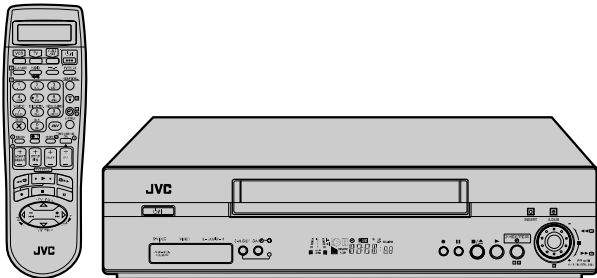


JVC

SERVICE MANUAL

MAGNETOSCOPE

HR-S6850MS/S7850MS/S7851MS/S8850MS



SHOWVIEW[®]
DELUXE
Hi-Fi SVHS
625
Super VHS ET

CARACTÉRISTIQUES TECHNIQUES *(The specifications shown pertain specifically to the model HR-S8850MS)*

GÉNÉRALES

Alimentation : CA 220 V – 240 V ~ , 50 Hz/60 Hz
Consommation
Alimentation en marche : 22 W
Alimentation en veille : 3,8 W
Températures
Fonctionnement : 5°C à 40°C
Stockage : -20°C à 60°C
Position de fonctionnement : Seulement horizontale
Dimensions (LxHxP) : 400 mm x 94 mm x 278 mm
Poids : 3,7 kg
Format : Standard S-VHS/VHS PAL/SECAM
Largeur de bande : 12,65 mm
Vitesse de bande
(VN) : 23,39 mm/s
(LD) : 11,70 mm/s
(EP)* : 7,80 mm/s
Durée maximale d'enregistrement
(VN) : 240 mn avec une cassette vidéo E-240
(LD) : 480 mn avec une cassette vidéo E-240
(EP)* : 720 mn avec une cassette vidéo E-240
* Signaux PAL seulement

VIDÉO/AUDIO

Système de signal : Signaux couleur PAL/SECAM et signal monochrome CCIR, 625 lignes/50 trames
Système d'enregistrement : Balayage hélicoïdal DA4 (Double Azimuth)
Entrée : 0,5 Vcc à 2,0 Vcc, 75 ohms, asymétrique
Sortie : 1,0 Vcc, 75 ohms, asymétrique
Rapport signal/bruit : 45 dB
Résolution horizontale : 400 lignes (S-VHS-PAL, VN/LD)
250 lignes (VHS-PAL, VN/LD)
350 lignes (S-VHS-PAL, EP)
220 lignes (VHS-PAL, EP)
240 lignes (VHS-SECAM, VN/LD)
Gamme de fréquence : 70 Hz à 10.000 Hz (Audio normal)
20 Hz à 20.000 Hz (Audio Hi-Fi)
Entrée/sortie : Connecteurs péritélévision à 21 broches:
ENTREE/SORTIE x 1, ENTREE/DECODEUR x 1
Connecteurs RCA:
ENTREE VIDEO x 1, ENTREE AUDIO x 1,
SORTIE AUDIO x 1
Connecteurs S-Vidéo: ENTREE x 1, SORTIE x 1

SYNTONISEUR

Système de syntonisation : Syntoniseur à synthèse de fréquence
Capacité de canaux TV : 99 positions (+ position AUX)
Canaux couverts

Gamme	SECAM L		PAL B/G	
	Fréquence	Canaux	Fréquence	Canaux
VHF (LOW)	49 MHz – 65 MHz	2 – 4	47 MHz – 89 MHz	E2 – E4 X, Y, Z
VHF (HIGH)	104 MHz – 300 MHz	5 – 10 CATV	104 MHz – 300 MHz	E5 – E12 S1 – S20 M1 – M10 U1 – U10
Hyper	300 MHz – 470 MHz	CATV	302 MHz – 470 MHz	S21 – S41
UHF	470 MHz – 862 MHz	21 – 69	470 MHz – 862 MHz	E21 – E69

MINUTERIE

Référence de l'horloge : Par quartz
Capacité de programmation : Minuterie sur 1 an/8 programmes
Durée de soutien mémoire : 10 mn

ACCESSOIRES

Accessoires fournis : Câble RF,
Câble péritélévision à 21 broches,
Contrôleur satellite,
Boîtier de télécommande à infrarouge,
Pile "R6" x 2

Les caractéristiques techniques sont pour le mode VN à moins d'indication contraire.
Présentation et caractéristiques modifiables sans préavis.

ATTENTION:

Ce magnétoscope contient des microprocesseurs. Des bruits électroniques externes ou des interférences peuvent causer un mauvais fonctionnement. Dans de tels cas, couper l'alimentation et débrancher le cordon d'alimentation. Puis le rebrancher et remettre l'alimentation. Sortir la cassette. Après contrôle de la cassette, faire fonctionner l'appareil comme d'ordinaire.

HR-S6850MS/S7850MS/S7851MS/S8850MS

No. 82884

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The following table lists the differing points between Models (HR-S6850MS, HR-S7850MS, HR-S7851MS and HR-S8850MS) in this series.

	HR-S6850MS	HR-S7850MS	HR-S7851MS	HR-S8850MS
FLYING ERASE HEAD	NOT USED	USED	USED	USED
DIGITAL 3R/TBC/FRAM MEMORY	NOT USED	NOT USED	NOT USED	USED
YNR/CNR/S.COLOR	NOT USED / 2D/NOT USED	NOT USED / 2D / NOT USED	NOT USED / 2D / NOT USED	USED (3D) / 3D / USED (3D)
RE-TAKE/ASSEMBLE EDIT	NOT USED / A.F.E.	USED / Z.F.E.	USED / Z.F.E.	USED / Z.F.E.
INSERT/OPERATION, AUDIO DUBBING / OPERATION	NOT USED	USED/BUTTON	USED/BUTTON	USED/BUTTON
HiFi LEVEL METER	NOT USED	USED	USED	USED
R.PAUSE TERMINAL	NOT USED	USED	USED	USED
REAR OUT	AUDIO L/R	AUDIO L/R & S-OUT	AUDIO L/R & S-OUT	AUDIO L/R & S-OUT
CABLE BOX OR DBS. BOX OR SAT CTL	OPTION	OPTION	OPTION	USED
CABLE MOUSE	OPTION	OPTION	OPTION	PROVIDED
RCU	V13 SMALL 10KEY	V13 SMALL 10KEY	V13 SMALL 10KEY	V13 LCD
RCU TYPE / COLOR	V14#E11-S / SILVER	V14#E11-S / SILVER	V14#E11-S / SILVER	V14#E5 / LIGHT BEIGE
RCU MBR /IR CODE	NOT USED / A	NOT USED / A	NOT USED / A	USED (TV, SAT/CABLE) / A, B
F-AV CAP	NOT USED	USED	USED	USED
WINDOW COLOR	SMOKE LIGHT GRAY	SMOKE LIGHT GRAY	GREEN	SMOKE LIGHT GRAY

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the  symbol and shaded () parts are critical for safety.
Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation Tape 3) Spacers 5) Barrier
2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

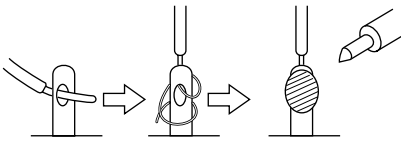


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

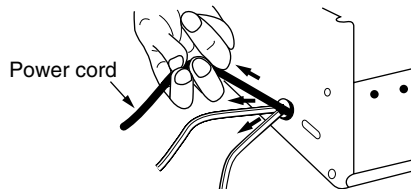


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) **Connector part number** : E03830-001

2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.

3) **Replacement procedure**

(1) Remove the old connector by cutting the wires at a point close to the connector.

Important : Do not reuse a connector (discard it).

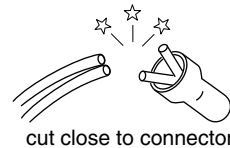


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

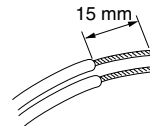


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

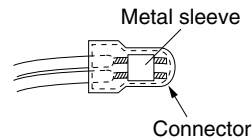


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

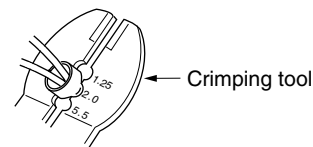


Fig.6

(5) Check the four points noted in Fig.7.

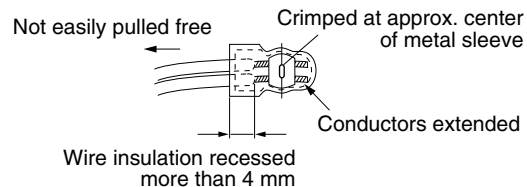


Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

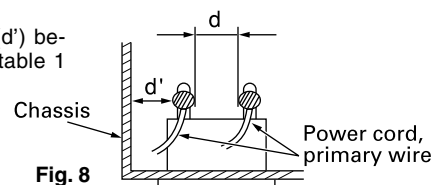
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

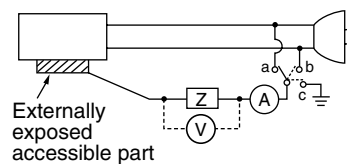


4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

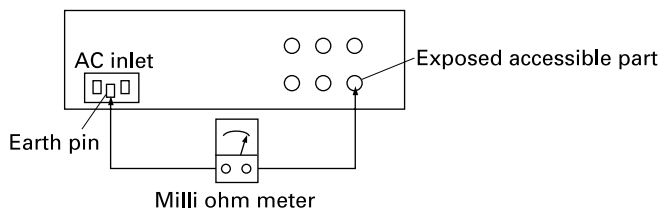


5. Grounding (Class 1 model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	$1 \text{ M}\Omega \leq R \leq 12 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V 200 to 240 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	$d \geq 4 \text{ mm}$ $d' \geq 8 \text{ mm (Power cord)}$ $d' \geq 6 \text{ mm (Primary wire)}$

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan		$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada		$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia		$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
			$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

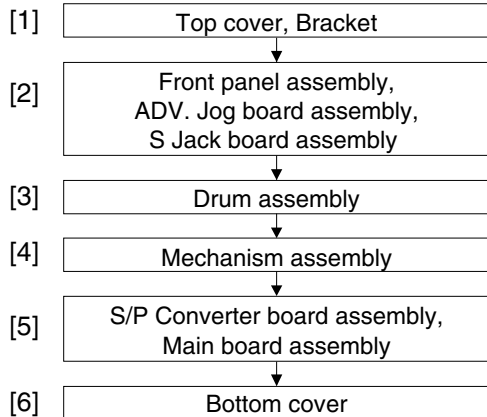
Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1 DISASSEMBLY

1.1 Disassembly flow chart

This flowchart lists the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 How to read the disassembly and assembly

<Example>

Step/ Loc.No.	Part Name	Fig. No.	Point	Note
[1]	Top cover, Bracket	D1	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a),(W1a), CN1(WR1a), 2(S1c)	<Note 1a>
(1)		(2)	(3)	(4)

(1) Order of steps in Procedure

When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

(2) Part name to be removed or installed.

(3) Fig. No. showing procedure or part location.

(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:

- The bracketed () WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.

(5) Adjustment information for installation

1.3 Disassembly/assembly method

Step/ Loc.No.	Part Name	Fig. No.	Point	Note
[1]	Top cover, Bracket	D1	4(S1a), (S1b) 2(S1c)	
[2]	Front panel assembly ADV. Jog board assembly S Jack board assembly	D2	CN7001(WR2a), CN916(WR2b), 4(L2a), 3(L2b) 2(S2a) 2(S2b)	<Note 2a> <Note 2b> <Note 2c>
[3]	Drum assembly (Inertia plate) (Roller arm assy)	D3	CN1(WR3a), CN1(WR3b), (S3a), (S3b), (S3c) 4(L3a) (P3), (L3b)	<Note 2c>
[4]	Mechanism assembly	D4	CN2001(WR4a), (S4a),(S4b), (S4c), (S4d), 2(L4)	<Note 2c> <Note 4a>
[5]	S/P Converter board assembly Main board assembly	D5	CN601(WR5a), 2(S5c) (S5a),3(S5b),7(L5a)	<Note 2c>
[6]	Bottom cover	D6	2(L6a), 9(L6b)	<Note 6a>

<Note 2a>

- When reattaching the Front panel assembly, make sure that the door opener “a” of the Cassette holder assembly is lowered in position prior to the reinstallation.

<Note 2b>

- When reattaching the Front panel assembly, pay careful attention to the switch lever not to make it touch the switch knob “b” of the Main board assembly from the side.

<Note 2c>

- Be careful not to damage the connector and wire etc. during connection and disconnection. When connecting the wire to the connector, be careful with the wire direction.

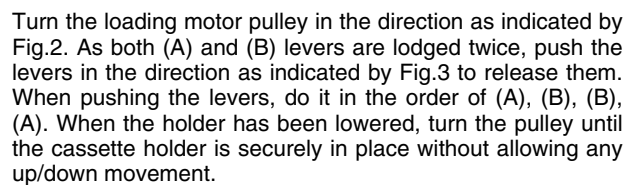
<Note 4a>

- When it is required to remove the screws (S4a to S4b) retaining the Mechanism assembly, please refer to the “Procedures for Lowering the Cassette holder assembly”(See on page 1-2).
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors and switch on the Main board assembly.
- When removing the Mechanism assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Mechanism assembly.
- The wire (WR4a) has excess length that may be loose, as it is quite long. After inserting the wire and connectors, the loose portion of the wire should be taken up and accommodated between the A/C head base and the main deck.

<Note 6a>

- When removing the bottom cover, push down the two tabs (L6a) to slide the bottom cover.

As the mechanism of this unit is integrated with the Housing assembly, the holder must be lowered and the two screws unscrewed when removing the Mechanism assembly.



This diagram illustrates the assembly of the top cover. The main components shown are the [1] Top cover and the [1] Bracket. The assembly steps are indicated by labels and arrows:

- (S1a)**: Screws used to secure the top cover to the bracket.
- (S1b)**: A screw used to secure the top cover to the main unit.
- (S1c)**: Screws used to secure the bracket to the main unit.

The diagram shows the top cover being positioned over the bracket, which is already attached to the main unit. An arrow indicates the direction of movement for the top cover.

Fig. D1

Not used

Drum shield

(S3d)

Inertia plate

(L3a)

(P3)

(L3b)

Roller arm Assy

(S3a)

(S3c)

WR3a <Note 2c>

CON1

(S3b)

WR3b <Note 2c>

[3] Drum assembly

Cleaner Assy

(L3c)

Not used

CN1

Fig. D3

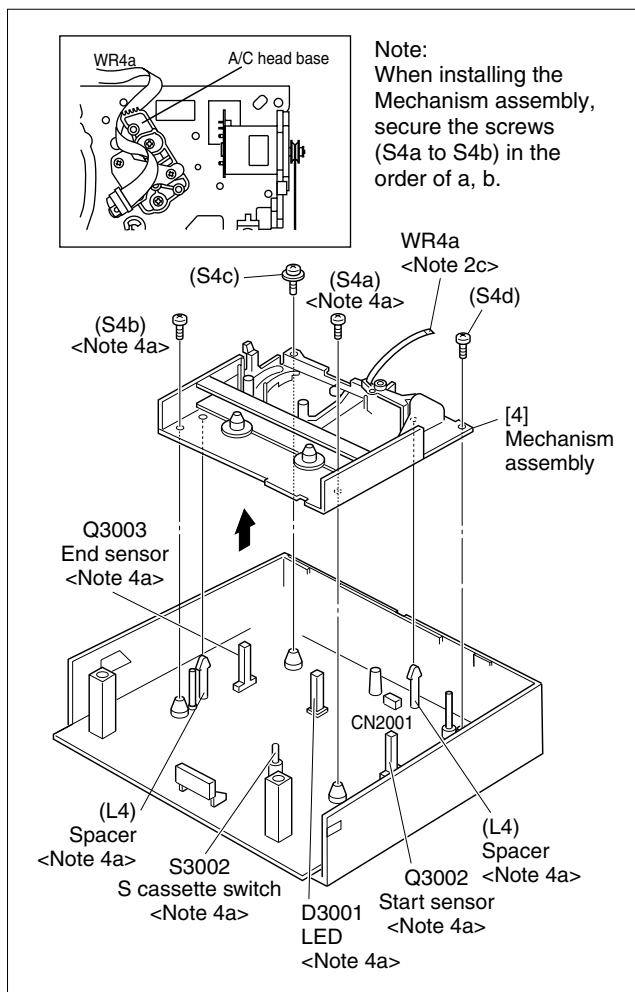


Fig. D4

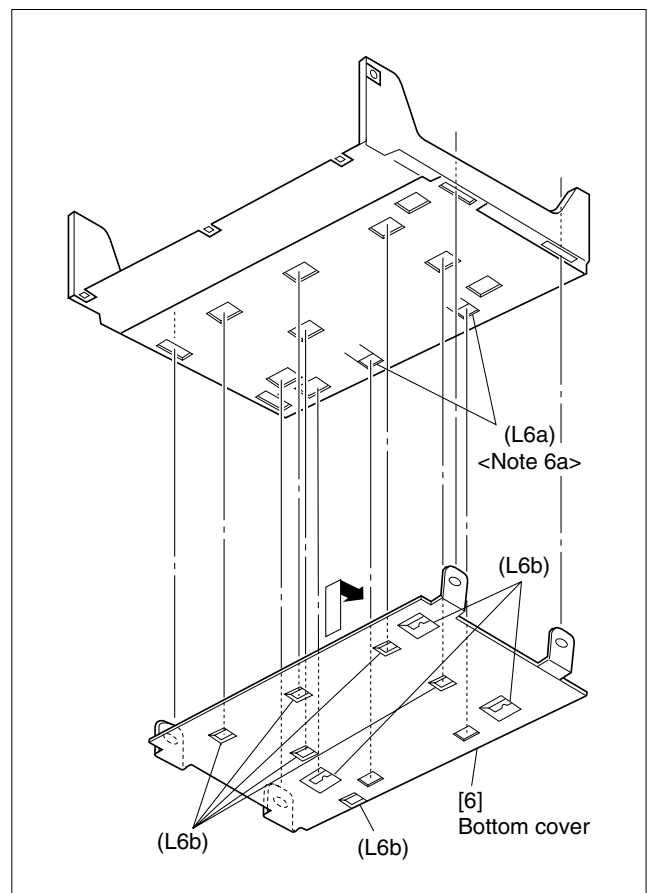


Fig. D6

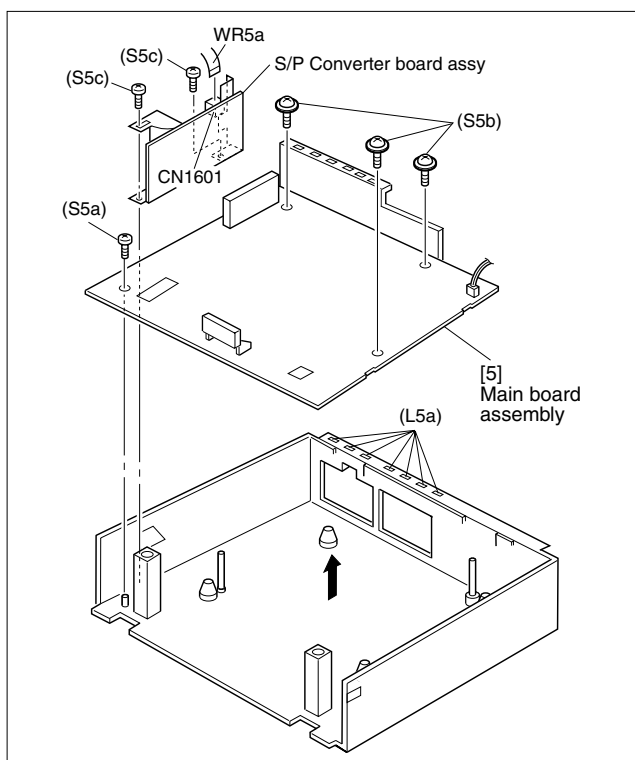


Fig. D5

1.4 Service position

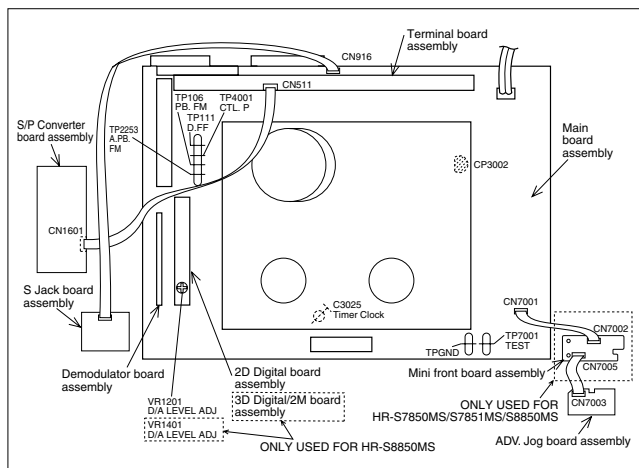
This unit has been designed so that the Mechanism and Main board assemblies can be removed together from the chassis assembly. Before diagnosing or servicing the circuit boards, take out the major parts from the chassis assembly.

1.4.1 How to set the "Service position"

- (1) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the Drum assembly.
- (2) Lower the cassette holder to prepare for the removal of the Mechanism assembly screws. (Refer to the "Procedures for lowering the Cassette holder assembly" of 1.3 Disassembly/assembly method.)
- (3) Remove the combined Mechanism and Main board assemblies.
- (4) Connect the wires and connectors of the major parts that have been removed in step (1). (Refer to Fig.1-4-1a.)
- (5) Place the combined Mechanism and Main board assemblies upside down.
- (6) Insert the power cord plug into the power outlet and then proceed with the diagnostics and servicing of the board assembly.

Notes:

- **Before inserting the power cord plug into the power outlet, make sure that none of the electrical parts are able to short-circuit between the workbench and the board assembly.**
- **For the disassembly procedure of the major parts and details of the precautions to be taken, see "1.3 Disassembly/assembly method".**
- **If there are wire connections from the Main board and Mechanism assemblies to the other major parts, be sure to remove them (including wires connected to the major parts) first before performing step (2).**
- **When carrying out diagnosis and repair of the Main board assembly in the "Service position", be sure to ground both the Main board and Mechanism assemblies. If they are improperly grounded, there may be noise on the playback picture or FDP counter display may move even when the mechanism is kept in an inoperative status.**
- **In order to diagnose the playback or recording of the cassette tape, set the Mechanism assembly to the required mode before placing it upside down. If the mechanism mode is changed (including ejection) while it is in an upside down position the tape inside may be damaged.**

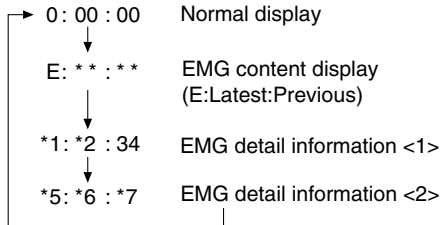


1.8 Emergency display function

This unit has a function for storing the history of the past two emergencies (EMG) and displaying them on each FDP (or OSD). With the status of the VCR and mechanism at the moment an emergency occurred can also be confirmed.

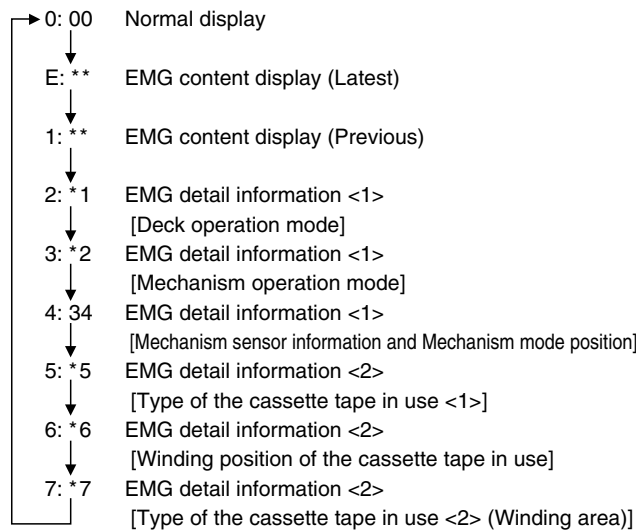
FDP display model

[FDP display]



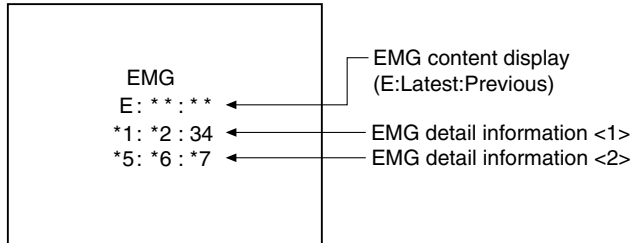
FDP (7segment LED) display model

[FDP display]



OSD display model

[OSD display]



Notes:

- The EMG detail information <1><2> show the information on the latest EMG.
It becomes “-- : -- : --” when there is no latest EMG record.
- When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).

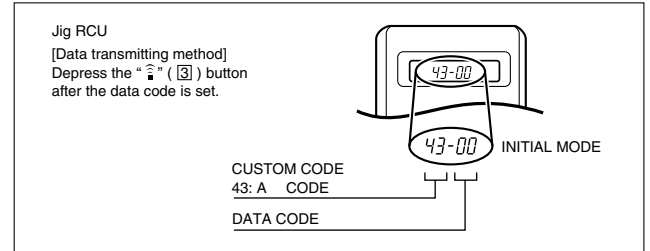
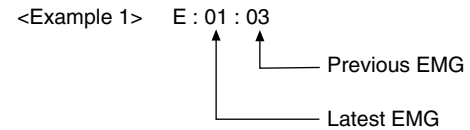


Fig. 1-8a Jig RCU [PTU94023B]

1.8.1 Displaying the EMG information

- (1) Transmit the code “59” from the Jig RCU.

The FDP shows the EMG content in the form of “E: ** : **”.



<Example 2> E : -- : -- ← No EMG record

- (2) Transmit the code “59” from the Jig RCU again.

The FDP shows the EMG detail information <1> in the form of “*1 : *2 : 34”.

- *1 : Deck operation mode at the moment of EMG
- *2 : Mechanism operation mode at the moment of EMG
- 3— : Mechanism sensor information at the moment of EMG
- 4 : Mechanism mode position at the moment of EMG

- (3) Transmit the code “59” from the Jig RCU once again.

The FDP shows the EMG detail information <2> in the form of “*5 : *6 : *7”.

- *5 : Type of the cassette tape in use <1> .
- *6 : Winding position of the cassette tape in use
- *7 : Type of the cassette tape in use <2> (Winding area)

- (4) Transmit the code “59” from the Jig RCU once again to re-set the display.

Notes:

- For the OSD display model, all EMG information are showed by transmitting first code from the Jig RCU.
- For the EMG content, see “1.8.3 EMG content description”.
- For the EMG detail information <1>, see “1.8.4 EMG detail information <1>”.
- For the EMG detail information <2>, see “1.8.5 EMG detail information <2>”.

1.8.2 Clearing the EMG history

- (1) Display the EMG history.
- (2) Transmit the code “36” from the Jig RCU.
- (3) Reset the EMG display.

1.8.3 EMG content description

Note: *EMG contents “E08/E09” are for the model with Dynamic Drum (DD).*

FDP	CONTENT	CAUSE
E01: Loading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the loading direction, [E:01] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. The mechanism is locked at the loading end due to the encoder position reading error during mode transition. 3. Power is not supplied to the loading MDA.
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. The mechanism is locked at the unloading end due to the encoder position reading error during mode transition. 3. Power is not supplied to the loading MDA.
E03: Take Up Reel Pulse EMG	When the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the reel EMG is not detected in STILL/SLOW modes.	1. The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1) The idler gear is not meshed with the take-up reel gear; 2) The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3) The take-up reel sensor does not output the FG pulse. 2. The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The supply reel sensor does not output the FG pulse. 3. Power is not supplied to the reel sensors.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	1. The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. 2. The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. 3. The drum control voltage (DRUM CTL V) is not supplied to the MDA. 4. Power is not supplied to the drum MDA.
E05: Cassette Eject EMG	When the eject operation does not complete in 3 seconds after the start, [E:05] is identified, the pinch rollers are turned off and stopped, and the power is turned off. When the cassette insertion operation does not complete in 3 seconds after the start, the cassette is ejected. In addition, when the operation does not complete within 3 seconds after the start, [E:05] is also identified and the power is turned off immediately.	1. The cassette cannot be ejected due to a failure in the drive mechanism of the housing. 2. When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. 3. The sensor/switch for detecting the end of ejection are not functioning normally. 4. The loading motor drive voltage is lower than specified or power is not supplied to the motor (MDA). 5. When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the capstan EMG is not detected in STILL/SLOW/FF/REW modes.	1. The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). 2. The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. 3. The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. 4. Power is not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	1. The SW 5 V power supply circuit is shorted with GND. 2. The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	1. The absolute value sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. 4. The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	1. The FG sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. 4. The power to the sensor is not supplied. (Connection failure/soldering failure) 5. The FG pulse is not sent to the System Controller CPU. 6. The tilt motor is defective. (The soldered parts have separated.) 7. The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) 8. The tilt motor drive MDA - IC is defective. 9. Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). However, note that the reel EMG is not detected in the SLOW/STILL mode.	1. The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The FG pulse output from the supply reel sensor is absent. 2. The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The FG pulse output from the take-up reel sensor is absent. 3. The power to a reel sensor is not supplied.
EC1 or EU1: Head clog warning	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:C1] or [E:U1] is identified and recorded in the emergency history. During the period in which a head clog is detected, the FDP and OSD repeat the “3-second warning display” and “7-second noise picture display” alternately. EMG code : “E:C1” or “E:U1” / FDP : “U:01” / OSD : “Try cleaning tape.” or “Use cleaning cassette.” The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

1.8.4 EMG detail information <1>

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest EMG can be confirmed based on the figure in EMG detail information <1> .

[FDP/OSD display]

* 1 : * 2 : 34

- * 1 : Deck operation mode at the moment of EMG
- * 2 : Mechanism operation mode at the moment of EMG
- 3— : Mechanism sensor information at the moment of EMG
- 4 : Mechanism mode position at the moment of EMG

Note:

- **For EMG detailed information <1>, the content of the code that is shown on the FDP (or OSD) differs depending on the parts number of the system control microprocessor (IC3001) of the VCR. The system control microprocessor parts number starts with two letters, refer these to the corresponding table.**

* 1 : Deck operation mode

[Common table of MN*, HD* and M3*]

Display		Deck operation mode
MN*/M3*	HD*	
00	-	Mechanism being initialized
01	00	STOP with pinch roller pressure off (or tape present with P.OFF)
02	01	STOP with pinch roller pressure on
03	-	POWER OFF as a result of EMG
04	04	PLAY
0C	0E	REC
10	11	Cassette ejected
20	22	FF
21	-	Tape fully loaded, START sensor ON, short FF
22	-	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	26	FWD SEARCH (variable speed) including x2-speed
2C	2E	INSERT REC
40	43	REW
42	-	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	47	REV SEARCH (variable speed)
4C	4C	AUDIO DUB
6C	6E	INSERT REC (VIDEO + AUDIO)
84	84	FWD STILL / SLOW
85	85	REV STILL / SLOW
8C	8F	REC PAUSE
8D	-	Back spacing
8E	-	Forward spacing (FWD transport mode with BEST function)
AC	AF	INSERT REC PAUSE
AD	-	INSERT REC back spacing
CC	CD	AUDIO DUB PAUSE
CD	-	AUDIO DUB back spacing
EC	EF	INSERT REC (VIDEO + AUDIO) PAUSE
ED	-	INSERT REC (VIDEO + AUDIO) back spacing

* 2 : Mechanism operation mode

[Common table of MN* and M3*]

Display		Mechanism operation mode
MN*	M3*	
00	00	Command standby (Status without executing command)
02	02	POWER OFF by EMG occurrence
04	04	Moving to the adjacent position in the LOAD direction
06	06	Moving to the adjacent position in the UNLOAD direction
08	08	Cassette ejection being executed / Cassette housing ejection being executed
-	0A	Mode transition to STOP with cassette ejection end
0A	0C	Cassette insertion being executed
0C	0E	Tape being loaded
0E	10	Tape being unloaded
10	12	Mode transition to STOP with pinch roller compression ON
12	14	Mode transition to STOP with pinch roller compression OFF
14	16	Mode transition to STOP with pinch roller compression OFF as a result of POWER OFF
16	18	Mode transition to STOP with pinch roller compression ON as a result of POWER ON
18	1A	Mode transition to PLAY
1A	1C	Mode transition to FWD SEARCH
1C	1E	Mode transition to REC
1E	20	Mode transition to FWD STILL / SLOW
20	22	Mode transition to REV STILL / SLOW
22	24	Mode transition to REV SEARCH
24	26	Mode transition from FF / REW to STOP
26	28	Mode transition to FF
28	2A	Mode transition to REW
2A	2C	4 sec. of REV as a result of END sensor going ON during loading
2C	2E	Short FF / REV as a result of END sensor going ON during unloading
2E	30	Mechanism position being corrected due to overrun
80	80	Mechanism in initial position (Dummy command)

[Table of HD*]

Display	Mechanism operation mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)

3- : Mechanism sensor information [Common table of MN*, HD* and M3*]

Display	Mechanism sensor information				
	MN* / HD* S-VHS SW	M3* CASS SW	REC safety SW	Start sensor	End sensor
0-	VHS	Cassette insertion	Tab broken	ON	ON
1-	VHS	Cassette insertion	Tab broken	ON	OFF
2-	VHS	Cassette insertion	Tab broken	OFF	ON
3-	VHS	Cassette insertion	Tab broken	OFF	OFF
4-	VHS	Cassette insertion	Tab present	ON	ON
5-	VHS	Cassette insertion	Tab present	ON	OFF
6-	VHS	Cassette insertion	Tab present	OFF	ON
7-	VHS	Cassette insertion	Tab present	OFF	OFF
8-	S-VHS	Cassette ejection	Tab broken	ON	ON
9-	S-VHS	Cassette ejection	Tab broken	ON	OFF
A-	S-VHS	Cassette ejection	Tab broken	OFF	ON
B-	S-VHS	Cassette ejection	Tab broken	OFF	OFF
C-	S-VHS	Cassette ejection	Tab present	ON	ON
D-	S-VHS	Cassette ejection	Tab present	ON	OFF
E-	S-VHS	Cassette ejection	Tab present	OFF	ON
F-	S-VHS	Cassette ejection	Tab present	OFF	OFF

-4 : Mechanism mode position [Common table of MN*, HD* and M3*]

Display			Mechanism mode position
MN*	HD*	M3*	
-0	-7	-	Initial value
-1	-0	-	EJECT position
-	-	-0	EJECT position (Cassette housing drive mode)
-2	-7	-	Housing operating
-	-	-1	Between EJECT and U / L STOP
-3	-1	-2	U / L STOP position
-	-	-3	Guide arm drive position
-4	-7	-4	Tape being loaded / unloaded (When the pole base is located on the front side of the position just beside the drum)
-5	-2	-5	Tape being loaded / unloaded (When the pole base is located on the rear side of the position just beside the drum)
-6	-7	-6	Pole base compressed position
-7	-3	-F	FF / REW position
-8	-7	-F	Between FF / REW and STOP with pinch roller compression ON
-9	-4	-F	STOP with pinch roller compression OFF
-A	-7	-E	Between STOP with pinch roller compression OFF and REV
-B	-5	-	REV (REV STILL / SLOW) position
-	-	-D	REV position
-	-	-C	Between REV and REV STILL / SLOW
-	-	-B	REV STILL / SLOW position
-C	-7	-	Between REV and FWD
-	-	-A	Between REV STILL / SLOW and FWD STILL / SLOW
-D	-6	-	FWD (FWD STILL / SLOW) position
-	-	-9	FWD STILL / SLOW position
-E	-7	-	Between FWD and PLAY
-	-	-8	Between FWD STILL / SLOW and PLAY
-F	-6	-7	PLAY position

Note:

- In the case of the "HD*" microprocessor, as the display is always "-7" at any intermediate position between modes, the position of transitory EMG may sometimes not be located.

1.8.5 EMG detail information <2>

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information <2> .

[FDP/OSD display]

*5 : *6 : *7

- *5 : Type of the cassette tape in use <1>
- *6 : Winding position of the cassette tape in use
- *7 : Type of the cassette tape in use <2> (Winding area)

Note:

- EMG detail information <2> is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.

*5 : Cassette tape type <1>

Display	Cassette tape type <1>
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- Cassette tape type <1> is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.
- If other value than those listed in the above table is displayed, the cassette tape type is not identified.

*6 : Cassette tape winding position

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 22 sections using a hex number from "00" to "15".

- "00" : End of winding
- "15" : Beginning of winding
- "FF or --" : Tape position not identified

*7 : Cassette tape type <2> (Winding area)

Display	Cassette tape type <2>
00	Cassette type not identified
07	Small reel, thick tape T-5
08 - 0E	C cassette, thick tape TC-10
09 - 15	C cassette, thick tape TC-20P
0A - 0B	Small reel, thick tape T-20
0A - 16	C cassette, thin tape TC-30
0A - 16	C cassette, thin tape TC-40
0D - 0F	Small reel, thick tape T-40
11 - 14	Small reel, thick tape T-60
15 - 18	Small reel, thick tape T-80 / DF-160
17 - 1A	Small reel, thick tape T-90 / DF-180
19 - 1D	Small reel, thick tape T-100
1D - 21	Small reel, thick tape T-120 / DF-240
1E - 1F	Small reel, thin tape T-140
1F - 23	Small reel, thick tape T-130
21 - 23	Small reel, thin tape T-160
21 - 23	Small reel, thin tape T-168
22 - 24	Small reel, thick tape DF-300
22 - 24	Small reel, thin tape T-180 / DF-360
22 - 24	Small reel, thin tape T-210 / DF-420
22 - 23	Large reel T-5
23 - 24	Large reel T-10
25 - 26	Large reel T-20
27 - 29	Large reel T-30
29 - 2B	Large reel T-40
2D - 2F	Large reel T-60

Note:

- The values of cassette tape type <2> in the above table are typical values with representative cassette tapes.

SECTION 2 MECHANISM ADJUSTMENT

2.1 Before starting repair and adjustment

2.1.1 Precautions

- (1) Unplug the power cord plug of the VCR before using your soldering iron.
- (2) Take care not to cause any damage to the conductor wires when plugging and unplugging the connectors.
- (3) Do not randomly handle the parts without identifying where the trouble is.
- (4) Exercise enough care not to damage the lugs, etc. during the repair work.
- (5) When reattaching the front panel assembly, make sure that the door opener of the cassette holder assembly is lowered in position prior to the reinstallation. (See SECTION 1 DISASSEMBLY.)
- (6) When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DISASSEMBLY.)

2.1.2 Checking for proper mechanical operations

Enter the mechanism service mode when you want to operate the mechanism when no cassette is loaded. (See SECTION 1 DISASSEMBLY.)

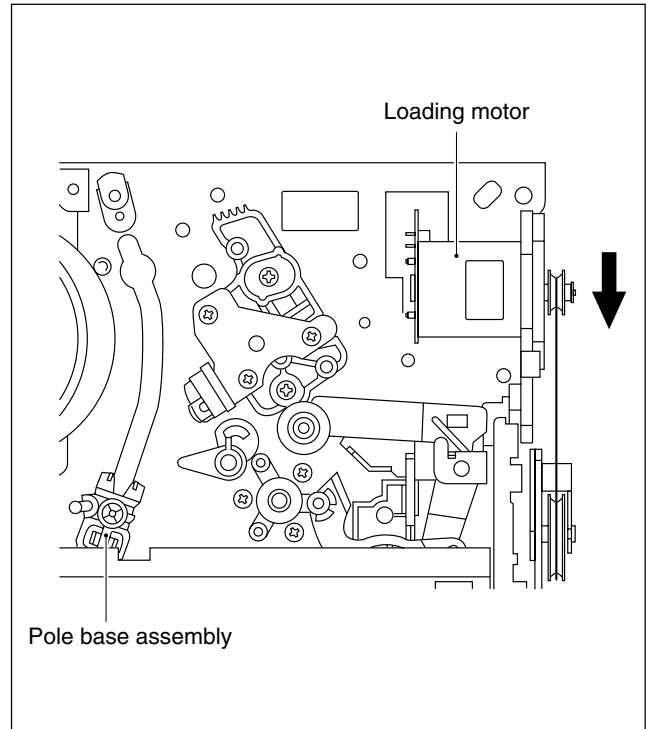


Fig. 2-1-3a

2.1.3 Manually removing the cassette tape

1. In case of electrical failures

If you cannot remove the cassette tape which is loaded because of any electrical failure, manually remove it by taking the following steps.

- (1) Unplug the power cord plug from the power outlet.
- (2) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the drum assembly.
- (3) Unload the pole base assembly by manually turning the loading motor of the mechanism assembly toward the front. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.2-1-3a.)
- (4) Bring the pole base assembly to a pause when it reaches the position where it is hidden behind the cassette tape.
- (5) Move the top guide toward the drum while holding down the lug (A) of the bracket retaining the top guide. Likewise hold part (B) down and remove the top guide. Section (C) of the top guide is then brought under the cassette lid. Then remove the top guide by pressing the whole cassette tape down. (See Fig.2-1-3b.)
- (6) Remove the cassette tape by holding both the slackened tape and the cassette lid.
- (7) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

Note:

- For the disassembly procedure of the major parts and details of the precautions to be taken, see "SECTION 1 DISASSEMBLY".

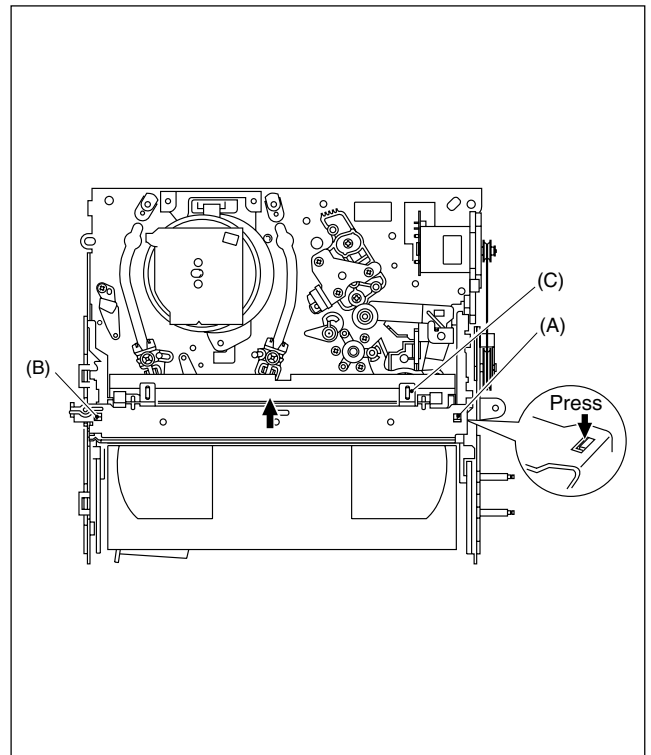


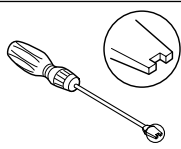
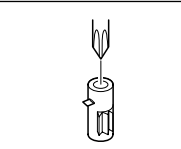
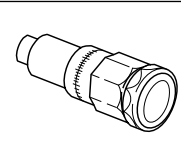
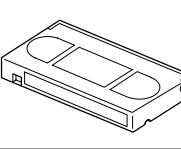
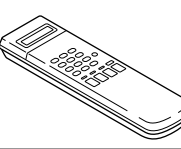
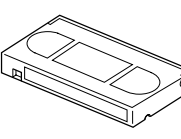
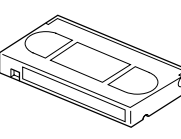
Fig. 2-1-3b

2. In case of mechanical failure

If you cannot remove the cassette tape which is loaded because of any mechanical failure, manually remove it by taking the following steps.

- (1) Unplug the power cable and remove the top cover, front panel assembly and others so that the mechanism assembly is visible. (See SECTION 1 DASSEMBLY.)
- (2) While keeping the tension arm assembly of the mechanism assembly free from tension, pull the tape on the pole base assembly (supply or take-up side) out of the guide roller. (See Fig.2-1-3c.)
- (3) Take the spring of the pinch roller arm assembly off the hook of the press lever assembly, and detach it from the tape. (See Fig.2-1-3d.)
- (4) In the same way as in the electrical failure instructions in 2.1.3-1(5), remove the top guide.
- (5) Raise the cassette tape cover. By keeping it in that position, draw out the cassette tape case from the cassette holder and take out the tape.
- (6) By hanging the pinch roller arm assembly spring back on the hook, take up the slack of the tape into the cassette.

2.1.4 Jigs and tools required for adjustment

Roller driver PTU94002	A/C head positioning tool PTU94010	Torque gauge PUJ48075-2
		
Back tension cassette gauge PUJ48076-2	Jig RCU PTU94023B	
		
Alignment tape (SP, staircase, PAL) MHPE	Alignment tape (LP, staircase, PAL) MHPE-L	
		

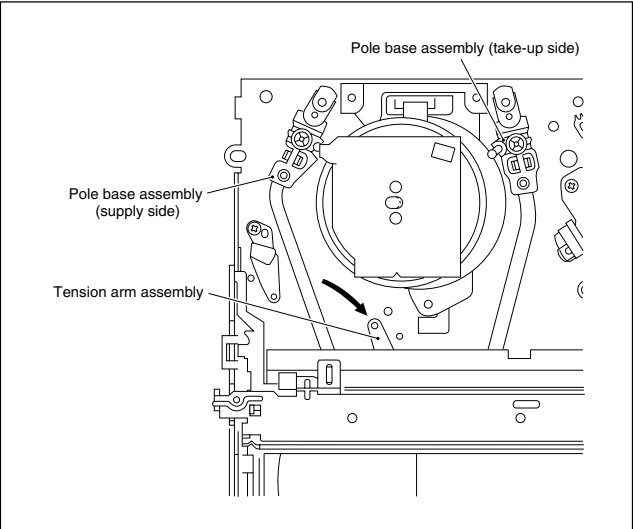


Fig. 2-1-3c

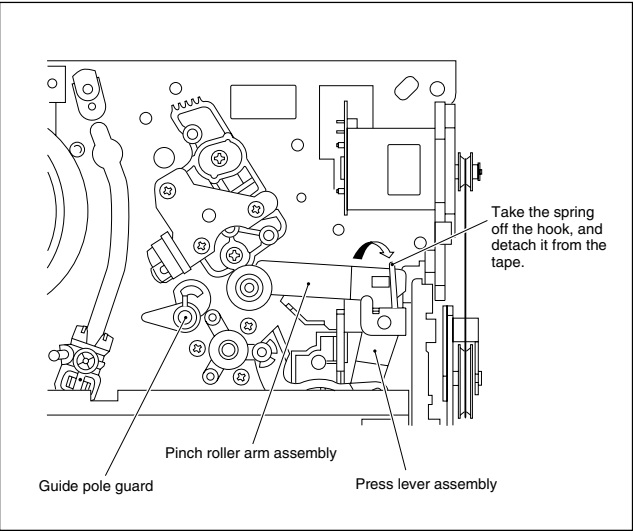


Fig. 2-1-3d

2.1.5 Maintenance and inspection

1. Location of major mechanical parts

In this chapter, the two mechanism speeds are described by comparing the speeds of the standard type and the high-speed FF/REW type.

It is possible to distinguish between these two types of mechanism by the diameters of their capstan pulleys.

The capstan pulley diameter for the standard type is approx. 32 mm.

The capstan pulley diameter for the high-speed FF/REW type is approx. 43 mm.

For information on the different parts used in the two mechanism types, please refer to the “Replacement of major parts”.

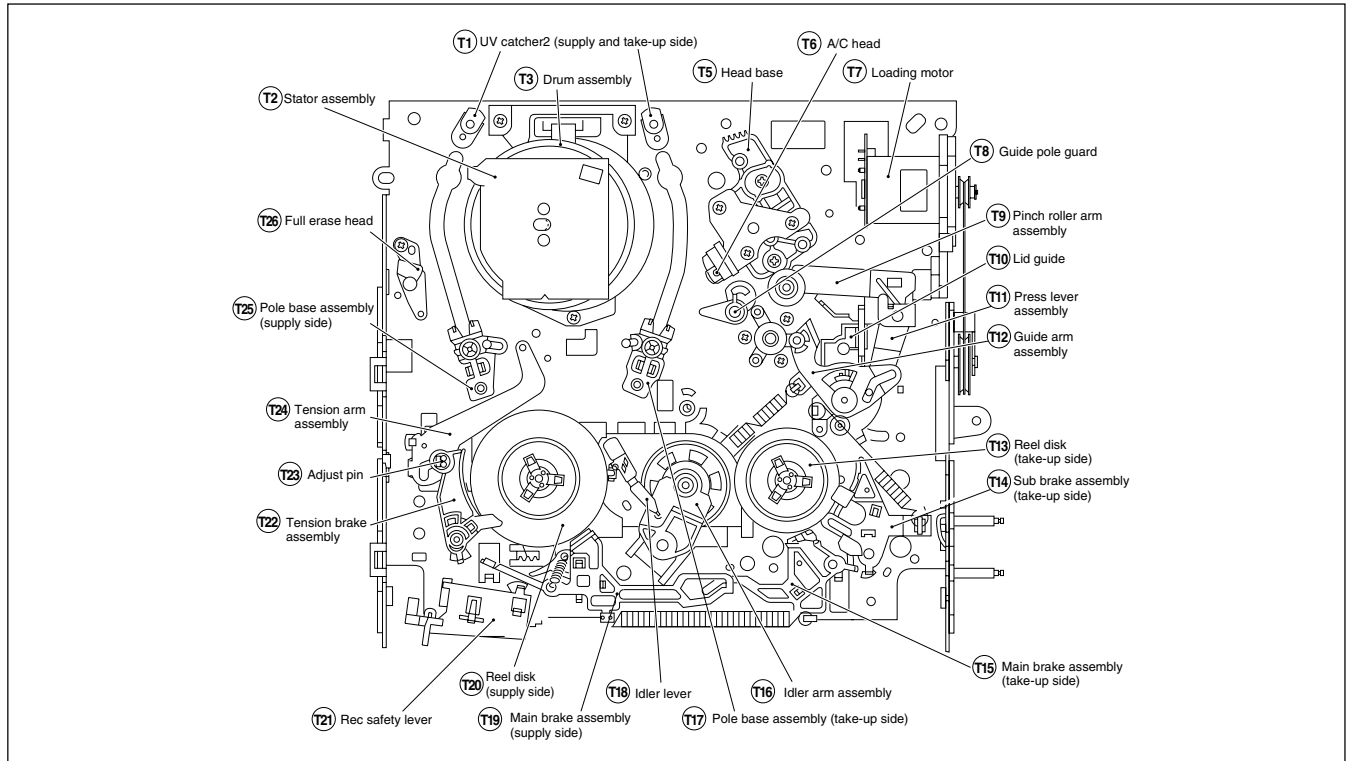


Fig. 2-1-5a Mechanism assembly top side

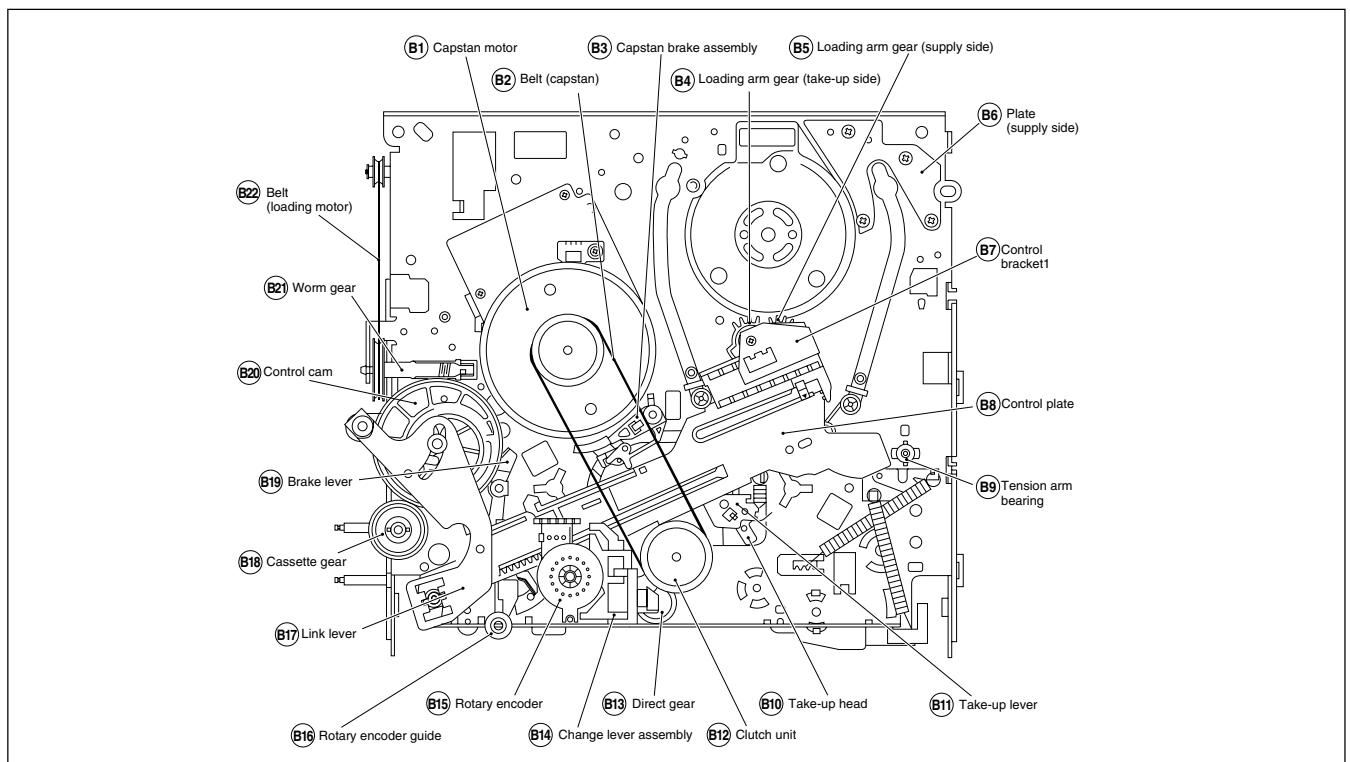


Fig. 2-1-5b Mechanism assembly bottom side

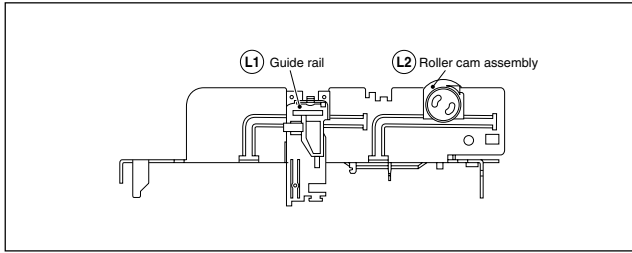


Fig. 2-1-5c Mechanism assembly left side

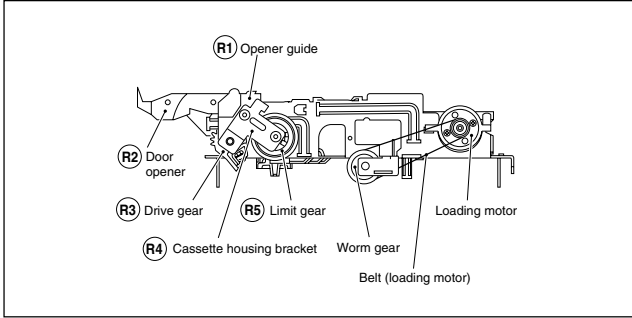


Fig. 2-1-5d Mechanism assembly right side

2. Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

- (1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note:

- **Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.**

- (2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
- (3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

3. Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- **See the “mechanism assembly” diagram of the parts list for the lubricating or greasing spots, and for the types of oil or grease to be used.**

4. Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Capstan motor (Shaft)	★	★
	Guide arm assembly	★	★
	Capstan motor		○
Drive	Capstan brake assembly		○
	Main brake assembly		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Clutch unit		○
	Worm gear		○
	Control plate		○
	Brush	★○	★○
Other	Tension brake assembly	○	○
	Rotary encoder		○

★ : Cleaning

○ : Inspection or replacement if necessary

Table 2-1-5a

5. Disassembling procedure table

The following table indicates the order in which parts are removed for replacement. To replace parts, remove them in the order of 1 to 18 as shown in the table. To install them, reverse the removal sequence.

The symbols and numbers preceding the individual part names represent the numbers in the “Location of major mechanical parts” table. Also, the “T”, “B”, and “T/B” on the right of each part name shows that the particular part is removed from the front, from the back, and from both sides of the mechanism, respectively.

Symbols and numbers	Symbols and numbers		Front (T)/Back (B) of mechanism	Number of removal steps	Guide rail	Roller cam assembly	Cassette housing bracket	Opener guide	Relay gear	Cassette holder assembly	Drive gear	Drive arm	Pinch roller arm assembly	Guide arm assembly	Press lever assembly	UV catcher2	Rotary encoder	Clutch unit	Change lever assembly	Direct gear	Coupling gear	Link lever	Worm gear	Control bracket1	Control plate	Loading arm gear (supply side)	Loading arm gear (take-up side)	Take-up lever	Sub brake assembly (take-up side)	Main brake assembly (take-up side)	Reel disk (take-up side)	Tension brake assembly	Tension arm assembly	Idler lever	Brake lever (*1)	
	Removal parts	(Reference items) Replacement parts																																		
L1	2.2.3	Guide rail	T	1																																
L2	2.2.3	Roller cam assembly	T	1																																
R4	2.2.3	Cassette housing bracket	T	1																																
R1	2.2.3	Opener guide	T	2			1																													
R2	2.2.3	Door opener	T	3			1	2																												
—	2.2.3	Relay gear	T	3			1	2																												
R5	2.2.3	Limit gear	T	3			1	2																												
—	2.2.3	Cassette holder assembly	T	6	1	2	3	4	5																											
R3	2.2.3	Drive gear	T	4			1	2	3																											
—	2.2.3	Drive arm	T	8	1	2	3	4	5	6	7																									
T9	2.2.4	Pinch roller arm assembly	T	1																																
T12	2.2.5	Guide arm assembly	T	1																																
T11	2.2.5	Press lever assembly	T	3										1	2																					
T6	2.2.6	A/C head	T	1																																
T7	2.2.7	Loading motor	T	1																																
B1	2.2.8	Capstan motor	T/B	1																																
T1	2.2.9	UV catcher2	T	1																																
T17	2.2.9	Pole base assembly (take-up side)	T/B	2												1																				
T25	2.2.9	Pole base assembly (supply side)	T/B	2												1																				
B15	2.2.10	Rotary encoder	B	1																																
B12	2.2.11	Clutch unit	B	1																																
B14	2.2.12	Change lever assembly	B	3													1	2																		
B13	2.2.12	Direct gear	B	4													1	2	3																	
—	2.2.12	Coupling gear	B	5													1	2	3	4																
—	2.2.12	Clutch gear	B	6													1	2	3	4	5															
B17	2.2.13	Link lever	B	1																																
B18	2.2.14	Cassette gear	B	2																			1													
B20	2.2.14	Control cam	B	2																			1													
B21	2.2.14	Worm gear	B	1																																
T10	-	Lid guide	T/B	5										1	2	3								4												
B7	2.2.15	Control bracket1	B	1																																
B8	2.2.15	Control plate	B	6														1	2	3			4		5											
B5	2.2.16	Loading arm gear (supply side)	B	7														1	2	3			4		5	6										
B4	2.2.16	Loading arm gear (take-up side)	B	8														1	2	3			4		5	6	7									
—	2.2.16	Loading arm gear shaft	B	9														1	2	3			4		5	6	7	8								
B11	2.2.17	Take-up lever	T/B	7														1	2	3			4		5	6										
B10	2.2.17	Take-up head	T/B	8														1	2	3			4		5	6			7							
—	2.2.17	Control plate guide	T/B	8														1	2	3			4		5	6			7							
B3	2.2.18	Capstan brake assembly	T/B	7														1	2	3			4		5	6										
T14	2.2.19	Sub brake assembly (take-up side)	T/B	15	1	2	3	4	5	6	7	8						9	10	11			12		13	14										
T15	2.2.20	Main brake assembly (take-up side)	T/B	16	1	2	3	4	5	6	7	8						9	10	11			12		13	14			15							
T19	2.2.20	Main brake assembly (supply side)	T/B	9	1	2	3	4	5	6	7	8																								
T13	2.2.20	Reel disk (take-up side)	T/B	16	1	2	3	4	5	6	7	8						9	10	11			12		13	14			15							
T22	2.2.21	Tension brake assembly	T/B	9	1	2	3	4	5	6	7	8																								
T20	2.2.21	Reel disk (supply side)	T/B	10	1	2	3	4	5	6	7	8																						9		
T24	2.2.21	Tension arm assembly	T/B	10	1	2	3	4	5	6	7	8																						9		
B9	2.2.21	Tension arm bearing	T/B	10	1	2	3	4	5	6	7	8																						9		
T18	2.2.22	Idler lever	T/B	17	1	2	3	4	5	6	7	8						9	10	11			12		13	14						15	16			
T16	2.2.22	Idler arm assembly	T/B	18	1	2	3	4	5	6	7	8						9	10	11			12		13	14						15	16	17		
B19	-	Brake lever (*1)	T/B	18	1	2	3	4	5	6	7	8						9	10	11			12		13	14			15	16	17					
B16	-	Rotary encoder guide	T/B	19	1	2	3	4	5	6	7	8						9	10	11			12		13	14			15	16	17					18

Table 2-1-5b

Note:

• The parts with marked (★) have different types of mechanisms (standard type or high-speed FF/REW type).

★ 1 : Uses the standard type mechanism only.

★ 2 : Uses the high-speed FF/REW type mechanism only.

2.2 Replacement of major parts

2.2.1 Before starting disassembling (Phase matching between mechanical parts)

The mechanism of this unit is closely linked with the rotary encoder and system controller circuits.

Since the system controller detects the status of mechanical operation in response to phases of the rotary encoder (internal switch positions), the mechanism may not operate properly unless such parts as the rotary encoder, control plate, loading arm gear, control cam, cassette gear, limit gear, relay gear and drive gear are installed in their correct positions.

Especially, this model is not provided with any cassette housing assembly, so that cassette loading and unloading must be accomplished by operation of the cassette holder assembly. The latter is in turn driven by such parts as the drive gear, relay gear and limit gear. Exercise enough care, therefore, to have the phases of all this gear matching one another. (For information on phase matching of the mechanism, see the instructions on how to install individual parts.)

This unit is provided with a mechanism assembly mode. It is therefore necessary to enter this mode for assembling and disassembling procedures.

This mode is usually not in use, manually set it when it is required.

2.2.2 How to set the “Mechanism assembling mode”

Remove the mechanism assembly and place it bottom side up. (See SECTION 1 DISASSEMBLY.) Turn the worm gear toward the front so that the guide hole of the control cam is brought into alignment with the hole at the mechanism assembly chassis. This position renders the mechanism assembling mode operational. Make sure that the control plate is located in alignment with the mark E. (See Fig.2-2-2a.)

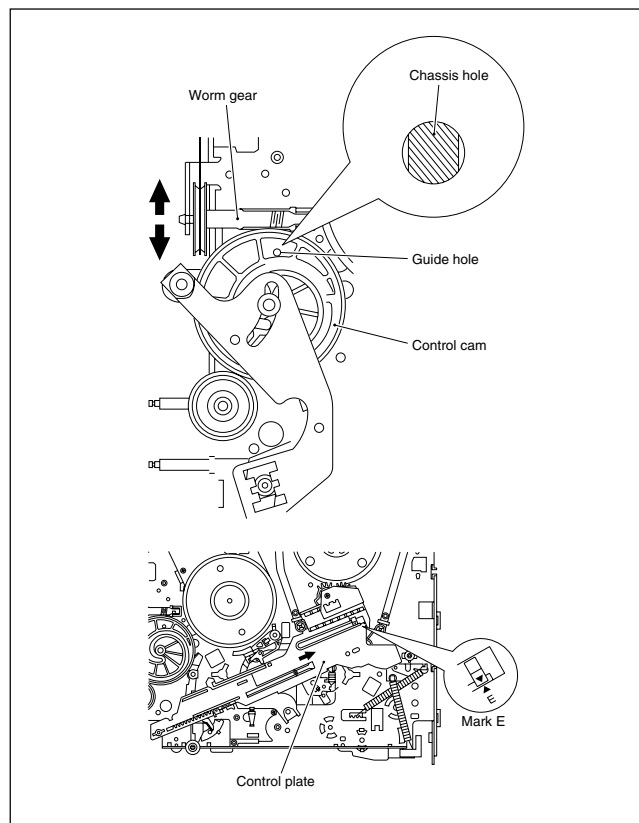


Fig. 2-2-2a

2.2.3 Cassette holder assembly

1. How to remove

- (1) Remove the guide rail and roller cam assembly. (See Fig.2-2-3a.)
(3 lugs on the guide rail and one lug on the roller cam assembly)

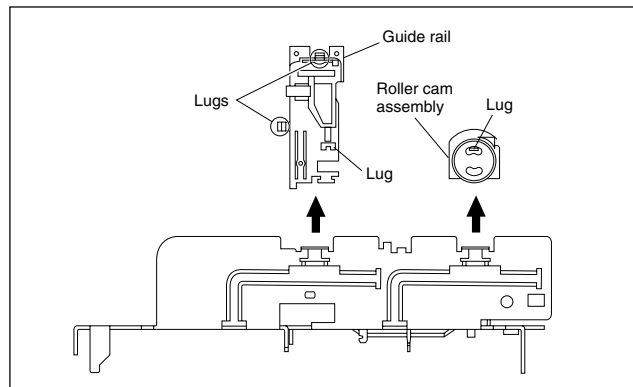


Fig. 2-2-3a

- (2) Remove the two slit washers and remove the cassette housing bracket. (See Fig.2-2-3b.)
- (3) Remove the opener guide, spring(A), door opener, relay gear and limit gear. (See Fig.2-2-3b.)

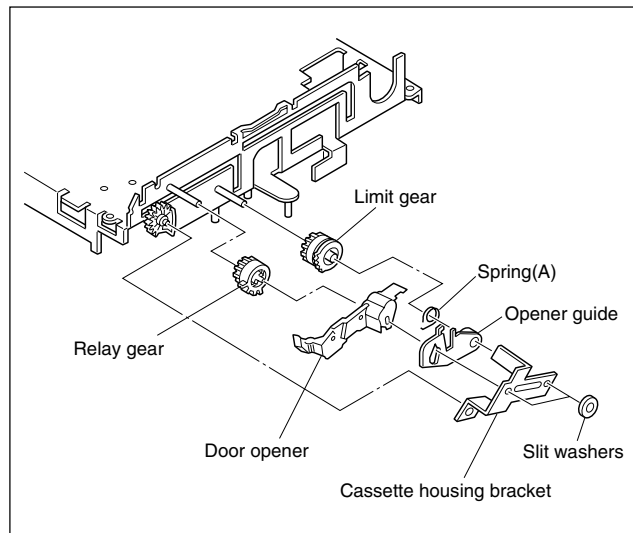


Fig. 2-2-3b

- (4) While swinging the lock levers (R) and (L) of the cassette holder assembly toward the front, slide the cassette holder assembly until its legs come to where the guide rail and the roller cam assembly have been removed (so that the drive arm is upright). (See Fig.2-2-3c.)

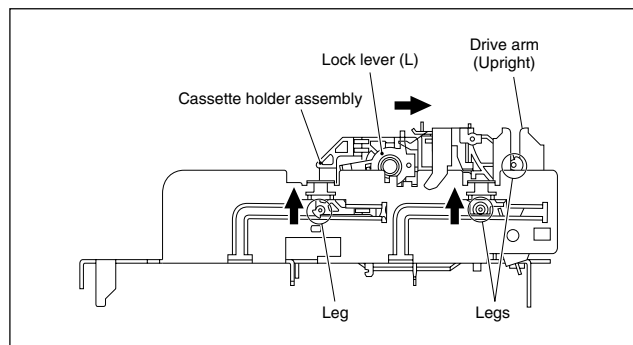


Fig. 2-2-3c

- (5) While holding the left side of the cassette holder, lift the cassette holder assembly so that the three legs on the left side are all released. Then pull the legs (A) and (B) on the right side out of the rail and also pull up the leg (C). (See Fig.2-2-3d and Fig.2-2-3e.)
- (6) Draw out the drive gear, and remove the drive arm.

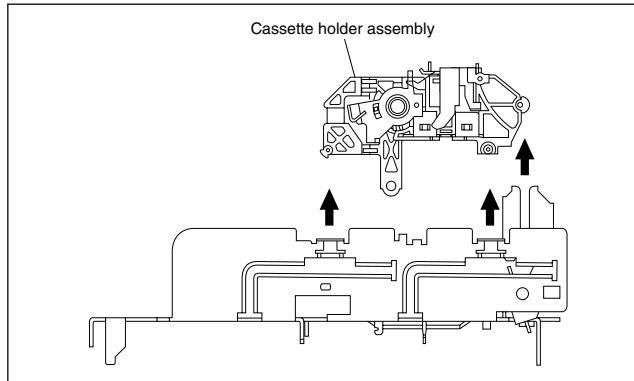


Fig. 2-2-3d

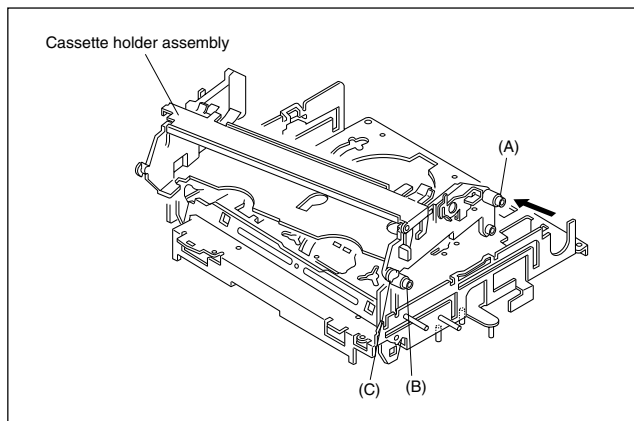


Fig. 2-2-3e

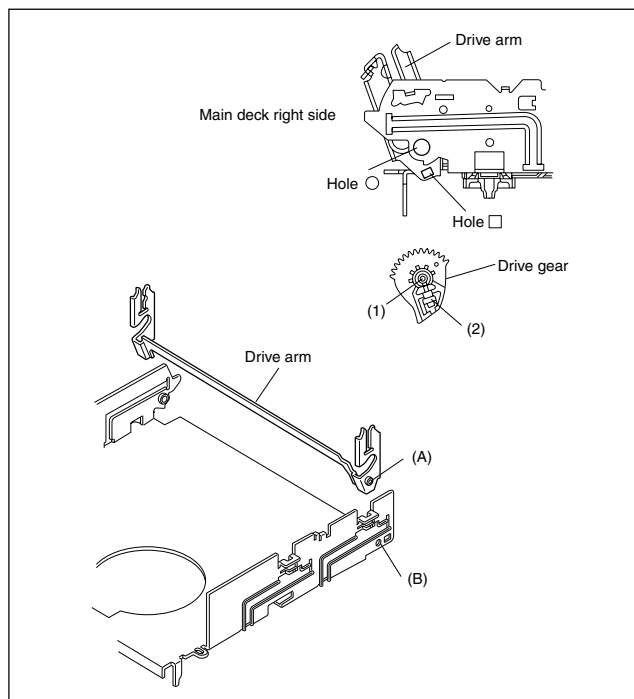


Fig. 2-2-3f

2. How to install (Phase matching)

- (1) Insert the section (A) of the drive arm into the section (B) of the main deck.
- (2) Insert the section (1) of the drive gear into the round hole, and the section (2) into the square hole on the drive arm. (See Fig.2-2-3f.)
- (3) Hold the drive arm upright and fit the leg (C) on the right side of the cassette holder assembly into the groove. (See Fig.2-2-3g.)
- (4) While swinging the lock lever (R) of the cassette holder assembly toward the front, put the legs (A) and (B) into the rail. (See Fig.2-2-3g.)
- (5) Drop the three legs on the left side of the cassette holder assembly into the groove at one time. (See Fig.2-2-3h.)
- (6) Slide the whole cassette holder assembly toward the front to bring it to the eject end position.
- (7) Install the limit gear so that the notch on the outer circumference of the limit gear is brought into alignment with the guide hole on the main deck. (See Fig.2-2-3i.)
- (8) Install so that the notch on the periphery of the relay gear is aligned with the notch of the main deck and that hole A of the relay gear is aligned with the hole B of the limit gear and that hole B of the relay gear is aligned with the hole B of the drive gear. (See Fig.2-2-3i.)
- (9) Install the door opener, opener guide, spring(A) and cassette housing bracket and fasten the two slit washers.

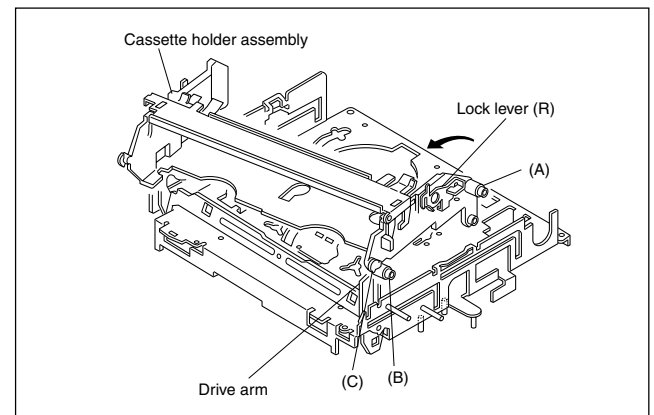


Fig. 2-2-3g

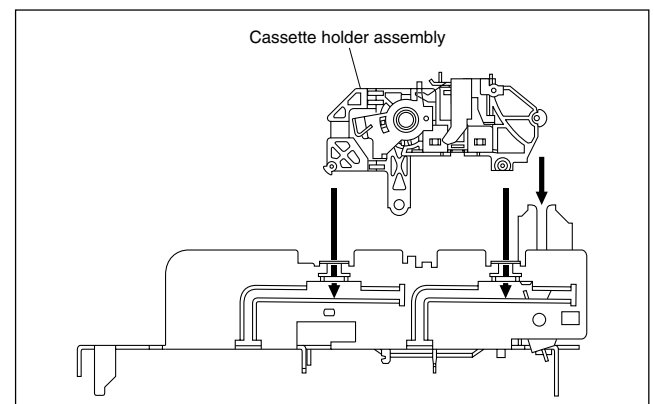


Fig. 2-2-3h

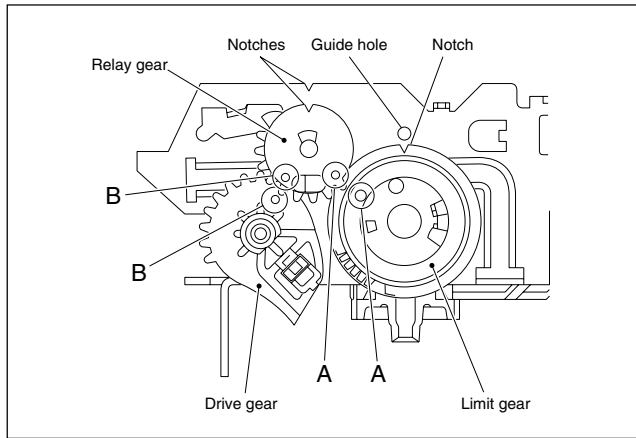


Fig. 2-2-3i

2.2.4 Pinch roller arm assembly

1. How to remove

- (1) Remove the spring from the hook of the press lever assembly.
- (2) Remove the slit washer and remove the pinch roller seat 2. (See Fig.2-2-4a.)
- (3) Remove the pinch roller arm assembly by pulling it up.

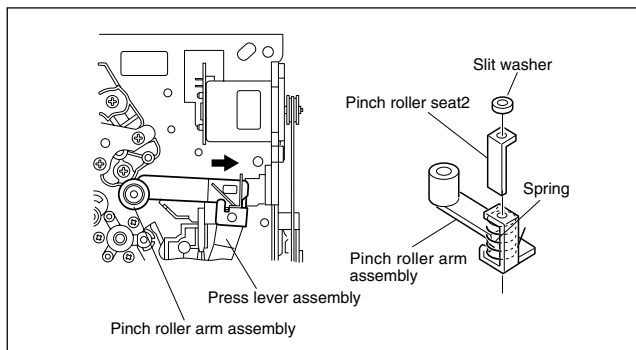


Fig. 2-2-4a

2.2.5 Guide arm assembly and press lever assembly

1. How to remove

- (1) Remove the spring and expand the lug of the lid guide in the arrow-indicated direction. Then remove the guide arm assembly by pulling it up.
- (2) Remove the press lever assembly by pulling it up. (See Fig.2-2-5a.)

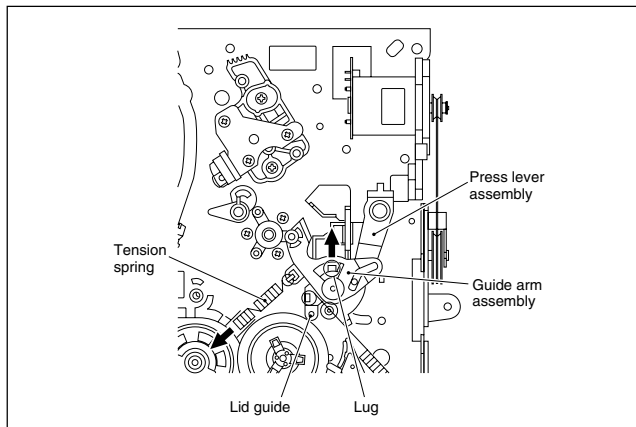


Fig. 2-2-5a

2.2.6 A/C head

1. How to remove

- (1) Remove the two screws (A) and remove the A/C head together with the head base.
- (2) When replacing only the A/C head, remove the three screws (B) while controlling the compression spring.

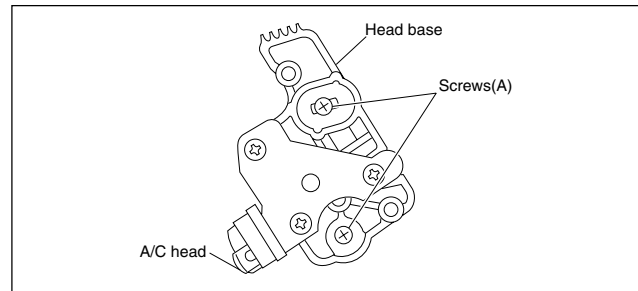


Fig. 2-2-6a

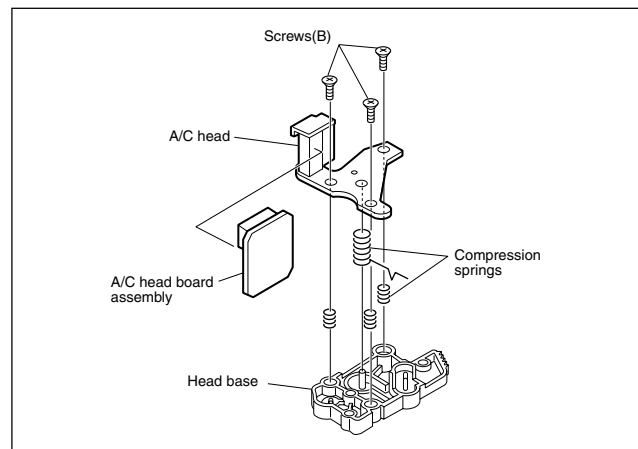


Fig. 2-2-6b

2. How to install

- (1) To make the post-installation adjustment easier, set the temporary level as indicated in Fig.2-2-6c. Also make sure that the screw center (centre) is brought into alignment with the center (centre) position of the slot.

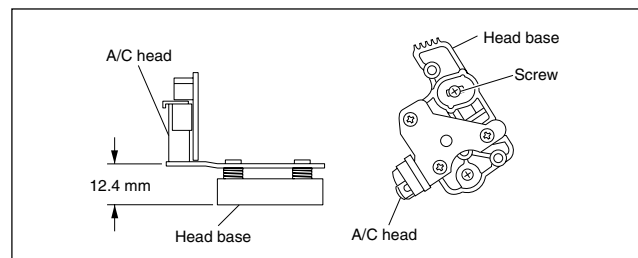


Fig. 2-2-6c

2.2.7 Loading motor

1. How to remove

- (1) Remove the belt wound around the worm gear.
- (2) Open the two lugs of the motor guide and remove the loading motor, loading motor board assembly and motor guide altogether by pulling them up.
- (3) When replacing the loading motor board assembly, take care with the orientation of the loading motor. (Install so that the loading motor label faces upward.)
- (4) When the motor pulley has been replaced, choose the fitting dimension as indicated in Fig.2-2-7a.

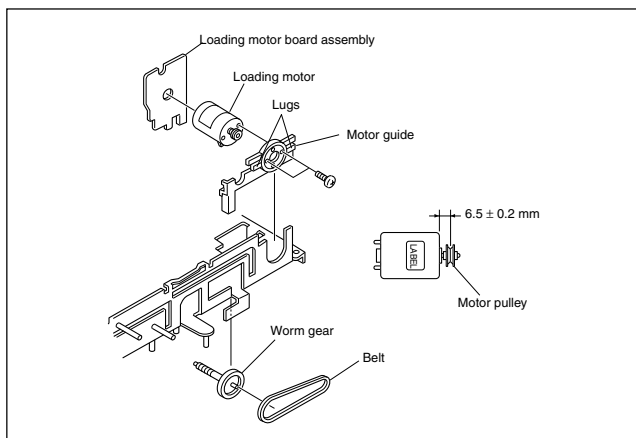


Fig. 2-2-7a

2.2.8 Capstan motor

1. How to remove

- (1) Remove the belt (capstan) on the mechanism assembly back side.
- (2) Remove the three screws (A) and remove the capstan motor.

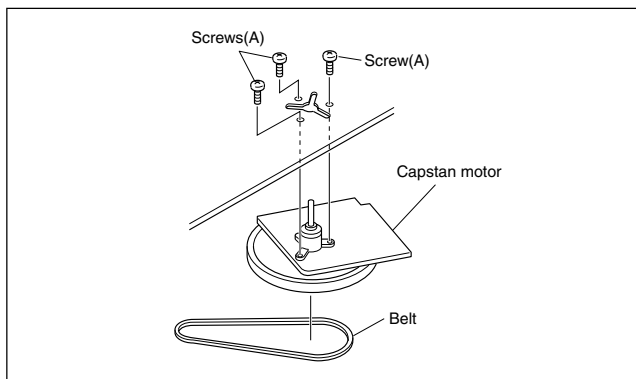


Fig. 2-2-8a

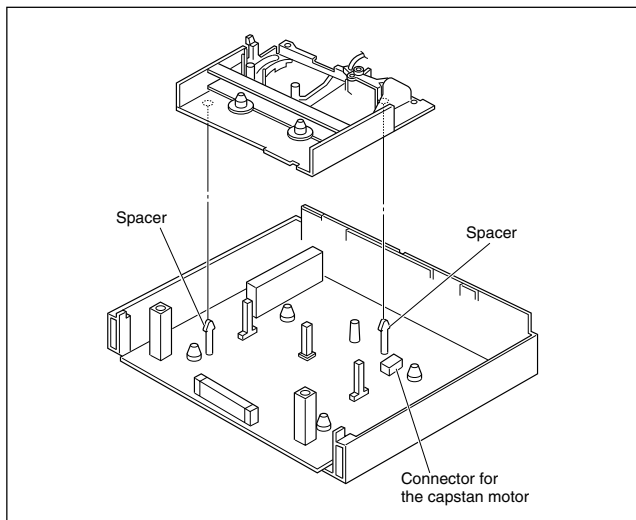


Fig. 2-2-8b

2. How to install (Centering the mounting position)

When the capstan motor has once been removed and then reinstalled out of the initial correct position in the rotational direction, the capstan motor current may be unstable during operation in high or low temperatures. This may result in greater Wow & Flutter and occasionally in power breakdown because of current over - load. Install the capstan motor while following the procedure given below.

(The capstan motor is centrally located when the unit is shipped from the factory.)

- (1) Provisionally tighten the three screws (A) securing the capstan motor.
- (2) Install the mechanism assembly to which the capstan motor is provisionally fastened on the bottom chassis which incorporates the Main board assembly. (No need to tighten the screws for mounting the mechanism.) Make sure that all the connectors for the mechanism assembly and the Main board assembly are correctly installed as indicated in Fig. 2-2-8b.
- (3) Making sure that the connector for the capstan motor is correctly mounted, and securely tighten the three screws (A).

Note:

- **When the capstan motor has been replaced with a new one, perform recording in the EP(or LP) mode for at least 2 minutes at normal temperatures immediately before starting the FF/REW or SEARCH operations (Aging).**

2.2.9 Pole base assembly (supply or take-up side)

1. How to remove

- (1) Remove the UV catcher 2 on the removal side by loosening the screw (A).
- (2) Remove the pole base assembly on the supply side from the mechanism assembly by loosening the screw (B) on the mechanism assembly back side and sliding the pole base assembly toward the UV catcher 2.
- (3) As for the pole base assembly on the take-up side, turn the pulley of the loading motor to lower the cassette holder because the screw (B) is hidden under the control plate. (See the "Procedures for Lowering the Cassette holder assembly" of 1.3 DISASSEMBLY/ASSEMBLY METHOD.) Further turn the motor pulley to move the cassette holder until the screw (B) is no longer under the control plate (in the half-loading position). Then remove it as done for the supply side by removing the screw (B).

Note:

- **After reinstalling the Pole base assembly and the UV catcher2, be sure to perform compatibility adjustment.**

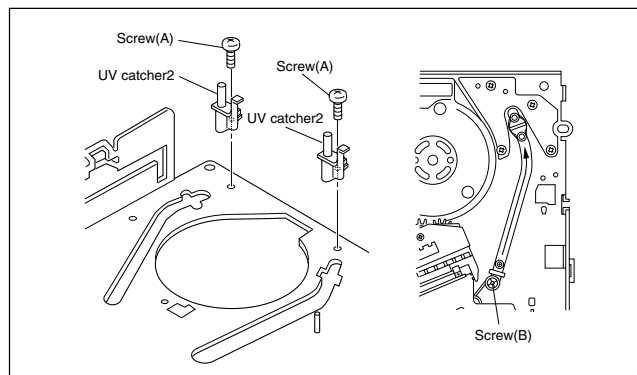


Fig. 2-2-9a

2.2.10 Rotary encoder

1. How to remove

- (1) Remove the screw (A) and remove the rotary encoder by pulling it up. (See Fig. 2-2-10a.)

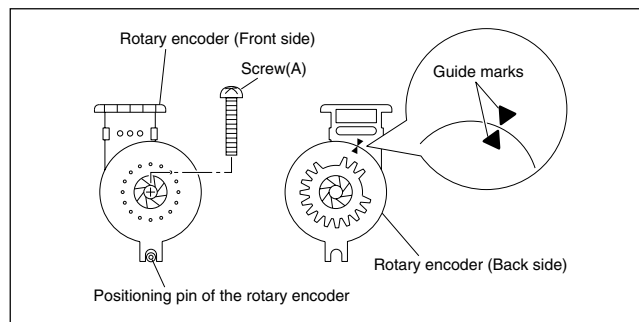


Fig. 2-2-10a

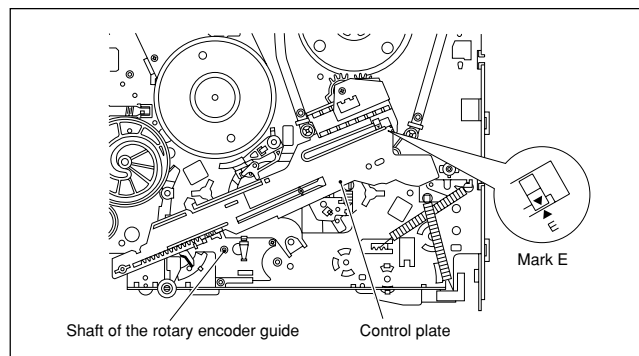


Fig. 2-2-10b

2. How to install (Phase matching)

- (1) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft and bring the guide marks on the rotary encoder into alignment as indicated in Fig.2-2-10a. (See Fig. 2-2-10a and Fig. 2-2-10b.)
- (2) Turn over the rotary encoder with its guide marks kept in alignment and install it by fitting on the shaft of the rotary encoder guide and the positioning pin.
- (3) Tighten the screw (A) to complete the installation.

2.2.11 Clutch unit

- (1) Remove the belt wound around the capstan motor and the clutch unit.
- (2) Remove the slit washer and remove the clutch unit.

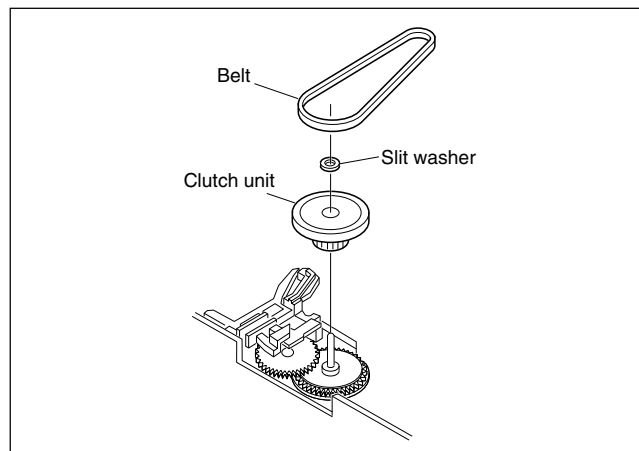


Fig. 2-2-11a

2.2.12 Change lever assembly, direct gear, clutch gear and coupling gear

1. How to remove

- (1) Release the two lugs of the rotary encoder guide in the arrow-indicated direction and remove the change lever assembly.
- (2) Remove the slit washer retaining the direct gear and remove the latter. Take care so as not to lose the washer and spring. (See Fig.2-2-12a.)

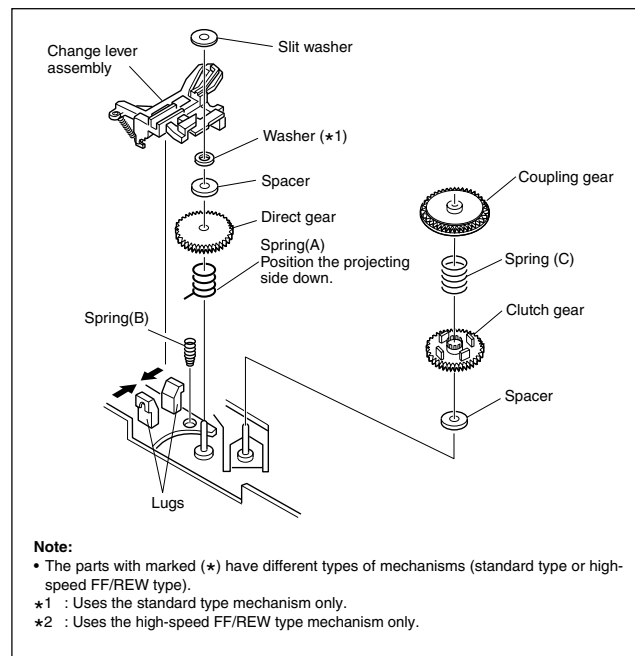


Fig. 2-2-12a

2. How to install

- (1) Install the clutch gear, spring (A), spring (C), direct gear, spacer and others to the individual shafts of the main deck, and finally the slit washer. (See Fig.2-2-12a.)
- (2) Let the spring (B) drops into the rotary encoder guide hole and install the change lever assembly. (Take care not to mistake a direction of the spring.) The point is to slightly lift the coupling gear and catch it from the both sides with the assembly. (See Fig.2-2-12b.)

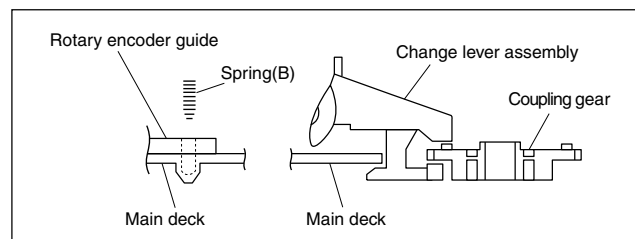


Fig. 2-2-12b

2.2.13 Link lever

1. How to remove

- (1) Remove the two slit washers.
- (2) Remove the link lever by lifting it from the shaft retained by the slit washers. Then swing the link lever counterclockwise and remove it from the locking section of the control plate.

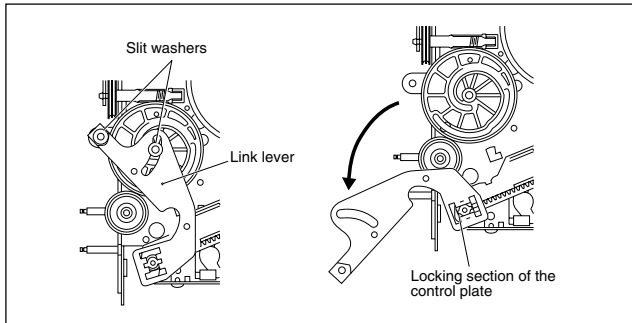


Fig. 2-2-13a

2. How to install (Phase matching)

- (1) Slide the control plate so that its mark E is aligned with the mark ▼ on the loading arm gear shaft. (See Fig.2-2-13b.)
- (2) Rotate the worm gear until the guide hole of the control cam is aligned exactly with the guide hole of the main deck. (See Fig.2-2-13c.)
- (3) Insert the link lever into the locking section of the control plate. (See Fig.2-2-13a.)
- (4) Rotate the link lever clockwise so that it is installed on the shafts in the center (centre) and on the left of the control cam.
- (5) Fasten the slit washers at these two points.

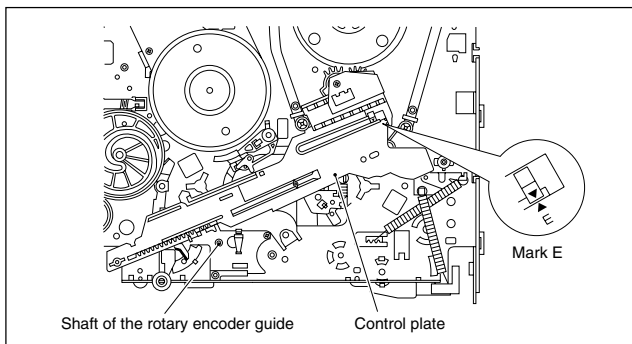


Fig. 2-2-13b

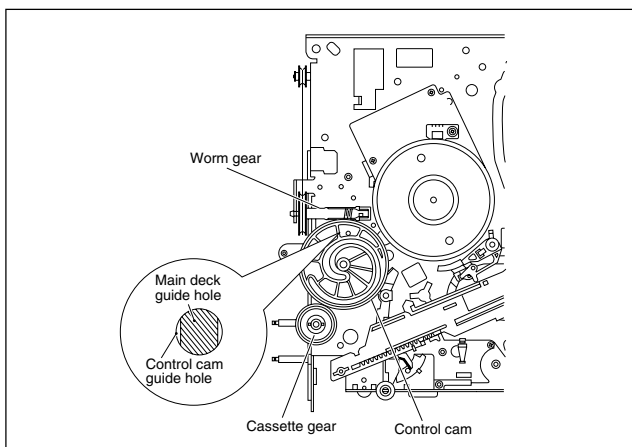


Fig. 2-2-13c

2.2.14 Cassette gear, control cam and worm gear

1. How to remove

- (1) Remove the control cam by lifting it.
- (2) Open the two lugs of the cassette gear outward and pull the latter off.
- (3) Remove the belt wound around the worm gear and the loading motor.
- (4) Open the lug of the lid guide outward and remove the worm gear.

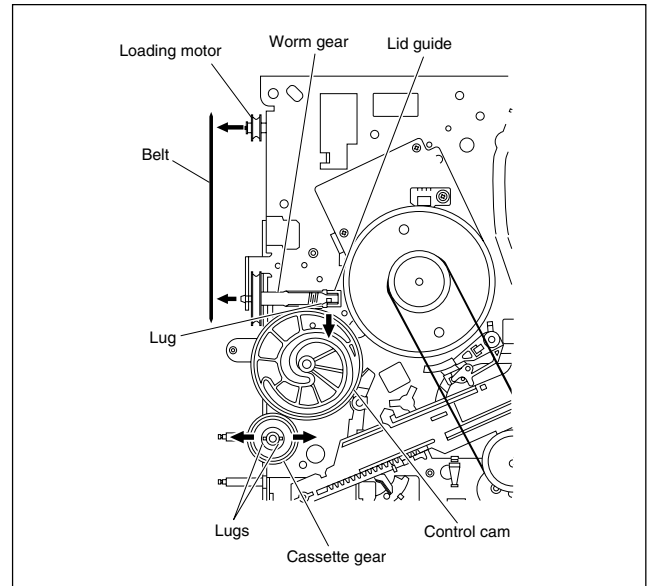


Fig. 2-2-14a

2.2.15 Control plate

1. How to remove

- (1) Remove the screw (A) retaining the control bracket 1 and remove the latter.
- (2) Slide the control plate as indicated by the arrow and remove the control plate. (See Fig.2-2-15a.)

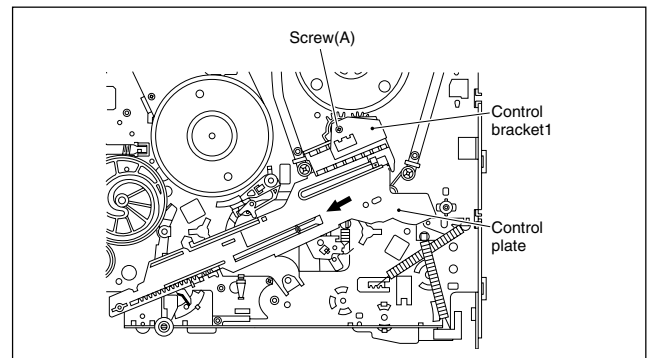


Fig. 2-2-15a

2. How to install (Phase matching)

- (1) Adjust the position of the idler arm assembly pin as indicated in Fig.2-2-15b (to the left of center (centre) of the R section).
- (2) Bring the guide hole of the take-up lever into alignment with the hole at the control plate guide and fix the position by inserting a 1.5 mm hexagonal wrench.

- (3) Install the control plate so that the section A of the loading arm gear shaft fits into the hole (A) of the control plate, the section B of the control plate guide into the hole (B), and the control plate comes under the section C of the rotary encoder guide and the section D of the loading arm gear shaft while press-fit the pole base assembly (supply side) as indicated by the arrow. It is important that the tension arm assembly shaft is positioned closer toward you than the control plate. (See Fig.2-2-15c.)
- (4) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft. (See Fig.2-2-15c.)
- (5) Pull off the hexagonal wrench for positioning.

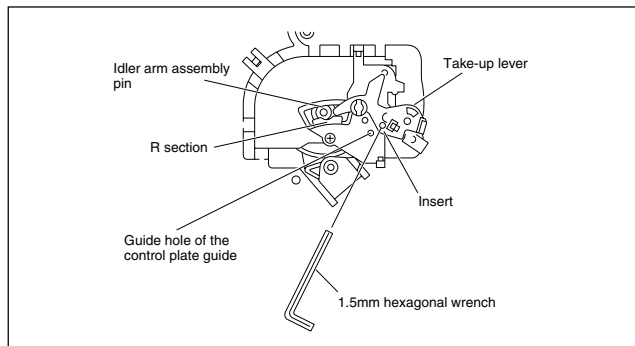


Fig. 2-2-15b

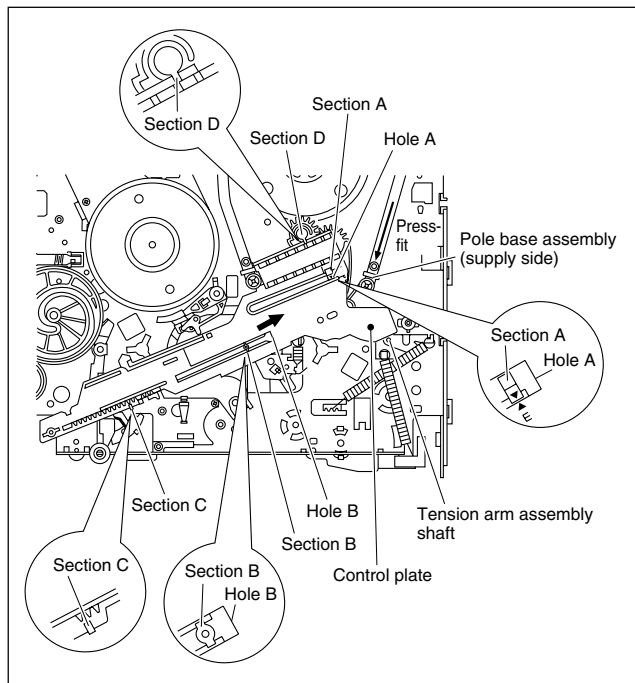


Fig. 2-2-15c

2.2.16 Loading arm gear (supply or take-up side) and loading arm gear shaft

1. How to remove

- (1) Remove the loading arm gear (supply side) by loosening the screw (A). (See Fig. 2-2-16a.)
- (2) Remove the screw (B) and remove the torsion arm from the pole base assembly (take-up side). (See Fig.2-2-16a.)

- (3) Turn the loading arm gear (take-up side) clockwise so that the notch of the loading arm gear (take-up side) is in alignment with the projection of the loading arm gear shaft and lift it. Likewise, turn the loading arm counterclockwise so that the notch is in alignment with the projection and remove the loading arm gear (take-up side). (See Fig.2-2-16a and Fig. 2-2-16b.)
- (4) When removing the loading arm gear shaft, be sure of first removing the screw retaining the drum assembly (on the back side of the loading arm gear shaft). Then remove the screw (C) and remove the loading arm gear shaft by sliding it.

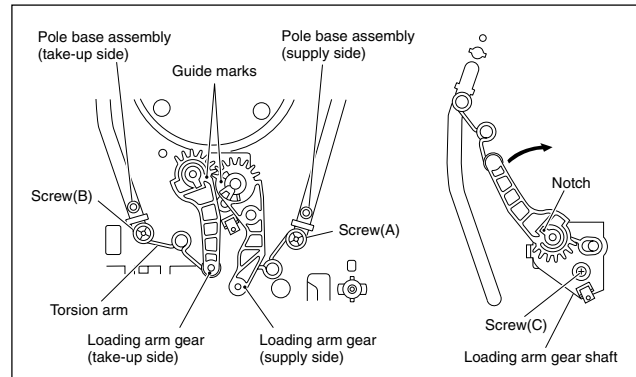


Fig. 2-2-16a

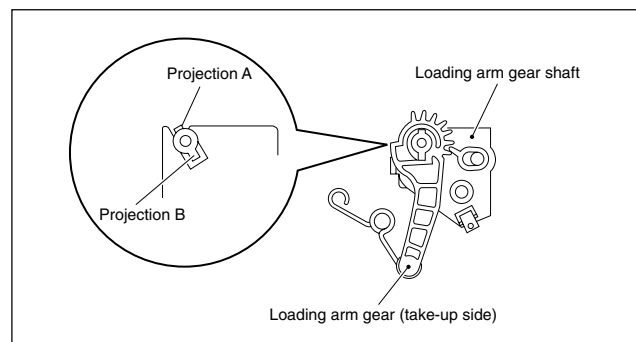


Fig. 2-2-16b

2. How to install

- (1) Align the notch of the loading arm gear (take-up side) to the projection B of the loading arm gear shaft and slip it over. Then rotate it clockwise for alignment with the projection A and slip it down to the bottom. (See Fig.2-2-16b.)
- (2) Then turn the loading arm gear (take-up side) counterclockwise. Hang the torsion arm on the pole base assembly (take-up side) and tighten the screw (B).
- (3) Install the loading arm gear (supply side) so that the guide mark of the loading arm gear (take-up side) is in alignment with the guide mark of the loading arm gear (supply side). Then hang the torsion arm on the pole base assembly (supply side) and tighten the screw (A). (See Fig.2-2-16a.)

2.2.17 Take-up lever, take-up head and control plate guide

- (1) Remove the spring of the take-up lever from the main deck.
- (2) Remove the lug (A) of the take-up lever from the main deck and pull out the take-up lever and the take-up head together.
- (3) Remove the screw (A).
- (4) Align the idler arm assembly pin in the center (centre) of the R section of the control plate guide, remove the control plate guide lugs (B) and (C) from the main deck, and remove the control plate guide.

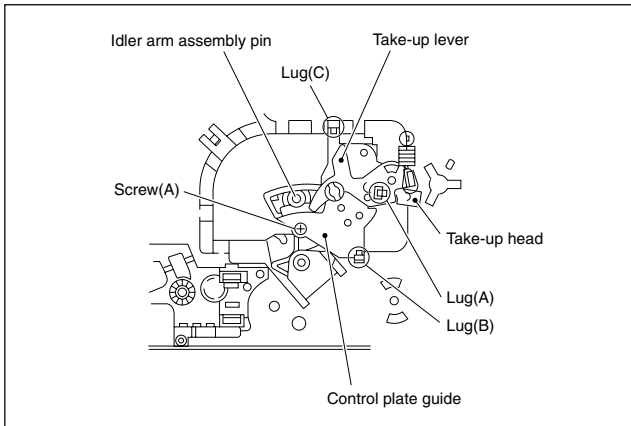


Fig. 2-2-17a

2.2.18 Capstan brake assembly

1. How to remove

- (1) Move the lug (A) of the capstan brake assembly in the arrow-indicated direction so that it comes into alignment with the notch of the main deck. (See Fig. 2-2-18a.)
- (2) Remove the lug (B) of the capstan brake assembly from the main deck and remove the capstan brake assembly.

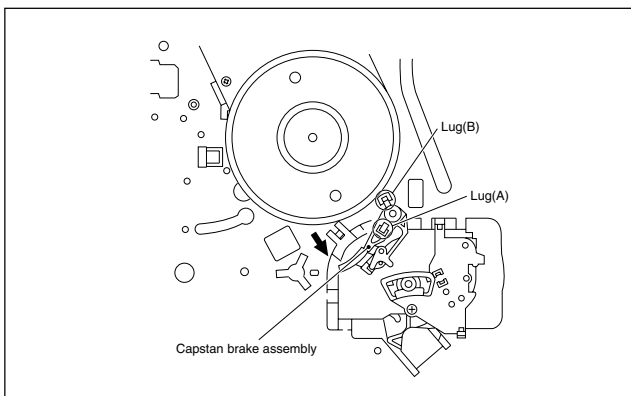


Fig. 2-2-18a

2.2.19 Sub brake assembly (take-up side)

1. How to remove

- (1) Remove the spring attached to the lid guide and sub brake assembly (take-up side).
- (2) Bring the lug (A) of the sub brake assembly (take-up side) into alignment with the notch of the main deck.
- (3) Remove the lugs (B) and (C) of the sub brake assembly (take-up side) from the main deck and remove the sub brake assembly (take-up side).

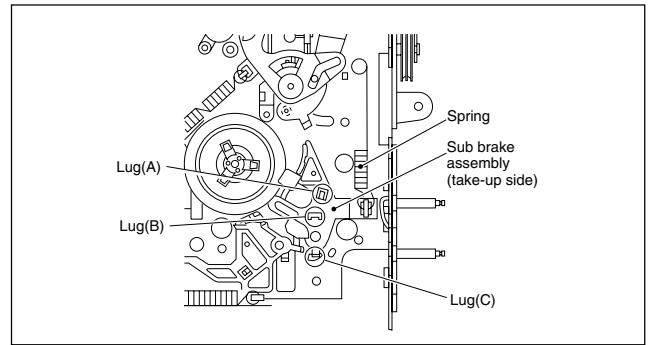


Fig. 2-2-19a

2.2.20 Main brake assembly (take-up side), reel disk (take-up side) and main brake assembly (supply side)

1. How to remove

- (1) Move the main brake assembly (take-up side) in the arrow-indicated direction and remove the reel disk (take-up side).
- (2) Remove the spring attached to the main brake assembly.
- (3) Remove the lug (A) of the main brake assembly (take-up side) and pull out the lug (B) after bringing it into alignment with the main deck notch.
- (4) Remove the lugs (C), (D) and (E) of the main brake assembly (supply side) from the main deck and pull them off. (See Fig.2-2-20a.)
- (5) When installing the main brake assembly (take-up side), slide the brake lever in the direction as indicated by the arrow to prevent it from hitting the projection of the main brake assembly (take-up side). (See Fig.2-2-20b.)

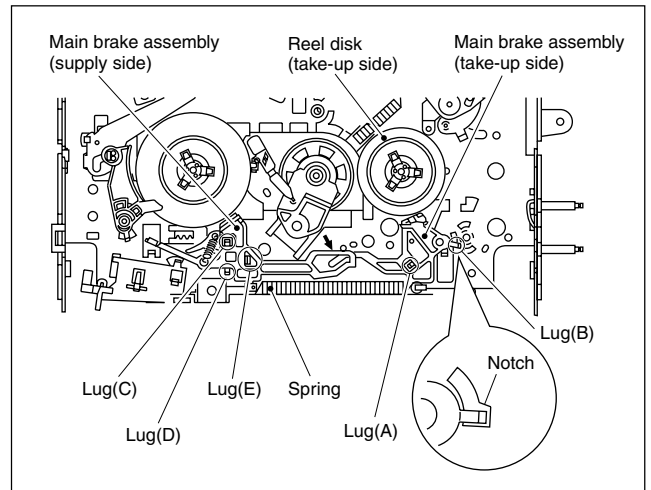


Fig. 2-2-20a

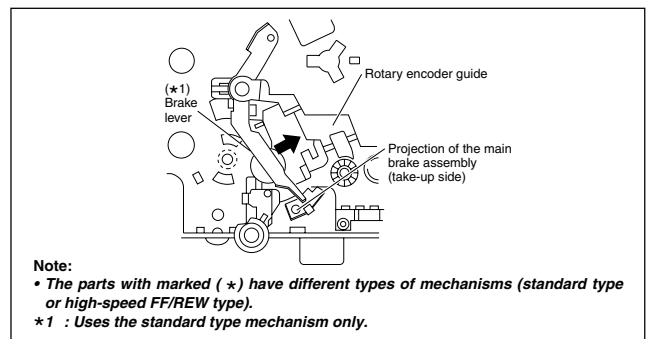


Fig. 2-2-20b

2.2.21 Tension brake assembly, reel disk (supply side) and tension arm assembly

1. How to remove

- (1) Remove the three lugs of the tension brake assembly from the main deck and pull them off.
- (2) Remove the reel disk (supply side) by loosening in the arrow-indicated direction the main brake assembly (supply side).
- (3) Remove the tension spring on the back of the main deck. Then release the lug of the tension arm bearing in the arrow-indicated direction and draw out the tension arm assembly. (See Fig. 2-2-21a.)

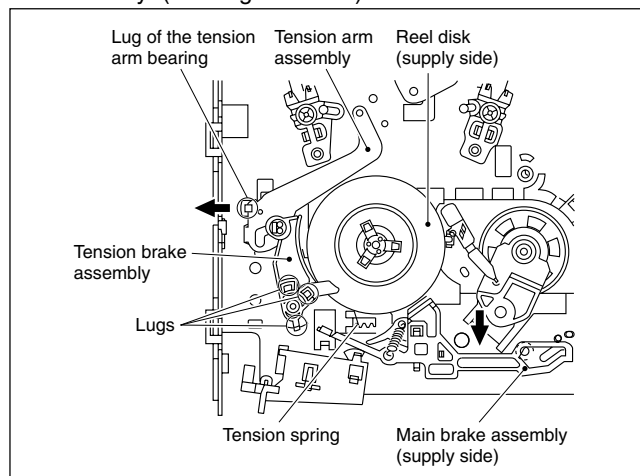


Fig. 2-2-21a

2.2.22 Idler lever, idler arm assembly

1. How to remove

- (1) Remove the lug of the idler lever from the main deck and remove the hook fitted in the idler arm assembly hole by lifting it.
- (2) Remove the slit washer and pull out the idler arm assembly.

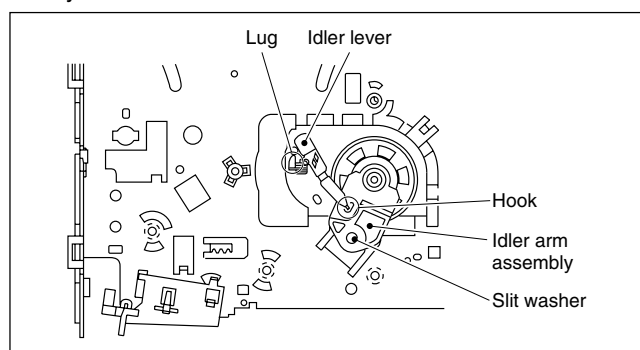


Fig. 2-2-22a

2.2.23 Stator assembly

- (1) Remove the flat cable.
- (2) Remove the two screws (A), (B) and remove the lug wire.
- (3) Remove the stator assembly by lifting in the arrow-indicated direction. (Take care that the brush spring does not jump out.)

Notes:

- **Be careful not to lose the brush and spring.**
- **There are some models that do not use the lug wire. Refer to the parts list for these models.**
- **When tightening the screw (B), place the caulked part of the lug terminal near to the shaft of the drum and then tighten it.**
- **After installation, be sure to perform the switching point adjustment according to the electrical adjustment procedure.**

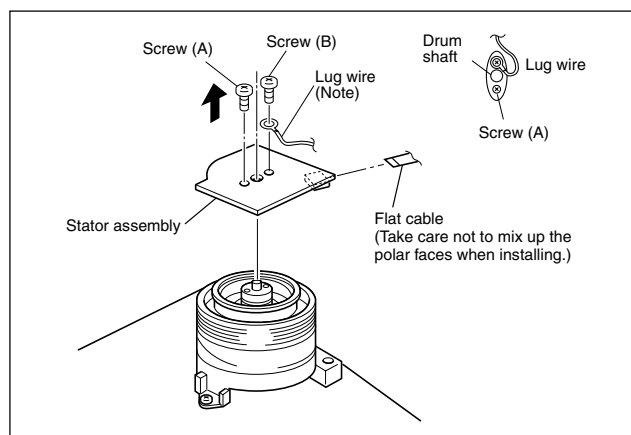


Fig. 2-2-23a

2.2.24 Rotor assembly

1. How to remove

- (1) Remove the stator assembly.
- (2) Remove the two screws (B) and remove the rotor assembly.

2. How to install

- (1) Match the phases of the upper drum assembly and the rotor assembly as indicated in Fig.2-2-24a.
- (2) Place the upper drum assembly hole (a) over the rotor assembly holes (b) (with three holes to be aligned) and tighten the two screws (B). (See Fig.2-2-24a.)

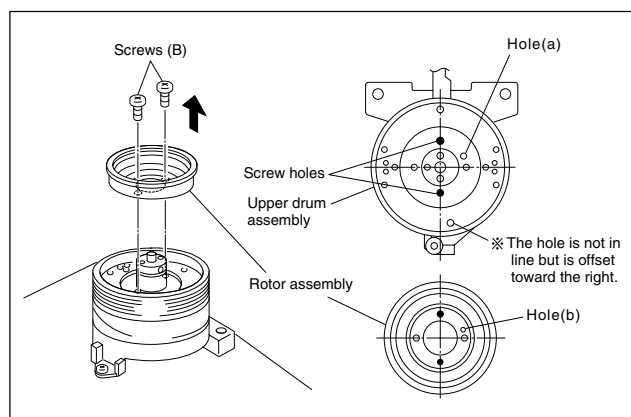


Fig. 2-2-24a

2.2.25 Upper drum assembly

Notes:

- **To replace the upper drum assembly only may not be possible with some models. For upper drum assembly replacement, refer to the parts list. (When the parts number of the upper drum assembly is not listed on the parts list, then this cannot be replaced.)**
- **When replacement is required, control the up- down movement of the brush. Never apply grease.**
- **When replacing the upper drum assembly, replace it together with the washer.**

1. How to remove

- (1) Remove the stator assembly and rotor assembly.
- (2) Loosen the screw of the collar assembly using a 1.5 mm hexagonal wrench and remove the collar assembly. Also remove the brush, spring and cap at one time.
- (3) Remove the upper drum assembly and remove the washer using tweezers.

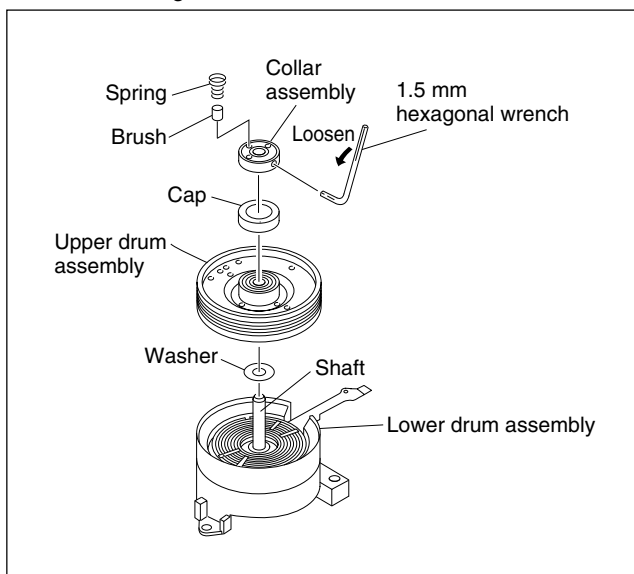


Fig. 2-2-25a

2. How to install

- (1) Clean the coil parts of the lower drum assembly and the newly installed upper drum assembly with an air brush in advance. (See Fig.2-2-25b.)
- (2) Install a new washer and upper drum assembly on the drum shaft. (See Fig.2-2-25a.)
- (3) Install the cap to the upper drum assembly.
- (4) Position the collar assembly as indicated in Fig.2-2-25c while controlling its up- down movement.
- (5) Secure the collar assembly in position with a hexagonal wrench while pressing its top with the fingers.
- (6) After installation, gently turn the upper drum assembly with your hand to make sure that it turns normally. Then install the brush and the spring.
- (7) Install the rotor assembly and stator assembly according to Fig 2-2-23a and 2-2-24a.
- (8) When installation is complete, clean the upper drum assembly and lower drum assembly and carry out the following adjustments.
 - PB switching point adjustment
 - Slow tracking adjustment
 - Compatibility adjustment (Be sure to check for compatibility for the EP (or LP) mode.)

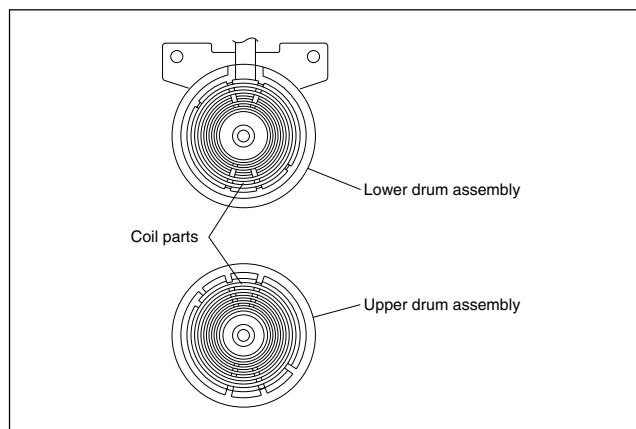


Fig. 2-2-25b

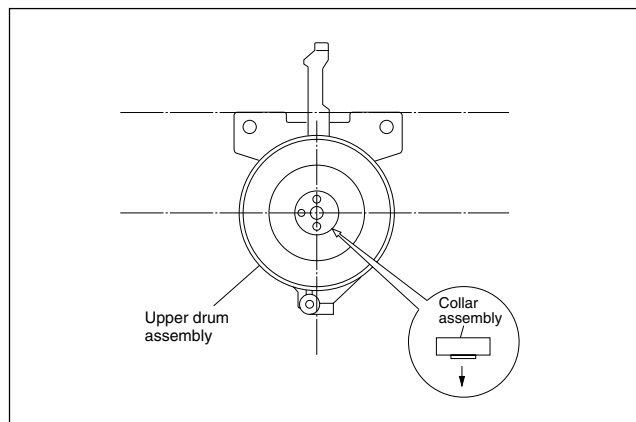


Fig. 2-2-25c

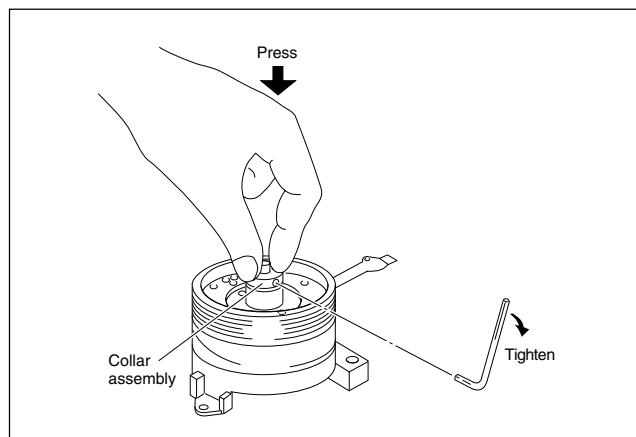


Fig. 2-2-25d

2.3 Compatibility adjustment

Notes:

- **Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the A/C head, drum assembly or any part of the tape transport system.**
- **To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.**
- **Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.**
- **When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DISASSEMBLY.)**

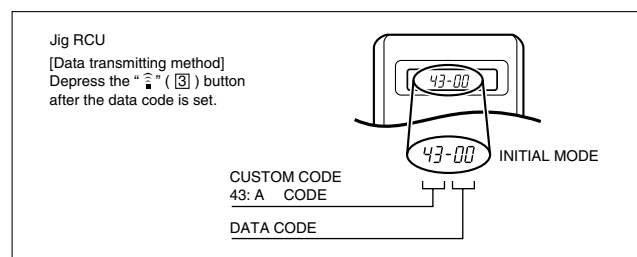


Fig. 2-3a Jig RCU [PTU94023B]

2.3.1 FM waveform linearity

Signal	(A1) (A2)	• Alignment tape(SP, staircase, PAL) [MHPE] • Alignment tape(LP, staircase, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Set the VCR to the manual tracking mode.
- (4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 2-3-1a.)
- (5) Reduce the V.PB FM waveform by the tracking operation. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear. If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 2-3-1c.)
- (6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).

- (7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
- (8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 2-3-1d.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

- (9) Repeat steps (1) to (8) by using the alignment tape (A2).

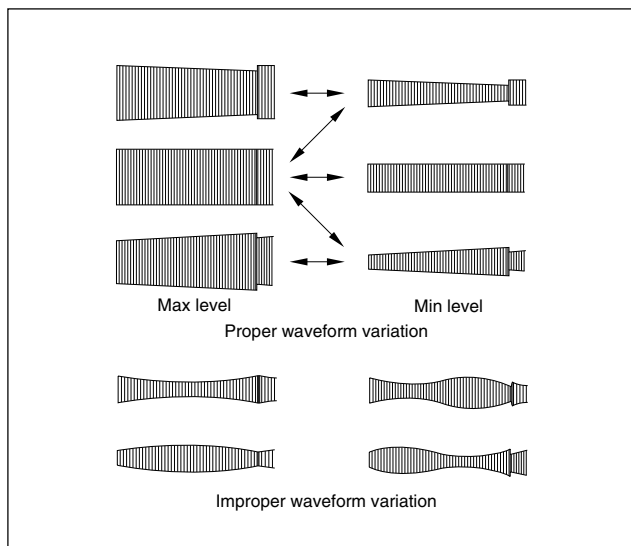


Fig. 2-3-1a

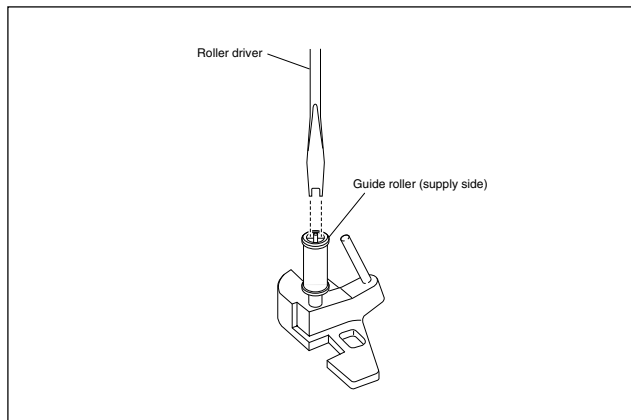


Fig. 2-3-1b

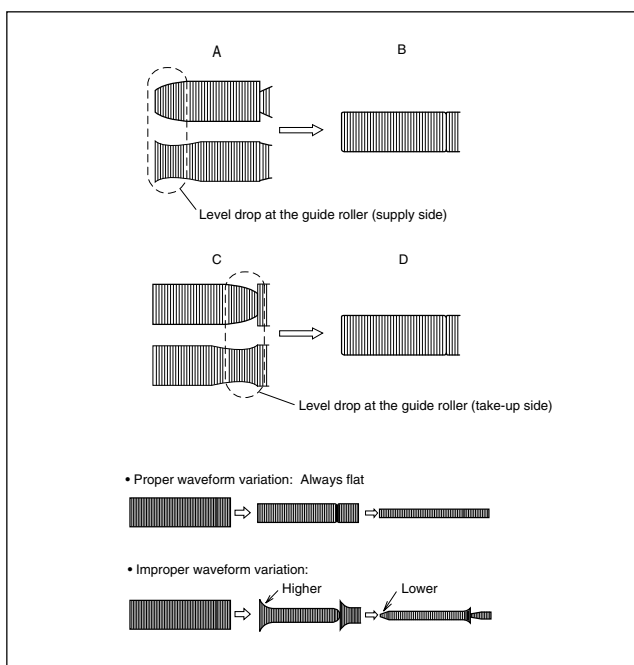


Fig. 2-3-1c

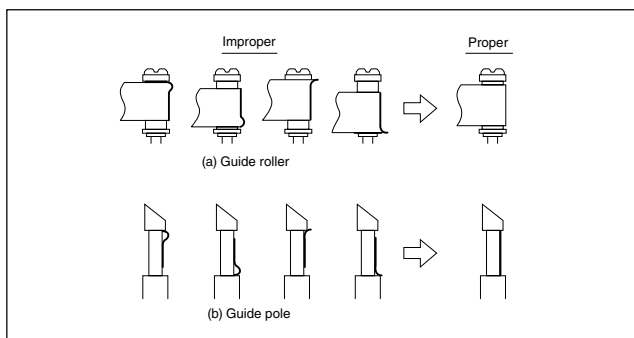


Fig. 2-3-1d

2.3.2 Height and tilt of the A/C head

Note:

- **Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See Fig.2-2-6c.)**

Signal	(A)	• Alignment tape(SP, staircase, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

- (1) Play back the alignment tape (A).
- (2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
- (3) Set the VCR to the manual tracking mode.

- (4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

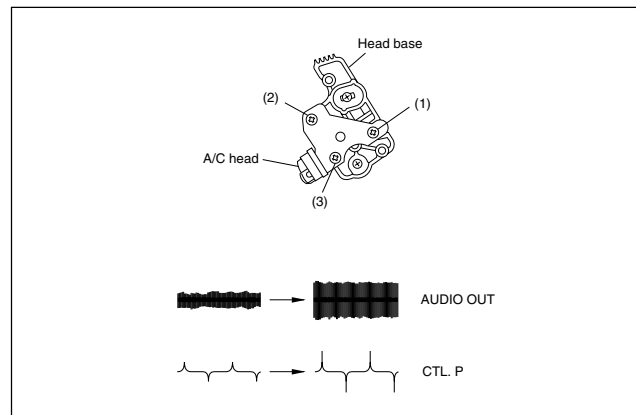


Fig. 2-3-2a

2.3.3 A/C head phase (X-value)

Signal	(A1)	• Alignment tape(SP, staircase, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• A/C head positioning tool [PTU94010]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Set the VCR to the manual tracking mode.
- (4) Loosen the screws (4) and (5), then set the A/C head positioning tool to the innermost projected part of the A/C head. (See Fig. 2-3-3a.)
- (5) Turn the A/C head positioning tool fully toward the capstan. Then turn it back gradually toward the drum and stop on the second peak point position of the V.PB FM waveform output level. Then tighten the screws (4) and (5).
- (6) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum. If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

[Perform adjustment steps (7) to (10) only for 2 Head models equipped with LP mode.]

- (7) Then play back the alignment tape (A2).
- (8) Set the VCR to the manual tracking mode.
- (9) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
- (10) If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

Note:

- After adjusting, always perform the confirmation and re-adjustment of the item 2.3.4.

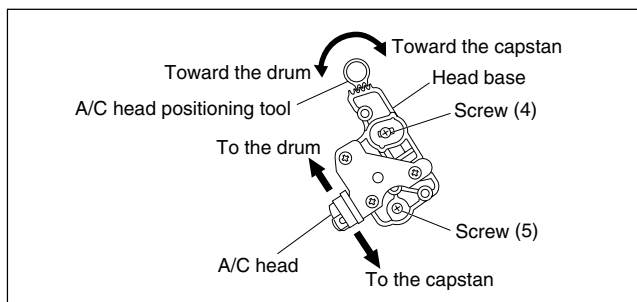


Fig. 2-3-3a

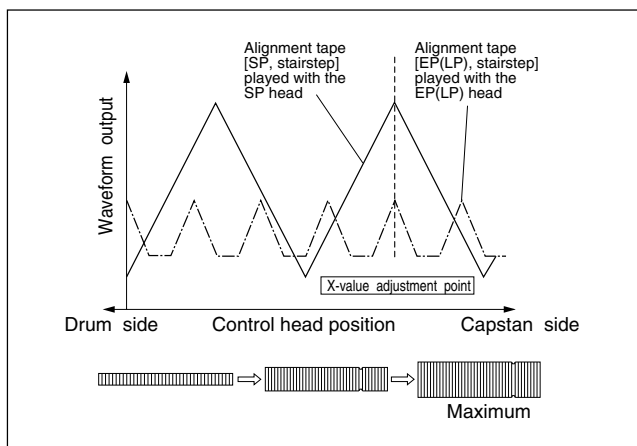


Fig. 2-3-3b

- (4) Set the VCR to the Auto adjust mode by transmitting the code (F) twice from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
- (5) If the VCR enters the eject mode, perform adjustment for the audio control head phase (X-value) again.

2.3.5 Tension pole position

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B)	• PB
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm (2.45 - 5 × 10 ⁻³ Nm)

- (1) Play back the back tension cassette gauge (A).
- (2) Check that the indicated value on the left side gauge is within the specified value (G).
- (3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.
 - 1) Set the VCR to the mechanism service mode. (See SECTION 1 DISASSEMBLY.)
 - 2) Set the VCR to the play back mode and adjust by turning adjustment pin to align the tension arm assembly edge with the main deck hole (A) on the right edge marker. (See Fig. 2-3-5a)

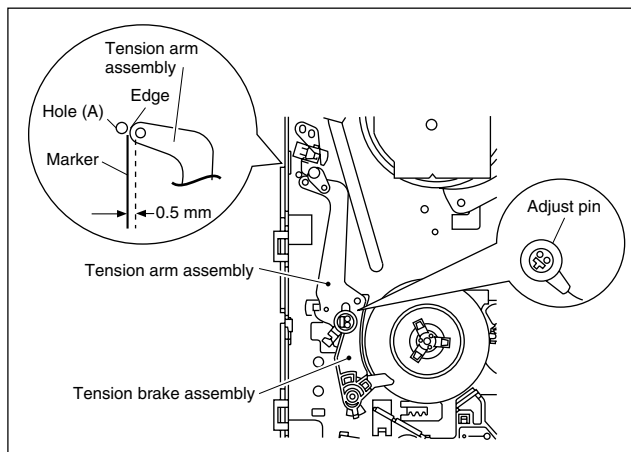


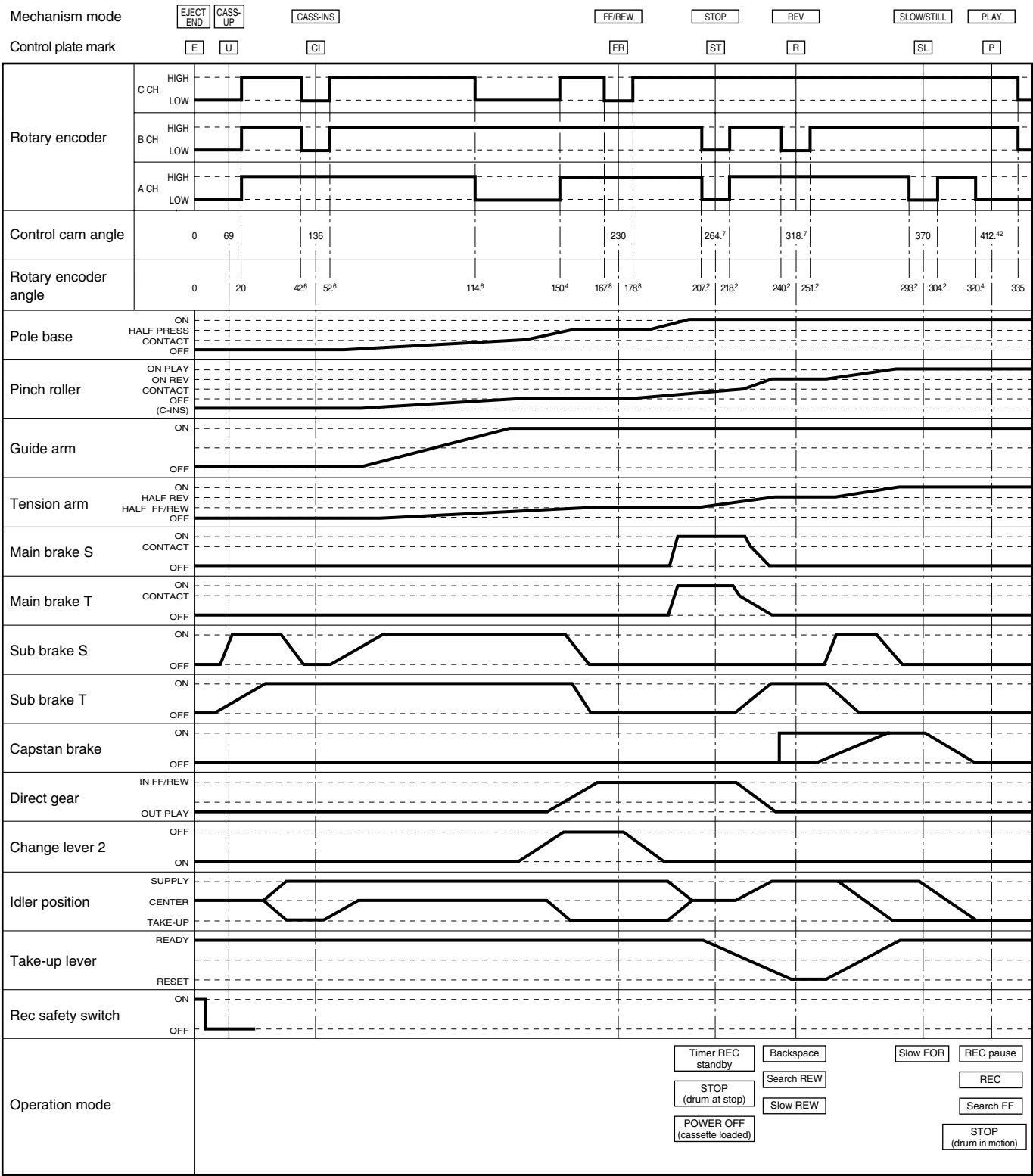
Fig. 2-3-5a

2.3.4 Standard tracking preset

Signal	(A)	• Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB → Auto adjust
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code "50"
Specified value	(G)	• STOP mode (Maximum V.PB FM waveform)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Play back the alignment tape (A).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Confirm that the automatic tracking operation is completed.

Mechanism Timing Chart



SECTION 3 ELECTRICAL ADJUSTMENT

3.1 Precaution

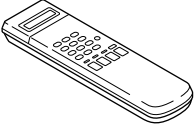
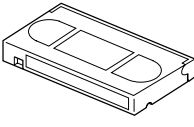
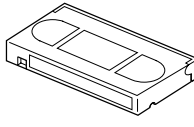
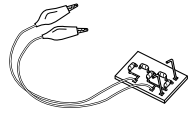
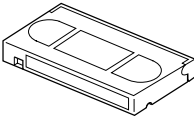
The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.

In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.1.1 Required test equipments

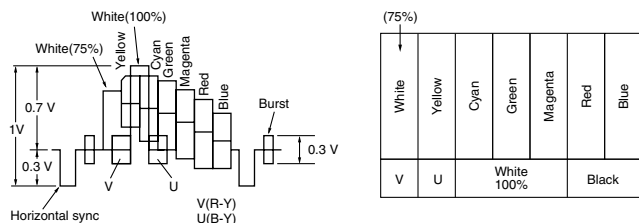
- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Frequency counter
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL/SECAM]
- Recording tape
- Digit-key remote controller (provided)

3.1.2 Required adjustment tools

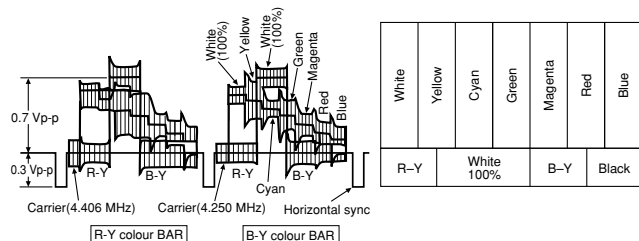
Jig RCU PTU94023B	Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L
		
LPF PTU93006	Alignment tape (S-VHS, SP/LP, color (colour) bar) MH-2H	
		

3.1.3 Color (colour) bar signal, Color (colour) bar pattern

- Color (colour) bar signal [PAL]
- Color (colour) bar pattern [PAL]



- Colour bar signal [SECAM]
- Colour bar pattern [SECAM]



3.1.4 Switch settings and standard precautions

The SW settings of the VCR and the standard precautions for the electrical adjustments are as follows.

- When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DISASSEMBLY.)

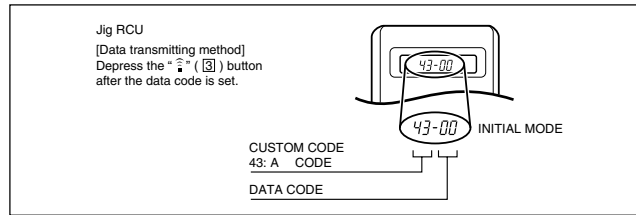


Fig. 3-1-4a Jig RCU [PTU94023B]

- Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired. If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF

- If there is a reference to a signal input method in the signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.
- Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.

3.1.5 EVR Adjustment

Some of the electrical adjustments require the adjustment performed by the EVR system. The main unit have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- In the EVR adjustment mode, the value is varied with the channel buttons (+, -). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.
- When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input. The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.
- When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.

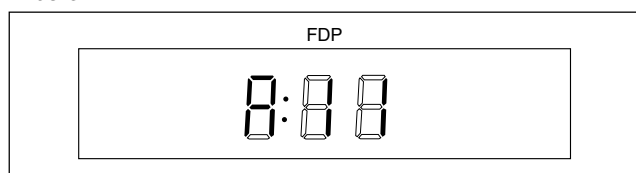


Fig. 3-1-5a EVR mode

3.2 Servo circuit

3.2.1 Switching point

Signal	(A1) (A2)	• Stairstep signal • Alignment tape (SP, stairstep, PAL) MHPE
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal (75Ω terminated) • TP106 (PB, FM)
External trigger	(E)	• TP111 (D.FF)/slope : –
Adjustment part	(F)	• Jig code “5A”
Specified value	(G)	• $7.5 \pm 0.5H$
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Play back the signal (A1) of the alignment tape (A2).
- (2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
- (3) Set the VCR to the manual tracking mode.
- (4) Adjust tracking so that the V.PB FM waveform becomes maximum.
- (5) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
- (6) If the VCR enters the eject mode, repeat steps (1) to (5) again.
- (7) Play back the alignment tape (A2) again, confirm that the switching point is the specified value (G).

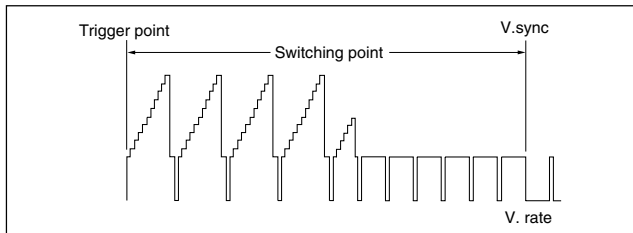


Fig. 3-2-1a Switching point

3.2.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• VHS SP • VHS LP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig code “71” or “72”
Specified value	(G)	• Minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
- (2) Set the VCR to the manual tracking mode.
- (3) Set the VCR to the FWD slow (+1/6x) mode.
- (4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
- (5) Set the VCR to the Stop mode.
- (6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
- (7) Repeat steps (3) to (6) in the REV slow (–1/6x) mode.
- (8) Repeat steps (1) to (7) in the mode (B2).

Note:

- **For FWD slow (+1/6x) playback, transmit the code “08” from the Jig RCU to enter the slow playback mode, and transmit the code “D0” for REV slow (–1/6x) mode.**

3.3 Video circuit

3.3.1 D/A level

Signal	(A1) (A2) (A3)	• Ext. S-input / Ext. input • Color (colour) bar signal [PAL] • S-VHS tape
Mode	(B)	• S-VHS • EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
Adjustment part	(F)	• VR1201 (D/A LEVEL ADJ) [2D DIGITAL board] • VR1401 [D/A LEVEL ADJ] [3D DIGITAL/2M board]
Specified value (Note)	(G)	• 1.00 ± 0.015 Vp-p (reference value)

- (1) Insert the cassette tape (A3) to enter the mode (B).
- (2) Observe the VIDEO OUT waveform at the measuring point (D).
- (3) Check the Y level value when the External S-input (Y/C separated video signal).
- (4) Switch the input signal to the External input (composite video signal), and adjust the adjustment part (F) so that the Y level becomes the same value observed in step (3).

Note:

- **The specified value (G) is just a reference value to be obtained when the External S-Video (Y/C separated video) signal is input. In actual adjustment, set it to the value observed in step (3).**

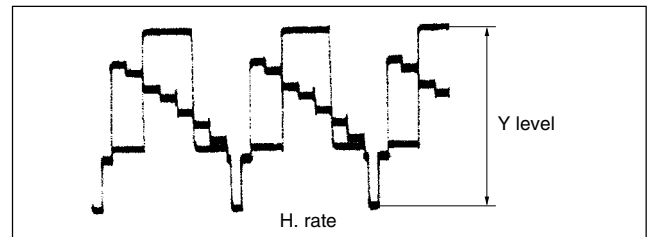


Fig. 3-3-1a D/A level

3.3.2 EE Y/PB Y (S-VHS/VHS) level

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2) (B3)	• EE • S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode	(F1)	• Jig code “57”
EVR address	(F2) (F3) (F4)	• A : 11 • Jig code “21” • Jig code “18” or “19” (Channel +/-)
Specified value	(G)	• 1.00 ± 0.05 Vp-p [2D DIGITAL board] • 1.00 ± 0.03 Vp-p [3D DIGITAL/2M board]
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Observe the Y OUT waveform at the measuring point (D).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.

- (4) Transmit the code (F4) from the Jig RCU to adjust so that the Y level of the Y OUT waveform becomes the specified value (G).
- (5) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- (6) Record the signal (A2) in the mode (B2), and play back the recorded signal.
- (7) Set the VCR to the manual tracking mode.
- (8) Repeat steps (1) to (5) in the mode (B2).
- (9) Record the signal (A2) in the mode (B3), and play back the recorded signal.
- (10) Set the VCR to the manual tracking mode.
- (11) Repeat steps (1) to (5) in the mode (B3).

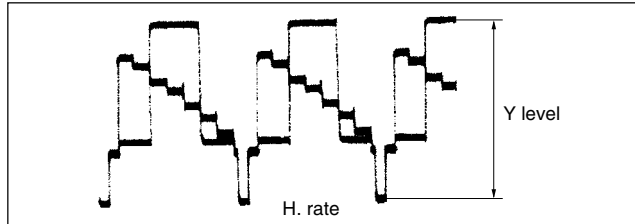


Fig. 3-3-2a EE/PB Y level

3.3.3 REC color (colour) level

Signal	(A1) (A2) (A3)	• Alignment tape(S-VHS, SP/LP, Color(colour) bar) • Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• S-VHS SP • S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• TP106 (PB. FM) • PB color (colour) output of the LPF
External trigger	(E)	• TP111 (D.FF)
EVR mode	(F1)	• Jig code "57"
EVR address	(F2) (F3) (F4)	• A : 02 • Jig code "20" and "22" • Jig code "18" or "19" (Channel +/-)
Specified value	(G)	[HR-S6850MS/S7850MS/S7851MS] • SP: "B" x 125 ± 5% • LP: "B" x 125 ± 5% [HR-S8850MS] • SP: "B" x 125 ± 3% • LP: "B" x 125 ± 3%
Adjustment tool	(H1) (H2)	• Jig RCU [PTU94023B] • LPF [PTU93006] (See Fig. 3-3-3a.)

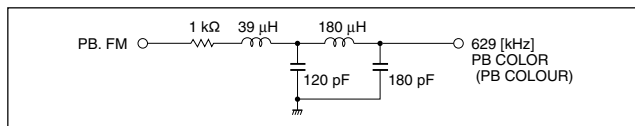


Fig. 3-3-3a LPF [PTU93006]

- (1) Connect the adjustment tool (H2) to the measuring point (D1).
- (2) Apply the external trigger signal to D.FF (E) to observe the PB color (colour) waveform at the measuring point (D2).
- (3) Play back the signal (A3) in the mode (B1) of the alignment tape (A1).
- (4) Set the VCR to the manual tracking mode.
- (5) Adjust tracking so that the PB color (colour) waveform becomes maximum. Make a note of the higher PB color (colour) level as "B" at this time.
- (6) Record the signal (A3) in the mode (B1), and play back the recorded signal.

- (7) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (8) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (9) Transmit the code (F4) from the Jig RCU to adjust so that the higher level channel becomes the specified value (G) of the note "B" level as shown in Fig. 3-3-3b. (Adjust before recording, then confirm it by playing back.)
- (10) After adjustment, record the signal (A3) then playing it back again. At this time, confirm that there is no inverting phenomenon or noise appearing on the playback screen.
- (11) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- (12) Repeat steps (3) to (11) in the mode (B2).

Note:

- **After adjusting, always perform the confirmation and re-adjustment of the item 3.4.1.**

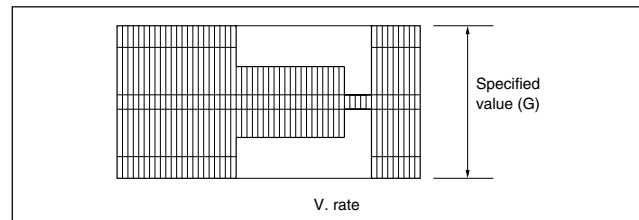


Fig. 3-3-3b REC color (colour) level

3.3.4 Video EQ (Frequency response)

Signal	(A1) (A2)	• Ext. S-input • Video sweep signal
Mode	(B1) (B2) (B3)	• S-VHS SP • S-VHS LP • Picture Control / Smart Picture - REC : Normal / Natural - PB : Edit / Distinct
Equipment	(C)	• Oscilloscope
Measuring point	(D1) Frequency marker(D2)	• Y OUT terminal (75Ω terminated) • 3 [MHz]
External trigger	(E)	• TP111 (D.FF)
EVR mode	(F1)	• Jig code "57"
EVR address	(F2) (F3) (F4)	• A : 03 • Jig code "20" and "23" • Jig code "18" or "19" (Channel +/-)
Specified value	(G)	• SP: 3.6 ± 0.4 div. (−1 ± 1 dB) • LP: 3.2 ± 0.4 div. (−2 ± 1 dB)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Apply the external trigger signal to D.FF (E) to observe the Y OUT waveform at the measuring point (D1).
- (2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
- (3) Set the VCR to the manual tracking mode.
- (4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (5) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (6) Set the slope of the oscilloscope to the channel having higher (D2) marker level of the Y OUT waveform [signal (A2)]. Then set the 100 kHz marker level to the "4" scale on the oscilloscope. In this condition, transmit the code (F4) from the Jig RCU to adjust so that the (D2) marker level reaches the specified value (G).

- (7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- (8) Repeat steps (2) to (7) in the mode (B2).

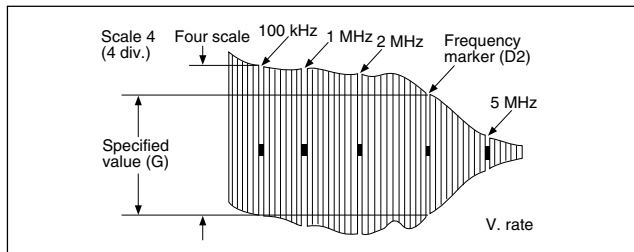


Fig. 3-3-4a Video EQ (Frequency Response)

3.3.5 Auto picture initial setting

Signal	(A1) (A2) (A3)	• Ext. input • Video: Optional • VHS tape
Mode	(B)	• EE → Auto adjust (SP/LP REC → PB)
Adjustment part	(F)	• Jig code "58"
Specified value	(G)	• STOP mode
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Insert the cassette tape (A3).
- (2) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed. When the VCR enters the eject mode, repeat steps (1) to (2) again.

3.4 Audio circuit

Notes:

- **This adjustment should be done after the "REC color (colour) level adjustment" for the video circuit has been completed.**
- **GND (Ground) should be taken from the Tuner shield case.**

3.4.1 Audio REC FM

Signal	(A1) (A2) (A3)	• Ext. input • Audio: No signal • Video: Color (colour) bar signal [PAL]
Mode	(B)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. PB. FM)
External trigger	(E)	• TP111 (D.FF)
EVR mode	(F1)	• Jig code "57"
EVR address	(F2) (F3) (F4)	• A : 30 • Jig code "23" and "20" • Jig code "18" or "19" (Channel +/-)
Specified value	(G1) (G2)	• 400 ± 100 mVp-p • More than 250 mVp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).
- (2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.
- (3) Set the VCR to the manual tracking mode.

- (4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.
- (5) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (6) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (7) Transmit the code (F4) from the Jig RCU to adjust so that the A.PB FM level of the higher channel level becomes the specified value (G1). (Adjust before recording, then confirm it by playing back.)
- (8) If the specified value (G1) is not obtained, transmit the code (F4) from the Jig RCU to adjust so that the waveform level of the lower channel level becomes the specified value (G2). (Adjust before recording, then confirm it by playing back.)
- (9) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

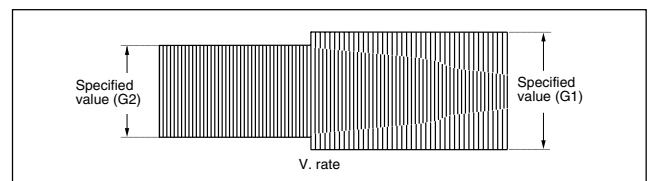


Fig. 3-4-1a Audio REC FM

3.5 Syscon circuit

Note:

- **When perform this adjustment, remove the Mechanism assembly.**

3.5.1 Timer clock

Signal	(A)	• No signal
Mode	(B)	• EE
Equipment	(C)	• Frequency counter
Measuring point	(D1)	• IC3001 pin 61
Short point	(D2)	• IC3001 pin 24
	(D3)	• C3026 + and -
Adjustment part	(F)	• C3025 (TIMER CLOCK)
Specified value	(G)	• 1024.020 ± 0.02 Hz (976.5434 ± 0.0191 μsec)

- (1) Connect the frequency counter to the measuring point (D1).
- (2) Connect the short wire between the short point (D2) and Vcc (5V).
- (3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.
- (4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
- (5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

3.6 PAL/SECAM Converter circuit

Note:

- Unless otherwise specified in this P/S Converter circuit adjustments, all measuring points and adjustment parts are located on the P/S Converter board.

3.6.1 Colour difference level

Signal	(A1)	• Color (colour) bar signal [SECAM]
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• CN1601 Pin 7
Adjustment part	(F1) (F2)	• VR1602 (B-Y ADJ) • VR1601 (R-Y ADJ)
Specified value	(G1) (G2)	• 460 ± 20 mVp-p : VR1602 (B-Y) • 620 ± 20 mVp-p : VR1601 (R-Y)

- (1) Observe the C (converted colour) waveform at the measuring point (D).
- (2) Adjust the adjustment part (F1) so that the higher level of the Yellow and Blue of the C waveform becomes the specified value (G1).
- (3) Adjust the adjustment part (F2) so that the higher level of the Green and Magenta of the C waveform becomes the specified value (G2).

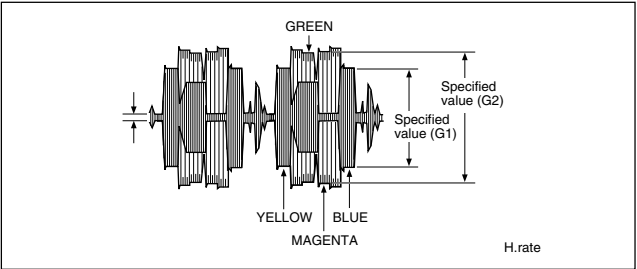


Fig. 3-6-1 Colour difference level

3.6.2 SECAM burst position

Signal	(A1)	• Color (colour) bar signal [SECAM]
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• CN1601 Pin 7 • CN1601 Pin 3
Adjustment part	(F)	• VR1603
Specified value	(G)	• $T = 5.6 \pm 0.1$ μ sec

- (1) Observe the waveforms appeared at the measuring points (D1) and (D2).
- (2) Adjust the adjustment part (F) so that the waveforms timing width between the H-SYNC and the colour burst signal becomes the specified value (G).

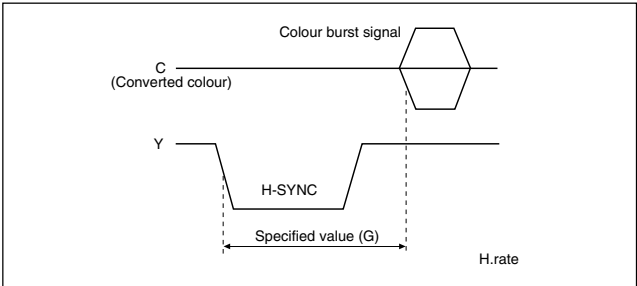


Fig. 3-6-2 PAL burst position

SECTION 4 CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

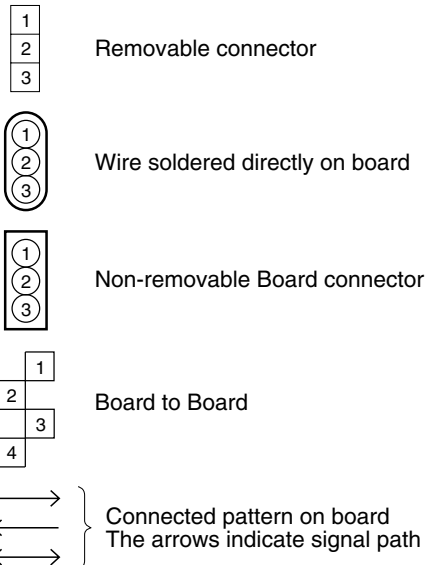
- 1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K or k: k Ω (1000 Ω), M: M Ω (1000k Ω)
- 2) All capacitance values are in μ F, (P: PF).
- 3) All inductance values are in μ H, (m: mH).
- 4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

AUX or AUX(L) : Active at low

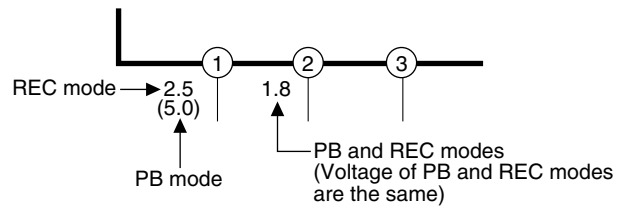
3. Interpreting Connector indications



4. Voltage measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
— : Unmeasurable or unnecessary to measure
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

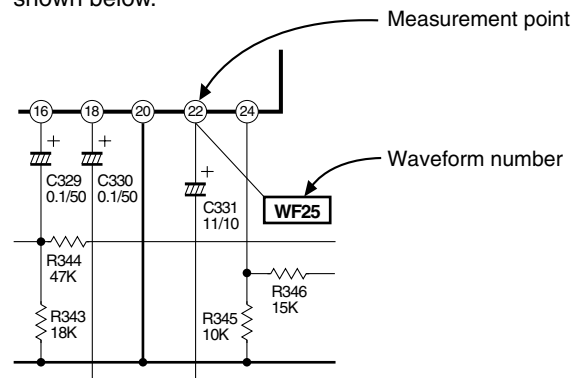
- 4) Indication on schematic diagram
Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



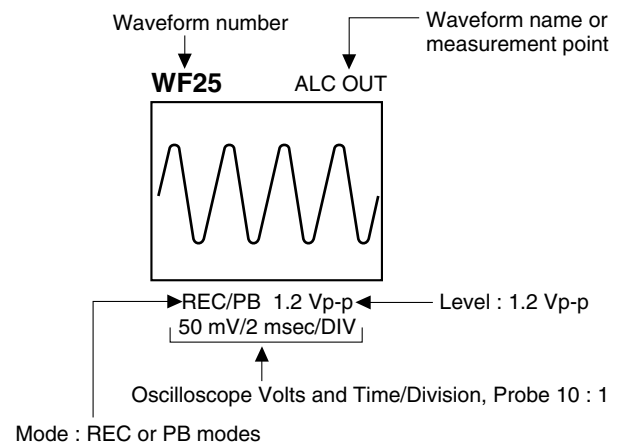
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
- 4) Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

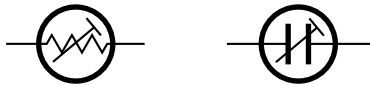
-  Playback signal path
-  Playback and recording signal path
-  Recording signal path (including E-E signal path)
-  Capstan servo path
-  Drum servo path

(Example)

-  R-Y Playback R-Y signal path
-  Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

“OPEN” is indicated by the parts not mounted on the circuit board.



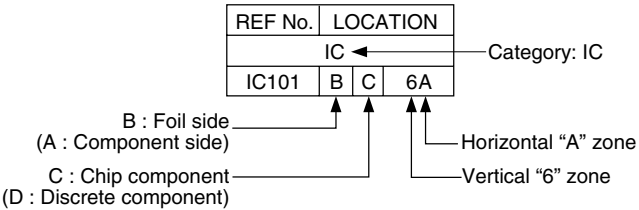
CIRCUIT BOARD NOTES

1. Foil and Component sides

- 1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

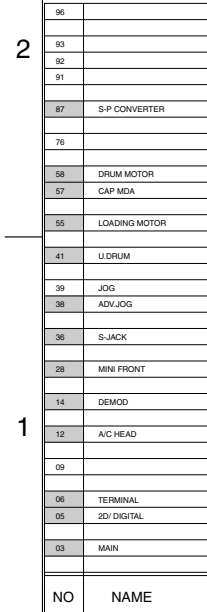
Parts location are indicated by guide scale on the circuit board.



Note:

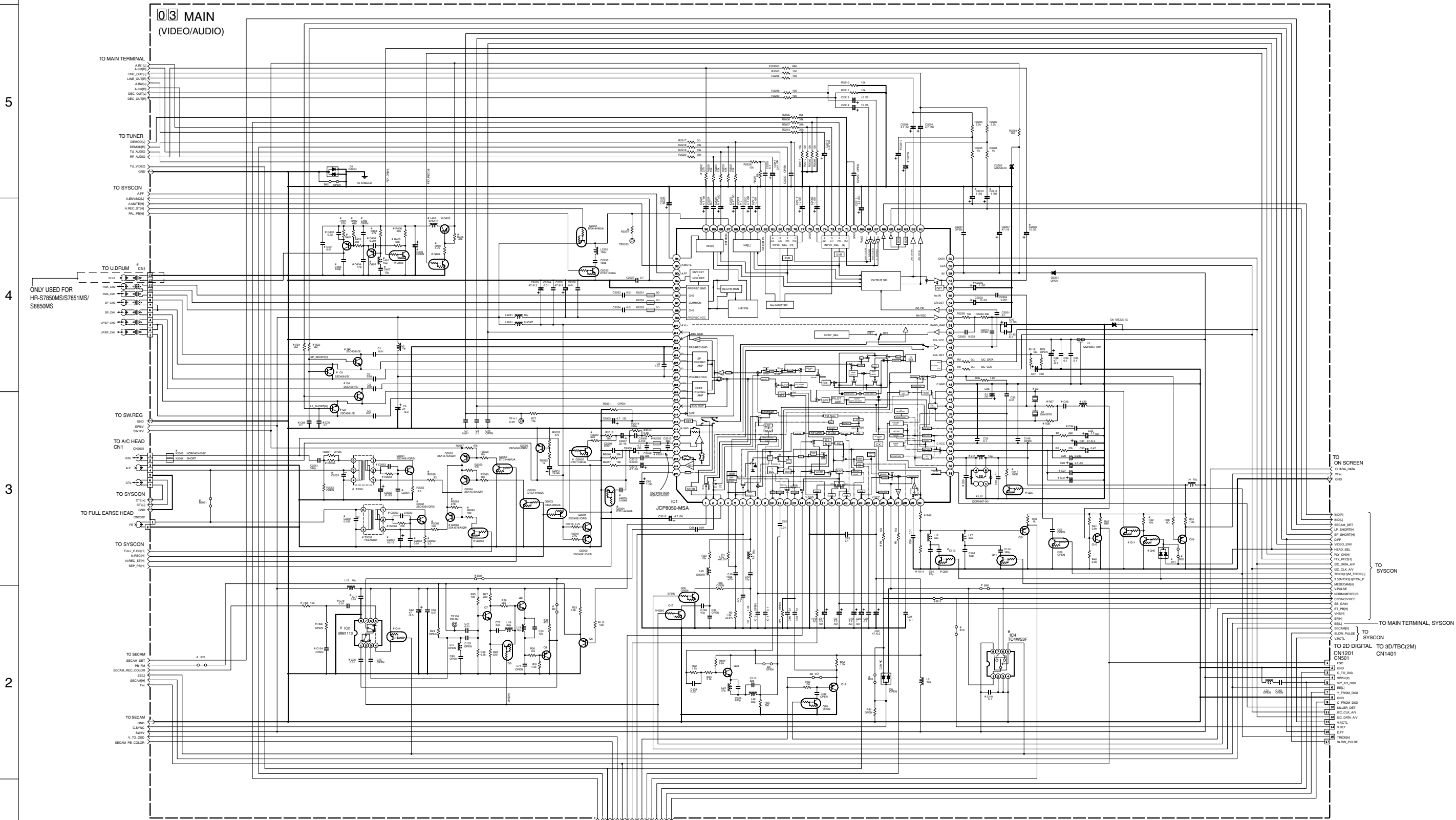
For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

1 2 3 4 5



4.2 MAIN (VIDEO/AUDIO) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



#DIFFERENCE TABLE
o:Used
x:Not used

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70	Q71	Q72	Q73	Q74	Q75	Q76	Q77	Q78	Q79	Q80	Q81	Q82	Q83	Q84	Q85	Q86	Q87	Q88	Q89	Q90	Q91	Q92	Q93	Q94	Q95	Q96	Q97	Q98	Q99	Q100	Q101	Q102	Q103	Q104	Q105	Q106	Q107	Q108	Q109	Q110	Q111	Q112	Q113	Q114	Q115	Q116	Q117	Q118	Q119	Q120	Q121	Q122	Q123	Q124	Q125	Q126	Q127	Q128	Q129	Q130	Q131	Q132	Q133	Q134	Q135	Q136	Q137	Q138	Q139	Q140	Q141	Q142	Q143	Q144	Q145	Q146	Q147	Q148	Q149	Q150	Q151	Q152	Q153	Q154	Q155	Q156	Q157	Q158	Q159	Q160	Q161	Q162	Q163	Q164	Q165	Q166	Q167	Q168	Q169	Q170	Q171	Q172	Q173	Q174	Q175	Q176	Q177	Q178	Q179	Q180	Q181	Q182	Q183	Q184	Q185	Q186	Q187	Q188	Q189	Q190	Q191	Q192	Q193	Q194	Q195	Q196	Q197	Q198	Q199	Q200	Q201	Q202	Q203	Q204	Q205	Q206	Q207	Q208	Q209	Q210	Q211	Q212	Q213	Q214	Q215	Q216	Q217	Q218	Q219	Q220	Q221	Q222	Q223	Q224	Q225	Q226	Q227	Q228	Q229	Q230	Q231	Q232	Q233	Q234	Q235	Q236	Q237	Q238	Q239	Q240	Q241	Q242	Q243	Q244	Q245	Q246	Q247	Q248	Q249	Q250	Q251	Q252	Q253	Q254	Q255	Q256	Q257	Q258	Q259	Q260	Q261	Q262	Q263	Q264	Q265	Q266	Q267	Q268	Q269	Q270	Q271	Q272	Q273	Q274	Q275	Q276	Q277	Q278	Q279	Q280	Q281	Q282	Q283	Q284	Q285	Q286	Q287	Q288	Q289	Q290	Q291	Q292	Q293	Q294	Q295	Q296	Q297	Q298	Q299	Q300	Q301	Q302	Q303	Q304	Q305	Q306	Q307	Q308	Q309	Q310	Q311	Q312	Q313	Q314	Q315	Q316	Q317	Q318	Q319	Q320	Q321	Q322	Q323	Q324	Q325	Q326	Q327	Q328	Q329	Q330	Q331	Q332	Q333	Q334	Q335	Q336	Q337	Q338	Q339	Q340	Q341	Q342	Q343	Q344	Q345	Q346	Q347	Q348	Q349	Q350	Q351	Q352	Q353	Q354	Q355	Q356	Q357	Q358	Q359	Q360	Q361	Q362	Q363	Q364	Q365	Q366	Q367	Q368	Q369	Q370	Q371	Q372	Q373	Q374	Q375	Q376	Q377	Q378	Q379	Q380	Q381	Q382	Q383	Q384	Q385	Q386	Q387	Q388	Q389	Q390	Q391	Q392	Q393	Q394	Q395	Q396	Q397	Q398	Q399	Q400	Q401	Q402	Q403	Q404	Q405	Q406	Q407	Q408	Q409	Q410	Q411	Q412	Q413	Q414	Q415	Q416	Q417	Q418	Q419	Q420	Q421	Q422	Q423	Q424	Q425	Q426	Q427	Q428	Q429	Q430	Q431	Q432	Q433	Q434	Q435	Q436	Q437	Q438	Q439	Q440	Q441	Q442	Q443	Q444	Q445	Q446	Q447	Q448	Q449	Q450	Q451	Q452	Q453	Q454	Q455	Q456	Q457	Q458	Q459	Q460	Q461	Q462	Q463	Q464	Q465	Q466	Q467	Q468	Q469	Q470	Q471	Q472	Q473	Q474	Q475	Q476	Q477	Q478	Q479	Q480	Q481	Q482	Q483	Q484	Q485	Q486	Q487	Q488	Q489	Q490	Q491	Q492	Q493	Q494	Q495	Q496	Q497	Q498	Q499	Q500	Q501	Q502	Q503	Q504	Q505	Q506	Q507	Q508	Q509	Q510	Q511	Q512	Q513	Q514	Q515	Q516	Q517	Q518	Q519	Q520	Q521	Q522	Q523	Q524	Q525	Q526	Q527	Q528	Q529	Q530	Q531	Q532	Q533	Q534	Q535	Q536	Q537	Q538	Q539	Q540	Q541	Q542	Q543	Q544	Q545	Q546	Q547	Q548	Q549	Q550	Q551	Q552	Q553	Q554	Q555	Q556	Q557	Q558	Q559	Q560	Q561	Q562	Q563	Q564	Q565	Q566	Q567	Q568	Q569	Q570	Q571	Q572	Q573	Q574	Q575	Q576	Q577	Q578	Q579	Q580	Q581	Q582	Q583	Q584	Q585	Q586	Q587	Q588	Q589	Q590	Q591	Q592	Q593	Q594	Q595	Q596	Q597	Q598	Q599	Q600	Q601	Q602	Q603	Q604	Q605	Q606	Q607	Q608	Q609	Q610	Q611	Q612	Q613	Q614	Q615	Q616	Q617	Q618	Q619	Q620	Q621	Q622	Q623	Q624	Q625	Q626	Q627	Q628	Q629	Q630	Q631	Q632	Q633	Q634	Q635	Q636	Q637	Q638	Q639	Q640	Q641	Q642	Q643	Q644	Q645	Q646	Q647	Q648	Q649	Q650	Q651	Q652	Q653	Q654	Q655	Q656	Q657	Q658	Q659	Q660	Q661	Q662	Q663	Q664	Q665	Q666	Q667	Q668	Q669	Q670	Q671	Q672	Q673	Q674	Q675	Q676	Q677	Q678	Q679	Q680	Q681	Q682	Q683	Q684	Q685	Q686	Q687	Q688	Q689	Q690	Q691	Q692	Q693	Q694	Q695	Q696	Q697	Q698	Q699	Q700	Q701	Q702	Q703	Q704	Q705	Q706	Q707	Q708	Q709	Q710	Q711	Q712	Q713	Q714	Q715	Q716	Q717	Q718	Q719	Q720	Q721	Q722	Q723	Q724	Q725	Q726	Q727	Q728	Q729	Q730	Q731	Q732	Q733	Q734	Q735	Q736	Q737	Q738	Q739	Q740	Q741	Q742	Q743	Q744	Q745	Q746	Q747	Q748	Q749	Q750	Q751	Q752	Q753	Q754	Q755	Q756	Q757	Q758	Q759	Q760	Q761	Q762	Q763	Q764	Q765	Q766	Q767	Q768	Q769	Q770	Q771	Q772	Q773	Q774	Q775	Q776	Q777	Q778	Q779	Q780	Q781	Q782	Q783	Q784	Q785	Q786	Q787	Q788	Q789	Q790	Q791	Q792	Q793	Q794	Q795	Q796	Q797	Q798	Q799	Q800	Q801	Q802	Q803	Q804	Q805	Q806	Q807	Q808	Q809	Q810	Q811	Q812	Q813	Q814	Q815	Q816	Q817	Q818	Q819	Q820	Q821	Q822	Q823	Q824	Q825	Q826	Q827	Q828	Q829	Q830	Q831	Q832	Q833	Q834	Q835	Q836	Q837	Q838	Q839	Q840	Q841	Q842	Q843	Q844	Q845	Q846	Q847	Q848	Q849	Q850	Q851	Q852	Q853	Q854	Q855	Q856	Q857	Q858	Q859	Q860	Q861	Q862	Q863	Q864	Q865	Q866	Q867	Q868	Q869	Q870	Q871	Q872	Q873	Q874	Q875	Q876	Q877	Q878	Q879	Q880	Q881	Q882	Q883	Q884	Q885	Q886	Q887	Q888	Q889	Q890	Q891	Q892	Q893	Q894	Q895	Q896	Q897	Q898	Q899	Q900	Q901	Q902	Q903	Q904	Q905	Q906	Q907	Q908	Q909	Q910	Q911	Q912	Q913	Q914	Q915	Q916	Q917	Q918	Q919	Q920	Q921	Q922	Q923	Q924	Q925	Q926	Q927	Q928	Q929	Q930	Q931	Q932	Q933	Q934	Q935	Q936	Q937	Q938	Q939	Q940	Q941	Q942	Q943	Q944	Q945	Q946	Q947	Q948	Q949	Q950	Q951	Q952	Q953	Q954	Q955	Q956	Q957	Q958	Q959	Q960	Q961	Q962	Q963	Q964	Q965	Q966	Q967	Q968	Q969	Q970	Q971	Q972	Q973	Q974	Q975	Q976	Q977	Q978	Q979	Q980	Q981	Q982	Q983	Q984	Q985	Q986	Q987	Q988	Q989	Q990	Q991	Q992	Q993	Q994	Q995	Q996	Q997	Q998	Q999	Q1000
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TITLE	REV	IC	CT
YES	X	O	
NO	O	X	

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN P.F.

— ELECTROLYTIC
— CERAMIC
— MYLAR
— NON POLAR

ALL NPN TYPE TRANSISTORS ARE 2SC4081/ORS or 2SD1819A/ORS or 2PC4081/RV
ALL PNP TYPE TRANSISTORS ARE 2SA1571A/ORS or 2SD1218A/ORS or 2PA1571/RV
ALL NPN TYPE DIGITAL TRANSISTORS ARE DTC144WUA or UN621E or RN1309 or POC144WU
ALL PNP TYPE DIGITAL TRANSISTORS ARE DTA144WUA or UN611E or RN2309 or POC144WU

5
4
3
2
1

5

4

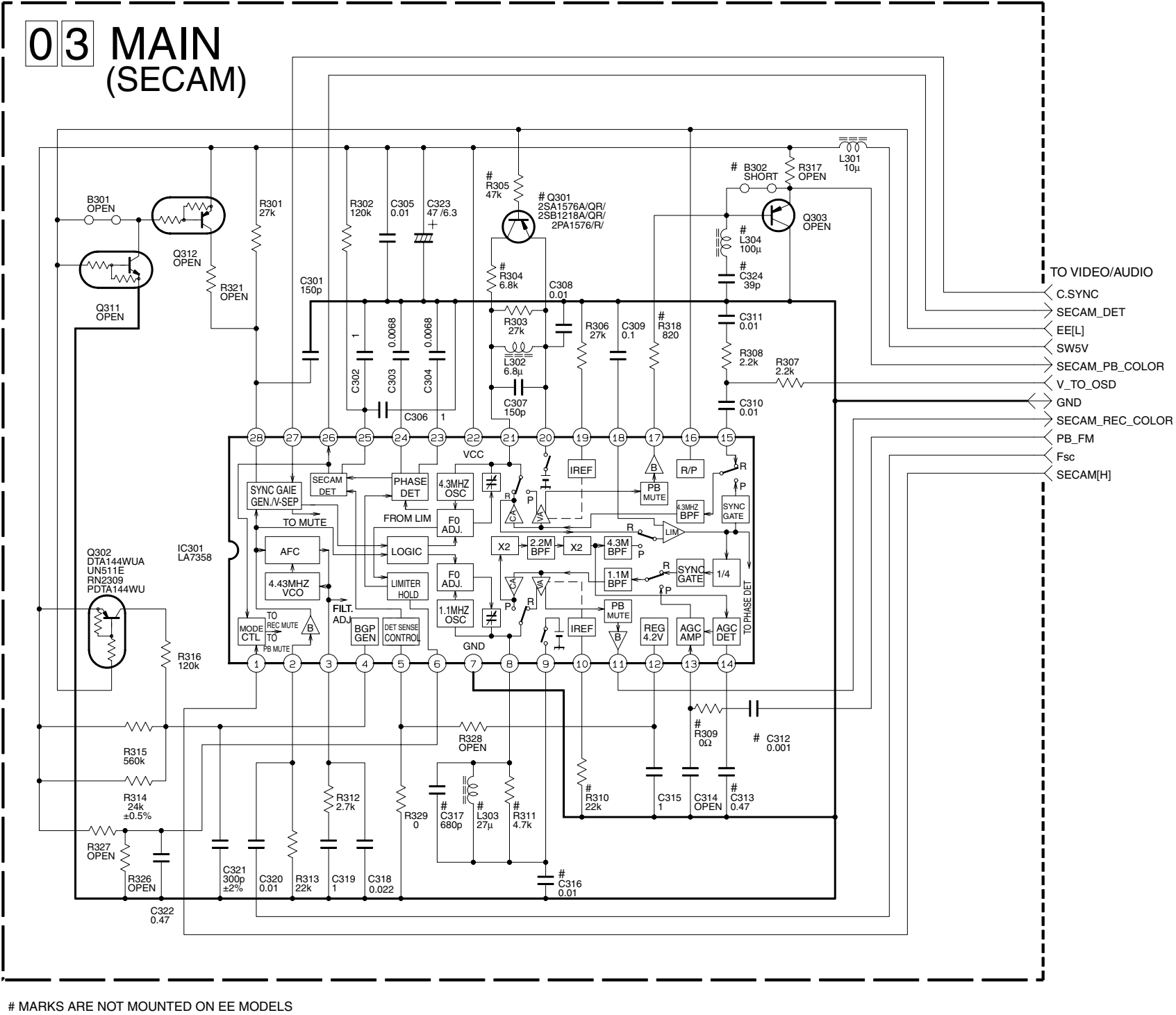


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4.4 MAIN (SECAM) SCHEMATIC DIAGRAM

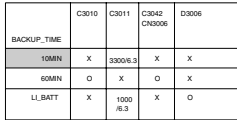
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.
+ ELECTROLYTIC
- CERAMIC
- MY MYLER
- N NON POLAR

TO VIDEO/AUDIO
C.SYNC
SECAM_DET
EE[L]
SW5V
SECAM_PB_COLOR
V_TO_OSD
GND
SECAM_REC_COLOR
PB_FM
Fsc
SECAM[H]

*Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.*



	C4015	C4016	Q4002	C4005	C4017	Q4003
MECHA_TYPE						
Y29-2	0.001	x	x	o	x	x
Y29-T	0.001	x	x	x	o	o
Y29-T-PALEP	680p	o	o	x	o	o

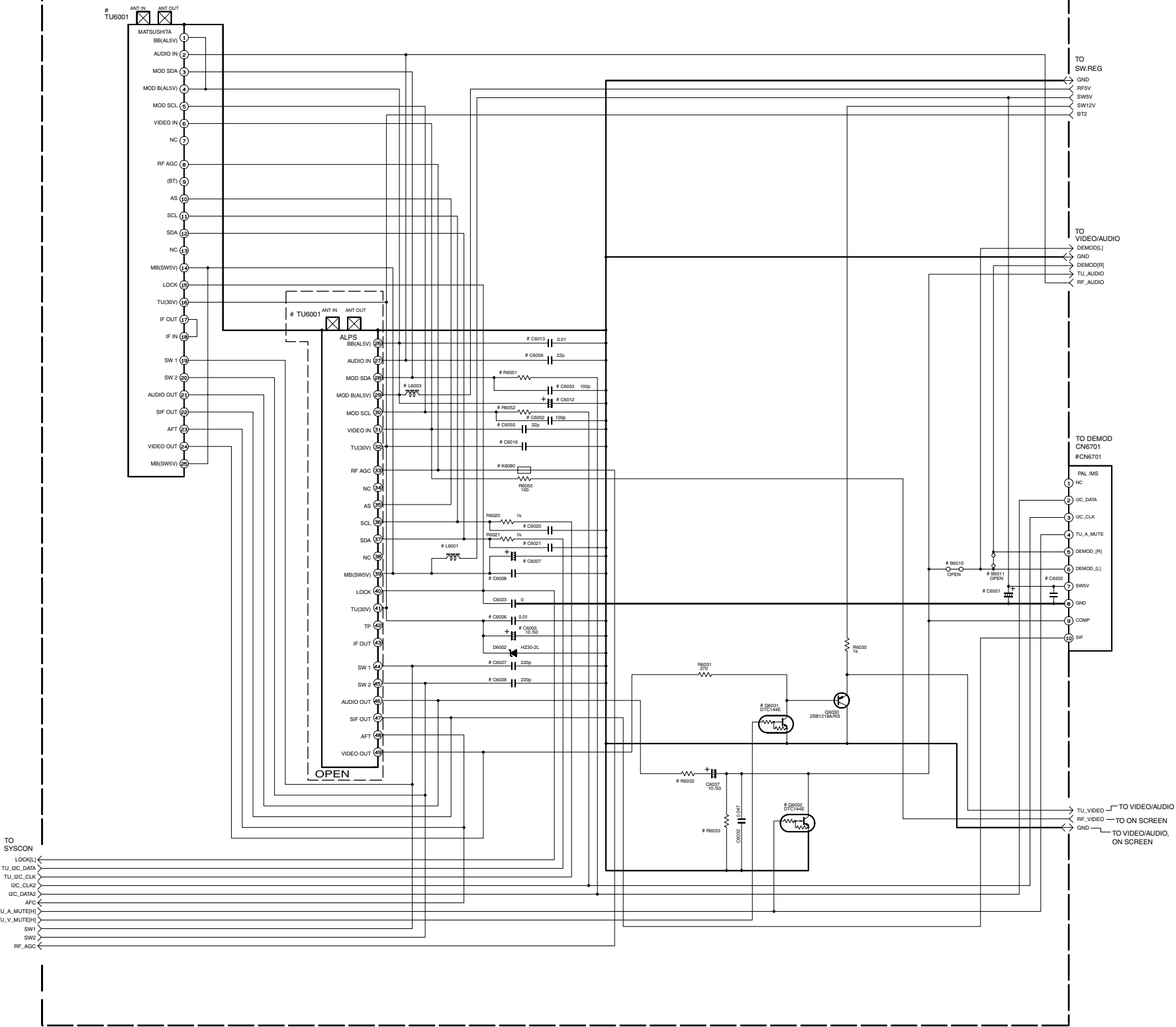
CP_TYPE	
Loaded_type	CP3002 ICP-N25
Surface_type	CP3003 NMF2012-1R0

p10356001a_rev0

4.7 MAIN (TUNER) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.

03 MAIN(TUNER)



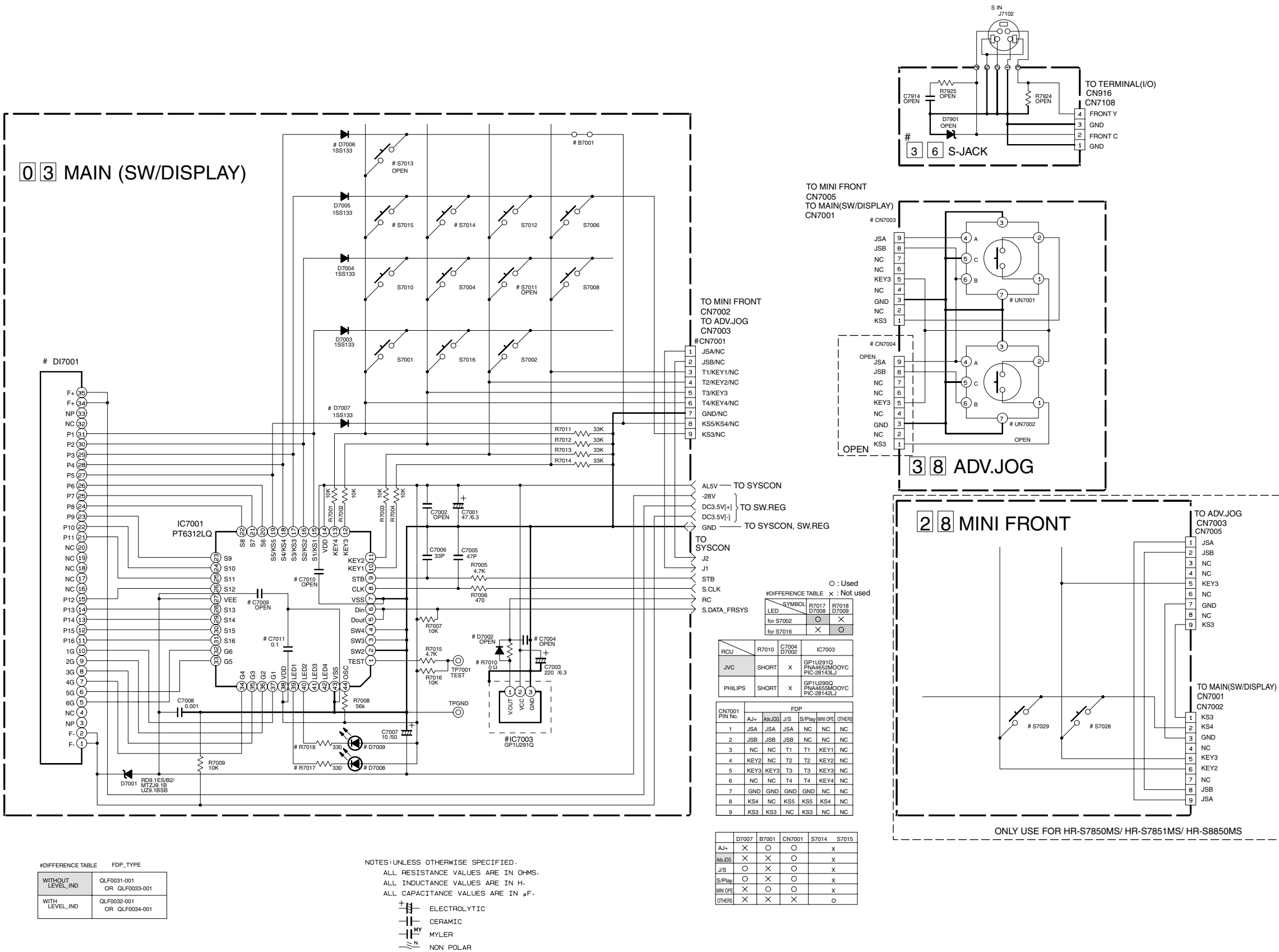
DIFFERENCE TABLE ○ : Used
x : Not used

		EU/EK	FRANCE	ASIA	ASIA	HR-FS/EU
TUNER	TU6001	ALPS	MS	3SYSTEM	4SYSTEM	ALPS
		QAU0008	QAU0210	QAU0212	QAU0206	QAU0008
ATS+	K6080	1kΩ	1kΩ	X	X	10kΩ
SWV	L6001	10μ	10μ	10μ	10μ	10μ
	C6007	220kΩ	220kΩ	220kΩ	220kΩ	220kΩ
	C6008	0.01	X	0.01	0.01	0.01
RFV	L6003	47μ	47μ	47μ	47μ	10μ
	C6012	100/16	100/16	100/16	100/16	330kΩ
	C6013	0.01	0.01	0.01	0.01	0.01
RF CONV.	C6016	0.01	X	0.01	0.01	2200p
	C6005	X	X	X	X	○
RF	TUNER	C6006	X	X	X	X
		R6001	100	X	100	470
		C6003	○	X	○	X
	ISC	R6002	100	X	100	470
		C6002	○	X	○	○
AUDIO IN	RF	C6005	X	X	X	X
		R6005	○	X	○	○
	VIDEO IN	C6005	X	X	X	X
TUNER ISC	TUNER	C6020	X	X	X	X
		C6021	X	X	X	X
		C6027	X	X	X	X
SYSTEM SW	SYSTEM SW	C6028	X	X	X	X
		R6032	4.7k	18k	18k	0
AUDIO OUT	AUDIO OUT	R6033	1.5k	18k	33k	X
		C6032	○	X	○	○
		Q6032	○	○	X	○
		Q6033	○	○	X	○
VIDEO OUT	VIDEO OUT	Q6031	○	○	X	○
		C6001	X	X	X	X
DEMOD PASS CON	DEMOD PASS CON	C6002	0.01	0.01	0.01	2200p

NOTES (UNLESS OTHERWISE SPECIFIED).
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.8 MAIN (SW.DISPLAY), MINI FRONT, S-JACK AND ADV.JOG SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.

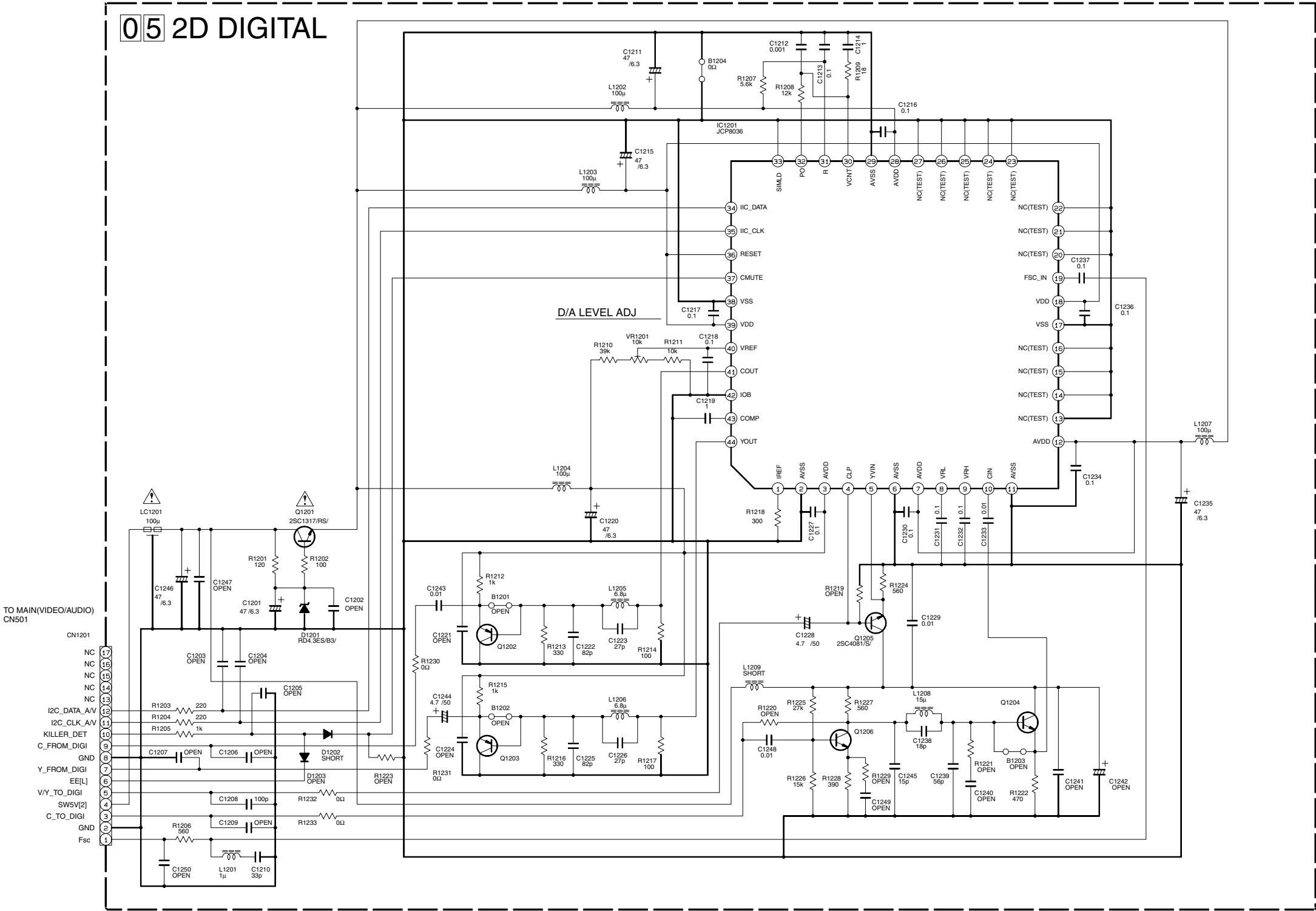


5

1

```
0 3 MAIN(MAIN TERMINAL)
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Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.

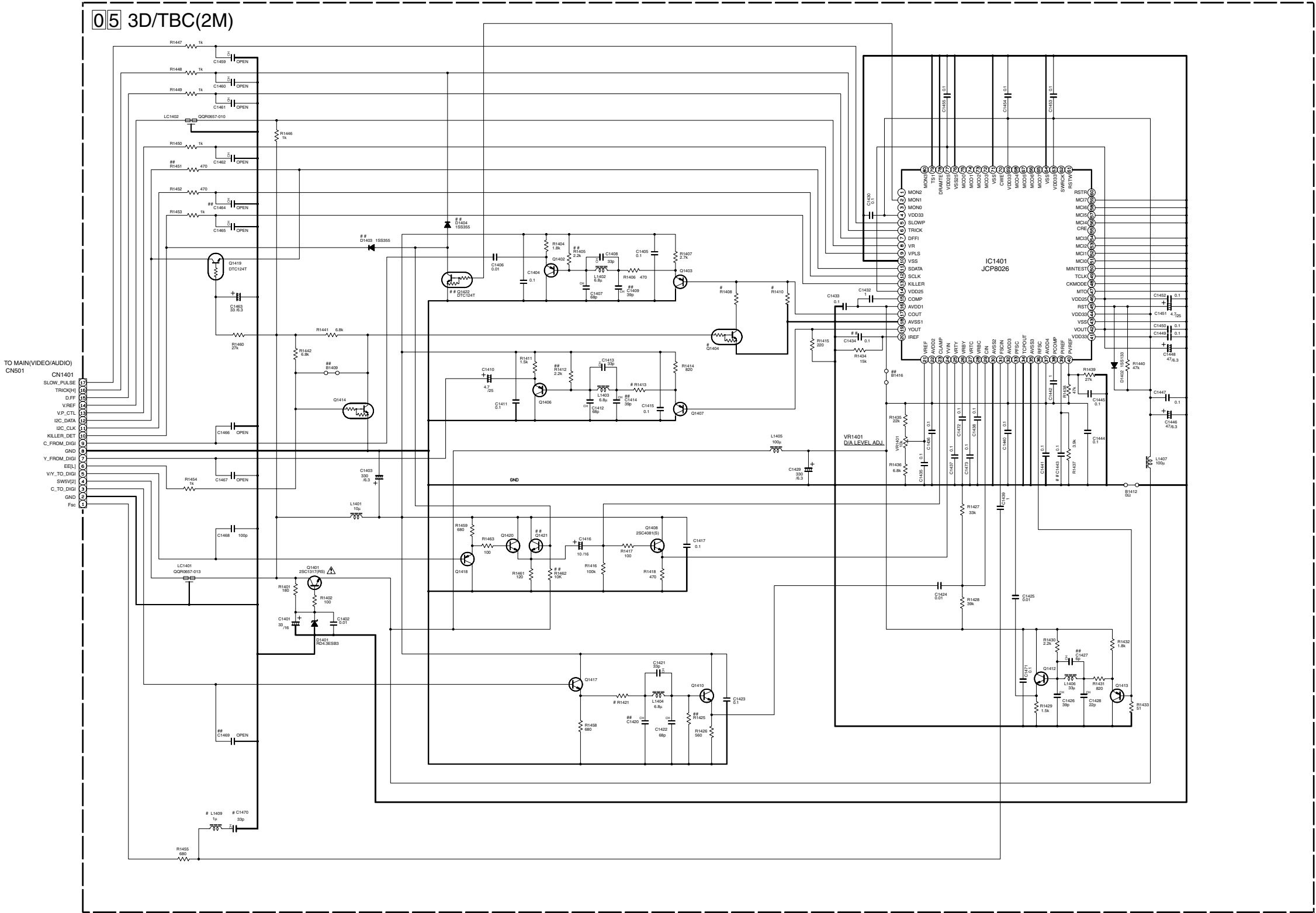


ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/ or 2SD1819A/QRS/ or 2PC4081/R/.
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QR/ or 2SB1218A/QR/ or 2PA1576/R/.

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.
+ ELECTROLYTIC
- CERAMIC
- MYL
- N NON POLAR

4.11 3D/TBC(2M) SCHEMATIC DIAGRAM [HR-S8850MS]

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.
ELECTROLYTIC
CERAMIC
WYLER
NON POLAR

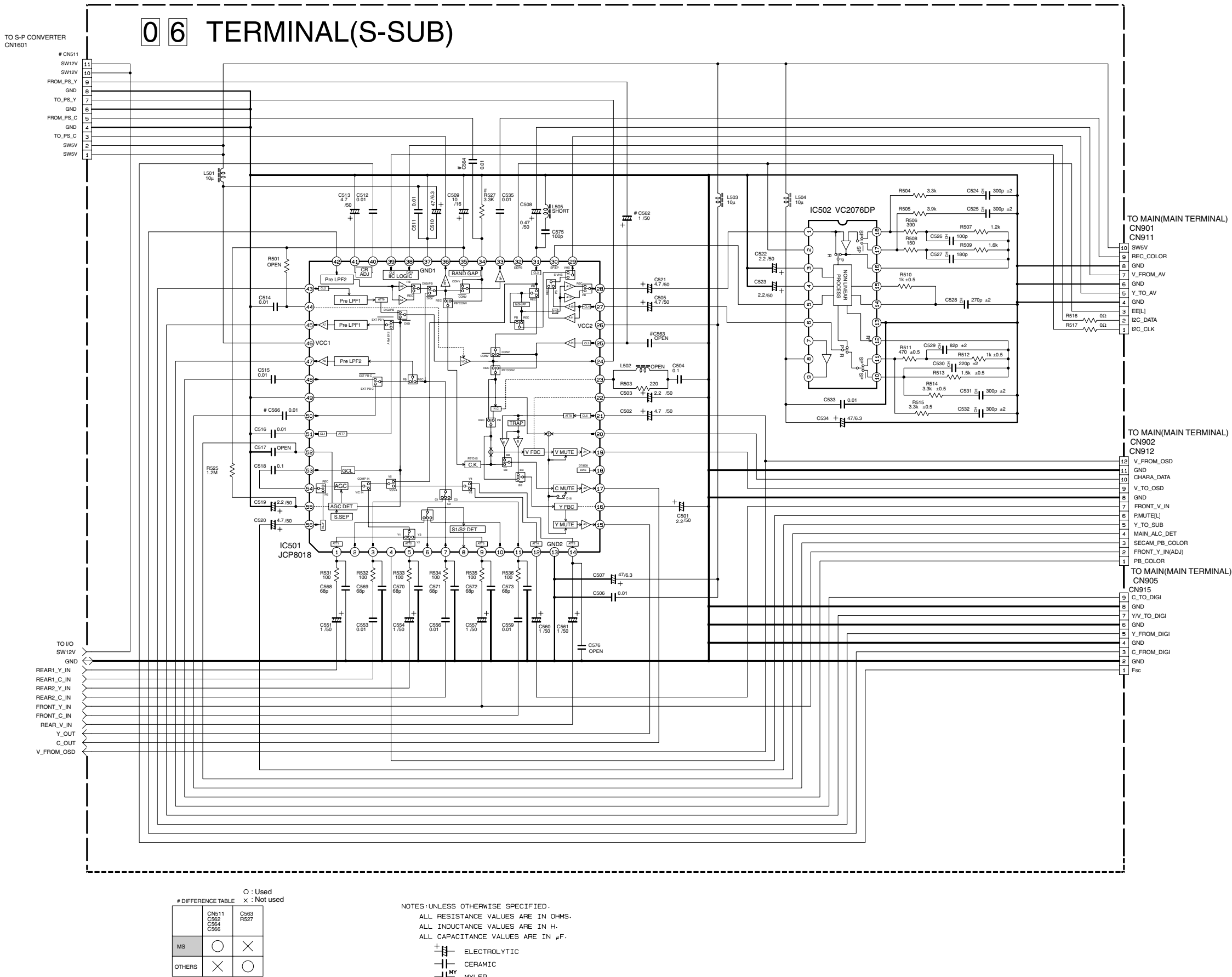
MARK ELEMENTS ARE NOT MOUNTED.
ALL SINGLE DIODE: 1SS133 OR 1N4148
ALL PNP TRANSISTOR: 2SA1576A(QR) OR 2SD1218A(QR) OR 2SA1576(R)
ALL NPN TRANSISTOR: 2SC4081(QRS) OR 2SD1819A(QRS) OR 2PC4081(R)
ALL NPN DIGITAL TRANSISTOR: DTC144WUA OR UN251E OR R1309

DIFFERENCE TABLE

	Q1404	R1408	R1410	R1413	R1421	C1470	L1409
REALMS	USED	1.2k	280	330	330	33p	1u
NTSC	NOT USED	OPEN	240	470	330	OPEN	OPEN

4.12 TERMINAL (S-SUB) SCHEMATIC DIAGRAM

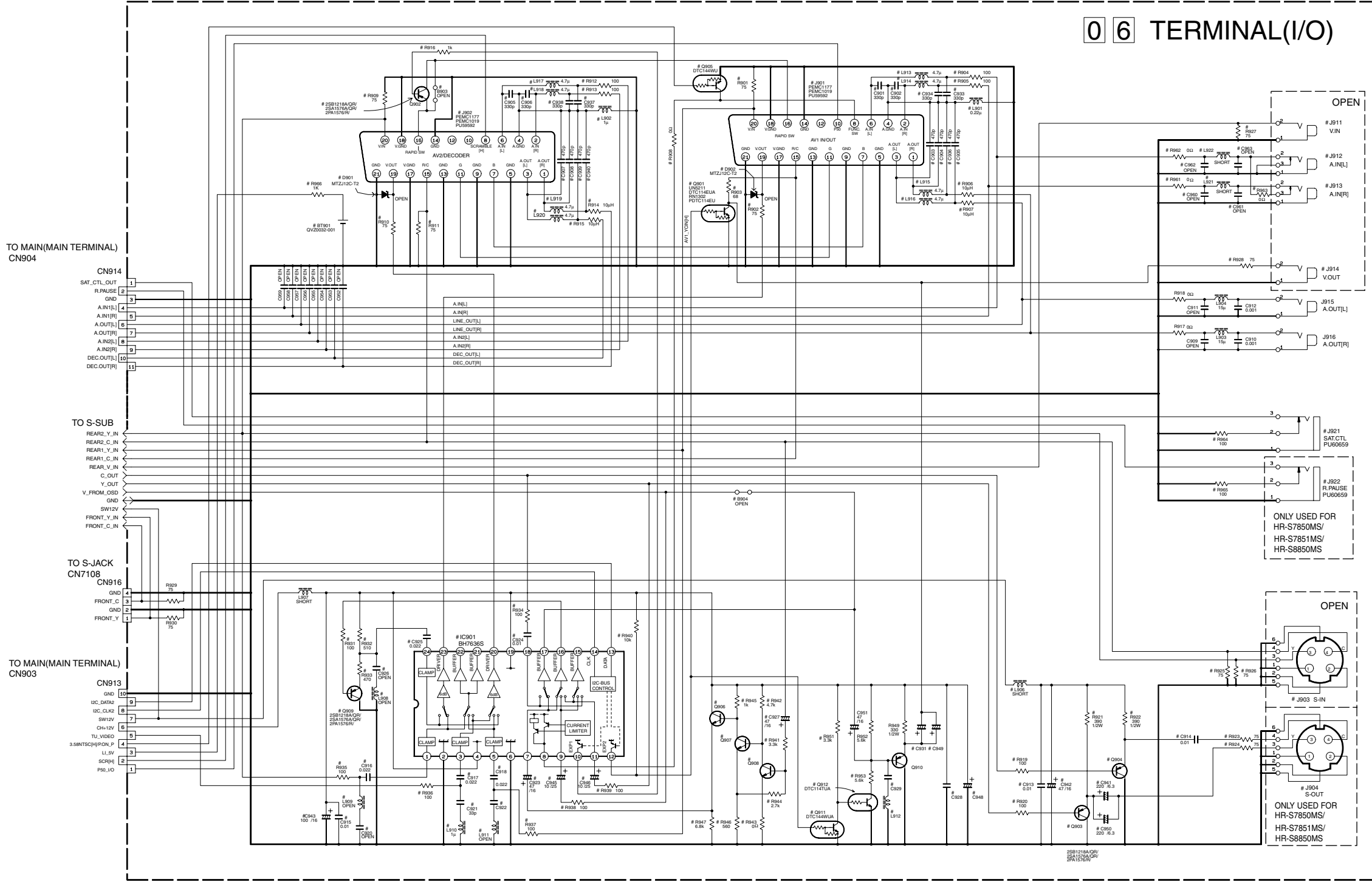
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



4.13 TERMINAL (I/O) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.

06 TERMINAL(I/O)



# DIFFERENCE TABLE		○ : Used x : Not used															
		CH+	REAR S-OUT	S-IN	REAR IN/OUT	SAT CTL	R.PAUSE	SW12VDECU				CE/V-OUT DRIVER				BACK UP	
		R901-R908, R909-R916, R931-R947, R951-R953, L901-L902, L908-L911, L913-L916, L917-L920, IC901 B903-B904 D901-D902 J901-J902	C901-C904, C905-C908, C916-C918, C920-C927, C935-C936, C937-C940, C945-C946, C901 C905 C906-C909, C911-C912	J904 R919-R924 C913-C914 C941-C942 C950 C903-C904 L906	J903 R925-R926	J911-J914 R927-R928 R961-R963 L921-L922 C960-C963	J921 R964	J922 R965	C915	C943	C928	C948	C929	L912	C931	C949	R966 BT901
EURO MODELS	WITHOUT REAR S-OUT		x	x	x	○	x	0.01	100/16	0.01	OPEN	OPEN	OPEN	10/25	OPEN	x	
	WITH REAR S-OUT	○	○	x	x	○	○	0.01	100/16	0.01	OPEN	OPEN	OPEN	10/25	OPEN	x	
ARC MODELS			○	○	○	○	x	x	OPEN	OPEN	0.01	47/16	5.6k	SHORT	220/6.3	220/6.3	○

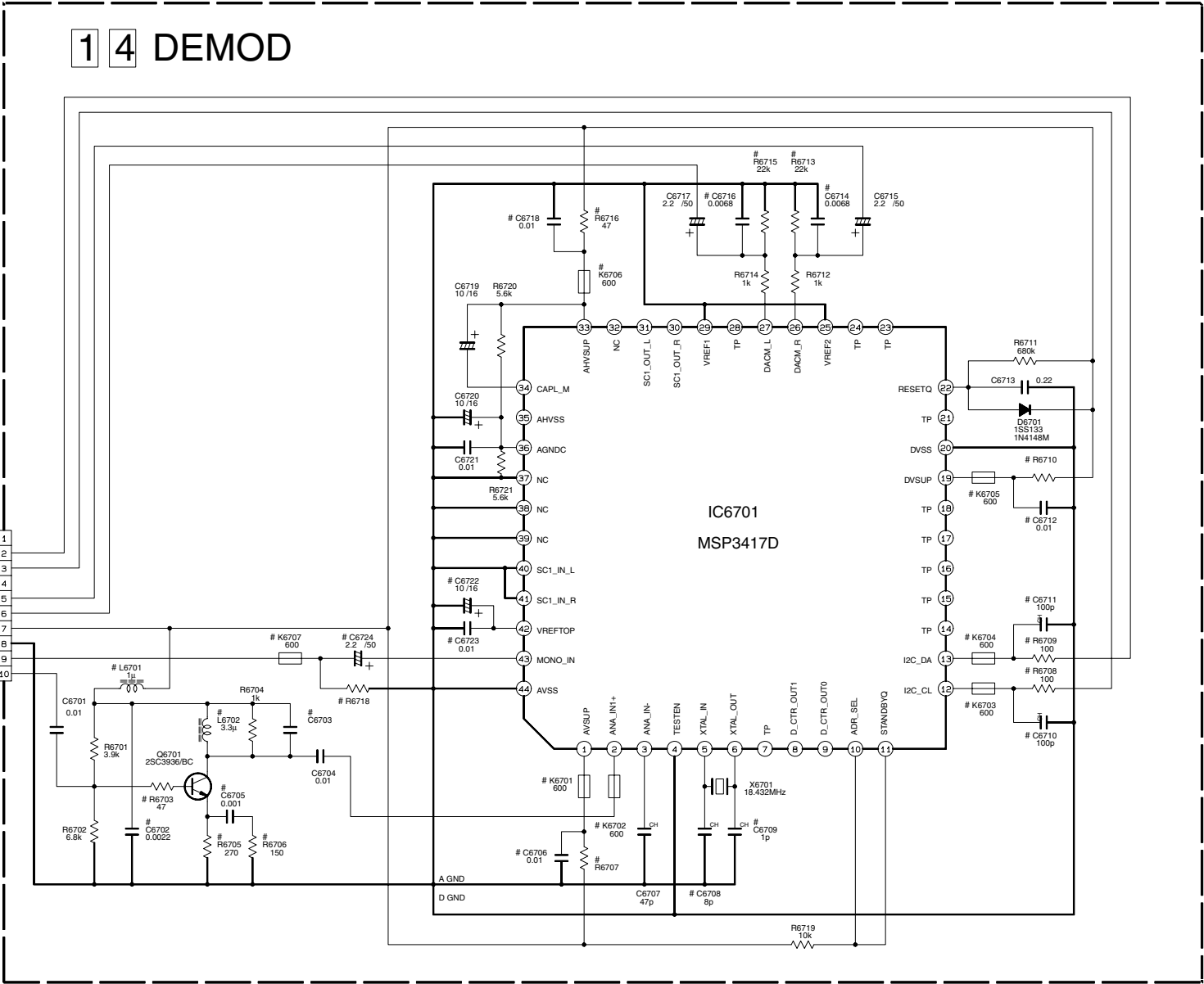
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN #F.

⎓ ELECTROLYTIC
⎓ CERAMIC
MY MYLER
⎓ NON POLAR

ALL NPN TYPE TRANSISTORS ARE 2SC4081(ORS)/ or 2SD1819A(ORS)/ or 2PC4081R/.
ALL PNP TYPE TRANSISTORS ARE 2SA1576A(OR)/ or 2SB1218A(OR)/ or 2PA1576R/.

4.14 DEMODULATOR SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

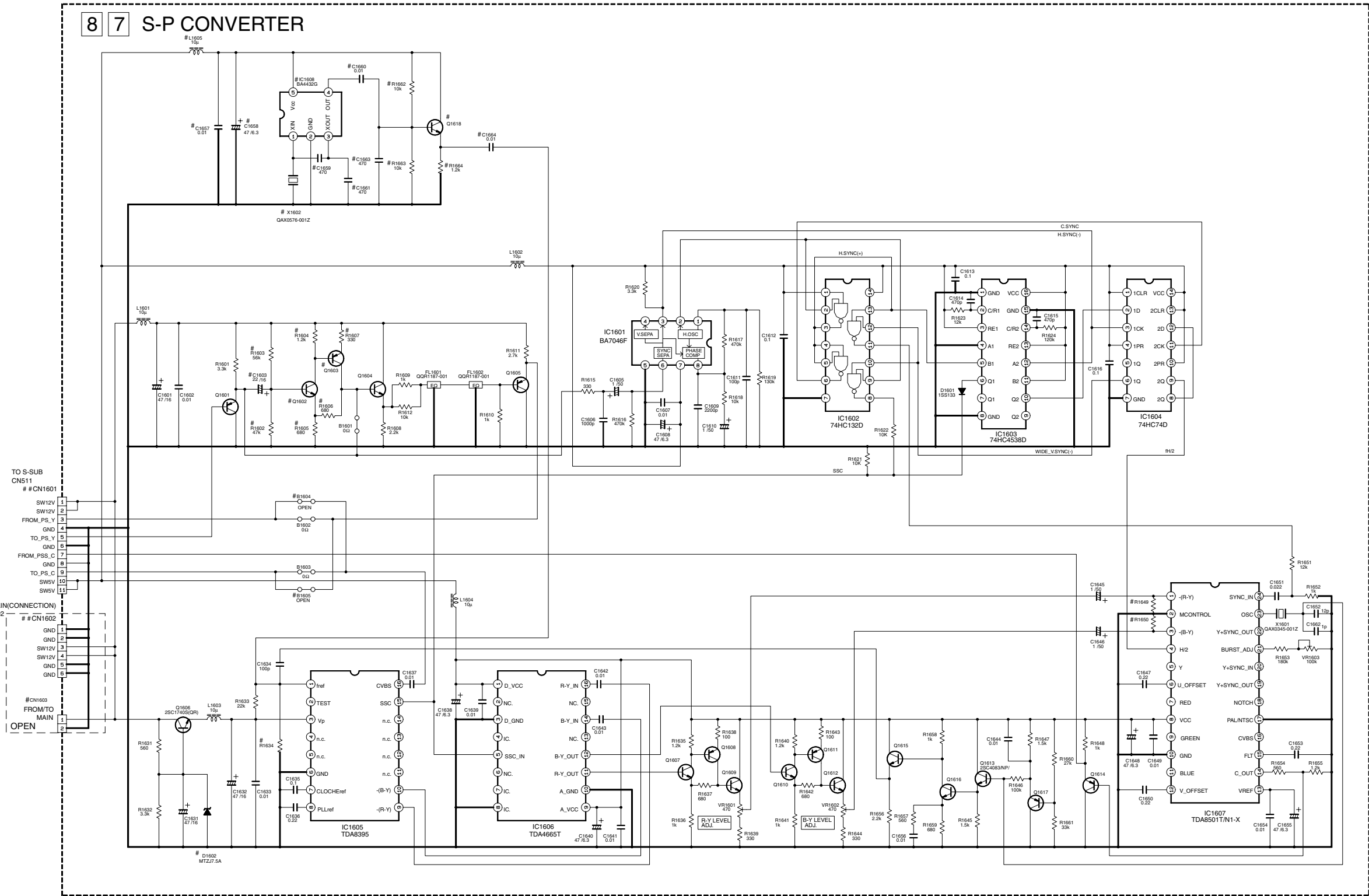
ELECTROLYTIC
 CERAMIC
 MYLAR
 NON POLAR

DIFFERENCE TABLE

		V13			V14			
		FRANCE MS	EU/EK	ARC	EU/EK	FRANCE MS	KOREA	ARC 4SYSTEM
DEMOP PWB ASSY		LPA10094 -01*	LPA10094 -02*	LPA10094 -03*	LPA10094 -04*	LPA10094 -05*	LPA10094 -06*	LPA10094 -07*
PRE AMP	R6703	47	47	47	0	0	47	0
	R6705	270	270	100	270	270	270	270
	R6706	150	150	X	X	X	100	X
	C6702	0.0022	0.0022	0.0022	X	X	X	X
	C6703	X	X	220p	X	X	X	220p
	C6705	0.001	0.001	X	X	X	0.001	X
	L6701	1 μ	1 μ	1 μ	SHORT	SHORT	SHORT	SHORT
	L6702	3.3 μ	3.3 μ	3.3 μ	X	X	3.3 μ	3.3 μ
MONO IN	K6707	FE 600	X	X	X	FE 600	X	X
	C6724	0.22/50	X	X	X	0.22/50	X	X
	R6718	X	X	X	X	X	X	X
I2C-BUS	R6708,R6709	100	100	100	FE 600	FE 600	FE 600	FE 600
	K6703,K6704	FE 600	FE 600	FE 600	1K	1K	1K	1K
	C6710,C6711	X	X	X	X	X	X	X
ANALOG Vcc	R6707	22	47	47	FE 600	FE 600	FE 600	FE 600
	K6701	FE 600	FE 600	FE 600	33	33	33	33
	C6706	X	X	X	X	X	X	X
DIGITAL Vcc	R6710	10	12	12	FE 600	FE 600	FE 600	FE 600
	K6705	FE 600	FE 600	FE 600	10	10	10	10
	C6712	X	X	X	X	X	X	X
DAC Vcc	R6716	47	47	47	FE 600	FE 600	FE 600	FE 600
	K6706	FE 600	FE 600	FE 600	47	47	47	47
	C6718	X	X	X	X	X	X	X
XTAL	C6708	8p	8p	8p	7p	7p	7p	7p
	C6709	1p	1p	1p	3p	3p	3p	3p
DAC OUT	R6713,R6715	X	X	X	X	X	X	X
	C6714,C6716	0.0068	0.0068	0.0068	0.0022	0.0068	0.0022	0.0022
VREF	C6722	X	X	X	X	X	X	X
	C6723	0.01	0.01	0.01	0.01	0.01	0.001	0.01

4.15 S-P CONVERTER SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



MARKED ELEMENTS ARE NOT MOUNTED.

ABOUT ## MARKED ELEMENTS

ELEMENTS	CN1601	CN1602
MODELS		
HR-S8850MS	1pin-11pin	NOT USED
HR-S7850MS		
HR-S8850MS		
VR1200/39	3pin-11pin	3pin-6pin

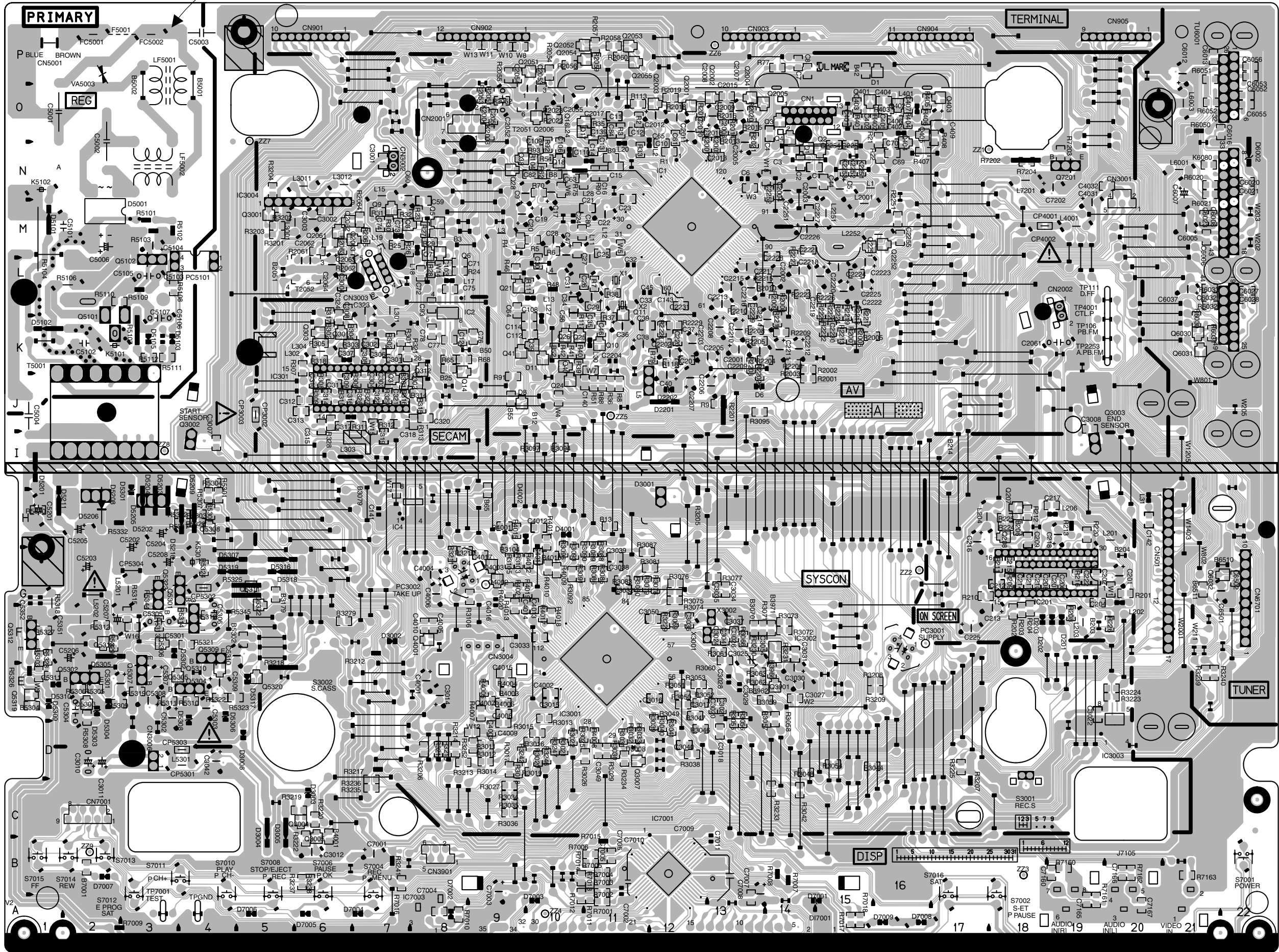
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

+ ELECTROLYTIC
- CERAMIC
- MYLER
- NON POLAR

4.16 MAIN CIRCUIT BOARD

<03> MAIN
LPB10140-001A

DANGEROUS VOLTAGE

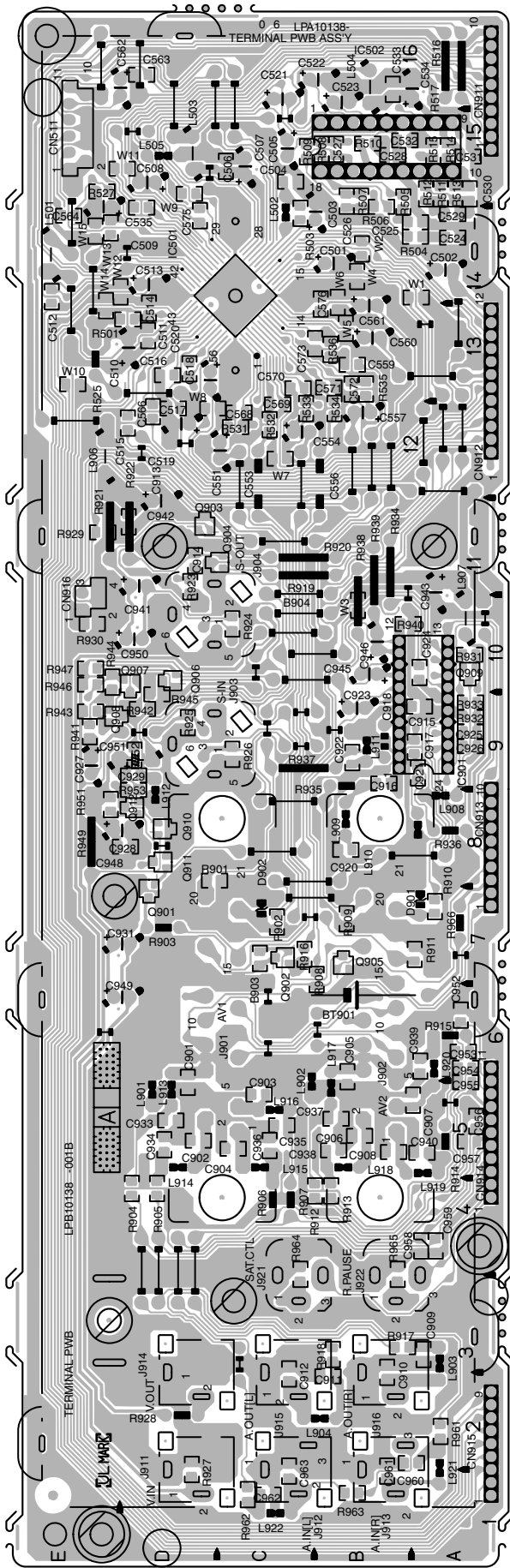


COMPONENT PARTS LOCATION GUIDE <MAIN>

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION					
CAPACITOR																						
C1	B C 14N	C316	B C 6J	C3038	B C 11G	CN3006	A D 3D	L2251	A D 15M	R23	B C 8M	R2056	B C 10P	R3105	B C 9G	R6050	A D 21P					
C2	B C 14N	C317	B C 6J	C3039	B C 11G	CN3901	A D 8B	L2252	A D 15M	R24	B C 8L	R2057	B C 11P	R3106	B C 9G	R6051	A D 21P					
C3	B C 14N	C318	B C 6J	C3040	B C 12D	CN5001	A D 1P	L3001	A D 6M	R25	B C 7M	R2058	B C 11P	R3201	B C 5M	R6052	B C 21A					
C4	B C 14N	C319	B C 7J	C3041	B C 13F	CN6701	A D 22F	L3011	A D 6N	R26	B C 7M	R2059	B C 11P	R3202	B C 5M	R7001	B C 11A					
C5	A D 15N	C320	B C 7J	C3042	A D 4D	CN7001	A D 2C	L3012	A D 7N	R27	B C 8M	R2060	B C 11P	R3203	B C 5M	R7002	B C 11B					
C6	A D 13N	C321	B C 8J	C3049	B C 11D	DIODE												B C 5N	R7003	B C 11B		
C7	A D 14P	C322	B C 7J	C3050	B C 12F	D1	B C 16P	L5201	A D 3G	R28	B C 8M	R2061	B C 6M	R3204	A D 12I	R7004	B C 11B					
C8	B C 14P	C323	B C 7J	C3054	B C 14F	D6	A D 13J	L5202	A D 2F	R30	B C 7M	R2063	B C 6L	R3206	A D 8D	R7005	B C 11B					
C9	A D 9N	C324	A D 6L	C4001	A D 8E	D8	B C 9J	L5301	A D 4D	R31	B C 7M	R2064	B C 7M	R3207	A D 17D	R7006	B C 11B					
C10	B C 12N	C401	B C 15O	C4003	B C 9D	D11	B C 10K	L6001	A D 21N	R32	B C 7M	R2065	B C 7M	R3208	B C 16E	R7007	A D 14B					
C11	B C 11O	C402	B C 15O	C4004	A D 8G	D201	B C 10K	L6003	A D 21N	R33	B C 11N	R2201	A D 13J	R3209	B C 16E	R7008	A D 14B					
C12	B C 11O	C403	B C 15O	C4005	A D 8F	D202	B C 10K	L7201	A D 18N	R35	B C 11O	R2202	B C 14K	R3210	B C 8G	R7009	A D 3A					
C13	B C 11N	C404	B C 16O	C4006	A D 8G	D203	B C 10K	TRANSISTOR												B C 8G	R7010	B C 8A
C14	B C 11N	C405	B C 16O	C4007	B C 9E	D2201	B C 10K	Q1	B C 14N	R36	B C 11J	R2203	B C 13K	R3211	A D 7F	R7011	B C 11A					
C15	B C 11N	C406	B C 16O	C4008	B C 9E	D2202	B C 10K	Q2	B C 15N	R37	B C 11K	R2204	B C 14K	R3212	A D 8D	R7012	B C 10A					
C16	B C 11N	C407	B C 16O	C4009	B C 9D	D3001	B C 10K	Q3	B C 14N	R38	B C 10K	R2205	B C 14K	R3213	B C 8D	R7013	B C 11B					
C17	A D 10N	C409	A D 17O	C4010	B C 8F	D3002	B C 10K	Q4	B C 14M	R39	B C 10K	R2206	B C 14K	R3214	B C 8D	R7014	B C 10B					
C19	A D 10M	C2001	A D 13K	C4011	B C 10G	D3003	B C 10K	Q5	B C 14O	R40	B C 10K	R2207	B C 13K	R3215	B C 8D	R7015	B C 10B					
C20	A D 9M	C2002	A D 14L	C4012	B C 10H	D3004	B C 10K	Q6	B C 8M	R41	B C 10K	R2208	B C 14K	R3216	A D 7D	R7016	B C 7B					
C21	B C 11M	C2003	A D 14N	C4013	B C 10F	D3005	B C 10K	Q7	B C 8M	R42	B C 9L	R2210	B C 14K	R3218	A D 6E	R7017	B C 15A					
C22	A D 11M	C2004	B C 14N	C4014	B C 10F	D3006	B C 10K	Q8	B C 7M	R43	B C 10K	R2211	B C 15K	R3219	B C 6C	R7018	B C 19B					
C23	B C 11N	C2005	A D 13N	C4015	B C 9E	D3008	B C 10K	Q9	B C 7M	R44	B C 10N	R2212	B C 14L	R3220	B C 6B	R7161	B C 19A					
C24	A D 10M	C2006	B C 13O	C4016	A D 9G	D4001	A D 10H	Q10	B C 11K	R45	B C 10N	R2213	B C 15K	R3222	B C 20E	R7162	B C 20B					
C25	B C 11M	C2007	A D 13O	C4017	B C 9G	D4002	A D 10H	Q11	B C 11K	R46	B C 10N	R2214	B C 15L	R3223	B C 20E	R7163	B C 21B					
C26	B C 11L	C2008	A D 13O	C4031	B C 19M	D5001	B C 2M	Q12	B C 11K	R47	B C 10N	R2215	B C 15L	R3224	B C 12F	R7202	B C 18N					
C27	B C 10M	C2009	B C 13O	C4032	B C 20N	D5101	A D 1M	Q13	B C 11O	R48	B C 10N	R2216	B C 15K	R3225	B C 12F	R7203	B C 18N					
C28	A D 10M	C2010	B C 13O	C5001	A D 1P	D5102	A D 2K	Q14	B C 11O	R49	B C 10N	R2217	B C 15K	R3226	B C 13F	R7204	A D 18N					
C29	B C 11L	C2011	A D 12O	C5002	A D 2N	D5103	A D 3K	Q15	B C 11O	R50	B C 10N	R2218	B C 15L	R3227	SWITCH							
C30	B C 10L	C2012	A D 12O	C5003	A D 4P	D5105	A D 3K	Q16	B C 12I	R51	B C 14P	R2224	B C 15L	R3231	B C 14C	S3001	A D 18C					
C31	A D 10L	C2013	B C 13N	C5004	A D 1J	D5201	A D 1I	Q17	B C 10K	R52	B C 12K	R2225	B C 15L	R3233	B C 11D	S3002	A D 6B					
C32	A D 11L	C2014	B C 12K	C5006	A D 2M	D5202	A D 3H	Q18	B C 10K	R53	B C 11N	R2226	B C 14L	R3234	B C 7C	S3003	A D 22B					
C33	A D 11L	C2015	B C 13O	C5101	A D 2M	D5203	A D 3I	Q19	B C 10K	R54	B C 9J	R2227	B C 12K	R3236	B C 7C	S3004	A D 18B					
C34	B C 10L	C2016	B C 13O	C5102	A D 2K	D5204	A D 3I	Q20	B C 9N	R55	B C 10N	R2228	B C 12K	R3237	B C 6B	S7002	A D 7B					
C35	B C 11K	C2051	B C 9O	C5104	A D 3M	D5205	A D 3I	Q21	B C 9N	R56	B C 10N	R2229	B C 16M	R3238	B C 6B	S7006	A D 6B					
C36	A D 11K	C2052	B C 9O	C5105	A D 3L	D5206	A D 2H	Q22	B C 10K	R57	B C 10N	R2231	B C 9D	R3239	B C 21E	S7008	A D 5B					
C37	A D 12K	C2053	B C 10P	C5106	A D 3K	D5209	A D 4H	Q23	B C 9K	R58	B C 10L	R3012	B C 8D	R3240	B C 21E	S7010	A D 4B					
C38	A D 11K	C2054	B C 9P	C5107	A D 3K	D5210	A D 4H	Q27	B C 18H	R59	B C 11O	R3013	B C 10E	R3241	A D 7B	S7011	A D 4B					
C39	A D 12K	C2055	A D 10O	C5201	A D 1H	D5211	A D 1H	Q28	B C 18H	R60	B C 10K	R3014	B C 10D	R3242	A D 7B	S7012	A D 3B					
C40	A D 12J	C2061	A D 19K	C5202	A D 3G	D5301	A D 3I	Q301	B C 6K	R61	B C 10K	R3015	B C 10D	R3246	B C 9D	S7013	A D 2B					
C44	A D 15N	C2062	B C 6M	C5203	A D 2G	D5302	A D 3F	Q302	B C 8J	R62	B C 20G	R3016	B C 10D	R3247	B C 10D	S7014	A D 2B					
C45	A D 12L	C2063	B C 6L	C5204	A D 3H	D5303	A D 2E	Q303	B C 8J	R63	B C 18F	R3017	B C 10D	R3252	B C 9D	S7015	A D 1B					
C46	B C 11K	C2064	A D 6L	C5205	A D 2H	D5304	A D 2E	Q311	B C 7J	R64	B C 18F	R3018	B C 10D	R3001	B C 9E	S7016	A D 17B					
C47	A D 10M	C2201	B C 12K	C5206	A D 2F	D5305	A D 2F	Q312	B C 8K	R65	B C 19F	R3019	B C 10D	R3020	B C 9E	TEST POINT						
C56	B C 10K	C2202	B C 12K	C5207	A D 2F	D5306	A D 4D	Q401	B C 15O	R66	B C 17G	R3021	B C 10D	R4005	B C 9E	TP106	A D 20K					
C59	B C 8M	C2203	A D 12K	C5208	A D 3G	D5307	A D 4G	Q402	B C 16O	R67	B C 17G	R3022	B C 10D	R4006	B C 9E	TP111	A D 20K					
C60	A D 7M	C2204	A D 11K	C5301	A D 3E	D5308	A D 4D	Q403	B C 17O	R68	B C 18G	R3025	B C 11D	R4007	B C 11D	TP2253	A D 20L					
C61	B C 12O	C2205	A D 13K	C5302	A D 3E	D5309	A D 1E	Q404	B C 16N	R69	B C 18G	R3026	B C 11D	R4008	B C 11D	TP3901	A D 12D					
C63	B C 10N	C2206	A D 13J	C5303	A D 4E	D5310	A D 2E	Q405	B C 16O	R70	B C 19H	R3027	B C 9C	R4009	B C 10G	TP3902	B C 12E					
C64	B C 9L	C2207	A D 12J	C5304	A D 2E	D5316	A D 5G	Q2001	B C 12O	R71	B C 19G	R3029	B C 11D	R4010	B C 10G	TP3903	B C 13E					
C65	A D 12O	C2208	A D 13K	C5305	A D 3F	D5317	A D 5E	Q2002	B C 13O	R72	B C 19H	R3030	B C 11D	R4011	B C 10H	TP3904	B C 14F					
C69	B C 16N	C2209	A D 13K	C5306	A D 4G	D5318	A D 6G	Q2003	B C 12O	R73	B C 18H	R3031	B C 11D	R4012	B C 10G	TP3905	B C 13F					
C70	B C 16N	C2210	A D 13K	C5307	A D 3E	D5319	A D 5G	Q2004	B C 13O	R74	B C 18H	R3032	B C 11D	R4013	B C 9F	TP3906	B C 13E					
C72	B C 8L	C2211	A D 14K	C5308	A D 3E	D6002	B C 22O	Q2005	B C 14O	R75	B C 20F	R3033	B C 11D	R4015	B C 9H	TP3907	B C 14E					
C73	B C 7M	C2212	A D 14K	C5309	A D 4E	D7001	A D 15A	Q2006	B C 10O	R301	B C 7K	R3034	B C 9C	R4016	B C 10G	TP3908	B C 14E					
C74	B C 7M	C2213	A D 13L	C5310	A D 5F	D7002	A D 8A	Q2051	B C 10P	R302	B C 7K	R3035	B C 9C	R4017	B C 10F	TP4001	A D 30K					
C75	B C 8L	C2214	A D 14L	C5311	B C 1E	D7003	A D 10A	Q2052	B C 10P	R303	B C 6K	R3036	B C 9C	R4018	B C 10F	TP7001	A D 4A					
C76	B C 8L	C2215	A D 13L	C5351	A D 1F	D7004	B C 7A	Q2053	B C 11P	R304	B C 7K	R3038	B C 12D	R4019	B C 10G	TPGND	A D 4A					
C77	B C 9K	C2216	A D 13L	C5352	A D 1F	D7005	A D 6A	Q2054	B C 11P	R305	B C 6K	R3039	B C 12D	R4020	B C 9G	OTHER						
C78	B C 8K	C2217	A D 13L	C6005	A D 21M	D7006	A D 5A	Q2055	B C 11P	R306	B C 7J	R3040	B C 12D	R4021	B C 9G	CP3002	5J					
C80	B C 10M	C2218	A D 14L	C6006	B C 21M	D7007	A D 2B	Q2061	B C 6M	R307	B C 6K	R3041	B C 12D	R5101	A D 3M	CP3003	5J					
C82	B C 10N	C2219	A D 15L	C6007	B C 21M	D7008	A D 16A	Q2062	B C 6M	R308	B C 6J	R3042	B C 14C	R5102	A D 3M	CP4001	18M					
C84	B C 11O	C2220	A D 15L	C6008	B C 21M	D7009	A D 16A	Q2063	B C 7M	R309	B C 6J	R3044	B C 15D	R5103	A D 3M	CP4002	19M					
C89	B C 8L	C2221	B C 14M	C6012	B C 21P	Q2251	B C 15M	R310	B C 6M	R310												

4.18 TERMINAL CIRCUIT BOARD

<06> TERMINAL
LPB10138-001B

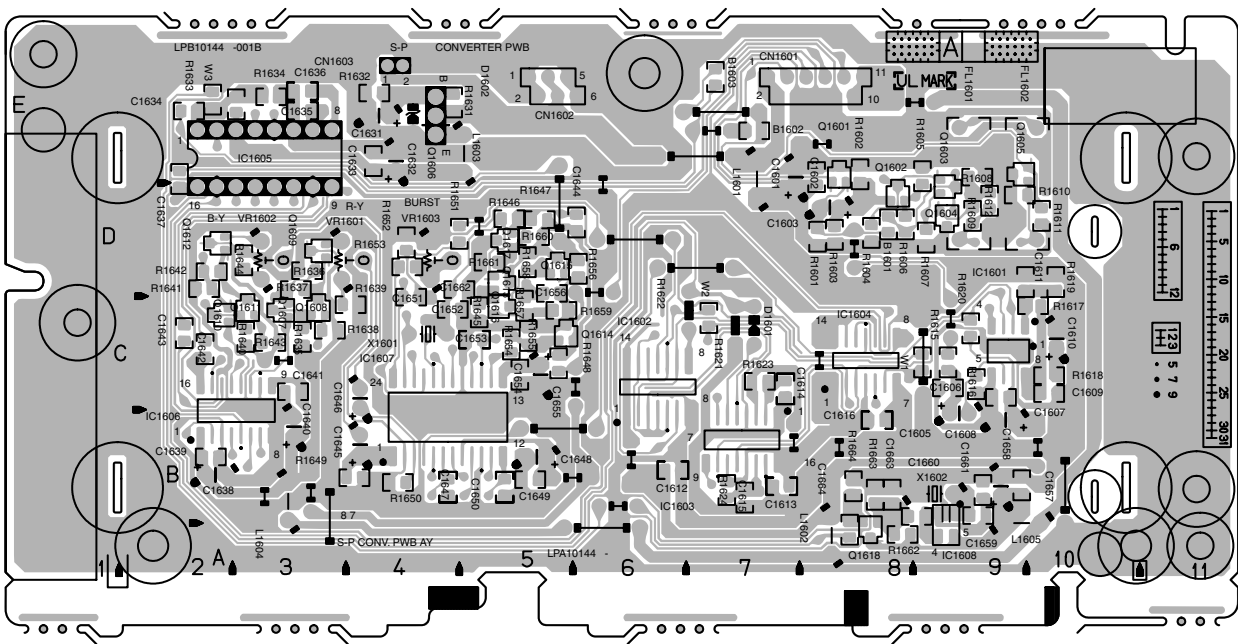


COMPONENT PARTS LOCATION GUIDE
<TERMINAL>

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR					
C501	A D 14B	C954	B C 6A	R535	B C 13B
C502	A D 14A	C955	B C 5A	R536	B C 13B
C503	A D 14B	C956	B C 5A	R901	B C 8D
C504	B C 15C	C957	B C 4A	R902	B C 7C
C505	A D 15C	C958	B C 4A	R903	A D 7D
C506	A D 15C	C959	B C 2B	R904	B C 4D
C507	A D 15C	C960	B C 1B	R905	B C 4D
C508	A D 15D	C961	B C 1C	R906	A D 4C
C509	A D 14E	C962	B C 1C	R907	A D 4C
C510	A D 13D	C963	B C 1C	R908	B C 7B
C511	B C 13D	CONNECTOR			
C512	B C 14E	CN511	A D 15E	R909	B C 7A
C513	A D 14D	CN911	A D 15A	R910	B C 7A
C514	B C 13D	CN912	A D 12A	R911	B C 4B
C515	B C 12D	CN913	A D 7A	R912	B C 4B
C516	B C 13D	CN914	A D 4A	R913	A D 5A
C517	B C 12D	CN915	A D 1A	R914	A D 6A
C518	A D 13D	CN916	A D 10E	R915	B C 7C
C519	A D 12D	DIODE			
C520	A D 13D	D901	A D 8A	R916	B C 3B
C521	A D 16C	D902	A D 7C	R917	B C 3B
C522	A D 16C	IC			
C523	A D 16B	IC501	B C 14C	R918	A D 11B
C524	B C 14A	IC502	A D 15B	R919	A D 11B
C525	B C 14A	IC901	A D 9B	R920	A D 11D
C526	B C 15B	JACK			
C527	B C 15B	J901	A D 6C	R921	A D 11D
C528	B C 15B	J902	A D 6B	R922	A D 11D
C529	B C 14A	J903	A D 9D	R923	B C 10C
C530	B C 15A	J904	A D 10D	R924	B C 9C
C531	B C 15B	J911	A D 2D	R925	B C 2D
C532	B C 16B	J912	A D 2C	R926	A D 2D
C533	A D 16A	J913	A D 2B	R927	B C 11E
C534	B C 14D	J914	A D 3D	R928	B C 10E
C535	A D 12C	J915	A D 3C	R929	B C 10A
C536	A D 12C	J916	A D 3B	R930	B C 9A
C537	A D 12C	J921	A D 4C	R931	A D 9B
C538	A D 12B	J922	A D 4B	R932	A D 8A
C539	A D 12B	COIL			
C540	A D 12B	L501	A D 14E	R933	A D 11B
C541	A D 13B	L502	A D 14C	R934	B C 10B
C542	A D 13B	L503	A D 15D	R935	B C 9E
C543	A D 16D	L504	A D 16B	R936	B C 9E
C544	B C 16D	L505	A D 15D	R937	B C 10E
C545	B C 14E	L901	A D 5C	R938	B C 10E
C546	B C 12D	L902	A D 5C	R939	B C 10E
C547	B C 12C	L903	A D 3A	R940	B C 10E
C548	B C 12C	L904	A D 2B	R941	A D 8E
C549	B C 13C	L905	A D 12E	R942	B C 8D
C550	B C 13B	L906	A D 10A	R943	B C 2A
C551	B C 13B	L907	A D 8A	R944	B C 2A
C552	B C 13B	L908	A D 8A	R945	B C 1C
C553	B C 14D	L909	A D 8A	R946	B C 1B
C554	B C 13B	L910	A D 8A	R947	B C 4C
C555	B C 13B	L911	A D 9B	R948	B C 4B
C556	B C 5D	L912	A D 8D	R949	B C 4B
C557	B C 5D	L913	A D 6D	R950	B C 7A
C558	B C 5C	L914	A D 5D	OTHER	
C559	B C 5C	L915	A D 5C	BT901	A D 6B
C560	B C 6B	L916	A D 5C	TRANSISTOR	
C561	B C 5B	L917	A D 5C	Q901	B C 7D
C562	B C 5A	L918	A D 5B	Q902	B C 7C
C563	B C 5B	L919	A D 5B	Q903	B C 11D
C564	B C 3A	L920	A D 5A	Q904	B C 11D
C565	B C 3B	L921	A D 2A	Q905	B C 7B
C566	B C 2B	L922	A D 1C	Q906	B C 10D
C567	B C 2C	RESISTOR			
C568	B C 2C	R501	B C 13D	R502	B C 13D
C569	B C 2C	R503	B C 14C	R503	B C 14C
C570	B C 2C	R504	B C 14A	R504	B C 14A
C571	B C 2C	R505	B C 15B	R505	B C 15B
C572	B C 2C	R506	B C 14B	R506	B C 14B
C573	B C 2C	R507	B C 15B	R507	B C 15B
C574	B C 2C	R508	B C 15B	R508	B C 15B
C575	B C 2C	R509	B C 15C	R509	B C 15C
C576	B C 2C	R510	B C 15B	R510	B C 15B
C577	B C 2C	R511	B C 15A	R511	B C 15A
C578	B C 2C	R512	B C 15A	R512	B C 15A
C579	B C 2C	R513	B C 15A	R513	B C 15A
C580	B C 2C	R514	B C 15A	R514	B C 15A
C581	B C 2C	R515	B C 15A	R515	B C 15A
C582	B C 2C	R516	B C 16A	R516	B C 16A
C583	B C 2C	R517	B C 16A	R517	B C 16A
C584	B C 2C	R518	B C 13E	R518	B C 13E
C585	B C 2C	R519	B C 15E	R519	B C 15E
C586	B C 2C	R520	B C 12C	R520	B C 12C
C587	B C 2C	R521	B C 12C	R521	B C 12C
C588	B C 2C	R522	B C 12C	R522	B C 12C
C589	B C 2C	R523	B C 12C	R523	B C 12C
C590	B C 2C	R524	B C 12B	R524	B C 12B

4.19 S-P CONVERTER AND DEMODULATOR CIRCUIT BOARDS

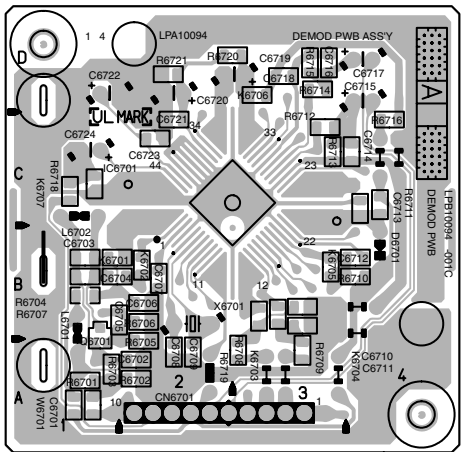
<87> S-P CONVERTER
LPB10144-001B



COMPONENT PARTS LOCATION GUIDE <S-P CONVERTER>

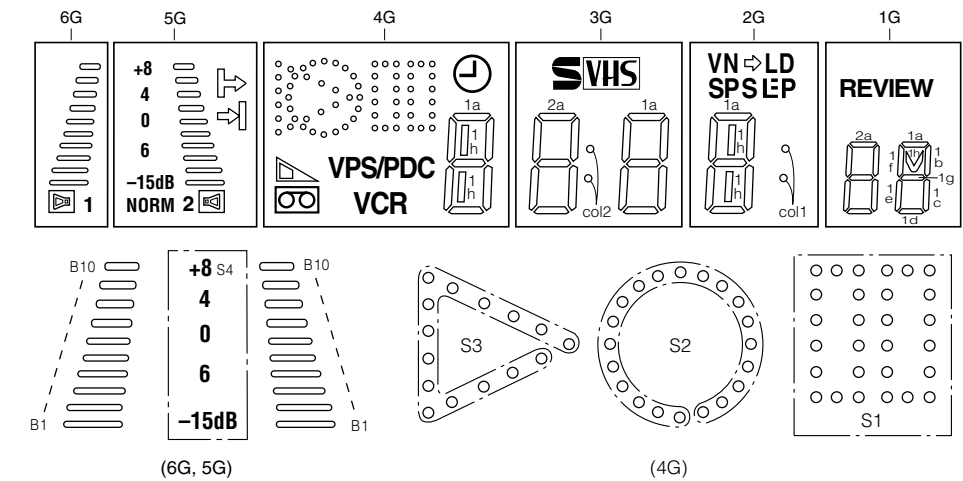
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CAPACITOR													
C1601	A D 7E	C1635	B C 3E	C1655	A D 5C	IC1602	B C 6C	C1606	A D 4E	R1607	B C 9D	R1635	B C 3C
C1602	B C 8E	C1636	B C 3E	C1656	B C 5D	IC1603	B C 7B	C1607	B C 3C	R1608	B C 9D	R1636	B C 3D
C1603	A D 8D	C1637	A D 2E	C1657	B C 9B	IC1604	B C 8C	C1608	B C 3C	R1609	B C 9D	R1637	B C 3D
C1604	A D 8D	C1638	A D 2B	C1658	A D 9B	IC1605	A D 2E	C1609	B C 3C	R1610	B C 9D	R1638	B C 3D
C1605	A D 9C	C1639	A D 2B	C1659	B C 9B	IC1606	B C 3C	C1610	B C 2C	R1611	B C 10D	R1639	B C 3C
C1606	B C 9C	C1640	A D 3B	C1660	B C 9B	IC1607	B C 4C	C1611	B C 3C	R1612	B C 9C	R1640	B C 3C
C1607	B C 9C	C1641	A D 3C	C1661	B C 9B	IC1608	B C 9B	C1612	B C 2D	R1613	B C 9C	R1641	B C 2D
C1608	A D 9B	C1642	B C 2C	C1662	B C 8B	COIL		C1613	B C 5D	R1614	B C 9C	R1642	B C 2D
C1609	B C 10C	C1643	B C 2C	C1663	B C 8B	L1601	A D 7E	C1614	B C 5C	R1615	B C 10C	R1643	B C 3C
C1610	A D 10C	C1644	B C 6D	C1664	B C 8B	L1602	A D 8A	C1615	B C 5D	R1616	B C 10C	R1644	B C 3D
C1611	B C 9D	C1645	A D 4B	CONNECTOR		L1603	A D 5E	C1616	B C 5C	R1617	B C 10C	R1645	B C 3C
C1612	B C 6B	C1646	A D 4C	CN1601	A D 7F	L1604	A D 3B	C1617	B C 5C	R1618	B C 10C	R1646	B C 3D
C1613	B C 7B	C1647	A D 4B	CN1602	A D 5F	L1605	A D 10B	C1618	B C 5D	R1619	B C 10C	R1647	B C 3D
C1614	B C 7C	C1648	A D 5B	CN1603	A D 4F	TRANSISTOR		R1620	B C 5D	R1621	B C 10C	R1648	B C 3C
C1615	B C 7B	C1649	A D 5B	DIODE		Q1601	B C 8E	R1622	A D 7C	R1623	B C 4B	R1649	B C 3C
C1616	B C 8B	C1650	B C 5B	D1601	A D 7C	Q1602	B C 8D	R1624	B C 7B	R1625	B C 4B	R1650	B C 3C
C1617	A D 4E	C1651	B C 4D	D1602	A D 4E	Q1603	B C 9E	R1626	B C 8E	R1627	B C 4E	R1651	B C 3D
C1618	A D 4E	C1652	B C 4C	IC		Q1604	B C 9D	R1628	B C 8E	R1629	B C 4E	R1652	B C 3D
C1619	B C 4E	C1653	B C 5C	IC1601	B C 9C	Q1605	B C 9E	R1630	B C 8E	R1631	B C 4E	R1653	B C 3D
C1620	B C 4E	C1654	B C 5C	OTHER		R1606	B C 8D	R1632	B C 8E	R1633	B C 4E	R1654	B C 3C
C1621	B C 4E					R1634	B C 3E	R1635	B C 3E	R1636	B C 3E	R1637	B C 3E
C1622	B C 4E					R1638	B C 3D	R1639	B C 3D	R1640	B C 3D	R1641	B C 3D
C1623	B C 4E					R1642	B C 3D	R1643	B C 3D	R1644	B C 3D	R1645	B C 3D
C1624	B C 4E					R1646	B C 3D	R1647	B C 3D	R1648	B C 3D	R1649	B C 3D
C1625	B C 4E					R1650	B C 3D	R1651	B C 3D	R1652	B C 3D	R1653	B C 3D
C1626	B C 4E					R1654	B C 3D	R1655	B C 3D	R1656	B C 3D	R1657	B C 3D
C1627	B C 4E					R1658	B C 3D	R1659	B C 3D	R1660	B C 3D	R1661	B C 3D
C1628	B C 4E					R1662	B C 3D	R1663	B C 3D	R1664	B C 3D	R1665	B C 3D
C1629	B C 4E					R1666	B C 3D	R1667	B C 3D	R1668	B C 3D	R1669	B C 3D
C1630	B C 4E					R1670	B C 3D	R1671	B C 3D	R1672	B C 3D	R1673	B C 3D
C1631	B C 4E					R1674	B C 3D	R1675	B C 3D	R1676	B C 3D	R1677	B C 3D
C1632	B C 4E					R1678	B C 3D	R1679	B C 3D	R1680	B C 3D	R1681	B C 3D
C1633	B C 4E					R1682	B C 3D	R1683	B C 3D	R1684	B C 3D	R1685	B C 3D
C1634	B C 4E					R1686	B C 3D	R1687	B C 3D	R1688	B C 3D	R1689	B C 3D

<14> DEMODULATOR
LPB10094-001C

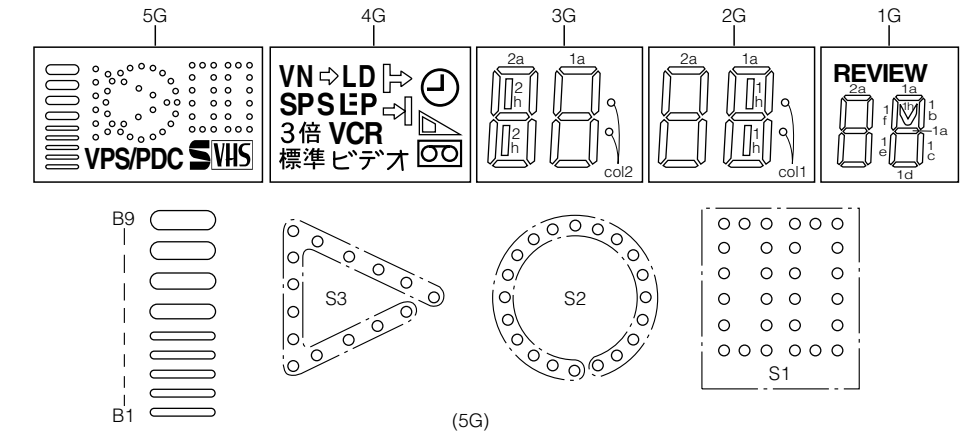


4.20 FDP GRID ASSIGNMENT AND ANODE CONNECTION

[A] (FDP with audio level indicator)



[B] (FDP without audio level indicator)



ANODE CONNECTION

		6G	5G	4G	3G	2G	1G
P 1	—	→	S2	1a	1a	1a	
P 2	—	→	S1	1b	1b	1b	
P 3	—	S4	S3	1f	1f	1f	
P 4	—	NORM	VPS/PDC	1g	1g	1g	
P 5	1	2	⊙	1c	1c	1c	
P 6	→	→	→	1e	1e	1e	
P 7	B10	B10	→	1d	1d	1d	
P 8	B9	B9	VCR	col2	1h	1h	
P 9	B8	B8	1a	2a	col1	2a	
P10	B7	B7	1b	2b	→	2b	
P11	B6	B6	1f	2f	VN	2f	
P12	B5	B5	1g	2g	LD	2g	
P13	B4	B4	1c	2c	SP	2c	
P14	B3	B3	1e	2e	S (SEP)	2e	
P15	B2	B2	1d	2d	⋮ (SEP)	2d	
P16	B1	B1	1h	S-VHS	LP (SEP)	REVIEW	

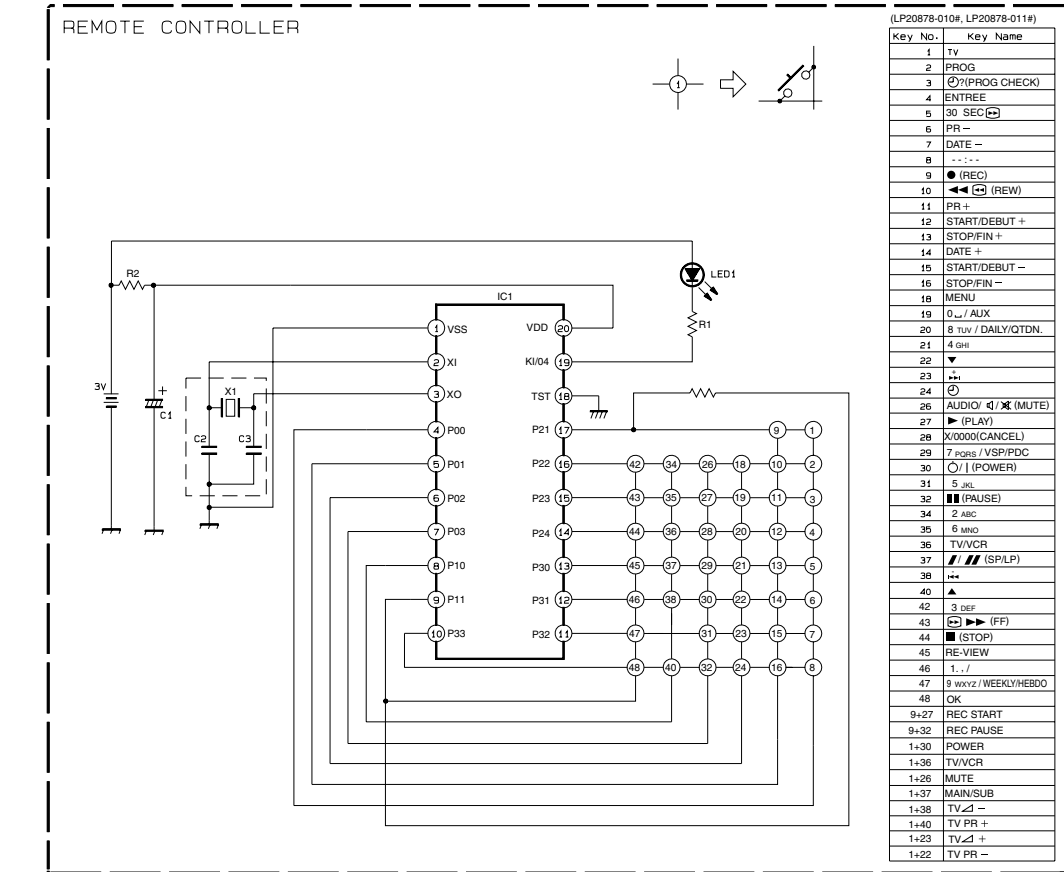
ANODE CONNECTION

		5G	4G	3G	2G	1G
P 1	S2	→	1a	1a	1a	
P 2	S1	→	1b	1b	1b	
P 3	S3	3倍	1f	1f	1f	
P 4	VPS/PDC	標準	1g	1g	1g	
P 5	S-VHS	⊙	1c	1c	1c	
P 6	—	→	1e	1e	1e	
P 7	—	→	1d	1d	1d	
P 8	B9	VCR	col2	1h	1h	
P 9	B8	ビデオ	2a	2a	2a	
P10	B7	→	2b	2b	2b	
P11	B6	VN	2f	2f	2f	
P12	B5	LD	2g	2g	2g	
P13	B4	SP	2c	2c	2c	
P14	B3	S (SEP)	2e	2e	2e	
P15	B2	⋮ (SEP)	2d	2d	2d	
P16	B1	LP (SEP)	2h	col1	REVIEW	

4.21 REMOTE CONTROLLER SCHEMATIC DIAGRAMS

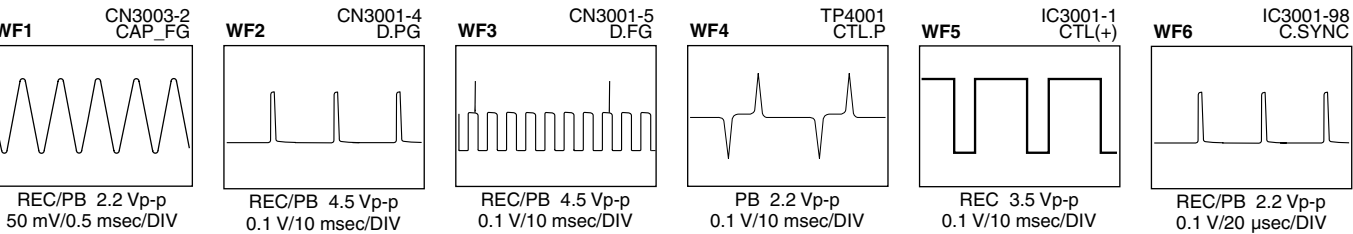
NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

[HR-S6850MS/S7850MS/S7851MS]

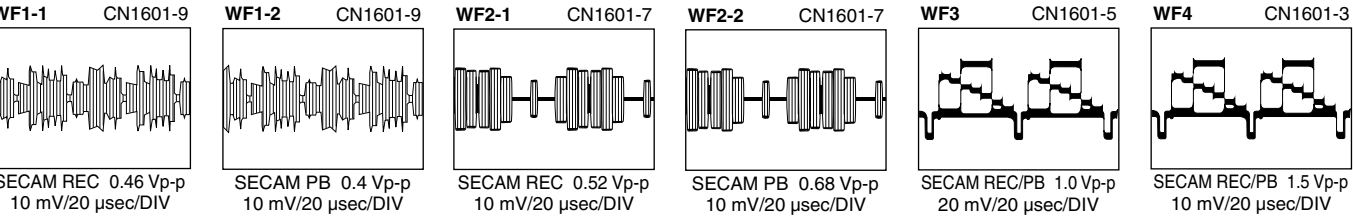


4.22 WAVEFORMS

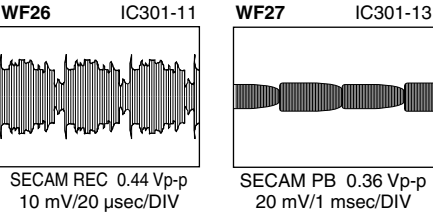
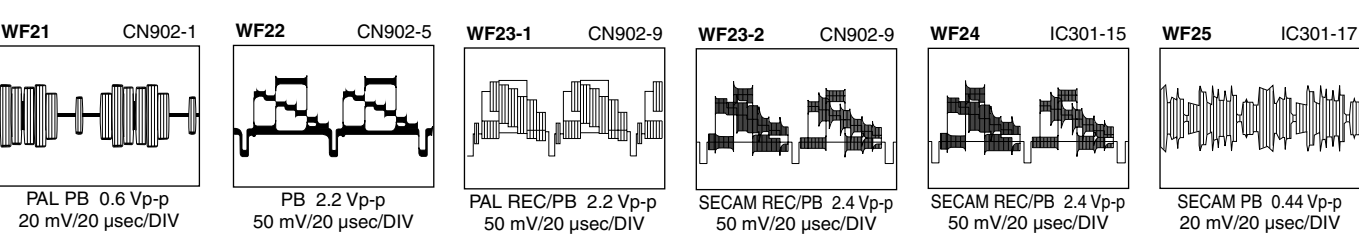
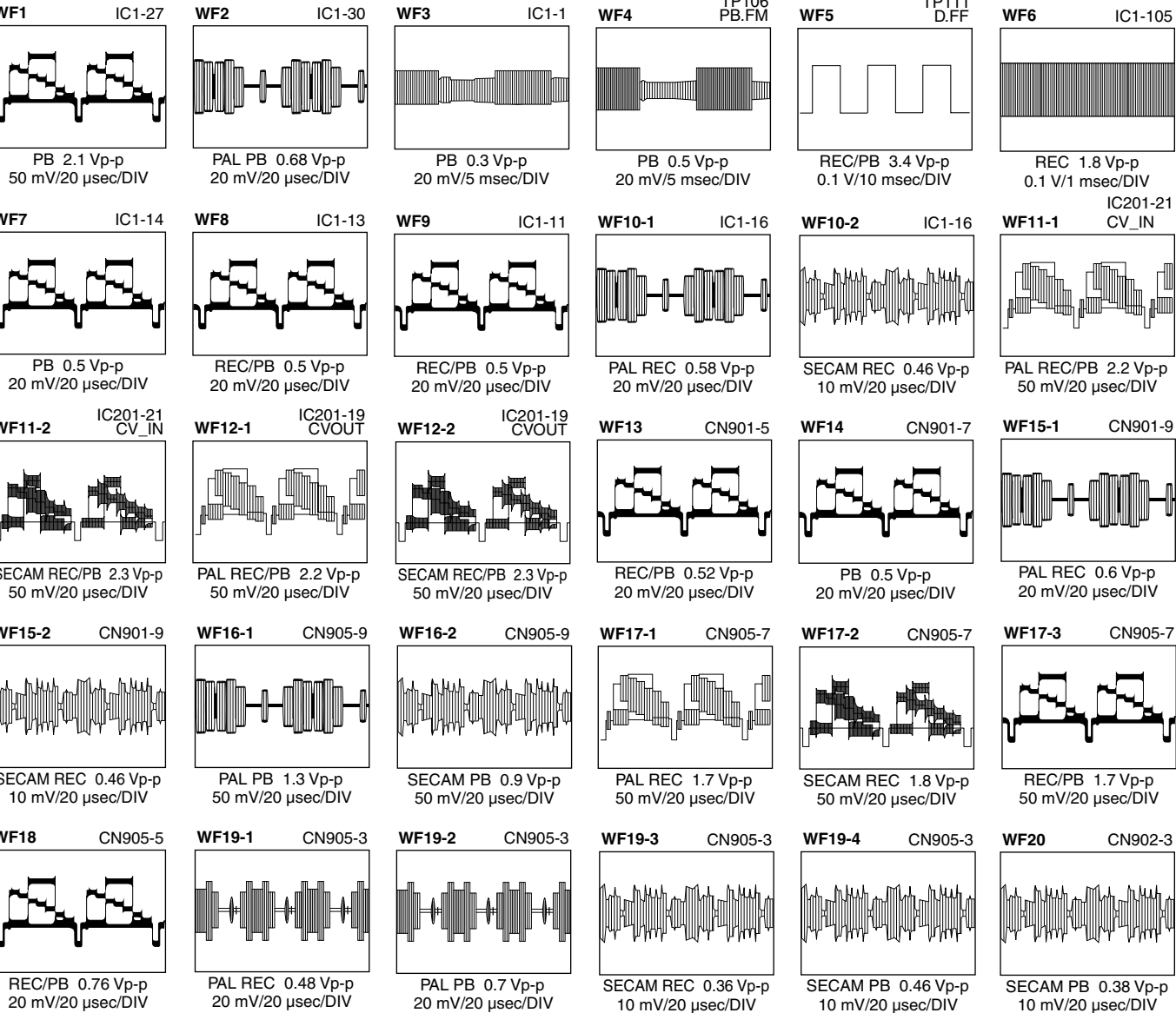
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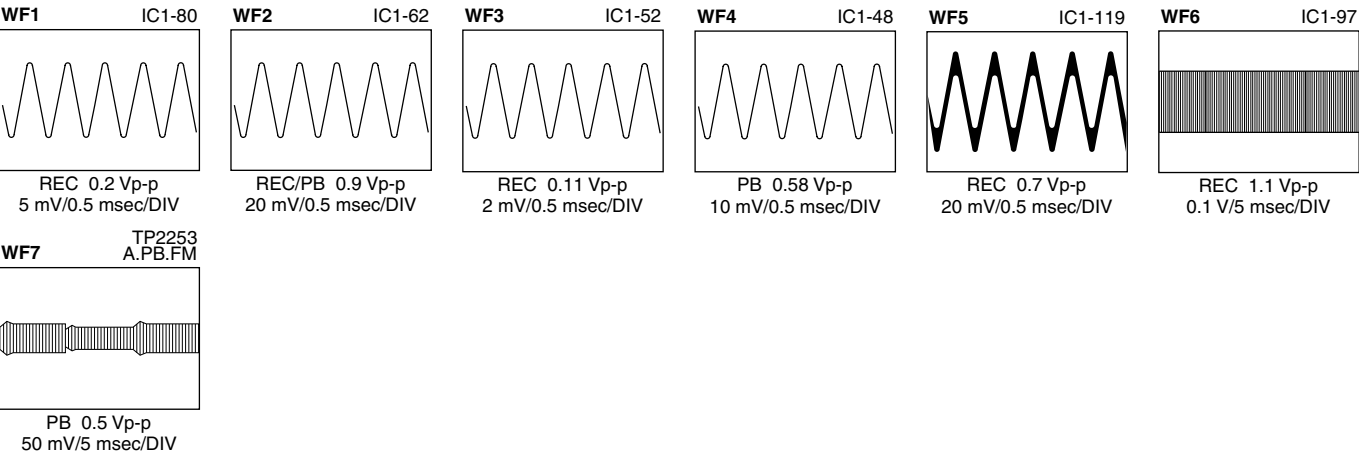
< S-P CONVERTER >



< VIDEO >



< AUDIO >



4.23 VOLTAGE CHARTS

<MAIN>

MODE PIN NO.	REC	PLAY
IC1		
1	4.2	2.2
2	2.8	2.9
3	2.6	2.6
4	1.9	1.4
5	1.9	1.4
6	2.4	2.1
7	1.6	0.7
8	0	0
9	2.6	3.0
10	1.9	2.0
11	3.1	3.1
12	2.8	2.4
13	3.1	3.1
14	3.5	2.4
15	0	0
16	2.8	2.8
17	1.5	1.5
18	2.8	2.8
19	0	4.8
20	2.8	2.8
21	1.5	2.0
22	2.8	2.8
23	3.1	2.9
24	4.9	4.9
25	0.3	0.3
26	0	0
27	1.3	2.3
28	2.8	2.5
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.6	2.6
33	4.9	4.9
34	2.7	2.4
35	4.9	4.9
36	2.6	2.6
37	2.3	2.3
38	-	-
39	1.3	1.3
40	-	-
41	2.7	2.7
42	2.2	2.2
43	0	0
44	2.1	2.1
45	4.6	4.6
46	4.1	4.1
47	2.9	2.9
48	2.6	2.6
49	5.0	5.0
50	2.5	2.5
51	2.8	2.8
52	2.3	2.3
53	2.3	2.3
54	2.6	2.6
55	2.2	2.2
56	0.5	0.5
57	2.3	2.3
58	8.3	8.3
59	4.6	4.6
60	4.1	4.1
61	4.2	4.2
62	4.2	4.2
63	2.3	2.3
64	2.3	2.3
65	0.6	0.6
66	3.1	3.1
67	4.2	4.2
68	4.2	4.2
69	2.3	2.3
70	0	0
71	0.2	0.2
72	0.2	0.2
73	0.3	0.3
74	2.3	2.3
75	2.5	2.5
76	0	0
77	2.6	2.6
78	0.3	0.3
79	0.3	0.3
80	0.2	0.2
81	2.3	2.3
82	0	0.7
83	0	0
84	2.3	2.3
85	2.3	2.3
86	2.3	2.3
87	1.6	1.8
88	2.3	2.3
89	2.3	2.3
90	2.3	2.3
91	0.1	0
92	0	0
93	0	2.4
94	0	1.8
95	0	0
96	2.6	2.3
97	2.6	2.3
98	2.6	2.3
99	4.9	4.9
100	4.9	4.9

MODE PIN NO.	REC	PLAY
101	0	0
102	0	0
103	0	0
104	2.3	2.3
105	2.3	2.3
106	2.4	2.4
107	4.9	4.9
108	0	0
109	0	0
110	0	0
111	0	1.8
112	2.5	2.5
113	0.7	0.7
114	0	0
115	2.5	2.5
116	2.5	2.5
117	2.5	2.5
118	0	0
119	2.5	2.5
120	4.5	4.5
IC2	-	-
IC201		
1	0	0
2	2.5	2.5
3	4.9	4.9
4	0	0
5	4.4	4.4
6	2.4	2.4
7	2.4	2.4
8	4.9	4.9
9	3.3	3.3
10	4.2	4.2
11	1.6	1.6
12	4.9	4.9
13	2.7	2.7
14	2.7	2.7
15	0	0
16	1.2	1.2
17	0	0
18	4.9	4.9
19	2.3	2.3
20	0	0
21	2.3	2.3
22	0.5	0.5
23	4.9	4.9
24	2.9	2.9
25	2.5	2.5
26	4.9	4.9
27	4.6	4.6
28	3.5	3.5
29	4.9	4.9
30	4.9	4.9
IC301	-	-
IC501	-	-
IC502	-	-
IC3001		
1	2.5	2.5
2	0	0
3	2.5	2.5
4	2.4	2.4
5	0	1.5
6	2.4	2.6
7	2.4	2.4
8	2.4	2.4
9	4.8	4.8
10	4.8	4.8
11	0	0
12	0	0.2
13	0	2.0
14	4.4	4.6
15	4.9	4.6
16	0.6	0.6
17	4.0	4.0
18	0	0
19	3.1	3.1
20	4.5	4.5
21	3.8	3.8
22	0.2	1.9
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	0	0
31	4.9	4.9
32	4.9	4.9
33	0	0
34	4.9	4.9
35	0	0
36	0	0
37	0	0
38	0	4.9
39	4.0	4.0
40	0	0
41	4.8	4.8
42	4.8	4.8
43	0	0
44	0	0
45	4.9	4.9

MODE PIN NO.	REC	PLAY
46	0	0
47	2.8	2.8
48	0	0
49	4.1	4.1
50	4.6	4.6
51	1.3	1.3
52	1.3	1.3
53	4.2	4.2
54	5.0	5.0
55	5.0	5.0
56	4.9	4.9
57	0	0
58	4.9	4.9
59	0	0
60	4.9	4.9
61	4.9	4.9
62	0	0
63	0	0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0
69	-	-
70	3.3	3.3
71	4.9	4.9
72	4.9	4.9
73	4.9	4.9
74	0	0
75	4.4	4.4
76	4.4	4.4
77	4.9	0
78	0	0
79	0	0
80	0	0
81	4.9	4.9
82	4.9	4.9
83	2.4	2.4
84	0	0
85	0	0
86	4.9	4.9
87	4.9	0
88	4.9	4.9
89	0	0
90	0	0
91	0	0
92	4.9	4.9
93	0	0
94	0	0
95	4.9	4.9
96	0	0
97	4.9	0
98	0.8	0.8
99	0	2.2
100	2.4	2.4
101	2.4	2.4
102	1.4	1.4
103	4.9	4.9
104	4.9	0
105	4.9	0
106	0	0
107	0	0
108	1.2	1.2
109	4.9	4.9
110	0	0
111	0	0
112	2.4	2.4
IC3002		
1	4.9	4.9
2	4.9	4.9
3	0	0
4	0	0
IC3003		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.5	4.5
6	4.5	4.5
7	0	0
8	4.9	4.9
IC3004		
1	11.4	11.4
2	0.2	0.2
3	0	0
4	0.2	0.2
5	11.4	11.4
6	11.4	11.4
7	0	0
8	0	0
9	0	0
IC5301		
1	2.4	2.4
2	0	0
3	4.4	4.4
IC7001		
1	4.9	4.9
2	0	0
3	0	0
4	0	0
5	1.6	1.6

MODE PIN NO.	REC	PLAY
6	0	0
7	0	0
8	4.2	4.2
9	3.9	3.9
10	0	0
11	0	0
12	0	0
13	0	0
14	4.9	4.9
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	-26.0	-26.0
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	4.9	4.9
39	4.9	4.9
40	4.9	4.9
41	4.9	4.9
42	0	0
43	0	0
44	2.7	2.7
IC7003		
1	4.9	4.9
2	4.9	4.9
3	0	0
CN1 (HR-S6850MS)		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.3	2.3
6	2.3	2.3
7	2.3	2.3
8	2.3	2.3
9	2.6	2.3
10	2.6	2.3
11	2.6	2.3
CN1 (HR-S7850MS, HR-S7850MS, HR-S8850MS)		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.3	2.3
6	2.3	2.3
7	2.3	2.3
8	2.3	2.3
9	2.6	2.3
10	2.6	2.3
11	2.6	2.3
CN1 (HR-S7850MS, HR-S7850MS, HR-S8850MS)		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.3	2.3
6	2.3	2.3
7	2.3	2.3
8	2.3	2.3
9	2.6	2.3
10	2.6	2.3
11	2.6	2.3
12	0	0
13	0	0
CN501		
1	2.4	2.4
2	0	0
3	2.3	2.3
4	4.9	4.9
5	2.1	2.1
6	0.3	4.5
7	3.3	3.3
8	0	0
9	2.8	2.8
10	0	0
11	4.6	4.6
12	4.1	4.1
13	0	0
14	0	0
15	2.5	2.5
16	0	0
17	0	0
CN511		
1	4.9	4.9
2	4.9	4.9
3	2.8	2.8
4	0	0
5	1.8	1.8
6	0	0
7	2.8	2.8
8	0	0
9	2.1	2.1
10	12.0	12.0
11	12.0	12.0

MODE PIN NO.	REC	PLAY
CN901		
1	4.6	4.6
2	4.1	4.1
3	0.3	0.3
4	0	0
5	2.5	2.3
6	0	0
7	3.5	2.4
8	0	0
9	2.8	2.8
10	4.9	4.9
CN902		
1	2.8	2.8
2	0	0
3	0	0
4	2.4	2.1
5	1.3	2.3
6	4.9	4.9
7	0	0
8	0	0
9	2.3	2.3
10	0	0
11	0	0
12	2.4	2.1
CN903		
1	4.7	4.7
2	0	0
3	0	0
4	0	0
5	0.8	0.8
6	10.1	10.1
7	10.1	10.1
8	4.5	4.5
9	4.5	4.5
10	0	0
CN904		
1	0	0
2	4.9	4.9
3	0	0
4	0.2	0.2
5	0	0.2
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
CN905		
1	2.4	2.4
2	0	0
3	2.8	2.8
4	0	0
5	3.3	3.3
6	0	0
7	2.1	2.1
8	0	0
9	2.3	2.3
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.3	2.3
7	2.2	2.2
CN2002		
1	0	0
2	0	0
CN3001		
1	11.4	11.4
2	0	0
3	1.3	1.3
4	0	0
5	1.3	1.3
CN3002		
1	0	0
2	0	0.2
CN3003		
1	0	0
2	2.5	2.5
3	2.4	2.4
4	4.8	4.8
5	0	0
6	4.9	4.9
7	-	-
8	9.2	9.2
CN3004		
1	4.9	4.9
2	4.9	4.9
3	0	0
4	0	0
CN6701		
1	0	0
2	4.6	4.6
3	4.5	4.5
4	4.8	4.8
5	0.3	0.3
6	0.3	0.3
7	5.0	5.0
8	0	0
9	0	0

4.24 CPU PIN FUNCTION

<SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL(+)	IN/OUT	CTL(+) SIGNAL
2	SVSS	-	GND
3	CTL(-)	IN/OUT	CTL(-) SIGNAL
4	CTLBIAS	-	CTL BIAS VOLTAGE
5	CTLFB	IN	CTL PULSE FEEDBACK
6	CTLAMPOUT	OUT	CTL PULSE OUTPUT
7	CTLSMTIN	IN	CTL PULSE INPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVCC	-	SYSTEM POWER
10	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
11	NORM/MESEC/S	IN	SVHS MODE:H
12	SECAM_DET	IN	NC
13	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
14	START_SENSOR	IN	START SENSOR
15	END_SENSOR	IN	END SENSOR
16	IND(L)	IN	AUDIO INPUT (L CH) FOR THE FOP AUDIO INDICATOR [HR-S7850MS/S7851MS/S8850MS]
17	PROTECT	IN	DETECTION SIGNAL FOR SW POWER SUPPLY
18	SCR_ID	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H)
19	IND(R)	IN	AUDIO INPUT (R CH) FOR THE FOP AUDIO INDICATOR [HR-S7850MS/S7851MS/S8850MS]
20	AFC	IN	TUNING CHECK
21	RF AGC	IN	CHANGES IN AT+IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT.
22	A.ENV/ND(L)	IN	AUDIO PB FM ENV.INPUT/NON HIFI MODE:L
23	AVSS	-	GND FOR ANALOG CIRCUIT
24	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
25	LSA	IN	MECHANISM MODE DETECT(A)
26	LSB	IN	MECHANISM MODE DETECT(B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP_REV(L)	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:H/REV:L)
29	RC	IN	REMOTE CONTROL DATA INPUT
30	LOCK(L)	IN	TUNING PLL LOCK DETECT:L
31	P50_IN	IN	CONTROL SIGNAL FOR TV LINK
32	R.PAUSE	IN	REMOTE PAUSE CONTROL
33	P50_OUT	OUT	CONTROL SIGNAL FOR TV LINK
34	P.SAVE(L)	OUT	POWER SAVE:L
35	LMC1	OUT	LOADING MOTOR DRIVE(1)
36	LMC2	OUT	LOADING MOTOR DRIVE(2)
37	LMC3	OUT	LOADING MOTOR DRIVE(3)
38	SB_G(PWM)	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	STB/TEST	OUT	STROBE SIGNAL (FOR FDP DRIVER)
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	P.CTL(H)	OUT	CONTROL SIGNAL FOR SWITCHING POWER SUPPLY
42	SP(H)	-	NC
43	VSS	-	GND
44	RMO	OUT	REMOTE CONTROL OUTPUT FOR SATELLITE RECEIVER
45	VCC	-	SYSTEM POWER
46	S.CASS(H)	IN	DETECTION SIGNAL FOR SVHS CASSETTE (SVHS:H)
47	OSD_CS	OUT	CHIP SELECT FOR THE ON-SCREEN IC
48	ET_PB(H)	-	NC
49	I2C_DATA_A/V	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
50	I2C_CLK_A/V	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
51	S.DATA_TOSYS	IN	SERIAL DATA TRANSFER OUTPUT FROM THE ON-SCREEN IC TO THE FDP DRIVER
52	S.DATA_FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN IC
53	S.CLK	OUT	SERIAL DATA TRANSMISSION CLOCK FROM THE FDP DRIVER TO THE ON-SCREEN IC
54	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
56	JSA	IN	INPUT FOR THE JOG SHUTTLE

PIN NO.	LABEL	IN/OUT	FUNCTION
57	JSB	IN	INPUT FOR THE JOG SHUTTLE
58	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
59	SW1	OUT	TUNER SYSTEM MODE:H
60	TU_CLK	OUT	CLOCK FOR DATA TRANSFER TO THE TUNER UNIT
61	TU_DATA	OUT	TUNING DATA
62	FWE	-	NC
63	NMI(L)	-	NC
64	X2	-	TIMER CLOCK (32.768KHz)
65	X1	-	TIMER CLOCK (32.768KHz)
66	RES(L)	-	RESET TERMINAL (RESET ON:L)
67	OSC1(IN)	-	MAIN SYSTEM CLOCK(10MHz)
68	VSS	-	GND
69	OSC2(OUT)	-	MAIN SYSTEM CLOCK(10MHz)
70	VCC/VCL	-	SYSTEM POWER
71	MODE	-	NC
72	TU_A_MUTE(H)	OUT	TUNER AUDIO MUTE CONTROL (MUTE:H)
73	TU_V_MUTE(H)	OUT	TUNER VIDEO CONTROL (MUTE:H)
74	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE:H)
75	I2C_CLK2	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	I2C_DATA2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	FLY_REC(H)	OUT	FLYING ERASE REC:H
78	P.ON_PULSE/3.58 NTSC(L)	OUT	P.ON_PULSE(H)
79	V.UP(H)/V_DOWN(L)/EE(L)	OUT	HIGH SPEED FF/REW TURBO SEARCH:H
80	V.PCTL	-	NC
81	VHS(H)	OUT	VHS MODE(H)
82	VCC	-	SYSTEM POWER
83	SLOW_P	OUT	MEMORY TIMING CONTROL IN THE SLOW MODE
84	VSS	-	GND
85	SP_SHORT(H)	OUT	MODE SELECT [HR-S6850MS]
86	LP_SHORT(H)	OUT	MODE SELECT [HR-S6850MS]
87	FLY_ON(H)	OUT	FLYING ERASE ON:H
88	H.REC_ST(H)	OUT	HIFI AUDIO SOUND RECORDING START
89	TRICK(H)	OUT	SPECIAL PLAYBACK :H
90	HEAD_SEL	OUT	HEAD SELECT(LP HEAD:H, SP HEAD:L)
91	SW2	OUT	TUNER SYSTEM MODE:L
92	SYNC_DET(H)	IN	DETECTION OF VIDEO SYNC SIGNAL (DETECTED:H)
93	MESECAM(H)	OUT	MESECAM:H
94	SECAM(H)	-	NC
95	PAL_PB(H)	OUT	PAL FM (PB ON:H)
96	SEP_PB(H)	OUT	PAL EP MODE(H)
97	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
98	C.SYNC	IN	COMPOSITE SYNC
99	A.FF	OUT	AUDIO FF OUTPUT
100	V.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
101	CAPPWM	OUT	CAPSTAN MOTOR CONTROL
102	DRUMPWM	OUT	DRUM MOTOR CONTROL
103	PMUTE(L)	OUT	PICTURE MUTE CONTROL(MUTE:L)
104	FULL_E_ON(H)	-	NC
105	N.REC(H)	OUT	NORMAL AUDIO REC MODE CONTROL SIGNAL (REC:H)
106	V_DOWN(L)/HL_FF/REW(L)	OUT	NC/HIGH SPEED FF/REW:L
107	DPG	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
108	DFG	IN	DRUM FG PULSE INPUT
109	VCC	-	SYSTEM POWER
110	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
111	VSS	-	GND
112	CTLREF	-	CTL REFERENCE VOLTAGE

The diagram illustrates the system control micro processor (IC3001) and its connections to various components. The components are organized into sections labeled 0, 3, 5, 1, 2, 3, 4, and 5.

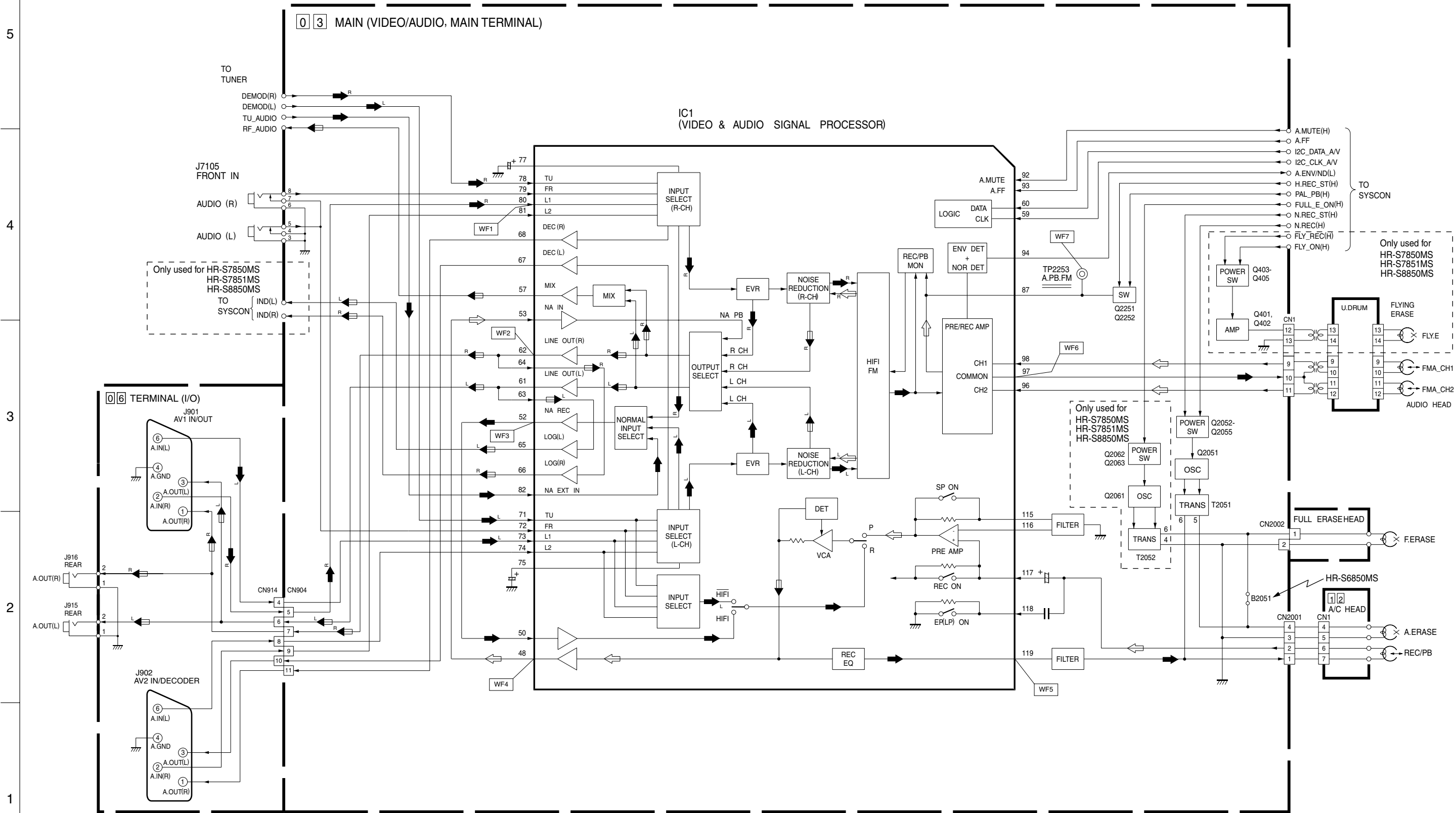
- Section 0, 3: MAIN (SYSCON)**
 - CAP MDA**: CAP_REV(L), CAP_CTL_V, CAP_FG.
 - DRUM MOTOR**: DRUM_CTL_V, D.PG, D.FG.
 - LOADING MOTOR**: LDM2, LDM1.
 - ROTARY ENCODER**: LSB, LSC, LSA.
 - A/C HEAD**: CTL HEAD(+), CTL HEAD(-).
 - IC3004 (LOADING MOTOR VOLTAGE CONTROL)**: LMC1, LMC2, LMC3, Vref.
 - DRIVE VOLTAGE CONTROL**: Q3001.
 - PC3001, PC3002**: PHOTO SENSORS.
 - TP4001**: CTL.P.
 - WF1, WF2, WF3, WF4, WF5, WF6**: Waveform points.
 - TP3906, TP3907**: Test points.
 - TP3908**: Test point.
 - TP3909**: Test point.
 - TP3910**: Test point.
 - TP3911**: Test point.
 - TP3912**: Test point.
 - TP3913**: Test point.
 - TP3914**: Test point.
 - TP3915**: Test point.
 - TP3916**: Test point.
 - TP3917**: Test point.
 - TP3918**: Test point.
 - TP3919**: Test point.
 - TP3920**: Test point.
 - TP3921**: Test point.
 - TP3922**: Test point.
 - TP3923**: Test point.
 - TP3924**: Test point.
 - TP3925**: Test point.
 - TP3926**: Test point.
 - TP3927**: Test point.
 - TP3928**: Test point.
 - TP3929**: Test point.
 - TP3930**: Test point.
 - TP3931**: Test point.
 - TP3932**: Test point.
 - TP3933**: Test point.
 - TP3934**: Test point.
 - TP3935**: Test point.
 - TP3936**: Test point.
 - TP3937**: Test point.
 - TP3938**: Test point.
 - TP3939**: Test point.
 - TP3940**: Test point.
 - TP3941**: Test point.
 - TP3942**: Test point.
 - TP3943**: Test point.
 - TP3944**: Test point.
 - TP3945**: Test point.
 - TP3946**: Test point.
 - TP3947**: Test point.
 - TP3948**: Test point.
 - TP3949**: Test point.
 - TP3950**: Test point.
 - TP3951**: Test point.
 - TP3952**: Test point.
 - TP3953**: Test point.
 - TP3954**: Test point.
 - TP3955**: Test point.
 - TP3956**: Test point.
 - TP3957**: Test point.
 - TP3958**: Test point.
 - TP3959**: Test point.
 - TP3960**: Test point.
 - TP3961**: Test point.
 - TP3962**: Test point.
 - TP3963**: Test point.
 - TP3964**: Test point.
 - TP3965**: Test point.
 - TP3966**: Test point.
 - TP3967**: Test point.
 - TP3968**: Test point.
 - TP3969**: Test point.
 - TP3970**: Test point.
 - TP3971**: Test point.
 - TP3972**: Test point.
 - TP3973**: Test point.
 - TP3974**: Test point.
 - TP3975**: Test point.
 - TP3976**: Test point.
 - TP3977**: Test point.
 - TP3978**: Test point.
 - TP3979**: Test point.
 - TP3980**: Test point.
 - TP3981**: Test point.
 - TP3982**: Test point.
 - TP3983**: Test point.
 - TP3984**: Test point.
 - TP3985**: Test point.
 - TP3986**: Test point.
 - TP3987**: Test point.
 - TP3988**: Test point.
 - TP3989**: Test point.
 - TP3990**: Test point.
 - TP3991**: Test point.
 - TP3992**: Test point.
 - TP3993**: Test point.
 - TP3994**: Test point.
 - TP3995**: Test point.
 - TP3996**: Test point.
 - TP3997**: Test point.
 - TP3998**: Test point.
 - TP3999**: Test point.
- Section 5: IC3001 (SYSTEM CONTROL MICRO PROCESSOR)**
 - X1**: 65, 64, 69, 67, 58, 53, 52, 51, 29, 47, 46, 15, 14, 83, 80, 66, 49, 50, 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - X2**: 65, 64, 69, 67, 58, 53, 52, 51, 29, 47, 46, 15, 14, 83, 80, 66, 49, 50, 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - OSC2(OUT)**: 69.
 - OSC1(IN)**: 67.
 - REC_SAFETY**: 58.
 - S. CLK**: 53.
 - S. DATA_FRSYS**: 52.
 - S. DATA_TOSYS**: 51.
 - RC**: 29.
 - OSD_CS**: 47.
 - S. CASS(H)**: 46.
 - END_SENSOR**: 15.
 - START_SENSOR**: 14.
 - SLOW_P**: 83.
 - V. P. CTL**: 80.
 - RES**: 66.
 - I2C_DATA_A/V**: 49, 50, 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - I2C_CLK_A/V**: 49, 50, 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - A. MUTE(H)**: 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - A. FF**: 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - H. REC_ST(H)**: 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - N. REC_ST(H)**: 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - N. REC(H)**: 105, 76, 75, 59, 91, 92, 72, 73.
 - I2C_DATA2**: 76, 75, 59, 91, 92, 72, 73.
 - I2C_CLK2**: 75, 59, 91, 92, 72, 73.
 - SW1**: 91, 92, 72, 73.
 - SW2**: 92, 72, 73.
 - TU_A_MUTE(H)**: 72, 73.
 - TU_V_MUTE(H)**: 73.
- Section 5: TO SW/DISPLAY**
 - S. CLK**: 53.
 - S. DATA_FRSYS**: 52.
 - S. DATA_TOSYS**: 51.
 - RC**: 29.
 - OSD_CS**: 47.
 - S. CASS**: 46.
 - END_SENSOR**: 15.
 - START_SENSOR**: 14.
 - SLOW_PULSE**: 83.
 - D. FF**: 15.
 - V. REF**: 14.
 - V. P. CTL**: 80.
 - I2C_DATA_A/V**: 49, 50, 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - I2C_CLK_A/V**: 49, 50, 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - A. MUTE(H)**: 74, 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - A. FF**: 99, 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - H. REC_ST(H)**: 88, 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - N. REC_ST(H)**: 97, 105, 76, 75, 59, 91, 92, 72, 73.
 - N. REC(H)**: 105, 76, 75, 59, 91, 92, 72, 73.
 - I2C_DATA2**: 76, 75, 59, 91, 92, 72, 73.
 - I2C_CLK2**: 75, 59, 91, 92, 72, 73.
 - SW1**: 91, 92, 72, 73.
 - SW2**: 92, 72, 73.
 - TU_A_MUTE(H)**: 72, 73.
 - TU_V_MUTE(H)**: 73.
- Section 5: TO 2D DIGITAL**
 - CN1201**: 1201.
 - CN1401**: 1401.
 - SLOW_PULSE**: 83.
 - <

5



1

4.27 AUDIO BLOCK DIAGRAM



Note : For the waveforms in this block diagram, refer to page 4-42.

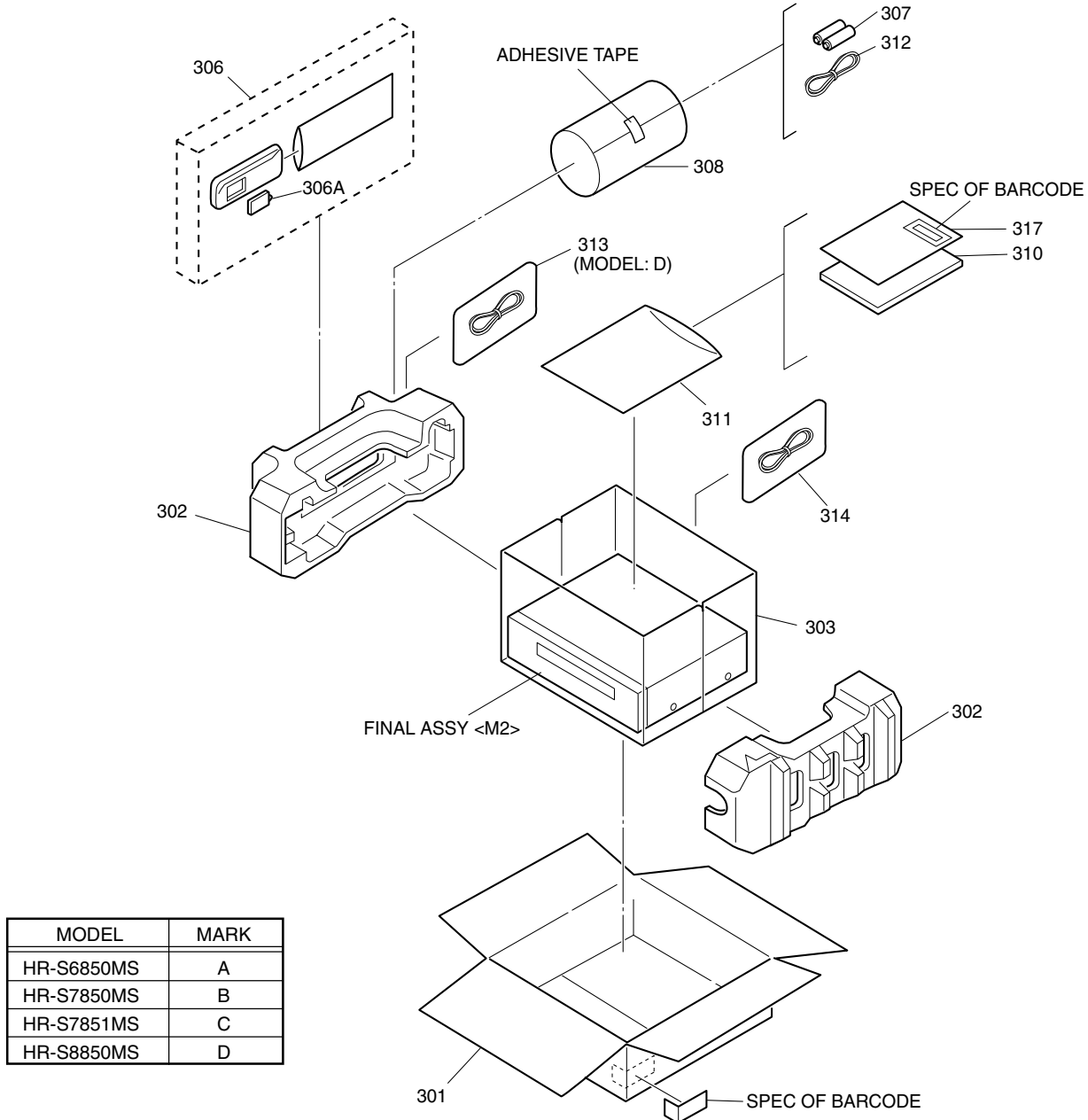
SECTION 5 PARTS LIST

SAFETY PRECAUTION

Parts identified by the $\triangle$ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



MODEL	MARK
HR-S6850MS	A
HR-S7850MS	B
HR-S7851MS	C
HR-S8850MS	D

$\triangle$ REF No. PART No. PART NAME, DESCRIPTION

PACKING AND ACCESSORY ASSEMBLY <M1>

301	LP30855-002B	PACKING CASE
302	LP30909-001C	CUSHION ASSY
303	PQM30021-93	POLY BAG
306	LP20873-007A	REMOTE CONTROLLER,D
	LP20878-010A	REMOTE CONTROLLER,A,B,C
306A	LP40254-006A	COVER(BATTERY),D
	LP40610-002A	COVER(BATTERY),A,B,C

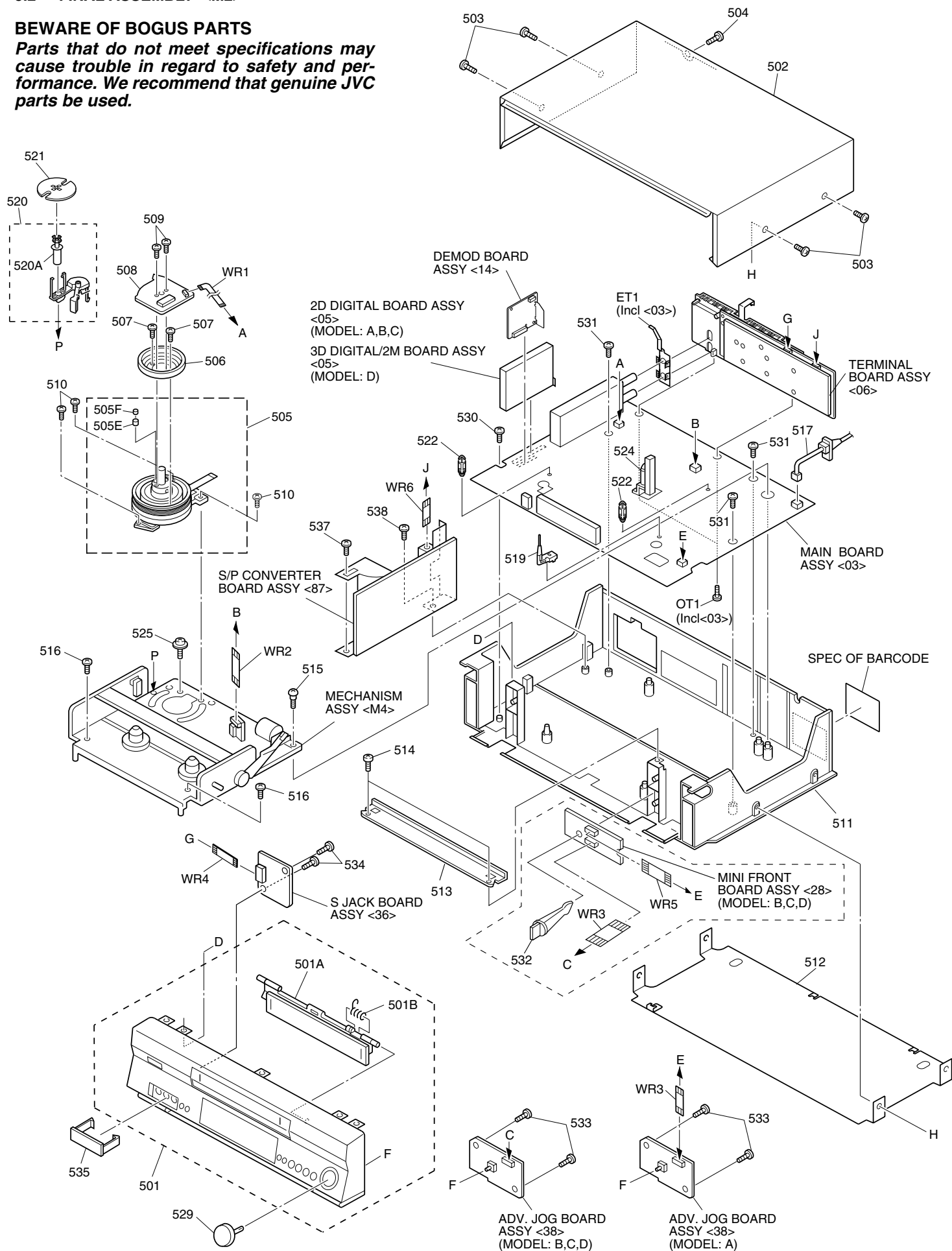
$\triangle$ REF No. PART No. PART NAME, DESCRIPTION

307	-	BATTERY,X2("R6"TYPE)
308	QPC02202230P	POLY BAG
$\triangle$ 310	LPT0493-001A	INST BOOK(FR),A
$\triangle$	LPT0494-001A	INST BOOK(FR),B,C
$\triangle$	LPT0495-001A	INST BOOK(FR),D
311	QPC02503530P	POLY BAG
312	PEAC0300-02	RF CABLE
313	QAL0095-005	LED CABLE ASSY(Satellite Controller),D
314	QAM0238-003	PERI CABLE
317	BT-54008-2	GUARANTY CARD

5.2 FINAL ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

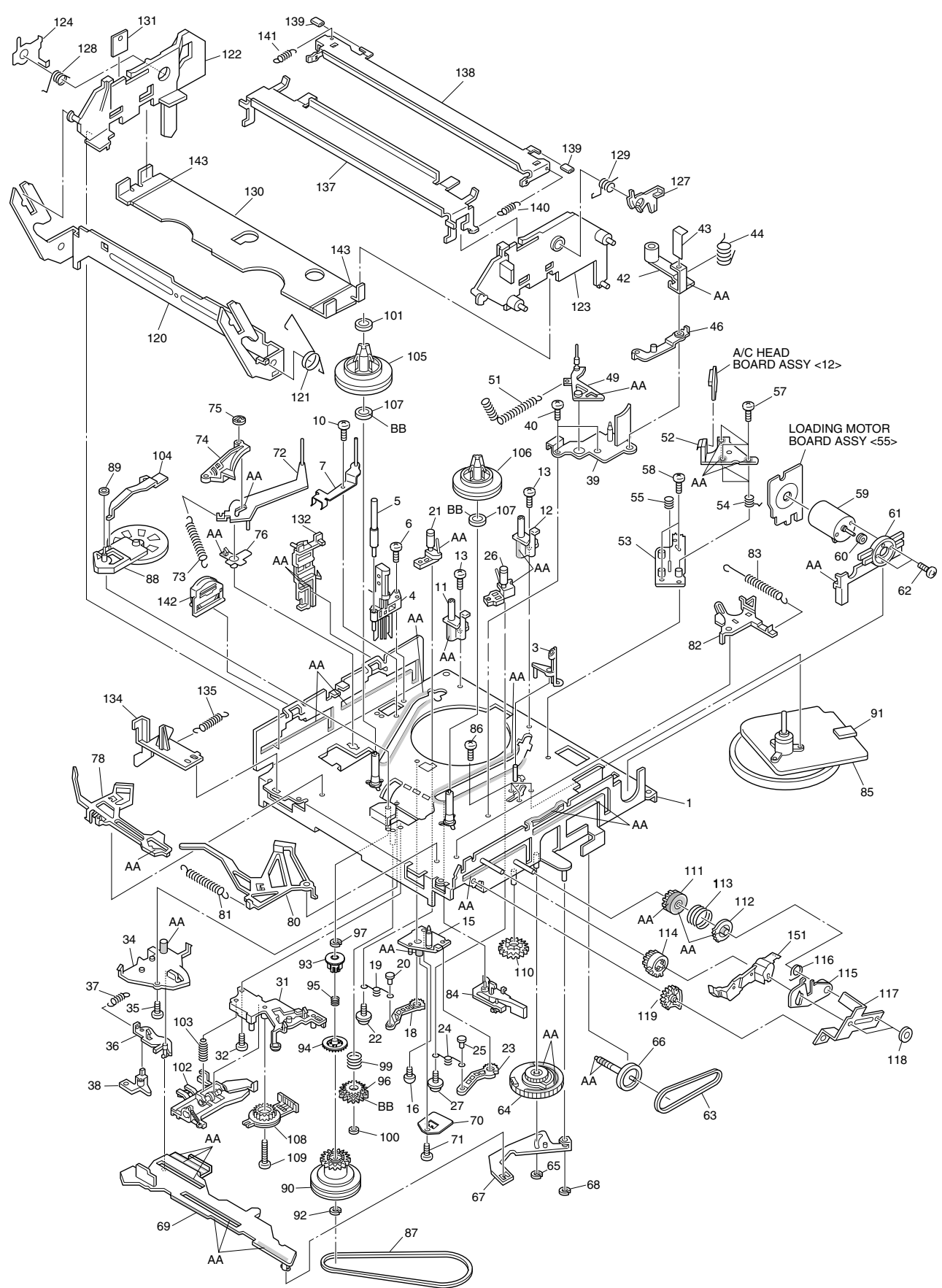
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION

FINAL ASSEMBLY <M2>									
△		501	LP10333-027D	FRONT PANEL ASSY,A					
△			LP10333-032D	FRONT PANEL ASSY,B					
△			LP10333-035D	FRONT PANEL ASSY,C					
△			LP10333-037D	FRONT PANEL ASSY,D					
		501A	LP20961-007C	CASSETTE DOOR,A,B,C					
			LP20961-010C	CASSETTE DOOR,D					
		501B	PQ46448	TORSION SPRING					
△		502	LP10013-051A	TOP COVER					
		503	QYTDSF3010R	SCREW,X4 TOP COVER(SIDE)					
		504	QYTDSF3010M	SCREW,TOP COVER(REAR)					
		505	LP20981-011A	DRUM SUB ASSY,A					
			LP20981-013A	DRUM SUB ASSY,B,C,D					
		505E	LP40323-001A	CONTACT					
		505F	LP30004-014A	COMPRESSION SPRING					
		506	PDZ0179-1-4	ROTOR ASSY					
		507	QYSPSP3006Z	SCREW,X2					
△		508	QAR0169-002	STATOR ASSY					
		509	QYSPSPH2606Z	SCREW,X2					
		510	QYTDST2610Z	SCREW,X3 DRUM					
△		511	LP10108-016E	BOTTOM CHASSIS					
△		512	LP10014-002B	BOTTOM COVER					
		513	LP30312-001B	BRACKET(CHASSIS)					
		514	QYTDSF3010Z	SCREW,X2					
		515	LP40700-001A	SPECIAL SCREW,MECHA					
		516	QYTDSF3010Z	SCREW,X2 MECHA					
△		517	QMP4A10-170	POWER CORD					
		519	LP40407-001A	KNOB ASSY					
		520	LP40370-001E	ROLLER ARM ASSY					
		520A	PDM4311A-1	ROLLER ASS					
		521	PQ45160	INERTIA PLATE					
		522	LP40226-001A	PC SUPPORT,X2					
		524	LP40253-001B	STOPPER					
		525	PQ40413	SPECIAL SCREW,MECHA					
		529	LP31019-001C	KNOB ASSY,FRONT					
		530	QYTDSF3010Z	SCREW,MAIN					
		531	DPSF3010Z	SCREW,X3 MAIN					
		532	LP40628-001B	PC SUPPORT,MINI FRONT,B,C,D					
		533	QYTPSFG2608Z	SCREW,X2 ADV.JOG					
		534	QYTDSF2608Z	SCREW,X2 S JACK					
		535	LP30809-001C	CAP(JACK)					
		537	QYTDSF3008Z	SCREW,S/P CONVERTER					
		538	QYTDSF3008Z	SCREW,S/P CONVERTER					
		WR1	QUQ212-0524CG	FFC WIRE,DRUM CN3001					
		WR2	WJT0005-001A	E-CARD WIRE,A/C HEAD CN2001					
		WR3	QUQ112-0914CG	FFC WIRE,ADV.JOG CN7001,A					
			QUQ112-0914CG	FFC WIRE,ADV.JOG CN7005,B,C,D					
		WR4	QUQ212-0456CG	FFC WIRE,S JACK CN916					
		WR5	QUQ112-0914CG	FFC WIRE,MINI FRONT CN7001,B,C,D					
		WR6	QUQ112-1140CG	FFC WIRE,S/P CONVERTER CN511					

5.3 MECHANISM ASSEMBLY <M4>



Classifi- cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE:The section marked in **AA** and **BB**
indicate lubrication and greasing areas.

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
*****					76		LP30232-002A		TENSION ARM BEARING
MECHANISM ASSEMBLY <M4>					78		LP40532-008B		MAIN BRAKE ASSY (SUPPLY)
1		LP20821-009A		MAIN DECK ASSY	80		LP40111-011A		MAIN BRAKE ASSY (TAKE UP)
3		LP30492-002B		GUIDE POLE GUARD	81		LP30003-026A		TENSION SPRING
4		NAH0001-001		FULL ERASE HEAD	82		LP40112-001F		SUB BRAKE ASSY (TAKE UP)
5		LP40701-001A		GUIDE POLE(SUPPLY)	83		LP40357-002A		TENSION SPRING
6		QYTDST2608Z		SCREW,FE HEAD	84		LP40461-001A		CAPSTAN BRAKE ASSY
7		LP40637-002A		TENSION STUD BASE ASSY	85		QAR0087-005		CAPSTAN MOTOR
10		QYTDST2606Z		SCREW	86		QYTDST2606M		SCREW,X3
11		LP30409-002C		UV CATCHER 2 (SUPPLY)	87		LP30005-007A		BELT,CAPSTAN MOTOR
12		LP30409-002C		UV CATCHER 2 (TAKE UP)	88		LP40114-012A		IDLER ARM ASSY
13		QYTPST2606Z		SCREW,X2	89		LP30016-001A		SLIT WASHER
15		LP30223-003C		LOADING ARM GEAR SHAFT	90		LP40593-001A		CLUTCH UNIT 3
16		QYTDST2606Z		SCREW	91		LP30002-097A		SPACER,CAPSTAN MOTOR
18		LP30224-001B		LOADING ARM GEAR(SUPPLY)	92		PQM30017-47		SLIT WASHER
19		LP40099-001A		TORSION ARM	93		LP30696-002A		CLUTCH GEAR 4
20		LP40100-001A		PIN	94		LP30697-003A		COUPLING GEAR
21		LP40101-006A		POLE BASE ASSY(SUPPLY)	95		LP40554-002A		COMPRESSION SPRING
22		QYSPSTG2606Z		SCREW	96		LP40442-001A		DIRECT GEAR
23		LP40103-002B		LOADING ARM GEAR(TAKE UP)	97		LP30017-019A		SPACER,C.GEAR4
24		LP40099-001A		TORSION ARM	99		LP40483-002A		COMPRESSION SPRING
25		LP40100-002A		PIN	100		LP30016-001A		SLIT WASHER,DIRECT GEAR
26		LP40104-006A		POLE BASE ASSY(TAKE UP)	101		LP30016-001A		SLIT WASHER,REEL DISK(SUPPLY)
27		QYSPSTG2606Z		SCREW	102		LP40484-001J		CHANGE LEVER ASSY
31		LP20233-004B		ROTARY ENCODER GUIDE	103		LP40512-002B		COMPRESSION SPRING
32		QYTPST2606Z		SCREW	104		LP30236-002C		IDLER LEVER
34		LP30226-004E		CONTROL PLATE GUIDE	105		LP20237-004A		REEL DISK (SUPPLY)
35		QYTPST2605Z		SCREW	106		LP20238-004A		REEL DISK (TAKE UP)
36		LP30249-003B		TAKE UP LEVER	107		LP30017-022A		SPACER,X2
37		LP30003-006A		TENSION SPRING	108		QSW0554-003		ROTARY ENCODER
38		LP40119-002A		TAKE UP HEAD	109		QYTPST2620Z		SCREW
39		LP20234-004B		LID GUIDE	110		LP30237-002B		CASSETTE GEAR
40		QYTDST2606Z		SCREW,X2	111		LP30239-002G		LIMIT GEAR(1)
42		LP40105-003A		PINCH ROLLER ARM ASSY	112		LP30240-002G		LIMIT GEAR(2)
43		LP40753-001A		PINCH ROLLER SHEET3	113		LP40136-001E		TORSION SPRING
44		LP40148-002A		TORSION SPRING	114		LP30242-002A		RELAY GEAR
46		LP40149-001C		PRESS LEVER ASSY	115		LP30339-002E		OPENER GUIDE
49		LP40106-007A		GUIDE ARM ASSY	116		LP40545-001A		TORSION SPRING
51		LP40134-002A		TENSION SPRING	117		LP40214-001B		C.H.BRACKET
52		QAH0058-001		AC HEAD	118		PQM30017-47		SLIT WASHER,X2
53		LP30228-001C		HEAD BASE	119		LP30243-002A		DRIVE GEAR
54		LP30004-013A		COMPRESSION SPRING,X3	120		LP20240-001G		DRIVE ARM
55		LP40236-001A		COMPRESSION SPRING	121		LP40137-001A		TORSION SPRING
57		LP40213-002B		SPECIAL SCREW,X3	122		LP10081-002P		SIDE HOLDER(L)
58		QYTDST2608Z		SCREW,X2	123		LP10082-002U		SIDE HOLDER(R)
59		QAR0023-001		LOADING MOTOR	124		LP30255-006B		LOCK LEVER(L)
60		PQ43546-1-2		MOTOR PULLEY	127		LP30256-001H		LOCK LEVER(R)
61		LP30230-003D		MOTOR GUIDE	128		LP40168-003A		TORSION SPRING(L)
62		QYTPSP3003Z		SCREW,X2	129		LP40218-001B		TORSION SPRING(R)
63		LP30005-003A		BELT,LOADING MOTOR	130		LP30257-001G		CASSETTE HOLDER
64		LP20791-002D		CONTROL CAM	131		PQ40919-30		SPACER,EARTH PLATE
65		PQM30017-24		SLIT WASHER	132		LP30244-002G		GUIDE RAIL
66		LP40120-001A		WORM GEAR	134		LP30245-002F		REC SAFETY LEVER
67		LP40107-002A		LINK LEVER ASSY	135		LP30003-004A		TENSION SPRING
68		PQM30017-24		SLIT WASHER	137		LP20578-001C		TOP GUIDE
69		LP10201-003G		CONTROL PLATE	138		LP30500-001C		HOLD PLATE
70		LP40379-001B		CONTROL BRACKET(1)	139		LP40450-003A		PAD,X2
71		QYTDST2608M		SCREW	140		LP30003-025B		TENSION SPRING
72		LP40108-002A		TENSION ARM ASSY	141		LP30003-024A		TENSION SPRING
73		LP30003-010A		TENSION SPRING	142		LP40481-003A		ROLLER CAM ASSY
74		LP40109-003D		TENSION BRAKE ASSY	143		LP30019-014A		PAD,X2
75		PQ46302-1-3		ADJUST PIN	152		LP20324-003B		DOOR OPENER

5.4 ELECTRICAL PARTS LIST

MODEL	MARK	MODEL	MARK
HR-S6850MS	A	HR-S7851MS	C
HR-S7850MS	B	HR-S8850MS	D

△ REF No. PART No. PART NAME, DESCRIPTION

MAIN BOARD ASSEMBLY <03>

PW1	LPA10140-03B	MAIN BOARD ASSY,B,C
	LPA10140-06A	MAIN BOARD ASSY,D
	LPA10140-09A	MAIN BOARD ASSY,A
IC1	JCP8050-MSA	IC
IC2	MM1113XF	IC
IC201	LC74775-9750	IC
IC301	LA7358	IC
IC3001	HD6432194SAD12F	IC(MCU)
IC3002	IC-PST3427U-X	IC
IC3003	24LC32A-I/SN-X	IC
	or HN58X2432FPI	IC
	or BR24C32F	IC
IC3004	BA6956AN	IC
IC5301	L5431	IC
	or MM1431AT	IC
	or UTCTL431	IC
IC7001	PT6312LQ	IC
	or UPD16312GB/H/	IC
IC7003	GP1U291Q	IR DETECT UNIT
	or PIC-28143LJ	IR DETECT UNIT
	or PNA4652M00YC	IR DETECT UNIT
	or PIC-37143LJ	IR DETECT UNIT
Q1	2SC4081/S/-X	TRANSISTOR,A
Q2	2SC4081/S/-X	TRANSISTOR,A
Q3	2SC4081/S/-X	TRANSISTOR,A
Q4	2SC4081/S/-X	TRANSISTOR,A
Q5	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q7	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q8	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q9	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q10	2SA1576A/QR/-X	TRANSISTOR
Q11	DTC144WU	TRANSISTOR,A,B,C
	or PDC144WU	TRANSISTOR,A,B,C
	or RN1309	TRANSISTOR,A,B,C
	or UN521E	TRANSISTOR,A,B,C
Q14	DTA144WU	TRANSISTOR
	or PDTA144WU	TRANSISTOR
	or RN2309	TRANSISTOR
	or UN511E	TRANSISTOR
Q17	DTC144WU	TRANSISTOR
	or PDC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
	or UN521E	TRANSISTOR
Q21	2SB1218A/QR/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q24	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR

△ REF No. PART No. PART NAME, DESCRIPTION

Q25	DTC144WU	TRANSISTOR,D
	or PDC144WU	TRANSISTOR,D
	or RN1309	TRANSISTOR,D
	or UN521E	TRANSISTOR,D
Q38	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q40	DTC144WU	TRANSISTOR,A,B,C
	or PDC144WU	TRANSISTOR,A,B,C
	or RN1309	TRANSISTOR,A,B,C
	or UN521E	TRANSISTOR,A,B,C
Q41	DTC144WU	TRANSISTOR
	or PDC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
	or UN521E	TRANSISTOR
Q207	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q208	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q301	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q302	UN511E	TRANSISTOR
	or DTA144WU	TRANSISTOR
	or PDTA144WU	TRANSISTOR
	or RN2309	TRANSISTOR
Q401	2SA1576A/QR/-X	TRANSISTOR,B,C,D
Q402	2SA1576A/QR/-X	TRANSISTOR,B,C,D
Q403	DTC144WU	TRANSISTOR,B,C,D
	or PDC144WU	TRANSISTOR,B,C,D
	or RN1309	TRANSISTOR,B,C,D
	or UN521E	TRANSISTOR,B,C,D
Q404	DTC144WU	TRANSISTOR,B,C,D
	or PDC144WU	TRANSISTOR,B,C,D
	or RN1309	TRANSISTOR,B,C,D
	or UN521E	TRANSISTOR,B,C,D
Q405	2SA1576A/QR/-X	TRANSISTOR,B,C,D
Q2001	2SC4081/QRS/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q2002	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
Q2003	DTA144WU	TRANSISTOR
	or PDTA144WU	TRANSISTOR
	or RN2309	TRANSISTOR
	or UN511E	TRANSISTOR
Q2004	DTC114EU	TRANSISTOR
	or PDC114EU	TRANSISTOR
	or RN1302	TRANSISTOR
	or UN5211	TRANSISTOR
Q2051	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
Q2052	2SA1576A/QR/-X	TRANSISTOR
	or 2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q2053	DTC144WU	TRANSISTOR
	or PDC144WU	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
			or RN1309	TRANSISTOR				or UN5111	TRANSISTOR	
			or UN521E	TRANSISTOR				or RN2302	TRANSISTOR	
Q2054			2SA1576A/QR/-X	TRANSISTOR	Q5306			DTC114EU	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR				or PDTC114EU	TRANSISTOR	
			or 2SB1218A/QR/-X	TRANSISTOR				or UN5211	TRANSISTOR	
Q2055			DTC144WU	TRANSISTOR				or RN1302	TRANSISTOR	
			or PDTC144WU	TRANSISTOR	Q5308			2SA1576A/RS/-X	TRANSISTOR	
			or UN521E	TRANSISTOR	Q5311			DTC114TU	TRANSISTOR	
			or RN1309	TRANSISTOR				or PDTC114TU	TRANSISTOR	
Q2061			2SC4081/QRS/-X	TRANSISTOR,B,C,D				or RN1311	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR,B,C,D				or UN5215	TRANSISTOR	
			or 2SD1819A/QRS/-X	TRANSISTOR,B,C,D	Q5312			2SD2144S/UV/-T	TRANSISTOR	
Q2062			2SA1576A/QR/-X	TRANSISTOR,B,C,D	Q5318			DTA114EU	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR,B,C,D				or RN2302	TRANSISTOR	
			or 2SB1218A/QR/-X	TRANSISTOR,B,C,D				or UN5111	TRANSISTOR	
Q2063			DTC144WU	TRANSISTOR,B,C,D				or PDTA114EU	TRANSISTOR	
			or PDTC144WU	TRANSISTOR,B,C,D	Q5320			DTC114EU	TRANSISTOR	
			or RN1309	TRANSISTOR,B,C,D				or PDTC114EU	TRANSISTOR	
			or UN521E	TRANSISTOR,B,C,D				or RN1302	TRANSISTOR	
Q2251			DTA144WU	TRANSISTOR				or UN5211	TRANSISTOR	
			or PDTA144WU	TRANSISTOR	Q5322			DTC114TU	TRANSISTOR	
			or RN2309	TRANSISTOR				or PDTC114TU	TRANSISTOR	
			or UN511E	TRANSISTOR				or RN1311	TRANSISTOR	
Q2252			DTC114EU	TRANSISTOR				or UN5215	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	Q5323			2SB927/ST/-T	TRANSISTOR	
			or RN1302	TRANSISTOR	Q6030			2SB1218A/QR/-X	TRANSISTOR	
			or UN5211	TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR	
Q3001			2SD1819A/QRS/-X	TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	Q6031			DTC114EU	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR				or PDTC114EU	TRANSISTOR	
Q3002			PTZ-NV16	PHOTO TRANSISTOR				or RN1302	TRANSISTOR	
			or PTZ-NV16A	PHOTO TRANSISTOR				or UN5211	TRANSISTOR	
Q3003			PTZ-NV16	PHOTO TRANSISTOR	Q6032			DTC114EU	TRANSISTOR	
			or PTZ-NV16A	PHOTO TRANSISTOR				or PDTC114EU	TRANSISTOR	
Q3004			2SD1819A/QRS/-X	TRANSISTOR				or RN1302	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR				or UN5211	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	Q7201			2SC1317/RS/-T	TRANSISTOR	
Q3005			2SD1819A/QRS/-X	TRANSISTOR	D1			DA204U	DIODE	
			or 2SC4081/QRS/-X	TRANSISTOR	D6			MTZJ5.1C	ZENER DIODE	
			or 2PC4081/R/-X	TRANSISTOR	D201			QRE141J-152Y	RESISTOR	1.5kΩ,1/4W
Q3007			UN521E	TRANSISTOR	D202			QRE141J-101Y	RESISTOR	100Ω,1/4W
			or PDTC144WU	TRANSISTOR	D203			QRE141J-101Y	RESISTOR	100Ω,1/4W
			or DTC144WU	TRANSISTOR	D2202			MTZJ8.2C	ZENER DIODE	
			or RN1309	TRANSISTOR	D3001			LNB2301L01VI	LE DIODE	
Q4001			UN5211	TRANSISTOR	D3002			1SS133	DIODE	
			or RN1302	TRANSISTOR				or 1SS270A	DIODE	
			or DTC114EU	TRANSISTOR	D3003			RD39ES/B3/-T2	ZENER DIODE	
			or PDTC114EU	TRANSISTOR				or MTZJ39C	ZENER DIODE	
Q5101			2SK2632-CB14	POWER MOS FET	D3004			11ES2	DIODE	
			or 2SK2632	POWER MOS FET				or 1A3G	DIODE	
			or 2SK2129-LT	POWER MOS FET	D3005			11ES2	DIODE	
			or 2SK2129	POWER MOS FET				or 1A3G	DIODE	
Q5102			2SD2144S/UV/-T	TRANSISTOR	D3008			1SS355	DIODE	
Q5301			2SB1256	TRANSISTOR	D4001			QUY153-050Y	IM BUS WIRE	
Q5302			2SD2375/QP/	TRANSISTOR	D4002			QUY153-050Y	IM BUS WIRE	
Q5303			2SD1819A/RS/-X	TRANSISTOR	D5001			S1WB/A/60-4102	BRIDGE DIODE	
			or 2PC4081/R/-X	TRANSISTOR				or S1WB/A/60-X	BRIDGE DIODE	
			or 2SC4081/RS/-X	TRANSISTOR				or S1WB(A)60F4072X	BRIDGE DIODE	
Q5304			2SC3616/ML/-T	TRANSISTOR	D5101			AU01	FR DIODE	
Q5305			DTA114EU	TRANSISTOR				or ERA18-04-T2	FR DIODE	
			or PDTA114EU	TRANSISTOR				or 1SR153-400-T2	FR DIODE	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
		or 10ELS4	FR DIODE			or 1A3G	DIODE
D5102		AU01	FR DIODE			or ERA15-02-T2	DIODE
		or ERA18-04-T2	FR DIODE	D5319		11ES2	DIODE
		or 10ELS4	FR DIODE			or 1A3G	DIODE
		or 1SR153-400-T2	FR DIODE			or ERA15-02-T2	DIODE
D5103		1SS133	DIODE	D6002		HZ30-2L-T2	ZENER DIODE
		or 1SS270A	DIODE			or HZ30-2LTD	Z DIODE (M)
D5105		1SS133	DIODE	D7001		RD9.1ES/B2/-T2	ZENER DIODE
		or 1SS270A	DIODE			or UZ9.1BSB	ZENER DIODE
D5201		AK04	DIODE,B,C,D			or MTZJ9.1B	ZENER DIODE
		AU01Z	FR DIODE,A	D7003		1SS133	DIODE
		or 1S4	SB DIODE,B,C,D			or 1SS270A	DIODE
		or 11EQS04	SB DIODE,B,C,D	D7004		1SS133	DIODE
		or 10ELS2	FR DIODE,A			or 1SS270A	DIODE
D5203		AU01Z	FR DIODE	D7005		1SS133	DIODE
		or 10ELS2	FR DIODE			or 1SS270A	DIODE
D5204		AU01Z	FR DIODE	D7006		1SS133	DIODE,B,C,D
		or 10ELS2	FR DIODE			or 1SS270A	DIODE,B,C,D
D5206		FMB-24	BARRIER DIODE	D7008		SLR-325MC-T	LE DIODE
		or SB640FCT	SB DIODE	D7009		SLR-325VC-T	LE DIODE
		or SF5SC4	SB DIODE	R1		NRVA02D-682X	CMF RESISTOR 6.8kΩ, 1/10W
		or YG801C04	SB DIODE	R2		NRVA02D-152X	CMF RESISTOR 1.5kΩ, 1/10W
		or FSQ05A04B	SB DIODE	R3		NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W
D5209		ERA18-02-T2	FR DIODE	R4		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or 1SR153-400-T2	FR DIODE	R5		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or 10ELS2	FR DIODE	R6		NRSA02J-273X	MG RESISTOR 27kΩ, 1/10W
		or PG104RS	FR DIODE	R7		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
D5210		AU01Z	FR DIODE	R8		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or ERA18-02-T2	FR DIODE	R9		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or 10ELS2	FR DIODE	R21		NRSA02J-0R0X	MG RESISTOR,A 0Ω, 1/10W
		or PG104RS	FR DIODE	R22		NRSA02J-0R0X	MG RESISTOR,A 0Ω, 1/10W
		or 1SR153-400-T2	FR DIODE	R23		NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W
D5211		AU01Z	FR DIODE	R25		NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
		or ERA18-02-T2	FR DIODE	R26		NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
		or 1SR153-400-T2	FR DIODE	R27		NRSA02J-221X	MG RESISTOR 220Ω, 1/10W
		or 10ELS2	FR DIODE	R28		NRSA02J-221X	MG RESISTOR 220Ω, 1/10W
		or PG104RS	FR DIODE	R29		NRSA02J-561X	MG RESISTOR 560Ω, 1/10W
D5301		MTZJ15C	ZENER DIODE	R30		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or RD15ES/B3/-T2	ZENER DIODE	R31		NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
D5302		1SS133	DIODE	R32		NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
		or 1SS270A	DIODE	R33		NRSA02J-153X	MG RESISTOR 15kΩ, 1/10W
D5303		RD5.1JS/B2/-T2	ZENER DIODE	R36		NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W
		or MA4051N/M/-T2	ZENER DIODE	R38		NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
D5304		1SS133	DIODE	R39		NRSA02J-103X	MG RESISTOR,A,B,C 10kΩ, 1/10W
		or 1SS270A	DIODE	R40		NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
D5305		AK04	DIODE	R41		NRSA02J-392X	MG RESISTOR 3.9kΩ, 1/10W
		or 11EQS04	SB DIODE	R42		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
		or 1S4	SB DIODE	R46		NRSA02J-561X	MG RESISTOR,A,B,C 560Ω, 1/10W
D5307		11ES2	DIODE			NRSA02J-221X	MG RESISTOR,D 220Ω, 1/10W
		or 1A3G	DIODE	R48		QRE141J-102Y	RESISTOR 1kΩ, 1/4W
		or ERA15-02-T2	DIODE	R51		NRSA02J-122X	MG RESISTOR 1.2kΩ, 1/10W
D5308		MTZJ11B	ZENER DIODE	R65		NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
		or RD11ES/B2/-T2	ZENER DIODE	R68		NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
D5309		MTZJ27C	ZENER DIODE	R70		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or RD27ES/B3/-T2	ZENER DIODE	R77		NRSA02J-103X	MG RESISTOR,A,B,C 10kΩ, 1/10W
D5310		1SS133	DIODE			NRSA02J-223X	MG RESISTOR,D 22kΩ, 1/10W
		or 1SS270A	DIODE	R88		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
D5316		QUY160-100Y	IM BUS WIRE	R90		NRSA02J-391X	MG RESISTOR 390Ω, 1/10W
D5317		1SS133	DIODE	R92		NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
		or 1SS270A	DIODE	R93		NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
D5318		11ES2	DIODE	R104		NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
R113			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	R2057			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W
R117			NRSA02J-104X	MG RESISTOR,D 100kΩ, 1/10W	R2058			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W
R118			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R2059			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W
R201			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R2060			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W
R202			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R2061			NRSA02J-273X	MG RESISTOR,B,C,D 27kΩ, 1/10W
R208			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W	R2062			NRSA02J-3R3X	MG RESISTOR,B,C,D 3.3Ω, 1/10W
R209			NRSA02J-512X	MG RESISTOR 5.1kΩ, 1/10W	R2063			NRSA02J-151X	MG RESISTOR,B,C,D 150Ω, 1/10W
R210			NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W	R2064			NRSA02J-473X	MG RESISTOR,B,C,D 47kΩ, 1/10W
R211			NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W	R2065			NRSA02J-183X	MG RESISTOR,B,C,D 18kΩ, 1/10W
R212			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	R2201			QRE141J-121Y	RESISTOR 120Ω, 1/4W
R213			QRE141J-0R0Y	RESISTOR 0Ω, 1/4W	R2202			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
R216			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R2203			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
R224			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	R2204			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R225			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W	R2205			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R226			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W	R2206			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
R301			NRSA02J-273X	MG RESISTOR 27kΩ, 1/10W	R2208			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
R302			NRSA02J-124X	MG RESISTOR 120kΩ, 1/10W	R2209			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
R303			NRSA02J-273X	MG RESISTOR 27kΩ, 1/10W	R2210			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
R304			NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W	R2211			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
R305			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W	R2213			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W
R306			NRSA02J-273X	MG RESISTOR 27kΩ, 1/10W	R2215			NRSA02J-153X	MG RESISTOR 15kΩ, 1/10W
R307			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W	R2217			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R308			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W	R2218			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W
R309			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R2219			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W
R310			NRSA02J-223X	MG RESISTOR 22kΩ, 1/10W	R2220			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W
R311			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R2222			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
R312			NRSA02J-272X	MG RESISTOR 2.7kΩ, 1/10W	R2223			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
R313			NRSA02J-223X	MG RESISTOR 22kΩ, 1/10W	R2224			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
R314			NRVA02D-243X	CMF RESISTOR 24kΩ, 1/10W	R2225			NRSA02J-153X	MG RESISTOR 15kΩ, 1/10W
R315			NRSA02J-564X	MG RESISTOR 560kΩ, 1/10W	R2226			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
R316			NRSA02J-124X	MG RESISTOR 120kΩ, 1/10W	R2227			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
R318			NRSA02J-821X	MG RESISTOR 820Ω, 1/10W	R2228			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
R329			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R2229			NRSA02J-563X	MG RESISTOR 56kΩ, 1/10W
R401			NRSA02J-221X	MG RESISTOR,B,C,D 220Ω, 1/10W	R2251			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R402			NRSA02J-681X	MG RESISTOR,B,C,D 680Ω, 1/10W	R3011			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R403			NRSA02J-561X	MG RESISTOR,B,C,D 560Ω, 1/10W	R3012			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R404			NRSA02J-473X	MG RESISTOR,B,C,D 47kΩ, 1/10W	R3013			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R405			NRSA02J-683X	MG RESISTOR,B,C,D 68kΩ, 1/10W	R3014			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R406			NRSA02J-393X	MG RESISTOR,B,C,D 39kΩ, 1/10W	R3015			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R407			NRSA02J-472X	MG RESISTOR,B,C,D 4.7kΩ, 1/10W	R3016			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R408			NRSA02J-473X	MG RESISTOR,B,C,D 47kΩ, 1/10W	R3017			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2003			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	R3018			NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
R2005			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R3019			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2006			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W	R3020			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2007			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W	R3021			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2008			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3022			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2009			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3025			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2010			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3026			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2013			NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W	R3027			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2014			NRSA02J-224X	MG RESISTOR 220kΩ, 1/10W	R3029			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2015			NRSA02J-181X	MG RESISTOR 180Ω, 1/10W	R3030			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2016			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W	R3031			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2017			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W	R3032			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2018			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3033			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2019			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3034			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2053			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3035			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2054			NRSA02J-123X	MG RESISTOR,A 12kΩ, 1/10W	R3036			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
			NRSA02J-153X	MG RESISTOR,B,C,D 15kΩ, 1/10W	R3038			NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
R2055			NRSA02J-3R3X	MG RESISTOR 3.3Ω, 1/10W	R3039			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2056			NRSA02J-820X	MG RESISTOR,A 82Ω, 1/10W	R3040			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
			NRSA02J-101X	MG RESISTOR,B,C,D 100Ω, 1/10W	R3041			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R3042		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3210		NRSA02J-181X	MG RESISTOR 180Ω,1/10W
R3044		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3211		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R3046		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3212		QRE141J-474Y	RESISTOR 470kΩ,1/4W
R3047		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3213		NRSA02J-334X	MG RESISTOR 330kΩ,1/10W
R3048		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3214		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3049		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3215		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3050		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3216		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3051		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3217		QRE141J-562Y	RESISTOR 5.6kΩ,1/4W
R3052		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3218		QRE141J-472Y	RESISTOR 4.7kΩ,1/4W
R3053		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3219		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3054		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3220		NRSA02J-104X	MG RESISTOR 100kΩ,1/10W
R3055		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3222		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3056		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3223		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3057		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3224		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3058		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3225		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3059		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3229		NRSA02J-105X	MG RESISTOR 1MΩ,1/10W
R3060		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3230		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3061		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3231		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3062		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R3233		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3063		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3234		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3066		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3235		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R3069		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	R3236		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R3071		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R3237		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3072		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3238		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3073		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3239		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3074		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3240		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3075		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3241		QRE141J-104Y	RESISTOR 100kΩ,1/4W
R3076		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3242		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3077		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4003		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R3078		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4004		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R3079		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4005		NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R3080		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4007		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3081		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4008		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3083		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4009		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3085		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4010		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
		NRSA02J-222X	MG RESISTOR,A 2.2kΩ,1/10W	R4011		NRSA02J-472X	MG RESISTOR,A,B,C 4.7kΩ,1/10W
R3086		NRSA02J-0R0X	MG RESISTOR,B,C,D 0Ω,1/10W			NRSA02J-272X	MG RESISTOR,D 2.7kΩ,1/10W
		NRSA02J-222X	MG RESISTOR,A 2.2kΩ,1/10W	R4012		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R3087		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4013		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3088		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4015		NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R3089		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4017		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3091		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4018		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3092		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R4019		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3093		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4020		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3094		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4021		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3095		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5101		QRE141J-334Y	RESISTOR 330kΩ,1/4W
R3096		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5102		QRE141J-334Y	RESISTOR 330kΩ,1/4W
R3097		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5103		QRE141J-683Y	RESISTOR 68kΩ,1/4W
R3103		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5104		QRG029J-154G	OMF RESISTOR 150kΩ,2W
R3104		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5106		QRT01DJ-R39X	MF RESISTOR 0.39Ω,1W
R3105		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5107		QRE121J-331Y	RESISTOR 330Ω,1/2W
R3106		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5108		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R3201		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5109		QRE141J-681Y	RESISTOR 680Ω,1/4W
R3202		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5110		NRSA02J-224X	MG RESISTOR 220kΩ,1/10W
R3203		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5111		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R3204		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W	R5112		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R3205		QRE141J-181Y	RESISTOR 180Ω,1/4W	R5301		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3206		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W	R5302		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3207		QRE141J-183Y	RESISTOR 18kΩ,1/4W	R5303		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R3208		NRSA02J-181X	MG RESISTOR 180Ω,1/10W	R5304		NRSA02J-471X	MG RESISTOR 470Ω,1/10W
R3209		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W	R5305		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
			R5306	NRSA02J-221X	MG RESISTOR			220Ω, 1/10W	
			R5308	NRSA02J-471X	MG RESISTOR			470Ω, 1/10W	
			R5309	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R5310	NRSA02J-221X	MG RESISTOR			220Ω, 1/10W	
			R5311	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R5312	NRVA02D-332X	CMF RESISTOR			3.3kΩ, 1/10W	
			R5313	NRVA02D-332X	CMF RESISTOR			3.3kΩ, 1/10W	
			R5314	NRSA02J-102X	MG RESISTOR			1kΩ, 1/10W	
			R5316	NRVA02D-123X	CMF RESISTOR			12kΩ, 1/10W	
			R5317	NRSA02J-473X	MG RESISTOR			47kΩ, 1/10W	
	△		R5318	QRZ9005-221X	FUSI RESISTOR			220Ω, 1/4W	
			R5320	NRSA02J-273X	MG RESISTOR			27kΩ, 1/10W	
			R5321	NRSA02J-273X	MG RESISTOR			27kΩ, 1/10W	
			R5324	NRSA02J-472X	MG RESISTOR			4.7kΩ, 1/10W	
			R5325	QRE141J-222Y	RESISTOR			2.2kΩ, 1/4W	
			R5326	QRE141J-2R2Y	RESISTOR,B,C,D			2.2Ω, 1/4W	
				QUY153-050Y	IM BUS WIRE,A				
			R5327	NRSA02J-222X	MG RESISTOR			2.2kΩ, 1/10W	
			R5329	NRSA02J-102X	MG RESISTOR			1kΩ, 1/10W	
			R5330	NRSA02J-102X	MG RESISTOR			1kΩ, 1/10W	
			R5332	QRE141J-222Y	RESISTOR			2.2kΩ, 1/4W	
			R5344	NRSA02J-472X	MG RESISTOR			4.7kΩ, 1/10W	
			R5345	QRE121J-561Y	RESISTOR			560Ω, 1/2W	
			R6020	NRSA02J-102X	MG RESISTOR			1kΩ, 1/10W	
			R6021	NRSA02J-102X	MG RESISTOR			1kΩ, 1/10W	
			R6030	NRSA02J-102X	MG RESISTOR			1kΩ, 1/10W	
			R6031	NRSA02J-271X	MG RESISTOR			270Ω, 1/10W	
			R6032	NRSA02J-183X	MG RESISTOR			18kΩ, 1/10W	
			R6033	NRSA02J-183X	MG RESISTOR			18kΩ, 1/10W	
			R7001	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R7002	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R7003	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R7004	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R7005	NRSA02J-472X	MG RESISTOR			4.7kΩ, 1/10W	
			R7006	NRSA02J-471X	MG RESISTOR			470Ω, 1/10W	
			R7007	QRE141J-103Y	RESISTOR			10kΩ, 1/4W	
			R7008	QRE141J-563Y	RESISTOR			56kΩ, 1/4W	
			R7009	QRE141J-103Y	RESISTOR			10kΩ, 1/4W	
			R7010	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			R7011	NRSA02J-333X	MG RESISTOR			33kΩ, 1/10W	
			R7012	NRSA02J-333X	MG RESISTOR			33kΩ, 1/10W	
			R7013	NRSA02J-333X	MG RESISTOR			33kΩ, 1/10W	
			R7014	NRSA02J-333X	MG RESISTOR			33kΩ, 1/10W	
			R7015	QRE141J-472Y	RESISTOR			4.7kΩ, 1/4W	
			R7016	NRSA02J-103X	MG RESISTOR			10kΩ, 1/10W	
			R7017	NRSA02J-331X	MG RESISTOR			330Ω, 1/10W	
			R7018	NRSA02J-331X	MG RESISTOR			330Ω, 1/10W	
			R7160	NRSA02J-101X	MG RESISTOR			100Ω, 1/10W	
			R7161	NRSA02J-101X	MG RESISTOR			100Ω, 1/10W	
			R7162	NRSA02J-101X	MG RESISTOR			100Ω, 1/10W	
			R7163	NRSA02J-750X	MG RESISTOR			75Ω, 1/10W	
			R7202	NRSA02J-221X	MG RESISTOR			220Ω, 1/10W	
			R7203	NRSA02J-472X	MG RESISTOR			4.7kΩ, 1/10W	
			R7204	QRE121J-100Y	RESISTOR			10Ω, 1/2W	
			B8	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B12	QUY160-220Y	IM BUS WIRE,A,B,C				
			B13	NRSA02J-0R0X	MG RESISTOR,D			0Ω, 1/10W	
			B25	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B50	QUY153-050Y	IM BUS WIRE				
			B52	NRSA02J-0R0X	MG RESISTOR,A,B,C			0Ω, 1/10W	
			B55	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B65	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B203	QUY153-050Y	IM BUS WIRE				
			B204	QUY153-050Y	IM BUS WIRE				
			B214	QUY160-280Y	IM BUS WIRE				
			B302	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B2051	QUY153-050Y	IM BUS WIRE,A				
			B3004	QUY160-120Y	IM BUS WIRE				
			B3179	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B5302	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B5304	NRSA02J-0R0X	MG RESISTOR			0Ω, 1/10W	
			B7001	NRSA02J-0R0X	MG RESISTOR,B,C,D			0Ω, 1/10W	
			C1	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C2	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C3	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C4	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C5	QEKJ0JM-476	E CAPACITOR			47μF,6.3V	
			C6	QCBB1HK-103	CAPACITOR			0.01μF,50V	
			C7	NCB21HK-102X	CAPACITOR			0.001μF,50V	
			C8	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C9	QEKJ1HM-225	E CAPACITOR			2.2μF,50V	
			C10	NDC21HG-151X	CAPACITOR			150pF,50V	
			C11	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C12	NDC21HJ-8R0X	CAPACITOR			8pF,50V	
			C14	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C15	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C16	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C17	QEKJ1HM-335	E CAPACITOR			3.3μF,50V	
			C19	QEKJ1HM-225	E CAPACITOR			2.2μF,50V	
			C20	QEKJ1HM-105	E CAPACITOR			1μF,50V	
			C21	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C22	QEKJ0JM-476	E CAPACITOR			47μF,6.3V	
			C23	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C24	QCBB1HK-104	CAPACITOR			0.1μF,50V	
			C25	NDC21HJ-6R0X	CAPACITOR			6pF,50V	
			C26	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C27	NCB21HK-223X	CAPACITOR			0.022μF,50V	
			C28	QEKJ1HM-335	E CAPACITOR			3.3μF,50V	
			C29	NCB21EK-333X	CAPACITOR			0.033μF,25V	
			C30	NCB21CK-474X	CAPACITOR			0.47μF,16V	
			C31	QEKJ0JM-476	E CAPACITOR			47μF,6.3V	
			C32	QCBB1HK-104	CAPACITOR			0.1μF,50V	
			C33	QEKJ1HM-225	E CAPACITOR			2.2μF,50V	
			C34	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C35	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C36	QEKJ1HM-475	E CAPACITOR			4.7μF,50V	
			C37	QEKJ1HM-105	E CAPACITOR			1μF,50V	
			C38	QEKJ0JM-476	E CAPACITOR			47μF,6.3V	
			C39	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C40	QEKJ1EM-106	E CAPACITOR			10μF,25V	
			C45	QCBB1HK-104	CAPACITOR			0.1μF,50V	
			C46	NDC21HJ-101X	CAPACITOR			100pF,50V	
			C59	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C60	QEKJ0JM-476	E CAPACITOR			47μF,6.3V	
			C61	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C63	NCB21EK-104X	CAPACITOR			0.1μF,25V	
			C64	NDC21HJ-220X	CAPACITOR			22pF,50V	
			C65	QEKJ1HM-105	E CAPACITOR			1μF,50V	
			C69	NCB21EK-104X	CAPACITOR,A			0.1μF,25V	
			C70	NCB21EK-104X	CAPACITOR,A			0.1μF,25V	
			C71	NCB21HK-103X	CAPACITOR			0.01μF,50V	
			C72	NDC21HJ-470X	CAPACITOR			47pF,50V	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C73		NDC21HJ-120X	CAPACITOR 12pF,50V	C2007		QEKJ1CM-226	E CAPACITOR 22μF,16V
C76		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2008		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C78		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2009		NCB21HK-102X	CAPACITOR 0.001μF,50V
C80		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2010		NCB21HK-152X	CAPACITOR 0.0015μF,50V
C106		NCB21HK-821X	CAPACITOR 820pF,50V	C2011		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C108		NDC21HJ-680X	CAPACITOR 68pF,50V	C2012		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C109		NCB21CK-224X	CAPACITOR 0.22μF,16V	C2013		NDC21HJ-680X	CAPACITOR 68pF,50V
C110		NDC21HJ-820X	CAPACITOR 82pF,50V	C2015		NCB21HK-682X	CAPACITOR 0.0068μF,50V
C114		NDC21HJ-181X	CAPACITOR 180pF,50V	C2051		NCB21HK-331X	CAPACITOR 330pF,50V
C124		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	C2052		QFLC1HJ-333Z	F CAPACITOR,B,C,D 0.033μF,50V
C139		NDC21HJ-470X	CAPACITOR 47pF,50V			QFLC1HJ-823Z	F CAPACITOR,A 0.082μF,50V
C143		QCFB1HZ-104	CAPACITOR 0.1μF,50V	C2053		NCB21HK-332X	CAPACITOR,B,C,D 0.0033μF,50V
C201		QEKJ0JM-227	E CAPACITOR 220μF,6.3V			NCB21HK-472X	CAPACITOR,A 0.0047μF,50V
C204		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2054		NCB21HK-103X	CAPACITOR,B,C,D 0.01μF,50V
C206		NDC21HJ-330X	CAPACITOR 33pF,50V			NCB21HK-223X	CAPACITOR,A 0.022μF,50V
C207		NDC21HJ-330X	CAPACITOR 33pF,50V	C2055		QEKJ1EM-106	E CAPACITOR 10μF,25V
C209		NCB21CK-474X	CAPACITOR 0.47μF,16V	C2061		QFLC1HJ-333Z	F CAPACITOR,B,C,D 0.033μF,50V
C210		NDC21HJ-101X	CAPACITOR 100pF,50V	C2062		NCB21HK-332X	CAPACITOR,B,C,D 0.0033μF,50V
C211		NDC21HJ-101X	CAPACITOR 100pF,50V	C2063		NCB21HK-103X	CAPACITOR,B,C,D 0.01μF,50V
C212		NCB21EK-104X	CAPACITOR 0.1μF,25V	C2064		QEKJ1EM-106	E CAPACITOR,B,C,D 10μF,25V
C213		QERF1EM-475	E CAPACITOR 4.7μF,25V	C2201		NCB21EK-104X	CAPACITOR 0.1μF,25V
C214		NCB21CK-224X	CAPACITOR 0.22μF,16V	C2202		NCB21EK-333X	CAPACITOR 0.033μF,25V
C215		NCB21CK-224X	CAPACITOR 0.22μF,16V	C2203		QEKJ1EM-106	E CAPACITOR 10μF,25V
C217		NDC21HJ-560X	CAPACITOR 56pF,50V	C2204		QDGB1HK-102Y	CAPACITOR 0.001μF,50V
C218		QERF1HM-105	E CAPACITOR 1μF,50V	C2207		QEKJ1CM-476	E CAPACITOR 47μF,16V
C222		NCB21CK-105X	CAPACITOR 1μF,16V	C2208		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C225		QERF1AM-227	E CAPACITOR 220μF,10V	C2209		QEKJ1HM-104	E CAPACITOR,B,C,D 0.1μF,50V
C301		NDC21HJ-151X	CAPACITOR 150pF,50V	C2210		QEKJ1HM-104	E CAPACITOR,B,C,D 0.1μF,50V
C302		NCB21CK-105X	CAPACITOR 1μF,16V	C2211		QEKJ1HM-105	E CAPACITOR,B,C,D 1μF,50V
C303		NCB21HK-682X	CAPACITOR 0.0068μF,50V	C2212		QEKJ1HM-105	E CAPACITOR,B,C,D 1μF,50V
C304		NCB21HK-682X	CAPACITOR 0.0068μF,50V	C2213		QEKJ1EM-106	E CAPACITOR 10μF,25V
C305		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2214		QEKJ1EM-106	E CAPACITOR 10μF,25V
C306		NCB21CK-105X	CAPACITOR 1μF,16V	C2215		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C307		NDC21HJ-151X	CAPACITOR 150pF,50V	C2216		QEKJ1HM-474	E CAPACITOR 0.47μF,50V
C308		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2217		QEKJ1EM-106	E CAPACITOR 10μF,25V
C309		NCB21EK-104X	CAPACITOR 0.1μF,25V	C2218		QEKJ1HM-474	E CAPACITOR 0.47μF,50V
C310		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2219		QEKJ1EM-106	E CAPACITOR 10μF,25V
C311		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2220		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C312		NCB21HK-102X	CAPACITOR 0.001μF,50V	C2221		NCB21HK-103X	CAPACITOR 0.01μF,50V
C313		NCB21CK-474X	CAPACITOR 0.47μF,16V	C2222		QEKJ1HM-474	E CAPACITOR 0.47μF,50V
C315		NCB21CK-105X	CAPACITOR 1μF,16V	C2223		QEKJ1HM-474	E CAPACITOR 0.47μF,50V
C316		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2224		NCB21HK-103X	CAPACITOR 0.01μF,50V
C317		NCB21HK-681X	CAPACITOR 680pF,50V	C2225		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C318		NCB21EK-223X	CAPACITOR 0.022μF,25V	C2226		QEKJ1EM-106	E CAPACITOR 10μF,25V
C319		NCB21CK-105X	CAPACITOR 1μF,16V	C2227		NCB21CK-104X	CAPACITOR 0.1μF,16V
C320		NCB21HK-103X	CAPACITOR 0.01μF,50V	C2228		NCB21CK-104X	CAPACITOR 0.1μF,16V
C321		NDC21HG-301X	CAPACITOR 300pF,50V	C2251		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C322		NCB21CK-474X	CAPACITOR 0.47μF,16V	C2252		NCB21HK-103X	CAPACITOR 0.01μF,50V
C323		QEKJ0JM-476	E CAPACITOR 47μF,6.3V	C2253		NCB21HK-103X	CAPACITOR 0.01μF,50V
C324		NDC21HJ-390X	CAPACITOR 39pF,50V	C2254		NCB21HK-103X	CAPACITOR 0.01μF,50V
C401		NCB21HK-103X	CAPACITOR,B,C,D 0.01μF,50V	C2255		NDC21HJ-181X	CAPACITOR 180pF,50V
C402		NCB21HK-223X	CAPACITOR,B,C,D 0.022μF,50V	C3001		NCB21EK-104X	CAPACITOR 0.1μF,25V
C403		NDC21HJ-131X	CAPACITOR,B,C,D 130pF,50V	C3003		QEKJ1EM-106	E CAPACITOR 10μF,25V
C404		NDC21HJ-470X	CAPACITOR,B,C,D 47pF,50V	C3008		NCB21HK-102X	CAPACITOR 0.001μF,50V
C406		NCB21HK-102X	CAPACITOR,B,C,D 0.001μF,50V	C3011		QETL0JM-338	E CAPACITOR 3300μF,6.3V
C407		NDC21HJ-150X	CAPACITOR,B,C,D 15pF,50V	C3012		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C2001		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C3014		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C2002		QEKJ1EM-106	E CAPACITOR 10μF,25V	C3015		NCB21EK-104X	CAPACITOR 0.1μF,25V
C2003		QEKJ0JM-476	E CAPACITOR 47μF,6.3V	C3016		NCB21EK-104X	CAPACITOR 0.1μF,25V
C2005		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C3020		NDC21HJ-101X	CAPACITOR 100pF,50V
C2006		NCB21EK-123X	CAPACITOR 0.012μF,25V	C3021		NDC21HJ-101X	CAPACITOR 100pF,50V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION		
			C3022	NCB21EK-104X	CAPACITOR			C7003	QEKJ0JM-227	E CAPACITOR	220μF,6.3V
			C3024	NDC21HJ-120X	CAPACITOR			C7005	NDC21HJ-470X	CAPACITOR	47pF,50V
			C3026	NCB21HK-103X	CAPACITOR			C7006	NDC21HJ-330X	CAPACITOR	33pF,50V
			C3027	QEKJ1EM-106	E CAPACITOR			C7007	QEKJ1HM-106	E CAPACITOR	10μF,50V
			C3030	QEKJ0JM-476	E CAPACITOR			C7008	NCB21HK-102X	CAPACITOR	0.001μF,50V
			C3031	NCB21EK-104X	CAPACITOR			C7011	QCFB1HZ-104	CAPACITOR	0.1μF,50V
			C3032	NCB21EK-104X	CAPACITOR			C7165	NCB21HK-681X	CAPACITOR	680pF,50V
			C3033	NCB21EK-104X	CAPACITOR			C7167	NCB21HK-681X	CAPACITOR	680pF,50V
			C3036	NDC21HJ-180X	CAPACITOR			C7202	QETJ0JM-477	E CAPACITOR	470μF,6.3V
			C3037	NDC21HJ-120X	CAPACITOR			L1	QQL29BJ-100Z	COIL	10μH
			C3040	NCB21HK-103X	CAPACITOR			L2	QQL071J-121Y	COIL	120μH
			C3041	NDC21HJ-100X	CAPACITOR			L3	QQL29BJ-100Z	COIL	10μH
			C3050	NCB21EK-104X	CAPACITOR			L4	QQL29BJ-100Z	COIL	10μH
			C4002	NCB21EK-104X	CAPACITOR			L5	QQR0521-012Z	NOISE FILTER	
			C4003	NCB21HK-102X	CAPACITOR			L12	QQR0967-001	COIL	12μH
			C4004	QEKJ1AM-226	E CAPACITOR			L13	QQL071J-330Y	COIL	33μH
			C4005	NCB21HK-222X	CAPACITOR			L15	QQL29BJ-100Z	COIL	10μH
			C4006	QEKJ0JM-476	E CAPACITOR			L18	QQL071J-220Y	COIL	22μH
			C4007	NCB21HK-102X	CAPACITOR,A			L19	QQL071J-120Y	COIL	12μH
				NCB21HK-561X	CAPACITOR,B,C,D			L20	QUY153-050Y	IM BUS WIRE	
			C4008	NCB21AK-105X	CAPACITOR			L24	QQL071J-270Y	COIL	27μH
			C4009	NCB21HK-563X	CAPACITOR			L27	QQL071J-330Y	COIL	33μH
			C4010	NCB21EK-223X	CAPACITOR			L28	QQL071J-680Y	COIL	68μH
			C4011	NCB21EK-104X	CAPACITOR			L30	QUY153-050Y	IM BUS WIRE	
			C4012	NCB21AK-105X	CAPACITOR			L201	QQL29BK-1R0Z	COIL	1.0μH
			C4013	NCB21HK-563X	CAPACITOR			L202	QUY153-050Y	IM BUS WIRE	
			C4014	NDC21HJ-101X	CAPACITOR			L203	QQL29BJ-220Z	COIL	22μH
			C4015	NCB21HK-102X	CAPACITOR			L204	QQL29BJ-100Z	COIL	10μH
△			C5001	QFZ9073-683	F CAPACITOR			L206	QQL071J-220Y	COIL	22μH
△			C5002	QFZ9051-333	F CAPACITOR			L301	QQL29BJ-100Z	COIL	10μH
△			C5004	QCZ9071-222	CAPACITOR			L302	QQL231J-6R8Y	COIL	6.8μH
			C5006	QEZ0375-686	E CAPACITOR			L303	QQL231J-270Y	COIL	27μH
			C5101	QCZ0212-472	CAPACITOR			L304	QQL29BJ-101Z	COIL	100μH
			C5102	QCZ0302-330Z	CAPACITOR			L401	QQL071J-150Y	COIL,B,C,D	15μH
			C5104	QEKJ1HM-105	E CAPACITOR			L402	QUY153-050Y	IM BUS WIRE,B,C,D	
			C5105	QFN31HJ-183	F CAPACITOR			L2001	QUY153-050Y	IM BUS WIRE	
			C5106	QCB1HJ-271	CAPACITOR			L2251	QQL29BJ-100Z	COIL	10μH
			C5107	QFV91HJ-104	F CAPACITOR			L2252	QQL29BJ-151Z	COIL	150μH
			C5201	QEMU0JM-227	E CAPACITOR			L3001	QUY153-050Y	IM BUS WIRE	
			C5202	QEMT1CM-687	E CAPACITOR			L3011	QUY153-050Y	IM BUS WIRE	
			C5203	QEMT1AM-128	E CAPACITOR			L3012	QUY153-050Y	IM BUS WIRE	
			C5204	QETN2AM-475	E CAPACITOR			L4001	QUY153-050Y	IM BUS WIRE	
			C5205	QETN1HM-106	E CAPACITOR			L5201	PELN1184	COIL	33μH
			C5206	QETN1EM-476	E CAPACITOR			L5202	PU60944-330K	COIL	33μH
			C5207	QETN1CM-107	E CAPACITOR			L6001	QQL29BJ-100Z	COIL	10μH
			C5208	QEMU1EM-187	E CAPACITOR			L6003	QQL29BJ-470Z	COIL	47μH
			C5301	QEKJ1CM-107	E CAPACITOR			L7201	QQL29BJ-100Z	COIL	10μH
			C5302	QEKJ1CM-476	E CAPACITOR			X1	QAX0576-001Z	CRYSTAL RESONATOR	
			C5303	QEKJ1CM-107	E CAPACITOR			X2	QCB1HK-103	CAPACITOR,D	0.01μF,50V
			C5304	QFLC1HJ-102Z	F CAPACITOR			X3001	QAX0444-001	CRYSTAL RESONATOR	
			C5305	QFV91HJ-224	F CAPACITOR			X3002	QAX0527-001	CRYSTAL RESONATOR	
			C5311	NCB21HK-103X	CAPACITOR			S3001	QSW0602-004	PUSH SWITCH,REC SAFETY	
			C5351	QUY153-050Y	IM BUS WIRE			S3002	QSW0695-001	PUSH SWITCH,S.CASS SW	
			C6007	QEMU0JM-227	E CAPACITOR			S7001	QSW0456-002Z	TACT SWITCH,STAND-BY	
			C6008	NCB21HK-103X	CAPACITOR			S7002	QSW0456-002Z	TACT SWITCH,SVHS ET	
			C6013	NCB21HK-103X	CAPACITOR			S7004	QSW0456-002Z	TACT SWITCH,REC	
			C6023	NRSA02J-0R0X	MG RESISTOR			S7006	QSW0456-002Z	TACT SWITCH,PAUSE	
			C6037	QEKJ1EM-106	E CAPACITOR			S7008	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
			C6501	QEKJ0JM-107	E CAPACITOR			S7010	QSW0456-002Z	TACT SWITCH,PLAY	
			C6502	NCB21HK-103X	CAPACITOR			S7012	QSW0456-002Z	TACT SWITCH,E.PROG	
			C7001	QEKJ0JM-476	E CAPACITOR			S7016	QSW0456-002Z	TACT SWITCH,SAT TIMER	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
K2001		NQR0403-003X	FERRITE BEAD
K2002		NQR0403-003X	FERRITE BEAD
K2003		NQR0403-003X	FERRITE BEAD
K2004		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
K2251		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
K2252		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
K2253		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
K5101		QQR0678-001Z	FERRITE BEAD
K5102		QUY153-050Y	IM BUS WIRE
K5301		QUY153-050Y	IM BUS WIRE
K6080		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
PC3001		GP3S123	IC(PHOTO SENSOR
PC3002		GP3S123	IC(PHOTO SENSOR
△ PC5101		PS2561L1-1/L/	IC(PHOTO COUPLER)
T2051		PELN0832	OSC TRANSFORMER,A
		PELN0860	OSC TRANSFORMER,B,C,D
T2052		PELN0861	OSC TRANSFORMER,B,C,D
△ T5001		QQS0033-001	SW TRANSFORMER
TU6001		QAU0210-001	TUNER
ET1		PQ21623-2-5	EARTH PLATE(RF)
DI7001		QLF0031-001	FL TUBE,A
		QLF0032-001	FL TUBE,B,C,D
HD1		PQ35479-1-4	HOLDER(FDP),A
		LP30188-001A	HOLDER(FDP),B,C,D
HS1		LP40621-001A	HEAT SINK,Q5101
SD1		LP30864-001A	SHIELD CASE(PRE)
OT1		QYTDSF3010Z	SCREW,X2
OT2		PU59915-107	#500SPACER,WR1,D
OT3		QYTDST3008Z	SCREW,Q5101
WR1		QUB321-11A1A1	SIN TWIST WIRE,D
FC5001		QNG0006-001Z	FUSE CLIP,F5001
FC5002		QNG0006-001Z	FUSE CLIP,F5001
J7105		QNN0381-002	PIN JACK,F_IN NI,A,B,C
		QNN0383-002	PIN JACK,AU YWR,D
△ LF5001		PELN1204-01-01	LINE FILTER
△ LF5002		QQR0978-001	LINE FILTER
CN1		QGF1028C1-11	FPC CONNECTOR,(1-11)U.DRUM,A
		QGF1028C1-13	FPC CONNECTOR,(1-13)U.DRUM,B,C,D
CN901		QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL
CN902		QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL
CN903		QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL
CN904		QGB2024K1-11S	CONNECTOR,(1-11)TERMINAL
CN905		QGB2024K1-09S	CONNECTOR,(1-9)TERMINAL
CN2001		QGF1207C1-07	FPC CONNECTOR,(1-7)A/C HEAD
CN2002		QGB2532J1-02	CONNECTOR,(1-2)FE HEAD
CN3001		QGF1207C1-05	FPC CONNECTOR,(1-5)DRUM MDA
CN3002		QGB2532J1-02	CONNECTOR,(1-2)LOADING MOTOR
CN3003		QGB2015M2-08	CONNECTOR,(1-8)CAPSTAN MOTOR
CN3004		QGB2534J2-04	CONNECTOR,(1-4)ROTARY ENCODER
△ CN5001		QGA7901C3-02	CONNECTOR,(1-2)AC IN
CN7001		QGF1207C1-09	FPC CONNECTOR,(1-9)ADV.JOG
△ CP3002		ICP-N25	CIRCUIT PROTECTOR
CP4001		QUY153-050Y	IM BUS WIRE
△ CP5303		NMFZ012-1R5X-M	FUSE T1.5A,50V
△ CP5304		NMFZ012-1R0X-M	FUSE T1.0A,50V
△ F5001		QMF51E2-2R0J1	FUSE T2.0A,AC250V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION

2D DIGITAL BOARD ASSEMBLY <05>(MODEL:A,B,C)			
PW1		LPA10090-07A	2D DIGITAL BOARD ASSY
IC1201		JCP8036	IC
△ Q1201		2SC1317/RS/-T	TRANSISTOR
Q1202		2SA1576A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q1203		2SA1576A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q1204		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q1205		2SC4081/S/-X	TRANSISTOR
Q1206		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
D1201		RD4.3ES/B3/-T2	ZENER DIODE
D1202		QUY153-050Y	IM BUS WIRE
R1201		NRSA02J-121X	MG RESISTOR 120Ω,1/10W
R1202		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R1203		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R1204		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R1205		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1206		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R1207		NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R1208		NRSA02J-123X	MG RESISTOR 12kΩ,1/10W
R1209		NRSA02J-180X	MG RESISTOR 18Ω,1/10W
R1210		NRSA02J-393X	MG RESISTOR 39kΩ,1/10W
R1211		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R1212		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1213		NRSA02J-331X	MG RESISTOR 330Ω,1/10W
R1214		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R1215		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1216		NRSA02J-331X	MG RESISTOR 330Ω,1/10W
R1217		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R1218		NRSA02J-301X	MG RESISTOR 300Ω,1/10W
R1222		NRSA02J-471X	MG RESISTOR 470Ω,1/10W
R1224		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R1225		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R1226		NRSA02J-153X	MG RESISTOR 15kΩ,1/10W
R1227		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R1228		NRSA02J-391X	MG RESISTOR 390Ω,1/10W
R1230		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R1231		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R1232		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R1233		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
VR1201		QVZ3521-103Z	V RESISTOR,D/A LEVEL ADJ
B1204		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
C1201		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C1208		NDC21HJ-101X	CAPACITOR 100pF,50V
C1210		NDC21HJ-330X	CAPACITOR 33pF,50V
C1211		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C1212		NCB21HK-102X	CAPACITOR 0.001μF,50V
C1213		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1214		NCF21CZ-105X	CAPACITOR 1μF,16V
C1215		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C1216		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1217		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1218		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1219		NCF21CZ-105X	CAPACITOR 1μF,16V
C1220		QEKJ0JM-476	E CAPACITOR 47μF,6.3V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION		
			C1222	NDC21HJ-820X	CAPACITOR			Q1413	2SA1576A/QR/-X	TRANSISTOR	
			C1223	NDC21HJ-270X	CAPACITOR				or 2PA1576/R/-X	TRANSISTOR	
			C1225	NDC21HJ-820X	CAPACITOR			Q1414	DTC144WU	TRANSISTOR	
			C1226	NDC21HJ-270X	CAPACITOR				or RN1309	TRANSISTOR	
			C1227	NCB21EK-104X	CAPACITOR				or UN521E	TRANSISTOR	
			C1228	QEKJ1HM-475	E CAPACITOR			Q1417	2SC4081/QRS/-X	TRANSISTOR	
			C1229	NCB21HK-103X	CAPACITOR				or 2PC4081/R/-X	TRANSISTOR	
			C1230	NCF21EZ-104X	CAPACITOR			Q1418	2SA1576A/QR/-X	TRANSISTOR	
			C1231	NCF21EZ-104X	CAPACITOR				or 2PA1576/R/-X	TRANSISTOR	
			C1232	NCF21EZ-104X	CAPACITOR			Q1419	DTC124TU	TRANSISTOR	
			C1233	QDYB1CM-103Y	CAPACITOR			Q1420	2SC4081/QRS/-X	TRANSISTOR	
			C1234	NCF21EZ-104X	CAPACITOR				or 2PC4081/R/-X	TRANSISTOR	
			C1235	QEKJ0JM-476	E CAPACITOR			D1401	RD4.3ES/B3/-T2	ZENER DIODE	
			C1236	NCF21EZ-104X	CAPACITOR			D1402	1SS133	DIODE	
			C1237	NCF21EZ-104X	CAPACITOR				or 1N4148M	DIODE	
			C1238	NDC21HJ-180X	CAPACITOR			R1401	NRSA02J-181X	MG RESISTOR	180Ω, 1/10W
			C1239	NDC21HJ-560X	CAPACITOR			R1402	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
			C1243	NCB21HK-103X	CAPACITOR			R1404	NRSA02J-182X	MG RESISTOR	1.8kΩ, 1/10W
			C1244	QEKJ1HM-475	E CAPACITOR			R1406	NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
			C1245	NDC21HJ-150X	CAPACITOR			R1407	NRSA02J-272X	MG RESISTOR	2.7kΩ, 1/10W
			C1246	QEKJ0JM-476	E CAPACITOR			R1408	NRSA02J-122X	MG RESISTOR	1.2kΩ, 1/10W
			C1248	NCB21HK-103X	CAPACITOR			R1410	NRSA02J-391X	MG RESISTOR	390Ω, 1/10W
			L1201	QQL071J-1R0Y	COIL			R1411	NRSA02J-152X	MG RESISTOR	1.5kΩ, 1/10W
			L1202	QQL29BJ-101Z	COIL			R1413	NRSA02J-331X	MG RESISTOR	330Ω, 1/10W
			L1203	QQL29BJ-101Z	COIL			R1414	NRSA02J-821X	MG RESISTOR	820Ω, 1/10W
			L1204	QQL29BJ-101Z	COIL			R1415	NRSA02J-221X	MG RESISTOR	220Ω, 1/10W
			L1205	QQL071J-6R8Y	COIL			R1416	NRSA02J-104X	MG RESISTOR	100kΩ, 1/10W
			L1206	QQL071J-6R8Y	COIL			R1417	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
			L1207	QQL29BJ-101Z	COIL			R1418	NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
			L1208	QQL071J-150Y	COIL			R1421	NRSA02J-391X	MG RESISTOR	390Ω, 1/10W
			L1209	QUY153-050Y	IM BUS WIRE			R1426	NRSA02J-561X	MG RESISTOR	560Ω, 1/10W
△		LC1201	QQL29BJ-101Z	COIL	100μH			R1427	NRSA02J-333X	MG RESISTOR	33kΩ, 1/10W
		SD1	LP30706-001C	SHIELD FRAME(S-VHS)				R1428	NRSA02J-393X	MG RESISTOR	39kΩ, 1/10W
		SD2	LP30684-001A	SHIELD CASE(S-VHS)				R1429	NRSA02J-152X	MG RESISTOR	1.5kΩ, 1/10W
		CN1201	QGG2502K1-17	HEADER PIN				R1430	NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W
								R1431	NRSA02J-821X	MG RESISTOR	820Ω, 1/10W
								R1432	NRSA02J-182X	MG RESISTOR	1.8kΩ, 1/10W
								R1433	NRSA02J-510X	MG RESISTOR	51Ω, 1/10W
								R1434	NRSA02J-153X	MG RESISTOR	15kΩ, 1/10W
								R1435	NRSA02J-223X	MG RESISTOR	22kΩ, 1/10W
								R1436	NRSA02J-682X	MG RESISTOR	6.8kΩ, 1/10W
								R1437	NRSA02J-392X	MG RESISTOR	3.9kΩ, 1/10W
								R1438	NRSA02J-473X	MG RESISTOR	47kΩ, 1/10W
								R1439	NRSA02J-273X	MG RESISTOR	27kΩ, 1/10W
								R1440	NRSA02J-473X	MG RESISTOR	47kΩ, 1/10W
								R1441	NRSA02J-682X	MG RESISTOR	6.8kΩ, 1/10W
								R1442	NRSA02J-682X	MG RESISTOR	6.8kΩ, 1/10W
								R1446	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1447	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1448	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1449	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1450	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1452	NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
								R1453	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1454	NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
								R1455	NRSA02J-681X	MG RESISTOR	680Ω, 1/10W
								R1458	NRSA02J-681X	MG RESISTOR	680Ω, 1/10W
								R1459	NRSA02J-681X	MG RESISTOR	680Ω, 1/10W
								R1460	NRSA02J-273X	MG RESISTOR	27kΩ, 1/10W
								R1461	NRSA02J-121X	MG RESISTOR	120Ω, 1/10W
								R1463	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W

3D DIGITAL/2M BOARD ASSEMBLY <05>(MODEL:D)											
			PW1	LPA10105-05A	3D DIGITAL/2M BOARD ASSY						
			IC1401	JCP8026	IC						
△			Q1401	2SC1317/RS/-T	TRANSISTOR						
			Q1402	2SA1576A/QR/-X	TRANSISTOR						
				or 2PA1576/R/-X	TRANSISTOR						
			Q1403	2SA1576A/QR/-X	TRANSISTOR						
				or 2PA1576/R/-X	TRANSISTOR						
			Q1404	DTC144WU	TRANSISTOR						
				or RN1309	TRANSISTOR						
				or UN521E	TRANSISTOR						
			Q1406	2SA1576A/QR/-X	TRANSISTOR						
				or 2PA1576/R/-X	TRANSISTOR						
			Q1407	2SA1576A/QR/-X	TRANSISTOR						
				or 2PA1576/R/-X	TRANSISTOR						
			Q1408	2SC4081/S/-X	TRANSISTOR						
			Q1410	2SC4081/QRS/-X	TRANSISTOR						
				or 2PC4081/R/-X	TRANSISTOR						
			Q1412	2SC4081/QRS/-X	TRANSISTOR						
				or 2PC4081/R/-X	TRANSISTOR						

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
VR1401		QVZ3521-103Z	V RESISTOR,D/A LEVEL ADJ
B1412		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
C1401		QEKJ1CM-336	E CAPACITOR 33μF,16V
C1402		NCB21HK-103X	CAPACITOR 0.01μF,50V
C1403		QEKJ0JM-337	E CAPACITOR 330μF,6.3V
C1404		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1405		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1406		NCB21HK-103X	CAPACITOR 0.01μF,50V
C1407		NDC21HJ-680X	CAPACITOR 68pF,50V
C1408		NDC21HJ-330X	CAPACITOR 33pF,50V
C1410		QEKJ1EM-475	E CAPACITOR 4.7μF,25V
C1411		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1412		NDC21HJ-680X	CAPACITOR 68pF,50V
C1413		NDC21HJ-330X	CAPACITOR 33pF,50V
C1415		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1416		QEKJ1CM-106	E CAPACITOR 10μF,16V
C1417		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1421		NDC21HJ-330X	CAPACITOR 33pF,50V
C1422		NDC21HJ-680X	CAPACITOR 68pF,50V
C1423		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1424		NCB21HK-103X	CAPACITOR 0.01μF,50V
C1425		NCB21HK-103X	CAPACITOR 0.01μF,50V
C1426		NDC21HJ-390X	CAPACITOR 39pF,50V
C1428		NDC21HJ-220X	CAPACITOR 22pF,50V
C1429		QEKJ0JM-337	E CAPACITOR 330μF,6.3V
C1430		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1432		NCF21CZ-105X	CAPACITOR 1μF,16V
C1433		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1435		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1436		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1437		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1438		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1439		NCF21CZ-105X	CAPACITOR 1μF,16V
C1440		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1441		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1442		NCF21CZ-105X	CAPACITOR 1μF,16V
C1444		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1445		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1446		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C1447		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1448		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C1449		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1450		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1451		QEKJ1EM-475	E CAPACITOR 4.7μF,25V
C1452		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1453		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1454		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1455		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1463		QEKJ0JM-336	E CAPACITOR 33μF,6.3V
C1468		NDC21HJ-101X	CAPACITOR 100pF,50V
C1470		NDC21HJ-330X	CAPACITOR 33pF,50V
C1471		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1472		NCF21EZ-104X	CAPACITOR 0.1μF,25V
C1473		NCF21EZ-104X	CAPACITOR 0.1μF,25V
L1401		QQL29BJ-100Z	COIL 10μH
L1402		QQL071J-6R8Y	COIL 6.8μH
L1403		QQL071J-6R8Y	COIL 6.8μH
L1404		QQL071J-6R8Y	COIL 6.8μH
L1405		QQL01BJ-101Z	COIL 100μH
L1406		QQL071J-330Y	COIL 33μH
L1407		QQL01BJ-101Z	COIL 100μH

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
L1409		QQL071J-1R0Y	COIL 1.0μH
LC1401		QQR0521-007Z	NOISE FILTER
LC1402		QQR0521-006Z	NOISE FILTER
SD1		LP30706-001C	SHIELD FRAME(S-VHS)
SD2		LP30684-001A	SHIELD CASE(S-VHS)
CN1401		QGG2502K1-17	HEADER PIN

TERMINAL BOARD ASSEMBLY <06>

PW1	LPA10138-05A	TERMINAL BOARD ASSY,A
	LPA10138-03B	TERMINAL BOARD ASSY,B,C,D
IC501	JCP8018	IC
	or JCP8028	IC
	or JCP8028-01	IC
	or JCP8038	IC
IC502	VC2076DP	IC
IC901	BH7636S	IC
Q901	UN5211	TRANSISTOR
	or RN1302	TRANSISTOR
	or DTC114EU	TRANSISTOR
	or PDT114EU	TRANSISTOR
Q902	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q903	2SB1218A/QR/-X	TRANSISTOR,B,C,D
	or 2PA1576/R/-X	TRANSISTOR,B,C,D
	or 2SA1576A/QR/-X	TRANSISTOR,B,C,D
Q904	2SB1218A/QR/-X	TRANSISTOR,B,C,D
	or 2PA1576/R/-X	TRANSISTOR,B,C,D
	or 2SA1576A/QR/-X	TRANSISTOR,B,C,D
Q905	UN521E	TRANSISTOR
	or DTC144WU	TRANSISTOR
	or PDT144WU	TRANSISTOR
	or RN1309	TRANSISTOR
Q906	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q907	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q908	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q909	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q910	2SB1218A/QR/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q911	UN521E	TRANSISTOR
	or RN1309	TRANSISTOR
	or DTC144WU	TRANSISTOR
	or PDT144WU	TRANSISTOR
Q912	UN5215	TRANSISTOR
	or RN1311	TRANSISTOR
	or DTC114TU	TRANSISTOR
	or PDT114TU	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
R503			NRSA02J-221X	MG RESISTOR 220Ω, 1/10W	R944			NRSA02J-272X	MG RESISTOR 2.7kΩ, 1/10W
R504			NRSA02J-332X	MG RESISTOR 3.3kΩ, 1/10W	R945			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R505			NRSA02J-392X	MG RESISTOR 3.9kΩ, 1/10W	R946			NRSA02J-561X	MG RESISTOR 560Ω, 1/10W
R506			NRSA02J-391X	MG RESISTOR 390Ω, 1/10W	R947			NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
R507			NRSA02J-122X	MG RESISTOR 1.2kΩ, 1/10W	R949			QRE121J-331Y	RESISTOR 330Ω, 1/2W
R508			NRSA02J-151X	MG RESISTOR 150Ω, 1/10W	R951			NRSA02J-332X	MG RESISTOR 3.3kΩ, 1/10W
R509			NRSA02J-162X	MG RESISTOR 1.6kΩ, 1/10W	R952			NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W
R510			NRVA02D-102X	CMF RESISTOR 1kΩ, 1/10W	R953			NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W
R511			NRVA02D-471X	CMF RESISTOR 470Ω, 1/10W	R964			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
R512			NRVA02D-102X	CMF RESISTOR 1kΩ, 1/10W	C501			QEKJ1HM-225	E CAPACITOR 2.2μF, 50V
R513			NRVA02D-152X	CMF RESISTOR 1.5kΩ, 1/10W	C502			QEKJ1HM-475	E CAPACITOR 4.7μF, 50V
R514			NRVA02D-332X	CMF RESISTOR 3.3kΩ, 1/10W	C503			QEKJ1HM-225	E CAPACITOR 2.2μF, 50V
R515			NRVA02D-332X	CMF RESISTOR 3.3kΩ, 1/10W	C504			NCB21EK-104X	CAPACITOR 0.1μF, 25V
R516			QUY160-100Y	IM BUS WIRE	C505			QEKJ1HM-475	E CAPACITOR 4.7μF, 50V
R517			QUY160-100Y	IM BUS WIRE	C506			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R525			QRE141J-125Y	RESISTOR 1.2MΩ, 1/4W	C507			QEKJ0JM-476	E CAPACITOR 47μF, 6.3V
R531			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C508			QEKJ1HM-474	E CAPACITOR 0.47μF, 50V
R532			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C509			QEKJ1CM-106	E CAPACITOR 10μF, 16V
R533			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C510			QEKJ0JM-476	E CAPACITOR 47μF, 6.3V
R534			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C511			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R535			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C512			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R536			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C513			QEKJ1HM-475	E CAPACITOR 4.7μF, 50V
R901			NRSA02J-750X	MG RESISTOR 75Ω, 1/10W	C514			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R902			NRSA02J-750X	MG RESISTOR 75Ω, 1/10W	C515			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R903			QRE141J-680Y	RESISTOR 68Ω, 1/4W	C516			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R904			NQL402M-4R7X	INDUCTOR	C518			NCB21EK-104X	CAPACITOR 0.1μF, 25V
R905			NQL402M-4R7X	INDUCTOR	C519			QEKJ1HM-225	E CAPACITOR 2.2μF, 50V
R906			QQL231J-100Y	COIL 10μH	C520			QEKJ1HM-475	E CAPACITOR 4.7μF, 50V
R907			QQL231J-100Y	COIL 10μH	C521			QEKJ1HM-475	E CAPACITOR 4.7μF, 50V
R908			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	C522			QEKJ1HM-225	E CAPACITOR 2.2μF, 50V
R909			NRSA02J-750X	MG RESISTOR 75Ω, 1/10W	C523			QEKJ1HM-225	E CAPACITOR 2.2μF, 50V
R910			NRSA02J-750X	MG RESISTOR 75Ω, 1/10W	C524			NDC21HG-301X	CAPACITOR 300pF, 50V
R911			NRSA02J-750X	MG RESISTOR 75Ω, 1/10W	C525			NDC21HG-301X	CAPACITOR 300pF, 50V
R912			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C526			NDC21HJ-101X	CAPACITOR 100pF, 50V
R913			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C527			NDC21HJ-181X	CAPACITOR 180pF, 50V
R914			QQL231J-100Y	COIL 10μH	C528			NDC21HG-271X	CAPACITOR 270pF, 50V
R915			QQL231J-100Y	COIL 10μH	C529			NDC21HG-820X	CAPACITOR 82pF, 50V
R916			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W	C530			NDC21HG-221X	CAPACITOR 220pF, 50V
R917			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	C531			NDC21HG-301X	CAPACITOR 300pF, 50V
R918			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	C532			NDC21HG-301X	CAPACITOR 300pF, 50V
R919			QRE141J-101Y	RESISTOR, B, C, D 100Ω, 1/4W	C533			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R920			QRE141J-101Y	RESISTOR, B, C, D 100Ω, 1/4W	C534			QEKJ0JM-476	E CAPACITOR 47μF, 6.3V
R921			QRE121J-391Y	RESISTOR, B, C, D 390Ω, 1/2W	C535			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R922			QRE121J-391Y	RESISTOR, B, C, D 390Ω, 1/2W	C551			QEKJ1HM-105	E CAPACITOR 1μF, 50V
R923			NRSA02J-750X	MG RESISTOR, B, C, D 75Ω, 1/10W	C553			QCBB1HK-103	CAPACITOR 0.01μF, 50V
R924			NRSA02J-750X	MG RESISTOR, B, C, D 75Ω, 1/10W	C554			QEKJ1HM-105	E CAPACITOR 1μF, 50V
R929			NRSA02J-820X	MG RESISTOR 82Ω, 1/10W	C556			QCBB1HK-103	CAPACITOR 0.01μF, 50V
R930			NRSA02J-750X	MG RESISTOR 75Ω, 1/10W	C557			QEKJ1HM-105	E CAPACITOR 1μF, 50V
R931			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	C559			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R932			NRSA02J-511X	MG RESISTOR 510Ω, 1/10W	C560			QEKJ1HM-105	E CAPACITOR 1μF, 50V
R933			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W	C561			QEKJ1HM-105	E CAPACITOR 1μF, 50V
R934			QRE141J-101Y	RESISTOR 100Ω, 1/4W	C562			QEKJ1HM-105	E CAPACITOR 1μF, 50V
R935			QRE141J-101Y	RESISTOR 100Ω, 1/4W	C564			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R936			QRE141J-101Y	RESISTOR 100Ω, 1/4W	C566			NCB21HK-103X	CAPACITOR 0.01μF, 50V
R937			QRE141J-101Y	RESISTOR 100Ω, 1/4W	C568			NDC21HJ-680X	CAPACITOR 68pF, 50V
R938			QRE141J-101Y	RESISTOR 100Ω, 1/4W	C569			NDC21HJ-680X	CAPACITOR 68pF, 50V
R939			QRE141J-101Y	RESISTOR 100Ω, 1/4W	C570			NDC21HJ-680X	CAPACITOR 68pF, 50V
R940			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	C571			NDC21HJ-680X	CAPACITOR 68pF, 50V
R941			NRSA02J-332X	MG RESISTOR 3.3kΩ, 1/10W	C572			NDC21HJ-680X	CAPACITOR 68pF, 50V
R942			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	C573			NDC21HJ-680X	CAPACITOR 68pF, 50V
R943			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	C575			NDC21HJ-101X	CAPACITOR 100pF, 50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C901		NCB21HK-331X	CAPACITOR 330pF,50V
C902		NCB21HK-331X	CAPACITOR 330pF,50V
C903		NCB21HK-471X	CAPACITOR 470pF,50V
C904		NCB21HK-471X	CAPACITOR 470pF,50V
C905		NCB21HK-331X	CAPACITOR 330pF,50V
C906		NCB21HK-331X	CAPACITOR 330pF,50V
C907		NCB21HK-471X	CAPACITOR 470pF,50V
C908		NCB21HK-471X	CAPACITOR 470pF,50V
C910		NCB21HK-102X	CAPACITOR 0.001μF,50V
C912		NCB21HK-102X	CAPACITOR 0.001μF,50V
C913		NCB21HK-103X	CAPACITOR,B,C,D 0.01μF,50V
C914		NCB21HK-103X	CAPACITOR,B,C,D 0.01μF,50V
C915		NCB21HK-103X	CAPACITOR 0.01μF,50V
C916		NCB21HK-223X	CAPACITOR 0.022μF,50V
C917		NCB21HK-223X	CAPACITOR 0.022μF,50V
C918		QCB21HK-223	CAPACITOR 0.022μF,50V
C921		NDC21HJ-330X	CAPACITOR 33pF,50V
C923		QEKJ1CM-476	E CAPACITOR 47μF,16V
C924		NCB21HK-103X	CAPACITOR 0.01μF,50V
C925		NCB21HK-223X	CAPACITOR 0.022μF,50V
C927		QEKJ1CM-476	E CAPACITOR 47μF,16V
C928		NCB21HK-103X	CAPACITOR 0.01μF,50V
C931		QEKJ1EM-106	E CAPACITOR 10μF,25V
C935		NCB21HK-471X	CAPACITOR 470pF,50V
C936		NCB21HK-471X	CAPACITOR 470pF,50V
C937		NCB21HK-331X	CAPACITOR 330pF,50V
C938		NCB21HK-331X	CAPACITOR 330pF,50V
C939		NCB21HK-471X	CAPACITOR 470pF,50V
C940		NCB21HK-471X	CAPACITOR 470pF,50V
C941		QEKJ0JM-227	E CAPACITOR,B,C,D 220μF,6.3V
C942		QEKJ1CM-476	E CAPACITOR,B,C,D 47μF,16V
C943		QEKJ1CM-107	E CAPACITOR 100μF,16V
C945		QEKJ1EM-106	E CAPACITOR 10μF,25V
C946		QEKJ1EM-106	E CAPACITOR 10μF,25V
C950		QEKJ0JM-227	E CAPACITOR,B,C,D 220μF,6.3V
C951		QEKJ1CM-476	E CAPACITOR 47μF,16V
C958		NCB21HK-331X	CAPACITOR 330pF,50V
C959		NCB21HK-331X	CAPACITOR 330pF,50V
L501		QQL29BJ-100Z	COIL 10μH
L503		QQL29BJ-100Z	COIL 10μH
L504		QQL29BJ-100Z	COIL 10μH
L505		QUY153-050Y	IM BUS WIRE
L901		QQL231J-R22Y	COIL 0.22μH
L902		QQL071J-1R0Y	COIL 1.0μH
L903		QQL071J-150Y	COIL 15μH
L904		QQL071J-150Y	COIL 15μH
L906		QUY153-050Y	IM BUS WIRE,B,C,D
L907		QUY153-050Y	IM BUS WIRE
L910		QQL071J-1R0Y	COIL 1.0μH
L913		QQL071J-4R7Y	COIL 4.7μH
L914		QQL071J-4R7Y	COIL 4.7μH
L915		QQL071J-4R7Y	COIL 4.7μH
L916		QQL071J-4R7Y	COIL 4.7μH
L917		QQL071J-4R7Y	COIL 4.7μH
L918		QQL071J-4R7Y	COIL 4.7μH
L919		QQL071J-4R7Y	COIL 4.7μH
L920		QQL071J-4R7Y	COIL 4.7μH
ET1		LP30918-001A	EARTH PLATE
ET2		LP30915-001A	EARTH PLATE
△ TB1		LP21028-001A	TERMINAL BOARD,A
△		LP21028-002A	TERMINAL BOARD,B,C,D

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
OT1		QYTDSF3008Z	SCREW,X6
J901		PEMC1177	RGB21PIN SOCKET,AV1
J902		PEMC1177	RGB21PIN SOCKET,AV2
J904		QND0084-001	S JACK,S OUT,B,C,D
J915		QNN0418-003	PIN JACK,A.OUT(L)
J916		QNN0418-002	PIN JACK,A.OUT(R)
J921		PU60659	MINI JACK,SAT.CTL
J922		PU60659	MINI JACK,PAUSE/RAE,B,C,D
CN511		QGF1208F1-11	FPC CONNECTOR,(1-11)S/P CONVERTER
CN911		QGB2024J1-10S	CONNECTOR,(1-10)MAIN
CN912		QGB2024J1-12S	CONNECTOR,(1-12)MAIN
CN913		QGB2024J1-10S	CONNECTOR,(1-10)MAIN
CN914		QGB2024J1-11S	CONNECTOR,(1-11)MAIN
CN915		QGB2024J1-09S	CONNECTOR,(1-9)MAIN
CN916		QGF1208F1-04	FPC CONNECTOR,(1-4)MAIN

A/C HEAD BOARD ASSEMBLY <12>

PW1	LP10122-01A1	A/C HEAD BOARD ASSY
CN1	QGF1208F1-07	FPC CONNECTOR

DEMOD BOARD ASSEMBLY <14>

PW1	LPA10094-05A	DEMOD BOARD ASSY
IC6701	MSP3417D	IC
	or MSP3417DG3	IC
Q6701	2SC3936/BC/-X	TRANSISTOR
D6701	1SS133	DIODE
	or 1N4148M	DIODE
R6701	NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W
R6702	NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R6703	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R6704	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R6705	NRSA02J-271X	MG RESISTOR 270Ω,1/10W
R6707	NQR0200-003X	FERRITE BEAD
R6708	NQR0200-003X	FERRITE BEAD
R6709	NQR0200-003X	FERRITE BEAD
R6710	NQR0200-003X	FERRITE BEAD
R6711	NRSA02J-684X	MG RESISTOR 680kΩ,1/10W
R6712	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R6714	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R6716	NQR0200-003X	FERRITE BEAD
R6719	QRE141J-103Y	RESISTOR 10kΩ,1/4W
R6720	NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R6721	NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
C6701	NCB21HK-103X	CAPACITOR 0.01μF,50V
C6704	NCB21HK-103X	CAPACITOR 0.01μF,50V
C6707	NDC21HJ-470X	CAPACITOR 47pF,50V
C6708	NDC21HJ-7R0X	CAPACITOR 7pF,50V
C6709	NDC21HJ-3R0X	CAPACITOR 3pF,50V
C6713	NCF21CZ-224X	CAPACITOR 0.22μF,16V
C6714	NCB21HK-682X	CAPACITOR 0.0068μF,50V
C6715	QEKJ1HM-225	E CAPACITOR 2.2μF,50V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
C6716			NCB21HK-682X	CAPACITOR 0.0068μF,50V
C6717			QEKJ1HM-225	E CAPACITOR 2.2μF,50V
C6719			QEKJ1EM-106	E CAPACITOR 10μF,25V
C6720			QEKJ1EM-106	E CAPACITOR 10μF,25V
C6721			NCB21HK-103X	CAPACITOR 0.01μF,50V
C6723			NCB21HK-103X	CAPACITOR 0.01μF,50V
C6724			QEKJ1HM-225	E CAPACITOR 2.2μF,50V
L6701			QUY153-050Y	IM BUS WIRE
X6701			QAX0443-001	CRYSTAL RESONATOR
K6701			NRSA02J-330X	MG RESISTOR 33Ω, 1/10W
K6702			NQR0200-003X	FERRITE BEAD
K6703			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
K6704			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
K6705			NRSA02J-100X	MG RESISTOR 10Ω, 1/10W
K6706			NRSA02J-470X	MG RESISTOR 47Ω, 1/10W
K6707			NQR0200-003X	FERRITE BEAD
BK1			LP40425-001A	BRACKET(BOARD)
CN6701			QGG2502K1-10	HEADER PIN

MINI FRONT BOARD ASSEMBLY(MODEL:B,C,D)<28>

PW1	LPA20014-01A	MINI FRONT BOARD ASSY
S7028	QSW0456-002Z	TACT SWITCH,INSERT
S7029	QSW0456-002Z	TACT SWITCH,A.DUB
CN7002	QGF1208C1-09	FPC CONNECTOR,(1-9)MAIN
CN7005	QGF1208C1-09	FPC CONNECTOR,(1-9)ADV.JOG

S JACK BOARD ASSEMBLY <36>

PW1	LPA20009-01B	S JACK BOARD ASSY,D
	LPA20009-02B	S JACK BOARD ASSY,A,B,C
J7102	QND0084-001	S JACK,A,B,C
	QND0085-001	S JACK,D
CN7108	QGF1209F1-04	FPC CONNECTOR,(1-4)TERMINAL

ADV.JOG BOARD ASSEMBLY <38>

PW1	LPA20013-03B	ADV.JOG BOARD ASSY
UN7001	QSW0905-001	ROTARY ENCODER
CN7003	QGF1209F1-09	FPC CONNECTOR,(1-9)

LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LP10122-01A2	LOADING MOTOR BOARD ASSY
CN1	QGB2533K1-02	CONNECTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION

S/P CONVERTER BOARD ASSEMBLY <87>

PW1	LPA10144-01B	S/P CONVERTER BOARD ASSY
IC1601	BA7046F-XE	IC
IC1602	74HC132D	IC(DIGITAL)
IC1603	74HC4538D	IC
IC1604	74HC74D	IC
IC1605	TDA8395	IC
IC1606	TDA4665T	IC
IC1607	TDA8501T/N1-X	IC
Q1601	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1604	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q1605	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1606	2SC1740S/QRS/-T	TRANSISTOR
Q1607	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1608	2SB1218A/QR/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q1609	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1610	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q1611	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1612	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q1613	2SC4083/NP/-X	TRANSISTOR
Q1614	2SB1218A/QR/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q1615	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1616	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q1617	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
D1601	1SS133	DIODE
R1601	NRSA02J-332X	MG RESISTOR 3.3kΩ, 1/10W
R1608	NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
R1609	NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R1610	NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R1611	NRSA02J-272X	MG RESISTOR 2.7kΩ, 1/10W
R1612	NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
R1615	NRSA02J-331X	MG RESISTOR 330Ω, 1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R1616		NRSA02J-474X	MG RESISTOR 470kΩ,1/10W	C1635		NCB21EK-104X	CAPACITOR 0.1μF,25V
R1617		NRSA02J-474X	MG RESISTOR 470kΩ,1/10W	C1636		NCB21CK-224X	CAPACITOR 0.22μF,16V
R1618		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	C1637		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1619		NRSA02J-134X	MG RESISTOR 130kΩ,1/10W	C1638		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
R1620		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W	C1639		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1621		QRE141J-103Y	RESISTOR 10kΩ,1/4W	C1640		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
R1622		QRE141J-103Y	RESISTOR 10kΩ,1/4W	C1641		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1623		NRSA02J-123X	MG RESISTOR 12kΩ,1/10W	C1642		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1624		NRSA02J-124X	MG RESISTOR 120kΩ,1/10W	C1643		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1631		NRSA02J-561X	MG RESISTOR 560Ω,1/10W	C1644		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1632		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W	C1645		QEKJ1HM-105	E CAPACITOR 1μF,50V
R1633		NRSA02J-223X	MG RESISTOR 22kΩ,1/10W	C1646		QEKJ1HM-105	E CAPACITOR 1μF,50V
R1635		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W	C1647		NCB21CK-224X	CAPACITOR 0.22μF,16V
R1636		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1648		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
R1637		NRSA02J-681X	MG RESISTOR 680Ω,1/10W	C1649		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1638		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	C1650		NCB21CK-224X	CAPACITOR 0.22μF,16V
R1639		NRSA02J-331X	MG RESISTOR 330Ω,1/10W	C1651		NCB21EK-223X	CAPACITOR 0.022μF,25V
R1640		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W	C1652		NDC21HJ-120X	CAPACITOR 12pF,50V
R1641		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1653		NCB21CK-224X	CAPACITOR 0.22μF,16V
R1642		NRSA02J-681X	MG RESISTOR 680Ω,1/10W	C1654		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1643		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	C1655		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
R1644		NRSA02J-331X	MG RESISTOR 330Ω,1/10W	C1656		NCB21HK-103X	CAPACITOR 0.01μF,50V
R1645		NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W	L1601		QQL29BJ-100Z	COIL 10μH
R1646		NRSA02J-104X	MG RESISTOR 100kΩ,1/10W	L1602		QQL29BJ-100Z	COIL 10μH
R1647		NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W	L1603		QQL29BJ-100Z	COIL 10μH
R1648		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	L1604		QQL29BJ-100Z	COIL 10μH
R1651		NRSA02J-123X	MG RESISTOR 12kΩ,1/10W	X1601		QAX0613-001Z	CRYSTAL RESONATOR
R1652		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	FL1601		QQR1187-001	EQUALIZER
R1653		NRSA02J-184X	MG RESISTOR 180kΩ,1/10W	FL1602		QQR1187-001	EQUALIZER
R1654		NRSA02J-561X	MG RESISTOR 560Ω,1/10W	BK1		LP30950-001A	BRACKET(1)
R1655		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W	BK2		LP30951-001A	BRACKET(2)
R1656		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W	OT1		PU59915-105	#500SPACER0.01
R1657		NRSA02J-561X	MG RESISTOR 560Ω,1/10W	CN1601		QGF1208F1-11	FPC CONNECTOR,(1-11)TERMINAL
R1658		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W				
R1659		NRSA02J-681X	MG RESISTOR 680Ω,1/10W				
R1660		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W				
R1661		NRSA02J-333X	MG RESISTOR 33kΩ,1/10W				
VR1601		QVP0039-471Z	TRIM RESISTOR				
VR1602		QVP0039-471Z	TRIM RESISTOR				
VR1603		QVP0039-104Z	TRIM RESISTOR				
B1601		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W				
B1602		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W				
B1603		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W				
C1601		QEKJ1CM-476	E CAPACITOR 47μF,16V				
C1602		NCB21HK-103X	CAPACITOR 0.01μF,50V				
C1605		QEKJ1HM-105	E CAPACITOR 1μF,50V				
C1606		NCB21HK-102X	CAPACITOR 0.001μF,50V				
C1607		NCB21HK-103X	CAPACITOR 0.01μF,50V				
C1608		QEKJ0JM-476	E CAPACITOR 47μF,6.3V				
C1609		NCB21HK-222X	CAPACITOR 0.0022μF,50V				
C1610		QEKJ1HM-105	E CAPACITOR 1μF,50V				
C1611		NDC21HJ-101X	CAPACITOR 100pF,50V				
C1612		NCB21EK-104X	CAPACITOR 0.1μF,25V				
C1613		NCB21EK-104X	CAPACITOR 0.1μF,25V				
C1614		NDC21HJ-471X	CAPACITOR 470pF,50V				
C1615		NDC21HJ-471X	CAPACITOR 470pF,50V				
C1616		NCB21EK-104X	CAPACITOR 0.1μF,25V				
C1631		QEKJ1CM-476	E CAPACITOR 47μF,16V				
C1632		QEKJ1CM-476	E CAPACITOR 47μF,16V				
C1633		NCB21HK-103X	CAPACITOR 0.01μF,50V				
C1634		NDC21HJ-101X	CAPACITOR 100pF,50V				