

JVC

SERVICE MANUAL

DVD DIGITAL CINEMA SYSTEM

TH-A25

Area suffix

US ----- Singapore
UB ----- Hong Kong
UW ----- Brazil, Mexico, Peru
UX ----- Saudi Arabia
UG - Turkey, South Africa, Egypt

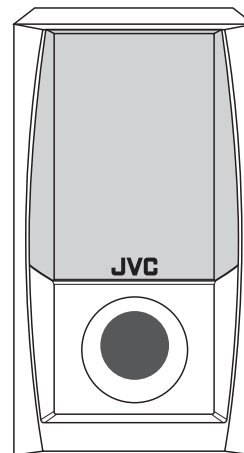
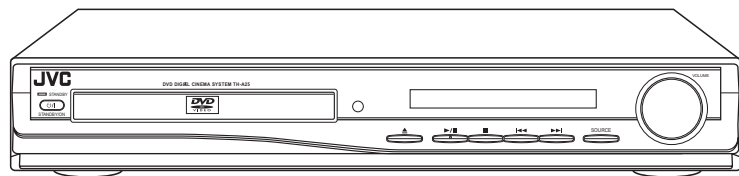
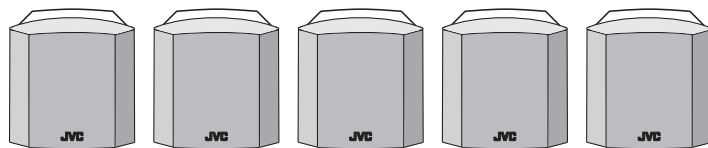


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SPECIFICATION

Center unit (XV-THA25)			
Amplifier	Front/Center/Rear	30 W per channel, min. RMS, driven into 6 Ω at 1 kHz, with no more than 10% total harmonic distortion	
	Subwoofer	55 W, min. RMS, driven into 3 Ω at 100 Hz, with no more than 10% total harmonic distortion	
Audio	Audio input sensitivity/Impedance (at 1 kHz)		
	Analog input	AUX ("AUDIO IN")	500 mV/47 kΩ
	Signal-to-Noise Ratio		68 dB
	Digital input*	DIGITAL IN (OPTICAL)	-24 dBm to -14.5 dBm (700 nm ±50 nm)
	* Corresponding to Linear PCM, Dolby Digital, and DTS Digital Surround (with sampling frequency-32 kHz, 44.1 kHz, 48 kHz)		
Video	Color System		NTSC/PAL
	Horizontal Resolution		480 lines
	Output Level	VIDEO OUT (Composite)	1.0 V(p-p)/75 Ω
		S-VIDEO	(Y):1.0 V(p-p)/75 Ω (C):0.286 V(p-p)/75 Ω
	COMPONENT VIDEO OUT	Y	1.0 V(p-p)/75 Ω
PB/PR		0.7 V(p-p)/75 Ω	
Tuner	Tuning Range	FM	87.50 MHz - 108.00 MHz
		AM	531 kHz - 1 602 kHz (at 9 kHz intervals)
			530 kHz - 1 600 kHz (at 10 kHz intervals)
	Usable Sensitivity	FM	8.0 dBf (0.9 μV/75 Ω)
AM loop antenna		650 μV/m	
General	Readable Discs	DVD VIDEO, Video CD, Super Video CD, Audio CD, CD-R/RW (Audio CD, Video CD, Super Video CD, MP3, JPEG), DVD-R/RW (Video format)	
	Power Requirements	AC 110 V - 127 V/220 V - 240 V , Adjustable with the voltage selector, 50 Hz/60 Hz	
	Power Consumption	110 W (at operation) 2 W (in standby mode)	
	Dimensions (W × H × D)	360 mm × 65 mm × 404 mm	
	Mass	6.3 kg	
Subwoofer (SP-WA25)			
Speaker		15 cm Bass-reflex, magnetically shielded	
Power Handling Capacity		55 W	
Impedance		3 Ω (min)	
Frequency Range		30 Hz to 200 Hz	
Dimensions (W × H × D)		210 mm × 382 mm × 338 mm	
Mass		6 kg	
Satellite Speakers (SP-XTHA25)			
Speaker		8 cm Bass-reflex, magnetically shielded	
Power Handling Capacity		30 W	
Impedance		6 Ω (min)	
Frequency Range		80 Hz to 20 kHz	
Dimensions (W × H × D)		105 mm × 114 mm × 116 mm	
Mass		640 g	

Designs & specifications are subject to change without notice.

SECTION 1 PRECAUTION

1.1 Safety Precautions

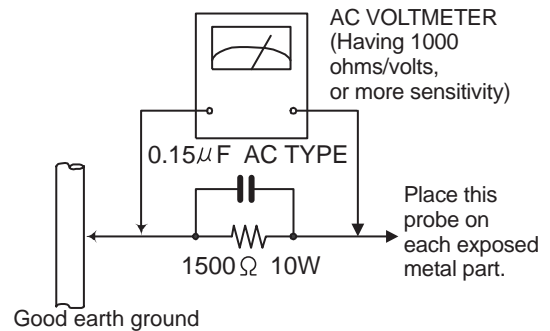
- (1) This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
- (2) Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
- (3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
- (4) The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after reassembling.
- (5) Leakage shock hazard testing

After reassembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
- Alternate check method
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 Ω per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC

voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



1.2 Warning

- (1) This equipment has been designed and manufactured to meet international safety standards.
- (2) It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
- (3) Repairs must be made in accordance with the relevant safety standards.
- (4) It is essential that safety critical components are replaced by approved parts.
- (5) If mains voltage selector is provided, check setting for local voltage.

1.3 Caution

Burrs formed during molding may be left over on some parts of the chassis.

Therefore, pay attention to such burrs in the case of pre-forming repair of this system.

1.4 Critical parts for safety

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (\blacksquare), diode (\blacksquare) and ICP (\bullet) or identified by the " Δ " mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (This regulation does not Except the J and C version)

1.5 Preventing static electricity

1.5.1 Grounding to prevent damage by static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

1.5.2 About the earth processing for the destruction prevention by static electricity

Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players.

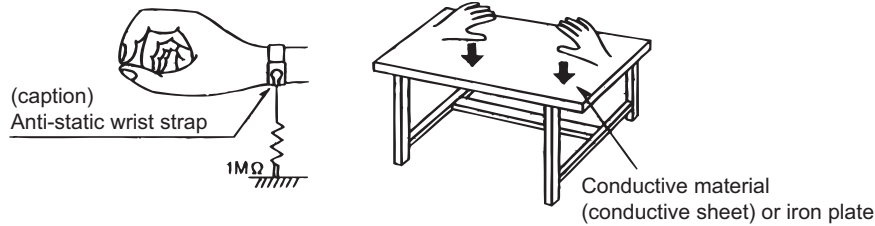
Be careful to use proper grounding in the area where repairs are being performed.

(1) Ground the workbench

Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

(2) Ground yourself

Use an anti-static wrist strap to release any static electricity built up in your body.



1.5.3 Handling the optical pickup

- (1) In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
- (2) Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

1.5.4 Handling the traverse unit (optical pickup)

- (1) Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
- (2) Remove solder of the short lands on the flexible wire after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit.
Be careful not to take too long a time when attaching it to the connector.
- (3) Handle the flexible wire carefully as it may break when subjected to strong force.
- (4) It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

1.5.5 Attention when traverse unit is decomposed

*Please refer to "Disassembly method" in the text for the DVD pickup.

- Apply solder to the short circuit points before the flexible wire is disconnected from the connector on the DVD pickup.
(If the flexible wire is disconnected without applying solder, the DVD pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short circuit points after connecting the flexible wire.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

SECTION 3 DISASSEMBLY

3.1 Main body section

3.1.1 Removing the top cover

(See Figs.1 and 2)

- (1) From the both sides of the main body, remove the four screws **A** attaching the top cover. (See Fig.1)
- (2) From the back side of the main body, remove the four screws **B** attaching the top cover. (See Fig.2)
- (3) Take out the top cover in the upward direction while extending the lower sections of the top cover in the direction of right and left.

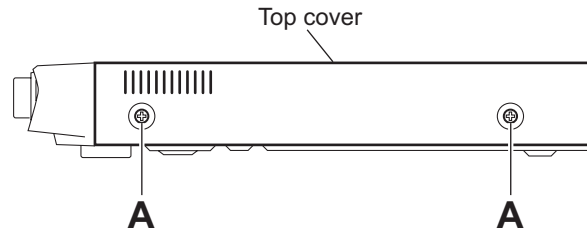


Fig.1

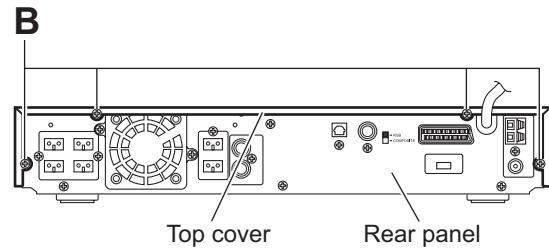


Fig.2

3.1.2 Removing the tray door (See Figs.3 to 6)

- Prior to performing the following procedures, remove the top cover.
- The following procedures are performed in the case of power on.
 - (1) From the front side of the main body, push the disk open bottom and eject the disc tray. (See Fig.3)
 - (2) Release the joints **a** in the upward direction and take out the tray door. (See Fig.3)

NOTE:

The following procedures are performed in the case of power off.

- (1) From the top side of the main body, remove the four screws **C** attaching the DVD top cover. (See Fig.4)
- (2) Take out the disc tray in the direction of the arrow while lifting the section **b**. (See Fig.5)
- (3) Release the joints **a** in an upward direction and take out the tray door. (See Fig.6)
- (4) Remove the four screws **D** attaching the DVD mechanism assembly. (See Fig.6)
- (5) Disconnect the wires from the connectors **AJ1**, **AJS1** and **PCN1** on the DVD mechanism assembly, and take out the DVD mechanism assembly. (See Fig.6)
- (6) Push in the disc tray while lifting the section **b**. (See Fig.5)

Reference:

- When pushing in the disc tray, push it until the position of the claw **c**. (See Fig.5)

- (7) Attach the DVD top cover with the four screws **C** to the DVD mechanism assembly.

Reference:

- Attaching method of the DVD mechanism assembly refers to the section 3.1.3.

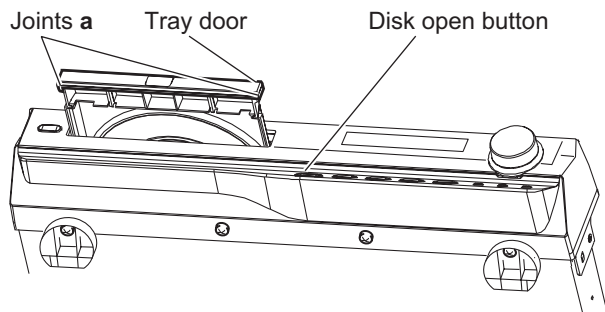


Fig.3

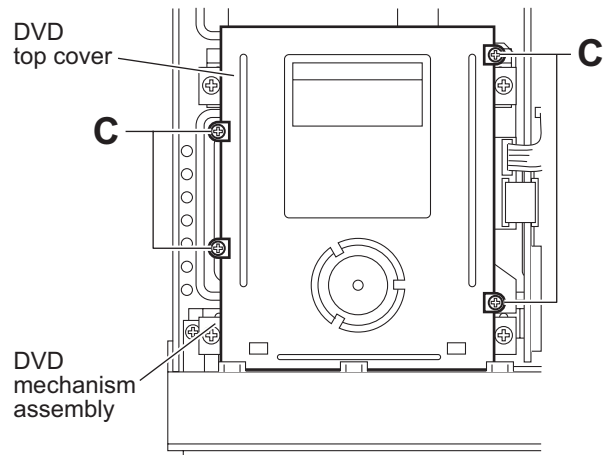


Fig.4

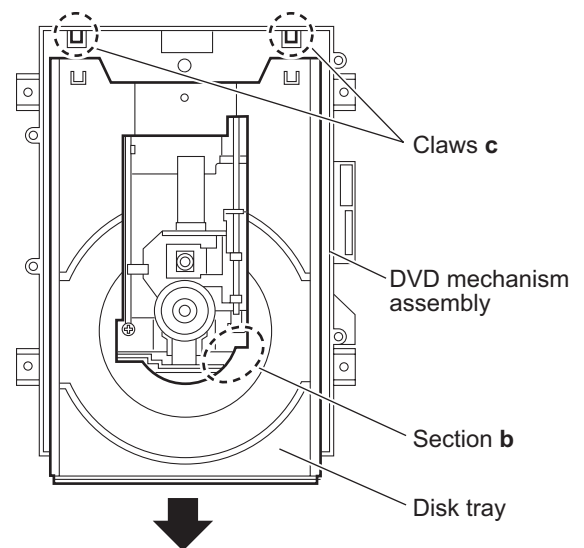


Fig.5

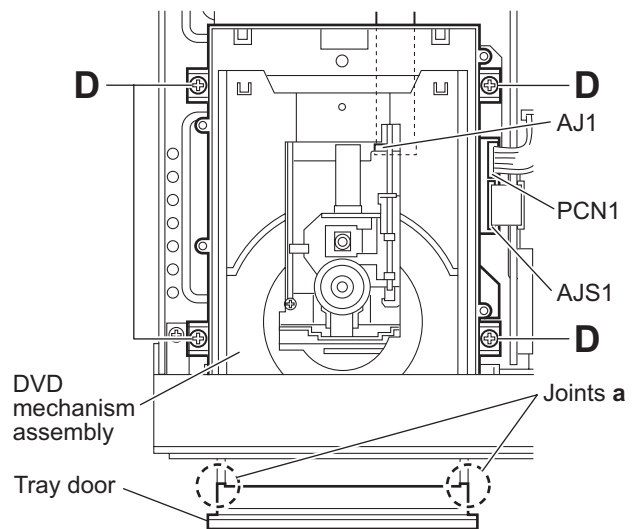
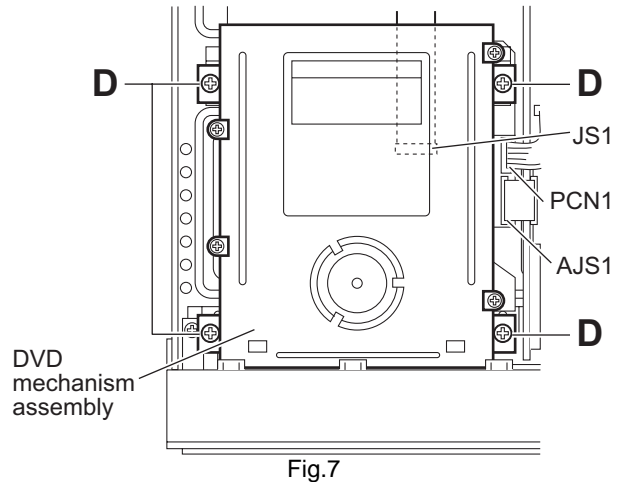


Fig.6

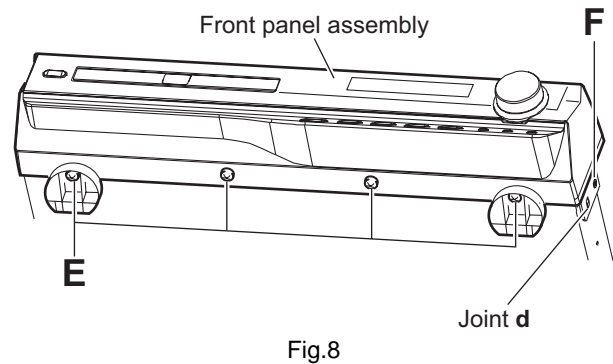
3.1.3 Removing the DVD mechanism assembly (See Fig.7)

- Prior to performing the following procedures, remove the top cover and tray door.
 - (1) From the top side of the main body, remove the four screws **D** attaching the DVD mechanism assembly.
 - (2) Disconnect the wires from the connectors [AJ1](#), [AJS1](#) and [PCN1](#) on the DVD mechanism assembly, and take out the DVD mechanism assembly.



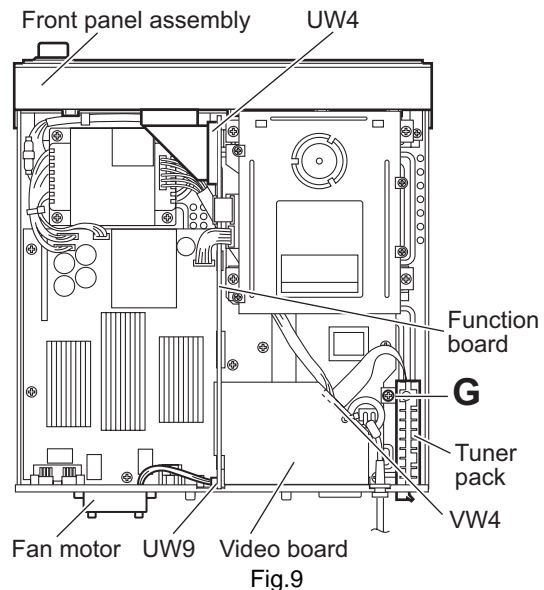
3.1.4 Removing the front panel assembly (See Figs.8 and 9)

- Prior to performing the following procedures, remove the top cover and tray door.
 - (1) From the top side of the main body, disconnect the card wire from the connector [UW4](#) on the function board. (See Fig.8)
 - (2) From the bottom side of the main body, remove the four screws **E** attaching the front panel assembly. (See Fig.9)
 - (3) From the both sides of the main body, remove the two screws **F** attaching the front panel assembly. (See Fig.9)
 - (4) Release the joints **d** in forward direction and take out the front panel assembly. (See Fig.9)



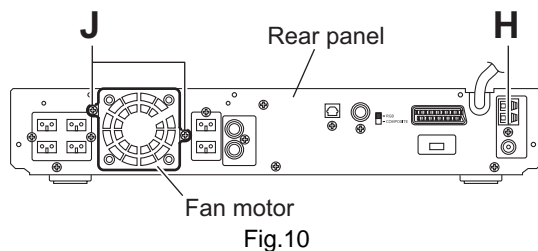
3.1.5 Removing the tuner pack (See Figs.8 and 10)

- Prior to performing the following procedures, remove the top cover.
 - (1) From the top side of the main body, disconnect the card wire from the connector [VW4](#) on video board. (See Fig.8)
 - (2) Remove the screw **G** attaching the tuner pack. (See Fig.8)
 - (3) From the back side of the main body, remove the screw **H** attaching the tuner pack. (See Fig.10)



3.1.6 Removing the fan motor (See Figs.8 and 10)

- Prior to performing the following procedures, remove the top cover.
 - (1) From the top side of the main body, disconnect the fan motor wire from the connector [UW9](#) on the function board. (See Fig.8)
 - (2) From the back side of the main body, remove two screws **J** attaching the fan motor. (See Fig.10)



3.1.7 Removing the rear panel (See Fig.11)

- Prior to performing the following procedures, remove the top cover and fan motor.
 - (1) From the back side of the main body, remove the power cord from the rear panel in the direction of the arrow.
 - (2) Remove the screw **H**, two screws **K**, five screws **L** three screws **M** and attaching the rear panel.
 - (3) Take out the rear panel.

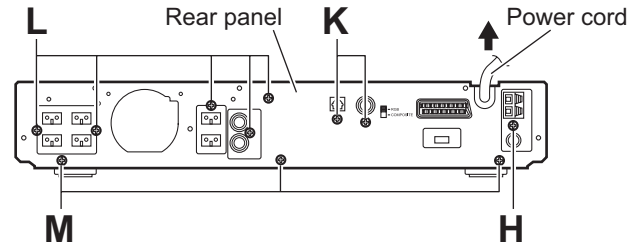


Fig.11

3.1.8 Removing the video board (See Fig.12)

- Prior to performing the following procedures, remove the top cover, fan motor and rear panel.
 - (1) From the top side of the main body, disconnect the power cord from the connector **ACW1** on the main board.
 - (2) Disconnect the card wire from the connector **VW4** on the video board.
 - (3) Disconnect the video board from the connector **UW7** and **UW8** on the function board, and turn over the video board.
 - (4) From the reverse side of the video board, disconnect the card wire from the connector **VW3** on the video board, and take out the video board.

Reference:

- Remove the tie band as required.

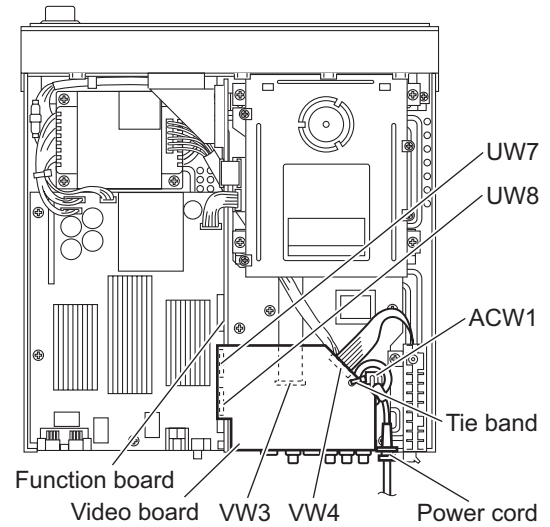


Fig.12

3.1.9 Removing the function board (See Fig.13)

- Prior to performing the following procedures, remove the top cover, fan motor, rear panel and video board.
 - (1) From the top side of the main body, disconnect the wires from the connector **PCN1** on the DVD mechanism assembly.
 - (2) Disconnect the card wire from the connector **UW4** and **UW6** on the function board.
 - (3) Remove the screw **N** attaching the function board.
 - (4) Disconnect the function board from the connector **CW5**, **CW6** and **CW7** on the main board.

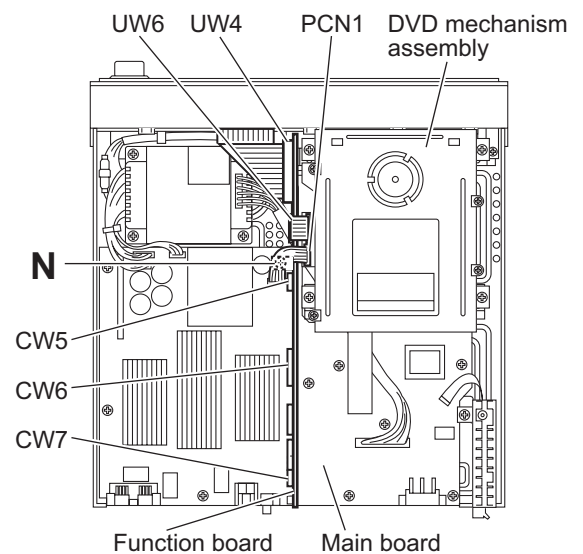


Fig.13

3.1.10 Removing the main board (See Fig.14)

- Prior to performing the following procedures, remove the top cover, tray door, DVD mechanism assembly, fan motor, rear panel, video board and function board.
 - (1) From the top side of the main body, remove the nine screws **P** attaching the main board.
 - (2) Disconnect the wires from the connectors [ACW2](#), [ACW3](#), [ACW4](#) and [ACW5](#) on the main board and take out the main board.

Reference:

- When attaching the screw **P**, attach the wire clamp together with it.
- After connecting the wire to the connector [ACW2](#), bundle the wire using the wire clamp.

3.1.11 Removing the power trans (See Fig.14)

- Prior to performing the following procedures, remove the top cover, tray door, DVD mechanism assembly, fan motor, rear panel, video board and function board.
 - (1) From the top side of the main body, disconnect the wires from the connectors [ACW2](#), [ACW3](#), [ACW4](#) and [ACW5](#) on the main board.
 - (2) Remove the four screws **Q** attaching the power trans.

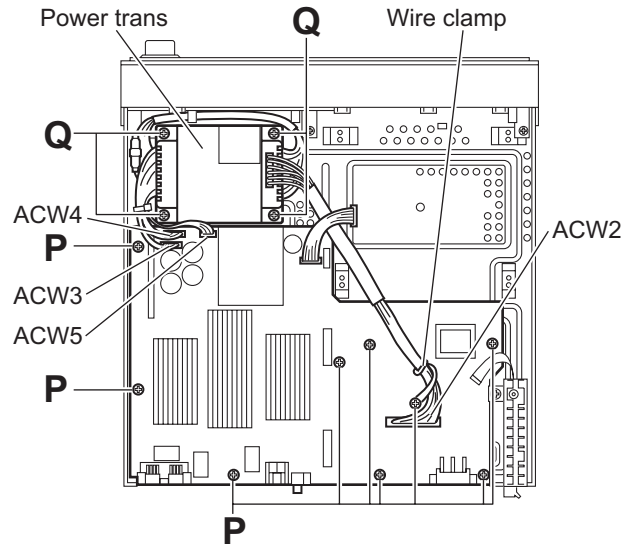


Fig.14

3.2 Front panel assembly section

3.2.1 Removing the front board (See Fig.15)

- Prior to performing the following procedures, remove the top cover, tray door and front panel assembly.
 - (1) From the back side of the front panel assembly, remove the five screws **R** attaching the FRONT board.
 - (2) Disconnect the wire from the connector **UCW13** on the front board.
 - (3) Take out the front board from the front panel assembly.

3.2.2 Removing the power SW board (See Fig.15)

- Prior to performing the following procedures, remove the top cover, tray door, front panel assembly and front board.
 - (1) Remove the screw **S** attaching the power SW board.
 - (2) Take out the power SW board from the front panel assembly.

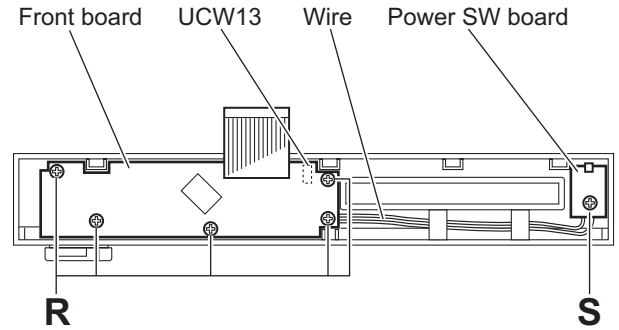


Fig.15

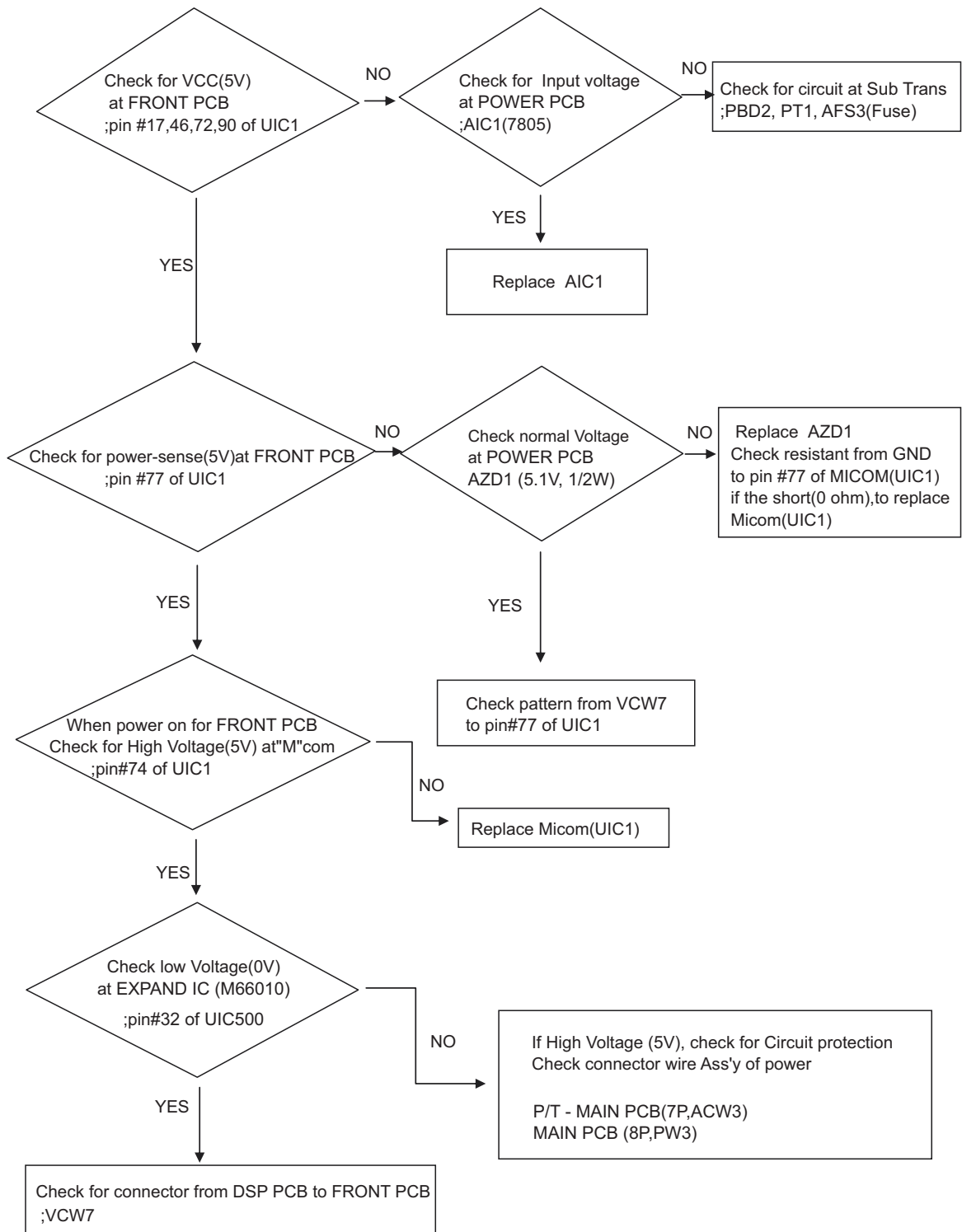
SECTION 4 ADJUSTMENT

This service manual does not describe ADJUSTMENT.

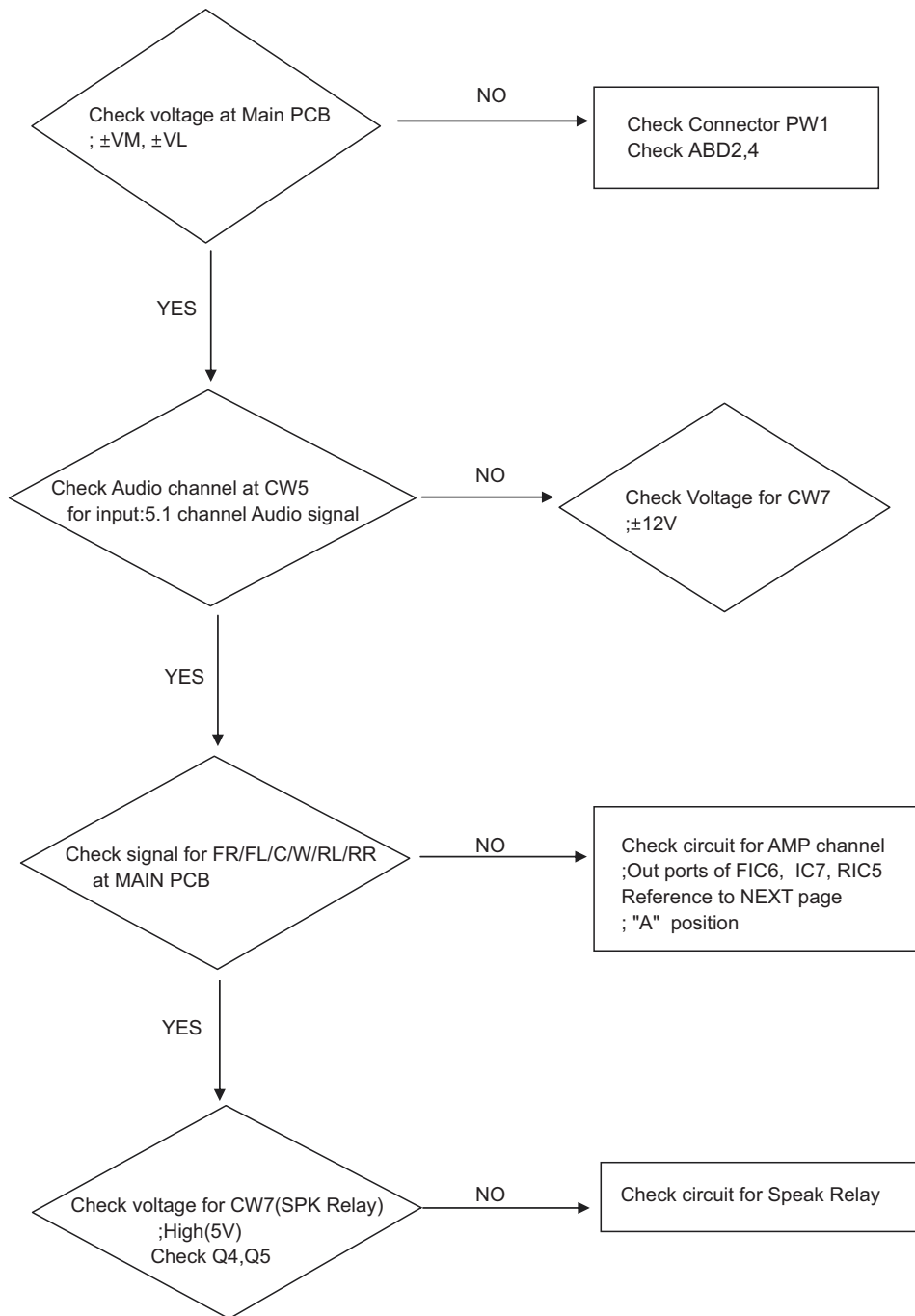
SECTION 5 TROUBLESHOOTING

5.1 MAIN

5.1.1 POWER

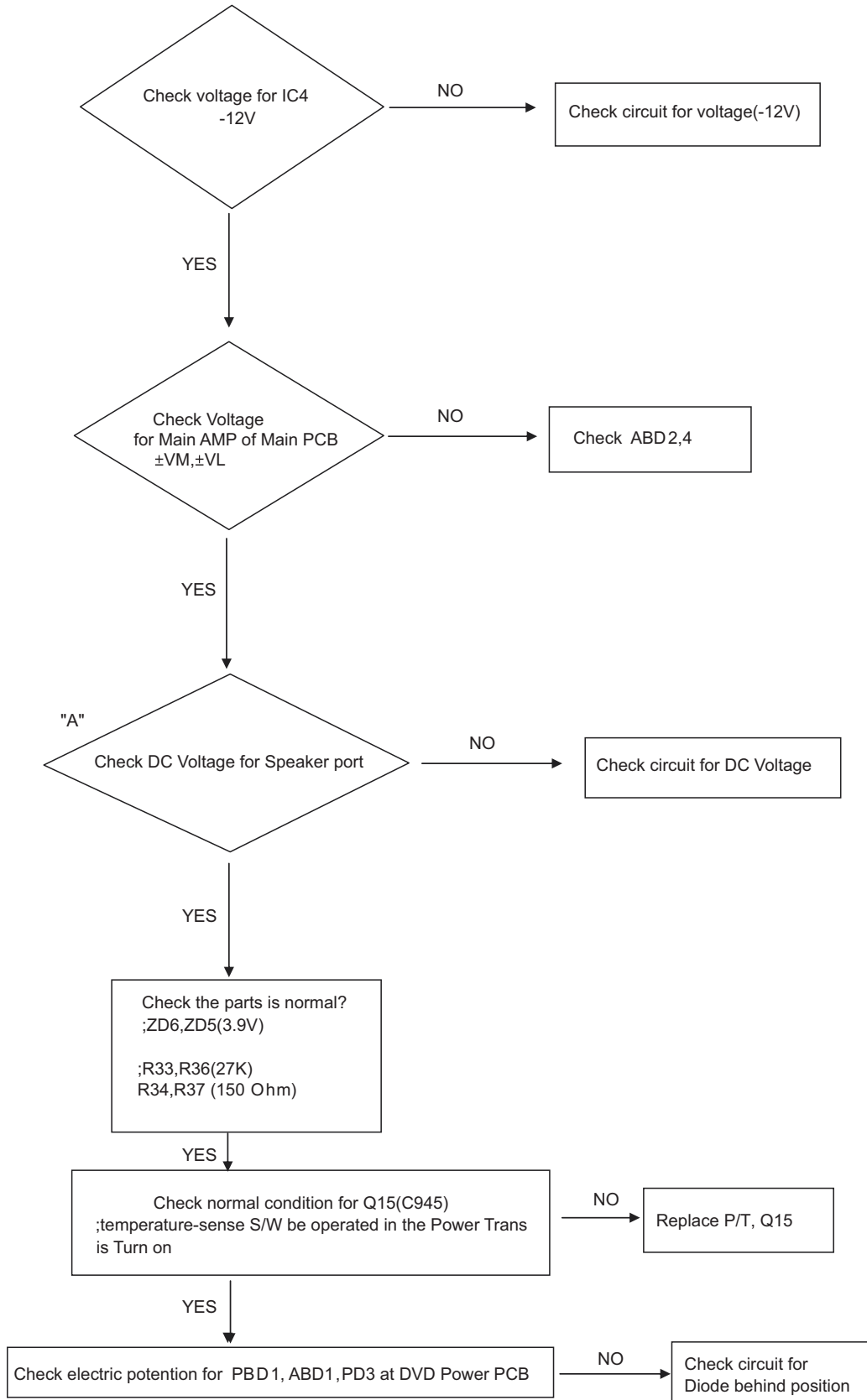


5.1.2 OUTPUT

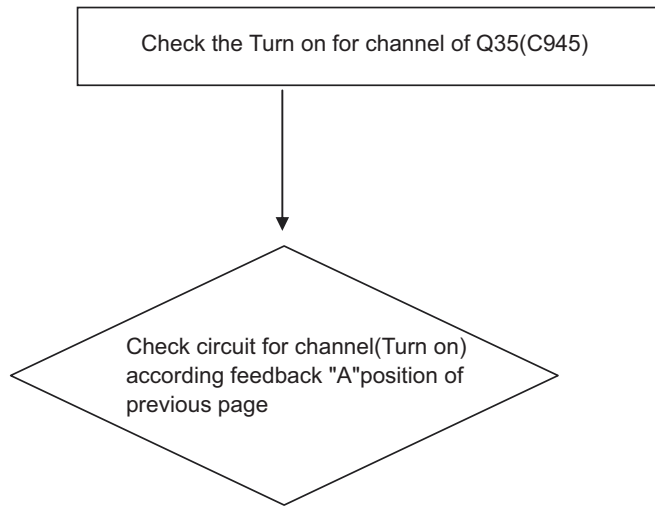


5.1.3 Protection(When High Voltage at Protection port)

5.1.3.1 In this case "LOW" for, Base port of Q12(R2003 TR) at MAIN PCB



5.1.3.2 In this case "LOW" for Base of Q13(A733) at Main PCB



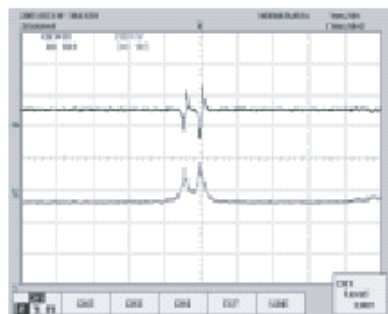
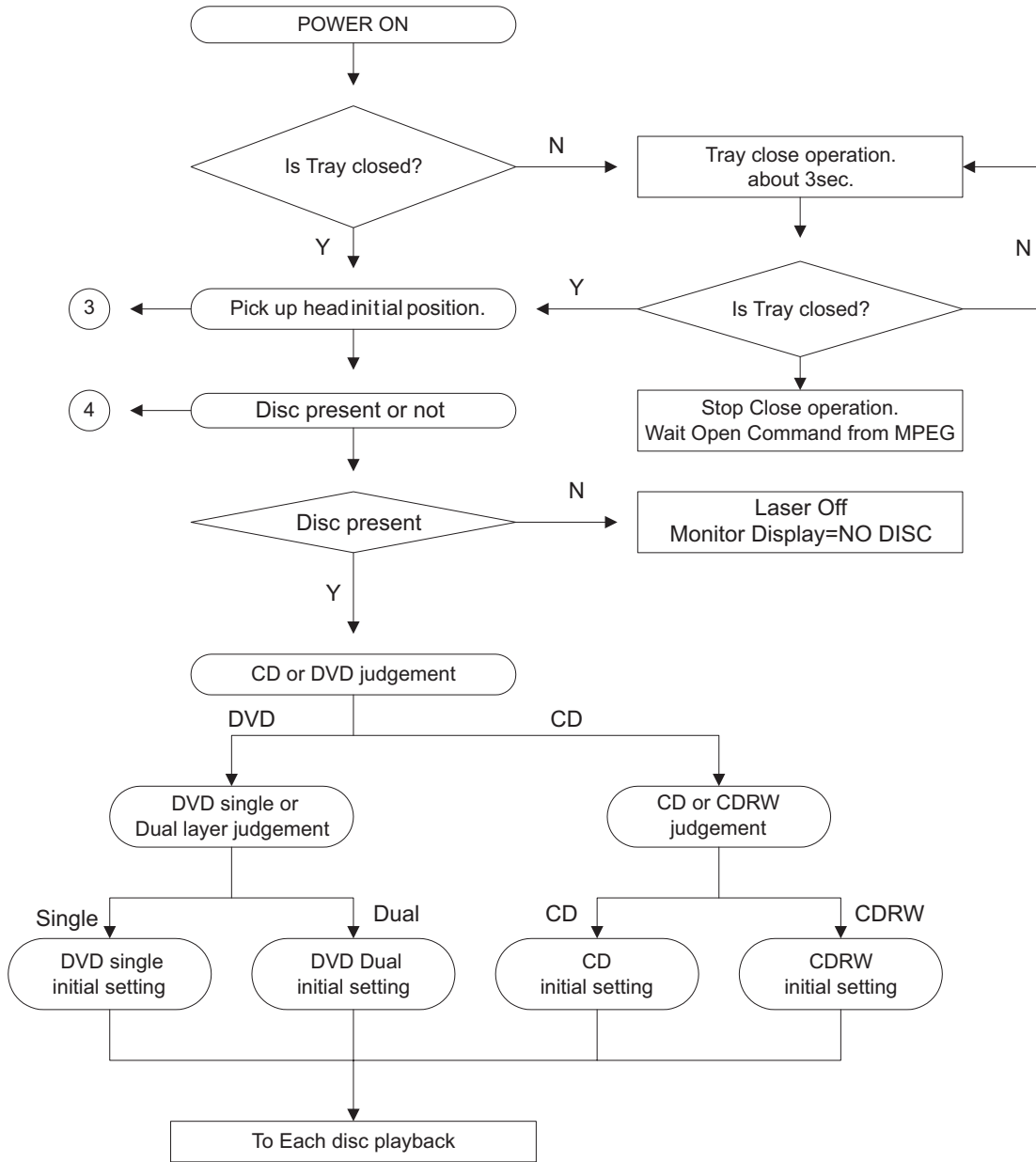
5.1.3.3 Check the Connector Wire Ass'y Connectin of each PCB

;DVD MECHA - Main PCB (8P,PW3)

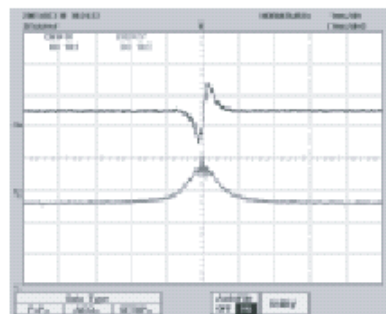
;POWER TRANS - Main PCB (ACW3)

5.2 DVD Servo parts

5.2.1 Initial operation after power ON

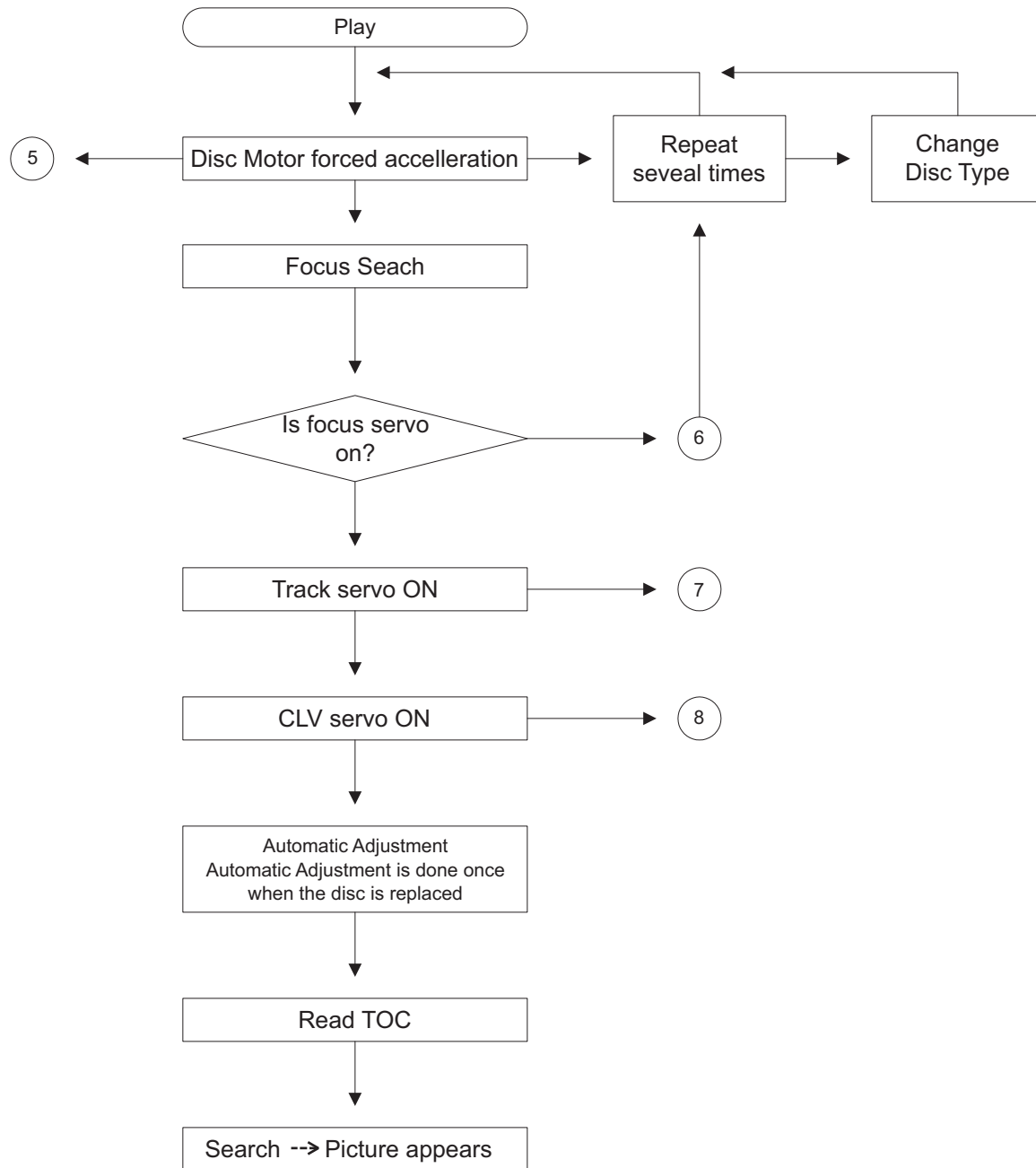


(DVD Dual)



(DVD single)

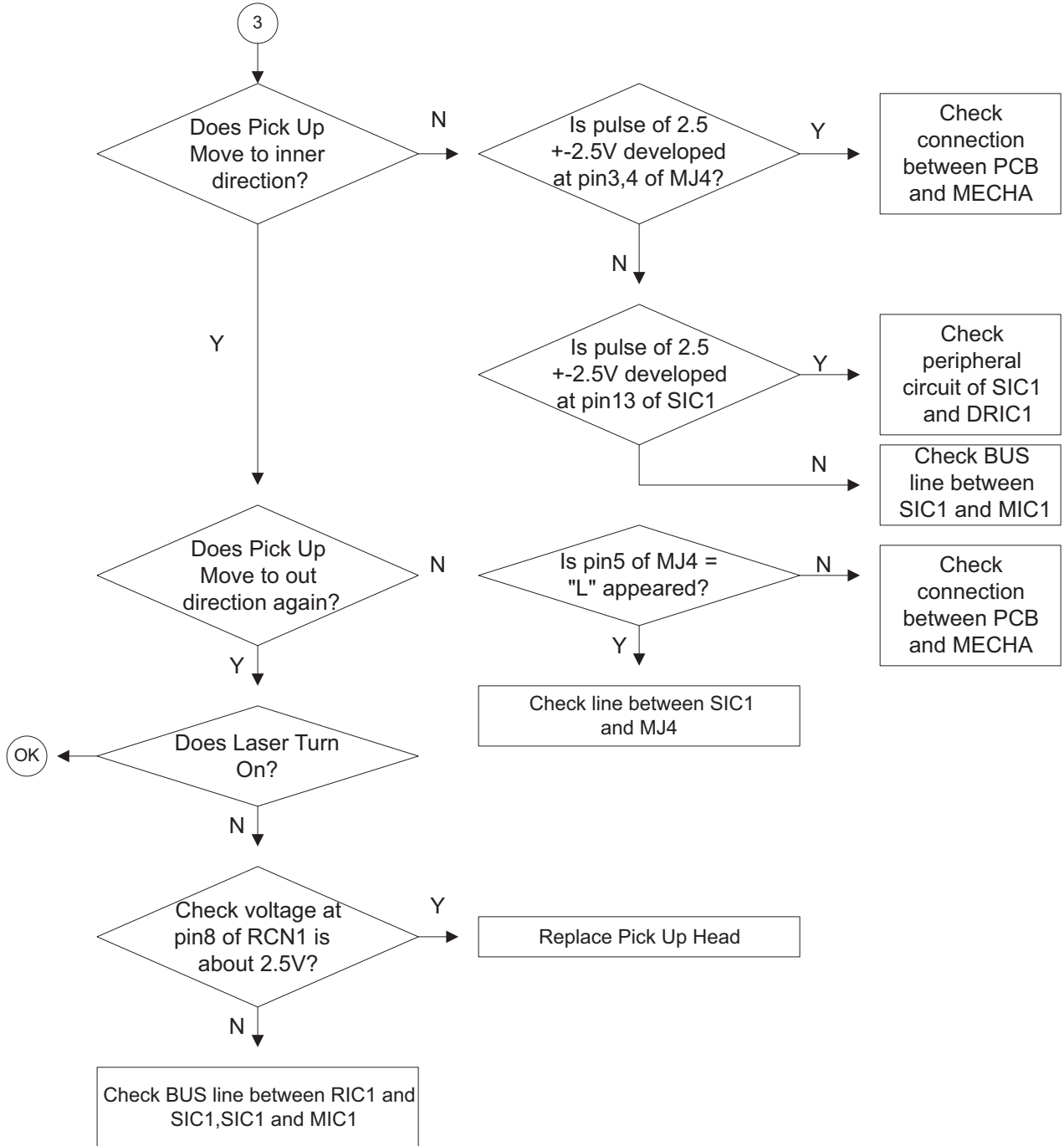
5.2.2 Play operation



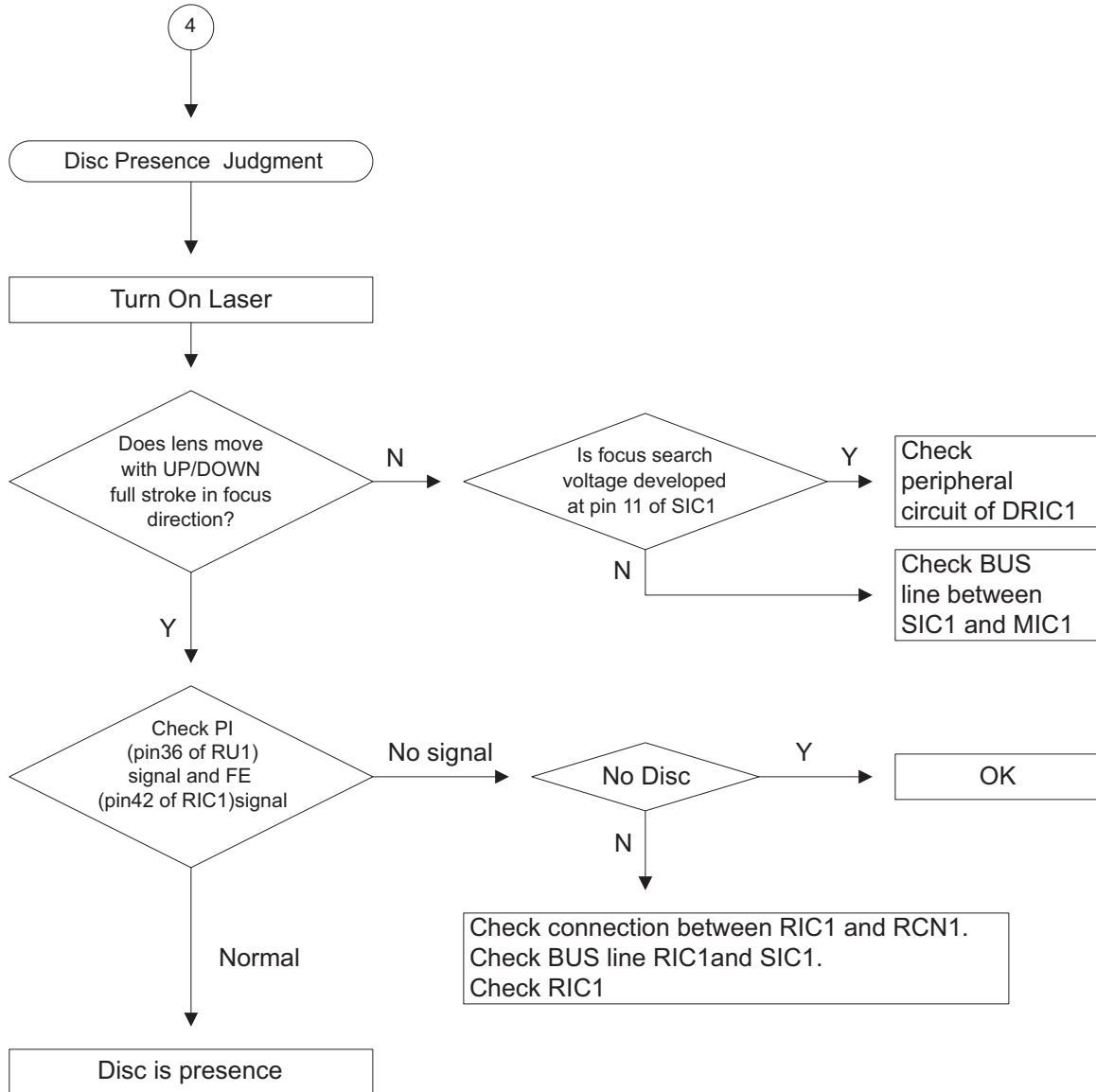
5.2.3 PickUp Head Initial Position

PickUp Head Initial Position

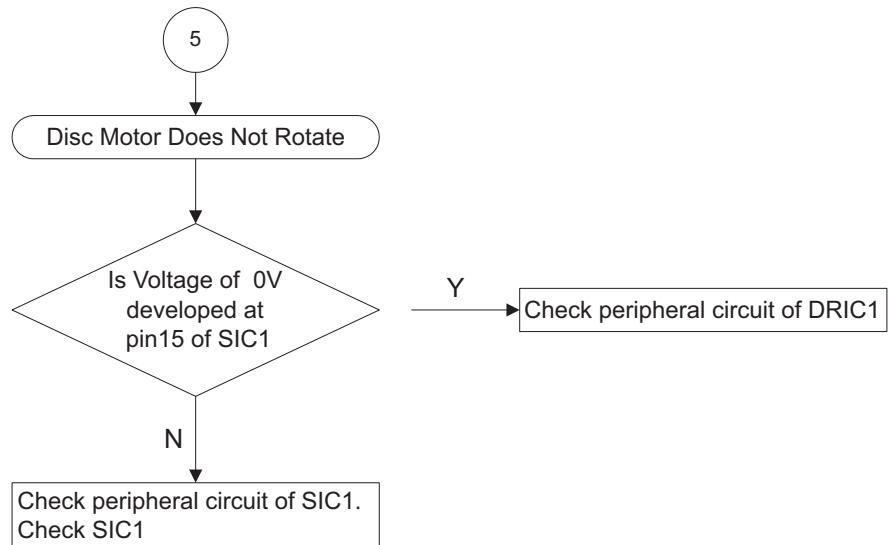
- (1) 1. Move Pick Up Head to inner direction until pin5 of MJ4="L"
- (2) 2. If pin5 of MJ4="L", then move Pick Up Head to outer direction for a short time.
- (3) 3. Turn On the Laser of Pick Up Head to judge that disc is present or not.



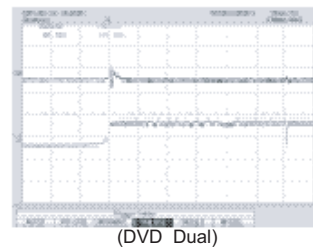
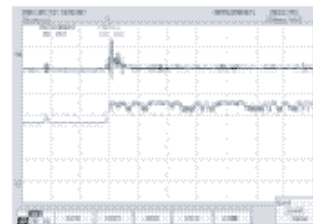
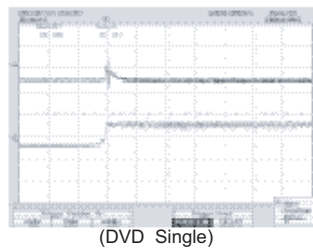
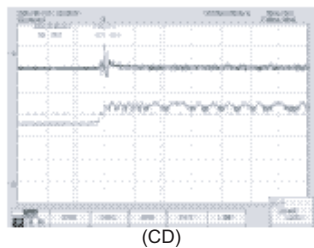
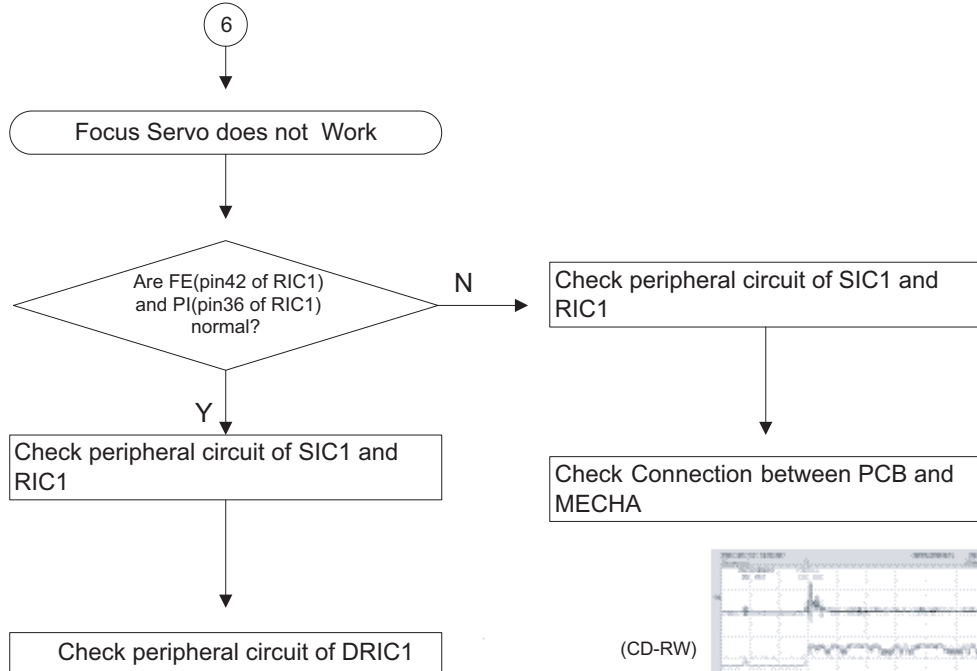
5.2.4 Disc Presence/Absence Judgment



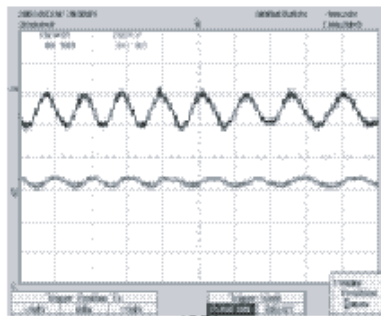
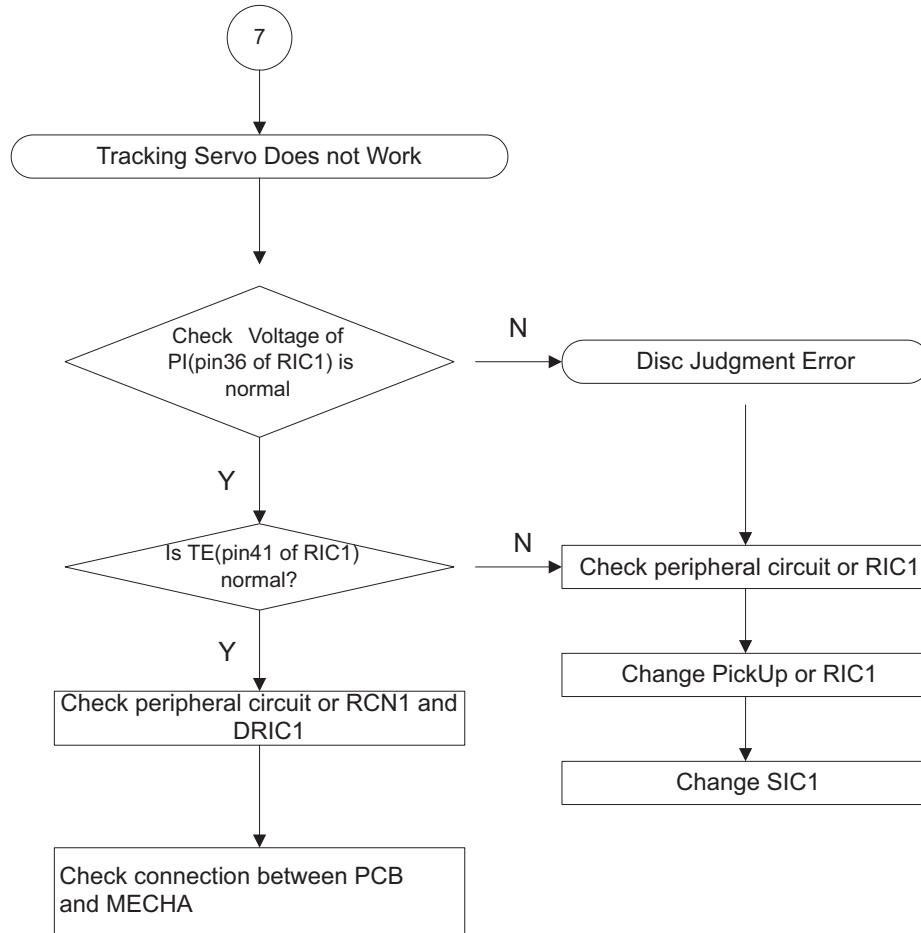
5.2.5 Disc Motor Does Not Rotate



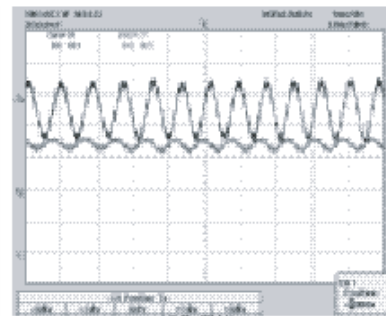
5.2.6 Focus Servo does not Work



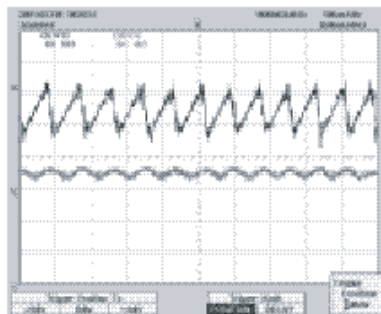
5.2.7 Tracking Servo Does Not Work



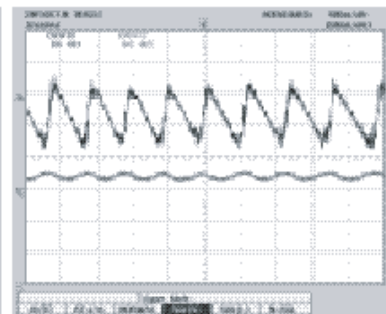
(CD)



(CD-RW)

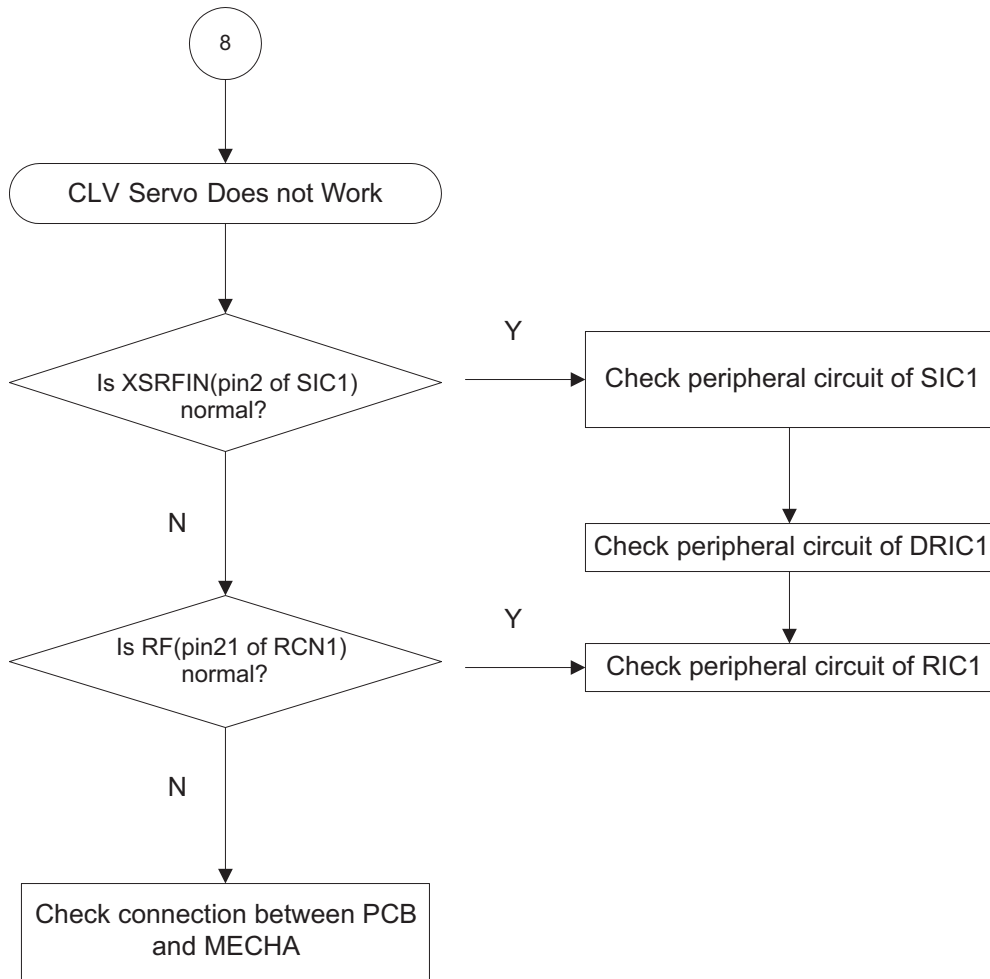


(DVD Single)



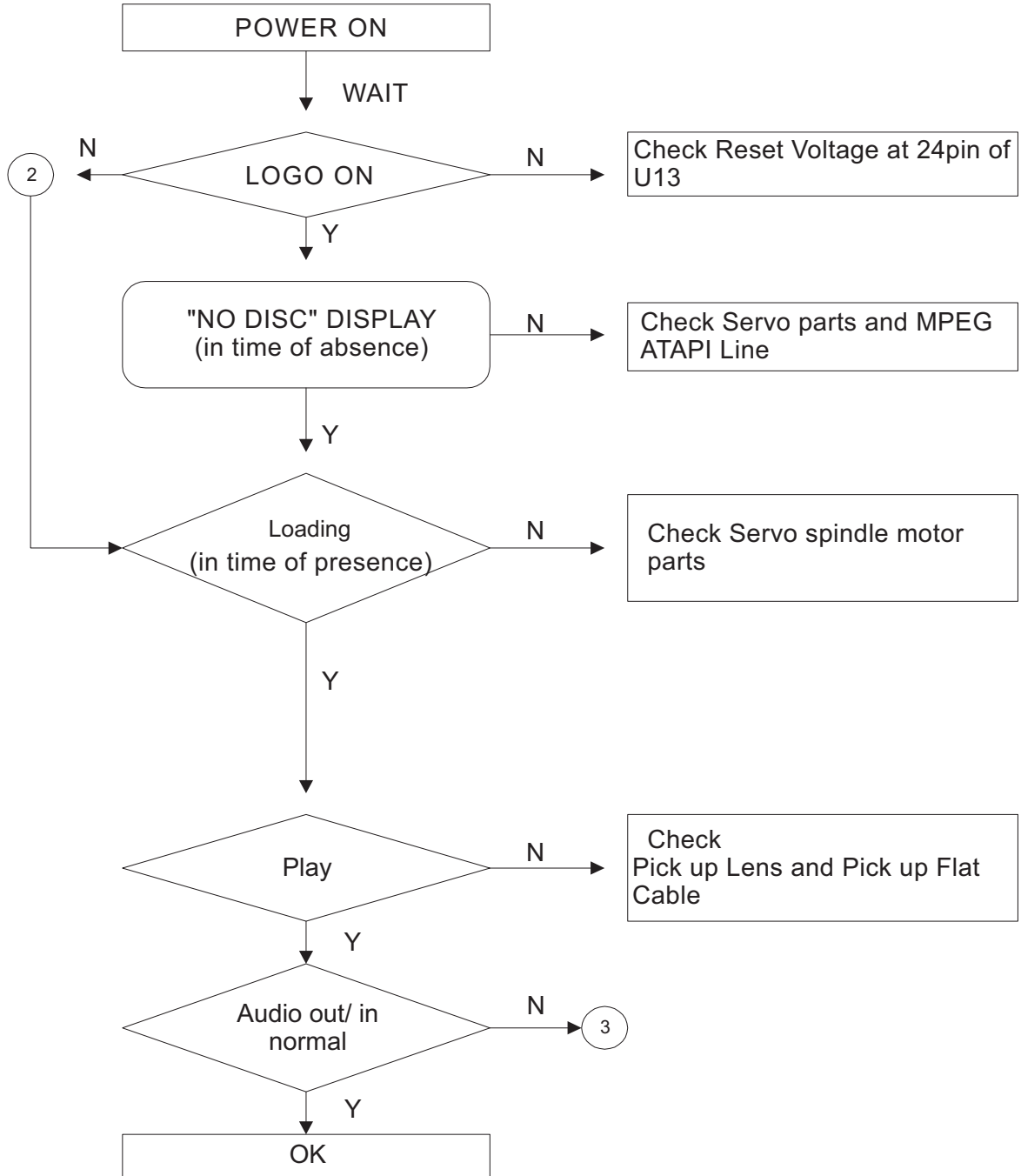
(DVD Dual)

5.2.8 CLV Servo Does Not Work



5.3 DVD MPEG Parts

5.3.1 Initial operation after NO



5.3.2 Logo operation

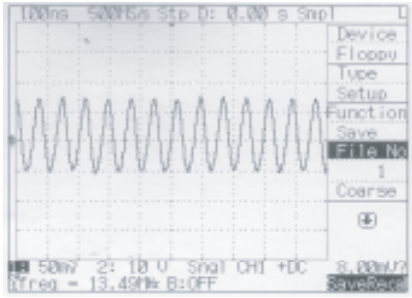
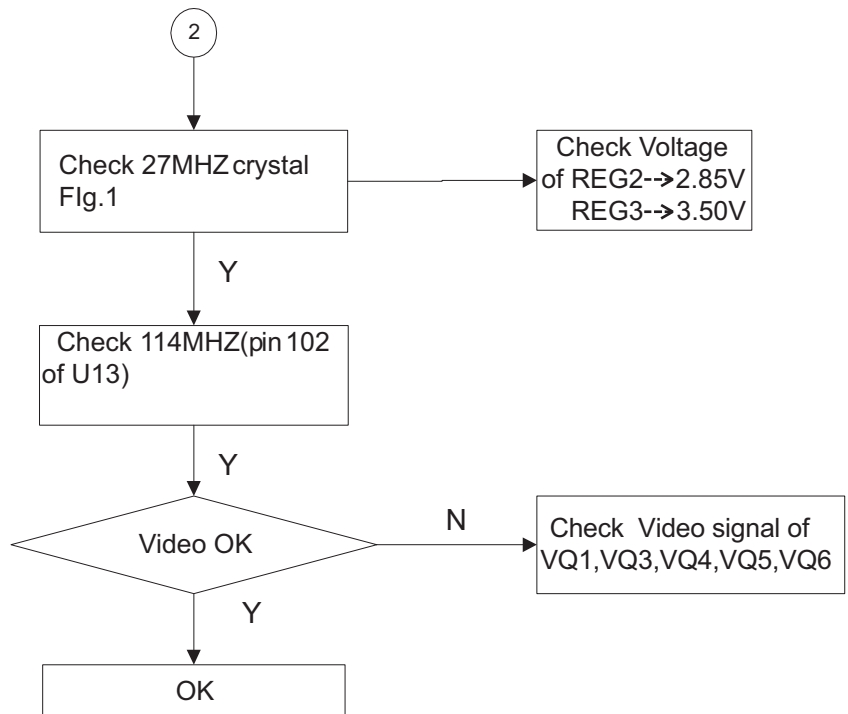
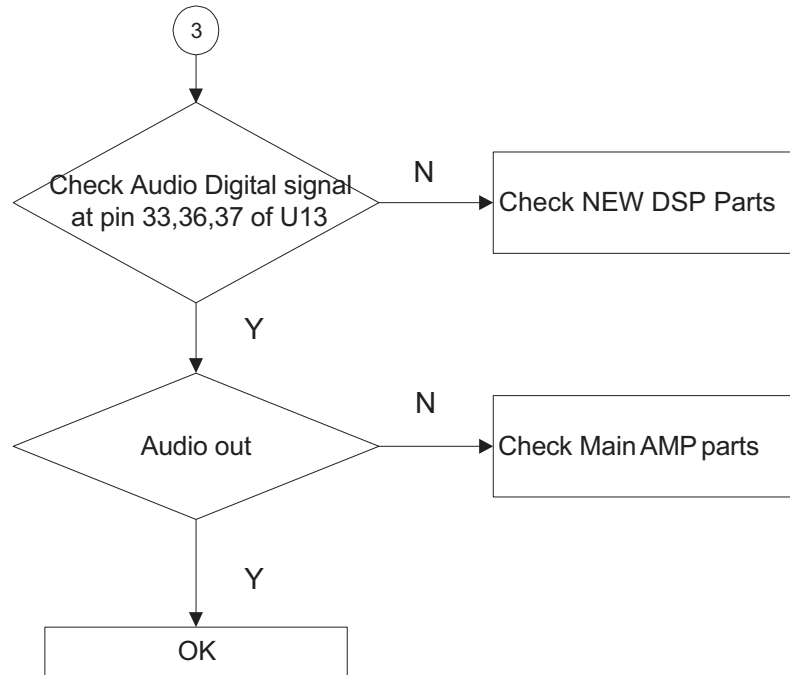


Fig.1



5.3.3 Audio operation





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