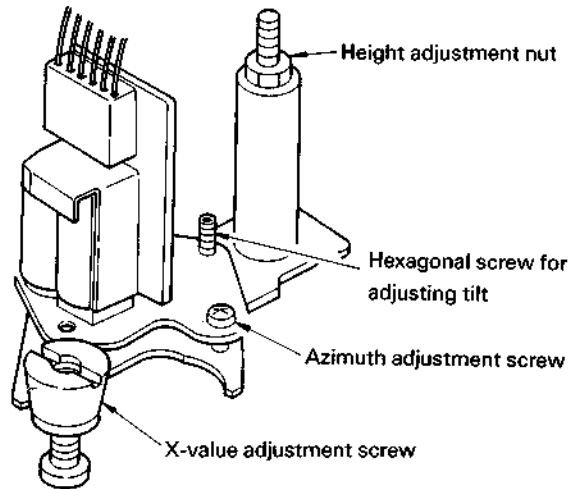


Tracking control centred

Turn tracking control clockwise

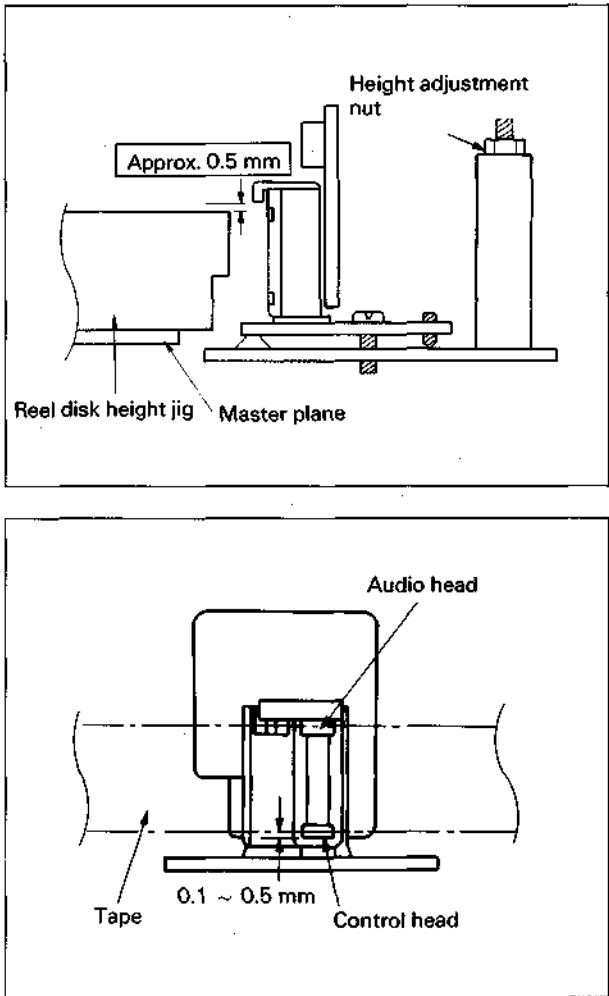
5. Audio and Control Head

Purpose: Ensure uniform contact between tape and head to record and play a prescribed track.

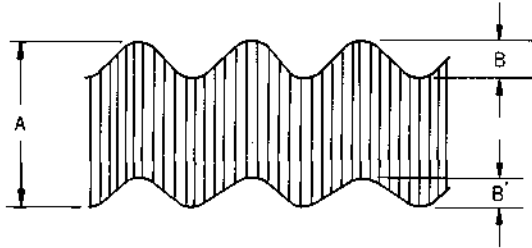


Coarse Adjustment

Test Equipment/Jigs	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Master plane ● Reel disk height jig ● Blank tape ● Hexagonal wrench 	<ol style="list-style-type: none"> 1) Remove chassis holder 2) Mount master plane and place reel disk height jig on it. 	<ul style="list-style-type: none"> ● Azimuth adjustment screw ● Height adjustment nut ● Tilt adjustment screw
Adjustment Procedure		Adjustment Diagram
<ol style="list-style-type: none"> 1) Tighten the A/C head lock screw through the spring from the bottom of head base (2) until the screw tip protrudes 3 ~ 4 mm from the top surface of head base (1). 2) Turn the tilt adjustment hexagonal screw and the azimuth adjustment screw so that head base (1) and head base (2) are parallel. 		

Adjustment Procedure	Adjustment Diagram
<p>3) Turn the height adjustment nut until the gap between reel disk height jig and A/C head is approx. 0.5 mm.</p> <p>4) Remove the adjustment jigs and insert a blank tape. Place in playback mode. Make sure the tape does not curl or ride over around the A/C head. If the tape curls or rides over, readjust the tilt adjustment hex screw, the azimuth adjustment screw and the height adjustment nut. The ideal A/C head height is with the tap's bottom edge 0.1 ~ 0.15 mm from the bottom edge of the control head's core.</p> <p>5) Now move on to precision adjustments.</p>	

Precision Adjustment

Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Hexagonal wrench ● Oscilloscope ● Alignment tape 	<ul style="list-style-type: none"> ● Audio output jack 	<ul style="list-style-type: none"> ● Playback alignment tape (7 kHz portion) 	<ul style="list-style-type: none"> ● Azimuth adjustment screw ● Height adjustment nut ● Tilt adjustment screw
Adjustment Procedure		Waveform Diagram	
<p>1) Alternate turning, a little at a time, of the azimuth adjustment screw, the height adjustment nut and the tilt adjustment hex screw to both maximize and flatten audio output (minimize fluctuation).</p>		 <p style="text-align: center;">A: maximum BB': minimum</p>	

6. X Value Adjustment

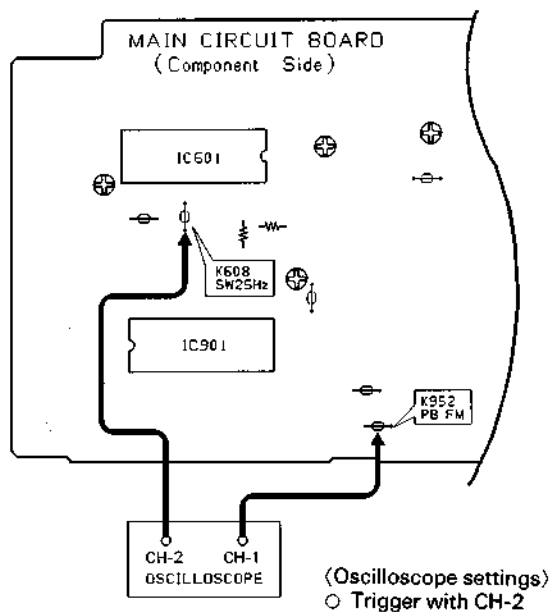
Purpose: Ensure compatibility with other VTRs.

Caution: Be sure to adjust the tracking preset before making this adjustment.

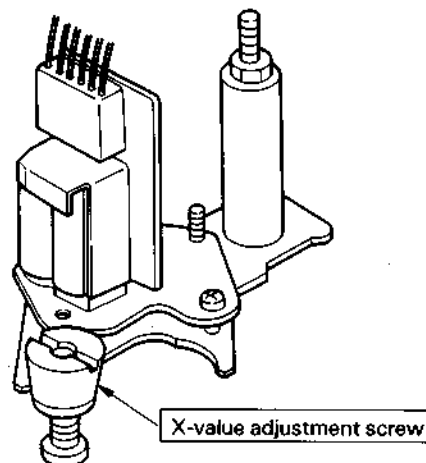
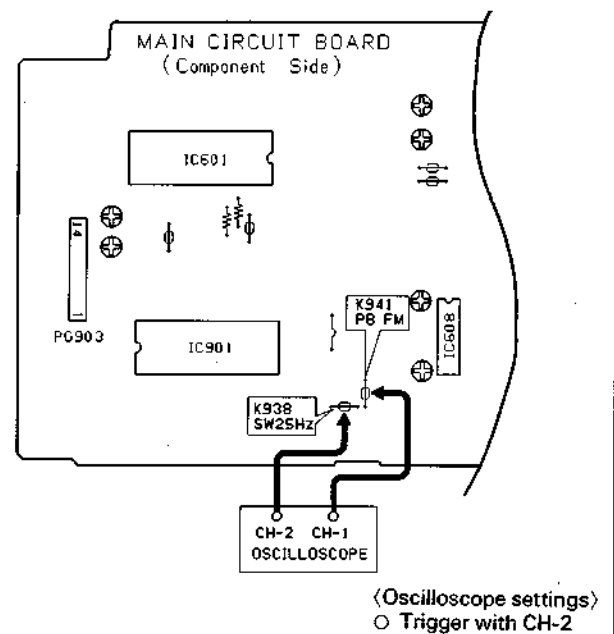
Test Equipment/Jigs	Test Equipment Connection Point	VTR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tape ● X-value adjustment screwdriver 	<ul style="list-style-type: none"> ● CH-1 : K938 ● CH-2 : K941 	<ul style="list-style-type: none"> ● Play back alignment tape 	<ul style="list-style-type: none"> ● X-value adjustment screw

Connections Diagram

VT-125E (VPS)

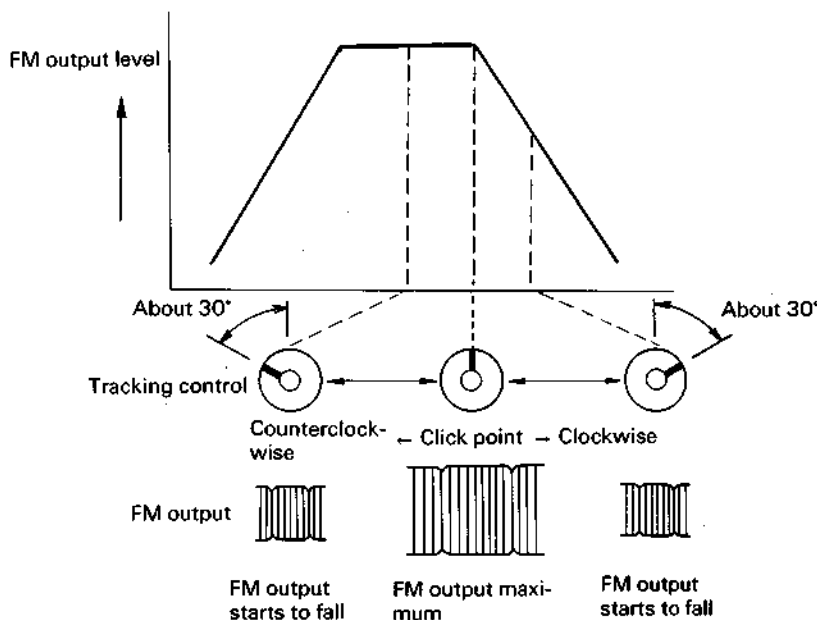
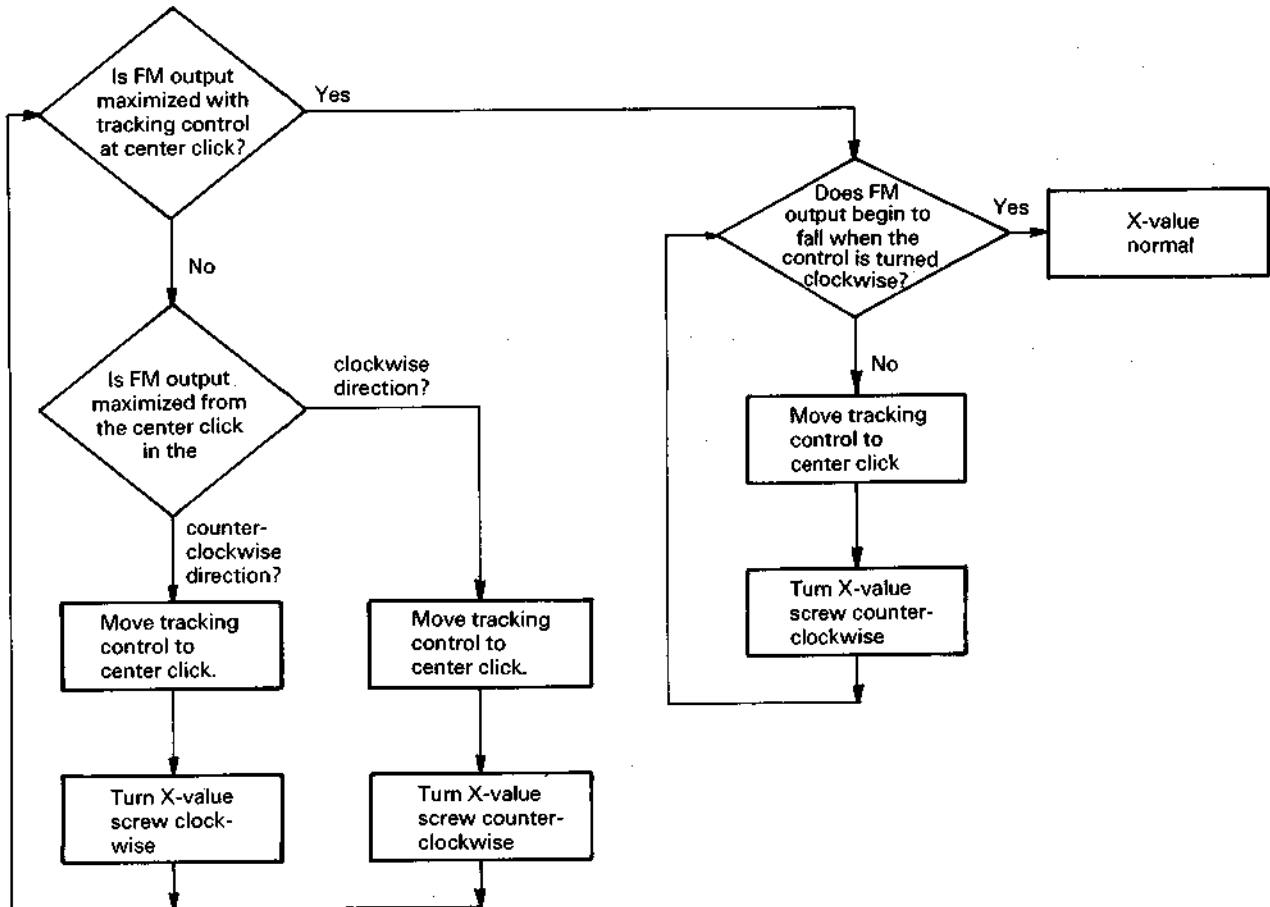


VT-135E (VPS)



Adjustment Procedure

Since the 65 μm head will trace over 49 μm width track, center tracking control and make adjustments to maximize FM output, or turn the control clockwise about 30° and adjust so that FM output begins to fall. (Is FM output maximized with tracking control at center click?)

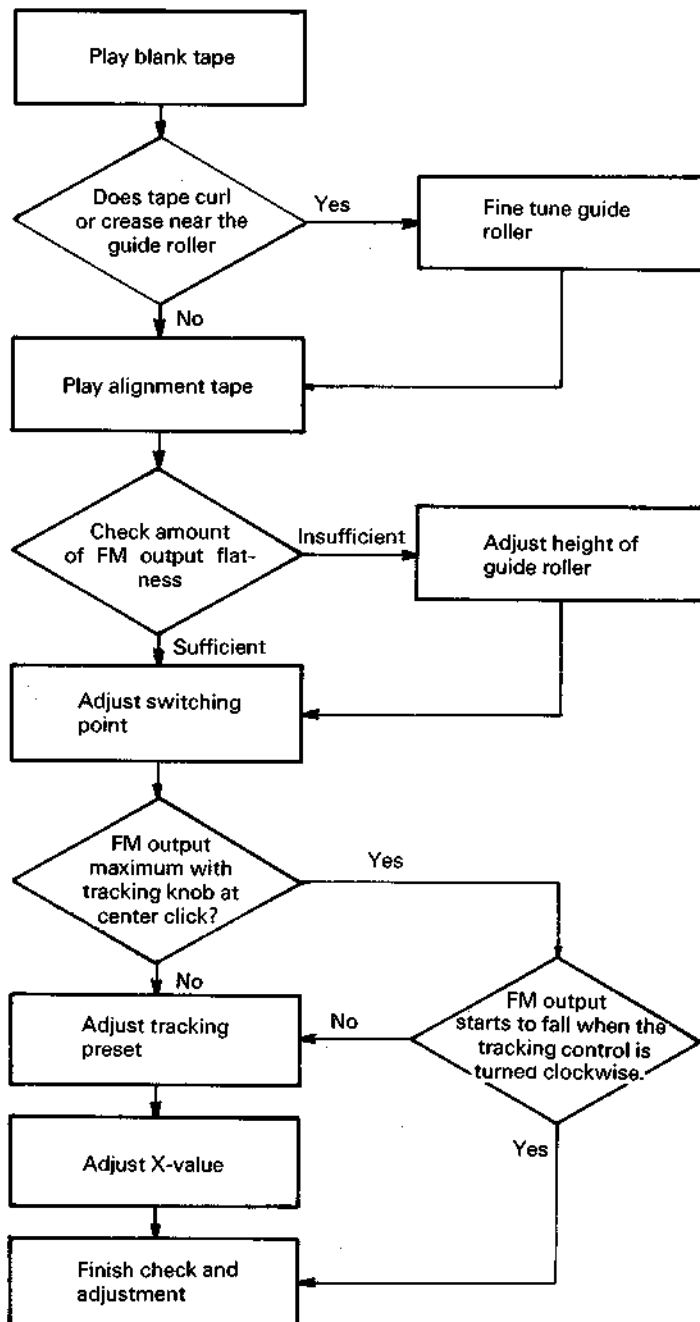


7. Adjustments after replacing Cylinder (Video Head)

Purpose: A new replacement cylinder will differ with the guide roller in X-value and relative height. But, correct replacement procedures will reduce this disparity to a minimum.

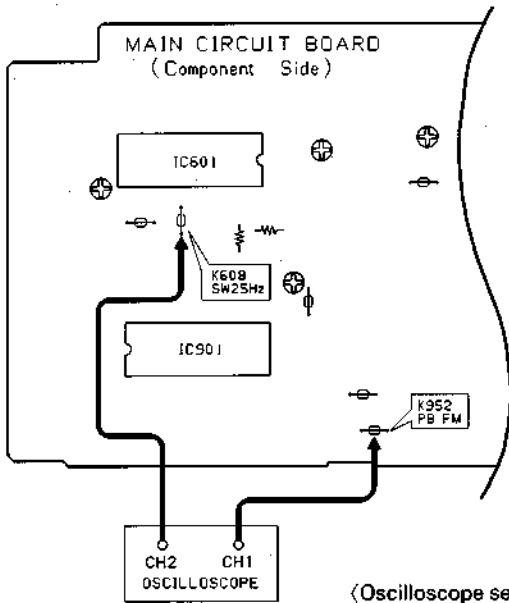
Test Equipment/Jigs	Test Equipment Connection Points	Adjustment Points
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tape ● Blank tape ● Hexagonal wrench ● X-value adjustment screwdriver 	<ul style="list-style-type: none"> ● Check amount of flattening ● CH-1 : K938 ● CH-2 : K941 	<ul style="list-style-type: none"> ● Guide roller (see precision adjustment on page 4-9) ● Switching point (see section 3) ● Tracking preset (see section 3) ● X-value (see page 4-12)

Check and Adjustment Procedures



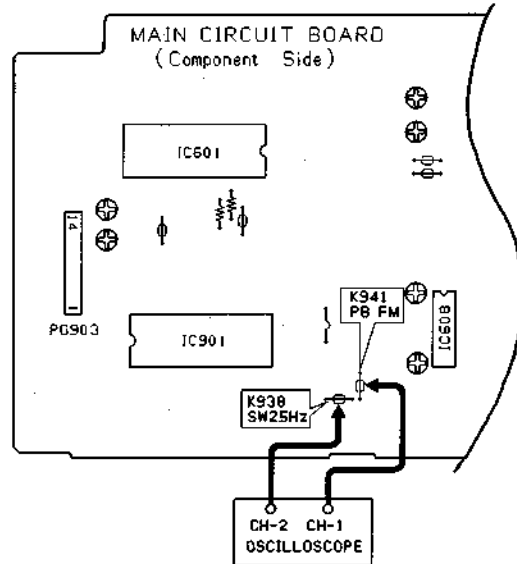
Connection Diagram

VT-125E (VPS)



<Oscilloscope settings>
○ Trigger with CH-2

VT-135E (VPS)

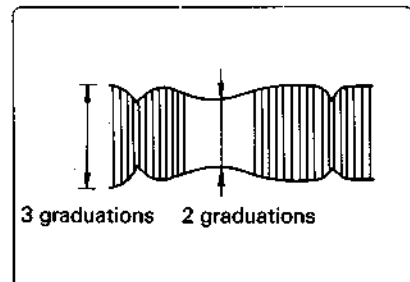
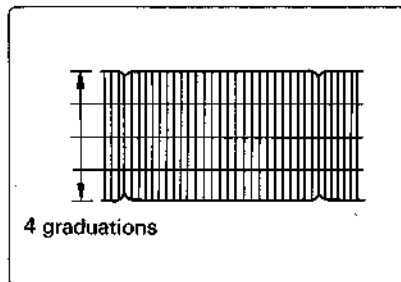
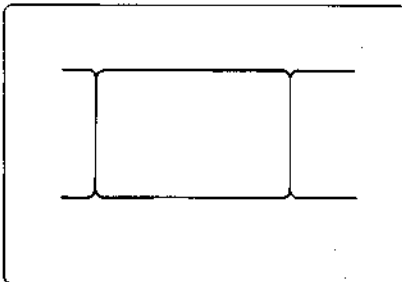


<Oscilloscope settings>
○ Trigger with CH-2

Procedures for checking amount of fluctuations and flatness in FM output

- 1) Use tracking control to maximize FM output.
- 2) Fine tune the oscilloscope's voltage level range to adjust FM output to 4 graduations.
- 3) Turn the tracking control to set the FM output's maximum amplitude at 3 graduations.
- 4) Make sure the minimum amplitude at this time is at 2 graduations or higher.
- 5) Make sure the difference between maximum and minimum level fluctuation is 13% or less.

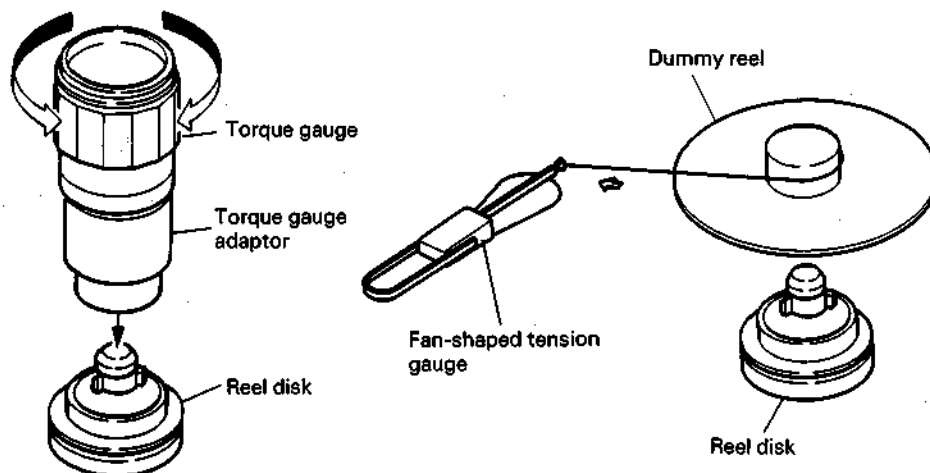
Waveform Diagram



8. Checking Tension and Torque

<p>Purpose: Checking tension torque and pressure on the components that wind and move the tape is necessary to ensure smooth tape run and fulfill the VTR's basic functions. Make this check when tape run is rough or tape speed is incorrect.</p>				
<p>Test equipment/jigs</p> <ul style="list-style-type: none"> ● Torque gauge ● Torque gauge adaptor ● Fan-shaped tension gauge ● Dummy reel 			<p>VTR state</p> <ul style="list-style-type: none"> ● Operate VTR without loading tape cassette (see page 4-17) 	
Item	VTR Operation mode	Measurement reel	Measurement values	Remarks
Main brake torque	Stop	Supply and take-up reels	170 g·cm or more	Note 1
Slack removal torque	Unloading	Supply reel	90 ~ 190 g·cm	Note 1
Fast forward torque	Fast forward	Take-up reel	400 g·cm or more	Note 1
Rewind torque	Rewind	Supply reel	400 g·cm or more	Note 1
Reel winding torque	Play	Take-up reel	90 ~ 180 g·cm	Note 1
Back-tension torque	Fast forward	Supply reel	4 ~ 15 g·cm	Note 2
	Rewind	Take-up reel		
<p>Note: 1. Value when using torque gauge and torque gauge adaptor for measurement with torque gauge sliding at 0.8 rps. However, main brake torque indicates measurement values during manual rotation of take-up reel, counterclockwise, and supply reel, clockwise, at 0.8 rps.</p>			<p>Note: 2. Indicates the value when the dummy reel and fan-shaped tension gauge are used to measure the take-up reel disk pulling counterclockwise and the supply reel disk pulling clockwise at 50 mm/s.</p>	

Adjustment Diagram



Note: Method with VTR in loading state and no tape cassette inserted.

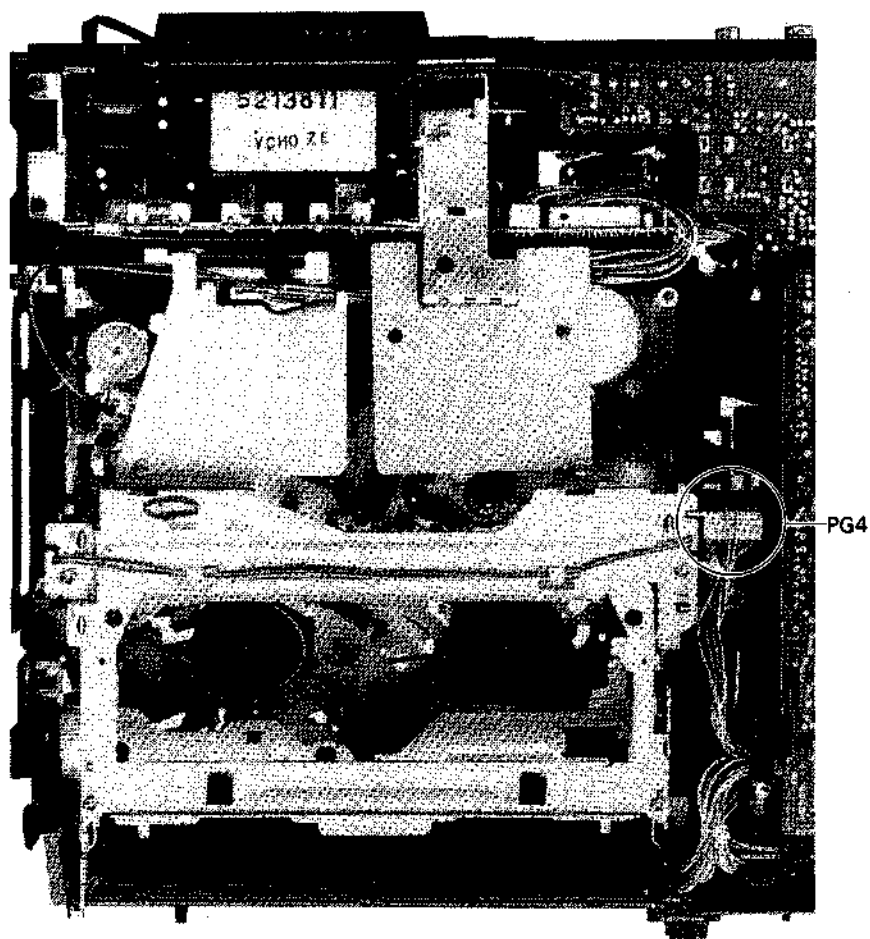
- 1) Remove top cover.
- 2) Remove AC plug from wall socket.
- 3) Disconnect the connector from the plug (PG-4) on the cassette loading motor circuit board.
- 4) Short-circuit pins 2 and 5 of the connector.
- 5) Insert AC plug into wall socket.
- 6) Turn VTR power on.

In this state, the VTR will accept all modes. However, rewind can be performed for only a few seconds because the take-up disk is in stop state and reel pulses cannot be detected.

[Caution]

After the above operations, always use the following steps to return to the original modes.

- 1) Remove short-circuit from connector and insert in plug.
- 2) Remove the AC plug from the wall socket once to reset the system control microprocessor.



SCHEMATIC/CIRCUIT BOARD DIAGRAMS

Note

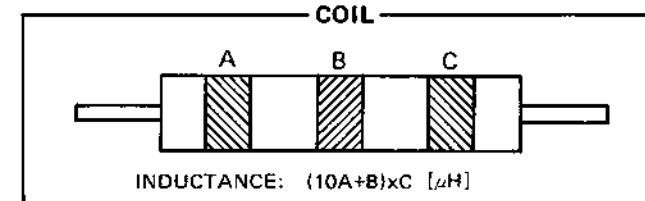
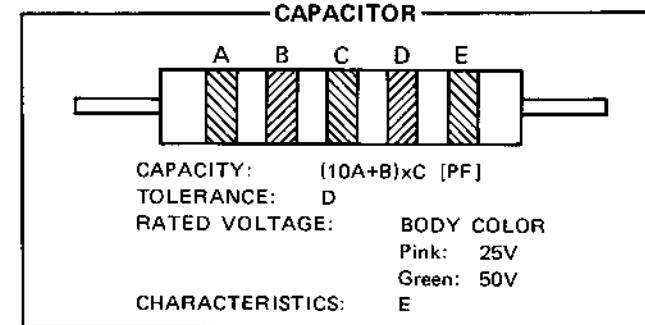
1. Voltage measured at base of chassis with minimum volume control and no signal () are shown in recording condition.
2. Nomenclature of Resistors and Capacitors.

	Value	No indicated Ω (Ohm) M: 1000kΩ
	Tolerance	No indicated ±5% K: ±10% M: ±20%
	Wattage	No indicated ¼ W
	Sort	No indicated Carbon film RC: Composition RW: Wire wound RS: Oxide metal film RN: Fixed metal film

	Value	No indicated μF P: PF
	Tolerance	No indicated ±10% J: ±5% M: ±20% Z: +80% -20% D: ±0.5pF C: ±0.25pF
	Sort	Ceramic Electrolytic Mylar Polyester Styrol
	Voltage	No indicated 50WV

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with * use specified ones stated on parts list since required temperature characteristics.

HOW TO READ CAPACITY AND INDUCTANCE OF RESISTOR SHAPE CAPACITORS AND COILS



COLOR	A, B	C	D	E
Black	0	10 ⁰	±20%	For temperature compensation
Brown	1	10 ¹		
Red	2	10 ²		
Orange	3	10 ³		
Yellow	4	10 ⁴		
Green	5	10 ⁵		
Blue	6			
Violet	7			
Grey	8		±30%	High dielectric constant type
White	9			For temperature compensation
Gold		10 ⁻¹	±5%	
Silver		10 ⁻²	±10%	High dielectric constant type

Cautions on use of MOS IC

1. The MOS IC is inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during their storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.
2. High voltages may be applied during soldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
3. The human body, clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so a worker should be grounded.
4. Be sure to ground measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

SCHALTPLAN/LEITERPLATTEN-DIAGRAMM

Hinweise:

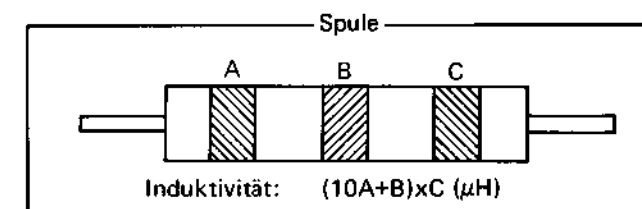
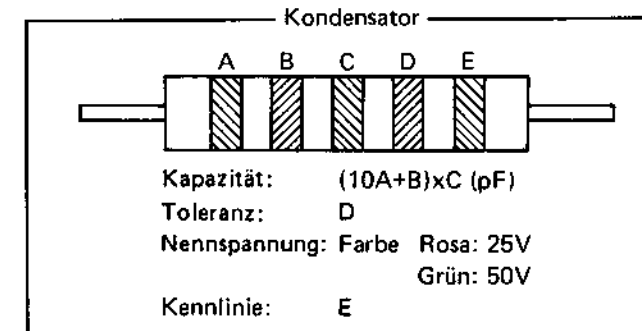
1. Die aufgeführten Spannungswerte wurden bei auf Minimum gestelltem Lautstärkereger und ohne Signal gemessen. Die in Klammern () gestellten Werte gelten für den Aufnahmehodus.
2. Bezeichnung der Widerstände und Kondensatoren

	Wert	Keine Angabe: Ohm M: 1000 kOhm
	Toleranz	Keine Angabe: ±5% K: ±10% M: ±20%
	Wattzahl	Keine Angabe: 1/4W
	Bauart	Keine Angabe: Kohlefilm RC: Verbundbauweise RW: Drahtspule RS: Metalloxidfilm RN: Fester Metallfilm

	Wert	Keine Angabe: μF P: PF
	Toleranz	Keine Angabe: ±10% J: +5% M: ±20% Z: +80% -20% D: +0.5pF C: ±0.25pF
	Bauart	Keramik Electrolyt Mylar Polyester Styrol
	Spannung	Keine Angabe: 50V

3. Bei der Bestellung von Widerständen und Kondensatoren unbedingt Wert, Spannung und Bauart angeben.
4. Werden die mit "*" markierten Kondensatoren ausgetauscht, dann müssen die in der Stückliste spezifizierten Kondensatoren verwendet werden, da diese spezielle Temperatureigenschaften aufweisen.

Ablese der Kapazität und Induktivität der in Form von Widerständen ausgeführten Kondensatoren und Spulen

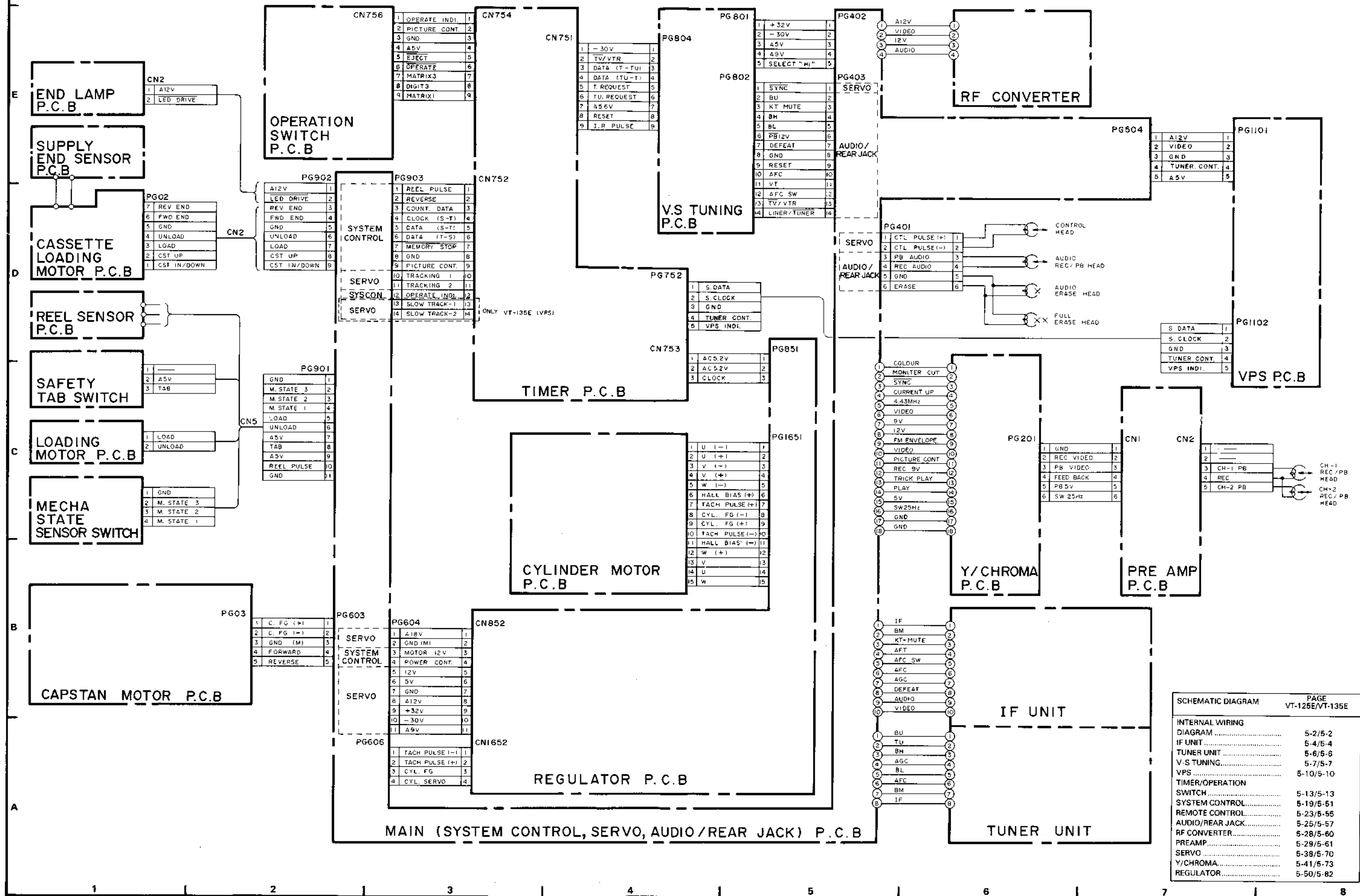


Vorsichtsmaßnahmen bei der Verwendung von MOS-ICs

1. Die MOS-ICs werden für den Versand in schwarzem Schaumstoff verpackt. Dieser Schaumstoff ist elektrisch leitend und schließt die Leiter kurz, um Beschädigungen zu vermeiden. Die ICs während der Lagerung niemals aus der Schaumstoffverpackung entfernen. Die ICs nur unmittelbar vor der Verwendung auspacken und niemals auf Plastikteilen ablegen (statische Elektrizität!) bzw. in Styrol-Schaumstoff einsetzen.
2. Aufgrund von Leckagen am LötKolben kann es während des Lötens zu Hochspannungen kommen; daher immer die Spitze des LötKolbens erden und nur einen Niederspannungs-LötKolben verwenden.
3. Statische Elektrizität von einigen tausend Volt kann sich aufgrund von Reibung im menschlichen Körper bzw. in aus Kunstfasern hergestellten Kleidern und Handschuhen aufbauen. Daher sollten auch die mit der Handhabung von ICs betrauten Personen geerdet werden.
4. Unbedingt die für die Reparaturen verwendeten Meßinstrumente wie Oszilloskop, Röhrenvoltmeter usw. erden.

Farbe	A, B	C	D	E
Schwarz	0	10 ⁰	±20%	Für Temperature-Kompensation
Braun	1	10 ¹		
Rot	2	10 ²		
Orange	3	10 ³		
Gelb	4	10 ⁴		
Grün	5	10 ⁵		
Blau	6			
Violett	7			
Grau	8		±30%	Bauart mit hoher Dielektrizitätskonstanter
Weiß	9			Für Temperatur-Kompensation
Gold		10 ⁻¹	±5%	
Silber		10 ⁻²	±10%	Bauart mit hoher Dielektrizitätskonstanter

INTERNAL WIRING DIAGRAM (KABELANSCHLUSSDIAGRAMM)

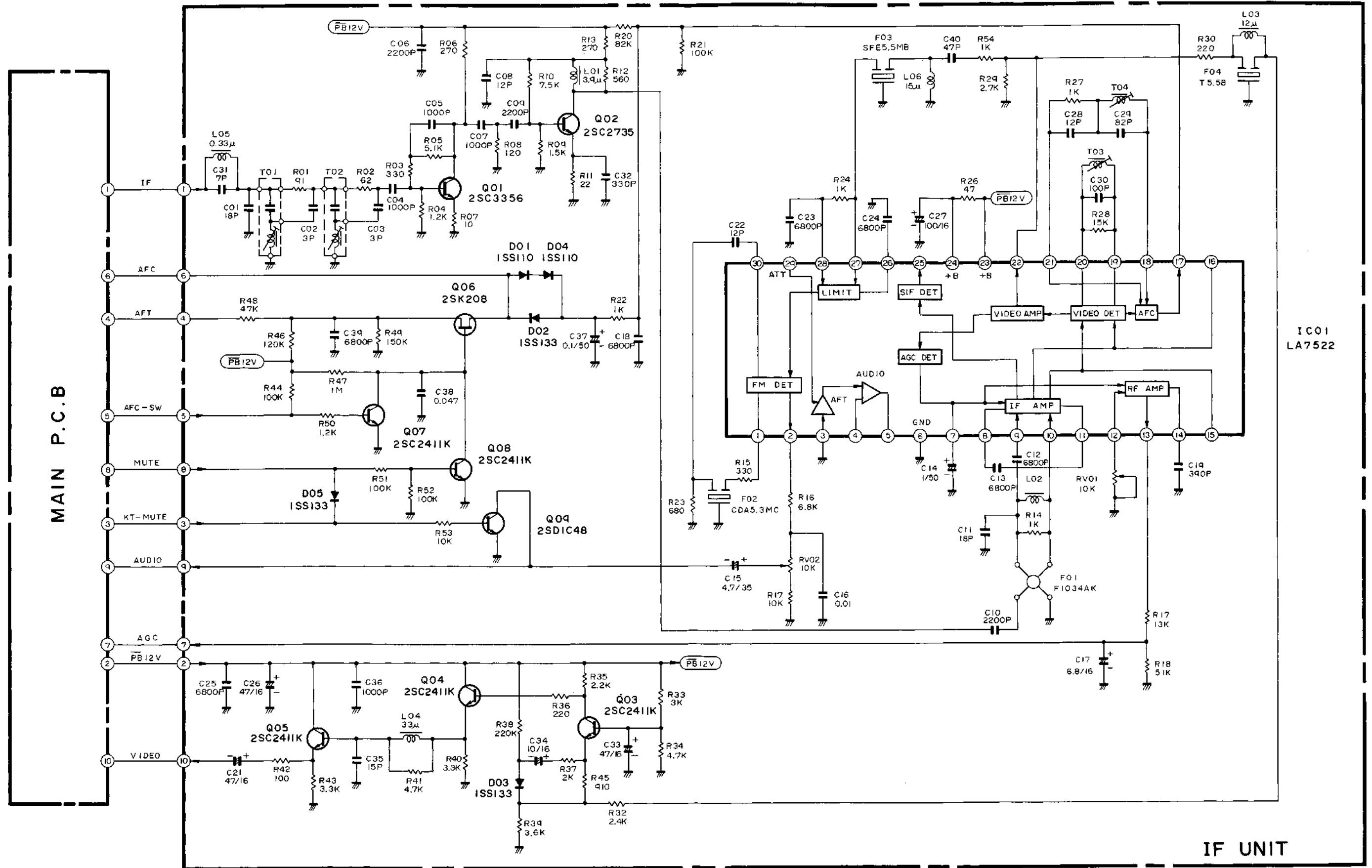


SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

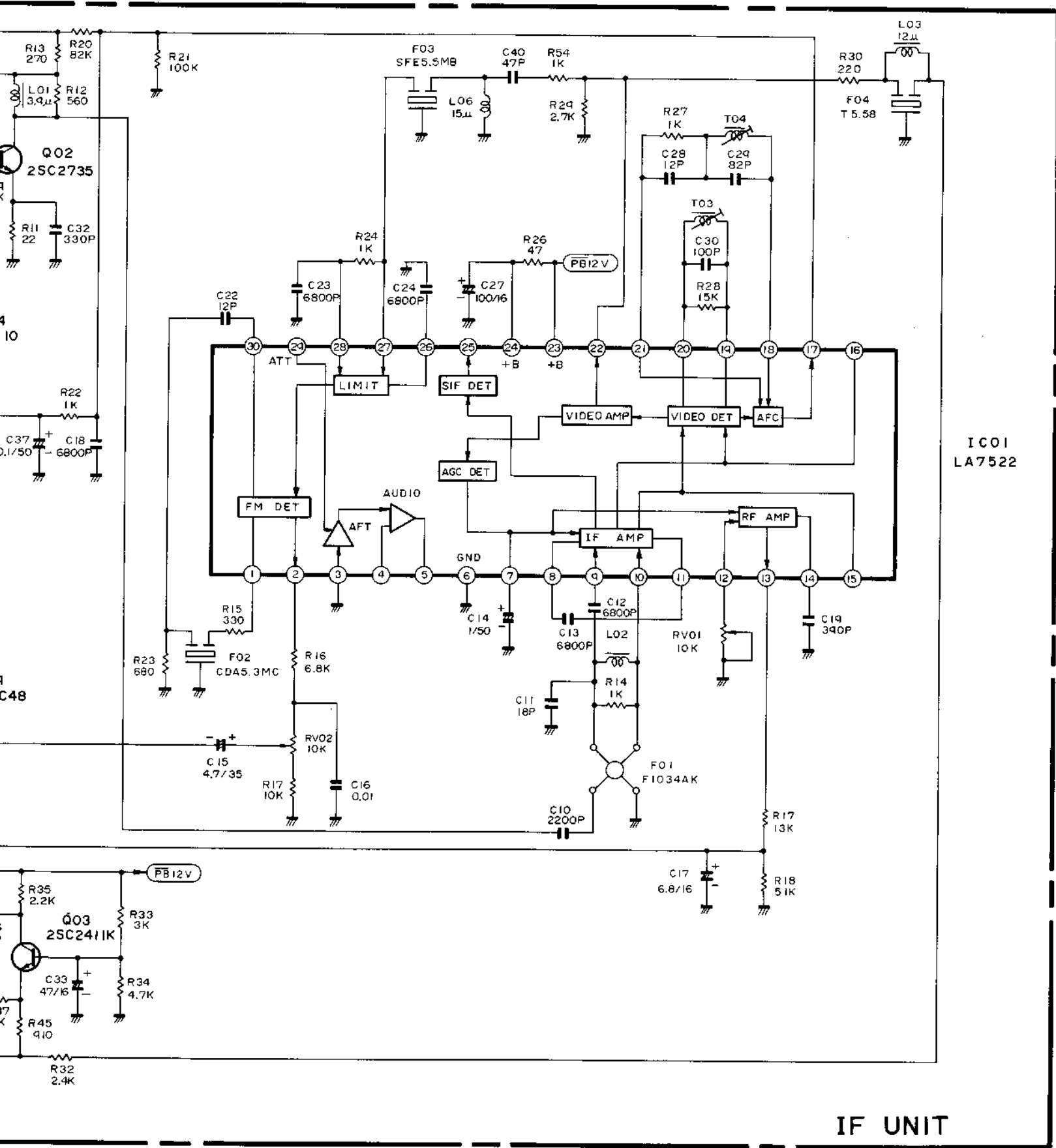
IF UNIT (ZF-EINHEIT)

TUNE

MAIN P.C.B



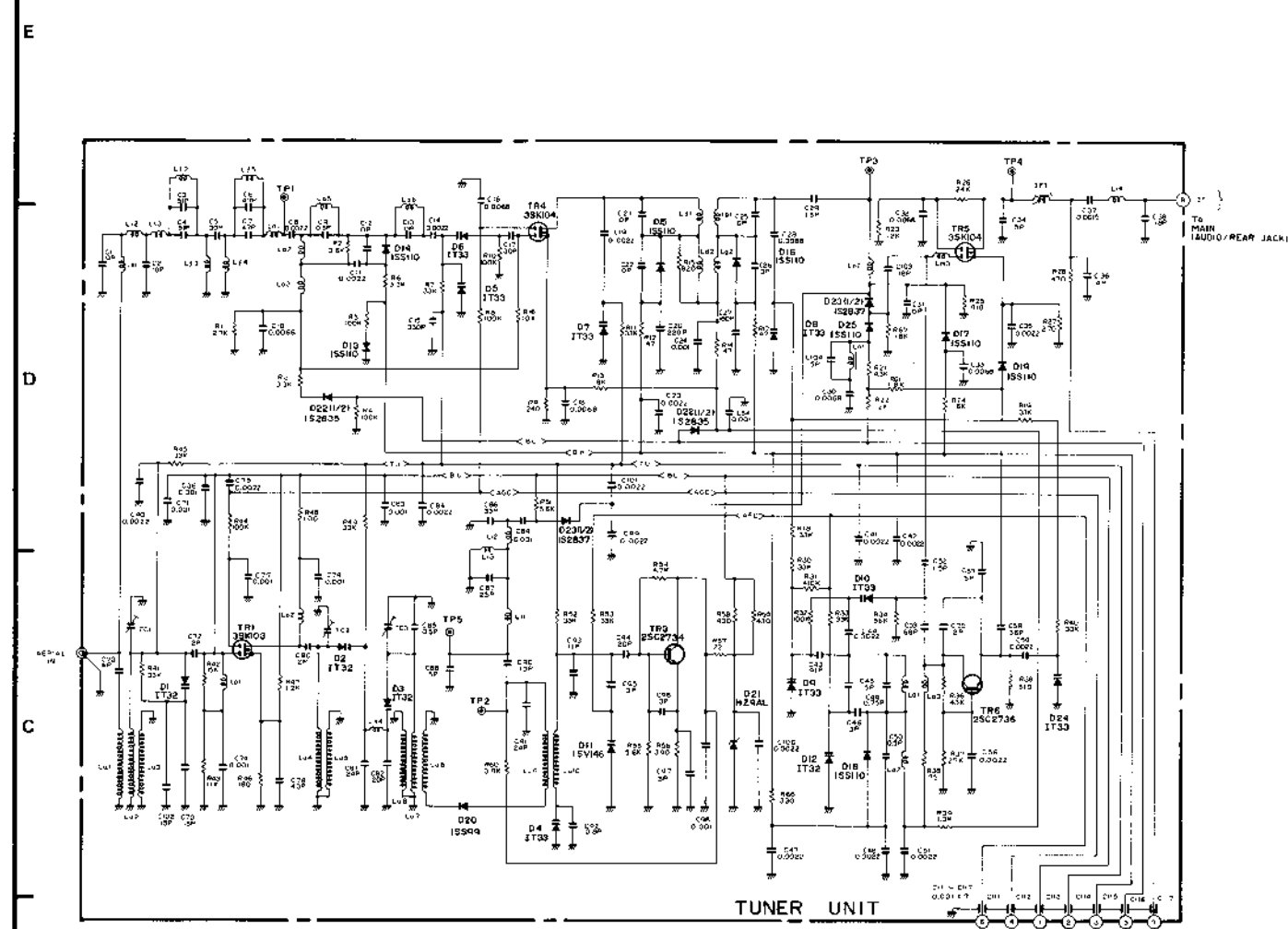
IF UNIT



IF UNIT

4 5 6 7 8
IF UNIT 5-4 5-5 IF UNIT

TUNER UNIT/(TUNER-EINHEIT)

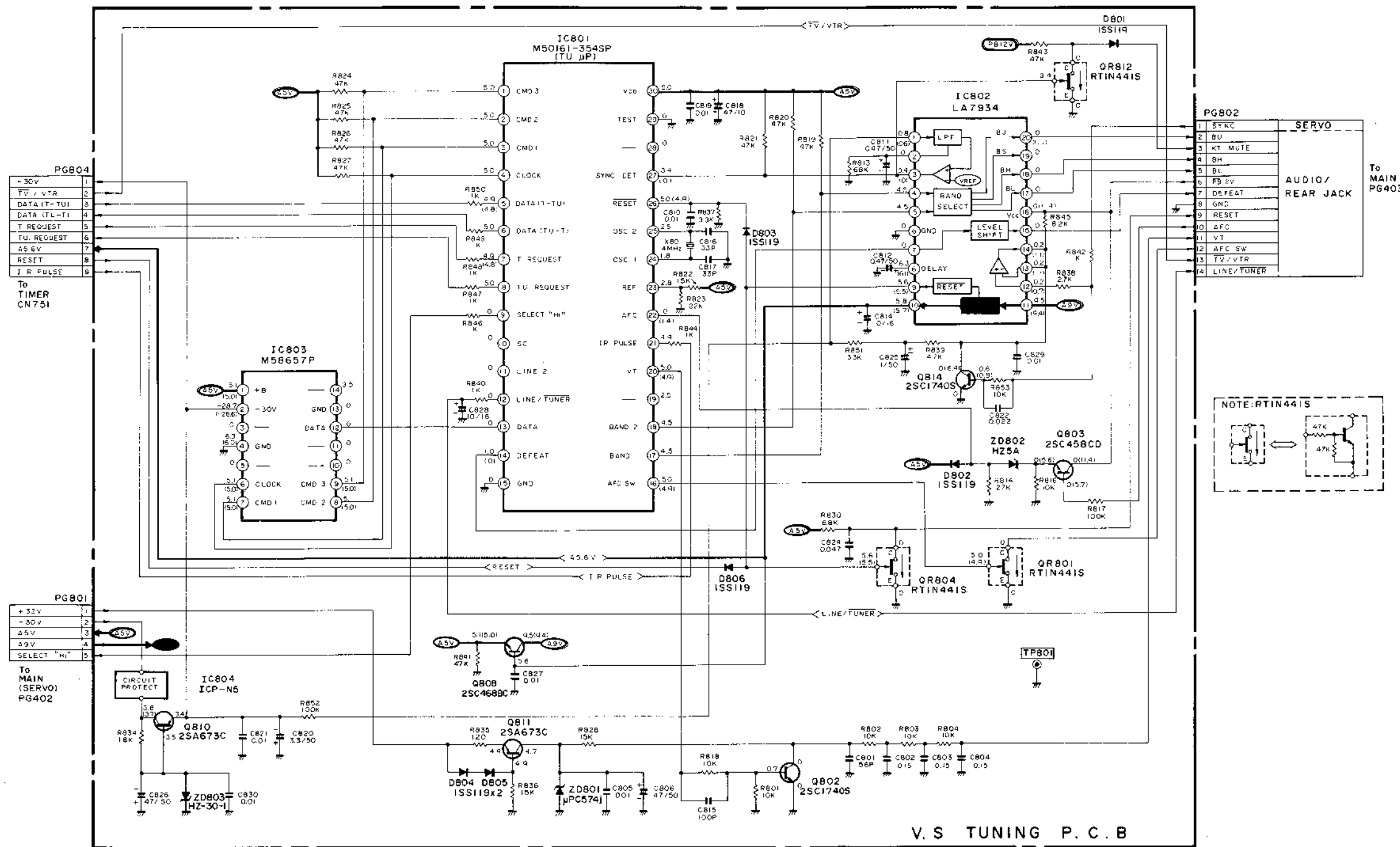


TUNER UNIT

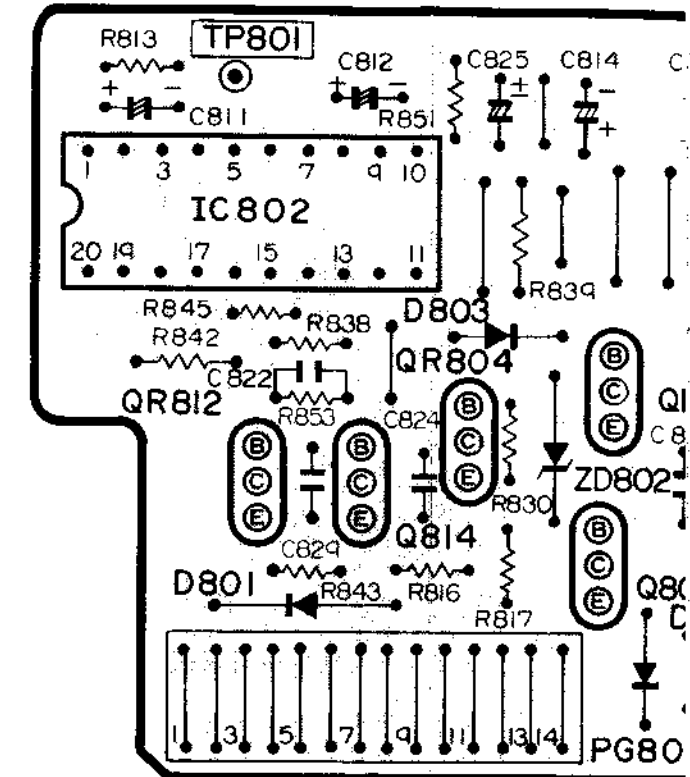
SCHEMATIC DIAGRAM		PAGE
		VT-125E/VT-135E
INTERNAL WIRING	5-2/5-2	
DIAGRAM	5-4/5-4	
IF UNIT	5-6/5-6	
TUNER UNIT	5-7/5-7	
V-S TUNING	5-10/5-10	
TIMER/OPERATION		
SWITCH	5-13/5-13	
SYSTEM CONTROL	5-19/5-51	
REMOTE CONTROL	5-23/5-55	
AUDIO/REAR JACK	5-25/5-57	
RF CONVERTER	5-28/5-60	
PREAMP	5-29/5-61	
SERVO	5-38/5-70	
Y/CHROMA	5-41/5-73	
REGULATOR	5-50/5-82	

TUNER UNIT 5-6

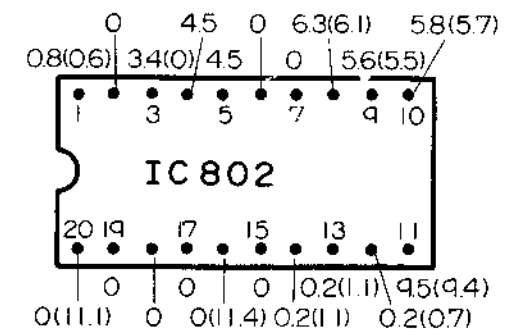
V-S TUNING (SPANNUNGSSYNTHESE-TUNER)



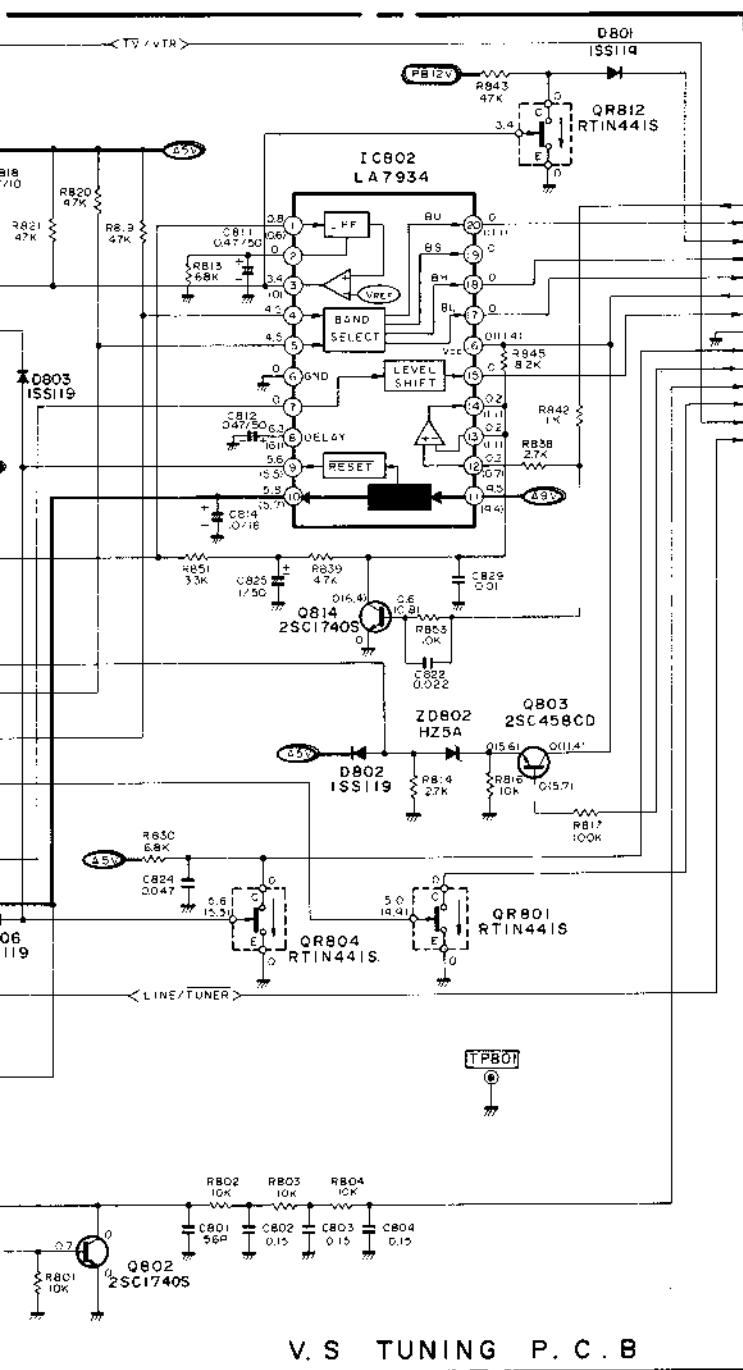
* ONE VOLTAGE : PB OR REC MODE, TWO VOLTAGES : PB AND (REC) MODE.



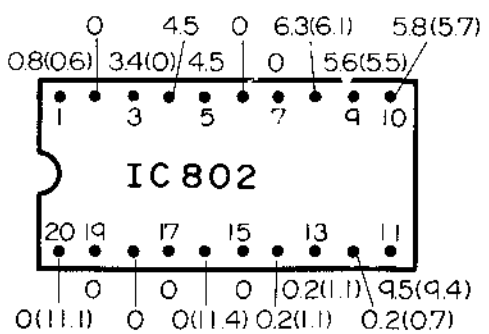
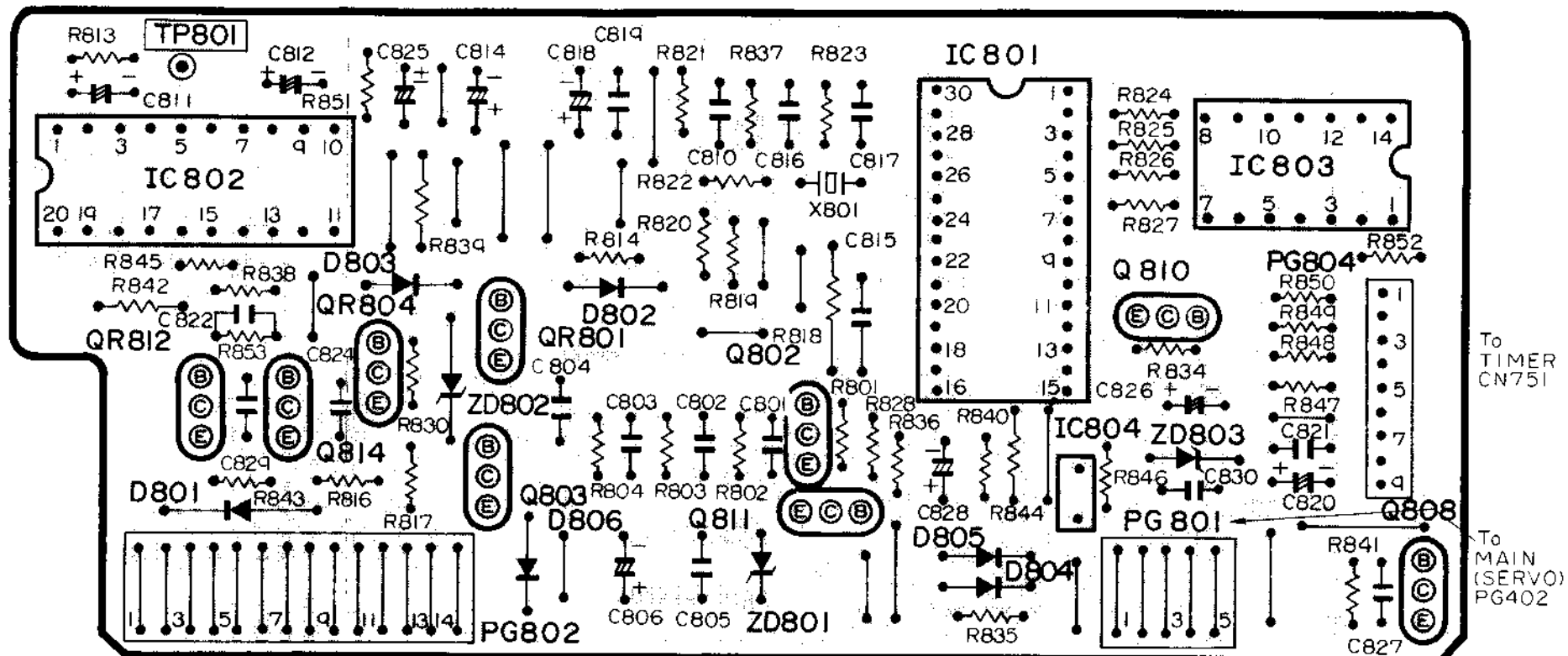
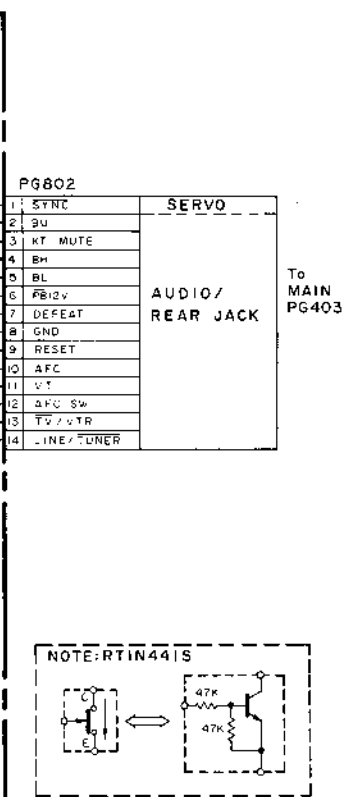
To MAIN PG403



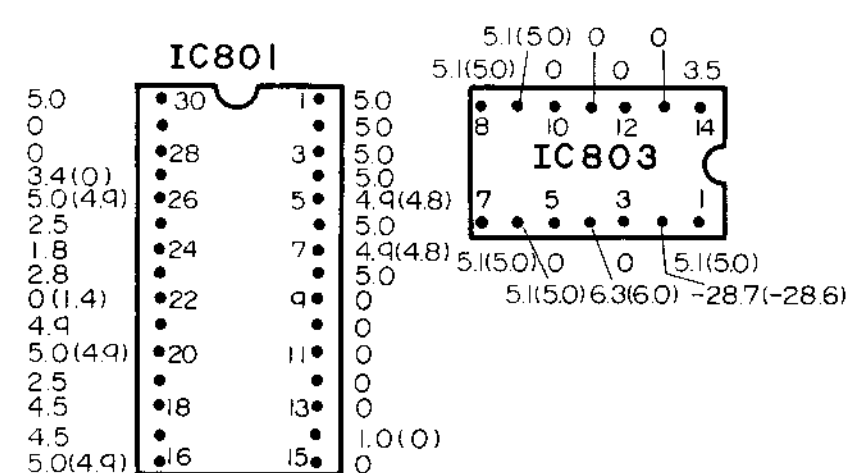
* ONE VOLTAGE : PB OR REC
TWO VOLTAGES : PB AND (REC)



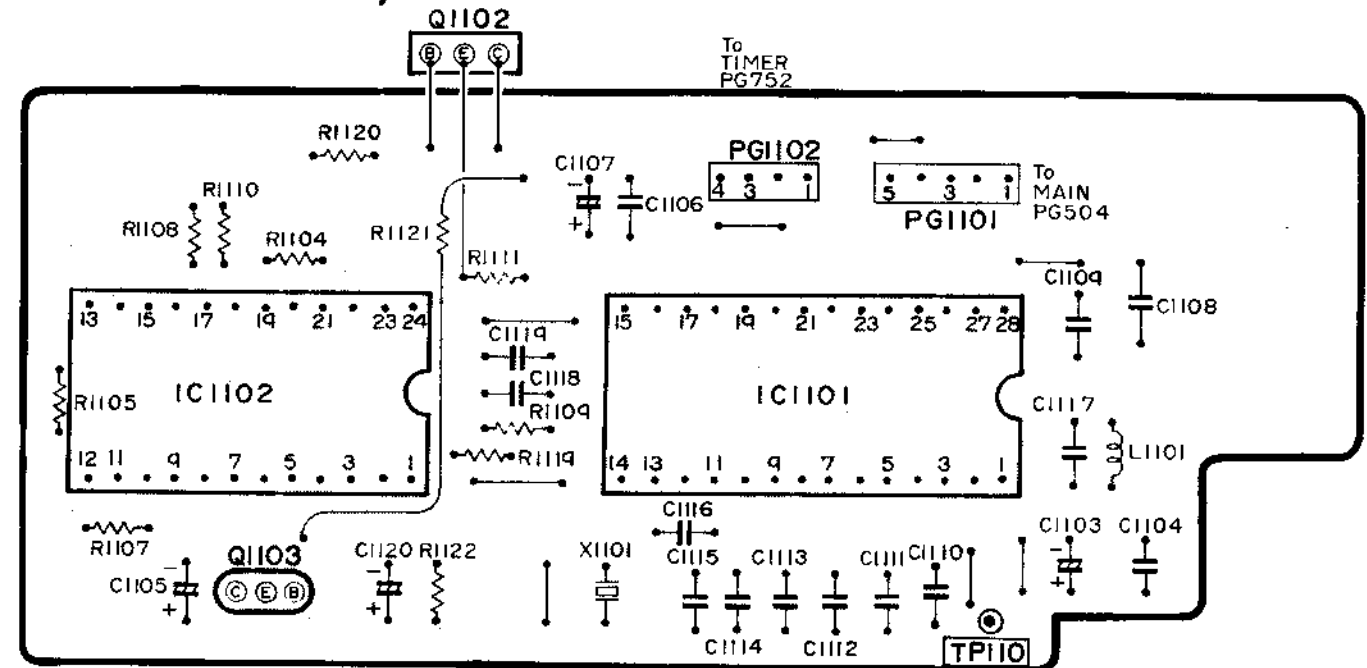
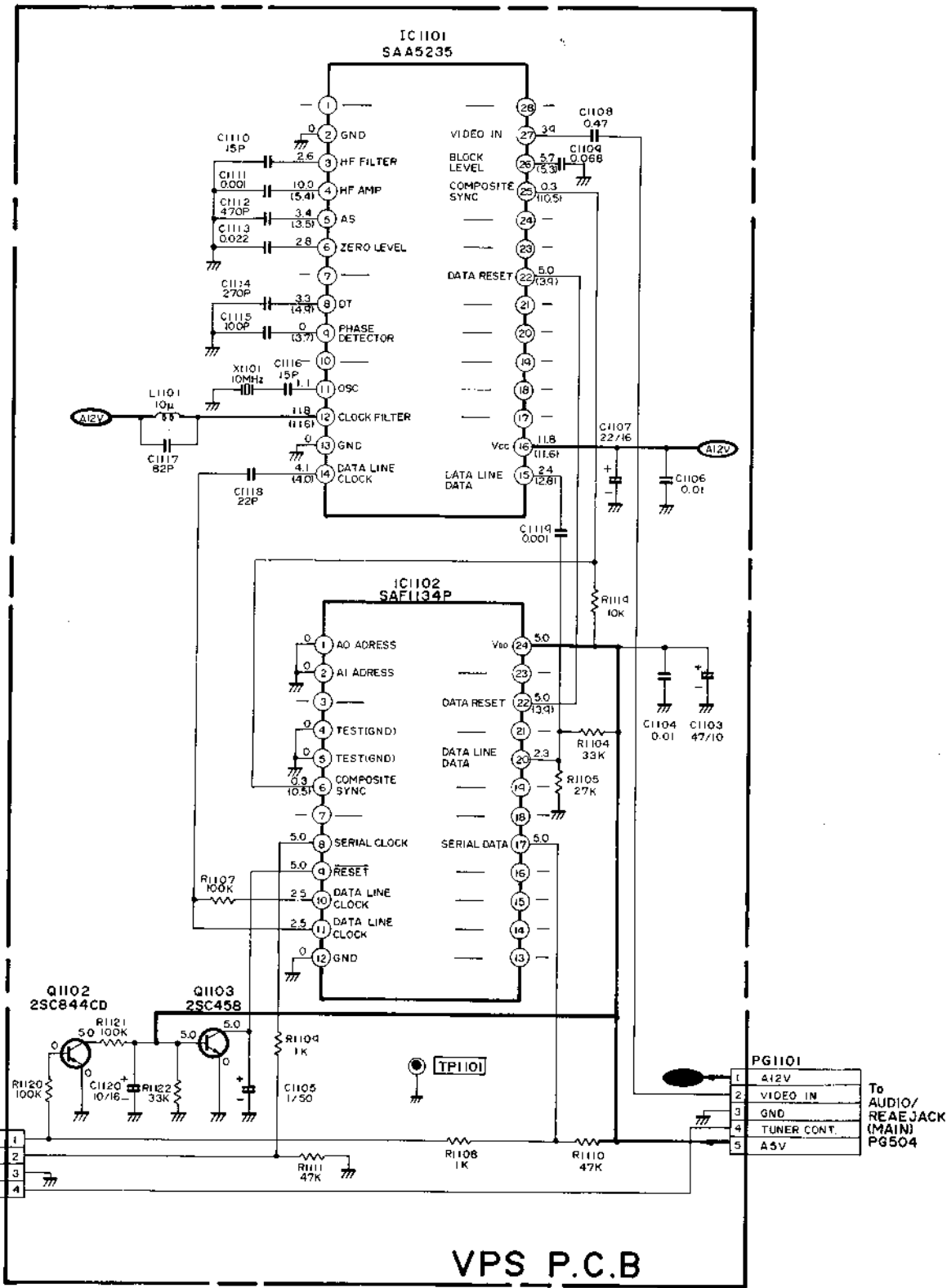
PB AND (REC) MODE.



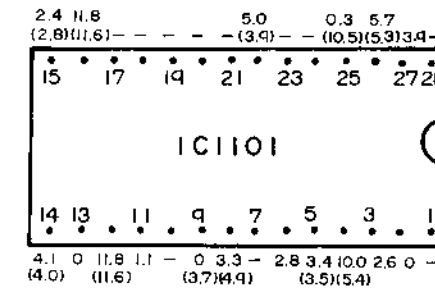
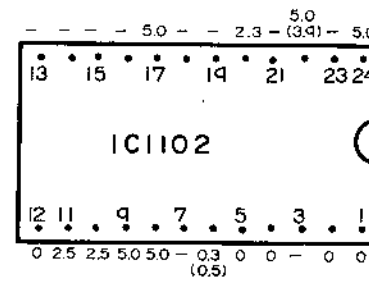
V.S TUNING P.C.B



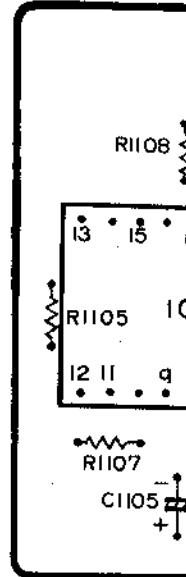
* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.



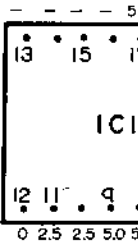
* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.

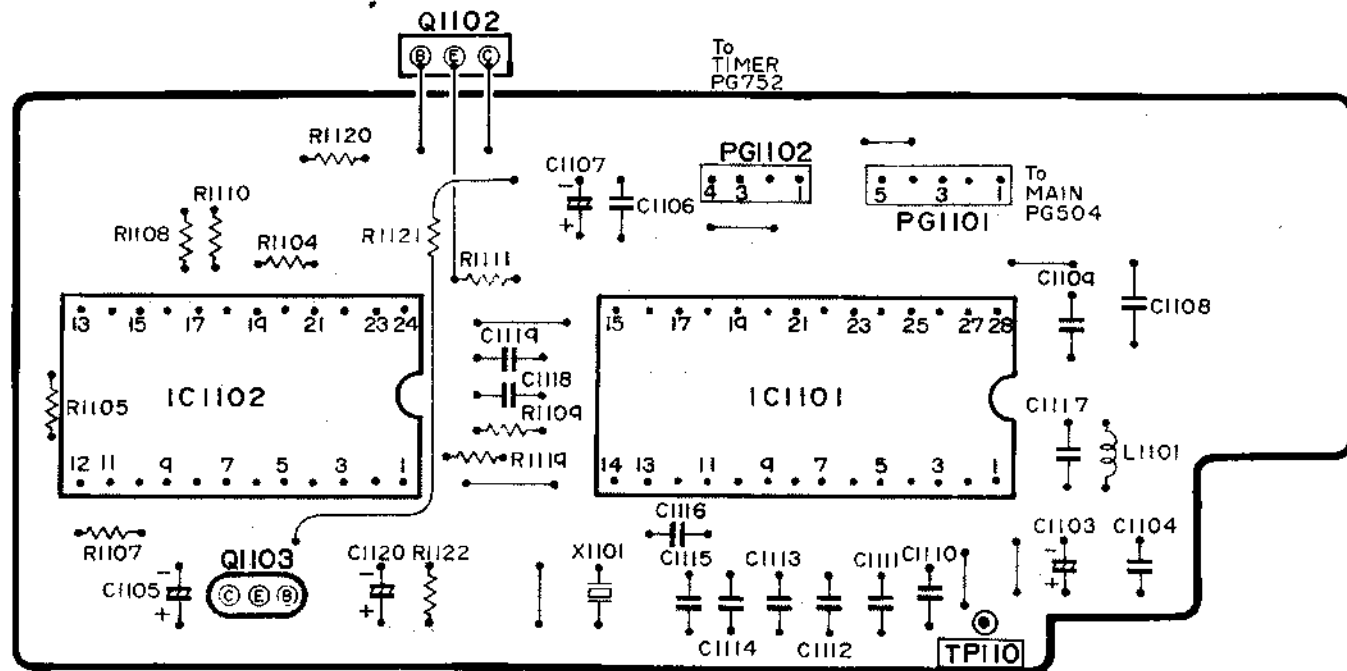


VPS P.C.B



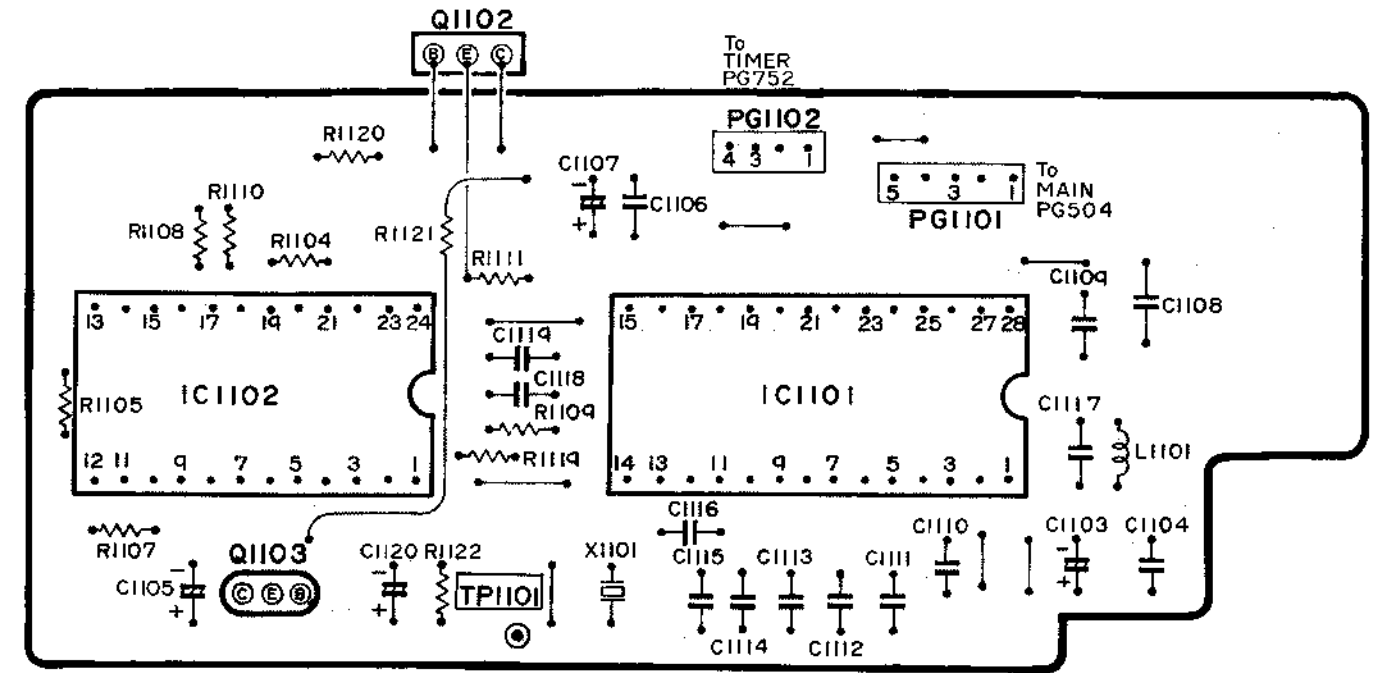
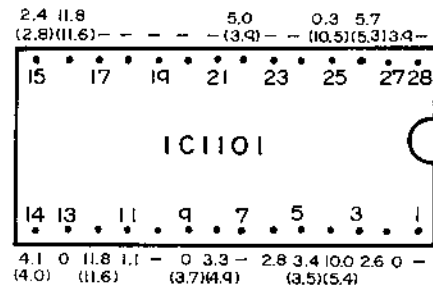
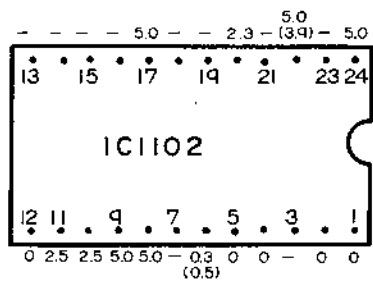
* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.





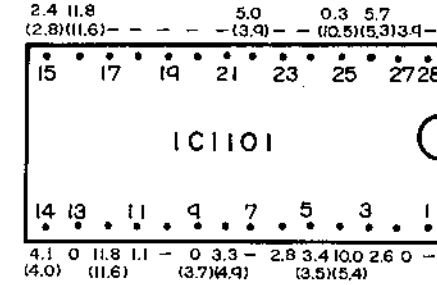
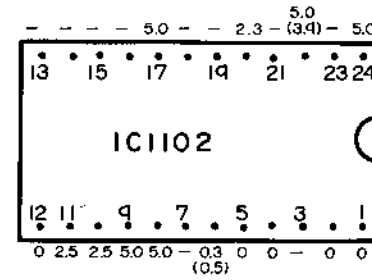
VPS P.C.B

* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.



VPS P.C.B

* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.

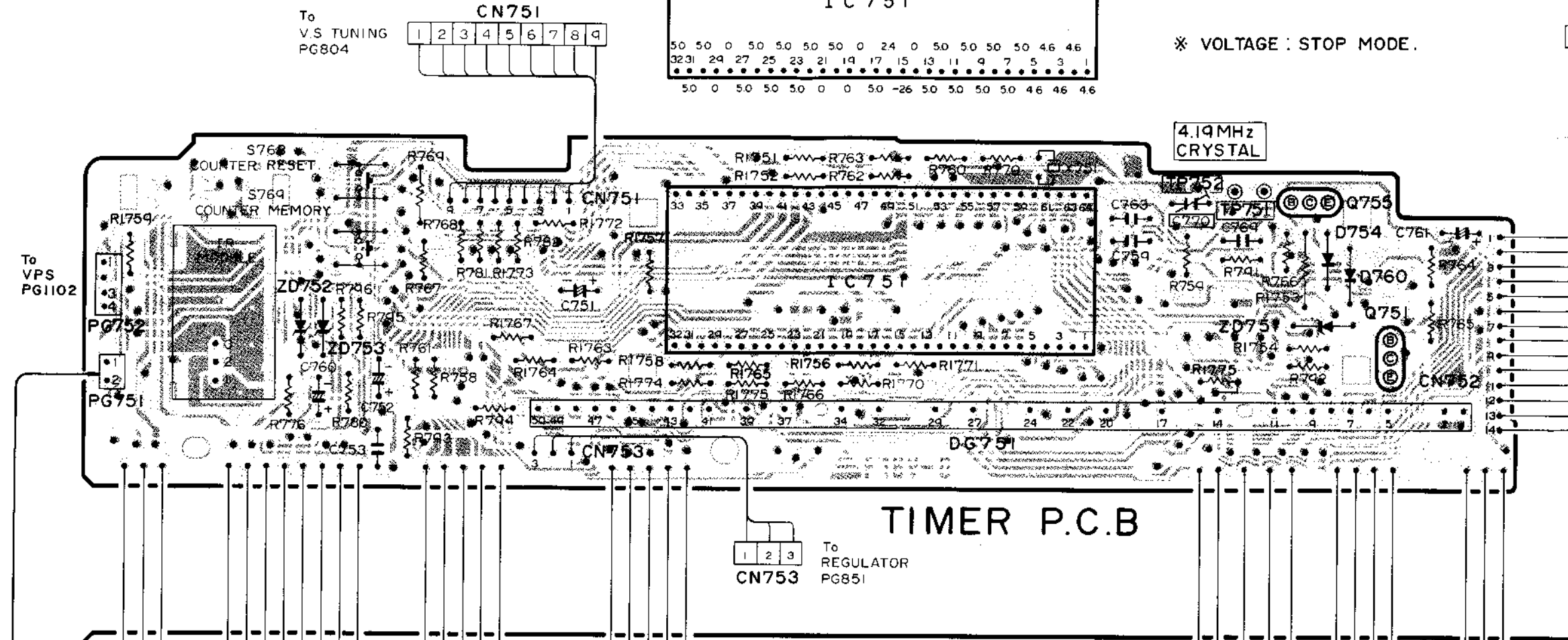


To
AUDIO/
REAEJACK
(MAIN)
PG504

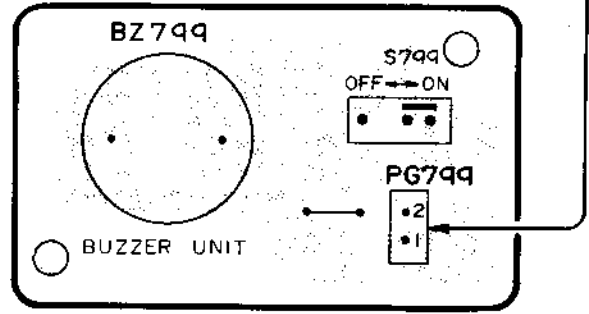
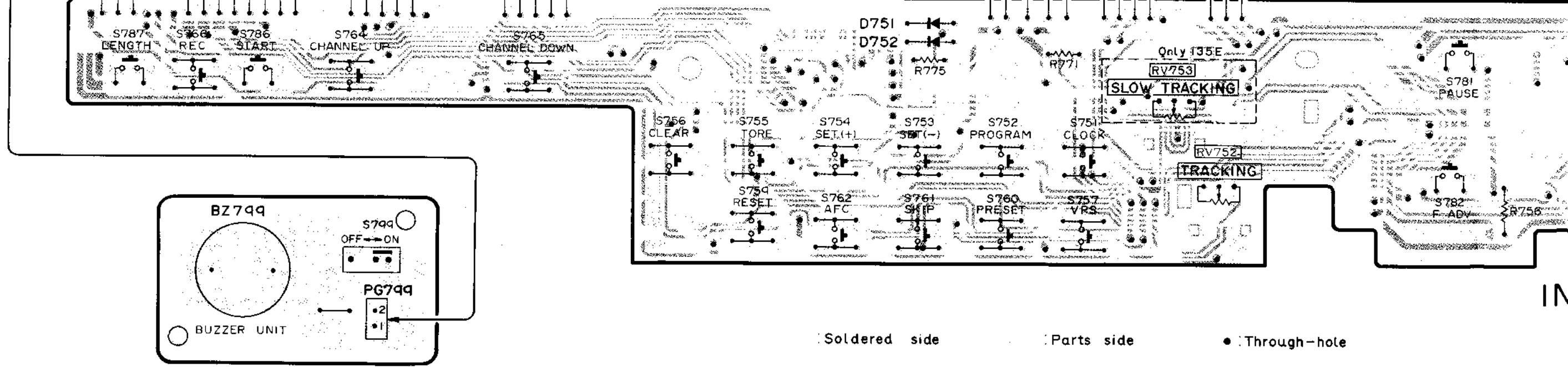
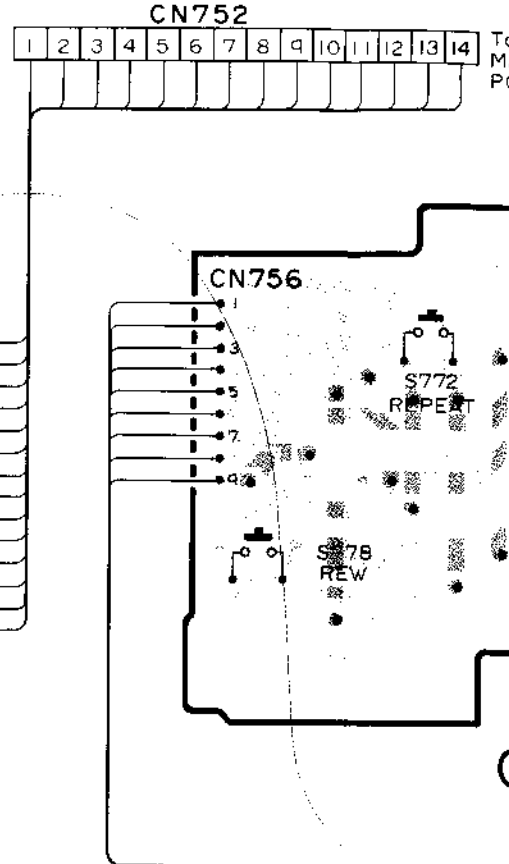
50	50	50	50	50	50	50	50	50	0	-	0	50	50	42	45	41
33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	64
50	50	50	50	50	50	50	50	50	-	50	50	44	46	45	45	
50	50	0	50	50	50	50	0	24	0	50	50	50	50	46	46	
32	31	24	27	25	23	21	19	17	15	13	11	9	7	5	3	1
50	0	50	50	50	0	0	50	-26	50	50	50	46	46	46		

IC 751

* VOLTAGE : STOP MODE .



TIMER P.C.B



BUZZER P.C.B

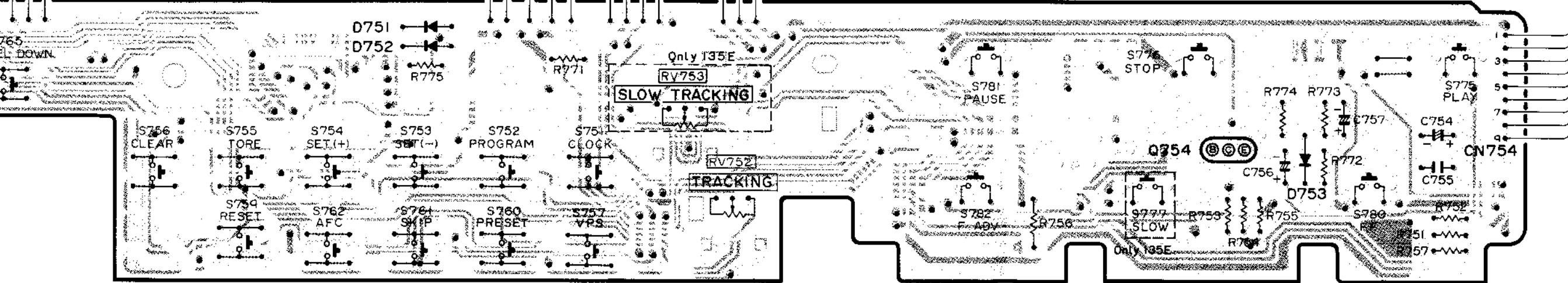
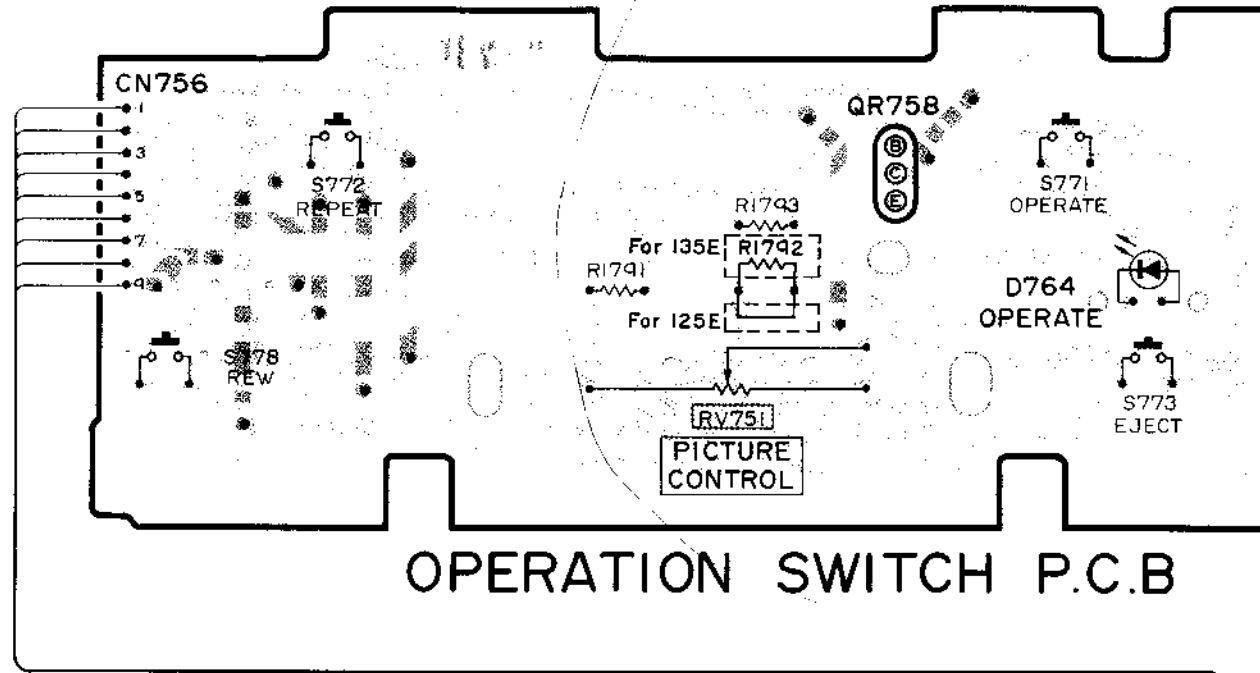
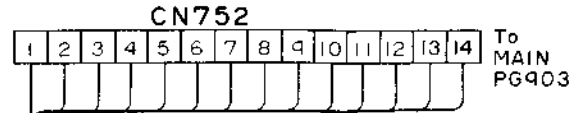
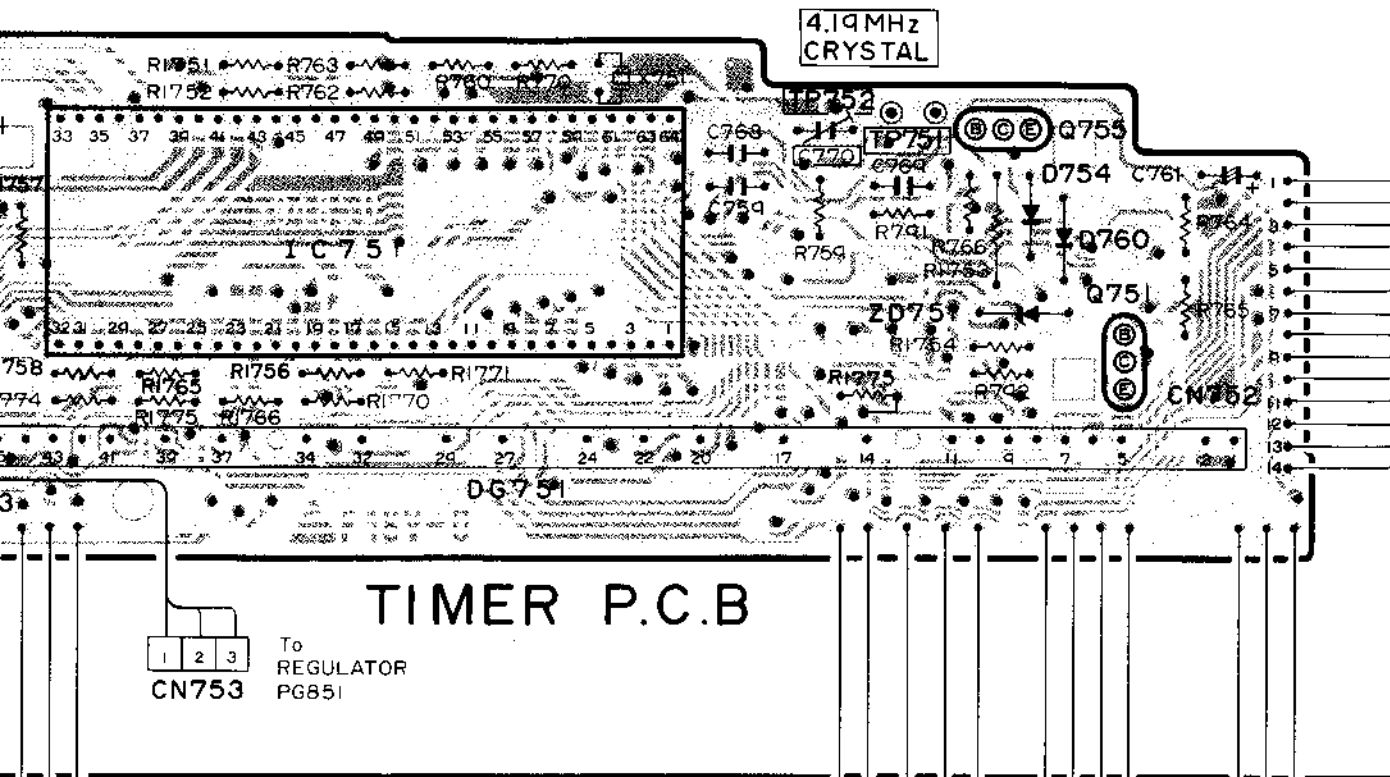
* VOLTAGE : STOP MODE .

TIMER/OPERATION SWITCH 5-16

5-17 TIMER/OPERATION SWITCH

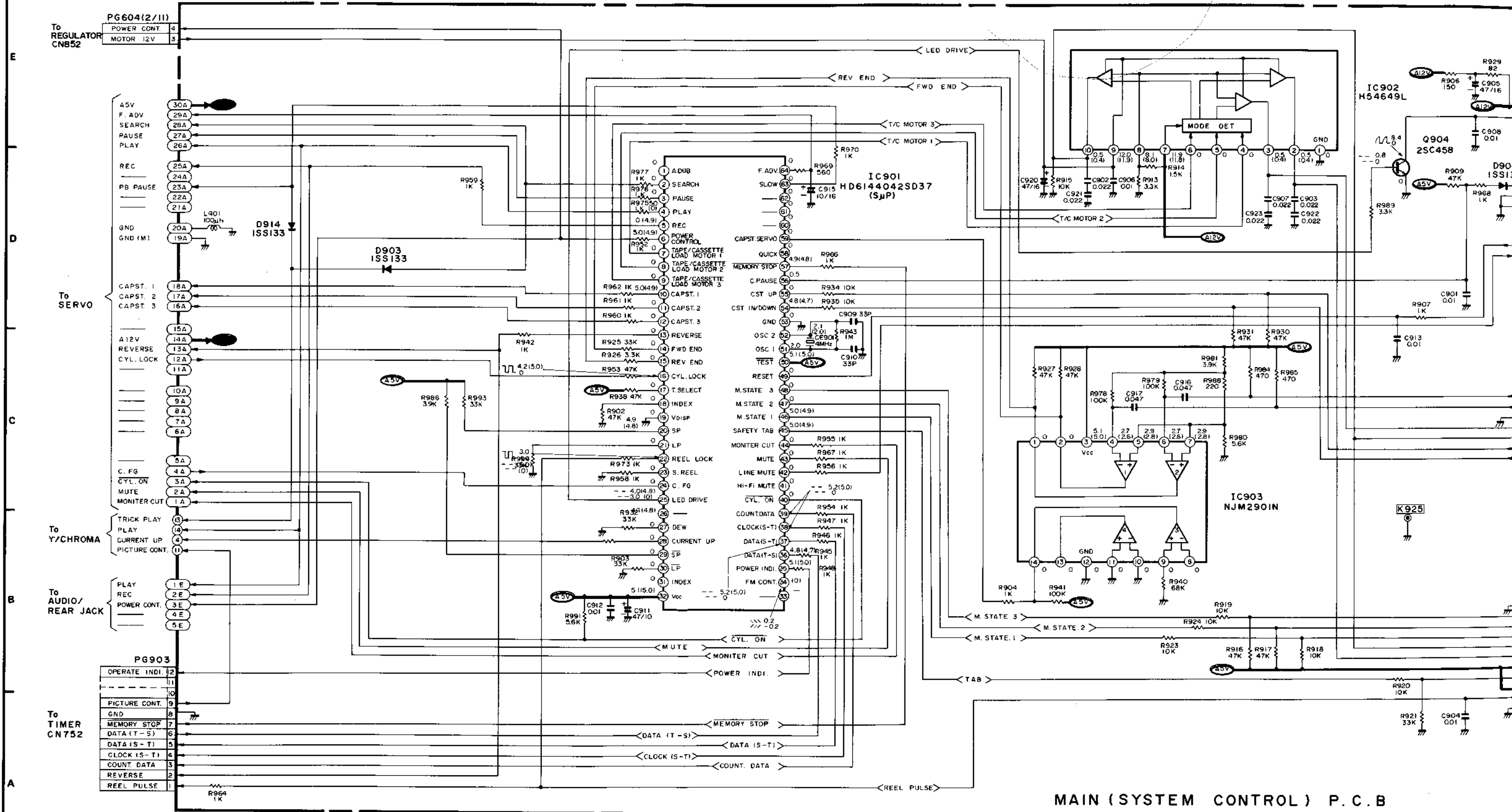
50	50	50	50	50	50	50	50	50	0	-	0	50	50	42	45	41
33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	64
50	50	50	50	50	50	50	50	50	-	50	50	49	46	45	45	
IC 751																
50	50	0	50	50	50	50	0	24	0	50	50	50	50	46	46	
32	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1
50	0	50	50	50	0	0	50	-26	50	50	50	50	46	46	46	

* VOLTAGE : STOP MODE.



○ Soldered side ○ Parts side ● Through-hole

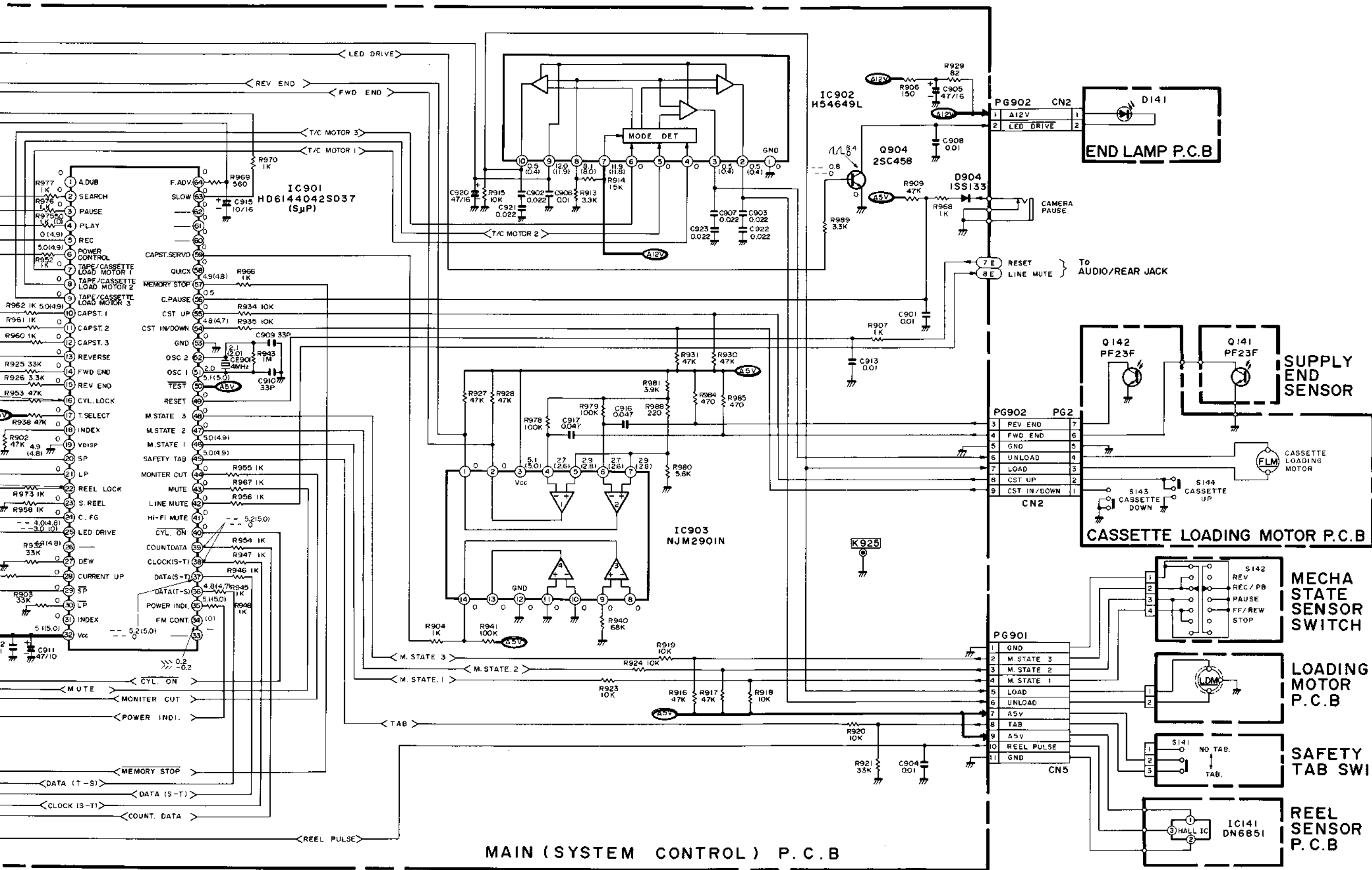
* VOLTAGE : STOP MODE.



MAIN (SYSTEM CONTROL) P.C.B

* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODES.

SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	VT-125E/VT-135E
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V/S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-61
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

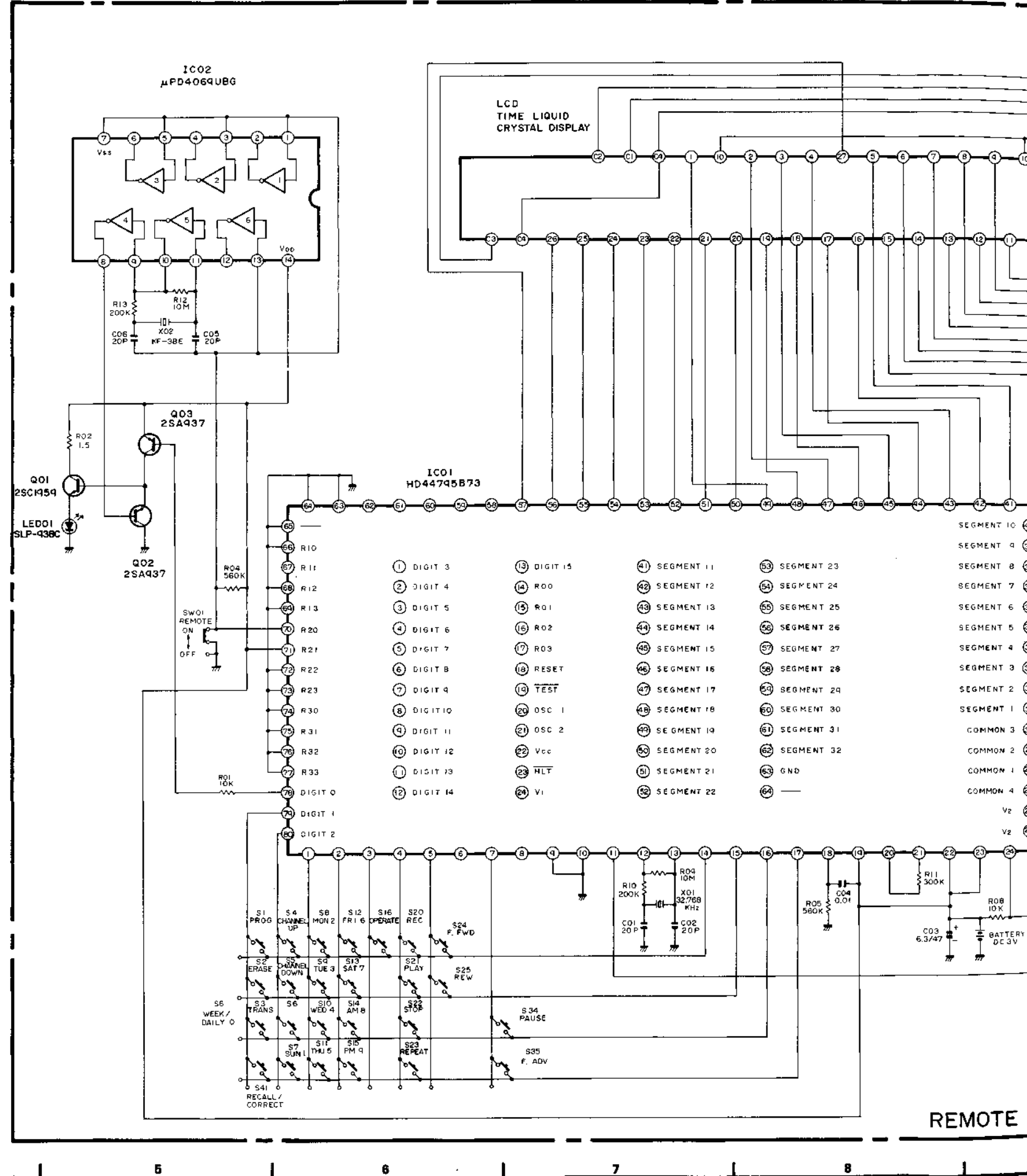
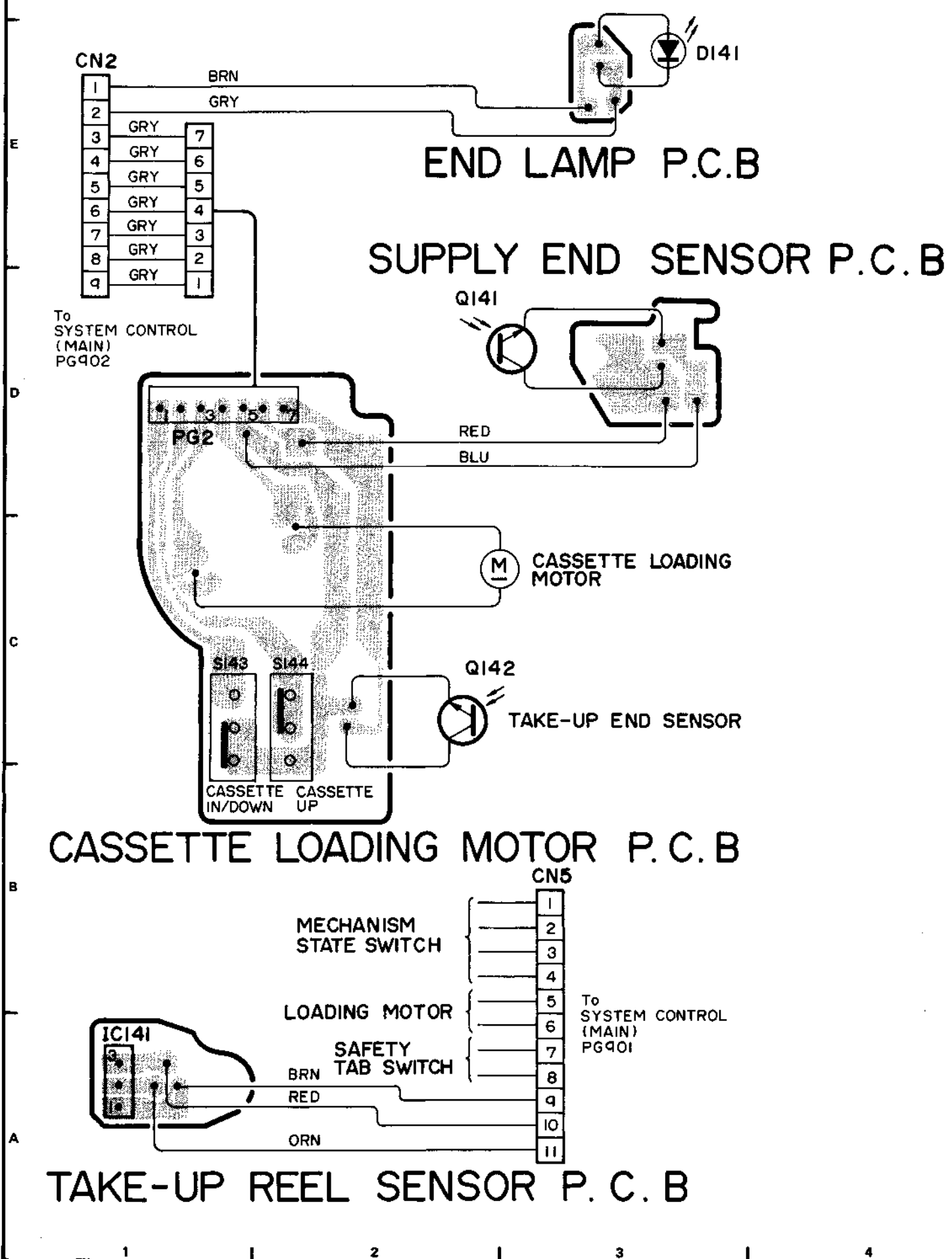


PAGES: PB AND (REC) MODES.

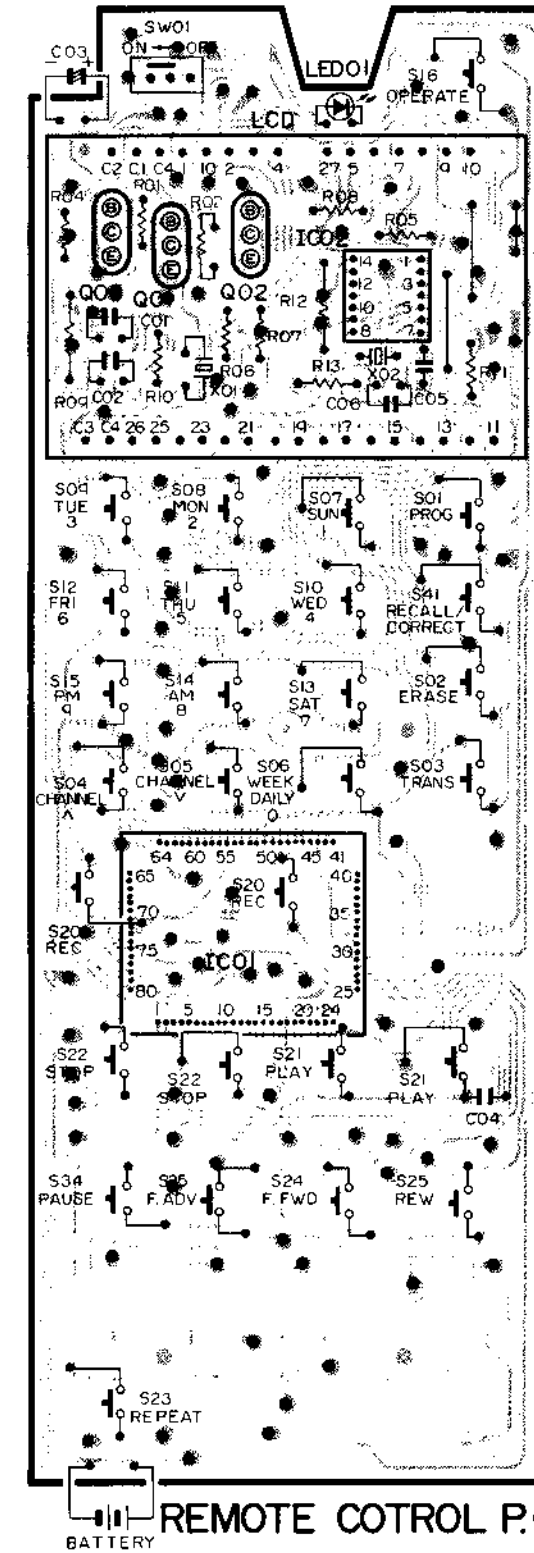
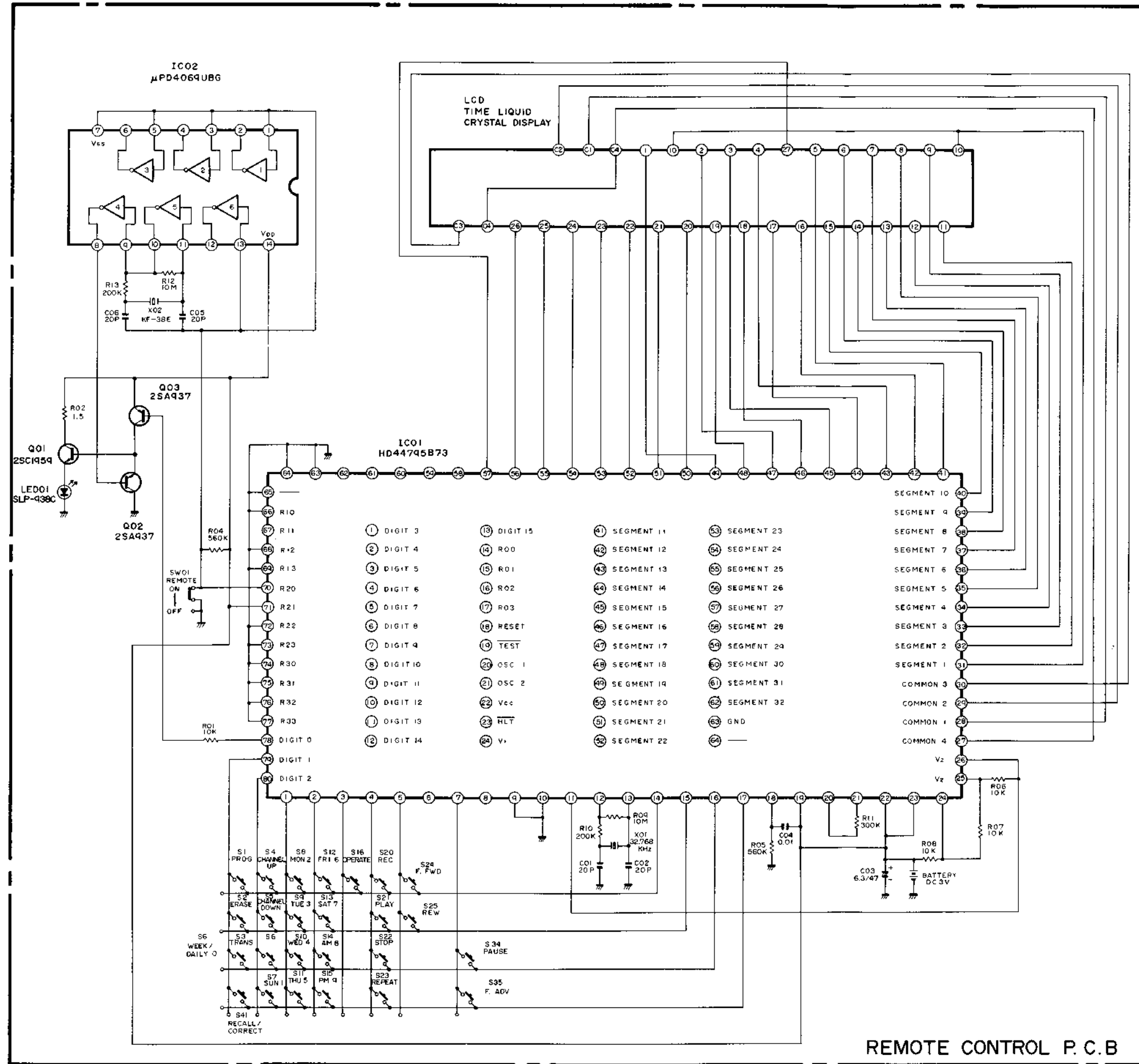
PERIPHERAL BOARD (PERIPHERIE-LEITERPLATTE)

REMOTE CONTROL (FERNBEDIENUNG)

VT-125E (VPS)



R.P.C.B

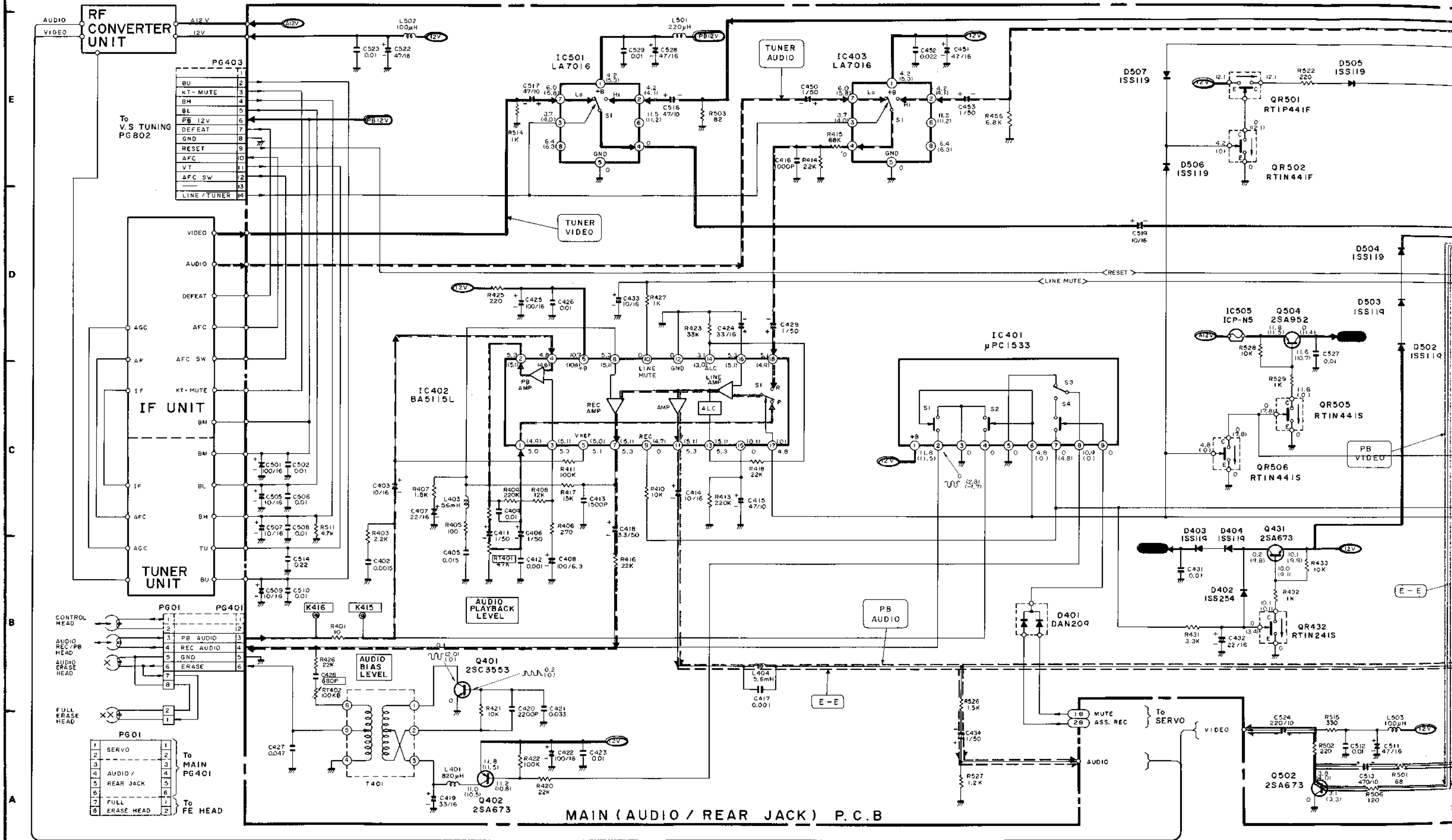


REMOTE CONTROL P.C.B

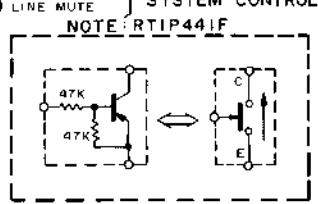
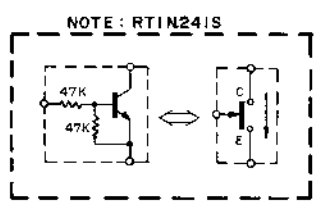
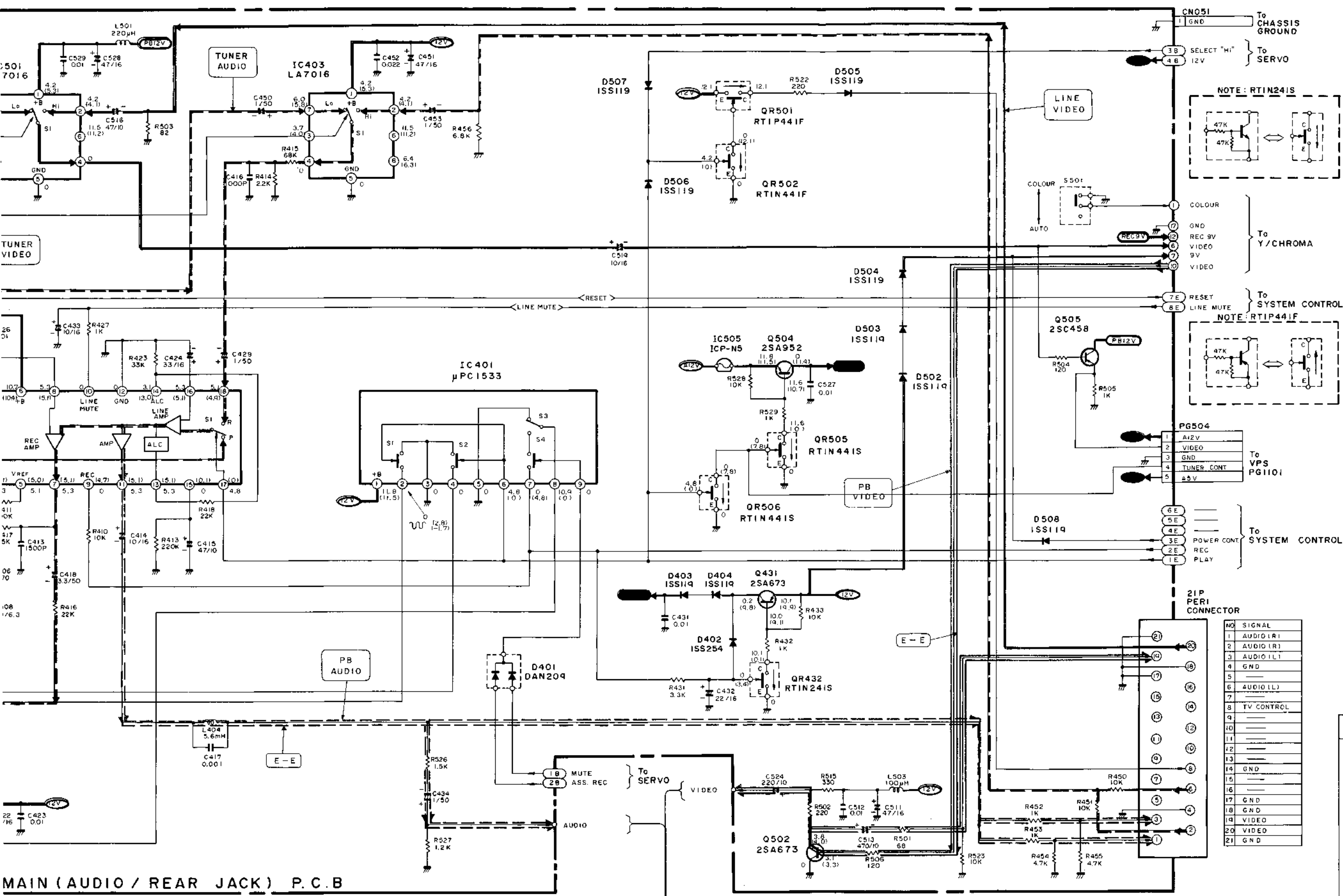
REMOTE CONTROL P.C.B

AUDIO/REAR JACK (AUDIO-BUCHSE)

VT-125E (VPS)



* ONE VOLTAGE : PB OR REC MODE, TWO VOLTAGES : PB AND (REC) MODES.



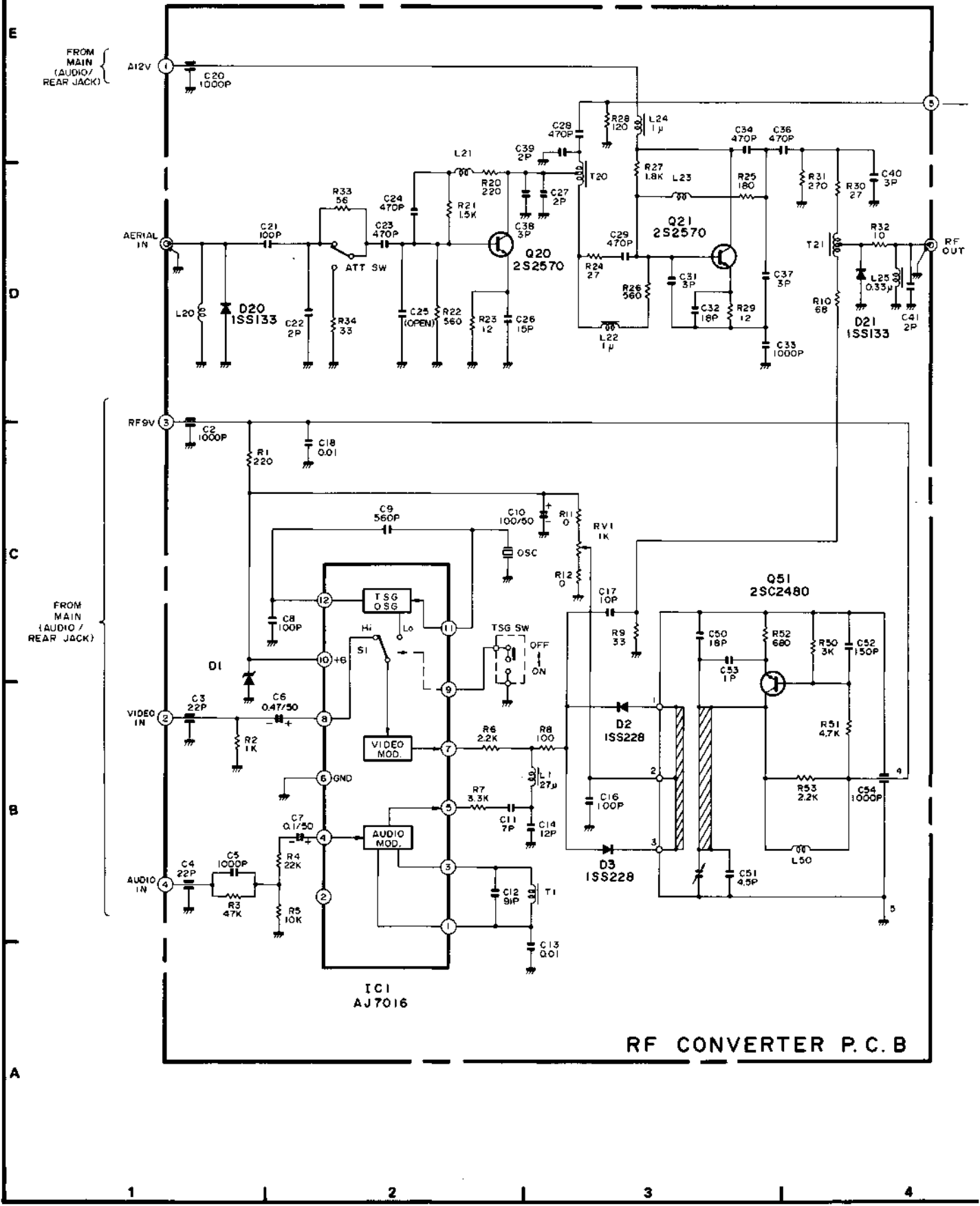
NO	SIGNAL
1	AUDIO (R)
2	AUDIO (L)
3	AUDIO (L1)
4	GND
5	---
6	AUDIO (LL)
7	---
8	TV CONTROL
9	---
10	---
11	---
12	---
13	---
14	GND
15	---
16	---
17	GND
18	GND
19	VIDEO
20	VIDEO
21	GND

SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V.S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

MAIN (AUDIO / REAR JACK) P.C.B

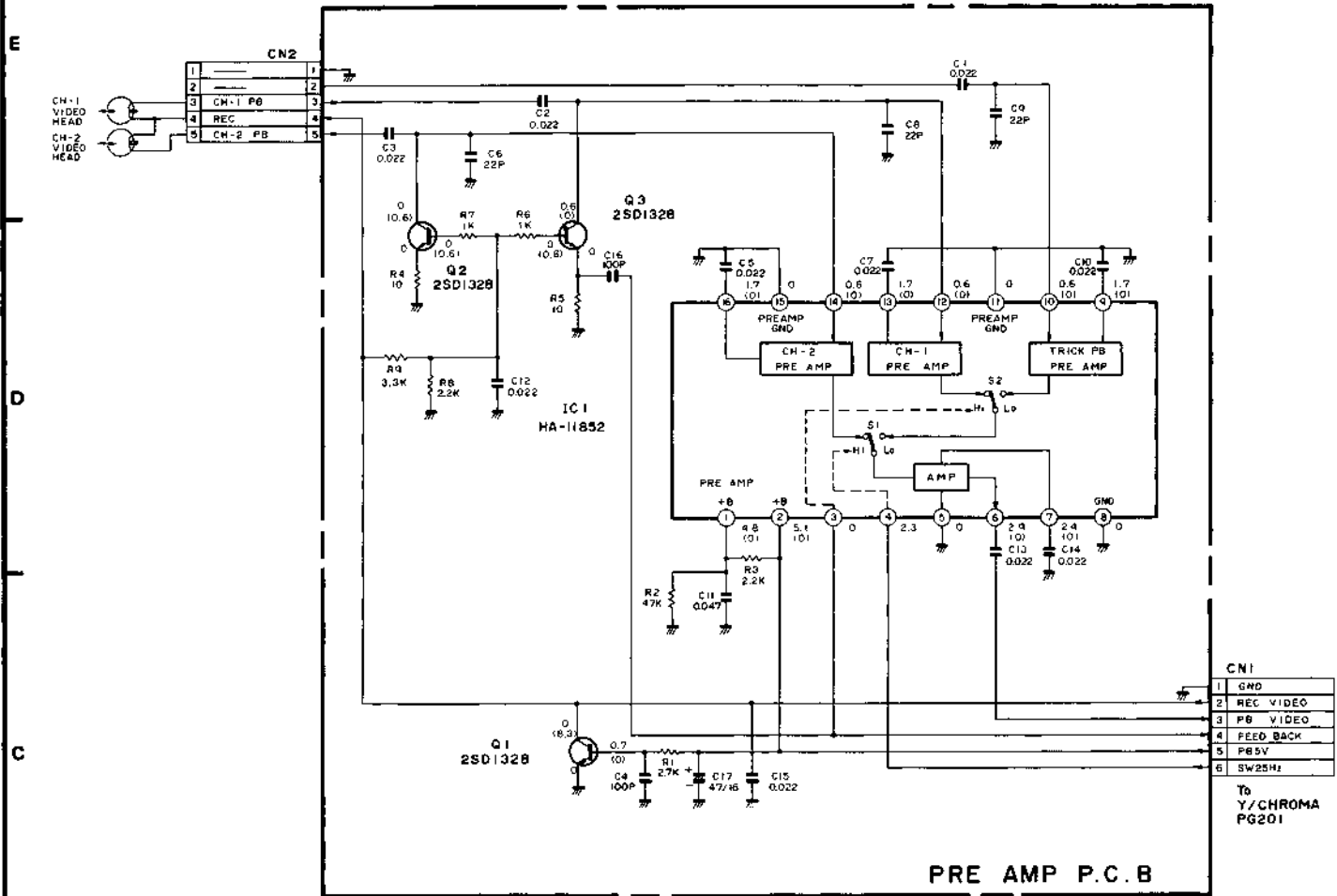
MODE, TWO VOLTAGES : PB AND (REC) MODES.

RF CONVERTER (HF-KONVERTER)



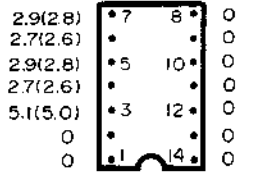
RF CONVERTER P.C.B

PREAMP (VORVERSTÄRKER)



* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.

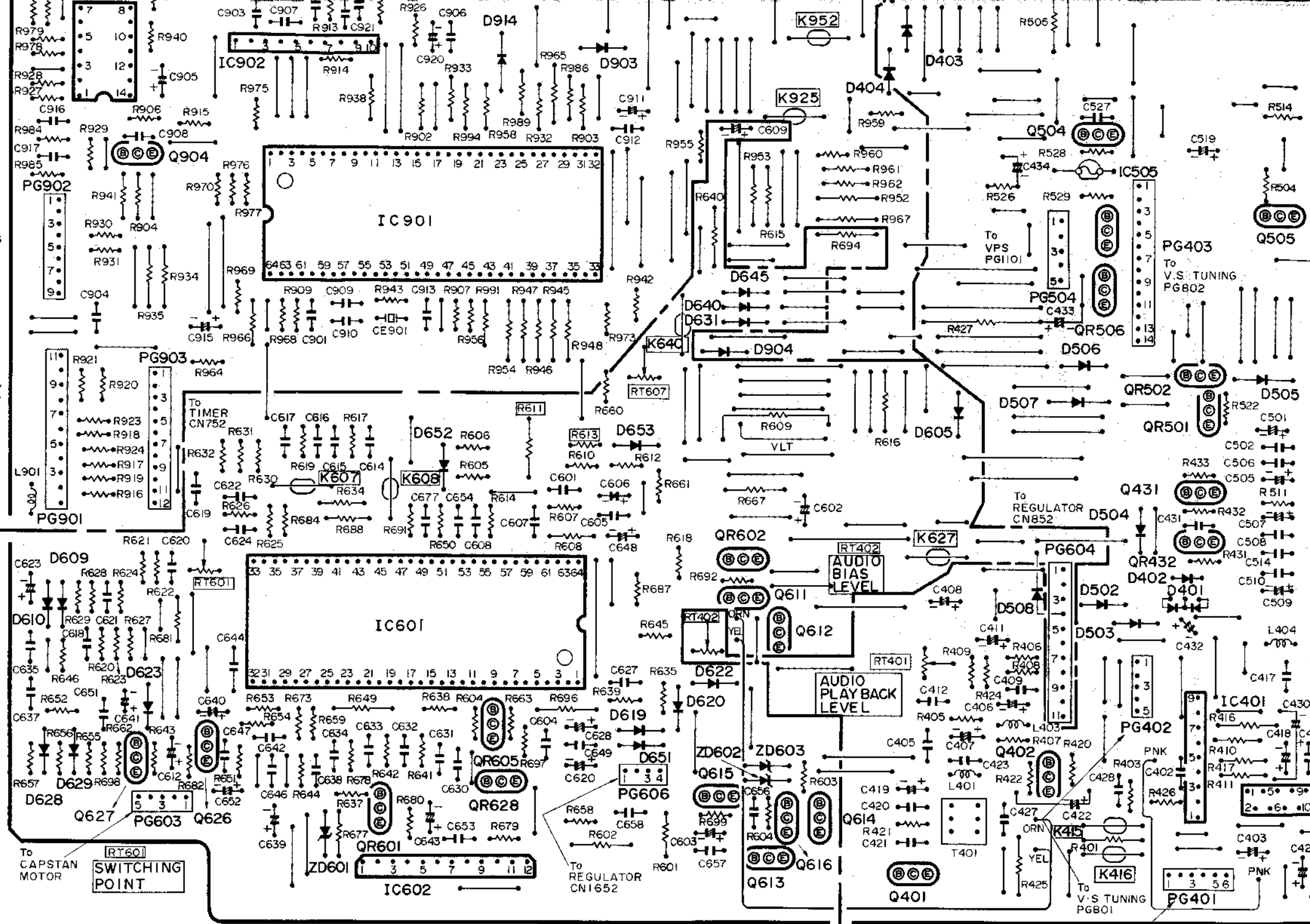
SCHEMATIC DIAGRAM		PAGE
		VT-125E/VT-135E
INTERNAL WIRING		
DIAGRAM		5-2/5-2
IF UNIT		5-4/5-4
TUNER UNIT		5-6/5-6
V-S TUNING		5-7/5-7
VPS		5-10/5-10
TIMER/OPERATION		
SWITCH		5-13/5-13
SYSTEM CONTROL		5-19/5-51
REMOTE CONTROL		5-23/5-55
AUDIO/REAR JACK		5-25/5-57
RF CONVERTER		5-28/5-60
PREAMP		5-29/5-61
SERVO		5-38/5-70
Y/CHROMA		5-41/5-73
REGULATOR		5-50/5-82



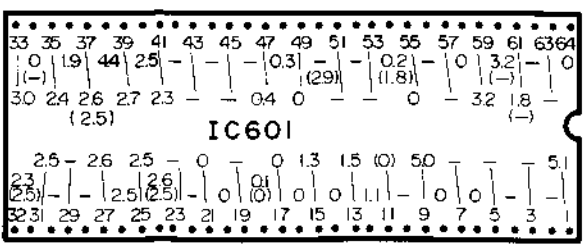
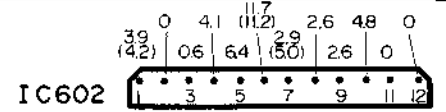
To CASSETTE LOADING MOTOR / SUPPLY END SENSOR / END LAMP

To MECHA STATE SENSOR SW / LOADING MOTOR / SAFETY TAB SW / REEL SENSOR

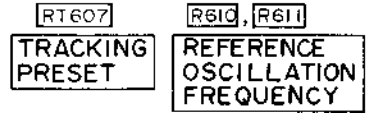
SYSTEM CONTROL SECTION



To CAPSTAN MOTOR SWITCHING POINT

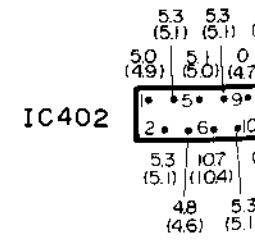


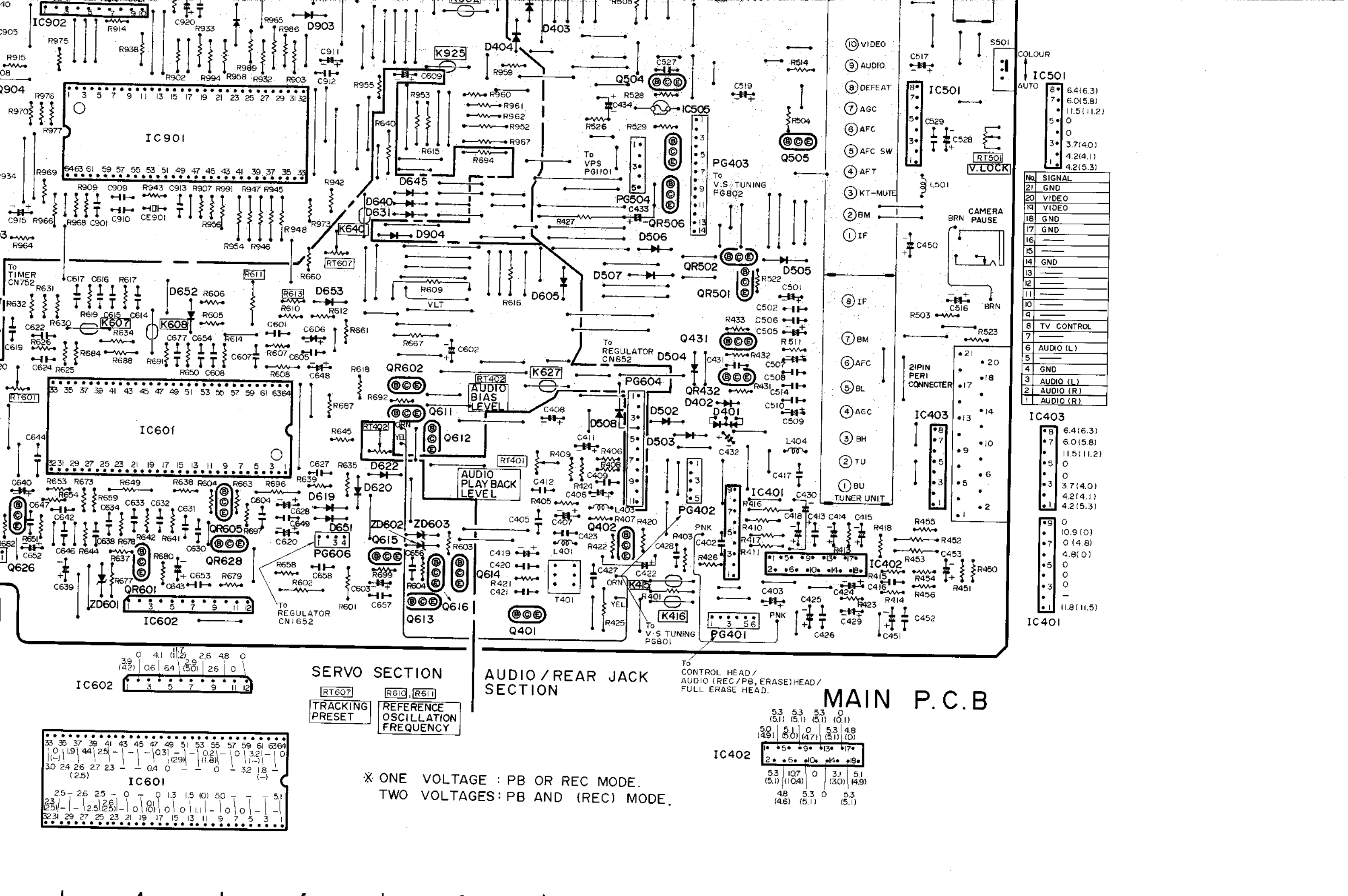
SERVO SECTION



AUDIO / REAR JACK SECTION

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.





- ⑩ VIDEO
- ⑨ AUDIO
- ⑧ DEFEAT
- ⑦ AGC
- ⑥ AFC
- ⑤ AFC SW
- ④ AFT
- ③ KT-MUTE
- ② BM
- ① IF

IC501

8	6.4(6.3)
7	6.0(5.8)
5	11.5(11.2)
5	0
3	0
3	3.7(4.0)
1	4.2(4.1)
1	4.2(5.3)

IC403

8	6.4(6.3)
7	6.0(5.8)
5	11.5(11.2)
5	0
3	0
3	3.7(4.0)
1	4.2(4.1)
1	4.2(5.3)

IC401

9	0
7	10.9(0)
7	0(4.8)
5	0
5	0
3	0
1	11.8(11.5)

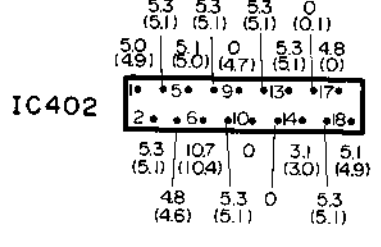
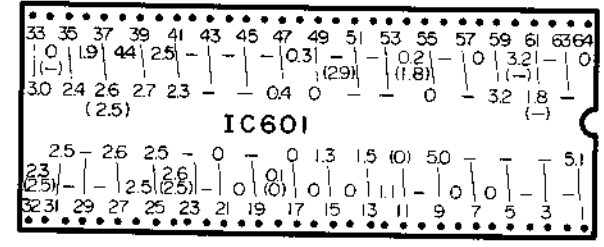
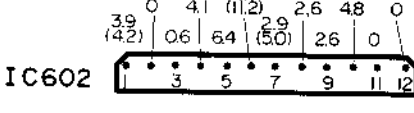
SERVO SECTION
 RT607 TRACKING PRESET
 R610, R611 REFERENCE OSCILLATION FREQUENCY

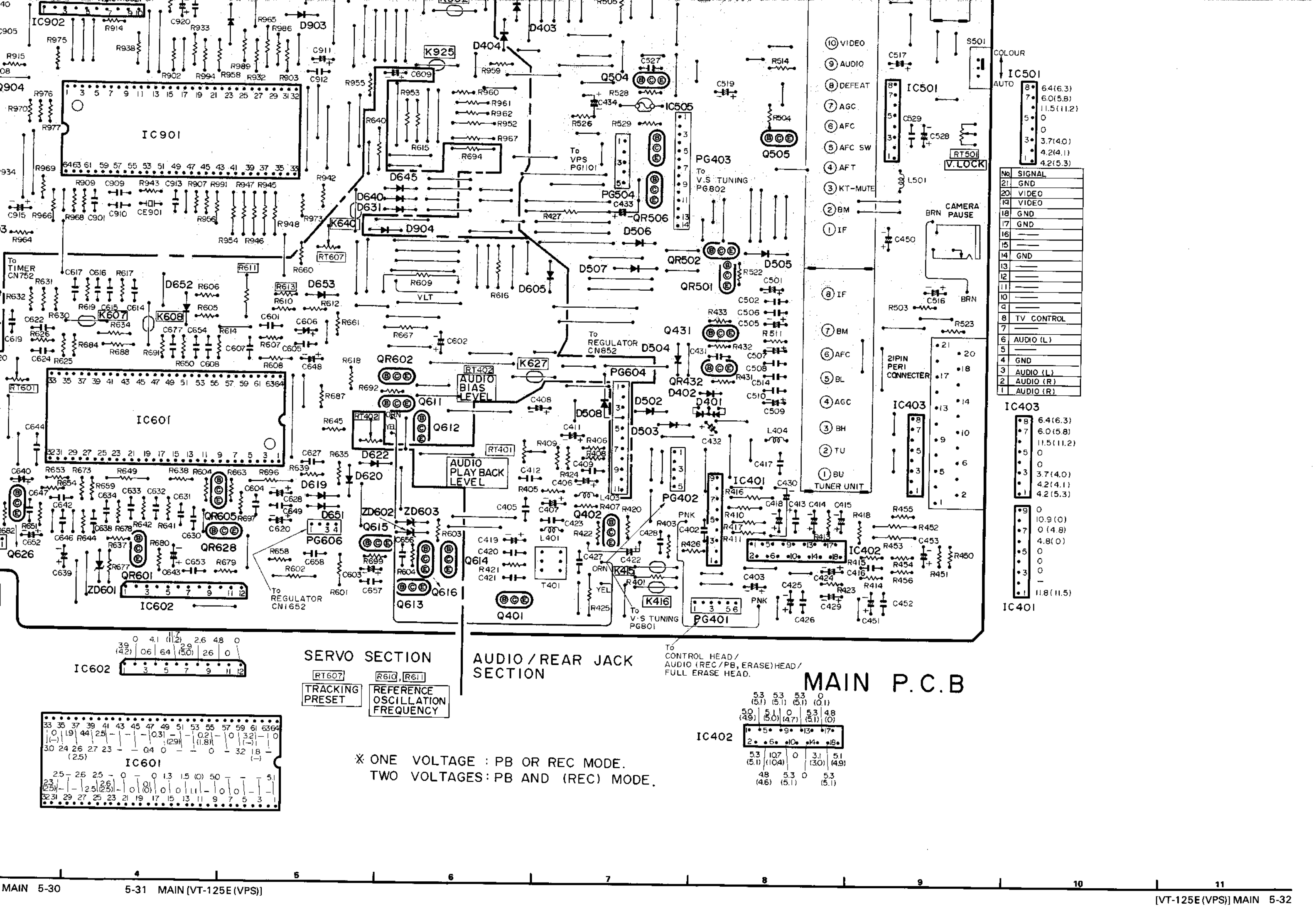
AUDIO/REAR JACK SECTION
 RT402 AUDIO BIAS LEVEL
 RT401 AUDIO PLAY BACK LEVEL

To CONTROL HEAD/
 AUDIO (REC/PB, ERASE) HEAD/
 FULL ERASE HEAD.

MAIN P.C.B

* ONE VOLTAGE : PB OR REC MODE.
 TWO VOLTAGES: PB AND (REC) MODE.





- ⑩ VIDEO
- ⑨ AUDIO
- ⑧ DEFEAT
- ⑦ AGC
- ⑥ AFC
- ⑤ AFC SW
- ④ AFT
- ③ KT-MUTE
- ② BM
- ① IF

No.	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)

SERVO SECTION
 RT607 TRACKING PRESET
 R610, R611 REFERENCE OSCILLATION FREQUENCY

AUDIO / REAR JACK SECTION

To CONTROL HEAD / AUDIO (REC/PB, ERASE) HEAD / FULL ERASE HEAD.

MAIN P.C.B

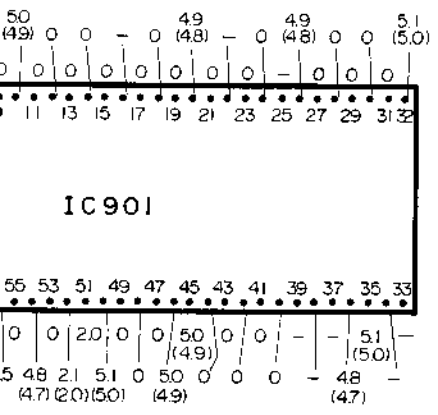
* ONE VOLTAGE : PB OR REC MODE.
 TWO VOLTAGES : PB AND (REC) MODE.

IC402

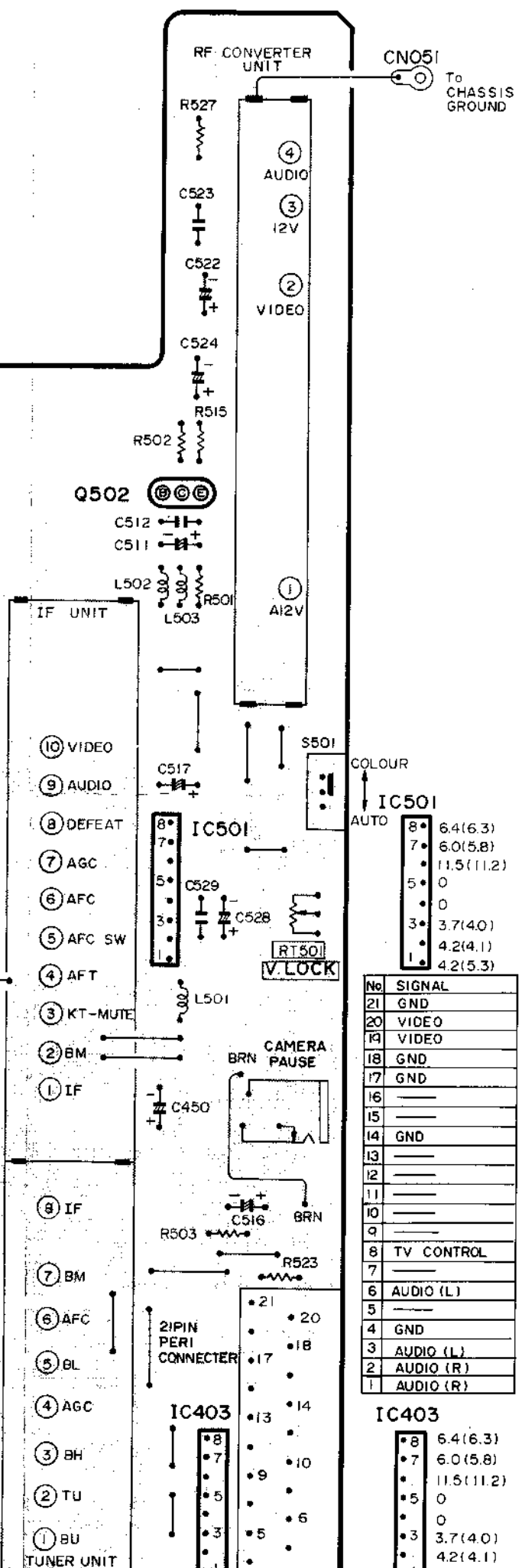
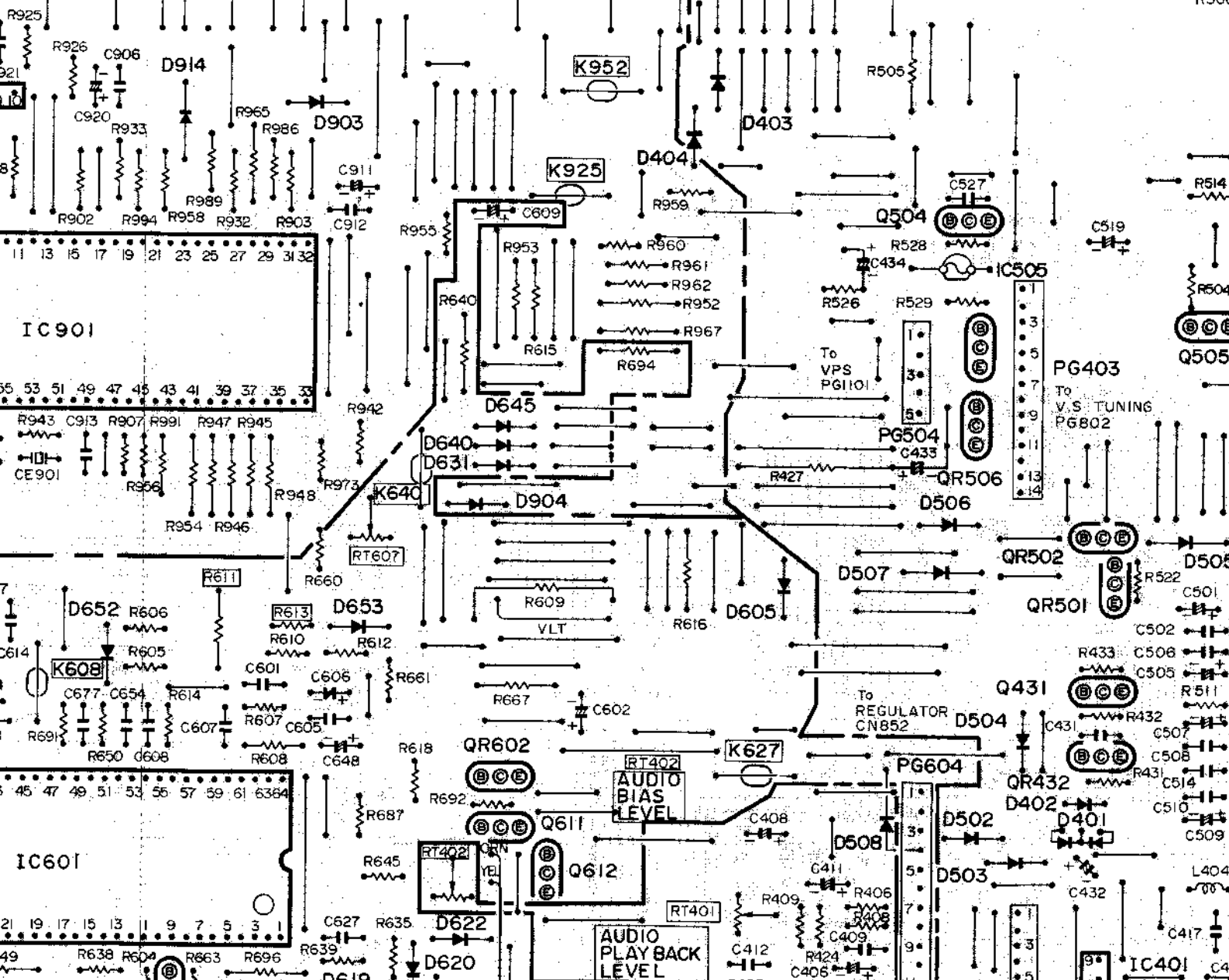
53	53	53	0
(5.1)	(5.1)	(5.1)	(0.1)
50	51	0	53 48
(4.9)	(5.0)	(4.7)	(5.1) (0)
5	9	13	17
2	6	10	14
53	107	0	31 51
(5.1)	(10.4)		(3.0) (4.9)
48	53	0	53
(4.6)	(5.1)		(5.1)

IC601

33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	64
0	19	44	25			0.3		0.2		0	3.2		1	0		
30	24	26	27	23		0.4	0			0	3.2	1.8				
						(2.5)										
25	26	25	0	0	0	1.3	1.5	10	50							
(2.5)						(2.5)										
32	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1

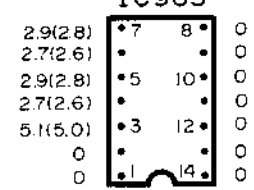


Y / CHROMA P.C.B



No	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)

No	SIGNAL
8	6.4(6.3)
7	6.0(5.8)
	11.5(11.2)
5	0
	0
3	3.7(4.0)
	4.2(4.1)
1	4.2(5.3)

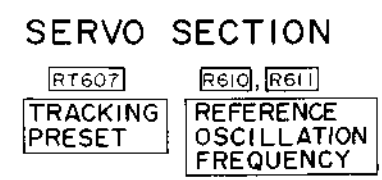
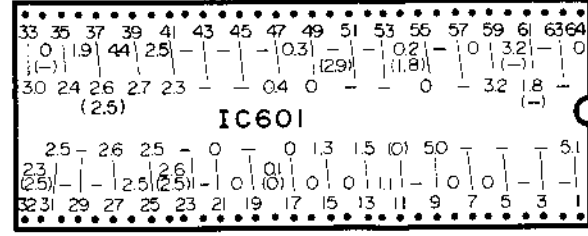
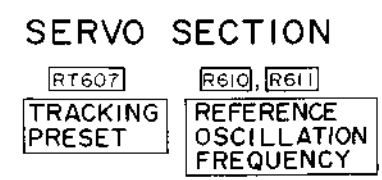
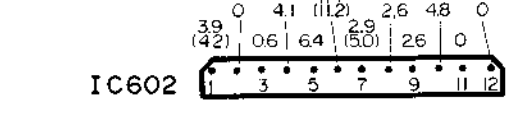
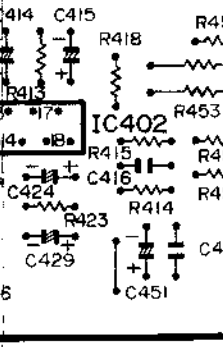
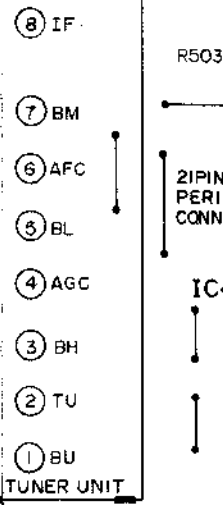
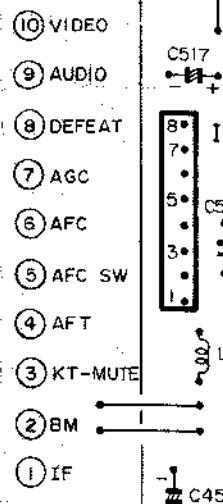
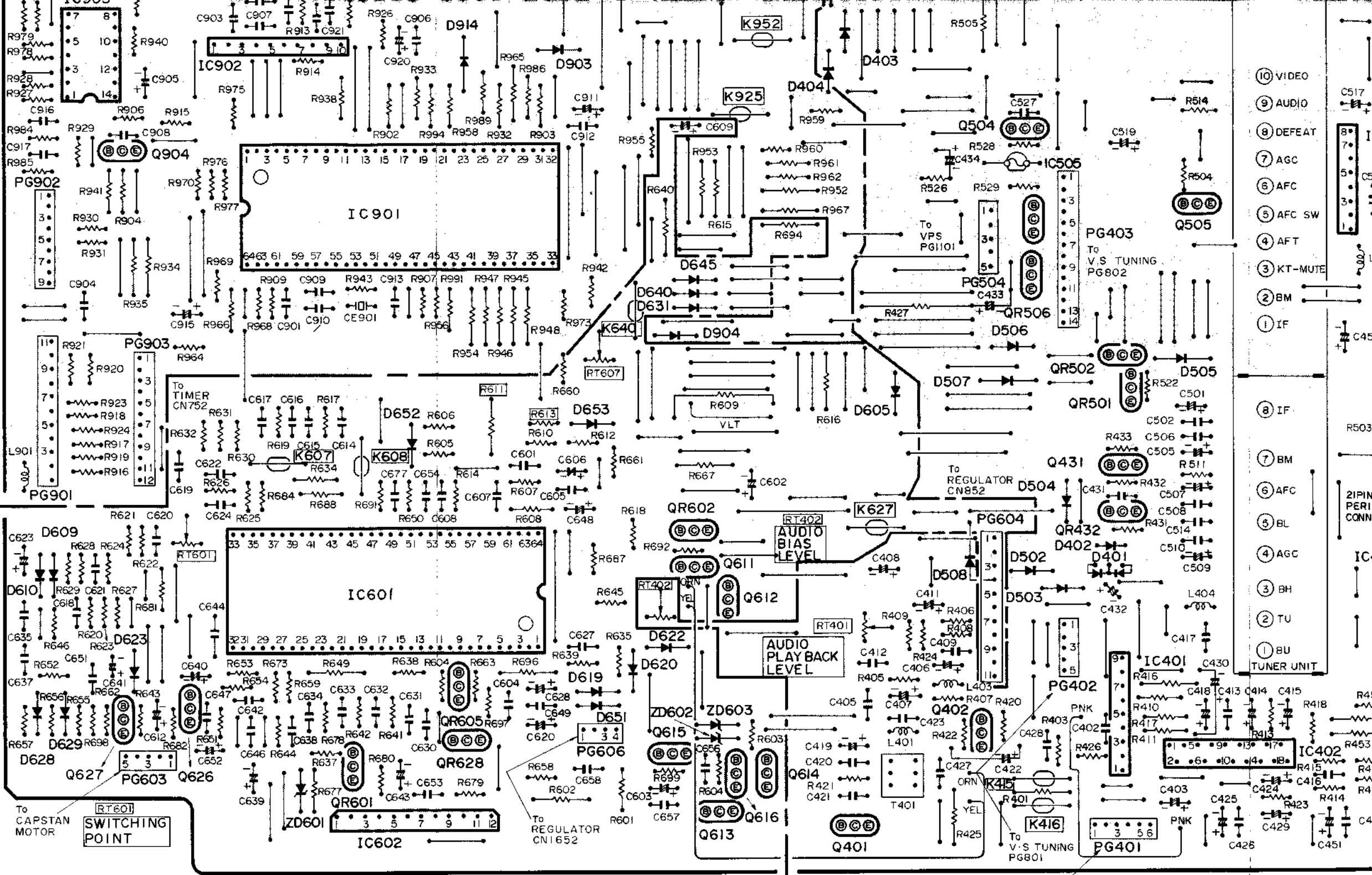


To CASSETTE LOADING MOTOR / SUPPLY END SENSOR / END LAMP

To MECHA STATE SENSOR SW / LOADING MOTOR / SAFETY TAB SW / REEL SENSOR

SYSTEM CONTROL SECTION

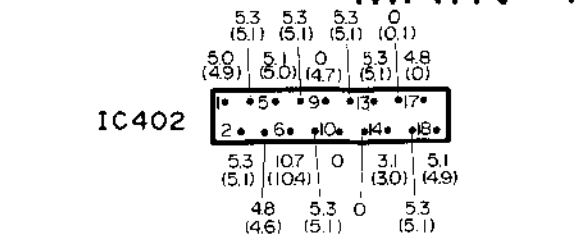
To CAPSTAN MOTOR SWITCHING POINT

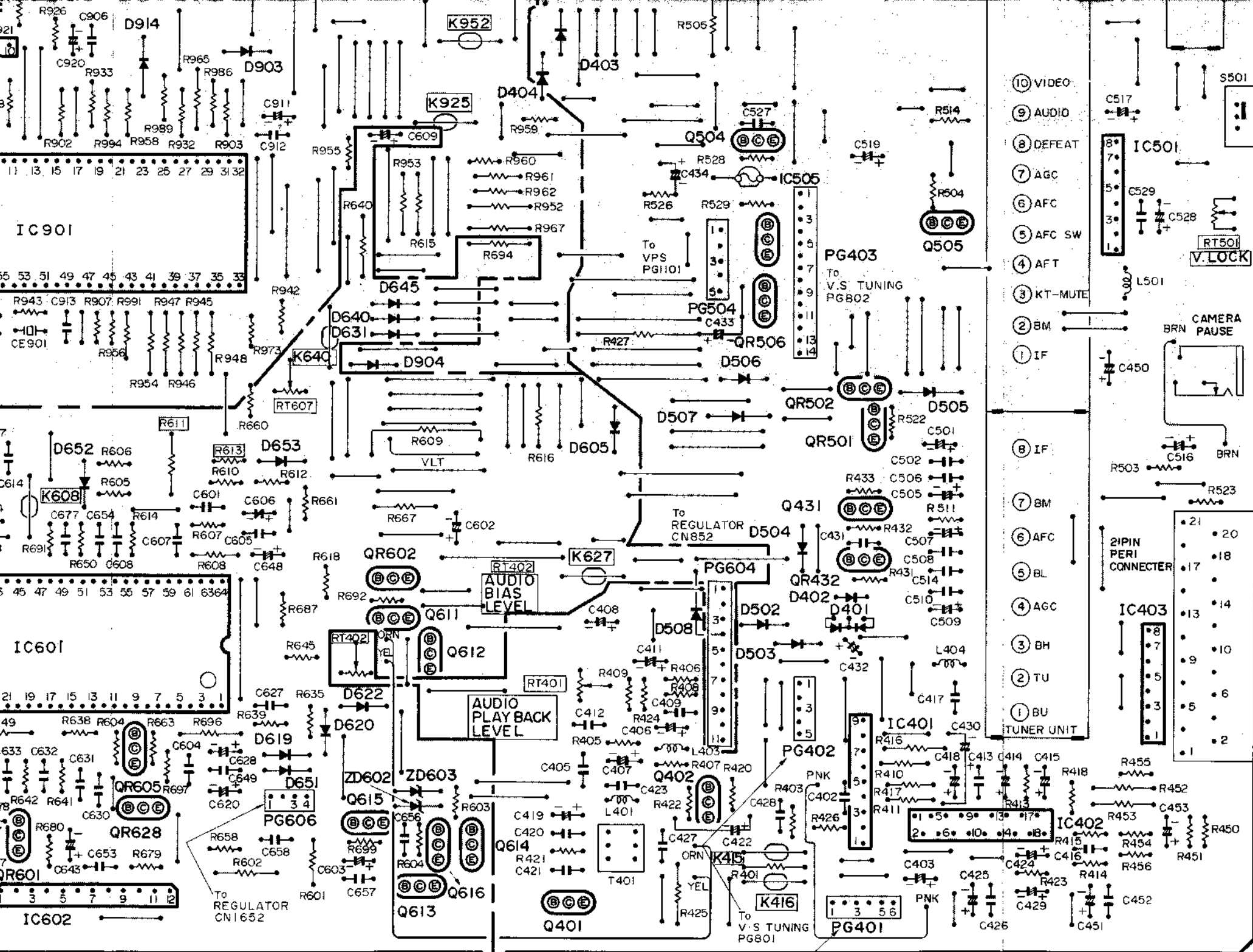


AUDIO / REAR JACK SECTION

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

MAIN P





- 10 VIDEO
- 9 AUDIO
- 8 DEFEAT
- 7 AGC
- 6 AFC
- 5 AFC SW
- 4 AFT
- 3 KT-MUTE
- 2 BM
- 1 IF

IC501

8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	4.2(5.3)

No SIGNAL

21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)

IC403

8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	4.2(5.3)

IC401

9	0
8	10.9(10)
7	0(4.8)
6	4.8(0)
5	0
4	0
3	0
2	0
1	11.8(11.5)

SERVO SECTION

RT607 TRACKING PRESET

R610, R611 REFERENCE OSCILLATION FREQUENCY

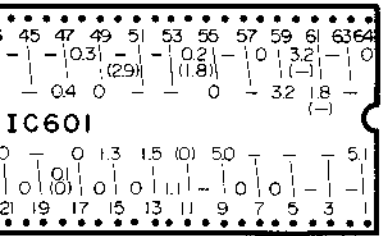
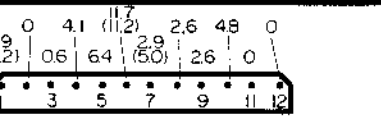
AUDIO / REAR JACK SECTION

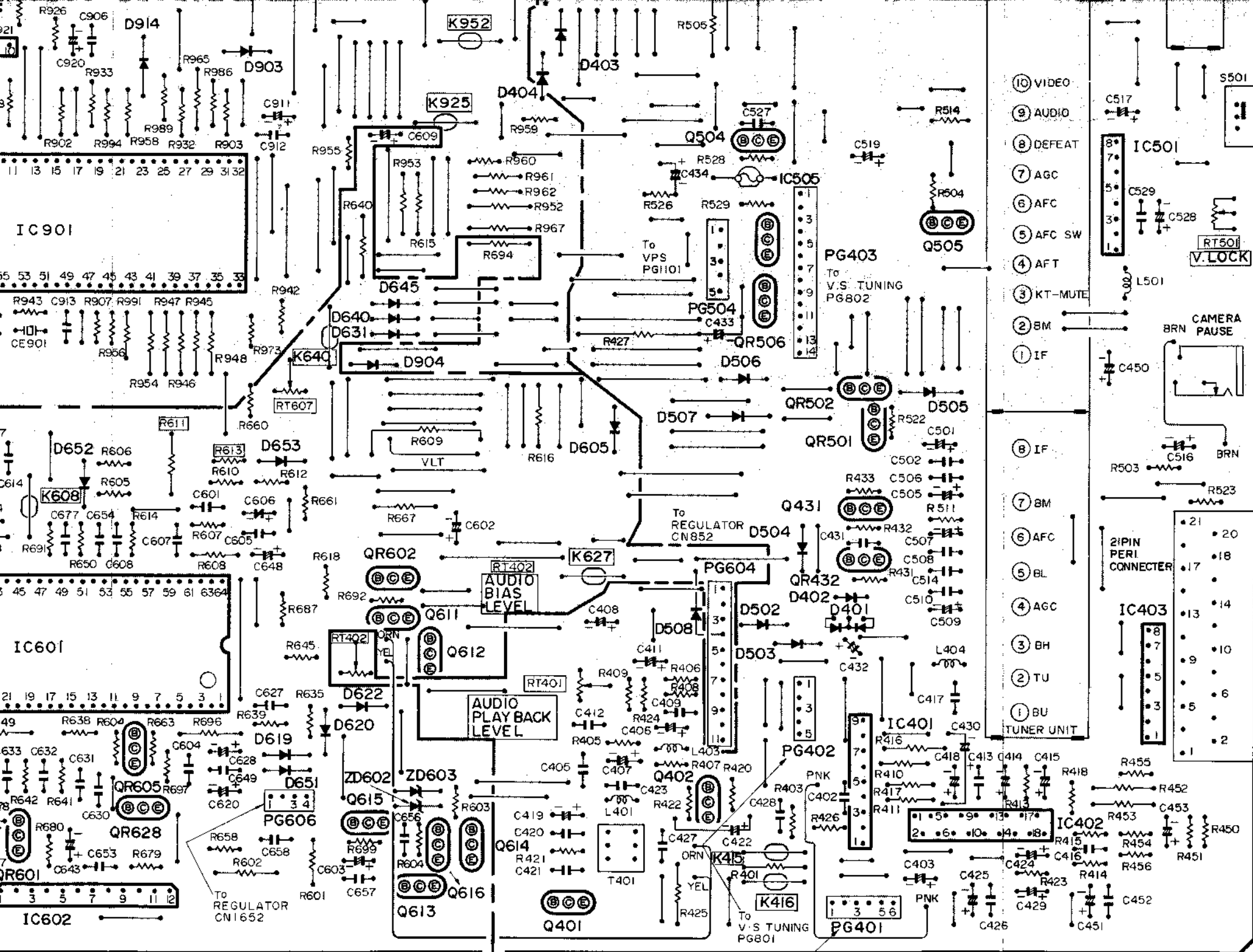
MAIN P.C.B

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

IC402

5.3	5.3	5.3	0
(5.1)	(5.1)	(5.1)	(0.1)
5.0	5.1	0	5.3 4.8
(4.9)	(5.0)	(4.7)	(5.1) (0)
5	9	13	17
2	6	10	14 18
5.3	10.7	0	3.1 5.1
(5.1)	(10.4)		(3.0) (4.9)
4.8	5.3	0	5.3
(4.6)	(5.1)		(5.1)





- 10 VIDEO
- 9 AUDIO
- 8 DEFEAT
- 7 AGC
- 6 AFC
- 5 AFC SW
- 4 AFT
- 3 KT-MUTE
- 2 BM
- 1 IF

IC501

8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	4.2(5.3)

No SIGNAL

21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)

IC403

8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	4.2(5.3)

IC401

9	0
8	10.9(0)
7	0(4.8)
6	4.8(0)
5	0
4	0
3	0
2	0
1	11.8(11.5)

SERVO SECTION

RT607 TRACKING PRESET

R610, R611 REFERENCE OSCILLATION FREQUENCY

AUDIO / REAR JACK SECTION

To CONTROL HEAD / AUDIO (REC / PB, ERASE) HEAD / FULL ERASE HEAD.

MAIN P.C.B

IC402

5.3	5.3	5.3	0
(5.1)	(5.1)	(5.1)	(0.1)
5.0	5.1	0	5.3 4.8
(4.9)	(5.0)	(4.7)	(5.1) (0)
5	9	13	17
2	6	10	18
5.3	10.7	0	3.1 5.1
(5.1)	(10.4)		(3.0) (4.9)
4.8	5.3	0	5.3
(4.6)	(5.1)		(5.1)

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

IC601

0	4.1	11.2	2.6	4.8	0	
9	2	0.6	6.4	5.0	2.6	0
3	5	7	9	11	12	

IC602

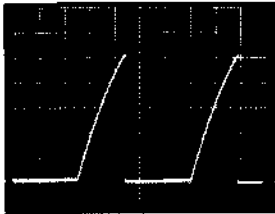
0	0	1.3	1.5	10	5.0	5.1				
0	0	0	0	0	0	0				
21	19	17	15	13	11	9	7	5	3	1

SERVO CIRCUIT WAVEFORMS (WELLENFORM)

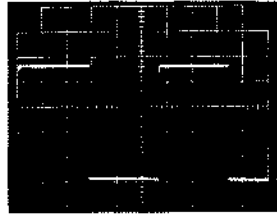
[IC601]

(REC: Colour bar Video in/PB: Alignment tape)

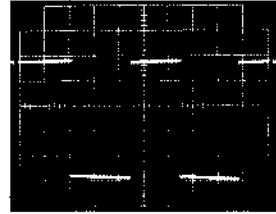
① PIN2 REC/PB
0.5V/10ms. div.



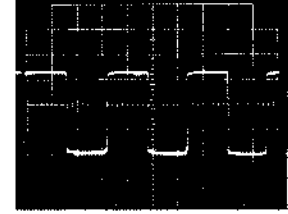
⑥ PIN22 REC/PB
1V/20 μ s. div.



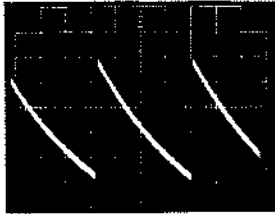
⑪ PIN42 REC/PB
1V/0.1ms. div.



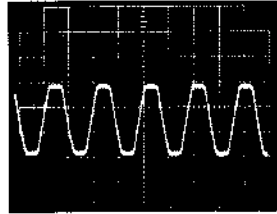
⑬ PIN50 REC/PB
1V/1ms. div.



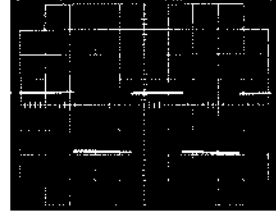
② PIN3 REC/PB
0.1V/10ms. div.



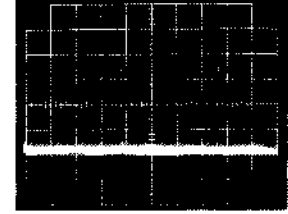
⑦ PIN28 REC/PB
0.5V/1ms. div.



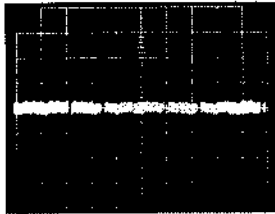
⑫ PIN43 REC/PB
2V/0.1ms. div.



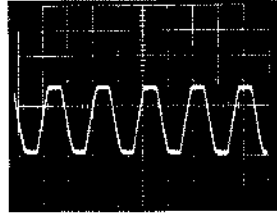
⑰ PIN53 REC/PB
1V/5ms. div.



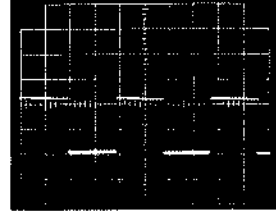
③ PIN4 REC/PB
50mV/10ms. div.



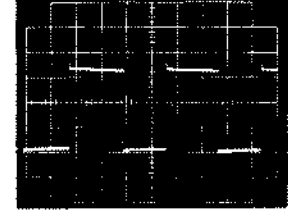
⑧ PIN29 REC/PB
0.5V/1ms. div.



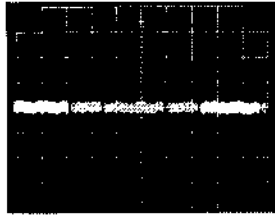
⑬ PIN44 REC/PB
2V/10ms. div.



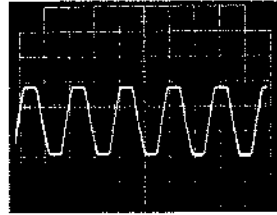
⑱ PIN59 REC
1V/10ms. div.



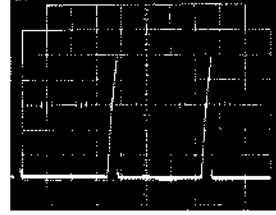
④ PIN5 REC/PB
50mV/10ms. div.



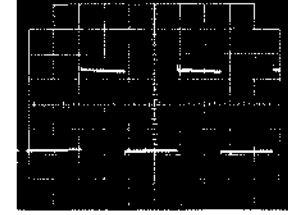
⑨ PIN30 REC/PB
1V/1ms. div.



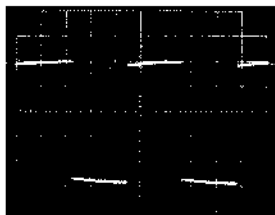
⑭ PIN45 REC/PB
0.5V/5ms. div.



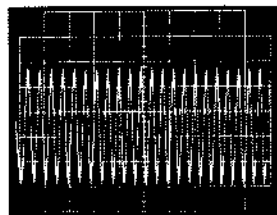
⑲ PIN60 REC
1V/10ms. div.



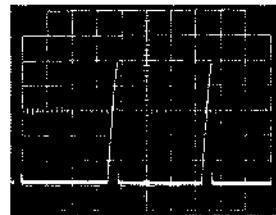
⑤ PIN11 REC/PB
1V/0.2ms. div.



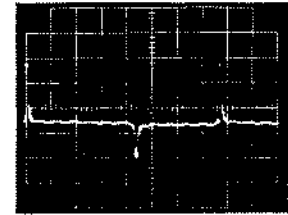
⑩ PIN32 REC/PB
50mV/0.5 μ s. div.



⑮ PIN46 REC/PB
0.5V/5ms. div.

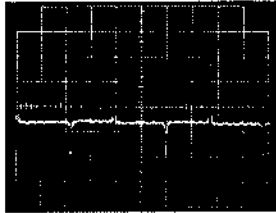


⑳ PIN62 PB
1V/5ms. div.

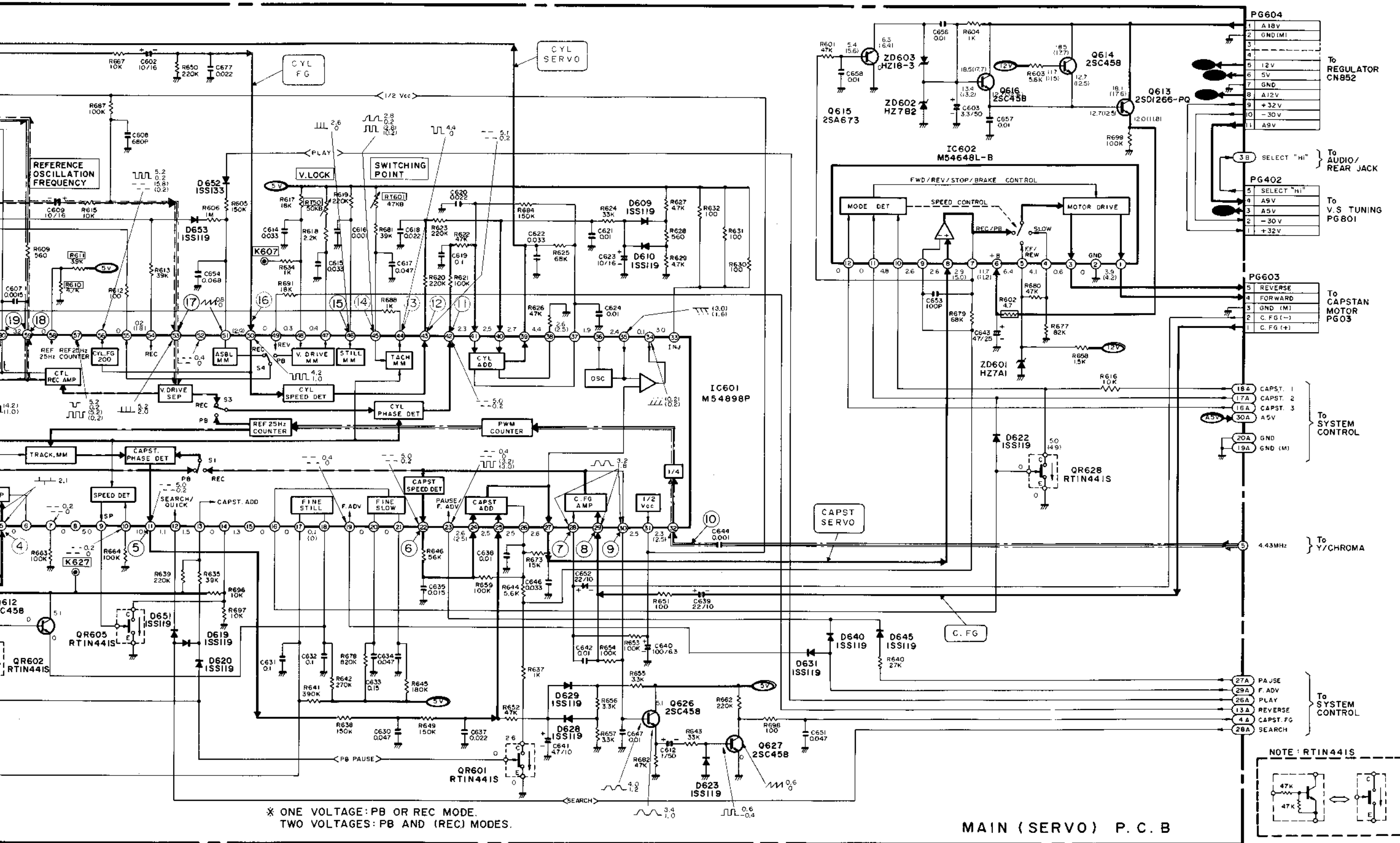


[IC601]

② PIN63 PB
1V/10ms. div.

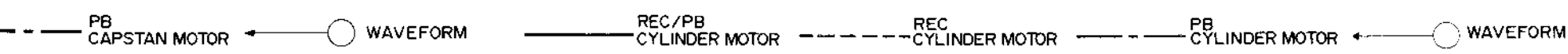
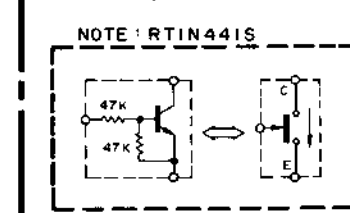


SCHEMATIC DIAGRAM	PAGE VT-125E/VT-135E
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING.....	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH.....	5-13/5-13
SYSTEM CONTROL.....	5-19/5-51
REMOTE CONTROL.....	5-23/5-55
AUDIO/REAR JACK.....	5-25/5-57
RF CONVERTER.....	5-28/5-60
PREAMP.....	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA.....	5-41/5-73
REGULATOR.....	5-50/5-82

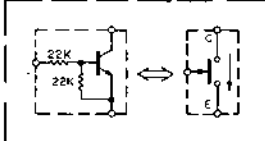


* ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODES.

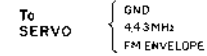
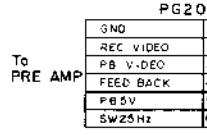
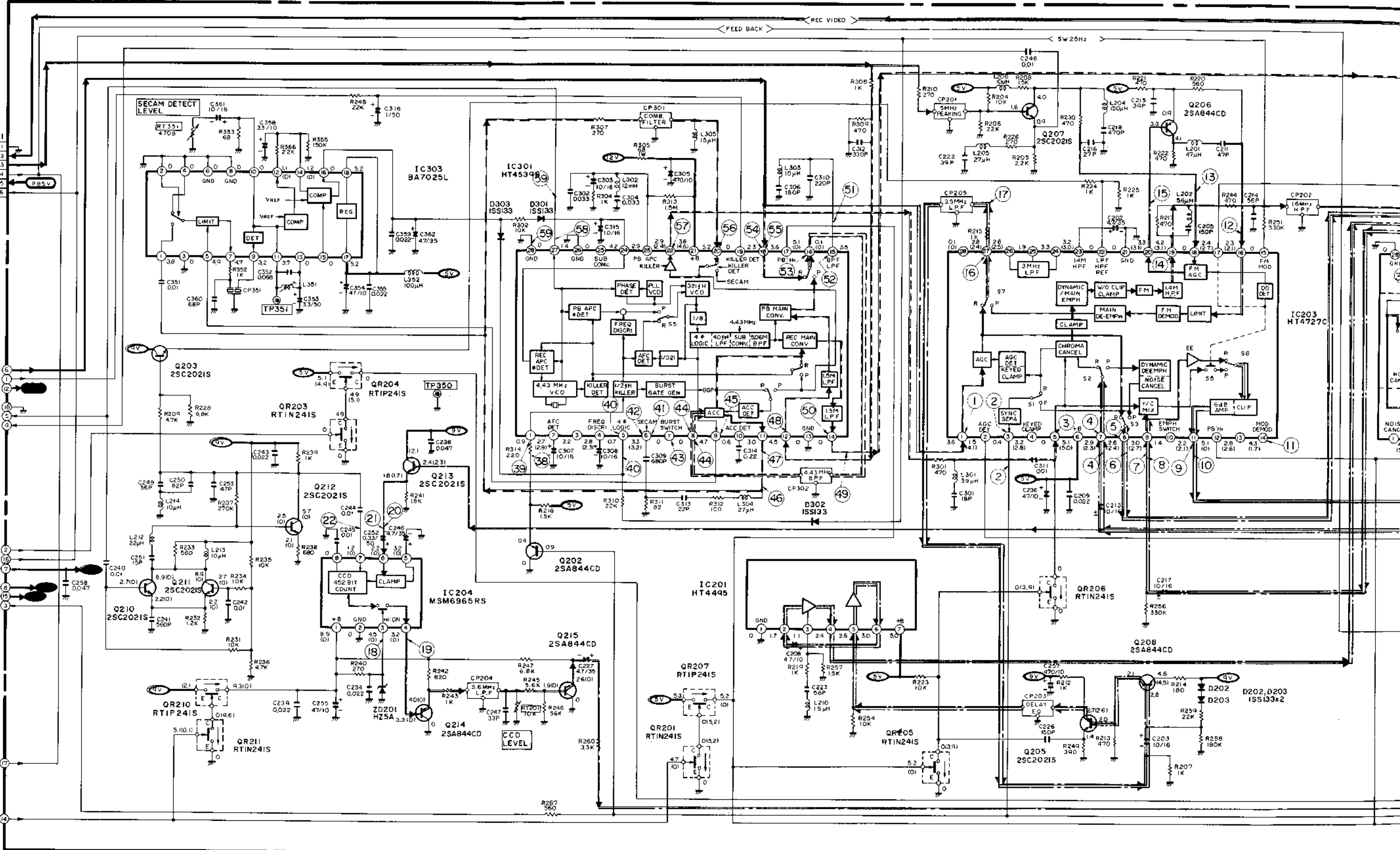
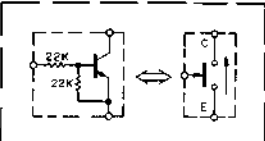
MAIN (SERVO) P.C.B



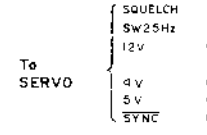
NOTE: RTIN241S



NOTE: RTIP241S



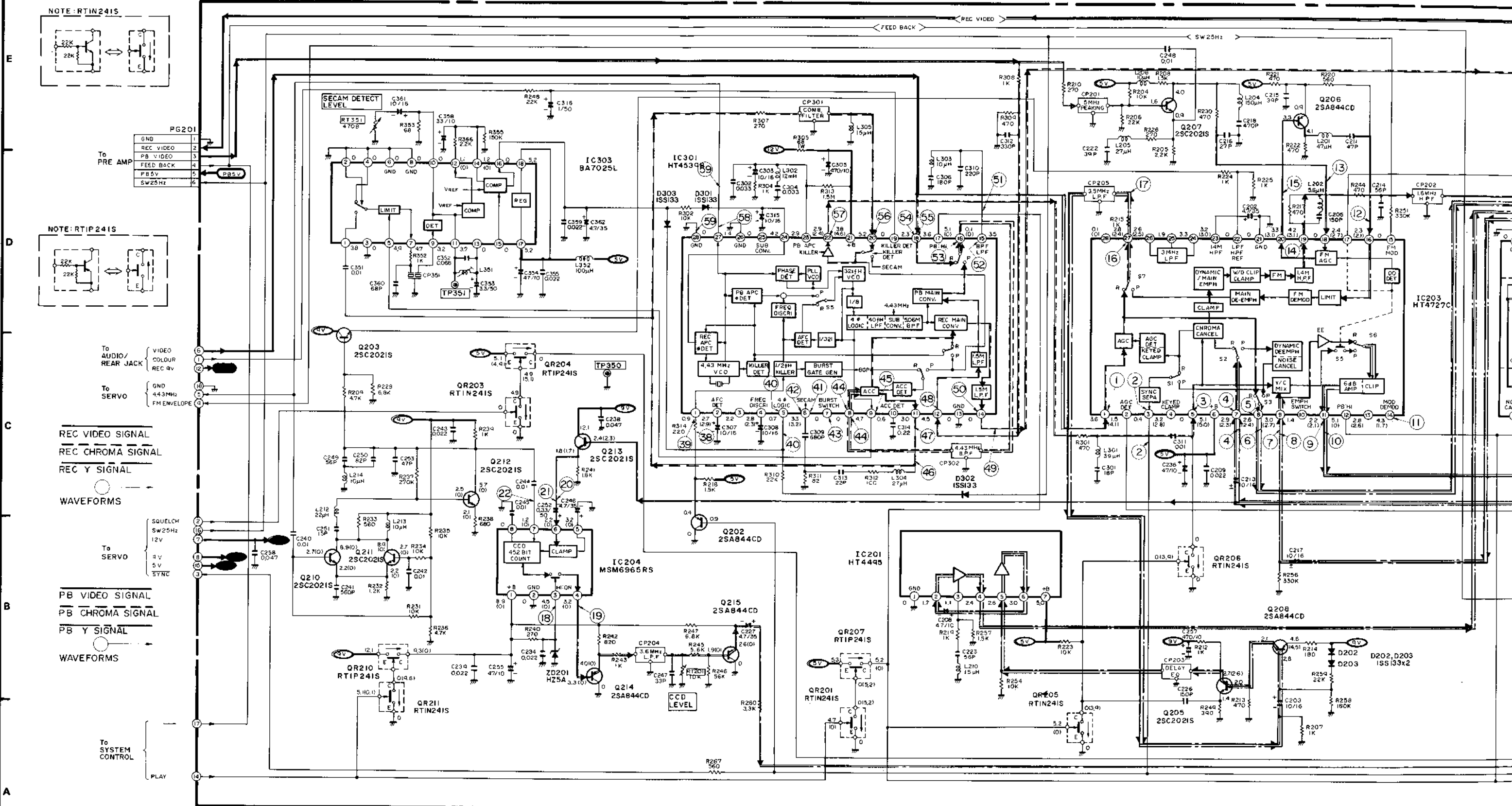
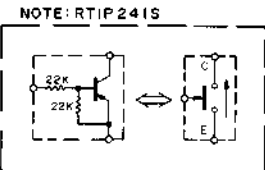
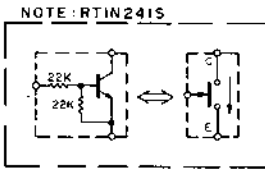
REC VIDEO SIGNAL
REC CHROMA SIGNAL
REC Y SIGNAL
WAVEFORMS



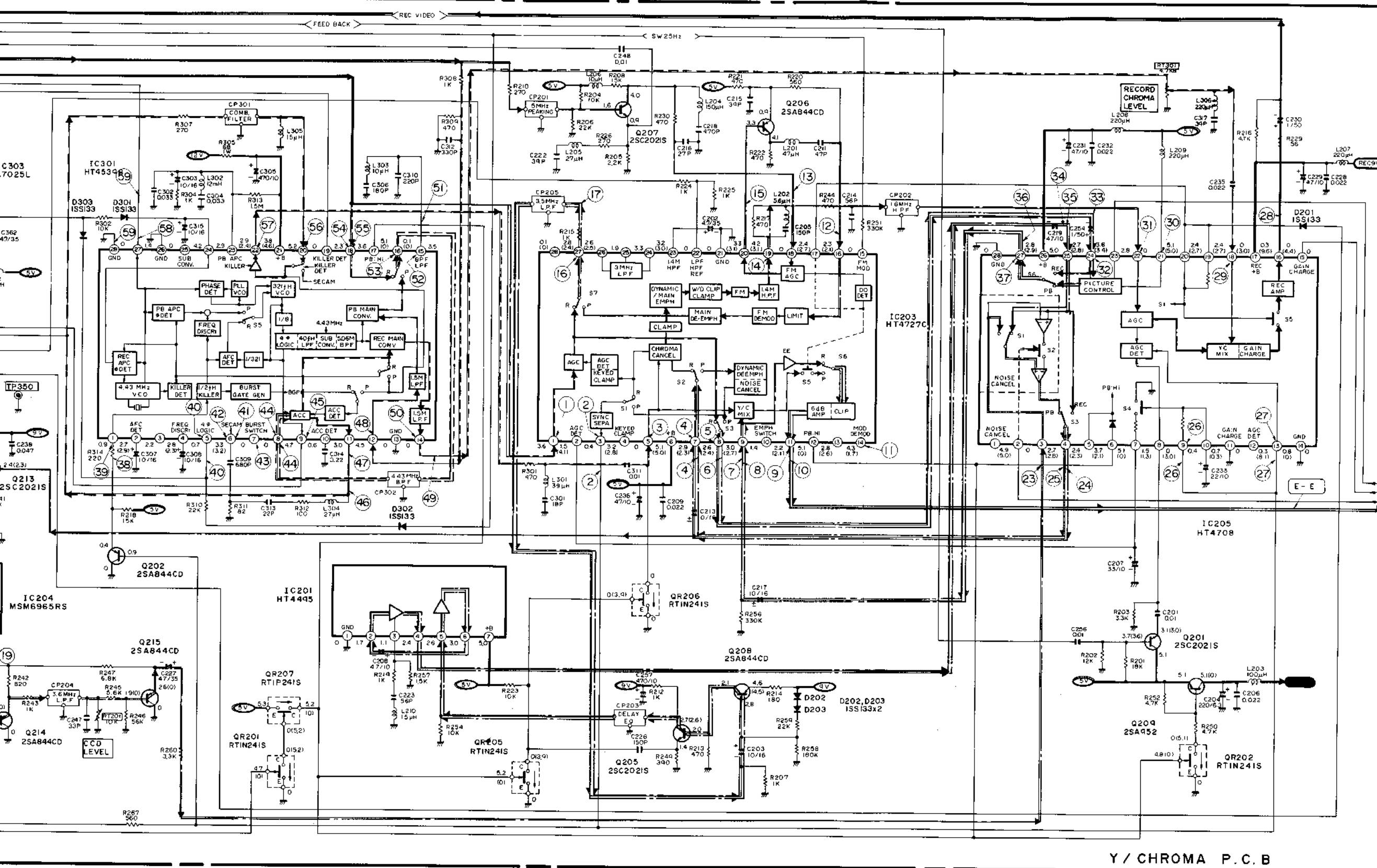
PB VIDEO SIGNAL
PB CHROMA SIGNAL
PB Y SIGNAL
WAVEFORMS



X ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODES.



* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODES.



11 PICTURE CONT.
 12 CURRENT UP
 13 TRICK PLAY
 14 VIDEO
 To SYSTEM CONTROL
 To AUDIO/ REAR JACK

SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

Y / CHROMA P.C.B

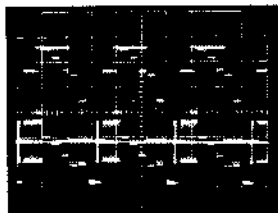
DE, TWO VOLTAGES: PB AND (REC) MODES.

Y/CHROMA CIRCUIT WAVEFORMS (WELLENFORM)

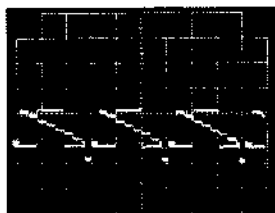
[IC203]

(REC: Colour bar Video in/PB: Alignment tape)

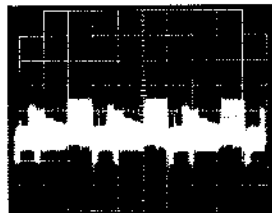
① PIN1 REC
0.1V/20 μ s. div.



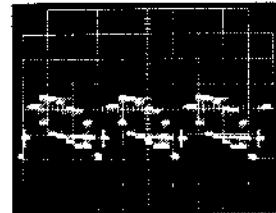
⑥ PIN8 PB
0.5V/20 μ s. div.



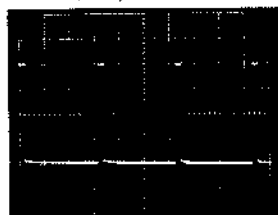
⑪ PIN14 PB
0.2V/20 μ s. div.



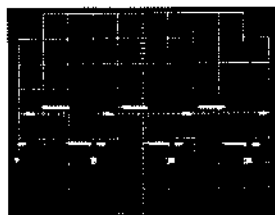
⑯ PIN27 REC
0.1V/20 μ s. div.



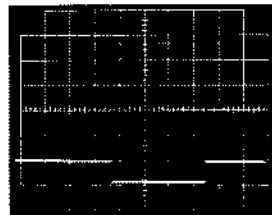
② PIN3 REC/PB
1V/20 μ s. div.



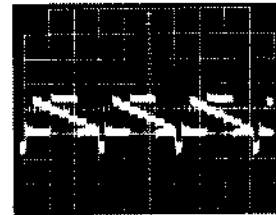
⑦ PIN9 REC
0.1V/20 μ s. div.



⑫ PIN16 PB
0.5V/5ms. div.

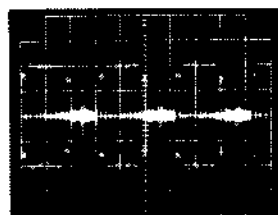


⑰ PIN27 PB
0.1V/20 μ s. div.

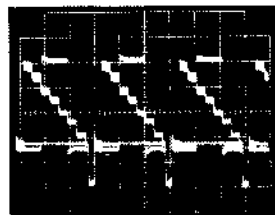


(SW25Hz: 5Vdiv.)

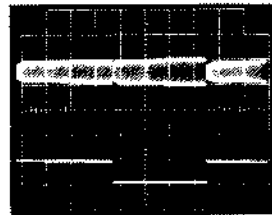
③ PIN5 PB
50mV/20 μ s. div.



⑧ PIN9 PB
0.2V/20 μ s. div.

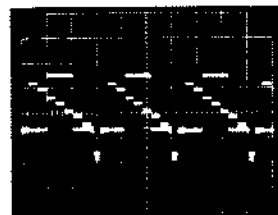


⑬ PIN18 PB
0.5V/5ms. div.

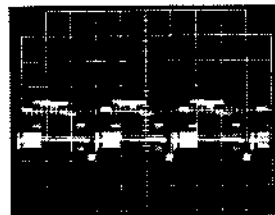


(SW25Hz: 5Vdiv.)

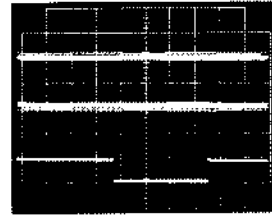
④ PIN7 REC/PB
0.1V/20 μ s. div.



⑨ PIN11 REC
0.1V/20 μ s. div.

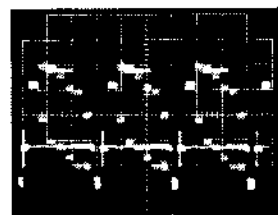


⑭ PIN19 REC
0.5V/5ms. div.

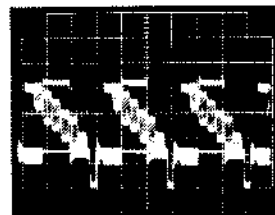


(SW25Hz: 5Vdiv.)

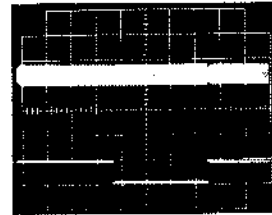
⑤ PIN8 REC
50mV/20 μ s. div.



⑩ PIN11 PB
0.5V/20 μ s. div.



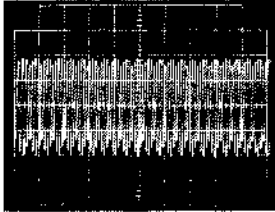
⑮ PIN20 PB
0.5V/5ms. div.



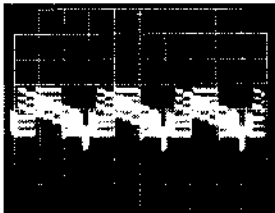
(SW25Hz: 5Vdiv.)

[IC204]

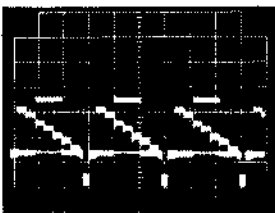
⑱ PIN3 PB
0.2V/0.5 μ s. div.



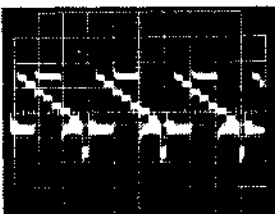
⑲ PIN4 PB
0.5V/20 μ s. div.



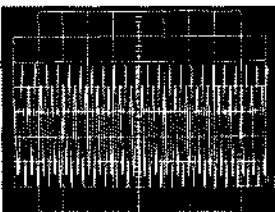
⑳ PIN6 REC
0.1V/20 μ s. div.



㉑ PIN6 PB
0.1V/20 μ s. div.

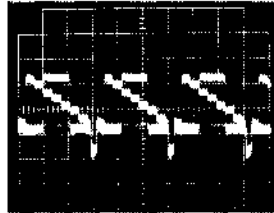


㉒ PIN7 PB
0.1V/0.5 μ s. div.

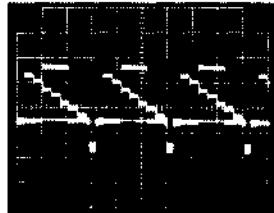


[IC205]

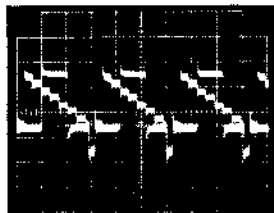
㉓ PIN3 PB
0.1V/20 μ s. div.



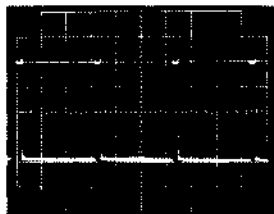
㉔ PIN 4 REC
10mV/20 μ s. div.



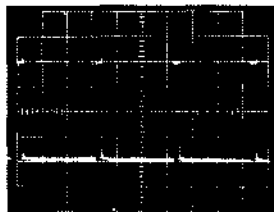
㉕ PIN4 PB
10mV/20 μ s. div.



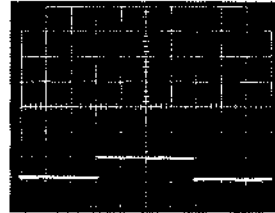
㉖ PIN9 REC/PB
1V/20 μ s. div.



㉗ PIN13 REC/PB
1V/20 μ s. div.

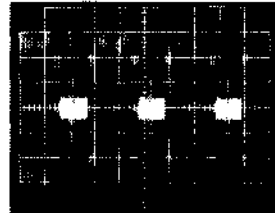


㉘ PIN16 REC
0.5V/5ms. div.

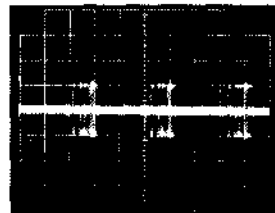


(SW25Hz: 5Vdiv.)

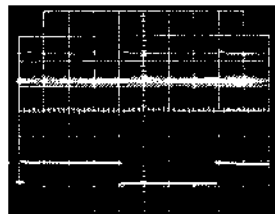
㉙ PIN18 REC
20mV/20 μ s. div.



㉚ PIN21 REC
50mV/20 μ s. div.

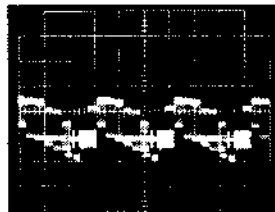


㉛ PIN22 REC
0.2V/5ms. div.

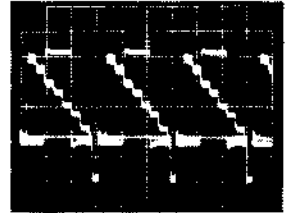


(SW25Hz: 5Vdiv.)

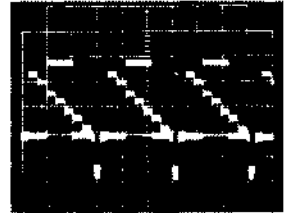
㉜ PIN24 REC
0.1V/20 μ s. div.



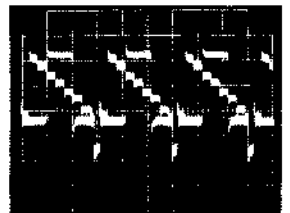
㉝ PIN24 PB
0.2V/20 μ s. div.



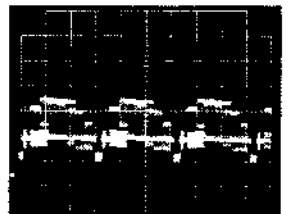
㉞ PIN25 REC
0.1V/20 μ s. div.



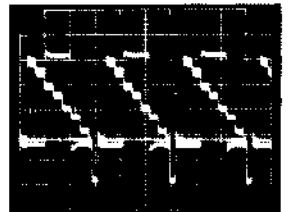
㉟ PIN25 PB
0.1V/20 μ s. div.



㊱ PIN27 REC
0.1V/20 μ s. div.

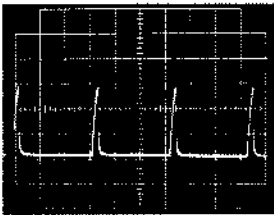


㊲ PIN27 PB
0.2V/20 μ s. div.

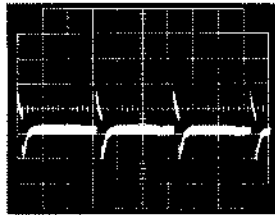


[IC301]

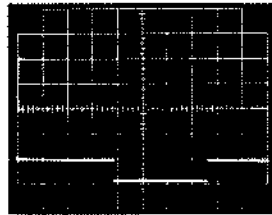
③⑧ PIN1 REC
1V/20 μ s. div.



④③ PIN7 REC/PB
0.1V/20 μ s. div.

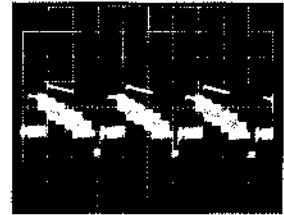


④⑧ PIN12 PB
50mV/0.5ms. div.

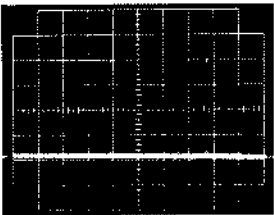


(SW25Hz: 5Vdiv.)

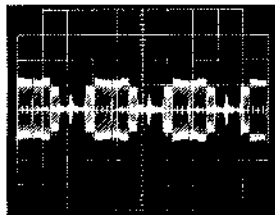
⑤③ PIN16 REC
0.2V/20 μ s. div.



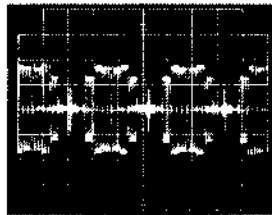
③⑨ PIN1 PB
1V/0.5ms. div.



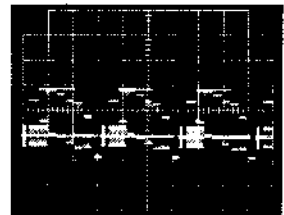
④④ PIN8 REC/PB
50mV/20 μ s. div.



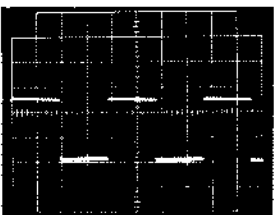
④⑨ PIN14 REC
0.1V/20 μ s. div.



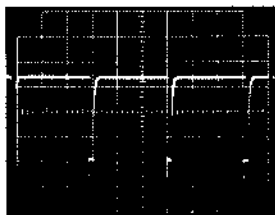
⑤④ PIN18 REC
0.2V/20 μ s. div.



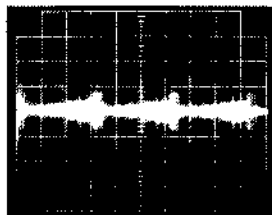
④⑩ PIN5 REC/PB
0.5V/10ms. div.



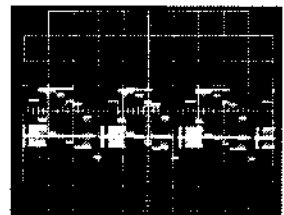
④⑤ PIN9 REC/PB
1V/20 μ s. div.



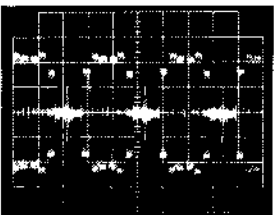
⑤⑩ PIN14 PB
50mV/20 μ s. div.



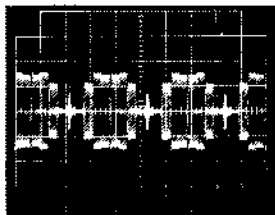
⑤⑤ PIN18 PB
0.2V/20 μ s. div.



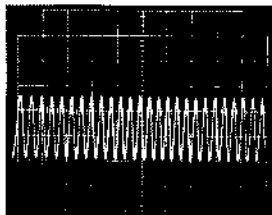
④① PIN6 REC
0.1V/20 μ s. div.



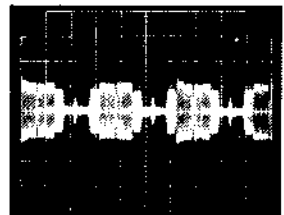
④⑥ PIN11 REC
0.2V/20 μ s. div.



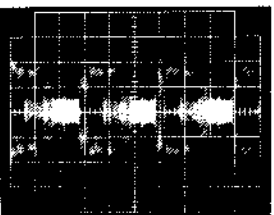
⑤① PIN15 REC
0.1V/0.5 μ s. div.



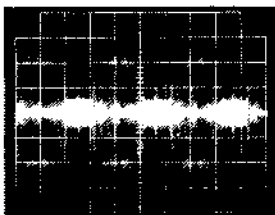
⑤⑥ PIN20 PB
50mV/20 μ s. div.



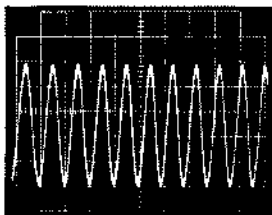
④② PIN6 PB
20mV/20 μ s. div.



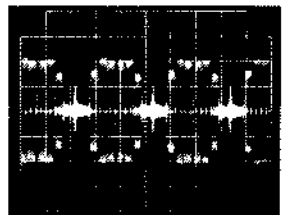
④⑦ PIN11 PB
0.2V/20 μ s. div.



⑤② PIN15 PB
50mV/0.2 μ s. div.

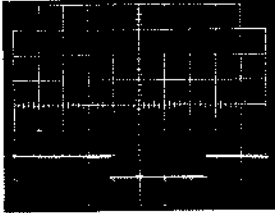


⑤⑦ PIN22 PB
0.1V/20 μ s. div.



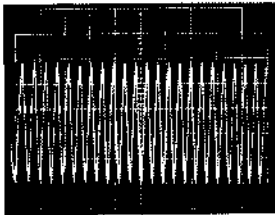
[IC301]

⑤⑧ PIN25 PB
0.1V/5ms. div.



(SW25Hz: 5Vdiv.)

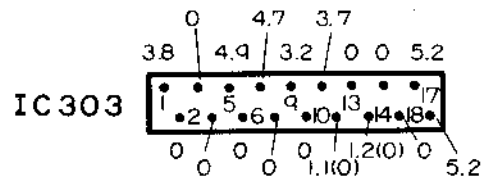
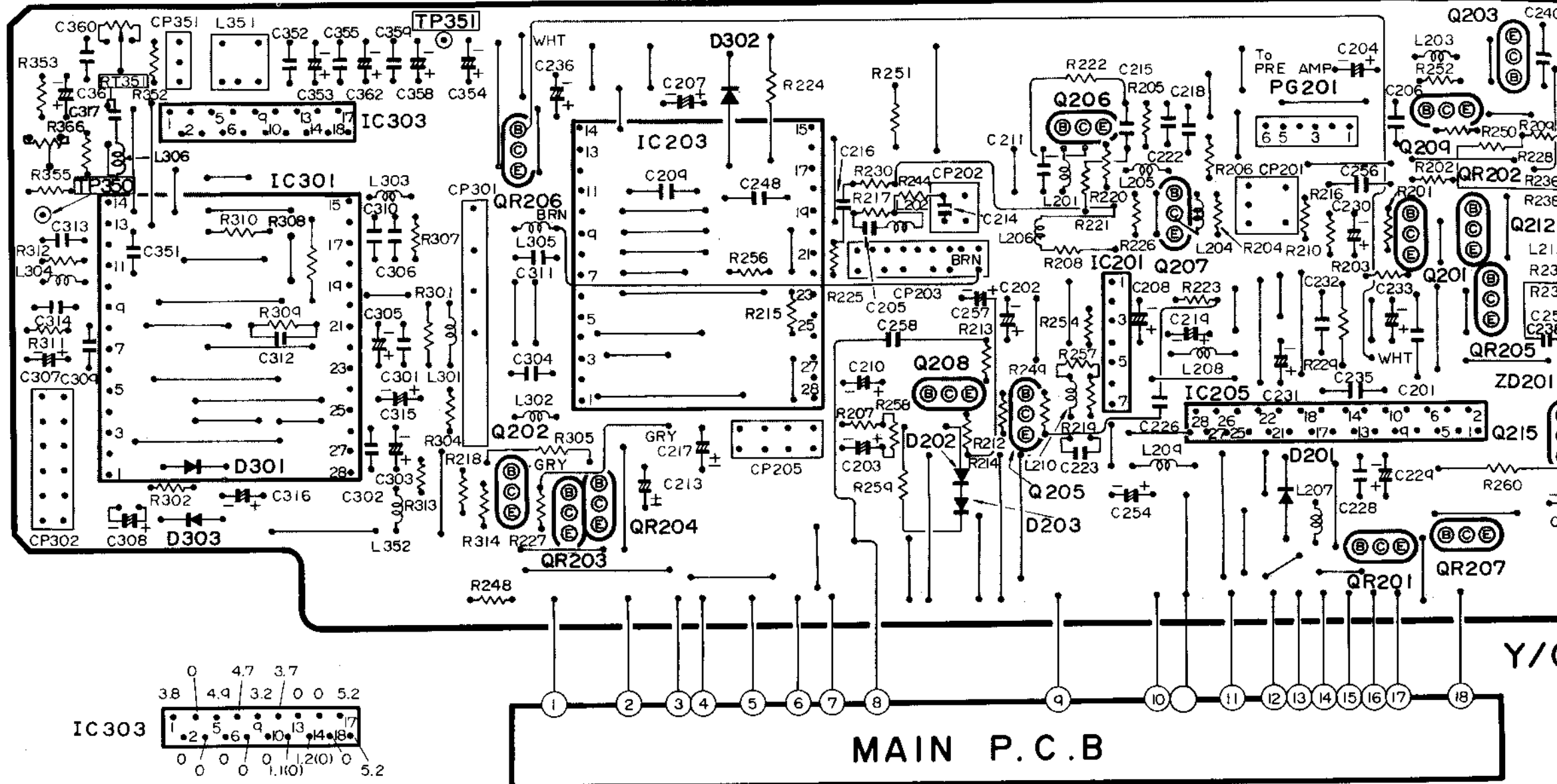
⑤⑨ PIN27 REC/PB
50mV/0.5 μ s. div.



SCHEMATIC DIAGRAM	PAGE VT-125E/VT-135E
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

SECAM
DETECT.
LEVEL

RT301
RECORD
CHROMA
LEVEL



14	0	3.5	15
13	0	0.1(0)	
11	3.0	3.6	
9	4.7	0	
7	0	5.2	21
5	0.7	2.9	
3	2.2	0	
1	0.9	0	28

IC301

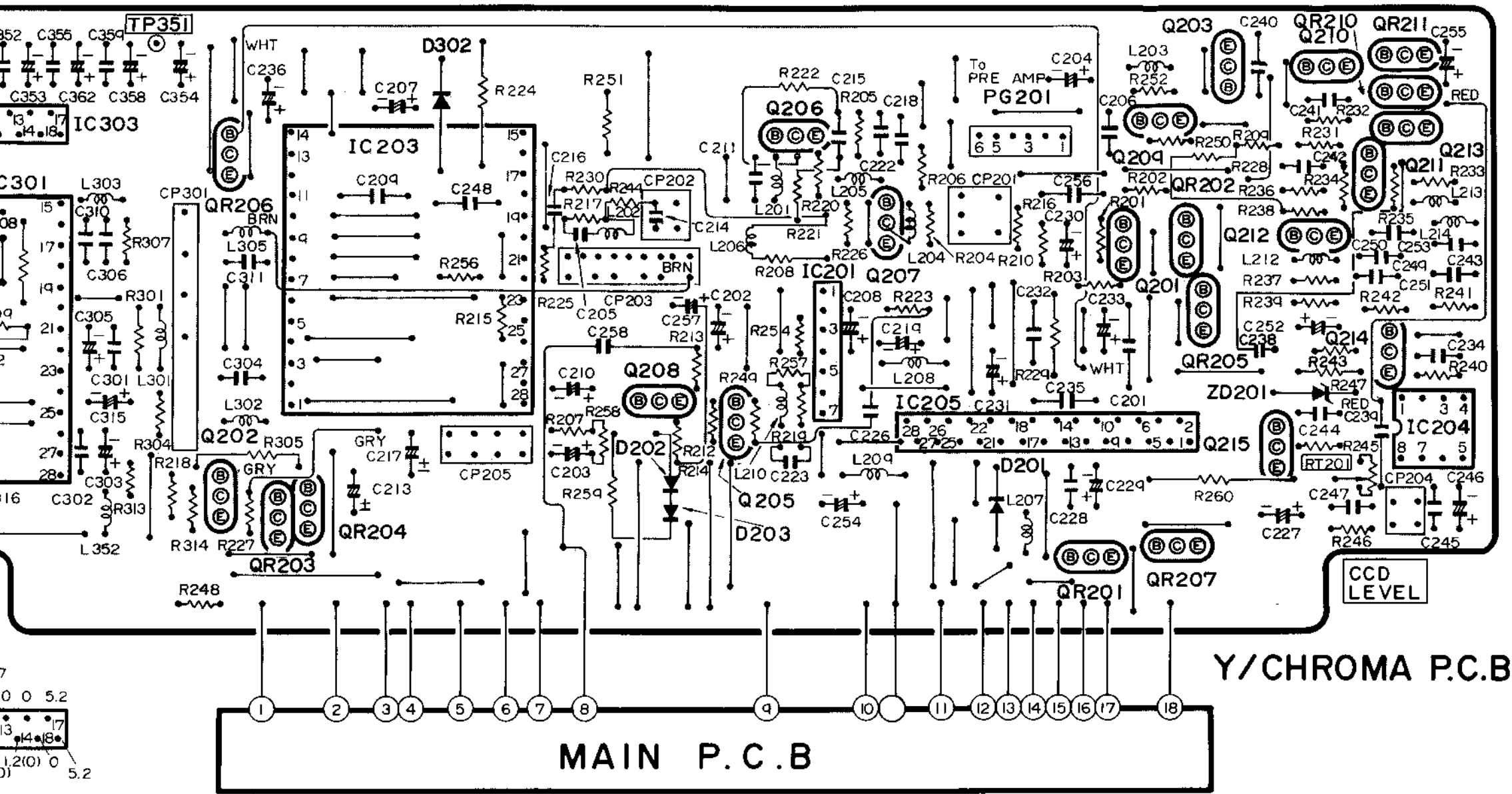
14	4.3(1.7)	0	15
13	2.8(2.6)	2.3(2.1)	
11	2.2(2.1)	0	
9	3.0(2.7)	3.3(3.1)	
7	2.9(2.3)	0	21
5	0	3.3	
3	0.4	2.6(2.5)	
1	3.6	0.1(0)	28

IC203

28	26	22	18	14	10	6	2
0	5.0	0	0	4.3(1.7)	1.4	5.1(5.0)	1.5(4.1)
1.7							
1.1							
2.4							
2.6							
3.0							
5.0							

IC201

* ONE VOLTAGE : PB OR REC MO
TWO VOLTAGES : PB AND (REC



Y/CHROMA P.C.B

MAIN P.C.B

3.5	15
0.1	10
5.1	17
3.6	
2.3	19
0	
5.2	21
3.8	16
2.9	23
4.2	25
0	
1.4	27
0	28

14	4.3	1.7	0	15
13	2.8	2.6	2.3	12
	5.1	1.0	2.4	17
11	2.2	2.1	0	
	1.4		4.2	19
9	3.0	2.7	3.3	3.1
	2.6	2.4	0	21
7	2.9	2.3	0	
	5.1	5.0	3.2	3.0
5	0		3.3	
	3.2	2.8	1.9	25
3	0.4		2.6	2.5
	1.5	4.1	2.8	27
1	3.6		0.1	10
			0.1	28

0	1
1.7	
1.1	3
2.4	
2.6	5
3.0	
5.0	7

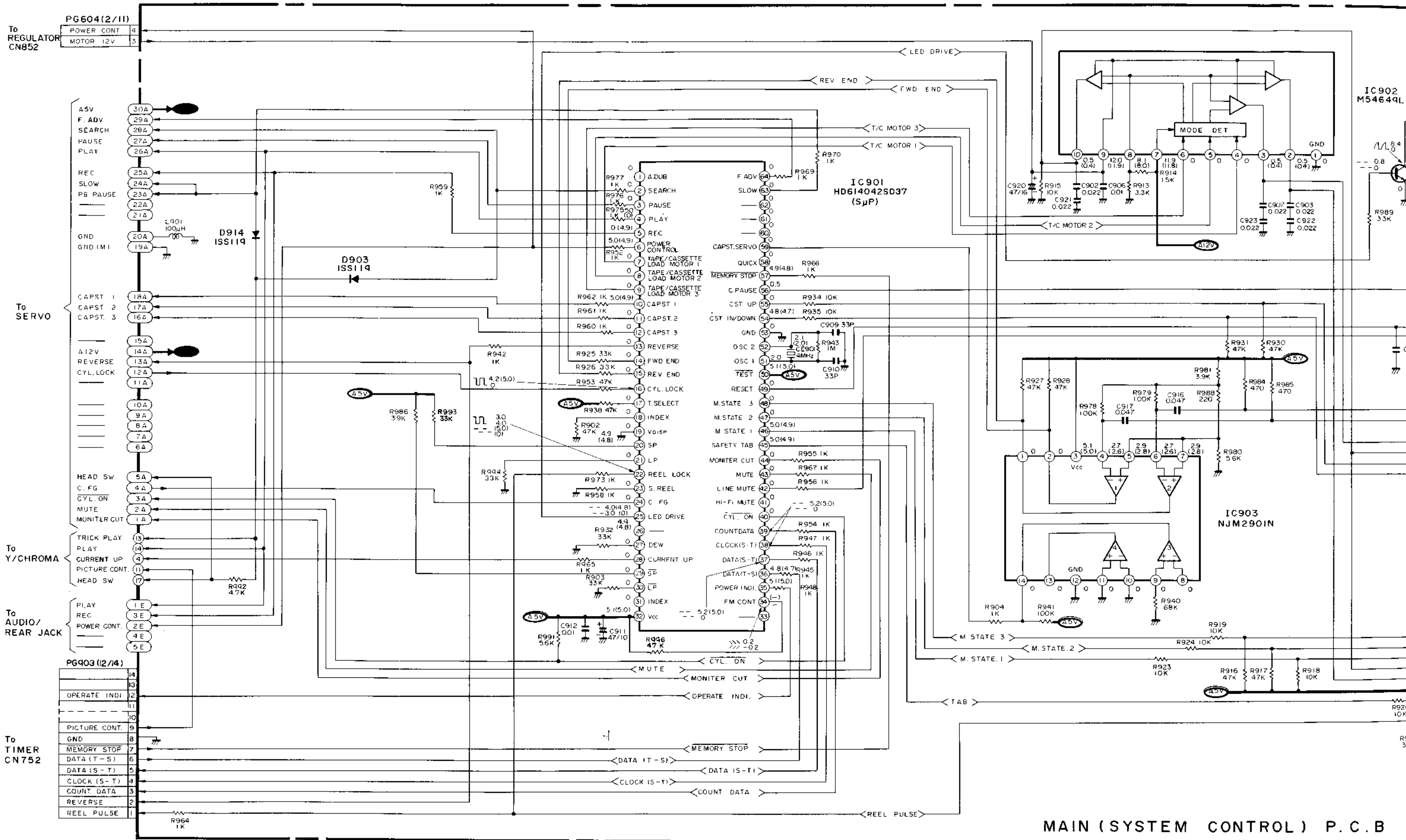
28	26	22	18	14	10	6	2
27	25	21	17	13	9	5	1
28	26	22	18	14	10	6	2
27	25	21	17	13	9	5	1

0	3	4
1		
8	7	5
0	2	1
1	2	1
1	2	1

* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODES.

SYSTEM CONTROL (SYSTEMREGELUNG)

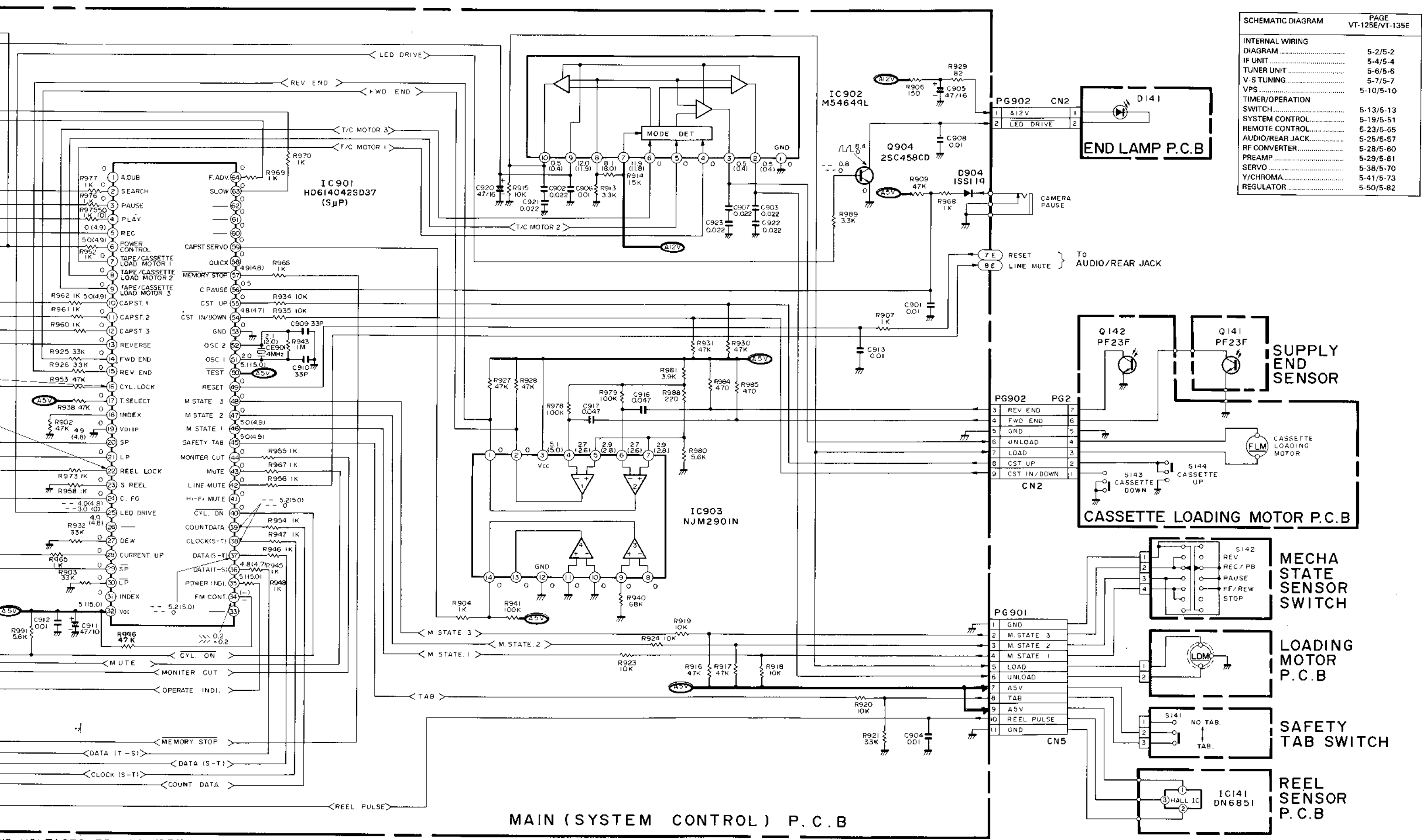
VT-135E (VPS)



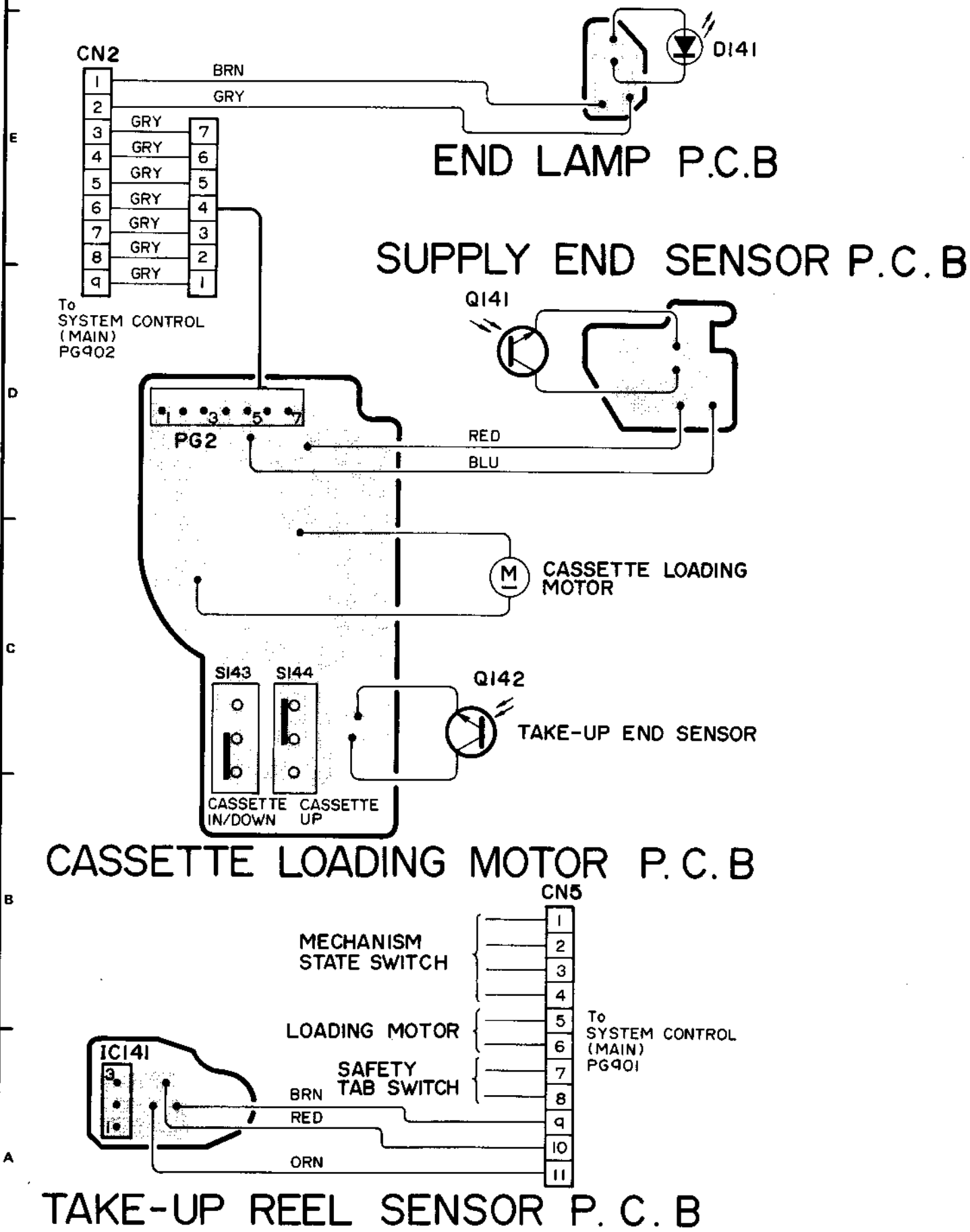
* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.

MAIN (SYSTEM CONTROL) P.C.B

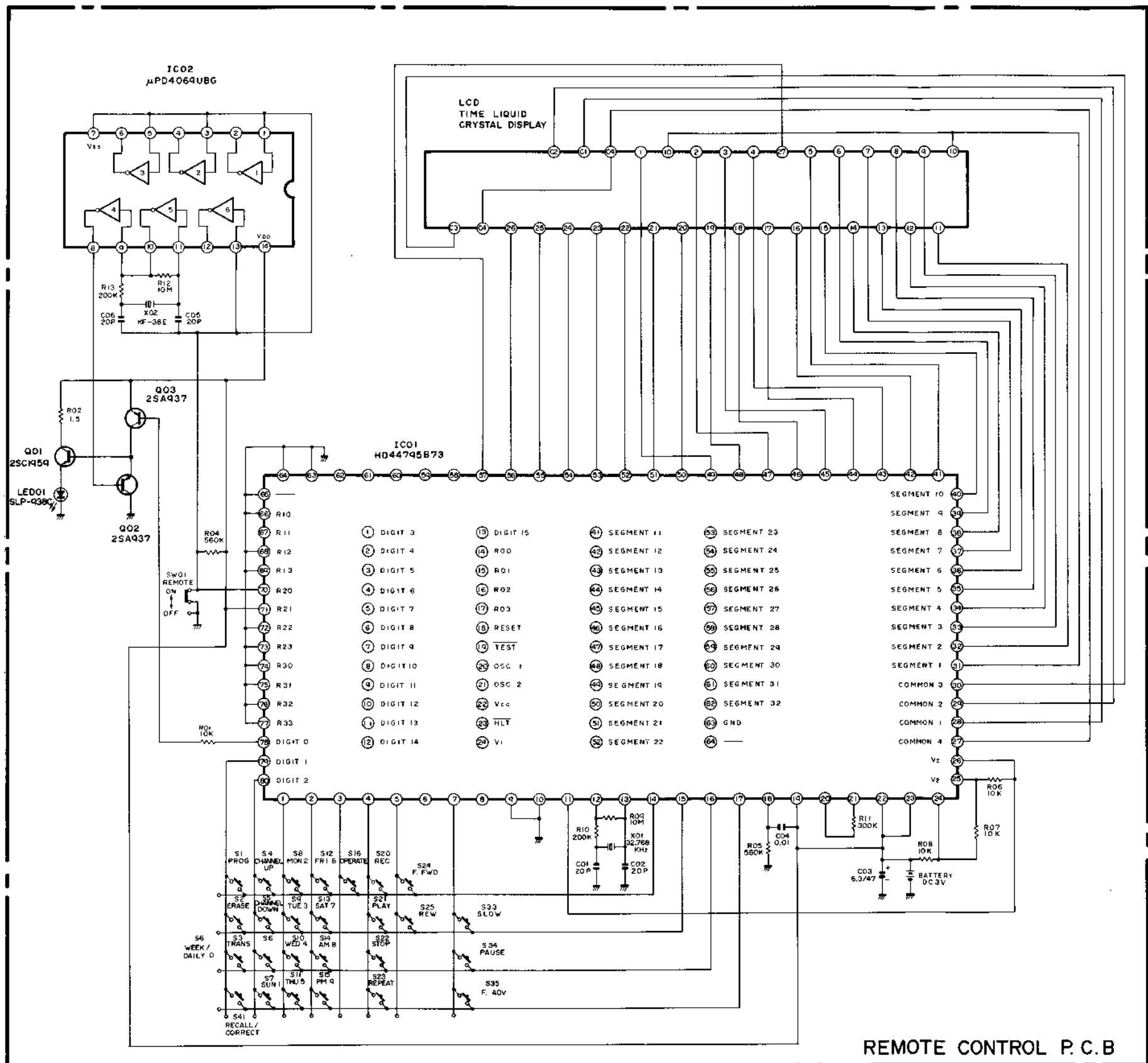
SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	VT-125E/VT-135E
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-65
AUDIO/REAR JACK	5-25/5-67
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82



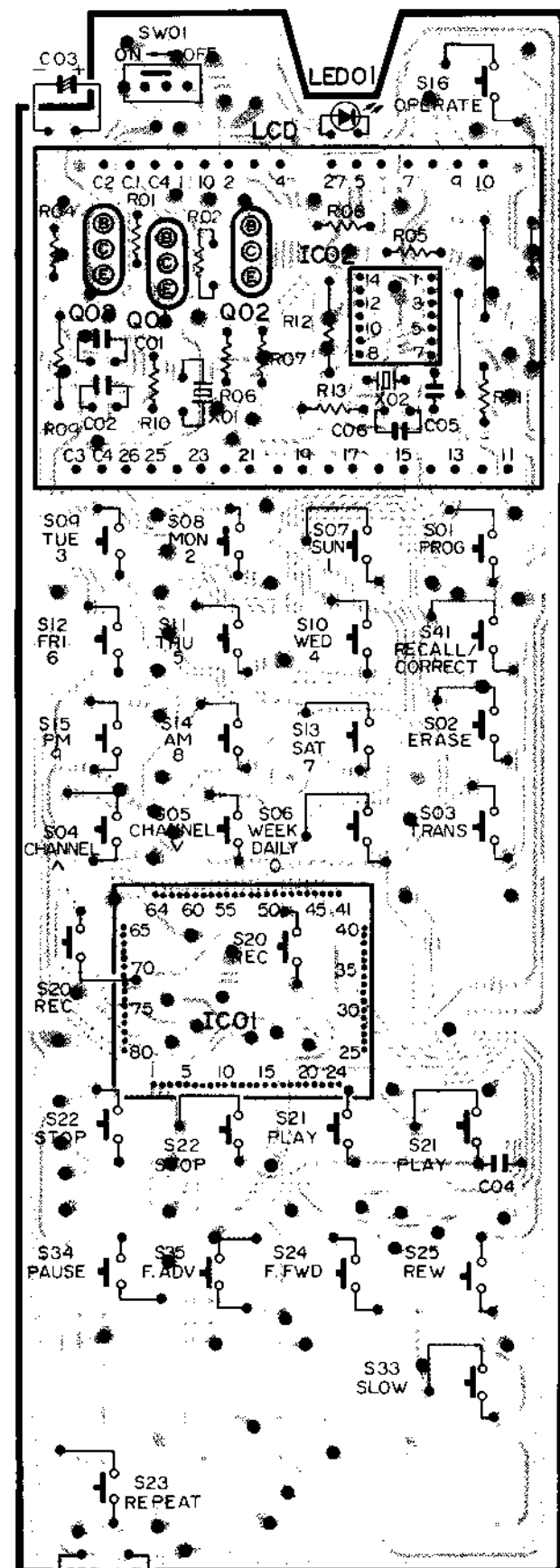
VO VOLTAGES: PB AND (REC) MODE.



R.P.C.B

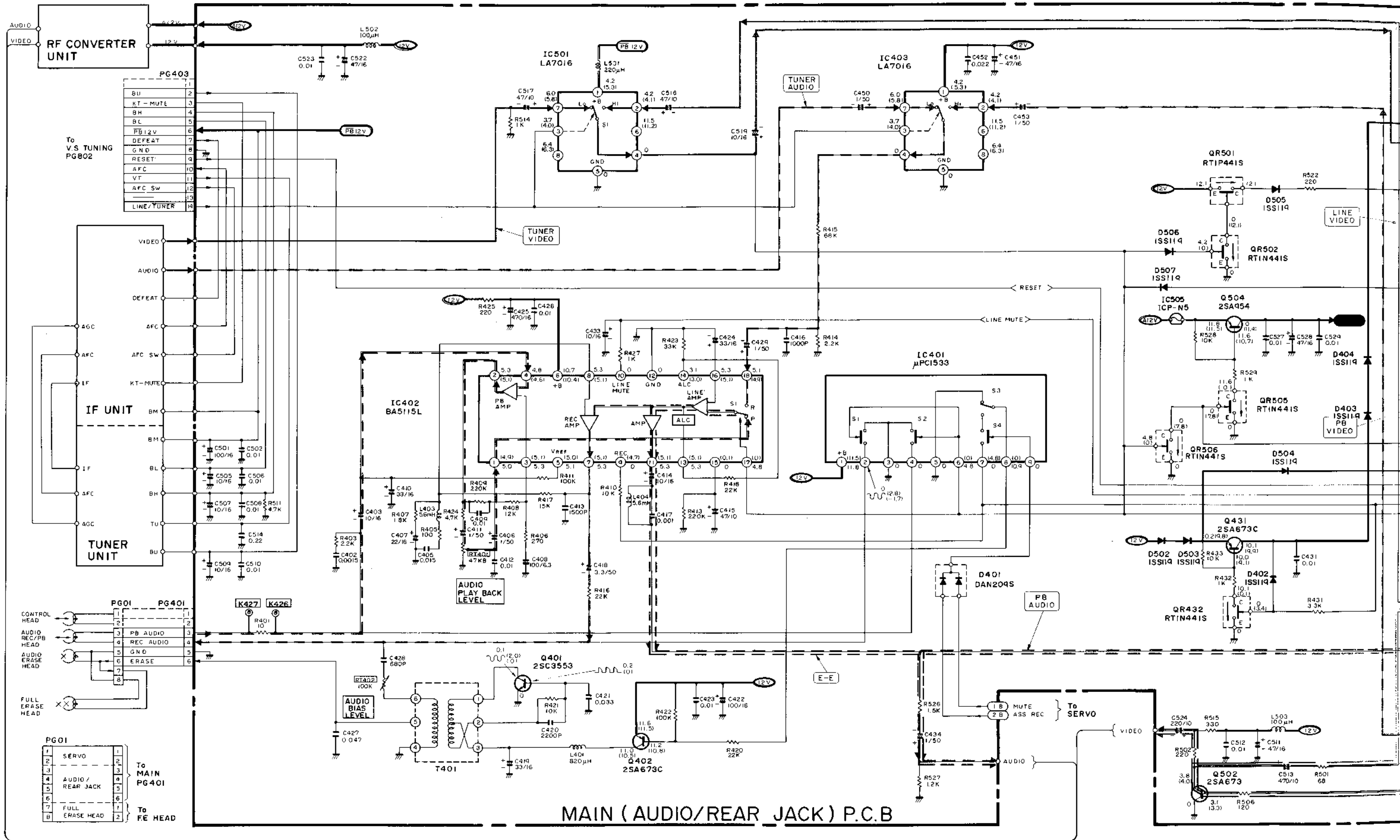


REMOTE CONTROL P.C.B

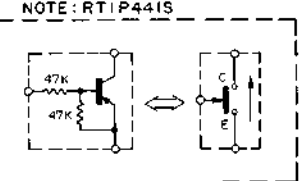
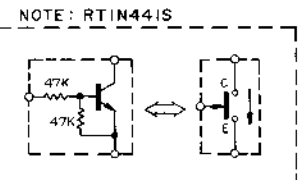
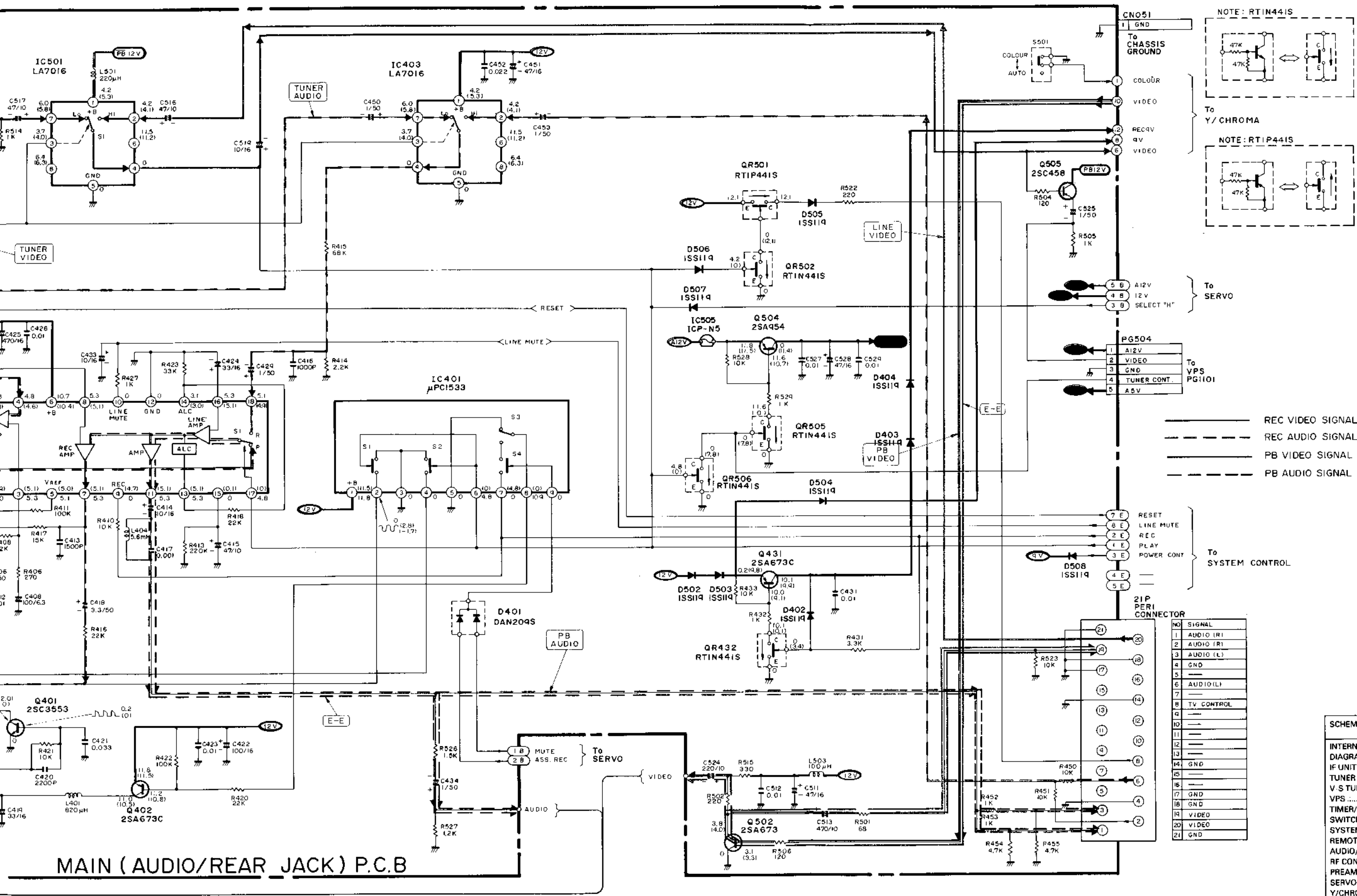


REMOTE CONTROL P.C.B

- Solderd side
- Parts side
- Through hole



* ONE VOLTAGE : PB OR REC MODE, TWO VOLTAGES : PB AND (REC) MODE.



——— REC VIDEO SIGNAL
 - - - REC AUDIO SIGNAL
 ——— PB VIDEO SIGNAL
 - - - PB AUDIO SIGNAL

7 E RESET
 8 E LINE MUTE
 2 E REC
 4 E PLAY
 3 E POWER CONT
 5 E

21P PERI CONNECTOR

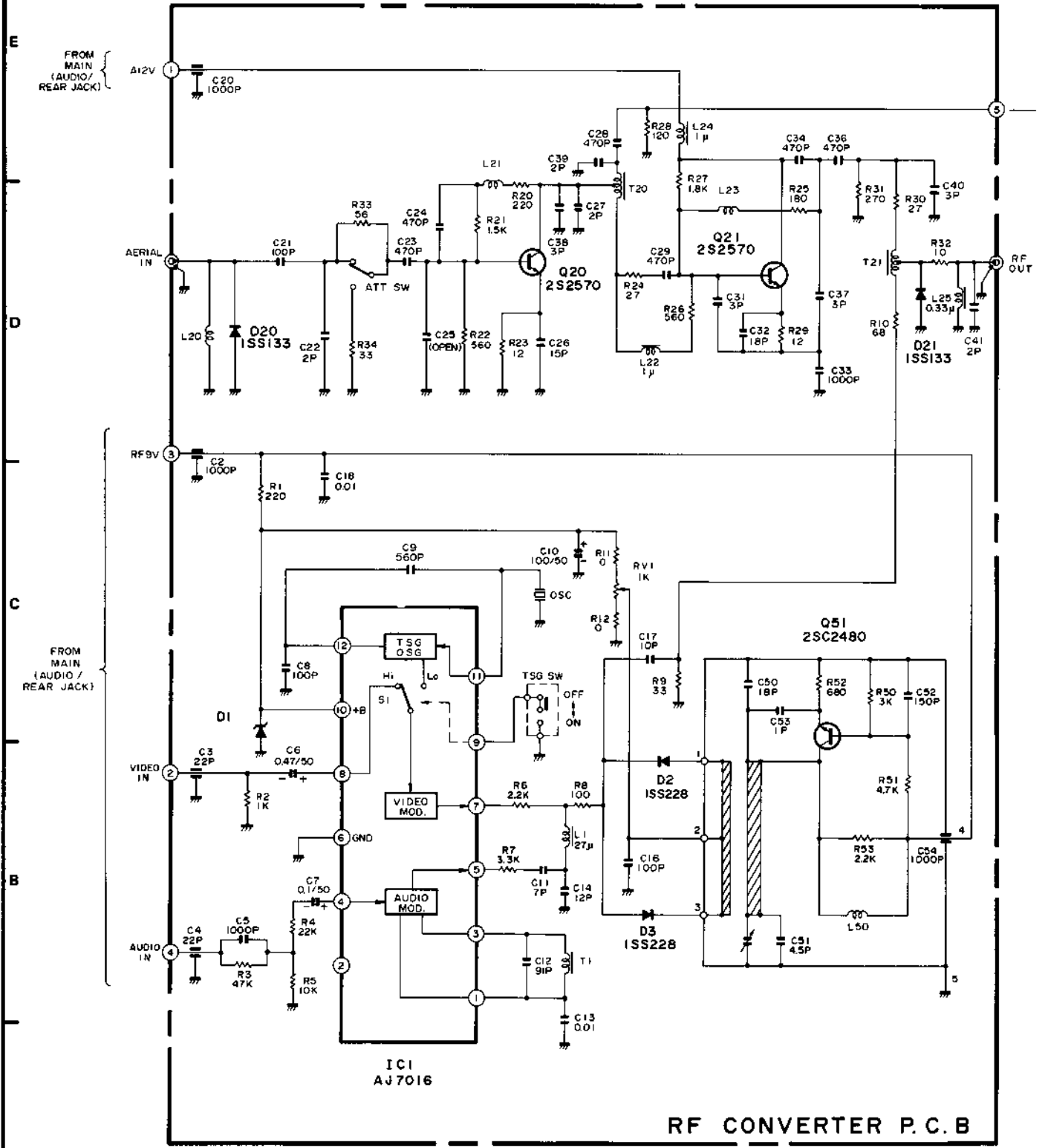
NO	SIGNAL
1	AUDIO (R)
2	AUDIO (R)
3	AUDIO (L)
4	GND
5	
6	AUDIO (L)
7	
8	TV CONTROL
9	
10	
11	
12	
13	
14	GND
15	
16	
17	GND
18	GND
19	VIDEO
20	VIDEO
21	GND

SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-8/5-8
V.S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

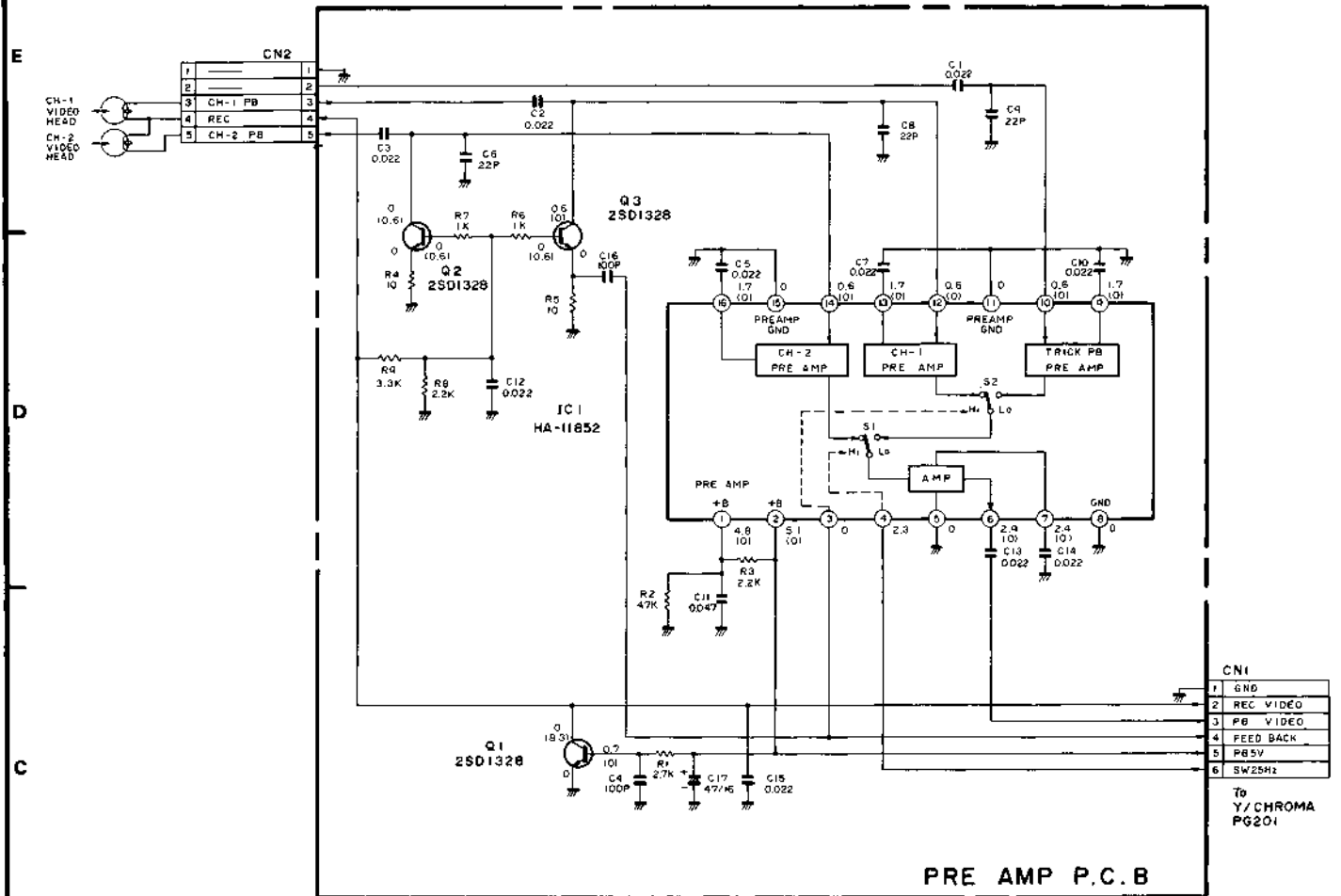
MAIN (AUDIO/REAR JACK) P.C.B

MODE, TWO VOLTAGES : PB AND (REC) MODE.

RF CONVERTER (HF-KONVERTER)



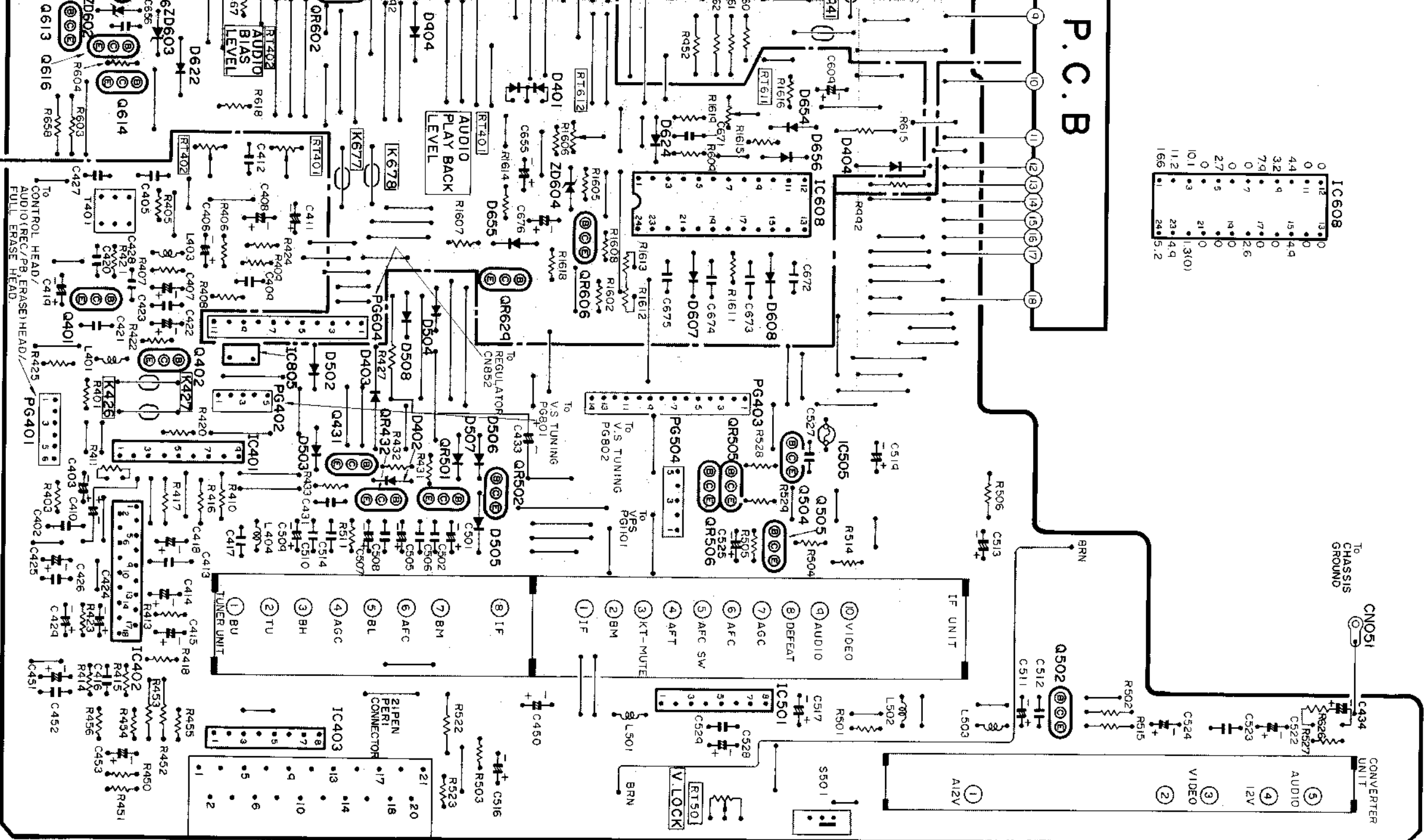
PREAMP (VORVERSTÄRKER)



* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.

SCHMATIC DIAGRAM	PAGE
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
10	0	7	0	0	2.6	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0



VO SECTION
AUDIO/REAR JACK
SECTION

MAIN P.C.B

RT612
SLOW TRACKING
PRESET

* ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGE: PB AND (REC) MODE.

5.3(5.1)	5.3(5.1)	5.3(5.1)	0(0.1)		
5.0(4.9)	5.1(5.0)	0(4.7)	5.3(5.1)	4.8(0)	
5.3(5.1)	0(0.7)	0(0.4)	0(3.1)	0(3.0)	5.1(4.9)
4.8(4.6)	5.3(5.1)	0(5.3)	5.1(5.1)		

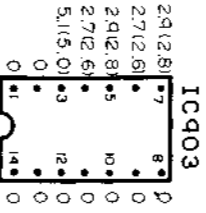
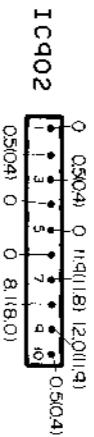
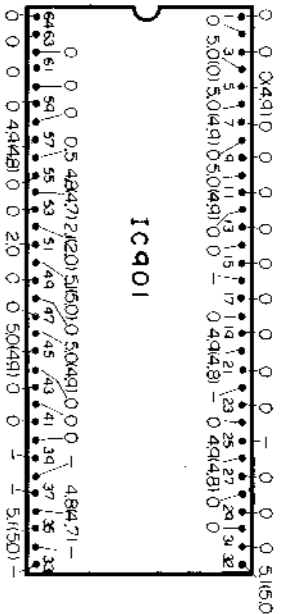
8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	4.2(5.3)

NO	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	GND
15	GND
14	GND
13	GND
12	GND
11	GND
10	GND
9	TV CONTROL
8	AUDIO(L)
7	AUDIO(L)
6	AUDIO(L)
5	GND
4	GND
3	AUDIO(R)
2	AUDIO(R)
1	AUDIO(R)

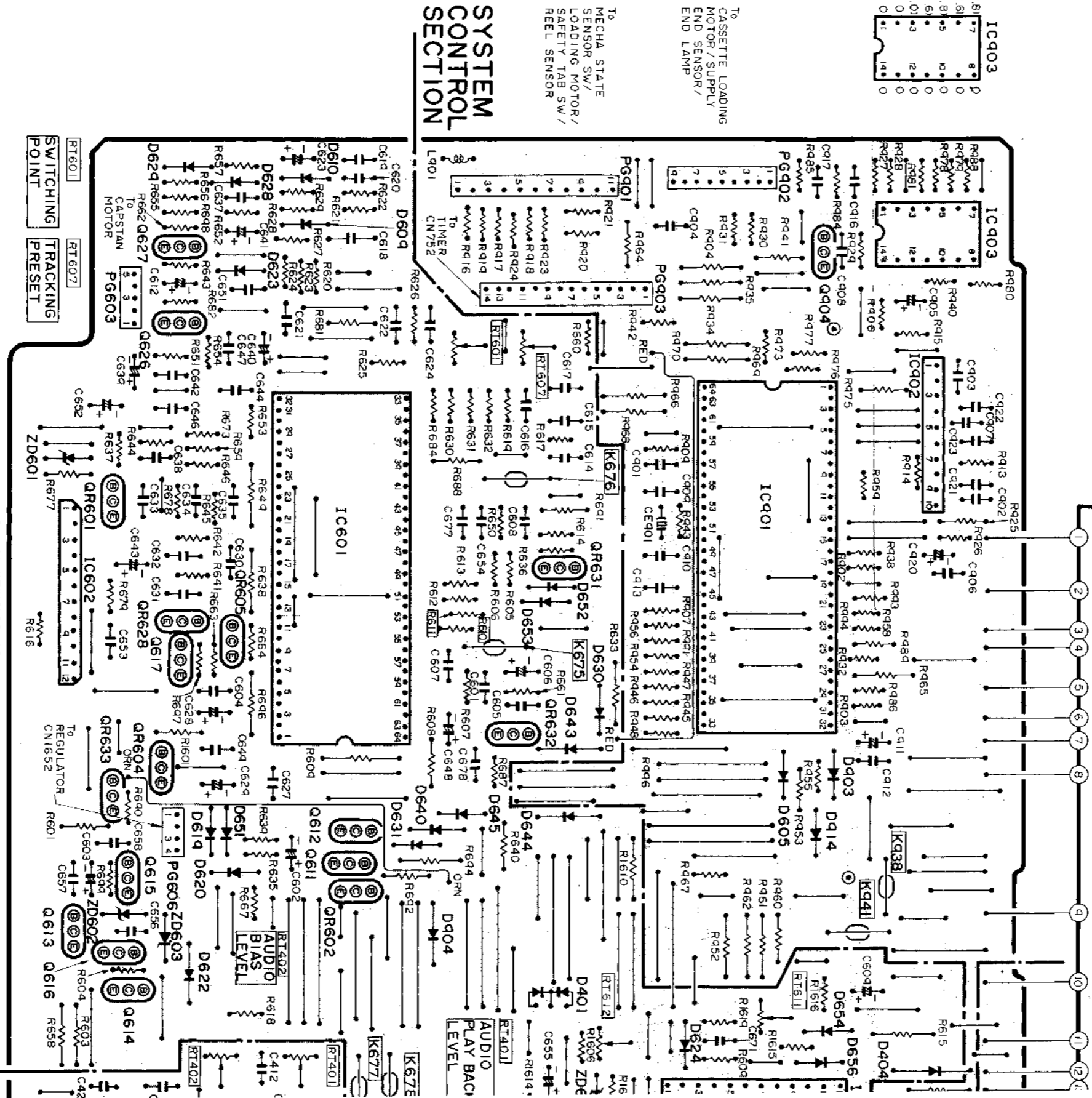
8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	4.2(5.3)

8	0
7	10.4(10)
6	0(4.8)
5	4.8(10)
4	0
3	0
2	0
1	11.8(11.5)

6 7 8 9 10 11



Y/CHROMA P.C.B



To CASSETTE LOADING MOTOR / SUPPLY END SENSOR / REEL LAMP

To MECHA STATE SENSOR SW / LOADING MOTOR / SAFETY TAB SW / REEL SENSOR

SYSTEM CONTROL SECTION

RT601 SWITCHING POINT

RT607 TRACKING PRESET

SERVO SECTION

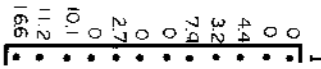
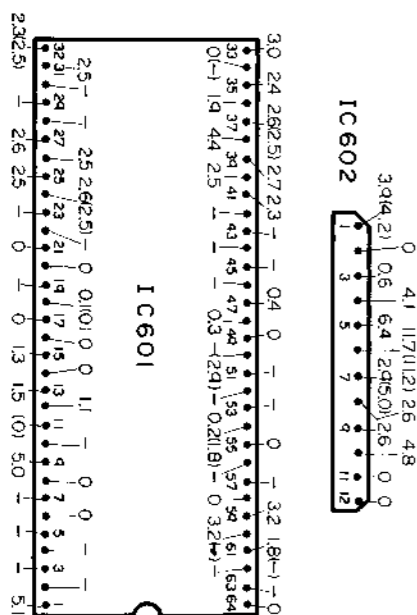
RT611 SLOW STABILITY

RT612 SLOW TRACKING

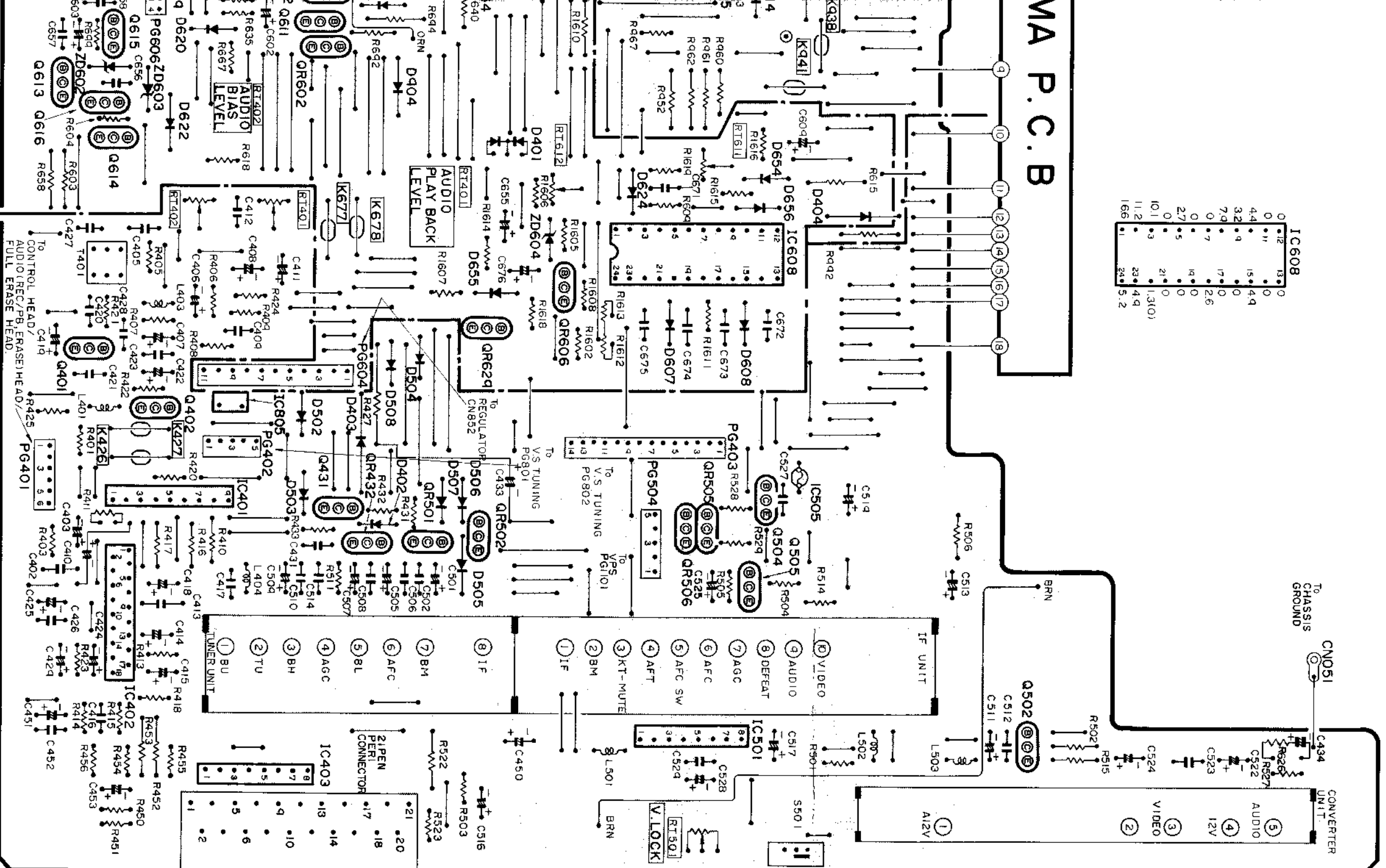
* ONE VOLTAGE : F

TWO VOLTAGE : F

RT610 REFERENCE OSCILLATION FREQUENCY



0	12	0
0	11	0
4.4	15	4.4
3.2	9	0
7.4	0	0
0	7	2.6
0	0	0
2.7	5	0
0	0	0
10.1	3	1.3(10)
11.2	0	4.4
1.66	1	24.4
		5.2



SERVO SECTION

AUDIO/REAR JACK SECTION

MAIN P.C.B

RT612
SLOW TRACKING
PRESET

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGE : PB AND (REC) MODE.

IC402

1	2	3	4	5	6	7	8
5.3(5.1)	10.7(10.4)	0	3(3.0)	5.1(4.9)	4.8(4.6)	5.3(5.1)	0

5.3(5.1)	5.3(5.1)	5.3(5.1)	0(0.1)
5.0(4.9)	5.1(5.0)	0(4.7)	5.3(5.1)
4.8(0)			

IC501

8	6,4(6.3)
7	6,0(5.8)
6	11,5(11.2)
5	0
4	3,7(4.0)
3	4,2(4.1)
2	4,2(5.3)
1	0

NO	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	GND
15	GND
14	GND
13	GND
12	GND
11	GND
10	TV CONTROL
9	GND
8	TV CONTROL
7	AUDIO(L)
6	AUDIO(L)
5	GND
4	AUDIO(L)
3	AUDIO(L)
2	AUDIO(R)
1	AUDIO(R)

IC403

8	6,4(6.3)
7	6,0(5.8)
6	11,5(11.2)
5	0
4	3,7(4.0)
3	3,7(4.0)
2	4,2(4.1)
1	4,2(5.3)

IC401

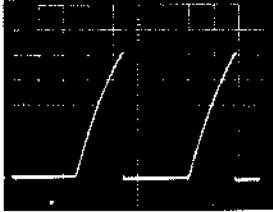
8	0
7	10,9(10)
6	0(4.8)
5	4,8(10)
4	0
3	0
2	0
1	11,8(11.5)

SERVO CIRCUIT WAVEFORMS (WELLENFORM)

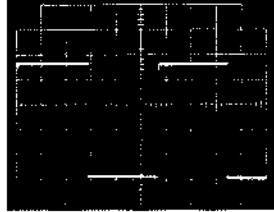
[IC601]

(REC: Colour bar Video in/PB: Alignment tape)

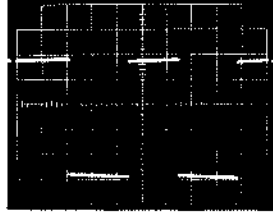
① PIN2 REC/PB
0.5V/10ms. div.



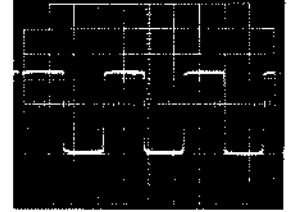
⑥ PIN22 REC/PB
1V/20 μ s. div.



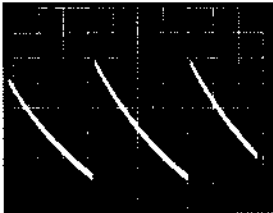
⑪ PIN42 REC/PB
1V/0.1ms. div.



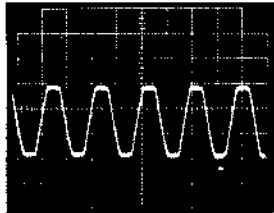
⑯ PIN50 REC/PB
1V/1ms. div.



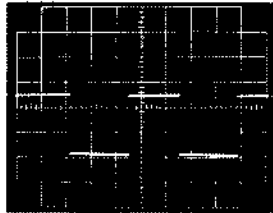
② PIN3 REC/PB
0.1V/10ms. div.



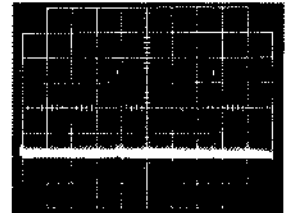
⑦ PIN28 REC/PB
0.5V/1ms. div.



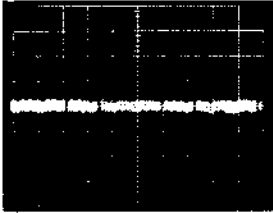
⑫ PIN43 REC/PB
2V/0.1ms. div.



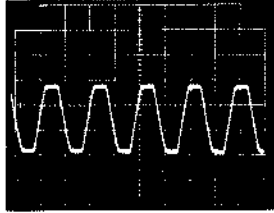
⑰ PIN53 REC/PB
1V/5ms. div.



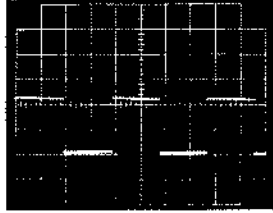
③ PIN4 REC/PB
50mV/10ms. div.



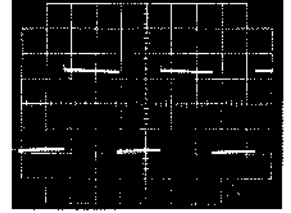
⑧ PIN29 REC/PB
0.5V/1ms. div.



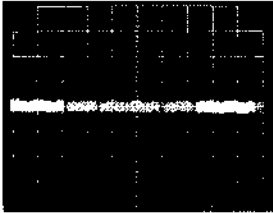
⑬ PIN44 REC/PB
2V/10ms. div.



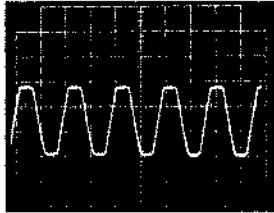
⑱ PIN59 REC
1V/10ms. div.



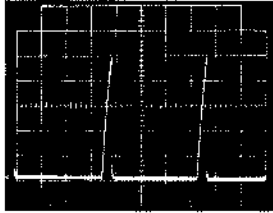
④ PIN5 REC/PB
50mV/10ms. div.



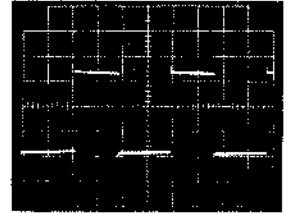
⑨ PIN30 REC/PB
1V/1ms. div.



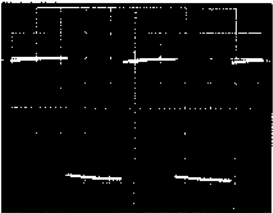
⑭ PIN45 REC/PB
0.5V/5ms. div.



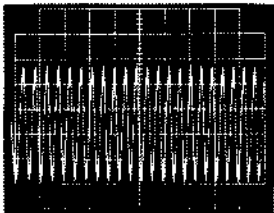
⑲ PIN60 REC
1V/10ms. div.



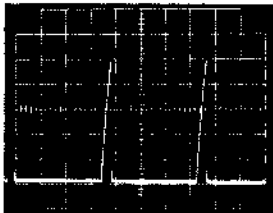
⑤ PIN11 REC/PB
1V/0.2ms. div.



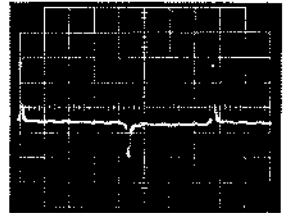
⑩ PIN32 REC/PB
50mV/0.5 μ s. div.



⑮ PIN46 REC/PB
0.5V/5ms. div.

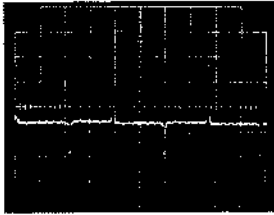


⑳ PIN62 PB
1V/5ms. div.

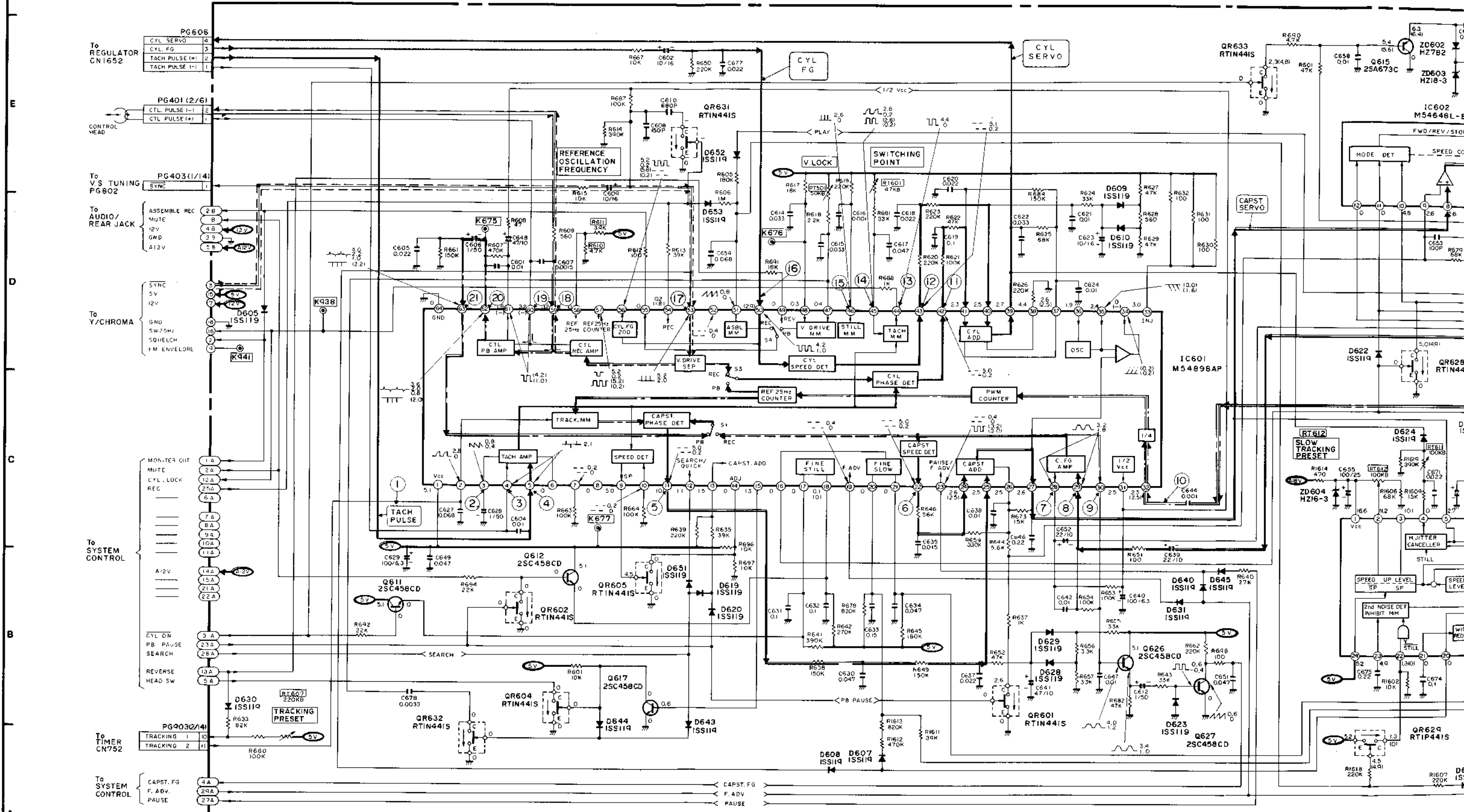


[IC601]

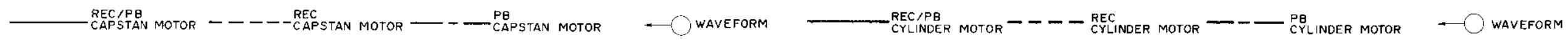
① PIN63 PB
1V/10ms. div.

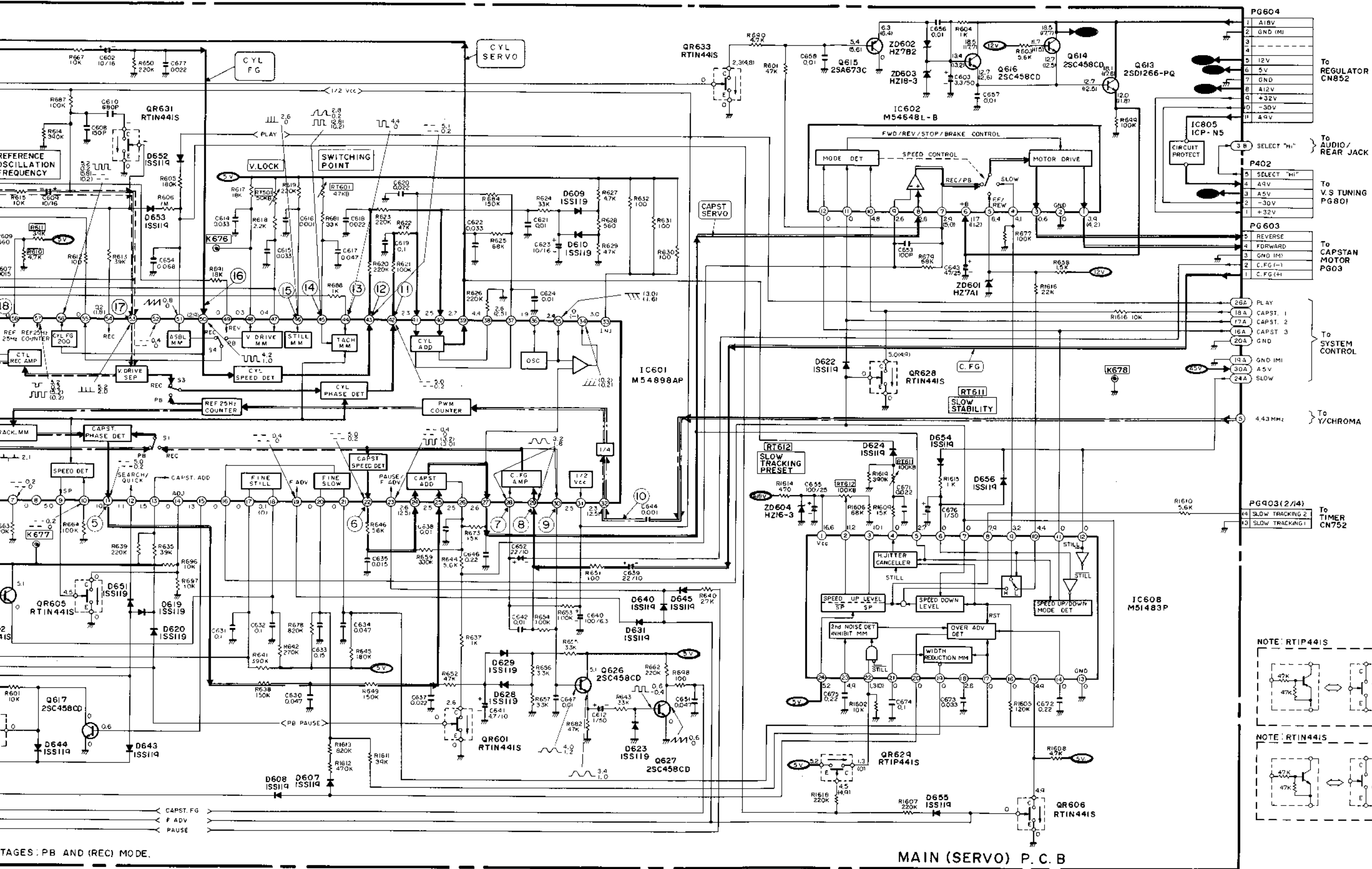


SCHEMATIC DIAGRAM	PAGE VT-125E/VT-135E
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-61
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82



* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.



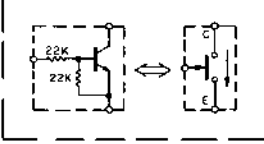


PAGES: PB AND (REC) MODE.

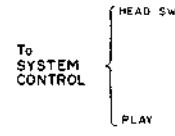
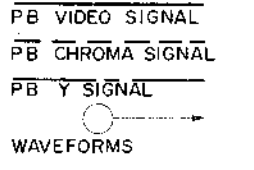
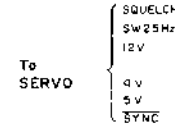
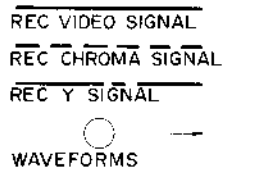
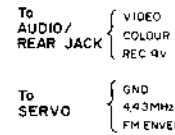
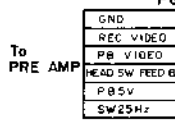
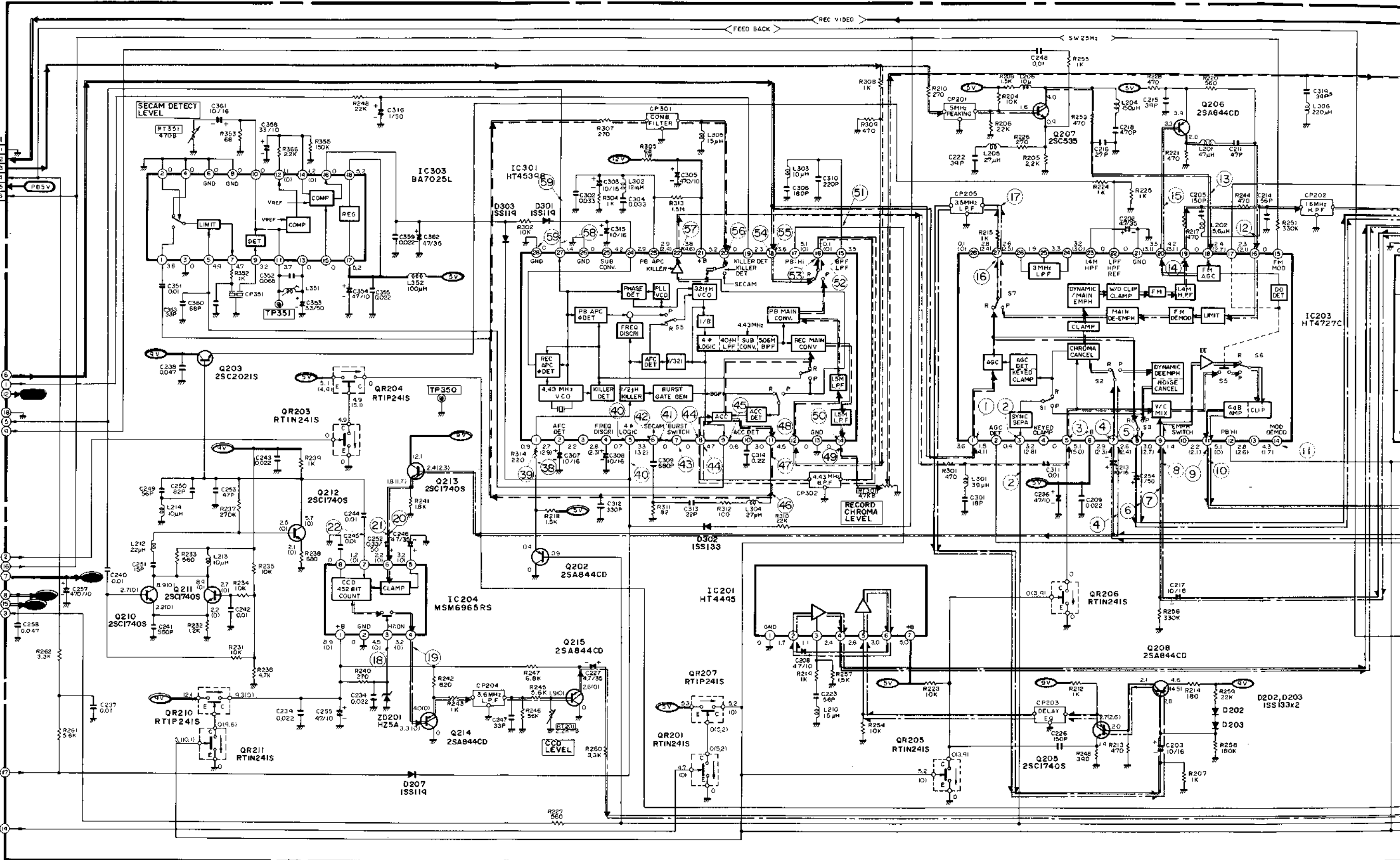
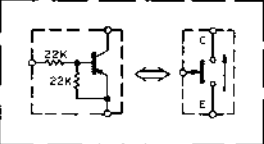
PB CAPSTAN MOTOR WAVEFORM REC/PB CYLINDER MOTOR REC CYLINDER MOTOR PB CYLINDER MOTOR WAVEFORM

4 5 6 7 8 9 10 11

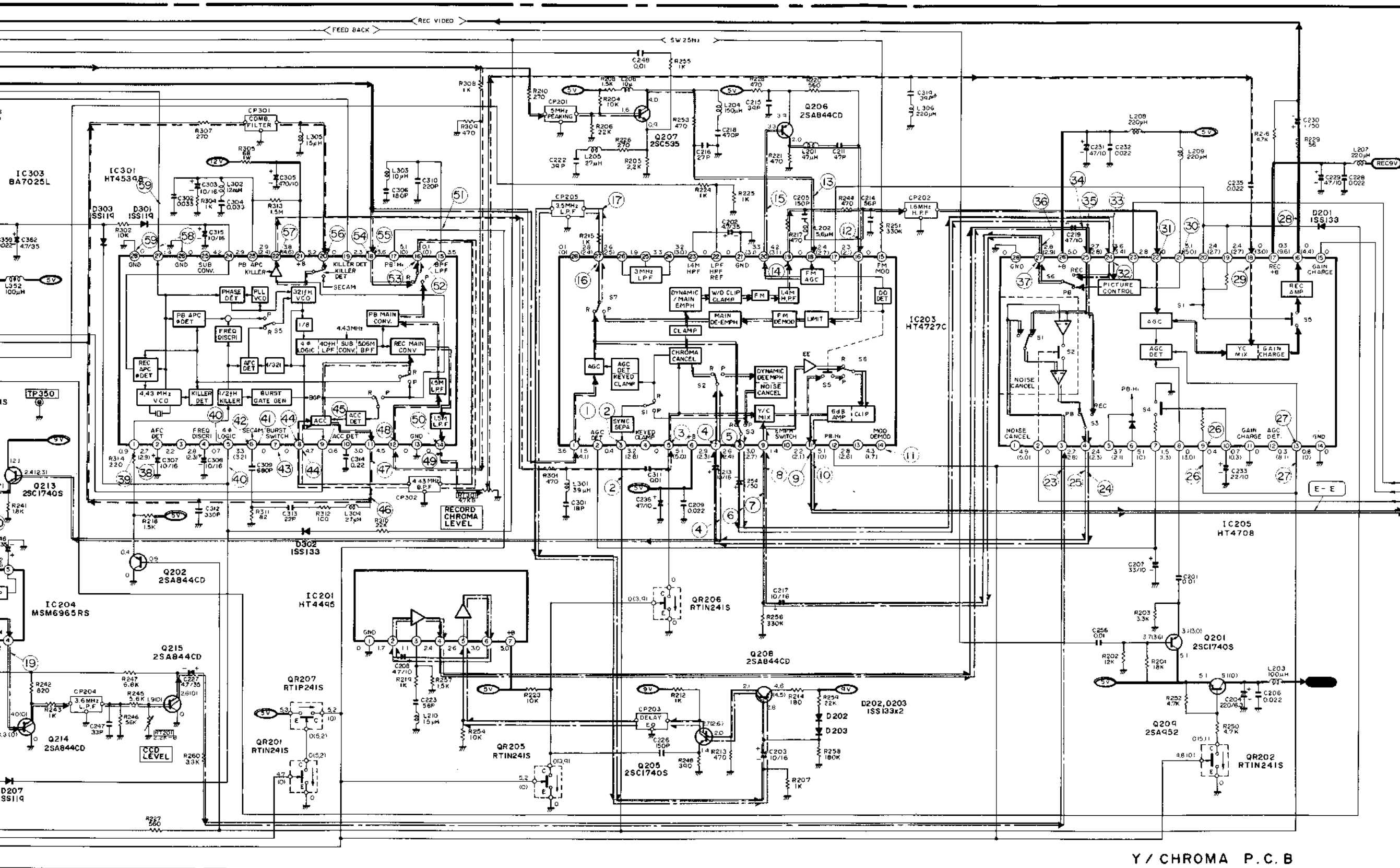
NOTE: RTIN241S



NOTE: RTIP241S



* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODES.



11 PICTURE CONT
 4 CURRENT UP
 13 TRICK PLAY
 20 VIDEO
) To SYSTEM CONTROL
) To AUDIO/ REAR JACK

SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V-S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82

Y / CHROMA P.C.B

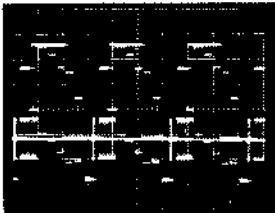
MODE, TWO VOLTAGES - PB AND (REC) MODES.

Y/CHROMA CIRCUIT WAVEFORMS (WELLENFORM)

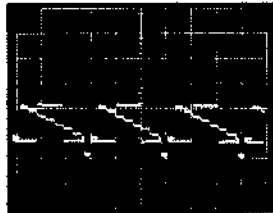
[IC203]

(REC: Colour bar Video in/PB: Alignment tape)

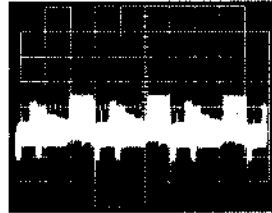
① PIN1 REC
0.1V/20 μ s. div.



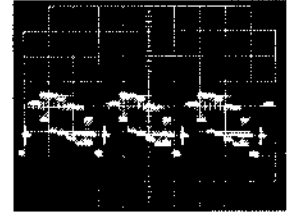
⑥ PIN8 PB
0.5V/20 μ s. div.



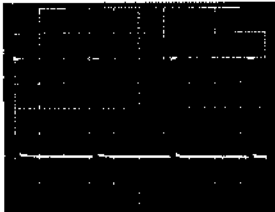
⑪ PIN14 PB
0.2V/20 μ s. div.



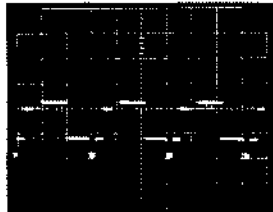
⑯ PIN27 REC
0.1V/20 μ s. div.



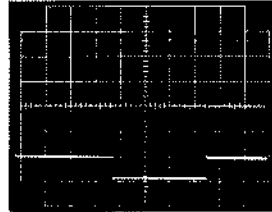
② PIN3 REC/PB
1V/20 μ s. div.



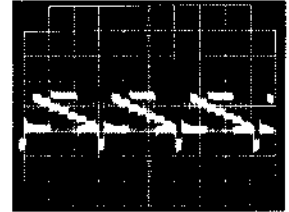
⑦ PIN9 REC
0.1V/20 μ s. div.



⑫ PIN16 PB
0.5V/5ms. div.

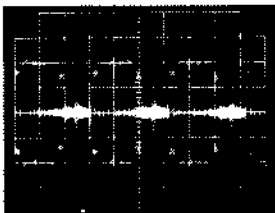


⑰ PIN27 PB
0.1V/20 μ s. div.

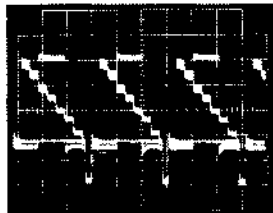


(SW25Hz: 5Vdiv.)

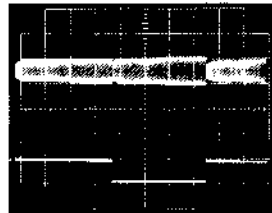
③ PIN5 PB
50mV/20 μ s. div.



⑧ PIN9 PB
0.2V/20 μ s. div.

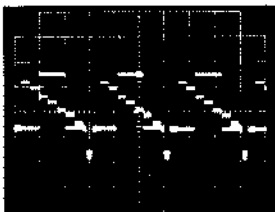


⑬ PIN18 PB
0.5V/5ms. div.

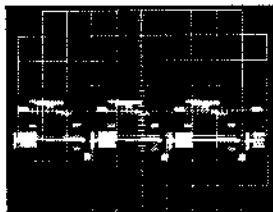


(SW25Hz: 5Vdiv.)

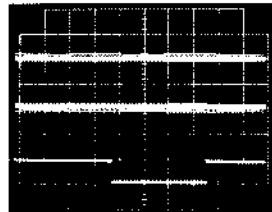
④ PIN7 REC/PB
0.1V/20 μ s. div.



⑨ PIN11 REC
0.1V/20 μ s. div.

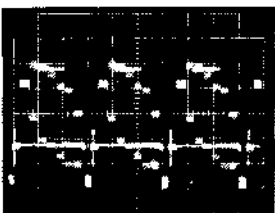


⑭ PIN19 REC
0.5V/5ms. div.

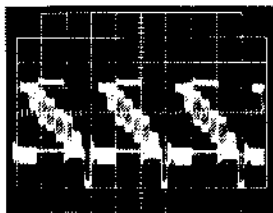


(SW25Hz: 5Vdiv.)

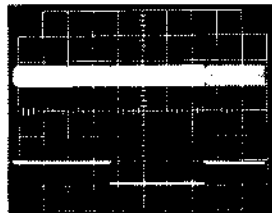
⑤ PIN8 REC
50mV/20 μ s. div.



⑩ PIN11 PB
0.5V/20 μ s. div.



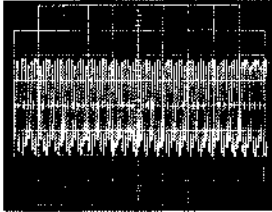
⑮ PIN20 PB
0.5V/5ms. div.



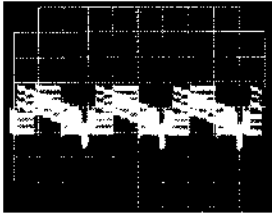
(SW25Hz: 5Vdiv.)

[IC204]

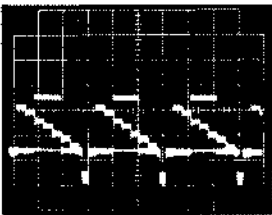
⑱ PIN3 PB
0.2V/0.5 μ s. div.



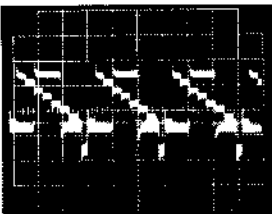
⑲ PIN4 PB
0.5V/20 μ s. div.



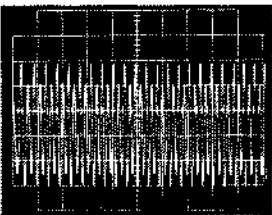
⑳ PIN6 REC
0.1V/20 μ s. div.



㉑ PIN6 PB
0.1V/20 μ s. div.

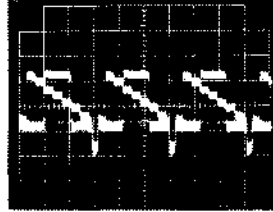


㉒ PIN7 PB
0.1V/0.5 μ s. div.

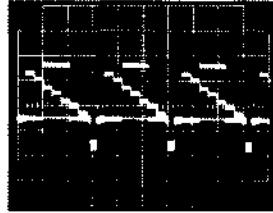


[IC205]

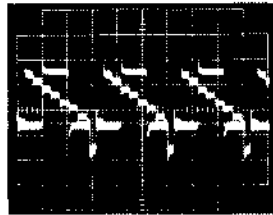
㉓ PIN3 PB
0.1V/20 μ s. div.



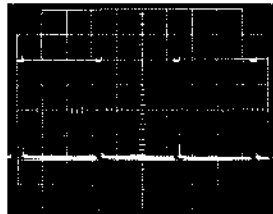
㉔ PIN 4 REC
10mV/20 μ s. div.



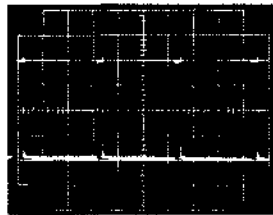
㉕ PIN4 PB
10mV/20 μ s. div.



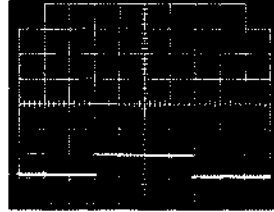
㉖ PIN9 REC/PB
1V/20 μ s. div.



㉗ PIN13 REC/PB
1V/20 μ s. div.

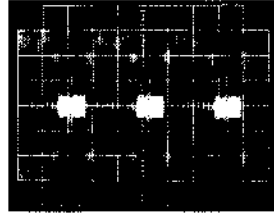


㉘ PIN16 REC
0.5V/5ms. div.

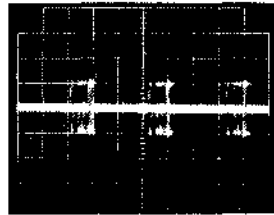


(SW25Hz: 5Vdiv.)

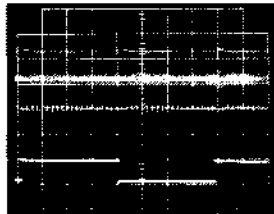
㉙ PIN18 REC
20mV/20 μ s. div.



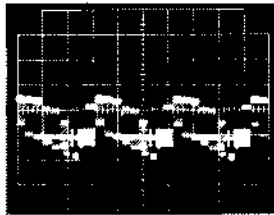
㉚ PIN21 REC
50mV/20 μ s. div.



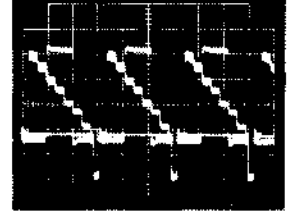
㉛ PIN22 REC
0.2V/5ms. div.



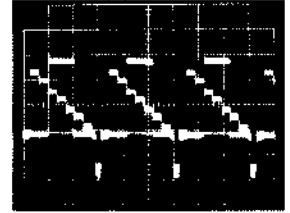
㉜ PIN24 REC
0.1V/20 μ s. div.



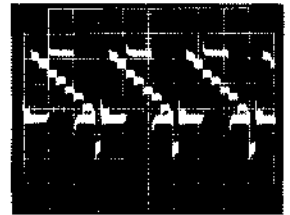
㉝ PIN24 PB
0.2V/20 μ s. div.



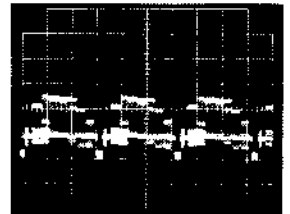
㉞ PIN25 REC
0.1V/20 μ s. div.



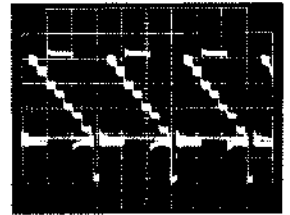
㉟ PIN25 PB
0.1V/20 μ s. div.



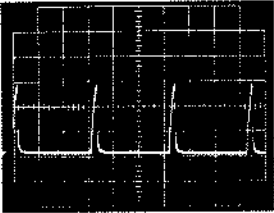
㊱ PIN27 REC
0.1V/20 μ s. div.



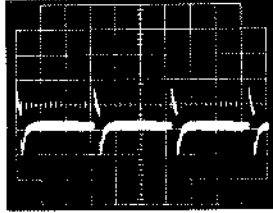
㊲ PIN27 PB
0.2V/20 μ s. div.



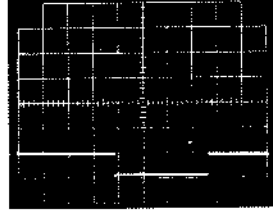
③⑧ PIN1 REC
1V/20 μ s. div.



④③ PIN7 REC/PB
0.1V/20 μ s. div.

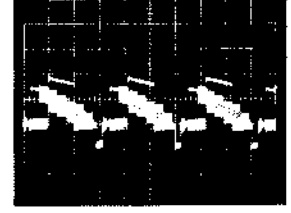


④⑨ PIN12 PB
50mV/0.5ms. div.

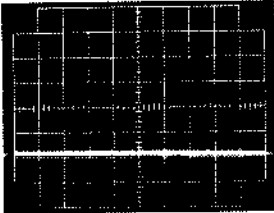


(SW25Hz: 5Vdiv.)

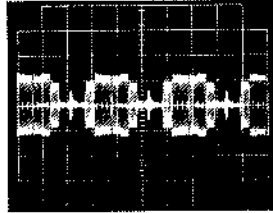
⑤③ PIN16 REC
0.2V/20 μ s. div.



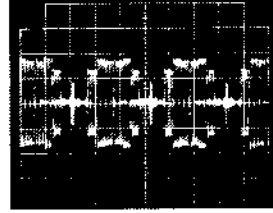
③⑨ PIN1 PB
1V/0.5ms. div.



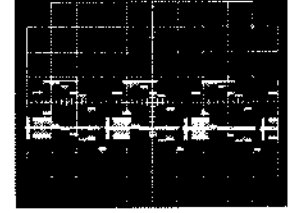
④④ PIN8 REC/PB
50mV/20 μ s. div.



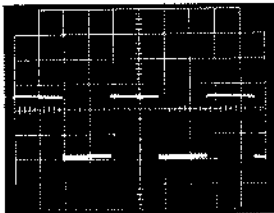
④⑨ PIN14 REC
0.1V/20 μ s. div.



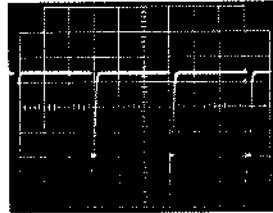
⑤④ PIN18 REC
0.2V/20 μ s. div.



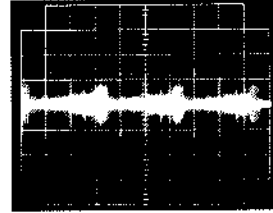
④⑩ PIN5 REC/PB
0.5V/10ms. div.



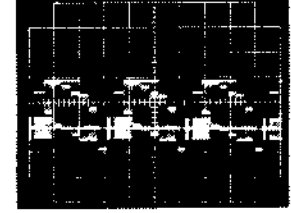
④⑤ PIN9 REC/PB
1V/20 μ s. div.



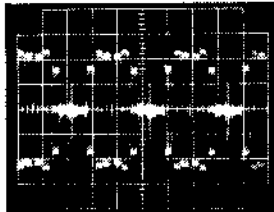
⑤⑩ PIN14 PB
50mV/20 μ s. div.



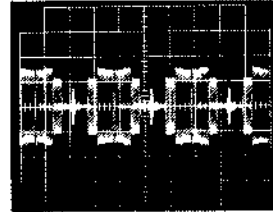
⑤⑤ PIN18 PB
0.2V/20 μ s. div.



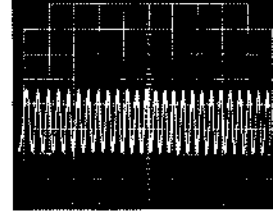
④① PIN6 REC
0.1V/20 μ s. div.



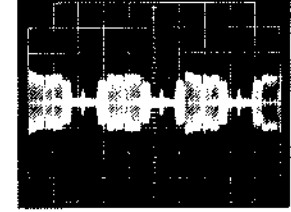
④⑥ PIN11 REC
0.2V/20 μ s. div.



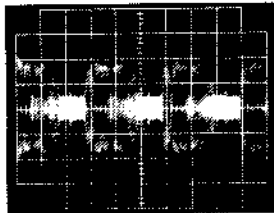
⑤① PIN15 REC
0.1V/0.5 μ s. div.



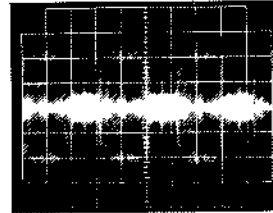
⑤⑥ PIN20 PB
50mV/20 μ s. div.



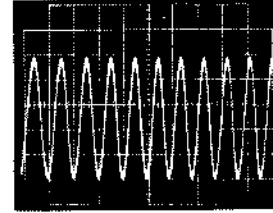
④② PIN6 PB
20mV/20 μ s. div.



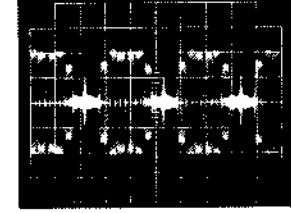
④⑦ PIN11 PB
0.2V/20 μ s. div.



⑤② PIN15 PB
50mV/0.2 μ s. div.

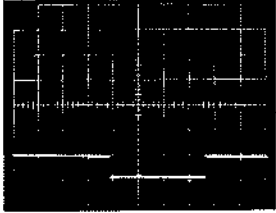


⑤⑦ PIN22 PB
0.1V/20 μ s. div.



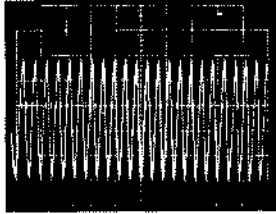
[IC301]

⑤⑧ PIN25 PB
0.1V/5ms. div.

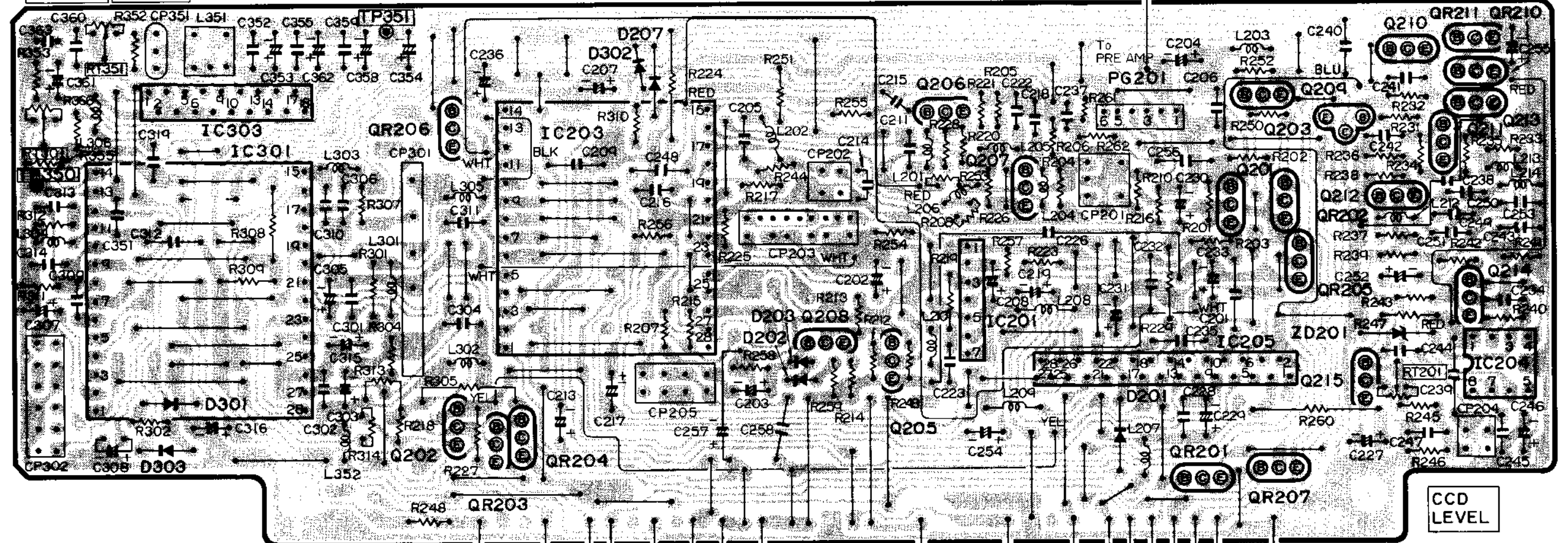


(SW25Hz: 5Vdiv.)

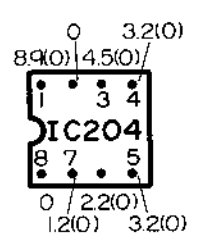
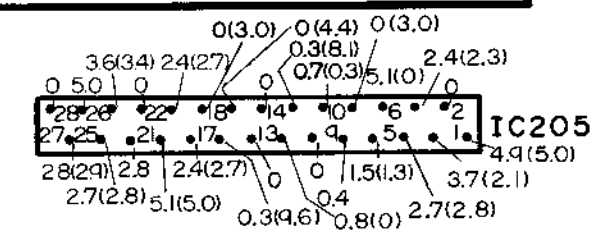
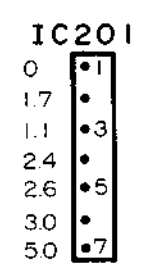
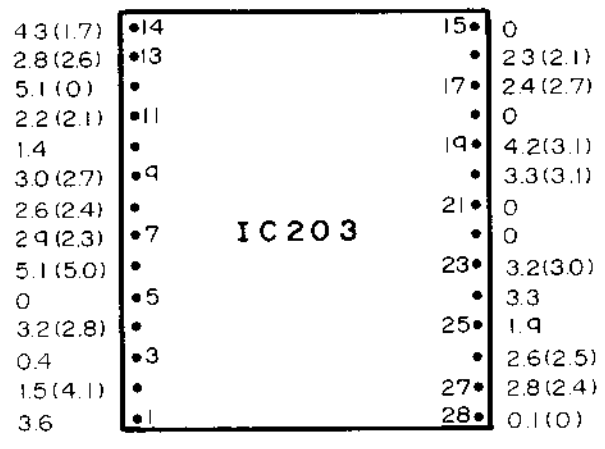
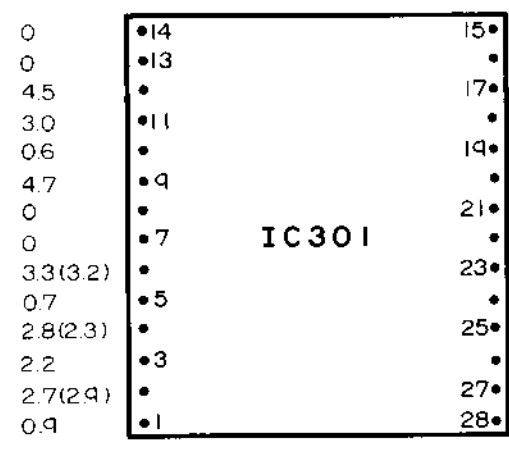
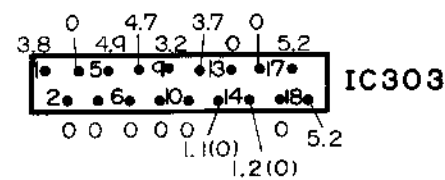
⑤⑨ PIN27 REC/PB
50mV/0.5 μ s. div.



RT301 RECORD CHROMA LEVEL
RT351 SECAM DETECT LEVEL

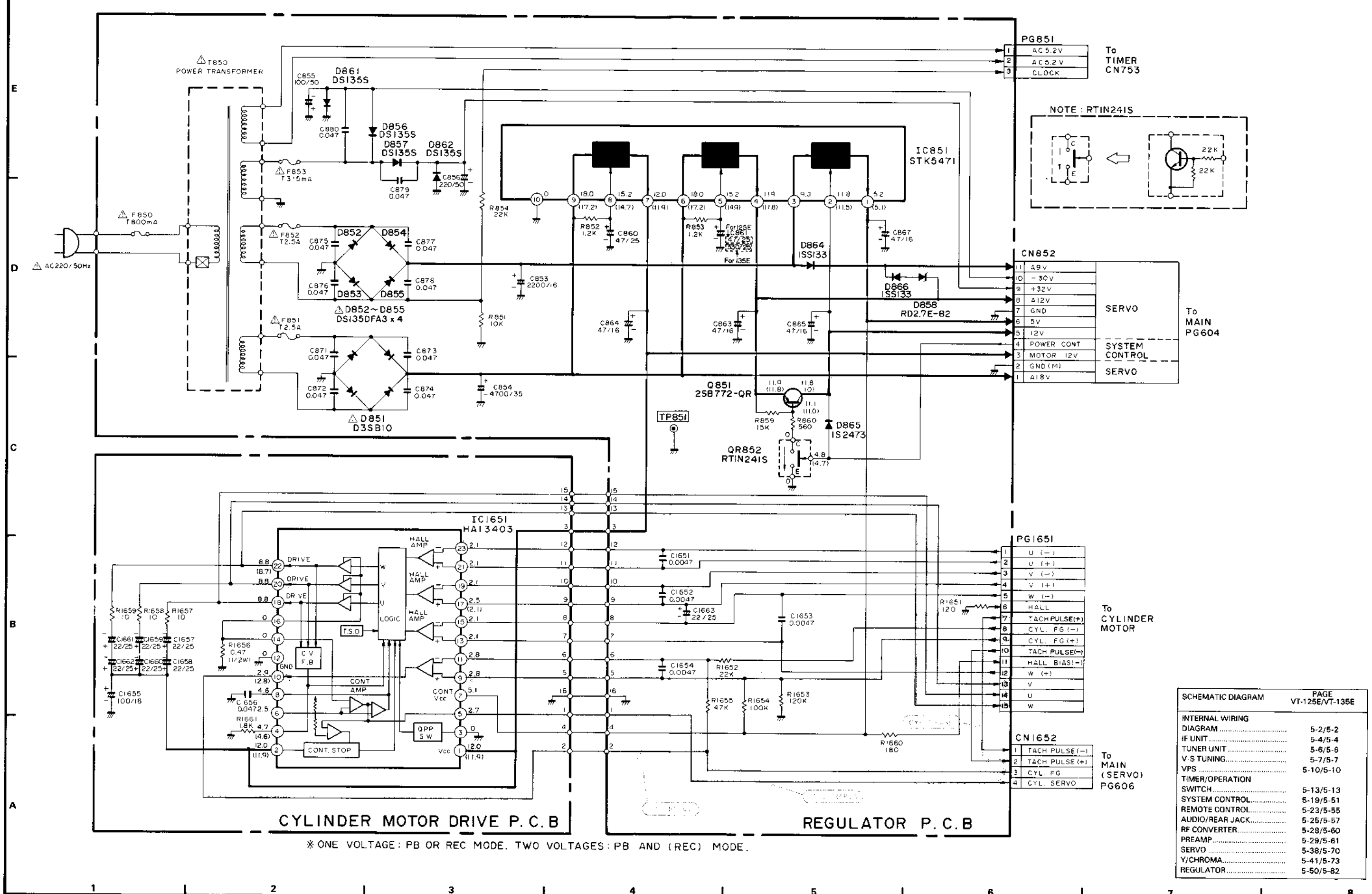


Y/CHROMA P.C.B

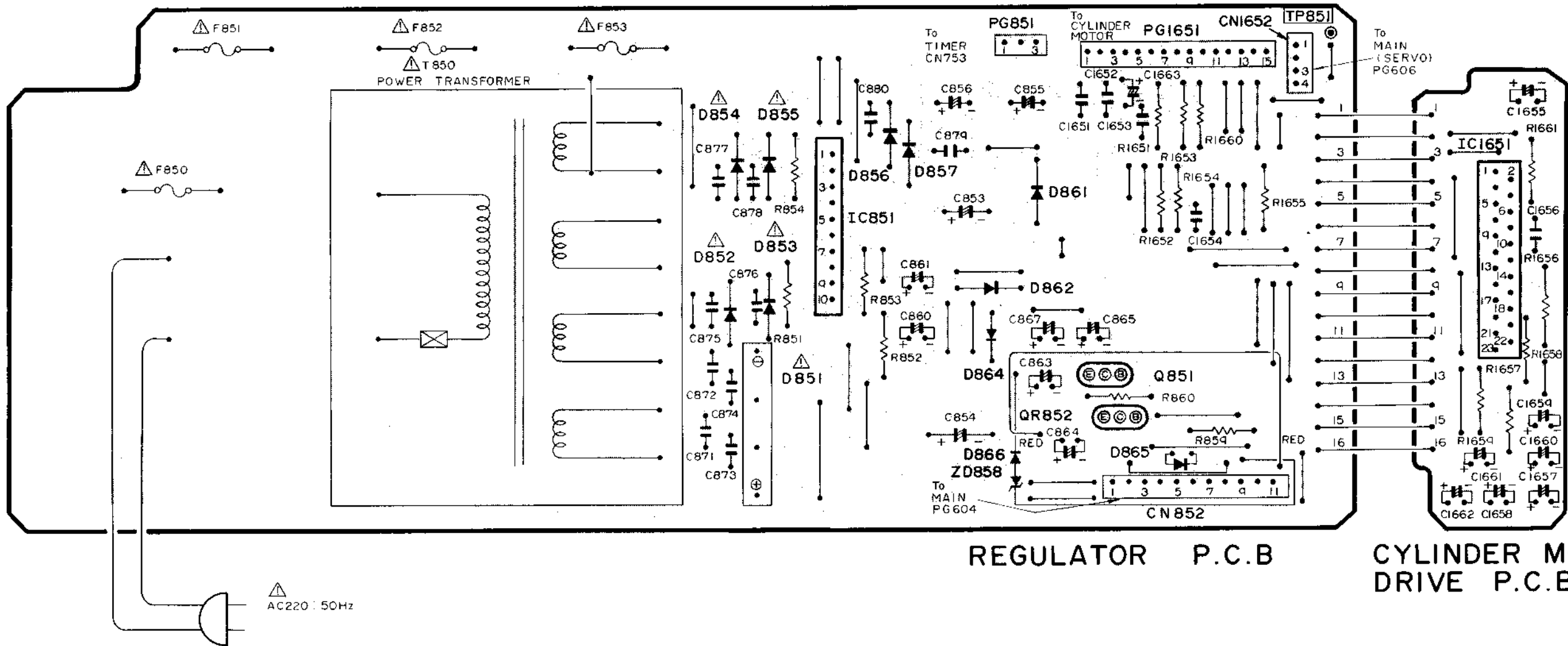


* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODES.

REGULATOR (REGLER)



SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	VT-125E/VT-135E
DIAGRAM	5-2/5-2
IF UNIT	5-4/5-4
TUNER UNIT	5-6/5-6
V.S TUNING	5-7/5-7
VPS	5-10/5-10
TIMER/OPERATION	
SWITCH	5-13/5-13
SYSTEM CONTROL	5-19/5-51
REMOTE CONTROL	5-23/5-55
AUDIO/REAR JACK	5-25/5-57
RF CONVERTER	5-28/5-60
PREAMP	5-29/5-61
SERVO	5-38/5-70
Y/CHROMA	5-41/5-73
REGULATOR	5-50/5-82



REGULATOR P.C.B

CYLINDER MOTOR DRIVE P.C.B

IC851

1	5.2 (5.1)
2	11.8 (11.5)
3	4.3
4	11.9 (11.8)
5	15.2 (14.9)
6	18.0 (17.2)
7	12.0 (11.9)
8	15.2 (14.7)
9	18.0 (17.2)
10	0

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

IC1651

1	2	12.0 (11.9)
3	4	4.7 (4.6)
5	6	2.5
7	8	4.6
9	10	2.9 (2.8)
11	12	0
13	14	0
15	16	0
17	18	8.8
19	20	8.8
21	22	8.8 (8.7)
23	24	

REPLACEMENT PARTS LIST (ERSATZTEILLISTE)

ELECTRICAL PARTS LIST [For VT-125E (VPS)]

SYMBOL-NO.	P-NO.	DESCRIPTION	SYMBOL-NO.	P-NO.	DESCRIPTION
CAPACITORS			C502	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C201	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C506	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C203	0256614	ELECTROLYTIC 10 μ F 16V	C508	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C206	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C510	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C209	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C512	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C211	0208357	CERAMIC DISC 56pF \pm 5% 50V	C513	0256789	CAPACITOR 470 μ F 10V ELECTROLYTIC
C213	0256135	ELECTROLYTIC 10 μ F 16V	C519	0256135	ELECTROLYTIC 10 μ F 16V
C214	0239357	CERAMIC DISC 56pF \pm 5% 50V	C523	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C215	0239355	CERAMIC DISC 39pF \pm 5% 50V	C524	0256782	ELECTROLYTIC 220 μ F 10V
C217	0256834	ELECTROLYTIC 10 μ F 16V	C527	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C218	0208364	CERAMIC DISC 470 pF \pm 10% 50V	C529	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C221	0208352	CERAMIC DISC 22pF 50V	C604	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C222	0208355	CERAMIC DISC 39pF 50V	C607	0208368	CERAMIC DISC 1500pF \pm 20% 50V
C228	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C608	0208365	CERAMIC DISC 680pF \pm 10% 50V
C232	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C616	0208367	CERAMIC DISC 1000pF \pm 10% 50V
C234	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C618	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V
C235	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C620	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V
C242	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C621	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C243	0239375	CERAMIC DISC 10000pF \pm 20%	C624	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C244	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C637	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V
C245	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C638	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C246	0256613	ELECTROLYTIC 4.7 μ F 35V	C641	0256475	TANTALUM 4.7 μ F \pm 30% 10V
C247	0208354	CERAMIC DISC 33pF \pm 5% 50V	C642	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C248	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C644	0208367	CERAMIC DISC 1000pF \pm 10% 50V
C249	0208357	CERAMIC DISC 56pF 50V	C652	0256617	ELECTROLYTIC 22MF 10V
C250	0208359	CERAMIC DISC 82pF 50V	C653	0208360	CERAMIC DISC 100pF \pm 5% 50V
C251	0208350	CERAMIC DISC 15pF \pm 5% 50V	C656	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C252	0256611	ELECTROLYTIC 0.33 μ F 50V	C657	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C253	0208356	CERAMIC DISC 47pF 50V	C658	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C256	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C677	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V
C257	0256194	ELECTROLYTIC 470MF 10V	C751	0256488	CAPACITOR 0.1F 5.5V
C301	0208351	CERAMIC DISC 18pF 50V	C752	0256626	ELECTROLYTIC 47MF 6.3V
C303	0256614	ELECTROLYTIC 10 μ F 16V	C753	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C305	0256194	ELECTROLYTIC 470MF 10V	C754	0256626	ELECTROLYTIC 47 μ F 6.3V
C308	0256614	ELECTROLYTIC 10 μ F 16V	C755	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C310	0208362	CERAMIC DISC 220pF \pm 10% 50V	C756	0256606	ELECTROLYTIC 1MF 50V
C311	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C757	0256612	ELECTROLYTIC 0.47 μ F 50V
C312	0239363	CERAMIC DISC 330pF \pm 10%	C760	0256626	ELECTROLYTIC 47MF 6.3V
C317	0208355	CERAMIC DISC 39pF \pm 5% 50V	C761	0256612	ELECTROLYTIC 0.47 μ F 50V
C406	0256606	ELECTROLYTIC 1MF 50V	C762	0239348	CERAMIC DISC 10pF \pm 5% 50V
C416	0208367	CERAMIC DISC 1000pF \pm 10% 50V	C763	0208348	CERAMIC DISC 10pF \pm 5% 50V
C419	0256622	ELECTROLYTIC 33MF 16V	C770	5058562	TRIMMER 22pF
C422	0256196	ELECTROLYTIC 100 μ F 16V	C801	0208357	CERAMIC DISC 56pF \pm 5% 50V
C423	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C805	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C425	0256196	ELECTROLYTIC 100 μ F 16V	C810	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C426	0208374	CERAMIC DISC 0.01 μ F \pm 10% 50V	C815	0208360	CERAMIC DISC 100pF \pm 5% 50V
C428	0208365	CERAMIC DISC 680pF \pm 10% 50V	C816	0208354	CERAMIC DISC 33pF \pm 5% 50V
C430	0256622	ELECTROLYTIC 33MF 16V	C817	0208354	CERAMIC DISC 33pF \pm 5% 50V
C431	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	C819	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C433	0256614	ELECTROLYTIC 10 μ F 16V	C821	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C434	0256606	ELECTROLYTIC 1MF 50V	C825	0256180	ELECTROLYTIC 1 μ F 50V
C451	0256627	ELECTROLYTIC 47MF 16V	C827	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
C452	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	C830	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V
			C854	0256657	ELECTROLYTIC 4700 μ F 35V
			C856	0256635	ELECTROLYTIC 220 μ F 50V
			C860	0256607	ELECTROLYTIC 47 μ F 25V

SYMBOL-NO.	P-NO.	DESCRIPTION	SYMBOL-NO.	P-NO.	DESCRIPTION
C861	0256607	ELECTROLYTIC 47 μ F 25V	D506	5339071	DIODE 1SS119
C863	0256627	ELECTROLYTIC 47MF, 16V	D507	5339071	DIODE 1SS119
C864	0256627	ELECTROLYTIC 47MF, 16V	D508	5332681	DIODE 1SS119
C865	0256627	ELECTROLYTIC 47MF, 16V	D605	5339071	DIODE 1SS119
C867	0256627	ELECTROLYTIC 47MF, 16V	D609	5339071	DIODE 1SS119
C901	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	D610	5339071	DIODE 1SS119
C902	0208375	CERAMIC DISC 0.022 μ F \pm 20% 50V	D619	5339071	DIODE 1SS119
C903	0208375	CERAMIC DISC 0.022 μ F \pm 20% 50V	D620	5339071	DIODE 1SS119
C904	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	D622	5339071	DIODE 1SS119
C906	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	D623	5339071	DIODE 1SS119
C907	0208375	CERAMIC DISC 0.022 μ F \pm 20% 50V	D628	5339071	DIODE 1SS119
C908	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	D629	5339071	DIODE 1SS119
C909	0208354	CERAMIC DISC 33pF \pm 5% 50V	D631	5339071	DIODE 1SS119
C910	0208354	CERAMIC DISC 33pF \pm 5% 50V	D640	5339071	DIODE 1SS119
C912	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	D645	5339071	DIODE 1SS119
C913	0208374	CERAMIC DISC 0.01 μ F \pm 20% 50V	D651	5339071	DIODE 1SS119
C921	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	D652	5339071	DIODE 1SS119
C922	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	D653	5339071	DIODE 1SS119
C923	0208375	CERAMIC DISC 0.022 μ F \pm 10% 50V	D751	5339021	DIODE 1SS133
C1657	0256618	ELECTROLYTIC 22 μ F 25V	D752	5338021	DIODE 1SS133
C1658	0256618	ELECTROLYTIC 22 μ F 25V	D753	5339021	DIODE 1SS133
C1659	0256618	ELECTROLYTIC 22 μ F 25V	D754	5331592	DIODE 1SS133
C1660	0256618	ELECTROLYTIC 22 μ F 25V	D760	5331592	DIODE 1SS133
C1661	0256618	ELECTROLYTIC 22 μ F 25V	D764	5381211	LED SEL-2213C
C1662	0256618	ELECTROLYTIC 22 μ F 25V	D801	5339071	DIODE 1SS119
C1663	0256618	ELECTROLYTIC 22 μ F 25V	D802	5339071	DIODE 1SS119
C1655	0256196	ELECTROLYTIC 100 μ F 16V	D803	5339071	DIODE 1SS119
RESISTORS			D804	5339071	DIODE 1SS119
R305	0171015	METAL FILM 680HM \pm 5% 1W	D805	5339071	DIODE 1SS119
R602	0249681	POSISTOR 4.7OHM	D806	5339071	DIODE 1SS119
R1656	0149705	RESISTOR METAL OXIDE 470OHM	D851	5332741	DIODE D3SB10
RT201	5007433	RESISTOR SEMI VARIABLE 2.2KOHM	D852	5331671	DIODE DS135D-FA3
RT301	5007434	RESISTOR SEMI VARIABLE 4.7KOHM	D853	5331671	DIODE DS135D-FA3
RT351	5007431	RESISTOR SEMI VARIABLE 470OHM	D854	5331671	DIODE DS135D-FA3
RT401	5007899	SEMI VARIABLE 47KOHM	D855	5331671	DIODE DS135D-FA3
RT402	5007901	SEMI VARIABLE 100KOHM	D856	5331671	DIODE DS135D-FA3
RT501	5009142	RESISTOR VARIABLE 50KOHM	D857	5331671	DIODE DS135D-FA3
RT601	5007899	SEMI VARIABLE 47KOHM	D858	5331588	DIODE RD2.7E-B2
RT607	5007902	SEMI VARIABLE 220KOHM	D861	5331671	DIODE DS135D-FA3
RV751	5027225	RESISTOR VARIABLE 10KOHM	D862	5331671	DIODE DS135D-FA3
RV752	5009131	VARIABLE 500KOHM	D864	5339021	DIODE 1SS133
SEMI-CONDUCTORS			D865	5330571	DIODE 1S2473VE SI 100MHZ 250MW 10NS
D201	5339071	DIODE 1SS119	D866	5331592	DIODE 1SS133
D202	5331592	DIODE 1SS133	D903	5339071	DIODE 1SS119
D203	5331592	DIODE 1SS133	D904	5339071	DIODE 1SS119
D204	5339071	DIODE 1SS119	D914	5339071	DIODE 1SS119
D207	5339071	DIODE 1SS119	IC201	5370821	IC HT4495
D301	5339071	DIODE 1SS119	IC203	5370844	IC HT4727
D302	5331592	DIODE 1SS133	IC204	5362262	IC MSM6965RS
D303	5339071	DIODE 1SS119	IC205	5370501	IC HT4708
D401	5339091	DIODE DAN209	IC301	5370273	IC HT4539B
D402	5339131	DIODE 1SS254	IC303	5366641	IC BA7025L
D403	5339071	DIODE 1SS119	IC401	5366331	IC UPC1533HA
D404	5339071	DIODE 1SS119	IC402	5364931	IC BA5115L
D502	5339071	DIODE 1SS119	IC403	5369431	IC LA7016
D503	5339071	DIODE 1SS119	IC501	5369431	IC LA7016
D504	5339071	DIODE 1SS119	IC505	5721802	IC PROTECTOR
D505	5339071	DIODE 1SS119	IC601	5367301	IC M54898P
			IC602	5369913	IC M54648L-B
			IC751	5368683	IC HD614085SA15
			IC801	5361834	IC M50161-354SP

SYMBOL-NO. P-NO. DESCRIPTION			SYMBOL-NO. P-NO. DESCRIPTION		
IC802	5366132	IC LA7934	Q904	5327001	TRANSISTOR 2SC458CD
IC803	5361071	IC M58657P	Q1102	5321255	TRANSISTOR 2SA844-CD
IC804	5721802	ICP-N5 IC PROTECTOR	Q1103	5320069	TRANSISTOR 2SC458-CD
IC805	5721802	ICP-N5 IC PROTECTOR	QR201	5327081	TRANSISTOR RT1N241S
IC851	5353651	IC STK5471	QR202	5327081	TRANSISTOR RT1N241S
IC901	5361812	IC HD614042SD37	QR203	5327081	TRANSISTOR RT1N241S
IC902	5367111	IC M54649L	QR204	5324093	TRANSISTOR RT1P241S
IC903	5365673	IC NJM2901N	QR205	5324091	TRANSISTOR RT1N241S
IC1101	5367211	IC SAA5235	QR206	5324091	TRANSISTOR RT1N241S
IC1102	5362241	IC SAF1134P	QR207	5327083	TRANSISTOR RT1P241S
IC1651	5355582	IC HA13403	QR210	5324093	TRANSISTOR RT1P241S
Q141	5381681	TRANSISTOR PT-23F-F PHOTO	QR211	5324091	TRANSISTOR RT1N241S
Q142	5381682	TRANSISTOR PT-23F-HLD PHOTO	QR432	5327081	TRANSISTOR RT1N241S
Q201	5327062	TRANSISTOR 2SC1740S	QR501	5324094	TRANSISTOR RT1P441S
Q202	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W	QR502	5327082	TRANSISTOR RT1N441S
Q203	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W	QR505	5327082	TRANSISTOR RT1N441S
Q205	5321292	TRANSISTOR 2SC1740S	QR506	5327082	TRANSISTOR RT1N441S
Q206	5321255	TRANSISTOR 2SA844CD	QR601	5327082	TRANSISTOR RT1N441S
Q207	0573511	TRANSISTOR 2SC535C	QR602	5327082	TRANSISTOR RT1N441S
Q208	5321255	TRANSISTOR 2SA844CD	QR605	5327082	TRANSISTOR RT1N441S
Q209	5322732	TRANSISTOR 2SA952ML2 SILICON 160MHZ 0.6W	QR628	5324092	TRANSISTOR RT1N441S
Q210	5321292	TRANSISTOR 2SC1740S	QR631	5324092	TRANSISTOR RT1N441S
Q211	5321292	TRANSISTOR 2SC1740S	QR758	5324092	TRANSISTOR RT1N441S
Q212	5327062	TRANSISTOR 2SC1740S	QR801	5327082	TRANSISTOR RT1N441S
Q213	5327062	TRANSISTOR 2SC1740S	QR804	5327082	TRANSISTOR RT1N441S
Q214	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W	QR812	5324092	TRANSISTOR RT1N441S
Q215	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W	QR852	5324091	TRANSISTOR RT1N241S
Q401	5327101	TRANSISTOR 2SC3553BC	ZD201	5331014	DIODE HZ5A SI ZENER
Q402	5327031	TRANSISTOR 2SA673C	ZD352	5330394	DIODE HZ6A2
Q431	5327031	TRANSISTOR 2SA673C	ZD601	5330317	DIODE HZ7A1
Q502	5327031	TRANSISTOR 2SA673C	ZD602	5330318	DIODE HZ7B2
Q504	5322732	TRANSISTOR 2SA952ML2 SILICON 160MHZ 0.6W	ZD603	5331271	DIODE HZ18-3
Q505	5320069	TRANSISTOR 2SC458-CD	ZD751	5332633	ZENER DIODE RD4R7J B1-2
Q611	5320069	TRANSISTOR 2SC458CD	ZD752	5330322	DIODE HZ9B SI ZENER 1MHZ 0.4W
Q612	5327001	TRANSISTOR 2SC458CD	ZD753	5331588	DIODE RD2.7E-B2
Q613	5323461	TRANSISTOR 2SD1266PQ	ZD801	5350611	IC UPC574J
Q614	5320069	TRANSISTOR 2SC458CD	ZD802	5339102	DIODE HZ5A
Q615	5327031	TRANSISTOR 2SA673C	ZD803	5331274	DIODE ZENER HZ30-1
Q616	5327001	TRANSISTOR 2SC458CD	TRANSFORMERS		
Q626	5320069	TRANSISTOR 2SC458CD	T401	5262531	BIAS COIL
Q627	5327001	TRANSISTOR 2SC458CD	COILS		
Q751	5321663	TRANSISTOR 2SC2021RS SILICON 180MHZ 0.3W	L201	5152332	CHOKE COIL 39μH
Q754	5321663	TRANSISTOR 2SC2021RS SILICON 180MHZ 0.3W	L202	5152321	CHOKE COIL 5.6μH
Q755	5321663	TRANSISTOR 2SC2021RS SILICON 180MHZ 0.3W	L204	5152339	CHOKE COIL 150μH
Q802	5323902	TRANSISTOR 2SC1740SS	L205	5153036	CHOKE COIL 27μH
Q803	5320069	TRANSISTOR 2SC458CD	L206	5159141	CHOKE COIL 10μH
Q808	5321214	TRANSISTOR 2SD468BC SILICON 190MHZ 0.9W	L207	5159082	CHOKE COIL 220μH ± 10%
Q810	5327031	TRANSISTOR 2SA673C	L208	5152342	CHOKE COIL 220μH ± 10%
Q811	5327031	TRANSISTOR 2SA673C	L209	5152342	CHOKE COIL 220μH
Q814	5327062	TRANSISTOR 2SC1740-SR	L210	5153003	CHOKE COIL 15μH
Q851	5323331	TRANSISTOR 2SB772-QR	L211	5159082	CHOKE COIL 220μH ± 10%
			L212	5159145	CHOKE COIL 22μH
			L213	5159141	CHOKE COIL 10μH
			L214	5153001	CHOKE COIL 10μH
			L301	5152332	CHOKE COIL 39μH
			L302	5150577	CHOKE COIL 12mH
			L303	5159064	CHOKE COIL 10μH

SYMBOL-NO.	P-NO.	DESCRIPTION	SYMBOL-NO.	P-NO.	DESCRIPTION
L304	5159146	CHOKE COIL 27 μ H	Δ F852	5721064	FUSE 2.5A
L305	5152326	CHOKE COIL 15 μ H	Δ F853	5720171	FUSE 315MA
L306	5152342	CHOKE COIL 220 μ H \pm 10%	PD751	5490295	IR MODULE
L351	5120849	TRAP COIL	S143	5633362	PUSH SWITCH
L352	5152337	CHOKE COIL 100 μ H \pm 10%	S144	5633362	PUSH SWITCH
L401	5152349	CHOKE COIL 820 μ H	S501	5622462	SLIDE SWITCH
L403	5152971	CHOKE COIL 5800 μ H	S751	5635061	SWITCH
L404	5152971	CHOKE COIL 5600 μ H	S752	5635061	SWITCH
L501	5159158	CHOKE COIL 220 μ H	S753	5635061	SWITCH
L502	5159154	CHOKE COIL 100 μ H	S754	5635061	SWITCH
L503	5159154	CHOKE COIL 100 μ H	S755	5635061	SWITCH
L901	5159077	CHOKE COIL 100 μ H \pm 10%	S766	5635061	SWITCH
L1101	5153031	CHOKE COIL 10 μ H	S757	5635061	SWITCH
CRYSTALS			S759	5635061	SWITCH
X751	5781611	CRYSTAL	S760	5635061	SWITCH
X801	5781121	XTAL	S761	5635061	SWITCH
X1101	5781631	CRYSTAL	S762	5635061	SWITCH
MISCELLANEOUS			S764	5635061	SWITCH
BZ799	5409271	BUZZER - VT120E -	S765	5635061	SWITCH
CE901	5781121	XTAL	S766	5635061	SWITCH
CP201	5123839	TRAP COIL	S768	5635061	SWITCH
CP202	5169002	HIGH PASS FILTER	S769	5635061	SWITCH
CP203	5169012	DELAY LINE	S771	5635111	SWITCH (OPERATE)
CP204	5169003	LOW PASS FILTER	S772	5635111	SWITCH (REPEAT)
CP205	5169022	LOW PASS FILTER	S773	5635111	SWITCH (EJECT)
CP301	5785814	DELAY LINE	S774	5635111	SWITCH
CP302	5163081	BAND PASS FILTER	S775	5635111	SWITCH (PLAY)
CP351	5160431	BAND PASS FILTER	S776	5635111	SWITCH (STOP)
DG751	5311772	TIMER DISPLAY	S778	5635111	SWITCH (REW)
Δ F850	5720175	FUSE 0.8A	S780	5635111	SWITCH
Δ F851	5721064	FUSE 2.5A	S781	5635111	SWITCH (PAUSE)
			S782	5635111	SWITCH (F. ADV)
			S788	5635111	SWITCH (START)
			S787	5635111	SWITCH (LENGTH)
			S799	5622801	SWITCH

REPLACEMENT PARTS LIST (ERSATZTEILLISTE)

ELECTRICAL PARTS LIST [For VT-135E (VPS)]

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS			C 426	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 201	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 428	0208365	CERAMIC DISC 680PF+-10% 50V
C 202	0256613	ELECTROLYTIC 4.7UF 35V	C 431	0239374	CERAMIC DISC 0.01UF+-20% 50V
C 206	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 432	0256617	ELECTROLYTIC 22MF,10V
C 209	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 433	0256180	CAPACITOR 1UF 50V ELECTROLYTIC
C 211	0208357	CERAMIC DISC 56PF+-5% 50V	C 451	0256627	ELECTROLYTIC 47MF,16V
C 213	0256614	ELECTROLYTIC 10UF,16V	C 452	0239375	CERAMIC DISC 10000PF+-20%
C 216	0208353	CERAMIC DISC 27PF 50V	C 502	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 217	0256834	ELECTROLYTIC 10UF 16V	C 506	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 218	0208364	CERAMIC DISC 470PF+-10% 50V	C 508	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 222	0208355	CERAMIC DISC 39PF+-5% 50V	C 510	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 228	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 512	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 230	0256606	ELECTROLYTIC 1MF,50V	C 513	0256789	CAPACITOR 470UF 10V ELECTROLYTIC
C 232	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 519	0256135	CAPACITOR 10UF 16V ELECTROLYTIC
C 233	0256617	ELECTROLYTIC 22MF,10V	C 523	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 234	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 524	0256782	CAPACITOR 220UF 10V ELECTROLYTIC
C 235	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 526	0256135	CAPACITOR 10UF 16V ELECTROLYTIC
C 239	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 527	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 242	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 529	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 244	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 604	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 246	0256613	ELECTROLYTIC 4.7UF 35V	C 607	0239368	CERAMIC DISC 1500PF+-20%
C 247	0208354	CERAMIC DISC 33PF+-5% 50V	C 608	0208361	CERAMIC DISC 150PF+-10% 50V
C 248	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 616	0208367	CERAMIC DISC 1000PF+-10% 50V
C 249	0208357	CERAMIC DISC 56PF+-5% 50V	C 618	0208375	CERAMIC DISC 0.022UF+-10% 50V
C 250	0208359	CERAMIC DISC 82PF+-10%	C 620	0208375	CERAMIC DISC 0.022UF+-10% 50V
C 251	0208350	CERAMIC DISC 15PF+-5% 50V	C 621	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 252	0256611	ELECTROLYTIC 0.33UF 50V	C 624	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 256	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 637	0208375	CERAMIC DISC 0.022UF+-10% 50V
C 257	0256194	ELECTROLYTIC 470MF,10V	C 638	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 301	0208351	CERAMIC DISC 18PF 50V	C 639	0256617	ELECTROLYTIC 22MF,10V
C 303	0256614	ELECTROLYTIC 10UF,16V	C 641	0256475	TANTALUM 4.7UF+-30% 10V
C 305	0256194	ELECTROLYTIC 470MF,10V	C 642	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 308	0256614	ELECTROLYTIC 10UF,16V	C 644	0208367	CERAMIC DISC 1000PF+-10% 50V
C 309	0208365	CERAMIC DISC 680PF+-10% 50V	C 653	0208360	CERAMIC DISC 100PF+-5% 50V
C 310	0208362	CERAMIC DISC 220PF+-10% 50V	C 656	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 311	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 657	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 312	0208363	CERAMIC DISC 330PF+-10% 50V	C 658	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 313	0208352	CERAMIC DISC 22PF 50V	C 677	0208375	CERAMIC DISC 0.022UF+-10% 50V
C 315	0256614	ELECTROLYTIC 10UF,16V	C 751	0256488	CAPACITOR 22UF 5V
C 317	0208355	CERAMIC DISC 39PF+-5% 50V	C 752	0256626	ELECTROLYTIC 47MF,6.3V
C 351	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 753	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 359	0208375	CERAMIC DISC 0.022UF+-10% 50V	C 754	0256626	ELECTROLYTIC 47MF,6.3V
C 360	0208358	CERAMIC DISC 68PF+-5% 50V	C 755	0208374	CERAMIC DISC 0.01UF+-20% 50V
C 403	0256614	ELECTROLYTIC 10UF,16V	C 756	0256606	ELECTROLYTIC 1MF,50V
C 408	0256614	ELECTROLYTIC 10UF,16V	C 757	0256612	ELECTROLYTIC 0.47UF 50V
C 410	0256622	ELECTROLYTIC 33MF,16V	C 759	0208375	CERAMIC DISC 0.022UF+-10% 50V
C 412	0208374	CERAMIC DISC 0.01UF+-20% 50V	C 760	0256626	ELECTROLYTIC 47MF,6.3V
C 413	0239368	CERAMIC DISC 1500PF+-20%	C 761	0256612	ELECTROLYTIC 0.47UF 50V
C 416	0208367	CERAMIC DISC 1000PF+-10% 50V	C 763	0208650	CERAMIC DISC 10PF+-5% 50V
C 419	0256622	ELECTROLYTIC 33MF,16V	C 770	5058562	TRIMMER 22PF
C 423	0239375	CERAMIC DISC 10000PF+-20%	C 801	0208357	CERAMIC DISC 56PF+-5% 50V
C 425	0256196	CAPACITOR 100UF 16V ELECTROLYTIC	C 805	0208374	CERAMIC DISC 0.01UF+-20% 50V

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
C 810	0208374	CERAMIC DISC 0.01UF+-20% 50V	RV 751	5027225	RESISTOR VARIABLE 10KOHM
C 815	0208363	CERAMIC DISC 330PF+-10% 50V	RV 752	5009131	VARIABLE 500KOHM
C 816	0208354	CERAMIC DISC 33PF+-5% 50V	RV 753	5009132	VARIABLE 20KOHM
C 817	0208354	CERAMIC DISC 33PF+-5% 50V	R1656	0149705	RESISTOR METAL OXIDE 470 OHM
C 819	0208374	CERAMIC DISC 0.01UF+-20% 50V	SEMI-CONDUCTORS		
C 825	0256180	CAPACITOR 1UF 50V ELECTROLYTIC	D 201	5339071	DIODE 1SS119-T
C 827	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 202	5331592	DIODE 1SS133
C 829	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 203	5331592	DIODE 1SS133
C 830	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 207	5339071	DIODE 1SS119-T
C 854	0256657	ELECTROLYTIC 4700UF 35V	D 301	5339071	DIODE 1SS119-T
C 856	0256635	ELECTROLYTIC 220UF 50V	D 302	5331592	DIODE 1SS133
C 860	0256607	ELECTROLYTIC 47UF 25V	D 303	5339071	DIODE 1SS119-T
C 861	0256190	ELECTROLYTIC 330MF.16V	D 401	5339091	DIODE DAN209S
C 863	0256627	ELECTROLYTIC 47MF.16V	D 402	5332782	DIODE 1SS254
C 864	0256627	ELECTROLYTIC 47MF.16V	D 403	5332681	DIODE 1SS 119-P
C 865	0256627	ELECTROLYTIC 47MF.16V	D 404	5332681	DIODE 1SS 119-P
C 867	0256627	ELECTROLYTIC 47MF.16V	D 502	5339071	DIODE 1SS119-T
C 901	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 503	5339071	DIODE 1SS119-T
C 902	0208375	CERAMIC DISC 0.022UF+-10% 50V	D 504	5339071	DIODE 1SS119-T
C 903	0208375	CERAMIC DISC 0.022UF+-10% 50V	D 505	5339071	DIODE 1SS119-T
C 904	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 506	5339071	DIODE 1SS119-T
C 906	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 507	5339071	DIODE 1SS119-T
C 907	0208375	CERAMIC DISC 0.022UF+-10% 50V	D 508	5339071	DIODE 1SS119-T
C 908	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 605	5339071	DIODE 1SS119-T
C 909	0208354	CERAMIC DISC 33PF+-5% 50V	D 607	5339071	DIODE 1SS119-T
C 910	0208354	CERAMIC DISC 33PF+-5% 50V	D 608	5339071	DIODE 1SS119-T
C 912	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 609	5339071	DIODE 1SS119-T
C 913	0208374	CERAMIC DISC 0.01UF+-20% 50V	D 610	5339071	DIODE 1SS119-T
C 921	0208375	CERAMIC DISC 0.022UF+-10% 50V	D 619	5339071	DIODE 1SS119-T
C 922	0208375	CERAMIC DISC 0.022UF+-10% 50V	D 620	5339071	DIODE 1SS119-T
C 923	0208375	CERAMIC DISC 0.022UF+-10% 50V	D 622	5339071	DIODE 1SS119-T
C1655	0256196	CAPACITOR 100UF 16V ELECTROLYTIC	D 623	5339071	DIODE 1SS119-T
C1657	0256618	ELECTROLYTIC 22UF 25V	D 624	5339071	DIODE 1SS119-T
C1658	0256618	ELECTROLYTIC 22UF 25V	D 628	5339071	DIODE 1SS119-T
C1659	0256618	ELECTROLYTIC 22UF 25V	D 629	5339071	DIODE 1SS119-T
C1660	0256618	ELECTROLYTIC 22UF 25V	D 630	5339071	DIODE 1SS119-T
C1661	0256618	ELECTROLYTIC 22UF 25V	D 640	5339071	DIODE 1SS119-T
C1662	0256618	ELECTROLYTIC 22UF 25V	D 643	5339071	DIODE 1SS119-T
C1663	0256618	ELECTROLYTIC 22UF 25V	D 644	5339071	DIODE 1SS119-T
RESISTORS			D 645	5339071	DIODE 1SS119-T
R 305	0171015	METAL FILM 680HM+-5% 1W	D 651	5339071	DIODE 1SS119-T
RT 201	5007447	RESISTOR SEMI VARIABLE 10K OHM	D 652	5339071	DIODE 1SS119-T
RT 301	5007434	RESISTOR SEMI VARIABLE 4.7K OHM	D 653	5339071	DIODE 1SS119-T
RT 351	5007431	RESISTOR SEMI VARIABLE 470 OHM	D 654	5339071	DIODE 1SS119-T
RT 401	5007899	SEMI VARIABLE 47KOHM	D 655	5332681	DIODE 1SS 119-P
RT 402	5007901	SEMI VARIABLE 100KOHM	D 656	5339071	DIODE 1SS119-T
RT 501	5009142	RESISTOR VARIABLE 50KOHM	D 751	5339021	DIODE 1SS133
RT 601	5007899	SEMI VARIABLE 47KOHM	D 752	5339021	DIODE 1SS133
RT 607	5007902	SEMI VARIABLE 220KOHM	D 753	5339021	DIODE 1SS133
RT 611	5007901	SEMI VARIABLE 100KOHM	D 754	5339021	DIODE 1SS133
RT 612	5007901	SEMI VARIABLE 100KOHM	D 760	5339021	DIODE 1SS133

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
D 764	5381211	LED SLR-34UR5	Q 205	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 801	5332681	DIODE 1SS 119-P	Q 206	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 802	5339071	DIODE 1SS119-T	Q 207	0573511	TRANSISTOR 2SC535C SILICON 700MHZ 100MW
D 803	5339071	DIODE 1SS119-T	Q 208	5327021	TRANSISTOR 2SA844CD-TB
D 804	5339071	DIODE 1SS119-T	Q 209	5322732	TRANSISTOR 2SA952ML2 SILICON 160MHZ 0.6W
D 805	5339071	DIODE 1SS119-T	Q 210	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 806	5339071	DIODE 1SS119-T	Q 211	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 851	5332741	DIODE D38B10	Q 212	5327062	TRANSISTOR 2SC1740S-R
D 852	5331671	DIODE DS135D-FA3	Q 213	5327062	TRANSISTOR 2SC1740S-R
D 853	5331671	DIODE DS135D-FA3	Q 214	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 854	5331671	DIODE DS135D-FA3	Q 215	5327021	TRANSISTOR 2SA844CD-TB
D 855	5331671	DIODE DS135D-FA3	Q 401	5327101	TRANSISTOR 2SC3553BC
D 856	5331671	DIODE DS135D-FA3	Q 402	5320593	TRANSISTOR 2SA673C SILICON 80MHZ 40MW
D 857	5331671	DIODE DS135D-FA3	Q 431	5327031	TRANSISTOR 2SA673C-TB
D 858	5331588	DIODE RD2.7E-B2	Q 502	5327031	TRANSISTOR 2SA673C-TB
D 861	5331671	DIODE DS135D-FA3	Q 504	5322732	TRANSISTOR 2SA952ML2 SILICON 160MHZ 0.6W
D 862	5331671	DIODE DS135D-FA3	Q 505	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 864	5339021	DIODE 1SS133	Q 611	5327001	TRANSISTOR 2SC458CD-TB
D 865	5330571	DIODE 1S2473VE SI 100MHZ 250MW 10NS	Q 612	5327001	TRANSISTOR 2SC458CD-TB
D 866	5331592	DIODE 1SS133	Q 613	5323461	TRANSISTOR 2SD1266PQ
D 903	5339071	DIODE 1SS119-T	Q 614	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 904	5339071	DIODE 1SS119-T	Q 615	5327031	TRANSISTOR 2SA673C-TB
D 914	5339071	DIODE 1SS119-T	Q 616	5327001	TRANSISTOR 2SC458CD-TB
IC 201	5370821	IC HT4495	Q 617	5327001	TRANSISTOR 2SC458CD-TB
IC 203	5370844	IC HT4727C	Q 626	5327001	TRANSISTOR 2SC458CD-TB
IC 204	5362262	IC MSM6965RS	Q 627	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
IC 205	5370501	IC HT4708	Q 751	5321663	TRANSISTOR 2SC2021RS SILICON 180MHZ 0.3W
IC 206	5721802	IC PROTECTOR	Q 754	5321663	TRANSISTOR 2SC2021RS SILICON 180MHZ 0.3W
IC 301	5370273	IC HT4539B	Q 755	5321663	TRANSISTOR 2SC2021RS SILICON 180MHZ 0.3W
IC 303	5366641	IC BA7025L	Q 802	5323903	TRANSISTOR 2SC1740S-RS
IC 401	5366331	IC UPC1533HA	Q 803	5327001	TRANSISTOR 2SC458CD-TB
IC 402	5364931	IC BA5115L	Q 808	5321214	TRANSISTOR 2SD468BC SILICON 190MHZ 0.9W
IC 403	5369431	IC LA7016	Q 810	5327031	TRANSISTOR 2SA673C-TB
IC 501	5369431	IC LA7016	Q 811	5327031	TRANSISTOR 2SA673C-TB
IC 601	5367302	IC M54898AP	Q 814	5327062	TRANSISTOR 2SC1740S-R
IC 602	5369913	IC M54648L-B	Q 851	5323334	TRANSISTOR 2SB772-QR
IC 608	5366992	IC M51483P	Q 904	5327001	TRANSISTOR 2SC458CD-TB
IC 801	5361834	IC M50161-354SP	QR 201	5327081	TRANSISTOR RT1N241S
IC 802	5366132	IC LA7934	QR 202	5327081	TRANSISTOR RT1N241S
IC 803	5361071	IC M58657P	QR 203	5324091	TRANSISTOR RT1N241S
IC 804	5721802	IC PROTECTOR	QR 204	5327083	TRANSISTOR RT1P241S
IC 805	5721802	IC PROTECTOR	QR 205	5324091	TRANSISTOR RT1N241S
IC 851	5353651	IC STK5471	QR 206	5327081	TRANSISTOR RT1N241S
IC 901	5361812	IC HD614042SD37	QR 207	5327083	TRANSISTOR RT1P241S
IC 902	5367111	IC M54649L	QR 208	5324091	TRANSISTOR RT1N241S
IC 903	5365673	IC NJM2901N	QR 209	5324091	TRANSISTOR RT1N241S
IC1101	5367211	IC SAA5235	QR 210	5327083	TRANSISTOR RT1P241S
IC1102	5362241	IC SAF1134P	QR 211	5324091	TRANSISTOR RT1N241S
IC1651	5355582	IC HA13403	QR 432	5327081	TRANSISTOR RT1N241S
Q 201	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W	QR 501	5327084	TRANSISTOR RT1P441S
Q 202	5327021	TRANSISTOR 2SA844CD-TB	QR 502	5327082	TRANSISTOR RT1N441S
Q 203	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W	QR 505	5327082	TRANSISTOR RT1N441S

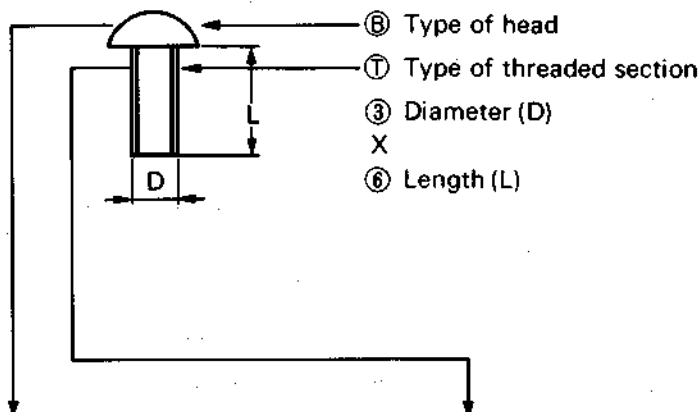
SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
QR 506	5327082	TRANSISTOR RT1N441S	L 351	5120849	TRAP COIL
QR 601	5327082	TRANSISTOR RT1N441S	L 352	5152337	CHOKE COIL 100UH+-10%
QR 602	5327082	TRANSISTOR RT1N441S	L 401	5159089	CHOKE COIL 820UH+-10%
QR 604	5327082	TRANSISTOR RT1N441S	L 403	5159111	CHOKE COIL 5600UH
QR 605	5324092	TRANSISTOR RT1N441S	L 404	5159111	CHOKE COIL 5600UH
QR 606	5324092	TRANSISTOR RT1N441S	L 501	5159158	CHOKE COIL 220UH
QR 628	5324092	TRANSISTOR RT1N441S	L 502	5159154	CHOKE COIL 100UH
QR 629	5324094	TRANSISTOR RT1P441S	L 503	5159154	CHOKE COIL 100UH
QR 631	5327082	TRANSISTOR RT1N441S	L 901	5159077	CHOKE COIL 100UH+-10%
QR 632	5324092	TRANSISTOR RT1N441S	L1101	5153031	CHOKE COIL 10UH
QR 633	5324092	TRANSISTOR RT1N441S			CRYSTALS
QR 758	5324092	TRANSISTOR RT1N441S	X 751	5781611	CRYSTAL
QR 801	5327082	TRANSISTOR RT1N441S	X 801	5781121	XTAL
QR 804	5327082	TRANSISTOR RT1N441S	X1101	5781631	CRYSTAL
QR 812	5327082	TRANSISTOR RT1N441S			MISCELLANEOUS
QR 852	5324091	TRANSISTOR RT1N241S	BZ 799	5409271	BUZZER
Q1102	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W	CE 901	5781121	XTAL
Q1103	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W	CP 201	5123839	TRAP COIL
ZD 201	5331014	DIODE HZ5A SI ZENER	CP 202	5169002	HIGH PASS FILTER
ZD 601	5330317	DIODE HZ-7A-1 ZENNER	CP 203	5169012	DELAY LINE
ZD 602	5330318	DIODE HZ7B2 SI ZENER 1MHZ 0.4W	CP 204	5169003	LOW PASS FILTER
ZD 603	5331271	DIODE HZ18-3	CP 205	5169022	LOW PASS FILTER
ZD 751	5332633	ZENNER DIODE RD4R7JSB1-2	CP 301	5785814	DELAY LINE
ZD 752	5330322	DIODE HZ9B SI ZENER 1MHZ 0.4W	CP 302	5163081	BAND PASS FILTER
ZD 753	5331588	DIODE RD2.7E-B2	CP 351	5160431	BAND PASS FILTER
ZD 801	5366151	IC UPC574J	D6 751	5311772	TIMER DISPLAY
ZD 802	5339102	DIODE HZ5A	△ F 850	5720175	FUSE 0.8A
ZD 803	5331274	DIODE ZENNER	△ F 851	5721064	FUSE 2.5A
		TRANSFORMERS	△ F 852	5721064	FUSE 2.5A
T 401	5262531	BIAS COIL	△ F 853	5720171	FUSE 315MA
		COILS	HZ 604	5330563	DIODE HZ16-3 SI ZENER 1MHZ 0.4W
L 201	5153039	CHOKE COIL 47UH	S 143	5633362	PUSH SWITCH
L 202	5152321	CHOKE COIL 5.6MICRO H	S 144	5633362	PUSH SWITCH
L 203	5152337	CHOKE COIL 100UH+-10%	S 501	5622462	SLIDE SWITCH
L 204	5159079	CHOKE COIL 150UH+-10%	S 751	5635061	SWITCH
L 205	5153036	CHOKE COIL 27UH	S 752	5635061	SWITCH
L 206	5153005	CHOKE COIL 22UH	S 753	5635061	SWITCH
L 207	5152342	CHOKE COIL 220UH+-10%	S 754	5635061	SWITCH
L 208	5152342	CHOKE COIL 220UH+-10%	S 755	5635061	SWITCH
L 209	5152342	CHOKE COIL 220UH+-10%	S 756	5635061	SWITCH
L 210	5153033	CHOKE COIL 15UH	S 759	5635061	SWITCH
L 211	5152342	CHOKE COIL 220UH+-10%	S 760	5635061	SWITCH
L 212	5159145	CHOKE COIL 22UH	S 761	5635061	SWITCH
L 213	5159141	CHOKE COIL 10UH	S 762	5635061	SWITCH
L 214	5153031	CHOKE COIL 10UH	S 764	5635061	SWITCH
L 301	5153038	CHOKE COIL 39UH	S 765	5635061	SWITCH
L 302	5150577	CHOKE COIL 12MH	S 766	5635061	SWITCH
L 303	5159064	CHOKE COIL 10UH+-10%	S 768	5635061	SWITCH
L 305	5159066	CHOKE COIL 15UH+-10%	S 769	5635061	SWITCH
L 306	5152342	CHOKE COIL 220UH+-10%	S 771	5635111	SWITCH

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
S 772	5635111	SWITCH	S 780	5635111	SWITCH
S 773	5635111	SWITCH	S 781	5635111	SWITCH
S 774	5635111	SWITCH	S 782	5635111	SWITCH
S 775	5635111	SWITCH	S 785	5635111	SWITCH
S 776	5635111	SWITCH	S 786	5635111	SWITCH
S 777	5635111	SWITCH	S 787	5635111	SWITCH
S 778	5635111	SWITCH	S 799	5622801	SWITCH

EXPLODED VIEWS

SCREW CLASSIFICATION

Example: BT3 × 6



Washers and Nuts

Abbreviation	Name	Shape	Abbreviation	Name	Shape	Abbreviation	Name	Shape
No symbol	Brazier head		No symbol	Machine (clamps without tapping)		W	Washer	
P	Pan head		t	Tapping (clamps with tapping) Type 1		SW	Spring washer	
B	Binding head		T	Tapping (clamps with tapping) Type 2		LW	Locking washer	
O	Oval countersunk head		f	Forming tight (for metal)		E	E-ring	
F	Flat countersunk head		Note: Since the forming tight screw tightens while self-tapping, machine screws can be replaced by tapping screws.			N	Nut	
						Note: Internal dia is indicated for nuts and washers.		

LUBRICATION

Lubrication points are shown in the exploded view diagrams by marks (Ⓢ, Ⓜ)

Lubricants shown in the diagram are as follows.

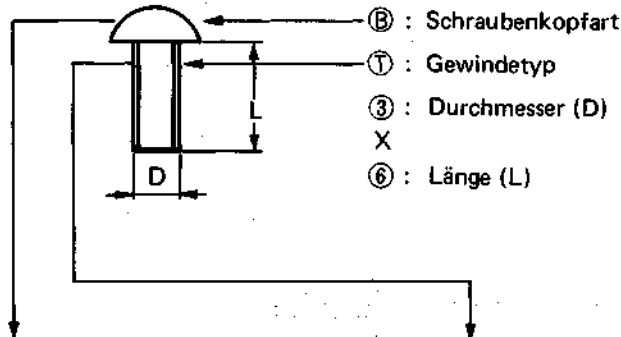
Ⓢ Sonic slider oil (# 1600)

Ⓜ Hitazol (MO-138)

EXPLOSIONSZEICHNUNGEN

Schrauben-Klassifikation

Beispiel: BT3 x 6



Abkürzung	Bezeichnung	Form
Kein symbol	Rundkopfschraube	
P	Zylinderkopfschraube	
B	Halbrundschrabe	
O	Linsenkopf-Senkschraube	
F	Senkschraube	

Abkürzung	Bezeichnung	Form
Kein symbol	Maschinenschraube	
t	Schneidschraube Typ 1 (selbstschneidend)	
T	Schneidschraube Typ 2 (selbstschneidend)	
f	Blechschrabe (für Metall)	
Hinweis: Blechschraben sind selbstschneidend; die selbstschneidenden Maschinenschrauben können durch Schneidschrauben ersetzt werden.		

Unterlegescheiben und Muttern

Abkürzung	Bezeichnung	Form
W	Unterlegescheibe	
SW	Federscheibe	
LW	Sicherungsscheibe	
E	E-Ring	
N	Mutter	
Hinweis: Für Muttern und Scheiben werden der Innendurchmesser angegeben.		

Schmierung

Die Schmierungspunkte sind in den Explosionszeichnungen durch Symbole (Ⓢ, Ⓜ) gekennzeichnet.

Die im Diagramm gezeigten Schmierungspunkte sind mit folgenden Schmiermitteln zu schmieren:

Ⓢ Sonic-Gleitöl (Nr. 1600)

Ⓜ Hitazol (MO-138)

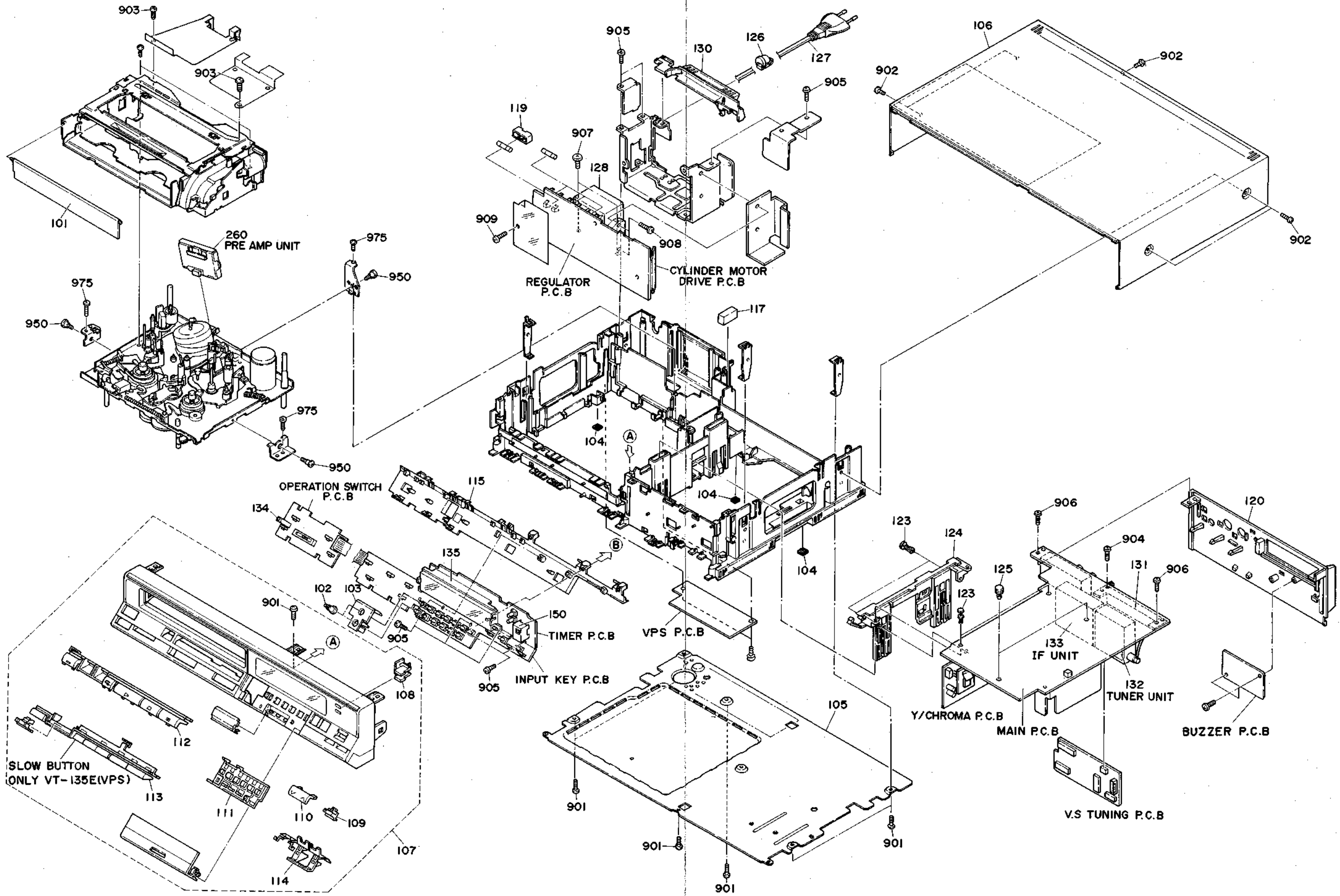
MECHANICAL PARTS LIST
[CABINET SECTION]

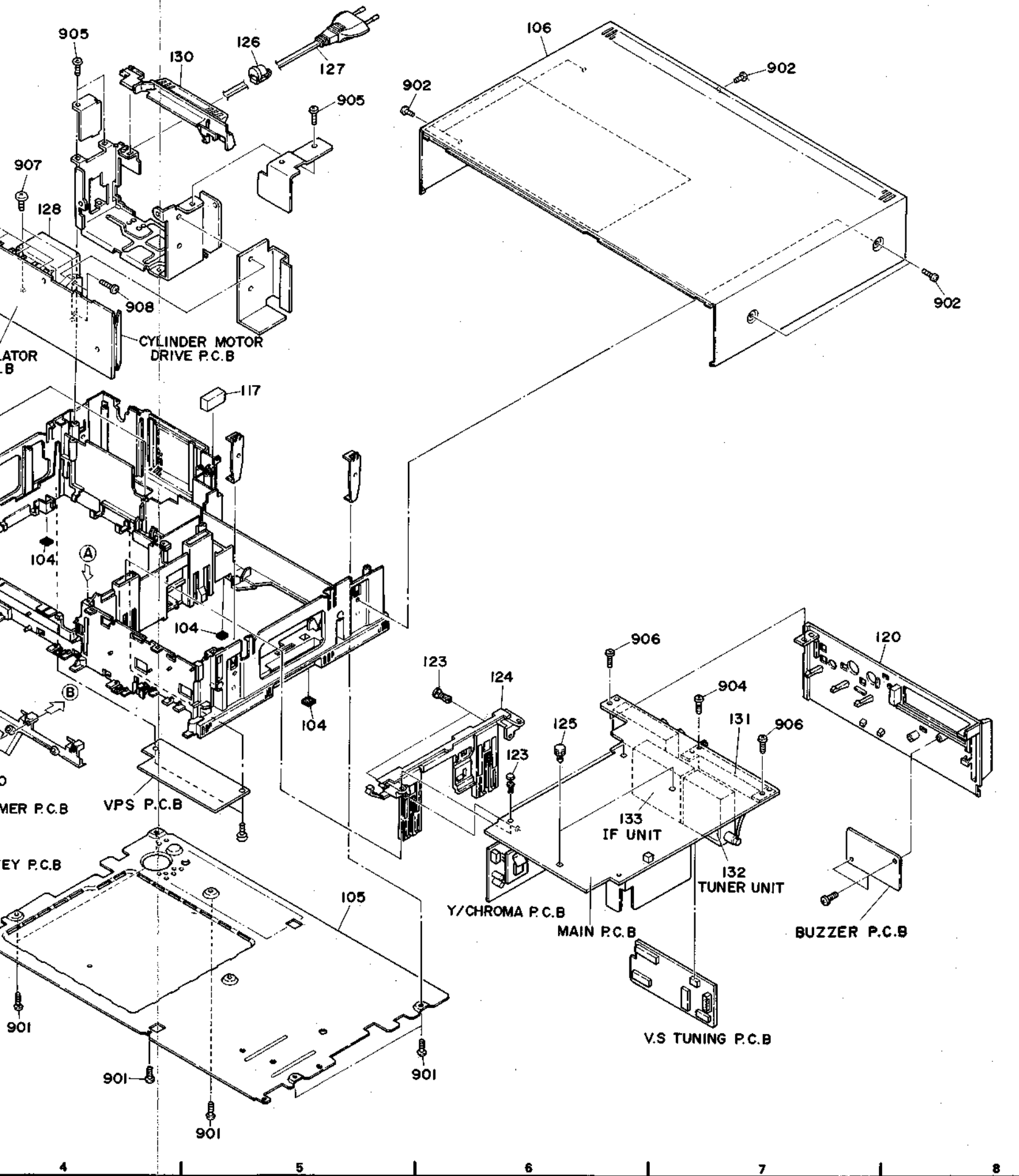
**[CHASSIS/CASSETTE LOADING MECHANISM/
CYLINDER MOTOR SECTION]**

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
FOR FINAL ASSEMBLY			FOR FINAL ASSEMBLY		
101	6189398	CASSETTE DOOR	202	6415391	REEL TABLE-SUPPLY
102	6077031	ROTARY KNOB	203	6415412	REEL TABLE-TAKE UP
103	6892335	HOLDER	206	7787412	WASHER
	6892333	RNOBU HOLDER	207	7778859	POLYSLIDER WASHER
104	7741444	FELT (LEG)	208	6865662	ARM-BRAKE
105	6001561	BOTTOM COVER	209	7386841	TENSION ARM
106	6001894	TOP COVER ASSEMBLY	210	6865804	BRAKE L
107	6238938	FRONT PANEL	211	6865812	BRAKE R
	6238925	FRONT PANEL ASSEMBLY	212	6302471	SPRING
108	6083613	BUTTON	213	6543864	SPRING
109	6083572	BUTTON	214	7376271	TENSION BAND
110	6083582	BUTTON	215	6879421	BT.SPRING HOLDER
111	6083605		216	7386882	ARM BRACKET [For VT-125E]
112	6083892	BUTTON	216	7368351	ARM BRACKET [For VT-135E]
113	6083884	BUTTON [For VT-125E]	217	6866792	ARM
113	6083883	BUTTON [For VT-135E]	218	7376303	LOADING LINK (RIGHT) ASSEMBLY
115	6890461	PCB HOLDER	219	7376313	LOADING LINK (LEFT) ASSEMBLY
116	6864241	CAP	220	6978301	GUIDE ROLLER BASE (I)
119	6753911	FUSE COVER	221	6974661	BASE
120	6026751	REAR PANEL	224	6869481	GUIDE ROLLER
123	6795152	RIVET	226	7386892	GUIDE BASE HOLDER
124	6893941	HINGE	228	6868061	GUIDE ROLLER ASSEMBLY (OUT)
125	6890501	STUD	229	7570671	TAPE GUIDE (I)
126	6794591	BUSHING	230	6304903	SPRING
△ 127	5746157	POWER CORD WITH PLUG	231	6879902	IMPEDANCE ARM ASSEMBLY
△ 128	5213811	POWER TRANSFORMER	232	5446151	FULL ERASE HEAD
130	6892513	REAR PIECE	233	6302391	SPRING
131	5672971	JACK PLATE [For VT-125E]	234	5446161	AUDIO CONTROL HEAD
131	5672981	JACK PLATE [For VT-135E]	235	6304906	SPRING
132	5586591	TUNER IF BLOCK	236	7786245	WASHER
133	5587621	RF CONVERTOR	237	6878932	SUB BRAKE
134	6890631	LED HOLDER	238	6300084	SPRING
135	6891531	DISPLAY HOLDER	239	5578762	CAPSTAN MOTOR
136	6869311	COVER	240	6865675	RECORDING PREVENTION ARM
150	5490295	IR MODULE	241	5633971	SWITCH (S142)
901	8699410	BT BIND HEAD SCREW 3MMD X 14MM BLACK	242	7788143	POLYSLIDER WASHER
902	7784428	SCREW (M3)	243	6979842	PRESSURE ROLLER ASSEMBLY
903	8741406	BIND SCREW - 3MMD X 6MM	246	6547811	SPRING
904	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM	247	6979042	SCREW
905	8699410	BT BIND HEAD SCREW 3MMD X 14MM BLACK	248	5625141	SWITCH
906	8699412	BIND TAPPING SCREW-3MMX12MM (BLACK)	250	6873291	COLLAR
907	8691608	SCREW 4X8BT	251	4504401	TAPE GUIDE
908	8691414	SCREW 3x14 BT	255	6877521	COLLAR
909	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM	256	6539101	SPRING
			257	6979872	ARM ASSEMBLY [ONLY VT-135E (VPS)]
			258	6550751	SPRING [ONLY VT-135E (VPS)]
			259	7786626	WASHER [ONLY VT-135E (VPS)]
			260	5372041	PRE AMP PCB ASSEMBLY
			301	6886824	CLUCH PLATE ASSEMBLY
			302	6355561	BELT
			303	7386971	SLIDER-BRAKE

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
304	6865733	MODE SLIDER	967	8741414	BINDING SCREW - 3MMD X 14MM
305	6547821	SPRING	968	8821114	3D NUT
306	6889552	GEAR	969	8741408	SCREW (B3X8)
307	6865791	TENTION ARM	970	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM
311	7386933	MOTOR(DC) 3.7W 65G LOADING	971	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM
312	6356111	BELT	972	8691312	BT BIND SCREW-2.6MMDX12MM
313	6356451	BELT	975	8699410	BT BIND HEAD SCREW 3MMD X 14MM BLACK
314	6979051	FLYWHEEL	976	7782781	SCREW 3X8BT
315	7788142	POLYSLIDER WASHER (THRUST)	977	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM
316	7788861	WASHER	978	8741408	SCREW (B3X8)
317	6356101	BELT	979	8650408	SCREW
318	6356081	BELT	980	8741406	BIND SCREW - 3MMD X 6MM
319	7386833	PLATE	983	8741403	BIND SCREW-3MMDX3MM
320	6869291	PULLEY	985	8671406	DT SCREW-3MMDX6MM
321	7778859	POLYSLIDER WASHER	986	8678405	DT SCREW-3MMDX5MM (BLACK)
322	6355561	BELT	988	8691410	SCREW
401	7397054	FRONT LOADING MECHA ASSEMBLY	989	8711103	PAN HEAD SCREW 2X3
402	7386745	SIDE BRACKET (L) ASSEMBLY	990	8741406	BIND SCREW - 3MMD X 6MM
403	7386701	BRACKET(R)			
404	7386815	CASSETTE HOLDER			FOR ACCESSARIES
412	7394493	BRACKET-MOTOR			
414	5946911	MOTOR CBA			
417	6879104	LOADING GEAR ASSEMBLY (R)			5898876 CONNECTER CORD
423	6879093	LOADING GEAR ASSEMBLY (L)			5638905 REMOTE HAND SET
424	7367361	PLATE			
425	6887322	FRONT HOLDER			
426	4500402	SHAFT			
427	6879153	DOOR ARM			
428	6301027	SPRING			
430	6879182	GUIDE PIECE			
501	5457471	UPPER CYLINDER [For VT-125E]			
501	5457472	UPPER CYLINDER [For VT-135E]			
502	5457481	LOWER CYLINDER [For VT-125E]			
502	5457482	LOWER CYLINDER [For VT-135E]			
503	5792631	BRUSH			
950	7541395	SPECIAL SCREW			
951	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM			
952	8741408	SCREW (B3X8)			
954	7781133	BT SCREW 3MMD			
955	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM			
956	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM			
958	8691408	BIND HEAD TAPPING SCREW 3MMD X 8MM			
959	7773083	SCREW			
960	8741408	SCREW (B3X8)			
961	8812114	WASHER - 3MMD SMALL			
962	8650412	SCREW 3X12 WITH SPRING WASHER			
963	8821114	3D NUT			
964	8741103	SCREW(2X3B)			
965	7781872	SCREW-3MMDX8MM			
966	7773086	SCREW			

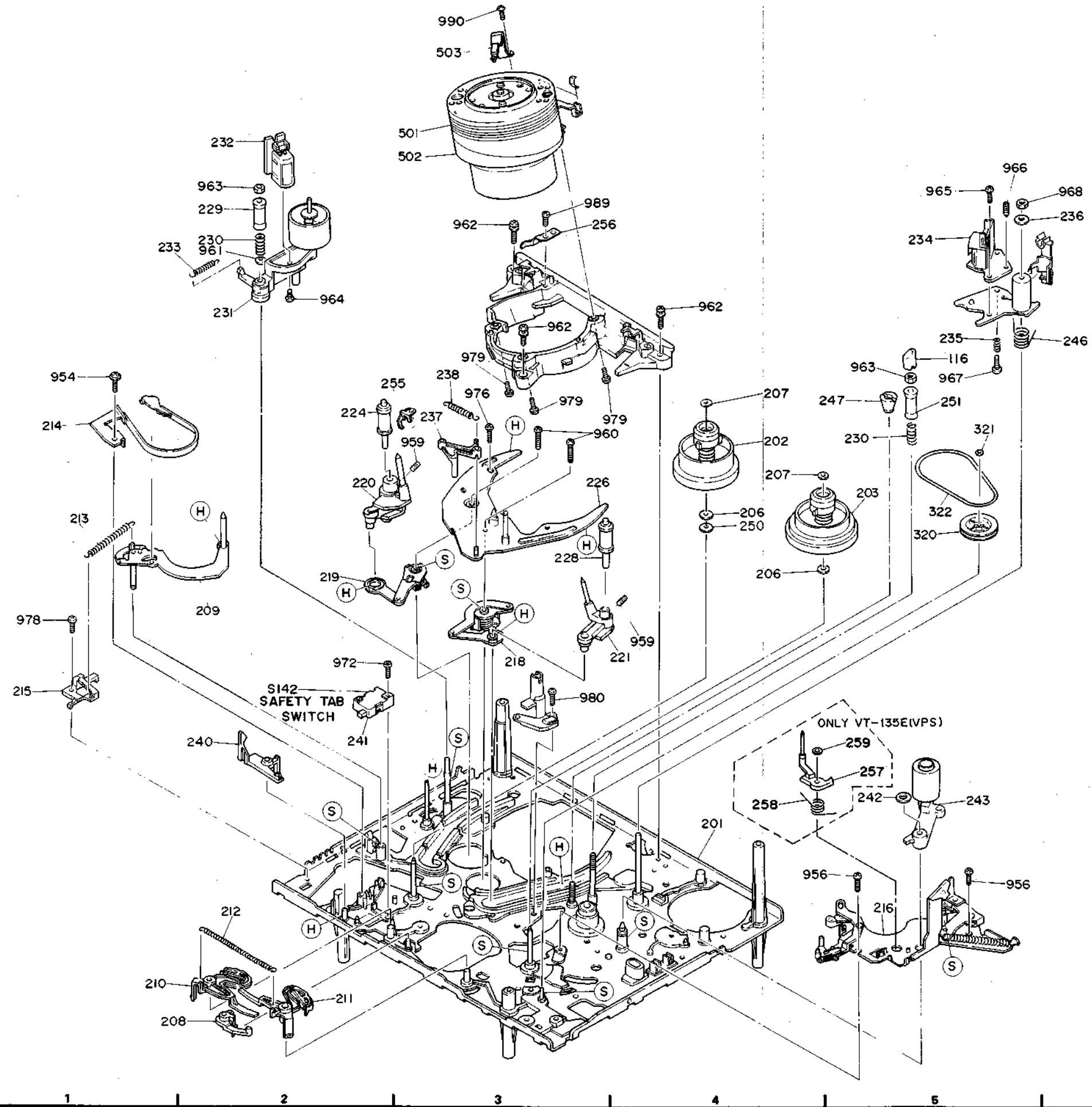
CABINET SECTION (GEHÄUSEEINHEIT)





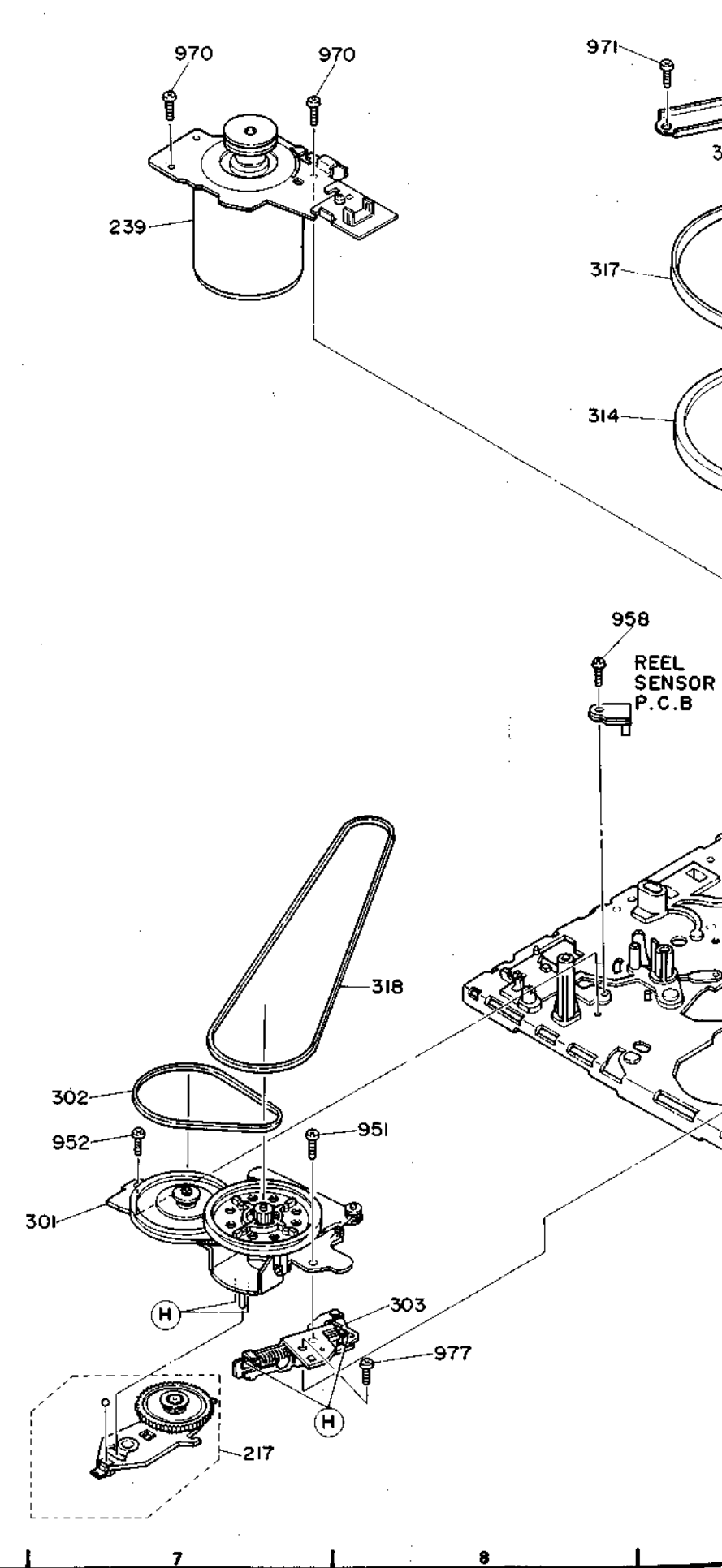
SECTION 6-13 6-14 CABINET SECTION

CHASSIS (I) SECTION (CHASSIS [I])



6-16 CHASSIS (I) SECTION

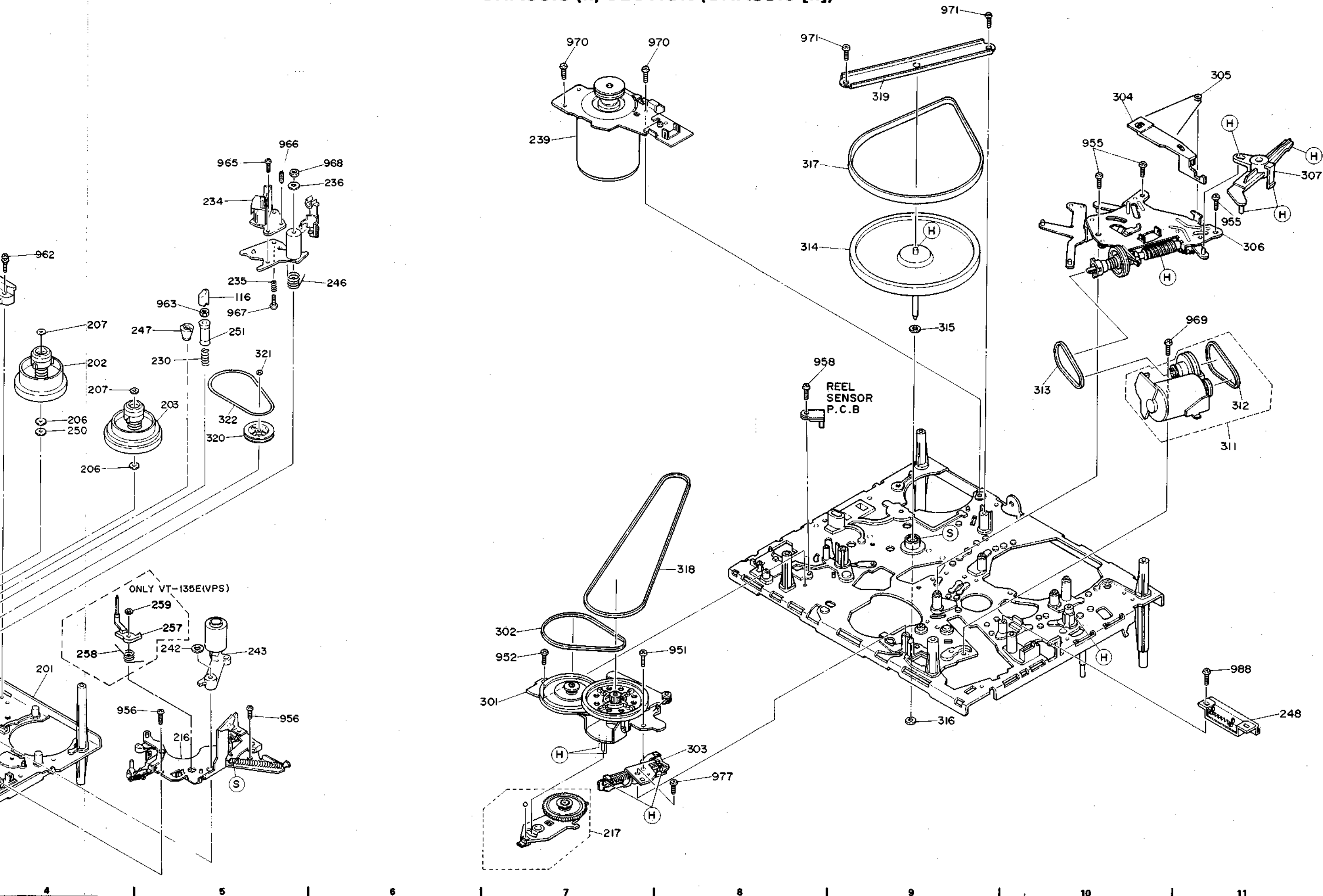
CHASSIS (II) SECTION (CHASSIS [II])



CHASSIS (II) SECTION 6-17

6-18 CHASSIS (II) SECTION

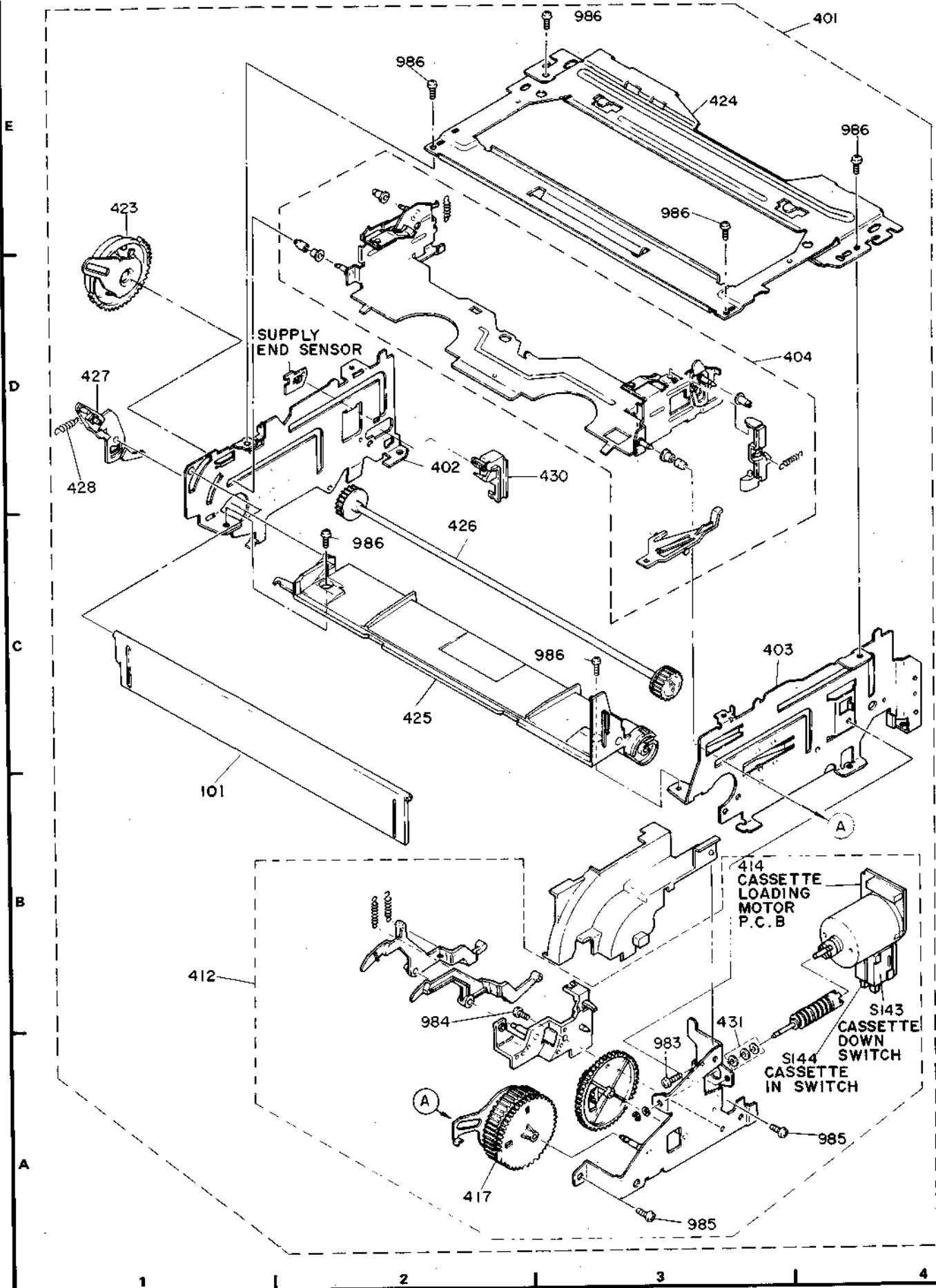
CHASSIS (II) SECTION (CHASSIS [II])



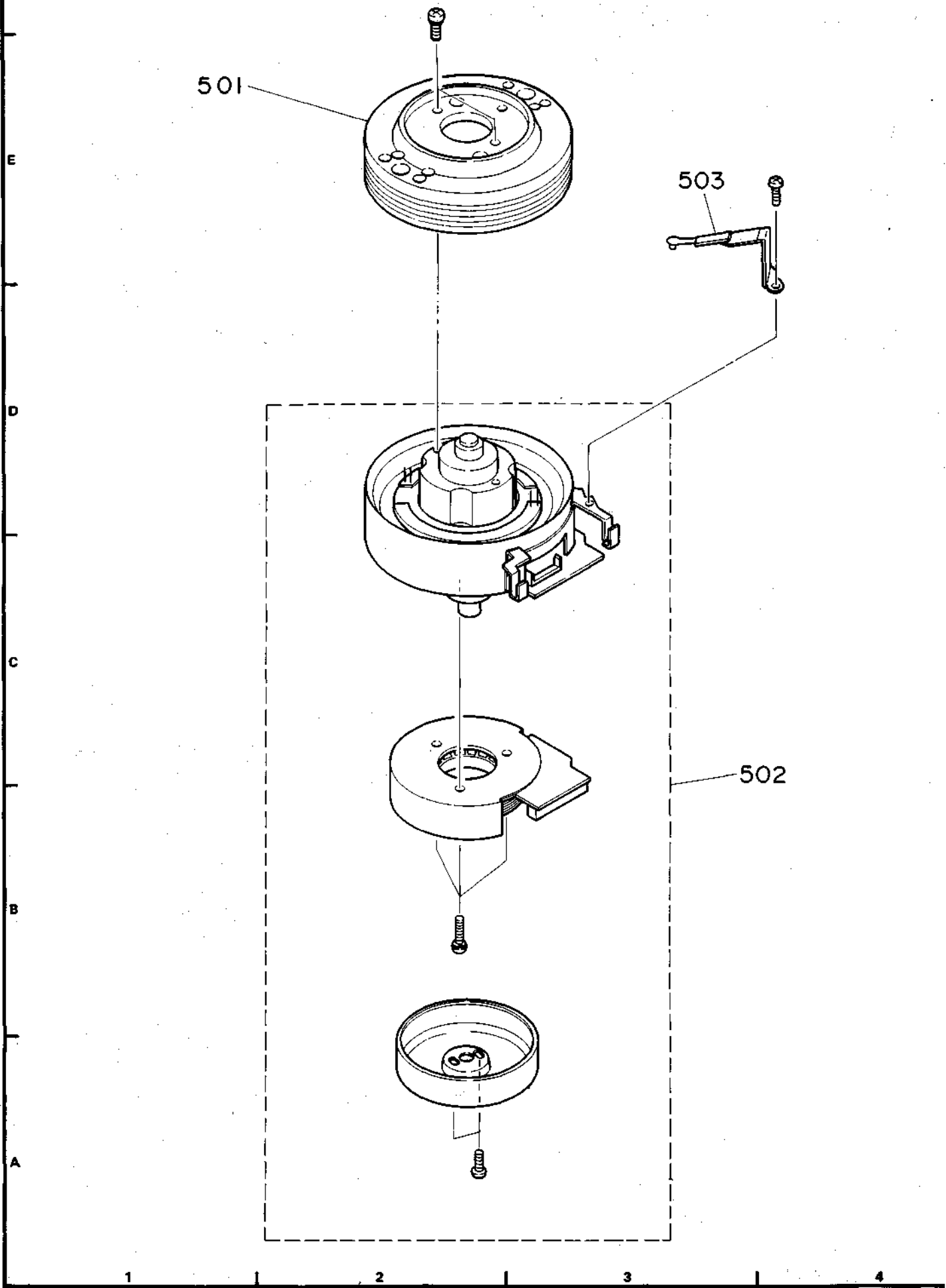
CHASSIS (II) SECTION 6-17

6-18 CHASSIS (II) SECTION

CASSETTE LOADING MECHANISM SECTION (CASSETTEN-LADEMECHANISMUS)



CYLINDER MOTOR SECTION (KOPFTROMMELMOTOR)





HITACHI

SERVICE MANUAL

TK**No.2518G****VT-125E(VPS)****VT-135E(VPS)**

AUVICOelectronics
 Service GmbH
 Hans-Bredow Str.19
 28307 Bremen
 Tel: 0421 40 40 02
 FAX 42 39 60

Technische Informationen

Video-Programm-System

Diese Technischen Informationen beschreiben das Video-Programm-System (VPS).

In dieser Anleitung nicht aufgeführte Informationen sind den Technischen Informationen VT-110E/120E (CT) (Nr. 2512G) zu entnehmen.

Anleitung für Modelle VT-125E(VPS)/135E(VPS)

VHS
 Dieser Videorecorder entspricht dem VHS-Format. Für problemlosen Betrieb dürfen daher nur VHS-Video-Cassetten verwendet werden.

Titel der Anleitung	Sprache	Anleitung-Nr.	Enthaltene Kapitel
Technische Daten	Englisch	2431E	Kapitel 1 - 6
	Deutsch	2432G	Kapitel 1 - 6
Technische Informationen	Englisch	2517E	---
	Deutsch	2518G	---

ÄNDERUNGEN DER TECHNISCHEN DATEN UND DES DESIGNS VORBEHALTEN.

VIDEO-CASSETTEN RECORDER

Februar 1987**TOKAI WORKS**

Inhaltsverzeichnis

) Liste der Unterschiede	1
1. VPS-IC-Stift-Belegung	3
1.1 IC1101 Datenzeilen-Slicer	3
1.2 IC1102 Datenzeilen-Decoder	5
2. Datenzeilen-Slicer	7
3. Datenzeilen-Decoder	9
4. Timer- μ P	13

Liste der Unterschiede

	Benennung	VT-120E (CT)	VT-135E (VPS)	VT-125E (VPS)
Merkmale	HQ (High Quality)	Verwendet	Verwendet	Verwendet
	Trick-Wiedergabe	<ul style="list-style-type: none"> ◦ Bildsuchlauf ◦ Pause ◦ Einzelbild (über Fernbedienung) ◦ Wiederholung 	<ul style="list-style-type: none"> ◦ Bildsuchlauf ◦ Pause ◦ Einzelbild (über Fernbedienung) ◦ Wiederholung ◦ Zeitlupe 	<ul style="list-style-type: none"> ◦ Bildsuchlauf ◦ Pause ◦ Einzelbild (über Fernbedienung) ◦ Wiederholung
	Einschaltautomatik	Ja	Ja	Ja
	Bildsuchlauf mit Rauschbalkenverriegelung	Ja	Ja	Ja
	Fernbedienung	Infrarot	Infrarot	Infrarot
	Timer-Aufnahmeprogramme	4 Programme während 2 Wochen	4 Programme während 2 Wochen	4 Programme während 2 Wochen
	Timer-Speicherschutz	Etwa 5 Minuten	Etwa 5 Minuten	Etwa 5 Minuten
	Timer-Programm-Zeitanzzeige	Gleichzeitig Start- und Stoppzeit	Gleichzeitig Start- und Stoppzeit	Gleichzeitig Start- und Stoppzeit
	Sofortaufnahme-funktion in Intervallen (IRT)	Einstellen der Startzeit	Einstellen der Startzeit und der Aufnahmedauer	Einstellen der Startzeit
	Bandzählwerk-Anzeige	Unabhängig	Unabhängig	Unabhängig
	Speicher-Stoppfunktion	Schneller Vor- und Rücklauf	Schneller Vor- und Rücklauf	Schneller Vor- und Rücklauf
	Kanalwahlfunktion	Spannungssynthesizer (Abstimmautomatik)	Spannungssynthesizer (Abstimmautomatik)	Spannungssynthesizer (Abstimmautomatik)
	Eingangswähler	Nicht vorhanden	Nicht vorhanden	Nicht vorhanden
	Wiedergabe-Bildregler	Hochfrequenzregler	Hochfrequenzregler	Hochfrequenzregler
	Eintasten-Aufnahmefunktion	Ja	Ja	Ja
	Zeitlupen-Spurlagenregler	Nein	Ja	Nein
VPS (Video-Programm-System)	Nein	Ja	Ja	

	Benennung	VT-120E (CT)	VT-135E (VPS)	VT-125E (VPS)
Chassis	Chassis-Bauart	UY	UY	UY
	Kopftrommelmotor	Dreiphasen-Motor mit äußerem Rotor, Frequenzgenerator: 300 Hz	Dreiphasen-Motor mit äußerem Rotor, Frequenzgenerator: 300 Hz	Dreiphasen-Motor mit äußerem Rotor, Frequenzgenerator: 300 Hz
	Videoköpfe	2 Köpfe CH-1/CH-2: 65 µm, Steckanschluß	3 Köpfe CH-1/CH-2: 65 µm, CH-3: 33 µm, Steckanschluß	2 Köpfe CH-1/CH-2: 65 µm, Steckanschluß
	Heizung	Keine (mit Kühlkörper)	Keine (mit Kühlkörper)	Keine (mit Kühlkörper)
	Kondensatsensor	Nein	Nein	Nein
Hauptregelungs-ICs	Video-System: Y-Signal- Verarbeitung Chromasignal- Verarbeitung Aufnahme/Wieder- gabe-Verstärker und Korrektur Bildregler	HT4727 (IC203) HT4539 (IC301) HT4708 (IC205) HA11852 (IC204) MSM6965RS (IC204)	HT4727AP (IC203) HT4539 (IC301) HT4708 (IC205) HA11852 (IC1) MSM6965RS (IC204)	HT4727 (IC203) HT4539 (IC301) HT4708 (IC205) HA11852 (IC1) MSM6965RS (IC204)
	Audio-System: Aufnahme/Wieder- gabe-Verstärker	BA5115L (IC402)	BA5115L (IC402)	BA5115L (IC402)
	Servo-System: Drehzahl-/ Phasenregelung Kopftrommel-Treiber Capstanmotor- Treiber Regelung für Trick- Wiedergabe	M54898P (IC601) HA13403 (IC651) M54648L-B (IC602) -----	M54898AP (IC601) HA13403 (IC651) M54648L-B (IC602) M54183P (IC608)	M54898AP (IC601) HA13403 (IC651) M54648L-B (IC602) -----
	Systemregelung: Systemregelungs-µP Lademotor-Treiber	HD614042SD37 (IC901) M54649L (IC902)	HD614042SD37 (IC901) M54649L (IC902)	HD614042SD37 (IC901) M54649L (IC902)
	Timer: Timer-µP	HD614045SD53 (IC751)	HD614085SA30 (IC751)	HD614085SD30 (IC751)
	Kanalwahlsystem (Abstimmung): Abstimmungs-µP Band-Umschaltung	M50161-354SP (IC801) LA7934 (IC802)	M50161-354SP (IC801) LA7934 (IC802)	M50161-354SP (IC801) LA7934 (IC802)
	Stromversorgung: Regler	STK5471 (IC851)	STK5471 (IC851)	STK5471 (IC851)
	VPS: VPS-µP (Video- Programm-System)	----	SAA5235 (IC1101) SAF1134P (IC1102)	SAA5235 (IC1101) SAF1134P (IC1102)


1. VPS-IC-Stift-Belegung (IC1101V, IC1102V)

1.1 IC101: Datenzeilen-Slicer

Typ: SAA5235

Funktion: Dieser Schaltkreis leitet das Datenzeilen-Signal aus dem Videosignal ab und regeneriert die Datenzeilen-Taktfrequenz. Er liefert auch das Signal für den Datenzeilen-Decoder.






Stift-Nr.	E/A	Aktiver Pegel	Abkürzung	Funktion
1	-	-	-	-
2	-	Hi/Lo	GAIN SW	Schaltet den Gewinn des Video-Verstärkers in diesem IC. Hoher Pegel (Hi): Videosignal mit einer Eingangspegelamplitude von 2,5 V. Niederer Pegel (Lo): Videosignal mit einer Eingangspegelamplitude von 1 V.
3	-	-	HF FILTER	Der HF-Verlustkompensator benötigt zwei Kondensatoren für den Betrieb. Der an Stift 3 angeschlossene Kondensator dient als Filter für das Videosignal des HF-Verlustkompensators. Die HF-Amplituden-Information wird in dem an Stift 4 angeschlossenen Kondensator gespeichert.
4	-	-	HF AMP	
5	-	-	AS	Der an den Stift 5 angeschlossene Kondensator speichert die Amplituden-Information für den Datenzeilen-Slicer. Die Nullpegel-Information wird in einem an den Stift 6 angeschlossenen Kondensator gespeichert. Der an den Stift 8 angeschlossene Kondensator ist für die Zeitsteuerung des Datenzeilen-Slicers erforderlich.
6	-	-	ZERO LEVEL	
7	-	-	-	
8	-	-	DT	
9	-	-	PHASE DETECTOR	Die im Phasen-Detektor erfaßte Phasen-Information wird in dem an den Stift 9 angeschlossenen Kondensator gespeichert.
10	-	-	-	-
11	E	-	OSC	Der Ein-Stift-Oszillator benötigt einen 10.000 MHz Kristall-Oszillator (2 x Datenzeilen-Taktfrequenz), der an den Stift 11 angeschlossen ist.
12	E	-	CLOCK FILTER	Eine Taktfrequenz-Filter für die Datenzeilen-Taktfrequenz von 5.000 MHz ist mit dem an den Stift 12 angeschlossenen Phasenschieber verbunden.
13	-	Lo	GND	Masseanschluß für den IC.

Stift-Nr.	E/A	Aktiver Pegel	Abkürzung	Funktion
14	A		DATALINE CLOCK	Der Datenzeilen-Taktfrequenz-Ausgang (Stift 14) und der Datenzeilen-Datenausgang (Stift 15) liefern die Signale für den Datenzeilen-Detektor.
15	A		DATALINE DATA	
16	E	Hi	Vcc	IC-Stromversorgung (12 V)
17	-	-	-	
18	-	-	-	
19	-	-	-	
20	-	-	-	
21	-	-	-	
22	E	Hi	DATA RESET	Der Datenzeilen-Slicer benötigt ein Rückstellsignal für jede Zeile; das Zeitablaufdiagramm ist in Abb. 4 dargestellt.
23	-	-	-	
24	-	-	-	
25	A		COMPOSITE SYNC	Dieser Stift liefert das Bildaustast-synchronsignal für den Datenzeilen-Decoder.
26	E	-	BLACK LEVEL	Der an diesen Stift angeschlossene Kondensator speichert den Schwarzpegel für den adaptiven Synchronsignal-Separator.
27	E	-	VIDEO	Das Bildaustast-synchronsignal muß über einen Klemmkondensator an diesem Eingang eingespeist werden. Die Eingangsamplitude hängt von der Position des an Stift 2 angeschlossenen Gewinnschalters ab.

1.2 IC1102 Datenzeilen-Decoder

Typ: SAF1134P

Funktion: VPS-Decoder

Stift-Nr.	E/A	Aktiver Pegel	Abkürzung	Funktion
1	E	Hi/Lo	A0 ADDRESS	Nicht belegt. (Die Adresse des Datenzeilen-Decoders zuordnen.)
2	E	Hi/Lo	A1 ADDRESS	
4	E	Hi	TEST 1	Nicht belegt. (Wird für Prüfungen verwendet.)
5	E	Hi	TEST 2	
6	E		COMPOSITE SYNC	Stellt die 16. Zeile fest.
8	E		SERIAL CLOCK	Taktfrequenzimpuls erforderlich, um die VPS-Daten an den Timer zu übertragen.
9	E	Lo	RESET	Dient für die Rückstellung des Zeitsteuer-Schaltkreises, des Regelregisters, des Datenregisters usw. in dem IC.
10	A		DATA LINE CLOCK	Ausgang für invertierten Daten-Taktfrequenzimpuls.
11	E		DATA LINE CLOCK	Dient für das Dekodieren der VPS Biphasen-Daten. 5 MHz
12	E	Lo	GND	
3, 7, 13, 14, 18, 19, 21				Nicht belegt.
15 16	A	Lo	DAVN 1 DAVN 2	Nicht belegt. Hier wird ein niederpegeliges "Lo" Signal ausgegeben, wenn das effektive VPS-Signal festgestellt wird.
17	A		SERIAL DATA	Vor hier werden die VPS-Daten - Tag, Monat, Stunde, Minute, Programmquelle, Sonderstatus-Code - an den Timer ausgegeben.
18	E		DATA LINE DATA	Empfängt ein Signal der 16. Zeile der VPS-Daten.

Stift-Nr.	E/A	Aktiver Pegel	Abkürzung	Funktion
20	A	Lo	DATA RESET	Ausgang für das Rückstellsignal ("Lo") mit der aus dem Bildaustast synchronsignal abgeleiteten Frequenz mit einer Dauer von 7,8 µs, um den Daten-Separator und den Daten-Taktfrequenz-Phasendetektor in diesem Datenzeilen-Slicer zurückzustellen.
22	A	Hi	VDD	Stift für Stromversorgung

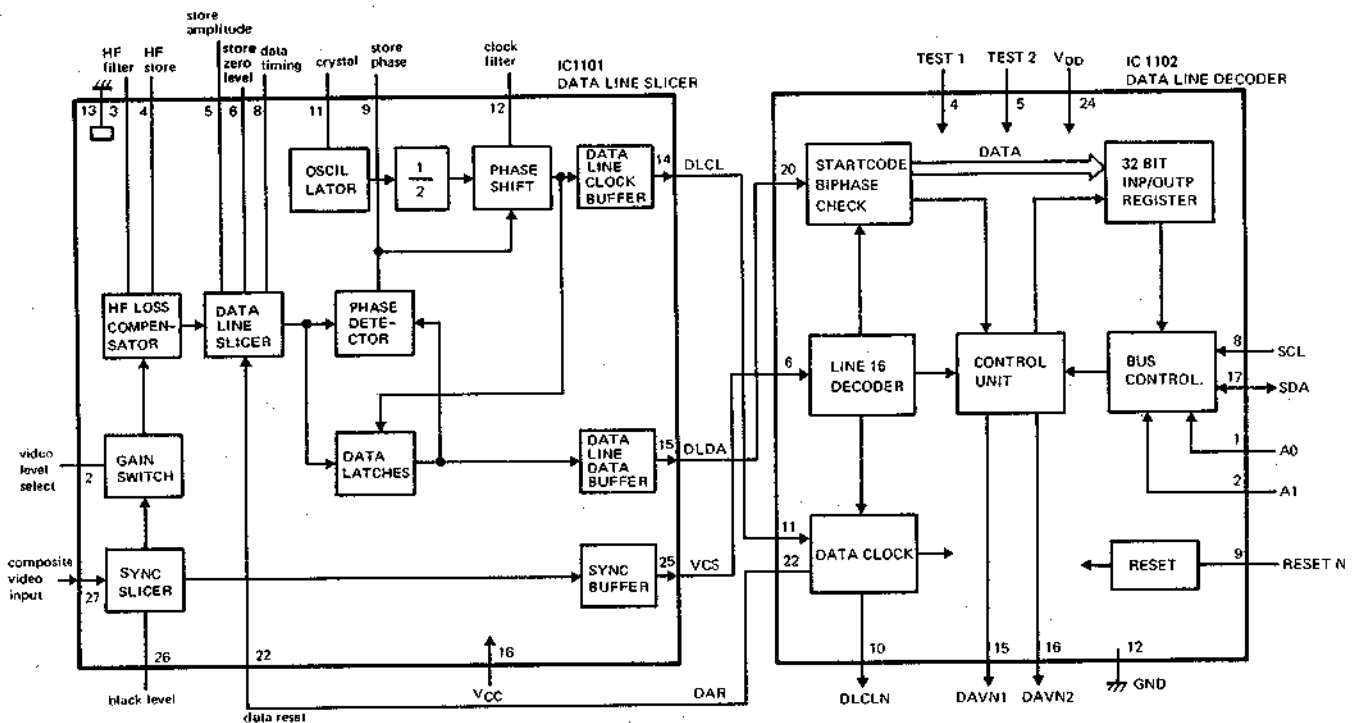


Abb. 1 Blockschaubild für VPS-Slicer/Decoder

2. Datenzeilen-Slicer

Kombiniert mit einem Videosignal-Verarbeitungsschaltkreis (Datenzeilen-Slicer), empfängt und dekodiert der SAF1134P Datenzeilen-Decoder die zusätzlichen Daten (siehe Abb. 3), die

in der 16. Zeile des TV-Signals (Abb. 2, 3) für das Video-Programm-System (VPS) enthalten sind. Diese Daten werden über einen Schnittstellen-Bus für die nachfolgende Verarbeitung geleitet.

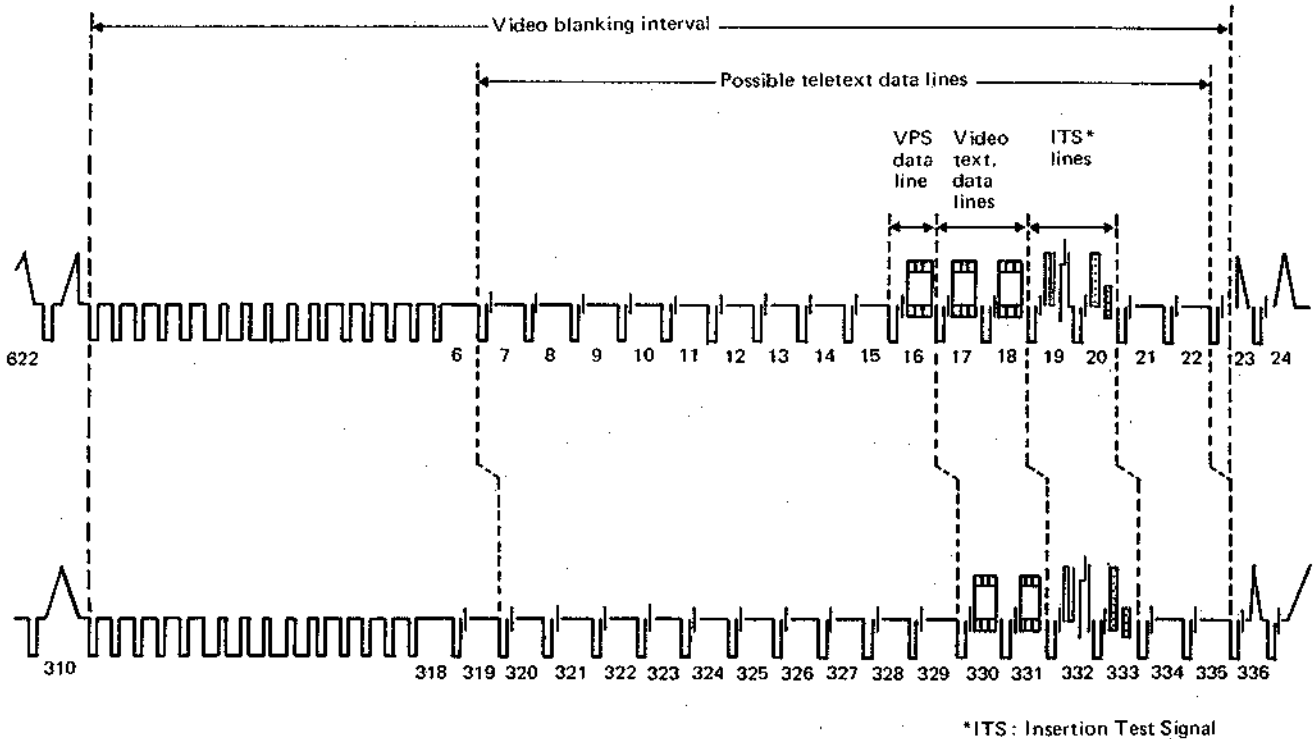


Abb. 2 Videosignal mit Position der VPS-Datenzeile

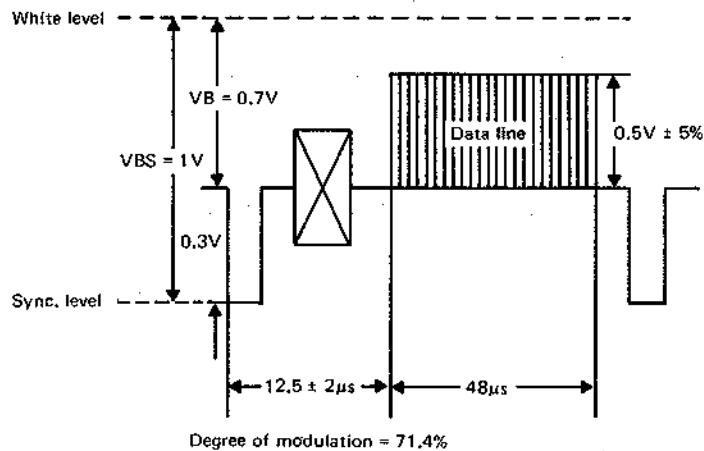


Abb. 3 Einfügen der Datenzeile in das Videosignal

Da die Programme während der Übertragung mit einem für die Identifikation verwendeten Steuerzeichen versehen sind, ermöglicht die Verwendung eines Datenzeilen-Decoders eine zeitgerechte Aufnahme bestimmter Programme durch den Videorecorder. Dadurch wird bei Programmänderungen die Aufnahme falscher Sendungen vermieden.

Der IC1101 Datenzeilen-Slicer extrahiert die Datenzeilen-Signale und das Bildaustastersynchronsignal und regeneriert die Datenzeilen-Taktfrequenz. Die extrahierten Signale werden an den Datenzeilen-Decoder IC1102 gesandt. In Abb. 4 ist das Zeitablaufdiagramm der Ein-/Ausgangssignale des Datenzeilen-Slicers dargestellt.

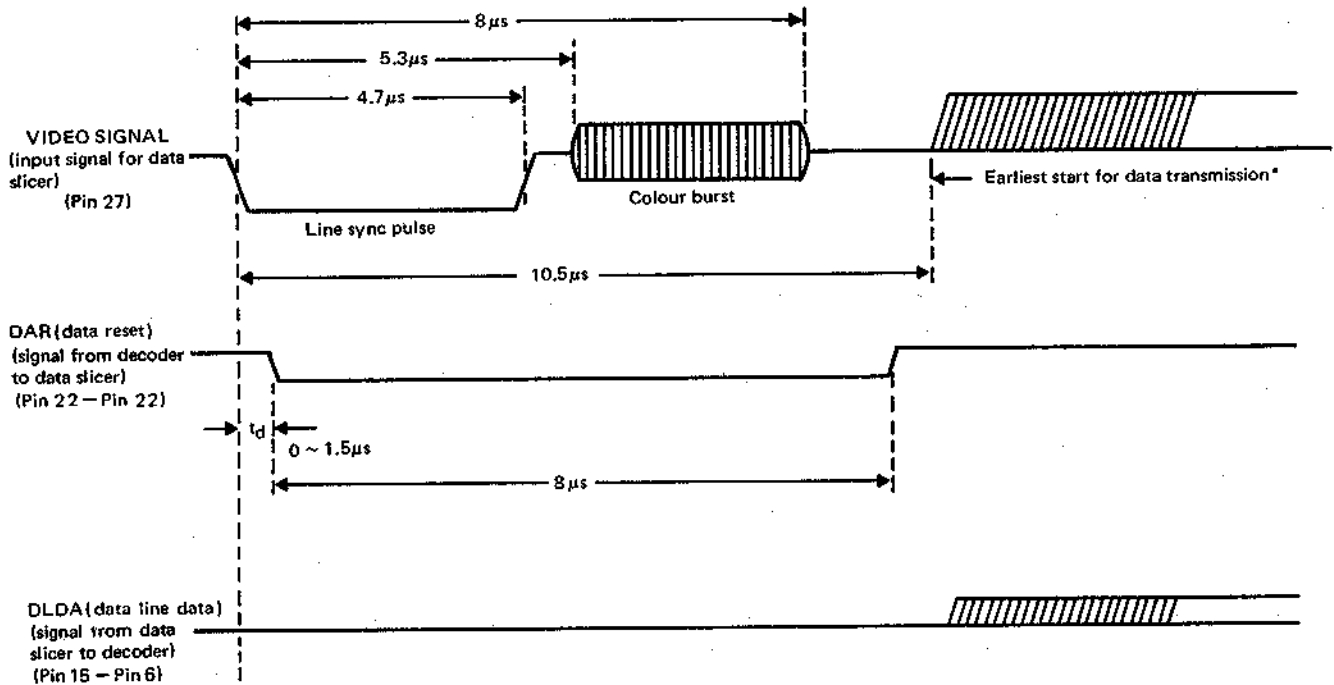


Abb. 4 Zeitablaufdiagramm für Datenzeilen-Slicer

3. Datenzeilen-Decoder

Der IC1102 Datenzeilen-Decoder dekodiert die VPS-Informationen, die in Zeile 16 (erstes Halbbild) des von ARD und ZDF übertragenen TV-Signals enthalten sind. Mit einer Datenrate von 2,5 MBit/s werden diese Daten mit Hilfe von Biphasen-Modulation übertragen. Die Abb. 5 zeigt den Zusammenhang zwischen den Startcode-Wellenformen für Wort 2 und dem Biphasen-Daten-Detektor. Jede Datenzeile - Zeile 16 des Fernsehbildes - enthält 1 Byte (= 120 Bit) (Abb. 6).

Für das Video-Programm-System (VPS) sind nur die Worte 11, 12, 13 und 14 von Bedeutung. Diese Wörter werden von dem Decoder kontrolliert und - wenn gültig - an ein 32-Bit Eingangsregister übertragen. Die Datenzeile 16 wird dann mit Hilfe des normalen Bildaustast-synchronsignals festgestellt.

Falls die eingehende Datenfolge DLDA dem

festgelegten Bit-Muster des Startcodes entspricht, dann wird die Datenzeile identifiziert. Die Datenworte 11, 12, 13 und 14 werden dekodiert, auf Biphasen-Fehler kontrolliert und danach - wenn gültig - in das bereits oben beschriebene Eingangsregister eingegeben. Anschließend erfolgt die Übertragung dieser Daten an das Ausgangsregister.

Ein Auslesen der im Ausgangsregister enthaltenen Daten durch den Timer-µP ist über den Schnittstellen-Bus in SAF1134 möglich. Die Datenübertragung dieses Schaltkreises ist vollständig transparent, d.h. die Daten werden nicht modifiziert. Die jeweils letzte gültige VPS-Information wird in dem Ausgangsregister gespeichert, bis das Auslesen über den Bus beendet wurde.

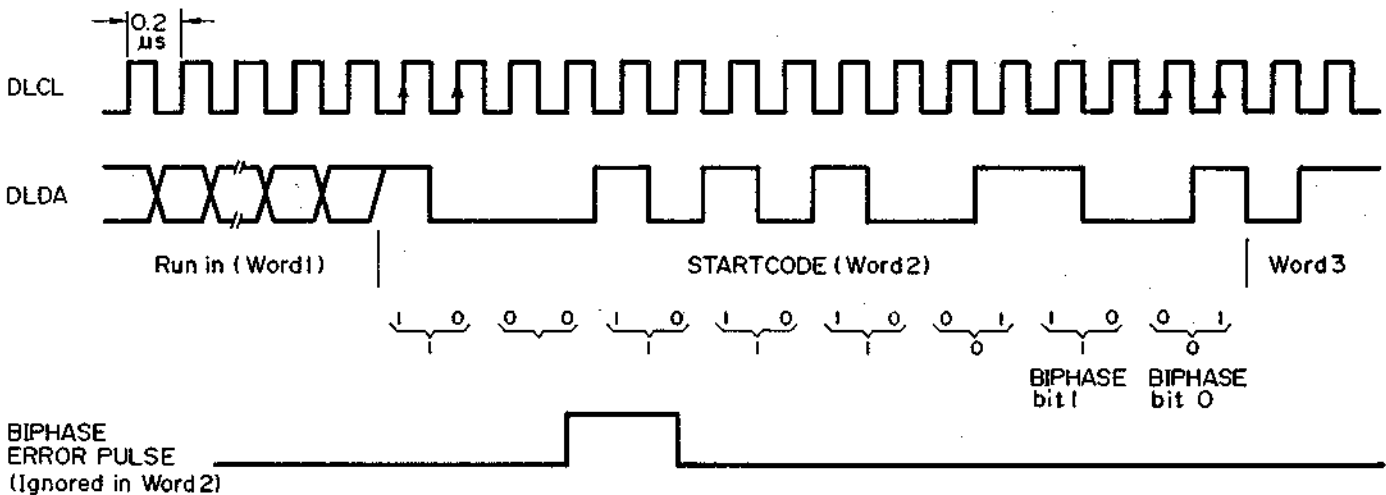


Abb. 5 Feststellen von Startcode und Biphasen-Fehler

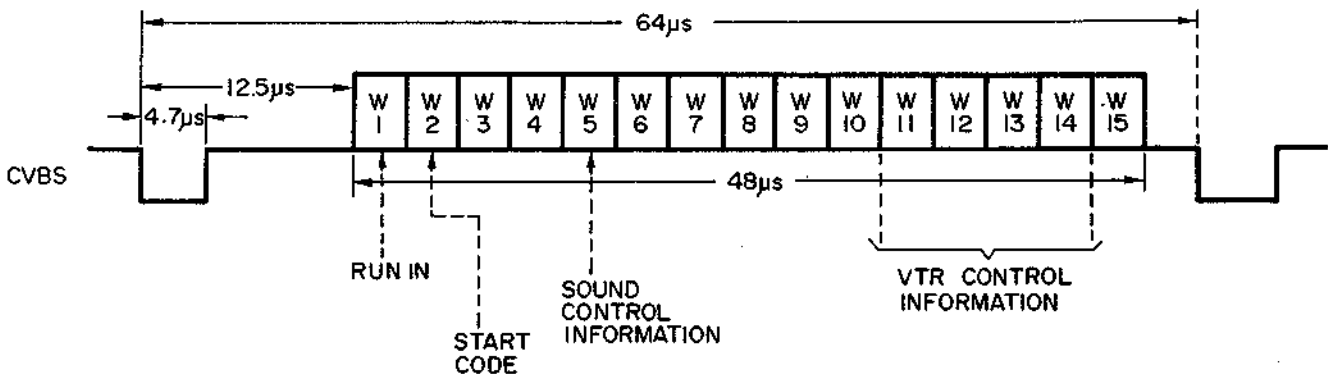


Abb. 6 Datenzeilen-Daten

Bus-Schnittstelle

Bei dem BUS handelt es sich um einen bidirektionalen Bus mit zwei Leitungen, bei dem die Datenleitung SDA und die Taktfrequenzleitung SCL über externe Widerstände mit V_{DD} verbunden sind. Alle Signale sind bei niederem "Lo" Pegel aktiv. Eine Datenübertragung ist nur zulässig, nachdem die Startbedingung "S" definiert wurde.

Übertragung eines Bits

Ein Daten-Bit kann auf der SDA Leitung nur während eines Taktfrequenzimpulses übertragen werden, der über die gesamte Impulsdauer (SCL = HIGH) konstant sein muß, da Interferenzen Änderungen im START/STOP Status hervorrufen können.

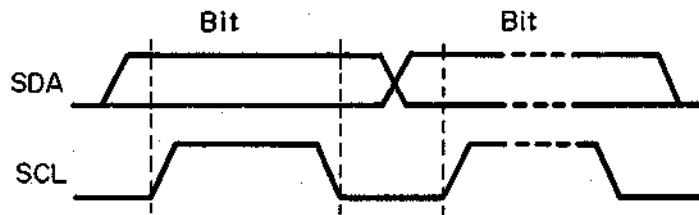


Abb. 7 Übertragung eines Bits

START/STOP Bedingungen

Außer Betrieb weisen die Leitungen SDA und SCL einen hohen "HIGH" Pegel auf. Ein H/L (hoch/nieder) Wechsel in der SDA Leitung (SCL = HIGH) entspricht der

START Bedingung "S", wogegen ein L/H (nieder/hoch) Wechsel in der SDA Leitung (SCL = HIGH) der STOP Bedingung "P" entspricht.

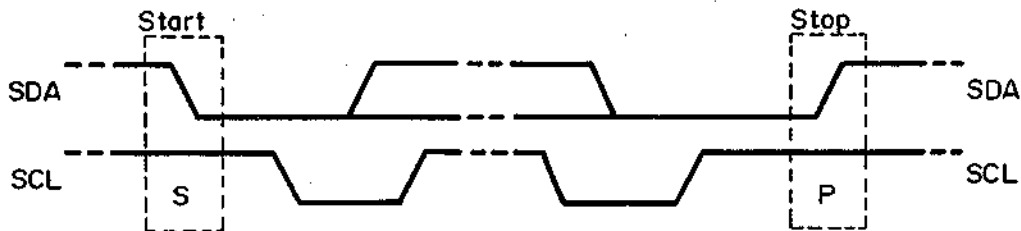


Abb. 8 Start/Stop-Bedingungen

Quittierung

Die Anzahl der Bits zwischen START und STOP ist normalerweise nicht begrenzt.

Jedes Byte enthält 8 Daten-Bits (Daten, Adressen, Befehle) und ein zusätzliches Quittungsbit.

Für die Übertragung des Quittungs-Status muß SDA einen hohen "HIGH" Pegel aufweisen, damit der Empfänger während

der Dauer des Taktfrequenzimpulses SCL Nr. 9 die Quittierung vornehmen kann, indem SDA auf einen niederen "LOW" Pegel gebracht wird. Die Quittierung kann von dem Timer- μ P ausgegeben werden.

Auch wenn die Quittierung entfällt, kann ein SCL Timer (Master-Empfänger) das Ende der Datenübertragung definieren.

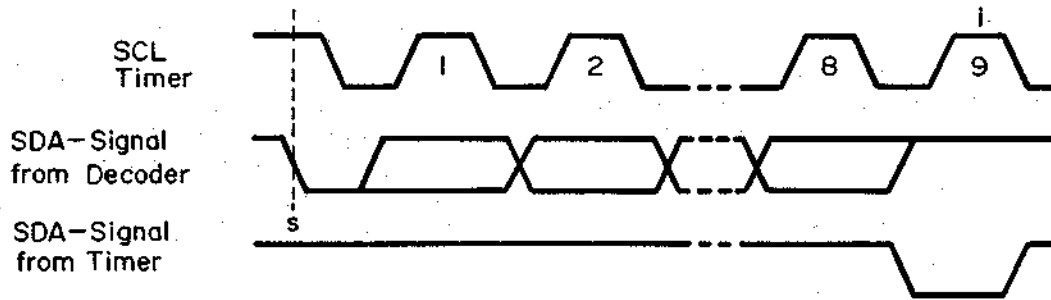


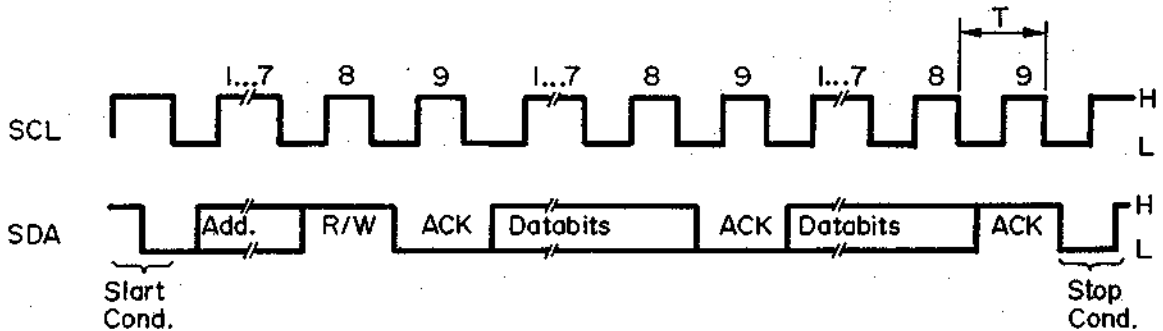
Abb. 9 Quittungssignal

Datenübertragung (allgemein)

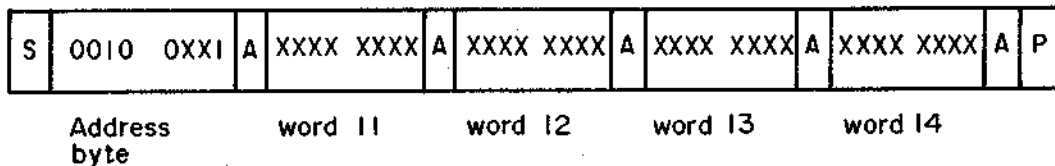
Der Decoder beginnt mit der START Bedingung und dem Adressen-Byte.

Bit Nr. 8 des Adressen-Byte R/W bezeichnet die WRITE (R/W=0) Schreib- oder READ (R/W=1) Lese-Bedingung. Die vier dem Start-Bit nachfolgenden Bits definieren den Decoder-Schaltkreis und

sind vom Hersteller festgelegt. Die Bits A1 und A0 müssen der Verdrahtung der Adressen-Einstelleingänge des Decoder-IC entsprechen. Bei richtiger Adressierung quittiert der Timer mit "A". Das zweite Byte kann weitere Daten oder Befehle enthalten.



Read out of the 32 bit output register:



S = Start condition, P = Stop condition, A = Acknowledge = 0
 A = no acknowledge = 1
 SCL period: $T > 10\mu S$

Abb. 10 Serielle Datenübertragung vom Decoder zum Timer

4. Timer μ P

Mit dem Programmieren des Timers wird der VPS ON Befehl des Timer- μ P automatisch in ein Programm eingegeben. Im VPS ON Modus erfolgt die Timer-Aufnahme mit Hilfe des VPS Code. Wenn bei programmiertem Timer der VPS OFF Schalter (S767) gedrückt (siehe Technische Daten) wird, so daß die VPS Anzeige in der Flüssigkristallanzeige erlischt, dann wird der VPS OFF Befehl in das Programm eingegeben. Im VPS OFF Modus wird der VPS Code ignoriert, so daß die normal programmierten Timer-Aufnahmen ausgeführt werden.

Im VPS ON Modus wird der Timer- μ P während der Timer-Aufnahme-Bereitschaftsfunktion auf den Kanal-

Suchlaufmodus geschaltet. In dem Kanal-Suchlaufmodus wählt der Timer- μ P jede Sekunde den Kanal an, für den die Startzeit für die Timer-Aufnahme zwischen 4:00 morgens (heute) und 3:59 morgens (des nächsten Tages) programmiert wurde, und überwacht den VPS Code. Danach schaltet der Timer- μ P den Videorecorder anhand des von dem Decoder übertragenen Code auf die Aufnahme. Die Tabelle 1 zeigt die Timer-Operation, wenn der vom Decoder übertragene Time-Code und der spezielle System-Code empfangen werden. In der Tabelle 2 ist dagegen dargestellt, wie der Modus des Timer- μ P in Abhängigkeit von dem VPS Code umgeschaltet wird.

Tabelle 1 Funktionen des VPS Code

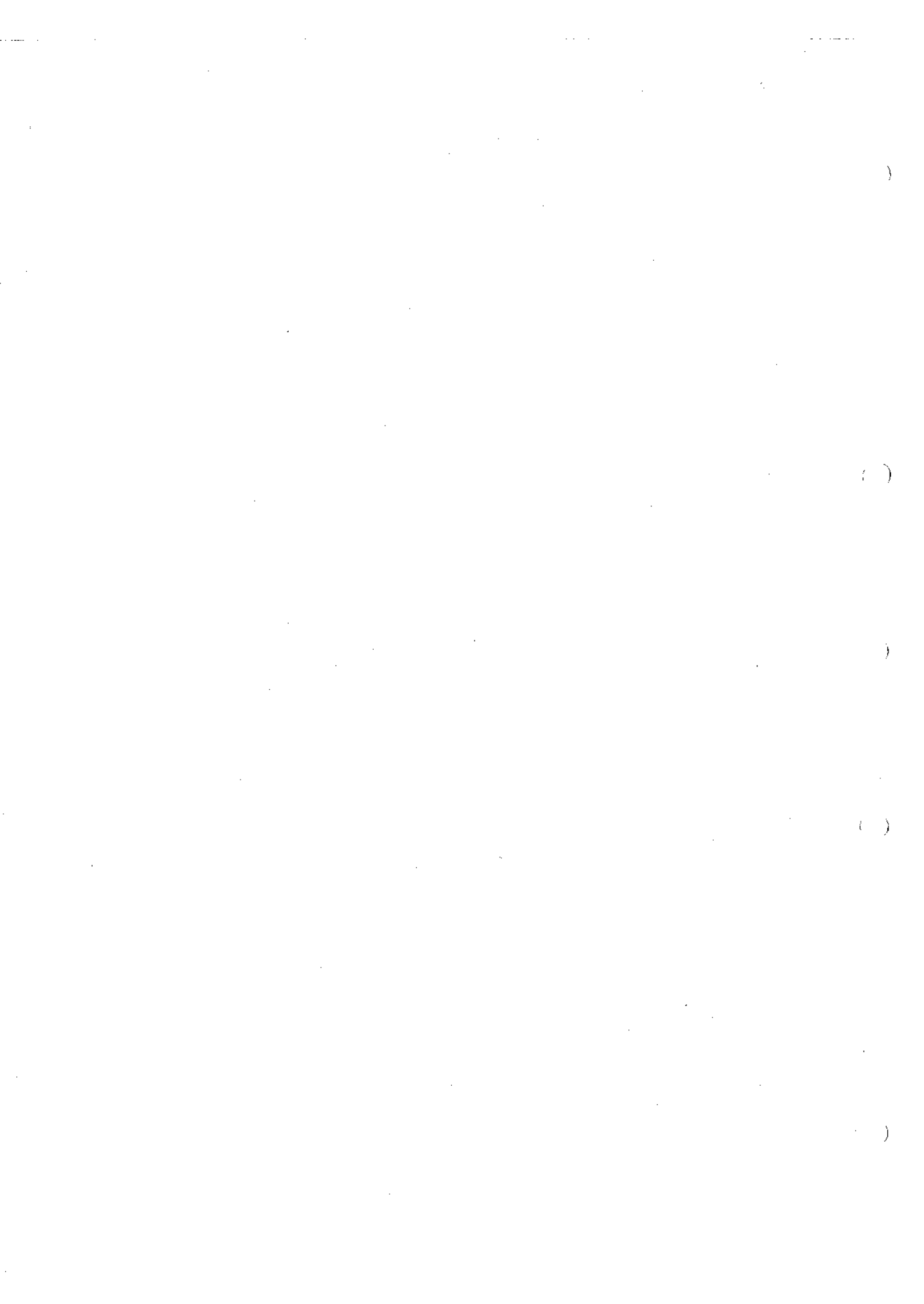
Symbol	Wort	Bedeutung/Code	Videorecorder	Hinweise
C	CORRECT	Geicher Code wie programmiert.	Aufnahme gemäß VPS	
W	WRONG	Code weicht vom Timer-Programm ab	Keine Aufnahme	
S	SYSTEM STATUS	Code = 31 St. 63 Min.	Aufnahme gemäß Uhrzeit	Die Aufnahme kann bis zu 2 Minuten vor der programmierten Startzeit beginnen.
I	INTERRUPTION	Code = 29 St. 63 Min.	Aufnahme stoppt und wartet auf den richtigen VPS Code von dem Fernsehsender im Bereitschaftsmodus.	Diese Bedingung kann bis zu 3 Stunden nach dem Empfang dieses Code andauern.
D	DUMMY CODE	Code = 30 St. 63 Min.	Keine Aufnahme	
N	NOTHING	Kein VPS Code	Innerhalb der programmierten Aufnahmezeit: Aufnahme gemäß Timer	Die Aufnahme wird fortgesetzt, auch wenn der VPS Code für nicht länger als eine Minute ausbleibt.
			Außerhalb der programmierten Aufnahmezeit: Keine Aufnahme	

Tabelle 2 Umschalten des Betriebsmodus gemäß VPS Code

Nach VPS Code im Symbol Derzeitiger Modus des Videorecorders Modus Nr.		C	W		S		I	D		N				
					4) innerhalb	4) außerhalb				5) 1 Min. halten	4) innerhalb	4) außerhalb		
1	1) Bereit- schaft (im Kanal- Suchlauf- modus)	Start der Timer- Aufnahme	-		Start der Timer- Aufnahme	-		-						
	nach Modus-Nr.	3	1		3	1		1	1		1	3	1	
2	1) Bereit- schaft 2) (im Unter- brechungs- modus)	Start der Timer- Aufnahme			Start der Timer- Aufnahme	-		-		-	Start der Timer- Aufnahme	-		
	nach Modus-Nr.	3	2		3	2		2	2		2	3	2	
3	Timer- Aufnahme	-	Unter- brechung	Sonstiges	-	Unter- brechung	Sonstiges	Timer- Bereit- schaft	Unter- brechung	Sonstiges	-	-	Unter- brechung	Sonstiges
			Timer- Bereit- schaft	Timer- Bereit- schaft		Timer- Bereit- schaft	Timer- Bereit- schaft		Timer- Bereit- schaft	Timer- Bereit- schaft			3) Timer- Bereit- schaft	
	nach Modus-Nr.	3	2	1	3	2	1	2	2	1	3	3	2	1

Hinweise:

- | | |
|--|--|
| <p>1) Bereitschaft: Betriebsschalter ausgeschaltet und Wartefunktion für programmierte Aufnahme.</p> <p>2) Unterbrechungsmodus: Überwachung nur eines Kanals, der mittels Timer-Programm aufgezeichnet wurde, nach dem Empfang des Unterbrechungs-Code.</p> <p>3) Falls der Timer-µP nach dem Empfang des Code "C" oder "S" die Timer-Aufnahme beginnt und während der</p> | <p>Timer-Aufnahme den Code "N" empfängt, dann schaltet er auf den Unterbrechungs-Modus.</p> <p>4) Innerhalb = Innerhalb der programmierten Timer-Aufnahmezeit.</p> <p>4) Außerhalb = Außerhalb der programmierten Timer-Aufnahmezeit.</p> <p>5) 1 Min. halten = Die Timer-Aufnahme wird für eine Minute fortgesetzt, nachdem der VPS Code ausbleibt.</p> |
|--|--|





HITACHI

SERVICE MANUAL

TK

No.2548E·G

VT-125E(VPS/VPSK)
VT-135E(VPS)

SUPPLEMENT

Technical

AUVICOelectronics
Service GmbH
Hans-Bredow Str.19
28307 Bremen
Tel: 0421 40 40 02
FAX 42 39 60



This service manual describes the following items of models VT-125E (VPS/VPSK) and VT-135E (VPS) which satisfy the new FTZ standards.

Diese Wartungsanleitung beschreibt die folgenden Punkte der Modelle VT-125E (VPS/VPSK) und VT-135E (VPS), die dem neuen FTZ-Standard entsprechen.

Items described in this manual

- Schematic diagram
- Circuit board diagram
- Replacement parts list
- Exploded view

Die folgenden Punkte sind in dieser Anleitung beschrieben

- Schaltplan
- Leiterplatten-Diagramm
- Ersatzteilliste
- Auseinandergezogene Darstellung

See the following service manual for the items other than above.

Andere als die oben beschriebenen Punkte sind der folgenden Wartungsanleitung zu entnehmen.

Referred manual

VT-125E (VPS) : No. 2431E
VT-135E (VPS)

Zu beachtende Anleitung

VT-125E (VPS) : No. 2432G
VT-135E (VPS)

To discriminate the FTZ-standard models

The units provided with the brackets at the lower sections on both sides are the models which satisfy the new FTZ standards.

Kennzeichnung der dem FTZ-Standard entsprechenden Modelle

Geräte, die mit Halterungen an beiden Seiten im unteren Teil ausgerüstet sind, sind die Modelle, die dem neuen FTZ-Standard entsprechen.

VHS

THIS VIDEO DECK IS A VHS TYPE VIDEO RECORDER. FOR PROPER OPERATION, ONLY THE VHS TYPE CASSETTE MUST BE USED.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

VIDEO CASSETTE RECORDER

August 1986

TOKAI WORKS

TABLE OF CONTENTS

CHAPTER 5

SCHEMATIC/CIRCUIT BOARD DIAGRAM	
INTERNAL WIRING DIAGRAM	5-2
IF UNIT	
Schematic diagram.....	5-4
TUNER UNIT	
Schematic diagram.....	5-6
TIMER/OPERATION SWITCH	
Schematic diagram.....	5-7
Circuit board diagram.....	5-10
V.S TUNING	
Schematic diagram.....	5-13
Circuit board diagram.....	5-14
REMOTE CONTROL	
Schematic diagram.....	5-16
Circuit board diagram.....	6-17
REGULATOR	
Schematic diagram.....	5-18
Circuit board diagram.....	5-20
RF CONVERTER	
Schematic diagram.....	5-22
Y/CHROMA	
Schematic diagram.....	5-23
Circuit board diagram VT-125E (VPS/VPSK)	5-30
VT-135E (VPS).....	5-32
Waveform.....	5-28
PREAMP	
Schematic diagram.....	5-29
Y/EQUALIZER	
Schematic diagram.....	5-34
Circuit board diagram VT-125E (VPS/VPSK)	5-31
VT-135E (VPS).....	5-33
SERVO [VT-125E (VPS/VPSK)]	
Schematic diagram.....	5-35
Circuit board diagram.....	5-48
Waveform.....	5-38
VPS (VIDEO PROGRAMME SYSTEM)	
Schematic diagram.....	5-40
Circuit board diagram VT-125E (VPS/VPSK)	5-41
VT-135E (VPS).....	5-41
AUDIO/REAR JACK [VT-125E (VPS/VPSK)]	
Schematic diagram.....	5-42
Circuit board diagram.....	5-48
SYSTEM CONTROL [VT-125E (VPS/VPSK)]	
Schematic diagram.....	5-45
Circuit board diagram	
Main.....	5-48
Peripheral board.....	5-50
SYSTEM CONTROL [VT-135E (VPS)]	
Schematic diagram.....	5-54
Circuit board diagram	
Main.....	5-51
Peripheral board.....	5-53

AUDIO/REAR JACK [VT-135E (VPS)]

Schematic diagram.....	5-57
Circuit board diagram.....	5-51

SERVO [VT-135E (VPS)]

Schematic diagram.....	5-62
Circuit board diagram.....	5-51
Waveform.....	5-60

CHAPTER 6

REPLACEMENT PARTS LIST

ELECTRICAL PARTS LIST	6-1
------------------------------------	-----

MECHANICAL PARTS LIST

Cabinet Section.....	6-12
Chassis/Cassete Loading mechanism/	
Cylinder Motor Section.....	6-12

EXPLODED VIEWS

CABINET ASSEMBLY	6-14
CHASSIS (I) ASSEMBLY	6-17
CHASSIS (II) ASSEMBLY	6-18
CASSETTE LOADING	
MECHANISM ASSEMBLY	6-20
CYLINDER MOTOR ASSEMBLY	6-21

INHALTSVERZEICHNIS

KAPITEL 5

SHALTPLAN/LEITERPLATTEN-DIAGRAMM	
KABELANSCHLUSSDIAGRAMM	5-2
ZF	
Schaltplan.....	5-4
TÜNER	
Schaltplan.....	5-6
TIMER/FUNKTIONSSCHALTER	
Schaltplan.....	5-7
Leiterplatten-Diagramm.....	5-10
SPANNUNGSSYNTHESEZER-TUNER	
Schaltplan.....	5-13
Leiterplatten-Diagramm.....	5-14
FERNBEDIENUNG	
Schaltplan.....	5-16
Leiterplatten-Diagramm.....	5-17
REGLER	
Schaltplan.....	5-18
Leiterplatten-Diagramm.....	5-20
HF-KONVERTER	
Schaltplan.....	5-22
LUMINANZ/CHROMINANZ	
Schaltplan.....	5-23
Leiterplatten-Diagramm VT-125E (VPS/VPSK).....	5-30
VT-135E (VPS).....	5-32
Wellenform.....	5-28
VORVERSTÄRKER	
Schaltplan.....	5-29
LUMINANZ/ENTZERRE	
Schaltplan.....	5-34
Leiterplatten-Diagramm VT-125E (VPS/VPSK).....	5-31
VT-135E (VPS).....	5-33
SERVO [VT-125E (VPS/VPSK)]	
Schaltplan.....	5-35
Leiterplatten-Diagramm.....	5-48
Wellenform.....	5-38
VPS (Video-Programm-System)	
Schaltplan.....	5-40
Leiterplatten-Diagramm VT-125E (VPS/VPSK).....	5-41
VT-135E (VPS).....	5-41
AUDIO/BUCHSE [VT-125E (VPS/VPSK)]	
Schaltplan.....	5-42
Leiterplatten-Diagramm.....	5-48
SYSTEMREGELUNG [VT-125E (VPS/VPSK)]	
Schaltplan.....	5-45
Leiterplatten-Diagramm	
Hauptplatte.....	5-48
Peripherieplatte.....	5-50
SYSTEMREGELUNG [VT-135E (VPS)]	
Schaltplan.....	5-54
Leiterplatten-Diagramm	
Hauptplatte.....	5-51
Peripherieplatte.....	5-53

AUDIO/BUCHSE

Schaltplan.....	5-57
Leiterplatten-Diagramm.....	5-51
SERVO [VT-135E (VPS)]	
Schaltplan.....	5-62
Leiterplatten-Diagramm.....	5-51
Wellenform.....	5-60

KAPITEL 6

ERSATZTEILLISTE

ELEKTRISCHE STÜCKLISTE	6-1
MECHANISCHE STÜCKLISTE	
Gehäuse.....	6-12
Chassis/Cassetten-Lademechanismus/ Kopftrommelmotor.....	6-12
EXPLOSIONSZEICHNUNG	
Gehäuse.....	6-14
Chassis (I).....	6-17
Chassis (II).....	6-18
Cassetten-Lademechanismus.....	6-20
Kopftrommelmotor.....	6-21

SCHEMATIC/CIRCUIT BOARD DIAGRAMS

Note

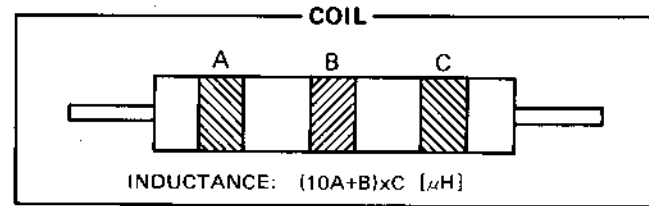
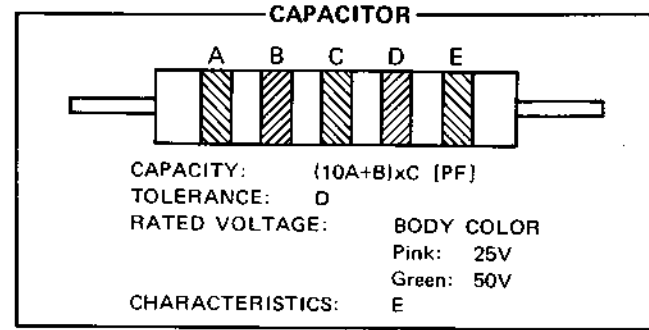
1. Voltage measured at base of chassis with minimum volume control and no signal. () are shown in recording condition.
2. Nomenclature of Resistors and Capacitors.

	Circuit No.	
	Value	No indicated Ω (Ohm) M: 1000kΩ
	Tolerance	No indicated ±5% K: ±10% M: ±20%
	Wattage	No indicated 1/4 W
Sort	No indicated Carbon film RC: Composition RW: Wire wound RS: Oxide metal film RN: Fixed metal film	

	Circuit No.											
	Value	No indicated μF P: PF										
	Tolerance	No indicated ±10% J: ±5% M: ±20% Z: ±80% -20% D: ±0.5pF C: +0.25pF										
	Sort	<table border="1"> <tr><td>+</td><td>Ceramic</td></tr> <tr><td>+</td><td>Electrolytic</td></tr> <tr><td>M</td><td>Mylar</td></tr> <tr><td>P</td><td>Polyester</td></tr> <tr><td>S</td><td>Styrol</td></tr> </table>		+	Ceramic	+	Electrolytic	M	Mylar	P	Polyester	S
+	Ceramic											
+	Electrolytic											
M	Mylar											
P	Polyester											
S	Styrol											
Voltage	No indicated 50WV											

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with * use specified ones stated on parts list since required temperature characteristics.

HOW TO READ CAPACITY AND INDUCTANCE OF RESISTOR SHAPE CAPACITORS AND COILS



COLOR	A, B	C	D	E
Black	0	10 ⁰	±20%	For temperature compensation
Brown	1	10 ¹		
Red	2	10 ²		
Orange	3	10 ³		
Yellow	4	10 ⁴		
Green	5	10 ⁵		
Blue	6			
Violet	7			
Grey	8		±30%	High dielectric constant type
White	9			For temperature compensation
Gold		10 ⁻¹	±5%	
Silver		10 ⁻²	±10%	High dielectric constant type

Cautions on use of MOS IC

1. The MOS IC is inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during their storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.
2. High voltages may be applied during soldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
3. The human body, clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so a worker should be grounded.
4. Be sure to ground measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

SCHALTPLAN/LEITERPLATTEN-DIAGRAMM

Hinweise:

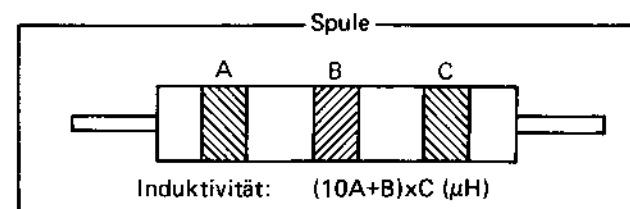
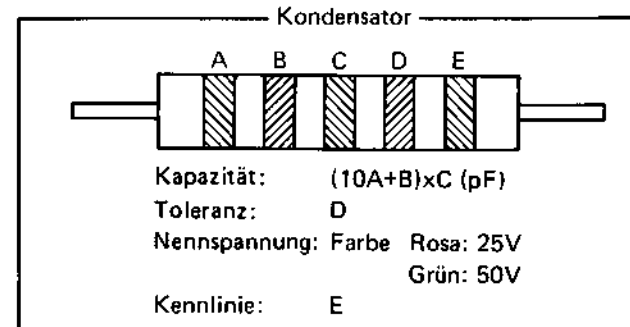
1. Die aufgeführten Spannungswerte wurden bei auf Minimum gestelltem Lautstärkereger und ohne Signal gemessen. Die in Klammern () gestellten Werte gelten für den Aufnahmehodus.
2. Bezeichnung der Widerstände und Kondensatoren

	Schaltkreis-Nr.	
	Wert	Keine Angabe: Ohm M: 1000 kOhm
	Toleranz	Keine Angabe: ±5% K: ±10% M: ±20%
	Wattzahl	Keine Angabe: 1/4W
Bauart	Keine Angabe: Kohlefilm RC: Verbundbauweise RW: Drahtspule RS: Metalloxidfilm RN: Fester Metallfilm	

	Schaltkreis-Nr.											
	Wert	Keine Angabe: μF P: PF										
	Toleranz	Keine Angabe: ±10% J: ±5% M: ±20% Z: ±80% -20% D: ±0.5pF C: +0.25pF										
	Bauart	<table border="1"> <tr><td>+</td><td>Keramik</td></tr> <tr><td>+</td><td>Electrolyt</td></tr> <tr><td>M</td><td>Mylar</td></tr> <tr><td>P</td><td>Polyester</td></tr> <tr><td>S</td><td>Styrol</td></tr> </table>		+	Keramik	+	Electrolyt	M	Mylar	P	Polyester	S
+	Keramik											
+	Electrolyt											
M	Mylar											
P	Polyester											
S	Styrol											
Spannung	Keine Angabe: 50V											

3. Bei der Bestellung von Widerständen und Kondensatoren unbedingt Wert, Spannung und Bauart angeben.
4. Werden die mit "*" markierten Kondensatoren ausgetauscht, dann müssen die in der Stückliste spezifizierten Kondensatoren verwendet werden, da diese spezielle Temperatureigenschaften aufweisen.

Ablese der Kapazität und Induktivität der in Form von Widerständen ausgeführten Kondensatoren und Spulen

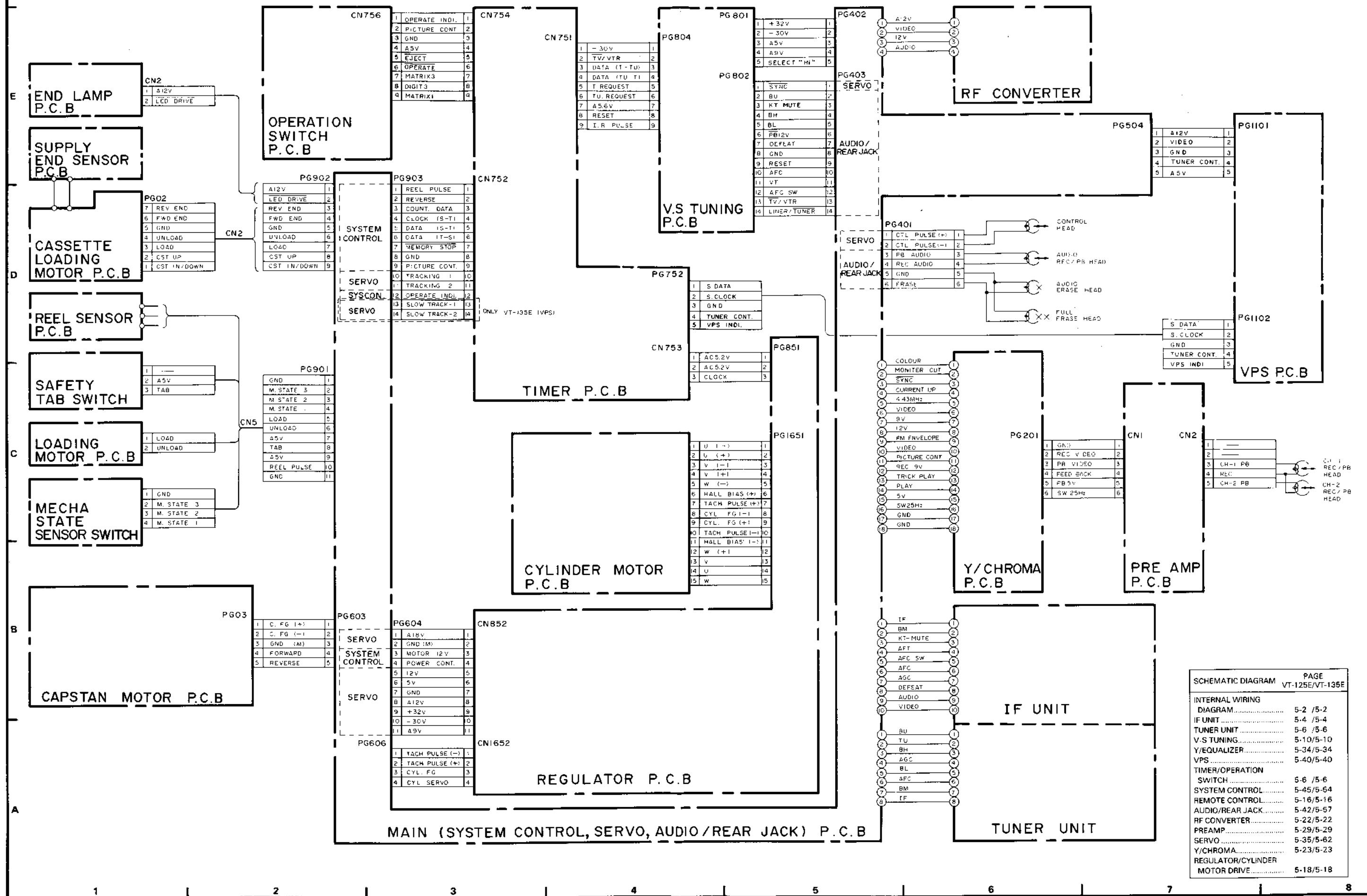


Vorsichtsmaßnahmen bei der Verwendung von MOS-ICs

1. Die MOS-ICs werden für den Versand in schwarzem Schaumstoff verpackt. Dieser Schaumstoff ist elektrisch leitend und schließt die Leiter kurz, um Beschädigungen zu vermeiden. Die ICs während der Lagerung niemals aus der Schaumstoffverpackung entfernen. Die ICs nur unmittelbar vor der Verwendung auspacken und niemals auf Plastikteilen ablegen (statische Elektrizität!) bzw. in Styrol-Schaumstoff einsetzen.
2. Aufgrund von Leckagen am LötKolben kann es während des Lötens zu Hochspannungen kommen; daher immer die Spitze des LötKolbens erden und nur einen Niederspannungs-LötKolben verwenden.
3. Statische Elektrizität von einigen tausend Volt kann sich aufgrund von Reibung im menschlichen Körper bzw. in aus Kunstfasern hergestellten Kleidern und Handschuhen aufbauen. Daher sollten auch die mit der Handhabung von ICs betrauten Personen geerdet werden.
4. Unbedingt die für die Reparaturen verwendeten Meßinstrumente wie Oszilloskop, Röhrevoltmeter usw. erden.

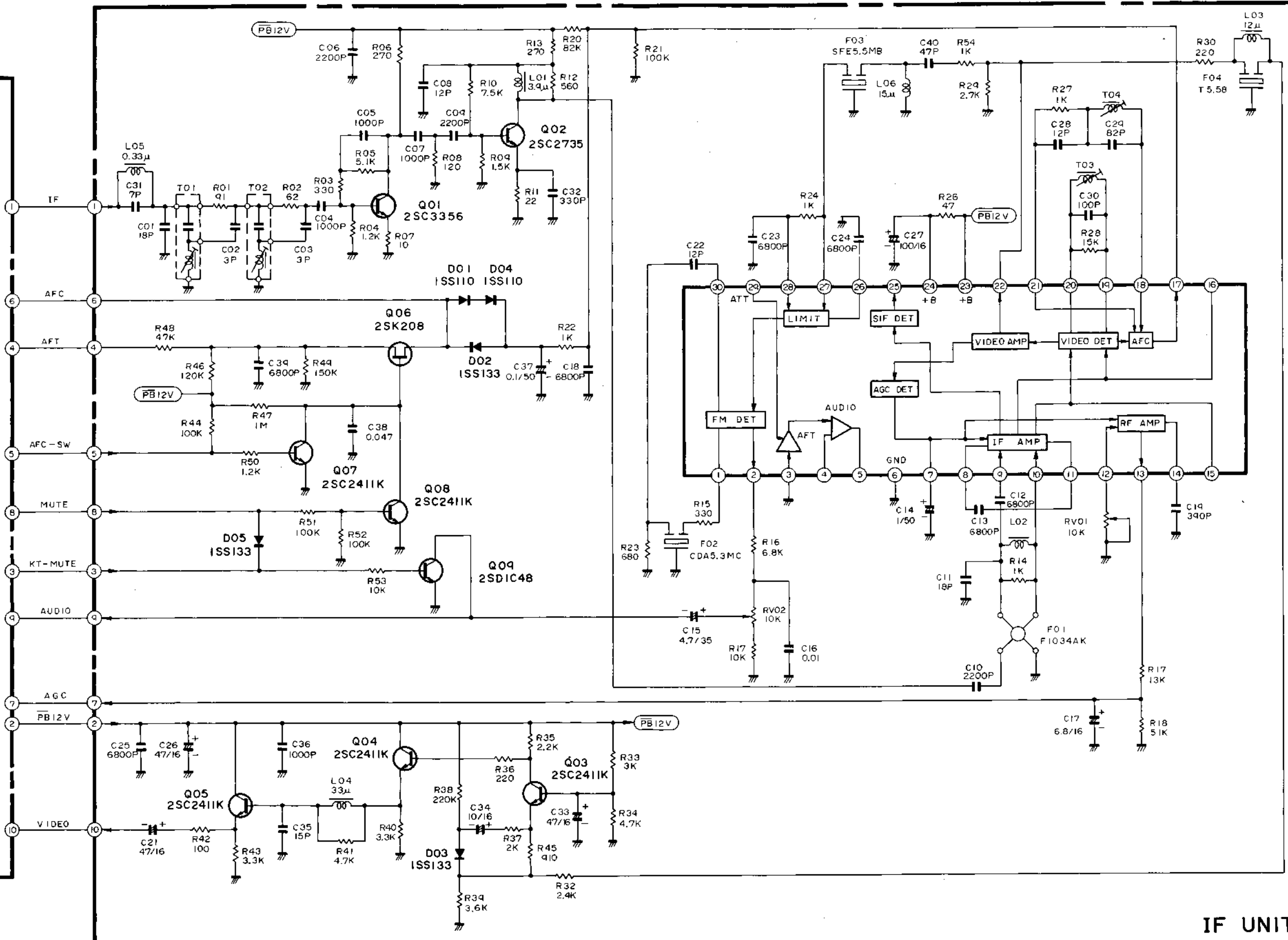
Farbe	A, B	C	D	E
Schwarz	0	10 ⁰	±20%	Für Temperature-Kompensation
Braun	1	10 ¹		
Rot	2	10 ²		
Orange	3	10 ³		
Gelb	4	10 ⁴		
Grün	5	10 ⁵		
Blau	6			
Violett	7			
Grau	8		±30%	Bauart mit hoher Dielektrizitätskonstanter
Weiß	9			Für Temperatur-Kompensation
Gold		10 ⁻¹	±5%	
Silber		10 ⁻²	±10%	Bauart mit hoher Dielektrizitätskonstanter

INTERNAL WIRING DIAGRAM (KABELANSCHLUSSDIAGRAMM)



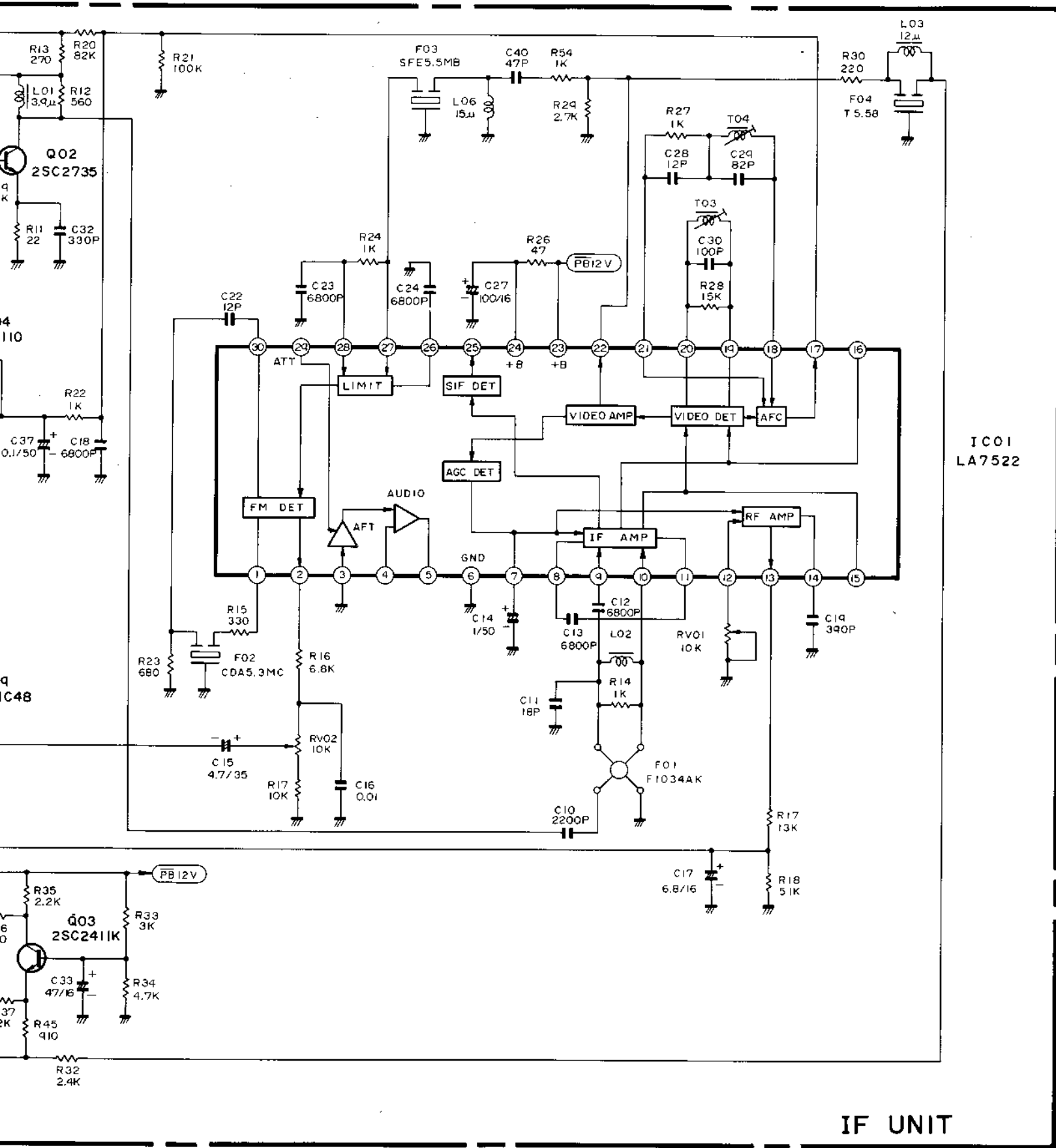
SCHMATIC DIAGRAM	PAGE
INTERNAL WIRING DIAGRAM	5-2 / 5-2
IF UNIT	5-4 / 5-4
TUNER UNIT	5-6 / 5-6
V-S TUNING	5-10 / 5-10
Y/EQUALIZER	5-34 / 5-34
VPS	5-40 / 5-40
TIMER/OPERATION SWITCH	5-6 / 5-6
SYSTEM CONTROL	5-45 / 5-64
REMOTE CONTROL	5-16 / 5-16
AUDIO/REAR JACK	5-42 / 5-67
RF CONVERTER	5-22 / 5-22
PREAMP	5-29 / 5-29
SERVO	5-35 / 5-62
Y/CHROMA	5-23 / 5-23
REGULATOR/CYLINDER MOTOR DRIVE	5-18 / 5-18

MAIN P.C.B

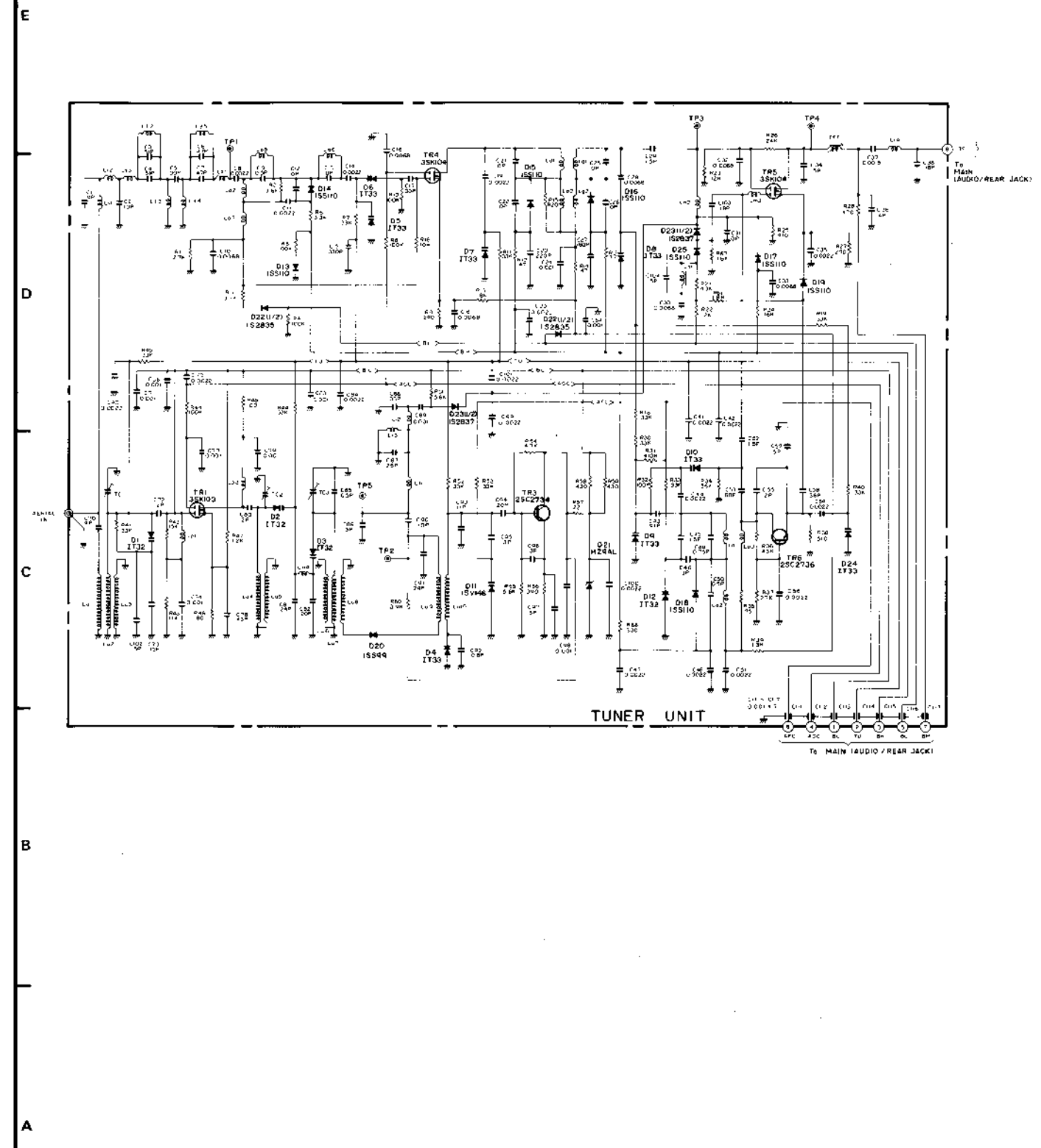


IC01 LA7522

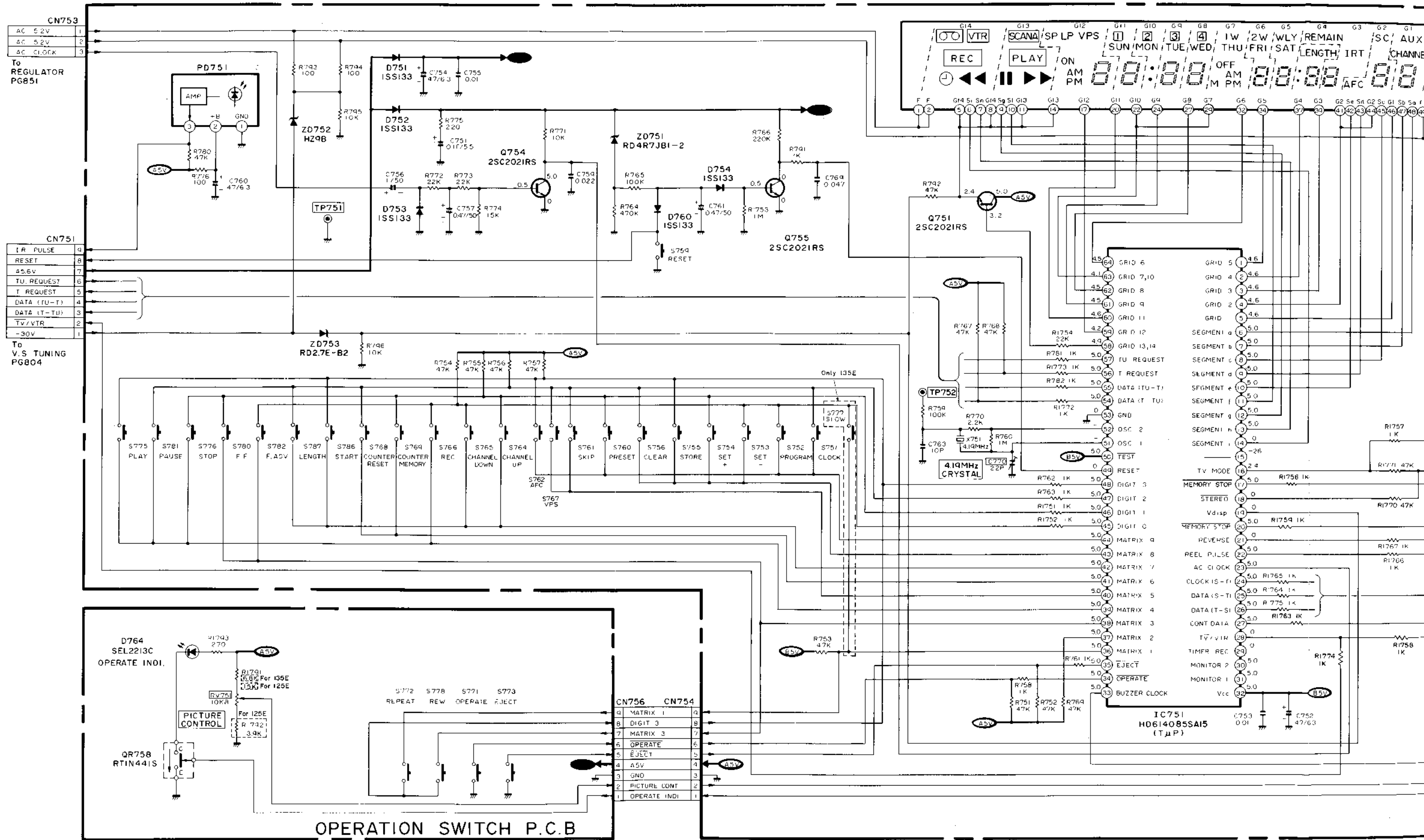
IF UNIT



TUNER UNIT/(TUNER-EINHEIT)

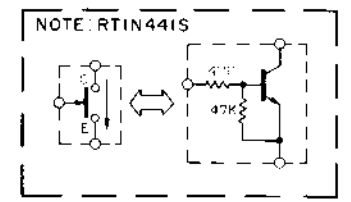
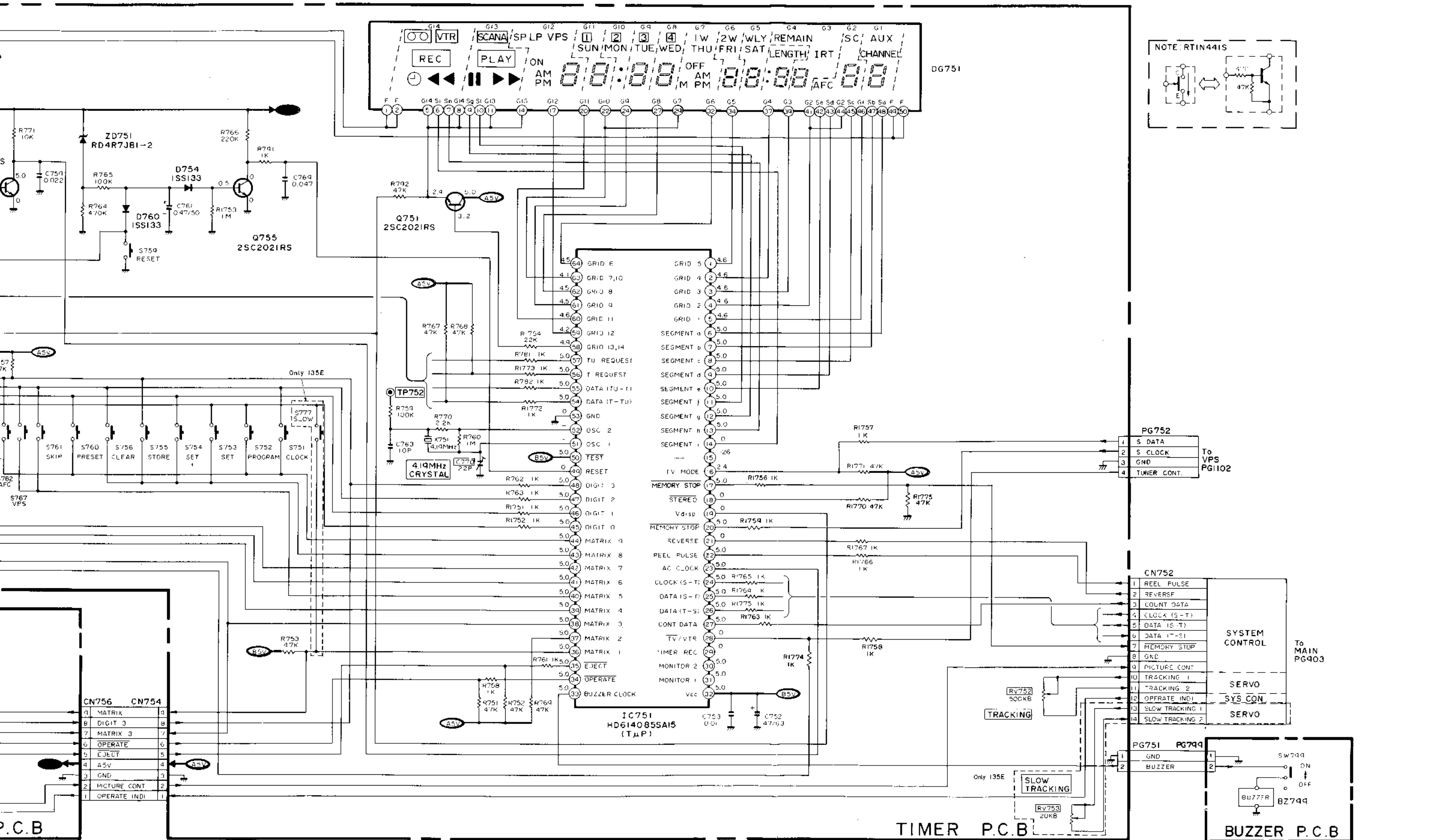


TIMER/OPERATION SWITCH (TIMER/FUNKTIONSSCHALTER)

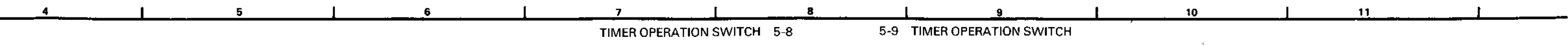


* VOLTAGE: STOP MODE.

ALTER)

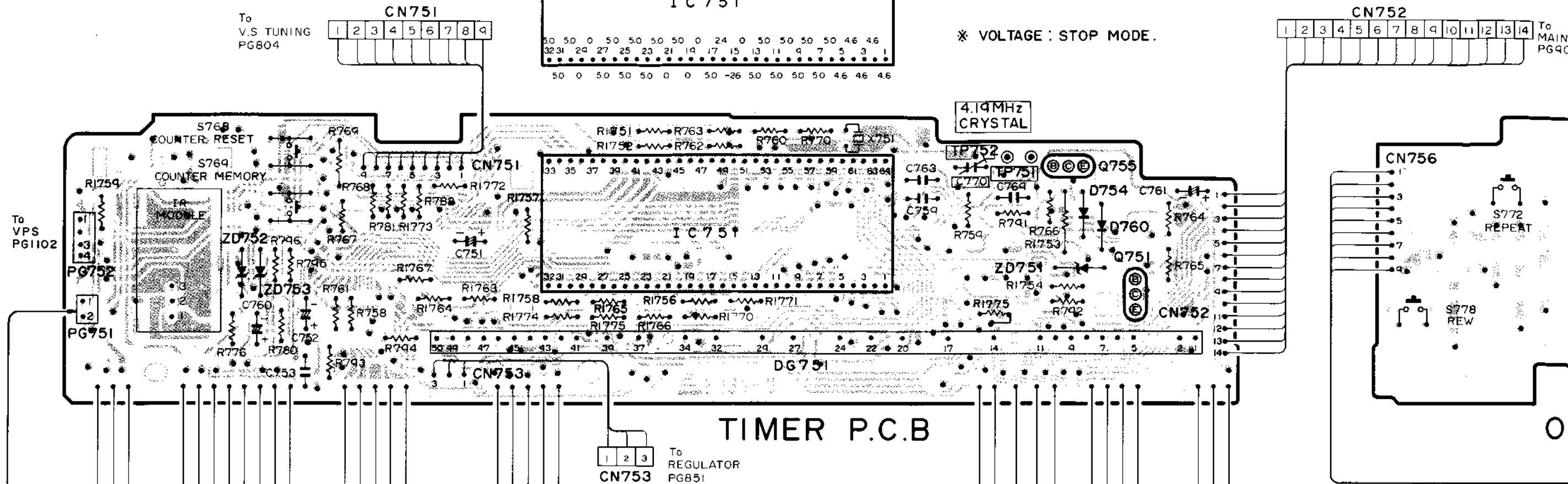


* VOLTAGE: STOP MODE.

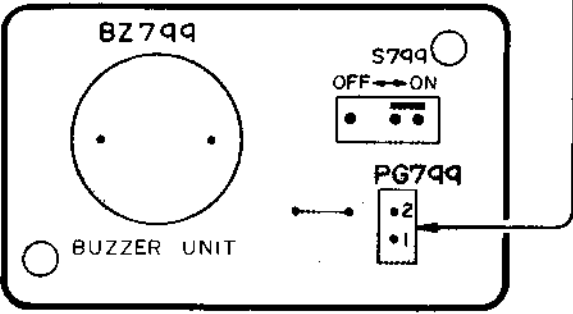
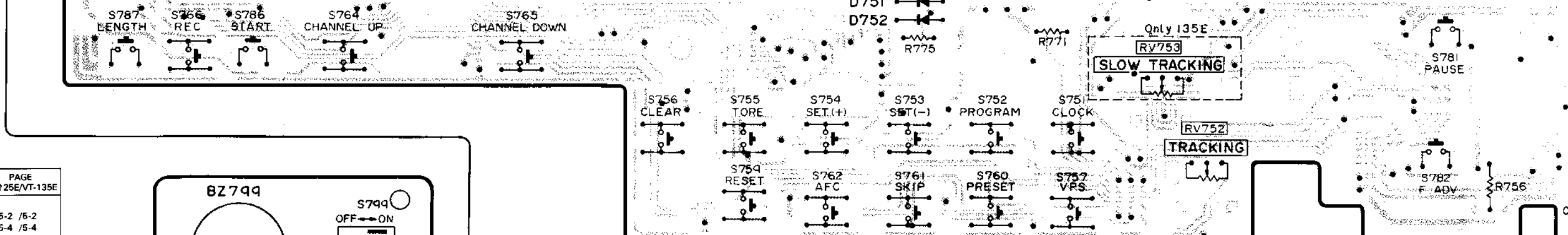


50	50	50	50	50	50	50	50	0	-	0	50	50	42	45	41	
33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	64
50	50	50	50	50	50	50	50	50	-	50	50	49	46	45	45	
IC 751																
50	50	0	50	50	50	50	0	24	0	50	50	50	50	46	46	
32	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1
50	0	50	50	50	0	0	50	-26	50	50	50	50	46	46	46	

* VOLTAGE : STOP MODE.



TIMER P.C.B



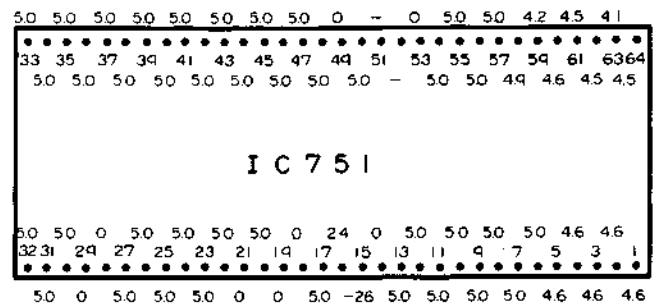
BUZZER P.C.B

* VOLTAGE : STOP MODE.

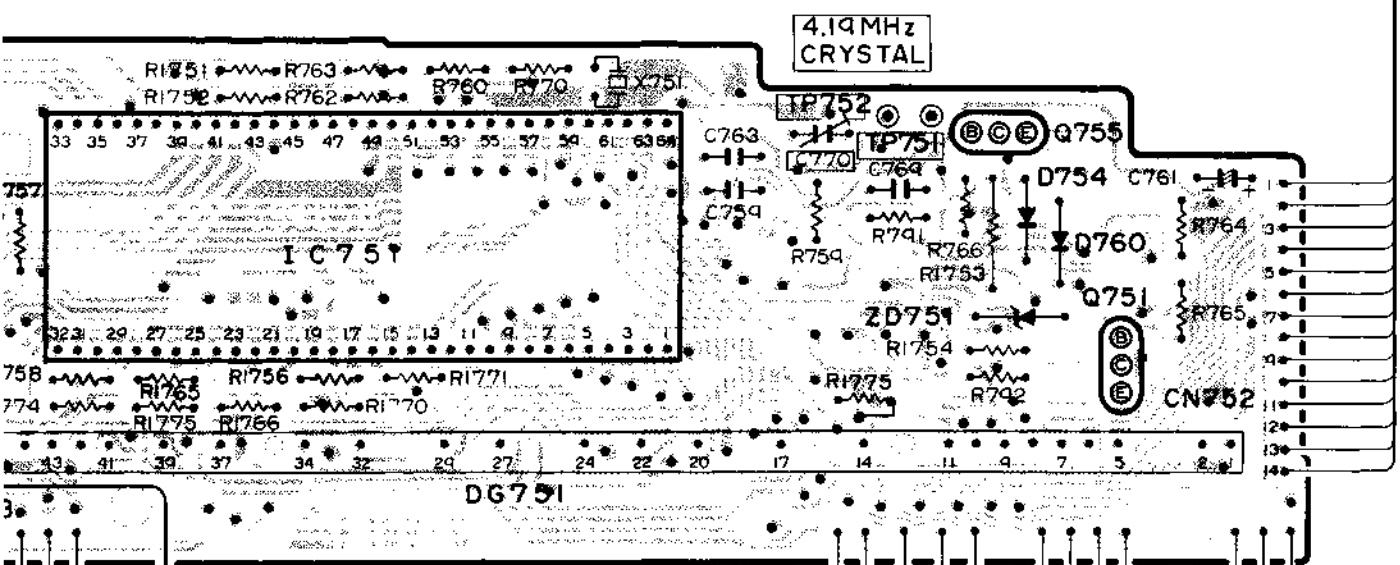
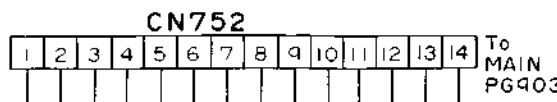
SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	5-2 /5-2
DIAGRAM	5-4 /5-4
IF UNIT	5-6 /5-6
TUNER UNIT	5-10/5-10
V-S TUNING	5-34/5-34
VPS	5-40/5-40
TIMER/OPERATION	
SWITCH	5-6 /5-6
SYSTEM CONTROL	5-45/5-54
REMOTE CONTROL	5-16/5-18
AUDIO/REAR JACK	5-42/5-57
RF CONVERTER	5-22/5-22
PREAMP	5-29/5-29
SERVO	5-35/5-62
Y/CHROMA	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE	5-18/5-18

TIMER OPERATION SWITCH 5-10

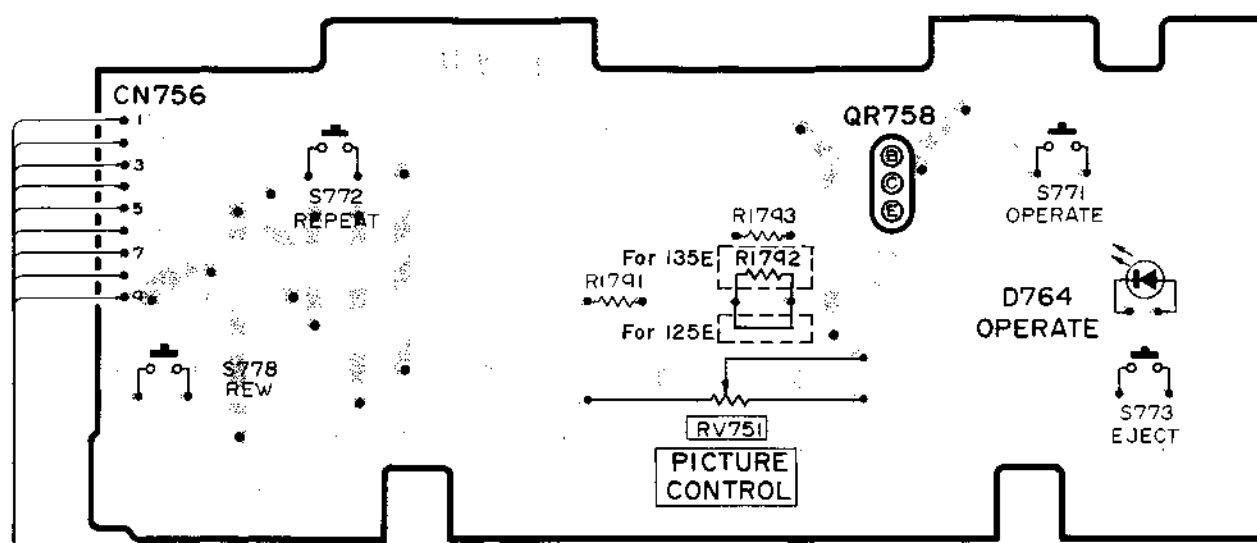
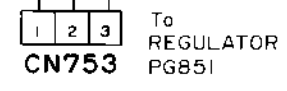
5-11 TIMER OPERATION SWITCH



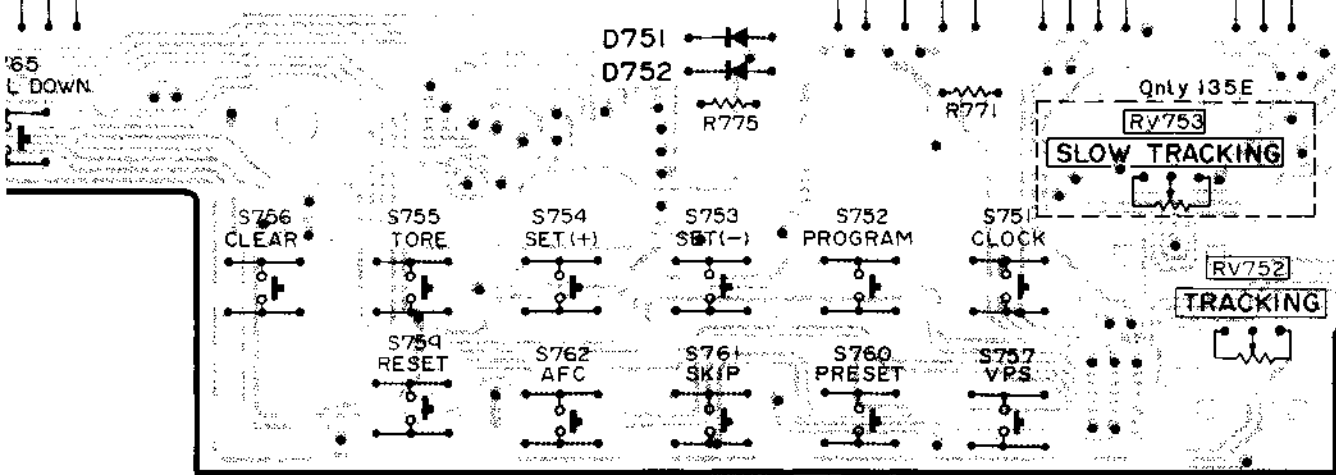
* VOLTAGE : STOP MODE.



TIMER P.C.B



OPERATION SWITCH P.C.B



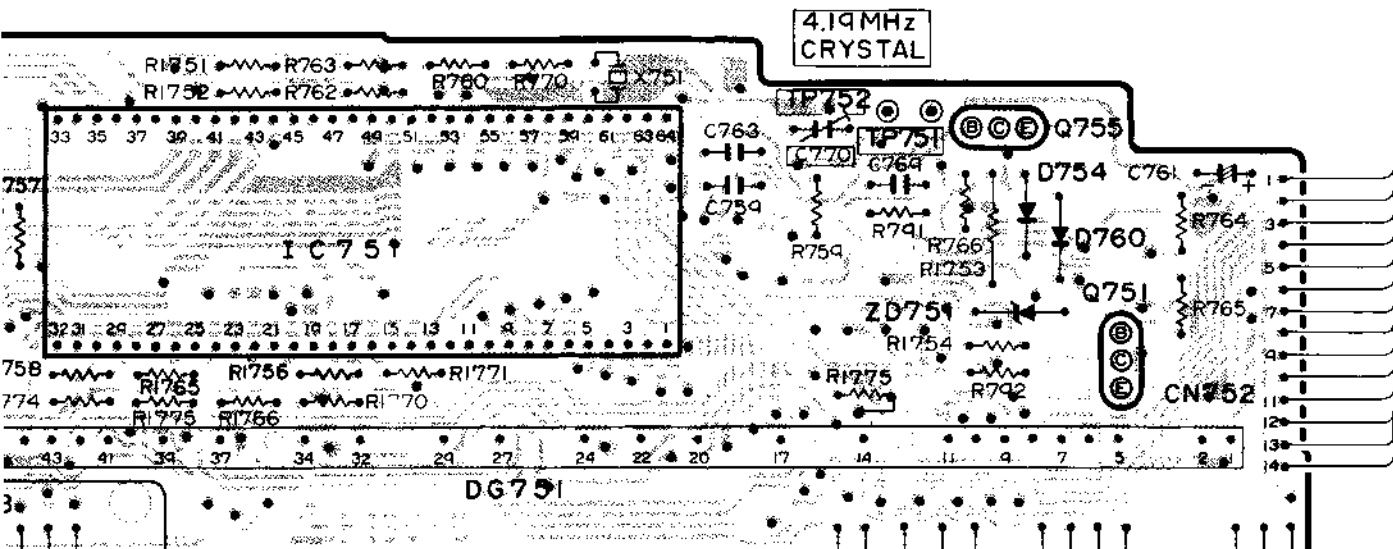
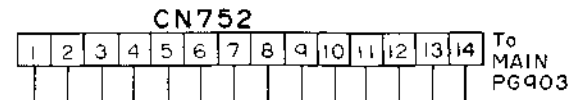
INPUT KEY P.C.B

: Soldered side : Parts side • : Through-hole

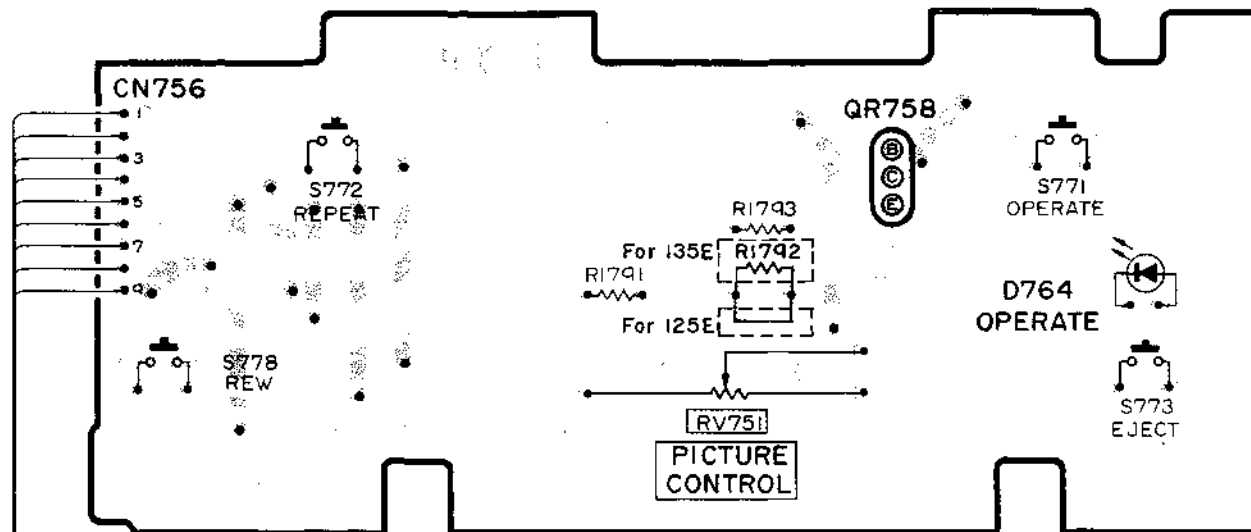
* VOLTAGE : STOP MODE.

50	50	50	50	50	50	50	50	0	-	0	50	50	42	45	41	
33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	64
50	50	50	50	50	50	50	50	50	-	50	50	44	46	45	45	
IC 751																
50	50	0	50	50	50	50	0	24	0	50	50	50	50	46	46	
32	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1
50	0	50	50	50	0	0	50	-26	50	50	50	50	46	46	46	

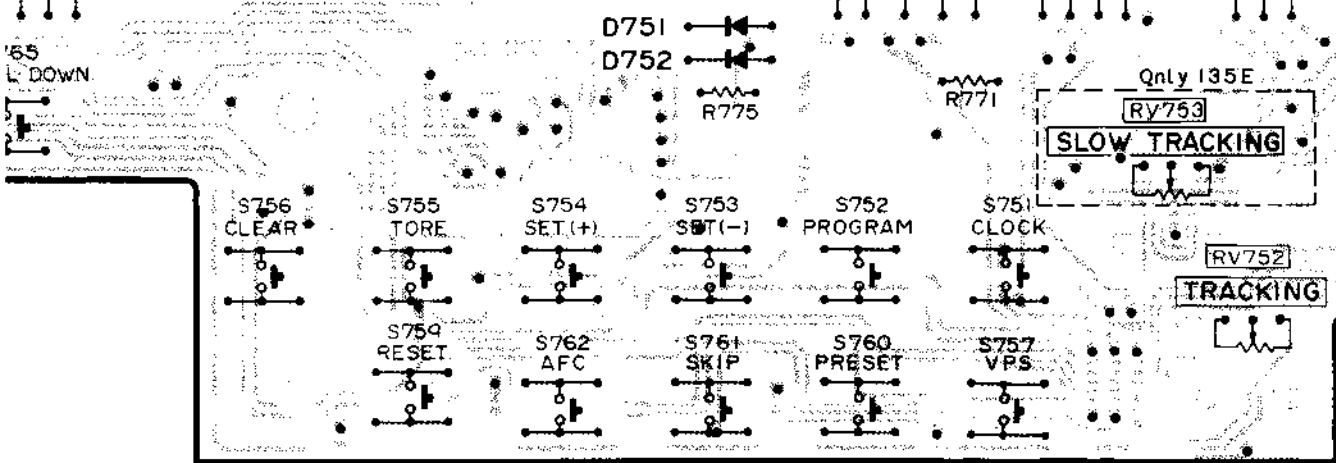
* VOLTAGE : STOP MODE.



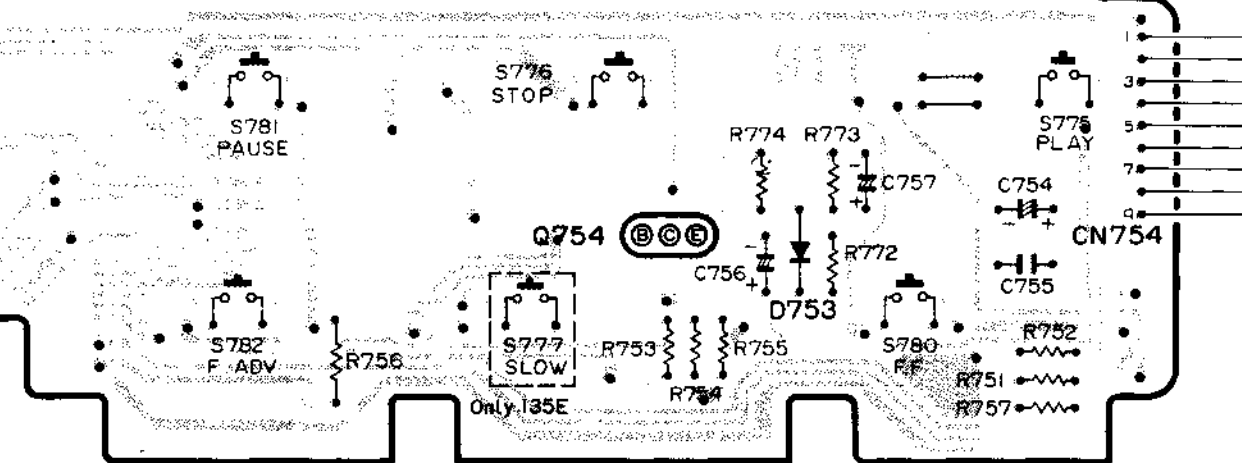
TIMER P.C.B



OPERATION SWITCH P.C.B



INPUT KEY P.C.B

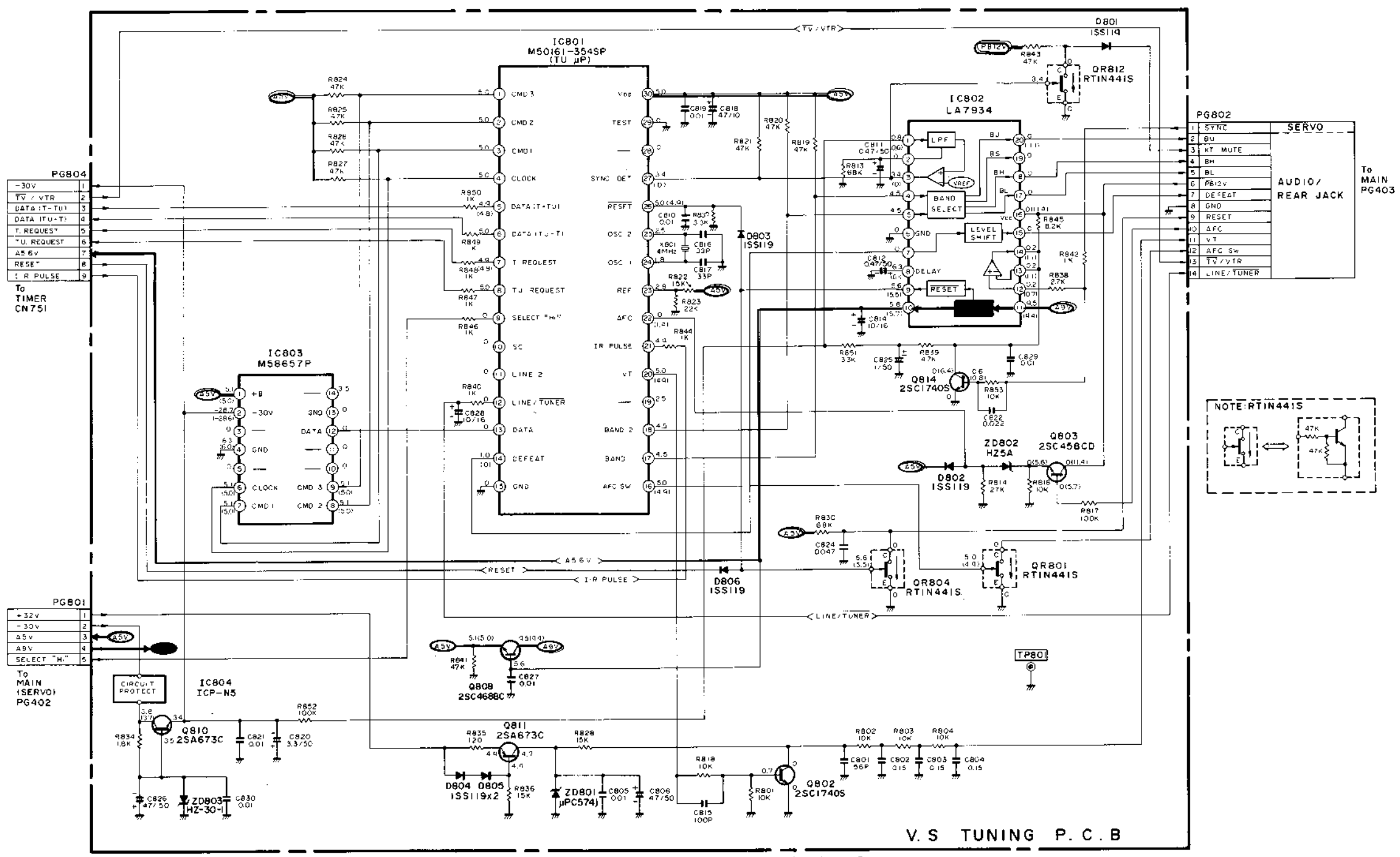


• Soldered side • Parts side • Through-hole

* VOLTAGE : STOP MODE.

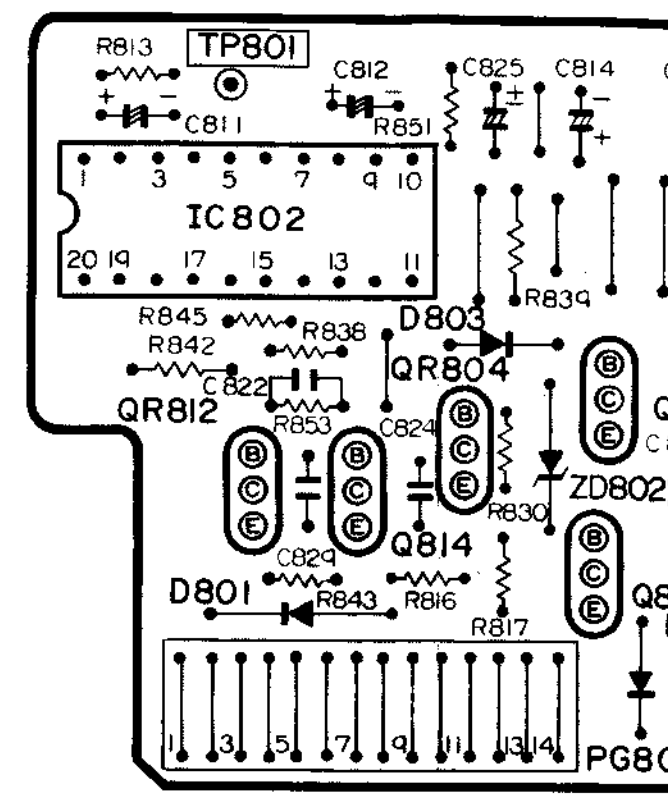
V-S TUNING (SPANNUNGSSYNTHESIZER-TUNER)

E
D
C
B
A

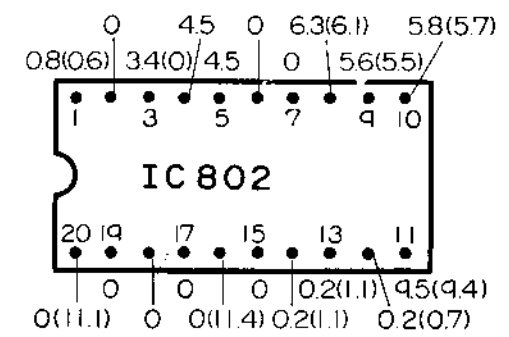
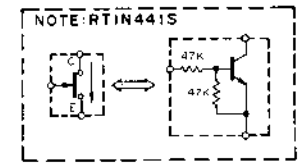


V. S TUNING P. C. B

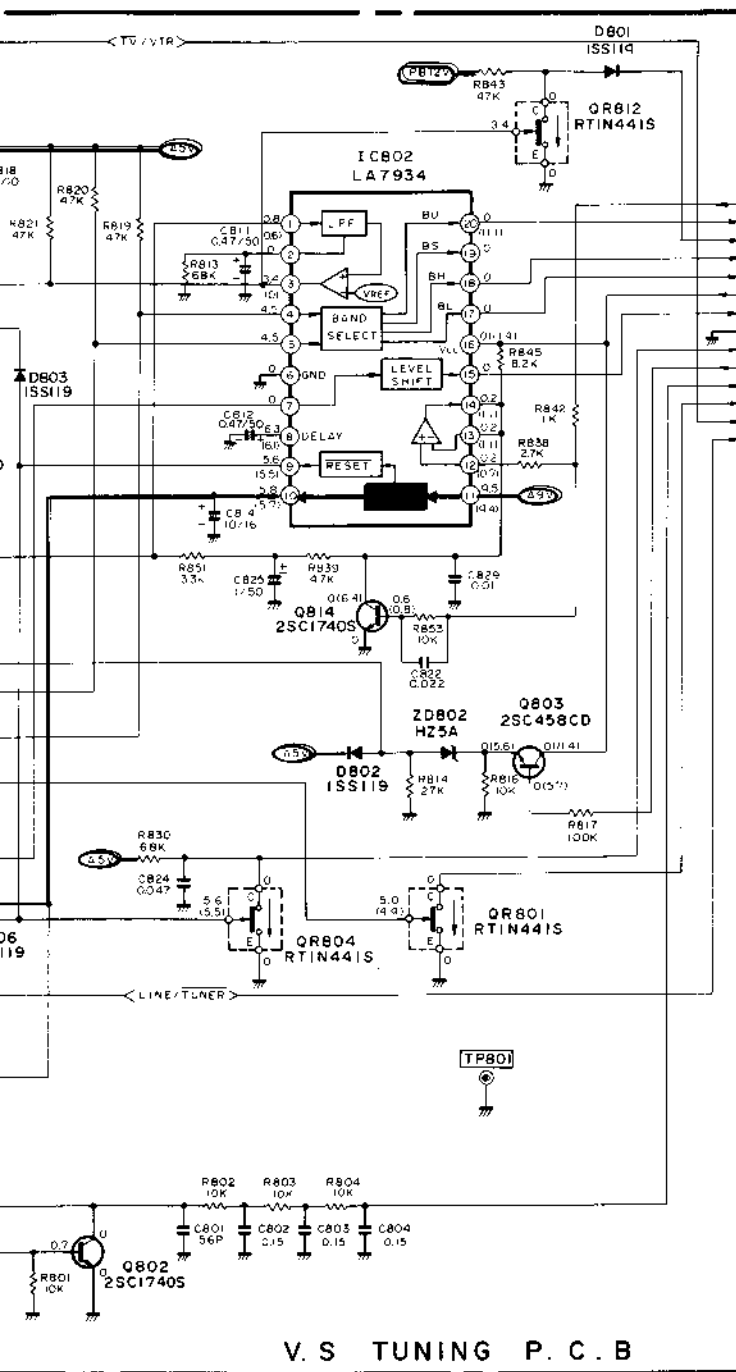
* ONE VOLTAGE : PB OR REC MODE, TWO VOLTAGES : PB AND (REC) MODE.



To MAIN PG403

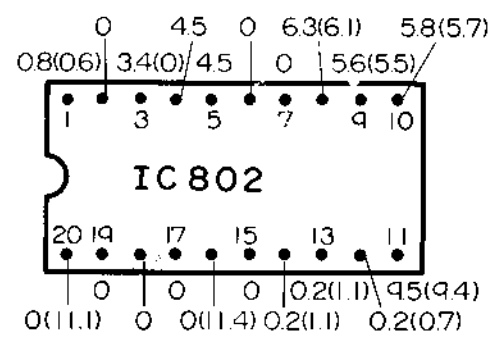
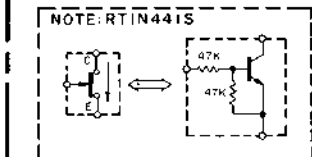
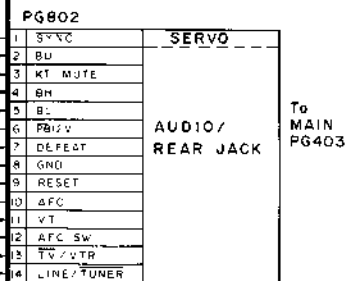


* ONE VOLTAGE : PB OR REC
TWO VOLTAGES : PB AND (REC)

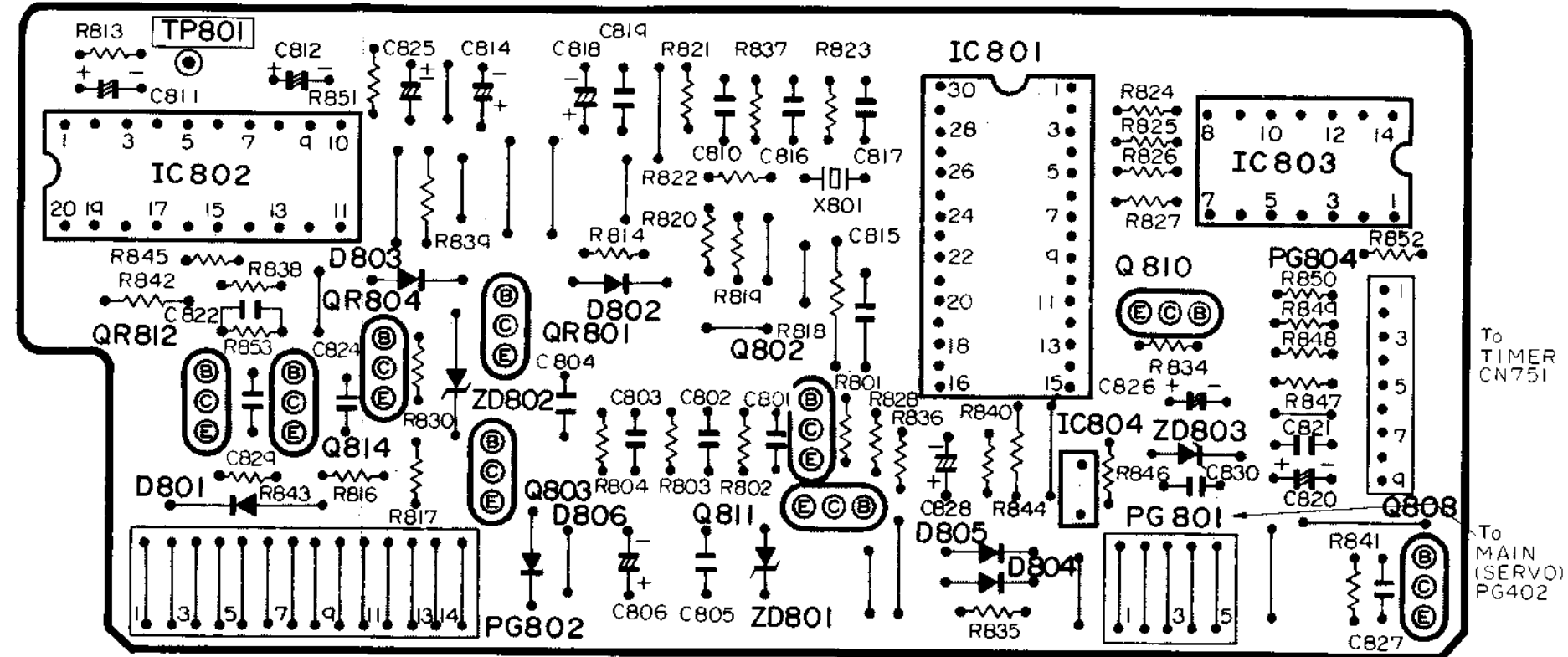


V.S TUNING P.C.B

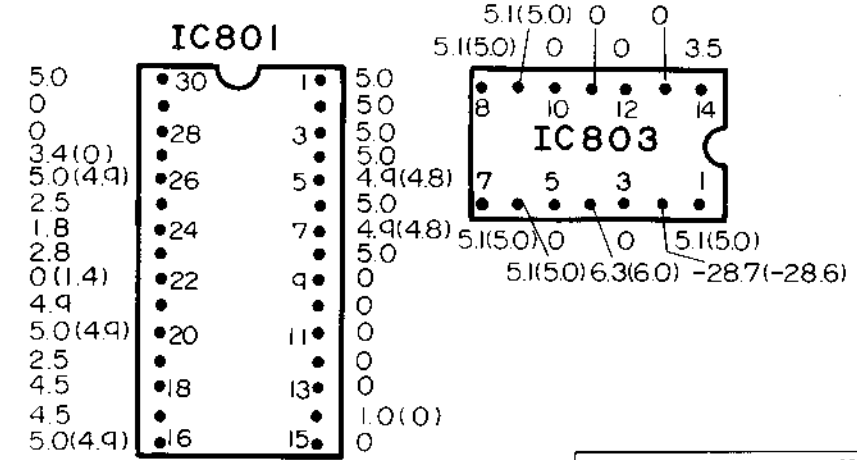
PB AND (REC) MODE.



* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.

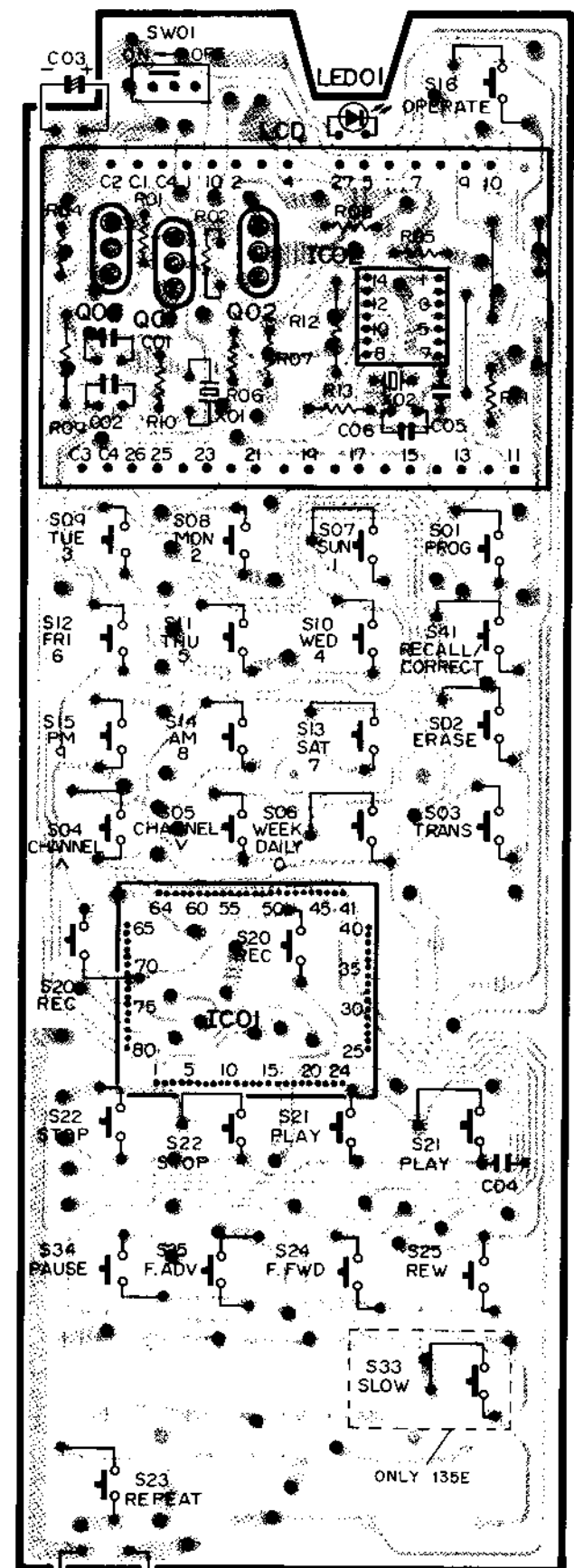
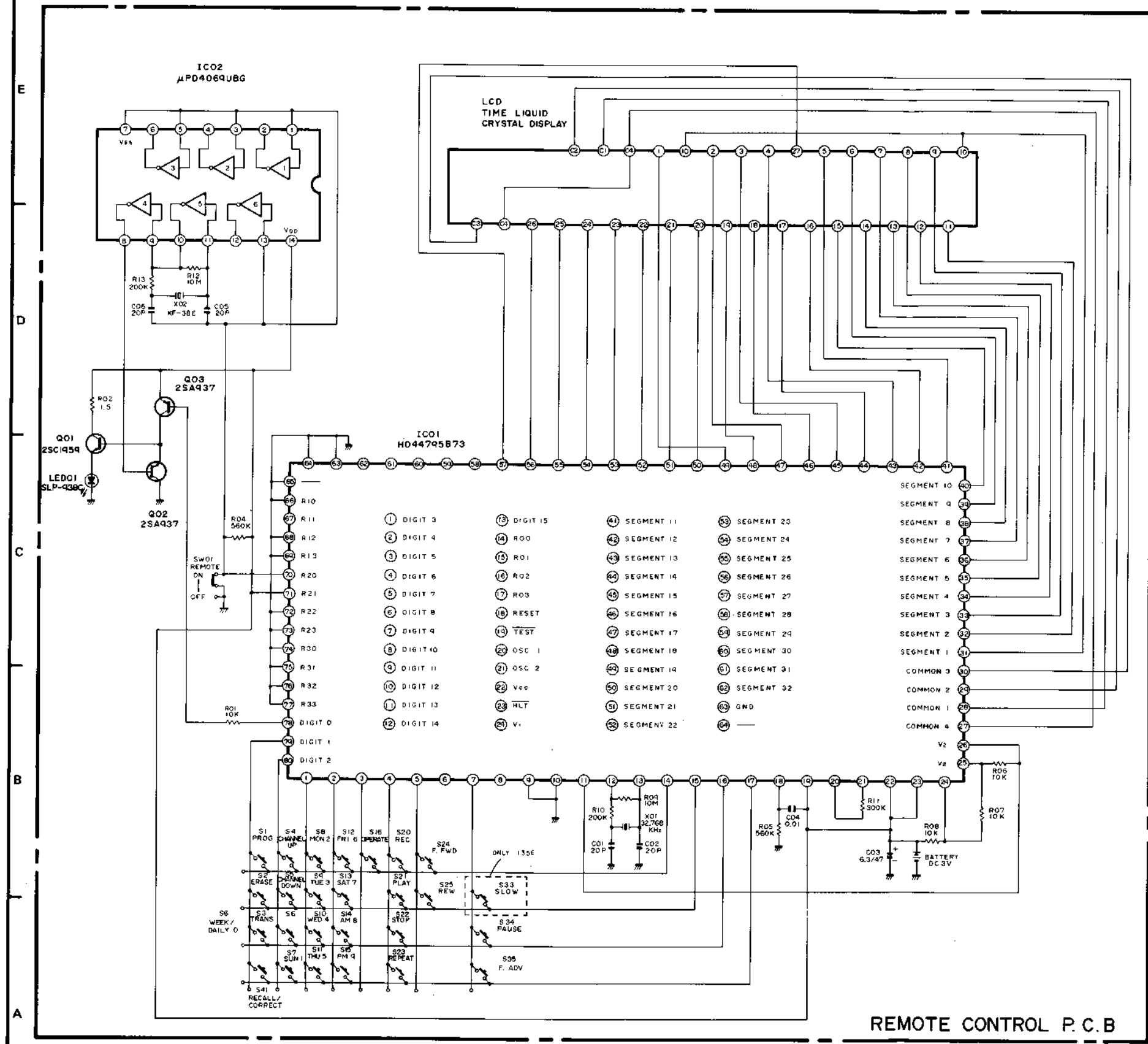


V · S TUNING P.C.B



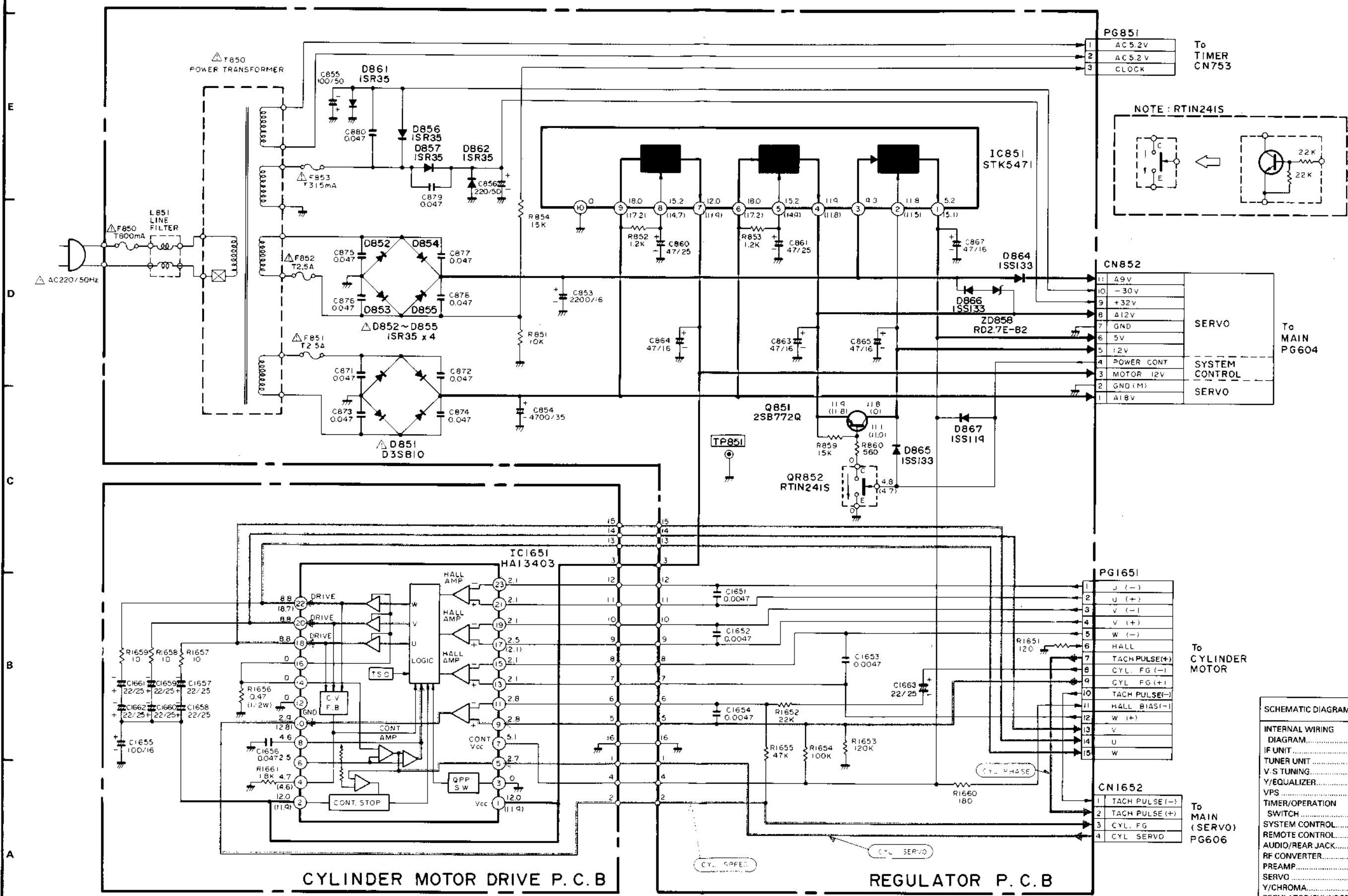
SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	VT-125E/VT-135E
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V.S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-6 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-16/5-16
AUDIO/REAR JACK.....	6-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18

REMOTE CONTROL (FERNBEDIENUNG)



- Solderd side
- Parts side
- Through hole

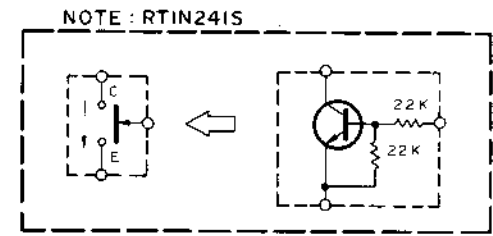
REGULATOR/CYLINDER MOTOR DRIVE (KOPFTROMMELMOTER-TREIBER)



PG851

1	AC 5.2V
2	AC 5.2V
3	CLOCK

To
TIMER
CN753



CN852

11	+9V
10	-30V
9	+32V
8	+12V
7	GND
6	5V
5	+2V
4	POWER CONT
3	MOTOR 12V
2	GND (M)
1	+18V

SERVO
SYSTEM CONTROL
SERVO

To
MAIN
PG604

PG1651

1	J (-)
2	U (+)
3	V (-)
4	V (+)
5	W (-)
6	HALL
7	TACH PULSE(+)
8	CYL. FG (-)
9	CYL. FG (+)
10	TACH PULSE(-)
11	HALL BIASE(-)
12	W (+)
13	V
14	U
15	W

To
CYLINDER
MOTOR

CN1652

1	TACH PULSE (-)
2	TACH PULSE (+)
3	CYL. FG
4	CYL. SERVO

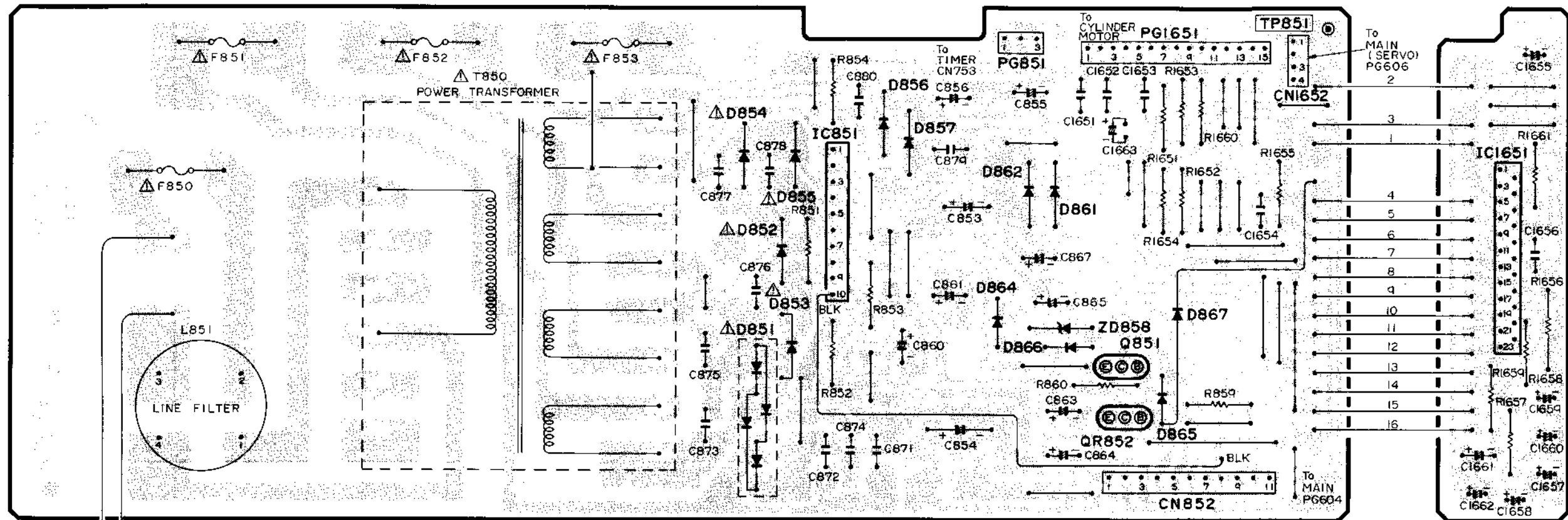
To
MAIN
(SERVO)
PG606

CYLINDER MOTOR DRIVE P. C. B

REGULATOR P. C. B

* ONE VOLTAGE: PB OR REC MODE. TWO VOLTAGES: PB AND (REC) MODE.

SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	VT-125E/VT-135E
DIAGRAM	5-2 / 5-2
IF UNIT	5-4 / 5-4
TUNER UNIT	5-6 / 5-6
V. S TUNING	5-10/5-10
Y/EQUALIZER	5-34/5-34
VPS	5-40/5-40
TIMER/OPERATION	
SWITCH	5-6 / 5-6
SYSTEM CONTROL	5-45/5-54
REMOTE CONTROL	5-16/5-16
AUDIO/REAR JACK	5-42/5-57
RF CONVERTER	5-22/5-22
PREAMP	5-29/5-29
SERVO	5-35/5-62
Y/CHROMA	5-23/5-23
REGULATOR/CYLINDER MOTOR DRIVE	5-18/5-18



REGULATOR P.C.B

CYLINDER MOTOR DRIVE P.C.B

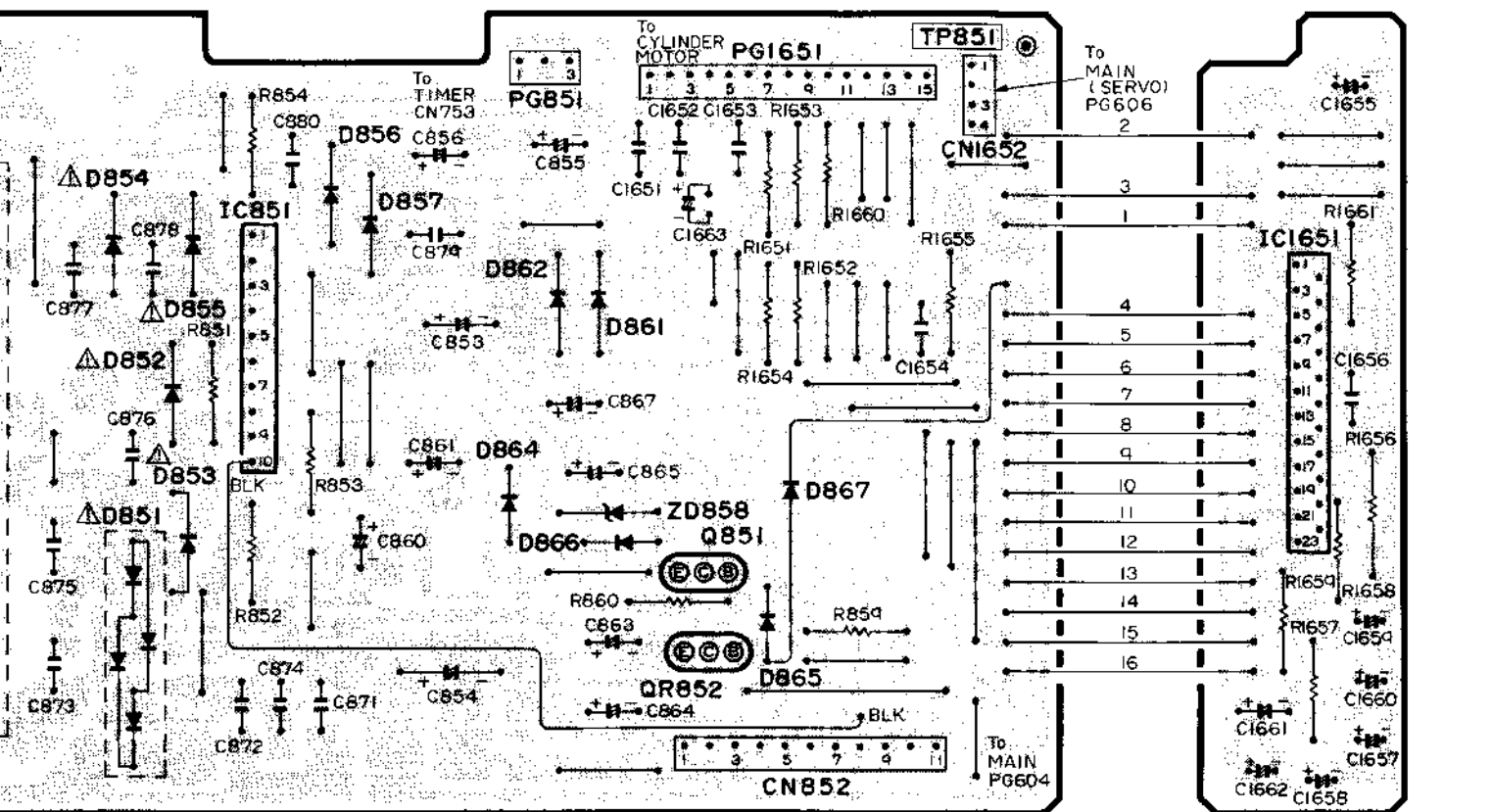
IC851

1	5.2(5.1)
2	11.8(11.5)
3	9.3
4	11.9(11.8)
5	15.2(14.9)
6	18.0(17.2)
7	12.0(11.9)
8	15.2(14.7)
9	18.0(17.2)
10	0

* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.

IC1651

1	12.0(11.9)	1	12.0(11.9)
2	0	2	4.7(4.6)
3	2.7	3	2.5
4	5.1	4	4.6
5	2.8	5	2.9(2.8)
6	2.8	6	0
7	2.1	7	0
8	2.1	8	0
9	2.5(2.1)	9	0
10	2.1	10	8.8
11	2.1	11	8.8
12	2.1	12	8.8(8.7)
13	2.1	13	
14	2.1	14	
15	2.1	15	
16	2.1	16	
17	2.1	17	
18	2.1	18	
19	2.1	19	
20	2.1	20	
21	2.1	21	
22	2.1	22	
23	2.1	23	



REGULATOR P.C.B

CYLINDER MOTOR DRIVE P.C.B

IC851

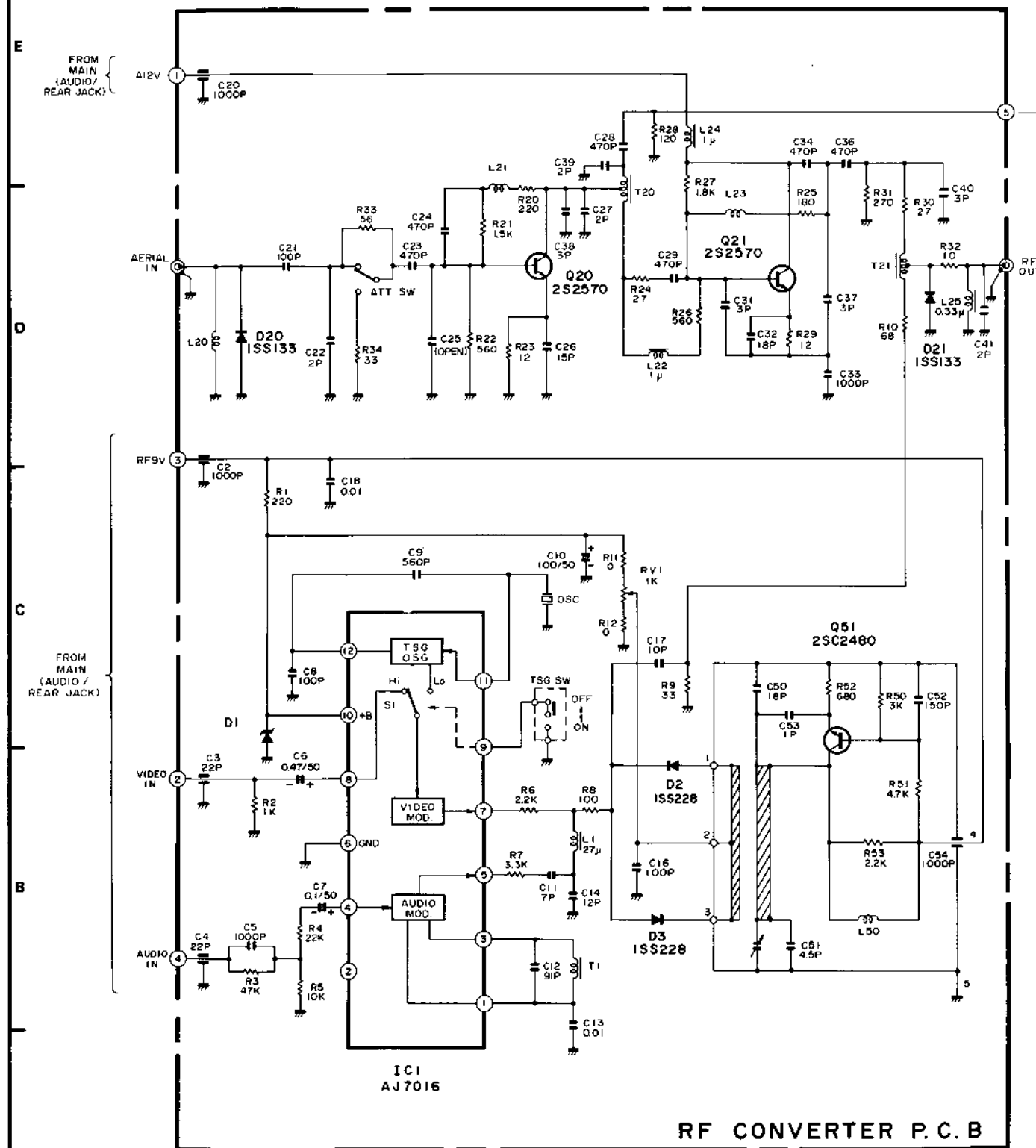
1	5.2(5.1)
2	11.8(11.5)
3	4.3
4	11.9(11.8)
5	15.2(14.4)
6	18.0(17.2)
7	12.0(11.9)
8	15.2(14.7)
9	18.0(17.2)
10	0

* ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODE.

IC1651

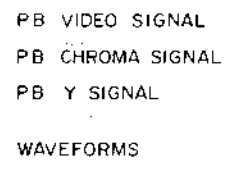
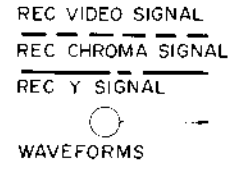
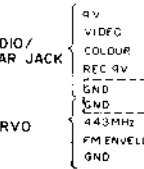
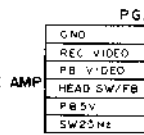
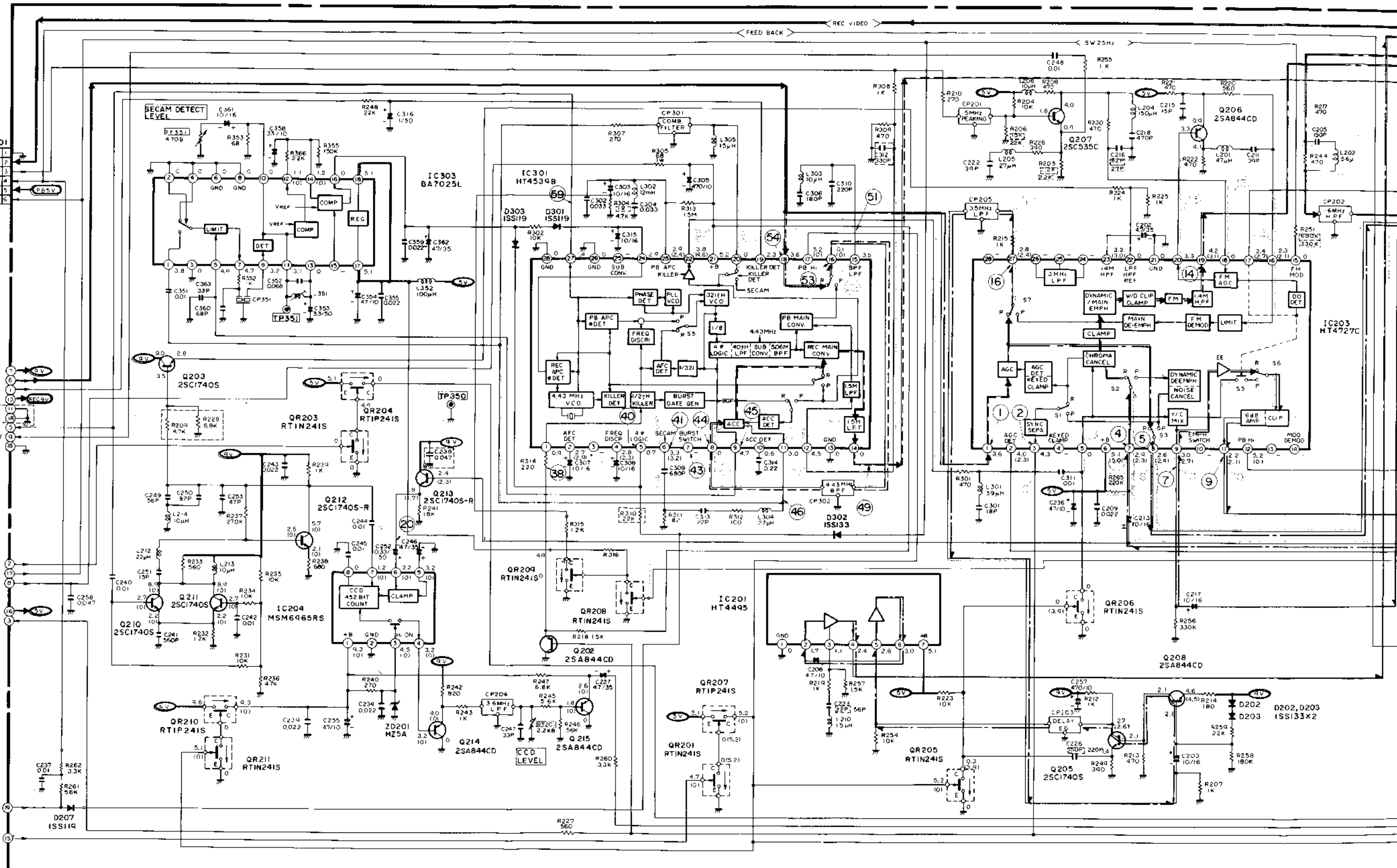
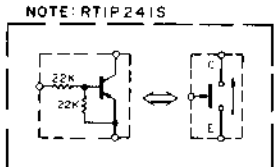
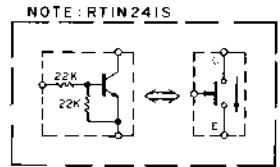
1	12.0(11.4)	12.0(11.4)
2	0	4.7(4.6)
3	2.7	2.5
4	5.1	4.6
5	2.8	2.9(2.8)
6	2.8	0
7	2.1	0
8	2.1	0
9	2.5(2.1)	8.8
10	2.1	8.8
11	2.1	8.8(8.7)
12	2.1	

RF CONVERTER (HF-KONVERTER)



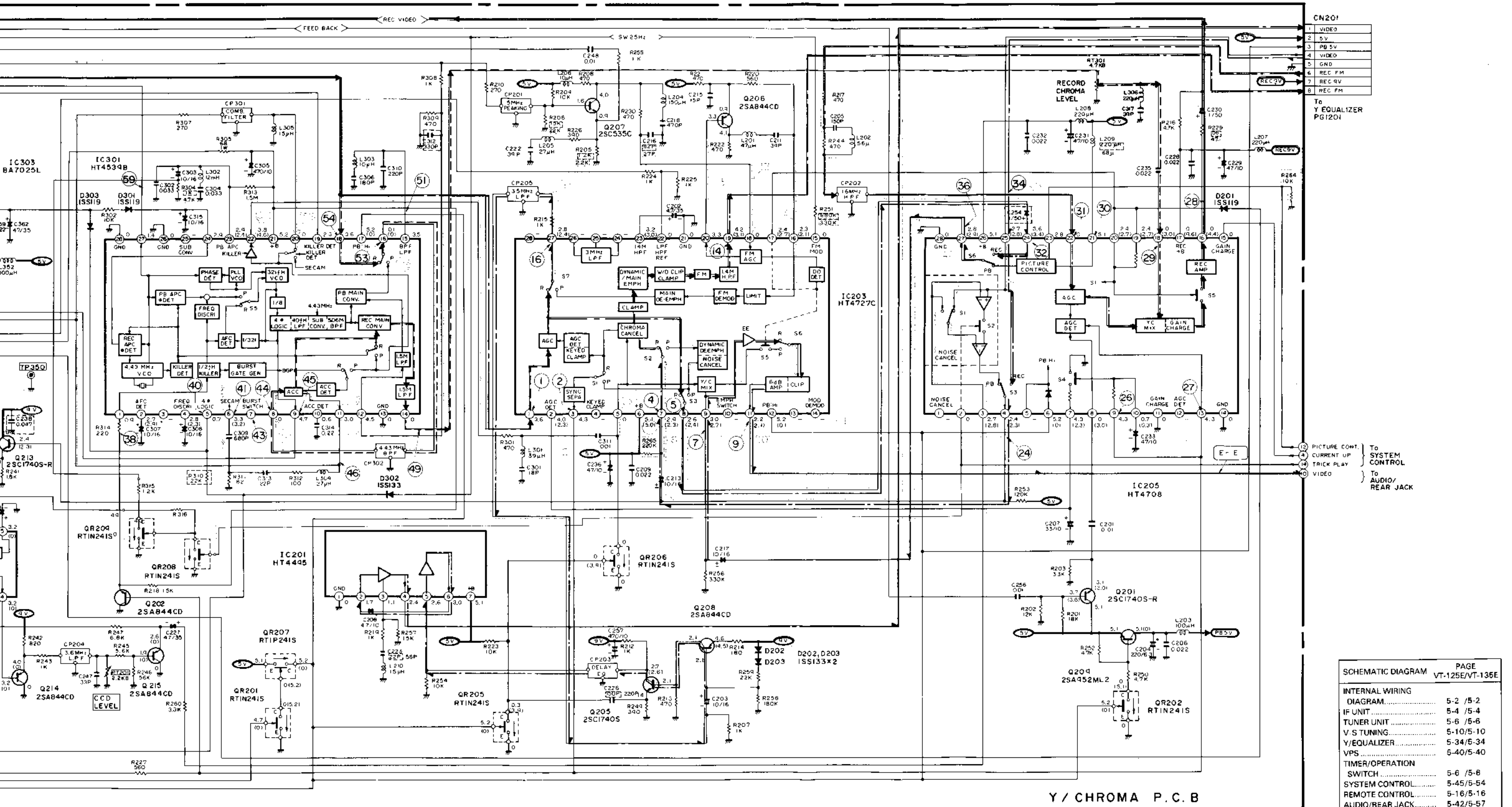
RF CONVERTER P.C.B

Y/CHROMA (LUMINANZ/CHROMINANZ)



*ONE VOLTAGE:PB OR REC MODE, TWO VOLTAGES:PB AND (REC) MODE.

ONLY VT-125E (VPSK/VFP)
ONLY VT-135E (VPS)



CN201

1	VIDEO
2	5V
3	PB 5V
4	VIDEO
5	GND
6	REC FM
7	REC 5V
8	REC FM

To Y EQUALIZER PG1201

12 PICTURE CONT. TO SYSTEM CONTROL
 14 TRACK PLAY TO SYSTEM CONTROL
 16 VIDEO TO AUDIO/ REAR JACK

SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V. S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-6 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-16/5-16
AUDIO/REAR JACK.....	5-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18

Y / CHROMA P. C. B

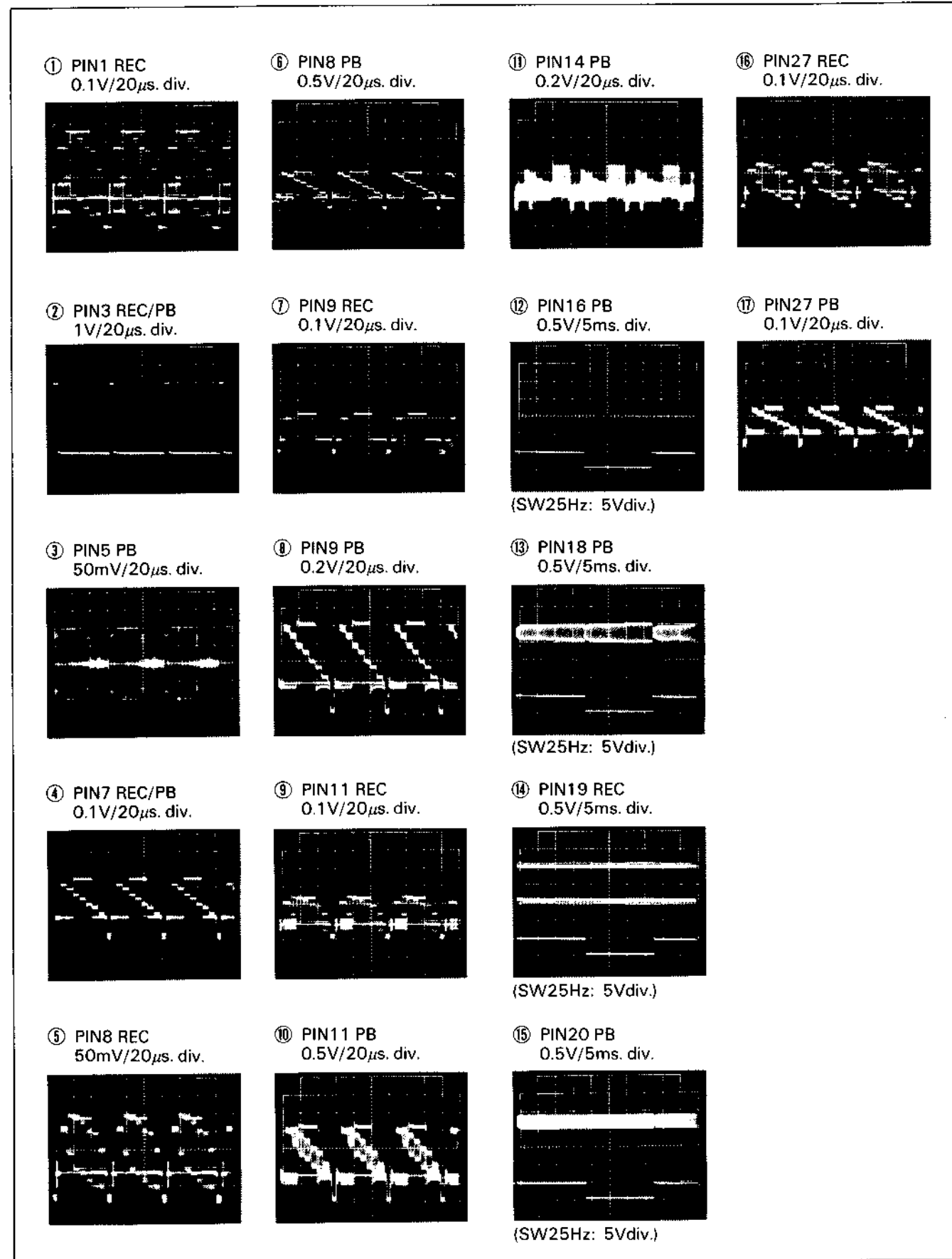
ONLY VT-125E (VPSK/VPS)
 ONLY VT-135E (VPS)

MODE, TWO VOLTAGES - PB AND (REC) MODE.

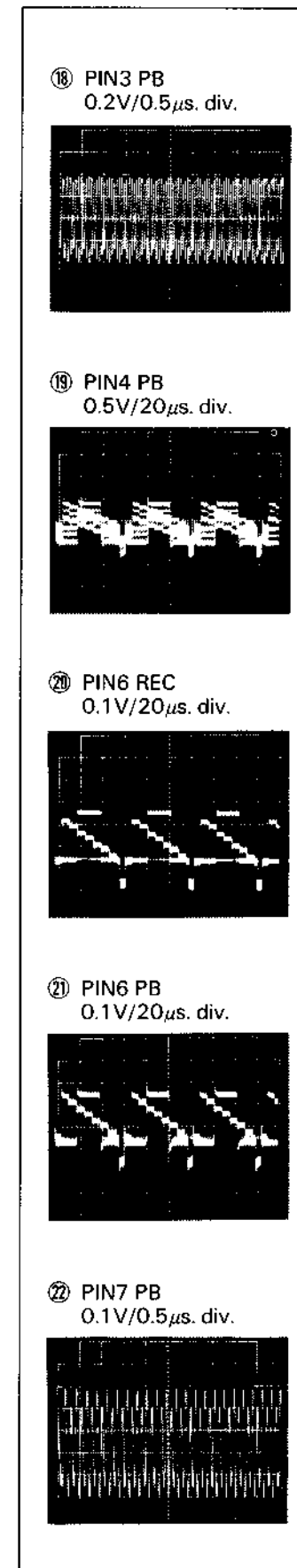
Y/CHROMA CIRCUIT WAVEFORMS (WELLENFORM)

[IC203]

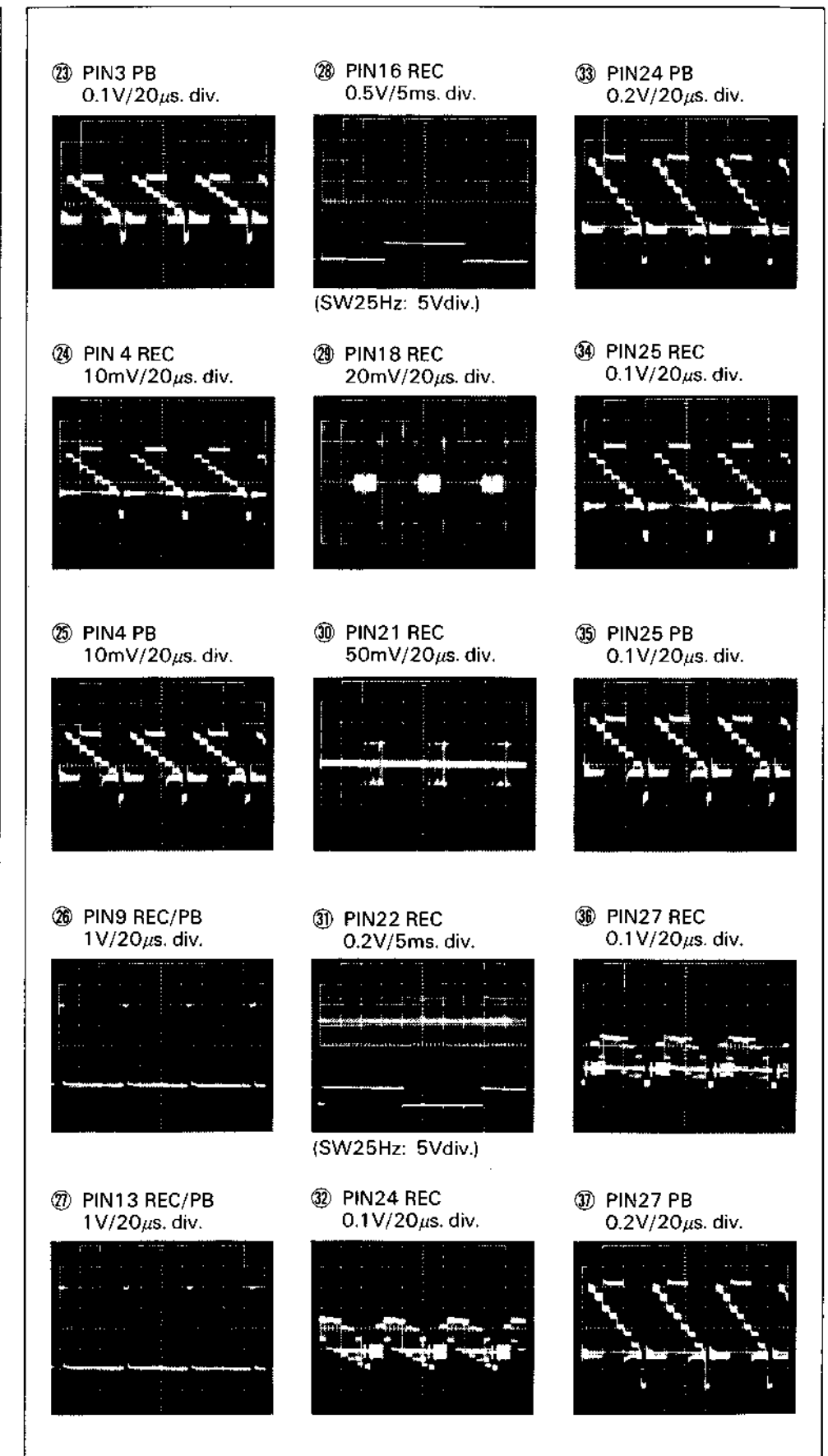
(REC: Colour bar Video in/PB: Alignment tape)

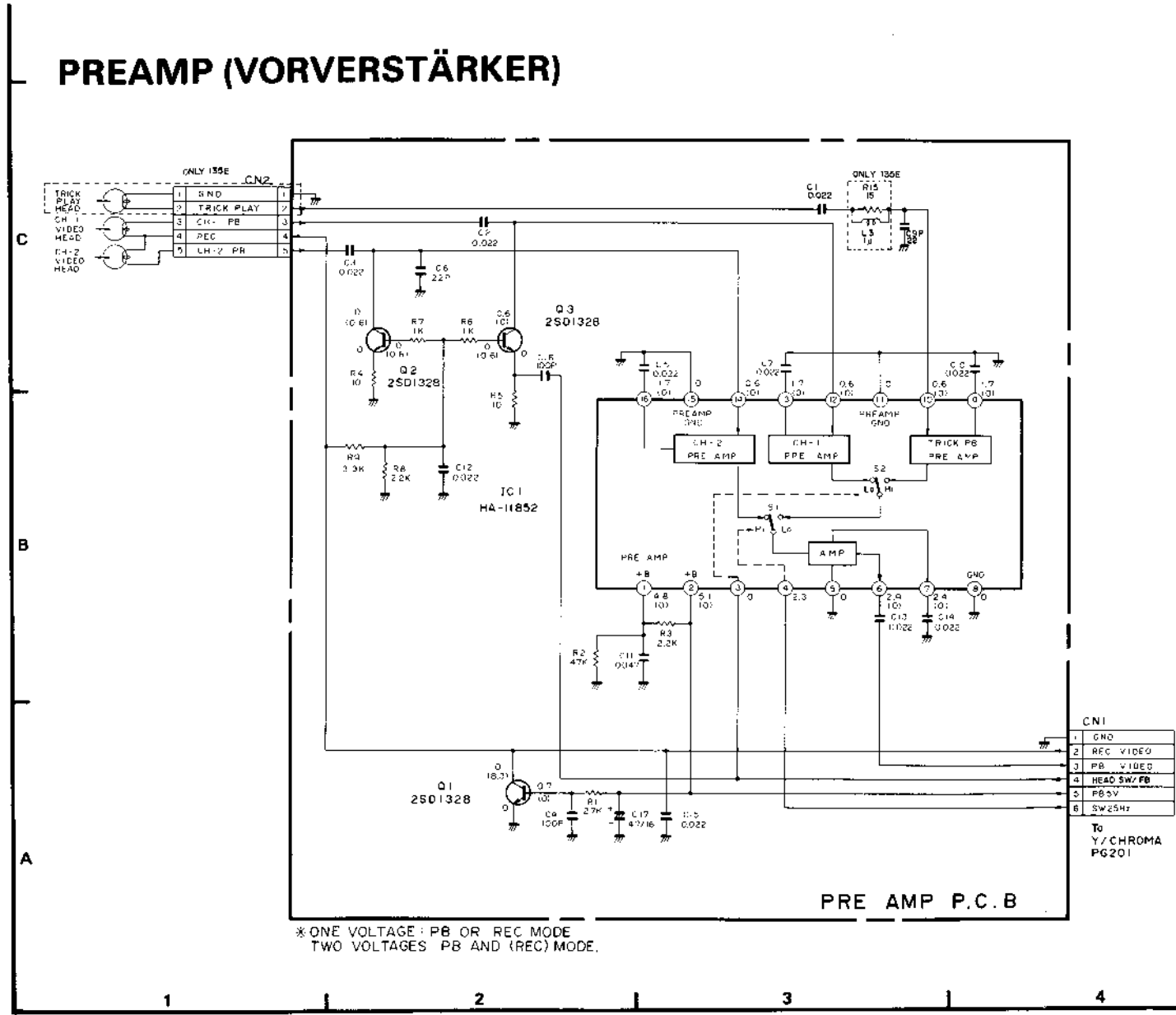
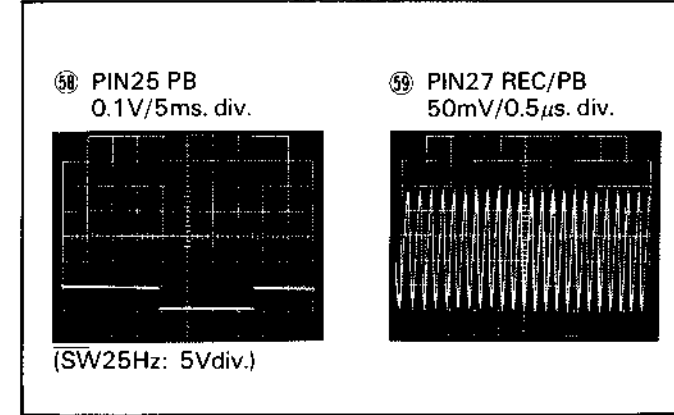
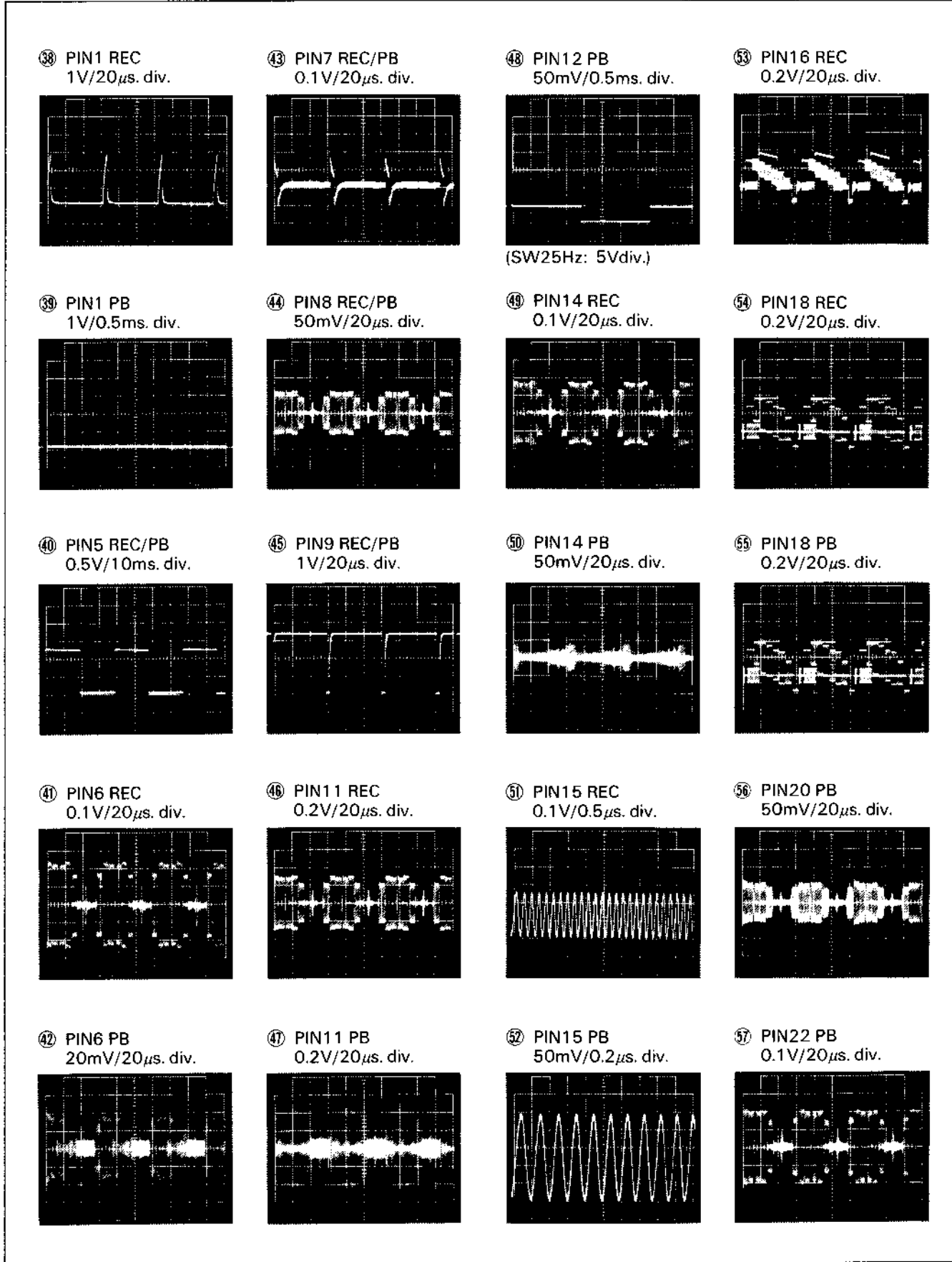


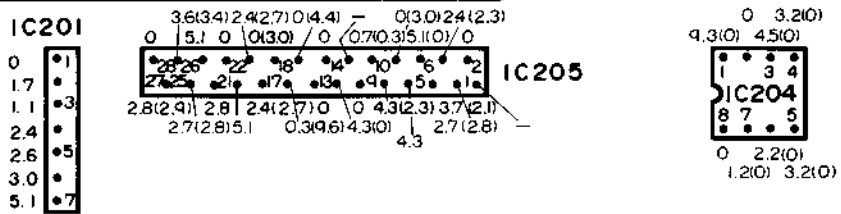
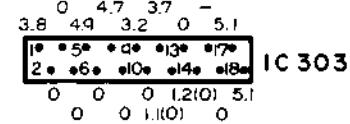
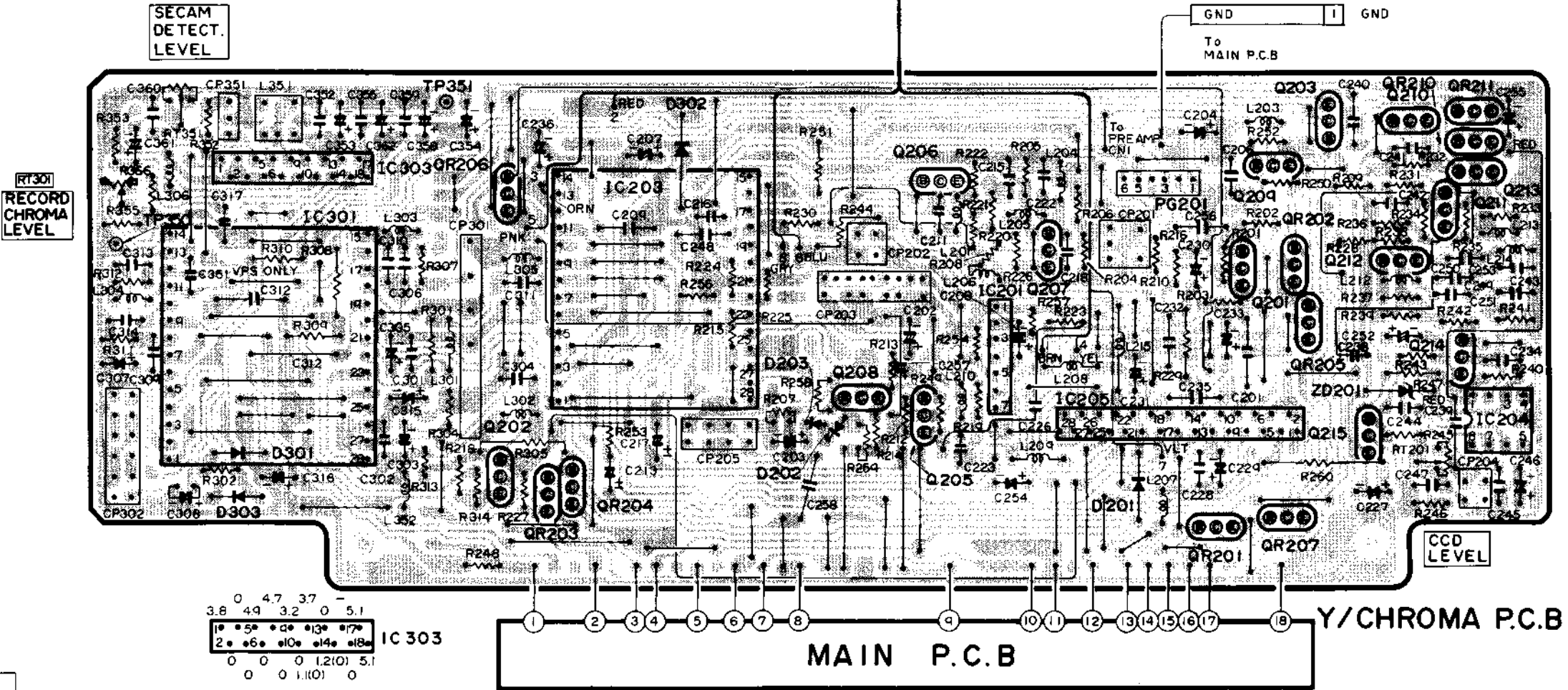
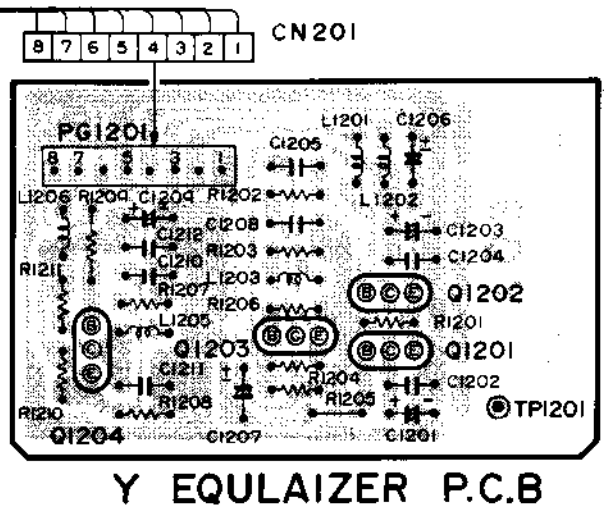
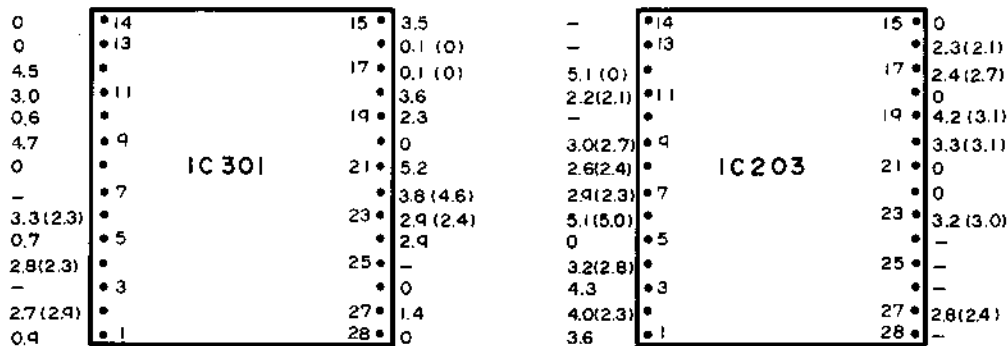
[IC204]



[IC205]





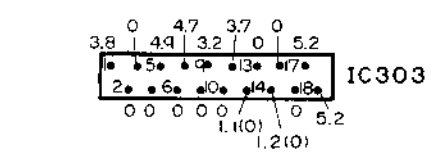
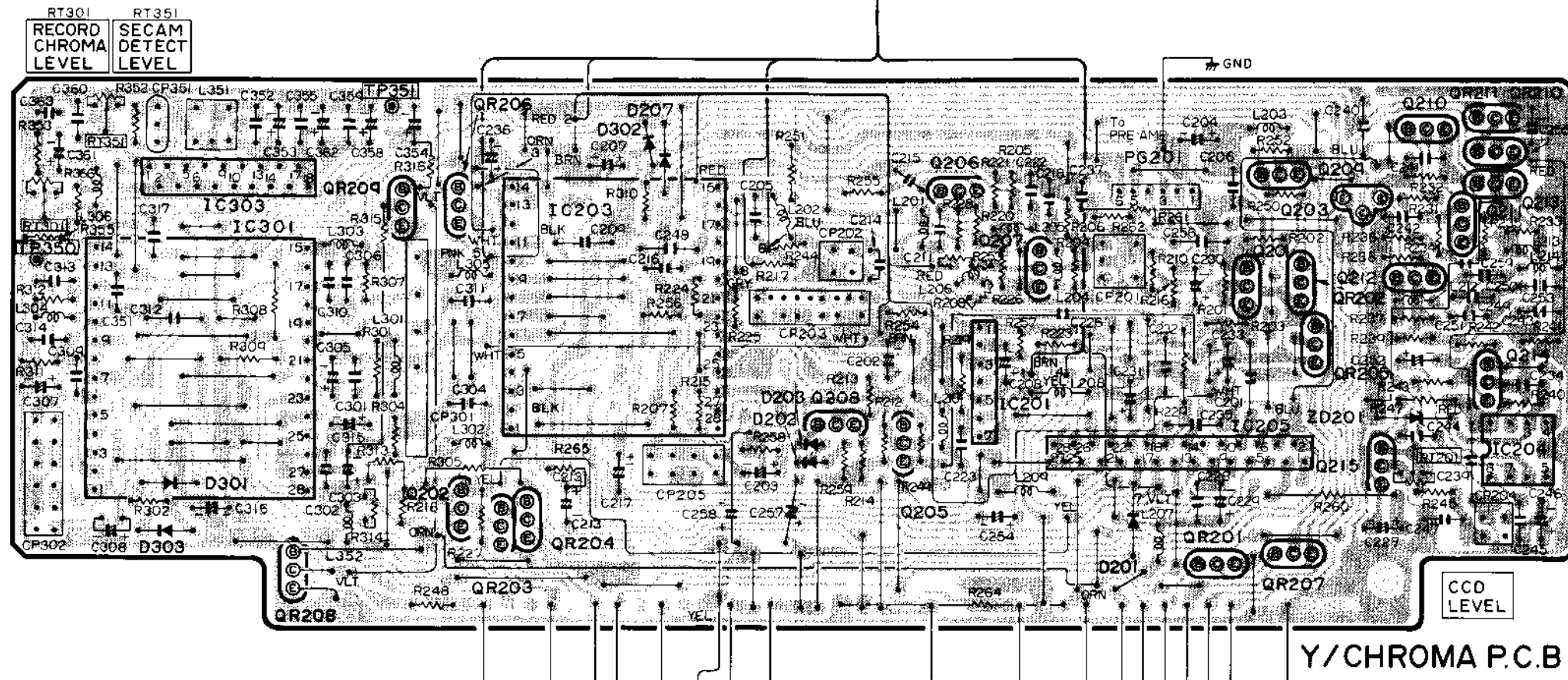
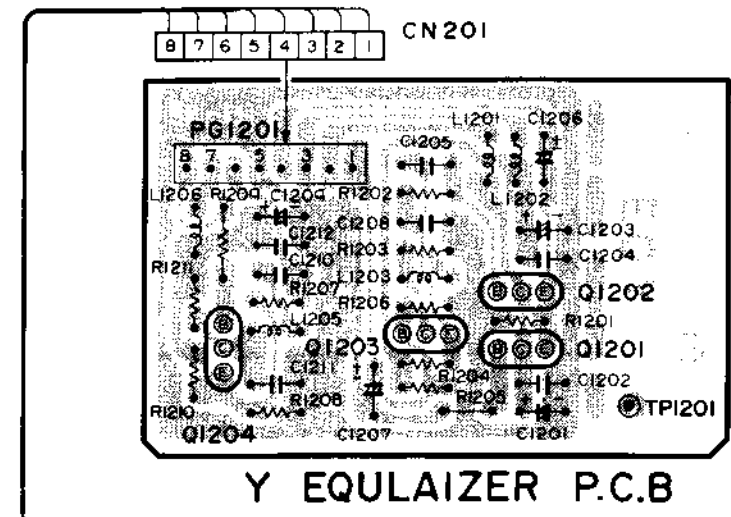
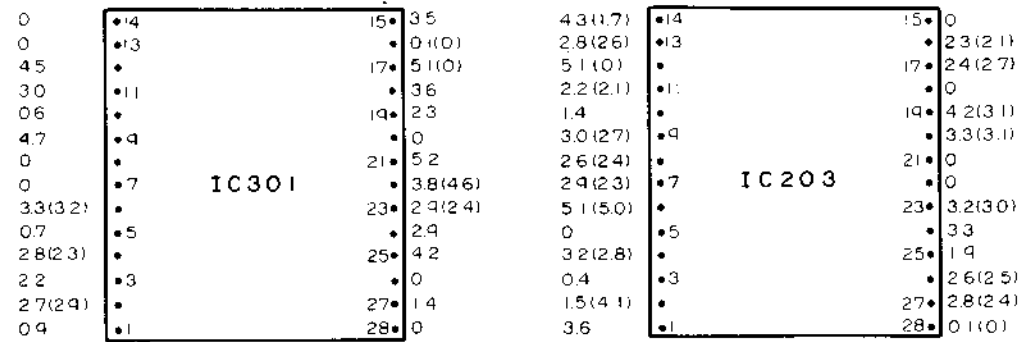


× ONE VOLTAGE : PB OR REC MODE,
TWO VOLTAGES : PB AND (REC) MODES.

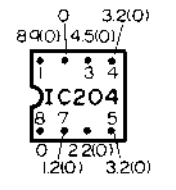
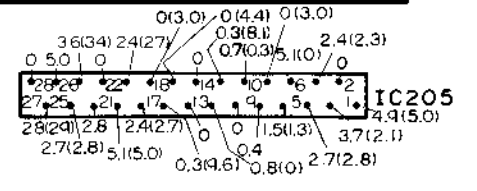
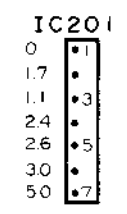
SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	5-2 /5-2
DIAGRAM	5-2 /5-2
IF UNIT	5-4 /5-4
TUNER UNIT	5-6 /5-6
V-S TUNING	5-10/5-10
Y/EQUALIZER	5-34/5-34
VPS	5-40/5-40
TIMER/OPERATION	
SWITCH	5-6 /5-6
SYSTEM CONTROL	5-45/5-54
REMOTE CONTROL	5-16/5-16
AUDIO/REAR JACK	5-42/5-57
RF CONVERTER	5-22/5-22
PREAMP	5-29/5-29
SERVO	5-35/5-62
Y/CHROMA	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE	5-18/5-18

FOR VT-125E (VPS/VSPK)

VT-125E (VPS/VPSK)

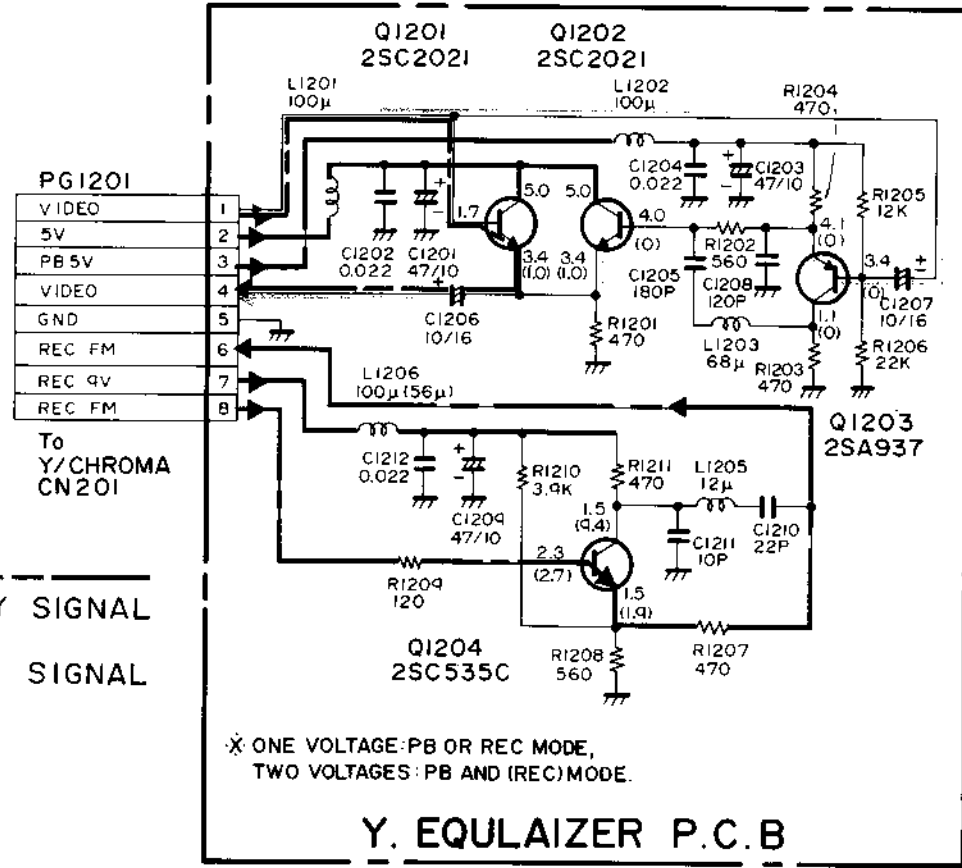


* ONE VOLTAGE : PB OR REC MODE.
 TWO VOLTAGES : PB AND (REC) MODE.



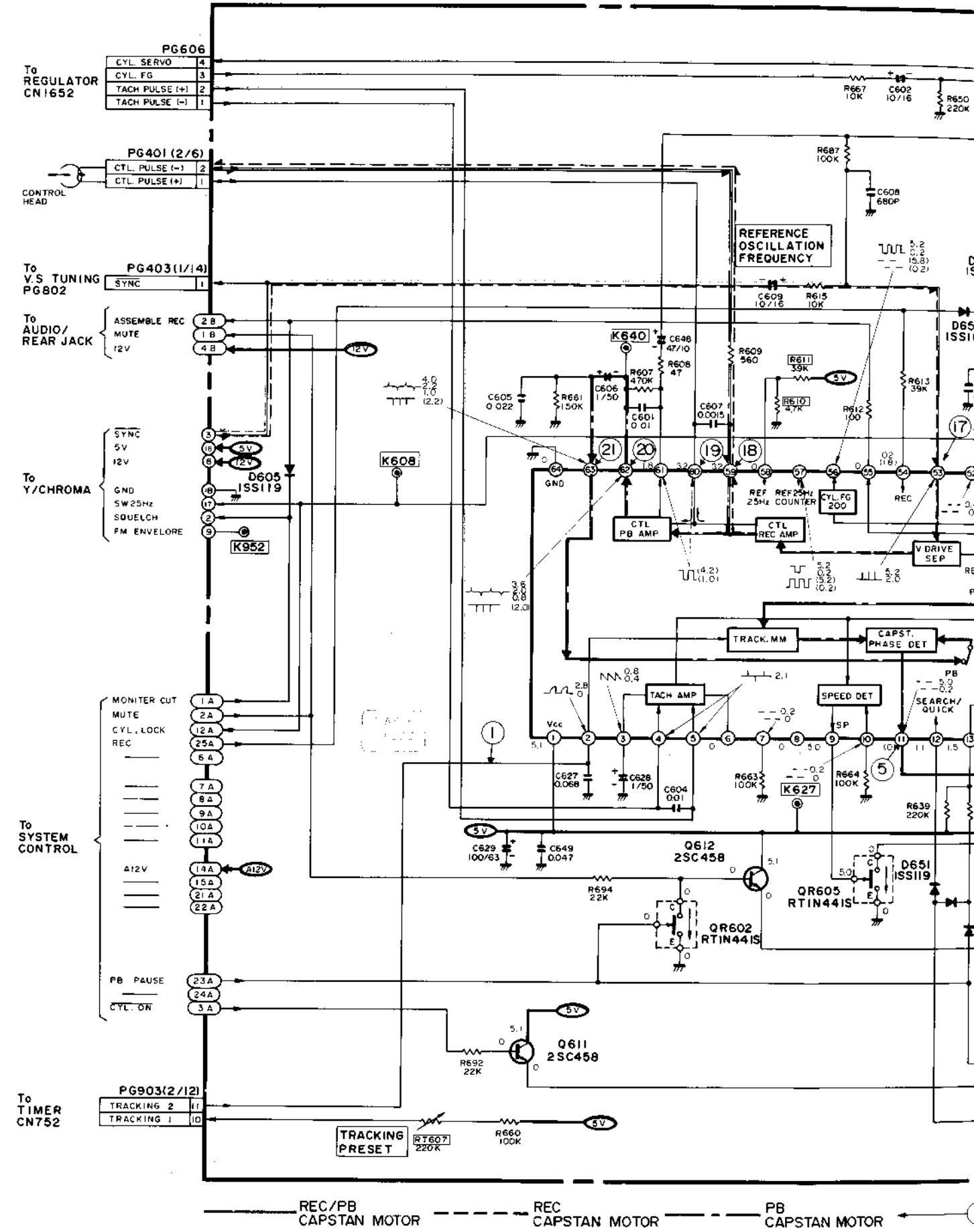
FOR VT-135E (VPS)

Y/EQUALIZER (LUMINANZ/ENTZERRER)

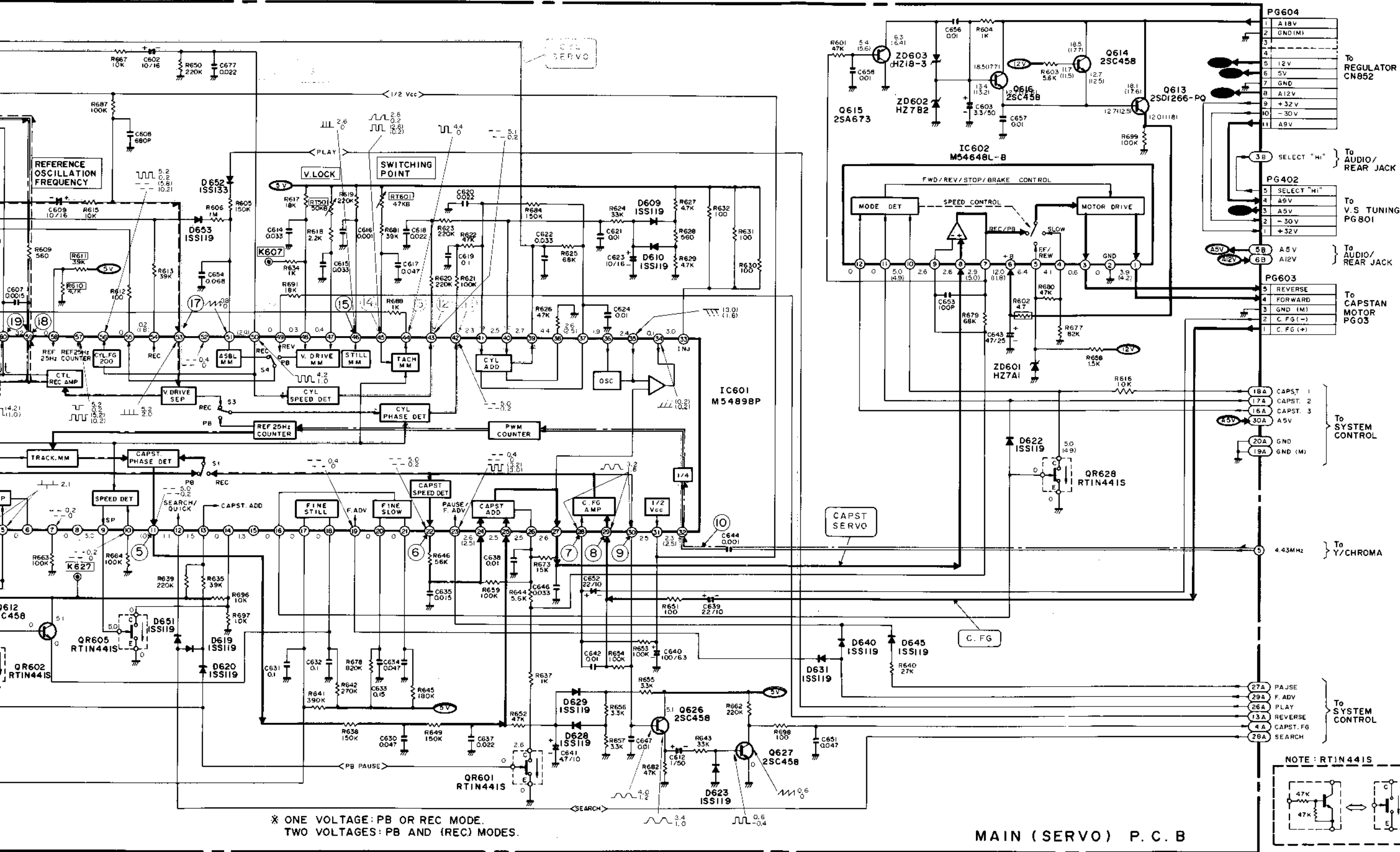


Y/EQUALIZER 5-34

SERVO VP-125E (VPS/VPSK)



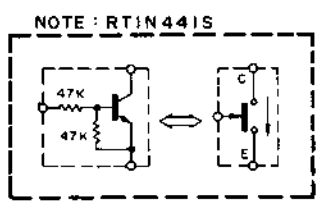
5-35 [VT-125E (VPS/VPSK)] SERVO

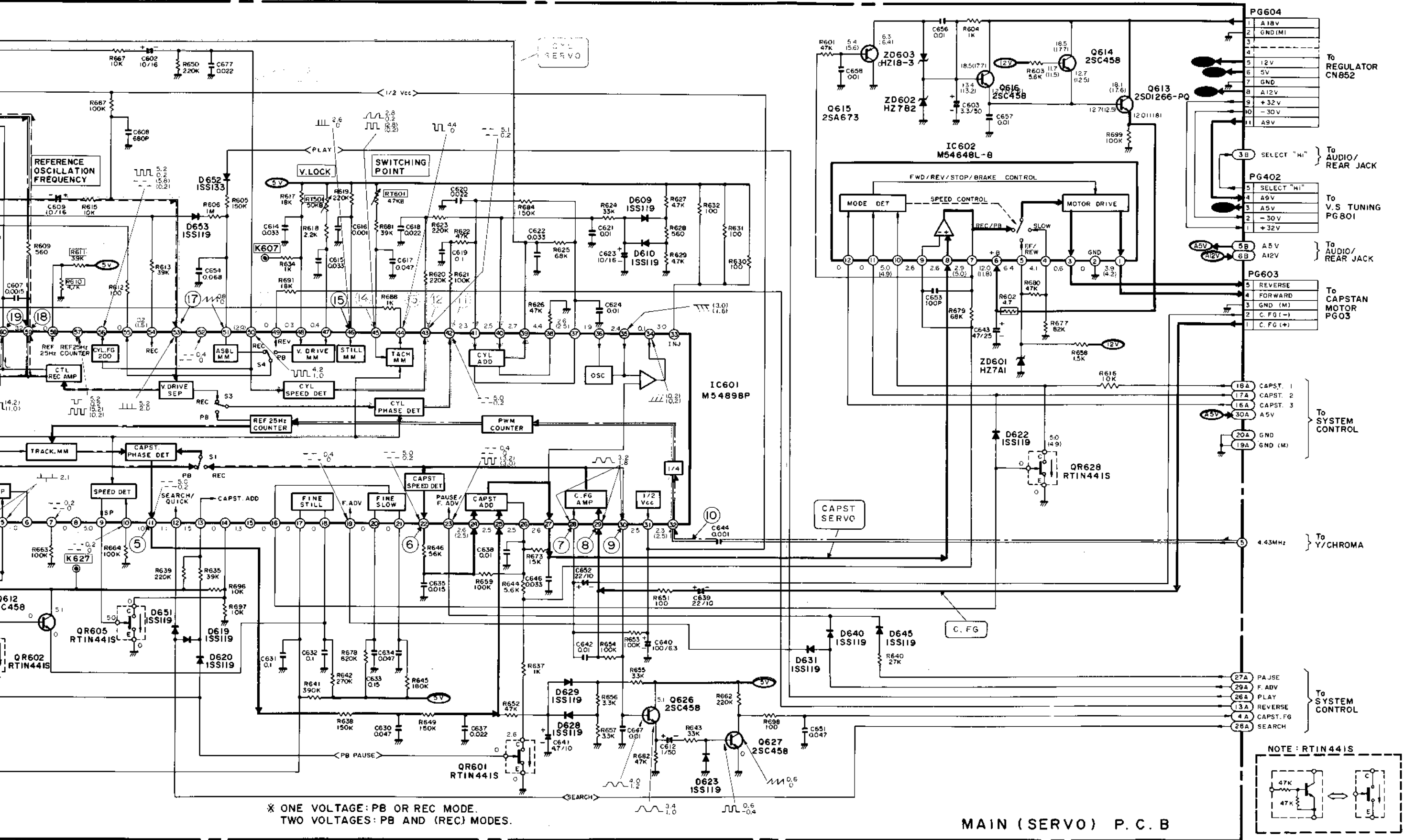


* ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODES.

PB CAPSTAN MOTOR WAVEFORM REC/PB CYLINDER MOTOR REC CYLINDER MOTOR PB CYLINDER MOTOR WAVEFORM

MAIN (SERVO) P.C.B

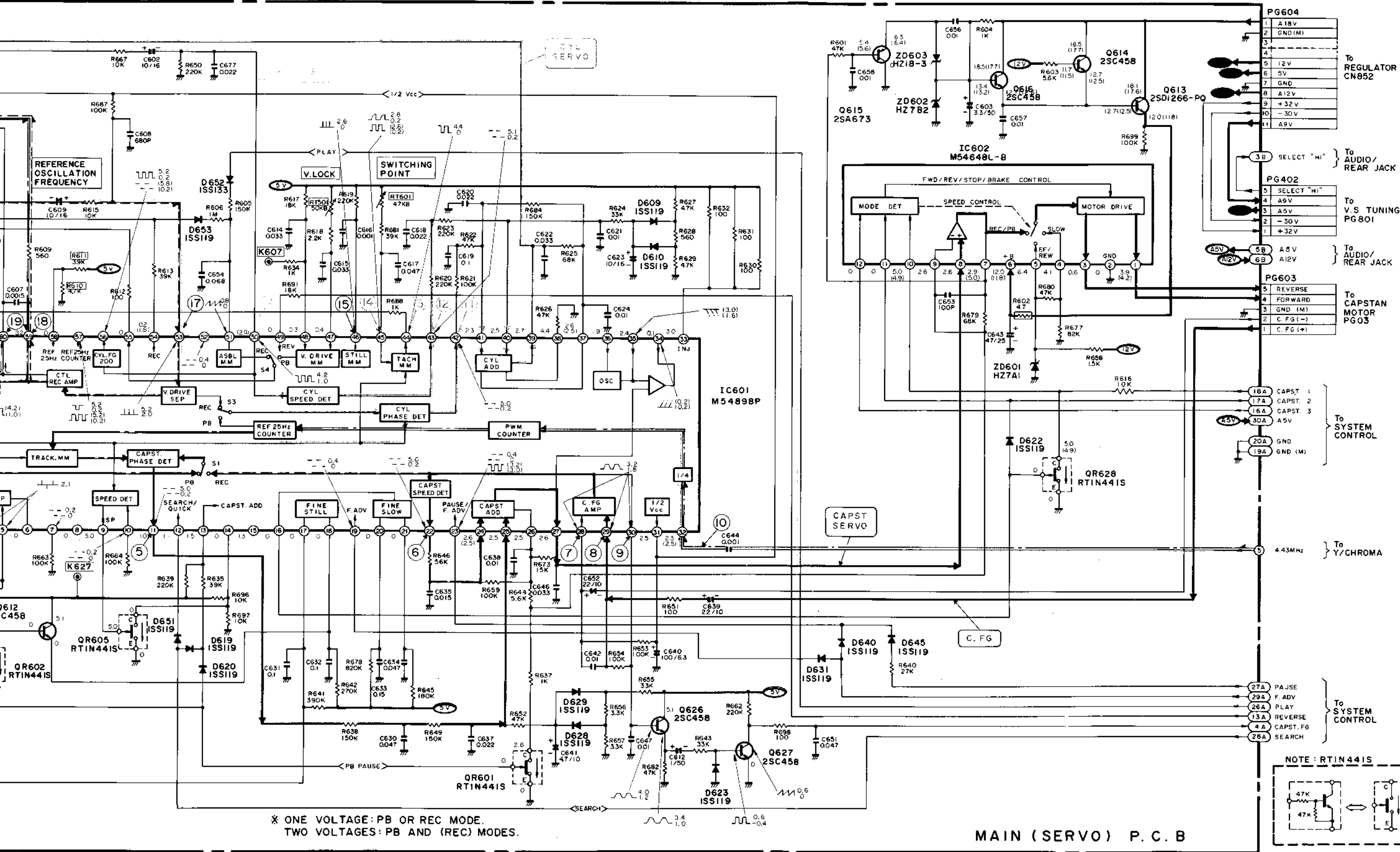




* ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODES.

MAIN (SERVO) P.C.B

--- PB CAPSTAN MOTOR ○ WAVEFORM REC/PB CYLINDER MOTOR REC CYLINDER MOTOR --- PB CYLINDER MOTOR WAVEFORM



* ONE VOLTAGE: PB OR REC MODE.
TWO VOLTAGES: PB AND (REC) MODES.

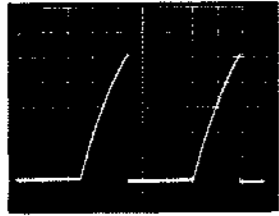
--- PB CAPSTAN MOTOR ○ WAVEFORM REC/PB CYLINDER MOTOR REC CYLINDER MOTOR --- PB CYLINDER MOTOR --- WAVEFORM

SERVO CIRCUIT WAVEFORMS (WELLENFORM)

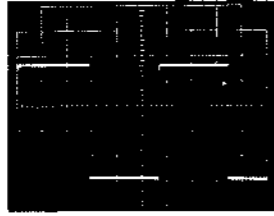
[IC601]

(REC: Colour bar Video in/PB: Alignment tape)

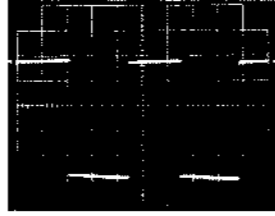
① PIN2 REC/PB
0.5V/10ms. div.



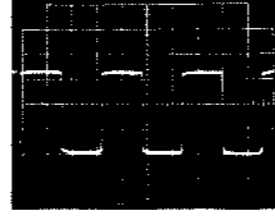
⑥ PIN22 REC/PB
1V/20μs. div.



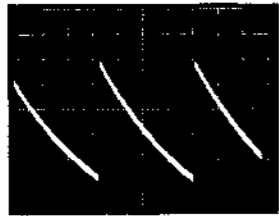
⑪ PIN42 REC/PB
1V/0.1ms. div.



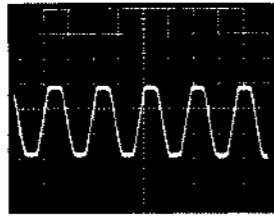
⑯ PIN50 REC/PB
1V/1ms. div.



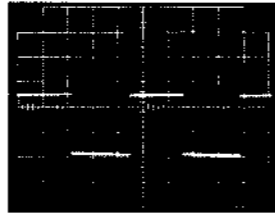
② PIN3 REC/PB
0.1V/10ms. div.



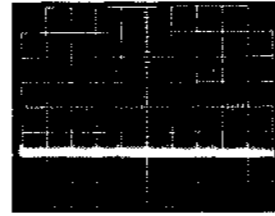
⑦ PIN28 REC/PB
0.5V/1ms. div.



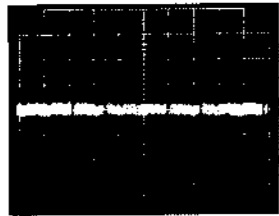
⑫ PIN43 REC/PB
2V/0.1ms. div.



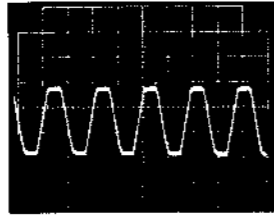
⑰ PIN53 REC/PB
1V/5ms. div.



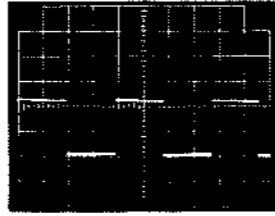
③ PIN4 REC/PB
50mV/10ms. div.



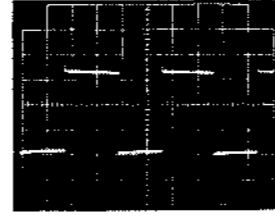
⑧ PIN29 REC/PB
0.5V/1ms. div.



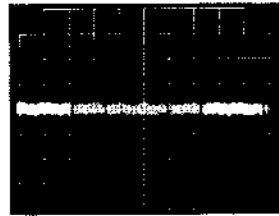
⑬ PIN44 REC/PB
2V/10ms. div.



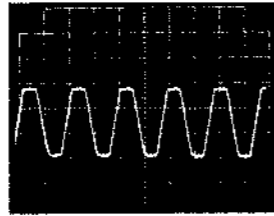
⑱ PIN59 REC
1V/10ms. div.



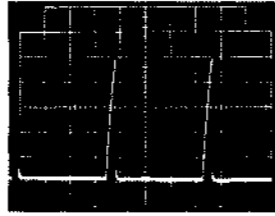
④ PIN5 REC/PB
50mV/10ms. div.



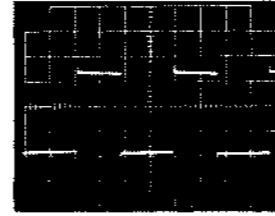
⑨ PIN30 REC/PB
1V/1ms. div.



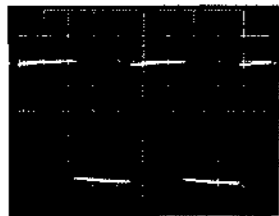
⑭ PIN45 REC/PB
0.5V/5ms. div.



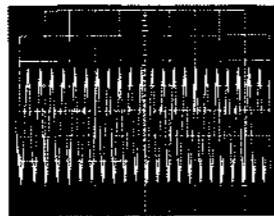
⑲ PIN60 REC
1V/10ms. div.



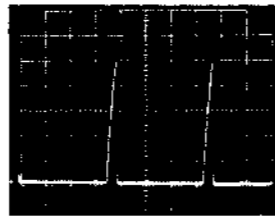
⑤ PIN11 REC/PB
1V/0.2ms. div.



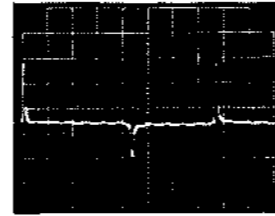
⑩ PIN32 REC/PB
50mV/0.5μs. div.



⑮ PIN46 REC/PB
0.5V/5ms. div.

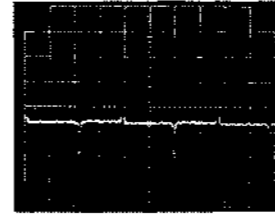


⑳ PIN62 PB
1V/5ms. div.



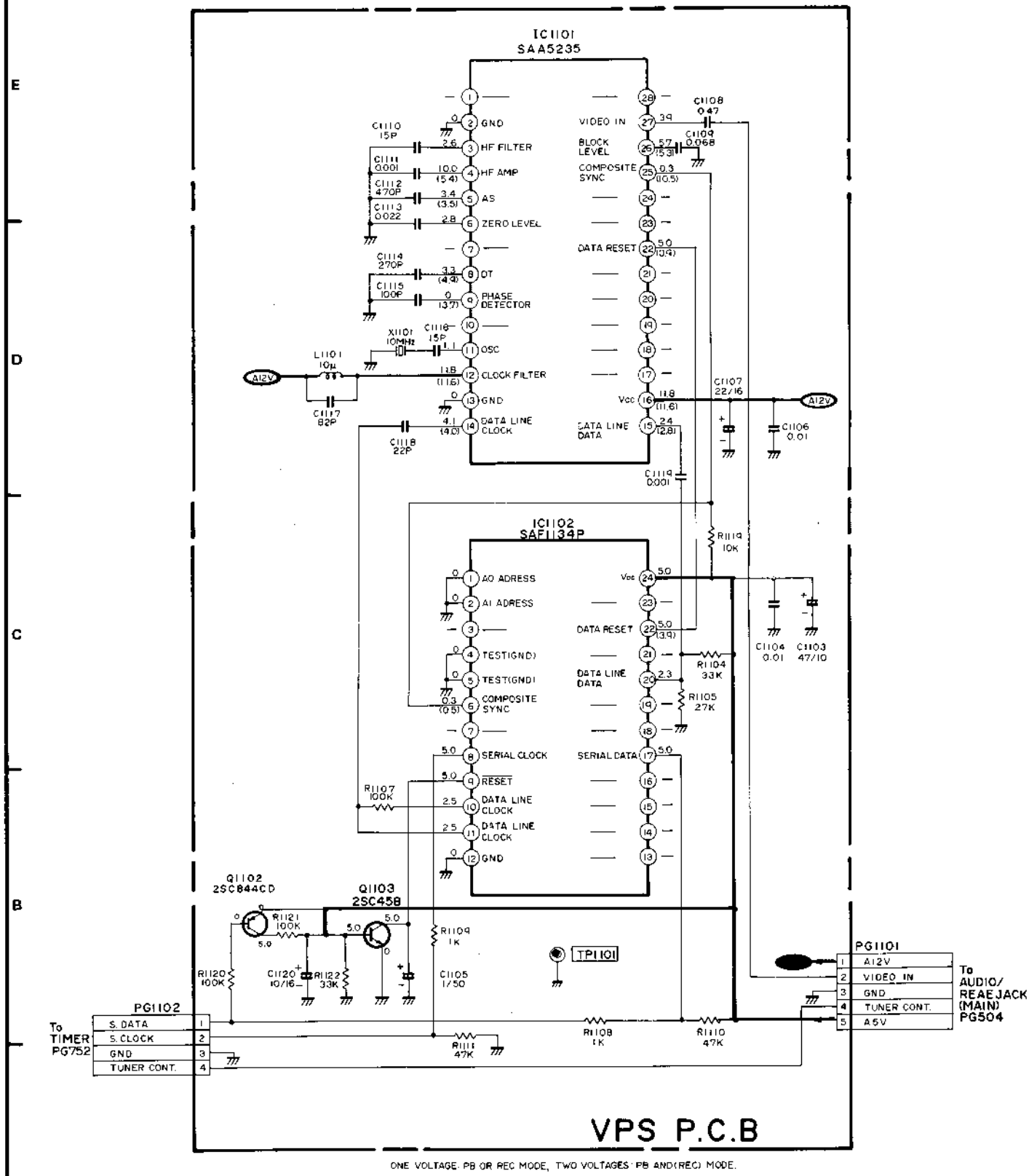
[IC601]

㉑ PIN63 PB
1V/10ms. div.

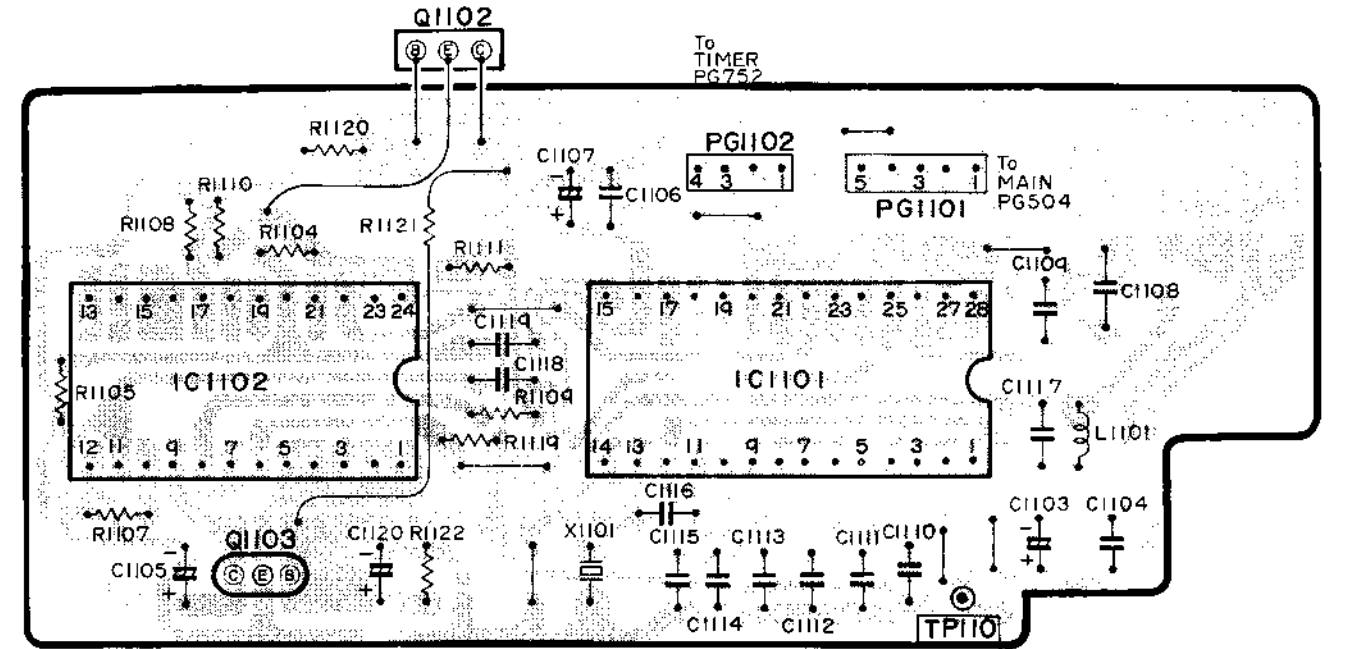


SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V.S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-6 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-16/5-16
AUDIO/REAR JACK.....	5-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18

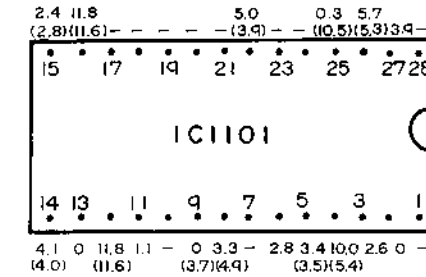
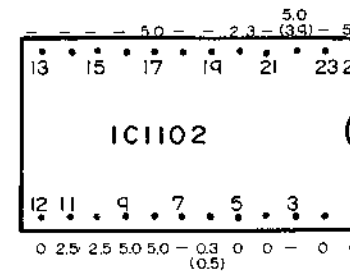
VPS (VIDEO PROGRAMME SYSTEM)



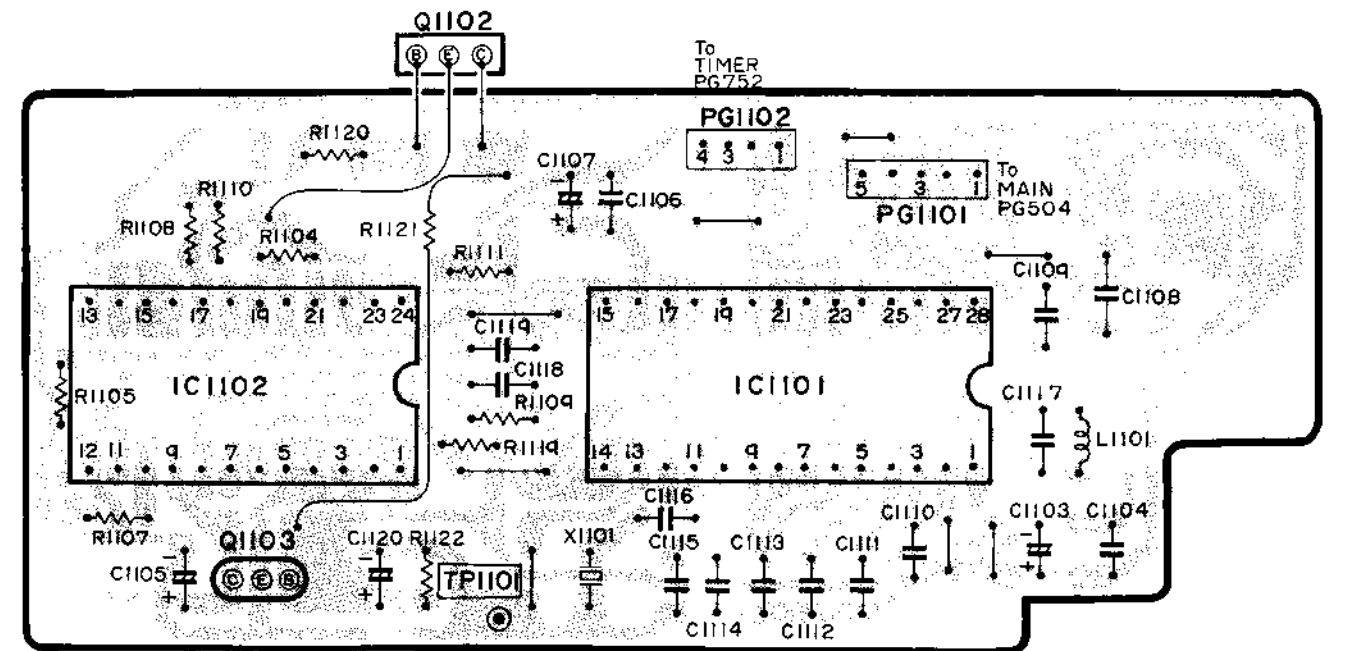
VT-125E (VPS/VPSK) VPS P.C. BOARD



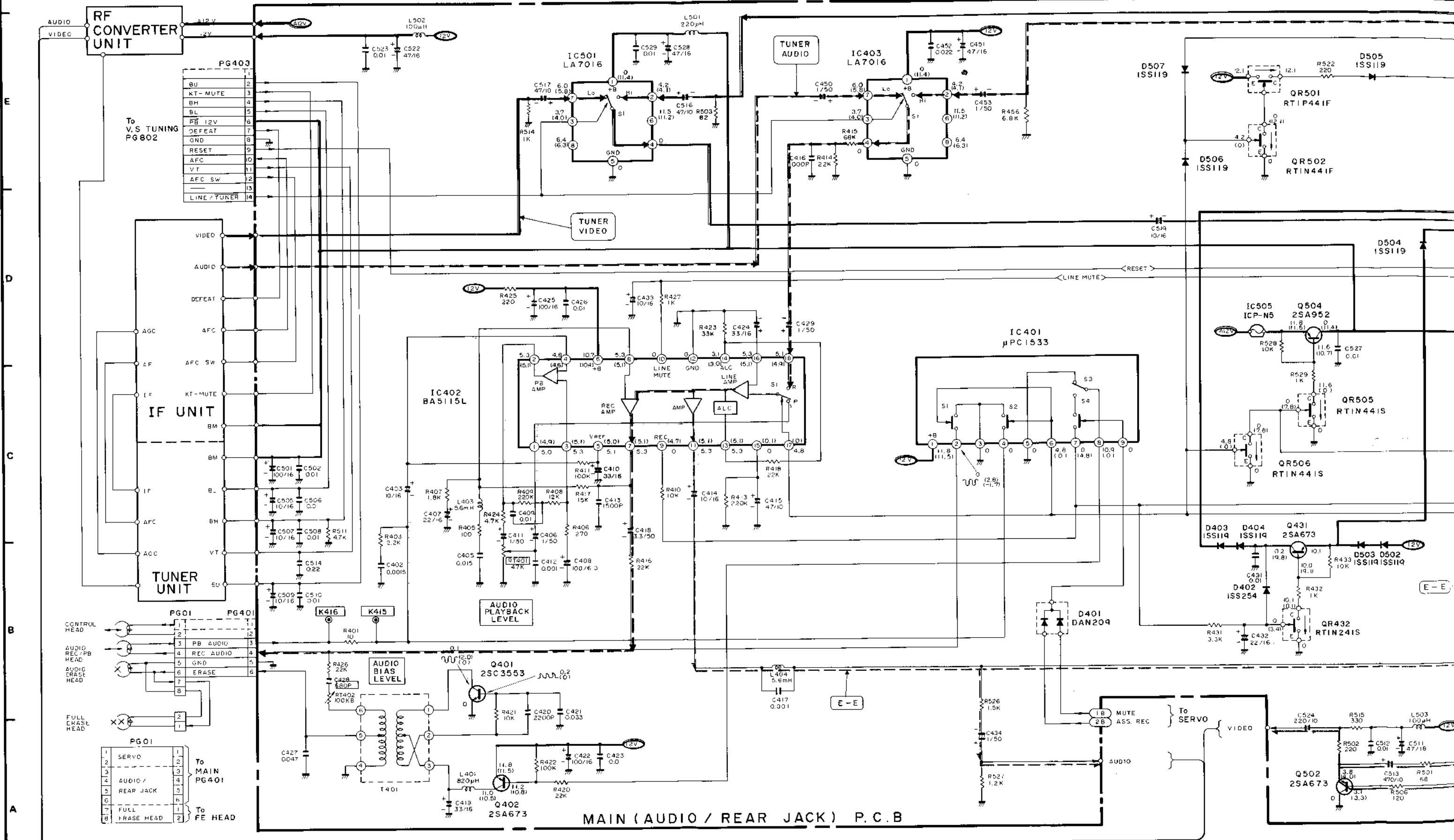
* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.



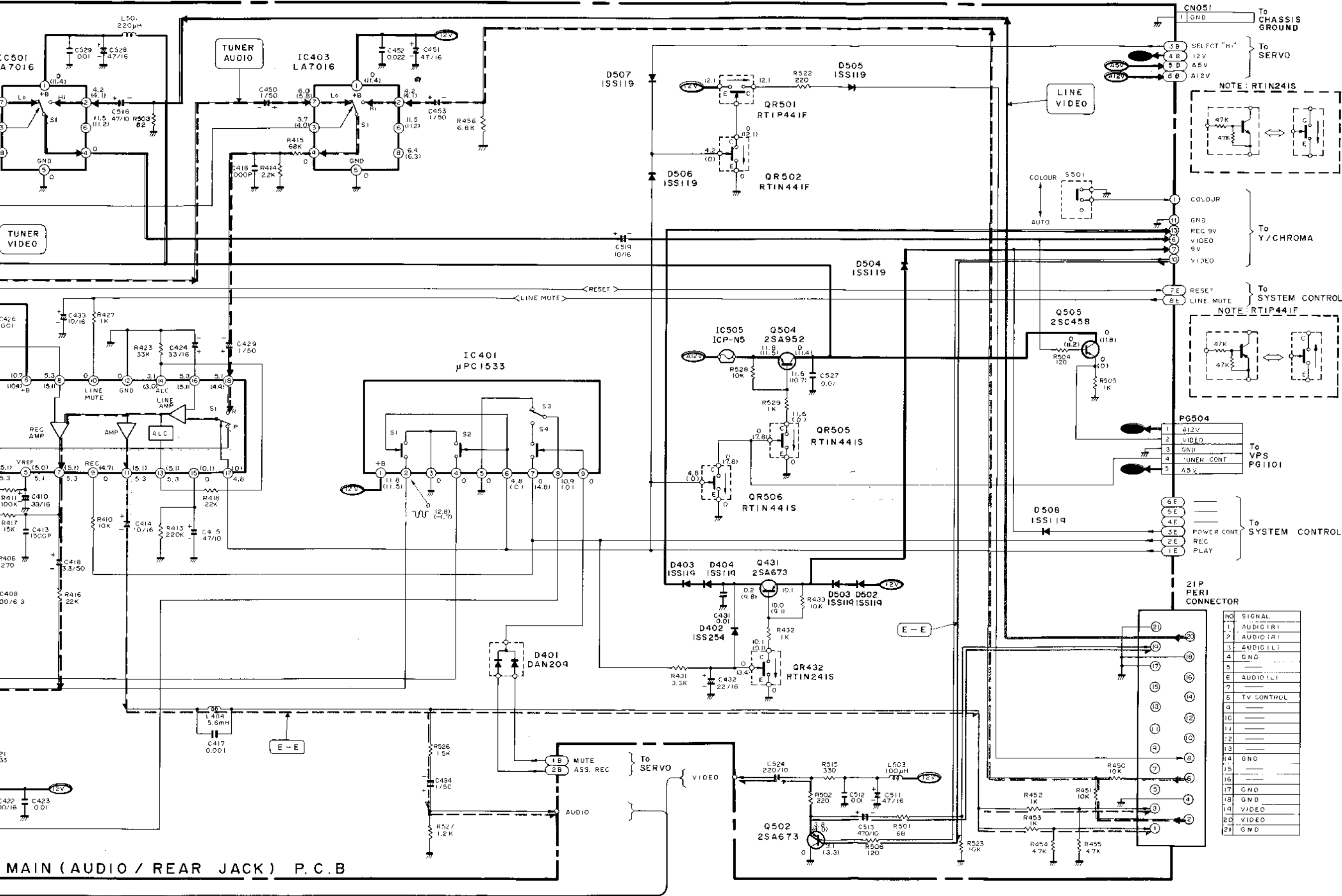
VT-135E (VPS) VPS P.C. BOARD



* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.

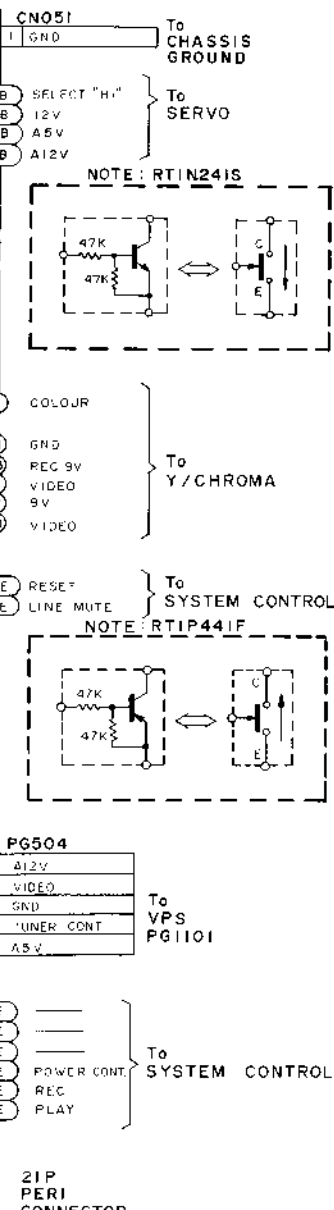


* ONE VOLTAGE : PB OR REC MODE, TWO VOLTAGES : PB AND (REC) MODES.



MAIN (AUDIO / REAR JACK) P.C.B.

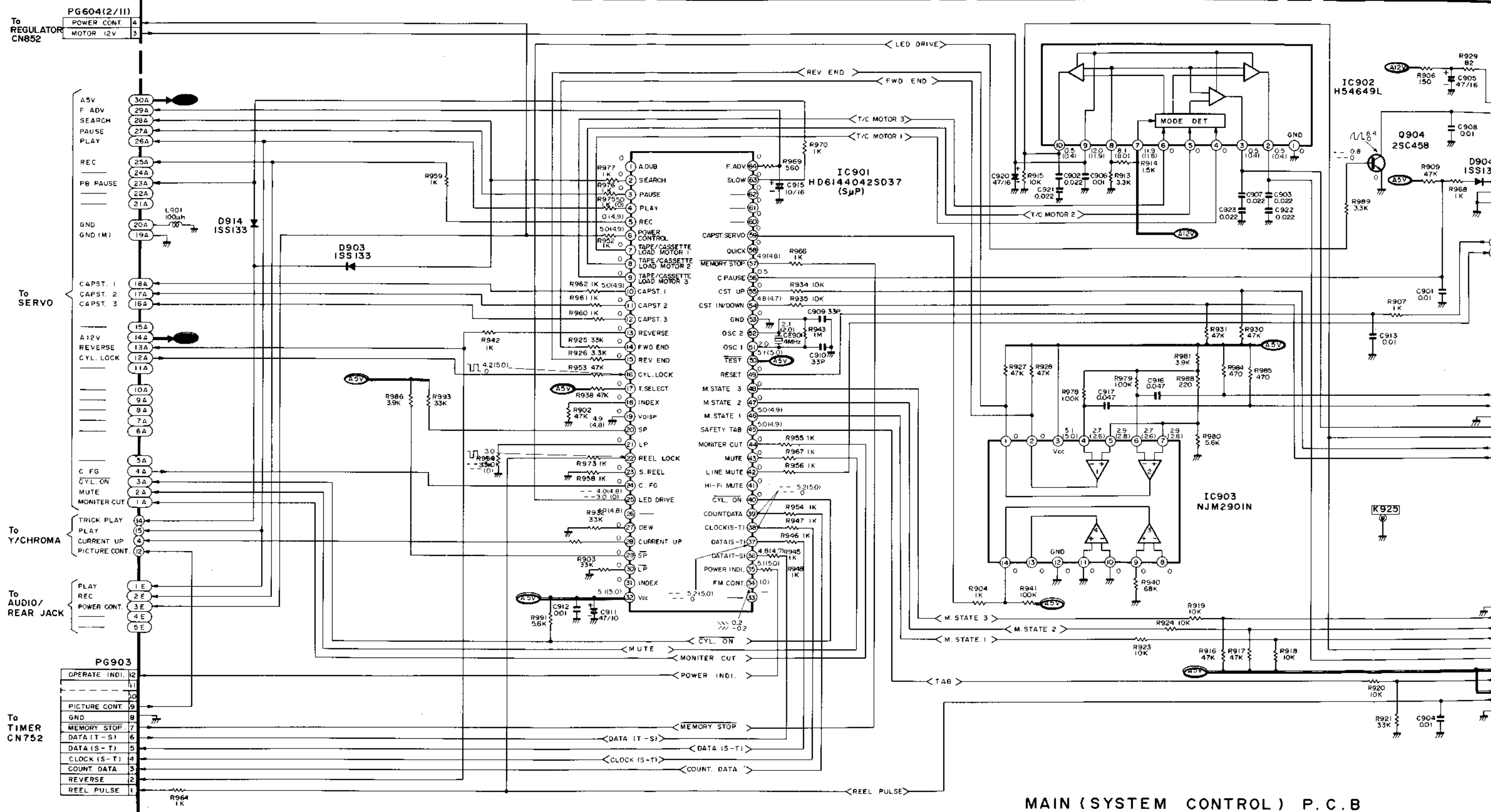
MODE, TWO VOLTAGES : PB AND (REC) MODES.



NO	SIGNAL
1	AUDIC (R)
2	AUDIC (L)
3	AUDIC (L)
4	GND
5	AUDIC (L)
6	AUDIC (L)
7	
8	TV CONTROL
9	
10	
11	
12	
13	
14	GND
15	
16	
17	GND
18	GND
19	VIDEO
20	VIDEO
21	GND

SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V-S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-6 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-16/5-16
AUDIO/REAR JACK.....	5-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18

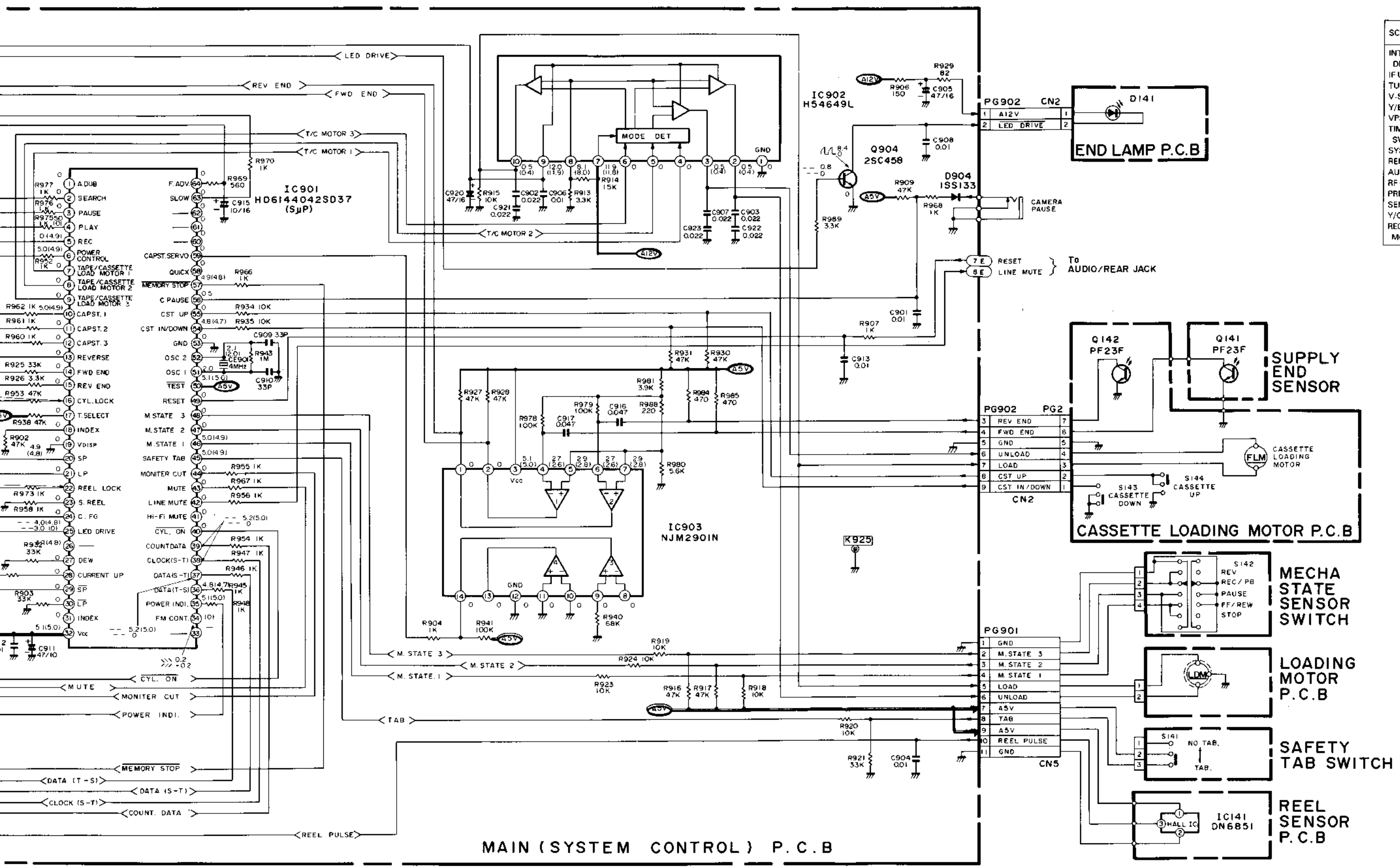
E
D
C
B
A



MAIN (SYSTEM CONTROL) P.C.B

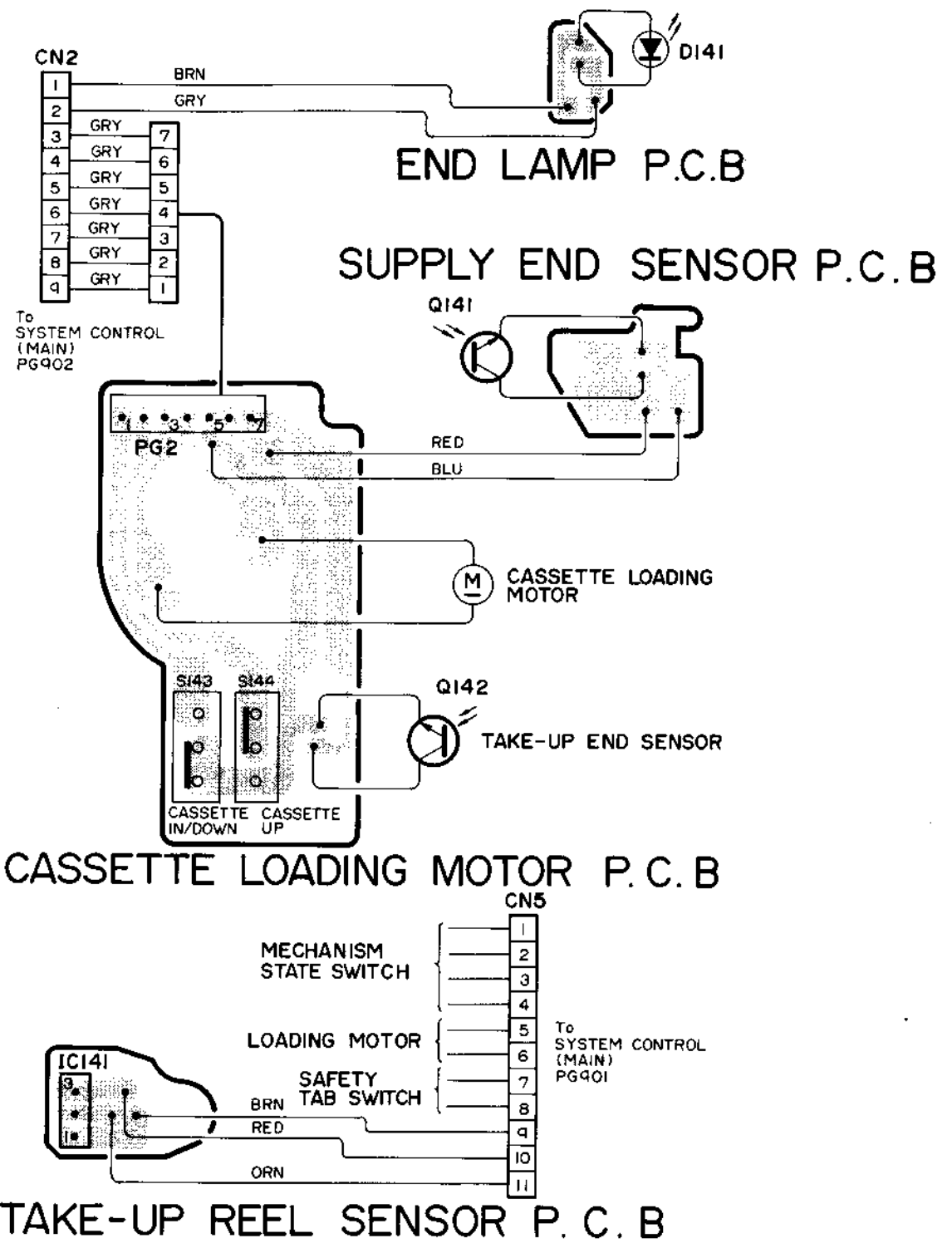
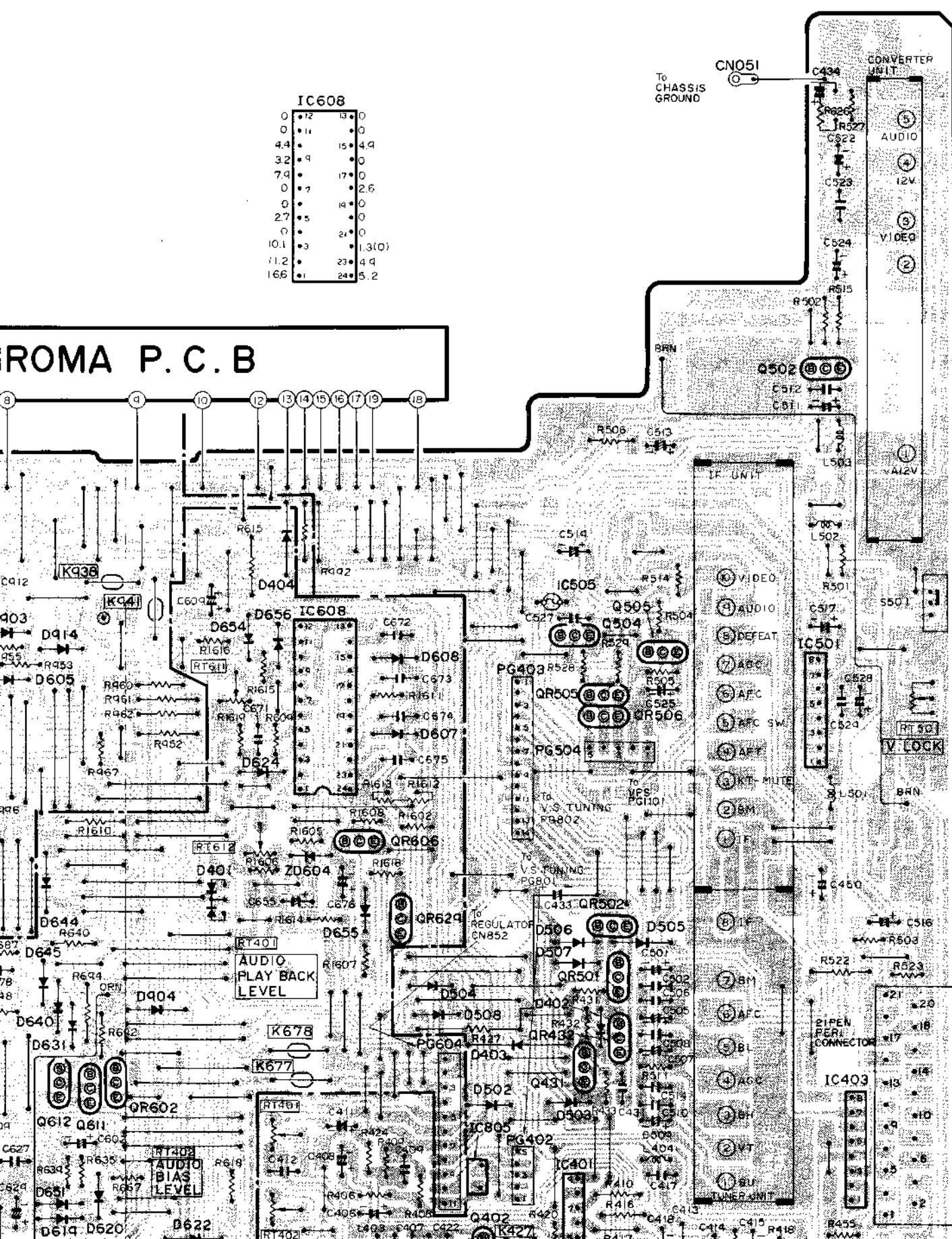
* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODES.

SCHEMATIC DIAGRAM	PAGE
INTERNAL WIRING	VT-125E/VT-135E
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V-S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-8 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-18/5-16
AUDIO/REAR JACK.....	5-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18



TAGES: PB AND (REC) MODES.

PERIPHERAL BOARD (PERIPHERIE-LEITERPLATTE)



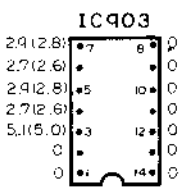
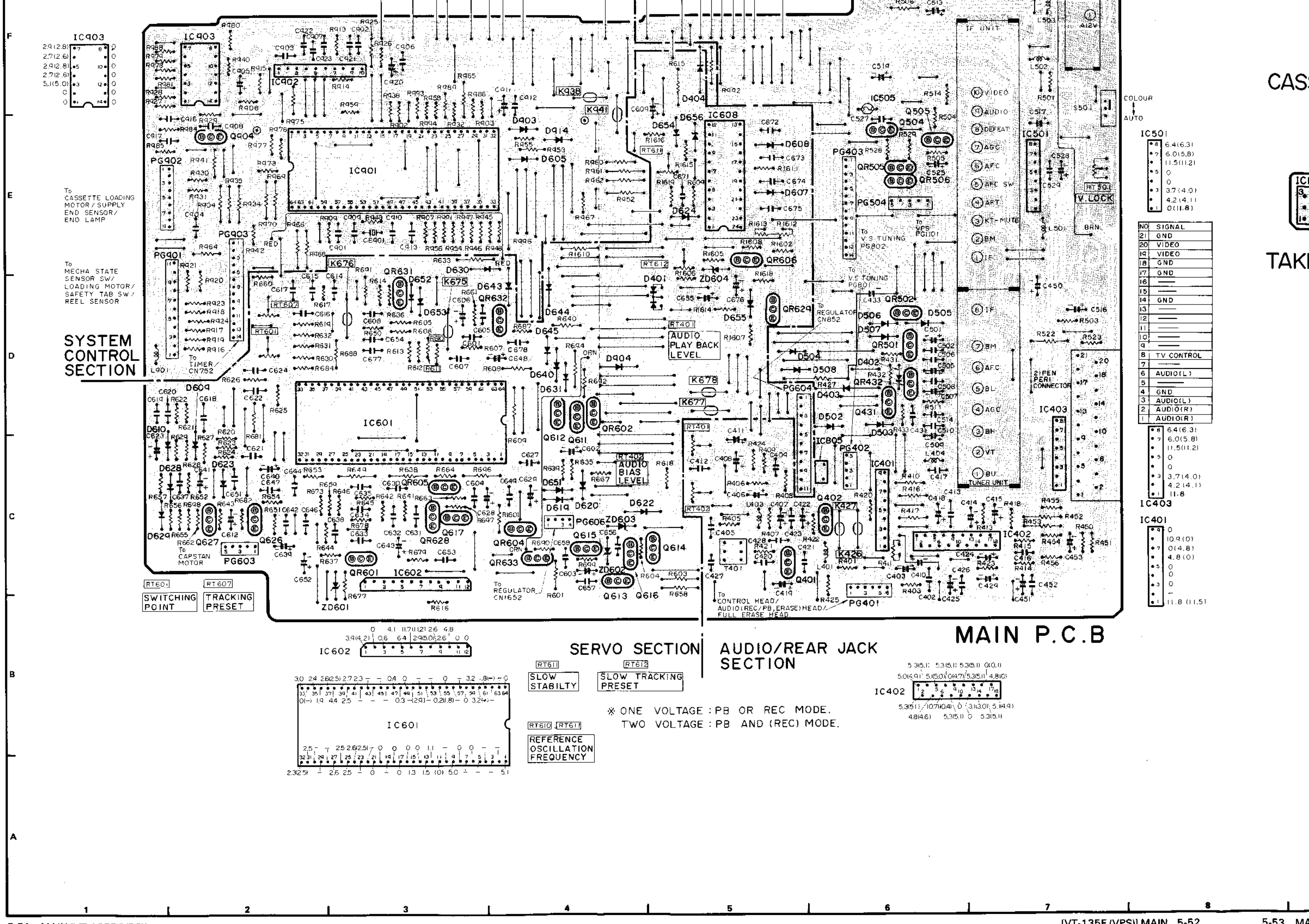
COLOUR
AUTO

IC501

8	6.4(6.3)
7	6.0(5.8)
11.5(11.2)	0
5	0
0	0
3	3.7(4.0)
4.2(4.1)	0(11.8)
11.8	0

IC403

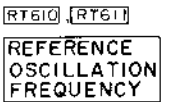
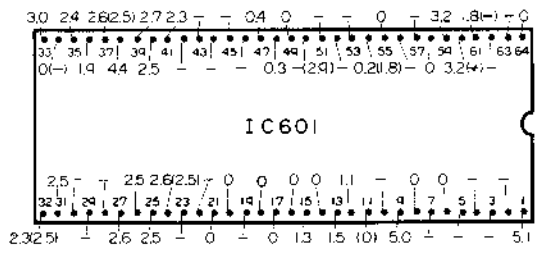
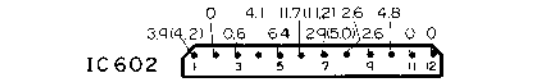
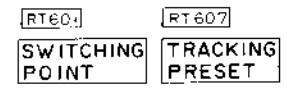
NO	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	---
15	---
14	GND
13	---
12	---
11	---
10	---
9	---
8	TV CONTROL
7	---
6	AUDIO(L)
5	---
4	GND
3	AUDIO(L)
2	AUDIO(R)
1	AUDIO(R)



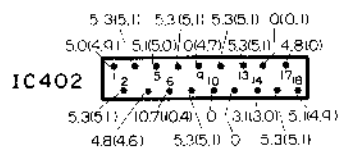
To CASSETTE LOADING MOTOR / SUPPLY END SENSOR / END LAMP

To MECHA STATE SENSOR SW / LOADING MOTOR / SAFETY TAB SW / REEL SENSOR

SYSTEM CONTROL SECTION



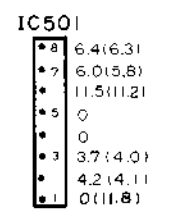
* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGE : PB AND (REC) MODE.



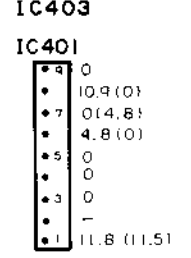
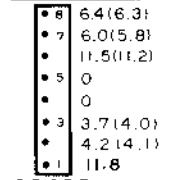
CASSETTE

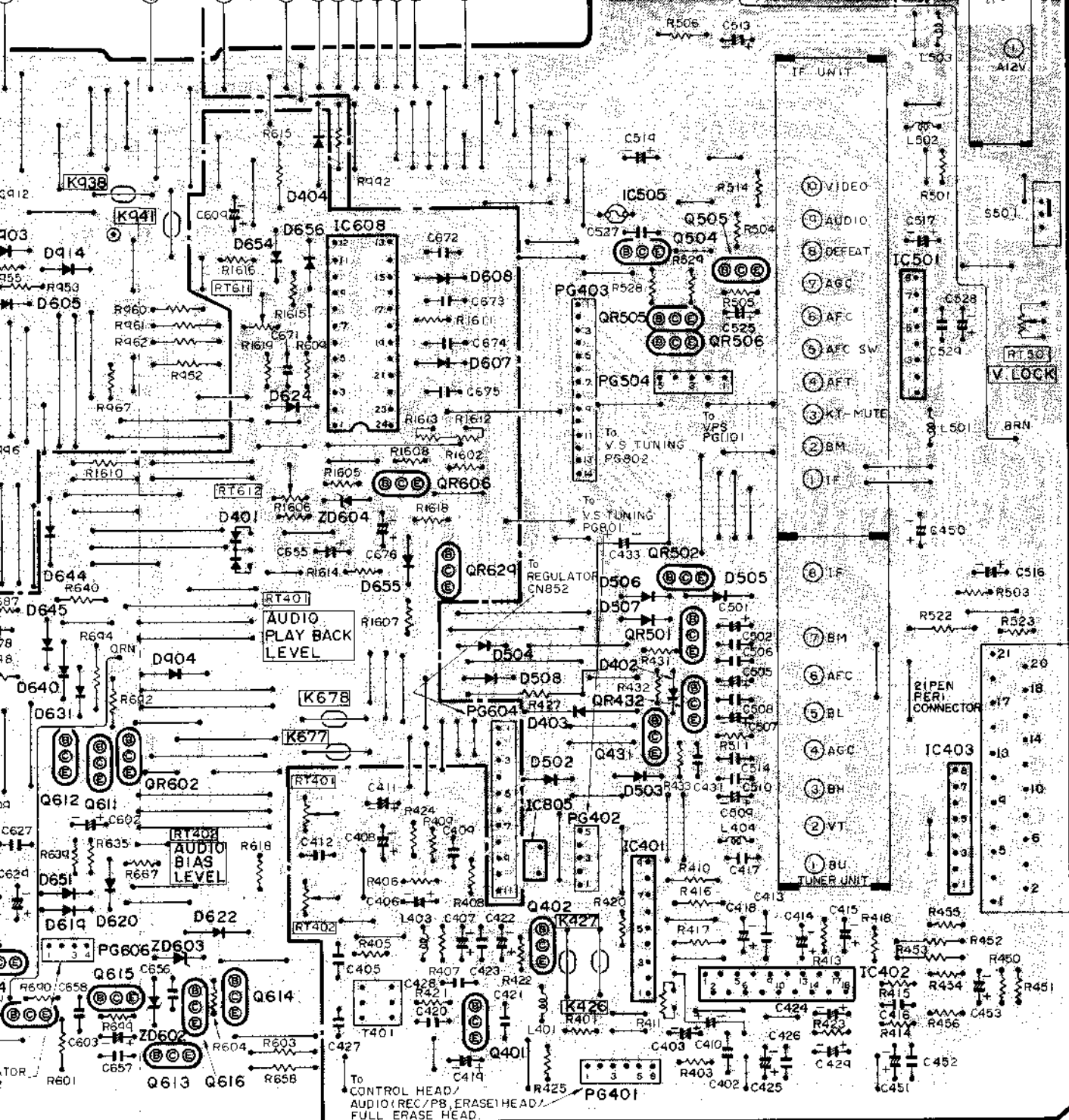
TAKE-UP

COLOUR AUTO



NO	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	---
15	---
14	GND
13	---
12	---
11	---
10	---
9	---
8	TV CONTROL
7	---
6	AUDIO(L)
5	---
4	GND
3	AUDIO(L)
2	AUDIO(R)
1	AUDIO(R)





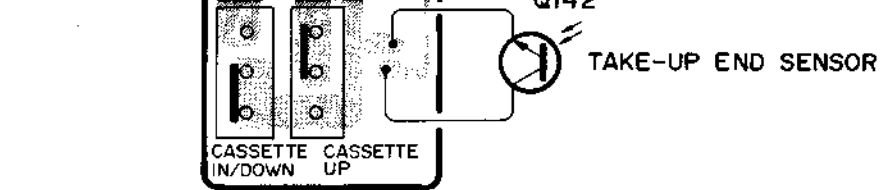
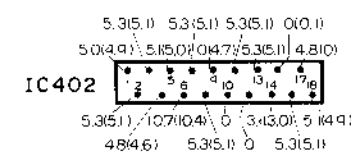
MAIN P.C.B

SERVO SECTION **AUDIO/REAR JACK SECTION**

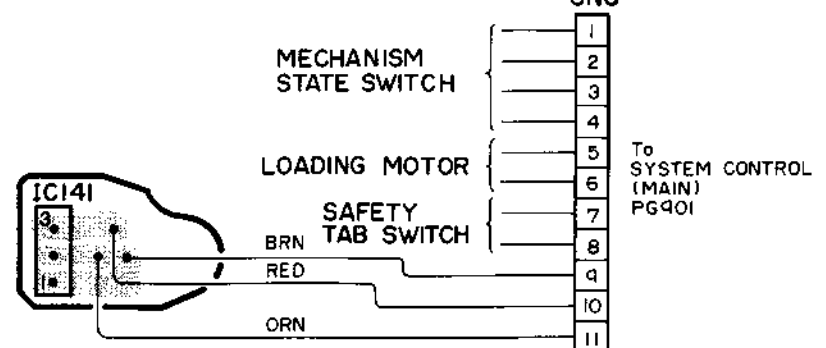
RT61 SLOW STABILTY
RT62 SLOW TRACKING PRESET

RT60, RT61 REFERENCE OSCILLATION FREQUENCY

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGE : PB AND (REC) MODE.

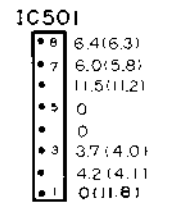


CASSETTE LOADING MOTOR P.C.B

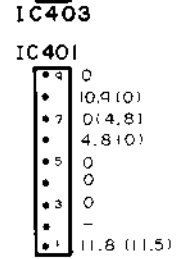
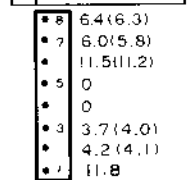


TAKE-UP REEL SENSOR P.C.B

COLOUR
↑
AUTO

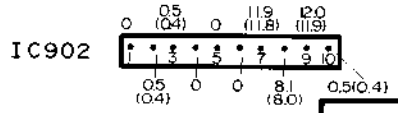
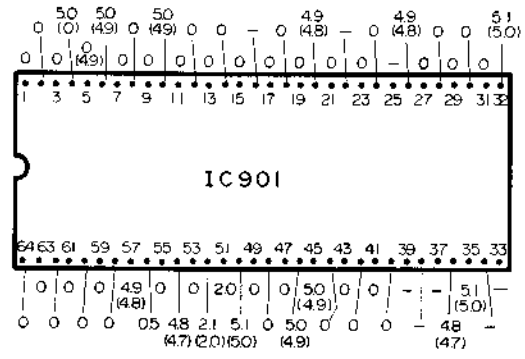


NO	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO(L)
5	
4	GND
3	AUDIO(L)
2	AUDIO(R)
1	AUDIO(R)

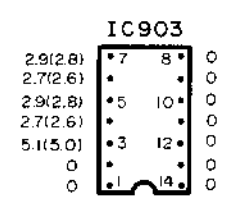


SCHMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V-S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-6 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-16/5-16
AUDIO/REAR JACK.....	5-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18

H
G
F
E
D
C



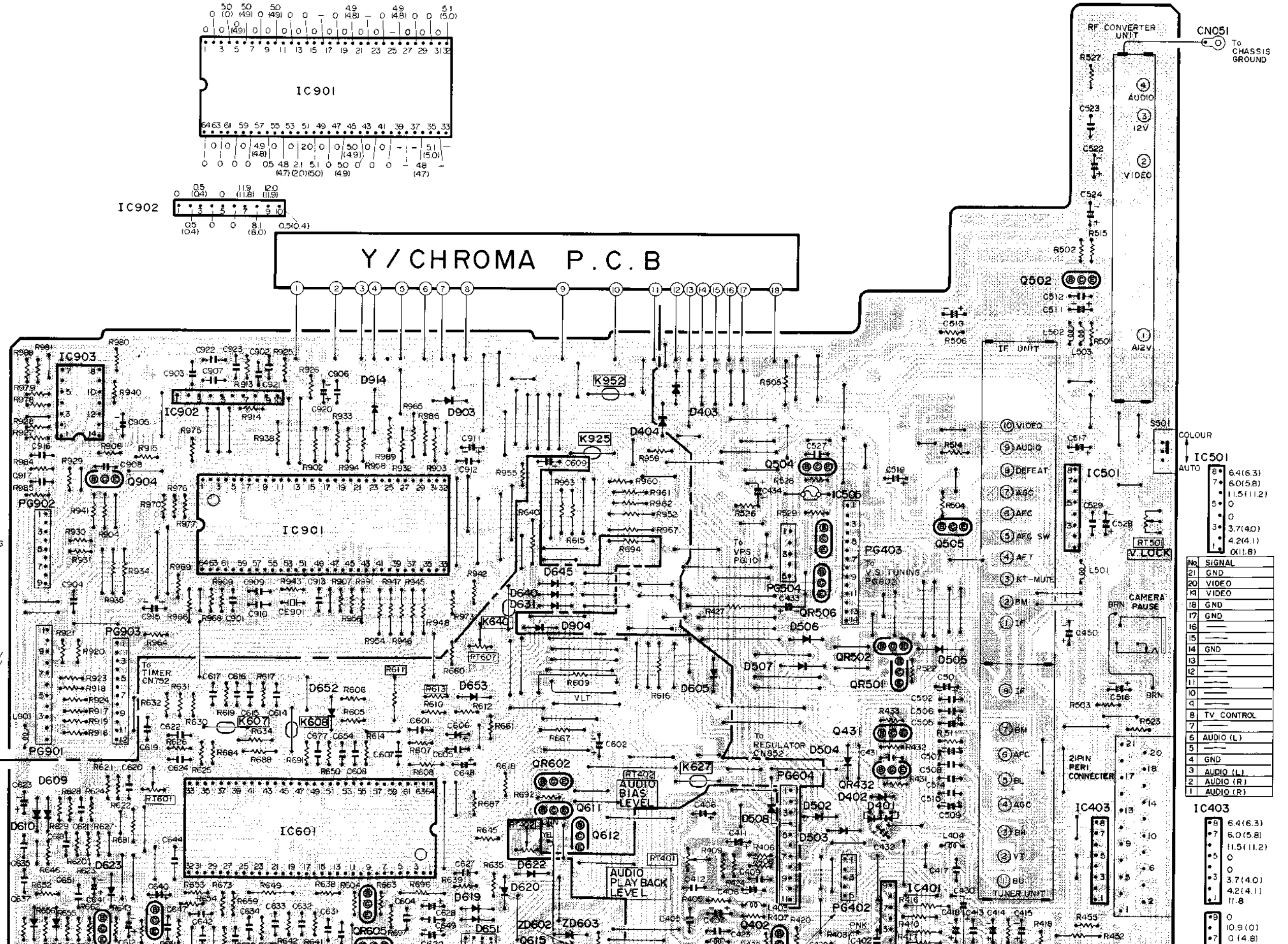
Y / CHROMA P.C.B



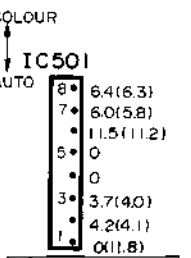
To CASSETTE LOADING MOTOR / SUPPLY END SENSOR / END LAMP

To MECHA STATE SENSOR SW / LOADING MOTOR / SAFETY TAB SW / REEL SENSOR

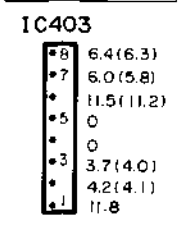
SYSTEM CONTROL SECTION



To CHASSIS GROUND



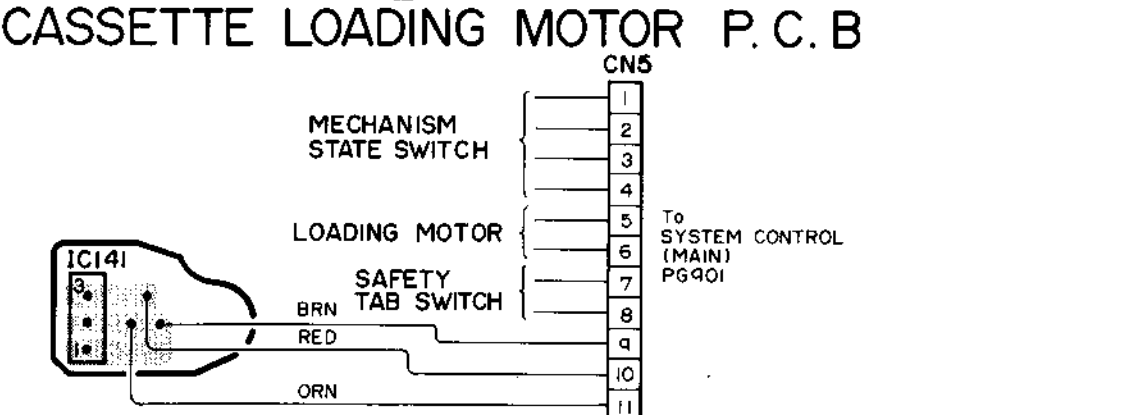
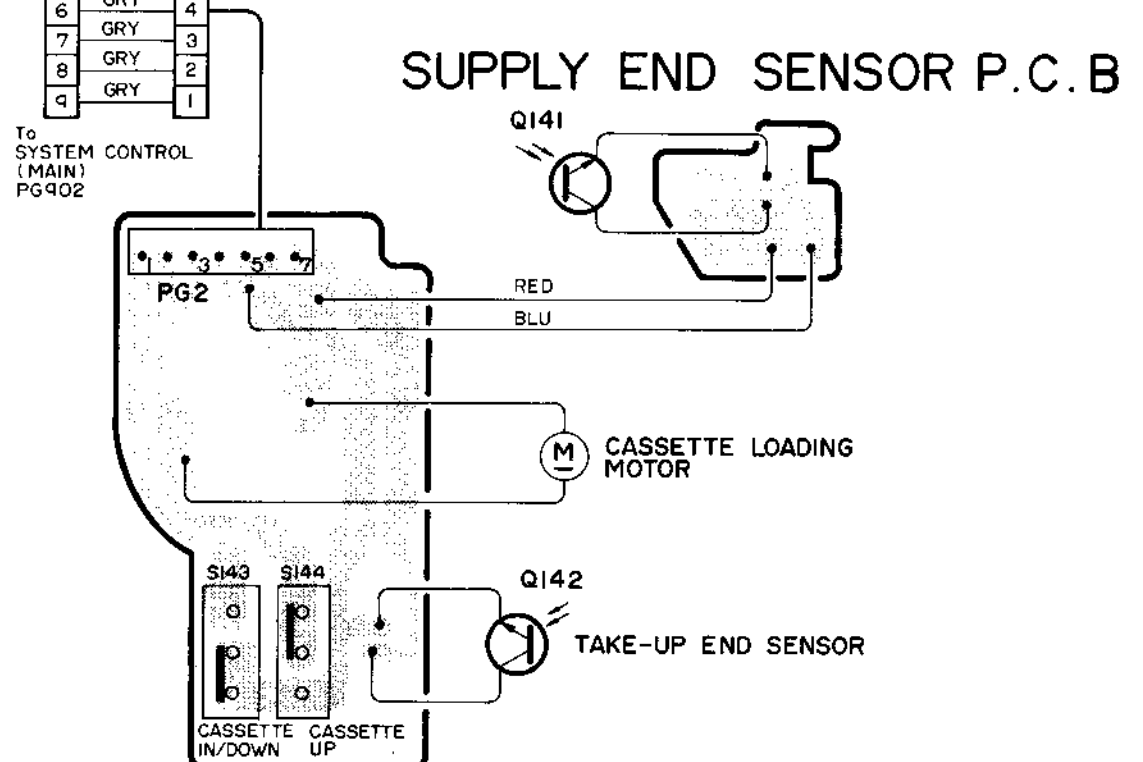
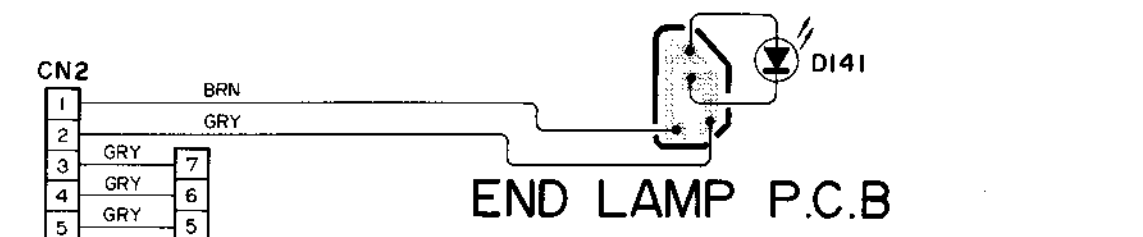
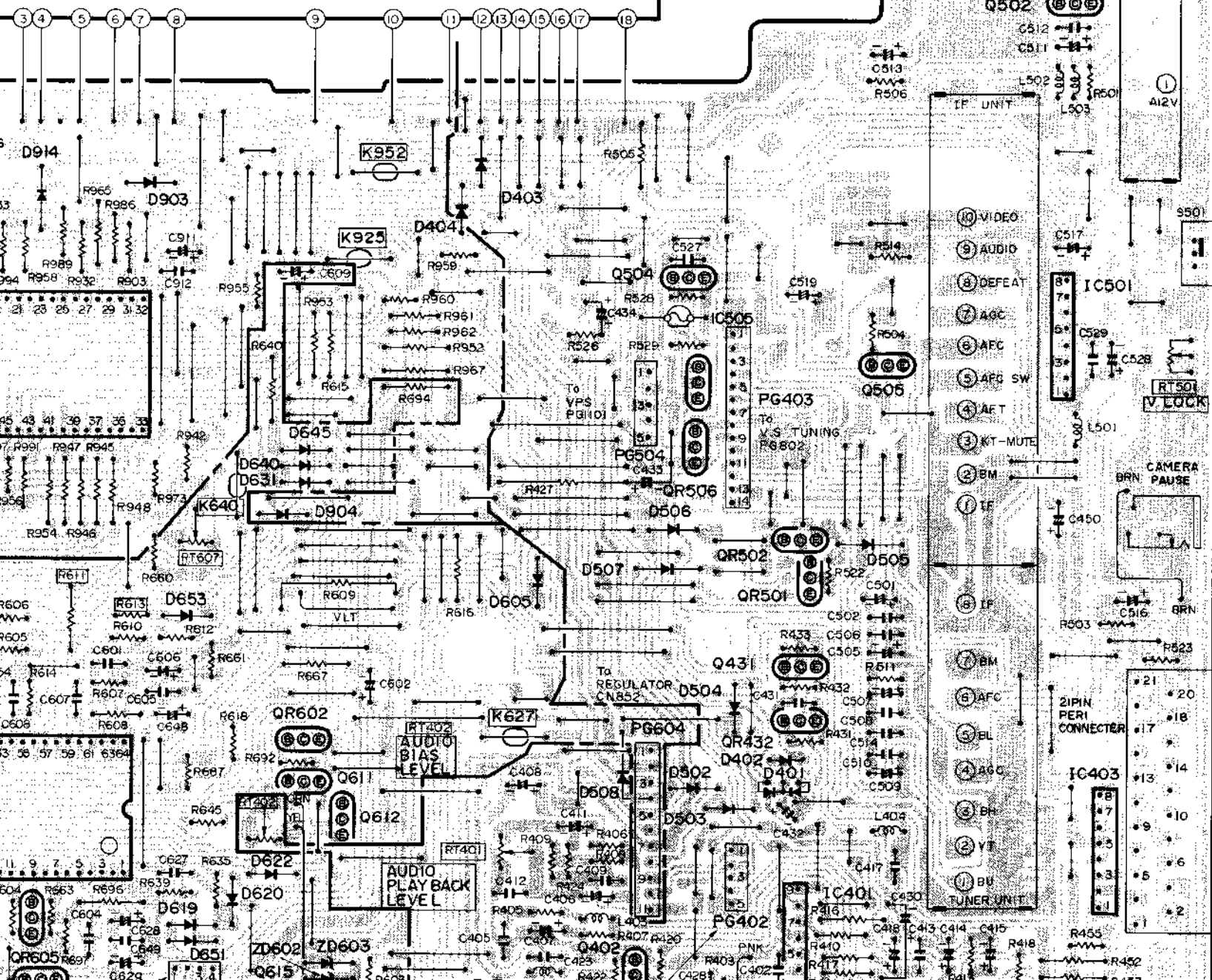
No.	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)



PERIPHERAL BOARD (PERIPHERIE-LEITERPLATTE)

49	49	51
481	0	481
0	0	0
21	23	25
27	29	31
32		
45	43	41
39	37	35
33		
50	0	51
49	0	50
0	0	48
0	0	47

Y / CHROMA P.C.B



IC501

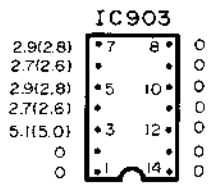
8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	0(11.8)

IC403

8	6.4(6.3)
7	6.0(5.8)
6	11.5(11.2)
5	0
4	0
3	3.7(4.0)
2	4.2(4.1)
1	11.8

IC141

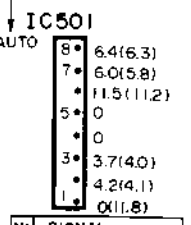
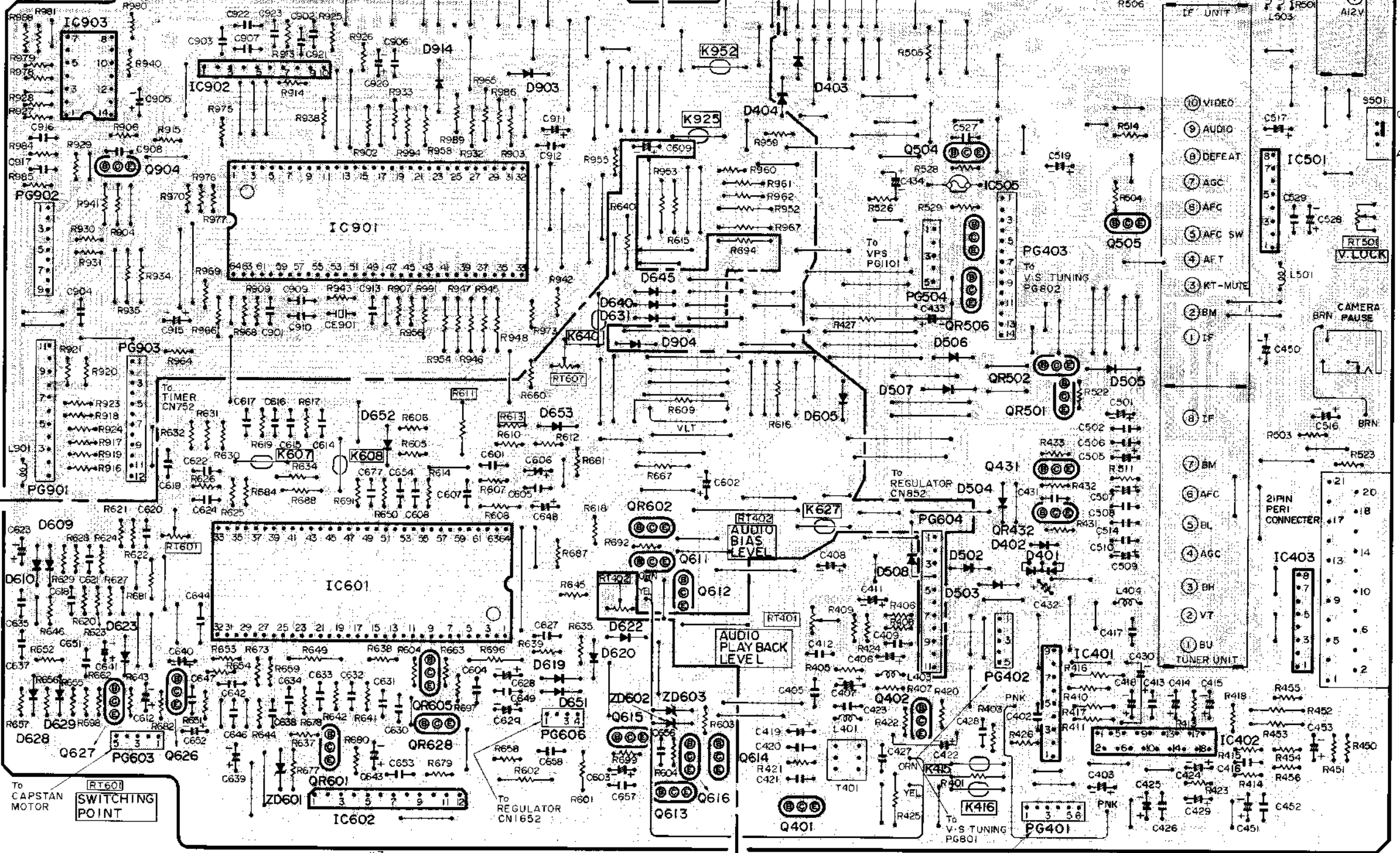
9	0
8	10.9(10)
7	0(4.8)
6	0
5	0
4	0
3	0
2	0
1	0



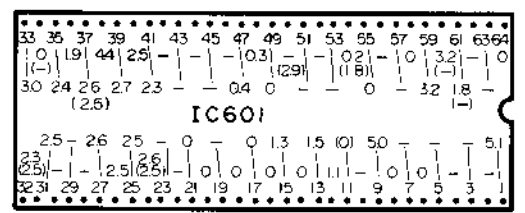
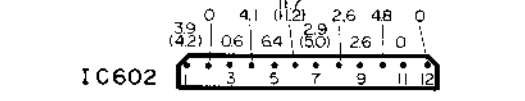
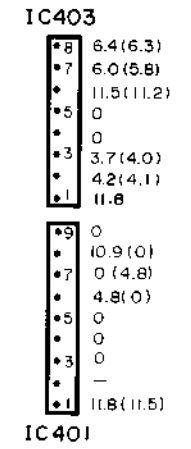
To CASSETTE LOADING MOTOR / SUPPLY END SENSOR / END LAMP

To MECHA STATE SENSOR SW / LOADING MOTOR / SAFETY TAB SW / REEL SENSOR

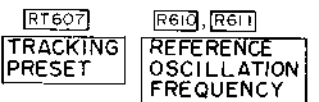
SYSTEM CONTROL SECTION



No	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)



SERVO SECTION

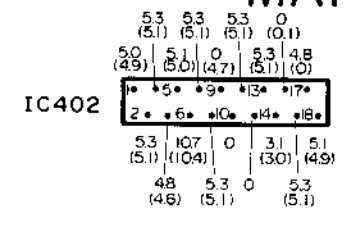


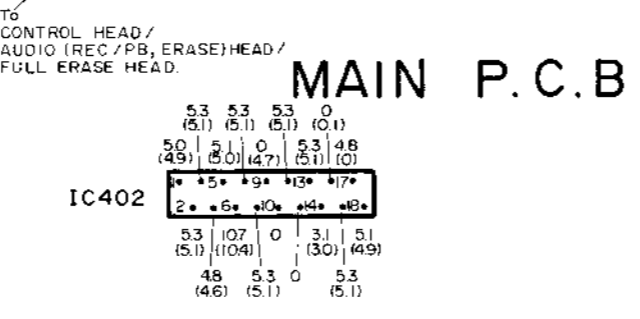
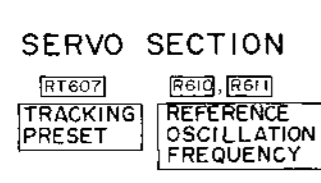
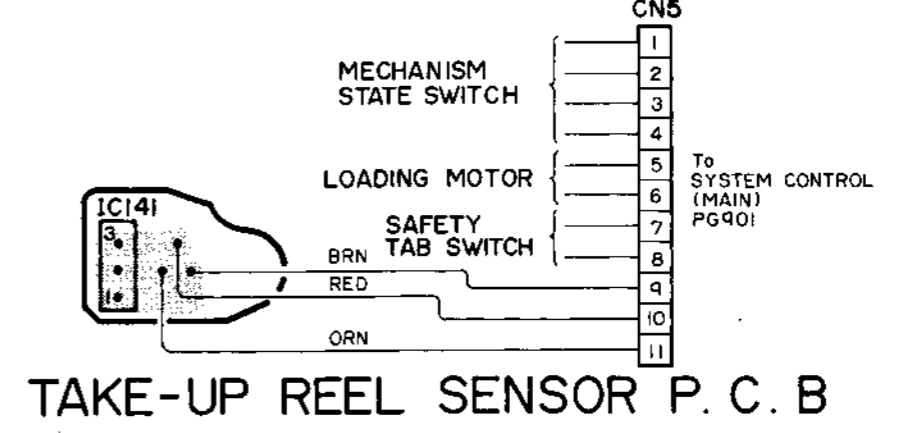
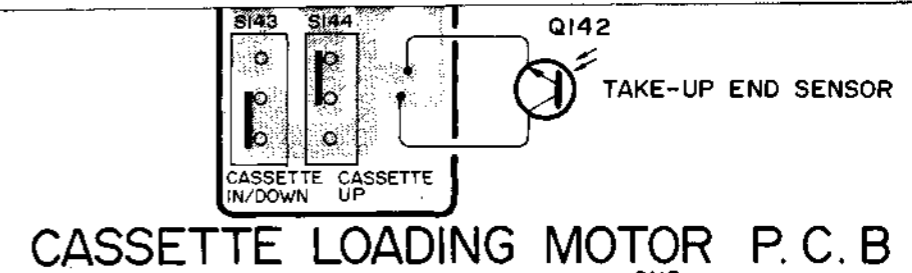
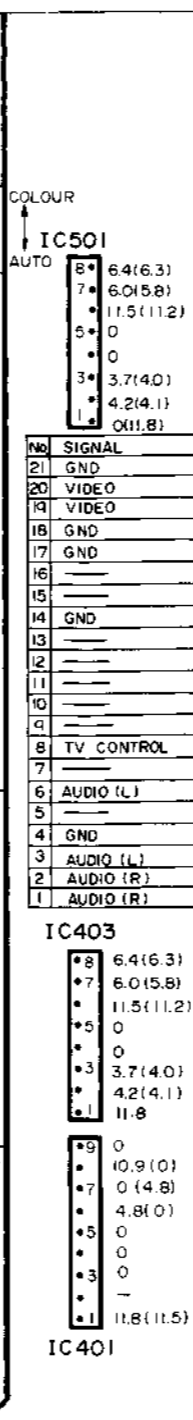
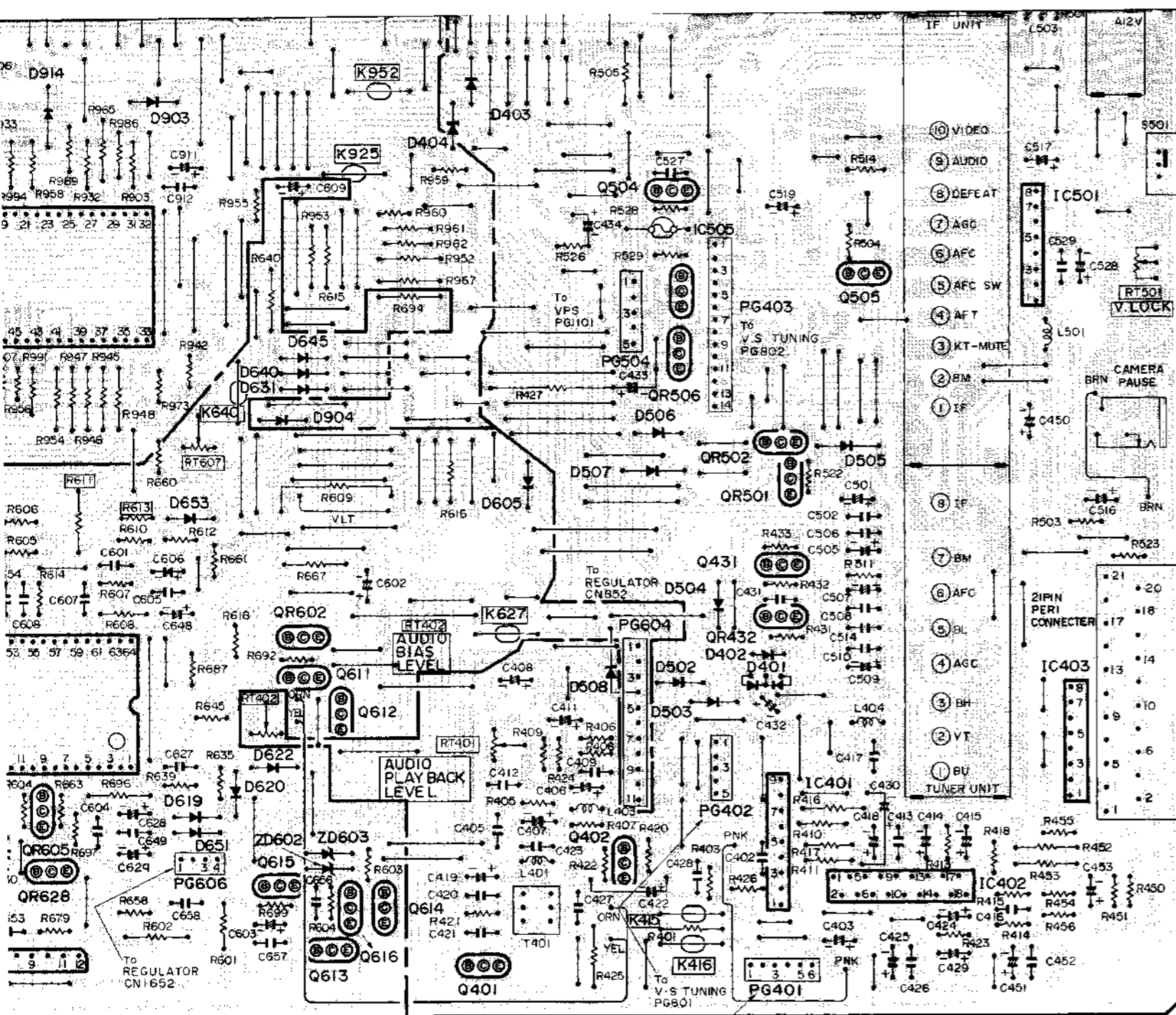
AUDIO / REAR JACK SECTION

* ONE VOLTAGE : PB OR REC MODE.
TWO VOLTAGES : PB AND (REC) MODE.

To CONTROL HEAD / AUDIO (REC / PB, ERASE) HEAD / FULL ERASE HEAD.

MAIN P.C.B



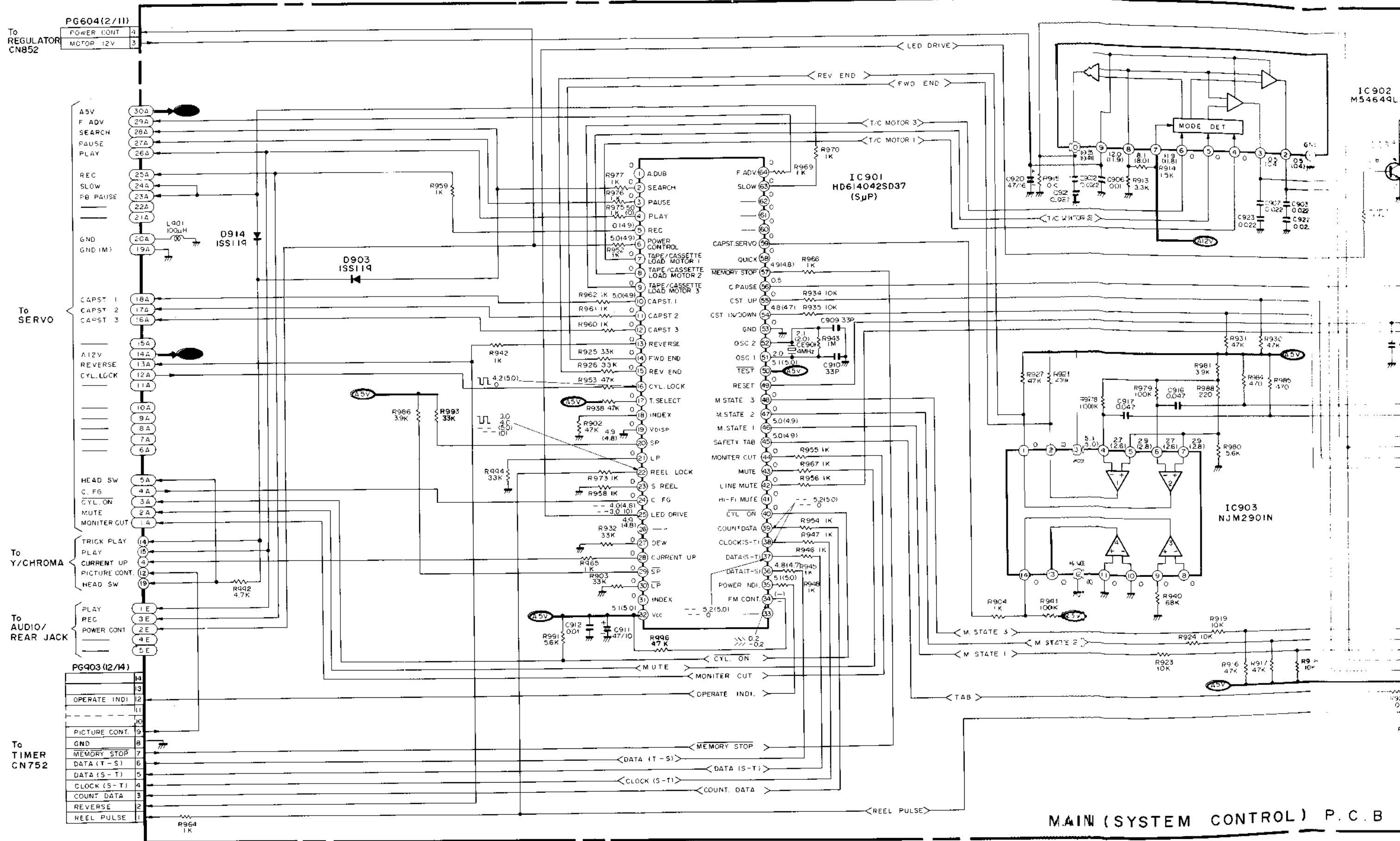


No	SIGNAL
21	GND
20	VIDEO
19	VIDEO
18	GND
17	GND
16	
15	
14	GND
13	
12	
11	
10	
9	
8	TV CONTROL
7	
6	AUDIO (L)
5	
4	GND
3	AUDIO (L)
2	AUDIO (R)
1	AUDIO (R)

IC501	Pin	Value
8	6.4	(6.3)
7	6.0	(5.8)
5	11.5	(11.2)
5	0	
3	3.7	(4.0)
3	4.2	(4.1)
1	0	(1.8)

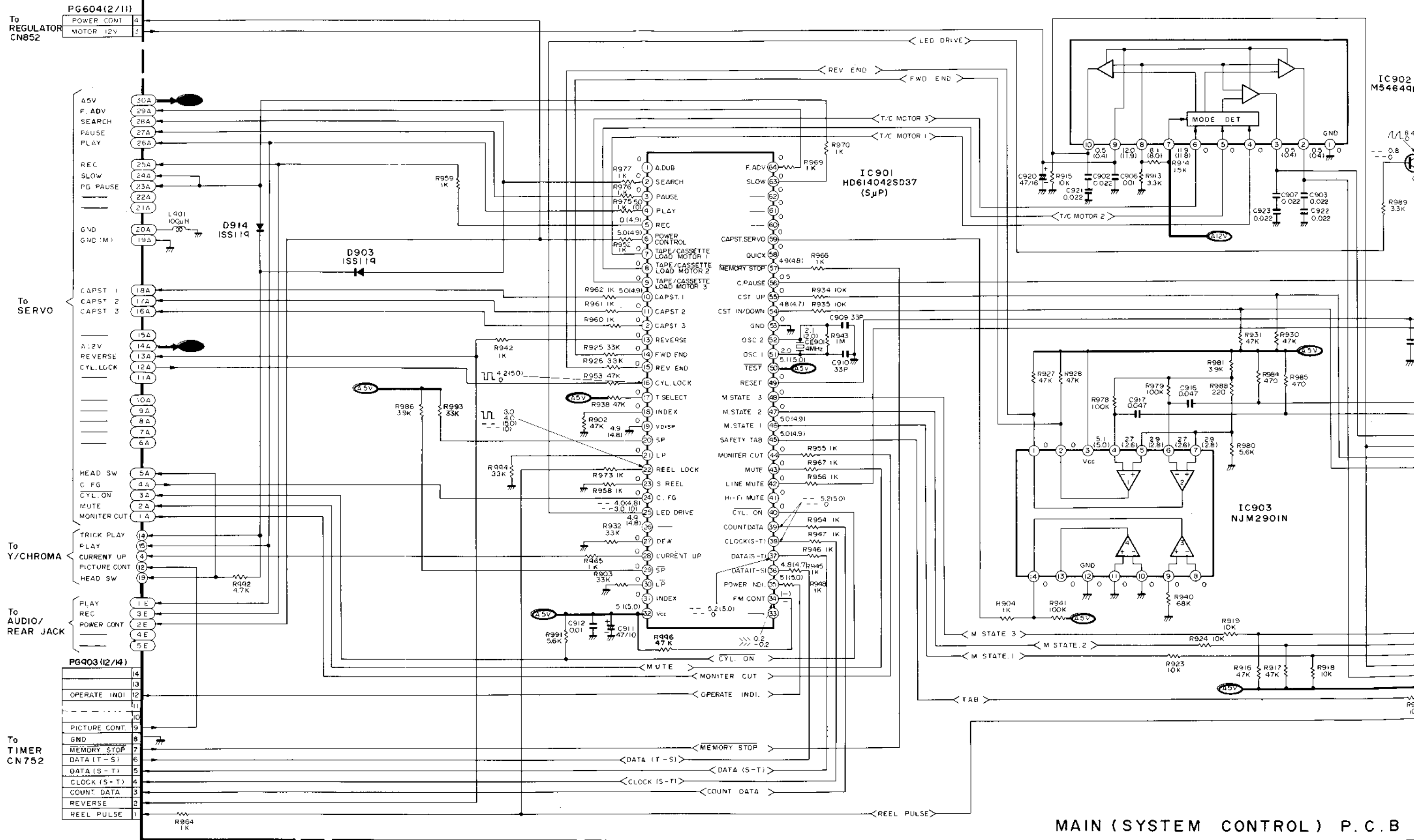
IC403	Pin	Value
8	6.4	(6.3)
7	6.0	(5.8)
5	11.5	(11.2)
5	0	
3	3.7	(4.0)
3	4.2	(4.1)
1	11.8	

IC401	Pin	Value
9	0	
7	10.9	(10)
7	0	(4.8)
5	4.8	(10)
5	0	
3	0	
3	0	
1	11.8	(11.5)



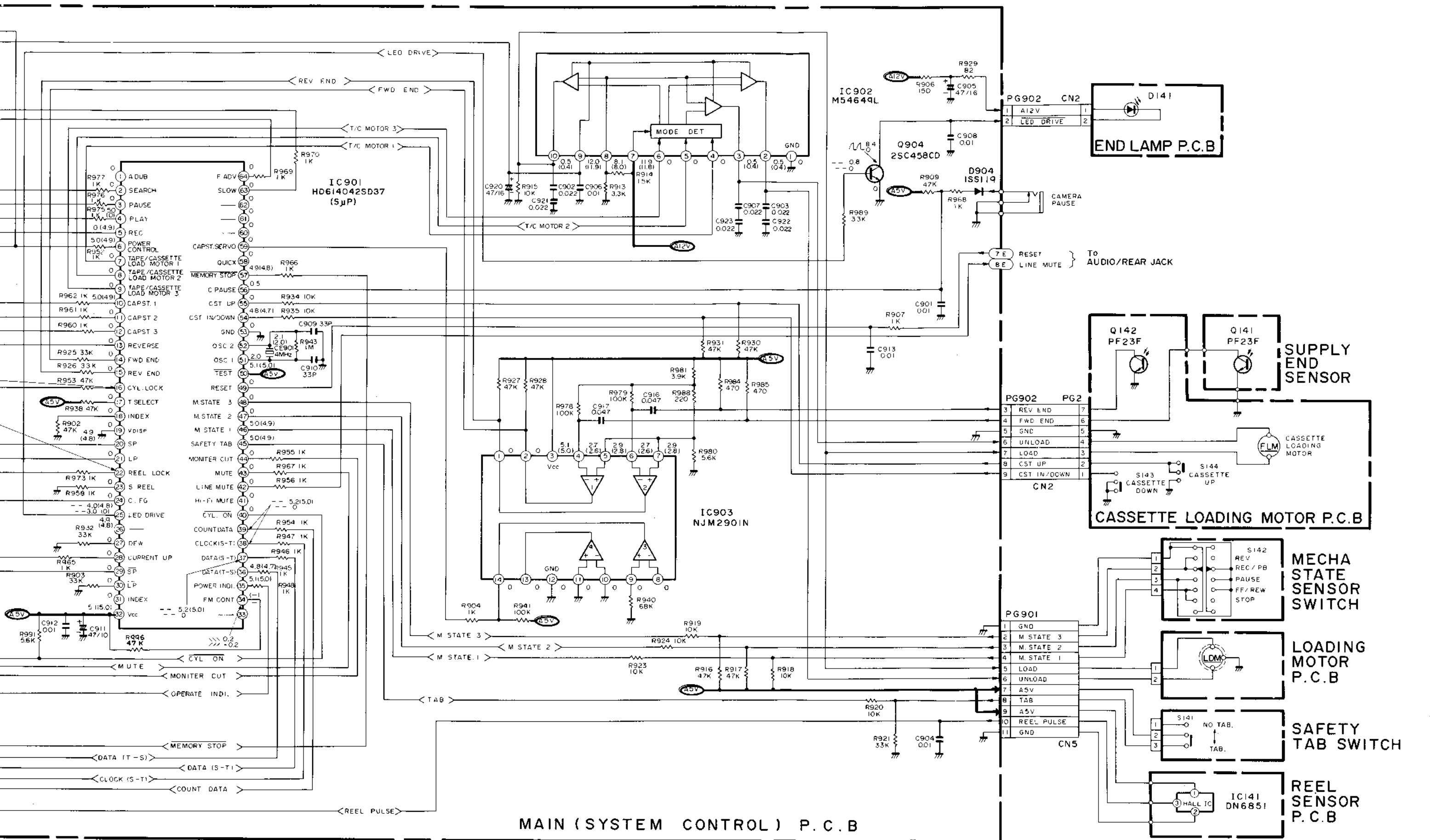
* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.

MAIN (SYSTEM CONTROL) P.C.B



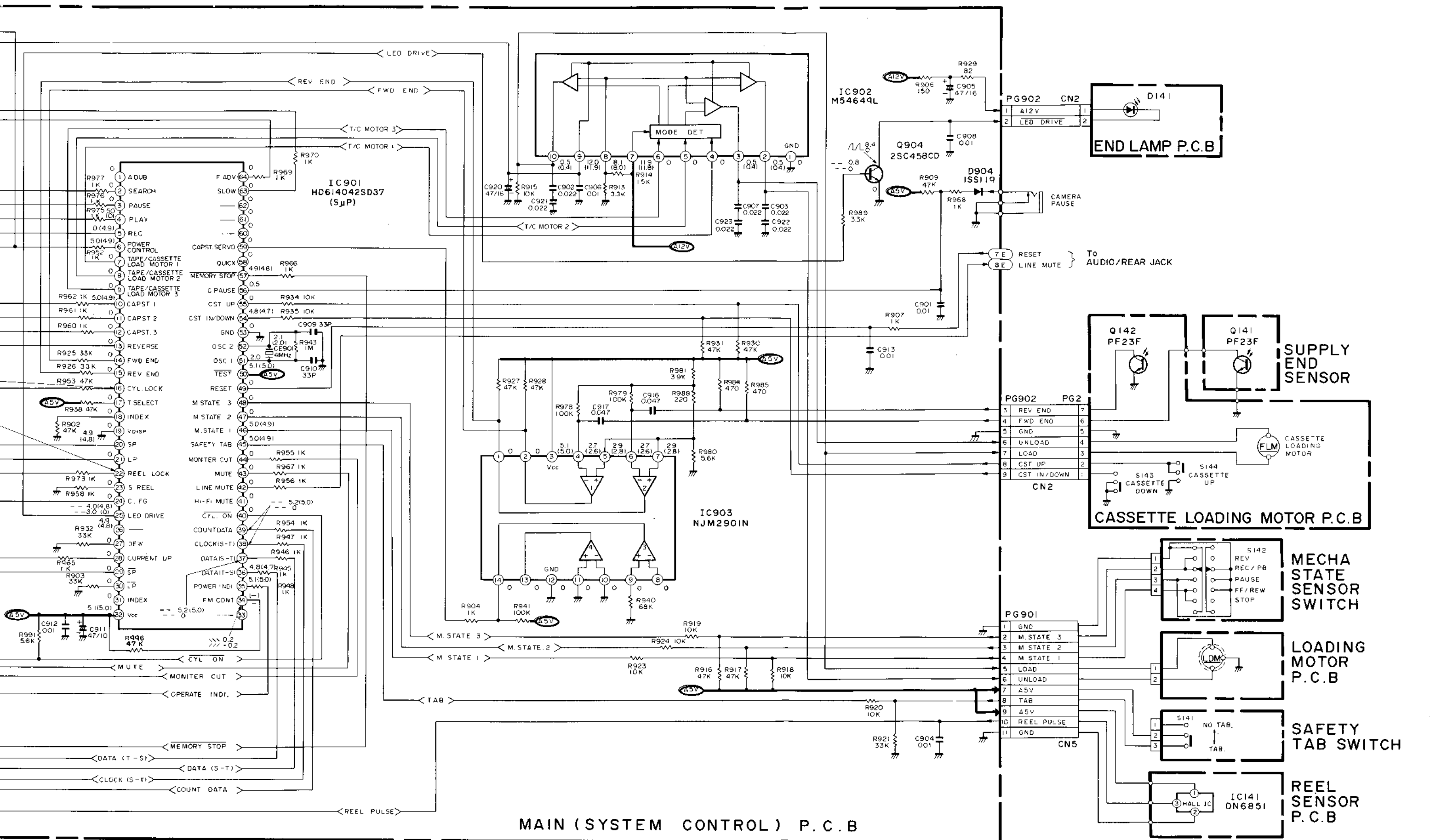
X ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.

MAIN (SYSTEM CONTROL) P.C.B



MAIN (SYSTEM CONTROL) P.C.B

WO VOLTAGES: PB AND (REC) MODE.

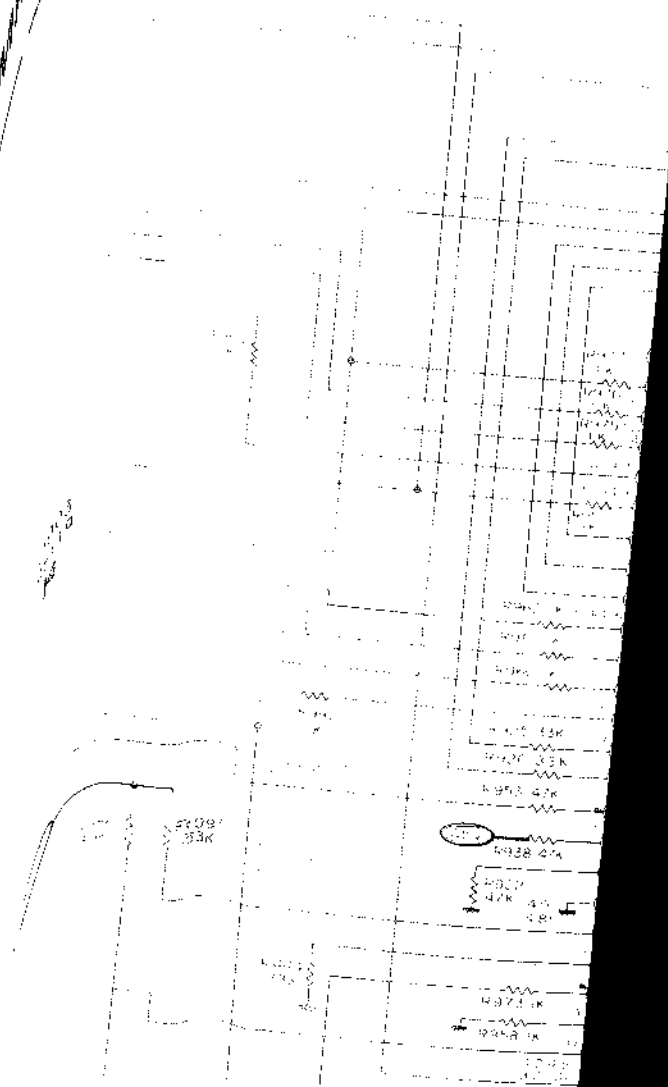


WO VOLTAGES: PB AND (REC) MODE.

ANSCHLÜSSE

(ANFORDERUNG)

VT-135E (VPS)

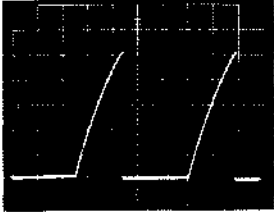


SERVO CIRCUIT WAVEFORMS (WELLENFORM)

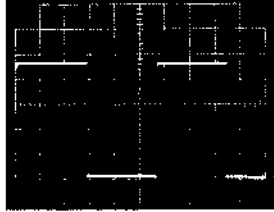
[IC601]

(REC: Colour bar Video in/PB: Alignment tape)

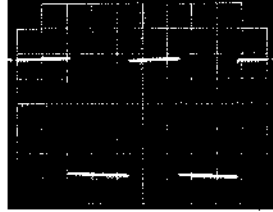
① PIN2 REC/PB
0.5V/10ms. div.



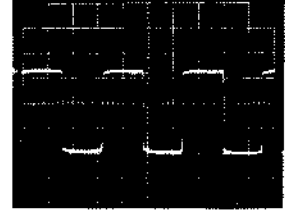
⑥ PIN22 REC/PB
1V/20 μ s. div.



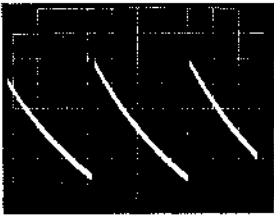
⑪ PIN42 REC/PB
1V/0.1ms. div.



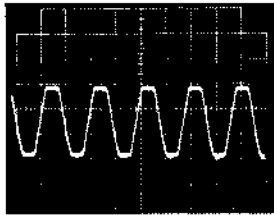
⑯ PIN50 REC/PB
1V/1ms. div.



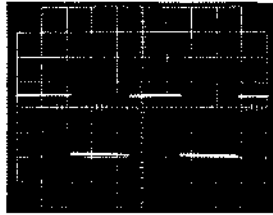
② PIN3 REC/PB
0.1V/10ms. div.



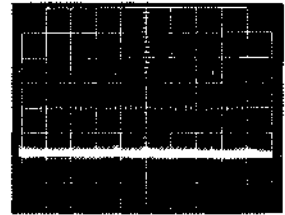
⑦ PIN28 REC/PB
0.5V/1ms. div.



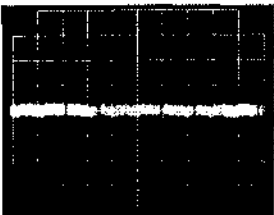
⑫ PIN43 REC/PB
2V/0.1ms. div.



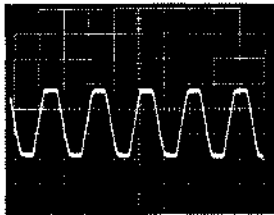
⑰ PIN53 REC/PB
1V/5ms. div.



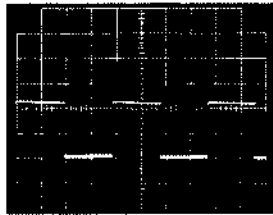
③ PIN4 REC/PB
50mV/10ms. div.



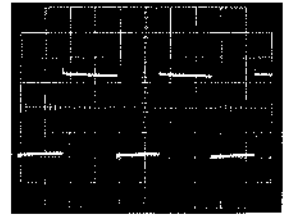
⑧ PIN29 REC/PB
0.5V/1ms. div.



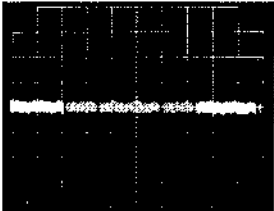
⑬ PIN44 REC/PB
2V/10ms. div.



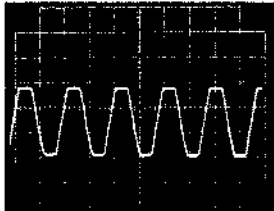
⑱ PIN59 REC
1V/10ms. div.



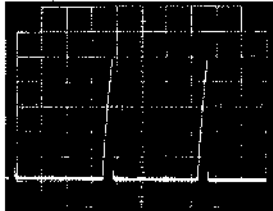
④ PIN5 REC/PB
50mV/10ms. div.



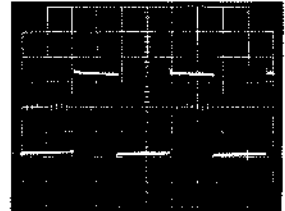
⑨ PIN30 REC/PB
1V/1ms. div.



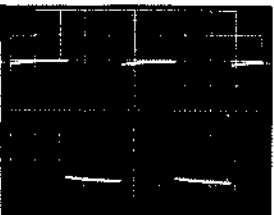
⑭ PIN45 REC/PB
0.5V/5ms. div.



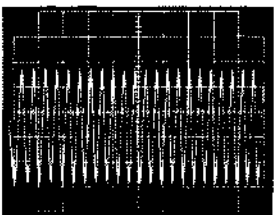
⑲ PIN60 REC
1V/10ms. div.



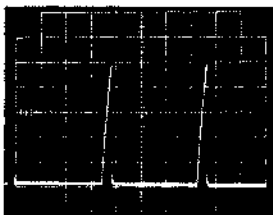
⑤ PIN11 REC/PB
1V/0.2ms. div.



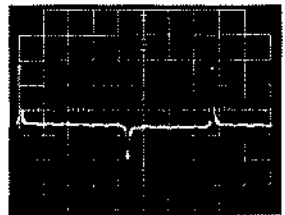
⑩ PIN32 REC/PB
50mV/0.5 μ s. div.



⑮ PIN46 REC/PB
0.5V/5ms. div.

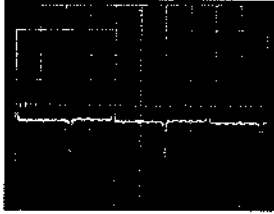


⑳ PIN62 PB
1V/5ms. div.



[IC601]

① PIN63 PB
1V/10ms. div.



SCHEMATIC DIAGRAM	PAGE
VT-125E/VT-135E	
INTERNAL WIRING	
DIAGRAM.....	5-2 /5-2
IF UNIT.....	5-4 /5-4
TUNER UNIT.....	5-6 /5-6
V-S TUNING.....	5-10/5-10
Y/EQUALIZER.....	5-34/5-34
VPS.....	5-40/5-40
TIMER/OPERATION	
SWITCH.....	5-6 /5-6
SYSTEM CONTROL.....	5-45/5-54
REMOTE CONTROL.....	5-16/5-16
AUDIO/REAR JACK.....	5-42/5-57
RF CONVERTER.....	5-22/5-22
PREAMP.....	5-29/5-29
SERVO.....	5-35/5-62
Y/CHROMA.....	5-23/5-23
REGULATOR/CYLINDER	
MOTOR DRIVE.....	5-18/5-18

**REPLACEMENT
ELECTRICAL**

SYMBOL-NO.

- C 201
- C 202
- C 203
- C 206
- C 209
- C 211
- C 213
- C 214
- C 215
- C 216
- C 217
- C 218
- C 221
- C 222
- C 228
- C 232
- C 234
- C 235
- C 242
- C 243
- C 244
- C 245
- C 246
- C 247
- C 248
- C 249
- C 250
- C 251
- C 252
- C 253
- C 256
- C 257
- C 301
- C 303
- C 305
- C 307
- C 308
- C 309
- C 310
- C 311
- C 312
- C 313
- C 317
- C 351
- C 355
- C 359
- C 360
- C 361
- C 362
- C 406
- C 416

REPLACEMENT PARTS LIST (ERSATZTEILLISTE)

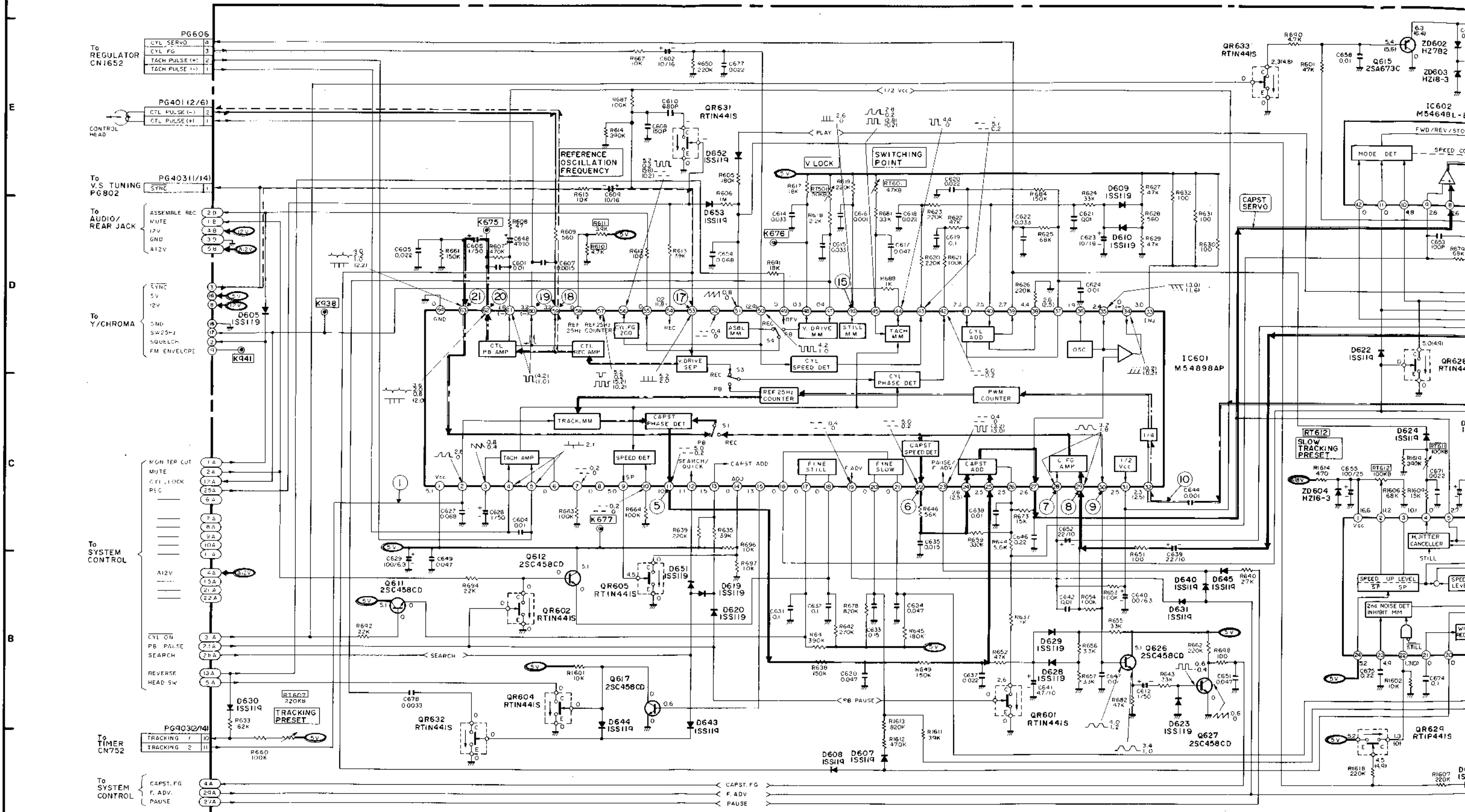
ELECTRICAL PARTS LIST [For VT-125E (VPS/VPSK)]

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS					
C 201	0208374	CERAMIC DISC 10000PF+-20% 16V	C 419	0256622	ELECTROLYTIC 33UF 16V
C 202	0256613	ELECTROLYTIC 4.7UF 35V	C 422	0256196	CAPACITOR 100UF 16V ELECTROLYTIC
C 203	0256614	ELECTROLYTIC 10UF 16V	C 423	0208374	CERAMIC DISC 10000PF+-20% 16V
C 206	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 425	0256196	CAPACITOR 100UF 16V ELECTROLYTIC
C 209	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 426	0208374	CERAMIC DISC 10000PF+-20% 16V
C 211	0208355	CERAMIC DISC 39PF+-5% 50V	C 428	0239365	CERAMIC DISC 680PF+-10% 50V
C 213	0256135	CAPACITOR 10UF 16V ELECTROLYTIC	C 430	0256622	ELECTROLYTIC 33UF 16V
C 214	0239357	CERAMIC DISC 56PF+-5% 50V	C 431	0208374	CERAMIC DISC 10000PF+-20% 16V
C 215	0239350	CERAMIC DISC 15PF+-5% 50V	C 433	0256614	ELECTROLYTIC 10UF 16V
C 216	0239355	CERAMIC DISC 39PF+-5% 50V	C 434	0256606	ELECTROLYTIC 1MF.50V
C 217	0256834	ELECTROLYTIC 10UF 16V	C 451	0256627	ELECTROLYTIC 47MF.16V
C 218	0208364	CERAMIC DISC 470PF+-10% 50V	C 452	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 221	0239361	CERAMIC DISC 150PF+-10% 50V	C 502	0208374	CERAMIC DISC 10000PF+-20% 16V
C 222	0208355	CERAMIC DISC 39PF+-5% 50V	C 506	0208374	CERAMIC DISC 10000PF+-20% 16V
C 228	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 507	0256614	ELECTROLYTIC 10UF 16V
C 232	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 508	0208374	CERAMIC DISC 10000PF+-20% 16V
C 234	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 510	0208374	CERAMIC DISC 10000PF+-20% 16V
C 235	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 512	0208374	CERAMIC DISC 10000PF+-20% 16V
C 242	0208374	CERAMIC DISC 10000PF+-20% 16V	C 513	0256789	CAPACITOR 470UF 10V ELECTROLYTIC
C 243	0239375	CERAMIC DISC 10000PF+-20%	C 519	0256135	CAPACITOR 10UF 16V ELECTROLYTIC
C 244	0208374	CERAMIC DISC 10000PF+-20% 16V	C 523	0208374	CERAMIC DISC 10000PF+-20% 16V
C 245	0239374	CERAMIC DISC 0.01UF+-20% 50V	C 524	0256782	CAPACITOR 220UF 10V ELECTROLYTIC
C 246	0256613	ELECTROLYTIC 4.7UF 35V	C 527	0208374	CERAMIC DISC 10000PF+-20% 16V
C 247	0208354	CERAMIC DISC 33PF+-5% 50V	C 529	0208374	CERAMIC DISC 10000PF+-20% 16V
C 248	0208374	CERAMIC DISC 10000PF+-20% 16V	C 604	0208374	CERAMIC DISC 10000PF+-20% 16V
C 249	0208357	CERAMIC DISC 56PF+-5% 50V	C 606	0256606	ELECTROLYTIC 1MF.50V
C 250	0208359	CERAMIC DISC 82PF+-10%	C 607	0208368	CERAMIC DISC 1500PF+-20% 50V
C 251	0208350	CERAMIC DISC 15PF+-5% 50V	C 608	0208365	CERAMIC DISC 680PF+-10% 50V
C 252	0256611	ELECTROLYTIC 0.33UF 50V	C 616	0208367	CERAMIC DISC 1000PF+-10% 50V
C 253	0239356	CERAMIC DISC 47PF+-5% 50V	C 618	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 256	0208374	CERAMIC DISC 10000PF+-20% 16V	C 620	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 257	0256194	ELECTROLYTIC 470MF.10V	C 621	0208374	CERAMIC DISC 10000PF+-20% 16V
C 301	0208351	CERAMIC DISC 18PF 50V	C 624	0208374	CERAMIC DISC 10000PF+-20% 16V
C 303	0256614	ELECTROLYTIC 10UF 16V	C 637	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 305	0256614	ELECTROLYTIC 470MF.10V	C 638	0208374	CERAMIC DISC 10000PF+-20% 16V
C 307	0256614	ELECTROLYTIC 10UF 16V	C 641	0256475	TANTALUM 4.7UF+-30% 10V
C 308	0256614	ELECTROLYTIC 10UF 16V	C 642	0208374	CERAMIC DISC 10000PF+-20% 16V
C 309	0208365	CERAMIC DISC 680PF+-10% 50V	C 644	0208367	CERAMIC DISC 1000PF+-10% 50V
C 310	0208362	CERAMIC DISC 220PF+-10% 50V	C 652	0256617	ELECTROLYTIC 22MF.10V
C 311	0208374	CERAMIC DISC 10000PF+-20% 16V	C 653	0208360	CERAMIC DISC 100PF+-10% 50V
C 312	0239363	CERAMIC DISC 330PF+-10%	C 656	0208374	CERAMIC DISC 10000PF+-20% 16V
C 313	0208352	CERAMIC DISC 22PF 50V	C 657	0208374	CERAMIC DISC 10000PF+-20% 16V
C 317	0208355	CERAMIC DISC 39PF+-5% 50V	C 658	0208374	CERAMIC DISC 10000PF+-20% 16V
C 351	0208374	CERAMIC DISC 10000PF+-20% 16V	C 677	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 355	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 751	0256488	CAPACITOR 22UF 5V
C 359	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 752	0256626	ELECTROLYTIC 47UF 6.3V
C 360	0208358	CERAMIC DISC 68PF+-5% 50V	C 753	0208374	CERAMIC DISC 10000PF+-20% 16V
C 361	0256614	ELECTROLYTIC 10UF 16V	C 754	0256626	ELECTROLYTIC 47UF 6.3V
C 362	0256613	ELECTROLYTIC 4.7UF 35V	C 755	0208374	CERAMIC DISC 10000PF+-20% 16V
C 406	0256606	ELECTROLYTIC 1MF.50V	C 756	0256606	ELECTROLYTIC 1MF.50V
C 416	0208367	CERAMIC DISC 1000PF+-10% 50V	C 757	0256612	ELECTROLYTIC 0.47UF 50V
			C 759	0208375	CERAMIC DISC 22000PF+80-20% 25V

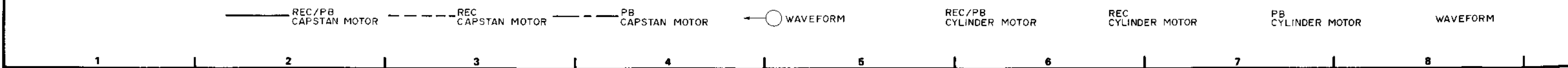
REPLACEMENT PARTS LIST (ERSATZTEILLISTE)

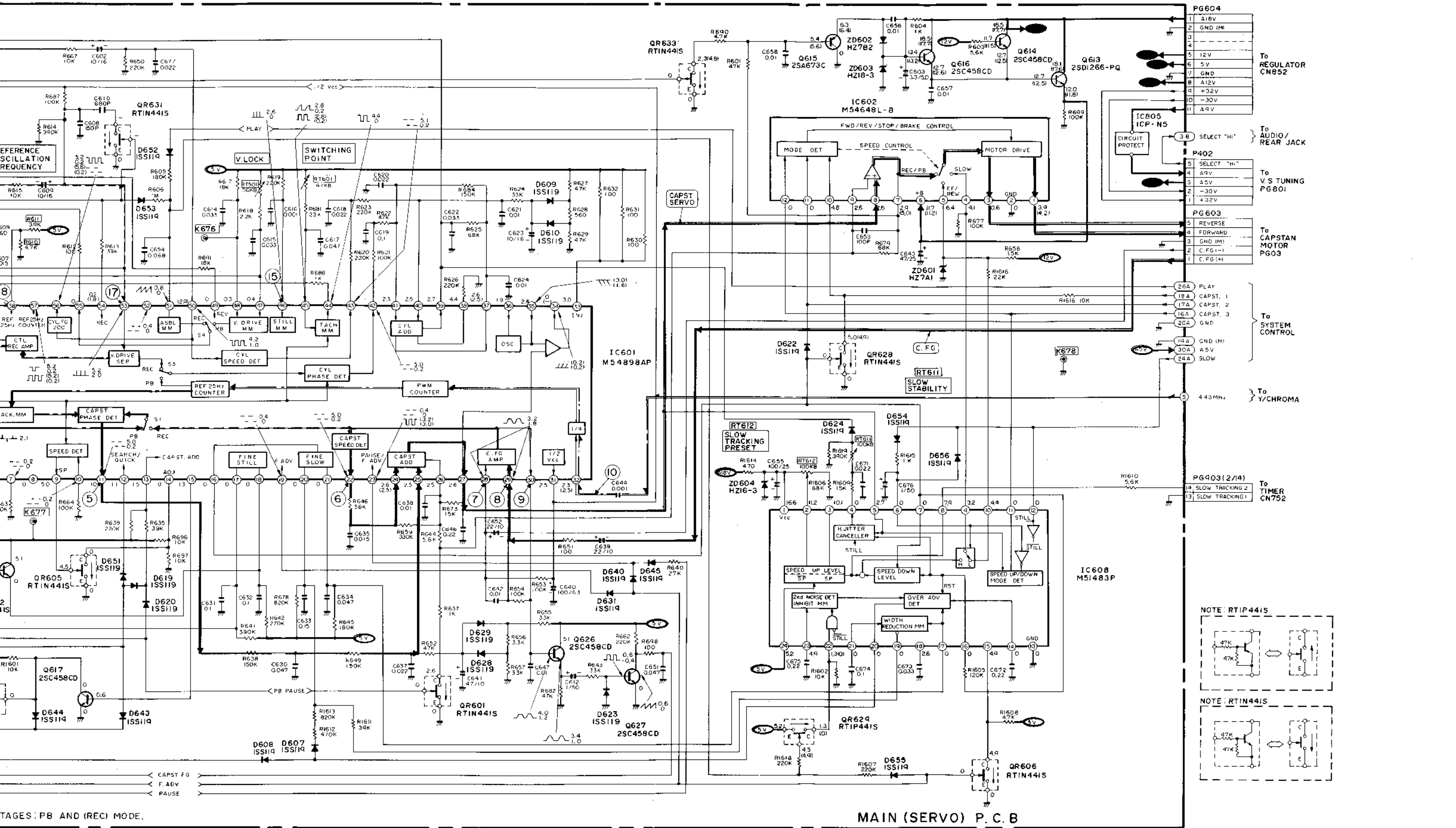
ELECTRICAL PARTS LIST [For VT-125E (VPS/VPSK)]

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS					
C 201	0208374	CERAMIC DISC 10000PF+-20% 16V	C 419	0256622	ELECTROLYTIC 33UF 16V
C 202	0256613	ELECTROLYTIC 4.7UF 35V	C 422	0256196	CAPACITOR 100UF 16V ELECTROLYTIC
C 203	0256614	ELECTROLYTIC 10UF 16V	C 423	0208374	CERAMIC DISC 10000PF+-20% 16V
C 206	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 425	0256196	CAPACITOR 100UF 16V ELECTROLYTIC
C 209	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 426	0208374	CERAMIC DISC 10000PF+-20% 16V
C 211	0208355	CERAMIC DISC 39PF+-5% 50V	C 428	0239365	CERAMIC DISC 680PF+-10% 50V
C 213	0256135	CAPACITOR 10UF 16V ELECTROLYTIC	C 430	0256622	ELECTROLYTIC 33UF 16V
C 214	0239357	CERAMIC DISC 56PF+-5% 50V	C 431	0208374	CERAMIC DISC 10000PF+-20% 16V
C 215	0239350	CERAMIC DISC 15PF+-5% 50V	C 433	0256614	ELECTROLYTIC 10UF 16V
C 216	0239355	CERAMIC DISC 39PF+-5% 50V	C 434	0256606	ELECTROLYTIC 1MF.50V
C 217	0256834	ELECTROLYTIC 10UF 16V	C 451	0256627	ELECTROLYTIC 47MF.16V
C 218	0208364	CERAMIC DISC 470PF+-10% 50V	C 452	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 221	0239361	CERAMIC DISC 150PF+-10% 50V	C 502	0208374	CERAMIC DISC 10000PF+-20% 16V
C 222	0208355	CERAMIC DISC 39PF+-5% 50V	C 506	0208374	CERAMIC DISC 10000PF+-20% 16V
C 228	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 507	0256614	ELECTROLYTIC 10UF 16V
C 232	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 508	0208374	CERAMIC DISC 10000PF+-20% 16V
C 234	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 510	0208374	CERAMIC DISC 10000PF+-20% 16V
C 235	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 512	0208374	CERAMIC DISC 10000PF+-20% 16V
C 242	0208374	CERAMIC DISC 10000PF+-20% 16V	C 513	0256789	CAPACITOR 470UF 10V ELECTROLYTIC
C 243	0239375	CERAMIC DISC 10000PF+-20%	C 519	0256135	CAPACITOR 10UF 16V ELECTROLYTIC
C 244	0208374	CERAMIC DISC 10000PF+-20% 16V	C 523	0208374	CERAMIC DISC 10000PF+-20% 16V
C 245	0239374	CERAMIC DISC 0.01UF+-20% 50V	C 524	0256782	CAPACITOR 220UF 10V ELECTROLYTIC
C 246	0256613	ELECTROLYTIC 4.7UF 35V	C 527	0208374	CERAMIC DISC 10000PF+-20% 16V
C 247	0208354	CERAMIC DISC 33PF+-5% 50V	C 529	0208374	CERAMIC DISC 10000PF+-20% 16V
C 248	0208374	CERAMIC DISC 10000PF+-20% 16V	C 604	0208374	CERAMIC DISC 10000PF+-20% 16V
C 249	0208357	CERAMIC DISC 56PF+-5% 50V	C 606	0256606	ELECTROLYTIC 1MF.50V
C 250	0208359	CERAMIC DISC 82PF+-10%	C 607	0208368	CERAMIC DISC 1500PF+-20% 50V
C 251	0208350	CERAMIC DISC 15PF+-5% 50V	C 608	0208365	CERAMIC DISC 680PF+-10% 50V
C 252	0256611	ELECTROLYTIC 0.33UF 50V	C 616	0208367	CERAMIC DISC 1000PF+-10% 50V
C 253	0239356	CERAMIC DISC 47PF+-5% 50V	C 618	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 256	0208374	CERAMIC DISC 10000PF+-20% 16V	C 620	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 257	0256194	ELECTROLYTIC 470MF.10V	C 621	0208374	CERAMIC DISC 10000PF+-20% 16V
C 301	0208351	CERAMIC DISC 18PF 50V	C 624	0208374	CERAMIC DISC 10000PF+-20% 16V
C 303	0256614	ELECTROLYTIC 10UF 16V	C 637	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 305	0256194	ELECTROLYTIC 470MF.10V	C 638	0208374	CERAMIC DISC 10000PF+-20% 16V
C 307	0256614	ELECTROLYTIC 10UF 16V	C 641	0256475	TANTALUM 4.7UF+-30% 10V
C 308	0256614	ELECTROLYTIC 10UF 16V	C 642	0208374	CERAMIC DISC 10000PF+-20% 16V
C 309	0208365	CERAMIC DISC 680PF+-10% 50V	C 644	0208367	CERAMIC DISC 1000PF+-10% 50V
C 310	0208362	CERAMIC DISC 220PF+-10% 50V	C 652	0256617	ELECTROLYTIC 22MF.10V
C 311	0208374	CERAMIC DISC 10000PF+-20% 16V	C 653	0208360	CERAMIC DISC 100PF+-10% 50V
C 312	0239363	CERAMIC DISC 330PF+-10%	C 656	0208374	CERAMIC DISC 10000PF+-20% 16V
C 313	0208352	CERAMIC DISC 22PF 50V	C 657	0208374	CERAMIC DISC 10000PF+-20% 16V
C 317	0208355	CERAMIC DISC 39PF+-5% 50V	C 658	0208374	CERAMIC DISC 10000PF+-20% 16V
C 351	0208374	CERAMIC DISC 10000PF+-20% 16V	C 677	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 355	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 751	0256488	CAPACITOR 22UF 5V
C 359	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 752	0256626	ELECTROLYTIC 47UF 6.3V
C 360	0208358	CERAMIC DISC 68PF+-5% 50V	C 753	0208374	CERAMIC DISC 10000PF+-20% 16V
C 361	0256614	ELECTROLYTIC 10UF 16V	C 754	0256626	ELECTROLYTIC 47UF 6.3V
C 362	0256613	ELECTROLYTIC 4.7UF 35V	C 755	0208374	CERAMIC DISC 10000PF+-20% 16V
C 406	0256606	ELECTROLYTIC 1MF.50V	C 756	0256606	ELECTROLYTIC 1MF.50V
C 416	0208367	CERAMIC DISC 1000PF+-10% 50V	C 757	0256612	ELECTROLYTIC 0.47UF 50V
			C 759	0208375	CERAMIC DISC 22000PF+80-20% 25V



* ONE VOLTAGE: PB OR REC MODE, TWO VOLTAGES: PB AND (REC) MODE.





PAGES: PB AND (REC) MODE.

PB CAPSTAN MOTOR WAVEFORM REC/PB CYLINDER MOTOR REC CYLINDER MOTOR PB CYLINDER MOTOR WAVEFORM

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
C 760	0256626	ELECTROLYTIC 47UF 6.3V	C1661	0256618	ELECTROLYTIC 22UF 25V
C 761	0256612	ELECTROLYTIC 0.47UF 50V	C1662	0256618	ELECTROLYTIC 22UF 25V
C 763	0208348	CERAMIC DISC 10PF+-5% 50V	C1663	0256618	ELECTROLYTIC 22UF 25V
C 770	5058562	TRIMMER 22PF	RESISTORS		
C 801	0208357	CERAMIC DISC 56PF+-5% 50V	R 305	0171015	METAL FILM 680HM+-5% 1W
C 805	0208374	CERAMIC DISC 10000PF+-20% 16V	R 602	0249681	POSISTOR 4.70HM
C 806	0256629	ELECTROLYTIC 47UF 50V	RT 201	5007445	SEMI VARIABLE 2.2KOHM
C 810	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 301	5007434	RESISTOR SEMI VARIABLE 4.7K OHM
C 814	0256614	ELECTROLYTIC 10UF 16V	RT 351	5007431	RESISTOR SEMI VARIABLE 470 OHM
C 815	0208363	CERAMIC DISC 330PF+-10% 50V	RT 401	5007899	SEMI VARIABLE 47KOHM
C 816	0208354	CERAMIC DISC 33PF+-5% 50V	RT 402	5007901	SEMI VARIABLE 100KOHM
C 817	0208354	CERAMIC DISC 33PF+-5% 50V	RT 501	5009145	VARIABLE RESISTOR 50KOHM
C 819	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 601	5007899	SEMI VARIABLE 47KOHM
C 821	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 607	5007902	SEMI VARIABLE 220KOHM
C 825	0256180	CAPACITOR 1UF 50V ELECTROLYTIC	RV 751	5027225	RESISTOR VARIABLE 10KOHM
C 830	0208374	CERAMIC DISC 10000PF+-20% 16V	RV 752	5009131	VARIABLE 500KOHM
C 854	0256657	ELECTROLYTIC 4700UF 35V	R1656	0149705	METAL OXIDE 0.470HM+-5% 1/2W
C 856	0256635	ELECTROLYTIC 220UF 50V	SEMI-CONDUCTORS		
C 860	0256607	ELECTROLYTIC 47UF 25V	D 201	5339071	DIODE 1SS119-T
C 861	0256607	ELECTROLYTIC 47UF 25V	D 202	5330571	DIODE 1S2473VE SI 100MHZ 250MW 10NS
C 863	0256627	ELECTROLYTIC 47MF.16V	D 203	5330571	DIODE 1S2473VE SI 100MHZ 250MW 10NS
C 864	0256627	ELECTROLYTIC 47MF.16V	D 301	5339071	DIODE 1SS119-T
C 865	0256627	ELECTROLYTIC 47MF.16V	D 302	5331592	DIODE 1SS133
C 867	0256627	ELECTROLYTIC 47MF.16V	D 303	5339071	DIODE 1SS119-T
C 901	0208374	CERAMIC DISC 10000PF+-20% 16V	D 401	5339091	DIODE DAN209S
C 902	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 402	5339131	DIODE 1SS254
C 903	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 403	5339071	DIODE 1SS119-T
C 904	0208374	CERAMIC DISC 10000PF+-20% 16V	D 404	5339071	DIODE 1SS119-T
C 906	0208374	CERAMIC DISC 10000PF+-20% 16V	D 502	5339071	DIODE 1SS119-T
C 907	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 503	5339071	DIODE 1SS119-T
C 908	0208374	CERAMIC DISC 10000PF+-20% 16V	D 504	5339071	DIODE 1SS119-T
C 909	0208354	CERAMIC DISC 33PF+-5% 50V	D 505	5339071	DIODE 1SS119-T
C 910	0208354	CERAMIC DISC 33PF+-5% 50V	D 506	5339071	DIODE 1SS119-T
C 912	0208374	CERAMIC DISC 10000PF+-20% 16V	D 507	5339071	DIODE 1SS119-T
C 913	0208374	CERAMIC DISC 10000PF+-20% 16V	D 508	5332681	DIODE 1SS 119-P
C 921	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 605	5339071	DIODE 1SS119-T
C 922	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 609	5339071	DIODE 1SS119-T
C 923	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 610	5339071	DIODE 1SS119-T
C1114	02086943	CERAMIC DISC 270PF+-5% 50V	D 619	5339071	DIODE 1SS119-T
C1118	02086943	CAPACITOR(22PF+-5% 50V) CERAMIC DISC	D 620	5339071	DIODE 1SS119-T
C1202	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 622	5339071	DIODE 1SS119-T
C1204	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 623	5339071	DIODE 1SS119-T
C1205	0208690	CERAMIC DISC 180PF+-5% 50V	D 628	5339071	DIODE 1SS119-T
C1208	02086883	CAPACITOR(120PF+-5% 50V) CERAMIC DISC	D 629	5339071	DIODE 1SS119-T
C1210	0208448	CERAMIC DISC 22PF+-5% 50V	D 631	5339071	DIODE 1SS119-T
C1211	0208430	CERAMIC DISC 10PF+-5% 50V	D 640	5339071	DIODE 1SS119-T
C1212	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 645	5339071	DIODE 1SS119-T
C1655	0256196	CAPACITOR 100UF 16V ELECTROLYTIC	D 651	5339071	DIODE 1SS119-T
C1657	0256618	ELECTROLYTIC 22UF 25V	D 652	5339071	DIODE 1SS119-T
C1658	0256618	ELECTROLYTIC 22UF 25V	D 653	5339071	DIODE 1SS119-T
C1659	0256618	ELECTROLYTIC 22UF 25V			
C1660	0256618	ELECTROLYTIC 22UF 25V			

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
D 751	5339021	DIODE 1S8133	IC1102	5362241	IC SAF1134P
D 752	5339021	DIODE 1S8133	IC1651	5355582	IC HA13403
D 753	5339021	DIODE 1S8133	Q 201	5327062	TRANSISTOR 2SC1740S-R
D 754	5331592	DIODE 1S8133	Q 202	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 760	5331592	DIODE 1S8133	Q 203	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 764	5381211	LED SEL-2213C	Q 205	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 801	5332681	DIODE 1S8 119-P	Q 206	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 802	5339071	DIODE 1S8119-T	Q 207	0573511	TRANSISTOR 28C535C SILICON 700MHZ 100MW
D 803	5339071	DIODE 1S8119-T	Q 208	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 804	5339071	DIODE 1S8119-T	Q 209	5322732	TRANSISTOR 2SA952ML2
D 805	5339071	DIODE 1S8119-T	Q 210	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 806	5339071	DIODE 1S8119-T	Q 211	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 851	5332741	DIODE D38B10	Q 212	5327062	TRANSISTOR 2SC1740S-R
D 852	5331671	DIODE D8135D-FA3	Q 213	5327062	TRANSISTOR 2SC1740S-R
D 853	5331671	DIODE D8135D-FA3	Q 214	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 854	5331671	DIODE D8135D-FA3	Q 215	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 855	5331671	DIODE D8135D-FA3	Q 401	5327101	TRANSISTOR 2SC3553BC
D 856	5331671	DIODE D8135D-FA3	Q 402	5327031	TRANSISTOR 2SA673C
D 857	5331671	DIODE D8135D-FA3	Q 431	5327031	TRANSISTOR 2SA673C
D 858	53315883	DIODE RD2.7E-B2 ZENER	Q 502	5327031	TRANSISTOR 2SA673C
D 861	5331671	DIODE D8135D-FA3	Q 504	5322732	TRANSISTOR 2SA952ML2
D 862	5331671	DIODE D8135D-FA3	Q 505	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 864	53390213	DIODE 1S8133T	Q 611	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 865	5330571	DIODE 1S2473VE SI 100MHZ 250MW 10NS	Q 612	5327001	TRANSISTOR 2SC458CD
D 866	5331592	DIODE 1S8133	Q 613	53234813	TRANSISTOR 28D1266PQ
D 903	5339071	DIODE 1S8119-T	Q 614	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 904	5339071	DIODE 1S8119-T	Q 615	5327031	TRANSISTOR 2SA673C
D 914	5339071	DIODE 1S8119-T	Q 616	5327001	TRANSISTOR 2SC458CD
IC 201	5370821	IC HT4495	Q 626	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
IC 203	5370845	IC HT4727D	Q 627	5327001	TRANSISTOR 2SC458CD
IC 204	5362262	IC MSM6965RS	Q 751	5321663	TRANSISTOR 2SC2021SR
IC 205	5370501	IC HT4708	Q 754	5321663	TRANSISTOR 2SC2021SR
IC 301	5370273	IC HT4539B	Q 755	5321663	TRANSISTOR 2SC2021SR
IC 303	5366641	IC BA7025L	Q 802	5323902	TRANSISTOR 2SC1740-S
IC 401	5366331	IC UPC1533HA	Q 803	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
IC 402	5364931	IC BA5115L	Q 808	5321214	TRANSISTOR 2SD468BC SILICON 190MHZ 0.9W
IC 403	5369431	IC LA7016	Q 810	5327031	TRANSISTOR 2SA673C
IC 501	5369431	IC LA7016	Q 811	5327031	TRANSISTOR 2SA673C
IC 505	5721802	IC PROTECTOR	Q 814	5327062	TRANSISTOR 2SC1740S-R
IC 601	5367302	IC M54898AP	Q 851	5323331	TRANSISTOR 2SB772Q
IC 602	5369915	IC M5468L-D	Q 904	5327001	TRANSISTOR 2SC458CD
IC 751	5368685	IC HD614085SA30	QR 201	5327081	TRANSISTOR RT1N241S
IC 801	5361834	IC M50161-3546P	QR 202	5327081	TRANSISTOR RT1N241S
IC 802	5366132	IC LA7934	QR 203	5327081	TRANSISTOR RT1N241S
IC 803	5361071	IC M58657P	QR 204	5324093	TRANSISTOR RT1P241S
IC 804	5721802	IC PROTECTOR	QR 205	5324091	TRANSISTOR RT1N241S
IC 805	5721802	IC PROTECTOR	QR 206	5324091	TRANSISTOR RT1N241S
IC 851	5353651	IC STK-5471	QR 207	5327083	TRANSISTOR RT1P241S
IC 901	5361812	IC HD614042SD37	QR 210	5324093	TRANSISTOR RT1P241S
IC 902	5367111	IC M54649L	QR 211	5324091	TRANSISTOR RT1N241S
IC 903	5365673	IC NJM2901N	QR 432	5327081	TRANSISTOR RT1N241S
IC1101	5367211	IC SAAS235	QR 501	5324094	TRANSISTOR RT1P441S

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
QR 502	5327082	TRANSISTOR RT1N441S	L 306	5152342	CHOKE COIL 220UH+-10%
QR 505	5327082	TRANSISTOR RT1N441S	L 351	5120849	TRAP COIL
QR 506	5327082	TRANSISTOR RT1N441S	L 352	5152337	CHOKE COIL 100UH+-10%
QR 601	5327082	TRANSISTOR RT1N441S	L 401	5152349	CHOKE COIL 820MH
QR 602	5327082	TRANSISTOR RT1N441S	L 403	5152971	CHOKE COIL
QR 605	5327082	TRANSISTOR RT1N441S	L 404	5152971	CHOKE COIL
QR 628	5324092	TRANSISTOR RT1N441S	L 501	5159158	CHOKE COIL 220UH
QR 631	5324092	TRANSISTOR RT1N441S	L 502	5159154	CHOKE COIL 100UH
QR 758	5324092	TRANSISTOR RT1N441S	L 503	5159154	CHOKE COIL 100UH
QR 801	5324092	TRANSISTOR RT1N441S	L 851	5273341	LINE FILTER
QR 804	5324092	TRANSISTOR RT1N441S	L 901	5159077	CHOKE COIL 100UH+-10%
QR 812	5324092	TRANSISTOR RT1N441S	L1101	5153031	CHOKE COIL 10UH
QR 852	5324091	TRANSISTOR RT1N241S	L1201	5159154	CHOKE COIL 100UH
Q1102	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W	L1202	5159154	CHOKE COIL 100UH
Q1103	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W	L1203	5159152	CHOKE COIL 68UH
Q1201	5321663	TRANSISTOR 2SC2021SR	L1205	5153032	CHOKE COIL 12UH
Q1202	5321663	TRANSISTOR 2SC2021SR	L1206	5159154	CHOKE COIL 100UH
Q1203	5322993	TRANSISTOR 2SA937QR SILICON			CRYSTALS
Q1204	0573511	TRANSISTOR 2SC535C SILICON 700MHZ 100MW	X 751	5781611	CRYSTAL
ZD 201	5331014	DIODE HZ5A SI ZENER	X 801	5781121	XTAL
ZD 601	53303173	DIODE HZ-7A-1 ZENNER	X1101	5781631	CRYSTAL
ZD 602	5330318	DIODE HZ7B2 SI ZENER 1MHZ 0.4W			MISCELLANEOUS
ZD 603	5331271	DIODE HZ18-3	BZ 799	5409271	BUZZER
ZD 751	5332633	DIODE RD4R7JSB1-2	CE 901	5781121	XTAL
ZD 752	5330322	DIODE HZ9B SI ZENER 1MHZ 0.4W	CP 201	5123839	TRAP COIL
ZD 753	53315883	DIODE RD2.7E-B2 ZENNER	CP 202	5169002	HIGH PASS FILTER
ZD 801	5350611	IC UPC574J	CP 203	5169012	LOW PASS FILTER
ZD 802	5339102	DIODE HZ5A	CP 204	5169003	LOW PASS FILTER
ZD 803	5331274	DIODE ZENNER	CP 205	5169022	LOW PASS FILTER
		TRANSFORMERS	CP 301	5785814	DELAY LINE
T 401	5262531	BIAS COIL	CP 302	5163082	BAND PASS FILTER
		COILS	CP 351	5160431	BAND PASS FILTER
L 201	5152333	CHOKE COIL 47UH+-10%	DG 751	5311772	TIMER DISPLAY
L 203	5152337	CHOKE COIL 100UH+-10%	F 850	5720175	FUSE 0.8A
L 204	5152339	CHOKE COIL 150UH+-10%	F 852	5721064	FUSE
L 205	5153036	CHOKE COIL 27UH	F 852	5721064	FUSE
L 206	5152324	CHOKE COIL 10UH+-10%	F 853	5720171	FUSE 315MA
L 207	5159082	CHOKE COIL 220UH+-10%	S 143	5633362	PUSH SWITCH
L 208	5152342	CHOKE COIL 220UH+-10%	S 144	5633362	PUSH SWITCH
L 209	5159152	CHOKE COIL 68UH	S 501	5622462	SLIDE SWITCH
L 210	5153003	CHOKE COIL 15UH	S 751	5635061	SWITCH
L 212	5159145	CHOKE COIL 22UH	S 752	5635061	SWITCH
L 213	5159141	CHOKE COIL 10UH	S 753	5635061	SWITCH
L 214	5153001	CHOKE COIL 10UH	S 754	5635061	SWITCH
L 301	5152332	CHOKE COIL 39UH+-10%	S 755	5635061	SWITCH
L 302	5150577	CHOKE COIL 12MH	S 756	5635061	SWITCH
L 303	5159064	CHOKE COIL 10UH+-10%	S 757	5635061	SWITCH
L 304	5159146	CHOKE COIL 27UH	S 759	5635061	SWITCH
L 305	5152326	CHOKE COIL 15UH+-10%	S 760	5635061	SWITCH
			S 761	5635061	SWITCH

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
S 762	5635061	SWITCH	S 776	5635111	SMK CONNECTOR (V-10)
S 764	5635061	SWITCH	S 778	5635111	SMK CONNECTOR (V-10)
S 765	5635061	SWITCH	S 780	5635111	SMK CONNECTOR (V-10)
S 766	5635061	SWITCH	S 781	5635111	SMK CONNECTOR (V-10)
S 768	5635061	SWITCH	S 782	5635111	SMK CONNECTOR (V-10)
S 769	5635061	SWITCH	S 785	5635111	SMK CONNECTOR (V-10)
S 771	5635111	SMK CONNECTOR (V-10)	S 786	5635111	SMK CONNECTOR (V-10)
S 772	5635111	SMK CONNECTOR (V-10)	S 787	5635111	SMK CONNECTOR (V-10)
S 773	5635111	SMK CONNECTOR (V-10)	S 799	5622801	SWITCH
S 775	5635111	SMK CONNECTOR (V-10)			

REPLACEMENT PARTS LIST (ERSATZTEILLISTE)

ELECTRICAL PARTS LIST [For VT-135E (VPS)]

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS			C 423	0239374	CERAMIC DISC 0.01UF+-20% 50V
C 201	0208374	CERAMIC DISC 10000PF+-20% 16V	C 425	0256196	CAPACITOR 100UF 16V ELECTROLYTIC
C 202	0256613	ELECTROLYTIC 4.7UF 35V	C 426	0208374	CERAMIC DISC 10000PF+-20% 16V
C 206	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 428	0208365	CERAMIC DISC 680PF+-10% 50V
C 208	0207085	ELECTROLYTIC 47UF 10V	C 431	0239374	CERAMIC DISC 0.01UF+-20% 50V
C 209	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 432	0256617	ELECTROLYTIC 22MF.10V
C 211	0208355	CERAMIC DISC 39PF+-5% 50V	C 433	0256614	ELECTROLYTIC 10UF 16V
C 213	0256614	ELECTROLYTIC 10UF 16V	C 434	0256180	CAPACITOR 1UF 50V ELECTROLYTIC
C 216	0208353	CERAMIC DISC 27PF+-5% 50V	C 451	0256627	ELECTROLYTIC 47MF.16V
C 217	0256834	ELECTROLYTIC 10UF 16V	C 452	0239375	CERAMIC DISC 10000PF+-20%
C 218	0208364	CERAMIC DISC 470PF+-10% 50V	C 502	0208374	CERAMIC DISC 10000PF+-20% 16V
C 222	0208355	CERAMIC DISC 39PF+-5% 50V	C 506	0208374	CERAMIC DISC 10000PF+-20% 16V
C 223	0208352	CERAMIC DISC 22PF 50V	C 508	0208374	CERAMIC DISC 10000PF+-20% 16V
C 228	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 510	0208374	CERAMIC DISC 10000PF+-20% 16V
C 230	0256606	ELECTROLYTIC 1MF.50V	C 512	0208374	CERAMIC DISC 10000PF+-20% 16V
C 232	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 513	0256789	CAPACITOR 470UF 10V ELECTROLYTIC
C 234	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 519	0256135	CAPACITOR 10UF 16V ELECTROLYTIC
C 235	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 523	0208374	CERAMIC DISC 10000PF+-20% 16V
C 236	0256194	ELECTROLYTIC 470MF.10V	C 524	0256782	CAPACITOR 220UF 10V ELECTROLYTIC
C 242	0208374	CERAMIC DISC 10000PF+-20% 16V	C 526	0256135	CAPACITOR 10UF 16V ELECTROLYTIC
C 244	0208374	CERAMIC DISC 10000PF+-20% 16V	C 527	0208374	CERAMIC DISC 10000PF+-20% 16V
C 246	0256613	ELECTROLYTIC 4.7UF 35V	C 529	0208374	CERAMIC DISC 10000PF+-20% 16V
C 247	0208354	CERAMIC DISC 33PF+-5% 50V	C 604	0208374	CERAMIC DISC 10000PF+-20% 16V
C 248	0208374	CERAMIC DISC 10000PF+-20% 16V	C 607	0239368	CERAMIC DISC 1500PF+-20%
C 249	0208357	CERAMIC DISC 56PF+-5% 50V	C 608	0208361	CERAMIC DISC 150PF+-10% 50V
C 250	0208359	CERAMIC DISC 82PF+-10%	C 610	0208365	CERAMIC DISC 680PF+-10% 50V
C 251	0208350	CERAMIC DISC 15PF+-5% 50V	C 616	0208367	CERAMIC DISC 1000PF+-10% 50V
C 252	0256611	ELECTROLYTIC 0.33UF 50V	C 618	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 256	0208374	CERAMIC DISC 10000PF+-20% 16V	C 620	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 257	0256194	ELECTROLYTIC 470MF.10V	C 621	0239374	CERAMIC DISC 0.01UF+-20% 50V
C 301	0208351	CERAMIC DISC 18PF 50V	C 624	0208374	CERAMIC DISC 10000PF+-20% 16V
C 303	0256614	ELECTROLYTIC 10UF 16V	C 637	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 305	0256194	ELECTROLYTIC 470MF.10V	C 638	0208374	CERAMIC DISC 10000PF+-20% 16V
C 308	0256614	ELECTROLYTIC 10UF 16V	C 639	0256617	ELECTROLYTIC 22MF.10V
C 309	0208365	CERAMIC DISC 680PF+-10% 50V	C 641	0256475	TANTALUM 4.7UF+-30% 10V
C 310	0208362	CERAMIC DISC 220PF+-10% 50V	C 642	0208374	CERAMIC DISC 10000PF+-20% 16V
C 311	0208374	CERAMIC DISC 10000PF+-20% 16V	C 643	0256607	ELECTROLYTIC 47UF 25V
C 313	0208352	CERAMIC DISC 22PF 50V	C 644	0208367	CERAMIC DISC 1000PF+-10% 50V
C 315	0256614	ELECTROLYTIC 10UF 16V	C 653	0208360	CERAMIC DISC 100PF+-10% 50V
C 317	0208355	CERAMIC DISC 39PF+-5% 50V	C 656	0208374	CERAMIC DISC 10000PF+-20% 16V
C 351	0208374	CERAMIC DISC 10000PF+-20% 16V	C 657	0208374	CERAMIC DISC 10000PF+-20% 16V
C 355	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 658	0208374	CERAMIC DISC 10000PF+-20% 16V
C 359	0208375	CERAMIC DISC 22000PF+80-20% 25V	C 677	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 360	0208358	CERAMIC DISC 68PF+-5% 50V	C 751	0256488	CAPACITOR 22UF 5V
C 361	0256614	ELECTROLYTIC 10UF 16V	C 752	0256626	ELECTROLYTIC 47UF 6.3V
C 362	0256613	ELECTROLYTIC 4.7UF 35V	C 753	0208374	CERAMIC DISC 10000PF+-20% 16V
C 403	0256614	ELECTROLYTIC 10UF 16V	C 754	0256626	ELECTROLYTIC 47UF 6.3V
C 406	0256606	ELECTROLYTIC 1MF.50V	C 755	0208374	CERAMIC DISC 10000PF+-20% 16V
C 408	0256614	ELECTROLYTIC 10UF 16V	C 756	0256606	ELECTROLYTIC 1MF.50V
C 410	0256622	ELECTROLYTIC 33UF 16V	C 757	0256612	ELECTROLYTIC 0.47UF 50V
C 416	0208367	CERAMIC DISC 1000PF+-10% 50V	C 759	0208375	CERAMIC DISC 22000PF+80-20% 25V
C 419	0256622	ELECTROLYTIC 33UF 16V	C 760	0256626	ELECTROLYTIC 47UF 6.3V

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
C 761	0256612	ELECTROLYTIC 0.47UF 50V	RESISTORS		
C 763	0208348	CERAMIC DISC 10PF+-5% 50V	R 305	0171015	METAL FILM 68OHM+-5% 1W
C 770	5058562	TRIMMER 22PF	RT 201	5007447	SEMI VARIABLE 10KOHM
C 801	0208357	CERAMIC DISC 56PF+-5% 50V	RT 301	5007434	RESISTOR SEMI VARIABLE 4.7K OHM
C 805	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 351	5007431	RESISTOR SEMI VARIABLE 470 OHM
C 806	0256629	ELECTROLYTIC 47UF 50V	RT 401	5007899	SEMI VARIABLE 47KOHM
C 810	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 402	5007901	SEMI VARIABLE 100KOHM
C 815	0208363	CERAMIC DISC 330PF+-10% 50V	RT 501	5009145	VARIABLE RESISTOR 50KOHM
C 816	0208354	CERAMIC DISC 33PF+-5% 50V	RT 601	5007899	SEMI VARIABLE 47KOHM
C 817	0208354	CERAMIC DISC 33PF+-5% 50V	RT 607	5007902	SEMI VARIABLE 220KOHM
C 819	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 611	5007901	SEMI VARIABLE 100KOHM
C 821	0208374	CERAMIC DISC 10000PF+-20% 16V	RT 612	5007901	SEMI VARIABLE 100KOHM
C 825	0256180	CAPACITOR 1UF 50V ELECTROLYTIC	RV 751	5027225	RESISTOR VARIABLE 10KOHM
C 826	0256629	ELECTROLYTIC 47UF 50V	RV 752	5009127	RESISTOR VARIABLE 500KOHM
C 830	0208374	CERAMIC DISC 10000PF+-20% 16V	RV 753	5009128	RESISTOR VARIABLE 20KOHM
C 854	0256657	ELECTROLYTIC 4700UF 35V	R1656	0149705	METAL OXIDE 0.47OHM+-5% 1/2W
C 856	0256635	ELECTROLYTIC 220UF 50V	SEMI-CONDUCTORS		
C 860	0256607	ELECTROLYTIC 47UF 25V	D 201	5339071	DIODE 1SS119-T
C 861	0256637	ELECTROLYTIC 330UF 25V	D 202	5331592	DIODE 1SS133
C 863	0256627	ELECTROLYTIC 47MF.16V	D 207	5339071	DIODE 1SS119-T
C 864	0256627	ELECTROLYTIC 47MF.16V	D 208	5339071	DIODE 1SS119-T
C 865	0256627	ELECTROLYTIC 47MF.16V	D 301	5339071	DIODE 1SS119-T
C 867	0256627	ELECTROLYTIC 47MF.16V	D 302	5331592	DIODE 1SS133
C 901	0208374	CERAMIC DISC 10000PF+-20% 16V	D 303	5339071	DIODE 1SS119-T
C 902	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 401	5339091	DIODE DAN209S
C 903	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 402	5331592	DIODE 1SS133
C 904	0208374	CERAMIC DISC 10000PF+-20% 16V	D 403	5332681	DIODE 1SS 119-P
C 906	0208374	CERAMIC DISC 10000PF+-20% 16V	D 404	5332681	DIODE 1SS 119-P
C 907	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 405	5332681	DIODE 1SS 119-P
C 908	0208374	CERAMIC DISC 10000PF+-20% 16V	D 502	5339071	DIODE 1SS119-T
C 909	0208354	CERAMIC DISC 33PF+-5% 50V	D 503	5339071	DIODE 1SS119-T
C 910	0208354	CERAMIC DISC 33PF+-5% 50V	D 504	5339071	DIODE 1SS119-T
C 912	0208374	CERAMIC DISC 10000PF+-20% 16V	D 505	5339071	DIODE 1SS119-T
C 913	0208374	CERAMIC DISC 10000PF+-20% 16V	D 506	5339071	DIODE 1SS119-T
C 921	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 507	5339071	DIODE 1SS119-T
C 922	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 508	5339071	DIODE 1SS119-T
C 923	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 605	5339071	DIODE 1SS119-T
C1202	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 607	5339071	DIODE 1SS119-T
C1204	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 608	5339071	DIODE 1SS119-T
C1205	0208690	CERAMIC DISC 180PF+-5% 50V	D 609	5339071	DIODE 1SS119-T
C1208	02086863	CAPACITOR(120PF+-5% 50V) CERAMIC DISC	D 610	5339071	DIODE 1SS119-T
C1210	0208448	CERAMIC DISC 22PF+-5% 50V	D 619	5339071	DIODE 1SS119-T
C1211	0208430	CERAMIC DISC 10PF+-5% 50V	D 620	5339071	DIODE 1SS119-T
C1212	0208375	CERAMIC DISC 22000PF+80-20% 25V	D 622	5339071	DIODE 1SS119-T
C1655	0256196	CAPACITOR 100UF 16V ELECTROLYTIC	D 623	5339071	DIODE 1SS119-T
C1657	0256618	ELECTROLYTIC 22UF 25V	D 624	5339071	DIODE 1SS119-T
C1658	0256618	ELECTROLYTIC 22UF 25V	D 628	5339071	DIODE 1SS119-T
C1659	0256618	ELECTROLYTIC 22UF 25V	D 629	5339071	DIODE 1SS119-T
C1660	0256618	ELECTROLYTIC 22UF 25V	D 630	5339071	DIODE 1SS119-T
C1661	0256618	ELECTROLYTIC 22UF 25V	D 640	5339071	DIODE 1SS119-T
C1662	0256618	ELECTROLYTIC 22UF 25V			
C1663	0256618	ELECTROLYTIC 22UF 25V			

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
D 643	5339071	DIODE 1SS119-T	IC 802	5366132	IC LA7934
D 644	5339071	DIODE 1SS119-T	IC 803	5361071	IC M58657P
D 645	5339071	DIODE 1SS119-T	IC 804	5721802	IC PROTECTOR
D 651	5339071	DIODE 1SS119-T	IC 805	5721802	IC PROTECTOR
D 652	5339071	DIODE 1SS119-T	IC 851	5353651	IC STK-5471
D 653	5339071	DIODE 1SS119-T	IC 901	5361812	IC HD614042SD37
D 654	5339071	DIODE 1SS119-T	IC 902	5367111	IC M54649L
D 655	5332681	DIODE 1SS 119-P	IC 903	5365673	IC NJM2901N
D 656	5339071	DIODE 1SS119-T	IC1101	5367211	IC SAA5235
D 751	53390213	DIODE 1SS133T	IC1102	5362241	IC SAF1134P
D 752	5339021	DIODE 1SS133	IC1651	5355582	IC HA13403
D 753	5339021	DIODE 1SS133	Q 201	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 754	5331592	DIODE 1SS133	Q 202	5327021	TRANSISTOR 2SA844CD-TB
D 760	5331592	DIODE 1SS133	Q 203	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 764	5381211	LED SEL-2213C	Q 205	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 801	5332681	DIODE 1SS 119-P	Q 206	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 802	5339071	DIODE 1SS119-T	Q 207	0573511	TRANSISTOR 2SC535C SILICON 700MHZ 100MW
D 803	5339071	DIODE 1SS119-T	Q 208	5327021	TRANSISTOR 2SA844CD-TB
D 804	5339071	DIODE 1SS119-T	Q 209	5322732	TRANSISTOR 2SA952ML2
D 805	5339071	DIODE 1SS119-T	Q 210	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 806	5339071	DIODE 1SS119-T	Q 211	5321292	TRANSISTOR 2SC1740S SILICON 250MHZ 0.3W
D 851	5332741	DIODE D38B10	Q 212	5327062	TRANSISTOR 2SC1740S-R
D 852	5331671	DIODE DS135D-FA3	Q 213	5327062	TRANSISTOR 2SC1740S-R
D 853	5331671	DIODE DS135D-FA3	Q 214	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W
D 854	5331671	DIODE DS135D-FA3	Q 215	5327021	TRANSISTOR 2SA844CD-TB
D 855	5331671	DIODE DS135D-FA3	Q 401	5327101	TRANSISTOR 2SC3553BC
D 856	5331671	DIODE DS135D-FA3	Q 402	5320593	TRANSISTOR 2SA673C
D 857	5331671	DIODE DS135D-FA3	Q 431	5327031	TRANSISTOR 2SA673C
D 858	53315883	DIODE RD2.7E-B2 ZENNER	Q 502	5327031	TRANSISTOR 2SA673C
D 861	5331671	DIODE DS135D-FA3	Q 504	5322732	TRANSISTOR 2SA952ML2
D 862	5331671	DIODE DS135D-FA3	Q 505	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 864	5339021	DIODE 1SS133	Q 611	5327001	TRANSISTOR 2SC458CD
D 865	5330571	DIODE 1S2473VE SI 100MHZ 250MW 10NS	Q 612	5327001	TRANSISTOR 2SC458CD
D 866	5331592	DIODE 1SS133	Q 613	53234613	TRANSISTOR 2SD1266PQ
D 903	5339071	DIODE 1SS119-T	Q 614	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
D 904	5339071	DIODE 1SS119-T	Q 615	5327031	TRANSISTOR 2SA673C
D 914	5339071	DIODE 1SS119-T	Q 616	5327001	TRANSISTOR 2SC458CD
IC 201	5370821	IC HT4495	Q 617	5327001	TRANSISTOR 2SC458CD
IC 203	5370844	IC HT4727C	Q 626	5327001	TRANSISTOR 2SC458CD
IC 204	5362262	IC MSM6965RS	Q 627	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W
IC 205	5370501	IC HT4708	Q 751	5321663	TRANSISTOR 2SC2021SR
IC 301	5370273	IC HT4539B	Q 754	5321663	TRANSISTOR 2SC2021SR
IC 303	5366641	IC BA7025L	Q 755	5321663	TRANSISTOR 2SC2021SR
IC 401	5366331	IC UPC1533HA	Q 802	5325903	TRANSISTOR 2SC1740S-RS
IC 402	5364931	IC BA5115L	Q 803	5327001	TRANSISTOR 2SC458CD
IC 403	5369431	IC LA7016	Q 808	5321214	TRANSISTOR 2SD468BC SILICON 190MHZ 0.9W
IC 501	5369431	IC LA7016	Q 810	5327031	TRANSISTOR 2SA673C
IC 601	5367302	IC M54898AP	Q 811	5327031	TRANSISTOR 2SA673C
IC 602	5369913	M54648L-B	Q 814	5327062	TRANSISTOR 2SC1740S-R
IC 608	5366992	IC M51483P	Q 851	5323331	TRANSISTOR 2SB772Q
IC 751	5368683	IC HD614085SA15	Q 904	5327001	TRANSISTOR 2SC458CD
IC 801	5361834	IC M50161-354SP	QR 201	5327081	TRANSISTOR RT1N241S

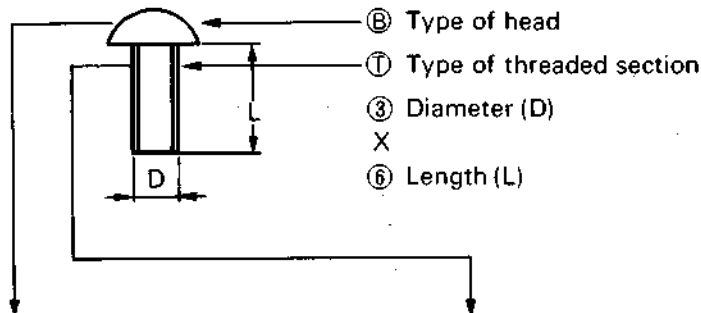
SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
QR 202	5327081	TRANSISTOR RT1N241S	L 204	5159079	CHOKE COIL 150UH+-10%
QR 203	5324091	TRANSISTOR RT1N241S	L 205	5153036	CHOKE COIL 27UH
QR 204	5327083	TRANSISTOR RT1P241S	L 206	5153005	CHOKE COIL 22UH
QR 205	5324091	TRANSISTOR RT1N241S	L 207	5152342	CHOKE COIL 220UH+-10%
QR 206	5327081	TRANSISTOR RT1N241S	L 208	5152342	CHOKE COIL 220UH+-10%
QR 207	5327083	TRANSISTOR RT1P241S	L 209	5159152	CHOKE COIL 68UH
QR 210	5327083	TRANSISTOR RT1P241S	L 210	5153033	CHOKE COIL 15UH
QR 211	5324091	TRANSISTOR RT1N241S	L 211	5152342	CHOKE COIL 220UH+-10%
QR 432	5327081	TRANSISTOR RT1N241S	L 212	5159145	CHOKE COIL 22UH
QR 501	5327084	TRANSISTOR RT1P441S	L 213	5159141	CHOKE COIL 10UH
QR 502	5327082	TRANSISTOR RT1N441S	L 214	5153031	CHOKE COIL 10UH
QR 505	5327082	TRANSISTOR RT1N441S	L 215	5159147	CHOKE COIL 33UH
QR 506	5327082	TRANSISTOR RT1N441S	L 301	5153038	CHOKE COIL 39UH
QR 601	5327082	TRANSISTOR RT1N441S	L 302	5150577	CHOCK COIL 12MH
QR 602	5327082	TRANSISTOR RT1N441S	L 303	5159064	CHOKE COIL 10UH+-10%
QR 604	5327082	TRANSISTOR RT1N441S	L 304	5159146	CHOKE COIL 27UH
QR 605	5324092	TRANSISTOR RT1N441S	L 305	5159066	CHOKE COIL 15UH+-10%
QR 606	5324092	TRANSISTOR RT1N441S	L 306	5152342	CHOKE COIL 220UH+-10%
QR 628	5324092	TRANSISTOR RT1N441S	L 351	5120849	TRAP COIL
QR 629	5324094	TRANSISTOR RT1P441S	L 352	5152337	CHOKE COIL 100UH+-10%
QR 631	5327082	TRANSISTOR RT1N441S	L 401	5152349	CHOKE COIL 820MH
QR 632	5324092	TRANSISTOR RT1N441S	L 403	5159111	CHOKE COIL 5600UH
QR 633	5324092	TRANSISTOR RT1N441S	L 404	5159111	CHOKE COIL 5600UH
QR 758	5324092	TRANSISTOR RT1N441S	L 501	5159158	CHOKE COIL 220UH
QR 801	5327082	TRANSISTOR RT1N441S	L 502	5159154	CHOKE COIL 100UH
QR 804	5327082	TRANSISTOR RT1N441S	L 503	5159154	CHOKE COIL 100UH
QR 812	5327082	TRANSISTOR RT1N441S	L 851	5273341	LINE FILTER
QR 852	5324091	TRANSISTOR RT1N241S	L 901	5159077	CHOKE COIL 100UH+-10%
Q1102	5321255	TRANSISTOR 2SA844CD SILICON 200MHZ 0.3W	L1101	5153031	CHOKE COIL 10UH
Q1103	5320069	TRANSISTOR 2SC458CD SILICON 230MHZ 0.2W	L1201	5159154	CHOKE COIL 100UH
Q1201	5321663	TRANSISTOR 2SC2021SR	L1202	5159154	CHOKE COIL 100UH
Q1202	5321663	TRANSISTOR 2SC2021SR	L1203	5159152	CHOKE COIL 68UH
Q1203	5322993	TRANSISTOR 2SA937QR SILICON	L1205	5153032	CHOKE COIL 12UH
ZD 201	5331014	DIODE HZ5A SI ZENER	L1206	5159154	CHOKE COIL 100UH
ZD 601	53303173	DIODE HZ-7A-1 ZENNER			CRYSTALS
ZD 602	5330318	DIODE HZ7B2 SI ZENER 1MHZ 0.4W	X 751	5781611	CRYSTAL
ZD 603	5331271	DIODE HZ18-3	X 801	5781121	XTAL
ZD 604	5330563	DIODE HZ16-3 SI ZENER 1MHZ 0.4W	X1101	5781631	CRYSTAL
ZD 751	5332633	DIODE RD4R7J8B1-2			MISCELLANEOUS
ZD 752	5330322	DIODE HZ9B SI ZENER 1MHZ 0.4W	BZ 799	5409271	BUZZER
ZD 753	5331588	DIODE RD2.7E-B2	CE 901	5781121	XTAL
ZD 801	5350611	IC UPC574J	CP 201	5123839	TRAP COIL
ZD 802	5339102	DIODE HZ5A	CP 202	5169002	HIGH PASS FILTER
ZD 803	5331274	DIODE ZENNER	CP 203	5169012	LOW PASS FILTER
		TRANSFORMERS	CP 204	5169003	LOW PASS FILTER
T 401	5262531	BIAS COIL	CP 205	5169022	LOW PASS FILTER
		COILS	CP 301	5785814	DELAY LINE
L 201	5159073	CHOKE COIL 47UH+-10%	CP 302	5163082	BAND PASS FILTER
L 202	5152321	CHOKE COIL 5.6MICRO H	CP 351	5160431	BAND PASS FILTER
L 203	5152337	CHOKE COIL 100UH+-10%	BG 751	5311772	TIMER DISPLAY

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
F 850	5720175	FUSE 0.8A	S 765	5635061	SWITCH
F 851	5721064	FUSE	S 766	5635061	SWITCH
F 852	5721064	FUSE	S 768	5635061	SWITCH
F 853	5720171	FUSE 315MA	S 769	5635061	SWITCH
S 143	5633362	PUSH SWITCH	S 771	5635111	SMK CONNECTOR (V-10)
S 144	5633362	PUSH SWITCH	S 772	5635111	SMK CONNECTOR (V-10)
S 501	5622462	SLIDE SWITCH	S 773	5635111	SMK CONNECTOR (V-10)
S 751	5635061	SWITCH	S 775	5635111	SMK CONNECTOR (V-10)
S 752	5635061	SWITCH	S 776	5635111	SMK CONNECTOR (V-10)
S 753	5635061	SWITCH	S 777	5635111	SMK CONNECTOR (V-10)
S 754	5635061	SWITCH	S 778	5635111	SMK CONNECTOR (V-10)
S 755	5635061	SWITCH	S 780	5635111	SMK CONNECTOR (V-10)
S 756	5635061	SWITCH	S 781	5635111	SMK CONNECTOR (V-10)
S 757	5635061	SWITCH	S 782	5635111	SMK CONNECTOR (V-10)
S 759	5635061	SWITCH	S 785	5635111	SMK CONNECTOR (V-10)
S 760	5635061	SWITCH	S 786	5635111	SMK CONNECTOR (V-10)
S 761	5635061	SWITCH	S 787	5635111	SMK CONNECTOR (V-10)
S 762	5635061	SWITCH	S 799	5622801	SWITCH
S 764	5635061	SWITCH			

EXPLODED VIEWS

SCREW CLASSIFICATION

Example: BT3 × 6



Washers and Nuts

Abbreviation	Name	Shape	Abbreviation	Name	Shape	Abbreviation	Name	Shape
No symbol	Brazier head		No symbol	Machine (clamps without tapping)		W	Washer	
P	Pan head		t	Tapping (clamps with tapping) Type 1		SW	Spring washer	
B	Binding head		T	Tapping (clamps with tapping) Type 2		LW	Locking washer	
O	Oval countersunk head		f	Forming tight (for metal)		E	E-ring	
F	Flat countersunk head		Note: Since the forming tight screw tightens while self-tapping, machine screws can be replaced by tapping screws.			N	Nut	
						Note: Internal dia is indicated for nuts and washers.		

LUBRICATION

Lubrication points are shown in the exploded view diagrams by marks (S, H)

Lubricants shown in the diagram are as follows.

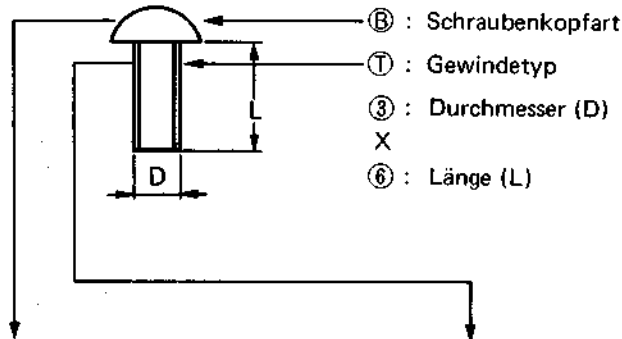
⑤ Sonic slider oil (≠ 1600)

④ Hitazol (MO-138)

EXPLOSIONSZEICHNUNGEN

Schrauben-Klassifikation

Beispiel: BT3 x 6



Abkürzung	Bezeichnung	Form
Kein symbol	Rundkopfschraube	
P	Zylinderkopfschraube	
B	Halbrundschrabe	
O	Linsenkopf-Senkschraube	
F	Senkschraube	

Abkürzung	Bezeichnung	Form
Kein symbol	Maschinenschraube	
t	Schneidschraube Typ 1 (selbstschneidend)	
T	Schneidschraube Typ 2 (selbstschneidend)	
f	Blechschrabe (für Metall)	
Hinweis: Blechschraben sind selbstschneidend; die selbstschneidenden Maschinenschrauben können durch Schneidschrauben ersetzt werden.		

Unterlegescheiben und Muttern

Abkürzung	Bezeichnung	Form
W	Unterlegescheibe	
SW	Federscheibe	
LW	Sicherungsscheibe	
E	E-Ring	
N	Mutter	
Hinweis: Für Muttern und Scheiben werden der Innendurchmesser angegeben.		

Schmierung

Die Schmierungspunkte sind in den Explosionszeichnungen durch Symbole (S), (H) gekennzeichnet.

Die im Diagramm gezeigten Schmierungspunkte sind mit folgenden Schmiermittel zu schmieren:

(S) Sonic-Gleitöl (Nr. 1600)

(H) Hitazol (MO-138)

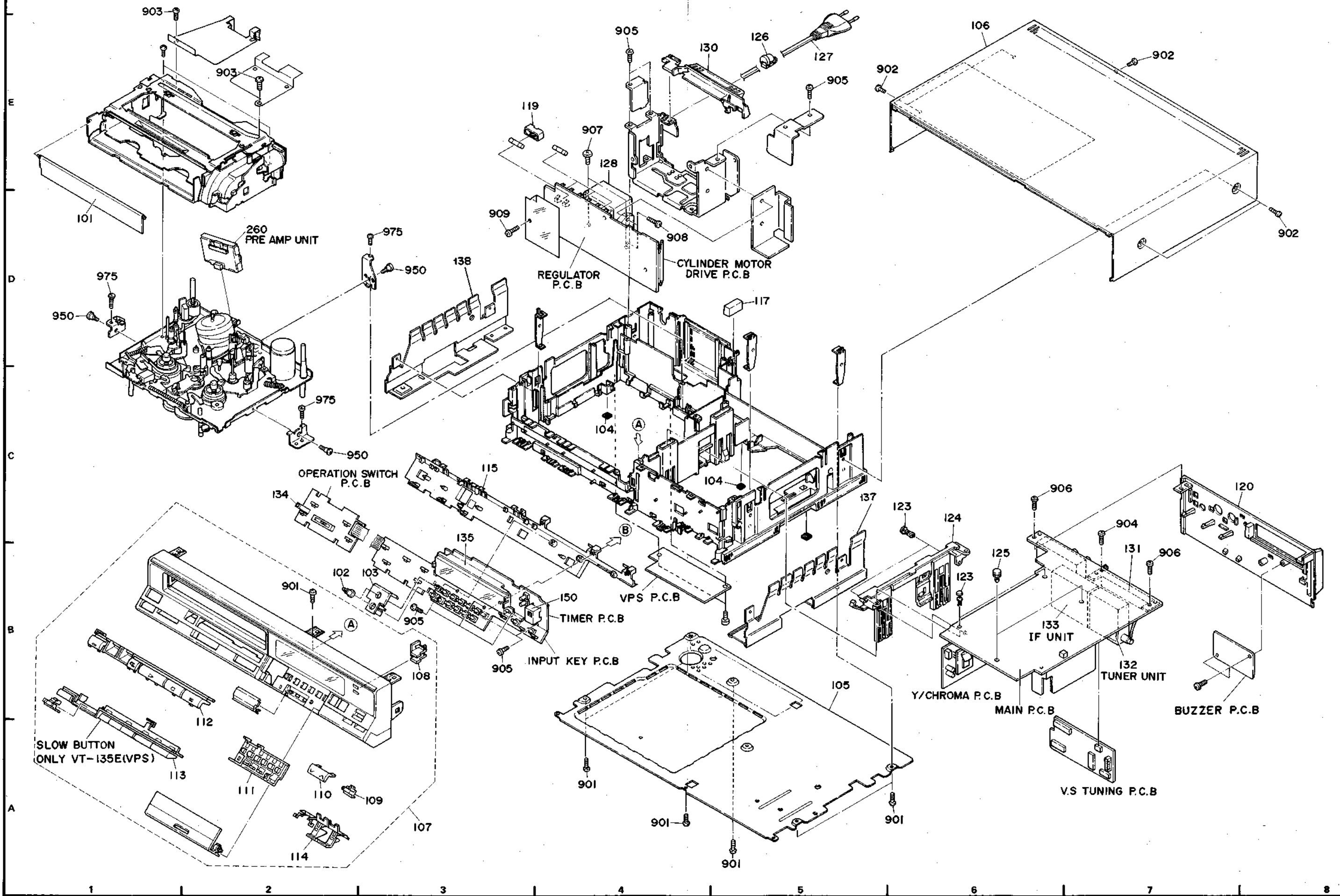
MECHANICAL PARTS LIST
[CABINET SECTION]

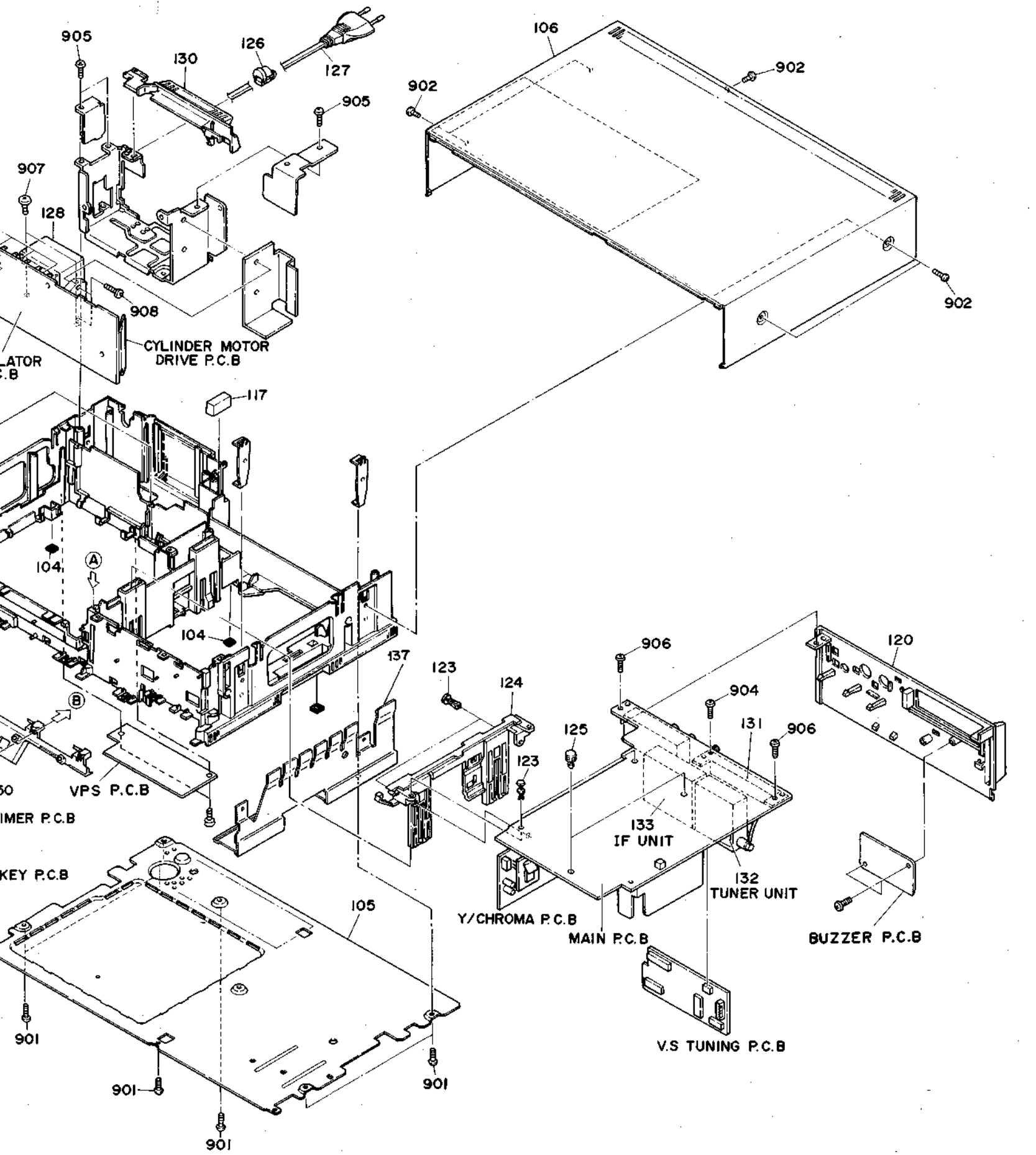
**[CHASSIS/CASSETTE LOADING MECHANISM/
CYLINDER MOTOR SECTION]**

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
FOR FINAL ASSEMBLY			FOR FINAL ASSEMBLY		
101	6189398	CASSETTE DOOR	202	6415391	REEL TABLE-SUPPLY
102	6077031	ROTARY KNOB	203	6415412	REEL TABLE-TAKE UP
103	6892333	HOLDER	206	7787412	WASHER
104	7741444	FELT (LEG)	207	7778859	POLYSLIDER WASHER
105	6001561	BOTTOM COVER	208	6865662	ARM-BRAKE
106	6002073	TOP COVER ASSEMBLY [For VT-125E (VPS/VPSK)]	209	7386841	TENSION ARM
106	6001894	TOP COVER ASSEMBLY [For VT-135E (VPS)]	210	6865804	BRAKE L
107	6238925	FRONT PANEL ASSEMBLY [For VT-125E (VPS)]	211	6865812	BRAKE R
107	6238932	FRONT PANEL ASSEMBLY [For VT-125E (VPSK)]	212	6302471	SPRING
107	6238938	FRONT PANEL ASSEMBLY [For VT-135E (VPS)]	213	6543864	SPRING
108	6083613	BUTTON	214	7376271	TENSION BAND
109	6083572	BUTTON	215	6879421	BT. SPRING HOLDER
110	6083582	BUTTON [For VT-125E (VPS)/VT-135E (VPS)]	216	7386882	ARM BRACKET
110	6083586	BUTTON [For VT-125E (VPSK)]	217	6886792	ARM
111	6083605	BUTTON	218	7376303	LOADING LINK ASSY (RIGHT)
112	6083892	BUTTON [For VT-125E (VPS)/VT-135E (VPS)]	219	7376313	LOADING LINK ASSY (LEFT)
112	6083896	BUTTON [For VT-125E (VPSK)]	220	6978301	GUIDE ROLLER BASE (IN)
113	6083884	BUTTON [For VT-125E (VPS/VPSK)]	221	6974661	BASE
113	6083883	BUTTON [For VT-135E (VPS)]	224	6869481	GUIDE ROLLER
115	6890462	PCB HOLDER	226	7386893	GUIDE BASE HOLDER
116	6864241	CAP	228	6868061	GUIDE ROLLER ASSEMBLY (OUT)
119	6753911	FUSE COVER	230	6304903	SPRING
120	6026751	REAR PANEL	231	6879902	IMPEDANCE ARM ASSY
123	6795152	RIVET	232	5446151	FULL ERASE HEAD
124	6893942	HINGE	233	6302391	SPRING
125	6890501	STUD	234	5446161	AUDIO CONTROL HEAD
126	6794591	BUSHING	235	6304906	SPRING
127	5850721	POWER CORD	236	7786245	WASHER
128	5213811	POWER TRANSFORMER	237	6878932	SUB BRAKE
130	6892513	REAR PIECE	238	6300084	SPRING
131	5672971	JACK PLATE	239	5578761	MOTOR-CAPSTAN
132	5586593	TUNER IF BLOCK	240	6865675	REC PREVENTION ARM
133	5587621	RF CONVERTOR	241	5633971	SWITCH (S142)
134	6890631	LED HOLDER	242	7788143	POLYSLIDER WASHER
135	6891531	DISPLAY HOLDER	243	6979842	PRESSURE ROLLER ASSEMBLY
136	6869311	COVER	246	6547811	SPRING
137	6002002	SIDE COVER (R)	247	6979041	X-ADJUST SCREW
138	6001992	SIDE COVER (L)	248	5625141	SWITCH
150	5490295	IR MODULE	250	6873291	COLLAR
901	8699410	SCREW (3X14)	251	4504401	TAPE GUIDE
902	7784428	SCREW (M3)	255	6877521	COLLAR
903	8741406	SCREW (3X6)	256	6539101	SPRING
904	8691408	SCREW (3X8)	260	5372041	PRE AMP PCB ASSEMBLY
905	8699410	SCREW (3X14)	301	6886824	CLUCH PLATE ASSEMBLY
906	8699412	SCREW (3X12)	302	6355561	BELT
907	8691608	SCREW 4X8BT	303	7386971	SLIDER-BRAKE
908	88914143	SCREW	304	6865733	MODE SLIDER
909	8691408	SCREW (3X8)	305	6547821	SPRING
			306	6434671	GEAR
			307	6865791	TENTION ARM
			311	7386933	LOADING MOTOR

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
312	6356111	BELT	979	8650408	SCREW
313	6356451	BELT	980	8741406	SCREW (3X6)
314	6979051	FLYWHEEL	983	8741403	BIND SCREW-3MMDX3MM
315	7788142	WASHER	985	8671406	SCREW
316	7788861	WASHER	986	8678405	SCREW (3X5) BLACK
317	6356101	BELT	988	8691410	SCREW
318	6356081	BELT	989	87111033	PAN HEAD SCREW 2X3
319	7386832	FLYWHEEL HOLDER	990	8741406	SCREW (3X6)
320	6869291	PULLEY			
321	7778859	POLYSLIDER WASHER			
322	6355561	BELT			
401	7397054	FRONT LOADING ASSY (MECHA ASSY)			
402	7386745	SIDE BRACKET ASSY (LEFT)			
403	7386701	BRACKET(R)			
404	7386815	CASSETTE HOLDER			
412	7394493	BRACKET-MOTOR			
414	5946911	MOTOR CBA			
417	6879104	LOADING GEAR (R)			
423	6879093	LOADING GEAR (L)			
424	7367361	PLATE			
425	6887322	FRONT HOLDER			
427	6879153	DOOR ARM			
428	6301027	SPRING			
430	6879182	GUIDE PIECE			
501	5457471	UPPER CYLINDER			
502	5457481	LOWER CYLINDER			
503	5792631	BRUSH			
950	7541395	SPECIAL SCREW			
951	8691408	SCREW (3X8)			
952	8741408	SCREW (B3X8)			
954	7781133	BT SCREW 3MMD			
955	8691408	SCREW (3X8)			
956	8691408	SCREW (3X8)			
958	8691408	SCREW (3X8)			
959	77730833	SCREW			
960	8741408	SCREW (B3X8)			
961	8812114	WASHER - 3MMD SMALL			
962	8650412	SCREW (3X12)			
963	8821114	3D NUT			
964	87411033	SCREW(2X3B)			
965	7781872	SCREW-3MMDX8MM			
966	7773086	SCREW			
967	8741414	SCREW (3X14)			
968	8821114	3D NUT			
969	8741408	SCREW (B3X8)			
970	8691408	SCREW (3X8)			
971	8691408	SCREW (3X8)			
972	8691312	SCREW (2.6X12)			
975	8699410	SCREW (3X14) BLACK			
976	7782781	SCREW 3X8BT			
977	8691408	SCREW (3X8)			
978	8741408	SCREW (B3X8)			

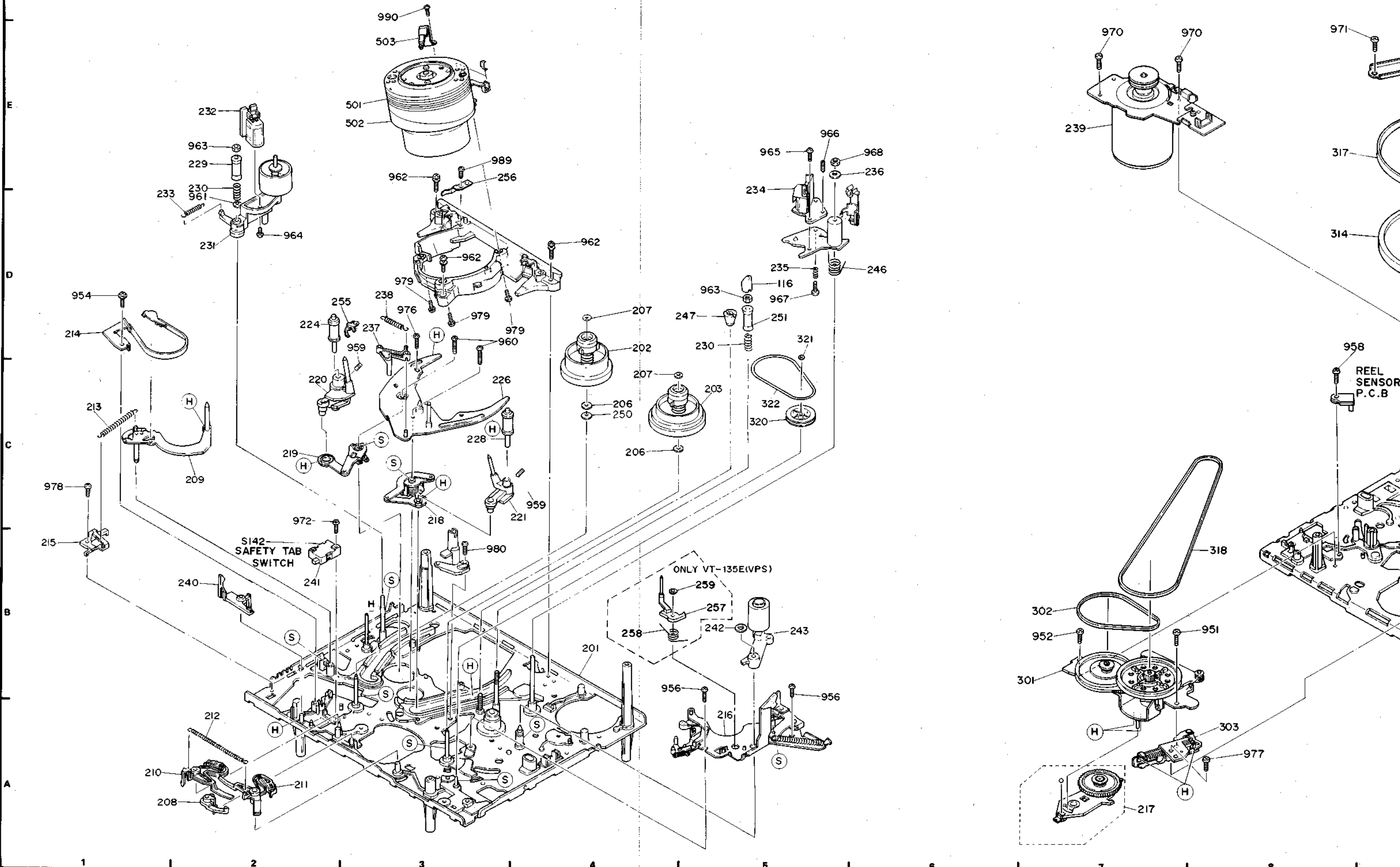
CABINET SECTION (GEHÄUSEEINHEIT)



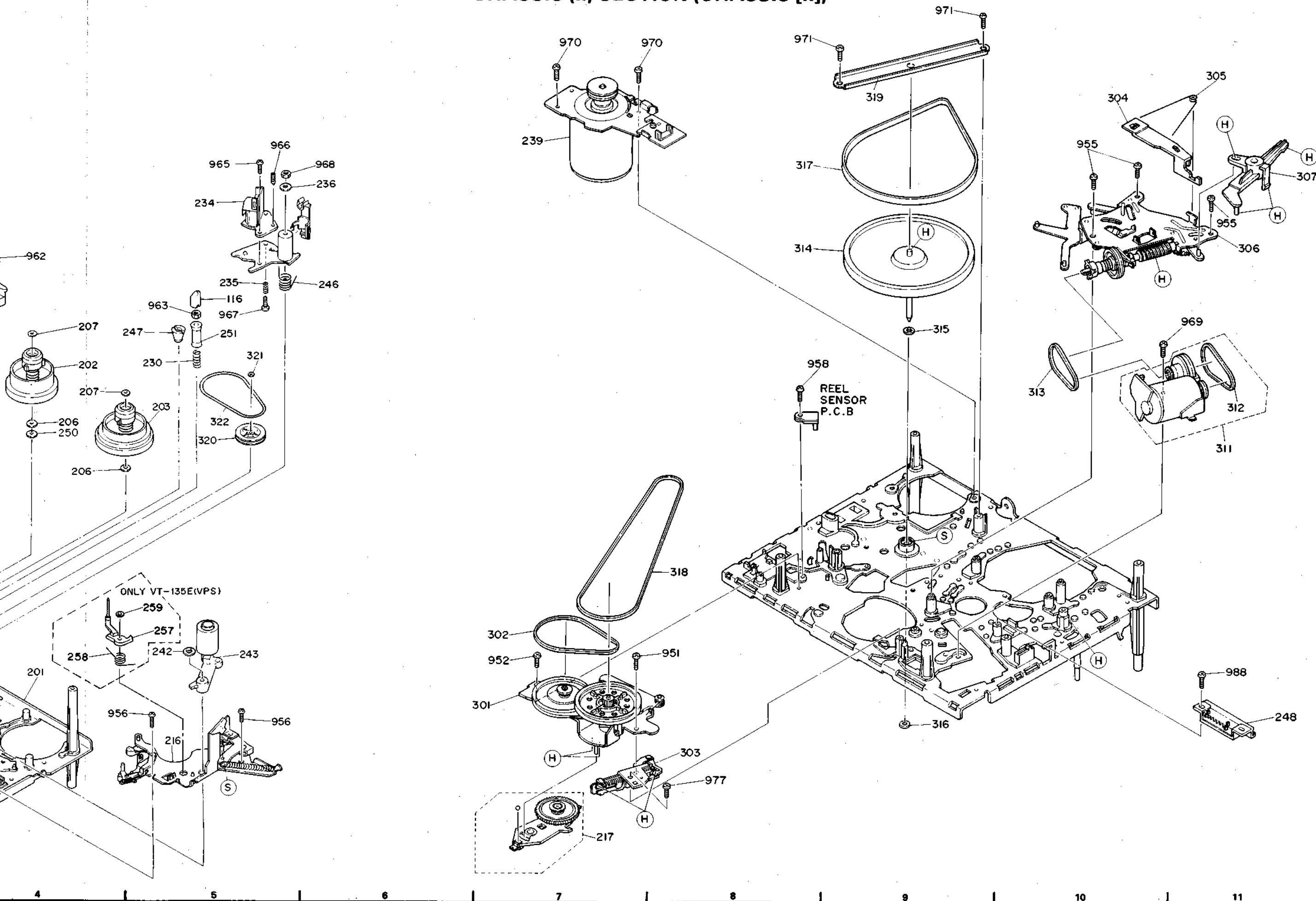


CHASSIS (I) SECTION (CHASSIS [I])

CHASSIS (II) SECTION (CHASSIS [II])



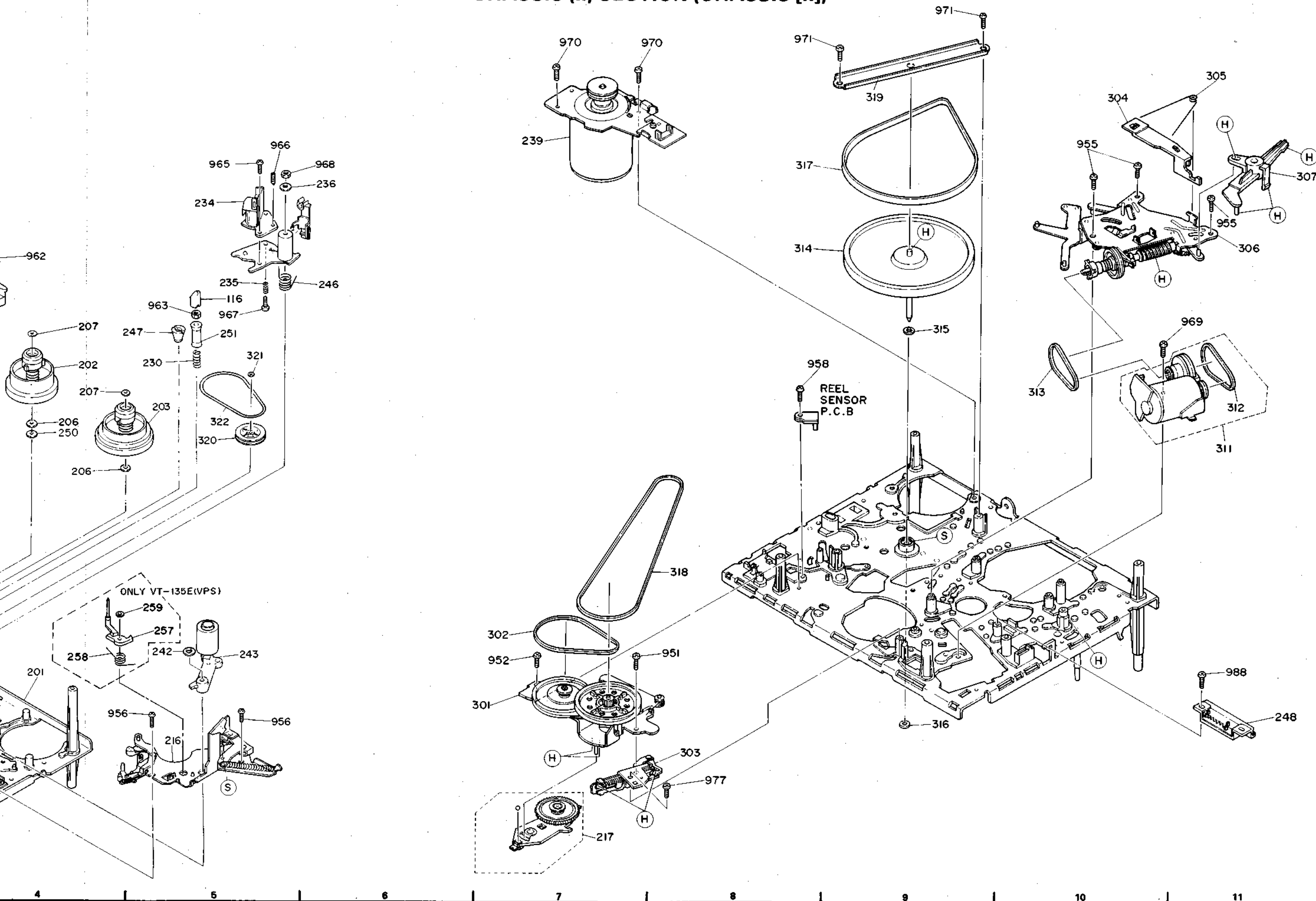
CHASSIS (II) SECTION (CHASSIS [II])



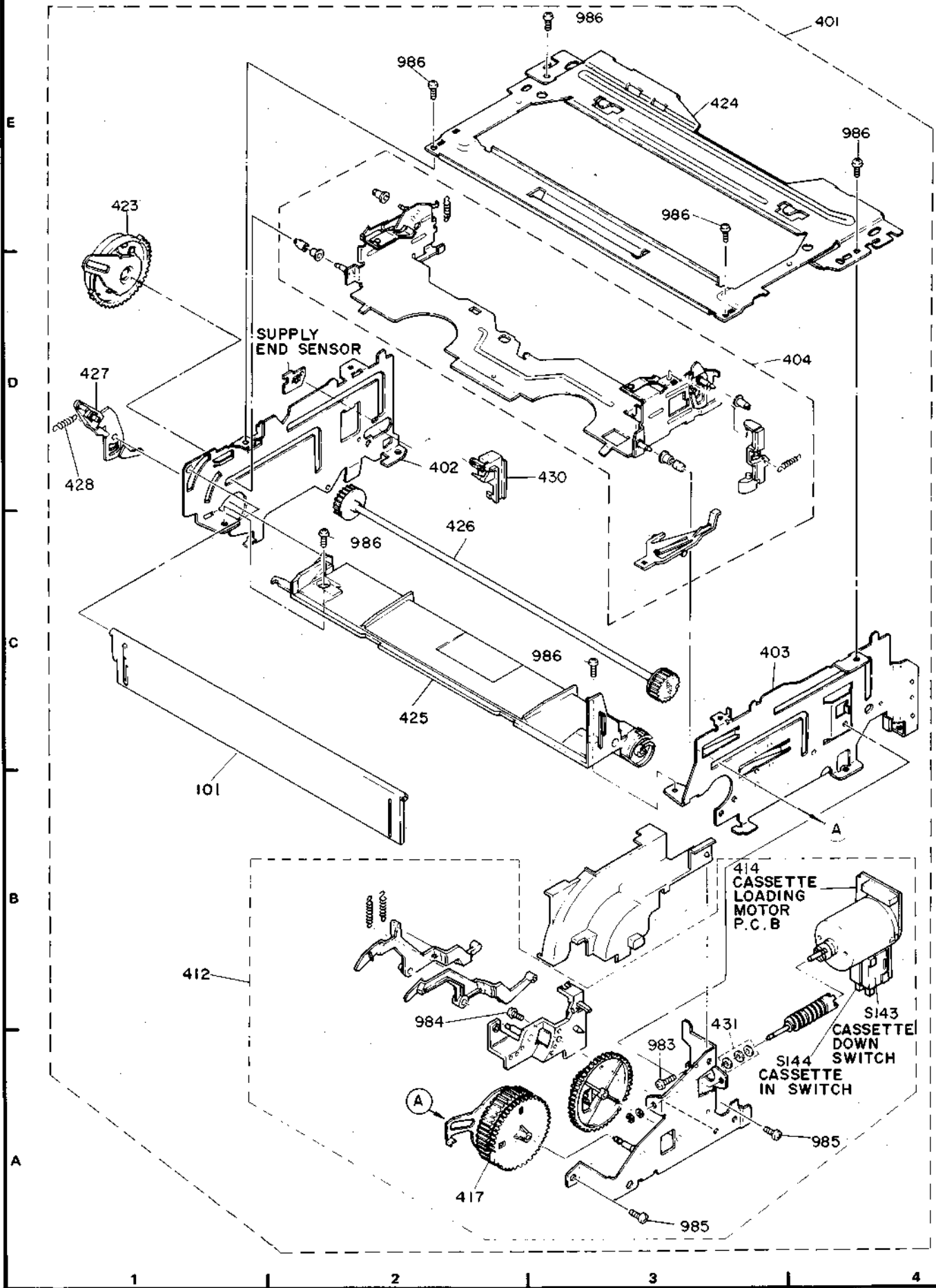
CHASSIS (II) SECTION 6-18

6-19 CHASSIS (I) SECTION

CHASSIS (II) SECTION (CHASSIS [II])



CASSETTE LOADING MECHANISM SECTION (CASSETTEN-LADEMECHANISMUS)



CYLINDER MOTOR SECTION (KOPFTROMMELMOTOR)

