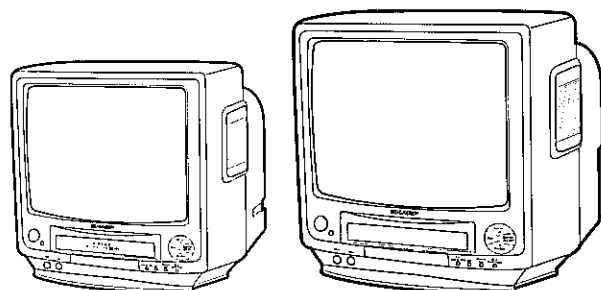


SHARP**SERVICE MANUAL**
维修手册

S85W6VT1428M/



VT-1428M

VT-2128M

TV/VCR COMBINATION
TELEVIDEO**Chassis No. VP-2****MODELS**
型号**VT-1428M**
VT-2128M

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

为了用户安全起见(根据一些国家的安全规程的需要), 应将电视机保持于最初的状态, 而且只能使用与指定物相同的部件。

FEATURE

- Full Auto Search Tuning System
- On Screen Digital Channel/Sound Level/ Tuning Display, Control (Contrast, Colour, Brightness, Tint, P-Tone) Symbol and Level
- Blue Back Off Timer
- 40 Key, Wireless Remote Control Unit
- Channel Skip
- High Speed Video Search System
 - PAL/SECAM: 7 times
 - NTSC: 5 times(SP), 15 times (EP)
- DPSS (Digital Program Search System)
- Quick Start Playback with Full Loading System
- Still/Slow Function with Noiseless Frame Still
- Digital Automatic Tracking Control
- Automatic Playback Function
- AHC (Automatic Head Cleaning System)

主要功能

- 全自动寻台调谐系统
- 接收频道、音量等级、图象控制(对比度、彩色、亮度、色调、影调)等级的在屏数值表示功能
- 蓝色背景定时自动关机功能
- 40键无线遥控器
- 频道跳选功能
- 磁带图象快速查索系统
 - PAL/SECAM制式: 7倍走速
 - NTSC制式: 5倍走速(SP方式)
15倍走速(EP方式)
- DPSS(数值式节目查寻系统)
- 全自动磁带装挂系统的快速播放始动功能
- 无噪声帧静止的图象静止及慢动作播放功能
- 数值式自动跟踪控制功能
- 自动播放功能
- AHC(磁头自动清控系统)

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user — serviceable parts inside. Refer servicing to qualified service personnel.

警告

该电视机底盘的有些部分通电。当维修本机底盘时, 请在电源线插头和电源插座之间使用隔离变压器。为了防止电击的危险, 不要去拆下机盖。在里面的部件, 不是使用者所能维修的, 必须委托够格的维修人员来进行维修。

SHARP CORPORATION

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SPECIFICATIONS

■ OUTLINE OF THE PRODUCT

Power Source:	110~240 V AC, 50/60 Hz
Power Consumption:	VT-1428M: 77 W VT-2128M: 98 W
Receiving Broadcast Standard:	PAL System B/G, I, D/K, M
Receiving Channel:	VHF; 1A~S20 UHF; E21~US83
Receiving System:	Sound; 5.5 / 6.0 / 6.5 / 4.5 MHz Colour; PAL / SECAM / NTSC
Antenna Input Impedance:	VHF/UHF; 75 ohm Unbalanced (DIN)
Video Signal:	Input; 0.5~2.0 Vp-p / 75 ohm (RCA) Output; 1.0 Vp-p / 75 ohm (RCA)
Audio Signal:	Input; 0.5Vrms / 10k ohm (RCA) Output; 0.5Vrms / 1k ohm (RCA)
Temperature:	Operation; 5° C to 40° C Storage; -20° C to 60° C
Dimensions (Approx.):	VT-1428M: 388 mm (W) × 380 mm (H) × 395 mm (D) VT-2128M: 510 mm (W) × 449 mm (H) × 483 mm (D)
Weight (Approx.):	VT-1428M: 13.7 kg VT-2128M: 25.3 kg
Cabinet Material:	Plastic
Accessories:	<input type="checkbox"/> Operation Manual <input type="checkbox"/> Infrared Remote Control Unit <input type="checkbox"/> Dry Batteries, Type AA (× 2 pcs) <input type="checkbox"/> AC Plug Adaptor

■ TV SECTION

Viewing Area:	VT-1428M: 33.54 cm Diagonal Measurement VT-2128M: 50.8 cm Diagonal Measurement
Picture Power:	VT-1428M: 22.0 kV at 800 μ A Beam Current VT-2128M: 25.0 kV at 1100 μ A Beam Current
Speaker Output:	VT-1428M: 3.0 W at Max. (8 cm Round Dynamic × 2 pcs) VT-2128M: 3.0 W at Max. (8 cm Round Dynamic × 2 pcs)
Picture Tube:	Type; VT-1428M: VB370BVBK1U-S (Tint Tube) VT-2128M: VB51JFC61X/*P or VB51JSY61X/*S (Tint Tube) Heater; VT-1428M: 6.3 V, 300 mA VT-2128M: 6.3 V, 680 mA Focus; High Bi-Potential Electrostatic

■ VCR SECTION

Outline:	VHS Video System Colour Video Cassette Recorder
Format:	VHS PAL/NTSC Standard
Video Recording System:	Rotary Slant Azimuth 2-Head Helical Scan System
Luminance:	FM Recording
Chrominance:	Low Frequency Converted Direct Recording
Video Signal System:	PAL/SECAM/NTSC 3.58 MHz Colour
Cassette Tape:	VHS Type Video Cassette Tape
Tape Width:	12.7 mm
Tape Speed:	PAL; 23.39 mm/s (SP), 11.70 mm/s (LP) NTSC; 33.35 mm/s (SP), 11.68 mm/s (LP-PB only), 11.12 mm/s (EP)
Recording/Playback Time:	SP; Max. 240 min (with E-240) LP; Max. 480 min (with E-240, PAL only) EP; Max. 480 min (with T-160, NTSC only)

Note: The antenna must correspond to the new standard DIN 45325 (IEC 169-2) for combined UHF antenna with 75 ohm connector.

Specifications are subject to change without prior notice.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10 k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. VT-1428M: When repairing the circuit, be sure not to increase the high voltage to more than 25.3 kV, (at beam 0 μ A) for the set.
VT-2128M: When repairing the circuit, be sure not to increase the high voltage to more than 29.3 kV, (at beam 0 μ A) for the set.
2. VT-1428M: To keep the set in a normal operation, be sure to make it function on 22.0 kV \pm 1.5 kV – 2.0 kV (at beam 800 μ A) in the case of the set. The set has been factory — Adjusted to the above-mentioned high voltage.
VT-2128M: To keep the set in a normal operation, be sure to make it function on 25.0 kV \pm 1.5 kV (at beam 1100 μ A) in the case of the set. The set has been factory — Adjusted to the above-mentioned high voltage.
∴ If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

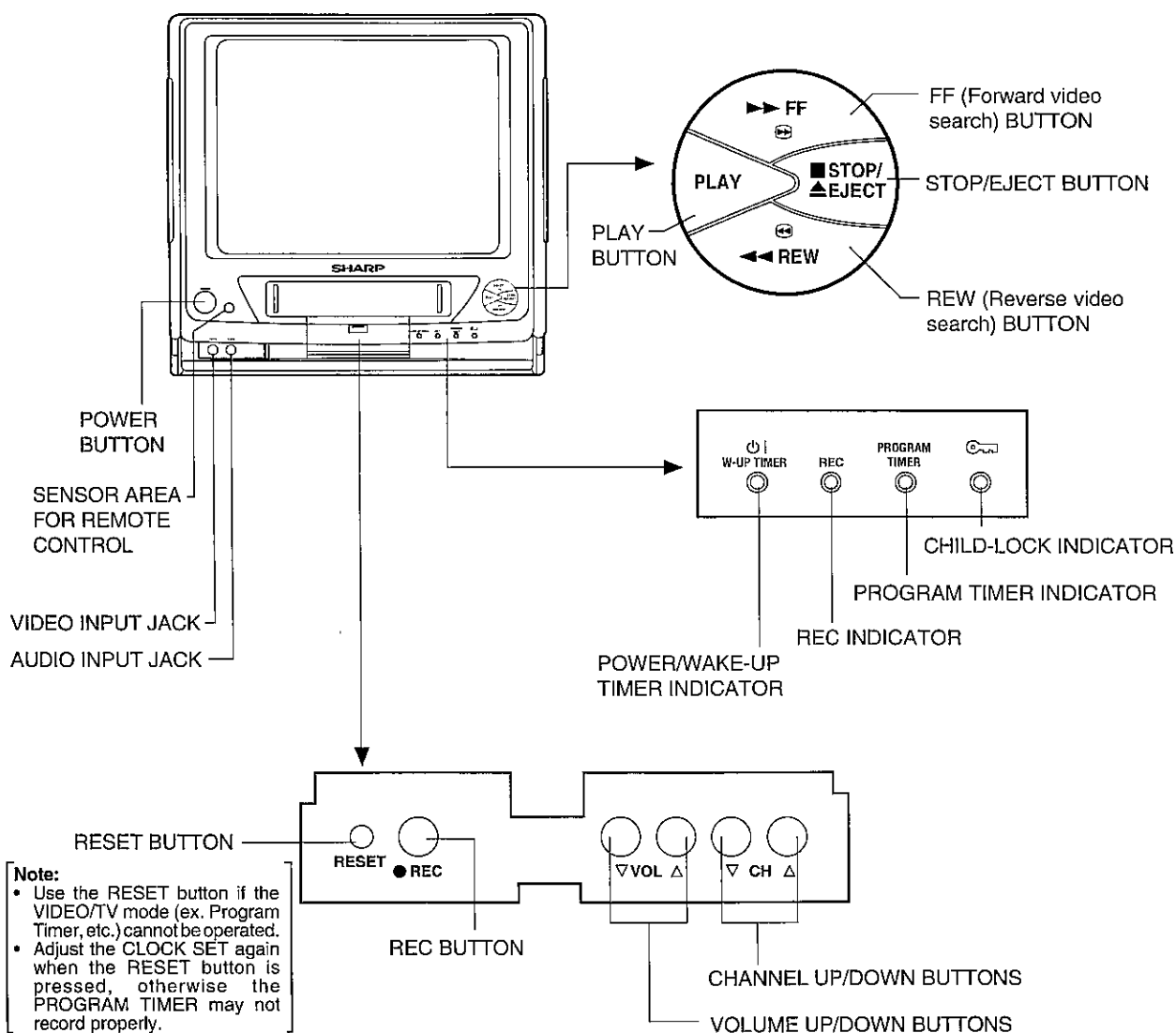
BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators etc.

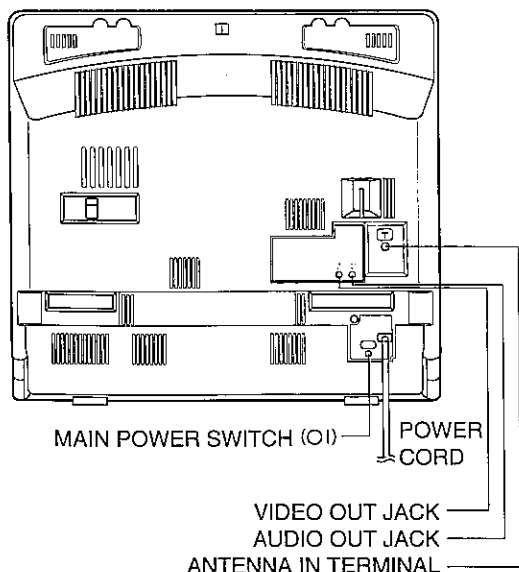
LOCATION OF USER'S CONTROL

FRONT

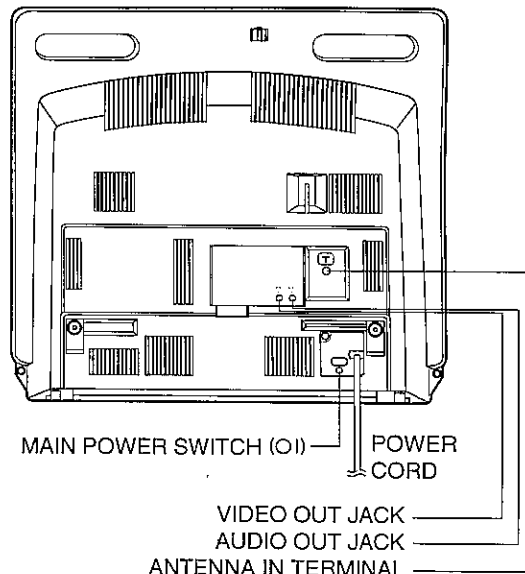


REAR

VT-1428M



VT-2128M

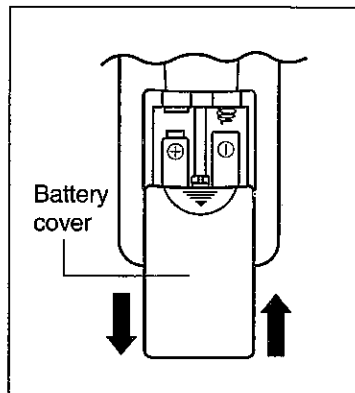


LOCATION OF USER'S CONTROL (Continued)

Remote Control Battery Installation

The remote control lets you operate this product at a distance. Just aim the front of the remote control at the photoreceptor window situated on the front panel and press the appropriate buttons.

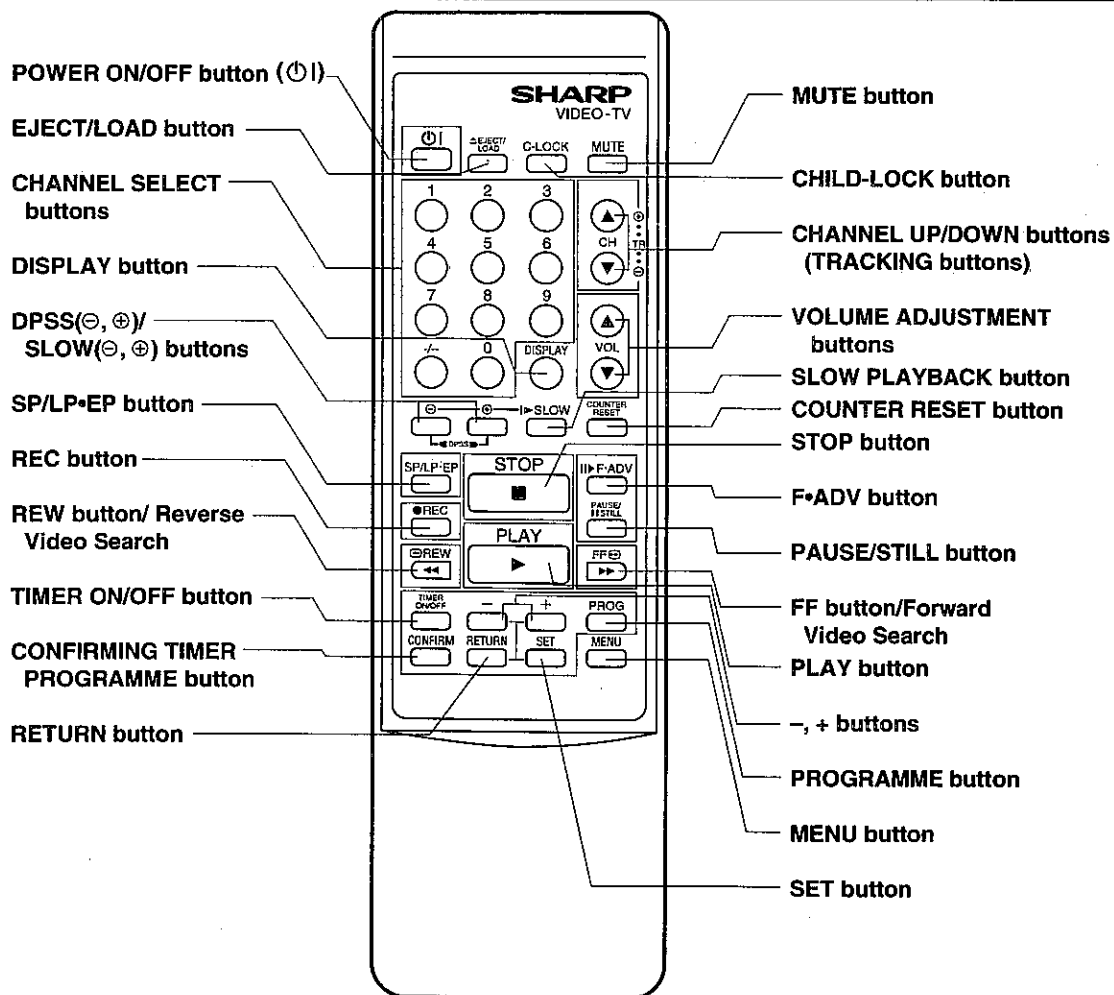
Inserting the Batteries



The remote control operates on two R6 (UM/SUM-3, AA) 1.5 volt batteries (included). If the remote control does not operate or fails to function normally due to weak batteries, new batteries can be purchased at electronics or camera stores.

- ❶ Open the battery cover. (Remove any old batteries that may be in the remote control.)
- ❷ Insert new batteries and match their polarities (+ and -) with the markings inside the compartment.
- ❸ Replace the cover.

Location of Controls

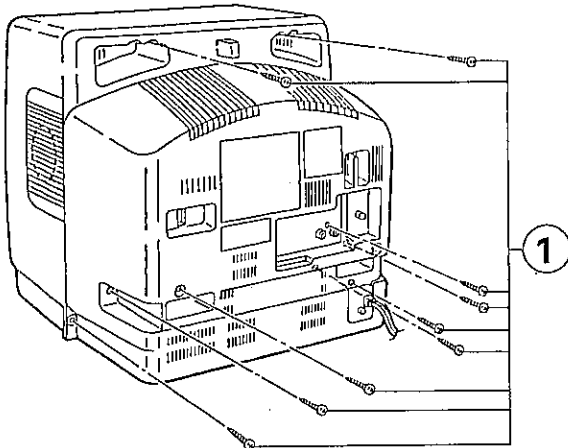


DISASSEMBLY AND REASSEMBLY

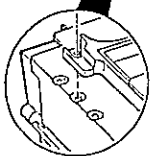
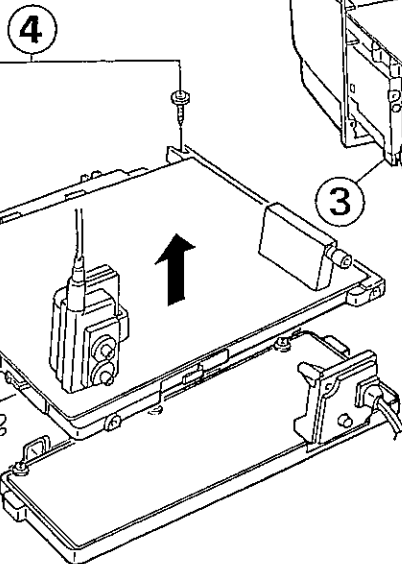
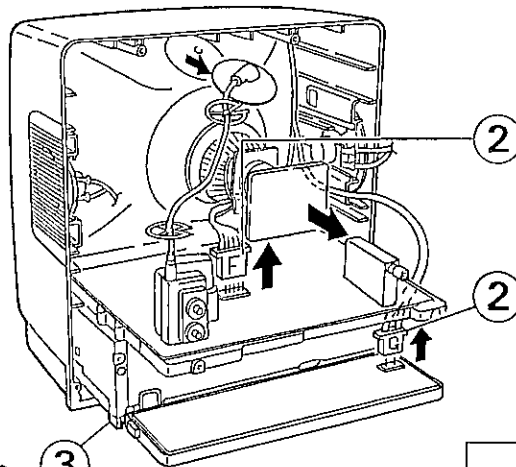
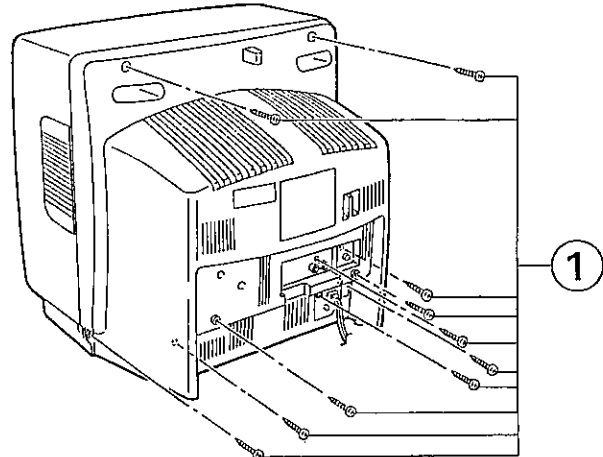
■ TV SECTION

1. Remove the nine screws off the rear cover. (VT-1428M)
1. Remove the ten screws off the rear cover. (VT-2128M)
2. Disconnect the F connector from the main PWB and G connector from the power PWB and disconnect the anode cap and the CRT PWB unit from the CRT.
3. After disconnect the coating earth from the CRT unit and take out the unit.
4. Remove the two screws from the main PWB and separate the PWB from the video unit.
5. Remove the three screws from the power PWB and separate the PWB from the video unit.

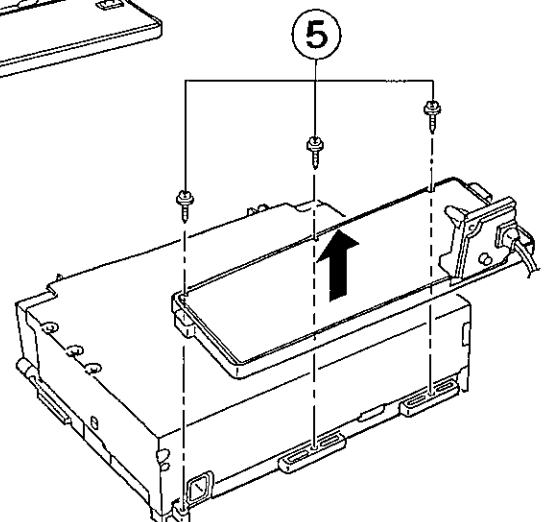
(VT-1428M)



(VT-2128M)

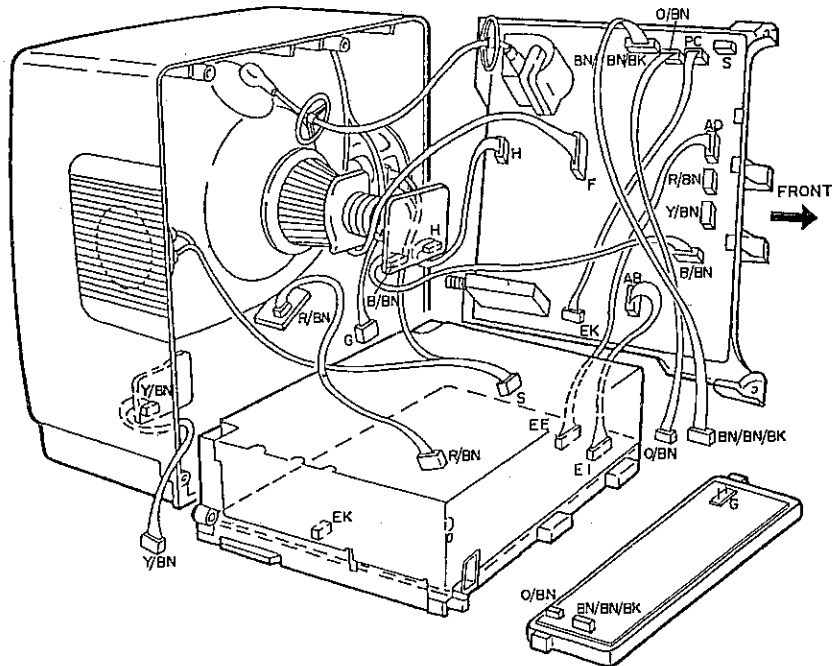


(only for VT-2128M)



DISASSEMBLY AND REASSEMBLY (Continued)

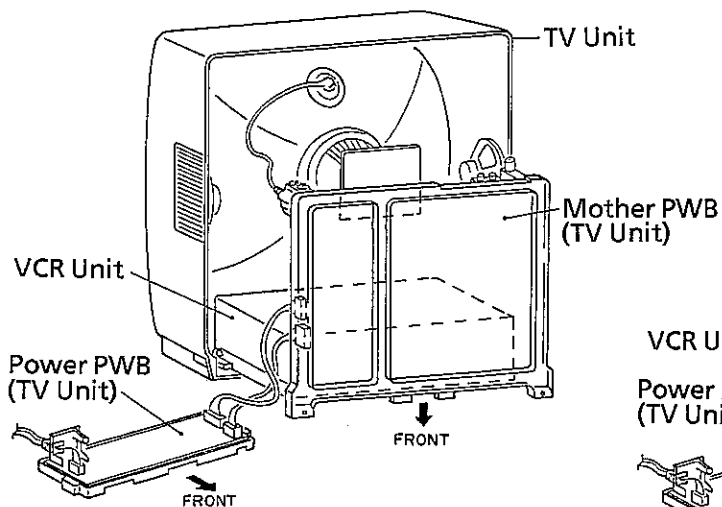
6. Remove the CRT PWB, degaussing coil connector G and front power switch remote control PWB. Place the main PWB upright.
7. Reconnect the CRT PWB. Put the main PWB and the VCR unit together as shown below. Keep the front power switch remote control PWB, speakers and degaussing coil connector G off position.



SERVICING THE PWBs

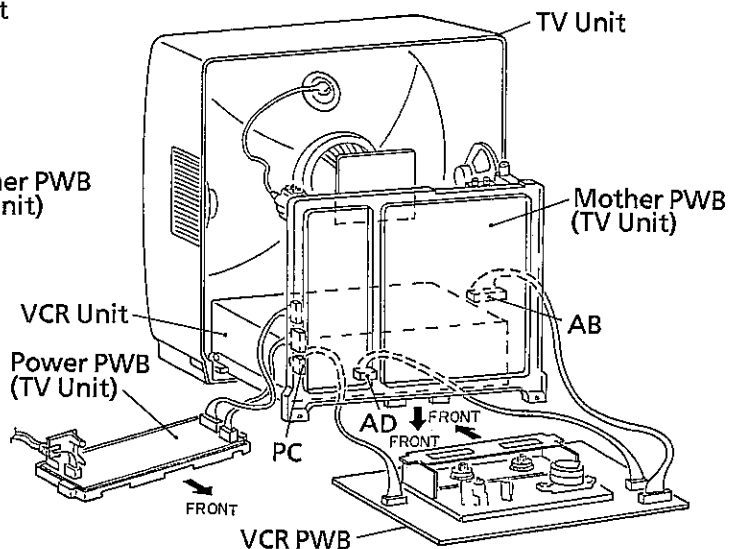
<Repairing the TV unit>

Unhook the power PWB and place it on the left hand of the set. Set up the mother PWB as shown below.



<Repairing the TV and VCR units>


Unhook the PWB/mechanism assembly from the VCR unit, and place it as shown here. Connect the cables (AB), (AD) and (PC) to the mother PWB to start repairing.



ADJUSTMENT OF THE TV ELECTRICAL CIRCUITRY

● PRECAUTIONS

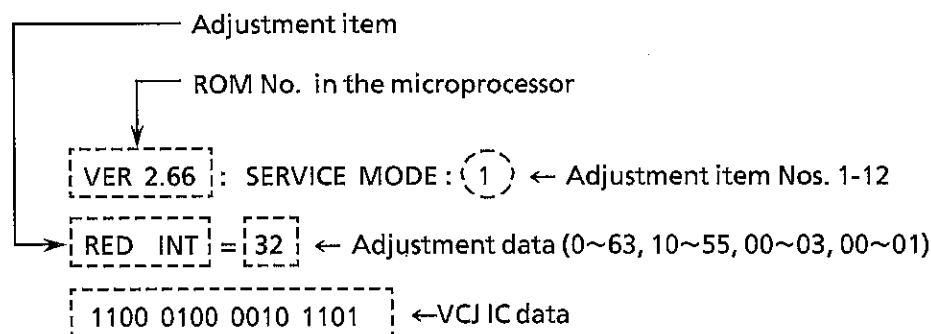
1. Calling the service mode

- (1) Place the set in the stand-by mode.
- (2) Hold down the CH UP key (CH ▲) of the set for 2 seconds or longer and at the same time press the POWER button () of the set. Now the set is in the service mode.

2. Clearing the service mode

- (1) There are two ways to clear the service mode. Press the MENU key on the remote control gun.
- (2) Or place the set in the stand-by mode again.

3. Display in the service mode



★ SERVICE MODE : 1	RED INT	= 0~63	General adjustment items
★ SERVICE MODE : 2	GRN INT	= 0~63	
★ SERVICE MODE : 3	BLUE INT	= 0~63	
★ SERVICE MODE : 4	VERT AMP	= 0~63	
★ SERVICE MODE : 5	VERT LIN	= 0~63	
★ SERVICE MODE : 6	VERT POS	= 0~63	
★ SERVICE MODE : 7	HOR PHAS	= 10~55	
★ SERVICE MODE : 8	HI-VI	= 00/01/02/03	Basically fixed
★ SERVICE MODE : 9	HGAIN1	= 00/01	
★ SERVICE MODE : 10	HGAIN2	= 00/01	
★ SERVICE MODE : 11	INTSEL	= 00/01	
★ SERVICE MODE : 12	CALKILL	= 00/01	

→ Selectable by the CH ▲/▼ key
 → Variable by the VOL ▲/▼ key

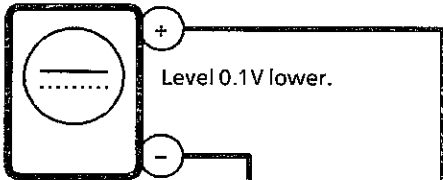
RF-AGC ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
----------------------	----------------------

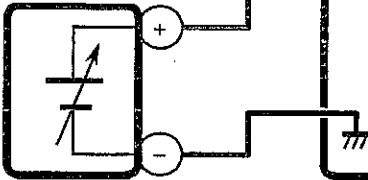
1. RF-AGC Cut-in Adjustment (AGC Control)

1. Receive the E-10 channel (PAL colour bar) signal.
Field intensity : $53 \pm 1 \text{ dB}_\mu\text{V}$ (50 Ω open)
2. Connect the oscilloscope to TP201. See the figure below.

Oscilloscope



Constant-voltage
power supply

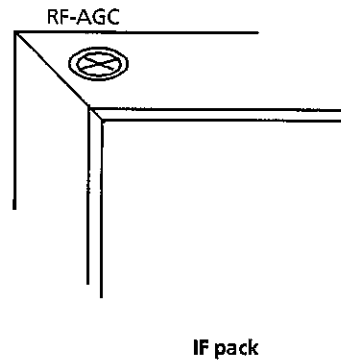


Approx. 6.0V

TV Set

TP201

1. Turn the control to get the highest voltage.
(10/10)
2. Turn the control gradually in the opposite direction until the voltage goes down by 0.1V from the highest level.
3. Adjust the signal level to 63-67 dB_μV and make sure there is no noise.
4. Adjust the signal level to 90-95 dB_μV and make sure there is no cross modulation beat.



SCREEN/BACKGROUND ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
----------------------	----------------------

1. Screen Adjustment

1. Receive the "AV-CH" signal. Keep the blue background off.
2. Reset "video adjust" mode.

1. Call the service mode and take the step below.

- Screen control:

Look at the VCJ IC data on the screen. Adjust the control so that the 10th figure from left should turn from "1" to "0".

To be 0 here too.
↓
1100 0100 0010 1101
↑
To turn to 0 here.

2. Background Adjustment

1. Receive "WHITE BALANCE ADJUSTMENT PATTERN" signal.

2. In the video adjust mode, adjust the brightness and contrast.

- Bright portion: 120 nit
 - Dark portion: 20 nit
- Keep the colour adjusted at "00".

1. Call the service mode and take the step below.

- Red intensity :
- Green intensity :
- Blue intensity :

Pick up the service mode numbers "1", "2" and "3". Adjust the colour temperature as follows.
12,300°K ($x = 0.272 \pm 0.015$, $y = 0.275 \pm 0.015$)
The "CA-100 Minolta CRT Color Analyzer" should be used as a colour thermometer.

Note:

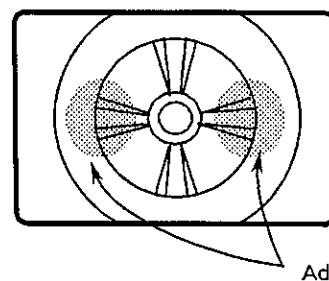
A different colour temperature may be specified according to the Production Communication Sheet "B".

※ 7500°K ($x : 0.300$, $y : 0.310$)

3. Focus Adjustment

1. Receive "monoscope pattern" signal.
2. Reset the video adjust mode to have the Video Normal Position.

1. Adjust the focus control to have the best focus in the areas between the pattern's center and its both ends.



Adjust point

HORIZONTAL/VERTICAL CIRCUIT ADJUSTMENT

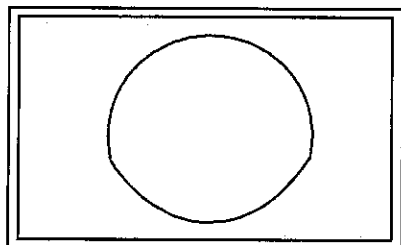


Figure-1-1.

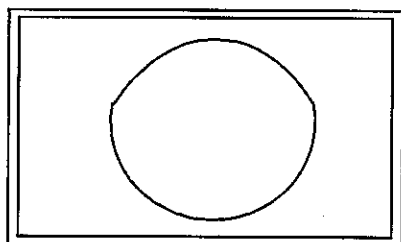


Figure-1-2.

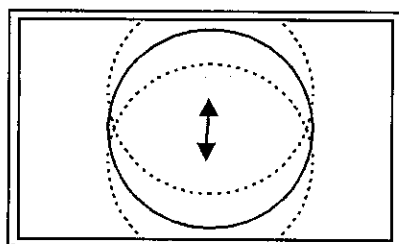


Figure-2.

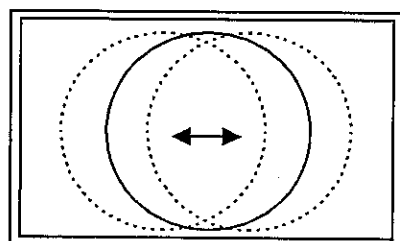


Figure-3.

1. PAL Adjustment

Adjusting Conditions
<ol style="list-style-type: none"> 1. Receive "PAL monoscope pattern" signal. 2. Reset the video adjust mode to have the Video Normal position.
Adjusting Procedures
<ol style="list-style-type: none"> 1. Call the service mode and take the steps below. <ul style="list-style-type: none"> ● VERT-AMP (vertical size): Select the service mode number "4". Adjust the VERT-AMP to have 10% overscan. ● VERT-LIN (vertical linearity): Select the service mode number "5". Adjust the VERT-LIN to have optimum vertical linearity. (See Figs. 1-1 and 1-2.) ● VERT-POS (vertical center): Select the service mode number "6". Adjust the VERT-POS so that the vertical center be at the center of the screen. (See Fig. 2.) ● HOR-PHAS (horizontal center): Select the service mode number "7". Adjust the HOR-PHAS so that the horizontal center be at the center of the screen. (See Fig. 3.)

2. SECAM Adjustment

Adjusting Conditions
<ol style="list-style-type: none"> 1. Receive the SECAM Philips pattern signal. 2. Reset the video adjust mode to have the Video Normal position.
Adjusting Procedures
<ol style="list-style-type: none"> 1. Call the service mode and take the step below. <ul style="list-style-type: none"> ● HOR-PHAS (horizontal center): Select the service mode number "7". Adjust the HOR-PHAS so the horizontal center be at the center of the screen. (See Fig. 3.)

HORIZONTAL/VERTICAL CIRCUIT ADJUSTMENT (Continued)

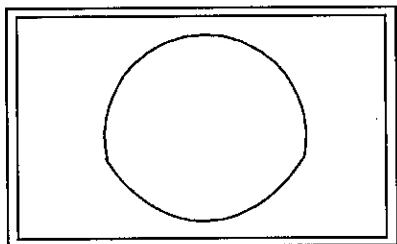


Figure-1-1.

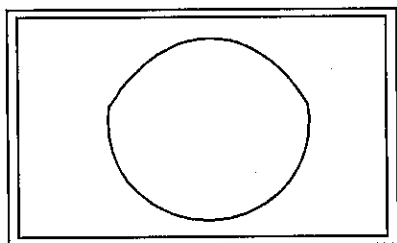


Figure-1-2.

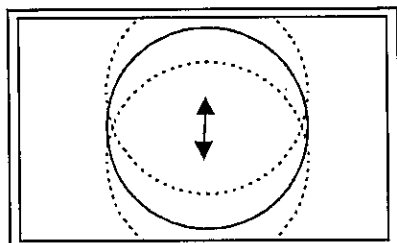


Figure-2.

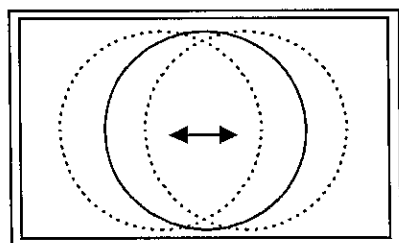


Figure-3.

3. NTSC Adjustment

Adjusting Conditions

1. Receive the NTSC monoscope pattern signal.
2. Reset the video adjust mode to have the Video Normal position.

Adjusting Procedures

1. Call the service mode and take the same steps as for the PAL system.
 - **VERT-AMP (vertical size):**
Select the service mode number "4". Adjust the VERT-AMP to have 10% overscan.
 - **VERT-LIN (vertical linearity):**
Select the service mode number "5". Adjust the VERT-LIN to have optimum vertical linearity. (See Figs. 1-1 and 1-2.)
 - **VERT-POS (vertical center):**
Select the service mode number "6". Adjust the VERT-POS so that the vertical center be at the center of the screen. (See Fig. 2.)
 - **HOR-PHAS (horizontal center):**
Select the service mode number "7". Adjust the HOR-PHAS so that the horizontal center be at the center of the screen. (See Fig. 3.)

PURITY ADJUSTMENT

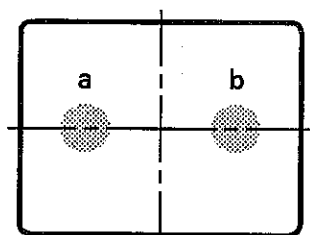
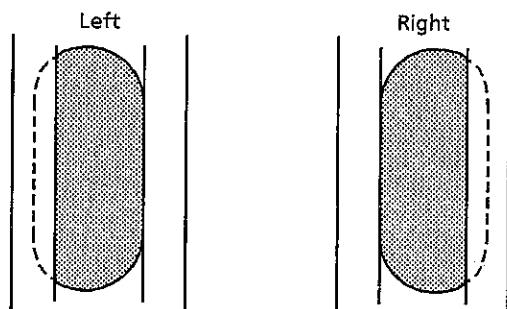
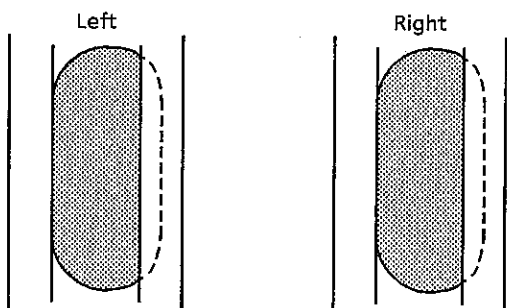


Figure A.



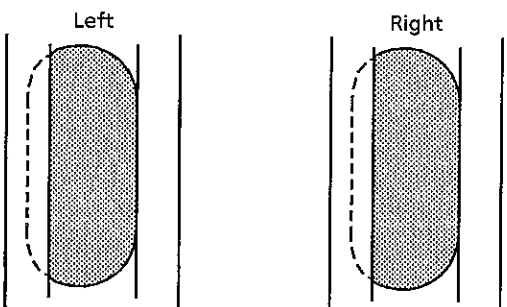
Beam landing equally outwards.

Figure B.



Beam landing shifted to the right.

Figure C.



Beam landing shifted to the left.

Figure D.

Adjusting Conditions

1. Before the purity adjustment, warm up the set with beam current of more than $700 \mu\text{A}$ for longer than 30 minutes ($400 \mu\text{A}$ for the 14" model).
2. Receive the green-only signal and adjust the beam current to about $770 \mu\text{A}$ ($500 \mu\text{A}$ for the 14" model).
3. Fully degauss the CRT with the degaussing coil.

Adjusting Procedures

Notes:

- Static convergence should be roughly adjusted.
- The purity magnet should be positioned where the magnetic field is zero.

Adjustment:

During the adjustment, keep the set facing the east.

1. Observe the spots "a" and "b" (shown in Fig. A) with a microscope. Adjust the purity magnet to have these spots at the specified landing positions.
2. If the right and left spots are equally deviated outwards from their landing positions (shown in Fig. B), push the deflection yoke forwards for proper positioning.
3. If both the spots are shifted to the right or left (shown in Figs. C and D), adjust the opening angle of the purity magnet for proper positioning.
4. Make sure that the center spot as well as the right and left spots are in their specified landing positions. Check the four corners of the CRT screen. See if all the landing positions are satisfactory with the Rank "B" specifications.
5. If any colour other than green appears, pull the deflection coil backwards.
Landing too outwards: Deflection yoke to push forwards.
Landing too inwards : Deflection coil to pull backwards.
6. Receive the monoscope pattern signal.
7. Set the raster rotation at "0" position with the set facing the east.

Adjustment error: $0 \pm 2 \text{ mm}$

8. Tighten up the deflection coil screws.
Tightening torque: $11 \pm 2 \text{ kg}$

CONVERGENCE ADJUSTMENT

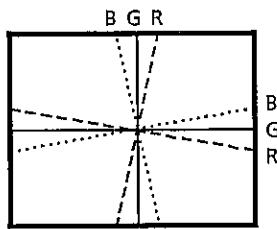


Figure a.

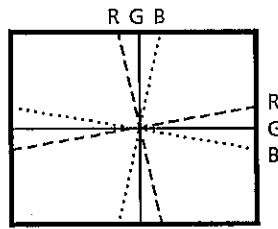


Figure b.

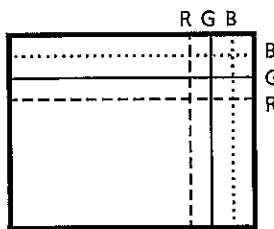


Figure c.

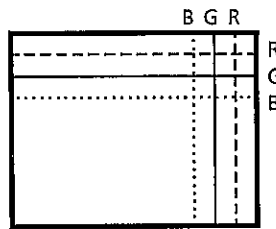
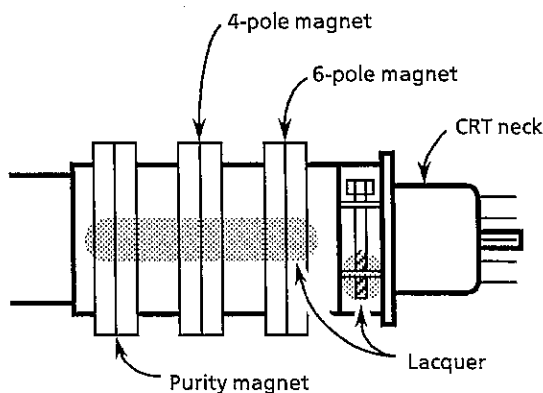
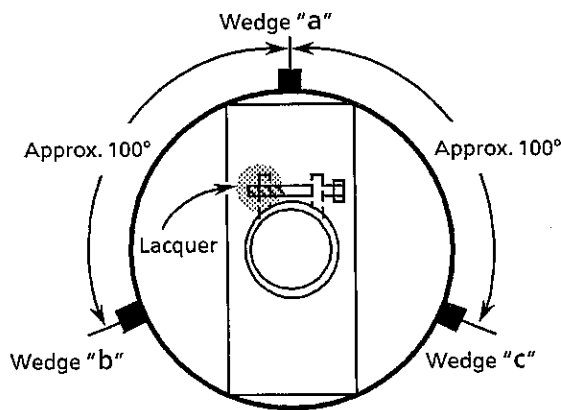


Figure d.



Adjusting Conditions

This adjustment should be performed after the purity magnet adjustment.

1. Receive the crosshatch pattern signal.
2. Set the brightness and contrast controls to the 5/10 and 10/10 positions, respectively.

Adjusting Procedures

STATIC CONVERGENCE

1. Adjust the opening angle of the 4-pole magnet and rotate the magnet to impose the blue line over the red one.
2. Adjust the opening angle of the 6-pole magnet and rotate the magnet to impose the green line over the blue one.

DYNAMIC CONVERGENCE

3. Take the following steps for dynamic convergence at the edges of the CRT screen.

- **Convergence in Fig a :**

Insert the wedge "a" in position, and tilt the deflection coil upward for correct convergence.

- **Convergence in Fig b :**

Insert the wedges "b" and "c" in position, and tilt the deflection coil downward for correct convergence.

- **Convergence in Fig c :**

Insert the wedge "c" deeper, and tilt the deflection coil rightward for correct convergence.

- **Convergence in Fig d :**

Insert the wedge "b" deeper, and tilt the deflection coil leftward for correct convergence.

4. Stick the above wedges on the CRT, and apply glass tape over them.

5. Apply lacquer to the deflection yoke screw, the magnet unit (consisting of purity, 4-pole and 6-pole magnets) and the magnet unit screw.

Finally receive the red-only signal to make sure there is no mixture with any other colour. Do the same with the blue-only signal.

PERFORMANCE CHECK

1. A/V Output Checking

Adjusting Point	Adjusting Conditions / Procedures
A/V output (J401)	<ol style="list-style-type: none"> 1. Receive the colour bar signal (100% white colour bar, audio : 400 Hz, 100% modulation). 2. Add a 75-ohm terminal resistor to the video output terminal. 3. Add a 10-kohm terminal resistor to the audio output terminal. <p>The output levels are as follows. Video output: $1 \text{ Vp-p} \pm 3 \text{ dB}$ (0.71-1.41 Vp-p) Audio output: $2.61 \text{ Vp-p} \pm 3 \text{ dB}$ (1.85-3.69 Vp-p)</p> <p>Note: <i>Make sure the video and audio outputs are as specified.</i></p>

2. A/V Input Checking

A/V input (J8021)	<ol style="list-style-type: none"> 1. Receive the colour bar signal. 2. Feed the external video and audio signals via the A/V front jacks. 3. Using the CH $\blacktriangle/\blacktriangledown$ key, call the AV mode and make sure the external video and audio signals are being properly received. (The AV mode is available somewhere between 1ch and 50 (max) ch.)
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3. Protector Performance Checking

Protector Performance	<ol style="list-style-type: none"> 1. Receive the monoscope pattern signal. 2. Apply 20V from the constant-voltage power supply to the cathode of D607 (TP603: no symbol on the PWB) and make sure the protector is not activated. 3. Feed 25V in the same way and make sure the protector is activated. <p>Note: <i>To reset the protector, press the RESET key.</i></p>
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4. Beam Protector Performance Checking

Beam Protector Performance	<ol style="list-style-type: none"> 1. Receive the monoscope pattern signal. 2. Ground any of the R, G and B cathodes on the CRT PWB. 3. Make sure the protector is activated immediately. <p>Note: <i>To reset the beam protector, press the RESET key.</i></p>
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PERFORMANCE CHECK (Continued)

5. Blue Background Checking

Adjusting Point	Adjusting Conditions / Procedures
Blue background	<ol style="list-style-type: none">1. In the SET UP mode, select the BLUE SCREEN function.2. Turn on the function. With any signal input, make sure the background is blue. Make sure also that the audio is mute.3. Turn off the function and make sure the blue background disappears.

6. Record Index Checking

Record index	<ol style="list-style-type: none">1. In the SET UP mode, select the REC INDEX function.2. Turn on the function to make recording. (Make sure the clock has been preset.)3. Check the recorded contents. <p>Note: <i>Make sure the channel and time are recorded.</i></p>
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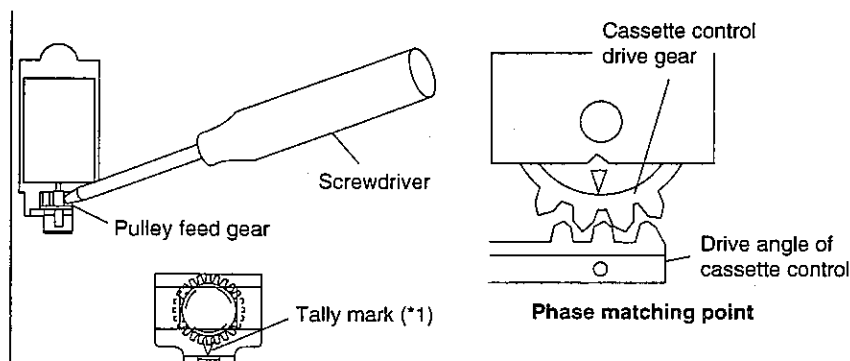
PRECAUTIONS IN REASSEMBLING

MOUNTING THE CASSETTE CONTROLLER

Initial setting is indispensable before placing the cassette controller in the mechanism. The initial setting is made in two ways; electrical and mechanical.

Electrical setting:

Make a short-circuit between TP8804 and TP8805, both located at the center on your side on VCR PWB, with a 22 ohm resistor and be sure that the mechanism is back to its initial setting position (*1). Now place the cassette controller in position. (This method is used when the mechanism has been already set on its PWB.)



Mechanical setting:

Turn the loading motor's pulley feed gear using a screwdriver and be sure that the mechanism is back to its initial setting position (*1). Now place the cassette controller in position. (This method is applicable for the mechanism alone.)

COUPLING THE MECHANISM TO THE PWB

Match the mechanism's projections with the two symbols (round reference and oval sub-reference) on the VCR PWB. Place the mechanism straight down in position with due care so that the mechanism chassis's outer edges should not damage any parts nearby.

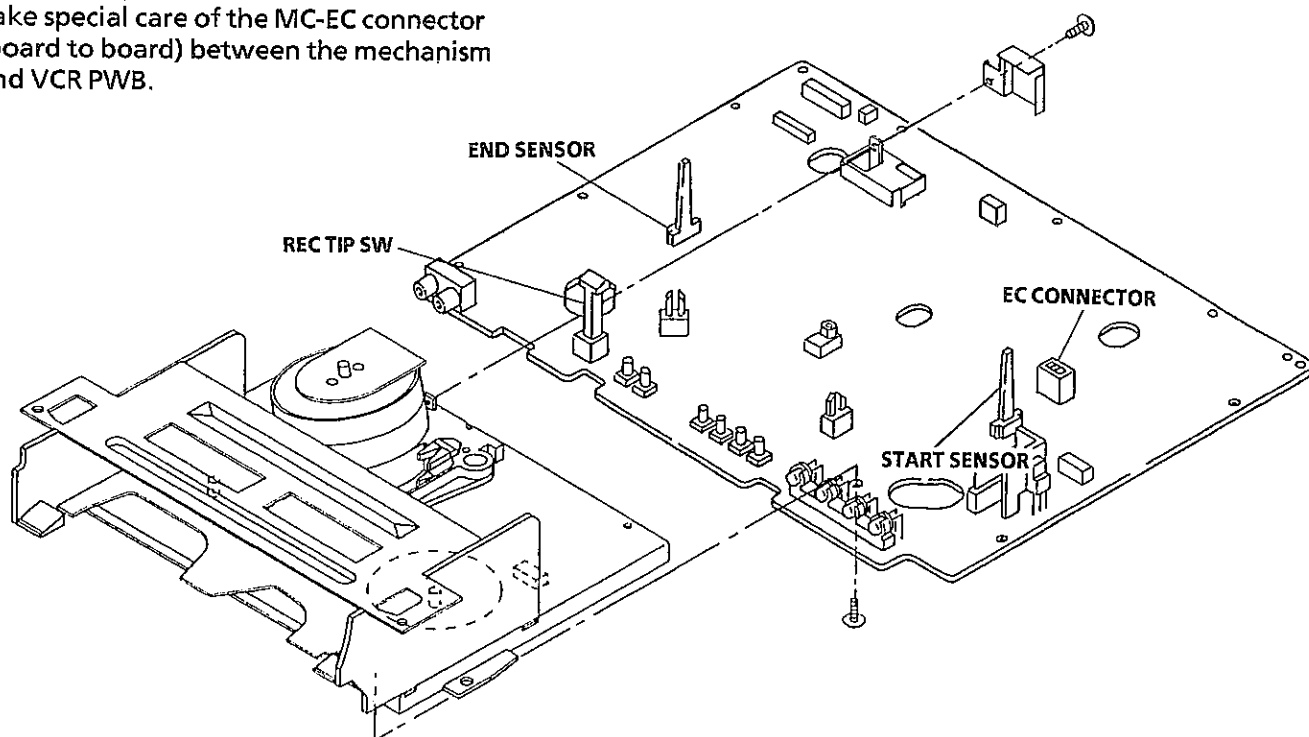
Tighten up the two screws (one for fixing the mechanism and the head amplifier shield, the other on the VCR PWB's soldering side and located near the loading motor) to fix the mechanism and VCR PWB. Reconnect the FFC cables (EB, EF and EH) and harnesses (ED and EG) between the mechanism and VCR PWB.

Parts to pay attention to:

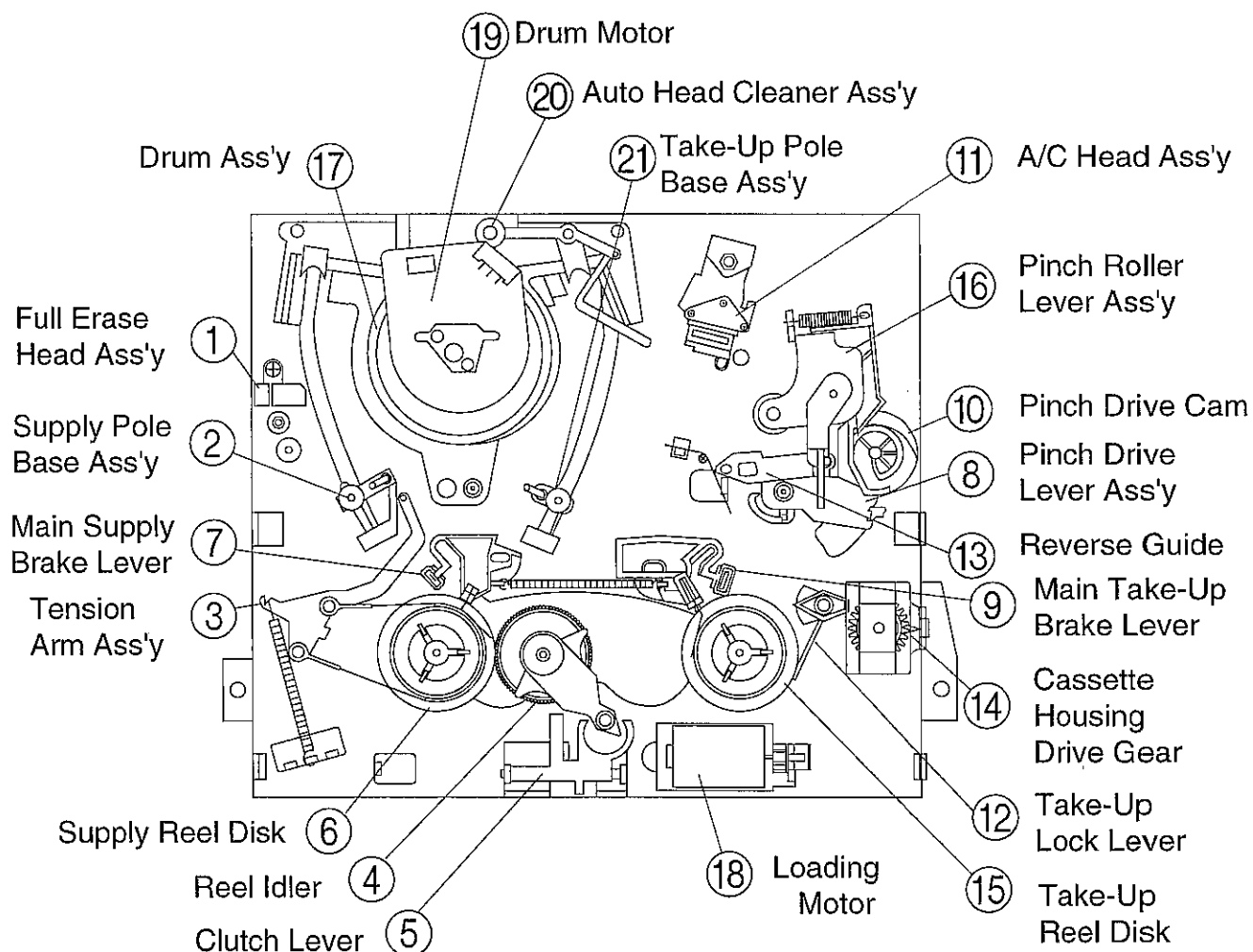
Start and end sensors: Q8803, Q8804

Record tip switch: S8801

Take special care of the MC-EC connector (board to board) between the mechanism and VCR PWB.

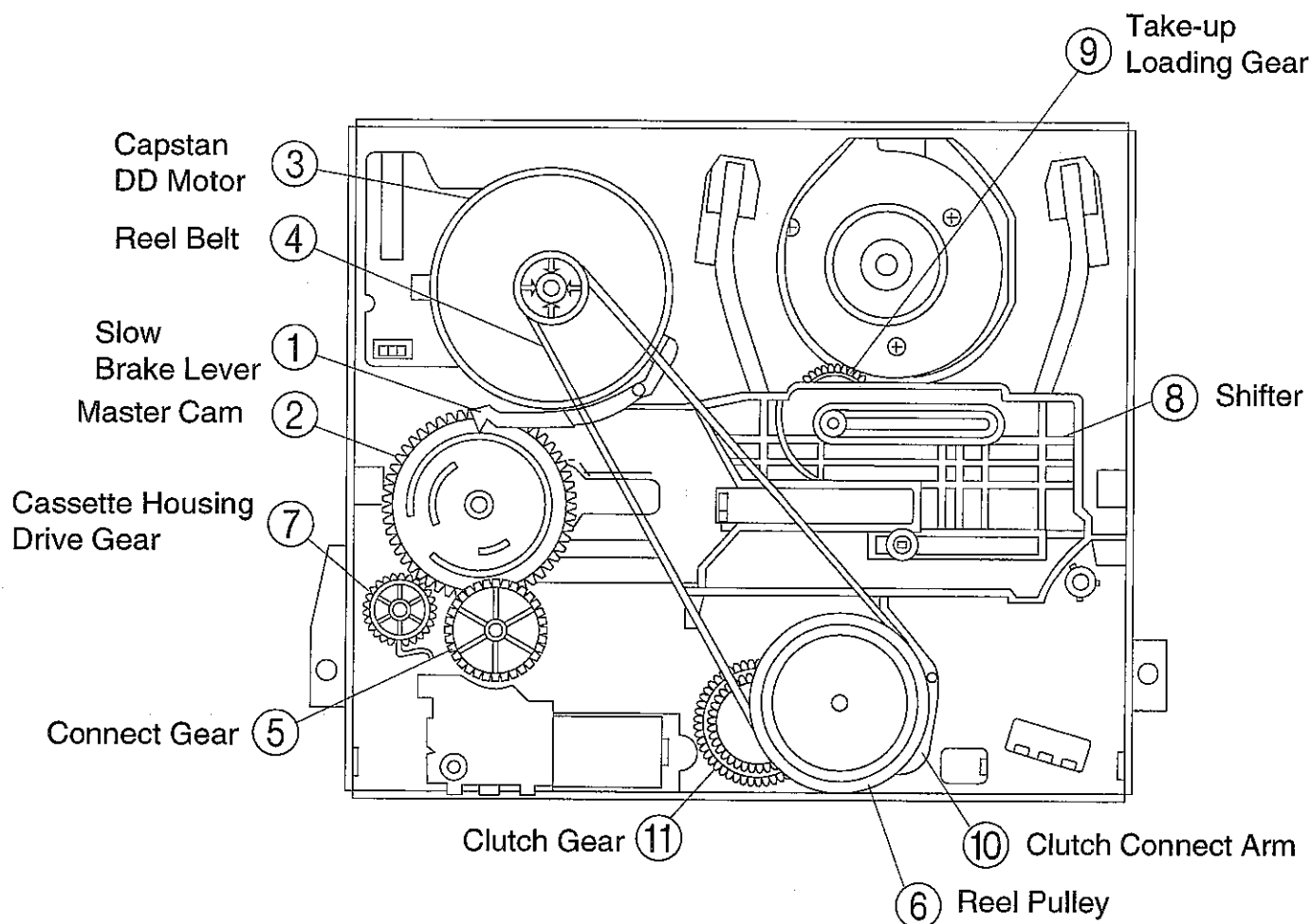


FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1.	Full erase head ass'y Erase the whole records on the tape in the recording mode.	13.	Reverse guide Pulls out the tape and controls the tape drive train height with the upper and lower guides.
3.	Tension arm ass'y Detects the tension of tape while running, and brakes the supply reel disk via the tension band.	16.	Pinch roller lever ass'y Press-fits the tape to the capstan during tape running.
7.	Main supply brake lever Brakes the supply reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.	18.	Loading motor A motive power which drives the mechanism. It transmits the power to the master cam and cassette housing control assembly.
9.	Main take-up brake lever Brakes the take-up reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.		

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



No.	Function	No.	Function
1.	Slow brake lever Gets in contact with the capstan D.D. motor linking to the master cam in the slow still mode, and brakes it to a certain degree.	6.	Reel pulley Transmits the power of the capstan D.D. motor to the reel disk via the reel idler.
3.	Capstan D.D. motor A motive power which runs the tape. It transmits the power via the reel belt.	8.	Shifter Transmits the operation of the master cam to break and loading gear.
4.	Reel belt Transmits the power to run the tape to the reel pulley.	9.	Take-up loading gear Shifts the take-up pole base and guide roller via the loading relay gear, and applies the tape around the drum assembly, as well as transmits the power to the supply loading gear.






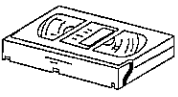
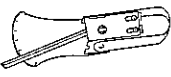
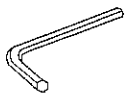
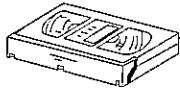
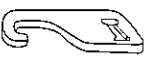
ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS



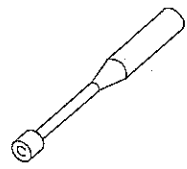

Here we will describe a relatively simple service work in the field, not referring to the more complicated repairs which would require the use of special equipment and tools (drum assembly replacement, for example).

We are sure that the easy-to-handle tools listed below would be more than handy for periodical maintenance to keep the machine in its original working condition.

TOOLS NECESSARY FOR ADJUSTING THE MECHANICAL UNITS

The following tools are required for proper service and satisfactory repair.

No.	Jig Item	Part No.	Code	Configuration	Remarks
1	Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.
2	Master Plane Jig	JiGMP0001	BY		
3	A/C Head Tilt Adjusting Jig	9DAACH-A323U	BX		This Jig is used for setting the A/C head tilt.
4	Torque Gauge (90g)	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.
	Torque Gauge (1.2 kg)	JiGTG1200	CN		
5	Gauge Head	JiGTH0006	AW		
6	Cassette Torque Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
7	Tension Gauge (300g)	JiGSG0300	BF		There are two gauges used for the tension measurements, 300 g and 2.0 kg.
	Tension Gauge (2.0kg)	JiGSG2000	BS		
8	Hex Wrench (0.9mm)	JiGHW0009	AE		These Jigs are used for loosening or tightening special hexagon type screws.
	Hex Wrench (1.2mm)	JiGHW0012	AE		
	Hex Wrench (1.5mm)	JiGHW0015	AE		
9	Alignment Tape (PAL)	VROCPSV	CD		These tapes are especially used for electrical fine adjustment.
	Alignment Tape (NTSC)	VROATSV	CD		
	Alignment Tape (NTSC)	VRONBZGS	CB		
11	Tension Gauge Adapter	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks
12	Special Bladed Screwdriver	JiGDRIVERH-4	AP		This screwdriver is used for adjusting the guide roller height.
14	Torque Driver	JiGTD1200	CB		This is used to screw down resin-made parts: the specified torque is 5 kg.
15	Box Driver	JiGDRIVER110-7	AS		This Jig is used for height adjustment of the A/C head and X-position.
		JiGDRIVER110-4	AV		This Jig is used for replacement of the SI roller.
		JiGDRIVER110-55	AR		This Jig is used for height adjustment of the reverse guide.
17	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.

MECHANICAL PARTS REQUIRING PERIODICAL INSPECTION

Use the following table as a guide to maintain the mechanical parts in good operating condition.

Parts	Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y		□	□	□	○	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Supply impedance roller		□	□	□	○		Clean with pure high quality isopropyl alcohol.
Supply impedance roller (inner hole and shaft)			□		□		Clean tape contact part with the specified cleaning liquid.
Supply impedance roller flange		□	□	□	□		
Retaining guide		□	□	□	□		
Slant pole		□	□	□	○		
Video head (upper / Lower drum ass'y)		□	○□	○□	○□	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	Clean tape contact area with the specified cleaning liquid.
Full-erase head		□	□	□	○	Poor colour, beating	
A/C head		□	□	□	○	Sound too small or distorted	
Capstan D.D. Motor		□	□	□	○	No tape running, uneven colour	
Pinch roller		□	□	□	○	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt			□		○	No tape running, tape slack, no fast forward/rewind motion	
Tension band ass'y					○	Cassette not loaded or unloaded	
Loading Motor					○		
Reel idler ass'y					○	No tape running	
Reel pully ass'y			□△		□○		
Clutch gear ass'y					○		
Main supply/take-up brake levers					○	Tape slack	
AHC (Automatic Head Cleaner)			○		○		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE:

○: Part replacement.

□: Cleaning (For cleaning, use a lint-free cloth dampened with pure isopropyl alcohol).

△: Oil refilling (The indicated point should be lubricated with high quality spindle oil every 1000 hrs).

If the reading is out of the specified value, clean or replace the part.

REMOVAL AND REASSEMBLY OF CASSETTE HOUSING CONTROL ASSEMBLY

● Removal

1. Set the cassette ejected condition in the cassette eject mode.
2. Unplug the recorder from the main source.
3. Follow the procedures below in the specified order.
 - a) Remove the cassette housing installation screws ① and ②.
 - b) Slide and pull out the cassette housing control assembly upward.

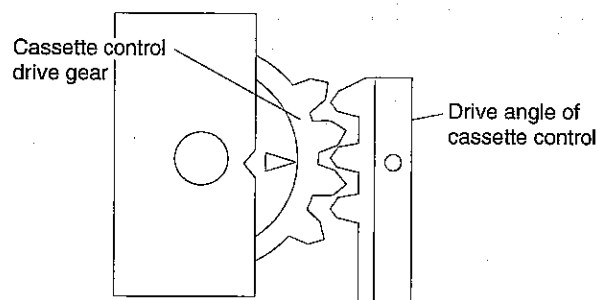


Figure 1-2.

2. Follow the procedures for removal in the reverse order.

Notes:

- ① In using a magnet screw driver, be sure to keep it away from the A/C head, FE (Full Erase) head, or the drum.
- ② In removal and reassembly, take care not to hit the cassette housing control assembly or tools against the guide pin, drum, or the like thereabout.
- ③ Load the cassette once onto the cassette housing control assembly after reassembly.

TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Be sure to make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor, before turning on the power.
2. Plug in the power cord.
3. Turn on the power switch.
4. Open the lid of a cassette tape by hand.
5. Hold the lid with two pieces of vinyl tape.
6. Set the cassette tape in the mechanism chassis.
7. Stabilize the cassette tape with a weight (500g) to prevent floating.
8. Perform running test.

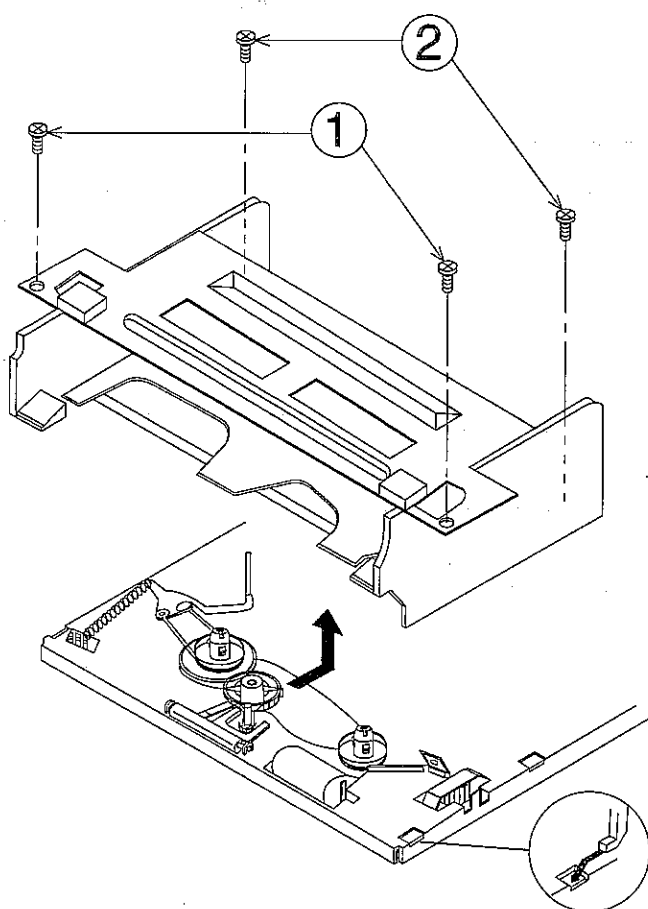


Figure 1-1.

● Reassembly

1. Before installation of the cassette housing control assembly, make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Plug in the power cord. The cassette control drive gear starts and stops just when a tally mark appears in the mechanism chassis window. Align this tally mark with the cassette control drive angle's mark, as shown in Fig. 1-2, to position the cassette control on the mechanism chassis.

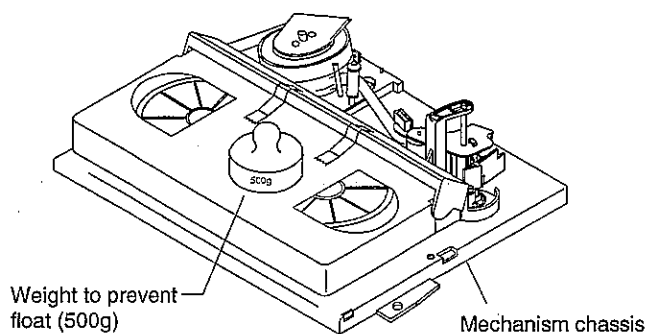


Figure 1-3.

Note:

The weight should not be more than 500g.

REPLACEMENT AND HEIGHT CHECKING AND ADJUSTMENT OF REEL DISKS

● Removal (Supply and Take-up reel disks)

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm.
3. Remove the supply main brake and the take-up main brake.
4. Open the hook at the top of the reel disk, and remove the reel disk.

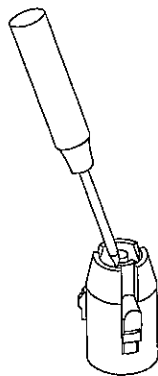
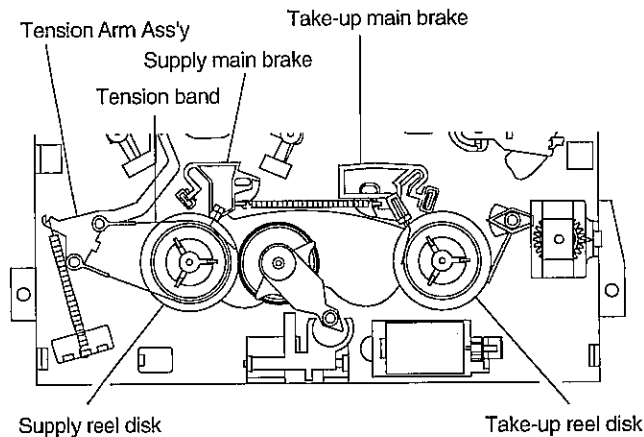


Figure 1-4.

Note:

When the tension band is pressed in the direction of the arrow for removal, the catch is hard to be deformed.



Figure 1-5.

● Reassembly (Supply reel disk)

1. Clean the reel disk shaft and apply oil to it.
2. Install a new supply reel disk onto the shaft.
3. Replace the tension band around the supply reel disk, and insert it to the hole of the tension arm.
4. Check the reel disk height and reassemble the supply main brake.

Notes:

- ① Take enough care not to deform the tension band during installation of the supply reel disk.
- ② Be careful not to damage the supply main brake.

● Reassembly (Take-up reel disk)

1. Clean the reel disk shaft and apply oil to it.
2. Install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake.

Note:

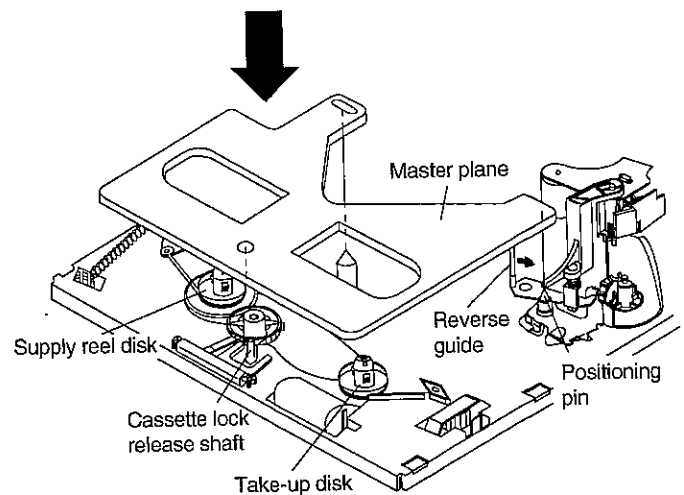
Take care not to damage the take-up main brake.

- * After reassembly, check the video search rewind back tension (see page 28), and check the brake torque (see page 31).

● Height checking and adjustment

Note:

Place the master plane onto the mechanism unit, taking care not to hit the drum (see Figure 1-6).



Set the master plane releasing the reverse guide by a finger.

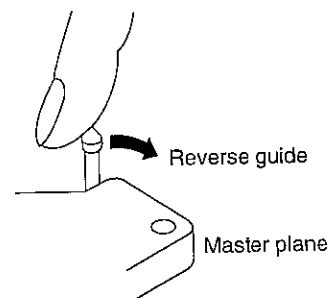


Figure 1-6.

- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

Note:

Whenever replacing the reel disk, perform the height checking and adjustment.

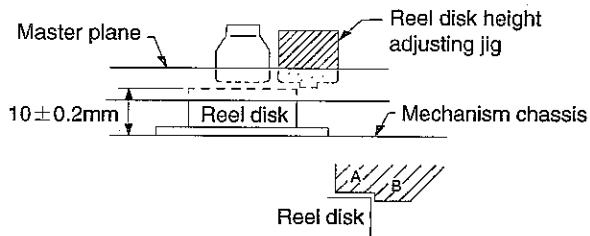


Figure 1-7.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Setting
 1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
 2. Press the FF button to set the mechanism to the fast forward mode.
- Checking
 1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction.
 2. Check to see if the take-up torque is higher than 69 mN·m (700 gf·cm).

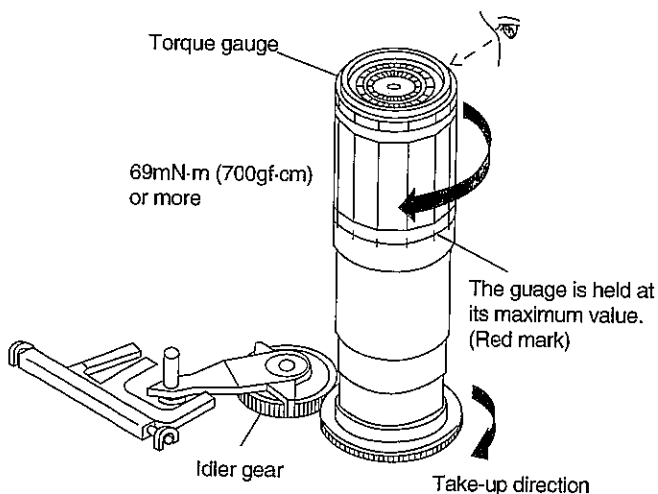


Figure 1-8.

Adjustment

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, reel belt and reel pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the reel belt.

Notes:

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Setting
 1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
 2. Press the REW button to set the mechanism to the rewind mode.
- Checking
 1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction.
 2. Check to see if the take-up torque is higher than 69 mN·m (700 gf·cm).

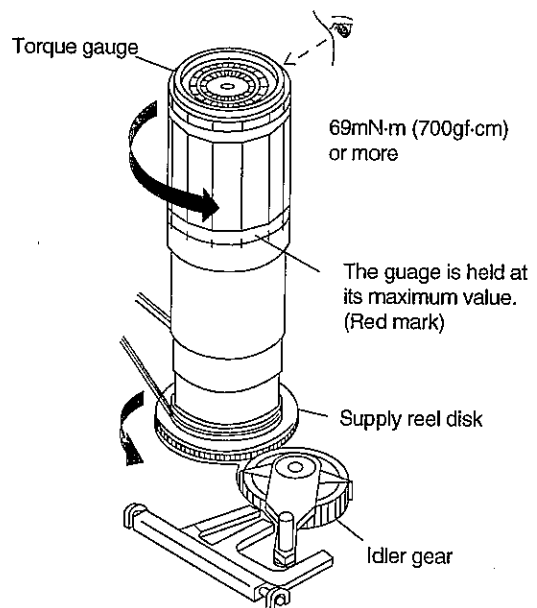


Figure 1-9.

- **Adjustment**

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, reel belt and reel pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the reel belt.

- **Notes:**

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN PLAYBACK MODE

1. Remove the cassette housing control assembly.
2. Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now plug in the power cord and turn on the power.
3. Open the lid of the cassette torque meter, and hold it with two pieces of vinyl tapes.
4. Load the cassette torque meter into the unit.
5. Put the weight (500g) on the cassette torque meter.
6. Press the REC button to put the unit in REC mode.

Set value SP $8.8 \pm 3.8\text{mN}\cdot\text{m}$ ($90 \pm 39\text{gf}\cdot\text{cm}$)

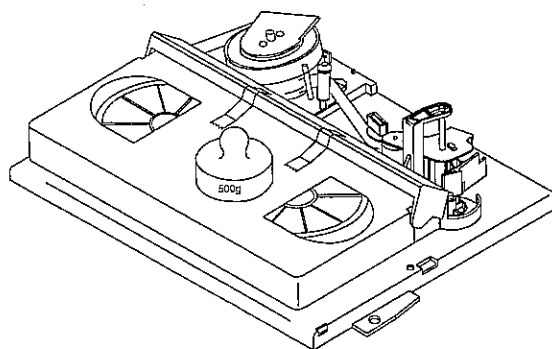


Figure 1-10.

- **Checking**

1. Check that the torque is in the range of $8.8 \pm 3.8\text{mN}\cdot\text{m}$ ($90 \pm 39\text{gf}\cdot\text{cm}$).
2. The torque fluctuates due to the rotational deviation of the reel pulley ass'y. Use the center of the fluctuation as the value.
3. Place the ass'y in the SP record mode, and check that the take-up torque is within the range.

- **Adjustment**

If the take-up torque in the playback mode is outside the range, replace the reel pulley ass'y.

- **Note:**

Stabilize the cassette torque meter to prevent floating.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REVERSE MODE

- Remove the cassette housing control assembly.

- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.

- **Setting**

1. Push the PLAY button to place the ass'y in the playback mode.
2. Push the REW button to place the ass'y in the video search reverse mode.

- **Checking**

1. Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value $14.5 \pm \begin{smallmatrix} 8 \\ 6 \end{smallmatrix} \text{mN}\cdot\text{m}$ ($148 \pm \begin{smallmatrix} 80 \\ 60 \end{smallmatrix} \text{gf}\cdot\text{cm}$)

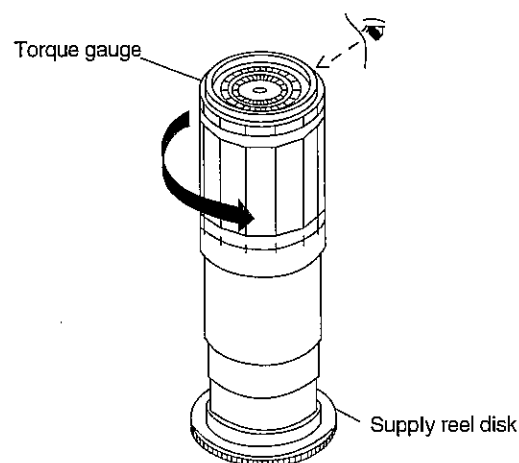


Figure 1-11.

- **Note:**

Set the torque gauge securely on the supply reel disk. If it is not secure, the measurement will be incorrect.

- **Adjustment**

If the take-up torque in video search reverse mode is outside the range, replace the reel pulley ass'y.

- **Note:**

The torque fluctuates due to the rotational deviation of the reel pulley ass'y. Use the center of the fluctuation at the value.

CHECKING THE FAST FORWARD BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Checking
 1. Push the FF button to place the ass'y in the fast forward mode.
 2. Place the torque gauge on the supply reel disk, and turn it clockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is $1.5 \pm 0.9\text{mN}\cdot\text{m}$ ($15 \pm 9\text{gf}\cdot\text{cm}$).

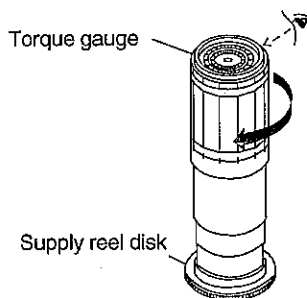


Figure 1-12.

Note:

- ① Set the torque gauge securely on the supply reel disk. If the torque gauge is not securely set on the reel disk, measurement will be incorrect.
- ② Measure the torque with the torque gauge's weight exerted on the reel disk.

CHECKING THE REWIND BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Checking
 1. Push the REW button to place the ass'y in the rewind mode.

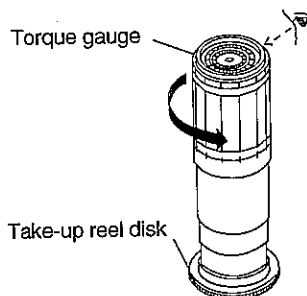


Figure 1-13.

2. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is $1.3 \pm 0.8\text{mN}\cdot\text{m}$ ($13 \pm 8\text{gf}\cdot\text{cm}$).

Note:

- ① Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.
- ② Measure the torque with the torque gauge's weight exerted on the reel disk.

CHECKING THE VIDEO SEARCH REVERSE BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Checking
 1. Push the PLAY button to place the ass'y in the playback mode.
 2. Push the rewind button to place the ass'y in the video search reverse mode.
 3. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value $4 \pm 1.7\text{mN}\cdot\text{m}$ ($41 \pm 17\text{gf}\cdot\text{cm}$).

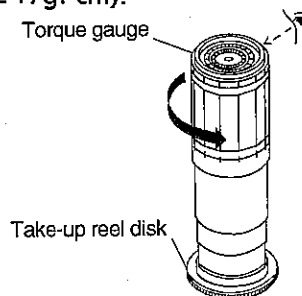


Figure 1-14.

Note:

- ① Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.
- ② Measure the torque with the torque gauge's weight not exerted on the reel disk.

CHECKING THE PINCH ROLLER PRESSURE

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Checking

Push the PLAY button to place the ass'y in the playback mode.

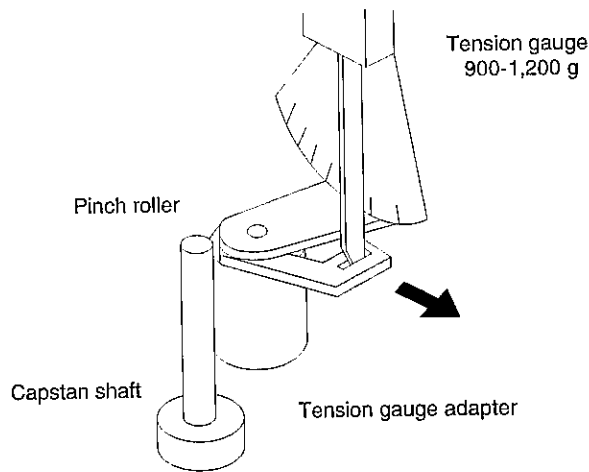


Figure 1-15.

1. Detach the pinch roller from the capstan shaft.
2. Set the tension gauge by hooking the tension gauge adapter onto the pinch roller shaft.
3. Gradually release the pressure to allow the pinch roller to touch the capstan shaft. When the pinch roller just touches the capstan shaft, read the indication on the gauge.
4. Check that the reading of the tension gauge is in the range of 900 to 1200 g.

CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Setting
 1. Open the lid of cassette tape (E-180), and hold it with two pieces of vinyl tapes.
 2. Load the cassette tape into the unit.
 3. Put the weight (500g) on the cassette tape.
 4. Make the adjustment with the beginning of a E-180 tape.

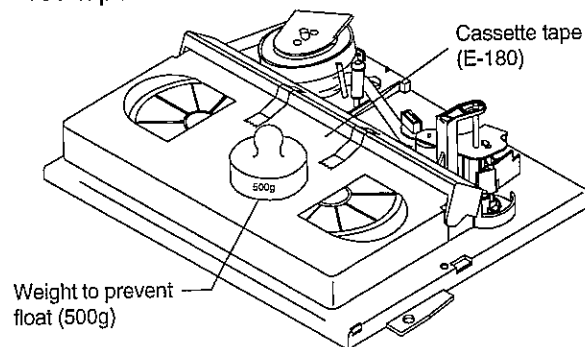


Figure 1-16.

- Checking
 1. Set a cassette tape, press the REC button and get the tape loaded. Now check the tension pole position.

2. Visually check to see if the left end of the tension pole is in alignment with the line 0.2mm left of the center line of the SI roller. Readjust as required in the following steps.

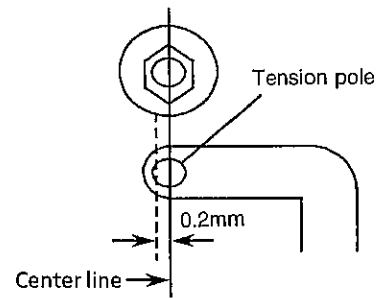


Figure 1-17.

Make the adjustment with the beginning of a E-180 tape.

- ① If the end is at the left from the center line:

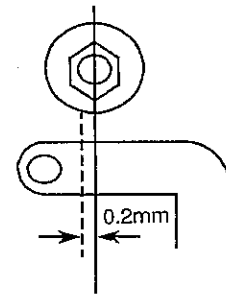


Figure 1-18.

1. Remove the cassette and press the REC button to make an empty loading. Put a bladed screwdriver into the tension band positioning cam and turn it clockwise.
2. Place the cassette in position and check the tension pole position.

- ② If the end is at the right from the dotted line:

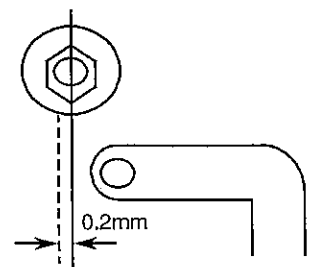


Figure 1-19.

1. Remove the cassette and press the REC button to make an empty loading. Put a bladed screwdriver into the tension band positioning cam to turn it counterclockwise.
2. Place the cassette in position and check the tension pole position.

Note:

- ① The tension band positioning cam cannot be adjusted with a cassette in place because the cam will be located below the cassette. Repeat a series of steps; empty loading, adjustment, cassette placement and position checking.
- ② Turn the positioning cam clockwise to move the tension pole to the right (in the black-arrow direction). Turn it counterclockwise to move the tension pole to the left (in the white-arrow direction).

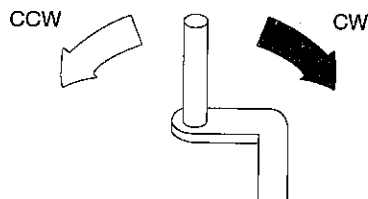


Figure 1-20.

- ③ Adjustable range of the tension pole positioning cam.

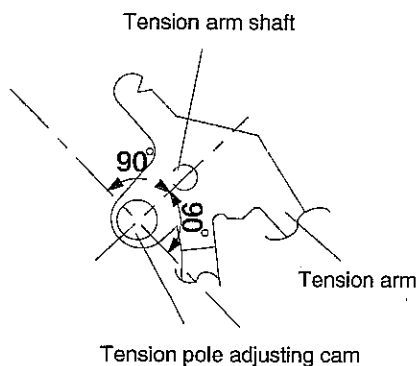


Figure 1-21.

Adjust the tension pole positioning cam so that the arrow mark on the cam be within 90° left and right from the tension arm shaft's center.

CHECKING AND ADJUSTMENT OF RECORD / PLAYBACK BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
- Setting
 1. Open the lid of the cassette torque meter, and hold it with two pieces of vinyl tapes.
 2. Load the cassette torque meter into the unit.
 3. Put the weight (500g) on the cassette torque meter.

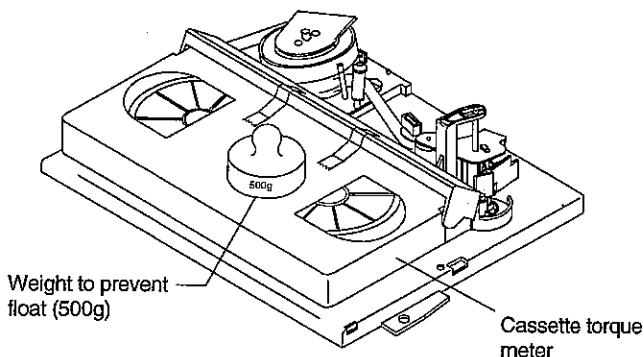


Figure 1-22.

● **Checking**

1. Push the REC button to place the unit in the record mode.
2. Check that the back tension indicated by the gauge is within the set range 31 to 38 g-cm.

Notes:

1. Make sure that the video cassette tape is over the retaining guide.
2. Make sure that the tape is not slack nor damaged at either end.

● **Adjustment**

1. If the reading of the cassette torque meter is less than specified, move the tension spring hook toward A.
2. If the reading of the cassette torque meter is more than specified, move the tension spring hook toward B.

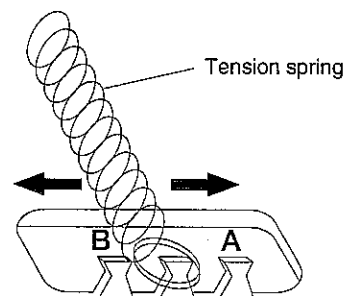


Figure 1-23.

CHECKING THE BRAKE TORQUE

- Checking the brake torque at the supply side

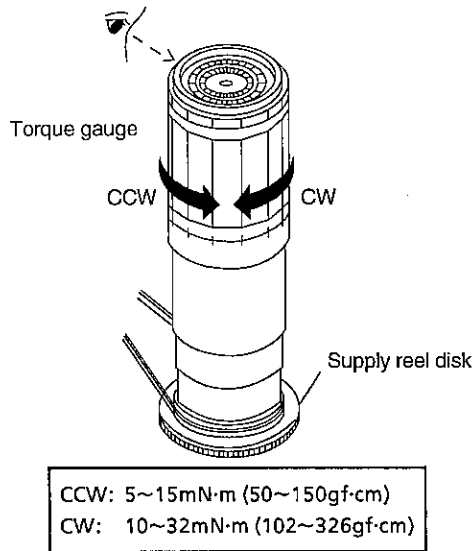


Figure 1-24.

- Checking the brake torque at the take-up side

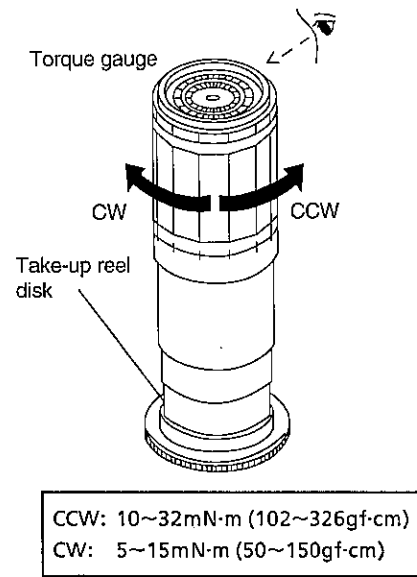


Figure 1-25.

- Remove the cassette housing control assembly.

- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.

- Setting

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the AC power plug.

- Checking

1. Slowly rotate the torque gauge in the clockwise (CW) direction and counterclockwise (CCW) direction of the supply brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CW direction = 10~32mN·m (102~326gf·cm), CCW direction = 5~15mN·m (50~150gf·cm), and that the brake torque in the CW direction is at least twice as high as that in the CCW direction.

- Remove the cassette housing control assembly.

- Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.

- Setting

1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the AC power plug.

- Checking

1. Slowly rotate the torque gauge in the clockwise (CW) direction and counterclockwise (CCW) direction of the take-up brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CCW direction = 10~32mN·m (102~326gf·cm), CW direction = 5~15mN·m (50~150gf·cm), and that the brake torque in the CCW direction is at least twice as high as that in the CW direction.

- Adjustment of the brake torque at the supply side and the take-up side

1. If the supply or take-up brake torque is outside the range, clean the supply or take-up reel disk break lever pad, then recheck the torque.
2. If the supply or take-up brake torque is still outside the range, replace the main brake ass'y or the main brake spring.

Note:

When the main brake is replaced, perform the height checking and adjustment of reel disks (see page 25), and the brake torque checking.

REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. Place the unit in the unloading mode, and unplug the power cord.

● Removal

1. Loosen the tilt adjusting screw ①.
2. Remove the azimuth adjusting screw ②.
3. Remove the A/C head screw ③.
4. Unsolder the A/C head PWB soldered to the A/C head assembly.

Notes:

1. After replacement, be sure to perform the adjustment of the tape drive train (see page 34). Under any circumstances, avoid touching the head. Clean the head, if touched with your finger, with alcohol.
2. Take care that the azimuth spring does not fly off when removing the A/C head screw.

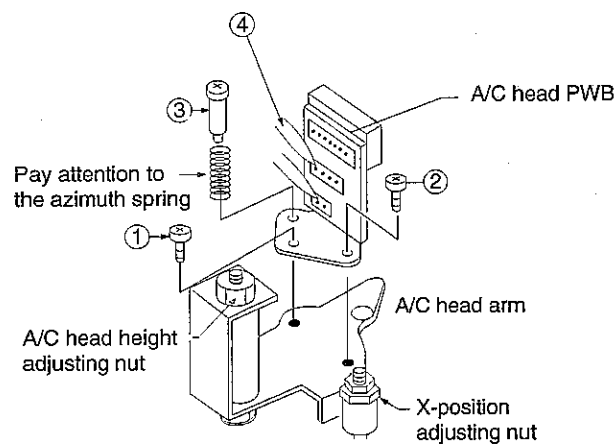


Figure 1-26.

● Replacement

1. Solder the removed A/C head PWB onto a new A/C head assembly.
2. The A/C head assembly is attached so that the A/C head arm and A/C head plate are roughly parallel to each other.

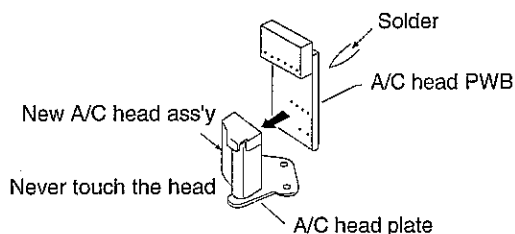


Figure 1-27.

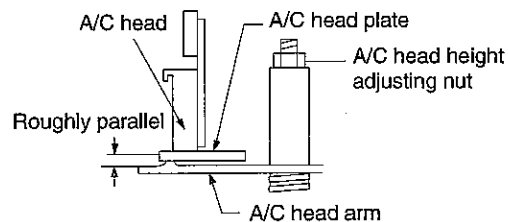
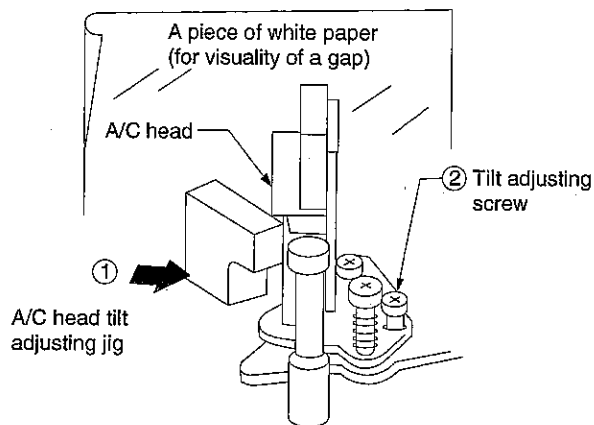


Figure 1-28.

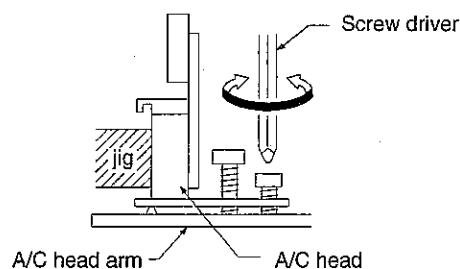
● Adjustment

[A/C head tilt angle]

1. Set the mechanism to the loading mode.
2. Place the A/C head tilt adjusting Jig ①.
3. Slowly turn the tilt adjusting screw ② with a screw driver until there is no gap between the Jig and the A/C head.



(a)



(b)

Figure 1-29.

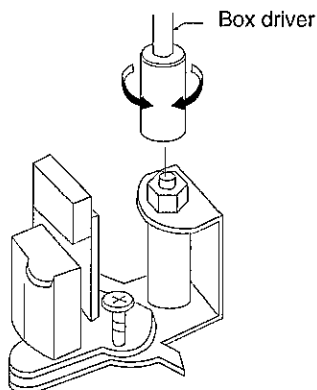
[A/C head height rough adjustment]● **Setting**

Figure 1-30.

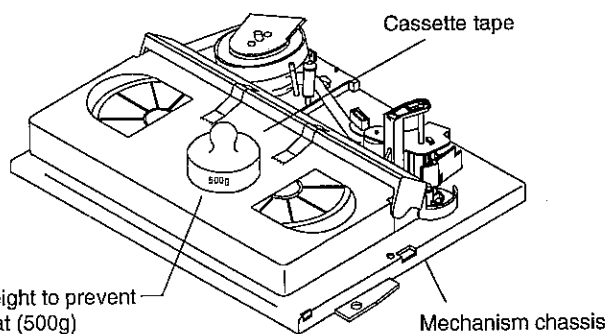


Figure 1-31.

- ① Roughly adjust the height of the A/C head by turning the A/C head adjusting hexagon nut with the specialized box driver until the tape is in the position shown below.
- ② Set the cassette tape to the mechanism chassis.
- ③ Press the PLAY button to put the unit in the playback mode.

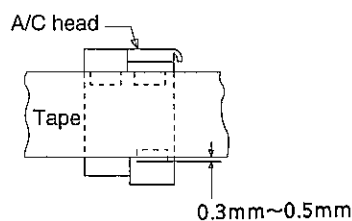
● **Adjustment**

Figure 1-32.

Adjust the nut visually so that the control head is visible 0.3 to 0.5mm below the bottom of the tape.

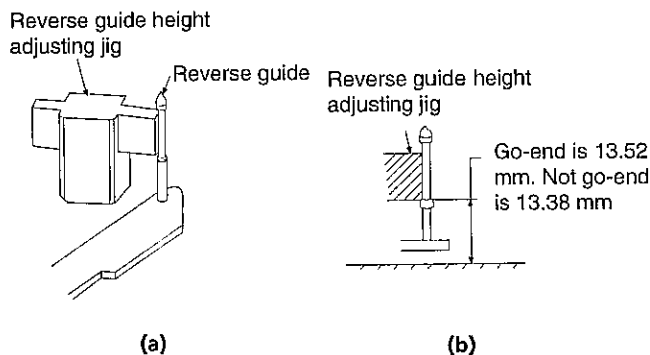
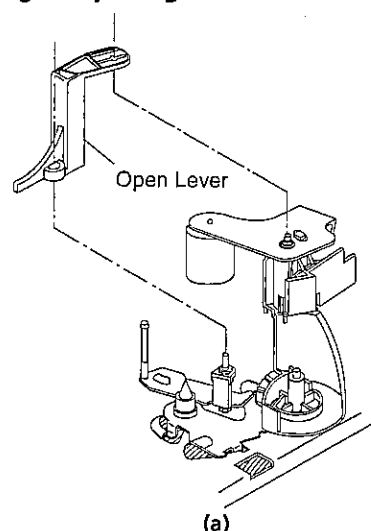
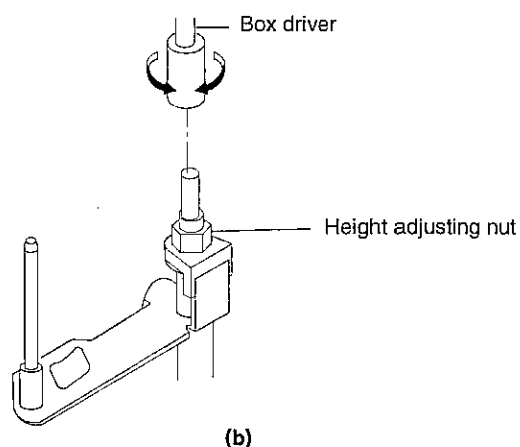
HEIGHT ADJUSTMENT OF REVERSE GUIDE**[Height adjustment of reverse guide]**

Figure 1-33.

1. Remove open lever (Figure 1-34. (a))
2. In the tape load mode, make adjustment at the 13.38mm side first and then rotate the height adjusting nut by 1/6 turn counterclockwise.
3. Actually load the unit with a tape, put it in the play mode, and make sure the tape is free from wrinkles near the reverse guide.
4. Use a commercially available box driver to turn the height adjusting nut.



(a)



(b)

Figure 1-34.

ADJUSTMENT OF TAPE DRIVE TRAIN

1. Remove the cassette housing control assembly.
2. Make a short-circuit between TP8804 and TP8805, both located at the center on your side on the VCR PWB, with a 22 ohm resistor. Now turn on the power.
3. Check and adjust the position of the tension pole. (See page 29.)
4. Check and adjust the video search rewind back tension. (See page 28.)
5. Set the tilt angle of the A/C head. (See page 32.)
6. Rough adjustment of tape drive train.
 - a) Connect the oscilloscope to the test point for PB CHROMA envelope output (TP2203). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP2204).
 - b) Loosen the setscrew at the lower part of the guide roller, and adjust it with an adjusting screw driver (JIGDRIVERH-4) so that the guide roller turns smoothly. (Do not overloosen the setscrew, which causes insecurity of the guide roller.) (See Figure 1-35.)
 - c) Set the alignment tape (monoscope pattern) on the reel disk, and place the unit in the playback mode. (Place a 500 g weight on the cassette tape to prevent floating of the cassette tape.)

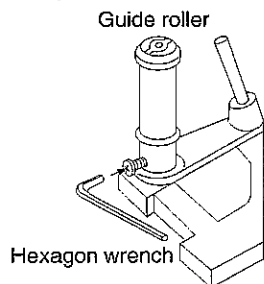


Figure 1-35.

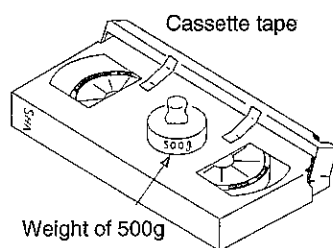


Figure 1-36.

- d) In the X value adjustment mode (see the Electrical Adjustment), change the envelope waveform from MAX to MIN, and MIN to MAX by pushing the (+) or (-) tracking button, and check a flat response is obtained on the waveform.
- e) If a flat response cannot be obtained, roughly adjust the guide rollers on the supply side and take-up side using an adjusting screw driver until a flat response can be obtained.
- f) Turn the A/C head tilt adjusting screw with a screwdriver to prevent the tape from wrinkling at the upper and lower flanges of the fixed guide.
 - 1) Wrinkles at the upper flange : Turn the above adjusting screw clockwise, as shown in Figure 1-37 (a).
 - 2) Wrinkles at the lower flange : Turn the above adjusting screw counterclockwise, as shown in Figure 1-37 (b).

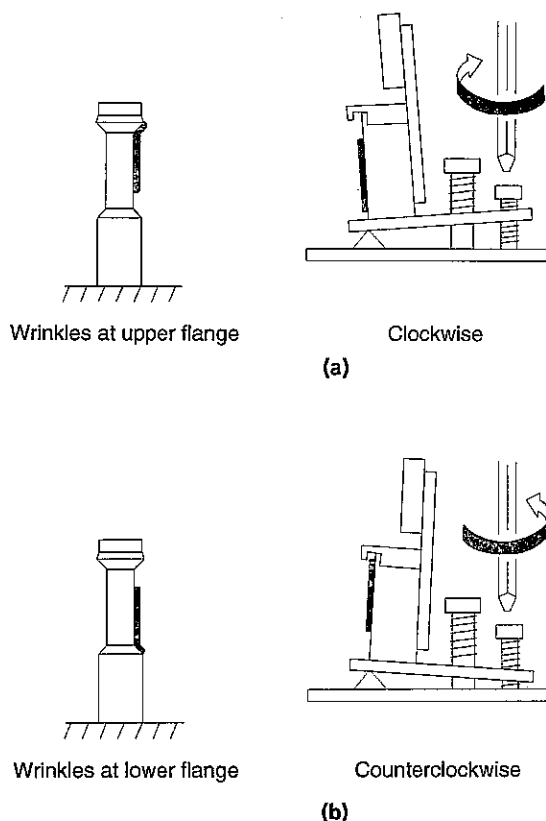


Figure 1-37.

Notes:

1. Place the tracking control in the center position, and adjust the X-position adjusting nut so that the PB CHROMA envelop becomes maximum for easier rough adjustment of the tape drive train.
2. In the rough adjustment, pay particular attention to the outlet side.

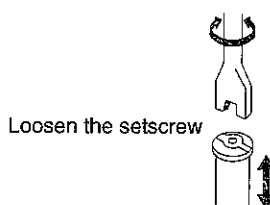


Figure 1-38.

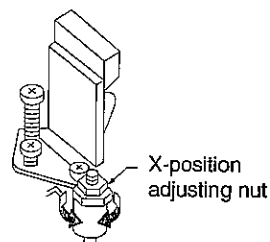


Figure 1-39.

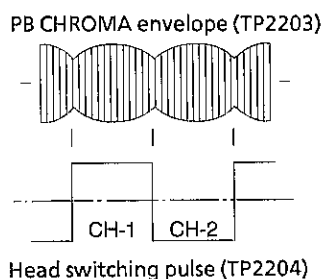


Figure 1-40.

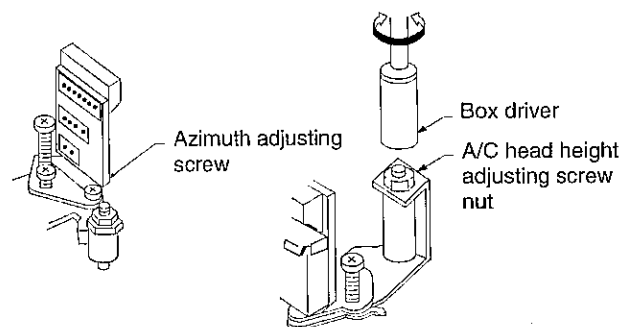


Figure 1-41.

Figure 1-42.

7. Adjustment of A/C head height and azimuth

- Connect an oscilloscope to the audio output terminal.
- Use the alignment tape and play back its audio 6 kHz signal (monoscope pattern for video signal). Adjust the azimuth adjusting screw to obtain the maximum audio output on an oscilloscope. (See Figure 1-41.)
- Use the alignment tape and play back its audio 1 kHz signal (colour bar for video signal) and slowly rotate the A/C head height adjusting nut with the special box driver to obtain the maximum audio output.
- Perform the adjustment in b) again.
- After this adjustment, apply glyptal to the screws and nuts to fix them.

8. Adjustment of tape (VRONBZGS) drive train and X-Position.

- Connect the oscilloscope to the test points (TP2203) for PB CHROMA envelope output. Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP2204).
- Play back the tape drive train alignment tape.
- Push the (+) or (-) button to change the envelope waveform from MAX to MIN, and MIN to MAX. Adjust the guide roller's height on the supply and take-up sides with an adjusting screw driver, to obtain an envelop waveform that is as flat as possible.
- If the tape is above or below the helical lead, the PB CHROMA waveform will take the shape shown in Figure 1-43.
- Adjust for maximum flatness of the envelope as the step 6, e) in page 34.

	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 1-43.

- f) Push the (+) or (-) tracking button to check that a flat response is obtained on the envelope waveform.
 - g) Secure the guide roller by tightening the guide roller setscrew in the unloading mode.
 - h) Play back the tape drive train alignment tape to check that the envelope waveform does not change.
9. Adjustment of A/C head X-position.
- a) In the X value adjustment mode (see the Electrical Adjustment), make a short circuit between TP8804 and TP8805, both located at the on your side on the VCR PWB, with a 22 ohm resistor to center the tracking.
 - b) Rotate the X-position adjusting nut with an adjusting box driver, and adjust the A/C head position for maximum head switching pulse low side envelope.
 - c) Adjust the playback switching point.
 - d) Check the flatness of the envelope waveform and sound by playing back a recorded tape.

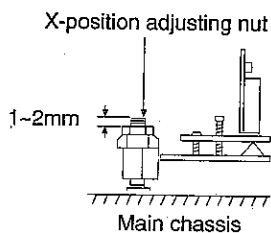


Figure 1-44.

REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the cassette housing control assembly.
- Removal (Follow the order of indicated numbers.)

1. Disconnect from the board-to-board connector on the VCR PWB.
2. Remove the reel belt ①.
3. Remove the screws ②.

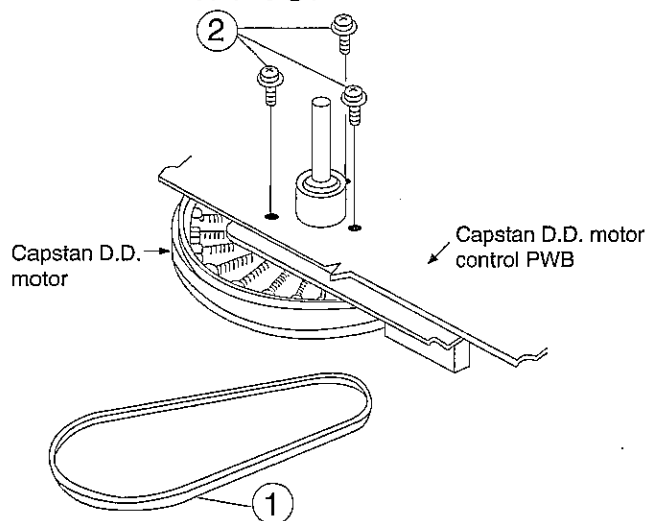


Figure 1-45.

● Reassembly

1. Mount the capstan motor on the mechanism chassis making sure not to allow the capstan shaft to hit the mechanism chassis, and attach it with the three screws.
2. Attach the reel belt. Reconnect to the board-to-board connector on the VCR PWB.

Notes:

1. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
2. Check the servo circuit.

REPLACEMENT OF D.D. MOTOR

1. Put the unit in the cassette eject position.
2. Unplug the power cord.

● Removal (Reverse the order in reassembly.)

1. Disconnect the FFC cable ①.
2. Unscrew the stator assembly fixing screws ②.
3. Take out the stator assembly ③.
4. Unscrew the rotor assembly fixing screws ④.
5. Take out the rotor assembly ⑤.

Notes:

1. In removing the stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
2. Secure the rotor assembly so that the installation positioning holes in the rotor assembly and upper drum assembly match. (Match the upper drum's notch with the rotor's hole.)
3. Be careful not to damage the upper drum or the video head.
4. Be sure that the hall device and the stator assembly are not damaged by the rotor assembly or other parts.
5. After installation, adjust the playback switching point.

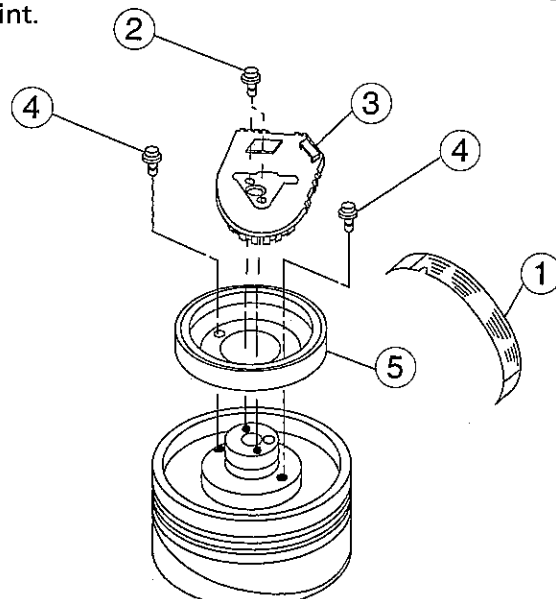


Figure 1-46.

ASSEMBLE THE MECHANISM'S PARTS REQUIRING THE PHASE MATCHING IN THE STEPS BELOW.

1. Assembling the pinch roller assembly and the pinch drive cam (on the front of the mechanism chassis).
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Mounting the connection gear, slow brake and loading motor assemblies (on the back of the mechanism chassis).

1. Assembling the pinch roller assembly and the pinch drive cam (on the front of the mechanism chassis).

Place the following parts in position in numerical order.

- (1) Pinch drive cam
- (2) Pinch roller and pinch double-action lever
- (3) Open lever

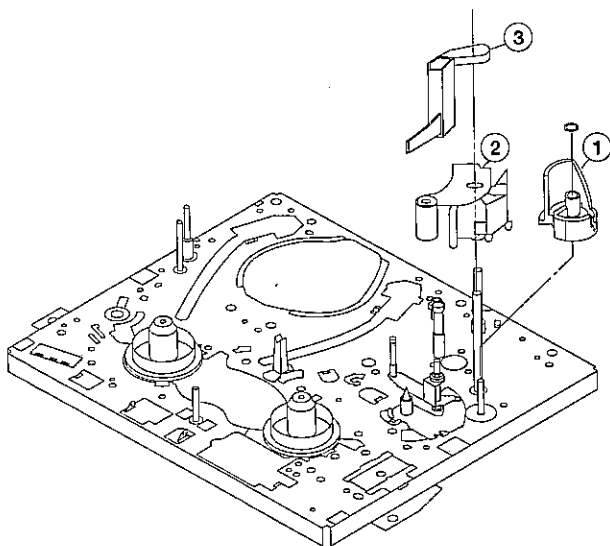
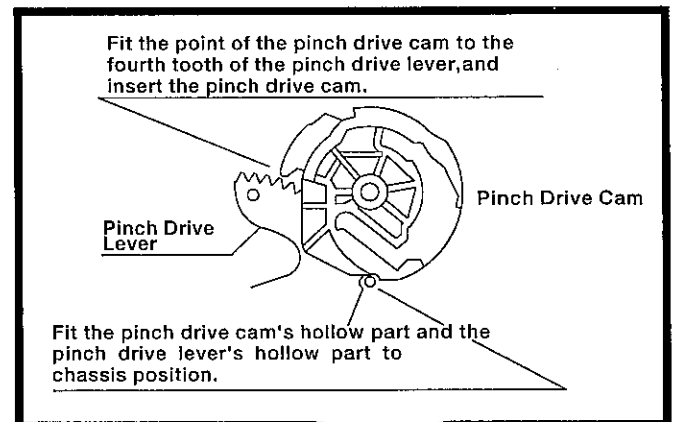


Figure 1-47.

① Insert Pinch Drive Cam.



Phase Matching Point ①

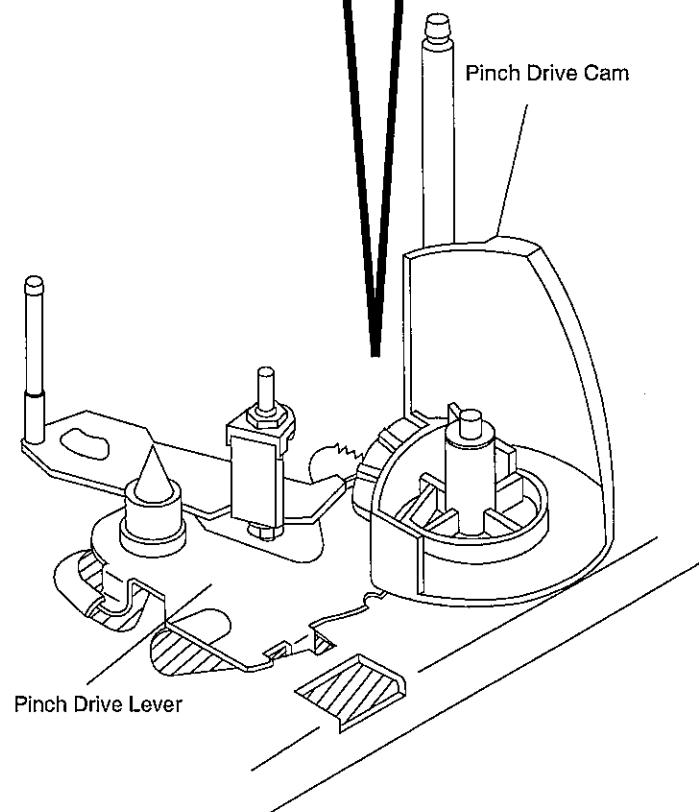


Figure 1-48-1.

② Insert Pinch Roller/Pinch Double Action Lever Ass'y.

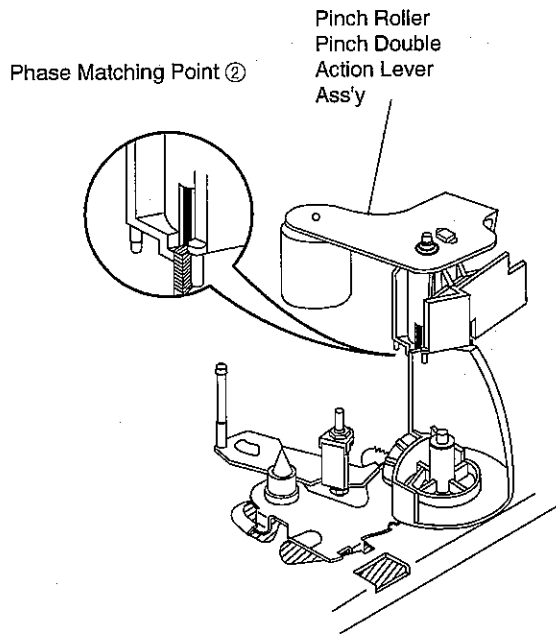


Figure 1-48-2.

③ Insert Open Lever.

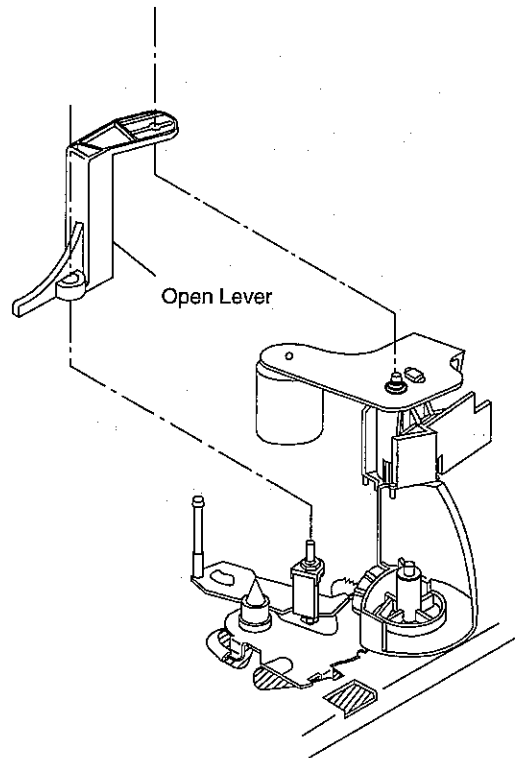


Figure 1-48-3.

2. Mounting the shifter (on the back of the mechanism chassis).

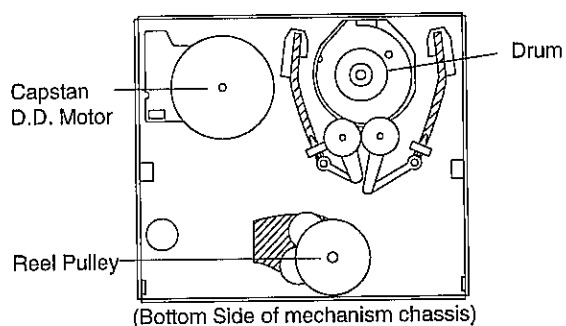


Figure 1-49.

1. Make sure that the loading gear is at the point ① as shown below.
2. Place the shifter in position, keeping in mind the ⑦ insertion points and the ⑤ relief points.
3. For the phase matching at the insertion point ①, see the point ② as shown below.
4. Finally fix the shifter with two washers located on insert points ① and ⑥.

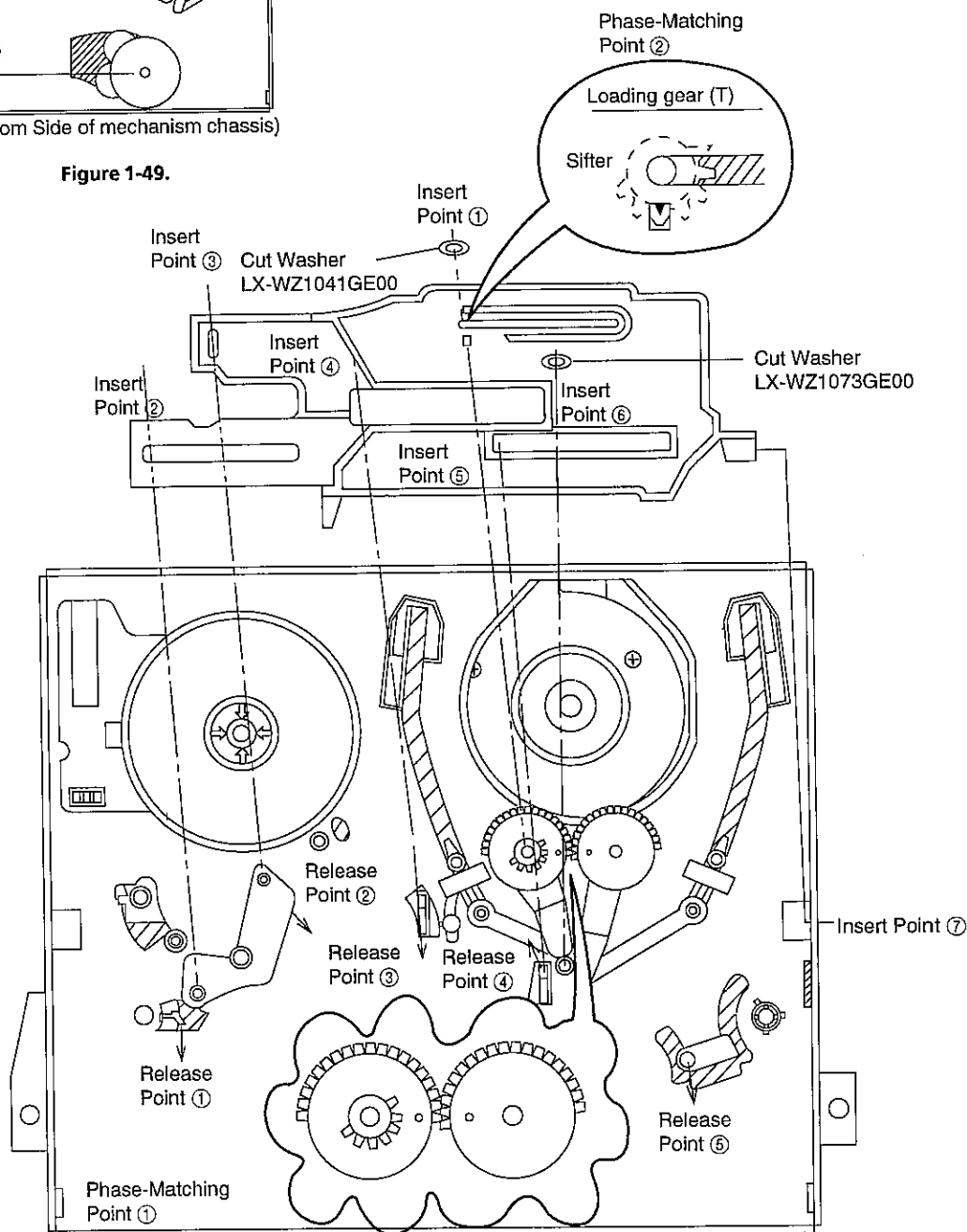


Figure 1-50.

3. Mounting the master cam (on the back of the mechanism chassis).

- (1) Make sure beforehand that the shifter is at the point as shown below.
- (2) Place the master cam in the position as shown below.

Note:

See the figure below for the phase matching between the master cam and the cassette control drive gear.

- (3) Finally fix the master cam with E ring.

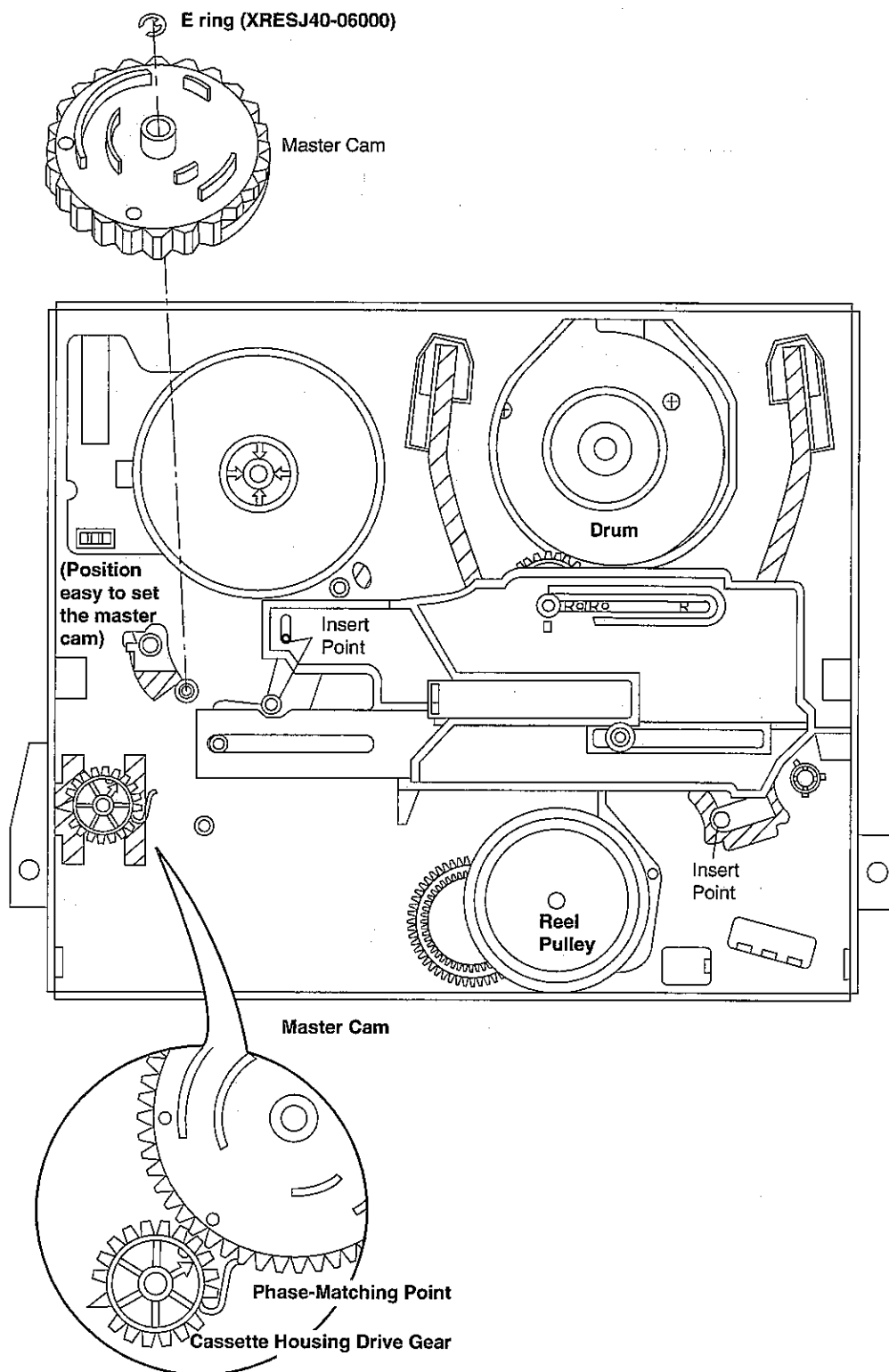


Figure 1-51.

4. Mounting the connection gear, slow brake and loading motor assemblies (on the back of the mechanism chassis).

- (1) Assemble the connect gear.
- (2) Assemble the slow brake.
- (3) Assemble the loading motor unit.

Note:

Let the slow brake leg out of the front of the mechanism chassis. Catch the spring to the take-up fixing guide that is at the left of the A/C head.

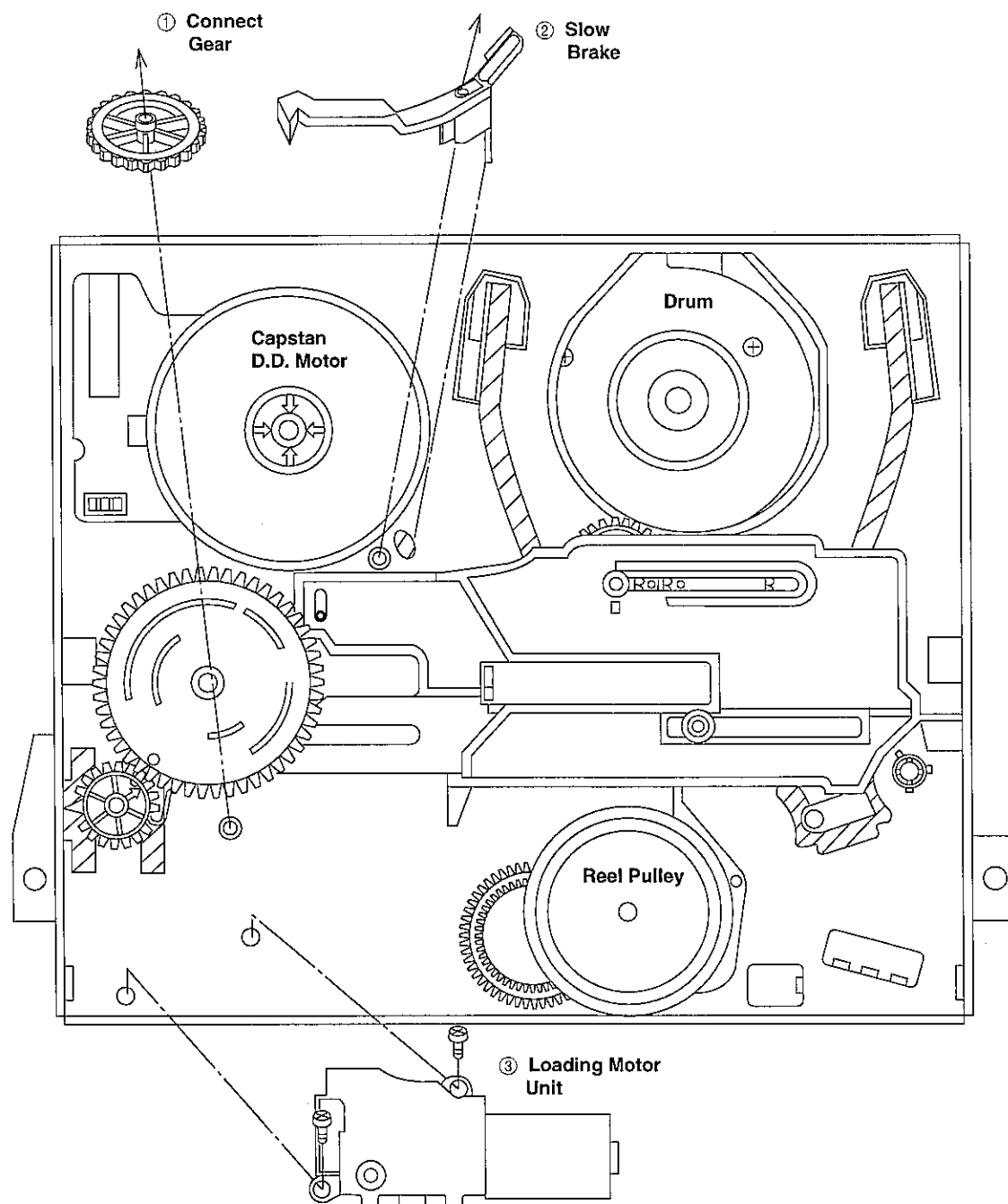


Figure 1-52.

Note:

Before setting up the loading motor, make sure the phase is matched. To do so, turn the connection gear clockwise and check to see if the loading is complete and if the pinch roller comes into contact.

When these actions are made smoothly, return the mechanism to the state as shown above. Finally mount the loading motor unit.

REPLACEMENT OF LOADING MOTOR

● Removal

Remove 2 screws.

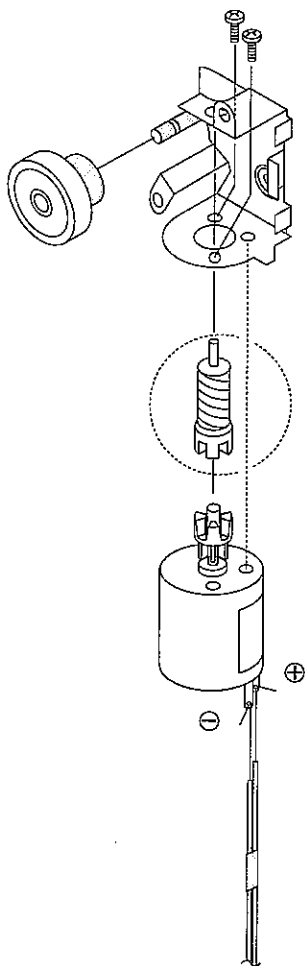


Figure 1-53.

● Replacement

- ① Take out the old loading motor. Place a replacement loading motor as shown above (Figure 1-53.).

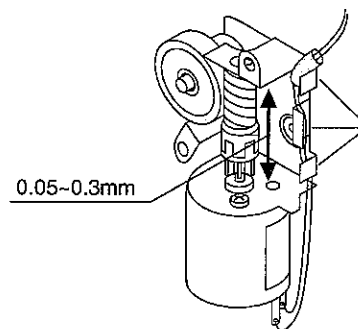


Figure 1-54.

- ② Adjust the worm gear's thrust gap to 0.05 to 0.3 mm.
Use the specific washers for an appropriate thickness.

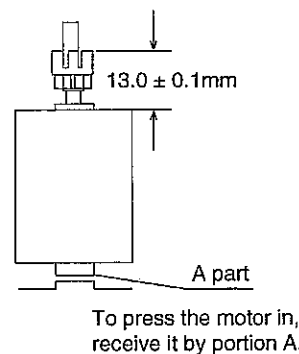
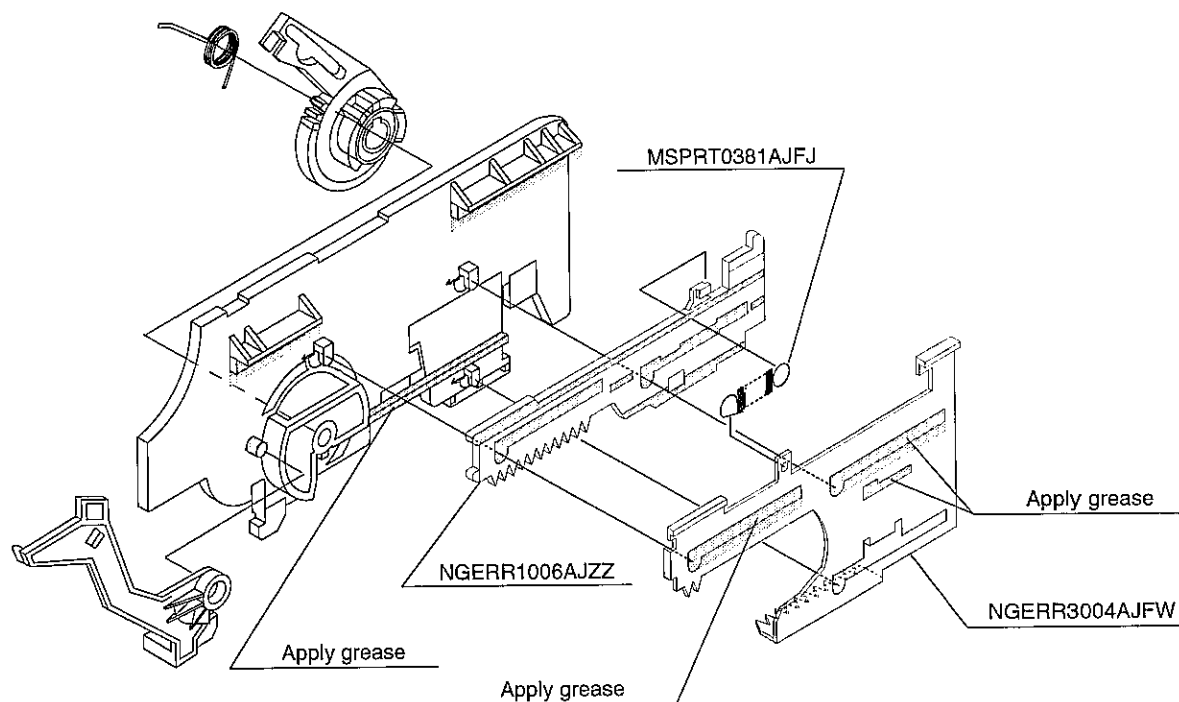
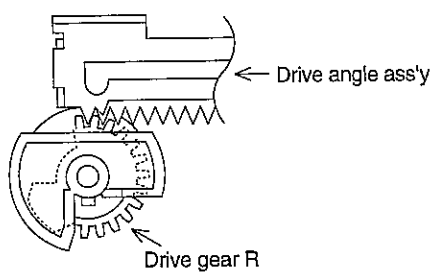


Figure 1-55.

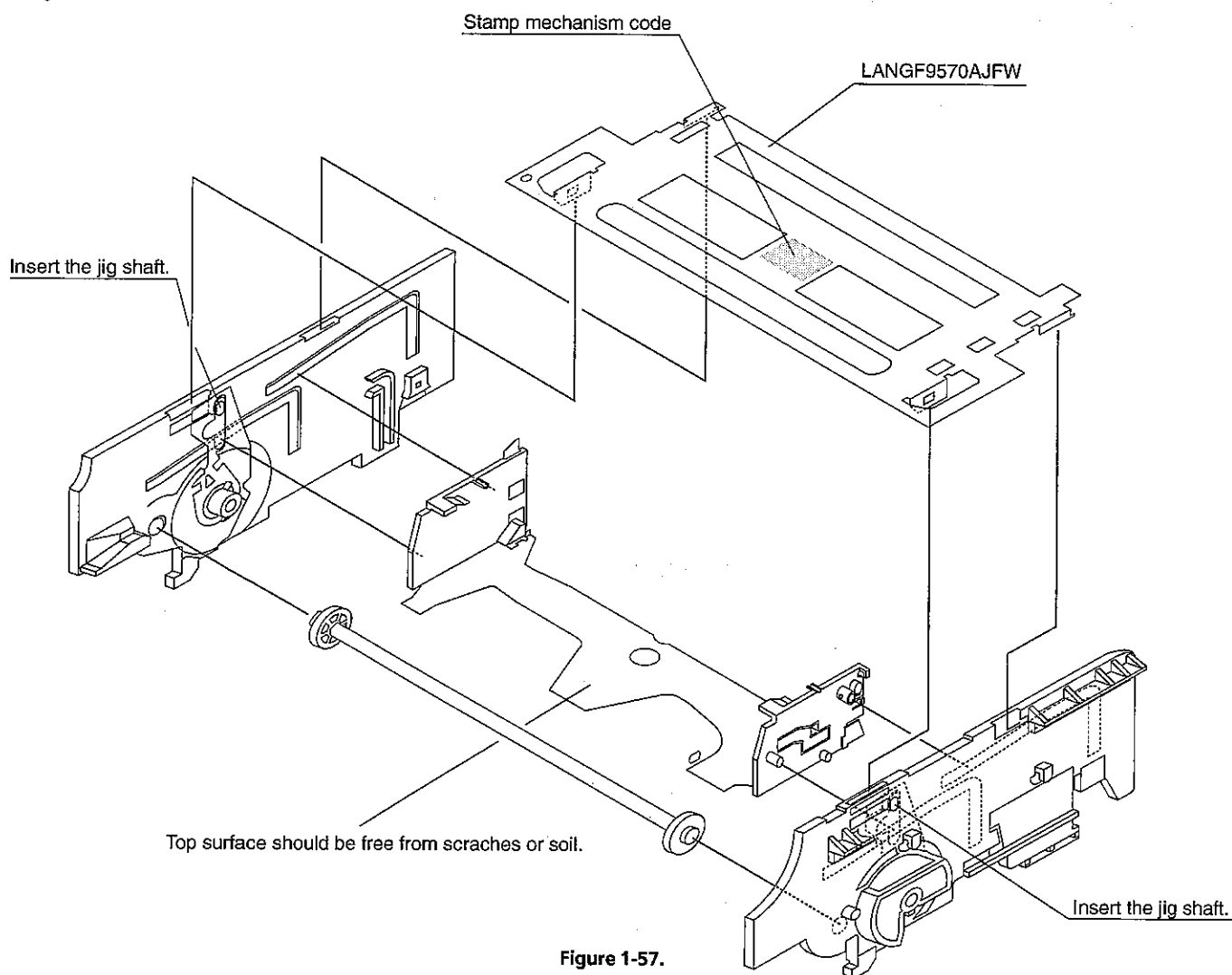
Press-fit the loading motor pulley with a force of less than 98N (10 kgf). Be sure that the pulley is 11.5 ± 0.05 mm away from the motor.

ASSEMBLY OF CASSETTE HOUSING**① Drive Gear R and Drive Angle Ass'y****Phase Matching Point**

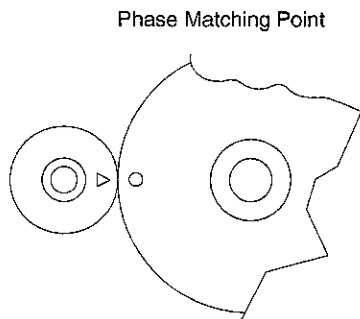
- Fix the drive angle ass'y to the drive gear Ras shown in the figure.

**Figure 1-56.**

② Synchro Gear, Drive Gear L and Drive Gear R



Align the drive gear's round hole with the synchro gear's triangular (\triangle) symbol. Do this alignment for both the drive gears.



Note:

Do not over-turn both of the drive gears when the phase has been matched. These gears are partially toothless and might come out of mesh with the synchro gear. In such a case, the phase needs rematching.

ADJUSTMENT OF THE VCR ELECTRICAL CIRCUITRY

Notes:

- Before the adjustment:
Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.
Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments can not be completed.
- Instruments required:
 - ⊙ Audio signal generator
 - ⊙ Dual-trace oscilloscope
 - ⊙ AC milli-voltmeter
 - ⊙ Frequency counter
 - ⊙ Blank video cassette tape
 - ⊙ Screwdriver for adjustment
 - ⊙ Colour bar generator
 - ⊙ DC voltmeter
 - ⊙ Alignment tape (VROCPSV)
- Adjustment of the VCR should be done in the TV/VCR combined style.

■ SERVO CIRCUIT ADJUSTMENT

Adjustment of head switching point

Measuring instrument	Dual-trace oscilloscope
Mode	Playback
Cassette	Alignment tape (VROCPSV)
Test point	TP2208 (Video out) to CH1 TP2204 (Trigger) to CH2
Control	R7701 head switching point adjustment control
Specification	6.5 ± 0.5 H (lines)

1. Put the set in the SERVICE mode by turning the power on with the STAND BY/POWER button while the CH ▲ button on the front pannel is being pressed down more than 3 seconds.
2. Play the alignment tape (VROCPSV) and check the "ACK" display on the monitor screen. Then press the MENU button on the remote control to set the tracking to center. "TEST" is displayed on the screen, it means tracking is in center in the playback mode.
3. Connect a dual trace oscilloscope to the test points TP2208 (Video out) and TP2204. (Trigger the oscilloscope with the head switching pulse on TP2204.)
4. Adjust R7701 so that the leading edge of the head switching pulse is $6.5H$ (lines) ahead of the vertical sync as shown in Figure 2-1.

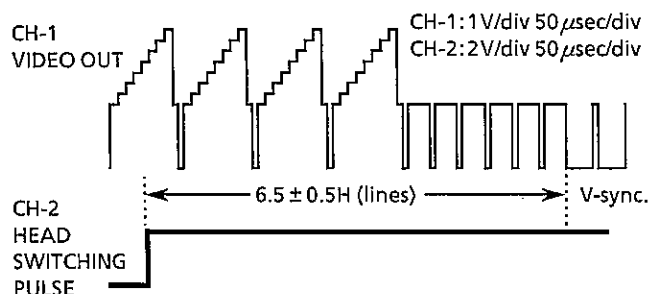


Figure 2-1.

Note:

To make this adjustment, disable the AUTO TRACKING function.

The AUTO TRACKING function is disabled in the following cases.

(In the playback mode only.)

- ① When the MENU button is pressed after the tape is played back in the SERVICE mode. (The display on the TV screen changes from "ACK" to "TEST".)
- ② When the tape is played back, after the cassette housing control ass'y is removed and the AC cord is plugged in with making TP8804 and TP8805 (NON-CAS JUMPER) short circuited. (Mechanism operating mode, in this case the SERVICE mode is not needed.)

■ Test points layout of VCR Main Unit.

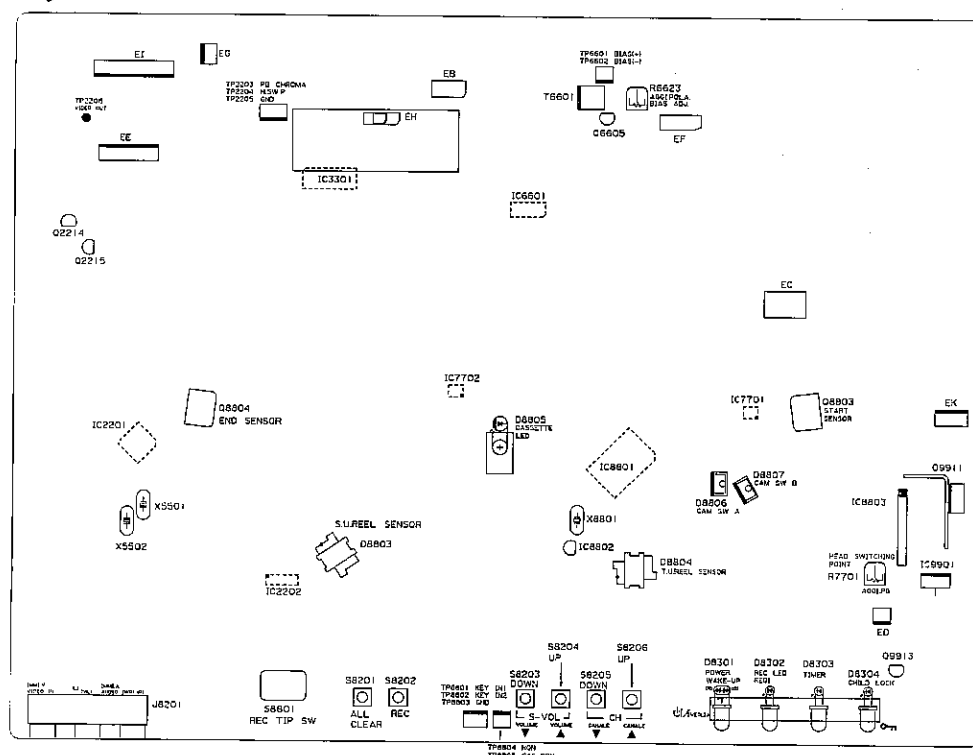


Figure 2-2.

Adjustment of PAL System SP / LP slow tracking Preset

Measuring instrument	Monitor TV
Mode	Recording and playback on self-recording tape at SP and LP mode.
Input signal	PAL System Commercial broadcast or video signal.
Test point	Monitor screen
Adjusting point	CH ▲/▼ (TR ⊕/⊖) buttons.
Specification	No noise bar on the monitor TV screen.

1. Record the PAL System signal in the SP and LP modes.
 2. Put the set in the SERVICE mode by turning the power on with STAND BY/POWER button while the CH ▲ button on the front panel is being pressed down more than 3 seconds.
 3. Play back the PAL SP self-recorded tape in the slow mode and check the "ACK" display on the monitor screen.
- Then press the MENU button on the remote control to set the unit in the PAL SP slow tracking preset mode. "TEST" is displayed on the screen. ("TEST" in the slow mode means the set is in the slow tracking preset mode.)

4. Using the CH ▲/▼ (TR ⊕/⊖) buttons on the remote control, adjust the PAL SP slow tracking so that there is no noise on the screen.
5. Press the STOP button to stop the PAL SP slow tracking preset mode.
6. Turn the power off once, and then put the set in the SERVICE mode again by turning the power on while the CH▲ button is being pressed down more than 3 seconds.
7. Play back the PAL LP self-recorded tape in the slow mode, then press the MENU button to set the unit in the PAL LP slow tracking preset mode. "TEST" is displayed.
8. Using the CH ▲/▼ (TR ⊕/⊖) buttons on the remote control, adjust the PAL LP slow tracking so that there is no noise on the screen.
9. Press the STOP button to stop the PAL LP slow tracking preset mode. (See Notes below)

Notes:

- ① 4 datas of these adjustments are memorized to the E2P-ROM IC on the TV main PWB when the slow tracking preset modes are stopped.
- ② In order to set the unit in the slow tracking preset modes, it needs that pressing the MENU button at the slow playback in the SERVICE mode for each.

Adjustment of NTSC System SP / EP slow tracking Preset

Measuring instrument	Monitor TV
Mode	Recording and playback on self-recording tape at SP and EP mode.
Input signal	NTSC System Commercial broadcast or video signal.
Test point	Monitor screen
Adjusting point	CH ▲/▼ (TR ⊕/⊖) buttons.
Specification	No noise bar on the monitor TV screen.

1. Record the NTSC System signal in the SP and EP modes.
2. Put the set in the SERVICE mode by turning the power on with STAND BY/POWER button while the CH ▲ button on the front pannel is being pressed down more than 3 seconds.
3. Play back the NTSC SP self-recorded tape in the slow mode and check the "ACK" display on the monitor screen.
Then press the MENU button on the remote control to set the unit in the NTSC SP slow tracking preset mode. "TEST" is displayed on the screen. ("TEST" in the slow mode means the set is in the slow tracking preset mode.)
4. Using the CH ▲/▼ (TR ⊕/⊖) buttons on the remote control, adjust the NTSC SP slow tracking so that there is no noise on the screen.
5. Press the STOP button to stop the NTSC SP slow tracking preset mode.
6. Turn the power off once, and then put the set in the SERVICE mode again by turning the power on while the CH ▲ button is being pressed down more than 3 seconds.
7. Play back the NTSC EP self-recorded tape in the slow mode, then press the MENU button to set the unit in the NTSC EP slow tracking preset mode. "TEST" is displayed.
8. Using the CH ▲/▼ (TR ⊕/⊖) buttons on the remote control, adjust the NTSC EP slow tracking so that there is no noise on the screen.
9. Press the STOP button to stop the NTSC EP slow tracking preset mode. (See Notes below)

Notes:

- ① 4 datas of these adjustments are memorized to the E2P-ROM IC on the TV main PWB when the slow tracking preset modes are stopped.
- ② In order to set the unit in the slow tracking preset modes, it needs that pressing the MENU button at the slow playback in the SERVICE mode for each.

Adjustment of PAL System still picture vertical sync

Measuring instrument	Monitor TV
Mode	Still picture playback
Input signal	PAL self-recording tape
Test point	Monitor screen
Adjusting point	CH ▲/▼ (TR ⊕/⊖) buttons.
Specification	No Vertical jitter.

1. Play back the self-recorded tape in the PAL System still mode.
2. Using the CH ▲/▼ (TR ⊕/⊖) buttons on the remote control, make adjustment so that jitter becomes minimum.
3. Now press the STOP button to stop the tape.

Adjustment of NTSC System still picture vertical sync

Measuring instrument	Monitor TV
Mode	Still picture playback
Input signal	NTSC self-recording tape
Test point	Monitor screen
Adjusting point	CH ▲/▼ (TR ⊕/⊖) buttons.
Specification	No Vertical jitter.

1. Play back the self-recorded tape in the NTSC System still mode.
2. Using the CH ▲/▼ (TR ⊕/⊖) buttons on the remote control, make adjustment so that jitter becomes minimum.
3. Now press the STOP button to stop the tape.

AUDIO CIRCUIT

Checking of audio play-back level

Measuring instrument	AC milli-voltmeter or Oscilloscope
Mode	Playback
Input signal	Alignment tape.(VROCPSV) (1kHz level adjusting signal.)
Test point	Audio Out (pin (11) of EI connector)
Specification	-9 ± 2dBs (0.6~1.0Vp-p)

1. Playback the Alignment tape. (VROCPSV 1kHz level adjusting signal)
2. Connect an AC milli-voltmeter to the Audio Out (pin (11) of EI connector).
3. Make sure that the output level is -9 ± 2dBs.

Checking of audio record level

Measuring instrument	AC milli-voltmeter or Oscilloscope
Mode	Record/Playback
Input signal	1kHz, -8dBs (0.87Vp-p)
Test point	Audio Out (pin (11) of EI connector)
Specification	-8 ± 2dBs (0.7~1.1Vp-p)

1. Connect an AC milli-voltmeter to the Audio Out (pin (11) of EI connector).
2. Feed the audio signal shown in table to the AUDIO IN jack and put the unit A/V input mode.
3. Make the self-recording and playback of the signal.
4. Make sure that the Audio Out level is as specified. If it is out of specified value, verify the bias current (ADJUSTMENT OF AUDIO BIAS CURRENT below).

Adjustment of audio bias current

Measuring instrument	AC milli-voltmeter or Oscilloscope
Mode	Record
Input signal	Not required
Test point	TP6601(+) ~ TP6602(-)
Control	R6623
Specification	2.6 ± 0.1mVrms (7.6 ± 0.3mVp-p)

1. Connect an AC milli-voltmeter to test points TP6601(+) and TP6602(-). (Use TP6602 for ground lead.)
2. Set the unit in recording mode.
3. Adjust R6623 so that the signal level is 2.6mVrms.

Checking of erase voltage and oscillation frequency

Measuring instrument	Oscilloscope
Mode	Record
Test point	Full erase head
Control	T6601
Specification	70 ± 5kHz, 40Vp-p or greater

1. Put the unit in record mode.
2. Connect an oscilloscope across the full erase head.
3. Make sure the erase voltage across the full erase head is approx. 40Vp-p or more and frequency is 70 ± 5kHz.

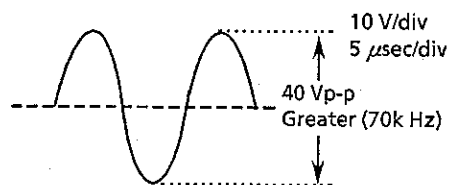


Figure 2-2.

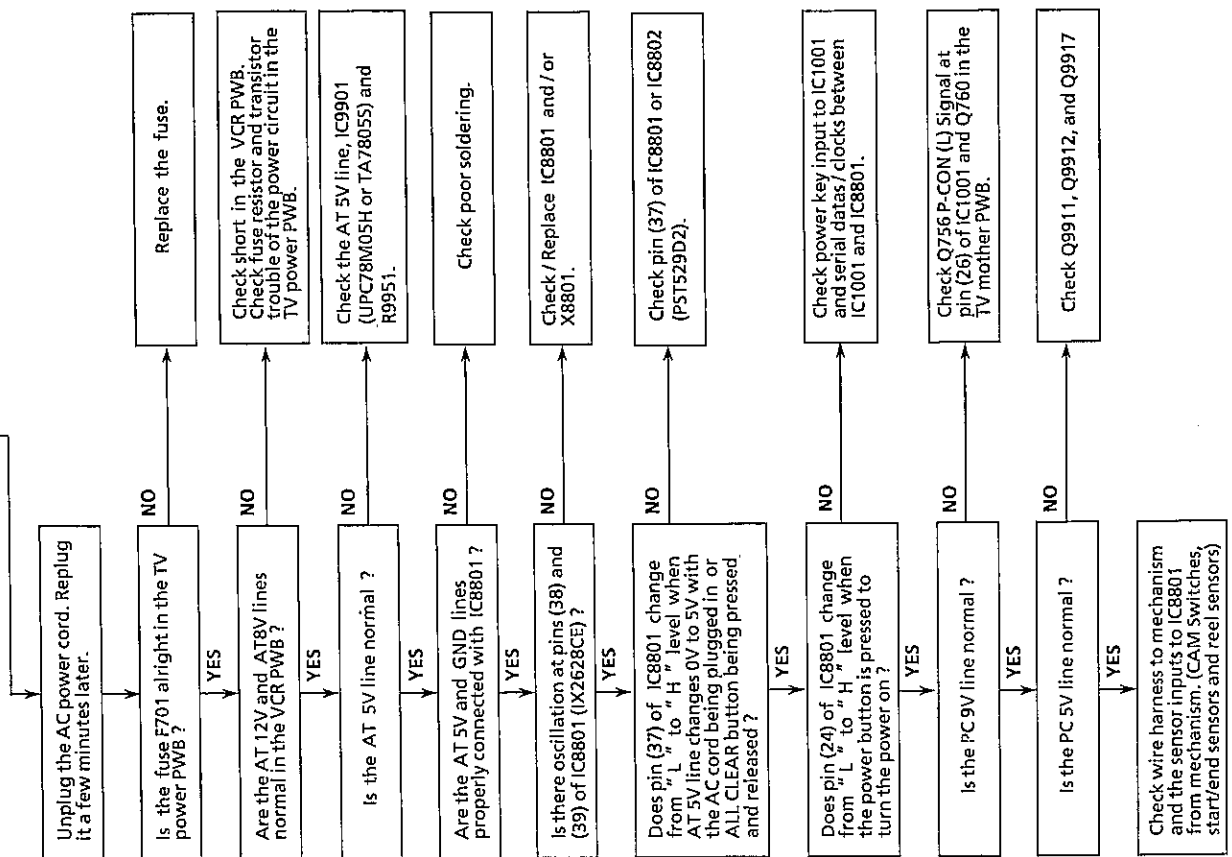
TROUBLESHOOTING OF VCR SECTION

ELECTRICAL TROUBLESHOOTING

VCR POWER TROUBLESHOOTING

FLOW CHART NO. 1-1

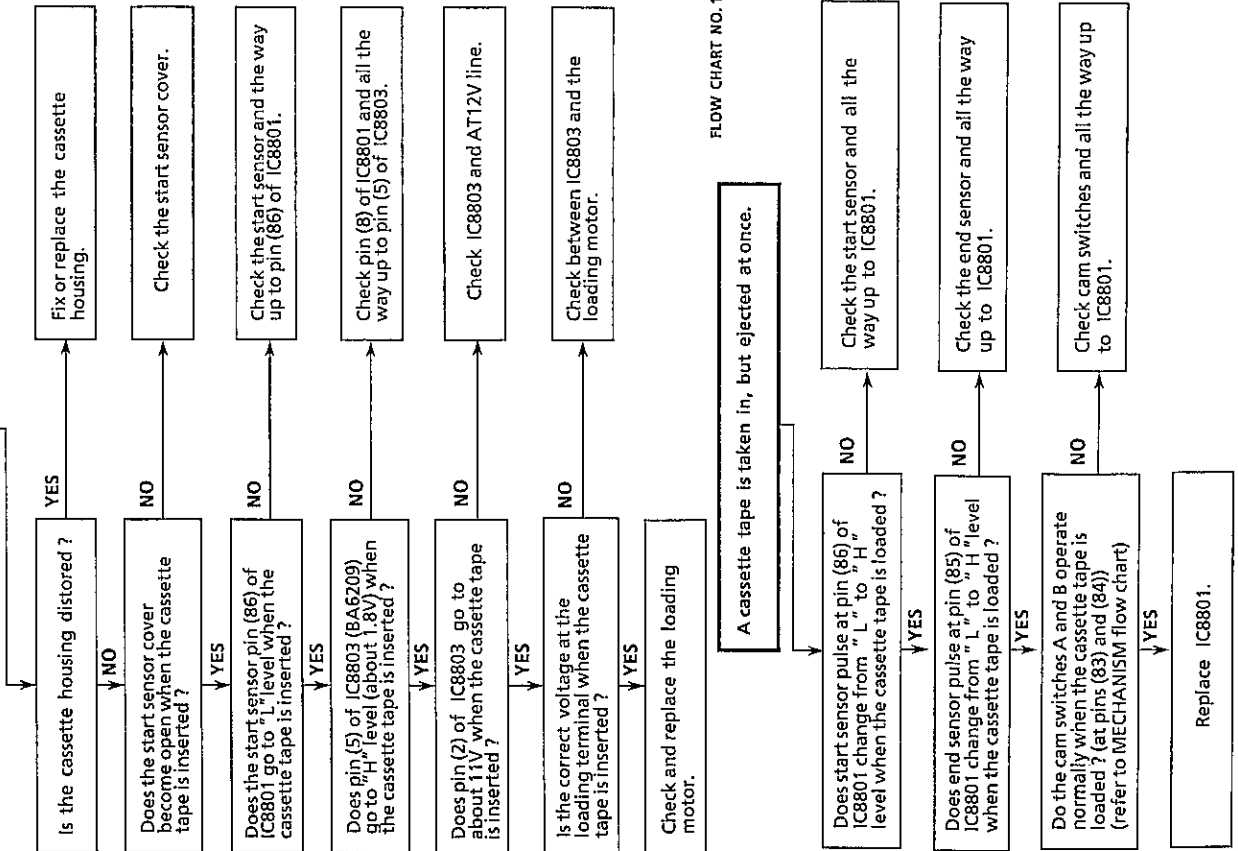
The VCR is dead. (No power)



CASSETTE CONTROL TROUBLESHOOTING

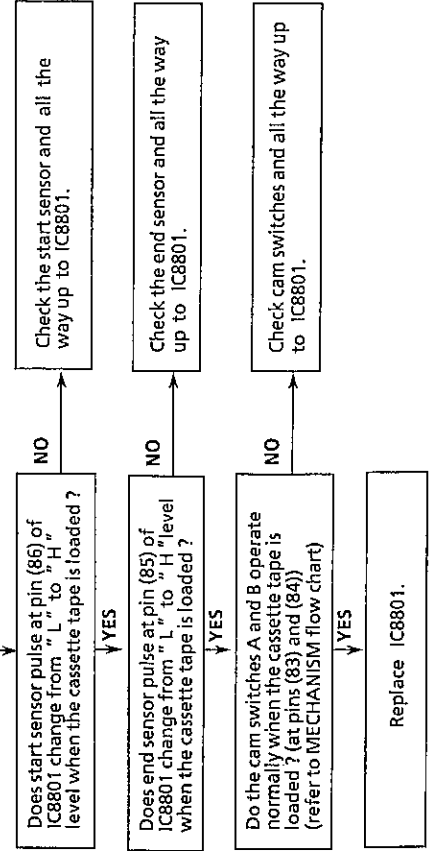
FLOW CHART NO. 1-2

A cassette tape is not taken in.

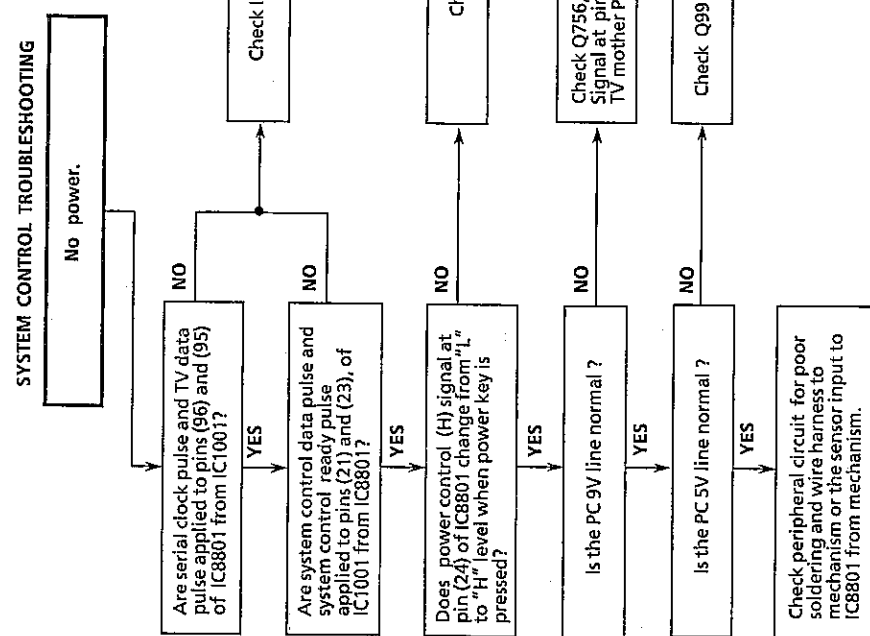


FLOW CHART NO. 1-3

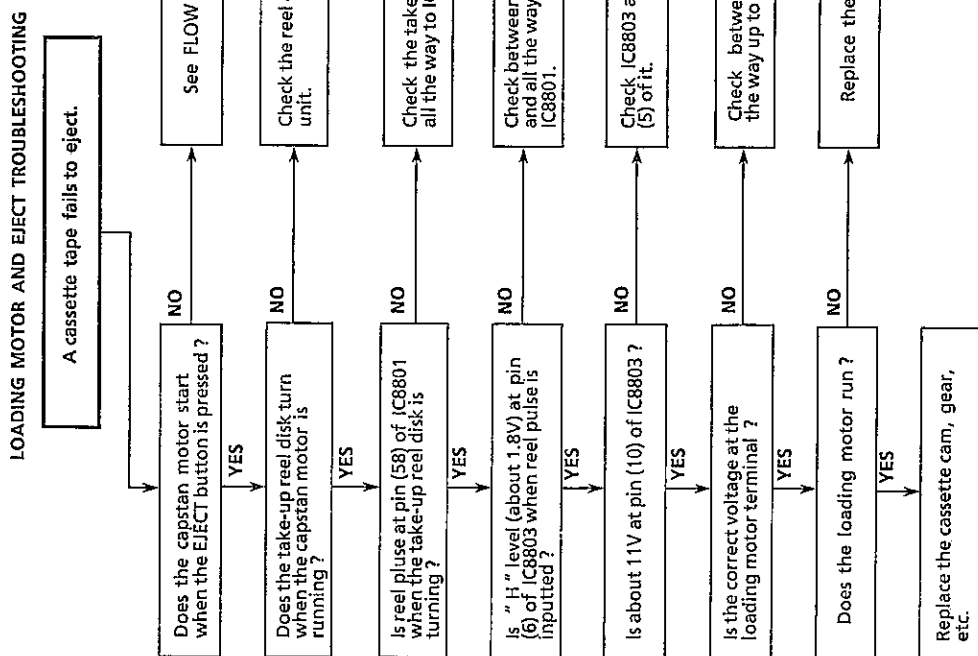
A cassette tape is taken in, but ejected at once.



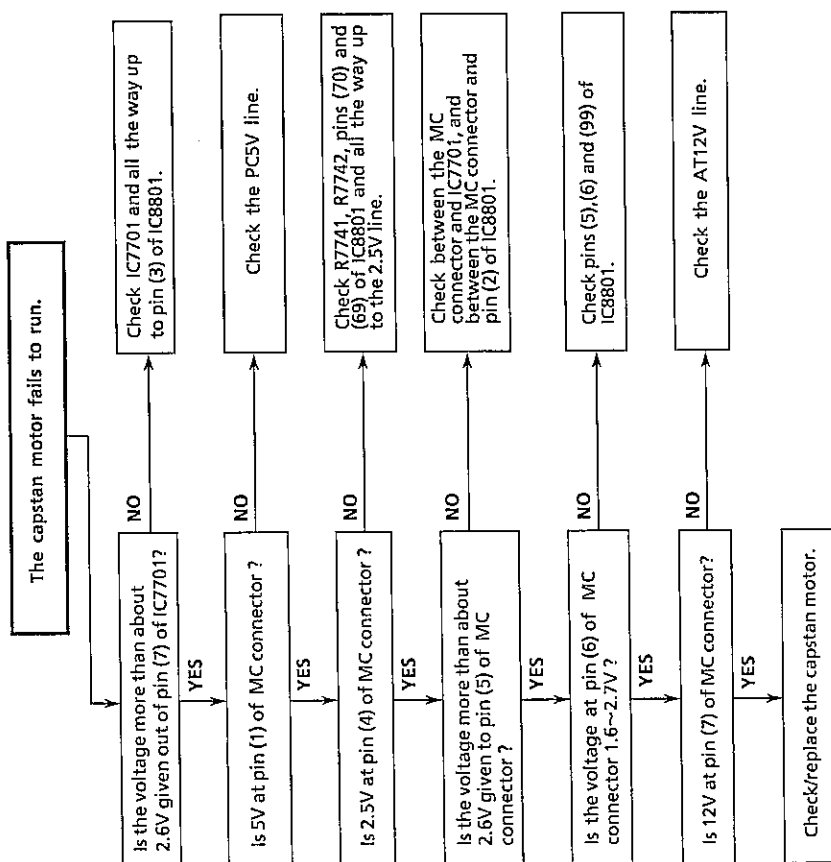
SYSTEM CONTROL TROUBLESHOOTING
FLOW CHART NO. 1-5



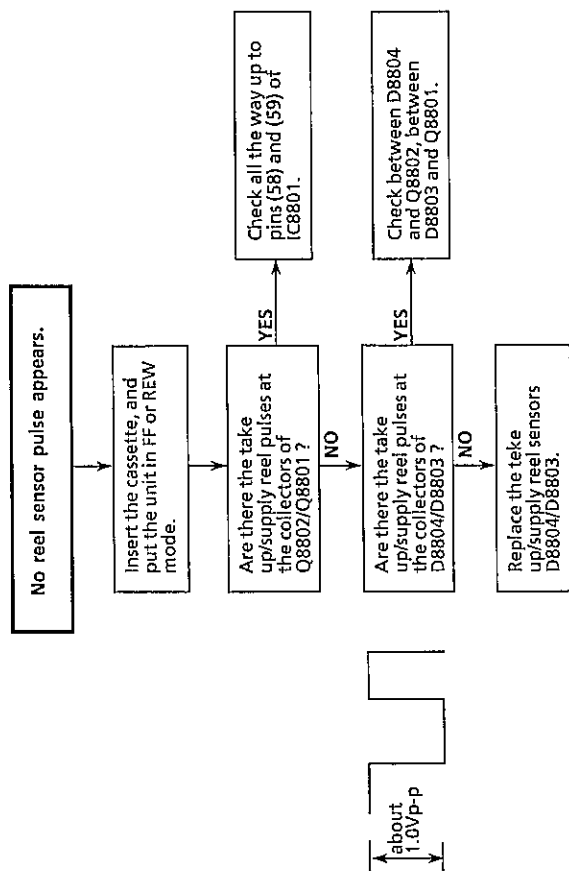
LOADING MOTOR AND EJECT TROUBLESHOOTING
FLOW CHART NO. 1-4



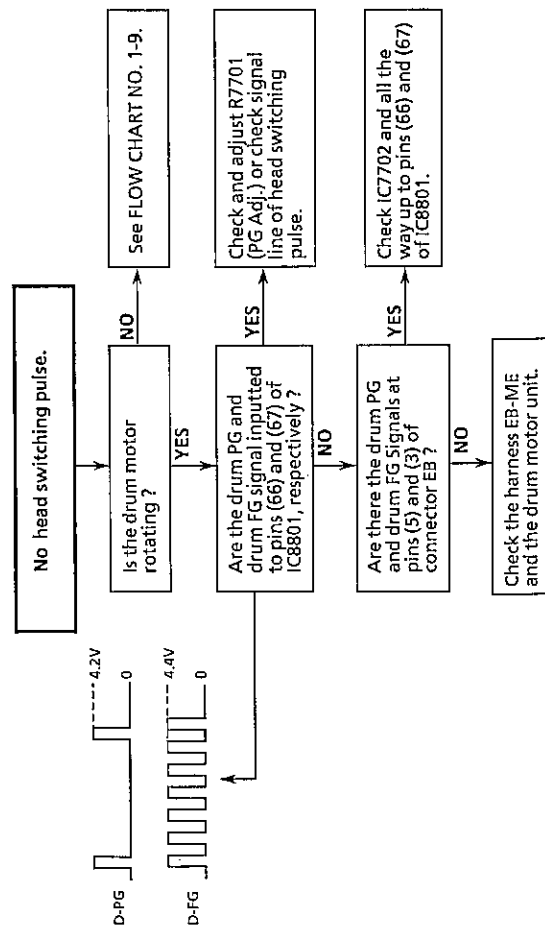
CAPSTAN MOTOR TROUBLESHOOTING
FLOW CHART NO. 1-6



TAKE-UP REEL PULSE GENERATOR TROUBLESHOOTING
FLOW CHART NO. 1-7

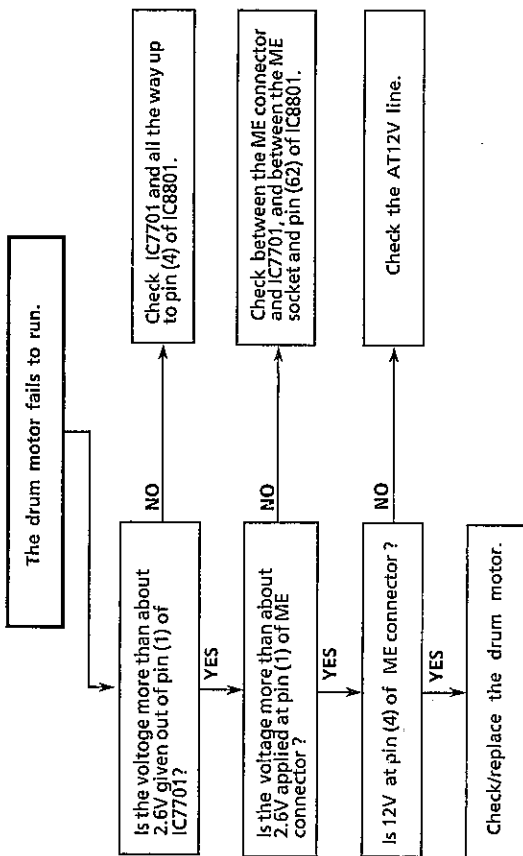


HEAD SWITCHING PULSE TROUBLESHOOTING
FLOW CHART NO. 1-8

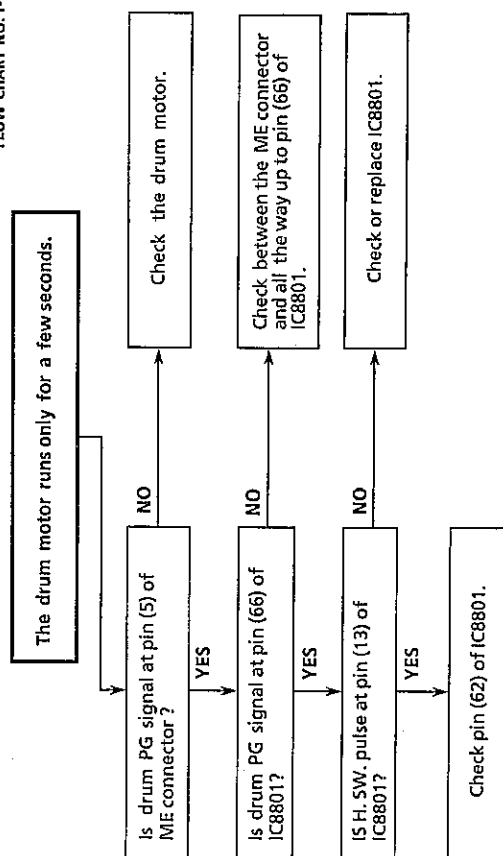


DRUM MOTOR TROUBLESHOOTING

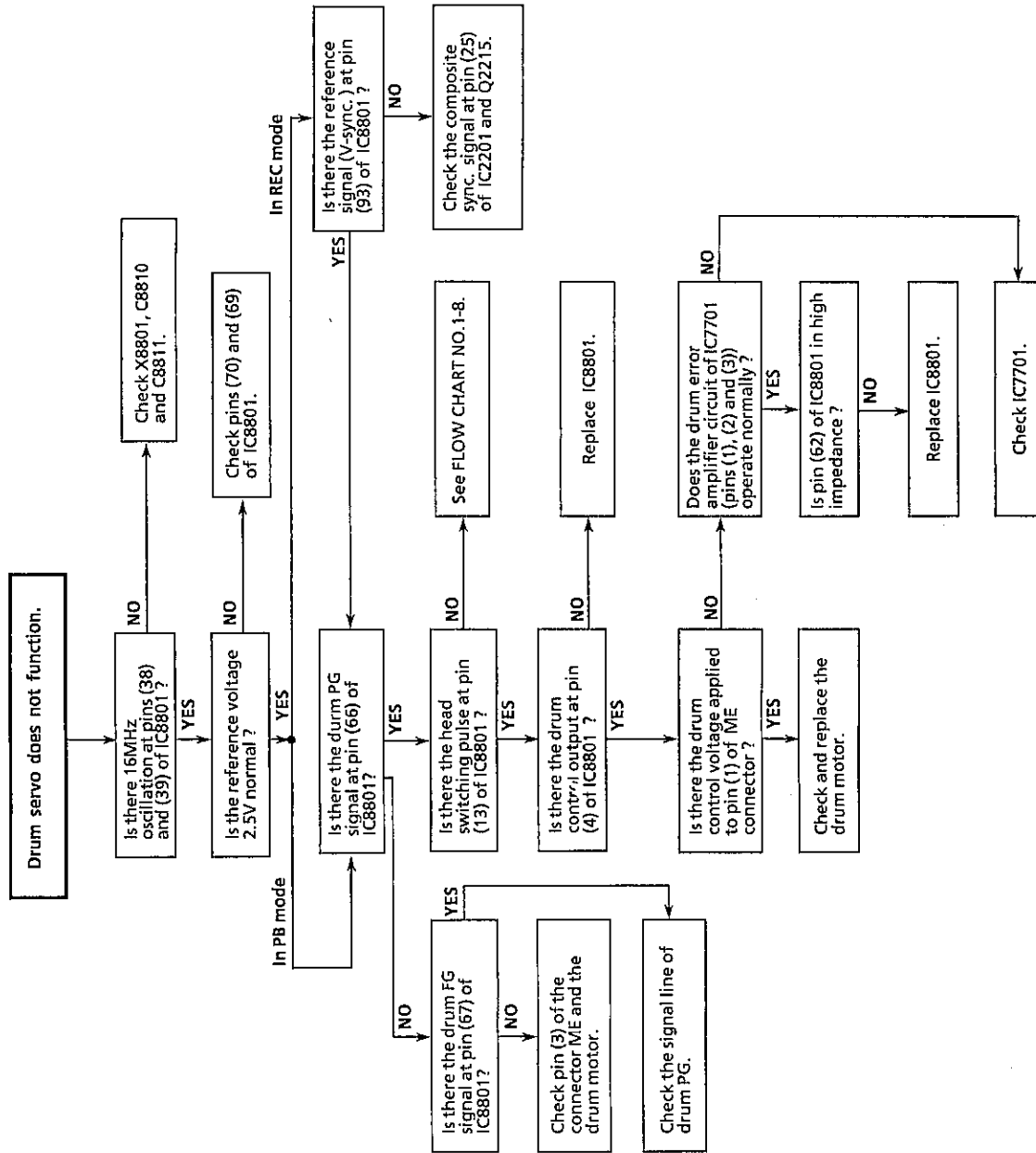
FLOW CHART NO. 1-9



FLOW CHART NO. 1-10

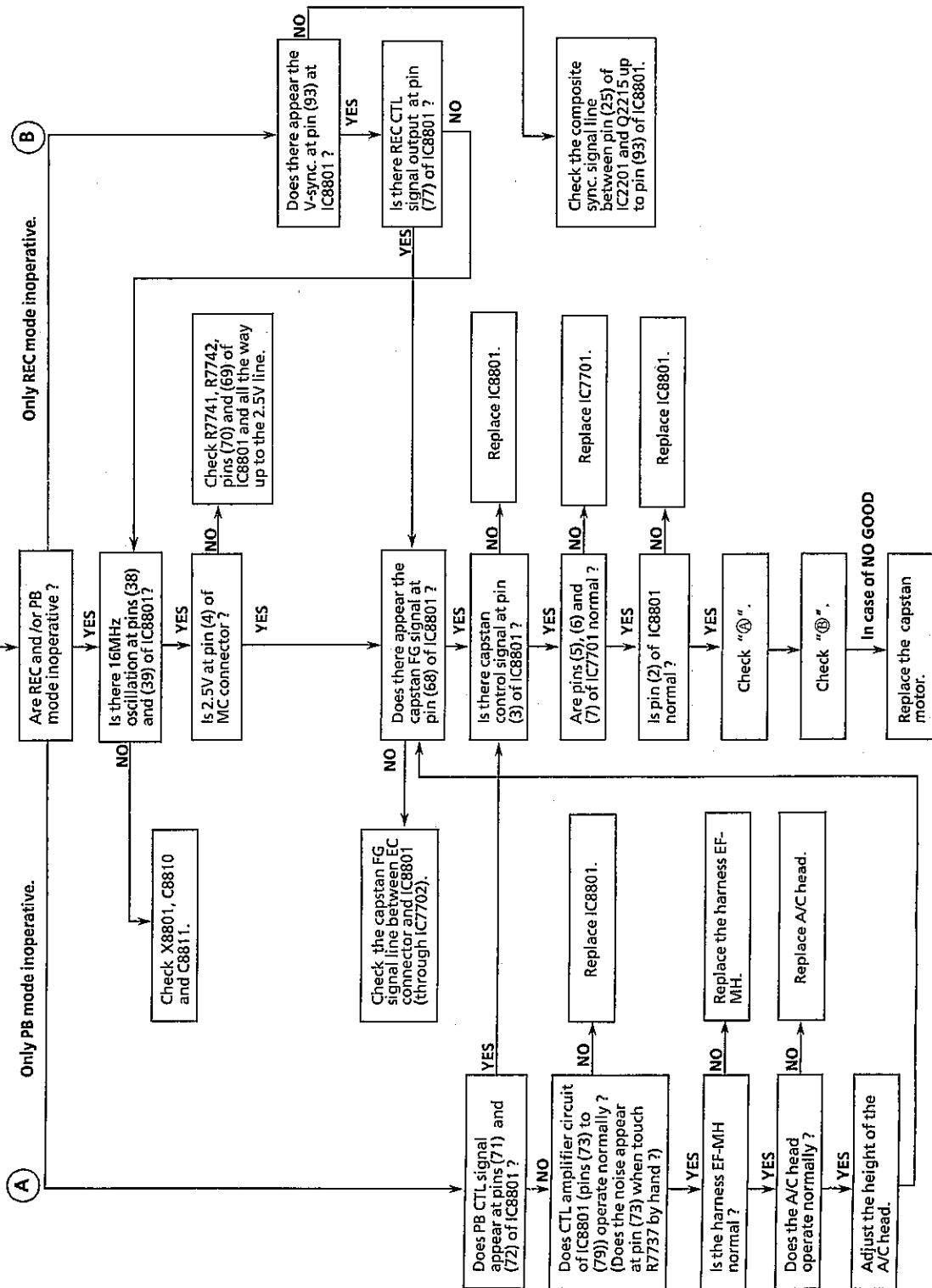


DRUM SERVO TROUBLESHOOTING



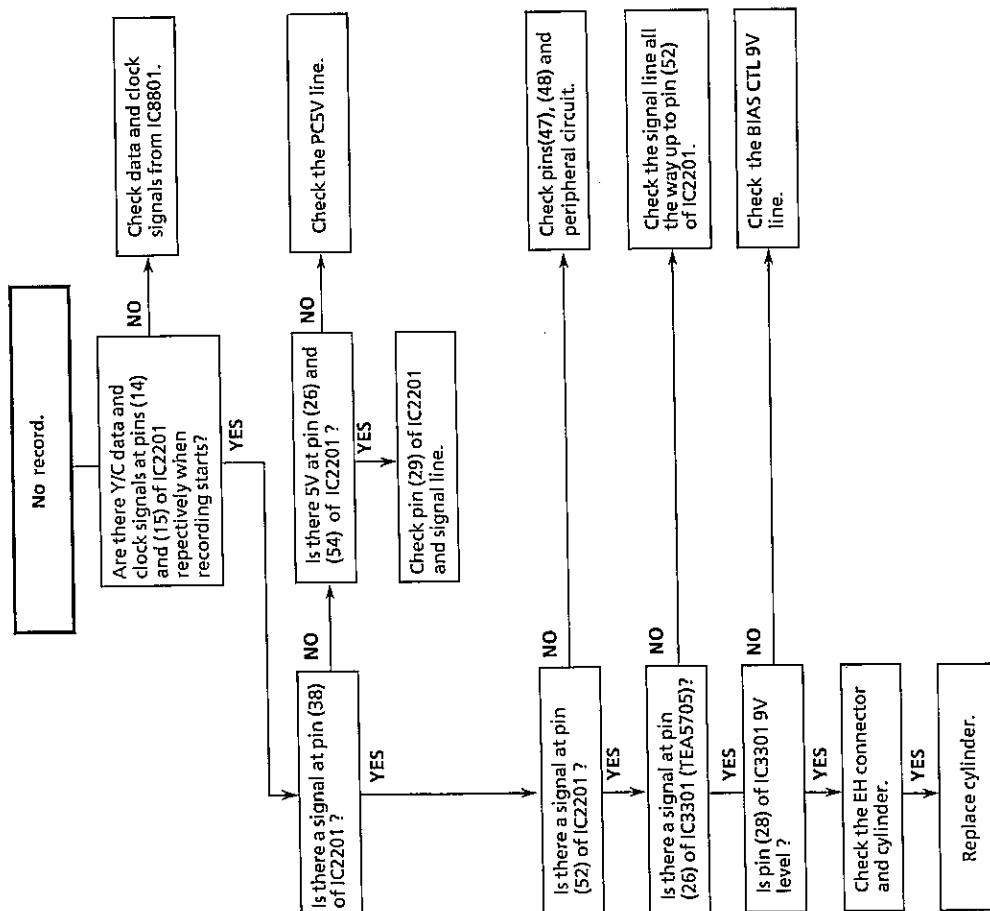
CAPSTAN SERVO TROUBLESHOOTING

Capstan servo does not function.



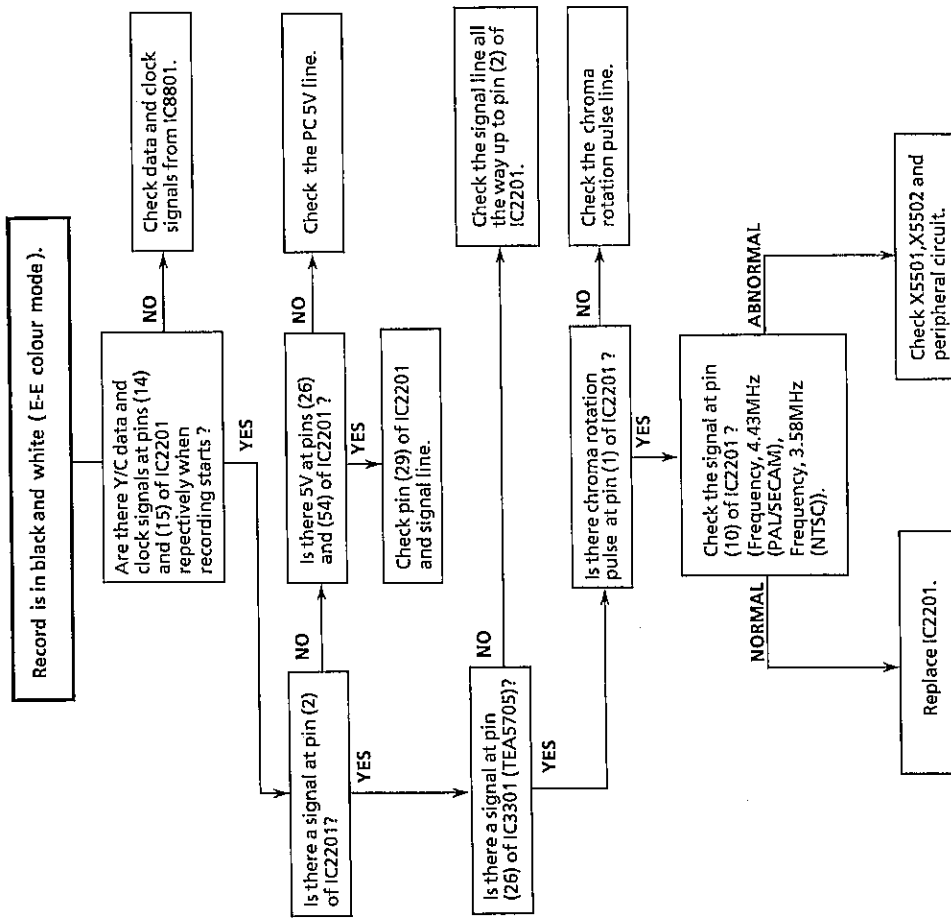
VCR RECORDING MODE (LUMINANCE) TROUBLESHOOTING

FLOW CHART NO. 1-13



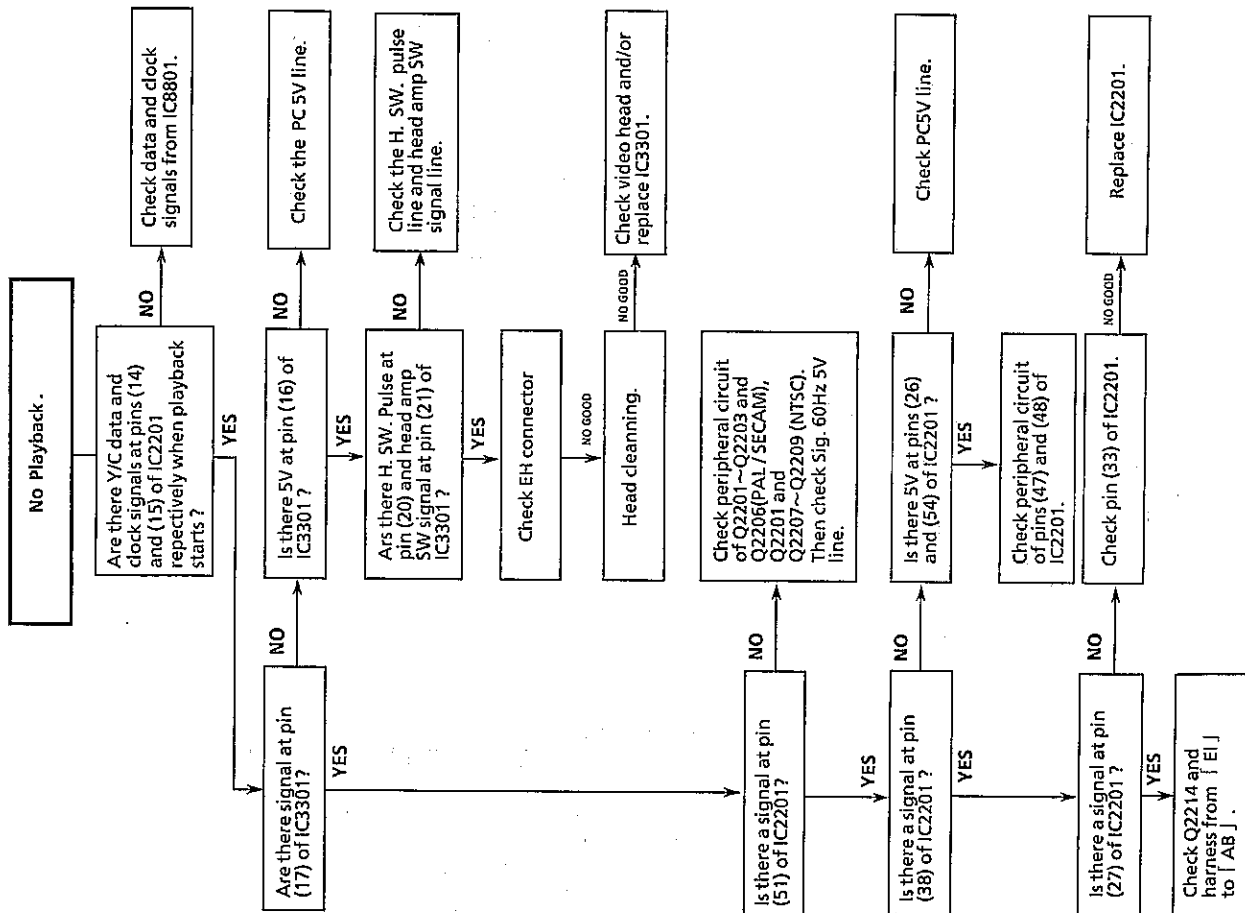
VCR RECORDING MODE (CHROMA) TROUBLESHOOTING

FLOW CHART NO. 1-14



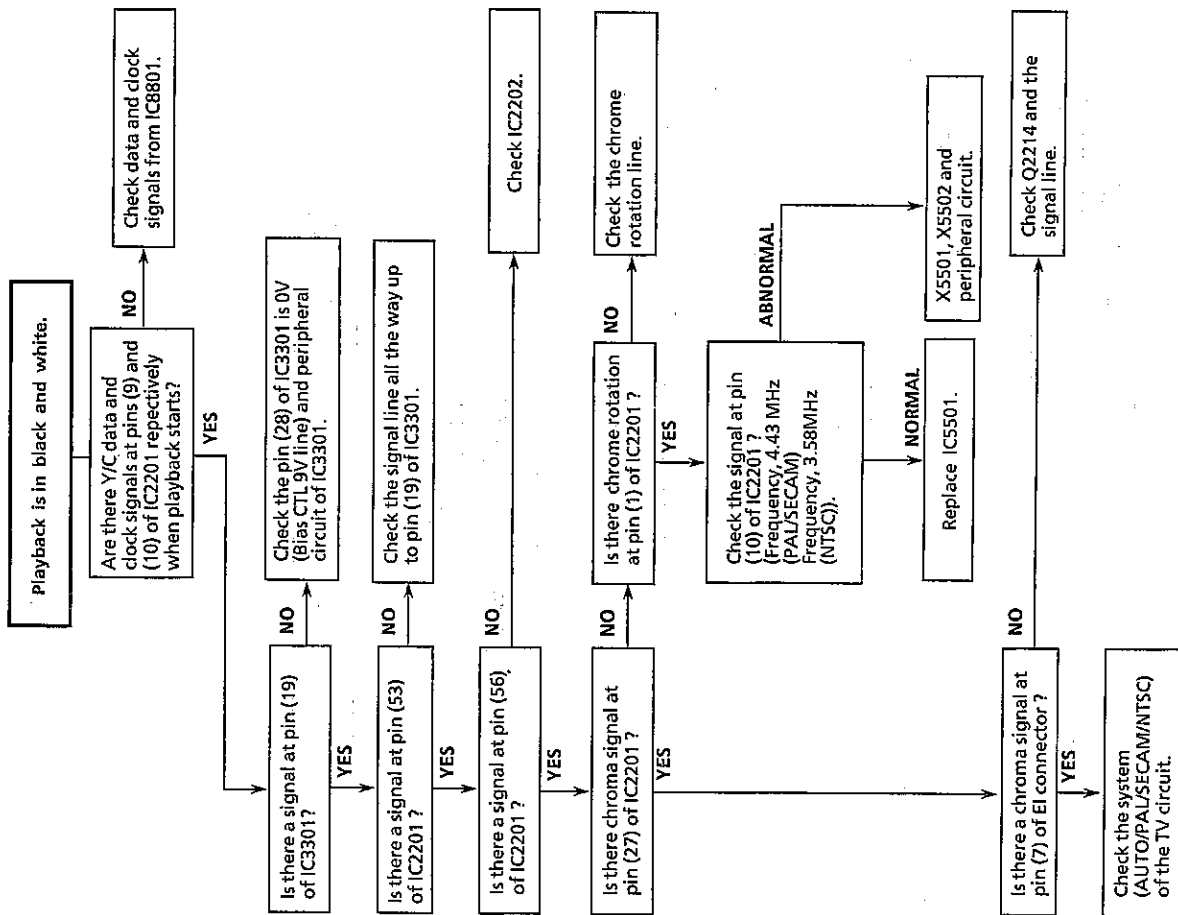
VCR PLAYBACK MODE (LUMINANCE) TROUBLESHOOTING

FLOW CHART NO. 1-15



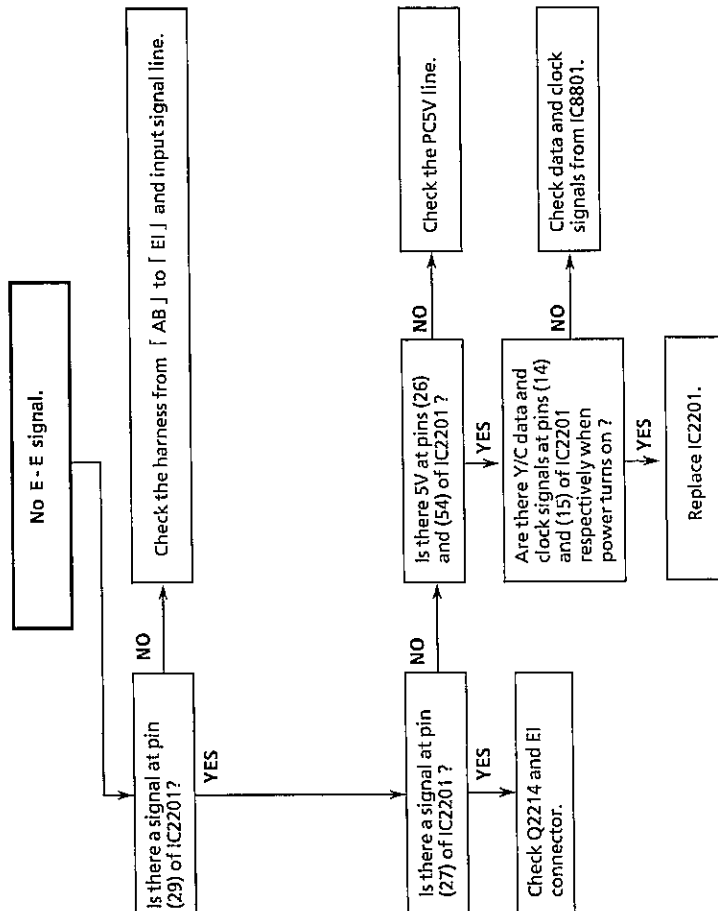
VCR PLAYBACK MODE (CHROMA) TROUBLESHOOTING

FLOW CHART NO. 1-15



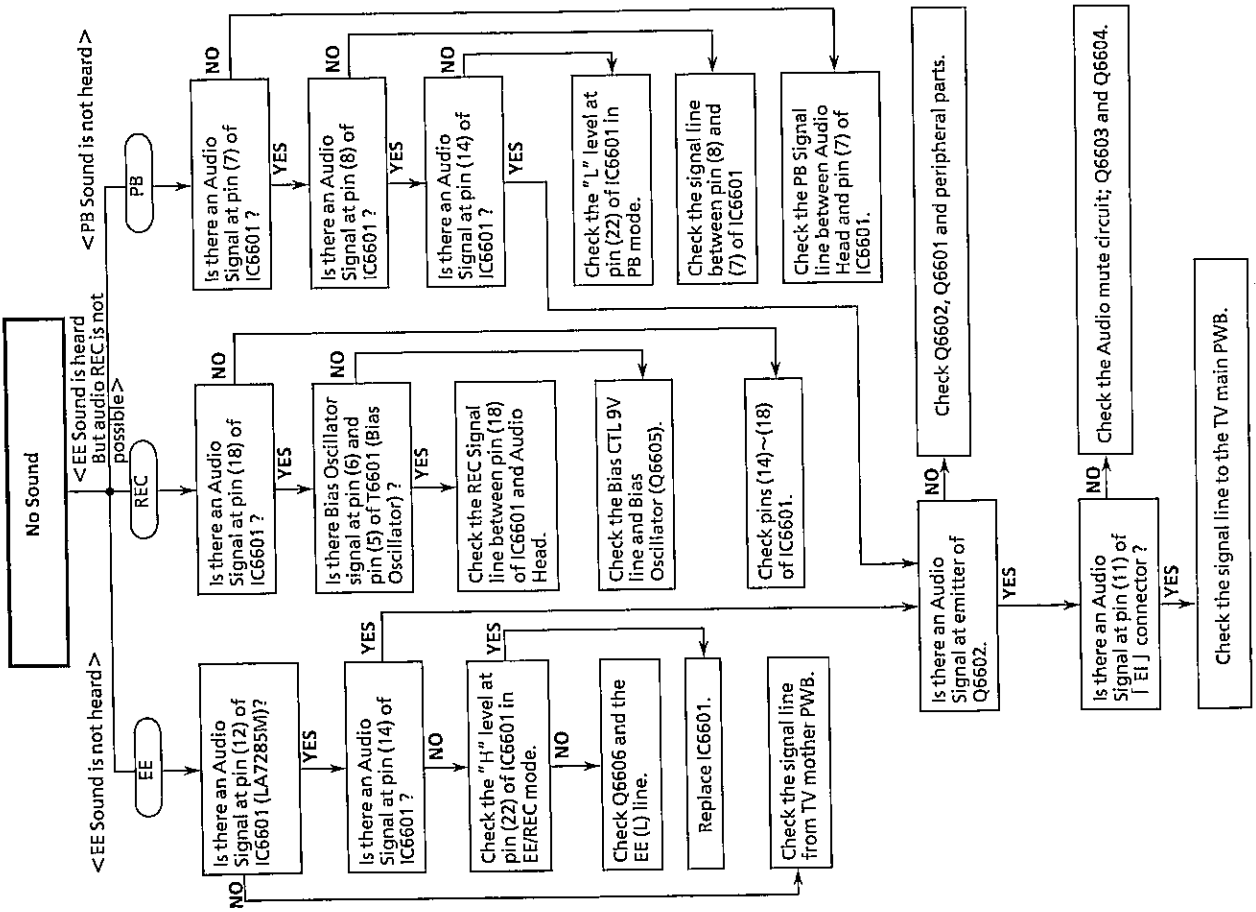
VCR E - E MODE TROUBLESHOOTING

FLOW CHART NO. 1-17



VCR SOUND TROUBLESHOOTING

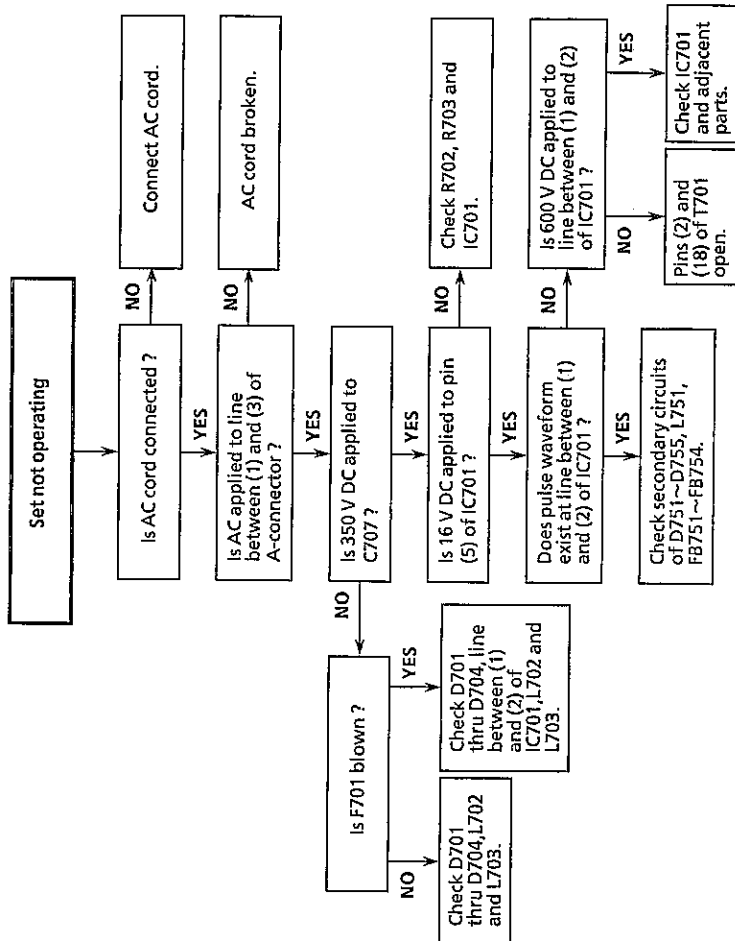
FLOW CHART NO. 1-18



TROUBLESHOOTING OF TV SECTION

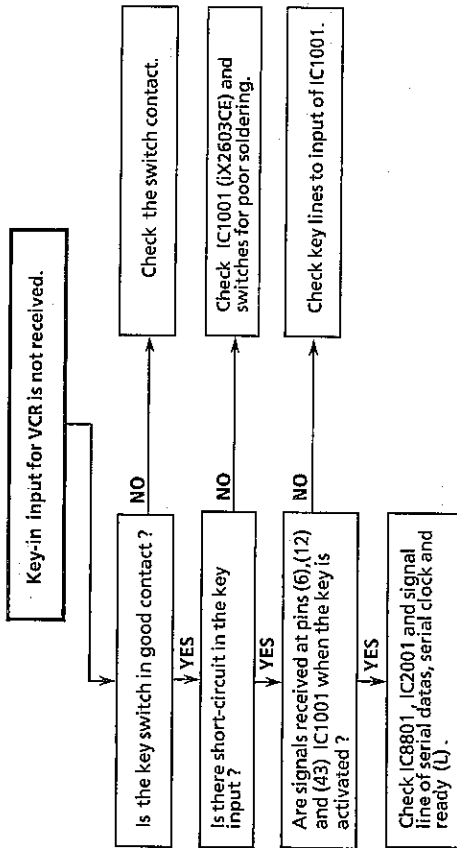
TV TROUBLESHOOTING TABLE

FLOW CHART NO. 2-1



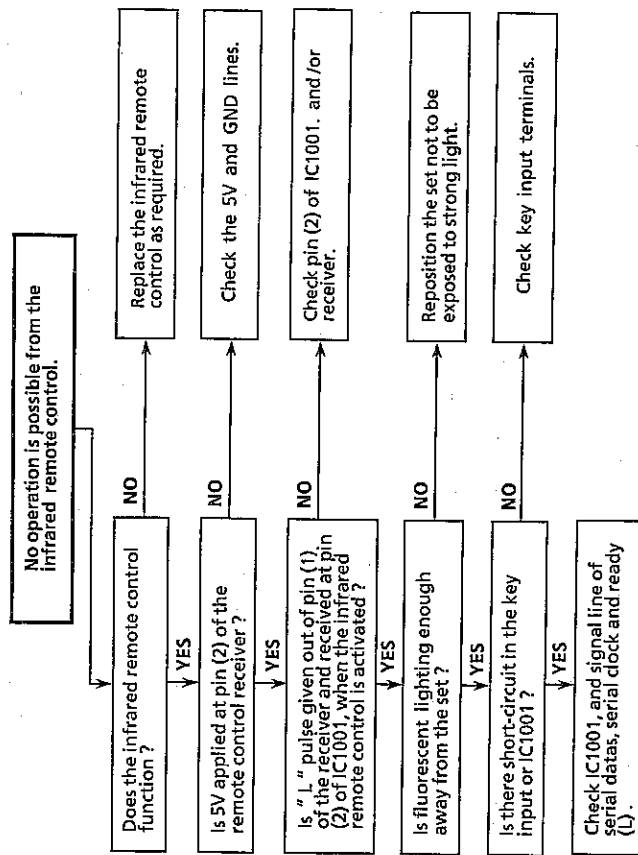
KEY-IN TROUBLESHOOTING

FLOW CHART NO. 2-2



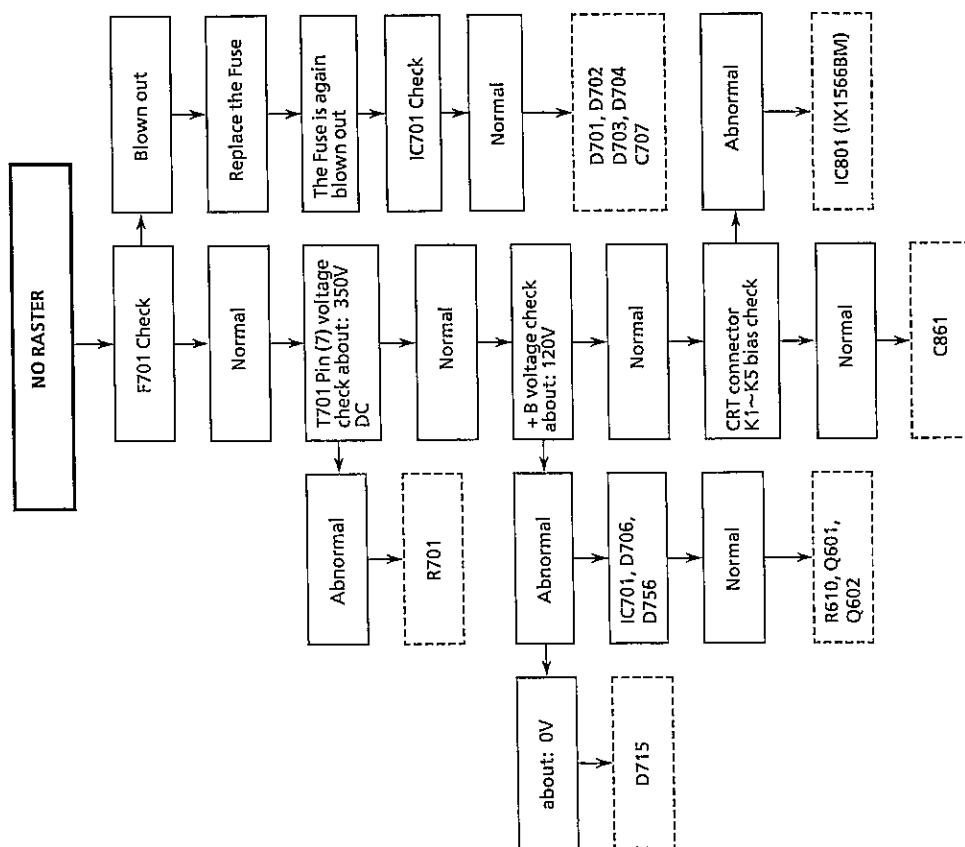
INFRARED R/C TROUBLESHOOTING

FLOW CHART NO. 2-3



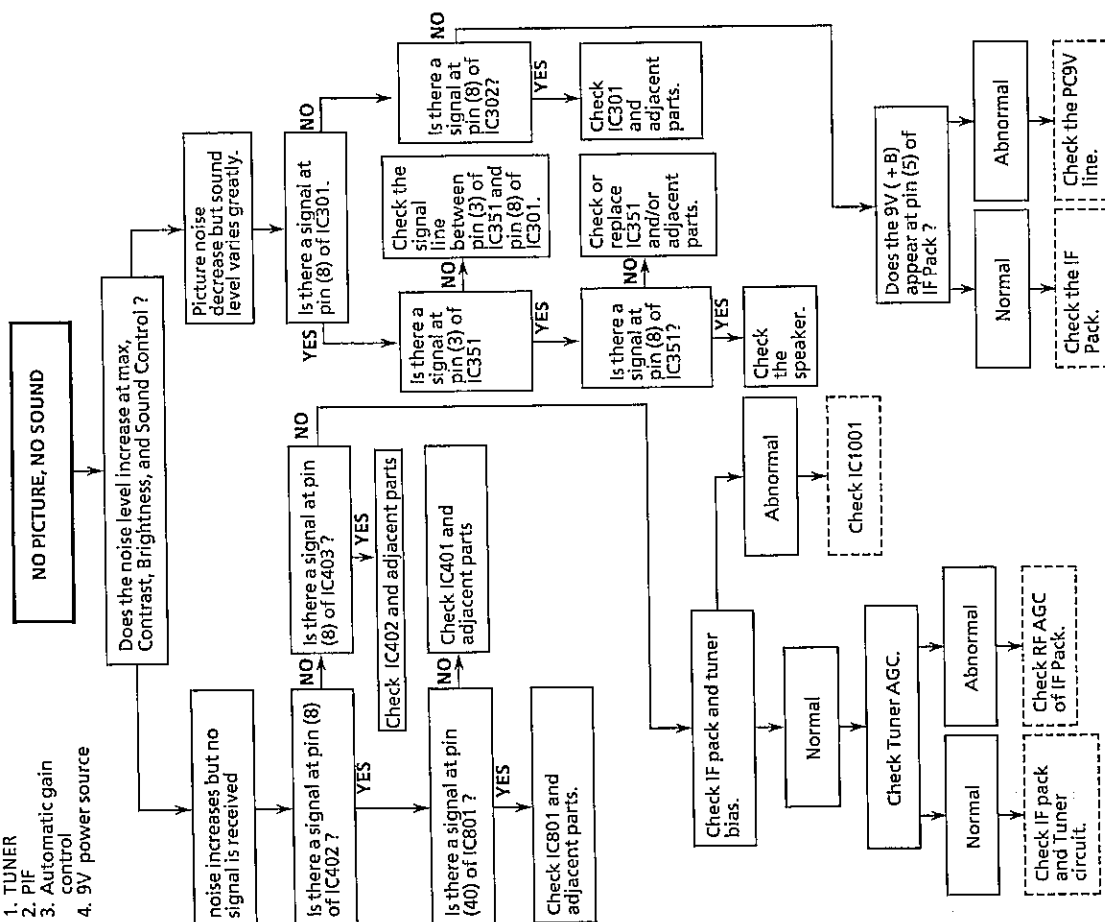
TV TROUBLESHOOTING TABLE

FLOW CHART NO. 2-4

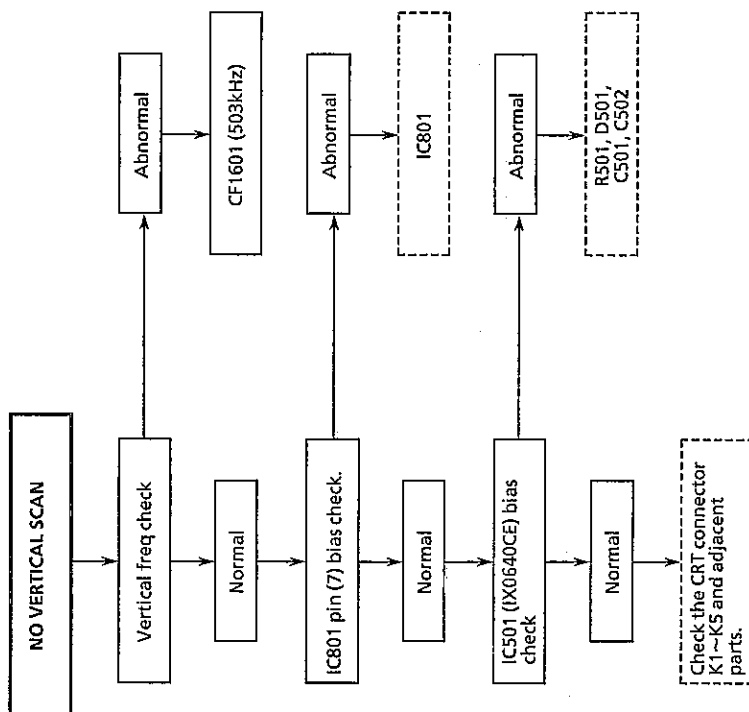


Circuit to be checked:
1. TUNER
2. PIF
3. Automatic gain control
4. 9V power source

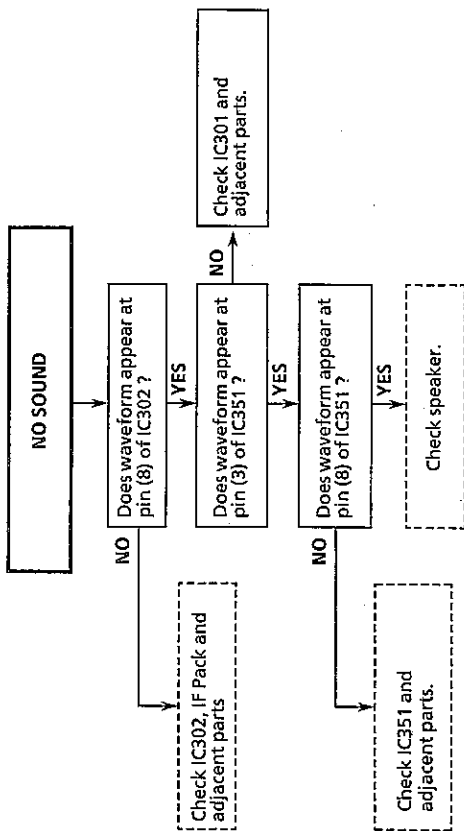
FLOW CHART NO. 2-5



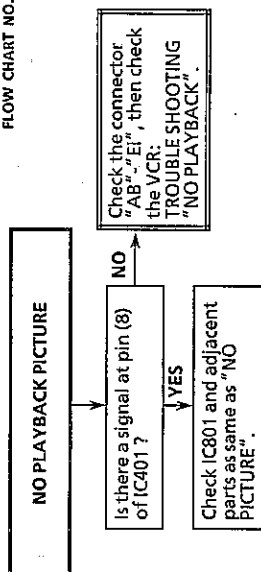
FLOW CHART NO. 2-6



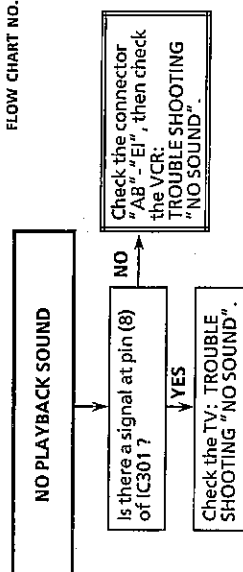
FLOW CHART NO. 2-7



FLOW CHART NO. 2-8

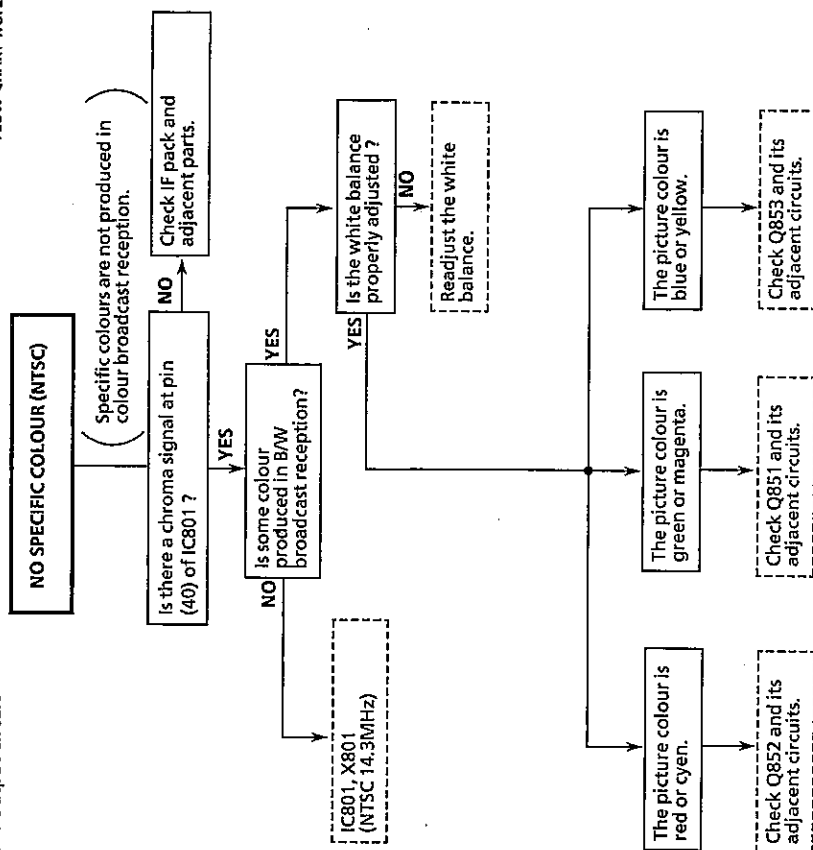


FLOW CHART NO. 2-9



FLOW CHART NO. 2-12

Circuits to be checked:
• IC 801 and its Adjacent Circuit
• R. G. B. Output Circuit



规 格

■主要部分

电源：	110~240V交流, 50/60Hz
功率消耗：	VT-1428M型：77W VT-2128M型：98W
电视播送接收标准：	PAL-B/G、I、D/K、M制式
接收频道：	VHF(甚高频)……1A~S20频道 UHF(超高频)……E21~US83频道
接收制式：	声音：5.5/6.0/6.5/4.5MHz 彩色：PAL/SECAM/NTSC制式
天线输入阻抗：	VHF/UHF：75Ω 非平衡式(DIN)
视频信号：	输入：0.5~2.0V _{p-p} /75Ω (RCA) 输出：1.0V _{p-p} /75Ω (RCA)
音频信号：	输入：0.5V _{rms} /10kΩ (RCA) 输出：0.5V _{rms} /1kΩ (RCA)
温度：	工作：5~40℃ 存放：-20~60℃
尺寸(大约)：	VT-1428M型：388(宽)×380(高)×395(深)mm VT-2128M型：510(宽)×449(高)×483(深)mm
重量(大约)：	VT-1428M型：13.7kg VT-2128M型：25.3kg
外壳材料：	塑胶
附属品：	<input type="checkbox"/> 使用说明书 <input type="checkbox"/> 红外线遥控器 <input type="checkbox"/> 干电池(AA型×2节) <input type="checkbox"/> 交流插头转接器

■电视机部分

电视荧屏尺寸：	VT-1428M型：33.54cm对角线长 VT-2128M型：50.8cm对角线长
电视显象管功率：	VT-1428M型：800μA电子束时22.0kV VT-2128M型：1100μA电子束时25.0kV
扬声器输出：	VT-1428M型：最大3.0W(8cm圆形动态式×2只) VT-2128M型：最大3.0W(8cm圆形动态式×2只)
电视显象管：	型 式：VT-1428M型：VB370BVBK1U-S型(色调显象管) VT-2128M型：VB51JFC61X/*P型或VB51JSY61X/*S型(色调显象管) 加热灯丝：VT-1428M型：6.3V, 300mA VT-2128M型：6.3V, 680mA 聚 焦：双电位高压静电聚焦

■录象机部分

名称：	VHS(甚高灵敏度)录象制式盒式磁带彩色录象机
形式：	VHS式PAL/NTSC制式标准型
录象系统：	双旋转磁头螺旋形扫描系统
亮度信号：	调频记录
色度信号：	低频变换直接记录
视频信号制式：	PAL/SECAM/NTSC3.58MHz彩色制式
录象用盒式磁带：	VHS式录象用盒式磁带
磁带带宽：	12.7mm
走带速度：	PAL制式：23.39mm/秒(SP标准转速方式), 11.70mm/秒(LP缓慢转速方式) NTSC制式：33.35mm/秒(SP标准转速方式), 11.68mm/秒(LP缓慢转速方式, 仅用于再现), 11.12mm/秒(EP超慢转速方式)
录象/再现时间：	SP方式：最大240分(E-240磁带) LP方式：最大480分(E-240磁带, 仅限于PAL制式) EP方式：最大480分(T-160磁带, 仅限于NTSC制式)

注：天线应使用符合DIN45325(IEC169-2)新标准要求，带有75欧姆连接器的UHF/VHF型天线。

由于产品的更新换代，上述设计及规格如有变更，恕不另告。

维修注意要点

本装置应只能由够格的维修人员来维修和修理。

高电压系统和显象管的维修

当维修高电压系统时，在显象管金属部分和第2阳极引线之间，用一绝缘（象测试探针等）和-10千欧姆的电阻串联连接，从而除去高电压系统的静电。（交流电源插头应和交流电源断开。）

1. 本装置的显象管使用整体内爆保护。
2. 为安全的连续性起见，更换时必须使用相同型号的显象管。
3. 不要抓住显象管的颈部来将其提起。
4. 只有在防震屏面磨损时，和高电压系统彻底放电之后，才能来操作显象管。

X-射线

本装置被设计成一些X-射线保持在绝对最小。但是由于故障或在修理时，有可能产生在靠近区域长期暴露于辐射之下的危险，因此，必须遵循下列预防措施。

1. VT-1428M型：当修理电路时，一定不要使装置的高电压超过25.3kV(电子束电流为 $0\mu\text{A}$)。
VT-2128M型：当修理电路时，一定不要使装置的高电压超过29.3kV(电子束电流为 $0\mu\text{A}$)。
2. VT-1428M型：要使装置操作正常，必须使装置在高电压为 $22.0\text{kV} \pm 1.5\text{V}$ - 2.0kV （电子束电流为 $800\mu\text{A}$ ）的情况下工作。
VT-2128M型：要使装置操作正常，必须使装置在高电压为 $25.0\text{kV} \pm 1.5\text{V}$ （电子束电流为 $1100\mu\text{A}$ ）的情况下工作。

本装置在出厂之前已被调整为上述的高电压。

∴在进行修理之后，可能会产生高电压波动的结果。因此在修理结束时，千万不要忘记检查一下高电压是否波动。

3. 不要使用没经许可类型和商标的显象管来代替，这样会产生超过标准的X-射线辐射。

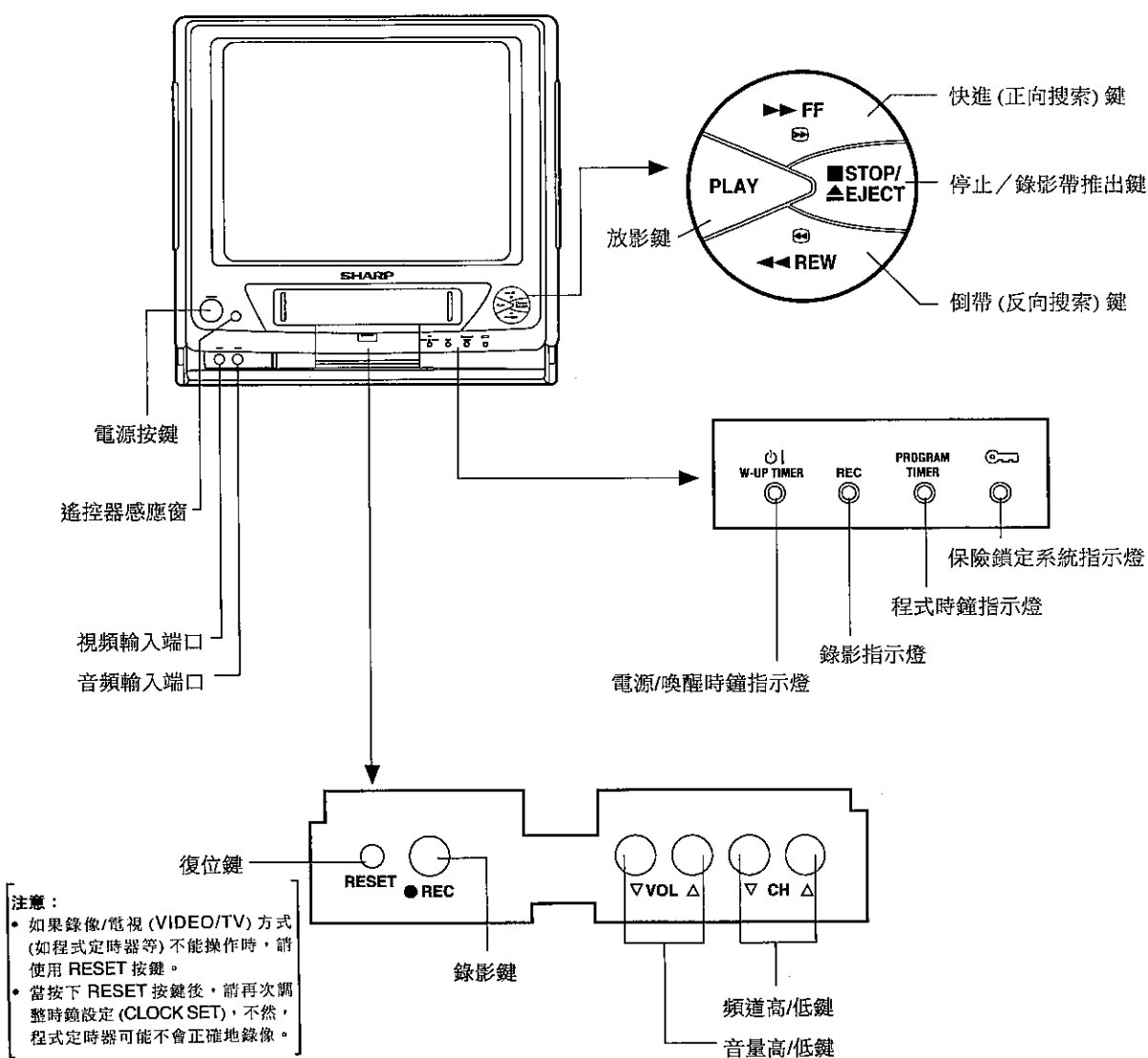
在归还装置之前

在将装置归还给用户之前，请进行下列的安全检查。

1. 检查机芯底盘和装置其它金属部件之间的全部导线的包皮，确认导线没有折叠、没有和其它金属部件短接。
2. 检查所有防护装置，象非金属的控制旋钮、绝缘青壳纸、机壳后盖、调整器和门盖或防护屏、隔离电阻—电容网、机械隔离器等。

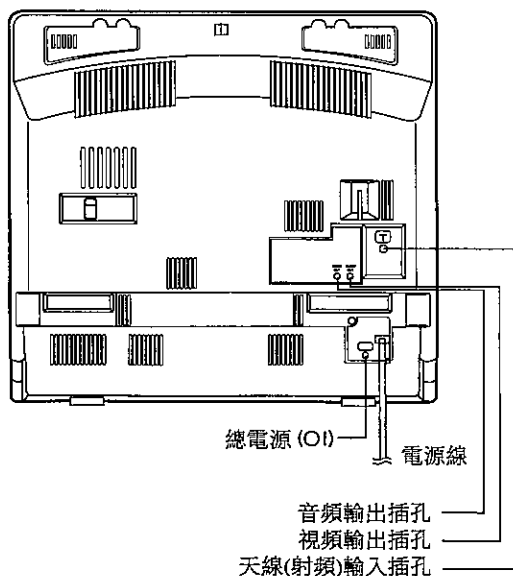
控制键钮的部位

正面

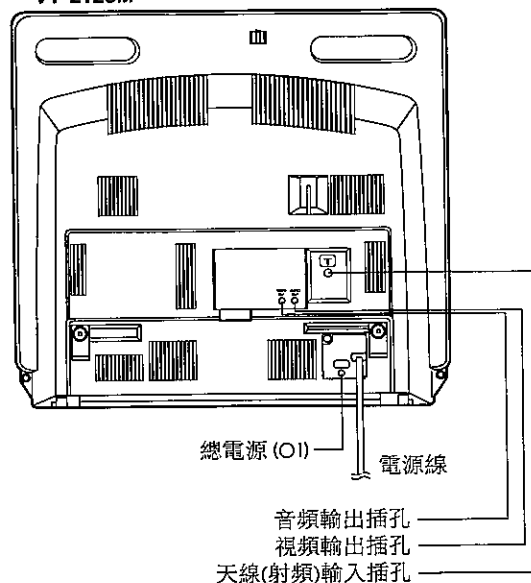


背面

VT-1428M



VT-2128M

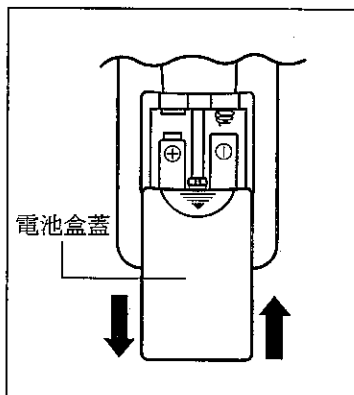


控制键钮的部位 (接上页)

遥控器电池的安裝

遙控器使您能夠操縱放置在遠處的這台錄影電視機。使用時只要將遙控器的前部對準本機前部面板上的光感受窗，並按動控制鍵即可。

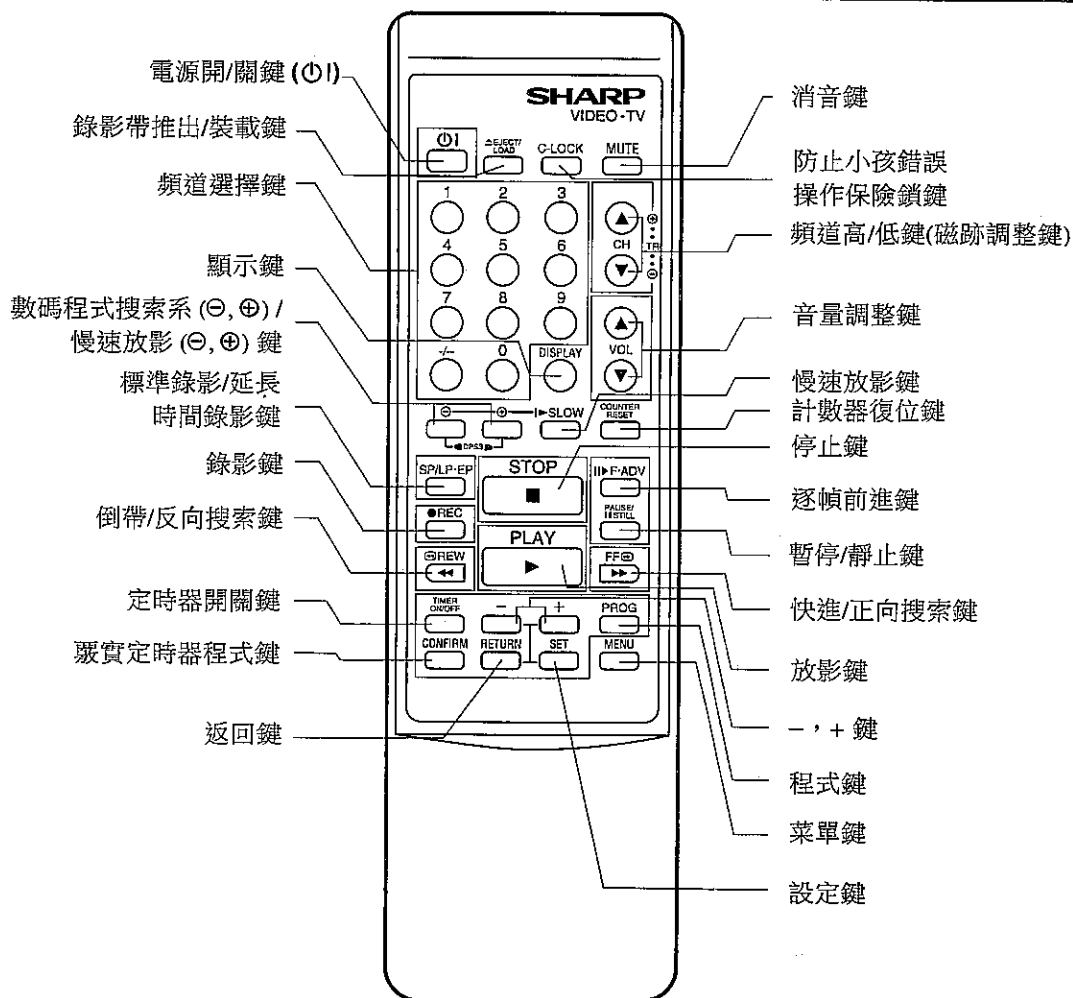
電池的安裝



本遙控器需使用兩節 R6 (UM/SUM-3, AA) 1.5 伏的電池(包括於附件中)。如果遙控器不工作或工作不正常，則應更換電池。該電池可在電器商店或照相器材商店裡購得。

- ① 打開遙控器背面的電池盒蓋，並取出舊電池。
- ② 裝入新電池。安裝時注意使它們的極性(“+”與“-”)與遙控器內標出的極性相符。
- ③ 蓋上電池盒蓋。

遙控器各键的名称和位置



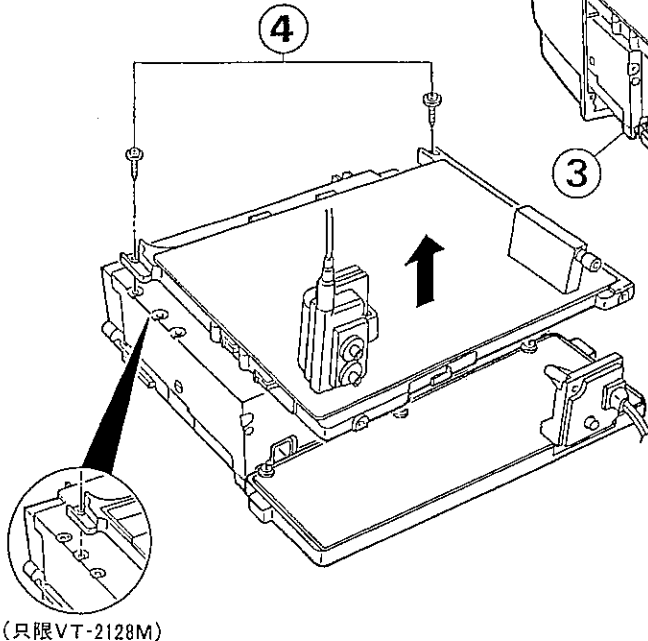
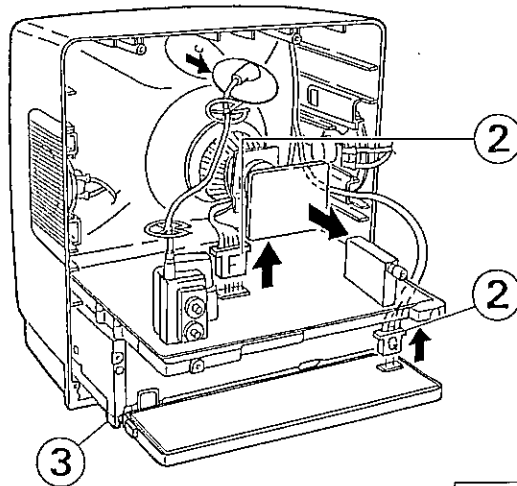
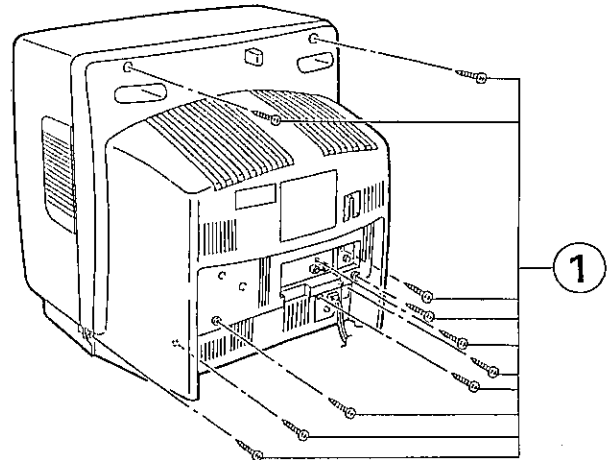
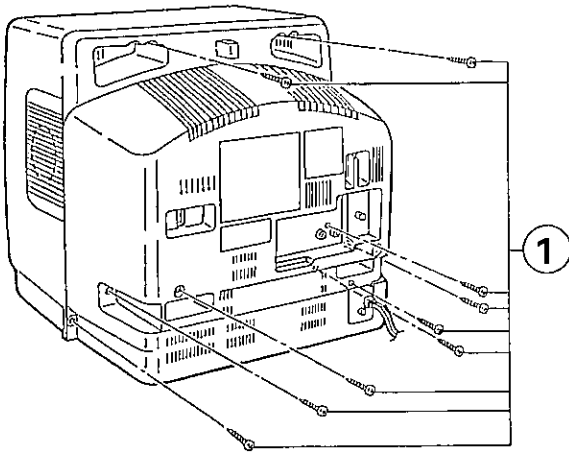
分解和组装

■ 电视机部分

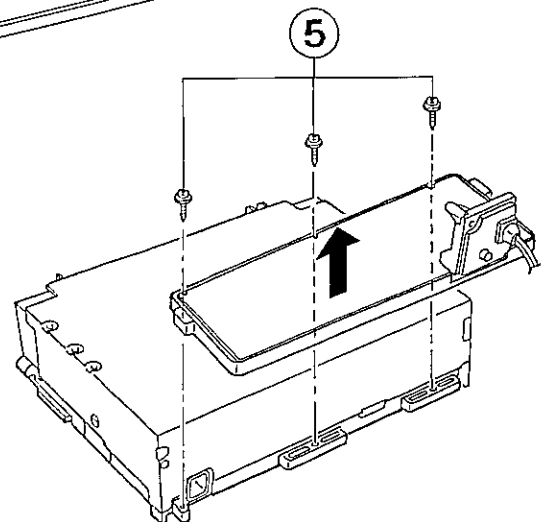
1. 松去背面壳盖的9只紧固螺丝。(VT-1428M型)
1. 松去背面壳盖的10只紧固螺丝。(VT-2128M型)
2. 先拆下主电路印刷板上的F接线器和电源电路印刷电路板上的G接线器，然后再拆下CRT上的阳极罩和CRT印刷电路装置。
3. 先拆下CRT装置上的被覆地线，然后再取出CRT装置。
4. 松去主电路印刷电路板上的两只紧固螺丝，取下录像机上的该印刷电路板。
5. 松去电源电路印刷电路板上的3只紧固螺丝，取前录像机上的该印刷电路板。

(VT-1428M型)

(VT-2128M型)

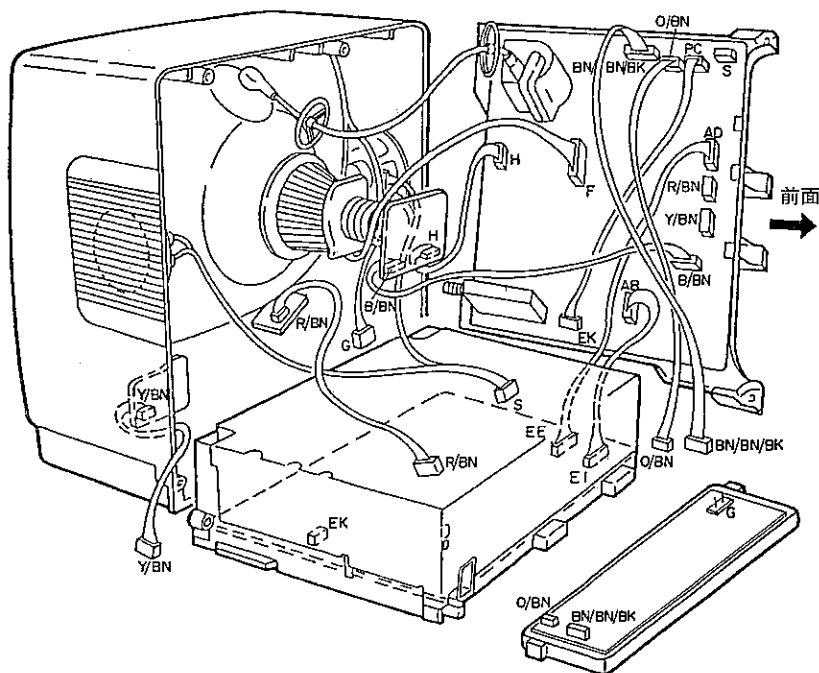


(只限VT-2128M)



分解和组装 (接上页)

6. 拆去CRT印刷电路板、消磁线圈接线器G以及前部电源开关遥控电路印刷电路板。将主电路印刷电路板重直放置。
7. 松去CRT印刷电路板的接线。按下图所述,将主电路印刷电路板与录象机部分放置于一起。移去前部电源开关遥控电路印刷电路板、扬声器以及消磁线圈接线器G。



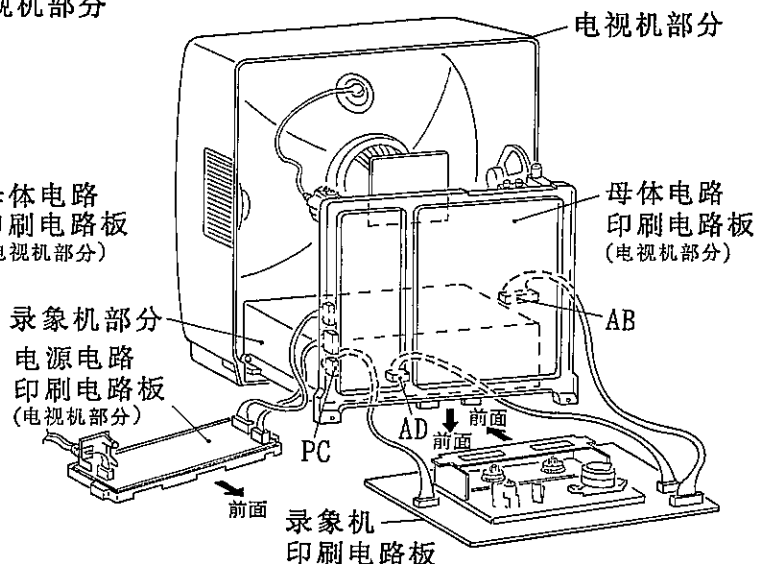
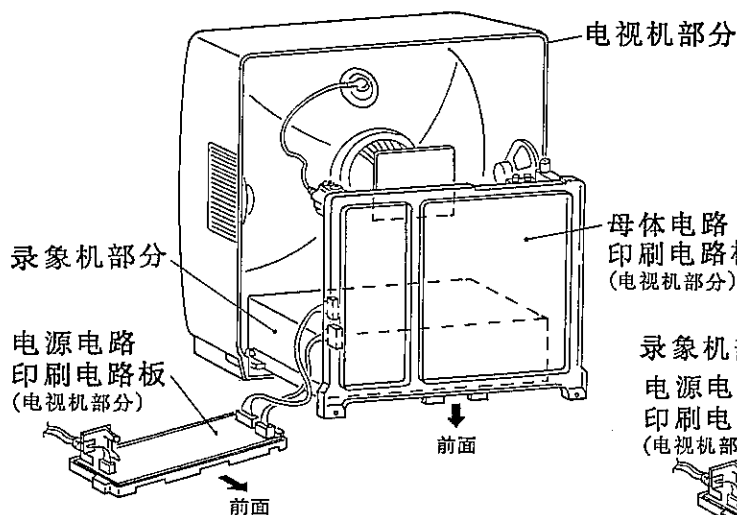
■ 各印刷电路板的保养调整方法

〈修理电视机部分时〉

拆下电源电路印刷电路板, 将其印刷电路板移至电视机左边, 如图所示把母体电路印刷电路板竖起而进行修理

〈同时修理电视机部分与录象机部分〉

拆下录象机上的印刷电路板与机械机构组件, 如图所示, 接连接电缆(AB)、(AD)、(PC)于母体电路印刷电路板而进行修理。



电视机部分电路的调试

● 注意事项

1. 保养调整状态的设定方法

(1) 设本机于准备状态。

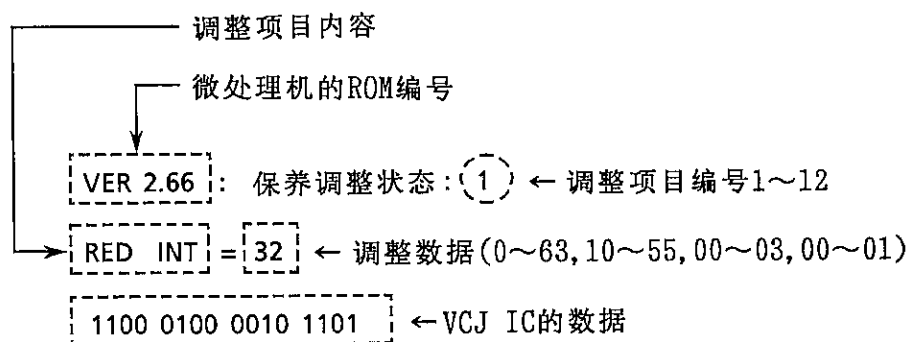
(2) 按住本机上的频道上移 (CH▲) 键2秒以上, 同时触按电源 (⏻) 键, 这样本机便进入保养调整状态。

2. 保养调整状态的取消方法

(1) 触按遥控器上的项目单 (MENU) 键, 以取消保养调整状态。

(2) 另外, 设本机于准备状态即可取消。

3. 进入保养调整状态时的显示内容。



★ SERVICE MODE : 1	RED INT	= 0~63	标准调整项目
★ SERVICE MODE : 2	GRN INT	= 0~63	
★ SERVICE MODE : 3	BLUE INT	= 0~63	
★ SERVICE MODE : 4	VERT AMP	= 0~63	
★ SERVICE MODE : 5	VERT LIN	= 0~63	
★ SERVICE MODE : 6	VERT POS	= 0~63	
★ SERVICE MODE : 7	HOR PHAS	= 10~55	
★ SERVICE MODE : 8	HI-VI	= 00/01/02/03	基本上被固定。
★ SERVICE MODE : 9	HGAIN1	= 00/01	
★ SERVICE MODE : 10	HGAIN2	= 00/01	
★ SERVICE MODE : 11	INTSEL	= 00/01	
★ SERVICE MODE : 12	CALKILL	= 00/01	

可触按VOL (音量) ▲/▼键进行调整

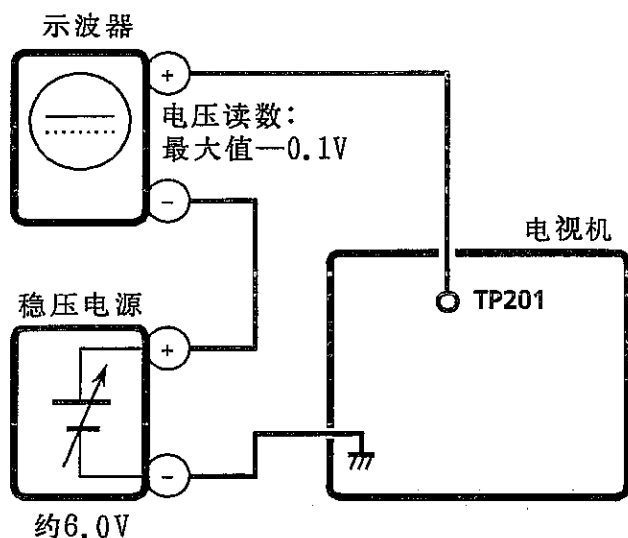
可触按频道上移/下移 (CH▲/▼) 键进行选择

RF-AGC (射频自动增益控制) 的调整

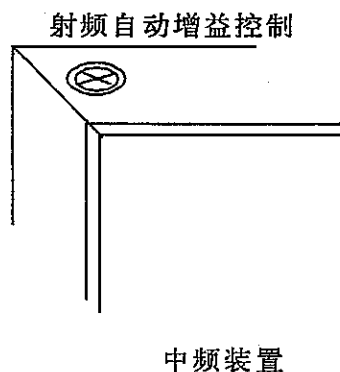
调试条件	调试方法
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1 射频自动增益控制插入调整 (射频自动增益控制调节)

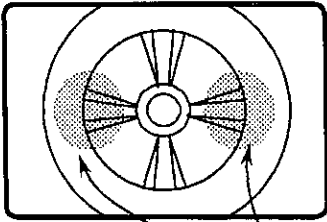
1. 接收E-10频道(PAL制式彩条)信号。
场强度： $53 \pm 1\text{dB}\mu\text{V}$ (端接 50Ω 电阻)
2. 按下图所示要求接示波器于TP201。



1. 旋转控制钮, 使所测电压读数达至最大(10/10)。
2. 再沿步骤3相反方向逐渐旋转控制钮, 将电压读数调至最大值—0.1V之程度。
3. 调信号强度为 $63 \sim 67\text{dB}\mu\text{V}$, 确认无噪声出现。
4. 再调信号强度 $90 \sim 95\text{dB}\mu\text{V}$, 确认无交叉调制差拍出现。



荧屏/背景的调整

调试条件	调试方法
1. 荧屏调节	
<ol style="list-style-type: none"> 1. 接收声象频道信号。蓝色背景应处于OFF位置 2. 通过VIDEO ADJUST(视频调整)功能设定于RESET(复位)状态。 	<ol style="list-style-type: none"> 1. 进入保养调整状态后进行下记调整。 <ul style="list-style-type: none"> ● 荧屏控制: <p>* 观察荧屏上的VCJ IC数据, 调节荧屏控制, 使从左边第10数值调至由“1”变为“0”之位置。</p> <div style="text-align: center;"> <p>此处亦成为0</p> <p>↓</p> <p>1100 0100 0010 1101</p> <p>↑</p> <p>此处成为0</p> </div>
2. 背景的调整	
<ol style="list-style-type: none"> 1. 接收白色平衡调整用图案信号。 2. 通过VIDEO ADJUST(视频调整)功能进行亮度和对比度的调整。 <ul style="list-style-type: none"> ● 明亮部分: 120尼特 ● 阴暗部分: 20尼特 此时, 应设彩色于00。 	<ol style="list-style-type: none"> 1. 进入保养调整状态后进行下记调整。 <ul style="list-style-type: none"> ● 红色信号强度: ● 绿色信号强度: ● 蓝色信号强度: 按保养调整状态1、2及3之顺序而进行调整, 以获得12,300° K($X=0.272 \pm 0.015$, $Y=0.275 \pm 0.015$)的规定色温。 所使用的色温计为CA-100美能达制CRT彩色分析器。 色温根据生产报告书B的要求而有差异。 * 7500° K($X:0.300$, $Y:0.310$)
3. 聚焦的调整	
<ol style="list-style-type: none"> 1. 接收单象管图案信号。 2. 通过VIDEO ADJUST(视频调整)的RESET(复位)功能设定于标准图象状态。 	<ol style="list-style-type: none"> 1. 调节聚焦控制, 使荧屏中心部与左右两端之间的聚焦达至最佳程度。 <div style="text-align: center;">  <p>聚焦调节部分</p> </div>

水平同步电路及垂直同步电路的调整

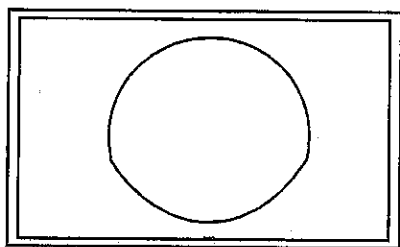


图-1-1.

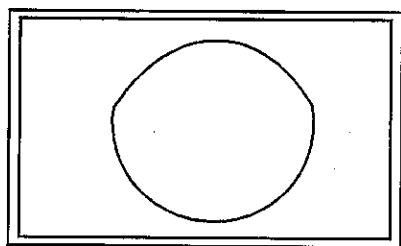


图-1-2.

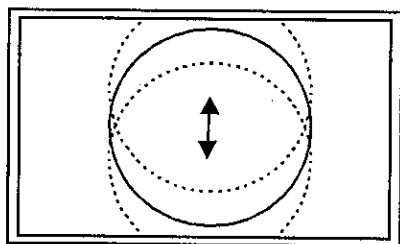


图-2.

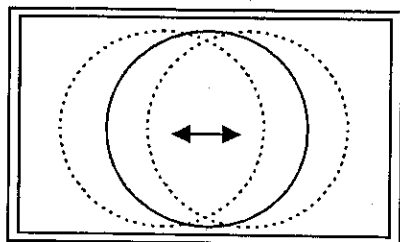


图-3.

1. PAL制式电路的调整

调试条件

1. 接收PAL制式单象管图案信号。
2. 通过VIDEO ADJUST (视频调整) 的RESET (复位) 功能设定于标准图象状态。

调试方法

1. 进入保养调整状态后进行下记调整。
 - VERT-AMP(垂直尺寸):
选择保养调整状态4, 调节VERT-AMP, 以获得10%的过扫描。
 - VERT-LIN(垂直线性):
选择保养调整状态5, 调节VERT-LIN, 使垂直线性达至最佳程度。(见图-1-1和-1-2)
 - VERT-POS(垂直中心):
选择保养调整状态6, 调节VERT-POS, 使垂直中心与荧屏中心对齐。(见图-2)
 - HOR-PHAS(水平中心):
选择保养调整状态7, 调节HOR-PHAS, 使水平中心与荧屏中心对齐。(见图-3)

2. SECAM制式电路的调整

调试条件

1. 接收菲利普图案信号。
2. 通过VIDEO ADJUST (视频调整) 的RESET (复位) 功能设定于标准图象状态。

调试方法

1. 进入保养调整状态后进行下记调整。
 - HOR-PHAS(水平中心):
选择保养调整状态7, 调节HOR-PHAS, 使水平中心与荧屏中心对齐。(见图-3)

水平同步电路及垂直同步电路的调整(接上页)

3. NTSC制式电路的调整

调试条件

1. 接收NTSC制式单象管图案信号。
2. 通过VIDEO ADJUST (视频调整) 的RESET (复位) 功能设定于标准图象状态。

调试方法

1. 进入保养调整状态后进行下记调整。
 - VERT-AMP(垂直尺寸):
选择保养调整状态4, 调节VERT-AMP, 以获得10%的过扫描。
 - VERT-LIN(垂直线性):
选择保养调整状态5, 调节VERT-LIN, 使垂直线性达至最佳程度。
(见图-1-1和-1-2)
 - VERT-POS(垂直中心):
选择保养调整状态6, 调节VERT-POS, 使垂直中心与荧屏中心对齐。
(见图-2)
 - HOR-PHAS(水平中心):
选择保养调整状态7, 调节HOR-PHAS, 使水平中心与荧屏中心对齐。(见图-3)

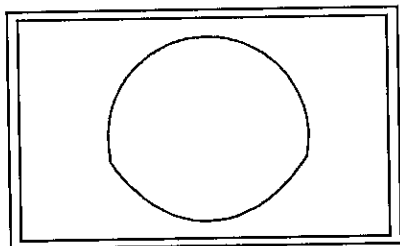


图-1-1.

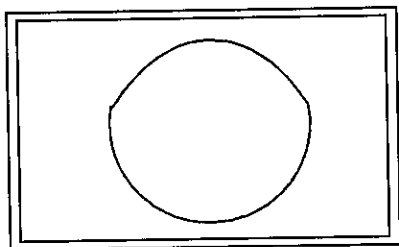


图-1-2.

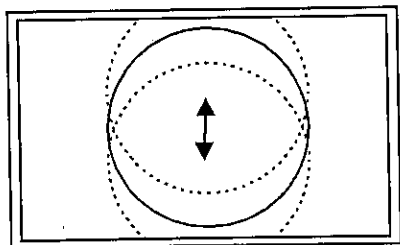


图-2.

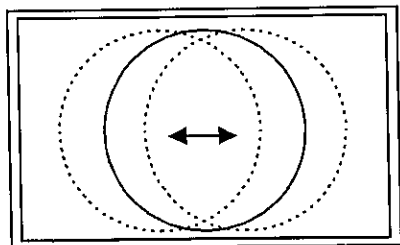


图-3.

色彩纯度调整

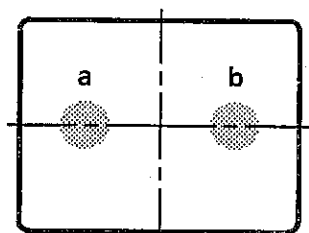
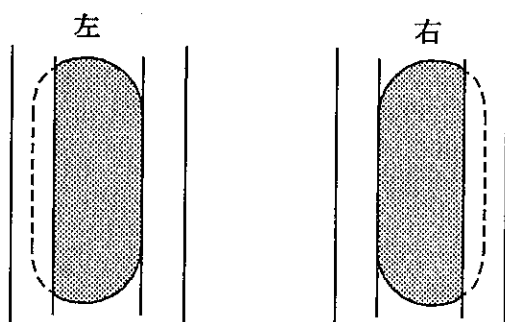
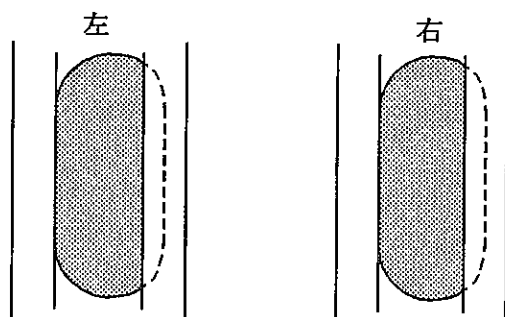


图-A



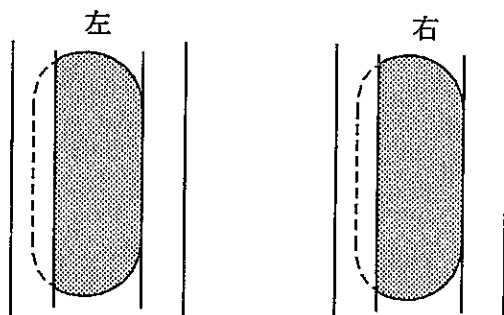
电子束射击点位置向外偏移

图-B



电子束射击点位置向右偏移

图-C



电子束射击点位置向左偏移

图-D

调试条件

1. 作此项调整之前, 请用大于 $700\mu\text{A}$ 的电子束电流预热CRT装置30分钟。(14英寸型号为 $400\mu\text{A}$)。
2. 接收绿色单色信号, 并调节其电子束电流于 $770\mu\text{A}$ 左右。(14英寸型号为 $400\mu\text{A}$)。
3. 通过消磁线圈对CRT作完全消磁处理。

调试方法

注意:

- 对静聚焦进行粗调。
- 色彩纯度磁铁的磁场磁势为0。

调整:

*调整中, 必须保持CRT面向东方。

1. 用显微镜观察图-A所示的两色点(“a”和“b”), 调节色彩纯度磁铁, 使两色点位置符合规定要求为止。
2. 如果两色点位置如图-B所示各自均匀地发生左右偏差, 可向前按压偏转线圈将其校正。
3. 如果两色点位置如图-C或图-4所示均发生向右或向左偏移现象, 可通过调节色彩纯度磁铁的开启程度, 校正电子束射击点位置。
4. 调节色彩纯度磁铁, 校正电子束在荧屏中心的射击点位置以及荧屏左右两边的射击点位置。然后, 检验在荧屏四角的射击点位置正确与否。最后, 按规范B级要求精确检查荧屏上任意点的着色位置是否满足要求。
5. 如果电子束在荧屏的着色点掺杂有其它色彩, 可向后轻拉偏转线圈消除其它杂色。
着色点位置向外偏移: 前推偏转线圈加以调节。
着色点位置向内偏移: 后拉偏转线圈加以调节。
6. 接收单象管图案信号。
7. 将光栅偏转角调节至0(CRT面向东方)。
调整误差: $0\text{mm} \pm 2\text{mm}$
8. 紧固偏转线圈螺丝。
紧固扭矩: $11\text{kg} \pm 2\text{kg}$

聚焦度的调整

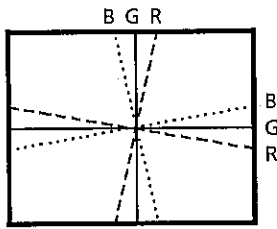


图-a

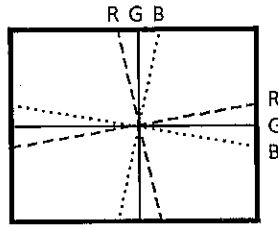


图-b

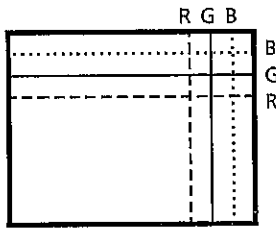


图-c

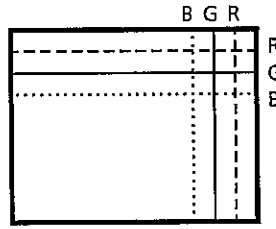
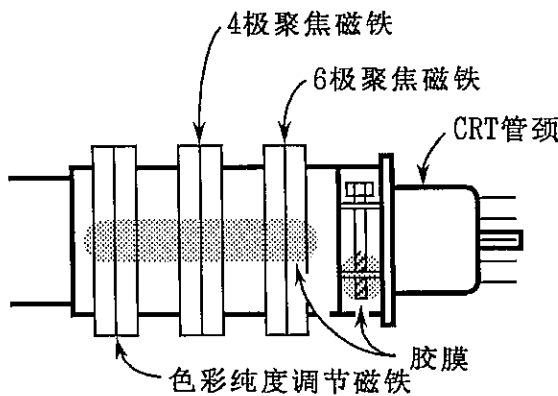
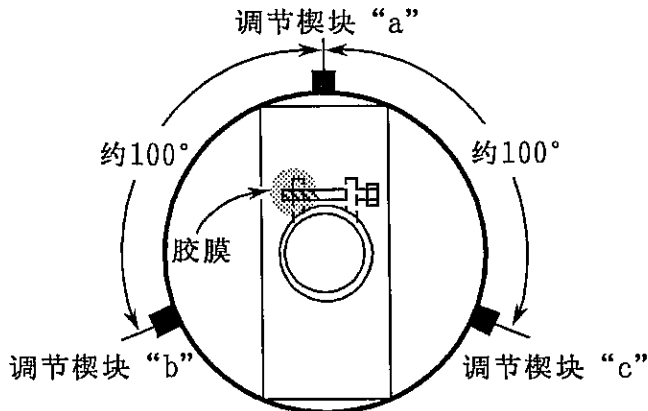


图-d



调试条件

此项调试必须于色彩纯度调试之后进行。

1. 接收棋盘格测试图信号。
2. 设亮度调节于中央位置(5/10)。
设对比度调节于最大位置(10/10)。

调试方法

静聚焦度的调整：

1. 调节4极聚焦磁铁的张开角度以及其转角，以会聚红色线条和蓝色线条。
2. 调节6极聚焦磁铁的张开角度以及其转角，以会聚红色线条，蓝色线条和绿色线条。

动聚焦度的调整：

1. CRT荧屏边缘的动聚焦的调整按下述要求进行。

●按图a.要求的会聚调试：

插入调节楔块“a”于偏转线圈和CRT之间，并向上倾斜调节偏转线圈。

●按图b.要求的会聚调试：

插入调节楔块“b”和“c”于偏转线圈和CRT之间，并向下倾斜调节偏转线圈。

●按图c.要求的会聚调试：

深插调节楔块“c”于偏转线圈和CRT之间，并向右倾斜调节偏转线圈。

●按图d.要求的会聚调试：

深插调节楔块“b”于偏转线圈和CRT之间，并向左倾斜调节偏转线圈。

2. 完成以上调整后，用透明胶带粘固三只调节楔块于CRT。

3. 然后涂漆于偏转线圈调节螺丝，调节磁铁装置(由纯度调节磁铁、4极聚焦磁铁和6极聚焦磁铁构成)以及调节磁铁装置固定螺丝。

该项调整完成后，让电视机接收红色或蓝色信号，并检查接收的单色信号是否掺杂有其他色彩信号。

检查项目

1. 声象信号输出的检查

调试点	调试条件 / 方法
声象信号输出 (J401)	<ol style="list-style-type: none"> 1. 接收彩条信号。 (100%白色图案信号, 音频信号: 400Hz, 100%调制) 2. 接75Ω终端电阻于视频输出端。 3. 接10Ω终端电阻于音频输出端。 <p>输出电平如下:</p> <p>视频输出电平: 1V_{p-p} \pm 3dB (0.71~1.41V_{p-p})</p> <p>音频输出电平: 2.61V_{p-p} \pm 3dB (1.85~3.69V_{p-p})</p> <p>注意: 必须检查视频和音频输出电平是否均符合规定要求。</p>

2. 声象信号输入的检查

声象信号输入 (J8201)	<ol style="list-style-type: none"> 1. 接收彩条信号。 2. 向前面声象插孔输入外部视频信号和外部音频信号。 3. 通过CH(频道)▲/▼键的触按呼出声象状态, 然后, 检查是否正确地接收外部视频信号和外部音频信号。(在频道1与50之间有声象状态)
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3. 保护电路性能的检查

保护电路性能	<ol style="list-style-type: none"> 1. 接收单象管图案信号。 2. 通过额定电压电源向D607阴极(TP603: 印刷电路板上无符号)施加20V电压, 然后检查这时的保护电路无发生激励动作。 3. 按与上述相同方法施加25V电压, 然后检查这时的保护电路发生激励动作。 <p>注意:</p> <p>触按RESET(复位)键, 即可将保护电路复位。</p>
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4. 电子束保护电路性能的检查

电子束保护 电路性能	<ol style="list-style-type: none"> 1. 接收单象管图案信号。 2. 将CRT印刷电路板上的R(红)、G(绿)、B(蓝)阴极中的某一阴极接地。 3. 检查这时的电子束保护电路会立刻开始激励动作。 <p>注意:</p> <p>*触按RESET(复位)键, 即可将电子束保护电路复位。</p>
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检查项目(接上页)

5. 蓝色背景的检查

调试点	调试条件/方法
蓝色背景	<ol style="list-style-type: none">1. 在SETUP(荧屏设定)状态下选择BLUE SCREEN(蓝色荧屏)功能。2. 设表示于ON, 在无信号状态下检查背景颜色是否变为蓝色, 并是否处于音频静噪状态。3. 设表示于OFF, 检查蓝色背景是否被消失。

6. 记录(录象)指引信号的检查

记录(录象) 指引信号	<ol style="list-style-type: none">1. 在SETUP(荧屏设定)状态下选择REC INDEX(记录指引)功能。2. 设表示于ON, 开始录象之。(检查时钟是否已被设定好)3. 检查录象内容。 <p>注意:</p> <p>*检查频道表示和时钟时刻是否被记录。</p>
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盒室控制机构组装的注意事项

盒室控制机构的组装

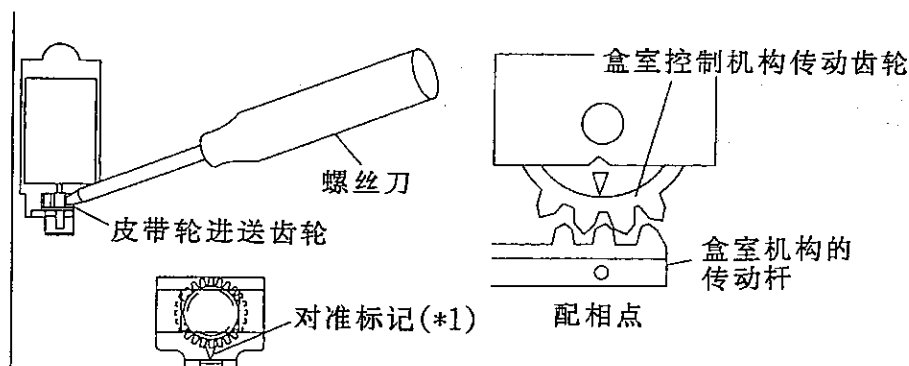
安置盒室控制器电路于盒室机构之前，先对其自身进行初期设定。初期设定的进行分电路设定和机械设定。

电路设定：

用 22Ω 电阻短接录像机印刷电路板中间的TP8804和TP8805之间，让盒室机构退回至其初始位置(*1)。确认其动作到位后，再安置盒室控制器电路于其机构之上。（此方法用于盒室机构已设定好其印刷电路板之场合。）

机械设定：

用螺丝刀拨转磁带装挂马达皮带轮进送齿轮，让盒室机构退回至其初始位置(*1)。确认其动作到位后，再安置盒室控制器电路于其机构之上。（此方法用于盒室机构未设装印刷电路板之场合。）



盒室机构与印刷电路板的连接

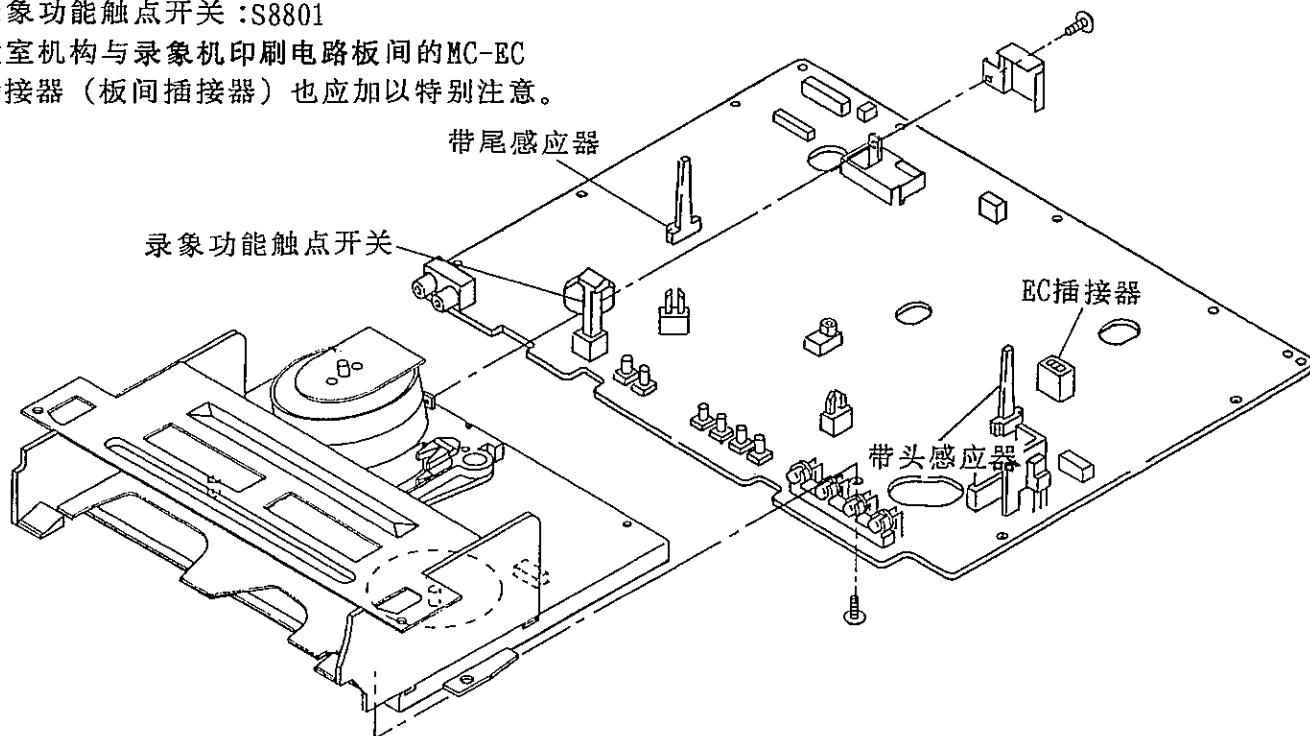
将盒室机构上的两个凸块对准录像机印刷电路板上的两个定位参考记号（圆形为正参考，椭圆形为副参考）。然后垂直放下盒室机构，注意切勿让其机构的边缘部碰伤附近的其他元件。旋紧固定盒室机构和录像机印刷电路板的两支螺丝（一支用于固定盒室机构和前置放大器屏蔽，另一支位于录像机印刷电路板焊线侧的磁带装挂马达近旁）。插接盒室机构和主电路印刷电路板间的扁平型电缆插接器（EB、EF和EH）以及导线插接器（ED和EG）。

应特别注意的元件：

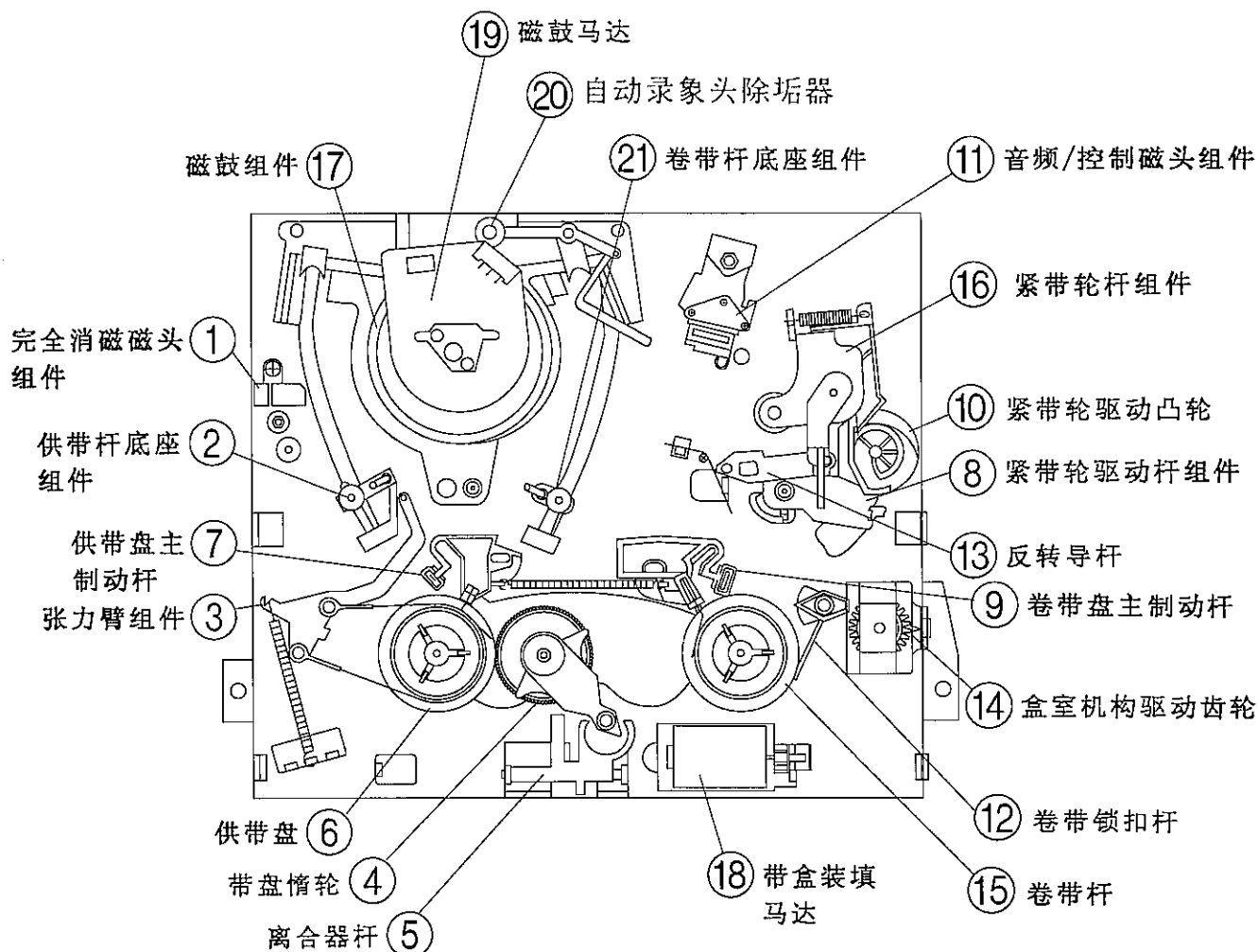
带头感应器、带尾感应器：Q8803、Q8804

录像功能触点开关：S8801

盒室机构与录像机印刷电路板间的MC-EC插接器（板间插接器）也应加以特别注意。

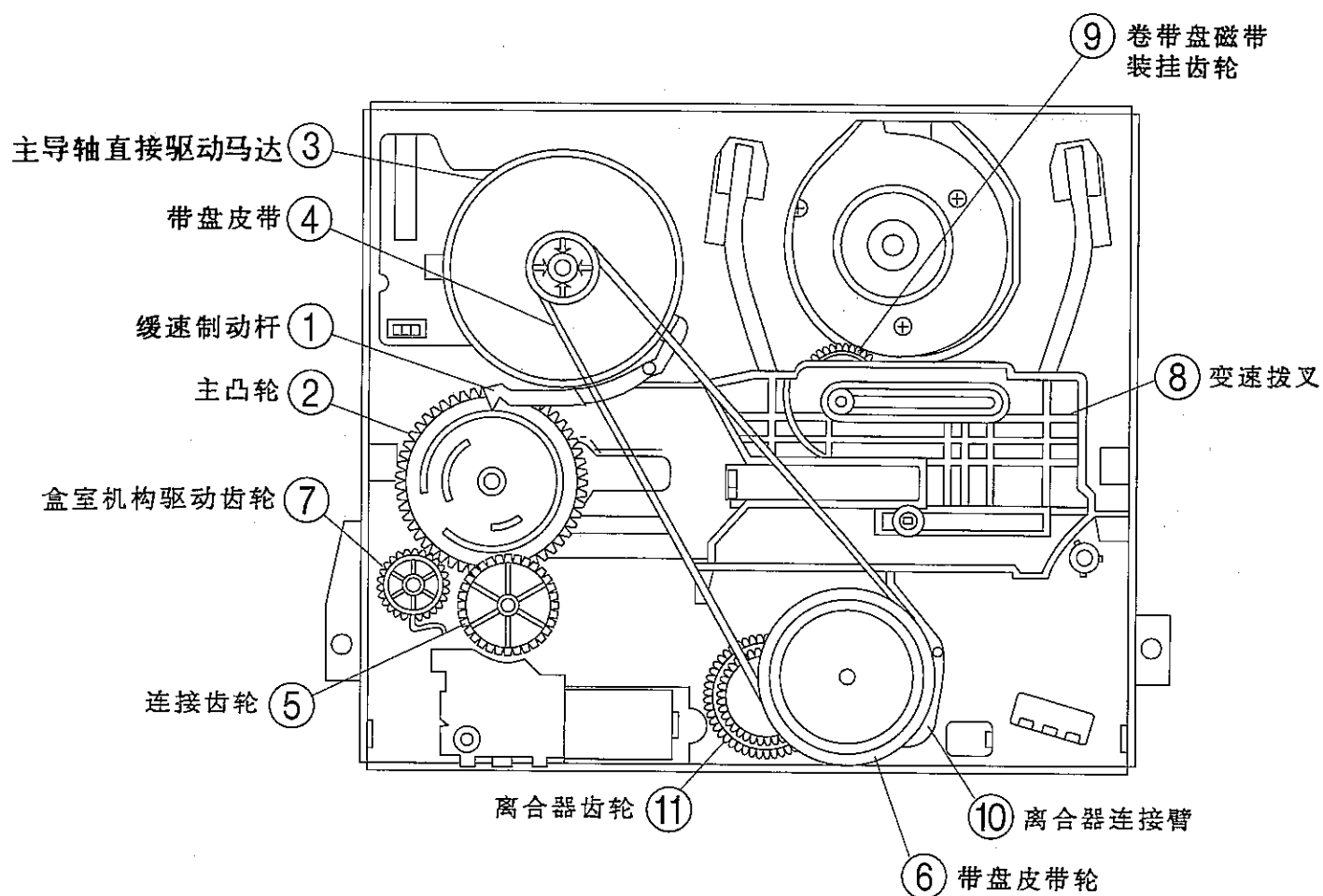


主要机械部件的配置(俯视)及其功能



序号	功 能	序号	功 能
1.	完全消磁磁头组件 于录象工作状态时消去录象磁带的全部记录内容。	13.	反转导杆 于视频搜索倒带状态时, 拉挂磁带, 并且通过其高导杆和低导杆控制其走带高度。
3.	张力臂组件 检测走带时录象磁带的松紧程度, 并与张力带一道对供带盘产生制动作用。	16.	紧带轮杆组件 于走带状态中, 压装磁带于主导轴。于磁带出盒动作时, 其右侧突出部拨动磁带盒室控制组件离合器, 使其机构将带盒推出盒室。
7.	供带盘主制动 于录象机动作停止时以及录象机处快进或倒带状态时, 对供带盘产生制动作用, 以防止磁带的松弛。	18.	带盒装填马达 其马达之作用在于为填装机构提供带盒填入及磁带装挂的动力。其动力通过马达皮带的传动, 转为主凸轮及磁带盒室控制机构的动作。
9.	卷带盘主制动 于录象机动作停止时以及录象机处快进或倒带状态时, 对卷带盘产生制动作用, 以防止磁带的松弛。		

主要机械部件的配置(仰视)及其功能



序号	功 能	序号	功 能
1.	缓速制动器 于缓速静止状态时，其制动器相触于与主凸轮连动的主导轴，对其轴产生适当的制动作用。	6.	带盘皮带轮 将主导轴直接驱动马达的动力经带盘惰轮传送给带盘。
3.	主导轴直接驱动马达 提供走带所需动力。其动力的转换由带盘皮带实现。	8.	变速拨叉 将主凸轮的运动传输至制动器齿轮与带盒装填齿轮。
4.	带盘皮带 带动带盘皮带轮转动，以驱动磁带的运转。	9.	卷带盘磁带装挂齿轮 通过磁带装挂继动齿轮，移动卷带杆底座及导辊，并将磁带环绕于磁鼓。另外，其齿轮还有传动力于供带盘磁带装挂齿轮之作用。

机械部件的调整、更换、装配及清扫

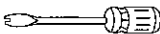

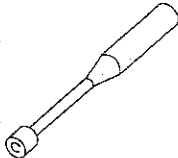

这里我们将为您介绍一些较简单的保养调试方法。这些方法与需要特殊的仪器和工具的复杂检修(例如,磁鼓的组装或更换等)相比更为容易简单。

我们相信,下表所列便于使用的工具在您为本录象机作定期保养以维持其原有的工作状态中无疑能起很大的作用。

机械部件调整必需的工具

检查修理时,应准备下列工具才能顺利进行修理工作。

序号	工 具 名 称	零件编号	编码	形 状	备 注
1	带盘高度调整工具	JiGRH0002	BR		用于检查、调整带盘高度。
2	主平面调整工具	JiGMP0001	BY		
3	音频/控制磁头倾斜调整工具	9DAACH-A323U	BX		用于设定音频 / 控制磁头的倾斜角度。
4	转矩测量计(90克)	JiGTG0090	CM		用于检查、调整供带轮和卷带轮的转动力矩。
	转矩测量计(1.2公斤)	JiGTG1200	CN		
5	转矩测量计测头	JiGTH0006	AW		
6	盒匣磁带式转矩测量计	JiGVHT-063	CZ		用于检查、调整卷带轮的转动力矩以及测量磁带反向张力。
7	张力测量计(300克)	JiGSG0300	BF		分为300克和2.0公斤两量级,用于张力测量。
	张力测量计(2.0公斤)	JiGSG2000	BS		
8	六角扳手(0.9毫米)	JiGHW0009	AE		用于松弛或紧固特制六角螺栓。
	六角扳手(1.2毫米)	JiGHW0012	AE		
	六角扳手(1.5毫米)	JiGHW0015	AE		
9	校正用磁带(PAL制式)	VROCPSV	CD		专用于机器的电路微调。
	校正用磁带(NTSC制式)	VROATSV	CD		
	校正用磁带(NTSC制式)	VRONBZGS	CB		
11	张力测量计接续器	JiGADP003	BK		用于张力测量计。

序号	工 具 名 称	零件编号	编号	形 状	备 注
12	专用螺丝刀	JiGDRIVERH-4	AP		用于导辊高度和X位置的调整。
14	扭转改锥（5 公斤）	JiGTD1200	CB		用于扭转树脂制工具。标准扭转值为 5 公斤。
15	套管改锥	JiGDRIVER110-7	AS		用于音频 / 控制磁头的高度调整。
		JiGDRIVER110-4	AV		用于定位导杆的高度调整。
		JiGDRIVER110-55	AR		用于反转导杆的高度调整。
17	反转导杆高度调整工具	JiGRVGH-F18	BU		用于反转导杆的高度调整。

机械部件的定期保养期间

为保持机械部件的正常工作性能，务必按下表定期进行维护保养。

部件名称	保养间隔	每500小时	每1000小时	每1500小时	每2000小时	可能出现症状	备 注
导辊组件		□	□	□	○	水平噪音线出现，磁头不时被磁带缠绞。	如发生不正常的旋转或显著的摇摆，就需更换该部件。
供带阻抗滚子		□	□	□	○		
供带阻抗滚子(内侧)			□		□		用高级异丙醇擦拭。
供带阻抗滚法兰		□	□	□	□		用指定清洁剂擦拭与磁带接触部分。
定位导杆		□	□	□	□		
斜 杆		□	□	□	○		
视频磁头(上部/下部磁鼓组件)		□	○□	○□	○□	信号/噪声比过小，无彩色表现。装入校正用磁带时，包络线非平坦。	用指定清洁剂擦拭与磁带接触部分。
完全消磁磁头		□	□	□	○	色彩过淡，图象闪跳。	
音频/控制磁头		□	□	□	○	声音太小或者噪音太大。	
主导轴直接驱动马达		□	□	□	○	磁带不转，色彩不均。	
紧带轮		□	□	□	○	不走带，磁带松弛。	用指定清洁剂擦拭橡胶与橡胶接触部分。
带盘皮带			□		○	不走带，磁带松弛，快进或倒带时走带不正常。	
张力带组件					○	带盒不填入或不退出。	
装填马达					○		
带盘惰轮组件					○	不走带	
带盘皮带轮组件			□△		□○		
离合器齿轮组件					○		
供带/卷带主制动杆					○	磁带松弛。	
AHC (自动录象磁头除垢器)			○		○		除垢器滚轮部位的磨损过大时，就需更换该部件。更换时，只要更换录象头除垢器臂组件即可。

注意：○：部件更换

□：部件清洗(用不起毛的绸布蘸异丙醇擦拭)

△：部件注油(注有标记之部件应该每1000小时用高级轴油点注润滑)

该类型录象机机械部件无法对其转矩、张力值进行调整。如发现所测数值超过或不及规定范围，务必对该部件进行清洗或加以更换。

磁带盒室控制机构的拆卸及安装

● 盒室控制机构的拆卸

1. 退出磁带盒匣，设机构于出盒状态。
2. 从电源插座中拔出电源引线插头。
3. 按下述步骤的要求顺序进行拆卸。
 - a) 松去紧固磁带盒室控制机构的紧固螺丝(1)和(2)。
 - b) 按箭头方向移动磁带盒室机构，然后将其向上拉出。

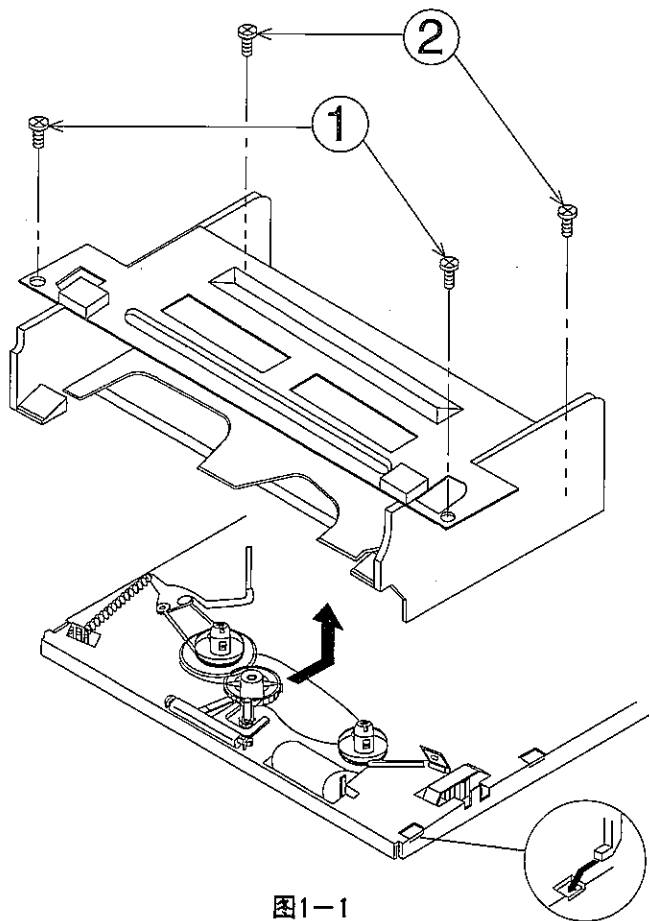


图1-1

● 盒室控制机构的组装

1. 安装盒室机构前，先用22Ω电阻短接录象机印刷电路板中间的TP8804和TP8805之间。然后，插入电源引线插头，盒室控制机构驱动齿轮开始转动。机芯底盘窗口处正好出现标记时转动停止。按图1-2所示，通过盒室控制机构驱动齿轮的转角对底盘窗口处出现的标记位置进行调整。

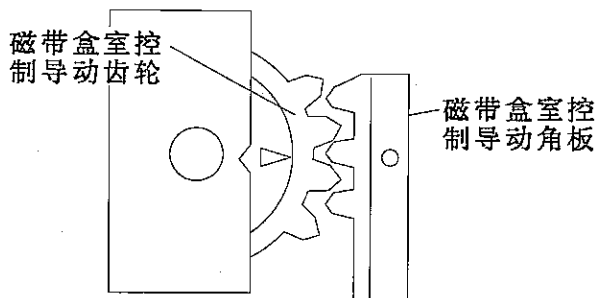


图1-2

2. 按拆卸步骤的相反顺序进行组装。

注意：

- ① 拆卸或组装时，如使用带磁螺丝刀，务请注意不要让其触碰音频/控制(A/C)磁头、完全消磁(FE)磁头以及磁鼓。
- ② 拆卸或组装磁带盒室控制机构时，务请谨慎小心，切勿磕碰其机构，同时注意不要让工具等碰撞导向销、磁鼓等精密度较高的部件。
- ③ 组装之后，填装一录象带盒于盒室控制机构中。

无盒室控制机构的走带测试

1. 电源接通之前，先用22Ω电阻短接主印刷电路板左边的TP8804和TP8805。
2. 插电源引线插头于电源插座。
3. 开启电源开关。
4. 用手打开磁带盒匣端口之盖。
5. 用胶带张贴之以保持其开盖状态。
6. 置其于主机芯中的走带机构。
7. 应将500g的重物牢固地安置于录象带盒上。
8. 作磁带的走带测试。

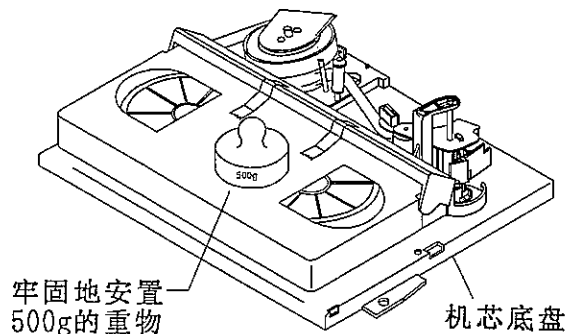


图1-3

注：压其重物不得超过500克。

带盘座的拆装与高度

●带盘座的拆卸

1. 拆去磁带盒室控制机构。
2. 从张力臂上取出张力带。
3. 拆去供带用主制动器和卷带用主制动器。
4. 拆去供带盘座和卷带盘座。

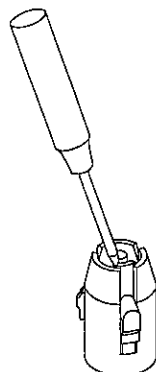
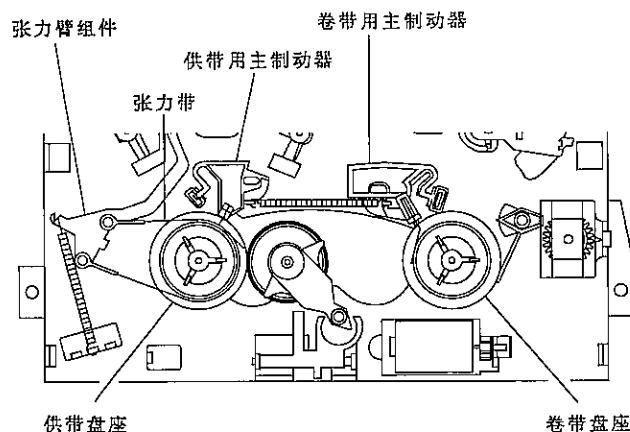


图1-4

注意：

拆卸时，应按图中箭头所示方面按压张力带，以免使锁扣变形。



图1-5

●供带盘座的更换

1. 清擦供带盘座轴，并注油加以润滑。
2. 将准备好的新供带盘座插套入其轴。
3. 环张力带于供带盘座装置安置就位，并将其端插入张力臂之插孔。
4. 检查供带盘座的高度后，安置供带用主制动器就位。

注意：

- ① 安置供带盘座时，务请格外小心，切勿弯折扭曲张力带。
- ② 切勿碰伤供带用主制动器。

●卷带盘座的更换

1. 清擦卷带盘座轴，并注油加以润滑。
2. 将准备好的新卷带盘座插套入其轴。
3. 检查卷带盘座的高度后，安置卷带用主制动器就位。

注意：

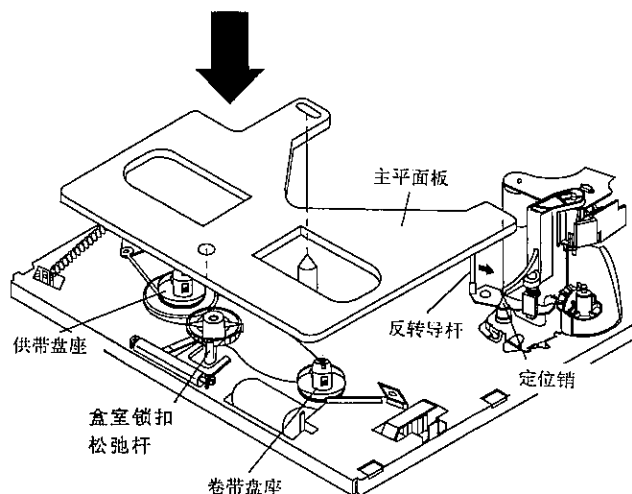
务请小心谨慎，切勿碰伤卷带用主制动器。

* 带盘座更换之后，须检查调试视频搜索倒带时的反向张力（见第88页），以及其制动力矩（见第91页）。

●带盘高度的检测和调整

注意：

将主面板设置于主机芯，注意切勿磕碰磁鼓（见图1-6所示）。



用手指松开反转导杆，使主面板设置。

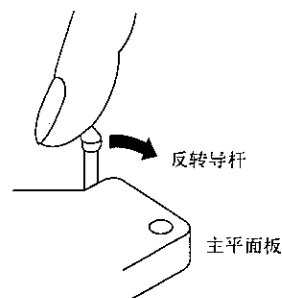


图1-6

- 检查带盘座是否低于图示A位置而高于B位置。如果所测高度不在AB两位置的要求范围内，则通过更换带盘座下面的滑动垫圈对其高度进行调整。

注意：

带盘座只要一经更换，就必须对其进行高度的检测和调整。

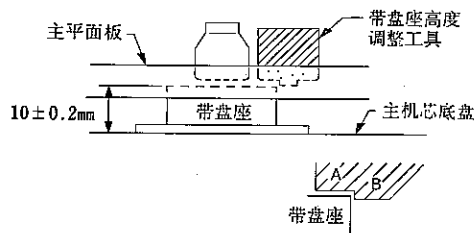


图1-7

快进状态时卷带转矩的检测和调整

●拆去磁带盒室控制机构

- 电源接通之前，先用22Ω电阻短接录象机印刷电路板中间的TP8804和TP8805之间。

●转矩测量计的设置

1. 设转矩测量计的刻度于0，然后将其转矩测量计安置于卷带盘座上。
2. 触按快进(FF)键，置盒室控制机构于快进状态。

●快进转矩的检测

1. 用手缓慢地沿卷带方向旋转转矩测量计(2~3秒/转)。
2. 检查所测卷带转矩值是否大于69mN·m (700gf·cm)。

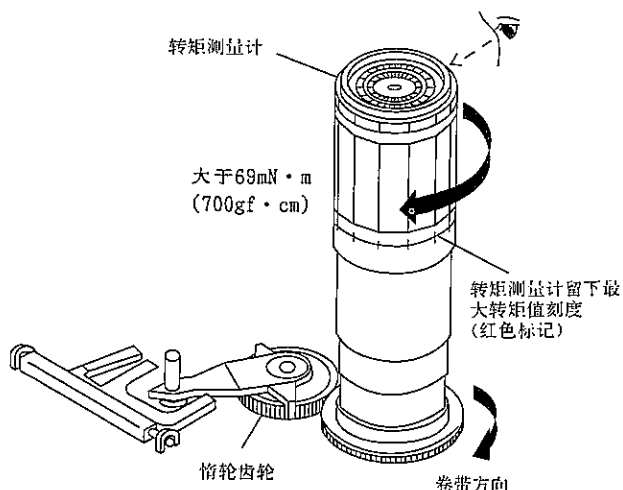


图1-8

●快进转矩的调整

1. 如果所测快进卷带转矩超出或不及规定值范围，则需用清洗液清擦主导轴直接驱动马达皮带轮，带盘皮带及其皮带轮。然后，再测量之。
2. 如果清擦后所测快进卷带转矩仍不符规格要求，则需更换带盘皮带。

注意：

1. 设置及计测时，须用手向下按住转矩测量计，以免卷带盘的旋转甩飞安置于其上的转矩测量计。
2. 作卷带转矩检测时，不宜让带盘座锁扣时间过长。

倒带状态时卷带转矩的检测和调整

●拆去磁带盒室控制机构

- 电源接通之前，先用22Ω电阻短接录象机印刷电路板中间的TP8804和TP8805之间。

●转矩测量计的设置

1. 设转矩测量计的刻度于0，然后将其转矩测量计安置于卷带盘座上。
2. 触按快进(FF)键，置盒室控制机构于快进状态。

●倒带转矩的检测

1. 用手缓慢地沿卷带方向旋转转矩测量计(2~3秒/转)。
2. 检查所测卷带转矩值是否大于69mN·m (700gf·cm)。

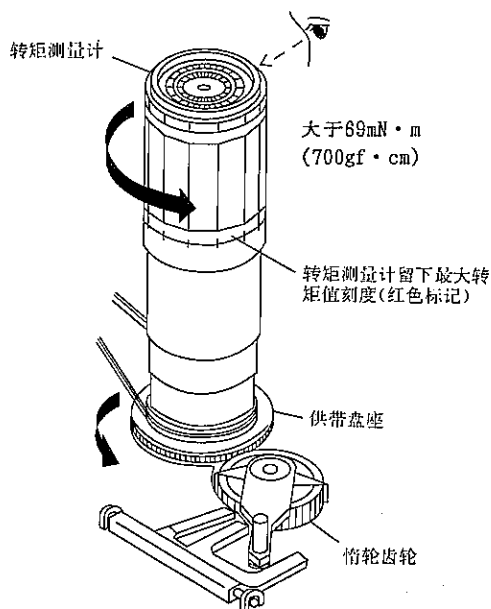


图1-9

●倒带转矩的调整

1. 如果所测倒带转矩超出或不及其规定值范围, 则需用清洗液清擦主导轴直接驱动马达皮带轮, 带盘皮带及其皮带轮。然后, 再测量之。
2. 如果清擦后所测倒带转矩仍不符合规格要求, 则需更换带盘皮带。

注意:

1. 设置及计测时, 须用手向下按住转矩测量计, 以免卷带盘的旋转甩飞安置于其上的转矩测量计。
2. 作卷带转矩检测时, 不宜让带盘座锁扣时间过长。

再现状态时卷带转矩的检测和调整

1. 拆去磁带盒室控制机构。
2. 电源接通之前, 先用 22Ω 电阻短接录象机印刷电路板中间的 TP8804 和 TP8805 之间。
3. 用手揭开盒匣磁带式转矩测量计端口盒盖, 用两片胶带张点之以保持其开盖状态。
4. 填装盒匣磁带式转矩测量计于录象机中。
5. 加一 500g 的重物于盒匣磁带式转矩测量计上。
6. 触按录象 (REC) 键, 设录象机于录象状态。

规定值为 $SP\ 8.8 \pm 3.8\text{mN} \cdot \text{m} (90 \pm 39\text{gf} \cdot \text{cm})$

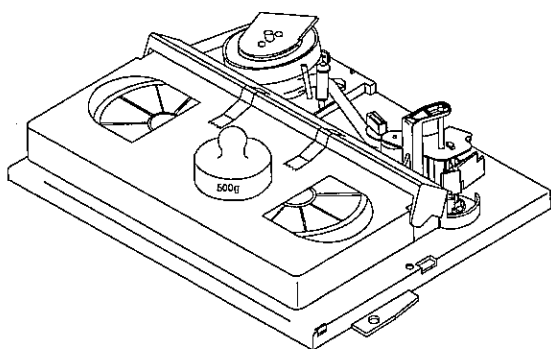


图1-10

●再现卷带转矩的检测

1. 检查所测转矩值是否于 $8.8 \pm 3.8\text{mN} \cdot \text{m} (90 \pm 39\text{gf} \cdot \text{cm})$ 。
2. 由于带盘旋转的不均匀性, 所测转矩值有可能产生波动现象。这时应取波动值的中心值为其测定值。
3. 触按录象键 (REC), 置录象机为 SP 方式录象状态, 检查这时的卷带转矩是否满足上述要求。

●再现卷带转矩的调整

如果所测再现卷带转矩超出或不及其规定值范围, 则需更换卷带盘座。

注: 压一重物于测量计之上, 以防其翘起。

视频搜索倒带状态时卷带转矩的检测和调整

●拆去磁带盒室控制机构

- 电源接通之前, 先用 22Ω 电阻短接录象机印刷电路板中间的 TP8804 和 TP8805 之间。

●设置

1. 触按再现 (PLAY) 键, 设录象机于再现状态。
2. 触按倒带 (REW) 键, 设录象机于视频搜索倒带状态。

●视频搜索倒带转矩的检测

1. 置转矩测量计于供带盘座之上, 逆时针方向缓慢地旋转之 ($1 \sim 2$ 秒/转), 检查所测转矩值是否于 $14.5 \pm 8 \text{mN} \cdot \text{m} (148 \pm 80 \text{gf} \cdot \text{m})$ 的规定范围内。

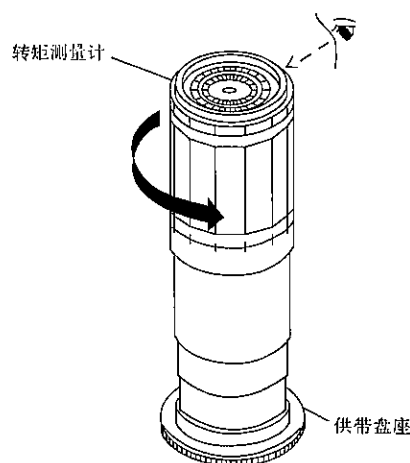


图1-11

注意:

应将转矩测量计牢固地安置于供带盘座之上, 否则, 所测值并非真实。

●视频搜索倒带转矩的调整

如果所测视频搜索倒带状态时的卷带转矩超出或不及其规定值范围, 则需更换卷带盘座。

注意:

由于供带盘旋转的不均匀性, 所测转矩值有可能产生波动现象。这时应取波动值的中心值为其测定值。

快进状态时的反向张力的检测

● 拆去磁带盒室控制机构

● 电源接通之前，先用 22Ω 电阻短接录像机印刷电路板中间的TP8804和TP8805之间。

● 检测反向张力

1. 触按快进(FE)键，设录像机于快进状态。
2. 置转矩测量计于供带盘座之上，顺时针方向缓慢地旋转之(2~3秒/转)，检查所测转矩值是否于 $1.5 \pm 0.9\text{mN} \cdot \text{m}$ ($15 \pm 9\text{gf} \cdot \text{cm}$)的规定范围内。

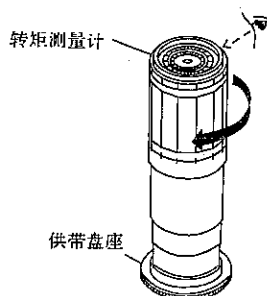


图1-12

注意：

- ① 应将转矩测量计牢固地安置于卷带盘座之上，否则，所测值并非真实。
- ② 在加负荷于带盘座之状态下，转矩测量计所示的数值是真实的转矩测量值。

倒带状态时反向张力的检测

● 拆去磁带盒室控制机构

● 电源接通之前，先用 22Ω 电阻短接录像机印刷电路板中间的TP8804和TP8805之间。

● 检测反向张力

1. 触按倒带(REW)键，设录像机于倒带状态。

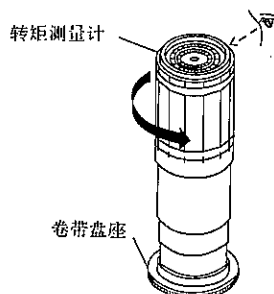


图1-13

2. 置转矩测量计于卷带盘座之上，逆时针方向缓慢地旋转之(2~3秒/转)，检查所测转矩值是否于 $1.3 \pm 0.8\text{mN} \cdot \text{m}$ ($13 \pm 8\text{gf} \cdot \text{cm}$)的规定范围内。

注意：

- ① 应将转矩测量计牢固地安置于卷带盘座之上，否则，所测值并非真实。
- ② 在加负荷于带盘座之状态下，转矩测量计所示的数值是真实的转矩测量值。

视频搜索倒带状态时反向张力的检测

● 拆去磁带盒室控制机构

● 电源接通之前，先用 22Ω 电阻短接录像机印刷电路板中间的TP8804和TP8805之间。

● 检测反向张力

1. 触按再现(PLAY)键，设录像机于再现状态。
2. 触按倒带(REW)键，设录像机于视频搜索倒带状态。
3. 置转矩测量计于卷带盘座之上，逆时针方向缓慢地旋转之(2~3秒/转)，检查所测转矩值是否于 $4 \pm 1.7\text{mN} \cdot \text{m}$ ($41 \pm 17\text{gf} \cdot \text{m}$)的规定范围内。

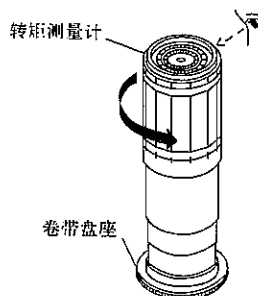


图1-14

注意：

- ① 应将转矩测量计牢固地安置于卷带盘座之上，否则，所测值并非真实。
- ② 在不加负荷于带盘座之状态下，测定之。

紧带轮紧带压力的检测

● 拆去磁带盒室控制机构

● 电源接通之前，先用 22Ω 电阻短接录像机印刷电路板中间的TP8804和TP8805之间。

● 检测

触按再现(PLAY)键，设录像机于再现状态。

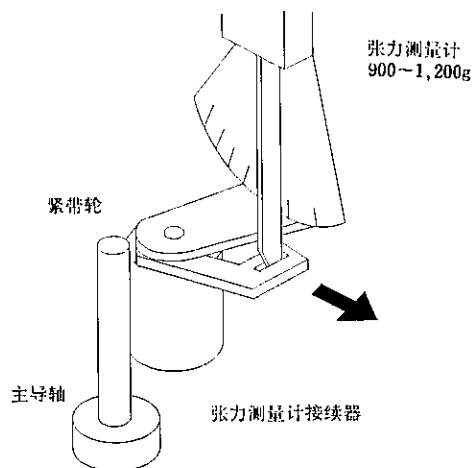


图1-15

1. 用一手指拨移紧带轮，使之与主导轴分离。
2. 通过套挂张力测量计接续器将张力测量计设置于紧带轮轴之上。
3. 慢慢放松施于手指的压力，让紧带轮渐渐靠拢主导轴。在紧带轮与主导轴相触的瞬间，测量计上的读数就是所要计测的压力值。
4. 检查所测压力值是否在900~1,200 g 的规定范围内。

张力杆位置的检测和调整

● 拆去磁带盒室控制机构

- 电源接通之前，先用22Ω电阻短接录象机印刷电路板中间的TP8804和TP8805之间。

● 设置

1. 揭开录象带(E-180)盒盖，用两片胶带将开盖固定。
2. 装入开盖的录象带带盒于盒室机构。
3. 在录象带带盒上加500g的重物。
4. 用E-180录象带的始端部进行调节。

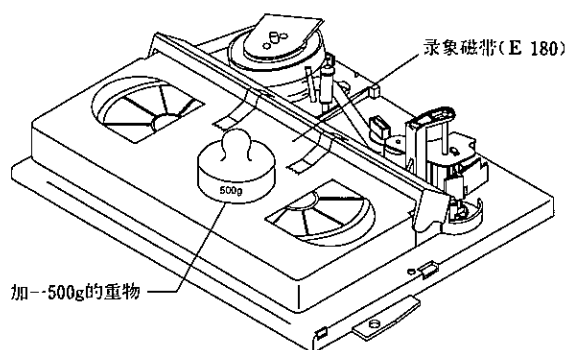


图1-16

● 调整

1. 安置好录象带带盒，触按录象(REC)键，让挂带机构挂好磁带后，检查张力杆的位置。

2. 通过观察检查张力杆左端是否位于与SI辊中心线左端离开0.2mm之位置。其重调方法如下：

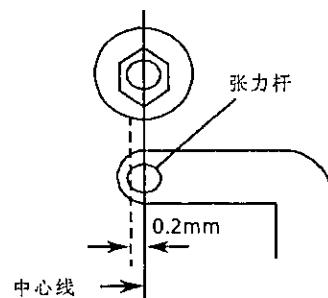


图1-17

用E-180录象带带头部分进行检调。

- ① 张力杆左端偏移至虚线的左侧时：

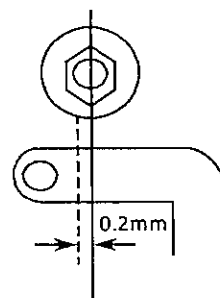


图1-18

1. 取出录象带带盒，触按录象(REC)键，让挂带机构作无带装挂动作。插一字口螺丝刀于张力带定位凸轮，顺时针旋转之。
2. 装入录象带带盒，再检查张力杆的位置。

- ② 张力杆左端偏移至虚线的右侧时：

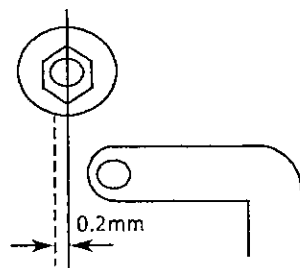


图1-19

1. 取出录象带带盒，触按录象(REC)键，让挂带机构作无带装挂动作。插一字口螺丝刀于张力带定位凸轮，逆时针旋转之。
2. 装入录象带带盒，再检查张力杆的位置。

注意：

- ① 张力带定位凸轮位于录象带带盒之下，因此上述的调整不能在带盒着位状态下进行。上述调整为下述步骤的重复：作无带装挂动作，调节，装入带盒，检查位置。
- ② 右移张力杆时，顺时针（下图黑色箭头方向）旋转定位凸轮。左移张力杆时，逆时针（下图白色箭头方向）旋转定位凸轮。

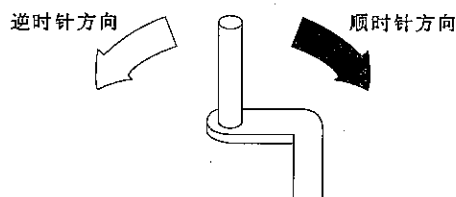


图1-20

③ 张力杆定位凸轮的调整范围

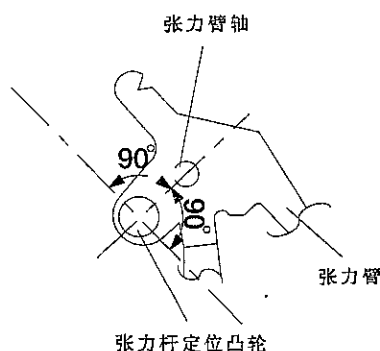


图1-21

以张力臂轴中心至定位凸轮中心为轴的左右90°范围内调整张力杆定位凸轮。

录象/再现状态时反向张力的检测和调整

● 拆去磁带盒室控制机构

● 电源接通之前，先用22Ω电阻短接录象机印刷电路板中间的TP8804和TP8805之间。

● 设置

1. 揭开录象带转矩计盒盖，用两片胶带将开盖固定。
2. 装入开盖的录象带转矩计于盒室机构。
3. 在转矩计盒体上加500g重物。

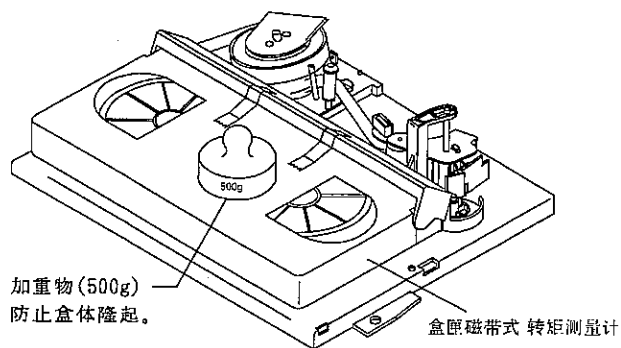


图1-22

● 反向张力的检测

1. 触按录象(REC)键，设录象机于录象状态。
2. 检查所测反张力值是否在31~38g·cm的规定范围内。

注意：

1. 确认走带时，不发生磁带高出定位导杆的现象。
2. 确认磁带自始至终不发生松弛或损伤现象。

● 反向张力的调整

1. 录象带转矩计所测读数小于规定值时，向A方向移动张力弹簧。
2. 录象带转矩计所测读数大于规定值时，向B方向移动张力弹簧。

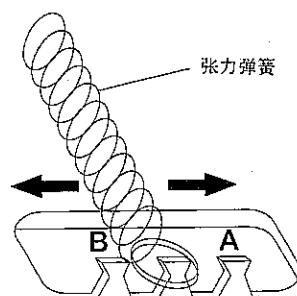
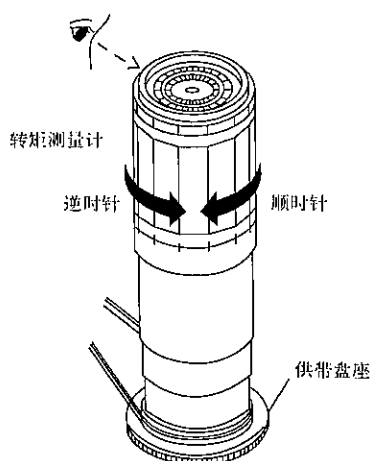


图1-23

制动力矩的检测

● 供带侧制动力矩的检测



逆时针方向：5~15mN.m(50~150gf.cm)
顺时针方向：10~32mN.m(102~326gf.cm)

图1-24

● 拆去磁带盒室控制机构

● 电源接通之前，先用22Ω电阻短接录像机印刷电路板中间的TP8804和TP8805之间。

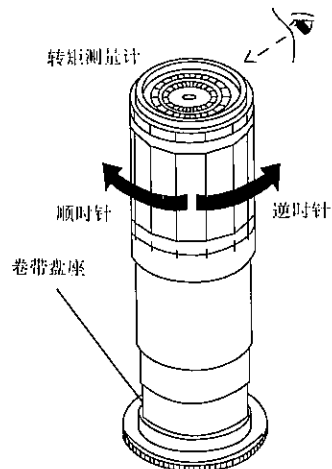
● 设定方法

1. 设转矩测量计的刻度于0，置其于供带盘座之上。
2. 转换快进(FF)状态为停止(STOP)状态。
3. 拔出交流电源插头。

● 检测方法

1. 用手缓慢地沿供带制动的顺时针方向和逆时针方向旋转转矩测量计，使转矩测量计的刻度盘与供带盘以同样的转速旋转。然后，检查所测值是否满足其规定要求：顺时针方向制动力矩=10~32mN.m(102~326gf.cm)；逆时针方向制动力矩=5~15mN.m(50~150gf.cm)。另外，两者所测值还得满足顺时针方向制动力矩至少等于逆时针方向制动力矩的两倍之规定要求。

● 卷带侧制动力矩的检测



逆时针方向：10~32mN.m(102~326gf.cm)
顺时针方向：5~15mN.m(50~150gf.cm)

图1-25

● 拆去磁带盒室控制机构

● 电源接通之前，先用22Ω电阻短接录像机印刷电路板中间的TP8804和TP8805之间。

● 设定方法

1. 设转矩测量计的刻度于0，置其于卷带盘座之上。
2. 转换快进(FF)状态为停止(STOP)状态。
3. 拔出交流电源插头。

● 检测方法

1. 用手缓慢地沿卷带制动的顺时针方向和逆时针方向旋转转矩测量计，使转矩测量计的刻度盘与卷带盘以同样的转速旋转。然后，检查所测值是否满足其规定要求：逆时针方向制动力矩=10~32mN.m(102~326gf.cm)；顺时针方向制动力矩=5~15mN.m(50~150gf.cm)。另外，两者所测值还得满足逆时针方向制动力矩至少等于顺时针方向制动力矩的两倍之规定要求。

● 供带侧以及卷带侧制动力矩的调整

1. 如果供带侧或卷带侧制动力矩所测值不满足其规定要求，则应清擦供带盘座或卷带盘座制动杆及其垫圈，然后重新检测之。
2. 如果清擦后重测制动力矩仍不符规定要求，则需更换主制动器或主制动弹簧。

注意：

主制动器一经更换，则需进行高度的检测与调整（见第85页所述），以及制动力矩的检测。

音频/控制(A/C)磁头的更换

1. 拆去磁带盒室控制机构。
2. 设录象机于出盒状态后，拔去其电源引线插头。

●A/C磁头的拆卸

1. 松旋倾斜度调整螺丝①。
2. 松去方位角调整螺丝②。
3. 松去A/C磁头螺丝③。
4. 松焊A/C磁头印刷电路板与A/C磁头的连线。

注意：

1. 拆装更换后，必须进行磁带走行检查调整（见第94页所述）。拆装过程中，无论是什么情况，都不得用手或其他物触碰A/C磁头。
2. 松去A/C磁头螺丝时，注意防止其方位弹簧弹出遗失。

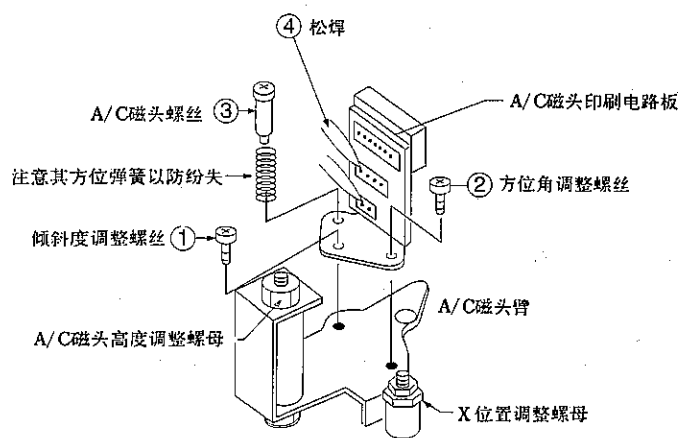


图1-26

●A/C磁头的更换

1. 焊接拆卸下的A/C磁头印刷电路板与更换用新A/C磁头的连线。
2. 安置A/C磁头组件，使A/C磁头臂与A/C磁头基板大致上相互平行。

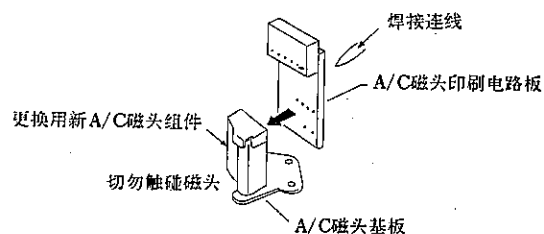


图1-27

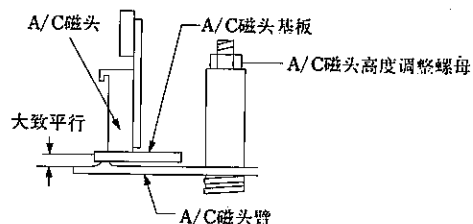
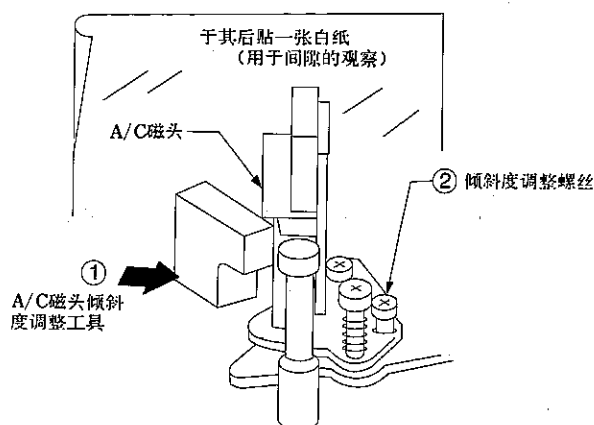


图1-28

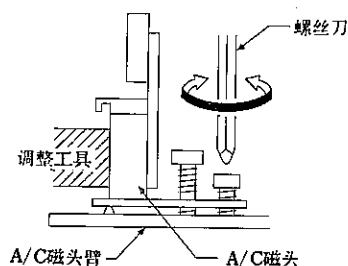
●A/C磁头的调整

(A/C磁头的倾斜度调整)

1. 设录象机于带盒装填状态。
2. 设置A/C磁头倾斜度调整工具①就位。
3. 用一螺丝刀缓慢地转动倾斜度调整螺丝②，直至A/C磁头与A/C磁头倾斜度调整工具间的间隙完全消去为止。



(a)



(b)

图1-29

〔A/C磁头的高度粗调〕

● 设置

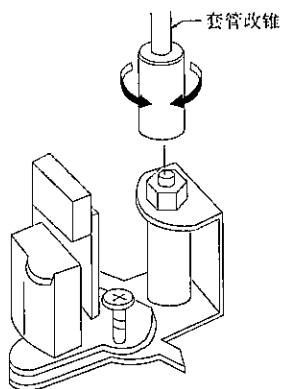


图1-30

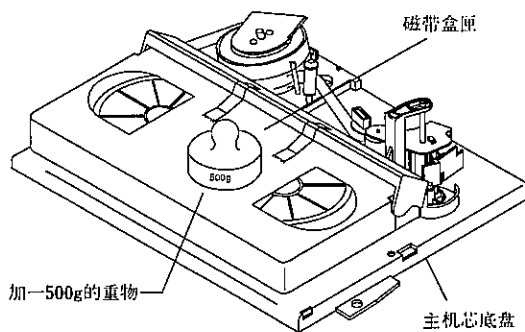


图1-31

- ① 用专用套管改锥旋转A/C磁头高度调整六角螺母，以对其高度进行粗调，使磁带达至下面所示位置为宜。
- ② 装入录像带带盒于盒室机构。
- ③ 触按再现(PLAY)键，设录像机于再现状态。

● 调整

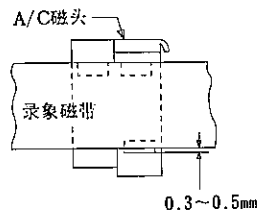
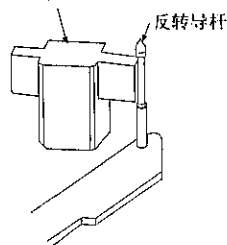


图1-32

旋转高度调整螺母，使控制磁头底边缘低于磁带底边缘
0.3~0.5mm为宜。

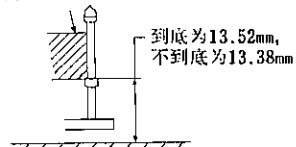
定位导杆以及反转导杆的高度调整

反转导杆高度调整工具



(a)

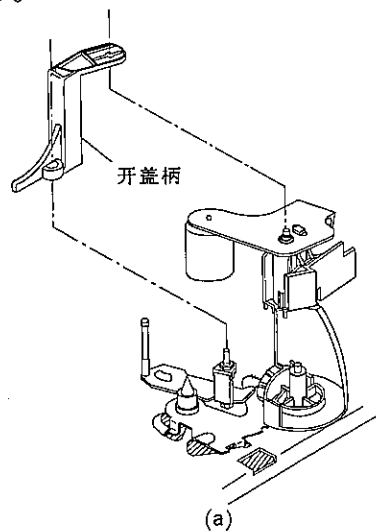
反转导杆高度调整工具



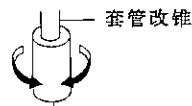
(b)

图1-33

1. 拆去开盖柄。(图1-34(a))
2. 先于录像带装挂状态下调整13.38mm端，然后再沿逆时针方向转高度调整1/6。
3. 录像带装挂动作结束后，设录像机于再现状态。检查靠近反转导杆处的录像带是否皱折。
4. 用一般市场上贩卖的套管改锥转动高度调整螺母。



(a)



(b)

图1-34

磁带走行情况的调整

1. 拆去磁带盒室控制机构。
2. 电源接通之前，先用 22Ω 电阻短接录象机印刷电路板中间的TP8804和TP8805之间。
3. 检测调整张力杆的位置。（见第89页）。
4. 检测调整视频搜索状态时的反向张力。（见第88页）。
5. 设定调整A/C磁头倾斜度。（见第92页）。
6. 按下述步骤对磁带走行情况进行粗调。

- a) 连接示波器于再现色彩包络线输出(TP2203)试点。
设示波器同步性于外接。这样，再现色彩信号便会被磁头转换脉冲(TP2204)所触发。
- b) 先松开导辊底部的设定螺丝，然后再用导辊调整专用螺丝刀(JIGDRIVERH-4)稍微将其旋至能轻松圆滑地转动它之程度。（见图1-35）。
- c) 将校正用磁带(单象管图案)盒匣安置于带盘座上，然后，将录象机设定于再现状态。
(施加一500g的重物于带盒之上，以防走带时带盒的翘起)。

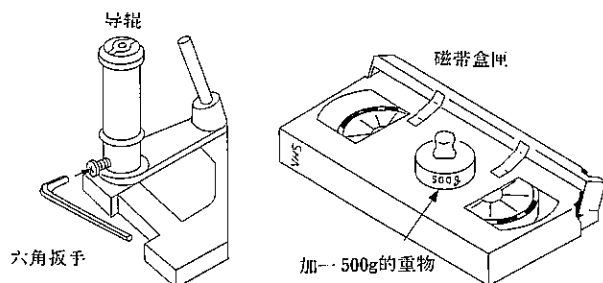


图1-35

图1-36

- d) 于X位置调整状态(见电路调整有关章节所述)，触按跟踪键(+)和(-)，调输出包络线波形从最大至最小，以及从最小至最大。同时观察其波形是否达至平坦状态。
- e) 如通过上述调节，其输出包络线波形无法达至平坦状态，则需用导辊调整用螺丝刀，对供带侧和卷带侧的导辊进行粗调，直至输出包络线波形达至平坦。
- f) 用专用螺丝刀旋转A/C磁头倾斜度调整螺丝，使磁带不触碰走带定位导杆的上下边缘。

- 1) 磁带缠绕于走带定位导杆上缘：按图1-37(a)所示，顺时针方向旋转倾斜度调整螺丝。
- 2) 磁带缠绕于走带定位导杆下缘：按图1-37(b)所示，逆时针方向旋转倾斜度调整螺丝。

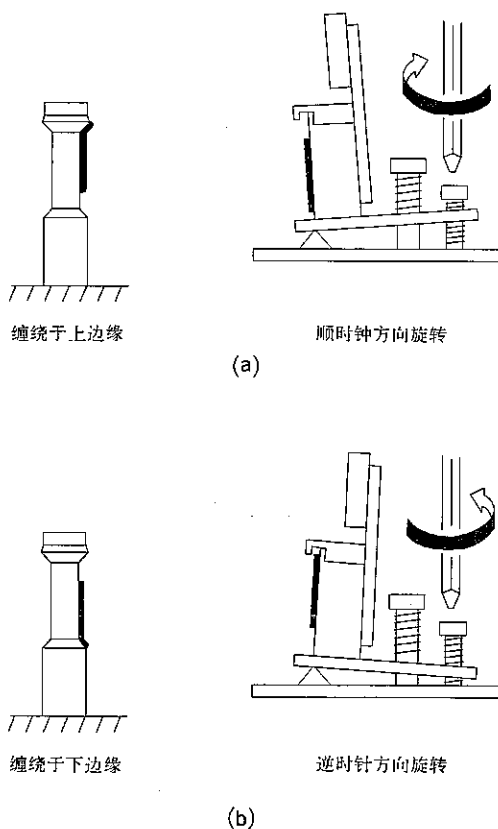


图1-37

注意：

1. 将跟踪调节控制钮设定于其中间位置，然后调整X位置调整螺母，使再现色彩包络线波形达其最大，以便进行磁带走行情况的粗调。
2. 粗调过程中，应特别注意对其输出波形等的观察。

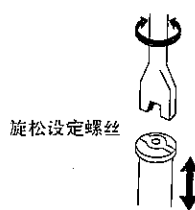


图1-38

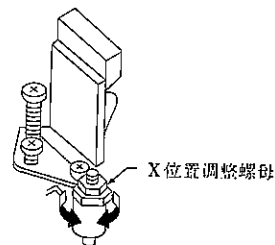


图1-39

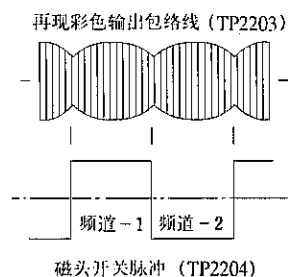


图1-40

7. A/C磁头高度和方位角的调整

- 连接示波器于音频输出端。
- 装入校正用磁带、再现之，让其输出 6 kHz 的音频信号（其视频信号为单象管图形）。用十字口螺丝刀旋转 A/C 磁头方位角调整螺丝，使示波器上音频输出达其最大。（见图 1-41）。
- 再现校正用磁带，让其输出 1 kHz 的音频信号（其视频信号为彩条图形）。用专用套管改锥缓慢地旋转 A/C 磁头高度调整螺母，使示波器上音频输出达其最大。
- 重复步骤 b) 的调整。
- 完成上述步骤后，浇粘合剂 (LOCTITE) 于方位角调整螺丝和高度调整螺母之上，封固之。

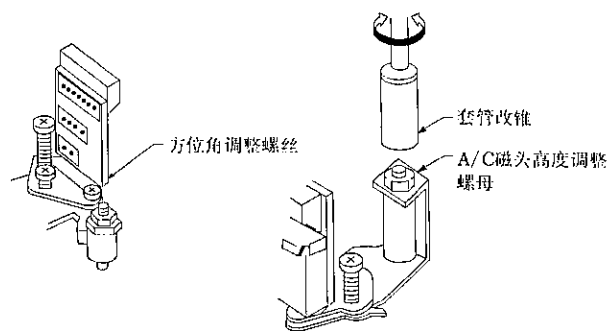


图1-41

图1-42

8. 走带系统以及 X 位置的调整。

- 连接示波器于试点 TP2203，作再现彩色包络线输出。设示波器同步于外接。这样，再现彩色信号将被磁头开关脉冲 (TP2204) 所触发。
- 再现走带检查用校正磁带。
- 触按跟踪键的 (+) 或 (-)，使输出包络线波形从最大转至最小，然后又从最小转为最大。用高度调整用螺丝刀调整供带盘侧和卷带盘侧导辊的高度，使输出包络线尽可能达至平坦。
- 如果走行中的磁带低于或高于螺旋扫描导前，再现彩色输出便会呈现图 1-43 所示波形。
- 按第 94 页步骤 6 的项目 e) 要求，调节输出包络线的最大平坦度。

	磁带高于螺旋扫描导前		磁带低于螺旋扫描导前	
	供带侧	卷带侧	供带侧	卷带侧
调 整	顺时针方向旋转供带盘侧导辊(导辊降低), 使其输出波形包络线达至平坦。	顺时针方向旋转卷带盘侧导辊(导辊降低), 使其输出波形包络线达至平坦。	逆时针方向旋转供带盘侧导辊(导辊升高), 让磁带高过螺旋扫描导前。然后, 顺时针方向旋转供带盘侧导辊, 使其输出波形包络线达至平坦。	逆时针方向旋转卷带盘侧导辊(导辊升高), 让磁带高过螺旋扫描导前。然后, 顺时针方向旋转卷带盘侧导辊, 使其输出波形包络线达至平坦。

图1-43

f) 触按跟踪键的(+)或(-), 检查包络线波形的平坦度反应。

g) 于磁带卸挂状态, 用导辊设定螺丝紧固导辊。

h) 再现走带检查用校正磁带, 检查输出包络线波形是否发生变化。

9. A/C磁头X位置的调整

a) 于X位置调整状态(见电路调整有关章节所述), 电源接通之前, 先用 22Ω 电阻短接录象机印刷电路板中间的TP8804和TP8805之间。

b) 用螺丝刀旋转A/C磁头X位置调整螺母, 以调整A/C磁头X位置, 以得磁头开关脉冲下侧的最大包络线。

c) 调整再现转换点。

d) 再现一录象磁带, 检查输出包络线波形以及声音的平坦度是否满足要求。

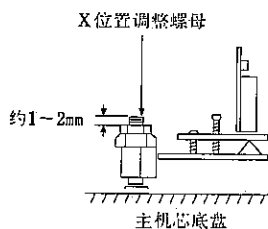


图1-44

主导轴直接驱动马达的拆卸和组装

● 拆去磁带盒室控制机构

● 直接驱动马达的拆卸(按图中所示顺号进行)

1. 拨开主电路印刷电路板上的板间插接器的连接。
2. 拆去带盘皮带(1)。
3. 松去三支紧固螺丝(2)

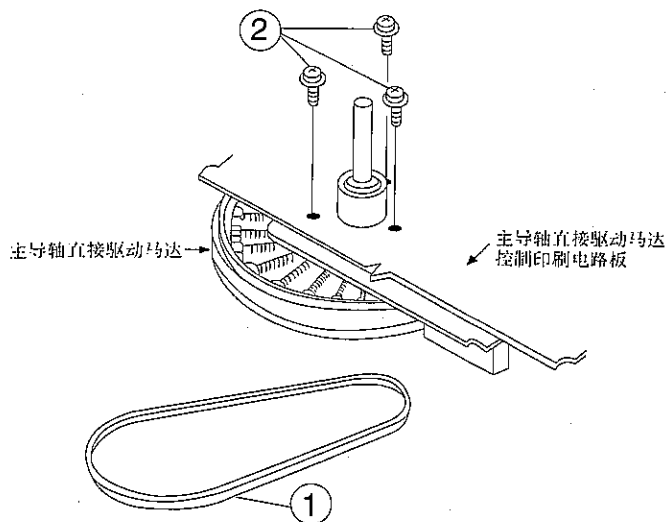


图1-45

● 直接驱动马达的组装

1. 将主导轴直接驱动马达就位位于主机芯底盘。这时, 应注意不要让主导轴磁碰主机芯底盘。然后, 用三支螺丝将其紧固。
2. 套好带盘皮带。连接好主电路印刷电路板上的板间插接器。

注意:

1. 组装完毕, 转动主导轴直接驱动马达, 检查其转动是否圆滑。
2. 检测, 调整其伺服电路。

磁鼓直接驱动马达的装卸

1. 设装置于磁带出盒状态。
2. 拔出电源插头。

● 马达的拆卸(组装时按其相反顺序进行即可)

1. 拨开FFC电缆线的插接(1)。
2. 松去直接驱动马达定子组件的固定螺丝(2)。
3. 取出直接驱动马达定子组件(3)。
4. 取出直接驱动马达转子组件的固定螺丝(4)。
5. 取出直接驱动马达转子组件(5)。

注意:

1. 拆卸直接驱动马达定子组件时, 磁鼓接地弹簧会弹出接地弹簧的压扣环。注意切勿丢失其接地弹簧。
2. 安装时, 必须先将直接驱动马达转子组件的安装孔与下部磁鼓组件的安装孔对齐, 然后紧密固定之。
接着再按类似要领安装上部磁鼓。
(将上部磁鼓的槽口与直接驱动马达转子的安装孔对齐。)
3. 操作中, 切勿碰伤上部磁鼓和视频磁头。
4. 安装时, 必须小心谨慎, 切勿损伤霍尔效应器、直接驱动马达定子、转子以及其它组成部件。
5. 更换组装完毕, 必须进行再现转换点的调试。

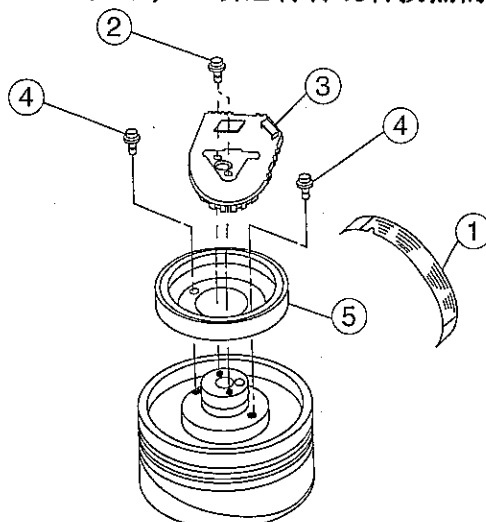


图1-46

需要进行下述配相调整的机械部件的组装

1. 组装紧带轮和紧带轮传动凸轮。（于机芯底盘前面）
2. 安装移行器。（于机芯底盘背面）
3. 安装主凸轮。（于机芯底盘背面）
4. 安装连接齿轮，慢放制动器以及磁带装挂马达。（于机芯底盘背面）

1. 紧带轮与紧带轮传动凸轮（机芯底盘前面）的组装

按下图所示数字的顺序进行组装。

- 1 紧带轮传动凸轮
- 2 紧带轮和紧带双动杆
- 3 开盖柄

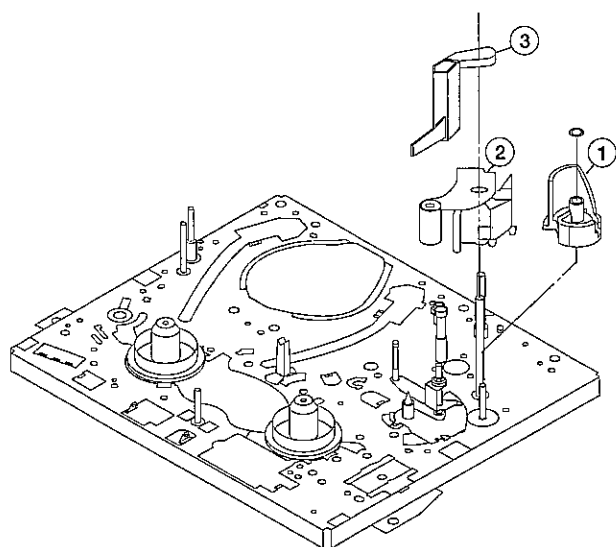
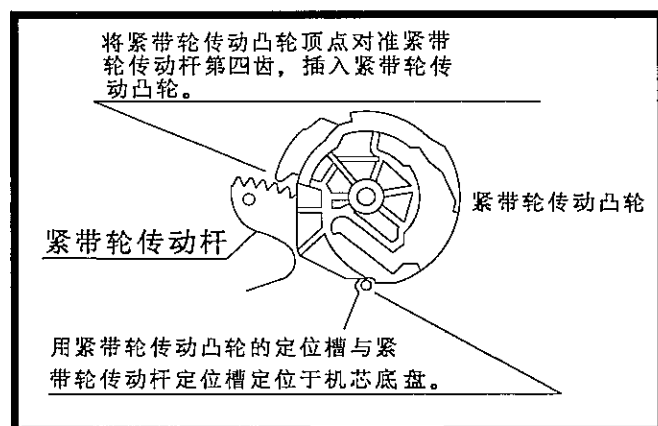


图1-47

① 插入紧带轮传动凸轮



配相点①

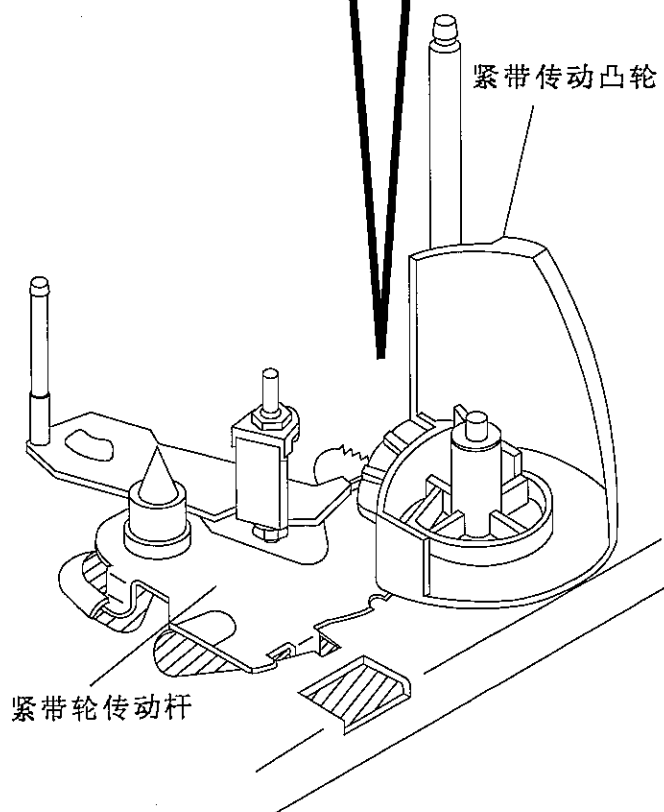


图1-48-1

② 插入紧带轮和紧带双动杆

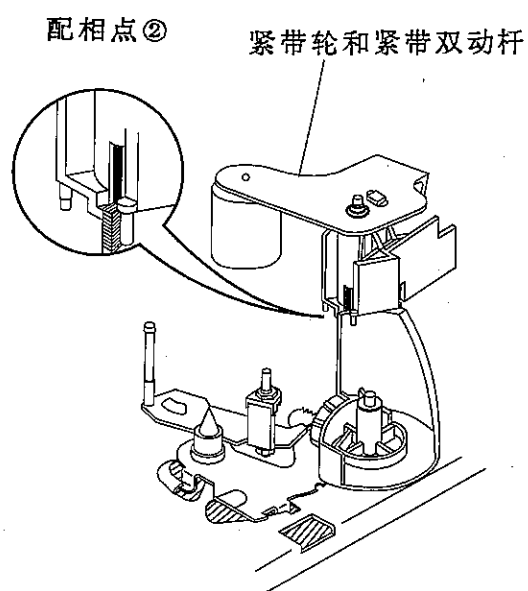


图1-48-2

③ 插入开盖柄

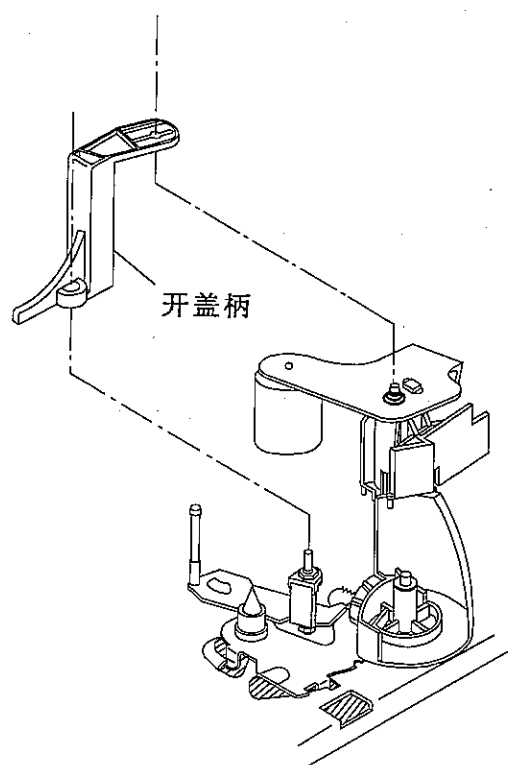


图1-48-3

2. 移行器（机芯底盘背面）的组装

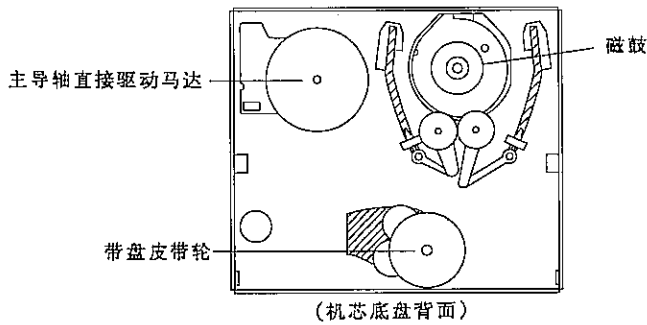


图1-49

1. 检查磁带装挂齿轮是否于下图所示的插入点(1)处。
2. 按要求安装移行器。这时，必须注意移行器的(7)个插孔和(5)个松解钉。
3. 为在插孔(1)处进行配相调整，请见下图的配相点(2)的放大说明。
4. 在插孔(1)和(6)处加上垫圈，紧固移行器。

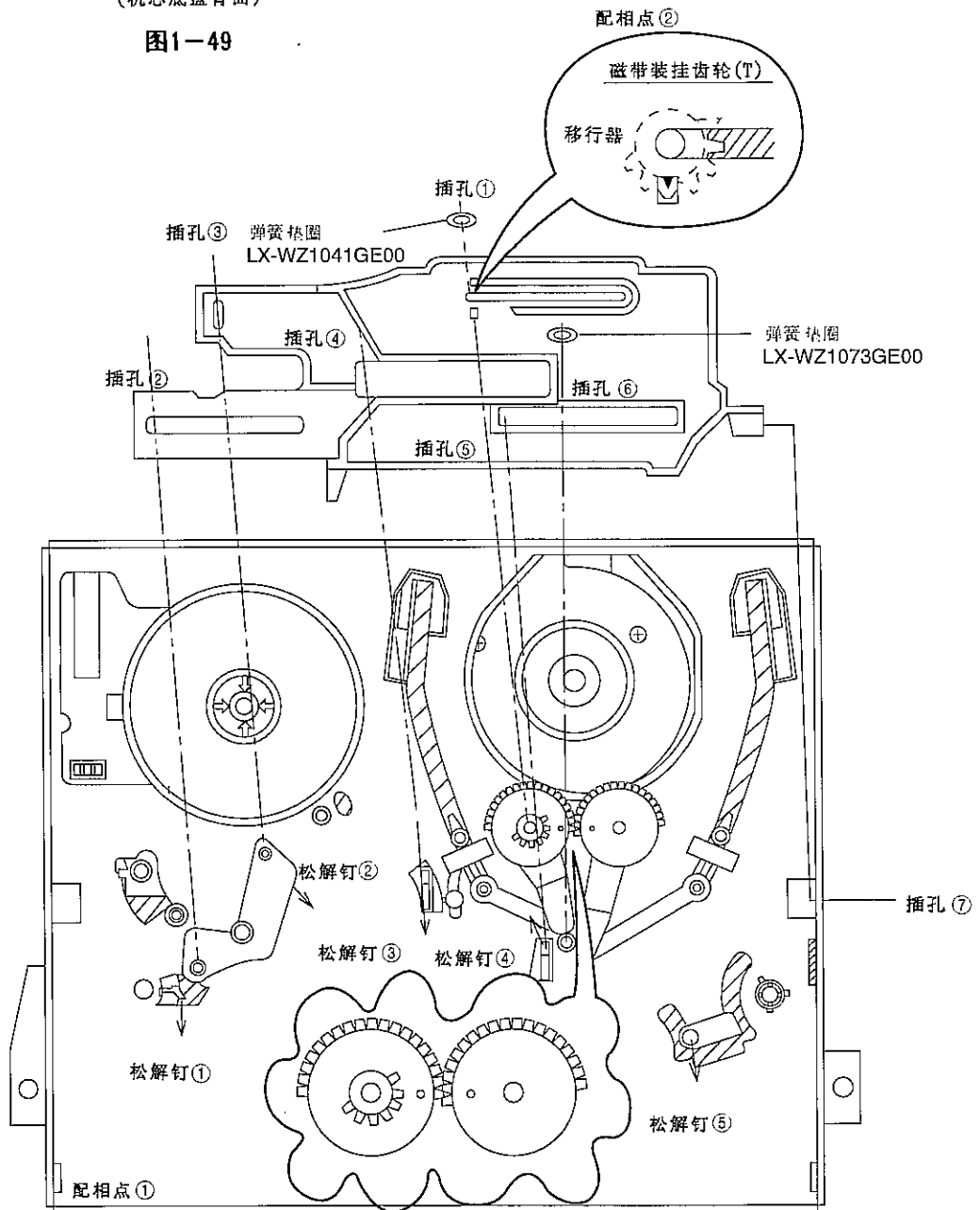


图1-50

3. 主凸轮（机芯底盘背面）的安装

- (1) 首先检查移行器位置是否满足下图所示要求。
- (2) 按下图所示要求安装主凸轮。

注意：

按下图所示，调整主凸轮与盒室控制机构传动齿轮间的配相点。

- (3) 加弹簧垫圈，固定主凸轮。

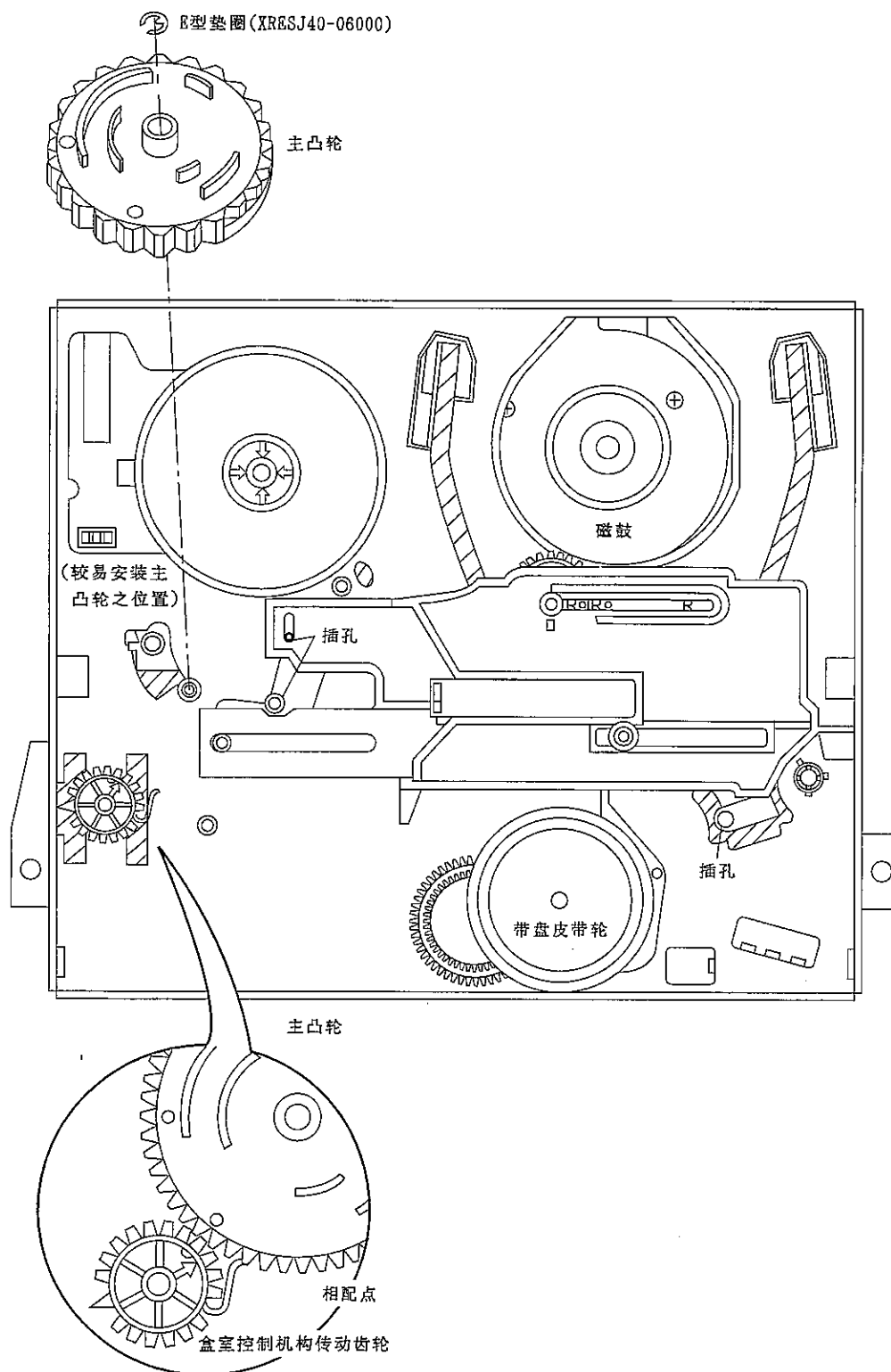


图1-51

4. 连接齿轮，慢放制动器以及磁带装挂马达 (机芯底盘背面) 的 组装

- (1) 安装连接齿轮。
- (2) 安装慢放制动器。
- (3) 安装磁带装挂马达装置。

注意：

让慢放制动器的脚伸出机芯底盘前面，并让其制动弹簧与音频/控制磁头左侧的卷带固定导杆相接。

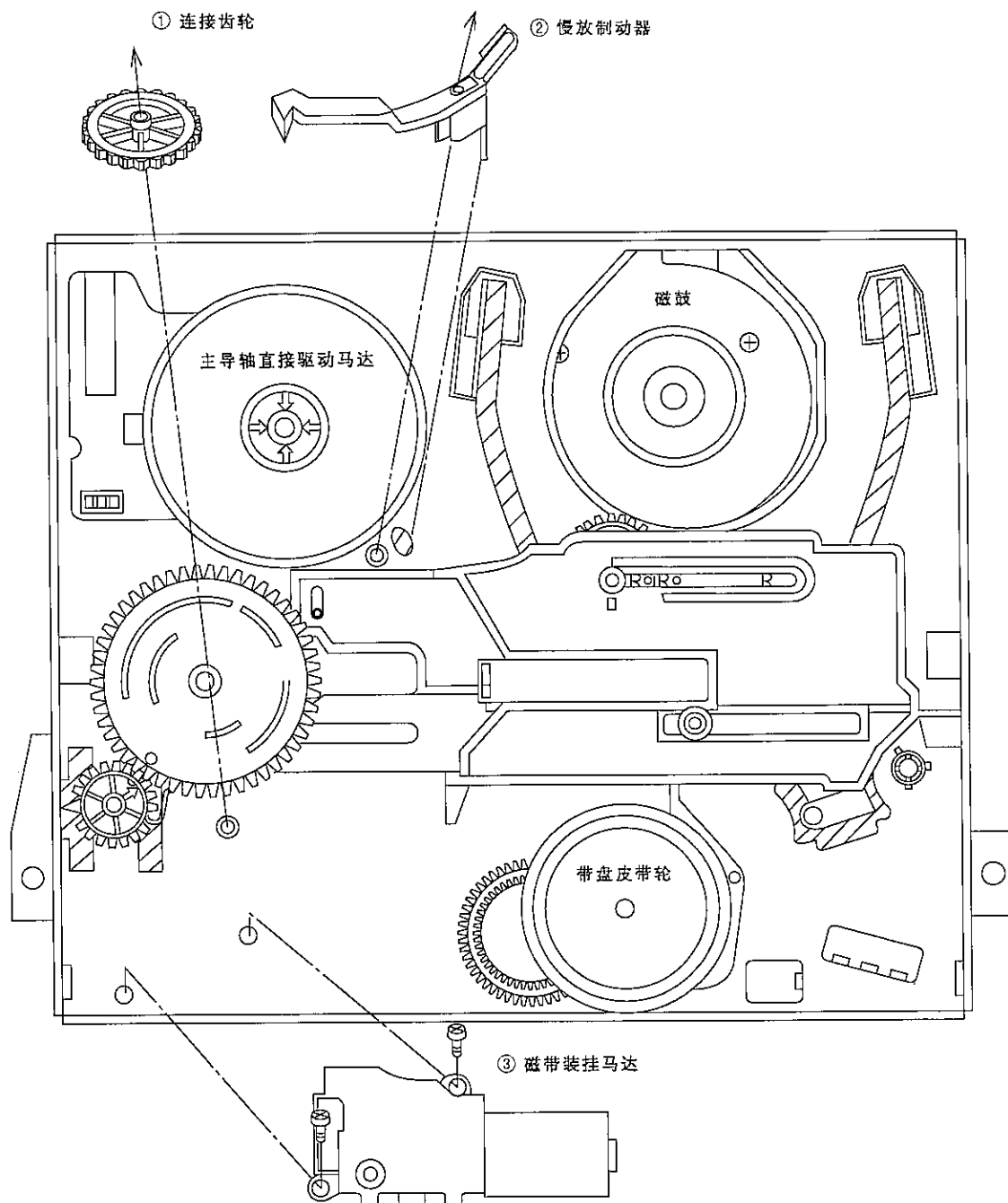


图1-52

注意：

在安装磁带装挂马达之前，应先对相位的配合进行调整检查。其检查方法如下：顺时针旋转连接齿轮检查磁带装挂动作是否相应进行，紧带辊是

否相应接带。这些动作配合均十分圆滑时，在将机构返回于上述状态。最后完成磁带装挂马达的安装。

磁鼓装挂马达的更换

● 马达的拆卸

松去两支紧固螺丝。

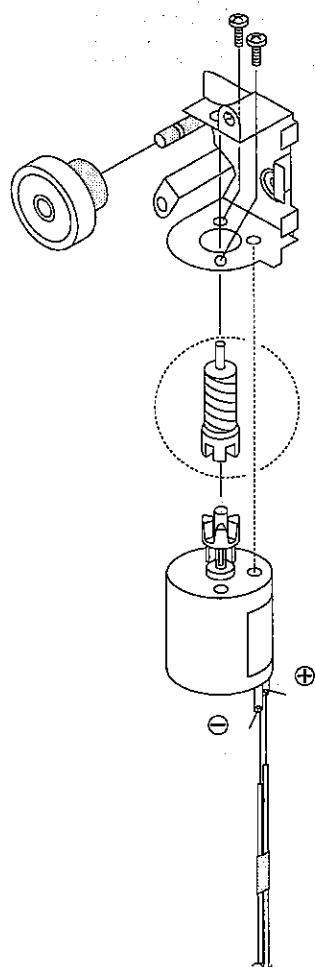


图1-53

● 马达的更换

- ① 取出旧的磁带装挂马达。按上图（图1-53）所示要求装换新的磁带装挂马达。

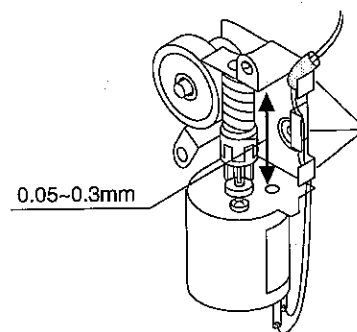
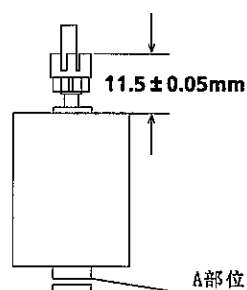


图1-54

- ② 将蜗轮传动的推进间距调整至 $0.05\sim 0.3\text{mm}$ 之间。用规定垫圈进行其间距的调整。



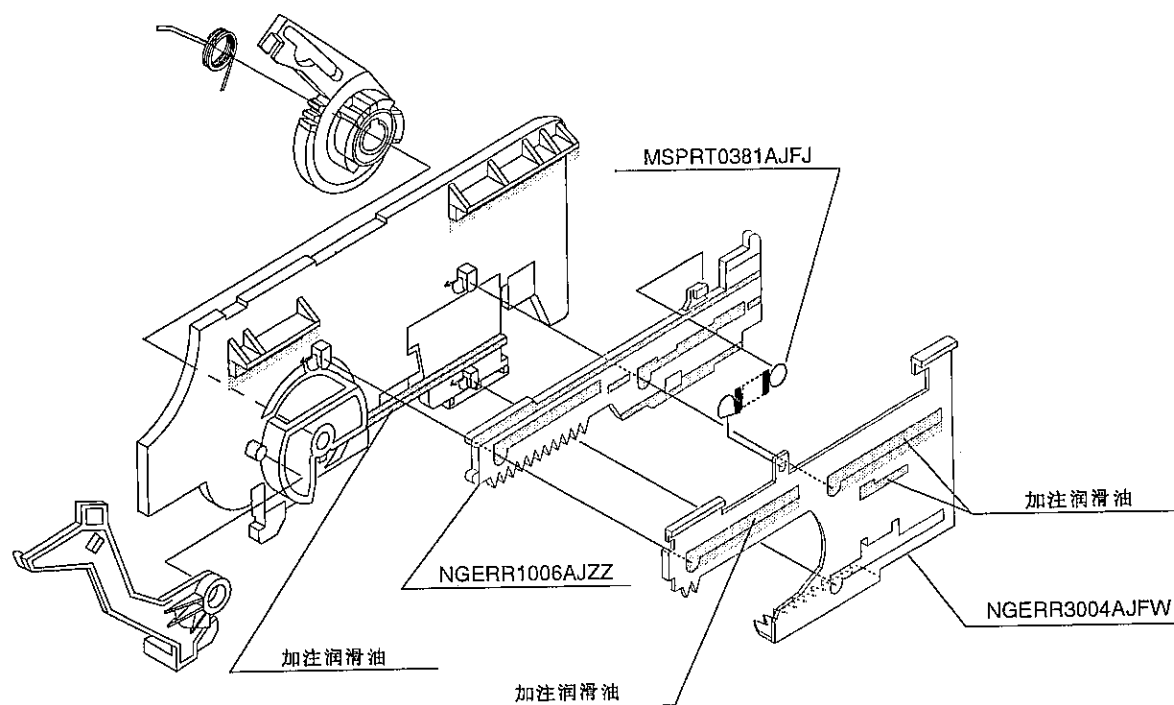
压入装挂马达，让A部位相触。

图1-55

用小于 98N (10kgf) 的力压入磁带装挂马达皮带轮。检查皮带轮是否离马达的间距是否满足 $11.5 \pm 0.05\text{mm}$ 的要求。

盒室控制机构的组装

① 右侧传动齿轮和传动杆



配相点

- 固定右侧传动齿轮和传动杆于下图所示位置。

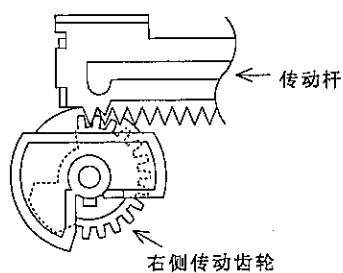


图1-56

② 同步齿轮、左侧传动齿轮和右侧传动齿轮

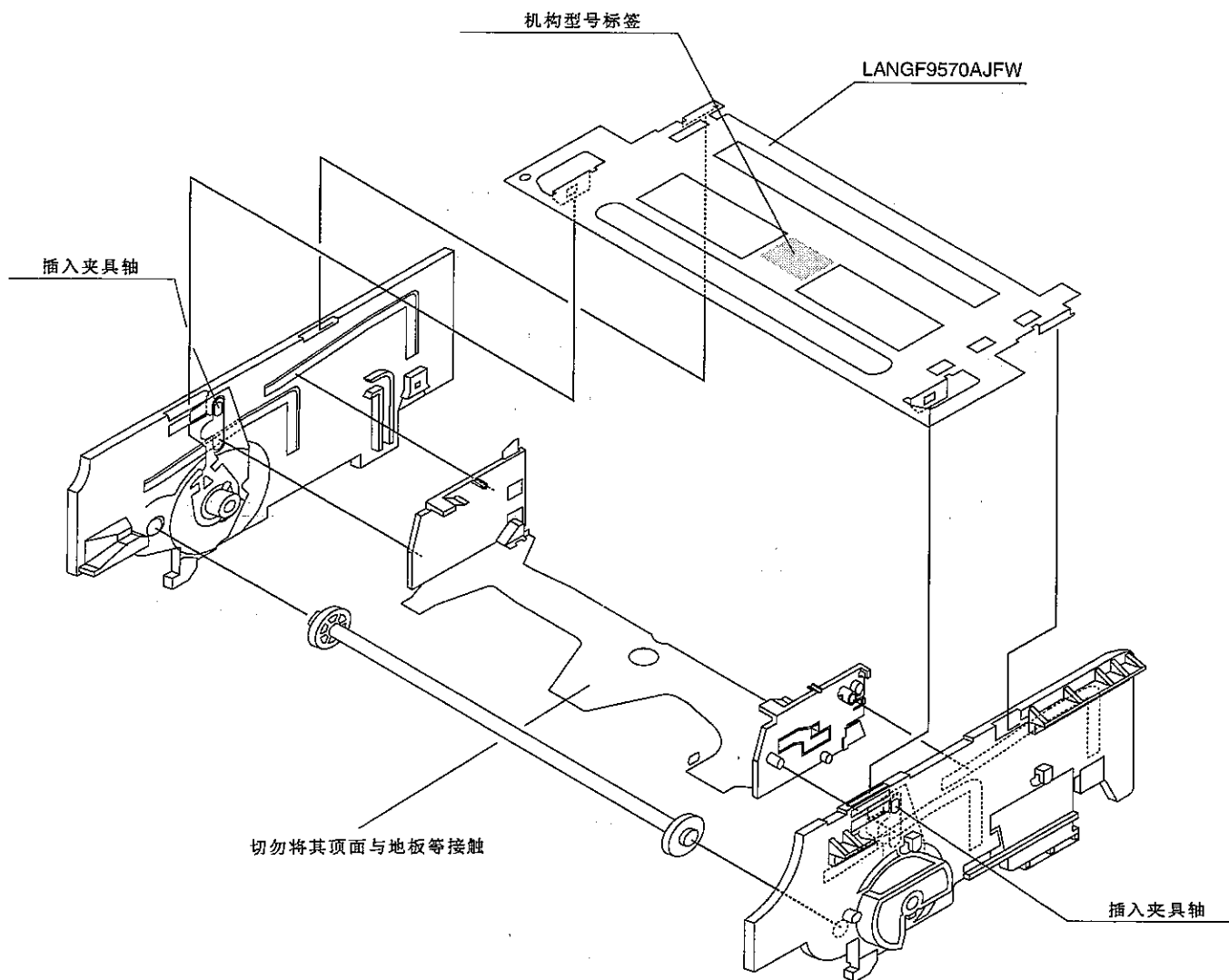


图1-57

将传动齿轮的圆孔与同步齿轮的三角标记（△）对齐。用此要领校正左、右两侧传动齿轮的位置。

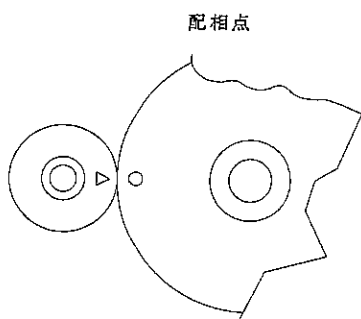


图1-58

注意：

作配相调整时，切勿颠倒左、右两侧传动齿轮的位置。这两只齿轮的一部分不带轮齿，因此可能转出同步齿轮的范围之外。这种情况发生时，需要重新进行其配相调整。

录象机部分电路的调试

注：

● 调试前

在更换录象机磁头之类的电子元件以及机械部件之后，经常需要进行本节所述的电路调试。在调试之前，检查机械机构以及所有的电子元件是否处于良好的工作状态，否则，调试不能顺利完成。

● 检测用仪器：

- ◎ 音频信号发生器
- ◎ 双轨迹示波器
- ◎ 交流毫伏特计
- ◎ 计频器
- ◎ 空白录象带

- ◎ 调试用螺丝刀
- ◎ 彩条信号发生器
- ◎ 直流伏特计
- ◎ 校正用磁带 (VROCPSV)

● 录象机的调整应以电视/录象机 (TV/VCR) 的综合形式进行。

■ 伺服电路的调试

磁头转换点的调试

检测仪器	双轨迹示波器
工作状态	再现
使用磁带	校正用磁带 (VROCPSV)
测试点	TP2208 (视频输出) 至频道1 TP2204 (触发脉冲) 至频道2
调整点	R7701 磁头开关转换点控制调节
规定要求	$6.5 \pm 0.5H$ (行数)

1. 按住录象机前面控制板上的频道上移 (▲) 键 3 秒以上，同时触按准备/电源 (STAND BY/POWER) 键，这样录象机便进行保养调整状态。
2. 演放校正用录象带 (VROCPSV)，检查监控电视荧屏上显示的“ACK”字样。
然后，触按遥控器上的项目单 (MENU) 键将跟踪设定至中间。这时荧屏上显示“TEST” (测试) 的字样，意为演放状态下跟踪被调至中间。
3. 接双踪示波器的两接头于测试点 TP2208 (视频输出) 和 TP2204 (触发脉冲)。(用 TP2204 处的磁头开关脉冲触发示波器)。
4. 调节 R7701，使双轨迹示波器荧屏上出现的波形达至图 2-1 所示的 $6.5 \pm 0.5H$ (行数)。

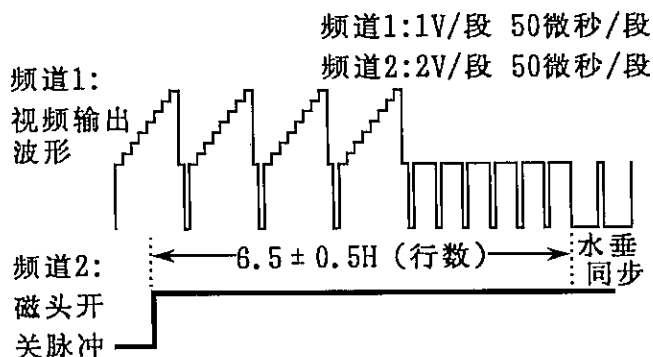


图 2-1

注：

作磁头转换点的调试时，切勿使自动跟踪功能动作。

在下记情况下，自动跟踪功能不动作。

(仅限于再现状态)

- ① 在保养调整状态下演放录象带后触按项目单 (MENU) 键之场合。(电视荧屏上显示的“ACK”变为“TEST” (测试))。
- ② 拆去磁带盒室控制机构，并让 TP8804 和 TP8805 (无盒室跨接) 短接状态下插入电源演放录象带之场合。(机构动作状态，保养调整状态无必要设定。)

■ 录象机主电路装置的测试点分布

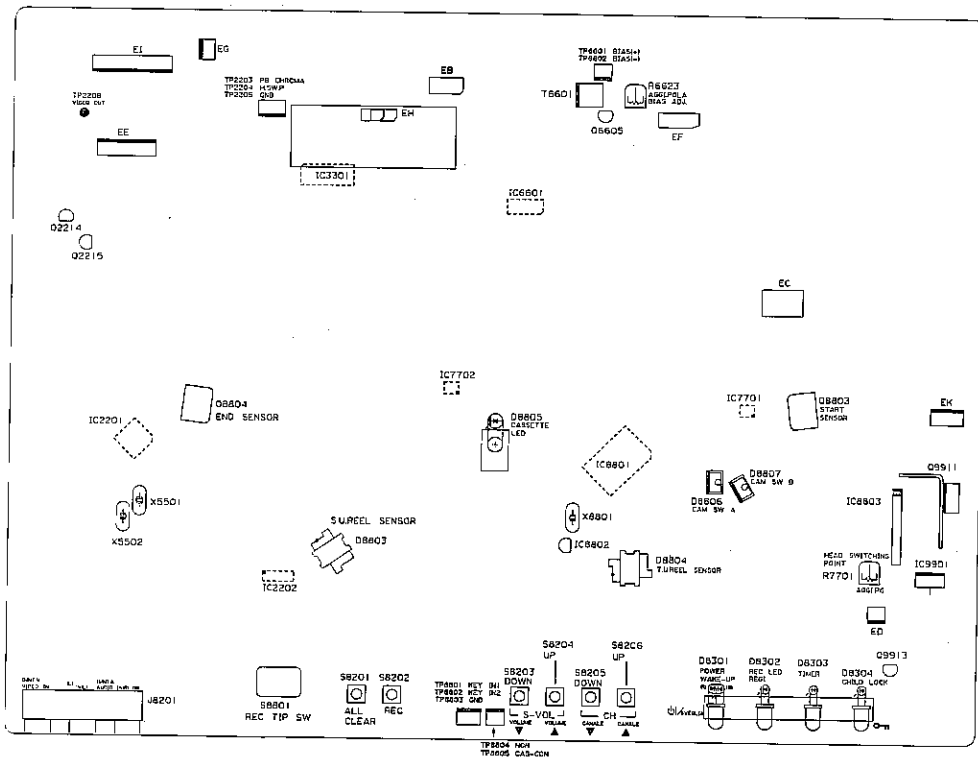


图 2-2

PAL制式SP/LP方式慢动作跟踪预设的调试

检测仪器	电视监测器
工作状态	记录(录象)和再现用PAL制式SP以及LP方式录制的自备录象带
输入信号	PAL制式 电视播放节目或视频信号
测试点	电视监测器荧屏
调整点	频道上移▲/下移▼(TR+)(-))键
规定要求	电视监测器荧屏上无噪声条纹出现

1. 用SP(标准转速)和LP(缓慢转速)方式为PAL制式信号录象。
2. 按住录象机前面控制板上的频道上移(▲)键3秒以上, 同时触按准备/电源(STAND BY/POWER)键, 这样录象机便进入保养调整状态。
3. 用标准转速方式播放PAL制式SP方式录制的录象带, 检查电视荧屏上显示的“ACK”字样。然后, 触按遥控器上的项目单(MENU)键将录象机设定于PAL制式的标准跟踪的预设状态。这时电视荧屏上显示出“TEST”(测试)的字样。
(其意为标准转速跟踪预设状态)。

4. 通过触按遥控器上的频道上移▲/下移▼(TR+)/(—)键, 调节PAL制式标准转速跟踪, 使电视荧屏上的噪声线完全消失。
5. 触按停止(STOP)键, 取消PAL制式标准转速跟踪预设状态。
6. 关闭电源, 再按住频道上移(▲)键3秒以上打开电源, 以便再次设录象机于保养调整状态。
7. 用缓慢转速方式演放PAL制式LP方式录制的录象带。然后, 触按项目单(MENU)键, 设录象机于PAL制式缓慢转速跟踪预设状态。这时, 电视荧屏上显示出“TEST”(测试)的字样。
8. 通过触按遥控器的频道上移▲/下移▼(TR+)/(—)键, 调节PAL制式缓慢转速跟踪, 使电视荧屏上的噪声线完全消失。
9. 触按停止(STOP)键, 取消PAL制式缓慢转速跟踪预设状态。(见下注)。

注：

- ①该缓慢转速跟踪预设状态被取消之同时，此项调整的4个数据随之自动被储存于E²PROM集成块中。
- ②为设定录象机的缓慢转速跟踪预设状态，每作设定时在保养调整状态下慢放录象带后再触按项目单(MENU)键之操作是必要的。

NTSC制式SP/EP方式慢动作跟踪预设的调试

检测仪器	电视监测器
工作状态	记录(录像)和再现用PAL制式SP以及EP方式录制的自备录像带
输入信号	NTSC制式电视播放节目或视频信号
测试点	电视监测器荧屏
调整点	频道上移▲/下移▼(TR(+)/(-))键
规定要求	电视监测器荧屏上无噪声条纹出现

1. 用SP(标准转速)和EP(超慢转速)方式为NTSC制式信号录像。
2. 按住录像机前面控制板上的频道上移(▲)键3秒以上,同时触按准备/电源(STAND BY/POWER)键,这样录像机便进入保养调整状态。
3. 用标准转速方式播放NTSC制式SP方式录制的录像带,检查电视荧屏上显示的“ACK”字样。
然后,触按遥控器上的项目单(MENU)键将录像机设定于NTSC制式的标准跟踪的预设状态。这时电视荧屏上显示出“TEST”(测试)的字样。(其意为标准转速跟踪预设状态)。
4. 通过触按遥控器上的频道上移▲/下移▼(TR(+)/(-))键,调节NTSC制式标准转速跟踪,使荧屏上的噪声线完全消失。
5. 触按停止(STOP)键,取消NTSC制式标准转速跟踪预设状态。
6. 关闭电源,再按住频道上移(▲)键3秒以上打开电源,以便再次设录像机于保养调整状态。
7. 用缓慢转速方式播放NTSC制式LP方式录制的录像带。然后,触按项目单(MENU)键,设录像机于NTSC制式缓慢转速跟踪预设状态。这时,电视荧屏上显示出“TEST”(测试)的字样。
8. 通过触按遥控器上的频道上移▲/下移▼(TR(+)/(-))键,调节NTSC制式缓慢转速跟踪,使电视荧屏上的噪声线完全消失。
9. 触按停止(STOP)键,取消NTSC制式缓慢转速跟踪预设状态。(见下注)。

注:

- ① 该缓慢转速跟踪预设状态被取消之同时,此项调整的4个数据随之自动被储存于E²PROM集成块中。

- ② 为设定录像机的缓慢转速跟踪预设状态,每作设定时在保养调整状态下慢放录像带后再触按项目单(MENU)键之操作是必要的。

PAL制式静止画面垂直同步的调试

检测仪器	电视监测器
工作状态	静止画面再现
输入信号	录有内容的PAL制式自备录像带
测试点	电视监测器荧屏
调整点	频道上移▲/下移▼(TR(+)/(-))键
规定要求	电视监测器荧屏上无噪声晃抖

1. 再现录有内容的PAL制式自备录像带,静止其中某一画面。
2. 通过触按遥控器上的频道上移▲/下移▼(TR(+)/(-))键,直至电视监测器荧屏上的噪声晃抖达至最小程度。
3. 触按停止(STOP)键,停止录像机再现动作。

NTSC制式静止画面垂直同步的调试

检测仪器	电视监测器
工作状态	静止画面再现
输入信号	NTSC制式电视播放节目或视频信号
测试点	电视监测器荧屏
调整点	频道上移▲/下移▼(TR(+)/(-))键
规定要求	电视监测器荧屏上无噪声晃抖

1. 再现录有内容的NTSC制式自备录像带,静止其中某一画面。
2. 通过触按遥控器上的频道上移▲/下移▼(TR(+)/(-))键,直至电视监测器荧屏上的噪声晃抖达至最小程度。
3. 触按停止(STOP)键,停止录像机再现动作。

■ 音频电路的调试

再现电平调试

检测仪器	交流毫伏特计 示波器
工作状态	再现
输入信号	校正用磁带(VROCPSV) (1kHz电平控制信号)
测试点	音频输出端 (EI接线器的销(11))
规定要求	$-9 \pm 2\text{dBs}$ ($0.6 \sim 1.0\text{Vp-p}$)

1. 装入校正用磁带(VROCPSV, 1kHz电平控制信号), 再现之。
2. 接交流毫伏特计于音频输出端(EI接线器的销(11))。
3. 检查输出电平达至 $-9 \pm 2\text{dBs}$ 的规定要求。

记录电平的调试

检测仪器	交流毫伏特计 示波器
工作状态	记录(录音)/再现
输入信号	1kHz, -8dBs (0.87Vp-p)
测试点	音频输出端 (EI接线器的销(11))
规定要求	$-8 \pm 2\text{dBs}$ ($0.7 \sim 1.1\text{Vp-p}$)

1. 接交流毫伏特计于音频输出端(EI接线器的销(11))。
2. 向音频输入端输入1kHz、 -8dBs 的音频信号, 设录象机于A/V输入状态。
3. 自录后再现之。
4. 检查音频输出端的电平是否符合规定要求。如不符合规定要求, 则需重新对偏压电流进行调整。(下记检测项目)

偏压电流的调试

检测仪器	交流毫伏特计 示波器
工作状态	记录(录音)
输入信号	不需要
测试点	TP6601(+)-TP6602(-)
调整点	R6623
规定要求	$2.6 \pm 0.1\text{mVrms}$ ($7.6 \pm 0.3\text{mVp-p}$)

1. 接交流毫伏特计于测试点TP6601(+)和TP6602(-)。(接TP6602于接地线)
2. 设录象机于记录状态。
3. 调节R6623, 使信号电平达至 2.6mVrms 的规定要求。

消磁电压和振荡器频率的调试

检测仪器	示波器
工作状态	记录(录音)
测试点	完全消磁磁头两端
调整点	T6601
规定要求	$70 \pm 5\text{kHz}$, 大于 40Vp-p

1. 设录象机于记录状态
2. 接示波器于完全消磁磁头两端。
3. 检查完全消磁磁头两端的电压是否为大于 40Vp-p , 并振荡频率是否为 $70 \pm 5\text{kHz}$ 。

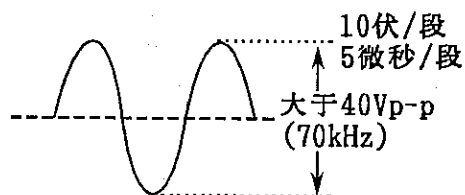
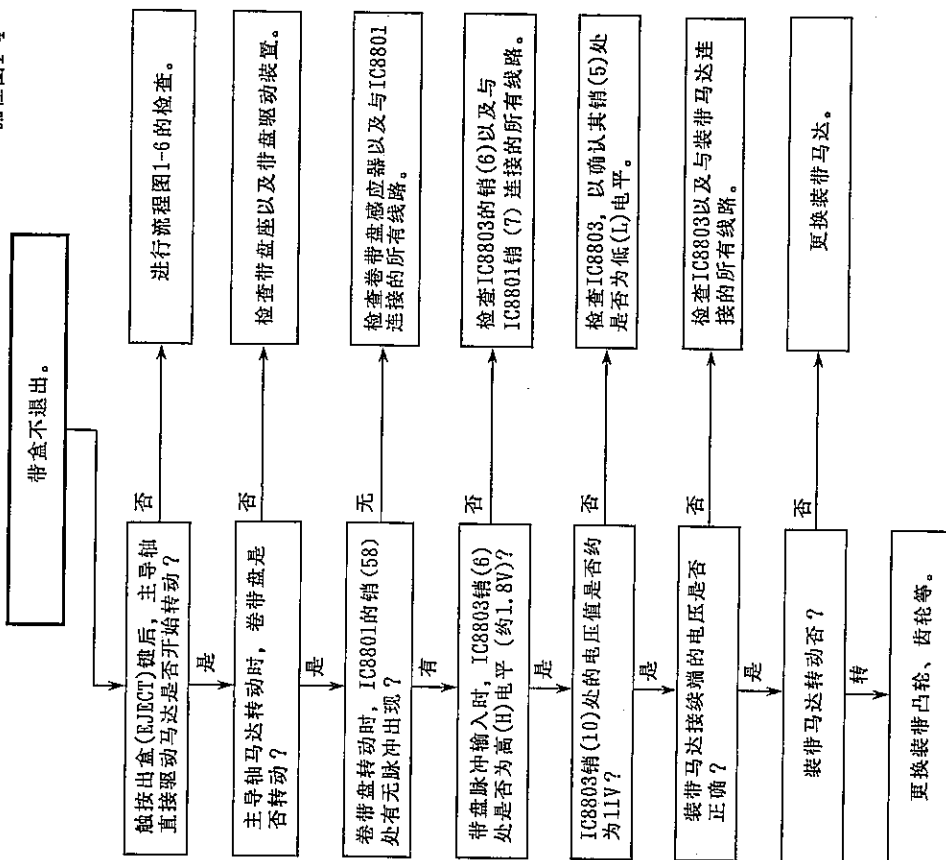


图2-2

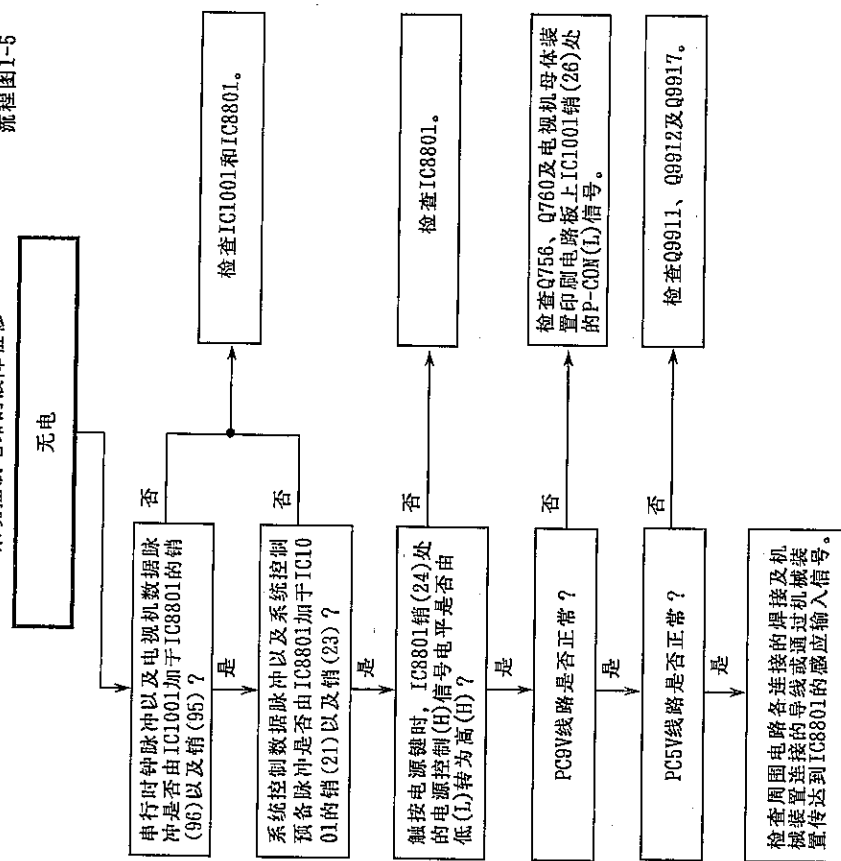
装带马达以及出盒动作的故障检修

流程图 1-4



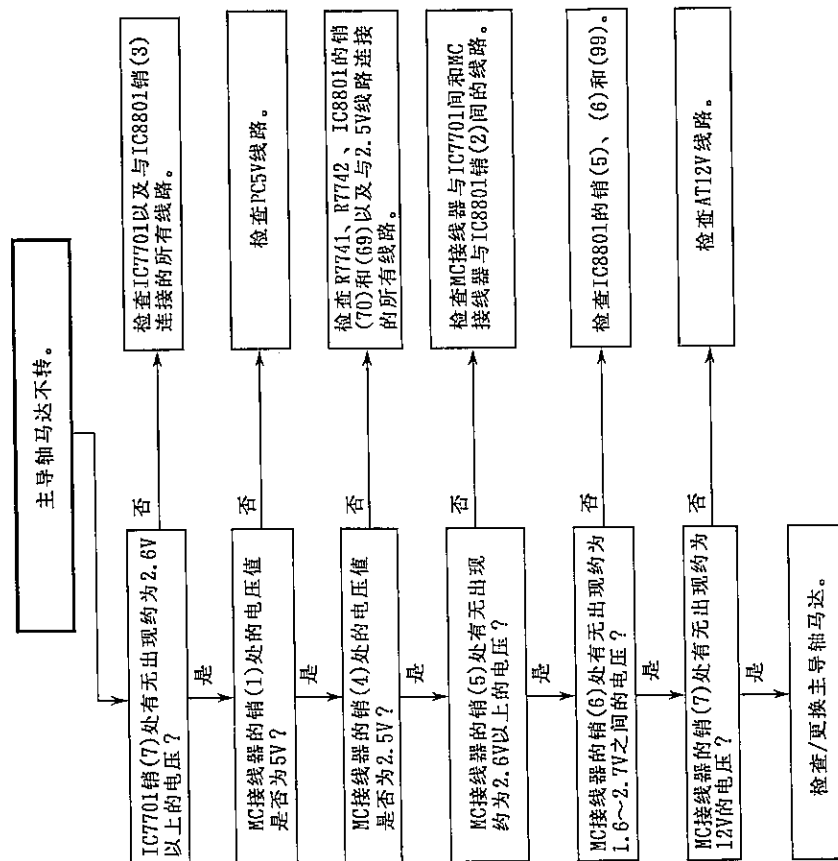
系统控制电路的故障检修

流程图 1-5



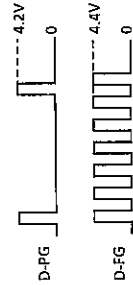
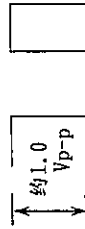
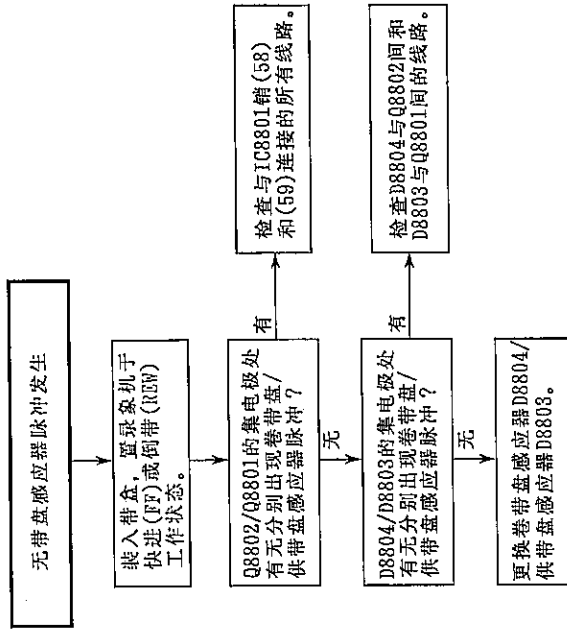
流程图 1-6

主导轴马达的故障检修



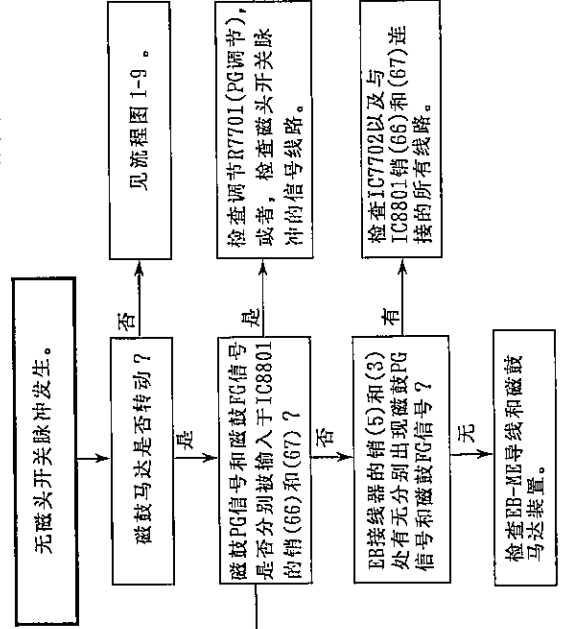
流程图 1-7

卷带盘脉冲发生器的故障检修



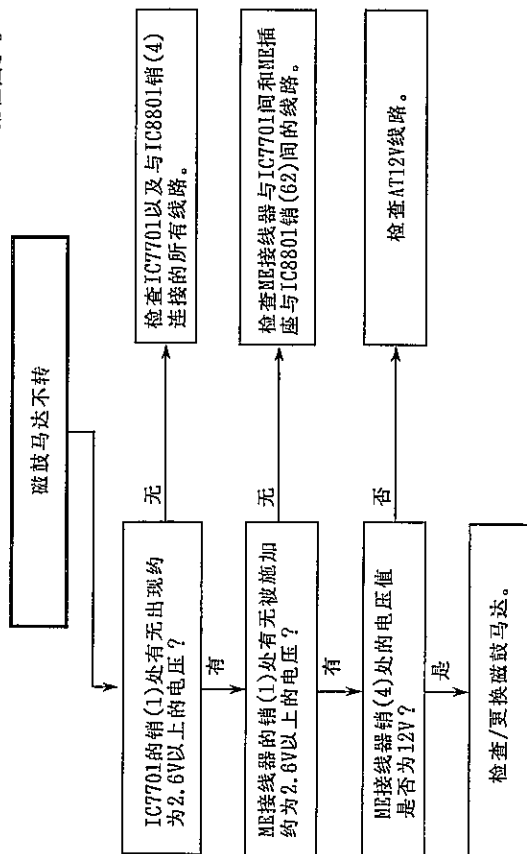
流程图 1-8

磁头开关脉冲的故障检修

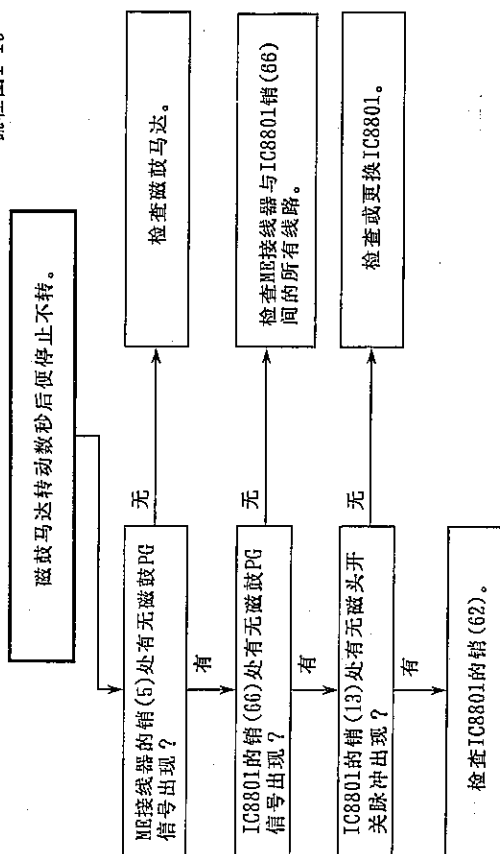


磁鼓马达的故障检修

流程图1-9

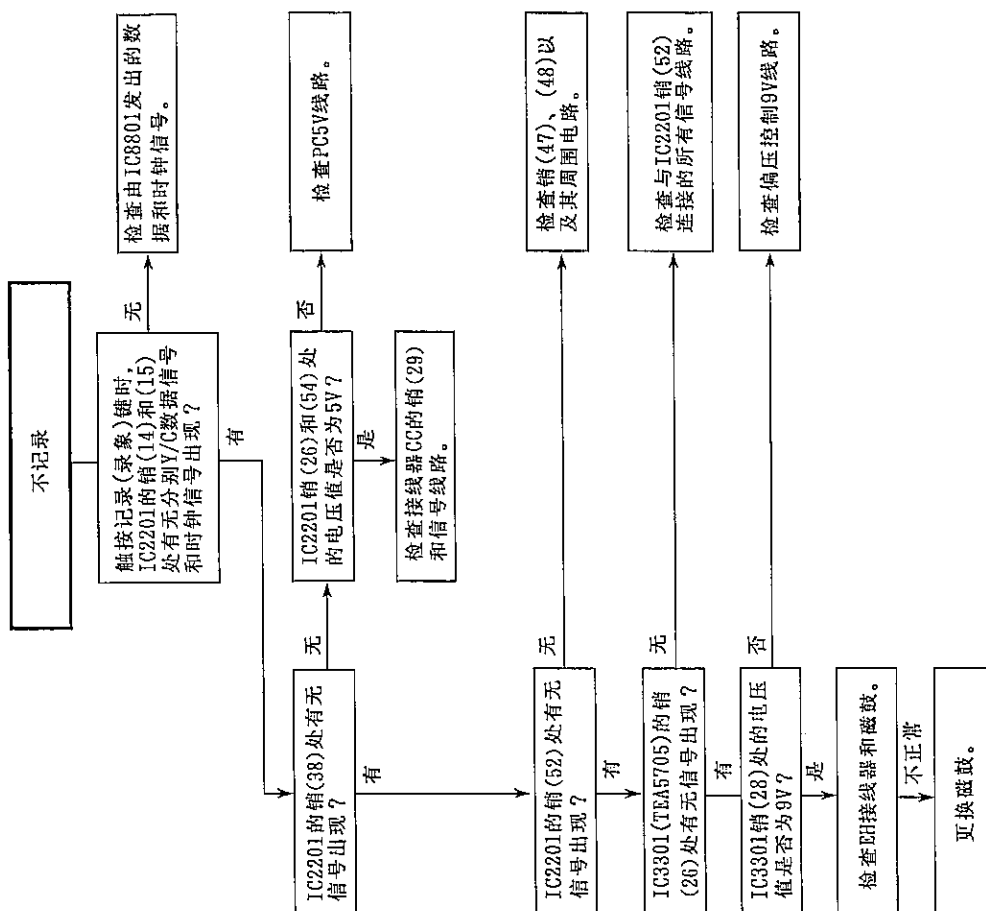


流程图1-10

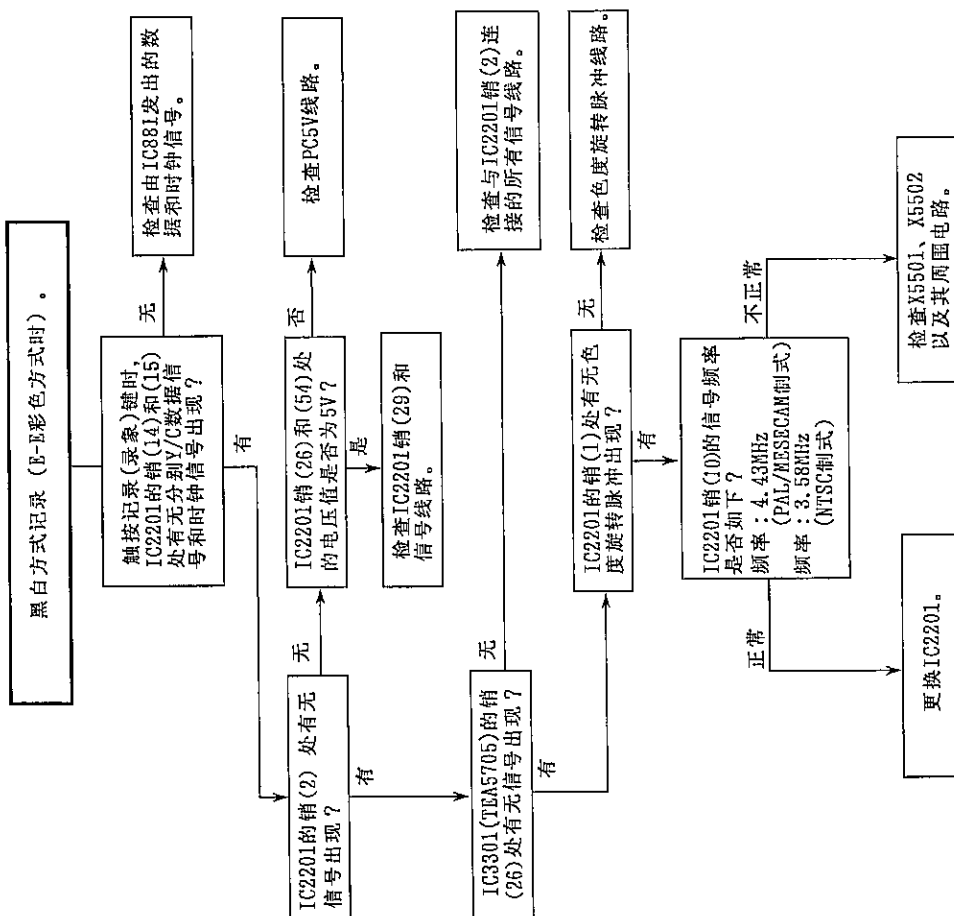




录像机记录（录像）状态（亮度）的故障检修 流程图1-13

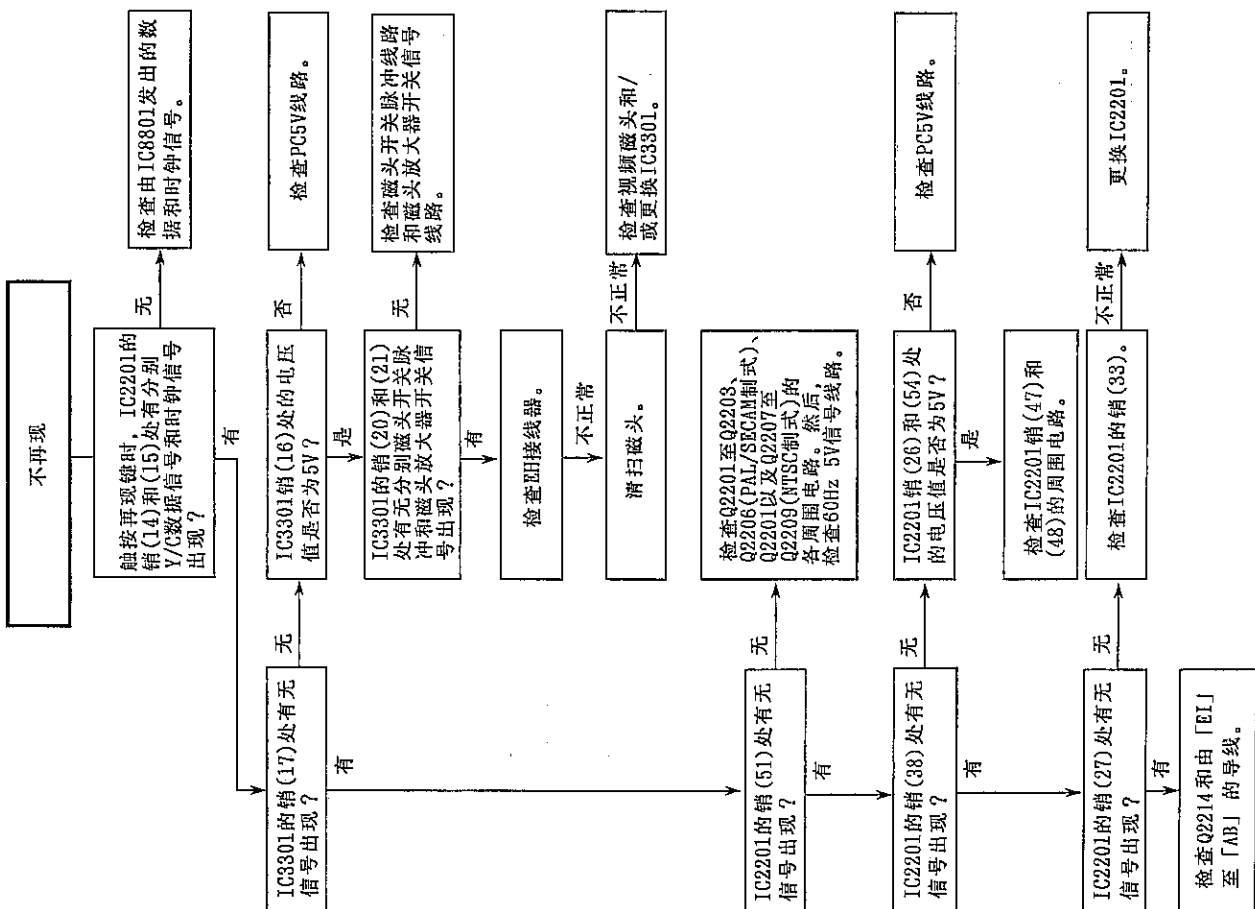


录像机记录（录像）状态（色度）的故障检修 流程图1-14



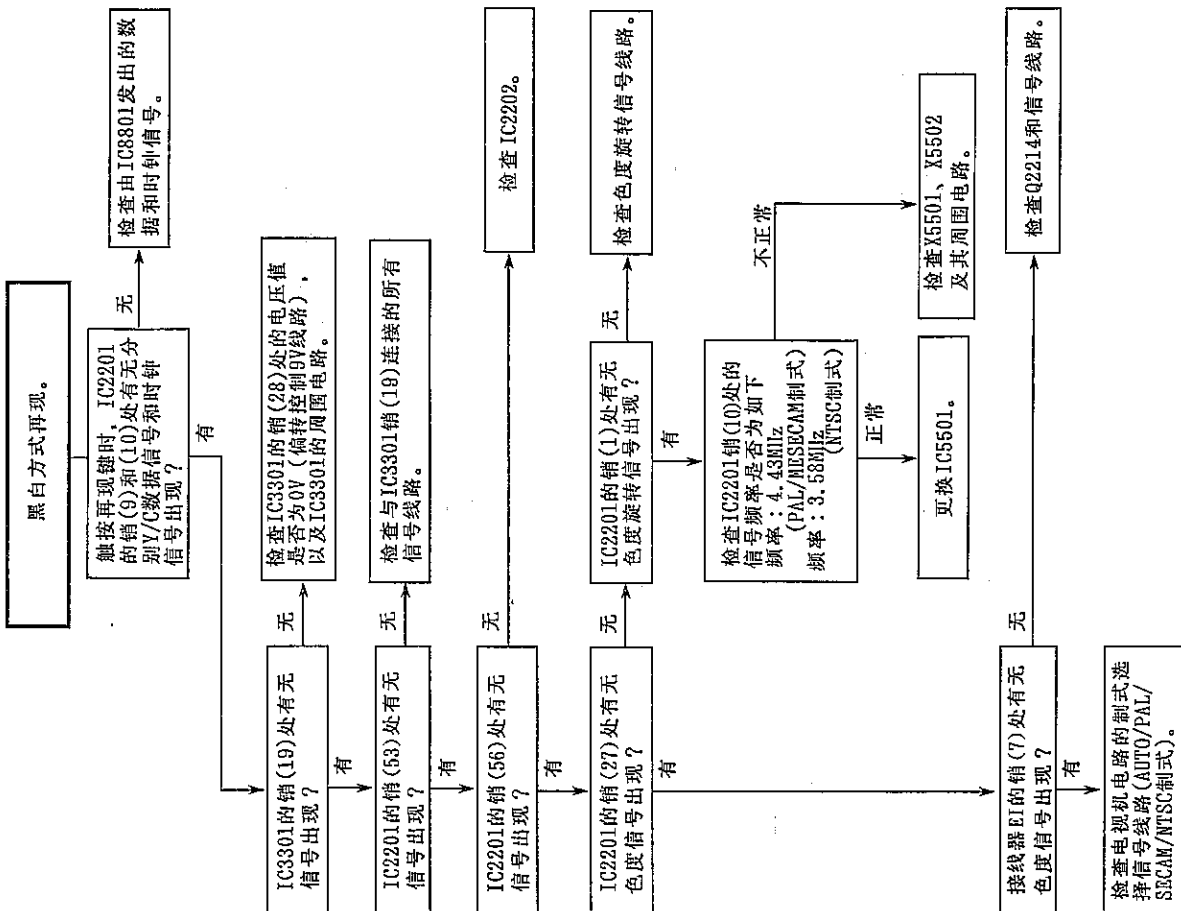
录像机再现状态（亮度）的故障检修

流程图1-15



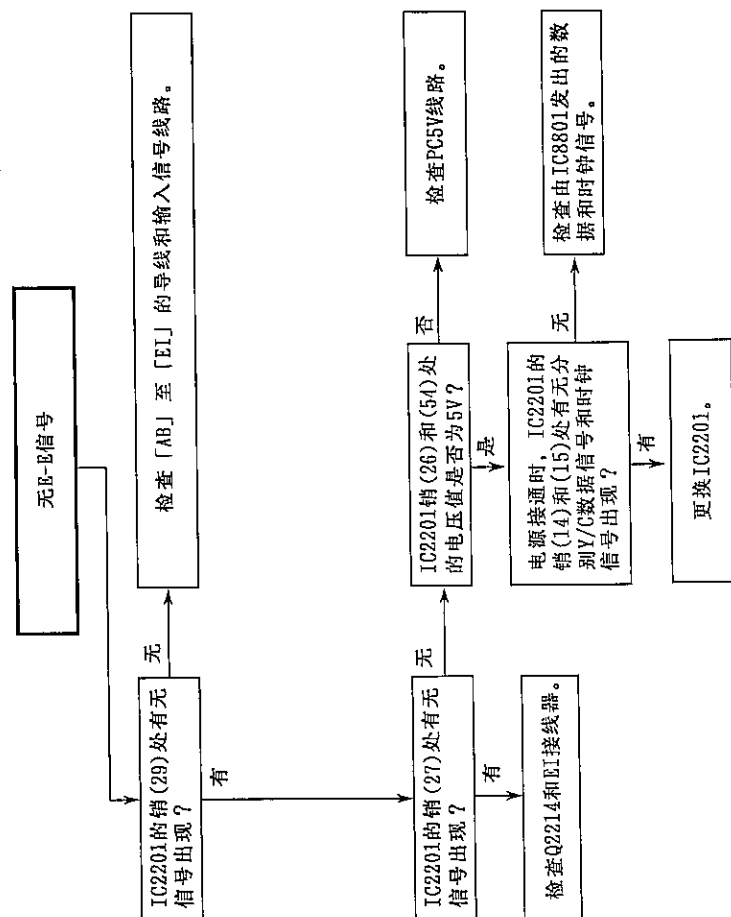
录像机再现状态（色度）的故障检修

流程图1-16



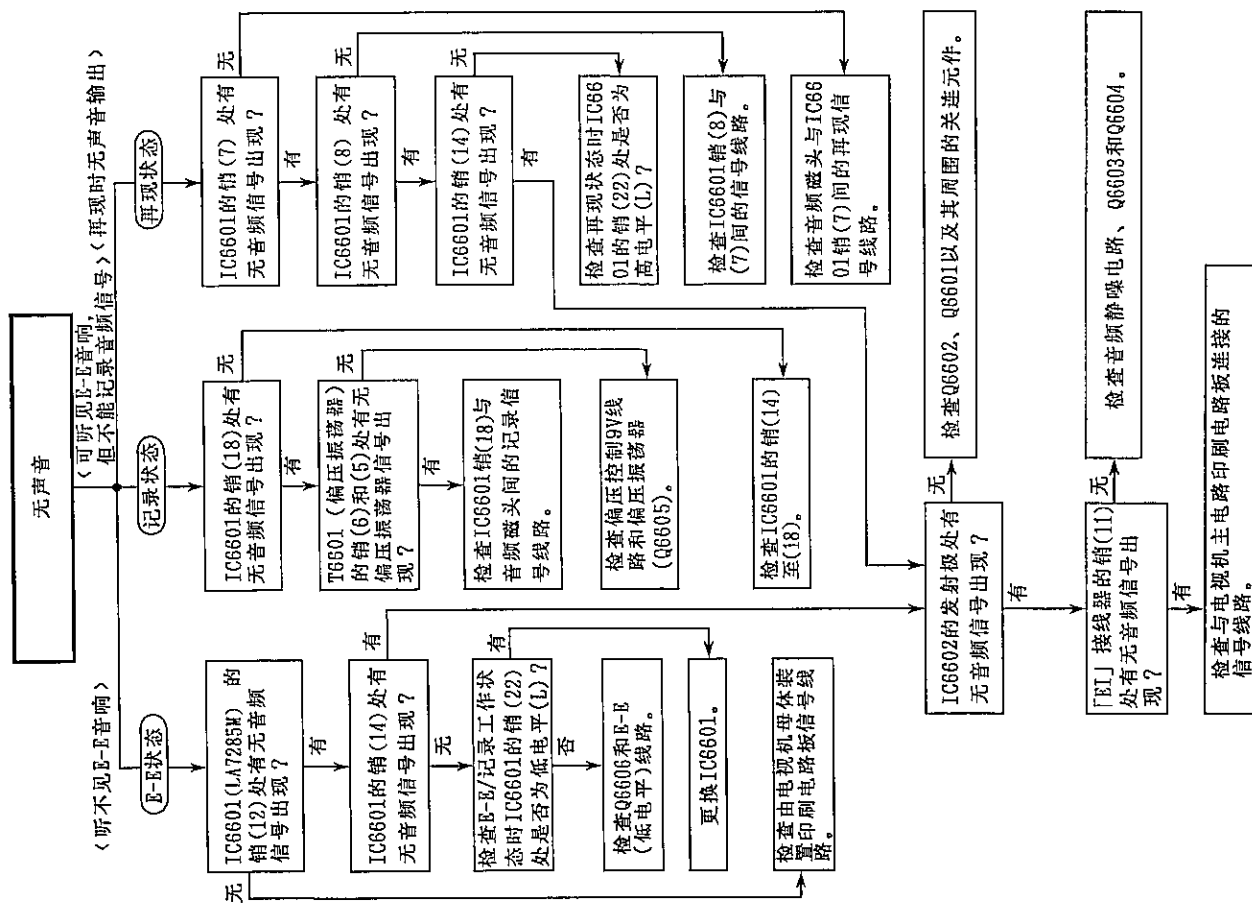
流程图1-17

录像机E-E方式的故障检修



流程图1-18

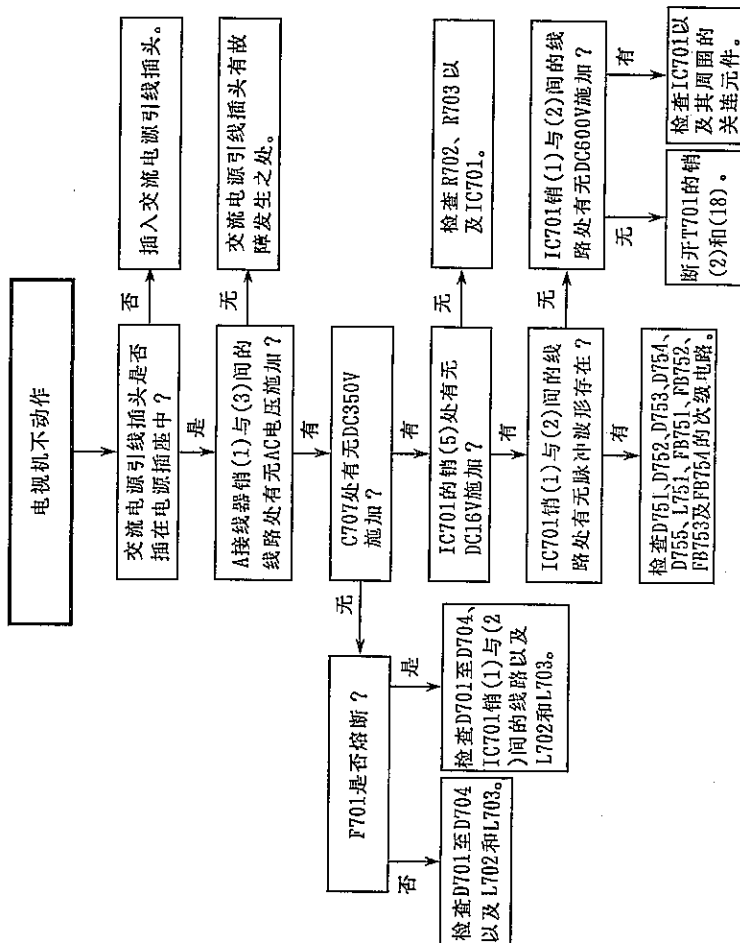
录像机音响装置的故障检修



电视机部分的故障检修

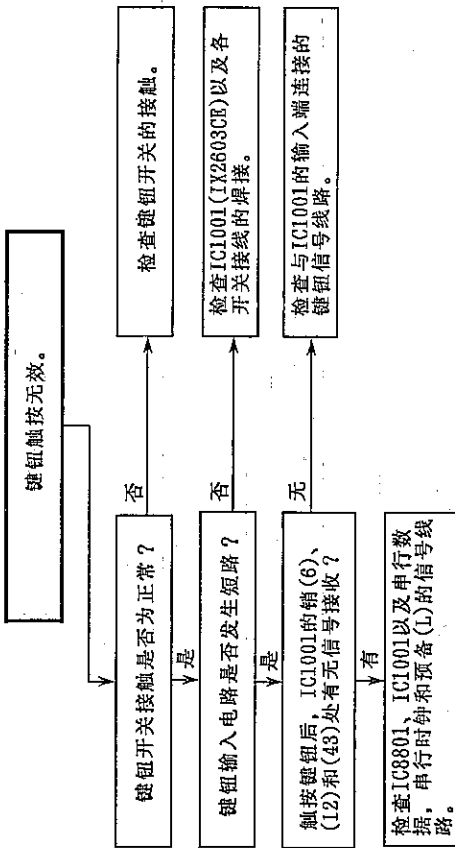
流程图 2-1

电视机的故障检修



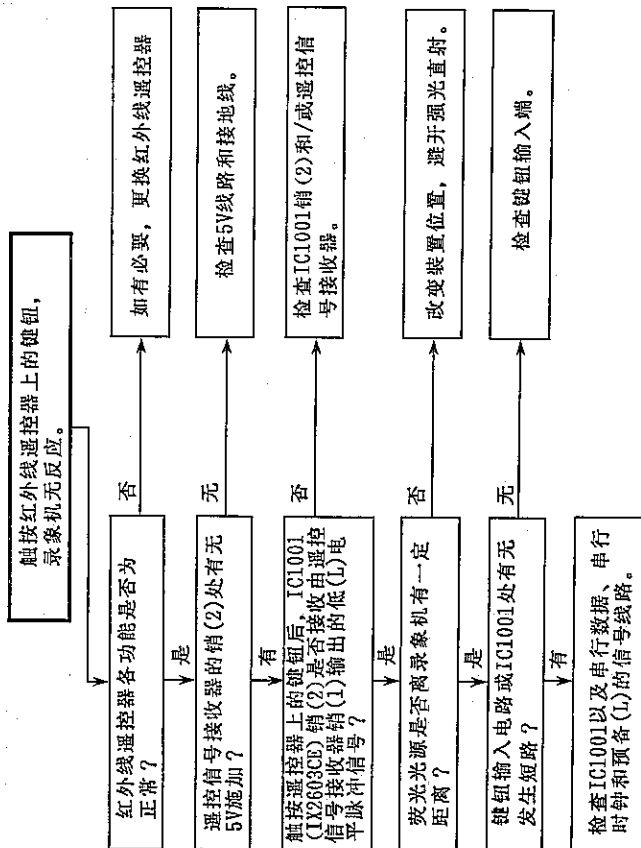
流程图 2-2

按钮输入电路的故障检修

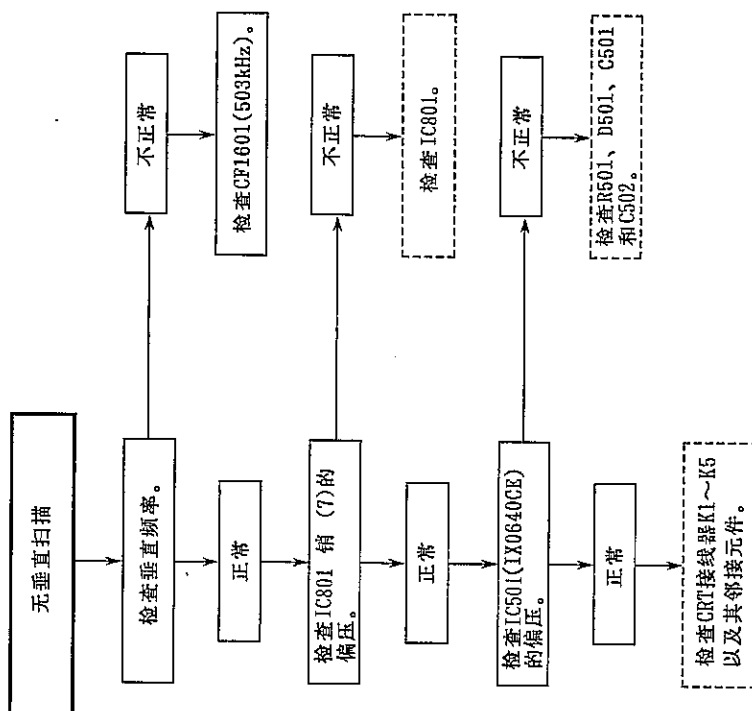


流程图 2-3

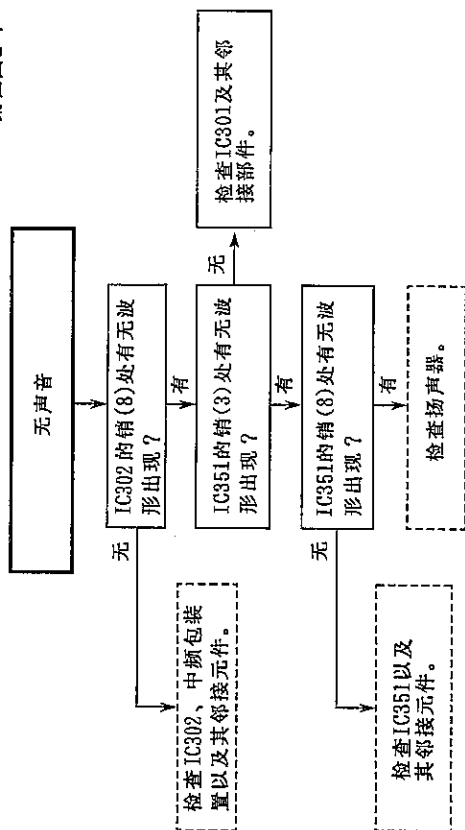
红外线遥控器的故障检修



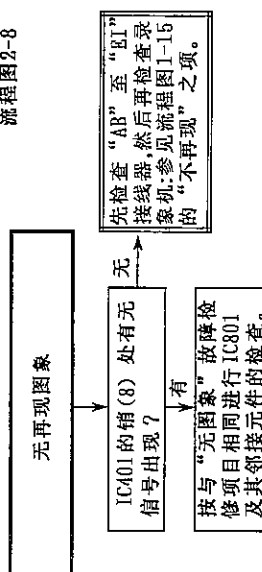
流程图 2-6



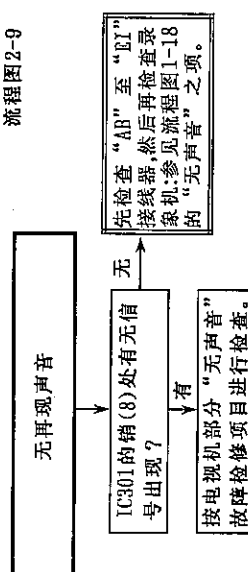
流程图 2-7



流程图 2-8

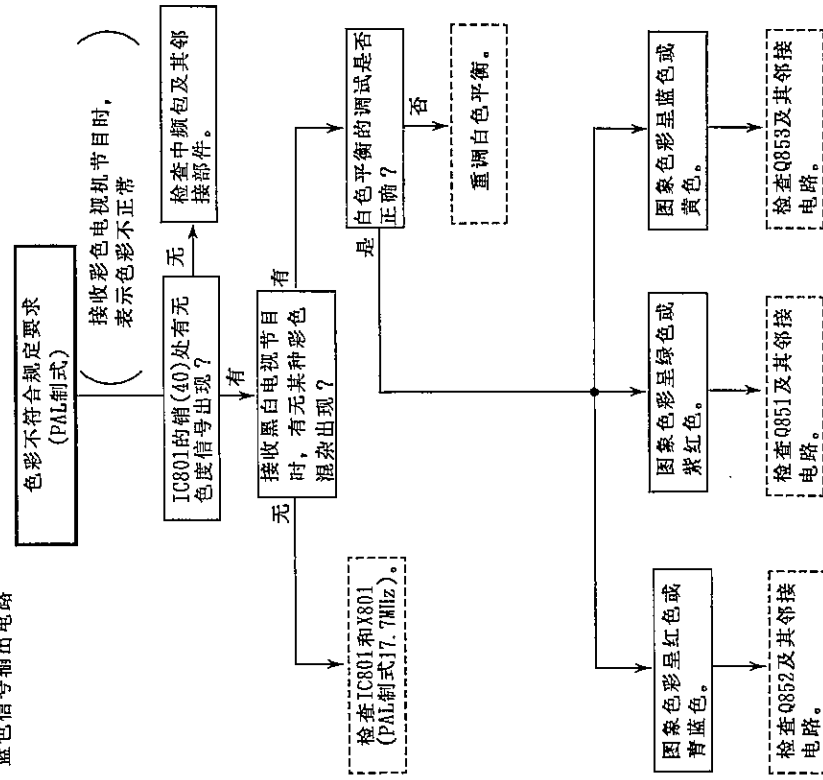


流程图 2-9



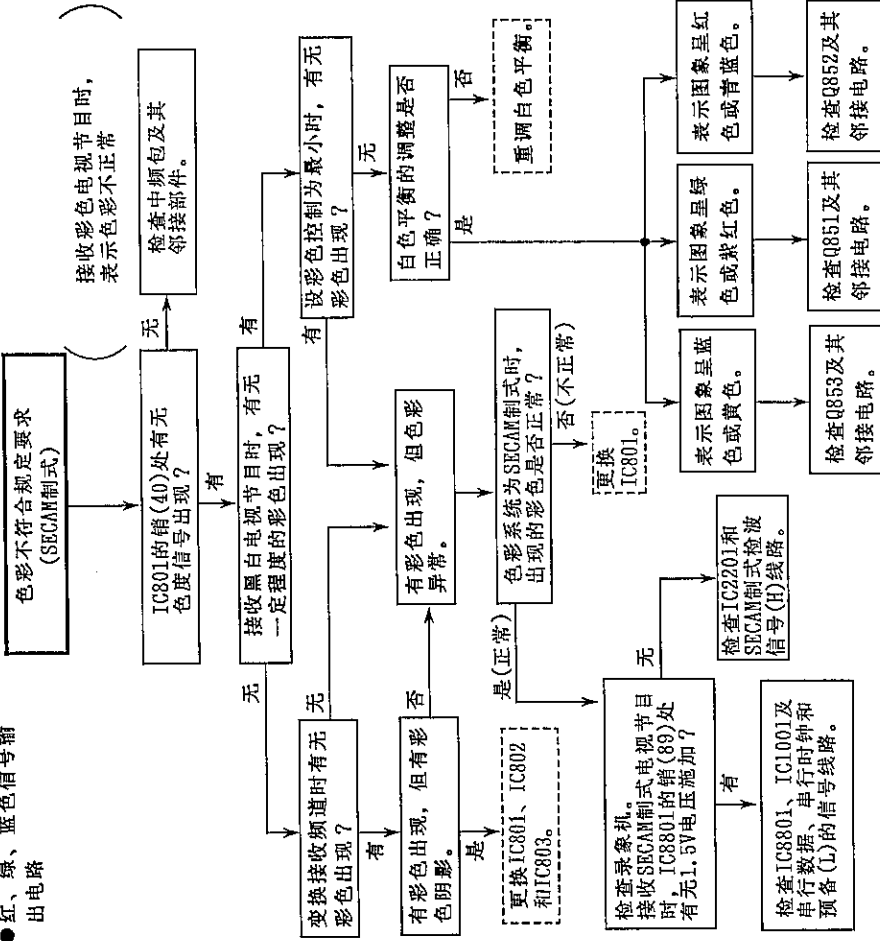
检查电路：
● IC801及其邻接电路
● 红、绿、蓝色信号输出电路

流程图2-10



检查电路：
● IC801及其邻接电路
● 红、绿、蓝色信号输出电路

流程图2-11

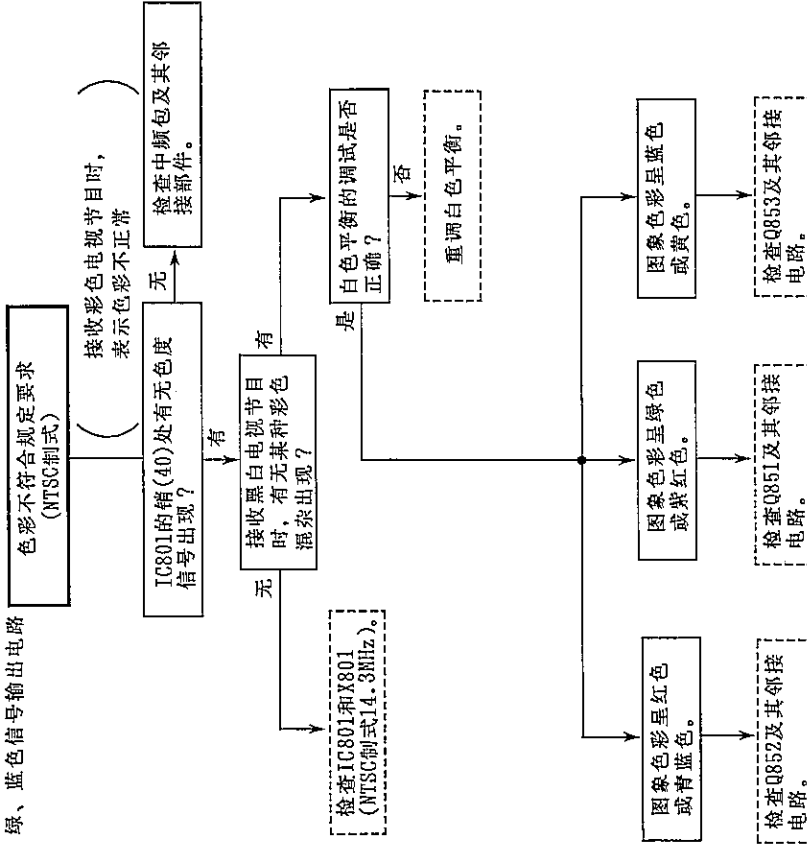


VT-1428M
VT-2128M

VT-1428M
VT-2128M

检查电路：
● IC801及其邻接电路
● 红、绿、蓝色信号输出电路

流程图2-12



OVERALL SCHEMATIC DIAGRAM

整体电路原理图

H

G

F

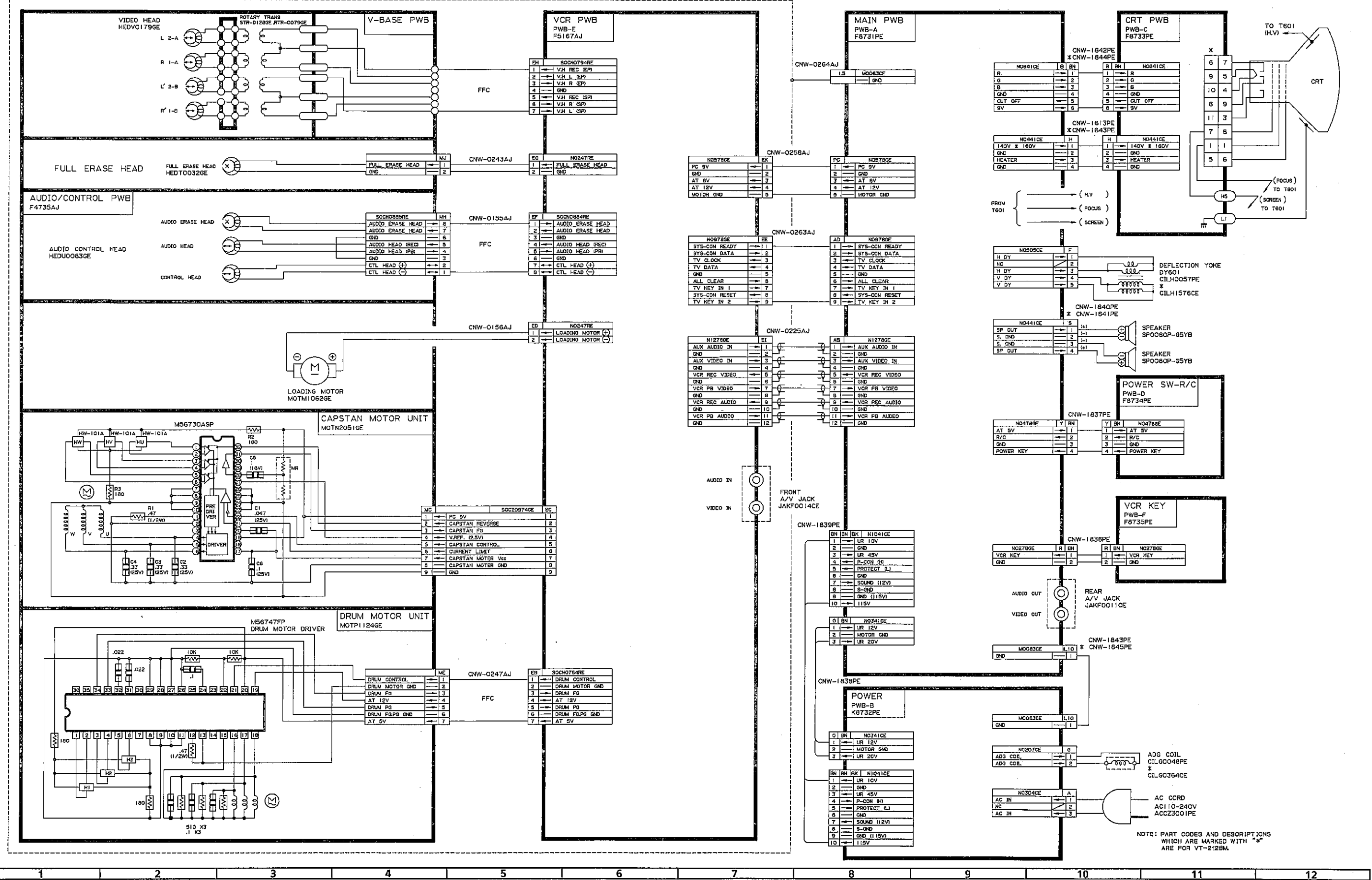
E

D

C

B

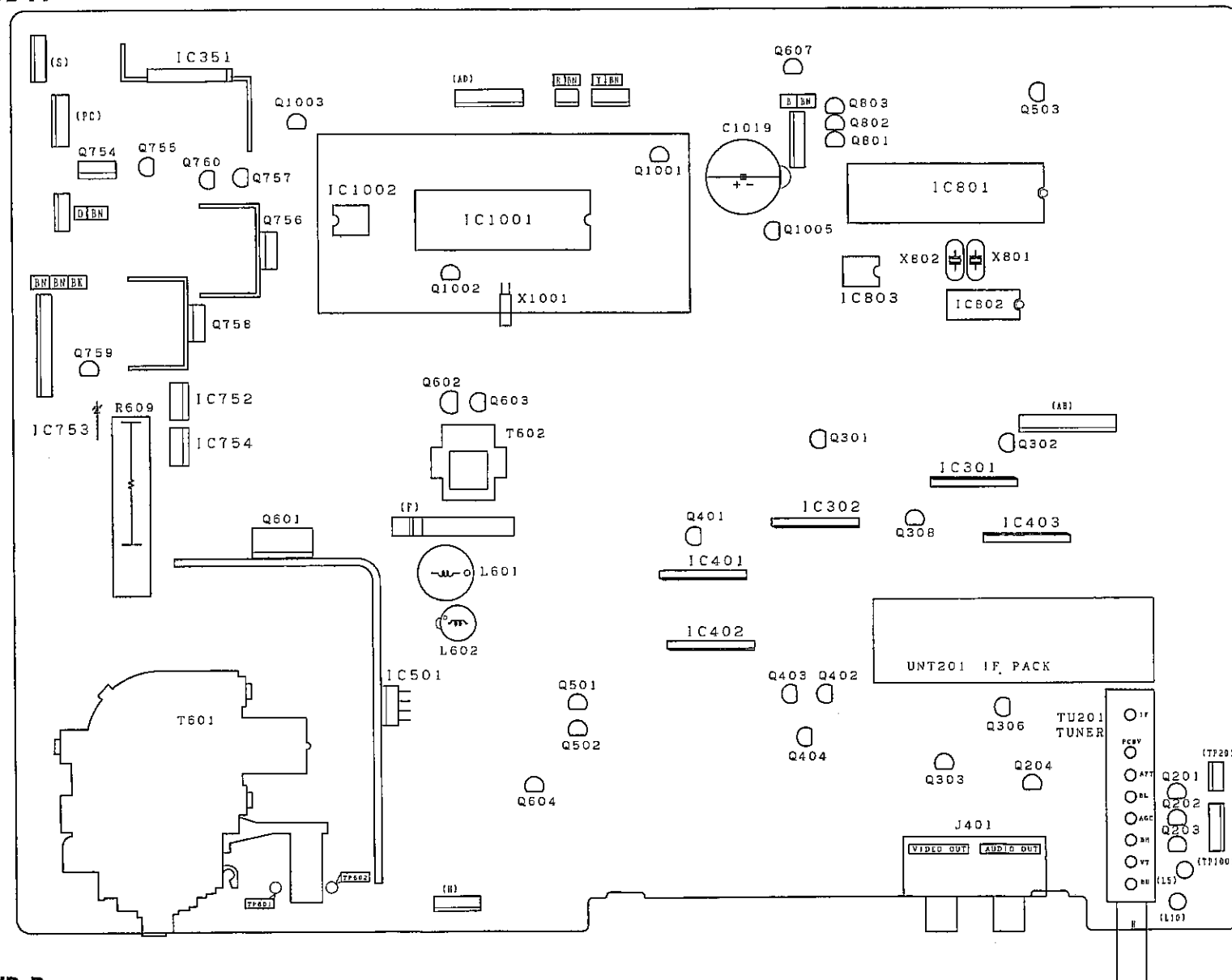
A



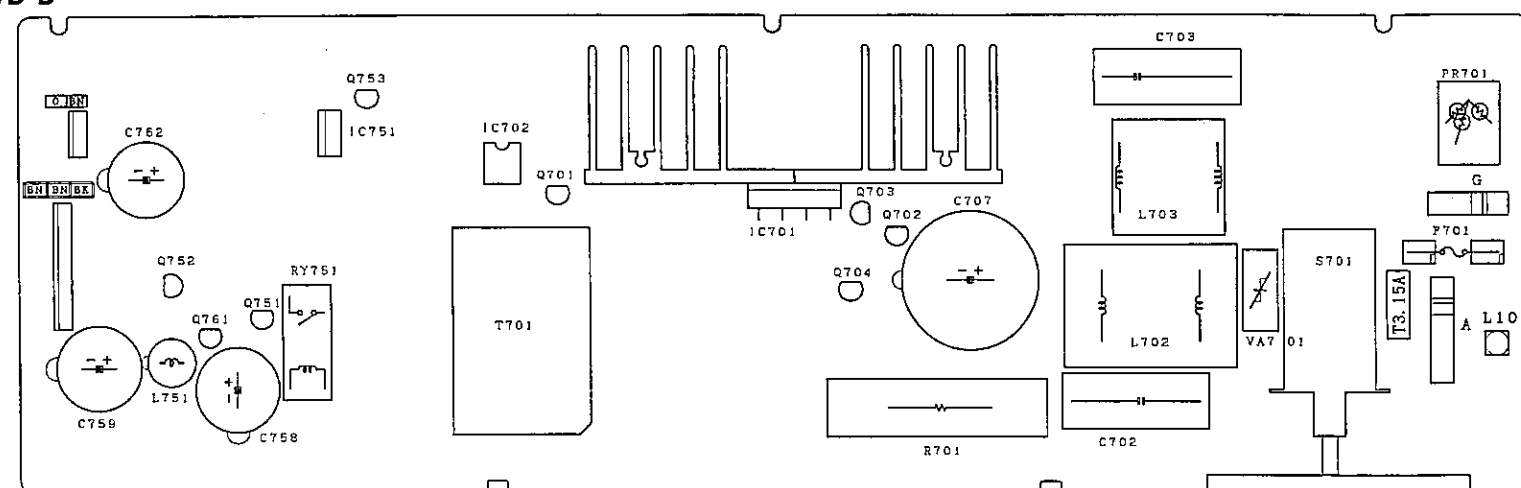
CHASSIS LAYOUT OF TV SECTION

电视机部分的机芯底盘电路布置

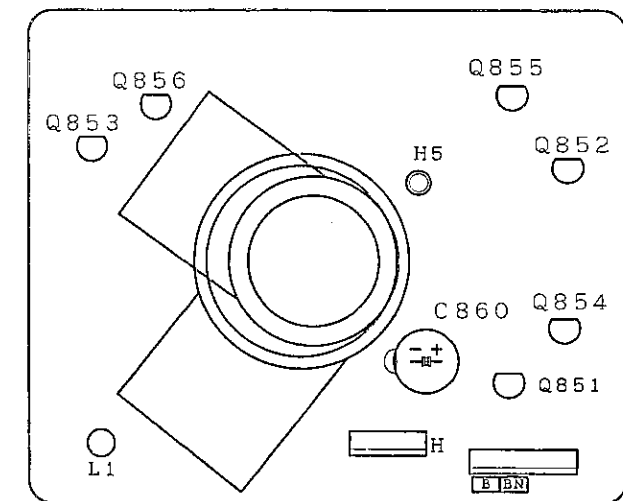
PWB-A



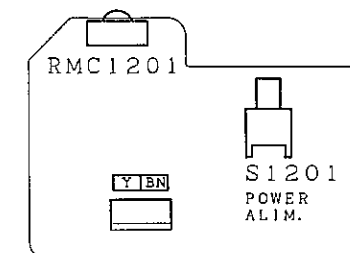
PWVB-B



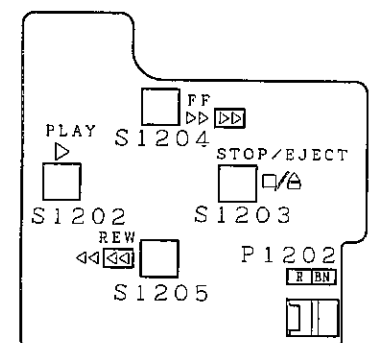
PWB-C



PWB-D

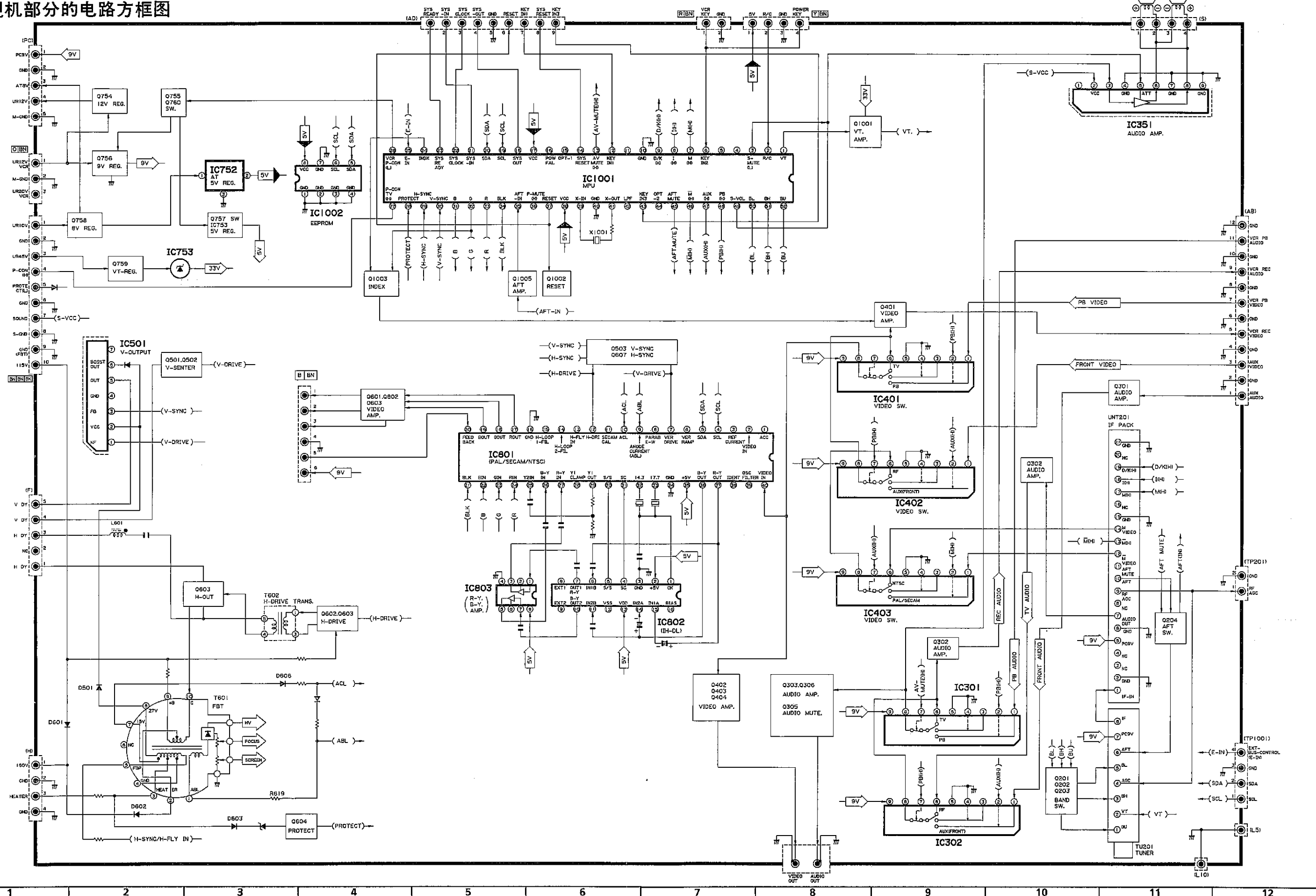


PVWB-F



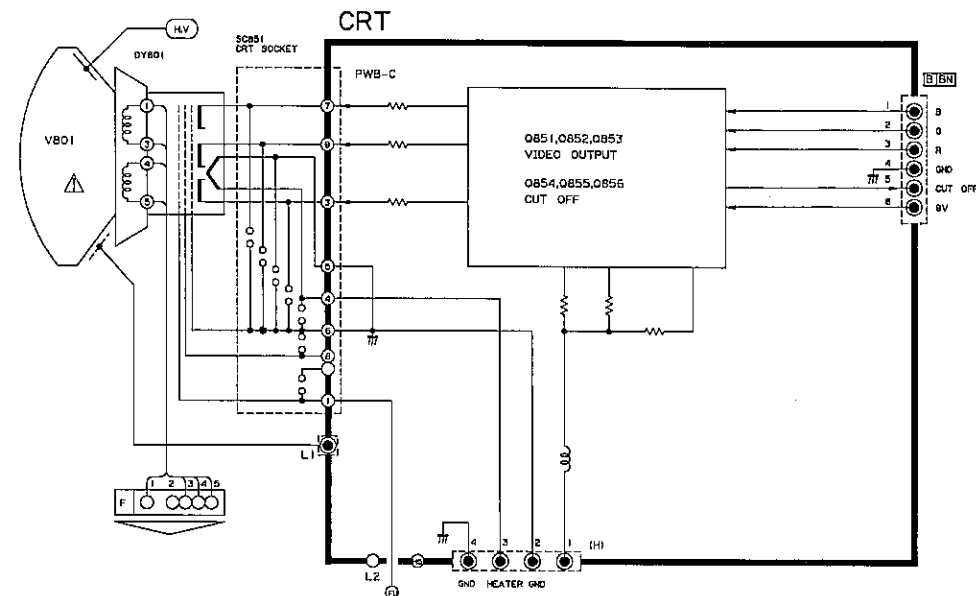
BLOCK DIAGRAM OF TV SECTION

电视机部分的电路方框图

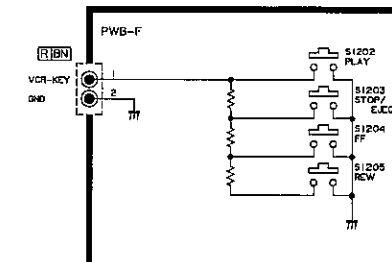


BLOCK DIAGRAM OF TV SECTION

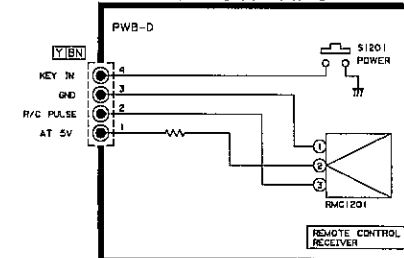
电视机部分的电路方框图



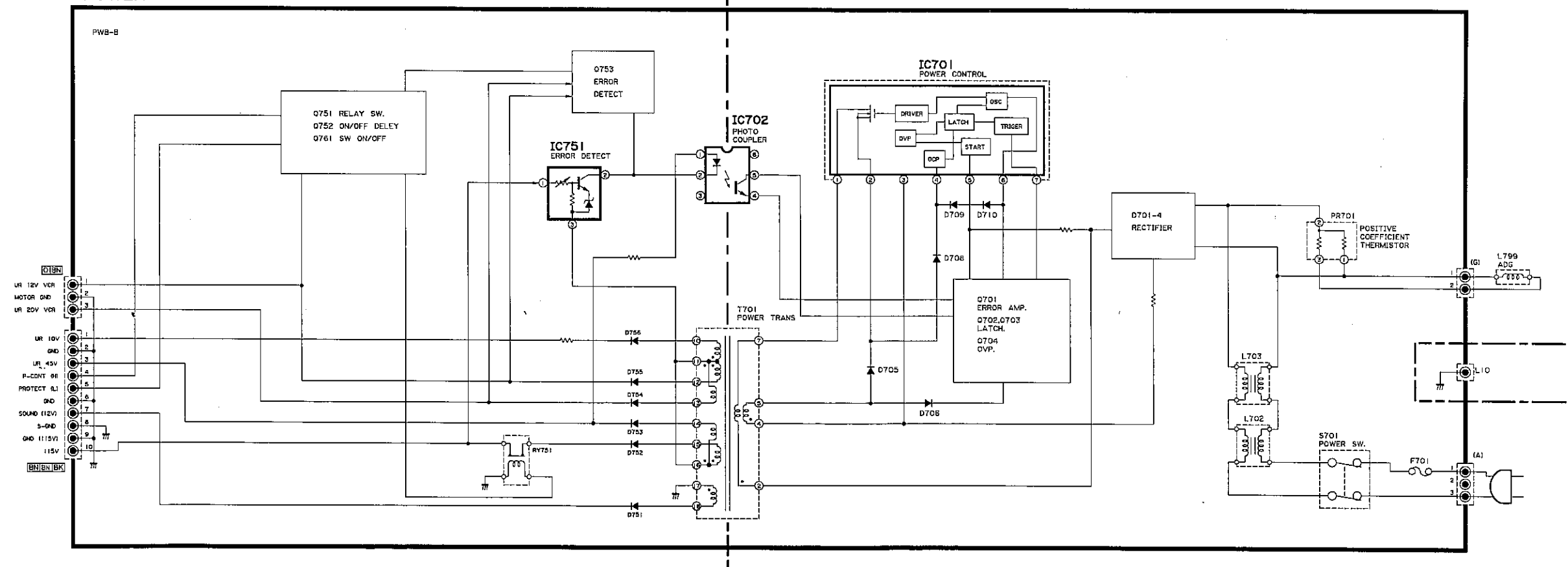
VCR-KEY



POWER SW-R/C



POWER




DESCRIPTION OF TV SECTION SCHEMATIC DIAGRAM

电路原理图的说明

SAFETY NOTE:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:

BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET. PARTS MARKED WITH "△" () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (- - - - -) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

CAUTION:

This circuit diagram is original one, therefore there may be a slight difference from yours.

NOTES:

1. The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = 1Meg ohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. The unit of capacitance "F" is omitted. ($\mu = \mu F$, P = $\mu\mu F$).
4. The values in parentheses are the ones in the PB mode; the values without parentheses are the ones in the REC mode.

VOLTAGE MEASUREMENT CONDITIONS:

1. DC voltages are measured between points indicated and chassis ground by VTVM, with AC 110~240V, 50/60Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.
2. Voltages are measured with 10000 μV B&W or colour signal.


WAVEFORM MEASUREMENT CONDITIONS:

10000 μV , 87.5% modulated colour bar signal is fed into tuner.

安全注意事项:

1. 更换电路元件时, 必须先拔出电源插头, 切断电源。
2. 底盘电路处工作状态时, 应注意电路中半导体元件散热片高电位可能导致的电击危险。

安全使用注意要点:

为保证本机的安全以及持久、正常的使用, 电路元件必须使用规定的纯正正牌元件。标有"△" () 的元件为对保证本机长久的安全使用起重要作用的元件。更换这些元件时, 必须使用规定的纯正正牌元件, 以保证本机的使用安全以及使用寿命。

维修注意事项:

电路中由粗断续线(- - - - -)所围部分为与交流电源直接相接线路。对这些部分的线路进行维修时, 应于本机与交流电源之间用隔离变压器相接, 以防止不意的电击之危险。

注意:

这里的电路原理图均为最初设计原图, 与您的机器的电路原理图可能有不同之处。

注:

1. 电阻单位为 Ω (欧姆), 图中省略。
(K = 1000 Ω , M = 1000000 Ω)
2. 除另加标记者, 所有电阻之功率均为1/8W。
3. 电容单位为"F" (法拉), 图中省略。
($\mu = 1 \times 10^{-6} F$, P = $1 \times 10^{-12} F$)
4. 括号中的数值为再现工作状态时之数值, 括号外的数值为记录工作状态时之数值。

电压测定条件:

1. 除另加注明者, 直流电压指于本机加110-240V, 50/60Hz交流电源, 设所有控制调节为标准设定, 用电子管电压表(VTVM)于测点与底盘接地端之间所测电压值。
2. 交流电压由10,000 μV 的黑白或彩色信号所测。

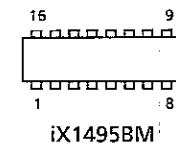
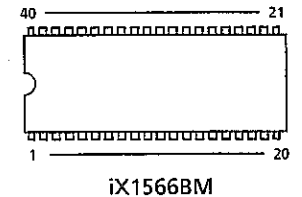
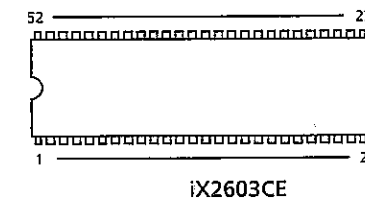
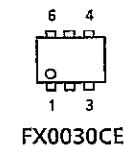
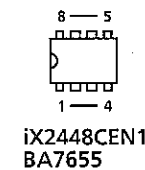
波形测定条件:

向调谐器输入10,000 μV , 87.5%的调制彩条信号加以测定。

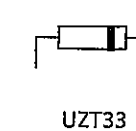
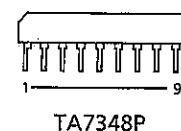
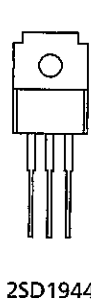
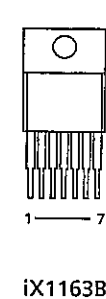
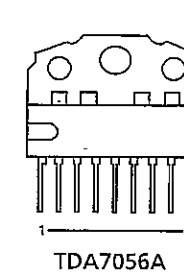
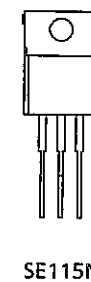
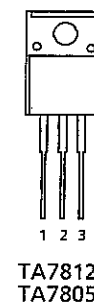
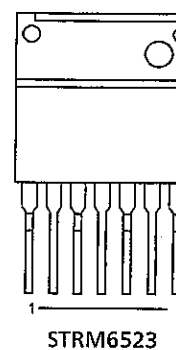
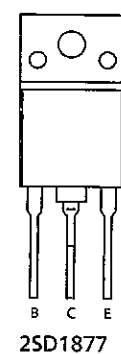
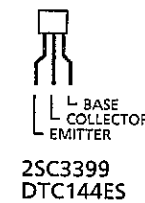
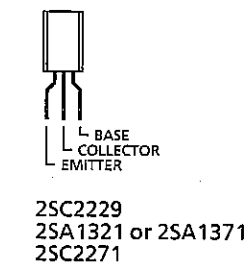
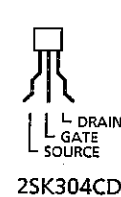
SOLID STATE DEVICE BASE DIAGRAM

固体器件基座图

TOP VIEW/ 俯视图

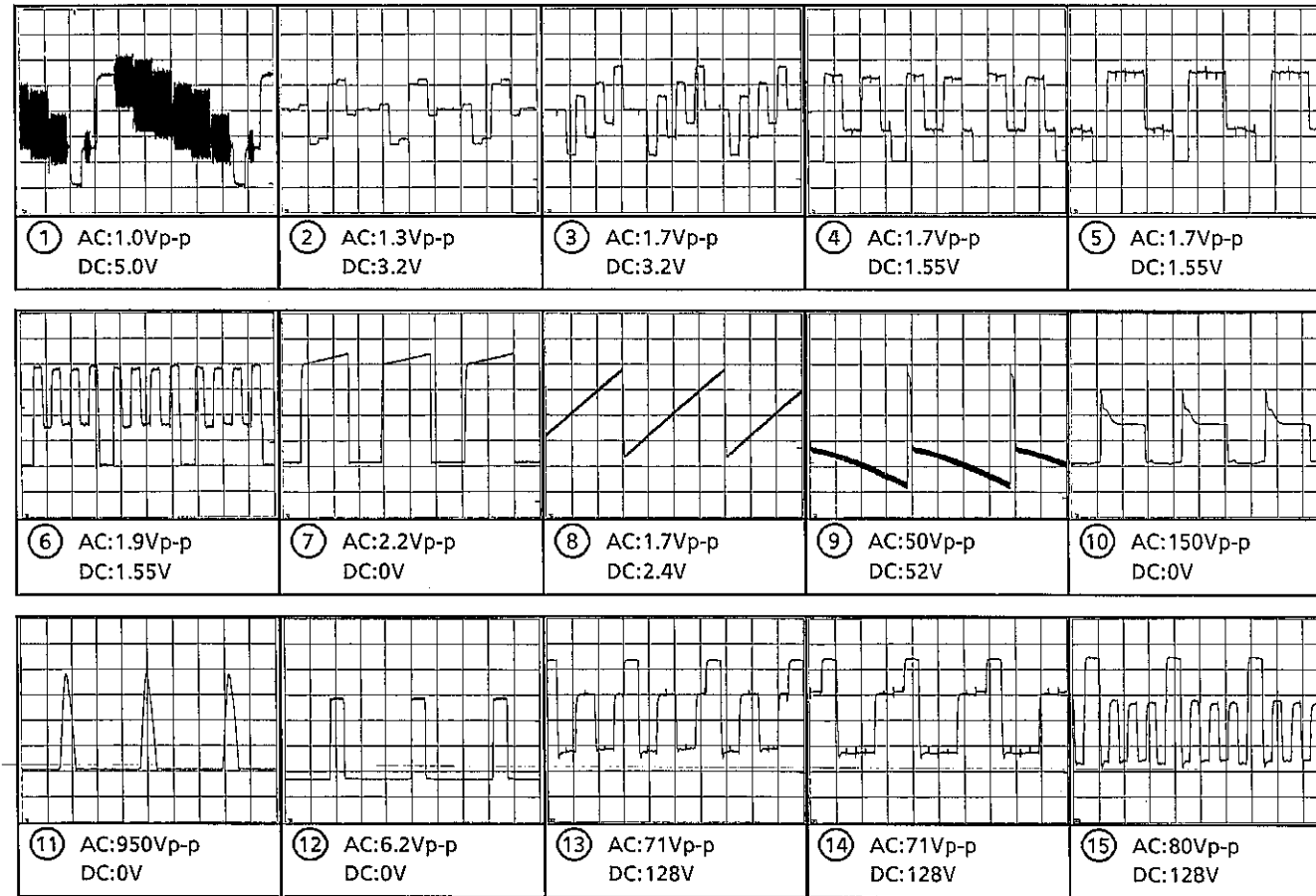


SIDE VIEW/ 侧视图



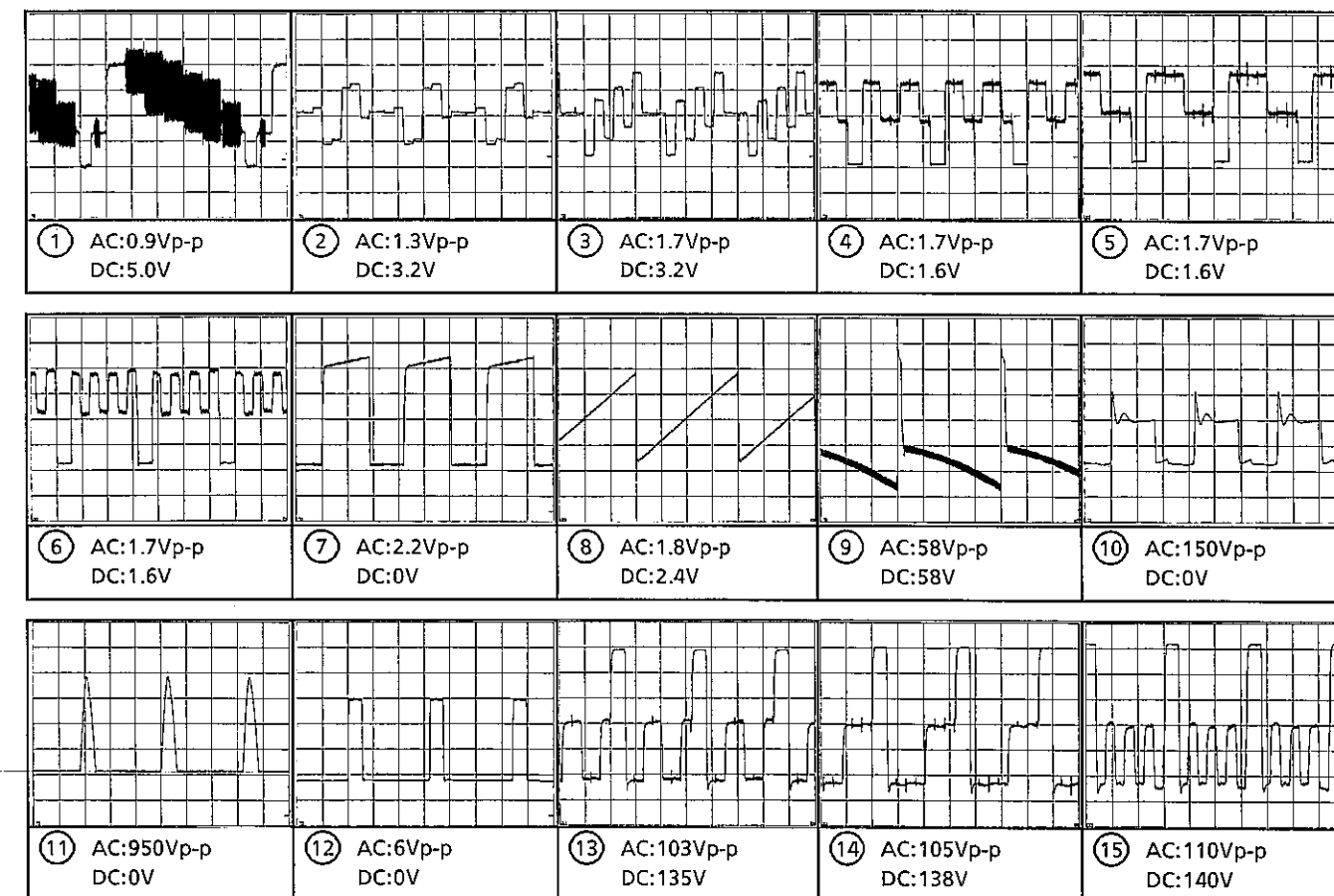
WAVEFORMS (VT-1428M)

波形图 (VT-1428M型)

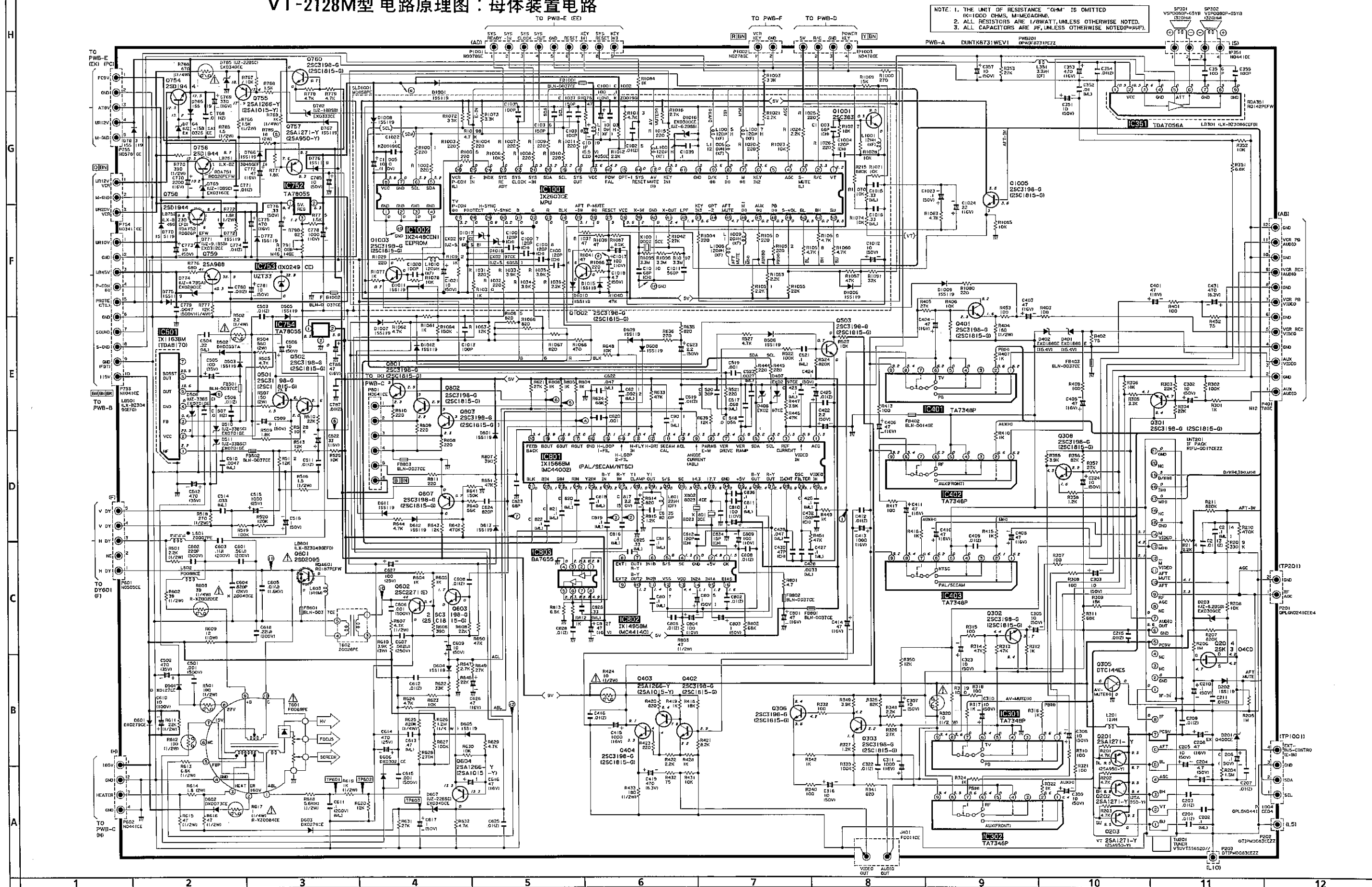


WAVEFORMS (VT-2128M)

波形图 (VT-2128M型)

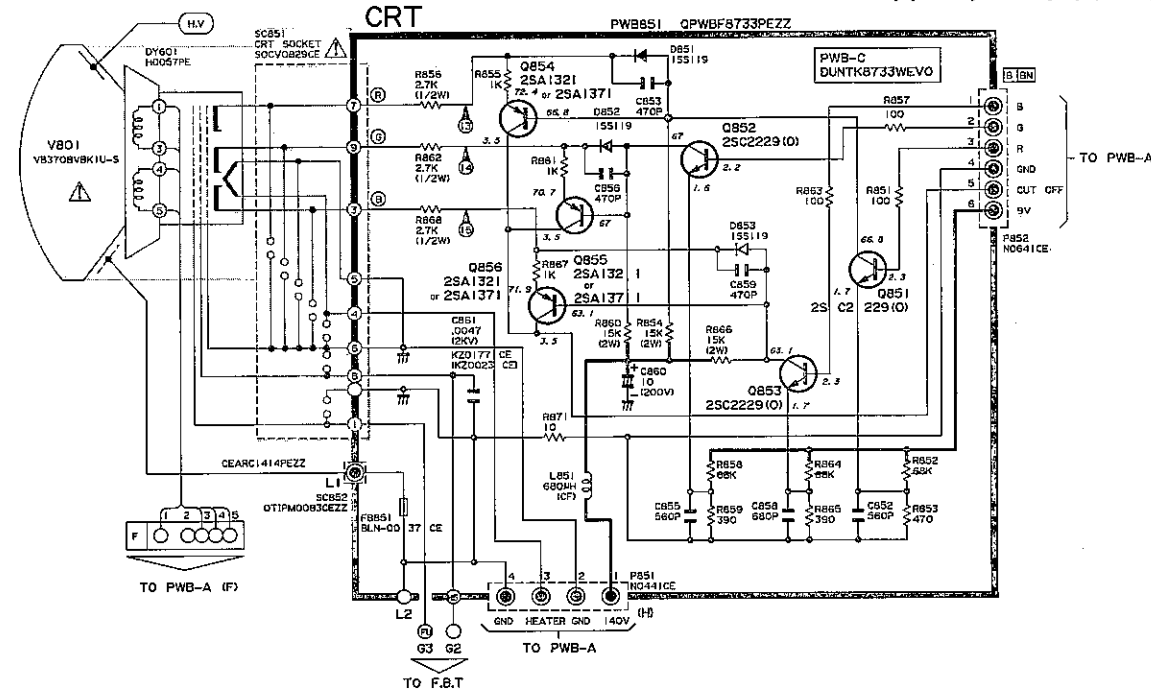


MODEL VT-2128M SCHEMATIC DIAGRAM: Mother Unit
VT-2128M型 电路原理图：母体装置电路

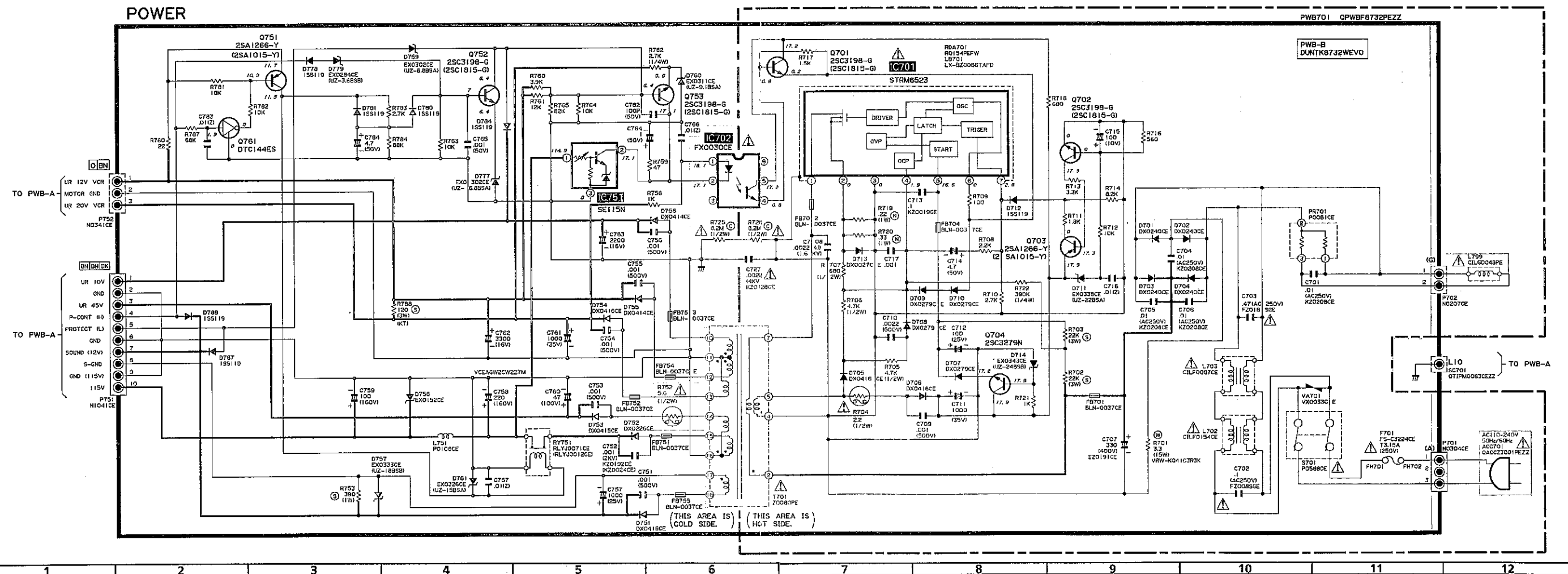
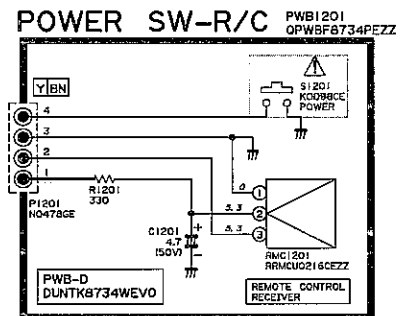
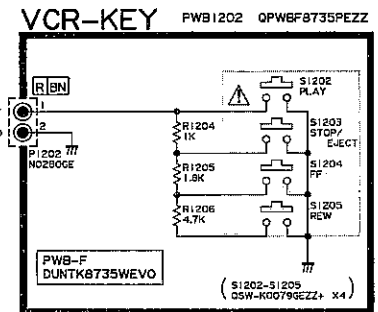


MODEL VT-1428M SCHEMATIC DIAGRAM: CRT Socket, Power, VCR-Key and Power SW, R/C Unit

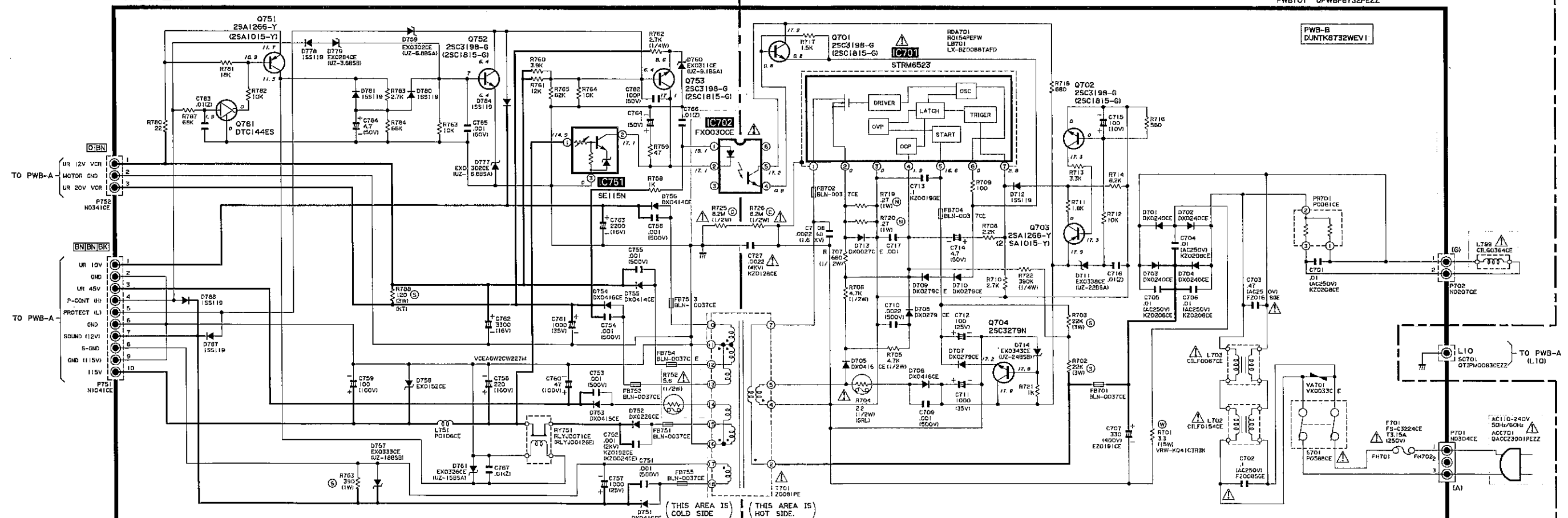
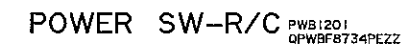
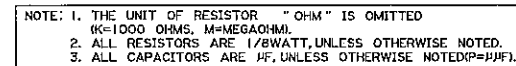
VT-1428M型 电路原理图: CRT管座、电源装置、录象机键钮开关、电源开关及遥控器电路



NOTE: 1. THE UNIT OF RESISTOR "OHM" IS OMITTED
(K=1000 OHMS, M=MEG OHMS).
2. ALL RESISTORS ARE 1/8WATT, UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE .01, UNLESS OTHERWISE NOTED (P=POLYMER).

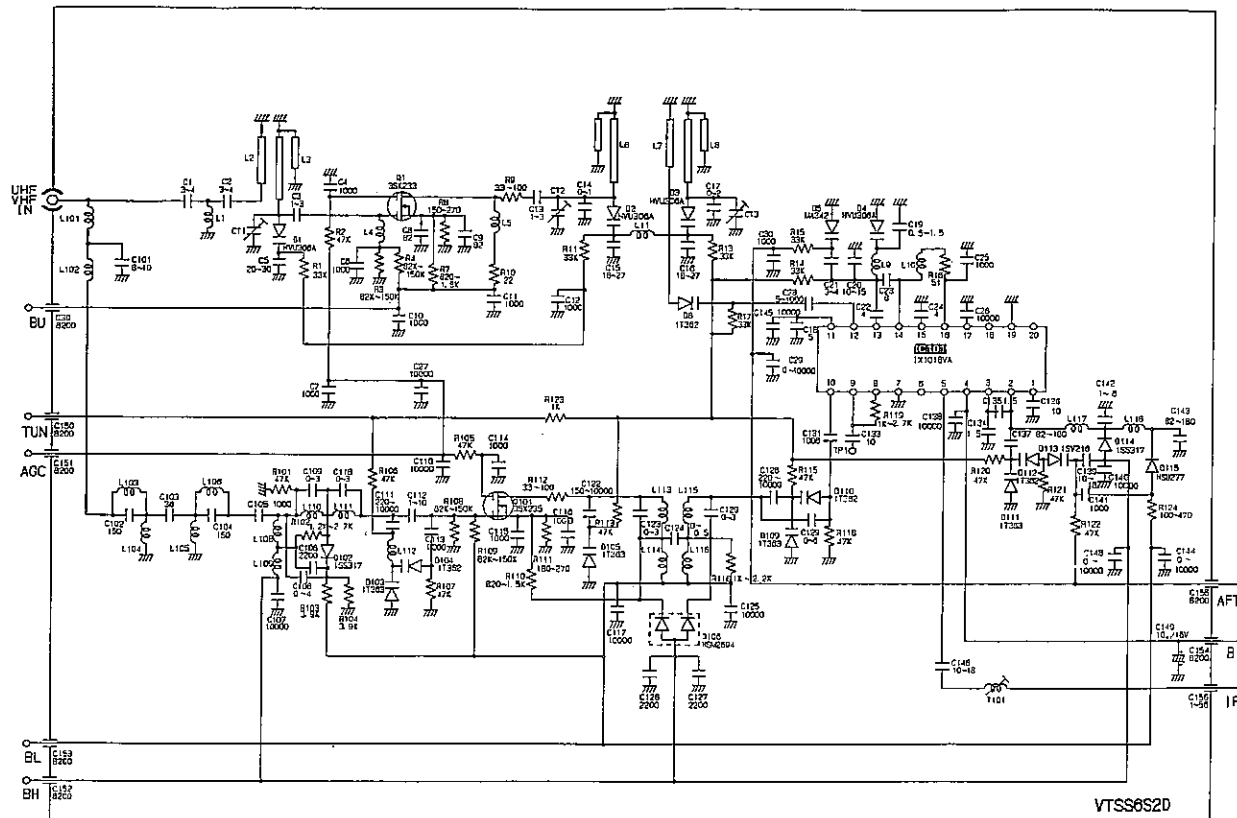


VT-2128M型电路原理图: CRT管座、电源装置、录象机按钮开关、电源开关及遥控器电路

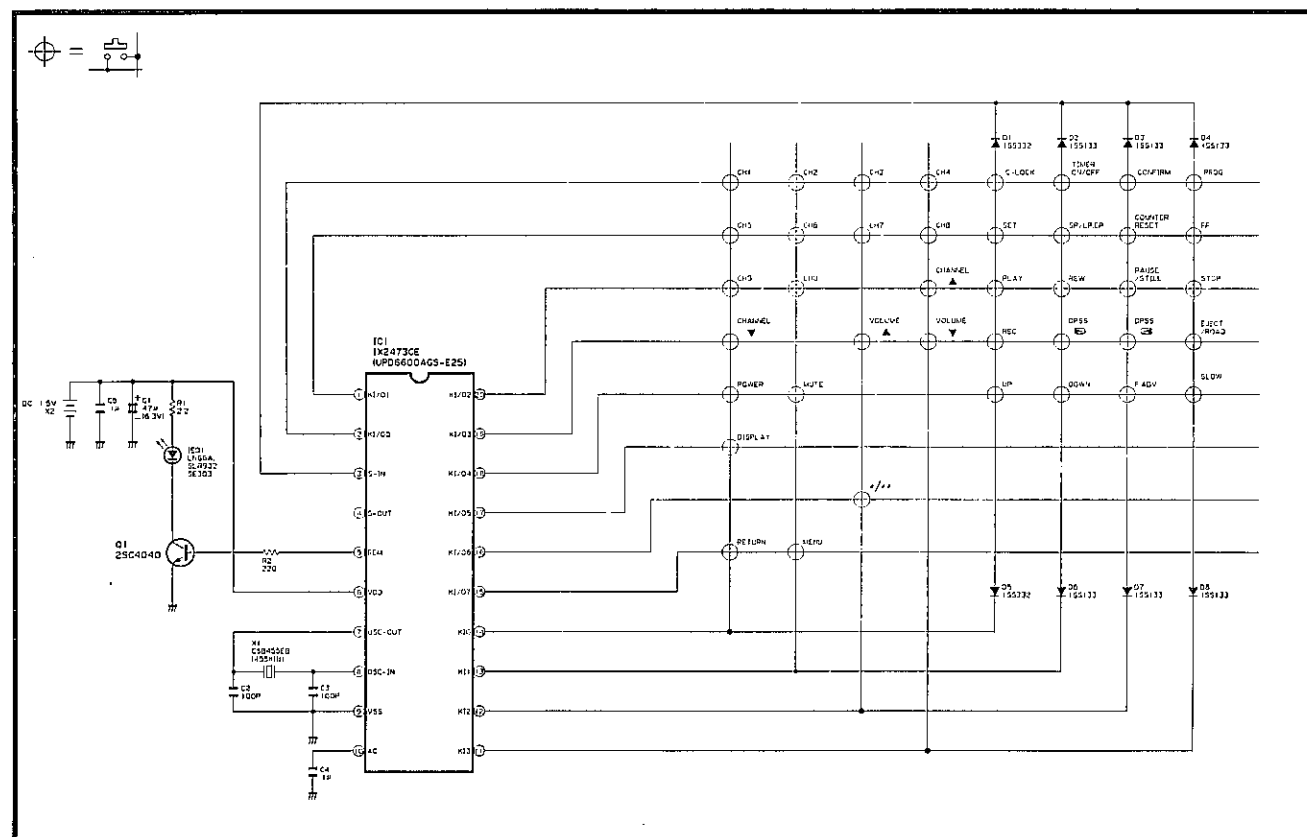


Tuner 调谐器

△VTUVTSS6S2D//



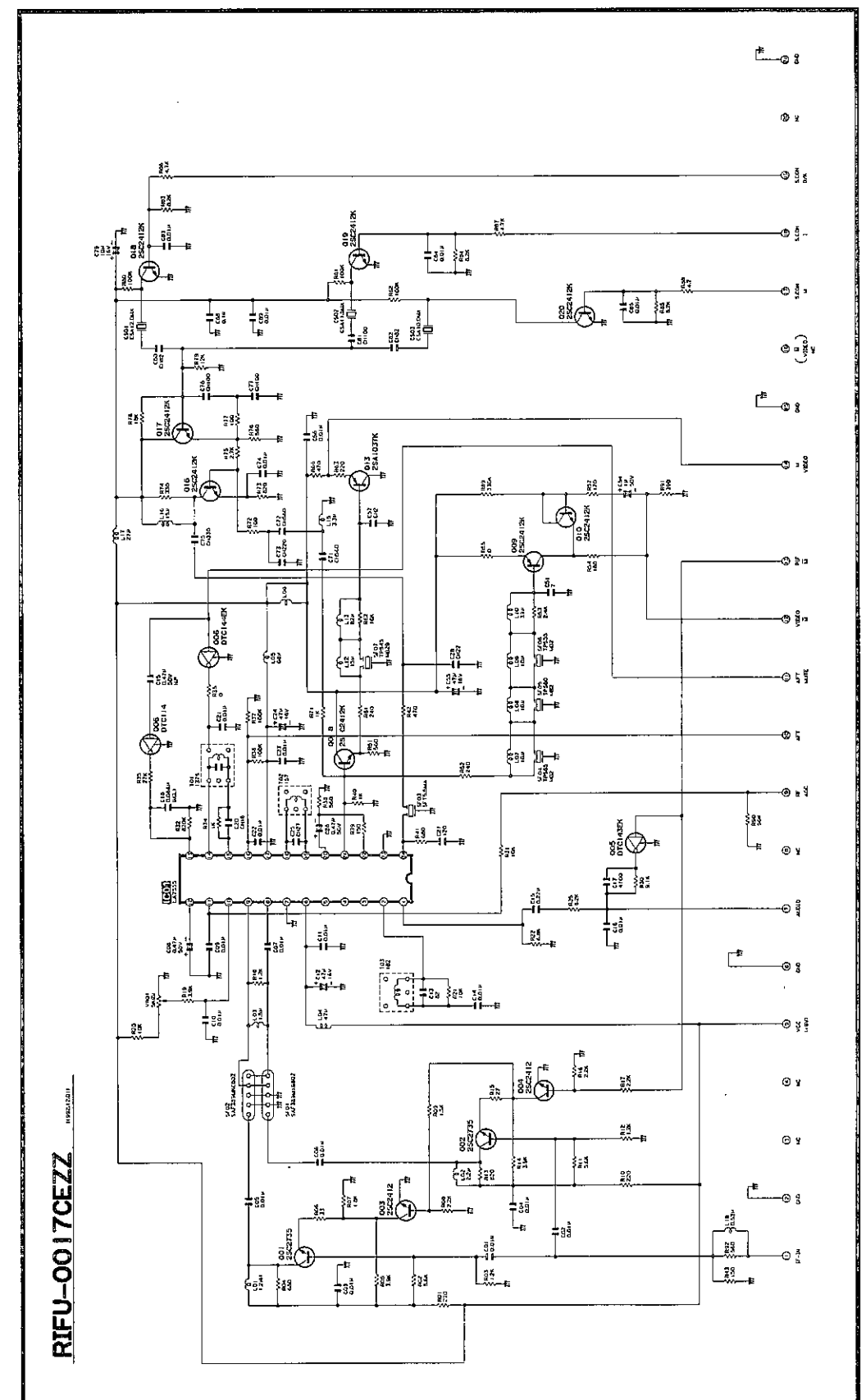
Infrared Remote Control Unit 红外线遥控器电路	RRMCG1046PESA
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IF-Pack Unit

中频包电路

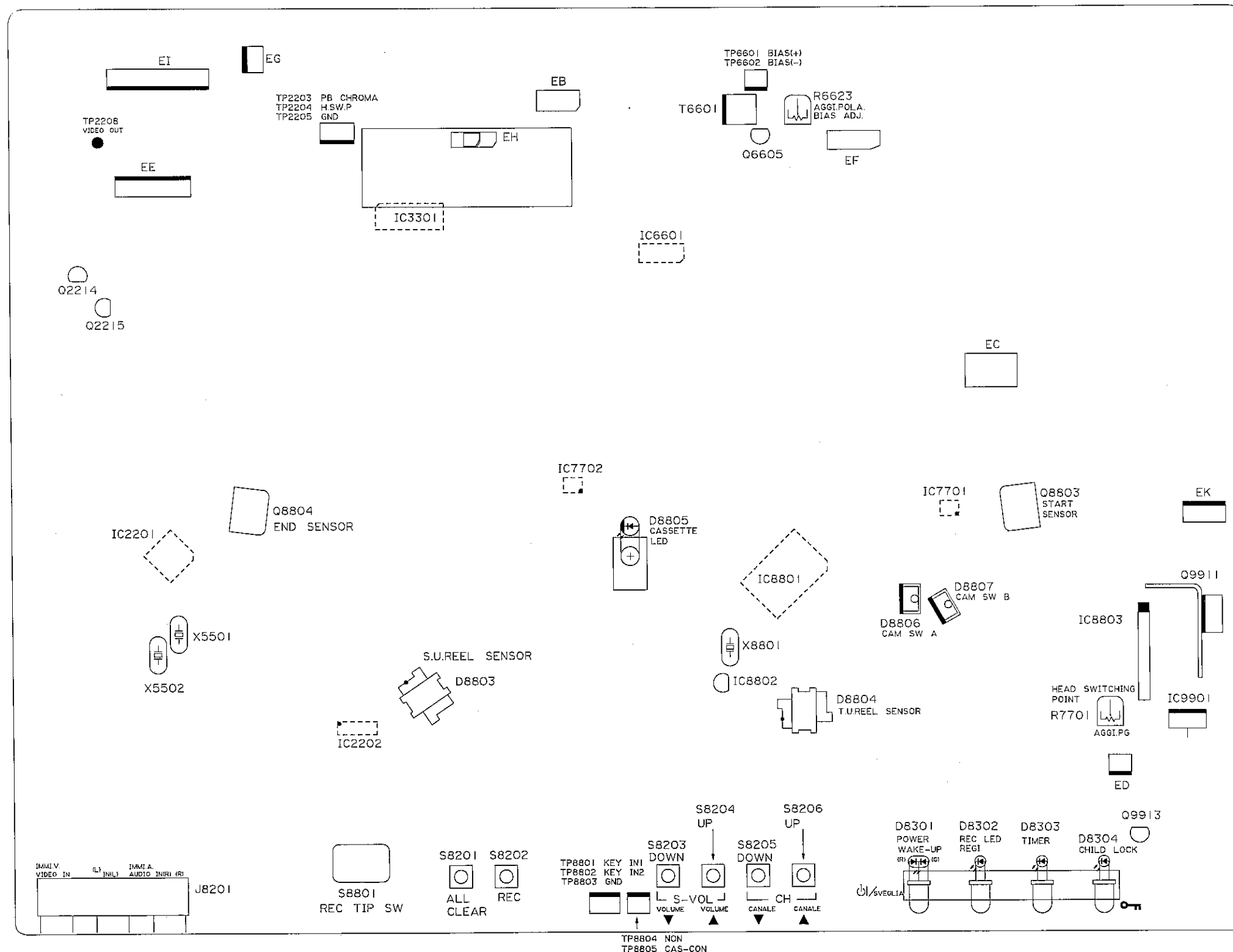
RiFU-0017CEZZ



CHASSIS LAYOUT OF VCR SECTION

录象机部分的机芯底盘电路布置

PWB-E

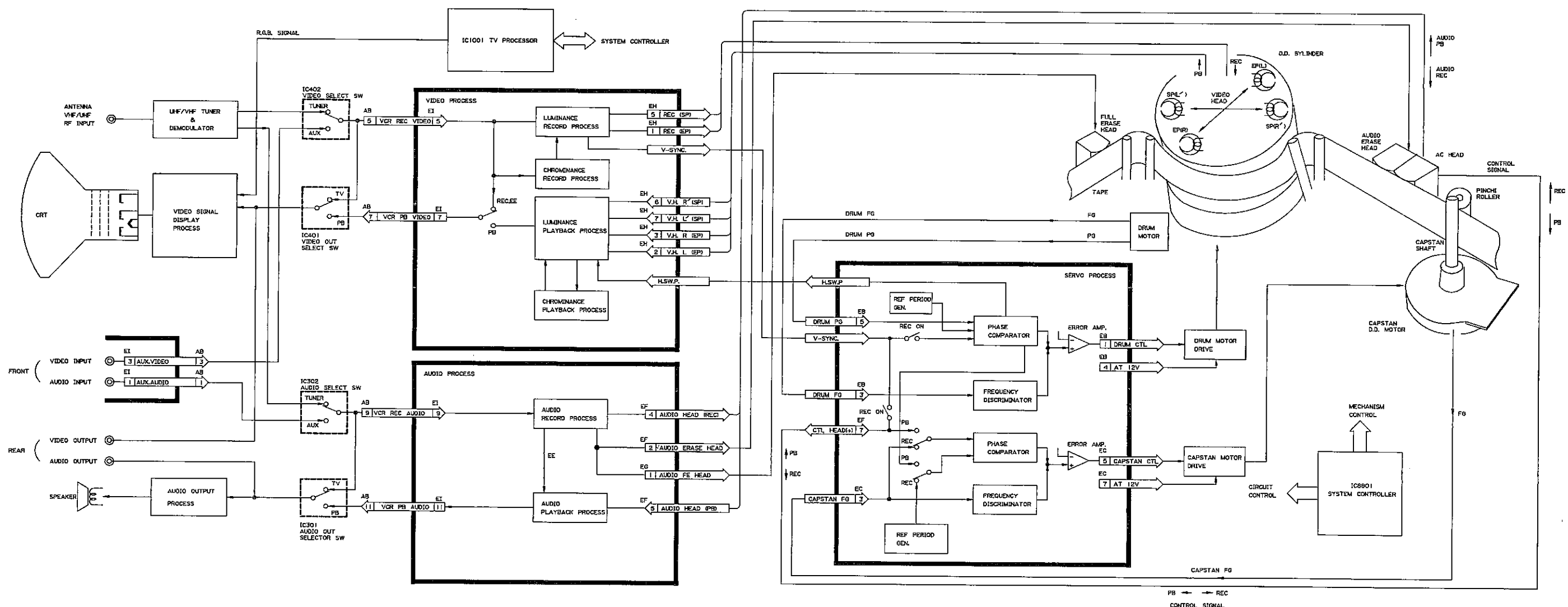


BLOCK DIAGRAM OF VCR SECTION

录像机部分的电路方框图

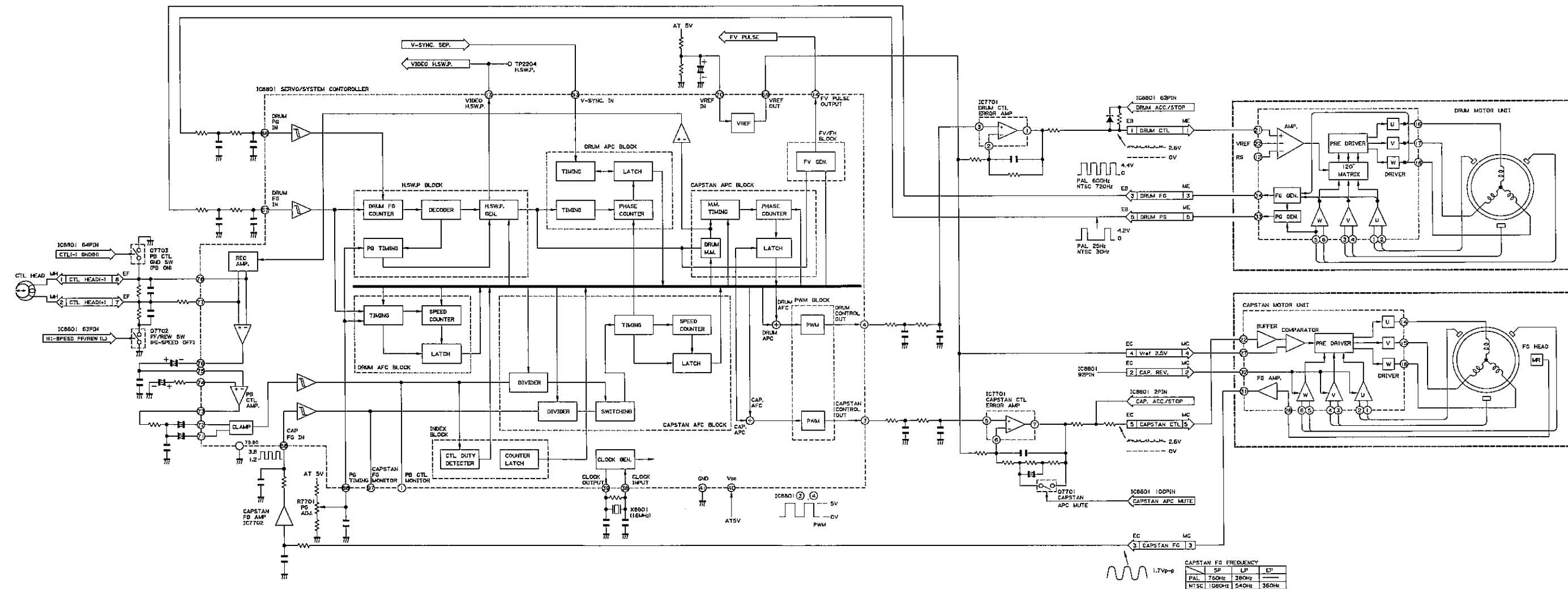
OVERALL BLOCK DIAGRAM

整体电路方框图



录象机部分的电路方框图

■ 伺服系统电路方框图



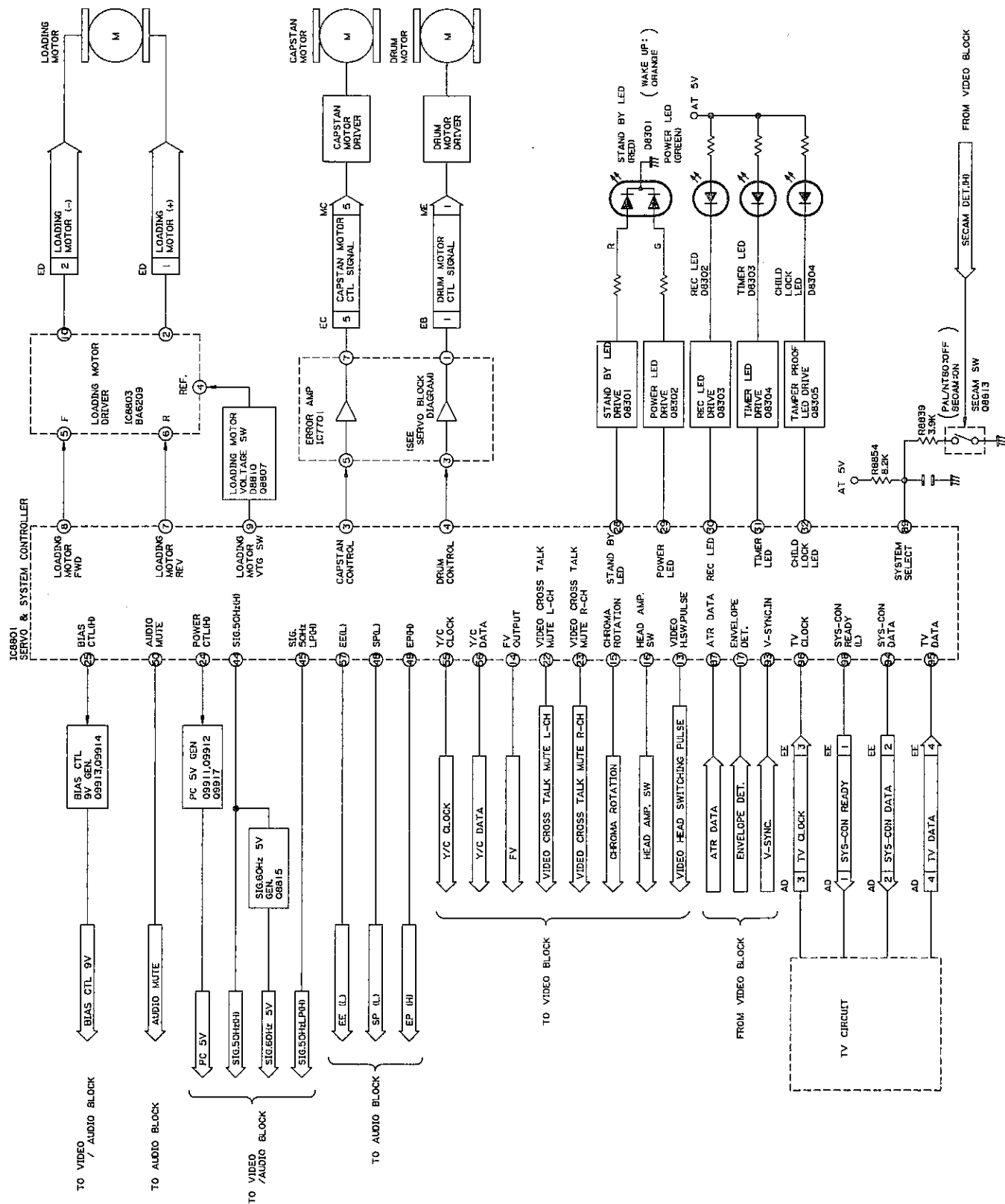
	SP	LP	EP
PAL	750Hz	380Hz	—
NTSC	1080Hz	540Hz	360Hz

BLOCK DIAGRAM OF VCR SECTION

录像机部分的电路方框图

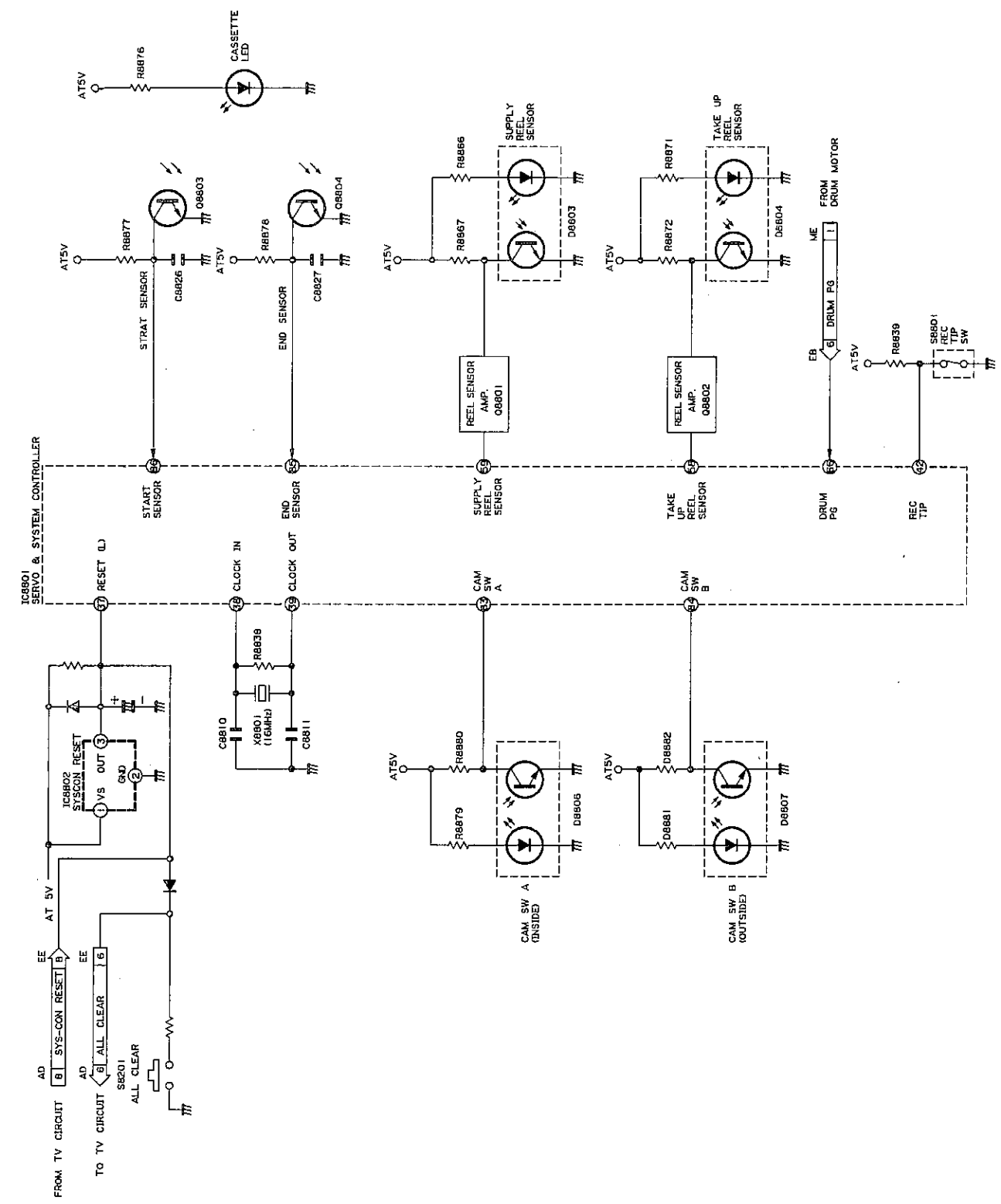
SYSTEM CONTROL BLOCK DIAGRAM

系统控制电路方框图



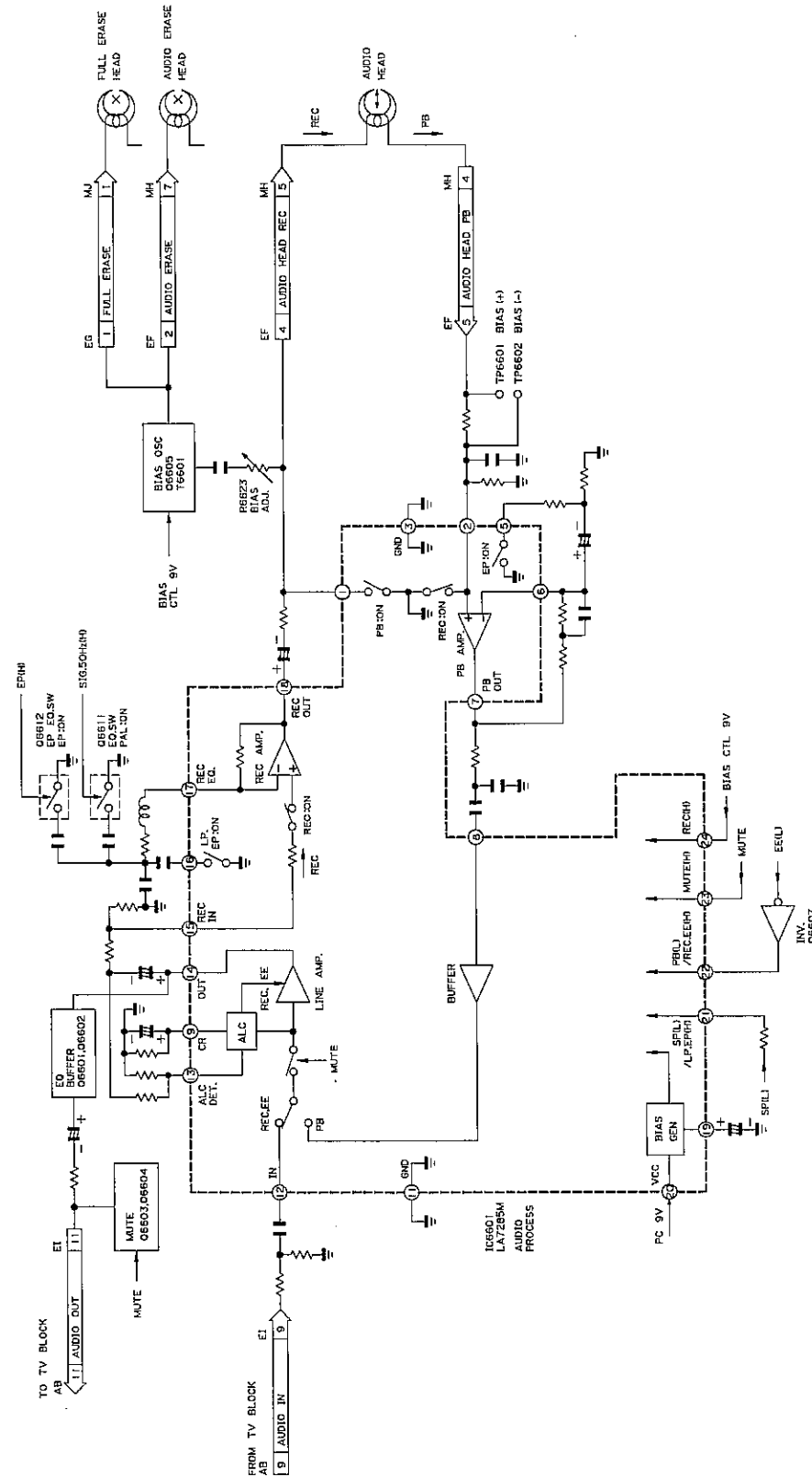
SAFETY DEVICE BLOCK DIAGRAM

安全装置电路方框图

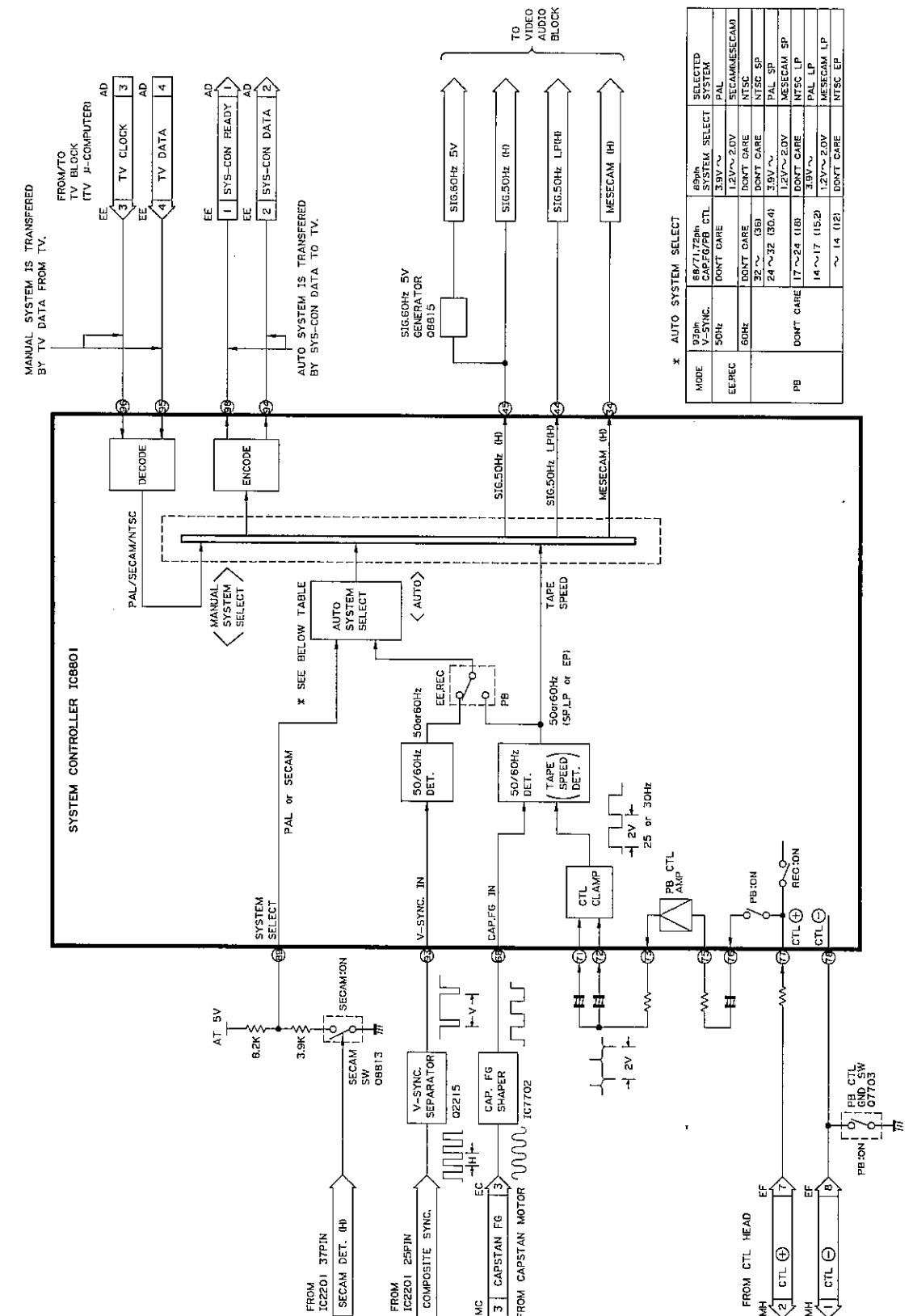


录象机部分的电路方框图

■音频信号电路方框图



■系统选择电路方框图

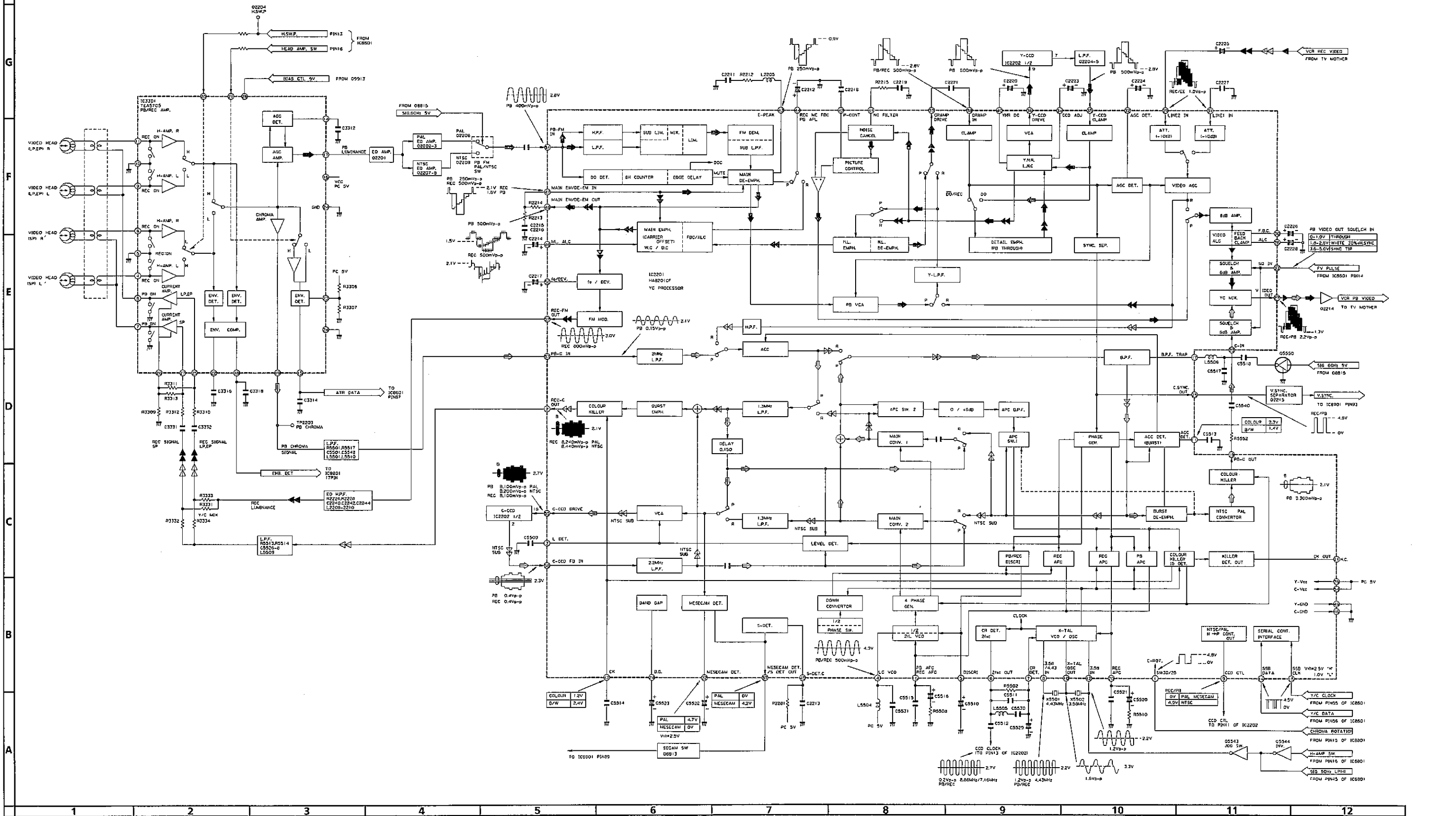


BLOCK DIAGRAM OF VCR SECTION

录象机部分的电路方框图

VIDEO SIGNAL FLOW BLOCK DIAGRAM

视频信号流程方框图



DESCRIPTION OF VCR SECTION SCHEMATIC DIAGRAM

电路原理图

IMPORTANT SAFETY NOTICE:

BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET. PARTS MARKED WITH "△" AND PARTS SHADED (IN BLACK) ARE ESPECIALLY IMPORTANT FOR MAINTAINING THE SAFETY AND PROTECTING ABILITY OF THE SET. BE SURE TO REPLACE THEM WITH PARTS OF SPECIFIED PART NUMBER.

SAFETY NOTES:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

NOTES:

1. The unit of resistance "ohm" is omitted ($K=1000\text{ ohm}$, $M=1\text{ Meg ohm}$).
2. All resistors are $1/16\text{ watt}$, unless otherwise noted.
3. The unit of capacitance "F" is omitted ($\mu=\mu\text{F}$, $p=p\mu\text{F}$).
4. The values in parentheses are the ones in the PB mode; the values without parentheses are the ones in the REC mode.

VOLTAGE MEASUREMENT CONDITIONS:

1. DC voltages are measured between points indicated and chassis ground by VTVM, with AC220~240V, 50Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.
2. Voltages are measured with $10000\mu\text{V}$ B & W or colour signal.

WAVEFORM MEASUREMENT CONDITIONS:

$10000\mu\text{V}$ 87.5 percent modulated colour bar signal is fed into tuner.

CAUTION:

This circuit diagram is original one. Therefore there may be a slight difference from yours.

安全使用注意要点:

为了保证本装置的安全性及可靠性, 务请使用该型号装置的原配零件。

注有△标记以及打有黑色阴影线的部件, 对于保护本装置的安全、保持其使用性能及使用寿命极其重要。

更换这些部件时, 务请使用规定编号者。

安全使用注意事项:

1. 在进行部件更换之前, 务请拔出电源插头。
2. 本装置工作时, 机芯底座的半导体散热片有触电之虑, 务请注意。

电路单位说明:

1. 电阻“欧姆”(Ω)单位予以略记(K=千欧, M=兆欧姆)。
2. 除特别说明者外, 图中电阻功率均为1/16瓦特。
3. 电容“法拉”(F)单位予以略记(μ =微法拉, P=微微法拉)。
4. 在括弧内的数值为PB状态, 无括弧的数值为REC状态。

电压测定条件

1. 除特别说明者外, 直流电压是以220~240V, 50/60Hz交流电源供给本装置时, 将所有控制调节都调至正常状态后, 把VTVM(电子管电压表)连接于测点与底盘接地之间所得的读数。
2. 电压由 $10000\mu\text{V}$ 黑白或彩色信号测定。

波形测定条件:

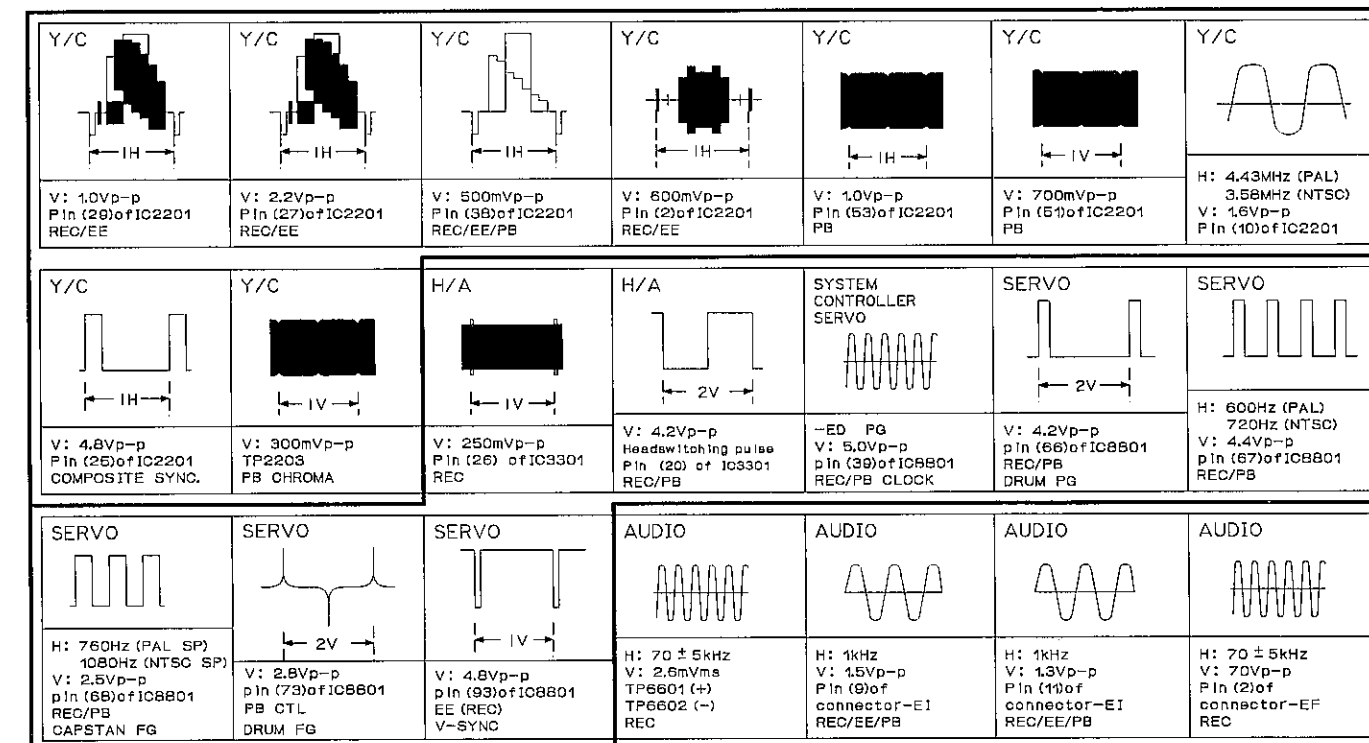
向调谐器输入 $10000\mu\text{V}$ 的87.5%调制色带信号的状态时进行测量。

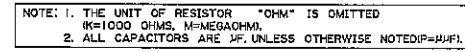
注意:

这里的电路原理图均为最初设计原图, 与您的机器的电路原理图可能有不同之处。

WAVEFORMS

波形图

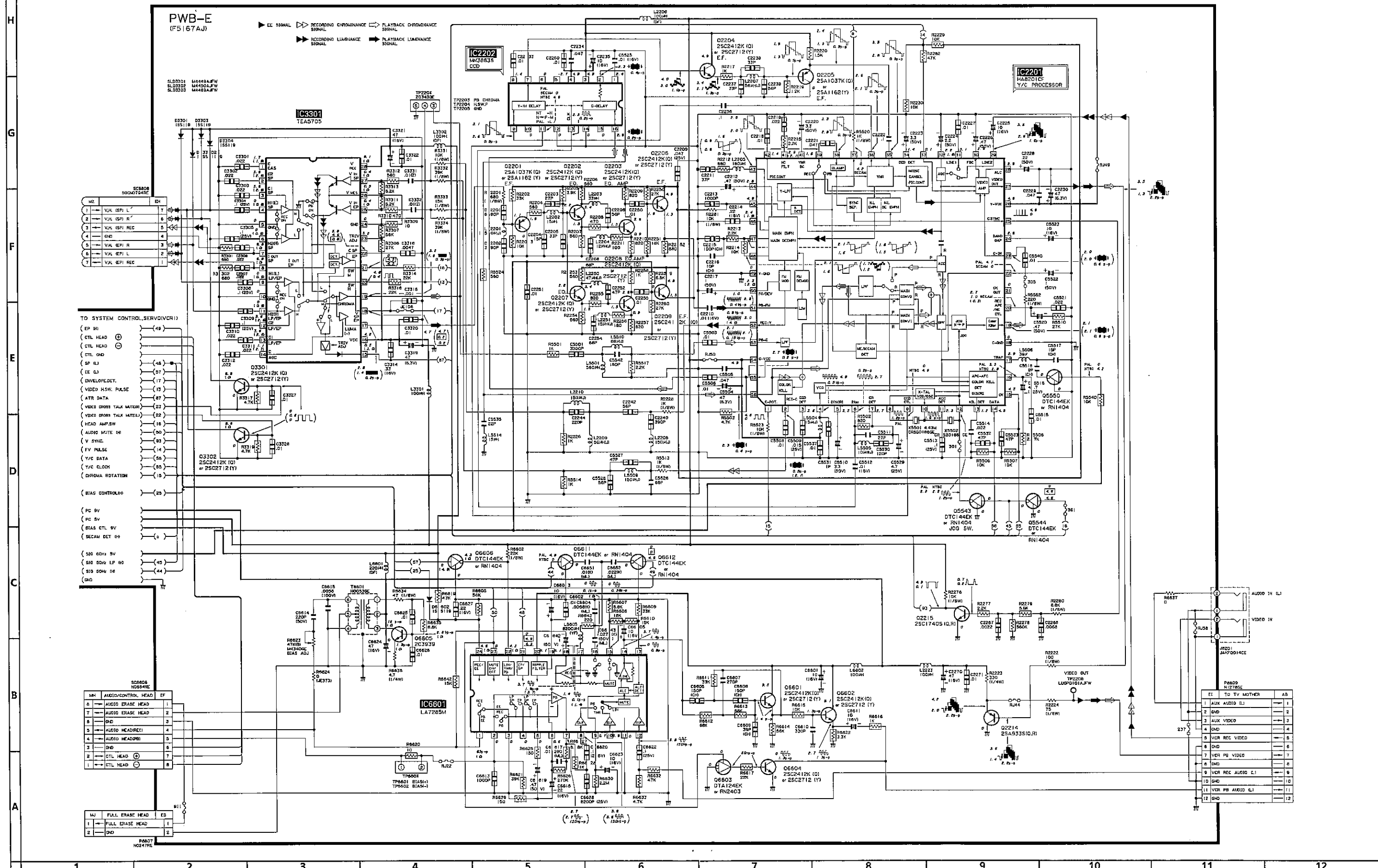




SCHEMATIC DIAGRAM: VCR Unit-2

电路原理图：录象机电路-2

NOTE: 1. THE UNIT OF RESISTOR "OHM" IS OMITTED
2. ALL CAPACITORS ARE PF, UNLESS OTHERWISE NOTED (P=PF).

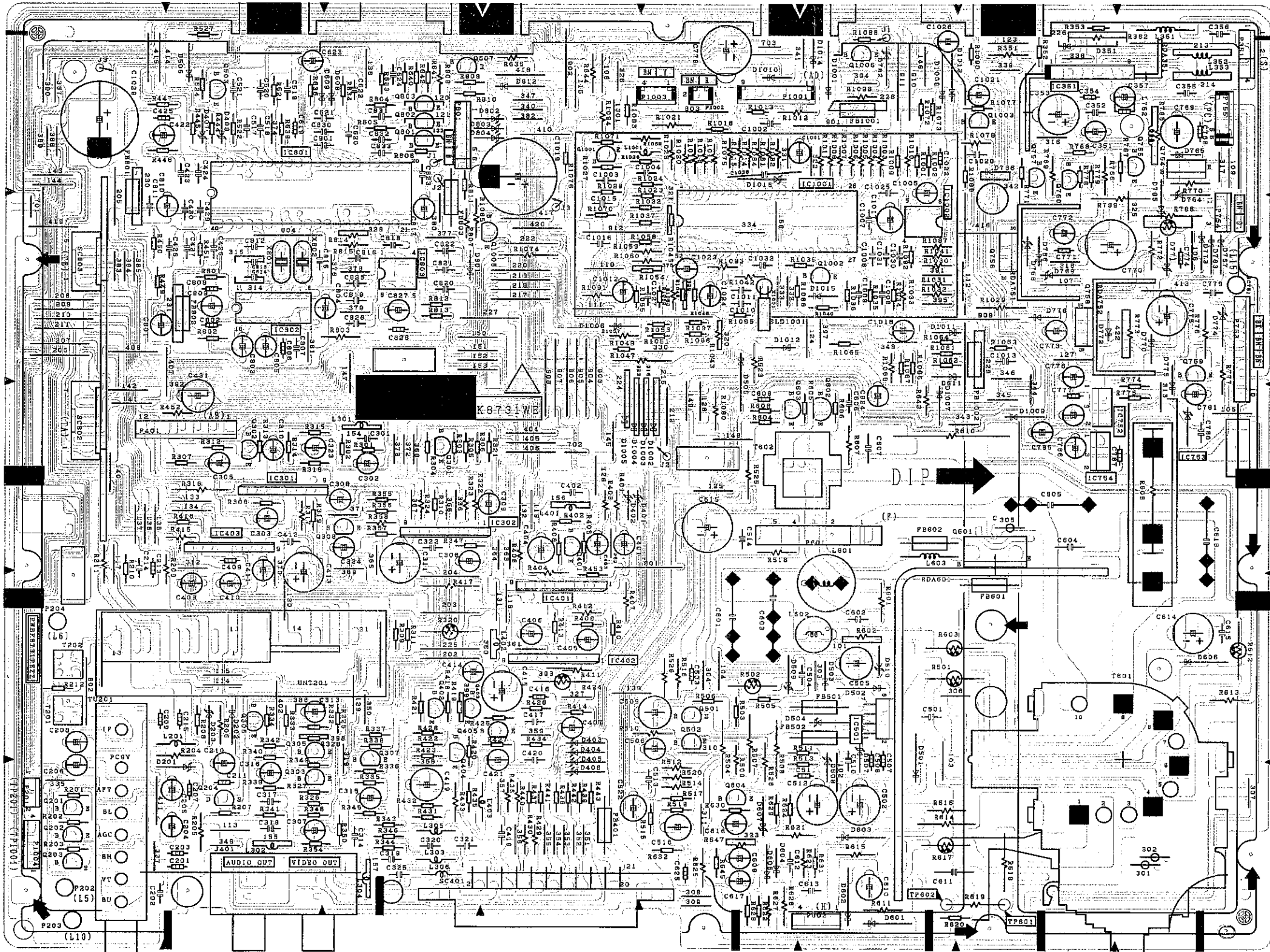


PRINTED WIRING BOARD ASSEMBLIES

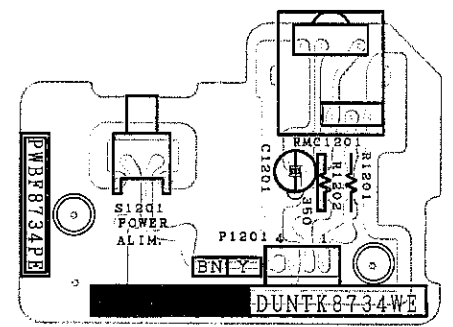
各印刷电路板图

■ TV SECTION

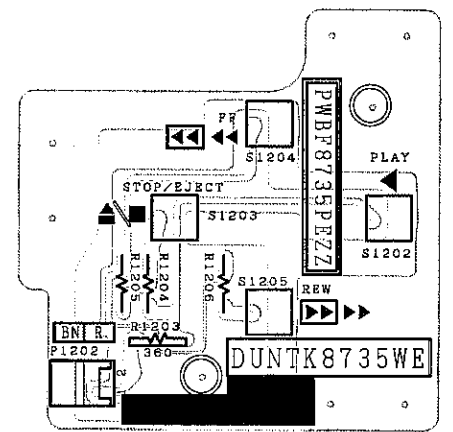
■ 电视机部分



PWB-A: Mother Unit (Wiring Side)
母体装置印刷电路板 (线路贴置侧)

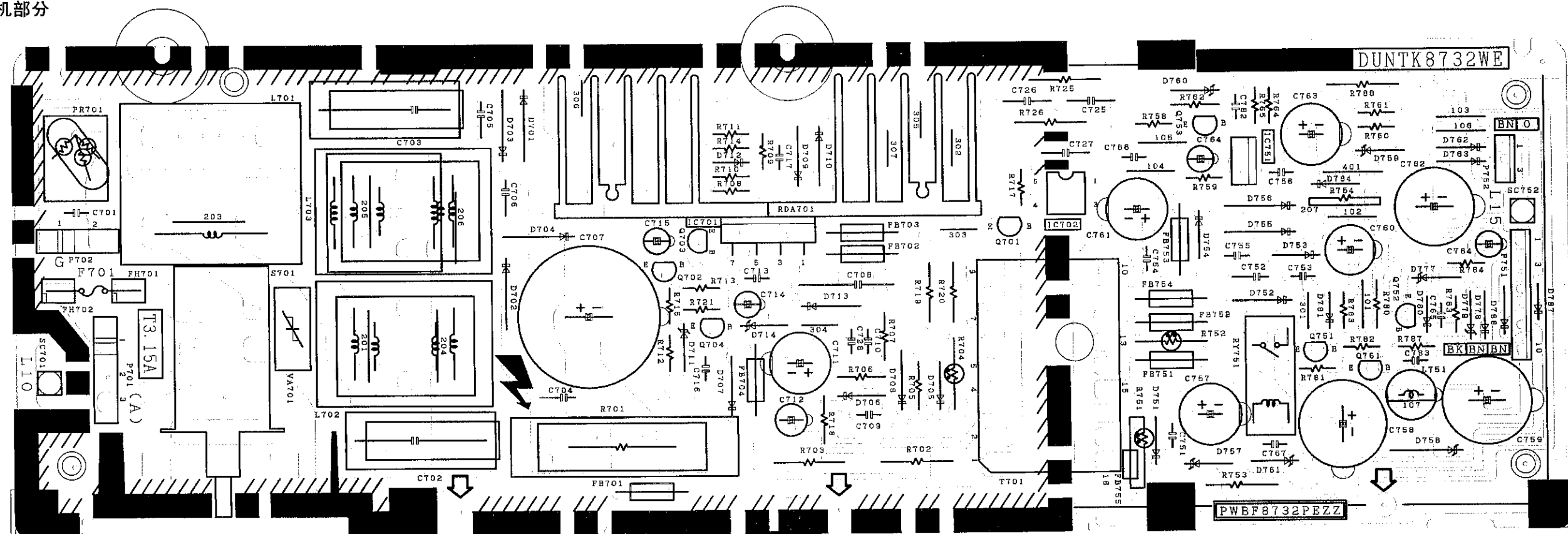


PWB-D: Power SW, R/C Unit
(Wiring Side)
电源开关、遥控器印刷电路板
(线路贴置侧)

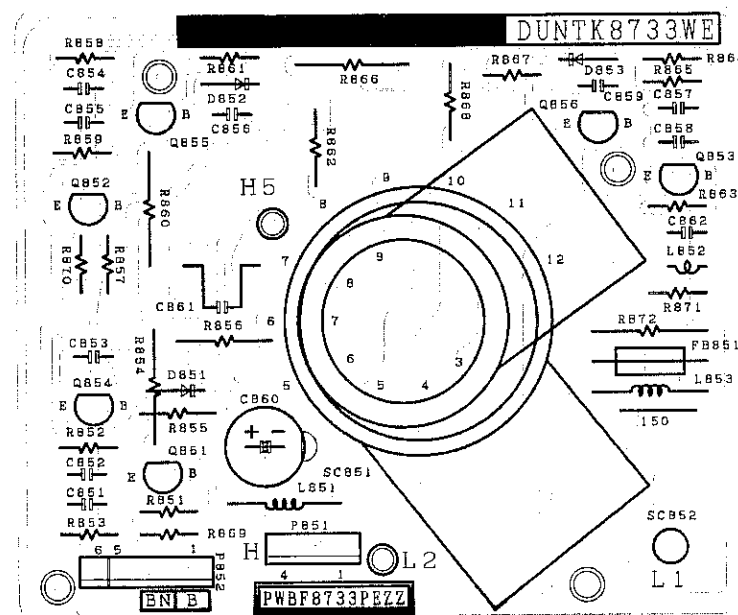


PWB-F: VCR-Key Unit (Wiring Side)
录象机键钮开关装置 (线路贴置侧)

■ TV SECTION
■ 电视机部分

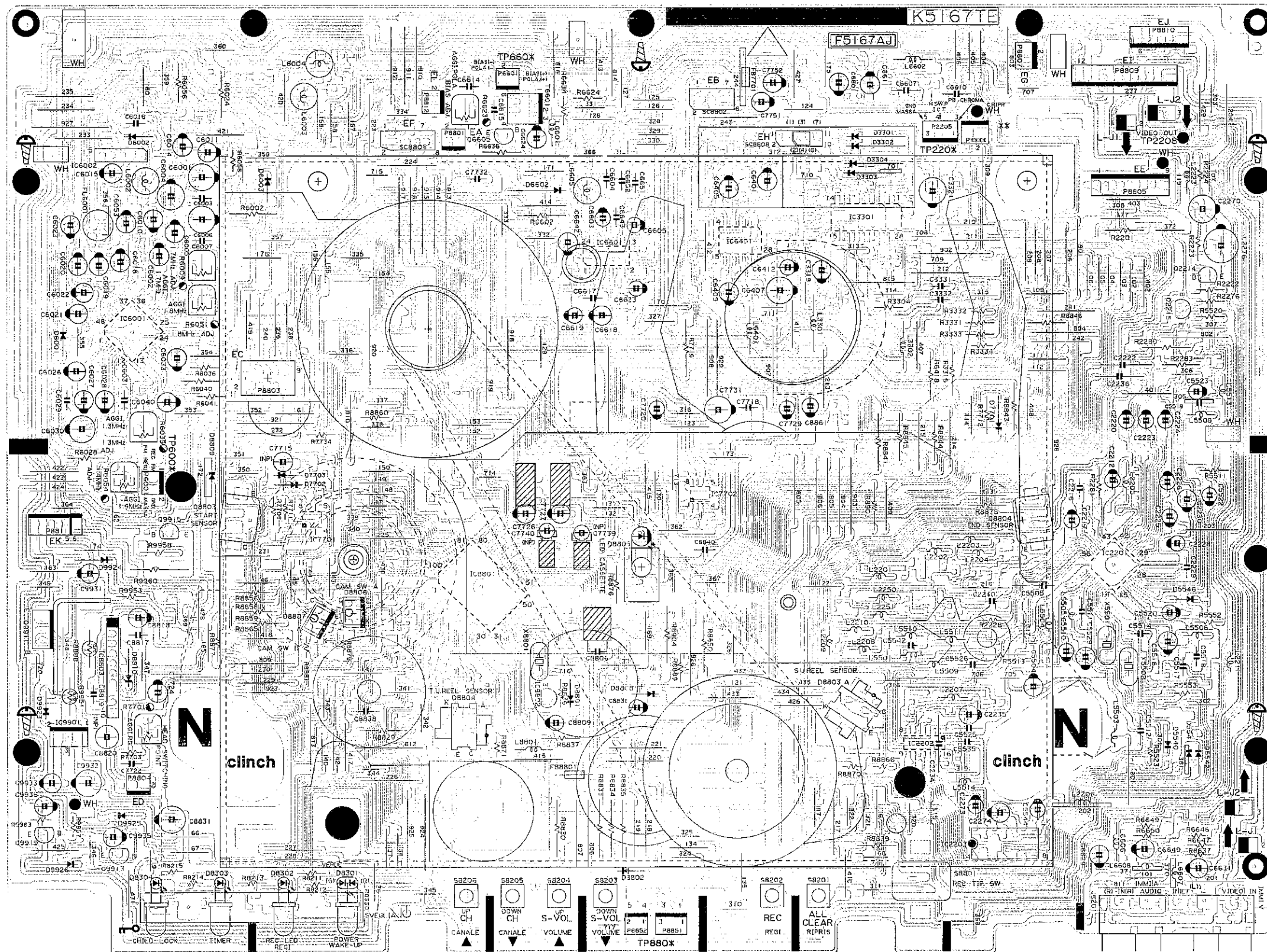


PWB-B: Power Unit (Wiring Side)
电源装置(线路贴置侧)



PWB-C: CRT Socket Unit (Wiring Side)
CRT管座装置印刷电路板
(线路贴置侧)

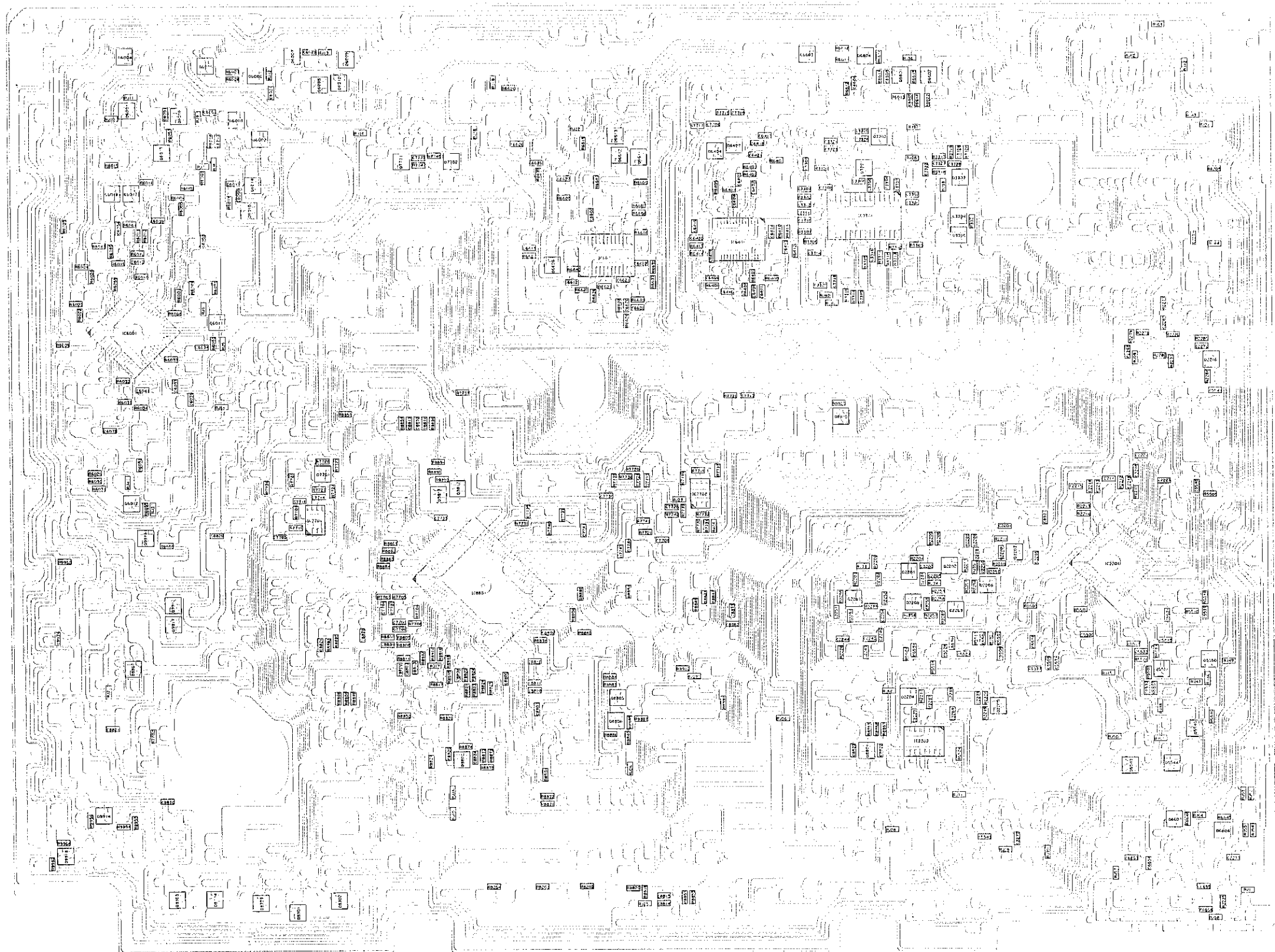
■ VCR SECTION
■ 录象机部分



PWB-E: VCR Unit (Wiring Side)
录象机(线路贴置侧)

■ VCR SECTION
■ 录象机部分

H
G
F
E
D
C
B
A



PWB-E: VCR Unit (Chip Parts Side)
录象机(部件装备侧)

1 2 3 4 5 6 7 8 9 10 11 12

PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "△" in the Replacement Parts Lists. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |
| 5. CODE | 6. QUANTITY |

MARK ★: SPARE PARTS-DELIVERY SECTION.

ELECTRICAL PARTS

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
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PICTURE TUBE

MODEL VT-1428M

△ V801	VB370BVBK1U-S	R	CRT, 37cm (14")	BX
△ DY601	RCiLH0057PEZZ	R	Deflection Yoke	BB
△ L799	RCiLG0048PEZZ	R	Degaussing Coil	AL
	PMAGF3006CEZZ	R	Purity Magnet	AK
	PSPAG0004PEZZ	R	Wedge (Gum), Yoke Positioning (3 used)	AB

MODEL VT-2128M

△ V801	VB51JFC61X/*P	R	CRT, 51cm (21")	CK
	or			
△ V801	VB51JSY61X/*S	R	CRT, 51cm (21")	CF
△ DY601	RCiLH1576CEZZ	R	Deflection Yoke	BD
△ L799	RCiLG0364CEZZ	R	Degaussing Coil	AV
	PMAGF3003CEZZ	R	Purity Magnet	AK
	PSPAG0003PEZZ	R	Wedge (Gum), Yoke Positioning (3 used)	AD

— End of PICTURE TUBE —

更换零件表

更换零件

本维修说明书对具有特别安全要求的零件均用标记加以识别。在此更换零件表中，具有特别安全要求的电路元件均用△标记以便注意识别。更换零件时，为了用户的安全以及电视机原有的工作性能，务请使用夏普规定零件。否则，可能有导致触电、火灾或其他不测事故发生的可能。

更换零件的订货方法

为了能迅速而确实地接受订货、以及正确无误地按时交货，在订货时请将下列各项明确告知。

- | | |
|---------|---------|
| 1. 型号 | 2. 参考编号 |
| 3. 零件编号 | 4. 零件名称 |
| 5. 代号 | 6. 数量 |

附★记号为备用部件的交货部门

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLACEMENT ITEM)

Model VT-1428M

TV Section

PWB-A	DUNTK8731WEV0	-	Mother Unit	—
PWB-B	DUNTK8732WEV0	-	Power Unit	—
PWB-C	DUNTK8733WEV0	-	CRT Socket Unit	—
PWB-D	DUNTK8734WEV0	-	Power SW, R/C Unit	—
PWB-F	DUNTK8735WEV0	-	VCR-Key Unit	—

VCR Section

PWB-E	DUNTK5167TEV0	-	VCR Unit	—
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Model VT-2128M

TV Section

PWB-A	DUNTK8731WEV1	-	Mother Unit	—
PWB-B	DUNTK8732WEV1	-	Power Unit	—
PWB-C	DUNTK8733WEV1	-	CRT Socket Unit	—
PWB-D	DUNTK8734WEV1	-	Power SW, R/C Unit	—
PWB-F	DUNTK8735WEV1	-	VCR-Key Unit	—

VCR Section

PWB-E	DUNTK5167TEV1	-	VCR Unit	—
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— End of P.W.B. ASSEMBLIES —

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
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PWB-A DUNTK8731WEV0/V1
MOTHER UNIT

ASSEMBLY UNITS

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

TU201	VTUVTSS6S2D//	J	Tuner, VHF/UHF	BE
UNT201	RiFU-0017CEZZ	J	IF-Pack Unit	BE

INTEGRATED CIRCUITS

IC301	VHiTA7348P/-1	R	Audio Switch	AK
IC302	VHiTA7348P/-1	R	Audio Switch	AK
IC351	VHiTDA7056A-1	R	Audio Output	AP
IC401	VHiTA7348P/-1	R	System Switch	AK
IC402	VHiTA7348P/-1	R	Video Switch	AK
IC403	VHiTA7348P/-1	R	Video Switch	AK
IC501	RH-iX1163BMZZ	S	Vertical Output	AP
IC752	VHiTA7805S/-1	R	5V Regulator	AD
IC753	VHiUZT33///-1	R	Error Detector	AC
IC754	VHiTA7805S/-1	R	5V Regulator	AD
IC801	RH-iX1566BMZZ	S	XC44002PF, PAL/SECAM/NTSC	BC
IC802	RH-iX1495BMZZ	S	1H-DL	AR
IC803	VHiBA7655A/-1	R		AG
IC1001	RH-iX2603CEZZ	R	MPU	BE
IC1002	RH-iX2448CEN1	J	E ² PROM	AN

TRANSISTORS

Q201	VS2SA1271-Y-1	R	2SA1271-Y	AB
Q202	VS2SA1271-Y-1	R	2SA1271-Y	AB
Q203	VS2SA1271-Y-1	R	2SA1271-Y	AB
Q204	VS2SK304CD/-1	R	2SK304CD	AC
Q301	VS2SC3198-G-1	R	2SC3198-G	AA
Q302	VS2SC3198-G-1	R	2SC3198-G	AA
Q303	VS2SC3198-G-1	R	2SC3198-G	AA
Q305	VSDTC144ES/-1	J	DTC144ES	AB
Q306	VS2SC3198-G-1	R	2SC3198-G	AA
Q308	VS2SC3198-G-1	R	2SC3198-G	AA
Q401	VS2SC3198-G-1	R	2SC3198-G	AA
Q402	VS2SC3198-G-1	R	2SC3198-G	AA
Q403	VS2SA1266-Y-1	R	2SA1266-Y	AA
Q404	VS2SC3198-G-1	R	2SC3198-G	AA
Q501	VS2SC3198-G-1	R	2SC3198-G	AA
Q502	VS2SC3198-G-1	R	2SC3198-G	AA
Q503	VS2SC3198-G-1	R	2SC3198-G	AA
△ Q601	VS2SD1877//1E	R	2SD1877 (VT-1428M)	AL
△ Q601	VS2SD2095//1E	R	2SD2095 (VT-2128M)	AN
Q602	VS2SC2271E/-1	R	2SC2271E	AD
Q603	VS2SC3198-G-1	R	2SC3198-G	AA
Q604	VS2SA1266-Y-1	R	2SA1266-Y	AA
Q607	VS2SC3198-G-1	R	2SC3198-G	AA
Q754	VS2SD1944K/-1	R	2SD1944K	AE
Q755	VS2SA1266-Y-1	R	2SA1266-Y	AA
Q756	VS2SD1944K/-1	R	2SD1944K	AE

TRANSISTORS (Continued)

Q757	VS2SA1271-Y-1	R	2SA1271-Y	AB
Q758	VS2SD1944K/-1	R	2SD1944K	AE
Q759	VS2SA988///1E	R	2SA988	AB
Q760	VS2SC3198-G-1	R	2SC3198-G	AA
Q801	VS2SC3198-G-1	R	2SC3198-G	AA
Q802	VS2SC3198-G-1	R	2SC3198-G	AA
Q803	VS2SC3198-G-1	R	2SC3198-G	AA
Q1001	VS2SC383-WT-1	R	2SC383	AE
Q1002	VS2SC3198-G-1	R	2SC3198-G	AA
Q1003	VS2SC3198-G-1	R	2SC3198-G	AA
Q1005	VS2SC3198-G-1	R	2SC3198-G	AA

DIODES

D201	RH-EX0400CEZZ	R	Zener Diode	AC
D202	VHD1SS119//1E	R	1SS119	AA
D203	RH-EX0309CEZZ	R	Zener Diode	AA
D401	RH-EX0168GEZZ	R	Zener Diode	AA
D402	RH-EX0168GEZZ	R	Zener Diode	AA
D407	RH-EX0297CEZZ	R	Zener Diode	AA
D408	RH-EX0297CEZZ	R	Zener Diode	AA
D501	RH-DX0127CEZZ	R		AC
D502	RH-DX0055TAZZ	R		AD
D503	VHD1SS119//1E	R	1SS119	AA
D505	VHD1SS119//1E	R	1SS119	AA
D506	VHD1SS119//1E	R	1SS119	AA
D508	RH-EX0701GEZZ	R	Zener Diode	AB
D510	RH-EX0701GEZZ	R	Zener Diode	AB
D511	RH-EX0701GEZZ	R	Zener Diode	AB
D601	RH-DX0279CEZZ	R		AB
D602	RH-DX0073CEZZ	R		AD
D603	RH-DX0279CEZZ	R		AB
D604	VHD1SS119//1E	R	1SS119	AA
D605	VHD1SS119//1E	R	1SS119	AA
D606	RH-DX0302CEZZ	R		AC
D607	RH-EX0340CEZZ	R	Zener Diode	AB
D608	VHD1SS119//1E	R	1SS119	AA
D609	VHD1SS119//1E	R	1SS119	AA
D611	VHD1SS119//1E	R	1SS119	AA
D612	VHD1SS119//1E	R	1SS119	AA
D613	VHD1SS119//1E	R	1SS119	AA
D764	RH-EX0326CEZZ	R	Zener Diode	AA
D765	VHD1SS119//1E	R	1SS119	AA
D766	VHD1SS119//1E	R	1SS119	AA
D767	VHD1SS119//1E	R	1SS119	AA
D769	RH-EX0316CEZZ	R	Zener Diode	AA
D770	VHD1SS119//1E	R	1SS119	AA
D771	RH-EX0312CEZZ	R	Zener Diode	AA
D772	VHD1SS119//1E	R	1SS119	AA
D773	VHD1SS119//1E	R	1SS119	AA
D774	RH-EX0290CEZZ	R	Zener Diode	AA
D775	VHD1SS119//1E	R	1SS119	AA
D776	VHD1SS119//1E	R	1SS119	AA
D782	RH-EX0333CEZZ	R	Zener Diode	AA
D783	VHD1SS119//1E	R	1SS119	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
PWB-A DUNTK8731WEV0/V1 MOTHER UNIT (Continued)					CONTROL				
DIODES (Continued)					R791	RVR-M4614GEZZ	R	100(B)	AB
D785	RH-EX0340CEZZ	R	Zener Diode	AB	CAPACITORS (Continued)				
D801	VHD1SS119//1E	R	1SS119	AA	C201	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
D1001	VHD1SS119//1E	R	1SS119	AA	C202	VCQYTA1HM104J	R	0.1 50V	Mylar AA
D1006	VHD1SS119//1E	R	1SS119	AA	C203	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
D1007	VHD1SS119//1E	R	1SS119	AA	C204	VCEAGA1HW475M	R	4.7 50V	Electrolytic AB
D1008	VHD1SS119//1E	R	1SS119	AA	C205	VCEAGA1HW106M	R	10 50V	Electrolytic AC
D1009	VHD1SS119//1E	R	1SS119	AA	C206	VCEAGA1HW104M	R	0.1 50V	Electrolytic AA
D1010	VHD1SS119//1E	R	1SS119	AA	C207	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
D1011	VHD1SS119//1E	R	1SS119	AA	C208	VCEAGA1CW476M	R	47 16V	Electrolytic AB
D1012	VHD1SS119//1E	R	1SS119	AA	C209	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
D1015	VHD1SS119//1E	R	1SS119	AA	C210	VCEAGA1HW104M	R	0.1 50V	Electrolytic AA
D1016	RH-EX0300CEZZ	R	Zener Diode	AC	C211	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
D1017	RH-EX0297CEZZ	R	Zener Diode	AA	C213	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
D1018	RH-EX0297CEZZ	R	Zener Diode	AA	C214	VCQYTA1HM104J	R	0.1 50V	Mylar AA
PACKAGED CIRCUITS					C215	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
X801	RCRSB0233CEZZ	R	Crystal	AN	C302	VCEAGA1HW106M	R	10 50V	Electrolytic AC
X802	RCRSB0234CEZZ	R	Crystal	AN	C303	VCEAGA1HW106M	R	10 50V	Electrolytic AC
X1001	RCRSB0025CEZZ	R	Crystal, 32.768 KHz	AG	C305	VCEAGA1HW106M	R	10 50V	Electrolytic AC
COIL AND TRANSFORMERS					C307	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L201	VP-DF120K0000	R	Coil, 12 μ H	AB	C308	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L351	VP-CF3R3K0000	R	Coil, 3.3 μ H	AB	C309	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L601	RCiLZ0004PEZZ	R	Coil, Horizontal Line. (VT-1428M)	AN	C310	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L601	RCiLZ0007PEZZ	R	Coil, Horizontal Line. (VT-2128M)	AK	C311	VCEAGA1CW108M	R	1000 16V	Electrolytic AD
L602	RCiLP0088CEZZ	R	Coil, Peaking	AG	C316	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L603	VP-CF1R5M0000	R	Coil, 1.5 μ H (VT-1428M)	AB	C322	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
L603	VP-CF1R0M0000	R	Coil, 1 μ H (VT-2128M)	AB	C323	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L801	VP-DF220K0000	R	Coil, 22 μ H	AB	C324	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L1001	VP-XF120K0000	R	Coil, 12 μ H	AB	C351	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L1003	VP-XF100K0000	R	Coil, 10 μ H	AB	C352	VCQYTA1HM103J	R	0.01 50V	Mylar AA
L1004	VP-XF121K0000	R	Coil, 120 μ H	AB	C353	VCEAGA1CW477M	R	470 16V	Electrolytic AC
L1005	VP-XF121K0000	R	Coil, 120 μ H	AB	C354	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
L1006	VP-XF121K0000	R	Coil, 120 μ H	AB	C355	VCKYPA1HB101K	R	100p 50V	Ceramic AA
L1007	VP-XF121K0000	R	Coil, 120 μ H	AB	C356	VCKYPA1HB101K	R	100p 50V	Ceramic AA
L1008	VP-XF121K0000	R	Coil, 120 μ H	AB	C357	VCEAGA1HW106M	R	10 50V	Electrolytic AC
L1009	VP-XF121K0000	R	Coil, 120 μ H	AB	C401	VCEAGA1CW476M	R	47 16V	Electrolytic AB
L1010	VP-XF121K0000	R	Coil, 120 μ H	AB	C403	VCEAGA1CW476M	R	47 16V	Electrolytic AB
▲ T601	RTRNF0063PEZZ	R	Flyback Trans. (FBT) (VT-1428M)	BE	C404	VCEAGA1CW476M	R	47 16V	Electrolytic AB
▲ T601	RTRNF0069PEZZ	R	Flyback Trans. (FBT) (VT-2128M)	BF	C405	VCEAGA1CW476M	R	47 16V	Electrolytic AB
T602	RTRNZ0179CEZZ	R	Horizontal Drive Trans. (VT-1428M)	AE	C406	VCEAGA1CW476M	R	47 16V	Electrolytic AB
T602	RTRNZ0026PEZZ	R	Horizontal Drive Trans. (VT-2128M)	AH	C408	VCEAGA1CW476M	R	47 16V	Electrolytic AB
					C409	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
					C410	VCEAGA1CW476M	R	47 16V	Electrolytic AB
					C411	VCEAGA1CW476M	R	47 16V	Electrolytic AB
					C412	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
					C413	VCEAGA1CW108M	R	1000 16V	Electrolytic AD
					C414	VCEAGA1CW476M	R	47 16V	Electrolytic AB
					C415	VCEAGA1CW108M	R	1000 16V	Electrolytic AD
					C416	VCKYPA1HF103Z	R	0.01 50V	Ceramic AA
					C419	VCEAGA0JW477M	R	470 6.3V	Electrolytic AB
					C422	VCEAGA1HW225M	R	2.2 50V	Electrolytic AB
					C423	VCQYTA1HM104J	R	0.1 50V	Mylar AA
					C424	VCEAGA1HW105M	R	1 50V	Electrolytic AC

Ref. No.	Part No.	*	Description	Code
PWB-A DUNTK8731WEV0/V1 MOTHER UNIT (Continued)				
CAPACITORS (Continued)				
C425	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C426	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C427	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C428	VCQYTA1HM332J	R	3300p50V Mylar	AA
C429	VCQYTA1HM473J	R	0.047 50V Mylar	AA
C430	VCCCPA1HH470J	R	47p 50V Ceramic	AA
C431	VCEAGA0JW477M	R	470 6.3V Electrolytic	AB
C432	VCCCPA1HH101J	R	100p 50V Ceramic	AA
C501	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C502	VCEAGA1VW477M	R	470 35V Electrolytic	AD
C503	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C504	VCFYFA1HA224J	R	0.22 50V M. Polyester	AB
C505	VCEAGA1VW107M	R	100 35V Electrolytic	AC
C506	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C507	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C508	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C509	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C510	VCQYTA1HM472J	R	4700p50V Mylar	AB
C511	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C512	VCEAGA1VW477M	R	470 35V Electrolytic	AD
C514	VCQYTA1HM333J	R	0.033 50V Mylar	AA
C515	VCEAGA1EW108M	R	1000 25V Electrolytic	AD
C516	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C517	VCQYTA1HM683J	R	0.068 50V Mylar	AB
C518	VCKYPA1HB562K	R	5600p50V Ceramic	AA
C519	VCKYPA1HB102K	R	1000p50V Ceramic	AA
C520	VCCSPA1HL331J	R	330p 50V Ceramic	AA
C521	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C522	VCEAGA1CW336M	R	33 16V Electrolytic	AB
C523	VCQYTA1HM272J	R	2700p50V Mylar	AA
C601	VCFPD2DB434J	R	0.43 200V Polypro Film (VT-1428M)	AE
C601	VCFPD2DB564J	R	0.56 200V Polypro Film (VT-2128M)	AF
C602	VCKYPA2HB221K	R	220p 500V Ceramic	AA
C603	VCFPB2DB104J	R	0.1 200V Polypro Film (VT-2128M)	AE
△ C604	RC-KZ0035CEZZ	R	220p 2kV Ceramic (VT-1428M)	AB
△ C604	RC-KZ0040CEZZ	R	820p 2kV Ceramic (VT-2128M)	AD
△ C605	VCFPD3CA682H	R	6800p1.6kV M. Polyester (VT-1428M)	AE
△ C605	VCFPD3CA103J	R	0.01 1.6kV M. Polyester (VT-2128M)	AF
C606	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C607	VCFYB2EB823J	R	0.082 250V M. Polyester	AD
C608	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C609	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C610	VCEAGA2AW106M	R	10 100V Electrolytic	AC
C611	VCQYSH2DM104K	R	0.1 200V Mylar	AD
C612	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA

Ref. No.	Part No.	*	Description	Code
CAPACITORS (Continued)				
C613	VCFYFA1HA474J	R	0.47 50V M. Polyester	AC
C614	VCEAGA1EW477M	R	470 25V Electrolytic	AD
C615	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C616	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C617	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C618	VCFPD2DB224J	R	0.22 200V M. Polyester	AE
C619	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C620	VCKYPA1HB102K	R	1000p50V Ceramic	AA
C621	VCQYTA1HM222J	R	2200p50V Mylar	AA
C622	VCQYTA1HM473J	R	0.047 50V Mylar	AA
C623	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C624	VCKYPA1HB821K	R	820p 50V Ceramic	AA
C625	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C626	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C627	VCEAGA1EW107M	R	100 25V Electrolytic	AD
C768	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C769	VCEAGA1CW337M	R	330 16V Electrolytic	AC
C770	VCEAGA1CW228M	R	2200 16V Electrolytic	AE
C771	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C772	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C773	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C774	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C775	VCEAGA1CW477M	R	470 16V Electrolytic	AC
C776	VCEAGA1HW334M	R	0.33 50V Electrolytic	AA
C778	VCEAGA1AW108M	R	1000 10V Electrolytic	AC
C779	VCKYPA2HB472K	R	4700p500V Ceramic	AB
C780	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C781	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C785	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C786	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C787	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C801	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C802	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C803	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C804	VCEAGA1AW107M	R	100 10V Electrolytic	AB
C805	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C806	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C807	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C808	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C809	VCEAGA1AW107M	R	100 10V Electrolytic	AB
C810	VCEAGA1AW107M	R	100 10V Electrolytic	AB
C811	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C812	VCCCPA1HH121J	R	120p 50V Ceramic	AA
C815	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C816	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C817	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C818	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C819	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C820	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C821	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C822	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C823	VCCSPA1HL680J	R	68p 50V Ceramic	AA
C825	VCFYFA1HA334J	R	0.33 50V Mylar	AB
C826	VCFYFA1HA334J	R	0.33 50V Mylar	AB
C827	VCEAGA1CW476M	R	47 16V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
PWB-A DUNTK8731WEV0/V1 MOTHER UNIT (Continued)					RESISTORS (Continued)				
CAPACITORS (Continued)					R302	VRD-RA2BE104J	R	100k 1/8W Carbon	AA
C828	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA	R303	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
C834	VCCCPA1HH150J	R	15p 50V Ceramic	AA	R304	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
C835	VCKYPA1HB821K	R	820p 50V Ceramic	AA	R305	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA
C836	RC-KZ0019GEZZ	R	0.1 25V Ceramic	AA	R306	VRD-RA2BE183J	R	18k 1/8W Carbon	AA
C901	VCQYTA1HM104J	R	0.1 50V Mylar	AA	R307	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1001	VCEAGA1AW107M	R	100 10V Electrolytic	AB	R308	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1002	RC-KZ0019GEZZ	R	0.1 25V Ceramic	AA	R309	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
C1003	VCCCPA1HH680J	R	68p 50V Ceramic	AA	R310	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1004	VCCCPA1HH121J	R	120p 50V Ceramic	AA	R311	VRD-RA2BE683J	R	68k 1/8W Carbon	AA
C1005	VCEAGA1AW107M	R	100 10V Electrolytic	AB	R312	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
C1006	VCCCPA1HH121J	R	120p 50V Ceramic	AA	R313	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
C1007	VCCCPA1HH121J	R	120p 50V Ceramic	AA	R314	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
C1008	VCCCPA1HH121J	R	120p 50V Ceramic	AA	R315	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1009	VCCCPA1HH121J	R	120p 50V Ceramic	AA	R316	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
C1010	VCCCPA1HH680J	R	68p 50V Ceramic	AA	R317	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
C1011	VCKYPA1HB561K	R	560p 50V Ceramic	AA	R318	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1012	VCEAGA1HW106M	R	10 50V Electrolytic	AC	R319	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1013	VCKYPA1HB101K	R	100p 50V Ceramic	AA	△ R320	VRG-RL2HB100J	R	10 1/2W Fuse Resistor	AB
C1015	VCFYFA1HA334J	R	0.33 50V M. Polyester	AB	R321	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1016	VCFYFA1HA334J	R	0.33 50V M. Polyester	AB	R322	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
C1017	VCEAGA1AW107M	R	100 10V Electrolytic	AB	R324	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
C1018	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB	R325	VRD-RA2BE823J	R	82k 1/8W Carbon	AA
C1019	RC-EZ0405GEZZ	R	1F 5.5V Electrolytic	AM	R326	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
C1020	VCKYPA1HB101K	R	100p 50V Ceramic	AA	R327	VRD-RA2BE122J	R	1.2k 1/8W Carbon	AA
C1021	VCEAGA1HW106M	R	10 50V Electrolytic	AC	R332	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1022	RC-KZ0019GEZZ	R	0.1 Ceramic	AA	R339	VRD-RA2BE104J	R	100k 1/8W Carbon	AA
C1023	VCEAGA1HW104M	R	0.1 50V Electrolytic	AA	R340	VRD-RA2BE101J	R	100 1/8W Carbon	AA
C1024	VCEAGA1CW226M	R	22 16V Electrolytic	AB	R341	VRD-RA2BE821J	R	820 1/8W Carbon	AA
C1025	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA	R342	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
C1035	VCKYPA1HB101K	R	100p 50V Ceramic	AA	R348	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
C1036	VCKYPA1HB151K	R	150p 50V Ceramic	AA	R349	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
C1037	VCKYPA1HB151K	R	150p 50V Ceramic	AA	R350	VRD-RA2BE123J	R	12k 1/8W Carbon	AA
C1038	VCKYPA1HB101K	R	100p 50V Ceramic	AA	R351	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
C1039	RC-KZ0019GEZZ	R	0.1p 25V Ceramic	AA				(VT-1428M)	
RESISTORS					R351	VRD-RA2BE682J	R	6.8k 1/8W Carbon	AA
R201	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA				(VT-2128M)	
R202	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	R352	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
R203	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA				(VT-1428M)	
R204	VRD-RA2BE155J	R	1.5M 1/8W Carbon	AA	R352	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R205	VRD-RA2BE105J	R	1M 1/8W Carbon	AA				(VT-2128M)	
R206	VRD-RA2BE105J	R	1M 1/8W Carbon	AA	R353	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
R207	VRD-RA2BE824J	R	820k 1/8W Carbon	AA	R355	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R208	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	R356	VRD-RA2BE823J	R	82k 1/8W Carbon	AA
R209	VRD-RA2BE334J	R	330k 1/8W Carbon	AA	R357	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
R210	VRD-RA2BE474J	R	470k 1/8W Carbon	AA	R358	VRD-RA2BE122J	R	1.2k 1/8W Carbon	AA
R211	VRD-RA2BE824J	R	820k 1/8W Carbon	AA	R401	VRD-RA2BE101J	R	100 1/8W Carbon	AA
R214	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA	R402	VRD-RA2BE750J	R	75 1/8W Carbon	AA
R215	VRD-RA2BE684J	R	680k 1/8W Carbon	AA	R403	VRD-RA2BE101J	R	100 1/8W Carbon	AA
R301	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	R404	VRD-RM2HD181J	R	180 1/2W Carbon	AA
					R405	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
					R406	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
					R407	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
					R409	VRD-RA2BE101J	R	100 1/8W Carbon	AA
					R410	VRD-RA2BE102J	R	1k 1/8W Carbon	AA

Ref. No.	Part No.	*	Description	Code
PWB-A DUNTK8731WEV0/V1 MOTHER UNIT (Continued)				
RESISTORS (Continued)				
R413	VRD-RA2BE101J	R 100	1/8W Carbon	AA
R415	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R416	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R417	VRD-RA2BE101J	R 100	1/8W Carbon	AA
R418	VRD-RA2BE183J	R 18k	1/8W Carbon	AA
R419	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R420	VRD-RA2BE821J	R 820	1/8W Carbon	AA
R421	VRD-RA2BE822J	R 8.2k	1/8W Carbon	AA
R422	VRD-RA2BE222J	R 2.2k	1/8W Carbon	AA
R423	VRD-RA2BE221J	R 220	1/8W Carbon	AA
△ R424	VRG-RL2HB100J	R 10	1/2W Fuse Resistor	AB
R428	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R431	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R432	VRD-RA2BE750J	R 75	1/8W Carbon	AA
R433	VRD-RM2HD181J	R 180	1/2W Carbon	AA
R444	VRD-RA2BE221J	R 220	1/8W Carbon	AA
R445	VRD-RA2BE221J	R 220	1/8W Carbon	AA
R446	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R447	VRD-RA2BE392J	R 3.9k	1/8W Carbon	AA
R449	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R451	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R452	VRD-RA2BE750J	R 75	1/8W Carbon	AA
R453	VRD-RA2BE101J	R 100	1/8W Carbon	AA
△ R501	VRG-RL2HB1R0K	R 1	1/2W Fuse Resistor	AB
△ R502	VRG-RF2EB2R2J	R 2.2	1/4W Fuse Resistor	AB
R504	VRS-VV3DB561J	R 560	2W Metal Oxide	AA
R505	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R507	VRS-VV3DB151J	R 150	2W Metal Oxide	AA
R509	VRD-RA2BE182J	R 1.8k	1/8W Carbon	AA
R510	VRD-RA2BE223J	R 22k	1/8W Carbon	AA
R512	VRD-RA2BE123J	R 12k	1/8W Carbon	AA
R513	VRD-RA2BE123J	R 12k	1/8W Carbon	AA
R516	VRD-RM2HD2R2J	R 2.2	1/2W Carbon (VT-1428M)	AA
R516	VRD-RM2HD1R5J	R 1.5	1/2W Carbon (VT-2128M)	AA
R518	VRD-RM2HD221J	R 220	1/2W Carbon (VT-1428M)	AA
R518	VRD-RM2HD271J	R 270	1/2W Carbon (VT-2128M)	AA
R519	VRD-RA2BE104J	R 100k	1/8W Carbon	AA
R520	VRD-RA2BE124J	R 120k	1/8W Carbon	AA
R521	VRD-RA2BE221J	R 220	1/8W Carbon	AA
R522	VRD-RA2BE104J	R 100k	1/8W Carbon	AA
R523	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R524	VRD-RA2BE824J	R 820k	1/8W Carbon	AA
R525	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R526	VRD-RA2BE220J	R 22	1/8W Carbon (VT-1428M)	AA
R527	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R528	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R601	VRD-RM2HD222J	R 2.2k	1/2W Carbon	AA

Ref. No.	Part No.	*	Description	Code
RESISTORS (Continued)				
R602	VRD-RM2HD390J	R 39	1/2W Carbon (VT-2128M)	AA
△ R603	RR-XZ0073CEZZ	R 270	1/2W Fuse Resistor (VT-1428M)	AB
△ R603	RR-XZ0020CEZZ	R 39	1/4W Fuse Resistor (VT-2128M)	AB
R604	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R605	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R606	VRD-RA2BE391J	R 390	1/8W Carbon	AA
R607	VRD-RM2HD392J	R 3.9k	1/2W Carbon (VT-1428M)	AA
R607	VRD-RM2HD472J	R 4.7k	1/2W Carbon (VT-2128M)	AA
R608	VRD-RA2BE223J	R 22k	1/8W Carbon	AA
R609	VRW-KX3NC100K	R 10	7W Cement (VT-1428M)	AE
R609	VRW-KX4AC120K	R 12	10W Cement (VT-2128M)	AD
R610	VRS-SV3LB472J	R 4.7k	3W Metal Oxide (VT-1428M)	AC
R610	VRS-SV3LB392J	R 3.9k	3W Metal Oxide (VT-2128M)	AC
R611	VRD-RM2HD223J	R 22k	1/2W Carbon	AA
△ R612	VRG-RL2HB1R0K	R 1	1/2W Fuse Resistor	AB
R613	VRD-RM2HD682J	R 6.8k	1/2W Carbon	AA
R614	VRN-RV3AB1R2J	R 1.2	1W Metal Film (VT-1428M)	AB
R614	VRN-VV3DB1R8J	R 1.8	2W Metal Film (VT-2128M)	AB
R615	VRD-RM2HD470J	R 47	1/2W Carbon	AA
R616	VRD-RM2HD470J	R 47	1/2W Carbon	AA
△ R617	RR-XZ0035TAZZ	R 22	1/4W Fuse Resistor (VT-1428M)	AB
△ R617	RR-XZ0084CEZZ	R 1	1/4W Fuse Resistor (VT-2128M)	AB
R618	VRC-MA2HG562K	R 5.6k	1/2W Solid	AA
R619	VRS-SU2HB102J	R 1k	1/2W Metal Oxide	AA
R620	VRD-RA2BE123J	R 12k	1/8W Carbon	AA
R621	VRD-RA2BE273J	R 27k	1/8W Carbon	AA
R622	VRD-RA2BE333J	R 33k	1/8W Carbon (VT-2128M)	AA
R623	VRD-RA2BE123J	R 12k	1/8W Carbon (VT-1428M)	AA
R623	VRD-RA2BE103J	R 10k	1/8W Carbon (VT-2128M)	AA
R624	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R625	VRD-RA2EE225J	R 2.2M	1/4W Carbon (VT-1428M)	AA
R625	VRD-RA2EE824J	R 820k	1/4W Carbon (VT-2128M)	AA
R626	VRD-RA2EE125J	R 1.2M	1/4W Carbon	AA
R627	VRD-RA2BE124J	R 120k	1/8W Carbon (VT-1428M)	AA
R627	VRD-RA2BE104J	R 100k	1/8W Carbon (VT-2128M)	AA

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
PWB-A DUNTK8731WEV0/V1 MOTHER UNIT (Continued)					RESISTORS (Continued)				
RESISTORS (Continued)					R809	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R628	VRD-RA2BE274J	R	270k 1/8W Carbon	AA	R810	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R629	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	R811	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R630	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	R812	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R631	VRD-RA2BE683J	R	68k 1/8W Carbon	AA	R813	VRD-RA2BE682J	R	6.8k 1/8W Carbon	AA
			(VT-1428M)		R814	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R631	VRD-RA2BE273J	R	27k 1/8W Carbon	AA				(VT-1428M)	
			(VT-2128M)		R814	VRD-RA2BE821J	R	820 1/8W Carbon	AA
R632	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA				(VT-2128M)	
R633	VRD-RA2BE473J	R	47k 1/8W Carbon	AA	R815	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R634	VRD-RA2BE683J	R	68k 1/8W Carbon	AA				(VT-1428M)	
R635	VRD-RA2BE821J	R	820 1/8W Carbon	AA	R815	VRD-RA2BE122J	R	1.2k 1/8W Carbon	AA
R636	VRD-RA2BE271J	R	270 1/8W Carbon	AA				(VT-2128M)	
R639	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	R1000	VRD-RA2BE271J	R	270 1/8W Carbon	AA
R640	VRD-RA2BE563J	R	56k 1/8W Carbon	AA	R1001	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R641	VRD-RA2BE154J	R	150k 1/8W Carbon	AA	R1002	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R642	VRD-RA2BE474J	R	470k 1/8W Carbon	AA	R1003	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R643	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	R1004	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R644	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	R1005	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R645	VRD-RA2BE223J	R	22k 1/8W Carbon	AA	R1006	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R647	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA	R1007	VRD-RA2BE221J	R	220 1/8W Carbon	AA
			(VT-1428M)		R1008	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R647	VRD-RA2BE272J	R	2.7k 1/8W Carbon	AA	R1009	VRD-RA2BE221J	R	220 1/8W Carbon	AA
			(VT-2128M)		R1010	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R648	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	R1011	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R649	VRD-RA2BE273J	R	27k 1/8W Carbon	AA	R1012	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R650	VRD-RA2BE473J	R	47k 1/8W Carbon	AA	R1013	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R651	VRD-RA2BE473J	R	47k 1/8W Carbon	AA	R1015	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R766	VRD-RM2HD152J	R	1.5k 1/2W Carbon	AA	R1016	VRD-RA2BE272J	R	2.7k 1/8W Carbon	AA
R767	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	R1020	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R768	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA	R1021	VRD-RA2BE272J	R	2.7k 1/8W Carbon	AA
R769	VRD-RA2EE102J	R	1k 1/4W Carbon	AA	R1023	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R770	VRD-RM2HD391J	R	390 1/2W Carbon	AA	R1024	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R771	VRD-RA2BE182J	R	1.8k 1/8W Carbon	AA	R1025	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R772	VRD-RM2HD182J	R	1.8k 1/2W Carbon	AA	R1026	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R775	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA	R1027	VRD-RA2BE183J	R	18k 1/8W Carbon	AA
R776	VRD-RA2BE681J	R	680 1/8W Carbon	AA	R1028	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R777	VRD-RA2EE123J	R	12k 1/4W Carbon	AA	R1029	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R778	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	R1030	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R779	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	R1031	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R785	VRD-RM2HD1R5J	R	1.5 1/2W Carbon	AA	R1032	VRD-RA2BE221J	R	220 1/8W Carbon	AA
△ R786	VRG-RF2EB471J	R	470 1/4W Fuse Resistor	AC	R1033	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R789	VRS-VV3DB180J	R	18 2W Metal Oxide	AA	R1034	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R790	VRD-RA2BE820J	R	82 1/8W Carbon	AA	R1035	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R791	<i>See Controls</i>				R1036	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R801	VRD-RA2BE4R7J	R	4.7 1/8W Carbon	AA	R1037	VRD-RA2BE470J	R	47 1/8W Carbon	AA
R802	VRD-RA2BE683J	R	68k 1/8W Carbon	AA	R1039	VRD-RA2BE470J	R	47 1/8W Carbon	AA
R803	VRD-RM2HD470J	R	47 1/2W Carbon	AA	R1040	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
R804	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	R1041	VRD-RA2BE470J	R	47 1/8W Carbon	AA
R805	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	R1042	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
R806	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	R1050	VRD-RA2BE221J	R	220 1/8W Carbon	AA
R807	VRD-RA2BE391J	R	390 1/8W Carbon	AA	R1051	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R808	VRD-RA2BE221J	R	220 1/8W Carbon	AA	R1052	VRD-RA2BE221J	R	220 1/8W Carbon	AA
					R1053	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
					R1055	VRD-RA2BE223J	R	22k 1/8W Carbon	AA

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
PWB-A DUNTK8731WEV0/V1 MOTHER UNIT (Continued)					MISCELLANEOUS PARTS (Continued)				
RESISTORS (Continued)					P202	QTIPM0083CEZZ	R	Tip, (L5)	AB
R1057	VRD-RA2BE473J	R	47k 1/8W Carbon	AA	P203	QTIPM0083CEZZ	R	Tip, (L10)	AB
R1058	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	P351	QPLGN0441CEZZ	R	Plug 4-pin, (S)	AB
R1059	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	P401	QPLGN1278GEZZ	R	Plug 12-pin, (AB)	AC
R1060	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	P601	QPLGN0505CEZZ	R	Plug 5-pin, (F)	AB
R1061	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	P602	QPLGN0441CEZZ	R	Plug 4-pin, (H)	AB
R1062	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	P753	QPLGN1041CEZZ	R	Plug 10-pin, (BN/BN/BK)	AC
R1063	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	P754	QPLGN0341CEZZ	R	Plug 3-pin, (O/BN)	AA
R1064	VRD-RA2BE154J	R	150k 1/8W Carbon	AA	P755	QPLGN0578GEZZ	R	Plug 5-pin, (EK/PC)	AB
R1065	VRD-RA2BE821J	R	820 1/8W Carbon	AA	P801	QPLGN0641CEZZ	R	Plug 6-pin, (B/BN)	AB
R1066	VRD-RA2BE821J	R	820 1/8W Carbon	AA	P1001	QPLGN0978GEZZ	R	Plug 9-pin, (AD)	AC
R1067	VRD-RA2BE821J	R	820 1/8W Carbon	AA	P1002	QPLGN0278GEZZ	R	Plug 2-pin, (R/BN)	AA
R1068	VRD-RA2BE471J	R	470 1/8W Carbon	AA	P1003	QPLGN0478GEZZ	R	Plug 4-pin, (Y/BN)	AB
R1069	VRD-RA2BE153J	R	15k 1/8W Carbon	AA	P1004	QPLGN0441CE04	R	Plug 4-pin, TP1001	AA
R1070	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	— End of MOTHER UNIT —				
R1071	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	PWB-B DUNTK8732WEV0/V1 POWER UNIT				
R1072	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA	INTEGRATED CIRCUITS				
R1073	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA	△ IC701	VHISTRM6523-1	R	Power Control	BA
R1074	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	△ IC702	RH-FX0030CEZZ	J	Photocoupler, PC113L1	AF
R1076	VRD-RA2BE470J	R	47 1/8W Carbon	AA	IC751	VHISE115N//-1	R	115V Error	AF
R1077	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	TRANSISTORS				
R1078	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	△ Q701	VS25C3198-G-1	R	25C3198-G	AA
R1080	VRD-RA2BE221J	R	220 1/8W Carbon	AA	△ Q702	VS25C3198-G-1	R	25C3198-G	AA
R1083	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	△ Q703	VS25A1266-Y-1	R	25A1266-Y	AA
R1084	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	△ Q704	VS25C3279N/-1	R	25C3279N	AC
R1085	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	Q751	VS25A1266-Y-1	R	25A1266-Y	AA
R1086	VRD-RA2BE221J	R	220 1/8W Carbon	AA	Q752	VS25C3198-G-1	R	25C3198-G	AA
R1087	VRD-RA2BE822J	R	8.2k 1/8W Carbon	AA	Q753	VS25C3198-G-1	R	25C3198-G	AA
R1091	VRD-RA2BE333J	R	33k 1/8W Carbon	AA	Q761	VSDTC144ES/-1	R	DTC144ES	AB
R1092	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	DIODES				
R1093	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA	△ D701	RH-DX0240CEZZ	R		AB
R1094	VRD-RA2BE221J	R	220 1/8W Carbon	AA	△ D702	RH-DX0240CEZZ	R		AB
R1095	VRD-RA2BE335J	R	3.3M1/8W Carbon	AA	△ D703	RH-DX0240CEZZ	R		AB
R1096	VRD-RA2BE335J	R	3.3M1/8W Carbon	AA	△ D704	RH-DX0240CEZZ	R		AB
R1097	VRD-RA2BE335J	R	3.3M1/8W Carbon	AA	△ D705	RH-DX0416CEZZ	R		AC
R1098	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	△ D706	RH-DX0416CEZZ	R		AC
R1099	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA	△ D707	RH-DX0279CEZZ	R		AB
MISCELLANEOUS PARTS					△ D708	RH-DX0279CEZZ	R		AB
FB402	RBLN-0014GEZZ	R	Ferrite Bead	AB	△ D709	RH-DX0279CEZZ	R		AB
FB403	RBLN-0037CEZZ	R	Ferrite Bead	AB	△ D710	RH-DX0279CEZZ	R		AB
FB501	RBLN-0037CEZZ	R	Ferrite Bead	AB	△ D711	RH-EX0338CEZZ	R	Zener Diode, 20.5V	AB
FB502	RBLN-0037CEZZ	R	Ferrite Bead	AB	△ D712	VHD1SS119//1E	R	1SS119	AA
FB601	RBLN-0037CEZZ	R	Ferrite Bead	AB	△ D713	RH-DX0027CEZZ	R		AE
FB801	RBLN-0037CEZZ	R	Ferrite Bead	AB	△ D714	RH-EX0343CEZZ	R	Zener Diode	AB
FB802	RBLN-0037CEZZ	R	Ferrite Bead	AB					
FB803	RBLN-0037CEZZ	R	Ferrite Bead	AB					
FB1001	RBLN-0037CEZZ	R	Ferrite Bead	AB					
FB1002	RBLN-0037CEZZ	R	Ferrite Bead	AB					
J401	QJAKF0011CEZZ	R	Jack, AV Output	AG					
P201	QPLGN0241CE04	R	Plug 2-pin, TP201	AA					

Ref. No.	Part No.	*	Description	Code
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PWB-B DUNTK8732WEV0/V1 **POWER UNIT (Continued)**

DIODES (Continued)

D751	RH-DX0416CEZZ	R		AC
D752	RH-DX0226CEZZ	R		AC
D753	RH-DX0415CEZZ	R		AC
D754	RH-DX0416CEZZ	R		AC
D755	RH-DX0414CEZZ	R		AE
D756	RH-DX0414CEZZ	R		AE
D757	RH-EX0333CEZZ	R	Zener Diode, 17.3V	AA
D758	RH-EX0152CEZZ	R	Zener Diode	AE
D759	RH-EX0302CEZZ	R	Zener Diode	AA
D760	RH-EX0311CEZZ	R	Zener Diode	AA
D761	RH-EX0326CEZZ	R	Zener Diode, 13.8V	AA
D777	RH-EX0302CEZZ	R	Zener Diode	AA
D778	VHD1SS119//1E	R	1SS119	AA
D779	RH-EX0284CEZZ	R	Zener Diode, 3.6V	AB
D780	VHD1SS119//1E	R	1SS119	AA
D781	VHD1SS119//1E	R	1SS119	AA
D784	VHD1SS119//1E	R	1SS119	AA
D787	VHD1SS119//1E	R	1SS119	AA
D788	VHD1SS119//1E	R	1SS119	AA
△ VA701	RH-VX0033CEZZ	R	Varistor	AD

PACKAGED CIRCUIT

△ PR701	RMPTP0061CEZZ	R	Positive Coefficient Thermistor	AV
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COIL AND TRANSFORMERS

△ L702	RCiLF0154CEZZ	R	Line Filter	AQ
△ L703	RCiLF0087CEZZ	R	Line Filter	AL
L751	RCiLP0106CEZZ	R	Peaking Coil	AE
△ T701	RTRNZ0080PEZZ	R	Power Regulator Trans. (VT-1428M)	AX
△ T701	RTRNZ0081PEZZ	R	Power Regulator Trans. (VT-2128M)	AY

CAPACITORS

△ C701	RC-KZ0208CEZZ	R	0.01 AC250V Ceramic	AD
△ C702	RC-FZ008SGEZZ	R	0.1 AC250V Special	AD
△ C703	RC-FZ016SGEZZ	R	0.47 AC250V Special	AK
△ C704	RC-KZ0208CEZZ	R	0.01 AC250V Ceramic	AD
△ C705	RC-KZ0208CEZZ	R	0.01 AC250V Ceramic	AD
△ C706	RC-KZ0208CEZZ	R	0.01 AC250V Ceramic	AD
△ C707	RC-EZ0191CEZZ	R	330 400V Electrolytic	AS
△ C708	VCFPFC3CA222J	R	2200p1.6kV M. Polyester	AD
△ C709	VCKYPA2HB102K	R	1000p500V Ceramic	AA
△ C710	VCKYPA2HB222K	R	2200p500V Ceramic	AB
△ C711	VCEAGA1VW108M	R	1000 35V Electrolytic	AD
△ C712	VCEAGA1EW107M	R	100 25V Electrolytic	AD
△ C713	RC-KZ0019GEZZ	R	0.1 25V Ceramic	AA

Ref. No.	Part No.	*	Description	Code
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CAPACITORS (Continued)

△ C714	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
△ C715	VCEAGA1AW107M	R	100 10V Electrolytic	AB
△ C716	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
△ C717	VCKYPA1HB102K	R	1000p50V Ceramic	AA
△ C727	RC-KZ0128CEZZ	R	2200p4kV Ceramic	AD
C751	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C752	RC-KZ0192CEZZ	R	1000p2kV Ceramic	AB
C753	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C754	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C755	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C756	VCKYPA2HB102K	R	1000p500V Ceramic	AA
C757	VCEAGA1EW108M	R	1000 25V Electrolytic	AD
C758	VCEAGW2CW227M	R	220 160V Electrolytic	AK
C759	VCEAGH2CW107M	R	100 160V Electrolytic	AE
C760	VCEAGA2AW476M	R	47 100V Electrolytic	AC
C761	VCEAGA1VW108M	R	1000 35V Electrolytic	AD
C762	VCEAGH1CW338M	R	3300 16V Electrolytic	AE
C763	VCEAGA1CW228M	R	2200 16V Electrolytic	AE
C764	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C765	VCKYPA1HB102K	R	1000p50V Ceramic	AA
C766	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C767	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C782	VCCSPA1HL101J	R	100p 50V Ceramic	AA
C783	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C784	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB

RESISTORS

△ R701	VRW-KQ41C3R3K	R	3.3 15W Cement	AG
△ R702	VRS-KT3LB223J	R	22k 3W Metal Oxide	AC
△ R703	VRS-KT3LB223J	R	22k 3W Metal Oxide	AC
△ R704	VRG-RL2HB2R2J	R	2.2 1/2W Fuse Resistor	AB
△ R705	VRD-RM2HD472J	R	4.7k 1/2W Carbon	AA
△ R706	VRD-RM2HD472J	R	4.7k 1/2W Carbon	AA
△ R707	VRD-RM2HD681J	R	680 1/2W Carbon	AA
△ R708	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
△ R709	VRD-RA2BE101J	R	100 1/8W Carbon	AA
△ R710	VRD-RA2BE272J	R	2.7k 1/8W Carbon	AA
△ R711	VRD-RA2BE182J	R	1.8k 1/8W Carbon	AA
△ R712	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
△ R713	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA
△ R714	VRD-RA2BE822J	R	8.2k 1/8W Carbon	AA
△ R716	VRD-RA2BE561J	R	560 1/8W Carbon	AA
△ R717	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA
△ R718	VRD-RA2BE681J	R	680 1/8W Carbon	AA
△ R719	VRN-VV3ABR22J	R	0.22 1W Metal Film (VT-1428M)	AA
△ R719	VRN-VV3ABR27J	R	0.27 1W Metal Film (VT-2128M)	AA
△ R720	VRN-VV3ABR33J	R	0.33 1W Metal Film (VT-1428M)	AA
△ R720	VRN-VV3ABR27J	R	0.27 1W Metal Film (VT-2128M)	AA
△ R721	VRD-RA2BE102J	R	1k 1/8W Carbon	AA

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
PWB-B DUNTK8732WEV0/V1 POWER UNIT (Continued)					PWB-C DUNTK8733WEV0/V1 CRT SOCKET UNIT				
RESISTORS (Continued)					TRANSISTORS				
△ R722	VRD-RA2EE394J	R	390k 1/4W Carbon	AA	Q851	VS2SC2229O/1E	R	2SC2229(O)	AD
△ R725	VRC-UA2HG825K	R	8.2M 1/2W Solid	AA	Q852	VS2SC2229O/1E	R	2SC2229(O)	AD
△ R726	VRC-UA2HG825K	R	8.2M 1/2W Solid	AA	Q853	VS2SC2229O/1E	R	2SC2229(O)	AD
△ R752	YRG-RL2HB5R6J	R	5.6 1/2W Fuse Resistor	AB	Q854	VS2SA1371E/1E	R	2SA1371 or 2SA1321	AD
R753	VRS-VV3AB391J	R	390 1W Metal Oxide	AA	Q855	VS2SA1371E/1E	R	2SA1371 or 2SA1321	AD
R758	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	Q856	VS2SA1371E/1E	R	2SA1371 or 2SA1321	AD
R759	VRD-RA2BE470J	R	47 1/8W Carbon	AA	DIODES				
R760	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA	D851	VHD1SS119//1E	J	1SS119	AA
R761	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	D852	VHD1SS119//1E	J	1SS119	AA
R762	VRD-RA2EE272J	R	2.7k 1/4W Carbon	AA	D853	VHD1SS119//1E	J	1SS119	AA
R763	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	COIL				
R764	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	L851	VP-CF681K0000	R	Coil, 680μH	AB
R765	VRD-RA2BE823J	R	82k 1/8W Carbon	AA	CAPACITORS				
R780	VRD-RA2BE220J	R	22 1/8W Carbon	AA	C852	VCKYPA1HB561K	R	560p 50V Ceramic (VT-1428M)	AA
R781	VRD-RA2BE183J	R	18k 1/8W Carbon	AA	C852	VCKYPA1HB821K	R	820p 50V Ceramic (VT-2128M)	AA
R782	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	C853	VCKYPA1HB471K	R	470p 50V Ceramic	AA
R783	VRD-RA2BE272J	R	2.7k 1/8W Carbon	AA	C855	VCKYPA1HB561K	R	560p 50V Ceramic	AA
R784	VRD-RA2BE683J	R	68k 1/8W Carbon	AA	C856	VCKYPA1HB471K	R	470p 50V Ceramic	AA
R787	VRD-RA2BE683J	R	68k 1/8W Carbon	AA	C858	VCKYPA1HB681K	R	680p 50V Ceramic (VT-1428M)	AA
R788	VRS-KT3LB121J	R	120 3W Metal Oxide	AD	C858	VCKYPA1HB821K	R	820p 50V Ceramic (VT-2128M)	AA
MISCELLANEOUS PARTS					C859	VCKYPA1HB471K	R	470p 50V Ceramic	AA
△ FB701	RBLN-0037CEZZ	R	Ferrite Bead	AB	C860	VCEAGA2DW106M	R	10 200V Electrolytic	AC
△ FB702	RBLN-0037CEZZ	R	Ferrite Bead	AB	C861	RC-KZ0177CEZZ	R	4700p2kV Ceramic	AC
△ FB704	RBLN-0037CEZZ	R	Ferrite Bead	AB	RESISTORS				
FB751	RBLN-0037CEZZ	R	Ferrite Bead	AB	R851	VRD-RA2BE101J	R	100 1/8W Carbon (VT-1428M)	AA
FB752	RBLN-0037CEZZ	R	Ferrite Bead	AB	R852	VRD-RA2BE683J	R	68k 1/8W Carbon	AA
FB753	RBLN-0037CEZZ	R	Ferrite Bead	AB	R853	VRD-RA2BE471J	R	470 1/8W Carbon (VT-1428M)	AA
FB754	RBLN-0037CEZZ	R	Ferrite Bead	AB	R853	VRD-RA2BE331J	R	330 1/8W Carbon (VT-2128M)	AA
FB755	RBLN-0037CEZZ	R	Ferrite Bead	AB	R854	VRS-VV3DB153J	R	15k 2W Metal Oxide	AA
△ F701	QFS-C3224CEZZ	R	Fuse, T3.15A 250V	AD	R855	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
FH701	QFSHD1009CEZZ	R	Fuse Holder	AA	R856	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
FH702	QFSHD1010CEZZ	R	Fuse Holder	AA	End of POWER UNIT				
P701	QPLGN0304CEZZ	R	Plug 3-pin, (A)	AB					
P702	QPLGN0207CEZZ	R	Plug 2-pin, (G)	AA					
P751	QPLGN1041CEZZ	R	Plug 10-pin, (BN/BN/BK)	AC					
P752	QPLGN0341CEZZ	R	Plug 3-pin, (O/BN)	AA					
RY751	RRLYJ0071CEZZ	R	Relay	AK					
△ S701	QSW-P0588CEZZ	R	Main Power Switch	AP					
SC701	QTIPM0083CEZZ	R	Tip, (L10)	AB					
	QCNW1838PEZZ	R	Connecting Cord, (O/BN)	AF					
	QCNW1839PEZZ	R	Connecting Cord, (BN/BN/BK)	AK					
	QCNW1843PEZZ	R	Connecting Cord, (L10) (VT-1428M)	AF					
	QCNW1845PEZZ	R	Connecting Cord, (L10) (VT-2128M)	AF					

Ref. No.	Part No.	★	Description	Code
PWB-C DUNTK8733WEV0/V1				
CRT SOCKET UNIT (Continued)				

RESISTORS (Continued)

R857	VRD-RA2BE101J	R	100 1/8W Carbon (VT-1428M)	AA
R858	VRD-RA2BE683J	R	68k 1/8W Carbon	AA
R859	VRD-RA2BE391J	R	390 1/8W Carbon	AA
R860	VRS-VV3DB153J	R	15k 2W Metal Oxide	AA
R861	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R862	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R863	VRD-RA2BE101J	R	100 1/8W Carbon	AA
R864	VRD-RA2BE683J	R	68k 1/8W Carbon	AA
R865	VRD-RA2BE391J	R	390 1/8W Carbon	AA
R866	VRS-VV3DB153J	R	15k 2W Metal Oxide	AA
R867	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R868	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R869	VRD-RA2BE101J	R	100 1/8W Carbon (VT-2128M)	AA
R870	VRD-RA2BE101J	R	100 1/8W Carbon (VT-2128M)	AA
R871	VRD-RA2BE100J	R	10 1/8W Carbon	AA

MISCELLANEOUS PARTS

FB851	RBLN-0037CEZZ	R	Ferrite Bead	AB
P851	QPLGN0441CEZZ	R	Plug 4-pin, (H)	AB
P852	QPLGN0641CEZZ	R	Plug 6-pin, (B/BN)	AB
△ SC851	QSOCV0829CEZZ	R	CRT Socket (VT-1428M)	AK
△ SC851	QSOCV0913CEZZ	R	CRT Socket (VT-2128M)	AK
SC852	QTIPM0083CEZZ	R	Tip, (L1)	AB

— End of CRT SOCKET UNIT —

Ref. No.	Part No.	★	Description	Code
PWB-D DUNTK8734WEV0/V1				
POWER SW, R/C UNIT				

CAPACITOR

C1201	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
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RESISTOR

R1201	VRD-RA2BE331J	R	330 1/8W Carbon	AA
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MISCELLANEOUS PARTS

P1201	QPLGN0478GEZZ	R	Plug 4-pin, (Y/BN)	AB
△ RMC1201	RRMCU0216CEZZ	R	R/C Receiver	AK
△ S1201	QSW-K0098CEZZ	R	Power Switch	AC
	QCNW-1837PEZZ	R	Connecting Cord, (Y/BN)	AG

— End of POWER SW, R/C UNIT —

PWB-F DUNTK8735WEV0/V1				
VCR-KEY UNIT				

RESISTORS

R1204	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R1205	VRD-RA2BE182J	R	1.8k 1/8W Carbon	AA
R1206	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA

MISCELLANEOUS PARTS

P1202	QPLGN0280GEZZ	R	Plug 2-pin, (R/BN)	AB
△ S1202	QSW-K0079GEZZ	R	Switch, Play	AB
△ S1203	QSW-K0079GEZZ	R	Switch, Stop/Eject	AB
△ S1204	QSW-K0079GEZZ	R	Switch, FF	AB
△ S1205	QSW-K0079GEZZ	R	Switch, REW	AB
	QCNW-1836PEZZ	R	Connecting Cord, (R/BN)	AE

— End of VCR-KEY UNIT —

Ref. No.	Part No.	★	Description	Code
PWB-E DUNTK5167TEV0/V1				
VCR UNIT				
INTEGRATED CIRCUITS				
IC2201	VHiHA8201CF-1	V		AW
IC2202	VHiMN3883S/1E	V		AS
IC3301	VHiTEA5705/-1	V		AL
IC6601	VHiLA7285M/-1	M		AG
IC7701	VHiBA15218F1E	V		AF
IC7702	VHiBA15218F1E	V		AF
IC8801	RH-IX2628CEZZ	V		BB
IC8802	VHiPST529D2-1	V		AD
IC8803	VHiBA6209//1E	V		AG
IC9901	VHiUPC78M05H1	V		AK
TRANSISTORS				
Q2201	VS2SA1037KQ-1	V	2SA1037K(Q)	AA
Q2202	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2203	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2204	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2205	VS2SA1037KQ-1	V	2SA1037K(Q)	AA
Q2206	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2207	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2208	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2209	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q2214	VS2SA933SQR1E	V	2SA933S(Q,R)	AB
Q2215	VS2SC1740SQR1E	V	2SC1740S(Q,R)	AC
Q3301	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q3302	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q5543	VSDTC144EK/-1	V	DTC144EK	AB
Q5544	VSDTC144EK/-1	V	DTC144EK	AB
Q5550	VSDTC144EK/-1	V	DTC144EK	AB
Q6601	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q6602	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q6603	VSDTA124EK/-1	V	DTA124EK	AB
Q6604	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q6605	VS2SC3939SQR-1	V	2SC3939	AC
Q6606	VSDTC144EK/-1	V	DTC144EK	AB
Q6611	VSDTC144EK/-1	V	DTC144EK	AB
Q6612	VSDTC144EK/-1	V	DTC144EK	AB
Q7701	VS2SA1037KQ-1	V	2SA1037K(Q)	AA
Q7702	VS2SD1306-E1E	V	2SD1306(E)	AD
Q7703	VS2SD1306-E1E	V	2SD1306(E)	AD
Q8301	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8302	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8303	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8304	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8305	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8801	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8802	VS2SC2412KQ-1	V	2SC2412K(Q)	AA
Q8803	RH-PX0233GEZZ	J	LED, PT493FL2 Start Sensor	AD
Q8804	RH-PX0233GEZZ	J	LED, PT493FL2 End Sensor	AD
Q8807	VSDTC114EK/-1	V	DTC114EK	AB

Ref. No.	Part No.	★	Description	Code
TRANSISTORS (Continued)				
Q8813	VSDTC124EK/-1	V	DTC124EK	AB
Q8815	VS2SA1037KQ-1	V	2SA1037K(Q)	AA
Q9911	VS2SD1944K/-1	V	2SD1944(K)	AE
Q9912	VSDTC124EK/-1	V	DTC124EK	AB
Q9913	VS2SA950-Y/1E	V	2SA950(Y)	AD
Q9914	VSDTC124EK/-1	V	DTC124EK	AB
Q9917	VSDTA124EK/-1	V	DTA124EK	AB
DIODES				
D3301	VHD1SS119//1	V	1SS119	AB
D3302	VHD1SS119//1	V	1SS119	AB
D3303	VHD1SS119//1	V	1SS119	AB
D3304	VHD1SS119//1	V	1SS119	AB
D6602	VHD1SS119//1	V	1SS119	AB
D7701	VHD1SS119//1	V	1SS119	AB
D7702	VHD1SS119//1	V	1SS119	AB
D7703	VHD1SS119//1	V	1SS119	AB
D8301	RH-PX0352CEZZ	V	LED, Power/Wake-up	AC
D8302	RH-PX0348CEZZ	V	LED, REC	AB
D8303	RH-PX0348CEZZ	V	LED, Timer	AB
D8304	RH-PX0348CEZZ	V	LED, Child Lock	AB
D8801	VHD1SS119//1	V	1SS119	AB
D8802	VHD1SS119//1	V	1SS119	AB
D8803	RH-PX0232GEZZ	J	LED, GP1S381 Supply Reel Sensor	AF
D8804	RH-PX0232GEZZ	J	LED, GP1S381 Take-up Reel Sensor	AF
D8805	RH-PX0234GEZZ	J	LED, Cassette	AD
D8806	RH-PX0231GEZZ	J	LED, GP1S24 Cam Switch A (Inside)	AF
D8807	RH-PX0231GEZZ	J	LED, GP1S24 Cam Switch B (Outside)	AF
D8810	RH-EX0615GEZZ	V	Zener Diode	
D9923	VHD1SS119//1	V	1SS119	AB
D9924	VHD1SS119//1	V	1SS119	AB
D9925	VHD1SS119//1	V	1SS119	AB
PACKAGED CIRCUITS				
X5501	RCRSB0166GEZZ	V	Crystal, 4.43 MHz	AG
X5502	RCRSB0188GEZZ	V	Crystal	AG
X8801	RCRSB0159GEZZ	V	Crystal	AF
COL AND TRANSFORMERS				
L2201	VP-XF151J0000	V	Coil, 150μH	AB
L2202	VP-XF150J0000	V	Coil, 15μH	AB
L2203	VP-XF330J0000	V	Coil, 33μH	AB
L2204	VP-XF120J0000	V	Coil, 12μH	AB
L2205	VP-XF181J0000	V	Coil, 180μH	AB
L2206	VP-DF101K0000	V	Coil, 100μH	AB
L2207	VP-XF560J0000	V	Coil, 56μH	AB
L2208	VP-XF151J0000	V	Coil, 150μH	AB
L2209	VP-XF560J0000	V	Coil, 56μH	AB

Ref. No.	Part No.	★	Description	Code
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PWB-E DUNTK5167TEV0/V1 **VCR UNIT (Continued)**

COL AND TRANSFORMERS (Continued)

L2210	VP-XF151J0000	V	Coil, 150μH	AB
L2223	VP-DF101K0000	V	Coil, 100μH	AB
L2250	VP-XF470J0000	V	Coil, 47μH	AB
L2251	VP-XF150J0000	V	Coil, 15μH	AB
L3301	VP-DF101K0000	V	Coil, 100μH	AB
L3302	VP-DF101K0000	V	Coil, 100μH	AB
L5501	VP-DF561K0000	V	Coil, 560μH	AB
L5504	VP-XF150J0000	V	Coil, 15μH	AB
L5505	VP-XF100J0000	V	Coil, 10μH	AB
L5506	VP-XF390J0000	V	Coil, 39μH	AB
L5509	VP-XF151J0000	V	Coil, 150μH	AB
L5510	VP-XF680J0000	V	Coil, 68μH	AB
L5514	VP-XF150J0000	V	Coil, 15μH	AB
L6601	VP-DF221K0000	V	Coil, 220μH	AB
L6602	VP-DF101K0000	V	Coil, 100μH	AB
L6605	VP-YF822J0000	V	Coil, 8200μH	AC
L8801	VP-DF1R0K0000	V	Coil, 1μH	AB
T6601	RTRNH0053GEZZ	V	Osc. Trans.	AE

CONTROLS

R6623	RVR-M4340GEZZ	V	47k(B) Bias Adj.	AB
R7701	RVR-M4343GEZZ	V	100k(B)	AB

Head Switching Point

CAPACITORS

C2201	VCKYCY1HB681K	V	680p 50V Ceramic	AA
C2202	VCKYCY1HB391K	V	390p 50V Ceramic	AA
C2203	VCCCCY1HH270J	V	27p 50V Ceramic	AA
C2204	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C2205	VCCCCY1HH330J	V	33p 50V Ceramic	AA
C2206	VCCCCY1HH560J	V	56p 50V Ceramic	AA
C2208	VCCCCY1HH680J	V	68p 50V Ceramic	AA
C2209	VCKYCY1EF473Z	V	0.047 25V Ceramic	AB
C2210	VCKYD41CY103N	V	0.01 16V Ceramic	AA
C2211	VCCCCY1HH330J	V	33p 50V Ceramic	AA
C2212	VCEAEA1HW474M	V	0.47 50V Electrolytic	AB
C2213	VCKYCY1HB102K	V	1000p50V Ceramic	AA
C2214	VCKYCY1CF224Z	V	0.22 16V Ceramic	AA
C2215	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C2216	VCCCPA1HH100D	V	10p 50V Ceramic	AA
C2217	VCEAEA1HW105M	V	1 50V Electrolytic	AB
C2218	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2219	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C2220	VCEAEA1HW335M	V	3.3 50V Electrolytic	AB
C2221	VCKYCY1EF473Z	V	0.047 25V Ceramic	AB
C2222	VCKYD41HF104Z	V	0.1 50V Ceramic	AA
C2223	VCEAEA1HW335M	V	3.3 50V Electrolytic	AB
C2224	VCEAEA1HW225M	V	2.2 50V Electrolytic	AB
C2225	VCEAEA1CW106M	V	10 16V Electrolytic	AB
C2226	VCEAEA1HW474M	V	0.47 50V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code
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CAPACITORS (Continued)

C2227	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2228	VCEAEA1HW224M	V	0.22 50V Electrolytic	AB
C2229	VCKYD41HF473Z	V	0.047 50V Ceramic	AA
C2230	VCEAEA0JW476M	V	47 6.3V Electrolytic	AB
C2233	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2234	VCKYD41HF473Z	V	0.047 50V Ceramic	AA
C2235	VCEAEM1CW106M	V	10 16V Electrolytic	AB
C2236	VCKYD41HF104Z	V	0.1 50V Ceramic	AA
C2237	VCCCCY1HH330J	V	33p 50V Ceramic	AA
C2238	VCCCCY1HH330J	V	33p 50V Ceramic	AA
C2239	VCCCCY1HH560J	V	56p 50V Ceramic	AA
C2240	VCKYCY1HB391K	V	390p 50V Ceramic	AA
C2242	VCCCCY1HH560J	V	56p 50V Ceramic	AA
C2244	VCCCCY1HH221J	V	220p 50V Ceramic	AA
C2250	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2251	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2252	VCCCCY1HH470J	V	47p 50V Ceramic	AA
C2254	VCCCCY1HH680J	V	68p 50V Ceramic	AA
C2255	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2267	VCKYCY1HB222K	V	2200p50V Ceramic	AA
C2268	VCKYCY1HB682K	V	6800p50V Ceramic	AA
C2269	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C2270	VCEAEA1CW476M	V	47 16V Electrolytic	AB
C2271	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C3301	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3302	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3303	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3304	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C3305	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C3306	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3307	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3308	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C3309	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C3310	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3311	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3312	VCKYCY1HF223Z	V	0.022 50V Ceramic	AB
C3314	VCKYCY1CF334Z	V	0.33 16V Ceramic	AA
C3316	VCKYCY1HB472K	V	4700p50V Ceramic	AA
C3318	VCKYCY1HB102K	V	1000p50V Ceramic	AA
C3319	VCEAEM0JW476M	V	47 6.3V Electrolytic	AB
C3320	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C3321	VCEAEM1CW476M	V	47 16V Electrolytic	AB
C3322	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C3327	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C3328	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C3331	VCKYPA1HF103Z	V	0.01 50V Ceramic	AA
C3332	VCKYPA1HF103Z	V	0.01 50V Ceramic	AA
C5501	VCKYCY1HB332K	V	3300p50V Ceramic	AA
C5503	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C5504	VCEAEM0JW476M	V	47 6.3V Electrolytic	AB
C5505	VCKYD41HF473Z	V	0.047 50V Ceramic	AA
C5506	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C5508	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C5509	VCKYCY1EF153Z	V	0.015 25V Ceramic	AA
C5510	VCEAEA1HW335M	V	3.3 50V Electrolytic	AB

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**PWB-E DUNTK5167TEV0/V1
VCR UNIT (Continued)**

CAPACITORS (Continued)

C5511	VCCSD41HL270J	V	27p	50V	Ceramic	AA
C5512	VCKYD41CY103N	V	0.01	16V	Ceramic	AA
C5513	VCKYCY1EF104Z	V	0.1	25V	Ceramic	AA
C5514	VCKYPA1HF223J	V	0.022	50V	Ceramic	AA
C5515	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C5516	VCEAEA1EW475M	V	4.7	25V	Electrolytic	AB
C5517	VCCCPA1HH150J	V	15p	50V	Ceramic	AA
C5518	VCCCPA1HH9R0D	V	9p	50V	Ceramic	AA
C5520	VCEAEA1HW474M	V	0.47	50V	Electrolytic	AB
C5521	VCKYCY1HF223Z	V	0.022	50V	Ceramic	AB
C5522	VCEAEA1HW105M	V	1	50V	Electrolytic	AB
C5523	VCEAEA1CW106M	V	10	16V	Electrolytic	AB
C5525	VCKYD41CY103N	V	0.01	16V	Ceramic	AA
C5526	VCCSD41HL680J	V	68p	50V	Ceramic	AA
C5527	VCCCCY1HH470J	V	47p	50V	Ceramic	AA
C5528	VCCCCY1HH560J	V	56p	50V	Ceramic	AA
C5529	VCEAEA1EW475M	V	4.7	25V	Electrolytic	AB
C5530	VCCCCY1HH121J	V	120p	50V	Ceramic	AA
C5531	VCCCCY1HH1R0C	V	1p	50V	Ceramic	AA
C5532	VCCCCY1HH470J	V	47p	50V	Ceramic	AA
C5533	VCCCCY1HH470J	V	47p	50V	Ceramic	AA
C5535	VCCSD41HL220J	V	22p	50V	Ceramic	AA
C5537	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C5540	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C5542	VCKYD41HB181K	V	180p	50V	Ceramic	AA
C6601	VCEAEA1CW106M	V	10	16V	Electrolytic	AB
C6602	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C6603	VCEAEM1CW106M	V	10	16V	Electrolytic	AB
C6604	VCQYTA1HM562K	V	5600p	50V	Mylar	AB
C6605	VCEAEM1CW106M	V	10	16V	Electrolytic	AB
C6606	VCCCCY1HH151J	V	150p	50V	Ceramic	AA
C6607	VCKYD41HB271K	V	270p	50V	Ceramic	AA
C6608	VCCCCY1HH151J	V	150p	50V	Ceramic	AA
C6609	VCCCCY1HH390J	V	39p	50V	Ceramic	AA
C6610	VCKYD41HB331K	V	330p	50V	Ceramic	AA
C6611	VCEAEA1CW106M	V	10	16V	Electrolytic	AB
C6613	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C6614	VCKYPA1HB221K	V	220p	50V	Ceramic	AA
C6615	VCQPYA2AA562J	V	5600p	100V	Polypro Film	AC
C6617	VCQYTA1HM123K	V	0.012	50V	Mylar	AA
C6618	VCEAEM1CW226M	V	22	16V	Electrolytic	AB
C6619	VCEAEM1HW474M	V	0.47	50V	Electrolytic	AB
C6620	VCKYCY1EF104Z	V	0.1	25V	Ceramic	AA
C6622	VCKYCY1EF104Z	V	0.1	25V	Ceramic	AA
C6623	VCEAEM1CW106M	V	10	16V	Electrolytic	AB
C6624	VCEAGA1CW476M	V	47	16V	Electrolytic	AB
C6625	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C6626	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C6627	VCKYCY1CF224Z	V	0.22	16V	Ceramic	AA
C6628	VCKYCY1EB822K	V	8200p	25V	Ceramic	AA
C6642	VCEAEA1HW105M	V	1	50V	Electrolytic	AB
C6643	VCQYTA1HM273K	V	0.027	50V	Mylar	AB

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CAPACITORS (Continued)

C6651	VCQYTA1HM103K	V	0.01	50V	Mylar	AB
C6652	VCQYTA1HM223K	V	0.022	50V	Mylar	AB
C7701	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7702	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7703	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7704	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7705	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7706	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7708	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7709	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7713	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7714	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7715	VCE9EM1HW474M	V	0.47	50V	Elect. (N.P)	AC
C7716	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7717	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7718	RC-KZ0019GEZZ	V	0.1	25V	Ceramic	AA
C7719	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7720	VCEAEM1CW106M	V	10	16V	Electrolytic	AB
C7721	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7722	VCKYD41HB102K	V	1000p	50V	Ceramic	AA
C7723	VCKYCY1EF104Z	V	0.1	25V	Ceramic	AA
C7724	VCEAEA1CW476M	V	47	16V	Electrolytic	AB
C7725	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7726	VCEAEU1CW226M	V	22	16V	Electrolytic	AB
C7727	VCEAEU1CW476M	V	47	16V	Electrolytic	AB
C7728	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7729	VCEAEM1CW106M	V	10	16V	Electrolytic	AB
C7730	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C7731	VCEAEM1CW476M	V	47	16V	Electrolytic	AB
C7732	RC-QZA682TAYJ	V	6800p	50V	Mylar	AB
C7733	VCKYCY1HB681K	V	680p	50V	Ceramic	AA
C7739	VCE9EU1HW105M	V	1	50V	Elect. (N.P)	AC
C7740	VCE9EU1HW105M	V	1	50V	Elect. (N.P)	AC
C7741	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C7751	VCEAEA1CW476M	V	47	16V	Electrolytic	AB
C7752	VCEAEA1CW106M	V	10	16V	Electrolytic	AB
C8801	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C8804	VCCCCY1HH101J	V	100p	50V	Ceramic	AA
C8805	VCKYCY1EF104Z	V	0.1	25V	Ceramic	AA
C8806	RC-KZ0019GEZZ	V	0.1	25V	Ceramic	AA
C8807	VCKYCY1EF104Z	V	0.1	25V	Ceramic	AA
C8808	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA
C8809	VCEAEM1HW225M	V	2.2	50V	Electrolytic	AB
C8810	VCCCCY1HH220J	V	22p	50V	Ceramic	AA
C8811	VCCCCY1HH220J	V	22p	50V	Ceramic	AA
C8813	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C8814	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C8815	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA
C8816	VCKYCY1HB332K	V	3300p	50V	Ceramic	AA
C8817	RC-KZ0019GEZZ	V	0.1	25V	Ceramic	AA
C8818	VCEAEA1EW476M	V	47	25V	Electrolytic	AC
C8819	RC-KZ0017GEZZ	V	0.047	25V	Ceramic	AA
C8820	VCE9EA1HW105M	V	1	50V	Elect. (N.P)	AC
C8821	VCKYCY1EF473Z	V	0.047	25V	Ceramic	AB
C8822	VCKYCY1HB102K	V	1000p	50V	Ceramic	AA

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VCR UNIT (Continued)				

CAPACITORS (Continued)

C8823	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C8824	VCKYCY1HB102K	V	1000p50V Ceramic	AA
C8825	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C8826	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C8827	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C8828	VCKYCY1HB102K	V	1000p50V Ceramic	AA
C8829	VCKYCY1HB102K	V	1000p50V Ceramic	AA
C8830	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C8831	VCEAEA1CW476M	V	47 16V Electrolytic	AB
C8837	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C8838	VCKYD41HB102K	V	1000p50V Ceramic	AA
C8839	VCKYCY1EF104Z	V	0.1 25V Ceramic	AA
C8840	VCKYD41HF104Z	V	0.1 50V Ceramic	AA
C8852	VCKYCY1HB102K	V	1000p50V Ceramic	AA
C8862	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C9931	VCEAEA1CW106M	V	10 16V Electrolytic	AB
C9932	VCEAEA1CW107M	V	100 16V Electrolytic	AC
C9933	VCEAEA1CW226M	V	22 16V Electrolytic	AB
C9934	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C9935	VCEAEA1CW226M	V	22 16V Electrolytic	AB

RESISTORS

R8840	VRS-CY1JF000J	V	0	AA
R2201	VRD-RA2BE681J	V	680 1/8W Carbon	AA
R2202	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R2203	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R2204	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R2205	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA
R2206	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R2207	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R2208	VRS-CY1JF471J	V	470 1/16W Metal Oxide	AA
R2209	VRS-CY1JF821J	V	820 1/16W Metal Oxide	AA
R2210	VRS-CY1JF821J	V	820 1/16W Metal Oxide	AA
R2211	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R2212	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R2213	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R2214	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R2215	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R2217	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R2219	VRS-CY1JF122J	V	1.2k 1/16W Metal Oxide	AA
R2220	VRS-CY1JF152J	V	1.5k 1/16W Metal Oxide	AA
R2222	VRD-RA2BE101J	V	100 1/8W Carbon	AA
R2223	VRD-RA2EE331J	V	330 1/4W Carbon	AA
R2224	VRD-RA2BE750J	V	75 1/8W Carbon	AA
R2226	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R2228	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R2229	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R2230	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R2250	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA

RESISTORS (Continued)

R2251	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R2252	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R2253	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R2254	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R2255	VRS-CY1JF821J	V	820 1/16W Metal Oxide	AA
R2256	VRS-CY1JF181J	V	180 1/16W Metal Oxide	AA
R2257	VRS-CY1JF821J	V	820 1/16W Metal Oxide	AA
R2258	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R2259	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R2260	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R2276	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R2277	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R2278	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA
R2279	VRS-CY1JF562J	V	5.6k 1/16W Metal Oxide	AA
R2280	VRD-RA2BE682J	V	6.8k 1/8W Carbon	AA
R2281	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R2282	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R3301	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R3302	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R3306	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R3307	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R3309	VRS-CY1JF100J	V	10 1/16W Metal Oxide	AA
R3310	VRS-CY1JF471J	V	470 1/16W Metal Oxide	AA
R3311	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R3312	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R3313	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R3314	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R3316	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R3317	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R3319	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R3331	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R3332	VRD-RA2BE393J	V	39k 1/8W Carbon	AA
R3333	VRD-RA2BE153J	V	15k 1/8W Carbon	AA
R3334	VRD-RA2BE393J	V	39k 1/8W Carbon	AA
R5501	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R5502	VRS-CY1JF821J	V	820 1/16W Metal Oxide	AA
R5503	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R5506	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R5507	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R5508	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R5510	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R5513	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R5514	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R5517	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R5520	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R5523	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R5524	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R5540	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R5552	VRD-RA2BE221J	V	220 1/8W Carbon	AA
R6602	VRD-RA2BE223J	V	22k 1/8W Carbon	AA
R6605	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R6607	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R6608	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R6609	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R6610	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA

Ref. No.	Part No.	*	Description	Code
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**PWB-E DUNTK5167TEV0/V1
VCR UNIT (Continued)**
RESISTORS (Continued)

R6611	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R6612	VRS-CY1JF683J	V	68k 1/16W Metal Oxide	AA
R6613	VRS-CY1JF683J	V	68k 1/16W Metal Oxide	AA
R6614	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R6615	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R6616	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R6617	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R6619	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R6620	VRS-CY1JF100J	V	10 1/16W Metal Oxide	AA
R6621	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA
R6622	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R6623	<i>See Controls</i>			
R6625	VRS-CY1JF151J	V	150 1/16W Metal Oxide	AA
R6626	VRS-CY1JF274J	V	270k 1/16W Metal Oxide	AA
R6627	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R6628	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R6629	VRS-CY1JF151J	V	150 1/16W Metal Oxide	AA
R6630	VRS-CY1JF225J	V	2.2M 1/16W Metal Oxide	AA
R6632	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R6633	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R6634	VRD-RA2BE470J	V	47 1/8W Carbon	AA
R6635	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R6636	VRD-RA2EE4R7J	V	4.7 1/4W Carbon	AA
R6642	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R6643	VRS-CY1JF221J	V	220 1/16W Metal Oxide	AA
R7701	<i>See Controls</i>			
R7702	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R7703	VRD-RA2BE472J	V	4.7k 1/8W Carbon	AA
R7704	VRS-CY1JF224J	V	220k 1/16W Metal Oxide	AA
R7705	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R7706	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R7707	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R7708	VRD-RA2BE683J	V	68k 1/8W Carbon	AA
R7710	VRS-CY1JF124J	V	120k 1/16W Metal Oxide	AA
R7711	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R7712	VRD-RA2BE274J	V	270k 1/8W Carbon	AA
R7715	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7716	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R7717	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7718	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R7719	VRS-CY1JF394J	V	390k 1/16W Metal Oxide	AA
R7720	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7721	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7723	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R7724	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R7725	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7726	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7727	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R7728	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA
R7729	VRS-CY1JF562J	V	5.6k 1/16W Metal Oxide	AA
R7730	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R7731	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA

Ref. No.	Part No.	*	Description	Code
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RESISTORS (Continued)

R7732	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R7733	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R7734	VRD-RA2BE472J	V	4.7k 1/8W Carbon	AA
R7735	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R7736	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R7737	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R7738	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R7739	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R7740	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R7741	VRS-CY1JF103F	V	10k 1/16W Metal Oxide	AA
R7742	VRS-CY1JF103F	V	10k 1/16W Metal Oxide	AA
R7743	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R7744	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R7745	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R7747	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R8202	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R8203	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R8204	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8205	VRS-CY1JF152J	V	1.5k 1/16W Metal Oxide	AA
R8211	VRD-RA2BE331J	V	330 1/8W Carbon	AA
R8212	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R8213	VRD-RA2BE331J	V	330 1/8W Carbon	AA
R8214	VRD-RA2BE331J	V	330 1/8W Carbon	AA
R8215	VRD-RA2BE331J	V	330 1/8W Carbon	AA
R8805	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R8806	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R8807	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R8808	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8809	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8810	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8814	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8816	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8817	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8818	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8819	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8820	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8821	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8823	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8825	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8827	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R8828	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8829	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8831	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8832	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8833	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R8834	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R8835	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R8836	VRD-RA2BE473J	V	47k 1/8W Carbon	AA
R8837	VRD-RA2BE101J	V	100 1/8W Carbon	AA
R8838	VRS-CY1JF684J	V	680k 1/16W Metal Oxide	AA
R8839	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R8842	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8843	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8847	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8848	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
PWB-E DUNTK5167TEV0/V1				
VCR UNIT (Continued)				
RESISTORS (Continued)				
R8849	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8850	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8851	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8852	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R8853	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8854	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R8855	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R8856	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8857	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R8858	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8859	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8860	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8861	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8862	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8863	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8864	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8865	VRD-RA2BE153J	V	15k 1/8W Carbon	AA
R8866	VRD-RA2BE221J	V	220 1/8W Carbon	AA
R8867	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
R8868	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8869	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R8870	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R8871	VRD-RA2BE221J	V	220 1/8W Carbon	AA
R8872	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
R8873	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8874	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R8875	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R8876	VRD-RA2EE151J	V	150 1/4W Carbon	AA
R8877	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R8878	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R8879	VRD-RA2BE331J	V	330 1/8W Carbon	AA
R8880	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
R8881	VRD-RA2BE331J	V	330 1/8W Carbon	AA
R8882	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
△ R8888	VRG-SC2EB2R2J	V	2.2 1/4W Fuse Resistor	AC
R8889	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R8895	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA
R8902	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R8903	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R8904	VRD-RA2BE472J	V	4.7k 1/8W Carbon	AA
R8905	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R8906	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
△ R9951	VRG-SC2EB2R2J	V	2.2 1/4W Fuse Resistor	AC
R9952	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R9953	VRD-RA2BE122J	V	1.2k 1/8W Carbon	AA
R9954	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R9955	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R9956	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R9957	VRD-RA2BE103J	V	10k 1/8W Carbon	AA

Ref. No.	Part No.	★	Description	Code
SWITCHES				
S8201	QSW-K0002AJZZ	V	All Clear	AD
S8202	QSW-K0002AJZZ	V	REC	AD
S8203	QSW-K0002AJZZ	V	Sound Volume Down	AD
S8204	QSW-K0002AJZZ	V	Sound Volume Up	AD
S8205	QSW-K0002AJZZ	V	Channel Down	AD
S8206	QSW-K0002AJZZ	V	Channel Up	AD
S8801	QSW-F0042AJZZ	V	Rec Tip	AG

MISCELLANEOUS PARTS				
FB8801	RBLN-0014GEZZ	V	Ferrite Bead	AB
J8201	QJAKF0014CEZZ	V	Jack, AV Input	AE
P2205	QPLGZ0343GEZZ	V	Plug 3-pin, TP2203-5	AA
P6601	QPLGZ0243GEZZ	V	Plug 2-pin, TP6601-2	AA
P8803	QPLGZ0974GEZZ	V	Plug 9-pin, (EC)	AD
P8804	QPLGN0247REZZ	V	Plug 2-pin, (ED)	AA
P8805	QPLGN0978GEZZ	V	Plug 9-pin, (EE)	AC
P8807	QPLGN0247REZZ	V	Plug 2-pin, (EG)	AA
P8809	QPLGN1278GEZZ	V	Plug, 12-pin, (EI)	AC
P8811	QPLGN0578GEZZ	V	Plug 5-pin, (EK)	AB
P8851	QPLGN0373GEZZ	V	Plug 3-pin, TP8801-3	AA
P8852	QPLGN0273GEZZ	V	Plug 2-pin, TP8804-5	AA
SC8802	QSOCN0794GEZZ	V	Socket 7-pin, (EB)	AC
SC8806	QSOCN0884REZZ	V	Socket 8-pin, (EF)	AC
SC8808	QSOCN0794REZZ	V	Socket 7-pin, (EH)	AE
W8801	LHLDZ1893AJ00	V	Sensor Holder	AB
W8802	LHLDZ1893AJ00	V	Sensor Holder	AB
	LHLDP1143AJZZ	V	CAS-LED Holder	AD
	LHLDP1151AJZZ	V	LED Holder	AE
	QLUGP0101AJFW	V	TP2208	AB
	QCNW-0225AJZZ	V	Connecting Cord (EI to AB)	AT
	QCNW-0243AJZZ	V	Connecting Cord (EG to MJ)	AD
	QCNW-0258AJZZ	V	Connecting Cord (EK to PC)	AH
	QCNW-0263AJZZ	V	Connecting Cord (EE to AD)	AL
	QCNW-0264AJZZ	V	Connecting Cord (GND Wire)	AF

— End of VCR UNIT —

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
MECHANISM CHASSIS PARTS									
1	LCHSM0155AJZZ	V	Main Chassis Ass'y	AZ	45	MLEVF0422AJZZ	V	Supply Loading Arm Ass'y	AG
2	NROLP0084AJZZ	V	Supply Impedance Roller	AB	46	CLEVP0239AJ00	V	Auto Head Cleaner Ass'y	AF
3	PGIDH0031AJFW	V	Supply Impedance Roller Frange	AD	47	MSPRT0379AJFJ	V	Loading Double Action Spring	AB
4	PGIDS0027AJZZ	V	Supply Impedance Roller Lower Frange	AA	48	NDAiV1065AJ00	V	Reel Disk	AB
5	NSFTL0563AJFW	V	Supply Impedance Roller Inner	AE	49	MARMP0053AJZZ	V	Reel Idler	AN
6	LPOLM0050GEZZ	V	Supply Pole Base Ass'y	AM	50	MLEVP0240AJZZ	V	Clutch Lever	AB
7	LPOLM0051GEZZ	V	Take-up Pole Base Ass'y	AM	51	NGERH1221AJZZ	V	Clutch Gear Ass'y	AK
8	NROLP0110GEZZ	V	Guide Roller	AH	52	NPLYV0147AJZZ	V	Reel Pulley Ass'y	AP
9	MLEVF0414AJZZ	V	Reverse Guide Lever Ass'y	AG	53	NGERH1224AJZZ	V	Playback Gear	AD
10	MSPRD0147AJFJ	V	Reverse Guide Spring	AB	54	MLEVP0241AJZZ	V	Clutch Connect Arm	AB
11	PSPAZ0391AJZZ	V	Reverse Guide Spacer	AE	55	MLEVP0252AJZZ	V	Take-up Main Brake Ass'y	AK
12	RHEDU0083GEZZ	V	Audio/Control Head	AR	56	MLEVP0249AJZZ	V	Take-up Lock Lever	AC
13	MLEVF0415AJFW	V	Audio/Control Head Arm	AC	57	MLEVP0253AJZZ	V	Supply Main Brake Lever Ass'y	AH
14	MSPRD0148AJFJ	V	Audio/Control Head Arm Head	AB	58	MSPRT0380AJFJ	V	Main Brake Spring	AB
15	MSPRC0189AJFJ	V	Azimuth Spring	AB	59	NGERH1225AJZZ	V	Cassette Housing Control Drive Gear	AD
16	RHEDT0032GEZZ	V	Full Erase Head	AK	60	PREFL1004AJZZ	V	Light Guide	AD
17	PSPAZ0392AJZZ	V	Audio/Control Head Arm Spacer	AB	61	MLEVP0250AJZZ	V	Slow Brake Ass'y	AD
18	QPWBF4735AJZZ	V	Audio/Control Head PWB	AC	62	MSPRD0158AJFJ	V	Slow Brake Spring	AB
19	QSOCN0885REZZ	V	Socket 8-pin	AB	63	RMOTN2051GEZZ	V	Capstan Motor	BD
20	NBLTK0065AJ00	V	Reel Belt	AE	64	RMOTM1062GEZZ	V	Loading Motor	AP
21	MLEVF0416GEZZ	V	Pinch Roller Lever Ass'y	AU	65	QCNW-0271AJZZ	V	Lead Wire for Loading Motor	AD
22	MLEVP0237AJZZ	V	Pinch Double Action Lever	AD	66	QCNW-0155AJZZ	V	FFC for Audio/Control	AF
23	MLEVF0417AJZZ	V	Pinch Drive Lever Ass'y	AG	67	QCNW-0247AJZZ	V	FFC for Drum Motor	AG
24	NGERH1216AJZZ	V	Pinch Drive Cam	AE	68	— Not Used —			
25	MLEVP0238AJZZ	V	Open Lever	AC	69	— Not Used —			
26	MSPRT0377AJFJ	V	Pinch Double Action Spring	AC	70	PGIDC0052GEFW	V	Drum Base	AK
27	— Not Used —				71	XBPSD30P08J00	V	Drum Base Mounting Screw (SW3P + 8S)	AA
28	MLEVF0418AJZZ	V	Tension Arm Ass'y	AG	72	QBRSK0034GEZZ	V	Drum Earth Brush	AD
29	LBOSZ1001AJZZ	V	Tension Arm Boss	AB	73	MSPRC0194GEFJ	V	Drum Earth Brush Spring	AA
30	MSPRT0378AJFJ	V	Tension Spring	AC	74	RMOTP1124GEZZ	V	Drum Drive Motor	AT
31	LBNDK1008AJZZ	V	Tension Band Ass'y	AG	75	XBPSD26P05J00	V	Drum Drive Motor Mounting Screw (SW2.6P + 5S)	AA
32	NSFTP0032AJZZ	V	Tension Pole Adjust Cam	AB	76	DDRMW0015TEX3	V	Upper and Lower Drum Ass'y	AU
33	NGERH1217AJ00	V	Master Cam	AE					
34	NPLYV0151AJZZ	V	Motor Pulley	AB					
35	NGERW1058AJZZ	V	Worm Gear	AC					
36	NGERW1052AJZZ	V	Worm Wheel Gear	AC					
37	NGERH1218AJZZ	V	Connect Gear	AC					
38	LHLDZ1931AJZZ	V	Loading Motor Block	AD					
39	— Not Used —								
40	MSLiP0006AJZZ	V	Shifter	AH					
41	MLEVF0419AJZZ	V	Shifter Drive Lever Ass'y	AG					
42	NGERH1219AJZZ	V	Take-up Loading Gear	AD					
43	MLEVF0420AJZZ	V	Take-up Loading Arm Ass'y	AG					
44	NGEARH1220AJZZ	V	Supply Loading Gear	AC					
					— End of MECHANISM CHASSIS PARTS —				

Ref. No.	Part No.	★	Description	Code
CASSETTE HOUSING CONTROL PARTS				
300	CHLDX3071TEV1	V	Cassette Housing Control Ass'y	AX
301	LHLDX1024AJ00	V	Frame (Left)	AG
302	LHLDX1025AJ00	V	Frame (Right)	AG
303	NGERR3004AJFW	V	Drive Angle	AE
304	NGERR1006AJZZ	V	Double Action Rack	AC
305	MSPRT0381AJFJ	V	Double Action Spring	AC
306	MSLIF0070AJFW	V	Slider	AH
307	LHLDX1026AJ00	V	Holder (Left)	AD
308	MLEVP0246AJ00	V	Proof Lever (Left)	AB
309	MSPRD0150AJFJ	V	Proof Lever (Left) Spring	AB
310	LHLDX1027AJ00	V	Holder (Right)	AD
311	MSPRP0159AJFJ	V	Cassette Spring	AD
312	MLEVF0424AJFW	V	Proof Lever (Right)	AC
313	MSPRD0151AJFJ	V	Proof Lever (Right) Spring	AB
314	NGERH1242AJ00	V	Drive Gear (Left)	AD
315	— Not Used —			
316	NGERH1227AJZZ	V	Drive Gear (Right)	AD
317	MSPRD0153AJFJ	V	Drive Gear (Right) Spring	AC
318	NGERH1228AJ00	V	Synchro Gear	AC
319	NSFTD0036AJFD	V	Main Shaft	AG
320	LANGF9570AJFW	V	Upper Plate	AH
321	MLEVP0247AJ00	V	Door Open Lever	AC
322	MLEVP0257AJ00	V	Sensor Lever	AC
323	MSPRT0382AJFJ	V	Sensor Lever Spring	AB
324	XHPSD30P06WS0	J	C3P + 6S (for Cassette Housing Control)	AA

Ref. No.	Part No.	★	Description	Code
206	XBPSD30P05J00	J	Screw, SW3P + 5S (for Loading Motor Block)	AA
207	XHPSD26P06000	J	Screw, C2.6P + 6S (for Capstan Motor)	AA
208	XHPSD26P06WS0	J	Screw, C2.6P + 6S (for Loading Motor Angle Ass'y)	AA
209	XHPSD30P08WS0	J	Screw, C3P + 8S (for Drum Base)	AA
210	LX-NZ3046GEFW	J	X-Position Adjusting Nut	AB
211	LX-NZ3019GEZZ	J	Reverse Guide Adjusting Nut	AB
212	XNFSD40-31000	J	Audio/Control Head Adjusting Nut, (M4)	AB
213	XNFSD20-16000	J	S. I. Roller Adjusting Nut, (M2)	AA
214	XWHJZ52-05110	J	Washer, W5.2P-11-0.5 (Reel Height Adjust)	AB
215	XWHJZ52-03110	J	Washer, W5.2P-11-0.3 (Reel Height Adjust)	AB
216	XWHJZ52-04110	J	Washer, W5.2P-11-0.4 (Reel Height Adjust)	AB
217	XWHJZ52-06110	J	Washer, W5.2P-11-0.6	AB
218	XWHJZ52-07110	J	Washer, W5.2P-11-0.7	AB
219	XWHJZ31-02070	J	Washer, W3.1-7-0.25	AA
220	LX-WZ1073GE00	J	Cut Washer, CW4.5P-10-0.5	AB
221	LX-WZ1006GE00	J	Cut Washer, CW2.6P-5.4-0.5	AA
222	LX-WZ1041GE00	J	Cut Washer, CW2.6P-6-0.5	AA
223	XRESJ40-06000	J	E-Ring, E-4	AA

— End of CASSETTE HOUSING CONTROL PARTS —

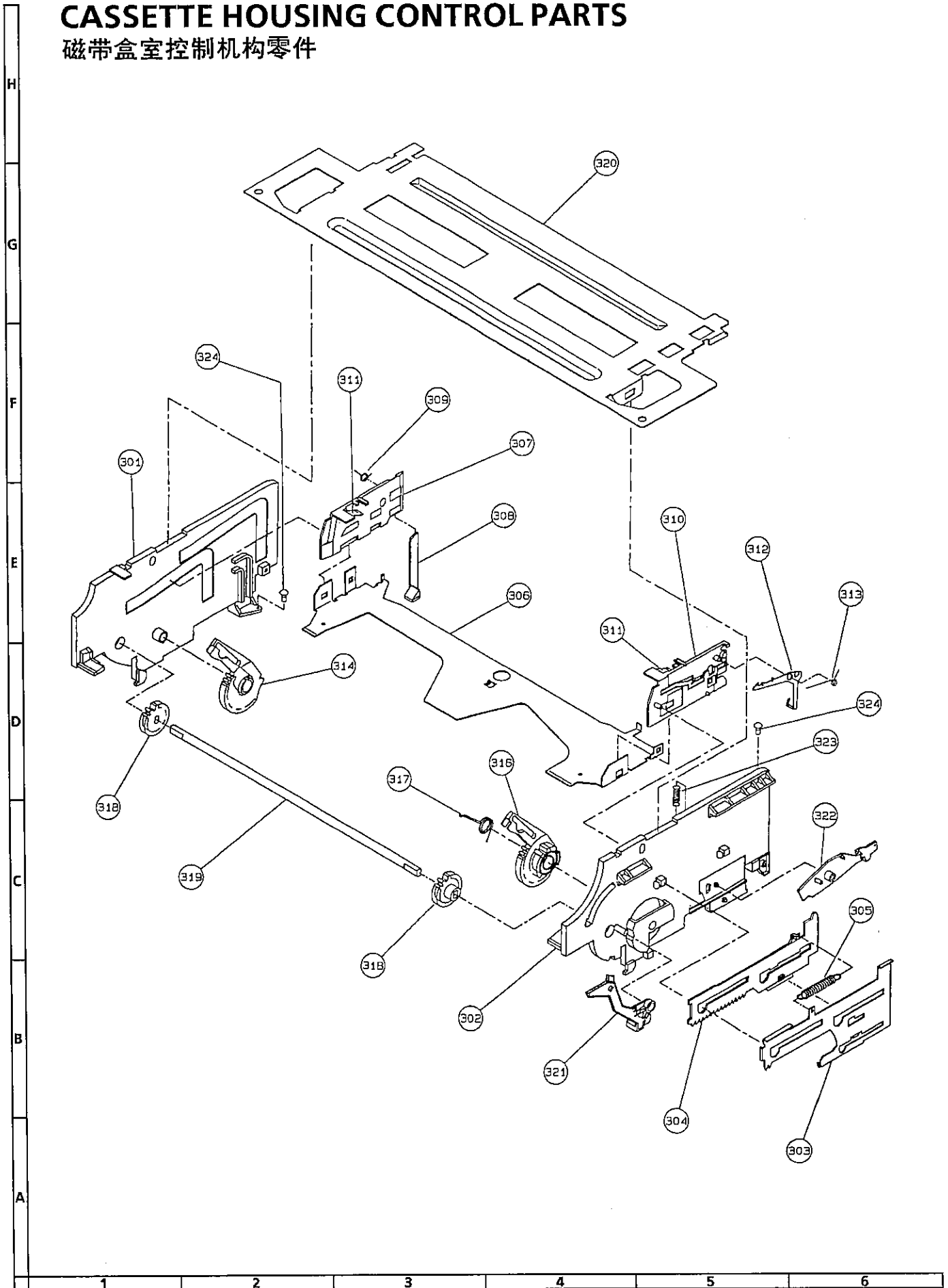
SCREWS, NUTS AND WASHERS

200	LX-XZ3030GEFD	J	Set Screw	AC
201	LX-BZ3095GEFD	J	Audio/Control Head Screw	AA
202	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
203	XBPSD26P06000	J	Azimuth Adjusting Screw (2.6P + 6S)	AA
204	XHPSD26P08WS0	J	Screw, C2.6P + 8S (for FE Head)	AA

— End of SCREWS, NUTS AND WASHERS —

CASSETTE HOUSING CONTROL PARTS

磁带盒室控制机构零件



Ref. No. Part No. ★ Description Code

CABINET AND MECHANICAL PARTS MODEL VT-1428M

1	CCABA2277WEV0	R	Front Cabinet Ass'y	BF
1-1	Not Available	-	Front Cabinet	—
1-2	GCOVA0052PESA	R	R/C Cover	AC
1-3	GDORF0156PESA	R	Door	AE
1-4	HBDGB0014PESB	R	Badge, "SHARP"	AE
1-5	HDECQ0050PESA	R	LED Decoration Plate	AD
1-6	HDECQ0061PESA	R	Decoration Cover	AL
			VCR Flap	
1-7	HiNDP0203PESA	R	Indicator, Door	AF
1-8	JBTN-0160PESA	R	Button, Power	AD
1-9	JBTN-0161PESB	R	Button, Control-A	AF
1-10	JBTN-0162PESC	R	Button, Control-B	AF
1-11	LX-TZ3004CEFD	R	Screw	AA
1-12	MSPRC0005PEFW	R	Spring	AB
1-13	MSPRD0123AJFJ	R	Spring	AC
1-14	PKAi-0001PE00	R	Latch, Door	AF
1-15	PSPAH0023PE00	R	Spacer, 125×12	AB
1-16	PSPAH0026PE00	R	Spacer, 10×280	AD
1-17	PSPAH0051PE00	R	Spacer, 85×12	AC
2	— Not Used —			
3	CCABB2233WEV0	R	Rear Cabinet Ass'y	AZ
3-1	Not Available	-	Rear Cabinet	—
3-2	PSPAV0011PEZZ	R	Spacer	AG
4	GCOVH0019PEZZ	R	Cover, AC Panel	AE
5	LHLDZ0074PEZZ	R	Holder	AC
6	TCAUA0002PEZZ	R	Caution Label	AB
7	TLABM1039PEZZ	R	Model Label	AC
8	TLABZ0098PEZZ	R	Label	AH
9	LCHSM0038PEZZ	R	Chassis Frame	AL
10	LX-TZ3004CEFD	R	Screw, ×14 used	AA
11	PMAGF3006CEZZ	R	Purity Magnet	AK
△ 12	QACCZ3001PEZZ	R	AC Cord	AQ
13	QEARC1404PEZZ	R	Grounding Strup	AD
14	VSP0080P-G5YB	R	Speaker, ×2 used	AN
15	LHLDW0003PEKZ	R	Holder, ×4 used	AB
16	LHLDW1033CE00	R	Holder, ×2 used	AA
17	LHLDW1037PEZZ	R	Holder	AB
18	LHLDW1003PEZZ	R	Holder	AA
19	LX-TZ0013PEFD	R	Screw	AD
20	LX-TZ3019CEFD	R	Screw	AA
21	— Not Used —			
22	PSPAG0004PEZZ	R	Wedge (Gum)	AB
23	LX-TZ3011CEFD	R	Screw	AA
24	XTASD40P20000	R	Screw, ×8 used	AA
25	GCABB1153AJKZ	R	Frame	AV
26	PSLDM4500AJFW	R	Top Shield	AU
27	PSLDM4489AJFW	R	Bottom Shield	AP
28	LX-HZ3001PEFD	R	Screw	AA
29	XHPSD30P06WS0	R	Screw	AA
30	XEBSD40P12000	R	Screw	AA
31	XEBSD30P12000	R	Screw	AA
32	LCHSM0040PEZZ	R	Chassis Frame	AG
33	LHLDW1019PEZZ	R	Holder	AB
34	LHLDW1047PEZZ	R	Holder	AB
35	LHLDW0015PEKZ	R	Holder	AB
36	LHLDK0002PEK0	R	AC Cord Holder	AA
37	LHLDW1088GEZZ	R	Holder	AA

Ref. No. Part No. ★ Description Code

CABINET AND MECHANICAL PARTS MODEL VT-1428M (Continued)

38	JBTN-0076PESA	R	Button, AC Main Switch	AC
39	QCNW-1840PEZZ	R	Connecting Wire, (S)	AK

— End of CABINET AND MECHANICAL PARTS —

Ref. No.	Part No.	*	Description	Code
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CABINET AND MECHANICAL PARTS MODEL VT-2128M

1	CCABA2273WEV0	R	Front Cabinet Ass'y	BK
1-1	<i>Not Available</i>			—
1-2	GCOVA0052PESA	R	Front Cabinet	—
1-2	GCOVA0052PESA	R	R/C Cover	AC
1-3	GDORF0156PESA	R	Door	AE
1-4	HBDGB0019PESA	R	Badge, "SHARP"	AD
1-5	HDECQ0052PESA	R	LED Decoration Plate	AF
1-6	HDECQ0061PESA	R	Decoration Cover, VCR Flap	AL
1-7	HINDP0203PESA	R	Indicator, Door	AF
1-8	JBTN-0160PESA	R	Button, Power	AD
1-9	JBTN-0161PESB	R	Button, Control-A	AG
1-10	JBTN-0162PESC	R	Button, Control-B	AF
1-11	LX-TZ3004CEFD	R	Screw	AA
1-12	MSPRC0005PEFW	R	Spring	AB
1-13	MSPRD0123AJFJ	R	Spring	AC
1-14	PKAi-0001PE00	R	Latch, Door	AF
1-15	PSPAH0053PE00	R	Spacer, 320×14×0.55	AD
1-16	PSPAH0062PE00	R	Spacer, 67×10×0.55	AB
1-17	PSPAH0072PE00	R	Spacer, 310×8×0.45	AC
2	<i>Not Used</i>			—
3	CCABB2232WEV0	R	Rear Cabinet Ass'y	BC
3-1	<i>Not Available</i>			—
3-2	PSPAV0011PEZZ	R	Spacer	AG
4	GCOVH0019PEZZ	R	Cover, AC Panel	AE
5	LHLDZ0063PEZZ	R	Holder	AD
6	TCAUA0002PEZZ	R	Caution Label	AB
7	TLABM1043PEZZ	R	Model Label	AC
8	TLABZ0100PEZZ	R	Label	AH
9	LCHSM0038PEZZ	R	Chassis Frame	AL
10	LX-TZ3004CEFD	R	Screw, ×14 used	AA
11	PMAGF3003CEZZ	R	Purity Magnet	AK
12	QACCZ3001PEZZ	R	AC Cord	AQ
13	QEARC2101PEZZ	R	Grounding Strup	AK
14	VSP0080P-G5YB	R	Speaker, ×2 used	AN
15	LHLDW0003PEKZ	R	Holder, ×4 used	AB
16	LHLDW1033CE00	R	Holder, ×2 used	AA
17	LHLDW1037PEZZ	R	Holder	AB
18	LHLDW1009PEZZ	R	Holder	AA
19	LX-TZ0016PEFD	R	Screw	AD
20	LX-TZ3019CEFD	R	Screw	AA
21	LX-WZ0017PEFD	R	Washer	AB
22	PSPAG0003PEZZ	R	Wedge (Gum)	AD
23	LX-TZ3011CEFD	R	Screw	AA
24	XTASD40P20000	R	Screw, ×9 used	AA
25	GCABB1153AJKZ	R	Frame	AV
26	PSLDM4500AJFW	R	Top Shield	AU
27	PSLDM4489AJFW	R	Bottom Shield	AP
28	LX-HZ3001PEFD	R	Screw	AA
29	XHPSD30P06WS0	R	Screw	AA
30	XEBSD40P12000	R	Screw	AA
31	XEBSD30P12000	R	Screw	AA
32	LCHSM0040PEZZ	R	Chassis Frame	AG
33	LHLDW1019PEZZ	R	Holder	AB
34	LHLDW1047PEZZ	R	Holder	AB
35	<i>Not Used</i>			—
36	LHLDK0002PEK0	R	AC Cord Holder	AA

Ref. No.	Part No.	*	Description	Code
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CABINET AND MECHANICAL PARTS MODEL VT-2128M (Continued)

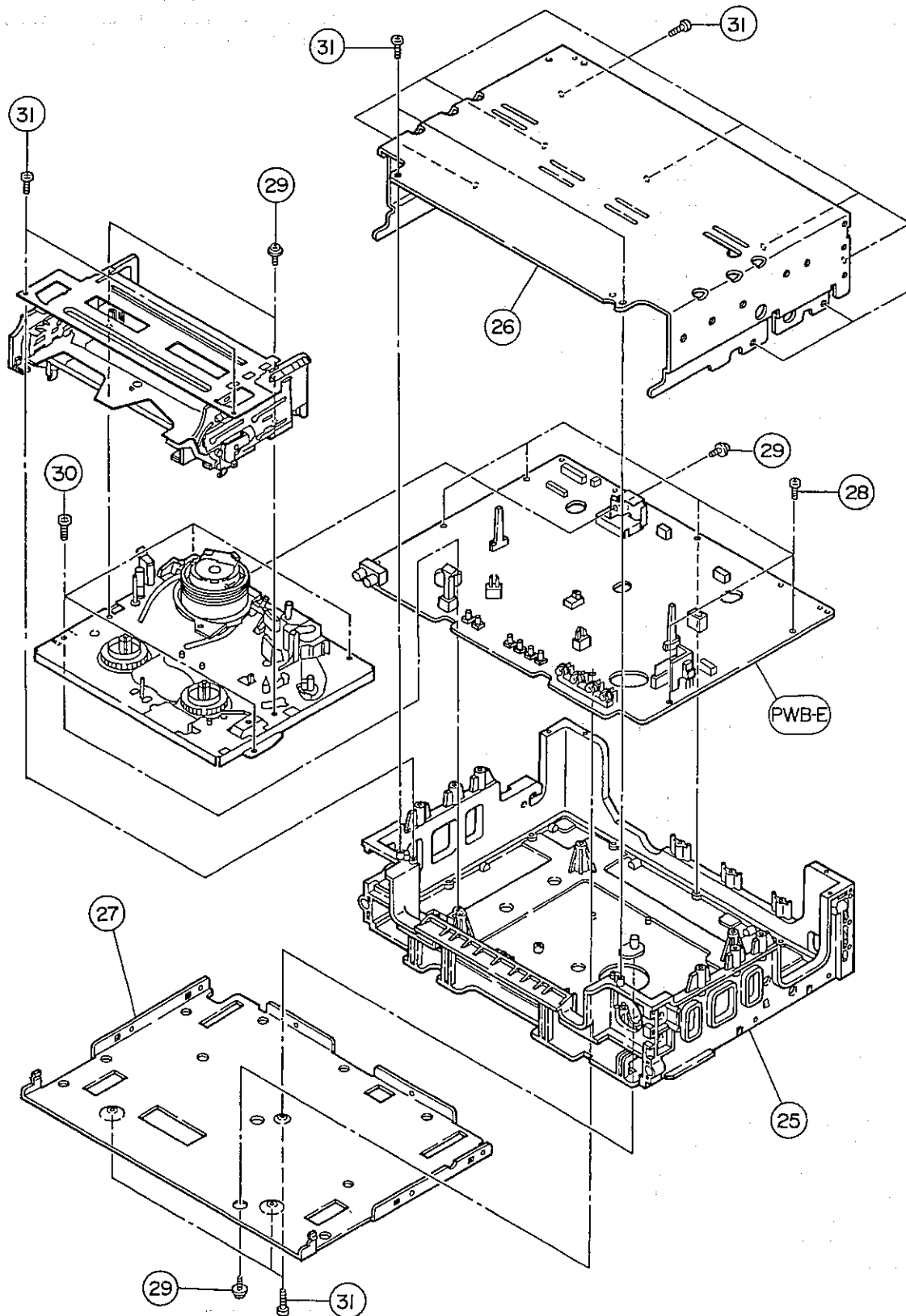
37	<i>Not Used</i>			—
38	JBTN-0076PESA	R	Button, AC Main Switch	AC
39	QCNW-1841PEZZ	R	Connecting Wire, (S)	AH
40	LHLDZ1759CEKZ	R	Holder	AB

— End of CABINET AND MECHANICAL PARTS —

MODELS VT-1428M AND VT-2128M CABINET AND MECHANICAL PARTS

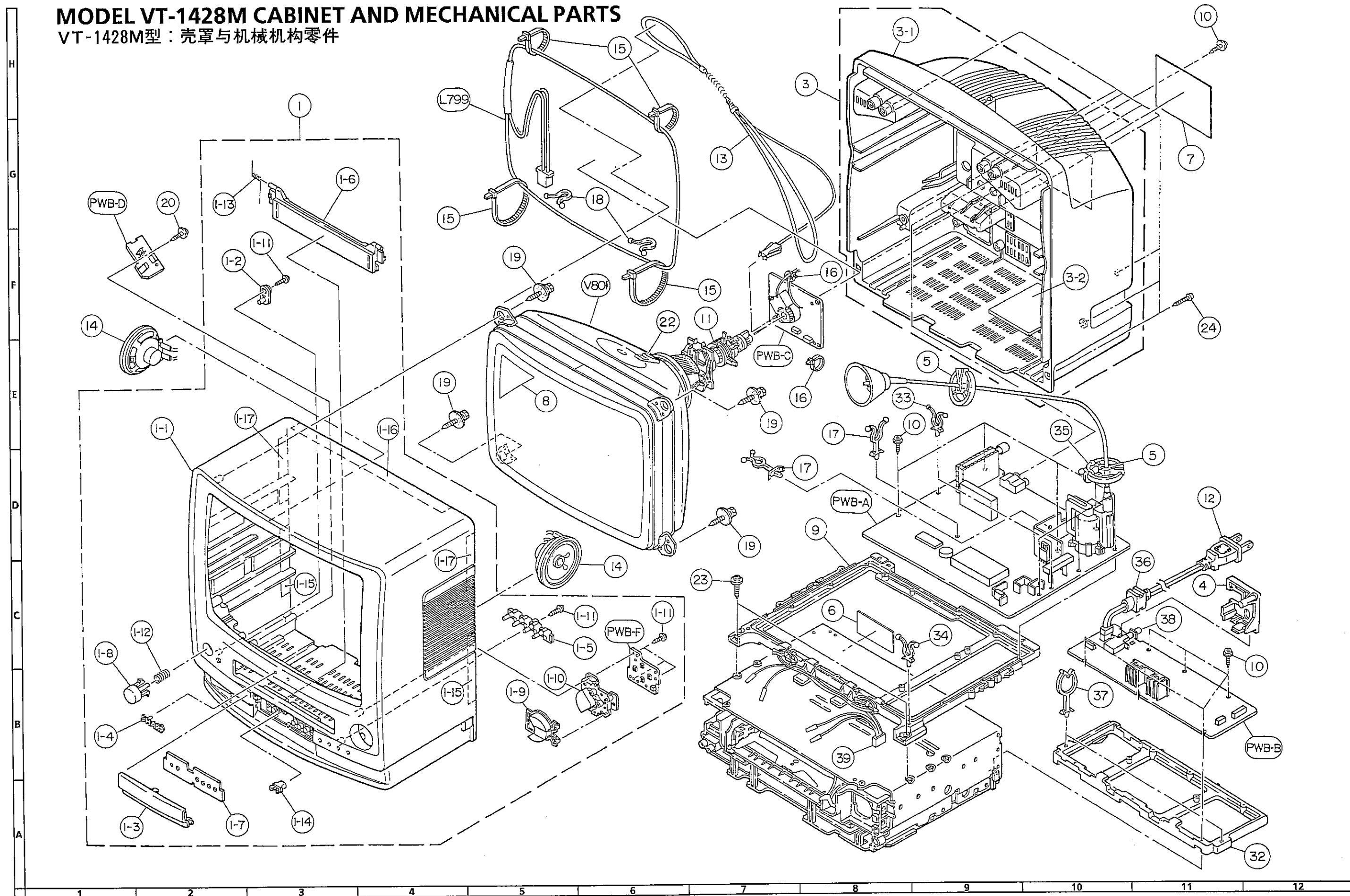
VT-1428M型与VT-2128M型

壳罩与机械机构零件



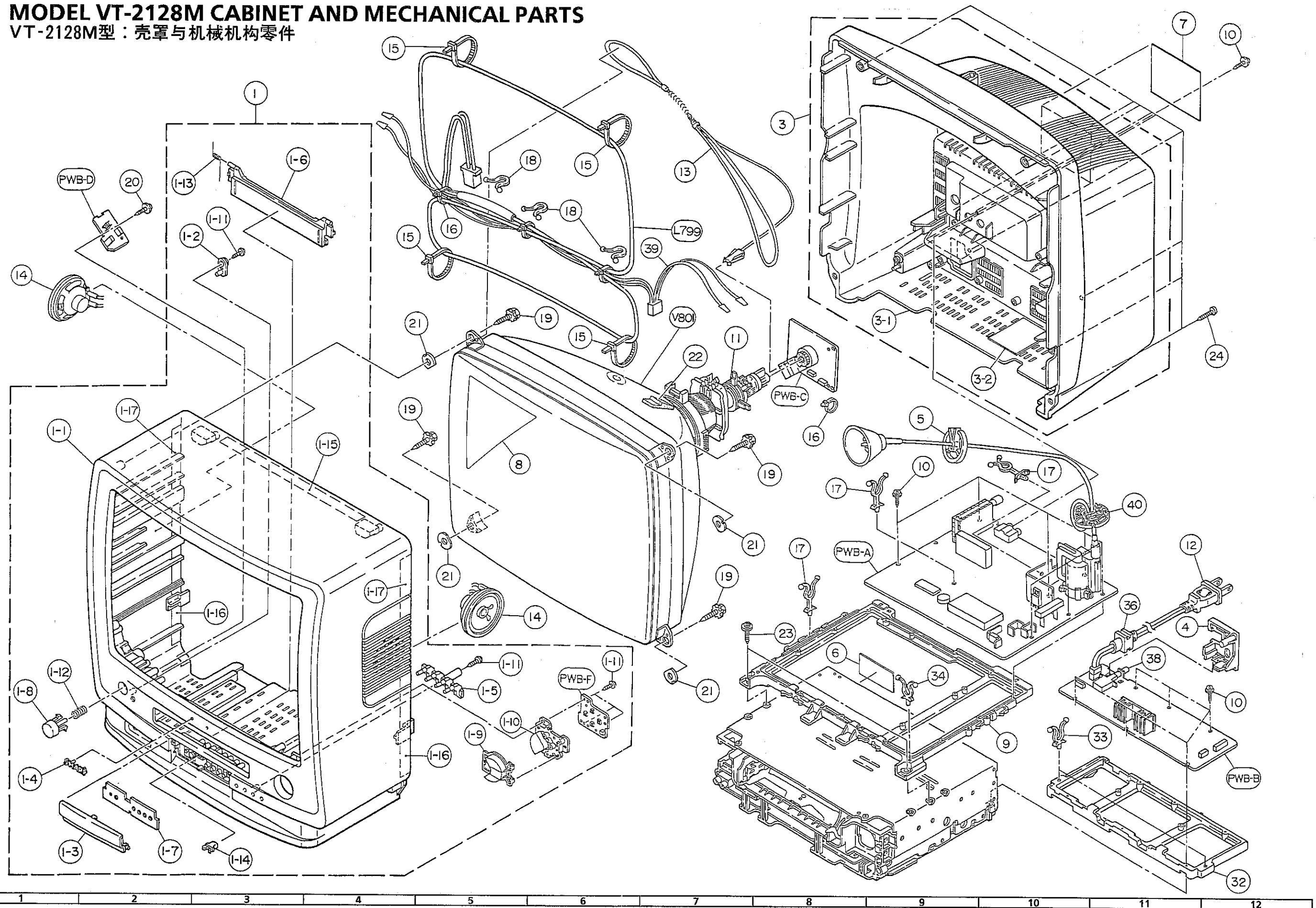
MODEL VT-1428M CABINET AND MECHANICAL PARTS

VT-1428M型：壳罩与机械机构零件



MODEL VT-2128M CABINET AND MECHANICAL PARTS

VT-2128M型：壳罩与机械机构零件



Ref. No.	Part No.	★	Description	Code
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SUPPLIED ACCESSORIES**ACCESSORIES**

QPLGA0011CEZZ	R	AC Plug Adaptor	AF
RRMCG1046PESA	R	Remote Control Unit	BA
TINS-5622PEZZ	R	Operation Manual	AP

ACCESSORIES (Not Replacement Item)

UBATU0001AJZZ	-	Dry Batteries	—
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— End of SUPPLIED ACCESSORIES —

Ref. No.	Part No.	★	Description	Code
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**PACKING PARTS
(NOT REPLACEMENT ITEM)****MODEL VT-1428M**

SPAKC6008PEZZ	-	Packing Case	—
SPAKP0095PEZZ	-	Polystyrene Cover	—
SPAKX2524PEZZ	-	Buffer Material	—

MODEL VT-2128M

SPAKC6015PEZZ	-	Packing Case	—
SPAKP0097PEZZ	-	Polystyrene Cover	—
SPAKX2529PEZZ	-	Buffer Material	—

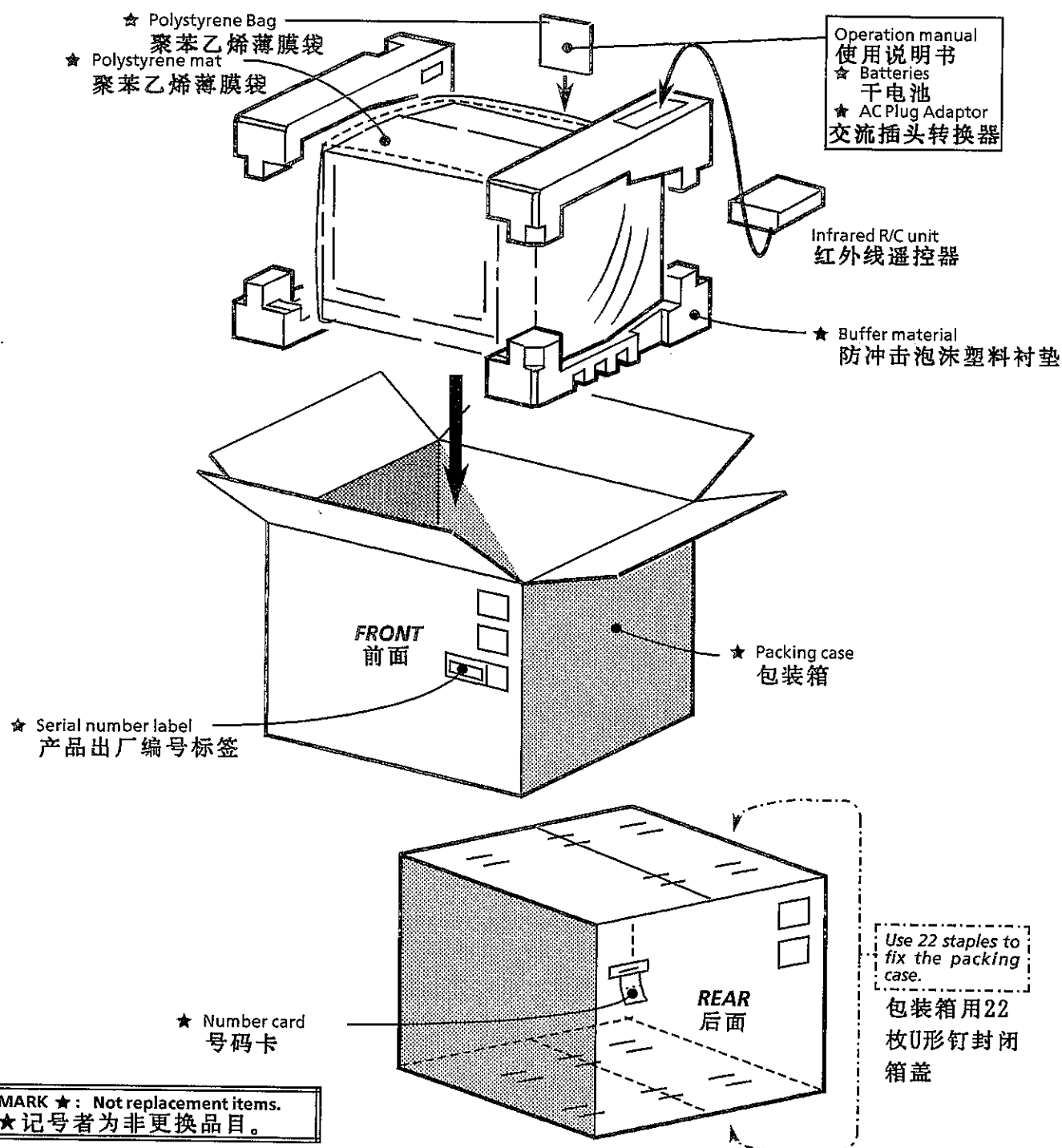
— End of PACKING PARTS —

PACKING OF THE SET (VT-1428M)

包装方法(VT-1428M型)

•Setting positions of the knobs
出厂包装时的旋钮设定位置

INITIAL CH POSITION 初始频道位置	1ch 频道1	POWER 电源	LAST POWER ON 最后电源ON
SOUND VOLUME 音量	00	MAIN SWITCH 主开关	关闭(OFF)
COLOUR SYSTEM 彩色制式	自动(AUTO)	TAPE SPEED 走带速度	标准转速(SP)
SOUND SYSTEM 声音制式	D/K, B/G	WOUND-UP TIMER 开机定时器	关闭(OFF)
BLUE BACKGROUND 蓝色背景	设定(ON)	SLEEP TIMER 关机定时器	关闭(OFF)
RECORD INDEX 记录指引	设定(ON)	CLOCK 幼儿误操作防护销扣	解除(OFF)
VIDEO ADJUST 视频调整	复位(RESET)		



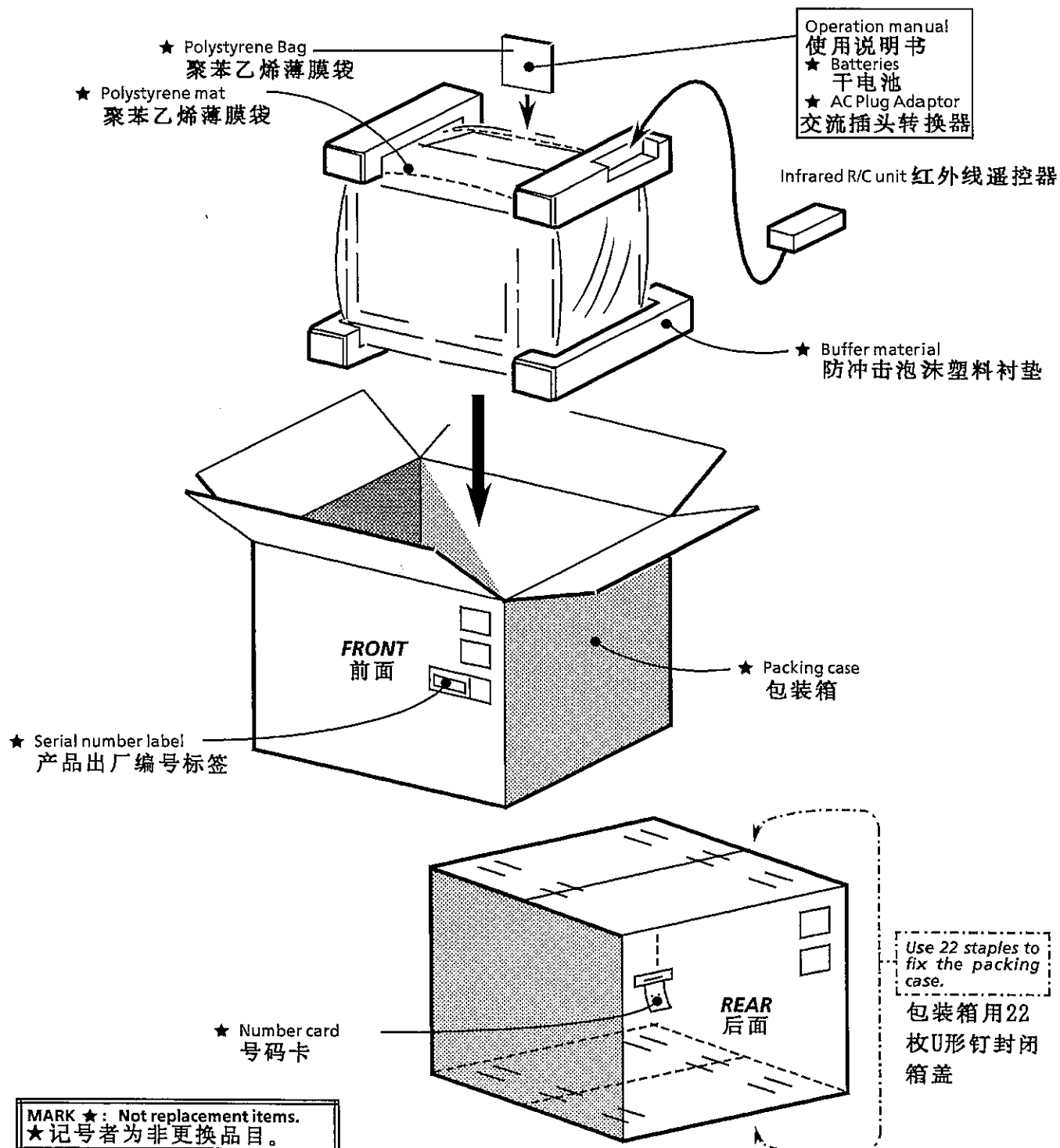
MARK ★: Not replacement items.
★记号者为非更换品目。

PACKING OF THE SET (VT-2128M)

包装方法(VT-2128M型)

•Setting positions of the knobs
出厂包装时的旋钮设定位置

INITIAL CH POSITION 初始频道位置	1ch 频道1	POWER 电源	LAST POWER ON 最后电源ON
SOUND VOLUME 音量	00	MAIN SWITCH 主开关	关闭(OFF)
COLOUR SYSTEM 彩色制式	自动(AUTO)	TAPE SPEED 走带速度	标准转速(SP)
SOUND SYSTEM 声音制式	D/K, B/G	WOUND-UP TIMER 开机定时器	关闭(OFF)
BLUE BACKGROUND 蓝色背景	设定(ON)	SLEEP TIMER 关机定时器	关闭(OFF)
RECORD INDEX 记录指引	设定(ON)	CLOCK 幼儿误操作防护销扣	解除(OFF)
VIDEO ADJUST 视频调整	复位(RESET)		



SHARP