

JVC

SERVICE MANUAL

CD RECEIVER

KD-S890

Area suffix

J----- Northern America

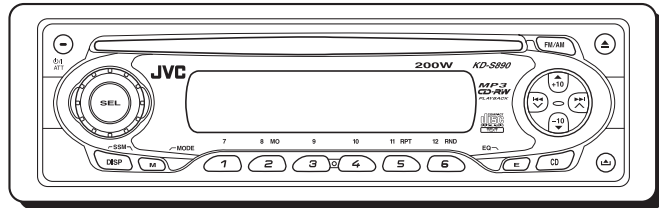
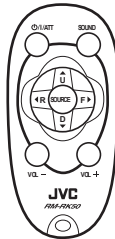
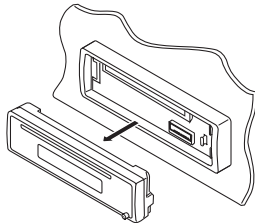



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SECTION 1

Important Safety Precautions

1.1 Safety Precautions

 **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 performing repair of this system.

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

1.2 Preventing 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.

1.2.1 Grounding to prevent damage by static electricity

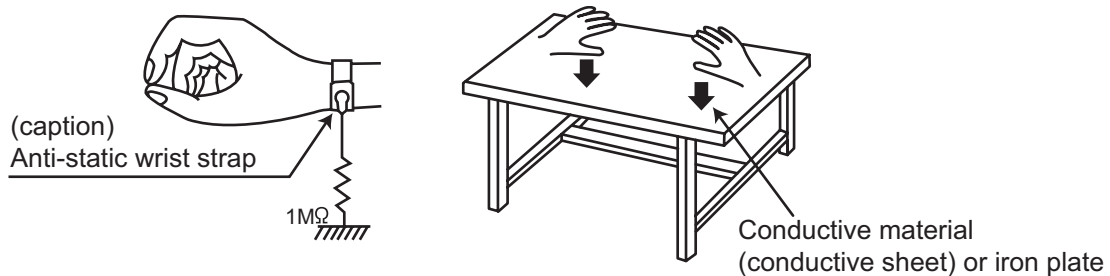
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

(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.



(3) Handling the optical pickup

- 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.)
- 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.

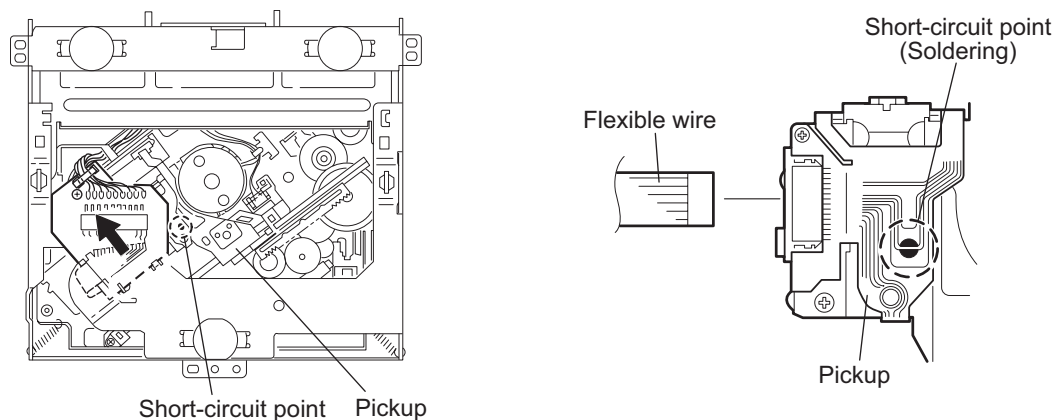
1.3 Handling the traverse unit (optical pickup)

- (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.

1.4 Attention when traverse unit is decomposed

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

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



SECTION 2

Disassembly method

2.1 Main body

2.1.1 Removing the front panel assembly (See Fig.1)

- (1) Push the detach button in the lower right part of the front panel assembly and remove the front panel assembly in the direction of the arrow.

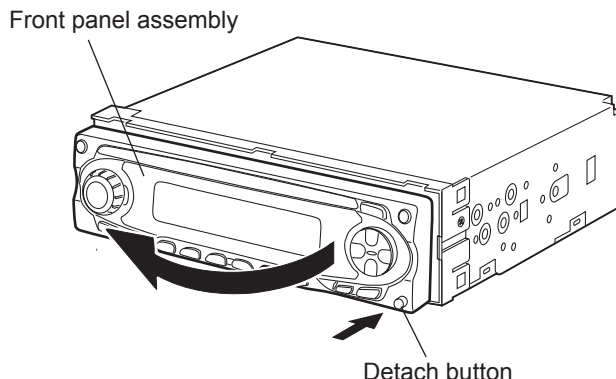


Fig.1

2.1.2 Removing the front chassis assembly (See Figs.2 to 4)

- Prior to performing the following procedure, remove the front panel assembly.

- (1) Remove the two screws **A** on the both sides of the main body.
- (2) Release the two joints **a** and two joints **b** on both sides of the main body.
- (3) Release the two joints **c** on the bottom side of the main body and remove the front chassis assembly in the direction of the arrow.

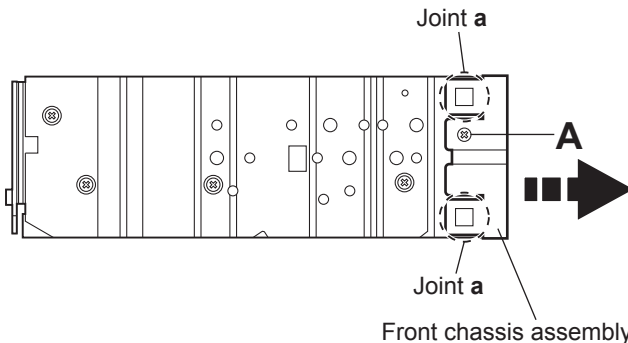


Fig.2

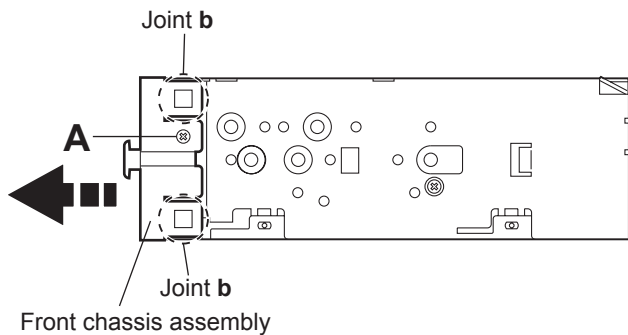


Fig.3

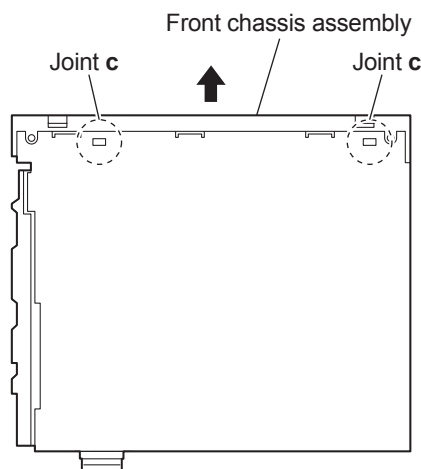


Fig.4

2.1.3 Removing the heat sink (See Fig.5)

- (1) Remove the two screws **B** and two screws **C** on the left side of the main body.

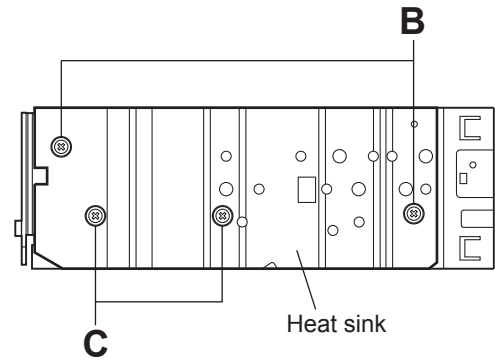


Fig.5

2.1.4 Removing the bottom cover (See Figs.6 and 7)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly and heat sink.
- (1) Turn over the main body, and release the two joints **d**, two joints **e** and joint **f**.

CAUTION:

Do not damage the main board when releasing the joint **f** using a screwdriver. (See Figs.6 and 7)

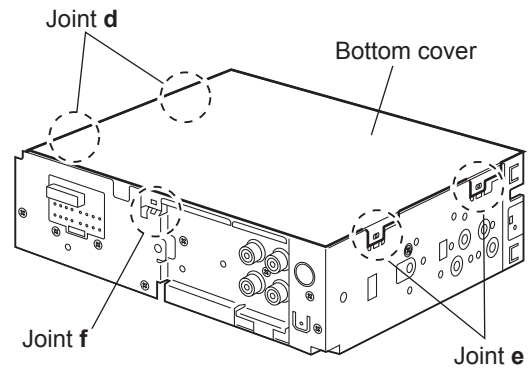


Fig.6

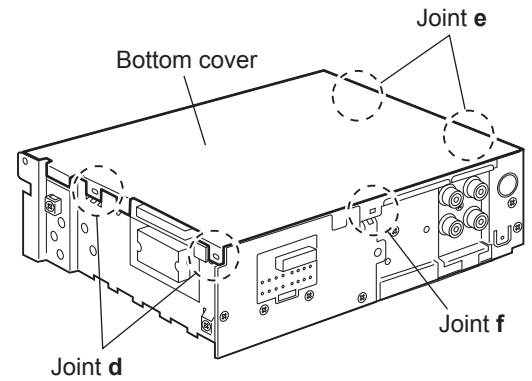


Fig.7

2.1.5 Removing the rear bracket (See Fig.8)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly, heat sink and bottom cover.
- (1) Remove the three screws **D**, three screws **E** and two screws **F** on the back side of the main body.
 - (2) Remove the rear bracket.

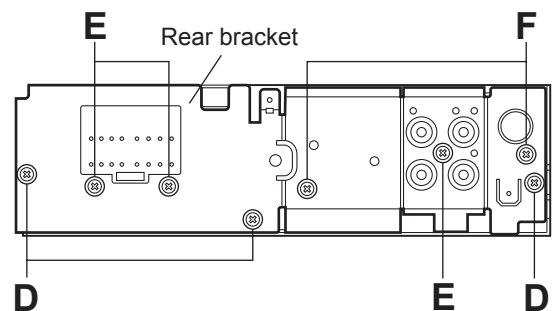


Fig.8

2.1.6 Removing the main board (See Fig.9)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly, heat sink, bottom cover and rear bracket.
- (1) Remove the two screws **G** attaching the main board.
- (2) Disconnect the connector CN501 and remove the main board.

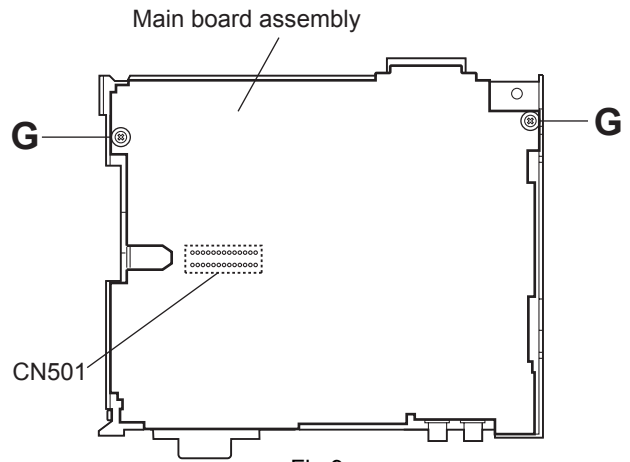


Fig.9

2.1.7 Removing the CD mechanism assembly (See Fig.10)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly, heat sink, bottom cover, rear bracket and main board.
- (1) Remove the three screws **H**.

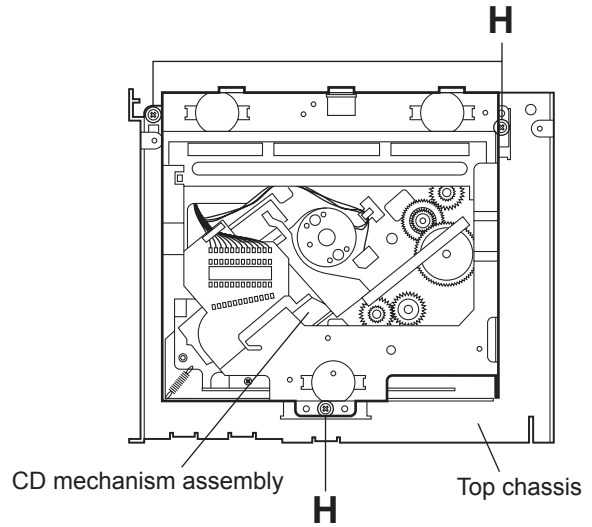


Fig.10

2.1.8 Removing the front board (See Figs.11 to 13)

- Prior to performing the following procedure, remove the front panel assembly.
 - (1) Remove the four screws **J** on the back side of the front panel assembly.
 - (2) Release the fourteen joints **g**.
 - (3) Release the joint **h** and take out the front board.

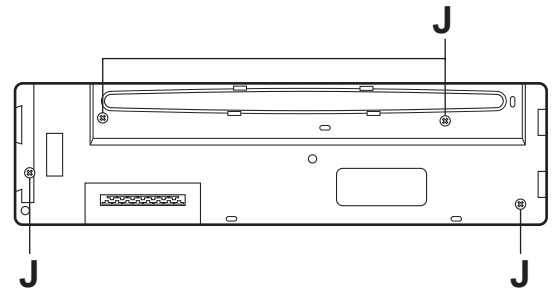


Fig.11

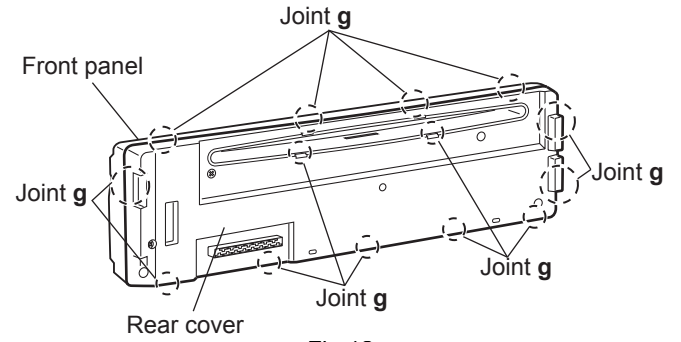


Fig.12

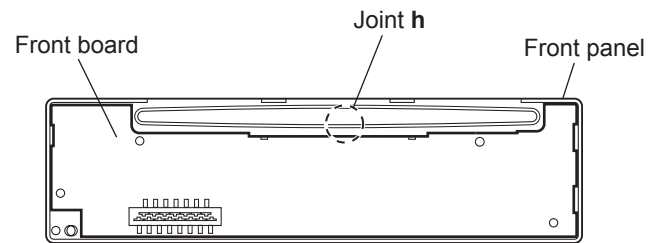
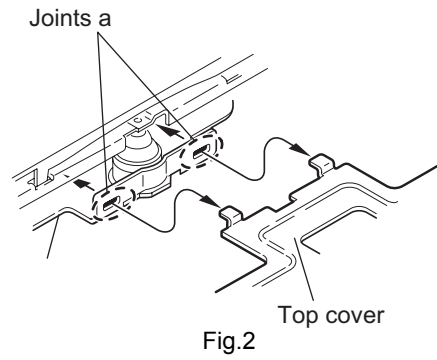
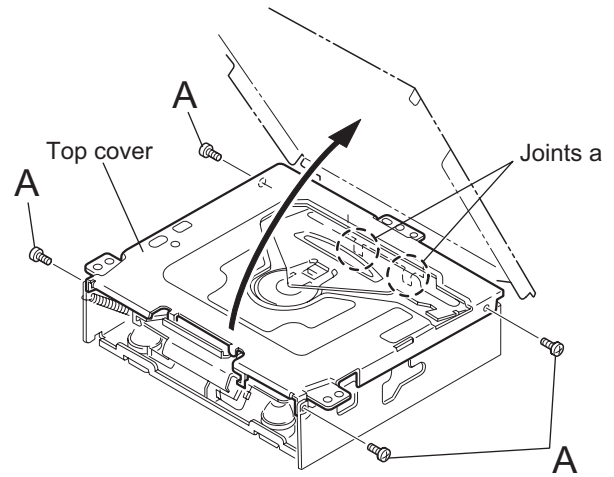


Fig.13

2.2 CD Mechanism Assembly

2.2.1 Removing the top cover (See Figs.1 and 2)

- (1) Remove the two screws **A** on the both side of the body.
- (2) Lift the front side of the top cover and move the top cover backward to release the two joints **a**.



2.2.2 Removing the connector board
 (See Figs.3 to 5)

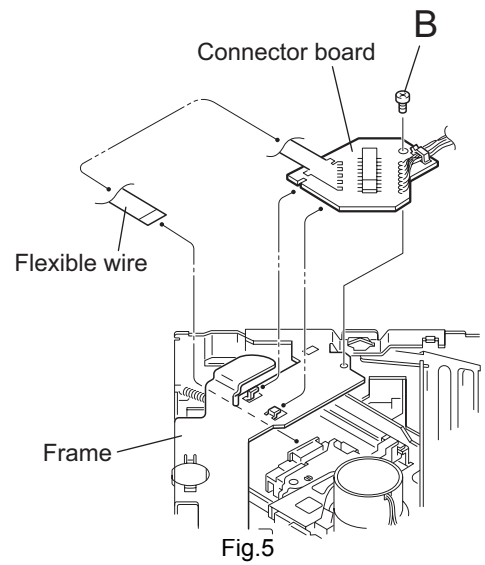
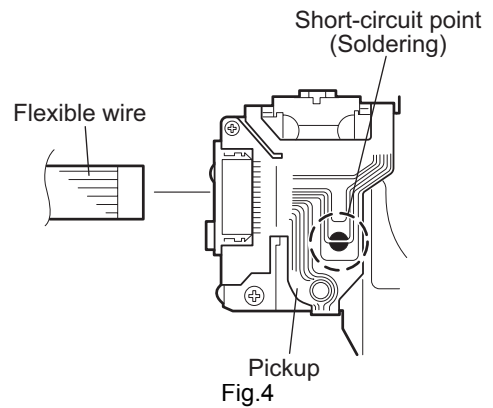
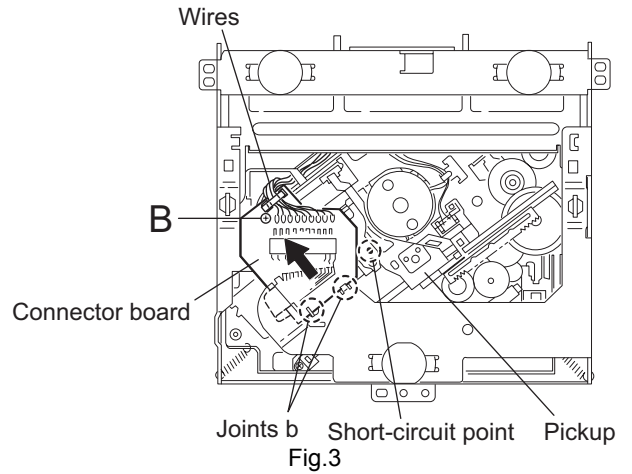
CAUTION:

Before disconnecting the flexible wire from the pickup, solder the short-circuit point on the pickup. No observance of this instruction may cause damage of the pickup.

- (1) Remove the screw **B** fixing the connector board.
- (2) Solder the short-circuit point on the connector board.
- (3) Disconnect the flexible wire from the pickup.
- (4) Move the connector board in the direction of the arrow to release the two joints **b**.
- (5) Unsolder the wire on the connector board if necessary.

CAUTION:

Unsolder the short-circuit point after reassembling.



2.2.3 Removing the DET switch (See Figs.6 and 7)

- (1) Extend the two tabs c of the feed sw. holder and pull out the switch.
- (2) Unsolder the DET switch wire if necessary.

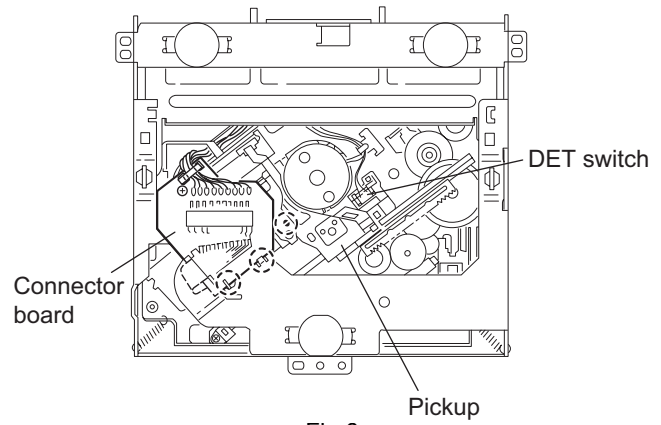


Fig.6

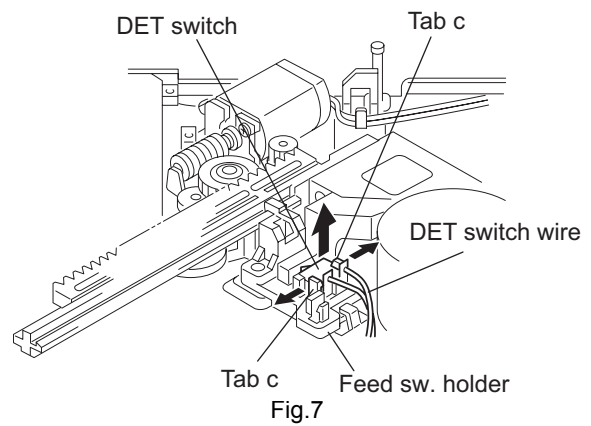


Fig.7

2.2.4 Removing the chassis unit (See Figs.8 and 9)

- Prior to performing the following procedure, remove the top cover and connector board.
- (1) Remove the two suspension springs (L) and (R) attaching the chassis unit to the frame.

CAUTION:

- The shape of the suspension spring (L) and (R) are different. Handle them with care.
- When reassembling, make sure that the three shafts on the underside of the chassis unit are inserted to the dampers certainly.

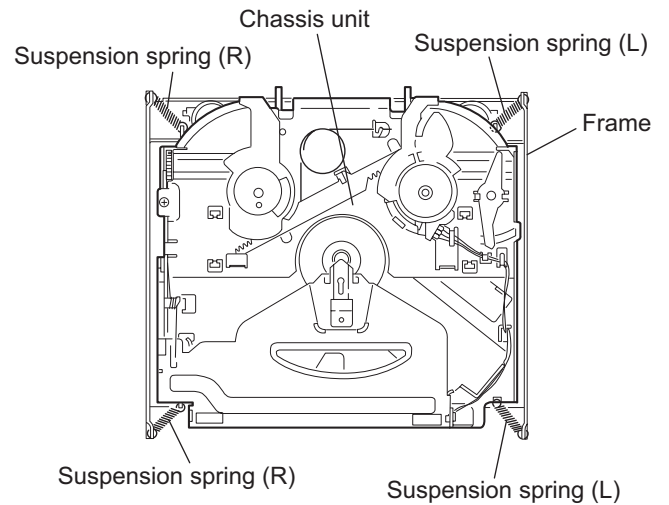


Fig.8

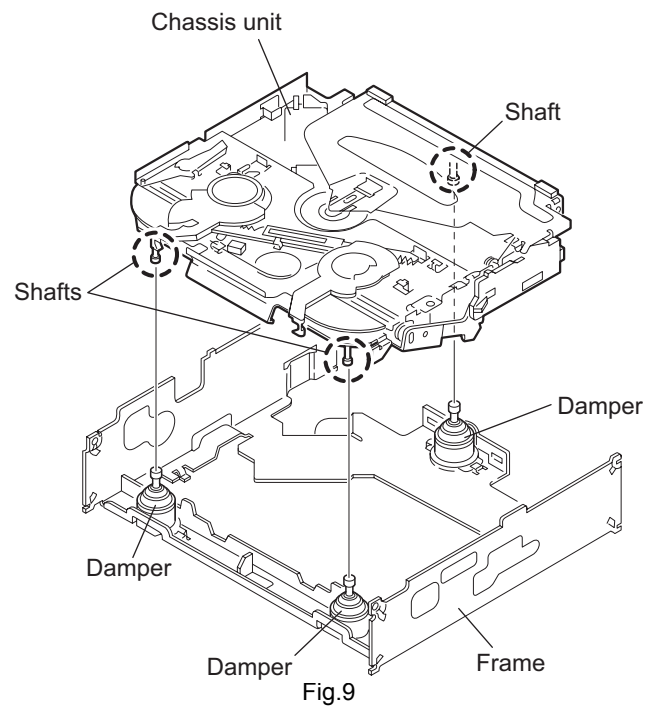
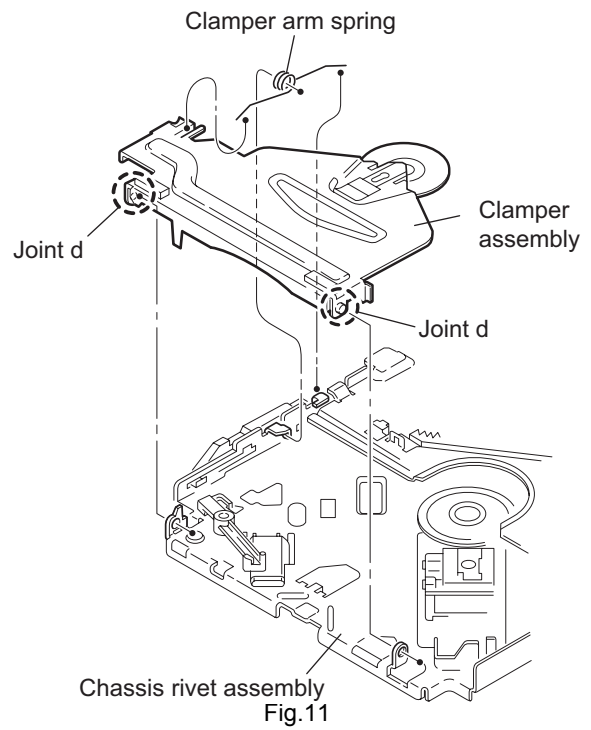
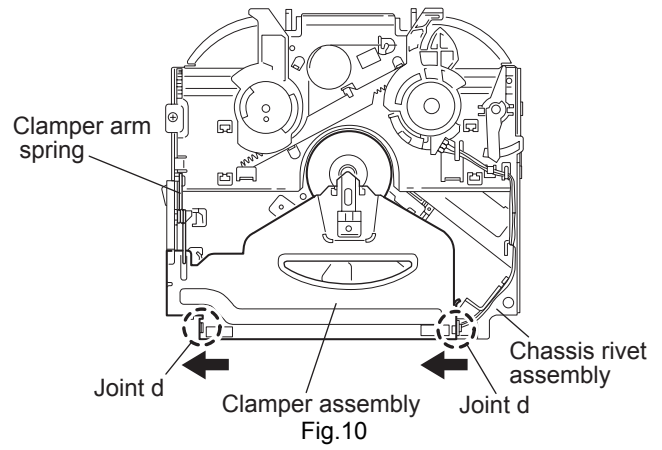


Fig.9

2.2.5 Removing the clamper assembly
(See Figs.10 and 11)

- Prior to performing the following procedure, remove the top cover.
- (1) Remove the clamper arm spring.
- (2) Move the clamper assembly in the direction of the arrow to release the two joints **d**.

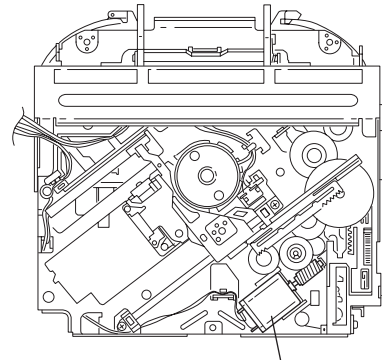


2.2.6 Removing the loading / feed motor assembly (See Figs.12 and 13)

- Prior to performing the following procedure, remove the top cover, connector board and chassis unit.
 - (1) Remove the screw **C** and move the loading / feed motor assembly in the direction of the arrow to remove it from the chassis rivet assembly.
 - (2) Disconnect the wire from the loading / feed motor assembly if necessary.

CAUTION:

When reassembling, connect the wire from the loading / feed motor assembly to the flame as shown in Fig.12.



Loading / feed motor assembly
Fig.12

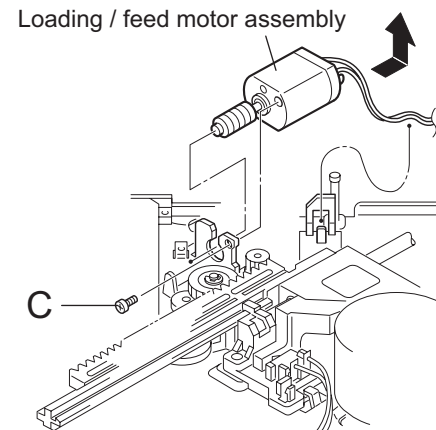
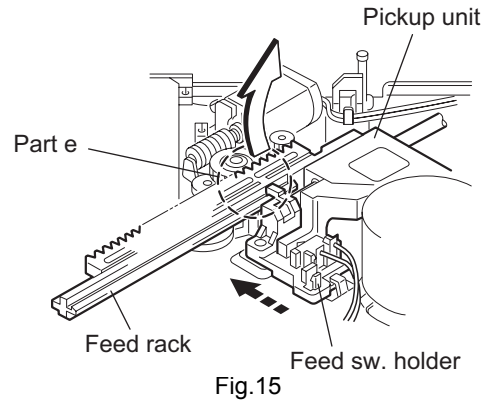


Fig.13

2.2.7 Removing the pickup unit
(See Figs.14 to 18)

- Prior to performing the following procedure, remove the top cover, connector board and chassis unit.
- (1) Remove the screw **D** and pull out the pu. shaft holder from the pu. shaft.
- (2) Remove the screw **E** attaching the feed sw. holder.
- (3) Move the part **e** of the pickup unit upward with the pu. shaft and the feed sw. holder, then release the joint **f** of the feed sw. holder in the direction of the arrow. The joint **g** of the pickup unit and the feed rack is released, and the feed sw. holder comes off.
- (4) Remove the pu. shaft from the pickup unit.
- (5) Remove the screw **F** attaching the feed rack to the pickup unit.



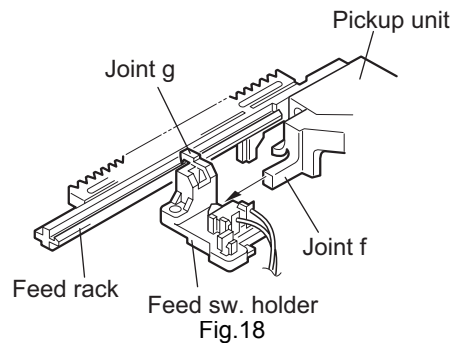
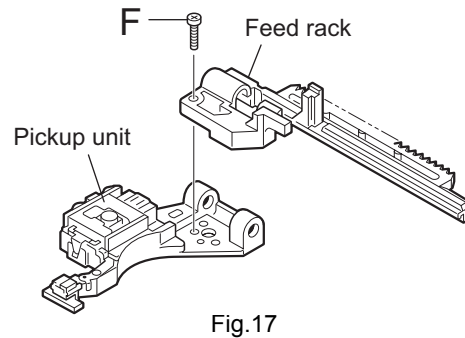
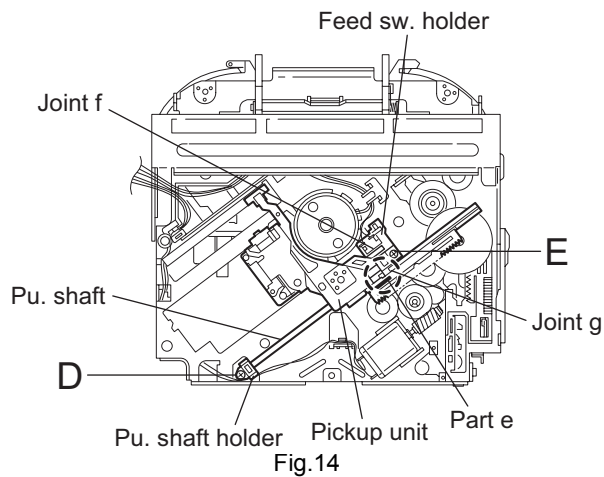
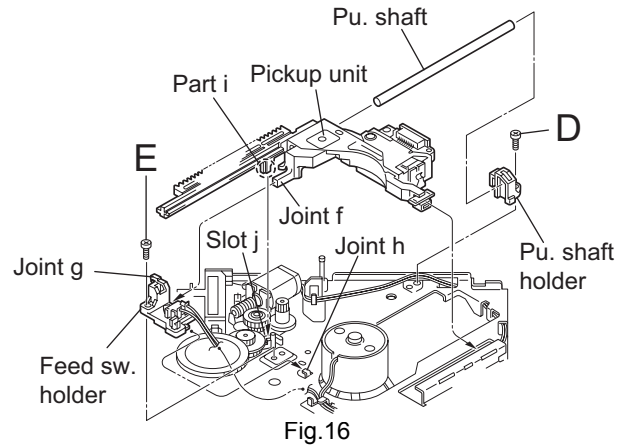
2.2.8 Reattaching the pickup unit
(See Figs.14 to 17)

- (1) Reattach the feed rack to the pickup unit using the screw **F**.
- (2) Reattach the feed sw. holder to the feed rack while setting the joint **g** to the slot of the feed rack and setting the part **f** of the feed rack to the switch of the feed sw. holder correctly.
- (3) As the feed sw. holder is temporarily attached to the pickup unit, set to the gear of the joint **g** and to the bending part of the chassis (joint **h**) at a time.

CAUTION:

Make sure that the part **i** on the underside of the feed rack is certainly inserted to the slot **j** of the change lock lever.

- (4) Reattach the feed sw. holder using the screw **E**.
- (5) Reattach the pu. shaft to the pickup unit. Reattach the pu. shaft holder to the pu. shaft using the screw **D**.

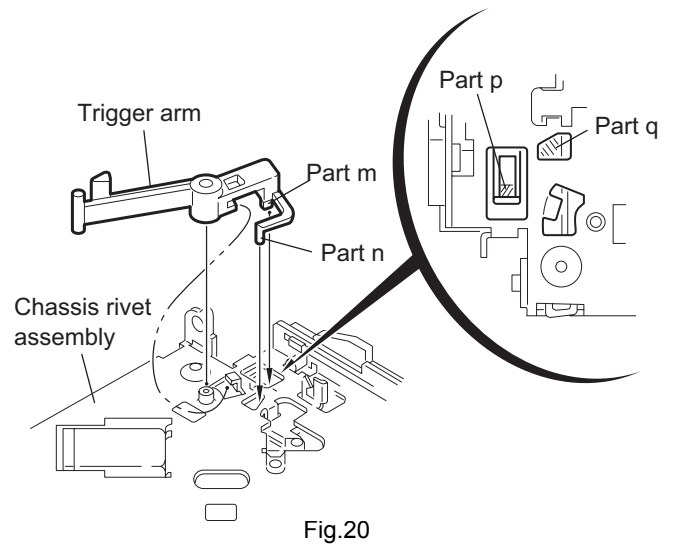
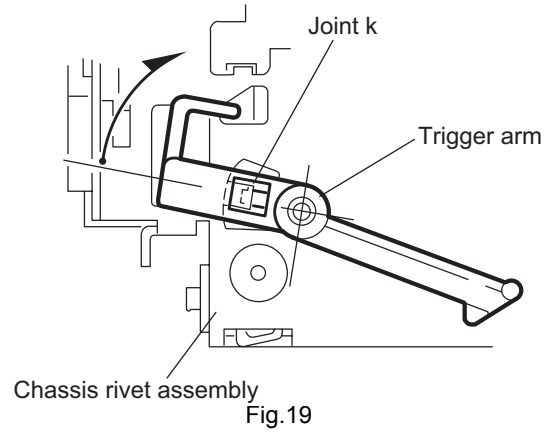


2.2.9 Removing the trigger arm (See Figs.19 and 20)

- Prior to performing the following procedure, remove the top cover, connector board and clamber unit.
- (1) Turn the trigger arm in the direction of the arrow to release the joint k and pull out upward.

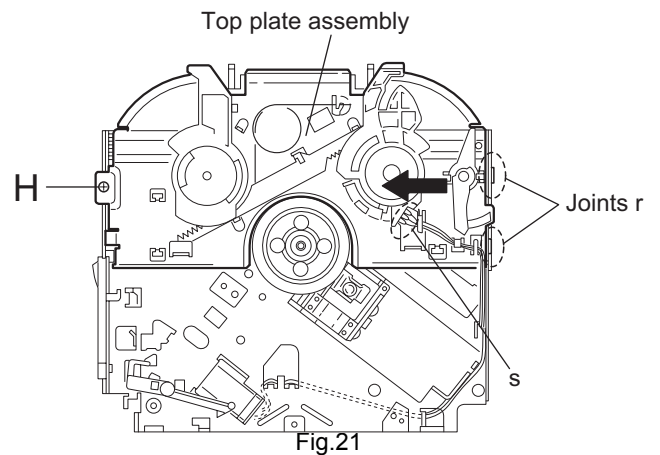
CAUTION:

When reassembling, insert the part m and n of the trigger arm into the part p and q at the slot of the chassis rivet assembly respectively and join the joint k at a time.



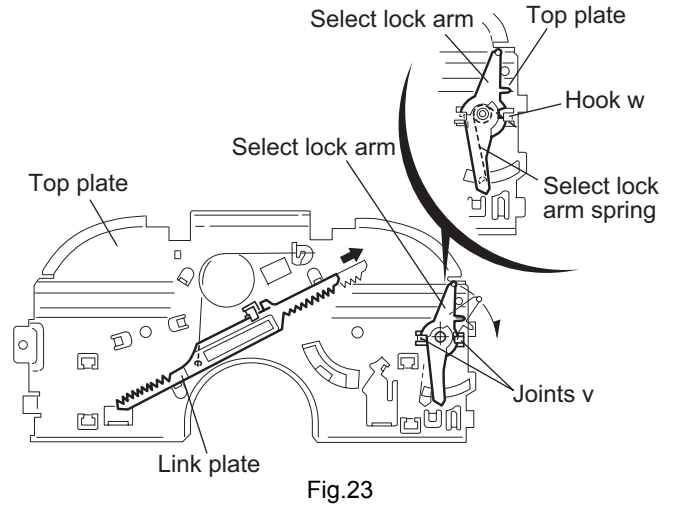
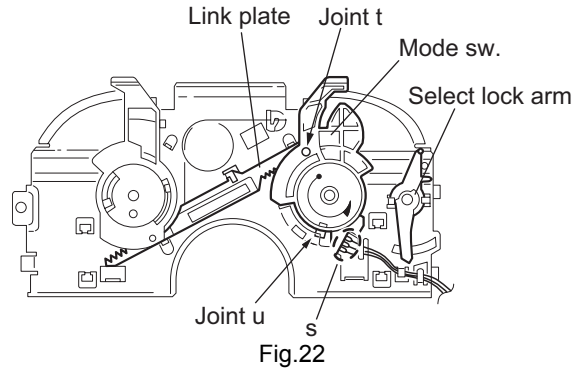
2.2.10 Removing the top plate assembly (See Fig.21)

- Prior to performing the following procedure, remove the top cover, connector board, chassis unit, and clamber assembly.
- (1) Remove the screw H.
- (2) Move the top plate assembly in the direction of the arrow to release the two joints r.
- (3) Unsolder the wire marked s if necessary.



2.2.11 Removing the mode sw. / select lock arm
(See Figs.22 and 23)

- Prior to performing the following procedure, remove the top plate assembly.
 - (1) Bring up the mode sw. to release from the link plate (joint t) and turn in the direction of the arrow to release the joint u.
 - (2) Unsolder the wire of the mode sw. marked s if necessary.
 - (3) Turn the select lock arm in the direction of the arrow to release the two joints v.
 - (4) The select lock arm spring comes off the select lock arm at the same time.



2.2.12 Reassembling the mode sw. / select lock arm (See Figs.24 to 26)

REFERENCE:

Reverse the above removing procedure.

- (1) Reattach the select lock arm spring to the top plate and set the shorter end of the select lock arm spring to the hook w on the top plate.
- (2) Set the other longer end of the select lock arm spring to the boss x on the underside of the select lock arm, and join the select lock arm to the slots (joint v). Turn the select lock arm as shown in the figure.
- (3) Reattach the mode sw. while setting the part t to the first peak of the link plate gear, and join the joint u.

CAUTION:

When reattaching the mode sw., check if the points y and z are correctly fitted and if each part operates properly.

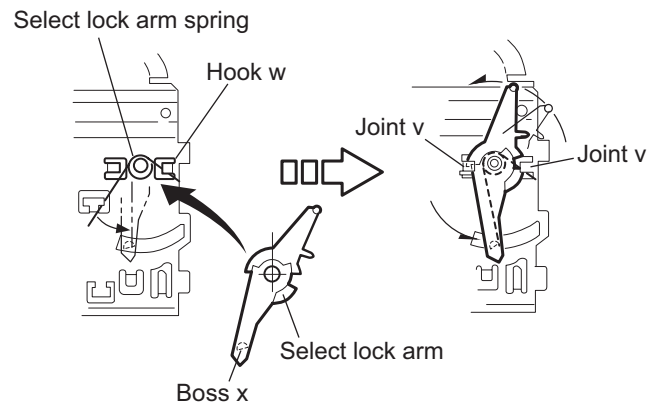


Fig.24

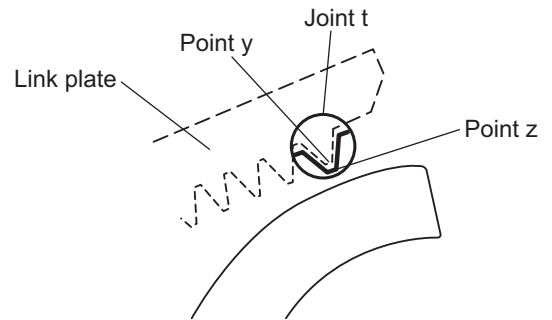


Fig.25

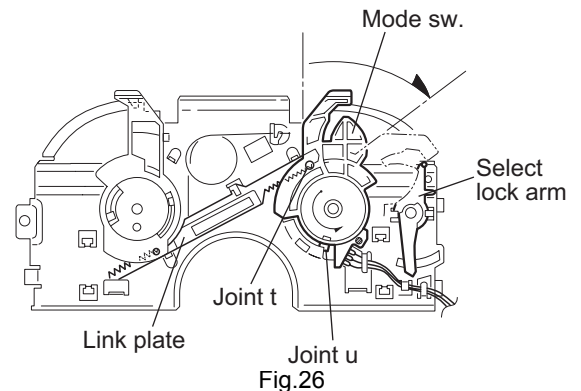


Fig.26

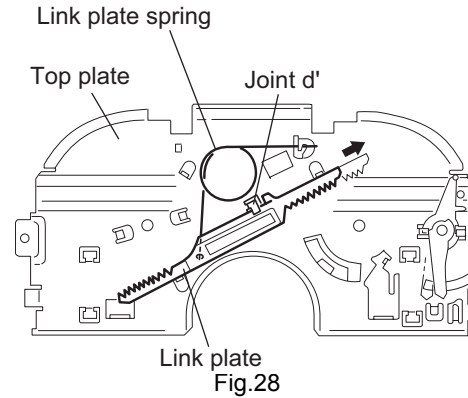
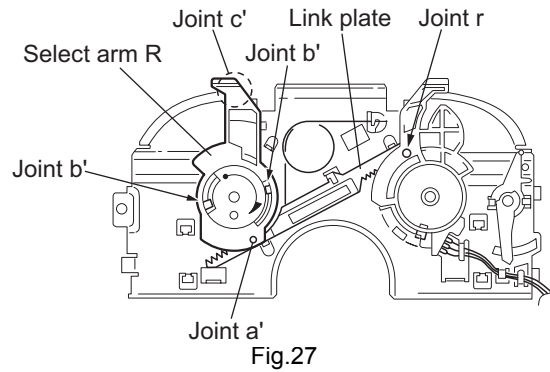
2.2.13 Removing the select arm R / link plate
(See Figs.27 and 28)

• Prior to performing the following procedure, remove the top plate assembly.

- (1) Bring up the select arm R to release from the link plate (joint a') and turn as shown in the figure to release the two joints b' and joint c'.
- (2) Move the link plate in the direction of the arrow to release the joint d'. Remove the link plate spring at the same time.

REFERENCE:

Before removing the link plate, remove the mode sw..



2.2.14 Reattaching the Select arm R / link plate
(See Figs.29 and 30)

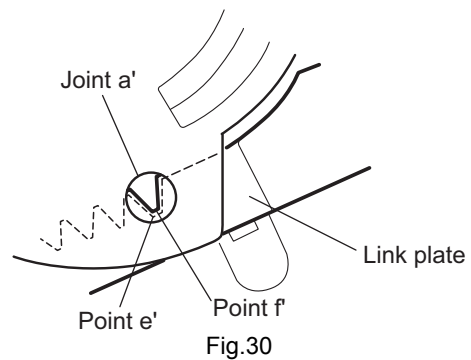
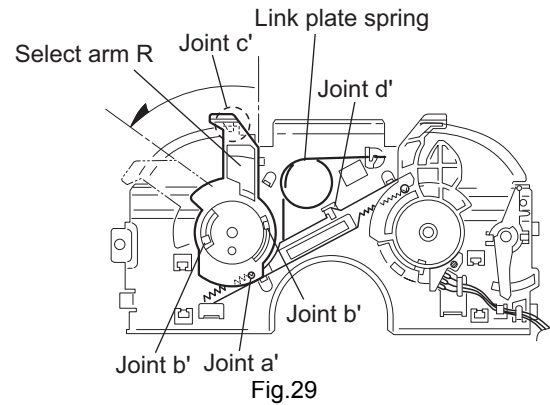
REFERENCE:

Reverse the above removing procedure.

- (1) Reattach the link plate spring.
- (2) Reattach the link plate to the link plate spring while joining them at joint d'.
- (3) Reattach the joint a' of the select arm R to the first peak of the link plate while joining the two joints b' with the slots. Then turn the select arm R as shown in the figure. The top plate is joined to the joint c'.

CAUTION:

When reattaching the select arm R, check if the points e' and f' are correctly fitted and if each part operates properly.



2.2.15 Removing the loading roller assembly
(See Figs.31 to 33)

- Prior to performing the following procedure, remove the clamper assembly and top plate assembly.
- (1) Push inward the loading roller assembly on the gear side and detach it upward from the slot of the joint **g'** of the lock arm rivet assembly.
- (2) Detach the loading roller assembly from the slot of the joint **h'** of the lock arm rivet assembly.

The roller guide comes off the gear section of the loading roller assembly.

Remove the roller guide and the HL washer from the shaft of the loading roller assembly.

- (3) Remove the screw **J** attaching the lock arm rivet assembly.
- (4) Push the shaft at the joint **i'** of the lock arm rivet assembly inward to release the lock arm rivet assembly from the slot of the L side plate.
- (5) Extend the lock arm rivet assembly outward and release the joint **j'** from the boss of the chassis rivet assembly. The roller guide springs on both sides come off at the same time.

CAUTION:

When reassembling, reattach the left and right roller guide springs to the lock arm rivet assembly before reattaching the lock arm rivet assembly to the chassis rivet assembly. Make sure to fit the part **k'** of the roller guide spring inside of the roller guide. (Refer to Fig.34.)

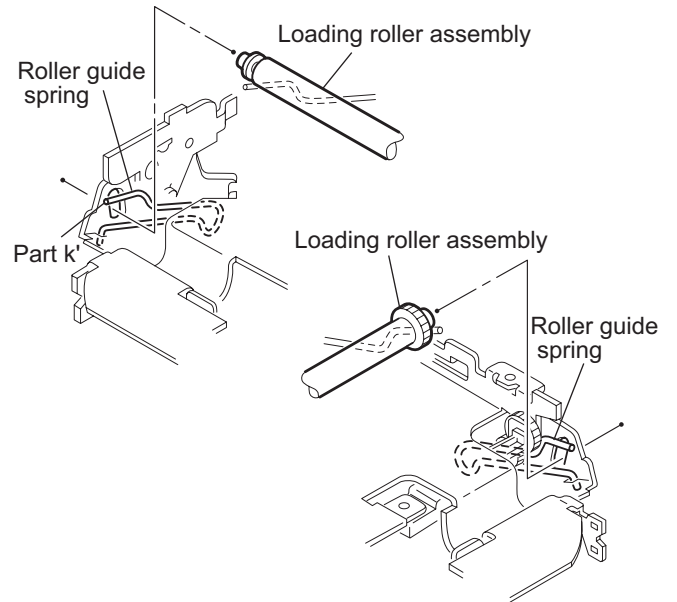


Fig.32

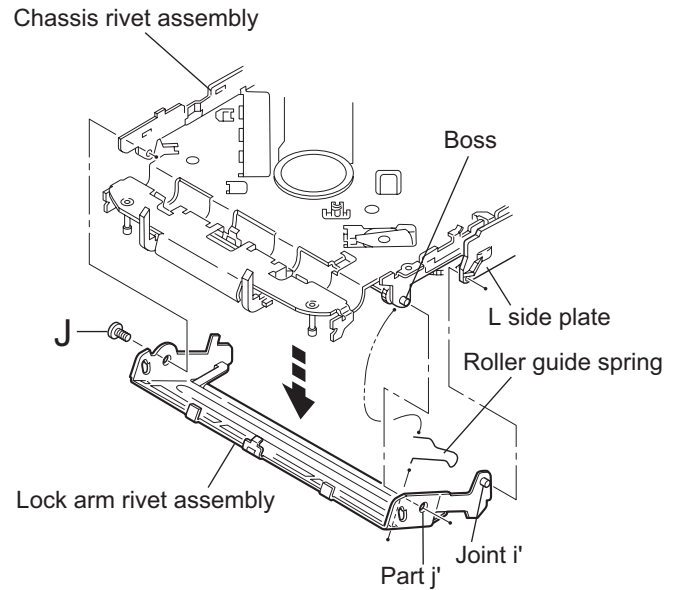


Fig.33

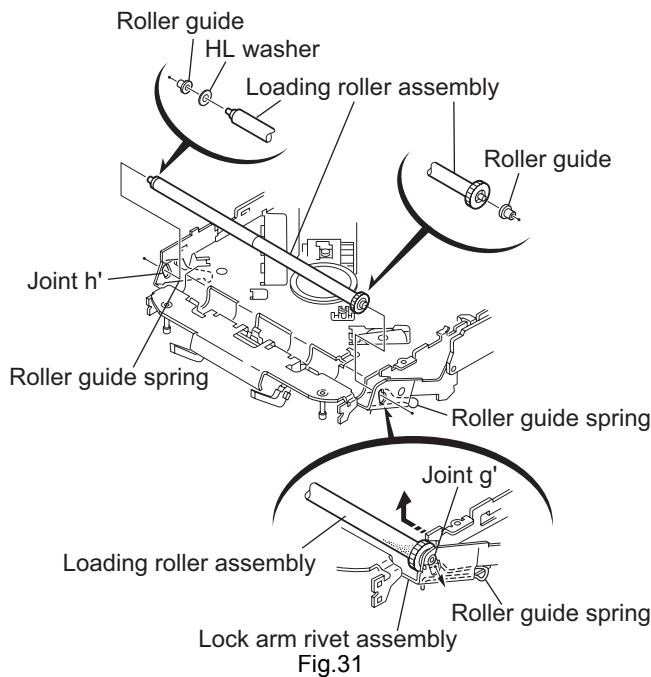


Fig.31

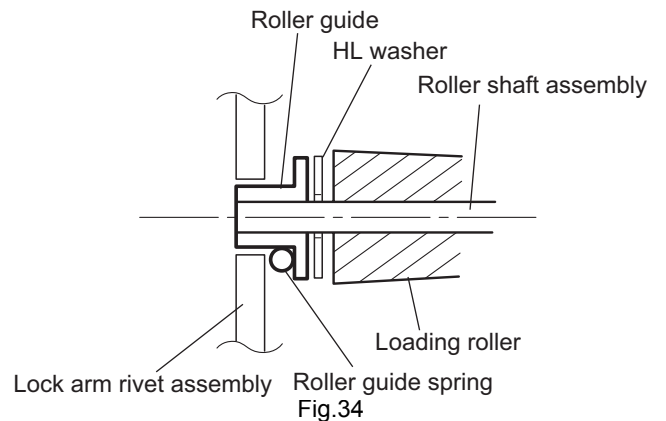


Fig.34

**2.2.16 Removing the loading gear 5, 6 and 7
(See Figs.35 and 36)**

- Prior to performing the following procedure, remove the top cover, chassis unit, pickup unit and top plate assembly.

- (1) Remove the screw **K** attaching the loading gear bracket.
The loading gear 6 and 7 come off the loading gear bracket.
- (2) Pull out the loading gear 5.

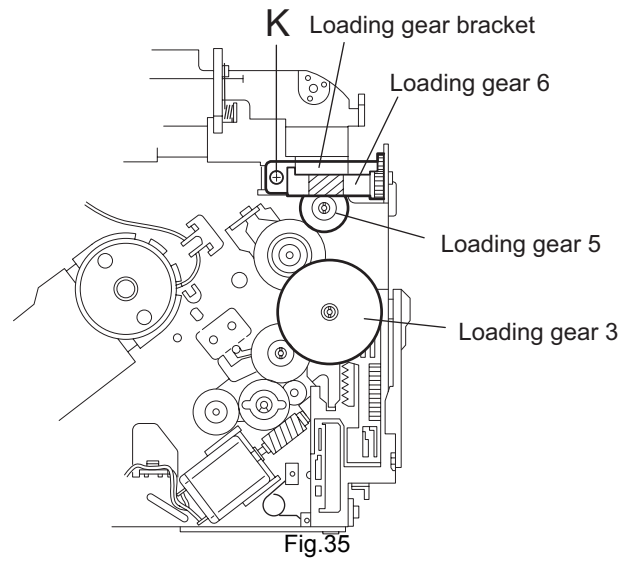


Fig.35

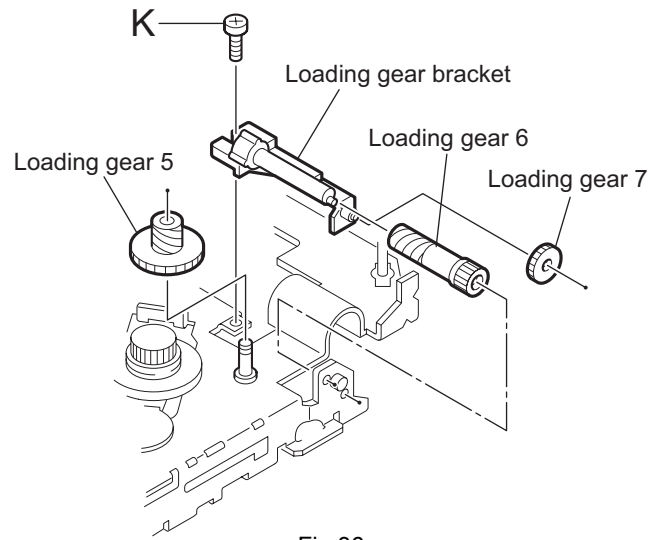
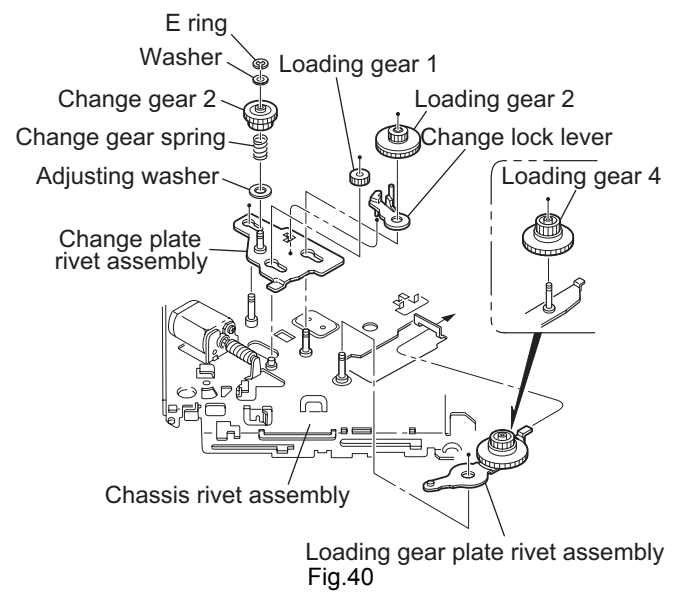
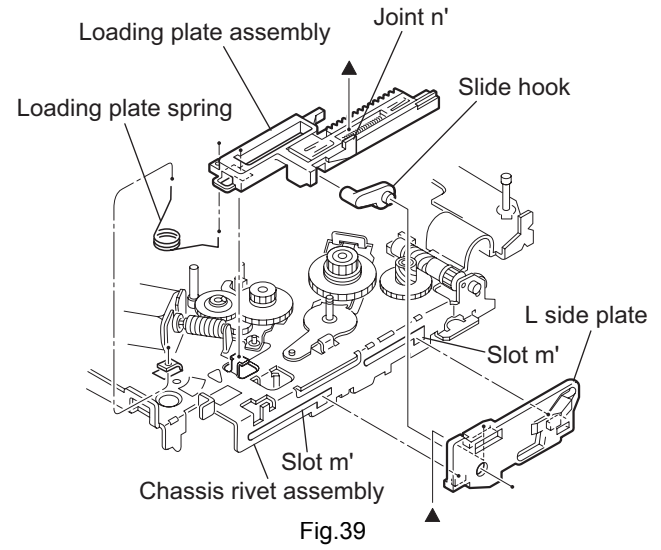
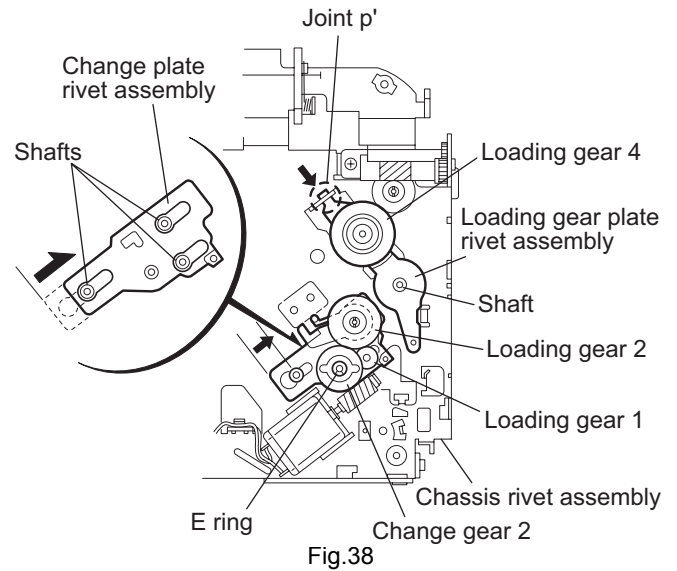
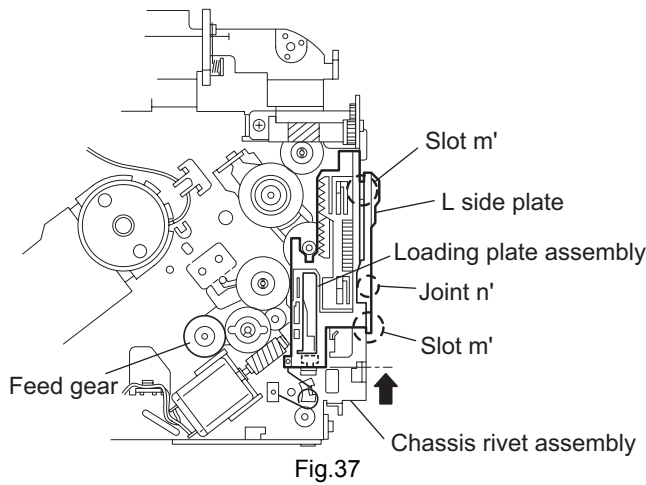


Fig.36

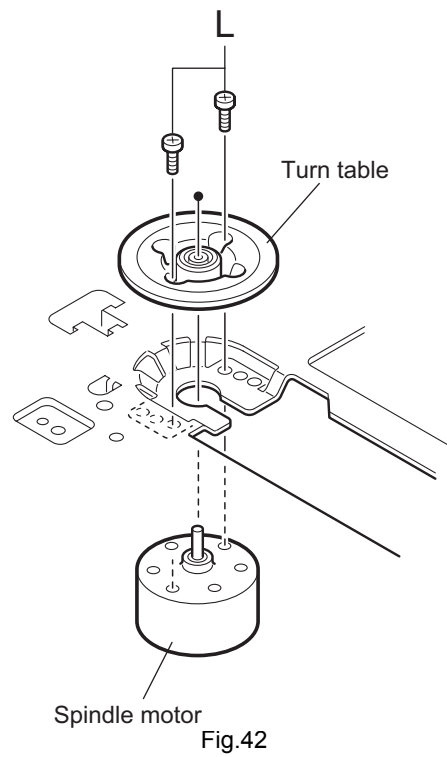
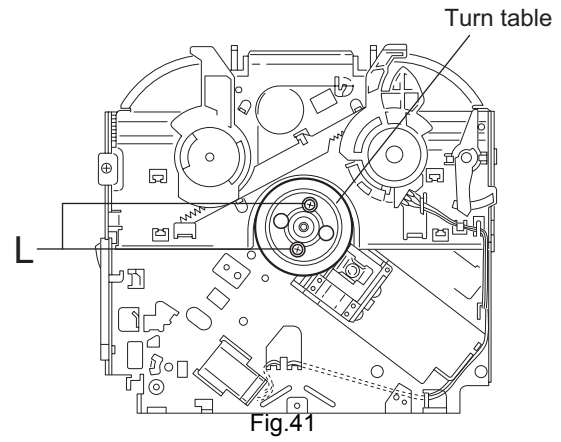
2.2.17 Removing the gears
(See Figs.37 to 40)

- Prior to performing the following procedure, remove the top cover, chassis unit, top plate assembly and pickup unit.
- Pull out the loading gear 3. (See Fig.35.)
 - (1) Pull out the feed gear.
 - (2) Move the loading plate assembly in the direction of the arrow to release the L side plate from the two slots m' of the chassis rivet assembly. (See Fig.37.)
 - (3) Detach the loading plate assembly upward from the chassis rivet assembly while releasing the joint n'. Remove the slide hook and loading plate spring from the loading plate assembly.
 - (4) Pull out the loading gear 2 and remove the change lock lever.
 - (5) Remove the E ring and washer attaching the changer gear 2.
 - (6) The changer gear 2, change gear spring and adjusting washer come off.
 - (7) Remove the loading gear 1.
 - (8) Move the change plate rivet assembly in the direction of the arrow to release from the three shafts of the chassis rivet assembly upward. (See Fig.38.)
 - (9) Detach the loading gear plate rivet assembly from the shaft of the chassis rivet assembly upward while releasing the joint p'. (See Figs.38 and 40.)
 - (10) Pull out the loading gear 4.



2.2.18 Removing the turn table / spindle motor (See Figs.41 and 42)

- Prior to performing the following procedure, remove the top cover, connector board, chassis unit and clasper assembly.
 - (1) Remove the two screws **L** attaching the spindle motor assembly through the slot of the turn table on top of the body.
 - (2) Unsolder the wire on the connector board if necessary.



SECTION 3 Adjustment

3.1 Adjustment method

■ Test instruments required for adjustment

1. Digital oscilloscope (100MHz)
2. AM Standard signal generator
3. FM Standard signal generator
4. Stereo modulator
5. Electric voltmeter
6. Digital tester
7. Tracking offset meter
8. Test Disc JVC :CTS-1000
9. Extension cable for check
EXTSH002-22P×1

■ Standard volume position

Balance and Bass & Treble volume : Indication "0"
Loudness : OFF

■ Frequency Band

FM 87.5MHz ~ 107.9MHz
AM 530kHz ~ 1710 kHz

■ Dummy load

Exclusive dummy load should be used for AM, and FM. For FM dummy load, there is a loss of 6dB between SSG output and antenna input. The loss of 6dB need not be considered since direct reading of figures are applied in this working standard.

■ Standard measuring conditions

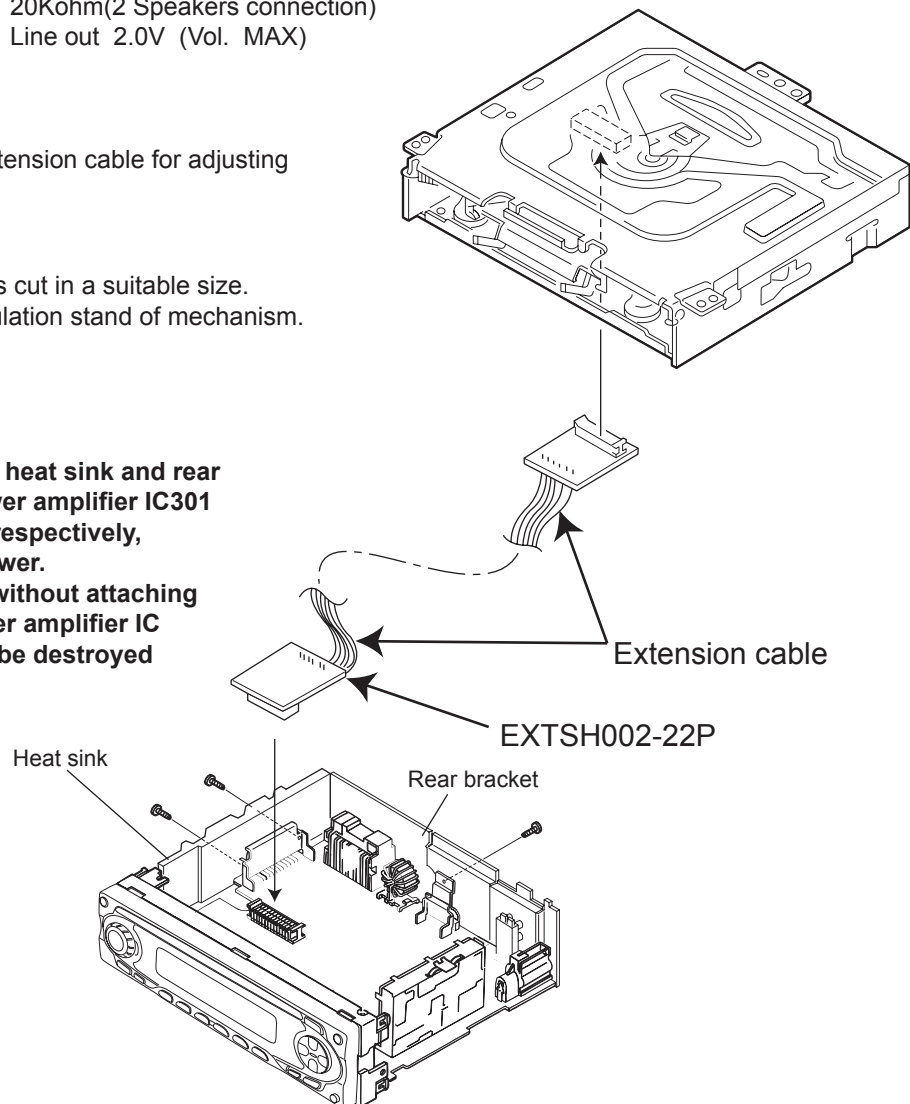
Power supply voltage DC14.4V(10.5~16V)
Load impedance 20Kohm(2 Speakers connection)
Output Level Line out 2.0V (Vol. MAX)

■ How to connect the extension cable for adjusting

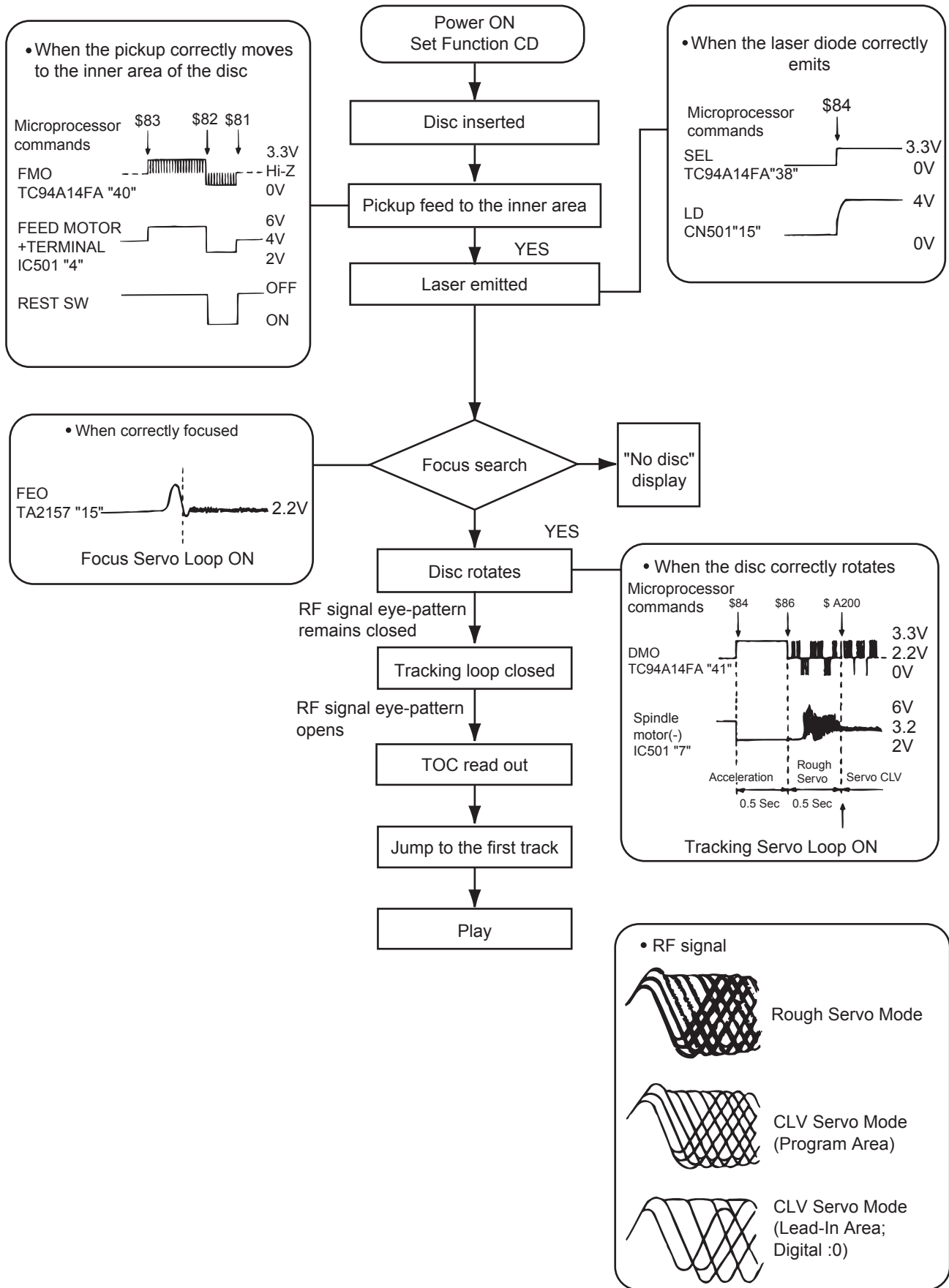
* The cardboard is cut in a suitable size.
uses for the insulation stand of mechanism.

Caution:

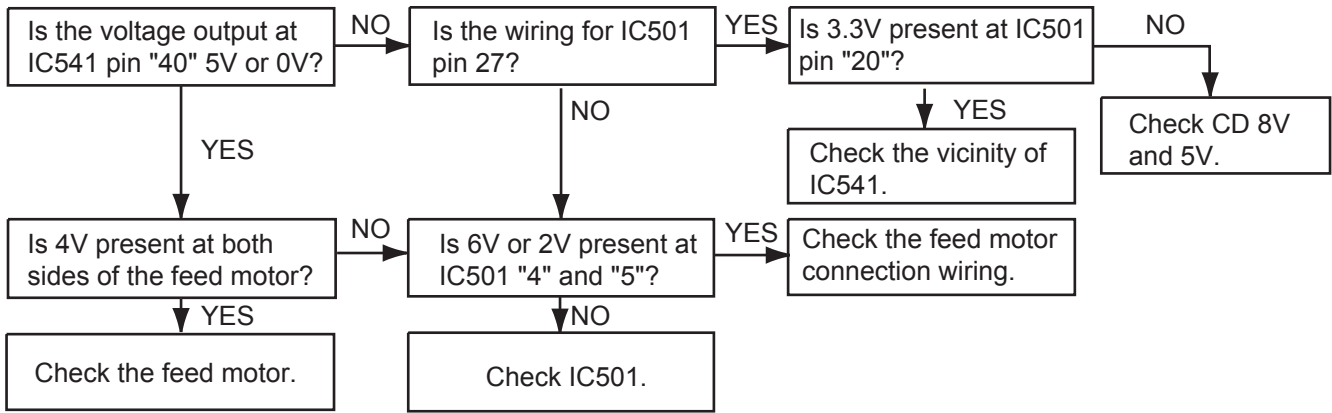
Be sure to attach the heat sink and rear bracket onto the power amplifier IC301 and regulator IC901 respectively, before supply the power. If voltage is applied without attaching these parts, the power amplifier IC and regulator IC will be destroyed by heat.



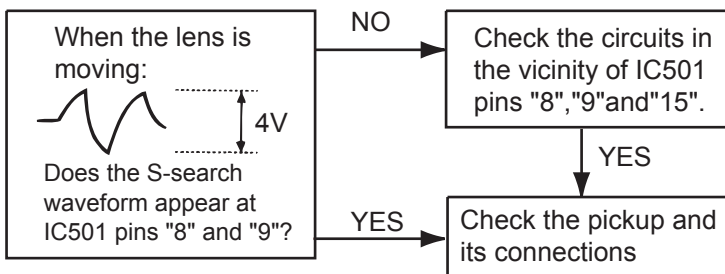
3.2 Flow of functional operation unit TOC read



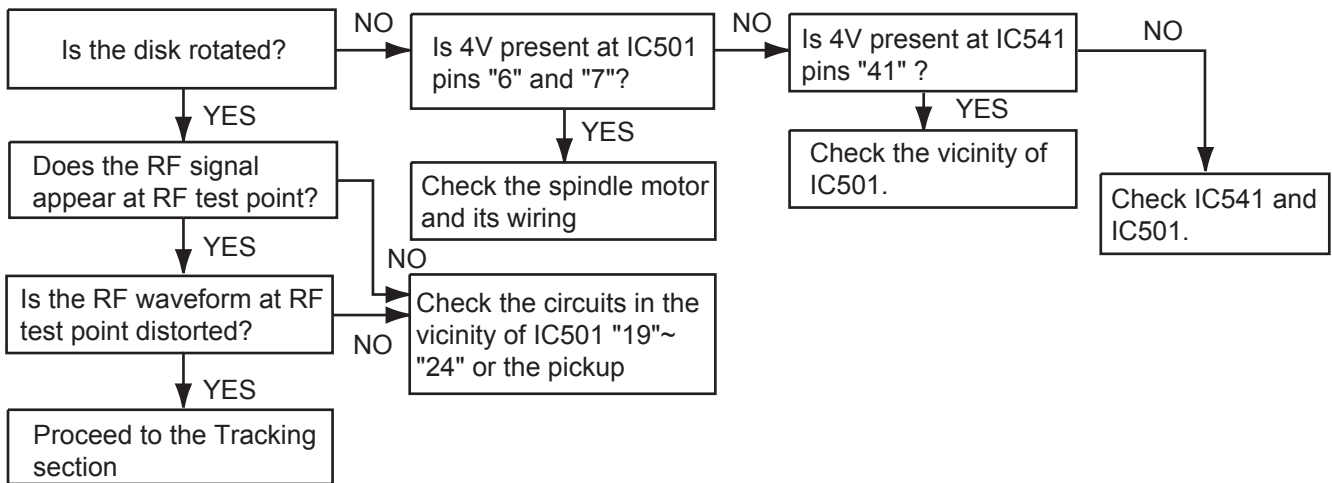
3.2.1 Feed section



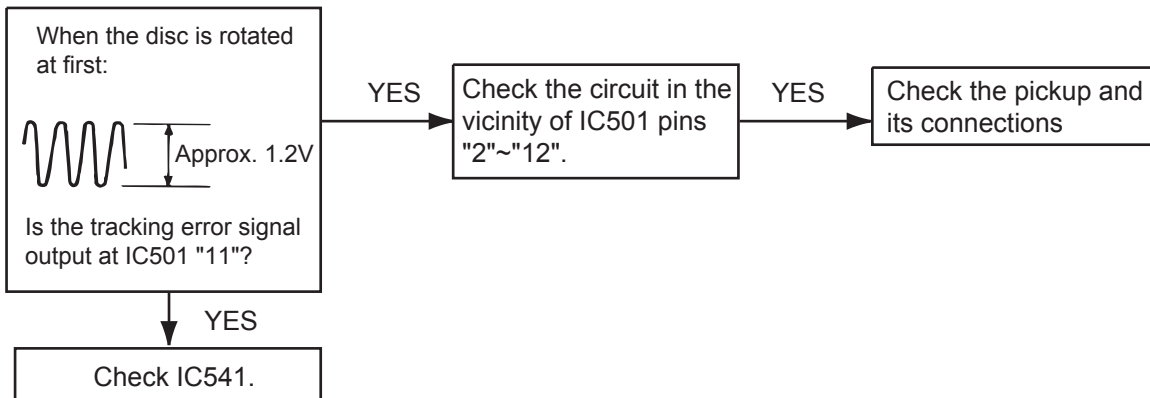
3.2.2 Focus section



3.2.3 Spindle section



3.2.4 Tracking section



3.3 Maintenance of laser pickup

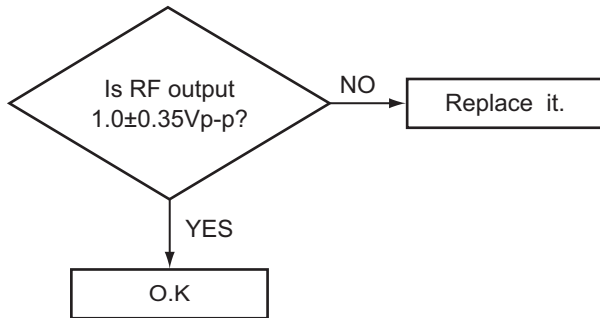
(1) Cleaning the pick up lens

Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

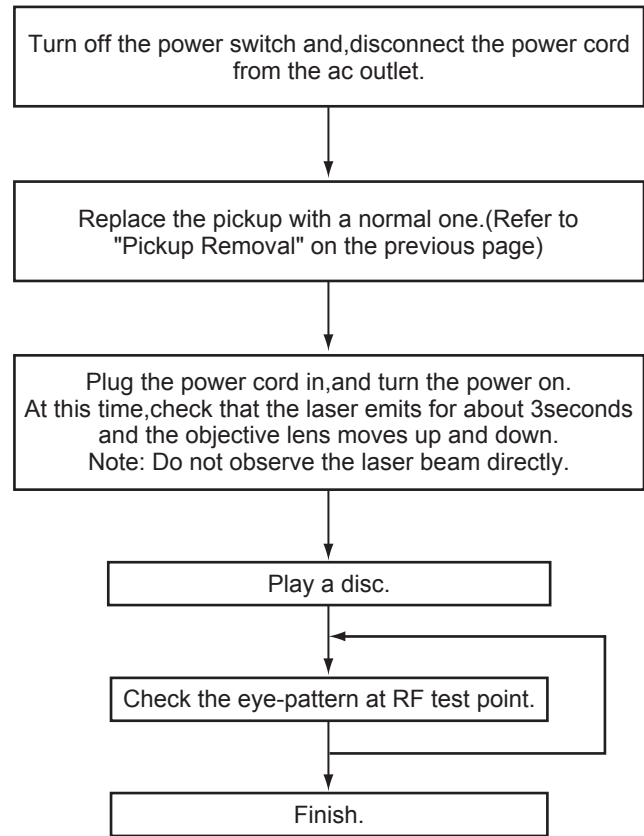
- The level of RF output (EFM output: amplitude of eye pattern) will be low.



(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.

3.4 Replacement of laser pickup



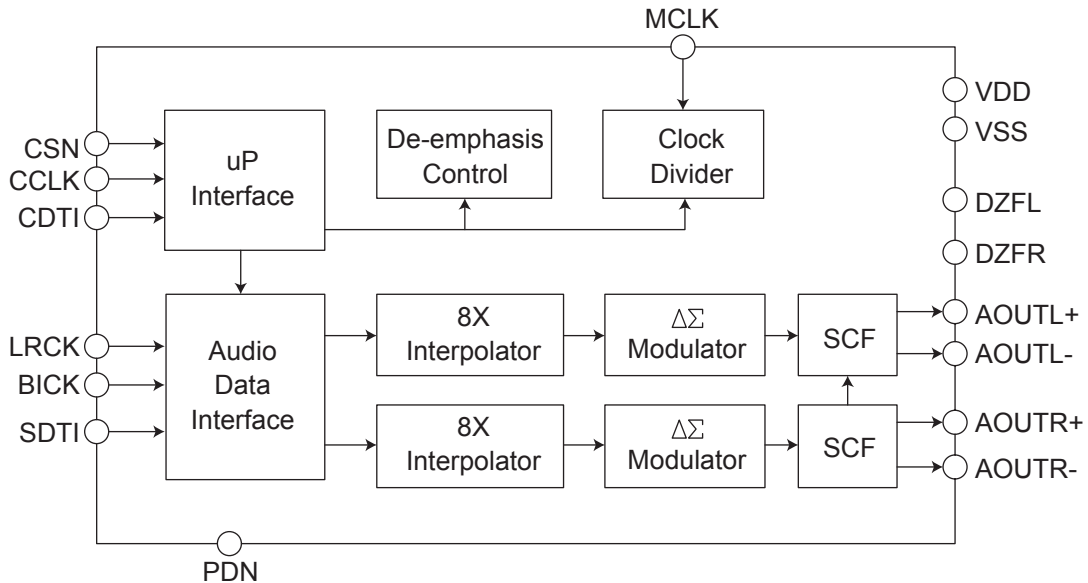
SECTION 4 Description of major ICs

4.1 AK4381VT-X (IC481) : D/A converter

- Pin layout

MCLK	1	16	DZFL
BICK	2	15	DZFR
SDTI	3	14	VDD
LRCK	4	13	VSS
PDN	5	12	AOUTL+
CSN	6	11	AOUTL-
CCLK	7	10	AOUTR+
CDTI	8	9	AOUTR-

- Block diagram

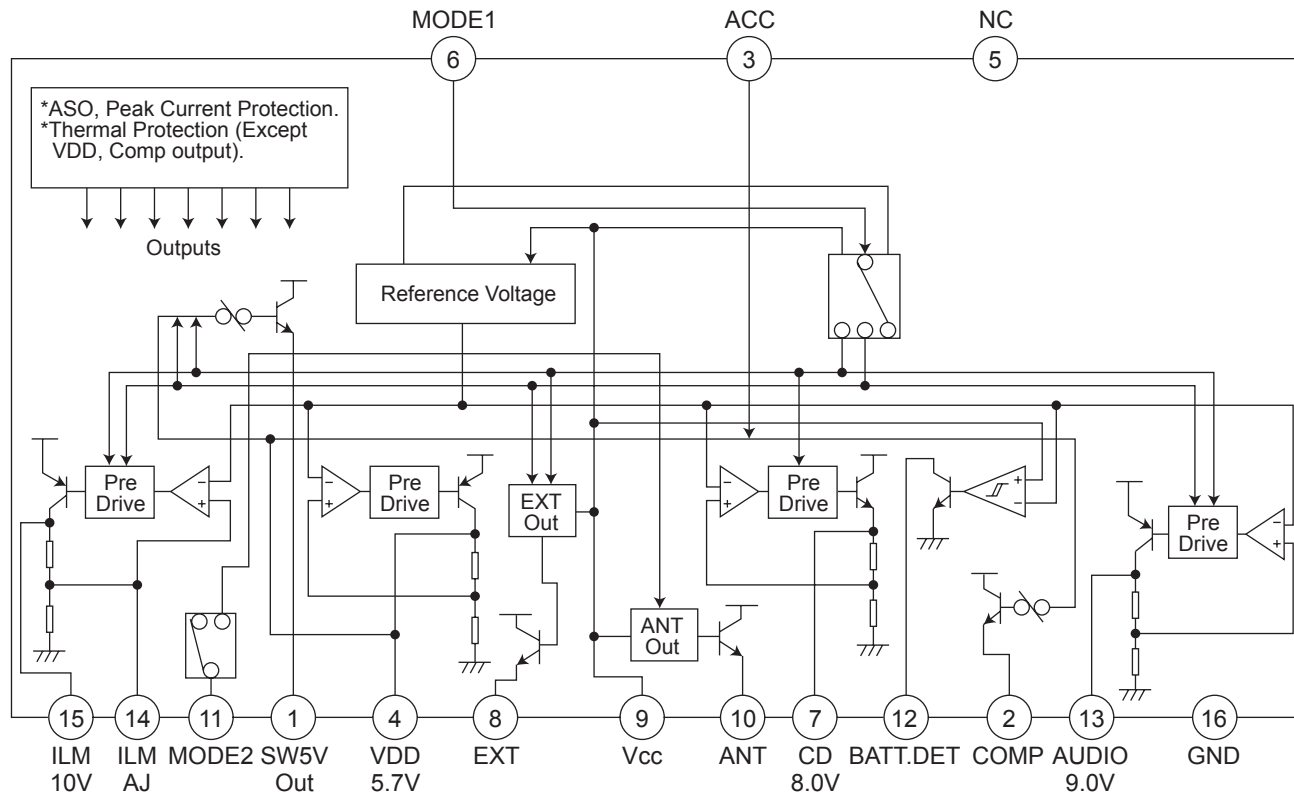


- Pin functions

Pin No.	Symbol	I/O	Description
1	MCLK	I	Master clock input terminal
2	BICK	I	Audio serial data clock terminal
3	SDTI	I	Audio serial data input terminal
4	LRCK	I	L/R Clock terminal
5	PDN	I	Power down mode terminal
6	CSN	I	Chip select
7	CCLK	I	Control data input terminal
8	CDTI	I	Control data input terminal
9	AOUTR-	O	Rch negative analog output terminal
10	AOUTR+	O	Rch positive analog output terminal
11	AOUTL-	O	Lch negative analog output terminal
12	AOUTL+	O	Lch positive analog output terminal
13	VSS	-	Connect to ground
14	VDD	-	Power supply terminal
15	DZFR	O	Rch data zero input detection terminal
16	DZFL	O	Lch data zero input detection terminal

4.2 AN80T07 (IC901) : Regulator

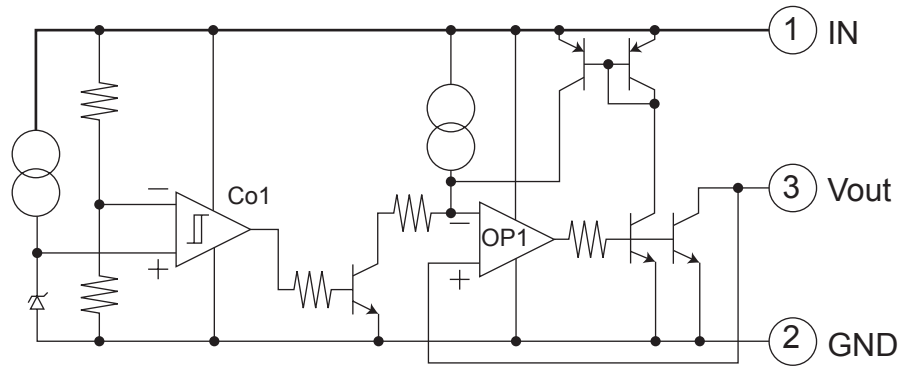
- Block diagram



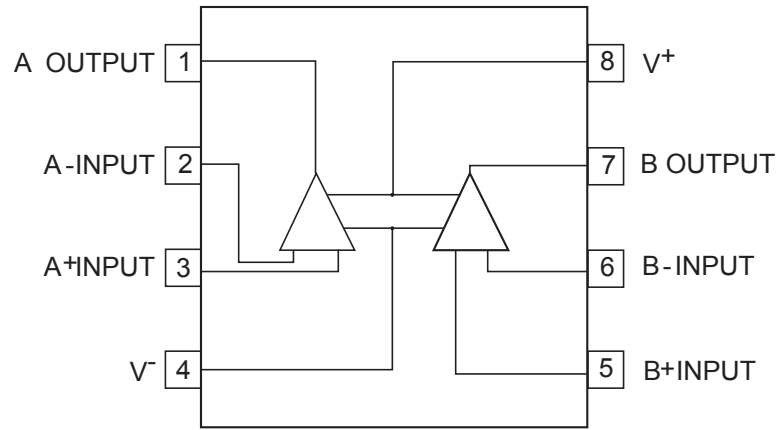
- Pin function

Pin No.	Symbol	Function
1	SW5V Output	When Mode 1 pin is "M", "H" SW output is VDD -0.7V (Io=100mA min).
2	COMP Output	When ACC input pin is "H" COMP Output is VDD -0.7V (Io=100mA min).
3	ACC Input	L: COMP Output OFF and H: COMP Output ON
4	VDD Output	5.7V Output voltage for a microcontroller (Io=100mA min).
5	NC	NC pin
6	MODE1	3 Input "L", "M", "H" control pin
7	CD Output	When Mode 1 pin is "H" CD output is 8V (Io=1200mA min).
8	EXT Output	When Mode 1 pin is "M", "H" EXT output is Vcc-1.0V (Io=300mA min).
9	VCC	Connected to car BACKUP Power supply.
10	ANT Output	When Mode 2 pin is "H" ANT output is Vcc-1.0V (Io=300mA).
11	MODE2	L: ANT Output OFF and H: ANT Output ON
12	BATT.DET	NPN Transistor open collector Output (When battery is lower then 9V "L")
13	Audio Output	When Mode 1 pin is "M", "H" Audio output is 9V (Io=500mA min).
14	ILM AJ	ILM (Illumination) Output adjustable pin.
15	ILM(Illumination) Output	When Mode 1 pin is "M", "H" ILM output is 10V (Io=300mA min).
16	GND	Connected to the IC substrate.

4.3 IC-PST600M/G/-W (IC702) : System reset

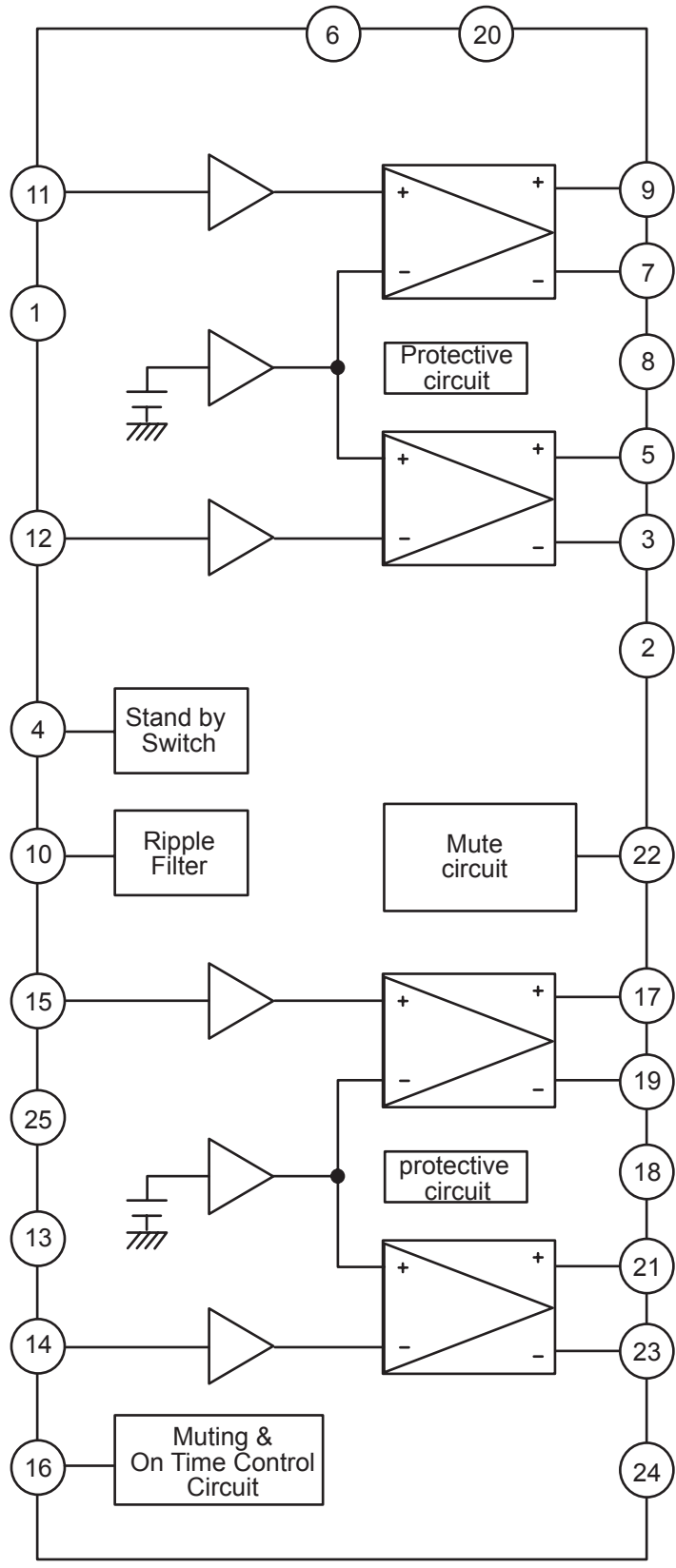


4.4 NJM4565M-WE (IC581) : CD L.P.F.

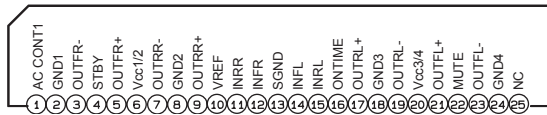


4.5 LA47505 (IC301) : Power amp.

- Terminal layout



- Terminal layout

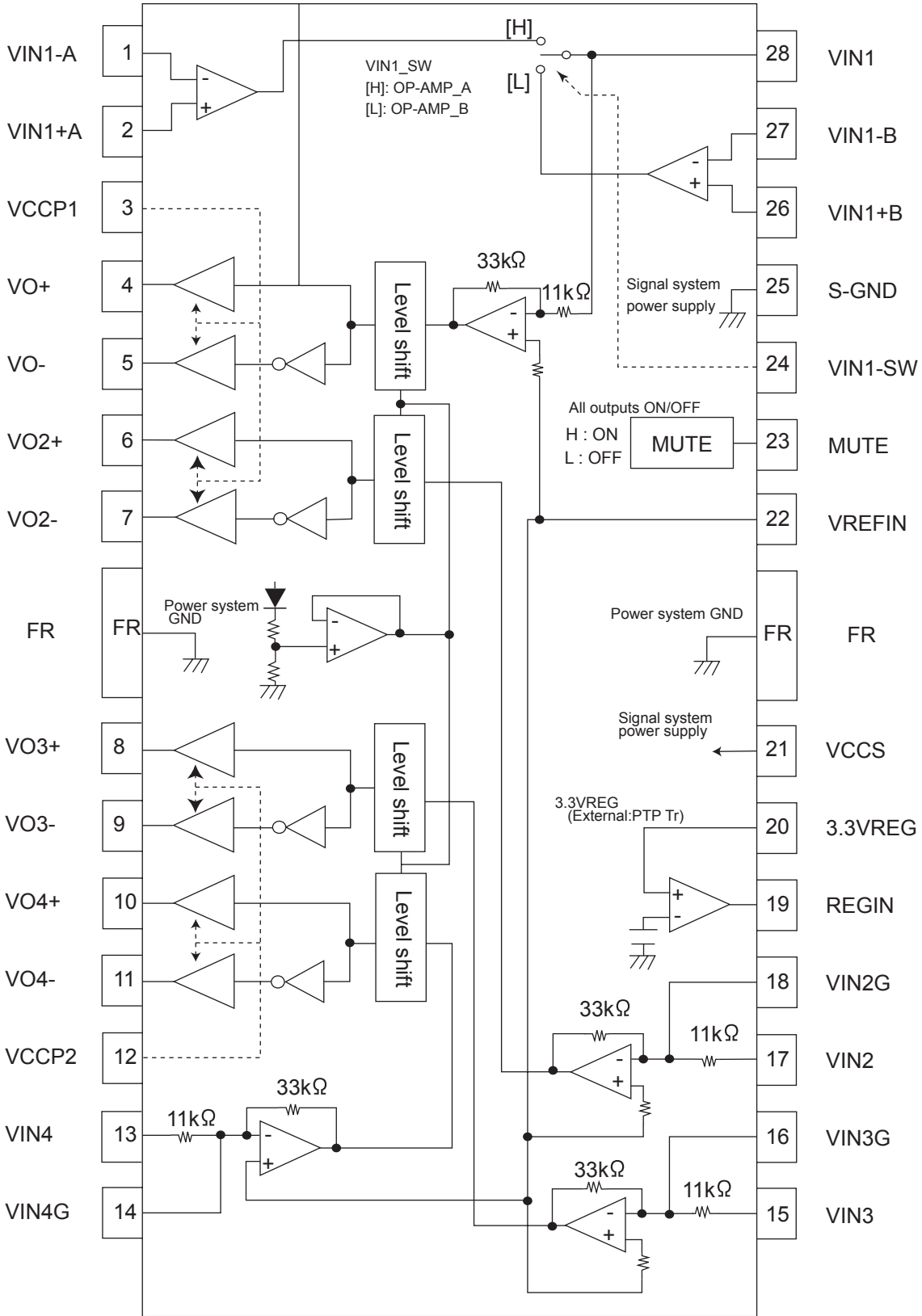


- Pin function

Pin No.	Symbol	Function
1	AC CONT1	Header of IC
2	GND1	Power GND
3	OUTFR-	Output(-) for front Rch
4	STBY	Stand by input
5	OUTFR+	Output (+) for front Rch
6	Vcc1/2	Power input
7	OUTRR-	Output (-) for rear Rch
8	GND2	Power GND
9	OUTRR+	Output (+) for rear Rch
10	VREF	Ripple filter
11	INRR	Rear Rch input
12	INFR	Front Rch input
13	SGND	Signal GND
14	INFL	Front Lch input
15	INRL	Rear Lch input
16	ONTIME	Power on time control
17	OUTRL+	Output (+) for rear Lch
18	GND3	Power GND
19	OUTRL-	Output (-) for rear Lch
20	Vcc3/4	Power input
21	OUTFL+	Output (+) for front
22	MUTE	Muting control input
23	OUTFL-	Output (-) for front
24	GND4	Power GND
25	NC	No connection

4.6 LA6579H-X (IC501) : 4-Channel bridge driver

- Pin layout & Block diagram

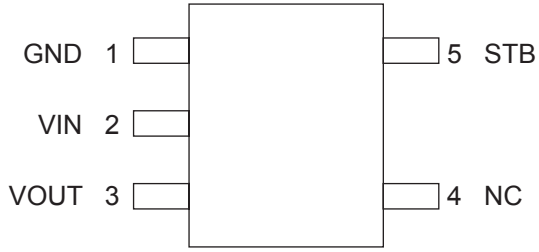


- Pin function

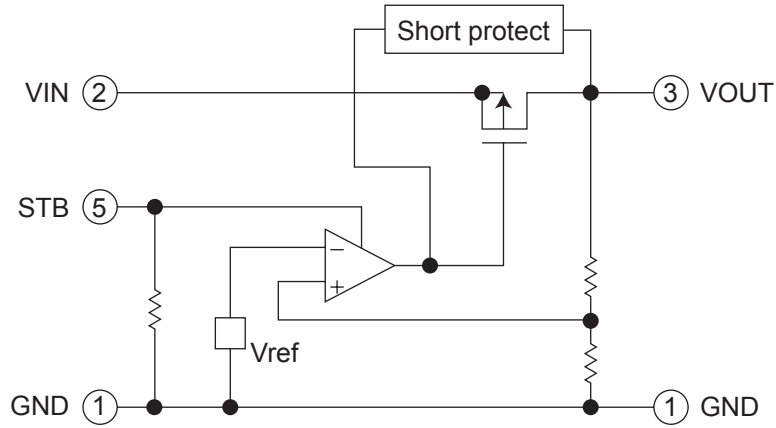
Pin No.	Symbol	Function
1	VIN1-A	CH1 input AMP_inverted input
2	VIN1+A	CH1 input AMP_non-inverted input
3	VCCP1	CH1 and CH2 power stage power supply
4	VO1+	Output pin(+)for channel 1
5	VO1-	CH1 output pin (-) for channel 1
6	VO2+	Output pin(+)for channel 2
7	VO2-	Output pin(-)for channel 2
8	VO3+	Output pin(+)for channel 3
9	VO3-	Output pin(-)for channel 3
10	VO4+	Output pin(+)for channel 4
11	VO4-	Output pin(-)for channel 4
12	VCCP2	CH3 and CH4 power stage powr supply
13	VIN4	Input pin for channel 4
14	VIN4G	Input pin for channel 4(for gain adjustment)
15	VIN3	Input pin for channel 3
16	VIN3G	Input pin for channel 3(for gain adjustment)
17	VIN2	Input pin for channel 2
18	VIN2G	Input pin for channel 2(for gain adjustment)
19	REGIN	External PNP transistor base connection
20	3.3VREG	3.3VREG output pin external PNP transistor,collector connection
21	VCCS	Signal system GND
22	VREFIN	Reference voltage application pin
23	MUTE	Output ON/OFF pin
24	VIN1_SW	CH1 input OP AMP_changeover pin
25	S_GND	Signal system GND
26	VIN1+B	CH1 AMP_B non-inverted input pin
27	VIN1-B	CH1 AMP_B inverted input pin
28	VIN1	CH1 input pin input OP_AMP output pin

4.7 NJU7241F25-X (IC461) : Regulator

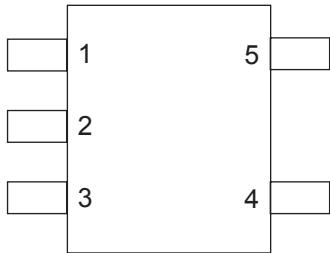
- Pin layout



- Block diagram

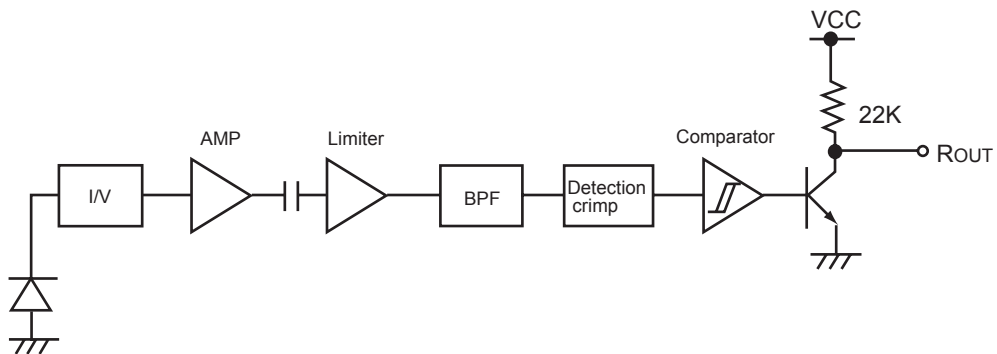


4.8 NJU7241F33-X (IC471) : Voltage regulator



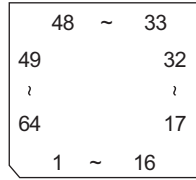
- PIN FUNCTION
1. GND
 2. VIN
 3. VOUT
 4. +NC
 5. STB

4.9 RPM7138-V4 (IC602) : Remote control receiver

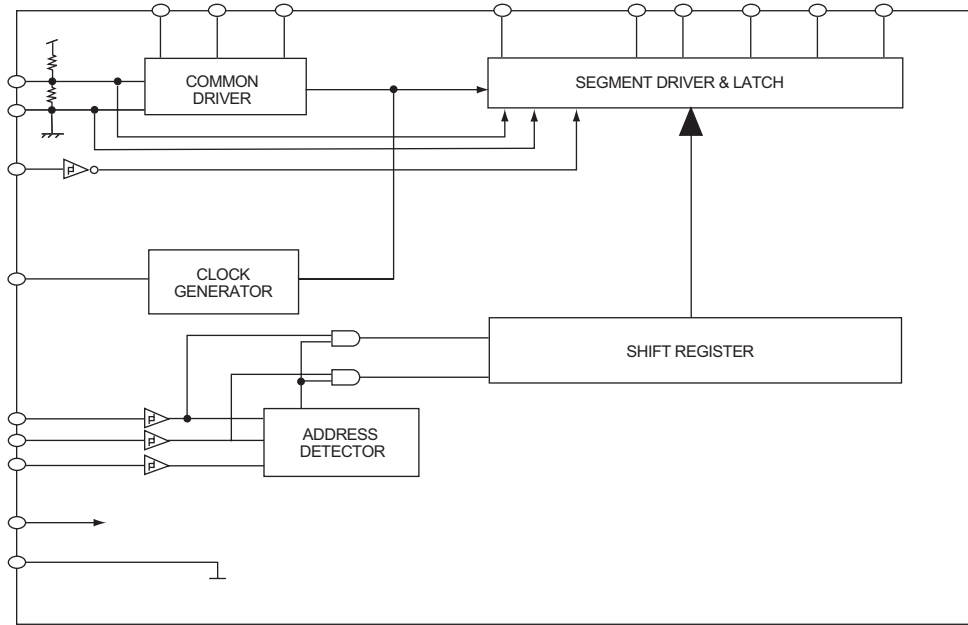


4.10 PT6523LQ (IC601) : LCD driver

- Pin layout



- Block diagram



- Pin function

Pin No.	Pin Name	I/O	Description
1~ 52	SG1 ~ SG52	O	Segment Output Pins
53~55	COM1 ~ COM3	O	Common Driver Output Pins
56	VDD	-	Power Supply
57	$\overline{\text{INH}}$	I	Display OFF Control Input Pin When this pin is "Low", the Display is forcibly turned OFF. (SG1 to SG52, COM1 to COM3 are set to "LOW"). (See Note 1) When this pin is set to "High", the Displa is ON.
58	VDD1	I	Used for the 2/3 Bias Voltage when the Bias Voltages are provided externally. Connect to VDD2 when 1/2 Bias is used.
59	VDD2	I	Used for 1/3 Bias Voltage when the Bias Voltages are provided externally. Connect to VDD1 when 1/2 Bias is used.
60	VSS	-	Ground Pin.
61	OSC	I/O	Oscillation Input /Output Pin
62	CE	I	Chip Enable Pin
63	CLK	I	Synchronization Clock
64	DI	I	Transfer Data Pin

Note 1:

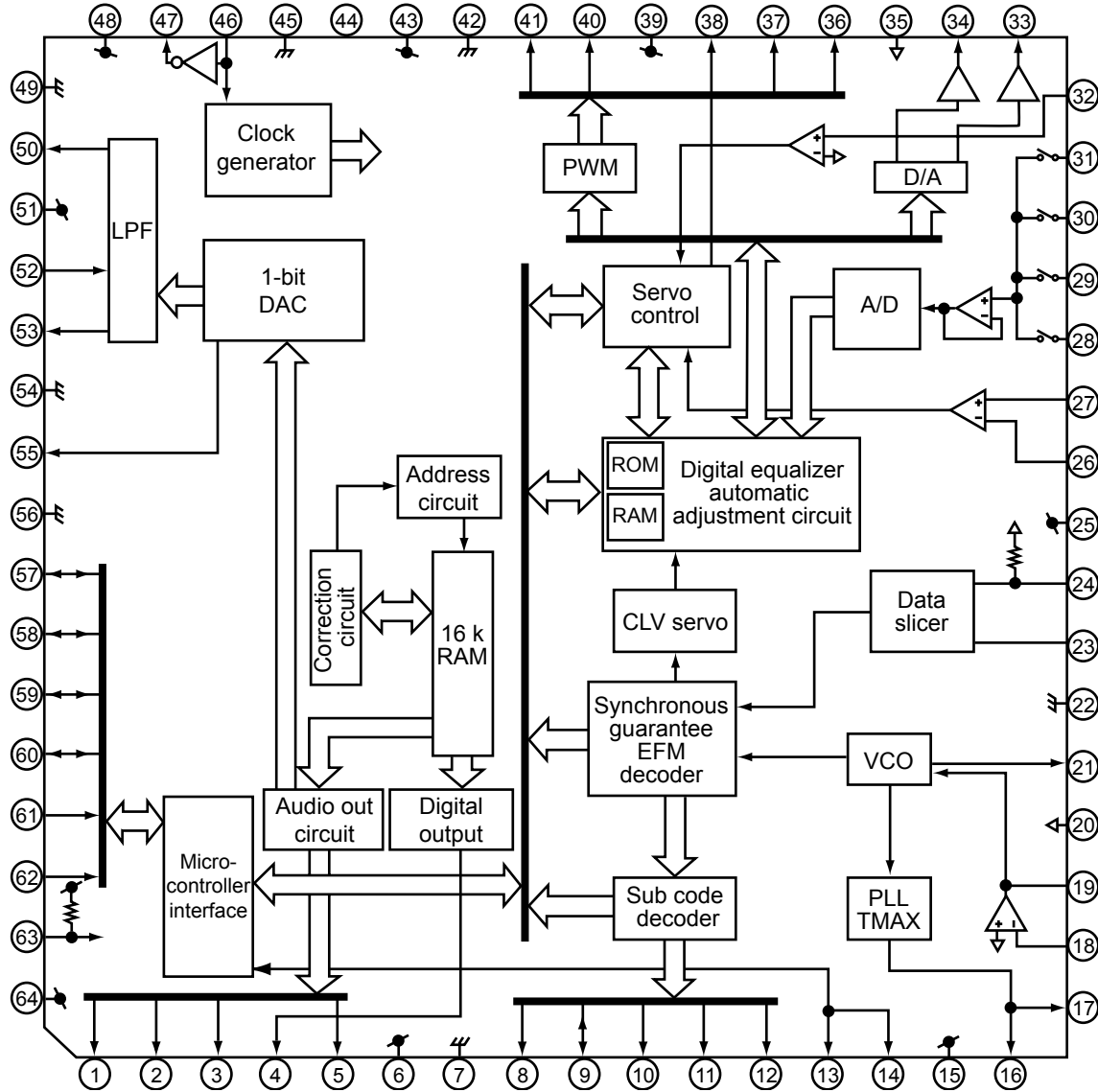
When $\overline{\text{INH}}$ = "LOW" : Serial data transfers can be performed when the display is forcibly OFF.

• Pin function

Pin No.	Symbol	I/O	Function												
1	VCC	-	3.3V power supply pin												
2	FNI	I	Main-beam amp input pin												
3	FPI	I	Main-beam amp input pin												
4	TPI	I	Sub-beam amp input pin												
5	TNI	I	Sub-beam amp input pin												
6	MDI	I	Monitor photo diode amp input pin												
7	LDO	O	Laser diode amp output pin												
8	SEL	I	APC circuit ON/OFF control signal, laser diode (LDO) control signal input or bottom/peak detection frequency change pin. <table border="1" data-bbox="662 548 1321 743"> <thead> <tr> <th>SEL</th> <th>APC circuit</th> <th>LDO</th> </tr> </thead> <tbody> <tr> <td>GND</td> <td>OFF</td> <td>Connected VCC through 1kΩ resistor</td> </tr> <tr> <td>Hiz</td> <td>ON</td> <td>Control signal output</td> </tr> <tr> <td>VCC</td> <td>ON</td> <td>Control signal output</td> </tr> </tbody> </table>	SEL	APC circuit	LDO	GND	OFF	Connected VCC through 1kΩ resistor	Hiz	ON	Control signal output	VCC	ON	Control signal output
SEL	APC circuit	LDO													
GND	OFF	Connected VCC through 1kΩ resistor													
Hiz	ON	Control signal output													
VCC	ON	Control signal output													
9	TEB	I	Tracking error balance adjustment signal input pin Adjusts TE signal balance by eliminating carrier component from PWM signal (3-state output, PWM carrier = 88.2kHz) output from TC94A14F/FA TEBC pin using RC-LPF and inputting DC. TEBC input voltage:GND~VCC												
10	TEN	I	Tracking error signal generation amp negative-phase input pin												
11	TEO	O	Tracking error signal generation amp output pin. Combining TEO signal RFRP signal with TC94A14F/FA configures tracking search system.												
12	RFDC	O	RF signal peak detection output pin												
13	GVSW	I	AGC/FE/TE amp gain change pin <table border="1" data-bbox="867 1100 1117 1295"> <thead> <tr> <th>GVSW</th> <th>Mode</th> </tr> </thead> <tbody> <tr> <td>GND</td> <td>CD-RW</td> </tr> <tr> <td>Hiz</td> <td>Normal</td> </tr> <tr> <td>VCC</td> <td></td> </tr> </tbody> </table>	GVSW	Mode	GND	CD-RW	Hiz	Normal	VCC					
GVSW	Mode														
GND	CD-RW														
Hiz	Normal														
VCC															
14	VRO	O	Reference voltage (VRO) output pin *VRO=1/2VCC When VCC=3.3V												
15	FEO	O	Focus error signal generation amp output pin												
16	FEN	I	Focus error signal generation amp negative-phase input pin												
17	RFRP	O	Signal amp output pin for track count Combining RFRP signal and TEO signal with TC94A14F/FA configures tracking search system.												
18	REIS	I	RF signal amplitude adjustment amp output pin Adjusts RF signal amplitude by eliminating carrier component from PWM signal (3-state output, PWM carrier=88.2kHz)output fromTC94A14F/14FA *RFGC pin using RC-LPF and inputting DC. *RFGC input voltage:GND~VCC												
19	RFGO	O													
20	RFGC	I													
21	AGCIN	I	RF signal amplitude adjustment amp input pin												
22	RFO	O	RF signal generation amp output pin												
23	RFI	I	RF signal generation amp input pin												
24	GND	-	GND pin												

4.12 TC94A14FA (IC541) : DSP & DAC

- Terminal layout & block diagram



- Pin function

Pin No	Symbol	I/O	Description
1	BCK	O	Bit clock output pin. 32fs/48fs or 64fs selectable by command.
2	LRCK	O	L/R channel clock output pin. "L" for L channel and "H" for R channel. Output polarity can be inverted by command.
3	AOUT	O	Audio data output pin. MSB-first or LSB-first selectable by command.
4	DOUT	O	Digital data output pin. Outputs up to double-speed playback.
5	IPF	O	Correction flag output pin. When set to "H" AOUT output cannot be corrected by C2 correction processing.
6	V _{DD3}	-	Digital 3.3V power supply voltage pin.
7	V _{SS3}	-	Digital GND pin.
8	SBOK	O	Subcode Q data CRCC result output pin. "H" level when result is OK.
9	CLCK	O	Subcode P-W data read I/O pin. I/O polarity selectable by command.
10	DATA	O	Subcode P-W data output pin.
11	SFSY	O	Playback frame sync signal output pin.
12	SBSY	O	Subcode block sync signal output pin. "H" level at S1 when subcode sync is detected.
13	HSD	I/O	General-purpose input / output pins. Input port at reset.
14	UHSD	I/O	General-purpose input / output pins. Input port at reset.
15	PV _{DD3}	-	PLL-only 3.3V power supply voltage pin.
16	PDO	O	EFM and PLCK phase difference signal output pin.

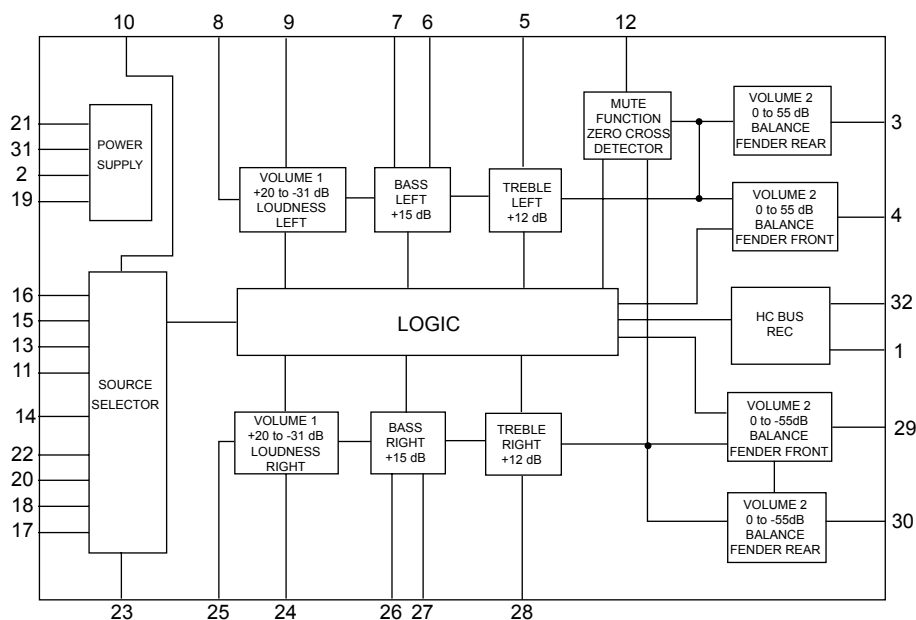
Pin No	Symbol	I/O	Description	
17	TMAX	O	TMAX detection result output pin.	
			TMAX Detection Result	TMAX Output
			Longer than fixed period	"PVDD3"
			Within fixed period	"HiZ"
Shorter than fixed period	"AVSS3"			
18	LPFN	I	Inverted input pin for PLL LPF amp.	
19	LPFO	O	Output pin for PLL LPF amp.	
20	PVREF	-	PLL-only VREF pin.	
21	VCOF	O	VCO filter pin.	
22	AVSS3	-	Analog GND pin.	
23	SLCO	O	DAC output pin for data slice level generation.	
24	RFI	I	RF signal input pin. Zin selectable by command.	
25	AVDD3	-	Analog 3.3V power supply voltage pin.	
26	RFCT	I	RFRP signal center level input pin.	
27	RFZI	I	RFRP signal zero-cross input pin.	
28	RFRP	I	RF ripple signal input pin.	
29	FEI	I	Focus error signal input pin.	
30	SBAD	I	Sub-beam adder signal input pin.	
31	TEI	I	Tracking error input pin. Inputs when tracking servo is on.	
32	TEZI	I	Tracking error signal zero-cross input pin.	
33	FOO	O	Focus equalizer output pin.	
34	TRO	O	Tracking equalizer output pin.	
35	VREF	-	Analog reference power supply voltage pin.	
36	RFGC	O	RF amplitude adjustment control signal output pin.	
37	TEBC	O	Tracking balance control signal output pin.	
38	SEL	O	APC circuit ON/OFF signal output pin. At laser on, high impedance with UHS="L", H output with UHS="H".	
39	AVDD3	-	Analog 3.3V power supply voltage pin.	
40	FMO	O	Feed equalizer output pin.	
41	DMO	O	Disc equalizer output pin.	
42	VSS3	-	Digital GND pin.	
43	VDD3	-	Digital 3.3V power supply voltage pin.	
44	TESIN	I	Test input pin. Normally, fixed to "L".	
45	XVSS3	-	System clock oscillator GND pin.	
46	XI	I	System clock oscillator input pin.	
47	XO	O	System clock oscillator output pin.	
48	XVDD3	-	System clock oscillator 3.3V power supply voltage pin.	
49	DVSS3R	-	DA converter GND pin.	
50	RO	O	R-channel data forward output pin.	
51	DVDD3	-	DA converter 3.3V power supply pin.	
52	DVR	-	Reference voltage pin.	
53	LO	O	L-channel data forward output pin.	
54	DVSS3L	-	DA converter GND pin.	
55	ZDET	O	1 bit DA converter zero detection flag output pin.	
56	VSS5	-	Microcontroller interface GND pin.	
57	BUS0			
58	BUS1			
59	BUS2	I/O	Microcontroller interface data I/O pins.	
60	BUS3			
61	BUCK	I	Microcontroller interface clock input pin.	
62	/CCE	I	Microcontroller interface chip enable signal input pin. At "L", BUS0 to BUS3 are active.	
63	/RST	I	Reset signal input pin. At reset, "L".	
64	VDD5	-	Microcontroller interface 5V power supply pin.	

4.13 TEA6320T-X (IC161) : E.volume

• Pin layout

SDA	1	32	SCL
GND	2	31	VCC
OUTLR	3	30	OUTRR
OUTLF	4	29	OUTRF
TL	5	28	TR
B2L	6	27	B2R
B1L	7	26	B1R
IVL	8	25	IVR
ILL	9	24	ILR
QSL	10	23	QSR
IDL	11	22	IDR
MUTE	12	21	Vref
ICL	13	20	ICR
IMD	14	19	CAP
IBL	15	18	IBR
IAL	16	17	IAR

• Block diagram



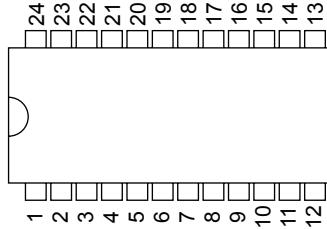
• Pin functions

Pin No.	Symbol	I/O	Functions
1	SDA	I/O	Serial data input/output.
2	GND	-	Ground.
3	OUTLR	O	output left rear.
4	OUTLF	O	output left front.
5	TL	I	Treble control capacitor left channel or input from an external equalizer.
6	B2L	-	Bass control capacitor left channel or output to an external equalizer.
7	B1L	-	Bass control capacitor left channel.
8	IVL	I	Input volume 1. left control part.
9	ILL	I	Input loudness. left control part.
10	QSL	O	Output source selector. left channel.
11	IDL	-	Not used
12	MUTE	-	Not used
13	ICL	I	Input C left source.
14	IMO	-	Not used
15	IBL	I	Input B left source.
16	IAL	I	Input A left source.

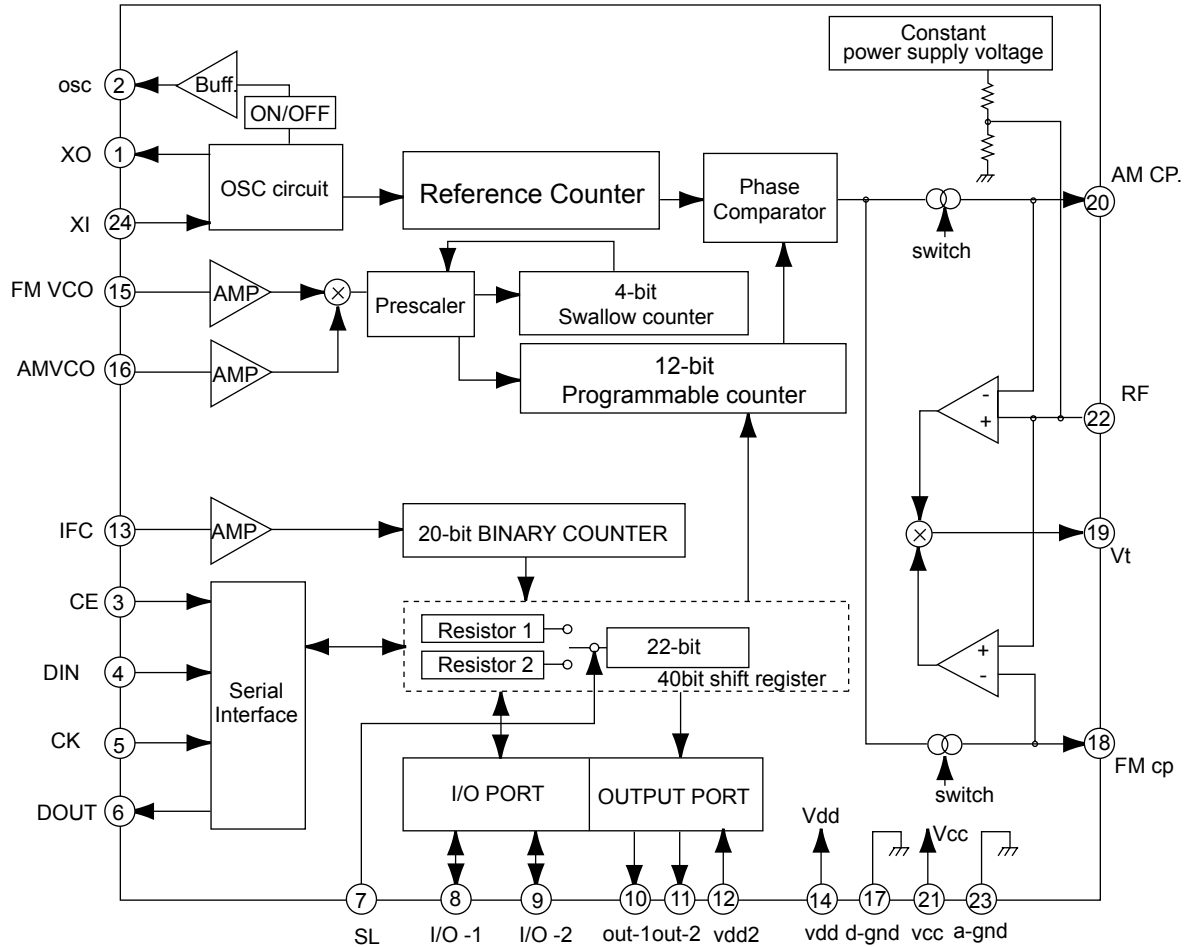
Pin No.	Symbol	I/O	Functions
17	IAR	I	Input A right source.
18	IBR	I	Input B right source.
19	CAP	-	Electronic filtering for supply.
20	ICR	I	Input C right source.
21	Vref	-	Reference voltage (0.5Vcc)
22	IDR	-	Not used
23	QSR	O	Output source selector right channel.
24	ILR	I	Input loudness right channel.
25	IVR	I	Input volume 1. right control part.
26	B1R	-	Bass control capacitor right channel
27	B2R	O	Bass control capacitor right channel or output to an external equalizer.
28	TR	I	Treble control capacitor right channel or input from an external equalizer.
29	OUTRF	O	Output right front.
30	OUTRR	O	Output right rear.
31	Vcc	-	Supply voltage.
32	SCL	I	Serial clock input.

4.14 TB2118F-X (IC31) : PLL

• Terminal Layout



• Block diagram

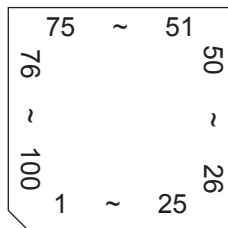


• Pin Function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XOUT	O	Crystal oscillator pin	13	IFC	I	IF signal input
2	OSC	-	Non connect	14	VDD	-	Power pins for digital block
3	CE	I	Chip enable input	15	FMIN	I	FM band local signal input
4	DI	I	Serial data input	16	AMIN	I	AM band local signal input
5	CK	I	Clock input	17	DGND	-	Connect to GND (for digital circuit)
6	DOUT	O	Serial data output	18	FMCP	O	Charge pump output for FM
7	SR	O	Register control pin	19	Vt	-	Tuning voltage biased to 2.5V.
8	I/O1	I/O	I/O ports	20	AMCP	O	Charge pump output for AM
9	I/O2	I/O	I/O ports	21	VCC	-	Power pins for analog block
10	OUT1	-	Non connect	22	RF	I	Ripple filter connecting pin
11	OUT2	-	Non connect	23	AGND	-	Connect to GND (for analog circuit)
12	VDD2	-	Single power supply for REF. frequency block	24	XIN	I	Crystal oscillator pin

4.15 UPD784215AGC214 (IC701) : CPU

- Pin layout



- Pin function

Pin No	Symbol	I/O	Function
1	(CDRESET)	-	CD reset signal
2	(CDMUTE)	-	CD mute signal
3	SW2	I	CD mecha switch 2
4	PSW	I	Power switch
5	LM0	O	Loading/Eject motor control (Loading side)
6	MOTORSEL	O	Loading/Eject motor control (Eject side)
7	NC	-	Non connect
8	ANTCTRL	O	Antenna remote control
9	VDD	-	Micon power supply
10	X2	-	Not use
11	X1	-	Not use
12	VSS	-	Connect to GND
13	XT2	-	Not use
14	XT1	-	Not use
15	RESET	I	Reset detection
16	SW1	I	CD mecha switch 1
17	BUSINT	I	J-BUS interruption
18	PS2	I	Power save 2
19~21	NC	-	Non connect
22	REMOCON	I	Remocon signal input
23	AVDD	-	A/D converter power supply
24	AVREF0	-	A/D converter reference voltage
25	VOL1	I	Volume encoder pulse input 1
26	VOL2	I	Volume encoder pulse input 2
27	KEY0	I	Key input 0
28	KEY1	I	Key input 1
29	KEY2	I	Key input 2
30	LEVEL	I	Level meter input
31	NC	-	Non connect
32	SM	I	S.METER input
33	AVSS	-	Connect to GND
34,35	NC	-	Non connect
36	AVREF	-	Reference voltage
37	BUSSI	I	J-BUS serial data input
38	BUSO	O	J-BUS serial data output
39	BUSCK	I/O	J-BUS serial clock input/output
40	BUSI/O	O	J-BUS serial I/O selection output
41	LCDDA	O	Data output for LCD driver
42	LCDCK	O	Clock output for LCD driver
43	LCDCE	O	Chip enable for LCD driver

Pin No	Symbol	I/O	Function
44~48	NC	-	Non connect
49	CSN	O	Chip select output for DAC
50	CCLK	O	Clock output for DAC
51	CDTI	O	Control data output for DAC
52	PDN	O	Power down signal output for DAC
53	SD/ST	I	Station detection/Stereo signal detection
54	MP3CLK	O	Clock output for MP3 decoder
55	MONO	O	Monoral signal selection output
56	MP3DIN	I	Data input for MP3 decoder
57	MP3DOUT	O	Data output for MP3 decoder
58	MP3STBY	O	Standby signal output for MP3 decoder
59	MP3RESET	O	Reset signal output for MP3 decoder
60	MP3REQ	I	Request signal input from MP3 decoder
61	DETACH	I	Detach detect input
62	NC	-	Non connect
63	SEEK/STOP	O	Auto seek and Stop selecting output
64	IFCCONT	O	IFC control signal output
65	FM/AM	O	FM/AM band select output
66	PLLCE	O	Chip enable output for PLL
67	PLLDA	O	Data output for PLL
68	PLLCLK	O	Clock output for PLL
69	PLLDI	I	Data input from PLL
70	(TELMUTE)	I	Telephone muting detection input
71	NC	-	Non connect
72	VSS	-	Connect to GND
73	VSDIMIN	I	Dimmer detection input
74	PS1	I	Power save 1
75	POWER	O	Power ON/OFF control output
76	CDON	O	CD power supply control output
77	MUTE	O	Muting output
78	DIMOUT	O	Dimmer output
79~80	NC	-	Non connect
81	VDD	-	Micon power supply
82	NC	-	Non connect
83	VOLDA	O	Data output for E.volume
84	VOLCLK	O	Clock output for E.vol
85~89	NC	-	Non connect
90	STAGE	I	Version select
91	BUCK	O	Clock output for CD LSI
92	CCE	O	Chip enable output for CD LSI
93	RST	O	Reset output for CD LSI
94	TEST	-	For writing flash memory
95	BUS0	I/O	Data input/output 0 for CD LSI
96	BUS1	I/O	Data input/output 1 for CD LSI
97	BUS2	I/O	Data input/output 2 for CD LSI
98	BUS3	I/O	Data input/output 3 for CD LSI
99	NC	-	Non connect
100	CDRW	O	RF gain control



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(No.49799)

PARTS LIST

[KD-S890]

* All printed circuit boards and its assemblies are not available as service parts.

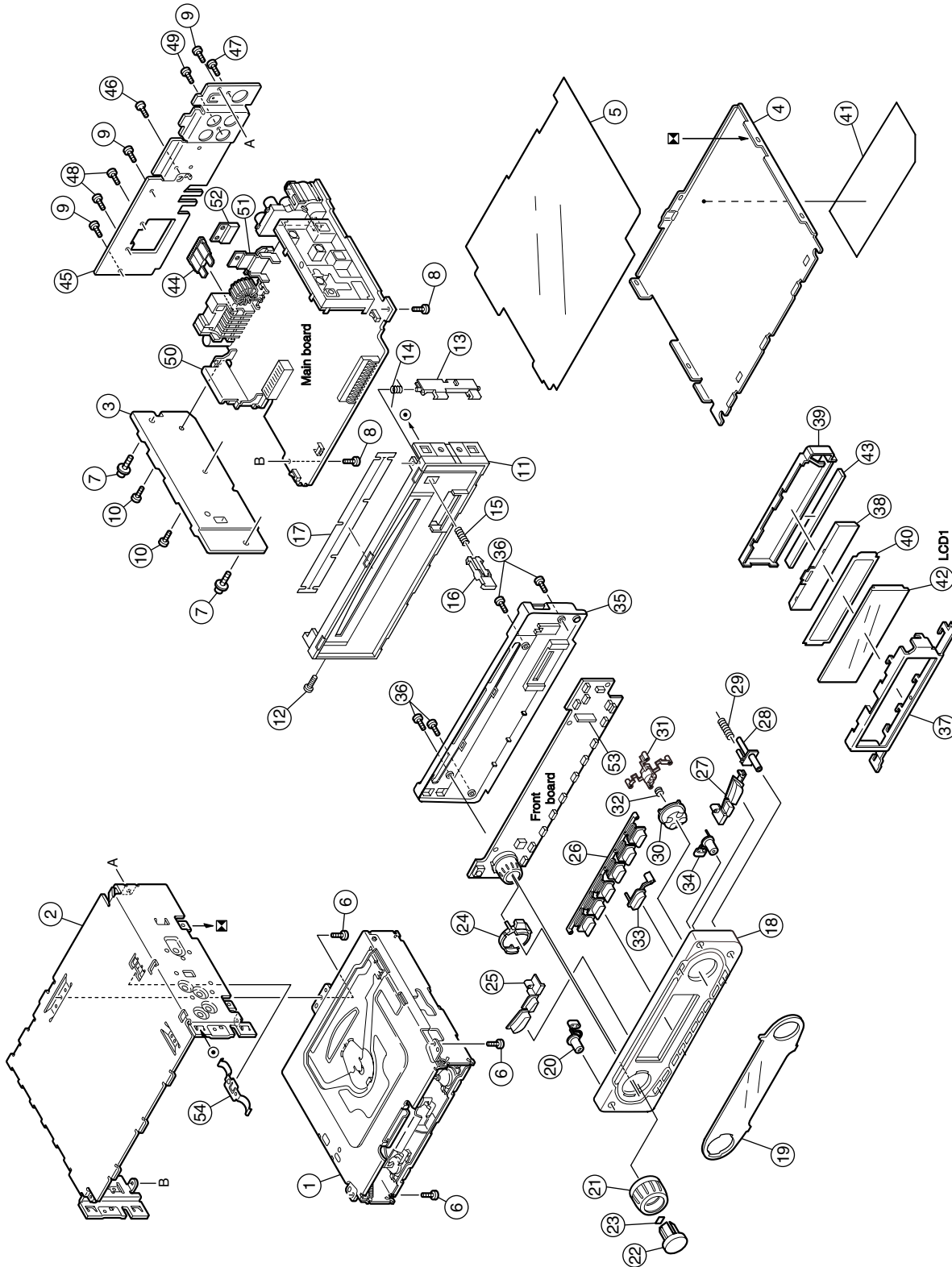
Area suffix
J ----- Northern America

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CD mechanism assembly and parts list (Block No.MB)	3- 5
Electrical parts list (Block No.01~02)	3- 8
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Exploded view of general assembly and parts list

Block No. M 1 M M



■ Parts list (General assembly)

Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	-----	CD MECHA	1		
	2	GE10043-210A	TOP CHASSIS	1		
	3	GE30568-006A	HEAT SINK	1		
	4	GE30393-002A	BOTTOM COVER	1		
	5	FSMA3004-203	INSULATOR	1		
	6	QYSDST2604Z	SCREW	3	CHASIS+CD MECHA	
	7	FSKZ4005-001	SCREW	2	CHASIS+HEAT SIN	
	8	QYSDST2606Z	SCREW	2	CHASSIS+MAIN PW	
	9	QYSDST2604Z	SCREW	3	CHASSIS+REAR BK	
	10	QYSDST2612Z	SCREW	2	HEAT SINK+IC BK	
	11	GE10056-001A	FRONT CHASSIS	1		
	12	QYSDST2004M	SCREW	1		
	13	GE30583-001A	LOCK LEVER	1		
	14	FSKW4005-003	TORSION SPRING	1	FOR LOCK LEVER	
	15	FSKW3002-015	COMP.SPRING	1		
	16	FSXP3026-002	RLS KNOB	1		
	17	GE40140-001A	BLIND	1		
	18	GE10057-001A	FRONT PANEL	1		
	19	GE30802-001A	FINDER ASSY	1		
	20	GE30105-002B	POWER BUTTON	1		
	21	GE30815-002A	KNOB	1		
	22	GE30816-002A	SEL BUTTON	1		
	23	FSYH4036-053	SHEET	1		
	24	GE30817-002A	RIM LENS	1		
	25	GE30811-002A	PUSH BUTTON (L)	1		
	26	GE20143-001A	PRESET BUTTON	1		
	27	GE30814-007A	D FUNC BTN (D)	1		
	28	GE30807-001A	DETACH BUTTON	1		
	29	FSKW3002-012	COMP. SPRING	1	DETACH BUTTON	
	30	GE30818-001A	NAVIGATION BTN	1		
	31	GE30819-001A	NAVIGATION BASE	1		
	32	GE40127-002A	COMP.SPRING	1		
	33	GE30813-001A	D FUNC BTN (U)	1		
	34	GE30803-001A	EJECT BUTTON	1		
	35	GE10058-001A	REAR COVER	1		
	36	VKZ4777-001	MINI SCREW	4		
	37	GE30804-002A	LCD CASE	1		
	38	GE30805-001A	LCD LENS	1		
	39	GE30806-001A	LENS CASE	1		
	40	GE40150-005A	LIGHTING SHEET	1		
	41	GE30717-001A	NAME PLATE	1		
	42	QLD0256-001	LCD MODULE	1		
	43	QNZ0442-001	LCD CONNECTOR	1		
⚠	44	QMFZ047-150-T	FUSE	1		
	45	GE30382-019A	REAR BRACKET	1		
	46	QYSDST2606Z	SCREW	1	REAR BKT+REG BK	
	47	QYSDST2606Z	SCREW	1	REAR BKT+ANT JA	
	48	QYSDSF2606Z	SCREW	2	REAR BKT+16P CO	

■ Parts list (General assembly)

Block No. M1MM

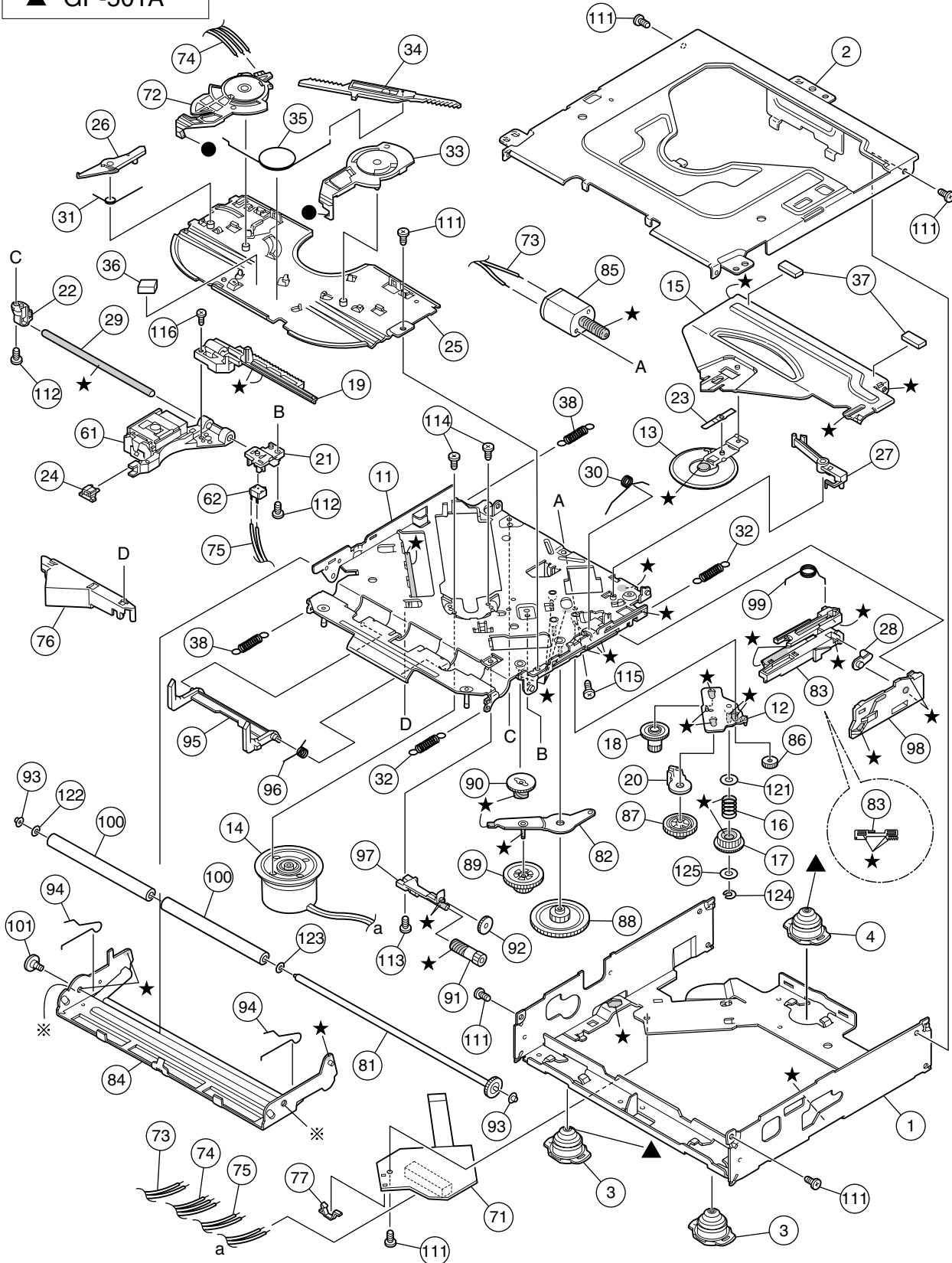
△	Item	Parts number	Parts name	Q'ty	Description	Area
	49	QYSDSF2606Z	SCREW	1	REAR BKT+PIN JA	
	50	GE40136-001A	IC BRACKET	1		
	51	GE40103-002A	REG BRACKET	1		
	52	GE40107-002A	HEAT SINK	1		
	53	GE30854-001A	LED HOLDER	1		
	54	GE40135-001A	EARTH PLATE	1		

CD mechanism assembly and parts list

Block No. M B M M

TN-2001-1011

- Grease**
- ★ TNG-87
 - ※ GP-501MK
 - CFD-005Z
 - ▲ GP-501A



■ Parts list (CD mechanism)

Block No. MBMM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	1	30320101T	FRAME	1		
	2	30320102T	TOP COVER	1		
	3	30320115T	DANPER F	2		
	4	30320116T	DANPER R	1		
	11	303205505T	CHASSIS RIVET	1		
	12	303205503T	CHANGE P. RVT A	1		
	13	303205301T	CLAMPER ASS'Y	1		
	14	303205302T	SPINDLE MOTOR A	1	MDN-3BL3LSBS	
	15	30320502T	CLAMPER ARM	1		
	16	30320503T	CHANGE GEAR SPG	1		
	17	30320505T	CHANGE GEAR 2	1		
	18	30320506T	FEED GEAR	1		
	19	30320507T	FEED RACK	1		
	20	30320509T	CHANGE LOCK RAR	1		
	21	30320510T	FEED SW HOLDER	1		
	22	30320511T	PU SHAFT HOLDER	1		
	23	30320513T	CLAMPER SUB SPG	1		
	24	30320514T	FD SUB HOLDER	1		
	25	30320518T	TOP PLATE	1		
	26	30320519T	SELECT LOCK ARM	1		
	27	30320520T	TRIGGER ARM	1		
	28	30320521T	SLIDE HOOK	1		
	29	30320522T	PU SHAFT	1		
	30	30320525T	CLAMPER ARM SPG	1		
	31	30320526T	SELECT L ARM SP	1		
	32	30320538T	SUSPENSION SP R	1		
	33	30320529T	SELECT ARM R	1		
	34	30320530T	LINK PLATE	1		
	35	30320531T	LINK PLATE SPG	1		
	36	30320523T	CUSHION F	1		
	37	30320524T	CUSHION R	2		
	38	30320539T	SUSPENSION SP L	2		
	61	69011614T	PICKUP OPT-725	1		
	62	64180406T	DET SW ESE22	1	ESE22MH56	
	71	303210301T	CONN PWB ASS'Y	1		
	72	30321002T	MODE SW	1	MMS000690ZMB0	
	73	30321003T	LOAD MOTOR WIRE	1		
	74	30321005T	MODE SW WIRE	1		
	75	30321009T	SL WIRE	1		
	76	30321011T	WIRE HOLDER	1		
	77	19501403T	WIRE CLAMPER	1		
	81	303211301T	ROLLER SHAFT AS	1		
	82	303211501T	L GEAR PLATE RV	1		
	83	303211302T	LOADING PLATE A	1		
	84	303211502T	LOCK ARM RV ASS	1		
	85	303211303T	L/F MOTOR ASS'Y	1	FF030PK-10180	
	86	30321101T	LOADING GEAR 1	1		
	87	30321102T	LOADING GEAR 2	1		

■ Parts list (CD mechanism)
Block No. MBMM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	88	30321103T	LOADING GEAR 3	1		
	89	30321104T	LOADING GEAR 4	1		
	90	30321105T	LOADING GEAR 5	1		
	91	30321106T	LOADING GEAR 6	1		
	92	30321107T	LOADING GEAR 7	1		
	93	30321111T	ROLLER GUIDE	2		
	94	30321114T	ROLLER GUIDE SP	2		
	95	30321116T	DISC STOPPER AR	1		
	96	30321117T	DISC ST ARM SPG	1		
	97	30321118T	LD GEAR BRACKET	1		
	98	30321125T	L SIDE PLATE	1		
	99	30321131T	LOAD PLATE SPG	1		
	100	30321133T	LDG ROLLER	2		
	101	18211223T	COLLAR SCREW	1		
	111	9P0420031T	SCREW M2X3	6	TAP 2X3	
	112	9P0420041T	SCREW(M2 X 4)	2	TAP 2X4	
	113	9B0320041T	SCREW(M2 X 4)	1	BIND 2X4	
	114	9C0117183T	SCREW	2	SCR M1.7X1.8	
	115	9C0120203T	SCREW	1	SCR M2X2	
	116	9C0317503T	SCREW	1	T SCR M1.7X5	
	121	9W0130170T	PW 3.5X8X0.3	1		
	122	9W0513060T	HL WASHER	1	HLW1.85X5X0.13	
	123	9W0710070T	L WASHER	1	LW3.1X6X0.1	
	124	9E0100152T	E RING	1	S 1.5	
	125	9W0113020T	PW 2.1X4X0.13	1		

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
C 1	QEKJ1CM-226Z	E CAPACITOR	22MF 20% 16V		
C 2	NCB31EK-473X	C CAPACITOR			
C 3	NCB31EK-103X	C CAPACITOR			
C 4	QEKJ1AM-227Z	E CAPACITOR	220MF 20% 10V		
C 5	QERF1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 6	NCB31HK-103X	C CAPACITOR			
C 9	NCB31HK-391X	C CAPACITOR			
C 31	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 32	NDC31HJ-470X	C CAPACITOR			
C 33	QEKJ0JM-476Z	E CAPACITOR	47MF 20% 6.3V		
C 34	NCB31EK-473X	C CAPACITOR			
C 35	NDC31HJ-100X	C CAPACITOR			
C 36	NDC31HJ-7R0X	C CAPACITOR			
C 37	NDC31HJ-100X	C CAPACITOR			
C 38	NCB31HK-102X	C CAPACITOR			
C 39	NCB31HK-102X	C CAPACITOR			
C 40	QEKJ1CM-106Z	E CAPACITOR	10MF 20% 16V		
C 41	NCB31EK-473X	C CAPACITOR			
C 42	NCB31HK-103X	C CAPACITOR			
C 43	QFV61HJ-473Z	MF CAPACITOR	.047MF 5% 50V		
C 44	NCB31HK-103X	C CAPACITOR			
C 45	NCB31HK-272X	C CAPACITOR			
C 46	NCB31HK-103X	C CAPACITOR			
C 47	NCB31HK-103X	C CAPACITOR			
C 48	NCB31EK-473X	C CAPACITOR			
C 49	NCB31HK-102X	C CAPACITOR			
C 50	NCS31HJ-101X	C CAPACITOR			
C 51	NCS31HJ-331X	C CAPACITOR			
C 81	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 84	NCB31HK-153X	C CAPACITOR			
C 85	NCB31HK-153X	C CAPACITOR			
C 91	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 94	NCB31HK-153X	C CAPACITOR			
C 95	NCB31HK-153X	C CAPACITOR			
C 161	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 162	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 164	NCB31HK-822X	C CAPACITOR			
C 165	NCB21CK-184X	C CAPACITOR			
C 166	NCB21CK-224X	C CAPACITOR			
C 167	NCB31EK-333X	C CAPACITOR			
C 168	NCB31HK-562X	C CAPACITOR			
C 169	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		
C 170	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		
C 171	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 172	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 174	NCB31HK-822X	C CAPACITOR			
C 175	NCB21CK-184X	C CAPACITOR			
C 176	NCB21CK-224X	C CAPACITOR			
C 177	NCB31EK-333X	C CAPACITOR			
C 178	NCB31HK-562X	C CAPACITOR			
C 179	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		
C 180	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		
C 191	QEKJ1CM-476Z	E CAPACITOR	47MF 20% 16V		
C 192	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 193	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 194	NCB31EK-823X	C CAPACITOR			
C 241	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 242	QEKJ1CM-226Z	E CAPACITOR	22MF 20% 16V		
C 243	NCB31EK-473X	C CAPACITOR			
C 244	QEKJ1HM-224Z	E CAPACITOR	.22MF 20% 50V		
C 301	QFV61HJ-334Z	MF CAPACITOR	.33MF 5% 50V		
C 302	QFV61HJ-334Z	MF CAPACITOR	.33MF 5% 50V		
C 303	NCS31HJ-391X	C CAPACITOR			
C 304	NCS31HJ-391X	C CAPACITOR			
C 307	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 308	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		

△	Item	Parts number	Parts name	Remarks	Area
C 311	QFV61HJ-334Z	MF CAPACITOR	.33MF 5% 50V		
C 312	QFV61HJ-334Z	MF CAPACITOR	.33MF 5% 50V		
C 313	NCS31HJ-391X	C CAPACITOR			
C 314	NCS31HJ-391X	C CAPACITOR			
C 315	QEKJ1HM-225Z	E CAPACITOR	2.2MF 20% 50V		
C 316	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		
C 317	QEKJ1CM-476Z	E CAPACITOR	47MF 20% 16V		
C 318	QEKJ1CM-226Z	E CAPACITOR	22MF 20% 16V		
C 319	NCB31EK-223X	C CAPACITOR			
C 320	NCB31EK-223X	C CAPACITOR			
C 321	NCB31EK-473X	C CAPACITOR			
C 322	NCB31EK-104X	C CAPACITOR			
C 323	NCB31EK-104X	C CAPACITOR			
C 324	NCB31EK-104X	C CAPACITOR			
C 325	NCB31EK-104X	C CAPACITOR			
C 341	NCB31EK-473X	C CAPACITOR			
C 401	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		
C 402	NCB31HK-103X	C CAPACITOR			
C 403	NCB31HK-103X	C CAPACITOR			
C 404	NCB31HK-103X	C CAPACITOR			
C 406	NCB31EK-104X	C CAPACITOR			
C 408	NCB31HK-103X	C CAPACITOR			
C 409	NCB31EK-104X	C CAPACITOR			
C 411	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 412	NCB31HK-103X	C CAPACITOR			
C 413	NCB31AK-334X	C CAPACITOR			
C 414	NCB31EK-273X	C CAPACITOR			
C 415	NCB31HK-103X	C CAPACITOR			
C 416	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 417	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 418	NCB31HK-103X	C CAPACITOR			
C 419	NDC31HJ-220X	C CAPACITOR			
C 420	NDC31HJ-220X	C CAPACITOR			
C 421	NCB31HK-103X	C CAPACITOR			
C 422	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 427	NCB31HK-221X	C CAPACITOR			
C 430	NCB31HK-103X	C CAPACITOR			
C 440	NCB31HK-103X	C CAPACITOR			
C 461	NCB31EK-104X	C CAPACITOR			
C 462	QEKJ0JM-107Z	E CAPACITOR	100MF 20% 6.3V		
C 463	QEKJ0JM-107Z	E CAPACITOR	100MF 20% 6.3V		
C 464	NCB31EK-104X	C CAPACITOR			
C 471	NCB31EK-104X	C CAPACITOR			
C 472	NCB31HK-103X	C CAPACITOR			
C 473	QEKJ0JM-227Z	E CAPACITOR	220MF 20% 6.3V		
C 474	QEKJ0JM-227Z	E CAPACITOR	220MF 20% 6.3V		
C 481	QERF1AM-476Z	E CAPACITOR	47MF 20% 10V		
C 482	NCB31EK-104X	C CAPACITOR			
C 483	NCB31EK-104X	C CAPACITOR			
C 501	QERF1AM-476Z	E CAPACITOR	47MF 20% 10V		
C 502	NCB31HK-103X	C CAPACITOR			
C 503	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 504	NCB31EK-473X	C CAPACITOR			
C 505	NCB31EK-473X	C CAPACITOR			
C 506	NCB31EK-473X	C CAPACITOR			
C 507	NCB31EK-473X	C CAPACITOR			
C 521	NCB31HK-103X	C CAPACITOR			
C 522	NCB31HK-103X	C CAPACITOR			
C 523	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 524	NCB31HK-103X	C CAPACITOR			
C 525	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 527	NCB31HK-682X	C CAPACITOR			
C 528	NCB31HK-103X	C CAPACITOR			
C 529	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		
C 530	NCB31EK-104X	C CAPACITOR			
C 531	NCB31EK-104X	C CAPACITOR			

■ Electrical parts list (Main board)

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Item	Parts number	Parts name	Remarks	Area	Item	Parts number	Parts name	Remarks	Area
C 532	NCS31HJ-820X	C CAPACITOR			C 782	NCB31EK-823X	C CAPACITOR		
C 533	NCB31HK-103X	C CAPACITOR			C 784	QEKJ1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 534	NDC31HJ-5R0X	C CAPACITOR			C 901	QEZ0622-338	E CAPACITOR	3300MF	
C 541	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		C 902	QEKJ1HM-225Z	E CAPACITOR	2.2MF 20% 50V	
C 542	NCB31HK-103X	C CAPACITOR			C 903	QEKJ1CM-476Z	E CAPACITOR	47MF 20% 16V	
C 543	QEKJ1HM-105Z	E CAPACITOR	1.0MF 20% 50V		C 904	QEKJ1CM-106Z	E CAPACITOR	10MF 20% 16V	
C 544	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		C 905	QEKJ1CM-476Z	E CAPACITOR	47MF 20% 16V	
C 545	NCB31HK-103X	C CAPACITOR			C 906	NCB31HK-103X	C CAPACITOR		
C 546	NDC31HJ-470X	C CAPACITOR			C 907	QEKJ1AM-227Z	E CAPACITOR	220MF 20% 10V	
C 547	NCB31HK-153X	C CAPACITOR			C 908	QEKJ1AM-227Z	E CAPACITOR	220MF 20% 10V	
C 548	NCB31HK-103X	C CAPACITOR			C 909	QEKJ1AM-227Z	E CAPACITOR	220MF 20% 10V	
C 549	NCB31HK-272X	C CAPACITOR			C 910	QEKJ1CM-476Z	E CAPACITOR	47MF 20% 16V	
C 550	NCB31HK-103X	C CAPACITOR			C 911	NCB31CK-104X	C CAPACITOR		
C 551	NCB31EK-333X	C CAPACITOR			C 912	NCB31HK-103X	C CAPACITOR		
C 552	NCB31EK-333X	C CAPACITOR			C 913	QEKJ1CM-106Z	E CAPACITOR	10MF 20% 16V	
C 553	NCB31EK-473X	C CAPACITOR			C 914	QEKJ1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 554	NCB31EK-473X	C CAPACITOR			C 915	NCB31CK-104X	C CAPACITOR		
C 555	NCB31EK-473X	C CAPACITOR			C 919	QEKJ1CM-106Z	E CAPACITOR	10MF 20% 16V	
C 556	NCB31HK-471X	C CAPACITOR			C 920	NCB31HK-102X	C CAPACITOR		
C 557	NCB31HK-471X	C CAPACITOR			C 961	NCS31HJ-101X	C CAPACITOR		
C 558	NCB31EK-473X	C CAPACITOR			C 962	NCS31HJ-101X	C CAPACITOR		
C 559	NCB31EK-473X	C CAPACITOR			C 963	NCS31HJ-101X	C CAPACITOR		
C 560	NCB31HK-103X	C CAPACITOR			C 964	NCS31HJ-101X	C CAPACITOR		
C 561	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		C 965	NCS31HJ-101X	C CAPACITOR		
C 562	NCB31HK-103X	C CAPACITOR			C 966	NCS31HJ-101X	C CAPACITOR		
C 565	NCB31HK-103X	C CAPACITOR			C 967	NCS31HJ-101X	C CAPACITOR		
C 566	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		C 968	NCS31HJ-101X	C CAPACITOR		
C 568	NCB31EK-104X	C CAPACITOR			C 971	NCB31EK-104X	C CAPACITOR		
C 569	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		CN501	QGB2027M4-22S	CONNECTOR		
C 570	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		CN701	VMC0334-001	CONNECTOR		
C 571	NCB31HK-103X	C CAPACITOR			CN901	QNZ0611-001	CAR CONNECTOR		
C 572	QERF1AM-107Z	E CAPACITOR	100MF 20% 10V		D 1	1SS355-X	DIODE		
C 573	NCB31HK-103X	C CAPACITOR			D 2	1SS355-X	DIODE		
C 581	NCB31HK-332X	C CAPACITOR			D 4	1SS355-X	DIODE		
C 582	NCS31HJ-271X	C CAPACITOR			D 5	1SS355-X	DIODE		
C 583	NCS31HJ-271X	C CAPACITOR			D 240	1SS355-X	DIODE		
C 584	NCB31EK-104X	C CAPACITOR			D 241	1SS355-X	DIODE		
C 585	QEKJ0JM-476Z	E CAPACITOR	47MF 20% 6.3V		D 242	1SS355-X	DIODE		
C 588	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		D 243	RB160M-30-X	SB DIODE		
C 589	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		D 244	UDZS5.1B-X	Z DIODE		
C 591	NCB31HK-332X	C CAPACITOR			D 321	1SS355-X	DIODE		
C 592	NCS31HJ-271X	C CAPACITOR			D 331	1SS355-X	DIODE		
C 593	NCS31HJ-271X	C CAPACITOR			D 341	1SS355-X	DIODE		
C 594	NCB31EK-104X	C CAPACITOR			D 351	1SS355-X	DIODE		
C 595	QEKJ0JM-476Z	E CAPACITOR	47MF 20% 6.3V		D 501	1A3G-T1	DIODE		
C 596	QEKJ1AM-107Z	E CAPACITOR	100MF 20% 10V		D 701	UDZS6.2B-X	SI DIODE		
C 597	NCB31HK-103X	C CAPACITOR			D 702	UDZS6.2B-X	SI DIODE		
C 598	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		D 703	UDZS6.2B-X	SI DIODE		
C 599	QEKJ1EM-475Z	E CAPACITOR	4.7MF 20% 25V		D 704	UDZS6.2B-X	SI DIODE		
C 701	NDC31HJ-220X	C CAPACITOR			D 705	UDZS6.2B-X	SI DIODE		
C 702	NDC31HJ-270X	C-CAPACITOR			D 706	UDZS6.2B-X	SI DIODE		
C 703	NDC31HJ-270X	C-CAPACITOR			D 707	UDZS6.2B-X	SI DIODE		
C 704	NDC31HJ-8R0X	C CAPACITOR			D 708	UDZS6.2B-X	SI DIODE		
C 705	NCB31EK-473X	C CAPACITOR			D 709	UDZS6.2B-X	SI DIODE		
C 706	NCB31EK-473X	C CAPACITOR			D 710	1SS355-X	DIODE		
C 707	NCB31EK-473X	C CAPACITOR			D 712	UDZS6.2B-X	SI DIODE		
C 708	NCB31EK-473X	C CAPACITOR			D 781	1SS355-X	DIODE		
C 709	NCB31HK-103X	C CAPACITOR			D 782	1SS355-X	DIODE		
C 710	QERF0JM-476Z	E CAPACITOR	47MF 20% 6.3V		D 784	UDZS11B-X	Z DIODE		
C 711	QEKJ1AM-227Z	E CAPACITOR	220MF 20% 10V		D 901	1N5401-F64	DIODE		
C 712	NCB31HK-103X	C CAPACITOR			D 902	1SS355-X	DIODE		
C 713	NCB31EK-104X	C CAPACITOR			D 971	RB160M-30-X	SB DIODE		
C 716	NCB31EK-104X	C CAPACITOR			D 972	RB160M-30-X	SB DIODE		
C 717	NCB31EK-104X	C CAPACITOR			IC 31	TB2118F-X	IC		
C 718	NCB31EK-104X	C CAPACITOR			IC161	TEA6320T-X	IC		
C 781	QEKJ0JM-476Z	E CAPACITOR	47MF 20% 6.3V		IC301	LA47505	IC		

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△	Item	Parts number	Parts name	Remarks	Area
	IC401	TC94A20F-011	IC		
	IC461	NJU7241F25-X	IC		
	IC471	NJU7241F33-X	IC		
	IC481	AK4381VT-X	IC		
	IC501	LA6579H-X	IC		
	IC521	TA2157FN-X	IC		
	IC541	TC94A14FA	IC		
	IC581	NJM4565M-WE	IC		
	IC701	UPD784215AGC214	I.C(MICRO-COMP)		
	IC702	IC-PST600M/GI-W	I.C(M)		
	IC901	AN80T07	IC		
	J 1	QNB0100-002	ANT TERMINAL		
	J 321	QNN0489-001	PIN JACK		
	L 1	QQL244J-4R7Z	INDUCTOR		
	L 401	NQL114K-470X	INDUCTOR		
	L 402	NQL114K-470X	INDUCTOR		
	L 403	NQL114K-470X	INDUCTOR		
	L 541	NQL114K-470X	INDUCTOR		
	L 542	NQL114K-470X	INDUCTOR		
	L 543	NQL114K-470X	INDUCTOR		
	L 544	NQL114K-470X	INDUCTOR		
	L 701	NQL114M-4R7X	INDUCTOR		
	L 901	QQR1362-001	CHOKE COIL		
	Q 1	2SD601A/R/-X	TRANSISTOR		
	Q 2	2SD601A/R/-X	TRANSISTOR		
	Q 3	UN2111-X	TRANSISTOR		
	Q 5	2SB709A/R/-X	TRANSISTOR		
	Q 6	2SB624/4/-X	TRANSISTOR		
	Q 7	UN2211-X	TRANSISTOR		
	Q 10	UN2211-X	TRANSISTOR		
	Q 31	UN2211-X	TRANSISTOR		
	Q 241	2SD601A/R/-X	TRANSISTOR		
	Q 321	2SD1781K/QR/-X	TRANSISTOR		
	Q 331	2SD1781K/QR/-X	TRANSISTOR		
	Q 341	2SD1781K/QR/-X	TRANSISTOR		
	Q 351	2SD1781K/QR/-X	TRANSISTOR		
	Q 430	UN2211-X	TRANSISTOR		
	Q 440	UN2211-X	TRANSISTOR		
	Q 501	2SB1322/RS/-T	TRANSISTOR		
	Q 521	2SB1241/QR/-T	TRANSISTOR		
	Q 541	UN2111-X	TRANSISTOR		
	Q 542	UN2211-X	TRANSISTOR		
	Q 781	UN2111-X	TRANSISTOR		
	Q 782	UN2211-X	TRANSISTOR		
	Q 784	UN2111-X	TRANSISTOR		
	Q 976	UN2211-X	TRANSISTOR		
	Q 977	2SA1037AK/RS/-X	TRANSISTOR		
	R 1	NRS181J-120X	MG RESISTOR		
	R 2	NRSA63J-473X	MG RESISTOR		
	R 3	NRSA63J-472X	MG RESISTOR		
	R 4	NRSA63J-332X	MG RESISTOR		
	R 5	NRSA63J-473X	MG RESISTOR		
	R 6	NRSA63J-473X	MG RESISTOR		
	R 7	NRSA63J-472X	MG RESISTOR		
	R 9	NRSA63J-470X	MG RESISTOR		
	R 10	NRSA63J-103X	MG RESISTOR		
	R 31	NRS181J-100X	MG RESISTOR		
	R 32	NRSA63J-622X	MG RESISTOR		
	R 33	NRSA63J-103X	MG RESISTOR		
	R 34	NRSA63J-222X	MG RESISTOR		
	R 35	NRSA63J-222X	MG RESISTOR		
	R 36	NRSA63J-222X	MG RESISTOR		
	R 37	NRSA63J-222X	MG RESISTOR		
	R 38	NRSA63J-101X	MG RESISTOR		
	R 39	NRSA63J-0R0X	MG RESISTOR		
	R 40	NRSA63J-393X	MG RESISTOR		

△	Item	Parts number	Parts name	Remarks	Area
	R 41	NRSA63J-103X	MG RESISTOR		
	R 42	NRS181J-100X	MG RESISTOR		
	R 43	NRSA63J-471X	MG RESISTOR		
	R 44	NRSA63J-221X	MG RESISTOR		
	R 51	NRSA63J-223X	MG RESISTOR		
	R 81	NRSA63J-222X	MG RESISTOR		
	R 82	NRSA63J-392X	MG RESISTOR		
	R 91	NRSA63J-222X	MG RESISTOR		
	R 92	NRSA63J-392X	MG RESISTOR		
	R 161	NRSA63J-224X	MG RESISTOR		
	R 162	NRSA63J-223X	MG RESISTOR		
	R 163	NRSA63J-222X	MG RESISTOR		
	R 164	NRSA63J-473X	MG RESISTOR		
	R 165	NRSA63J-473X	MG RESISTOR		
	R 171	NRSA63J-224X	MG RESISTOR		
	R 172	NRSA63J-223X	MG RESISTOR		
	R 173	NRSA63J-222X	MG RESISTOR		
	R 174	NRSA63J-473X	MG RESISTOR		
	R 175	NRSA63J-473X	MG RESISTOR		
	R 181	NRSA63J-271X	MG RESISTOR		
	R 182	NRSA63J-271X	MG RESISTOR		
	R 241	NRSA63J-473X	MG RESISTOR		
	R 242	NRSA63J-223X	MG RESISTOR		
	R 243	NRSA63J-184X	MG RESISTOR		
	R 244	NRSA63J-123X	MG RESISTOR		
	R 245	NRSA63J-470X	MG RESISTOR		
	R 246	NRSA63J-102X	MG RESISTOR		
	R 247	NRSA63J-823X	MG RESISTOR		
	R 248	NRSA63J-221X	MG RESISTOR		
	R 301	NRSA63J-273X	MG RESISTOR		
	R 302	NRSA63J-273X	MG RESISTOR		
	R 311	NRSA63J-273X	MG RESISTOR		
	R 312	NRSA63J-273X	MG RESISTOR		
	R 321	NRSA63J-222X	MG RESISTOR		
	R 322	NRSA63J-821X	MG RESISTOR		
	R 323	NRSA63J-101X	MG RESISTOR		
	R 331	NRSA63J-222X	MG RESISTOR		
	R 332	NRSA63J-821X	MG RESISTOR		
	R 333	NRSA63J-101X	MG RESISTOR		
	R 341	NRSA63J-222X	MG RESISTOR		
	R 342	NRSA63J-821X	MG RESISTOR		
	R 343	NRSA63J-101X	MG RESISTOR		
	R 351	NRSA63J-222X	MG RESISTOR		
	R 352	NRSA63J-821X	MG RESISTOR		
	R 353	NRSA63J-101X	MG RESISTOR		
	R 402	NRSA63J-470X	MG RESISTOR		
	R 403	NRSA63J-225X	MG RESISTOR		
	R 404	NRSA63J-103X	MG RESISTOR		
	R 411	NRSA63J-0R0X	MG RESISTOR		
	R 423	NRSA63J-331X	MG RESISTOR		
	R 424	NRSA63J-331X	MG RESISTOR		
	R 425	NRSA63J-470X	MG RESISTOR		
	R 430	NRSA63J-102X	MG RESISTOR		
	R 440	NRSA63J-102X	MG RESISTOR		
	R 451	NRSA63J-223X	MG RESISTOR		
	R 452	NRSA63J-473X	MG RESISTOR		
	R 453	NRSA63J-221X	MG RESISTOR		
	R 454	NRSA63J-471X	MG RESISTOR		
	R 455	NRSA63J-221X	MG RESISTOR		
	R 456	NRSA63J-471X	MG RESISTOR		
	R 457	NRSA63J-221X	MG RESISTOR		
	R 458	NRSA63J-471X	MG RESISTOR		
	R 501	NRSA63J-333X	MG RESISTOR		
	R 502	NRSA63J-822X	MG RESISTOR		
	R 503	NRSA63J-472X	MG RESISTOR		
	R 504	NRSA63J-153X	MG RESISTOR		

■ Electrical parts list (Main board)

Block No. 01

▲	Item	Parts number	Parts name	Remarks	Area
	R 506	NRSA02J-822X	MG RESISTOR		
	R 507	NRSA63J-682X	MG RESISTOR		
	R 508	NRSA63J-302X	MG RESISTOR		
	R 509	NRSA63J-123X	MG RESISTOR		
	R 510	NRSA63J-822X	MG RESISTOR		
	R 511	NRSA63J-152X	MG RESISTOR		
	R 512	NRSA63J-152X	MG RESISTOR		
	R 513	NRSA63J-182X	MG RESISTOR		
	R 523	NRSA63J-823X	MG RESISTOR		
	R 524	NRSA63J-823X	MG RESISTOR		
	R 525	NRSA63J-334X	MG RESISTOR		
	R 526	NRSA63J-334X	MG RESISTOR		
	R 527	NRSA02J-220X	MG RESISTOR		
	R 528	NRSA02J-220X	MG RESISTOR		
	R 529	NRSA63J-823X	MG RESISTOR		
	R 530	NRSA63J-563X	MG RESISTOR		
	R 531	NRSA63J-103X	MG RESISTOR		
	R 532	NRSA63J-202X	MG RESISTOR		
	R 533	NRSA63J-102X	MG RESISTOR		
	R 534	NRSA63J-153X	MG RESISTOR		
	R 535	NRSA63J-101X	MG RESISTOR		
	R 536	NRSA63J-821X	MG RESISTOR		
	R 537	NRSA63J-0R0X	MG RESISTOR		
	R 539	NRSA02J-151X	MG RESISTOR		
	R 541	NRSA63J-562X	MG RESISTOR		
	R 542	NRSA63J-473X	MG RESISTOR		
	R 543	NRSA63J-474X	MG RESISTOR		
	R 544	NRSA63J-103X	MG RESISTOR		
	R 545	NRSA63J-103X	MG RESISTOR		
	R 546	NRSA63J-0R0X	MG RESISTOR		
	R 547	NRSA63J-0R0X	MG RESISTOR		
	R 548	NRSA63J-0R0X	MG RESISTOR		
	R 549	NRSA63J-101X	MG RESISTOR		
	R 550	NRSA63J-101X	MG RESISTOR		
	R 551	NRSA63J-101X	MG RESISTOR		
	R 552	NRSA63J-101X	MG RESISTOR		
	R 553	NRSA63J-105X	MG RESISTOR		
	R 554	NRSA63J-472X	MG RESISTOR		
	R 555	NRSA63J-472X	MG RESISTOR		
	R 713	NRSA63J-0R0X	MG RESISTOR		
	R 714	NRSA63J-103X	MG RESISTOR		
	R 715	NRSA63J-0R0X	MG RESISTOR		
	R 716	NRSA63J-0R0X	MG RESISTOR		
	R 719	NRSA63J-0R0X	MG RESISTOR		
	R 720	NRSA63J-122X	MG RESISTOR		
	R 721	NRSA63J-102X	MG RESISTOR		
	R 722	NRSA63J-103X	MG RESISTOR		
	R 723	NRSA63J-103X	MG RESISTOR		
	R 725	NRSA63J-103X	MG RESISTOR		
	R 726	NRSA63J-103X	MG RESISTOR		
	R 728	NRSA63J-103X	MG RESISTOR		
	R 729	NRSA63J-473X	MG RESISTOR		
	R 734	NRSA63J-222X	MG RESISTOR		
	R 735	NRSA63J-222X	MG RESISTOR		
	R 736	NRSA63J-222X	MG RESISTOR		
	R 741	NRSA63J-103X	MG RESISTOR		
	R 743	NRSA63J-103X	MG RESISTOR		
	R 744	NRSA63J-103X	MG RESISTOR		
	R 745	NRSA63J-103X	MG RESISTOR		
	R 746	NRSA63J-103X	MG RESISTOR		
	R 747	NRSA63J-472X	MG RESISTOR		
	R 748	NRSA63J-472X	MG RESISTOR		
	R 749	NRSA63J-472X	MG RESISTOR		
	R 750	NRSA63J-103X	MG RESISTOR		
	R 751	NRSA63J-103X	MG RESISTOR		
	R 752	NRSA63J-473X	MG RESISTOR		

▲	Item	Parts number	Parts name	Remarks	Area
	R 753	NRSA63J-473X	MG RESISTOR		
	R 754	NRSA63J-821X	MG RESISTOR		
	R 755	NRSA63J-106X	MG RESISTOR		
	R 756	NRSA63J-473X	MG RESISTOR		
	R 757	NRSA63J-222X	MG RESISTOR		
	R 758	NRSA63J-473X	MG RESISTOR		
	R 760	NRSA63J-473X	MG RESISTOR		
	R 763	NRSA63J-103X	MG RESISTOR		
	R 783	NRSA63J-822X	MG RESISTOR		
	R 901	QRE142J-102X	C RESISTOR	1.0K 5% 1/4W	
	R 902	NRSA02J-912X	MG RESISTOR		
	R 903	NRSA02J-472X	MG RESISTOR		
	R 971	NRS181J-222X	MG RESISTOR		
	R 972	NRS181J-222X	MG RESISTOR		
	R 976	NRSA02J-273X	MG RESISTOR		
	R 977	NRSA02J-123X	MG RESISTOR		
	TU 1	QAU0291-001	TUNER PACK		
	X 31	QAX0616-001Z	CRYSTAL		
	X 401	QAX0413-001Z	CRYSTAL		
	X 701	QAX0617-001Z	CRYSTAL		
	X 702	QAX0401-001	CRYSTAL		
	R 556	NRSA63J-472X	MG RESISTOR		
	R 557	NRSA63J-472X	MG RESISTOR		
	R 558	NRSA63J-103X	MG RESISTOR		
	R 559	NRSA63J-155X	MG RESISTOR		
	R 560	NRSA63J-221X	MG RESISTOR		
	R 561	NRSA63J-221X	MG RESISTOR		
	R 562	NRSA63J-221X	MG RESISTOR		
	R 563	NRSA63J-471X	MG RESISTOR		
	R 564	NRSA63J-471X	MG RESISTOR		
	R 565	NRSA63J-471X	MG RESISTOR		
	R 581	NRSA63J-822X	MG RESISTOR		
	R 582	NRSA63J-822X	MG RESISTOR		
	R 583	NRSA63J-822X	MG RESISTOR		
	R 584	NRSA63J-181X	MG RESISTOR		
	R 585	NRSA63J-181X	MG RESISTOR		
	R 586	NRSA63J-682X	MG RESISTOR		
	R 587	NRSA63J-102X	MG RESISTOR		
	R 588	NRSA63J-102X	MG RESISTOR		
	R 591	NRSA63J-822X	MG RESISTOR		
	R 592	NRSA63J-822X	MG RESISTOR		
	R 593	NRSA63J-822X	MG RESISTOR		
	R 594	NRSA63J-181X	MG RESISTOR		
	R 595	NRSA63J-181X	MG RESISTOR		
	R 596	NRSA63J-682X	MG RESISTOR		
	R 597	NRSA63J-102X	MG RESISTOR		
	R 598	NRSA63J-102X	MG RESISTOR		
	R 701	NRSA63J-473X	MG RESISTOR		
	R 702	NRSA63J-0R0X	MG RESISTOR		
	R 703	NRSA63J-0R0X	MG RESISTOR		
	R 704	NRSA63J-473X	MG RESISTOR		
	R 705	NRSA63J-473X	MG RESISTOR		
	R 708	NRSA63J-332X	MG RESISTOR		
	R 710	NRSA63J-0R0X	MG RESISTOR		
	R 711	NRSA63J-0R0X	MG RESISTOR		
	R 712	NRSA63J-0R0X	MG RESISTOR		

■ Electrical parts list (Front board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area
	C 601	NCB31HK-223X	C CAPACITOR		
	C 602	NCS31HJ-681X	C CAPACITOR		
	C 603	NBE20JM-106X	TS E CAP SVB20J		
	C 611	NCB31HK-123X	C CAPACITOR		
	C 612	NBE20JM-475X	TS E CAPACITOR		
	C 613	NCB31HK-153X	C CAPACITOR		
	C 614	NCB31HK-153X	C CAPACITOR		
	CJ601	VMC0335-001	CONNECTOR		
	D 601	SML-310VT/JK/-X	LED		
	D 602	SML-310VT/JK/-X	LED		
	D 603	SML-310VT/JK/-X	LED		
	D 604	SML-310VT/JK/-X	LED		
	D 605	SML-310VT/JK/-X	LED		
	D 606	SML-310VT/JK/-X	LED		
	D 607	SML-310VT/JK/-X	LED		
	D 608	SML-310VT/JK/-X	LED		
	D 609	SML-310VT/JK/-X	LED		
	D 610	SML-310VT/JK/-X	LED		
	D 611	SML-310VT/JK/-X	LED		
	D 612	SML-310VT/JK/-X	LED		
	D 613	SML-310VT/JK/-X	LED		
	D 614	SML-310VT/JK/-X	LED		
	D 615	SML-310VT/JK/-X	LED		
	D 616	SML-310VT/JK/-X	LED		
	D 617	SML-310VT/JK/-X	LED		
	D 618	SML-310VT/JK/-X	LED		
	D 619	SML-310VT/JK/-X	LED		
	D 620	SML-310VT/JK/-X	LED		
	D 621	SML-310VT/JK/-X	LED		
	D 622	SML-310LT/MN/-X	LED		
	D 641	UDZS5.1B-X	Z DIODE		
	D 642	1SS355-X	DIODE		
	D 644	UDZS5.1B-X	Z DIODE		
	D 645	UDZS6.2B-X	SI DIODE		
	D 731	NSPW310BS/BRS/	LED		
	D 732	NSPW310BS/BRS/	LED		
	IC601	LC75823W	IC		
	IC602	RPM6938-SV4	IC		
	JS690	QSW0793-001	ROTARY ENCODER		
	R 601	NRSA63J-821X	MG RESISTOR		
	R 602	NRSA63J-392X	MG RESISTOR		
	R 603	NRSA63J-821X	MG RESISTOR		
	R 604	NRSA63J-122X	MG RESISTOR		
	R 605	NRSA63J-182X	MG RESISTOR		
	R 606	NRSA63J-821X	MG RESISTOR		
	R 607	NRSA63J-821X	MG RESISTOR		
	R 608	NRSA63J-122X	MG RESISTOR		
	R 609	NRSA63J-182X	MG RESISTOR		
	R 610	NRSA63J-272X	MG RESISTOR		
	R 612	NRSA63J-821X	MG RESISTOR		
	R 613	NRSA63J-821X	MG RESISTOR		
	R 614	NRSA63J-122X	MG RESISTOR		
	R 615	NRSA63J-182X	MG RESISTOR		
	R 616	NRSA63J-272X	MG RESISTOR		
	R 631	NRSA02J-821X	MG RESISTOR		
	R 632	NRSA02J-122X	MG RESISTOR		
	R 633	NRSA02J-122X	MG RESISTOR		
	R 634	NRSA02J-102X	MG RESISTOR		
	R 635	NRSA02J-102X	MG RESISTOR		
	R 636	NRSA02J-821X	MG RESISTOR		
	R 637	NRSA02J-821X	MG RESISTOR		
	R 638	NRSA02J-391X	MG RESISTOR		
	R 639	NRSA02J-391X	MG RESISTOR		
	R 640	NRSA02J-681X	MG RESISTOR		
	R 641	NRSA02J-681X	MG RESISTOR		
	R 642	NRSA02J-681X	MG RESISTOR		

△	Item	Parts number	Parts name	Remarks	Area
	R 643	NRSA02J-681X	MG RESISTOR		
	R 644	NRSA02J-102X	MG RESISTOR		
	R 645	NRSA02J-102X	MG RESISTOR		
	R 646	NRSA02J-102X	MG RESISTOR		
	R 647	NRSA02J-102X	MG RESISTOR		
	R 651	NRSA63J-102X	MG RESISTOR		
	R 653	NRSA63J-103X	MG RESISTOR		
	R 654	NRSA63J-103X	MG RESISTOR		
	R 655	NRS181J-103X	MG RESISTOR		
	R 656	NRS181J-103X	MG RESISTOR		
	R 657	NRSA63J-513X	MG RESISTOR		
	R 658	NRSA63J-184X	MG RESISTOR		
	R 659	NRS181J-431X	MG RESISTOR		
	R 660	NRS181J-431X	MG RESISTOR		
	R 662	NRSA02J-0R0X	MG RESISTOR		
	R 670	NRSA02J-103X	MG RESISTOR		
	R 671	NRSA63J-471X	MG RESISTOR		
	R 672	NRSA63J-473X	MG RESISTOR		
	R 673	NRSA63J-473X	MG RESISTOR		
	R 674	NRSA63J-0R0X	MG RESISTOR		
	S 601	NSW0124-001X	TACT SW		
	S 602	NSW0124-001X	TACT SW		
	S 603	NSW0124-001X	TACT SW		
	S 604	NSW0124-001X	TACT SW		
	S 605	NSW0124-001X	TACT SW		
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	S 618	NSW0124-001X	TACT SW		

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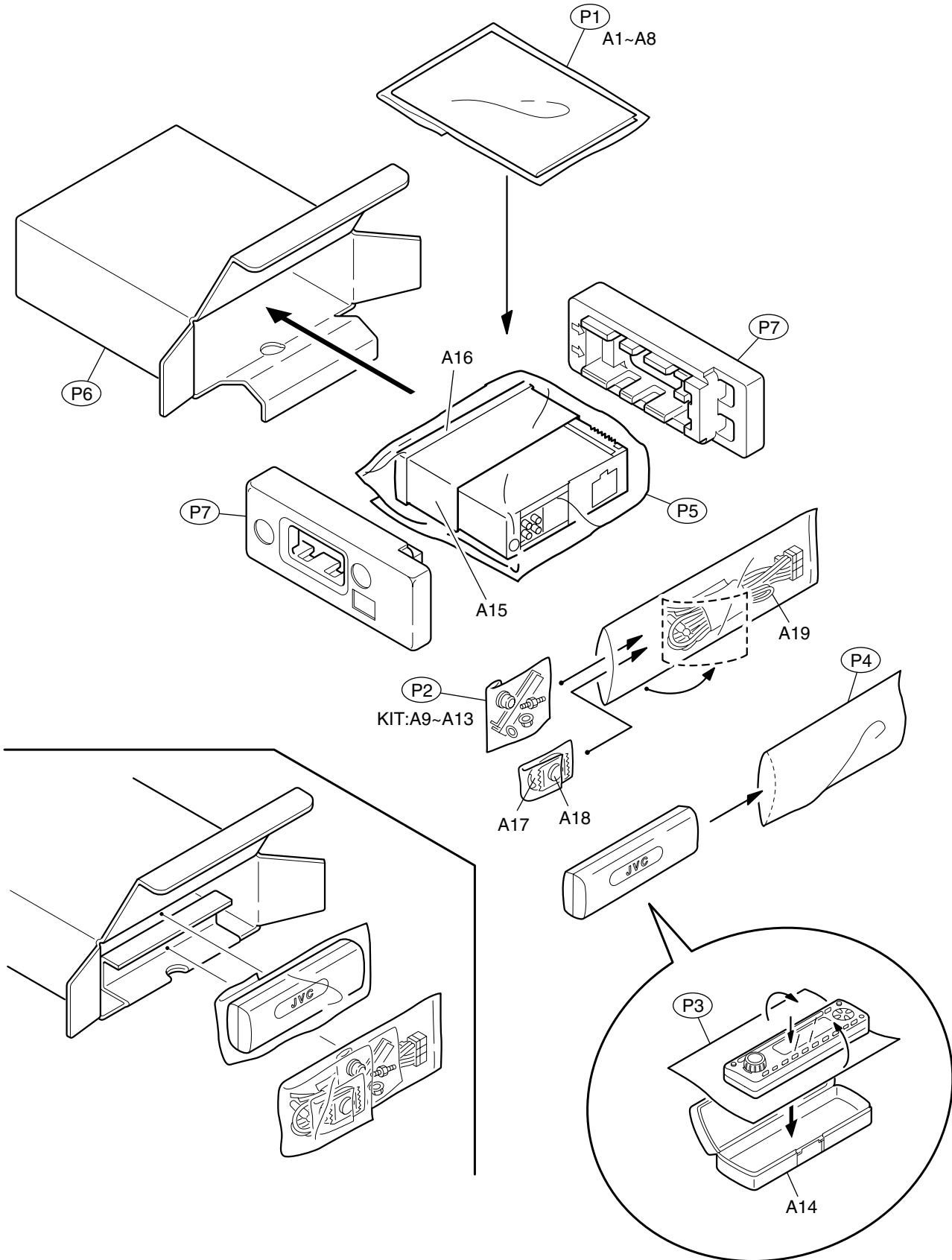
Packing materials and accessories parts list

Block No.

M	3	M	M
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Block No.

M	5	M	M
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■ Parts list (Packing)

Block No. M3MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	FSPG4002-001	POLY BAG	1	FOR INST. BOOK	
	P 2	QPA00801205	POLY BAG	1		
	P 3	FSYH4036-068	SHEET	1	MIRAMA SHEET	
	P 4	QPA01003003	POLY BAG	1		
	P 5	QPC03004315P	POLY BAG	1		
	P 6	GE30718-001A	CARTON	1		
	P 7	GE10070-001A	EPS CUSHION	1		

■ Parts list (Accessories)

Block No. M5MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	GET0132-001A	INST.BOOK	1	ENG,FRE,SPA	
	A 2	GET0131-002A	INSTALL MANUAL	1	ENG,FRE,SPA	
	A 3	GET0153-001A	CAUTION SHEET	1	ENG,FRE,SPA	
	A 4	LVT0717-001B	TROUBLE SHEET(C	1		
	A 5	BT-51018-3	WARRANTY CARD	1		
	A 6	BT-52006-2	WARRANTY CARD	1		
	A 7	BT-51028-2	J=REGIST CARD	1		
	A 8	LVT0770-003C	INST SHEET	1		
	A 9	VKZ4027-202	PLUG NUT	1		
	A 10	VKH4871-001SS	MOUNT BOLT	1		
	A 11	VKZ4328-001	LOCK NUT	1		
	A 12	WNS5000Z	WASHER	1		
	A 13	GE40130-001A	HOOK	2		
	A 14	FSJB3002-00C	HARD CASE	1		
	A 15	GE20137-003A	MOUNTING SLEEVE	1		
	A 16	GE20135-004A	TRIM PLATE	1		
	A 17	RM-RK50	REMOCON	1		
	A 18	-----	LI BATTERY	1		
	A 19	QAM0013-006	16P CORD ASS'Y	1		
	K I T	KSFX480K-SCREW1	SCREW PARTS KIT	1	A9~A13	

JVC

SCHEMATIC DIAGRAMS

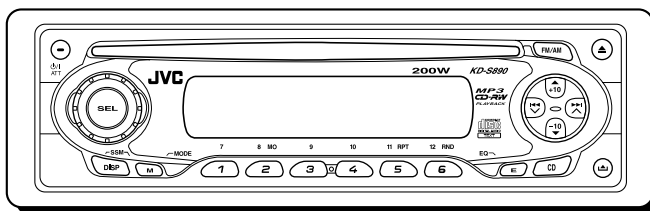
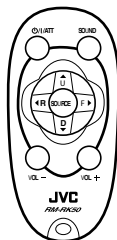
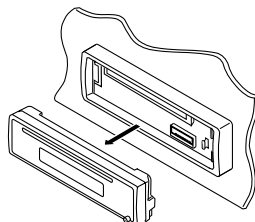
CD RECEIVER

KD-S890

CD-ROM No.SML200302

Area suffix


J ----- Northern America




Contents

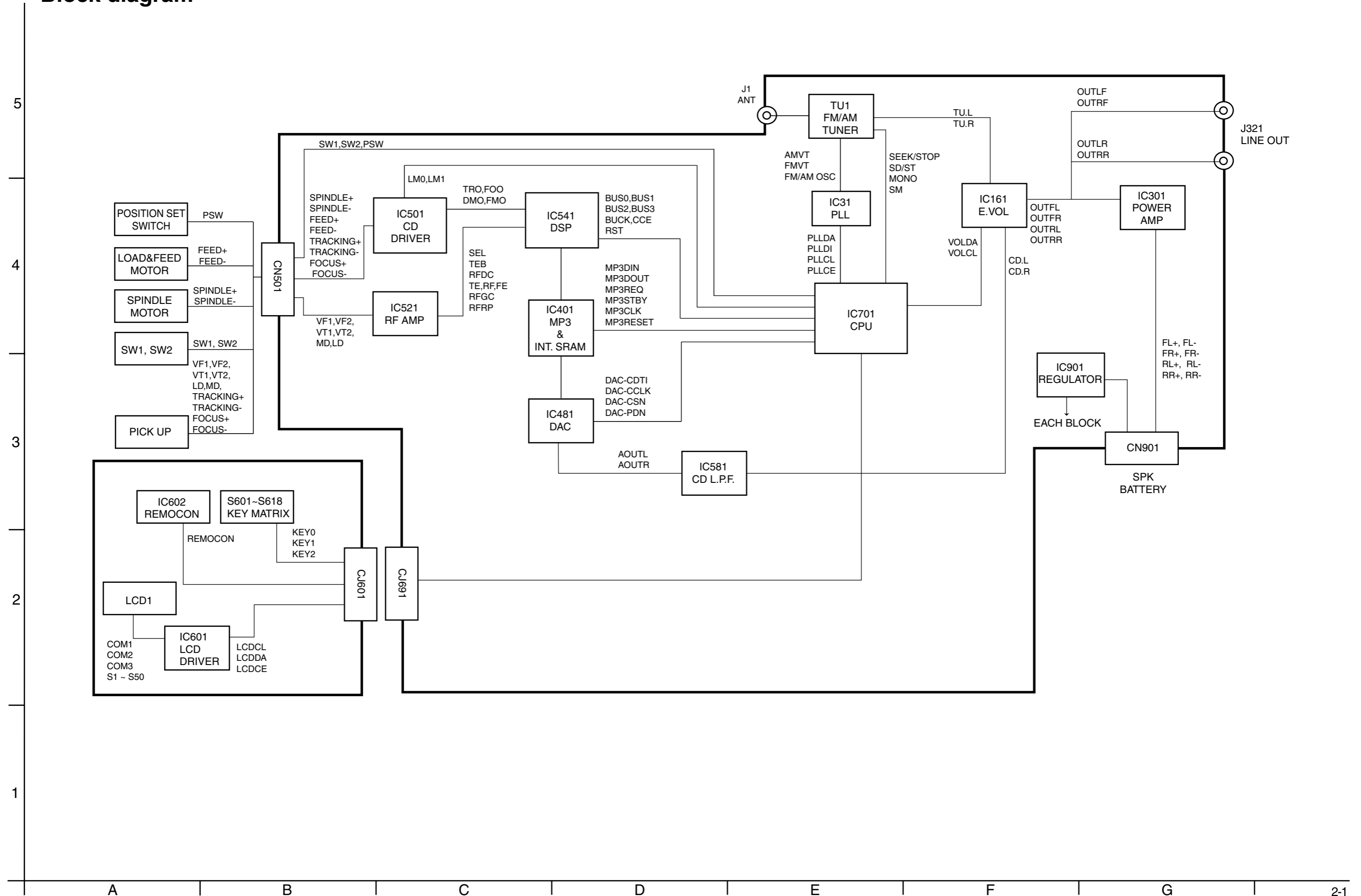
Block diagram	2-1
Standard schematic diagrams	2-2
Printed circuit boards	2-5~7

Safety precaution

 **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 performing repair of this system.

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

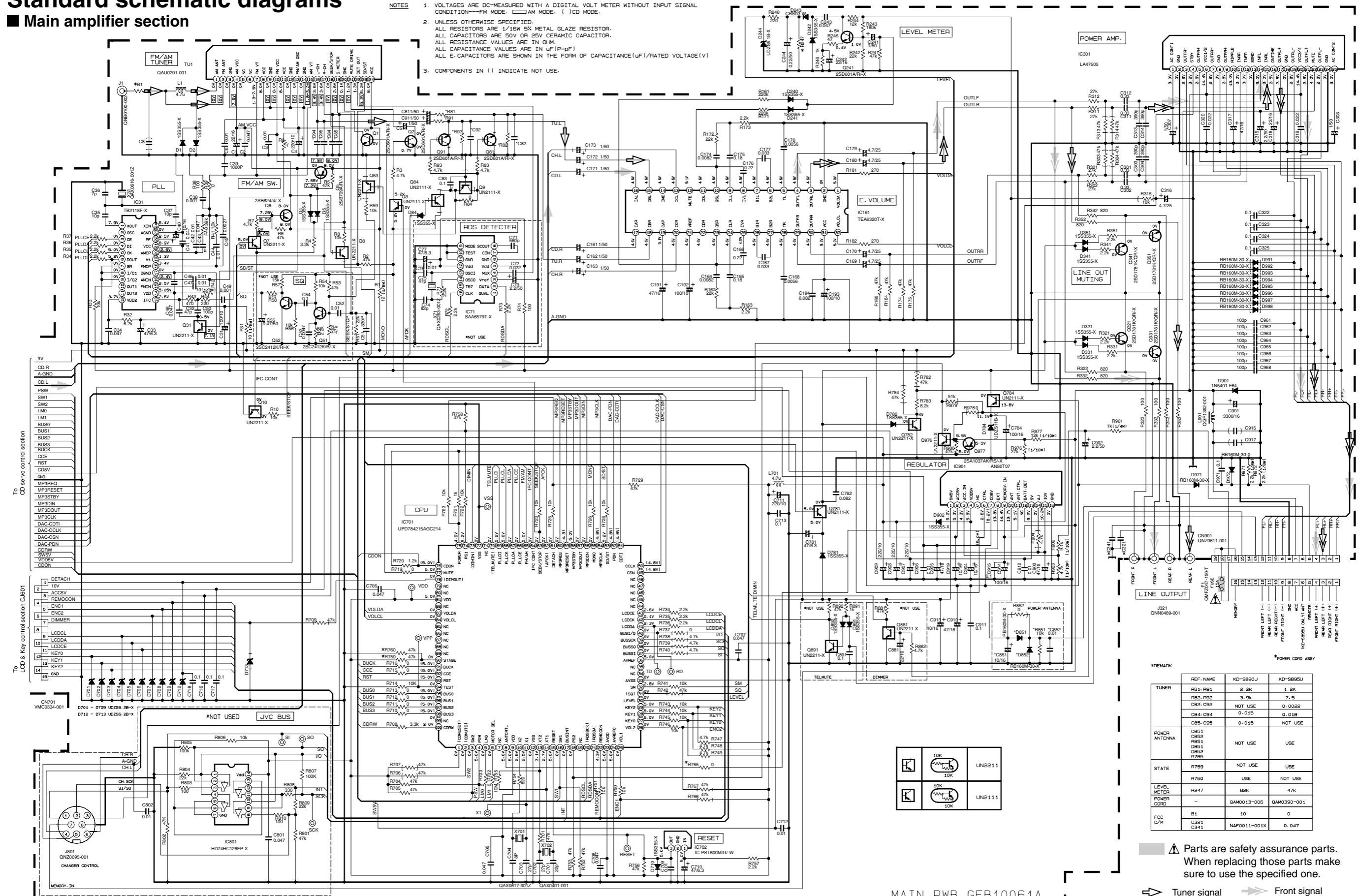
Block diagram



Standard schematic diagrams

Main amplifier section

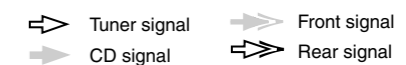
- NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION—FM MODE. □ AM MODE. () CD MODE.
 2. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/16W 5% METAL GLAZE RESISTOR. ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR. ALL RESISTANCE VALUES ARE IN OHM. ALL CAPACITANCE VALUES ARE IN uF(pF). ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V).
 3. COMPONENTS IN () INDICATE NOT USE.



REMARK

	REF. NAME	KD-S890J	KD-S890U
TUNER	RB1, RB1	2.2k	1.2k
	RB2, RB2	3.9k	7.5
	CB4, CB4	NOT USE	0.022
	CB5, CB5	0.015	0.018
POWER ANTENNA	CB5, CB5	NOT USE	USE
	RB5, RB5	NOT USE	USE
	DB5, DB5	NOT USE	USE
	R765, R765	NOT USE	USE
STATE	R759	NOT USE	USE
	R760	USE	NOT USE
LEVEL METER	R247	82k	47k
POWER CORD	-	GAM0013-00B	GAM0390-001
	FCC C/M	B1	10
	C341	NAF0011-001X	0.047

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



MAIN PWB GEB10061A

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2
1

A B C 2-2 D E F G H

CD servo control section

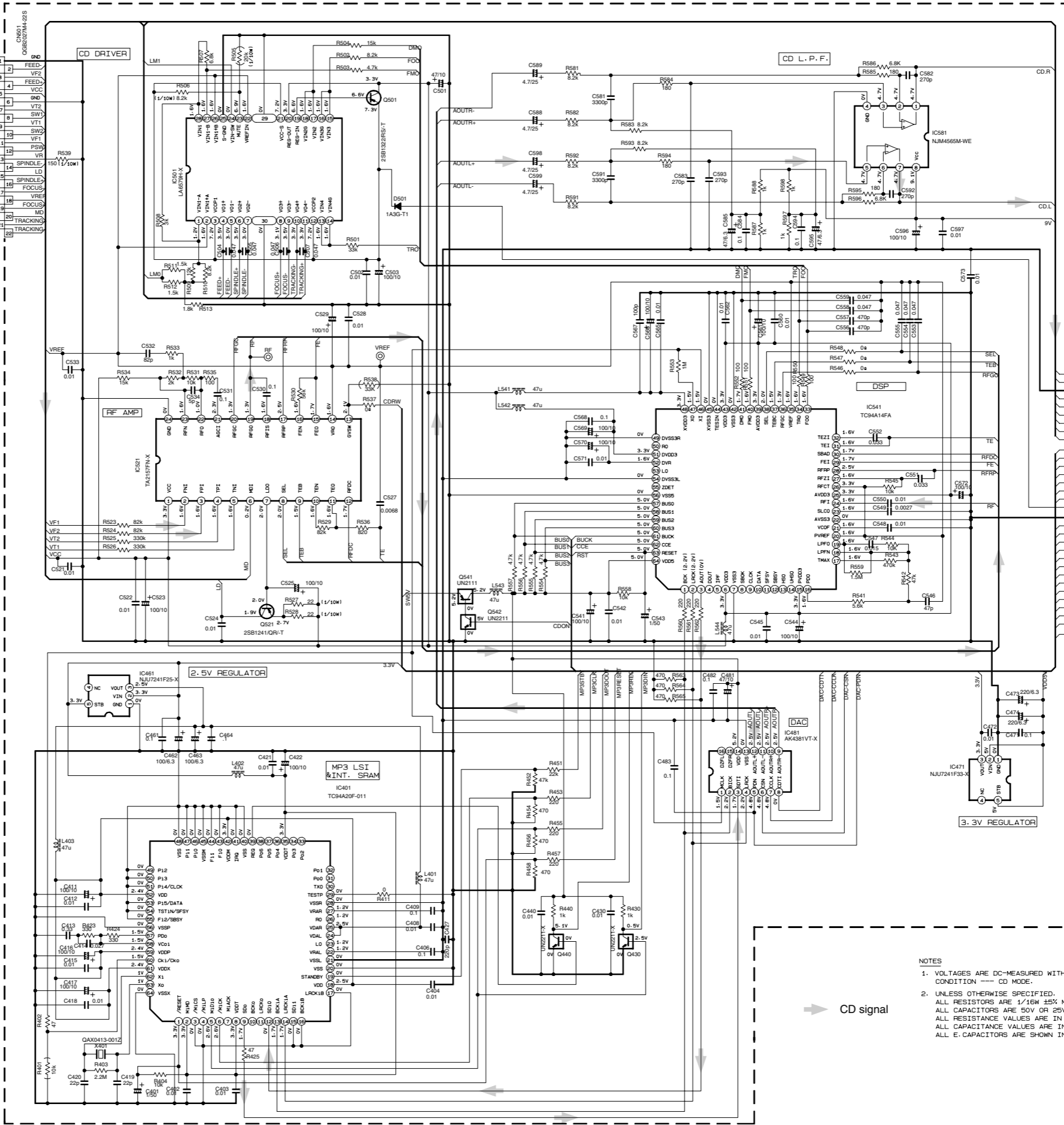
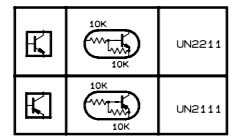
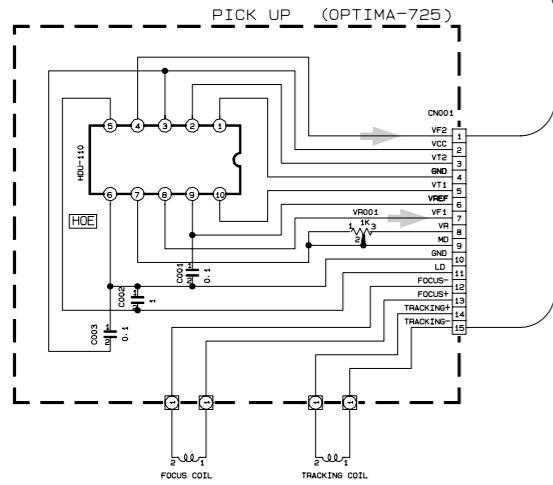
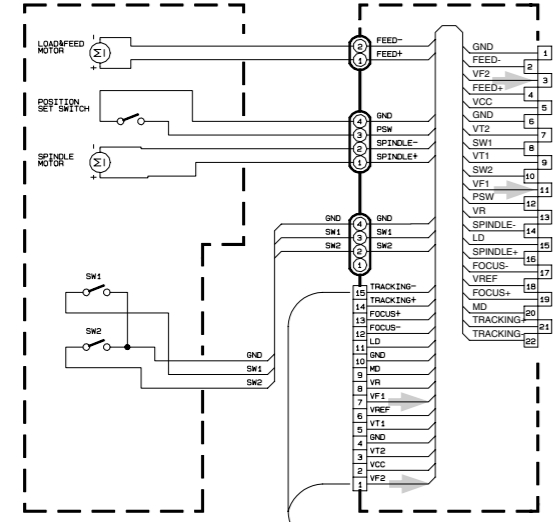
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MAIN PWB GEB10061A

- NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION --- CD MODE.
 2. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/16W ±5% METAL GLAZE RESISTOR. ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR. ALL RESISTANCE VALUES ARE IN OHM. ALL CAPACITANCE VALUES ARE IN UF(PpF). ALL E. CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(UF)/RATED VOLTAGE(V)

CD signal

To Main amplifier section

■ LCD & Key control section

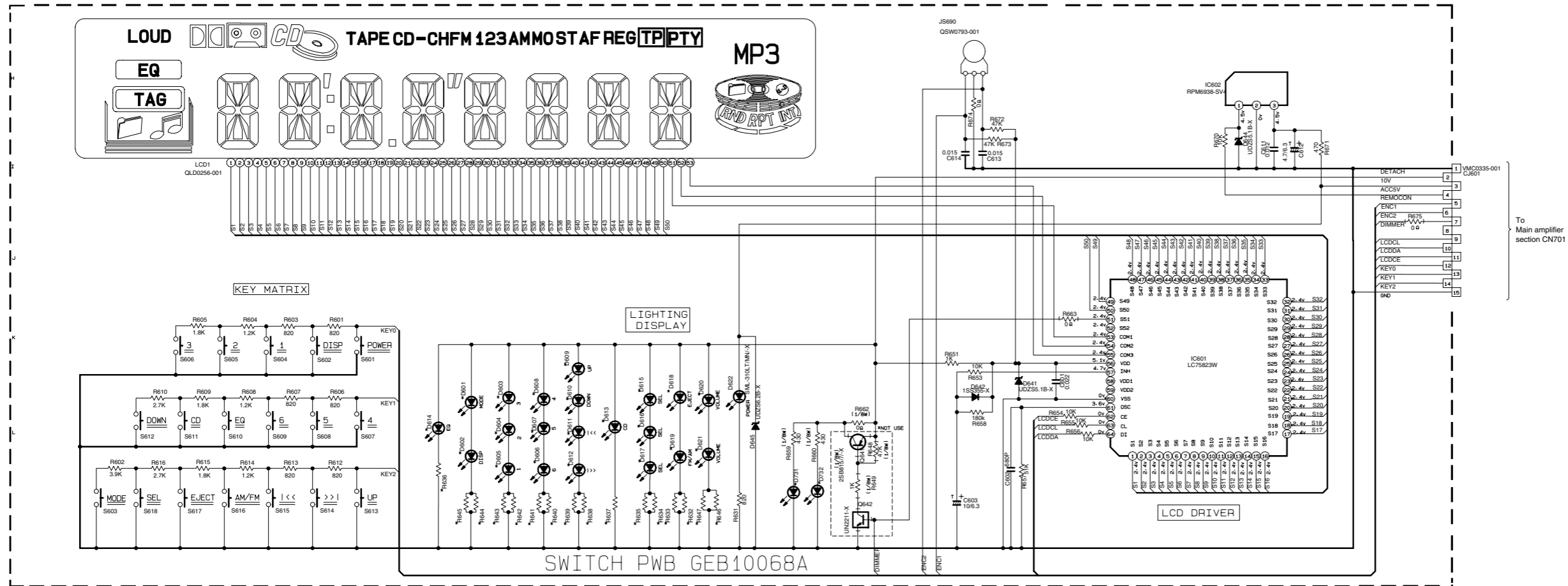
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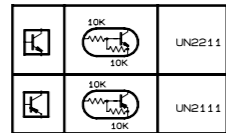
3

2

1



FRONT CIRCUIT BOARD SECTION



*REMARKS

REF. NAME	MODEL	KD-S890J	KD-S895U
D731-D732	WHITE NSPW310BS/BRS/	WHITE NSPW310BS/BRS/	
D601-D621	SML-310VT/JK/-X	LNJ308681/1-3/X	
R632-R633		1.2k	820
R634-R635		1k	510
R636-R637		820	820
R638-R639		390	330
R640-R641		680	510
R642-R643		680	510
R644-R645		1k	820
R646-R647		1k	820

NOTES

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
- UNLESS OTHERWISE SPECIFIED, ALL RESISTOR ARE 1/16W ±5% METAL GLAZE RESISTOR. ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR. ALL RESISTANCE VALUES ARE IN Ω-M. ALL CAPACITANCE VALUES ARE IN μF (P=pF). ALL E. CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE(V). T --- TANTAL CAPACITOR

Printed circuit boards

■ Main board

5

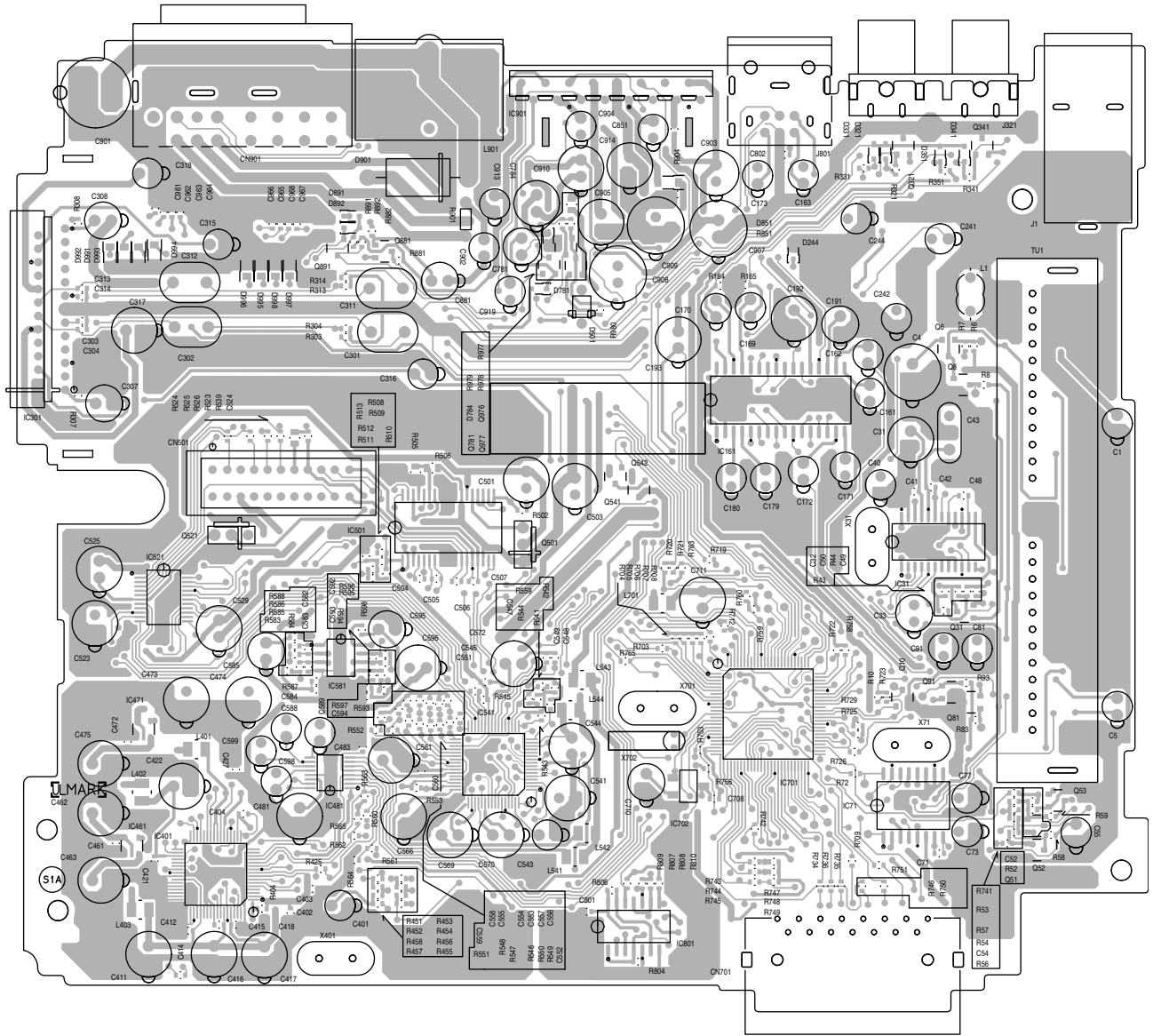
Forward side

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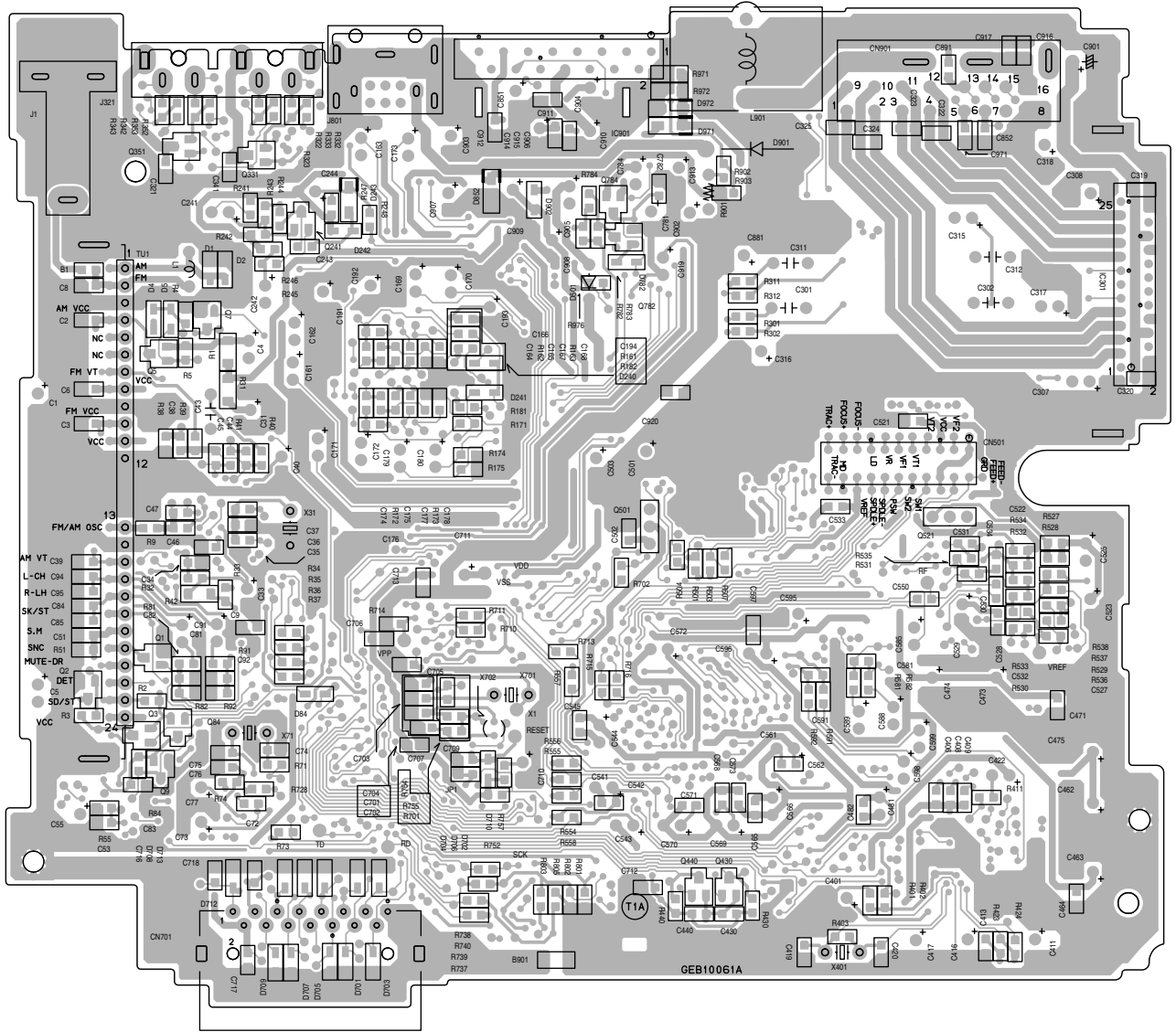
A

B

C

■ Main board

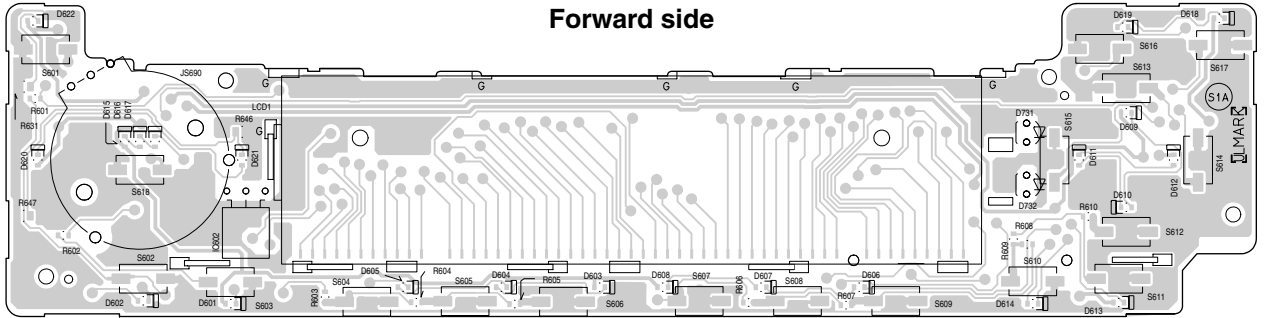
Reverse side



■ Front board

5

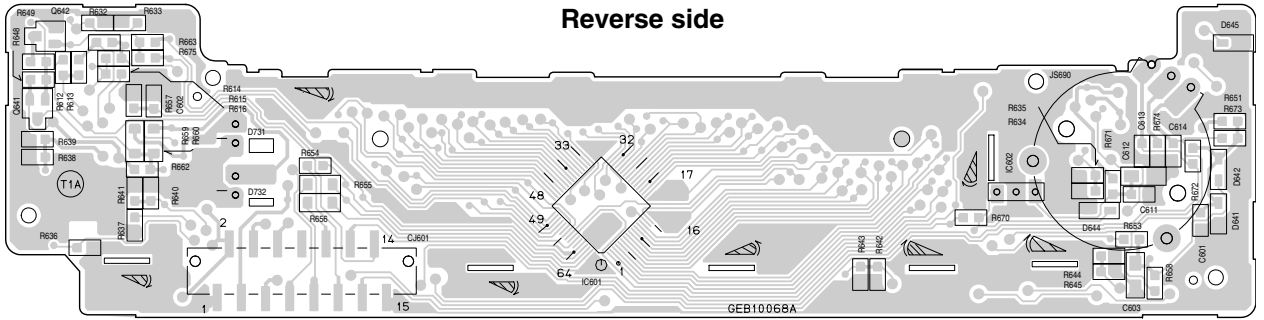
Forward side



4

3

Reverse side



2

1

A

B

C

KD-S890

JVC

VICTOR COMPANY OF JAPAN, LIMITED

AV & MULTIMEDIA COMPANY 10-1, 1Chome, Ohwatari-machi, Maebashi-city, 371-8543, Japan

(No.49799SCH)



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