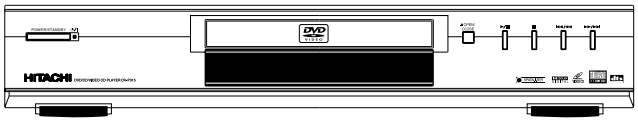
HITACHI

SERVICE MANUAL

TK | No.9101E

DV-P315U
DV-P313U



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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

DVD PLAYER

February 2001 Digital Media Products Division, Tokai

1. Precautions

1-1 Safety Precautions

1) Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:

(1) Be sure that no built-in protective devices are defective or have been defeated during servicing. (1)Protective shields are provided to protect both the technician and the customer. Correctly replace all missing protective shields, including any remove for servicing convenience.
(2)When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fish papers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

(2) Be sure that there are no cabinet openings through which adults or children might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, excessively wide cabinet ventilation slots, and an improperly fitted and/or incorrectly secured cabinet back cover.

(3) Leakage Current Hot Check-With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use a isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1270 (40.7). With the instrument's AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinets, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis.
Any current measured must not exceed 0.5mA. Reverse the instrument power cord plug in the outlet and repeat the test. See Fig. 1-1.

Any measurements not within the limits specified herein indicate a potential shock hazard that must be eliminated before returning the instrument to the customer.

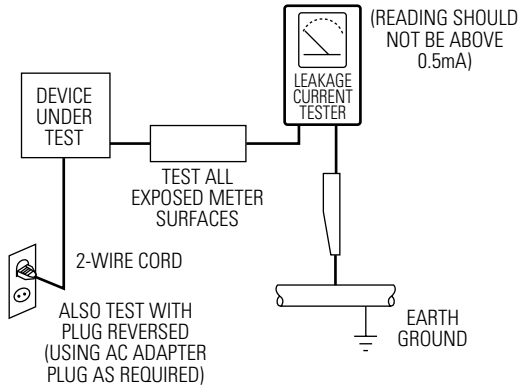


Fig. 1-1 AC Leakage Test

(4) Insulation Resistance Test Cold Check-(1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug. (2) Turn on the power switch of the instrument. (3) Measure the resistance with an ohmmeter between the jumpered AC plug and all exposed metallic cabinet parts on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. When an exposed metallic part has a return path to the chassis, the reading should be between 1 and 5.2 megohm. When there is no return path to the chassis, the reading must be infinite. If the reading is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be re-pared and rechecked before it is returned to the customer. See Fig. 1-2.

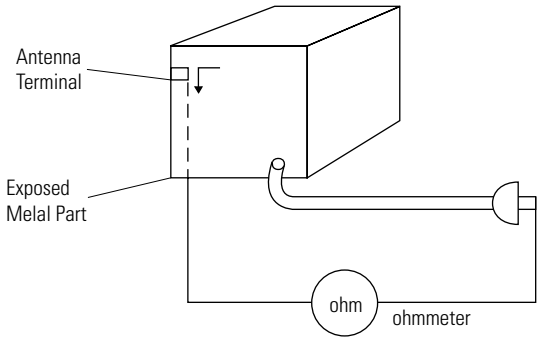


Fig. 1-2 Insulation Resistance Test

2) Read and comply with all caution and safety related notes non or inside the cabinet, or on the chassis.

3) Design Alteration Warning-Do not alter of add to the mechanical or electrical design of this instrument. Design alterations and additions, including but not limited to, circuit modifications and the addition of items such as auxiliary audio output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions will make you, the service, responsible for personal injury or property damage resulting therefrom.

4) Observe original lead dress. Take extra care to assure correct lead dress in the following areas: (1) near sharp edges, (2) near thermally hot parts (be sure that leads and components do not touch thermally hot parts), (3) the AC supply, (4) high voltage, and (5) antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring, Do not change spacing between a component and the printed-circuit board. Check the AC power cord for damage.

5) Components, parts, and/or wiring that appear to have overheated or that are otherwise damaged should be replaced with components, parts and/ or wiring that meet original specifications.
Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

6) Product Safety Notice-Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by shading, an (⚠)or a (⚠)on schematics and parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might created shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2 Servicing Precautions

CAUTION : Before servicing Instruments covered by this service manual and its supplements, read and follow the Safety Precautions section of this manual.

Note : If unforseen circument create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions. Remember: Safety First.

1-2-1 General Servicing Precautions

(1) a. Always unplug the instrument's AC power cord from the AC power source before (1) re-moving or reinstalling any component, circuit board, module or any other instrument assembly, (2) disconnecting any instrument electrical plug or other electrical connection, (3) connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

b. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.

c. Do not apply AC power to this instrument and /or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

d. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

Note : Refer to the Safety Precautions section ground lead last.

(2) The service precautions are indicated or printed on the cabinet, chassis or components. When servicing, follow the printed or indicated service precautions and service materials.

(3) The components used in the unit have a specified flame resistance and dielectric strength.
When replacing components, use components which have the same ratings. Components ientified by shading, by(⚠) or by (⚠) in the circuit diagram are important for safety or for the characteristics of the unit. Always replace them with the exact replacement components.

(4) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install such elements as they were.

(5) After servicing, always check that the removed screws, components, and wiring have been installed correctly and that the portion around the serviced part has not been damaged and so on. Further, check the insulation between the blades of the attachment plug and accessible conductive parts.

1-2-2 Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power ON. Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts(see note) should be more than 1 Megohm.

Note : Accessible conductive parts include metal panels, input terminals, earphone jacks, etc.

1-3 ESD Precautions

Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity.
Such components commonly are called Electrostatically Sensitive Devices(ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

(1) Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

(2) After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

(3) Use only a grounded-tip soldering iron to solder or unsolder ESD devices.

(4) Use only an anti-static solder removal devices. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.

(5) Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.

(6) Do not remove a replacement ESD device from its protective package until immediately before your are ready to install it.(Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).

(7) Immediately before removing the protective materials from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

(8) Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

1-4 Handling the optical pick-up

The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

(1) Place a conductive sheet on the work bench (The black sheet used for wrapping repair parts.)

(2) Place the set on the conductive sheet so that the chassis is grounded to the sheet.

(3) Place your hands on the conductive sheet(This gives them the same ground as the sheet.)

(4) Remove the optical pick up block

(5) Perform work on top of the conductive sheet. Be careful not to let your clothes or any other static sources to touch the unit.

- ♦Be sure to put on a wrist strap grounded to the sheet.
- ♦Be sure to lay a conductive sheet made of copper etc. Which is grounded to the table.

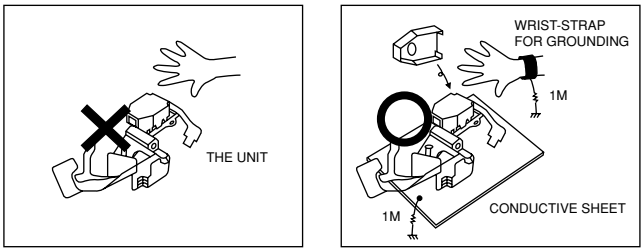


Fig.1-3

(6) Short the short terminal on the PCB, which is inside the Pick-Up ASS'Y, before replacing the Pick-Up. (The short terminal is shorted when the Pick-Up Ass'y is being lifted or moved.)

(7) After replacing the Pick-up, open the short terminal on the PCB.

1-5 Pick-up disassembly and reassembly

1-5-1 Disassembly

1) Remove the power code.
2) Disassemble the Deck-Assy.
3) Solder land 2 points short on Pick-up. (See Fig. 1-4)
4) Disassembly the Pick-up.

1-5-2 Assembly

1) Replace the Pick-up.
2) Remove the soldering 2 points on Pick-up.
3) Reassemble the Deck-Assy.

Note : If the assembly and disassembly are not done in correct sequence, the Pick-up may be damaged.

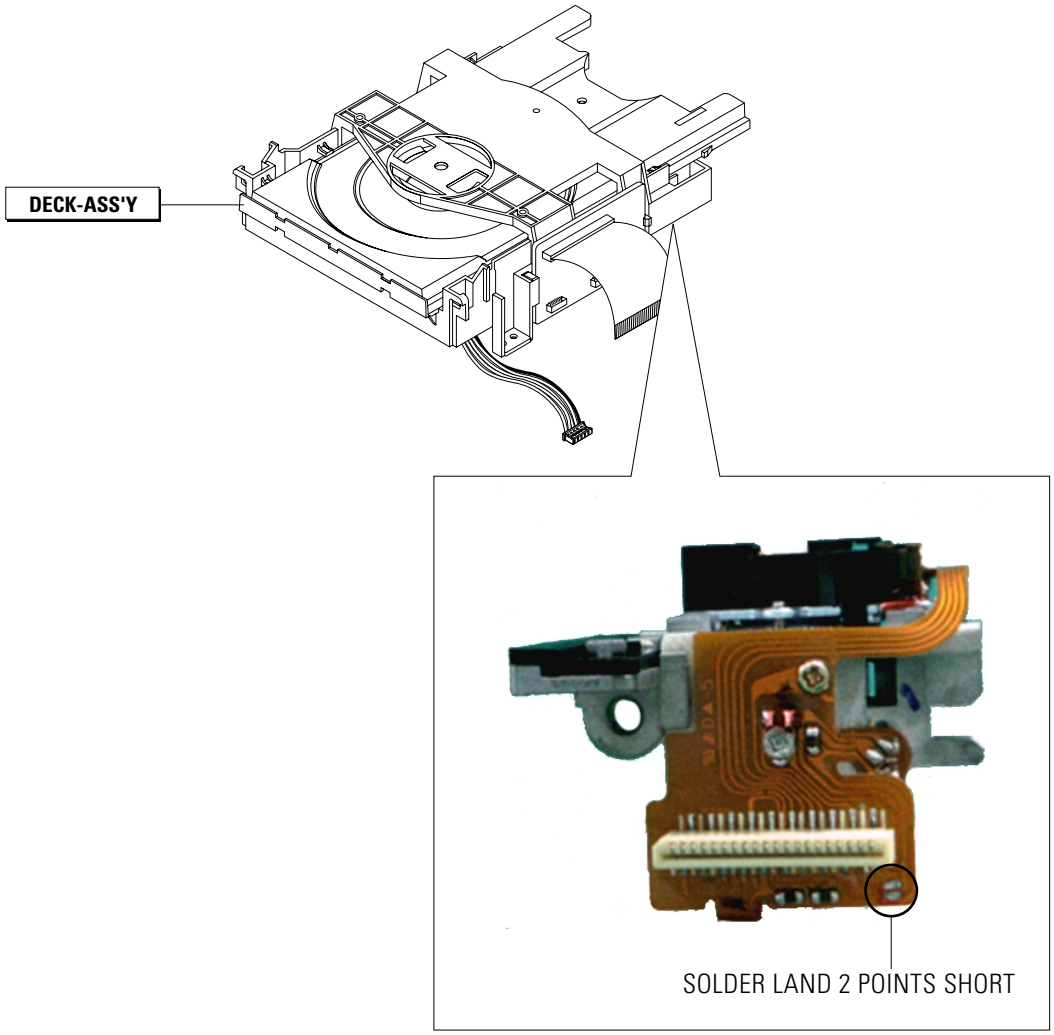


Fig. 1-4

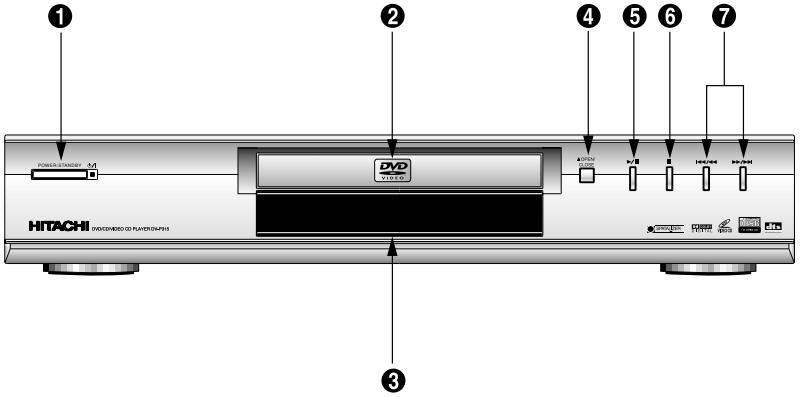
3. Product Specifications

GENERAL	Power Requirements	AC 120V, 60Hz
	Power Consumption	15W
	Weight	2.7kg
	Dimensions	W 430mm X D 240mm X H 79mm
	Operating Temperature Range	+5°C ~ +35°C
	Operating Humidity Range	10% to 75%
DISC	DVD (Digital Versatile Disc)	Reading Speed : 3.49 m/s
		Approx. Play Time (Single Sided, Single Layer Disc) : 135 min.
	CD : 12Cm (Compact Disc)	Reading Speed : 1.2 to 1.4 m/s
		Maximum Play Time : 74min.
	CD : 8Cm (Compact Disc)	Reading Speed : 1.2 to 1.4 m/s
		Maximum Play Time : 20min.
	VCD : 12Cm	Reading Speed : 1.2 to 1.4 m/s
		Maximum Play Time : 74min. (Video + Audio)
Video Output	Composite Video	1 channel : 1.0Vp-p (75ohm load)
	Component Video	Y : 1.0Vp-p (75ohm load)
		Pr : 0.70Vp-p (75ohm load)
		Pb : 0.70Vp-p (75ohm load)
	S-Video	Luminance Signal : 1Vp-p (75ohm load)
		Chrominance Signal : 0.286Vp-p (75ohm load)
Audio Output	2 Channel	L (1/L), R (2/R)
	* Frequency Response	48kHz Sampling : 4Hz to 22kHz
		96kHz Sampling : 4Hz to 44kHz
	* S/N Ratio	110dB
	* Dynamic Range	100dB
	* Total Harmonic Distortion	0.004%

* : Nominal specification

MEMO

Description-Front Panel



Front Panel Controls

❶ **POWER/STANDBY ⏻/I**
- When the unit is first plugged in, the indicator lights. When POWER/STANDBY ⏻/I is pressed, the lamp goes out and the player is turned on.

❷ **DISC TRAY**
- Press ▲ OPEN/CLOSE to open and close the disc tray.

❸ **DISPLAY**
- Operation indicators are displayed here.

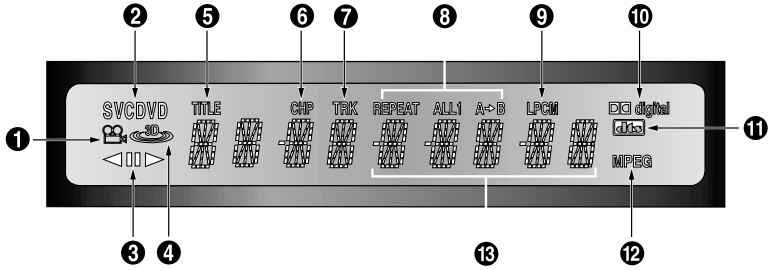
❹ **▲OPEN/CLOSE**
- Press to open and close the disc tray.

❺ **►/❚❚ (PLAY/PAUSE)**
- Begin or pause disc play.

❻ **■ (STOP)**
- Stops disc play.

❼ **|◄◄/◄◄ ►►/►►| (SKIP/SEARCH)**
- Use to skip a scene or music.
- If this button is held down for approx. two seconds, it will switch to the search button: Thereafter, each time the button is pressed, the search speed will switch to 2X, 4X, 8X, 16X, 32X, 128X, after which SKIP will be restored.

Front Panel Display

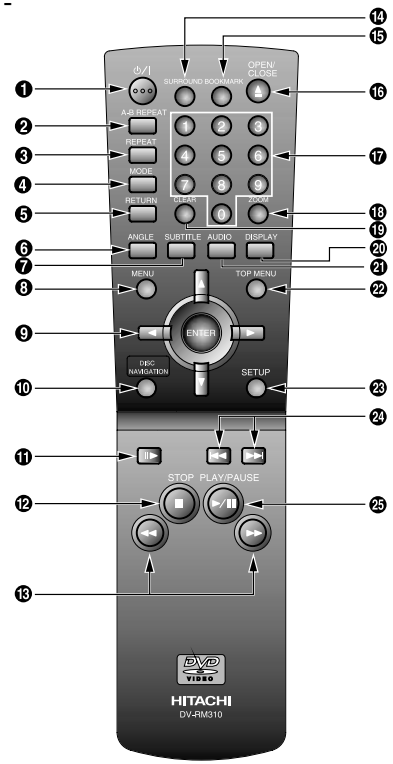


Front Panel Display

❶ You can now select different viewing points of the scene recorded by different cameras (Multi Angle).
Disc type indicators
Reverse playback / Pause / Forward playback
Lights when 3D sound is turned on.
DVD : Title number
DVD : Chapter number.
Video/Audio CD : Track number
Repeat play mode
Linear PCM audio output
Dolby Digital audio output
DTS (Digital Theater System) audio output(Digital only)
MPEG-2 Audio output
Displays various messages concerning operations such as PLAY, STOP, LOAD, RANDOM, ...
no DISC : No disc loaded.
OPEN : The disc tray is open.
LOAD : Player is loading disc information.

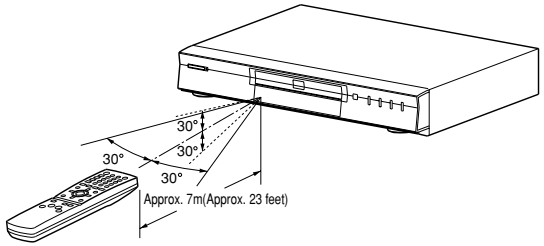
Tour of the Remote Control

– DV-P315U -



How to handle the remote control

• Operate the remote control within the following area, in a straight line from the signal detecting eye of the player and an angle of 30°.



DVD Function Buttons

❶ **DVD POWER Button**
- Turns the player on and off.

❷ **A-B REPEAT Button**
- Marks a segment to repeat between A and B.

❸ **REPEAT Button**
- Allows you to repeat play a title, chapter, track, or disc.

❹ **MODE Button**
- Allows you to program a specific order.

❺ **RETURN Button**
- Returns to a previous menu.

❻ **ANGLE Button**
- Accesses various camera angles on a disc.

❼ **SUBTITLE Button**
- Accesses various subtitles on a disc.

❽ **MENU Button**
- Brings up the Menu on a disc.

❾ **ENTER/DIRECTION Button (UP/DOWN or LEFT/RIGHT Button)**

❿ **DISC NAVIGATION Button**
- To view the first picture of each chapter(DVD) or track(VCD).

⓫ **STEP Button**
- Advances playback one frame at a time.

⓬ **STOP Button**
- To stop playback.

⓭ **SEARCH Buttons**
- Allows you to search forward/backward through a disc.

⓮ **SURROUND Button**
- To activate the 3D sound.

⓯ **BOOKMARK Button**
- To rapidly return to a location of disc.

⓰ **OPEN/CLOSE Button**
- To open or close the disc tray.

⓱ **NUMBER Buttons**

⓲ **ZOOM Button**
- To magnify part of picture.

⓳ **CLEAR Button**
- Removes menus or status displays from the screen.

⓴ **DISPLAY Button**
- Displays the current disc mode.

㉑ **AUDIO Button**
- Accesses various audio functions on a disc.

㉒ **TOP MENU Button**
- Brings up the Top Menu on a disc.

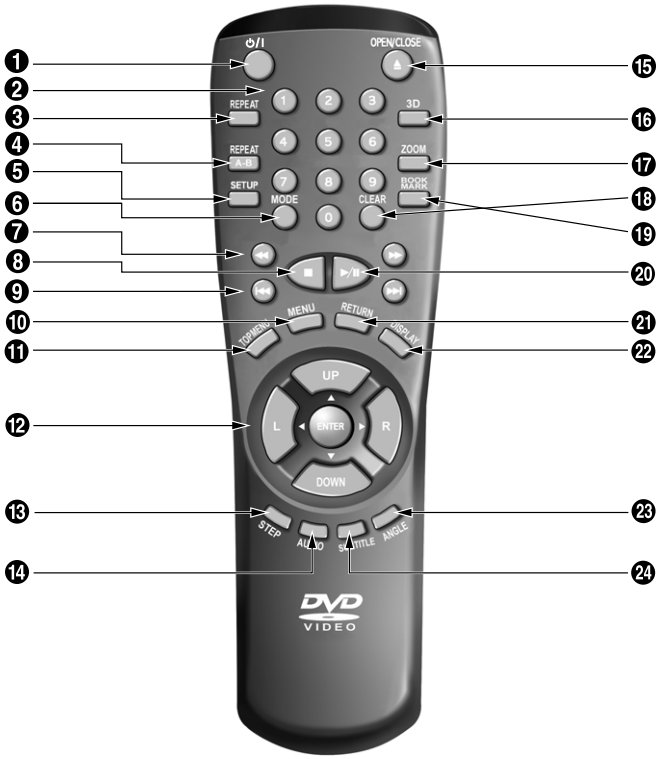
㉓ **SETUP Button**
- Brings up the DVD player's Setup menu.

㉔ **SKIP Buttons**
- Skip the, Chapter, or Track.

㉕ **PLAY/PAUSE Button**
- Begin/Pause disc play.

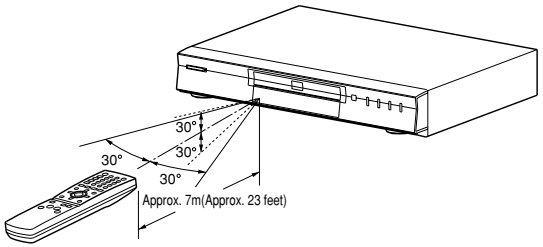
Tour of the Remote Control

— DV-P313U —



How to handle the remote control

• Operate the remote control within the following area, in a straight line from the signal detecting eye of the player and an angle of 30°.



DVD Function Buttons

❶ **DVD POWER Button**
- Turns the player on and off.

❷ **NUMBER Buttons**

❸ **REPEAT Button**
- Allows you to repeat play a title, chapter, track, or disc.

❹ **A-B REPEAT Button**
- Marks a segment to repeat between A and B.

❺ **SETUP Button**
- Brings up the DVD player's Setup menu.

❻ **MODE Button**
- Allows you to program a specific order.

❼ **SEARCH Buttons**
- Allows you to search forward/backward through a disc.

❽ **STOP Button**
- To stop playback.

❾ **SKIP Buttons**
- Skip the, Chapter, or Track.

❿ **MENU Button**
- Brings up the Menu on a disc.

⓫ **TOP MENU Button**
- Brings up the Top Menu on a disc.

⓬ **ENTER/DIRECTION Button (UP/DOWN or LEFT/RIGHT Button)**

⓭ **STEP Button**
- Advances playback one frame at a time.

⓮ **AUDIO Button**
- Accesses various audio functions on a disc.

⓯ **OPEN/CLOSE Button**
- To open or close the disc tray.

⓰ **3D SOUND Button**
- To activate the 3D sound.

⓱ **ZOOM Button**
- To magnify part of picture.

⓲ **CLEAR Button**
- Removes menus or status displays from the screen.

⓳ **BOOKMARK Button**
- To rapidly return to a location of disc.

⓴ **PLAY/PAUSE Button**
- Begin/Pause disc play.

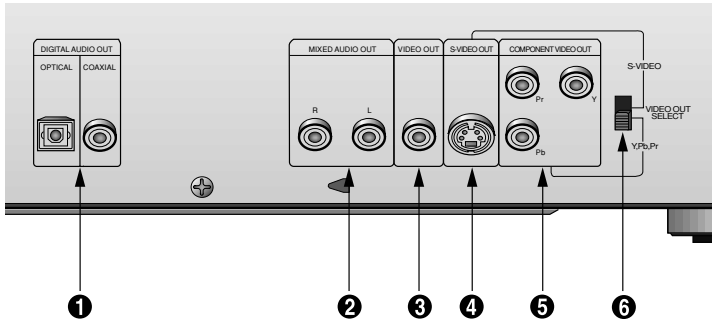
㉑ **RETURN Button**
- Returns to a previous menu.

㉒ **DISPLAY Button**
- Displays the current disc mode.

㉓ **ANGLE Button**
- Accesses various camera angles on a disc.

㉔ **SUBTITLE Button**
- Accesses various subtitles on a disc.

Description-Rear Panel



Rear Panel

❶ DIGITAL AUDIO OUT JACK
- Use either an optical or coaxial digital cable to connect to a compatible Dolby Digital receiver. Use to connect to an A/V Amplifier that contains a Dolby Digital decoder or DTS decoder.

MIXED AUDIO OUT JACKS
- Connect to the Audio input jacks of your television, audio/video receiver.

VIDEO OUT JACK
- Use a video cable to connect one of the jack to the Video input on your television.

S-VIDEO OUT JACK
- Use the S-Video cable to connect this jack to the S-Video jack on your television for a higher quality picture. The S-Video must be selected in the VIDEO OUT SELECT SWITCH.

COMPONENT VIDEO OUT JACKS
- Use these jacks if you have a TV with Component Video in jacks. These jacks provide Pr, Pb and Y video. Along with S-Video, Component Video provides the best picture quality. The Y, Pb, Pr must be selected in the VIDEO OUT SELECT SWITCH.

VIDEO OUT SELECT SWITCH
- Use the switch to set video out.
- If the Y, Pb or Pr is selected, the S-Video may not work.
- If the S-Video is selected, the Y, Pb or Pr may not work.

5. Disassembly and Reassembly

5-1 Cabinet and PCB

Note : Reassembly in reverse order.

5-1-1 Top Cabinet Removal

1) Remove 3 Screws ❶ on the back Top Cabinet.
2) Lift up the Top Cabinet in direction of arrow.

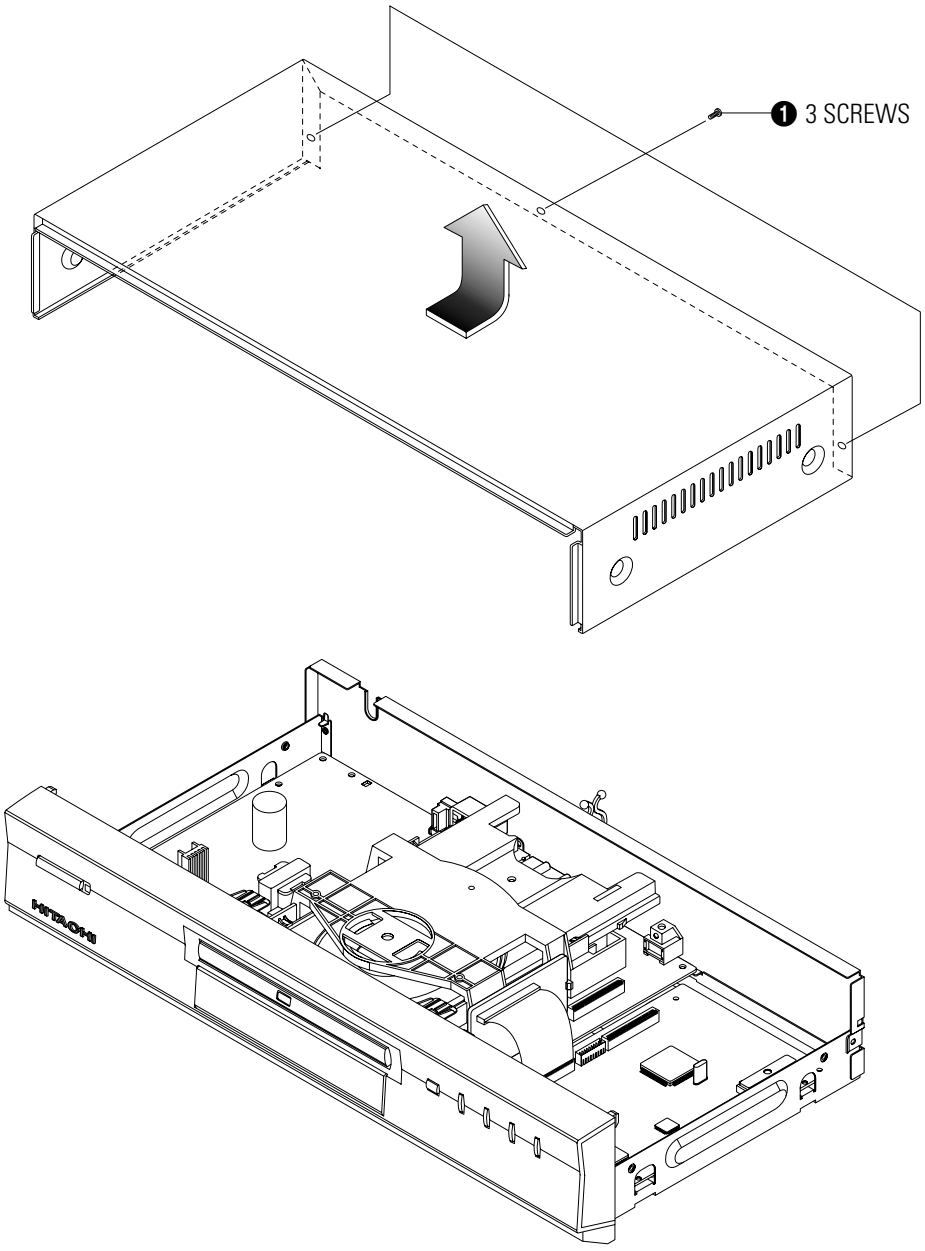


Fig. 5-1 Top Cabinet Removal

5-1-2 Door-Tray Removal

1) Supply power and open Tray ❶ .
2) Disassemble the Door-Tray ❷ in direction of arrow "A".
3) Close Tray ❶ and power off.

Note : If Tray ❶ doesn't open, insert a Screw driver ❹ into the Emergency hole ❸ (as shown in detailed drawing) and then push it in the direction of arrow "B". Open Tray manually.

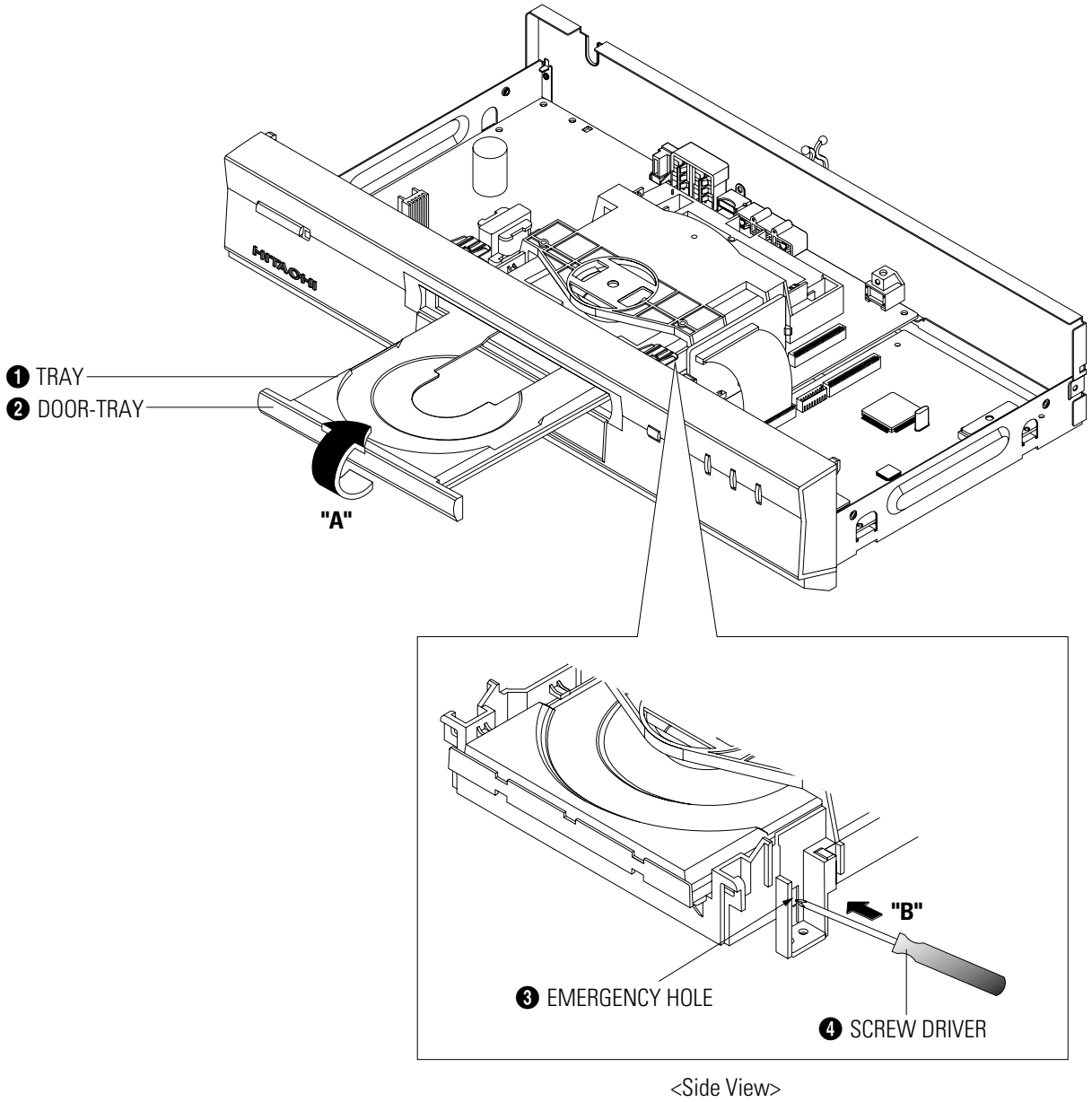


Fig. 5-2 Door-Tray Removal

5-1-3 Ass'y Front-Cabinet Removal

1) Remove Ass'y Front-Cabinet ❶.

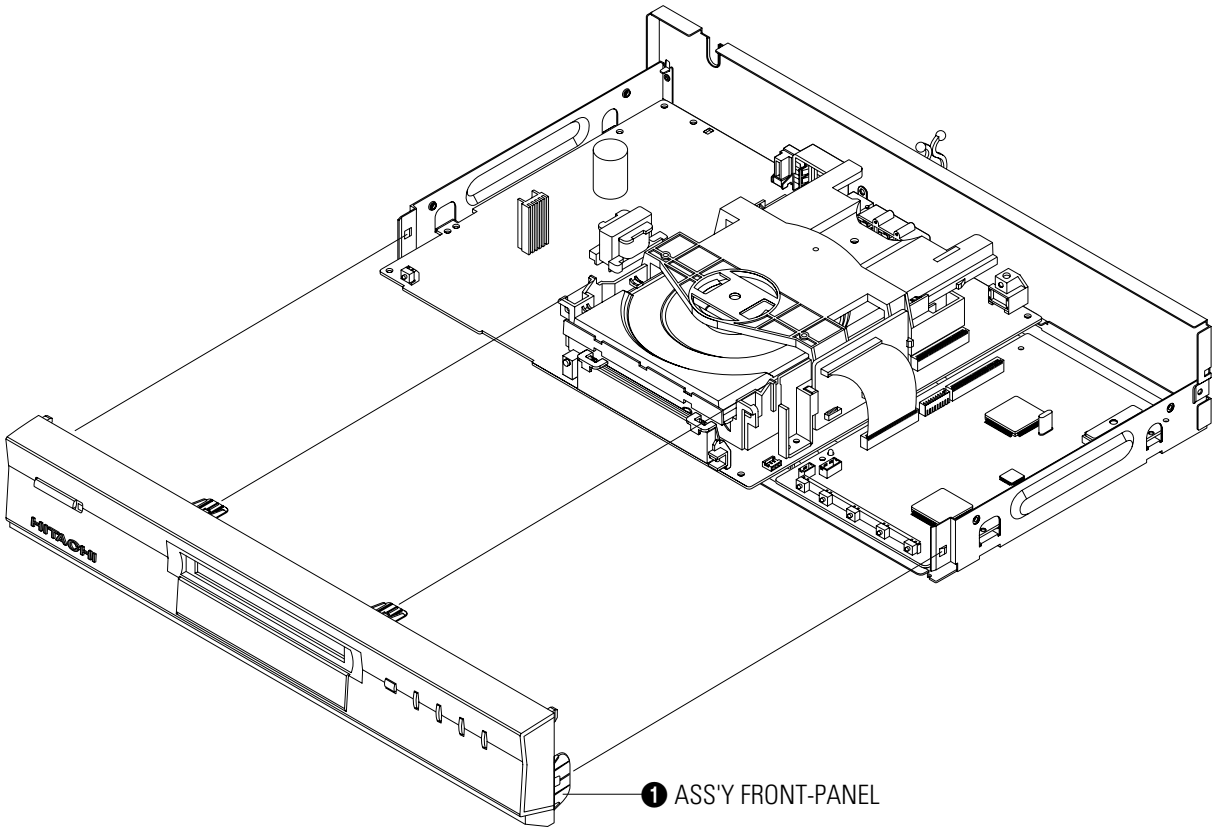


Fig. 5-3 Ass'y Front-Cabinet Removal

5-1-4 Ass'y Deck Removal

1) Disconnect Flat-Cable,Connect-Wire from DCN1, DCN2 on Main PCB.
2) Remove 3 Screws ❶ from the Ass'y Deck and lift it up.

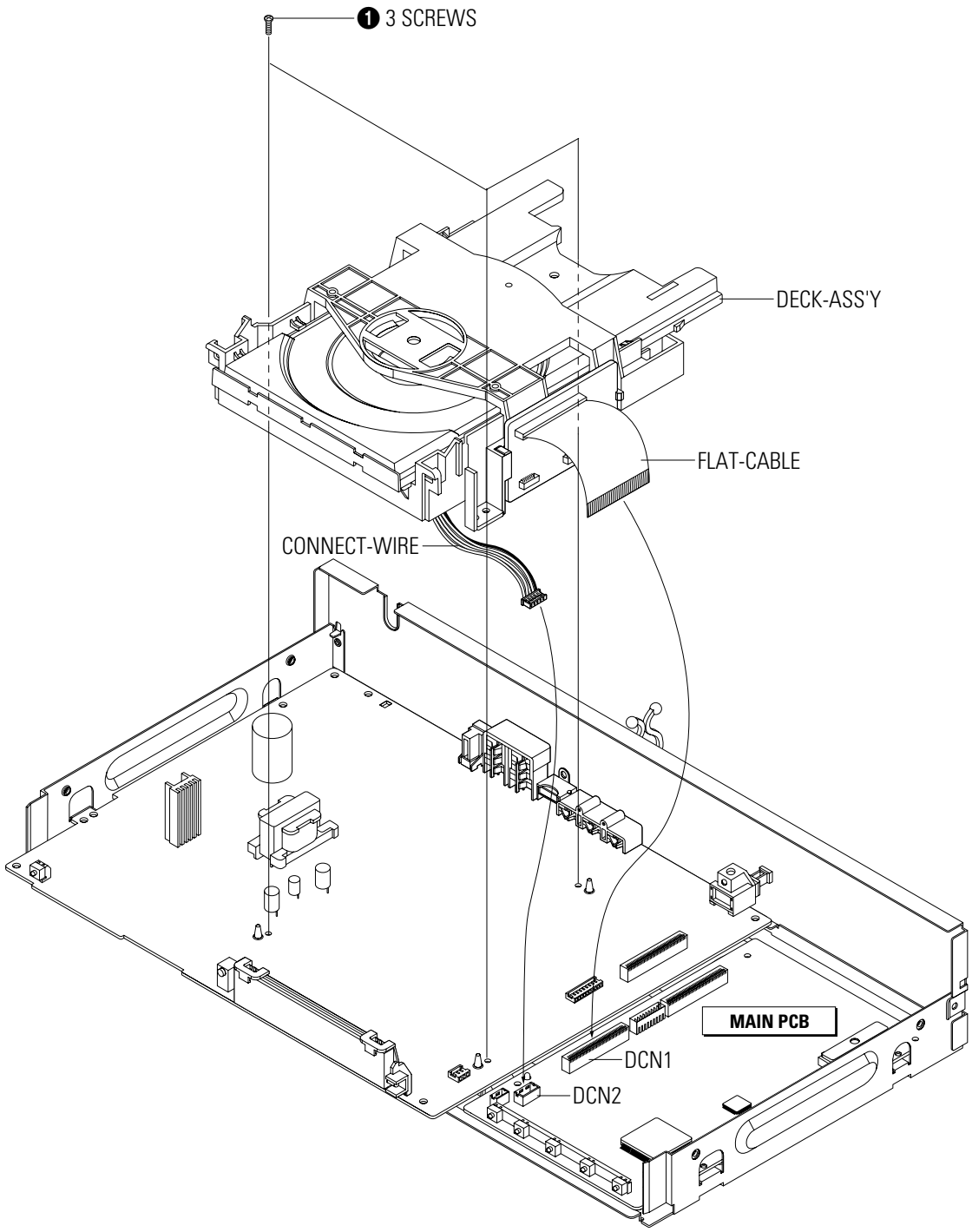


Fig. 5-4 Ass'y Deck Removal

5-1-5 Main PCB, Jack PCB Removal

1) Remove 2 Screws ❶ and lift up the Jack PCB ❷.
2) Remove 3 Screws ❸ and lift up the Main PCB ❹.

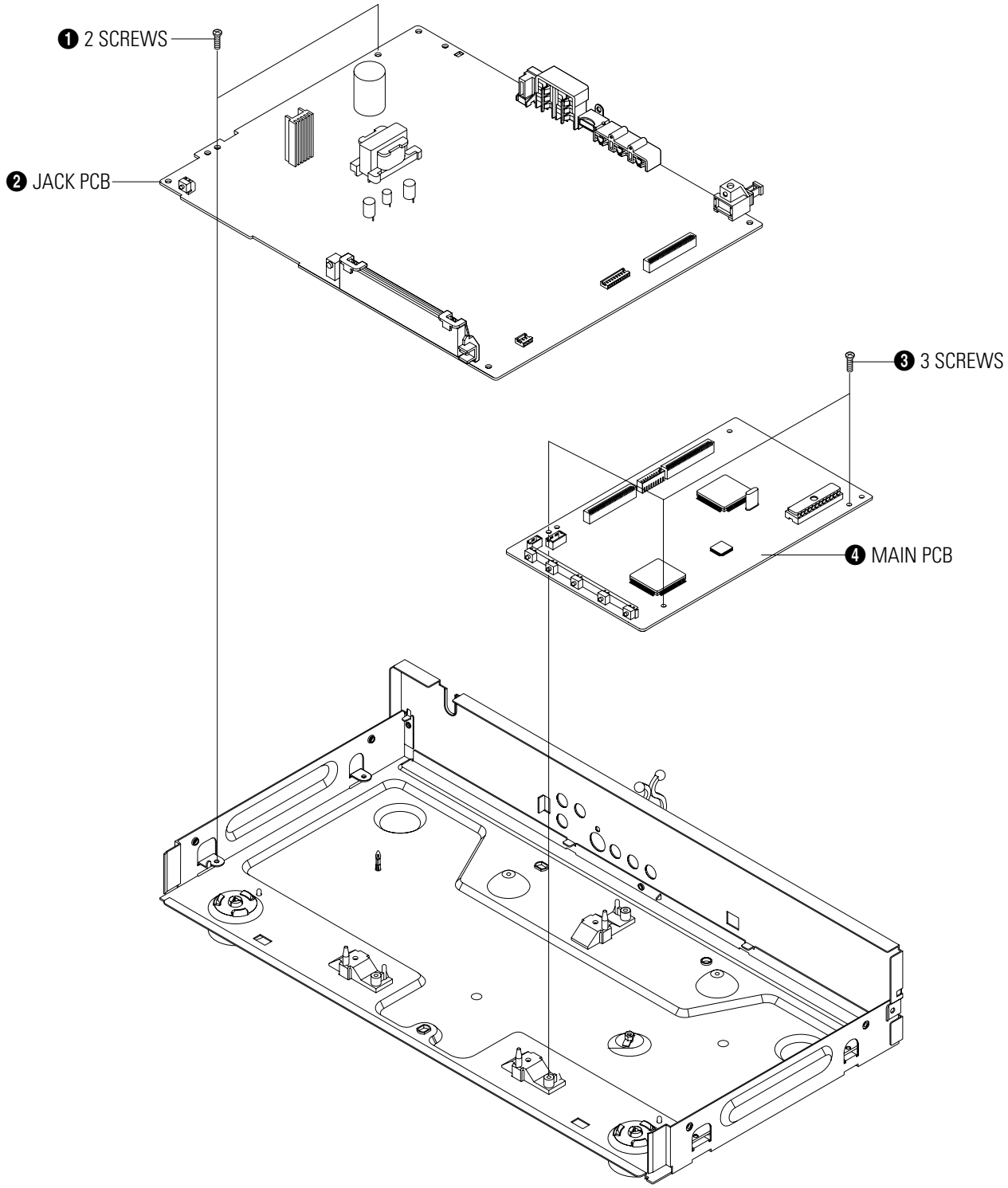


Fig. 5-5 Main PCB, Jack PCB Removal

5-2 PCB Location

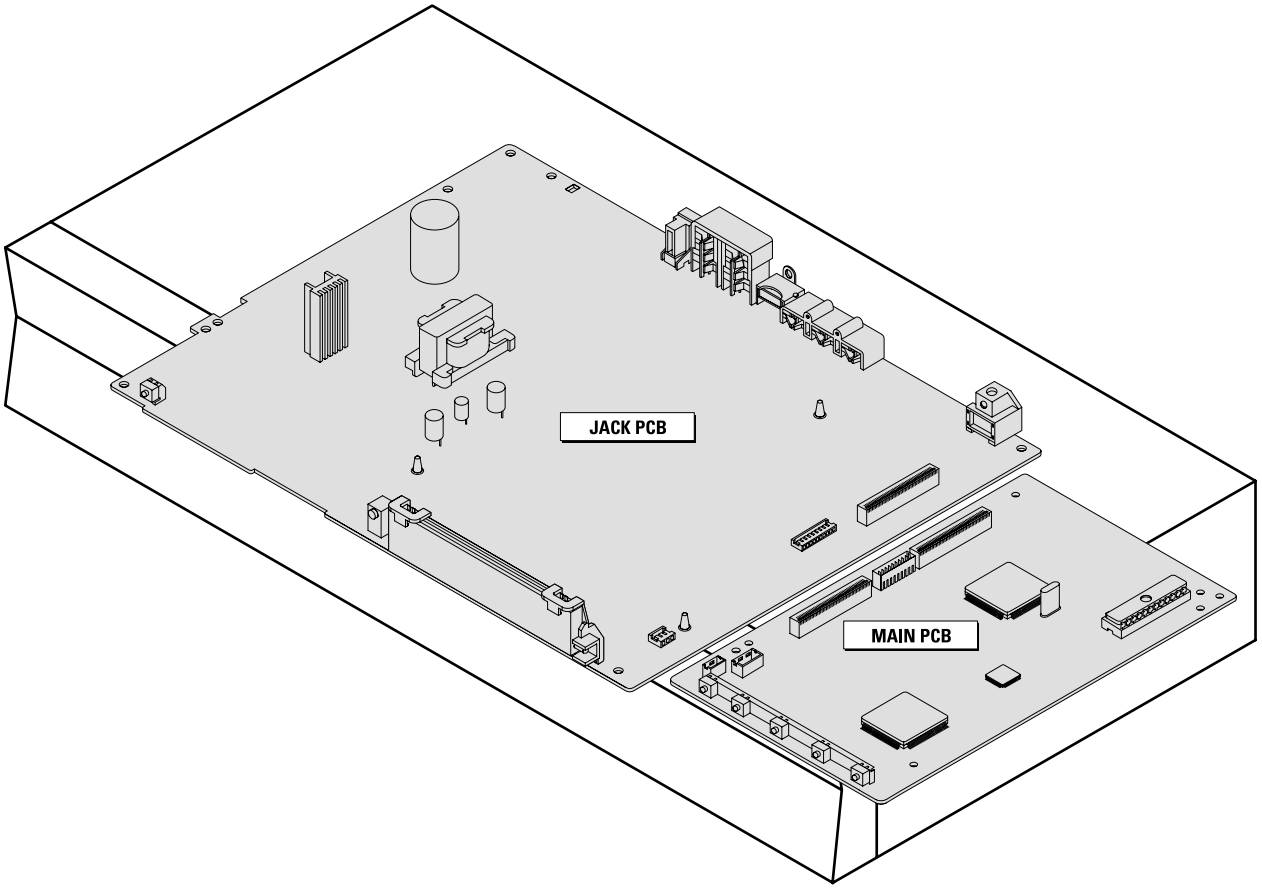
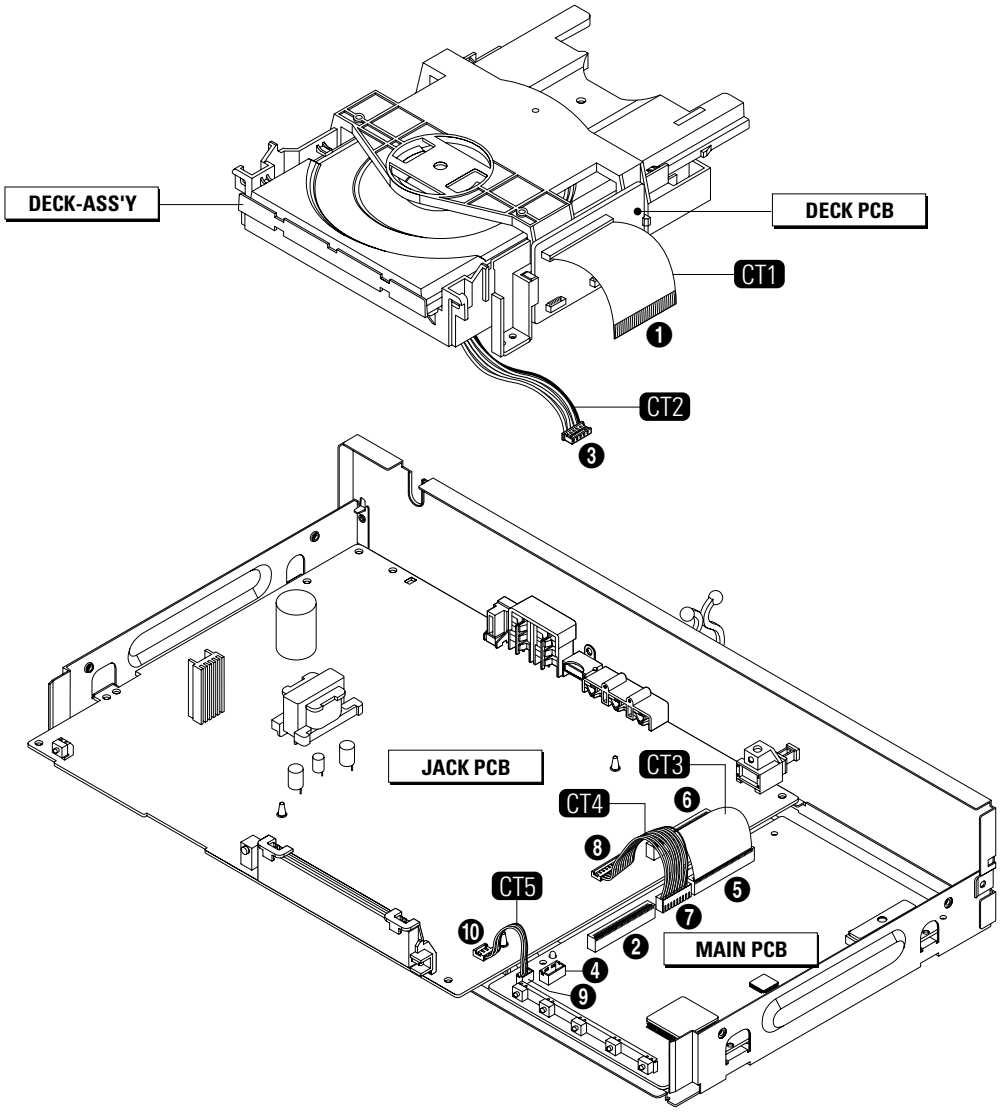


Fig. 5-6 PCB Location

5-3 Connector Diagram



NO.	CONNECTOR NO.	DIRECTION	CONNECTOR NO.	NO.
❶	FLAT-CABLE	DECK PCB ◄ CT1 ► MAIN PCB	DCN1	❷
❸	CONNECT-WIRE (HCN1)	HOUSING PCB ◄ CT2 ► MAIN PCB	DCN2	❹
❺	CN8	MAIN PCB ◄ CT3 ► JACK PCB	DCN1	❻
❼	PCN1	MAIN PCB ◄ CT4 ► JACK PCB	PCNS1	❽
❾	FCN1	MAIN PCB ◄ CT5 ► JACK PCB	CN2-S	❿

Fig. 5-7 Connector Diagram

5-4 Deck

5-4-1 Tray Disc Removal

1) Insert a Screw Driver ❶ into Emergency Hole ❷ and push the Slider Housing ❸ in the direction arrow "A".
2) When the Tray Disc ❹ comes out a little, pull it in the direction arrow "B" by hand.
3) Pull the Tray Disc ❹ to disassemble , while simultaneously pushing 2 Stoppers ❺ (left, right) in the direction arrow "C", "D".

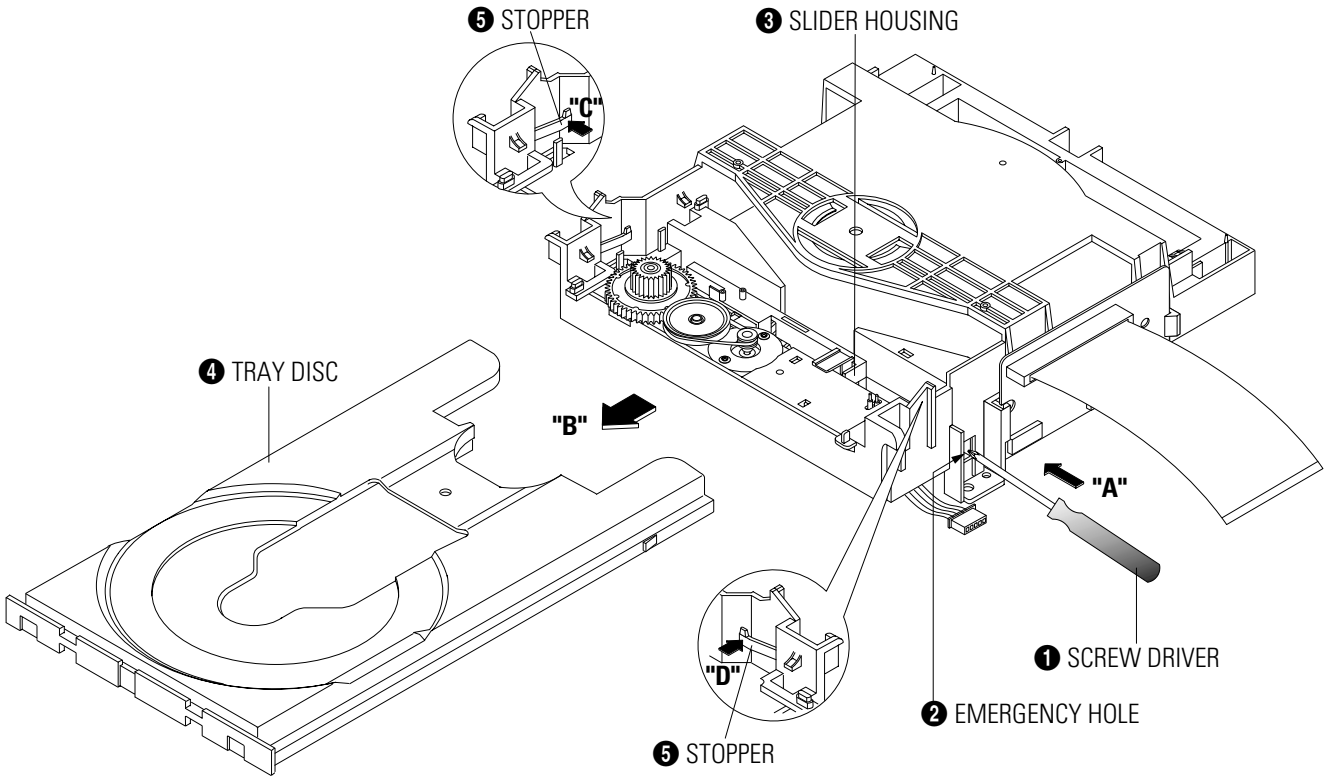


Fig. 5-8 Tray Disc Removal

5-4-2 Ass'y P/U Deck Removal

1) Disconnect DCN2 ❶, DCN3 ❷.
2) Lift down the Assy P/U Deck ❸ while simultaneously pushing 2 Hooks ❹, ❺ in the direction of arrow "A", "B".

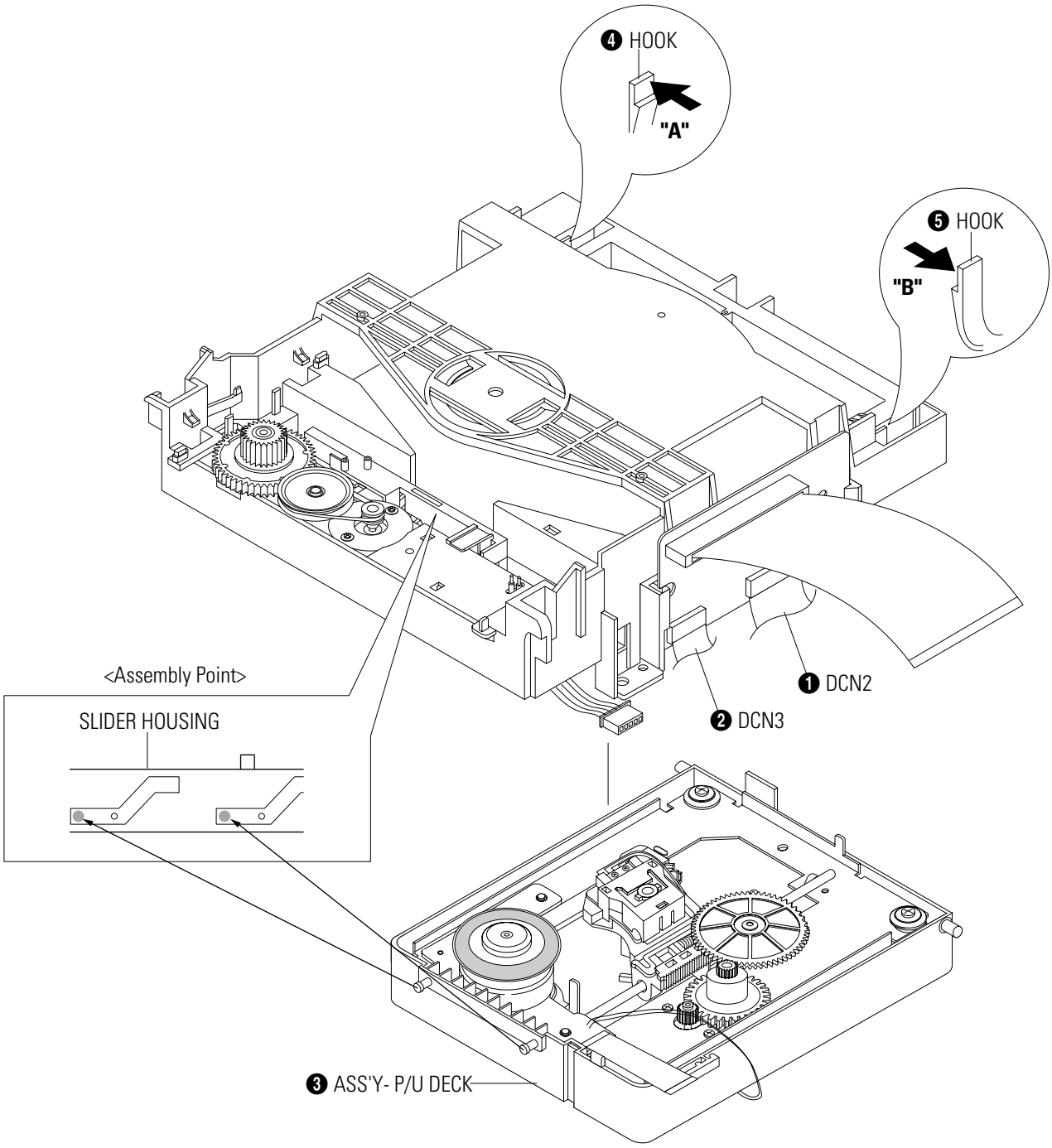


Fig. 5-9 Ass'y P/U Deck Removal

5-4-3 Housing Ass'y Removal

1) Remove Belt ❶.
2) Push the Hook ❷ in the direction arrow "A" and lift up Pulley Gear ❸.
3) Push the Slider Housing ❺ in the direction arrow "B" and lift up the Gear Tray ❹.
4) Lift up the Slider Housing ❺.
5) Remove the soldering ❻ of 2 points (Red, Black).
6) Remove 2 Screws ❼ and lift down the Motor Load Assy ❽.
7) Push the 3 Hooks ❾ bottom side in the direction arrow "C" and lift up the Housing PCB ❿.
8) Push the Hooks ⓫ and remove Deck PCB ⓬.

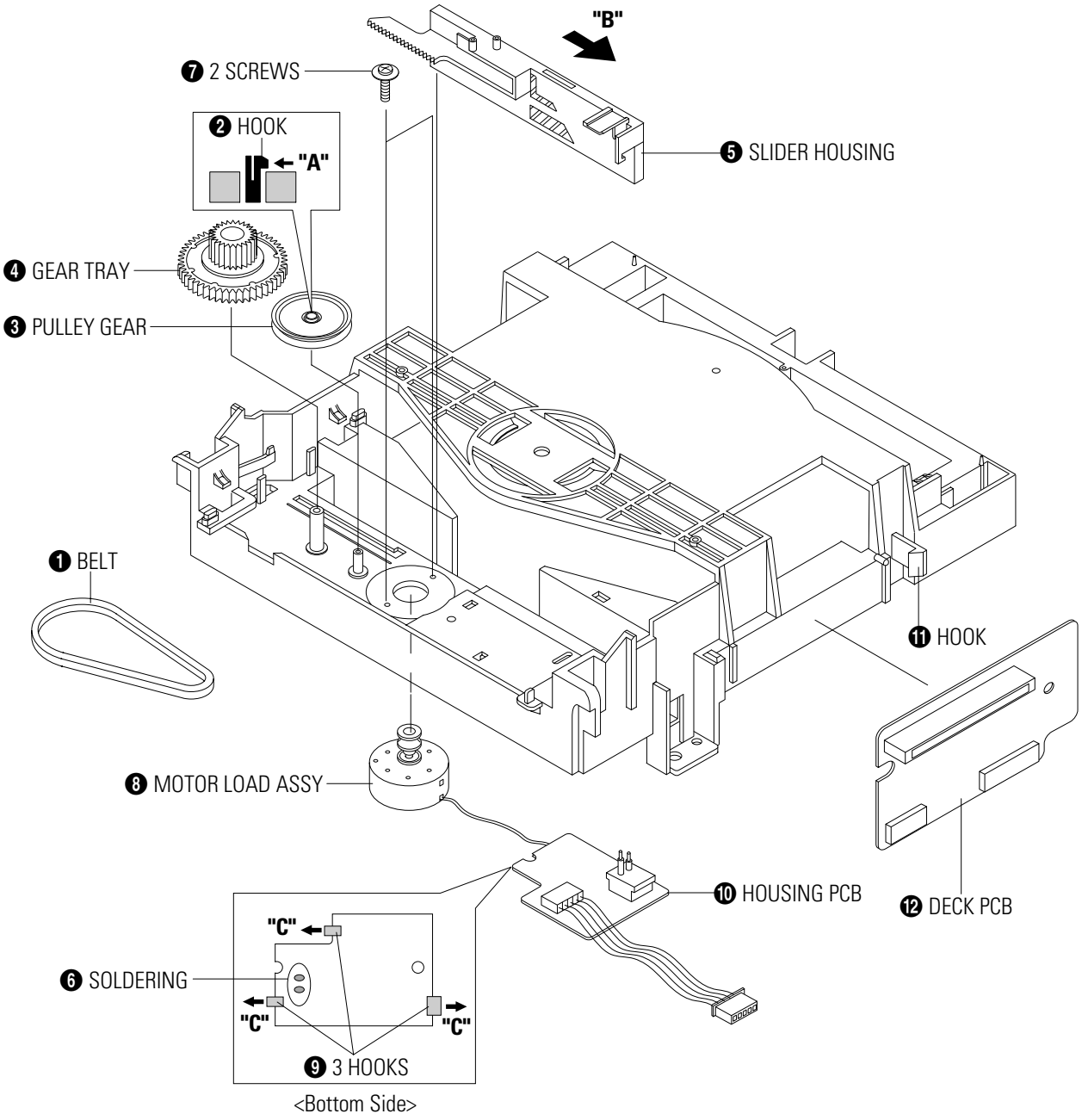


Fig. 5-10 Housing Ass'y Removal

5-4-4 Sub Chassis Removal

1) Remove the Soldering of Motor Feed (+, - wire) ❶.
2) Remove the 4 Screws ❷.
3) Lift up the Ass'y Brkt Deck ❸.

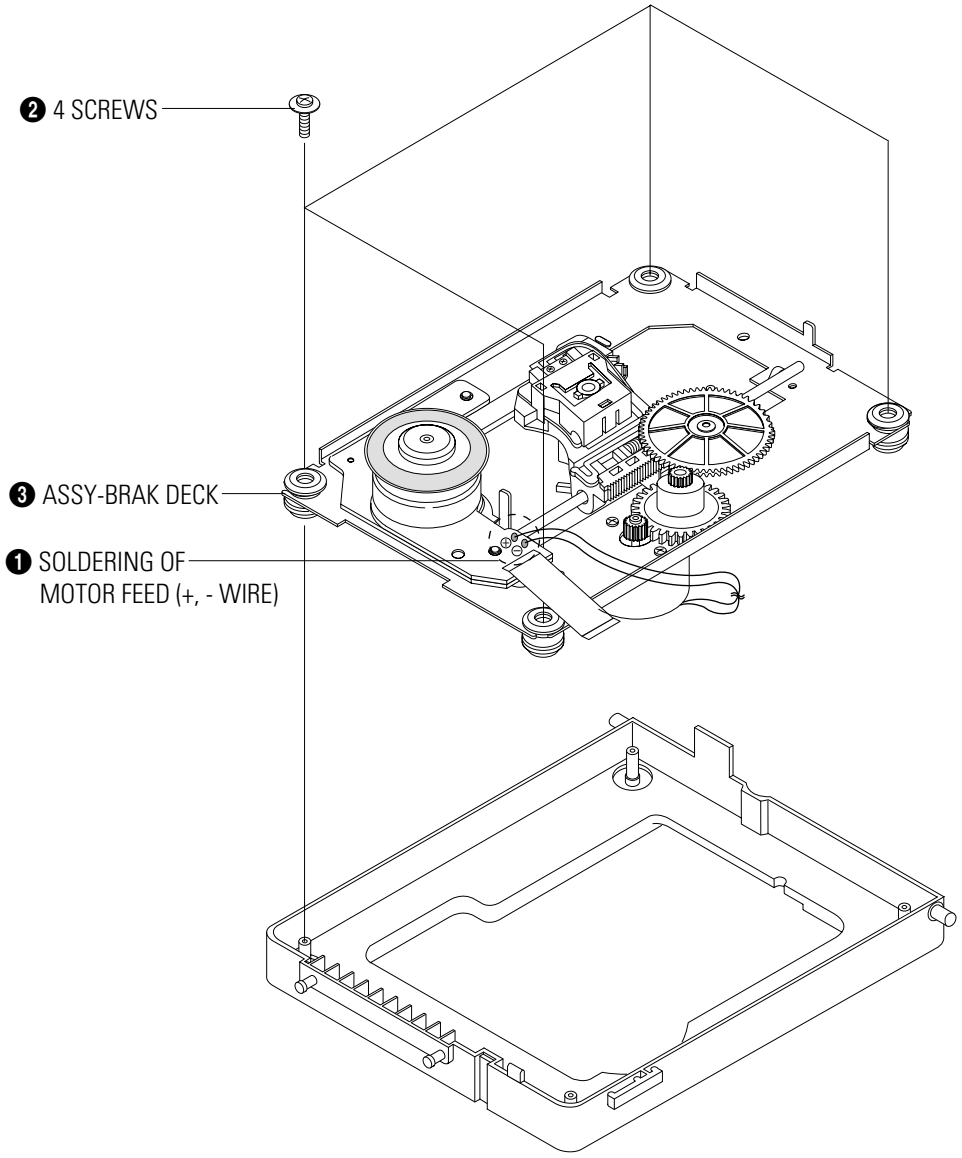


Fig. 5-11 Sub Chassis Removal

5-4-5 Ass'y Brkt Deck Removal

1) Remove Washer ❶.
2) Remove Gear Feed B ❷ , Gear Feed A ❸.
3) Remove 2 Screws ❹.
4) Remove Shaft Pick-Up ❺ and Pick-Up Assy ❻.
5) Remove 1 Screw ❼.
6) Remove 2 Screws ❽.
7) Remove 3 Spring Spindle ❾ and Motor Spindle Ass'y ❿.

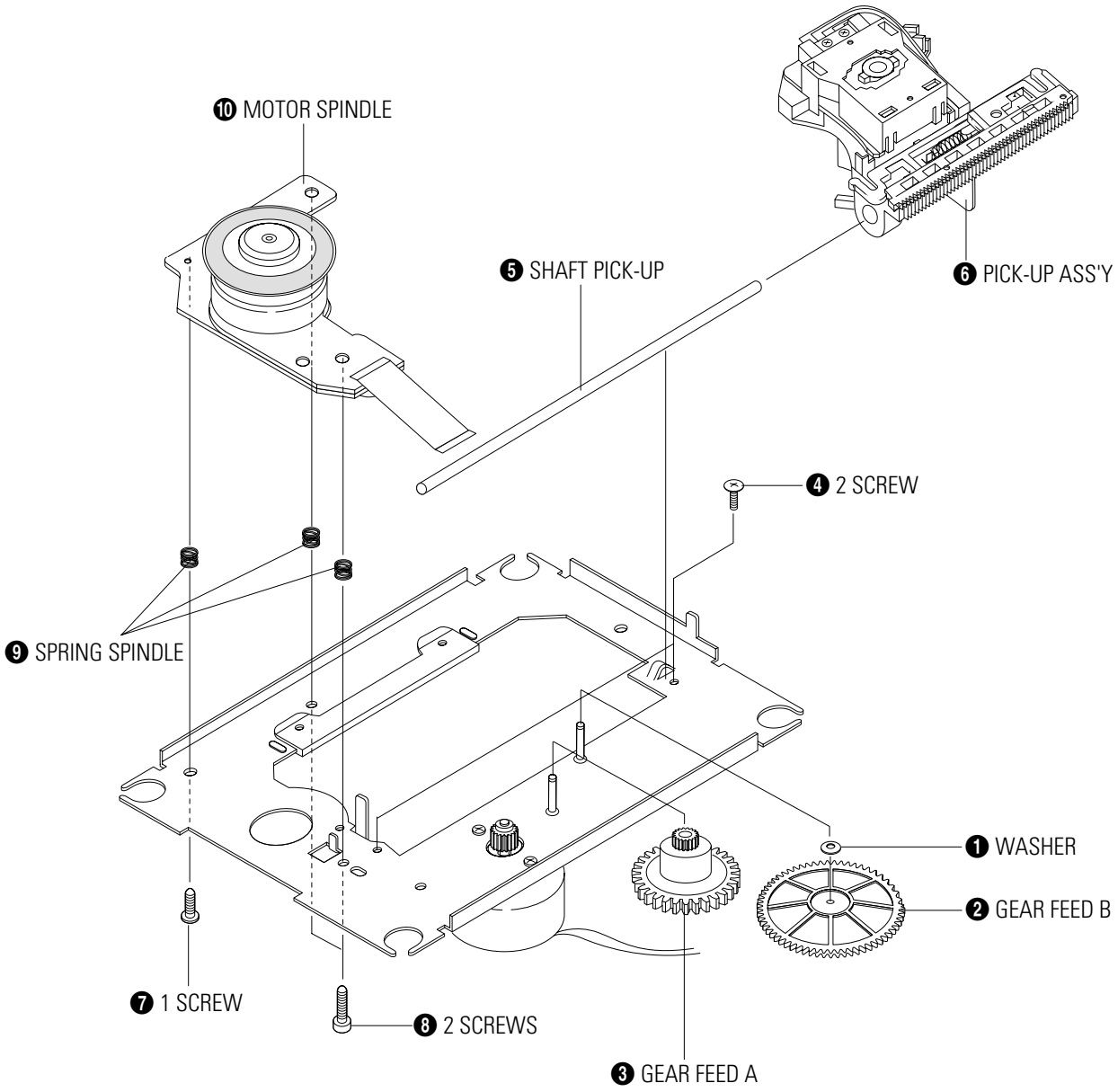
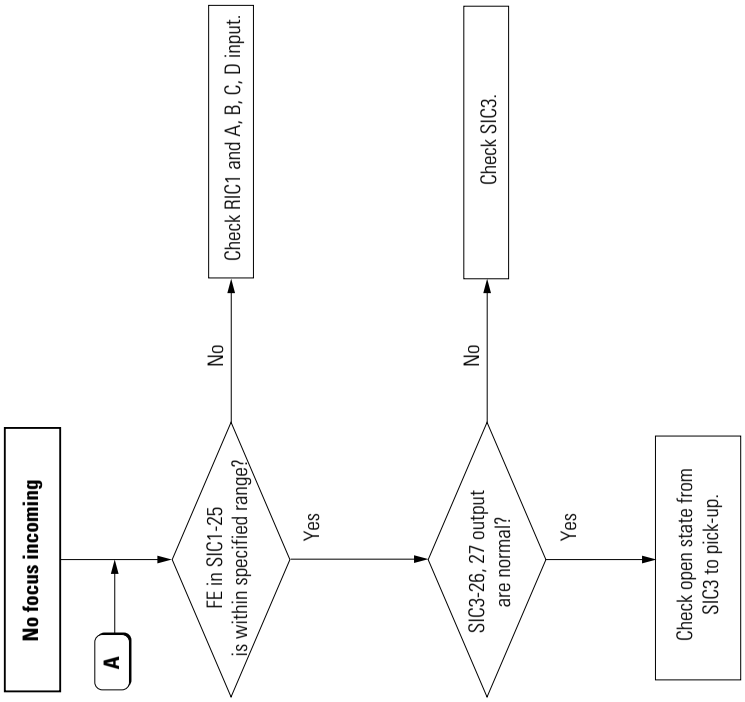
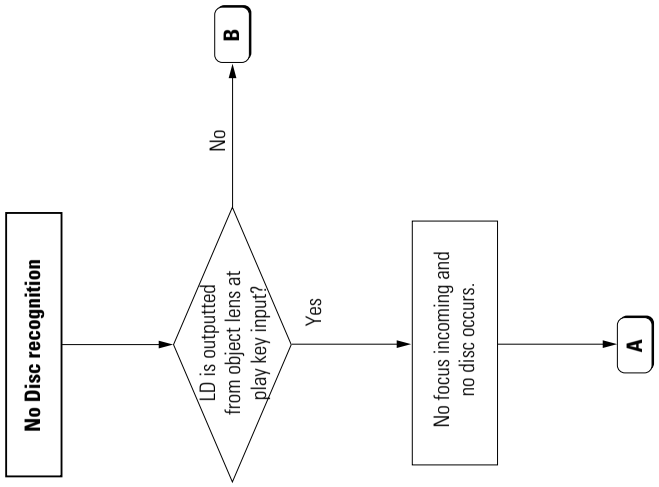
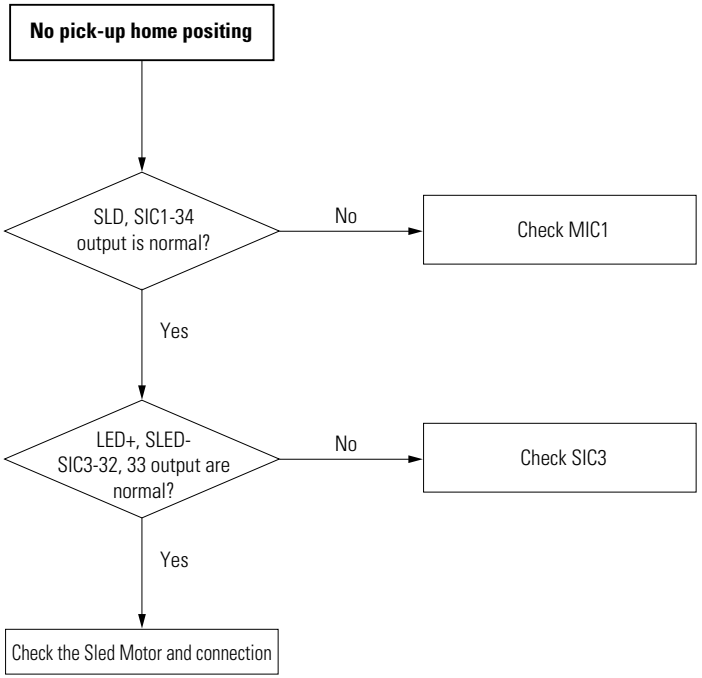


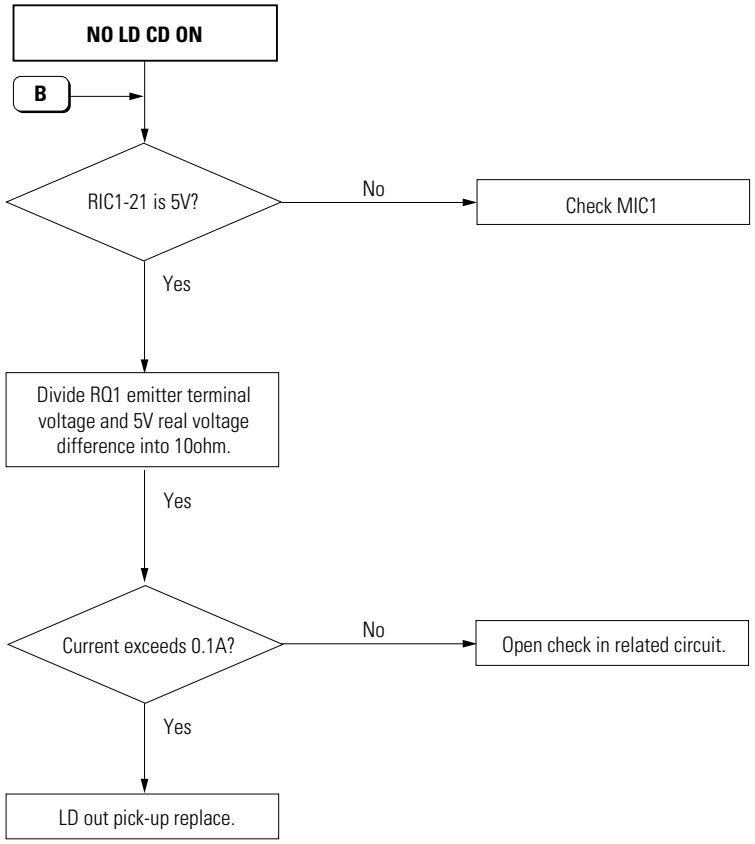
Fig. 5-12 Ass'y Brkt Deck Removal

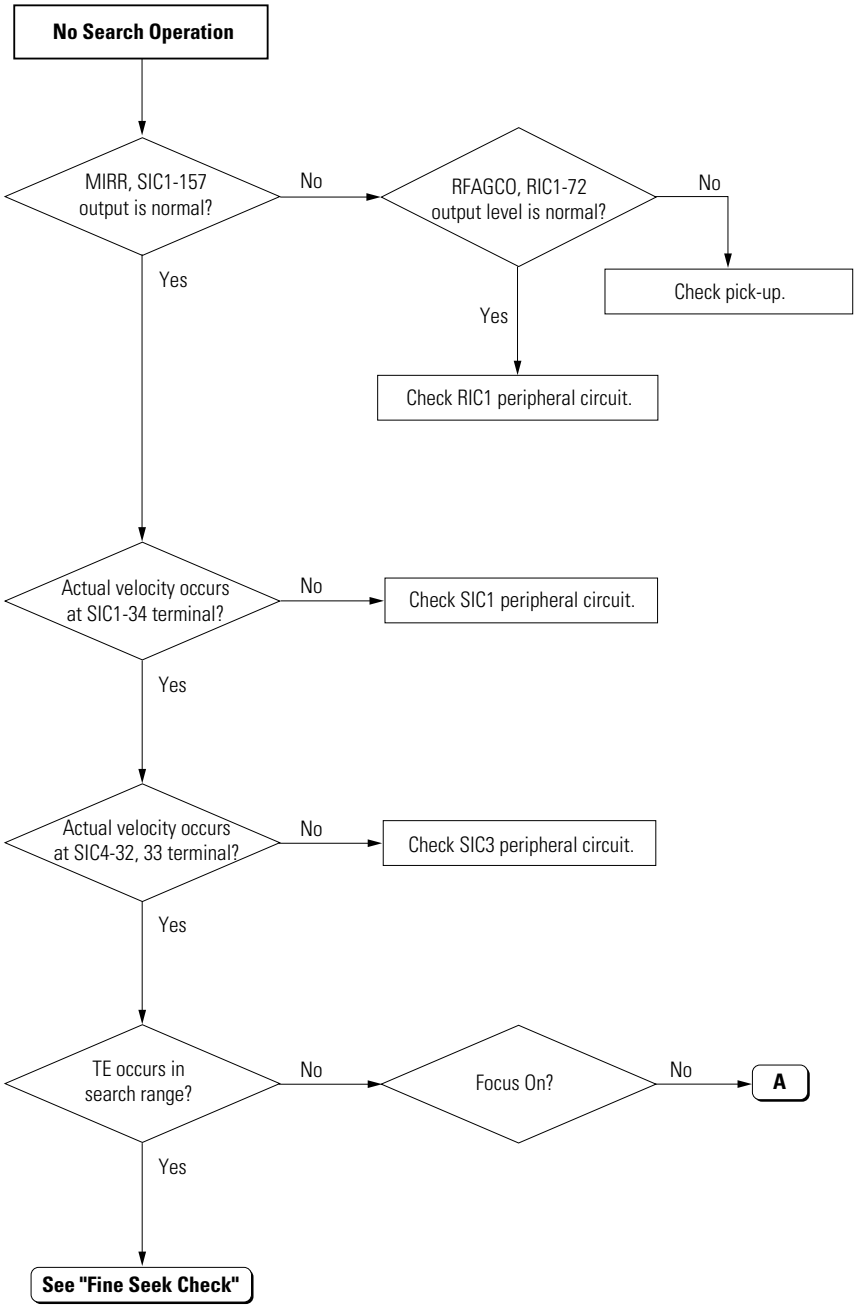
7. Troubleshooting

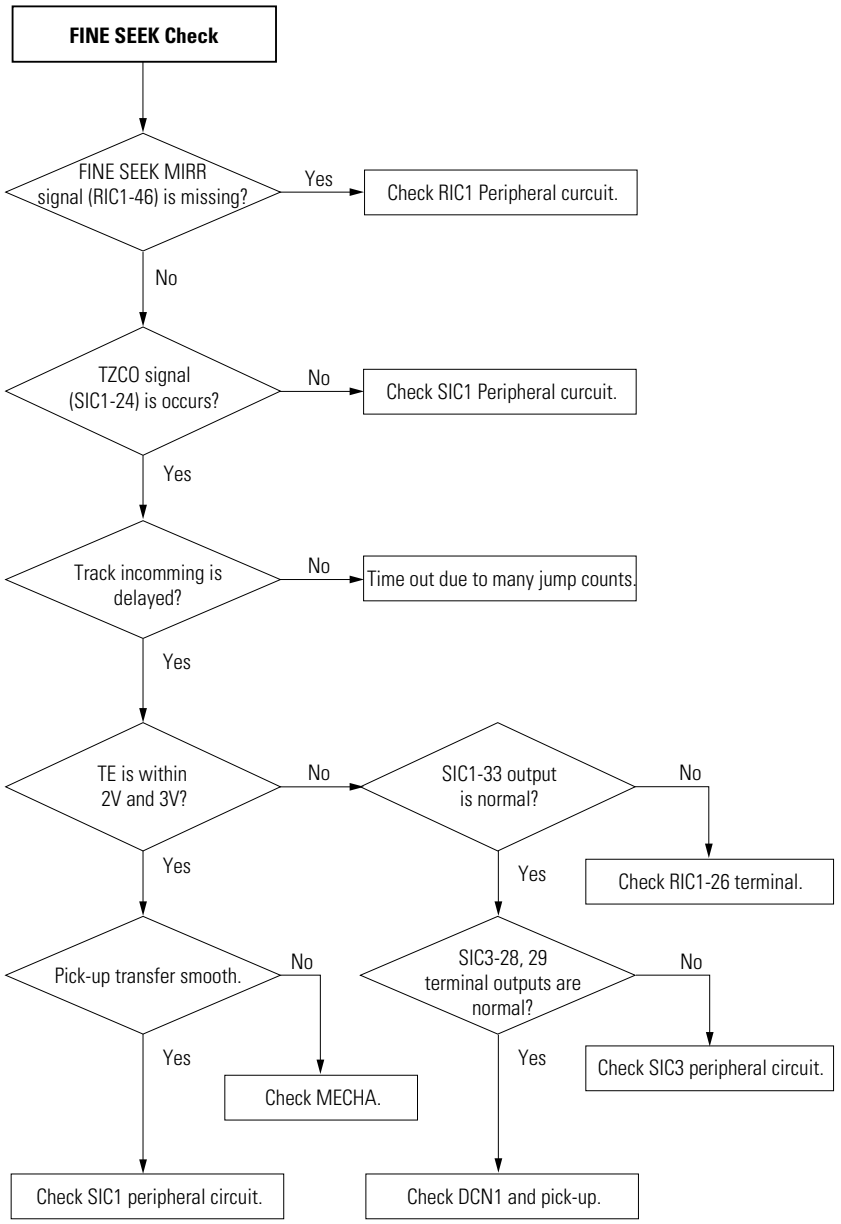


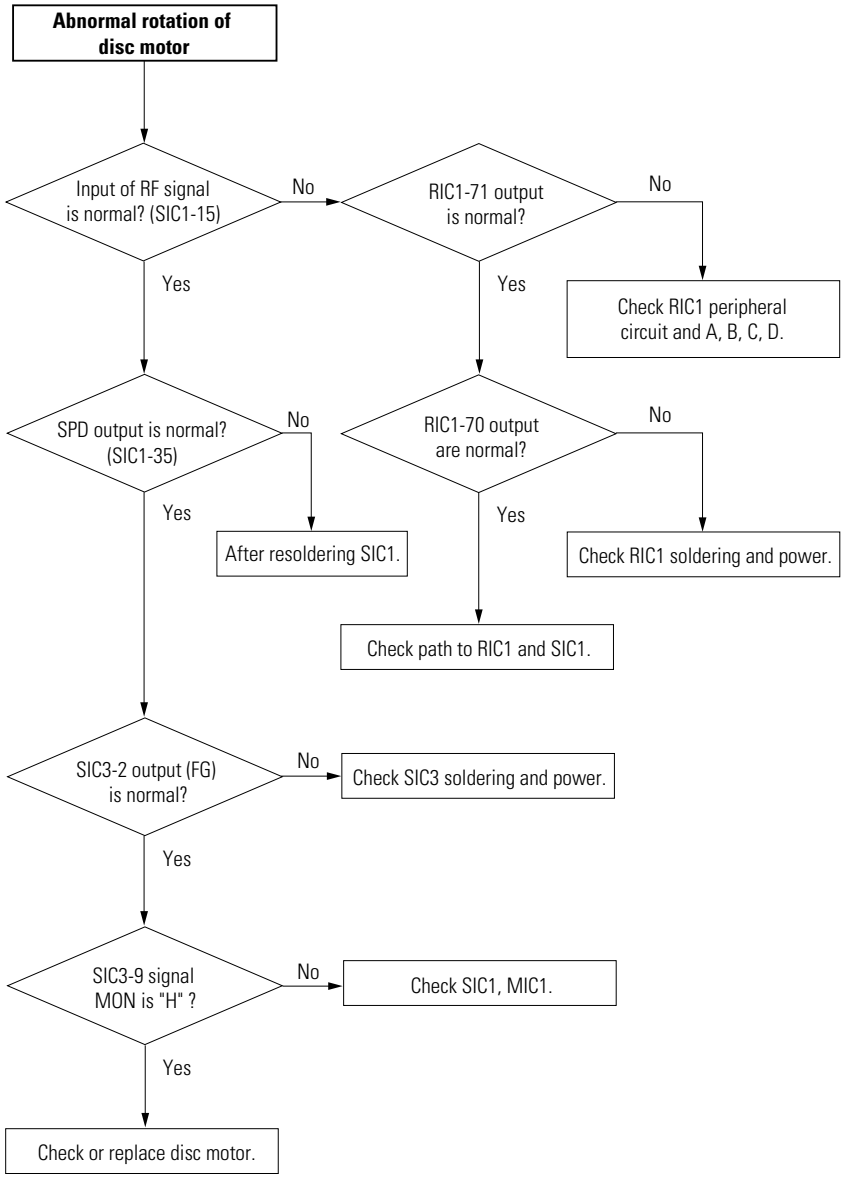


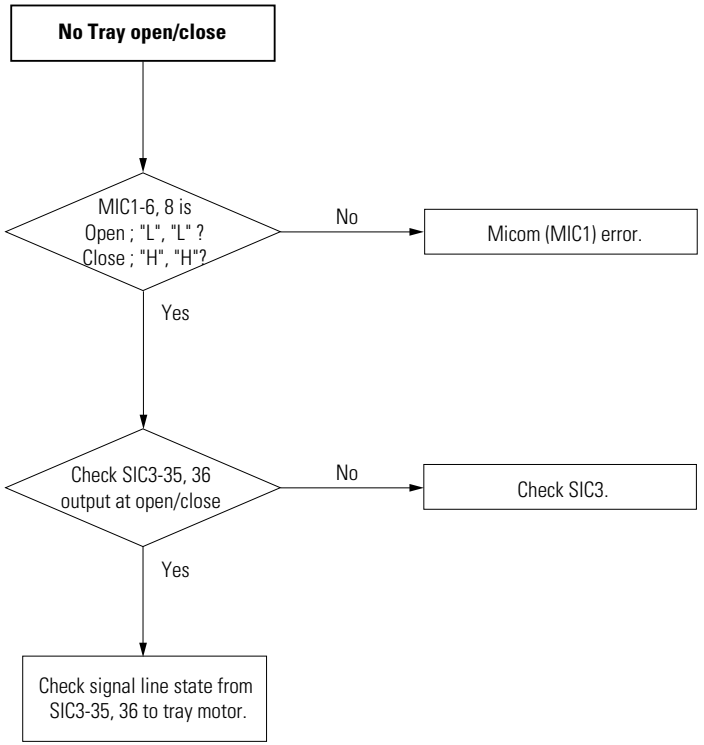

No pick-up home positing
SLD, SIC1-34 output is normal?
No
Check MIC1
Yes
LED+, SLED- SIC3-32, 33 output are normal?
No
Check SIC3
Yes
Check the Sled Motor and connection

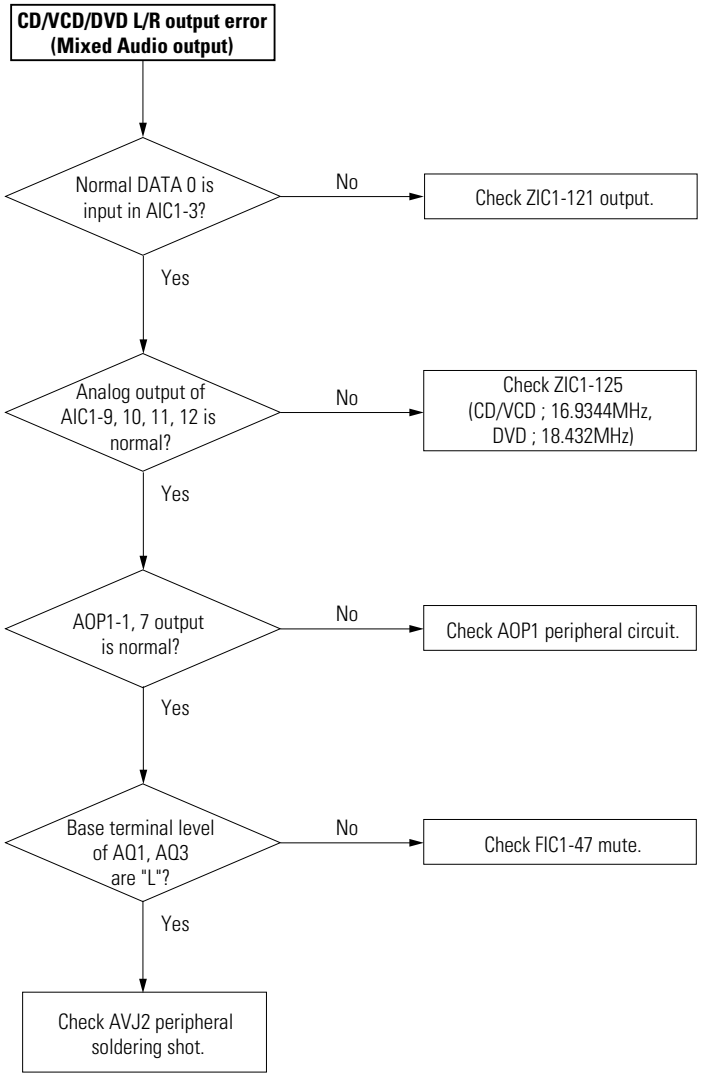

NO LD CD ON
B
RIC1-21 is 5V?
No
Check MIC1
Yes
Divide RQ1 emitter terminal voltage and 5V real voltage difference into 10ohm.
Yes
Current exceeds 0.1A?
No
Open check in related circuit.
Yes
LD out pick-up replace.

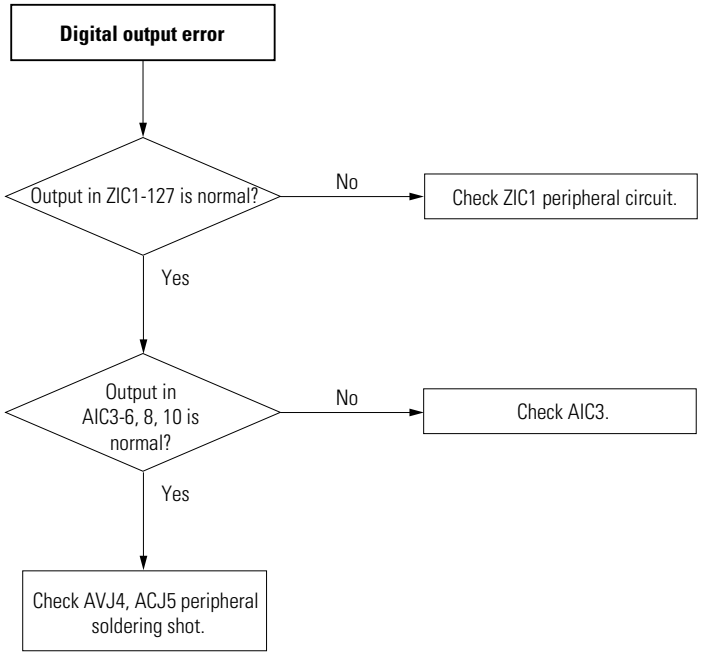

No Search Operation
MIRR, SIC1-157 output is normal?
No
RFAGCO, RIC1-72 output level is normal?
No
Check pick-up.
Yes
Check RIC1 peripheral circuit.
Yes
Actual velocity occurs at SIC1-34 terminal?
No
Check SIC1 peripheral circuit.
Yes
Actual velocity occurs at SIC4-32, 33 terminal?
No
Check SIC3 peripheral circuit.
Yes
TE occurs in search range?
No
Focus On?
No
A
Yes
See "Fine Seek Check"

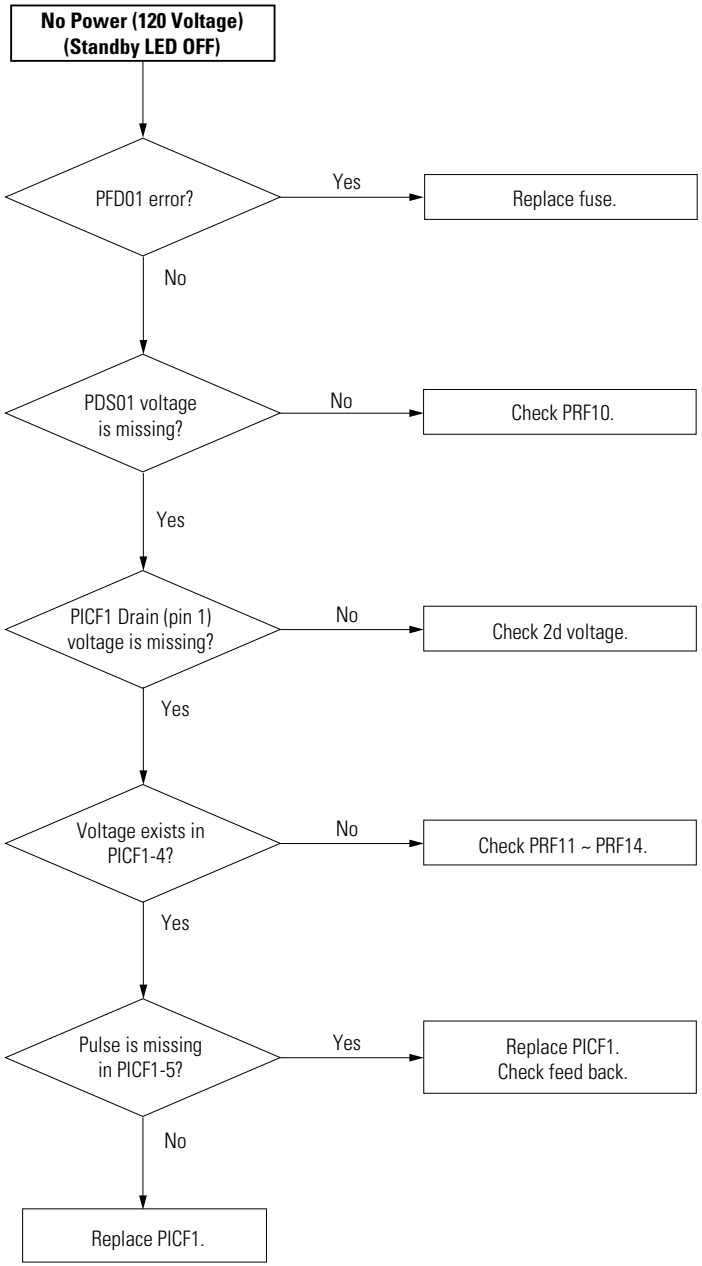

FINE SEEK Check
FINE SEEK MIRR signal (RIC1-46) is missing?
Yes
Check RIC1 Peripheral curcuit.
No
TZCO signal (SIC1-24) is occurs?
No
Check SIC1 Peripheral curcuit.
Yes
Track incomming is delayed?
No
Time out due to many jump counts.
Yes
TE is within 2V and 3V?
No
SIC1-33 output is normal?
No
Check RIC1-26 terminal.
Yes
Yes
Pick-up transfer smooth.
No
Check MECHA.
Yes
SIC3-28, 29 terminal outputs are normal?
No
Check SIC3 peripheral circuit.
Yes
Check SIC1 peripheral circuit.
Check DCN1 and pick-up.

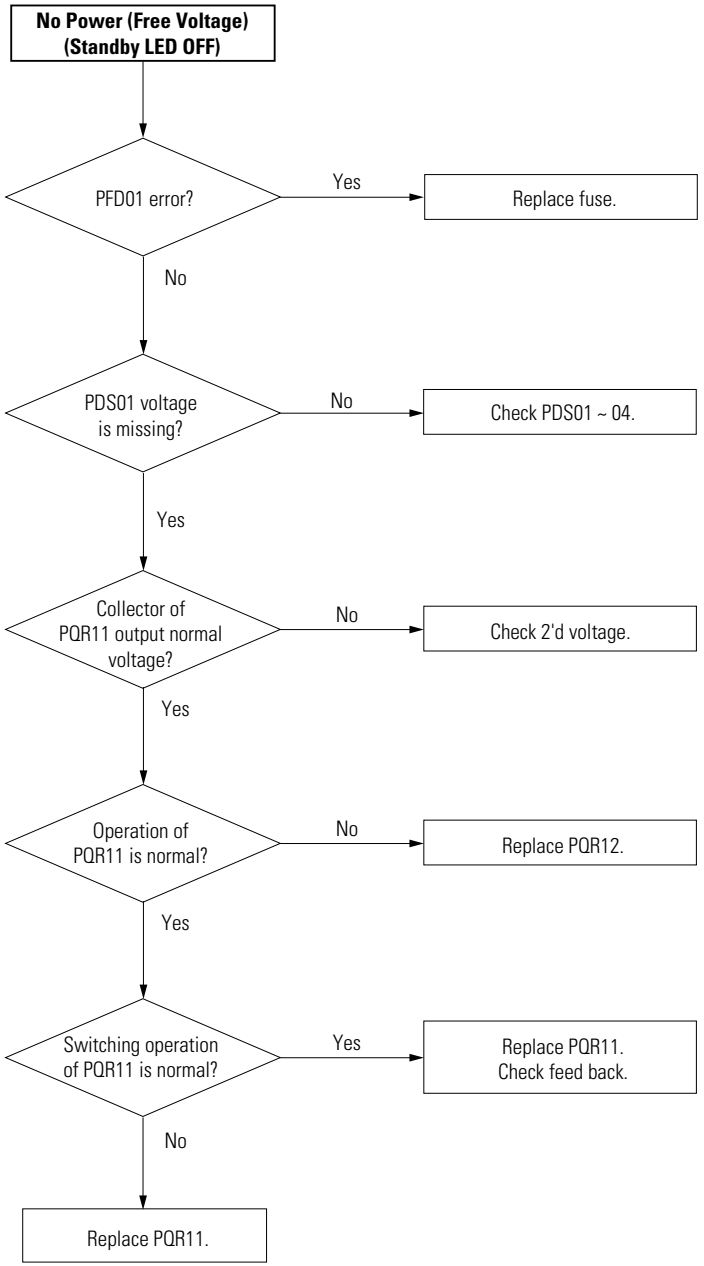

Abnormal rotation of disc motor
Input of RF signal is normal? (SIC1-15)
No
RIC1-71 output is normal?
No
Check RIC1 peripheral circuit and A, B, C, D.
Yes
Yes
SPD output is normal? (SIC1-35)
No
RIC1-70 output are normal?
No
After resoldering SIC1.
Check RIC1 soldering and power.
Yes
Yes
Check path to RIC1 and SIC1.
SIC3-2 output (FG) is normal?
No
Check SIC3 soldering and power.
Yes
SIC3-9 signal MON is "H" ?
No
Check SIC1, MIC1.
Yes
Check or replace disc motor.

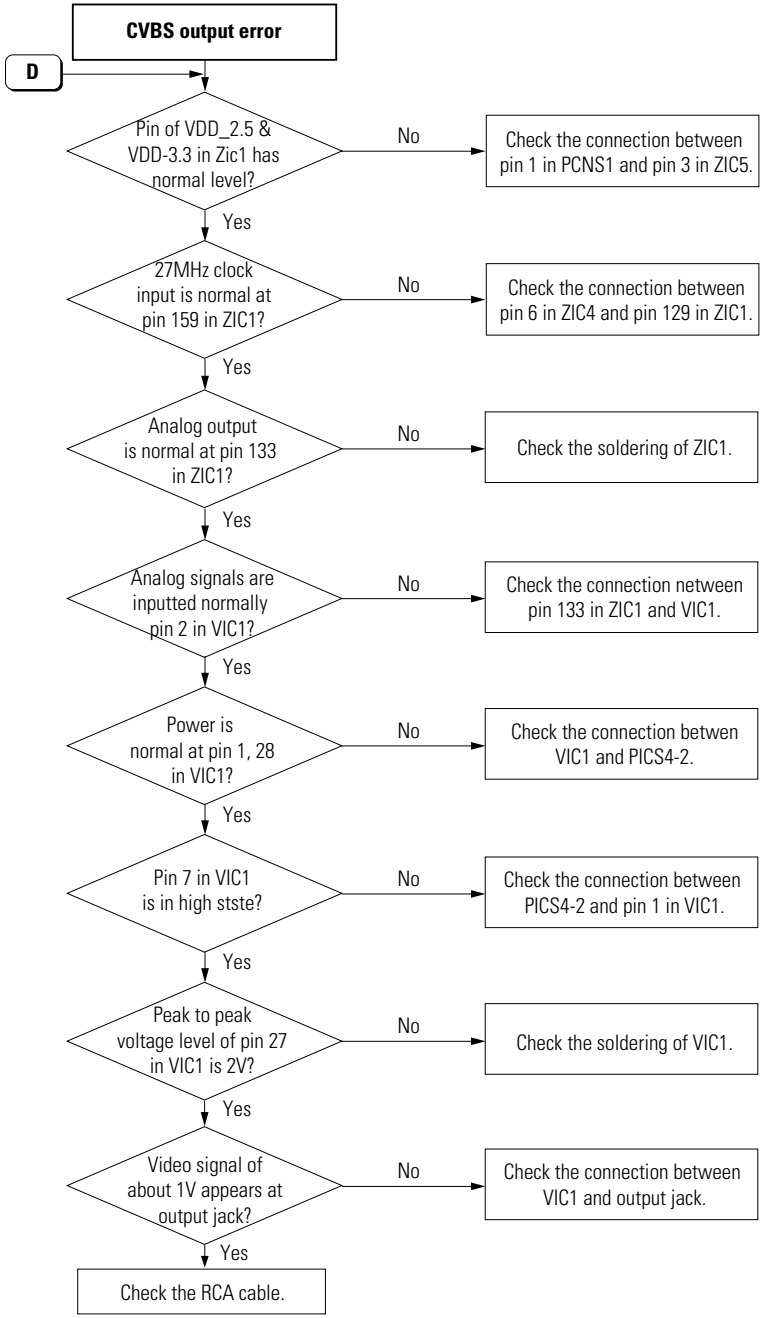

No Tray open/close
MIC1-6, 8 is Open ; "L", "L" ? Close ; "H", "H"?
No
Micom (MIC1) error.
Yes
Check SIC3-35, 36 output at open/close
No
Check SIC3.
Yes
Check signal line state from SIC3-35, 36 to tray motor.

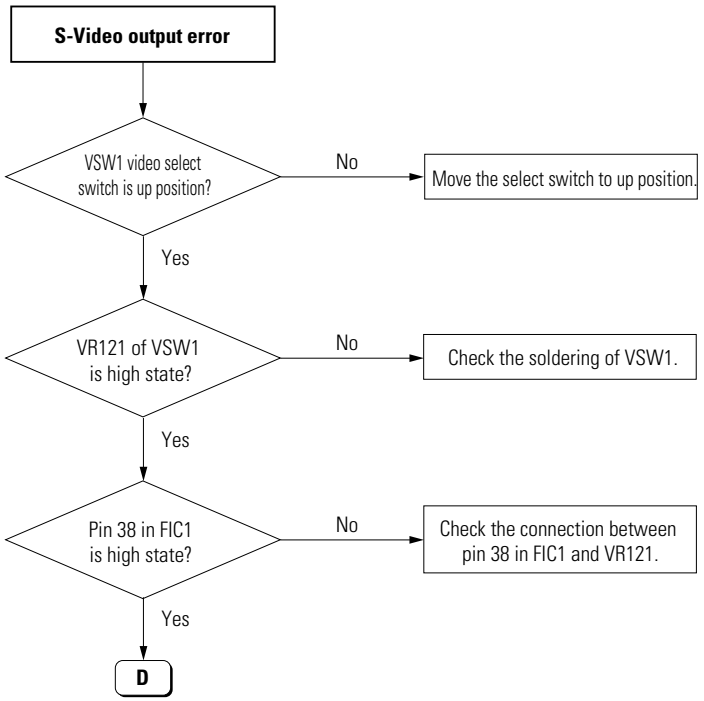

CD/VCD/DVD L/R output error
(Mixed Audio output)
Normal DATA 0 is input in AIC1-3?
No
Check ZIC1-121 output.
Yes
Analog output of AIC1-9, 10, 11, 12 is normal?
No
Check ZIC1-125 (CD/VCD ; 16.9344MHz, DVD ; 18.432MHz)
Yes
AOP1-1, 7 output is normal?
No
Check AOP1 peripheral circuit.
Yes
Base terminal level of AQ1, AQ3 are "L"?
No
Check FIC1-47 mute.
Yes
Check AVJ2 peripheral soldering shot.

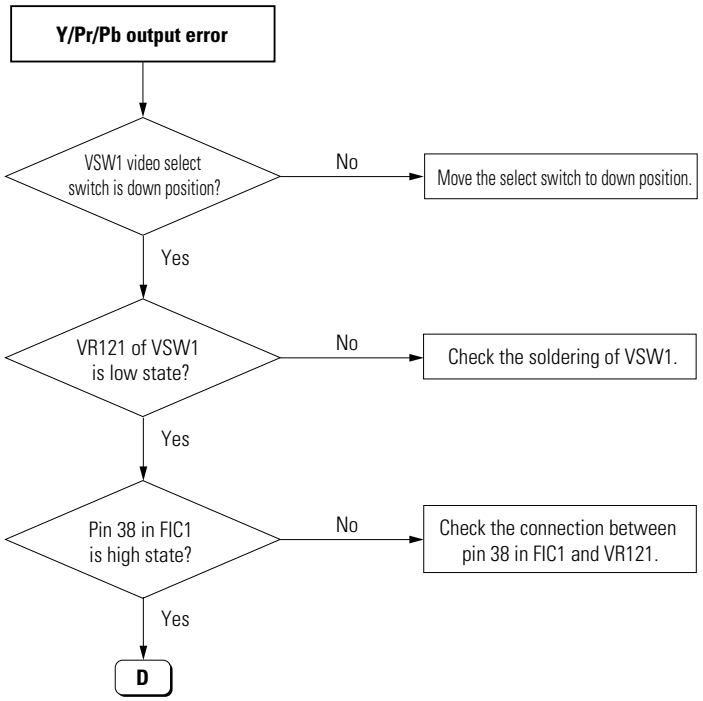

Digital output error
Output in ZIC1-127 is normal?
No
Check ZIC1 peripheral circuit.
Yes
Output in AIC3-6, 8, 10 is normal?
No
Check AIC3.
Yes
Check AVJ4, ACJ5 peripheral soldering shot.


No Power (120 Voltage)
(Standby LED OFF)
PFD01 error?
Yes
Replace fuse.
No
PDS01 voltage
is missing?
No
Check PRF10.
Yes
PICF1 Drain (pin 1)
voltage is missing?
No
Check 2d voltage.
Yes
Voltage exists in
PICF1-4?
No
Check PRF11 ~ PRF14.
Yes
Pulse is missing
in PICF1-5?
Yes
Replace PICF1.
Check feed back.
No
Replace PICF1.


No Power (Free Voltage)
(Standby LED OFF)
PFD01 error?
Yes
Replace fuse.
No
PDS01 voltage
is missing?
No
Check PDS01 ~ 04.
Yes
Collector of
PQR11 output normal
voltage?
No
Check 2'd voltage.
Yes
Operation of
PQR11 is normal?
No
Replace PQR12.
Yes
Switching operation
of PQR11 is normal?
Yes
Replace PQR11.
Check feed back.
No
Replace PQR11.


CVBS output error
D
Pin of VDD_2.5 & VDD-3.3 in Zic1 has normal level?
No
Check the connection between pin 1 in PCNS1 and pin 3 in ZIC5.
Yes
27MHz clock input is normal at pin 159 in ZIC1?
No
Check the connection between pin 6 in ZIC4 and pin 129 in ZIC1.
Yes
Analog output is normal at pin 133 in ZIC1?
No
Check the soldering of ZIC1.
Yes
Analog signals are inputted normally pin 2 in VIC1?
No
Check the connection netween pin 133 in ZIC1 and VIC1.
Yes
Power is normal at pin 1, 28 in VIC1?
No
Check the connection betwen VIC1 and PICS4-2.
Yes
Pin 7 in VIC1 is in high stste?
No
Check the connection between PICS4-2 and pin 1 in VIC1.
Yes
Peak to peak voltage level of pin 27 in VIC1 is 2V?
No
Check the soldering of VIC1.
Yes
Video signal of about 1V appears at output jack?
No
Check the connection between VIC1 and output jack.
Yes
Check the RCA cable.

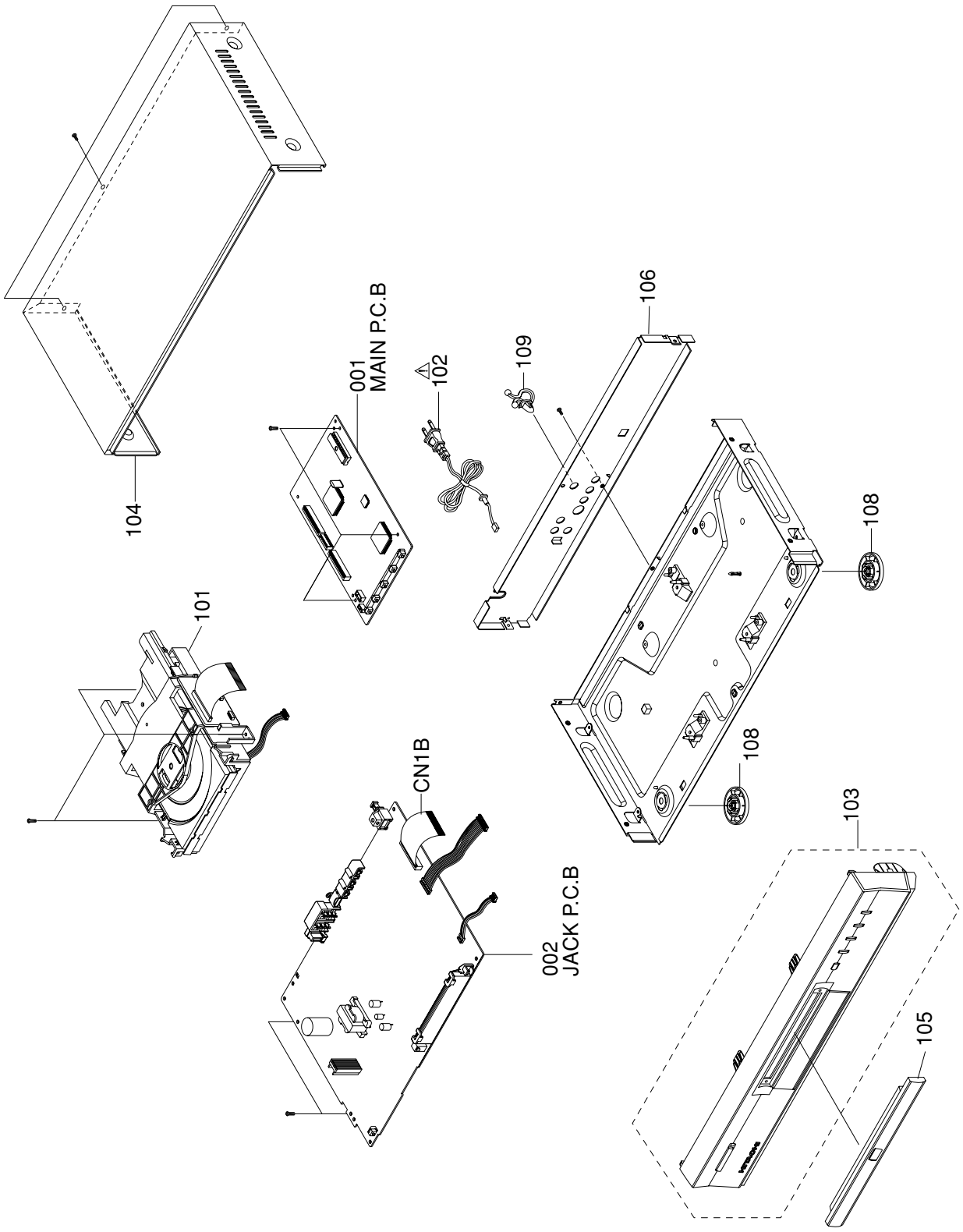

S-Video output error
VSW1 video select switch is up position?
No
Move the select switch to up position.
Yes
VR121 of VSW1 is high state?
No
Check the soldering of VSW1.
Yes
Pin 38 in FIC1 is high state?
No
Check the connection between pin 38 in FIC1 and VR121.
Yes
D


Y/Pr/Pb output error
VSW1 video select switch is down position?
No
Move the select switch to down position.
Yes
VR121 of VSW1 is low state?
No
Check the soldering of VSW1.
Yes
Pin 38 in FIC1 is high state?
No
Check the connection between pin 38 in FIC1 and VR121.
Yes
D

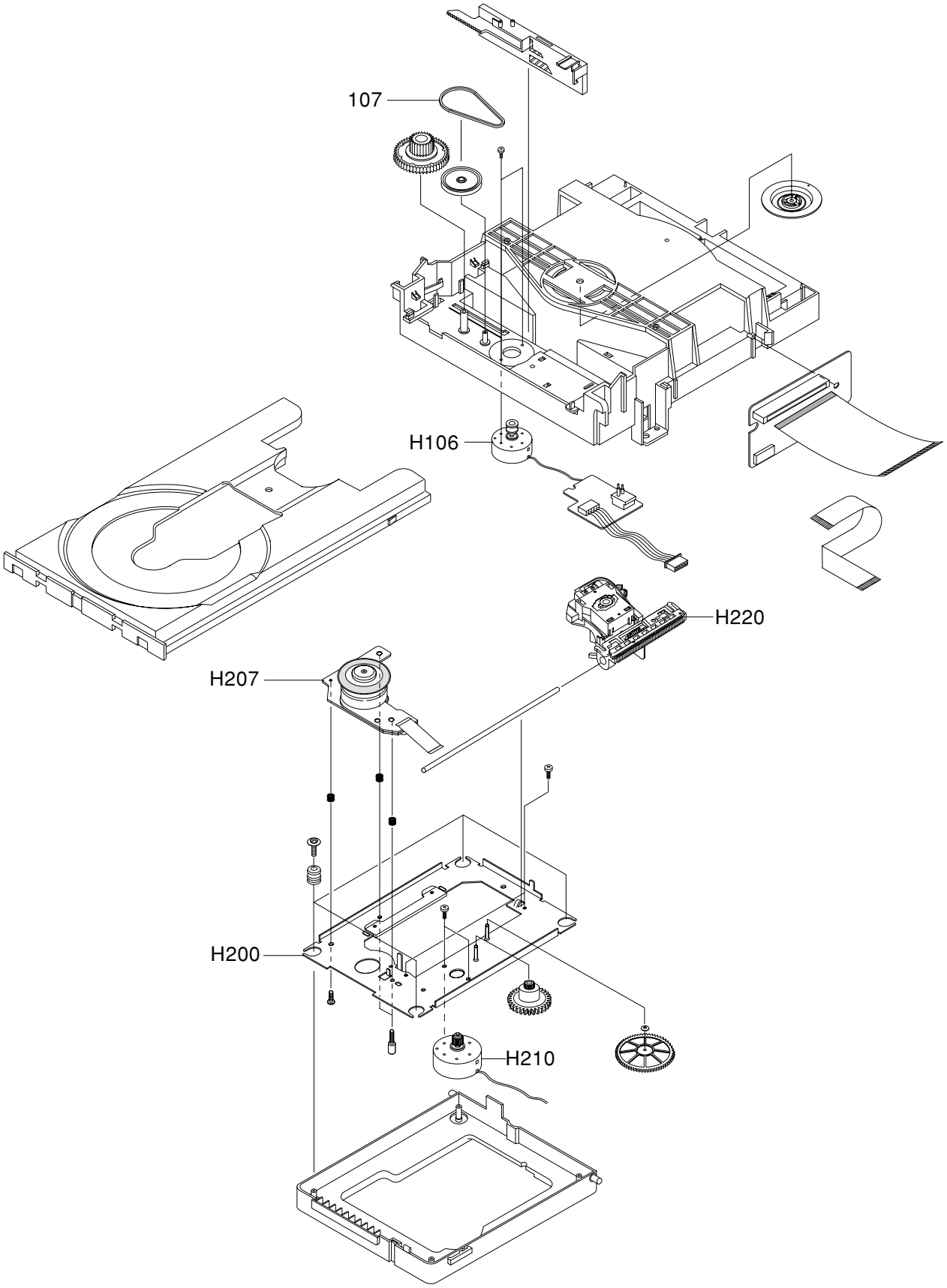
8. Exploded View

Page

8-1 Cabinet Assembly



8-2 Deck Assembly



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9. Replacement Parts List

1. MECHINICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION	
		MECHINISM SECTION	
101	TS16321	MECHA ASSY(DVD)	
⚠ 102	TE13371	CORD,POWER	
103	TJ14991	PANEL,FRONT	[P315U]
103	TJ14992	PANEL,FRONT	[P313U]
104	TJ15001	COVER,TOP	[P315U]
104	TS15001	COVER,TOP	[P313U]
105	TJ15011	DOOR ASSY	
106	TJ15021	PANEL,REAR	
107	TJ15031	BELT,PUULEY	
108	TJ15041	FOOT,FRONT	
109	TJ15051	HOLDER,CORD	
H106	TS16341	MOTOR,LOAD	
H200	TS16371	DECK,BRACKET	
H207	TS16351	MOTOR,SPINDLE	
H210	TS16361	MOTOR,FEED	
H220	TS16391	PICK UP ASSY	
001	TS16301	PWB ASSY MAIN	
002	TS16311	PWB ASSY JACK	
		ACCESSORIES	
802	TS15543	Remote, DV-RM300, [DV-P313U]	
802	TS16331	Remote, DV-RM310, [DV-P315U]	
803	TE13361	CABLE,AV	

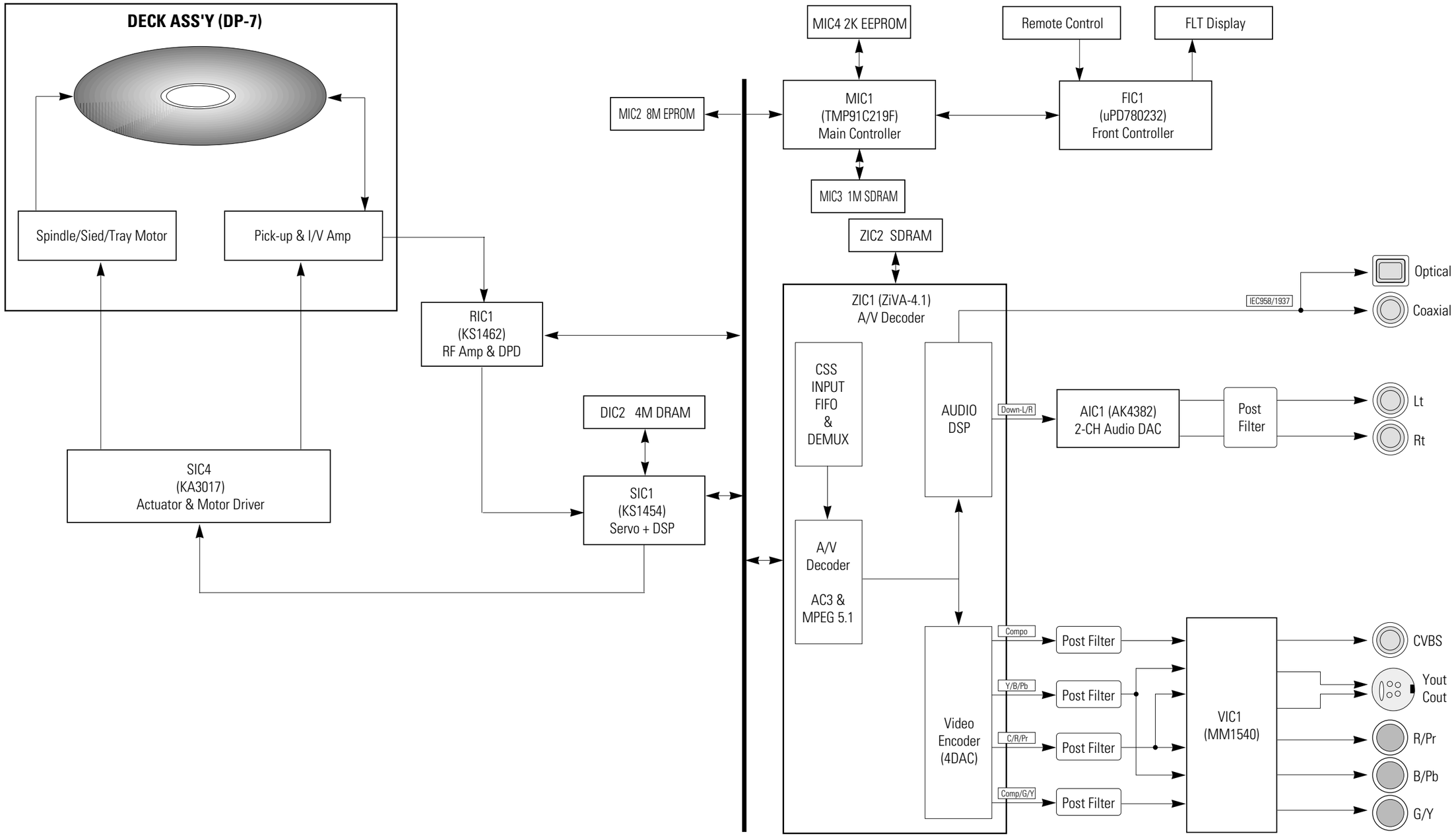
2.ELECTRICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION	
⚠ PCD02	TA14311	CERAMIC DISC 3.3nF	
⚠ PCD03	TA14311	CERAMIC DISC 33nF	
⚠ PCR01	TA14301	CERAMIC DISC 10nF	
⚠ PCR02	TA14311	CERAMIC DISC 3.3nF	
⚠ PCS03	TA14341	CERAMIC DISC 100PF	
⚠ PER10	TA14291	CAPACITOR 150UF 200V	
AD54	TC11651	DIODE 1N4148	
AD55	TC11651	DIODE 1N4148	
FD10	TC11651	DIODE 1N4148	
PDR11	TC11651	DIODE 1N4148	
PDR12	TC11651	DIODE 1N4148	
⚠ PDS01	TC11631	DIODE 1T5	
⚠ PDS02	TC11631	DIODE 1T5	
⚠ PDS03	TC11631	DIODE 1T5	
⚠ PDS04	TC11631	DIODE 1T5	
PDS11	TC11661	DIODE UF4007	
PDS51	TC11651	DIODE 1N4148	
AIC1	TC11751	IC AK4382VT	
AIC3	TC11481	IC M74HCU04	
AOP1	TC11511	IC 4560	
FIC1	TC11761	IC UPD780232	
FIC2	TC11541	IC 7545	
FIC4	TC11791	MODULE,REMOCON	
MIC1	TC11361	IC 95C265	
MIC2	TC11294	EPROM	[P315U]
MIC2	TC11295	EPROM	[P313U]
MIC3	TC11671	IC 24257	
MIC4	TC11681	IC 24C021	
MIC5	TC11351	IC 7SET08	
MIC6	TC11691	IC 7S32	
MIC7	TC11401	IC 7SET00	
PIC1	TC11701	IC 1365	
⚠ PICS1	TC11591	PHOTO COUPLER PC123	
PICS2	TC11581	IC KA431Z	
PICS3	TC11551	IC 7908	
PICS4	TC11561	IC 78R08	
PICS5	TC11781	IC 3RD13	
RIC1	TC11711	IC KS1462	
SIC1	TC11721	IC KS1454	
SIC2	TC11731	IC 416C256	
SIC3	TC11441	IC KA3017	
SIC4	TC11741	IC 7ST08	
VIC1	TC11771	IC 1540	
ZIC1	TC11461	IC ZIVA4.1	
ZIC2	TC11471	IC 3617161	
ZIC4	TC11481	IC M74HCU04	
⚠ PQR11	TC11611	SEMICONDUCTOR C5039F	
PQR12	TC11621	TRANSISTOR KTC3203	
⚠ PVA1	TC11641	SOMICONDUCTOR SVC471D	
SY1	TE13881	CRYSTAL 33.8688MHZ	

SYMBOL NO	P-NO	DESCRIPTION
ZY1	TE13891	CRYSTAL 27HMZ
MY1	TE13871	CRYSTAL 20HMZ
⚠ PTD1	TA14191	TRANSFORMER
AVJ1	TE13931	JACK
AVJ2	TE13941	JACK
AVJ4	TE14191	JACK
AVJ5	TE13961	CONNECTOR
CN1	TE14011	CONNECTOR
CN1A	TE14001	CONNECTOR
CN8	TE13381	CONNECTOR(35P)
DCN1A	TE14001	CONNECTOR
FY1	TE13901	RESONATOR 5MHZ
HSW1	TE14021	SWITCH
⚠ PCNS2	TE14291	CONNECTOR
⚠ PFD01	TE13401	FUSE
PICS6	TE13911	FUSE 1A 50V
PICS7	TE13911	FUSE 1A 50V
⚠ PLS01	TA14201	FILTER,LINE
SVJ1	TE13951	JACK
SW1	TE13981	SWITCH,TACT
SW2	TE13991	SWITCH,TACT
VFD1	TE13921	DISPLAY
VSW1	TE13971	SWITCH,SLIDE

SYMBOL NO	P-NO	DESCRIPTION

10. Block Diagram



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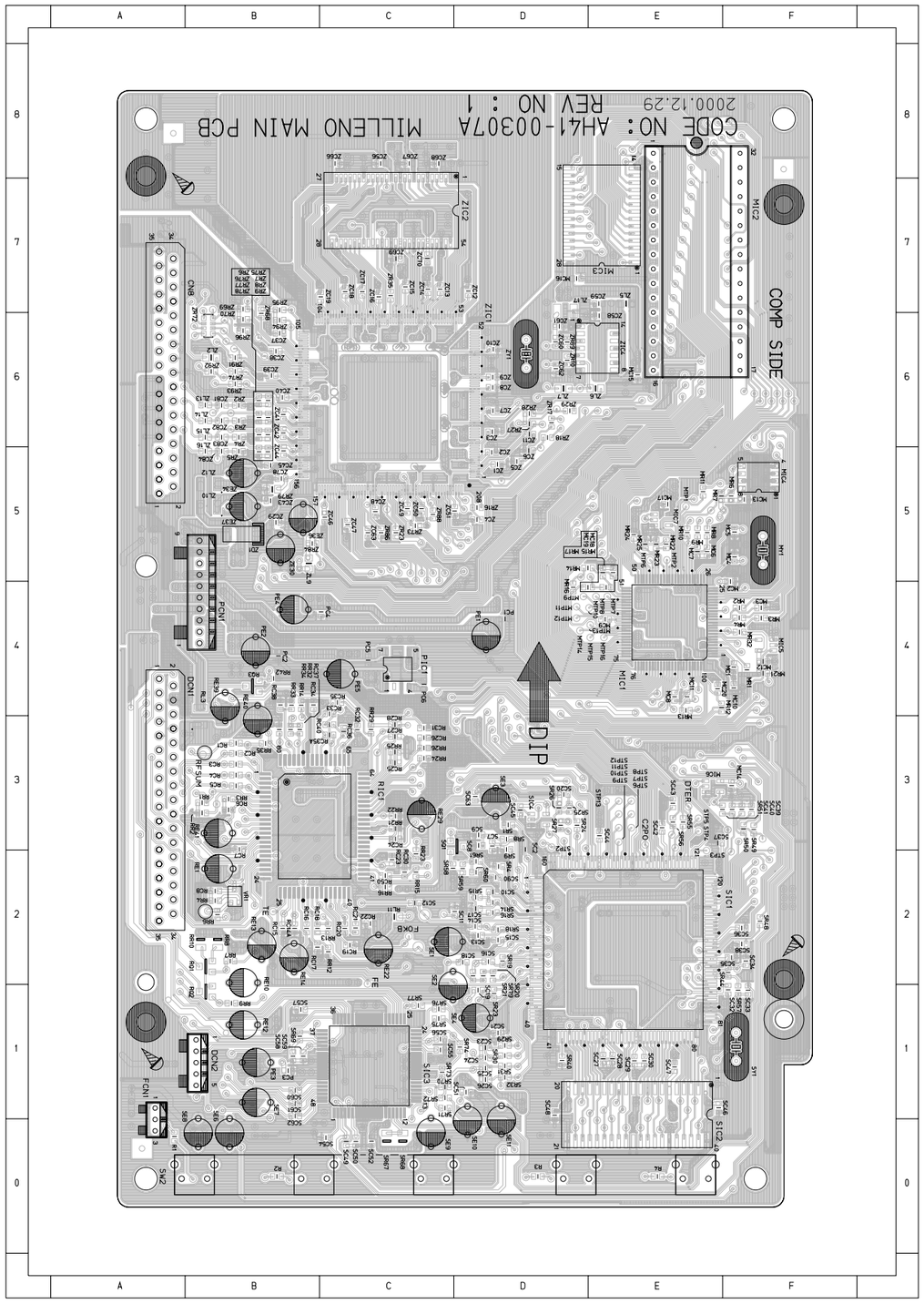
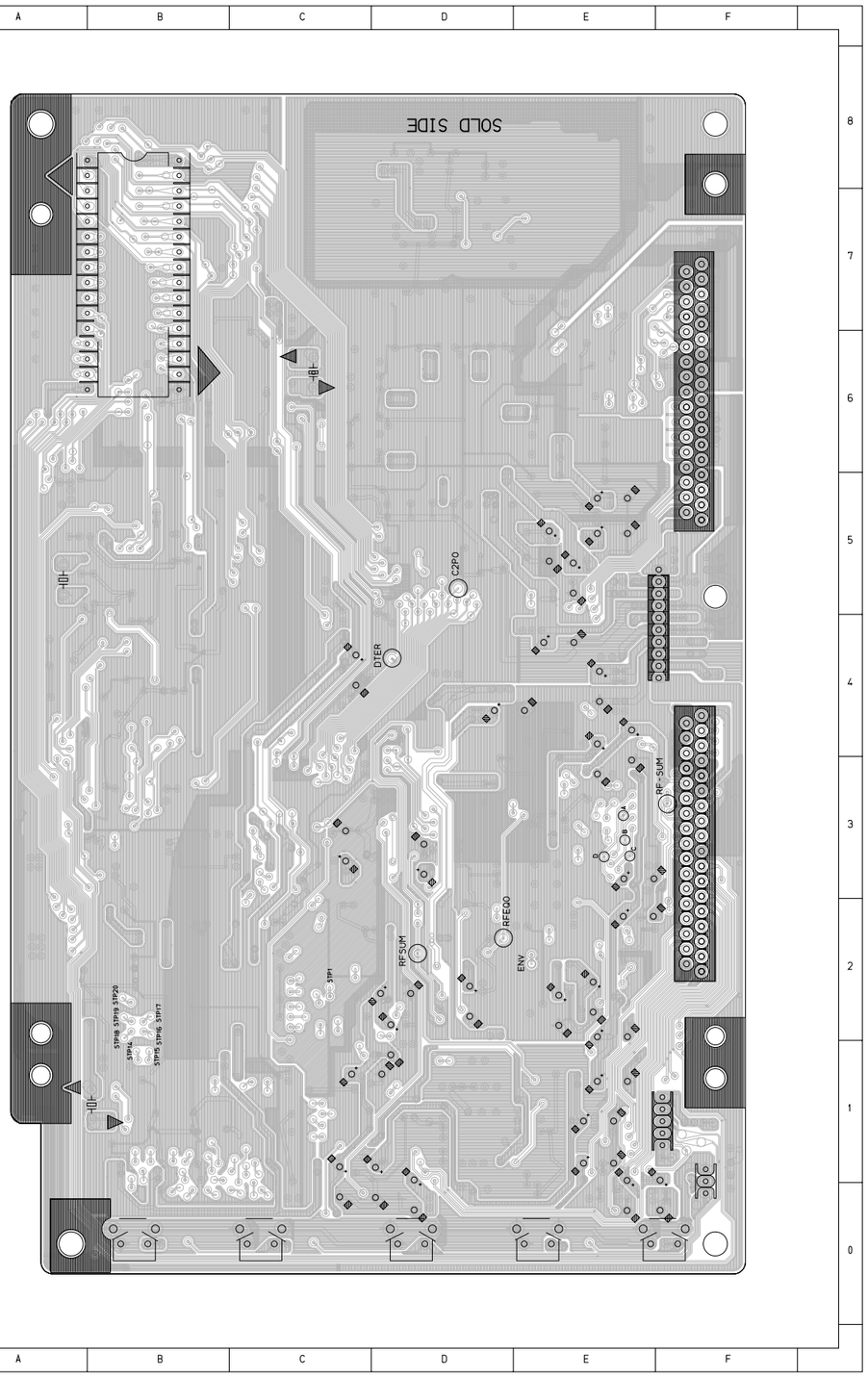
11. PCB Diagrams

11-1 Main

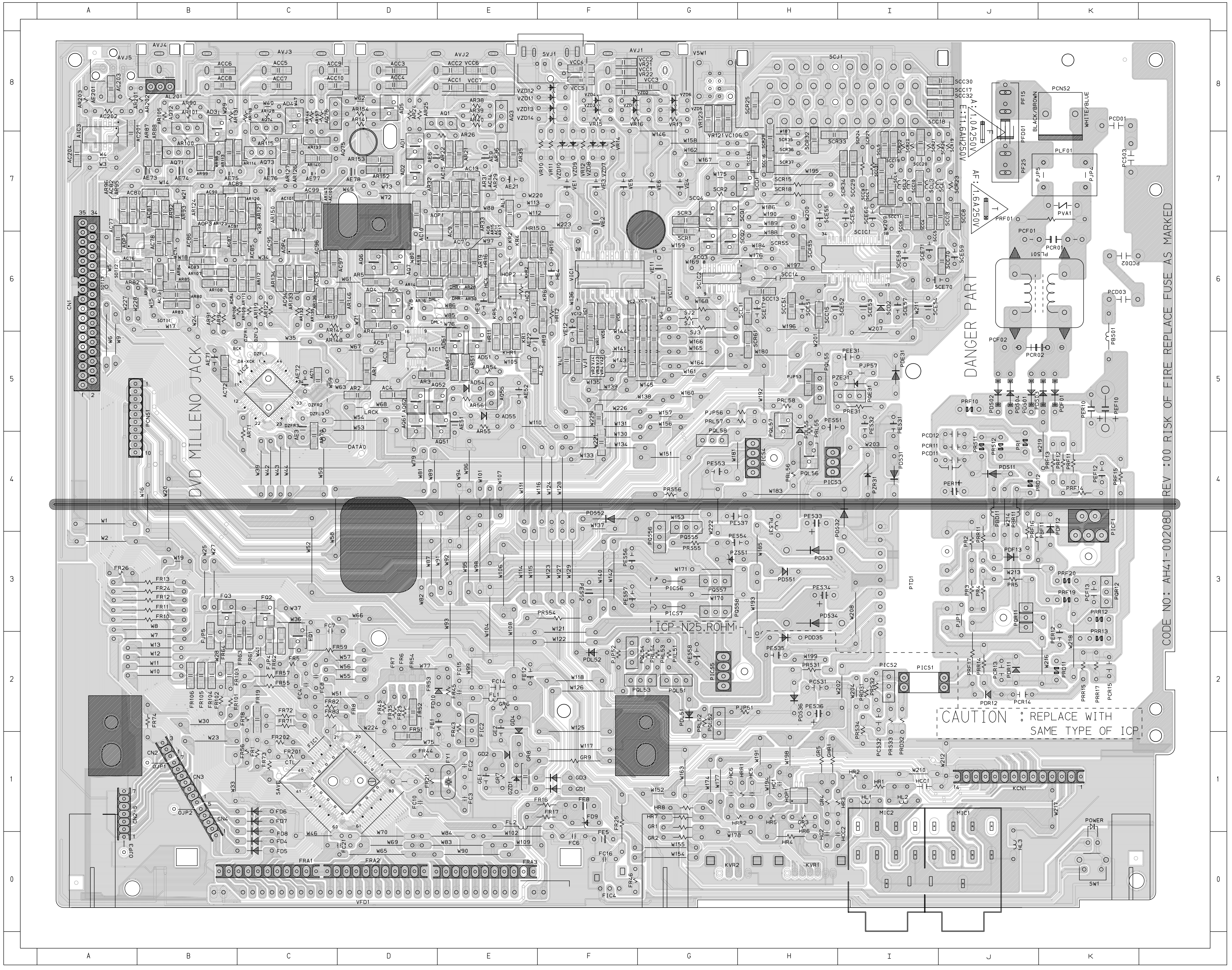
COMPONENT



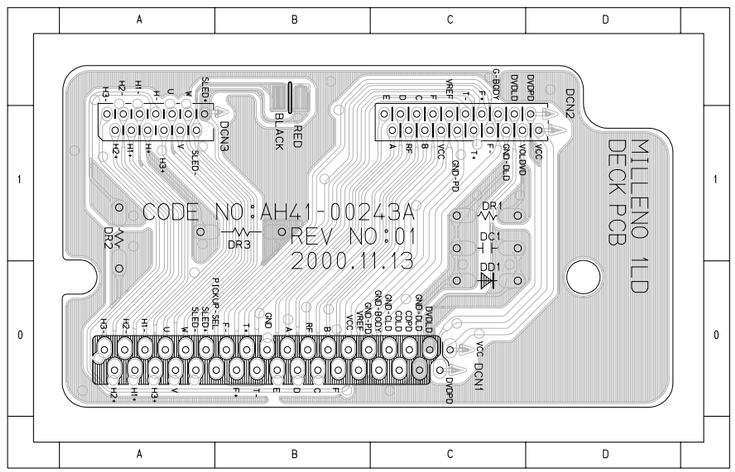
SOLDER SIDE



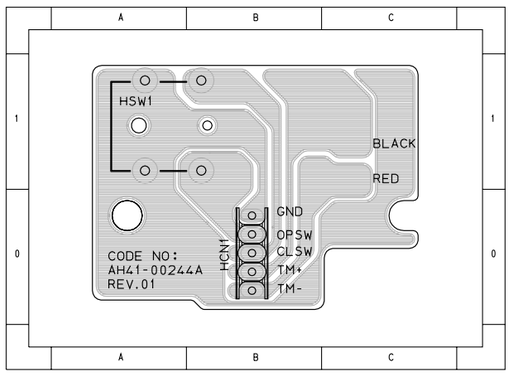
11-2 Jack



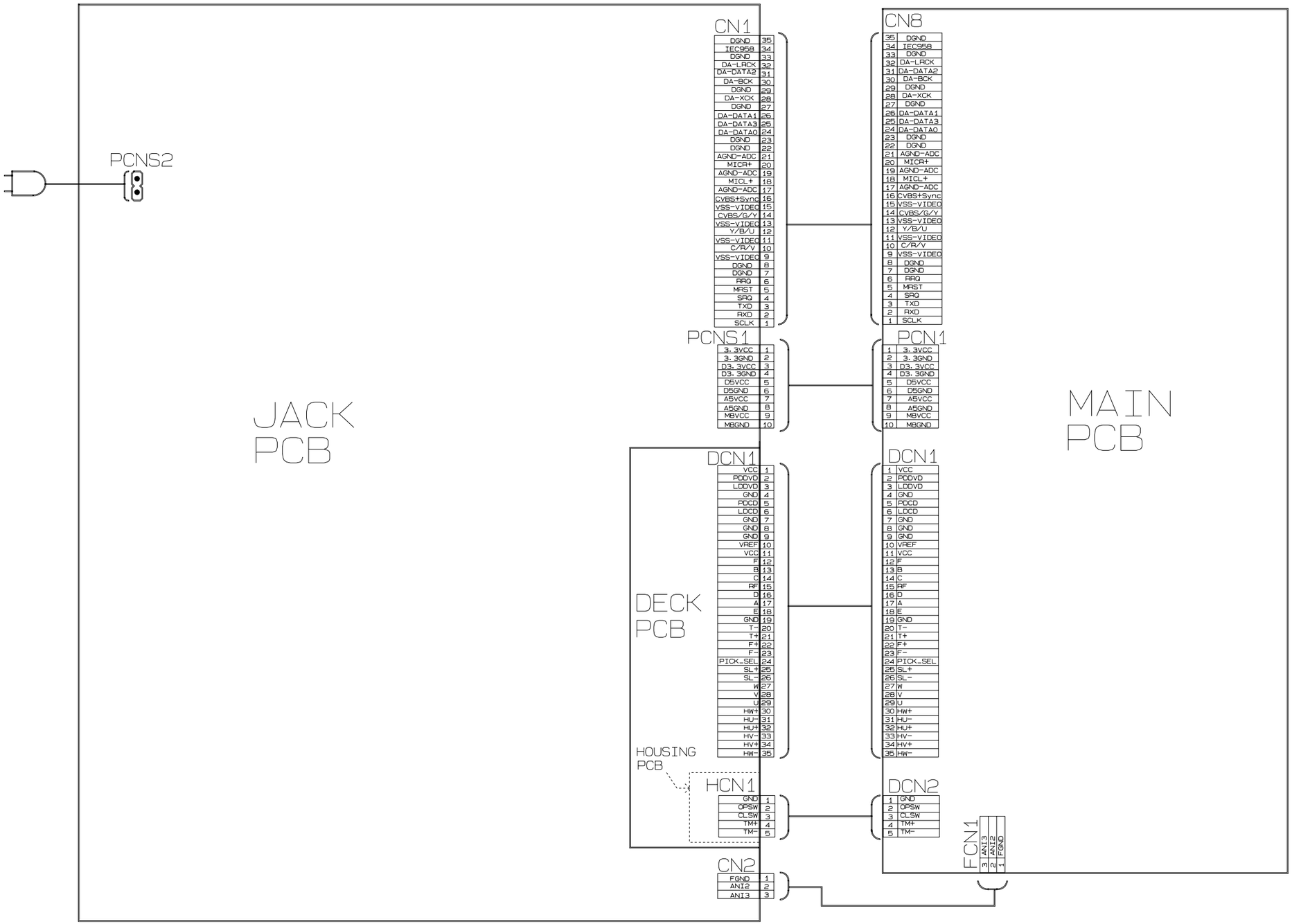
11-3 Deck



11-4 Housing



12. Wiring Diagram



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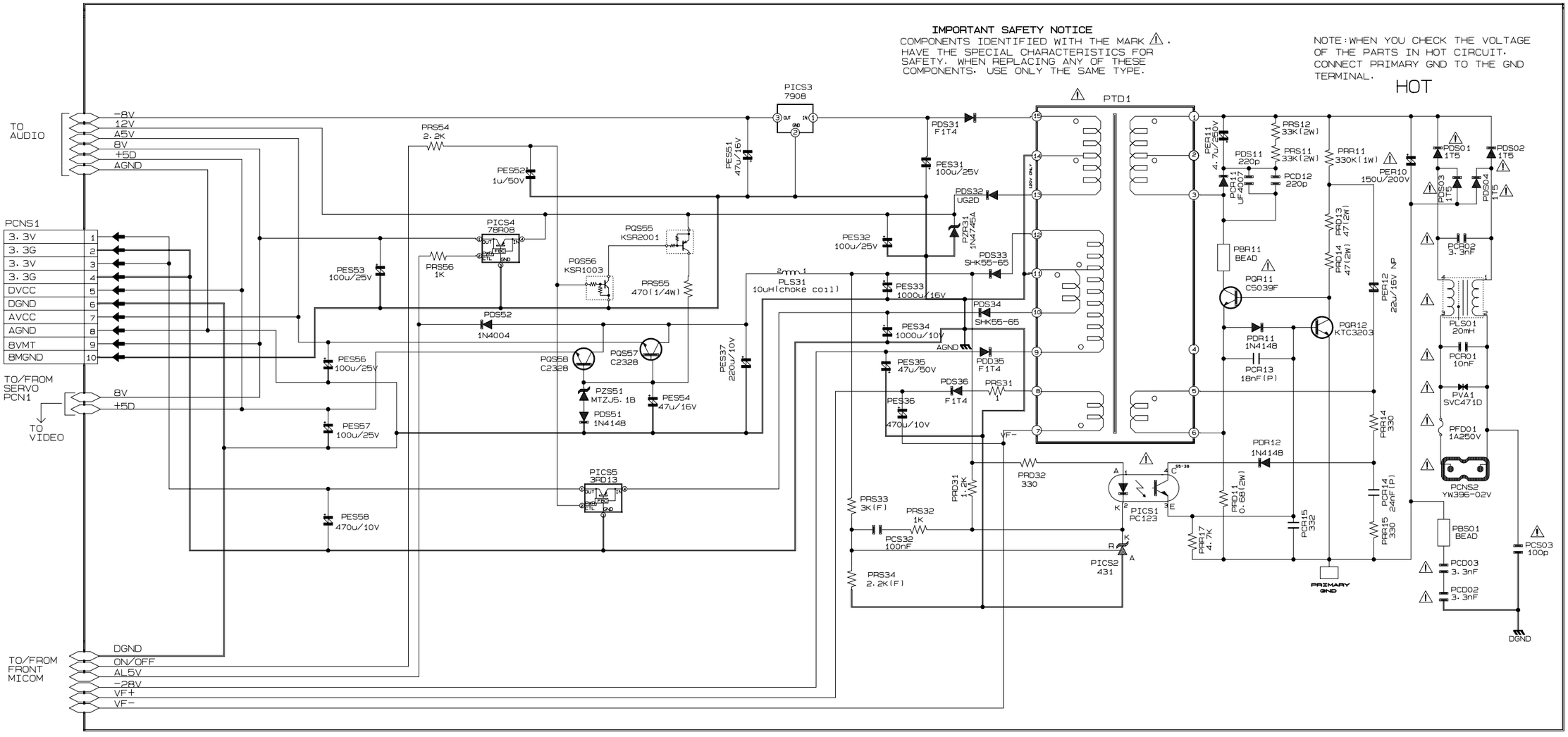
13. Schematic Diagrams

Block Identification of PCB

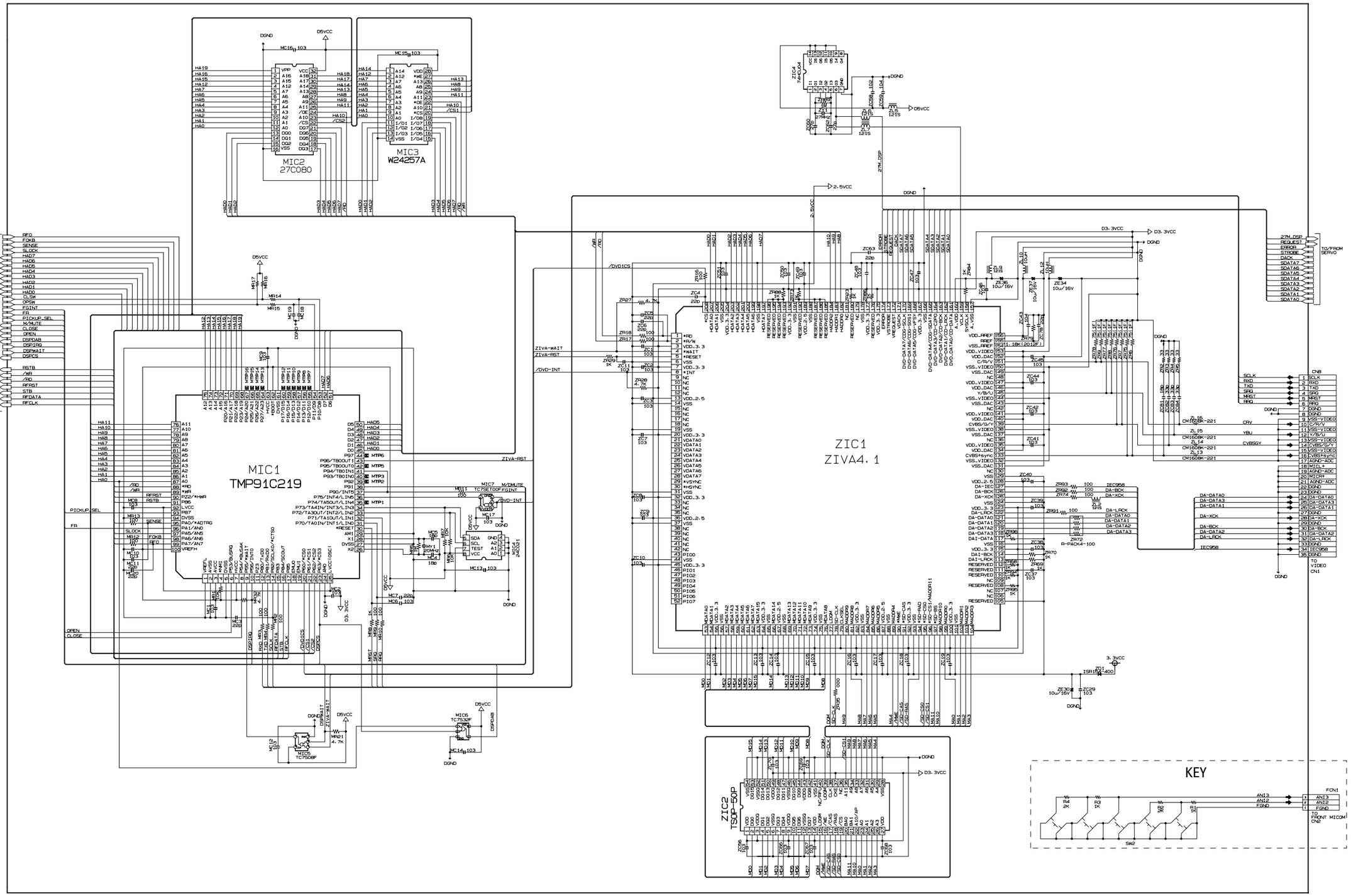
Main PCB (Component Side)

Jack PCB (Conductor Side)

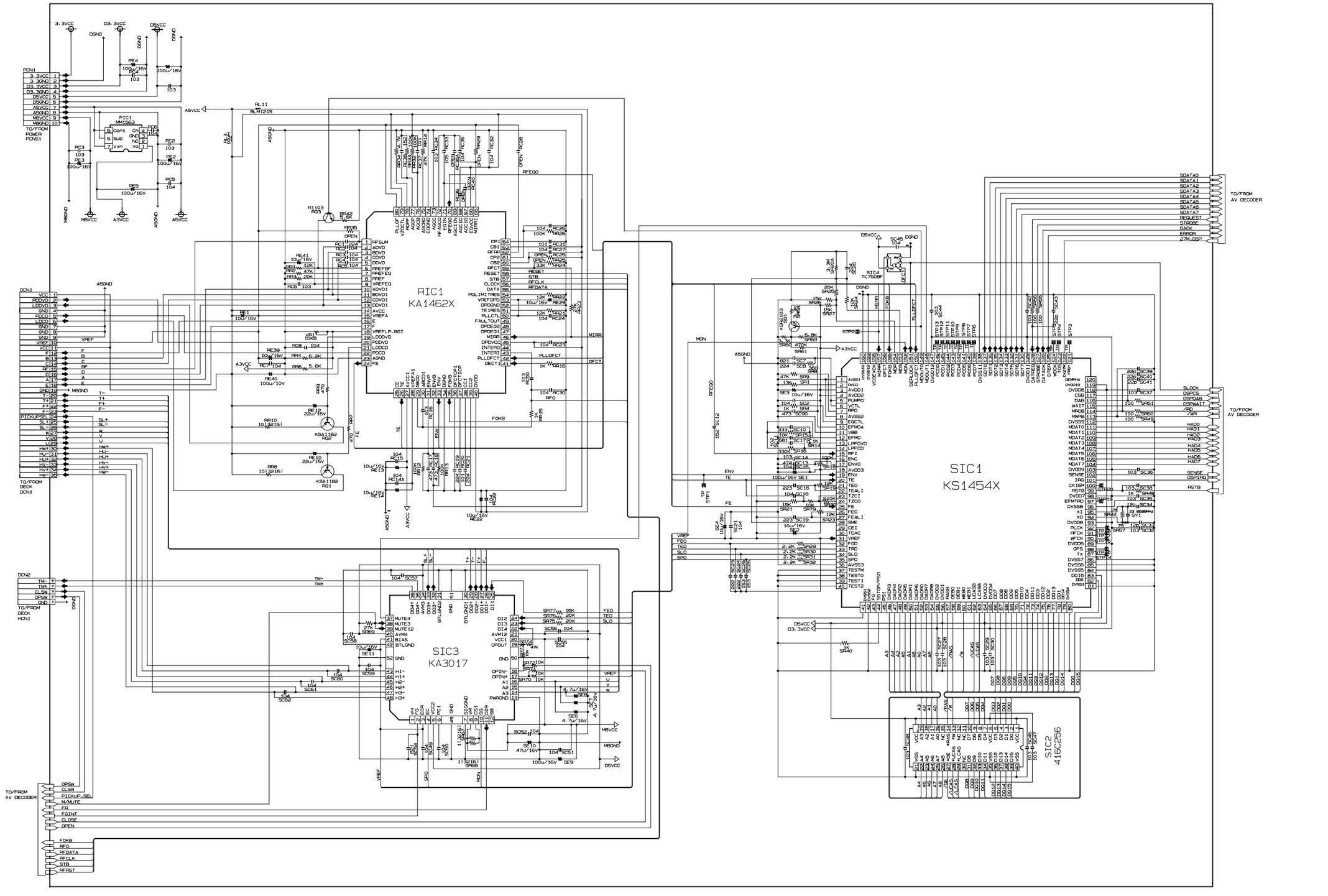
13-1 Power


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:WHEN YOU CHECK THE VOLTAGE OF THE PARTS IN HOT CIRCUIT. CONNECT PRIMARY GND TO THE GND TERMINAL.
HOT
PTD1
TO AUDIO
-8V
12V
A5V
8V
+5D
AGND
PCNS1
3.3V 1
3.3G 2
3.3V 3
3.3G 4
DVCC 5
DGND 6
AVCC 7
AGND 8
8VMT 9
8MGND 10
TO/FROM SERVO PCN1
8V
+5D
TO VIDEO
TO/FROM FRONT MICOM
DGND
ON/OFF
AL5V
-28V
VF+
VF-
PICS3 7908
PRS54 2.2K
PES52 1u/50V
PES51 47u/16V
PICS4 78R08
PRS56 1K
PES53 100u/25V
PQS55 KSR2001
PQS56 KSR1003
PRS55 470(1/4W)
PDS52 1N4004
PES56 100u/25V
PQS58 C2328
PQS57 C2328
PZS51 MTZJ5.1B
PDS51 1N4148
PES54 47u/16V
PES57 100u/25V
PES58 470u/10V
PICS5 3RD13
PES37 220u/10V
PDS31 F1T4
PES31 100u/25V
PDS32 UG2D
PZS31 1N4745A
PES32 100u/25V
PDS33 SHK55-65
PLS31 10uH(choke coil)
PES33 1000u/16V
PDS34 SHK55-65
PES34 1000u/10V
PES35 47u/50V
PDD35 F1T4
PDS36 F1T4
PES36 470u/10V
PRS31 1
PRD32 330
PRD31 1.2K
PRS33 3K(F)
PRS32 1K
PCS32 100nF
PRS34 2.2K(F)
PICS1 PC123
PICS2 431
PER11 4.7u/250V
PDS11 220p
PRS12 33K(2W)
PRS11 33K(2W)
PRR11 330K(1W)
PER10 150u/200V
PCD11 UF4007
PCD12 220p
PDS01 1T5
PDS02 1T5
PDS03 1T5
PDS04 1T5
PBR11 BEAD
PQR11 C5039F
PQR12 KTC3203
PRD13 47(2W)
PRD14 47(2W)
PER12 22u/16V NP
PDR11 1N4148
PCR13 18nF(P)
PDR12 1N4148
PRD11 0.68(2W)
PCR15 332
PRR14 330
PCR14 24nF(P)
PRR15 330
PRIMARY GND
PCR00 3.3nF
PLS01 20mH
PCR01 10nF
PVA1 SVC471D
PFD01 1A250V
PCNS2 YW396-02V
PBS01 BEAD
PCD03 3.3nF
PCD02 3.3nF
PCS03 100p
DGND

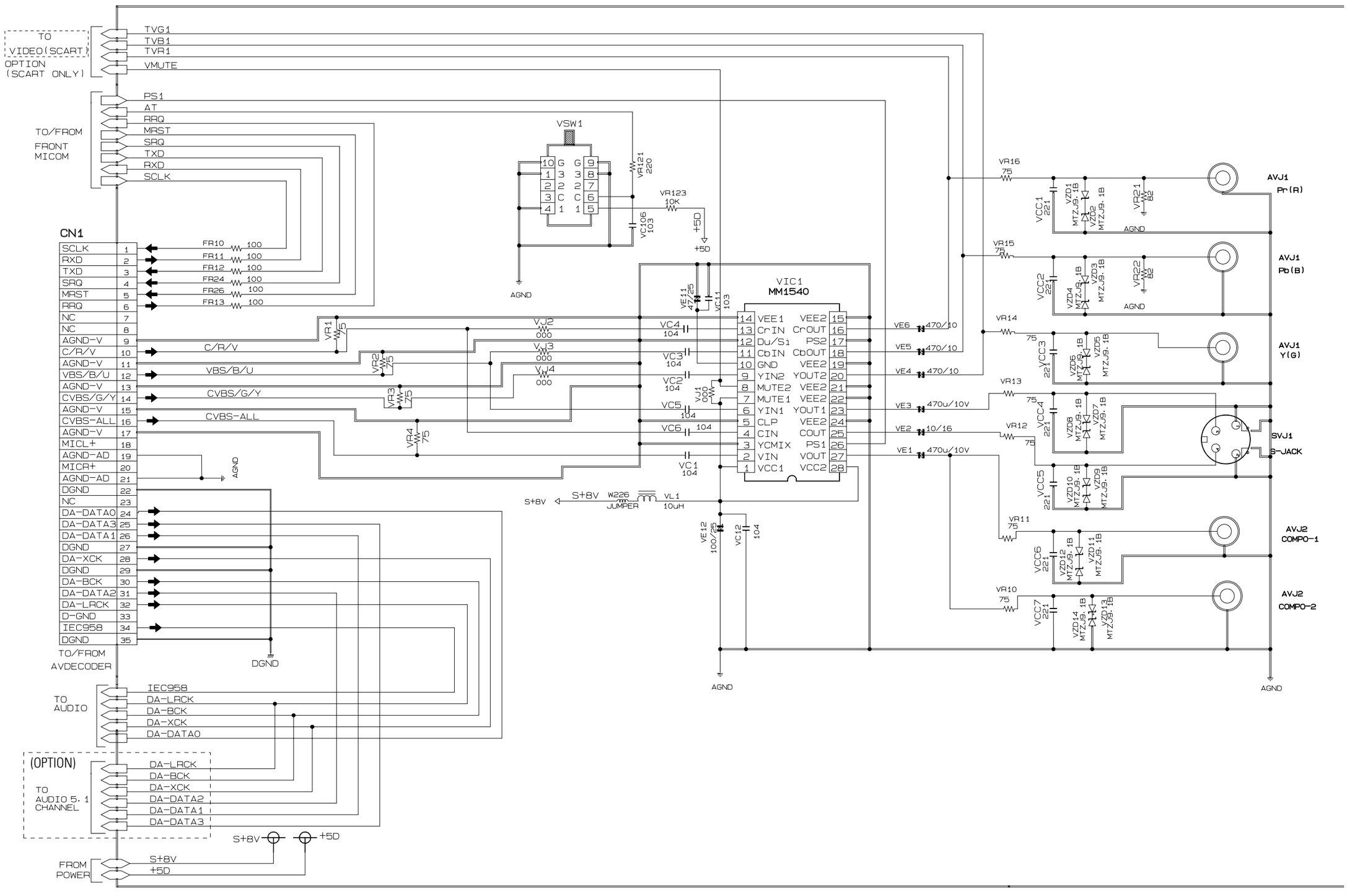
13-2 AV-Decoder/Main-Micom/Key



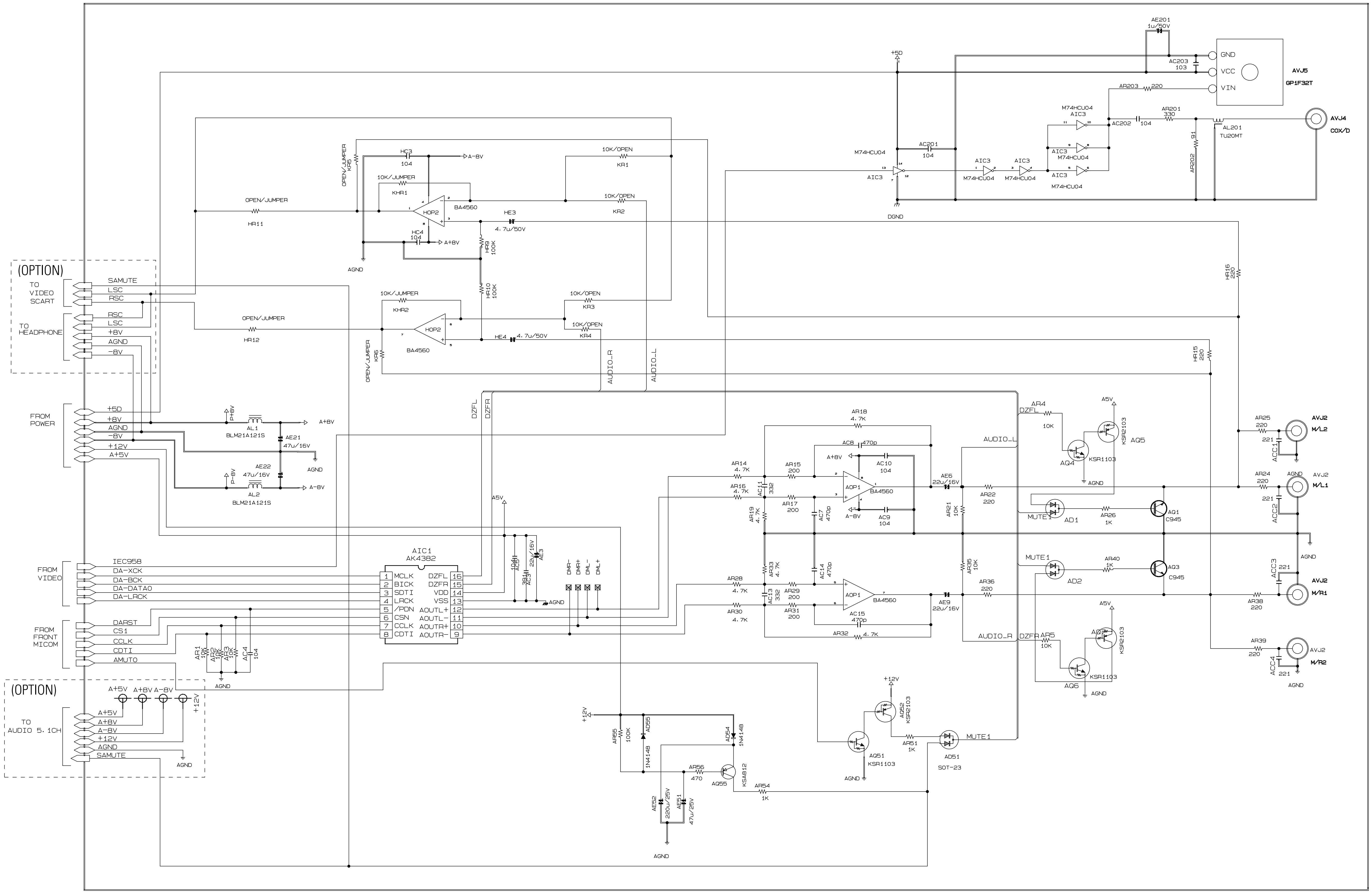
13-3 Servo


RIC1
KA1462X
SIC1
KS1454X
SIC2
416C256
SIC3
KA3017
SIC4
TC7S08F
PCN1
DCN1
DCN2
TO/FROM POWER PCNS1
TO/FROM DECK DCN1
TO/FROM AV DECODER
TO/FROM AV DECODER
3. 3VCC
D3. 3VCC
D5VCC
DGND
A5VCC
A3VCC
M8VCC
M8GND
A5GND
RFEQO
MIRR
DFCT
FOKB
RFO
RFDATA
RFCLK
STB
RFRST
FEO
TEO
SLO
SPO
VREF
MON
ENV
TE
FE
SDATA0
SDATA1
SDATA2
SDATA3
SDATA4
SDATA5
SDATA6
SDATA7
REQUEST
STROBE
DACK
ERROR
27M_DSP
SLOCK
DSPCS
DSPDAB
DSPWAIT
/RD
/WR
HAD0
HAD1
HAD2
HAD3
HAD4
HAD5
HAD6
HAD7
SENSE
DSPIRQ
RSTB
OPSW
CLSW
PICKUP_SEL
M/MUTE
FB
FGINT
CLOSE
OPEN
RFDATA
RFCLK
STB
RFRST

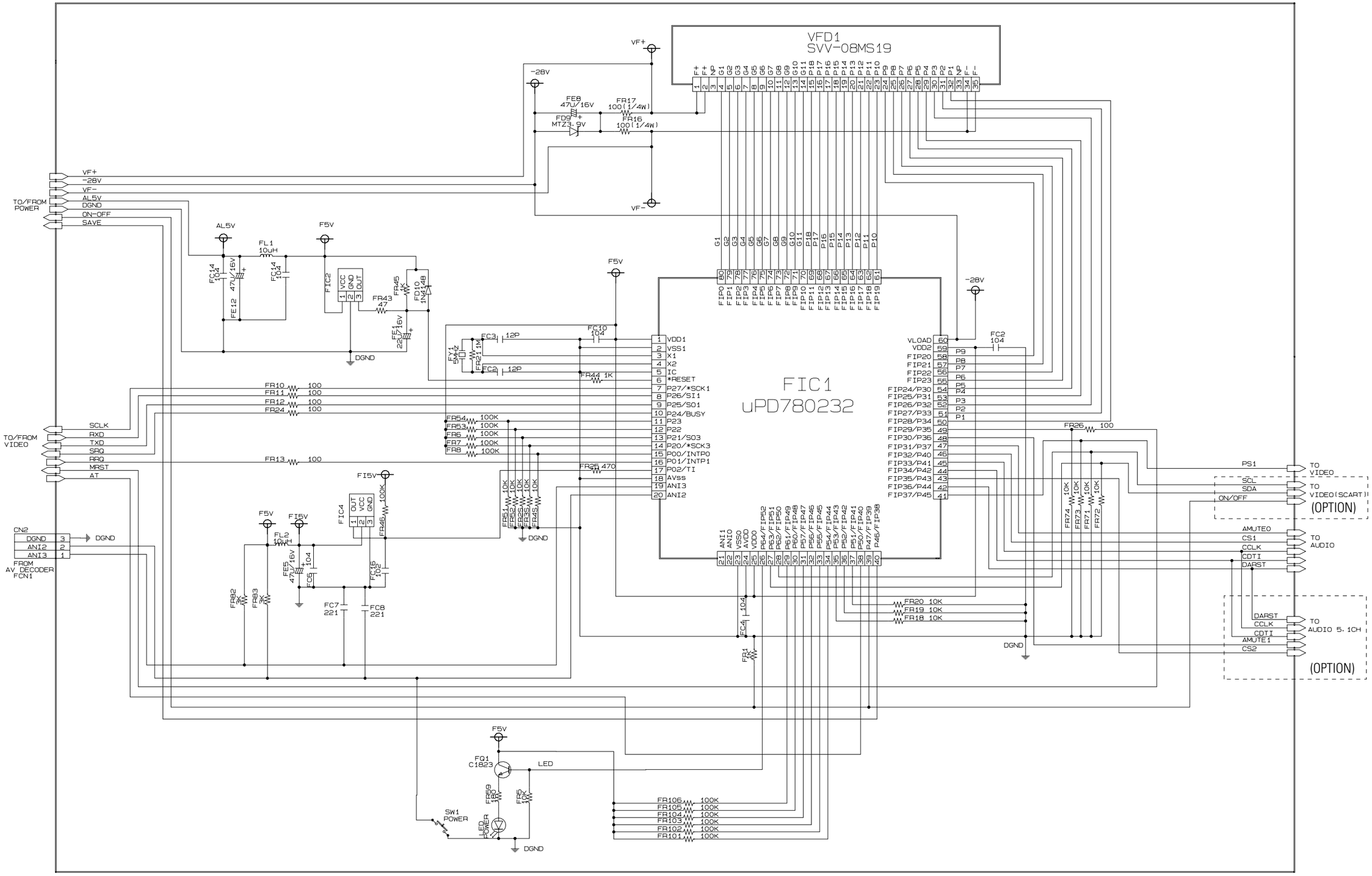
13-4 Video


TO VIDEO(SCART) OPTION (SCART ONLY)
TVG1
TVB1
TVR1
VMUTE
TO/FROM FRONT MICOM
PS1
AT
RRQ
MRST
SRQ
TXD
RXD
SCLK
CN1
SCLK 1
RXD 2
TXD 3
SRQ 4
MRST 5
RRQ 6
NC 7
NC 8
AGND-V 9
C/R/V 10
AGND-V 11
VBS/B/U 12
AGND-V 13
CVBS/G/Y 14
AGND-V 15
CVBS-ALL 16
AGND-V 17
MICL+ 18
AGND-AD 19
MICR+ 20
AGND-AD 21
DGND 22
NC 23
DA-DATA0 24
DA-DATA3 25
DA-DATA1 26
DGND 27
DA-XCK 28
DGND 29
DA-BCK 30
DA-DATA2 31
DA-LRCK 32
D-GND 33
IEC958 34
DGND 35
TO/FROM AVDECODER
FR10 100
FR11 100
FR12 100
FR24 100
FR26 100
FR13 100
VR1 75
VR2 75
VR3 75
VR4 75
C/R/V
VBS/B/U
CVBS/G/Y
CVBS-ALL
AGND
DGND
VSW1
VR121 220
VR123 10K
VC106 103
+5D
VJ2 000
VJ3 000
VJ4 000
VJ1 000
VE11 47/25
VC11 103
VIC1
MM1540
VEE1 14
CrIN 13
Du/Si 12
CbIN 11
GND 10
YIN2 9
MUTE2 8
MUTE1 7
YIN1 6
CLP 5
CIN 4
YCMIX 3
VIN 2
VCC1 1
VEE2 15
CrOUT 16
PS2 17
CbOUT 18
VEE2 19
YOUT2 20
VEE2 21
VEE2 22
YOUT1 23
VEE2 24
COUT 25
PS1 26
VOUT 27
VCC2 28
VC4 104
VC3 104
VC2 104
VC5 104
VC6 104
VC1 104
VE6 470/10
VE5 470/10
VE4 470/10
VE3 470u/10V
VE2 10/16
VE1 470u/10V
S+8V
W226 JUMPER
VL1 10uH
VE12 100/25
VC12 104
AGND
VR16 75
VR15 75
VR14 75
VR13 75
VR12 75
VR11 75
VR10 75
VCC1 221
VCC2 221
VCC3 221
VCC4 221
VCC5 221
VCC6 221
VCC7 221
VZD1 MTZJ9.1B
VZD2 MTZJ9.1B
VZD3 MTZJ9.1B
VZD4 MTZJ9.1B
VZD5 MTZJ9.1B
VZD6 MTZJ9.1B
VZD7 MTZJ9.1B
VZD8 MTZJ9.1B
VZD9 MTZJ9.1B
VZD10 MTZJ9.1B
VZD11 MTZJ9.1B
VZD12 MTZJ9.1B
VZD13 MTZJ9.1B
VZD14 MTZJ9.1B
VR21 W 82
VR22 W 82
AVJ1 Pr(R)
AVJ1 Pb(B)
AVJ1 Y(G)
SVJ1 S-JACK
AVJ2 COMPO-1
AVJ2 COMPO-2
TO AUDIO
IEC958
DA-LRCK
DA-BCK
DA-XCK
DA-DATA0
(OPTION)
TO AUDIO 5.1 CHANNEL
DA-LRCK
DA-BCK
DA-XCK
DA-DATA2
DA-DATA1
DA-DATA3
S+8V
+5D
FROM POWER
S+8V
+5D

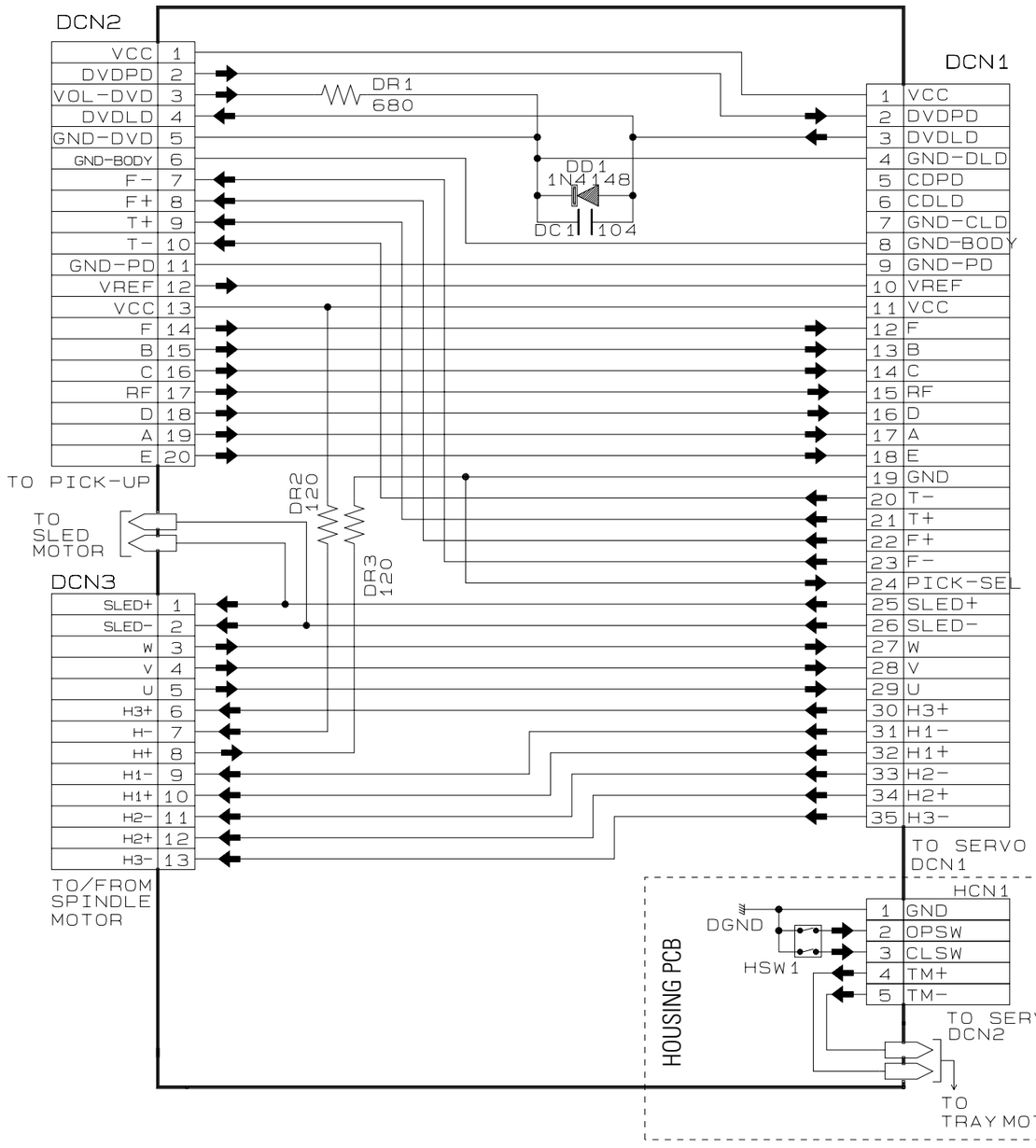
13-5 Audio


(OPTION)
TO VIDEO SCART
TO HEADPHONE
SAMUTE
LSC
RSC
+8V
AGND
-8V
FROM POWER
+5D
+12V
A+5V
FROM VIDEO
IEC958
DA-XCK
DA-BCK
DA-DATA0
DA-LRCK
FROM FRONT MICOM
DARST
CS1
CCLK
CDTI
AMUTO
TO AUDIO 5.1CH
A+5V
A+8V
A-8V
AIC1
AK4382
MCLK
BICK
SDTI
LRCK
/PDN
CSN
CCLK
CDTI
DZFL
DZFR
VDD
VSS
AOUTL+
AOUTL-
AOUTR+
AOUTR-
BA4560
HOP2
AOP1
AUDIO_L
AUDIO_R
MUTE1
AVJ5
GP1F32T
AVJ4
COX/D
AVJ2
M/L2
M/L1
M/R1
M/R2
M74HCU04
AIC3
TU20MT
BLM21A121S
KSR1103
KSR2103
C945
KSA812
1N4148
SOT-23
DGND
AGND

13-6 Front-Micom/VFD Display



13-7 Deck


DCN2
VCC 1
DVDPD 2
VOL-DVD 3
DVDLD 4
GND-DVD 5
GND-BODY 6
F- 7
F+ 8
T+ 9
T- 10
GND-PD 11
VREF 12
VCC 13
F 14
B 15
C 16
RF 17
D 18
A 19
E 20
DR1
680
DD1
1N4148
DC1 104
DCN1
1 VCC
2 DVDPD
3 DVDLD
4 GND-DLD
5 CDPD
6 CDLD
7 GND-CLD
8 GND-BODY
9 GND-PD
10 VREF
11 VCC
12 F
13 B
14 C
15 RF
16 D
17 A
18 E
19 GND
20 T-
21 T+
22 F+
23 F-
24 PICK-SEL
25 SLED+
26 SLED-
27 W
28 V
29 U
30 H3+
31 H1-
32 H1+
33 H2-
34 H2+
35 H3-
TO PICK-UP
TO SLED MOTOR
DR2 120
DR3 120
DCN3
SLED+ 1
SLED- 2
W 3
V 4
U 5
H3+ 6
H- 7
H+ 8
H1- 9
H1+ 10
H2- 11
H2+ 12
H3- 13
TO/FROM SPINDLE MOTOR
TO SERVO DCN1
HOUSING PCB
HCN1
DGND
HSW1
1 GND
2 OPSW
3 CLSW
4 TM+
5 TM-
TO SERVO DCN2
TO TRAY MOTOR

HITACHI

DV-P315U/P313U

DV-P315U
DV-P313U

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