Table Of Contents

Service Manual

TOP NEXT

ORDER NO. MABR0303005C2

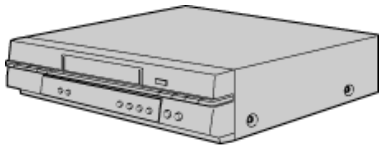
Service Manual

Video Cassette Recorder

Panasonic VHS PAL

- NV-MV20EG
  NV-MV20EB
  NV-MV20EBL
  NV-MV15EG
  NV-MV15EP

Z-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION		ITEM	SPECIFICATION
POWER	SOURCE: 220-240 V AC 50/60 Hz		AUDIO	HEAD: 1 Stationary head (Normal-mono only)
	CONSUMPTION: 16 watts COMSUMPTION WHEN IN STANDBY MODE: Approx. 3W (NV-MV20EG, MV15EG/EP)			INPUT: EURO AV (AV1) Connector (21 pin) -6dBV (500mV), More than 10kΩ
RECORDING SYSTEM	2 rotary heads, helical scanning system			OUTPUT: EURO AV (AV1) Connector (21 pin) -6 dBV (500mV), Less than 1kΩ
	PAL		TAPE SPEED	SP: 23.39 mm/s LP: 11.695 mm/s (NV-MV20EB/EBL,MV15EP) EP: 7.796 mm/s(NV-MV20EB/EBL,MV15EP) Record/Playback Time: SP:4 hours with 240 min. type tape LP: 8 hours with 240 min. type tape (NV-MV20EB/EBL,MV15EP) EP:12 hours with 240 min. type tape (NV-MV20EB/EBL, MV15EP)
TV TUNER SYSTEM	NV-MV20EG NV-MV15EG	VHF: CHE2-CHE12 (PAL/SECAM B) UHF: CH21-CH69 (PAL/SECAM G) CATV: CHS01-CHS41 (PAL/SECAM B)		
	NV-MV20EB	UHF: CH21-CH68 (PAL I)		
	NV-MV20EBL	VHF: CHA-CHJ (PAL I) UHF: CH21-CH69 (PAL I) CATV: 104-470MHz (PAL I)		
	NV-MV15EP	VHF: CHE2-CHE12 (PAL/SECAM B) CHR1-CHR12 (SECAM D) UHF: CH21-CH69 (PAL/SECAM G, SECAM K, PAL I) CATV: CHS01-CHS41 (PAL/SECAM B) 44MHz-470MHz (SECAM B)	OPERATING TEMPERATURE	5°C - 40°C
			OPERATING HUMIDITY	35% - 80%
			DIMENSIONS	430 (W)×87(H)×282(D) mm
RF OUT SYSTEM	NV-MV20EG NV-MV15EG	UHF: CH21-CH69 (PAL/SECAM G) 71 ± 3 dBμ, 75 Ω close	WEIGHT	3.3 kg (NV-MV20EG, MV15EG) 3.5 kg (NV-MV20EB/EBL,MV15EP)
	NV-MV20EB/EBL	UHF: CH21-CH68 (PAL I) 71 ± 3 dBμ, 75 Ω close	STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. AC Mains Lead 1 pc. Infra-red Remote Controller
	NV-MV15EP	UHF: CH21-CH69 (PAL/SECAM G, SECAM K, PAL I) 71 ± 3 dBμ, 75 Ω close	SOLDER	This model use lead free solder (PbF).
VIDEO	HEADS: 2 rotary heads 1 pair for recording and playback (L-R heads)			
	INPUT: EURO AV (AV1) Connector (21 pin) 1.0 Vp-p, 75 Ω terminated			
	OUTPUT: EURO AV (AV1) Connector (21 pin) 1.0 Vp-p, 75 Ω terminated			

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

TOP NEXT

Table Of Contents

Service Manual

TOP NEXT

ORDER NO. MABR0303005C2

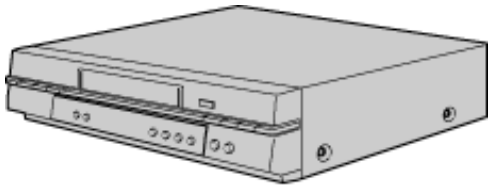
Service Manual

Video Cassette Recorder

Panasonic VHS PAL

- NV-MV20EG
  NV-MV20EB
  NV-MV20EBL
  NV-MV15EG
  NV-MV15EP

Z-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION		ITEM	SPECIFICATION
POWER	SOURCE: 220-240 V AC 50/60 Hz		AUDIO	HEAD: 1 Stationary head (Normal-mono only)
	CONSUMPTION: 16 watts COMSUMPTION WHEN IN STANDBY MODE: Approx. 3W (NV-MV20EG, MV15EG/EP)			INPUT: EURO AV (AV1) Connector (21 pin) -6dBV (500mV), More than 10kΩ
RECORDING SYSTEM	2 rotary heads, helical scanning system			OUTPUT: EURO AV (AV1) Connector (21 pin) -6 dBV (500mV), Less than 1kΩ
	PAL		TAPE SPEED	SP: 23.39 mm/s LP: 11.695 mm/s (NV-MV20EB/EBL,MV15EP) EP: 7.796 mm/s(NV-MV20EB/EBL,MV15EP) Record/Playback Time: SP:4 hours with 240 min. type tape LP:8 hours with 240 min. type tape (NV-MV20EB/EBL,MV15EP) EP:12 hours with 240 min. type tape (NV-MV20EB/EBL, MV15EP)
TV TUNER SYSTEM	NV-MV20EG NV-MV15EG	VHF: CHE2-CHE12 (PAL/SECAM B) UHF: CH21-CH69 (PAL/SECAM G) CATV: CHS01-CHS41 (PAL/SECAM B)		
	NV-MV20EB	UHF: CH21-CH68 (PAL I)		
	NV-MV20EBL	VHF: CHA-CHJ (PAL I) UHF: CH21-CH69 (PAL I) CATV: 104-470MHz (PAL I)		
	NV-MV15EP	VHF: CHE2-CHE12 (PAL/SECAM B) CHR1-CHR12 (SECAM D) UHF: CH21-CH69 (PAL/SECAM G, SECAM K, PAL I) CATV: CHS01-CHS41 (PAL/SECAM B) 44MHz-470MHz (SECAM B)	OPERATING TEMPERATURE	5°C - 40°C
			OPERATING HUMIDITY	35% - 80%
			DIMENSIONS	430 (W)×87(H)×282(D) mm
RF OUT SYSTEM	NV-MV20EG NV-MV15EG	UHF: CH21-CH69 (PAL/SECAM G) 71 ± 3 dBμ, 75 Ω close	WEIGHT	3.3 kg (NV-MV20EG, MV15EG) 3.5 kg (NV-MV20EB/EBL,MV15EP)
	NV-MV20EB/EBL	UHF: CH21-CH68 (PAL I) 71 ± 3 dBμ, 75 Ω close	STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. AC Mains Lead 1 pc. Infra-red Remote Controller
	NV-MV15EP	UHF: CH21-CH69 (PAL/SECAM G, SECAM K, PAL I) 71 ± 3 dBμ, 75 Ω close	SOLDER	This model use lead free solder (PbF).
VIDEO	HEADS: 2 rotary heads 1 pair for recording and playback (L-R heads)			
	INPUT: EURO AV (AV1) Connector (21 pin) 1.0 Vp-p, 75 Ω terminated			
	OUTPUT: EURO AV (AV1) Connector (21 pin) 1.0 Vp-p, 75 Ω terminated			

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

TOP NEXT

1 INTRODUCTION

TOP PREVIOUS NEXT

1.1 INTRODUCTION

1.2 ABOUT LEAD FREE SOLDER (PbF)

TOP PREVIOUS NEXT

1.1 INTRODUCTION

TOP PREVIOUS NEXT

This service manual contains technical information which will allow service personnel to understand and service this model.

If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

Note:

1. Adjustment procedures, Disassembly Procedures and Assembly Procedures for Mechanism Chassis are separate volume from this service manual.
   Please refer to the service manual for Z-Mechanism Chassis. (Order No. VRD9802005C2)

2. The Model No. is indicated on the Schematic Diagram and Circuit Board Diagrams as follows.

Model No.	Indication Mark
NV-MV20EG	(A)
NV-MV20EB	(B)
NV-MV20EBL	(C)
NV-MV15EG	(D)
NV-MV15EP	(E)

TOP PREVIOUS NEXT

1.2 ABOUT LEAD FREE SOLDER (PbF)

TOP PREVIOUS NEXT

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:

- Pb free solder has a higher melting point than standard solder, Typically the melting point is 50-70°F (30-40°C) higher. Please use a high temperature soldering iron. In case of soldering iron with temperature control,please set it to 700±20°F (370±10°C)

- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

TOP PREVIOUS NEXT

2 GENERAL DESCRIPTIONS

TOP PREVIOUS NEXT

2.1 SERVICE CAUTION

2.1.1 REPLACING IC6002/EEPROM

2.1.2 CYLINDER UNIT REPLACEMENT

2.1.3 CHECKING OF MAIN C.B.A.

2.1.4 FLAT CARD CABLE INSTALLATION

2.2 REMOVAL OF CASSETTE TAPE

2.3 INTRODUCTION OF VIDEO HEAD CLEANING CASSETTE(POLISHING TYPE)

2.4 SELF-DIAGNOSIS RESULT DISPLAY

2.5 CAUTION FOR AC MAINS LEAD (NV-MV20EB/EBL)

TOP PREVIOUS NEXT

2.1 SERVICE CAUTION

TOP PREVIOUS NEXT

2.1.1 REPLACING IC6002/EEPROM

2.1.2 CYLINDER UNIT REPLACEMENT

2.1.3 CHECKING OF MAIN C.B.A.

2.1.4 FLAT CARD CABLE INSTALLATION

TOP PREVIOUS NEXT

2.1.1 REPLACING IC6002/EEPROM

TOP PREVIOUS NEXT

When the EEPROM: IC6002 is replaced, applicable model code, option code and electrical adjustment data will not be available.

Therefore, enter and/or adjust the necessary data after replacing IC6002 by referring following procedure.

STEP1.REPLACE THE IC6002

1. Remove the C.B.A. with Mechanism unit by referring the Disassembly procedure.

2. Disconnect the AC plug and replace the IC6002.

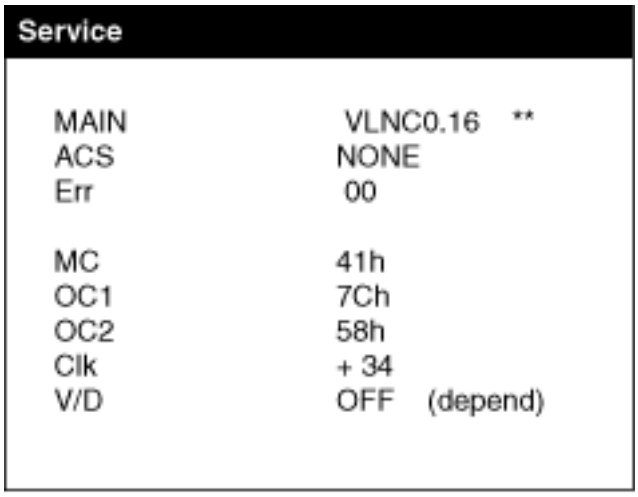
STEP2.INPUT THE MODEL & OPTION CODE

1. Set up the applicable model code and option code by ordering the following table.

PROCEDURE	F.I.P. DISPLAY
Turn on the Service Mode 1.Press the FF key and the EJECT key simultaneously for more than 3 seconds.	
Activate the Service Mode 2 2.While keep placing FF key, press the EJECT key in twice.	
Activate the Entering Mode. 3.Press the EJECT key for more than 3 seconds.	
Set the Mode 2. 4.Press the CH UP key in twice.	

Display the Setting Code. 5.Press the POWER key to turn the power on.	 (Colon starts flashing)
Enter the Model and Option Code. 6.Service Screen is displayed on the monitor. 7.Set the applicable Model and Option code by using REW, PLAY, STOP and FF keys on theRemote Controller. (See .S1 & S2)	
Exit from Service Mode. 8.Press the POWER key to turn the power off. 9. Press FF and EJECT keys simultaneously in 6 times.	 (Normal Indication)

Fig.S1 Service Screen (sample)



Model No.	MC	OC1	OC2
NV-MV20EG	01h	7Ch	08h
NV-MV20EB	03h	5Ch	4Ch
NV-MV20EBL	04h	5Ch	4Ch
NV-MV15EG	01h	08h	00h
NV-MV15EP	06h	08h	40h

Fig. S2 Model Code & Option Code

NOTE:

Since all electrical adjustments data is still not available, perform the Electrical Adjustment continuously.

TOP PREVIOUS NEXT

2.1.2 CYLINDER UNIT REPLACEMENT

TOP PREVIOUS NEXT

1. CYLINDER UNIT REPLACEMENT

   A. Remove the mechanism unit from MAIN C.B.A./Chassis by referring “SECTION 2. Disassembly Procedure”.

   B. Remove the 3 screws (A) of the CYLINDER UNIT with a screw driver.

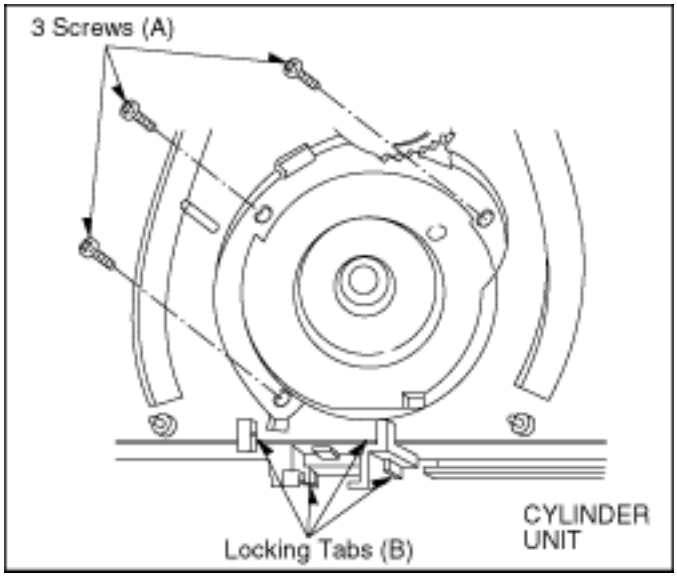
   C. Unlock the 4 locking tabs (B) and disconnect the Cylinder flexible card from the FPC Holder.

   D. Remove the CYLINDER UNIT.

      CAUTION:

      Handle the Cylinder flexible card with care. When it damaged, you should replace whole Cylinder unit.

Fig. S3



- UPPER CYLINDER DISASSEMBLY

  A. Remove 2 screws (A).

  B. Remove the Cylinder Stator Unit.

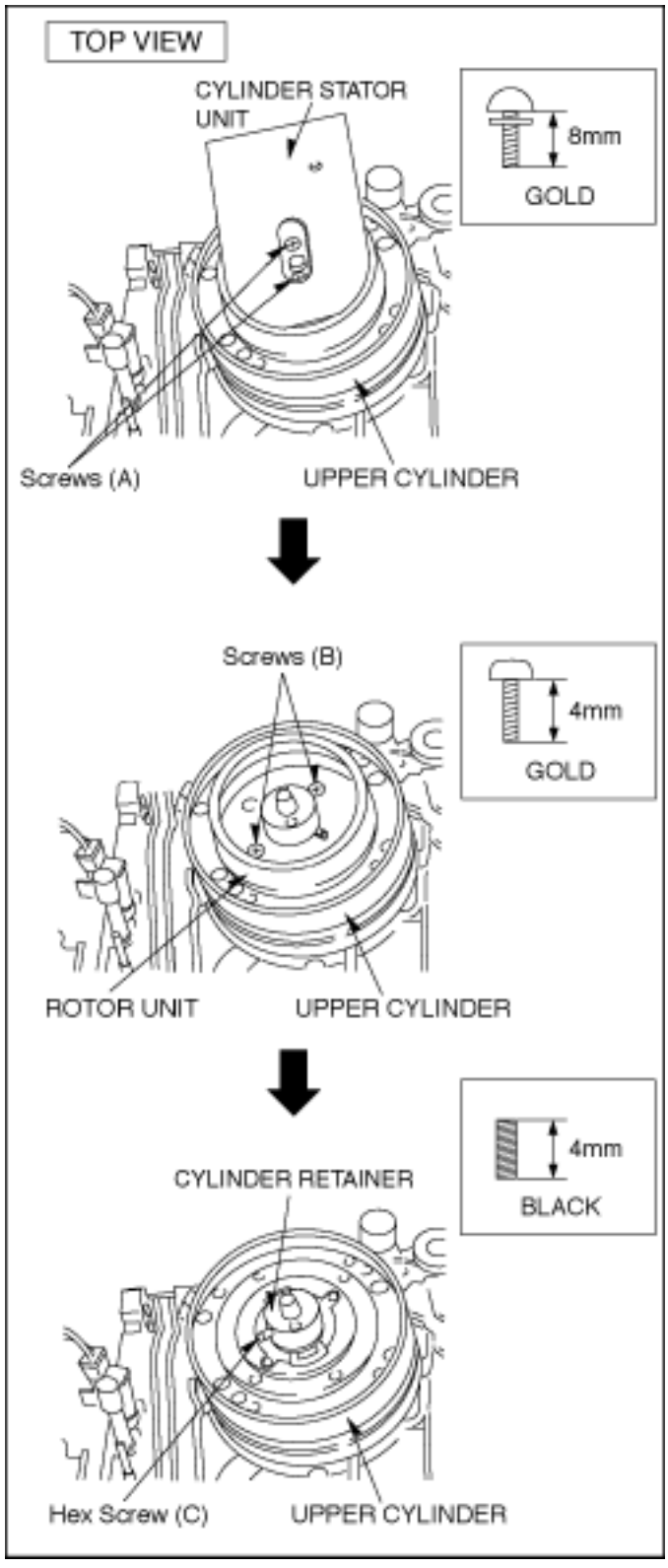
C. Remove 2 screws (B).

D. Remove the Cylinder Rotor Unit.

E. Loose Hex screw (C) (1.5 mm) and remove the CYLINDER RETAINER.

F. Remove the Upper Cylinder.

Fig. S4



- UPPER CYLINDER ASSEMBLY

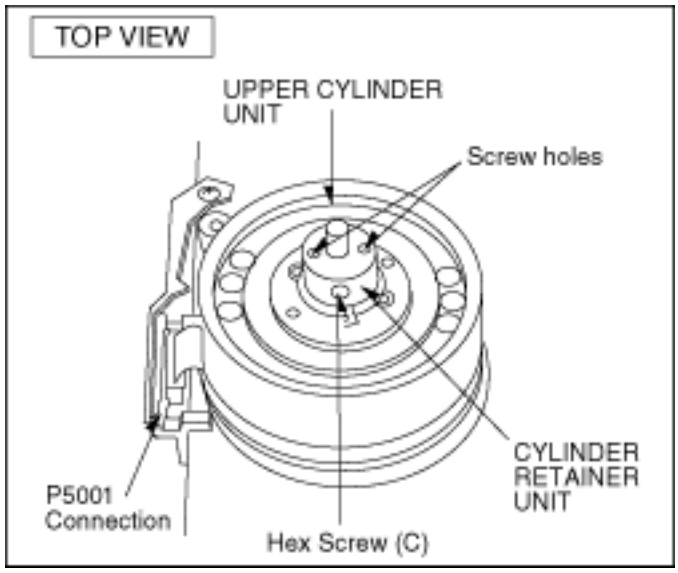
When reassembling, perform the steps in the reverse order.

Notes:

A. Install the Cylinder Retainer so that the 2 holes on top of the Cylinder Retainer are at right angles with the P5001 Connection.

B. Tighten the Hex screw (C) (1.5 mm) while pressing down on top of the Cylinder Retainer.

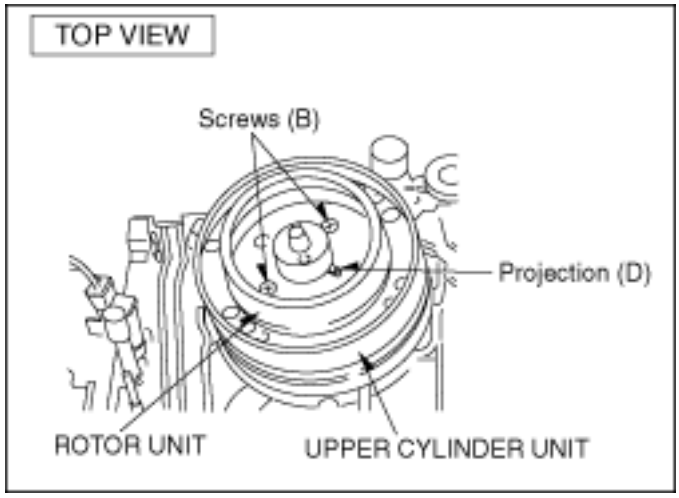
Fig. S5



- Install the Cylinder Rotor Unit so that the inner hole of the Cylinder Rotor Unit fits to the small projection (D) on top of the Upper Cylinder.

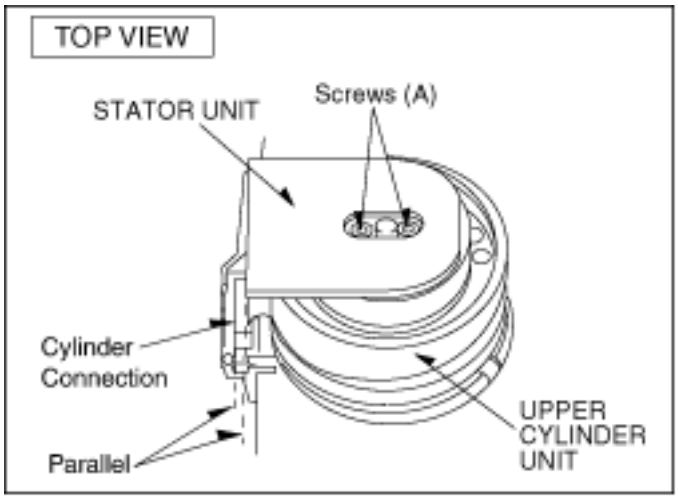
- Tighten 2 screws (B).

Fig. S6



- install the Cylinder Stator Unit.
- Tighten 2 screws (A).

Fig. S7



- Confirm the PG SHIFTER ADJUSTMENT with the alignment tape (PAL: VFJ8125H3F) and adjust it if necessary.

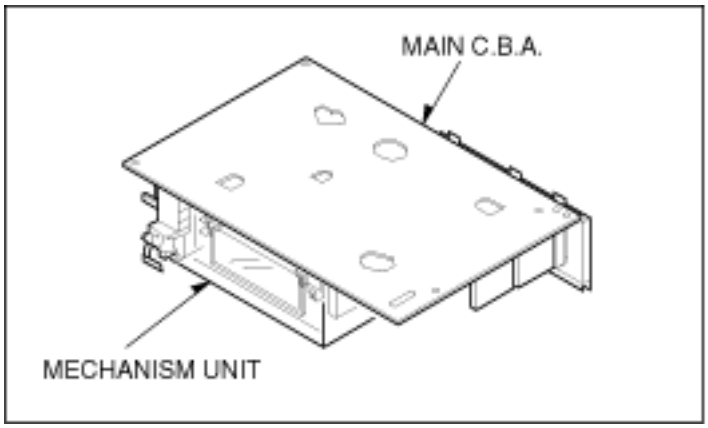
TOP PREVIOUS NEXT

2.1.3 CHECKING OF MAIN C.B.A.

TOP PREVIOUS NEXT

When servicing the MAIN C.B.A., take out the MAIN C.B.A. and mechanism from the frame and turn over.

Fig. S8



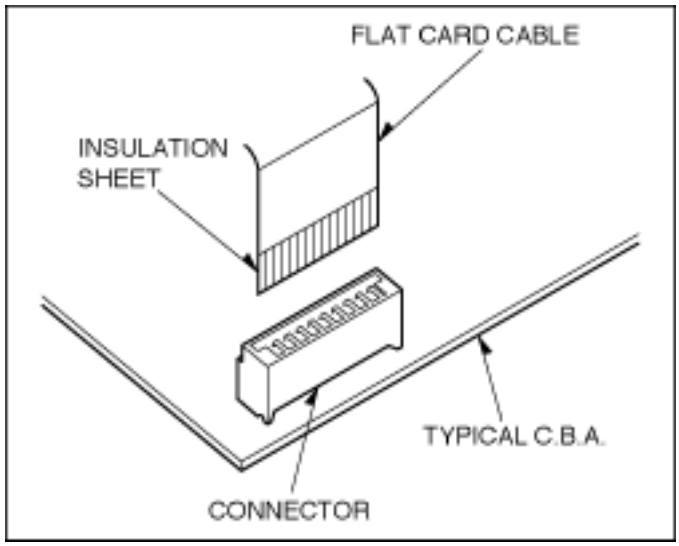
TOP PREVIOUS NEXT

2.1.4 FLAT CARD CABLE INSTALLATION

TOP PREVIOUS NEXT

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

Fig. S9



TOP PREVIOUS NEXT

2.2 REMOVAL OF CASSETTE TAPE

TOP PREVIOUS NEXT

There are 2 ways to remove a cassette tape.

1. Service Information Display Operation

    A. Press the FF and EJECT keys simultaneosly for 3 seconds and set the Service Mode 7.

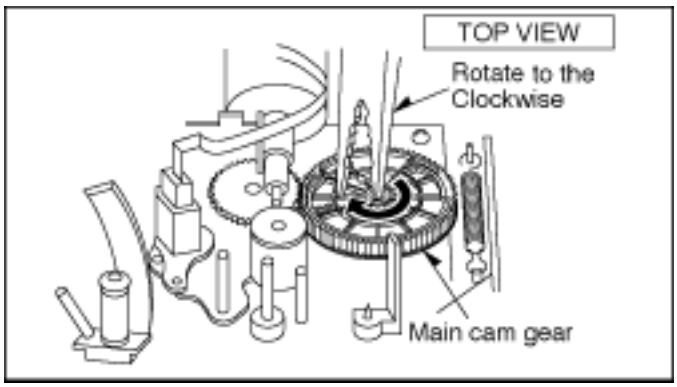
    B. Press STOP key in order to rotate the Loading Motor for unloading operation. (Pay an attention of tape slack)

2. Manual Operation

    A. Disconnect the AC Mains Lead and remove the Top Panel.

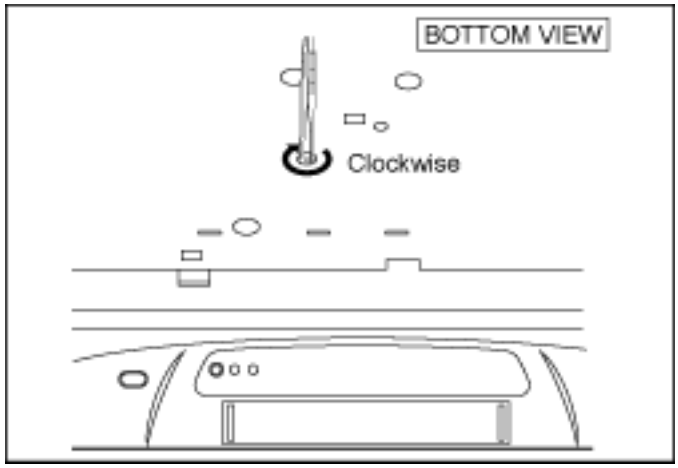
    B. Rotate the Main Cam Gear clockwise until the Loading Posts move to fully unloaded position as shown in Fig. S10 . (Tape is remaining)

Fig. S10



3. Rotate the Capstan Motor clockwise from the bottom side to take up the tape.

Fig. S11



4. Rotate the Main Cam Gear clockwise until the cassette tape is ejected.

TOP PREVIOUS NEXT

2.3 INTRODUCTION OF VIDEO HEAD CLEANING CASSETTE (POLISHING TYPE)

TOP PREVIOUS NEXT

1. We are pleased to introduce Panasonic Video Head Cleaning Cassette, VFK0923FT [for service purposes] and VFK0923FSE [for end users] for all VHS/SVHS VCP and VCR.

2. These cleaning cassettes are exclusive removing the hard and sticky clogging on video heads.

3. These improve the efficiency of video head cleaning service and shortening cleaning time for end users.

VFK0923FT (For Service usage)	
Type of Cassette	Full VHS Cassette
Cleaning Time	10 Seconds/Time
Tape Length	20 m
Usability in a Path	180 Times

VFK0823FSE (For end users)	
Type of Cassette	Full VHS Cassette
Cleaning Time	10 Seconds/Time
Tape Length	3.34 m
Usability in a Path	30 Times

Note:

The tape material itself is the same in both types.

TOP PREVIOUS NEXT

2.4 SELF-DIAGNOSIS RESULT DISPLAY

TOP PREVIOUS NEXT

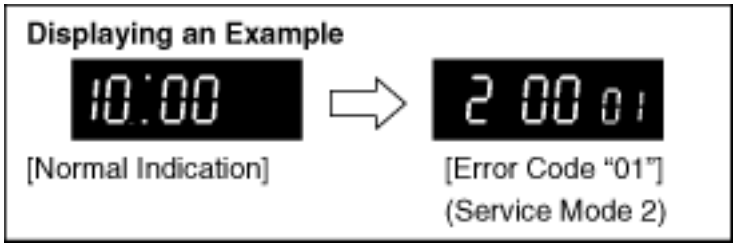
The "SELF-DIAGNOSIS RESULT DISPLAY & MEMORY function is built in this VTR.

It means that when the VCR detects undesirable condition, it can be displayed a “Error code (Two numbers from the right)” with Service Mode 2.

Since the "Error code" is stored in the EEPROM, it can be displayed although after disconnected the AC leads. It can be displayed with Service Mode 2.

(If a second error had been detected, only the most recent error is displayed.)

For more details, refer to the Service Manual for Z-Mechanism Chassis Order number VRD9802005C2.



INDICATION	CAUSE	REMEDY/CHECK
01	After cylinder lock is detected, the cylinder does not start rotating again even after tape unloading.	Check the cylinder motor drive circuit.
02	Cassette tape is not wound up during the tape unloading except EJECT mode.	Check the capstan motor drive circuit.
03	Mechanism locks during mode transition except EJECT mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment. 3. Check the mode switch.
04	Mechanism locks during tape unloading.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment.
06	Mechanism locks after tape unloading in EJECT mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment for cassette holder unit.

07	During recording mode, recording signal is less than the normal condition.	Protection of the over-current flowing in transistor which produces the power supply for recording mode.
08	Recording circuit works except recording mode.	Check the recording circuit.
16	Cylinder lock detection.	Check the cylinder unit and the cylinder motor drive circuit.
17	Supply reel mechanism lock detection	Check the supply reel mechanism and the supply reel circuit.
18	Take-up reel mechanism lock detection	Check the Take-up reel mechanism and the Take-up reel circuit.
2*	PG shifter automatic adjustment error.	Check the servo/system control circuit and the cylinder unit.

Fig. T1 Self-Test indication Display

TOP PREVIOUS NEXT

2.5 CAUTION FOR AC MAINS LEAD (NV-MV20EB/EBL)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

3 ADJUSTMENT PROCEDURES

TOP PREVIOUS NEXT

3.1 DISASSEMBLY METHOD

3.1.1 DISASSEMBLY FLOW CHART

3.1.2 DETAIL OF DISASSEMBLY METHOD

3.2 MECHANICAL ADJUSTMENT PROCEDURES

3.3 ELECTRICAL ADJUSTMENT PROCEDURES

3.3.1 TEST EQUIPMENT

3.3.2 VCR SETTING

3.3.3 ADJUSTMENTS

3.3.4 PG SHIFTER ADJUSTMENT(AUTOMATIC)

3.3.5 VHS FREQUENCY RESPONSE ADJUSTMENT

3.3.6 LOCATION OF TEST POINTS& CONTROLS

3.3.7 CIRCUIT BOARD LAYOUT

TOP PREVIOUS NEXT

3.1 DISASSEMBLY METHOD

TOP PREVIOUS NEXT

3.1.1 DISASSEMBLY FLOW CHART

3.1.2 DETAIL OF DISASSEMBLY METHOD

TOP PREVIOUS NEXT

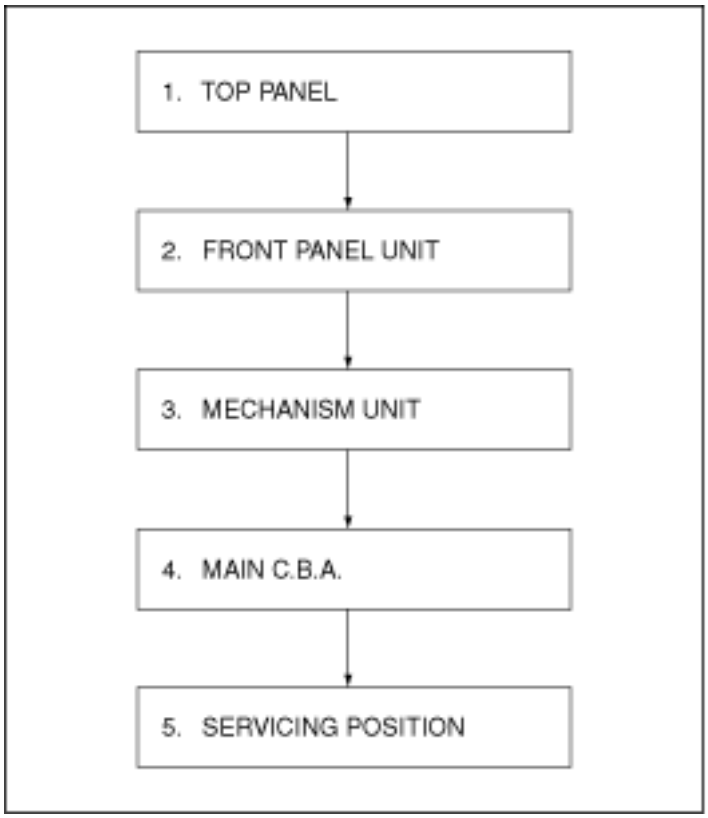
3.1.1 DISASSEMBLY FLOW CHART

TOP PREVIOUS NEXT

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing.

When reassembling, perform the steps in the reverse order.

Fig. D1



TOP PREVIOUS NEXT

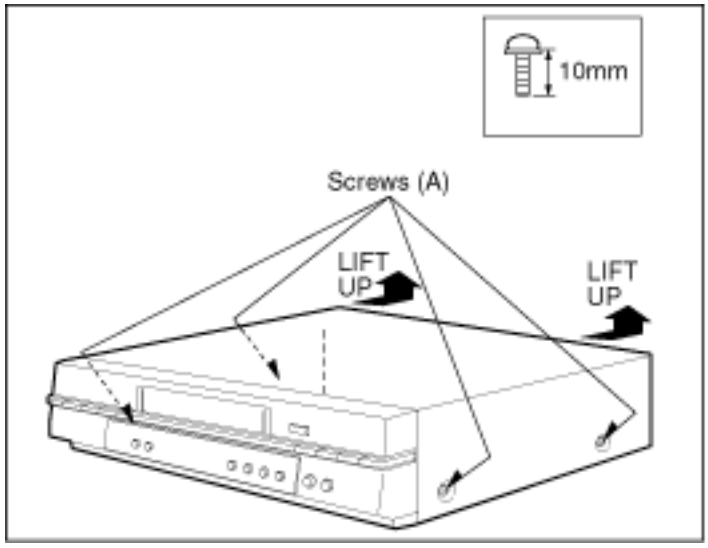
3.1.2 DETAIL OF DISASSEMBLY METHOD

TOP PREVIOUS NEXT

1. REMOVAL OF THE TOP PANEL

Remove	4 Screws (A)

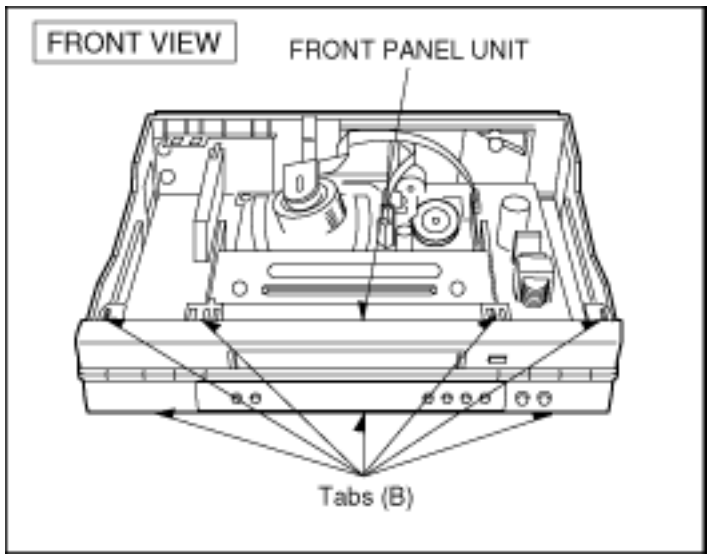
Fig.D2



2. REMOVAL OF THE FRONT PANEL UNIT

Unlock	7 Tabs (B)

Fig. D3



3. REMOVAL OF THE MECHANISM UNIT

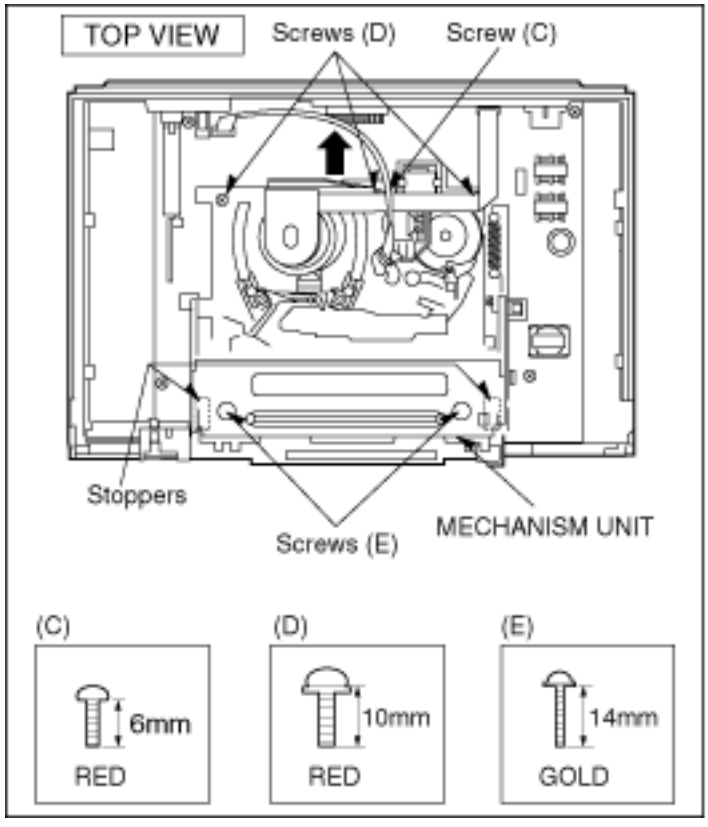
Remove	Screw (C)
Remove	3 Screws (D)
Remove	2 Screws (E)

Note:

A. Keep pressing 2 stoppers on Cassette Holder Plate and Press Cassette Holder Plate to the rear.

B. Remove the Mechanism Unit after bend the Cylinder Shield in the direction of the arrow.

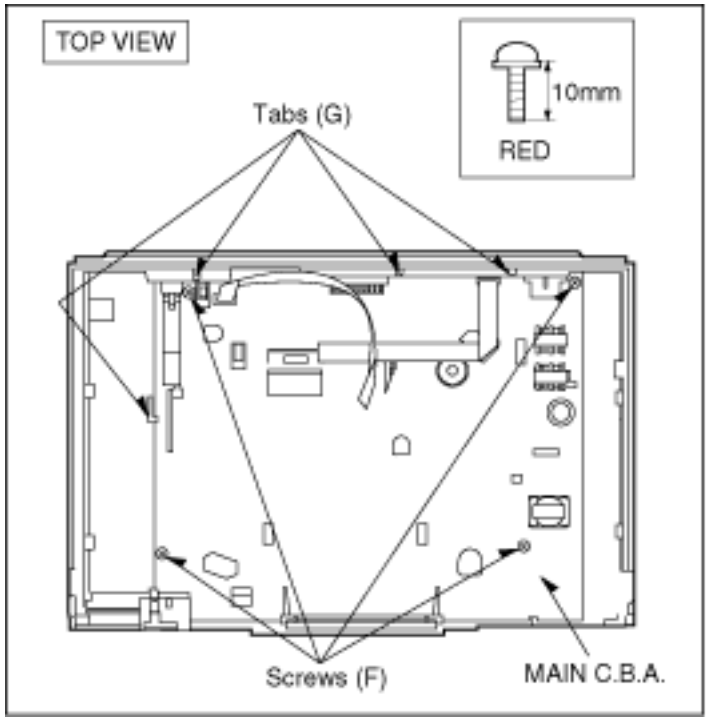
Fig. D4



4. REMOVAL OF THE MAIN C.B.A.

Remove	4 Screws (F)
Unlock	4 Tabs (G)

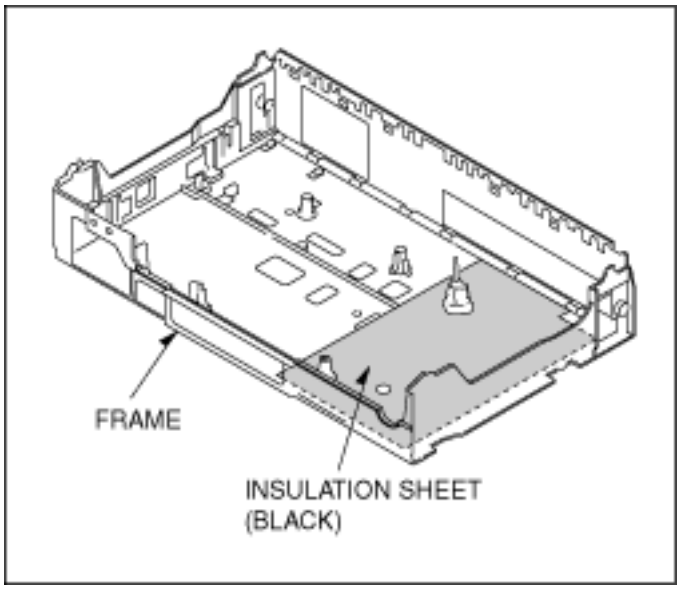
Fig. D5



NOTE:

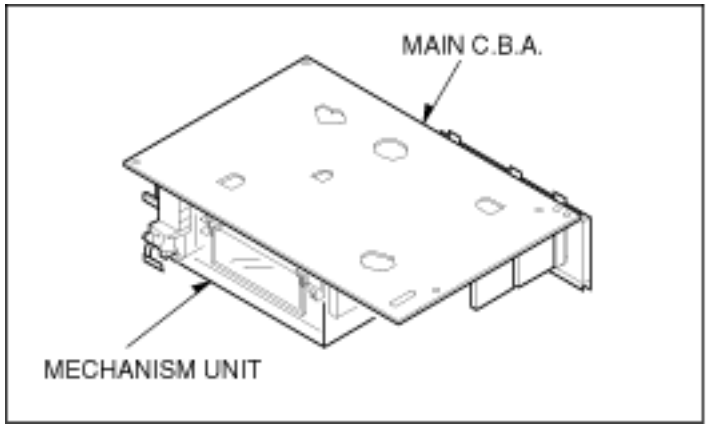
Before mounting the MAIN C.B.A. onto the frame, be sure to confirm that the insulation sheet is mounted on the frame as shown in Fig. D6 .

Fig. D6



5. SERVICING POSITION

Fig. D7



TOP PREVIOUS NEXT

3.2 MECHANICAL ADJUSTMENT PROCEDURES

TOP PREVIOUS NEXT

Refer to the Service Manual for Z-Mechanism Chassis.
(Order No. VRD9802005C2)

TOP PREVIOUS NEXT

3.3 ELECTRICAL ADJUSTMENT PROCEDURES

TOP PREVIOUS NEXT

3.3.1 TEST EQUIPMENT

3.3.2 VCR SETTING

3.3.3 ADJUSTMENTS

3.3.4 PG SHIFTER ADJUSTMENT(AUTOMATIC)

3.3.5 VHS FREQUENCY RESPONSE ADJUSTMENT

3.3.6 LOCATION OF TEST POINTS& CONTROLS

3.3.7 CIRCUIT BOARD LAYOUT

TOP PREVIOUS NEXT

3.3.1 TEST EQUIPMENT

TOP PREVIOUS NEXT

The following equipments are required for Electrical Adjustments.

1. Dual-Trace Oscilloscope
    - Voltage Range: 0.005-5V/div
    - Frequency Range: DC-35MHz
    - Probes: 10:1 / 1:1
2. Frequency Counter
    - Frequency Range: 0-10MHz
    - Probes: 1:1
3. Universal Counter
4. Digital Volt Meter (D.V.M.)
5. Video Sweep Generator
6. Sinewave Generator
7. Video Pattern Generator
8. Monitor TV
9. DC Power Supply
10. VHS Blank Tape
11. VHS Alignment Tape
    - Parts No.: VFJ8125H3F(PAL)

TOP PREVIOUS NEXT

3.3.2 VCR SETTING

TOP PREVIOUS NEXT

When no indication in the procedure, set each selector as follows.

1. TAPE SPEED: SP
2. CHANNEL: AV1

   (Set to signal input terminal number)

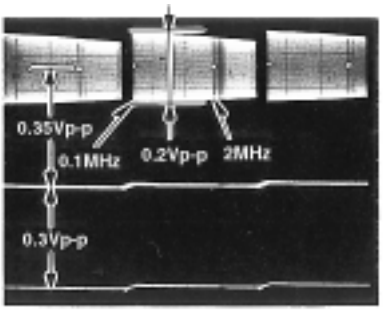
TOP PREVIOUS NEXT

3.3.3 ADJUSTMENTS

TOP PREVIOUS NEXT

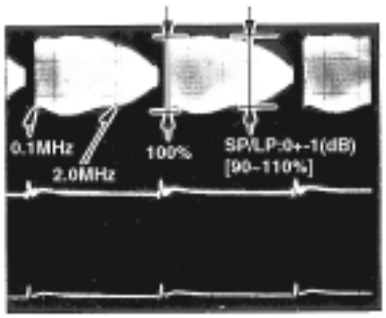
ITEM	TP	ADJ.	MODE	INPUT	TAPE	M. EQ.	SPEC.	REMARKS
PG SHIFTER ADJUSTMENT	---	---	PLAYBACK	---	ALIGNMENT TAPE (PAL)	---	---	Refer to procedure as shown in Fig.E3.
VHS FREQUENCY RESPONSE ADJUSTMENT	VIDEO OUT (TW3002)	---	SP/LP PLAYBACK (SELF-REC)	VIDEO SWEEP (See Fig. E1)	VHS BLANK TAPE	OSCILLO SCOPE/ SWEEP GENERATOR	SP: 0+-1 (dB) (90~110%) LP: 0+-1 (dB) (90~110%) (See Fig. E2)	Refer to the procedure as shown in Fig. E4.

Fig.E1



CONDITION: BURST SIGNAL OFF / 75 ohm TERMINATED

Fig.E2



TOP PREVIOUS NEXT

3.3.4 PG SHIFTER ADJUSTMENT (AUTOMATIC)

TOP PREVIOUS NEXT

PROCEDURES	FIP DISPLAY
Press the FF and EJECT Keys simultaneously for 3 seconds.	
Press the FF and EJECT Keys simultaneously twice.	
Press the EJECT key for 3 seconds.	
Press the CH UP key once.	
Insert the Alignment cassette tape. (PAL:VFJ8125H3F)	
When the sequence of the automatical adjustment has been terminated, the following action has been made. *SUCCEED: The cassette tape is ejected. *ERROR : The "F2"is displayed on the FIP. (Check the Servo/Syscon circuit and Cylinder unit.)	
Release the Service mode by pressing the EJECT and FF keys simultaneously in 6 times until the FIP becomes normal indication.	

Fig. E3

TOP PREVIOUS NEXT

3.3.5 VHS FREQUENCY RESPONSE ADJUSTMENT

TOP PREVIOUS NEXT

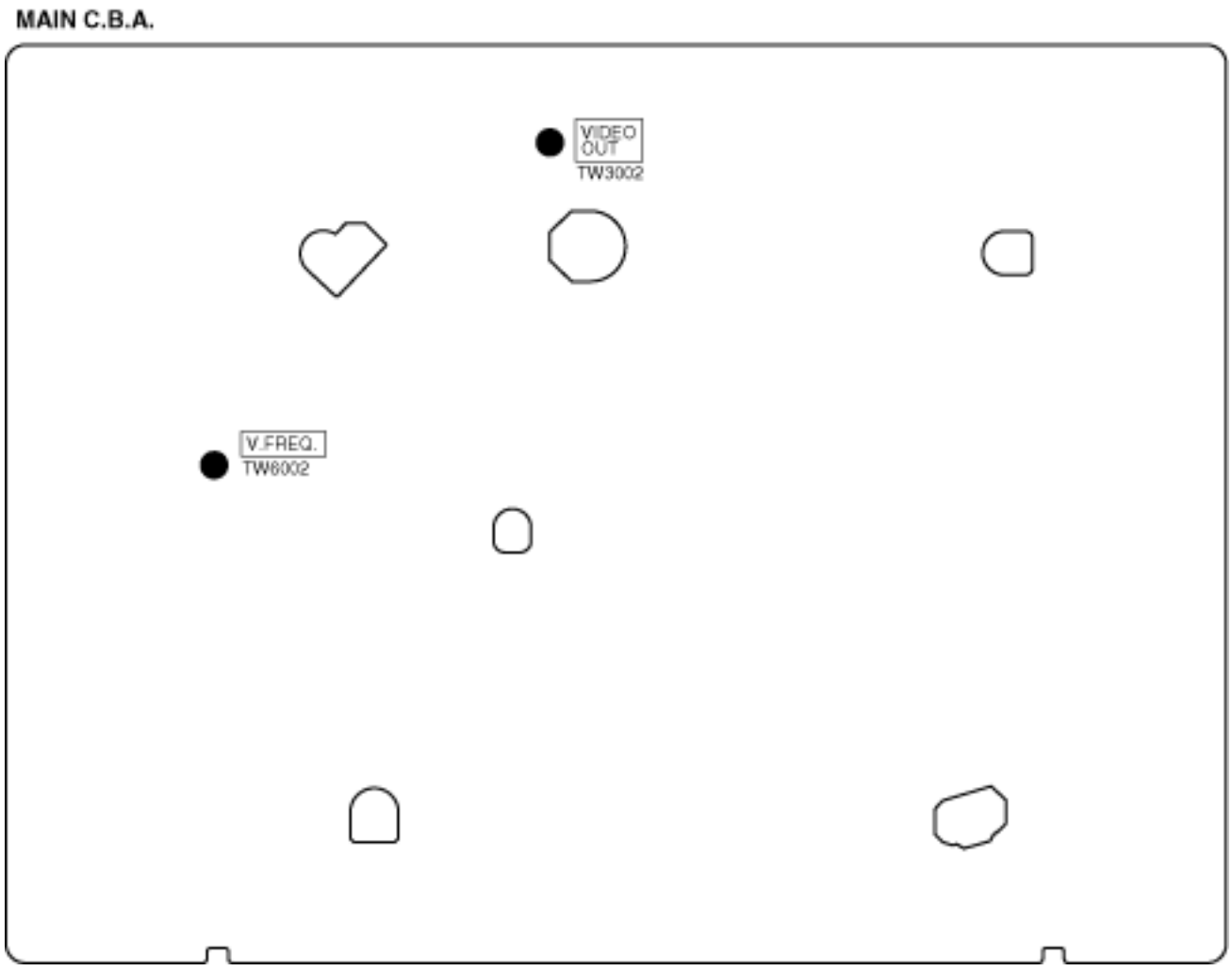
PROCEDURES	FIP DISPLAY
Insert the VHS Blank Tape. Input the Video sweep signal (See Fig. E1) to AV1 (VIDEO IN) and record it in SP and LP.	
Press the FF and EJECT Keys simultaneously for 3 seconds.	
Press the FF and EJECT Keys simultaneously twice.	
Press the EJECT key for 3 seconds.	
Press the CH UP and/or CH DOWN key until "11" is displayed on FIP.	
Insert the Self-recorded tape and playback it. (SP/LP mode) *NV-MV20EG,MV15EG do not have LP/EP modes.	
Connect the Oscilloscope to: *CH1....Video Out (TW3002). *CH2....V.FREQ.(TW6002)	
Press the "4" key on the remote controller. (Confirm that TW6002 becomes high(2.5V)).	
Adjust the Frequency response by pressing the "2"(increase) and/or "8"(decrease) key on the Remote Controller. (See Fig.E2)	
Store the Adjusted value by pressing the "5" key on the Remote Controller.	
Release the Service mode by pressing the EJECT and FF keys simultaneously in 6 times until the FIP becomes normal indication.	

Fig. E4

TOP PREVIOUS NEXT

3.3.6 LOCATION OF TEST POINTS& CONTROLS

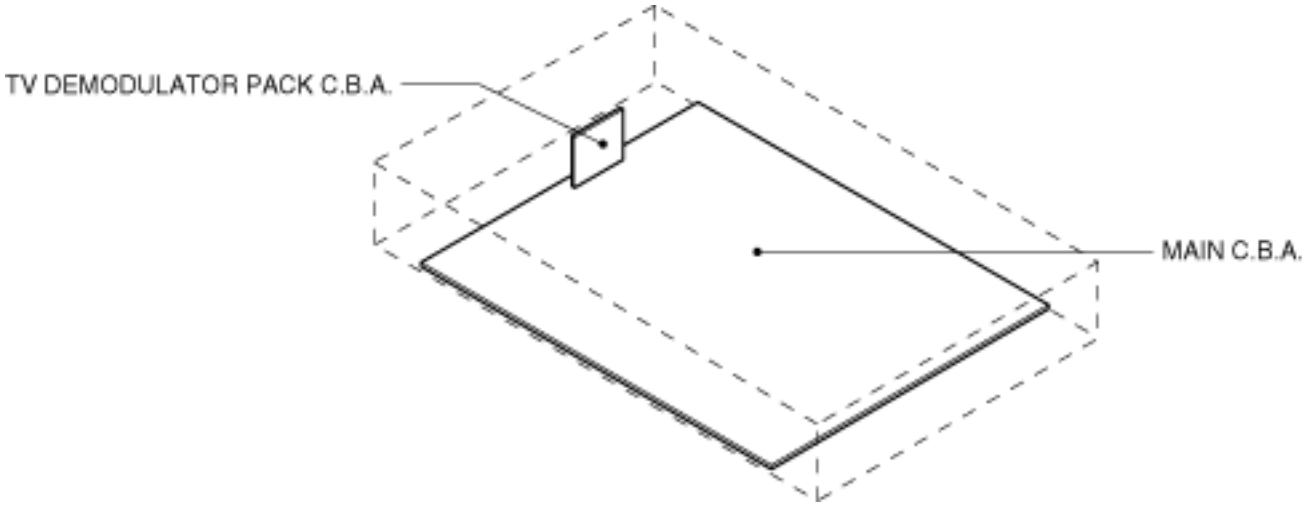
TOP PREVIOUS NEXT



TOP PREVIOUS NEXT

3.3.7 CIRCUIT BOARD LAYOUT

TOP PREVIOUS NEXT



TOP PREVIOUS NEXT

4 ABBREVIATIONS

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

5 INPUT/OUTPUT CHART

TOP PREVIOUS NEXT

5.1 INPUT/OUTPUT CHART FOR IC6001

5.2 TRUTH TABLE (EG/EP MODEL)

5.3 TRUTH TABLE (EB/EBL MODEL)

TOP PREVIOUS NEXT

5.1 INPUT/OUTPUT CHART FOR IC6001

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

5.2 TRUTH TABLE (EG/EP MODEL)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

5.3 TRUTH TABLE (EB/EBL MODEL)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

6 WAVEFORM TABLE& VOLTAGE CHART

TOP PREVIOUS NEXT

6.1 WAVEFORM TABLE

6.2 VOLTAGE CHART

TOP PREVIOUS NEXT

6.1 WAVEFORM TABLE

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

6.2 VOLTAGE CHART

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7 BLOCK DIAGRAMS

TOP PREVIOUS NEXT

7.1 SYSTEM CONTROL& SERVO BLOCK DIAGRAM

7.2 LUMINANCE& CHROMINANCE BLOCK DIAGRAM

TOP PREVIOUS NEXT

7.1 SYSTEM CONTROL& SERVO BLOCK DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.2 LUMINANCE& CHROMINANCE BLOCK DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8 SCHEMATIC DIAGRAMS

TOP PREVIOUS NEXT

8.1 POWER TRANSFORMER SECTION IN MAIN SCHEMATIC DIAGRAM

8.2 POWER SUPPLY/ RF SECTION IN MAIN SCHEMATIC DIAGRAM

8.3 TIMER SECTION IN MAIN SCHEMATIC DIAGRAM

8.4 SYSTEM CONTROL& SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

8.5 LUMINANCE& CHROMINANCE/ AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

8.6 INPUT/ OUTPUT SECTION IN MAIN SCHEMATIC DIAGRAM

8.7 TV DEMODULATOR PACK SCHEMATIC DIAGRAM

8.8 CYLINDER STATOR UNIT SCHEMATIC DIAGRAM

8.9 CAPSTAN UNIT SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

8.1 POWER TRANSFORMER SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.2 POWER SUPPLY/ RF SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.3 TIMER SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.4 SYSTEM CONTROL& SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.5 LUMINANCE& CHROMINANCE/ AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.6 INPUT/ OUTPUT SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.7 TV DEMODULATOR PACK SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.8 CYLINDER STATOR UNIT SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

8.9 CAPSTAN UNIT SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

9 CIRCUIT BOARD ASSEMBLIES

TOP PREVIOUS NEXT

9.1 TV DEMODULATOR PACK C.B.A.

9.2 CYLINDER STATOR UNIT

9.3 MAIN C.B.A.

TOP PREVIOUS NEXT

9.1 TV DEMODULATOR PACK C.B.A.

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

9.2 CYLINDER STATOR UNIT

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

9.3 MAIN C.B.A.

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

10 EXPLODED VIEWS

TOP PREVIOUS NEXT

10.1 CHASSIS PARTS SECTION

10.2 CASING PARTS SECTION

10.3 PACKING PARTS SECTION

TOP PREVIOUS NEXT

10.1 CHASSIS PARTS SECTION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

10.2 CASING PARTS SECTION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

10.3 PACKING PARTS SECTION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

11 REPLACEMENT PARTS LIST

TOP PREVIOUS NEXT

11.1 CHASSIS PARTS SECTION PARTS LIST

11.2 CASING PARTS SECTION PARTS LIST

11.3 PACKING PARTS SECTION PARTS LIST

11.4 ELECTRICAL PARTS LIST

TOP PREVIOUS NEXT

11.1 CHASSIS PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

- All parts except parts mentioned [AVC-SPC] in the Remarks column are supplied from MAVD.

  Parts mentioned [AVC-SPC] are supplied from PAVC-CSG (AVC-SPC).

Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
1	VEG1562-I	CYLINDER UNIT	NV-MV15EG-S/20EG-S
1	VEG1563-I	CYLINDER UNIT	NV-MV15EP-S/20EB-S/20EBL-S
2	VXP2083	ROTATION U ZT100EG	NV-MV15EG-S/20EG-S
2	VXP2084	ROTATION U ZT100B	NV-MV15EP-S/20EB-S/20EBL-S
3	VDB1256	CYLINDER RETAINER	
4	VEM0715	CYLINDER MOTOR UNIT	⚠
6	VXS0135	EARTH BRUSH UNIT	
7	VMD3796	FPC HOLDER 5P	
10	VEK9069	CAPSTAN UNIT	
11	L1AZ00000004	FE HEAD	
12	VDB1431	TENSION ARM BOSS	
13	VDB1460	SUPPLY BRAKE ARM BOSS	
14	VDG1220KIT	MAIN CAM GEAR KIT	
15	VDG1221	CONVERSION GEAR	
16	VDR0350	REEL TABLE	
17	VDR0350	REEL TABLE	
18	VDV0382	CAPSTAN BELT	
19	VED0412	A/C HEAD UNIT	
20	VMX2656	P4 CAP	
21	VDG1217	WORM GEAR	
22	VDG1218	WORM WHEEL GEAR	
23	VDG1219	CENTRE GEAR	

24	VEM0604	LOADING MOTOR UNIT	
25	VMD2619	MOTOR BRACKET	
26	VMB3045	CONVERSION GEAR SPRING	
27	VMD2620	OPENER PIECE	
28	VMD2738	LED PRISM	
29	VML3165	DRIVE RACK ARM	
30	VML3166	MAIN LEVER	
31	VML3167	DRIVE MAIN LEVER ARM	
32	VML3172	SUPPLY SPRING ARM	
33	VML3176	CONVERSION LEVER A	
34	VML3177	CONVERSION LEVER B	
35	VXA6040	INCLINED BASE (S) UNIT	
36	VXA5854	INCLINED BASE (T) UNIT	
37	VXP1891	ROLLER POST	
38	VXP1891	ROLLER POST	
39	VMA9672	SUPPORT ANGLE	
41	VXL2667	TAKE UP BRAKE ARM UNIT	
43	VXL2670	TAKE UP LOADING ARM UNIT	
44	VXL2798	TENSION ARM UNIT	
45	VXL2672	SUPPLY LOADING ARM UNIT	
46	VXL2785	PINCH ARM UNIT	
47	VXL2996	P5 ARM UNIT	
48	VXL2792	IDLER ARM UNIT	
49	VXL2733	SUPPLY BRAKE ARM UNIT	
50	VML3271	LOADING RACK B	
51	VXP2035	CENTRE CLUTCH UNIT	
56	VDP1660	MOTOR COUPLING	
60	VMA9516	TOP PLATE	
61	VMB3047	CONNECTION SPRING	
62	VMD3379	SIDE PLATE (L)	
63	VXA6540	SIDE PLATE (R) UNIT	
64	VXA5746	CASSETTE HOLDER UNIT	
65	VXP1730	MAIN SHAFT UNIT	

B1	VHD1117	SCREW	
B2	VHD1117	SCREW	
B3	VHD0842	SCREW	
B4	VHD0843	SCREW	
B5	VHD0843	SCREW	
B6	VHD0844	SCREW	
B7	VHD0844	SCREW	
B8	VHD1066	SCREW	
B9	VHD1066	SCREW	
B10	VHD1044	A/C STOP SCREW	
B11	VHD1060	SCREW	
B12	VHD1071	SCREW	
B13	XTS26+6F	SCREW	
B14	XTN26+6F	SCREW	
B15	XTN26+7J	SCREW	
B16	XTN26+7J	SCREW	
B17	XTN26+7J	SCREW	
B18	VHD1095	SCREW	
B19	VHD1185	SCREW	
N1	VHN0311	PUSH NUT	
W1	VMX2208	WASHER	
W2	VMX3022	WASHER	
W3	VMX3022	WASHER	

TOP PREVIOUS NEXT

11.2 CASING PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

- All parts except parts mentioned [AVC-SPC] in the Remarks column are supplied from MAVD.

  Parts mentioned [AVC-SPC] are supplied from PAVC-CSG (AVC-SPC).

Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
101	VGM1990	TOP PANEL silver	
102	VYP8761	FRONT PANEL U MV20EG	NV-MV20EG-S
102	VYP8762	FRONT PANEL U MV20EB	NV-MV20EB-S/20EBL-S
102	VYP8763	FRONT PANEL U MV15	NV-MV15EG-S/15EP-S
103	RKA0072-K	LEG	
104	RKA0072-K	LEG	
107	VGB0554	SUPER DRIVE BADGE	
108	VKF3705	BLINDER PANEL	
109	VMB2521	BLINDER SPRING	
111	VKU0575	BOTTOM PLATE(VCR)	
112	VMZ3099-W	V0 SHEET	⚠ VMZ3099
113	VJH1176	JACK BOARD	
114	VJH1174	ANT BOARD	
120	VWJ1651	FFC (P4002-A/C HEAD)	
121	VWJ1282	FFC (P2502-CYL)	⚠
B101	XTW3+10TFC	SCREW TOP CASE	
B102	XTW3+10TFC	SCREW TOP CASE	
B103	XTW3+10TFC	SCREW TOP CASE	
B104	XTW3+10TFC	SCREW TOP CASE	
B105	VHD0168	SCREW FOR MECHA.CHAS	
B106	VHD0168	SCREW FOR MECHA.CHAS	

B107	VHD1092	SCREW	
B108	VHD1092	SCREW	
B109	VHD1092	SCREW	
B110	VHD1092	SCREW	
B111	VHD1092	SCREW	
B112	VHD1092	SCREW	
B113	VHD1092	SCREW	
B114	XTV26+8FR-NC	TAPPING SCREW	
B115	XTV26+8FR-NC	TAPPING SCREW	XTV26+6JR
B116	XTV26+8FR-NC	TAPPING SCREW	XTV26+6JR
B117	XTV26+8FR-NC	TAPPING SCREW	XTV26+6JR

TOP PREVIOUS NEXT

11.3 PACKING PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

- All parts except parts mentioned [AVC-SPC] in the Remarks column are supplied from MAVD.

  Parts mentioned [AVC-SPC] are supplied from PAVC-CSG (AVC-SPC).

Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
201	RQTD0037-D	OPERATING INSTRUCTIONS (GERMAN)	⚠ NV-MV15EG-S/20EG-S
201	RQTD0038-A	OPERATING INSTRUCTIONS (ENGLISH)	⚠ NV-MV15EG-S/20EG-S
201	RQTD0039-V	OPERATING INSTRUCTIONS (ITALIAN)	⚠ NV-MV15EG-S/20EG-S
201	RQTD0040-X	OPERATING INSTRUCTIONS (GREEK)	⚠ NV-MV15EG-S/20EG-S
201	RQTD0041-H	OPERATING INSTRUCTIONS (DUTCH)	⚠ NV-MV15EG-S/20EG-S
201	RQTD0042-C	OPERATING INSTRUCTIONS (FRENCH)	⚠ NV-MV15EG-S/20EG-S
201	RQTD0043-B	OPERATING INSTRUCTIONS (ENGLISH)	⚠ NV-MV20EB-S
201	RQTD0050-T	OPERATING INSTRUCTIONS (HUNGARIAN)	⚠ NV-MV15EP-S
201	RQTD0051-R	OPERATING INSTRUCTIONS (RUSSIAN)	⚠ NV-MV15EP-S
201	RQTD0052-S	OPERATING INSTRUCTIONS (CZECHOSLOVAKIAN)	⚠ NV-MV15EP-S
201	RQTD0053-Q	OPERATING INSTRUCTIONS (POLISH)	⚠ NV-MV15EP-S
201	RQTD0080-Y	OPERATING INSTRUCTIONS (ENGLISH)	⚠ NV-MV15EP-S
201	RQTD0078-B	OPERATING INSTRUCTIONS (ENGLISH)	⚠ NV-MV20EBL-S
201	RQTD0079-B	OPERATING INSTRUCTIONS (ENGLISH)	⚠ NV-MV20EB-S/20EBL-S
202	N2QAHB000031	REMOTE HV50	NV-MV15EG-S/15EP-S
202	N2QAKB000043	REMOTE HV60,MV20	NV-MV20EG-S
202	N2QAKB000044	REMOTE HV60,MV20EB	NV-MV20EB-S/20EBL-S
203	R0185-720010	BATTERY COVER	NV-MV15EG-S/15EP-S
203	R0186-720010	BATTERY COVER	NV-MV20EG-S/20EB-S/20EBL-S
205	K1TWACC00001	RF CABLE	
206	RJA0043-1C	POWERCORD(MINI/E+EG)	⚠ NV-MV15EG-S/15EP-S/20EG-S
206	RJA0044-3C	POWER CORD (MINI/EB)	⚠ NV-MV20EB-S/20EBL-S

210	VPK2246	ACCESSORY CASE	
211	VPN5491	CUSHION L (VHS)	
212	VPN5492	CUSHION R (VHS)	
215	VPG0T31	PACK.CASE MV20 S	NV-MV15EG-S/20EG-S
215	VPG0T80	PACK.CASE MV20 S	NV-MV15EP-S/20EB-S/20EBL-S
		SERVICE FIXTURES & TOOLS	
	VFJ8125H3F	VHS ALIGNMENT TAPE (PAL)	[AVC-SPC]
	VFK0132	BACK TENSION METER	[AVC-SPC]
	VFK0326	HEX WRENCH SET	[AVC-SPC]
	VFK0329	POST ADJUSTMENT SCREWDRIVER	[AVC-SPC]
	VFK0330	FINE ADJUSTMENT GEAR DRIVER	[AVC-SPC]
	VFK0335	RETAINING RING REMOVER (3mm/4mm)	[AVC-SPC]
	VFK1024	MOLYTONE GREASE	[AVC-SPC]
	VFK1298	FLOIL GREASE	[AVC-SPC]
	VFK1301	SILICONE GREASE	[AVC-SPC]
	VFK27	HEAD CLEANING STICK	[AVC-SPC]

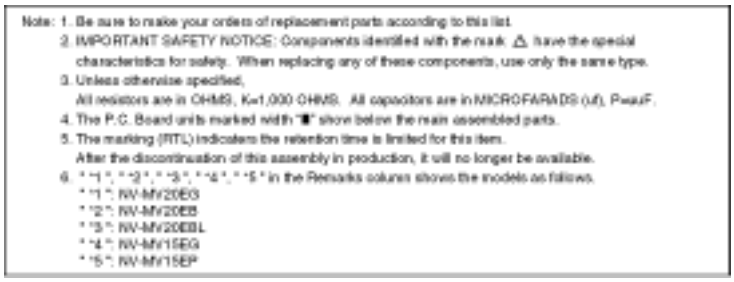
TOP PREVIOUS NEXT

11.4 ELECTRICAL PARTS LIST

TOP PREVIOUS NEXT

- All parts except parts mentioned [AVC-SPC] in the Remarks column are supplied from MAVD.

  Parts mentioned [AVC-SPC] are supplied from PAVC-CSG (AVC-SPC).


Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE: Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS (uf), P=uuF.
4. The P.C. Board units marked with "■" show below the main assembled parts.
5. The marking (RTL) indicates the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.
6. " *1 ", " *2 ", " *3 ", " *4 ", " *5 " in the Remarks column shows the models as follows.
" *1 ": NV-MV20EG
" *2 ": NV-MV20EB
" *3 ": NV-MV20EBL
" *4 ": NV-MV15EG
" *5 ": NV-MV15EP

Ref. No.	Part No.	Part Name & Description	Remarks
	VEP06F09R	MAIN C.B.A.	(RTL) *1
			THE FOLLOWING C.B.A. IS INCLUDED IN MAIN C. B.A.
			VEP07A23V-SK
	VEP06F09S	MAIN C.B.A.	(RTL) *2
			THE FOLLOWING C.B.A. IS INCLUDED IN MAIN C. B.A.
			VEP07A23W-SK
	VEP06F09T	MAIN C.B.A.	(RTL) *3
			THE FOLLOWING C.B.A. IS INCLUDED IN MAIN C. B.A.
			VEP07A23X-SK
	VEP06F09U	MAIN C.B.A.	(RTL) *4
			THE FOLLOWING C.B.A. IS INCLUDED IN MAIN C. B.A.
			VEP07A23V-SK
	VEP06F09V	MAIN C.B.A.	(RTL) *5
			THE FOLLOWING C.B.A. IS INCLUDED IN MAIN C. B.A.

			VEP07A23X-SK
	VEP07A23V-SK	TV DEMODULATOR PACK C.B.A.	(RTL) *1,*4
			INCLUDED IN MAIN C.B.A.(VEP06F09R/U).
	VEP07A23W-SK	TV DEMODULATOR PACK C.B.A.	(RTL) *2
			INCLUDED IN MAIN C.B.A.(VEP06F09S).
	VEP07A23X-SK	TV DEMODULATOR PACK C.B.A.	(RTL) *3,*5
			INCLUDED IN MAIN C.B.A.(VEP06F09T/V).
	----------	CYLINDER STATOR C.B.A.	INCLUDED IN CYLINDER STATOR UNIT (VEM0715).
	----------	CAPSTAN DRIVE C.B.A.	INCLUDED IN CAPSTAN UNIT (VEK9069).
	VEP06F09R	MAIN C.B.A.	(RTL) *1
	VEP06F09S	MAIN C.B.A.	(RTL) *2
	VEP06F09T	MAIN C.B.A.	(RTL) *3
	VEP06F09U	MAIN C.B.A.	(RTL) *4
	VEP06F09V	MAIN C.B.A.	(RTL) *5
C0701	ECJ2VF1C105Z	CHIP CAPACITOR	ECUV1C105ZFN
C0702	F1H1H102A009	CHIP CAPACITOR	
C0703	F1J1A1050024	CHIP CAPACITOR	
C0704	ECJ2VB1H333K	CHIP CAPACITOR	
C0705	F1H1H150A230	CHIP CAPACITOR	*1,*3,*4,*5
C0706	ECEA1HKA010B	ALU ELEC CAPACITOR	
C0707	ECEA1HKA2R2B	ALU ELEC CAPACITOR	
C0708	ECEA1HKAR47B	ALU ELEC CAPACITOR	
C0709	F1H1H470A230	CHIP CAPACITOR	
C0710	F1H1H103A220	CHIP CAPACITOR	
C0711	ECEA1CKA220B	ALU ELEC CAPACITOR	
C0712	F1H1C104A008	CHIP CAPACITOR	
C0713	ECEA0JKA331Q	ALU ELEC CAPACITOR	
C0714	ECJ2VF1C105Z	CHIP CAPACITOR	ECUV1C105ZFN

C0715	ECJ1VC1H030C	CHIP CAPACITOR	*1,*3,*4,*5 ECUV1H030CCV
C0715	F1H1H120A230	CHIP CAPACITOR	*2
C0716	F1H1E223A029	CHIP CAPACITOR	
C0717	ECUV1H330GUV	CHIP CAPACITOR	
C0718	ECEA1CKN100B	ALU ELEC CAPACITOR	
C0719	F1H1E104A030	CHIP CAPACITOR	ECUV1E104ZFV
C0721	ECJ1VC1H121J	CHIP CAPACITOR	*1,*4 ECUV1H121JCV
C0721	F1H1H820A230	CHIP CAPACITOR	*2
C0721	ECJ1VC1H560J	CHIP CAPACITOR	*3,*5 ECUV1H560JCV
C0722	ERJ3GEYJ123V	THICK FILM CHIP RESI	ERJ3GSJ123V
C0724	ECJ1VB1H221K	CHIP CAPACITOR	*1,*3,*4,*5 ECUV1H221KBV
C0724	ECJ1VB1H331K	CHIP CAPACITOR	*2
C1002	EEUEB1E470SB	ALU ELEC CAPACITOR	
C1003	F1H1C104A071	CHIP CAPACITOR	
C1004	EEUEB1E470SB	ALU ELEC CAPACITOR	
C1008	F1H1C104A071	CHIP CAPACITOR	
C1009	F1H1C104A071	CHIP CAPACITOR	
C1011	EEUEB1E470SB	ALU ELEC CAPACITOR	
C1016	ECA1CHJ101B	ALU ELEC CAPACITOR	
C1018	F1H1C104A071	CHIP CAPACITOR	
C1019	F1H1C104A071	CHIP CAPACITOR	
C1025	ECUY1H104KBN	CHIP CAPACITOR	
C1026	ECUY1H104KBN	CHIP CAPACITOR	
C1120	VCF2AAF683M	EMI CAPACITOR	⚠ ECQU2A683MVA
C1121	F1BAF1020020	CAPACITOR	⚠
C1123	F1BAF1020020	CAPACITOR	⚠
C1141	EEUEB2G330E	ALU ELEC CAPACITOR	
C1151	ECQB1H473JF3	PLAST FILM CAPACITOR	
C1152	ECQB1H103JF3	PLAST FILM CAPACITOR	
C1153	ECQV1H104JL3	PLAST FILM CAPACITOR	
C1154	ECQB1H223JF3	PLAST FILM CAPACITOR	
C1155	F1A3A271A028	CAPACITOR	
C1200	ECQV1H104JL3	PLAST FILM CAPACITOR	
C1210	F1B3A332A004	CAPACITOR	
C1230	F2A1H2200032	ALU ELEC CAPACITOR	
C1250	F2A1E6810012	ALU ELEC CAPACITOR	
C1251	F2A1E101A122	ALU ELEC CAPACITOR	ECA1EM101B

C1260	F2A1A1020056	ALU ELEC CAPACITOR	
C1261	ECA1AHJ331B	ALU ELEC CAPACITOR	
C1270	F2A1H2200032	ALU ELEC CAPACITOR	
C1280	F2A1A1010072	ALU ELEC CAPACITOR	
C2501	ECJ1VB1C563K	CHIP CAPACITOR	ECUV1C563KBV
C2502	F1H1C104A071	CHIP CAPACITOR	
C2503	F1H1C104A008	CHIP CAPACITOR	
C2506	ECJ1VB1C563K	CHIP CAPACITOR	ECUV1C563KBV
C2507	ECJ1VB1C563K	CHIP CAPACITOR	ECUV1C563KBV
C2508	F1H1C104A071	CHIP CAPACITOR	
C2509	ECJ1VF1C474Z	CHIP CAPACITOR	ECUV1C474ZFV
C2510	F1H1H330A230	CHIP CAPACITOR	
C2511	ECEA0JKN220B	ALU ELEC CAPACITOR	
C2512	ECEA1EKA4R7B	ALU ELEC CAPACITOR	
C2513	ECJ1VB1H392K	CHIP CAPACITOR	ECUV1H392KBV
C2514	F1H1C104A008	CHIP CAPACITOR	
C2515	ECEA1VKN4R7B	ALU ELEC CAPACITOR	
C2516	ECEA1VKN4R7B	ALU ELEC CAPACITOR	
C2517	ECEA0JKA470B	ALU ELEC CAPACITOR	
C2518	ECUV1H473ZFV	CHIP CAPACITOR	ECJ1VF1H473Z
C2519	ECEA1EKA470B	ALU ELEC CAPACITOR	
C2520	ECJ1VB1C683K	CHIP CAPACITOR	
C2521	ECJ1VB1A154K	CHIP CAPACITOR	
C2522	ECJ1VB1A154K	CHIP CAPACITOR	
C2523	ECJ1VB1A154K	CHIP CAPACITOR	
C2524	ECEA1VKN4R7B	ALU ELEC CAPACITOR	
C3001	ECJ1VC1H151J	CHIP CAPACITOR	ECUV1H151JCV
C3002	F1H0J105A002	CHIP CAPACITOR	
C3003	F1H1C104A071	CHIP CAPACITOR	
C3005	F1H1H270A230	CHIP CAPACITOR	
C3006	F1H1C104A071	CHIP CAPACITOR	
C3007	ECJ1VF1A105Z	CHIP CAPACITOR	ECUV1A105ZFV
C3008	ECEA1HKA4R7B	ALU ELEC CAPACITOR	
C3009	ECJ1VF1A105Z	CHIP CAPACITOR	ECUV1A105ZFV
C3010	ECJ1VF1A105Z	CHIP CAPACITOR	ECUV1A105ZFV
C3011	F1H1H103A220	CHIP CAPACITOR	
C3012	ECEA0JKA470B	ALU ELEC CAPACITOR	

C3014	F1H1C104A071	CHIP CAPACITOR	
C3015	F1H0J105A002	CHIP CAPACITOR	
C3017	F1H1C104A071	CHIP CAPACITOR	
C3019	F1H1C104A071	CHIP CAPACITOR	
C3020	ECEA1HKA3R3B	ALU ELEC CAPACITOR	
C3021	ECEA1CKA100B	ALU ELEC CAPACITOR	
C3023	F1H1H103A748	CHIP CAPACITOR	
C3024	ECJ1VC1H331J	CHIP CAPACITOR	ECUV1H331JCV
C3025	F1H1H103A220	CHIP CAPACITOR	
C3026	ECEA0JKA470B	ALU ELEC CAPACITOR	
C3027	ECEA1HKA010B	ALU ELEC CAPACITOR	
C3028	ECEA1HKA4R7B	ALU ELEC CAPACITOR	
C3029	ECEA1HKAR47B	ALU ELEC CAPACITOR	
C3030	F1H1E223A029	CHIP CAPACITOR	
C3031	F1H1C333A059	CHIP CAPACITOR	
C3032	ECEA1HKA3R3B	ALU ELEC CAPACITOR	
C3033	F1H1C104A071	CHIP CAPACITOR	
C3034	ECEA1HKA2R2B	ALU ELEC CAPACITOR	
C3035	F1H1E223A029	CHIP CAPACITOR	
C3036	ECEA0JKA470B	ALU ELEC CAPACITOR	
C3037	F1H1H103A220	CHIP CAPACITOR	
C3038	ECJ1VC1H030C	CHIP CAPACITOR	ECUV1H030CCV
C3039	ECEA1HKA010B	ALU ELEC CAPACITOR	
C3040	F1H1H103A220	CHIP CAPACITOR	
C3041	F1H1H103A220	CHIP CAPACITOR	
C3042	ECJ1VF1A105Z	CHIP CAPACITOR	ECUV1A105ZFV
C3053	F1H1H103A220	CHIP CAPACITOR	
C3054	F1H1H470A230	CHIP CAPACITOR	
C3058	F1H1C104A071	CHIP CAPACITOR	
C3070	F1H1C104A071	CHIP CAPACITOR	
C3071	ECJ2VF1H104Z	CHIP CAPACITOR	ECUV1H104ZFN
C4001	ECEA0JKA101B	ALU ELEC CAPACITOR	
C4003	F1H1H472A219	CHIP CAPACITOR	
C4004	ECJ1VB1H122K	CHIP CAPACITOR	
C4005	ECEA0JKA220B	ALU ELEC CAPACITOR	
C4006	ECEA1EKA4R7B	ALU ELEC CAPACITOR	
C4008	ECEA1EKA3R3B	ALU ELEC CAPACITOR	

C4009	ECEA0JKA220B	ALU ELEC CAPACITOR	
C4011	ECJ1VB1H822K	CHIP CAPACITOR	ECUV1H822KBV
C4012	ECEA1HKA4R7B	ALU ELEC CAPACITOR	
C4013	F1H1H103A220	CHIP CAPACITOR	
C4014	ECEA0JKA470B	ALU ELEC CAPACITOR	
C4016	F1H1C104A071	CHIP CAPACITOR	
C4017	ECEA1CKA100B	ALU ELEC CAPACITOR	
C4018	ECEA1HKA010B	ALU ELEC CAPACITOR	
C4019	ECEA1CKA100B	ALU ELEC CAPACITOR	
C4020	F1H1H221A736	CHIP CAPACITOR	
C4021	ECQB1H223JF3	PLAST FILM CAPACITOR	
C4022	F1H1H152A219	CHIP CAPACITOR	
C4023	ECEA1AKA470B	ALU ELEC CAPACITOR	
C4024	F1H1E223A029	CHIP CAPACITOR	
C4025	ECEA1AKA220B	ALU ELEC CAPACITOR	
C4026	ECEA1CKA100B	ALU ELEC CAPACITOR	
C4516	ECJ1VF1H104Z	CHIP CAPACITOR	
C4911	F1H1H101A736	CHIP CAPACITOR	
C4912	F1H1H470A230	CHIP CAPACITOR	
C4913	F1H1H470A230	CHIP CAPACITOR	
C4915	ECJ1VC1H471J	CHIP CAPACITOR	ECUV1H471JCV
C4951	F2A0J471A016	ALU ELEC CAPACITOR	ECA0JM471B
C4958	F1H1C104A008	CHIP CAPACITOR	
C5003	F1H1H103A748	CHIP CAPACITOR	
C5004	F1H1H103A748	CHIP CAPACITOR	
C5005	F1H1C104A071	CHIP CAPACITOR	
C5006	ECEA0JKA470B	ALU ELEC CAPACITOR	
C5007	F1H1C104A008	CHIP CAPACITOR	
C5008	F1H1H103A220	CHIP CAPACITOR	
C5009	F1H1H103A220	CHIP CAPACITOR	
C6001	ECEA0JKA470B	ALU ELEC CAPACITOR	
C6003	ECJ1VC1H471J	CHIP CAPACITOR	ECUV1H471JCV
C6004	F1H1H103A220	CHIP CAPACITOR	
C6005	F1H1H103A220	CHIP CAPACITOR	
C6006	F1H1H330A230	CHIP CAPACITOR	*5
C6009	F1H1H180A230	CHIP CAPACITOR	
C6010	F1H1H180A230	CHIP CAPACITOR	

C6011	F1H1H180A230	CHIP CAPACITOR	
C6012	F1H1H150A230	CHIP CAPACITOR	
C6015	ECEA1CKA100B	ALU ELEC CAPACITOR	
C6016	F1H1H103A220	CHIP CAPACITOR	
C6017	ECJ1VC1H681J	CHIP CAPACITOR	ECUV1H681JCV
C6022	F1H1H221A736	CHIP CAPACITOR	
C6023	ECJ1VF1A105Z	CHIP CAPACITOR	ECUV1A105ZFV
C6024	ECEA0JKA221B	ALU ELEC CAPACITOR	
C6025	F1H1C104A008	CHIP CAPACITOR	
C6027	F1H1C333A059	CHIP CAPACITOR	*1,*2,*3
C6028	F1H1H222A219	CHIP CAPACITOR	*1,*2,*3
C6029	ECJ1VF1C474Z	CHIP CAPACITOR	*1,*2,*3 ECUV1C474ZFV
C6030	ECJ1VC1H151J	CHIP CAPACITOR	*1,*2,*3 ECUV1H151JCV
C6031	F1H1C104A008	CHIP CAPACITOR	*1,*2,*3
C6032	ECEA0JKA470B	ALU ELEC CAPACITOR	*1,*2,*3
C6035	F1H0J105A002	CHIP CAPACITOR	
C6036	ECJ1VC1H561J	CHIP CAPACITOR	
C6038	F1H1H101A736	CHIP CAPACITOR	
C6039	F1H1H101A736	CHIP CAPACITOR	
C6040	ECJ1VF1H104Z	CHIP CAPACITOR	
C6041	ECJ1VF1H104Z	CHIP CAPACITOR	
C6042	ECJ1VF1H104Z	CHIP CAPACITOR	
C7501	F1H1H103A220	CHIP CAPACITOR	
C7502	ECEA1HKA100B	ALU ELEC CAPACITOR	
C7503	F1H1H120A230	CHIP CAPACITOR	
C7504	ECEA0JKA101B	ALU ELEC CAPACITOR	
C7507	F4D55473A005	ALU ELEC CAPACITOR	VCE0073-T
C7508	ECEA0JKA221B	ALU ELEC CAPACITOR	
C7509	ECUV1H682KBV	CHIP CAPACITOR	ECJ1VB1H682K
C7510	F1H1H103A220	CHIP CAPACITOR	
C7511	F1H1C104A008	CHIP CAPACITOR	
C7512	F1H1C104A008	CHIP CAPACITOR	
C7603	ECEA0JKA101B	ALU ELEC CAPACITOR	
C7604	ECEA0JKA101B	ALU ELEC CAPACITOR	
C7605	F1H1H103A220	CHIP CAPACITOR	
C7607	ECEA1HKA010B	ALU ELEC CAPACITOR	
C7609	F1H1H330A230	CHIP CAPACITOR	

C7610	F1H1H330A230	CHIP CAPACITOR	
C7611	F1H1H330A230	CHIP CAPACITOR	
C7612	ECJ1VF1H104Z	CHIP CAPACITOR	
C7614	ECEA0JKA101B	ALU ELEC CAPACITOR	
C7615	F1H1H103A220	CHIP CAPACITOR	
C7617	F1H1H103A220	CHIP CAPACITOR	*1,*3,*4,*5
C7619	F1H1C104A071	CHIP CAPACITOR	*3,*5
D0702	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
D0703	M1MA151KT1	DIODE	*3,*5
D1002	MAZ4056NHF	DIODE	MA4056N-HTA
D1003	MAZ4130NLF	DIODE	MA4130N-LTA
D1005	MAZ4056NHF	DIODE	MA4056N-HTA
D1011	MAZ4051NMF	DIODE	MA4051N-MTA
D1012	B0EADD000002	DIODE	1SS119-04TJ
D1110	ERZVA5V471	SURGE ABSORBER	⚠
D1140	B0KB00000013	DIODE	
D1150	B0HAGM000006	DIODE	
D1152	MA2C18500E	DIODE (WHITE/GREEN)	MA185TA5
D1155	B0EADD000002	DIODE	1SS119-04TJ
D1157	MAZ40270LF	DIODE	
D1180	MAZ751000C	DIODE	
D1230	MA2C18500E	DIODE (WHITE/GREEN)	MA185TA5
D1250	B0JAMK000015	DIODE	
D1251	B0JAMK000015	DIODE	
D1260	B0JAME000025	DIODE (AK04V2)	11EQS04TA1
D1261	B0JAME000025	DIODE (AK04V2)	11EQS04TA1
D1270	MA2C18500E	DIODE (WHITE/GREEN)	MA185TA5
D1280	B0JAME000025	DIODE (AK04V2)	11EQS04TA1
D1501	B3EA00000040	DIODE	SIR505STA47
D2501	B0EADD000002	DIODE	1SS119-04TJ
D2502	B0EADD000002	DIODE	1SS119-04TJ
D4901	MAZ4075NMF	DIODE	MA4075N-MTA
D4902	MAZ4075NMF	DIODE	MA4075N-MTA
D6004	B0ACCK000005	DIODE	1SS355TE-17
D7501	MAZ4240NMF	DIODE	
D7503	B0JACE000001	DIODE	RB441PT-77

D7601	MAZ43000MF	DIODE	MA4300-MTA
DP7501	A2BA00000212	DISPLAY (VCR)	
F1101	K5D162BL0007	MINIATURE FUSE	⚠ K5Y162B00002, VSF0244C16
IC0701	C1AA00000606	IC	
IC1200	C0DAEJC00003	INTEGRATED CIRCUIT	UPC1093J-T
IC1501	B3EZ00000001	INTEGRATED CIRCUIT	RPI354N
IC1502	B3EZ00000001	INTEGRATED CIRCUIT	RPI354N
IC2501	AN3811NK-P	CYLINDER DRIVE IC	
IC3001	C1AB00001739	INTEGRATED CIRCUIT	
IC6001	C2CBJG000262	INTEGRATED CIRCUIT	
IC6002	C3EAGC000015	EEPROM	M24C16-WBN6
IC6003	C1AB00001293	INTEGRATED CIRCUIT	*1,*2,*3 SDA5650X
IC7501	C0HBB0000023	INTEGRATED CIRCUIT	M35502AFP-E1
IC7502	PNA4618M08VT	INTEGRATED CIRCUIT	
IC7503	C0EBE0000211	INTEGRATED CIRCUIT	
IC7504	C0EBH0000218	INTEGRATED CIRCUIT	
JK4902	K1FB121B0003	CONNECTOR	
K0701	ECJ1VC1H560J	CHIP CAPACITOR	*1,*4 ECUV1H560JCV
K0703	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
K0707	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
K0708	ERJ3GEY0R00V	CHIP RESISTOR	*1,*4 ERJ3GS0R00V
K0709	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
K3004	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K3016	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K3017	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K3018	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K3025	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K3027	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K3028	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4502	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4901	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4902	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V

K4903	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4907	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4908	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4909	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4913	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4914	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K4915	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K5002	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K5003	J0JBC0000041	BEAD CORE	VLP0147-T
K5004	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K6001	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K6005	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
K7611	J0JBC0000041	BEAD CORE	*3,*5 VLP0147-T
K7613	ERJ6GEY0R00Z	CHIP RESISTOR	*3,*5 ERJ6GEY0R00V
L0701	ELJNAR27JF	CHIP INDUCTOR	*1,*3,*4,*5
L0701	ELJNAR22JF	CHIP INDUCTOR	*2
L0703	ELJNA2R2JF	CHIP INDUCTOR	*1,*3,*4,*5
L0703	ELJNA1R8JF	CHIP INDUCTOR	*2
L0705	ELESN330KA	PEAKING COIL RADIAL	*1,*3,*4,*5
L1120	ELF15N003AB	LINE FILTER	⚠ ELF15N003A
L1121	ELF15N005AB	LINE FILTER	⚠ ELF15N005A
L1250	G0A220G00018	FIXED INDUCTOR	
L1260	G0A220G00018	FIXED INDUCTOR	
L2501	G0C680JA0019	CHOKE COIL AXIAL	VLQ0599J680T
L3002	G0C820JA0019	CHOKE COIL AXIAL	
L3003	G0C270JA0019	CHOKE COIL AXIAL	VLQ0599J270T
L3004	G0C680JA0019	CHOKE COIL AXIAL	VLQ0599J680T
L3005	G0C270JA0019	CHOKE COIL AXIAL	VLQ0599J270T
L3006	G1C120J00001	FIXED INDUCTOR	
L3010	G0C390JA0019	CHOKE COIL AXIAL	VLQ0599J390T
L4001	----------	JUMPER WIRE	
L4002	G0C680JA0019	CHOKE COIL AXIAL	VLQ0599J680T
L4501	----------	JUMPER WIRE	
L4503	G0C100JA0019	CHOKE COIL AXIAL	ELEXT100JBV
L4503	G0C100JA0019	CHOKE COIL AXIAL	VLQ0599J100T
L4901	G0CR22JA0019	CHOKE COIL AXIAL	VLQ0599JR22T

L4902	G0C330JA0019	CHOKE COIL AXIAL	VLQ0599J330T
L5001	G0C680JA0019	CHOKE COIL AXIAL	VLQ0599J680T
L6001	G0C101JA0019	CHOKE COIL AXIAL	ELEXT101JBV
L6001	G0C101JA0019	CHOKE COIL AXIAL	VLQ0599J101T
L6002	G0C330JA0019	CHOKE COIL AXIAL	*5 VLQ0599J330T
L6005	----------	JUMPER WIRE	
L6006	G0C680JA0019	CHOKE COIL AXIAL	*1,*2,*3 VLQ0599J680T
L7601	G0C270JA0019	CHOKE COIL AXIAL	VLQ0599J270T
L7602	G0C270JA0019	CHOKE COIL AXIAL	VLQ0599J270T
L7603	G0C270JA0019	CHOKE COIL AXIAL	VLQ0599J270T
L7605	G0C2R2JA0019	CHOKE COIL AXIAL	VLQ0599J2R2T
L7606	----------	JUMPER WIRE	
LB0701	J0JBC0000041	BEAD CORE	*3,*5 VLP0147-T
LB1213	J0JHC0000070	BEAD CORE	
LB4001	J0JBC0000070	CHIP INDUCTOR	
LB4002	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
LB4003	J0JBC0000070	CHIP INDUCTOR	
LB4004	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
LB4905	ERJ6GEYJ103V	CHIP RESISTOR	
LB4906	ERJ6GEYJ103V	CHIP RESISTOR	
LB4907	ERJ6GEYJ471V	CHIP RESISTOR	
LB5003	J0JBC0000041	BEAD CORE	VLP0147-T
LB5004	J0JBC0000041	BEAD CORE	VLP0147-T
LB6001	J0JBC0000041	BEAD CORE	VLP0147-T
LR1150	J1ZZA0000001	BEAD CORE	
P1101	K2AA2K000012	AC INLET	⚠
P1501	K1KB02A00035	CONNECTOR	VJS3837A002
P2501	K1KA12A00127	CONNECTOR	VJP3835E012
P2502	K1MN09A00023	CONNECTOR	
P4001	K1KB02A00035	CONNECTOR	VJS3837A002
P4002	K1MN06A00035	CONNECTOR	
P5001	K1MN05A00020	CONNECTOR	
PK0701	K1MR09A00028	CONNECTOR	

PP0701	K1KA04B00135	CONNECTOR	
Q0701	2SD0601ASL	TRANSISTOR	
Q0702	2SD0601ASL	TRANSISTOR	
Q1001	2SD0602ARL	TRANSISTOR	2SD602A-RTX
Q1002	B1AAGD000006	TRANSISTOR	
Q1003	2SB0710ARL	TRANSISTOR	2SB710A-RTX
Q1005	B1AAGD000006	TRANSISTOR	
Q1006	B1AAGD000006	TRANSISTOR	
Q1007	B1AAGD000006	TRANSISTOR	
Q1008	B1AAGD000006	TRANSISTOR	
Q1009	B1AAGD000006	TRANSISTOR	
Q1013	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q1150	B1DEDR000003	TRANSISTOR	
Q1151	2SD1992ARA	TRANSISTOR	
Q1152	2SC3311ASA	TRANSISTOR	2SC3311ARA
Q1153	B1DEDQ000014	TRANSISTOR	
Q1200	B3PBA0000078	PHOTO COUPLER	⚠ PC123ZY2
Q1501	PNB2301MBV	TRANSISTOR	
Q1502	PNB2301MAV	TRANSISTOR	
Q3001	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q4003	2SD114900L	TRANSISTOR	2SD1149-TX
Q4004	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q4005	2SD0602ARL	TRANSISTOR	2SD602A-RTX
Q4006	2SB0710ARL	TRANSISTOR	2SB710A-RTX
Q4903	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q4904	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q4907	2SB0709ARL	TRANSISTOR	2SB709A-RTX
Q6003	2SB0709ARL	TRANSISTOR	*5 2SB709A-RTX
Q6004	2SB0709ARL	TRANSISTOR	*1,*2,*3 2SB709A-RTX
Q6008	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q6009	2SD0601ARN	TRANSISTOR	2SD601A-RTX
Q7601	2SD0601ARN	TRANSISTOR	2SD601A-RTX
QR0707	B1GBHCHH0001	DIGITAL TRANSISTOR	*3,*5 DTC363EUT106
QR1003	UNR211200L	TRANSISTOR	

QR1004	B1GDCFJJ0002	TRANSISTOR	DTA114EK-T146
QR1005	UNR221100L	TRANSISTOR	UN2211-TX
QR4001	UNR221100L	TRANSISTOR	UN2211-TX
QR4002	B1GDCFJJ0002	TRANSISTOR	DTA114EK-T146
QR4005	B1GBCFLL0002	TRANSISTOR	DTC124EK-T146
QR4502	UNR211300L	TRANSISTOR	UN2113-TX
QR4507	B1GBCFGA0002	TRANSISTOR	DTC143TK-T146
QR6001	B1GBCFJA0002	TRANSISTOR	DTC114TK-T146
QR6002	B1GBCFLL0002	TRANSISTOR	DTC124EK-T146
QR6004	UNR221100L	TRANSISTOR	UN2211-TX
R0701	ERJ6GEYJ104V	CHIP RESISTOR	*2
R0702	ERJ3GEYJ103V	CHIP RESISTOR	*3,*5 ERJ3GSJ103V
R0705	ERJ3GEYJ472V	CHIP RESISTOR	ERJ3GSJ472V
R0707	ERJ3GEYJ393V	CHIP RESISTOR	ERJ3GSJ393V
R0708	ERJ3GEYJ332V	CHIP RESISTOR	ERJ3GSJ332V
R0709	ERJ6GEYJ104V	CHIP RESISTOR	*3,*5
R0711	ERJ3GEYJ181V	CHIP RESISTOR	
R0712	ERJ3GEYJ103V	CHIP RESISTOR	*3,*5 ERJ3GSJ103V
R0714	ERJ3GEYJ562V	CHIP RESISTOR	*3,*5 ERJ3GSJ562V
R0715	ERJ3GEYJ223V	CHIP RESISTOR	ERJ3GSJ223V
R0717	ERJ3GEYJ471V	CHIP RESISTOR	ERJ3GSJ471V
R0719	ERJ3GEYJ472V	CHIP RESISTOR	ERJ3GSJ472V
R0723	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
R0724	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
R0725	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R0726	ERJ3GEYJ683V	CHIP RESISTOR	
R0727	ERJ3GEY0R00V	CHIP RESISTOR	ERJ3GS0R00V
R0728	ERJ3GEY0R00V	CHIP RESISTOR	*2 ERJ3GS0R00V
R0729	ERJ3GEYJ103V	CHIP RESISTOR	*1,*2,*4 ERJ3GSJ103V
R0730	ERJ6GEYJ103V	CHIP RESISTOR	*1,*4
R0731	ERJ3GEYJ101V	CHIP RESISTOR	*3,,*5 ERJ3GSJ101V
R0732	ERJ3GEYJ472V	CHIP RESISTOR	*3,*5 ERJ3GSJ472V
R0733	ERJ3GEYJ221V	CHIP RESISTOR	ERJ3GSJ221V
R0734	ERJ3GEYJ392V	CHIP RESISTOR	
R0737	ERJ3GEYJ331V	CHIP RESISTOR	*1,*3,*4,*5
R0737	ERJ3GEYJ102V	CHIP RESISTOR	*2 ERJ3GSJ102V

R0738	ERJ3GEYJ103V	CHIP RESISTOR	*3,*5 ERJ3GSJ103V
R0739	ERJ3GEYJ472V	CHIP RESISTOR	ERJ3GSJ472V
R0740	ERJ3GEYG471V	CHIP RESISTOR	*1,*2,*4
R0740	ERJ3GEYG271V	CHIP RESISTOR	*3,*5
R0741	ERJ3GEYJ221V	CHIP RESISTOR	ERJ3GSJ221V
R0742	ERJ8GEYJ151V	CHIP RESISTOR	
R0745	ERJ6GEYJ335V	CHIP RESISTOR	
R0746	ERJ6GEYJ564V	CHIP RESISTOR	
R1001	ERJ6GEYJ333V	CHIP RESISTOR	
R1003	ERJ6GEYJ273V	CHIP RESISTOR	
R1005	ERJ6GEYJ562V	CHIP RESISTOR	
R1006	ERJ6GEYJ562V	CHIP RESISTOR	
R1008	ERDS2TJ471T	CARBON RESISTOR	
R1009	ERDS2TJ471T	CARBON RESISTOR	
R1013	ERDS2TJ103T	CARBON RESISTOR	
R1014	ERJ6GEYJ472V	CHIP RESISTOR	
R1015	ERDS2TJ103T	CARBON RESISTOR	
R1016	ERJ6GEYJ103V	CHIP RESISTOR	
R1017	ERJ6GEYJ103V	CHIP RESISTOR	
R1022	ERDS2TJ151T	CARBON RESISTOR	
R1024	ERJ6GEYJ562V	CHIP RESISTOR	
R1025	ERDS2TJ151T	CARBON RESISTOR	
R1026	ERJ6GEYJ682V	CHIP RESISTOR	
R1027	ERDS2TJ332T	CARBON RESISTOR	
R1028	ERDS2TJ332T	CARBON RESISTOR	
R1150	ERDS2TJ105T	CARBON RESISTOR	
R1153	ERG2SJ331E	METAL OXIDE RESISTOR	
R1154	ERDS2TJ105T	CARBON RESISTOR	
R1155	ERDS2TJ104T	CARBON RESISTOR	
R1156	ERDS2TJ330T	CARBON RESISTOR	
R1157	EROS2THF1501	METAL OXIDE RESISTOR	
R1158	ERDS2TJ331T	CARBON RESISTOR	
R1159	ERDS2TJ3R3T	CARBON RESISTOR	
R1160	ERX1SJR51E	METAL RESISTOR	
R1161	ERDS2TJ101T	CARBON RESISTOR	
R1162	ERDS2FJ102T	CARBON RESISTOR	
R1163	ERDS2FJ101T	CARBON RESISTOR	

R1200	ERJ6GEYG393V	CHIP RESISTOR	
R1202	ERJ6GEYG222V	CHIP RESISTOR	
R1203	ERJ6GEYG153V	CHIP RESISTOR	
R1204	ERJ6GEYJ123V	CHIP RESISTOR	
R1205	ERJ6GEYJ222V	CHIP RESISTOR	
R1206	ERJ6GEYJ271V	CHIP RESISTOR	
R1207	ERJ6GEYG333V	CHIP RESISTOR	
R1208	ERJ6GEYG822V	CHIP RESISTOR	
R1209	ERJ6GEYG273V	CHIP RESISTOR	
R1501	ERDS2TJ121T	CARBON RESISTOR	
R1502	ERDS2TJ181T	CARBON RESISTOR	
R1503	ERJ6GEYJ273V	CHIP RESISTOR	
R1504	ERJ6GEYJ273V	CHIP RESISTOR	
R1505	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R1506	ERJ6GEYJ103V	CHIP RESISTOR	
R2501	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R2502	ERJ6GEYJ222V	CHIP RESISTOR	
R2503	ERJ6GEYJ103V	CHIP RESISTOR	
R2504	ERJ6GEYJ103V	CHIP RESISTOR	
R2505	ERJ6GEYJ392V	CHIP RESISTOR	
R2506	ERJ6GEYJ105V	CHIP RESISTOR	
R2507	ERJ6GEYJ274V	CHIP RESISTOR	
R2508	ERJ6GEYG433V	CHIP RESISTOR	
R2509	ERDS2TJ331T	CARBON RESISTOR	
R2510	ERDS2TJ330T	CARBON RESISTOR	
R2511	ERDS2TJ330T	CARBON RESISTOR	
R2512	ERJ6GEYJ102V	CHIP RESISTOR	
R2515	ERDS2TJ330T	CARBON RESISTOR	
R2516	ERJ6GEYJ1R5V	CHIP RESISTOR	
R2517	ERJ6GEYJ1R2V	CHIP RESISTOR	
R3001	ERJ6GEYJ152V	CHIP RESISTOR	
R3002	ERJ6GEYJ622V	CHIP RESISTOR	
R3004	ERJ6GEYJ562V	CHIP RESISTOR	
R3005	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R3006	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R3009	ERJ6GEYJ153V	CHIP RESISTOR	
R3010	ERJ6GEYJ103V	CHIP RESISTOR	

R3011	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R3012	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R3013	ERJ6GEYJ273V	CHIP RESISTOR	
R3014	ERJ6GEYJ471V	CHIP RESISTOR	
R3017	ERJ6GEYJ102V	CHIP RESISTOR	
R3027	ERJ6GEYJ332V	CHIP RESISTOR	
R3028	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R3030	ERJ6GEYJ106V	CHIP RESISTOR	
R3033	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R3037	ERJ6GEYJ122V	CHIP RESISTOR	
R3038	ERJ6GEYJ221V	CHIP RESISTOR	
R4001	ERJ6GEYJ332V	CHIP RESISTOR	
R4002	ERJ6GEYJ104V	CHIP RESISTOR	
R4003	ERJ6GEYJ223V	CHIP RESISTOR	
R4004	ERJ6GEYJ221V	CHIP RESISTOR	
R4006	ERJ6GEYJ223V	CHIP RESISTOR	
R4007	ERJ6GEYJ103V	CHIP RESISTOR	
R4008	ERJ6GEYJ334V	CHIP RESISTOR	
R4009	ERJ6GEYJ333V	CHIP RESISTOR	
R4010	ERJ6GEYJ621V	CHIP RESISTOR	
R4011	ERJ6GEYJ243V	CHIP RESISTOR	
R4012	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R4013	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R4014	ERJ6GEYJ163V	CHIP RESISTOR	
R4015	ERJ6GEYJ472V	CHIP RESISTOR	
R4016	ERJ6GEYJ222V	CHIP RESISTOR	
R4017	ERJ6GEYJ332V	CHIP RESISTOR	
R4018	ERJ6GEYJ472V	CHIP RESISTOR	
R4019	ERJ6GEYJ682V	CHIP RESISTOR	
R4020	ERJ6GEYJ472V	CHIP RESISTOR	
R4908	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R4909	ERJ6GEYJ750V	CHIP RESISTOR	
R4911	ERJ6GEYJ750V	CHIP RESISTOR	
R4912	ERJ6GEYJ103V	CHIP RESISTOR	
R4913	ERJ6GEYJ103V	CHIP RESISTOR	
R4918	ERJ6GEYJ153V	CHIP RESISTOR	
R4929	ERDS2TJ681T	CARBON RESISTOR	

R4935	ERJ6GEYJ471V	CHIP RESISTOR	
R6001	ERJ6GEYJ472V	CHIP RESISTOR	
R6002	ERJ6GEYJ102V	CHIP RESISTOR	
R6003	ERJ6GEYJ391V	CHIP RESISTOR	
R6004	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R6005	ERJ6GEYJ224V	CHIP RESISTOR	
R6006	ERJ6GEYJ152V	CHIP RESISTOR	*5
R6007	ERJ6GEYJ473V	CHIP RESISTOR	*1,*2,*3,*4
R6009	ERJ6GEYJ223V	CHIP RESISTOR	
R6011	ERJ6GEYJ221V	CHIP RESISTOR	
R6012	ERJ6GEYJ221V	CHIP RESISTOR	
R6013	ERJ6GEYJ221V	CHIP RESISTOR	
R6017	ERJ6GEYJ102V	CHIP RESISTOR	
R6019	ERJ6GEYJ103V	CHIP RESISTOR	
R6020	ERJ6GEYJ393V	CHIP RESISTOR	
R6021	ERJ6GEYJ273V	CHIP RESISTOR	
R6022	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R6023	ERJ6GEYJ273V	CHIP RESISTOR	
R6025	ERJ6GEYJ433V	CHIP RESISTOR	
R6026	ERJ6GEYJ393V	CHIP RESISTOR	
R6031	ERJ6GEYJ682V	CHIP RESISTOR	
R6035	ERJ6GEYJ681V	CHIP RESISTOR	
R6036	ERJ6GEYJ681V	CHIP RESISTOR	
R6039	ERJ6GEYJ102V	CHIP RESISTOR	
R6040	ERJ6GEYJ102V	CHIP RESISTOR	
R6041	ERJ6GEYJ102V	CHIP RESISTOR	
R6046	ERJ6GEYJ472V	CHIP RESISTOR	
R6047	ERJ6GEYJ472V	CHIP RESISTOR	
R6048	ERJ6GEYJ472V	CHIP RESISTOR	
R6049	ERJ6GEYJ221V	CHIP RESISTOR	
R6051	ERJ6GEYJ564V	CHIP RESISTOR	*1,*2,*3
R6052	ERJ6GEYJ221V	CHIP RESISTOR	*1,*2,*3
R6053	ERJ6GEYJ682V	CHIP RESISTOR	*1,*2,*3
R6054	ERJ6GEYJ125V	CHIP RESISTOR	*1,*2,*3
R6055	ERJ6GEYJ682V	CHIP RESISTOR	*1,*2,*3
R6056	ERJ6GEYJ125V	CHIP RESISTOR	*1,*2,*3
R6057	ERJ6GEYJ104V	CHIP RESISTOR	*1,*2,*3

R6058	ERJ6GEYJ222V	CHIP RESISTOR	*1,*2,*3
R6059	ERJ6GEYJ222V	CHIP RESISTOR	*1,*2,*3
R6060	ERJ6GEYJ102V	CHIP RESISTOR	*1,*2,*3
R6061	ERJ6GEYJ102V	CHIP RESISTOR	*1,*2,*3
R6071	ERJ6GEYJ183V	CHIP RESISTOR	
R6072	ERJ6GEYJ223V	CHIP RESISTOR	
R6073	ERJ6GEYJ474V	CHIP RESISTOR	
R6074	ERDS2TJ471T	CARBON RESISTOR	
R6075	ERJ6GEYJ223V	CHIP RESISTOR	
R6076	ERJ6GEYJ153V	CHIP RESISTOR	
R6077	ERJ6GEYJ105V	CHIP RESISTOR	
R6078	ERJ6GEYJ471V	CHIP RESISTOR	
R6084	ERJ6GEYJ332V	CHIP RESISTOR	
R7501	ERJ6GEYJ822V	CHIP RESISTOR	
R7502	ERJ6GEYJ562V	CHIP RESISTOR	
R7503	ERJ6GEYJ432V	CHIP RESISTOR	
R7504	ERJ6GEYJ822V	CHIP RESISTOR	
R7505	ERJ6GEYJ562V	CHIP RESISTOR	
R7506	ERJ6GEYJ432V	CHIP RESISTOR	
R7507	ERDS2TJ330T	CARBON RESISTOR	
R7509	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R7510	ERDS2TJ821T	CARBON RESISTOR	
R7511	ERDS2TJ821T	CARBON RESISTOR	
R7512	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
R7513	ERJ6GEYJ303V	CHIP RESISTOR	
R7514	ERJ6GEYJ303V	CHIP RESISTOR	
R7515	ERJ6GEYJ303V	CHIP RESISTOR	
R7516	ERJ6GEYJ303V	CHIP RESISTOR	
R7517	ERJ6GEYJ103V	CHIP RESISTOR	
R7518	ERJ6GEYJ103V	CHIP RESISTOR	
R7519	ERJ6GEYJ432V	CHIP RESISTOR	
R7520	ERJ6GEYJ123V	CHIP RESISTOR	
R7521	ERJ6GEYJ223V	CHIP RESISTOR	
R7522	ERJ6GEYJ822V	CHIP RESISTOR	
R7534	ERJ6GEYJ181V	CHIP RESISTOR	
R7535	ERJ6GEYJ103V	CHIP RESISTOR	
R7536	ERJ6GEYJ562V	CHIP RESISTOR	

R7537	ERJ6GEYJ123V	CHIP RESISTOR	
R7538	ERJ6GEYJ123V	CHIP RESISTOR	
R7603	J0JBC0000041	BEAD CORE	VLP0147-T
R7605	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R7606	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R7607	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R7608	ERJ6GEYJ101Z	CHIP RESISTOR	ERJ6GEYJ101V
R7610	ERJ6GEYJ683V	CHIP RESISTOR	
R7611	ERDS2TJ331T	CARBON RESISTOR	
R7612	ERDS2TJ331T	CARBON RESISTOR	
R7613	ERJ6GEYJ151V	CHIP RESISTOR	
R7614	ERJ6GEYJ151V	CHIP RESISTOR	
S1501	EVQWJCA01	MODE SELECT SWITCH	
S7501	EVQ11L07B	SWITCH	
S7502	EVQ11L07B	SWITCH	
S7503	EVQ11L07B	SWITCH	
S7504	EVQ11L07B	SWITCH	
S7505	EVQ11L07B	SWITCH	
S7506	EVQ11L07B	SWITCH	
S7507	K0C111A00006	SAFETY TAB SWITCH	
S7508	EVQ11L07B	SWITCH	
S7510	EVQ11L07B	SWITCH	
S7511	EVQ11L07B	SWITCH	
S7512	EVQ11404M	SWITCH	
S7513	EVQ11L07B	SWITCH	
S7514	EVQ11404M	SWITCH	
S7515	EVQ11L07B	SWITCH	
S7516	EVQ11L07B	SWITCH	
S7517	EVQ11L07B	SWITCH	
T0701	EQV5EC082P	TRANSFORMER	*1,*4
T0701	EQV5EC083P	TRANSFORMER	*2
T0701	EQV5EC081P	TRANSFORMER	*3,*5
T1150	ETS29AZ286AC	TRANSFORMER	⚠
T4001	EQQ7QF024P	HIGH FREQUENCY COIL	EQQ7QF024Q

TU7601	ENG47327G1	TUNER	⚠ *1,*4
TU7601	ENG47328G1	TUNER	⚠ *2
TU7601	ENG47329G1	TUNER	⚠ *3,*5
VR0701	EVNCYAA03B14	VARIABLE RESISTOR	
W501	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W502	ERJ8GEY0R00V	CHIP RESISTOR	
W503	ERJ8GEY0R00V	CHIP RESISTOR	
W504	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W506	ERJ8GEY0R00V	CHIP RESISTOR	
W507	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W508	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W509	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W510	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W511	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W512	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W513	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W514	ERJ8GEY0R00V	CHIP RESISTOR	
W515	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W516	ERJ8GEY0R00V	CHIP RESISTOR	
W517	ERJ8GEY0R00V	CHIP RESISTOR	
W701	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W702	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W703	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W704	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W705	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W706	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W707	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W708	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W709	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W710	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W711	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W712	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W713	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W714	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W715	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V

W717	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W718	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W719	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W720	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W721	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W722	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W723	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W724	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W725	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W726	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W727	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W728	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W729	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W730	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W731	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W732	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W733	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W734	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W735	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
W736	ERJ6GEY0R00Z	CHIP RESISTOR	ERJ6GEY0R00V
X0701	J0B4045A0002	CRISTAL OSCILLATOR	*1,*4
X0701	J0B4155A0003	CRISTAL OSCILLATOR	*2
X0701	J0B3955A0001	CRISTAL OSCILLATOR	*3,*5
X0702	J0B4055A0001	CRISTAL OSCILLATOR	*3,*5
X0704	VLF1493	FILTER	*1,*4
X0704	VLF1495	FILTER	*2
X0704	VLF1497	FILTER	*3,*5
X3001	H0D443400039	CRISTAL OSZILLATOR	
X6001	H0A120500002	CRYSTAL OCSILLATOR	
X6002	VSX1022	QUARZ	
		MISCELLANEOUS	
	EYF52BC	FUSE HOLDER	
	EYF52BC	FUSE HOLDER	
	VSC4998	SHIELD CASE	
	VMP4471	ANGLE	

	----------	CYLINDER STATOR C.B.A.	
		MISCELLANEOUS	
	VJS3537F009G	CONNECTOR (FEMALE) 9P	K1MN09B00039
	HW-300A-DF	HALL IC	B4AAB0000007

TOP PREVIOUS NEXT

12 SCHEMATIC DIAGRAM FOR PRINTING WITH A4 SIZE

TOP PREVIOUS

TOP PREVIOUS

For your safety please read the following text carefully

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstance should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

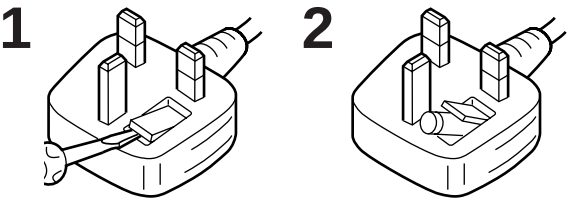
How to replace the Fuse

- There are two types of the AC Mains Lead assembly: **A** and **B** as shown below.

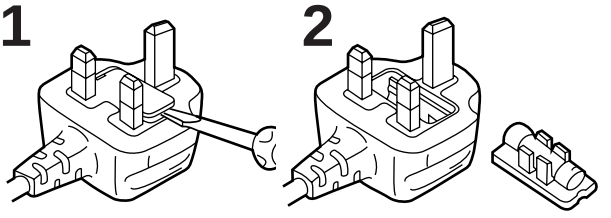
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

TYPE A



TYPE B



443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ
BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (–)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (–)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [–]	CONTROL HEAD (–)
CTL [+]	CONTROL HEAD (+)
CTL [–]	CONTROL HEAD (–)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL

CYL GND	CYLINDER GND
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
D. FM REC [L]	DELAIED FM RECORDING Ⓛ
D. GND	DIGITAL GND
D. REC [H]	DELAYED RECORDING Ⓗ
D4/S. LED	D4/STILL LED
D4/STILLED	D4/STILL LED
DAC [CLK]	TUNER DAC (CLOCK)
DAC/FSCS	TUNER DAC/FS CHIP SELECT
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ
DATA	DATA
DECODER [L]	DECODER (L)
DECODER [R]	DECODER (R)
DEW	DEW
DEW SNS	DEW SENSOR
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ
E. REC 5V	EXCEPT RECORDING 5V
EC	ERROR TORQUE CONTROL
ECR	ERROR TORQUE CONTROL REFERENCE VOLTAGE
EDT TRIG [L]	EDIT TRIGGER Ⓛ
EDIT [H]	EDIT Ⓗ
EE [H]	EE Ⓗ
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ
EE. VV. TR	EE/VV/TRICK PLAY
EJECT. PO	EJECT POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK
ENV. SEL	ENVELOPE SELECT
ENVE. OUT	ENVELOPE OUTPUT
ENVE. SEL	ENVELOPE SELECT
ENV SELECT	ENVELOPE SELECT
EP [H]	LP Ⓗ
EP/LP [H]	LP Ⓗ
EP/LP/SP	LP/SP
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ
EPROMCS	EPROM CHIP SELECT
EX. REC 5V	EXCEPT RECORDING 5V
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ
FG1 IN	FG1 PULSE INPUT
FG2 IN	FG2 PULSE INPUT
FILTER ADJUSTMENT	FILTER ADJUSTMENT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ
FM MUT [H]	FM AUDIO MUTE Ⓗ
FM MUTE [H]	FM AUDIO MUTE Ⓗ
FM OUT [L]	FM OUTPUT (L)
FM OUT [R]	FM OUTPUT (R)
FM PACK OUT [L]	FM PACK OUTPUT (L)
FM PACK OUT [R]	FM PACK OUTPUT (R)
FM/BS SEL [L]	FM/BS SELECT (L)
FM/BS SEL [R]	FM/BS SELECT (R)
FS. CLK	FS CLOCK
FUL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E [H]	FULL ERASE HEAD ON Ⓗ

FULL. E. 12V	FULL ERASE 12V
GND [A]	GND (ANALOG)
GND [TU]	GND (TUNER)
GND/N. SW. 12V	GND/NON SW 12V
H. SYNC	HORIZONTAL SYNC
H. AMP. SW	HEAD AMP SW PULSE
H. P <R>	HEAD PHONE (R)
H. P <L>	HEAD PHONE (L)
H. P GND	HEAD PHONE GND
H. P OUT [L]	HEAD PHONE OUTPUT (L)
H. P OUT [R]	HEAD PHONE OUTPUT (R)
H. SW	HEAD SW PULSE
HEAD PHONE [L]	HEAD PHONE (L)
HEAD PHONE [R]	HEAD PHONE (R)
HEAD SW	HEAD SW
HEATER [+]	HEATER (+)
HEATER [–]	HEATER (–)
HSS	HORIZONTAL SYNC SIGNAL
HTR [+]	HEATER (+)
HTR [–]	HEATER (–)
I RFE	REFERENCE CURRENT
ICL	CONTROL AGC CIRCUIT
IF	INTERMEDIATE FREQUENCY
IN SELA1	INPUT SELECT A1 POSITION
IN SELA2	INPUT SELECT A2 POSITION
IN SELA3	INPUT SELECT A3 POSITION
INS L/R [L]	INSERT Lch/Rch Ⓛ
INS. [H]	INSERT Ⓗ
INSEL A1	INPUT SELECT A1 POSITION
INSEL A2	INPUT SELECT A2 POSITION
INSERT	INSERT
INSERT [H]	INSERT Ⓗ
IO CS	INPUT/OUTPUT CHIP SELECT
JOG1	JOG1
JOG S3 LED/FOWRD	JOG LED/FORWARD LED
JOG/F. LED	JOG LED/FORWARD LED
JSB [H]	JSB Ⓗ
JST. CLCK	JUST CLOCK
JST. CLK	JUST CLOCK
JST. CLOCK	JUST CLOCK
L. OUT	Lch OUTPUT
L. CH [H]	Lch Ⓗ
L. CH [L]	Lch Ⓛ
LED (MAIN)	LED (MAIN)
LED (STEREO)	LED (STEREO)
LED (SUB)	LED (SUB)
LED CKL	LED SERIAL CLOCK
LED CKS	LED SERIAL CLOCK
LED DATA	LED SERIAL DATA
LINE IN 1 [L]	LINE INPUT 1 (L)
LINE IN 1 [R]	LINE INPUT 1 (R)
LINE IN 2 [L]	LINE INPUT 2 (L)
LINE IN 2 [R]	LINE INPUT 2 (R)
LINE IN V	LINE INPUT VIDEO
LINE IN [L]	LINE INPUT (L)

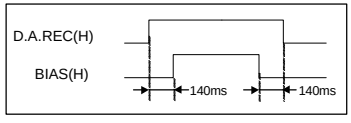
LINE IN [R]	LINE INPUT (R)
LINE OUT [L]	LINE OUTPUT (L)
LINE OUT [R]	LINE OUTPUT (R)
LP [H]	LP Ⓗ
LPTRI [L]	LP TRICK PLAY Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING
M GND	MOTOR GND
M REG	MOTOR REGULATOR
MAIN OUT	MAIN OUTPUT
MAIN [L]	MAIN Ⓛ
MAIN/MONO	MAIN/MONAURAL
MAX IN	MAXIMAM INPUT
MES [H]	MESECAM Ⓗ
MESE [H]	MESECAM Ⓗ
MESE [L]	MESECAM Ⓛ
METER 5V	LEVEL METER 5V
METER [L]	LEVEL METER (L)
METER [R]	LEVEL METER (R)
METER. L/AVS	LEVEL METER (L)
METER. R/AVC	LEVEL METER (R)
MI/BI [L]	MIX Ⓗ/BILIGUAL
MIC GND	MIC GND
MIC IN	MIC INPUT
MIC IN [L]	MIC INPUT (L)
MIC IN [R]	MIC INPUT (R)
MIC [H]	MIC Ⓗ
MIX [H]	MIX Ⓗ
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ
MODE SEL	AUDIO MODE SELECT
MODE SW	AUDIO MODE SW
MODE. S. IN	AUDIO MODE SELECT INPUT
MODE. S. OUT	AUDIO MODE SELECT OUTPUT
MONO [H]	MONAURAL Ⓗ
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ
MONO2 [L]	MONAURAL 2
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)
MOTOR GND	MOTOR GND
MUTE	MUTE
N. A. REC [L]	NORMAL AUDIO RECORDING
N. SW 12V	NON SW 12V
N. SW. 5. DET	NON SW 5V DETECT
NICAM	NICAM
NICAM [L]	NICAM Ⓛ
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ
NORMAL [H]	NORMAL Ⓗ
NR BIAS	NR BIAS
NTSC [L]	NTSC Ⓛ
OCH	CONTROL AGC CIRCUIT
OUT	OUTPUT

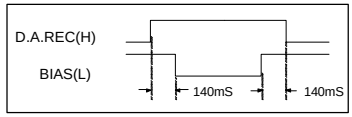
P-OFF [H]	POWER OFF Ⓗ
P-OFF [L]	POWER OFF Ⓛ
P. FAIL	POWER FAILURE DETECT
P. OFF [H]	POWER OFF Ⓗ
P. OFF [L]	POWER OFF Ⓛ
PAL [H]	PAL Ⓗ
PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
PB ADJ OUT	PLAYBACK ADJUST OUTPUT
PB OUT	PLAYBACK OUTPUT
PB. H	PLAYBACK Ⓗ
PFG	PG/FG
PHOTSN +B	PHOTO SENSOR +B
PICT. CNT	PICTURE CONTROL
PLAY LED/RVS LED	PLAY LED/REVERSE LED
PLAY. PO	PLAY POSITION
PLAY/R. LED	PLAY LED/REVERSE LED
PLY/DEW	PLAY/DEW Ⓗ
POWER OFF [L]	POWER OFF Ⓛ
PREROLL [H]	PREROLL Ⓗ
PWRFAIL	POWER FAILURE DETECT
R. CH [H]	Rch Ⓗ
R. CH [L]	Rch Ⓛ
R. ST	RESET
R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
RCH [H]	Rch Ⓗ
REC 12V	RECORDING 12V
REC CHROMA	RECORDING CHROMINANCE SIGNAL
REC H	RECORDING Ⓗ
REC IN	RECORDING INPUT
REC OUT [L]	RECORDING OUTPUT Ⓛ
REC START	RECORDING START
REC VR [C]	RECORDING VOLUME (COMMON)
REC VR [L]	RECORDING VOLUME (L)
REC VR [R]	RECORDING VOLUME (R)
REC Y	RECORDING LUMINANCE SIGNAL
REC [H]	RECORDING Ⓗ
REC. C	RECORDING CHROMINANCE SIGNAL
REC. Y	RECORDING LUMINANCE SIGNAL
REC/EE CTL	RECORDING/EE CONTROL
REEL-T	REEL PULSE (TAKE-UP)
REEL-S	REEL PULSE (SUPPLY)
REGULATOR FILTER	REGULATOR FILTER
RESET	RESET
REV M F/R	REVIEW MOTOR FORWARD/REVERSE
REV M V1	REVIEW MOTOR V1
REV M V2	REVIEW MOTOR V2
REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
REV MOTOR V1	REVIEW MOTOR V1
REV MOTOR V2	REVIEW MOTOR V2
REV MOTOR [+]	REVIEW MOTOR (+)
REV MOTOR [–]	REVIEW MOTOR (+)
REV. M. GND	REVIEW MOTOR GND
RF. CHROMA	RF CHROMINANCE SIGNAL

RF OUT	RF OUTPUT
RF Y	RF LUMINANCE SIGNAL
RF. Y. IN	RF LUMINANCE SIGNAL INPUT
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT
ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [–]	SOLENOID (–)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	REFERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

Pin No.	Signal Name	I/O	Describe	P-OFF	P-SAVE	P-FAIL	Reset
1	A.DEF(H)	O	Output signal for audio defea and decoder IC reset.	Low	Low	Low	Low
2	CKILLER DET(L)	I	Detection of COLOR KILLER active.	In	In	In	In
3	AFC S	I	S curve input from tuner.	In	In	In	In
4	SLP(H)	O	Output signal depens on tape speed. (During N10H or P9H: High) (Except N10H and P9H: Low)	Low	Low	Low	Low
5	CPB	I	PB input from AV2. *3.21v ~ :High *1.23v ~ 3.21v :Middle * ~ 1.23v : Low	In	In	In	In
6	N/S/T2	I	Normal/Service/Test2/Test3 select. * 4.0v ~ :NORMAL mode * 2.5v ~ 4.0v :SERVICE mode * 1.0v ~ 2.5v :TEST2 mode * 0v ~ 1.0v :No define (spare)	In	In	In	In
7	S-PHOTO	I	Photo sensor input from supply side. (more than 2.6V: black / less than 2.4V: white)	In	In	In	In
8	T-PHOTO	I	Photo sensor input from take up side. (more than 2.6V: black / less than 2.4V: white)	In	In	In	In
9	TRACKING_ENVE	I	Video envelope input for auto tracking and CVC.	In	In	In	In
10	AV1_8IN	I	PB input from IC3001. * 3.21v ~ : High * 1.23v ~ 3.21v: Middle * ~ 1.23v: Low	In	In	In	In
11	CURRENT_LIMIT	O	Current limit for capstan driver.	Low	Low	Low	Low
12	F ADJUST	O	Analogue voltage output for HEAD frequency response adjustment.	Low	Low	Low	Low
13	ART.V/H/N	O	Artificial V synchronization signal.	Low	Low	Low	Low
14	IR	I	Interrupt input from IR sensor.	In	In	In	In
15	AVPB-H(L)	O	Output signal for AV2-PB "H". (2 Scart Model) Output signal for AV1-PB "H". (1 Scart Model) * H/M/L is output to 21pin-(8) when both terminals are set as follows.	High	High	Low	High
16	AVPB-M(H)	O		Low	Low	Low	Low
17	EEP_WR	O	Write enable for EEPROM. *H:READ only L:Write	High	High	Low	High
18	VIDEO.H.SW	O	Output signal for video HEAD switch.	Low	Low	Low	Low
19	A.H.SW	O	Output signal for FM audio HEAD switch.	Low	Low	Low	Low
20	PROG ON(H)	O	I/O control to switch IIC bus for LW-programmer. H:IIC bus is connected to AV2. L:IIC bus is not connected to AV2.	Low	Low	Low	Low
21	B/W(H)	O	Output signal for B/W mode.	Low	Low	Low	Low
22	NC	O	Non connect. (Low Fix)	Low	Low	Low	Low
23	ABS_NORM(H)	I	Input signal for FM audio enverope level detection. (Also serves that the Automatic Adjustment is completed)	In	In	In	In
24	V EE(L)	O	Output signal for switch between EE and VV.	Low	Low	Low	Low
25	D.FM.REC(H)	O	Control signal for FM audio recording current)	Low	Low	Low	Low
26	D.A.REC(H)	O	Control signal for normal audio recording current.	Low	Low	Low	Low
27	BIAS(H)	O	Control signal for FM audio recording current.	Low	Low	Low	Low
28	FM.MUTE(H)	O	Output signal for audio mute control.	High	High	Low	High
29	PAL-I/BG/DK(SYS4)	O	Output terminal for broad cast system to control the video circuit.	Not fix	Low	Low	Low
30	S-VHS DET(H)	I	Detection between SVHS and VHS.	In	In	In	In

	Setting	
Pin 8	AVPB-H(L)	AVPBM-(H)
High	L	Hi-z
Middle	H	Hi-z
Low	H	L



Pin No.	Signal Name	I/O	Describe	P-OFF	P-SAVE	P-FAIL	Reset
31	POS.SW3	I	Input terminal for mechanism position. 	In	In	In	In
32	POS.SW2	I		In	In	In	In
33	POS.SW1	I		In	In	In	In
34	RESET(L)	I	MICOM reset input terminal.	In	In	In	In
35	32KHz IN	I	Sub oscillator input.	---	---	---	---
36	32KHz OUT	O	Sub oscillator output.	---	---	---	---
37	+5V(D)	-	Power.	---	---	---	---
38	12MHz.IN	I	Main oscillator input.	---	---	---	---
39	12MHz.OUT	O	Main oscillator output.	---	---	---	---
40	GND(D)	-		---	---	---	---
41	POWER OFF(L)	O	Control signal for power circuit. *Low is existed when turning off the power supply for concerned circuit. *High is existed while power is supplied to mechanism and/or concerned circuit, although it seems to be power off.	Low	Low	Low	Low
42	FIP ON(L)	O	Control signal for FIP on/off. P-OFF in power save mode: "H" is output. Other than above: "L" is output. (Output switching timing of FIP"L" is same with the switching timing of POWER OFF "L".)	Low	High	Low	Low
43	12M.START(H)	I	Starting clock select terminal at releasing RESET.	---	---	---	---
44	LC.OSC IN	I	OSC terminal for OSD dot clock.	---	---	---	---
45	LC.OSC OUT	O	OSC terminal for OSD dot clock.	---	---	---	---
46	GND	I	GND	---	---	---	---
47	4FC.LPF	I	NC	---	---	---	---
48	OSD.FSC IN	I	NC	---	---	---	---
49	GND(OSD)	-	GND	---	---	---	---
50	CVIN	I	Composite video signal input terminal.	---	---	---	---
51	LECHA	I	Composite video signal white level input terminal.	---	---	---	---
52	CVOUT	O	CG video output teminal.	---	---	---	---
53	5V(OSD)	-		---	---	---	---
54	HLF	I	LPF connection terminal for SLICER (Used for OSD dot clock.)	---	---	---	---
55	AMUTE(H)	O	Audio mute signal only for RF convertor.	High	High	Low	High
56	CVIN(EDS)	I	Composite video signal input terminal for SLICER.	In	In	In	In
57	GND	I		---	---	---	---
58	SECAM/PAL(SYS2)	O	Output terminal for the unit recognition result of broad cast system.	Low	Low	Low	Low
59	SECAM.V.IN	I	Chroma input terminal for SECAM SUPERIMPOSE.	---	---	---	---
60	OSD PULSE	O	Abstraction signal for BOX from the video signal at SUPERIMPOSE.	Low	Low	Low	Low
61	SLEEP(L)	O	Power circuit control signal for super power save mode. *P-OFF in power save mode: "L" is output. Other than above: "H" is output. *Output switching timing of FIP "L" is same with the switching timing of POWER OFF "L".)	High	Low	Low	High
62	UNLOADING(H)	O	Control signal for Loading motor forward. *High is existed when the loading motor rotates reverse direction and/or breaking.	Low	Low	Low	Low
63	LOADING(H)	O	Control signal for Loading motor reverse. *High is existed when the loading motor rotates forward direction and/or breaking.	Low	Low	Low	Low
64	FLD CS	O	FLD chip select terminal.	Not fix	Not fix	Low	Low
65	MESECAM DET(H)	I	Detection between MESECAM and NORMAL in playback mode.	In	In	In	In
66	LP(H)	O	Output signal depens on tape speed in both EE and VV modes. * During N4H,N6H,P6H or P9H: High. * Other than above speed: Low.	Low	Low	Low	Low
67	NC	O	Non connect. * Low fixed.	Low	Low	Low	Low
68	FLD DATA OUT	O	Serial data output signal for FIP driver.	Not fix	Not fix	Low	Low
69	FLD DATA IN	I	Serial data input signal for FIP driver.	Not fix	Not fix	In	In
70	FLD CLK	O	Serial clock signal for FIP driver.	Not fix	Not fix	Low	Low
71	IIC CLK	O	IIC clock for all IIC devices	Not fix	Not fix	Low	Low
72	IIC DATA	O	IIC data for all IIC devices	Not fix	Not fix	Low	Low
73	125Hz	O	125Hz output for adjustment of clock accuracy . (Output in only TEST MODE 2.)	Low	Low	Low	Low
74	CAP.R/F	O	Control signal for capstan motor diriction.	Low	Low	Low	Low

Pin No.	Signal Name	I/O	Describe	P-OFF	P-SAVE	P-FAIL	Reset
75	HALF_WAVE(H)	O	Control signal for switching capstan motor mode FAST and SLOW.	In	In	In	In
76	CAP.ET	O	Torque control signal for capstan motor.	0V	0V	Low	0V
77	CYL.ET	O	Torque control signal for cylinder motor.	4.213V	4.213V	Low	4.213V
78	P FAIL	I	Interrupt input signal for power fail detection.	In	In	In	In
79	S.REEL.PULSE	I	Input signal from supply reel sensor.	In	In	In	In
80	T.REEL.PULSE	I	Input signal from take up reel sensor.	In	In	In	In
81	S TAB(L)	I	Input signal from Safety-tab SW. * Safety-tab exists: Low, * Safety-tab does not exist: High)	In	In	In	In
82	POWER_KEY	I	Input terminal for signal from power button on the Front Panel. * Switch between ON and off, when down edge is detected.	In	In	In	In
83	CNR OFF(H)	O	CNR control for IC3001.	Low	Low	Low	Low
84	SECAM_ID(L)	I	Detection of SECAM mode.	In	In	In	In
85	DAVN	I	DAVN signal from Slicer	In	In	In	In
86	FG.AMP.OUT	I	Output from internal FG Amplifier	---	---	---	---
87	FG.AMP.IN	I	Input for internal FG Amplifier	---	---	---	---
88	GND(A)	-		---	---	---	---
89	AV3_S_IN(L)	I	Detection of conposite or conponent for AV3 VIDEO INPUT.	In	In	In	In
90	PFG	I	FPG input terminal.	---	---	---	---
91	OREF	O	Output from internal reference voltage (2.5V)	---	---	---	---
92	IREF	I	Input for internal reference voltage	---	---	---	---
93	SCAS_IN(L)	I	Detection between VHS tape or S-VHS tape.	In	In	In	In
94	CTL.HEAD(-)	I/O	Input signal from CTL HEAD(+)	---	---	---	---
95	CTL.HEAD(+)	I/O	Input signal from CTL HEAD(-)	---	---	---	---
96	CTL.AMP.REF	I	Input for internal CTL amplifier reference voltage	---	---	---	---
97	PB.CTL.OUT	O	Output from internal CLT amplifier	---	---	---	---
98	+5V(A)	-		---	---	---	---
99	+5V(AD)	-		---	---	---	---
100	EX.FF/REW(L)	O	Control terminal for the filter of the PB-CTL signal during FF/REW.	Low	Low	Low	Low

INPUT CONDITION								OUTPUT RESULT							
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 OUT	AV1 S(H)	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT
OFF	---	---	---	---	---	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
EXT LINK 1/2 Standby	---	---	---	L	NO.TU	L/M/H	---	MUTE	L	MUTE	*1[L(0)]	L	OFF(1)	TUN(000)	TUN
					C+.TU	L/M/H	---	MUTE	L	MUTE	*1[L(0)]	L	OFF(1)	TUN(000)	TUN
					AV1	L/M/H	---	MUTE	L	MUTE	*1[L(0)]	L	OFF(1)	AV1(100)	AV1
					AV2	L/M/H	---	MUTE	L	MUTE	*1[L(0)]	L	OFF(1)	AV2(010)	AV2
					AV3	L/M/H	---	MUTE	L	MUTE	*1[L(0)]	L	OFF(1)	AV3(110)	AV3
				H	no chance		---	---	---	---	---	---	---	---	---
VPS STAND BY	EXT	---	---	L	NO.TU	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
					C+.TU	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
					AV1	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV1(100)	AV1
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV1(100)	AV1
					AV2	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
					AV3	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV3(110)	AV3
				H	NO.TU	L	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	H	OFF(1)	TUN(000)	TUN
							S-VIDEO		H						
						M/H	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO		H						
					C+.TU	L	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	H	OFF(1)	TUN(000)	TUN
							S-VIDEO		H						
						M/H	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO		H						
					AV1	L	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	H	OFF(1)	AV1(100)	AV1
							S-VIDEO		H						
						M/H	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO		H						
					AV2	L	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	H	OFF(1)	AV2(010)	AV2
							S-VIDEO		H						
						M/H	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO		H						
					AV3	L	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	H	OFF(1)	AV3(110)	AV3
							S-VIDEO		H						
						M/H	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO		H						
	DECODER	---	---	L	NO.TU	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
					C+.TU	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
					AV1	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV1(100)	AV1
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
					AV2	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
					AV3	L	---	AV2 IN(0)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
						M/H	---	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV3(110)	AV3
				H	NO.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					AV1	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV2	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						

INPUT CONDITION								OUTPUT RESULT							
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 OUT	AV1 S(H)	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT
P.ON	EXT	TV	EE	L	NO.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	L(0)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	L(0)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
	or				AV1	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	L(0)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
					AV2	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	L(0)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
	"DECODER				AV3	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	L(0)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
	and			H	NO.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
	EXTLINK1/2				C+.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
	Standby				AV1	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
	is ON"				AV2	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
		VTR	EE	L	NO.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					AV1	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
					AV2	L	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	H	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	VCR OUT(11)	M/H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
				H	NO.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					AV1	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
					AV2	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
			VV	L	NO.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
					C+.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
					AV1	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	AV1(100)	PB
							S-VIDEO	Y OUT(11)	H						
					AV2	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	AV2(010)	PB
							S-VIDEO	Y OUT(11)	H						
					AV3	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	AV3(110)	PB
							S-VIDEO	Y OUT(11)	H						
				H	NO.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
					C+.TU	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
					AV1	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV1(100)	PB
							S-VIDEO	Y OUT(11)	H						
					AV2	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV2(010)	PB
							S-VIDEO	Y OUT(11)	H						
					AV3	---	VIDEO	VCR OUT(1)	L	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV3(110)	PB
							S-VIDEO	Y OUT(11)	H						

INPUT CONDITION								OUTPUT RESULT							
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 OUT	AV1 S(H)	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT
P.ON	DECODER	TV	EE	L	NO.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
							S-VIDEO	AV2 IN(0)	L						
					C+.TU	L	VIDEO	VCR OUT(1)	L	TUN IN(10)	L(0)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	TUN IN(10)	L(0)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV1	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
							S-VIDEO	AV2 IN(0)	L						
					AV2	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
							S-VIDEO	AV2 IN(0)	L						
					AV3	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	AV2 IN(0)	L	AV1 IN(00)	M/H(1)	L	*4	AV3(110)	AV3
							S-VIDEO	AV2 IN(0)	L						
				H	NO.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	L	VIDEO	VCR OUT(1)	L	TUN IN(10)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	TUN IN(10)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV1	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV2	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
		VTR	EE	L	NO.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	L	VIDEO	VCR OUT(1)	L	TUN IN(10)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	TUN IN(10)	M/H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV1	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV2	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						

INPUT CONDITION								OUTPUT RESULT							
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 OUT	AV1 S(H)	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT
P.ON	DECODER	VTR	EE	H	NO.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
					C+.TU	L	VIDEO	VCR OUT(1)	L	TUN IN(10)	H(1)	L	OFF(1)	TUN(000)	TUN
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	TUN IN(10)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV1	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV1(100)	AV1
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV2	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
							S-VIDEO	Y OUT(11)	H						
					AV3	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
							S-VIDEO	Y OUT(11)	H						
			VV	---	NO.TU	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
					C+.TU	L	VIDEO	VCR OUT(1)	L	TUN IN(10)	M/H(1)	L	OFF(1)	TUN(000)	PB
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	TUN IN(10)	M/H(1)	L	OFF(1)	AV2(010)	PB
							S-VIDEO	Y OUT(11)	H						
					AV1	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV1(100)	PB
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	PB
							S-VIDEO	Y OUT(11)	H						
					AV2	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	PB
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	PB
							S-VIDEO	Y OUT(11)	H						
					AV3	L	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV3(110)	PB
							S-VIDEO	Y OUT(11)	H						
						M/H	VIDEO	VCR OUT(1)	L	AV1 IN(00)	M/H(1)	L	OFF(1)	AV3(110)	PB
							S-VIDEO	Y OUT(11)	H						

INPUT CONDITION								Audio Output Results					IC4501 settings			Mute signals	
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector	REC/ PB	Input Select	Dec Select	Mute (H)	A-Mute (H)
OFF	---	---	---	---	---	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
EXT LINK 1/2 Standby	---	---	---	L	NO.TU	L/M/H	---	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
					C+.TU	L/M/H	---	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
					AV1	L/M/H	---	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
					AV2	L/M/H	---	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
					AV3	L/M/H	---	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				H	no chance		---	---	---	---	---	---	---	---	---	---	---
VPS STAND BY	EXT	---	---	L	NO.TU	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					C+.TU	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					AV1	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					AV2	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					AV3	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				H	NO.TU	L	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
					C+.TU	L	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
					AV1	L	VIDEO	Mute	Mute	Mute	AV1IN	AV1IN	REC	EXT1	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	AV1IN	AV1IN	REC	EXT1	EXT1	H	H
							S-VIDEO										
					AV2	L	VIDEO	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
							S-VIDEO										
					AV3	L	VIDEO	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
							S-VIDEO										
	DECODER	---	---	L	NO.TU	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					C+.TU	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					AV1	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					AV2	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					AV3	L	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
						M/H	---	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				H	NO.TU	L	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
					C+.TU	L	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
							S-VIDEO										
					AV1	L	VIDEO	Mute	Mute	Mute	AV1IN	AV1IN	REC	EXT1	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
							S-VIDEO										
					AV2	L	VIDEO	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
							S-VIDEO										
					AV3	L	VIDEO	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
							S-VIDEO										
						M/H	VIDEO	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
							S-VIDEO										

INPUT CONDITION								Audio Output Results					IC4501 settings			Mute signals	
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector	REC/ PB	Input Select	Dec Select	Mute (H)	A-Mute (H)
P.ON	EXT	TV	EE	L	NO.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
					C+.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
	or				AV1	---	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	INSEL	REC	EXT1	OUTSEL	L	L
							S-VIDEO										
					AV2	---	VIDEO	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
							S-VIDEO										
	"DECODER				AV3	---	VIDEO	AV3IN	AV3IN	AV3IN	AV3IN	INSEL	REC	EXT3	OUTSEL	L	L
							S-VIDEO										
	and			H	NO.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
	EXTLINK1/2				C+.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
	Standby				AV1	---	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	INSEL	REC	EXT1	OUTSEL	L	L
							S-VIDEO										
	is ON"				AV2	---	VIDEO	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
							S-VIDEO										
					AV3	---	VIDEO	AV3IN	AV3IN	AV3IN	AV3IN	INSEL	REC	EXT3	OUTSEL	L	L
							S-VIDEO										
		VTR	EE	L	NO.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
					C+.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
					AV1	---	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	INSEL	REC	EXT1	OUTSEL	L	L
							S-VIDEO										
					AV2	L	VIDEO	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
							S-VIDEO										
					AV3	---	VIDEO	AV3IN	AV3IN	AV3IN	AV3IN	INSEL	REC	EXT3	OUTSEL	L	L
							S-VIDEO										
				H	NO.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
					C+.TU	---	VIDEO	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
							S-VIDEO										
					AV1	---	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	INSEL	REC	EXT1	OUTSEL	L	L
							S-VIDEO										
					AV2	---	VIDEO	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
							S-VIDEO										
					AV3	---	VIDEO	AV3IN	AV3IN	AV3IN	AV3IN	INSEL	REC	EXT3	OUTSEL	L	L
							S-VIDEO										
			VV	L	NO.TU	---	VIDEO	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
							S-VIDEO										
					C+.TU	---	VIDEO	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
							S-VIDEO										
					AV1	---	VIDEO	PB	PB	PB	AV1IN	INSEL	PB	EXT1	OUTSEL	L	L
							S-VIDEO										
					AV2	---	VIDEO	PB	PB	PB	AV2IN	INSEL	PB	EXT2	OUTSEL	L	L
							S-VIDEO										
					AV3	---	VIDEO	PB	PB	PB	AV3IN	INSEL	PB	EXT3	OUTSEL	L	L
							S-VIDEO										
				H	NO.TU	---	VIDEO	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
							S-VIDEO										
					C+.TU	---	VIDEO	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
							S-VIDEO										
					AV1	---	VIDEO	PB	PB	PB	AV1IN	INSEL	PB	EXT1	OUTSEL	L	L
							S-VIDEO										
					AV2	---	VIDEO	PB	PB	PB	AV2IN	INSEL	PB	EXT2	OUTSEL	L	L
							S-VIDEO										
					AV3	---	VIDEO	PB	PB	PB	AV3IN	INSEL	PB	EXT3	OUTSEL	L	L
							S-VIDEO										

INPUT CONDITION								Audio Output Results					IC4501 settings			Mute signals	
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector	REC/ PB	Input Select	Dec Select	Mute (H)	A-Mute (H)
P.ON	DECODER	TV	EE	L	NO.TU	L	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	TUN --> A2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					C+.TU	L	VIDEO	TUN	TUN	TUN	TUN	TUN	REC	TV	TVIN	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	TUN	AV2IN	AV2IN	TUN	REC	EXT2	TVIN	L	L
							S-VIDEO										
					AV1	L	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	AV1IN	REC	EXT1	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV2	L	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV3	L	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV3IN --> A2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
				H	NO.TU	L	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
					C+.TU	L	VIDEO	TUN	TUN	TUN	TUN	TUN	REC	TV	TVIN	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	TUN	AV2IN	AV2IN	TUN	REC	EXT2	TVIN	L	L
							S-VIDEO										
					AV1	L	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	AV1IN	REC	EXT1	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV2	L	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV3	L	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										
		VTR	EE	L	NO.TU	L	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
					C+.TU	L	VIDEO	TUN	TUN	TUN	TUN	TUN	REC	TV	TVIN	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	TUN	AV2IN	AV2IN	TUN	REC	EXT2	TVIN	L	L
							S-VIDEO										
					AV1	L	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	AV1IN	REC	EXT1	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV2	L	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV3	L	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										

INPUT CONDITION								Audio Output Results					IC4501 settings			Mute signals	
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector	REC/ PB	Input Select	Dec Select	Mute (H)	A-Mute (H)
P.ON	DECODER	VTR	EE	H	NO.TU	L	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	TUN	AV1IN	TUN	TUN	AV1IN	REC	TV	EXT1	L	L
							S-VIDEO										
					C+.TU	L	VIDEO	TUN	TUN	TUN	TUN	TUN	REC	TV	TVIN	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	TUN	AV2IN	AV2IN	TUN	REC	EXT2	TVIN	L	L
							S-VIDEO										
					AV1	L	VIDEO	AV1IN	AV1IN	AV1IN	AV1IN	AV1IN	REC	EXT1	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV2	L	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
							S-VIDEO										
					AV3	L	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
							S-VIDEO										
			VV	---	NO.TU	L	VIDEO	PB	AV1IN	PB	TUN	AV1IN	PB	TV	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	PB	AV1IN	PB	TUN	AV1IN	PB	TV	EXT1	L	L
							S-VIDEO										
					C+.TU	L	VIDEO	PB	TUN	PB	TUN	TUN	PB	TV	TVIN	L	L
							S-VIDEO										
						M/H	VIDEO	PB	TUN	PB	AV2IN	TUN	PB	EXT2	TVIN	L	L
							S-VIDEO										
					AV1	L	VIDEO	PB	AV1IN	PB	AV1IN	AV1IN	PB	EXT1	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	PB	AV1IN	PB	AV2IN	AV1IN	PB	EXT2	EXT1	L	L
							S-VIDEO										
					AV2	L	VIDEO	PB	AV1IN	PB	AV2IN	AV1IN	PB	EXT2	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	PB	AV1IN	PB	AV2IN	AV1IN	PB	EXT2	EXT1	L	L
							S-VIDEO										
					AV3	L	VIDEO	PB	AV1IN	PB	AV3IN	AV1IN	PB	EXT3	EXT1	L	L
							S-VIDEO										
						M/H	VIDEO	PB	AV1IN	PB	AV3IN	AV1IN	PB	EXT3	EXT1	L	L
							S-VIDEO										

Remark:

NO.TU	Tuner position, DECODER OFF (e.g. ARD)
C+TU	Tuner position, DECODER ON (e.g. PREMI)
RGW SW	OFF = HIGH
RGW SW	ON = LOW
EE	Non-Playback signal
VV	Playback signal
INSEL	Inputselect= Audio Output signal from AN3655 at Line Out
***1[L(0)]**	**In case of EXT LINK1 standby(not EXT LINK2), AV1 PB must not output 'M' or 'H'**
***2[H*] / *3[M/H]**	**AV2 PB must not output 'M' or 'H' if AV2 PB IN is 'M' or 'H'.**
***4**	**RGB SW output "ON" if AV1PB is "H" or "M". (RGB SW output "OFF" if AV1PB is "L")**

INPUT CONDITION						OUTPUT RESULT						
POWER	AV2 SELECT	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT
OFF	---	---	---	---	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
EXT LINK 1/2 Standby	---	---	L	TUN	L/M/H	MUTE	MUTE	*1[L(0)]	L	OFF(1)	TUN(000)	TUN
				AV1	L/M/H	MUTE	MUTE	*1[L(0)]	L	OFF(1)	AV1(100)	AV1
				AV2	L/M/H	MUTE	MUTE	*1[L(0)]	L	OFF(1)	AV2(010)	AV2
				AV3	L/M/H	MUTE	MUTE	*1[L(0)]	L	OFF(1)	AV3(110)	AV3
			H	no chance		---	---	---	---	---	---	---
PDC STAND BY	EXT	---	L	TUN	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
				AV1	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	AV1(100)	AV1
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	AV1(100)	AV1
				AV2	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
				AV3	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	AV3(110)	AV3
			H	TUN	L	VCR OUT(1)	VCR OUT(11)	H(1)	H	OFF(1)	TUN(000)	TUN
					M/H	VCR OUT(1)	VCR OUT(11)	H(1)	L	OFF(1)	TUN(000)	TUN
				AV1	L	VCR OUT(1)	VCR OUT(11)	H(1)	H	OFF(1)	AV1(100)	AV1
					M/H	VCR OUT(1)	VCR OUT(11)	H(1)	L	OFF(1)	AV1(100)	AV1
				AV2	L	VCR OUT(1)	VCR OUT(11)	H(1)	H	OFF(1)	AV2(010)	AV2
					M/H	VCR OUT(1)	VCR OUT(11)	H(1)	L	OFF(1)	AV2(010)	AV2
				AV3	L	VCR OUT(1)	VCR OUT(11)	H(1)	H	OFF(1)	AV3(110)	AV3
					M/H	VCR OUT(1)	VCR OUT(11)	H(1)	L	OFF(1)	AV3(110)	AV3
	DECODER	---	L	TUN	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	TUN(000)	TUN
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	TUN(000)	TUN
				AV1	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	AV1(100)	AV1
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
				AV2	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	AV2(010)	AV2
				AV3	L	AV2 IN(0)	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
					M/H	AV2 IN(0)	AV1 IN(00)	M/H(1)	L	*4	AV3(110)	AV3
			H	TUN	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	TUN(000)	TUN
				AV1	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV1(100)	AV1
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
				AV2	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
				AV3	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3

INPUT CONDITION						OUTPUT RESULT						
POWER	AV2 SELECT	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT
P.ON	EXT	EE	L	TUN	---	VCR OUT(1)	VCR OUT(11)	L(0)	L	OFF(1)	TUN(000)	TUN
				AV1	---	VCR OUT(1)	VCR OUT(11)	L(0)	L	OFF(1)	AV1(100)	AV1
	or			AV2	---	VCR OUT(1)	VCR OUT(11)	L(0)	L	OFF(1)	AV2(010)	AV2
				AV3	---	VCR OUT(1)	VCR OUT(11)	L(0)	L	OFF(1)	AV3(110)	AV3
	"DECODER		H	TUN	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	TUN
	and			AV1	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV1(100)	AV1
	EXTLINK1/2			AV2	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV2(010)	AV2
	Standby			AV3	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV3(110)	AV3
	is ON"	VV	L	TUN	---	VCR OUT(1)	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	TUN(000)	PB
				AV1	---	VCR OUT(1)	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	AV1(100)	PB
				AV2	---	VCR OUT(1)	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	AV2(010)	PB
				AV3	---	VCR OUT(1)	VCR OUT(11)	M/H(1)	*3[M/H]	OFF(1)	AV3(110)	PB
			H	NO.TU	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	PB
				C+.TU	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	TUN(000)	PB
				AV1	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV1(100)	PB
				AV2	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV2(010)	PB
				AV3	---	VCR OUT(1)	VCR OUT(11)	H(1)	*2[H]	OFF(1)	AV3(110)	PB
	DECODER	EE	L	TUN	L	VCR OUT(1)	TUN IN(10)	L(0)	L	OFF(1)	TUN(000)	TUN
					M/H	VCR OUT(1)	TUN IN(10)	L(0)	L	OFF(1)	AV2(010)	AV2
				AV1	L	VCR OUT(1)	AV1 IN(00)	L(0)	L	OFF(1)	AV1(100)	AV1
					M/H	VCR OUT(1)	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
				AV2	L	VCR OUT(1)	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
					M/H	VCR OUT(1)	AV1 IN(00)	L(0)	L	OFF(1)	AV2(010)	AV2
				AV3	L	VCR OUT(1)	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
					M/H	VCR OUT(1)	AV1 IN(00)	L(0)	L	OFF(1)	AV3(110)	AV3
			H	TUN	L	VCR OUT(1)	TUN IN(10)	H(1)	L	OFF(1)	TUN(000)	TUN
					M/H	VCR OUT(1)	TUN IN(10)	H(1)	L	OFF(1)	AV2(010)	AV2
				AV1	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV1(100)	AV1
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
				AV2	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV2(010)	AV2
				AV3	L	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
					M/H	VCR OUT(1)	AV1 IN(00)	H(1)	L	OFF(1)	AV3(110)	AV3
		VV	---	TUN	L	VCR OUT(1)	TUN IN(10)	M/H(1)	L	OFF(1)	TUN(000)	PB
					M/H	VCR OUT(1)	TUN IN(10)	M/H(1)	L	OFF(1)	AV2(010)	PB
				AV1	L	VCR OUT(1)	AV1 IN(00)	M/H(1)	L	OFF(1)	AV1(100)	PB
					M/H	VCR OUT(1)	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	PB
				AV2	L	VCR OUT(1)	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	PB
					M/H	VCR OUT(1)	AV1 IN(00)	M/H(1)	L	OFF(1)	AV2(010)	PB
				AV3	L	VCR OUT(1)	AV1 IN(00)	M/H(1)	L	OFF(1)	AV3(110)	PB
					M/H	VCR OUT(1)	AV1 IN(00)	M/H(1)	L	OFF(1)	AV3(110)	PB

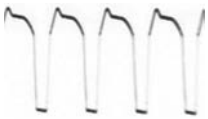
INPUT CONDITION						Audio Output Results					IC4501 settings			Mute signals	
POWER	AV2 SELECT	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector	REC/ PB	Input Select	Dec Select	Mute (H)	A-Mute (H)
OFF	---	---	---	---	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
EXT LINK 1/2 Standby	---	---	L	TUN	L/M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				AV1	L/M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				AV2	L/M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				AV3	L/M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
			H	no chance		---	---	---	---	---	---	---	---	---	---
PDC STAND BY	EXT	---	L	TUN	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				AV1	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				AV2	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				AV3	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
			H	TUN	L	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
					M/H	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
				AV1	L	Mute	Mute	Mute	AV1IN	AV1IN	REC	EXT1	EXT1	H	H
					M/H	Mute	Mute	Mute	AV1IN	AV1IN	REC	EXT1	EXT1	H	H
				AV2	L	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
					M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				AV3	L	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
					M/H	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
	DECODER	---	L	TUN	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				AV1	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				AV2	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
				AV3	L	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
					M/H	AV2IN	AV1IN	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	L	H
			H	TUN	L	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
					M/H	Mute	Mute	Mute	TUN	AV1IN	REC	TV	EXT1	H	H
				AV1	L	Mute	Mute	Mute	AV1IN	AV1IN	REC	EXT1	EXT1	H	H
					M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				AV2	L	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
					M/H	Mute	Mute	Mute	AV2IN	AV1IN	REC	EXT2	EXT1	H	H
				AV3	L	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H
					M/H	Mute	Mute	Mute	AV3IN	AV1IN	REC	EXT3	EXT1	H	H

INPUT CONDITION						Audio Output Results					IC4501 settings			Mute signals	
POWER	AV2 SELECT	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector	REC/ PB	Input Select	Dec Select	Mute (H)	A-Mute (H)
P.ON	EXT	EE	L	TUN	---	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
				AV1	---	AV1IN	AV1IN	AV1IN	AV1IN	INSEL	REC	EXT1	OUTSEL	L	L
	or			AV2	---	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
				AV3	---	AV3IN	AV3IN	AV3IN	AV3IN	INSEL	REC	EXT3	OUTSEL	L	L
	"DECODER		H	TUN	---	TUN	TUN	TUN	TUN	INSEL	REC	TV	OUTSEL	L	L
	and			AV1	---	AV1IN	AV1IN	AV1IN	AV1IN	INSEL	REC	EXT1	OUTSEL	L	L
	EXTLINK1/2			AV2	---	AV2IN	AV2IN	AV2IN	AV2IN	INSEL	REC	EXT2	OUTSEL	L	L
	Standby			AV3	---	AV3IN	AV3IN	AV3IN	AV3IN	INSEL	REC	EXT3	OUTSEL	L	L
	is ON"	VV	L	TUN	---	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
				AV1	---	PB	PB	PB	AV1IN	INSEL	PB	EXT1	OUTSEL	L	L
				AV2	---	PB	PB	PB	AV2IN	INSEL	PB	EXT2	OUTSEL	L	L
				AV3	---	PB	PB	PB	AV3IN	INSEL	PB	EXT3	OUTSEL	L	L
			H	NO.TU	---	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
				C+.TU	---	PB	PB	PB	TUN	INSEL	PB	TV	OUTSEL	L	L
				AV1	---	PB	PB	PB	AV1IN	INSEL	PB	EXT1	OUTSEL	L	L
				AV2	---	PB	PB	PB	AV2IN	INSEL	PB	EXT2	OUTSEL	L	L
				AV3	---	PB	PB	PB	AV3IN	INSEL	PB	EXT3	OUTSEL	L	L
	DECODER	EE	L	TUN	L	TUN	TUN	TUN	TUN	TUN	REC	TV	TVIN	L	L
					M/H	AV2IN	TUN	AV2IN	AV2IN	TUN	REC	EXT2	TVIN	L	L
				AV1	L	AV1IN	AV1IN	AV1IN	AV1IN	AV1IN	REC	EXT1	EXT1	L	L
					M/H	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
				AV2	L	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
					M/H	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
				AV3	L	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
					M/H	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
			H	TUN	L	TUN	TUN	TUN	TUN	TUN	REC	TV	TVIN	L	L
					M/H	AV2IN	TUN	AV2IN	AV2IN	TUN	REC	EXT2	TVIN	L	L
				AV1	L	AV1IN	AV1IN	AV1IN	AV1IN	AV1IN	REC	EXT1	EXT1	L	L
					M/H	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
				AV2	L	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
					M/H	AV2IN	AV1IN	AV2IN	AV2IN	AV1IN	REC	EXT2	EXT1	L	L
				AV3	L	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
					M/H	AV3IN	AV1IN	AV3IN	AV3IN	AV1IN	REC	EXT3	EXT1	L	L
		VV	---	TUN	L	PB	TUN --> mute	PB	TUN	TUN	PB	TV	TVIN	L	L
					M/H	PB	TUN --> mute	PB	AV2IN	TUN	PB	EXT2	TVIN	L	L
				AV1	L	PB	AV1IN	PB	AV1IN	AV1IN	PB	EXT1	EXT1	L	L
					M/H	PB	AV1IN	PB	AV2IN	AV1IN	PB	EXT2	EXT1	L	L
				AV2	L	PB	AV1IN	PB	AV2IN	AV1IN	PB	EXT2	EXT1	L	L
					M/H	PB	AV1IN	PB	AV2IN	AV1IN	PB	EXT2	EXT1	L	L
				AV3	L	PB	AV1IN	PB	AV3IN	AV1IN	PB	EXT3	EXT1	L	L
					M/H	PB	AV1IN	PB	AV3IN	AV1IN	PB	EXT3	EXT1	L	L

***1[L(0)]** **In case of EXT LINK1 standby(not EXT LINK2), AV1 PB must not output 'M' or 'H'**
***2[H*] / *3[M/H]** **AV2 PB must not output 'M' or 'H' if AV2 PB IN is 'M' or 'H'.**
***4** **RGB SW output "ON" if AV1PB is "H" or "M". (RGB SW output "OFF" if AV1PB is "L")**

T1150-3 STOP
1.6Vp-p (5msec.div.)

T1150-5 STOP
330Vp-p (5usec.div.)

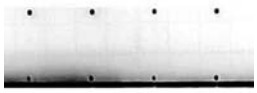


T1150-6 STOP
340Vp-p (5usec.div.)

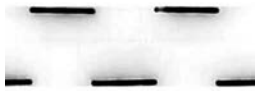
T1150-7 STOP
18Vp-p (10usec.div.)

Q1150-G STOP
15Vp-p (5usec.div.)

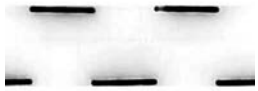
Q1200-1,2 STOP
0.5Vp-p (5usec.div.)



IC6001-13 PAUSE
5.0Vp-p (10msec.div.)



IC6001-18 REC
5.0Vp-p (10msec.div.)



IC6001-19 REC
5.0Vp-p (10msec.div.)

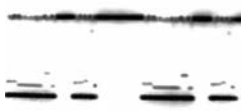
IC6001-48 REC
5.0Vp-p (10msec.div.)

IC6001-52 REC
2.1Vp-p (20µsec.div.)

IC6001-68,69 REC
5.0Vp-p (10msec.div.)

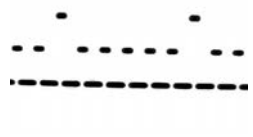
IC6001-70 REC
5.0Vp-p (10msec.div.)

IC6001-71 REC
5.0Vp-p (10msec.div.)

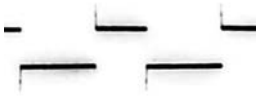


IC6001-72 REC
5.0Vp-p (10msec.div.)

IC6001-79,80 FF/REW
5.0Vp-p (1msec.div.)



IC6001-90 REC
5.0Vp-p (10msec.div.)



IC6001-94,95 REC
6.0Vp-p (10msec.div.)

IC6001-97 PLAY
0.6Vp-p (10msec.div.)

IC2501-1,2,16 REC
9.5Vp-p (5msec.div.)

IC3001-2 REC
0.4Vp-p (5msec.div.)

IC3001-6 REC/PLAY
1.8Vp-p (0.5msec.div.)

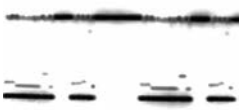
IC3001-19 REC
1.0Vp-p (20µsec.div.)

IC3001-26 REC
0.6Vp-p (20µsec.div.)

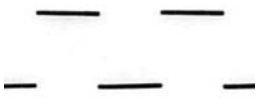
IC3001-29 REC/PLAY
2.2Vp-p (20µsec.div.)

IC3001-45,46 PLAY
0.5Vp-p (20µsec.div.)

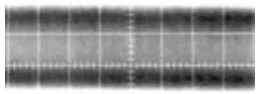
IC3001-73 REC/PLAY
5.0Vp-p (5msec.div.)



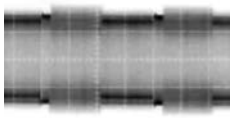
IC3001-74 REC/PLAY
5.0Vp-p (5msec.div.)



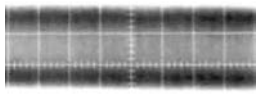
IC3001-80 REC/PLAY
0.6Vp-p (10msec.div.)



IC3001-85 PLAY
150mVp-p (20µsec.div.)

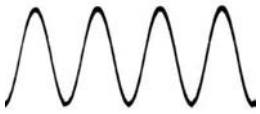


IC3001-86 REC
1.8Vp-p (5msec.div.)



IC3001-87 PLAY
150mVp-p (20µsec.div.)

IC3001-96 PLAY
5.0Vp-p (5msec.div.)



IC3001-98 REC
2.4Vp-p (1msec.div.)

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

Ref. No.	IC1501								IC1502											
MODE	1	2	3	4					1	2	3	4								
STOP	1.2	2.3	0.1	0.0					0.0	1.2	5.0	0.0								
PLAY	1.2	2.3	4.3	0.0					0.0	1.2	5.0	0.0								
REC	1.2	2.3	4.3	0.0					0.0	1.2	5.0	0.0								
F.F	1.2	2.3	1.2	0.0					0.0	1.2	2.3	0.0								
REW	1.2	2.3	2.2	0.0					0.0	1.2	2.3	0.0								

Ref. No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	15.4	15.4	15.6	1.0	5.1	1.1	1.2	0.5	2.4	1.4	-0.1	3.9	3.9	3.9	0.0	15.4				
PLAY	15.0	15.0	15.2	1.0	5.1	1.1	1.2	0.5	2.5	1.4	0.0	3.9	3.9	3.9	0.0	15.0				
REC	15.1	15.0	15.3	1.0	5.1	1.1	1.2	0.5	2.4	1.4	-0.1	3.9	3.9	3.9	0.0	15.0				
F.F	14.7	14.6	14.9	1.1	5.1	1.1	1.2	0.5	2.5	1.4	0.0	3.9	3.9	3.9	0.0	15.0				
REW	14.6	14.6	14.9	1.1	5.1	1.1	1.2	0.5	2.5	1.4	0.0	3.9	3.9	3.9	0.0	14.8				

Ref. No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.8	4.2	4.8	0.0	0.0	5.1	5.0	5.0	3.3	0.0	0.0	1.4	0.0	5.2	4.8	0.0	4.8	2.4	0.0	0.0
PLAY	4.8	4.2	4.8	0.0	0.0	5.0	5.0	4.5	1.4	4.5	4.8	1.4	0.0	5.2	0.0	0.0	4.9	2.4	2.4	0.0
REC	4.8	4.2	4.8	0.0	0.0	5.0	5.0	4.5	3.3	0.0	4.7	1.4	0.0	5.2	4.8	0.0	4.8	2.4	0.0	0.0
F.F	4.8	4.2	4.8	0.0	0.0	5.1	4.9	4.5	3.4	0.0	5.0	1.4	0.0	5.2	4.8	0.0	4.8	2.4	0.0	0.0
REW	4.8	4.2	4.8	0.0	0.0	5.1	4.9	4.5	3.4	0.0	5.0	1.4	0.0	5.2	4.8	0.0	4.8	2.4	0.0	0.0

Ref. No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.8	0.0	0.0	4.9	1.4	1.5	4.9	2.1	2.0	0.0
PLAY	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	4.3	4.9	0.0	0.0	4.9	1.4	1.5	4.9	2.1	2.0	0.0
REC	0.0	0.0	0.0	0.0	4.8	4.8	4.8	0.0	0.0	0.0	4.8	0.0	0.0	4.9	1.4	1.5	4.9	2.1	2.0	0.0
F.F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	0.0	4.9	1.4	1.5	4.9	2.1	2.0	0.0
REW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	0.0	4.9	1.4	1.6	4.9	2.1	2.0	0.0

Ref. No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	4.8	0.0	4.8	0.0	0.0	0.0	1.7	2.1	0.0	1.6	2.5	1.6	5.0	2.1	0.0	1.9	0.0	4.8	0.0	0.0
PLAY	4.8	0.0	4.9	0.0	0.0	0.0	1.7	2.1	0.0	1.6	2.5	1.6	5.0	2.1	0.0	1.9	0.0	4.8	0.0	0.0
REC	4.8	0.0	4.8	0.0	0.0	0.0	1.7	2.1	0.0	1.6	2.5	1.6	5.0	2.1	0.0	1.9	0.0	4.8	0.0	0.0
F.F	4.8	0.0	4.8	0.0	0.0	0.0	1.7	2.1	0.0	1.6	2.5	1.6	5.0	2.1	0.0	1.9	0.0	4.8	0.0	0.1
REW	4.8	0.0	4.9	0.0	0.0	0.0	1.7	2.1	0.0	1.6	2.5	1.6	5.0	2.1	0.0	1.9	0.0	4.8	0.0	0.1

Ref. No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	4.8	0.0	0.0	2.4	0.0	0.0	0.0	4.7	4.7	4.8	2.9	2.8	0.0	0.0	0.0	0.0	2.4	5.2	0.1	5.0
PLAY	4.8	0.0	0.0	2.4	0.0	0.0	0.0	4.7	4.7	4.8	2.9	2.8	0.0	0.0	0.4	2.5	2.4	5.2	5.0	4.1
REC	4.8	0.0	0.0	2.4	0.0	0.0	0.0	4.7	4.7	4.8	2.9	2.8	0.0	0.0	0.4	2.5	2.4	5.2	5.0	4.3
F.F	4.8	0.0	0.0	2.4	0.0	0.0	0.0	4.6	4.6	4.8	2.9	2.8	0.0	0.0	0.4	4.8	2.5	5.2	2.4	2.2
REW	4.8	0.0	0.0	2.4	0.0	0.0	0.0	4.6	4.6	4.8	2.9	2.8	0.0	4.8	4.5	2.6	2.5	5.2	2.2	2.4

Ref. No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0.0	4.9	0.0	0.0	5.0	2.5	2.5	-0.1	5.0	1.0	2.5	2.5	5.0	2.4	2.4	2.5	2.5	5.1	5.1	0.0
PLAY	0.0	4.9	0.0	0.0	5.0	2.5	2.5	-0.1	5.0	1.1	2.5	2.5	5.0	2.4	2.4	2.5	2.5	5.1	5.1	0.0
REC	0.0	4.9	0.0	0.0	5.0	2.5	2.5	-0.1	5.0	1.0	2.5	2.5	5.0	2.2	2.4	2.7	2.5	5.0	5.0	0.0
F.F	0.0	4.9	0.0	0.0	5.0	2.5	2.5	-0.1	5.0	1.1	2.5	2.5	5.0	2.4	2.4	2.5	2.6	0.0	5.1	1.8
REW	0.0	4.9	0.0	0.0	5.0	2.5	2.5	-0.1	5.0	1.1	2.5	2.5	5.0	2.5	2.5	2.5	2.6	5.1	5.1	1.7

Ref. No.	IC6002																			
MODE	1	2	3	4	5	6	7	8												
STOP	0.0	0.0	0.0	0.0	2.8	2.9	4.9	5.0												
PLAY	0.0	0.0	0.0	0.0	2.8	2.9	4.9	5.1												
REC	0.0	0.0	0.0	0.0	2.8	2.9	4.8	5.0												
F.F	0.0	0.0	0.0	0.0	2.8	2.9	4.8	5.1												
REW	0.0	0.0	0.0	0.0	2.8	2.9	4.8	5.1												

Ref. No.	IC6003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.0	0.0	-	2.9	2.8	0.0	0.4	-	5.0	0.0	0.0	2.5	-	2.6	2.5	1.5	1.3	-	5.0	5.0
PLAY	0.0	0.0	-	2.9	2.8	0.0	0.4	-	5.0	5.0	0.0	2.6	-	2.6	2.6	1.5	1.3	-	5.0	5.0
REC	0.0	0.0	-	2.9	2.8	0.0	0.4	-	5.0	0.0	0.0	2.5	-	2.5	2.5	1.5	1.3	-	5.0	5.0
F.F	0.0	0.0	-	2.9	2.8	0.0	0.4	-	5.0	0.0	0.0	2.5	-	2.6	2.5	1.5	1.3	-	5.0	5.0
REW	0.0	0.0	-	2.9	2.8	0.0	0.4	-	5.0	0.0	0.0	2.5	-	2.6	2.5	1.5	1.3	-	5.0	5.0

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

Ref. No.	Q1501			Q1502			Q6004			Q6008			Q6009		
MODE	(–)	(+)		(–)	(+)		E	C	B	E	C	B	E	C	B
STOP	-0.1	4.5		0.0	5.0		1.4	0.0	0.8	-0.1	12.4	0.0	1.6	5.0	2.3
PLAY	-0.1	4.6		0.0	5.0		1.2	0.0	0.8	11.8	12.4	12.3	1.6	5.0	2.3
REC	-0.1	4.6		0.0	5.0		1.4	0.0	0.8	-0.1	12.4	0.0	1.6	5.0	0.0
F.F	-0.1	4.6		0.0	5.0		1.4	0.0	0.8	-0.1	12.4	0.0	1.6	5.0	2.3
REW	-0.1	4.7		0.0	4.9		1.4	0.0	0.8	-0.1	12.4	0.0	1.6	5.0	2.3

Ref. No.	QR6001			QR6002			QR6004		
MODE	E	C	B	E	C	B	E	C	B
STOP	0.0	0.0	4.8	0.0	2.4	2.5	-0.1	0.0	4.8
PLAY	0.0	12.3	0.0	0.0	2.4	2.5	-0.1	0.0	4.8
REC	0.0	0.0	4.8	0.0	2.4	2.5	-0.1	0.0	4.8
F.F	0.0	0.0	4.8	0.0	2.4	2.5	-0.1	0.0	4.8
REW	0.0	0.0	4.8	0.0	2.4	2.5	-0.1	0.0	4.8

IC0201 (CAPSTAN MOTOR DRIVE)

CAPSTAN MOTOR

TL0201

MOTOR DRIVE

DIFFERENTIAL AMPRIFIER

TORQUE CONTROL

TL AMP

HALF WAVE TL AMP

EC AMP

POSITION SIGNAL PROCESS

TORQUE DIRECTION

CONTROL LOGIC

H1

H2

H3

LOADING MOTOR

P1501 1

P1501 2

P2501 P0201 9

P2501 P0201 8

INPUT		OUTPUT		MODE
PIN 15	PIN 16	PIN 19	PIN 21	
H	L	H	L	FORWARD
L	H	L	H	REWIND
H	H	L	L	BRAKE
L	L	OPEN	OPEN	STOP

CAPSTAN FG HEAD

CAP FG5V

P0201 P2501 4

TW2015

CAPSTAN FG IN

CAPSTAN FG OUT

TW6002

125Hz

S1501 MODE SW

POSITION SW2

POSITION SW3

POSITION SW1

PS 12V

Q6008

QR6001

FROM INPUT/ OUTPUT

AV1 PB (H)

AV1 PB (H)

AVPB (H)

AVPB (M)

TW2002

PB CTL OUT

EX.FF/REW (L)

CYL PFG

CYLINDER STATOR UNIT

P2901

6,7	VM	P2502-3,4	MAIN COIL 2
1	M2	P2502-9	
9	M1	P2502-1	MAIN COIL 1
3	M3	P2502-7	MAIN COIL 3
5	GND	P2502-5	
8	HE-	P2502-2	
4	HE+	P2502-6	
2	VH+	P2502-8	

HALL IC

IC2501 (CYLINDER MOTOR DRIVE)

COM

MOTOR DRIVE

PG/FG

DIFFERENTIAL AMPLIFIER

SCHMIT

TORQUE CONTROL

REG 5V

REG 5V

CYLINDER ERROR TORQUE

TAKE-UP PHOTO

SUPPLY PHOTO

SAFETY TAB (L)

REG 5V

IC1502 (S-REEL SENSOR)

IC1501 (T-REEL SENSOR)

REG 5V

TL6012

TL6013

T-REEL PULSE

S-REEL PULSE

Q1501 TAKE UP PHOTO SENSOR

D1501 SENSOR LED

Q1502 SUPPLY PHOTO SENSOR

S7507 SAFETY TAB SW

CTL HEAD

P4002 5

P4002 6

CTL HEAD(-)

CTL HEAD(+)

IC6001 (SYSTEM CONTROL/SERVO IC)

TL2503

TL2502

P0201 P2501 1

P0201 P2501 2

P0201 P2501 3

P0201 P2501 4

P0201 P2501 12

P0201 P2501 11

UNREG 14.5V

CURRENT LIMIT

CAPSTAN ERROR TORQUE

CAPSTAN REVERSE/ FORWARD

HALF WAVE (H)

LOADING (H)

UNLOADING (H)

CAPSTAN FG IN

CAPSTAN FG OUT

125Hz

POSITION SW2

POSITION SW3

POSITION SW1

AV1 PB (H)

AVPB (H)

AVPB (M)

PB CTL OUT

EX.FF/REW (L)

CYL PFG

TAKE-UP PHOTO

SUPPLY PHOTO

SAFETY TAB (L)

T-REEL PULSE

S-REEL PULSE

CTL HEAD(-)

CTL HEAD(+)

P.FAIL (L)

IC7501 RESET N.SW 5V

IC7502 IR RECEIVER N.SW 5V

IR

IC7503 RESET

RESET (L)

C7507

BACK UP 5V

12M START (H)

N.SW 5V

FIP ON (L)

QR1003

12MHz IN

12MHz OUT

X6001

32KHz IN

32KHz OUT

X6002

IIC CLOCK

IIC DATA

FLD CS

S.CLOCK

S.DATA OUT

S.DATA IN

POWER KEY

N.SW 5V

IC6002 (EEPROM)

SCL

SDA

IIC CLOCK

IIC DATA

TO/FROM LUMI.& CHRO, INPUT/OUTPUT, TUNER

DP7501

TIMER DISPLAY

F+

F-

Q1001 BUFFER

FROM POWER

HEATER(+)

HEATER(-)

UNREG -29V

QR1002

IC7501

SEG1

SEG18

GRID1

GRID7

VEE

CS

SERIAL CLOCK

SERIAL DATA

POWER S7506

TIMER CHECK S7517

INTELLIGENT TIMER S7510

PROG PLAY S7516

EJECT S7505

EXT LINK S7508

N.SW 5V

AN2

FF S7514

T.REC S7513

STOP S7515

REC S7501

CH DOWN S7502

N.SW 5V

AN1

REW S7512

PLAY S7511

QUICK ERASE S7503

CH UP S7504

N.SW 5V

AN0

NV-MV20EG/EB/EBL,MV15EG/EP

SYSTEM CONTROL & SERVO BLOCK DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

IC3001 (AUDIO/VIDEO SIGNAL PROCESSOR)

JK4902 AV1(TV)
VIDEO OUT 19
VIDEO IN 20
TW3002
TW3004
Q4907
AMP
TO TUNER
RFC VIDEO OUT
FROM TV DEMODULATOR
TUNER VIDEO

15 ATT -6dB
ATT -4dB
17 ATT -10dB
19 ATT -10dB
21 ATT -10dB
23
VIDEO AGC
SVHS
SVHS
ATP
HPF
2MHz LPF
P
R
ACC
EXT
INT
(FIXED TO INT IN THES MODELS BY PIN53)
CLEAR SYNC
FEED BACK CLAMP
VIDEO ALC

26 GCL
Y-LPF
SECAM DELAY +SSEQ
SVHS+L SECAM
SVHS+L SECAM
NON-LINEAR DE-EMPHASIS
33
SQPB
SQPB
SQPB EQ

R(SVHS)
R(SVHS)
DO/REC
DO
35 GCL
37 GCL
38 LPF
40
49 Y-CCD DELAY
51
36
Y-NOISE REDUCTION
HP-NC TRAP-NC
PHASE COMPARATOR
DEH
NON-LINEAR EMPHASIS
ET LPF

L3002, C3005
PEAKING FILTER
12
MAIN DE-EMPHASIS
9
8
MAIN EMPHASIS CARRIER OFFSET W.C/D.C
REC FBC+ALC PB AGC+APL
fo/DEVIATION ADJUSTMENT
FM MODULATION
REC FILTER
SUB LPF
DEMO
DLIM
G-EQ

X3001
71
69
X'TAL VCO OSCILLATOR
65
2FSC
53
C CLOCK DRIVER
TO C CCD
SQPB
SQPB
SQPB DL
P-EQ
FM AGC
629MHz TRAP
R
P
INT
EXT
EXTERNAL PB LUMINANCE SIGNAL INPUT LINE (NOT USED IN THESE MODELS)

TO SYSTEM CONTROL
S-VHS DET H
20
S-VHS DET

APC SW
PB APC
KILLER
REC APC
ACC SW
ACC DET
CHROMA ACC DET

SQUELCH
NTSC/PAL CONVERTER
COLOUR KILLER
EXT
INT
6dB AMP
C-SQUELCH
V-AMP
29
Q6009
BUFFER
IC6001
OSD SIGNAL PROCESS
50
52
59
71 IIC CLOCK
72 IIC DATA

MAIN CONV 2
MAIN CONV 1
C LPF2
VCA
57
C CCD
55
CCD LPF
46
45
PILOT ADD
BPF
B.D
PILOT ERASE
4.43PAL→MPAL CONV DELAY
C LPF1

(E)
Q6003
BUFFER
L6002, C6006
BPF

(A/B/C)
Q6004
AMP

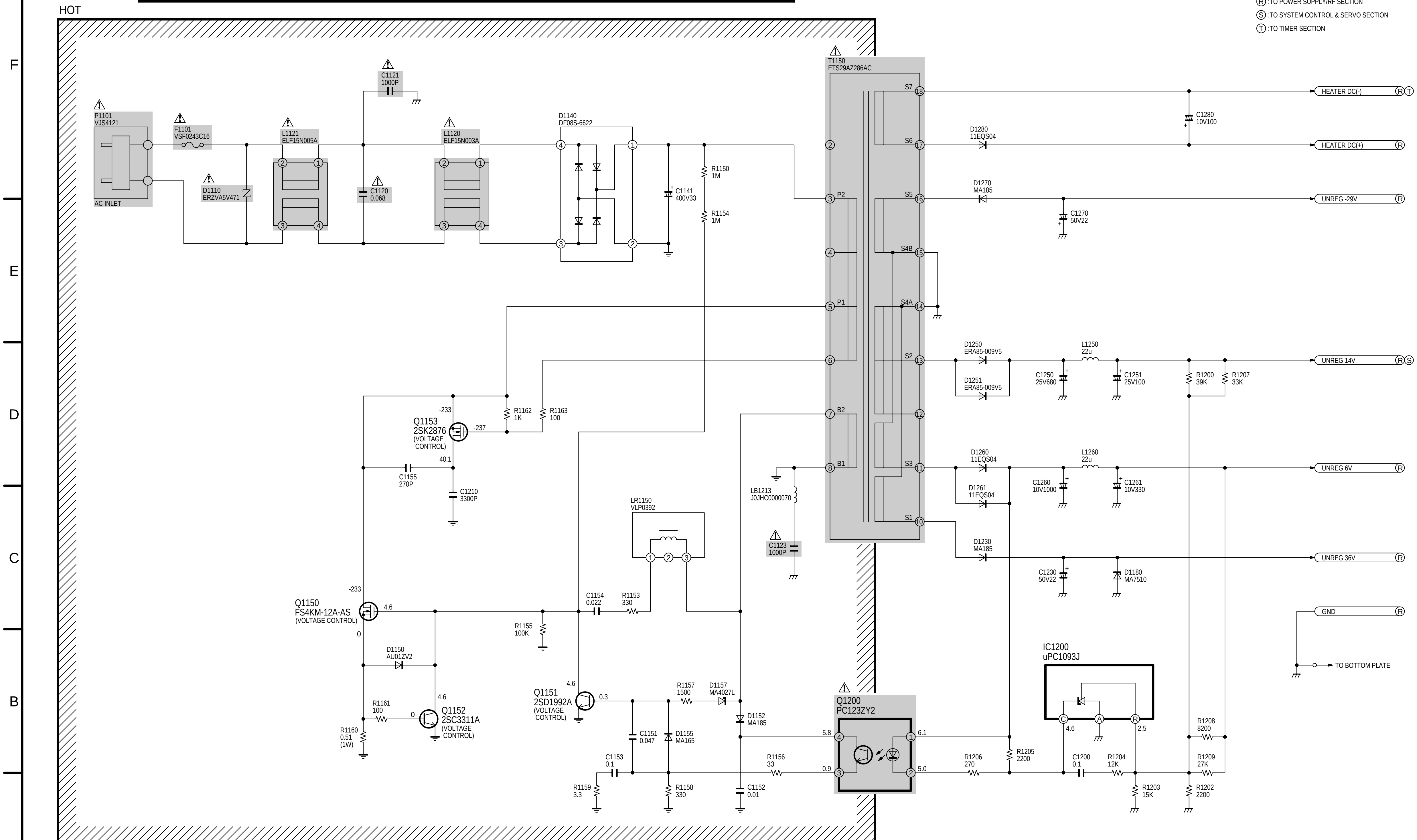
IC6003
(OSD u-COM SLICER)
DATA 74
CLOCK 73
5 SDA
4 SCL
VCBS 17

CHROMA ACC
C-ACC:ON
THROUGH
L SECAM
L SECAM
B.E
MIX LEVEL ADJUST
fh HPF CTL TRAP
REC TRAP/ Hi-Fi TRAP
C-DELAY
P
R
NO FREC TRAP
FREC TRAP
L SECAM
L SECAM
LPF

REC MUTE
VCA
SP2
SP2
CH2
CH1
SP1
SP1
85
86
87
SP L
SP COM
SP R
P5001 3
P5001 2
P5001 1
TO/FROM DD CYLINDER VIDEO HEAD

NV-MV20EG/EB/EBL,MV15EG/EP
LUMINANCE & CHROMINANCE BLOCK DIAGRAM

CAUTION — THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.



HOT
Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓣ :TO TIMER SECTION
P1101 VJS4121
AC INLET
F1101 VSF0243C16
D1110 ERZVA5V471
L1121 ELF15N005A
C1121 1000P
C1120 0.068
L1120 ELF15N003A
D1140 DF08S-6622
C1141 400V33
R1150 1M
R1154 1M
T1150 ETS29AZ286AC
P2
P1
B2
B1
S7
S6
S5
S4B
S4A
S2
S3
S1
D1280 11EQS04
D1270 MA185
C1270 50V22
C1280 10V100
HEATER DC(-)
HEATER DC(+)
UNREG -29V
D1250 ERA85-009V5
D1251 ERA85-009V5
L1250 22u
C1250 25V680
C1251 25V100
R1200 39K
R1207 33K
UNREG 14V
D1260 11EQS04
D1261 11EQS04
L1260 22u
C1260 10V1000
C1261 10V330
UNREG 6V
D1230 MA185
C1230 50V22
D1180 MA7510
UNREG 36V
GND
TO BOTTOM PLATE
R1162 1K
R1163 100
Q1153 2SK2876 (VOLTAGE CONTROL)
C1155 270P
C1210 3300P
LB1213 J0JHC0000070
C1123 1000P
LR1150 VLP0392
Q1150 FS4KM-12A-AS (VOLTAGE CONTROL)
C1154 0.022
R1153 330
R1155 100K
D1150 AU01ZV2
R1161 100
Q1152 2SC3311A (VOLTAGE CONTROL)
R1160 0.51 (1W)
Q1151 2SD1992A (VOLTAGE CONTROL)
R1157 1500
D1157 MA4027L
D1152 MA185
C1151 0.047
D1155 MA165
C1153 0.1
R1159 3.3
R1158 330
R1156 33
C1152 0.01
Q1200 PC123ZY2
IC1200 uPC1093J
R1206 270
R1205 2200
C1200 0.1
R1204 12K
R1203 15K
R1208 8200
R1209 27K
R1202 2200

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

NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE.....
SECONDARY SIDE...
NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-MV20EG/EB/EBL, MV15EG/EP POWER TRANSFORMER SECTION SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9 10

Ⓟ :TO POWER TRANSFORMER SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDEIO SECTION
Ⓘ :TO INPUT/OUTPUT SECTION
Ⓣ :TO TIMER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

Q1013
2SD601A
(FIP ON/OFF CONTROL)

Q1003
2SB710A
(POWER SAVE CONTROL)

QR1003
UN2112
(FIP Ⓛ:ON)

QR1004
UN2111
(POWER ON/OFF CONTROL)

QR1005
UN2211
(POWER ON:ON)

Q1001
2SD602A
(BUFFER)

Q1005
2SC1959Y
(12V REG.)

Q1009
2SC1959Y
(5V REG.)

Q1008
2SC1959Y
(5V REG.)

Q1007
2SC1959Y
(5V REG.)

Q1002
2SC1959Y
(5V REG.)

Q1006
2SC1959Y
(5V REG.)

Q7601
2SD601A
(MUTE)

TUNER UNIT
TU7601
ENG47327G1:A/D
ENG47328G1:B
ENG47329G1:C/E

1 N.SW 5V
2 AUDIO OUT
3 DATA
4 PS 5V
5 CLOCK
6 VIDEO OUT
7
8 AGC
9 BT
10
11 CLOCK
12 DATA
13
14 REG 5V
15 SW1
16 BTL 30V
17 IF OUT
18 IF IN

DU7601

19	SW1	PK0701-1
20	SW2	PK0701-2
21	TUNER AUDIO	PK0701-3
22	———	PK0701-4
23	AFC S-CURVE	PK0701-5
24	TUNER VIDEO	PK0701-6
25	REG 5V	PK0701-7
26	———	PK0701-8
27	GND	PK0701-9

TO TV DEMODULATOR PACK PK0701(D-1)

P UNREG -29V
S FIP Ⓛ
T FIP -29V
S SLEEP Ⓗ
P UNREG 36V
P UNREG 14V
P UNREG 6V
P HEATER DC(+)
P HEATER DC(-)
P GND
S V GND
I T GND
S V T GND(SYS)
S T GND(FIP)
S GND(CTL)
S GND(FG)
S GND(MOTOR)
V GND(A)
V GND(V)
V GND(HA)
V GND(NA)
I GND(AV)
T HEATER(+)
S POWER OFF Ⓛ
S REG 5V
V VIDEO 5V
S I PS 12V
S V PS 5V
V BIAS 5V
S T N.SW 5V

V AUDIO OUT ⟨A1⟩
I RFC VIDEO OUT ⟨A2⟩
S SYS IIC CLOCK ⟨A3⟩
S SYS IIC DATA ⟨A4⟩
S SW2 ⟨A5⟩
S AFC S-CURVE ⟨A7⟩
V TUNER VIDEO ⟨A8⟩
V TUNER AUDIO ⟨A9⟩
S AUDIO DEF Ⓗ ⟨A10⟩

⟨A1⟩ R7603 J0JBC0000041 ⟨A1⟩
⟨A2⟩ L7603 27u ⟨A2⟩
R7606 100
R7605 100
⟨A3⟩ R7608 100 C7609 33P C7611 33P C7612 0.1 ⟨A3⟩
⟨A4⟩ R7607 100 C7610 33P ⟨A4⟩
⟨A5⟩ (C/E) C7619 0.1 K7611 J0JBC0000041 ⟨A5⟩
⟨A7⟩ C7617 0.01 (A/B/D) ⟨A7⟩
⟨A8⟩ R7614 150 R7613 150 ⟨A8⟩
⟨A10⟩ ⟨A9⟩

L7601 27u C7603 6V100 C7605 0.01
L7602 27u C7604 6V100
L7605 2.2u C7614 6V100 C7615 0.01 R7612 330 R7611 330
L7606 0
C7607 50V1 D7601 MA4300M

C1026 0.1 R1003 27K R1026 6800 R1027 3300 R1028 3300
R1001 33K R1014 4700 R1016 10K C1025 0.1
R1024 5600
R1006 5600 R1005 5600
C1008 0.1 C1004 25V47 D1003 MA4130NL R1013 10K R1015 10K
C1019 0.1 C1018 0.1 C1016 16V100 D1011 MA4051NM D1012 MA165 R1022 150 R1025 150
R7610 68K
R1008 470 C1003 0.1 C1002 25V47 D1002 MA4056NH
C1009 0.1 C1011 25V47 D1005 MA4056NH R1009 470

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

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

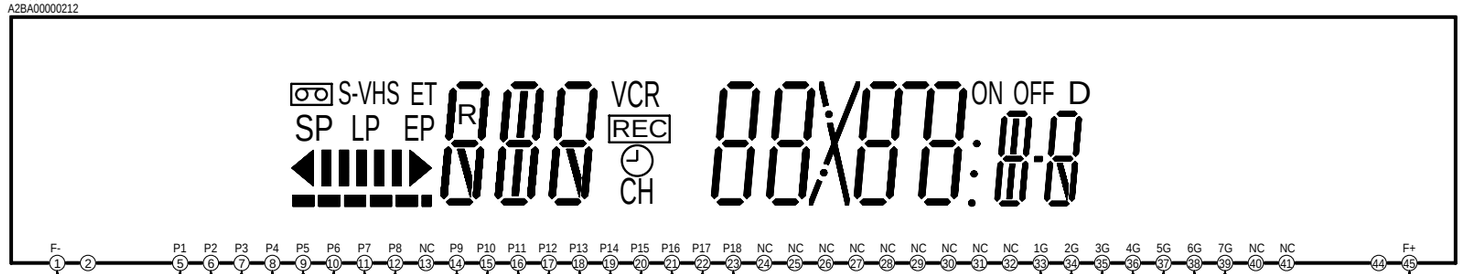
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-MV20EG/EB/EBL,
MV15EG/EP
POWER SUPPLY/RF
SECTION SCHEMATIC DIAGRAM

G F E D C B A
1 2 3 4 5 6 7 8 9 10

Ⓟ :TO POWER TRANSFORMER SECTION
Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION

DP7501
A2BA00000212



F- 1 2 | P1 5 P2 6 P3 7 P4 8 P5 9 P6 10 P7 11 P8 12 NC 13 P9 14 P10 15 P11 16 P12 17 P13 18 P14 19 P15 20 P16 21 P17 22 P18 23 NC 24 NC 25 NC 26 NC 27 NC 28 NC 29 NC 30 NC 31 NC 32 1G 33 2G 34 3G 35 4G 36 5G 37 6G 38 7G 39 NC 40 NC 41 | 44 45 F+

Ⓡ HEATER (+)
R7507 33
C7501 0.01
Ⓟ HEATER DC (-)
D7501 MA4240NM
C7502 50V10
R7511 820
R7510 820
Ⓡ FIP -29V
R7509 100

S1 -10.1 | S2 -15.3 | S3 -25.3 | S4 -25.3 | S5 -10.1 | S6 -25.3 | S7 -20.3 | S8 -20.3 | S9 -20.3 | S10 -15.3 | S11 -20.2 | S12 -20.2 | S13 -15.3 | S14 -15.3 | S15 -20.4 | S16 -25.3 | S17 -20.4 | VEE -29.4

IC7501
M35502AFP

S DATA 4.7 | S CLOCK 4.8 | CS Ⓛ 2.4 | A3 5.2 | A2 5.2 | A5 5.2 | A4 5.2 | VSS 2.3 | OSC | VCC 5.2 | G1 -25.7 | G2 -25.7 | G3 -25.7 | G4 -21.1 | G5 -21.1 | G6 -25.7 | G7 -25.7 | S18 -29.4

R7512 0
C7503 12P

Ⓢ S.DATA
Ⓢ S.CLOCK
Ⓢ FIP CS
Ⓢ SAFETY TAB Ⓛ
SAFETY TAB
S7507 K0C111A00006
POWER
S7506 EVQ11L07B
Ⓢ POWER KEY
R7521 22K
IC7502
PNA4618M08V
(IR RECEIVER)
R OUT | GND | VCC
5.2 | 5.2
Ⓢ IR
Ⓡ N.SW 5V
Ⓡ GND
C7512 0.1
R7517 10K
R7518 10K
R7513 30K
R7515 30K
R7516 30K
R7514 30K
IC7504
C0EBH0000218
(RESET)
RST 5.2 | VDD 5.2 | VSS
C7511 0.1
Ⓢ P.FAIL Ⓛ
IC7503
C0EBE0000211
(RESET)
OUT 4.9 | CD 2.2 | VDD 4.9 | GND 0
C7504 6V100
C7510 0.01
R7535 10K
C7509 6800P
D7503 RB441PT-77
R7534 180
C7507 VCE0073
C7508 6V220
Ⓢ RESET Ⓛ
Ⓢ BACK UP 5V

CH UP S7504 EVQ11L07B — R7506 4300
QUICK ERASE S7503 EVQ11L07B — R7505 5600
R7504 8200
PLAY S7511 EVQ11L07B
R7537 12K
REW S7512 EVQ11404M
CH DOWN S7502 EVQ11L07B — R7503 4300
REC S7501 EVQ11L07B — R7502 5600
STOP S7515 EVQ11L07B — R7501 8200
TIMER REC S7513 EVQ11L07B
R7538 12K
FF S7514 EVQ11404M
EXT LINK S7508 EVQ11L07B — R7519 4300
EJECT S7505 EVQ11L07B — R7536 5600
PROG PLAY S7516 EVQ11L07B — R7522 8200
INTELLIGENT TIMER S7510 EVQ11L07B
R7520 12K
TIMER CHECK S7517 EVQ11L07B

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

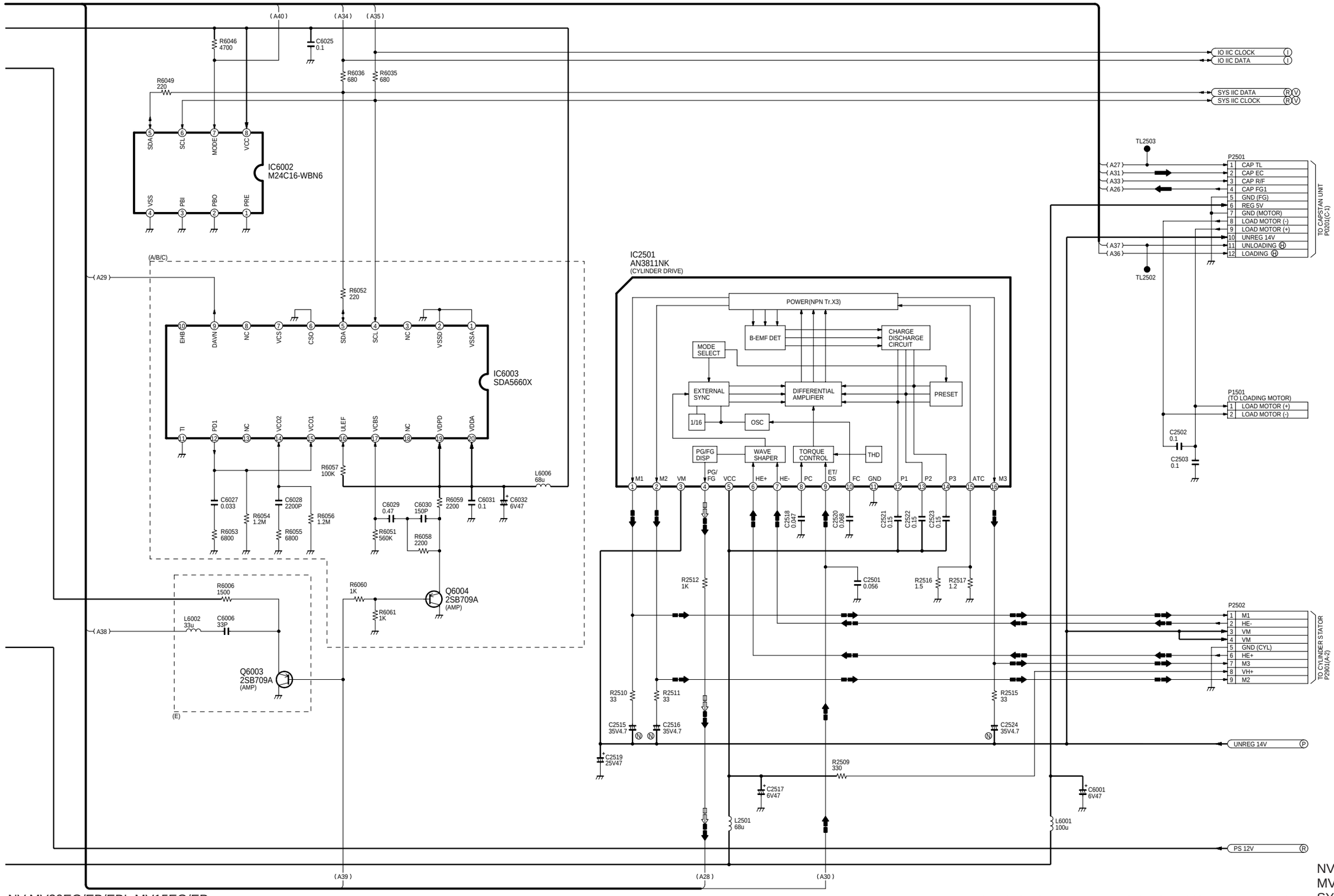
NOTE:DO NOT USE PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-MV20EG/EB/EBL,MV15EG/EP
TIMER SECTION SCHEMATIC DIAGRAM

F E D C B A
1 2 3 4 5 6 7 8 9

Ⓟ :TO POWER TRANSFORMER SECTION
Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓘ :TO INPUT/OUTPUT SECTION
Ⓣ :TO TIMER SECTION

NV-MV20EG/EB/EBL,MV15EG/EP
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM



NV-MV20EG/EB/EBL,MV15EG/EP
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

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

NV-MV20EG/EB/EBL,
MV15EG/EP
SYSTEM CONTROL & SERVO
SECTION SCHEMATIC DIAGRAM

Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓘ :TO INPUT/OUTPUT SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

Ⓢ SYS IIC DATA
Ⓢ MUTE Ⓗ
Ⓢ HEAD SW
Ⓢ MESECAM DET Ⓗ
Ⓢ TRACKING ENV.
Ⓢ FSC

P4002 (TO A/C HEAD)
AUDIO ERASE IN 1
GND 2
AUDIO HEAD (R) 3
AUDIO HEAD (W) 4
CTL HEAD (-) 5
CTL HEAD (+) 6

Ⓢ CTL HEAD (+)
Ⓢ CTL HEAD (-)

P4001 (TO FULL ERASE HEAD)
FULL ERASE OUT 1
FULL ERASE IN 2

Ⓡ BIAS 5V
Ⓡ GND
Ⓡ GND (SYS)
Ⓡ GND (A)
Ⓡ GND (HA)
Ⓡ GND (V)
Ⓡ GND (NA)

Ⓢ BIAS Ⓗ
Ⓡ Ⓘ AUDIO OUT
Ⓢ RFC MUTE Ⓗ

P5001 (TO CYLINDER UNIT)
SP R 1
SP COM 2
SP L 3
4
5

Ⓢ PAL EP Ⓗ
Ⓢ D.A.REC Ⓗ
Ⓡ TUNER AUDIO
Ⓘ AUDIO IN

Ⓡ PS 5V
Ⓘ VIDEO 5V

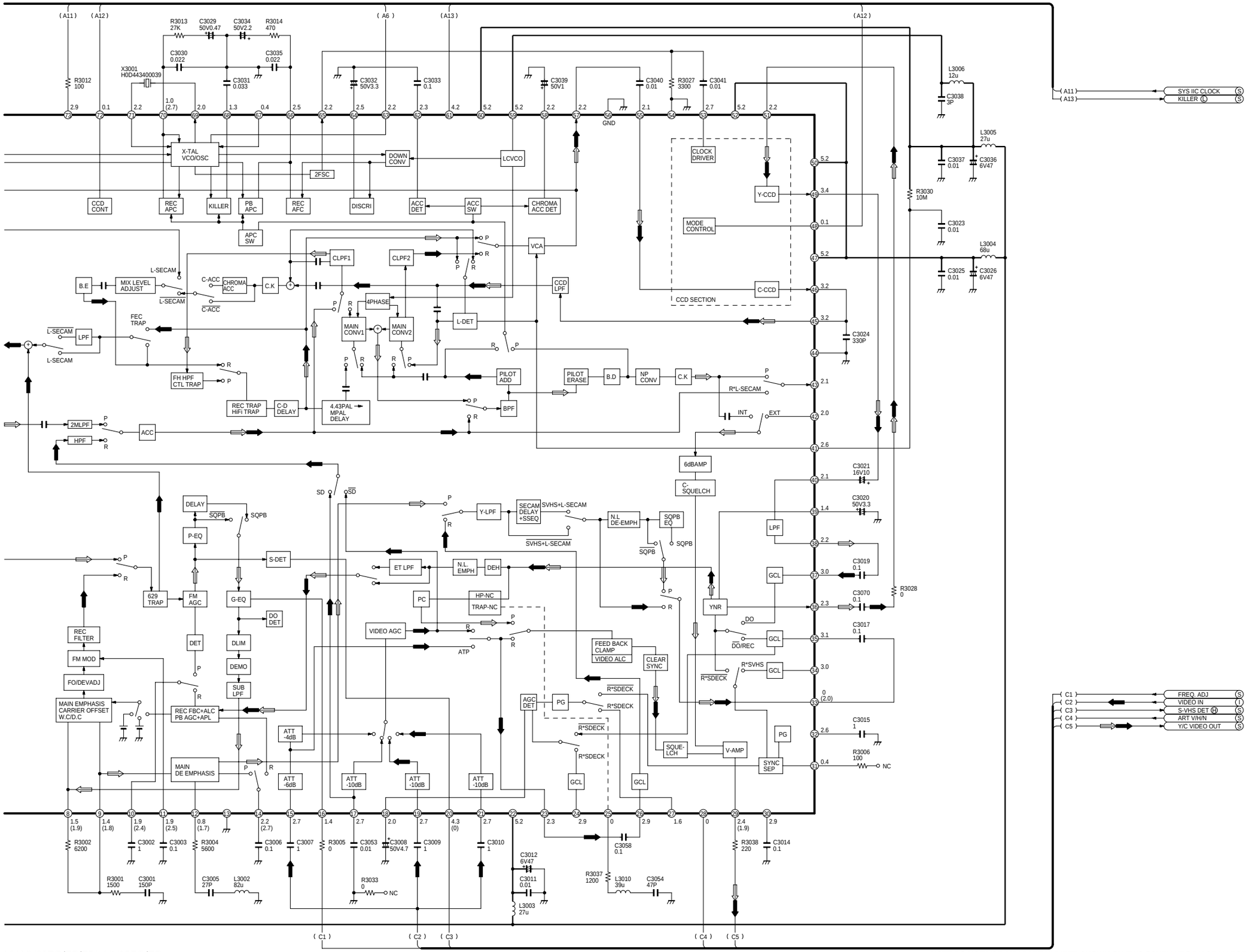
C3042 1
Q3001 2SD601A (AMP)
R3017 1K
C5007 0.1
L5001 68u
C5005 0.1
C5006 6V47
R4014 16K
C4020 220P
C4021 0.022
T4001 EQQ7QF024P
R4017 3300
Q4005 2SD602A (OSC)
C4022 1500P
C4024 0.022
C4023 10V47
LB4004 0
R4020 4700
C4026 16V10
R4019 6800
C4025 10V22
Q4006 2SB710A (ERASE HEAD DRIVE)
R4018 4700
QR4005 UN2212 (BIAS Ⓗ:ON)
L4002 68u
QR4502 UN2113 (BUFFER)
QR4507 UN2216 (MUTE)
C4008 25V3.3
LB4001 J0JBC0000070
C4003 4700P
R4003 22K
C4004 1200P
R4002 100K
R4001 3300
QR4001 UN2211 (PAL EP Ⓗ:ON)
C4001 6V100
R4006 22K
C4006 25V4.7
C3071 0.1
QR4002 UN2111 (D.A.REC Ⓗ:OFF)
L4501 0
C4516 0.1
R4015 4700
Q4003 2SD114900L (PB:ON)
R4016 2200
Q4004 2SD601A (PB:ON)
L4001 0
C4013 0.01
C4014 6V47
R4008 330K
C4011 8200P
R4007 10K
C4009 6V22
LB4002 0
R4004 220
C4005 6V22

(A6) (A1) (A2) (A3) (A4) (A5)
TW3001
R3009 15K
R3010 10K
C3028 50V4.7
R3011 100
B-Y INVERT
C3027 50V1
TANK
COME
CR DET
MESECAM DET
COLOR LEVEL DETECTOR
DET
DET
ENVDET
HPF
C5004 0.01
LB5004 VLP0147
K5003 VLP0147
C5003 0.01
LB5003 VLP0147
SP2
SP1
VCA
CH1
CH2
REC MUTE
EXT
INT
SP
C5008 0.01
C5009 0.01
C4012 50V4.7
FH TRAP
SP ON
PREAMP
REC ON
EP ON
REC EQ
DET
BAND GAP
IC3001 HA118425F
C4016 0.1
C4017 16V10
C4018 50V1
C4019 16V10
R4013 100
R4009 33K
R4011 24K
R4012 0
R4010 620

(B9) (B7) (B8) (B9)

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

NV-MV20EG/EB/EBL,MV15EG/EP
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM



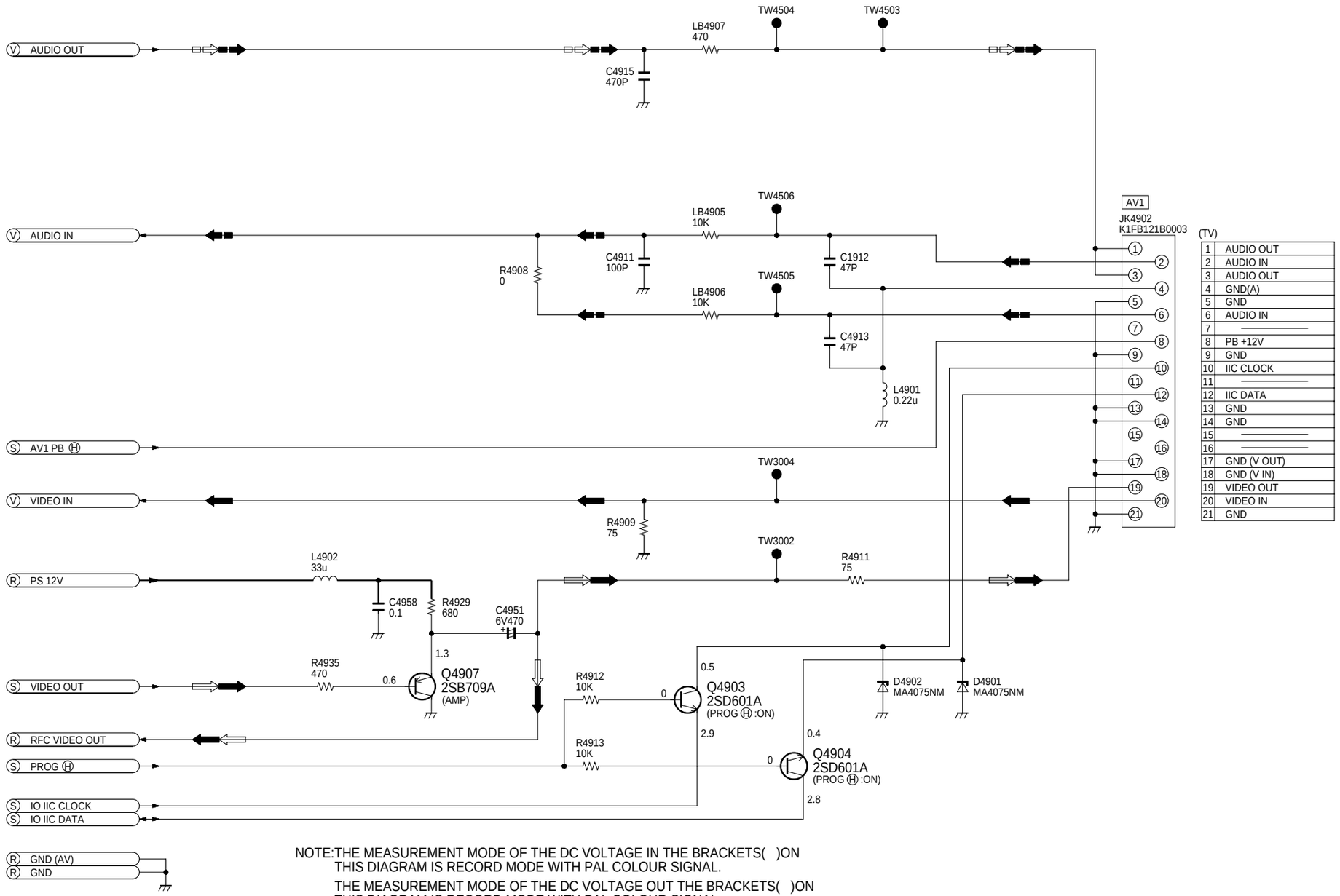
NV-MV20EG/EB/EBL,MV15EG/EP
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

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

NV-MV20EG/EB/EBL,
MV15EG/EP
LUMINANCE & CHROMINANCE/AUDIO
SECTION SCHEMATIC DIAGRAM

Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

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

NV-MV20EG/EB/EBL,MV15EG/EP
INPUT/OUTPUT SECTION SCHEMATIC DIAGRAM

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

TO POWER SUPPLY/ RF SECTION DU7601 (B-9)

PK0701

DU7601-19	SW1	1
DU7601-20	SW2	2
DU7601-21	TUNER AUDIO	3
DU7601-22	———	4
DU7601-23	AFC S-CURVE	5
DU7601-24	TUNER VIDEO	6
DU7601-25	REG 5V	7
DU7601-26	———	8
DU7601-27	GND	9

PP0701 (TO TUNER UNIT)

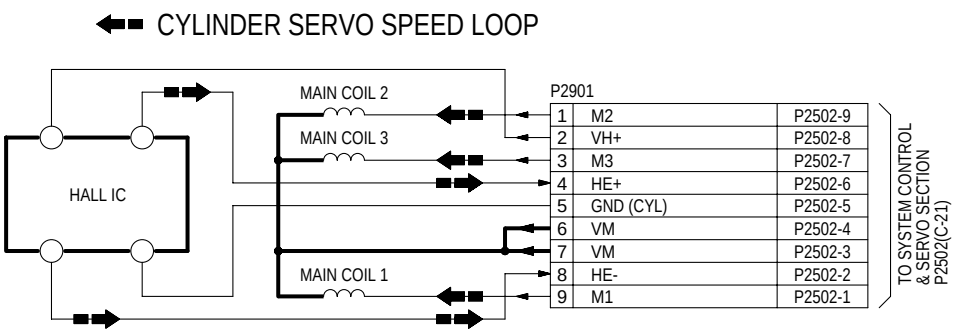
4MHz	1
AGC	2
IF	3
GND	4

IC0701 LA75503

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

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

NV-MV20EG/EB/EBL,MV15EG/EP
TV DEMODULATOR PACK SCHEMATIC DIAGRAM

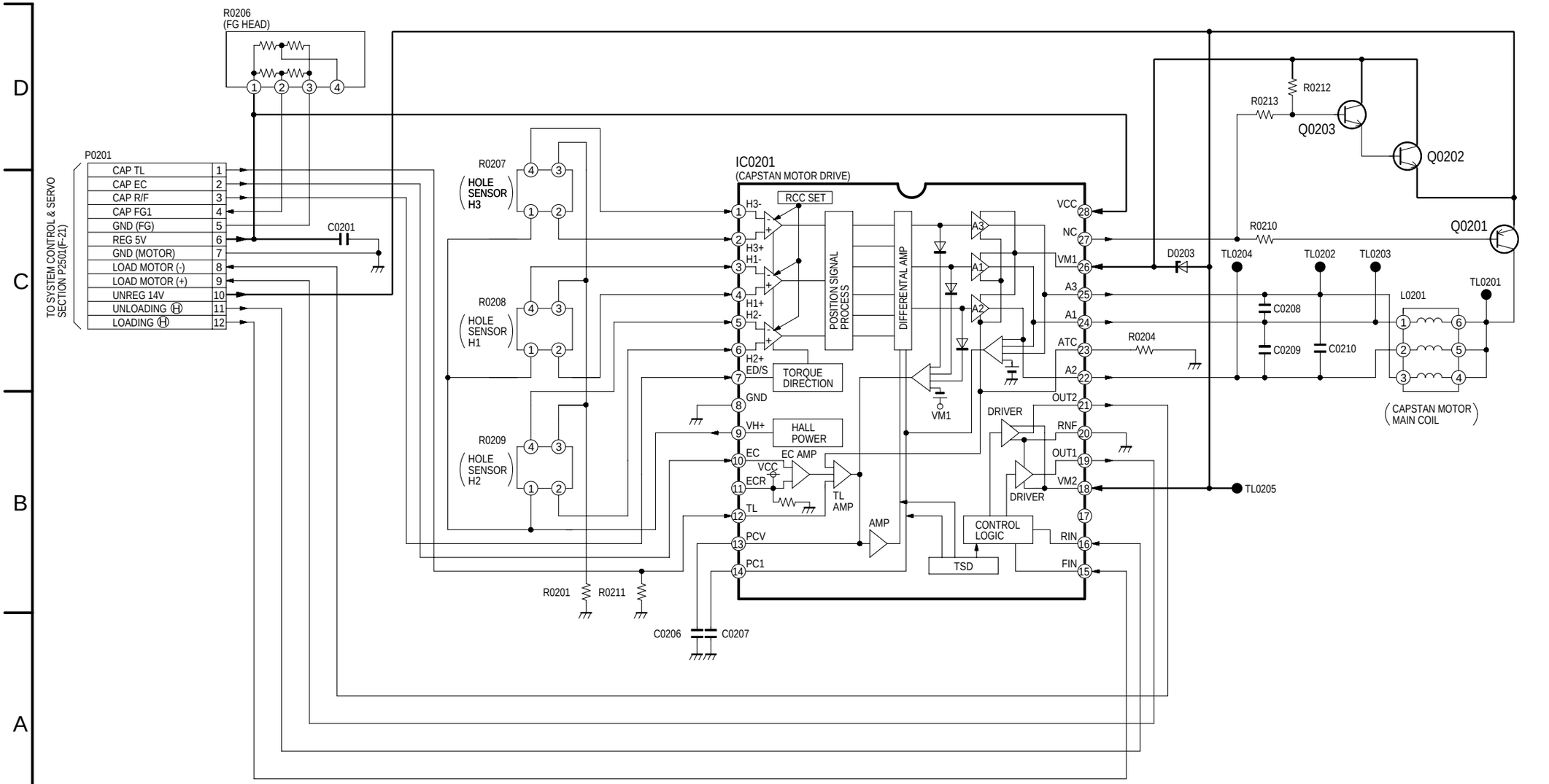


NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

A

1 2 3

NV-MV20EG/EB/EBL,
MV15EG/EP
CYLINDER STATOR
SCHEMATIC DIAGRAM

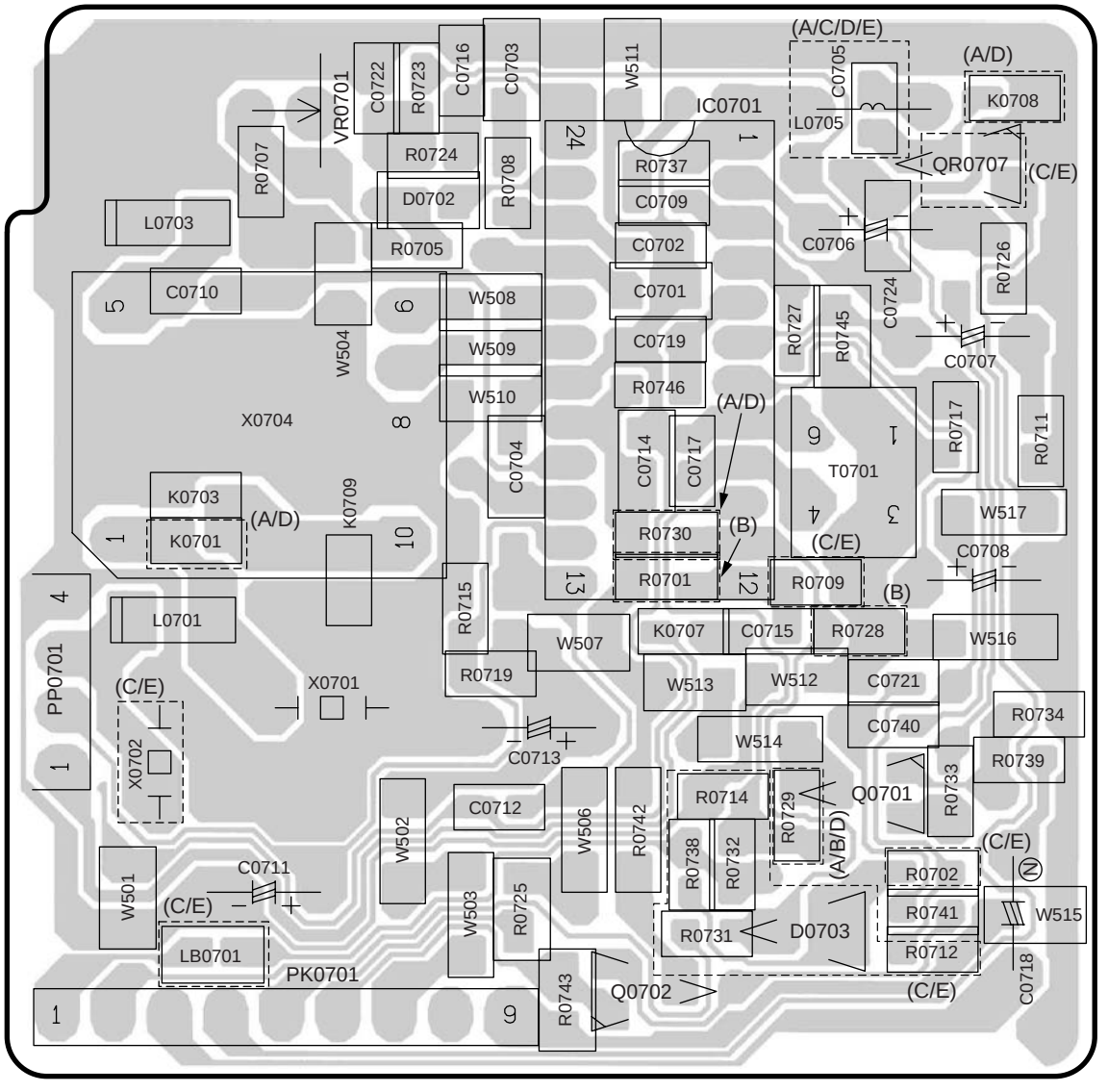


NV-MV20EG/EB/EBL,MV15EG/EP
CAPSTAN UNIT SCHEMATIC DIAGRAM

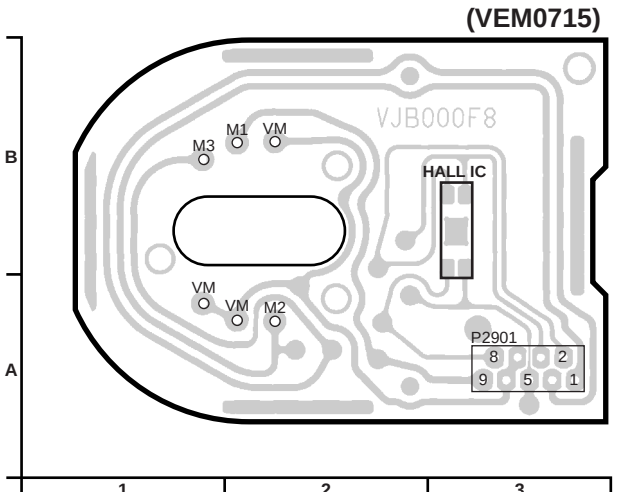
TV DEMODULATOR PACK C.B.A.	
Transistor	
Q0701	B-4
Q0702	A-3
Transistor & Resistor	
QR0707	D-4
Integrated Circuit	
IC0701	D-3
Adjustment	
T0701	C-4
VR0701	D-2
Connector	
PK0701	A-2
PP0701	B-1

ADDRESS INFORMATION

(VEP07A23V:NV-MV20EG,MV15EG)
(VEP07A23W:NV-MV20EB)
(VEP07A23X:NV-MV20EBL,MV15EP)



NV-MV20EG/EB/EBL,MV15EG/EP
TV DEMODURATOR PACK C.B.A.

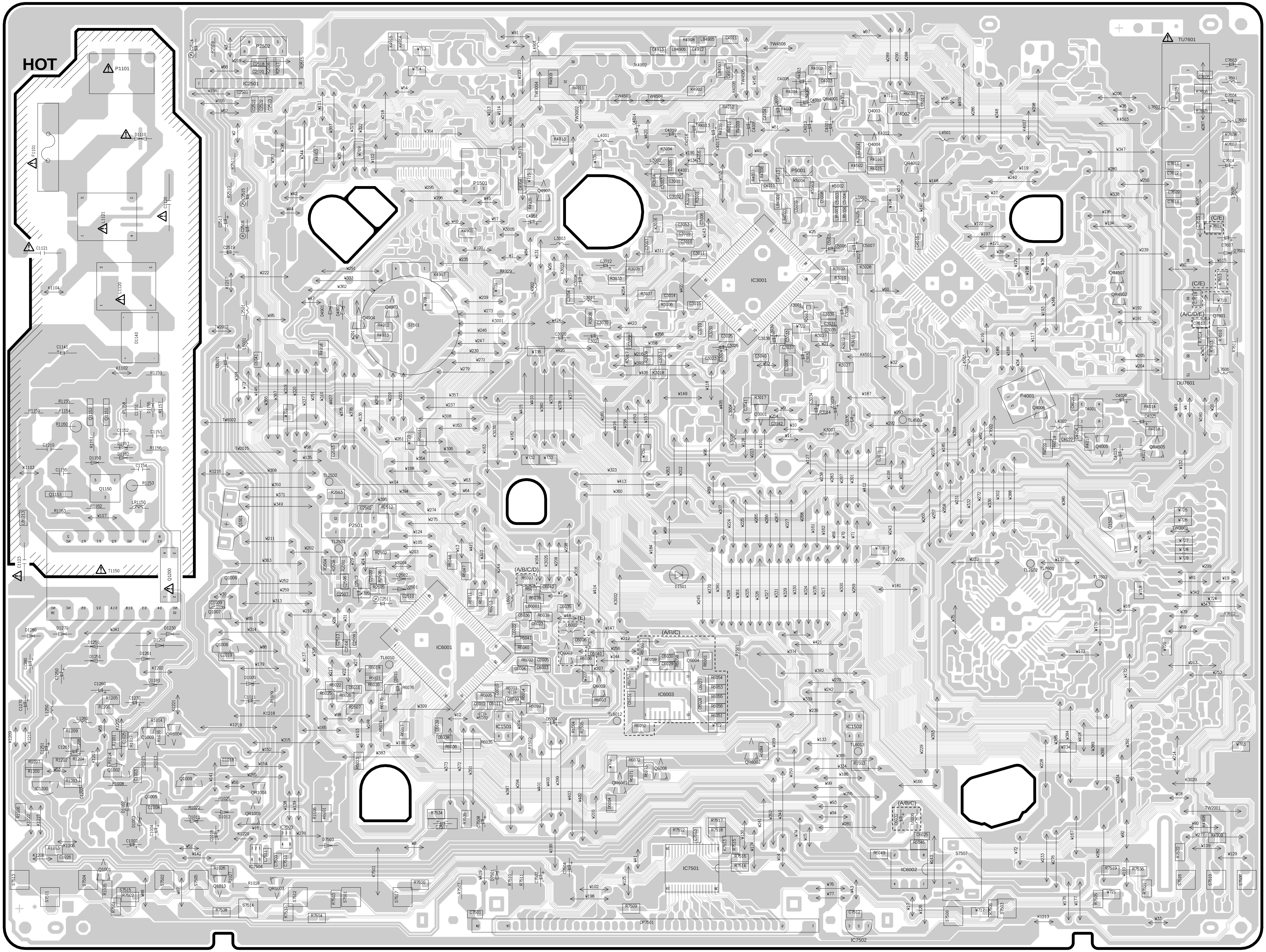


CYLINDER STATOR UNIT	
Integrated Circuit	
HALL IC	B-3
Connector	
P2901	A-3

ADDRESS INFORMATION

NV-MV20EG/EB/EBL,MV15EG/EP
CYLINDER STATOR UNIT

(VEP06F09R: NV-MV20EG) (VEP06F09S: NV-MV20EB) (VEP06F09T: NV-MV20EBL) (VEP06F09U: NV-MV15EG) (VEP06F09V: NV-MV15EP)



NV-MV20EG/EB/EBL,MV15EG/EP MAIN C.B.A.

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

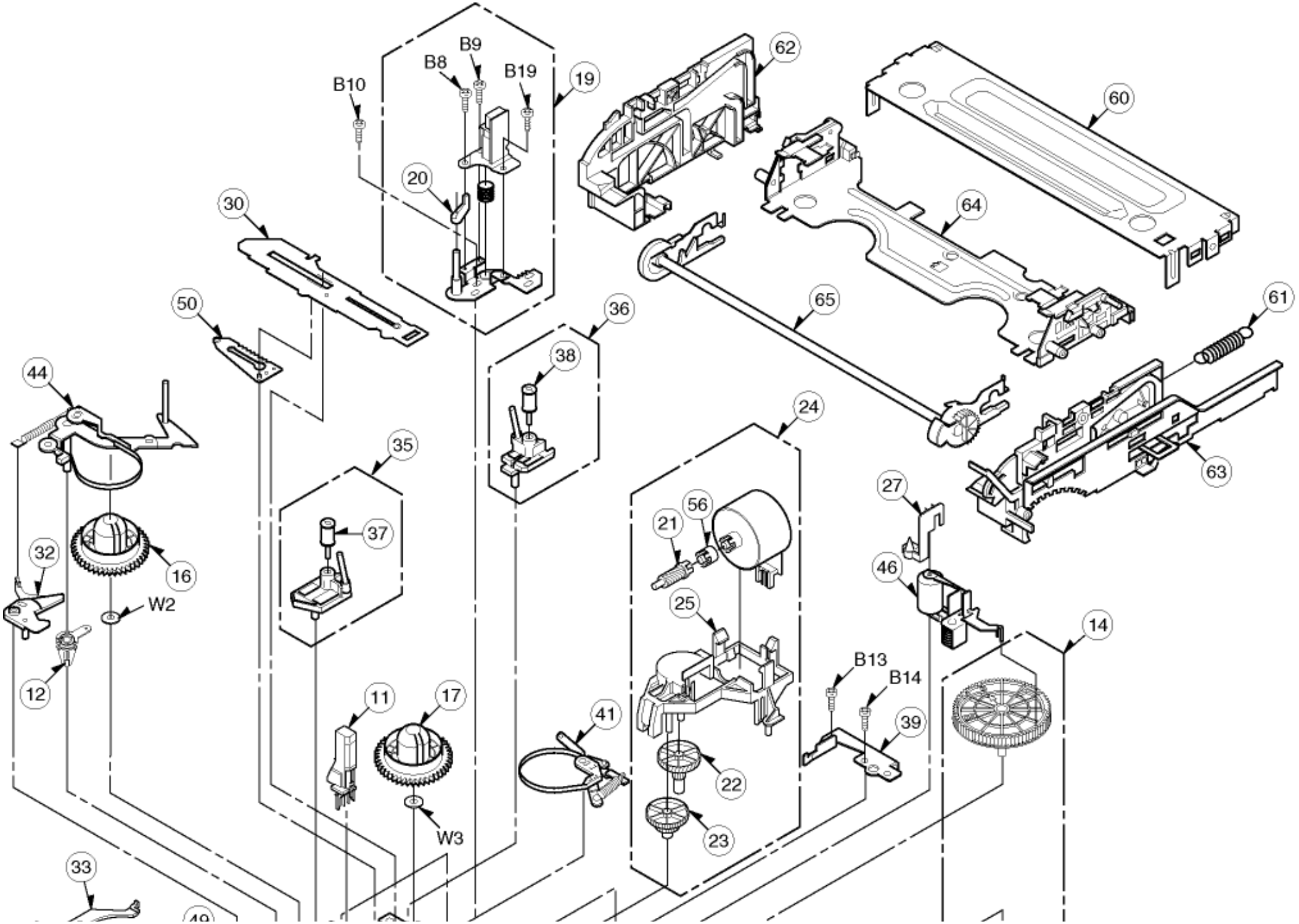
CAUTION

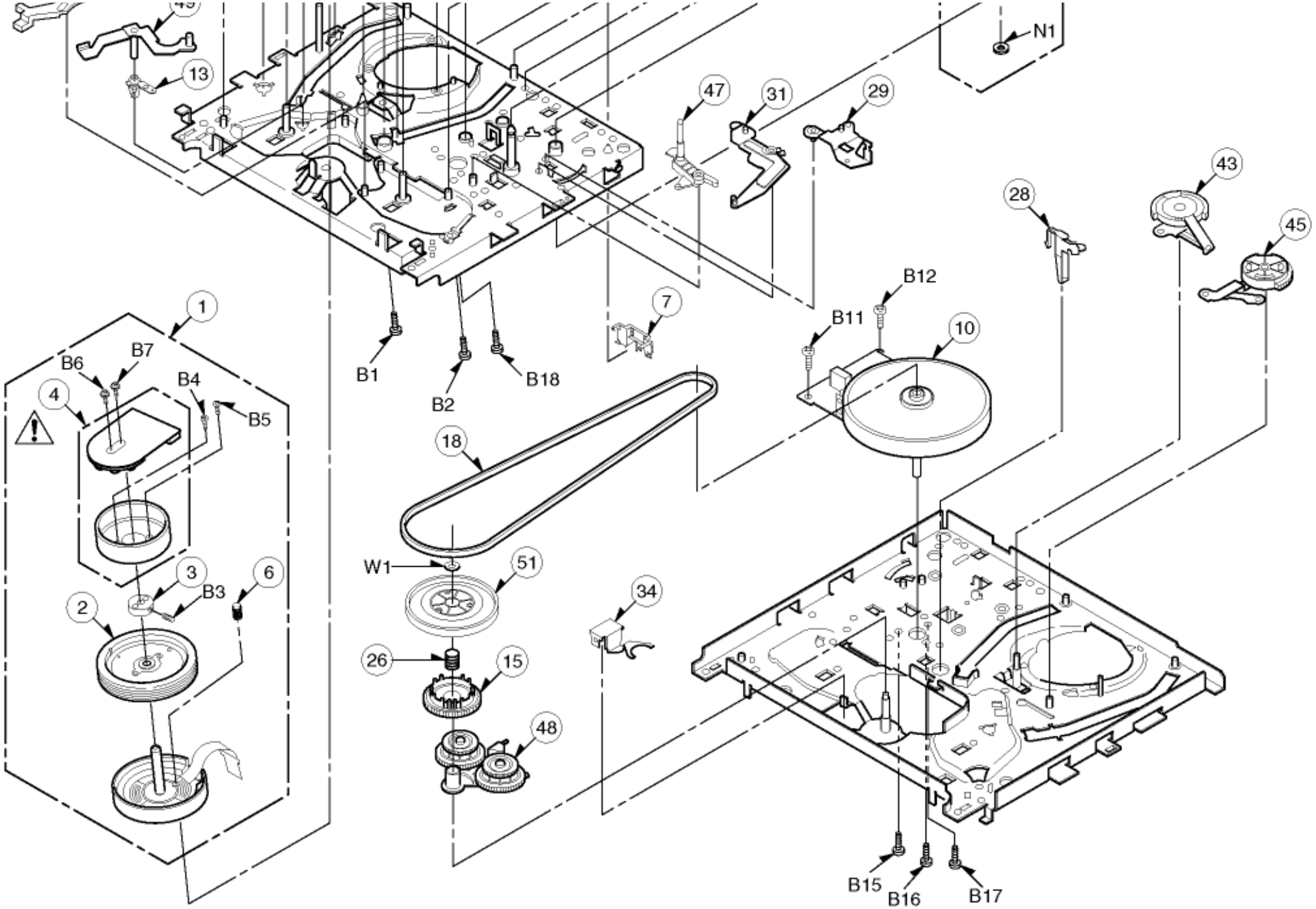
THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

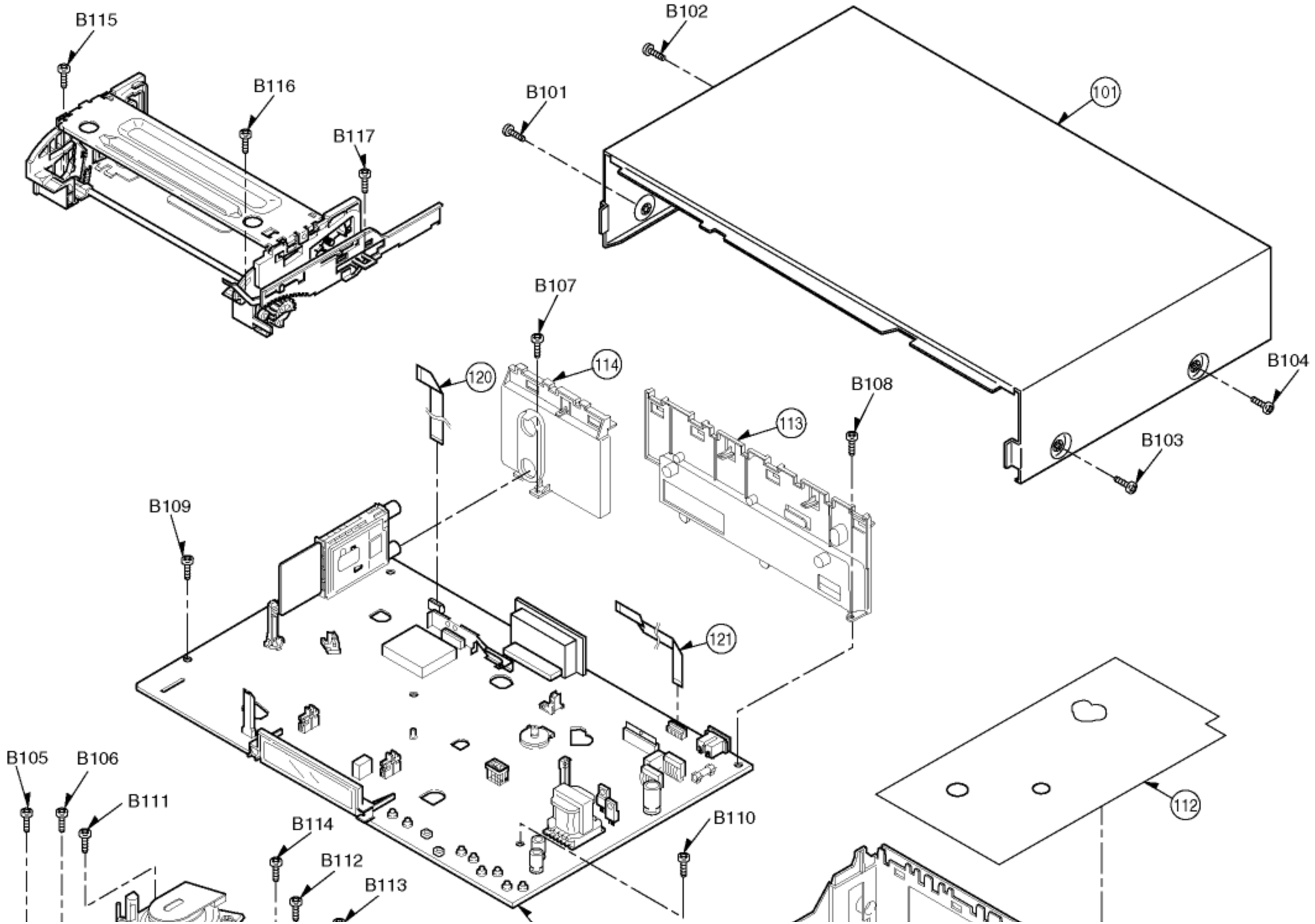
MAIN C.B.A.

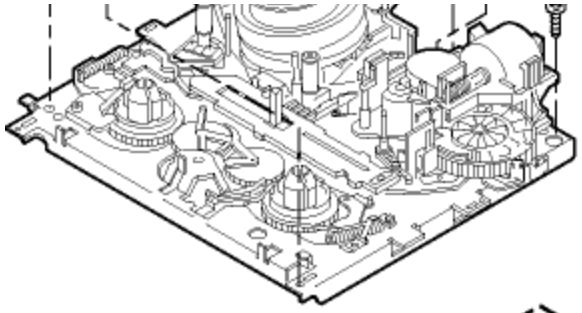
Transistor		**Integrated Circuit**	
Q1001	A-1	IC1200	B-1
Q1002	B-1	IC1501	B-4
Q1003	B-2	IC1502	B-6
Q1005	B-2	IC2501	F-2
Q1006	C-2	IC3001	E-5
Q1007	C-2	IC6001	C-3
Q1008	C-2	IC6002	A-6
Q1009	B-2	IC6003	B-5
Q1013	A-2	IC7501	A-5
Q1150	D-1	IC7502	A-6
Q1151	D-1	IC7503	A-3
Q1152	D-1	IC7504	A-2
Q1153	C-1	**Test Point**	
Q1200	C-2	TL2502	D-3
Q1501	C-2	TL2503	C-3
Q1502	C-8	TL4503	D-6
Q3001	D-5	TL6010	B-3
Q4003	F-6	TL6012	B-5
Q4004	F-6	TL6013	B-6
Q4005	D-8	TL7601	C-7
Q4006	D-7	TL7602	C-7
Q4903	E-3	TL7603	C-8
Q4904	E-3	TW2001	A-8
Q4907	E-4	TW2002	D-2
Q6003	B-4	TW2015	D-2
Q6004	B-5	TW3001	C-8
Q6008	B-5	TW3002	F-4
Q6009	B-4	TW3004	F-4
Q7601	E-8	TW4503	F-5
Transistor & Resistor		TW4504	F-5
QR1003	A-2	TW4505	F-5
QR1004	B-2	TW4506	F-6
QR1005	A-2	TW6002	D-2
QR4001	F-6	**Connector**	
QR4002	F-6	P1101	F-1
QR4005	D-8	P1501	E-4
QR4502	E-8	P2501	C-3
QR4507	E-8	P2502	F-2
QR6001	B-5	P4001	D-7
QR6002	B-5	P4002	F-6
QR6004	B-2	P5001	F-6
		TU7601	F-8

ADDRESS INFORMATION

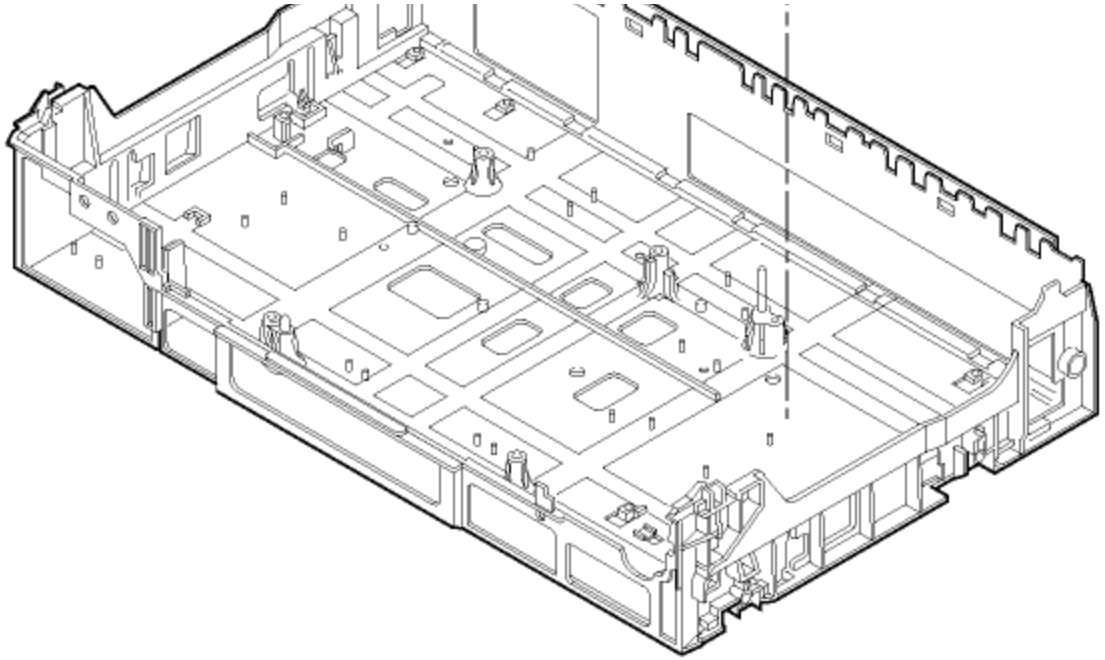

B10
B8
B9
B19
19
62
60
20
64
30
65
61
50
36
38
63
44
24
35
27
56
21
37
46
32
25
16
W2
14
B13
B14
12
11
17
41
39
22
W3
23
33

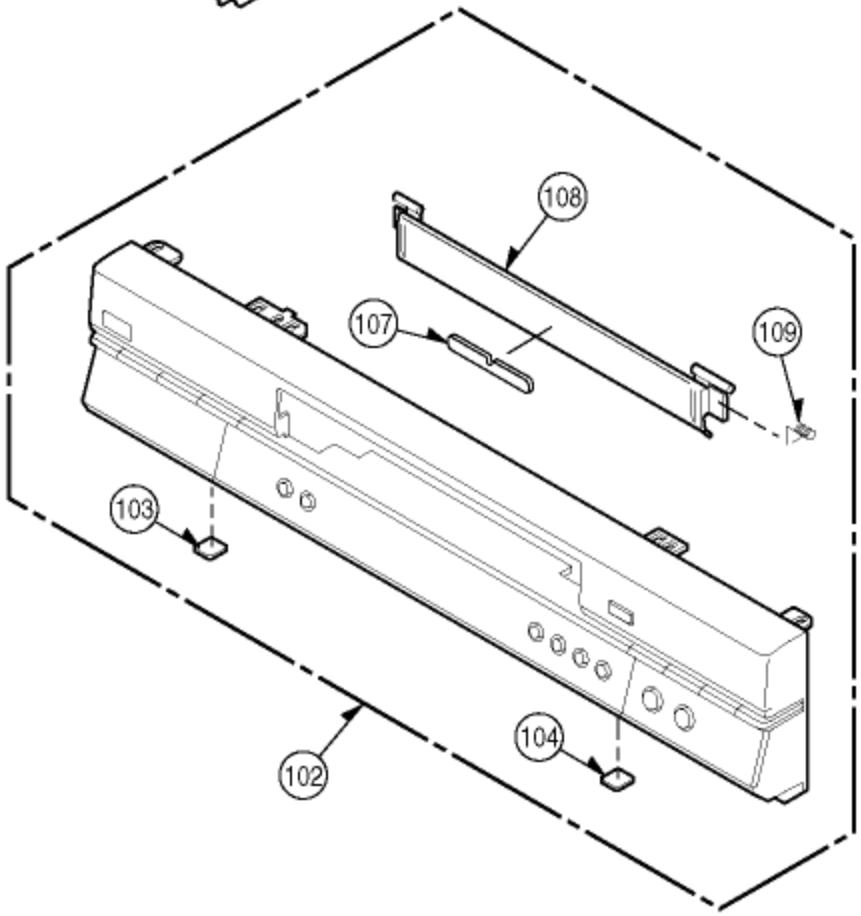

N1
13
47
31
29
43
28
45
B12
B11
10
7
B1
B2
B18
1
B6
B7
B4
B5
4
18
W1
51
3
B3
6
2
34
26
15
48
B15
B16
B17

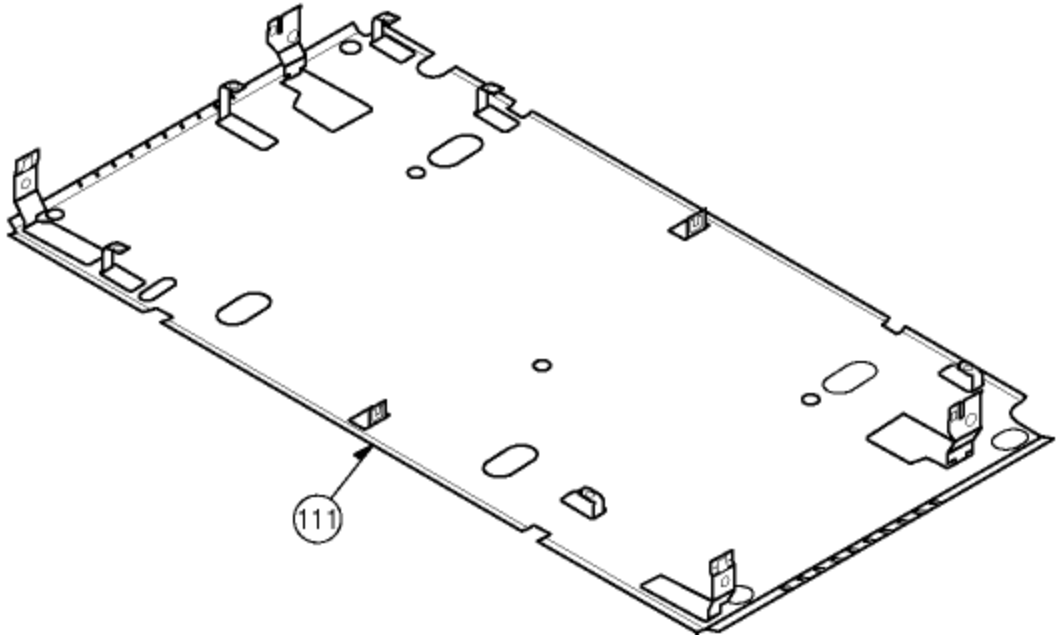

B115
B116
B117
B102
B101
101
B107
120
114
B108
113
B104
B103
B109
121
B105
B106
B111
B114
B112
B113
B110
112

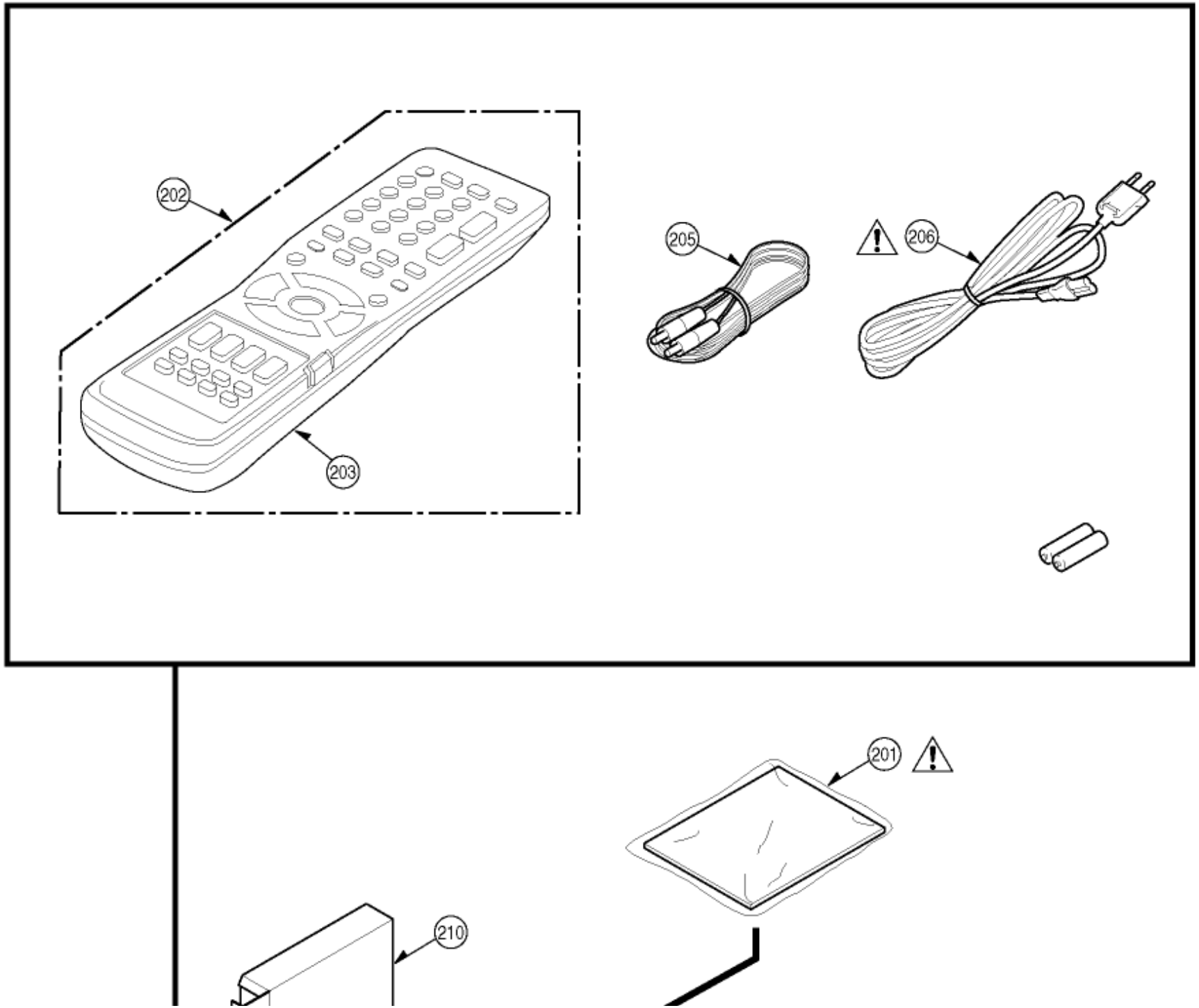


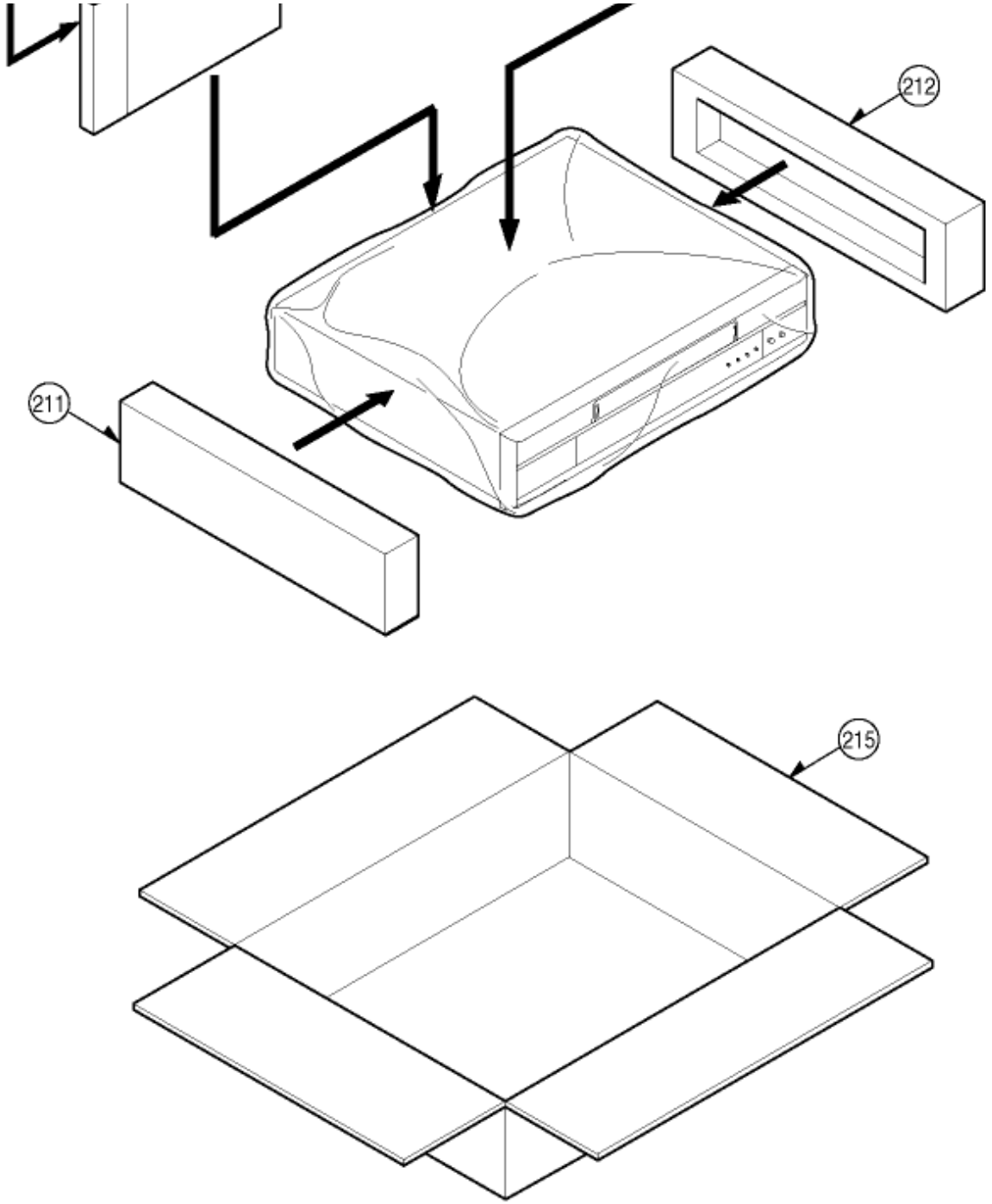

E
MAIN C.B.A.




108
107
109
103
104
102


111


202
203
205
206
201
210

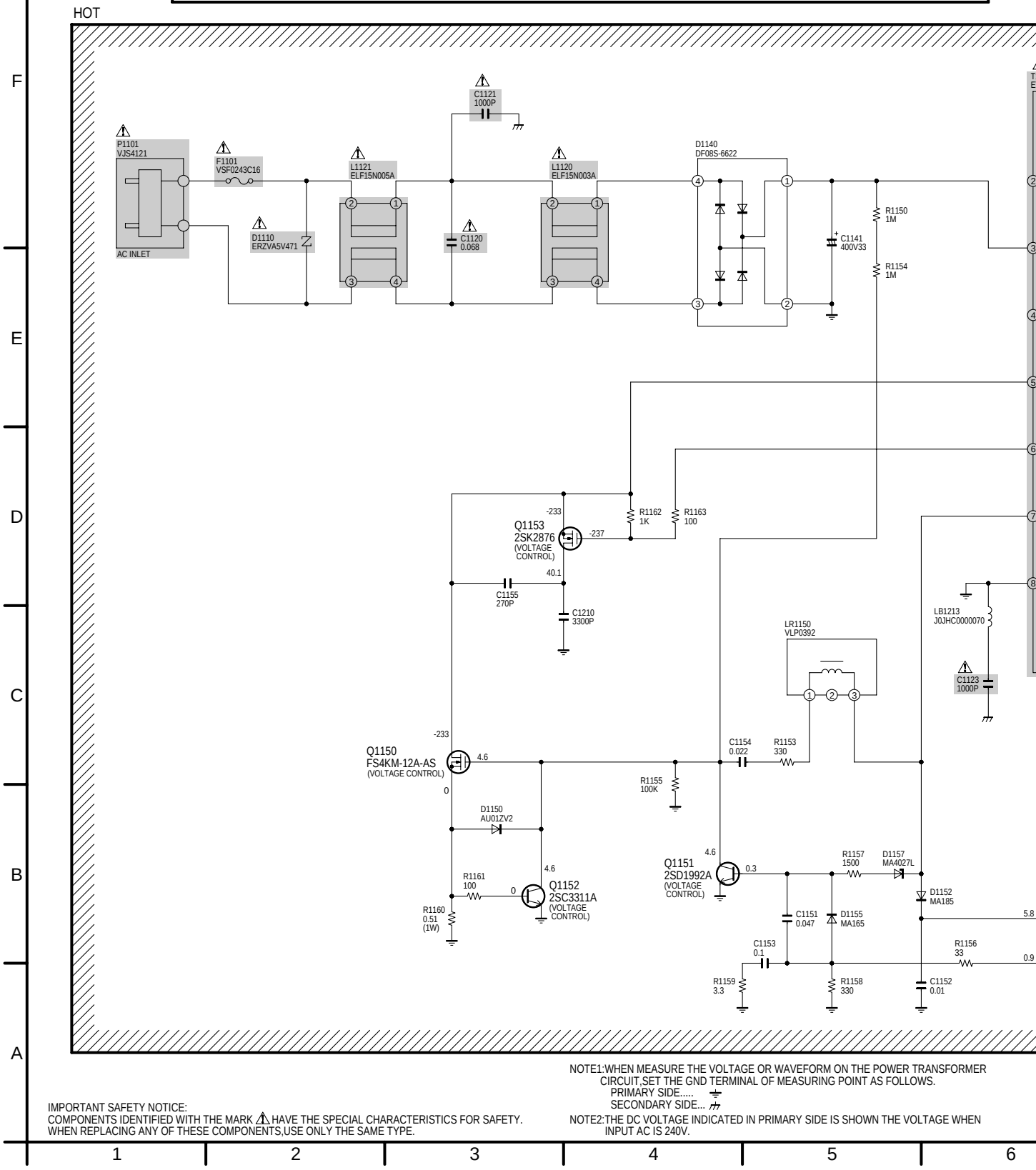

212
211
215

8 SCHEMATIC DIAGRAMS

8.1. POWER TRANSFORMER SECTION IN MAIN SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

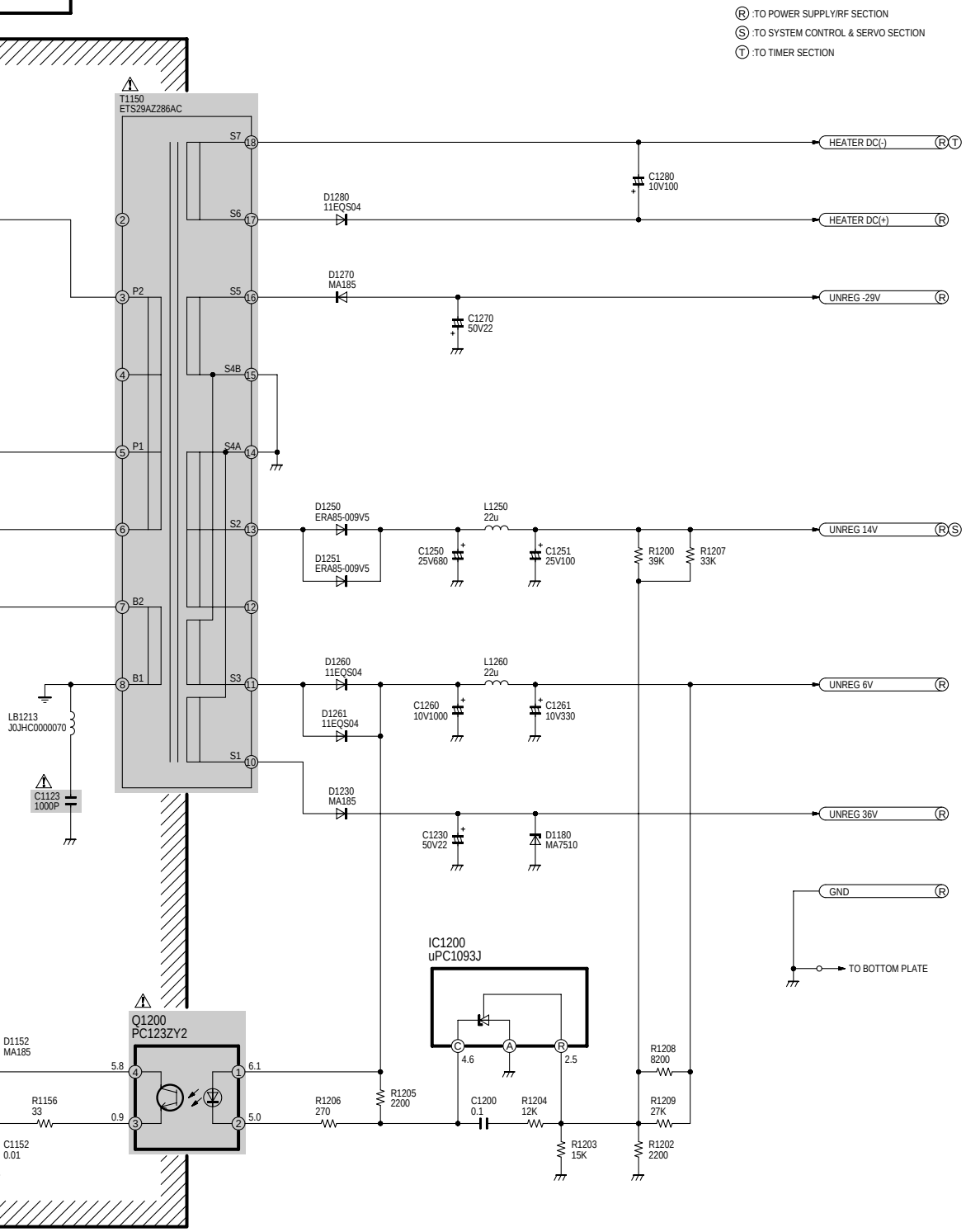


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚
NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

M

ARY
CE OF



ANSFORMER
S.

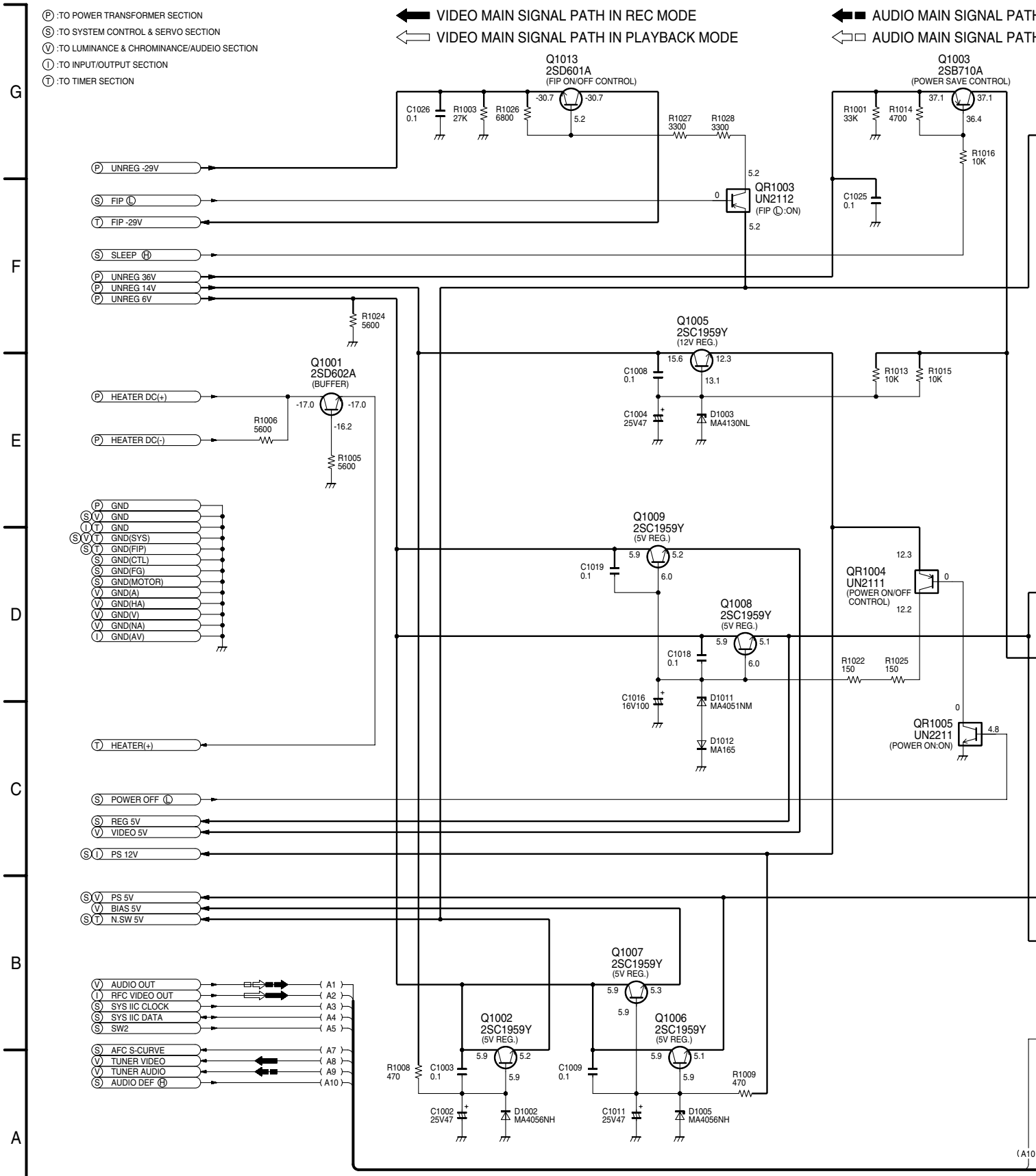
TAGE WHEN

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-MV20EG/EB/EBL,
MV15EG/EP
POWER TRANSFORMER
SECTION SCHEMATIC DIAGRAM

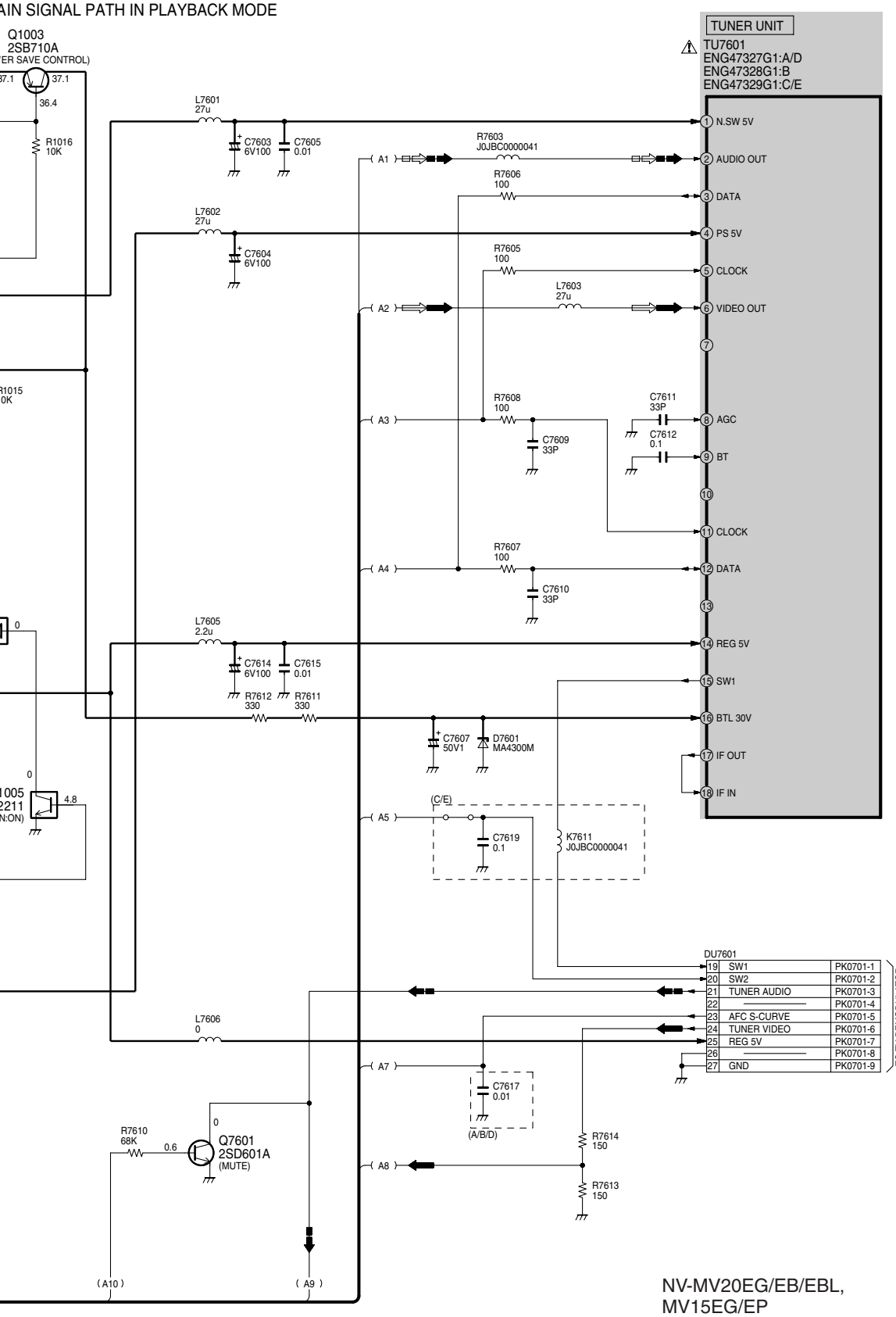
6 | 7 | 8 | 9 | 10

8.2. POWER SUPPLY/ RF SECTION IN MAIN SCHEMATIC DIAGRAM



AIN SIGNAL PATH IN REC MODE

AIN SIGNAL PATH IN PLAYBACK MODE



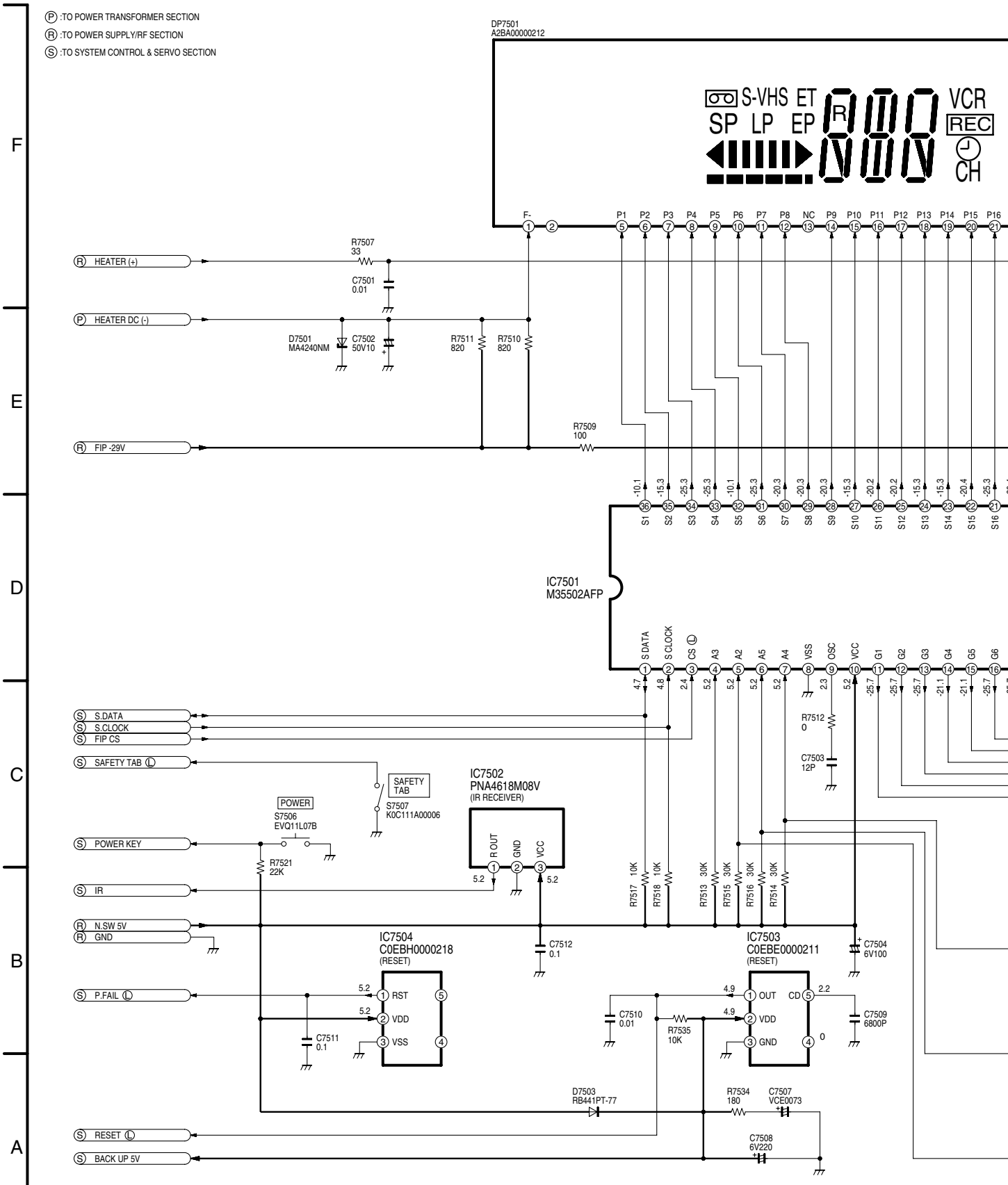
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

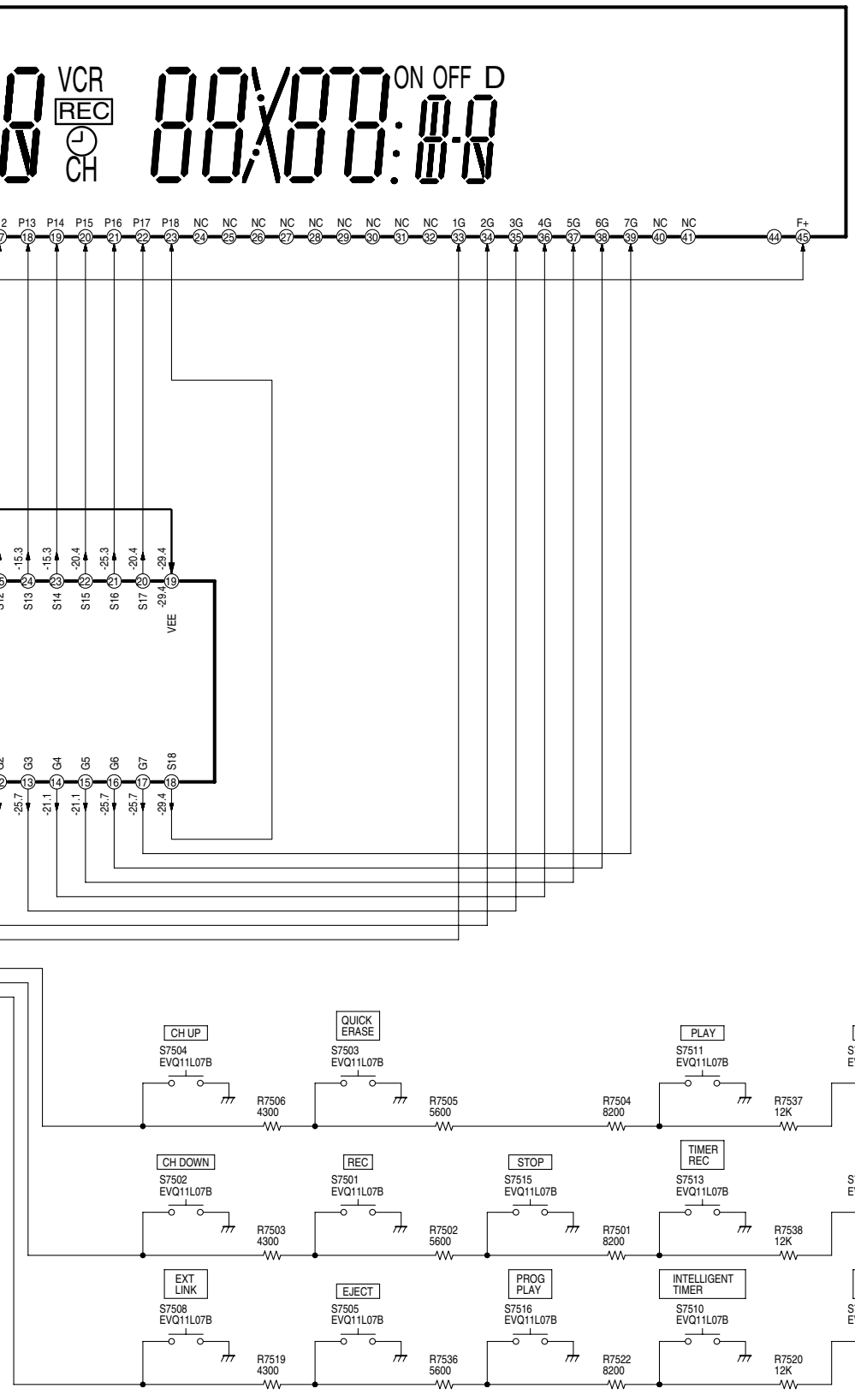
IS DIAGRAM IS STOP MODE.

NV-MV20EG/EB/EBL,
MV15EG/EP
POWER SUPPLY/RF
SECTION SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

8.3. TIMER SECTION IN MAIN SCHEMATIC DIAGRAM



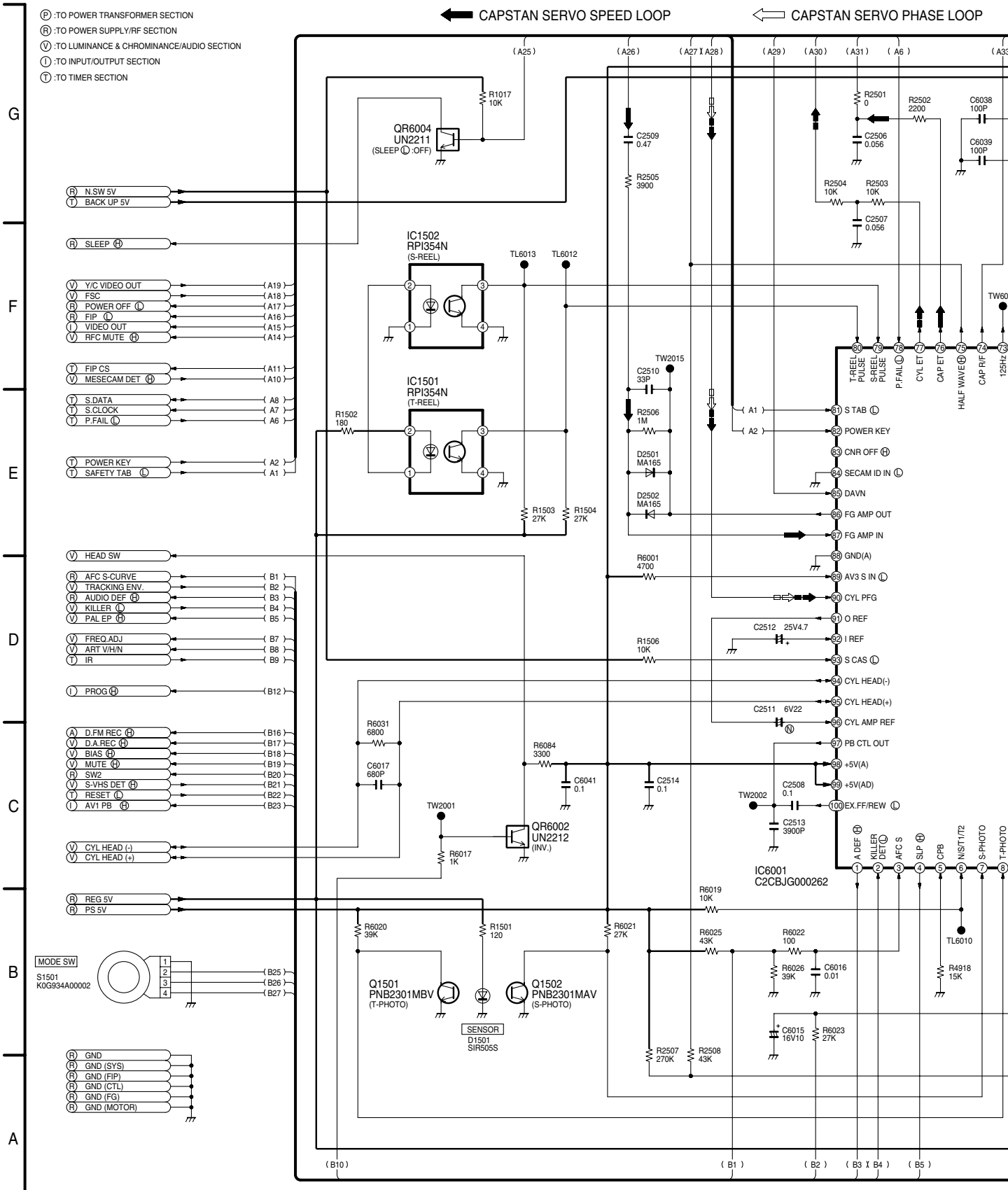


ON THIS SCHEMATIC DIAGRAM FOR
T,PLEASE REFER TO PARTS LIST.

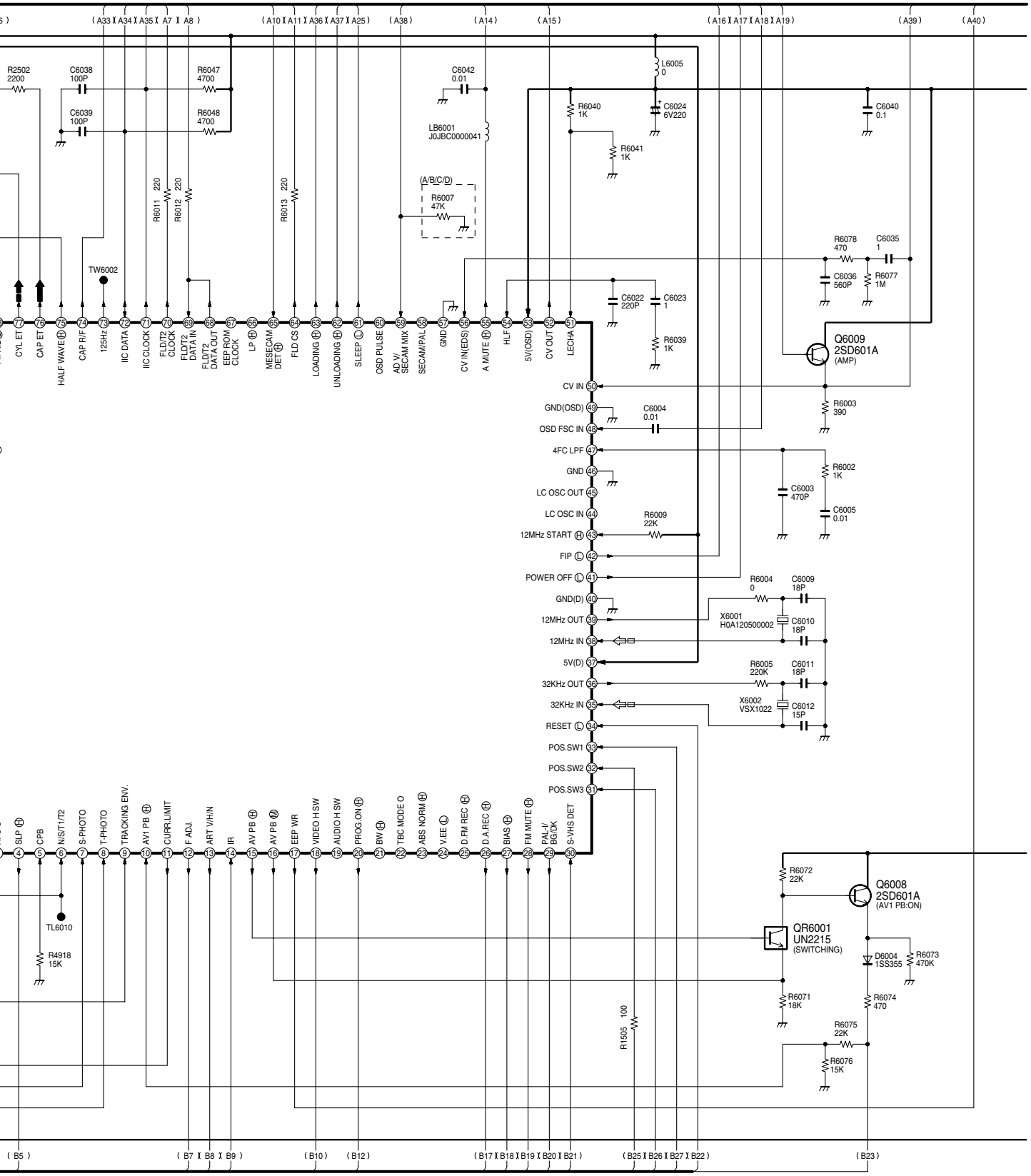
NV-MV20EG/EB/EBL,MV15EG/EP
TIMER SECTION SCHEMATIC DIAGRAM

6 7 8 9

8.4. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

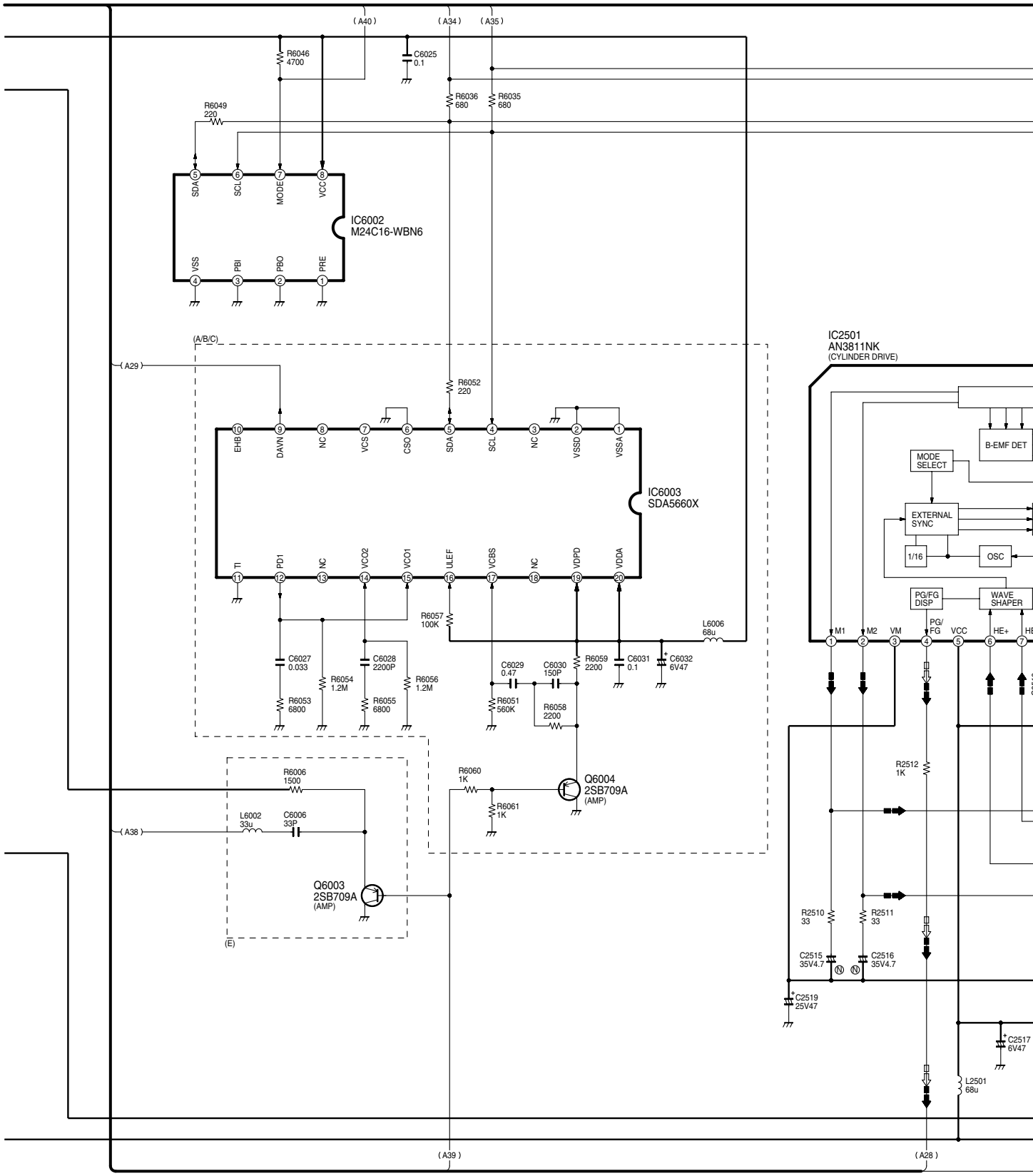


PHASE LOOP ◀■ CYLINDER SERVO SPEED LOOP ⇦□ CYLINDER SERVO PHASE LOOP



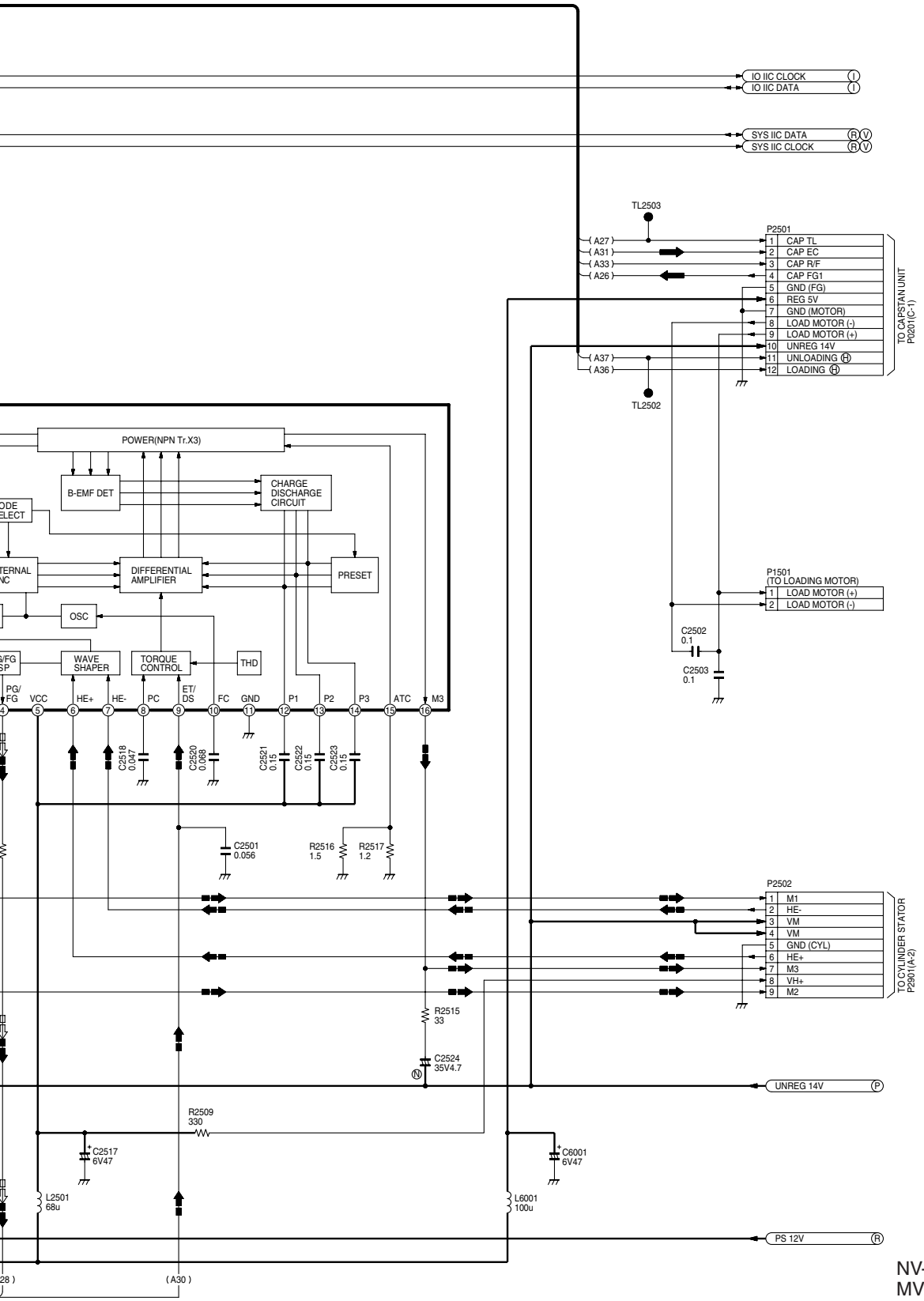
NV-MV20EG/EB/EBL,MV15EG/EP
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11



NV-MV20EG/EB/EBL,MV15EG/EP
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

12 | 13 | 14 | 15 | 16 | 17

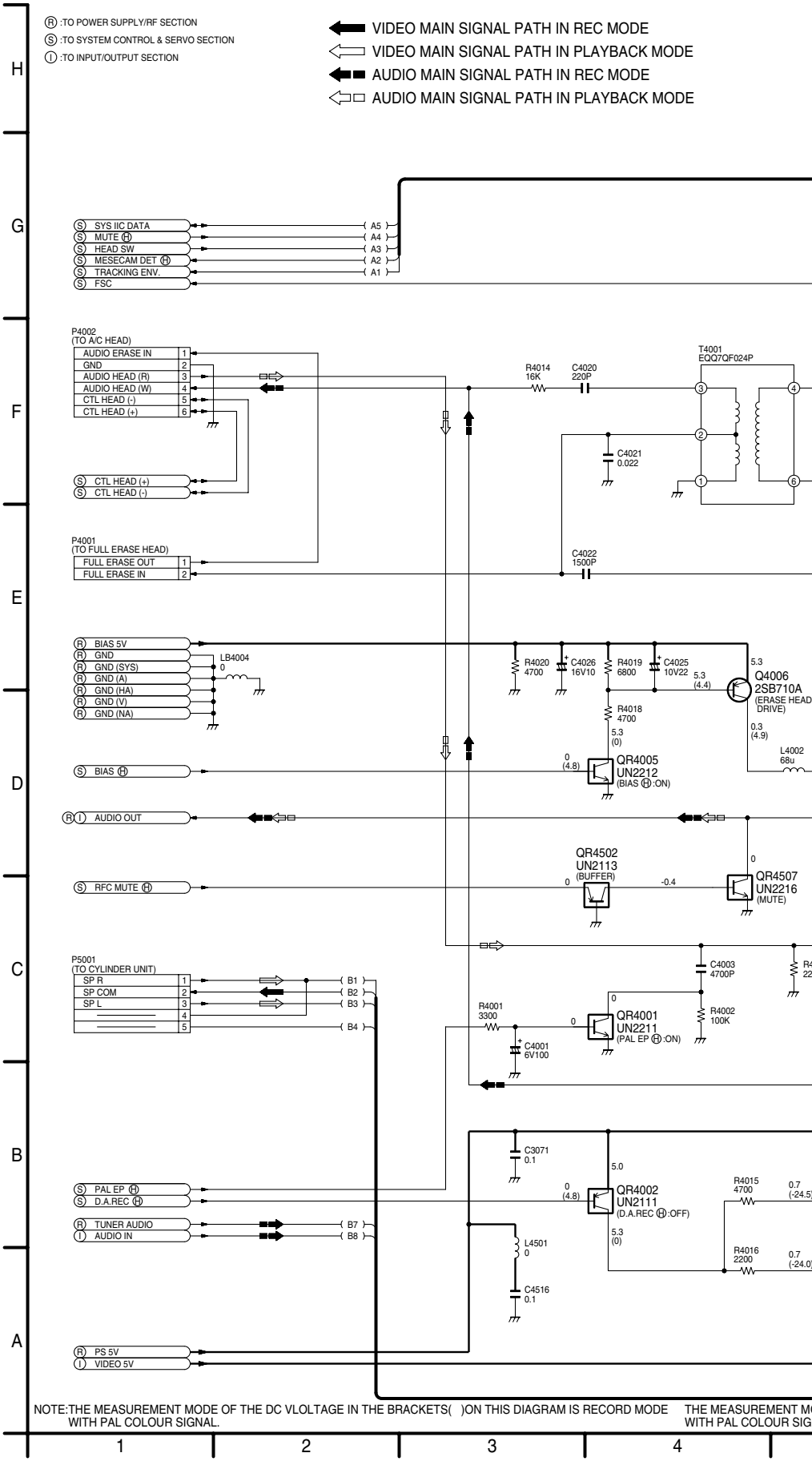


NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

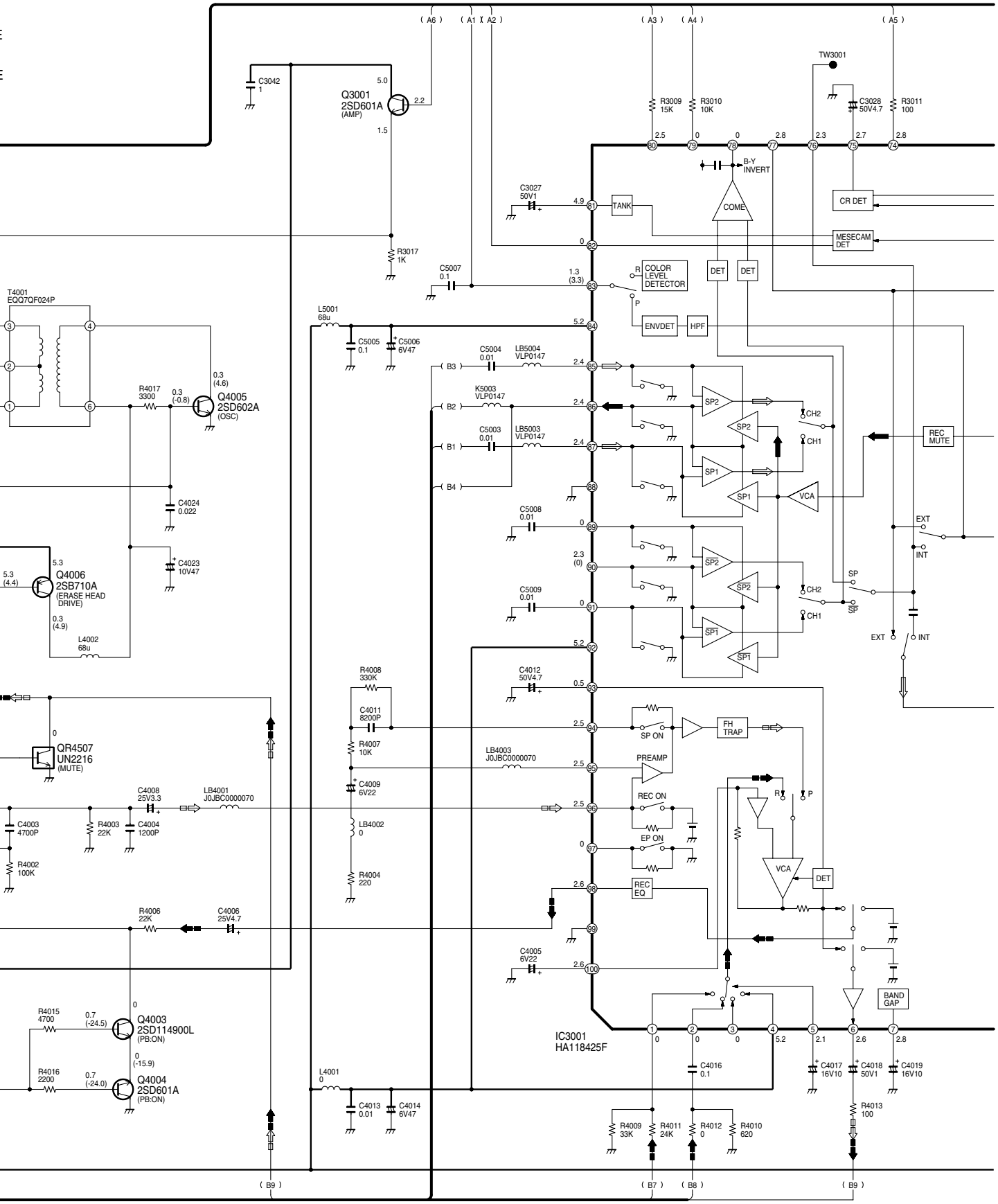
17 | 18 | 19 | 20 | 21

NV-MV20EG/EB/EBL,
MV15EG/EP
SYSTEM CONTROL & SERVO
SECTION SCHEMATIC DIAGRAM

8.5. LUMINANCE & CHROMINANCE/ AUDIO SECTION IN MAIN SCHEMATIC DIAGR

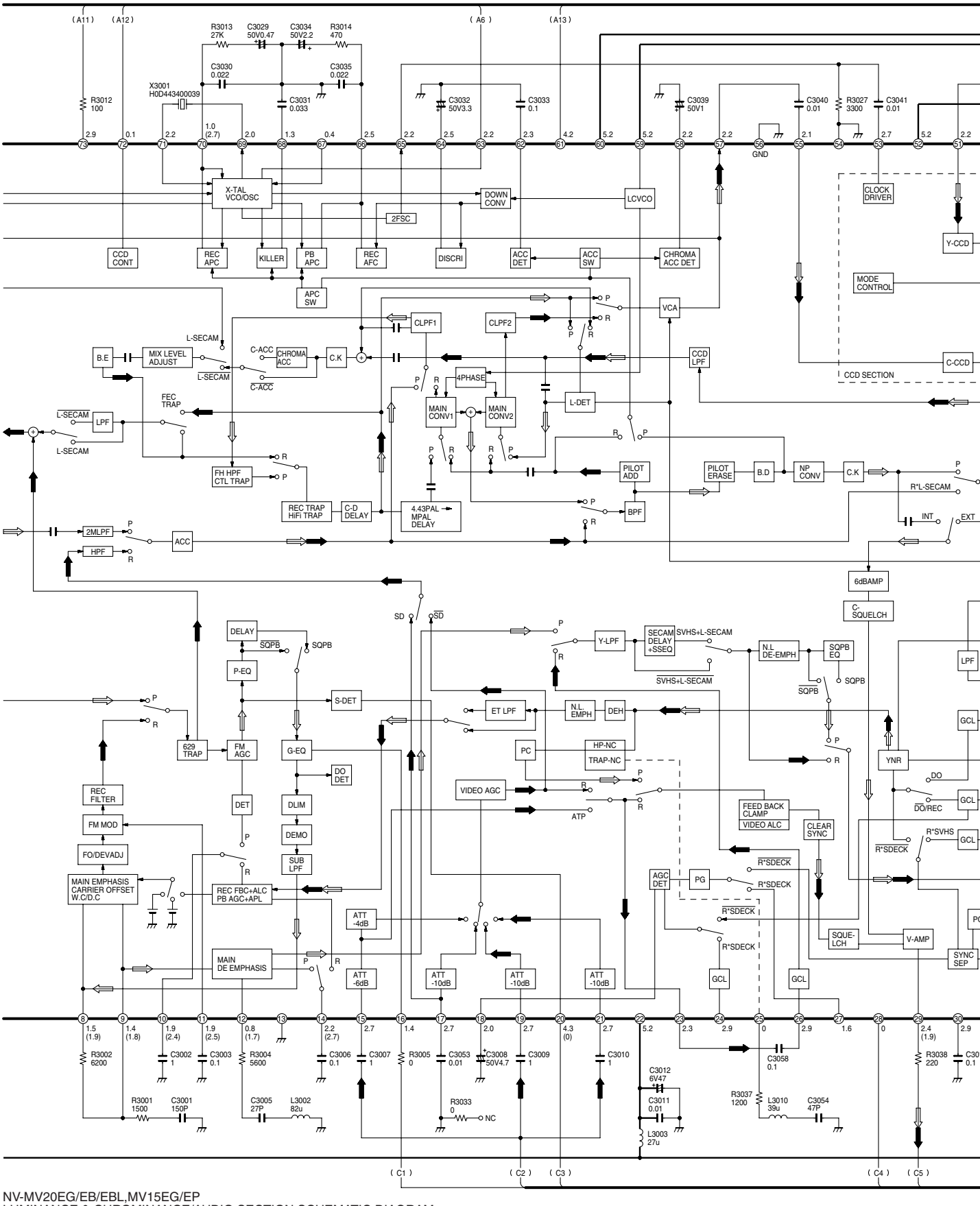


C DIAGRAM



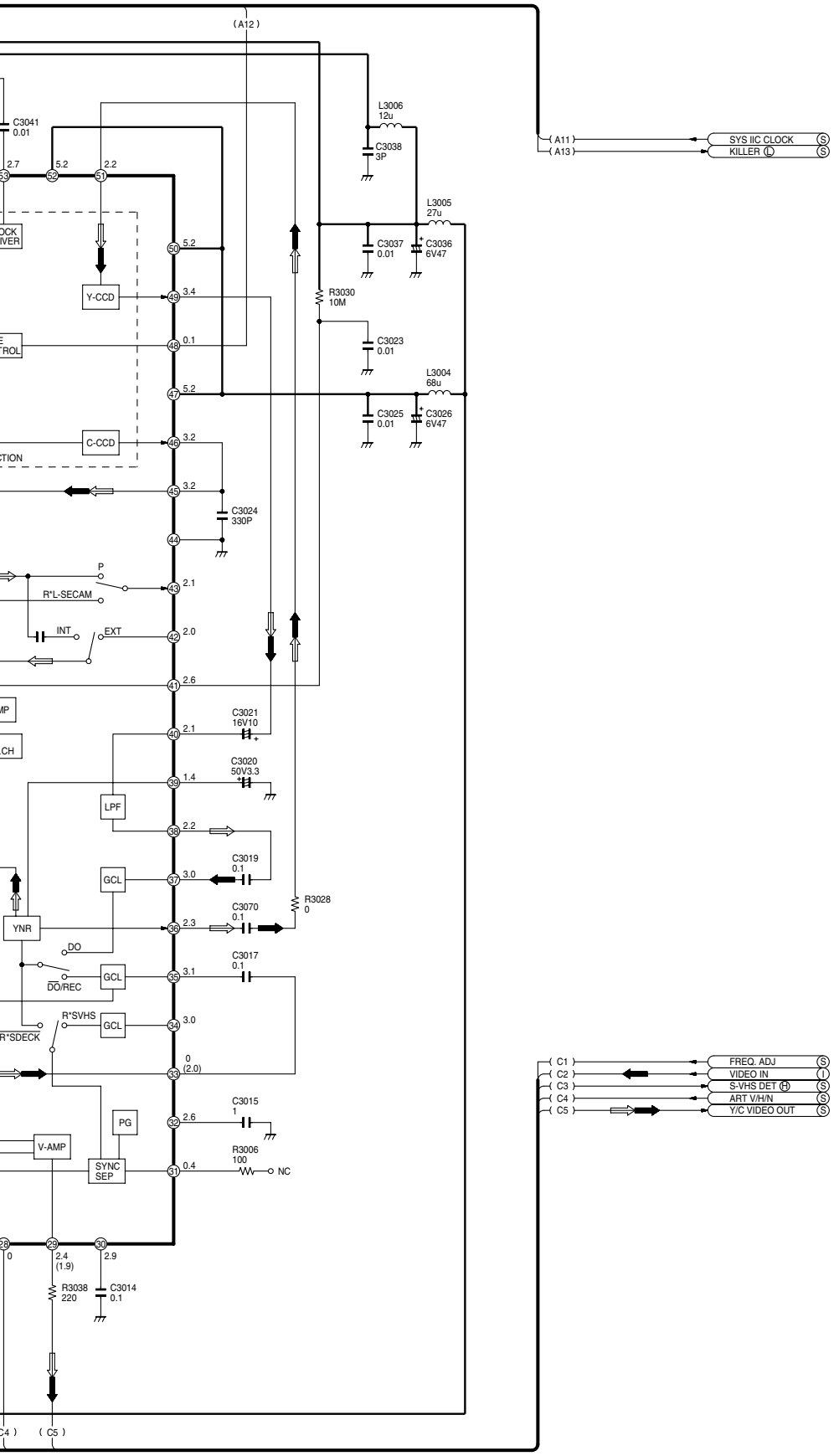
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NV-MV20EG/EB/EBL,MV15EG/EP
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM



NV-MV20EG/EB/EBL,MV15EG/EP
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

11	12	13	14	15	16

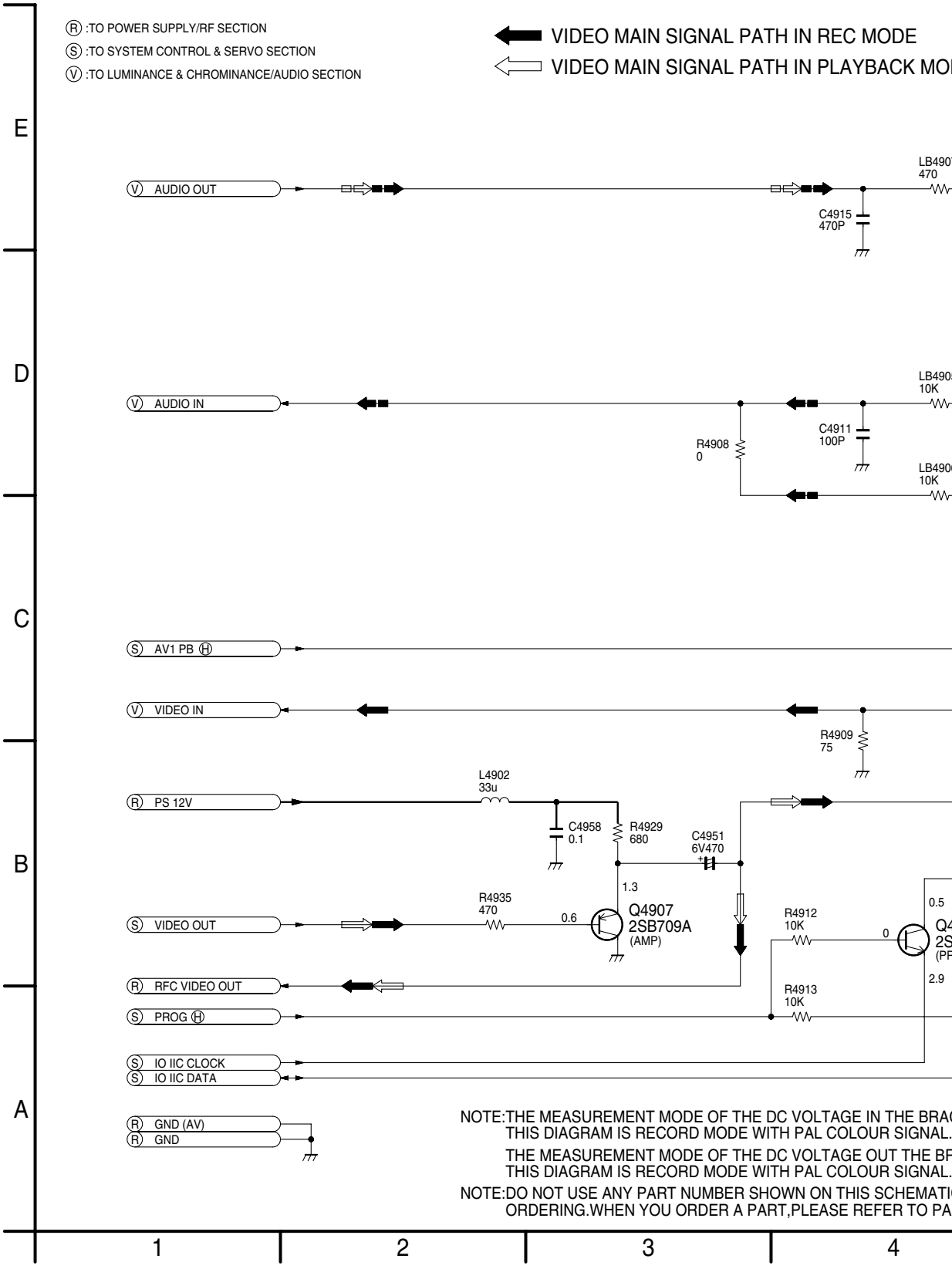


NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

16 | 17 | 18 | 19

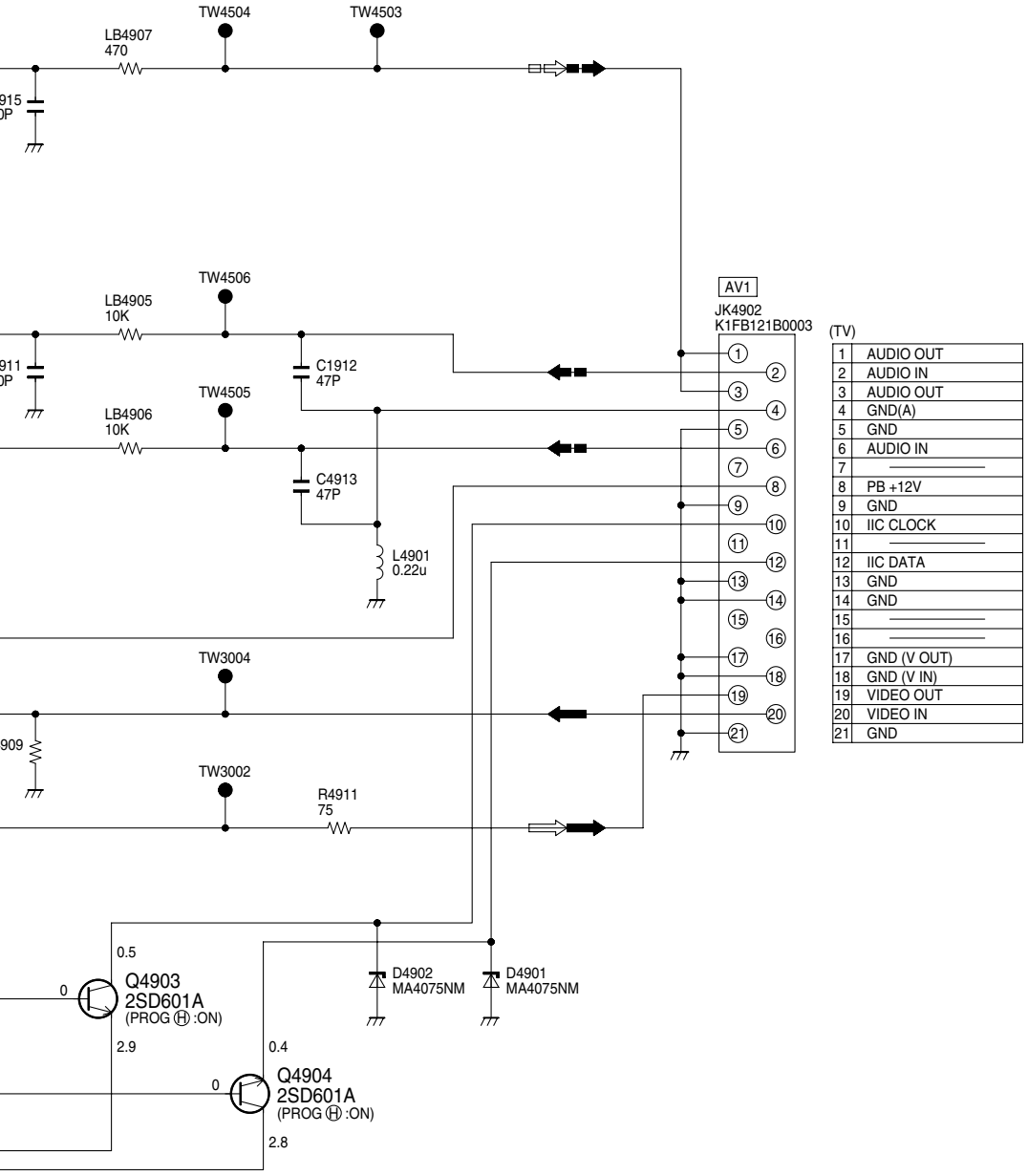
NV-MV20EG/EB/EBL,
MV15EG/EP
LUMINANCE & CHROMINANCE/AUDIO
SECTION SCHEMATIC DIAGRAM

8.6. INPUT/ OUTPUT SECTION IN MAIN SCHEMATIC DIAGRAM



EC MODE
LAYBACK MODE

AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

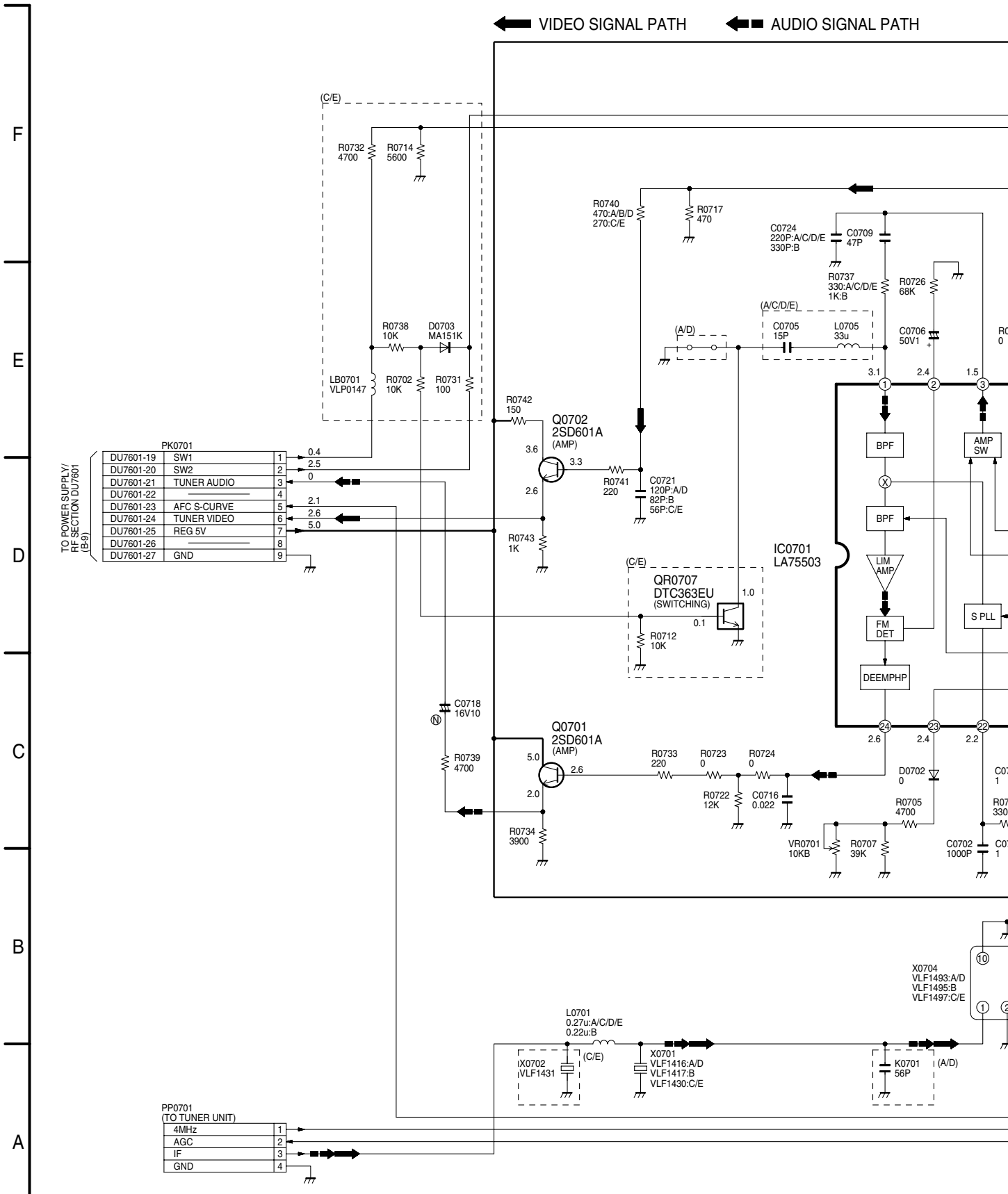


AGE IN THE BRACKETS( )ON
COLOUR SIGNAL.
AGE OUT THE BRACKETS( )ON
COLOUR SIGNAL.
THIS SCHEMATIC DIAGRAM FOR
SE REFER TO PARTS LIST.

NV-MV20EG/EB/EBL,MV15EG/EP
INPUT/OUTPUT SECTION SCHEMATIC DIAGRAM

4	5	6	7

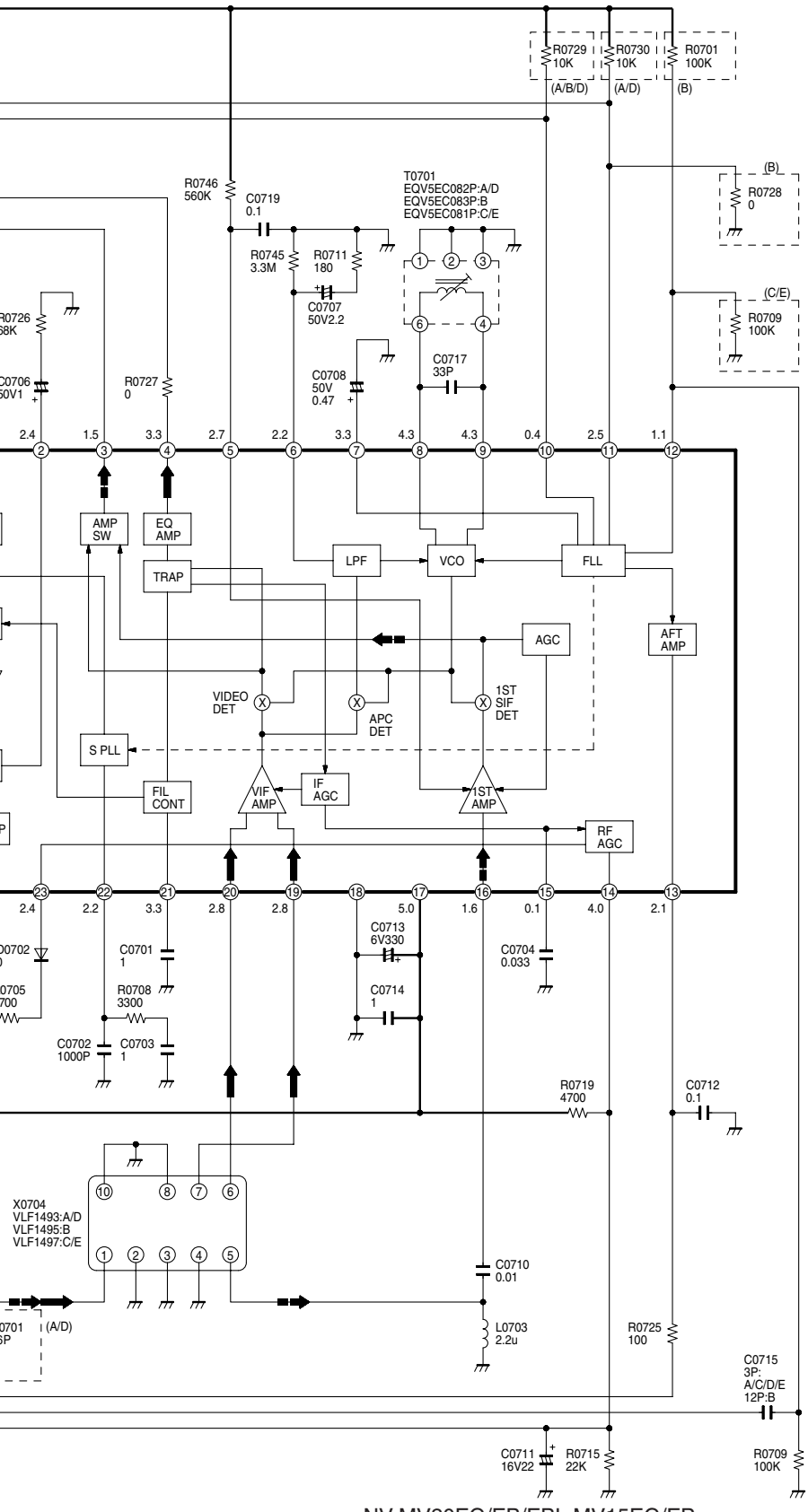
8.7. TV DEMODULATOR PACK SCHEMATIC DIAGRAM



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

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

TH

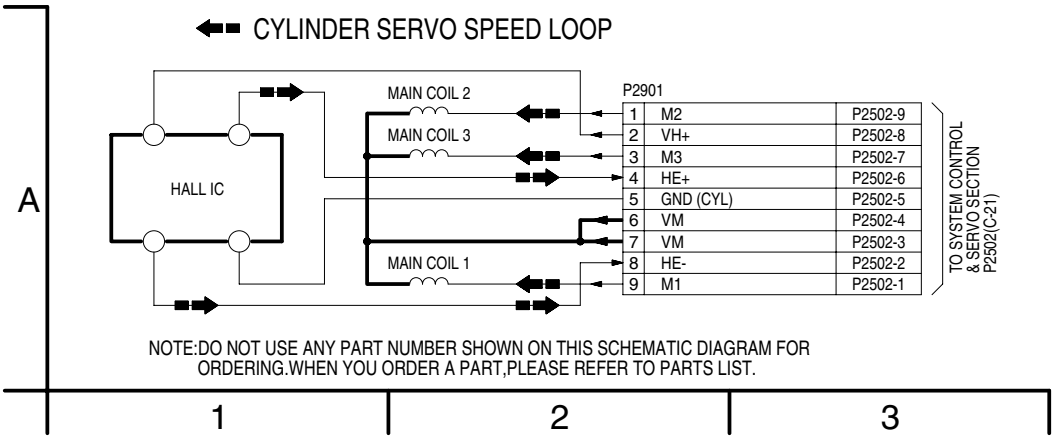


N THIS SCHEMATIC DIAGRAM FOR
ASE REFER TO PARTS LIST.

NV-MV20EG/EB/EBL,MV15EG/EP
TV DEMODULATOR PACK SCHEMATIC DIAGRAM

5 | 6 | 7 | 8

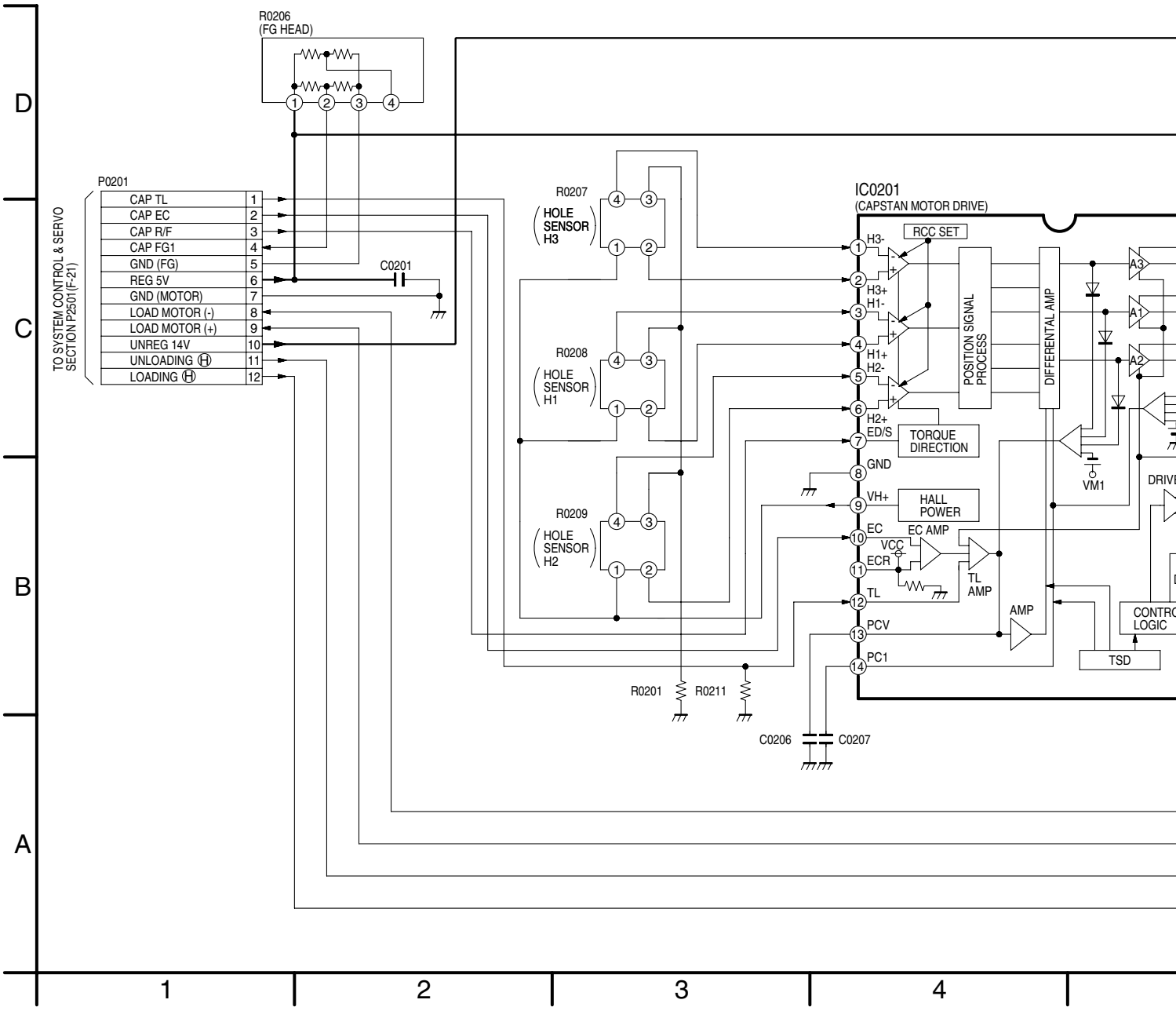
8.8. CYLINDER STATOR UNIT SCHEMATIC DIAGRAM

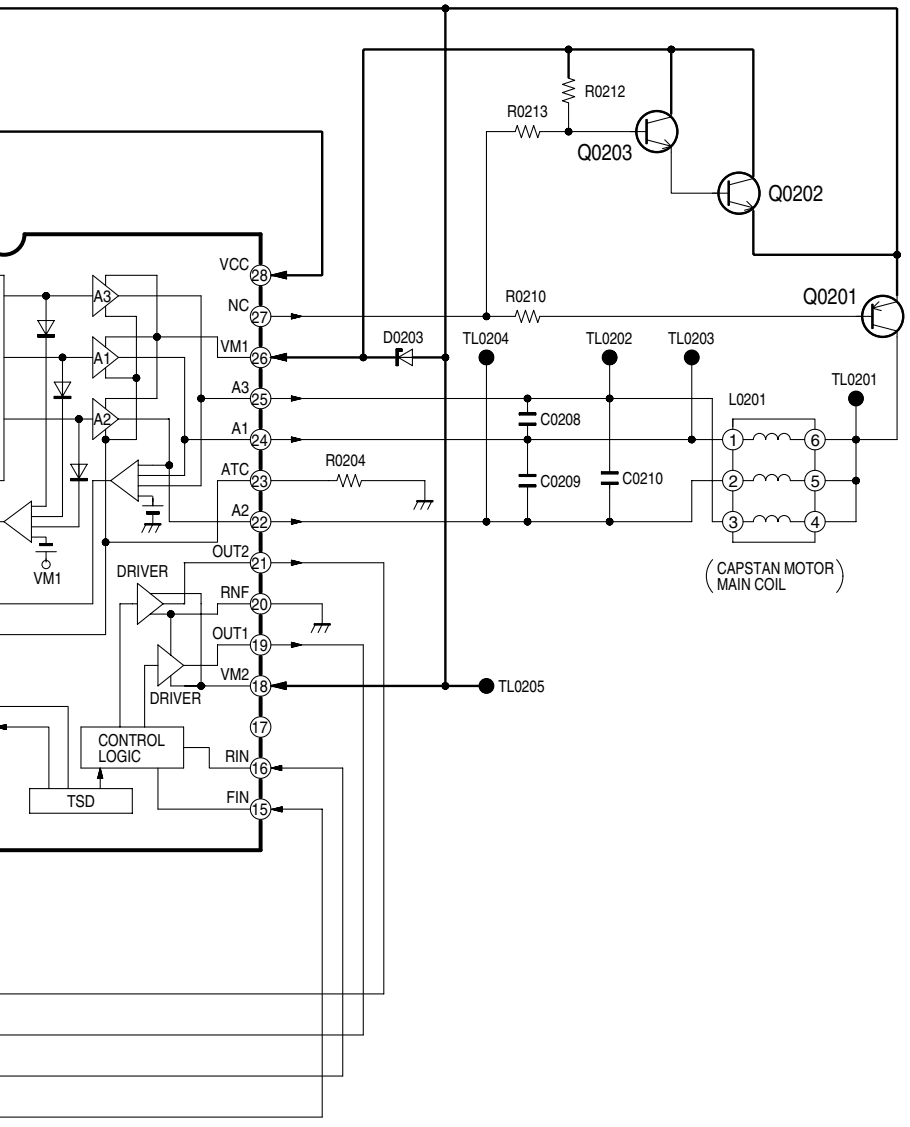


NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-MV20EG/EB/EBL, MV15EG/EP CYLINDER STATOR SCHEMATIC DIAGRAM

8.9. CAPSTAN UNIT SCHEMATIC DIAGRAM





NV-MV20EG/EB/EBL,MV15EG/EP
CAPSTAN UNIT SCHEMATIC DIAGRAM

5 6 7