

SANYO

SERVICE MANUAL

Video Cassette Recorder

VHR-778E

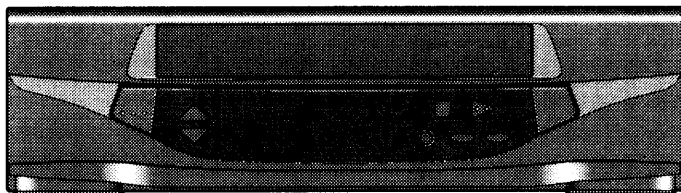
(Product Code : 143 173 04)
(U.K.)

VHR-778G

(Product Code : 143 173 11)
(Germany)

VHR-788G

(Product Code : 143 173 10)
(Germany)



(VHR-778G)



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Please see other materials with Reference number given in table below.

Materials	Model No.	Reference No.
Mechanism	V95 I Mechanism	MM531433
	V95 II Mechanism	MS531500
Manual		

PRODUCT SAFETY NOTICE

The components designated by a symbol (Δ) in this schematic diagram designates components whose value are of special significance to product safety. Should any component designated by a symbol need to be replaced, use only the part designated in the parts List. Do not deviate from the resistance, wattage, and voltage ratings shown.

- NOTE: 1. Parts order must contain model number, part number, and description.
2. Substitute parts may be supplied as the service parts.
3. N.S.P. : Not available as service parts.

Design and specifications are subject to change without notice.

Notice

- CORRECTION PRODUCTION CHANGE
 SERVICE FLASH ADD INFORMATION

FILE No.

Please add this notice to the Service manual listed below.

Category : Video Cassette Recorder	Date :Jun.19.1998												
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Model Name</th> <th style="text-align: left;">Reference No.</th> <th style="text-align: left;">Destination</th> </tr> </thead> <tbody> <tr> <td>VHR-778E</td> <td>SM531632</td> <td>U.K.</td> </tr> <tr> <td>VHR-778G</td> <td>SM531632</td> <td>Germany</td> </tr> <tr> <td>VHR-788G</td> <td>SM531632</td> <td>Germany</td> </tr> </tbody> </table>	Model Name	Reference No.	Destination	VHR-778E	SM531632	U.K.	VHR-778G	SM531632	Germany	VHR-788G	SM531632	Germany	
Model Name	Reference No.	Destination											
VHR-778E	SM531632	U.K.											
VHR-778G	SM531632	Germany											
VHR-788G	SM531632	Germany											

The reason of change.

- A : Misprint B : Quality Reliability C : Standardization D : Design
 E : Delection F : Addition G : Multiple Use

Section	Loc.No.	New/Old	Part No.	Description	Interchangeability	Reason
COMPL PWB,CP-1-A(Page 17) (Page 18)	CN301	New	645 012 5645	SOCKET,FPC 31P(N.S.P.)	Yes with Old	G
	IC301	New	410 321 0908	IC LC866852A-5J13, VHR-778E ONLY	Yes with Old	G
(Page 20)	C3581	Old	403 184 9300	MT-POLYEST 0.047U J 50V	No	D
		New	403 184 9805	MT-POLYEST 0.22U J 50V	No	
(Page 22)	R3581	Old	401 013 7206	CARBON 120K JA 1/4W	No	D
		New	401 021 4006	CARBON 56K JA 1/4W	No	
	R5120	Old	△ 402 004 2705	FUSIBLE RES 8.2 JA 1/4W, VHR-778E ONLY	No	D
		New	△ 402 080 0008	FUSIBLE RES 8.2 JA 1/4W, VHR-778E ONLY	No	
	PR512	Old	△ 645 014 2529	PROTECTOR,1.25A 125V	No not use	D
		New	△ 645 014 2536	PROTECTOR,1.5A 125V		
COMPL PWB,TM-1 (Page 23)	CN711	New	645 012 5645	SOCKET,FPC 31P(N.S.P.), VHR-778G ONLY	Yes with Old	G
	CN714	New	645 012 5645	SOCKET,FPC 31P(N.S.P.), EXCEPT VHR-778G	Yes with Old	G

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SELF-DIAGNOSIS DISPLAY

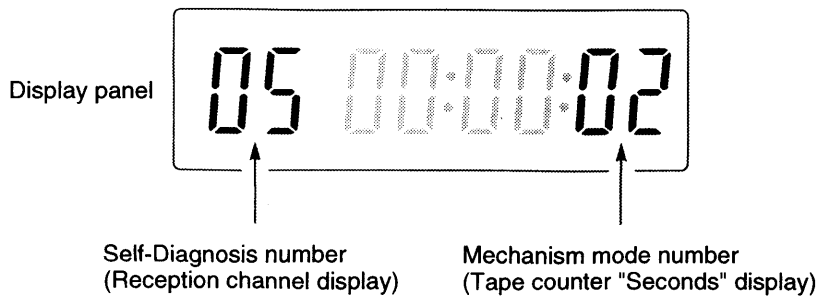
Mechanism Mode Display / Head Output Drop Warning Display / Cylinder Rotation Accumulated Time Display

This unit displays the diagnosis contents of abnormalities and the mechanism, mode on its display panel in 2-digit numbers. When the head playback output has dropped, the "L" sign will be blinked. Some models (listed later) will also display the cylinder rotation accumulated time.

These display shows the outline of the problems. Use it as a reference when servicing the unit.

1. Self-Diagnosis Contentes and Mechanism Mode Display

- When the STOP button on the remote control is pressed for about 10 seconds continuously, the self-diagnosis number will be displayed on the reception channel display of the display panel and number indicating the failed mechanism mode (changed mode when being shifted) on the tape counter "seconds" display for 10 seconds each.
- During self-diagnosis display, displays other than the diagnosis number/mechanism mode number and the cylinder accumulated rotation time display described later (some models only) will be turned off and when displays end, the normal display will be returned automatically.
- Refer to "Self-Diagnosis Contents" for the self-diagnosis numbers and the "Mechanism Mode Display Contents" for the mechanism mode numbers.
- When the "0" button on the remote control unit is pressed during display, and clearing the self-diagnosis display and mechanism mode display.



Self-Diagnosis Contents

No.	Problem	Main Possible Cause	Mechanism Operations and State After Occurrence
00	There is no abnormality in the mechanism.		
01	The cylinder motor does not rotate.	<ul style="list-style-type: none"> • The cylinder motor is faulty. • The control of the cylinder motor is faulty. • The tape winds around the cylinder. 	Shifts to the STOP mode.
02	The take-up reel does not rotate.	<ul style="list-style-type: none"> • The take-up reel is caught. • The reel belt is faulty. • The take-up torque has decreased. 	Shifts to the STOP mode.
03	The capstan motor does not rotate.	<ul style="list-style-type: none"> • The capstan motor is faulty. • The control of the capstan motor is faulty. 	Shifts to the STOP mode.
04	The tape cannot be loaded with the cassette inserted. (But unloading can be performed.)	<ul style="list-style-type: none"> • Error in the operations of the tape loading mechanism. • Foreign particles in the tape loading mechanism. • The tape end sensor is faulty. • The reel brake of the tape cassette has not been released. 	Unloads, shifts to the INITIAL mode, and the power goes off.
05	Tape loading and unloading cannot be performed with the cassette inserted.	<ul style="list-style-type: none"> • The tape guide is caught. • The loading motor is faulty. • The control of the loading motor is faulty. 	The power is forcibly turned off with the mechanism at its current position.

No.	Problem	Main Possible Cause	Mechanism Operations and State After Occurrence
06	Front unloading cannot be performed when ejecting the cassette. (Front loading can be performed.)	<ul style="list-style-type: none"> The cassette drive mechanism is faulty. The front door is caught. 	Front loads and shifts to the STOP or INITIAL mode. <ul style="list-style-type: none"> When the power switch is turned on before eject operations: Shifts to the STOP mode. When the power switch is turned off before eject operations: Shifts to the INITIAL mode and the power goes off.
07	Front loading and front unloading cannot be performed when ejecting the cassette.	<ul style="list-style-type: none"> The tape cassette is caught in the cassette drive mechanism. The main cam and front rack gear of the front loading mechanism have not engaged properly. The gears of the front loading drive mechanism have not engaged properly. 	The power is forcibly turned off with the mechanism at its current position.
08	The mechanism becomes 1 (REVIEW) while moving from 2 (IDLER), 3 (STILL), 4 (BRAKE), and to 5 (STOP).	<ul style="list-style-type: none"> The mechanism mode switch contact is faulty. 	The power is forcibly turned off with the mechanism at its current position.
09	The mechanism becomes 7 (INITIAL) while moving from 1 (REVIEW), 2 (IDLER), 3 (STILL), 4 (BRAKE), and to 5 (STOP).	<ul style="list-style-type: none"> The mechanism mode switch contact is faulty. 	Carries out tape take-up operations, shifts to the INITIAL mode, and the power goes off.
10	The capstan motor does not rotate and cassette tape eject when cassette tape insert.	<ul style="list-style-type: none"> The capstan motor is faulty. The control of the capstan motor is faulty. 	Shifts to the STANDBY mode. Protect cassette tape.
11	The cylinder motor does not rotate and cassette tape eject when cassette tape insert.	<ul style="list-style-type: none"> The cylinder motor is faulty. The control of the cylinder motor is faulty. 	Shifts to the STANDBY mode. Protect cassette tape.

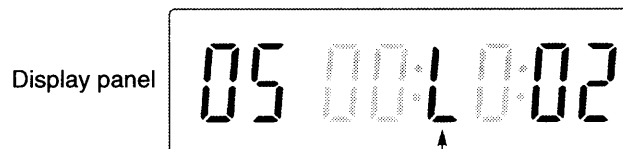
Note: For details of mechanism operations corresponding to the mechanism positions of the self-diagnosis numbers 08 and 09 above, refer to the separate volume on the V95 I mechanism manual. These manual reference numbers are shown in the cover.

Mechanism Mode Display Contents

Mode No.	Mechanism Mode	Mode No.	Mechanism Mode	Mode No.	Mechanism Mode
00	CASSETTE OUT	07	SLOW	14	FAST FORWARD
01	STANDBY	08	PLAY	15	REWIND
02	STOP	09	REC	16	VIDEO INSERT
03	STILL	10	AUDIO DUBBING	17	VIDEO INSERT-PAUSE
04	REC-PAUSE	11	X2 SPEED PLAY	18	AUDIO/VIDEO INSERT
05	AUDIO DUBBING-PAUSE	12	CUE	19	REVERSE X2 SPEED PLAY
06	FRAME ADVANCE	13	REVIEW	99	OTHERS

2. Head Output Drop Warning Display

- When the STOP button on the remote control is pressed for 10 seconds continuously 10 seconds after play starts, "L" will be displayed blinking at the first digit of the minutes position on the tape counter when the head output is lower than the specified value to indicate an abnormality.
- The cause of the abnormality may be due to drop in the playback output caused by drop in the efficiency of the cassette used or head clogging. Refer to "Head Playback Output Voltage Check" as a means to judge the abnormality.



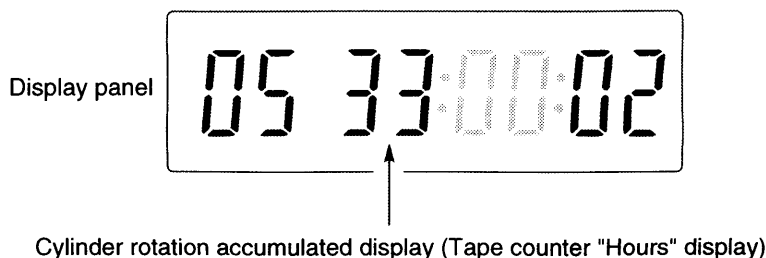
Head output drop warning display (Tape counter "1st digit of Minutes." position)

Head playback output voltage check

Cassette Used	Warning Display	Envelope Detection Output Voltage	Main Cause
Cassette with normal playback output	-	<p>Envelope detection output (IC301 Pin 25 or R3032 Mark side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-2)</p>	<p>When the output voltage difference of the two channels is 0.5 to 0.95V</p> <ul style="list-style-type: none"> The video heads of both are normal
Recorded cassette (with tabs)	"L" blinking	<p>Envelope detection output (IC301 Pin 25 or R3032 Mark side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-2)</p>	<p>When the output voltage difference of the two channels is more than 0.95V</p> <ul style="list-style-type: none"> Tracking adjustment has not been performed accurately One video head is clogged One video head has worn out
	"L" blinking	<p>Envelope detection output (IC301 Pin 25 or R3032 Mark side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-2)</p>	<p>When the average output voltage of the two channels is less than 0.5V</p> <ul style="list-style-type: none"> Tracking adjustment has not been performed accurately Both video heads are clogged Both video heads have worn out
Rental cassette (without tabs)	"L" blinking	<p>Envelope detection output (IC301 Pin 25 or R3032 Mark side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-2)</p>	<p>When the output voltage difference of the two channels is more than 0.95V</p> <ul style="list-style-type: none"> Tracking adjustment has not been performed accurately One video head is clogged One video head has worn out
		<p>• Some rental cassettes may have extremely low video playback outputs even when both video heads are normal. As the average output voltage of the two heads may be less than 0.5V for some, no warning displays will be shown.</p>	

3. Cylinder rotation accumulated time display

- Press the STOP button on the remote control for approximately 10 seconds and the cylinder rotation accumulated time excluding the cassette out and standby operation time will be displayed on the "Hours" display in units of 100 hours. ("33" will be displayed for 10 seconds for 3,200 to 3,299 hours.)
- To erase the cylinder rotation accumulated time display, press the RESET button on the remote control during the accumulated time display.



1. DISASSEMBLY

1-1. REMOVAL OF CABINET, MECHANISM UNIT, AND MAIN BOARD

REMOVING THE CABINET PARTS (Fig. 1-1-1)

1. Remove the cabinet and bottom cover by removing the four screws ① and four screws ②.
2. Remove the front panel by removing the locks of the clamps (A) using a screwdriver, etc. and slightly rotating the bottom part in the direction of the arrow.

Notes:

- Electrical adjustments for the this model can be performed with only the cabinet removed.
- When replacing the bottom cover, do not tighten the screws ② too much. Excess tightness may damage the screws taps on the chassis.

REMOVING THE MECHANISM MAIN UNIT AND THE CP-1 PWB ASSEMBLY (Fig. 1-1-2 and 1-1-3)

After removing the cabinet parts, remove the mechanism unit and the CP-1 PWB assembly connected as follows.

1. Spread out the lock clamps (C) in the arrow direction slightly and remove the TM-1 PWB as shown in Fig. 1-1-2.
2. Remove the screw ④ at the chassis.
3. Remove the screw ⑤ in the chassis, the screw ⑥, and the holder in this order.
4. Remove the two screws ⑦ and two screws ⑧ of the mechanism unit. The two screws ⑧ of the cassette tray can be removed easily by pushing the tray lock lever in the arrow direction to remove the lock as shown in the enlarge view A and by pushing the lid opener lever in the arrow direction to remove the lock as shown in the enlarge view B.
5. Lift up the whole mechanism unit and main board (CP-1 PWB assembly), and as shown in Fig. 1-1-3, push the two lock clamps (D) of the chassis in the arrow direction so that they can be removed from the chassis.

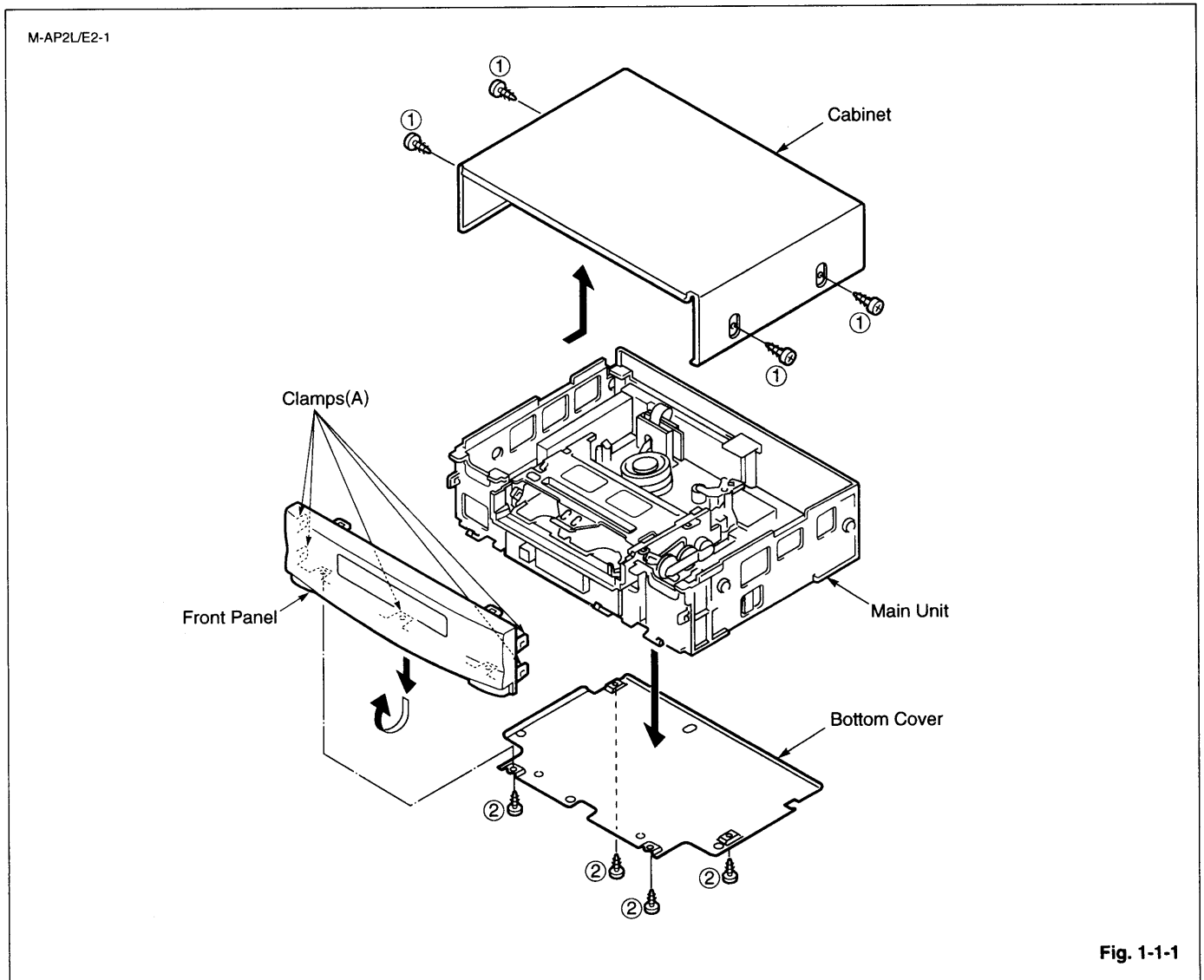


Fig. 1-1-1

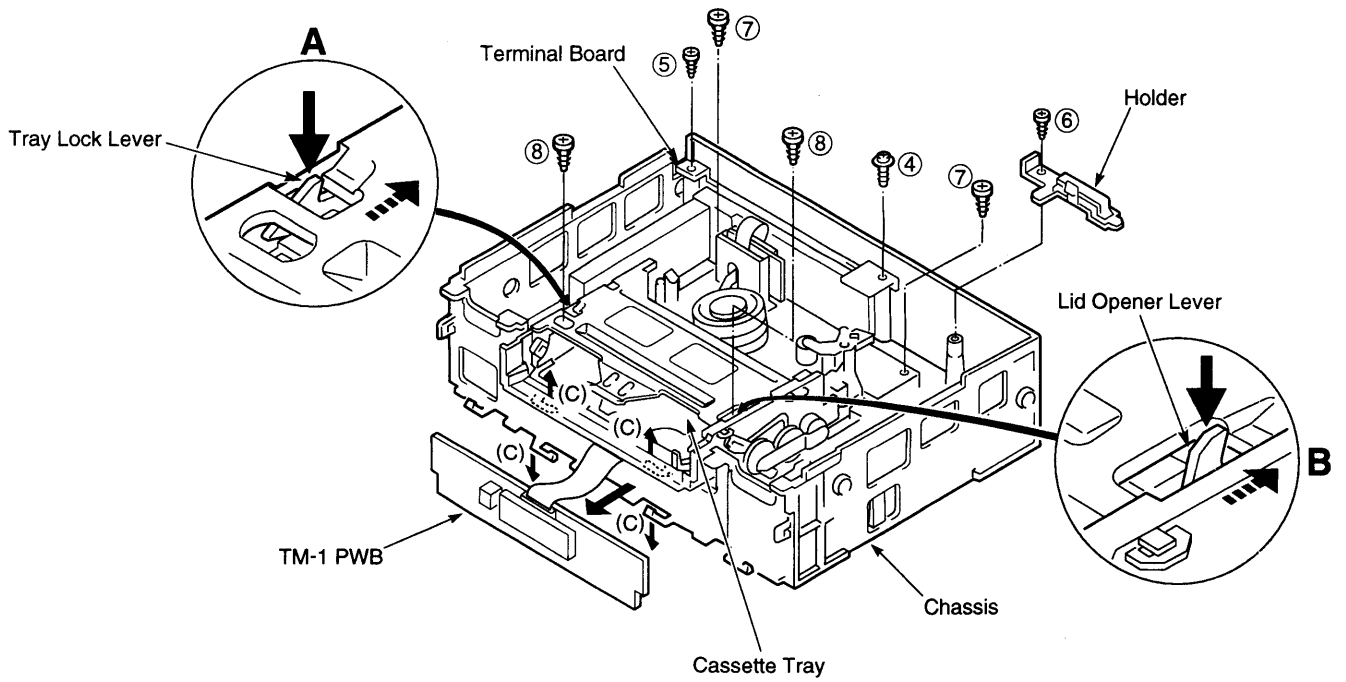


Fig. 1-1-2

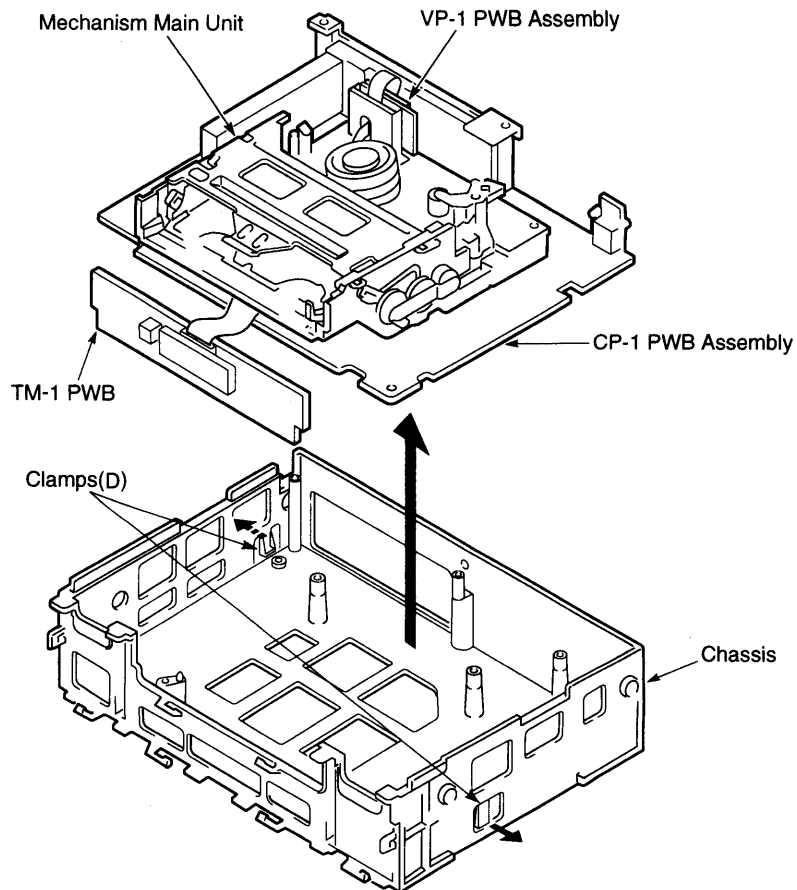
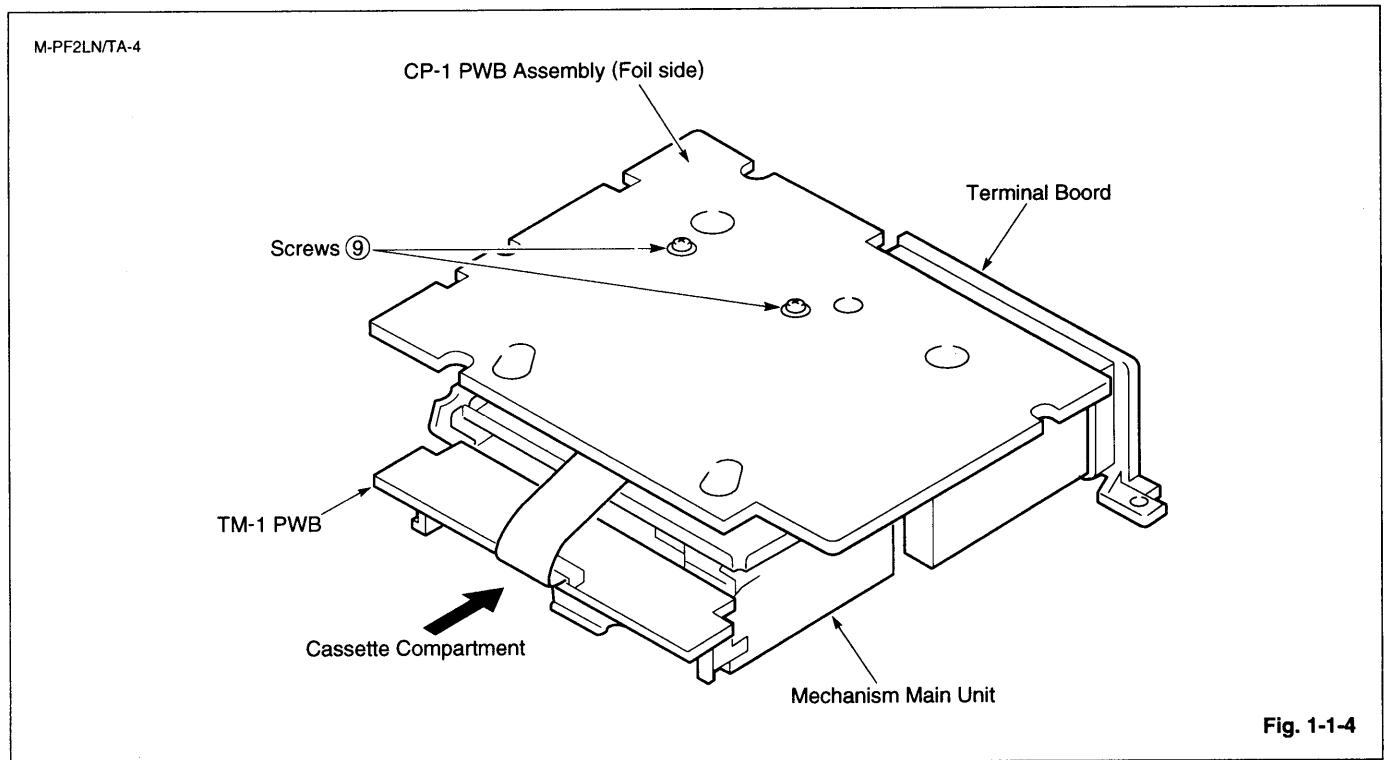


Fig. 1-1-3

1-2. TEMPORARILY SETTING UP AND CONNECTING CP-1 PWB ASSEMBLY

The following is an example of how to place and connect the main board without a jig, when repairing the CP-1 PWB assembly.

1. Place the mechanism unit and main board up side down as a whole on a flat surface with foil side of the main board facing up.
2. Operate the unit using the buttons on TM-1 PWB or the remote control.

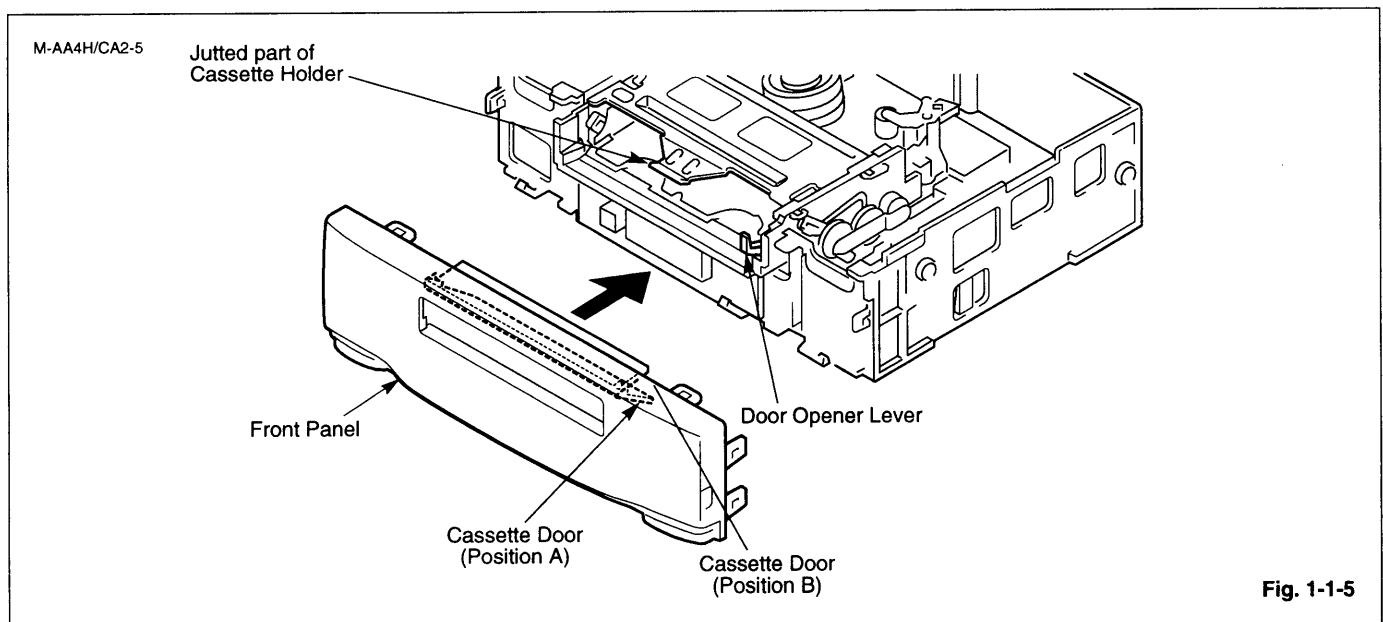


1-3. INSTALLATION OF THE FRONT PANEL

When installing the front panel to the chassis after repairs and adjustments.

1. Pressing down the door opener lever of the mechanism main unit.
2. Set the cassette door to half-opened state as shown in Fig. 1-1-5, and install the front panel to the chassis.

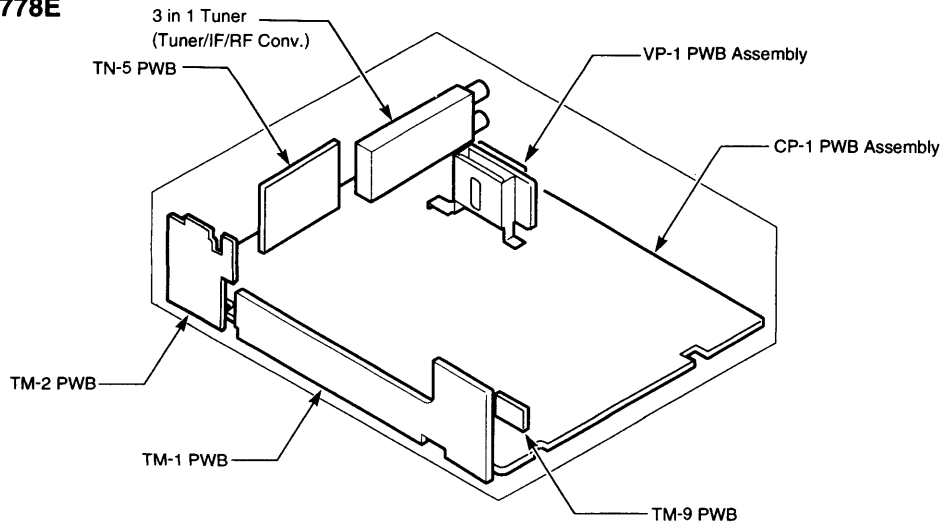
Note: Opened cassette door position does not install the front panel to the chassis.



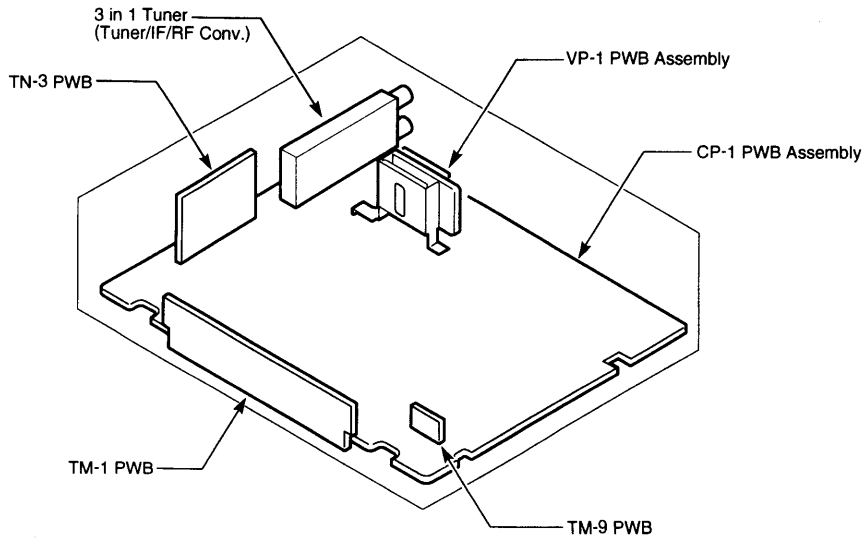
1-4. CIRCUIT BOARD LOCATIONS

L-AP4HN/E3, MP4H/G5, AP4HN/G2

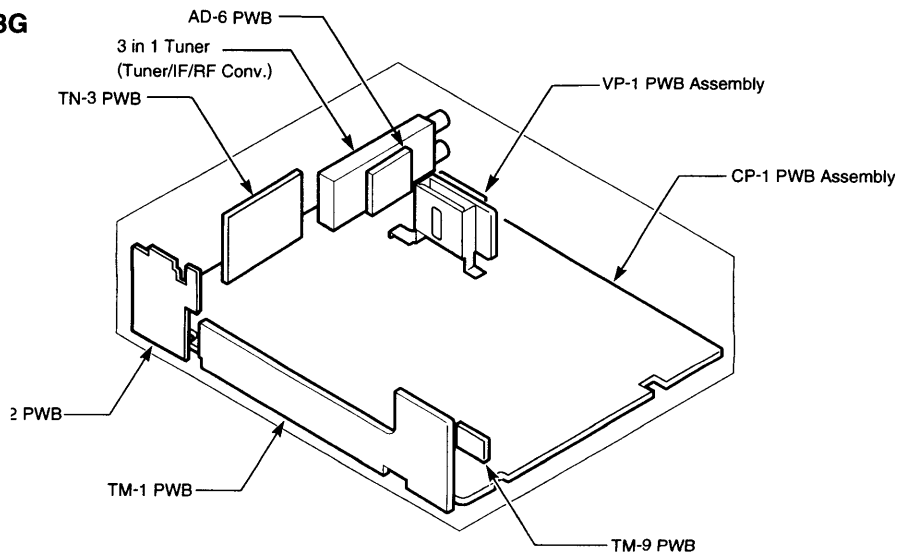
VHR-778E



VHR-778G



VHR-788G



2. ELECTRICAL ADJUSTMENT

VCR PRESETTING

This VCR need three basic presetting by using the menus displayed on-screen. After all connection have been made, then follow steps 1 to 3 to preset the VCR.

The three presetting steps will be displayed in sequence on TV screen. The setting are entered with the remote control.

Turn on the VCR

1. Adjusting the TV receiver to the video channel: The AUTO SETUP screen will appear. When the video channel has been preset, press the OK button on the remote control.
2. Country selection: Using the numeric button, select the country of use.
3. Language selection: When the desired language has been select, press the MENU/TV button directly before prevent auto tuning will start.

When steps 1 to 3 have been finish, ready to operate the all operating mode.

2-1. SERVO CIRCUIT ADJUSTMENT

- These adjustments should be done upon completion of the tape transport adjustments.
- If the tape transport adjustments (except the tilt adjustment) are done after these adjustments, follow the procedures again in section 2-1-3, "Switching position adj."
- When a cassette tape is loaded, auto-tracking will be set immediately after starting the first playback. As this will daviate the tracking center set, be sure to press the channel buttons (+) and (-) once directly after starting playback to prevent auto-tracking from being set.

2-1-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Oscilloscope	Vertical sensitivity : 5 mV/DIV, external trigger Bandwidth : more than 10 MHz
Alignment Tape	VHJ-0009 or VHJ-0023 : SP mode, monoscope, 6 KHz
Blank Tape	VHS-type cassette tape
Monitor TV	

2-1-2. LOCATION OF ADJUSTMENT POINTS

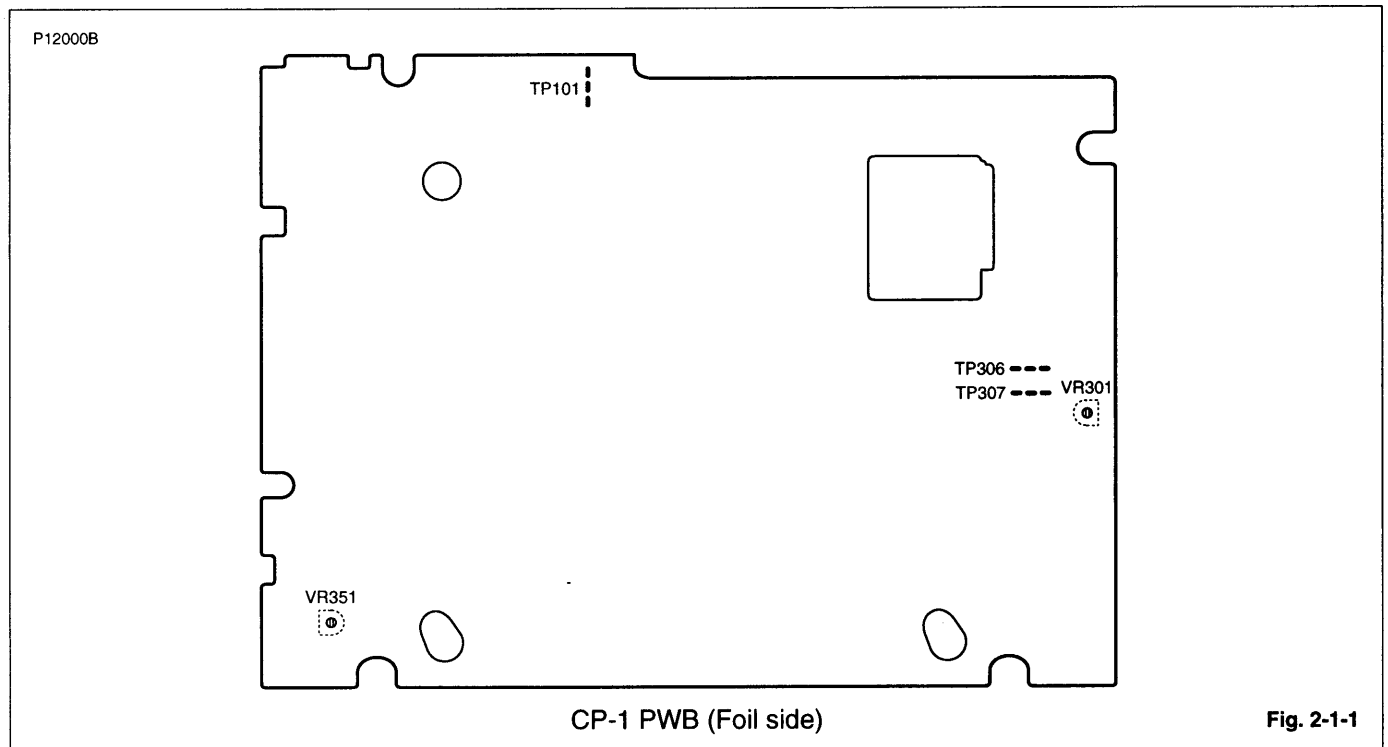
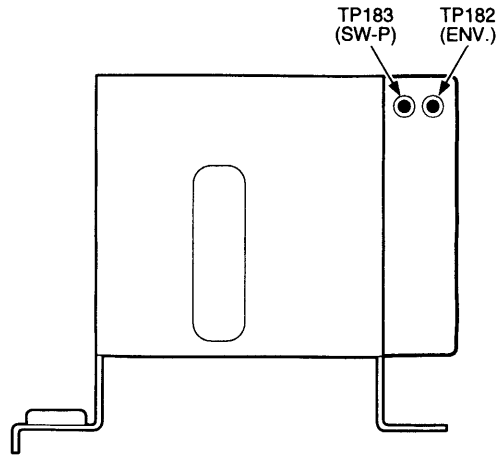


Fig. 2-1-1

P66300D



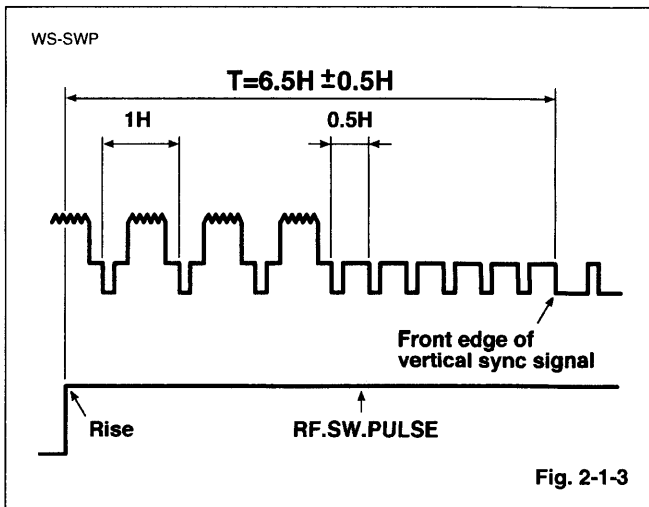
VP-1 PWB Assembly

Fig. 2-1-2

2-1-3. SWITCHING POSITION ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP101 (VIDEO OUT) TP183 (SW-P)	Oscilloscope	PLAY (SP) mode Alignment tape (VHJ-0009 or VHJ-0023)
Adj. Location		Adj. Value
VR351 (SW-P)		$6.5 H \pm 0.5 H$

1. Play back the alignment tape.
2. Set the tracking control position to the center by pressing CHANNEL buttons (+) and (-) simultaneously.
3. Adjust VR351 (SW-P) so that the width of "T" becomes $6.5 H \pm 0.5 H$ as shown in Fig. 2-1-3.

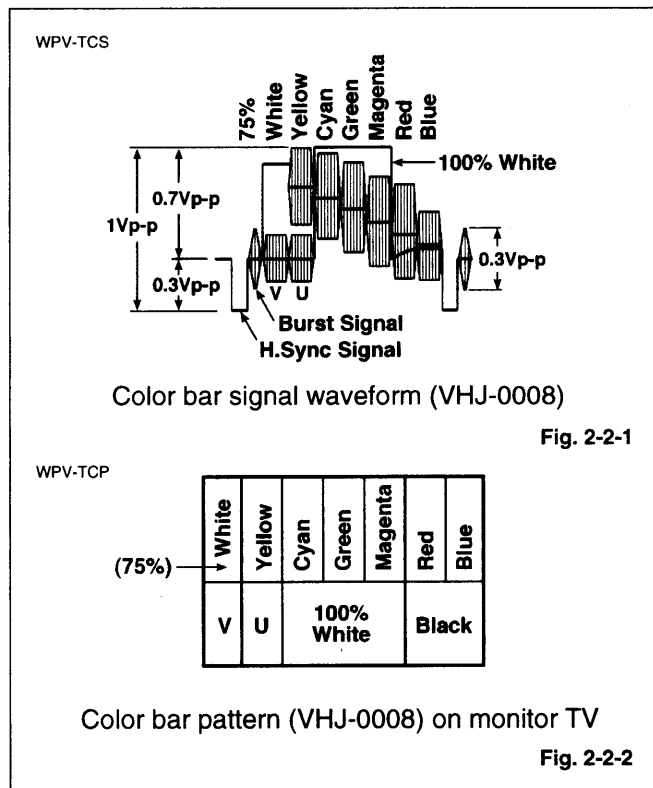


2-2. VIDEO CIRCUIT RELAY JIG

2-2-1. TEST EQUIPMENT AND STANDARDS REQUIRED

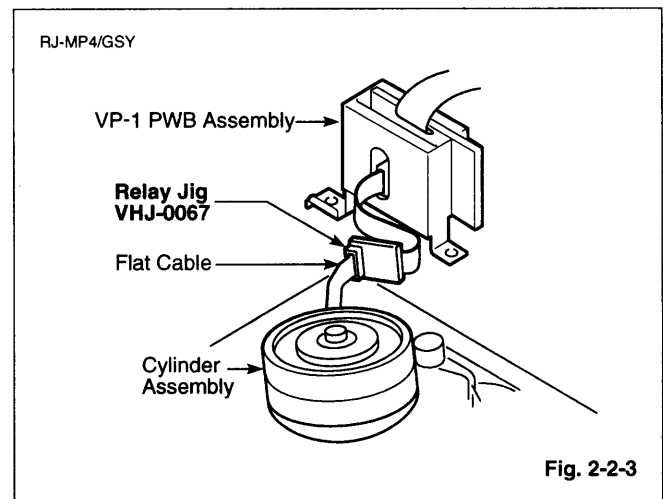
Color Bar Signal Generator	PAL Color bar signal with 100% white level (EBU color bar signal)
Oscilloscope	Vertical sensitivity : 5 mV/DIV, external trigger Bandwidth : more than 10 MHz
Oscilloscope Probe	Input capacity : less than 25 pF (10:1) less than 40 pF (1:1) Covering frequency : DC ~ 40 MHz (10:1) DC ~ 30 MHz (1:1)
Digital Voltmeter	DC range
Alignment Tape	VHJ-0008 or VHJ-0023 : SP mode, color bar, 1 kHz (Color bar signal waveform is described below. Refer to Fig. 2-2-1)
Relay Jig	VHJ-0067 : 12-wire flat cable for VP-1 PWB assembly

ALIGNMENT TAPE COLOR BAR SIGNAL



RELAY JIG

Connect the flat cable end from the cylinder assembly to the VP-1 PWB assembly using the relay jig to provide simple repairing of the VP-1 PWB assembly, as shown in Fig.2-2-3. Further, when adjusting the VP-1 PWB assembly, be sure to make contact an end of shield case with bracket of the VP-1 PWB assembly to maintain the shield effect. If the VP-1 PWB assembly does not contact, there is insufficient ground and no proper play back image can be obtained.



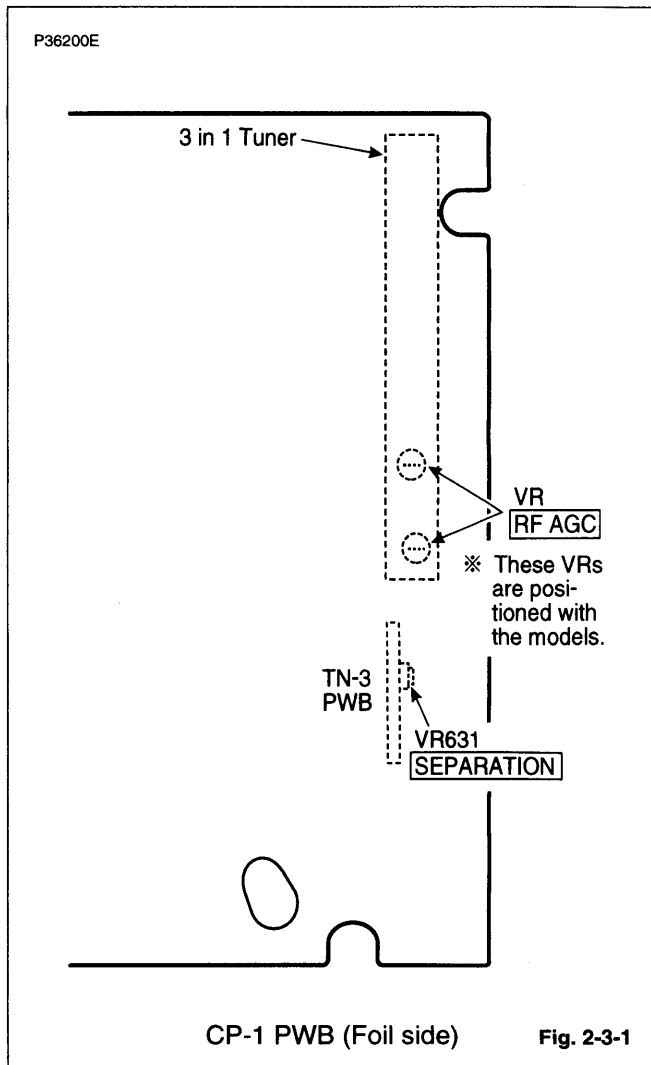
2-3. MTS DECODER CIRCUIT ADJUSTMENT for VHR-778G and VHR-788G

- If adjusting the MTS Decoder circuit, special equipment shown in section 2-4-1. is necessary.
- Improper adjustment will cause loss of performance of stereo sound and bilingual sound detection.
- Before making these adjustments, be sure to make the adjustments described in section 2-1. " Servo Circuit.", section 2-2. "Video Circuit Relay Jig."

2-3-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Audio Multiplex TV signal Generator	
Oscilloscope	
AC Voltmeter	
Low Path Filter	15 kHz (48dB/oct)

2-3-2. LOCATION OF ADJUSTMENT POINTS



Note:

- Set the following remote control button to the positions indicated below, before making following adjustments.

REMOTE CONTROL BUTTON	POSITION
TAPE SPEED	SP
INPUT	AV
AUDIO	LR

2-3-3. SEPARATION ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
AUDIO OUTPUT terminal EURO pin3 (Lch)	Audio Multiplex TV signal generator Oscilloscope Low path filter 15 kHz (48 dB/oct)	E-E mode
Adj. Location		Adj. Value
VR631 (SEPARATION)		Minimum level

1. Input the output signal of the audio multiplex TV signal generator into the VCR ANT input terminal.
2. Connect the oscilloscope to the audio output terminal EURO pin 3 (Lch) of the VCR via the LPF.
3. Set the audio multiplex TV signal generator as follows.
Audio signal Rch: 1 kHz 30% modulation
Audio signal Lch: Unmodulation
4. Adjust VR631 (SEPARATION) so that the output of the audio output terminal (Lch) is brought to its minimum level.

2-4. IF CIRCUIT ADJUSTMENT

- In this model, the circuits of the TUNER, IF, and RF converter have been made into one. Therefore, should one circuit malfunction, the whole unit must be replaced.
- The adjustments for the IF (RF AGC) circuit of the 3 in 1 tuner are described below.

Note: The 3 in tuner dose not need any adjustments, because precise adjustments were down before shipment.

2-4-1. TEST EQUIPMENT AND STANDARD REQUIRED

Monitor TV	
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2-4-2. LOCATION OF ADJUSTMENT POINT

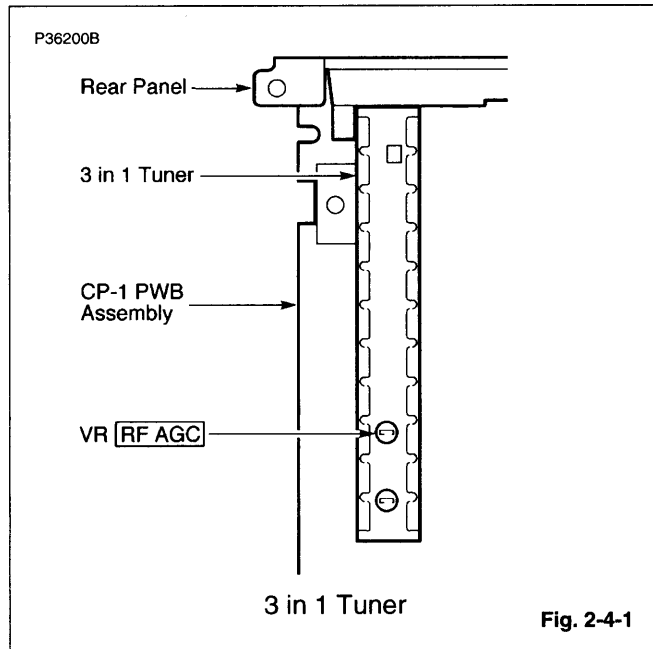


Fig. 2-4-1

2-4-3. RF AGC ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
Picture of monitor TV	Monitor TV	E-E mode
Adj. Location		Adj. Value
VR (RF AGC) (on the 3 in 1 tuner)		S/N is best point

1. Connect the monitor TV to the VHF/UHF antenna output terminal.
2. Connect the VHF or UHF antenna to the VHF/UHF antenna input terminal.
3. Receive the middle electrical field (70 dB μ ~ 90 dB μ) of the VHF or UHF channel, and slowly turn the VR (RF AGC) from the point where snow-noise is present to the point where it just disappears from the monitor TV.
4. Confirm by monitor TV that there is no beat and saturation (S/N is best point) when receiving any TV channel.

2-5 . CHECKING THE RF CHANNEL

If the TV and VCR are connected by an aerial output cable which has poor shielding characteristics, turn off the RF converter of the VCR and use the VCR with an AV cable. To turn the RF converter off, input "00" when setting the RF (when "RF" is displayed) during VCR pre-setting.

3. TEST POINTS FOR TAPE PATH ADJUSTMENT

Test points TP182 (ENV) and TP183 (SW-P) for tape path adjustment are shown in figure below.

For adjustment, refer to the separate volume "V95 I Mechanism Manual" (MM531433) and "V95 II Mechanism Manual" (MS531500).

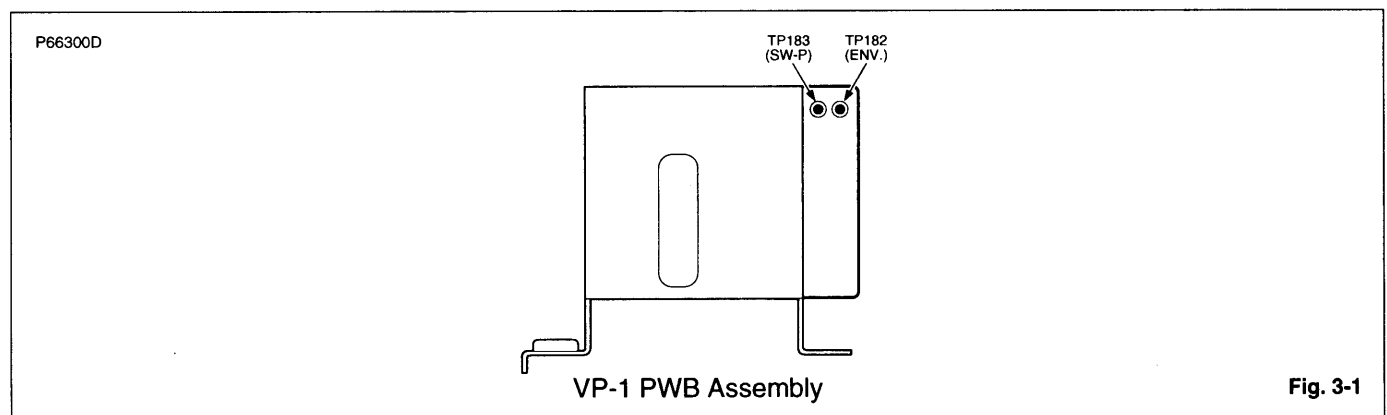


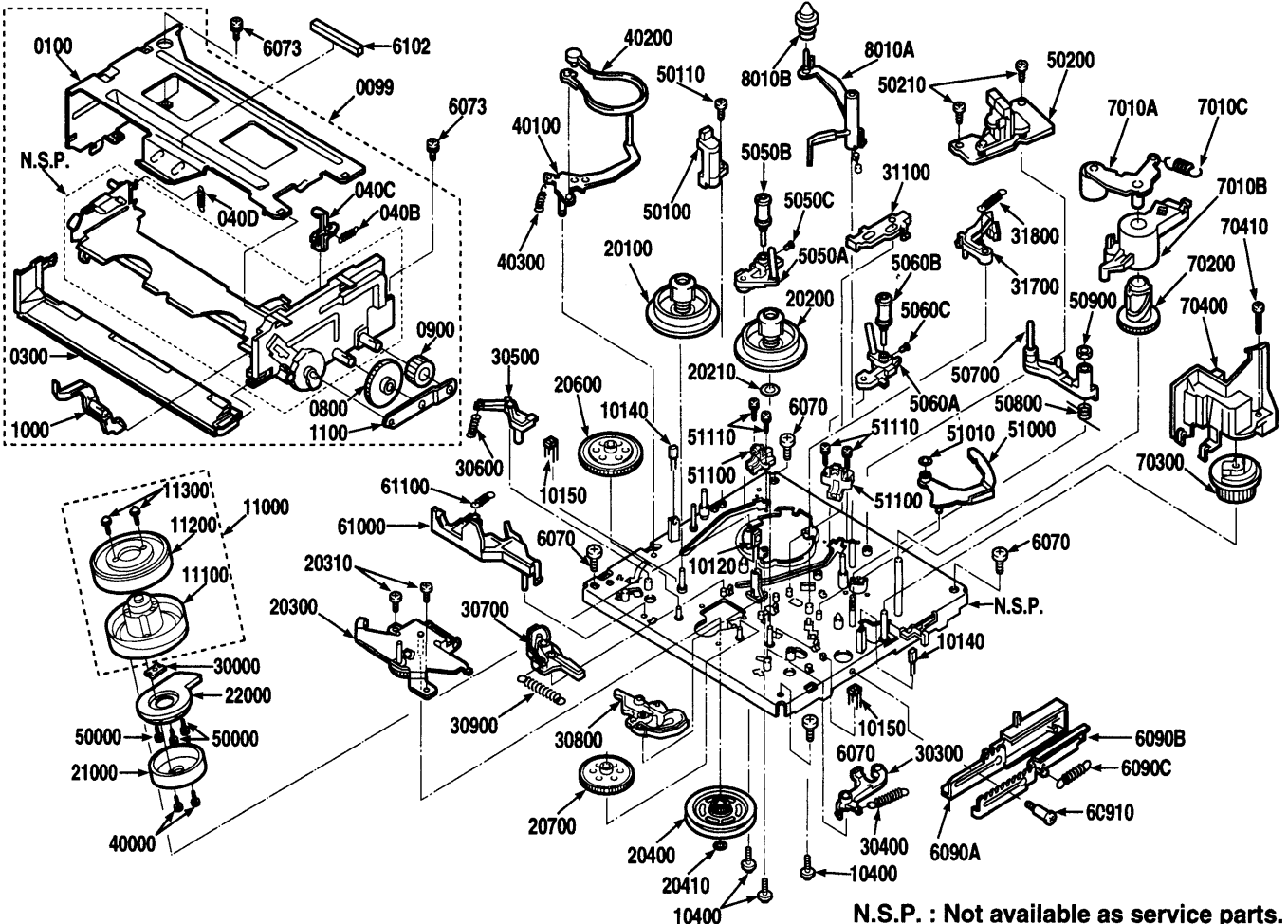
Fig. 3-1

4. PARTS LIST MECHANISM PARTS

LOCATION	PARTS NO.	DESCRIPTION
MECHANISM PARTS 1		
11000	613 164 5981	COMPL,CYLINDER,4H6P-R2
11100	613 096 2751	ASSY,CYLINDER,LWR 6K
11200	613 164 6001	ASSY,CYLINDER,UPR 4H6P-R2
11300	411 038 1608	SCR PAN+W 3X8
21000	645 015 7875	MOTOR,ROTOR,CYL DC 2W
22000	645 015 7868	MOTOR,STATOR,CYL DC 2W
OR	645 026 7802	MOTOR,STATOR,CYL DC 2W
30000	613 097 2170	SPACER,MOTOR
40000	412 036 5001	SPECIAL SCREW 2.3X6
50000	412 036 4905	SPECIAL SCREW 2.3X10
0099	613 152 0578	COMPL,CASSETTE MECHANISM
0100	613 152 0738	STAND L
0300	613 152 0660	FRAME UNDER
040B	613 152 0417	SPRING,LID OPENER
040C	613 152 0707	LEVER,RELEASE
040D	613 152 0424	SPRING,TRAY LOCK
0800	613 152 2794	GEAR,LOCK
0900	613 152 2800	GEAR,PINION
1000	613 151 9480	LEVER,DOOR OPENER
1100	613 151 9299	HOLDER,GEAR
6070	411 021 7907	SCR S-TPG BIN 4X12
6073	412 048 8205	SPECIAL SCREW-2.6X6
6102	613 151 6618	PAD
10120	407 162 1102	LED LN59L(D8003)
10140	407 162 8705	PHOTO DIODE PN263L-(NC) (D8001,D8002) S,T SENSOR
10150	407 165 8108	PHOTO COUPLE SG-105F (PC801),(PC802:VHR-778E ONLY)

LOCATION	PARTS NO.	DESCRIPTION
10150	407 043 0101	PHOTO DIODE ON2170-R (PC801),(PC802:VHR-778E ONLY)
10400	412 052 6204	SPECIAL SCREW-2.6X5.5
20100	613 169 3722	ASSY,REEL SUPPLY,VHR-778E ONLY
OR	613 176 2343	ASSY,REEL SUPPLY,VHR-778E ONLY
20100	613 169 0974	REEL,SUPPLY,EXCEPT VHR-778E
OR	613 160 5503	ASSY,REEL SUPPLY,EXCEPT VHR-778E
20200	613 160 4193	ASSY,REEL TAKE UP
OR	613 168 1514	ASSY,REEL TAKE UP
20210	412 015 8504	SPECIAL WASHER 3.1X6X0.5
OR	412 021 5306	SPECIAL WASHER 3.1X6X0.3
OR	412 015 8900	SPECIAL WASHER 3.1X6X0.4
20300	613 175 0661	COMPL,MOUNTING CLUTCH
OR	613 171 6896	COMPL,MOUNTING CLUTCH
20310	412 048 7505	SPECIAL SCREW-2.6X4
20400	613 151 9701	PULLEY,REEL
20410	412 045 4606	SPECIAL WASHER 2.4X6X0.25
20600	613 152 2749	GEAR,REEL S
20700	613 152 2756	GEAR,REEL T
30300	613 160 3356	ASSY,BRAKE SOFT T
30400	613 152 0295	SPRING,SOFT T
30500	613 151 9411	LEVER,SOFT S
30600	613 152 0318	SPRING,SOFT S
30700	613 160 6166	ASSY,BRAKE,S
30800	613 159 2193	ASSY,BRAKE T
30900	613 163 6996	SPRING,BRAKE
31100	613 152 0189	SLIDE,ACT BRAKE T
31700	613 151 8490	ASSY,BRAKE CAPSTAN
31800	613 152 0356	SPRING,BRAKE CAPSTAN
40100	613 151 8759	ASSY,LEVER,BT
40200	613 160 5282	ASSY,BRAKE,BAND

Note:
Location No. 8010A and 8010B are used on
VHR-788G ONLY

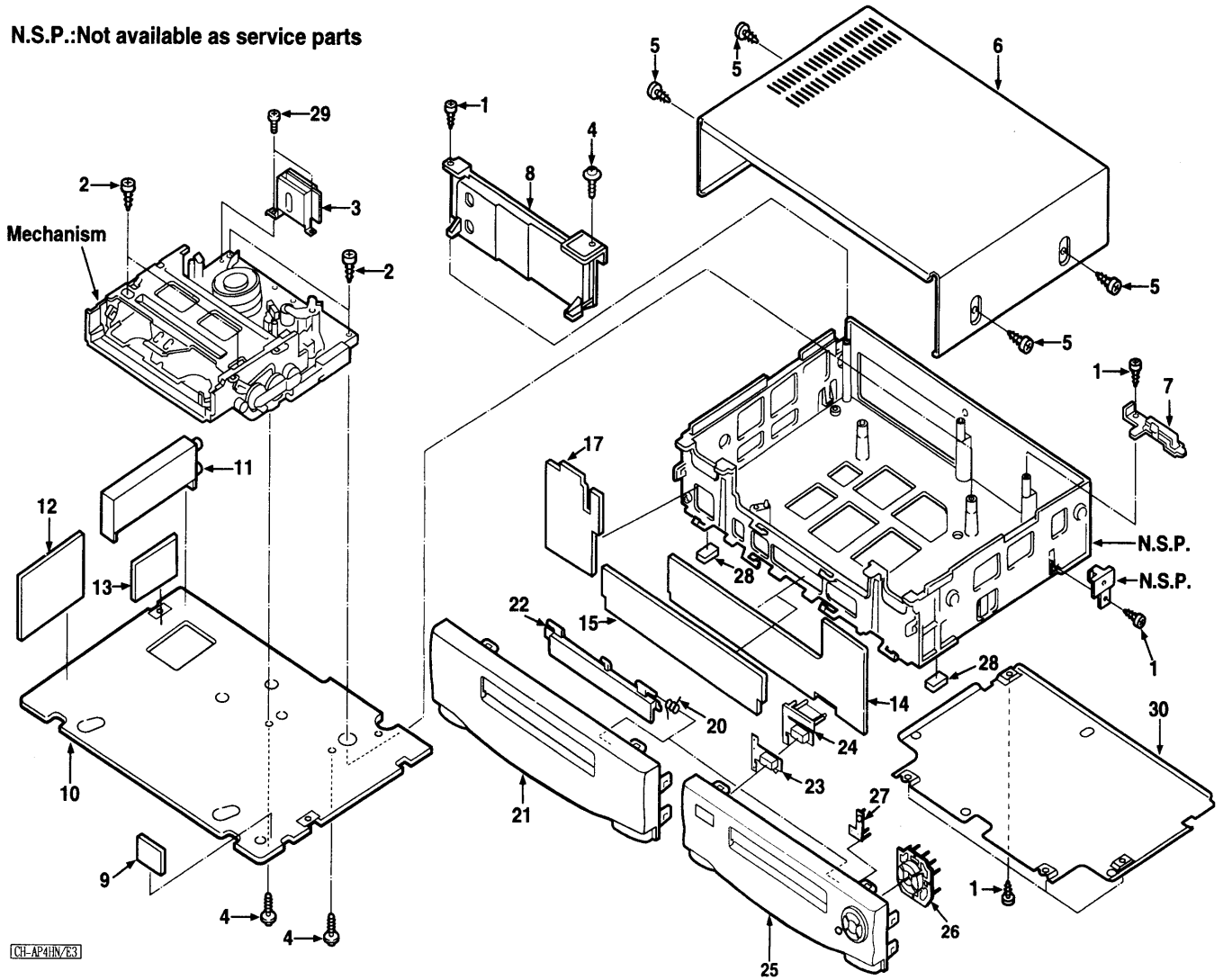


**N.S.P. : Not available as service parts.
MECHANISM-PART 1**

LOCATION	PARTS NO.	DESCRIPTION
CABINET & CHASSIS PARTS		
1	411 137 0007	SCR L-TPG BIN 3X10
2	411 021 7907	SCR S-TPG BIN 4X12
3	613 178 7841	COMPL PWB,VP-1,VHR-778E ONLY
3	613 179 0124	COMPL PWB,VP-1,EXCEPT VHR-778E
4	412 052 5108	SPECIAL SCREW-2.6X12
5	412 028 9406	SPECIAL SCREW
6	613 177 5398	COVER TOP, VHR-788G ONLY
6	613 161 2952	COVER TOP, VHR-788G ONLY
6	613 177 5404	COVER TOP, EXCEPT VHR-788G
6	613 163 4794	COVER TOP, EXCEPT VHR-788G
7	613 160 2885	HOLDER
8	613 173 3244	TERMINAL
9	613 179 1091	COMPL PCB, TM-9
10	613 179 5600	COMPL PWB, CP-1-A, VHR-788G ONLY
10	613 180 4128	COMPL PWB, CP-1-A, VHR-778G ONLY
10	613 179 5563	COMPL PWB, CP-1-A, VHR-778E ONLY
11	645 019 0117	TUNER, RF/TU/IF, VHR-778E ONLY
11	645 019 0070	TUNER, RF/TU/IF, EXCEPT VHR-778E
12	613 173 4470	COMPL PWB, TN-3, EXCEPT VHR-778E
12	613 161 6226	COMPL PWB, TN-5, VHR-778E ONLY
13	613 179 8366	COMPL PWB, AD-6, VHR-788G ONLY

LOCATION	PARTS NO.	DESCRIPTION
14	613 179 2388	COMPL PWB, TM-1, VHR-778E ONLY
14	613 178 9944	COMPL PWB, TM-1, VHR-788G ONLY
15	613 179 3002	COMPL PWB, TM-1, VHR-778G ONLY
17	613 178 9951	COMPL PWB, TM-2, VHR-788G ONLY
17	613 179 2395	COMPL PWB, TM-2, VHR-778E ONLY
20	613 153 0478	SPRING
21	613 180 3152	ASSY, CABINET FRONT SID, VHR-778G ONLY
22	613 180 3275	DOOR CASSETTE, VHR-778G ONLY
22	613 179 5174	DOOR CASSETTE, VHR-788G ONLY
22	613 179 3149	DOOR CASSETTE, VHR-778E ONLY
23	613 178 9777	BUTTON, VHR-788G ONLY
24	613 179 0285	HOLDER, VHR-788G ONLY
24	613 179 3125	BUTTON, VHR-778E ONLY
25	613 179 4993	ASSY, CABINET FRONT SID, VHR-788G ONLY
25	613 179 3118	ASSY, CABINET FRONT SID, VHR-778E ONLY
26	613 179 5051	BUTTON 5P, VHR-788G ONLY
26	613 178 9760	BUTTON 5P, VHR-778E ONLY
27	613 178 9784	BUTTON, VHR-778E ONLY
27	613 179 5068	BUTTON, VHR-788G ONLY
28	613 121 1001	STAND, FELT, (FRONT)
29	411 001 1901	SCR S-TPG BIN 3X6
30	613 160 5091	COVER BOTTOM

N.S.P.: Not available as service parts



CH-AP41N/23

ELECTRICAL PARTS

Note:

1. Materials of Capacitors and Resistors are abbreviated as follows ;

Resistors	Capacitors
MT-FILM Metallized Film Resistor	MT-POLYEST Metallized Polyester Capacitor
MT-GLAZE Metallized Glaze Resistor	MT-COMPO Metallized Composite Capacitor
OXIDE-MT Oxide Metallized Film Resistor	TA-SOLID Tantalum Solid Capacitor
	AL-SOLID Aluminum Solid Capacitor
	NP-ELECT Non-Polarized Electrolytic Capacitor
	OS-SOLID Aluminum Solid Capacitors with Organic Semiconductive Electrolytic Capacitor
	DL-ELECT Double Layered Electrolytic Capacitor

2. Tolerance of Capacitor (10pF over) and Resistor are noted with follow symbols.

F1%	G2%	J5%	K10%
M20%	N30%	Z+80% ~ -20%	

3. Capacitors

U : μ F P : pF

4. Inductors

UH : μ H MH : mH

5. N.S.P. : Not available as service parts.

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
COMPL PWB, CP-1-A			Q2342	405 014 4608	TR 2SC2412K-S
	613 179 5600	VHR-788G ONLY	OR	405 015 8704	TR 2SC2812-L6
	613 180 4128	VHR-778G ONLY	OR	405 014 4509	TR 2SC2412K-R
	613 179 5563	VHR-778E ONLY	Q3051	405 018 1900	TR 2SC3395,EXCEPT VHR-778E
			OR	405 029 3504	TR DTC144EK,EXCEPT VHR-778E
			Q3052	405 000 0409	TR DTA114EK,EXCEPT VHR-778E
			Q3201	405 014 4509	TR 2SC2412K-R,VHR-778E ONLY
			OR	405 014 4608	TR 2SC2412K-S,VHR-778E ONLY
			Q3202	405 014 4509	TR 2SC2412K-R,VHR-778E ONLY
			OR	405 014 4608	TR 2SC2412K-S,VHR-778E ONLY
			Q3301	405 000 5305	TR DTC143TK,VHR-778E ONLY
			Q3302	405 000 2007	TR DTA144EK,VHR-778E ONLY
			Q3401	405 084 8209	TR 2SC2960-F-SPA,VHR-778E ONLY
			OR	405 084 8308	TR 2SC2960-G-SPA,VHR-778E ONLY
			Q3504	405 029 3504	TR DTC144EK
			Q3551	405 014 4509	TR 2SC2412K-R
			OR	405 014 4608	TR 2SC2412K-S
			Q3552	405 014 4509	TR 2SC2412K-R
			OR	405 014 4608	TR 2SC2412K-S
			Q3553	405 014 4509	TR 2SC2412K-R
			OR	405 014 4608	TR 2SC2412K-S
			Q3554	405 029 3504	TR DTC144EK
			Q3581	405 029 3504	TR DTC144EK
			Q5001	405 126 0208	TR 2SK1460LS,VHR-778E ONLY
			Q5002	405 089 2202	TR 2SC4483-T,EXCEPT VHR-778E
			Q5002	405 013 7006	TR 2SC2274-F,VHR-778E ONLY
			OR	405 013 7303	TR 2SC2274K-F,VHR-778E ONLY
			Q5003	405 006 6702	TR 2SA984-F,VHR-778E ONLY
			OR	405 006 7204	TR 2SA984K-F,VHR-778E ONLY
			Q5004	405 013 7006	TR 2SC2274-F,VHR-778E ONLY
			OR	405 013 7303	TR 2SC2274K-F,VHR-778E ONLY
			Q5101	405 089 2103	TR 2SC4483-S
			OR	405 089 2202	TR 2SC4483-T
			OR	405 104 3108	TR 2SD1858-Q
			OR	405 029 4501	TR 2SD1858-R
			Q5102	405 089 2103	TR 2SC4483-S
			OR	405 089 2202	TR 2SC4483-T
			OR	405 104 3108	TR 2SD1858-Q
			OR	405 029 4501	TR 2SD1858-R
			Q5103	405 013 6801	TR 2SC2274-E
			OR	405 013 7006	TR 2SC2274-F
			OR	405 013 7204	TR 2SC2274K-E
			OR	405 013 7303	TR 2SC2274K-F
			Q5104	405 125 3200	TR 2SC5070,EXCEPT VHR-778E
			Q5104	405 089 2103	TR 2SC4483-S,VHR-778E ONLY
			OR	405 089 2202	TR 2SC4483-T,VHR-778E ONLY
			OR	405 104 3108	TR 2SD1858-Q,VHR-778E ONLY
			OR	405 029 4501	TR 2SD1858-R,VHR-778E ONLY
			Q5105	405 099 8508	TR 2SC4640S
			OR	405 011 8401	TR 2SC1740S-Q
			OR	405 093 0607	TR KSC2785-Y
			OR	405 099 8607	TR 2SC4640T
			OR	405 011 8500	TR 2SC1740S-R
			Q5110	405 083 6305	TR DTB113ZK,EXCEPT VHR-778E

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
Q5111	405 000 2007	TR DTA144EK,EXCEPT VHR-778E	D5001	407 197 6509	DIODE DB155G-S
Q5112	405 000 4100	TR DTC124EK,EXCEPT VHR-778E	OR	407 104 5304	DIODE S1WB(A)60
Q5113	405 000 2908	TR DTC114EK,EXCEPT VHR-778E	D5002	407 004 9808	DIODE DSK10E,EXCEPT VHR-778E
Q5114	405 125 3200	TR 2SC5070,EXCEPT VHR-778E	D5003	407 078 2705	DIODE 1SS244,VHR-778E ONLY
Q5115	405 029 3504	TR DTC144EK,EXCEPT VHR-778E	D5004	407 078 2705	DIODE 1SS244,VHR-778E ONLY
Q5116	405 000 4100	TR DTC124EK,EXCEPT VHR-778E	D5006	407 078 2705	DIODE 1SS244,VHR-778E ONLY
Q5117	405 138 7905	TR DTC123JKA,EXCEPT VHR-778E	D5010	407 091 6704	DIODE AP01C,VHR-778E ONLY
Q5131	405 125 3200	TR 2SC5070,EXCEPT VHR-778E	D5011	407 198 2401	DIODE SFT14,EXCEPT VHR-778E
Q5131	405 089 2103	TR 2SC4483-S,VHR-778E ONLY	D5012	407 198 2401	DIODE SFT14,EXCEPT VHR-778E
OR	405 089 2202	TR 2SC4483-T,VHR-778E ONLY	D5012	408 038 0908	ZENER DIODE 1.5KE150A,VHR-778E ONLY
OR	405 104 3108	TR 2SD1858-Q,VHR-778E ONLY	D5013	△ 407 169 5608	PHOTO COUPLE PC123U2
OR	405 029 4501	TR 2SD1858-R,VHR-778E ONLY	D5014	407 078 2705	DIODE 1SS244,EXCEPT VHR-778E
Q5132	405 000 0409	TR DTA114EK,EXCEPT VHR-778E ONLY	D5015	407 078 2705	DIODE 1SS244,EXCEPT VHR-778E
Q5132	405 000 2007	TR DTA144EK,EXCEPT VHR-778E	D5016	407 125 9008	ZENER DIODE MTZJ2.0A,EXCEPT VHR-778E
Q5133	405 000 2908	TR DTC114EK	D5019	407 078 2705	DIODE 1SS244,EXCEPT VHR-778E
Q5134	405 099 8508	TR 2SC4640S,VHR-778E ONLY	D5101	408 038 5309	DIODE ERC81-004J11,EXCEPT VHR-778E
OR	405 011 8401	TR 2SC1740S-Q,VHR-778E ONLY	D5101	407 169 5707	DIODE RLLZ-LF-C4,VHR-778E ONLY
OR	405 093 0607	TR KSC2785-Y,VHR-778E ONLY	OR	407 198 2609	DIODE SF34,VHR-778E ONLY
OR	405 099 8607	TR 2SC4640T,VHR-778E ONLY	OR	407 160 9308	DIODE ERB93-02L3,VHR-778E ONLY
OR	405 011 8500	TR 2SC1740S-R,VHR-778E ONLY	D5102	407 198 2500	DIODE SF24,VHR-778E ONLY
Q5134	405 014 4509	TR 2SC2412K-R,EXCEPT VHR-778E	D5102	407 205 7009	DIODE D2FS6,EXCEPT VHR-778E
OR	405 014 4608	TR 2SC2412K-S,EXCEPT VHR-778E	OR	407 205 7009	DIODE D2FS6,EXCEPT VHR-778E
(INTEGRATED CIRCUITS)			D5103	407 078 2705	DIODE 1SS244
IC101	410 297 2500	IC LA71511DML-MPB	D5104	407 078 2705	DIODE 1SS244,VHR-778E ONLY
IC102	409 372 4508	IC LC89977M	D5104	407 198 2401	DIODE SFT14,EXCEPT VHR-778E
IC141	410 301 7903	IC LC74788JM-9696	D5105	407 198 2401	DIODE SFT14,VHR-778E ONLY
IC231	409 406 0100	IC BH7801BK	D5105	407 167 8007	DIODE D1FL20U,EXCEPT VHR-778E
OR	409 392 2201	IC BH7801AK	OR	407 167 8007	DIODE D1FL20U,EXCEPT VHR-778E
IC301	410 309 1903	IC LC866852A-5G59,VHR-778E ONLY	D5106	407 078 2705	DIODE 1SS244,EXCEPT VHR-778E
IC301	410 311 3803	IC LC866852A-5G91,VHR-778G ONLY	D5107	407 063 8903	ZENER DIODE MTZJ5.6C,VHR-778E ONLY
IC301	410 311 4701	IC LC866852A-5G80,VHR-778G ONLY	D5107	407 099 5303	ZENER DIODE MTZJ5.6B,EXCEPT VHR-778E
IC302	409 314 2005	IC LB1643	D5108	407 063 8903	ZENER DIODE MTZJ5.6C,VHR-778E ONLY
IC303	409 415 0009	IC BMR03H-04	D5108	407 099 5303	ZENER DIODE MTZJ5.6B,EXCEPT VHR-778E
IC304	409 401 6305	IC BR24C02,VHR-778E ONLY	D5109	407 063 8903	ZENER DIODE MTZJ5.6C,VHR-778E ONLY
OR	410 177 3603	IC AT24C02-10PC,VHR-778E ONLY	D5109	407 099 5303	ZENER DIODE MTZJ5.6B,EXCEPT VHR-778E
OR	409 348 6901	IC XL24C04P,EXCEPT VHR-778E	D5110	407 099 6508	ZENER DIODE MTZJ12A,EXCEPT VHR-778E
OR	409 348 6802	IC XL24C02P,VHR-778E ONLY	D5110	407 099 6607	ZENER DIODE MTZJ12B,VHR-778E ONLY
OR	410 172 6807	IC X24C02PC7189,VHR-778E ONLY	D5111	407 099 5501	ZENER DIODE MTZJ6.2C,VHR-778E ONLY
OR	410 189 5701	IC 24LC02B/P,VHR-778E ONLY	D5111	407 099 5600	ZENER DIODE MTZJ6.8A,EXCEPT VHR-778E
IC304	410 189 5800	IC 24LC04B/P,EXCEPT VHR-778E	D5112	407 091 6902	DIODE ERA38-04,EXCEPT VHR-778E
OR	410 177 3702	IC AT24C04-10PC,EXCEPT VHR-778E	D5112	407 004 9709	DIODE DSK10C,VHR-778E ONLY
OR	410 172 6906	IC X24C04PC7346,EXCEPT VHR-778E	OR	407 005 8701	DIODE ERA15-02,VHR-778E ONLY
IC341	409 026 8203	IC L5631,VHR-778E ONLY	D5113	407 004 9709	DIODE DSK10C,VHR-778E ONLY
OR	409 057 5103	IC UPC574J,VHR-778E ONLY	OR	407 005 8701	DIODE ERA15-02,VHR-778E ONLY
IC351	409 409 2507	IC BU2923K	D5115	407 078 2705	DIODE 1SS244,EXCEPT VHR-778E
IC501	409 409 3801	IC MA3810-4105,EXCEPT VHR-778E	D5116	407 055 4708	ZENER DIODE RD24MB1,EXCEPT VHR-778E
IC511	409 180 2307	IC UPC1093J	OR	407 055 4807	ZENER DIODE RD24M-B2,EXCEPT VHR-778E
(DIODES)			OR	407 120 7108	ZENER DIODE RD24MB3,EXCEPT VHR-778E
D1005	407 012 4406	DIODE 1SS133	(CRYSTAL DEVICES)		
D1301	407 012 4406	DIODE 1SS133	X1001	645 002 4436	OSC,CRYSTAL 4.433619MHZ
D1302	407 012 4406	DIODE 1SS133	OR	645 014 8378	OSC,CRYSTAL 4.433619MHZ
D1341	407 012 4406	DIODE 1SS133	OR	645 000 6012	OSC,CRYSTAL 4.433619MHZ
D1342	407 012 4406	DIODE 1SS133	OR	645 000 6029	OSC,CRYSTAL 4.433619MHZ
D1347	407 012 4406	DIODE 1SS133	X3001	645 008 8360	OSC,CERAMIC 8.500MHZ
D1348	407 012 4406	DIODE 1SS133	OR	645 007 8460	OSC,CERAMIC 8.500MHZ
D2301	407 012 4406	DIODE 1SS133	X3002	613 109 0972	OSC,CRYSTAL 32KHZ
D2341	407 012 4406	DIODE 1SS133	OR	645 004 1938	OSC,CRYSTAL 32.768KHZ
D2371	407 099 7000	ZENER DIODE MTZJ15B	(VARIABLE RESISTORS)		
D2373	407 099 7000	ZENER DIODE MTZJ15B	VR351	645 003 5166	VR,SEMI,220K N
D3001	407 012 4406	DIODE 1SS133	OR	645 006 5538	VR,SEMI,220K N
D3003	407 012 4406	DIODE 1SS133,EXCEPT VHR-778E	OR	645 003 5593	VR,SEMI,220K N
D3101	407 012 4406	DIODE 1SS133,EXCEPT VHR-778E	(INDUCTORS)		
D3102	407 012 4406	DIODE 1SS133,VHR-778G ONLY	L1002	645 001 4611	INDUCTOR,120U J
D3105	407 012 4406	DIODE 1SS133	OR	645 003 7948	INDUCTOR,120U J
D3106	407 012 4406	DIODE 1SS133	L1003	645 002 1510	INDUCTOR,68U J
D3109	407 012 4406	DIODE 1SS133,VHR-778E ONLY	OR	645 003 8228	INDUCTOR,68U J
D3115	407 012 4406	DIODE 1SS133,EXCEPT VHR-778G	L1006	645 001 4642	INDUCTOR,22U J
D3117	407 012 4406	DIODE 1SS133	OR	645 003 8013	INDUCTOR,22U J
D3120	407 012 4406	DIODE 1SS133	L1101	645 025 0644	INDUCTOR,0.75UH
D3124	407 012 4406	DIODE 1SS133	L1102	645 025 0644	INDUCTOR,0.75UH
D3201	407 012 4406	DIODE 1SS133,VHR-778E ONLY	L1401	645 001 5472	INDUCTOR,33U J
D3202	407 012 4406	DIODE 1SS133,VHR-778E ONLY	OR	645 003 8105	INDUCTOR,33U J
D3401	407 100 0006	ZENER DIODE MTZJ33C,EXCEPT VHR-778E	L1402	645 001 4642	INDUCTOR,22U J
D3502	407 012 4406	DIODE 1SS133	OR	645 003 8013	INDUCTOR,22U J
D3505	407 100 6602	DIODE 1SS291	L1404	645 002 1442	INDUCTOR,18U J
D3506	407 100 6602	DIODE 1SS291	OR	645 003 7986	INDUCTOR,18U J
D3554	407 012 4406	DIODE 1SS133	L2021	645 003 6934	INDUCTOR,100U J

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
L2021	645 003 7634	INDUCTOR,100U J	C1108	403 192 5905	CERAMIC 0.1U K 25V
L2371	645 025 0644	INDUCTOR,0.75UH	C1109	403 068 0409	CERAMIC 0.1U Z 25V
L2372	645 025 0644	INDUCTOR,0.75UH	C1301	403 135 4101	ELECT 470U M 6.3V
L2373	645 003 6934	INDUCTOR,100U J	C1303	403 068 0409	CERAMIC 0.1U Z 25V
OR	645 003 7634	INDUCTOR,100U J	C1352	403 191 8709	ELECT 1U M 50V
L3001	645 025 0644	INDUCTOR,0.75UH	C1353	403 109 6308	ELECT 1U M 50V
L3003	645 025 0644	INDUCTOR,0.75UH	C1401	403 022 8205	CERAMIC 33P J 50V
L3301	645 001 4550	INDUCTOR,10U K	C1403	403 109 6308	ELECT 1U M 50V
OR	645 003 7900	INDUCTOR,10U K	C1404	403 069 9500	CERAMIC 0.01U Z 50V
L3304	645 006 3886	INDUCTOR,1U K,EXCEPT VHR-778E	C1405	403 135 4002	ELECT 47U M 6.3V
OR	645 005 3856	INDUCTOR,1U M,EXCEPT VHR-778E	C1406	403 018 0503	CERAMIC 22P J 50V
L3305	645 001 5441	INDUCTOR,2.2U K,VHR-778E ONLY	C1407	403 018 0503	CERAMIC 22P J 50V
OR	645 005 3887	INDUCTOR,2.2U M,VHR-778E ONLY	C1410	403 009 5807	CERAMIC 100P J 50V
L5001	△ 645 013 5620	LINE FILTER	C1411	403 070 5508	CERAMIC 1200P K 50V
L5010	645 006 3602	INDUCTOR,1.1UH,VHR-778E ONLY	C1412	403 109 6308	ELECT 1U M 50V
OR	645 024 3417	INDUCTOR,2.0UH,VHR-778E ONLY	C1414	403 014 3508	CERAMIC 18P J 50V
L5011	645 009 3791	CORE,BEAD,VHR-778E ONLY	C1419	403 069 9500	CERAMIC 0.01U Z 50V
L5101	645 011 6957	INDUCTOR,10U,EXCEPT VHR-778E	C2001	403 191 8709	ELECT 1U M 50V
L5101	645 006 3602	INDUCTOR,1.1UH,VHR-778E ONLY	C2002	403 069 1702	CERAMIC 1000P K 50V
OR	645 024 3417	INDUCTOR,2.0UH,VHR-778E ONLY	C2003	403 069 5601	CERAMIC 0.01U K 50V
L5102	645 006 3602	INDUCTOR,1.1UH	C2004	403 189 2405	ELECT 10U M 16V
OR	645 024 3417	INDUCTOR,2.0UH	C2005	403 167 7002	ELECT 4.7U M 50V
L5109	645 009 3791	CORE,BEAD,VHR-778E ONLY	C2006	403 068 0409	CERAMIC 0.1U Z 25V
		(TRANSFORMERS)	C2007	403 167 7002	ELECT 4.7U M 50V
T2001	645 018 3515	TRANS,OSC,70KHZ	C2008	403 068 0409	CERAMIC 0.1U Z 25V
T5001	△ 645 020 8676	TRANS,POWER,PULSE,VHR-778E ONLY	C2009	403 159 8109	ELECT 100U M 6.3V
T5001	△ 645 027 3599	TRANS,POWER,PULSE,EXCEPT VHR-778E	C2010	403 167 6500	ELECT 33U M 6.3V
		(CAPACITORS)	C2011	403 167 6500	ELECT 33U M 6.3V
C1001	403 191 8709	ELECT 1U M 50V	C2012	403 068 0409	CERAMIC 0.1U Z 25V
C1002	403 189 2405	ELECT 10U M 16V	C2013	403 189 2405	ELECT 10U M 16V
C1003	403 135 4002	ELECT 47U M 6.3V	C2016	403 163 8409	ELECT 47U M 16V
C1004	403 068 0409	CERAMIC 0.1U Z 25V	C2017	403 074 7607	CERAMIC 5600P K 50V
C1005	403 163 7907	ELECT 47U M 6.3V	C2018	403 069 5601	CERAMIC 0.01U K 50V
C1006	403 068 0409	CERAMIC 0.1U Z 25V	C2021	403 069 1702	CERAMIC 1000P K 50V
C1007	403 191 8709	ELECT 1U M 50V	C2022	403 069 1702	CERAMIC 1000P K 50V
C1009	403 191 8709	ELECT 1U M 50V	C2023	403 075 0706	CERAMIC 6800P K 50V
C1010	403 014 9302	CERAMIC 180P J 50V	C2024	403 075 0706	CERAMIC 6800P K 50V
C1011	403 023 4503	CERAMIC 330P J 50V	C2025	403 193 7809	ELECT 100U M 16V
C1012	403 020 0508	CERAMIC 27P J 50V	C2026	403 081 3302	POLYPRO 0.022U J 100V
C1013	403 150 6500	ELECT 22U M 16V	C2027	403 068 0409	CERAMIC 0.1U Z 25V
C1014	403 069 5601	CERAMIC 0.01U K 50V	C2051	403 018 0602	CERAMIC 22P J 50V
C1015	403 022 8304	CERAMIC 33P J 50V	C2301	403 189 2405	ELECT 10U M 16V
C1016	403 001 1906	CERAMIC 0.01U M 16V	C2302	403 189 2405	ELECT 10U M 16V
C1017	403 001 1906	CERAMIC 0.01U M 16V	C2303	403 072 1607	CERAMIC 0.022U K 50V
C1018	403 130 3109	CERAMIC 0.047U K 50V	C2304	403 072 1607	CERAMIC 0.022U K 50V
C1019	403 191 8709	ELECT 1U M 50V	C2305	403 073 9107	CERAMIC 4700P K 50V
C1021	403 130 3109	CERAMIC 0.047U K 50V	C2306	403 073 9107	CERAMIC 4700P K 50V
C1022	403 109 6308	ELECT 1U M 50V	C2307	403 193 7809	ELECT 100U M 16V
C1023	403 130 3109	CERAMIC 0.047U K 50V	C2308	403 193 7809	ELECT 100U M 16V
C1024	403 192 5905	CERAMIC 0.1U K 25V	C2309	403 070 8806	CERAMIC 1500P K 50V
C1025	403 069 5601	CERAMIC 0.01U K 50V	C2310	403 070 8806	CERAMIC 1500P K 50V
C1026	403 191 8709	ELECT 1U M 50V	C2311	403 139 1502	ELECT 10U M 16V,EXCEPT VHR-788G
C1027	403 072 1607	CERAMIC 0.022U K 50V	C2312	403 139 1502	ELECT 10U M 16V,EXCEPT VHR-788G
C1028	403 191 8709	ELECT 1U M 50V	C2321	403 167 7002	ELECT 4.7U M 50V
C1029	403 163 7907	ELECT 47U M 6.3V	C2323	403 193 7809	ELECT 100U M 16V
C1030	403 068 0409	CERAMIC 0.1U Z 25V	C2324	403 163 8409	ELECT 47U M 16V
C1031	403 069 5601	CERAMIC 0.01U K 50V	C2325	403 072 1607	CERAMIC 0.022U K 50V
C1032	403 191 8709	ELECT 1U M 50V	C2326	403 001 1906	CERAMIC 0.01U M 16V
C1033	403 014 3409	CERAMIC 18P J 50V	C2327	403 139 1809	ELECT 47U M 16V
C1038	403 010 1102	CERAMIC 1000P J 50V	C2332	403 193 7809	ELECT 100U M 16V
C1040	403 189 2405	ELECT 10U M 16V	C2361	403 069 0309	CERAMIC 1000P J 50V
C1041	403 020 0409	CERAMIC 27P J 50V	C2362	403 069 0309	CERAMIC 1000P J 50V
C1043	403 086 2805	NP-ELECT 1U M 50V	C2363	403 069 1702	CERAMIC 1000P K 50V
C1044	403 026 2803	CERAMIC 47P J 50V	C2364	403 069 1702	CERAMIC 1000P K 50V
C1046	403 111 8000	CERAMIC 1200P J 50V	C2365	403 018 7502	CERAMIC 220P J 50V
C1047	403 026 2803	CERAMIC 47P J 50V	C2366	403 018 7502	CERAMIC 220P J 50V
C1048	403 012 6907	CERAMIC 15P J 50V	C2369	403 018 7502	CERAMIC 220P J 50V
C1050	403 012 6907	CERAMIC 15P J 50V	C2370	403 018 7502	CERAMIC 220P J 50V
C1051	403 026 2803	CERAMIC 47P J 50V	C2372	403 071 8102	CERAMIC 2200P K 50V
C1052	403 026 2803	CERAMIC 47P J 50V	C3001	403 018 0503	CERAMIC 22P J 50V
C1101	403 191 8709	ELECT 1U M 50V	C3002	403 012 5900	CERAMIC 15P J 50V
C1102	403 163 7907	ELECT 47U M 6.3V	C3004	403 069 5601	CERAMIC 0.01U K 50V
C1103	403 068 0409	CERAMIC 0.1U Z 25V	C3005	403 069 5601	CERAMIC 0.01U K 50V
C1104	403 069 5601	CERAMIC 0.01U K 50V	C3008	403 150 6500	ELECT 22U M 16V
C1105	403 069 5601	CERAMIC 0.01U K 50V	C3009	403 069 5601	CERAMIC 0.01U K 50V
C1106	403 069 5601	CERAMIC 0.01U K 50V	C3011	403 068 0409	CERAMIC 0.1U Z 25V
C1107	403 069 5601	CERAMIC 0.01U K 50V	C3012	403 069 5601	CERAMIC 0.01U K 50V

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
C3014	403 135 4101	ELECT 470U M 6.3V	C5010	403 249 0204	ELECT 47U M 400V
C3016	403 069 5601	CERAMIC 0.01U K 50V	C5011	403 301 1101	ELECT 4.7U M 50V,VHR-778E ONLY
C3017	403 069 1702	CERAMIC 1000P K 50V,VHR-778E ONLY	C5012	403 076 2402	CERAMIC 3300P K 500V,VHR-778E ONLY
C3019	403 068 0409	CERAMIC 0.1U Z 25V	C5012	403 247 3702	CERAMIC 3300P K 1K,EXCEPT VHR-778E
C3022	403 333 1001	DL-ELECT 0.1F Z 5.5V	C5013	403 222 1303	CERAMIC 1000P K 1KV, EXCEPT VHR-778E
C3034	403 069 5601	CERAMIC 0.01U K 50V	C5013	403 255 8409	CERAMIC 39P J 1K,VHR-778E ONLY
C3037	403 028 3402	CERAMIC 56P J 50V,EXCEPT VHR-778E	C5014	403 192 5905	CERAMIC 0.1U K 25V,EXCEPT VHR-778E
C3037	403 075 3103	CERAMIC 82P J 50V,VHR-778E ONLY	C5015	403 069 5601	CERAMIC 0.01U K 50V, EXCEPT VHR-778E
C3040	403 009 5807	CERAMIC 100P J 50V,EXCEPT VHR-778E	C5015	403 192 5905	CERAMIC 0.1U K 25V,VHR-778E ONLY
C3041	403 009 5807	CERAMIC 100P J 50V,EXCEPT VHR-778E	C5016	403 192 5905	CERAMIC 0.1U K 25V,EXCEPT VHR-778E
C3042	403 009 5807	CERAMIC 100P J 50V,EXCEPT VHR-778E	C5017	403 024 7107	CERAMIC 390P J 50V,VHR-778E ONLY
C3043	403 009 5807	CERAMIC 100P J 50V,EXCEPT VHR-778E	C5020	403 255 8508	CERAMIC 47P J 1K,VHR-778E ONLY
C3201	403 189 2405	ELECT 10U M 16V,VHR-778E ONLY	C5021	403 076 0507	CERAMIC 2200P K 500V,VHR-778E ONLY
C3202	403 069 1702	CERAMIC 1000P K 50V,VHR-778E ONLY	C5101	403 314 0207	ELECT 1000U M 16V
C3203	403 189 2405	ELECT 10U M 16V,VHR-778E ONLY	C5102	403 147 9200	ELECT 1000U M 6.3V,EXCEPT VHR-778E
C3204	403 069 1702	CERAMIC 1000P K 50V,VHR-778E ONLY	C5102	403 135 3302	ELECT 1000U M 6.3V,VHR-778E ONLY
C3301	403 107 9905	ELECT 10U M 16V	C5103	403 314 0108	ELECT 470U M 16V
C3302	403 107 9905	ELECT 10U M 16V,EXCEPT VHR-778E	C5104	403 125 5507	ELECT 1000U M 16V
C3302	403 134 8100	ELECT 100U M 6.3V,VHR-778E ONLY	C5105	403 304 9302	ELECT 47U M 50V
C3303	403 024 7206	CERAMIC 390P J 50V,EXCEPT VHR-778E	C5106	403 301 1309	ELECT 47U M 35V
C3307	403 068 0409	CERAMIC 0.1U Z 25V	C5107	403 301 1507	ELECT 220U M 6.3V
C3314	403 189 2405	ELECT 10U M 16V	C5108	403 301 1101	ELECT 4.7U M 50V,EXCEPT VHR-778E
C3315	403 068 3608	CERAMIC 0.033U Z 25V,VHR-778E ONLY	C5111	403 125 5606	ELECT 100U M 16V
C3316	403 167 7002	ELECT 4.7U M 50V,VHR-778E ONLY	C5112	403 189 2405	ELECT 10U M 16V
C3318	403 011 5000	CERAMIC 120P J 50V	C5113	403 189 2405	ELECT 10U M 16V
C3320	403 030 7009	CERAMIC 68P J 50V	C5114	403 107 9905	ELECT 10U M 16V
C3324	403 121 9509	CERAMIC 0.1U Z 50V	C5115	403 135 7805	ELECT 3.3U M 50V
C3325	403 068 0409	CERAMIC 0.1U Z 25V	C5116	403 107 9905	ELECT 10U M 16V
C3401	403 014 9203	CERAMIC 180P J 50V,VHR-778E ONLY	C5117	403 135 7805	ELECT 3.3U M 50V
C3402	403 168 6202	MT-POLYEST 0.33U J 50V,VHR-778E ONLY	C5118	403 189 2405	ELECT 10U M 16V
C3403	403 184 9805	MT-POLYEST 0.22U J 50V,VHR-778E ONLY	C5119	403 192 5905	CERAMIC 0.1U K 25V,EXCEPT VHR-778E
C3404	403 193 8905	ELECT 22U M 50V	C5120	403 192 5905	CERAMIC 0.1U K 25V,EXCEPT VHR-778E
C3406	403 168 6103	MT-POLYEST 0.1U J 50V,VHR-778E ONLY	C5122	403 192 5905	CERAMIC 0.1U K 25V,EXCEPT VHR-778E
C3501	403 070 9803	CERAMIC 0.015U K 50V	C5123	403 192 5905	CERAMIC 0.1U K 25V,EXCEPT VHR-778E
C3502	403 075 0706	CERAMIC 6800P K 50V	C5123	403 075 6906	CERAMIC 100P K 500V,VHR-778E ONLY
C3503	403 070 9803	CERAMIC 0.015U K 50V	C5124	403 108 0000	ELECT 0.22U M 50V,VHR-778E ONLY
C3504	403 228 8207	ELECT 22U M 16V	C5135	403 057 3107	POLYESTER 0.1U K 50V,VHR-778E ONLY
C3505	403 228 8207	ELECT 22U M 16V	C5135	403 068 0409	CERAMIC 0.1U Z 25V,EXCEPT VHR-778E
C3506	403 075 0706	CERAMIC 6800P K 50V			
C3507	403 150 6500	ELECT 22U M 16V			
C3508	403 150 6500	ELECT 22U M 16V			
C3509	403 163 7907	ELECT 47U M 6.3V	R1001	401 037 5400	(RESISTORS) MT-GLAZE 1K JA 1/10W
C3511	403 071 6504	CERAMIC 220P K 50V	R1002	401 038 6406	MT-GLAZE 4.7K JA 1/10W
C3512	403 056 9704	POLYESTER 0.01U J 50V	R1003	401 037 9200	MT-GLAZE 1.8K JA 1/10W
C3513	403 119 6701	CERAMIC 0.068U K 16V	R1004	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C3514	403 184 9805	MT-POLYEST 0.22U J 50V	R1005	401 038 6307	MT-GLAZE 470 JA 1/10W
C3515	403 063 0206	POLYESTER 6800P K 50V	R1006	401 038 6307	MT-GLAZE 470 JA 1/10W
C3516	403 071 8102	CERAMIC 2200P K 50V	R1011	401 037 5400	MT-GLAZE 1K JA 1/10W
C3517	403 070 8806	CERAMIC 1500P K 50V	R1012	401 038 6505	MT-GLAZE 47K JA 1/10W
C3522	403 069 1207	CERAMIC 1000P K 50V	R1014	401 037 9200	MT-GLAZE 1.8K JA 1/10W
C3523	403 139 2707	ELECT 1U M 50V	R1015	401 039 0403	MT-GLAZE 8.2K JA 1/10W
C3524	403 069 5601	CERAMIC 0.01U K 50V	R1016	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C3525	403 139 2608	ELECT 0.47U M 50V	R1017	401 016 4707	CARBON 22K JA 1/4W
C3526	403 063 7205	POLYESTER 0.082U J 50V	R1024	401 037 5400	MT-GLAZE 1K JA 1/10W
C3536	403 193 7601	ELECT 220U M 6.3V	R1025	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3540	403 009 5708	CERAMIC 100P J 50V	R1028	401 038 0701	MT-GLAZE 2.2K JA 1/10W
C3551	403 175 0903	MT-POLYEST 0.12U J 50V	R1032	401 037 5400	MT-GLAZE 1K JA 1/10W
C3552	403 014 9203	CERAMIC 180P J 50V	R1033	401 018 2701	CARBON 330 JA 1/4W
C3553	403 191 8709	ELECT 1U M 50V	R1034	401 038 5003	MT-GLAZE 390 JA 1/10W
C3554	403 013 3004	CERAMIC 150P J 50V	R1041	401 038 0701	MT-GLAZE 2.2K JA 1/10W
C3555	403 069 5601	CERAMIC 0.01U K 50V	R1042	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3556	403 069 1702	CERAMIC 1000P K 50V	R1045	401 038 1005	MT-GLAZE 2.2M JA 1/10W
C3557	403 191 8709	ELECT 1U M 50V	R1046	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3558	403 167 6500	ELECT 33U M 6.3V	R1047	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3561	403 058 9306	POLYESTER 0.018U J 50V	R1048	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3562	403 138 5600	POLYESTER 5600P J 50V	R1049	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3570	403 070 2606	CERAMIC 0.1U Z 50V	R1051	401 012 4404	CARBON 100 JA 1/4W
C3571	403 070 2606	CERAMIC 0.1U Z 50V	R1101	401 038 0701	MT-GLAZE 2.2K JA 1/10W
C3581	403 184 9300	MT-POLYEST 0.047U J 50V	R1102	401 038 0701	MT-GLAZE 2.2K JA 1/10W
C5001	△ 404 070 4201	MT-POLYEST 0.068U M 250V	R1104	401 015 2605	CARBON 1.8K JA 1/4W
C5002	△ 404 070 4201	MT-POLYEST 0.068U M 250V	R1301	401 019 0904	CARBON 390 JA 1/4W
C5005	△ 404 074 1602	CERAMIC 1000P M 250V, EXCEPT VHR-778E	R1303	401 022 6702	CARBON 75 JA 1/4W
C5005	△ 404 074 2104	CERAMIC 1000P M 250V,VHR-778E ONLY	R1304	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C5007	△ 404 074 1602	CERAMIC 1000P M 250V, EXCEPT VHR-778E	R1312	401 038 0602	MT-GLAZE 220 JA 1/10W
C5007	△ 404 074 2104	CERAMIC 1000P M 250V,VHR-778E ONLY	R1313	401 038 2002	MT-GLAZE 270 JA 1/10W
			R1352	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
			R1404	401 038 3603	MT-GLAZE 3.3K JA 1/10W

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
R1405	401 038 0602	MT-GLAZE 220 JA 1/10W	R2381	401 037 5400	MT-GLAZE 1K JA 1/10W
R1410	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R2392	401 038 9506	MT-GLAZE 75 JA 1/10W
R1417	401 039 0403	MT-GLAZE 8.2K JA 1/10W	R2396	401 038 9506	MT-GLAZE 75 JA 1/10W
R1419	401 037 5806	MT-GLAZE 1M JA 1/10W	R2399	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-788G ONLY
R2001	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R3001	△ 402 067 7402	FUSIBLE RES 3.3 JA 1/2W
R2002	401 037 6803	MT-GLAZE 12K JA 1/10W	R3004	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R2003	401 037 6803	MT-GLAZE 12K JA 1/10W	R3007	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2004	401 038 3801	MT-GLAZE 330K JA 1/10W	R3008	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2005	401 037 8500	MT-GLAZE 160 JA 1/10W	R3009	401 023 1607	CARBON 820 JA 1/4W
R2006	401 038 5102	MT-GLAZE 3.9K JA 1/10W	R3011	401 016 4707	CARBON 22K JA 1/4W,VHR-778E ONLY
R2007	401 038 5102	MT-GLAZE 3.9K JA 1/10W	R3011	401 020 2805	CARBON 47K JA 1/4W, EXCEPT VHR-778E
R2008	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R3013	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2009	401 038 3900	MT-GLAZE 3.3M JA 1/10W	R3014	401 014 9001	CARBON 16K JA 1/4W
R2010	401 038 3702	MT-GLAZE 33K JA 1/10W	R3015	401 014 9001	CARBON 16K JA 1/4W
R2011	401 037 5608	MT-GLAZE 10K JA 1/10W	R3017	401 038 9209	MT-GLAZE 6.8K JA 1/10W,EXCEPT VHR-778E
R2017	401 039 0403	MT-GLAZE 8.2K JA 1/10W	R3018	401 038 9209	MT-GLAZE 6.8K JA 1/10W,VHR-778E ONLY
R2021	401 038 2200	MT-GLAZE 27K JA 1/10W	R3019	401 037 9309	MT-GLAZE 18K JA 1/10W,VHR-778E ONLY
R2022	401 037 9200	MT-GLAZE 1.8K JA 1/10W	R3019	401 038 2200	MT-GLAZE 27K JA 1/10W, EXCEPT VHR-778E
R2023	401 037 5400	MT-GLAZE 1K JA 1/10W	R3023	401 037 5400	MT-GLAZE 1K JA 1/10W
R2024	401 038 6208	MT-GLAZE 47 JA 1/10W	R3024	401 037 5400	MT-GLAZE 1K JA 1/10W
R2025	401 011 8809	CARBON 1 JA 1/4W	R3025	401 037 5400	MT-GLAZE 1K JA 1/10W
R2026	401 038 0701	MT-GLAZE 2.2K JA 1/10W	R3026	401 037 5400	MT-GLAZE 1K JA 1/10W
R2027	401 038 0701	MT-GLAZE 2.2K JA 1/10W	R3032	401 018 4804	CARBON 33K JA 1/4W
R2028	401 037 9101	MT-GLAZE 180 JA 1/10W	R3036	401 016 3700	CARBON 2.2K JA 1/4W
R2029	401 037 5608	MT-GLAZE 10K JA 1/10W	R3037	401 038 2200	MT-GLAZE 27K JA 1/10W,VHR-778E ONLY
R2030	401 038 0800	MT-GLAZE 22K JA 1/10W	R3037	401 038 5300	MT-GLAZE 39K JA 1/10W, EXCEPT VHR-778E
R2031	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R3047	401 037 9200	MT-GLAZE 1.8K JA 1/10W
R2301	401 020 1907	CARBON 4.7K JA 1/4W	R3048	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R2302	401 020 1907	CARBON 4.7K JA 1/4W	R3049	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R2303	401 038 2101	MT-GLAZE 2.7K JA 1/10W,VHR-778E ONLY	R3050	401 016 4707	CARBON 22K JA 1/4W
R2303	401 038 2200	MT-GLAZE 27K JA 1/10W, EXCEPT VHR-778E	R3051	401 016 4707	CARBON 22K JA 1/4W
R2304	401 038 2101	MT-GLAZE 2.7K JA 1/10W,VHR-778E ONLY	R3056	401 038 6505	MT-GLAZE 47K JA 1/10W,VHR-778E ONLY
R2304	401 038 2200	MT-GLAZE 27K JA 1/10W, EXCEPT VHR-778E	R3057	401 016 3700	CARBON 2.2K JA 1/4W
R2305	401 038 3702	MT-GLAZE 33K JA 1/10W, EXCEPT VHR-778E	R3058	401 016 3700	CARBON 2.2K JA 1/4W
R2305	401 039 0403	MT-GLAZE 8.2K JA 1/10W,VHR-778E ONLY	R3101	401 012 6903	CARBON 10K JA 1/4W
R2306	401 038 3702	MT-GLAZE 33K JA 1/10W, EXCEPT VHR-778E	R3102	401 012 6903	CARBON 10K JA 1/4W
R2306	401 039 0403	MT-GLAZE 8.2K JA 1/10W,VHR-778E ONLY	R3103	401 012 6903	CARBON 10K JA 1/4W
R2313	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R3104	401 012 6903	CARBON 10K JA 1/4W
R2314	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R3201	401 020 2805	CARBON 47K JA 1/4W,VHR-778E ONLY
R2315	401 020 1907	CARBON 4.7K JA 1/4W	R3202	401 038 3702	MT-GLAZE 33K JA 1/10W,VHR-778E ONLY
R2316	401 020 1907	CARBON 4.7K JA 1/4W	R3203	401 037 8203	MT-GLAZE 1.5M JA 1/10W,VHR-778E ONLY
R2317	401 038 0909	MT-GLAZE 220K JA 1/10W	R3204	401 038 0800	MT-GLAZE 22K JA 1/10W,VHR-778E ONLY
R2318	401 038 0909	MT-GLAZE 220K JA 1/10W	R3205	401 038 6505	MT-GLAZE 47K JA 1/10W,VHR-778E ONLY
R2322	401 023 2703	CARBON 8.2K JA 1/4W	R3206	401 038 3702	MT-GLAZE 33K JA 1/10W,VHR-778E ONLY
R2323	401 038 2200	MT-GLAZE 27K JA 1/10W	R3207	401 037 8203	MT-GLAZE 1.5M JA 1/10W,VHR-778E ONLY
R2324	401 038 2200	MT-GLAZE 27K JA 1/10W	R3301	401 038 5003	MT-GLAZE 390 JA 1/10W
R2325	401 014 4006	CARBON 1.5K JA 1/4W	R3302	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R2327	401 016 3700	CARBON 2.2K JA 1/4W	R3305	401 038 3603	MT-GLAZE 3.3K JA 1/10W,VHR-778E ONLY
R2329	401 038 1005	MT-GLAZE 2.2M JA 1/10W	R3306	401 039 0403	MT-GLAZE 8.2K JA 1/10W,VHR-778E ONLY
R2331	401 037 6704	MT-GLAZE 1.2K JA 1/10W	R3309	△ 402 078 2908	FUSIBLE RES 680 GA 1/4W
R2332	401 038 5102	MT-GLAZE 3.9K JA 1/10W	R3401	401 038 3702	MT-GLAZE 33K JA 1/10W,VHR-778E ONLY
R2333	401 038 2200	MT-GLAZE 27K JA 1/10W,VHR-778E ONLY	R3402	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-778E ONLY
R2334	401 038 3702	MT-GLAZE 33K JA 1/10W,VHR-778E ONLY	R3403	401 037 6605	MT-GLAZE 120 JA 1/10W,VHR-778E ONLY
R2335	401 037 5400	MT-GLAZE 1K JA 1/10W	R3404	401 012 6903	CARBON 10K JA 1/4W,VHR-778E ONLY
R2336	401 014 4006	CARBON 1.5K JA 1/4W	R3405	401 037 9309	MT-GLAZE 18K JA 1/10W,VHR-778E ONLY
R2337	401 014 4006	CARBON 1.5K JA 1/4W	R3406	401 037 8005	MT-GLAZE 15K JA 1/10W,VHR-778E ONLY
R2340	401 018 2701	CARBON 330 JA 1/4W	R3407	401 037 6803	MT-GLAZE 12K JA 1/10W,VHR-778E ONLY
R2341	401 021 2903	CARBON 5.6K JA 1/4W	R3501	401 012 8006	CARBON 100K JA 1/4W
R2342	401 021 2903	CARBON 5.6K JA 1/4W	R3502	401 037 5707	MT-GLAZE 100K JA 1/10W
R2343	401 012 4404	CARBON 100 JA 1/4W	R3503	401 038 3801	MT-GLAZE 330K JA 1/10W
R2344	401 012 6903	CARBON 10K JA 1/4W	R3504	401 014 6000	CARBON 150K JA 1/4W
R2345	401 012 6903	CARBON 10K JA 1/4W	R3505	401 014 5102	CARBON 15K JA 1/4W
R2347	401 020 1907	CARBON 4.7K JA 1/4W	R3506	401 038 0909	MT-GLAZE 220K JA 1/10W
R2361	401 012 5609	CARBON 1K JA 1/4W	R3507	401 014 6000	CARBON 150K JA 1/4W
R2362	401 012 5609	CARBON 1K JA 1/4W	R3508	401 017 2702	CARBON 27K JA 1/4W
R2363	401 038 9001	MT-GLAZE 680 JA 1/10W	R3516	401 039 0403	MT-GLAZE 8.2K JA 1/10W
R2364	401 038 9001	MT-GLAZE 680 JA 1/10W	R3517	401 038 6505	MT-GLAZE 47K JA 1/10W
R2365	401 037 5400	MT-GLAZE 1K JA 1/10W	R3518	401 020 2805	CARBON 47K JA 1/4W
R2366	401 037 5400	MT-GLAZE 1K JA 1/10W	R3519	401 038 3801	MT-GLAZE 330K JA 1/10W
R2369	401 037 5400	MT-GLAZE 1K JA 1/10W	R3520	401 038 5409	MT-GLAZE 390K JA 1/10W
R2370	401 037 5400	MT-GLAZE 1K JA 1/10W	R3521	401 037 5608	MT-GLAZE 10K JA 1/10W
R2379	401 038 5102	MT-GLAZE 3.9K JA 1/10W	R3525	401 012 5609	CARBON 1K JA 1/4W
R2380	401 038 9209	MT-GLAZE 6.8K JA 1/10W	R3526	401 038 0701	MT-GLAZE 2.2K JA 1/10W
			R3527	401 037 5400	MT-GLAZE 1K JA 1/10W

LOCATION	PARTS NO.	DESCRIPTION
R1807	401 037 5400	MT-GLAZE 1K JA 1/10W
R1808	401 037 5400	MT-GLAZE 1K JA 1/10W
R1831	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1833	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R2901	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R2902	401 038 0206	MT-GLAZE 20K JA 1/10W
R2903	401 037 5400	MT-GLAZE 1K JA 1/10W
R2904	401 037 5400	MT-GLAZE 1K JA 1/10W
	(JUMPERS)	
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W

COMPL PWB, TM-1

	613 179 2388	VHR-778E ONLY
	613 179 3002	VHR-778G ONLY
	613 178 9944	VHR-788G ONLY
	(CONNECTORS)	
CN711	645 005 4761	SOCKET,31P (N.S.P),VHR-778G ONLY
OR	645 009 4361	SOCKET,FFC 31P (N.S.P),VHR-778G ONLY
CN714	645 005 4761	SOCKET,31P (N.S.P),EXCEPT VHR-778G
OR	645 009 4361	SOCKET,FFC 31P (N.S.P),EXCEPT VHR-778G
	(DIODES)	
D7101	407 012 4406	DIODE 1SS133
D7102	407 012 4406	DIODE 1SS133
D7103	407 012 4406	DIODE 1SS133
D7104	407 012 4406	DIODE 1SS133
D7123	407 163 3600	LED SEL2715Y-D, POWER SAVE LED, VHR-778G ONLY
OR	407 163 3501	LED SEL2715Y-C, POWER SAVE LED, VHR-778G ONLY
	(CAPACITORS)	
C7101	403 167 7002	ELECT 4.7U M 50V,EXCEPT VHR-778G
C7101	403 043 8802	ELECT 4.7U M 16V,VHR-778G ONLY
	(RESISTORS)	
R7105	401 013 4106	CARBON 120 JA 1/4W,VHR-778G ONLY
	(SWITCHES)	
S7101	645 001 9777	SWITCH,PUSH 1P-1T, POWER,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, POWER,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, POWER,VHR-778G ONLY
OR	645 006 2797	SWITCH,PUSH 1P-1T, POWER,VHR-778G ONLY
OR	645 008 8049	SWITCH,PUSH 1P-1T, POWER,VHR-778G ONLY
S7102	645 008 8049	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-778G ONLY
OR	645 006 2797	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-778G ONLY
S7103	645 006 2797	SWITCH,PUSH 1P-1T, CH-UP,VHR-778G ONLY
OR	645 008 8049	SWITCH,PUSH 1P-1T, CH-UP,VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, CH-UP,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, CH-UP,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, CH-UP,VHR-778G ONLY
S7103	645 001 9777	SWITCH,PUSH 1P-1T, CH-UP, EXCEPT VHR-778G
OR	645 006 2797	SWITCH,PUSH 1P-1T, CH-UP, EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, CH-UP, EXCEPT VHR-778G
S7104	645 006 2797	SWITCH,PUSH 1P-1T, CH-DOWN, VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, CH-DOWN, VHR-778G ONLY
OR	645 008 8049	SWITCH,PUSH 1P-1T, CH-DOWN, VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, CH-DOWN, VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, CH-DOWN, VHR-778G ONLY
S7104	645 001 9777	SWITCH,PUSH 1P-1T, CH-DOWN, EXCEPT VHR-778G
OR	645 006 2797	SWITCH,PUSH 1P-1T, CH-DOWN, EXCEPT VHR-778G

LOCATION	PARTS NO.	DESCRIPTION
S7104	645 008 8049	SWITCH,PUSH 1P-1T, CH-DOWN, EXCEPT VHR-778G
S7105	645 006 2797	SWITCH,PUSH 1P-1T, REC,EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, REC,EXCEPT VHR-778G
OR	645 001 9777	SWITCH,PUSH 1P-1T, REC,EXCEPT VHR-778G
S7106	645 008 8049	SWITCH,PUSH 1P-1T, PAUSE,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, PAUSE,VHR-778G ONLY
OR	645 006 2797	SWITCH,PUSH 1P-1T, PAUSE,VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, PAUSE,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, PAUSE,VHR-778G ONLY
S7106	645 006 2797	SWITCH,PUSH 1P-1T, PAUSE, EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, PAUSE, EXCEPT VHR-778G
OR	645 001 9777	SWITCH,PUSH 1P-1T, PAUSE, EXCEPT VHR-778G
S7107	645 008 8049	SWITCH,PUSH 1P-1T, REW,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, REW,VHR-778G ONLY
OR	645 006 2797	SWITCH,PUSH 1P-1T, REW,VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, REW,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, REW,VHR-778G ONLY
S7108	645 006 2797	SWITCH,PUSH 1P-1T, PLAY,VHR-778G ONLY
OR	645 008 8049	SWITCH,PUSH 1P-1T, PLAY,VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, PLAY,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, PLAY,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, PLAY,VHR-778G ONLY
S7108	645 001 9777	SWITCH,PUSH 1P-1T, FF,EXCEPT VHR-778G
OR	645 006 2797	SWITCH,PUSH 1P-1T, FF,EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, FF,EXCEPT VHR-778G
S7109	645 006 2797	SWITCH,PUSH 1P-1T, FF,VHR-778G ONLY
OR	645 008 8049	SWITCH,PUSH 1P-1T, FF,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, FF,VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, FF,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, FF,VHR-778G ONLY
S7109	645 001 9777	SWITCH,PUSH 1P-1T, REW,EXCEPT VHR-778G
OR	645 006 2797	SWITCH,PUSH 1P-1T, REW,EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, REW,EXCEPT VHR-778G
S7110	645 006 2797	SWITCH,PUSH 1P-1T, REC,VHR-778G ONLY
OR	645 008 8049	SWITCH,PUSH 1P-1T, REC,VHR-778G ONLY
OR	645 001 9777	SWITCH,PUSH 1P-1T, REC,VHR-778G ONLY
OR	645 011 5165	SWITCH,PUSH 1P-1T, REC,VHR-778G ONLY
OR	645 011 5172	SWITCH,PUSH 1P-1T, REC,VHR-778G ONLY
S7110	645 001 9777	SWITCH,PUSH 1P-1T, STOP/EJECT, EXCEPT VHR-778G
OR	645 006 2797	SWITCH,PUSH 1P-1T, STOP/EJECT, EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, STOP/EJECT, EXCEPT VHR-778G
S7111	645 006 2797	SWITCH,PUSH 1P-1T, PLAY,EXCEPT VHR-778G
OR	645 008 8049	SWITCH,PUSH 1P-1T, PLAY,EXCEPT VHR-778G
OR	645 001 9777	SWITCH,PUSH 1P-1T, PLAY,EXCEPT VHR-778G
	(REMOTE RECEIVERS)	
RR711	645 027 2332	UNIT,IR RECEIVER PACK
OR	645 021 5384	UNIT,IR RECEIVER PACK
	(DISPLAYS)	
A7101	645 020 9437	FLUORESCENT TUBE
OR	645 004 0597	FLUORESCENT TUBE
	(MISCELLANEOUS)	
	613 142 4913	HOLDER LED,VHR-778G ONLY
	613 163 1700	HOLDER IR, RR711
	613 173 7488	HOLDER IR, RR711
	613 139 2267	HOLDER FL

COMPL PWB, TM-2

	613 178 9951	VHR-788G ONLY
	613 179 2395	VHR-778E ONLY
	(CONNECTORS)	
CN721	645 009 9014	SOCKET,RIBBON 3P (N.S.P),VHR-778E ONLY
CN721	645 003 1663	SOCKET,RIBBON 4P (N.S.P),VHR-788G ONLY
	(DIODES)	
D7204	408 035 5203	LED SEL2413EM-TP2-D,VHR-788G ONLY
	(RESISTORS)	
R7209	401 013 4106	CARBON 120 JA 1/4W,VHR-788G ONLY

LOCATION	PARTS NO.	DESCRIPTION
	(SWITCHES)	
S7201	645 008 8049	SWITCH,PUSH 1P-1T,EXCEPT VHR-778G
OR	645 001 9777	SWITCH,PUSH 1P-1T,EXCEPT VHR-778G
OR	645 006 2797	SWITCH,PUSH 1P-1T,EXCEPT VHR-778G

COMPL PCB,TM-9

613 179 1091

	(CONNECTORS)	
CN771	613 113 3853	CONNECTOR,5P (N.S.P)
OR	645 003 0840	PLUG,5P (N.S.P)
	(INTEGRATED CIRCUITS)	
IC771	409 380 8604	IC SDA5650
	(CAPACITORS)	
C7701	403 060 7505	POLYESTER 0.033U J 50V
C7702	403 071 8102	CERAMIC 2200P K 50V
C7703	403 256 4608	MT-COMPO 0.33U J 50V
C7704	403 013 3004	CERAMIC 150P J 50V
C7705	403 068 0409	CERAMIC 0.1U Z 25V
C7706	403 129 0409	CERAMIC 0.01U K 16V
	(RESISTORS)	
R7701	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R7702	401 037 7008	MT-GLAZE 1.2M JA 1/10W
R7703	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R7704	401 037 7008	MT-GLAZE 1.2M JA 1/10W
R7705	401 037 5806	MT-GLAZE 1M JA 1/10W
R7706	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R7707	401 037 5707	MT-GLAZE 100K JA 1/10W
R7708	401 037 5608	MT-GLAZE 10K JA 1/10W

COMPL PWB,TN-3

613 173 4470 EXCEPT VHR-778E

	(CONNECTORS)	
CN631	645 003 0925	PLUG,11P (N.S.P),EXCEPT VHR-778E
	(SEMICONDUCTORS)	
Q6301	405 099 8508	TR 2SC4640S,EXCEPT VHR-778E
OR	405 011 8401	TR 2SC1740S-Q,EXCEPT VHR-778E
OR	405 093 0607	TR KSC2785-Y,EXCEPT VHR-778E
OR	405 099 8607	TR 2SC4640T,EXCEPT VHR-778E
OR	405 011 8500	TR 2SC1740S-R,EXCEPT VHR-778E
	(INTEGRATED CIRCUITS)	
IC631	409 370 6504	IC TDA9840,EXCEPT VHR-778E
IC632	409 002 5905	IC BA403,EXCEPT VHR-778E
	(CRYSTAL DEVICES)	
X6301	645 002 0711	OSC,CRYSTAL 10MHZ,EXCEPT VHR-778E
	(CERAMIC RESONATORS)	
XF631	645 020 7914	DISCR,CERAMIC 5.74MHZ,EXCEPT VHR-778E
XF632	645 006 3022	CERAMIC FILTER 5.742MHZ,EXCEPT VHR-778E
	(VARIABLE RESISTORS)	
VR631	645 001 9487	VR,SEMI 22K N,EXCEPT VHR-778E
OR	645 003 5692	VR,SEMI,22K N,EXCEPT VHR-778E
	(INDUCTORS)	
L6301	645 003 7955	INDUCTOR,15U J,EXCEPT VHR-778E
OR	645 002 1428	INDUCTOR,15U J,EXCEPT VHR-778E
L6302	645 003 7627	INDUCTOR,10U J,EXCEPT VHR-778E
OR	645 003 6910	INDUCTOR,10U J,EXCEPT VHR-778E
L6303	645 003 7627	INDUCTOR,10U J,EXCEPT VHR-778E
OR	645 003 6910	INDUCTOR,10U J,EXCEPT VHR-778E
	(TRANSFORMERS)	
T6301	645 020 7921	TRANS,IF 54.7MHZ,EXCEPT VHR-778E
	(CAPACITORS)	
C6301	403 009 1809	CERAMIC 10P J 50V,EXCEPT VHR-778E
C6302	403 024 1501	CERAMIC 39P J 50V,EXCEPT VHR-778E
C6303	403 001 1906	CERAMIC 0.01U M 16V, EXCEPT VHR-778E
C6304	403 001 1906	CERAMIC 0.01U M 16V, EXCEPT VHR-778E
C6305	403 107 9905	ELECT 10U M 16V,EXCEPT VHR-778E
C6306	403 001 1906	CERAMIC 0.01U M 16V, EXCEPT VHR-778E
C6307	403 125 5606	ELECT 100U M 16V,EXCEPT VHR-778E
C6308	403 134 8100	ELECT 100U M 6.3V,EXCEPT VHR-778E
C6309	403 001 1906	CERAMIC 0.01U M 16V, EXCEPT VHR-778E

LOCATION	PARTS NO.	DESCRIPTION
C6310	403 001 1906	CERAMIC 0.01U M 16V EXCEPT VHR-778E
C6311	403 001 1906	CERAMIC 0.01U M 16V, EXCEPT VHR-778E
C6312	403 121 3507	ELECT 4.7U M 50V,EXCEPT VHR-778E
C6313	403 121 3507	ELECT 4.7U M 50V,EXCEPT VHR-778E
C6314	403 107 9905	ELECT 10U M 16V,EXCEPT VHR-778E
C6315	403 001 1906	CERAMIC 0.01U M 16V, EXCEPT VHR-778E
C6316	403 121 9509	CERAMIC 0.1U Z 50V,EXCEPT VHR-778E
C6317	403 026 2209	CERAMIC 47P J 50V,EXCEPT VHR-778E
C6318	403 134 8100	ELECT 100U M 6.3V,EXCEPT VHR-778E
C6319	403 107 9905	ELECT 10U M 16V,EXCEPT VHR-778E
C6320	403 107 9905	ELECT 10U M 16V,EXCEPT VHR-778E
C6321	403 001 5102	CERAMIC 2200P M 16V, EXCEPT VHR-778E
	(RESISTORS)	
R6301	401 014 4006	CARBON 1.5K JA 1/4W, EXCEPT VHR-778E
R6303	401 018 2701	CARBON 330 JA 1/4W,EXCEPT VHR-778E
R6304	401 021 1807	CARBON 560 JA 1/4W,EXCEPT VHR-778E
R6305	401 012 5609	CARBON 1K JA 1/4W,EXCEPT VHR-778E
R6306	401 012 5609	CARBON 1K JA 1/4W,EXCEPT VHR-778E
R6307	401 013 6308	CARBON 12K JA 1/4W, EXCEPT VHR-778E
R6308	401 023 2703	CARBON 8.2K JA 1/4W, EXCEPT VHR-778E
R6311	401 020 1907	CARBON 4.7K JA 1/4W, EXCEPT VHR-778E
R6312	401 012 6903	CARBON 10K JA 1/4W, EXCEPT VHR-778E
R6313	401 017 2702	CARBON 27K JA 1/4W, EXCEPT VHR-778E

COMPL PWB,TN-5

613 161 6226 VHR-778E ONLY

	(CONNECTORS)	
CN671	645 003 0925	PLUG,11P (N.S.P),VHR-778E ONLY
	(SEMICONDUCTORS)	
Q6701	405 014 4608	TR 2SC2412K-S,VHR-778E ONLY
OR	405 014 4509	TR 2SC2412K-R,VHR-778E ONLY
OR	405 015 8704	TR 2SC2812-L6,VHR-778E ONLY
OR	405 015 8407	TR 2SC2812-L5,VHR-778E ONLY
Q6741	405 002 6508	TR 2SA1179-M5,VHR-778E ONLY
OR	405 002 0407	TR 2SA1037K-S,VHR-778E ONLY
OR	405 002 0308	TR 2SA1037K-R,VHR-778E ONLY
OR	405 002 6706	TR 2SA1179-M6,VHR-778E ONLY
Q6742	405 002 6508	TR 2SA1179-M5,VHR-778E ONLY
OR	405 002 6706	TR 2SA1179-M6,VHR-778E ONLY
OR	405 002 0407	TR 2SA1037K-S,VHR-778E ONLY
OR	405 002 0308	TR 2SA1037K-R,VHR-778E ONLY
	(INTEGRATED CIRCUITS)	
IC671	409 374 6302	IC SAA7283(M2),VHR-778E ONLY
OR	409 344 9807	IC SAA7283GP(M1),VHR-778E ONLY
	(DIODES)	
D6701	407 169 8005	VARACTOR DI BB405B,VHR-778E ONLY
D6702	407 007 9904	DIODE GMA01,VHR-778E ONLY
OR	407 012 4406	DIODE 1SS133,VHR-778E ONLY
	(CRYSTAL DEVICES)	
X6701	645 007 7449	OSC,CRYSTAL 8.192MHZ,VHR-778E ONLY
	(INDUCTORS)	
L6701	645 003 7429	INDUCTOR,2.2U J,VHR-778E ONLY
OR	645 003 7023	INDUCTOR,2.2U J,VHR-778E ONLY
L6702	645 003 7429	INDUCTOR,2.2U J,VHR-778E ONLY
OR	645 003 7023	INDUCTOR,2.2U J,VHR-778E ONLY
L6703	645 003 7894	INDUCTOR,10U J,VHR-778E ONLY
OR	645 002 1411	INDUCTOR,10U J,VHR-778E ONLY
L6704	645 003 7429	INDUCTOR,2.2U J,VHR-778E ONLY
OR	645 003 7023	INDUCTOR,2.2U J,VHR-778E ONLY
L6705	645 003 7429	INDUCTOR,2.2U J,VHR-778E ONLY
OR	645 003 7023	INDUCTOR,2.2U J,VHR-778E ONLY
	(CAPACITORS)	
C6701	403 159 1001	CERAMIC 0.22U Z 16V,VHR-778E ONLY
C6702	403 068 0409	CERAMIC 0.1U Z 25V,VHR-778E ONLY
C6703	403 135 4002	ELECT 47U M 6.3V,VHR-778E ONLY

LOCATION	PARTS NO.	DESCRIPTION
C6704	403 159 1001	CERAMIC 0.22U Z 16V,VHR-778E ONLY
C6705	403 184 9300	MT-POLYEST 0.047U J 50V,VHR-778E ONLY
C6706	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
C6707	403 134 9602	ELECT 47U M 16V,VHR-778E ONLY
C6708	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6709	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
C6710	403 068 0409	CERAMIC 0.1U Z 25V,VHR-778E ONLY
C6711	403 008 7505	CERAMIC 10P D 50V,VHR-778E ONLY
C6712	403 024 7206	CERAMIC 390P J 50V,VHR-778E ONLY
C6714	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6715	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
C6716	403 018 7502	CERAMIC 220P J 50V,VHR-778E ONLY
C6717	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
C6718	403 068 0409	CERAMIC 0.1U Z 25V,VHR-778E ONLY
C6719	403 109 6308	ELECT 1U M 50V,VHR-778E ONLY
C6720	403 068 0409	CERAMIC 0.1U Z 25V,VHR-778E ONLY
C6721	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6722	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
C6723	403 168 6202	MT-POLYEST 0.33U J 50V,VHR-778E ONLY
C6724	403 072 1607	CERAMIC 0.022U K 50V,VHR-778E ONLY
C6725	403 026 2803	CERAMIC 47P J 50V,VHR-778E ONLY
C6726	403 026 2803	CERAMIC 47P J 50V,VHR-778E ONLY
C6727	403 068 0409	CERAMIC 0.1U Z 25V,VHR-778E ONLY
C6728	403 130 2904	ELECT 0.47U M 50V,VHR-778E ONLY
C6729	403 135 4002	ELECT 47U M 6.3V,VHR-778E ONLY
C6730	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6731	403 068 0409	CERAMIC 0.1U Z 25V,VHR-778E ONLY
C6732	403 135 4002	ELECT 47U M 6.3V,VHR-778E ONLY
C6733	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6734	403 125 5606	ELECT 100U M 16V,VHR-778E ONLY
C6741	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6742	403 069 5601	CERAMIC 0.01U K 50V,VHR-778E ONLY
C6743	403 073 0005	CERAMIC 3300P K 50V,VHR-778E ONLY
C6744	403 073 0005	CERAMIC 3300P K 50V,VHR-778E ONLY
C6745	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
C6746	403 107 9905	ELECT 10U M 16V,VHR-778E ONLY
(RESISTORS)		
R6701	401 037 9200	MT-GLAZE 1.8K JA 1/10W,VHR-778E ONLY
R6702	401 038 3702	MT-GLAZE 33K JA 1/10W,VHR-778E ONLY
R6703	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-778E ONLY
R6704	401 037 8005	MT-GLAZE 15K JA 1/10W,VHR-778E ONLY
R6705	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-778E ONLY
R6706	401 037 5202	MT-GLAZE 100 JA 1/10W,VHR-778E ONLY
R6708	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-778E ONLY
R6709	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-778E ONLY
R6710	401 038 0800	MT-GLAZE 22K JA 1/10W,VHR-778E ONLY
R6712	401 037 5004	MT-GLAZE 0.000 ZA 1/10W,VHR-778E ONLY
R6714	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-778E ONLY
R6715	401 038 0800	MT-GLAZE 22K JA 1/10W,VHR-778E ONLY
R6716	401 037 5806	MT-GLAZE 1M JA 1/10W,VHR-778E ONLY
R6717	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-778E ONLY
R6718	401 038 9407	MT-GLAZE 680K JA 1/10W,VHR-778E ONLY
R6741	401 037 7909	MT-GLAZE 1.5K JA 1/10W,VHR-778E ONLY
R6742	401 037 7909	MT-GLAZE 1.5K JA 1/10W,VHR-778E ONLY
R6743	401 037 7909	MT-GLAZE 1.5K JA 1/10W,VHR-778E ONLY
R6744	401 037 7909	MT-GLAZE 1.5K JA 1/10W,VHR-778E ONLY
R6745	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-778E ONLY
R6746	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-778E ONLY
R6747	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-778E ONLY
R6748	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-778E ONLY

COMPL PWB,AD-6

613 179 8366 VHR-788G ONLY

(CONNECTORS)

CN261 613 010 7947 PLUG (N.S.P.),VHR-788G ONLY

(SEMICONDUCTORS)

Q2613 405 000 2007 TR DTA144EK,VHR-788G ONLY

Q2651 405 083 5209 TR DTC343TK,VHR-788G ONLY

Q2652 405 083 5209 TR DTC343TK,VHR-788G ONLY

(INTEGRATED CIRCUITS)

IC261 409 405 6004 IC MM1369BD,VHR-788G ONLY

IC262 409 192 7109 IC BA15218F,VHR-788G ONLY

OR 409 192 7109 IC BA15218F,VHR-788G ONLY

(CAPACITORS)

C2601 403 150 6500 ELECT22U M 16V,VHR-788G ONLY

LOCATION	PARTS NO.	DESCRIPTION
C2602	403 075 0706	CERAMIC 6800P K 50V,VHR-788G ONLY
C2603	403 010 1102	CERAMIC 1000P J 50V,VHR-788G ONLY
C2604	403 168 6103	MT-POLYEST 0.1U J 50V,VHR-788G ONLY
C2607	403 163 8409	ELECT 47U M 16V,VHR-788G ONLY
C2609	403 191 8808	ELECT2.2U M 50V,VHR-788G ONLY
C2614	403 069 5601	CERAMIC 0.01U K 50V,VHR-788G ONLY
C2615	403 069 5601	CERAMIC 0.01U K 50V,VHR-788G ONLY
C2616	403 069 5601	CERAMIC 0.01U K 50V,VHR-788G ONLY
C2617	403 069 5601	CERAMIC 0.01U K 50V,VHR-788G ONLY
C2619	403 010 1102	CERAMIC 1000P J 50V,VHR-788G ONLY
C2620	403 168 6103	MT-POLYEST 0.1U J 50V,VHR-788G ONLY
C2622	403 075 0706	CERAMIC 6800P K 50V,VHR-788G ONLY
C2623	403 150 6500	ELECT22U M 16V,VHR-788G ONLY
C2624	403 193 7809	ELECT 100U M 16V,VHR-788G ONLY
C2632	403 189 2405	ELECT 10U M 16V,VHR-788G ONLY
C2636	403 189 2405	ELECT 10U M 16V,VHR-788G ONLY
C2651	403 139 1601	ELECT22U M 16V,VHR-788G ONLY
C2652	403 150 6500	ELECT22U M 16V,VHR-788G ONLY
(RESISTORS)		
R2602	401 038 8004	MT-GLAZE 5.6M JA 1/10W,VHR-788G ONLY
R2604	401 037 9507	MT-GLAZE 1.8M JA 1/10W,VHR-788G ONLY
R2605	401 038 2408	MT-GLAZE 2.7M JA 1/10W,VHR-788G ONLY
R2606	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-788G ONLY
R2607	401 038 6505	MT-GLAZE 47K JA 1/10W,VHR-788G ONLY
R2610	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-788G ONLY
R2618	401 038 9704	MT-GLAZE 7.5K JA 1/10W,VHR-788G ONLY
R2623	401 037 5806	MT-GLAZE 1M JA 1/10W,VHR-788G ONLY
R2631	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-788G ONLY
R2632	401 038 5102	MT-GLAZE 3.9K JA 1/10W,VHR-788G ONLY
R2636	401 038 5102	MT-GLAZE 3.9K JA 1/10W,VHR-788G ONLY
R2637	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-788G ONLY
R2651	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-788G ONLY
R2652	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-788G ONLY
R2653	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-788G ONLY
R2654	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-788G ONLY
R2661	401 037 6704	MT-GLAZE 1.2K JA 1/10W,VHR-788G ONLY
R2662	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-788G ONLY
R2663	401 037 6704	MT-GLAZE 1.2K JA 1/10W,VHR-788G ONLY
R2664	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-788G ONLY
(JUMPERS)		
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W,VHR-788G ONLY
(MISCELLANEOUS)		
	613 053 8055	FIXER,VHR-788G ONLY

FLEXIBLE FLAT CABLE

645 017 0645 FLEXIBLE FLAT CABLE

COMPL PWB,MC-1

613 173 9451 EXCEPT VHR-778E

613 175 0913 VHR-778E ONLY

(CONNECTORS)

CN801 645 007 8446 SOCKET,12P (N.S.P)

(CAPACITORS)

C8001 403 121 9509 CERAMIC 0.1U Z 50V

(RESISTORS)

R8001 401 015 2605 CARBON 1.8K JA 1/4W

R8002 401 023 1607 CARBON 820 JA 1/4W

R8003 401 017 0708 CARBON 270 JA 1/4W

R8004 401 014 2804 CARBON 150 JA 1/4W

R8005 401 017 0708 CARBON 270 JA 1/4W,VHR-778E ONLY

(SWITCHES)

S8002 645 003 4589 SWITCH,DETECTOR 1P-1T,

OR 645 009 3388 SWITCH,DETECTOR 1P-1T,

(MISCELLANEOUS)

613 152 4002 SPACER,MC1

ACCESSORIES

645 026 7581 REMOCON,INFRARED,VHR-778E ONLY WITH COVER BATTERY

645 027 5883 REMOCON,INFRARED,VHR-778G ONLY WITH COVER BATTERY

<u>LOCATION</u>	<u>PARTS NO.</u>	<u>DESCRIPTION</u>
	645 027 0888	REMOCON,INFRARED,VHR-788GONLY WITH COVER BATTERY
	613 179 2586	COVER BATTERY, FOR REMOCON,INFRARED
	613 180 4098	INSTRUCTION MANUAL,VHR-778G ONLY
	613 179 4115	INSTRUCTION MANUAL,VHR-788G ONLY
	613 179 2333	INSTRUCTION MANUAL,VHR-778E ONLY
	645 023 4170	CABLE,ANT PAL
OR	645 025 1382	CABLE,ANT PAL
	△645 019 1923	CORD,POWER,VHR-778E ONLY
OR	△645 023 4156	CORD,POWER,VHR-778E ONLY
OR	△613 136 6411	CORD,POWER,VHR-778E ONLY
	△645 024 0522	CORD,POWER,EXCEPT VHR-778E
OR	△645 025 0767	CORD,POWER,EXCEPT VHR-778E
OR	△645 023 4163	CORD,POWER,EXCEPT VHR-778E
OR	△645 028 3086	CORD,POWER,EXCEPT VHR-778E

PACKING MATERIALS

	613 179 2326	CARTON CASE,VHR-778E ONLY
	613 180 3374	CARTON CASE,VHR-778G ONLY
	613 179 4191	CARTON CASE,VHR-788G ONLY
	613 173 2537	CUSHION, FRONT
	613 173 2544	CUSHION, BACK
	613 139 8047	POLYE COVER,INNER-K



SANYO Electric Co.,Ltd.
Osaka, Japan

VHR-778E, VHR-778G, VHR-788G

BLOCK DIAGRAMS, CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS


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NOTES:

1. All resistance values in "OHMS" unless otherwise noted.
(K=1,000; M=1,000,000)
2. All capacitance values in "μF" unless otherwise noted.
p=pico farad; μ,u or U=micro farad
3. All inductance values in "μH" unless otherwise noted.
μ,u or U=micro henry; m=milli henry

PRODUCTSAFETYNOTICE

THE COMPONENTS DESIGNATED BY A SYMBOL () IN THIS SCHEMATIC DIAGRAM DESIGNATES COMPONENTS WHOSE VALUE ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A SYMBOL NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DONOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLT-AGE RATING S SHOWN.

EXPLANATORY NOTES (EXAMPLES)

Resistor 10K:1/16J means 10kilo ohm $\pm 5\%$, 1/16watt max.
1M:1/10K means 1mega ohm $\pm 10\%$, 1/10watt max.

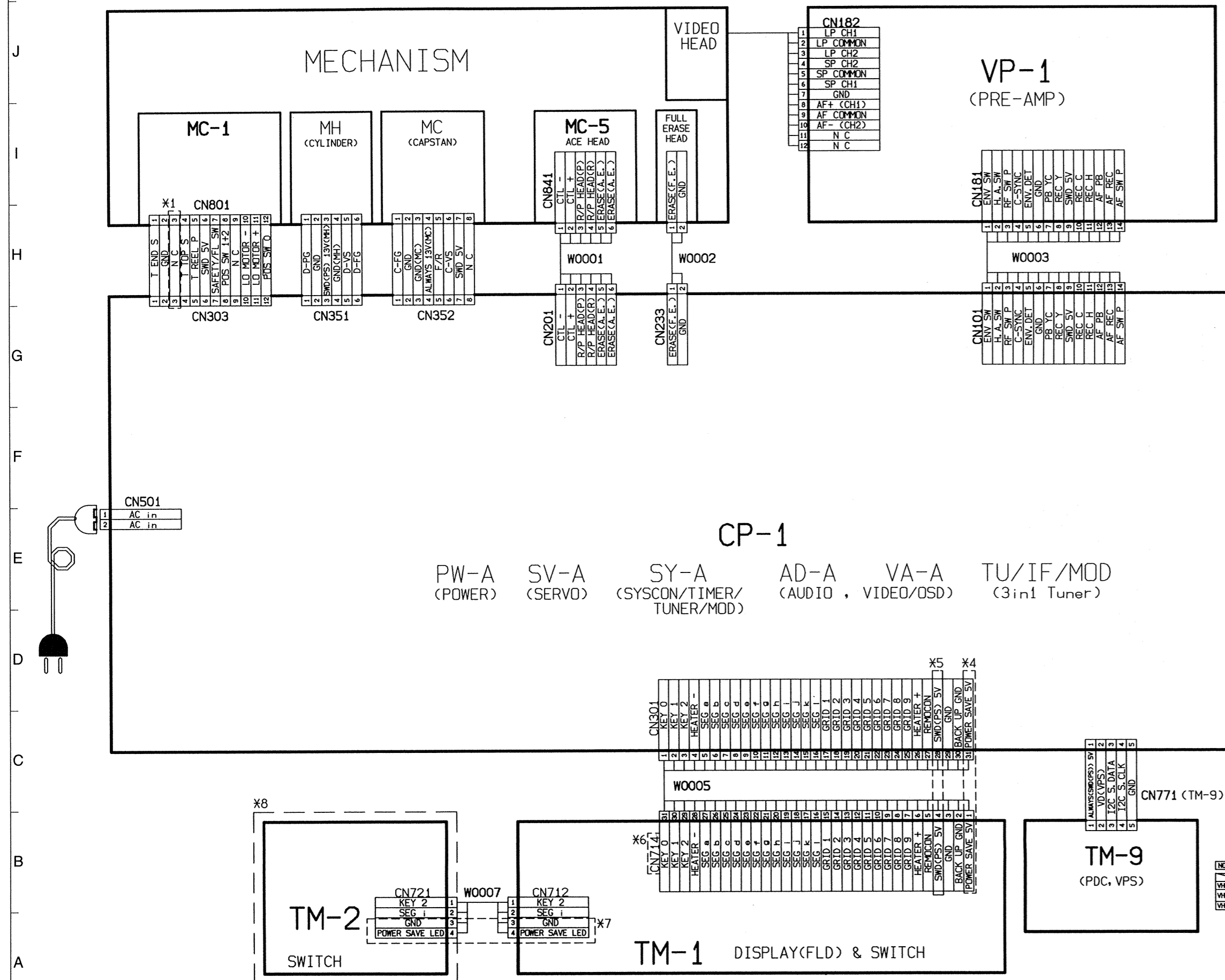
Capacitor 0.047:F means 0.047micro farad, Ftype.

Electrolytic capacitor
10:16 means 10micro farad, 16volt max.

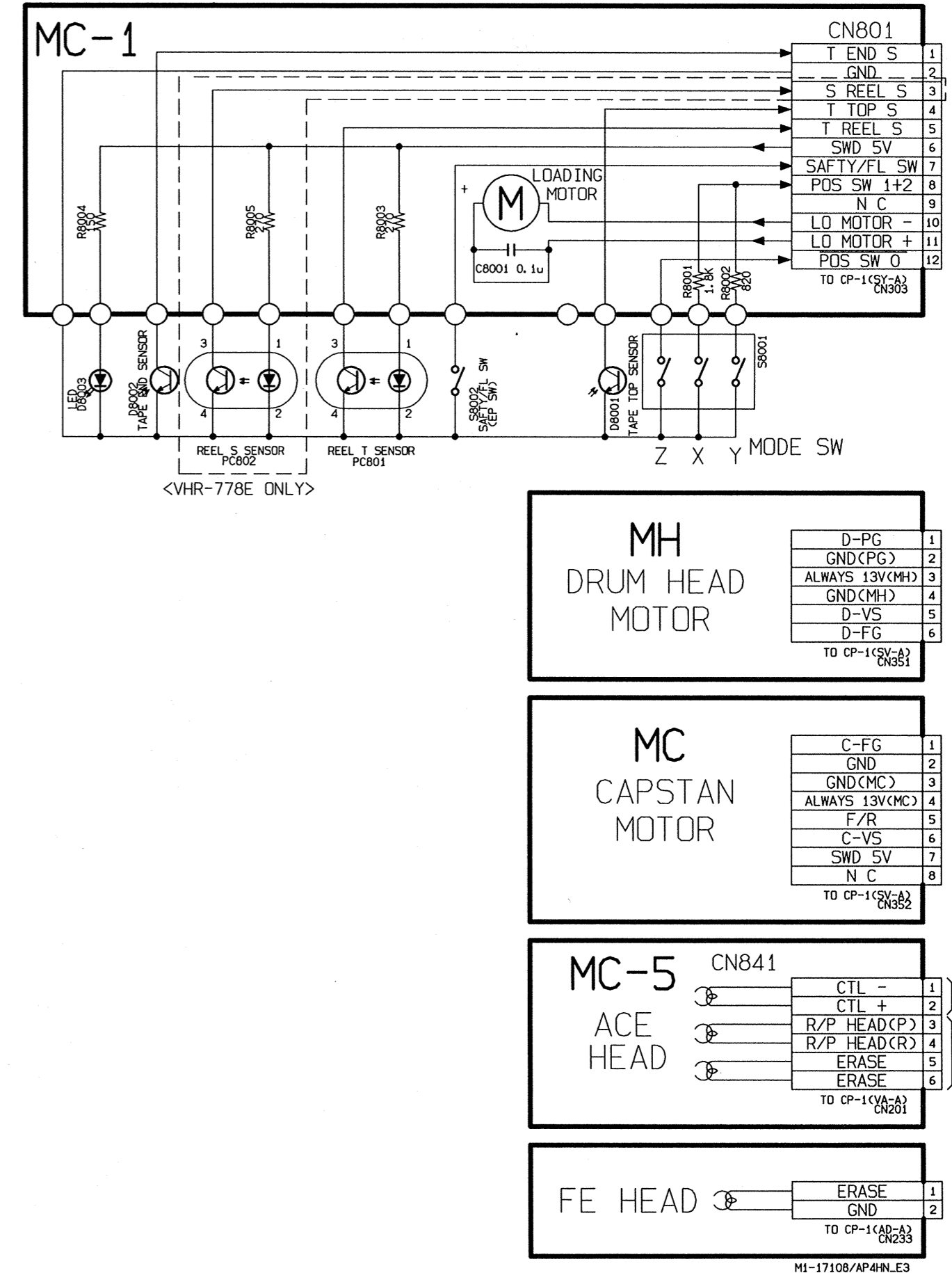
Inductor 330:J means 330micro henry $\pm 5\%$
470:K means 470micro henry $\pm 10\%$
No description J or K means $\pm 5\%$

K 1. OVERALL WIRING, MECHANISM CONNECTION & BLOCK DIAGRAMS

OVERALL WIRING



MECHANISM CONNECTION



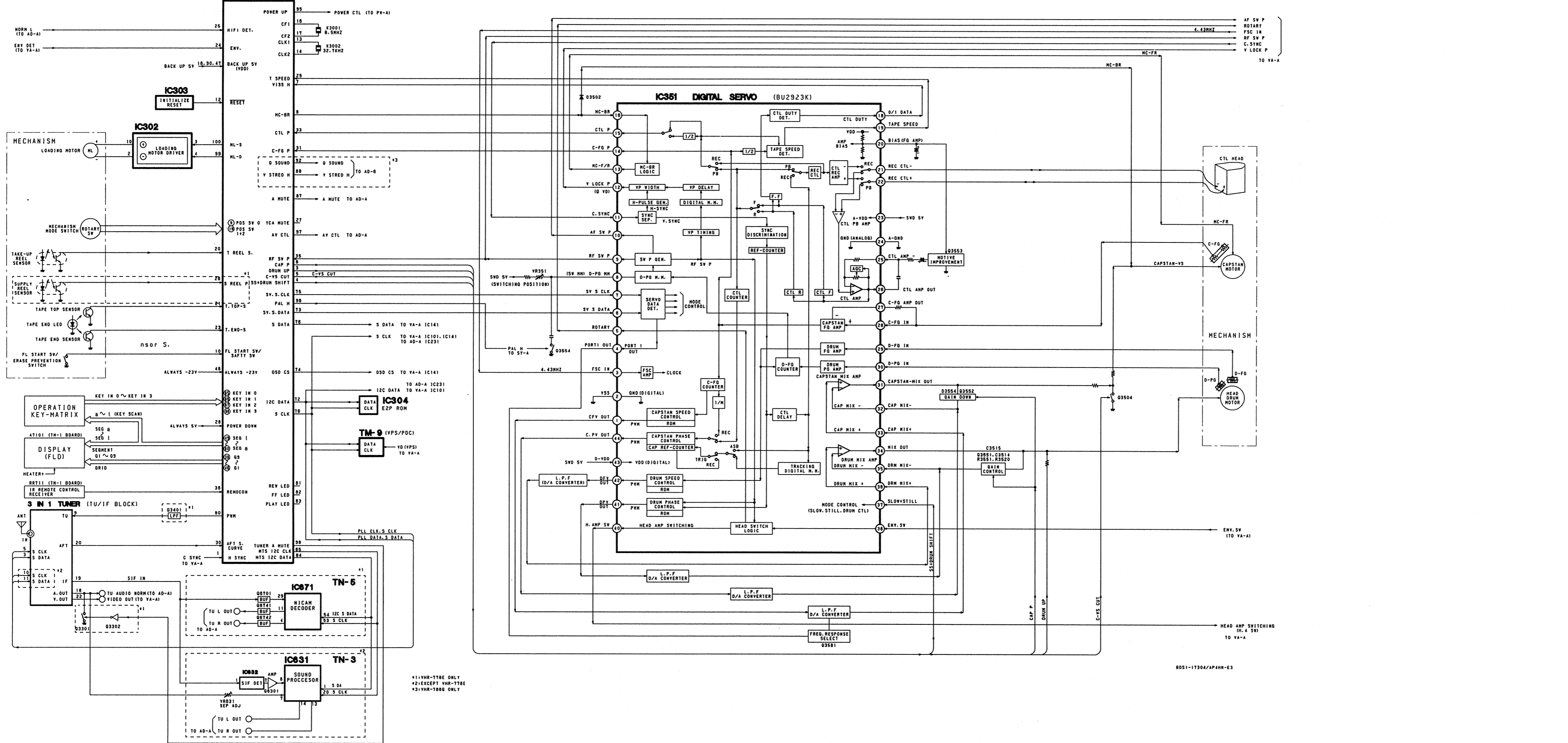
NOTE: NOT USE *OPEN CIRCUIT

WVR-778E	WVR-778G	WVR-788G	WVR-788G	WVR-788G	WVR-788G	WVR-788G	WVR-788G	WVR-788G	WVR-788G
X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
REEL P	REEL S	REEL T	REEL S	REEL T	REEL S	REEL T	REEL S	REEL T	REEL S
LOCK LED	LOCK LED	LOCK LED	LOCK LED	LOCK LED	LOCK LED	LOCK LED	LOCK LED	LOCK LED	LOCK LED
POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV	POWER SAVE SV
NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE
NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE
NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE
NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE	NOT USE

W1-17310/AP4H-G2

SYSTEM CONTROL & SERVO CIRCUIT

IC301 MPU
SYSTEM CONTROL,
TIMER, TUNING CONTROL LC866852A



*1 VHR-170E ONLY
*2 EXCEPT VHR-170E
*3 VHR-106G ONLY

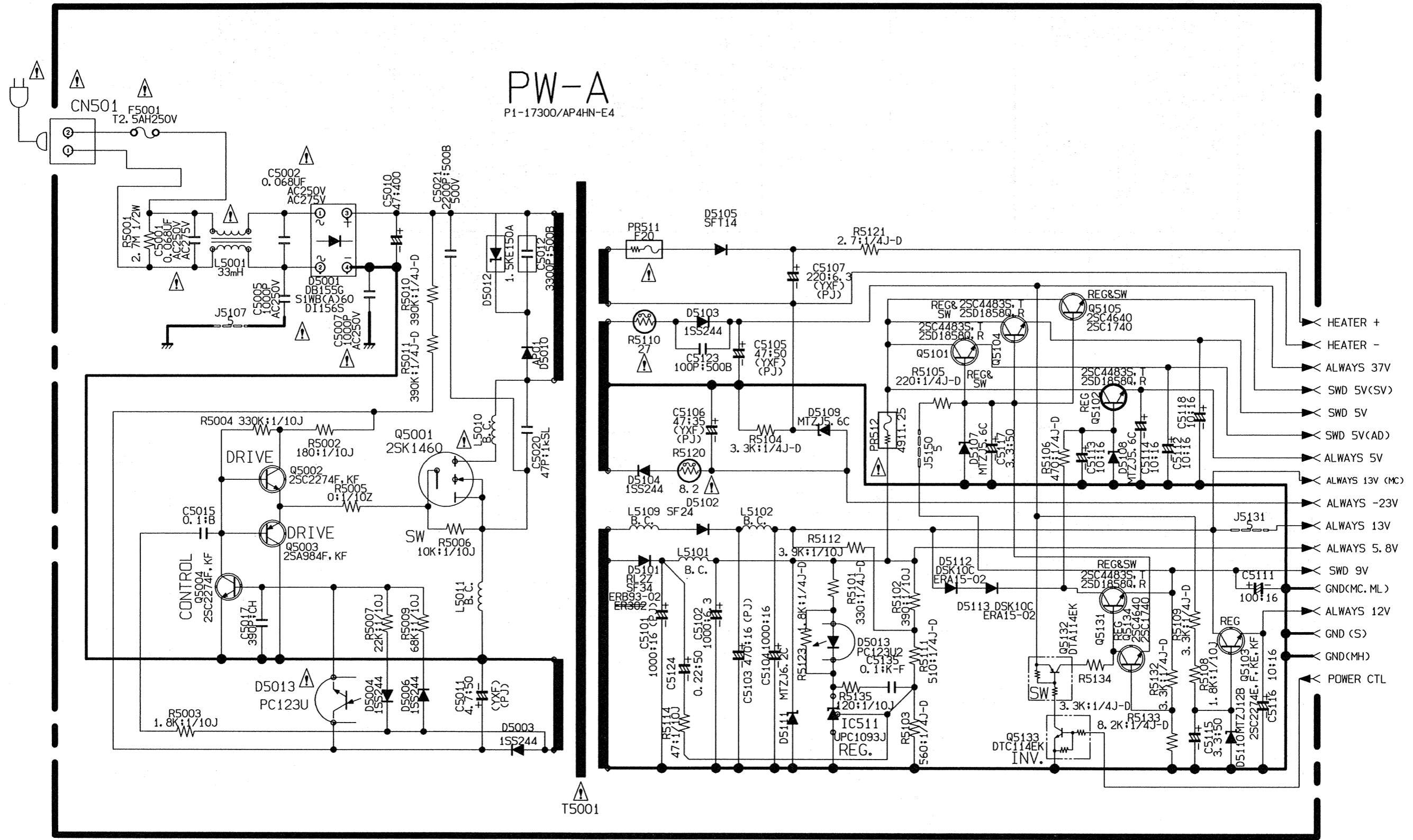
8051-17304/AP4H-E3

K
J
I
H
G
F
E
D
C
B
A

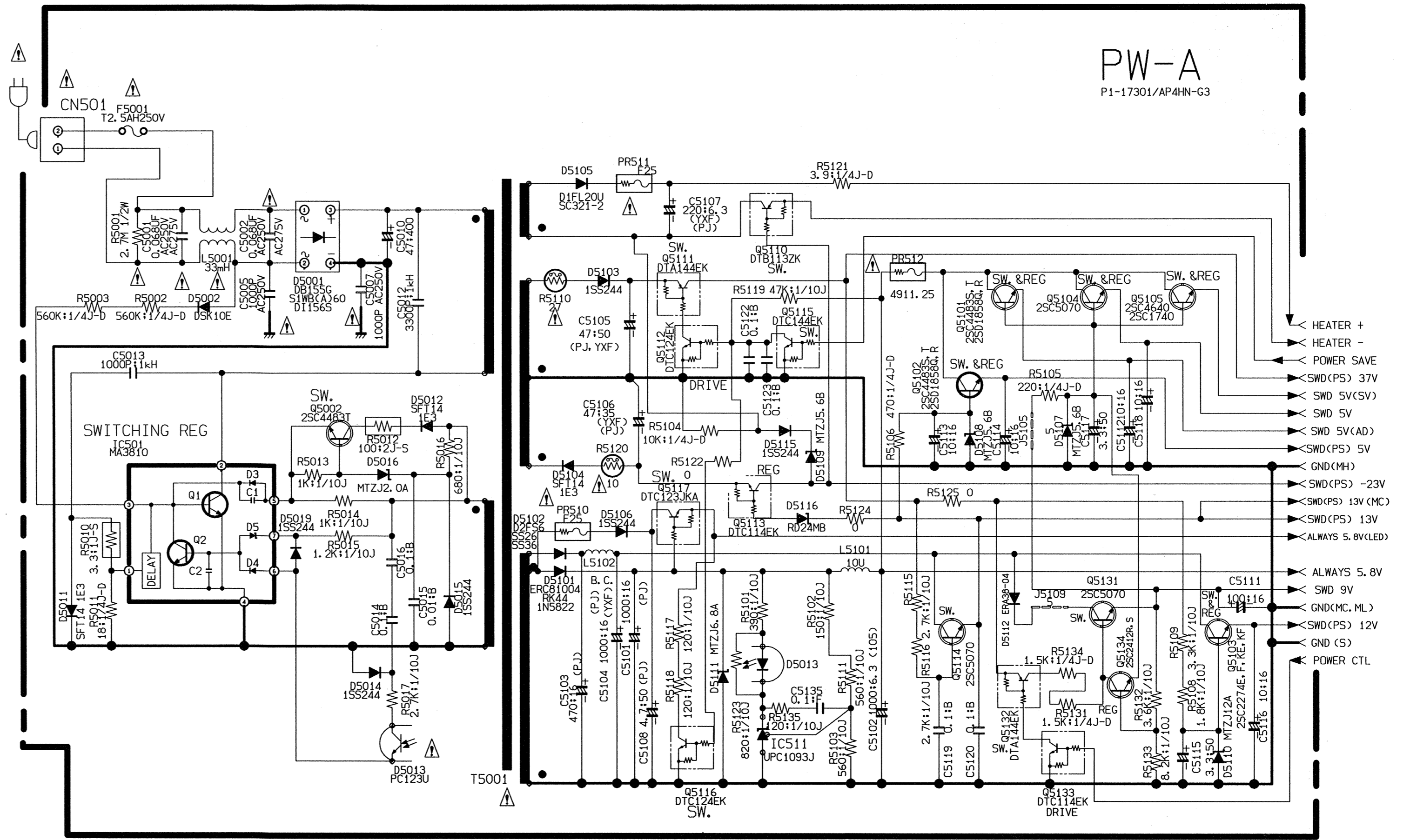
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

2. CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS (P.W.B.)

CP-1 BOARD (PW-A) POWER SUPPLY (VHR-778E ONLY)



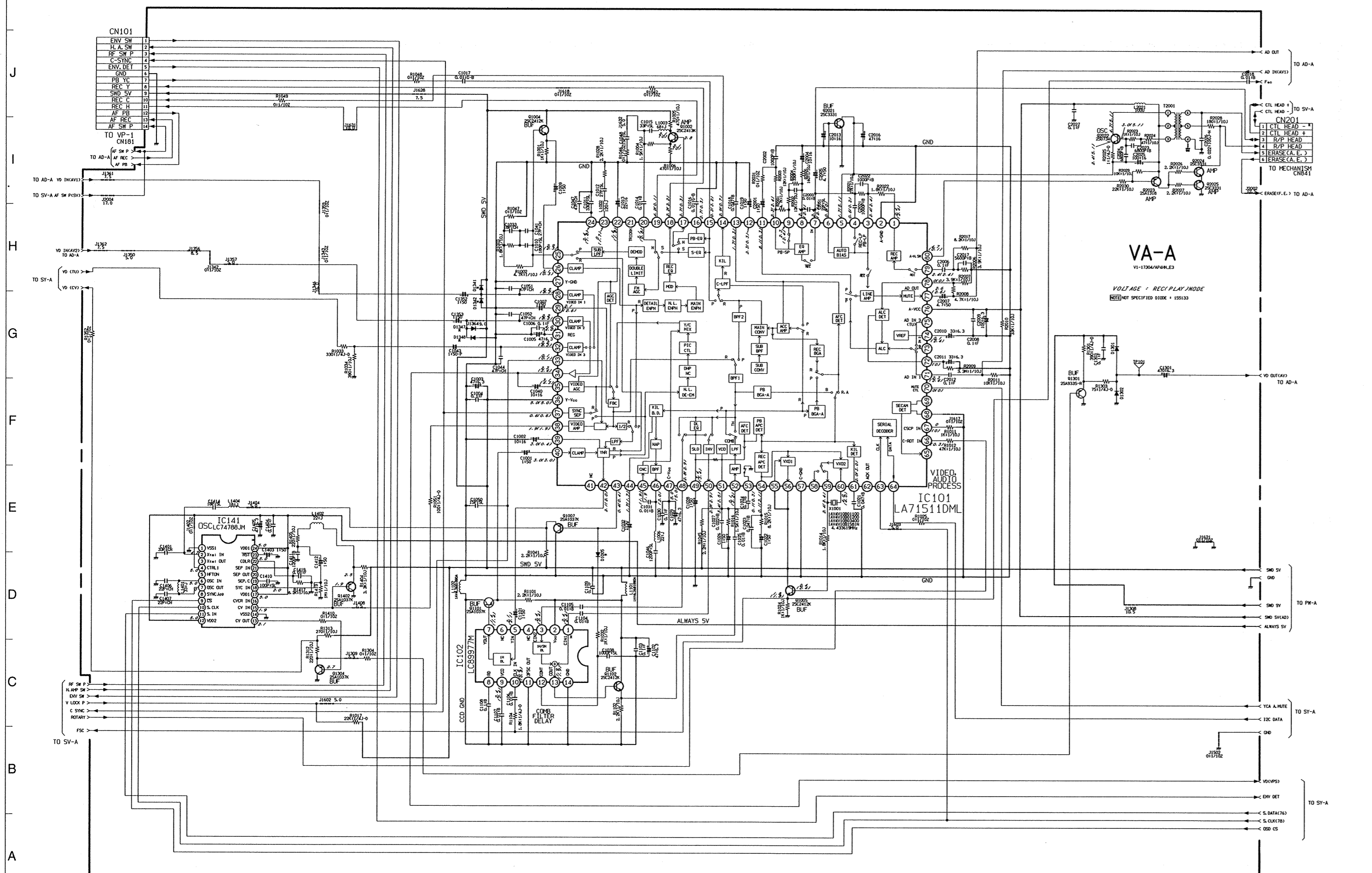
T5001



PW-A
P1-17301/AP4HN-G3

- HEATER +
- HEATER -
- POWER SAVE
- SWD(PS) 37V
- SWD 5V(SV)
- SWD 5V
- SWD 5V(AD)
- SWD(PS) 5V
- GND(MH)
- SWD(PS) -23V
- SWD(PS) 13V(MC)
- SWD(PS) 13V
- ALWAYS 5.8V(LED)
- ALWAYS 5.8V
- SWD 9V
- GND(MC, ML)
- SWD(PS) 12V
- GND(S)
- POWER CTL

CP-1 BOARD (VA-A) VIDEO & AUDIO

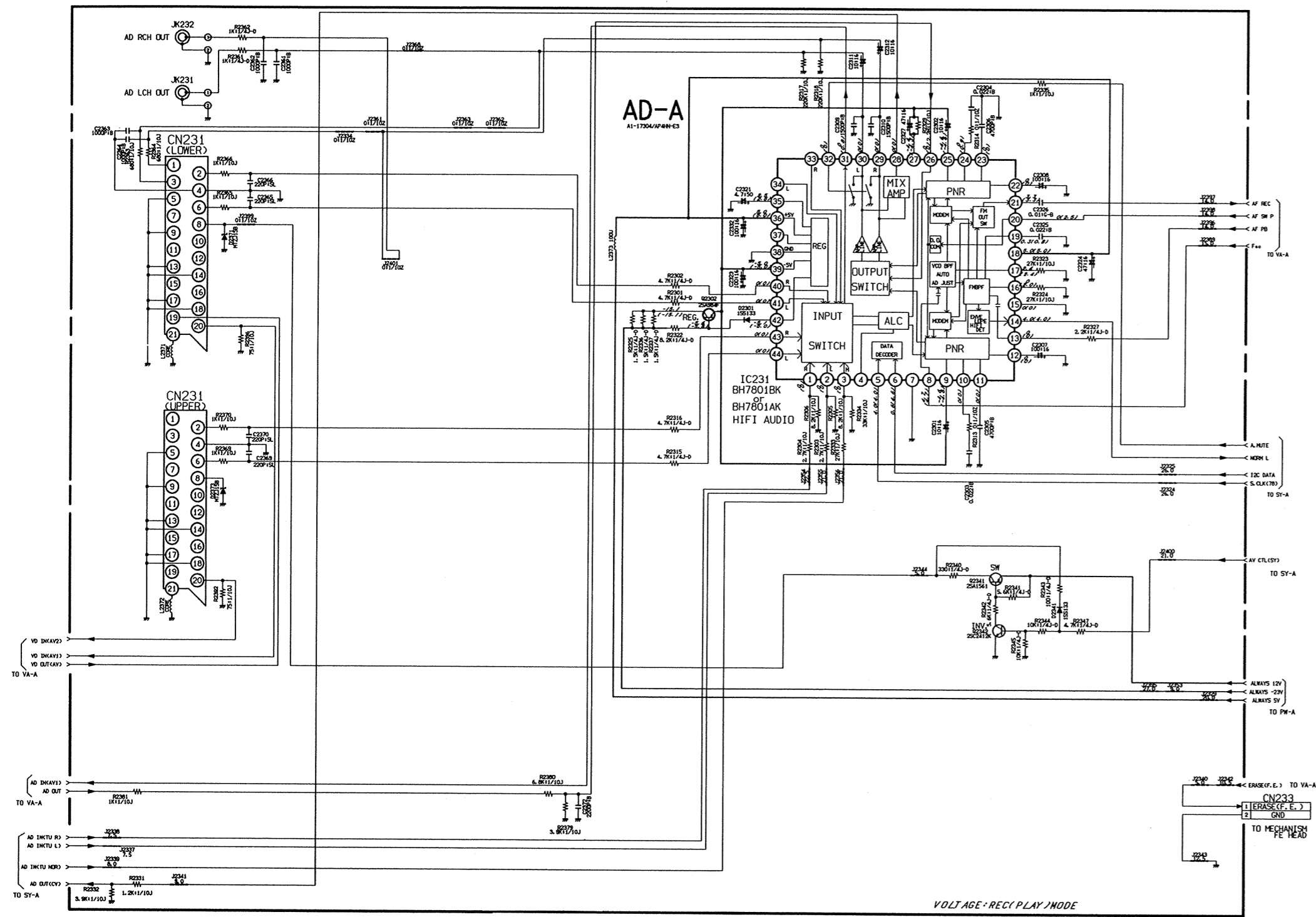


VIDEO CIRCUIT WAVEFORMS

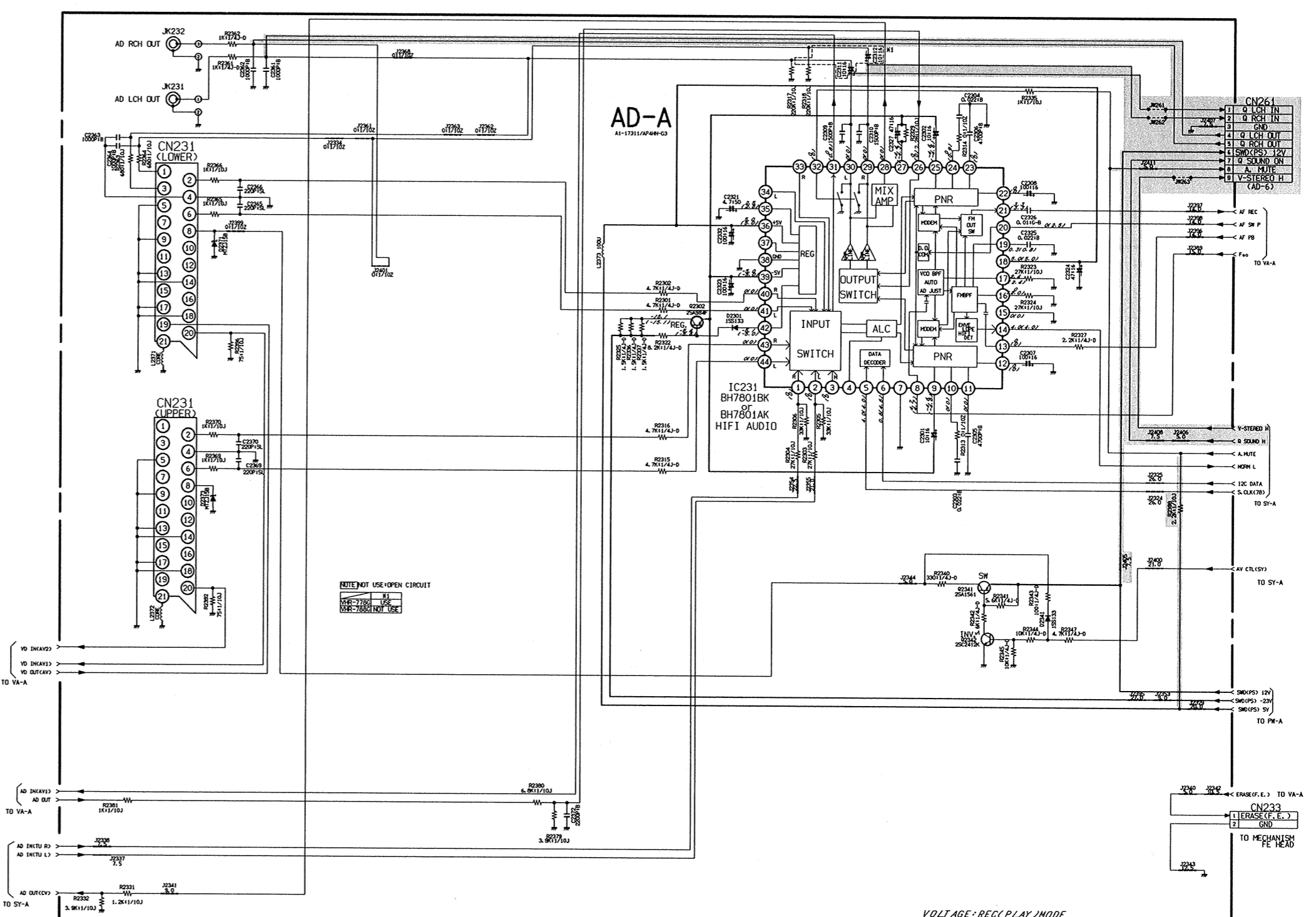
TEST LOCATION	WAVE FORM	TEST LOCATION	WAVE FORM
IC101 PIN14 REC 0.4Vp-p (REC C)		IC101 PIN37 REC, PLAY 4Vp-p (C SYNC)	
IC101 PIN15 PLAY 0.25Vp-p (PB Y, C)		IC101 PIN38 REC, PLAY 2Vp-p (VIDEO OUT)	
IC101 PIN18 REC 0.2Vp-p (REC Y)		IC101 PIN40, 42 REC, PLAY 0.35Vp-p	
IC101 PIN25, 26 REC, PLAY 0.5Vp-p		IC101 PIN45, 46 PLAY 0.4Vp-p	
IC101 PIN28 REC 1Vp-p (VIDEO IN)		IC101 PIN48, 50, 52 REC, PLAY 0.25Vp-p	

WF-V-PG22K

CP-1 BOARD (AD-A) HiFi AUDIO (VHR-778E ONLY)

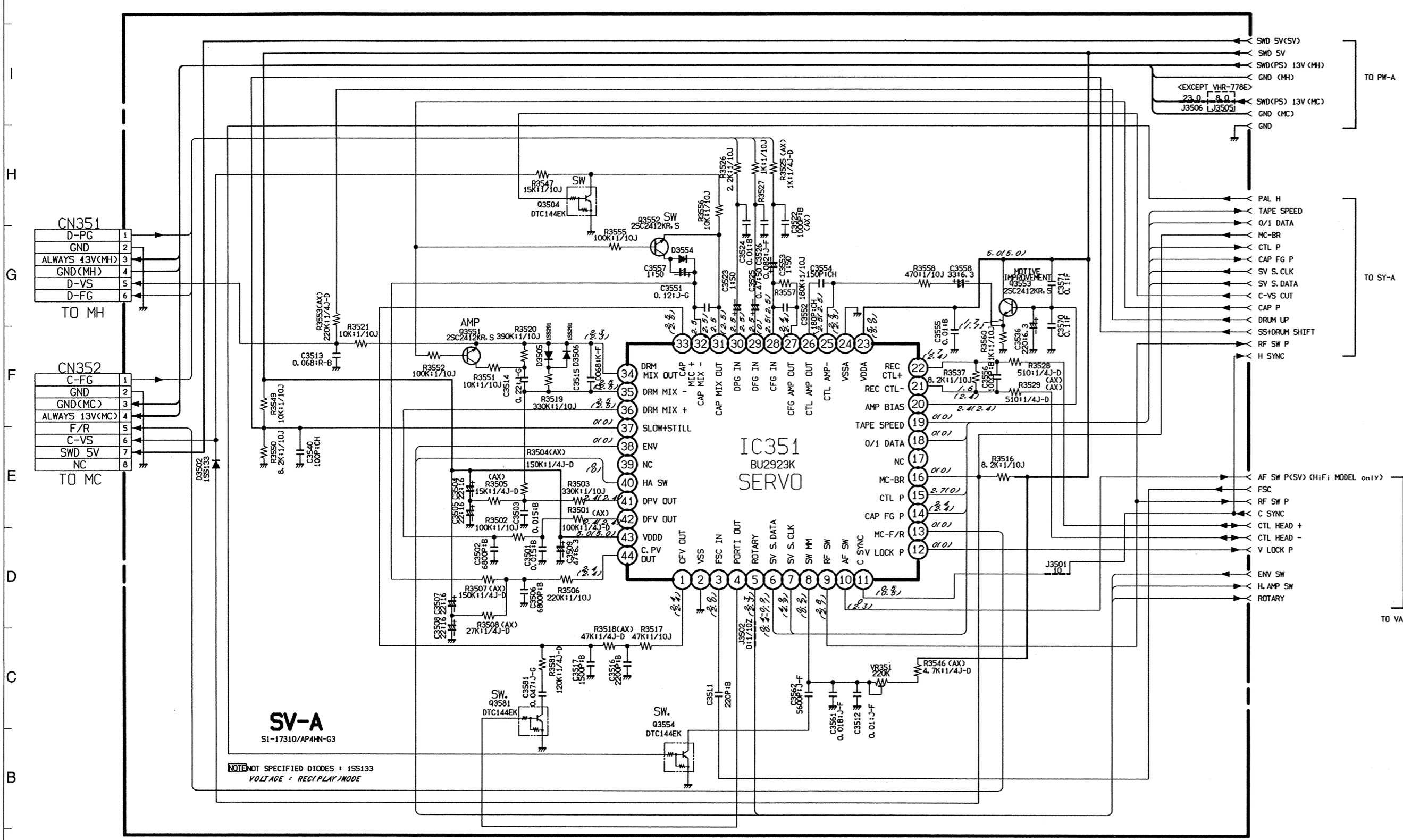


CP-1 BOARD (AD-A) HiFi AUDIO (VHR-778G & VHR-788G)



NOTES:
 — : Common parts for VHR-778G & VHR-788G.
 The parts marked [shaded] are VHR-788G ONLY.

CP-1 BOARD (SV-A) SERVO

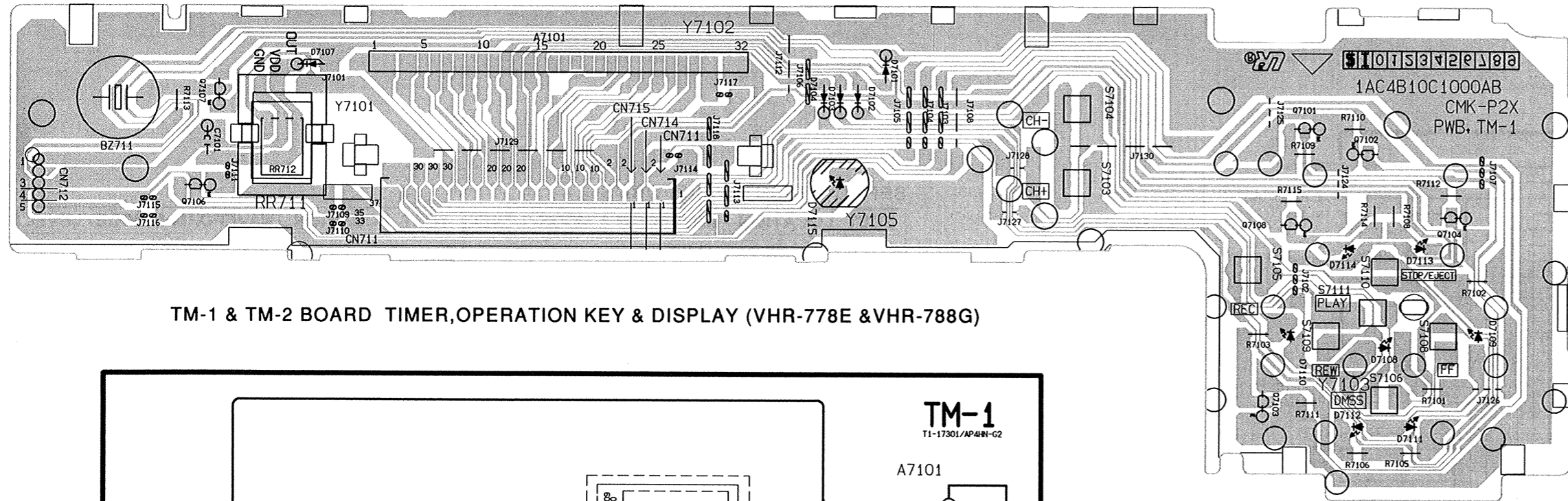


SERVO CIRCUIT WAVEFORMS

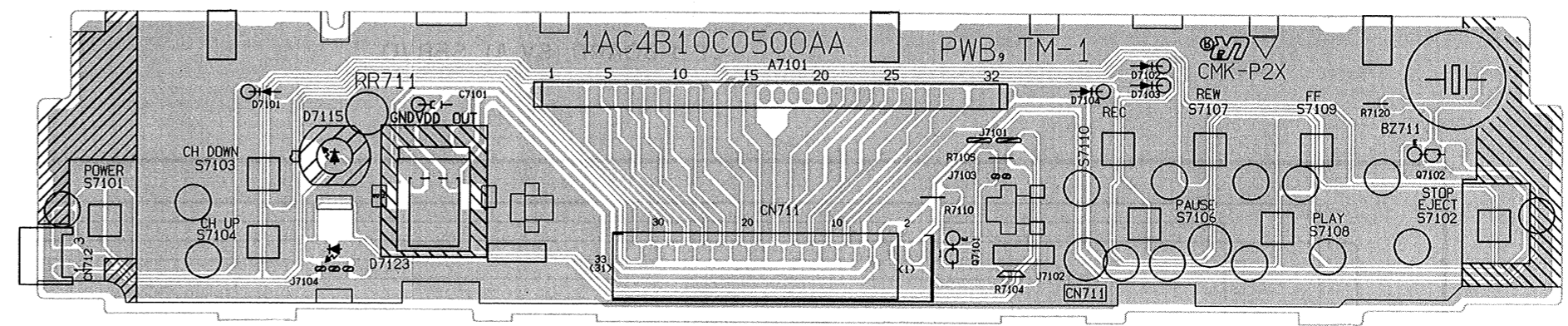
TEST LOCATION	WAVEFORM & MODE/LEVEL	TEST LOCATION	WAVEFORM & MODE/LEVEL
Pin 40 (H. A. SWITCHING)	SLOW PB 	Pin 15 (CTL PULSE)	REC
Pin 42 (PWM)		Pin 15 (CTL PULSE)	PB
Pin 41, 44, 1 (PWM)		Pin 21 (CTL HEAD-)	REC
Pin 3 (FSC INPUT)		Pin 22 (CTL HEAD+)	REC
Pin 5 (ROTARY)	PB 	Pin 26 (CTL AMP OUT)	PB
Pin 8 (D-PG MM)		Pin 28 (C-FG INPUT)	
Pin 9 (RF SW PULSE)		Pin 29 (D-FG INPUT)	
Pin 10 (AF SW PULSE)	PB 	Pin 30 (D-PG INPUT)	
Pin 11 (COMPOSITE SYNC INPUT)		Pin 38 (ENV. SW INPUT)	SLOW PB
Pin 14 (C-FG PULSE)			

WF-S-PP

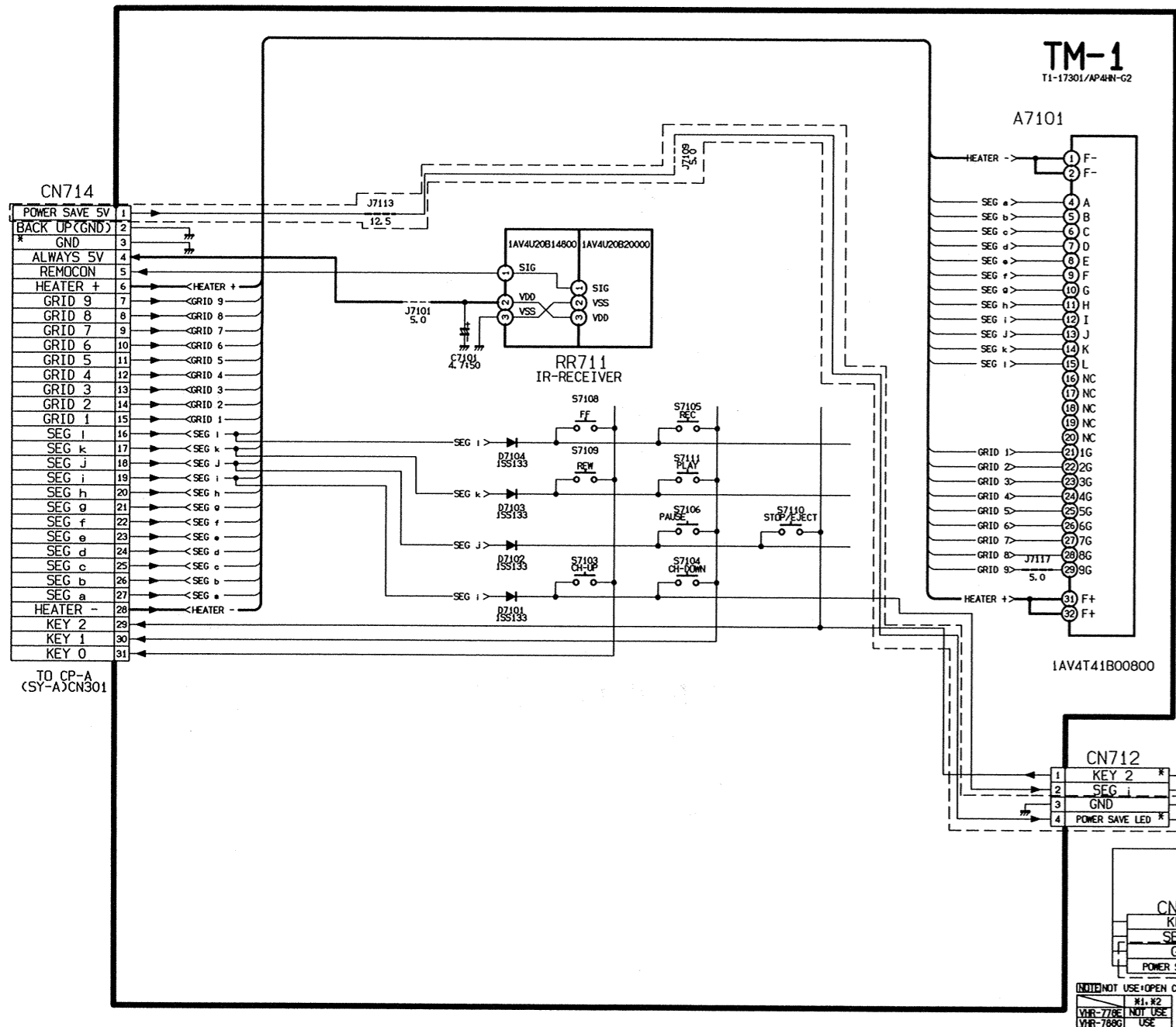
TM-1 P.W.B. (VHR-778E & VHR-788G)



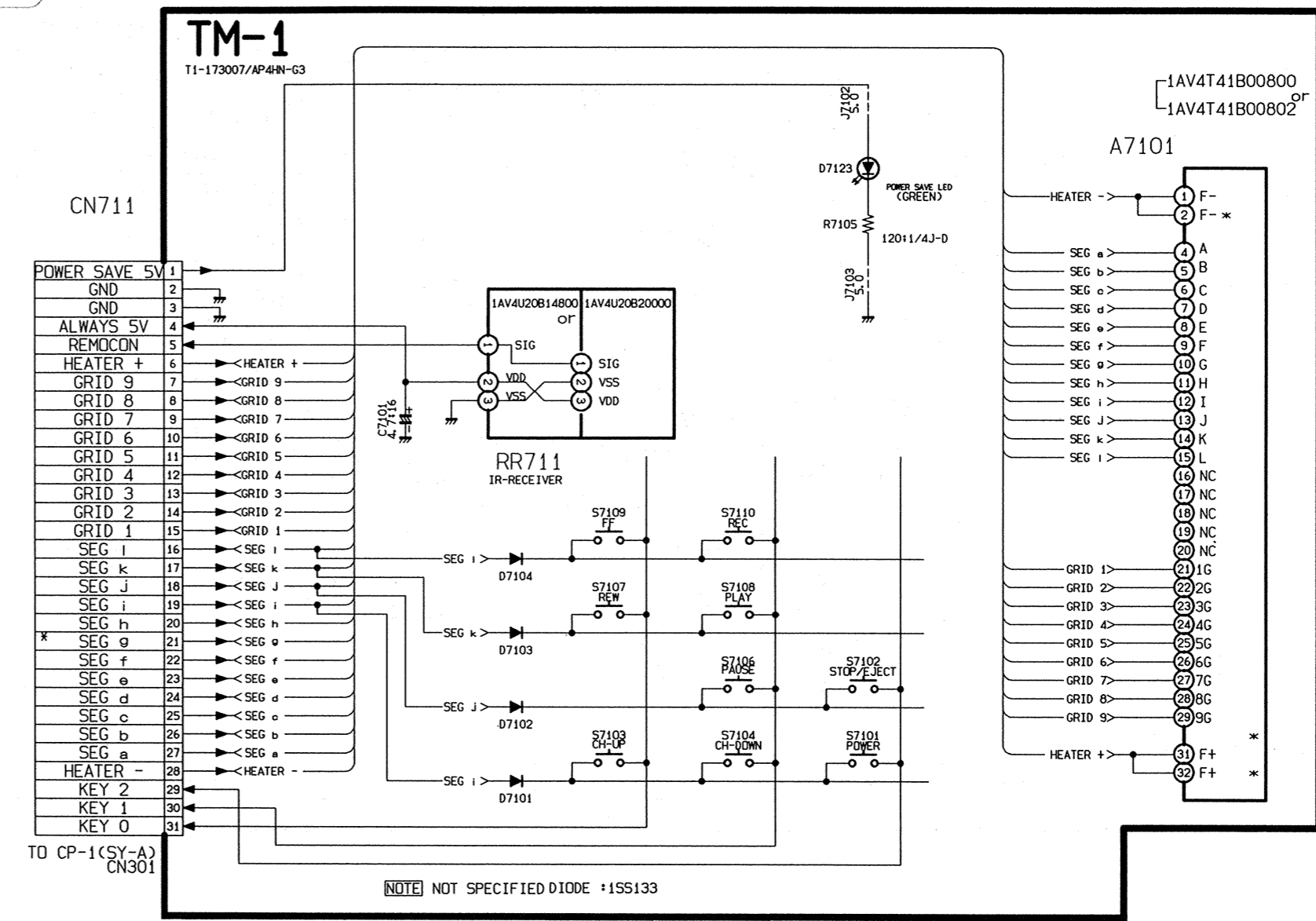
TM-1 P.W.B. (VHR-778G ONLY)



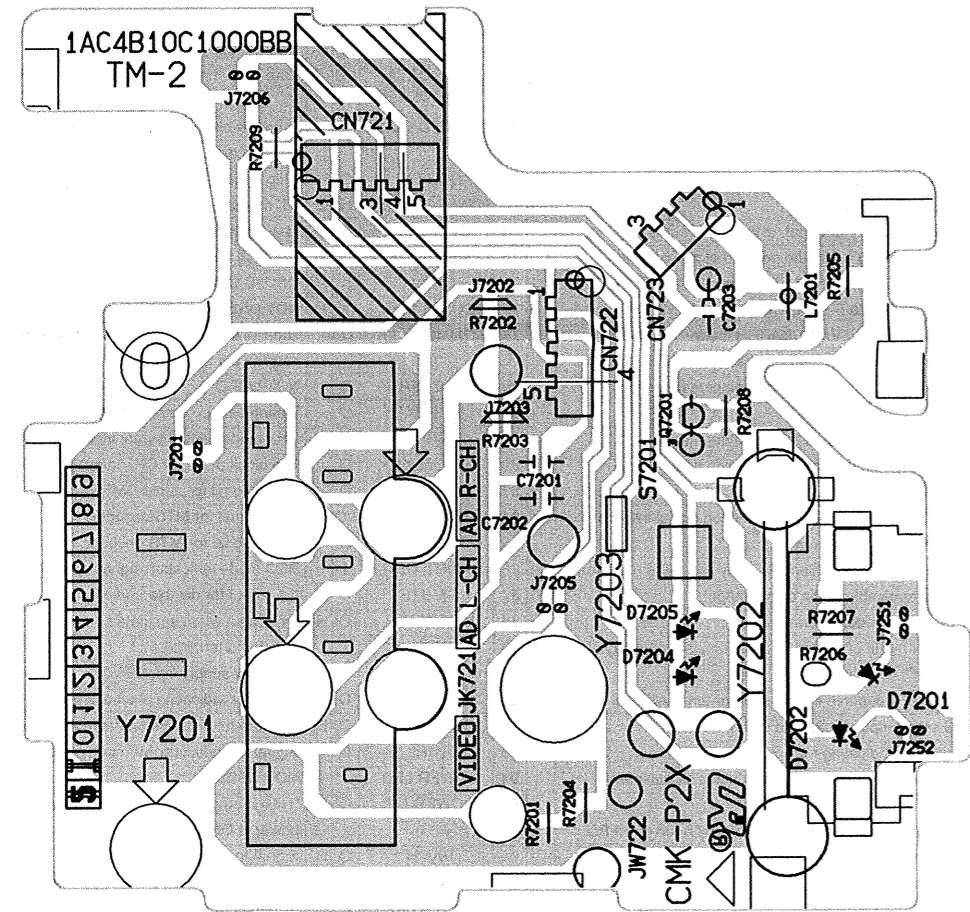
TM-1 & TM-2 BOARD TIMER, OPERATION KEY & DISPLAY (VHR-778E & VHR-788G)



TM-1 BOARD TIMER, OPERATION KEY & DISPLAY (VHR-778G ONLY)

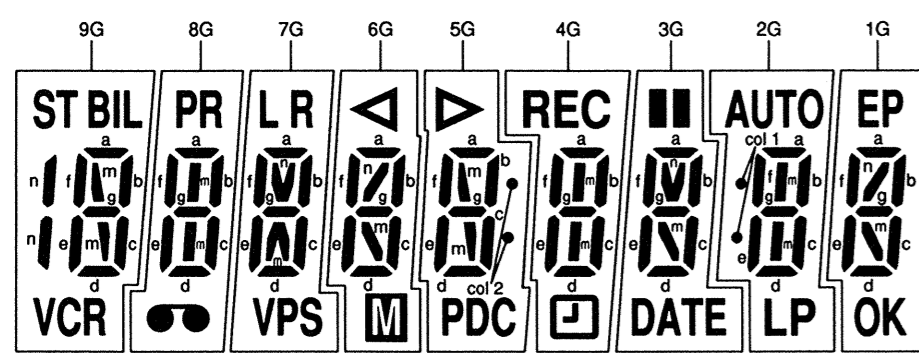


TM-2 P.W.B. (VHR-778E & VHR-788G)



A7101 DISPLAY (FLD) GRID/ANODE ASSIGNMENT DRAWING & TABLE

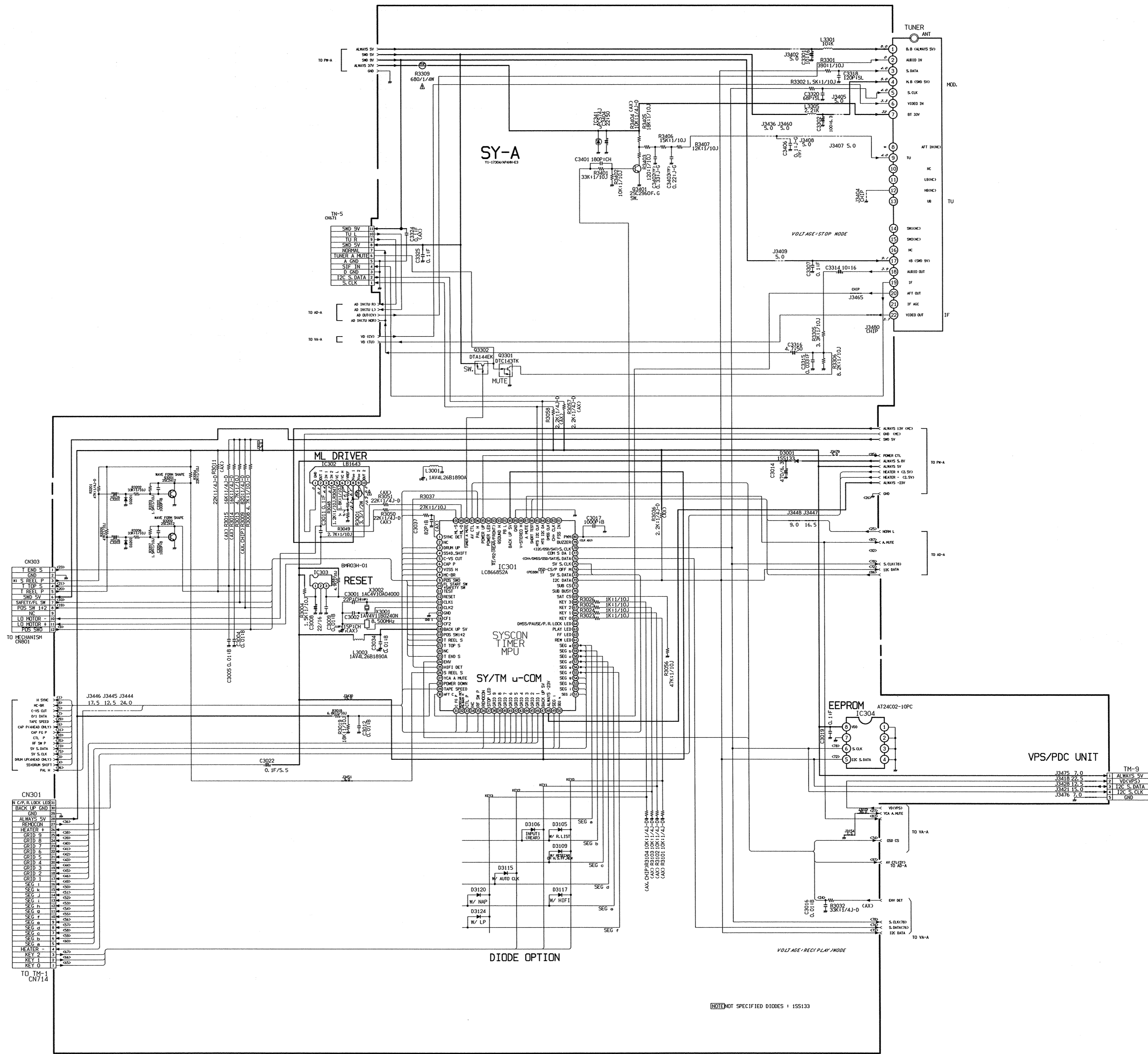
GRID & SEGMENT ASSIGNMENT



ANODE CONNECTION

GRID/SEGMENT	9G	8G	7G	6G	5G	4G	3G	2G	1G
a	ST	PR	L	REC	REC	AUTO	EP		
b	n	n	n	n	n	n	n		
c	a	a	a	a	a	a	a		
d	b	b	b	b	b	b	b		
e	c	c	c	c	c	c	c		
f	d	d	d	d	d	d	d		
g	e	e	e	e	e	e	e		
h	f	f	f	f	f	f	f		
i	g	g	g	g	g	g	g		
j	m	m	m	m	m	m	m		
k	BIL	VPS	col 2			col 1			
l	VCR	R	M	PDC	DATE	LP	OK		

GR-00800

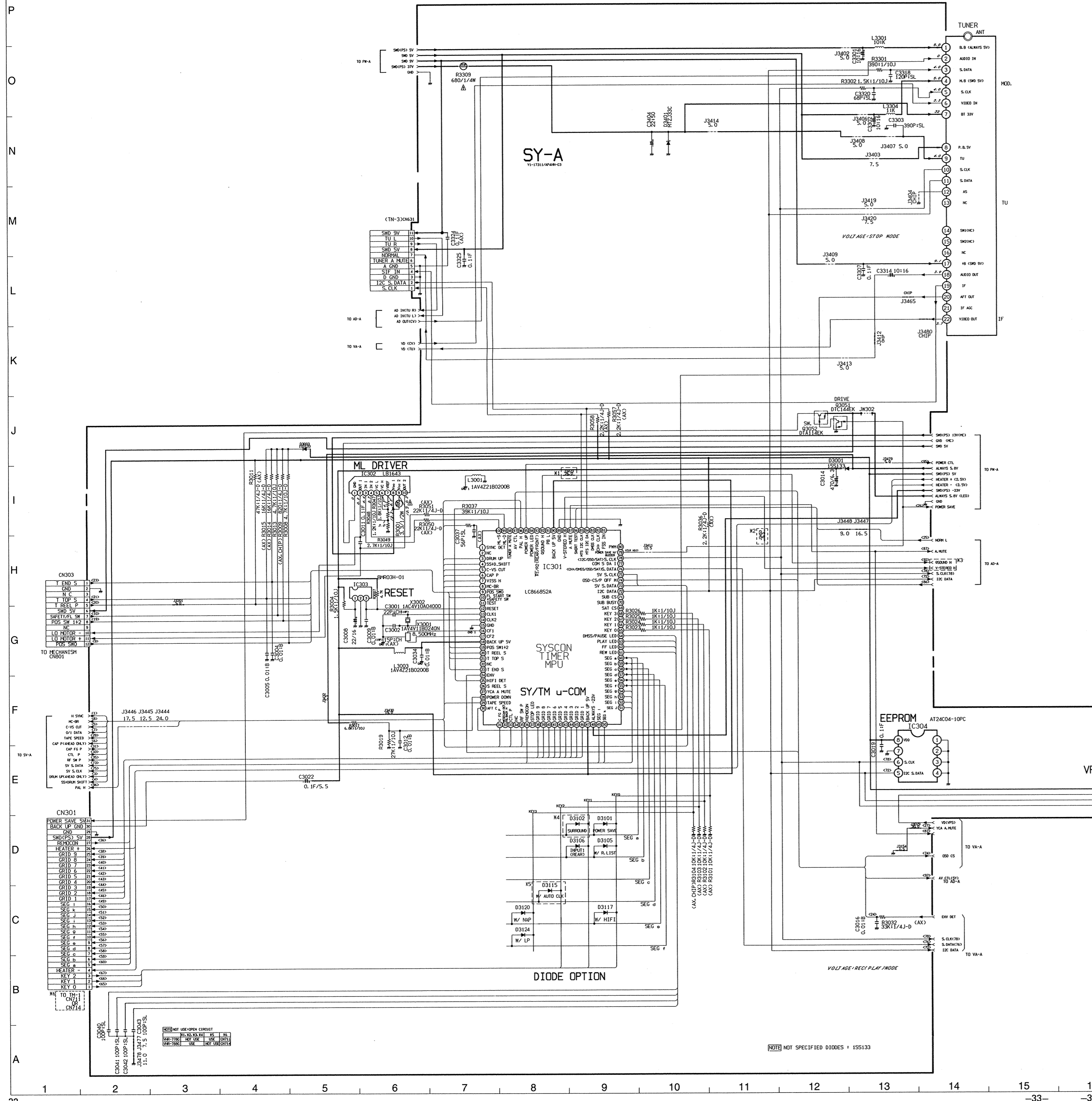


NOTE: UN-SPECIFIED DIODES - 1SS133

IC301 SYSTEM CONTROL, TIMER & TUNING CONTROL MPU PIN FUNCTIONS TABLE

Table with 4 columns: No., Name, I/O, I/O Signal Function. Lists 52 pins and their functions, such as SYNC DET, DRUM UP, C-Vs CUT, etc.

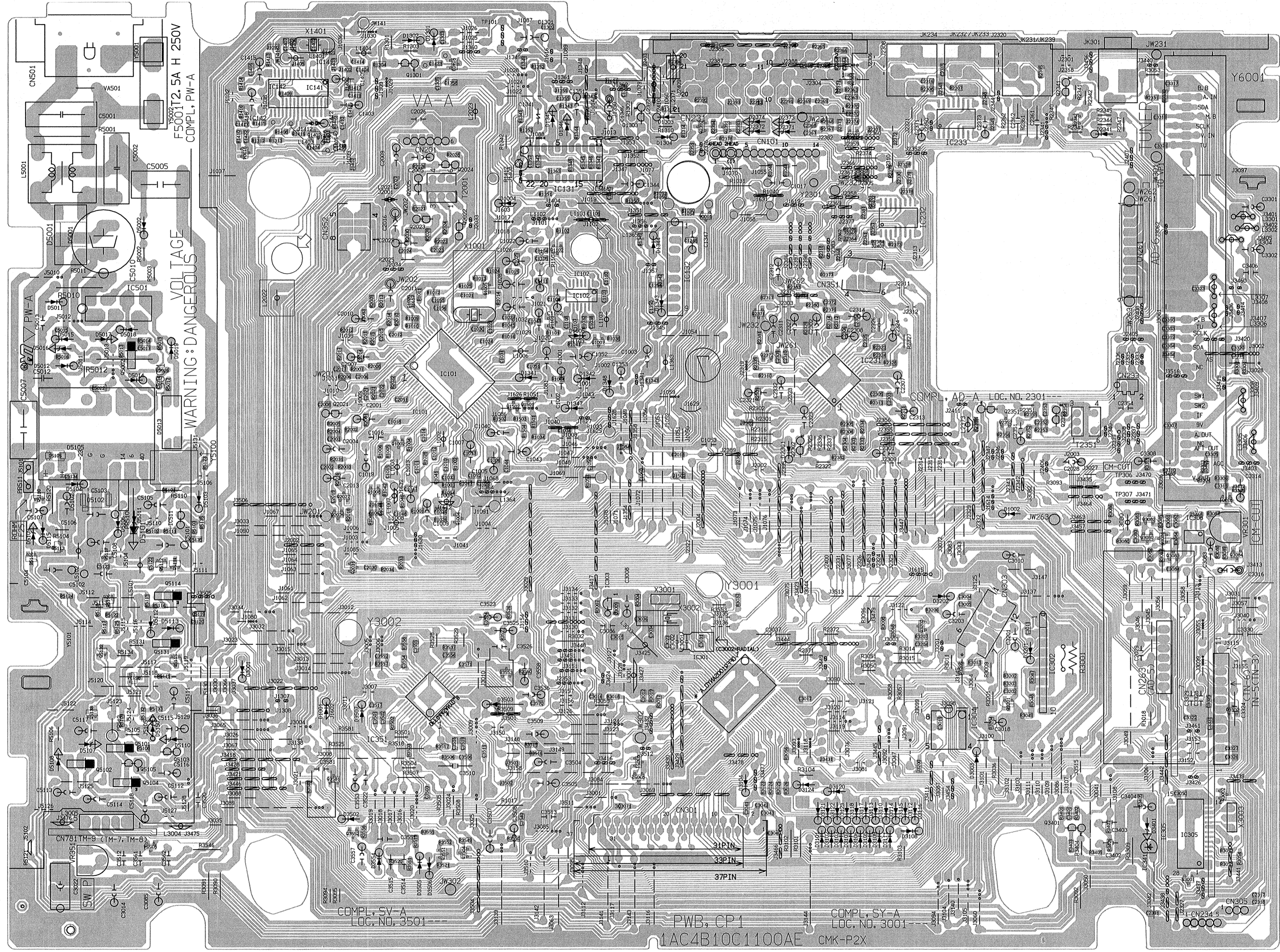
Table with 4 columns: No., Name, I/O, I/O Signal Function. Lists 30 pins and their functions, such as PAL H, AV CTL, TUNER A MUTE, etc.



NOTE NOT SPECIFIED DIODES : 1SS133

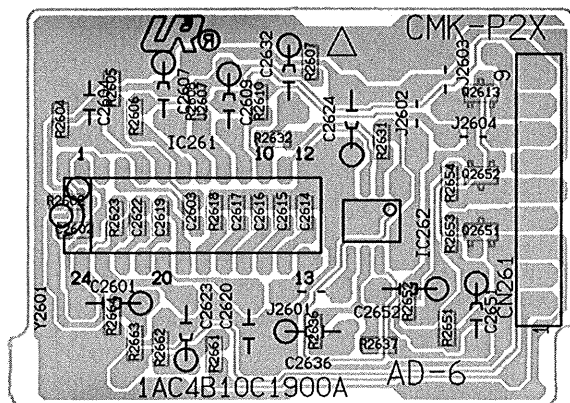
AP_IC301_B

P
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A

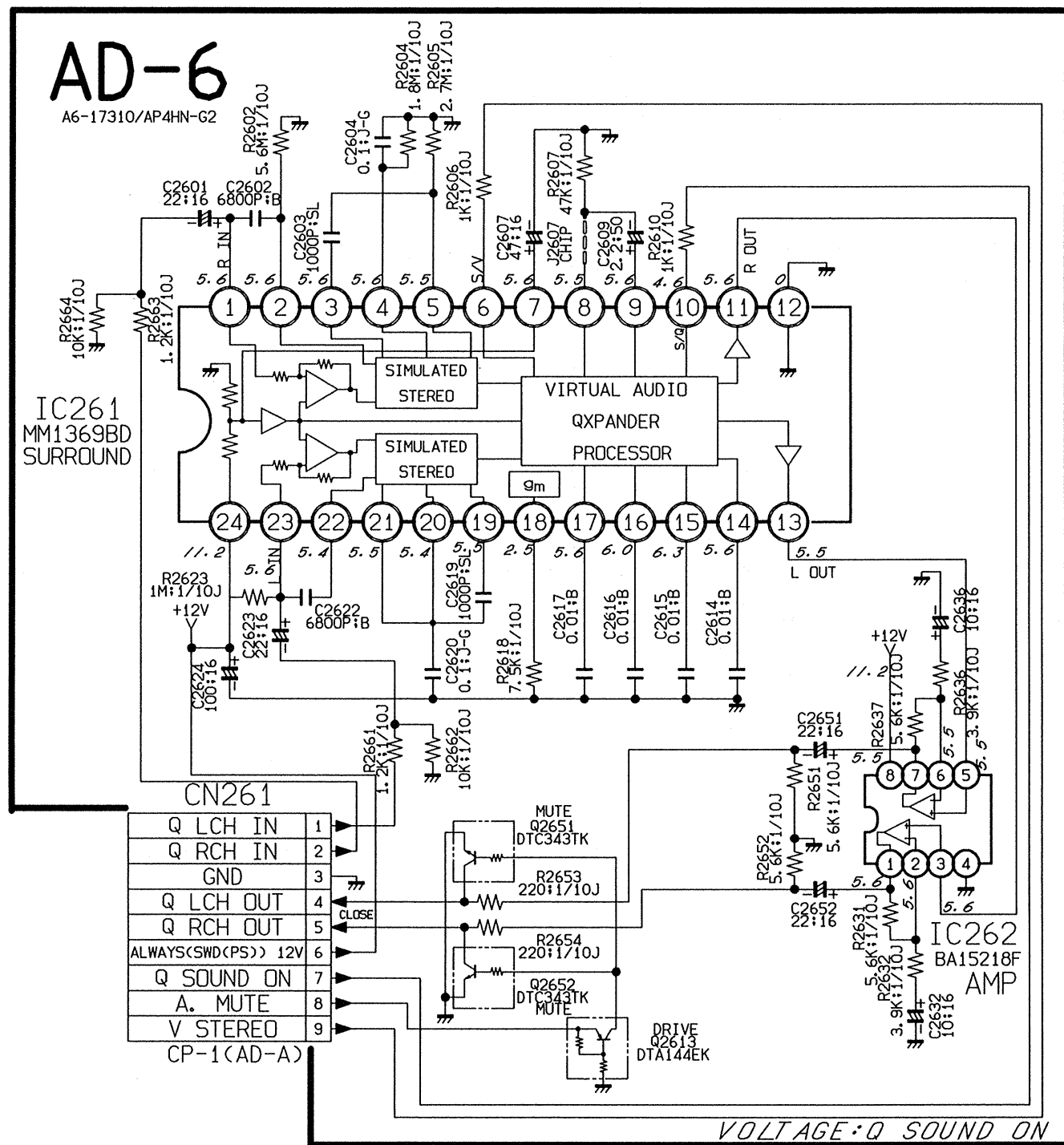


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
-38- -39- -40-

AD-6 P.W.B. (VHR-788G ONLY)

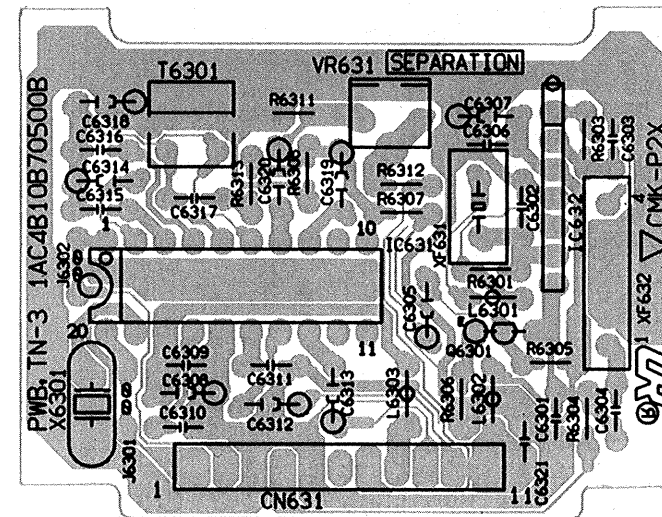


AD-6 BOARD Q SOUND (VHR-788G ONLY)

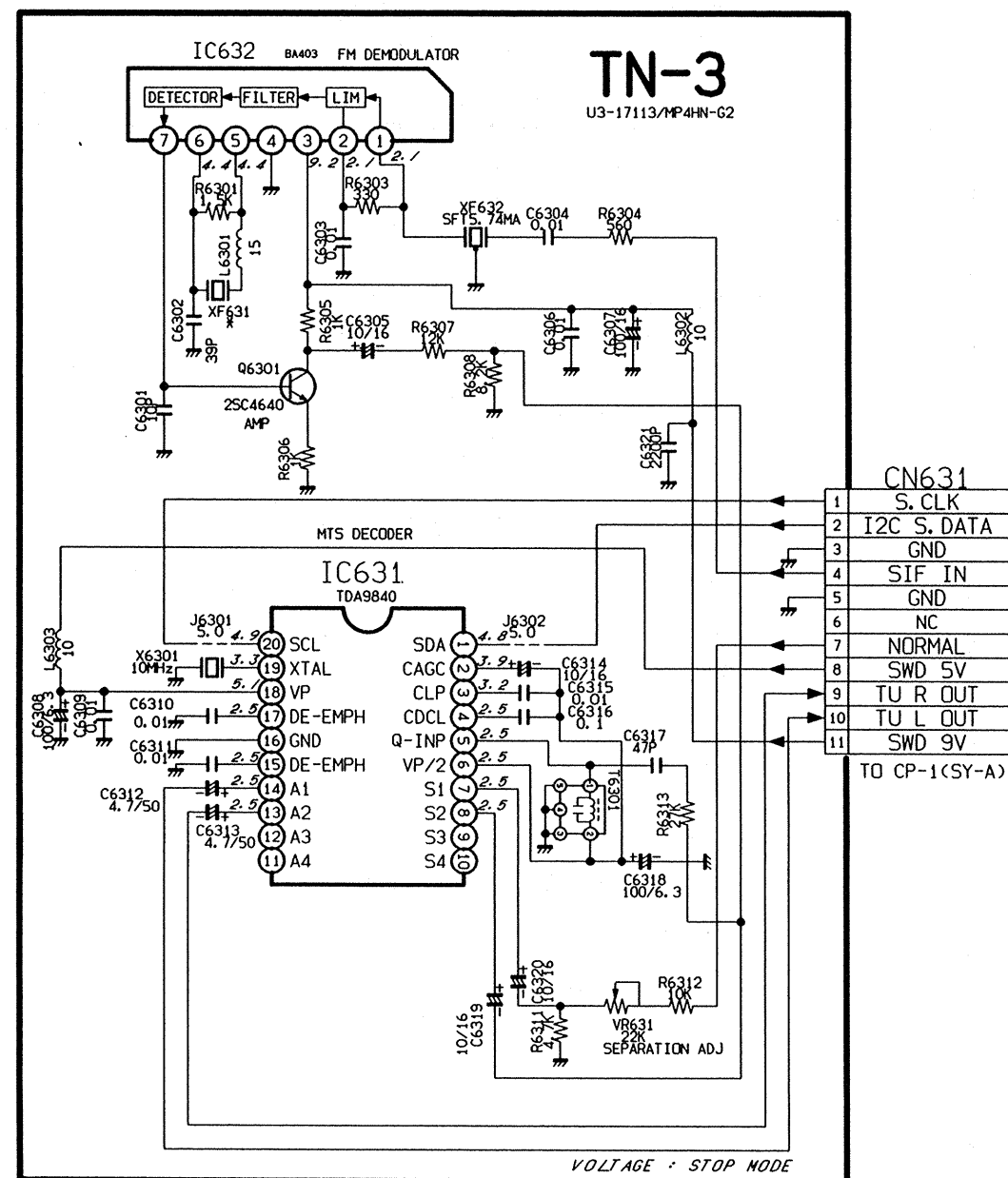


VOLTAGE: Q SOUND ON

TN-3 P.W.B. (VHR-778G & VHR-788G)



TN-3 BOARD MTS DECODER (VHR-778G & VHR-788G)

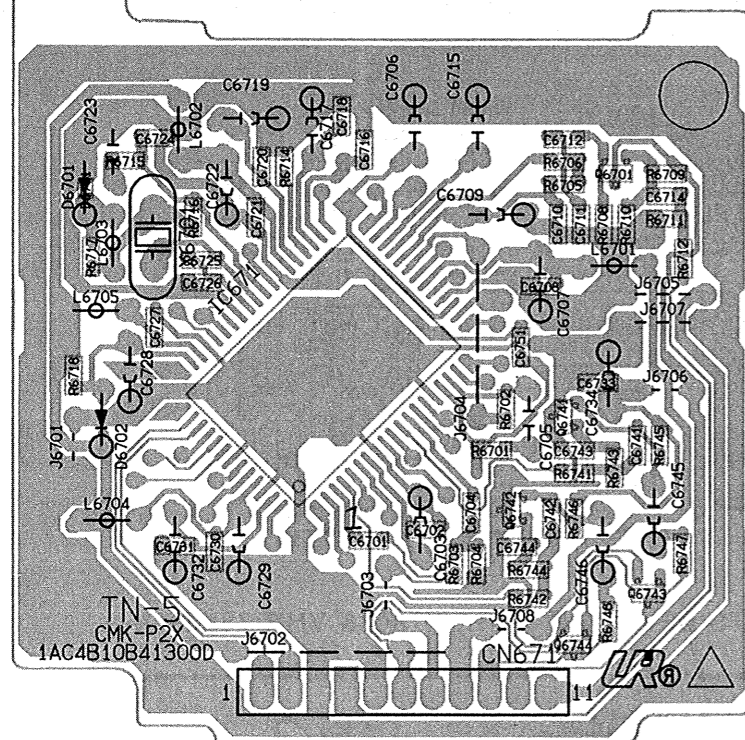


VOLTAGE: STOP NODE

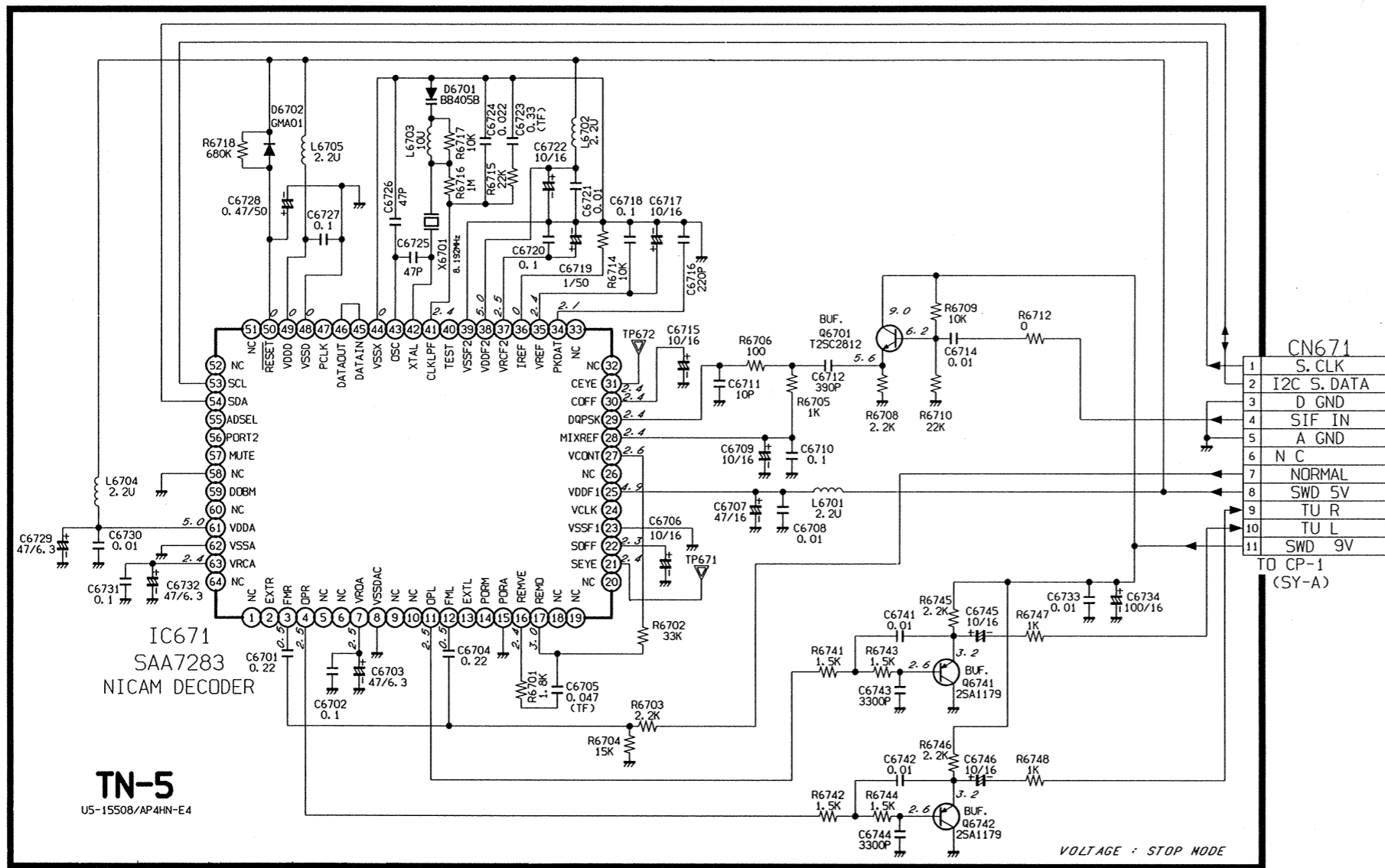
CN631	
1	S. CLK
2	I2C S. DATA
3	GND
4	SIF IN
5	GND
6	NC
7	NORMAL
8	SWD 5V
9	TU R OUT
10	TU L OUT
11	SWD 9V

TO CP-1(SY-A)

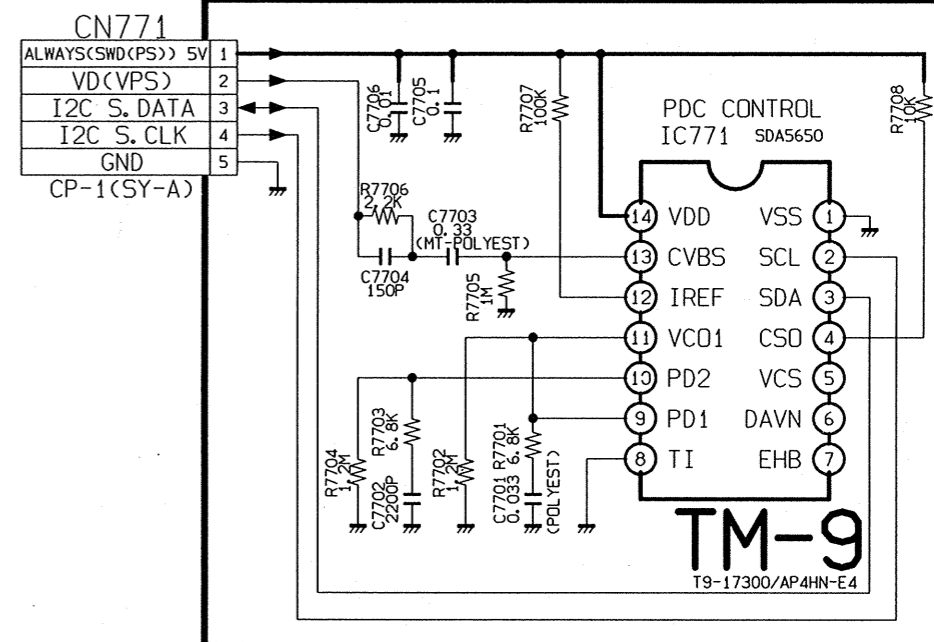
TN-5 P.W.B. (VHR-778E ONLY)



TM-5 BOARD NICAM DECODER (VHR-778E ONLY)



TM-9 BOARD PDC/VPS



TM-9 P.W.B.

