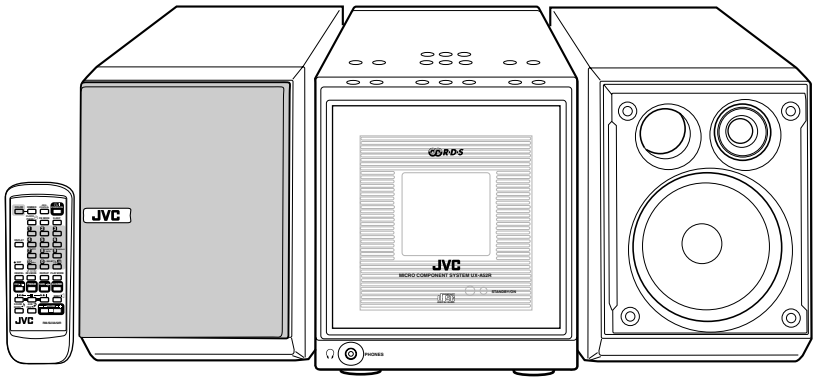
JVC

SERVICE MANUAL

MICRO COMPONENET SYSTEM

UX-A52R



R·D·S

COMPACT disc DIGITAL AUDIO

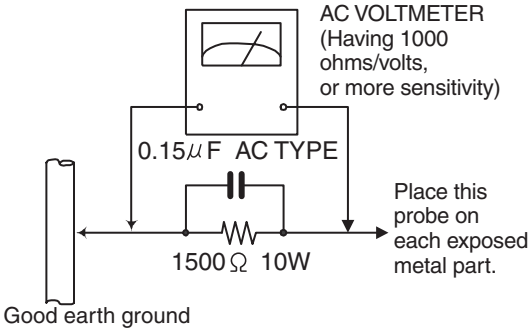
Area Suffix	
B	U.K.
E	Continental Europe
EN	Northem Europe

Contents

No.21064
Feb. 2002

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 manufacture 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 (⚠) 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 re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling 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 parts 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 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF 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 meausre 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.).



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.

⚠ 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 preforming repair of this system.

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 (▬), diode (▮) and ICP (●) or identified by the "⚠" mark nearby are critical for safety.

(This regulation does not correspond to J and C version.)

Safety precautions (U.K only)

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.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by (⚠) on the Parts List and by shading on the schematics, and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics. These characteristics are often not evident from visual inspection. Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the Service Manual and 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 re-assembling.

Warning

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
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6. If mains voltage selector is provided, check setting for local voltage.

⚠ ***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 preforming repair of this system.**

Preventing static electricity

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.

2.About the earth processing for the destruction prevention by static electricity

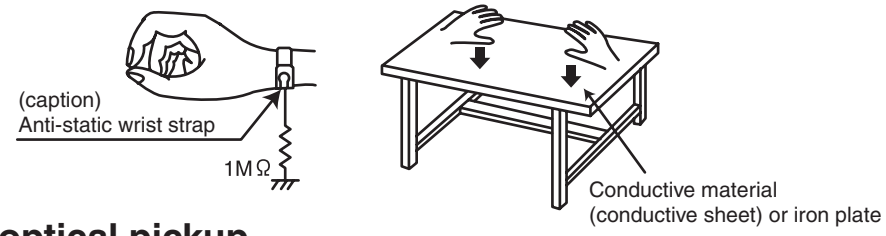
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

2-1 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.

2-2 Ground yourself

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



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.

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. Cut off the shorted part of the flexible cable using nippers, etc. 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 cable carefully as it may break when subjected to strong force.

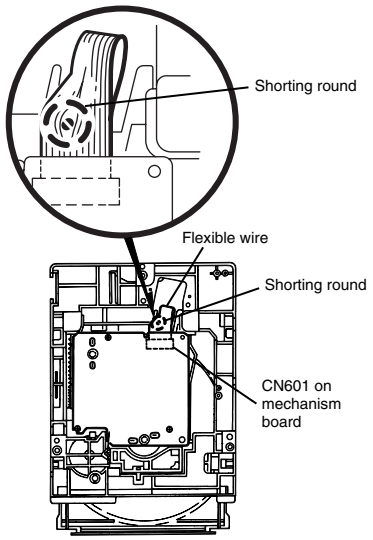
4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it

Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for pick-up and how to detach the substrate.**

1.Solder is put up before the card wire is removed from connector on the CD substrate as shown in Figure.
(When the wire is removed without putting up solder, the CD pick-up assembly might destroy.)

2.Please remove solder after connecting the card wire with when you install picking up in the substrate.



Important for laser products

1.CLASS 1 LASER PRODUCT

2.DANGER : Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laserradiation and is equipped with safety switches whichprevent emission of radiation when the drawer is open and the safety interlocks have failed or are de feated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

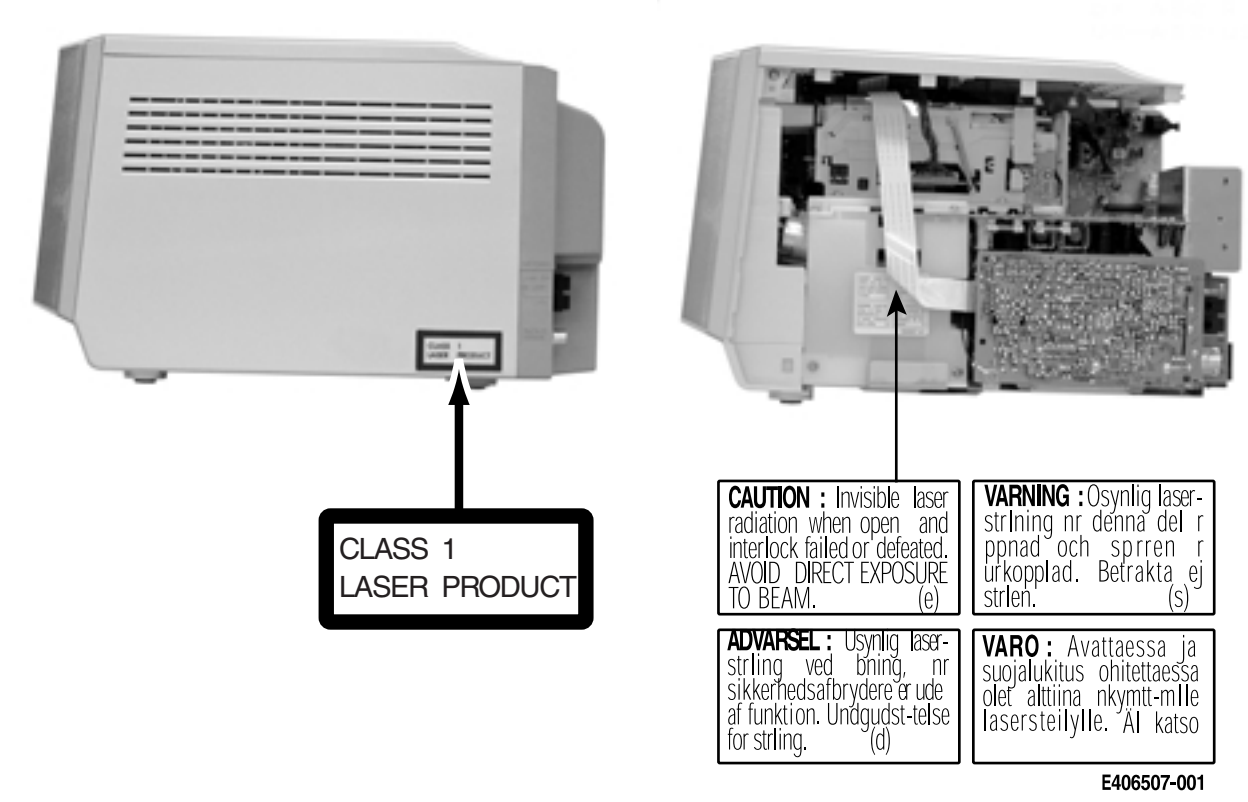
VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL



Disassembly method

<Main body>

■ Removing the rear cover

(See Fig.1 and 2)

1. Remove the eight screws **A** on the back of the body.
2. Remove the two screws **B** on the bottom of the body.
3. Unlock the speaker terminal and the antenna terminal, then remove the rear cover backward with releasing the hooks.

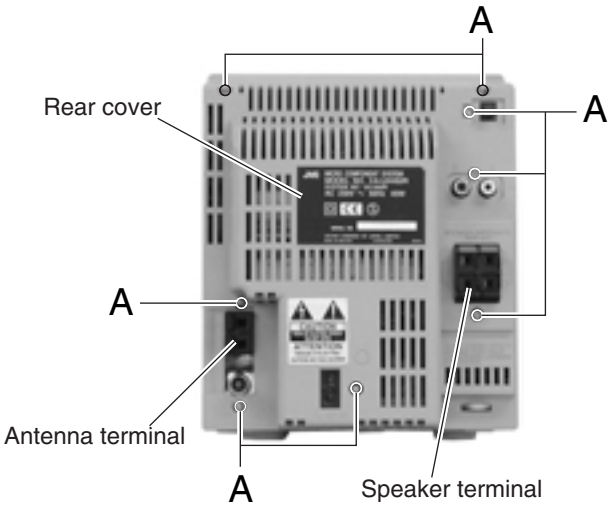


Fig.1

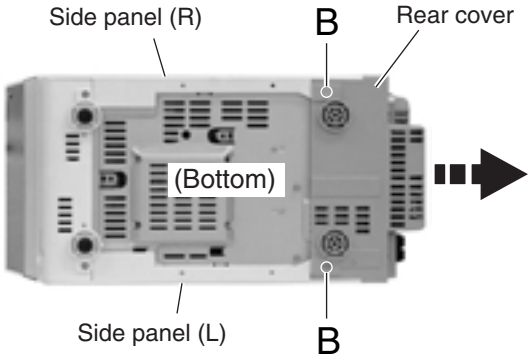


Fig.2

■ Removing the side panels

(See Fig.3 to 5)

・ Prior to performing the following procedure, remove the rear cover.

1. Remove the two screws **C** attaching the side panels on the bottom of the body.
2. Remove each side panel backward while releasing the eight joints **a** as shown in Fig.4 and 5.

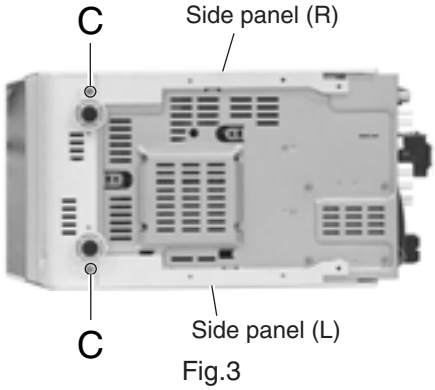


Fig.3

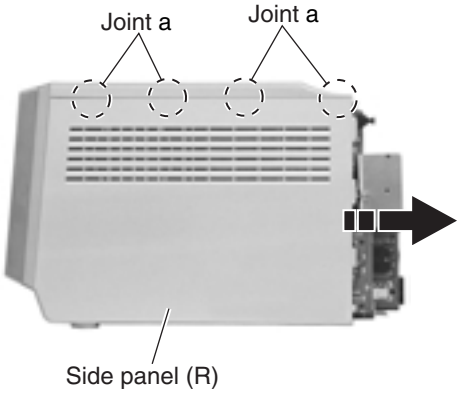


Fig.4

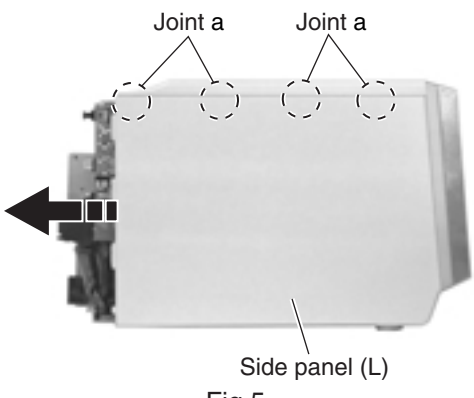


Fig.5

■ Removing the top panel (See Fig.6 and 7)

・ Prior to performing the following procedure, remove the rear cover and the side panels.

1. Remove the two screws **D** on each side of the body.
2. Release the two joints **b** on each side of the body and remove the top panel in the direction of the arrow.
3. Disconnect the card wires from connector CN705 on the system control board on the left side of the body.

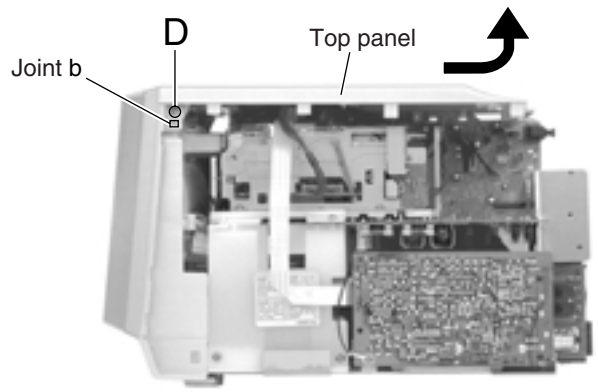


Fig.6

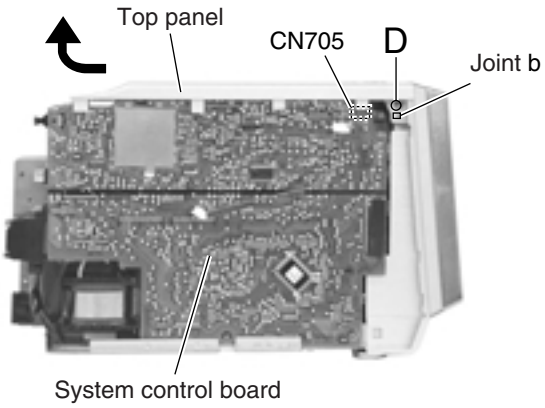


Fig.7

■ Removing the cassette mechanism assembly section (See Fig.8)

・ Prior to performing the following procedure, remove the rear cover, the side panels and the top panel.

1. Disconnect each wire from connector CN706, CN715 and CN716 on the system control board on top of the body.
2. Remove the four screws **E** retaining the cassette mechanism assembly section on top of the body.

REFERENCE: Reference: If necessary, remove the spacer marked **h** and the wire from the Cassette mechanism assembly section.

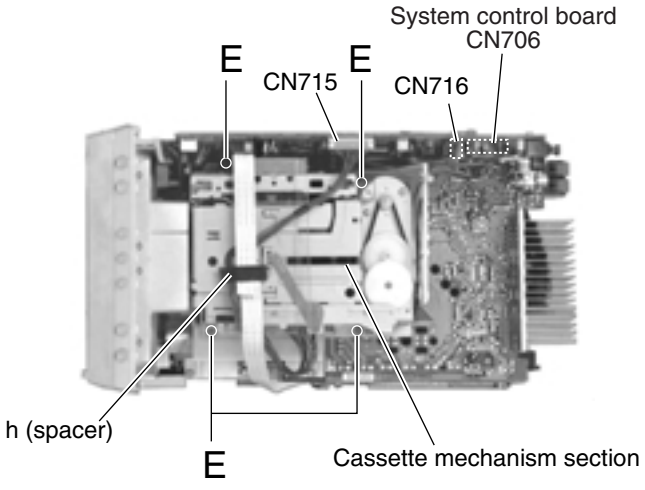


Fig.8

■ Removing the system control board (See Fig.9)

・ Prior to performing the following procedure, remove the rear cover, the side panels and the top panel.

1. Disconnect the card wire from connector CN701 and the wire from connector CN706, CN715, CN716 on the system control board.
2. Remove the screw **F** on the left side of the body.
3. Disconnect connector CN709, CN711 and CN712 on the system control board from the body outward.
4. Disconnect the card wire from connector CN704 on the underside of the system control board.

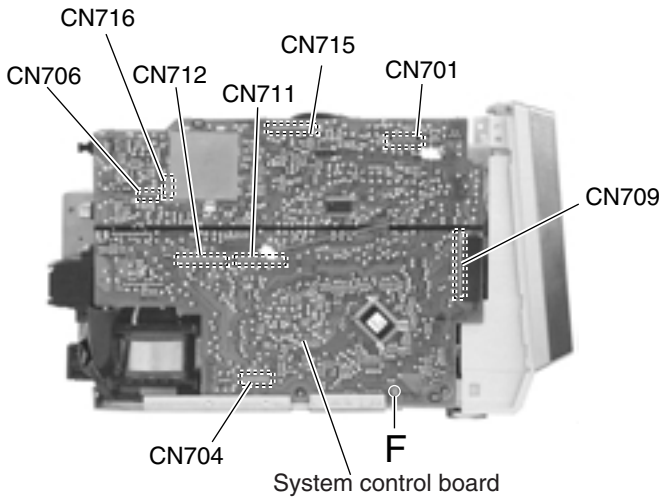


Fig.9

■ Removing the tuner board (See Fig.10)

・ Prior to performing the following procedure, remove the rear cover and the right side panel.

1. Disconnect the card wire from connector CN1 on the tuner board on the right side of the body.
2. Remove the screw **G** and remove the tuner board upward while disengaging the three joints **c**.

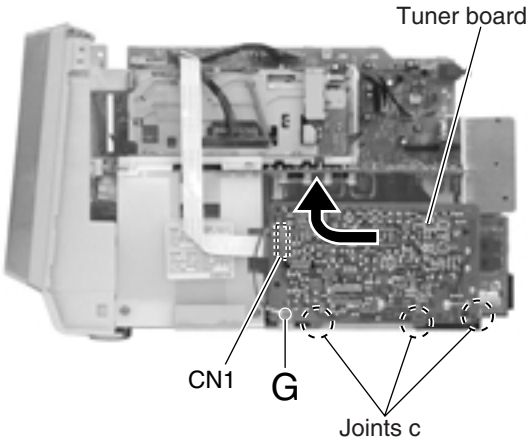


Fig.10

■ Removing the front panel assembly (See Fig.11 and 12)

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel and the system control board.

1. Release the two joints **d** on the lower right and left sides of the front panel assembly, then remove the front panel assembly toward the front.

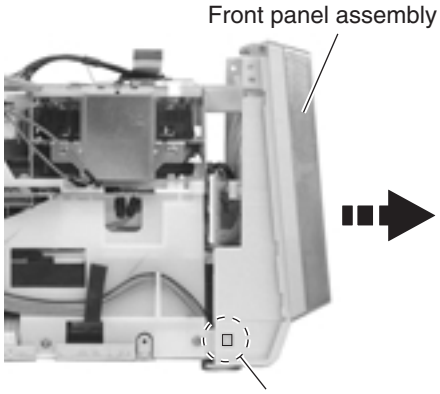


Fig.11

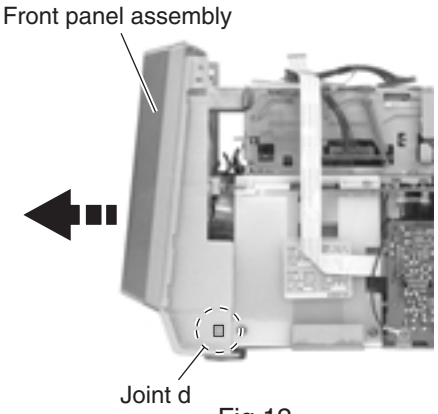


Fig.12

■ Removing the headphone jack board (See Fig.13 and 14)

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel, the system control board and the front panel assembly section.

1. Disconnect the wire from connector CN804 on the main board.

2. Remove the plastic rivet fixing the headphone jack board.

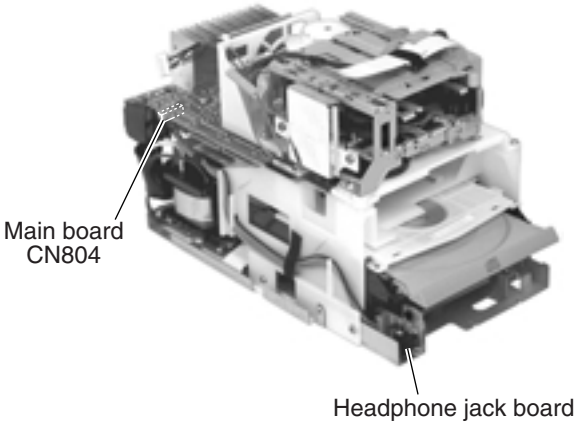


Fig.13

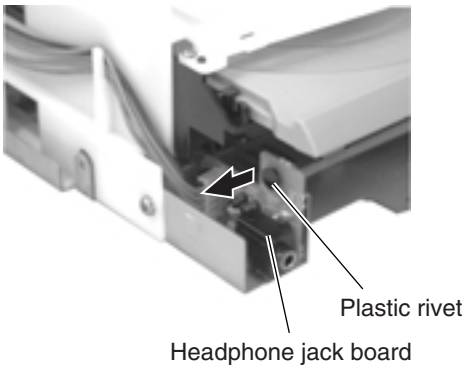


Fig.14

■ Removing the main board / the heat sink (See Fig.15 to 17)

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel, the cassette mechanism assembly section and and the system control board.

1. Disconnect the wire from connector CN804 on the main board.
2. Remove the five screws **H** attaching the cassette mechanism bracket.
3. Remove the screw **G** attaching the grounding terminal extending from the main board.
4. Disconnect connector CN805 on the main board from the AC jack board while pulling out it. Remove the main board in the direction of the arrow and disconnect the wire from connector CN803 on the reverse side of the main board.
5. Remove the three screws **I** attaching the heat sink on the reverse side of the main board.

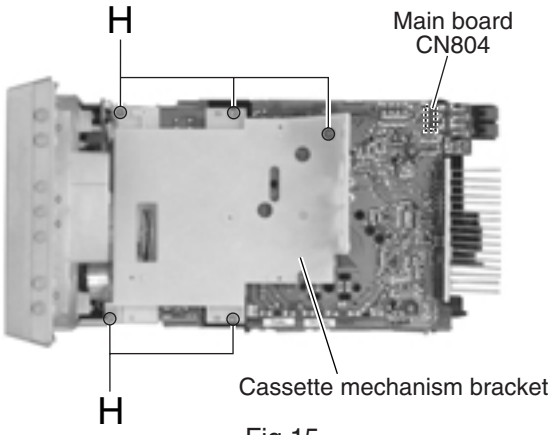


Fig.15

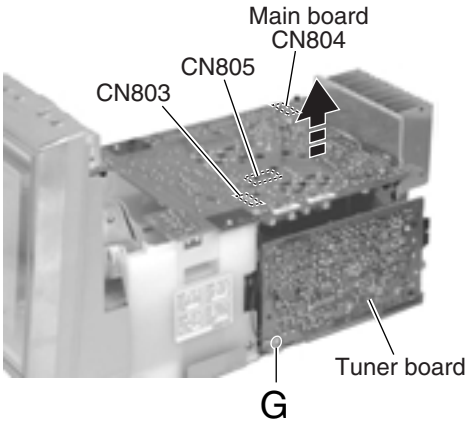


Fig.16

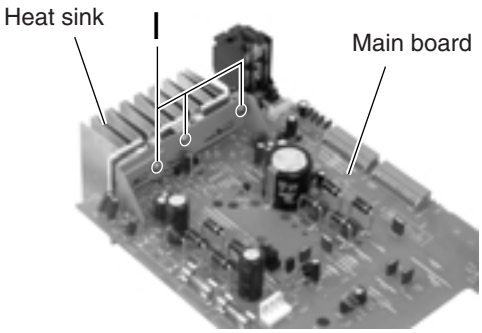


Fig.17

■ Removing the AC jack board (See Fig.18 and 19)

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel, the cassette mechanism assembly section, the system control board and the main board / the tuner board.

1. Disconnect the wire from connector CN809 on the AC jack board.

2. Remove the screw **J** and screw **K** attaching the AC jack board.

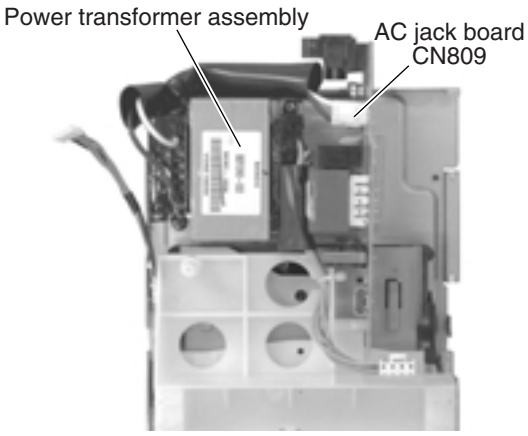


Fig.18

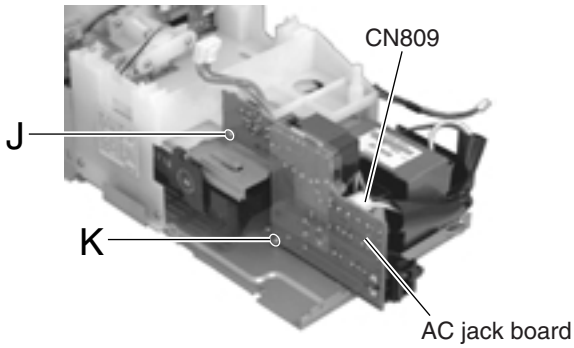


Fig.19

■ Removing the power transformer assembly (See Fig.20)

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel, the cassette mechanism assembly section, the system control board and the main board.

1. Disconnect the wire from connector CN809 on the AC jack board.

2. Cut off the band setting the wire on the CD mechanism cover.

3. Remove the four screws **L** attaching the power transformer assembly.

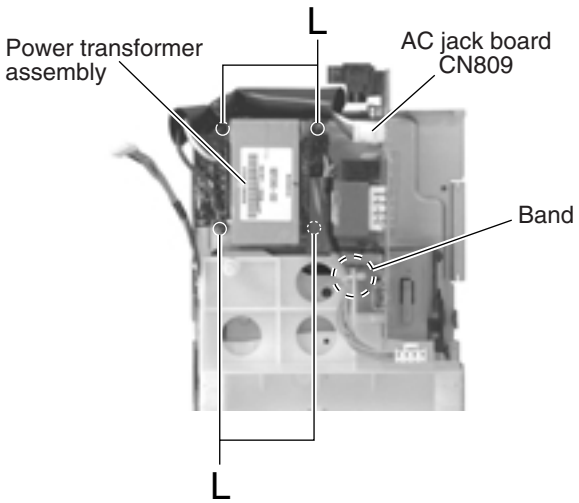


Fig.20

■ Removing the CD mechanism assembly (See Fig.21 to 23)

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel, the cassette mechanism assembly section, the system control board, the front panel assembly section, the main board / the tuner board and the AC jack board.

1. Cut off the band setting the wire on the CD mechanism cover.

2. Release the wire extending from the headphone jack board from the spacer and the three notches of the CD mechanism cover on the left side of the body.

3. Remove the four screws **M** on the left and right side of the CD mechanism cover. Then remove the CD mechanism cover upward.

4. Remove the three screws **N** attaching the CD mechanism assembly.

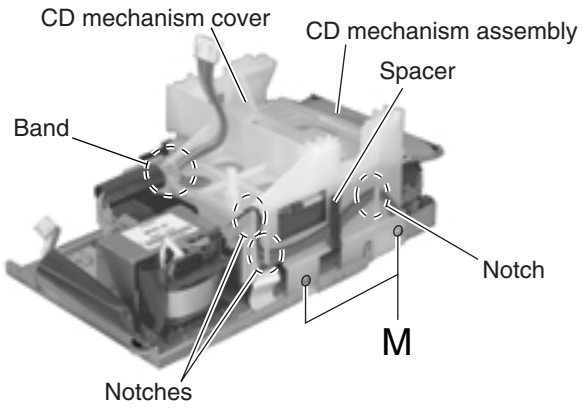


Fig.21

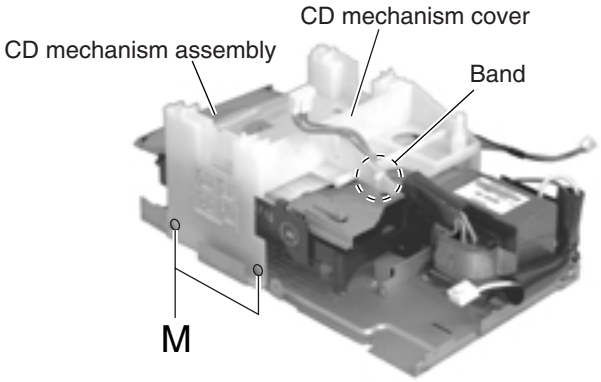


Fig.22

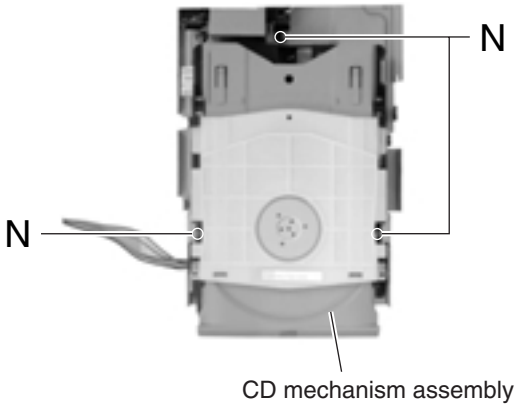


Fig.23

<Front panel assembly section>

- Prior to performing the following procedure, remove the rear cover, the side panels, the top panel, the system control board and the front panel assembly section.

■ Removing the relay board (See Fig. 24)

1. Disconnect the wire from connector CN906, CN907 and the card wire from CN908 on the relay board respectively.
2. Remove the two screws **O**.

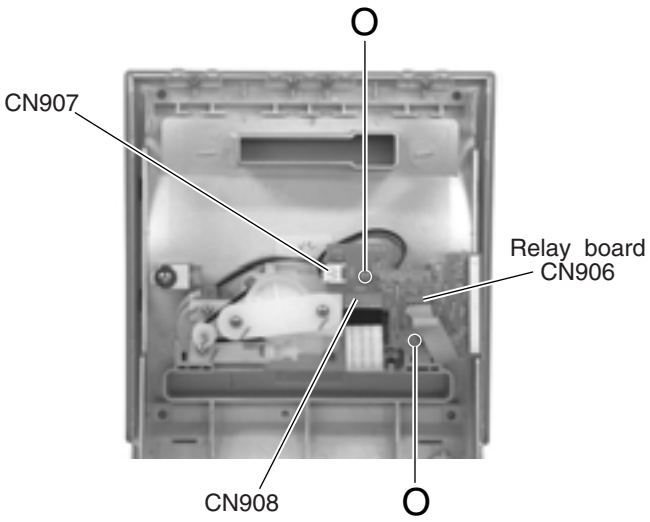


Fig.24

■ Removing the drive motor assembly (See Fig.25)

- Prior to performing the following procedure, remove the relay board.

1. Remove the four screws **P** attaching the drive motor assembly.

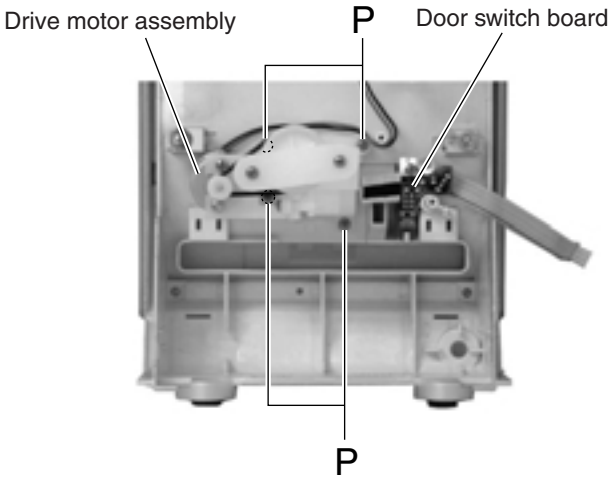


Fig.25

■ Removing the belt and the drive motor (See Fig.26)

REFERENCE: The belt and the drive motor can be removed respectively without removing the drive motor assembly from the front panel section.

1. Remove the two screws **Q** attaching the plate.
2. Remove the belt from the two pulleys.
3. Remove the two screws **R** attaching the drive motor.

REFERENCE: When removing the drive motor only, remove the belt from the drive motor pulleys in advance.

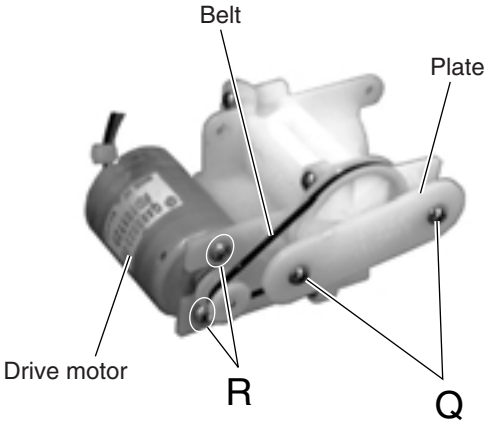


Fig.26

■ Removing the door switch board (See Fig.27 and 28)

- Prior to performing the following procedure, remove the relay board.

1. Loosen the screw **S** attaching the door switch.
2. Remove the door switch board while releasing it from the joint **e**.

CAUTION: When reattaching the door switch board, fit it to the joint **e** and check the operating state of the switch before tightening the screw **S**.

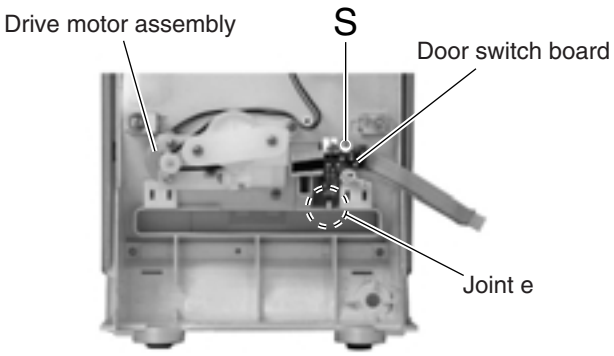


Fig.27

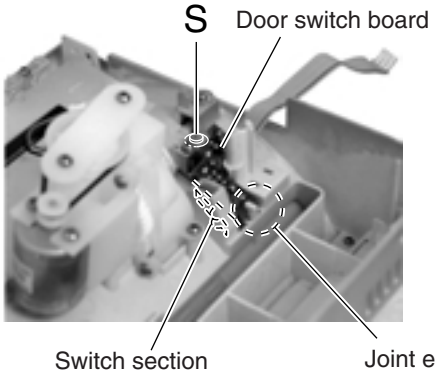


Fig.28

■ Removing the LCD section (See Fig.29 to 31)

- Prior to performing the following procedure, remove the relay board.

1. Loosen the two screws **T** attaching the lock lever.
2. Push the part **f** of the lock lever in the direction of the arrow as shown in Fig.30-1 / 30-2 and disengage the LCD section from the front panel assembly.

CAUTION: Because the LCD may come off, hold it when loosening the screws **T**.

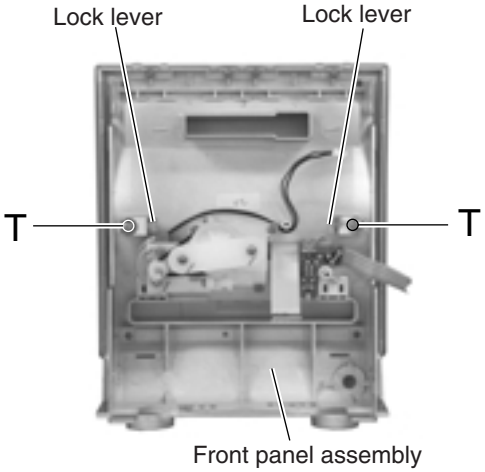


Fig.29

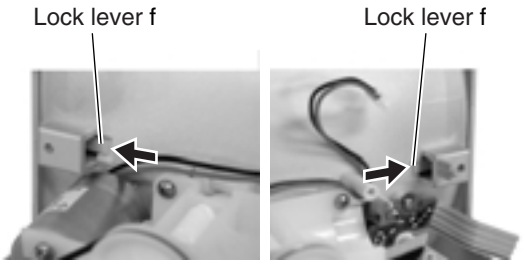


Fig.30-1 Fig.30-2

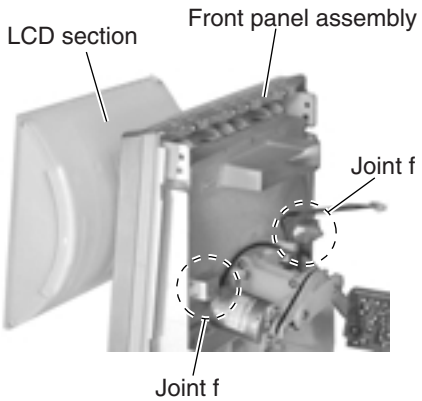


Fig.31

■ Removing the LCD board assembly (See Fig.32 to 36)

- Prior to performing the following procedure, remove the relay board and the LCD section.

1. Remove the four screws **U** attaching the case cover.
2. Remove the four screws **V** attaching the LCD panel on the back of the LCD section.
3. Remove the LCD cover.
4. Release the three joints **g** and remove the LCD board assembly in the direction of the arrow.

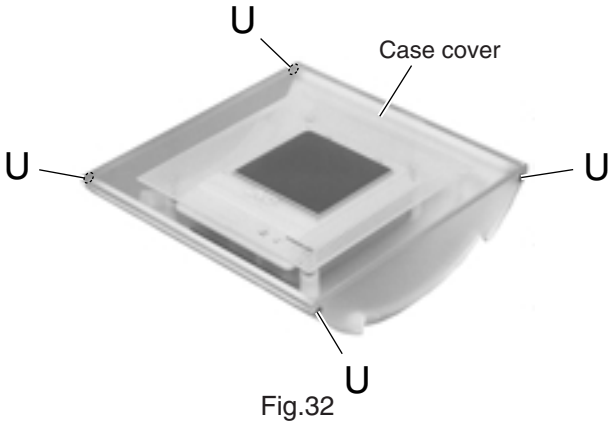


Fig.32

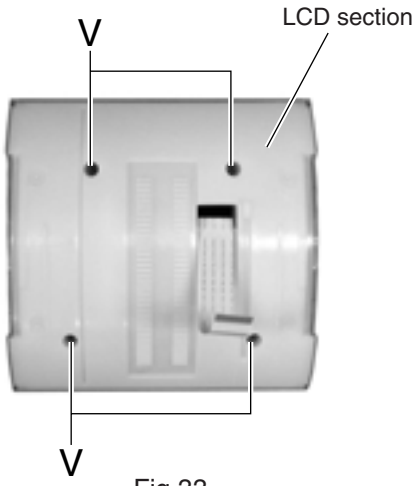


Fig.33

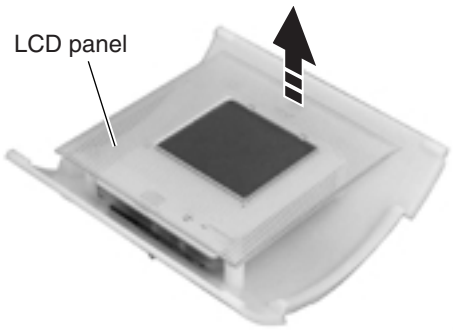


Fig.34

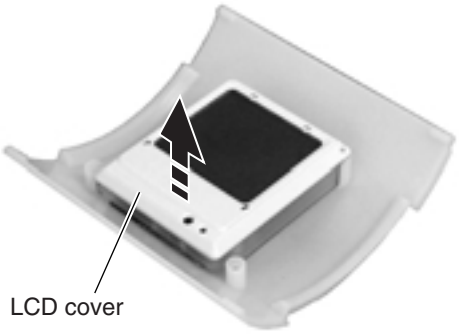


Fig.35

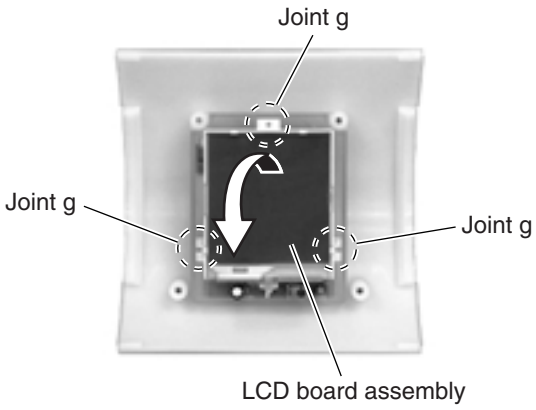


Fig.36

<Top panel section>

・ Prior to performing the following procedure, remove the rear cover, the side panels and the top panel.

■ Removing the operation switch board (See Fig.37)

1. Remove the seven screws **W** attaching the operation switch board on the reverse side of the top panel.

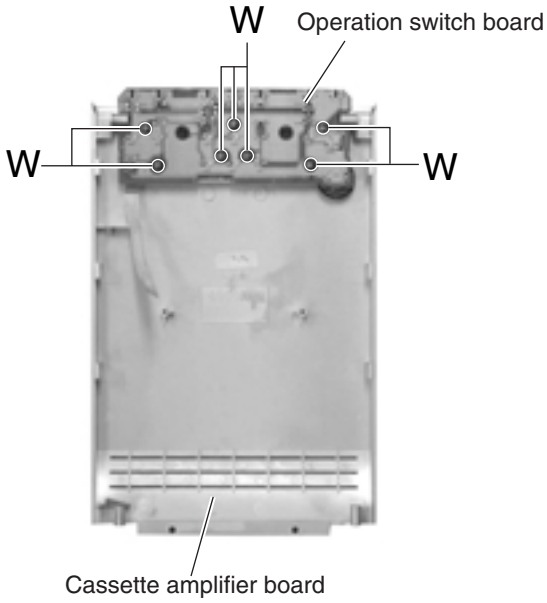


Fig.37

<CD Mechanism Assembly>

■ Removing the CL. Base Assembly and Tray (Refer to Figs. 1 to 5.)

1. Remove the two screws A fastening the CL. base assembly from the top of the CD mechanism assembly.

2. Move the CL. base assembly diagonally upwards as indicated by the arrow to release it from the two hooks a.

3. Turn the idle gear in the arrow-marked direction from the upper side of the CD mechanism assembly. Accordingly, the TRAMECHA assembly moves downwards.

> Note: When drawing out the tray, shift down the TRAMECHA assembly to the position where the tray does not contact the T-T assembly of the TRAMECHA assembly.

4. Draw out the tray frontwards for removing it.

> Note: When reinstalling the tray:
> - Turn the idle gear so that the part b of the tray gear is positioned in the part c shown in Fig. 4. (Eject position)
> - Engage the right and left hooks d and e of the tray with the right and left grooves of the TRAMECHA assembly respectively for retaining the tray.

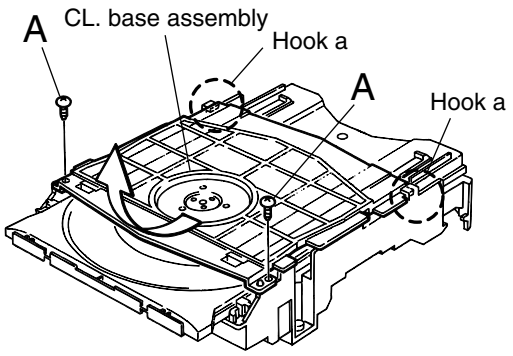


Fig. 1

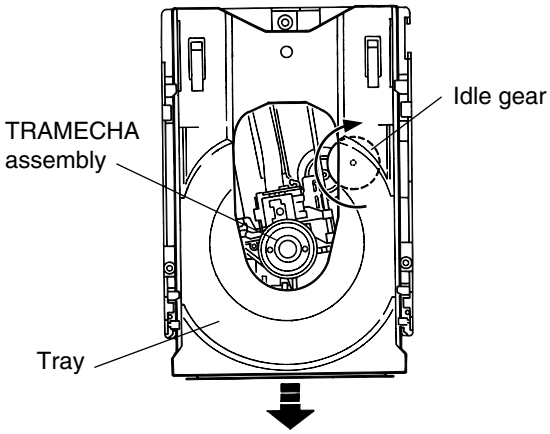


Fig. 2

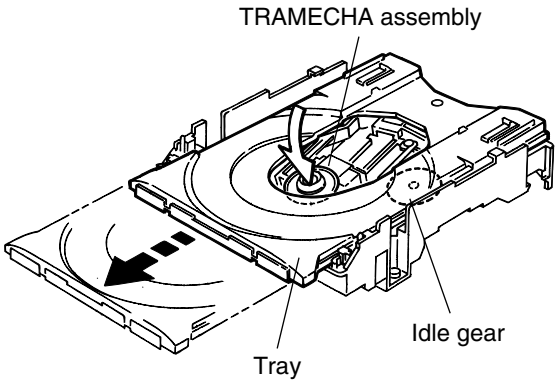


Fig. 3

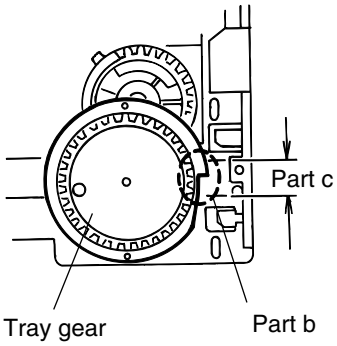


Fig. 4

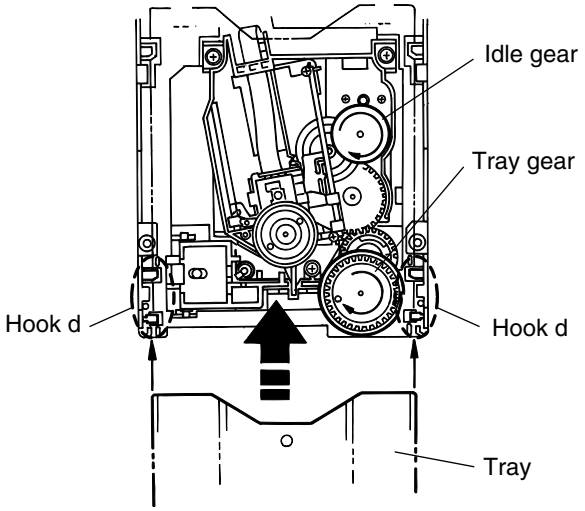


Fig. 5

■ Removing the TRAMECHA Assembly (Refer to Figs. 6 to 9.)

- Remove the CL. base assembly and tray.

Reference: The TRAMECHA assembly can be removed without removal of the mechanism board.

1. If the TRAMECHA assembly is lowered and it is located out of the PLAY position, turn the idle gear in the arrow-marked direction so that the hole in the part f of the tray gear meets the hole on the CL. base assembly. (Set the TRAMECHA assembly at the PLAY position.)

2. Remove the three screws B fastening the TRAMECHA assembly and then remove the TRAMECHA assembly upwards from the front side.

3. At the same time, remove the spring from the groove of the CH. base assembly in the part g of the TRAMECHA assembly.

Note: When reinstalling the TRAMECHA assembly:
- Check to see if the spring is properly engaged with groove of the CH. base assembly in the part g of the TRAMECHA assembly.
- After making sure that the three insulators of the TRAMECHA assembly are properly set on the bosses of the L. base assembly's guide, fasten them with the screws.

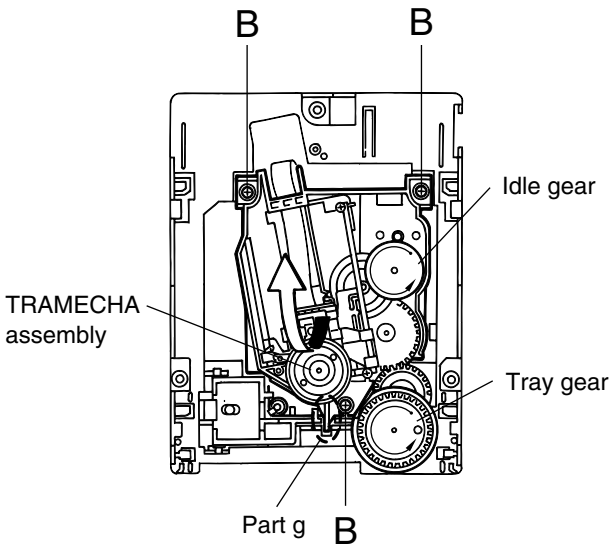


Fig. 6

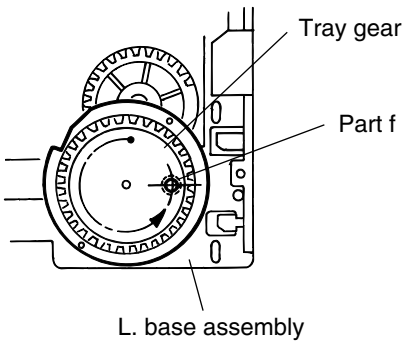


Fig. 7

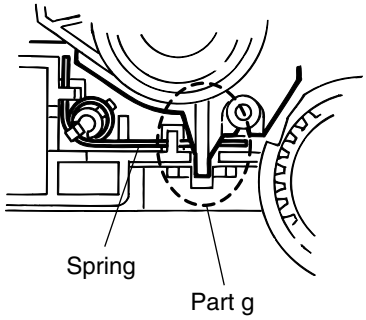


Fig. 8

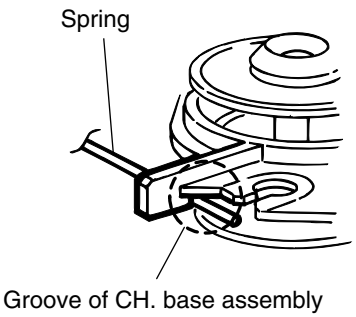


Fig. 9

■ Removing the Mechanism Board (Refer to Fig 10.)

Reference: The mechanism board can be removed without removal of the TRAMECHA assembly.

Note: Before disconnecting the flexible wire coming from the pickup from the connector, be sure to solder its shorting round.
If the flexible wire is connected without soldering, it may cause breakdown of the pickup.

1. Solder the shorting round of the flexible wire connected with the mechanism board from the back of the mechanism assembly.
2. Disconnect the flexible wire from the connector CN601 on the mechanism board.
3. Remove the three screws C fastening the mechanism board.
4. Unsolder the two points of the part h and one point of the part i of the mechanism board. Then, remove the mechanism board upwards.

Note: When reinstalling the mechanism board, connect the flexible wire coming from the pickup to the connector first and then remove the solder from the shorting round of the flexible cable.

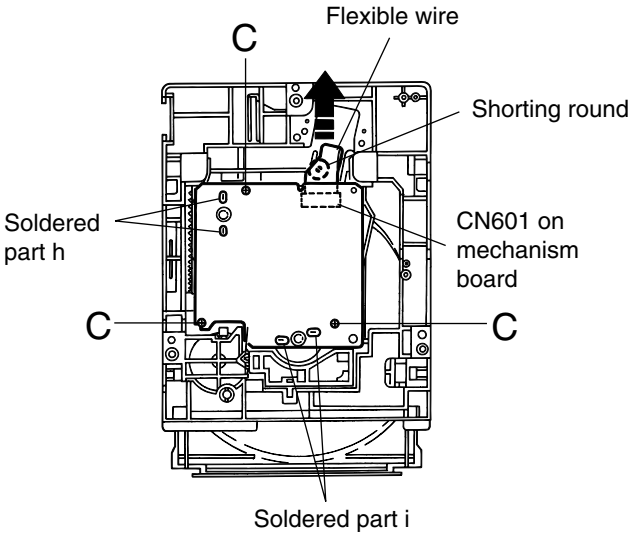


Fig. 10

■ Removing the Pickup (Refer to Figs. 11 to 14.)

- Remove the CL. base assembly and tray.
- Remove the TRAMECHA assembly.

Reference: The pickup can be removed without removal of the mechanism board.

Note: Before disconnecting the flexible wire coming from the pickup from the connector, be sure to solder its shorting round.
If the flexible wire is connected without soldering, it may cause breakdown of the pickup.

1. Solder the shorting round of the flexible wire connected with the mechanism board from the back of the TRAMECHA assembly.

2. Disconnect the flexible wire from the connector CN601 on the mechanism board.

3. Turn the idle gear in the arrow-marked direction from the top of the TRAMECHA assembly so that the pickup assembly is shifted to the reverse side of the T-T assembly.
Move the pickup assembly until the part j of the rack plate in the lower part of the pickup assembly comes out of the CH. base assembly.

4. Remove the two screws D retaining the shaft of the pickup assembly. Next, disengage the hook k from the CH. base assembly and then remove the pickup assembly together with the shaft.

5. Pull the shaft out of the pickup.

6. Remove the two screws E fastening the rack plate from the pickup.

7. Remove the screw F retaining the P.S. spring from the pickup.

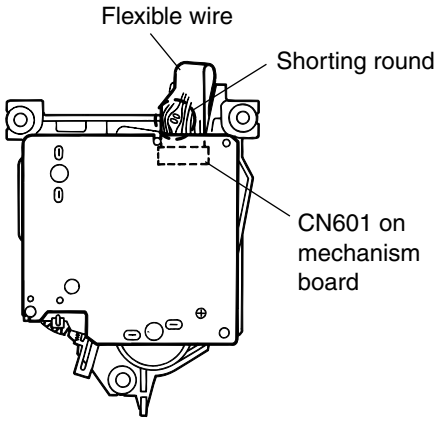


Fig. 11

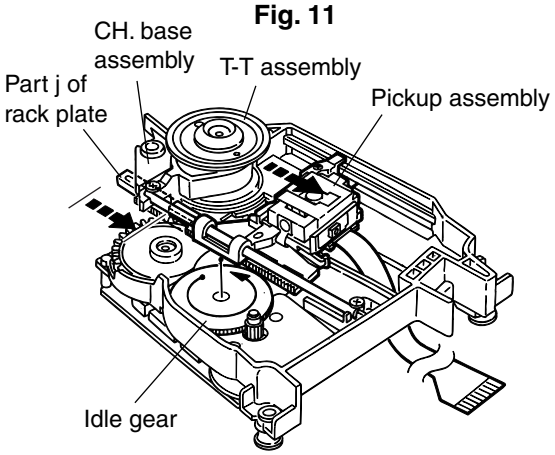


Fig. 12

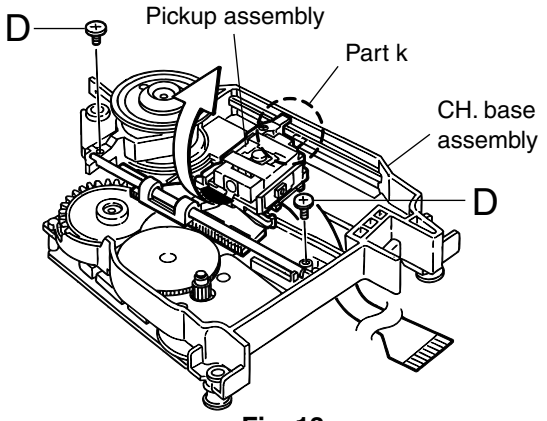


Fig. 13

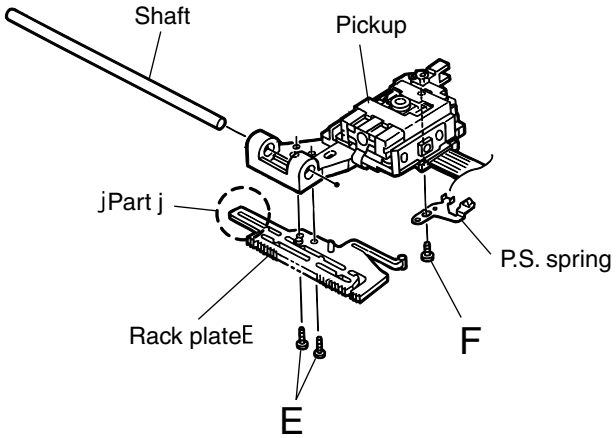


Fig. 14

■ Reinstalling the Pickup Assembly (Refer to Figs. 15 and 16.)

Reference: Refer to the explanation of "Removing the Pickup" on the preceding page.

1. Fit the P.S. spring and rack plate to the pickup.
2. Insert the shaft into the pickup.
3. Engage the hook k of the pickup assembly with the CH. base assembly first, and set the part j of the rack plate in the opening I next. Then, reinstall the pickup assembly while shifting it to the T-T side (inward) so that the part m of the rack plate is positioned as shown in Fig. 16.
4. Move the pickup assembly to the center position and fasten the shaft with the two screws D. (Make sure that the part n of the rack plate is correctly engaged with the middle gear.)
5. After passing the flexible wire coming from the pickup through the opening of the CH. base assembly, connect it to the connector CN601.

Note: When reinstalling the pickup assembly, remove the solder from the shorting round after connecting the flexible wire coming from the pick to the connector CN601.

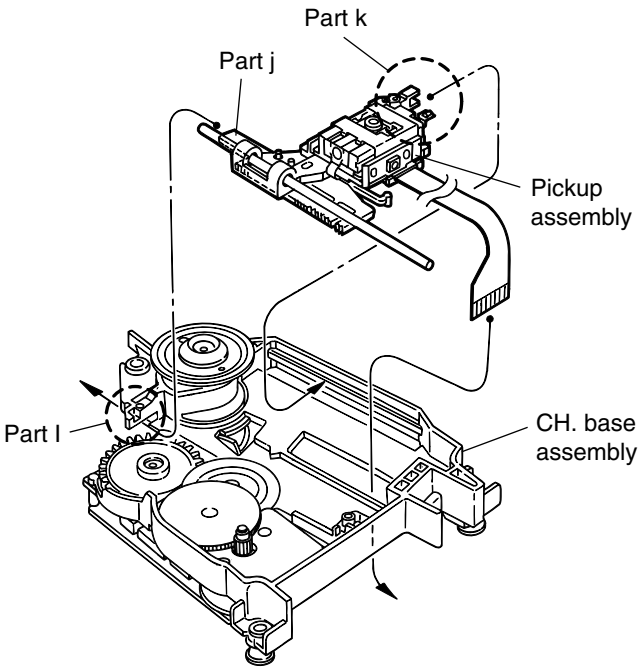


Fig. 15

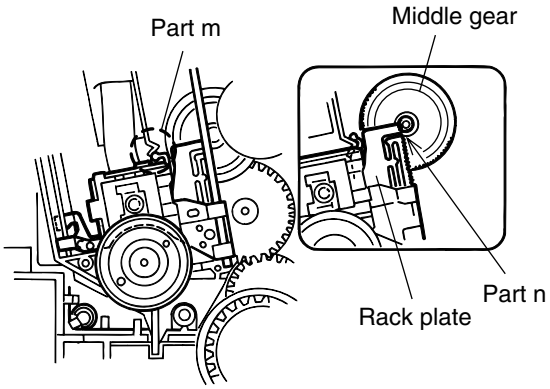


Fig. 16

■ Removing the Feed Motor Assembly (Refer to Fig. 17.)

- Remove the CL. base assembly and tray.
- Remove the mechanism board.

Remove the two screws E fastening the feed motor assembly from the top of the mechanism assembly.

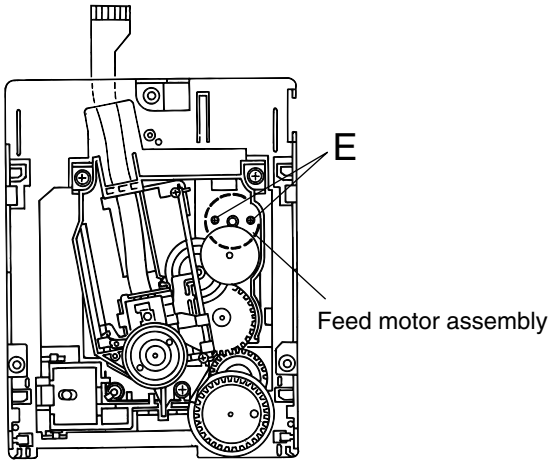


Fig. 17

<Cassette mechanism section>

CAUTION: Prior to performing the following procedures, turn the mode gear in the direction of the arrow to move each section to the eject position.

■Removing the side bracket (L) and (R) / load board (See Fig.1 to 4)

1. Remove the E-washer attaching the load arm on the right side of the body.
2. Turn the load arm in the direction of the arrow to release from the cassette hook at the joint **a**.
3. Remove the spring (1) attaching the trig lever.
4. Move the trig lever in the direction of the arrow and release it from the two holes **b**.
5. Remove the screw **A** attaching the load board on the right side of the body and unsolder the wire extending from the sub motor.

REFERENCE: The side bracket unit (R) can be removed even if the load board is attached. In such case, make sure to unsolder the wire extending from the sub motor.

6. Remove the spring (2) and the holder collar on the right side of the body.
7. Remove the two screws **B** attaching the side bracket unit (R) in the direction of the arrow.
8. Remove the four screws **C** attaching the side bracket (L) in the direction of the arrow.

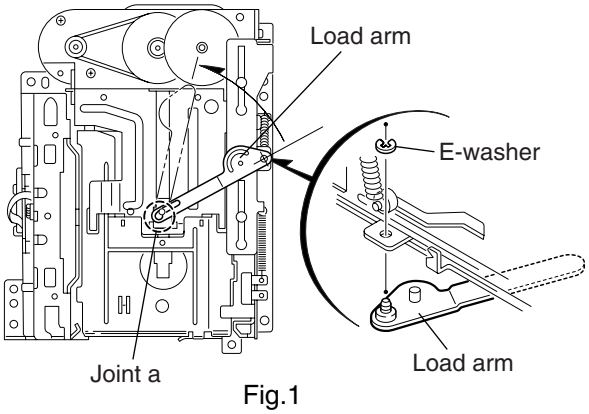


Fig.1

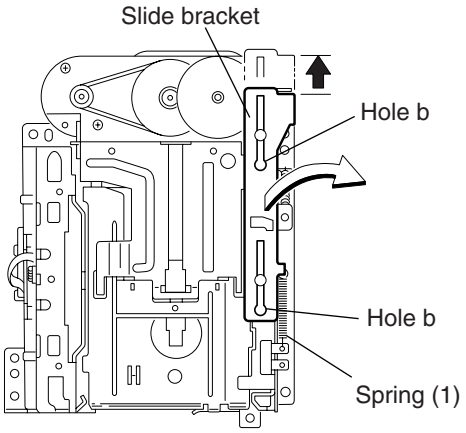


Fig.2

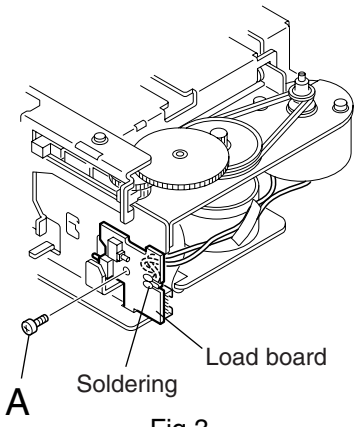


Fig.3

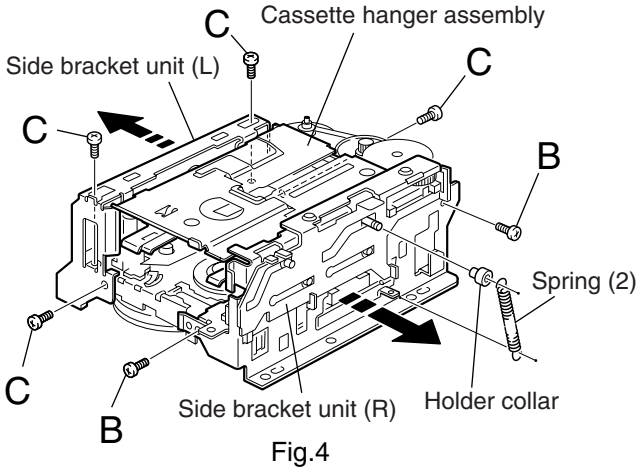


Fig.4

■ Removing the cassette hanger assembly / cassette holder (See Fig.5)

・ Prior to performing the following procedure, remove the side bracket (L) and (R).

1. Remove the slit washer attaching the cassette hanger assembly and pull out the pin.

2. Move the cassette hanger assembly in the direction of the arrow to release the boss of the joint **c** on the left rear side and detach the cassette hanger assembly upward.

REFERENCE: The cassette hanger assembly is detached with the cassette holder.

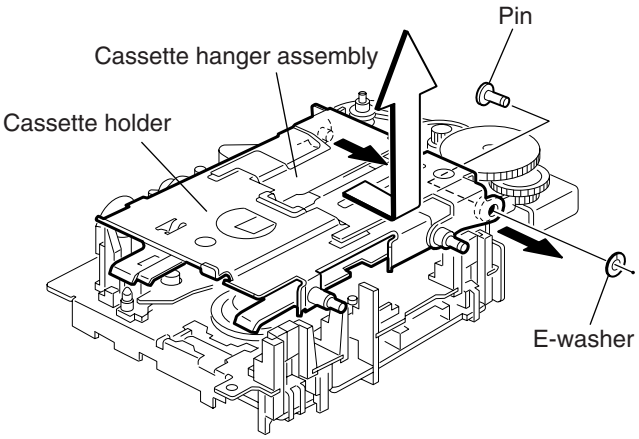


Fig.5

■ Removing the pinch roller (F) and (R) (See Fig.6 to 8)

・ Prior to performing the following procedure, remove the side bracket (L), (R), cassette hanger assembly / cassette holder.

1. Release the tab **d** in the direction of the arrow and pull out the pinch roller upward.

REFERENCE: The above method is for removing the pinch roller (F) and (R).

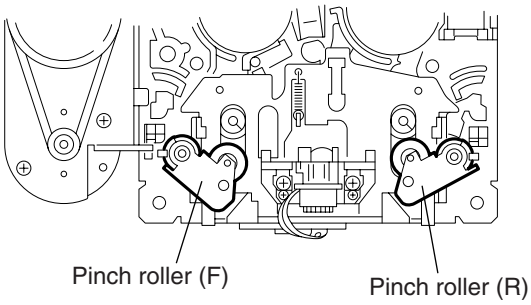


Fig.6

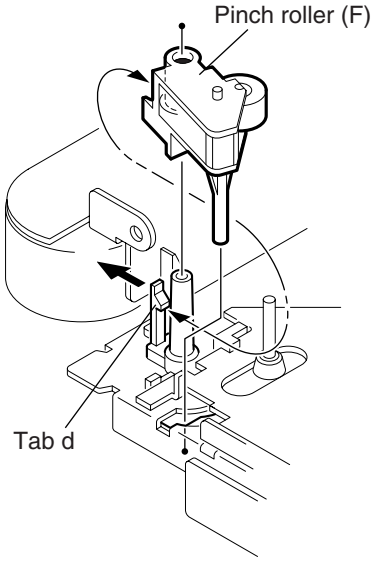


Fig.7

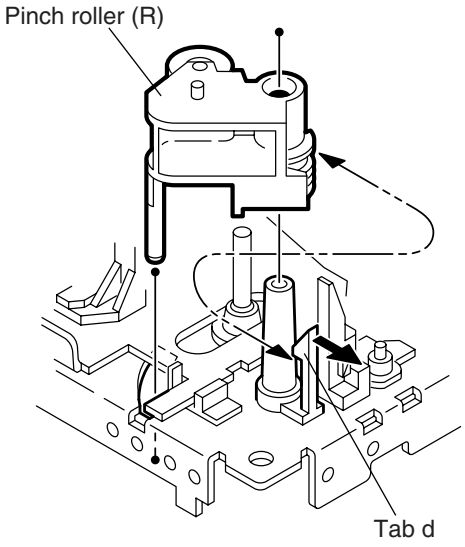


Fig.8

■Removing the head assembly / head board (See Fig.9 and 10)

・ Prior to performing the following procedure, remove the side bracket (L), (R), cassette hanger assembly / cassette holder.

1. Remove the spring on the lower side of the head assembly.

2. Remove the two screws **D** and remove the head assembly upward.

3. Remove the screw **E** attaching the head board. Unsolder the flexible wire extending from the head assembly if necessary.

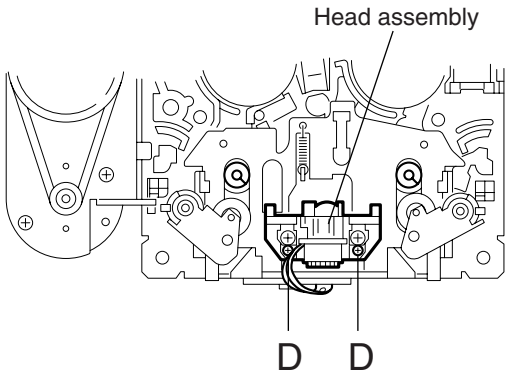


Fig.9

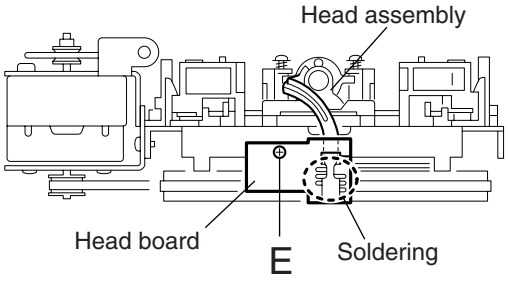


Fig.10

■Removing the flywheel assembly (F) and (R) (See Fig.11 and 12)

・ Prior to performing the following procedure, remove the side bracket (L), (R), cassette hanger assembly / cassette holder.

1. Remove the belt and sub belt on the bottom of the body.

2. Remove the polywasher from the flywheel (F) and (R) on top of the body.

3. Pull out the flywheel (F) and (R).

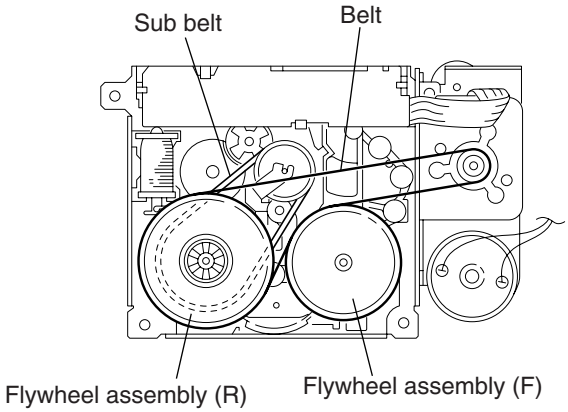


Fig.11

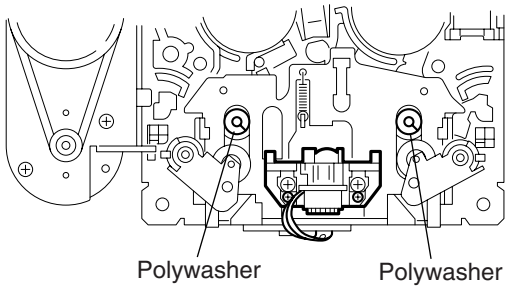


Fig.12

Adjustment Method

1. Jigs and test instruments

Test disc (CTS-1000)
Test tape (VT712)
Test tape (VT703)
Test tape (AC225)

2. Adjustment and check items

1) Indications in the modes that all LCD's are on

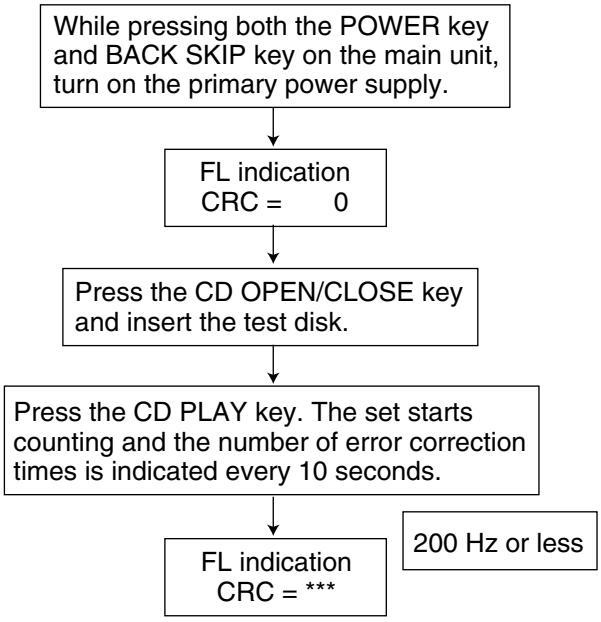
2) CD section

(1) Indication of the C1 error
(2) Cancel of the C1 error indication

3. Adjustment and check method

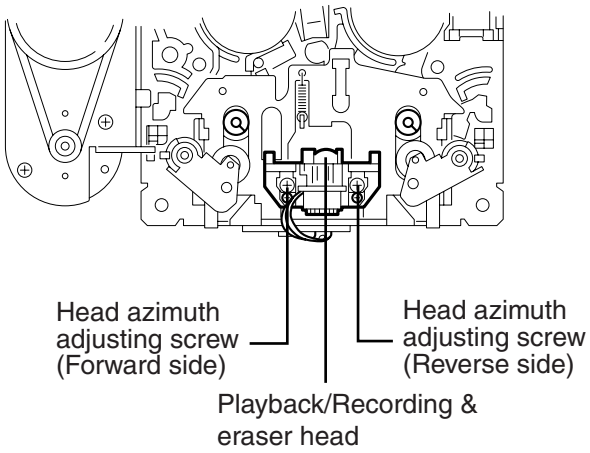
1) CD section

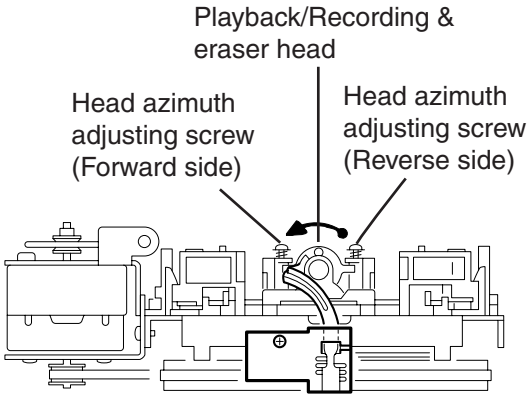
(1) Indication of the C1 error



(2) Cancel of the C1 error indication
To cancel the C1 error indication, cut off the power supply.

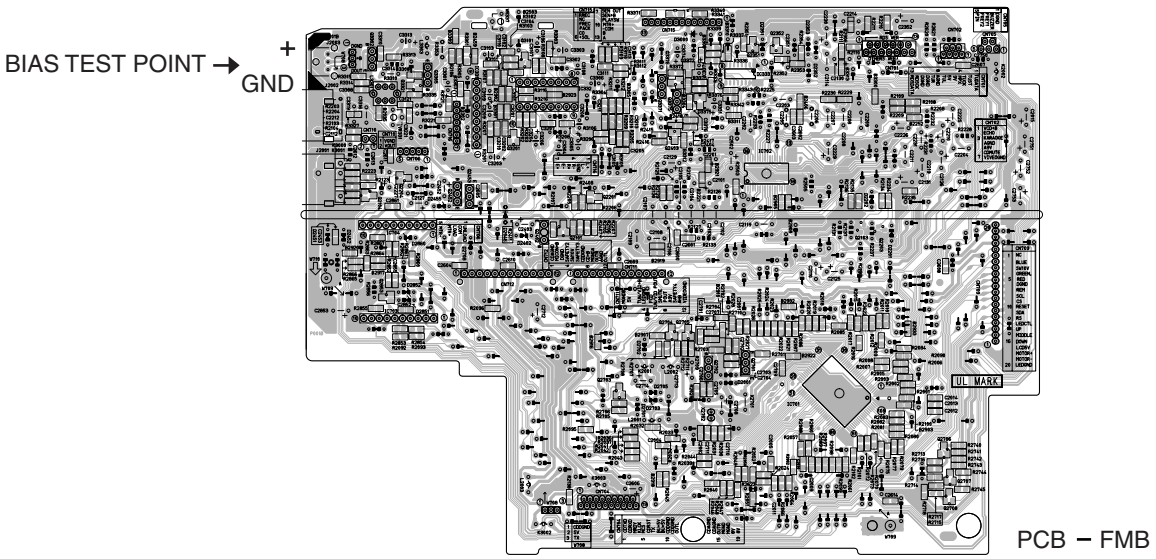
■ Cassette section





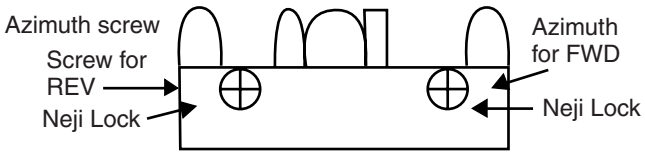
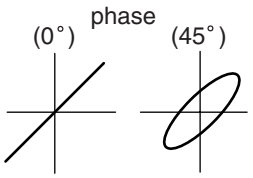
Removing the Cassette Mechanism Assembly

1. Remove the rear cover.
2. Remove the side panels (right and left).
3. Remove the cassette mechanism assembly.
4. Remove the four screws S fastening the cassette mechanism assembly from the back of the cassette mechanism.
5. Press the EJECT button on the front side of the cassette mechanism assembly to open the cassette door, and then remove the cassette mechanism assembly.

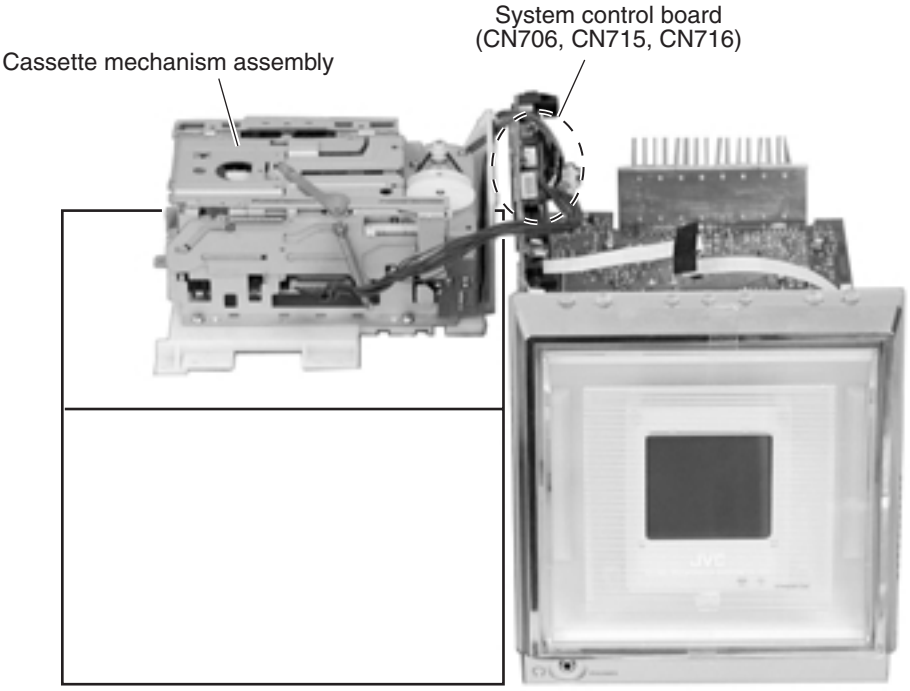


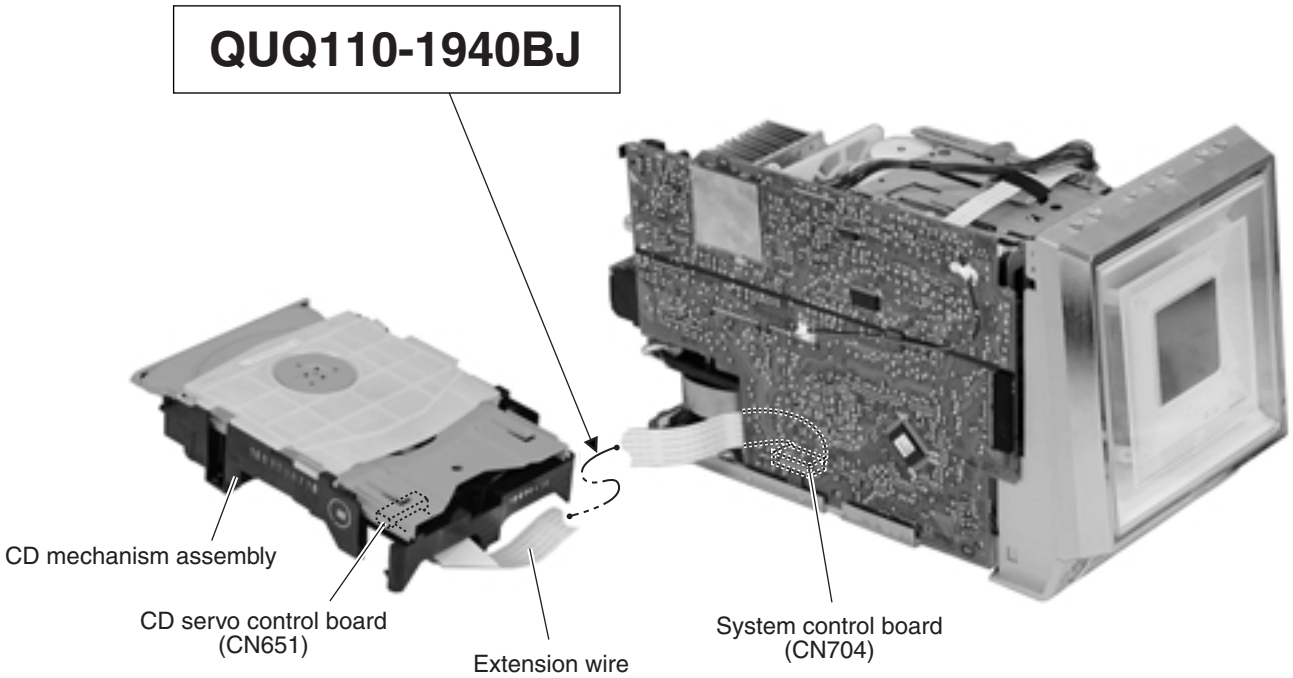
PCB – FMB

■ Check and adjustment of the Head amplifier section

Item	Check/Adjustment Method	Adjusting Point	Standard Value
1. Head azimuth adjustment	1) Play back the end part of the test tape VT703 (10 kHz). 2) Adjust the head azimuth screws so that the output becomes maximum in both the normal and reverse directions. After adjustment, lock the screws with screw bond without fail. Measuring output terminal: Speaker terminal, 4Ωload resistance Difference between L-ch and R-ch: Within 3 dB Difference between FWD and REV directions: Within 4 dB Adjust max level in FWD and REV. After adjusting, should be Applied bond (THREEBOND 1401 A/C) to screw.  	Head azimuth screw	Maximum output 
2. Tape speed adjustment	1) Play back the end part of the test tape VT712 (3 kHz). 2) Adjust VR37 so that the frequency counter reads 3000 ±15 Hz in playback in the normal direction.	VR37	3000 ±15Hz
(Reference value) Speed difference between the normal and reverse directions	Measuring output terminal: Speaker terminal Make sure that speed difference between the normal and reverse directions is 60 Hz or less by reading of the frequency counter. (With the beginning part of the test tape)	—	60 Hz or less
Wow and flutter	Play back the end part of the test tape VT712 (3 kHz). Make sure that the wow and flutter meter reads 0.25 % (WRMS) or less.		0.25 % (WRMS) or less
3. Recording / playback frequency characteristic adjustment	1) Set a blank cassette tape (Type I: AC225) and enter the set into the recording pause mode. 2) Cancel the pause mode and start recording. Repeat to input the 1 kHz and 10 kHz reference signals alternately from the CD test disk to record the signals on the blank tape. 3) While playing back the repeatedly input 1 kHz and 10 kHz reference signals, adjust VR31 so that output level of 10 kHz signals is +2 dB ±1 dB of 1 kHz.	VR31	-1dB ±1dB
(Reference value) Recording bias frequency	1) Set a blank cassette tape (Type I: AC225) and enter the set into the recording pause mode. 2) Make sure that the bias frequency at the bias test point (Refer on 1-26 board drowing) on the head amplifier board is 70 ±9 kHz.	—	70 ±9kHz
(Reference value) Erasing current	1) Set a blank cassette tape (Type I: AC225) and enter the set into the recording pause mode. 2) After connecting a 1Ω resistor to the erasing head in series, cancel the pause mode and start recording. Connect the electronic voltmeter to both the terminals and measure the erasing current.	—	Erasing current: 60 mA (Type I tape)

■ Extension code connecting method





Flow of functional operation until TOC read (CD)

Power ON → Power Key → Slider turns REST SW ON.

Check Point

Check to see if the voltage at the pin 72 of IC701 or pin 5 of CN602 becomes 0 V for an instant. (The moment the switch is turned on, the voltage becomes 0 V.)

Slider turns REST SW ON. → Automatic tuning of TE offset

Automatic tuning of TE offset → Laser ON

Laser ON → Make sure of the H level at the pin 40 of IC603.

Laser ON → Detection of disc

Detection of disc → Automatic tuning of Foucus offset

Automatic tuning of Foucus offset → Automatic measurement of Focus A-curve amplitude

Automatic measurement of Focus A-curve amplitude → Confirm that the Focus error S-curve siganl at the pin28 of IC603 is approx.2Vp-p

Automatic measurement of Focus A-curve amplitude → Disc is rotated

Disc is rotated → Confirm that the siganl from pin24 IC603 (R645) is 0V as a accelerated pulse during approx.400ms.

Disc is rotated → Focus servo ON (Tracking servo ON)

Focus servo ON (Tracking servo ON) → Automatic measurement of Tracking error amplitude

Automatic measurement of Tracking error amplitude → Make sure that the TE signal (1.8 Vp-p approx.) indicating the tracking servo off status is output from the pin 25 (one side of R609) of IC601.

Automatic measurement of Tracking error amplitude → Automatic tuning of Tracking error balance

Automatic tuning of Tracking error balance → Automatic tuning of Focus error balance

Automatic tuning of Focus error balance → Automatic tuning of Focus error gain

Automatic tuning of Focus error gain → Automatic tuning of Tracking error gain

Automatic tuning of Tracking error gain → TOC reading

TOC reading → Confirm the eys-pattern at the lead of TP602

TOC reading → Play a disc

■Tracking error waveform at TOC reading

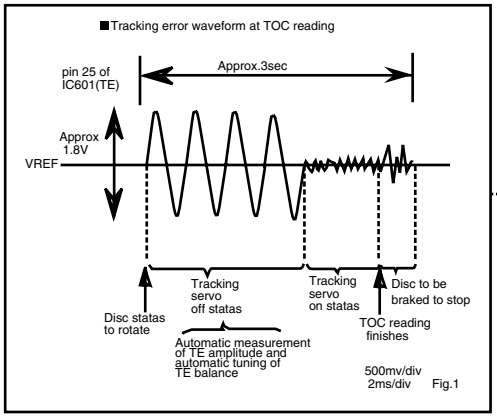
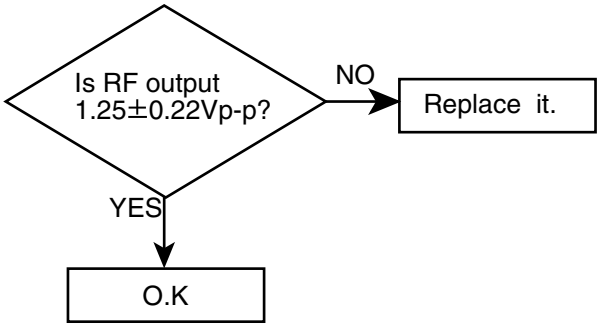


Fig.1

Maintenance of laser pickup

(1) Cleaning the pick up lens
Befor you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

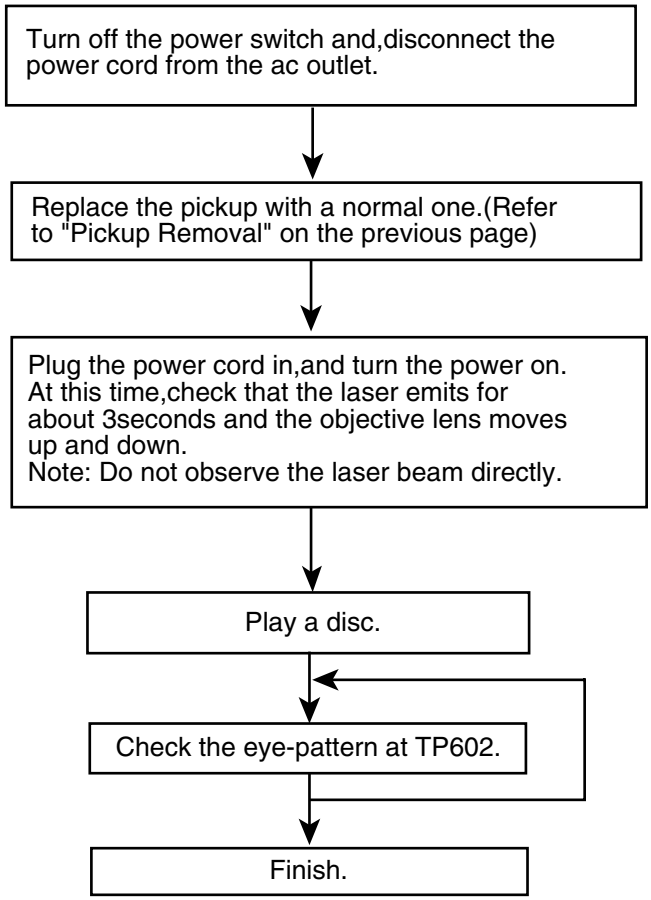
(2) Life of the laser diode (Fig.1)
When the life of the laser diode has expired, the following symptoms wil appear.
(1) The level of RF output (EFM output:amplitude of eye pattern) will below.



(Fig.1)

(3) Semi-fixed resistor on the APC PC board
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor is adjusted while the pickup is functioning normally,the laser pickup may be damaged due to excessive current.

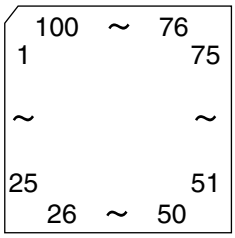
Replacement of laser pickup



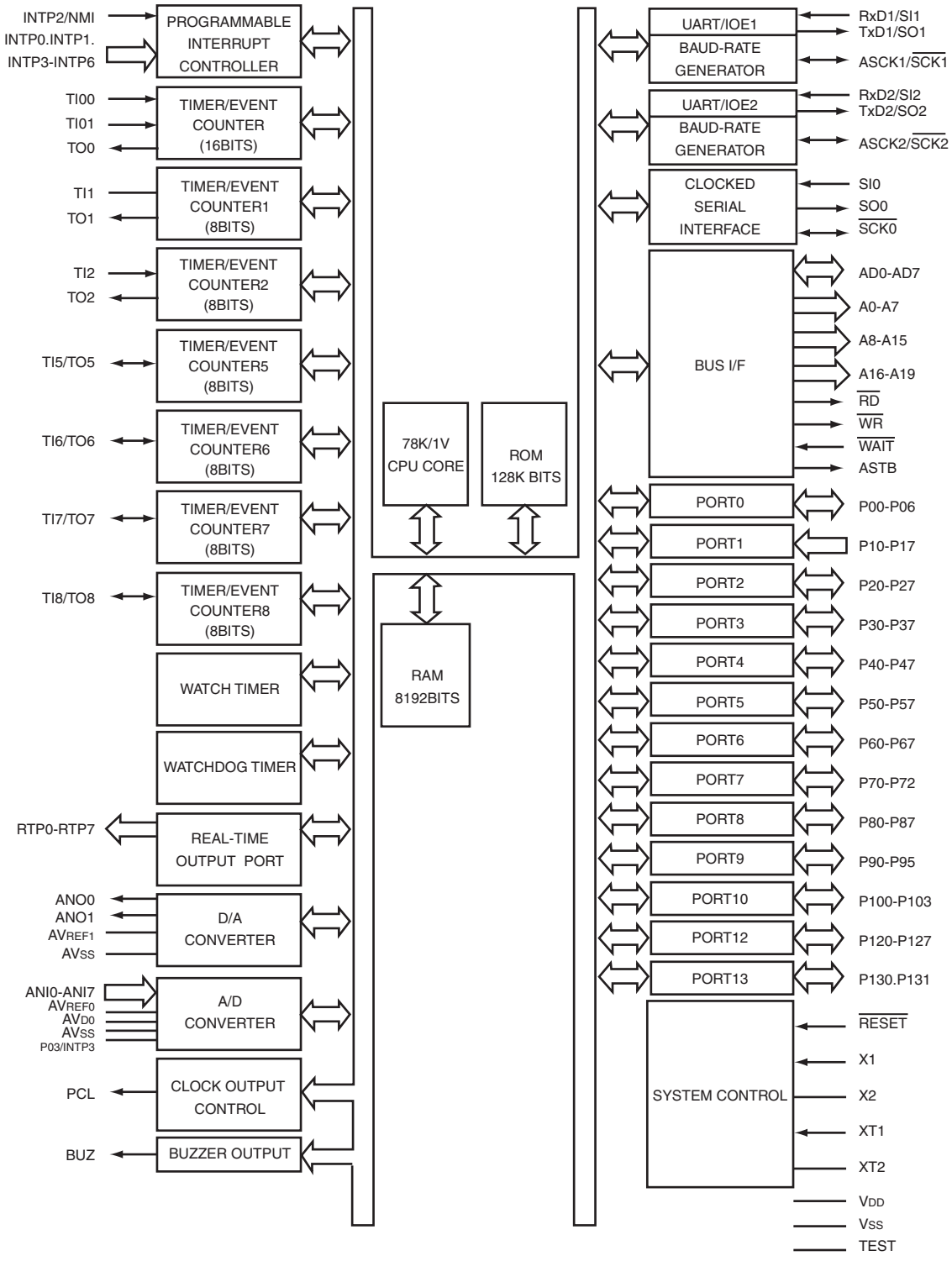
Description of major ICs

■ UPD784216AGF (IC701) : System micon

1. Pin layout



2. Block diagram



3. Pin function (1/2)

Pin No.	Symbol	I/O	Description
1	FAUX2	-	Not connected
2	NC	-	Not connected
3	RDSDATA	-	Not connected
4	MPX	I	Stereo detection
5	TUST	I	Stereo indicator detection
6	NC	O	Not connected
7	FTUNER	O	Tuner switch output
8	FCD	O	CD switch output
9	VDD	-	Connected with VDD
10	NC	-	Not connected
11	PBMUTE	O	PB mute output
12	NC	-	Not connected
13	PIN	I	Power key input
14	LEDCTL	O	LED control output
15	BUZER	O	Buzzer output
16	MDPOUT	O	MD PB output
17	MDRESET	O	MD reset output
18	SMUTE	O	System mute output
19	NC	-	Not connected
20	NC	-	Not connected
21	POUT	O	Power-on control output
22	VPP	I	GND
23	UP	I	Door position detection - UP
24	RMT0	O	Door open/shut motor control output
25	RMT1	O	Door open/shut motor control output
26	MIDDLE	I	Door position detection - MIDDLE
27	DOWN	I	Door position detection - DOWN
28	RMSPEED	O	Door open/shut motor speed control output
29	VOLCK	O	Volume control clock
30	VOLCE	O	Volume control chip enable
31	VOLDA	O	Volume control data
32	AHB	O	Active hyper bus control
33	BUB	I	Backup detection
34	BTCL	O	Battery control
35	NC	O	Not connected
36	XKILL	I/O	Power-off clock oscillator control
37	VDD	I	Power supply
38	X1	I	Master clock
39	X2	O	Master clock
40	VSS	I	GND
41	XT2	O	Clock for timer
42	XT1	I	Clock for timer
43	RESET	I	Power-on reset
44	REM	I	Remote control sensor
45	RDSCK	-	Not connected
46	NC	-	Not connected
47	PHOTO	I	Reel pulse detection
48	SAFTEY4	I	Current detection
49	NC	-	Not connected
50	NC	-	Not connected

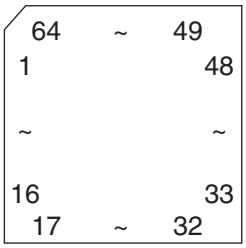
3. Pin function (2/2)

UPD784216AGF(2/2)

Pin No.	Symbol	I/O	Description
51	AVREF	I	Reference power supply +5 V
52	AVREF0	I	Reference power supply +5 V
53	SEFTY2	I	Current detection
54	SEFTY3	I	Current detection
55	LDCK	I/O	
56	FKEY1	I	Function switch key input
57	VERSION	I	Destination switch input
58	FKEY2	I	Function switch key input
59	KEY1	I	Cassette key input
60	SEFTY1	I	Current detection
61	VSS	I	GND
62	RCDL	O	LED color display control
63	BCDL	O	LED color display control
64	AVREF1	I	Reference power supply +5 V
65	RXD	I	Digital input
66	TXD	O	Digital output
67	NC	-	Not connected
68	CDRXD	I	CD digital input
69	CDTXD	O	CD digital output
70	CDRST	O	CD reset
71	GCDL	O	LED color display control
72	NC	-	Not connected
73	TUDATA(1)	I	Tuner data
74	TUDATA	O	Tuner data
75	TUCK	O	Tuner clock
76	NC	-	Not connected
77	NC	-	Not connected
78	NC	-	Not connected
79	NC	-	Not connected
80	NC	-	Not connected
81	NC	-	Not connected
82	NC	-	Not connected
83	NC	-	Not connected
84	NC	-	Not connected
85	NC	-	Not connected
86	NC	-	Not connected
87	NC	-	Not connected
88	SCL	O	LCD clock
89	CS	O	LCD power supply
90	RESET	O	LCD reset
91	SDA	I/O	LCD serial data
92	NC	-	Not connected
93	RS	I	LCD start
94	NC	-	Not connected
95	NC	-	Not connected
96	SDATA	I/O	Cassette control serial data
97	SCK	I/O	Cassette control serial clock
98	STTA	I/O	Cassette control status signal
99	PLAY	O	Cassette PB switch detection
100	VSS	I	GND

■ UPD780024AGKB21 (IC251) : Unit micon

1. Pin layout



2. Pin function (1/2)

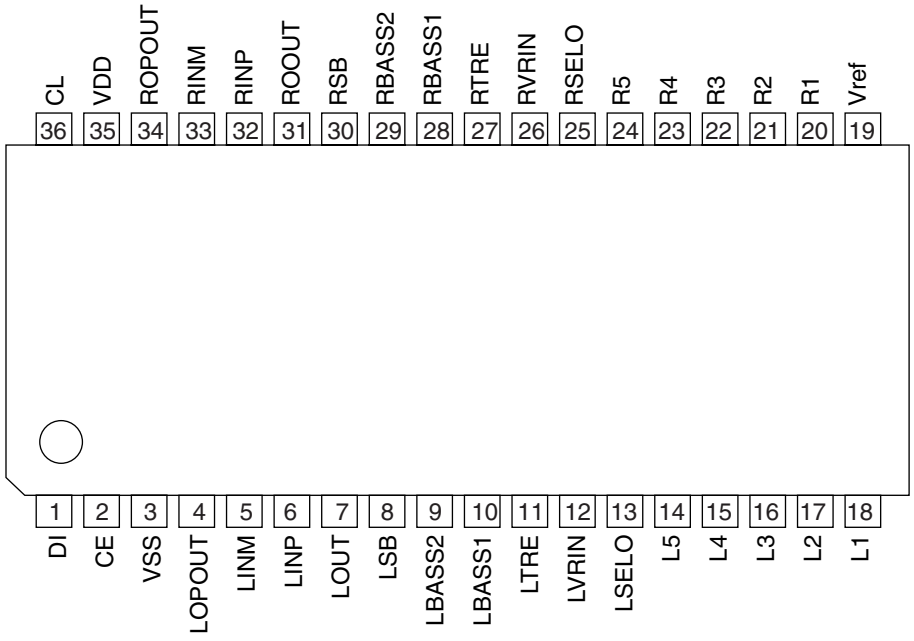
Pin No.	Symbol	I/O	Description
1	P50/A8	-	Connected to GND
2	P59/A9	-	Not used
3	MCS	-	Pull-up +B
4	MRDY	-	Not used
5	CDINDEX	-	Not used
6	CDEMP	I	CD emphasis detection
7	CDTNO	I	CD track No. detection
8	CDCOPY	I	CD copy detection
9	VSS0	-	GND
10	VDD0	-	Power supply
11	P30	-	Not used
12	P31	-	Not used
13	P32	-	Not used
14	MUTE	O	Mute output
15	SUBQ	I	Sub-code Q data input from IC651
16	P35/SO31	-	Not used
17	SQCK	O	Sub-code Q register clock output to IC651
18	KCMND	O	Kick command data
19	MSTAT	O	CD control status output to IC801
20	MCLK	I	CD control command clock input from IC801
21	RXDO	I	Digital data input
22	TXDO	O	Digital data output
23	P25/SCK0	-	Connected to GND
24	VDD1	-	Power supply
25	AVSS	-	GND
26	KEY1	I	Key input 1
27	KEY2	I	Key input 2
28	PCHK	I	Parity check
29	P14/AN14	-	Connected to GND
30	P13/AN13	-	Connected to GND
31	/OPEN	I	Open switch input
32	/REST	I	Rest switch input

2. Pin function (2/2)

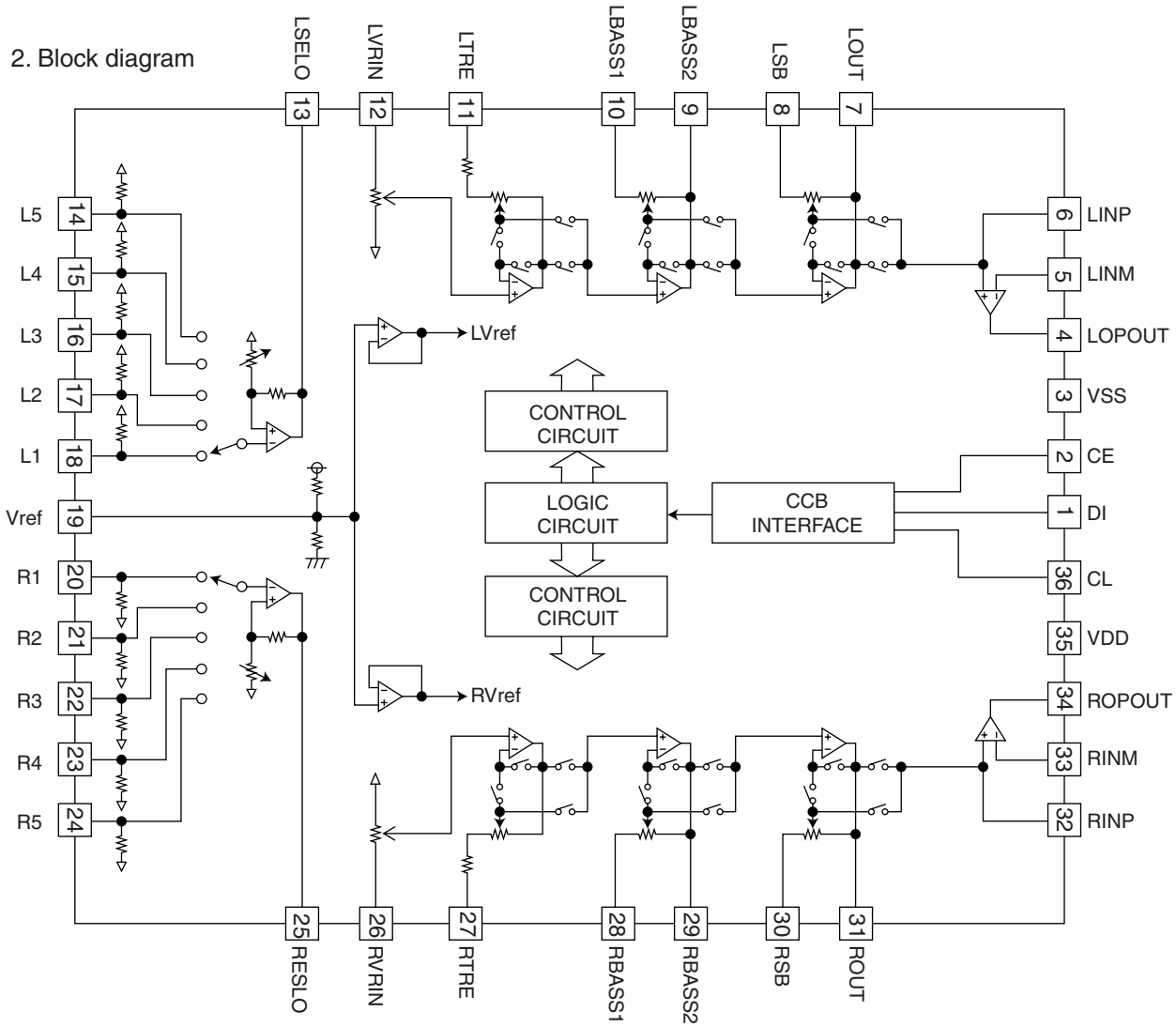
Pin No.	Symbol	I/O	Function
33	P10/AN10	-	Connected to GND
34	AVREF	-	Analog circuit reference voltage. Connected with analog circuit power supply
35	AVDD	-	Analog circuit power supply
36	/RESET	I	CD control reset input from IC801
37	XT2	-	Not used
38	XT1	-	Connected with power supply
39	IC	O	Flash memory control
40	X2	-	Connected with external crystal oscillator
41	X1	-	Connected with external crystal oscillator
42	VSS1	-	GND
43	FLAG	I	Flag signal input from IC651
44	BLKCK	I	Sub-code block clock signal input from IC651
45	/RFDET	I	RF signal amplitude detection input
46	EQx2	O	×2 equalizer switch output
47	EQx4	O	×4 equalizer switch output
48	VCOx4	-	Not used
49	OPEN	I	Open door detection
50	/CLOSE	I	Closed door detection
51	IREFx4	O	×4 DSP current switch output
52	P75/BUZ	-	Not used
53	/RESET	O	Reset signal output to IC651 (L: Reset)
54	STAT	I	Status signal input from IC651
55	/DMUTE	O	Muting output to IC651
56	/P.ON	O	Power on/off switch signal output to IC291
57	MLD	O	Microcomputer command load signal output to IC651
58	MDATA	O	Microcomputer command data output to IC651
59	MCLK	O	Microcomputer command clock signal output to IC651
60	CLKSW	-	Not used
61	JIG	-	Not used
62	JIG	-	Not used
63	JIG	-	Not used
64	JIG	-	Connected to GND

■ LC75345M-X (IC702) : E.volume

1. Pin layout



2. Block diagram

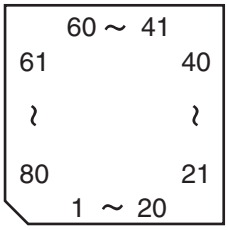


3. Pin function

Pin No.	Symbol	Function
1	DI	Serial data and clock input pin for control.
2	CE	Chip enable pin.
3	VSS	Ground pin.
4	LOPOUT	Output pin of general-purpose operation amplifier.
5	LINM	Non-inverted input pin of general-purpuse operation amplifier.
6	LINP	Non-inverted input pin of general-purpuse operation amplifier.
7	LOUT	ATT + equalizer output pin.
8	LSB	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
9	LBASS2	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
10	LBASS1	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
11	LTRE	Capacitor and resistor connection pin comprising treble band filter.
12	LVRIN	Volume input pin.
13	LSELO	Input selector output pin.
14	L5	Input signal pin.
15	L4	Input signal pin.
16	L3	Input signal pin.
17	L2	Input signal pin.
18	L1	Input signal pin.
19	Vref	0.5 x VDD voltage generation block for analog ground.
20	R1	Input signal pin.
21	R2	Input signal pin.
22	R3	Input signal pin.
23	R4	Input signal pin.
24	R5	Input signal pin.
25	RSELO	Input selector output pin.
26	RVRIN	Volume input pin.
27	RTRE	Capacitor connection pin comprising treble band filter.
28	RBASS1	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
29	RBASS2	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
30	RSB	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
31	ROUT	ATT + equalizer output pin.
32	RINP	Non inverted input pin of general-purpose operation amplifier.
33	RINM	Non inverted input pin of general purpose operation amplifier.
34	ROPOUT	Output pin of general-purpose operation amplifier.
35	VDD	Supply pin.
36	CL	Serial data and clock input pin for control.

■ MN662790RSC (IC651) : Digital servo & processor

1.Pin layout



2.Pin function

MN662790RSC (1/2)

Pin No.	Symbol	I/O	Description
1	BCLK	O	Bit clock output for SRDATA
2	LRCK	O	Identifying signal output of L,R
3	SRDATA	O	Serial data output
4	DVDD1	-	Power supply for digital circuit
5	DVSS1	-	Connect to ground for digital circuit
6	TX	O	Digital audio interface output signal
7	MCLK	I	Micom command clock signal input
8	MDATA	I	Micom command data signal input
9	MLD	I	Micom command load signal input L:load
10	SENSE	-	Non connect
11	FLOCK	-	Non connect
12	TLOCK	-	Non connect
13	BLKCK	O	Sub code block clock signal (Command execution : CD-TEXT data readout enabling signal (DQSY) output)
14	SQCK	I	Export clock signal input for sub code Q resister
15	SUBQ	O	Sub code Q data output
16	DMUTE	I	Muting input H:muting
17	STAT	O	Status signal output
18	LSI_RST	I	Reset signal input L:reset
19	SMCK	O	Clock signal output MSEL is H : 8.4672 MHz MSEL is L : 4.2336 MHz
20	CSEL	I	Oscillation frequency specification terminal H:33.8688 MHz L:16.9344 MHz
21	TEST2	-	TEST2 terminal usually : open
22	TVD	O	Traverse drive output
23	PC	-	Non connect
24	ECM	O	Spindle motor drive signal output (Compulsion mode output)
25	ECS	O	Spindle motor drive signal output (Servo error signal output)
26	VDETMON	-	Non connect
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	-	Reference voltage for DA output section
30	FBAL	O	Focus balance adjust signal output
31	TBAL	O	Tracking balance adjust signal output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF Envelope signal input (analog input)
35	TEST3	I	TEST3 Terminal usually : Fixation L
36	OFT	I	Off track signal input H : off track
37	TRCRS	I	Track cross signal input (analog input)
38	RFDET	I	RF detection signal input L : detection
39	BDO	I	Dropout signal input H : dropout
40	LDON	-	Non connect

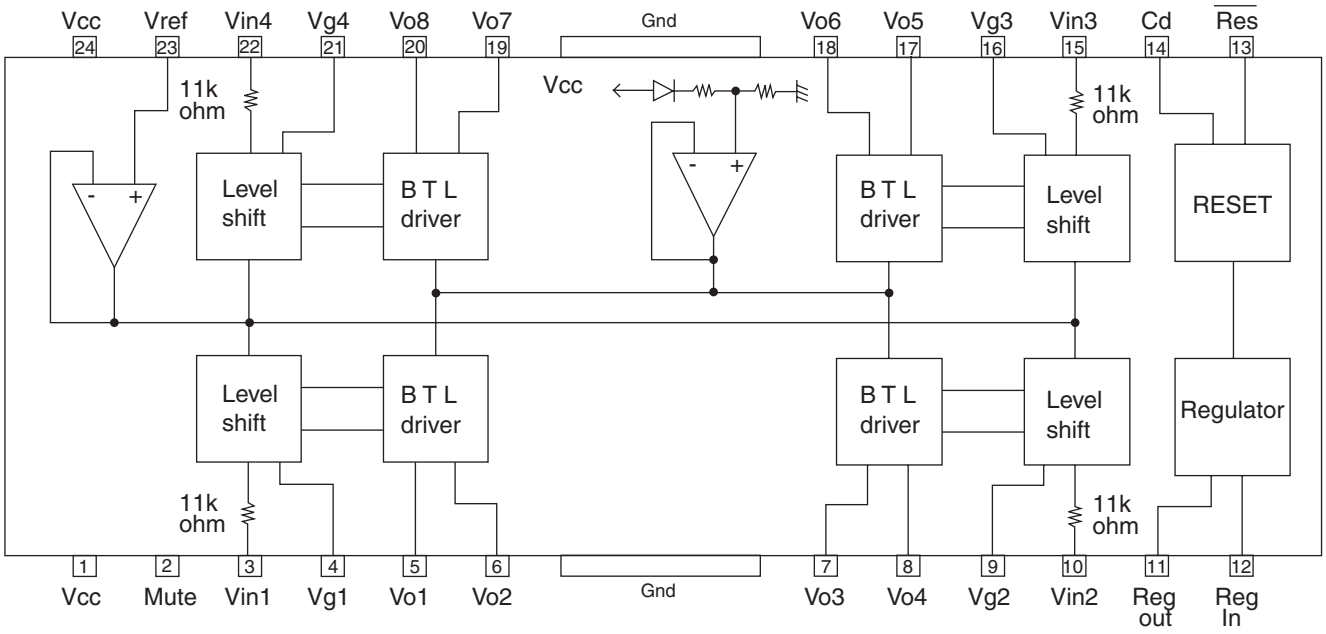
2.Pin function

MN662790RSC (2/2)

Pin No.	Symbol	I/O	Functions
41	PLLF2	I/O	Terminal for loop filter characteristic switch for PLL
42	DSLBDA	-	Non connect
43	WVEL	-	Non connect
44	ARF	I	RF Signal output
45	IREF	I	Standard electric current input terminal
46	DRF	I	Bias terminal for DSL
47	DSLF	I/O	Loop filter terminal for DSL
48	PLLF	I/O	Loop filter terminal for PLL
49	VCOF	I/O	Loop filter terminal for VCO
50	AVDD2	-	Power supply terminal for analog circuit
51	AVSS2	-	Connect to ground terminal for analog circuit
52	EFM	-	Non connect
53	DSLB	O	PLL extraction clock output
54	VCOF2	I/O	Loop filter terminal for VCO
55	SUBC	O	Sub code serial output
56	SBCK	I	Clock signal input for sub code serial output
57	VSS	-	Connect to ground terminal for oscillation circuit
58	X1	I	Oscillation circuit input terminal f=16.9344 MHz, 33.8688 MHz
59	X2	O	Oscillation circuit output terminal f=16.9344 MHz, 33.8688 MHz
60	VDD	-	Power supply terminal for oscillation circuit
61	BYTCK	-	Non connect
62	LDON	O	Laser ON signal output H : ON
63	GCTRL	O	General I/O port
64	IPFLAG	-	Non connect
65	FLAG	O	Flag signal output
66	CLVS	-	Non connect
67	CRC	-	Non connect
68	DEMPH	O	De-emphasis detection signal output
69	RESY	-	Non connect
70	IOSEL	I	Mode switch terminal
71	TEST	I	TEST terminal usually : H
72	AVDD1	-	Power supply terminal for analog circuit (for audio output section)
73	OUTL	O	Lch audio output
74	AVSS1	-	Connect to ground terminal for analog circuit (for audio output section)
75	OUTR	O	Rch audio output
76	DQSY	I	RF signal polarity specification terminal
77	VCC5V	-	Power supply terminal (5V)
78	PSEL	O	IOSEL=H TEST terminal IOSEL=L SRDATA input
79	MSEL	O	IOSEL=H SMCK terminal output (frequency switch terminal) IOSEL=L LRCK input
80	SSEL	O	IOSEL=H SUBQ terminal output mode switch terminal IOSEL=L BCLK input

■ LA6541-X (IC801) : Servo driver

1. Pin layout & Block diagram

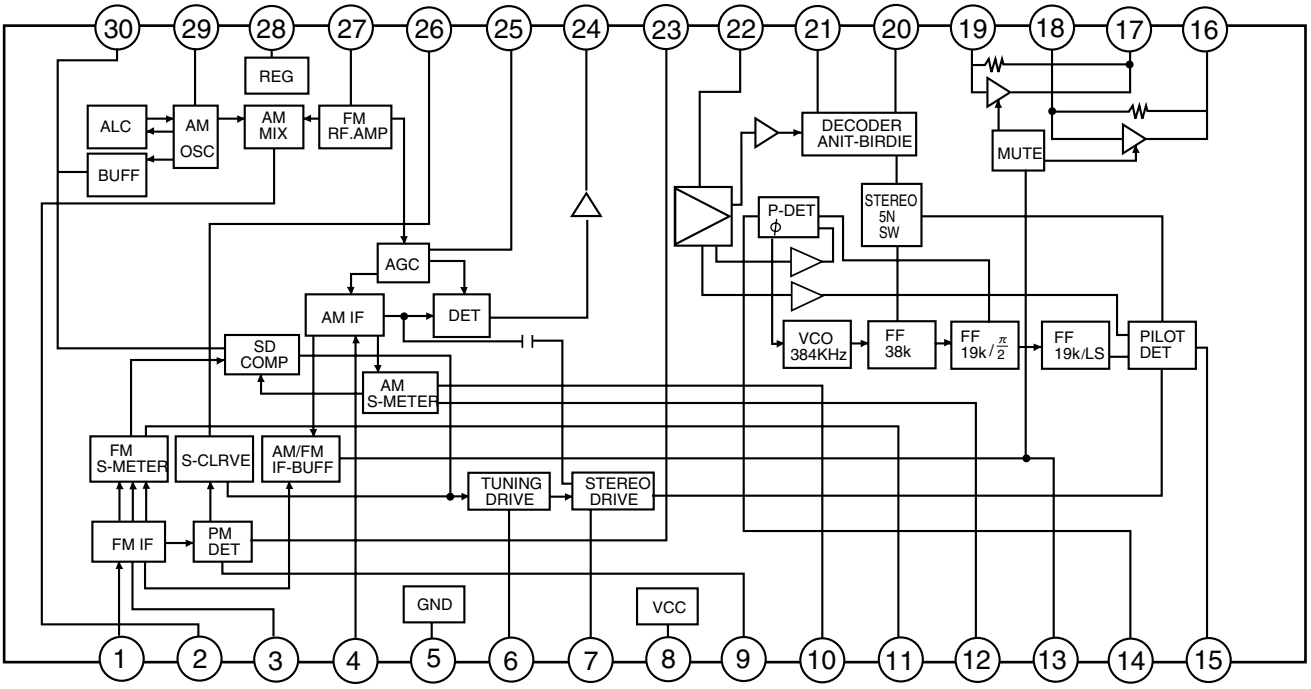


2. Pin function

Pin No.	Symbol	Function
1	Vcc	Power supply (Shorted to pin 24)
2	Mute	All BTL amplifier outputs ON/OFF
3	Vin1	BTL AMP 1 input pin
4	Vg1	BTL AMP 1 input pin (For gain adjustment)
5	Vo1	BTL AMP 1 input pin (Non inverting side)
6	Vo2	BTL AMP 1 input pin (Inverting side)
7	Vo3	BTL AMP 2 input pin (Inverting side)
8	Vo4	BTL AMP 2 input pin (Non inverting side)
9	Vg2	BTL AMP 2 input pin (For gain adjustment)
10	Vin2	BTL AMP 2 input pin
11	Reg Out	External transistor collector (PNP) connection. 5V power supply output
12	Reg In	External transistor (PNP) base connection
13	Res	Reset output
14	Cd	Reset output delay time setting (Capacitor connected externally)
15	Vin3	BTL AMP 3 input pin
16	Vg3	BTL AMP 3 input pin (For gain adjustment)
17	Vo5	BTL AMP 3 output pin (Non inverting side)
18	Vo6	BTL AMP 3 output pin (Inverting side)
19	Vo7	BTL AMP 4 output pin (Inverting side)
20	Vo8	BTL AMP 4 output pin (Non inverting side)
21	Vg4	BTL AMP 4 output pin (For gain adjustment)
22	Vin4	BTL AMP 4 output pin
23	Vref	Level shift circuit's reference voltage application
24	Vcc	Power supply (Shorted to pin 1)

■ LA1838 (IC1) : FM AM IF amp & Detector, FM MPX decoder

1. Block diagram

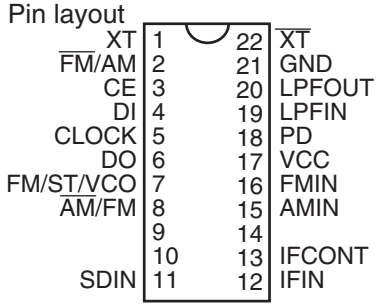


2. Pin function

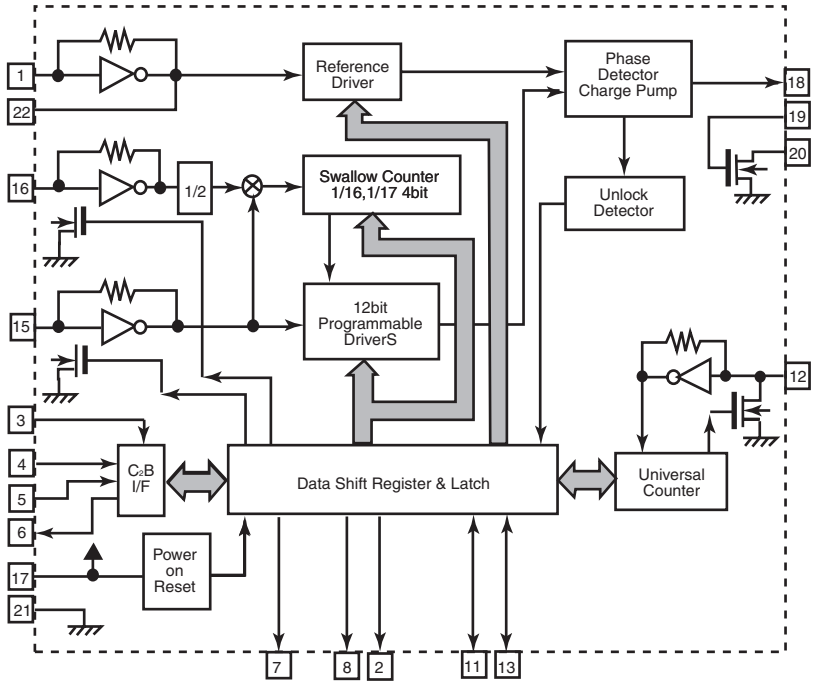
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	FM IN	I	This is an input terminal of FM IF signal.	16	L OUT	O	Left channel signal output.
2	AM MIX	O	This is an out put terminal for AM mixer.	17	R OUT	O	Right channel signal output.
3	FM IF	I	Bypass of FM IF	18	L IN	I	Input terminal of the Left channel post AMP.
4	AM IF	I	Input of AM IF Signal.	19	R IN	I	Input terminal of the Right channel post AMP.
5	GND	—	This is the device ground terminal.	20	RO	O	Mpx Right channel signal output.
6	$\overline{\text{TUNED}}$	O	When the set is tunning,this terminal becomes "L".	21	LO	O	Mpx Left channel signal output.
7	$\overline{\text{STEREO}}$	O	Stereo indicator output. Stereo "L", Mono: "H"	22	MPX IN	I	Mpx input terminal
8	VCC	—	This is the power supply terminal.	23	FM OUT	O	FM detection output.
9	FM DET	—	FM detect transformer.	24	AM DET	O	AM detection output.
10	AM SD	—	This is a terminal of AM ceramic filter.	25	AM AGC	I	This is an AGC voltage input terminal for AM
11	FM VSM	O	Adjust FM SD sensitivity.	26	AFC	—	This is an output terminal of voltage for FM-AFC.
12	AM VSM	O	Adjust AM SD sensitivity.	27	AM RF	I	AM RF signal input.
13	MUTE	I/O	When the signal of IF REQ of IC121(LC72131) appear, the signal of FM/AM IF output. //Muting control input.	28	REG	O	Register value between pin 26 and pin28 besides the frequency width of the input signal.
14	FM/$\overline{\text{AM}}$	I	Change over the FM/AM input. "H" :FM, "L" : AM	29	AM OSC	—	This is a terminal of AM Local oscillation circuit.
15	$\overline{\text{MONO}}$/ST	O	Stereo : "H", Mono: "L"	30	OSC BUFFER	O	AM Local oscillation Signal output.

■ LC72136N (IC2) : PLL frequency synthesizer

1. Pin layout



2. Block diagram

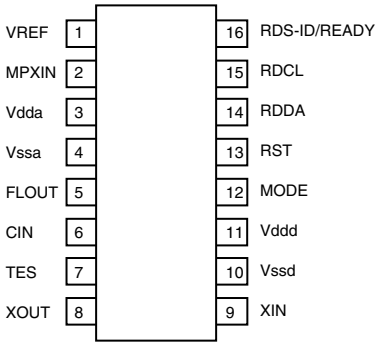


3. Pin function

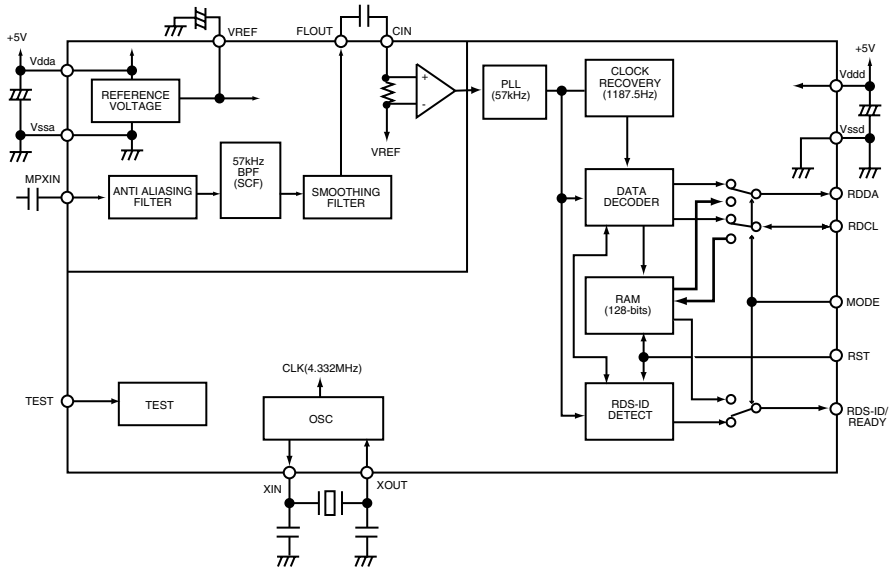
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XT	I	X'tal oscillator connect (75kHz)	12	IFIN	I	IF counter signal input
2	$\overline{FM}$/AM	O	LOW:FM mode	13	IFCONT	O	IF signal output
3	CE	I	When data output/input for 4pin(input) and 6pin(output): H	14		-	Not use
4	DI	I	Input for receive the serial data from controller	15	AMIN	I	AM Local OSC signal output
5	CLOCK	I	Sync signal input use	16	FMIN	I	FM Local OSC signal input
6	DO	O	Data output for Controller Output port	17	VCC	-	Power suplly(VDD=4.5-5.5V) When power ON:Reset circuit move
7	FM/ST/VCO	O	"Low": MW mode	18	PD	O	PLL charge pump output(H: Local OSC frequency Height than Reference frequency. L: Low Agreement: Height impedance)
8	$\overline{AM}$/FM	O	Open state after the power on reset	19	LPFIN	I	Input for active lowpassfilter of PLL
9	LW	I/O	Input/output port	20	LPFOUT	O	Output for active lowpassfilter of PLL
10	MW	I/O	Input/output port	21	GND	-	Connected to GND
11	SDIN	I/O	Data input/output	22	$\overline{XT}$	I	X'tal oscillator(75KHz)

■ LA72723 (IC3) : RDS demodulation

1. Pin layout



2. Block Diagram

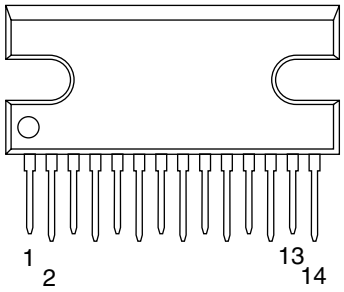


3. Pin functions

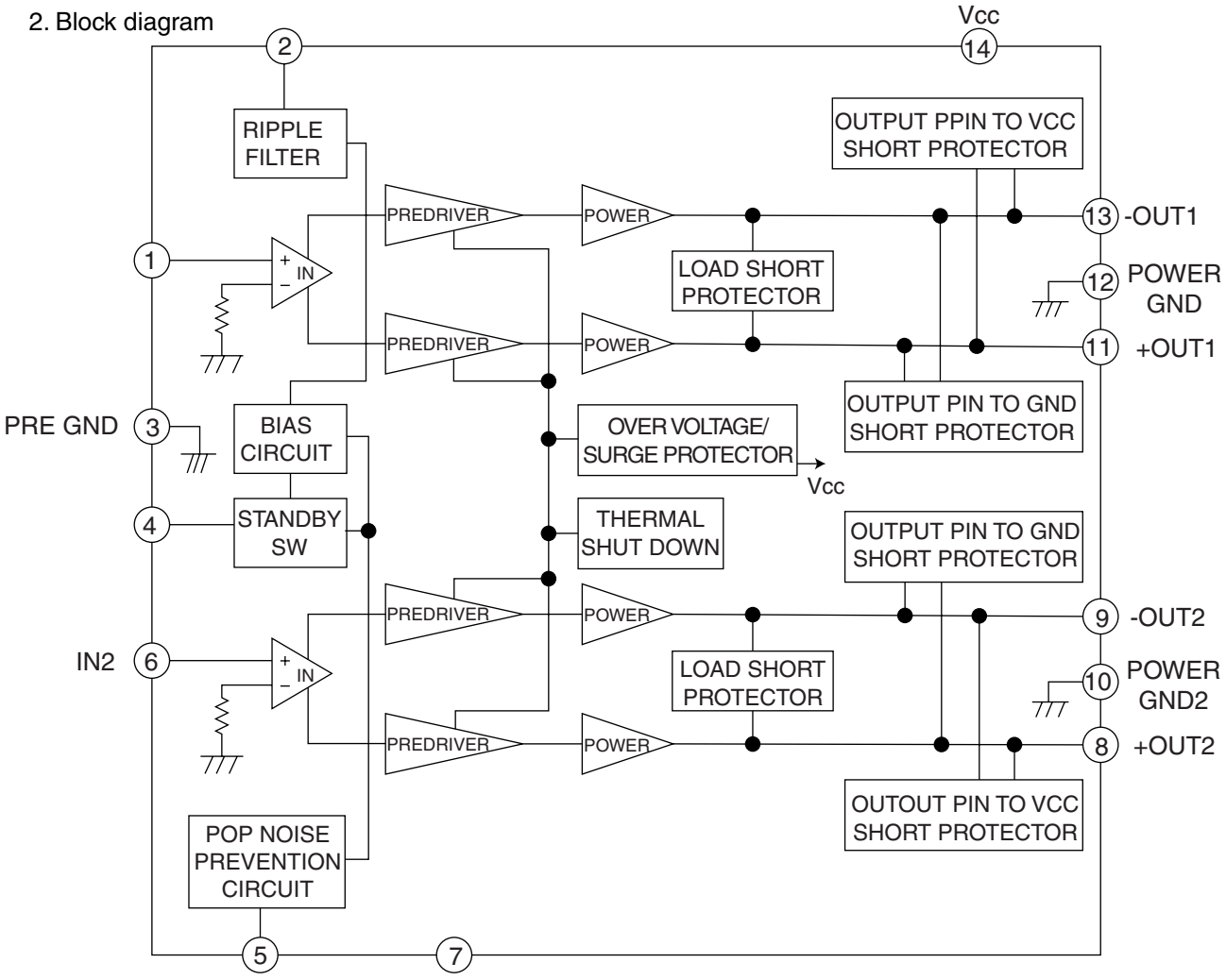
Pin No.	Symbol	I/O	Function
1	VREF	O	Reference voltage output (Vdda/2)
2	MPXIN	I	Baseband (multiplexed) signal input
3	Vdda	—	Analog power supply (+5V)
4	Vssa	—	Analog ground
5	FLOUT	O	Subcarrier input (filter output)
6	CIN	I	Subcarrier input (comparator input)
7	TEST	I	Test input
8	XOUT	O	Crystal oscillator output (4.332MHz)
9	XIN	I	Crystal oscillator input (exeternal reference input)
10	Vssd	—	Digtal ground
11	Vddd	—	Digtal power supply
12	MODE	I	Read mode setting (0:master,1:slave)
13	RST	I	RDS-ID/RAM reset (positive polarity)
14	RDDA	O	RDS data output
15	RDCL	I/O	RDS clock output (master mode)/RDS clock input (slave mode)
16	RDS-ID READY	O	RDS-ID/READY output (negative polarity)

■ LA4628 (IC801) : Power amp.

1. Pin layout

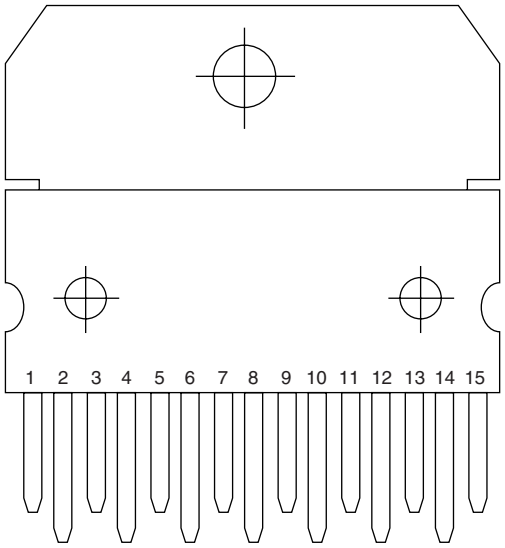


2. Block diagram

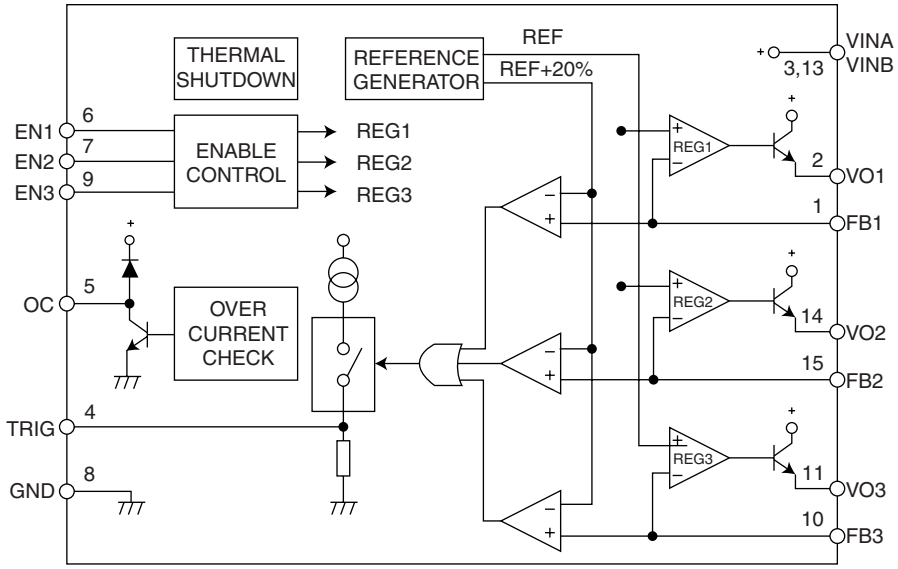


■ L4909 (IC802) : Regulator

1. Pin layout



2. Block diagram

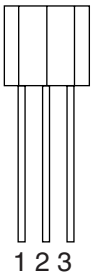


3. Pin functions

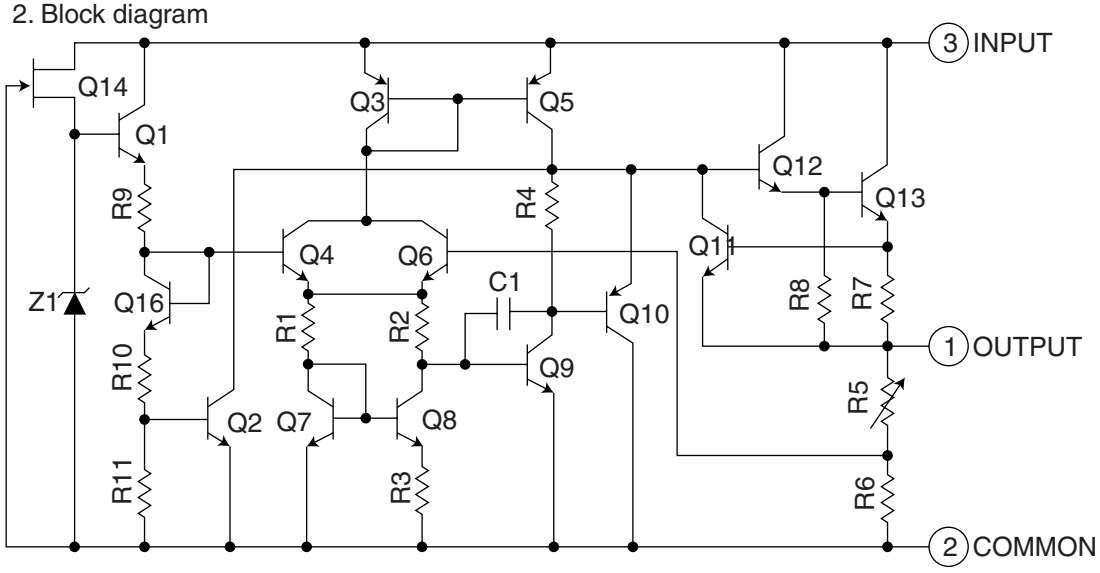
Pin No.	Symbol	Function
1	FB1	REG1 feedback voltage input
2	VO1	REG1 output voltage
3	VINA	Input DC supply voltage
4	TRIG	Trigger for external SCR (crowbar protection)
5	OC	Over current warning output
6	EN1	REG1 enable input
7	EN2	REG2 enable input
8	GND	Analog ground
9	EN3	REG3 enable input
10	FB3	REG3 feedback voltage input
11	VO3	REG3 output voltage
12	N.C.	Not connected
13	VINB	Input DC supply voltage
14	VO2	REG2 output voltage
15	FB2	REG2 feedback voltage input

■ KIA78S05P-T (IC803) : Reglator

1. Pin layout

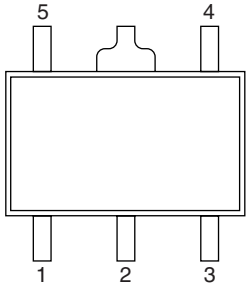


2. Block diagram

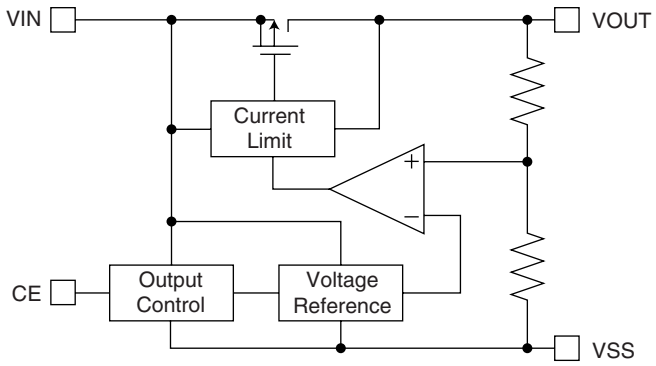


■ XC62HR3502P-X (IC291) : Regulator

1. Pin layout



2. Block diagram

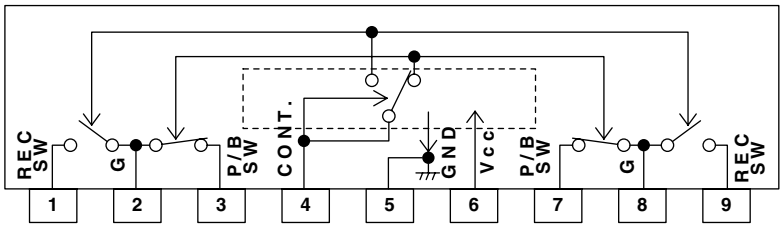


3. Pin function

Pin No.	Symbol	Function
1	VSS	Ground
2	VIN	Supply voltage input
3	CE	Chip enable
4	NC	Non connect
5	VOUT	Regulated output voltage

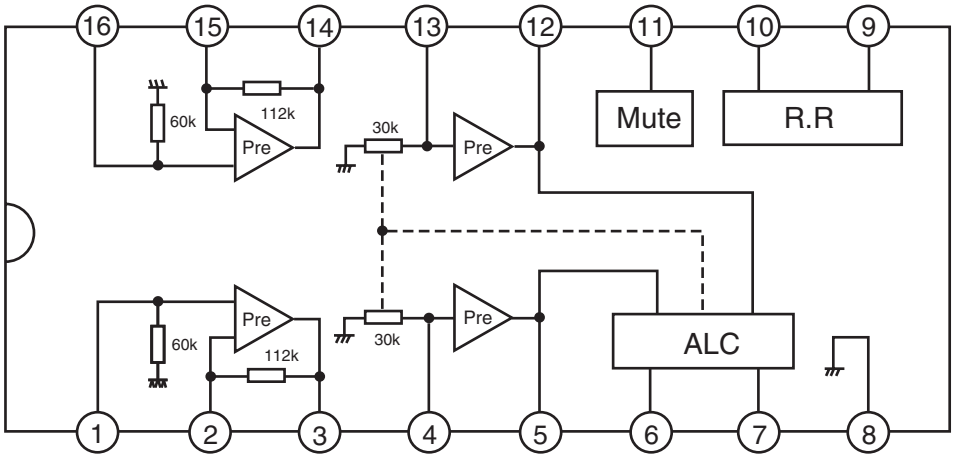
■ BA3126N (IC331) : R / P switch

1. Pin layout & Block diagram



■ AN7317 (IC332) : R / P amp

1. Pin layout & Block diagram

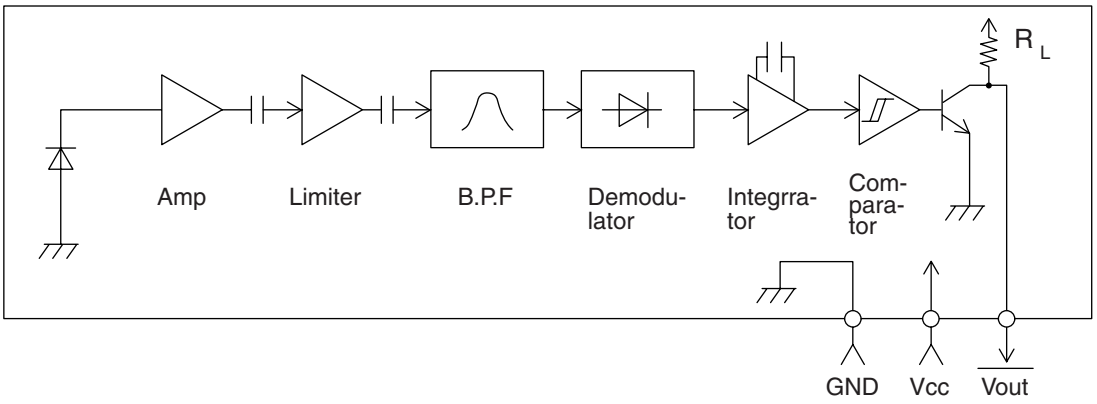


2. Pin function

Pin No.	Function
1	CH1 playback amp input
2	Feedback of CH1 playback amp
3	CH1 playback amp output
4	CH1 recording amp input
5	CH1 recording amp output
6	Low cut of ALC
7	Time of ALC
8	GND
9	Vcc
10	Lipple filter
11	Recording amp mute
12	CH2 recording amp output
13	CH2 recording amp input
14	CH2 playback amp output
15	Feedback of CH2 playback amp
16	CH2 playback amp input

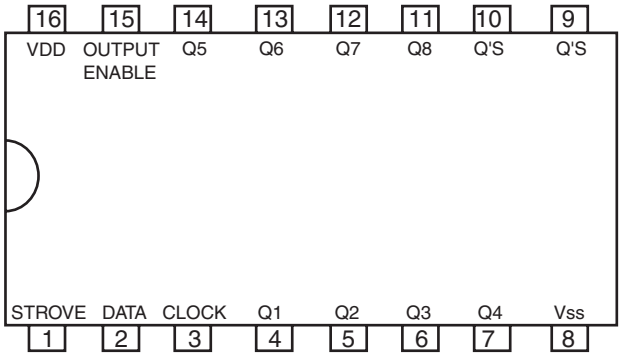
■ GP1UM271XK (IC901) : Remocon

1. Block diagram

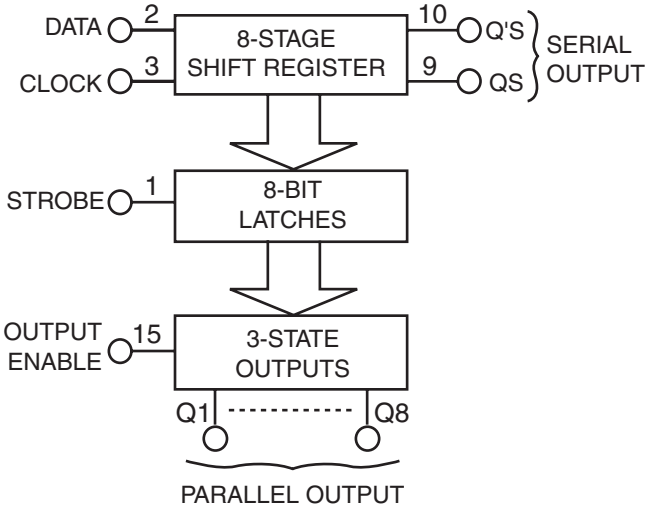


■ BU4094BCF-X (IC333) : Shift / Store registor

1. Pin layout

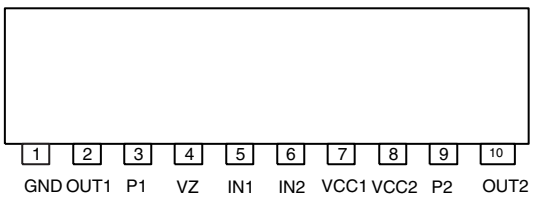


2. Block diagram



■ LB1641 (IC703, IC704) : DC motor driver

1. Pin layout

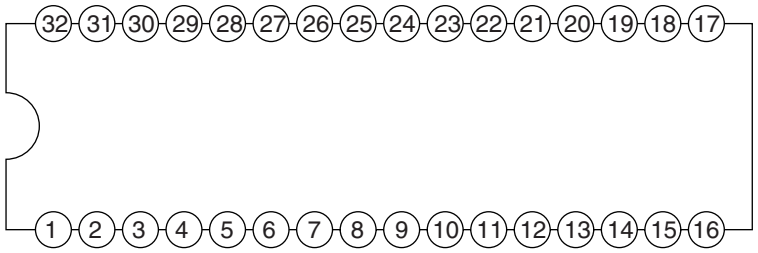


2. Pin function

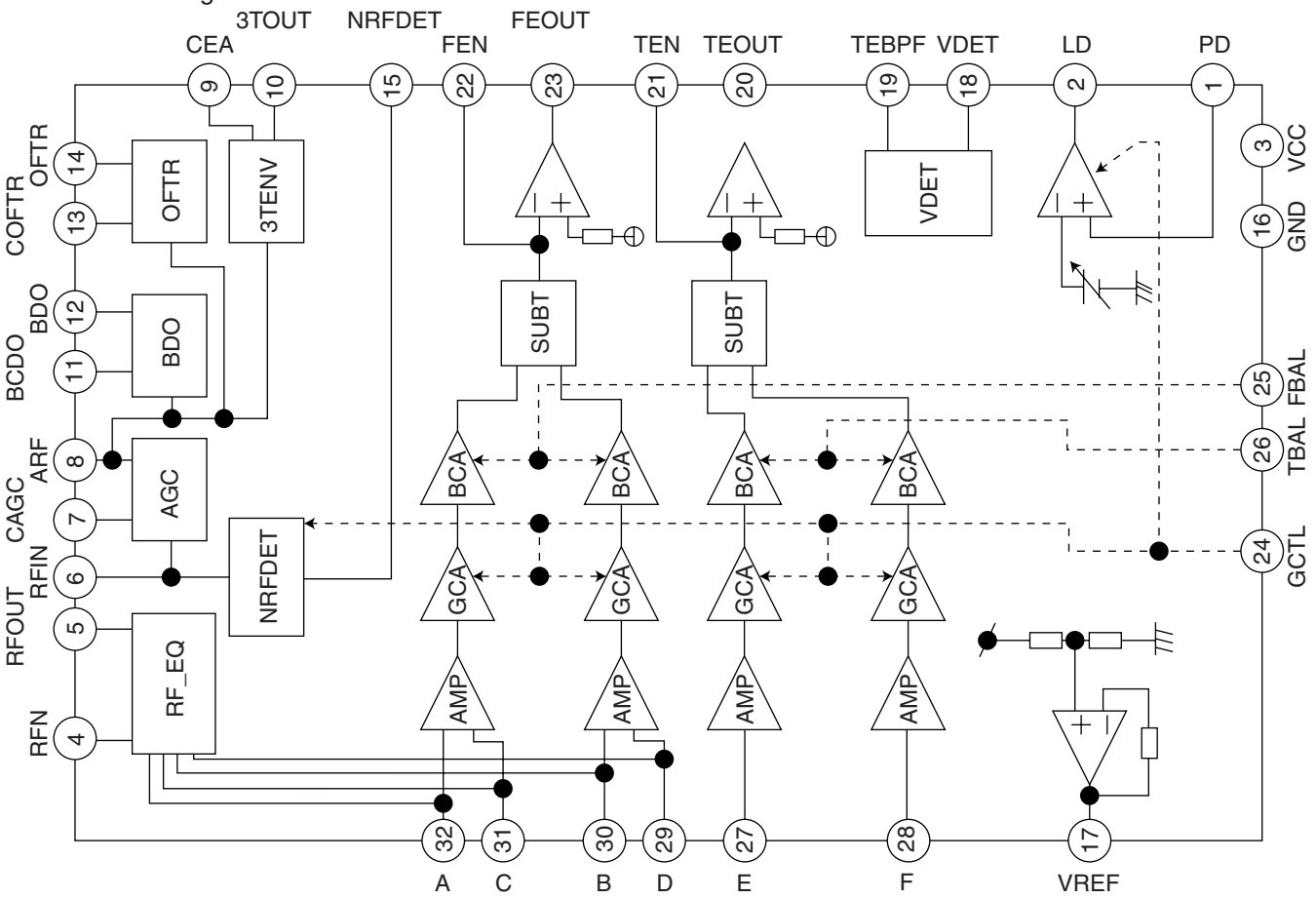
Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake

■ AN22000A-W (IC601) : RF head amp.

1. Pin layout



2. Block diagram



3. Pin function

Pin No.	Function	Pin No.	Function
1	APC amp input terminal.	17	VREF output terminal.
2	APC amp output terminal.	18	VDET output terminal.
3	Power supply.	19	VDET input terminal.
4	RF amp negative input terminal.	20	TE amp. output terminal.
5	RF amp output terminal.	21	TE amp. negative input terminal.
6	AGC input terminal.	22	FE amp. negative input terminal.
7	AGC loop filter capacitor connection terminal.	23	FE amp. output terminal.
8	AGC output terminal.	24	GCTL & APC terminal.
9	Capacitor connection terminal for HPF-amp.	25	FBAL control terminal.
10	3TENV output terminal.	26	TBAL control terminal.
11	Capacitor connection terminal for RF enberope detection.	27	Tracking signal input terminal 1.
12	BDO output terminal.	28	Tracking signal input terminal 2.
13	Capacitor connection terminal for RF enverope detection.	29	Focus signal input terminal 4.
14	OFTR output terminal.	30	Focus signal input terminal 3.
15	NRDET output terminal.	31	Focus signal input terminal 2.
16	Ground terminal.	32	Focus signal input terminal 1.

JVC

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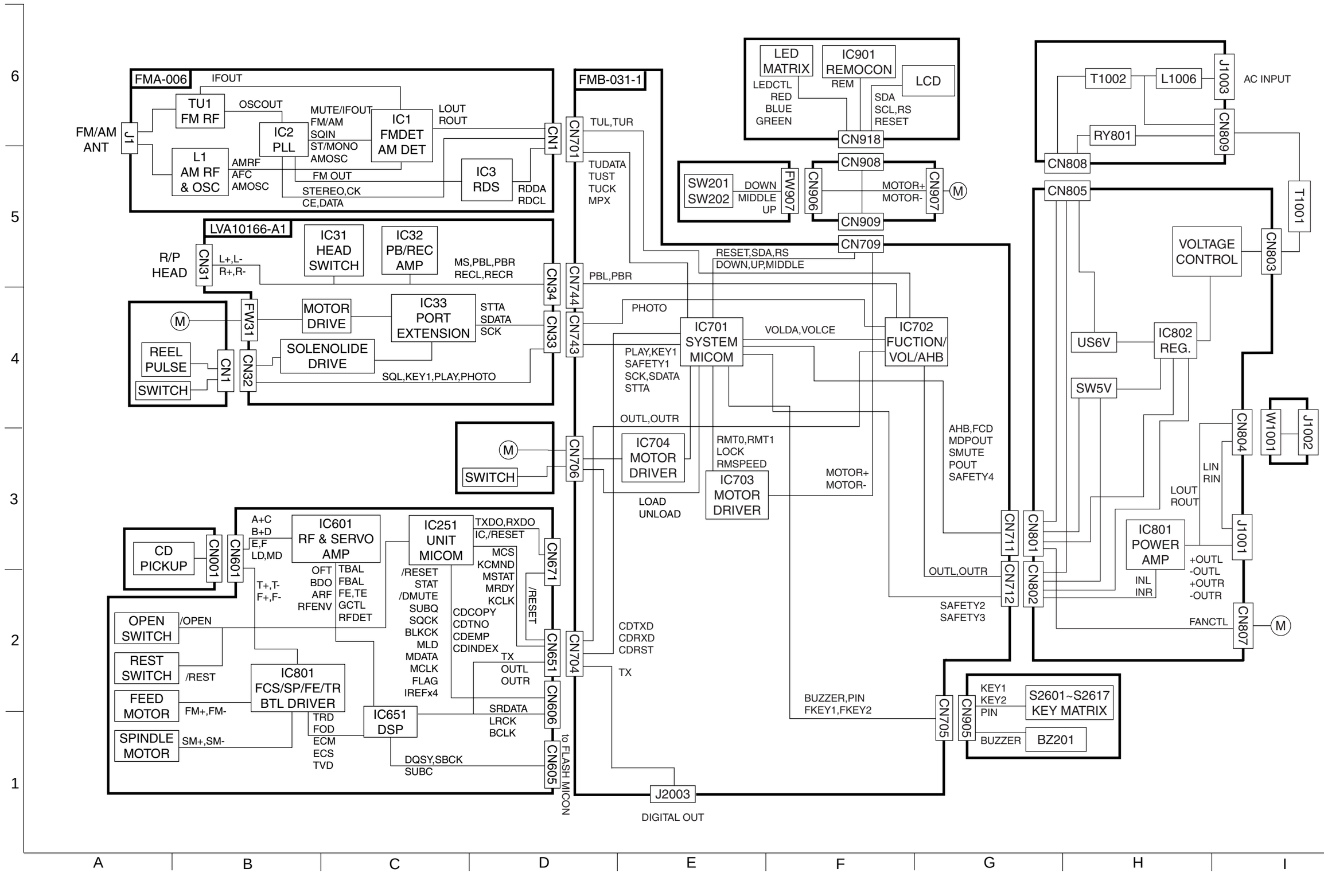
AUDIO & COMUNICATION BUSINESS DIVISION
PERSONAL & MOBILE NETWORK BUSINESS UNIT. 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.21064)

200202

Block diagram



Standard schematic diagrams

■ Main & control circuit

FUNC./VOL/AHB IC VOLTAGE MEASUREMENT

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
VOLT	0	0	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
PIN NO	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
VOLT	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.8	0

*MARK

	B/E/EN/EV	A	USeries	J/C
R2039	10K	11K	22K	20K
R2040	NONE	13K	4.7K	10K
R2411	FR 5.6 1/4W		NONE	
D2046	NONE		IN4003S-T5	
L2003	QQL244K-100Z		QUY150-050Y	
C2606	QEKC1CM-226Z		NONE	

FMB-031-2

FMH-034-6

FMH-034-5

CONNECTION BOARD

TO CN1 OF FMA-006

TO CN851 OF FMU-N1

CASSETTE MOTOR DRIVER

DOOR MOTOR DRIVER

SYSTEM MICOM

CLOCK SHIFT

BACKUP

RESET

SW5V

PHOTO BUFFER

FUNC./VOL/AHB

FMH-034-4

EJECT AHB TAPE CD AUX CD EJECT VOL+ VOL− SLEEP

POWER COLOR FM/AM REC MODE REC |<< STOP >>|

FMB-031-1

FROM CN802 OF FMH-034-1

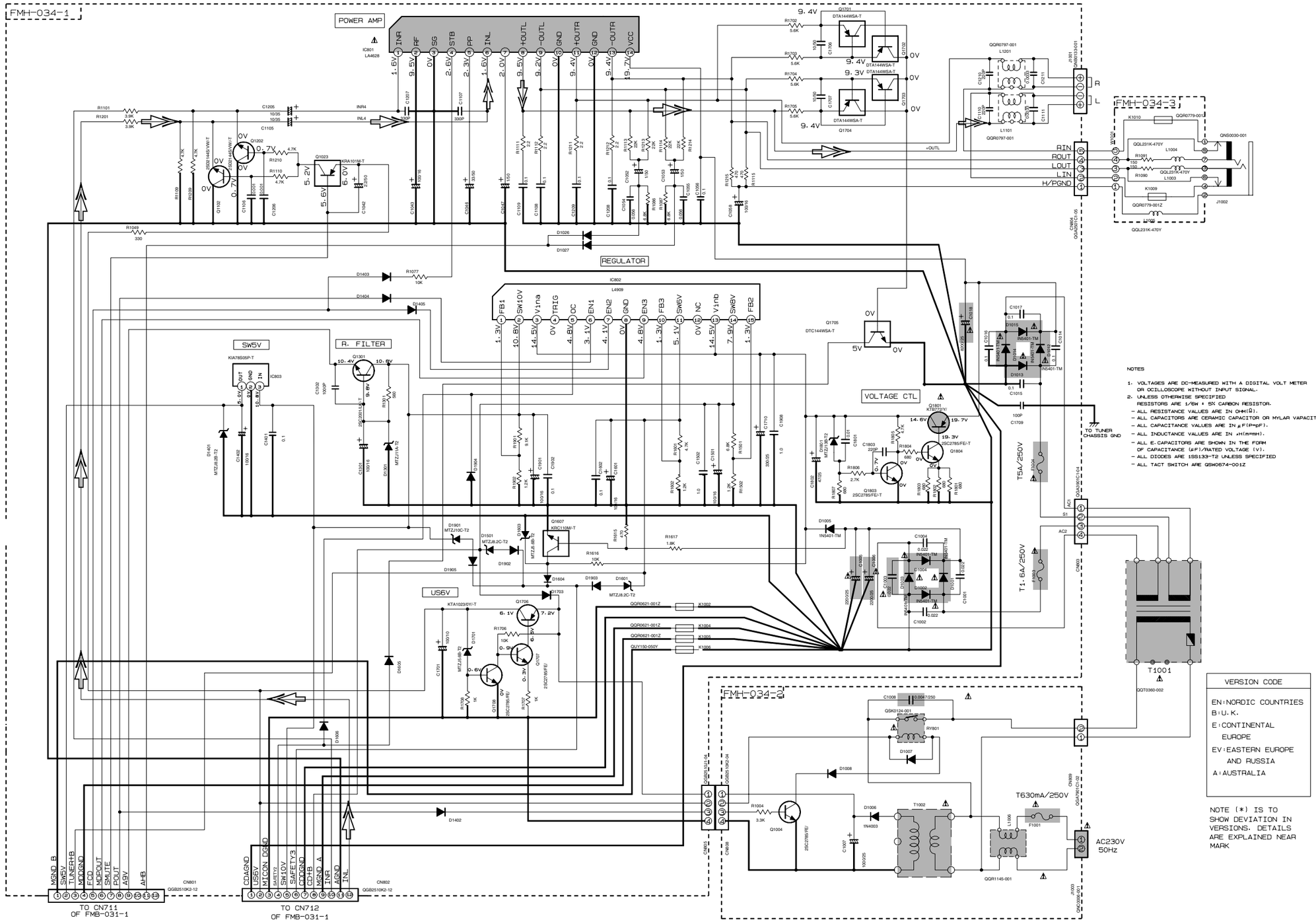
FROM CN801 OF FMH-034-1

TO CASSETTE SECTION

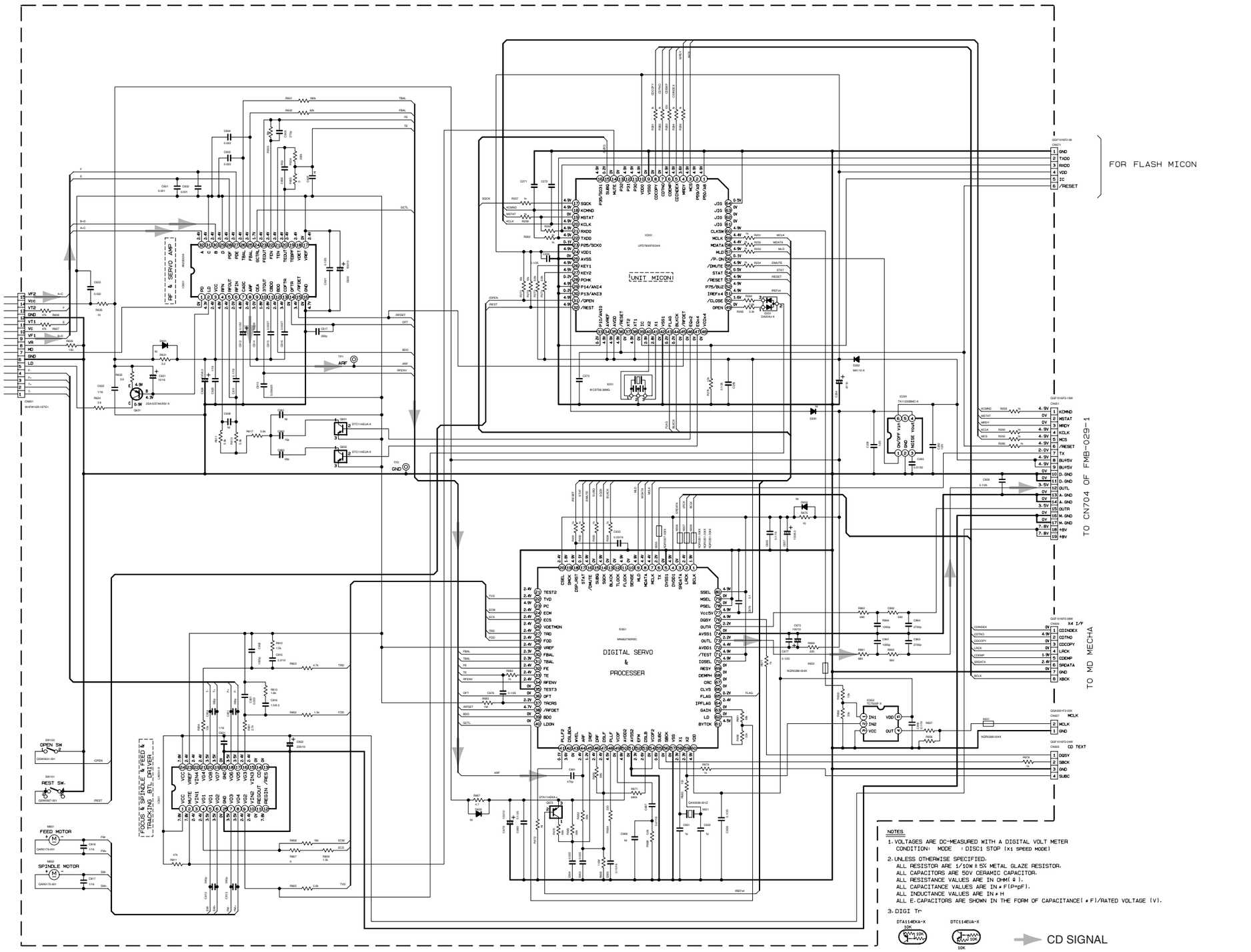
NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL.
   CONDITION —— CD STOP MODE
2. UNLESS OTHERWISE SPECIFIED
   RESISTORS ARE 1/5W ±5% CARBON RESISTOR.
   ALL RESISTANCE VALUES ARE IN OHM(Ω).
   ALL CAPACITORS ARE CERAMIC CAPACITOR OR MYLAR CAPACITOR.
   ALL CAPACITANCE VALUES ARE IN μF(MFD).
   ALL INDUCTANCE VALUES ARE IN μH(MMH).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μF)/RATED VOLTAGE (V).
   ALL DIODES ARE 1SS133-T2 UNLESS SPECIFIED
   ALL TACT SWITCH ARE QSW0674-001Z

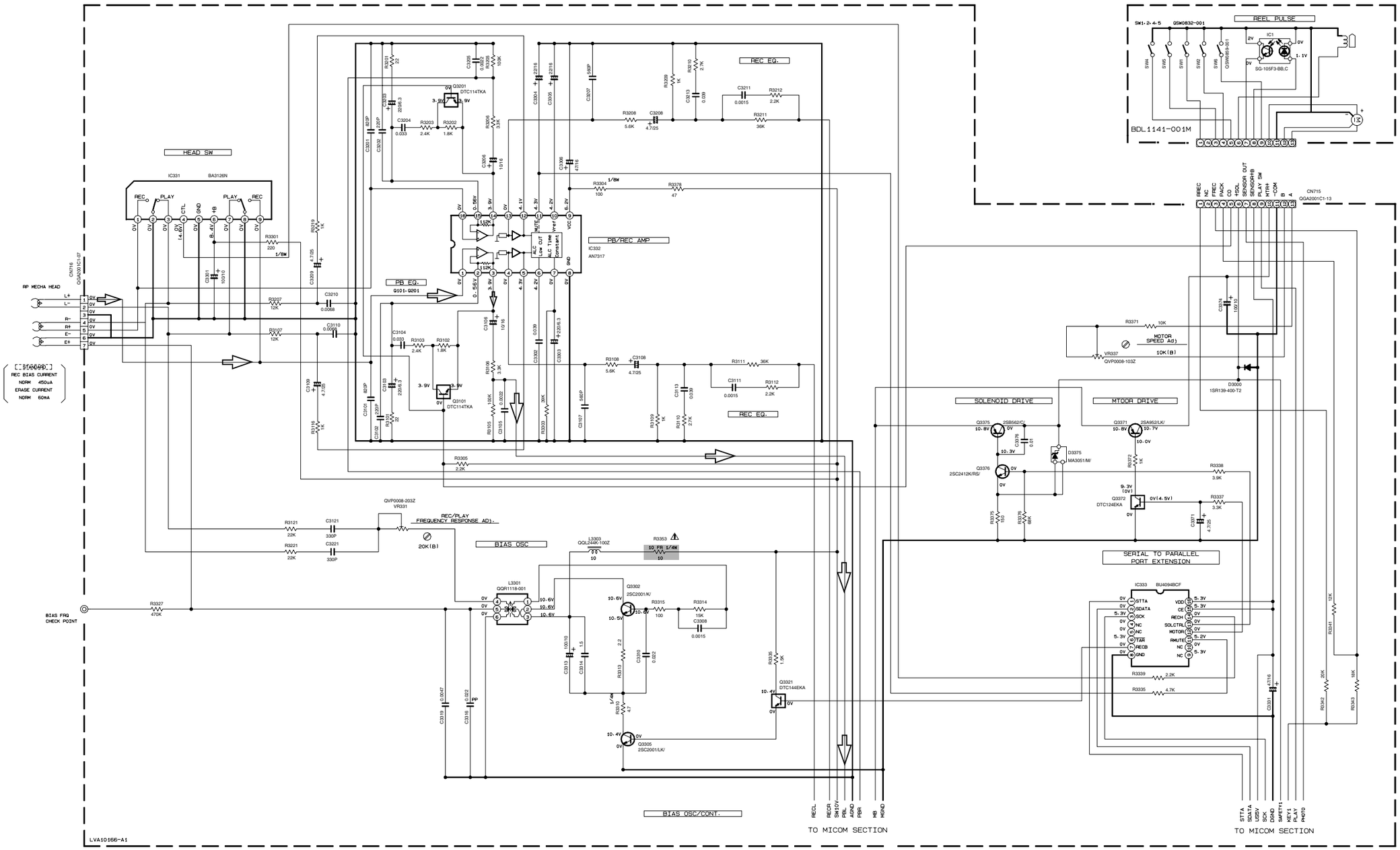
■ Power amplifier & Power supply circuit



■ CD control circuit



■ Tape circuit



NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL.
   CONDITION : MECHA STOP MODE

2. UNLESS OTHERWISE SPECIFIED . RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR.
   ALL RESISTANCE VALUES ARE IN OHM(Ω).
   ALL CAPACITORS ARE CERAMIC CAPACITOR OR MYLAR CAPACITOR.
   ALL CAPACITANCE VALUES ARE IN μF(P=pF).
   ALL INDUCTANCE VALUES ARE IN μH(m=mH).
   ALL E.CAPACITORS ARE SHOWN IN THE FORMOF CAPACITANCE (μF)/RATED VOLTAGE (V).
   POLYPROPYLENE CAPACITOR

PARTS	NAME	REF.NO
10K 10K	FA1A4Z or DTC114TKA	Q101-Q201 Q103-Q203 Q331
47K 47K	FA1L4M or DTC144EKA	Q321
22K 22K	FA1F4M or DTC124EKA	Q372

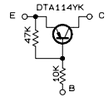
TAPE P. B. SIGNAL

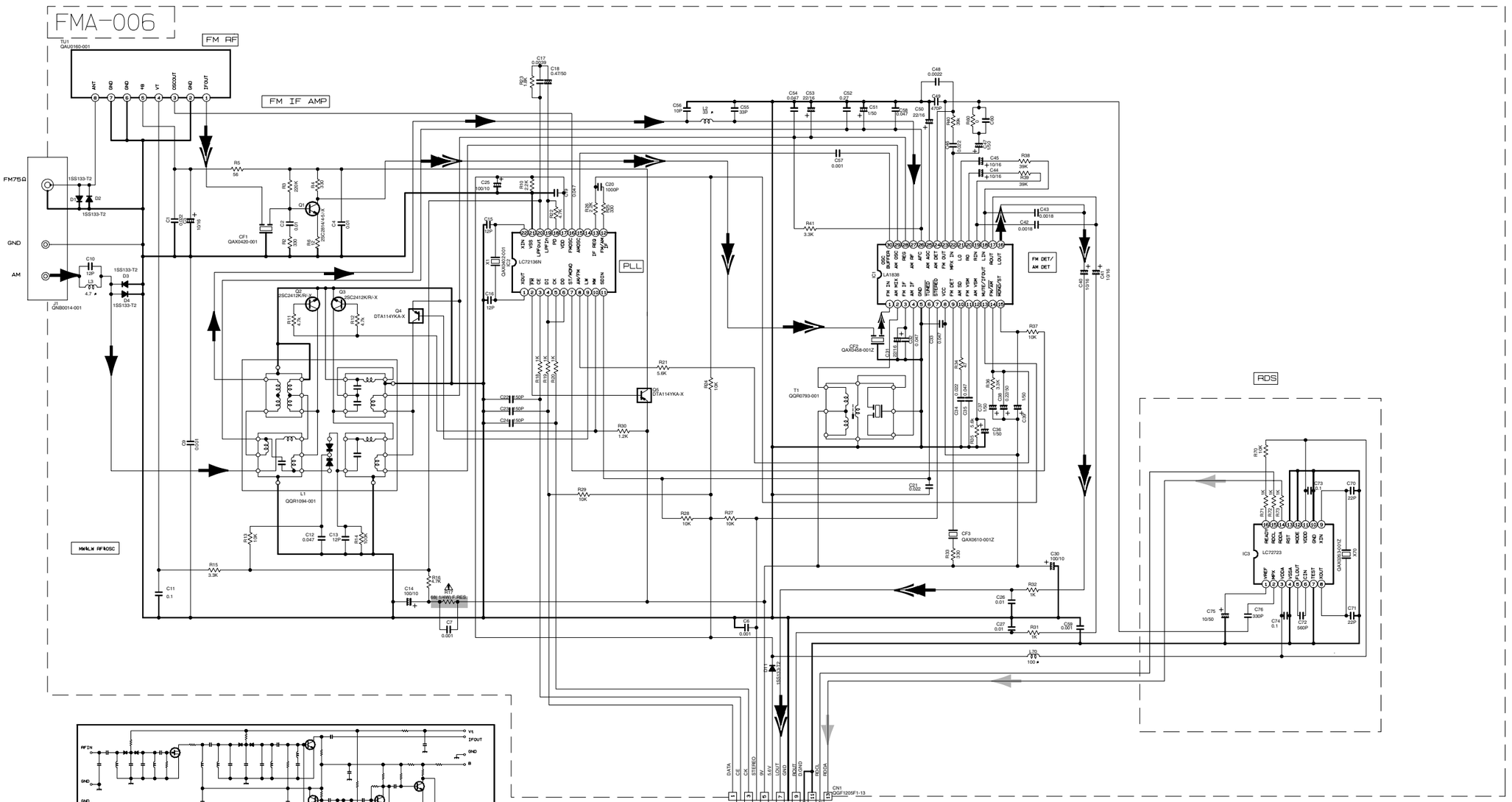
⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

■ Tuner circuit

NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER.
2. ALL RESISTORS ARE 1/8W ±5% METAL GLAZE RESISTOR.
3. ALL RESISTANCE VALUES ARE IN OHM(Ω).
4. ALL CAPASITANCE VALUES ARE IN μF(P=pF).
5. ALL E.CAPASITORS ARE SHOWN IN THE FORM OF CAPASITANCE (μF)/RATED VOLTAGE (V).
6. SI DIODES (▶|) ARE ALL 1SS133-T THAT CAN BE CHANGED TO SIMILAR DIODE SUCH AS MA165 OR HSS104J.
7. PARTS NO. OF TRANSISTORS ARE AS FOLLOWS.
   Q1 2SC2814/4-5/-X Q2.Q3 2SC2412K/R/-X
   Q4.Q5 DTA114YKA-X
8. INSIDE OF DIGITAL TRANSISTORS ARE SHOWN AS FOLLOWS.





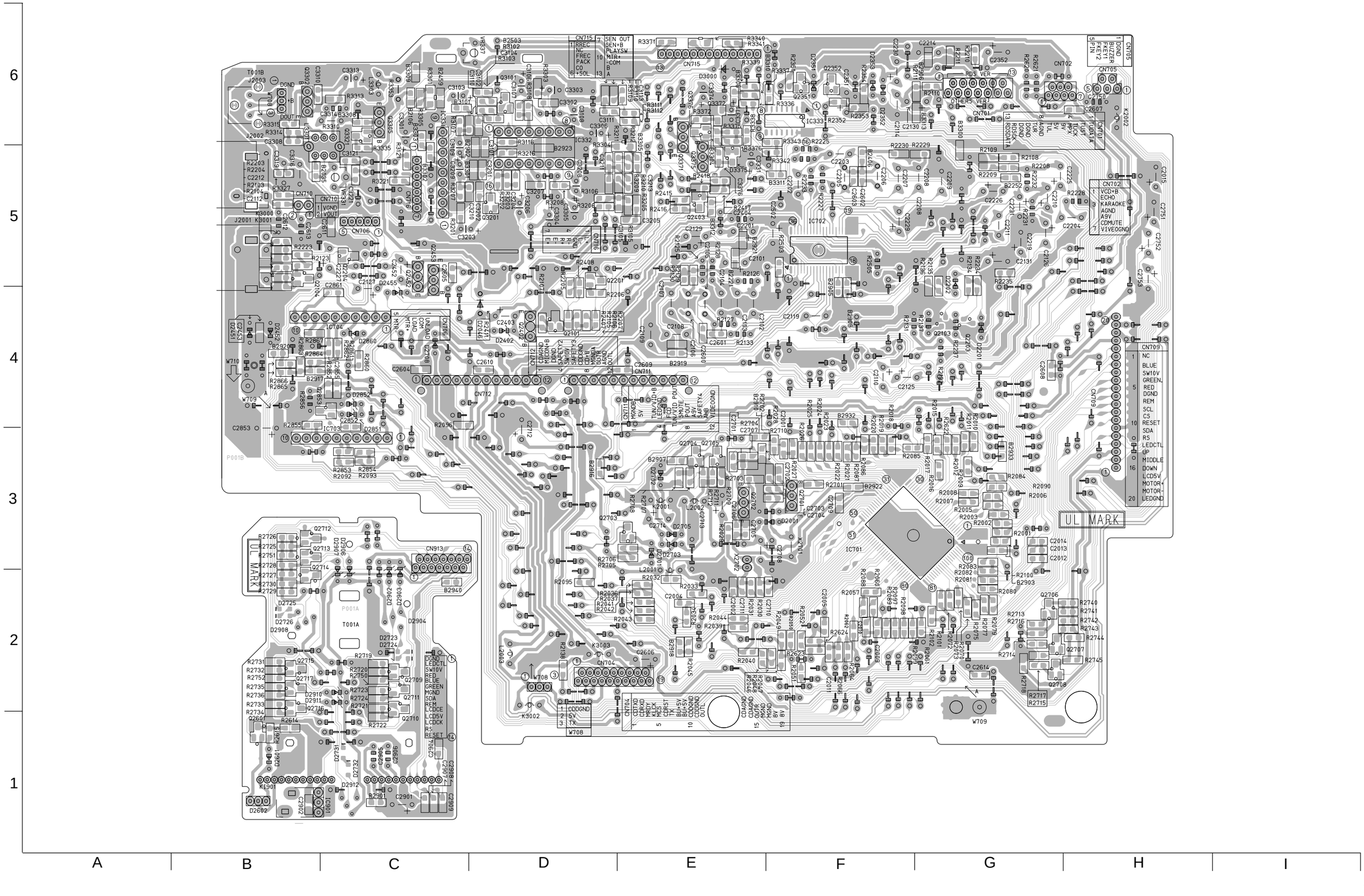
	CONDITION PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
IC1	FM NO SIGNAL	3.6	8.9	3.6	3.6	0	5.0	5.0	8.9	8.9	1.3	0.1	0	0.9	7.8	7.8	4.3	4.3	4.3	4.3	3.4	3.4	2.8	3.4	0	0	3.5	3.5	3.6	3.6	2.7
	FM 60dB STEREO	3.6	8.9	3.6	3.6	0	0	5.0	8.9	8.9	1.3	4.3	0	0.9	7.8	7.8	4.3	4.3	4.3	4.3	3.4	3.4	2.8	3.4	0	0	3.6	3.6	3.6	3.6	2.7
	AM NO SIGNAL	3.5	9.0	3.5	3.5	0	5.0	5.1	9.0	2.6	1.3	0	0	0.9	4.7	5.5	4.3	4.3	4.3	4.3	3.3	3.2	2.8	ust	0.7	0.7	3.6	3.6	3.6	3.6	2.1
IC2	FM NO SIGNAL	2.5	0	0	5.0	4.9	5.0	7.9	7.8	3.6	6.1	5.1	0	0	0	0	2.5	5.1	0.9	0.9	3.8	0	2.3								

Tr NO.	Q1			Q5					
PIN NO.	E	C	B	E	C	B			
FM 87.5MHz NO SIGNAL	0	7.1	0.85	8.9	8.8	0			
AM 522KHz NO SIGNAL	0	0	0	9.0	0	8.9			
Tr NO.	Q2			Q3			Q4		
PIN NO.	E	C	B	E	C	B	E	C	B
AM 522KHz NO SIGNAL	0	0	0.7	0	0	0.7	0	3.6	0.7
AM 144KHz NO SIGNAL	0	0	0.3	0	0.3	0.3	3.6	3.6	3.6

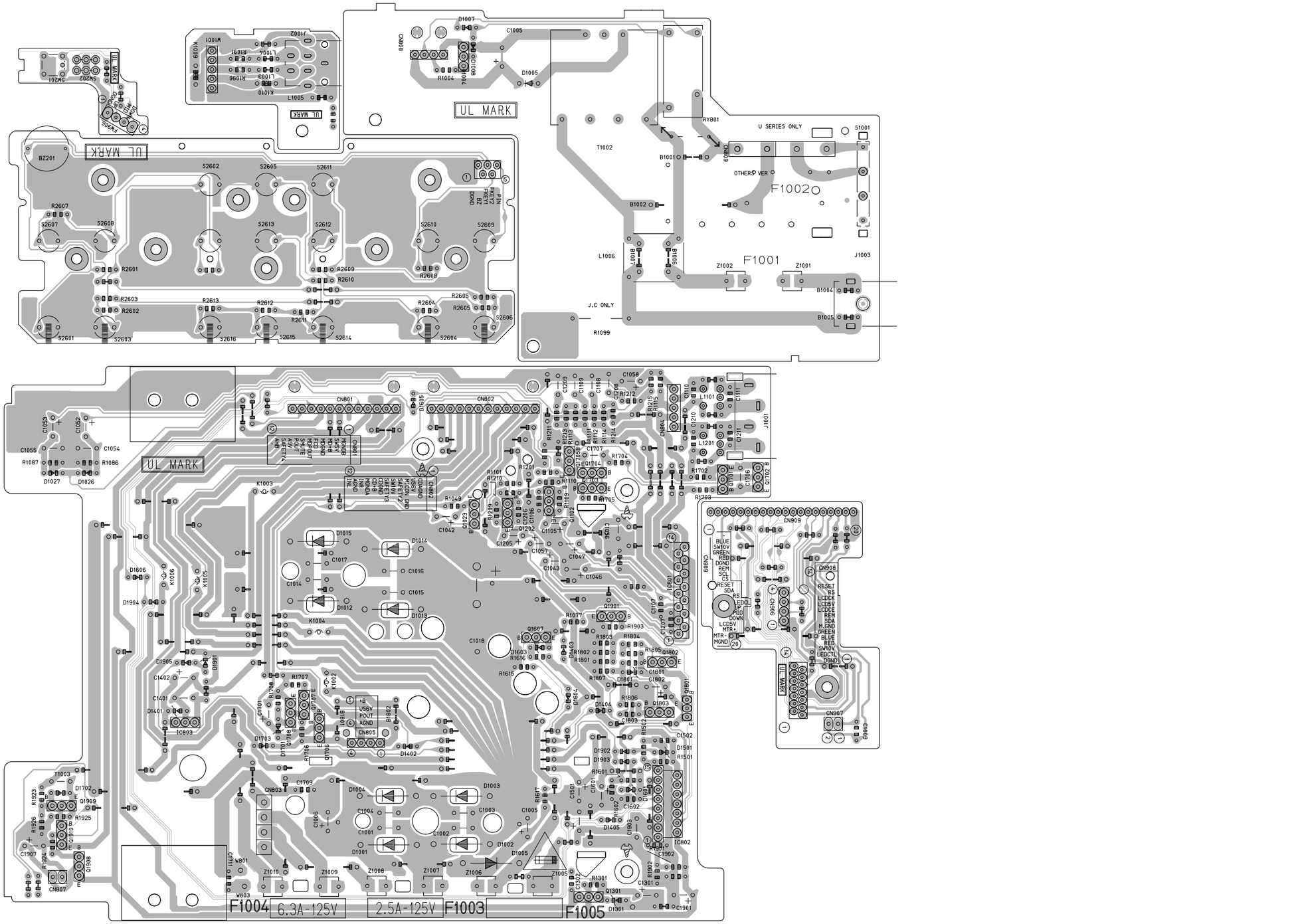
SHEET 1/7

Printed circuit boards

■Main board

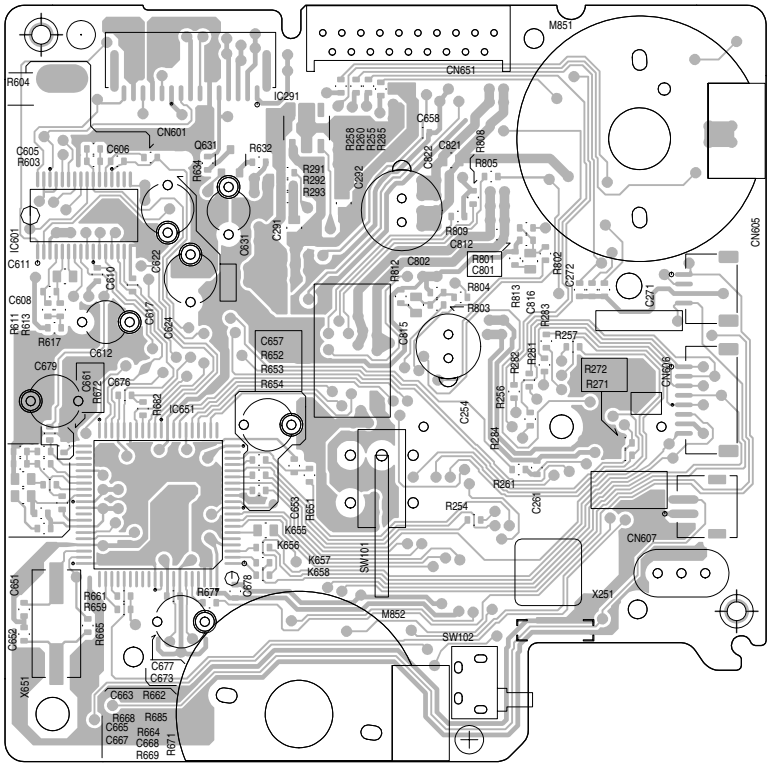


■ Power amplifier & control & AC jack board

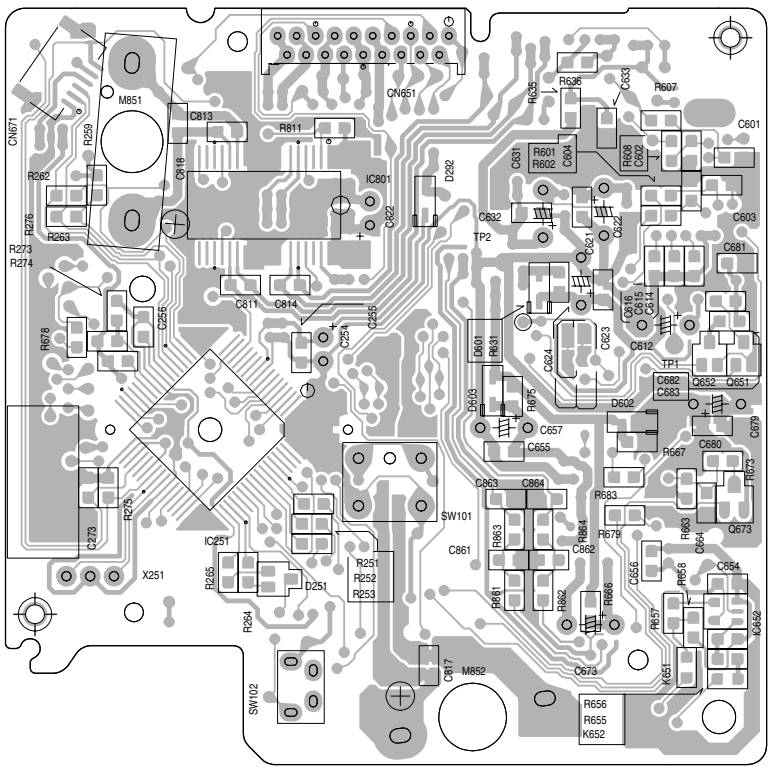


■CD servo control board

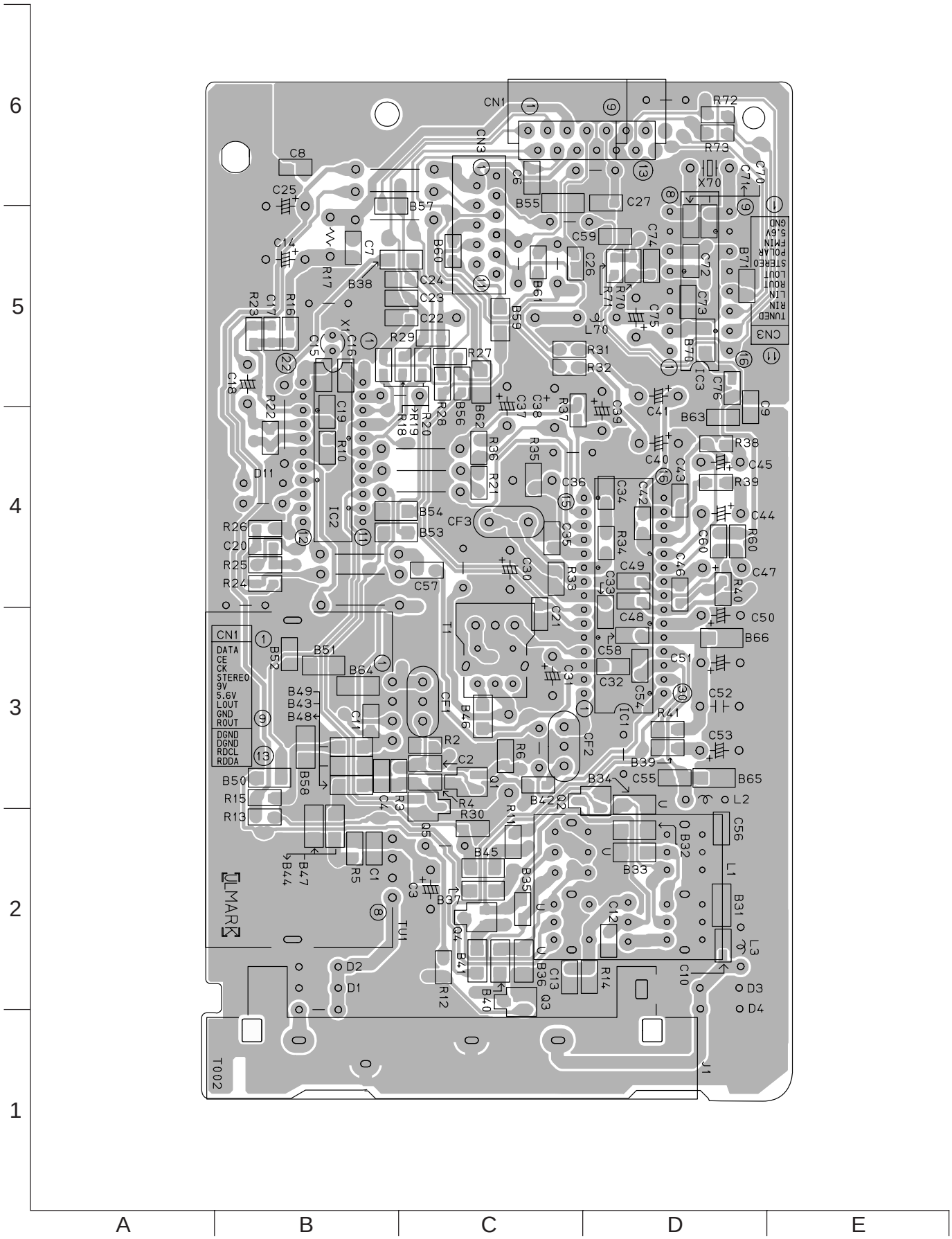
(Forward side)



(Reverse side)



■ Tuner board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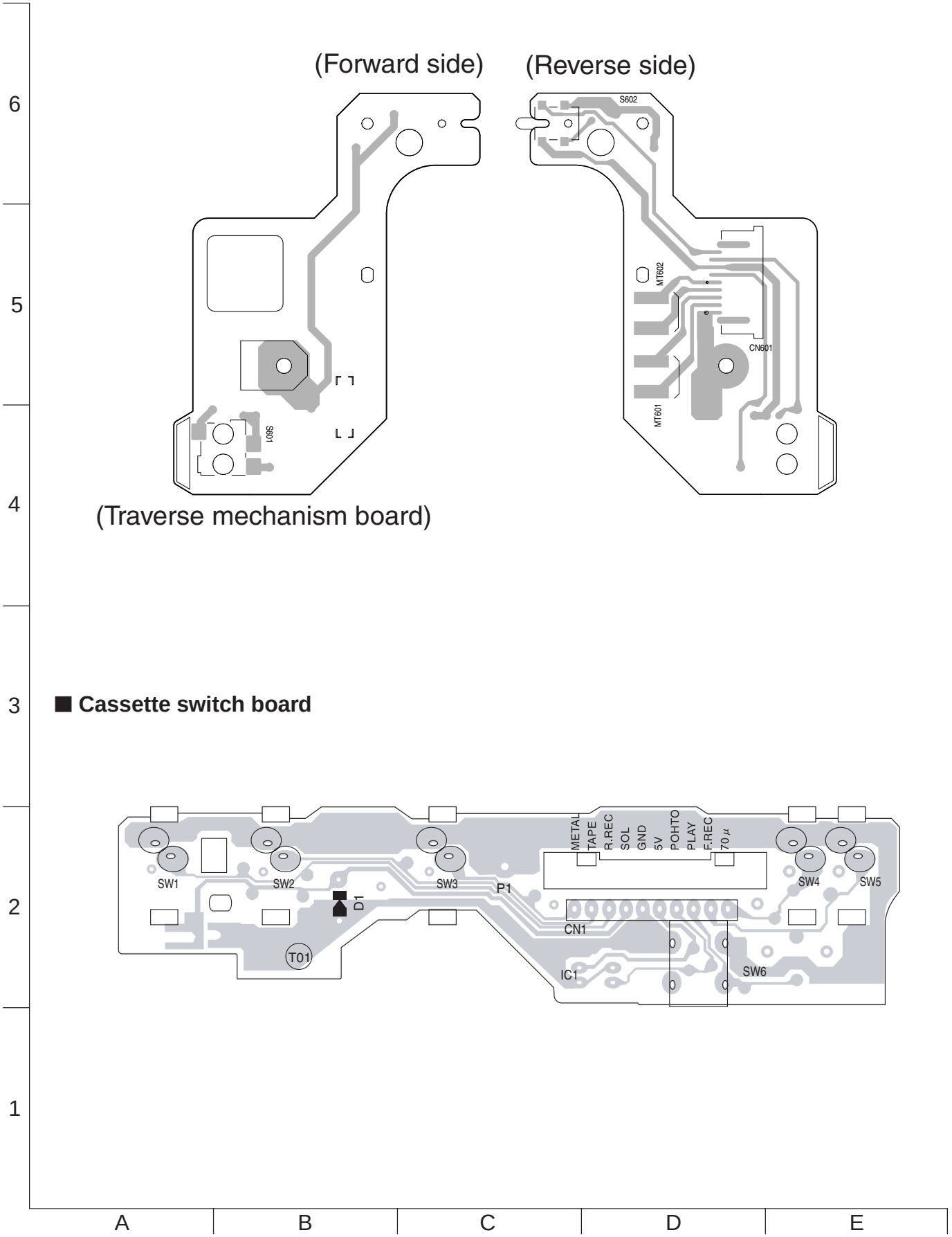
■ Traverse mechanism board



■ Cassette switch board