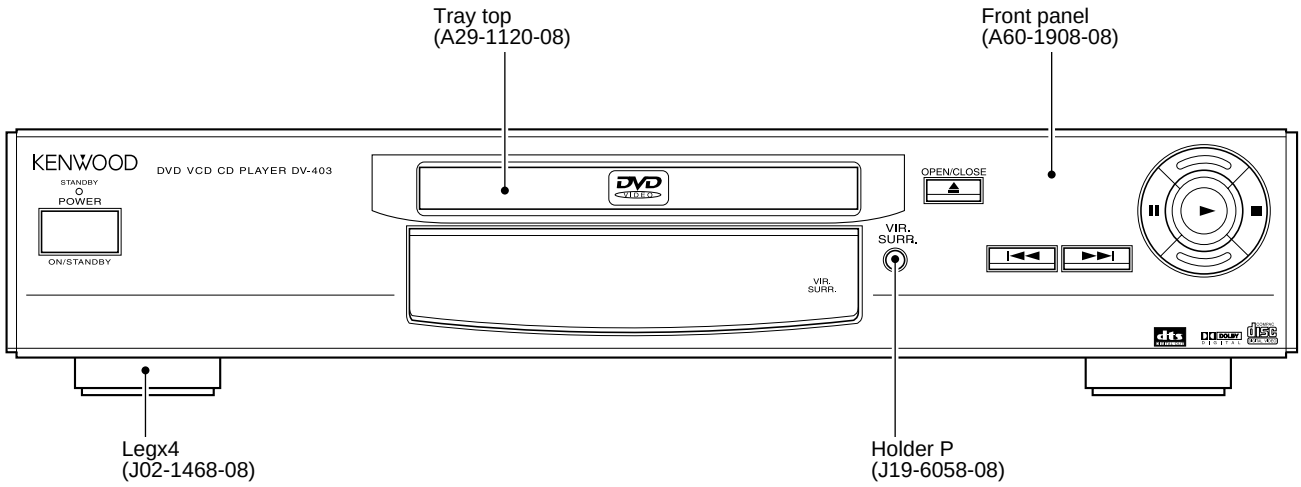
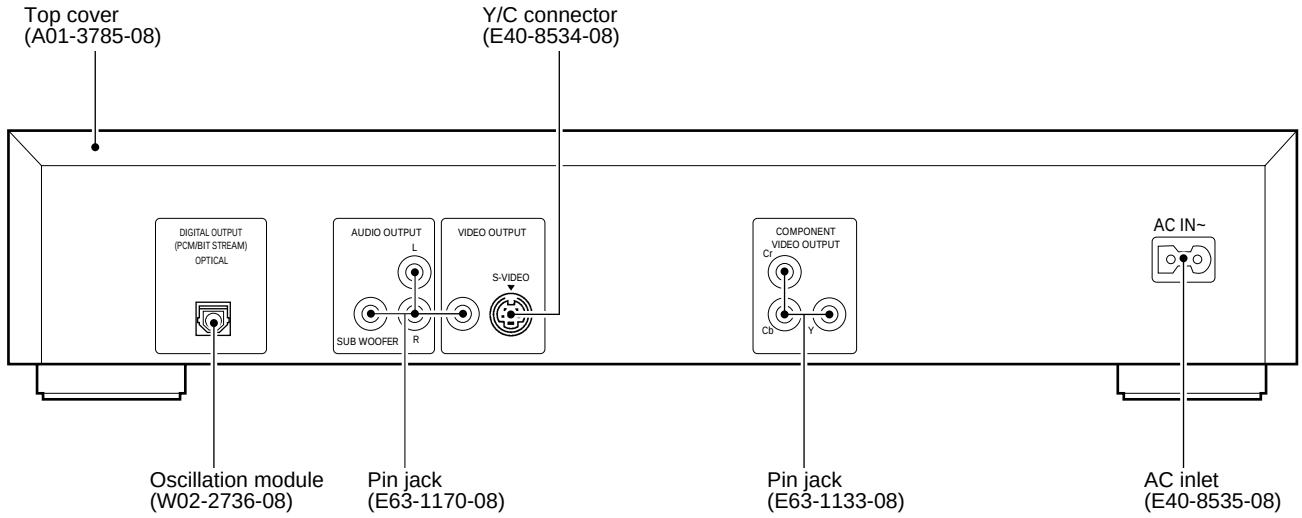
DVD VCD CD PLAYER

DV-403

SERVICE MANUAL

KENWOOD





In compliance with Federal Regulations, following are reproduction of labels on, or inside the porduct relating to laser product safety.

KENWOOD-Crop. certifies this equipment conforms to DHHS Regulations No.21 CFR 1040. 10, Chapter 1, subchapter J.

DANGER : Laser radiation when open and interlock defeated.
AVOID DIRECT EXPOSURE TO BEAM.

Caution : No connection of ground line if disassemble the unit. Please connect the ground line on rear panel, PCBs, Chassis and some others.

NOTE : Please use the remote controller for self-diagnosis.

70%

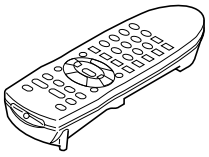
CONTENTS / ACCESSORIES

Contents

Note: There is different part in this manual as compared with a usual one because we use OEM factory's data.
On "Circuit description", "Lubrication" and "Abbreviation of Logo", please refer to DV-303 service manual (B51-5561-00 or B51-5583-00)

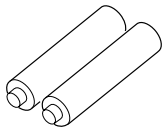
Accessories

Remote control unit 1
(A70-1444-08)

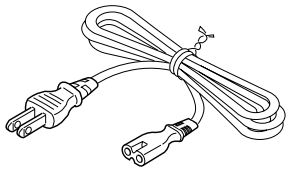


Battery cover (A09-1193-08)

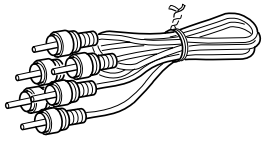
Batteries. 2
for remote control unit [size "AA"]



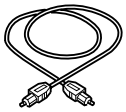
AC cord 1
(E30-2937-08)



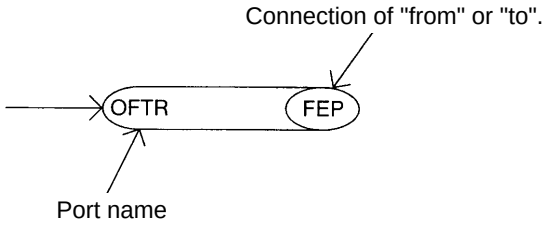
Video/audio cable. 1
(E30-2938-08)



Digital cord. 1
(B19-1615-08)



How to read the schematic diagram

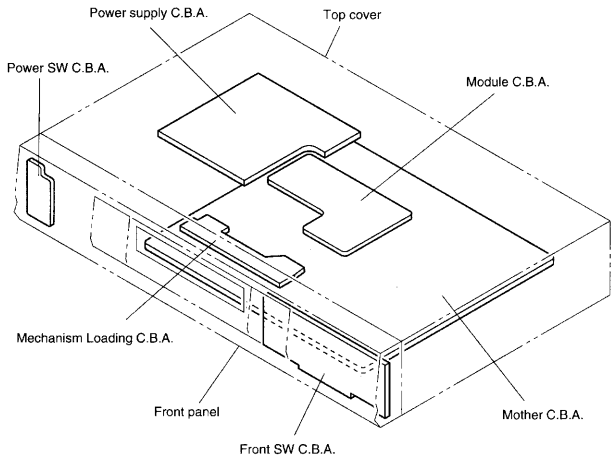


• There are some destinations in this schematic.

DISASSEMBLY FOR REPAIR

1. Assembling and Disassembling the Casing and Checking C.B.A.s

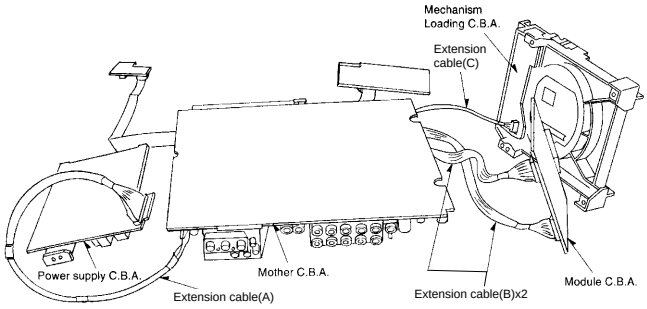
1-1 Casing Parts and C.B.A. Positions



1-2 Service Positions

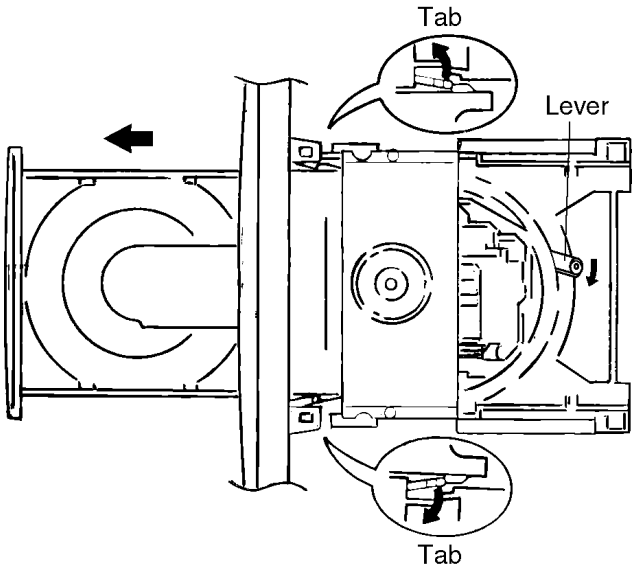
Note

To inspect the loading base unit, position the left side upward (as viewed from the front).



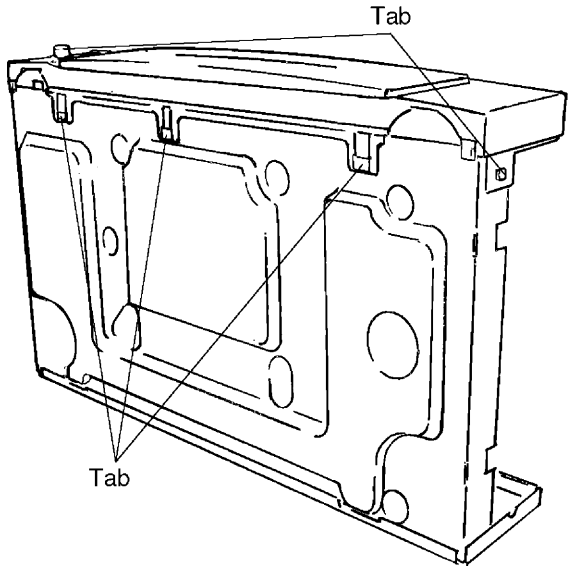
1-3 Disassembling the Tray

1. Turn the lever clockwise.
2. Move the tray in the direction of the arrow until it locks.
3. Release the tab locks on the left and right, then pull out the tray.

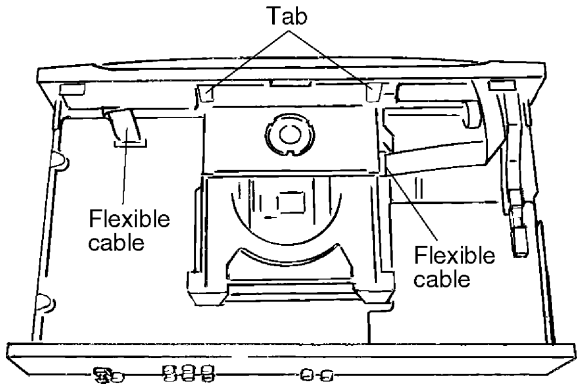


1-4 Disassembling the Front Panel

1. Release the 3 tabs on the bottom.
2. Release the 2 tabs on the left and right.



3. Release the 2 tabs.
4. Disconnect the 2 flexible cables.

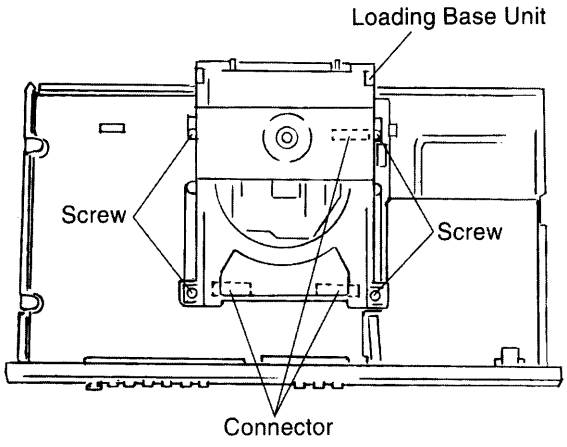


1-5 Disassembling the Loading Base Unit

1. Remove the 4 screws.
2. Pull out the loading base unit vertically.

Note

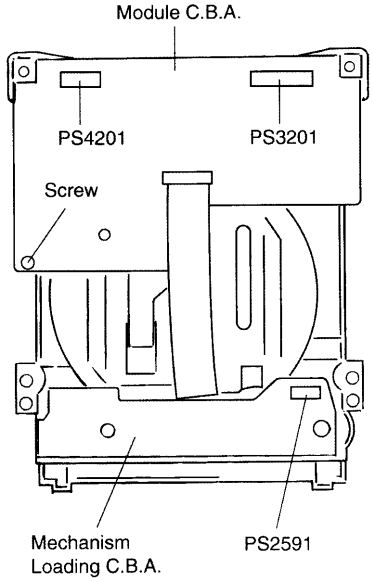
There is a danger of damaging the connectors.



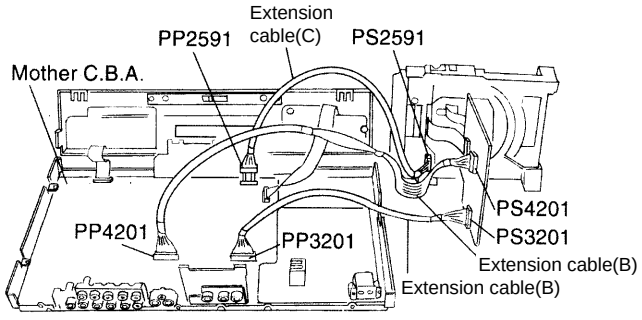
DISASSEMBLY FOR REPAIR

1-6 Checking the Module C.B.A.

1. Remove the screws.



2. Connect the module C.B.A. to the mother C.B.A. with the extension cables for inspection.
   - Extension cable (B)x2
     Mother C.B.A. Module C.B.A.
     PP4201-PS4201
     PP3201-PS3201
3. Connect the mechanism loading C.B.A. to the mother C.B.A. with the extension cable: for inspection.
   Extension cable(C)
   Mother C.B.A. Mechanism Loading C.B.A.
   PP2591-PS2591

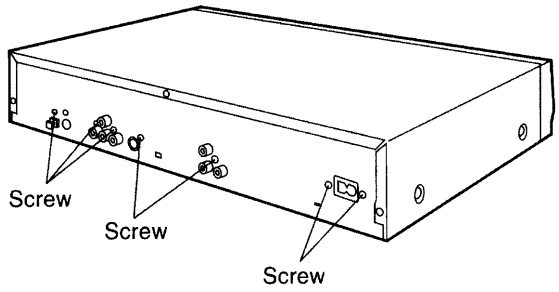


Note

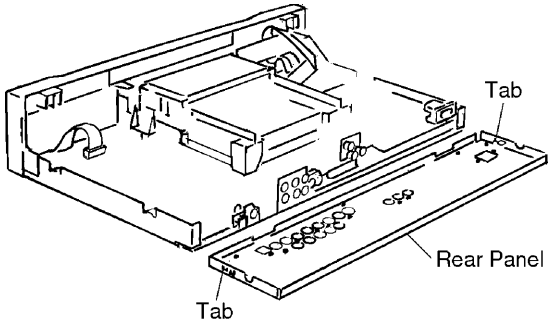
Be sure to initialize the player whenever you replace a C.B.A. (Refer to page17/4-1 Initializing the DVD Player.)

1-7 Disassembling the Rear Panel,

1. Remove all of the screws connected to the rear panel. (The number of screws varies according to the model).

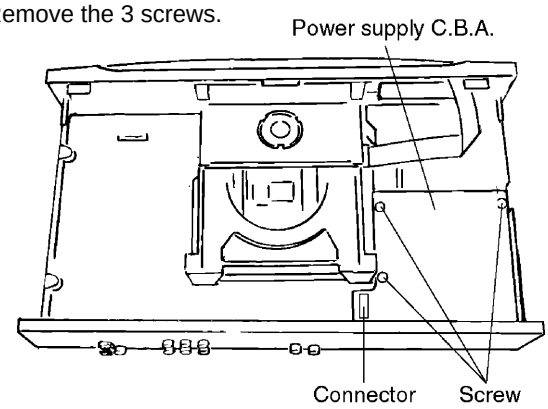


2. Release the two tabs on the left and right.



1-8 Checking the Power Supply C.B.A.

1. Remove the 3 screws.

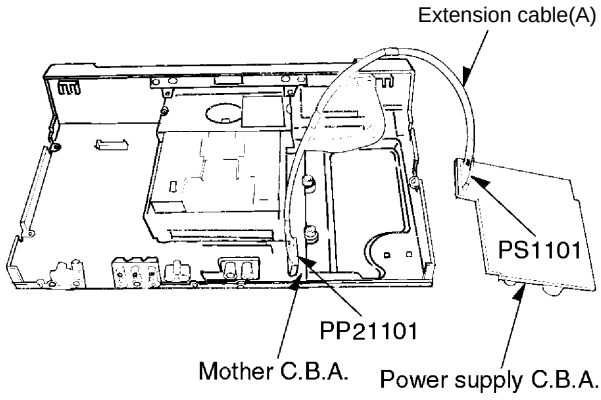


2. Carefully pull out the power supply C.B.A.

Note

There is a danger of damaging the connectors.

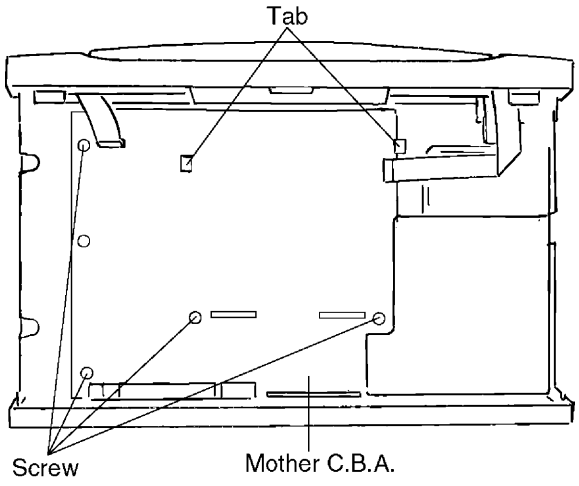
3. Connect the power supply C.B.A. and the mother C.B.A. with the extension cable for inspection.
   - Extension cable(A) (connects the power supply C.B.A. PS1101 and the mother C.B.A. PP1101)



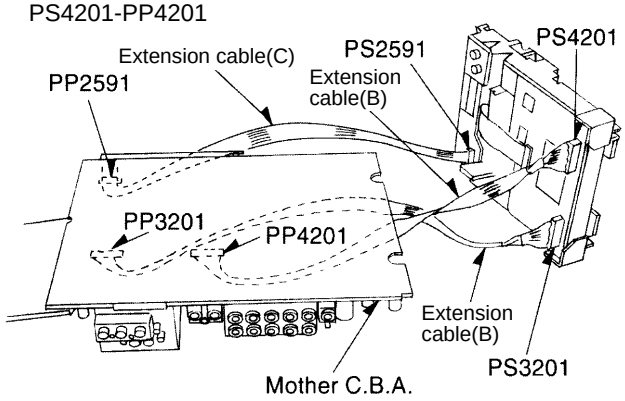
DISASSEMBLY FOR REPAIR

1-9 Checking the Mother C.B.A.

1. Remove the 4 screws.
2. Release the 2 tabs.



3. Checked by connecting the module C.B.A. and the mother C.B.A. with the extension cables.
   Extension cable (B)x2
   Module C.B.A. Mother C.B.A.
   PS3201-PP3201
   PS4201-PP4201



4. Checked by connecting the mechanism loading C.B.A. and the mother C.B.A. with the extension cables.
   Extension cable(C)
   Mechanism Loading C.B.A. Mother C.B.A.
   PS2591-PP4201

Note

Be sure to initialize the player whenever you replace a C.B.A. (Refer to page17/4-1, Initializing the DVD player.)

2. Assembling and Disassembling the Optical Pickup (Mechanical Parts)

The optical pickup can be damaged by static electricity from your body. Be sure to take static electricity countermeasures when working around the optical pickup.

2-1 Handling the Optical Pickup

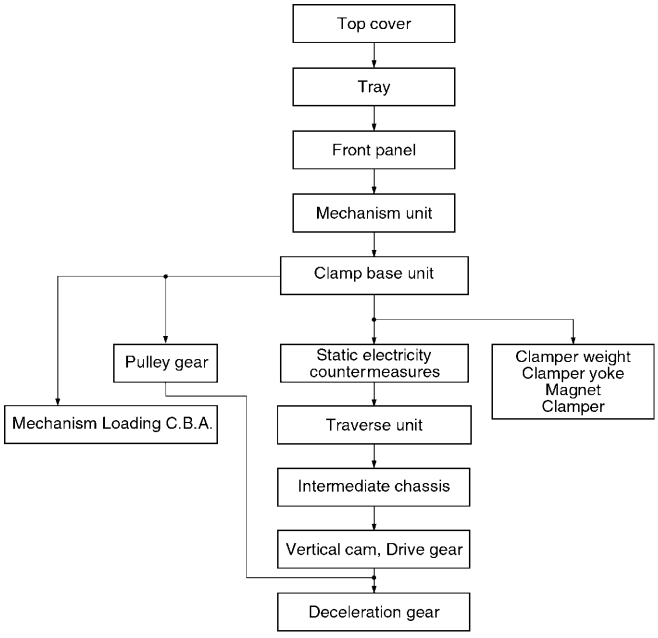
The optical pickup can be damaged by static electricity from your body. Be sure to take static electricity countermeasures when working around the optical pickup.

1. The optical pickup is an extremely high-precision mechanism. Do not subject it to strong impact.
2. To preserve the quality of the optical pickup replacement parts during transport and installation, the terminals of the laser diode are short-circuited. After replacing the parts, use the proper procedure to return the laser diode to its original condition. (Refer to page8/2-11 Assembling the Optical Pickup.)
3. Testers cannot be used to check the laser diode of the optical pickup. The power supply inside the tester can easily damage the laser diode.
4. Take care when handling the flexible cable because excessive force can cause it to break.
5. You cannot adjust the semifixed resistor for laser power adjustment. Do not turn it.

2-2 Disassembly Procedure

Use the following procedure to replace major parts.

For the assembly procedure, follow the flow chart in reverse.



DISASSEMBLY FOR REPAIR

2-3 Static Electricity Countermeasures

The laser diode inside the traverse unit (optical pickup) can be damaged by static electricity from your body. Be sure to take static electricity countermeasures when working around the optical pickup.

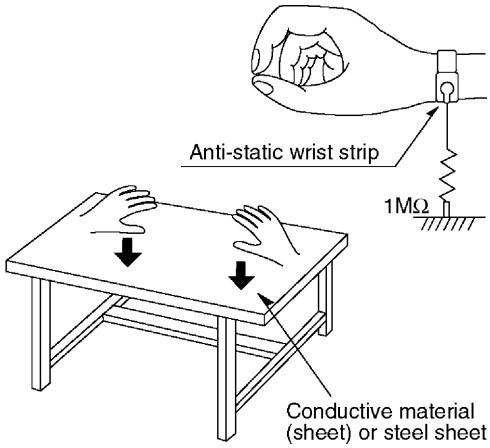
2-3-1 Static Electricity Countermeasure Methods

1. Ground yourself

   Use an anti-static wrist strap to discharge static electricity from your body.

2. Ground the workbench

   Lay a conductive material (sheet) or steel sheet on the surface where the traverse unit (optical pickup) is to be placed, then ground the sheet.



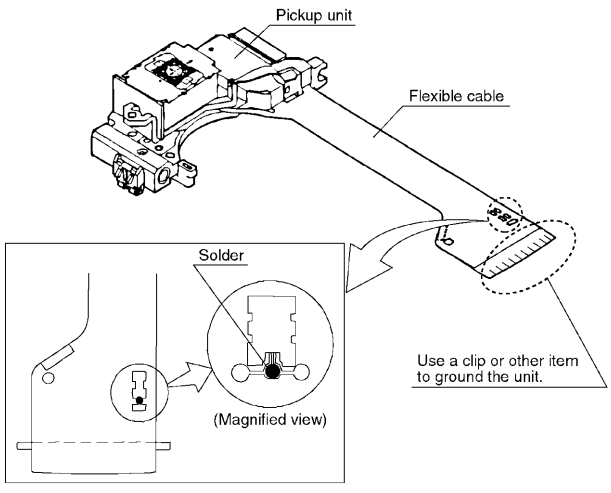
2-3-2 Short-circuit the laser diode

Solder the land in the flexible cable of the optical pickup.

Notes

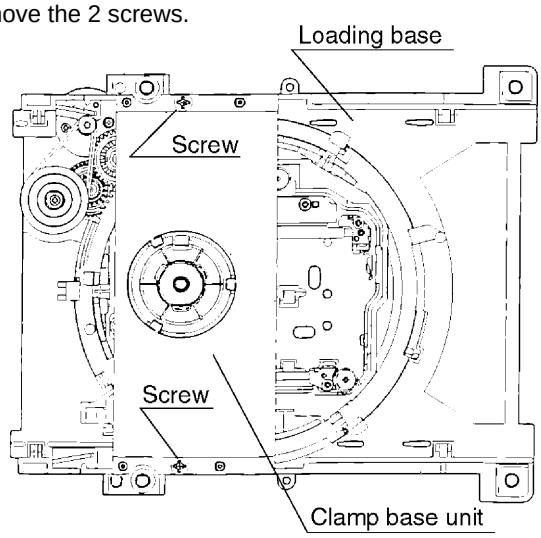
- Be sure to do this befer disconnecting the flexible cable of the optical pickup from the module C.B.A.
- Use an anti-static soldering iron to short-circuit and unshort-circuit laser diode.

  (Recommended soldering iron: Hakko with ESD countermeasure)
- After you have finished repairing the laser diode, follow the correct procedure to remove the solder from the short-circuit location. (Refer to page5/2. Assembling and Disassembling the Optical Pickup (Mechanical Parts).)



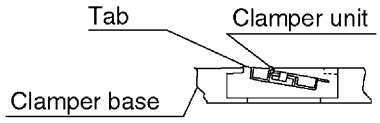
2-4 Disassembling the Clamp Base Unit

Remove the 2 screws.

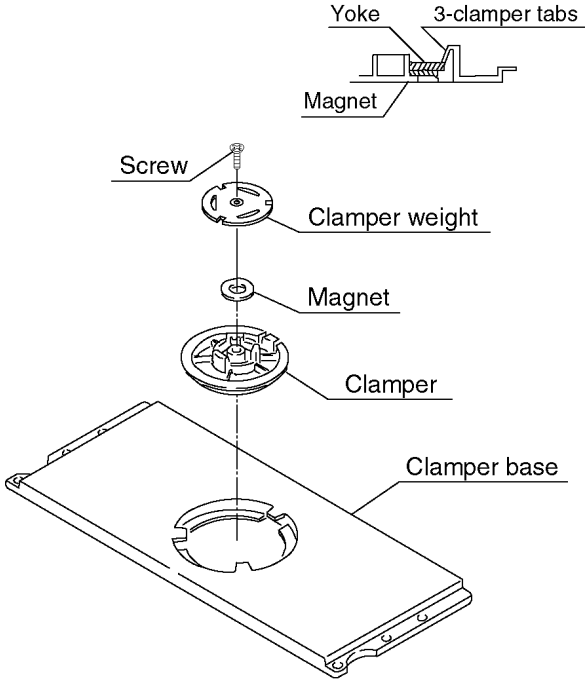


2-5 Disassembling the Clamper Weight, Clamper Yoke, Magnet and Clamper

1. Release the tab, and pull out the clamper.



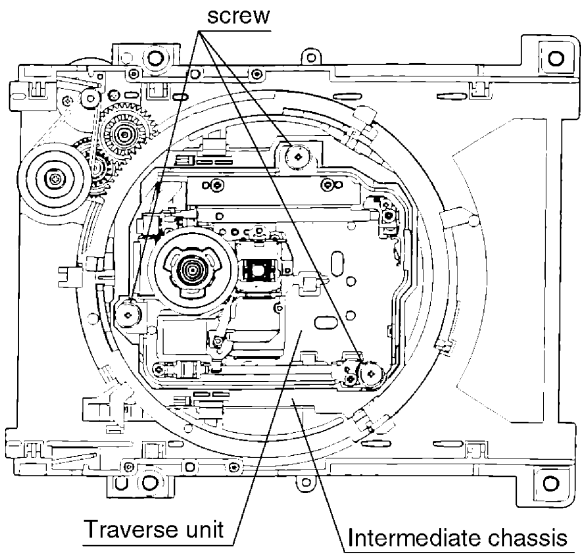
2. Release the 3 tabs on the clamper.



DISASSEMBLY FOR REPAIR

2-6 Disassembling the Traverse Unit

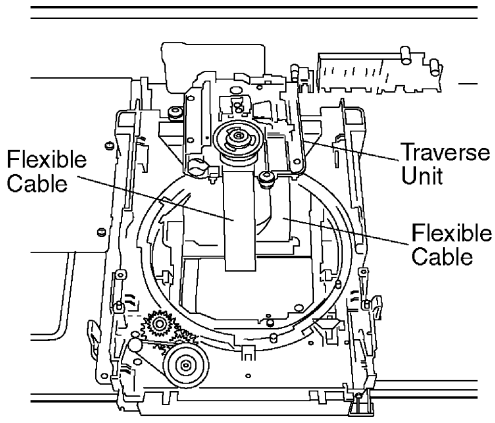
1. Remove the 3 screws.



Note

Be sure to take static electricitiy countermeasures befer disconnecting the flexible cable.(Refer to page6/2-3 Static Electricity Countermeasures.)

2. Disconnect the 2 flexible cables.

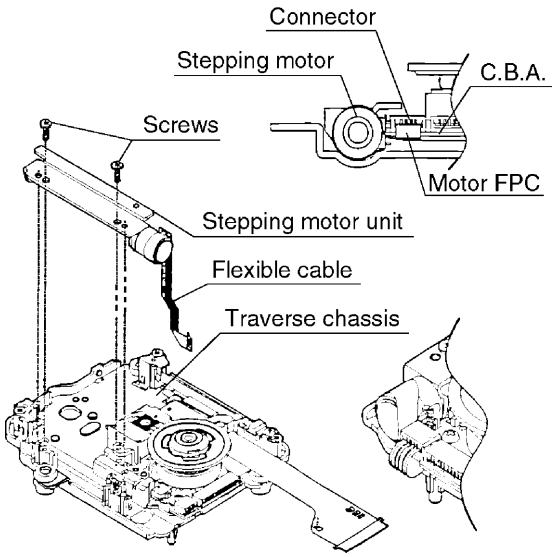


2-7 Disassembling the Stepping Motor Unit

1. Disconnect the flexible cable.
2. Remove the 2 screws.

Note

Take care when handling the flexible cable because it can be broken by excessive force.



2-8 Disassembling the Optical Pickup Unit

1. Remove the screw.
2. Release the tab, then remove spring holder 1.

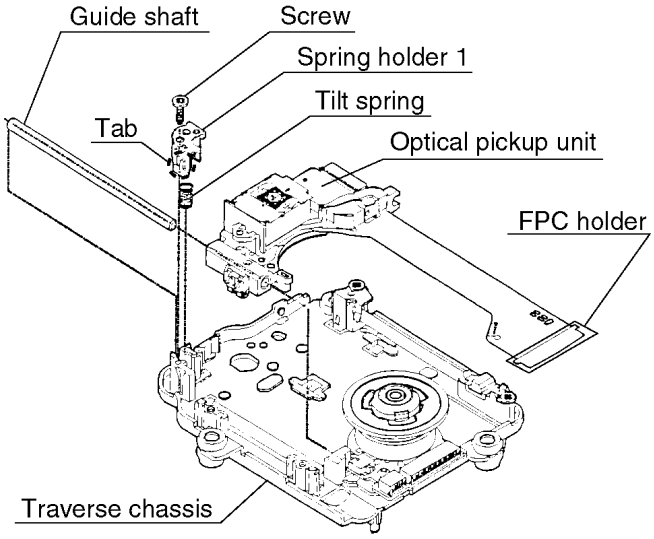
Note

Be sure not to lose the spring.

3. Remove the guide shaft.

Note

Be sure to adjust the optical pickup tilt after replacing the optical pickup.
(Refer to page9/2-13 Opitcal Pickup Tilt Adjustment.)



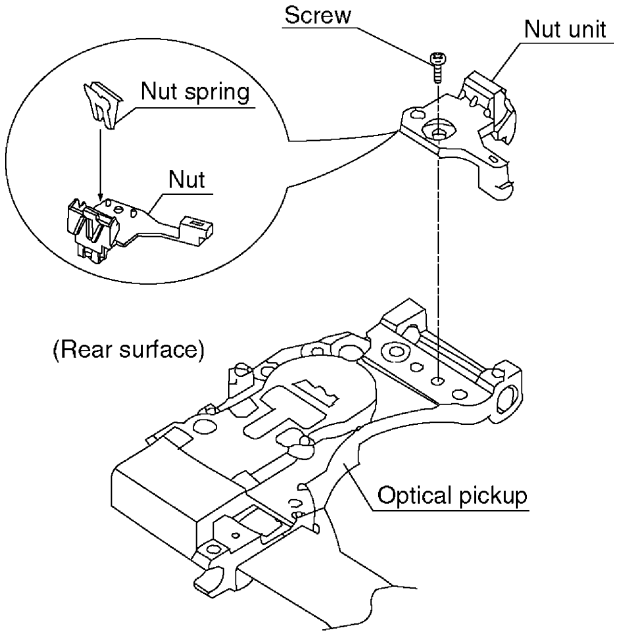
DISASSEMBLY FOR REPAIR

2-9 Disassembling the Nut Unit

1. Remove the screw.

Notes

- The nut unit is not part of the optical pickup.
  Before replacing the optical pickup, remove the nut unit for use with the new optical pickup.
- After installation, use screw lock to lock the screw in position.
- When reassembling, use screw lock to lock the screw in position after attaching it.

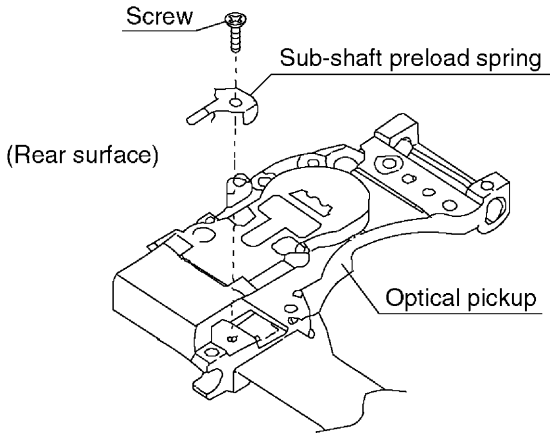


2-10 Disassembling the Sub-Shaft Preload Spring

1. Remove the screw.

Notes

- Handle the sub-shaft preload spring carefully because the shape of the tip is easily deformed.
- The sub-shaft preload spring is not part of the optical pickup. Before replacing the optical pickup, remove the sub-sahft preload spring for use with the new optical pickup.
- After installation, use screw lock to lock the screw in position.

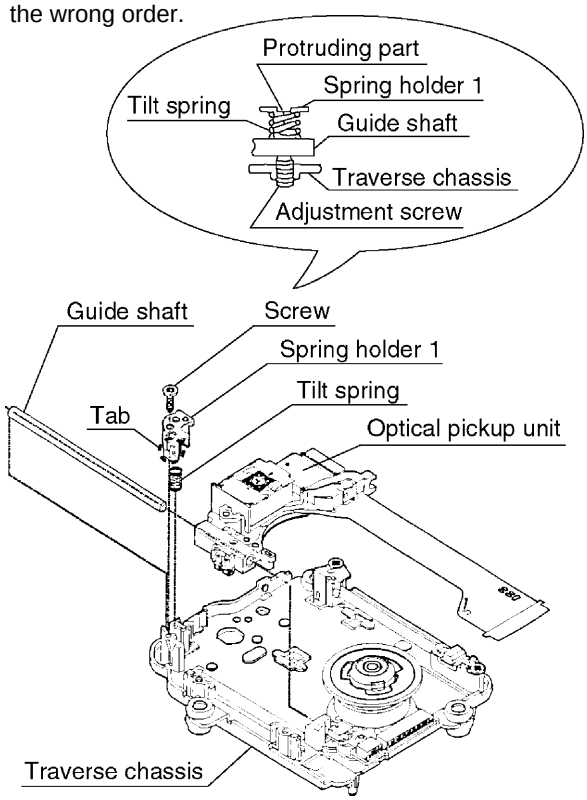


2-11 Assembling the Optical Pickup

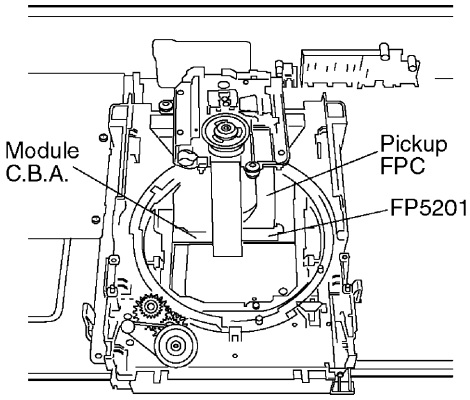
1. Install the optical pickup.

Note

Take care not ot attach the tilt spring and guide shaft in the wrong order.

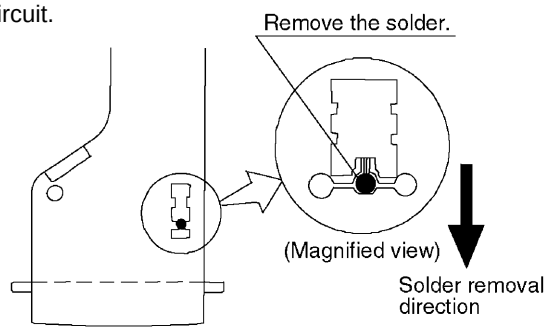


2. Insert the pickup FPC into connector FP5201 on the module C.B.A.



DISASSEMBLY FOR REPAIR

3. Remove the solder from the pickup FPC's soldered short-circuit.



Open the circuit after short-circuiting it.

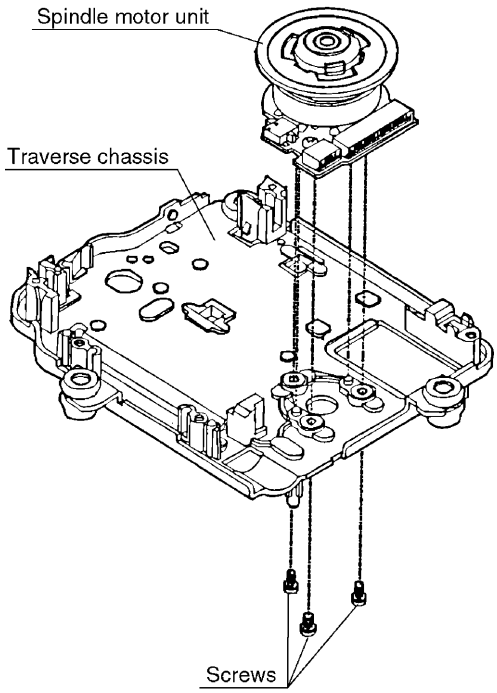
4. Adjust the optical pickup tilt after removing the solder. (Refer to page 9/2-13 Optical Pickup Tilt Adjustment.)

2-12 Disassembling the Spindle Motor Unit

1. Remove the three screws.

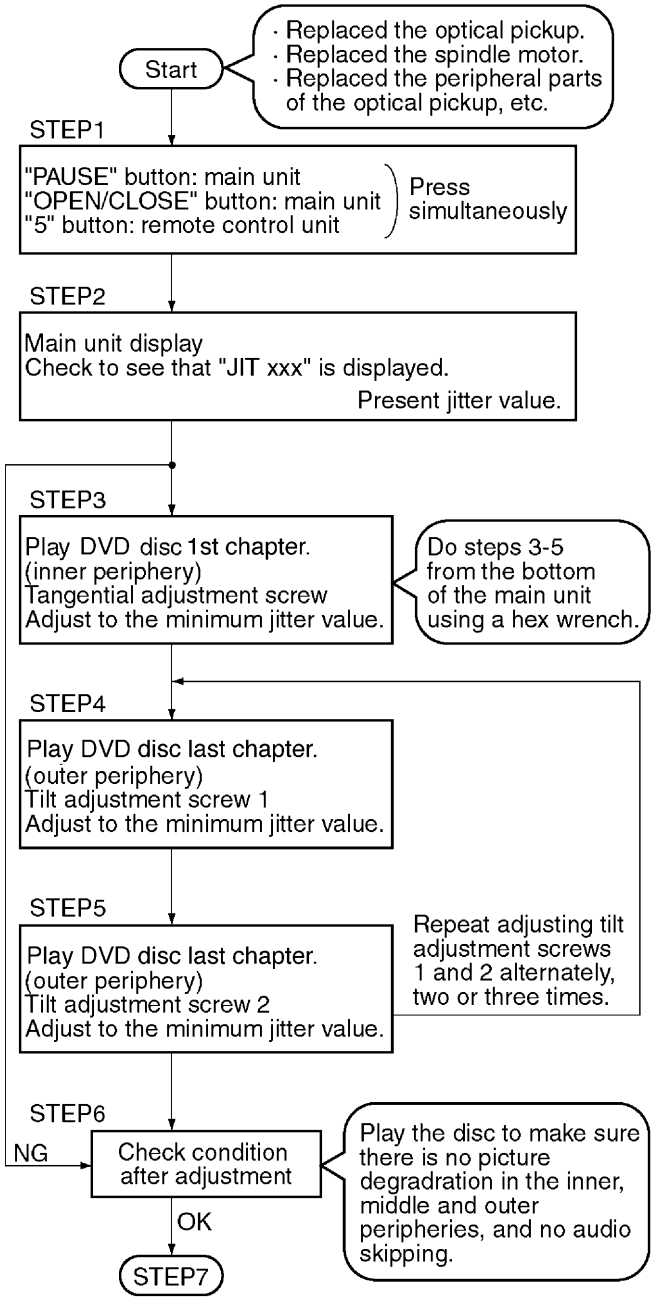
Note

Be sure to adjust the optical pickup tilt after replacing the spindle motor unit.

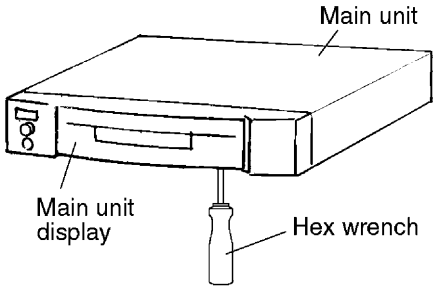


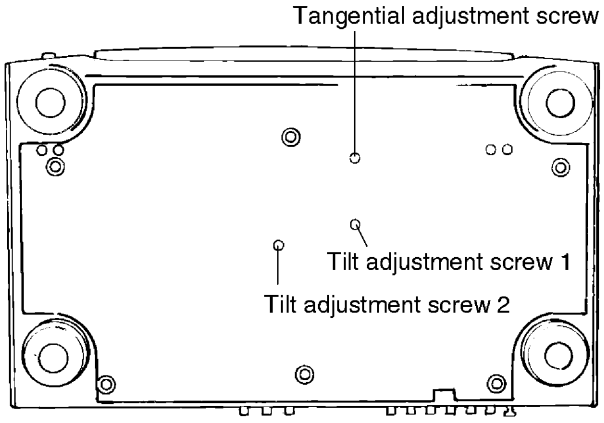
2-13 Optical Pickup Tilt Adjustment

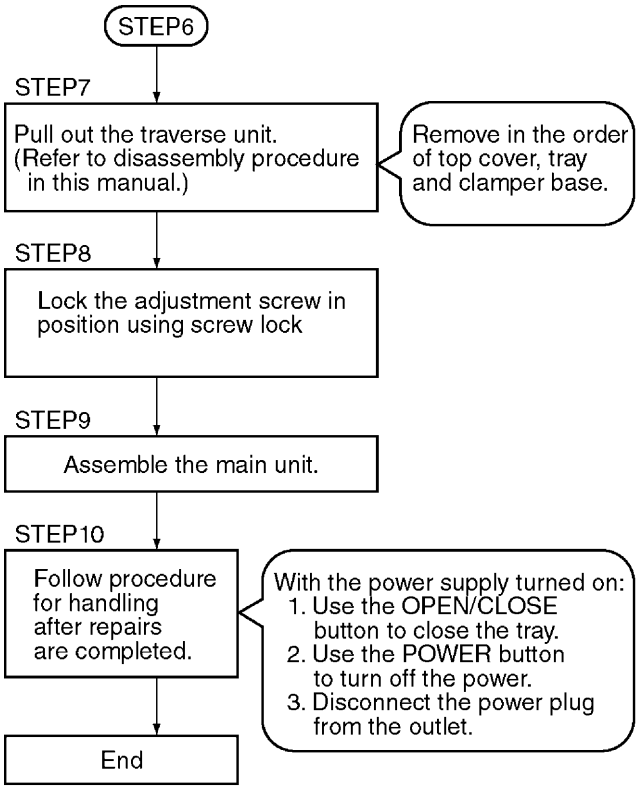
Measurement point	Adjustment point	Mode	Disc
Main unit service display	Tangential adjustment screw Tilt adjustment screw	(inner periphery) play (outer periphery) play	DVD-disc
Measuring equipment, tools		Adjustment value	
Hex wrench Screw lock		Adjust to the minimum jitter value.	

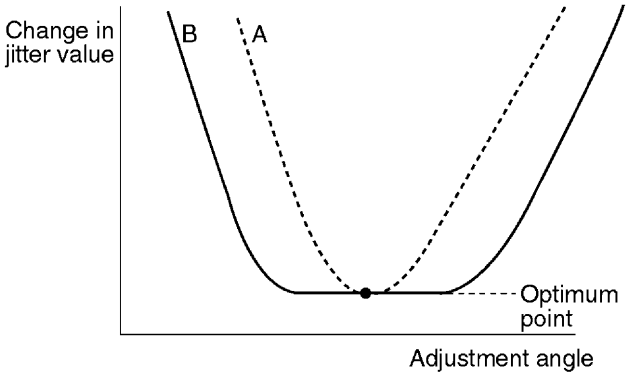


DISASSEMBLY FOR REPAIR

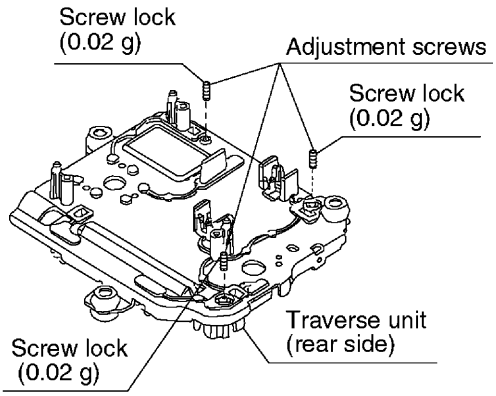








· Jitter value depends on the model:
(1) If the jitter value changes like A, the optimum point is easy to find.
(2) If the jitter value changes like B, set the optimum point near the middle.



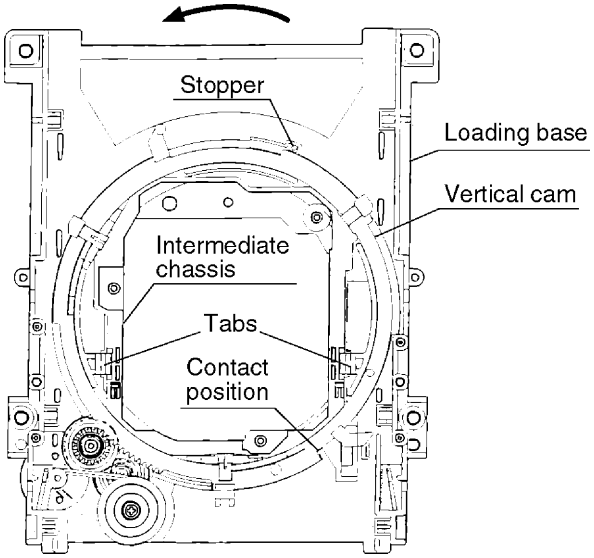
Notes

- Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, adjust if there is a noticeable degradation in picture quality.
- Optical adjustments cannot be made inside the optical pickup.
- Adjustment is generally unnecessary after replacing the traverse unit.

DISASSEMBLY FOR REPAIR

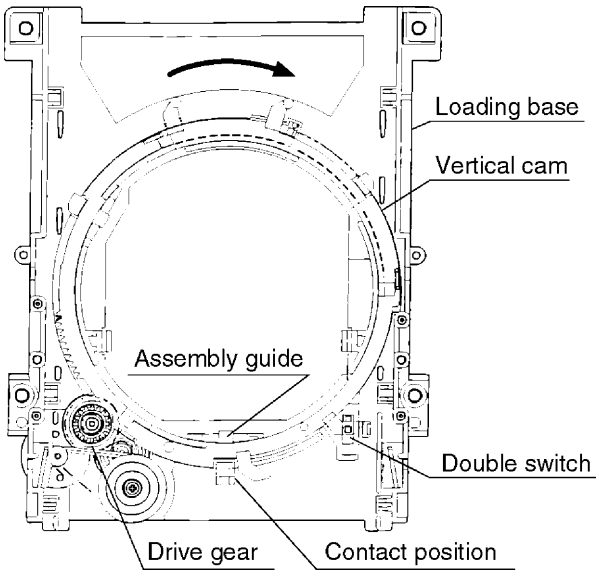
2-14 Disassembling the Intermediate Chassis

1. Push the stopper downward, then rotate it until it contacts the Vertical cam.
2. Release the 2 tabs.



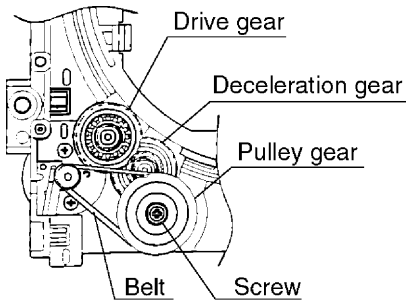
2-15 Disassembling the Vertical cam and Drive gear

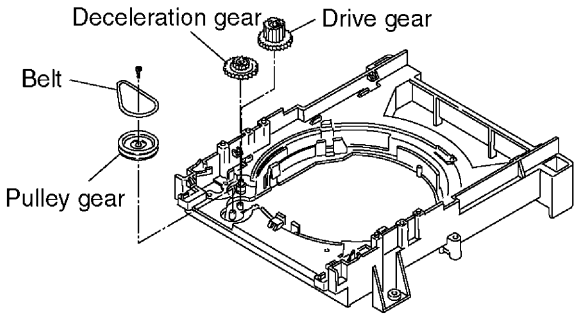
1. Rotate the Vertical cam until it reaches the contact position.
2. Lift the Vertical cam straight upward to pull it out.
3. Remove the Drive gear.



2-16 Disassembling the Pulley Gear and Deceleration Gear

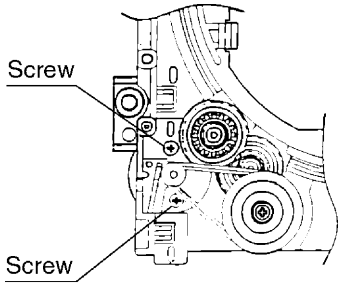
1. Remove the screw.
2. Remove the pulley gear.
3. Remove the belt.
4. Remove the deceleration gear.



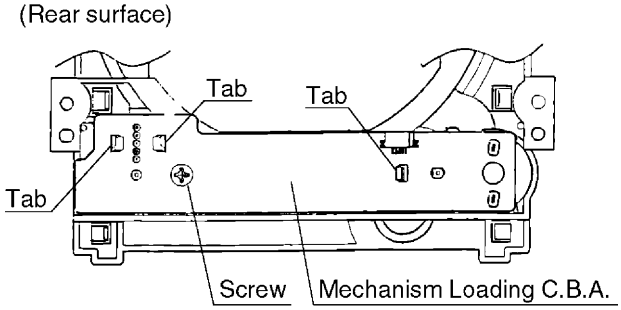


2-17 Disassembling the Mechanism Loading C.B.A.

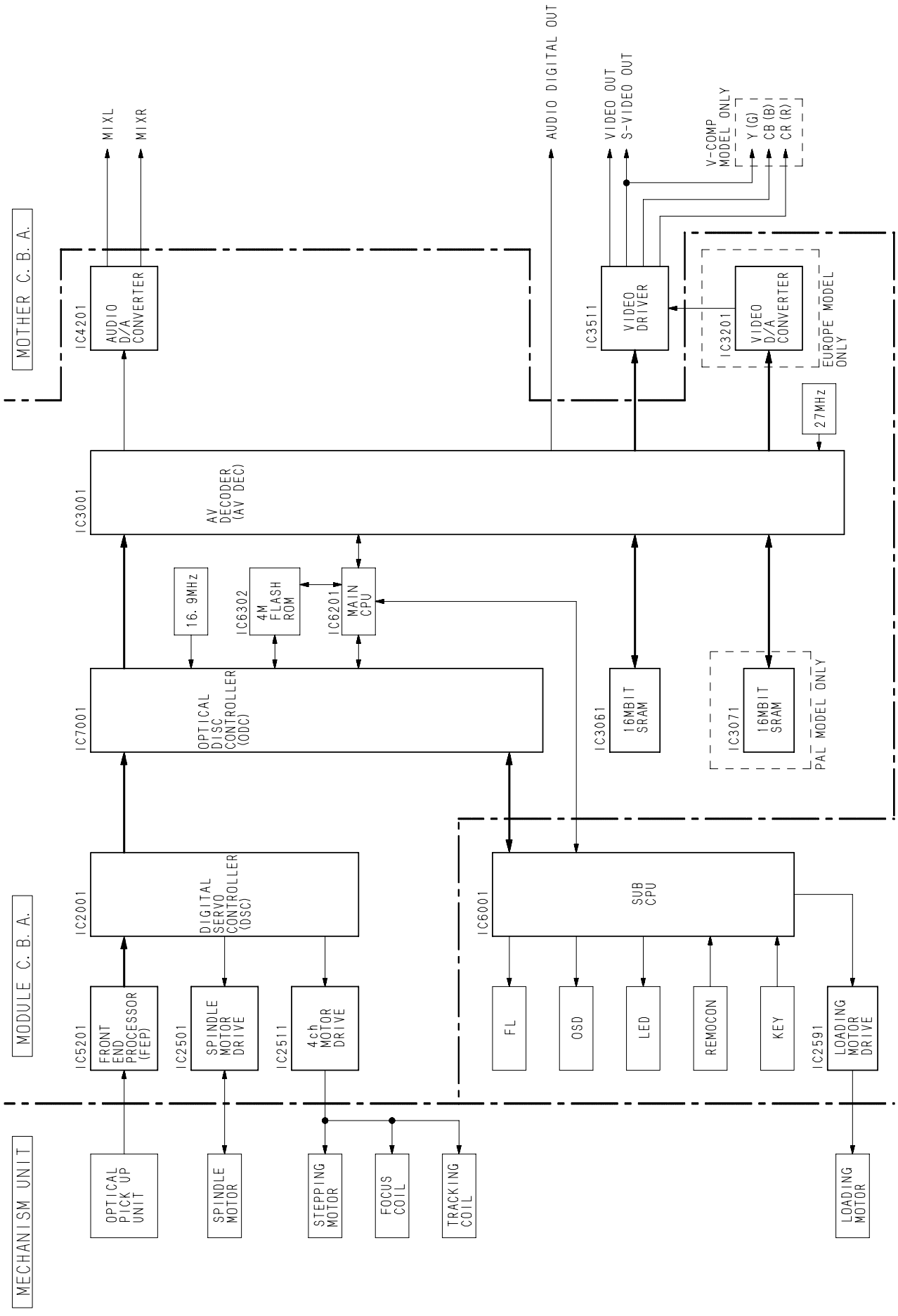
1. Remove the 2 screws.



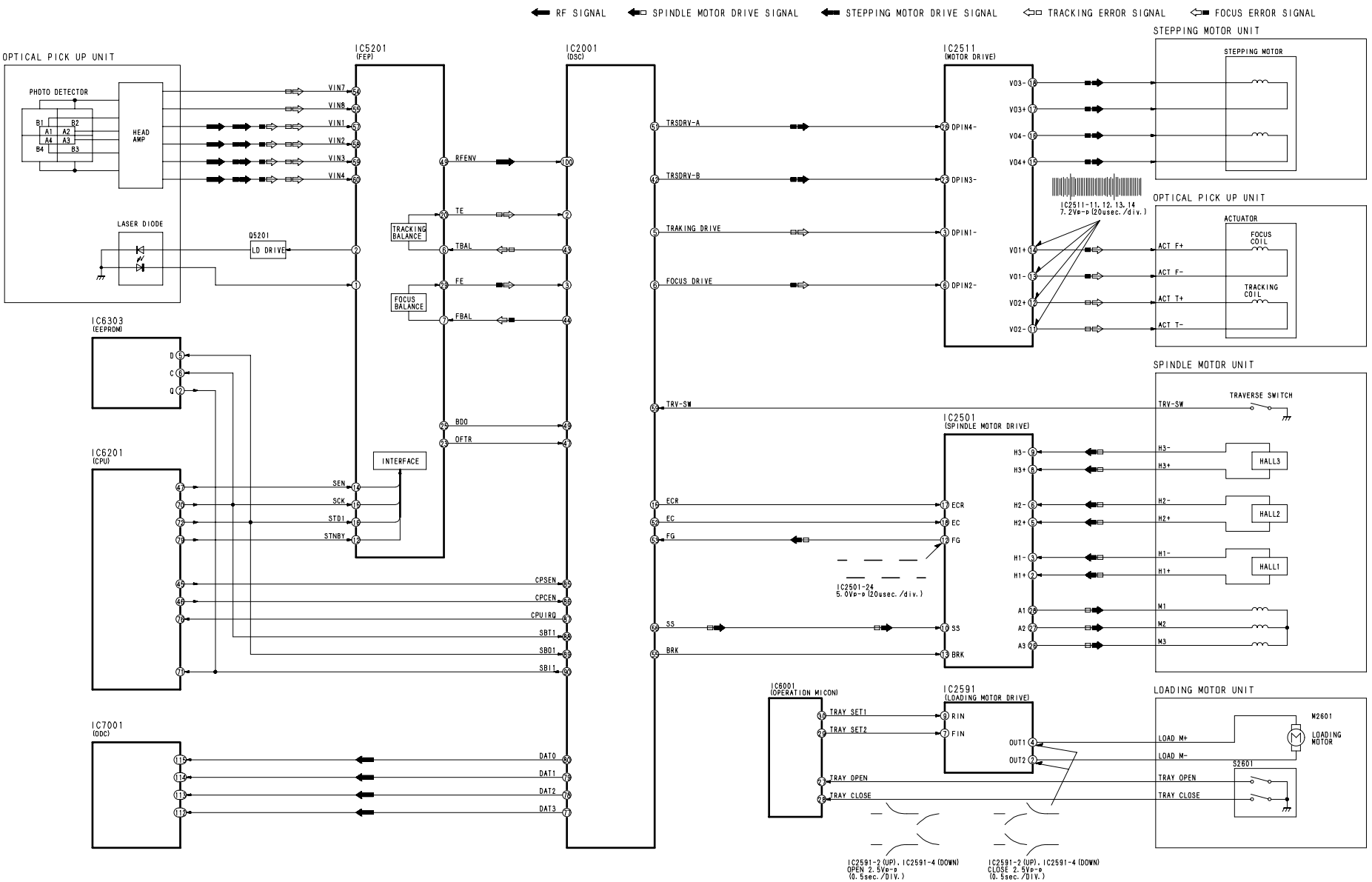
2. Remove the 2 screws.
3. Release the three tabs.



OVERAL BLOCK DIAGRAM

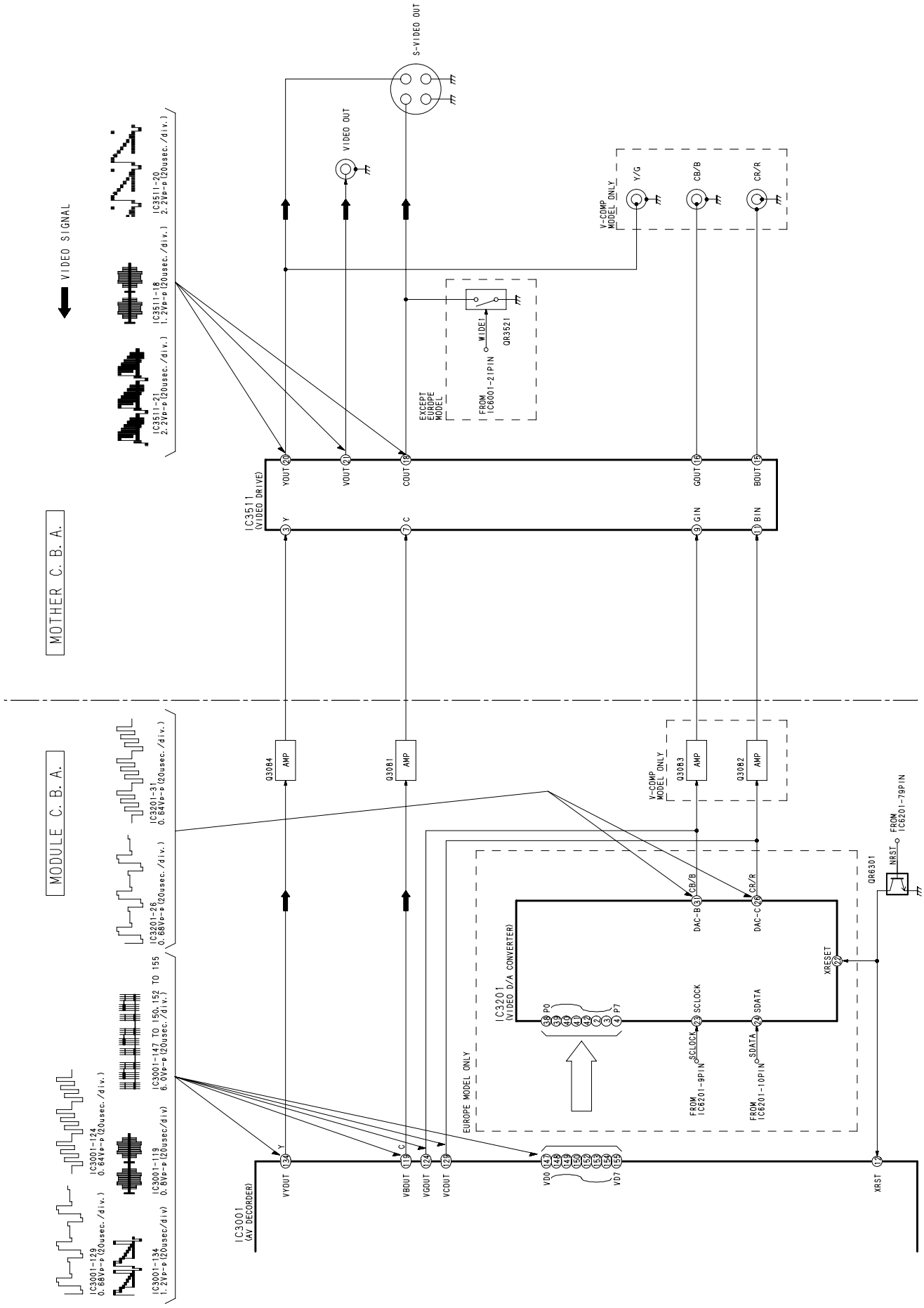


SERVO BLOCK DIAGRAM

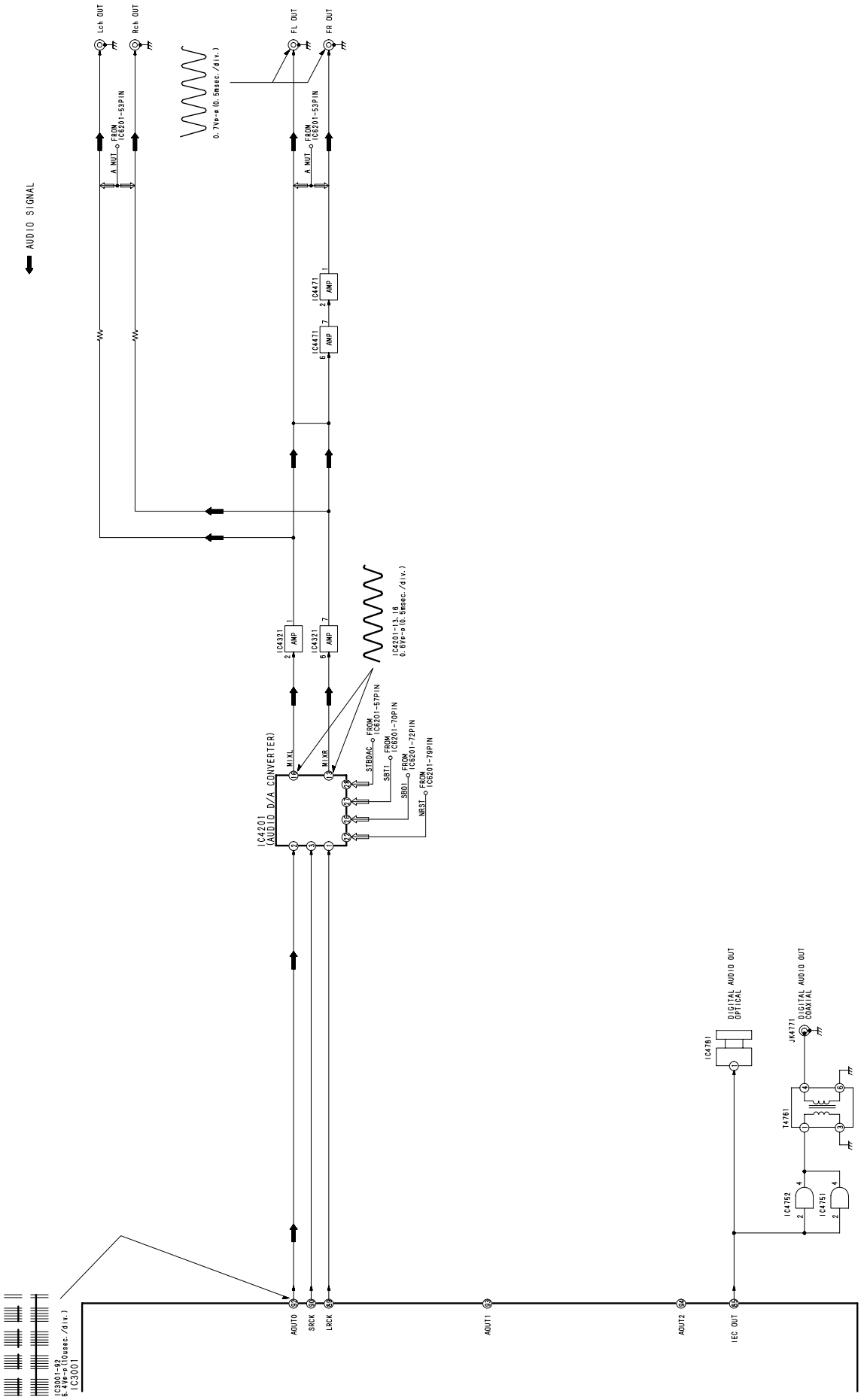


DV-403

VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM



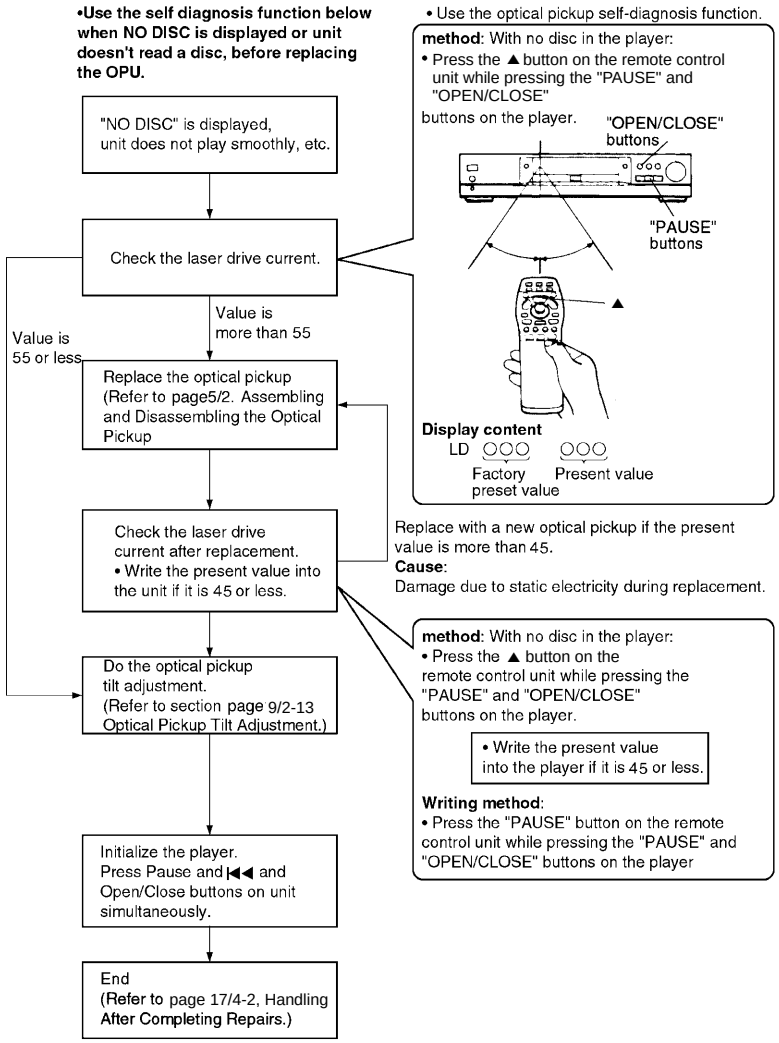
1. Optical Pickup Self-Diagnosis and Replacement Procedure

The optical pickup self-diagnosis function and tilt adjustment check function have been newly added to this player. When repairing, use the following procedure for effective Self-diagnosis and tilt adjustment.

Be sure to use the self-diagnosis function before replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser drive current is more than 55.

Note

Press the power button to turn on the power, and check the value before the unit warms up (within three minutes).



2. Self-Diagnosis Function and Service Modes

2-1 Service Mode Table

The service modes can be activated by pressing various button combinations on the player and remote control unit.

Player buttons	Remote control unit buttons	Application	Note
PAUSE + OPEN/CLOSE	0	Displaying the UHF display F_ _ _	Refer to page16/2-2 Self-Diagnosis Function (UHF Display).
	5	Jitter check,Tilt adjustment *Jitter value is three digit. Three digit of right number XXX is not related to jitter value. JIT ✻ ✻ ✻ XXX → JITTER VALUE XXX.....Occurence number of internal read error which is inclement every time error happens. But this is not always reflected to picture/sound noise.	Refer to page 9/2-13 Optical Pickup Tilt Adjustment.
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check the IC6302 FLASH ROM program.
	9	Lighting Confirmation Fanction of Display Tube	
	▲	Checking the laser drive current	Refer to page16/1 Optical Pickup Self-Diagnosis and Replacement Procedure.
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	Procedure
PAUSE ⏮ OPEN/CLOSE		Initializing the DVD player (restoring factory preset settings) *Use when replaceing a microprocessor, microprocessor peripheral parts, or C.B.A.	Refer to page17/4-1 Initializing the DVD Player

2-2 Self-Diagnosis Function (UHF Display)

This unit incorporates a convenient self-diagnosis function for use in troubleshooting.

Display method	Display	Diagnosis	Checkpoints
Service numbers displayed during use	Check the disc	Focus error	IC2001,IC2511,IC5201,pickup
	H01	Tray loading error	IC2001, IC2511, loading motor
	H02	Spindle servo error	Spindle motor, IC2501, IC2001
	H03	Traverse error	Stepping motor, IC2511, IC2001
	H04	Tracking servo error	IC2001, IC2501, IC5201, pickup, disc
	H05	Seek error	Stepping motor, IC2511, IC2001
	H06	Power supply error	IC1021, IC1121, IC1151, IC6001
Press the "0" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" button on the player.	F0**	Disc format error	If this type of error occurs, refer to page17/2-4 Examples of Repairs Using Error Codes.
	F1**	Disc code error	
	F2**	Decoder LSI error	
	F3**	SDRAM error	
	F4**	IIC BUS error	
	F5**	DSC	
	F6**	ECC error	
	F7**	Microprocessor error	
	F8**	Microprocessor error	

2-3 Self-Diagnosis Display Function

When an error or trouble is detected during operation, a service number appears in the FL display.
When a service number appears, check out the details given below.

Service number	Player status	Remedy
Check the disc	Disc is dirty.	Wipe the disc clean.
H□□ □□ stands for a number.	Trouble is likely to have occurred. The number following "H" differs depending on the status of the player.	Press POWER to set the player to the standby mode and then back to ON. Alternatively, press POWER to set the player to the standby mode, disconnect the AC plug, and then re-connect it.

2-4 Examples of Repairs Using Error Codes

Refer to this section when carrying out repairs.

Error display	Malfunction example
F0**	Disc, IC7001
F103	Disc, IC7001
F4FF	IC6001
F500	Optical pickup, IC2001, IC5201, IC2511, IC2501
F501	IC2001, IC6201
F502	IC2501, IC2511, IC2001, IC5202
F504	IC5201, IC2001
F505	Disc, IC2501, IC2511, IC5201, IC2001
F506	Disc, Optical pickup, IC2001
F600	Disc, IC7001, IC5201, IC2001
F601	Disc, IC7001
F602	Disc, IC5201, IC2001
F603	Disc, IC5201, IC2001
F610	IC7001
F611	IC7001, IC5201, IC2001
F612	IC7001, IC15201, IC2001
F620	Laser drive circuit
F621	Laser drive circuit
F700	IC6201
F701	IC6201
F702	IC6201
F880	IC6201
F890	IC6201
F891	IC6201
F8A0	IC6201
F893	IC6302
F894	IC6303

2-5 Sales Demonstration Lock Function

This function prevents discs from being lost when the unit is used for sales demonstrations, by disabling the disc eject function. "LOCKED" is displayed on the unit, and ordinary operation is disabled.

2-5-1 Setting Method

The sales demonstration lock function is set by simultaneously pressing the "POWER" button of DVD Player on the remote control unit and the "STOP" button on the main unit. ("LOCKED" is displayed when the lock function is engaged.)

2-5-2 Release Method

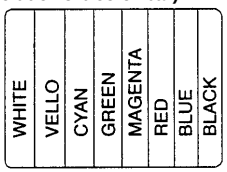
The function can be released using the same procedure as for setting. If the remote control unit is not at hand, the function can be released by using the same method as for player initialization (pressing the "PAUSE," "I◄◄" and "OPEN/CLOSE" buttons simultaneously).

3. Service Tools and Equipment

3-1 Service Tools and Equipment Table

Application	Name	Number
General	DVD disc (Include the color bar 75%)	
Tilt adjustment	Hex wrench (ø1.27mm)	
Inspection	Extension cables (power supply C.B.A. to mother C.B.A.)	Extension cable(A)
	Extension cable (module C.B.A. to mother C.B.A.)	Extension cable(B)
	Extension cable (Mechanism loading C.B.A. to mother C.B.A.)	Extension cable(C)
Others	Screw lock	
	Grease	410-0013-05
Confirmation	CD disc	
	VCD disc	
Electrical adjustment	Oscilloscope	
	Probe	
	AV cable	
	TV monitor	
General	General tools (Screw driver. etc)	
Static electricity countermeasures	Soldering iron (with ESD countermeasure)	
	Anti-static wrist strap	
	Conductive material (conductive sheet)	

DVD disc (Include 75% color bar)



COLOR BAR (TV)

3-2 Storing and Handling DVD Discs

Surface precision is vital for DVD discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.
2. Handle discs carefully in order to maintain their flatness.
   Place them into their case after use and store them vertically. Store discs in a cool place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped from being placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

4. Service Precautions

4-1 Initializing the DVD Player

Initialize the DVD player whenever you replace a microprocessor, microprocessor peripheral parts, module C.B.A or mother C.B.A.

4-1-1Precautions

The customer settings will return to factory preset settings when the player is initialized. Make a note of the settings and reset them after initializing.

When resetting, see the Initial Settings in the Operating Instructions.

4-1-2 Initialization Method

The player will be initialized (return to the factory preset condition) when you press the "PAUSE", "I◄◄" and "OPEN/CLOSE" buttons simultaneously. When the DVD player is initialized, "All Clear" appears on screen, it also displays "INITIALIZE".

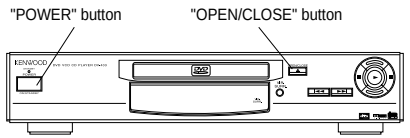
4-2 Handling After Completing Repairs

Use the following procedure to secure the traverse unit in the standby position.

4-2-1 Method

With the power turned on:

1. Press the "OPEN/CLOSE" button to close the tray.
2. Press the "POWER" button to the off the power.
3. Disconnect the power plug from the outlet.



4-2-2 Precautions

Do not disconnect the power plug from the outlet with the tray still open, then close the tray manually. If you were to do so, the traverse unit would not og to the upper (standby) position, and the player could not be transported.

ADJUSTMENT

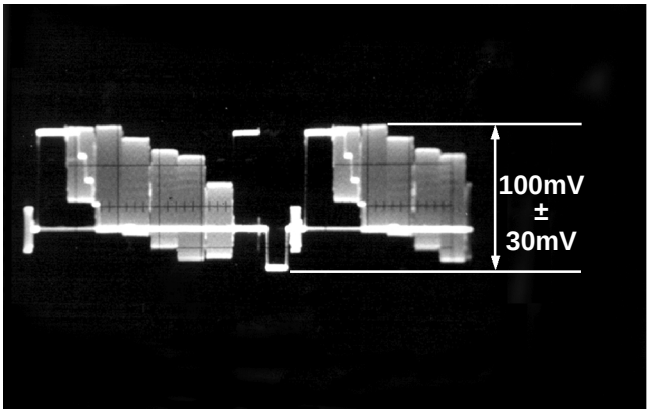
1. Video Output (Luminance Signal) Confirmation

Do this adjustment after replacng a C.B.A.

Measurement point	Mode	Disc
Video output terminal	Color bar 75%	DVD disc (Color bar 75%)
Measuring equipment, tools	Adjustment value	
Screwdriver, Oscilloscope 200mV/div, 10µsec/div	1000mVp-p±30mV	

Purpose: To maintain video signal output compatibility.

1. Connect the oscilloscope to the video output terminal and terminate at 75 ohms.
2. Comfirm that the luminance signal (Y+S) level becomes 1000 mVp-p±30 mV.



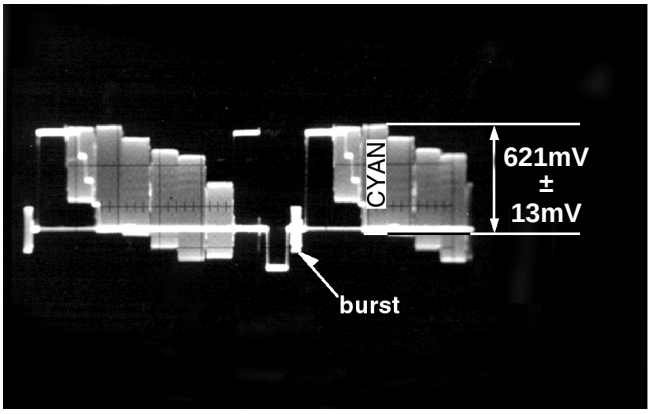
2. Video Output (Chrominance Signal) Confirmation

Do this adjustment after replacing a C.B.A.

Measurement point	Mode	Disc
Video output terminal	Color bar 75%	DVD disc (Color bar 75%)
Measuring equipment, tools	Adjustment value	
Screwdriver, Oscilloscope 200mV/div, 10µsec/div	621mVp-p±13mV	

Purpose: To maintain video signal output compatibility.

1. Connect the oscilloscope to the video output terminal and terminate at 75 ohms.
2. Adjust VR3511 so that the chrominance signal (C) level becomes 621 mVp-p±13 mV.



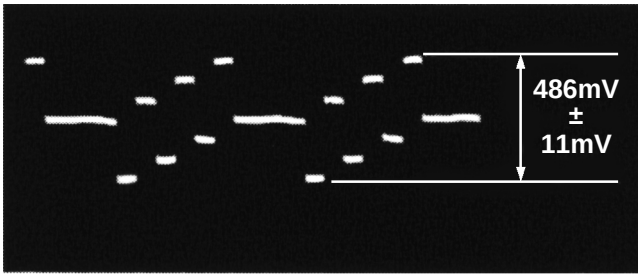
3. Video Component Signal (CB) Output Confirmation

Do this adjustment after replacing a C.B.A.

Measurement point	Mode	Disc
Video output terminal	Color bar 75%	DVD disc (Color bar 75%)
Measuring equipment, tools	Adjustment value	
Screwdriver, Oscilloscope 100mV/div, 10µsec/div	486mVp-p±11mV	

Purpose: To maintain video signal output compatibility.

1. Connect the oscilloscope to the video component output terminal and terminate at 75 ohms.
2. Apply the trigger at the Y output terminal signal.
3. Comfirm so that the video component signal (CB) level becomes 486 mVp-p ±11 mV.



VOLTAGE CHART

1. Voltage chart

1-1 Power supply C.B.A.

Ref No.	IC1101				IC1125						IC1151									
MODE	K	R	A		1	2	3	4	5		1	2	3	4	5					
STOP	2.9	2.5	0		3.8	4.9	2.6	1.2	0		0	4.9	9.0	9.0	10.2					
PLAY	2.9	2.5	0		3.8	4.9	2.6	1.2	0		0	4.9	9.0	9.0	9.7					

Ref No.	Q1021				Q1051					Q1052				Q1061				Q1062		
MODE	E	C	B		1	2	3	4		E	C	B		E	C	B		E	C	B
STOP	0	-8.6	0		5.2	4.0	1.1	10.2		0	-0.2	0.2		0	0	0.6		0.1	10.1	0
PLAY	0	-8.6	0		5.2	4.0	1.0	10.1		0	-0.1	0.2		0	0	0.6		0.1	10.1	0

Ref No.	Q1063				Q1115															
MODE	E	C	B		S	D	G													
STOP	0	-0.1	-0.5		5.1	5.1	0													
PLAY	0	-0.1	-0.5		5.1	5.1	0													

Ref No.	QR1115																			
MODE	E	C	B																	
STOP	0	0	4.9																	
PLAY	0	0	4.9																	

1-2 Module C.B.A.

Ref No.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.7	1.6	1.6	3.3	1.7	0	0	1.6	1.6	1.5	0	0	0	3.3	1.6	2.8	0.2	2.2	1.5	0
PLAY	1.5	0	1.7	3.3	1.5	1.7	0	1.6	1.6	1.5	1.5	1.5	1.6	3.3	1.7	2.8	0.2	2.2	1.5	0
Ref No.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.2	2.2	0	0	1.5	2.2	3.3	1.7	0	0	1.7	0.4	1.7	1.6	0	1.6	1.7	3.3	0	1.7
PLAY	1.8	1.7	1.5	1.7	1.5	2.2	3.3	1.7	1.2	0	1.7	1.2	1.7	1.6	0	1.6	1.7	3.3	1.7	1.7
Ref No.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	2.1	1.4	1.6	0	3.3	3.0	1.5	0	0	0	0	0	0	0	0	0	2.5	0	0
PLAY	0	2.0	1.6	1.7	0	3.3	0	0	0	0.4	1.5	1.6	1.4	3.3	3.3	0	0	3.0	3.0	0
Ref No.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.3	0	0	0	0	0	3.3	0	0	1.4	0	0	0	0	3.3	1.6	1.6	1.6	1.6	0
PLAY	3.3	0	3.3	0	0	0	0	1.7	0	1.4	0	0	0	0	0	1.6	1.6	1.6	1.6	1.6
Ref No.	IC2001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0	0	0	3.2	3.3	3.3	3.3	3.1	3.3	3.1	0	0	0	0.1	0	2.5	1.7	1.6	1.6	1.7
PLAY	0	3.3	3.3	3.3	0	0	3.3	3.2	3.3	3.1	0	0	0	0	0	2.5	1.4	1.8	1.4	2.2
Ref No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	5.0	5.0	0	5.1	5.1	5.1	5.1	5.1	0	5.0	2.7	3.3	0	0	5.0	1.7	1.7	0	0
PLAY	0	0	0	0	2.9	2.9	0.8	0	0	3.3	5.0	1.4	3.3	0	0	5.0	0	1.6	0	0.6
Ref No.	IC2501																			
MODE	21	22	23	24	25	26	27	28												
STOP	9.0	9.0	0	0	0	1.5	1.6	1.7												
PLAY	9.0	9.0	0	0	0	7.4	7.4	7.4												
Ref No.	IC2511																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.7	1.7	1.7	1.6	1.7	1.6	1.6	0	0	5.1	2.4	0.5	0.5	0.5	6.7	7.0	7.1	7.4	9.0	0
PLAY	1.7	1.7	1.7	1.7	1.7	0	1.7	0	3.3	5.0	2.6	2.4	2.4	2.7	4.8	3.7	3.4	5.0	9.0	0
Ref No.	IC2511																			
MODE	21	22	23	24	25	26	27	28												
STOP	0	1.9	1.9	1.7	2.0	2.0	1.7	9.0												
PLAY	0	1.5	1.7	1.7	1.8	1.7	1.7	9.0												

VOLTAGE CHART

Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	0	1.2	0	0	1.2	0	1.0	3.3	1.2	3.3	3.2	3.3	1.8	0	0	0	0	0	0
PLAY	3.3	0	1.1	0	0	1.1	0	1.0	3.3	2.0	3.3	3.2	3.3	1.8	0	0	0	0	0	0
Ref No.	IC3001																			
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	3.3	3.3	0	3.3	3.1	3.3	1.5	3.3	3.0	3.0	2.9	3.0	1.8	2.8
PLAY	0	0	0	0	0	0	0	3.3	0	3.3	3.3	3.3	1.5	3.3	3.3	3.3	3.3	0	1.8	3.3
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.1	2.8	2.7	0	2.9	2.9	2.9	3.3	3.1	3.1	3.1	0	3.3	3.1	3.1	3.1	3.2	0	3.2	3.1
PLAY	0	3.3	3.3	0	3.3	0	0	3.3	3.3	3.3	0	0	3.3	3.3	3.3	3.3	3.3	0	3.3	3.3
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.1	3.1	1.8	3.1	3.2	3.1	3.2	0	3.2	0	1.6	3.3	3.3	3.3	3.3	0	3.3	0	1.8	0
PLAY	3.3	3.3	1.8	3.3	3.3	3.3	3.3	0	3.3	0	1.6	3.3	3.3	3.3	0	3.3	3.3	3.3	1.8	3.3
Ref No.	IC3001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	0	3.3	0	1.6	0	1.8	1.4	1.6	1.6	3.3	0	0	0	0	0	0	3.3	1.6	3.3
PLAY	3.3	3.3	3.3	1.7	0	1.8	1.4	1.7	1.6	0	0	0	0	0	0	3.3	1.5	3.3	3.3	3.3
Ref No.	IC3001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	1.1	0	0	1.8	1.8	0	0	1.8	3.3	1.6	3.3	3.3	0.6	0	0	1.0	1.0	2.3	0.6	3.3
PLAY	1.3	0	0.2	1.8	0	0	0	0	3.3	1.6	3.3	3.3	0	0	0	1.0	0	0	0.6	3.3
Ref No.	IC3001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0.6	0.6	2.4	0.4	0	0.6	0.6	2.3	0.4	3.3	1.3	1.3	2.2	0.4	0	0	0	0	0	0
PLAY	0.6	0.6	0	0.4	0	0.6	0.6	2.3	0.4	3.3	1.3	2.2	0.5	0	0	0	0	0	0	0
Ref No.	IC3001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
STOP	0	0	3.3	3.1	0	1.8	0	0	0	0	0	0	0	0	0	3.3	0	2.8	2.9	3.3
PLAY	0	0	3.3	3.1	0	1.8	0	0	0	0	0	0	0	0	0	3.3	0	2.7	0	3.3
Ref No.	IC3001																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
STOP	2.6	2.8	0	2.7	2.8	3.3	3.0	2.8	0	2.8	3.1	3.3	0	1.8	2.9	0	2.8	2.7	3.3	2.9
PLAY	2.6	2.7	0	2.6	2.5	3.3	2.5	2.5	0	2.5	2.6	3.3	2.5	1.8	2.6	0	3.3	3.3	3.3	2.6
Ref No.	IC3001																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
STOP	2.8	0	1.7	3.3	0	0	0	1.8	2.6	3.3	3.3	0	3.2	0	0	3.1	3.3	3.3	3.0	0
PLAY	2.6	0	1.6	3.3	1.6	0	3.3	1.8	2.2	3.3	3.3	1.9	3.3	3.3	3.2	3.3	3.3	3.0	0	0
Ref No.	IC3001																			
MODE	201	202	203	204	205	206	207	208												
STOP	0	1.8	1.2	0	3.3	0	0.9	0												
PLAY	0	0	1.4	0	0	0	1.2	0												
Ref No.	IC3002																			
MODE	1	2	3	4	5															
STOP	2.6	2.6	1.8	0	0															
PLAY	2.6	2.6	1.8	0	0															
Ref No.	IC3061																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	2.8	2.8	0	2.8	3.3	3.3	3.1	2.9	0	2.7	2.8	3.3	2.6	3.2	3.2	3.1	3.0	1.2	0
PLAY	3.3	3.1	3.1	0	3.3	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	0	0
Ref No.	IC3061																			
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	1.2	3.3	0	1.0	0	0	0	0	0	0	3.3	1.7	2.6	0	3.3	2.9	2.8
PLAY	0	0	0	0	3.3	0	0	0	1.4	0	0	0	0	0	0	0	0	3.3	0	2.5
Ref No.	IC3061											IC3091								
MODE	41	42	43	44	45	46	47	48	49	50		1	2	3	4	5	6			
STOP	0	2.6	0	3.3	2.9	2.8	0	2.6	2.8	0		5.0	0	1.3	3.3	0	5.0			
PLAY	0	2.5	2.5	3.3	2.7	2.6	0	0	0.2	0		5.0	0	1.3	3.3	0	5.0			
Ref No.	IC4201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.7	0	1.6	1.7	1.6	2.6	0	4.9	4.9	0	2.4	0	0	0	4.9	2.5	0	2.4	0	4.9
PLAY	1.7	1.2	1.6	1.7	1.6	2.6	0	4.9	4.9	0	2.4	0	2.4	0	4.9	0	0	0	0	0
Ref No.	IC4201																			
MODE	21	22	23	24	25	26	27	28												
STOP	0.2	3.2	0	0	4.9	3.3	3.2	3.3												
PLAY	4.2	3.2	0	4.9	4.9	0	3.2	3.3												
Ref No.	IC5201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	4.4	0.9	0.9	0	1.7	1.7	1.9	0.6	1.6	1.6	3.2	1.7	3.3	3.3	3.3	0	0	1.7	1.7
PLAY	0.6	3.3	1.3	1.3	0	1.7	1.7	1.9	1.1	1.6	1.6	3.2	1.7	3.3	3.2	3.3	1.2	0	1.7	1.7
Ref No.	IC5201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	0	0	0	0	0	1.7	1.7	0	0	0	2.2	2.1	5.0	5.0	2.8	2.1	0	1.6	3.4
PLAY	3.3	3.3	3.2	1.2	0	0	1.7	1.7	1.7	1.7	1.7	1.9	2.1	0	4.9	2.8	2.1	0.1	1.6	3.4
Ref No.	IC5201																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.6	2.1	1.1	2.2	2.2	0	1.7	1.5	1.7	2.2	0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	0	0
PLAY	3.7	2.2	1.2	2.2	2.2	0	0	1.5	1.7	2.2	0	0	2.2	0	0	1.9	0	0	0	0
Ref No.	IC5201																			
MODE	61	62	63	64																
STOP	5.0	0	0	0																
PLAY	0	2.2	0	0																

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Ref No.	IC6201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	3.1	3.3	2.1	0	3.3	3.3	3.0	3.3	0	3.3	3.3	2.5	3.0	0	0	3.3	0	0	0
PLAY	3.3	0	3.3	2.3	0	0	3.3	2.7	0	0	0	0	0	2.7	0	0	0	0	0	0
Ref No.	IC6201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	3.3	1.6	1.6	3.3	3.0	2.8	3.0	3.3	0.3	0	0.1	0.3	3.3	0	3.3	3.3	3.3	3.3	0.1
PLAY	3.3	3.3	1.6	1.6	3.3	2.7	2.6	2.7	2.7	2.6	2.6	2.6	2.7	3.3	2.4	2.3	2.5	2.7	2.5	2.8
Ref No.	IC6201																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0.1	0.3	0	0.5	0.4	0.5	2.7	1.0	1.3	3.3	3.3	3.3	3.2	1.3	3.3	3.3	0.4	0.4	0.4	0
PLAY	1.9	2.0	0.8	3.3	3.3	3.3	3.3	1.0	1.2	2.8	1.5	2.5	0	1.3	3.3	3.3	3.3	0	0	0.1
Ref No.	IC6201																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	1.3	1.0	0.5	0.5	3.3	0	0	0	3.3	0	3.3	3.3	3.3	3.3	3.3	3.3	0	0	0
PLAY	0	1.3	1.2	3.3	0	3.3	3.3	3.3	0	3.3	2.8	3.3	3.2	0	3.2	3.3	0.1	0	0	0.1
Ref No.	IC6201																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	3.3	3.3	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	0	3.3	3.3	3.3	3.3	0	0	3.3	3.3
PLAY	3.2	3.3	3.3	0	2.6	0	0	0	3.3	3.3	2.4	0	0	0	2.5	0	0	3.3	3.3	3.3
Ref No.	IC6251							IC6301												
MODE	1	2	3	4	5	6		1	2	3	4	5								
STOP	5.1	0	1.3	3.3	0	5.1		0	0	0	3.3	3.3								
PLAY	5.0	0	1.3	3.3	0	5.0		0	0	0	3.3	3.3								
Ref No.	IC6302																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.9	2.8	2.9	2.6	2.7	2.9	0	0	0	3.3	3.3	0	0	0	2.5	2.5	2.7	2.6	2.8	3.1
PLAY	2.6	2.7	2.5	2.3	2.4	2.8	2.6	2.6	0	0	3.3	3.3	0	0	0	2.0	1.9	2.6	2.7	2.8
Ref No.	IC6302																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.8	3.0	0	0	3.0	3.1	0	3.1	1.1	1.2	1.1	1.3	1.6	2.1	0.9	0	0	0.9	2.1	0.4
PLAY	2.6	2.7	2.6	2.8	0	2.7	0	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	3.3	2.9	2.9	2.9
Ref No.	IC6302									IC6303										
MODE	41	42	43	44	45	46	47	48		1	2	3	4	5	6	7	8			
STOP	1.3	0.4	1.3	0.4	1.2	0	3.3	0		3.3	3.1	3.3	0	3.3	0	3.3	3.3			
PLAY	2.9	2.9	3.0	3.0	3.0	0	3.3	2.8		3.3	3.1	0	0	3.3	3.1	3.3	3.3			
Ref No.	IC6501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	0	1.3	0	3.3	3.3	0	1.5	1.6	0	3.3	0	1.3	0	3.3	1.5	0	0	3.2	0
PLAY	3.3	0	1.4	0	3.3	3.3	0	1.5	1.6	0	3.3	1.6	1.3	0	3.3	1.5	0	0	3.2	0
Ref No.	IC6501																			
MODE	21	22	23	24																
STOP	3.3	1.6	3.3	1.6																
PLAY	0	1.6	0	1.6																
Ref No.	IC6551																			
MODE	1	2	3																	
STOP	3.3	5.0	0																	
PLAY	3.3	5.0	0																	
Ref No.	IC7001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	0.6	0	0	3.3	3.3	0	0	0	0	0	0	0	3.3	3.3	0	0	0	3.3	3.3
PLAY	3.3	3.3	3.3	3.3	3.3	3.3	0	0	3.3	2.5	3.3	3.3	3.3	3.3	3.3	0	0	0	3.3	3.3
Ref No.	IC7001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	3.3	3.3	3.3	0.4	3.3	0.4	0.4	0	3.3	0	0	0	0	0	2.5	3.3	3.3	0	3.3
PLAY	3.3	3.3	3.3	3.3	0.5	0	0.5	0.5	0	3.3	0	3.3	0	0	0	2.5	0	0	0	0
Ref No.	IC7001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.3	3.3	3.3	2.5	0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	3.3
PLAY	0	0	0	0	3.3	0	0	3.3	0	0	3.3	3.3	0	3.3	0.1	0	0	3.3	3.3	3.2
Ref No.	IC7001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.3	3.3	3.3	0	0	2.5	0	3.3	3.3	3.3	0	3.3	3.3	3.3	1.6	3.3	0	2.0	0	0
PLAY	3.3	0	3.3	0	0	2.5	0	3.3	2.4	3.3	0	2.5	2.5	0	0	0	0	0	0	0
Ref No.	IC7001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	0	0	0	3.2	2.5	0	0	0	0	0	3.3	0	3.3	1.7	0	3.3	0	0	0
PLAY	3.3	0	0	0	3.2	2.5	0	0	0	0	0	3.3	0	3.3	1.7	0	3.3	0	0	1.4
Ref No.	IC7001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	1.6	3.3	3.1	3.3	0	0	0	0	0	0	0	0	0	0	3.3	3.3	3.3	0	0
PLAY	1.3	0	0	0	3.3	0	0	0	1.7	0	1.6	1.6	1.6	1.7	1.7	0	3.3	3.3	0	0
Ref No.	IC7001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0	0	0	3.3	2.5	3.3	0	3.3	3.3	3.3	1.6	3.3	3.3	0	3.3	0.5	0	3.3	3.3	0.5
PLAY	0	0	0	3.3	2.5	3.3	0	3.3	3.3	3.3	1.6	3.3	3.3	0	3.3	0.5	0	3.3	2.9	0
Ref No.	IC7001																			
MODE	141	142	143	144																
STOP	0	0	3.3	3.3																
PLAY	0	0	0	3.3																

Ref No.	Q3081				Q3082				Q3083				Q3084				Q5201			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	1.3	0	0.6		1.1	0	0.4		0	0	0.4		1.0	0	0.3		4.9	1.4	4.6	
PLAY	1.3	0	0.6		1.1	0	0.4		0	0	0.4		1.2	0	0.5		3.9	2.2	0	

Ref No.	QR2001				QR5201				QR5231				QR6301							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
STOP	0	0	0		0	1.6	0		2.6	0	3.3		0	3.2	0					
PLAY	0	0	3.3		0	1.6	0		2.6	2.5	0		0	3.2	0					

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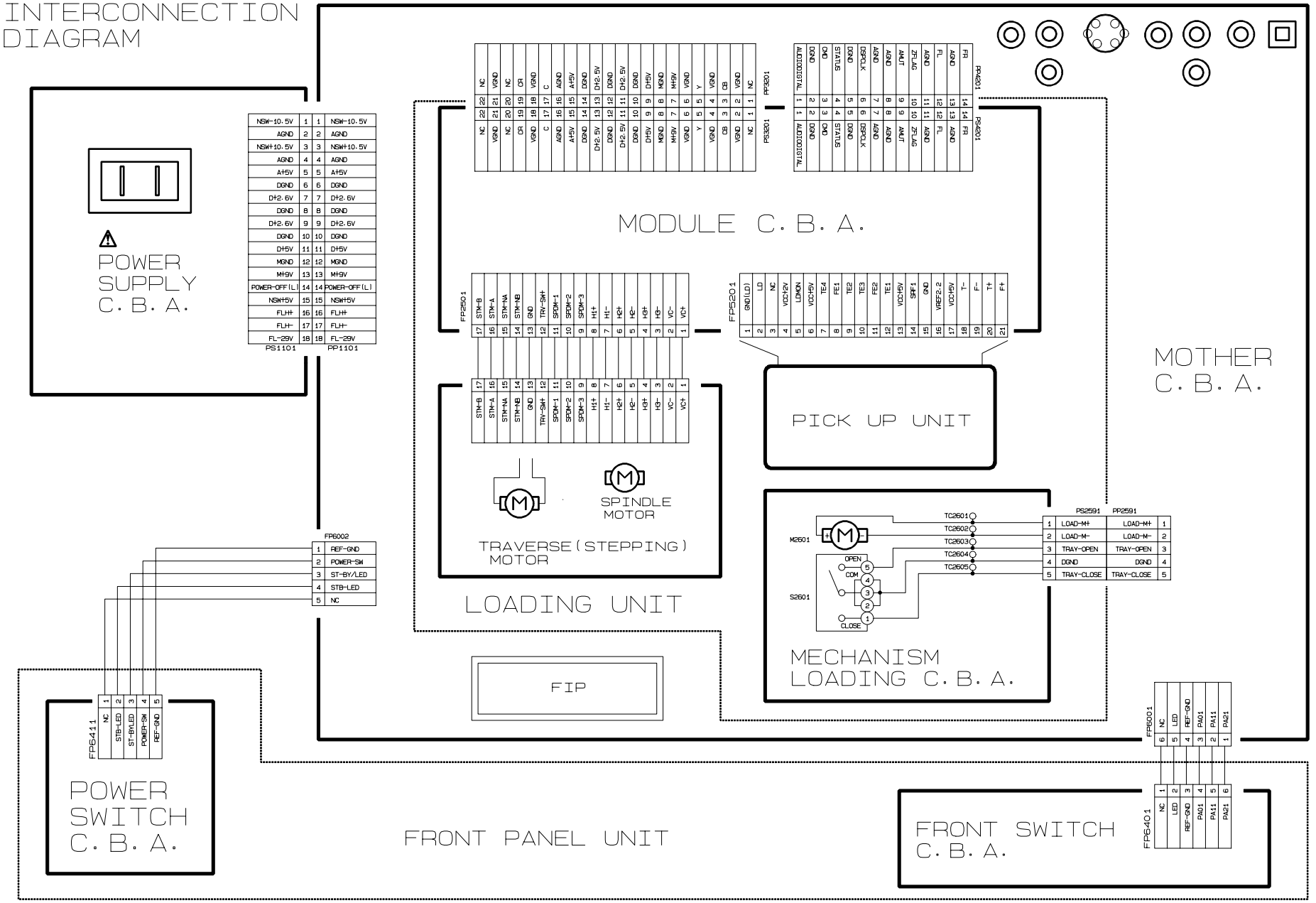
Ref No.	IC2591																				
MODE	1	2	3	4	5	6	7	8	9												
STOP	7.4	0.2	0	0.2	9.0	9.0	0	0	0												
PLAY	7.4	2.8	0	2.8	9.0	9.0	0	0	0												
Ref No.	IC3511																				
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
STOP	3.2	0.7	1.0	0	0	4.9	0.7	0	0.7	0	0.9	0	0.1	0.1	1.3	0.9	4.9	0.9	0	1.5	
PLAY	3.2	0.9	1.2	0	0	4.9	0.7	0	0.7	0	0	0	0.1	0.1	1.3	0.9	4.9	0.9	0	1.8	
Ref No.	IC3511																				
MODE	21	22	23	24																	
STOP	1.5	4.9	0	0.4																	
PLAY	1.9	0	0.4	0.4																	
Ref No.	IC4321									IC4471											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8				
STOP	0	0	0	-8.1	0	0	0	8.1		0	0	0	-8.1	0	0	0	8.1				
PLAY	0	0	0	-8.1	0	0	0	8.1		0	0	0	-8.1	0	0	0	8.1				
Ref No.	IC4781				IC4902				IC4911												
MODE	1	2	3		1	2	3		1	2	3										
STOP	1.7	5.1	0		8.1	0	10.1		0	-10.2	-8.1										
PLAY	1.7	5.1	0		8.1	0	10.1		0	-10.2	-8.1										
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	1.5	3.8	4.3	5.1	5.1	5.1	0	5.1	2.4	2.5	0	0	5.1	0	0	5.1	5.1	5.1	1.9	1.9	
PLAY	1.5	3.8	4.3	5.1	0	5.1	0	5.1	2.4	2.5	0	0	5.1	0	0	5.1	5.1	5.1	1.2	1.2	
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	1.8	1.9	1.8	5.1	0	5.1	5.1	0	0	0	0	0	5.1	2.0	1.9	1.3	1.4	1.0	5.1	0	
PLAY	1.2	1.3	1.3	5.1	0	5.1	5.1	0	0	0	0	0	5.1	0.7	0.7	0.7	0.7	0.7	5.1	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	1.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.8	4.9	-25.0	-25.0	-25.0	-24.9	-24.9	-24.9	-24.9	-24.9	-24.9	
PLAY	0.8	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-4.8	4.9	-25.1	-25.1	-25.1	-24.9	-24.9	-24.9	-24.9	-24.9	-24.9	
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	-24.9	-24.9	-24.9	-24.9	-15.5	-24.6	-24.6	-24.6	-20.0	-20.0	-20.0	-20.1	-22.5	-20.3	-24.9	-24.9	-24.9	-22.5	-15.5	3.8	
PLAY	-24.9	-24.9	-24.9	-24.9	-8.6	-22.4	-20.0	-24.7	-8.7	-8.6	-20.2	-20.2	-9.0	-13.6	-24.9	-24.9	-24.9	-18.1	-11.2	3.7	
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	3.7	3.8	3.8	4.1	3.8	4.4	4.4	4.4	4.5	4.1	4.6	4.6	4.2	4.4	4.5	4.5	4.5	4.4	4.4	-27.1	
PLAY	0	0	3.6	3.9	0	0	0	4.2	4.2	0	4.4	4.5	0	4.3	0	4.3	4.3	4.3	4.3	-27.3	
Ref No.	IC6002				IC6003				IC6004						IC6005						
MODE	1	2	3	4	1	2	3		1	2	3	4	5		1	2	3	4	5		
STOP	0	0	5.1	5.1	5.1	0	5.1		2.8	2.8	0	4.3	5.1		2.5	2.5	0	3.9	5.1		
PLAY	0	0	5.1	5.1	5.1	0	5.1		2.8	2.8	0	4.3	5.1		2.5	2.5	0	3.8	5.1		

Ref No.	Q3501				Q4501				Q4511				Q4521				Q4531			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	0.6	4.9	1.2		0	0	0.7		0	0	0.7		0	0	-4.8		0	0	0.7	
PLAY	0.7	4.9	1.4		0	0	-4.8		0	0	-4.8		0	0	-4.8		0	0	-4.8	
Ref No.	Q6009																			
MODE	E	C	B																	
STOP	-20.2	-20.1	-19.4																	
PLAY	-20.1	-20.1	-19.4																	

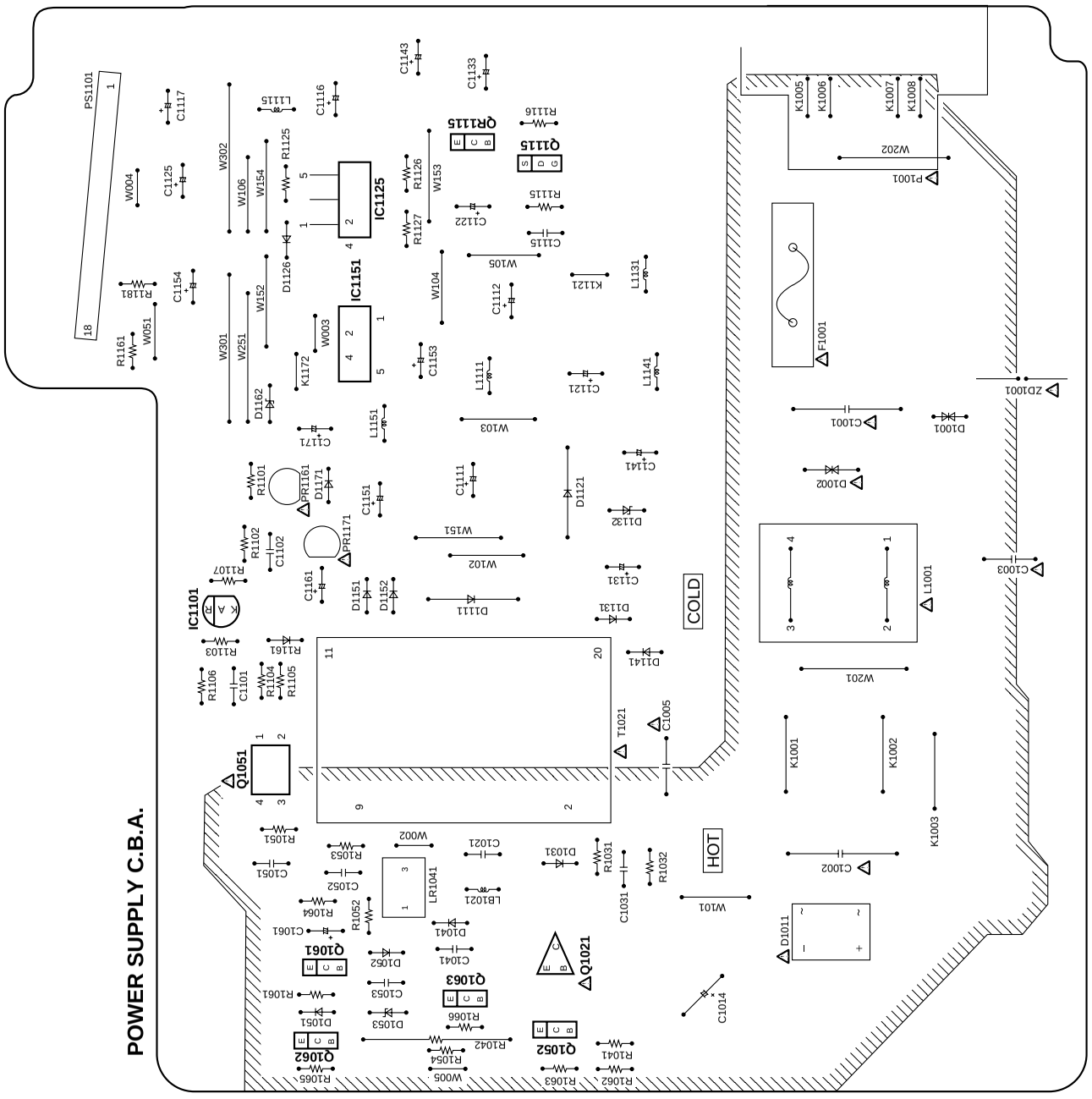
Ref No.	QR3521				QR4521				QR4593				QR4594				QR4596			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	0	5.0	0		0	-4.8	0		0	2.9	0.2		2.9	2.8	0		2.9	2.8	0	
PLAY	0	5.0	0		0	-4.8	0		0	0.1	3.8		0.1	-4.8	0		0	-4.8	0	
Ref No.	QR6009																			
MODE	E	C	B																	
STOP	5.1	-2.1	5.1																	
PLAY	5.1	-2.0	5.1																	

WIRING DIAGRAM

INTERCONNECTION DIAGRAM



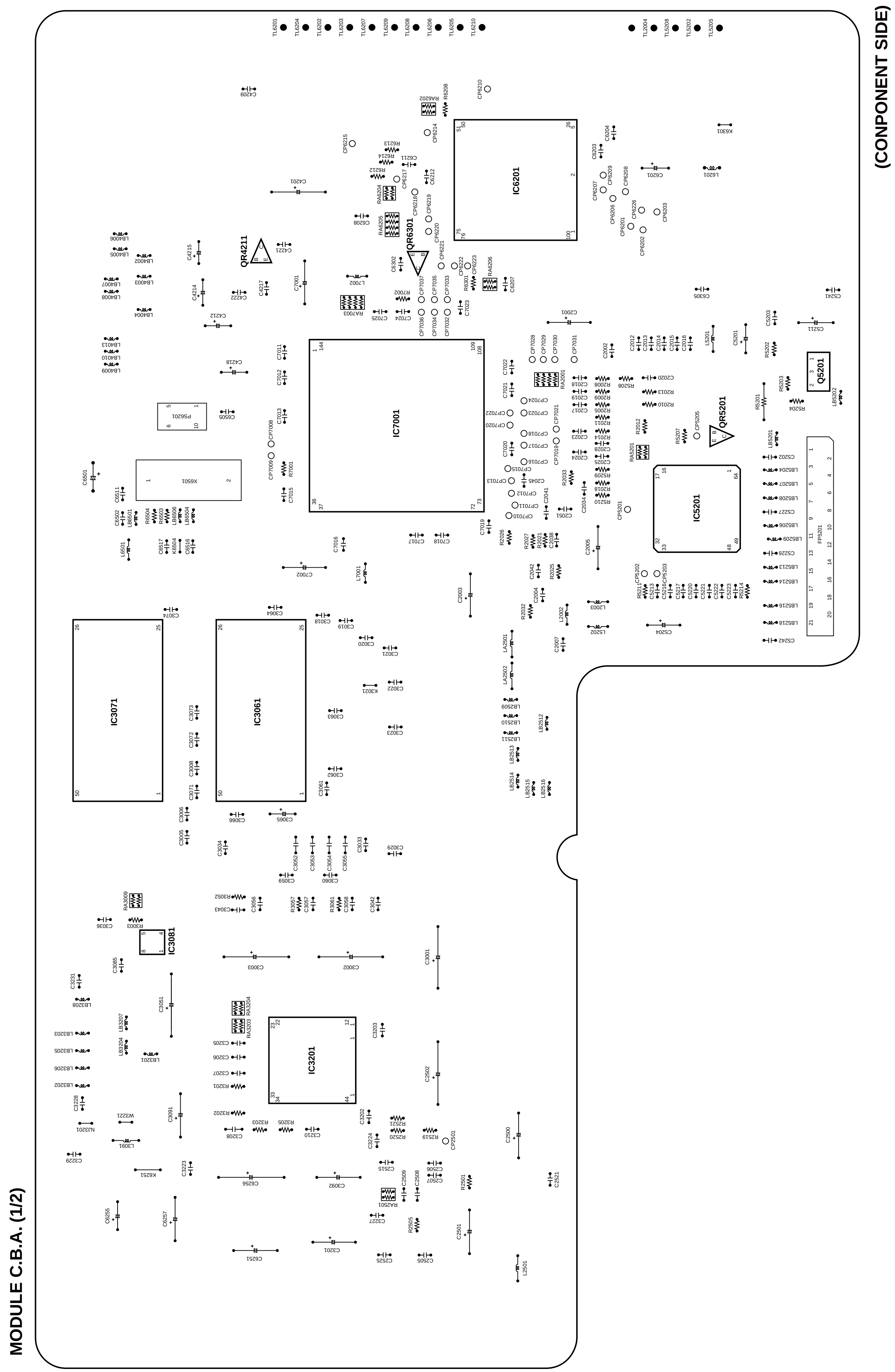
PC BOARD (Component side view)



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.

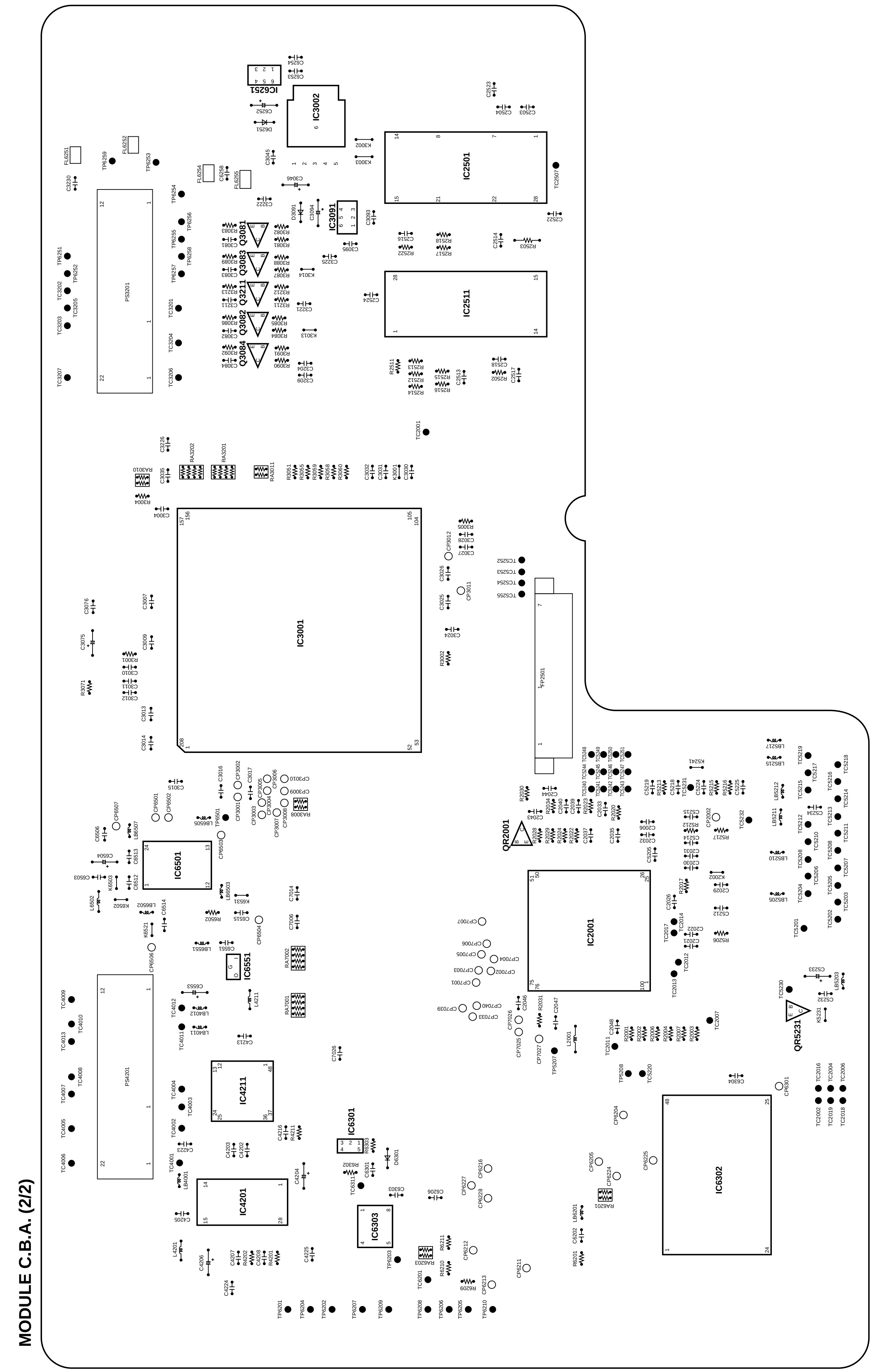
Refer to the schematic diagram for the value of resistors and capacitors.

PC BOARD (Component side view)

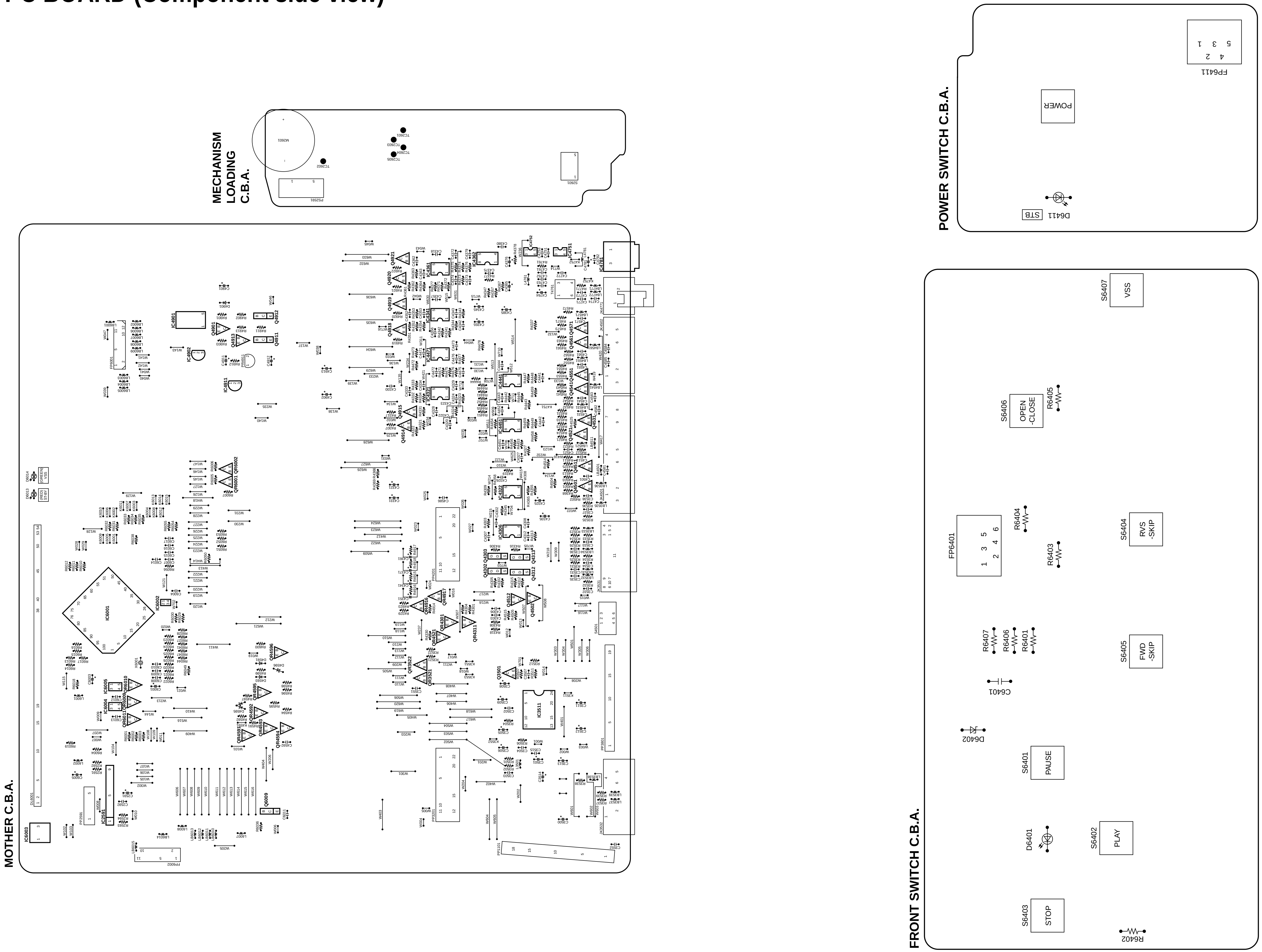


Refer to the schematic diagram for the value of resistors and capacitors.

PC BOARD (Foil side view)



PC BOARD (Component side view)



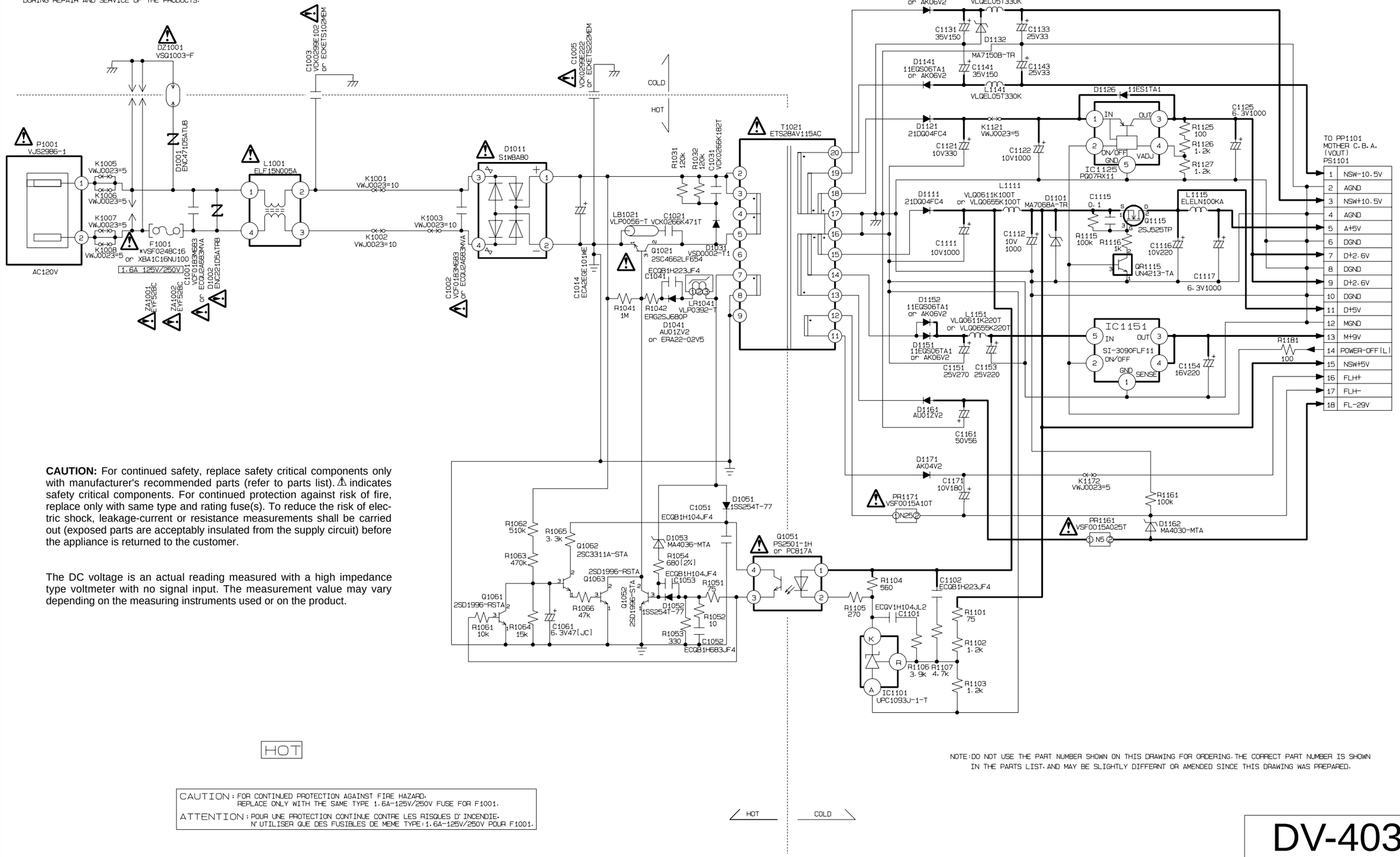
Refer to the schematic diagram for the value of resistors and capacitors.

Power supply

CAUTION

THE ▨ MARK INDICATIONS 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.



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continuous protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

HOT

CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD.
REPLACE ONLY WITH THE SAME TYPE 1.6A-125V/250V FUSE FOR F1001.

ATTENTION : POUR UNE PROTECTION CONTINUE CONTRE LES RISQUES D' INCENDIE.
N' UTILISER QUE DES FUSIBLES DE MEME TYPE:1.6A-125V/250V POUR F1001.

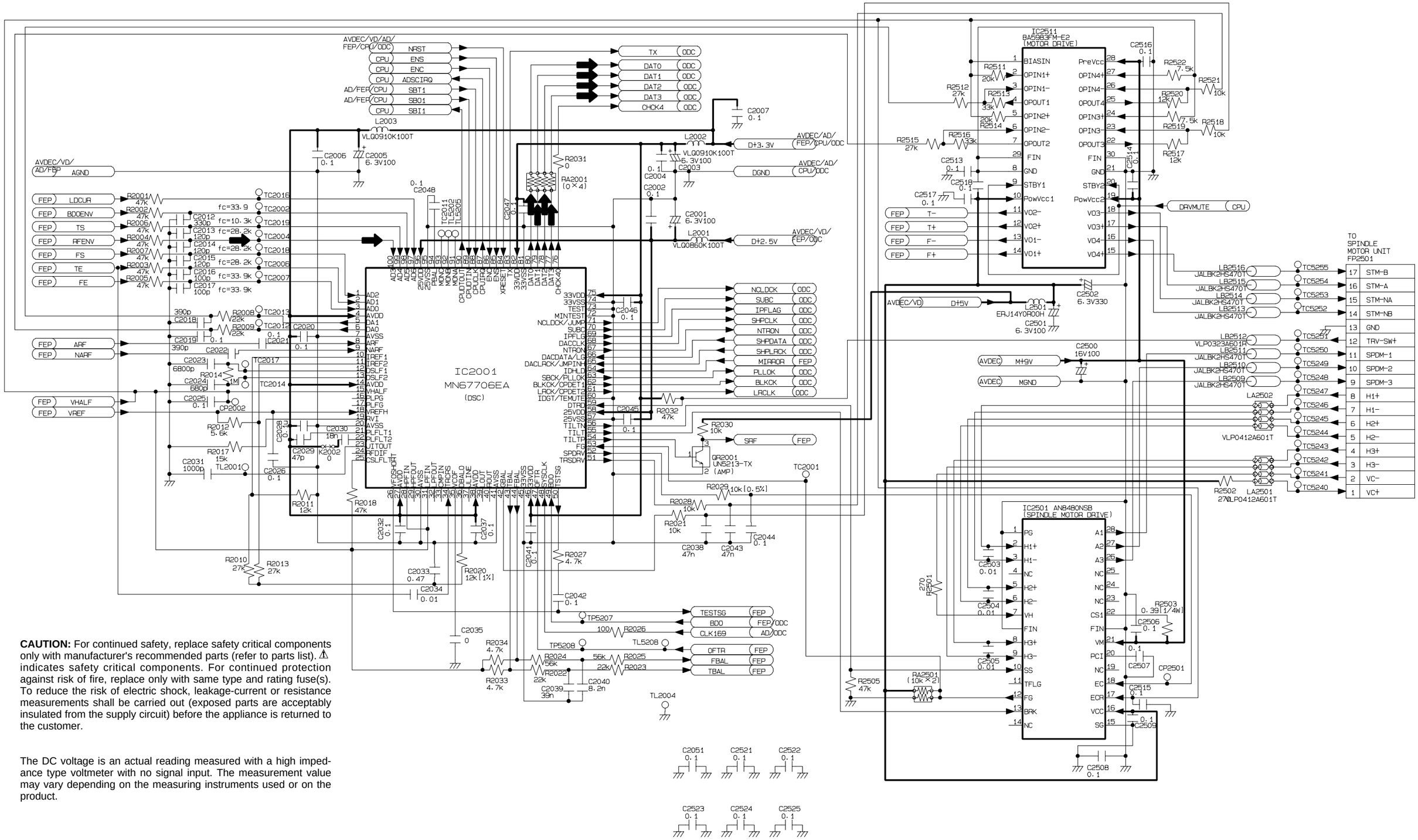
HOT COLD

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

ADSC/Section(Module C.B.A. 1/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)

MAIN SIGNAL PATH



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

AV Decorder section(Module C.B.A. 2/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)

VIDEO SIGNAL
AUDIO SIGNAL

IC3061
MNX7160BT1
or KM416S1DTG8 or HY57V16DTC8
(16M-SDRAM)

IC3071
*MNX7160BT1
or KM416S1DTG8 or HY57V16DTC8
(16M-SDRAM)
PAL model only

IC3001
MN677532JA
(AV DECORDER)

IC3002 P0016EZ01ZP

IC6251 PQ1R33

IC3091 PQ1R33

IC3081 TC4W66FUTL

FL6255 VLF14915104T

FL6254 VLF14915105T

FL6252 VLF14915105T

FL6251 VLF14915105T

NJ3201

L3091 VLQ0860K100T or ELJEA100KF

Q3084 2SB1218A-RTX (AMP)

Q3083 *2SB1218A-RTX (AMP)

Q3082 *2SB1218A-RTX (AMP)

Q3081 2SB1218A-RTX (AMP)

TO PP3201 MOTHER C.B.A. (VOUT) PS3201

1	NC
2	VGND
3	CB
4	VGND
5	Y
6	VGND
7	M+9V
8	MGND
9	D+5V
10	DGND
11	D+2.5V
12	DGND
13	D+2.5V
14	DGND
15	A+5V
16	AGND
17	C
18	VGND
19	CR
20	NC
21	VGND
22	NC

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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LB3203	○
LB3204	×
LB3205	×
LB3206	×
LB3207 LB3208	×

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Y22-8330-10

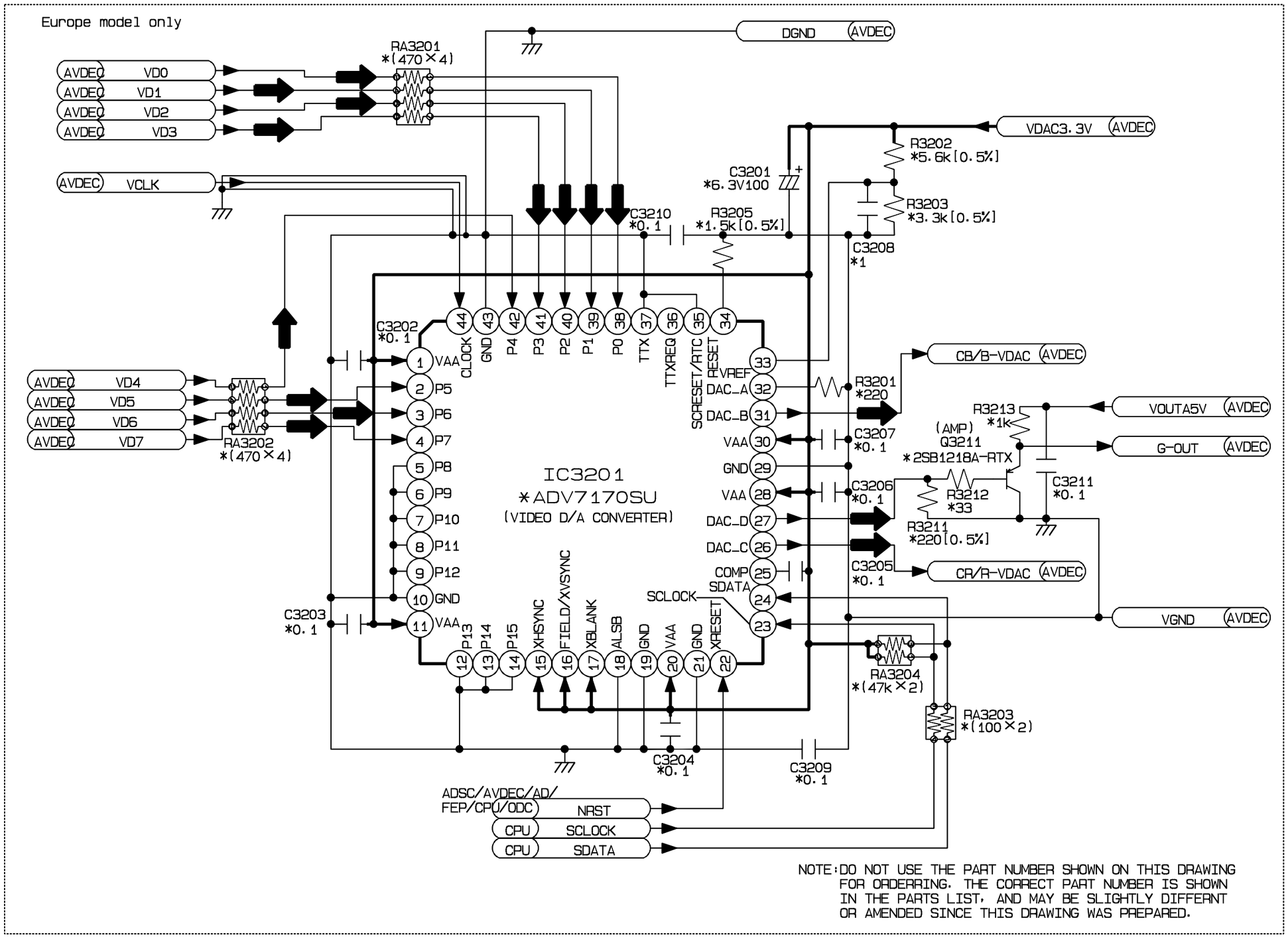
DV-403

KENWOOD

VIDEO D/A converter section(Module C.B.A. 3/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)

VIDEO SIGNAL



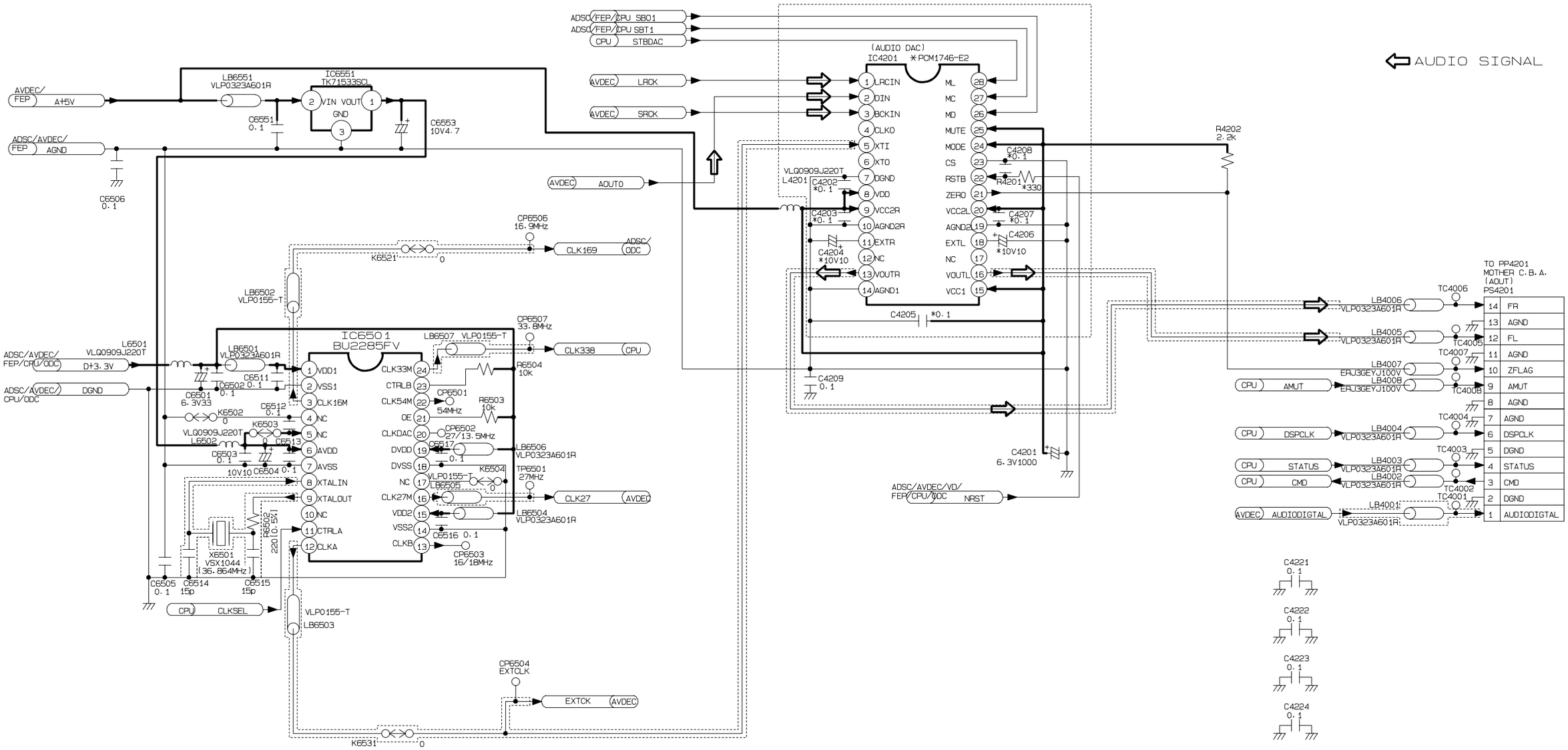
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

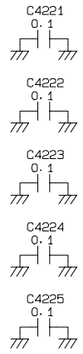
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

AUDIO section(Module C.B.A. 4/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)





CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

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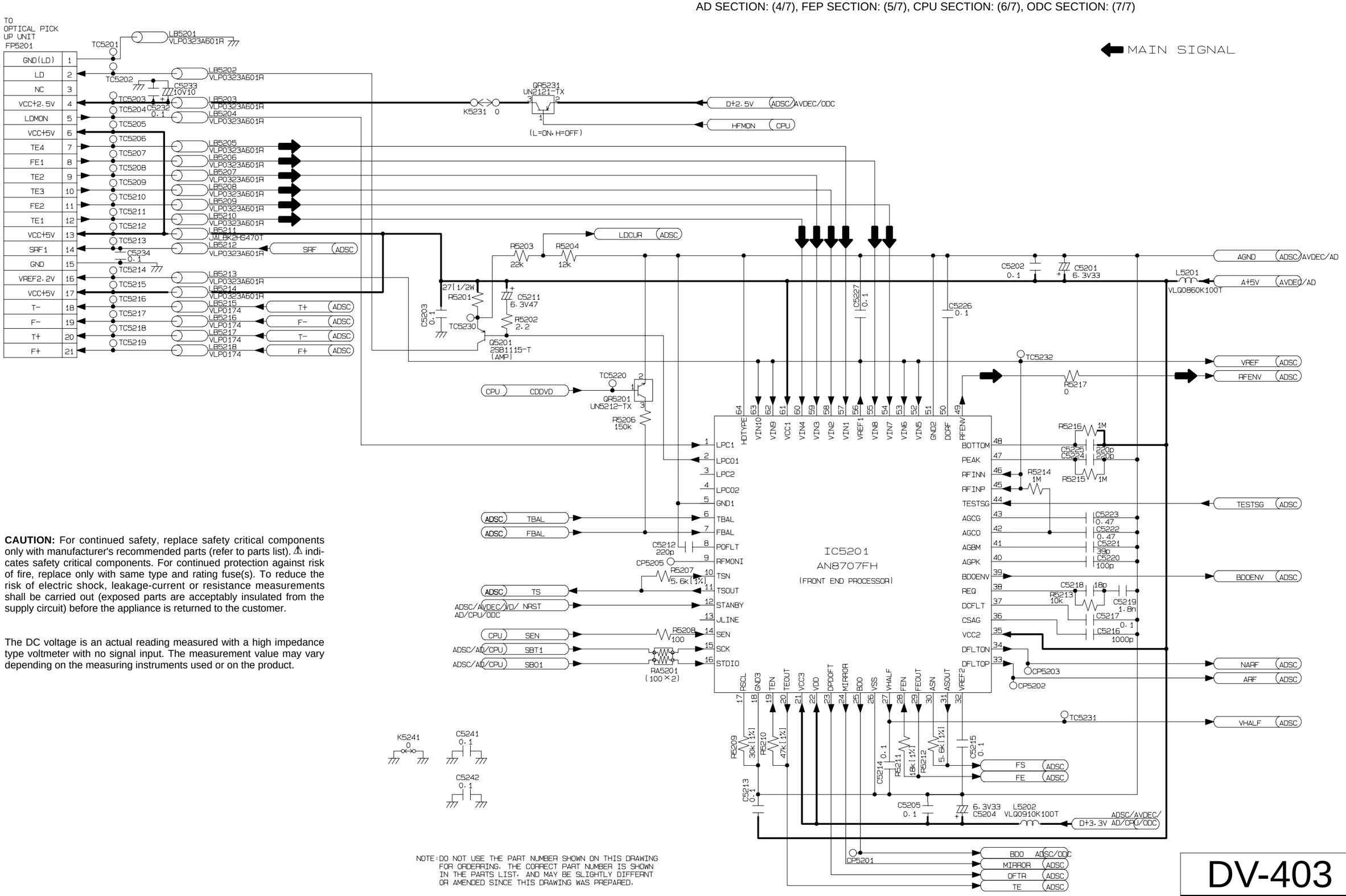
FET section(Module C.B.A. 5/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)

MAIN SIGNAL



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CPU section(Module C.B.A. 6/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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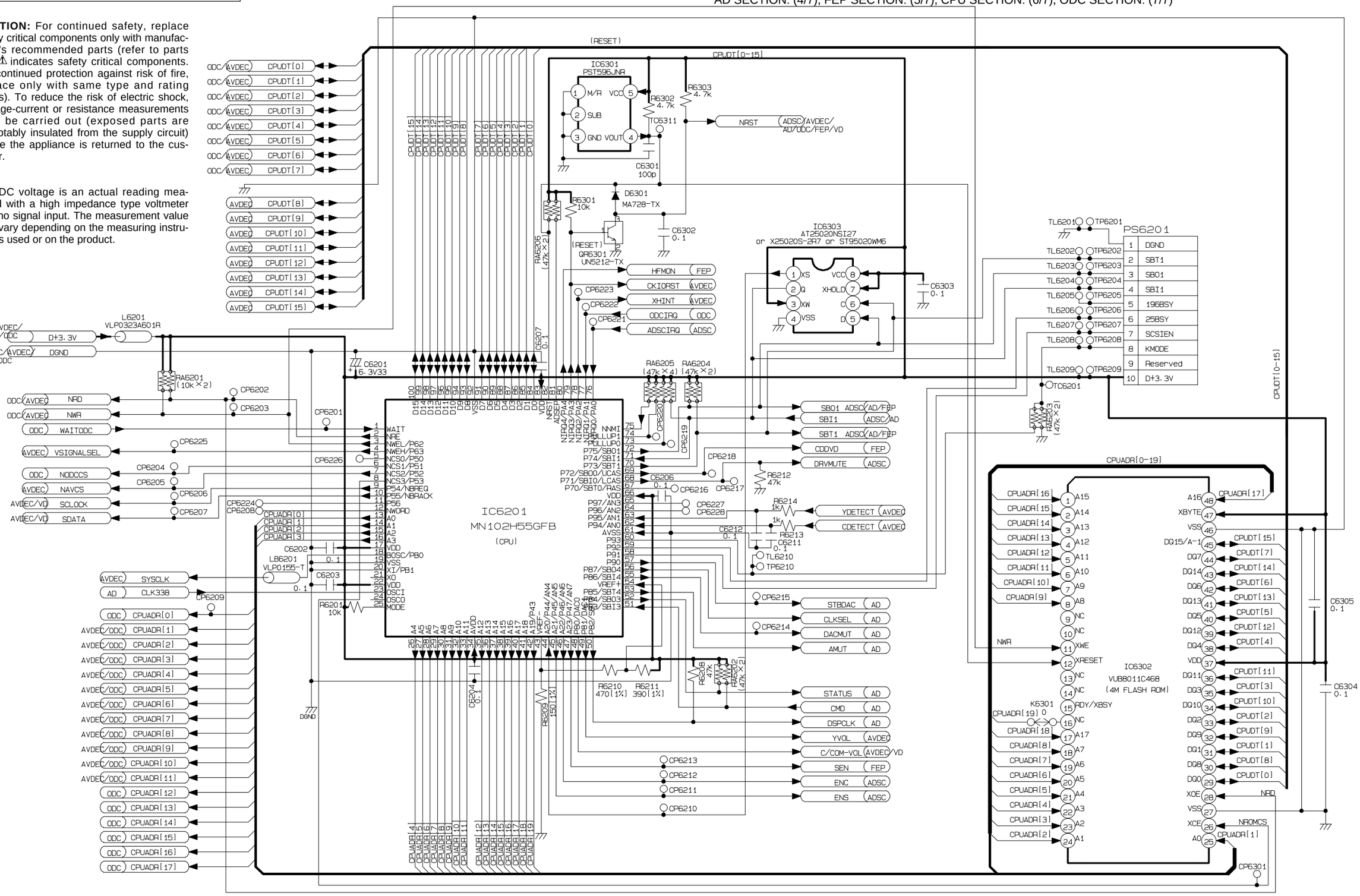


NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

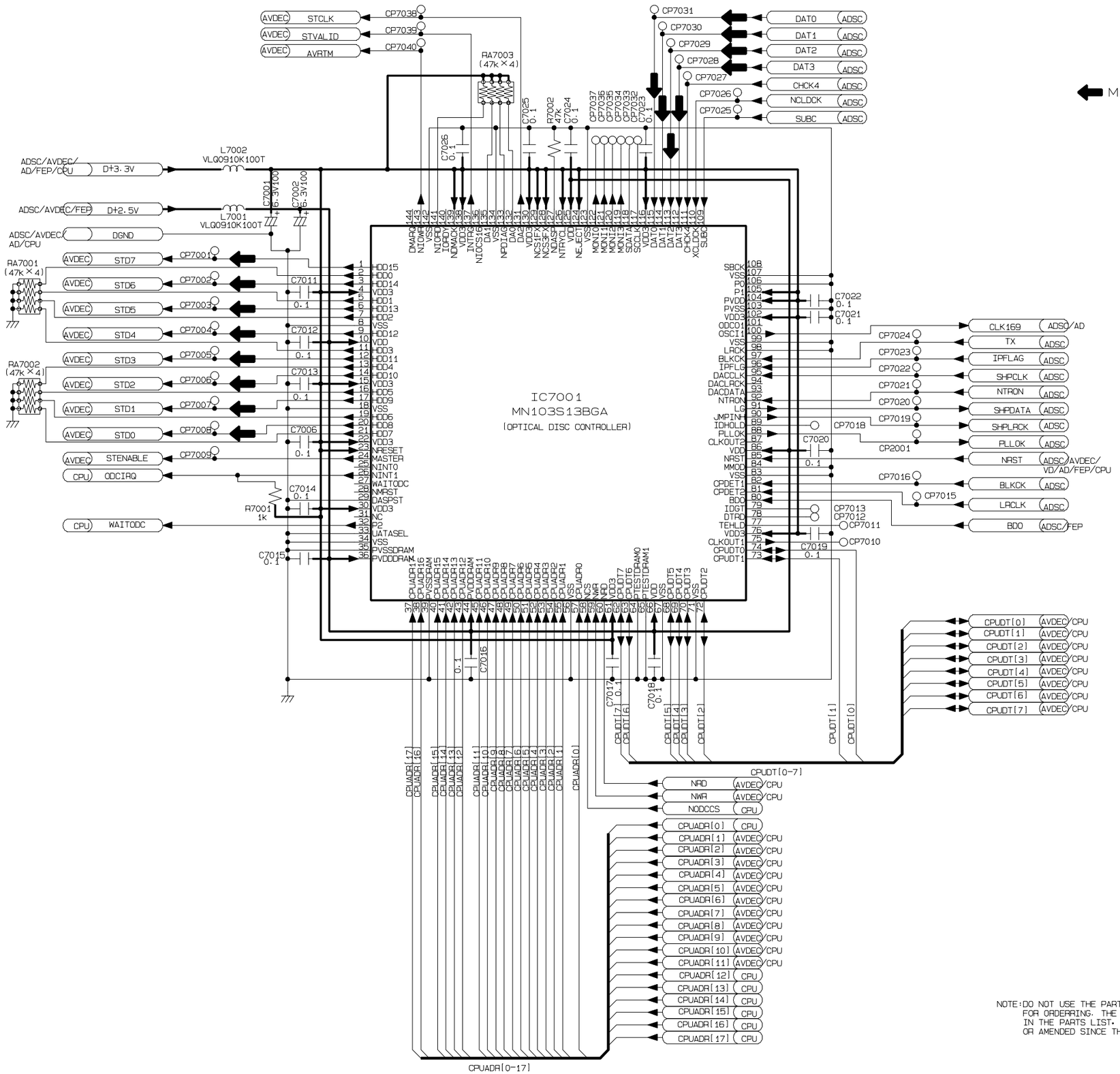
Y22-8330-10

DV-403

KENWOOD

ODC section(Module C.B.A. 7/7)

ADSC SECTION: (1/7), AVDEC SECTION: (2/7), VD SECTION: (3/7),
AD SECTION: (4/7), FEP SECTION: (5/7), CPU SECTION: (6/7), ODC SECTION: (7/7)



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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Y22-8330-10

DV-403

KENWOOD

VIDEO out section(Mother C.B.A. 1/4)

VO SECTION: (1/4), AOUT1 SECTION: (2/4), AOUT2 SECTION: (3/4), OP SECTION: (4/4)

VIDEO SIGNAL

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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TO PS1101
POWER C.B.A.
PP1101

NSW-11V	1
AGND	2
NSW+12V	3
AGND	4
A+5V	5
DGND	6
D+2.5V	7
DGND	8
D+2.5V	9
DGND	10
D+5V	11
MGND	12
M+9V	13
POWER-OFF(L)	14
NSW+5V	15
FLH+	16
FLH-	17
FL-29V	18

TO PS3201
MODULE C.B.A.
(AV DEC)
PP3201

NC	1
VGND	2
CB	3
VGND	4
Y	5
VGND	6
M+9V	7
MGND	8
D+5V	9
DGND	10
D+2.5V	11
DGND	12
D+2.5V	13
DGND	14
A+5V	15
AGND	16
C	17
VGND	18
CR	19
NC	20
VGND	21
NC	22

PP3801

1	NSW+12V
2	NSW+5V
3	GND
4	VOUT
5	GND
6	YOUT
7	GND
8	COUT
9	GND
10	ROUT
11	GND
12	LOUT
13	GND
14	SCLOCK
15	SDATA
16	DVDH
17	R
18	G
19	B

IC3511
ML6427
(VIDEO DRIVE)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Y22-8330-10

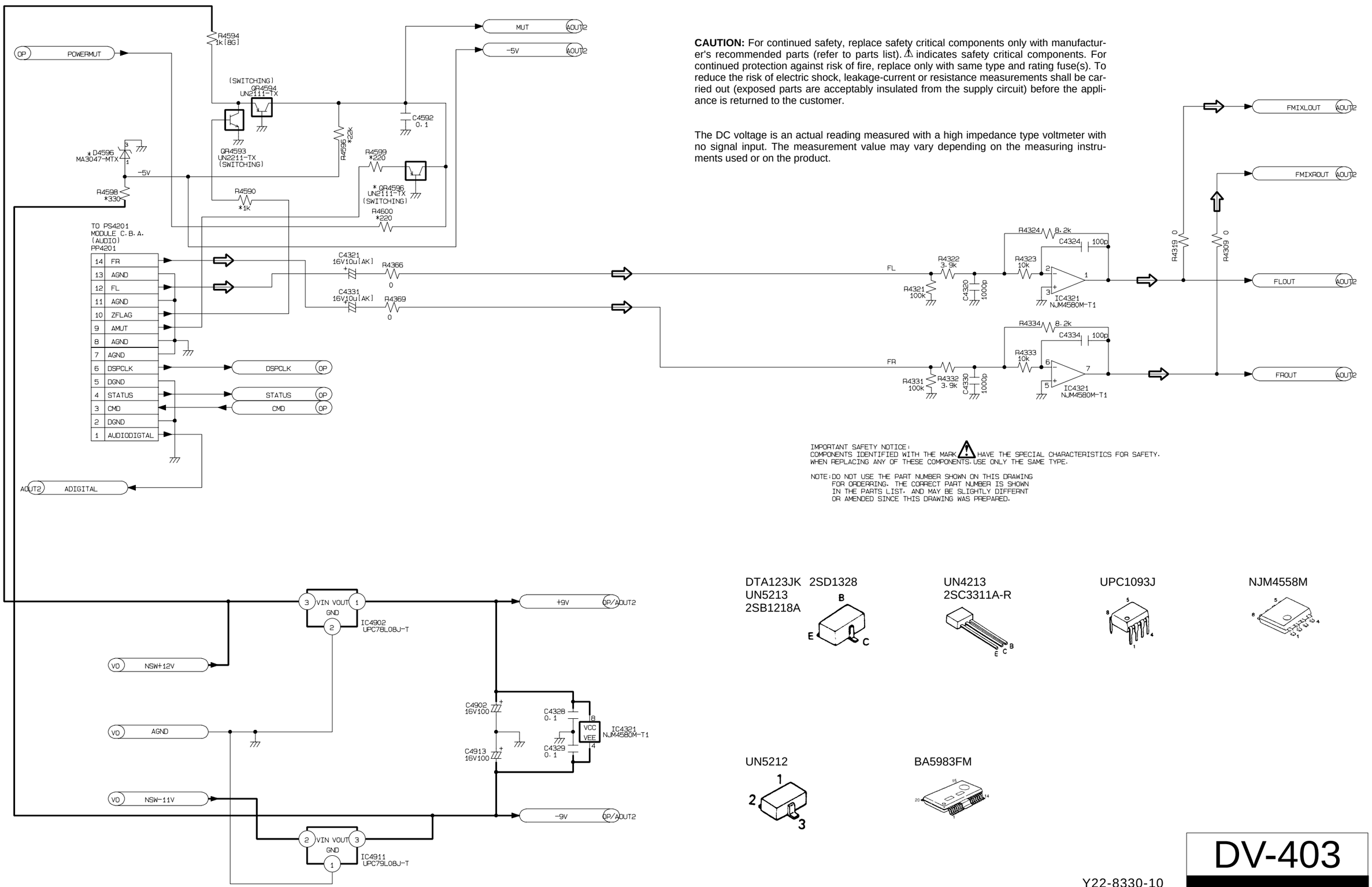
DV-403

KENWOOD

AUDIO out1 section(Mother C.B.A. 2/4)

VO SECTION: (1/4), AOUT1 SECTION: (2/4), AOUT2 SECTION: (3/4), OP SECTION: (4/4)

AUDIO SIGNAL



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DTA123JK 2SD1328
UN5213
2SB1218A

UN4213
2SC3311A-R

UPC1093J

NJM4558M

UN5212

BA5983FM

Y22-8330-10

DV-403

KENWOOD

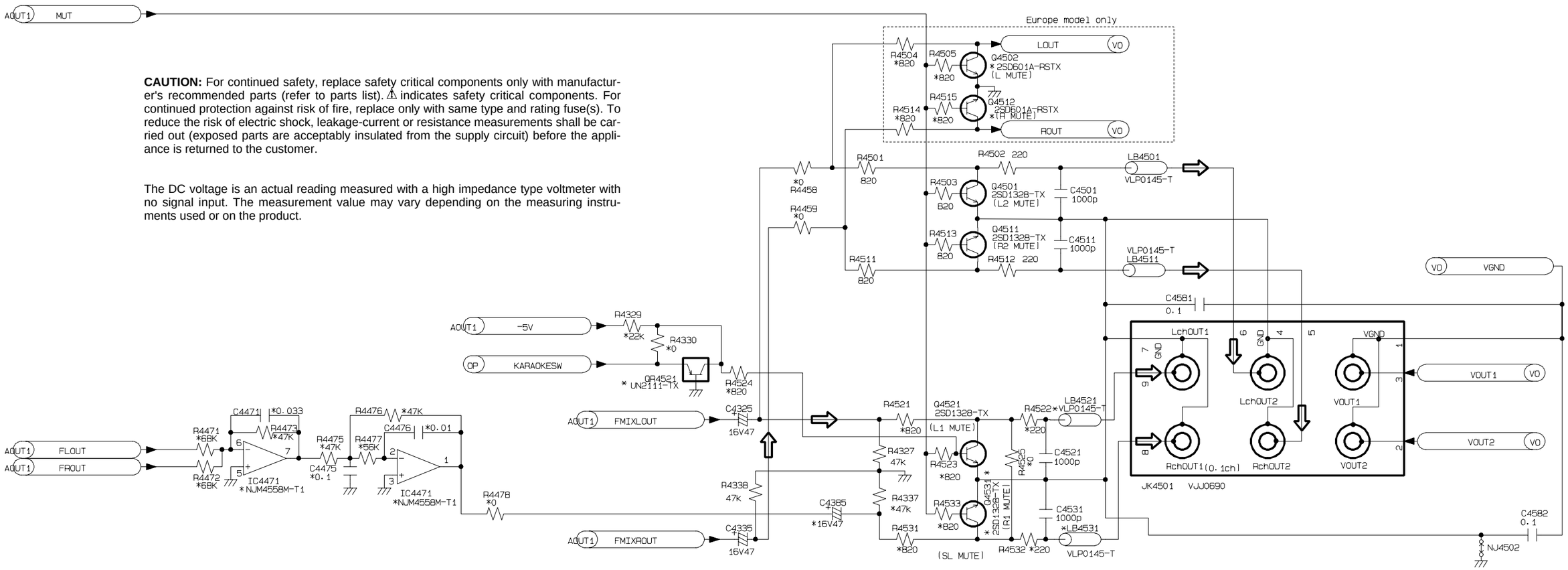
AUDIO out2 section(Mother C.B.A. 3/4)

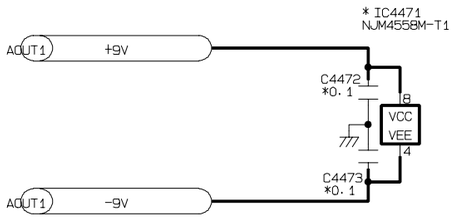
VO SECTION: (1/4), AOUT1 SECTION: (2/4), AOUT2 SECTION: (3/4), OP SECTION: (4/4)

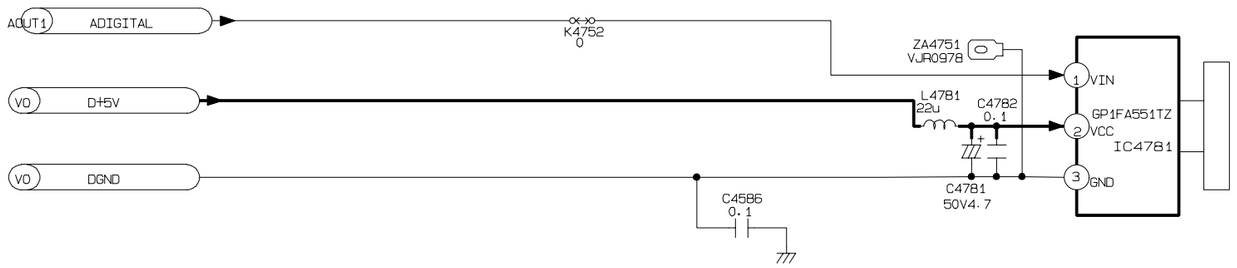
AUDIO SIGNAL

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.



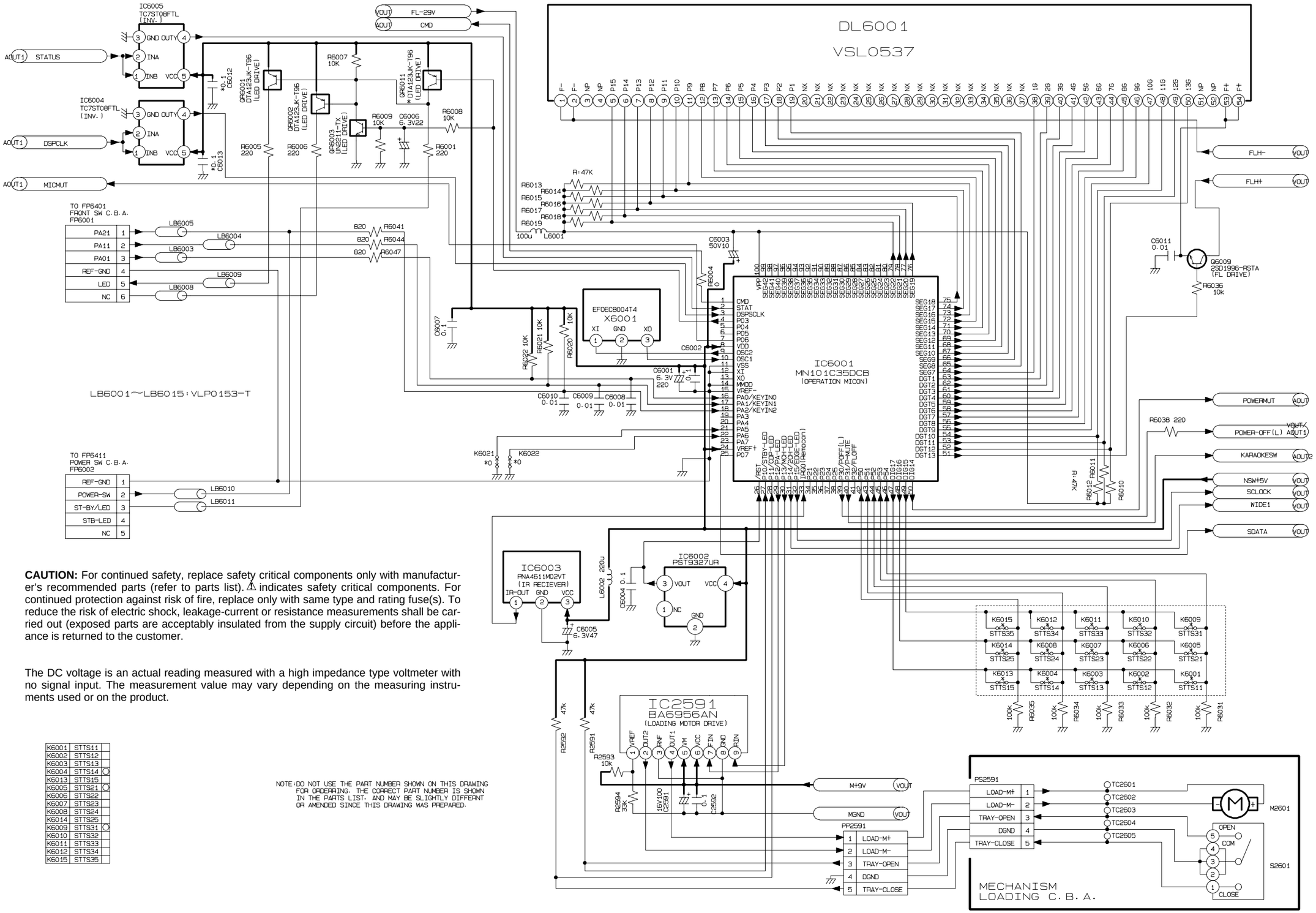




NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Operation section(Mother C.B.A. 4/4)

VO SECTION: (1/4), AOUT1 SECTION: (2/4), AOUT2 SECTION: (3/4), OP SECTION: (4/4)



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

K6001	STTS11
K6002	STTS12
K6003	STTS13
K6004	STTS14 ○
K6013	STTS15
K6005	STTS21 ○
K6006	STTS22
K6007	STTS23
K6008	STTS24
K6014	STTS25
K6009	STTS31 ○
K6010	STTS32
K6011	STTS33
K6012	STTS34
K6015	STTS35

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Y22-8330-10

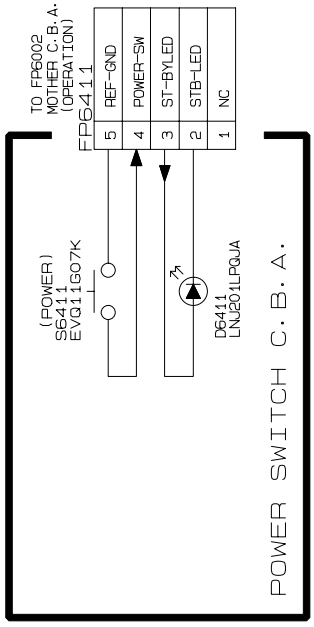
DV-403

KENWOOD

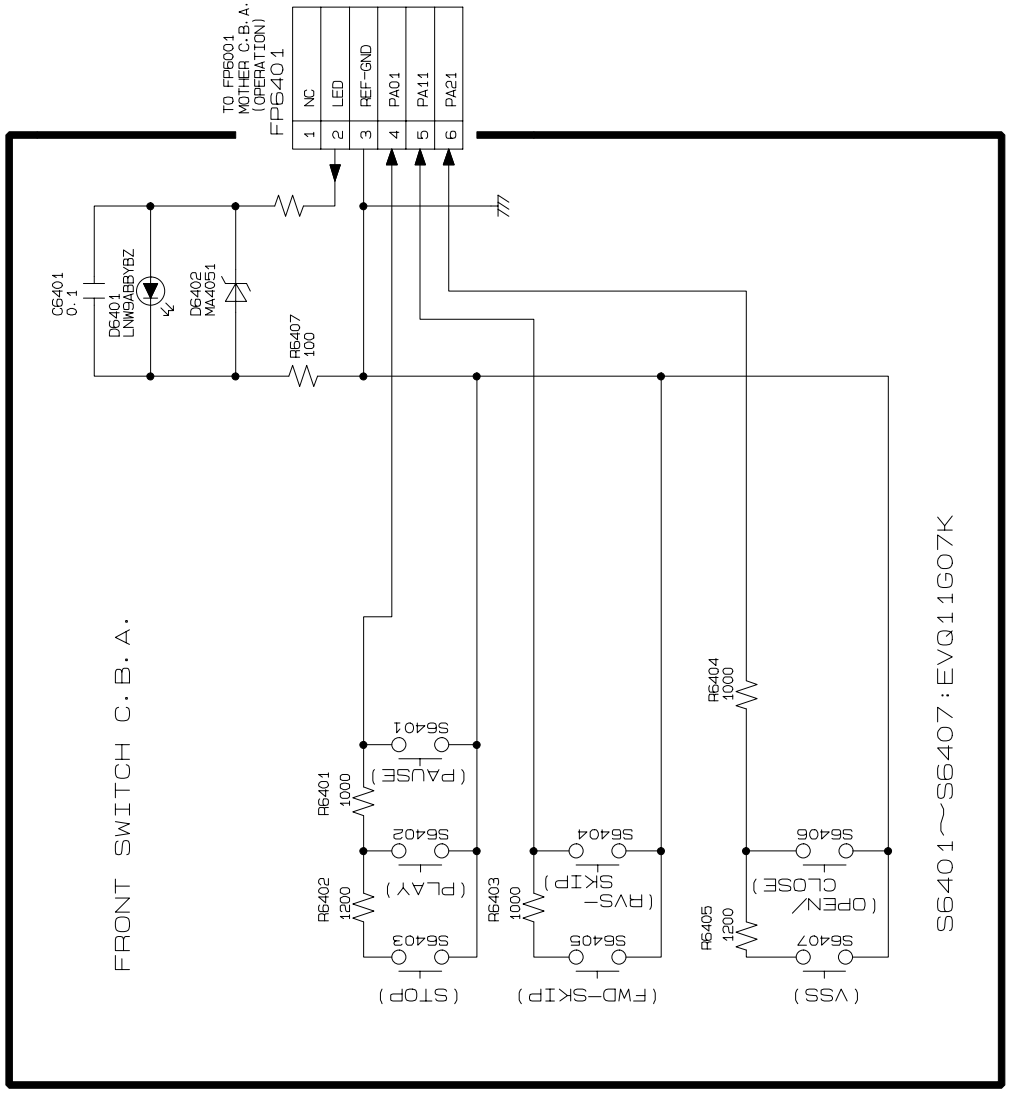
Front switch and power switch

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.



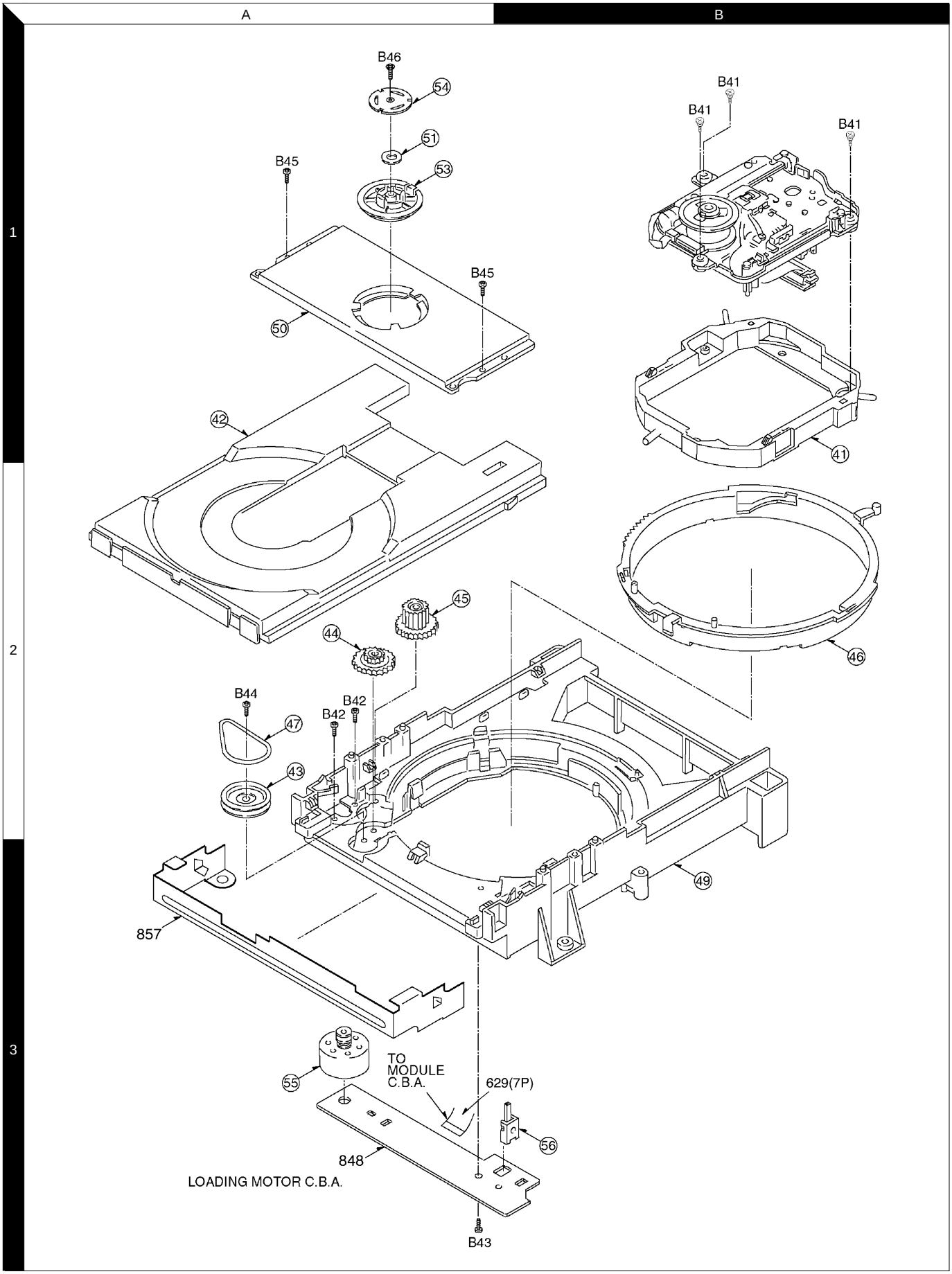
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.



DV-403

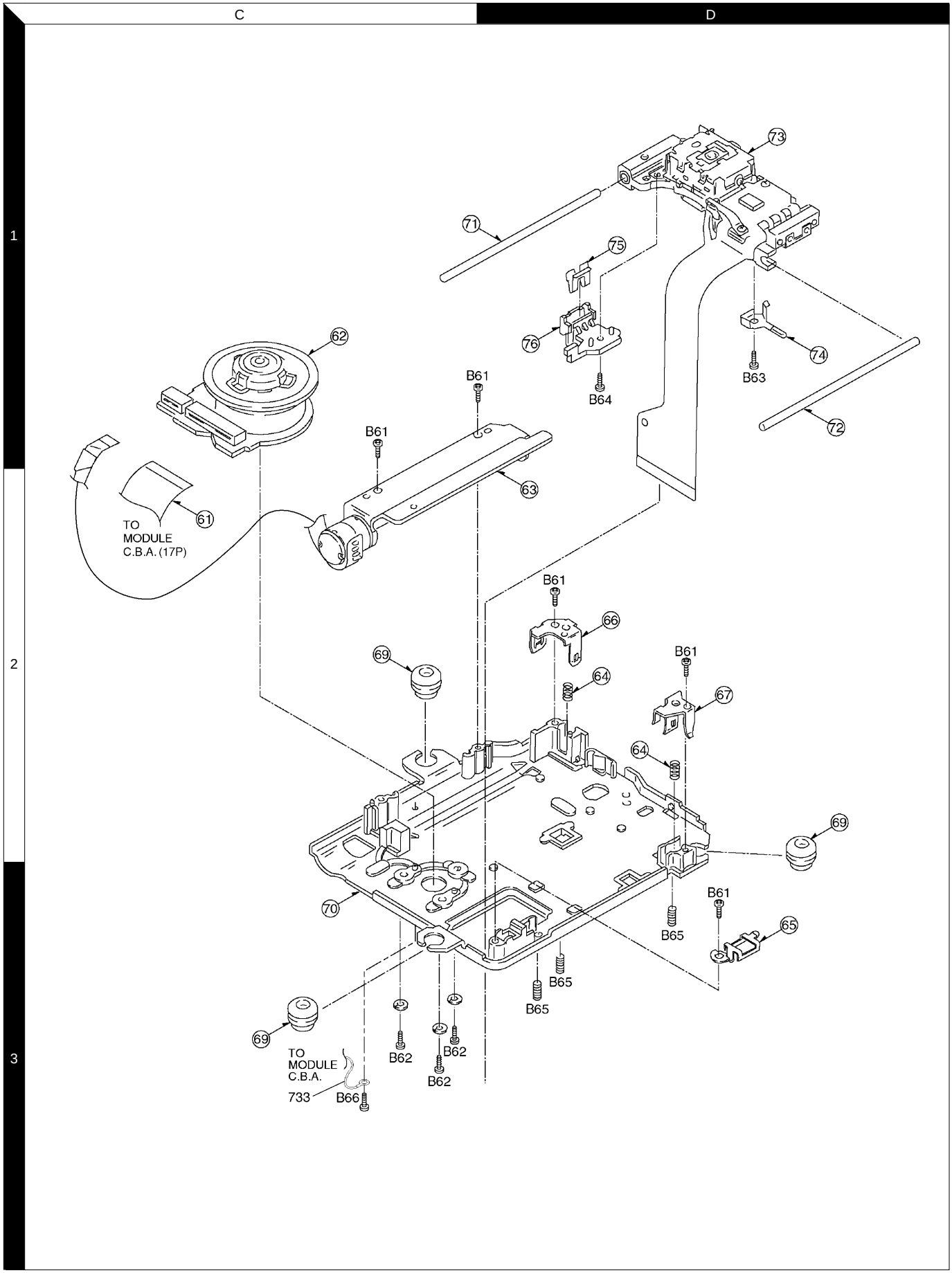
KENWOOD

EXPLODED VIEW (MECHANISM)



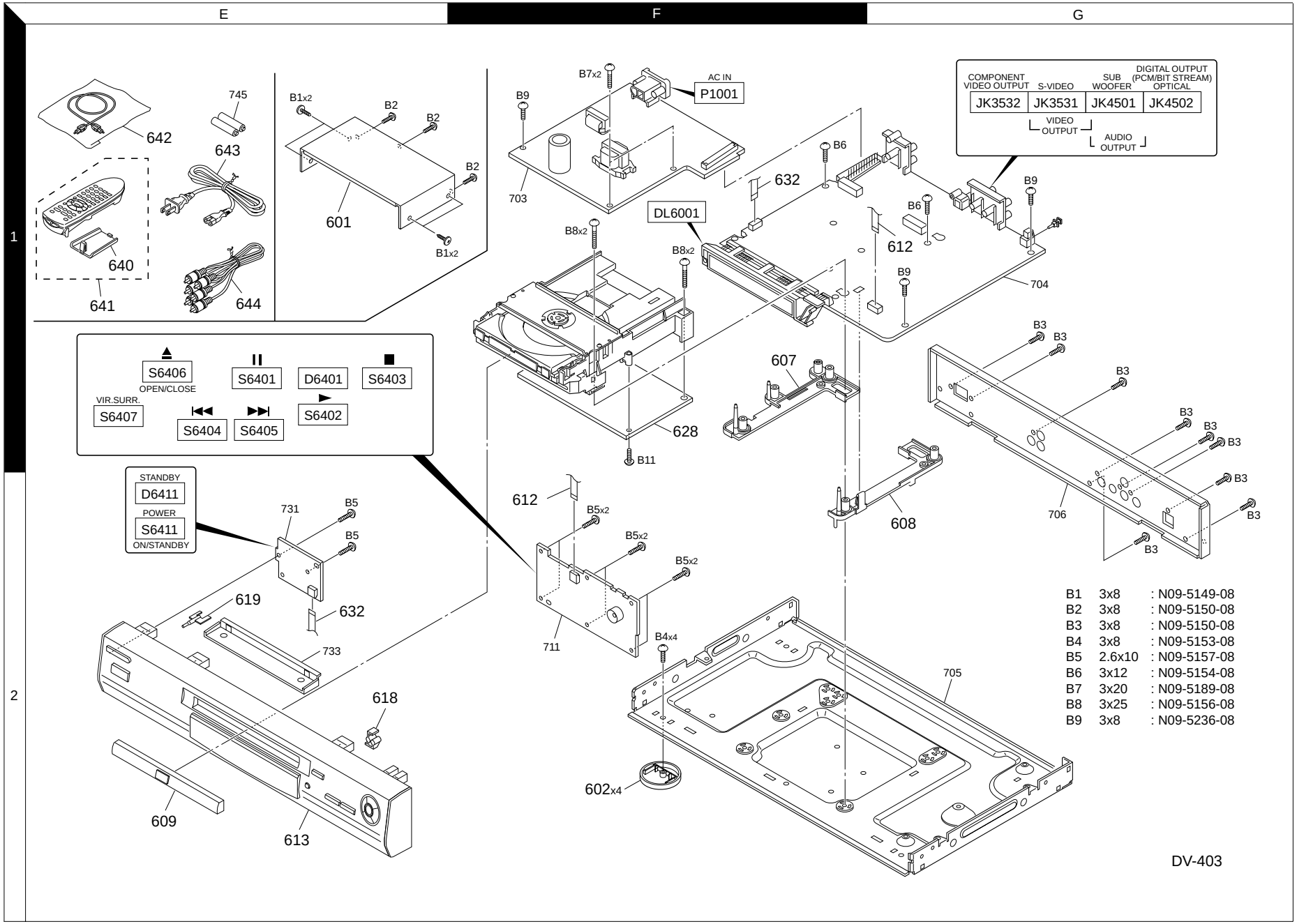
Parts with exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (MECHANISM)



DV-403

EXPLODED VIEW(UNIT)



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❷

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
MECHANISM PARTS						
41	2B		A11-1171-08	INTERMEDIATE CHASSIS,VMD3270		
42	1A		J99-0819-08	TRAY VMD3265		
43	2A		D13-1978-08	PULLEY GEAR VDG1308		
44	2A		D13-1979-08	DECLERATION GEAR,VDG1309		
45	2A		D13-1980-08	DRIVER GEAR VDG1310		
46	2B		A11-1172-08	VERTICAL CAM VDK0156		
47	2A		D16-0722-08	BELT VDV0373		
49	3B		A10-3504-08	LOADING BASE VMD3266		
50	1A	✻	A11-1192-08	CLAMPER BASE VMA0E55-2		
51	1A	✻	T99-0644-08	MAGENT RHM245ZA		
53	1A	✻	J11-0863-08	CLAMPER VMD3884		
54	1A	✻	N19-1512-08	CLAMPER WEIGHT VMA0E54		
55	3A		T42-0964-08	LOADING MOTOR UNIT,VEM0664		
56	3B		S64-0047-08	DOUBLE SWITCH VSH0170		
61	2C	✻	E35-2708-08	SPINDLE FFC VWJ1388		
62	1C	✻	T42-0989-08	SPINDLE MOTOR BML3E4CRU		
63	2D	✻	T42-0990-08	STEPPING MOTOR VEM0720		
64	2D		G01-4184-08	TILT SPRING VMB3278		
65	3D		G02-1696-08	SUB-SHAFT TILT SP, VMC1487		
66	2D	✻	G02-1718-08	SPRING HOLDER1 VMC1606		
67	2D	✻	G02-1719-08	SPRING HOLDER2 VMC1607		
69	2C,2D		J02-1469-08	FLOATING RUBBER,VMG1166		
70	3C	✻	A11-1193-08	TRVERSE CHASSIS,VMK0502		
71	1D		J90-0872-08	GUIDE SHAFT1 VMS6471		
72	1D		J90-0873-08	GUIDE SHAFT2 VMS6472		
73	1D		J91-0504-08	OPTICAL PICKUP VED0402-1		
74	1D		G02-1699-08	SUB-SHAFT PRELOAD SP,VMC1491		
75	1D		G02-1700-08	SCREW NUT VMC1490		
76	1D		J21-6791-08	NUT VMD3260		
B11			N09-5158-08	SCREW XTV3+10G		
B41			N09-5159-08	SCREW VHD1223		
B42			N09-3456-08	SCREW XQNQC17+3		
B43			N09-5158-08	SCREW XTV3+10G		
B44		✻	N09-5237-08	SCREW VHD1330		
B45			N09-5158-08	SCREW XTV3+10G		
B61			N09-5162-08	SCREW VHD1224		
B62		✻	N09-5238-08	SCREW VHD1358		
B63			N09-3462-08	SCREW VHD1057		
B64			N09-3456-08	SCREW XQNQC17+3		
B65			N09-5164-08	SCREW XXE26C6FN		

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❶

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
DV-403						
601	1E	✻	A01-3785-08	TOP COVER VGM1725		
602	2F		J02-1468-08	LEG VYK5504		
607	1F	✻	J30-1420-08	SPACER L VMD3854		
608	2G	✻	J30-1421-08	SPACER R VMD3855		
609	2E	✻	A29-1120-08	TRAY TOP VFY2693		
612	2F,1G		E35-2563-08	FLAT CABLE VWJ06A0130BB		
613	2E	✻	A60-1908-08	FRONT PANEL VYP7757		
618	2E		J19-6058-08	HOLDER P VGL0812		
619	2E	✻	J19-6133-08	HOLDER S VGL0861		
628	1F	✻	J26-0122-08	MODULE CBA		
632	2E,1F	✻	E35-2707-08	FLAT CABLE VWJ05AW170BB		
640	1E	✻	A09-1193-08	BATTERY COVER TR1122722030		
641	1E	✻	A70-1444-08	REMOTE CONTROL VEQ2395		
642	1E		B19-1615-08	DIGITAL CORD VJA1031		
⚠643	1E	✻	E30-2973-08	AC CORD RJA0065-A		
644	1E		E30-2938-08	A/V CORD VJA1062		
B1			N09-5149-08	SCREW VHD1041		
B2			N09-5150-08	SCREW VHD0690		
B3			N09-5150-08	SCREW VHD0690		
B4			N09-5153-08	SCREW XTV3+8G		
B5			N09-5157-08	SCREW XTBS26+10J		
B6			N09-5154-08	SCREW XYE3+EF12		
B7			N09-5189-08	SCREW XYE3+EF20		
B8			N09-5156-08	SCREW XYE3+EF25		
B9		✻	N09-5236-08	SCREW XYE3+EF8		
-		✻	B60-4734-08	OPERATING INST VQT8703		
-			H09-0133-08	ACCESSORY CASE VPK1891Z		
-		✻	H10-7720-08	CUSHION L VPN5389		
-		✻	H10-7721-08	CUSHION R VPN5390		
-			H25-1664-08	POLYETHYLENE BAG,VPF0731		
-		✻	H50-3774-08	PACKING CASE VPG0E11		

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PARTS LIST

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❸

ELECTRICAL PARTS

Ref. No	New Parts	Parts No.	Destination
D6401	✻	B30-2588-08	
D6411	✻	B30-2589-08	
⚠ C1001,02		C90-3891-08	
⚠ C1003		C90-3915-08	
⚠ C1005		C90-3892-08	
C1014		C90-3870-08	
C1021		C90-3914-08	
C1031	✻	C91-1603-08	
C1041		CQ93FM1H223J	
C1051		CQ93FM1H104J	
C1052		C90-3891-08	
C1053		CQ93FM1H223J	
C1061		CE04EW0J470M	
C1101		C90-3891-08	
C1102		CQ93FM1H223J	
C1111,12		CE04EW1A102M	
C1115		CK45FB1E104Z	
C1116		CE04EW1A221M	
C1117		CE04EW0J102M	
C1121		CE04EW1A331M	
C1122		CE04EW1A102M	
C1125		CE04EW0J102M	
C1131		C90-3874-08	
C1133		CE04EW1E330M	
C1141		C90-3874-08	
C1143		CE04EW1E330M	
C1151		C90-3875-08	
C1153		CE04EW1E221M	
C1154		CE04EW1C221M	
C1161	✻	C90-3943-08	
C1171	✻	C90-3944-08	
C2001		C90-3923-08	
C2002		CK73GB1C104Z	
C2003		C90-3923-08	
C2004		CK73GB1C104Z	
C2005		C90-3923-08	
C2006		CK73GB1C104K	
C2007		CK73GB1C104Z	
C2012		CC73GCH1H331J	
C2013-15		CC73GCH1H121J	
C2016,17		CC73GCH1H101J	
C2018,19		CC73GCH1H391J	
C2020		CK73GB1C104Z	
C2021,22		CK73GB1C104K	
C2023		CK73GB1H682K	
C2024		CC73GCH1H681J	
C2025,26		CK73GB1C104Z	
C2028		CK73GB1C104Z	
C2029		CC73GCH1H470J	
C2030		CK73GB1C183K	
C2031		CK73GB1H102K	
C2032		CK73GB1C104Z	
C2033		CK73FB1C474K	
C2034		CK73GB1C103K	
C2035		RK73GB1J000J	
C2037		CK73GB1C104Z	
C2038		CK73GB1C473K	
C2039		CK73GB1C393K	
C2040		CK73GB1H822K	
C2041		CK73GB1C104Z	
C2042		CK73GB1C104K	
C2043		CK73GB1C473K	
C2044		CK73GB1C104K	
C2045-48		CK73GB1C104Z	
C2051		CK73GB1C104Z	
C2500		C90-3911-08	
C2501		C90-3923-08	
C2502		C90-3885-08	
C2503-05		CK73GB1H103K	
C2506		CK73GB1C104Z	
C2507,08		CK73GB1C104K	
C2509		CK73GB1C104Z	
C2513-18		CK73GB1C104Z	
C2521-25		CK73GB1C104Z	
C2591		CE04KW1C101M	
C2592		CK73FB1H104Z	
C3001-03		C90-3885-08	
C3004		C90-3886-08	
C3005,06		CK73GB1C104Z	
C3007,08		C90-3886-08	
C3009-11		CK73GB1C104Z	
C3012,13		C90-3886-08	
C3014,15		CK73GB1C104Z	
C3016		C90-3886-08	
C3017,18		CK73GB1C104Z	
C3019,20		C90-3886-08	
C3021-23		CK73GB1C104Z	
C3024		C90-3886-08	
C3025		CK73GB1C104Z	
C3026		C90-3886-08	
C3027-29		CK73GB1C104Z	
C3030		C90-3886-08	
C3031-35		CK73GB1C104Z	
C3036		CC73GCH1H220J	
C3042,43		CK73GB1C104Z	
C3045		CK73GB1C104Z	
C3046		C90-3879-08	
C3051		C90-3885-08	
C3052-55		CK73FB1A105K	
C3056-64		CK73GB1C104Z	
C3065		CS15E1A100K	
C3066		CK73GB1C104Z	
C3081-85		CK73GB1C104Z	
C3091,92		C90-3923-08	
C3093		CK73GB1C104Z	
C3094		CS15E1A100K	
C3095		CK73GB1C104Z	
C3221-31		CK73GB1C104Z	
C3500		CE04EW0J471M	
C3501		C90-3215-05	
C3502		CK73FB1H103Z	
C3503		CK73FB1H471K	
C3504		CK73FB1H103K	
C3505,06		CE04KW1C470M	
C3507		CK73FB1H103Z	
C3508,09		CE04EW0J471M	
C3511,12		CE04EW0J102M	
C3513,14		CE04KW1C101M	
C3515		CK73FB1H103Z	
C3536		CK73FB1H103K	
C3551,52		CK73FB1H103Z	
C4201		CE04KW0J102M	
C4202,03		CK73GB1C104Z	
C4204		CS15E1A100K	
C4205		CK73GB1C104Z	
C4206		CS15E1A100K	
C4207-09		CK73GB1C104Z	
C4221-25		CK73GB1C104Z	
C4320		CK73FB1H102J	
C4321		CE04KW1C220M	
C4324		CC73FCH1H101J	
C4325		CE04KW1C470M	
C4328,29		CK73FB1H104Z	
C4330		CK73FB1H102J	
C4331		CE04KW1C220M	
C4334		CK73FB1H102J	
C4335		CE04KW1C470M	
C4385		CE04KW1C470M	
C4471		CK73FB1H333K	
C4472,73		CK73FB1H104Z	
C4475		CK73FB1H104K	
C4476		CK73FB1H103K	
C4501		CK73FB1H102J	
C4511		CK73FB1H102J	
C4531		CK73FB1H102J	
C4581,82		CK73FB1H104Z	
C4586		CK73FB1H104Z	
C4592		CK73FB1H104Z	
C4781		CE04KW1H4R7M	
C4782		CK73FB1H104Z	
C4902		CE04EW1C101M	
C4913		CE04EW1C101M	
C5201		C90-3882-08	
C5202,03		CK73GB1C104Z	
C5204		C90-3882-08	
C5205		CK73GB1C104Z	
C5211		C90-3924-08	
C5212		CC73GCH1H221J	
C5213		CK73GB1C104K	
C5214,15		CK73GB1C104Z	
C5216		CK73GB1H102K	
C5217		CK73GB1C104K	
C5218		CC73GCH1H180J	
C5219		CK73GB1H182K	
C5220		CC73GCH1H101J	
C5221		CC73GCH1H390J	
C5222,23		CK73GB1A474K	
C5224,25		CC73GCH1H221J	
C5226		CK73GB1C104K	
C5227		CK73GB1C104Z	
C5232		CK73GB1C104Z	
C5233		CS15E1A100K	
C5234		CK73GB1C104Z	
C5241,42		CK73GB1C104Z	
C6001		CE04KW0J221M	
C6002		CK73FB1H104Z	
C6003		CE04KW1H100M	
C6004		CK73FB1H104Z	
C6005		CE04KW0J470M	
C6006		CE04KW0J220M	
C6007		CK73FB1H104Z	
C6008-11		CK73FB1H103Z	
C6012,13		CK73FB1H104Z	
C6201		C90-3882-08	
C6202-04		CK73GB1C104Z	
C6206-08		CK73GB1C104Z	
C6211,12		CK73GB1C104Z	
C6251		C90-3923-08	
C6252		CS15E1A100K	
C6253,54		CK73GB1C104Z	
C6255		C90-3882-08	
C6256		C90-3885-08	
C6257		C90-3923-08	
C6258		CK73GB1H103K	
C6301		CC73GCH1H101J	
C6302		CK73GB1C104K	
C6303-05		CK73GB1C104Z	
C6401		CK45FB1E104Z	
C6501		C90-3882-08	
C6502,03		CK73GB1C104Z	
C6504		CS15E1A100K	
C6505,06		CK73GB1C104Z	
C6511-13		CK73GB1C104Z	
C6514,15		CC73GCH1H150J	
C6516,17		CK73GB1C104Z	
C6551		CK73GB1C104Z	
C6553		CS15E1A4R7K	
C7001,02		C90-3923-08	
C7006		CK73GB1C104Z	
C7011-26		CK73GB1C104Z	
FP2501	✻	E40-8710-08	
FP5201		E40-8592-08	
FP6001		E40-8547-08	
FP6002		E40-8535-08	
FP6401		E40-8546-08	
FP6411		E40-8547-08	
JK3531		E40-8534-08	
JK3532		E63-1133-08	
JK4501	✻	E63-1170-08	
JK4502		W02-2736-08	
⚠ P1001		E40-8535-08	
PP1101	✻	E40-8711-08	
PP2591	✻	E40-8712-08	
PP3201	✻	E40-8713-08	
PP4201	✻	E40-8714-08	
PS1101		E40-8596-08	
PS2591		E40-8596-08	
PS3201		E40-8539-08	

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PARTS LIST

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❹

Ref. No	New Parts	Parts No.	Destination
PS4201	✻	E40-8715-08	
PS6201		E40-8540-08	
ZA4752		E29-1648-08	
⚠ F1001		F50-0165-08	
⚠ PR1171		F50-0163-08	
FL6251,52	✻	L79-1266-08	
FL6254	✻	L79-1266-08	
FL6255	✻	L79-1267-08	
L1001		L79-1257-08	
L1111		L90-0332-08	
L1115		L33-0595-08	
L1131		L90-0333-08	
L1141		L90-0333-08	
L1151		L90-0334-08	
L2001	✻	L90-0355-08	
L2002,03	✻	L90-0356-08	
L2501		RK73FB2A000J	
L3091	✻	L90-0355-08	
L3501		L33-0596-08	
L4201	✻	L90-0357-08	
L4781		L33-0596-08	
L5201	✻	L90-0355-08	
L5202	✻	L90-0356-08	
L6001		L90-0351-08	
L6002		L90-0352-08	
L6201		L90-0341-08	
L6501,02	✻	L90-0357-08	
L7001,02	✻	L90-0356-08	
LA2501,02	✻	L33-1606-08	
LB1021		L90-0340-08	
LB2509-11		L90-0342-08	
LB2512		L90-0341-08	
LB2513-16		L90-0342-08	
LB3201-04		L90-0341-08	
LB3533,34		L90-0343-08	
LB3536-39		L90-0343-08	
LB4001-06		L90-0341-08	
LB4007,08		RK73GB1J100J	
LB4501		L90-0343-08	
LB4511		L90-0343-08	
LB4531		L90-0343-08	
LB5201-10		L90-0341-08	
LB5211		L90-0342-08	
LB5212-14		L90-0341-08	
LB5215-18	✻	L90-0358-08	
LB6003-05		L90-0354-08	
LB6009-11		L90-0354-08	
LB6201		L92-0084-08	
LB6501		L90-0341-08	
LB6502,03		L92-0084-08	
LB6504		L90-0341-08	
LB6505		L92-0084-08	
LB6506		L90-0341-08	
LB6507		L92-0084-08	
LB6551		L90-0341-08	
LR1041	✻	L90-0359-08	
⚠ T1021	✻	L07-2912-08	
X6001		L78-0710-08	
X6501		L77-2280-08	
K2002		RK73GB1J000J	
K3001		RK73GB1J000J	
K3002,03		RK73FB2A000J	
K3013,14		RK73GB1J000J	
K3021		RK73GB1J000J	
K3511		RK73FB2A000J	
K3552		RK73FB2A000J	
K4752		RK73FB2A000J	
K5231		RK73GB1J000J	
K5241		RK73GB1J000J	
K6004,05		RK73FB2A000J	
K6009		RK73FB2A000J	
K6251		RK73FB2A000J	
K6301		RK73GB1J000J	
K6502-04		RK73GB1J000J	
K6521		RK73GB1J000J	

Ref. No	New Parts	Parts No.	Destination
K6531		RK73GB1J000J	
R1042		RS14GB3D680J	
R1054		RN14BK2E681J	
R1102,03		RN14BK2E122J	
R1126,27		RN14BK2E122J	
R2001-07		RK73GB1J473J	
R2008,09		RK73GB1J223J	
R2010		RK73GB1J273J	
R2011		RK73GB1J123J	
R2012		RK73GB1J562J	
R2013		RK73GB1J273J	
R2014		RK73GB1J105J	
R2017		RK73GB1J153J	
R2018		RK73GB1J473J	
R2020		RK73GB1J123J	
R2021		RK73GB1J103J	
R2022,23		RK73GB1J223J	
R2024,25		RK73GB1J563J	
R2026		RK73GB1J101J	
R2027		RK73GB1J472J	
R2028,29		RK73GB1J103J	
R2030		RK73GB1J103J	
R2031		RK73GB1J000J	
R2032		RK73GB1J473J	
R2033,34		RK73GB1J472J	
R2501,02		RK73GB1J271J	
R2503		R92-1933-08	
R2505		RK73GB1J473J	
R2511		RK73GB1J203J	
R2512		RK73GB1J273J	
R2513		RK73GB1J333J	
R2514		RK73GB1J203J	
R2515		RK73GB1J273J	
R2516		RK73GB1J333J	
R2517		RK73GB1J123J	
R2518		RK73GB1J103J	
R2519		RK73GB1J752J	
R2520		RK73GB1J123J	
R2521		RK73GB1J103J	
R2522		RK73GB1J752J	
R2591,92		RK73FB2A473J	
R2593		RK73FB2A103J	
R2594		RK73FB2A333J	
R3001		RK73GB1J220J	
R3002		RK73GB1J472J	
R3003		RK73GB1J101J	
R3004		RK73GB1J000J	
R3005		RK73GB1J473J	
R3051		RK73GB1J752J	
R3052		RK73GB1J101J	
R3055		RK73GB1J752J	
R3057		RK73GB1J183J	
R3058		RK73GB1J432J	
R3059,60		RK73GB1J752J	
R3061		RK73GB1J101J	
R3071		RK73GB1J103J	
R3081		RK73GB1J750J	
R3082		RK73GB1J330J	
R3083		RK73GB1J102J	
R3084		RK73GB1J750J	
R3085		RK73GB1J330J	
R3086		RK73GB1J102J	
R3087		RK73GB1J750J	
R3088		RK73GB1J330J	
R3089		RK73GB1J102J	
R3090		RK73GB1J750J	
R3091		RK73GB1J330J	
R3092		RK73GB1J331J	
R3501		RK73FB2A472J	
R3502		RK73FB2A182J	
R3507		RK73FB2A102J	
R3511,12		RK73FB2A102J	
R3521		RK73FB2A222J	
R3526		RK73FB2A103J	
R3533,34		RK73FB2A750J	
R3536		R92-1934-08	

Ref. No	New Parts	Parts No.	Destination
R3537-39		RK73FB2A750J	
R4201		RK73GB1J331J	
R4202		RK73GB1J222J	
R4309		RK73FB2A000J	
R4319		RK73FB2A000J	
R4321		RK73FB2A104J	
R4322		RK73FB2A392J	
R4323		RK73FB2A103J	
R4324		RK73FB2A822J	
R4327		RK73FB2A473J	
R4329		RK73FB2A223J	
R4331		RK73FB2A104J	
R4332		RK73FB2A392J	
R4333		RK73FB2A103J	
R4334		RK73FB2A822J	
R4337,38		RK73FB2A473J	
R4366		RK73FB2A000J	
R4369		RK73FB2A000J	
R4458,59		RK73FB2A000J	
R4471,72		RK73FB2A683J	
R4473		RK73FB2A473J	
R4475,76		RK73FB2A473J	
R4477		RK73FB2A563J	
R4478		RK73FB2A000J	
R4501		RK73FB2A821J	
R4502		RK73FB2A221J	
R4503		RK73FB2A821J	
R4511		RK73FB2A821J	
R4512		RK73FB2A221J	
R4513		RK73FB2A821J	
R4524		RK73FB2A332J	
R4525		RK73FB2A000J	
R4531		RK73FB2A821J	
R4532		RK73FB2A221J	
R4533		RK73FB2A821J	
R4590		RK73FB2A102J	
R4594		RK73EB2B102J	
R4596		RK73FB2A223J	
R4598		RK73FB2A331J	
R4599		RK73FB2A681J	
R4600		RK73FB2A221J	
R5201		R92-1935-08	
R5202		RK73GB1J2R2J	
R5203		RK73GB1J223J	
R5204		RK73GB1J123J	
R5206		RK73GB1J154J	
R5207		RK73GB1J562J	
R5208		RK73GB1J101J	
R5209		RK73GB1J303J	
R5210		RK73GB1J473J	
R5211		RK73GB1J183J	
R5212		RK73GB1J562J	
R5213		RK73GB1J103J	
R5214-16		RK73GB1J105J	
R5217		RK73GB1J000J	
R6001,02		RK73FB2A221J	
R6004		RK73FB2A000J	
R6005		RK73FB2A221J	
R6007		RK73FB2A103J	
R6008		RK73FB2A473J	
R6009		RK73FB2A103J	
R6010-19		RK73FB2A473J	
R6020-22		RK73FB2A103J	
R6031-35		RK73FB2A104J	
R6036		RK73FB2A103J	
R6038		RK73FB2A221J	
R6041		RK73FB2A821J	
R6044		RK73FB2A821J	
R6047		RK73FB2A821J	
R6201		RK73GB1J103J	
R6208		RK73GB1J473J	
R6209		RK73GB1J151J	
R6210		RK73GB1J471J	
R6211		RK73GB1J391J	
R6212		RK73GB1J473J	
R6213,14		RK73GB1J102J	

L : Scandinavia **K :** USA **P :** Canada **R :** Mexico **C :** China **I :** Malaysia
Y : PX(Far East,Hawaii) **T :** England **E :** Europe **G :** Germany **V :** China(Shanghai)
Y : AAFES(Europe) **X :** Australia **Q :** Russia **H :** Korea **M :** Other Areas

⚠ indicates safety critical components .

PARTS LIST

✻ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No	New Parts	Parts No.	Destination
R6301		RK73GB1J103J	
R6302,03		RK73GB1J472J	
R6502		RK73GB1J221J	
R6503,04		RK73GB1J103J	
R7001		RK73GB1J102J	
R7002		RK73GB1J473J	
RA2001		R90-1307-08	
RA2501		R90-0997-08	
RA3008		R90-0997-08	
RA3009,10	✻	R90-1310-08	
RA3011		R90-0996-08	
RA5201	✻	R90-1311-08	
RA6201		R90-0997-08	
RA6202-04		R90-0996-08	
RA6205		R90-0995-08	
RA6206		R90-0996-08	
RA7001-03		R90-0995-08	
W701-11		RK73FB2A000J	
W713-16		RK73FB2A000J	
W3221		RK73GB1J000J	
S6401-07		S70-0084-08	
S6411		S70-0084-08	
⚠ D1011		S1WBA80	
D1031		VSD0002	
D1041		AU01Z	
D1051,52		1SS254	
D1053		MA4036M	
D1111		21DQ04	
D1121		21DQ04	
D1126		11ES1	
D1131		11EQS06	
D1132		MA7150B	
D1141		11EQS06	
D1151,52		11EQS06	
D1161		AU01Z	
D1162		MA4030	
D1171		AK04	
D3091		MA111	
D4596		MA3047M	
D6014		LN28RCPL	
D6251		MA111	
D6301		MA728	
D6402		MA4051-M	
DL6001		VSL0537	
⚠ DZ1001		VSQ1003	
IC1101		UPC1093J	
IC1125		PQ07RX11	
IC1151		SI-3090FLF11	
IC2001		MN67706EA	
IC2501		AN8480NSB	
IC2511		BA5983FM	
IC2591		BA6956AN	
IC3001		MN677532JA	
IC3002		PQ018EZ01ZP	
IC3061		MNX7160BT1	
IC3081		TC4W66FU	
IC3091		PQ1R33	
IC3511		ML6427	
IC4201		PCM1746E	
IC4321		NJM4580M	
IC4471		NJM4558M	
IC4781		GP1FA550TZ	
IC4902		UPC78L08J	
IC4911		UPC79L08J	
IC5201		AN8707FH	
IC6001		MN101C35DCC	
IC6002		PST9327UR	
IC6003		PNA4611M02VT	
IC6004,05		TC7ST08F	
IC6201		MN102H55GFB	
IC6251		PQ1R33	
IC6301		PST596JNR	
IC6302		VUB8011C468	
IC6303		AT25020NS127	
IC6501		BU2285FV	

Ref. No	New Parts	Parts No.	Destination
IC6551		TK71533SCL	
IC7001		MN103S13BGA	
⚠ PR1161		F09-0147-08	
⚠ Q1021		2SC4662LF654	
⚠ Q1051		T95-0170-08	
Q1052		2SD1996-S	
Q1061		2SD1996-S	
Q1062		2SC3311A-R	
Q1063		2SD1996-S	
Q1115		2SJ525	
Q3081-84		2SB1218A	
Q3501		2SD601A	
Q4501		2SD1328	
Q4511		2SD1328	
Q4521		2SD1328	
Q4531		2SD1328	
Q5201		2SB1115-T	
Q6009		2SD1996-S	
QR1115		UN4213	
QR2001		UN5213	
QR3521		UN2212	
QR4521		UN2111	
QR4593		UN2211	
QR4594		UN2111	
QR4596		UN2111	
QR5201		UN5212	
QR5231		UN2121	
QR6001		DTA123JK	
QR6003		2SD601A	
QR6009		DTA123JK	
QR6011		DTA123JK	
QR6301		UN5212	
D1001		ENC471D5ATUB	
⚠ D1002		ENC221D5ATRB	

Ref. No	New Parts	Parts No.	Destination

L : Scandinavia
Y : PX(Far East,Hawaii)
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C : China
V : China(Shanghai)
M : Other Areas
I : Malaysia

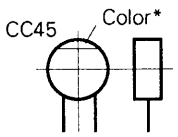
⚠ indicates safety critical components .

PARTS DESCRIPTIONS

CAPACITORS

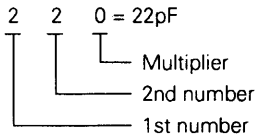
CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001µF
103 = 0.01µF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	–80	–150	–220	–330	–470	–750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = –470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10µF – 10 ~ +50
							–20	-20	–0	Less than 4.7µF –10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	–

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

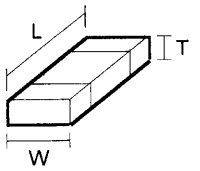
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B,F)

Dimension



• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

DV-403

SPECIFICATIONS

Power requirements: AC 120V, 60 Hz
Power consumption: 14W
Dimensions: $17^{5}/_{16}$"(W)x$12^{3}/_{8}$"(D)x$3^{3}/_{8}$"(H)
[440 (W)x315 (D)x86 (H) mm]
(excluding protrusions)
Mass: 6.6 lb. (3.0 kg)
Signal system: NTSC
Operating temperature range:
+41 to +95°F(+5 to +35°C)
Operating humidity range:
5 to 90% RH(no condensation)
Discs played:
(1) DVD-Video disc
5" (12 cm) single-sided, single-layer
5" (12 cm) single-sided, dual-layer
5" (12 cm) double-sided, single-layer
3" (8 cm) single-sided, single-layer
3" (8 cm) single-sided, dual-layer
3" (8 cm) double-sided, single-layer
(2) Compact disc (CD-DA, Video CD)
5" (12 cm) disc
3" (8 cm) disc
Video output:
Output level: 1Vp-p (75Ω)
Output terminal: Pin hack
Number of terminals: 1 system
S video output:
Y output level: 1 Vp-p (75 Ω)
C output level: 0.286 Vp-p (75 Ω)
Output terminal: S terminal
Number of terminals: 1 terminal
Component video output:
Y output level: 1 Vp-p (75 Ω)
C_b output level: 0.7 Vp-p (75 Ω)
C_r output level: 0.7 Vp-p (75 Ω)
Output terminal: Pin jack
(Y: green, C_b: blue, C_r: red)
Audio output:
Output level: 2 Vrms (1 kHz, 0 dB)
Output terminal: Pin hack
Mixed output (L/R): 1 system
Subwoofer output: 1 system
Audio signal output characteristics:
(1) Frequency response:
• DVD (linear audio): 4 Hz~22 kHz (48 kHz sampling)
4 Hz~44 kHz (96 kHz sampling)
• CD audio: 4 Hz~20 kHz (EIAJ)
(2) S/N ratio:
• CD audio: 115 dB (EIAJ)
(3) Dynamic range:
• DVD (linear audio): 102 dB
• CD audio: 98dB (EIAJ)
(4) Total harmonic distortion:
• CD audio: 0.0025% (EIAJ)
Digital audio output:
Optical digital output: Optical terminal
Pickup: Wave length: 665 nm
Laser power: CLASS II

Note: Specifications are subject to change without notice.
Mass and dimensions are approximate.

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