

Service Manual



DV-310-S

ORDER NO.
RRV3756

DVD PLAYER

DV-310-S

DV-310-K

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Remarks
DV-310-S	WYXZT5	AC 220 V to 240V	2	
DV-310-S	WSXZT5	AC 220 V to 240V	5	
DV-310-K	WYXZT5	AC 220 V to 240V	2	
DV-310-K	WSXZT5	AC 220 V to 240V	5	



For details, refer to "Important Check Points for good servicing".

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SAFETY INFORMATION

A

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

B

WARNING !

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

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LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 650 nm
FOR CD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 780 nm

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LABEL CHECK

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Location: inside of the unit

CAUTION	: CLASS 1M LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.	726000A140 SH
Vorsicht	: KLASSE 1M LASER Strahlung: Bei geöffnetem Gerät nicht mit optischen Geräten in den Laserstrahl blicken.	
PRECAUCIÓN	: RADIACIÓN LASER CLASE 1M. AL ABRIR NO MIRAR DIRECTAMENTE CON INSTRUMENTOS ÓPTICOS.	
VIKTIGT	: KLASSE 1M LASER STRÅLNING: NÅR APPARATEN ÄR ÖPPEN, TITTA INTE RAKT IN I DEN, SPECIELLT INTE OM DU HAR GLASÖGON PÅ DIG.	
Varoitus!	: Luokka 1M:n lasersäteily: Älä koskaan katso laitteen sisään sen ollessa auki-ei myöskään silmälaseilla tai muilla optisilla laitteilla!	
ADVARSEL	: LASERSTRÅLER KLASSE 1M KIG IKKE DIREKTE IND I APPARATET, NÅR DETTE ER ÅBENT. IS/ER IKKE MED BRILLER ELLER ANDRE OPTISKE OBJEKTER.	

D

(Printed on the Rear Panel)

Additional Laser Caution

- Laser diode is driving with Q2303, Q2305(650nm LD) and Q2302, Q2304(780nm LD) on the DVD MT PCB Assy. Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
 - In the test mode *, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.
- When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

* : See page 26.

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DV-310-S

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[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C. Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 WHEN REPLACING DVD DECK

WHEN REPLACING DVD DECK

[Removing the DVD Deck]

Before removing Pick Up PCB and DVD PCB connector, short circuit the position shown in **Fig. 1** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[Installing the DVD Deck]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

NOTE

- Before your operation, please read "PREPARATION OF SERVICING".
- Use the Lead Free solder.
- Manual soldering conditions
 - Soldering temperature: $320 \pm 20^{\circ}\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
- When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to prevent the Flux smoke from it.

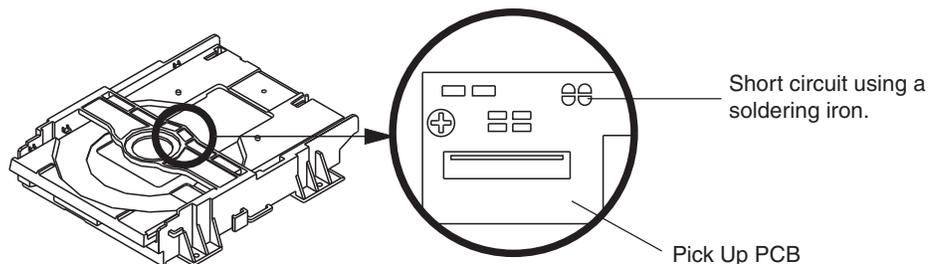


Fig. 1

1.3 DISC REMOVAL METHOD

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Slide the Rack Loading (White) toward the arrow direction by using a minus driver to release the lock.
(Refer to Fig. 1)
2. Manually open the Tray.

NOTE: Please strongly pushing Rack Loading (White) to release the lock because the tray doesn't go out easily.

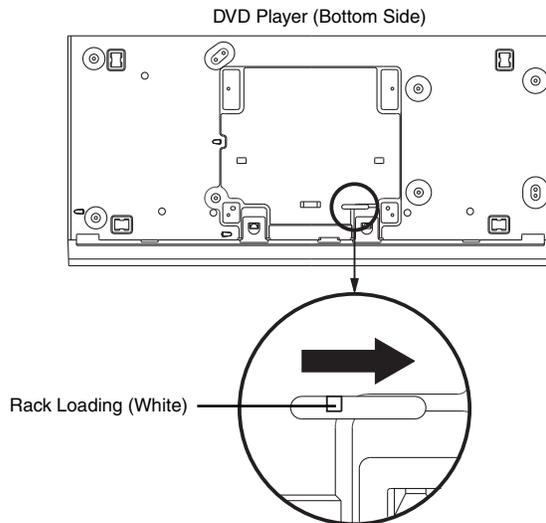


Fig. 1

PARENTAL CONTROL - RATING LEVEL 4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Set the DVD to the Stand-by Mode.
2. Press and hold the 'STOP' key on the front panel.
3. Simultaneously press and hold the POWER key on the front panel.
4. The 4 digit password has now been cleared.

NOTE: The above procedure will reset ALL of the player's settings to the default factory state.

PREPARATION OF SERVICING

The laser diode used for a pickup head may be destroyed with external static electricity. Moreover, even if it is operating normally after repair, when static electricity discharge is received at the time of repair, the life of the product may be shortened. Please perform the following measure against static electricity, be careful of destruction of a laser diode at the time of repair.

- Place the unit on a workstation equipped to protect against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

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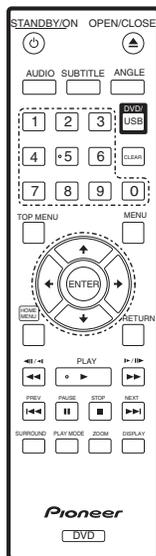
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2. SPECIFICATIONS

2.1 ACCESSORIES

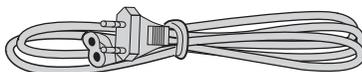
● Accessories

- Remote control x1
(076E0PP031:DV-310-S)
(076E0PP041:DV-310-K)



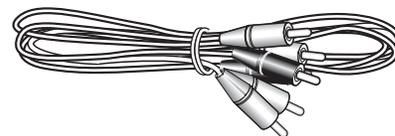
A detailed line drawing of the Pioneer DV-310-S remote control. It features a standard numeric keypad (0-9), a power button, and various function buttons including AUDIO, SUBTITLE, ANGLE, MENU, ENTER, and playback controls like PLAY, PAUSE, and STOP. The Pioneer logo and 'DVD' indicator are visible at the bottom.

- Power cable x1
(1206158802)



A line drawing of a power cable with a standard AC power plug on one end and a two-prong connector on the other.

- Audio / Video cable(1.2m) x1
(red/white/yellow)
(06CPBA2006)



A line drawing of an audio/video cable with three RCA connectors (red, white, and yellow) on one end and a standard AC power plug on the other.

- Dry cell batteries x2
(AA/R6P)



A line drawing of two AA/R6P dry cell batteries.

- Warranty Card
- Operating Instructions

DV-310-S

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2.2 SPECIFICATIONS

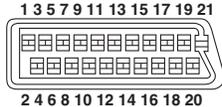
General

Power requirements. AC 220V to 240V, 50Hz/60Hz
 Power consumption. 11W
 Power consumption (standby). 0.8W
 Weight. 1.7kg
 Dimensions
 420mm (W) x 49.5mm (H) x 215mm (D)
 Operating temperature +5°C to +35°C
 Operating humidity 5% to 85% (no condensation)

AV Connector

(21-pin connector assignment)

AV connector output 21-pin connector
 This connector provides the video and audio signals for connection to a compatible colour TV or monitor.



PIN no.
 1. Audio 2/R out
 3. Audio 1/L out
 4. GND
 7. B out
 8. Status
 11. G out
 15. R out
 17. GND
 19. Video out
 21. GND

Component video output

Y (luminance) - Output level 1Vp-p (75Ω)
 P_B (color) - Output level. 0.7Vp-p (75Ω)
 P_R (color) - Output level. 0.7Vp-p (75Ω)
 Jack RCA

Video output

Output level 1Vp-p (75Ω)
 Jack RCA

Audio output (1 stereo pair)

Output level. During audio output
 200mVrms (1kHz, -20dB)
 Number of channels. 2
 Jacks RCA

Digital audio characteristics

Frequency response. 4Hz to 44kHz
 S/N ratio 115dB
 Dynamic range 88dB
 Total harmonic distortion. 0.0065%
 Wow and flutter Limit of measurement
 (±0.001%W. PEAK) or lower

Digital output

Coaxial digital output. RCA

Accessories

Remote control. 1
 AA/R6P dry cell batteries. 2
 Audio/video cable. 1
 Power cable. 1
 Warranty card. 1
 Operating instructions

The specifications and design of this product are subject to change without notice, due to improvement.

2.3 DISC/CONTENT FORMAT

Disc/content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format—see below for further compatibility information.

Please also note that recordable discs cannot be recorded using this player.



- This unit will play DVD+R/+RW discs.
-  is a trademark of DVD Format/Logo Licensing Corporation.
-  is a trademark of FUJIFILM Corporation.
- Also compatible with KODAK Picture CD

This player supports the IEC's SuperVCD standard. Compared to the VideoCD standard, SuperVCD offers superior picture quality, and allows two stereo soundtracks to be recorded. SuperVCD also supports the widescreen size.



About DualDisc playback

A DualDisc is a new two-sided disc, one side of which contains DVD content video, audio, etc. while the other side contains non-DVD content such as digital audio material.

The non-DVD, audio side of the disc is not compliant with the CD audio specification and therefore may not play.

The DVD side of a DualDisc plays in this product.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

CD-R/-RW compatibility

- Compatible formats: CD-audio, Video CD/Super VCD, ISO 9660 CD-ROM* containing MP3, WMA, MPEG-4 AAC, JPEG or DivX video/WMV files
*ISO 9660 Level 1 or 2 compliant. CD physical format: Mode1, Mode2 XA Form1. Romeo and Joliet file systems are both compatible with this player.
- Multi-session playback: No
- Unfinalized disc playback: No
- File structure (may differ): Up to 299 folders on a disc; up to 648 folders and files (combined) within each folder

DVD+R/+RW compatibility

Only DVD+R/DVD+RW discs recorded in 'Video Mode (DVD Video Mode)' which have been finalized, can be played back. However, some editing made during the recording may not be played back accurately.

DVD-R/-RW compatibility

- Compatible formats: DVD-Video, Video Recording (VR)*
* Edit points may not play exactly as edited; screen may go momentarily blank at edited points.
- Unfinalized playback: No
- MP3/WMA/MPEG-4 AAC/JPEG or DivX video/WMV file playback on DVD-R/-RW: Yes

Compressed audio compatibility

- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA), MPEG-4 AAC
- Sampling rates: 32kHz, 44.1kHz or 48kHz
- Bit-rates: Any (128 kbps or higher recommended)
- VBR (variable bit rate) MP3/WMA/MPEG-4 AAC playback: No
- WMA lossless encoding compatible: No
- DRM (Digital Rights Management) compatible: No (DRM-protected audio files will *not* play in this player)
- File extensions: .mp3, .wma, .m4a (these must be used for the player to recognize MP3, WMA and MPEG-4 AAC files—do not use for other file types)

About MPEG-4 AAC

Advanced Audio Coding (AAC) is at the core of the MPEG-4 AAC standard, which incorporates MPEG-2 AAC, forming the basis of the MPEG-4 audio compression technology. The file format and extension used depend on the application used to encode the AAC file. This unit plays back AAC files encoded by iTunes® bearing the extension '.m4a'. DRM-protected files will not play, and files encoded with some versions of iTunes® may not play, or filenames may display incorrectly.

Apple and iTunes® are trademarks of Apple Inc., registered in the U.S. and other countries.

WMA (Windows Media™ Audio) compatibility

This player can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation. WMA content can be encoded by using Windows Media Player for Windows XP, Windows Media Player 9 or Windows Media Player 10 series.

Windows Media™ is a trademark of Microsoft Corporation.

This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from Microsoft Licensing, Inc.

About DivX video

DivX is a digital videoformat created by DivX, Inc. This player can play DivX videos burned on CD-R/-RW/-ROM discs. Keeping the same terminology as DVD-Video, individual DivX video files are called "Titles". When naming files/titles on a CD-R/-RW disc prior to burning, keep in mind that by default they will be played in alphabetical order.

DivX video compatibility

- Official DivX® Ultra Certified product.
- Plays all versions of DivX® video (including DivX® 6) with standard playback of DivX® media files.
- File extensions: .avi and .divx (these must be used for the player to recognize DivX video files). *Note that all files with the .avi extension are recognized as MPEG4, but not all of these are necessarily DivX video files and therefore may not be playable on this player.*

JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.2* still image files up to a resolution of 3072 x 2048.
**File format used by digital still cameras.*
- Progressive JPEG compatible: No
- File extensions: .jpg (must be used for the player to recognize JPEG files—do not use for other file types)

PC-created disc compatibility

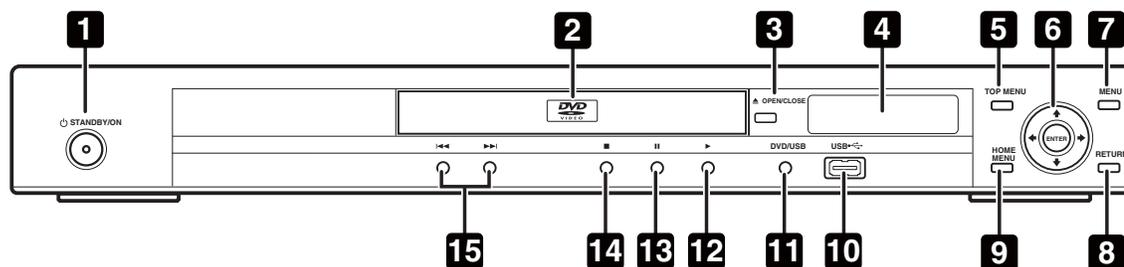
Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

Discs recorded in packet write mode (UDF format) are not compatible with this player.

Check the DVD-R/-RW or CD-R/-RW software disc boxes for additional compatibility information.

2.4 PANEL FACILITILES

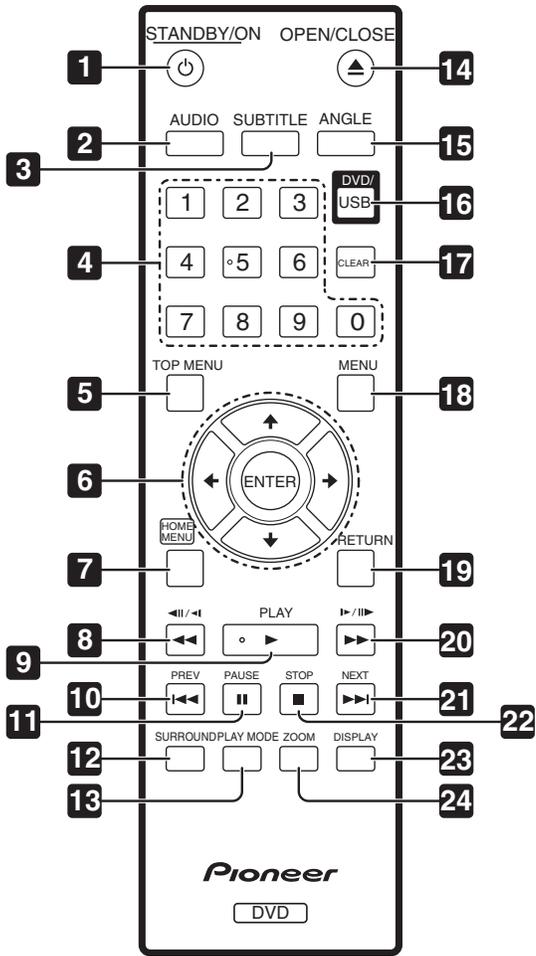
Front panel



- 1** **STANDBY/ON**
Press to switch the player on or into standby.
- 2** **Disc tray**
- 3** **OPEN/CLOSE**
Press to open or close the disc tray.
- 4** **Display**
- 5** **TOP MENU**
Displays the 'top menu' of a DVD disc —this varies with the disc.
- 6** **ENTER & cursor buttons**
Selects the current menu option.
- 7** **MENU**
Displays a DVD disc (or DiviX media files) menu —this varies with the disc and may be the same as the 'top menu'.
- 8** **RETURN**
Returns to the previously displayed menu screen.
- 9** **HOME MENU**
Display/exit the on-screen display.
- 10** **USB port (Type A)**
- 11** **DVD/USB**
Press to turn to USB mode and return to DVD mode.
- 12** **▶**
Press to start or resume playback.
- 13** **||**
Press to pause playback. Press again to restart.
- 14** **■**
Press to stop the disc (you can resume playback by pressing ▶ (play)).
- 15** **◀◀ and ▶▶**
Skips to the start of the current track, title or chapter, then to previous tracks/titles/chapters. Skips to the next track, title or chapter.

Remote control

A
B
C
D
E
F



- 9 ▶ PLAY**
Press to start or resume playback.
- 10 ◀◀ PREV**
Skips to the start of the current track, title or chapter, then to previous tracks/titles/chapters.
- 11 || PAUSE**
Press to pause playback; press again to restart.
- 12 SURROUND**
Press to switch on/off virtual Surround.
- 13 PLAY MODE**
Press to display the Play Mode menu. (You can also get to the Play Mode menu by pressing **HOME MENU** and selecting Play Mode).
Press to jump to the beginning of the current
- 14 ▲ OPEN/CLOSE**
Press to open or close the disc tray.
- 15 ANGLE**
Press to change the camera angle during DVD multi-angle scene playback.
- 16 DVD/USB**
Press to turn to USB mode and return to DVD mode.
- 17 CLEAR**
Press to clear a numeric entry.
- 18 MENU**
Displays a DVD disc (or DiviX media files) menu —this varies with the disc and may be the same as the 'top menu'.
- 19 RETURN**
Press to return to a previous menu screen.
- 20 ▶▶ and ||▶ / ▶**
Use for forward slow motion playback, frame advance and forward scanning.
- 21 ▶▶| NEXT**
Press to jump to the next chapter or track.
- 22 ■ STOP**
Press to stop the disc (you can resume playback by pressing ▶(play)).
- 23 DISPLAY**
Press to display information about the disc playing.
- 24 ZOOM**
Press to change the zoom level.

- 1 ⏻ STANDBY/ON**
Press to switch the player on or into standby.
- 2 AUDIO**
Press to select the audio channel or language.
- 3 SUBTITLE**
Press to select a subtitle option.
- 4 Number buttons**
- 5 TOP MENU**
Press to display the top menu of a DVD disc.
- 6 ENTER & cursor buttons**
Use to navigate on-screen displays and menus. Press **ENTER** to select an option or execute a command.
- 7 HOME MENU**
Display/exit the on-screen display.
- 8 ◀◀ and ◀| / ◀||**
Use for reverse slow motion playback, frame reverse and reverse scanning.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

[1] Check points after servicing (DVD player)

To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedure	Check points
1	Confirm the firmware version on Service Mode.	The version of the firmware must be latest. Update firmware to the latest one, if it is not the latest.
2	Confirm whether the customer complain has been solved. If the customer complain occurs with the specific disc, use it for the operation check.	The customer complain must not be reappeared. Video, audio and operations must be normal.
3	Confirm playback error rates at the innermost and outermost tracks by using the following disc. DVD test disc (GGV1025)	The error rates must be less than 5.0e-4.
4	Play back a DVD. (Menu operation, Title/chapter search)	Audio and operations must be normal.
5	Play back a DVD. (Menu operation, Title/chapter search)	Video, audio and operations must be normal.
6	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio:

Items to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

[2] Cleaning

- Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools	Remark
Pickup lenses	Cleaning liquid : GEM1004	
	Cleaning paper : GED-008	

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3.2 PCB LOCATIONS

A

B

C

D

The diagram shows an exploded view of a DVD player chassis. Four PCB assemblies are labeled with arrows pointing to their respective locations:

- OPERATION PCB ASSY**: Located on the front panel.
- POWER PCB ASSY**: Located at the top of the chassis.
- DVD MECHA ASSY**: Located in the center of the chassis.
- DVD MT PCB ASSY**: Located on the right side of the chassis.

Arrows indicate the assembly sequence: OPERATION PCB ASSY is inserted into the front panel, followed by the DVD MECHA ASSY, then the DVD MT PCB ASSY, and finally the POWER PCB ASSY.

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
-----------------	--------------------	-----------------

LIST OF ASSEMBLIES

1..	DVD MT PCB ASSY	A2L103A130
-----	-----------------	------------

1..	OPERATION PCB ASSY(WYXZT5)	A2L103A270
-----	----------------------------	------------

1..	OPERATION PCB ASSY(WSXZT5)	A2L109A270
-----	----------------------------	------------

⚠	1..POWER PCB ASSY	A2L103A240
---	-------------------	------------

1..	DVD MECHA ASSY	A2L101A650
-----	----------------	------------

F

14

DV-310-S

1

2

3

4

3.3 JIGS LIST

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	diagnosis
DVD Test Disc (DVD-Video,NTSC)	GGV1025	Operation Check
DVD Test Disc (DVD-Video,PAL)	GGV1101	Operation Check
CD Test Disc	STD-905	Operation Check

■ Lubricants and Glues list

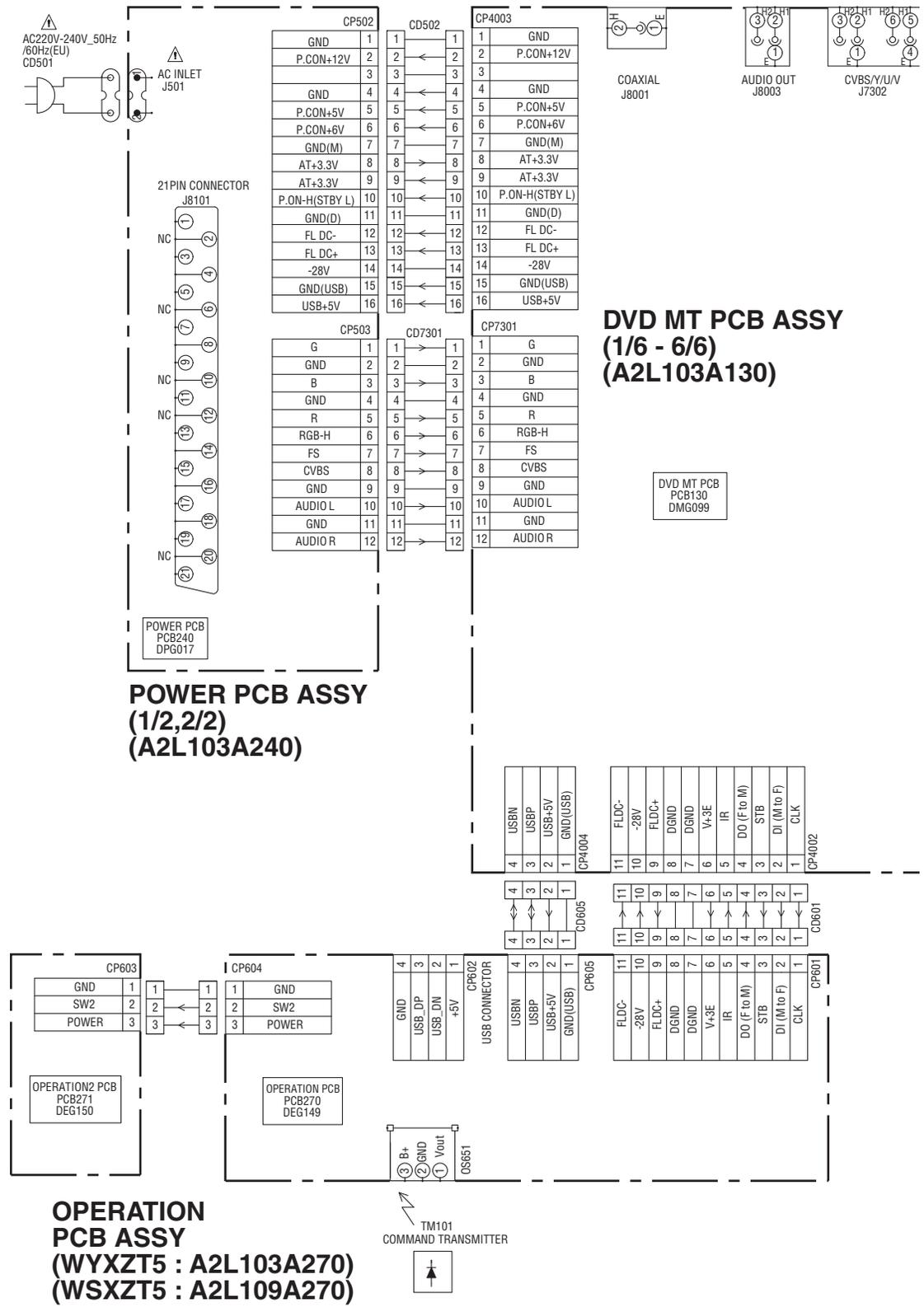


Name	Lubricants and Glues No.	Remark
Daifree	GEM1036 (ZLX-ME413A)	Refer to "9.3 DVD MECHA SECTION"
Grease	GYA1001 (ZLB-PN397B)	Refer to "9.3 DVD MECHA SECTION"
Grease	GEM1018	Refer to "9.3 DVD MECHA SECTION"

4. BLOCK DIAGRAM

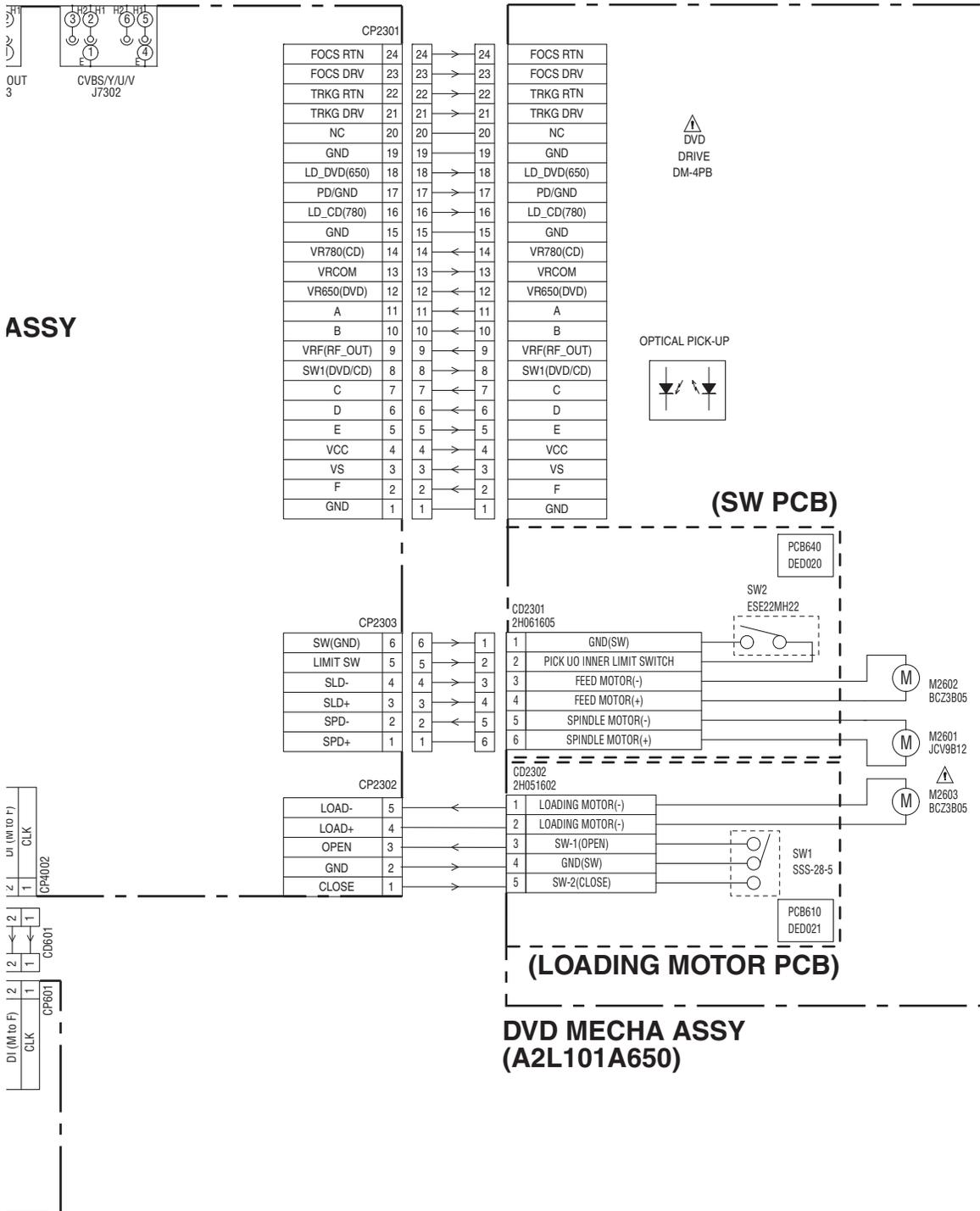
4.1 OVERALL WIRING DIAGRAM

A
B
C
D
E
F



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: SINCE THESE PARTS MARKED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL. CRITICAL FOR SAFETY, USE OF DESCRIBED IN PARTS LIST IS

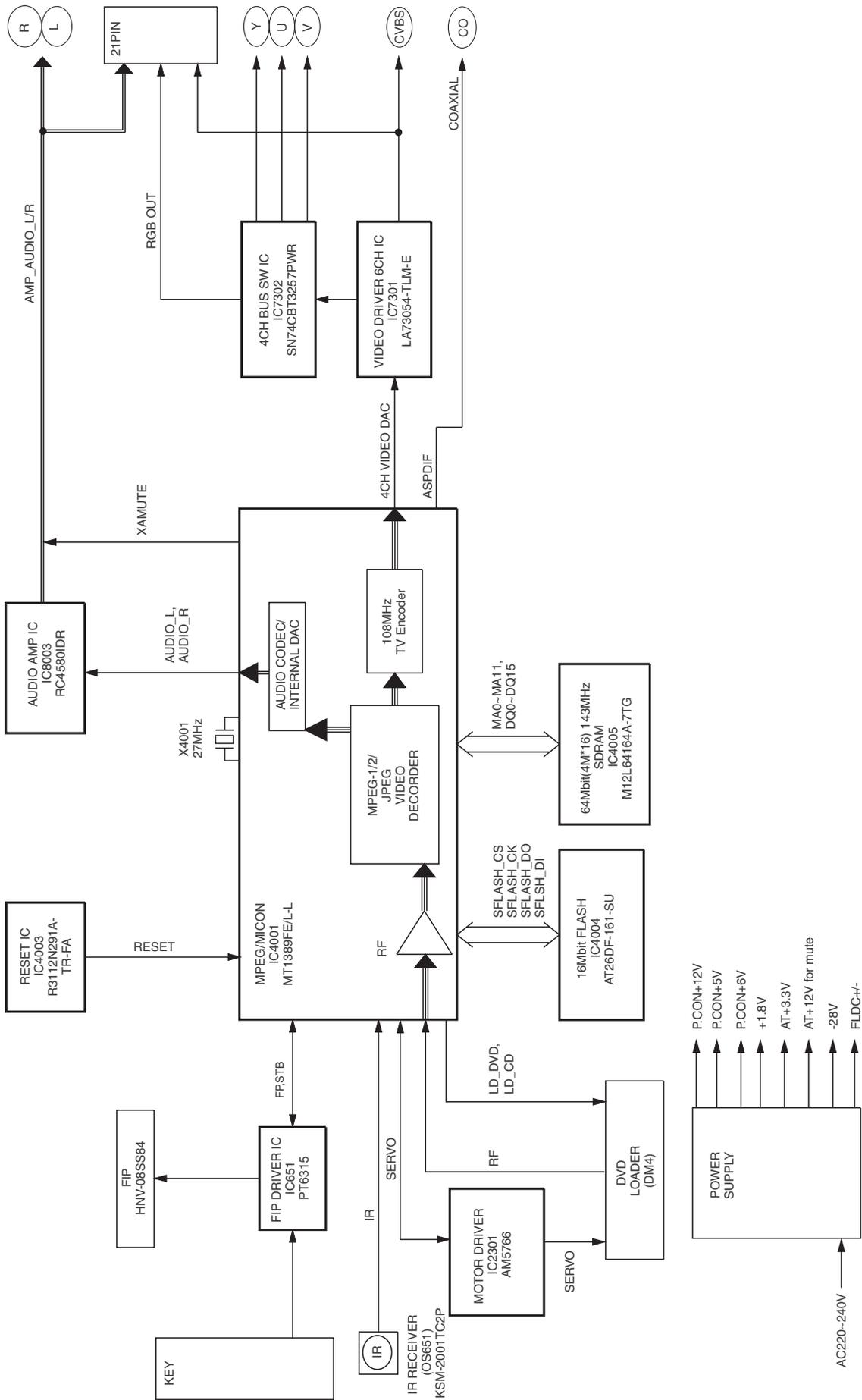


ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

E THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONLY THOSE DESCRIBED IN PARTS LIST ONLY.

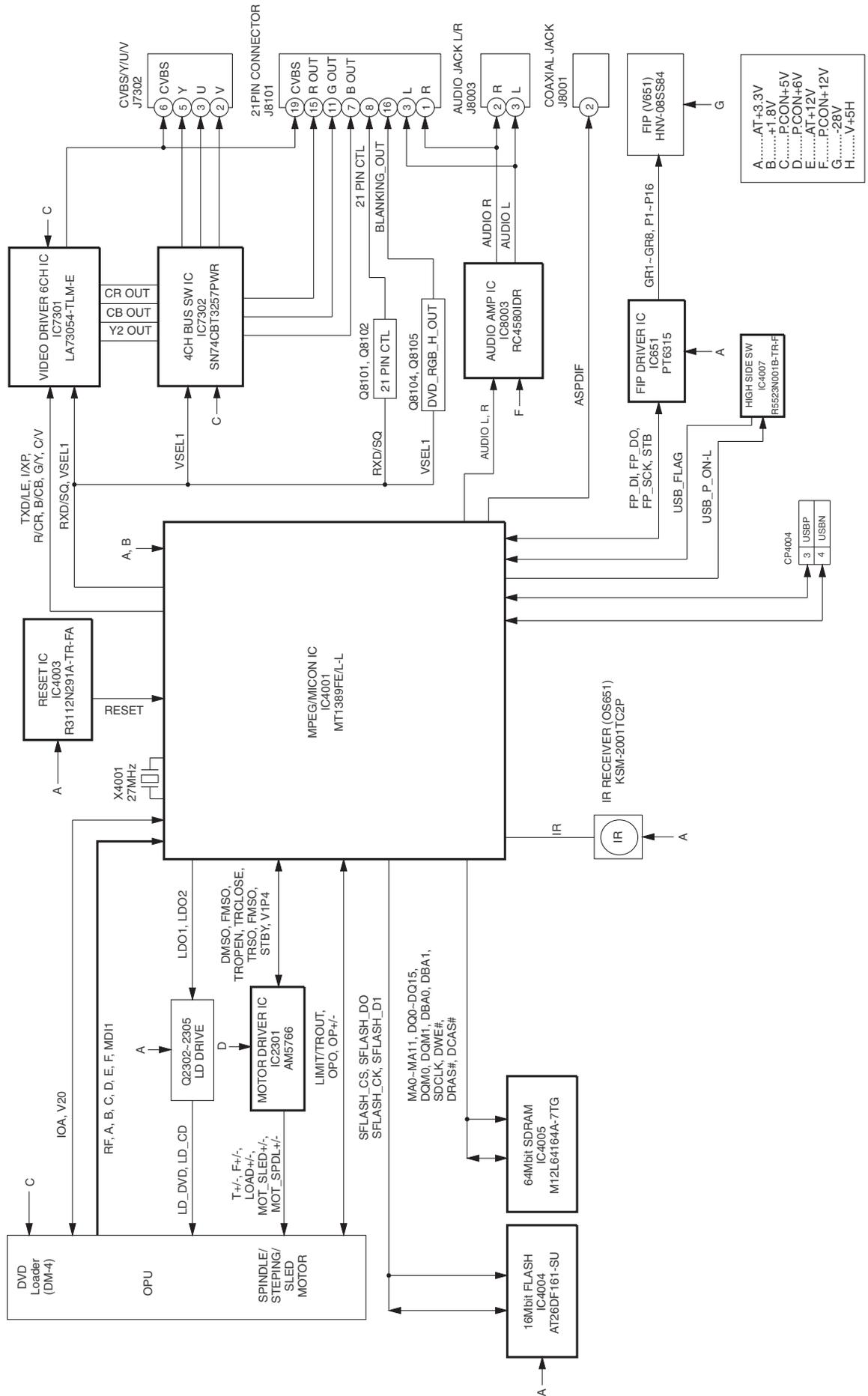
4.2 OVERALL BLOCK DIAGRAM

OVERALL BLOCK DIAGRAM



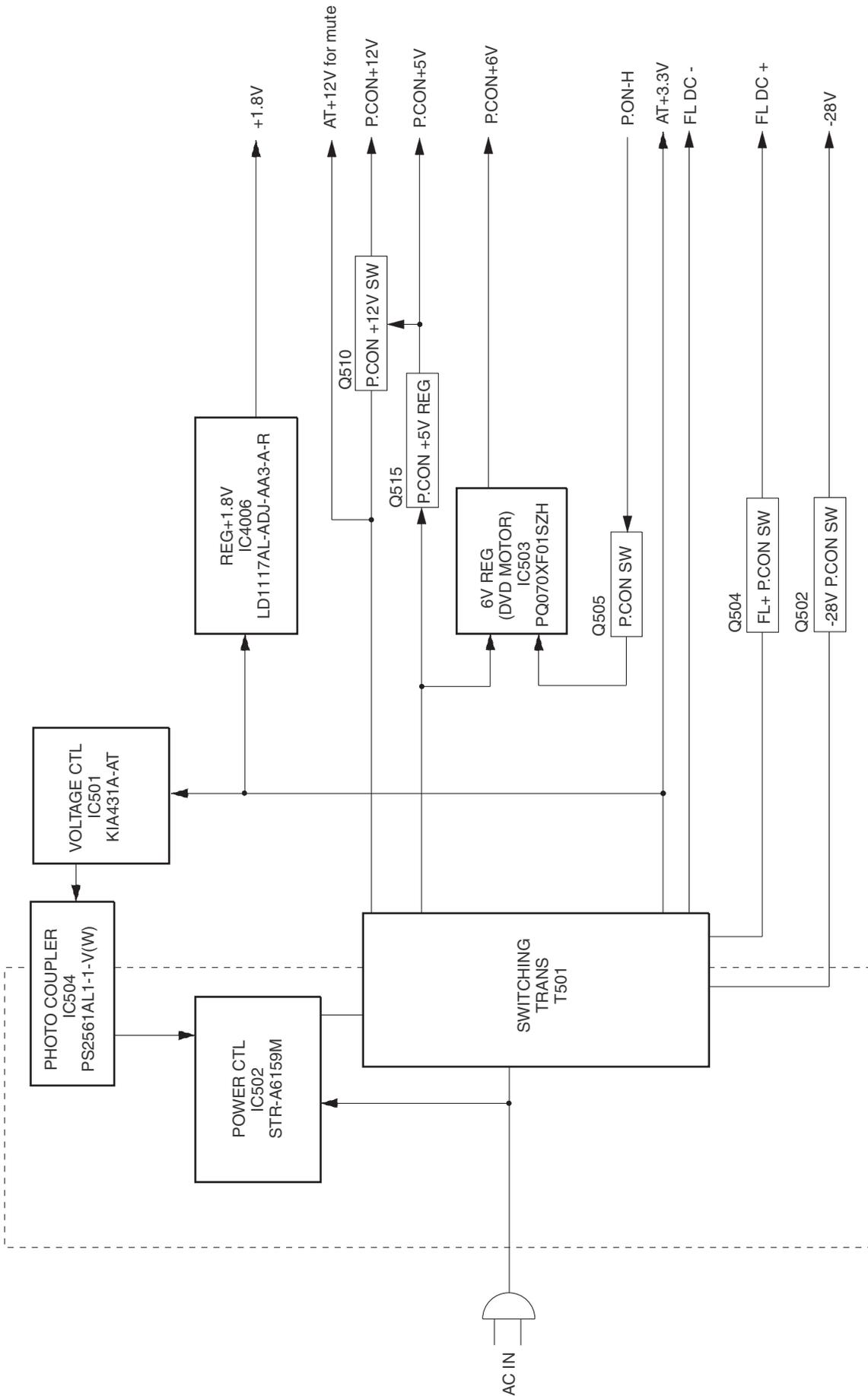
4.3 DVD LOADER/MPEG BLOCK DIAGRAM

DVD LOADER/MPEG BLOCK DIAGRAM



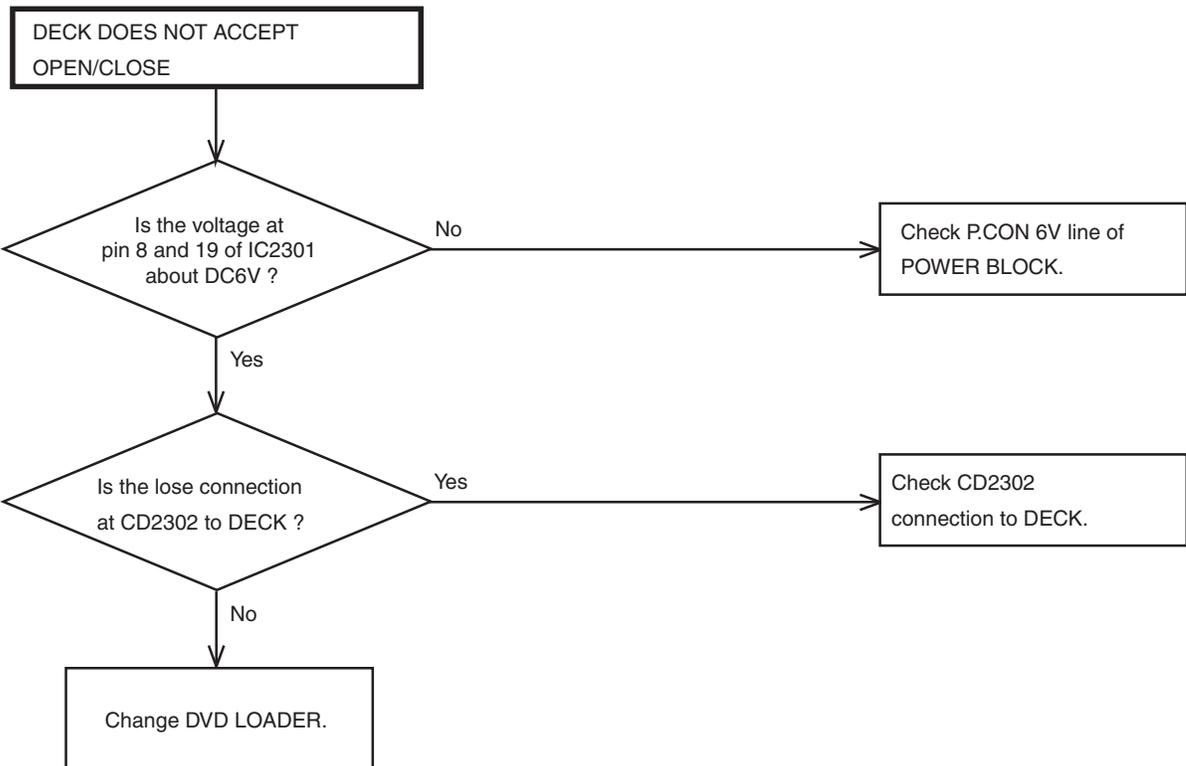
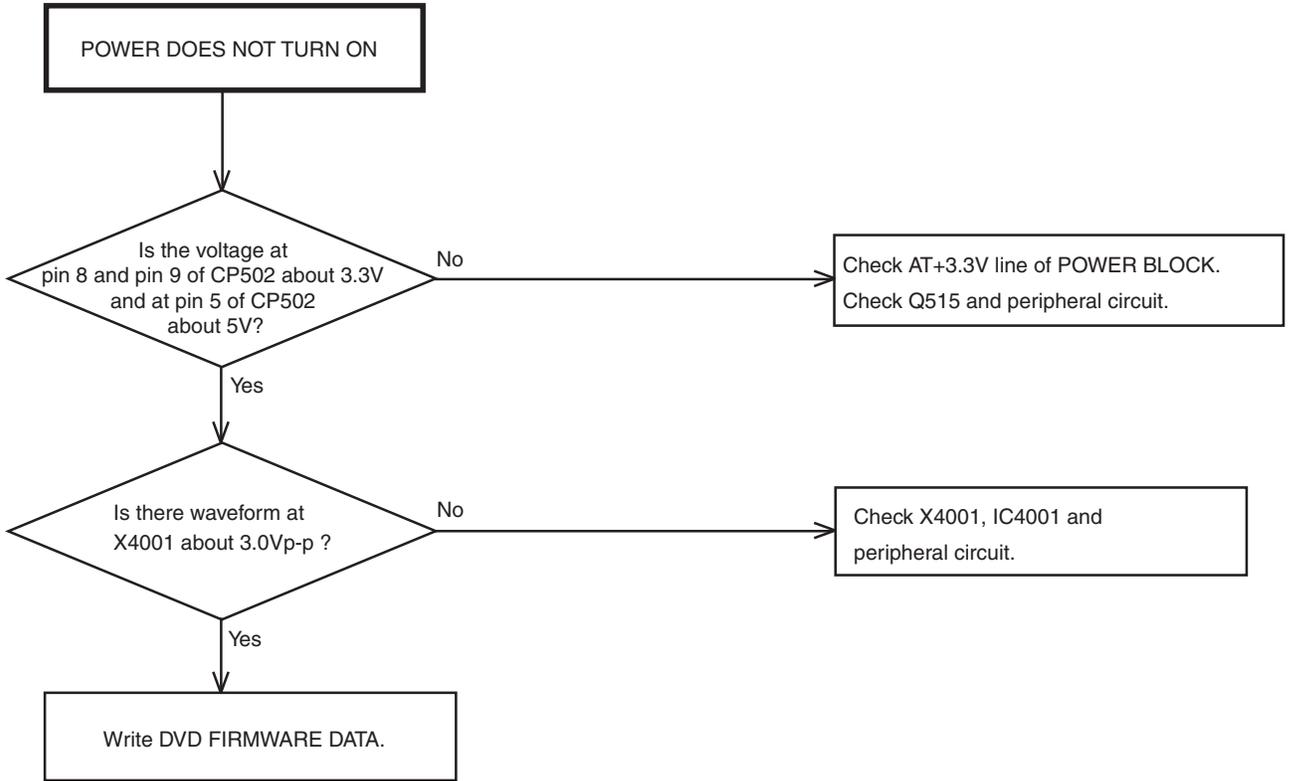
4.4 POWER BLOCK DIAGRAM

POWER BLOCK DIAGRAM



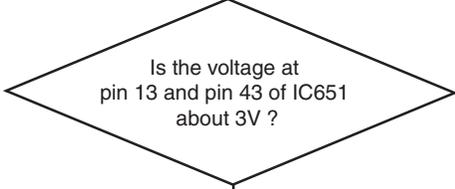
5. DIAGNOSIS

5.1 TROUBLE SHOOTING



A

DOES NOT LIGHT ON DISPLAY



No

Check AT+3.3V line of POWER BLOCK.



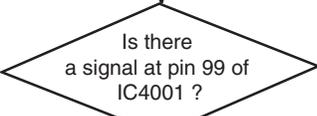
Yes

Replace V651 or IC651.

B

C

NO PLAYBACK PICTURE OF AV JACK

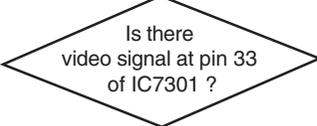


No

Check IC4001 and peripheral circuit.



Yes



Yes

Check J7302 and peripheral circuit.



No

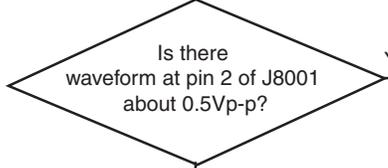
Change IC7301.

D

E

F

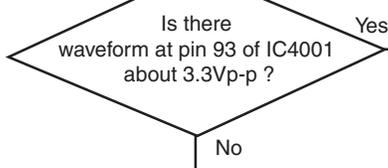
NO DIGITAL AUDIO ON
PLAYBACK OF COAXIAL JACK



Yes

Check connection at RCA
Cable.

No



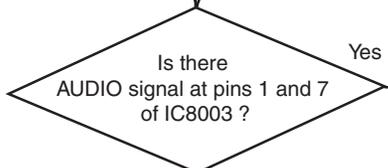
Yes

Check Q8005 and
peripheral circuit.

No

Change IC4001.

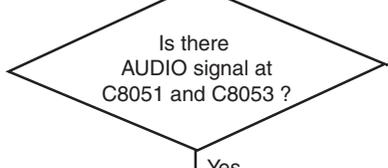
NO ANALOG AUDIO ON
PLAYBACK



Yes

Check J8003 and peripheral
circuit.

No



No

Check AT pins 116 and 118
of IC4001

Yes

Change IC8003.

● Symptoms That May Occur When Any Of The Following ICs Is In Failure

IC	Symptoms
16M Flash ROM (DVD MT PCB Assy : IC4004)	The power cannot be turned on. Downloading of the firmware cannot be performed.
DVD IC (DVD MT PCB Assy : IC4001)	Any kind of symptoms (no power, a failure in any of the servo, video and audio systems, etc.) may be generated, because the DVD processing is performed by a single chip.
64M SDRAM (DVD MT PCB Assy : IC4005)	No power. Block noise is generated during playback.

A

B

C

D

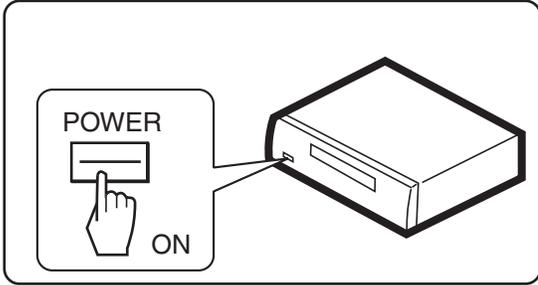
E

F

6. SERVICE MODE

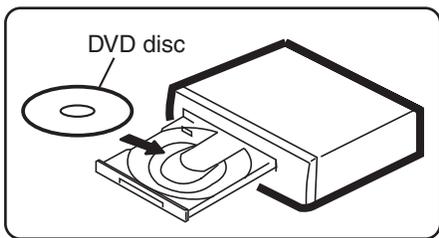
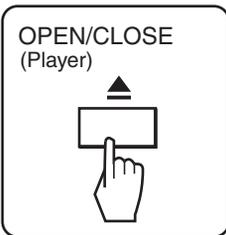
6.1 SERVICE MODE PROCEDURE

POWER ON

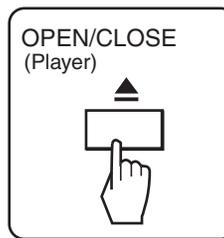


DISC SET

<TRAY OPEN>

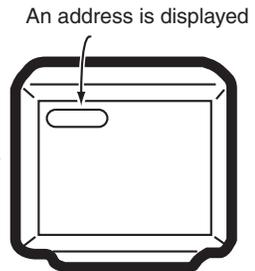
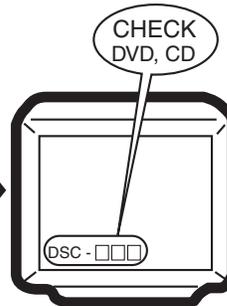
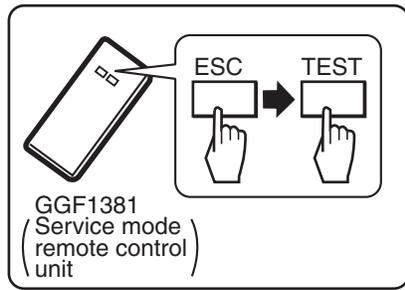


<TRAY CLOSE>



SERVICE MODE: PLAY

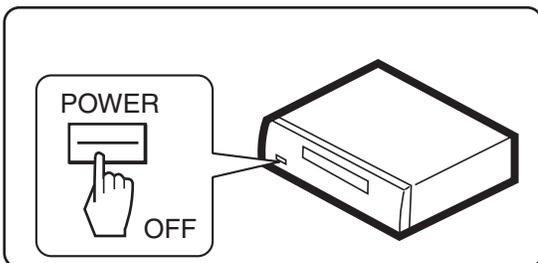
<PLAY>



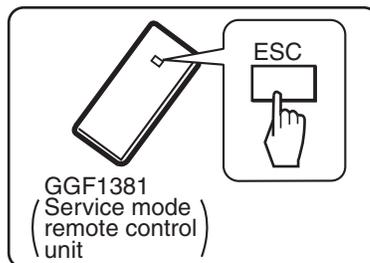
Notes:

- After going into service mode, if you play back the disc, "DISC-NON" is displayed.
- The video signal and the audio signal are outputted during the servicemode.
- The SKIP key and the SCAN key are effective during the service mode.

SERVICE MODE: OFF



OR



6.2 SERVICE MODE IN

Service Mode Functional Specification

① Service mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Service mode remote control unit.

- Light the all FL and LEDs.
- OSD displays test mode.

Note:

* When pressing the keys of something, the FL displays "NO DISC" and the LED lighting disappears.

② Release the Service mode

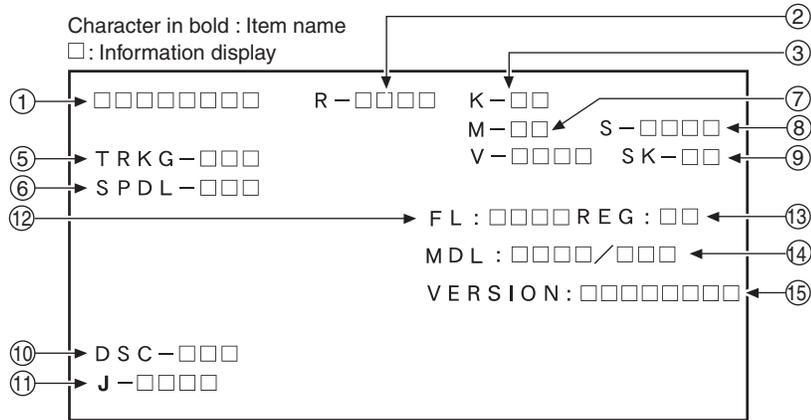
- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit.

③ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650nm).

CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780nm).

6.3 DISPLAY SPECIFICATION OF THE SERVICE MODE



① Address indication

The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)

[*****]

CD : ID indication [*****]

② Code indication of remote control unit [R - * * * *]

In case of double code, display a 2nd code.

③ Main unit keycode indication [K - * * *]

⑤ Tracking status [TRKG - * * * *]

Tracking on : [ON]

Tracking off : [OFF]

⑥ Spindle status [SPDL - * * * *]

[OFF], [CLV]

⑦ Mechanism (loading) position value [M - * * *]

Unknown : [01] or [41]

Open state : [04]

Close state : [08]

During opening : [12]

During closing : [22]

⑧ Slider position [S - * * * *]

In Side Switch ON : [01]

In Side Switch OFF : [00]

⑨ Output video system [V - * * * *]

NTSC system : [NTSC]

PAL system : [PAL]

Automatic setting : [AUTO]

Scart terminal output [SK - * * *]

(Display only the WY model which can do the output setting of scart terminal.)

VIDEO : [00]

S-VIDEO : [01]

RGB : [02]

⑩ Disc sensing [DSC - * * * *]

The type of discs loaded is displayed.
[DVD], [CD], [VCD], []

⑪ Jitter value [J - * * * *]

Note:Don't use it.

⑫ Version of the FL controller [FL: * * * *]

⑬ Region setting of the player [REG: *]

Setting value : [1] to [6]

⑭ Destination setting of the FL controller [MDL: * * * * / * * * *]

Four characters in the front represent code 01.

Three characters in the back represent the destination code.

J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM : /RAM,

LB: /LB, WY: /WY

⑮ Version of the flash ROM [VERSION: *****]

6.4 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote ControlCode
Memory clear and region / revision indication		CLEAR (*1)	A8-45
Average value measurement of DVD error rate		5 (*1)	A8-05
CD error rate measurement		5 (*1)	A8-05
Scart terminal output : VIDEO		AUDIO	AF-BE
Scart terminal output : S-VIDEO	WY, models equipped with Scart terminal	SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
ZOOM ON (X2 -> X4 -> x1)		ZOOM	AF-37
Service mode indication (error rate indication, etc.)		CHP/TIM (*1)	A8-13
Model information indication		CHAP (*1)	A8-40
Title search Input mode IN Title No. input Search execution		SIDE A (*1) Numbers (*1) PLAY (*1)	A8-4D A8-00 to A8-09 A8-17
Region confirmation mode		A.MON (*1) Numbers (*1)	A8-1E A8-01 to A8-08

*1 : Service mode remote control unit

• Service mode indication (ESC + CHP/TIM keys)

ID Address

The error rate is always displayed in exponential notation, e.g., *.* * e - *, for both DVDs and CDs.
EDC/ID/AV 1 error history (ID Address, EDC/ID Error, last eight errors)

• Calculation of the average error rate (ESC + "5" [Service mode remote control unit] keys)

The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

• Indication of model information (ESC + CHAP keys)

The items from 12 to 15 of the SERVICE MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to CHIP VERSION, and M is changed to FL VERSION.

• Region confirmation mode (ESC + A.MON [Service mode remote control unit] + "1"- "8" [Service mode remote control unit] keys)

After you press the A.MON key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

1 2 3 4

6.5 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE

• **Display during Service Mode**

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.
To quit, press the ESC key.

Service mode display

① ID Address
② Error rate (always displayed), in exponential notation

```
ERROR RATE : * * * * *
            ( * * * * )
```

↑
Number of error

• Calculation of the average error rate
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

ex) For DVDs

• Step 1

△△e-□

△△ e -6 : OK
△△ e -5 : OK
△△ e -4 : Refer to Step 2
△△ e -3 : NG
△△ e -2 : NG

• Step 2

△△ e -4

3.0e -4 : OK
4.0e -4 : OK
5.0e -4 : OK
6.0e -4 : NG
7.0e -4 : NG

③ EDC/ID error history (ID Address, EDC/ID errors, last eight errors)

Note:

* Error of AV1 is not supported in this player.

Indication plan contents

	SERVICE MODE	ADDRESS	/EDC	/ID	/AV
①	□□□□□□□□	□□□□□□□□	□□	□□	
②	□□□□□□□□	□□□□□□□□	□□	□□	
		□□□□□□□□	□□	□□	
		□□□□□□□□	□□	□□	
		□□□□□□□□	□□	□□	
		□□□□□□□□	□□	□□	
		□□□□□□□□	□□	□□	
		□□□□□□□□	□□	□□	

Character in bold : Item name
□ : Information display

30

1 2 3 4

DV-310-S

7. DISASSEMBLY

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: TOP CABINET/FRONT CABINET AND OPERATION (Refer to Fig. 1-1)

1. Remove the 5 screws (1).
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connectors: (**CP4002 and CP4004**).
4. Unlock the 4 supports (2).
5. Remove the Front Cabinet in the direction of arrow (B).
6. Remove the 11 screws (3).
7. Remove the Operation PCB in the direction of arrow (C).

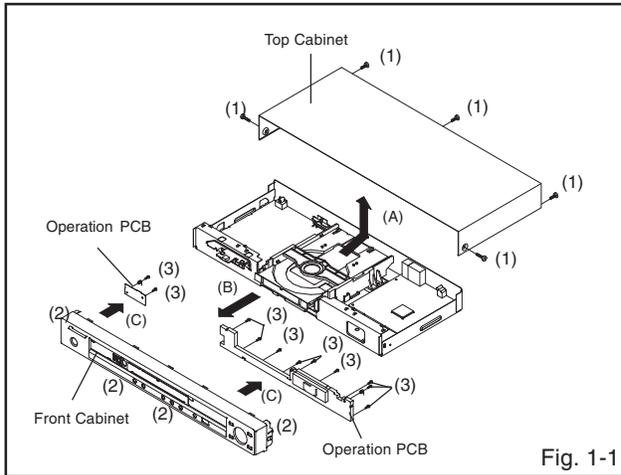


Fig. 1-1

1-2: POWER PCB (Refer to Fig. 1-2)

1. Disconnect the following connectors: (**CP502 and CP503**).
2. Remove the 2 screws (1).
3. Remove the 3 screws (2).
4. Remove the Power PCB in the direction of arrow.

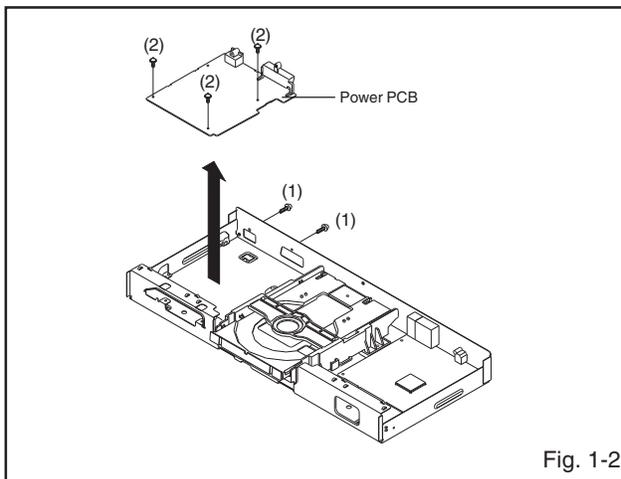


Fig. 1-2

1-3: DVD DECK (Refer to Fig. 1-3)

1. Short circuit the position shown in **Fig. 1-3** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Disconnect the following connectors: (**CP2301, CP2302 and CP2303**).
3. Remove the 4 screws (1).
4. Remove the DVD Deck in the direction of arrow.

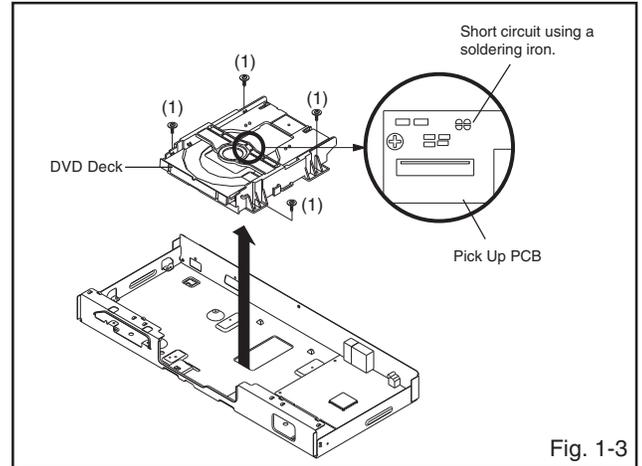


Fig. 1-3

NOTE

1. Before your operation, please read **iPREPARATION OF SERVICINGi**.
2. Use the Lead Free solder.
3. Manual soldering conditions
 - Soldering temperature: $320 \pm 20^{\circ}\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
4. When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to keep the Flux smoke away from it.
5. When installing the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD MT PCB connector.

1-4: DVD MT PCB (Refer to Fig. 1-4)

1. Remove the 3 screws (1).
2. Remove the 4 screws (2).
3. Remove the DVD MT PCB in the direction of arrow.

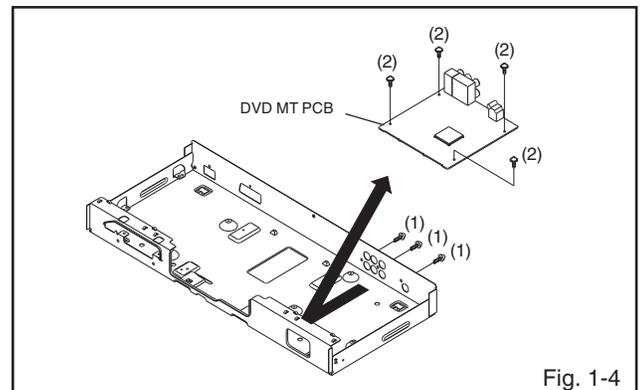


Fig. 1-4

2. REMOVAL OF DVD DECK PARTS

NOTE

- Disassemble only the DVD DECK PARTS parts listed here. Minute adjustments are needed if the disassembly is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

2-1: TRAY (Refer to Fig. 2-1-A)

- Set the Tray opened. (Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)
- Unlock the 2 supports ① and draw it while sagging the Tray.

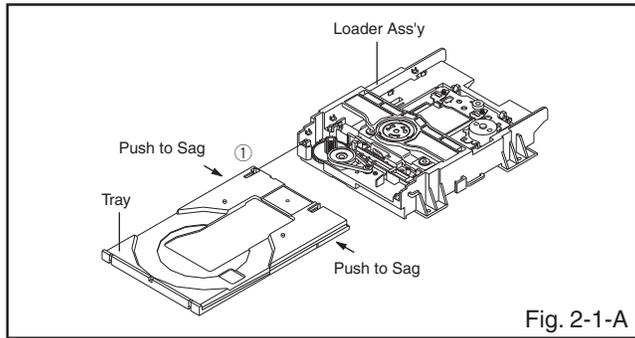


Fig. 2-1-A

NOTE

- In case of the Tray installation, install them as the circled section of Fig. 2-1-B so that the each markers are met.

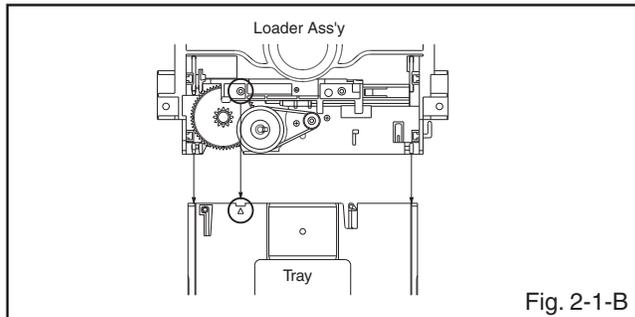


Fig. 2-1-B

2-2: TRAVERSE ASS'Y (Refer to Fig. 2-2-A)

- Remove the screw ①.
- Unlock the 2 supports ②.
- Remove the Insulator (R) from the Loader Sub Ass'y.
- Remove the Traverse Ass'y.

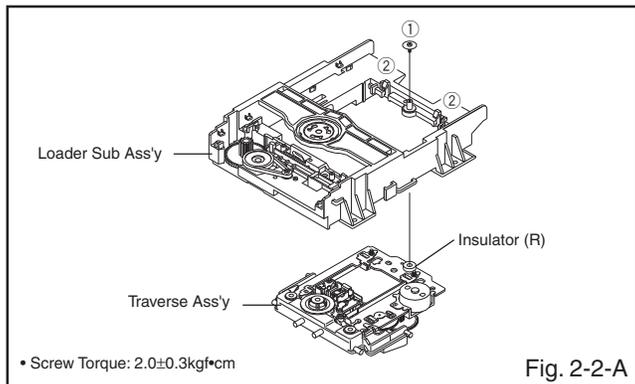


Fig. 2-2-A

NOTE

- In case of the Traverse Ass'y, install it from (1) to (4) in order. (Refer to Fig. 2-2-B)
- In case of the Traverse Ass'y installation, hook the wire on the Loader Ass'y as shown Fig. 2-2-C.

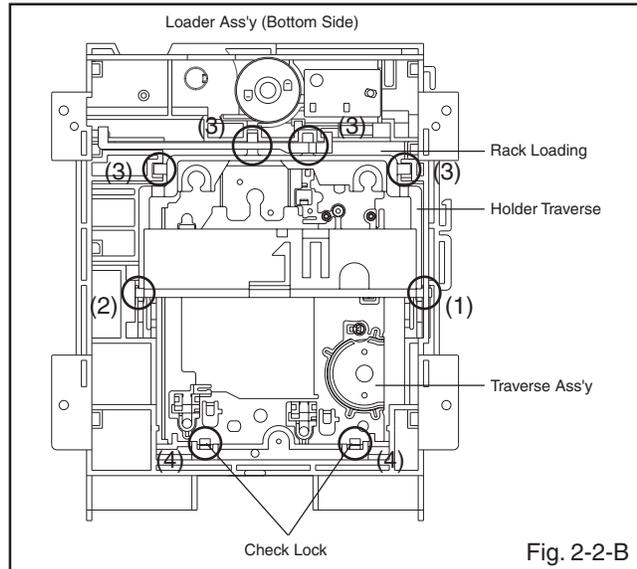


Fig. 2-2-B

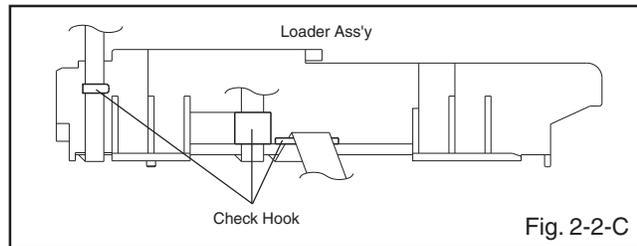


Fig. 2-2-C

2-3: LOADING MOTOR PCB ASS'Y/ LOADING BELT (Refer to Fig. 2-3-A)

- Remove the Loading Belt.
- Remove the screw ①.
- Remove the Loading Motor PCB Ass'y.
- Remove the 2 screws ②.
- Remove the Loading Motor.
- Remove the Gear Pulley.

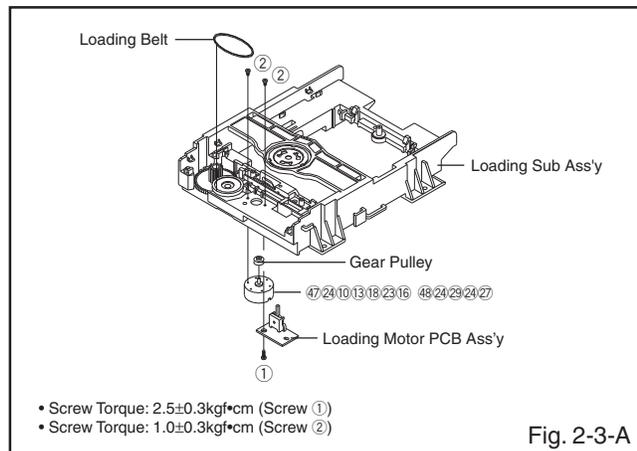


Fig. 2-3-A

NOTE

1. In case of the Pulley Motor installation, check if the value of the Fig. 2-3-B is correct.
2. When installing the wire of the Loading Motor PCB Ass'y, install it correctly as Fig. 2-3-C.
Manual soldering conditions
 - Soldering temperature: $320 \pm 20^{\circ}\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
3. When installing the Loading Motor PCB Ass'y, install it correctly as Fig. 2-3-D.
4. In case of the Loading Motor PCB Ass'y installation, hook the wire on the Loader Sub Ass'y as shown Fig. 2-3-E.

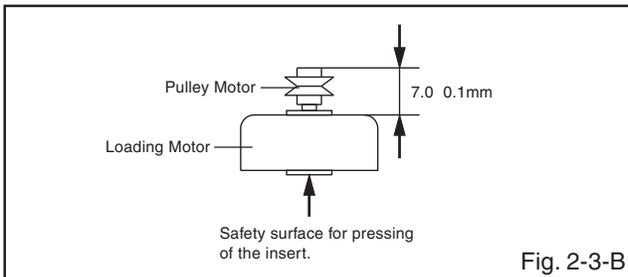


Fig. 2-3-B

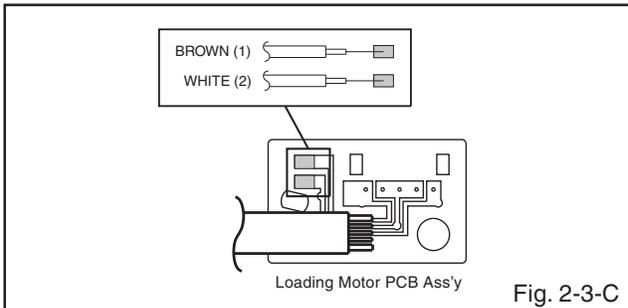


Fig. 2-3-C

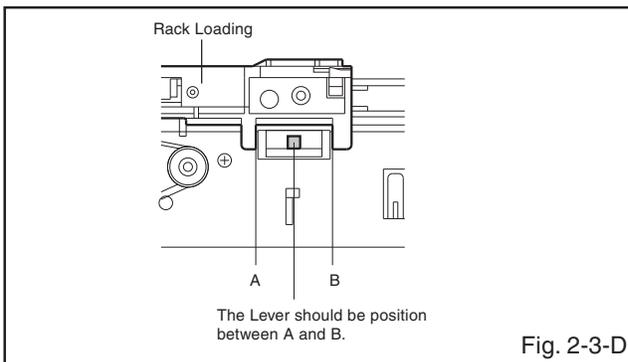


Fig. 2-3-D

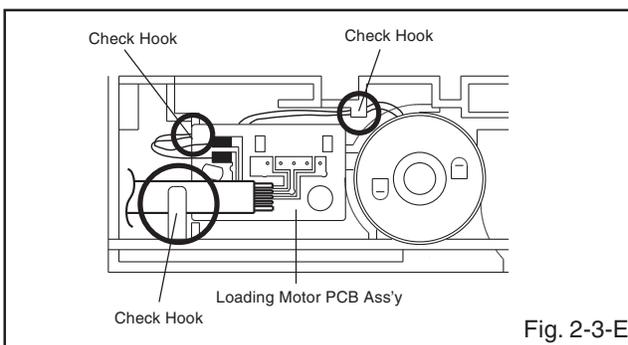


Fig. 2-3-E

2-4: RACK LOADING/MAIN GEAR/PULLEY GEAR (Refer to Fig. 2-4-A)

1. Unlock the support ② and remove the Gear Pulley.
2. Remove the Gear Main.
3. Press down the catcher ① and slide the Rack Loading.

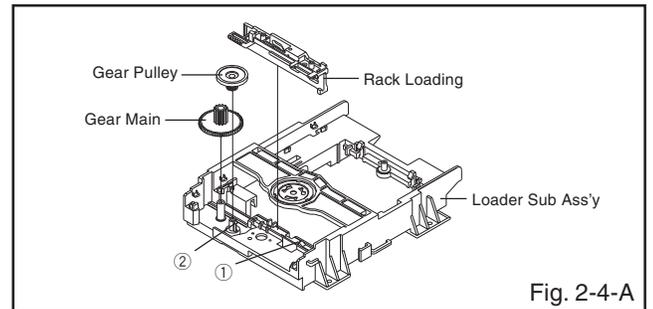


Fig. 2-4-A

NOTE

1. In case of the Rack Loading installation, hook the Rack Loading on the Loader Sub Ass'y as shown Fig. 2-4-B.
2. When installing the Gear Main, take care the direction of up or down as shown Fig. 2-4-C.

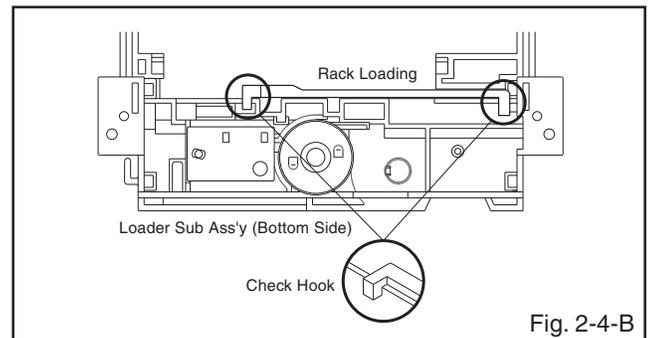


Fig. 2-4-B

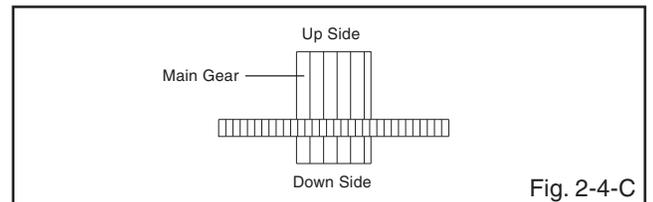


Fig. 2-4-C

2-5: CLAMPER ASS'Y (Refer to Fig. 2-5-A)

1. Press the Clamper and rotate the Plate Clamper clockwise, then unlock the 3 supports ①.
2. Remove the Plate Clamper, Magnet Clamper and Clamper.

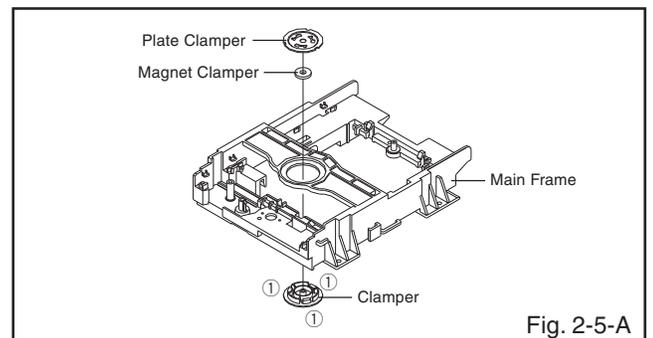


Fig. 2-5-A

NOTE

1. In case of the Clamper Ass'y installation, install correctly as Fig. 2-5-B.

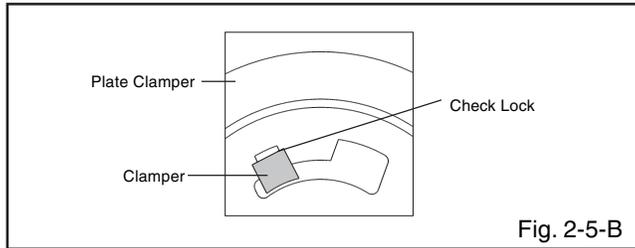


Fig. 2-5-B

2-6: HOLDER TRAVERSE/INSULATOR (F)/INSULATOR (R) (Refer to Fig. 2-6-A)

1. Remove the Holder Traverse.
2. Remove the 2 Insulator (F).
3. Remove the Insulator (R).



Pickup lenses
GEM1004
GED-008

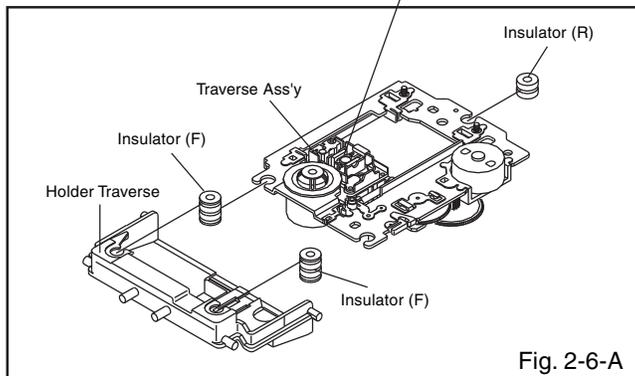


Fig. 2-6-A

NOTE

1. In case of the Insulator (F) installation, install correctly as Fig. 2-6-B.

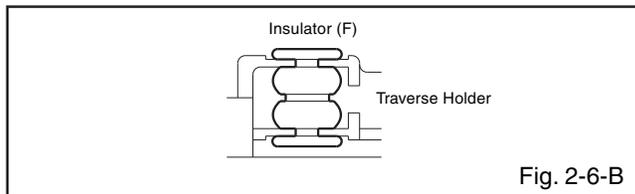


Fig. 2-6-B

2-7: SWITCH PCB ASS'Y/GEAR MIDDLE/GEAR FEED/RACK FEED ASS'Y/FEED MOTOR (Refer to Fig. 2-7-A)

1. Unlock the support ①.
2. Remove the Gear Middle.
3. Remove the screw ②.
4. Remove the Rack Feed Ass'y.
5. Remove the screw ③.
6. Remove the Switch PCB Ass'y.
7. Remove the screw ④.
8. Remove the Gear Feed.
9. Remove the 2 screws ⑤.
10. Remove the Feed Motor.
11. Remove the Gear Motor.

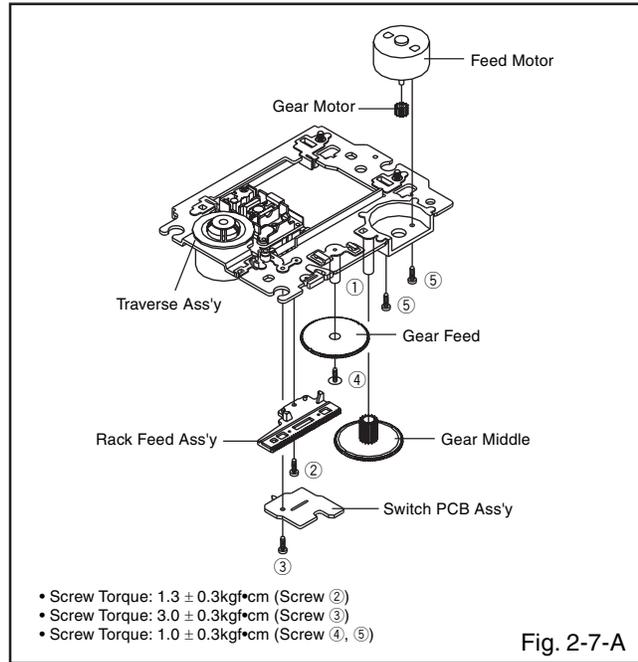


Fig. 2-7-A

- Screw Torque: $1.3 \pm 0.3\text{kgf}\cdot\text{cm}$ (Screw ②)
- Screw Torque: $3.0 \pm 0.3\text{kgf}\cdot\text{cm}$ (Screw ③)
- Screw Torque: $1.0 \pm 0.3\text{kgf}\cdot\text{cm}$ (Screw ④, ⑤)

NOTE

1. When installing the Rack Feed Ass'y, push both ends to align the teeth as shown Fig. 2-7-B. Then install it.
2. In case of the Gear Motor installation, check if the value of the Fig. 2-7-C is correct.
3. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 2-7-D.
Manual soldering conditions
 - Soldering temperature: $320 \pm 20^\circ\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
4. After the assembly of the Traverse Ass'y, hook the wire on the Traverse Ass'y as shown Fig. 2-7-E.

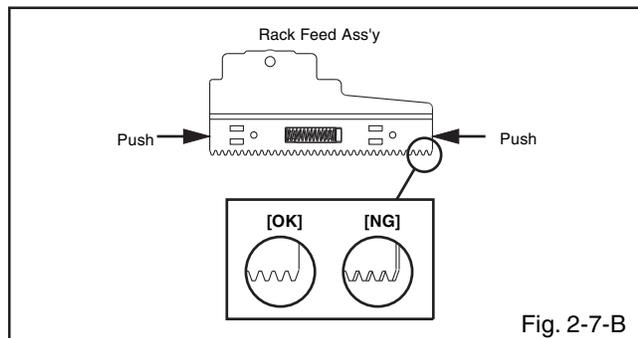


Fig. 2-7-B

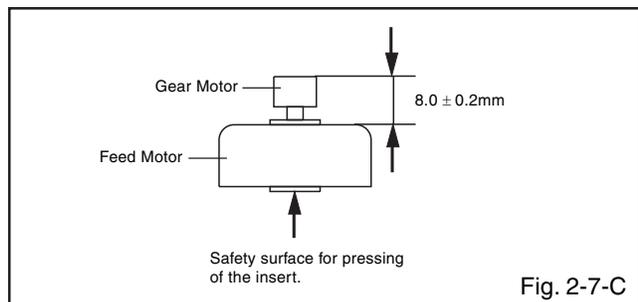
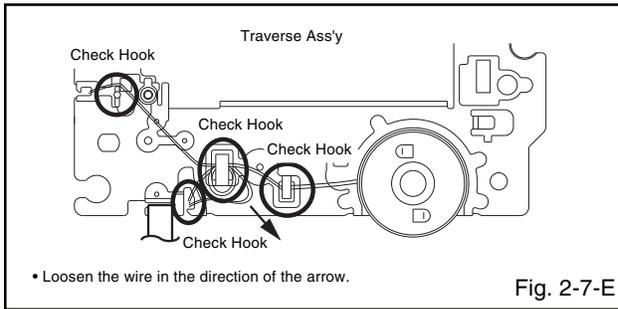
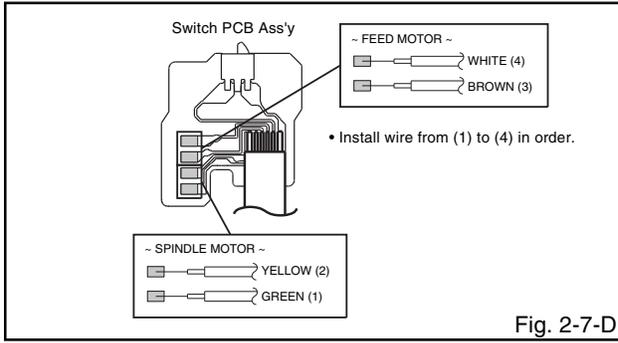


Fig. 2-7-C

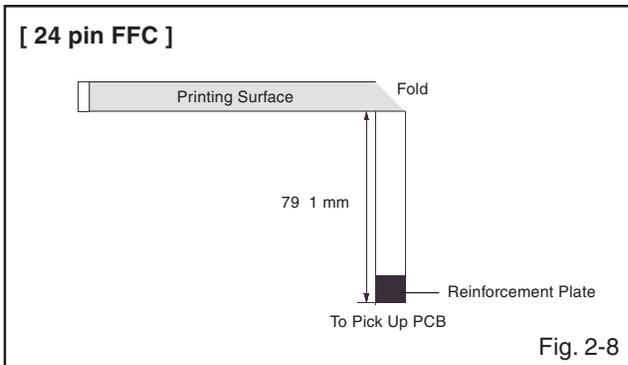


2-8: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 2-8.

NOTE

1. Do not make the folding lines except the specified positions for the FFC.



8. EACH SETTING AND ADJUSTMENT

8.1 RE-WRITE FOR DVD FIRMWAVE

A 1. Purpose

After replacing the DVD MT PCB Assy, be sure to update the firmware to the latest version. The firmware of the Assy for service may not be the latest.

2. Procedures for creating the disc for updating

Necessary tools:

- ① PC with a CD-R/CD-RW drive
- ② Blank CD-R or CD-RW
- ③ Firmware file (*****.BIN)

How to create:

- B ① Start up the program for writing to CD.
- ② Load a blank disc in the CD-R/CD-RW drive.
- ③ Enter "PIONEER" as the volume label.
- ④ Select the .BIN file.
- ⑤ Write the latest version of the firmware in ISO 9660 format.

3. Procedures for updating the firmware

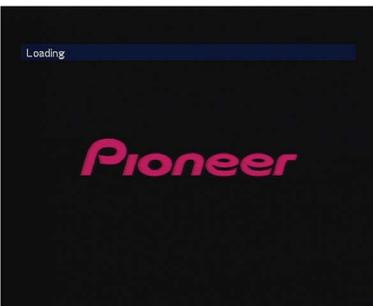
How to update:

- C ① Turn on the main unit and open the disc tray.
- ② Place the disc for updating in the disc tray and close the tray.
- ③ Press the PLAY button.



While the screen shown at left is being displayed, updating is in progress. **DO NOT TURN OFF THE POWER DURING UPDATING.**

- D ④ Updating of the firmware is completed.



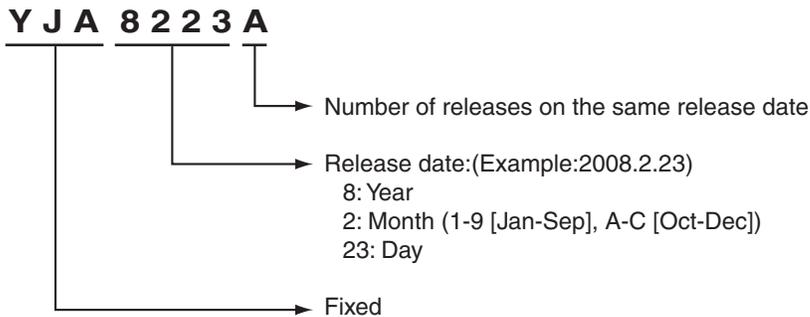
When the screen with the Pioneer logo is displayed, updating is completed. The time required for updating is about 2 minutes.

4. How to confirm the version of the firmware

Press the ESC then the CHAP key on the remote control unit for servicing. The version of the firmware is labeled ROM NUMBER. Check if the version is the latest one.

	AREA:WY	REGION:2
<u>ROM NUMBER</u>	<u>YJA8223A</u>	
REG CHK	10	
SUM CHK	02A8	
FL VERSION	1.16	
CHIP VERSION	1389EE	

How to interpret the version code:



5. Troubleshooting

- ① If updating of the firmware failed
 If the main unit was turned off during updating, it cannot initialize and start up again properly. In such a case, replace the flash ROM on the DVD MT PCB Assy.
- ② If updating of the firmware using the disc for updating failed
 - Was the disc for updating recognized properly?
 Check if the volume label of the disc is PIONEER.
 - Is playback of a disc other than the disc for updating possible?
 If playback of a test CD is also impossible, a reading section, such as PU, may be defective. In such a case, repair the defective part first.
 If playback of a test CD is possible, the disc for updating may be defective. Check for any scratches or foreign matter, such as fingerprints, on the reading surface.
 If no problem is found with the disc, create a new disc for updating again.

1 2 3 4

9. EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ∇ mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING

Except WSXZT5

WSXZT5 Only

38

DV-310-S

1 2 3 4

(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
⚠ 1	Power Cable	1206158802	9	Operating Instructions (S/D)	See Contrast table (2)
2	Audio/Video Cable	06CPBA2006	10	Operating Instructions (R)	See Contrast table (2)
3	Remote Control	See Contrast table (2)			
4	Package Pad	792WHAA237	11	Polyethylene Bag,Instruction	JB5KD000
5	.....		12	Gift Sheet	791WHAA183
			13	Package	792WHAA252
6	.....		14	Gift Box	See Contrast table (2)
7	Operating Instructions (E/I)	See Contrast table (2)	15	Polyethylene Bag,INSTA5	791WHAA040
8	Operating Instructions (G/F)	See Contrast table (2)			

(2) CONTRAST TABLE

DV-310-S/WYXZT5, DV-310-S/WSXZT5, DV-310-K/WYXZT5 and DV-310-K/WSXZT5 are constructed the same except for the following:

Mark	No.	Symbol and Description	DV-310-S/WYXZT5	DV-310-S/WSXZT5	DV-310-K/WYXZT5	DV-310-K/WSXZT5
	3	Remote Control	076E0PP031	076E0PP031	076E0PP041	076E0PP041
	7	Operating Instructions (English/Italian)	J2L30221B	Not used	J2L30221B	Not used
	8	Operating Instructions (German/French)	J2L30222B	Not used	J2L30222B	Not used
	9	Operating Instructions (Spanish/Dutch)	J2L30223B	Not used	J2L30223B	Not used
	10	Operating Instructions (Russian)	Not used	J2L30801B	Not used	J2L30801B
	14	Gift Box	793WCDD660	793WCDD737	793WCDD711	793WCDD736

9.2 EXTERIOR SECTION

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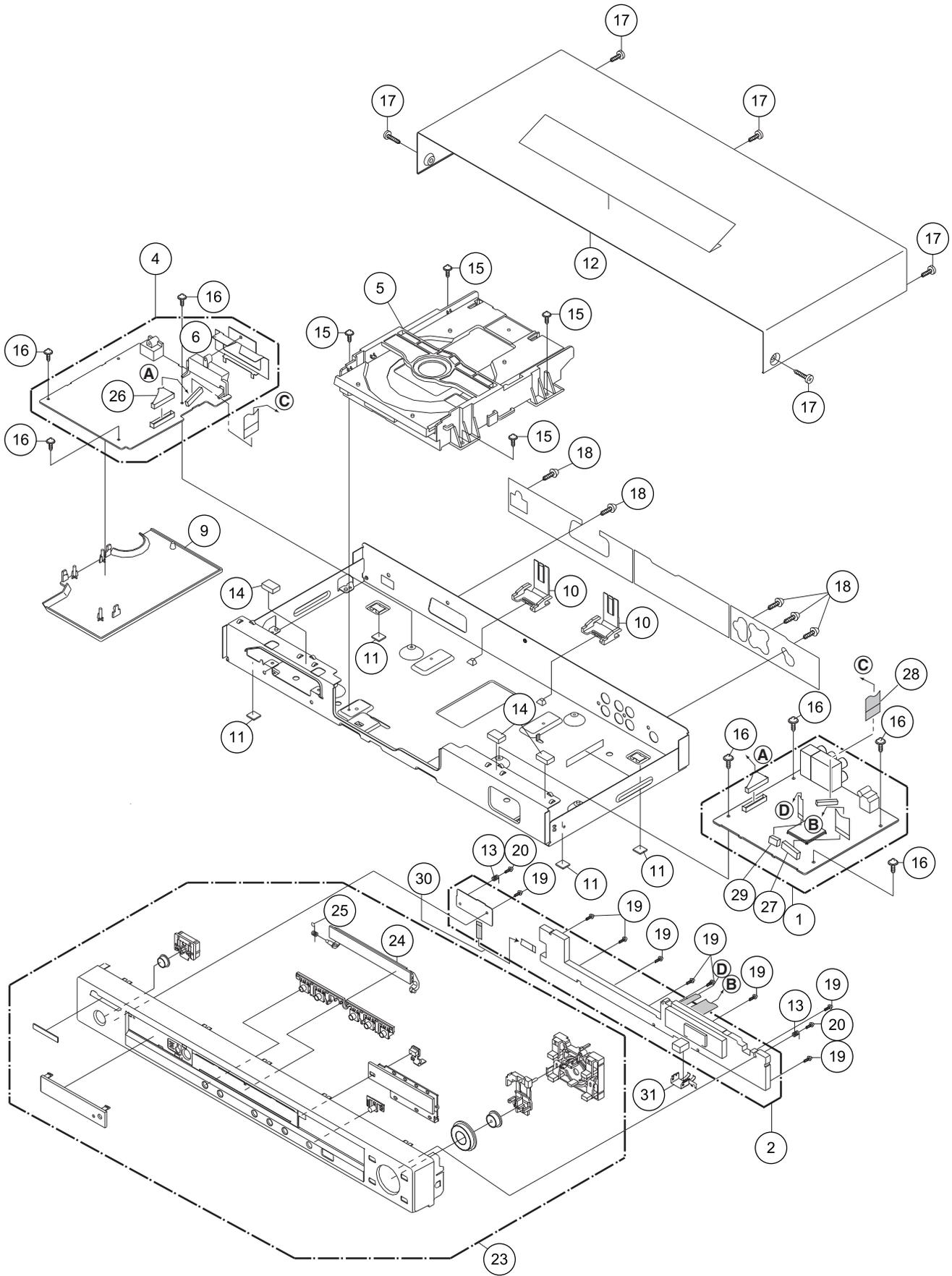
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(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	DVD MT PCB Assy	A2L103A130	17	Screw, Tap Tite(B) (3x6.0)	See Contrast table (2)
2	OPERATION PCB Assy	See Contrast table (2)	18	Screw, Tap Tite(B)Pan (3x6)	810913060U
3	.....		19	Screw, Tap Tite(P) (2.6x8)	811022680U
⚠ 4	POWER PCB Assy	A2L103A240	20	Screw, Tap Tite(P) Bind WH7	811012680U
5	DVD MECHA Assy	A2L101A650	21	.....
6	Shield, 21Pin	761WSA0237	22	.....
7	.....		23	Front Cabi Assy	See Contrast table (2)
8	.....		24	Flap, DVD	712WPDA085
9	Plate, Cover power	755WPAA035	25	Spring, Flap-DVD	743WKA0052
10	Holder, FFC	761WPA0396	26	Cord Connector (CD502)	06E82G3301
11	Cushion, Leg	VEB1349	27	Cord Jumper (CD601)	122H0B1202
12	Cabinet, Top	See Contrast table (2)	28	Cord Jumper (CD7301)	122H0C3002
13	Spring Earth	743WCAA015	29	Cord Jumper (CD605)	06CU241403
14	Cushion 65TS10-7.5	8965TS0610	30	Flat Cable	WAL6815038
15	Screw, Tap Tite(S)-Bind Wash.	816423063U	31	Spring Earth	753WUAA013
16	Screw, Tap Tite(B)-R (3x5.5)	815223055U			

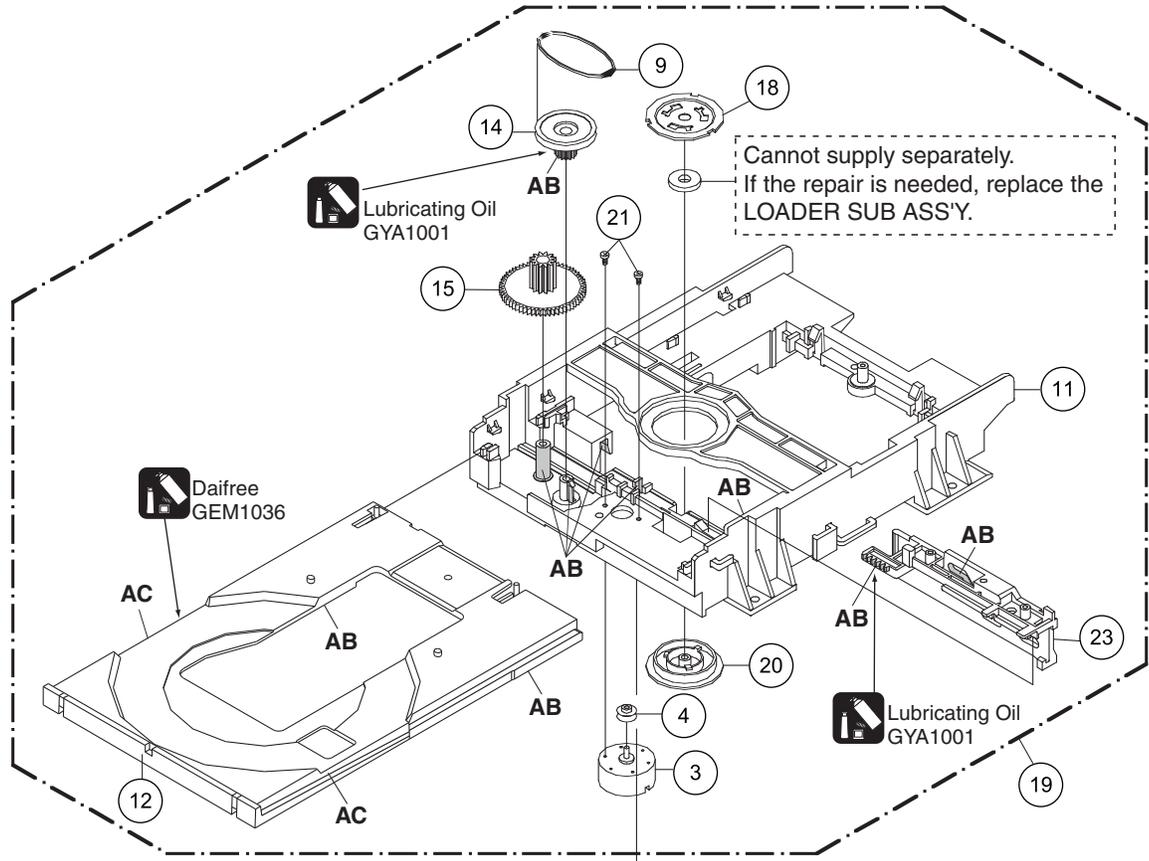
(2) CONTRAST TABLE

DV-310-S/WYXZT5, DV-310-S/WSXZT5, DV-310-K/WYXZT5 and DV-310-K/WSXZT5 are constructed the same except for the following:

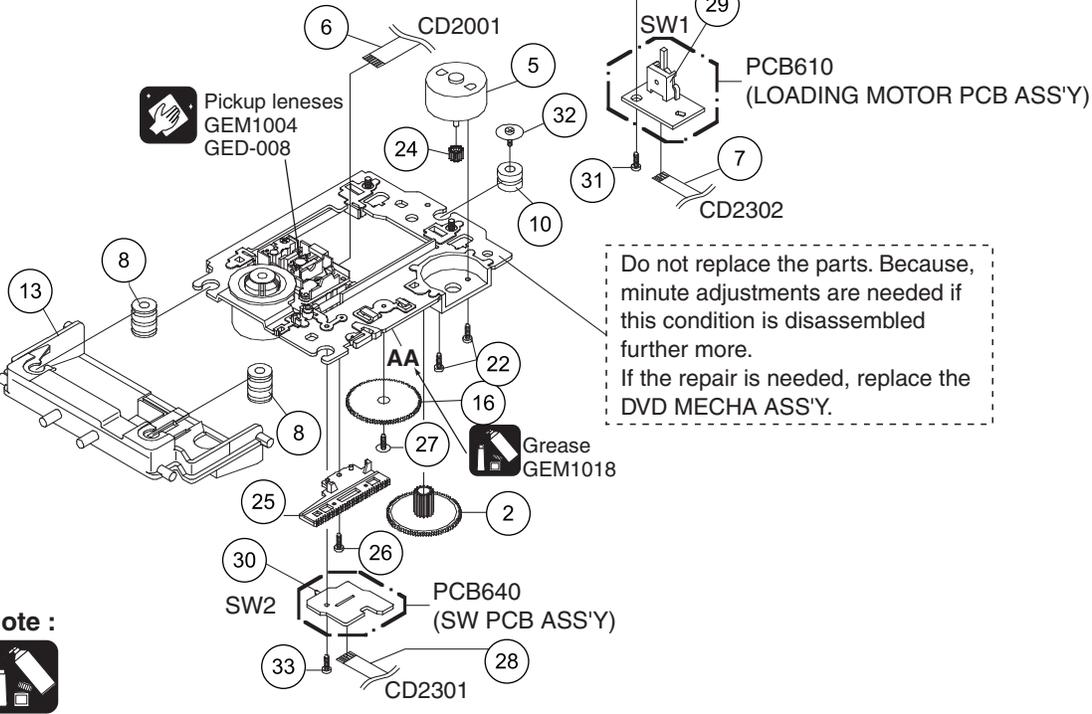
Mark	No.	Symbol and Description	DV-310-S/WYXZT5	DV-310-S/WSXZT5	DV-310-K/WYXZT5	DV-310-K/WSXZT5
	2	OPERATION PCB ASSY	A2L103A270	A2L109A270	A2L103A270	A2L109A270
	12	Cabinet, Top	702WSBA075	702WSBA075	702WSBA076	702WSBA076
	17	Screw, Tap Tite(B) (3x6.0)	810923060U	810923060U	810923060S	910923060S
	23	Front Cabi Assy	7A701B080A	7A701B080A	7A701B137A	7A701B137A

9.3 06 DVD MECHA SECTION

A
B
C
D
E
F



Cannot supply separately.
If the repair is needed, replace the
LOADER SUB ASS'Y.



Do not replace the parts. Because,
minute adjustments are needed if
this condition is disassembled
further more.
If the repair is needed, replace the
DVD MECHA ASS'Y.

Note :
[Icon of grease application]

CLASS	PART NO.	MARK
GREASE	GEM1018	AA
	GYA1001	AB
	GEM1036	AC

NOTE: Applying positions AA, AB and AC for the
grease are displayed for this section.
Check if the correct grease is applied for each
position.

06 DVD MECHA SECTION PARTS LIST

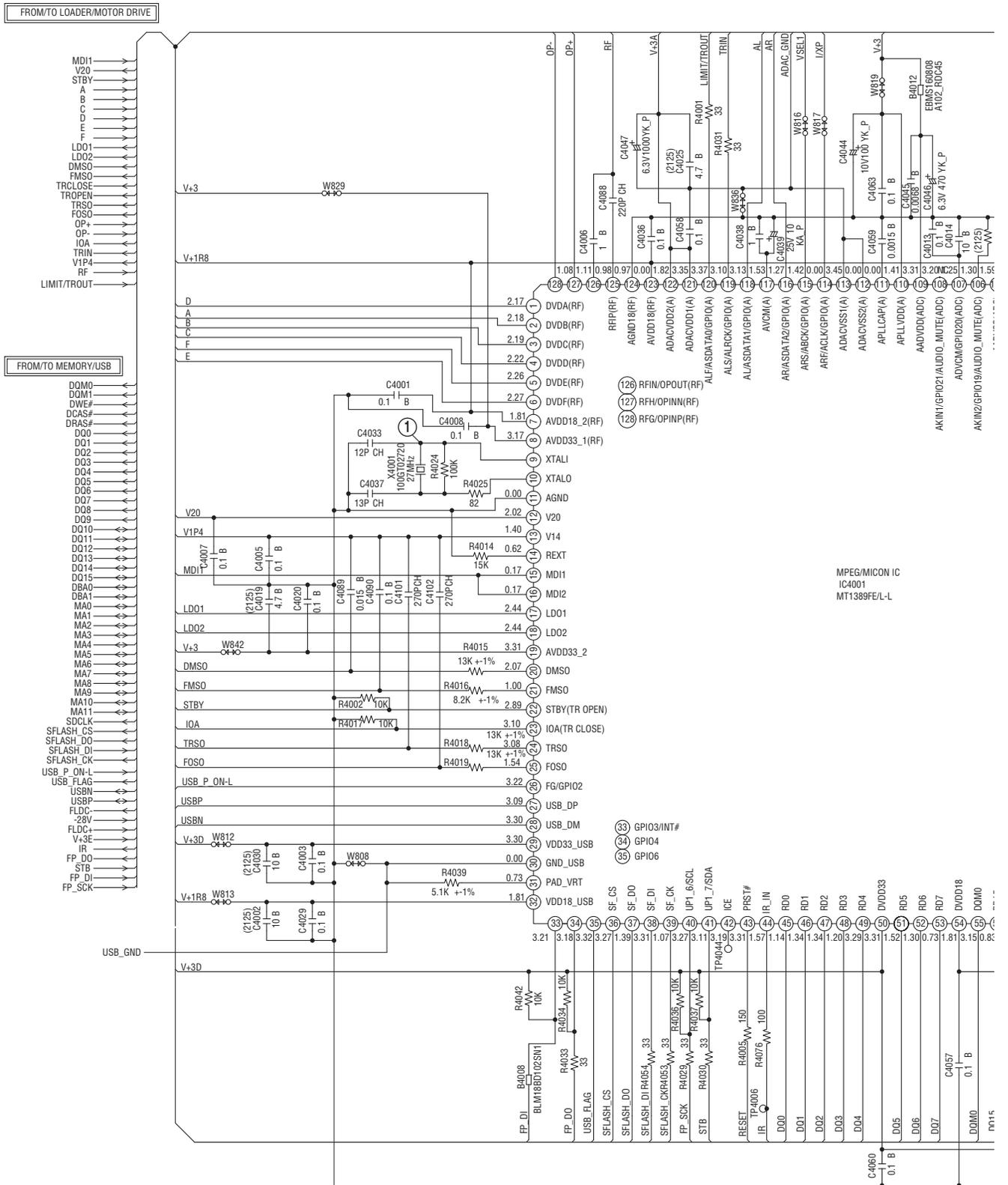
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	.....	
2	Gear,Middle	92P100117A	A
3	Loading Motor	1515S98004	
4	Pulley,Motor	92P100097A	
5	FEED Motor	1515S98004	
6	Cord Jumper (CD2001)	12C14O2202	
7	Cord Jumper (CD2302)	12C1051601	
8	Insulator (F)	92P200013A	
9	Belt,Loading	92P200015A	
10	Insulator (R)	92P200016A	
11	Frame,main	92P100119A	B
12	Tray (R)	92P100151A	
13	Holder ,Traverse	92P100125A	
14	Gear,Pulley	92P100123A	
15	Gear,Main	92P100124A	
16	Gear,Feed	92P100116A	
17	.....	
18	Plate, Clamper	92P000023A	
19	LOADER SUB ASSY (R)	92AAA0024A	
20	Clamper	92P100122A	C
21	Screw,Pan (M1.7x3 P3)	814011730U	
22	Screw,Pan (M1.7x2.3 P3)	814011723U	
23	Rack,Loading	92P100121A	
24	Gear,Motor	92P100088A	
25	Feed Rack Assy	92AAA0017A	
26	Screw,T-Tite(B) (M1.7x5.0 P3)	813381750U	
27	Screw,Gear Feed	92P700007A	
28	Cord Jumper (CD2301)	12C1061601	
29	Switch (SW1)	0515S32003	D
30	Push Switch (SW2)	0500101036	
31	Screw,Tap Tite(P) (2.6x8)	811022680U	
32	Sems.Tap Tite(P) (2x8)	816112080U	
33	Screw (Bind 2x8)	811022080U	

10. SCHEMATIC DIAGRAM

10.1 DVD MT PCB ASSY(1/6)

DVD MT PCB ASSY (1/6) (A2L103A130)

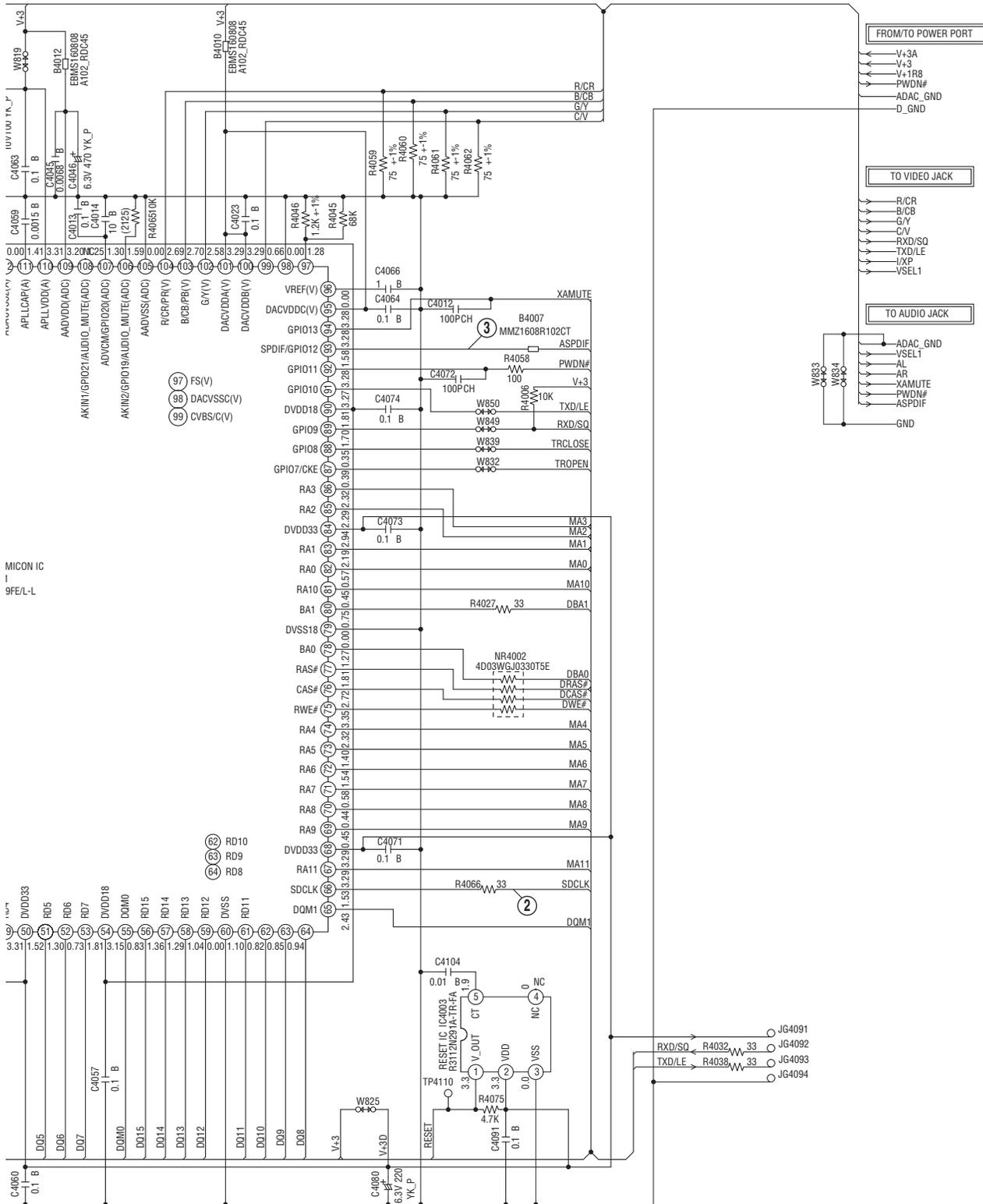
MPEG/MICON/DSP SCHEM (DVD MT PCB)



NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS PRINTED ON A SEPARATE SHEET OF PRINTING AND SUBJ.

SP SCHEMATIC DIAGRAM (DVD MT PCB)

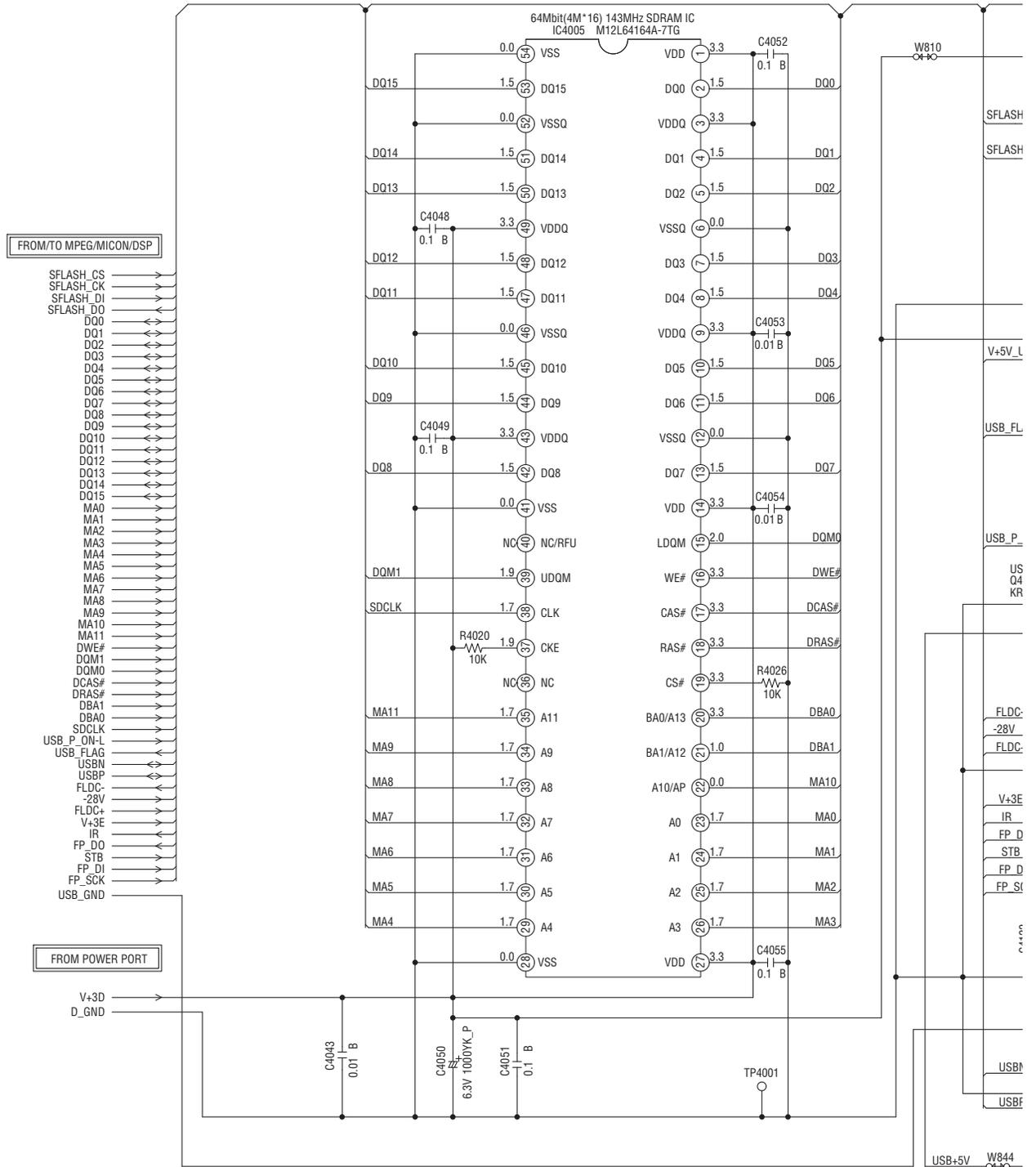


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

10.2 DVD MT PCB ASSY(2/6)

DVD MT PCB ASSY (2/6) (A2L103A130)

MEMORY/USB SCHEMA (DVD MT PCB)

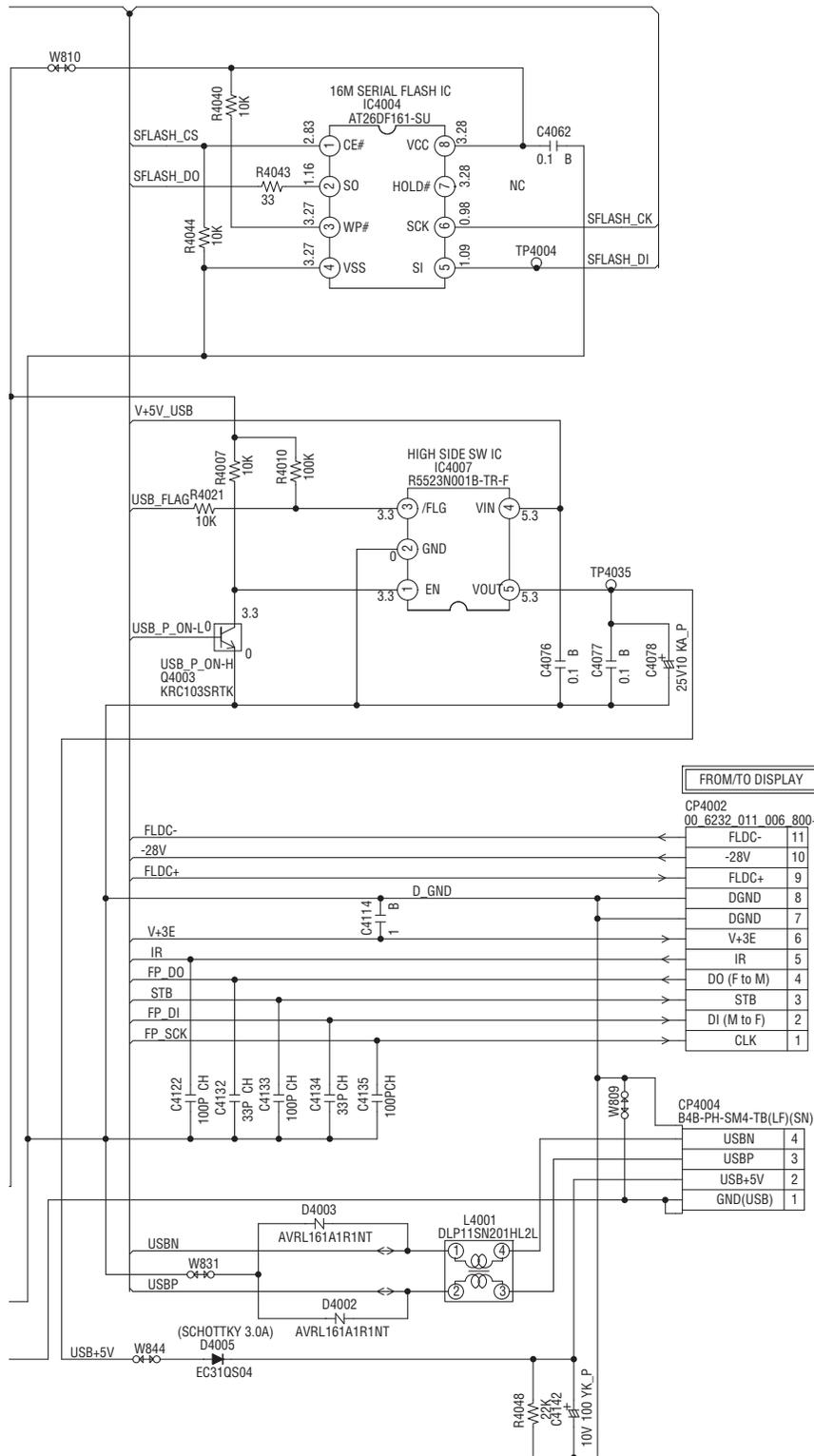


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TES DURING PLAYBACK.

SCHEMATIC DIAGRAM DVD MT PCB)

- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



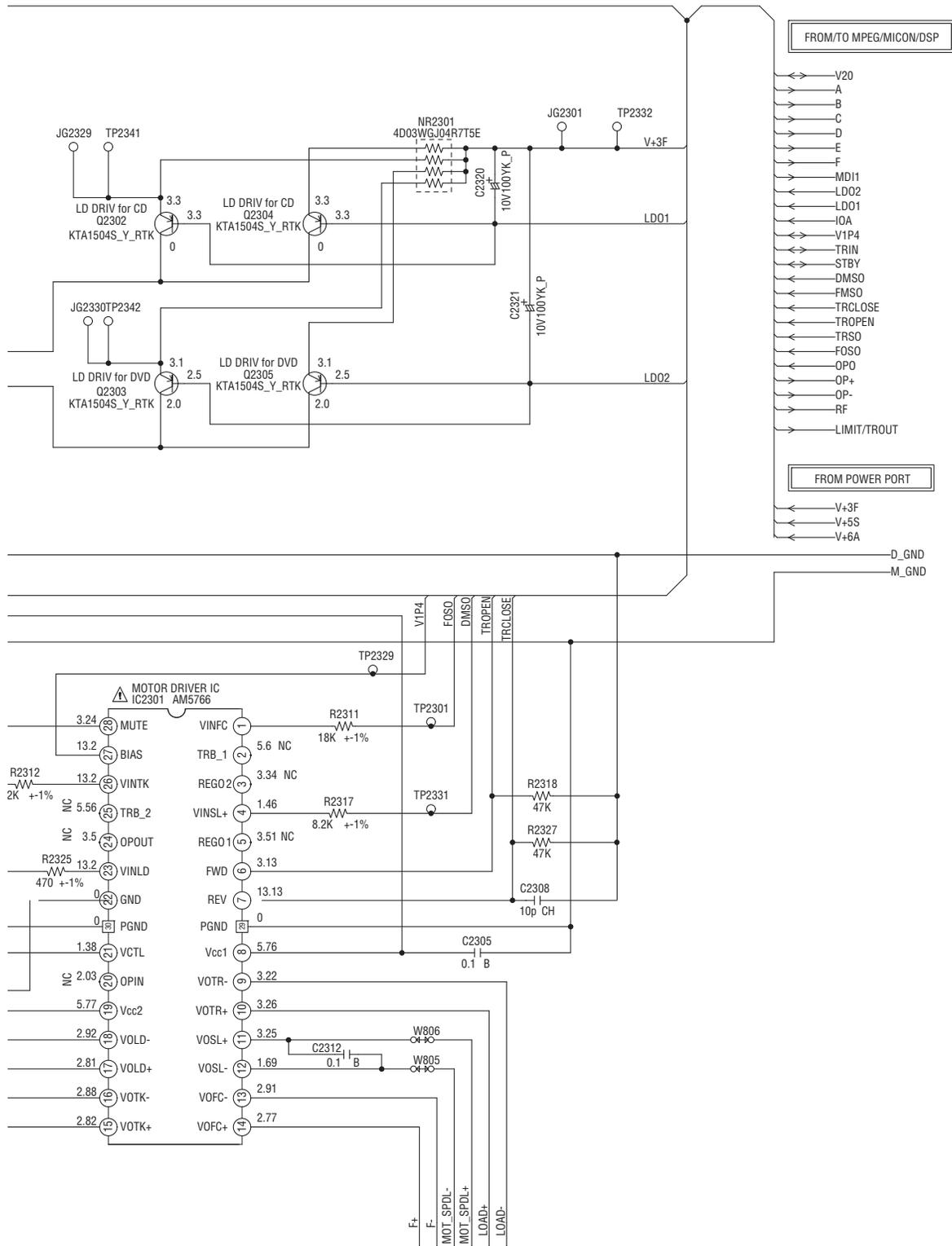
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D WITH THE DIGITAL TESTER
LAYBACK.

CAUTION: DIGITAL TRANSISTOR



PCB130
DMG099

RIVE SCHEMATIC DIAGRAM DVD MT PCB)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

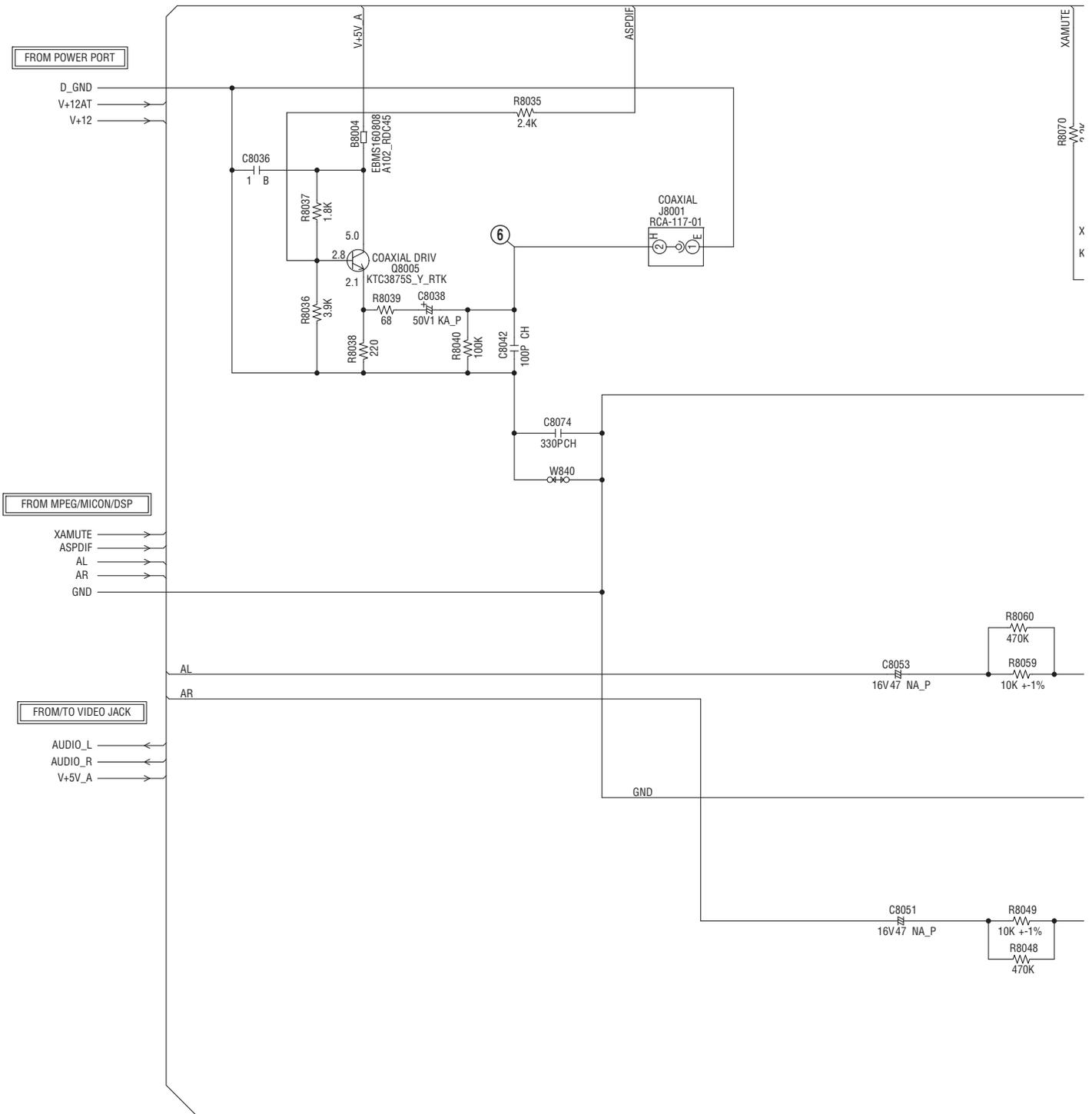
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB130
DMG099

10.4 DVD MT PCB ASSY(4/6)

AUDIO JACK SCHEMA1 (DVD MT PCB

DVD MT PCB ASSY (4/6)
(A2L103A130)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST A' OF PRINTING AND SUBJECT TO CHANGE WITH

SCHEMATIC DIAGRAM DVD MT PCB)

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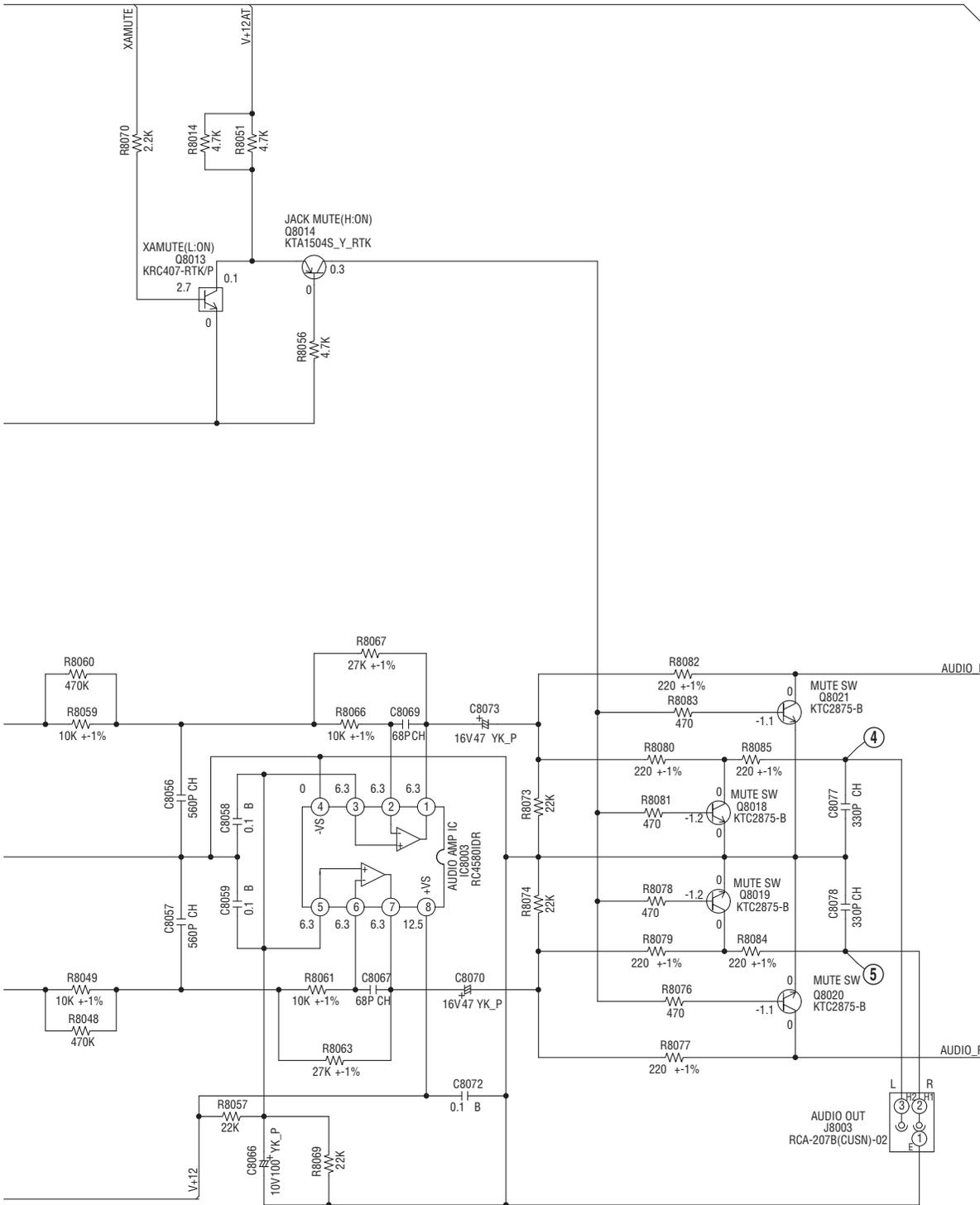
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SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



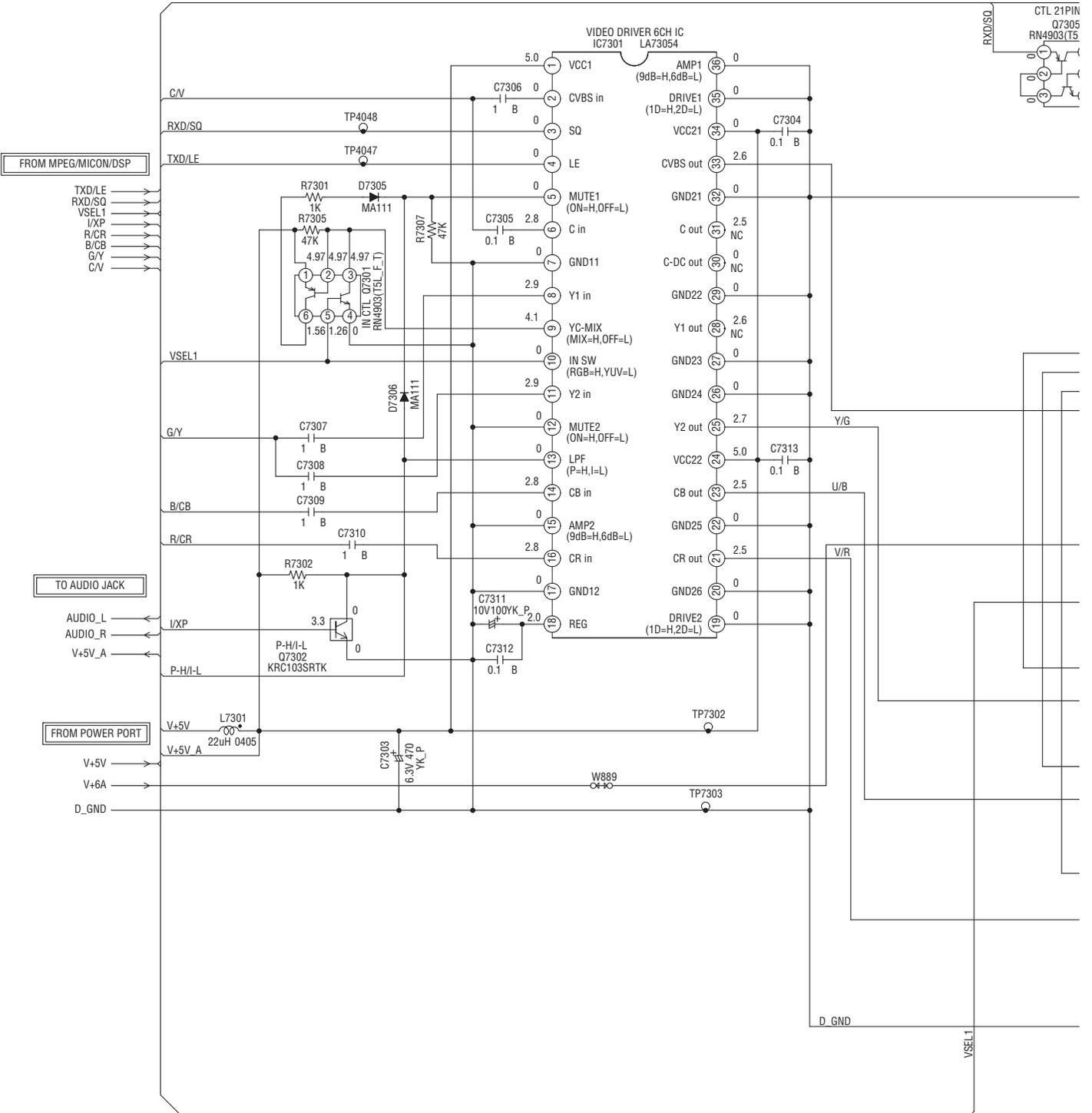
DV-310-S

PCB130
DMG099

10.5 DVD MT PCB ASSY(5/6)

DVD MT PCB ASSY (5/6) (A2L103A130)

VIDEO JACK SCHEMATIC (DVD MT PCB)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE L^A OF PRINTING AND SUBJECT TO CHANG

SCHEMATIC DIAGRAM DVD MT PCB)

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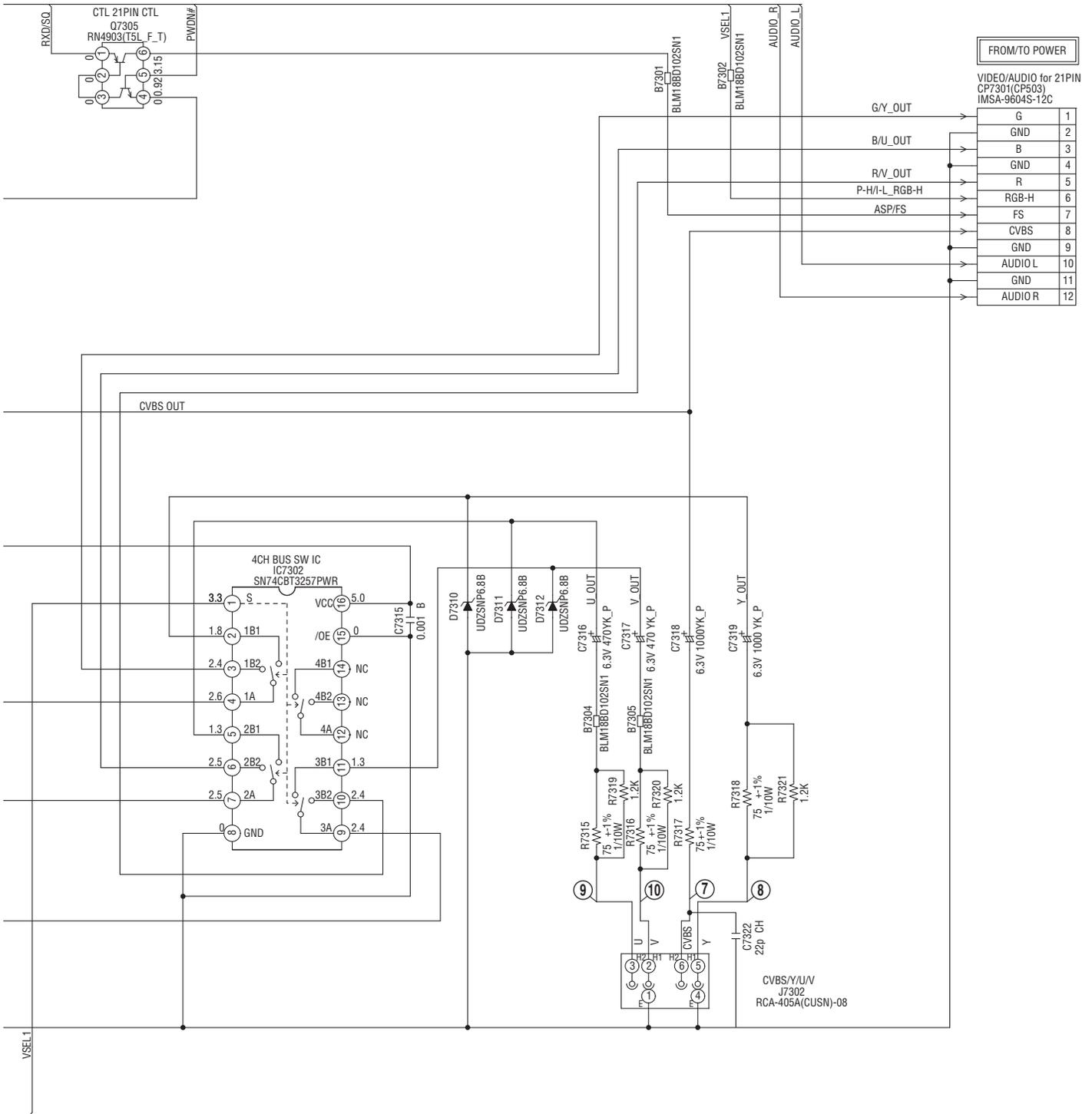
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PCB130
DMG099

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AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR

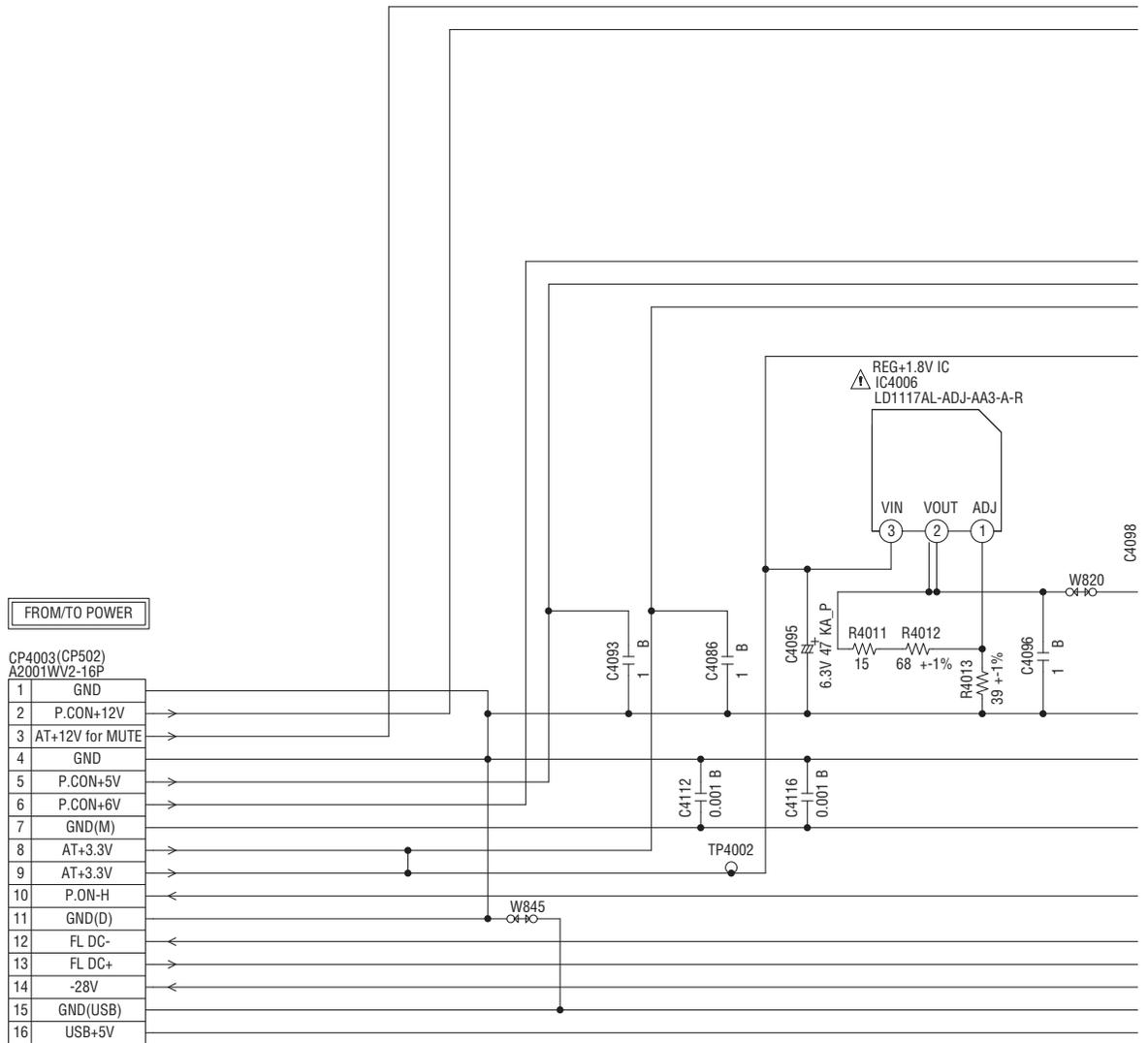


DV-310-S

10.6 DVD MT PCB ASSY(6/6)

DVD MT PCB ASSY (6/6)
(A2L103A130)

POWER PORT SCHEMA
(DVD MT PCB)

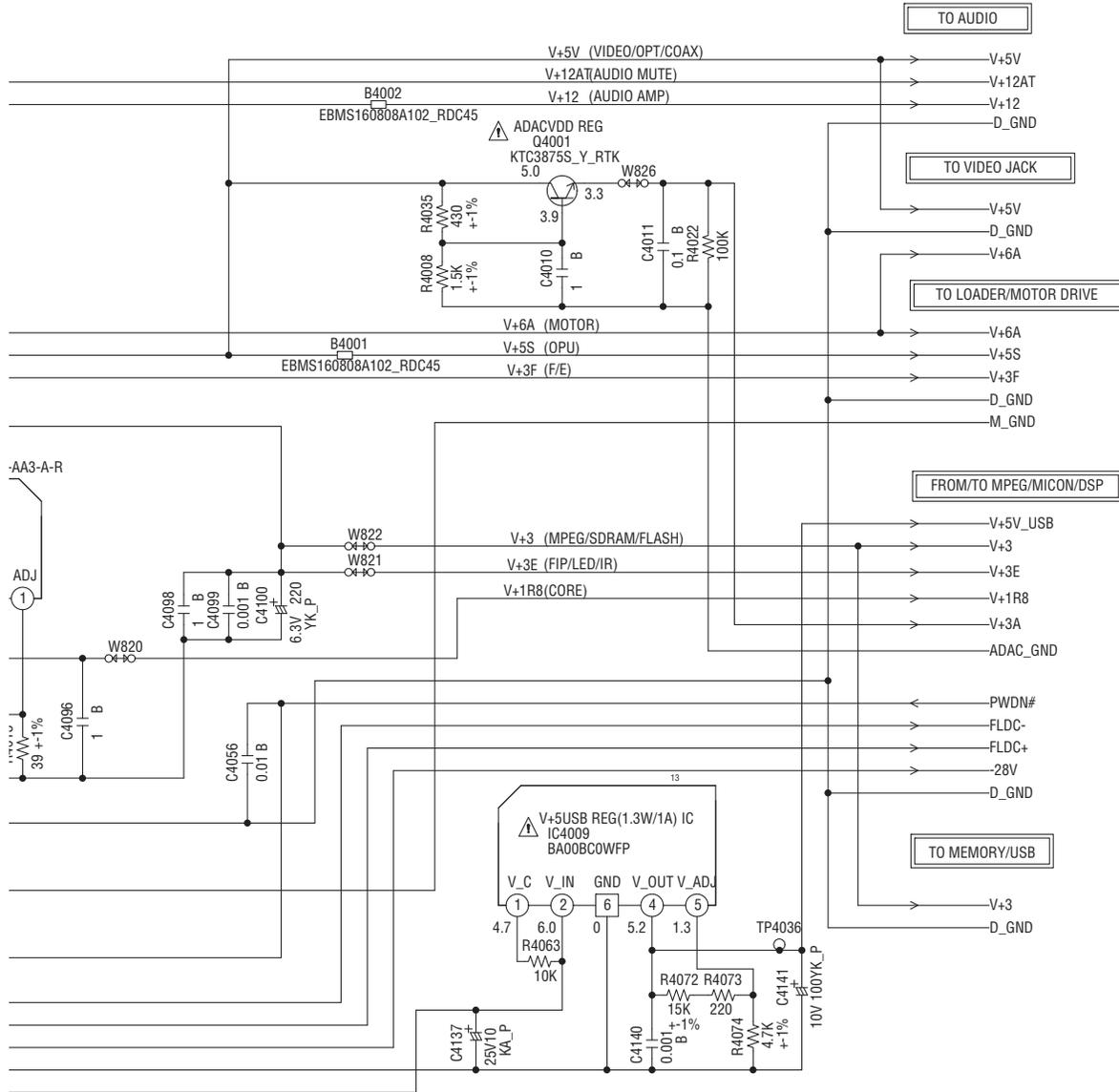


ATTENTION: LES PIÈCES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THE DC VOLTAGE EACH P/ MEASURED WITH THE DIG DURING PLAYBACK.

SCHEMATIC DIAGRAM DVD MT PCB)



THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

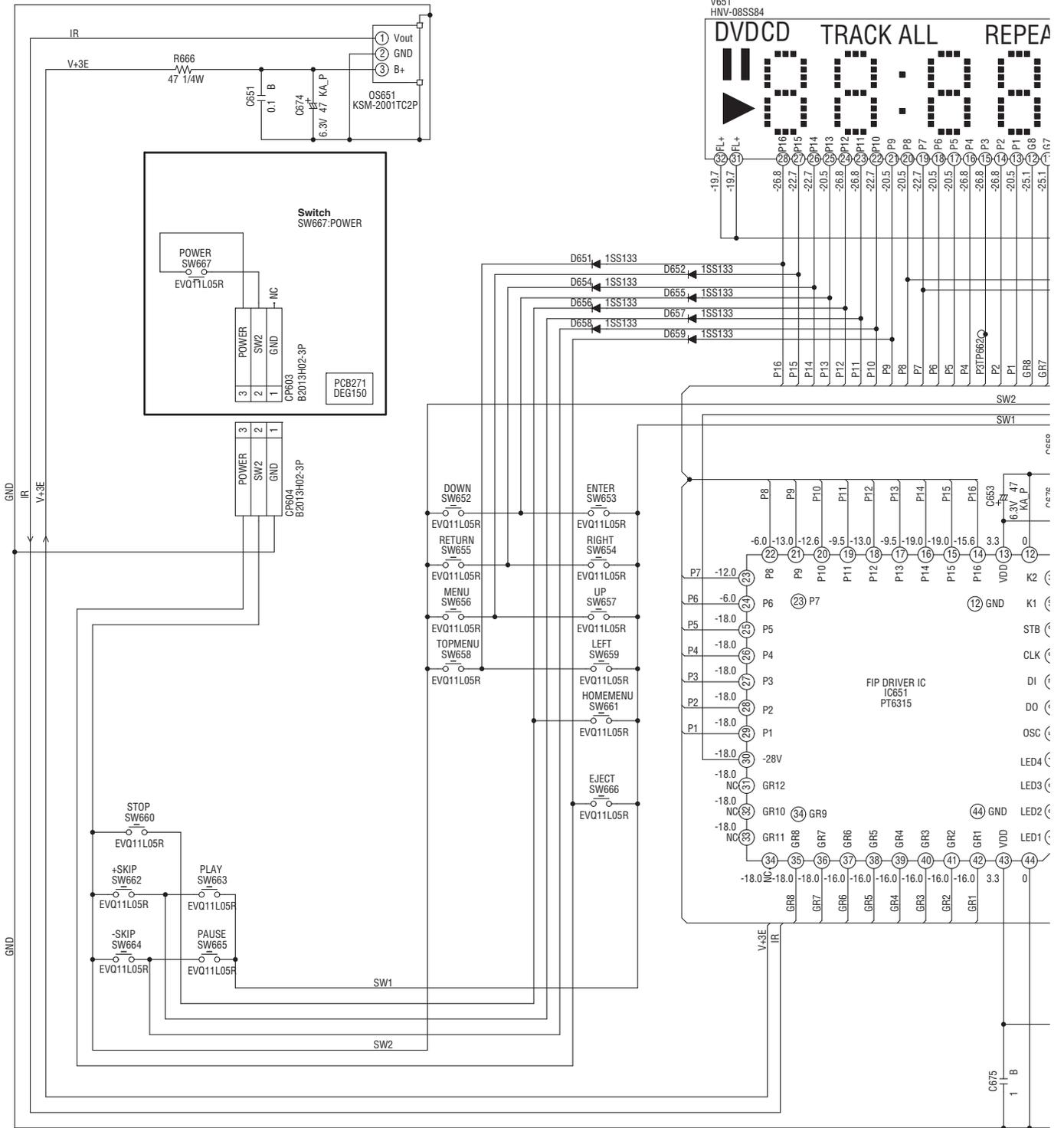
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB130
DMG099

10.7 OPERATION PCB ASSY

OPERATION PCB ASSY
 (WYXZT5 : A2L103A270)
 (WSXZT5 : A2L109A270)

DISPLAY SCHEMATIC
 (OPERATION PC



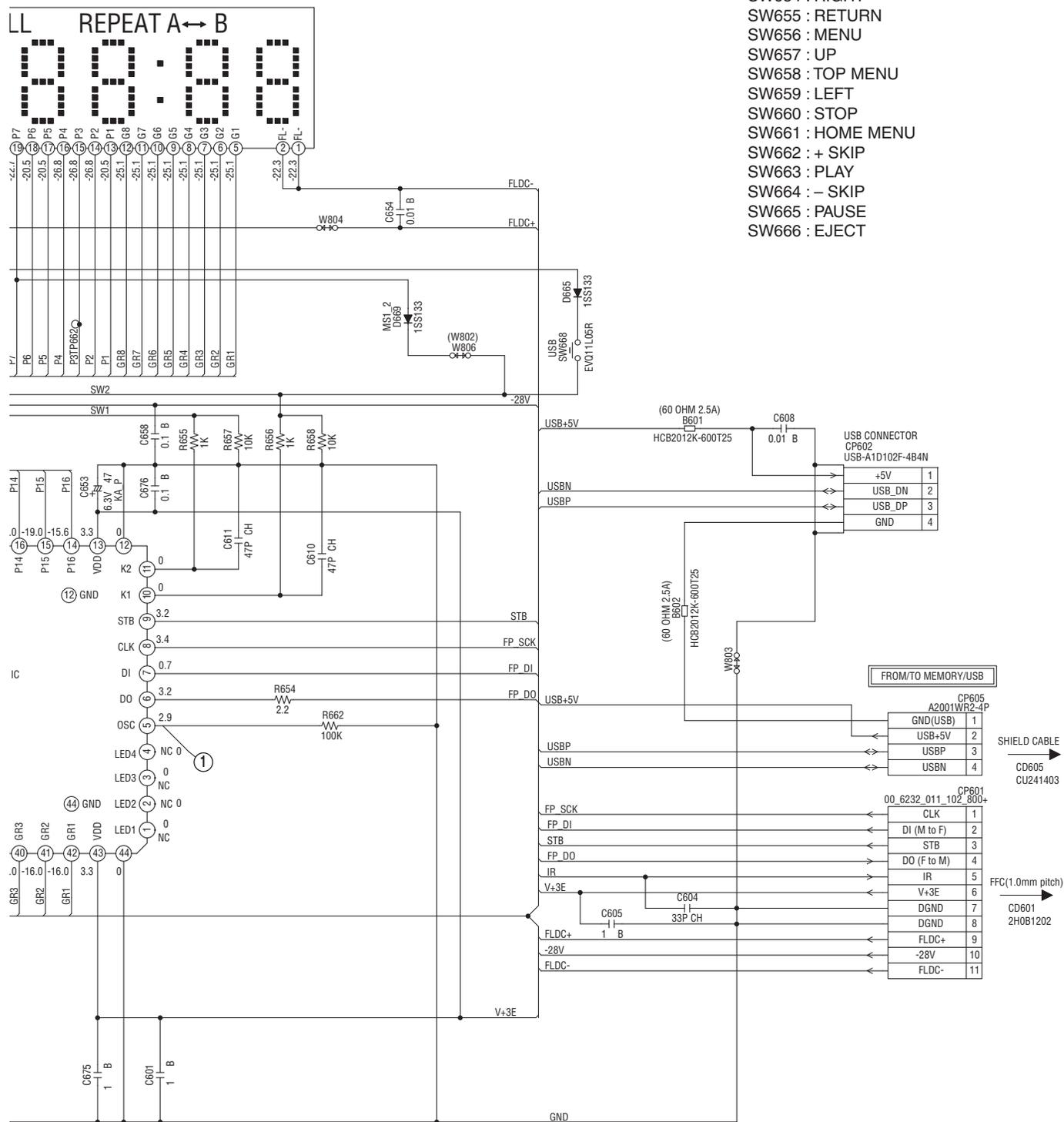
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIA OF PRINTING AND SU

CHEMATIC DIAGRAM PERATION PCB)

Switches

- SW652 : DOWN
- SW653 : ENTER
- SW654 : RIGHT
- SW655 : RETURN
- SW656 : MENU
- SW657 : UP
- SW658 : TOP MENU
- SW659 : LEFT
- SW660 : STOP
- SW661 : HOME MENU
- SW662 : + SKIP
- SW663 : PLAY
- SW664 : - SKIP
- SW665 : PAUSE
- SW666 : EJECT



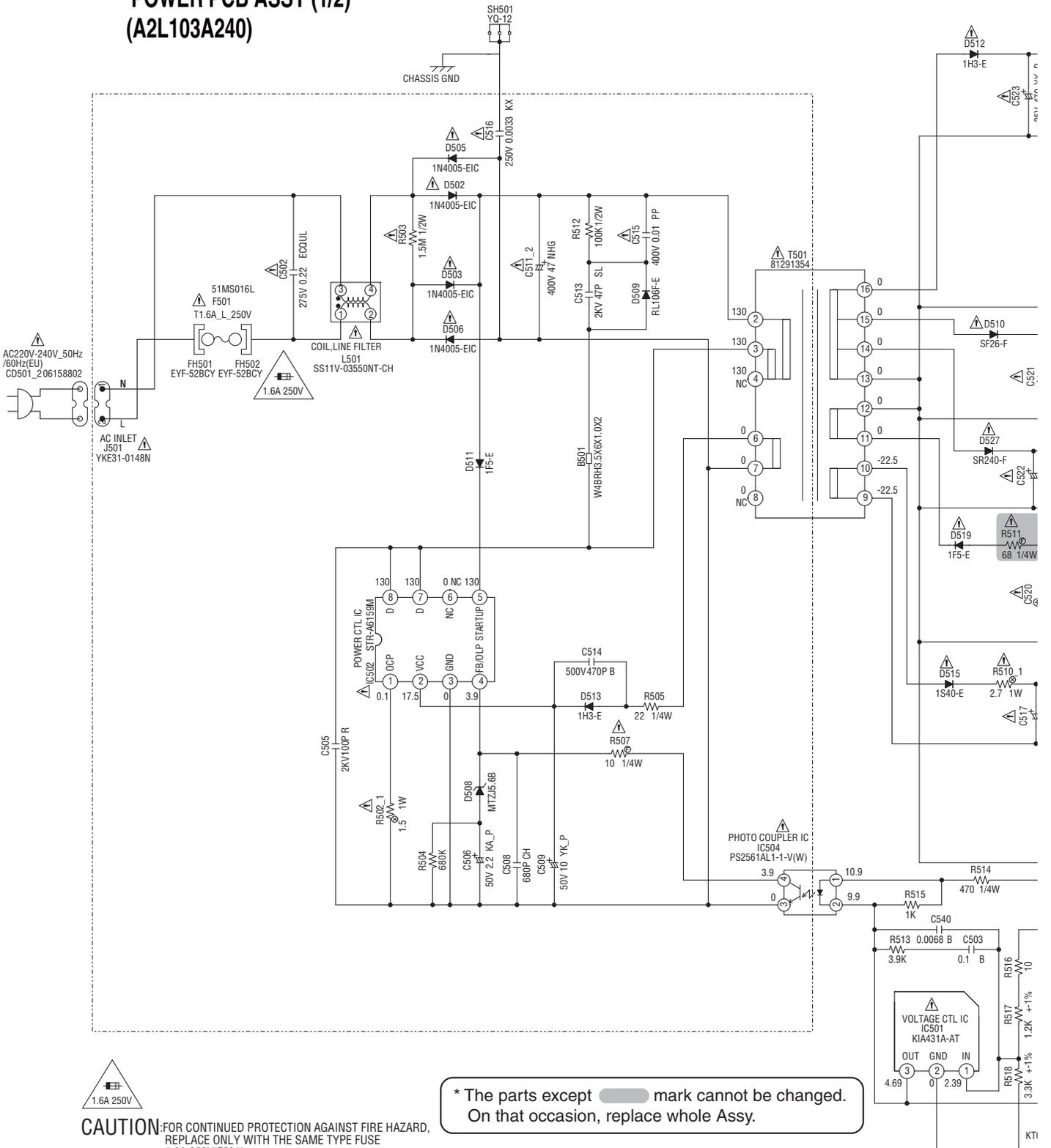
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

PCB270
DEG149

10.8 POWER PCB ASSY(1/2)

POWER SCHEMATIC (POWER PCB)

POWER PCB ASSY (1/2) (A2L103A240)



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 1.6A 250V(F501)

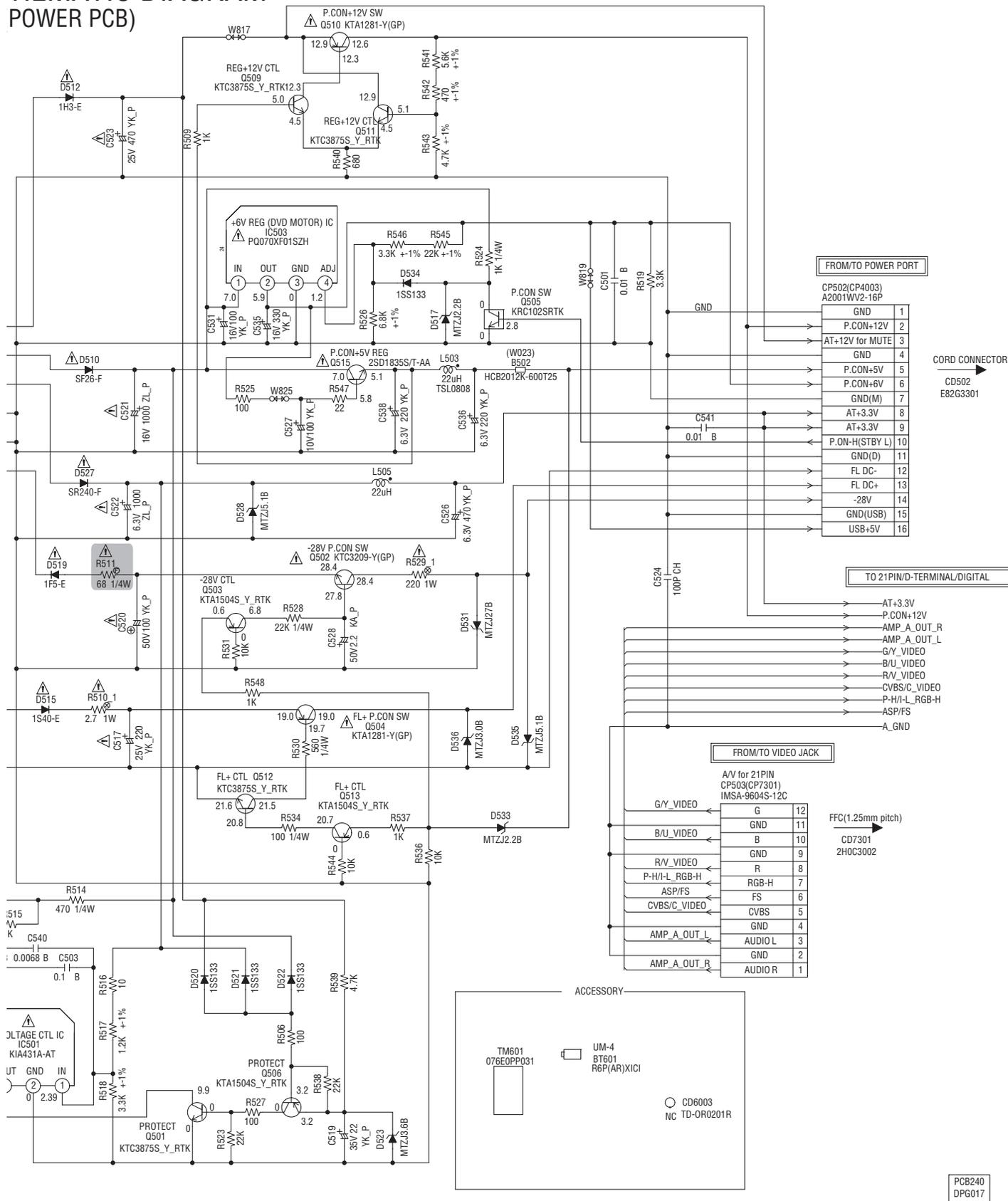
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 1.6A 250V(F501)

CAUTION: SINCE THESE PARTS MARKED BY Δ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPARÉES PAR UN Δ ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DÉCRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIM OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOT
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

SCHEMATIC DIAGRAM POWER PCB



SEE THE LATEST AT THE TIME TO CHANGE WITHOUT NOTICE.
 ⚠ WAS AL TESTER

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
 THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: DIGITAL TRANSISTOR

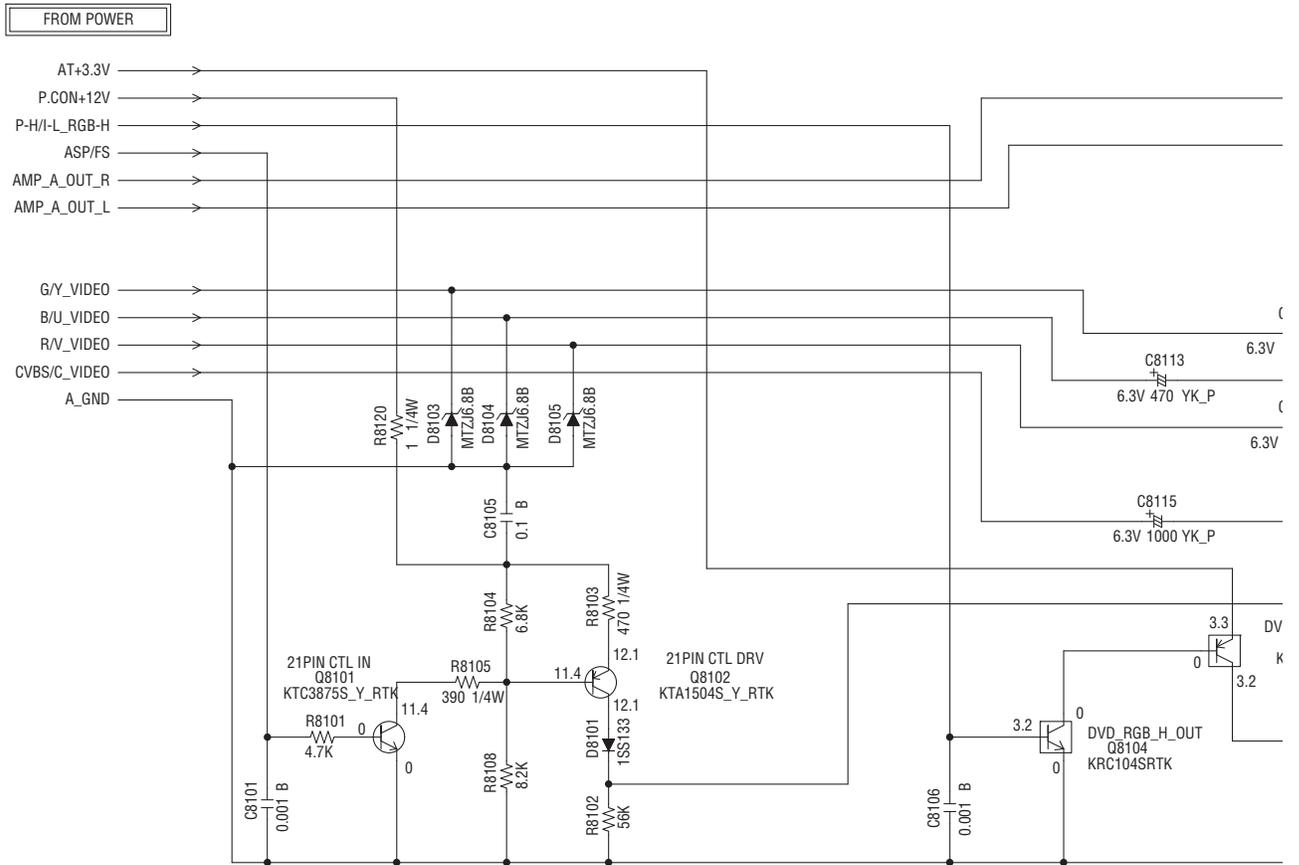


DV-310-S

10.9 POWER PCB ASSY(2/2)

POWER PCB ASSY (2/2) (A2L103A240)

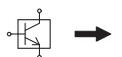
21PIN/D-TERMINAL/DIGITAL (POWER PCB



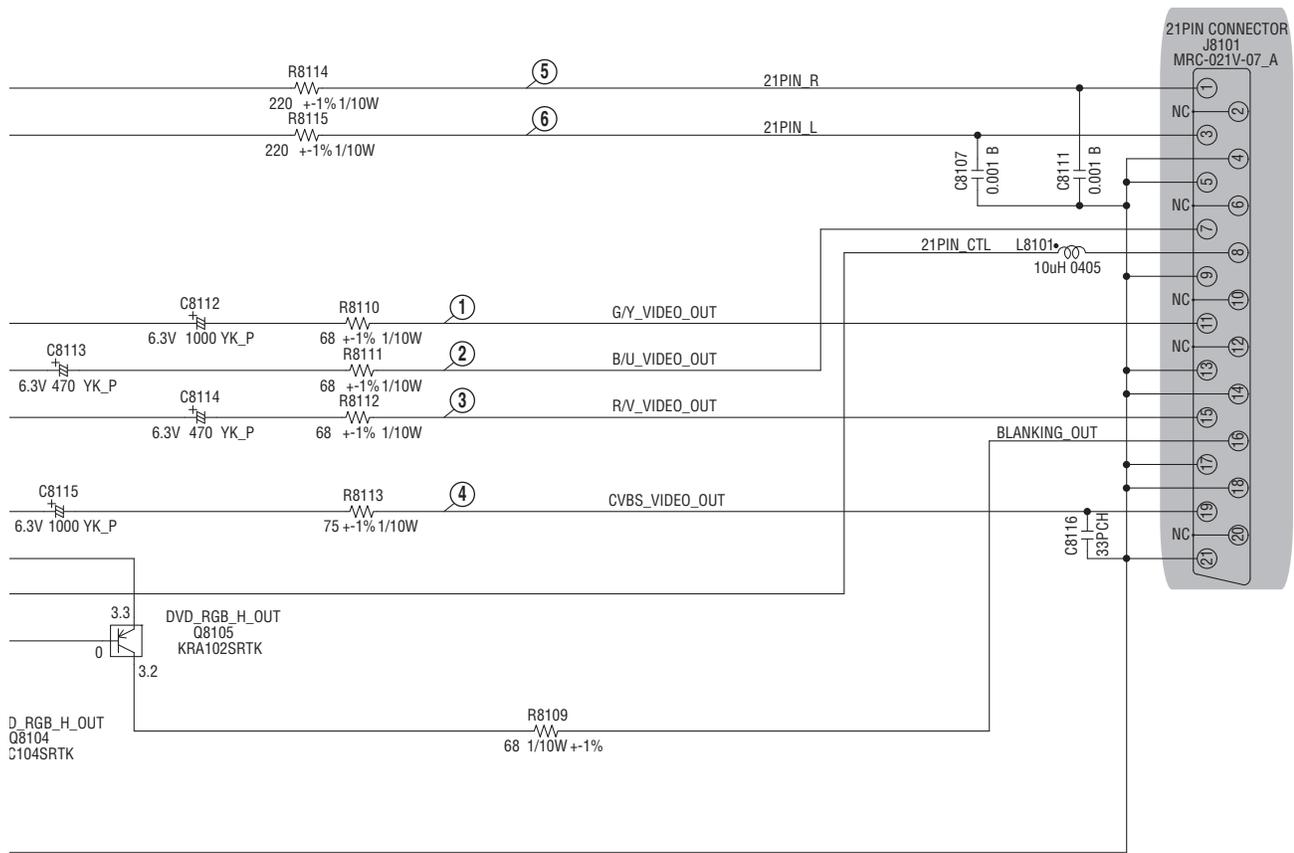
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL 1



'DIGITAL SCHEMATIC DIAGRAM POWER PCB)



* The parts except mark cannot be changed.
On that occasion, replace whole Assy.

CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR



PCB240
DPG017

10.10 WAVEFORMS

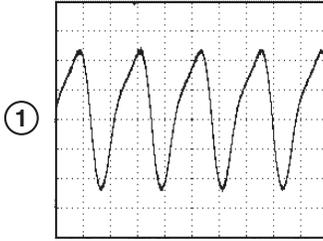
Note : The encircled numbers denote measuring point in the schematic diagram.

DVD MT PCB ASSY

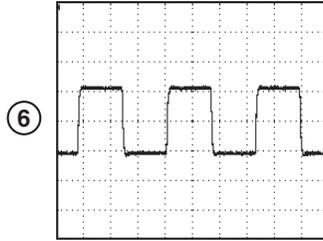
POWER PCB ASSY

MPEG/MICON/DSP

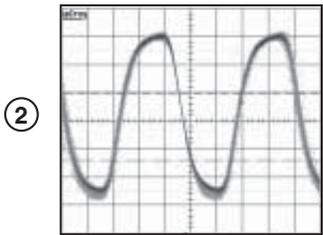
IC4001-pin9 (XTALI)
V:200mV/div. H:500μs/div.



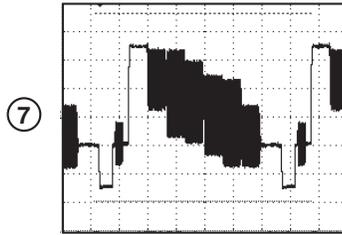
J8001-pin2 (Coaxial Out)
V:500mV/div. H:200ns/div.



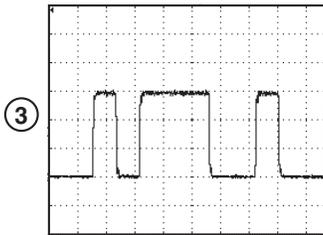
IC4001-pin66 (SDCLK)
V:0.5V/div. H:2ns/div.



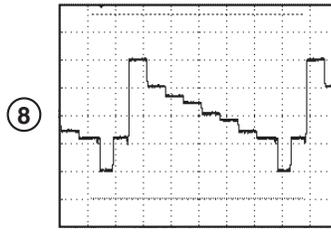
J7302-pin6 (CVBS_Out)
V:200mV/div. H:10μs/div.



IC4001-pin93 (SPDIF)
V:1.0V/div. H:200ns/div.

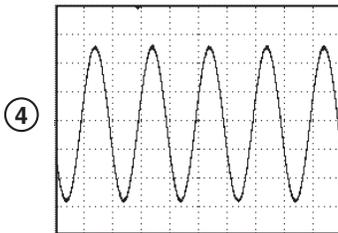


J7302-pin5 (Y_Out)
V:500mV/div. H:10μs/div.

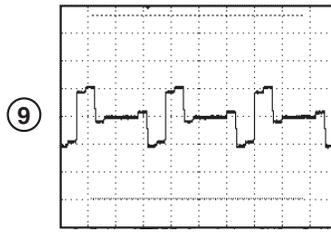


AUDIO JACK

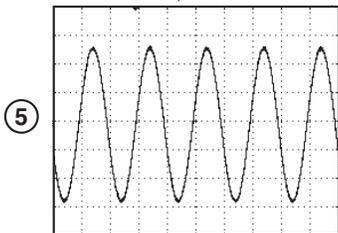
J8003-pin3 (Lch_Out)
V:1.0V/div. H:500μs/div.



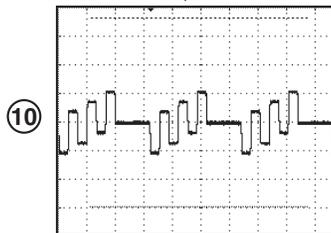
J7302-pin3 (U_Out)
V:500mV/div. H:20μs/div.



J8003-pin2 (Rch_Out)
V:1.0V/div. H:500μs/div.

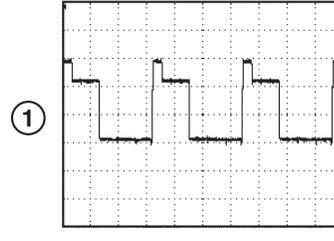


J7302-pin2 (V_Out)
V:500mV/div. H:20μs/div.

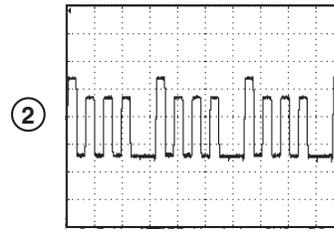


21PIN/D-TERMINAL/DIGITAL

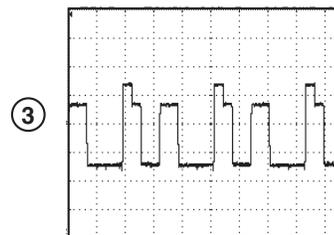
J8101-pin11 (G/Y_Out)
V:500mV/div. H:20μs/div.



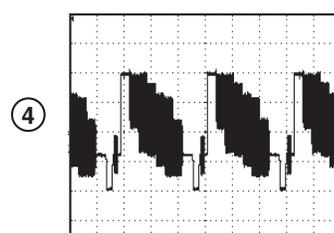
J8101-pin7 (B/U_Out)
V:500mV/div. H:20μs/div.



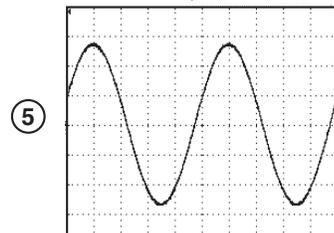
J8101-pin15 (R/V_Out)
V:500mV/div. H:20μs/div.



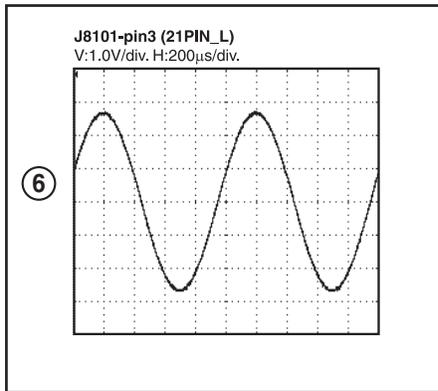
J8101-pin19 (CVBS_Out)
V:500mV/div. H:20μs/div.



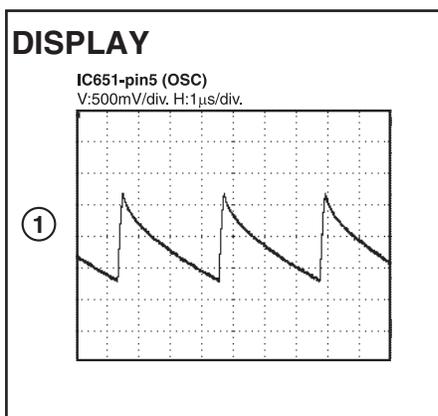
J8101-pin1 (21PIN-R)
V:1.0V/div. H:200μs/div.



POWER PCB ASSY



OPERATION PCB ASSY



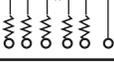
A
B
C
D
E
F

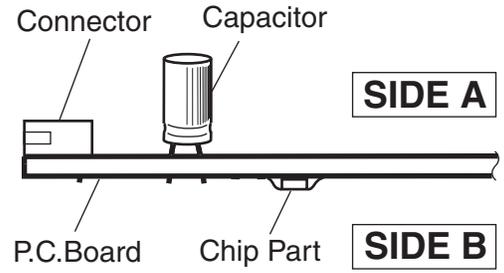
11. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

- 1. Part numbers in PCB diagrams match those in the schematic diagrams.
- 2. A comparison between the main parts of PCB and schematic diagrams is shown below.

- 3. The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.
- 4. View point of PCB diagrams.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator



SIDE B

SIDE B

A

B

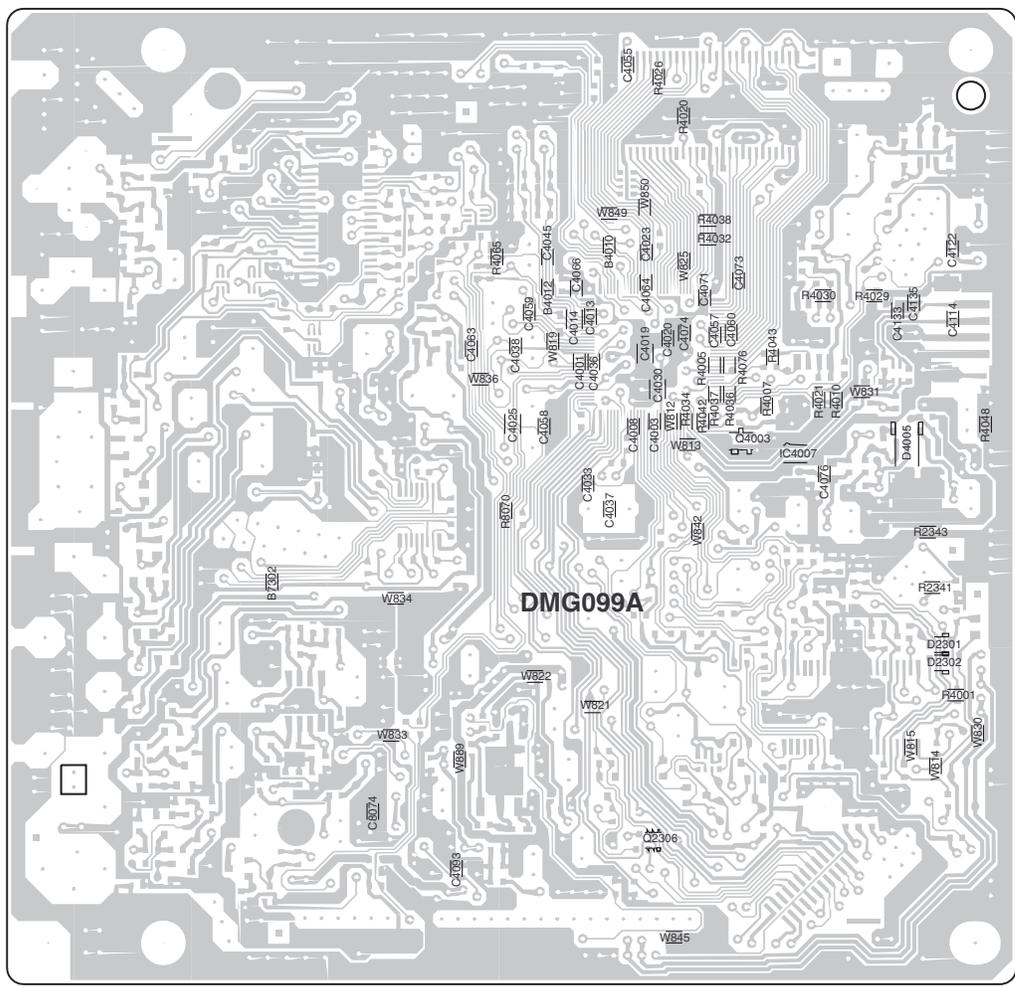
C

D

E

F

DVD MT PCB ASSY

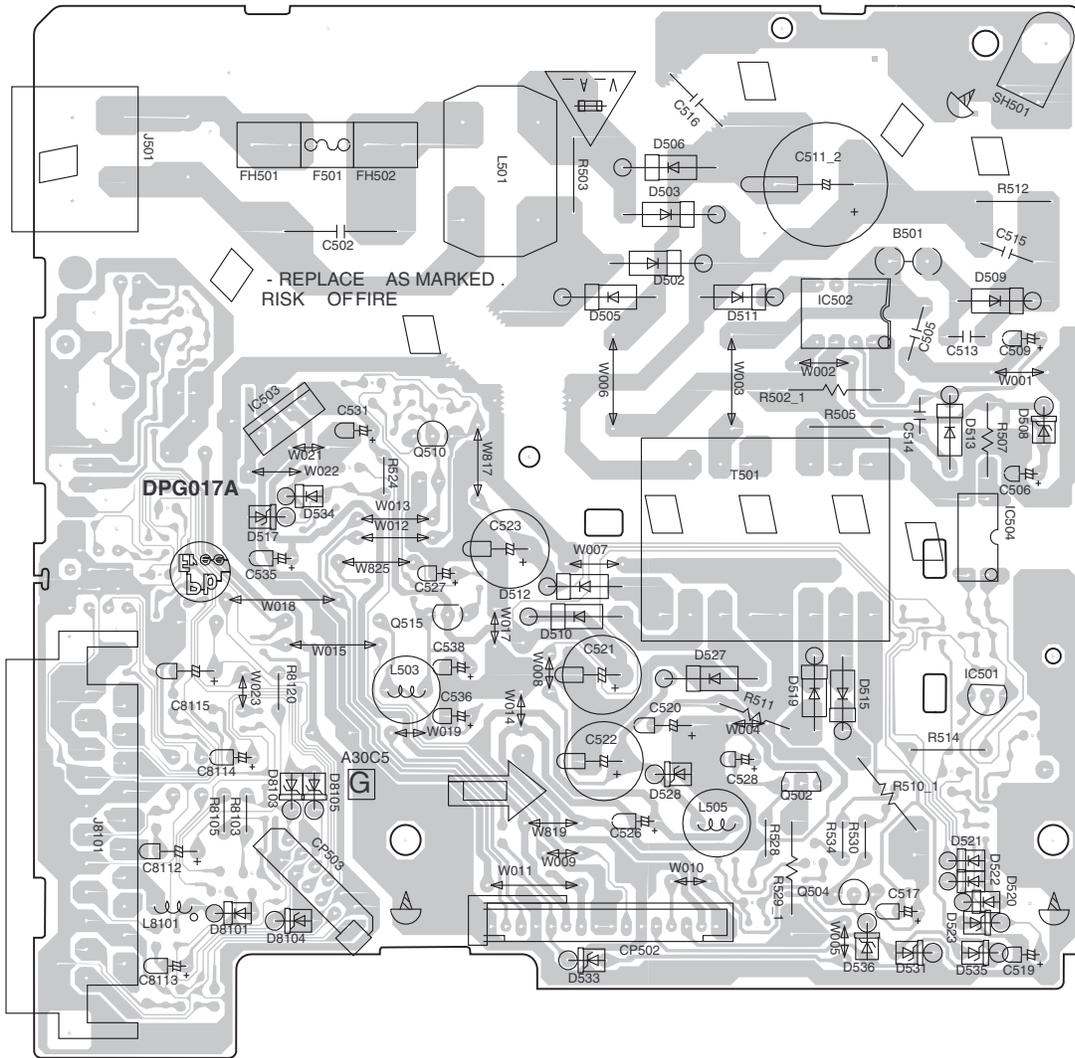


11.3 POWER PCB ASSY

SIDE A

SIDE A

POWER PCB ASSY



SIDE B

SIDE B

A

B

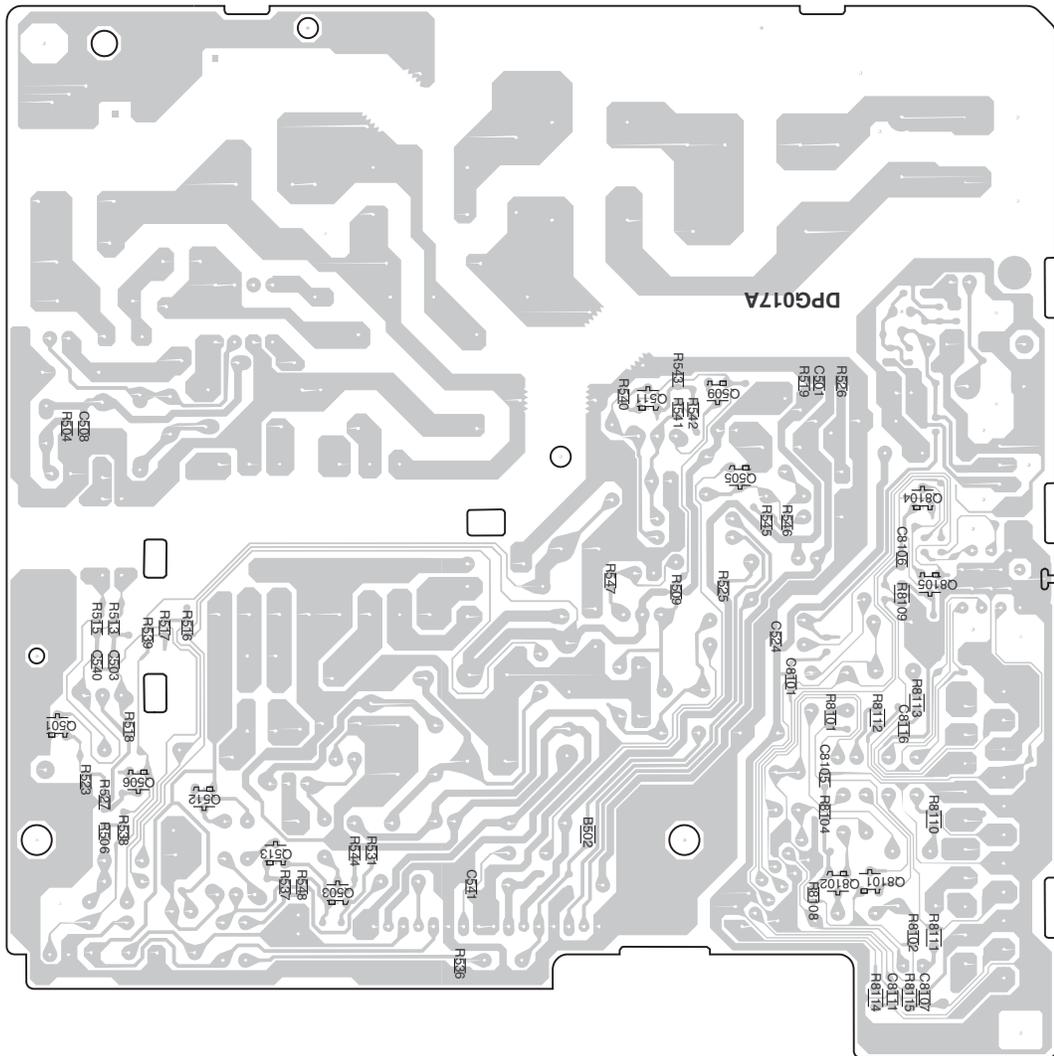
C

D

E

F

POWER PCB ASSY



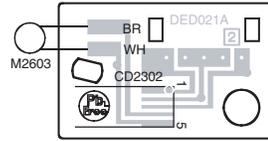
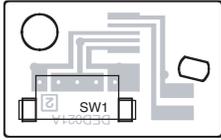
11.4 LOADING MOTOR and SW

SIDE A

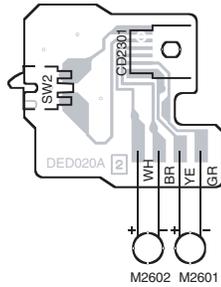
SIDE B

LOADING MOTOR (INSERTED PARTS)

LOADING MOTOR (CHIP MOUNTED PARTS)



SW



12. PCB PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

● The Δ mark found on some component parts indicates the importance of the safety factor of the part.

Therefore, when replacing, be sure to use parts of identical designation.

● When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω \rightarrow 56 x 10¹ \rightarrow 561 RD1/4PU 561J

47k Ω \rightarrow 47 x 10³ \rightarrow 473 RD1/4PU 473J

0.5 Ω \rightarrow R50 RN2H R50K

1 Ω \rightarrow 1R0 RS1P 1R0K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω \rightarrow 562 x 10¹ \rightarrow 562 RN1/4PC 562F

● Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Mark No. Description Part No.

LIST OF ASSEMBLIES

1..DVD MT PCB ASSY A2L103A130

1..OPERATION PCB ASSY(WYXZT5)* A2L103A270

1..OPERATION PCB ASSY(WSXZT5)* A2L109A270

Δ 1..POWER PCB ASSY A2L103A240

(*) A2L103A270 and A2L109A270 have same service parts.
But they are NOT COMPATIBLE.

Mark No. Description Part No.

DVD MT PCB ASSY

SEMICONDUCTORS

IC 2301 IC AM5766 I1UFV5766S

IC 4001 IC MT1389FE/L-L IC8K0389L0

IC 4003 IC R3112N291A-TR-FA IE1F0291A0

IC 4004 IC AT26DF161-SU S2L101AF01

IC 4005 IC M12L64164A-7TG IF9J0164AG

IC 4006 IC LD1117AL-ADJ-AA3-A-R I1YF9117A0

IC 4007 IC R5523N001B-TR-F I1ZF0N0010

IC 4009 IC BA00BCOWFP-E2 I07F0COWF0

IC 7301 IC LA73054-TLM-E I03FG30540

IC 7302 IC SN74CBT3257PWR I5CJ032570

IC 8003 IC RC4580IDR I04J045800

OTHERS

J 7302 RCA JACK 060R451013

J 8001 RCA JACK 060R401122

J 8003 RCA JACK 060R451012

X 4001 CRYSTAL (27MHz) 100GT02720

OPERATION PCB ASSY

SEMICONDUCTORS

IC 651 IC PT6315 IF4K063150

SWITCHES

SW 652-667 SWITCH TACT 0504R01T38

OTHERS

CP 602 CONNECTOR PCB SIDE 06G5AA1002

V 651 TUBE FLUORESCENT 096F80R401

Mark No. Description Part No.

OS 651 REMOTE RECEIVER 077Q040004

POWER PCB ASSY

RESISTORS

Δ R 511 R,FUSE 68 OHM 1/4W R65584680J

OTHERS

J 8101 SOCKET, 21PIN 063D100050