

JVC

SERVICE MANUAL

CD/CDR MULTIPLE COMPACT DISC RECORDER

XL-R5020BK

Area Suffix
J ----- U.S.A.

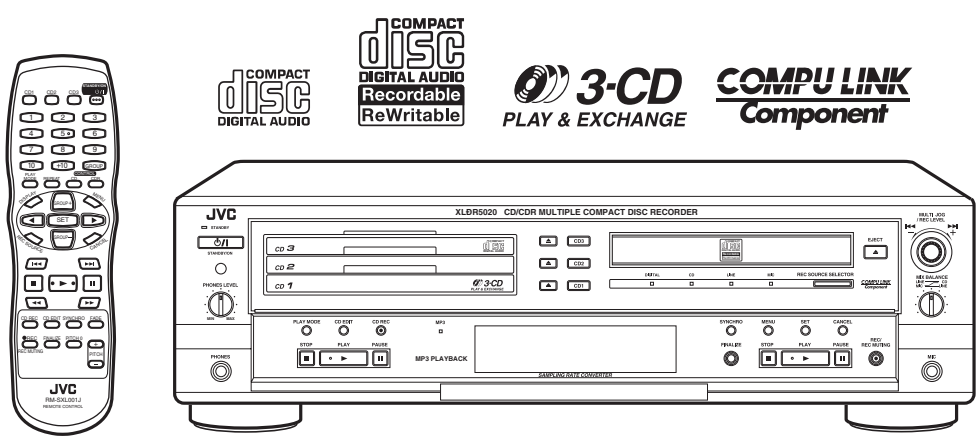


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SECTION 1

Important Safety Precautions

1.1 Safety Precautions

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

After reassembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

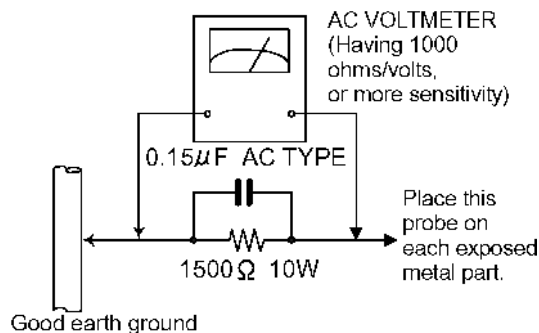
Do not use a line isolation transformer during this check.

 - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal 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 1,500 ohm 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC

voltmeter.

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



1.2 Warning

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

1.3 Caution

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of performing repair of this system.

1.4 Critical parts for safety

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (\blacksquare), diode (\blacksquare) and ICP (\bullet) or identified by the " Δ " mark nearby are critical for safety.

When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

1.5 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.

1.5.1 Grounding to prevent damage by static electricity

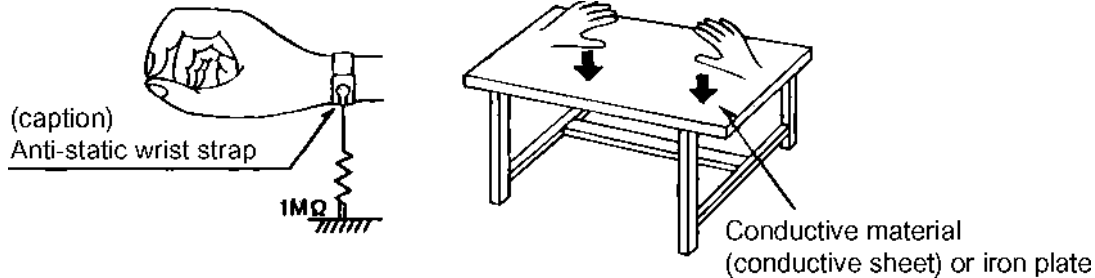
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

(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.

1.6 Handling the traverse unit (optical pickup)

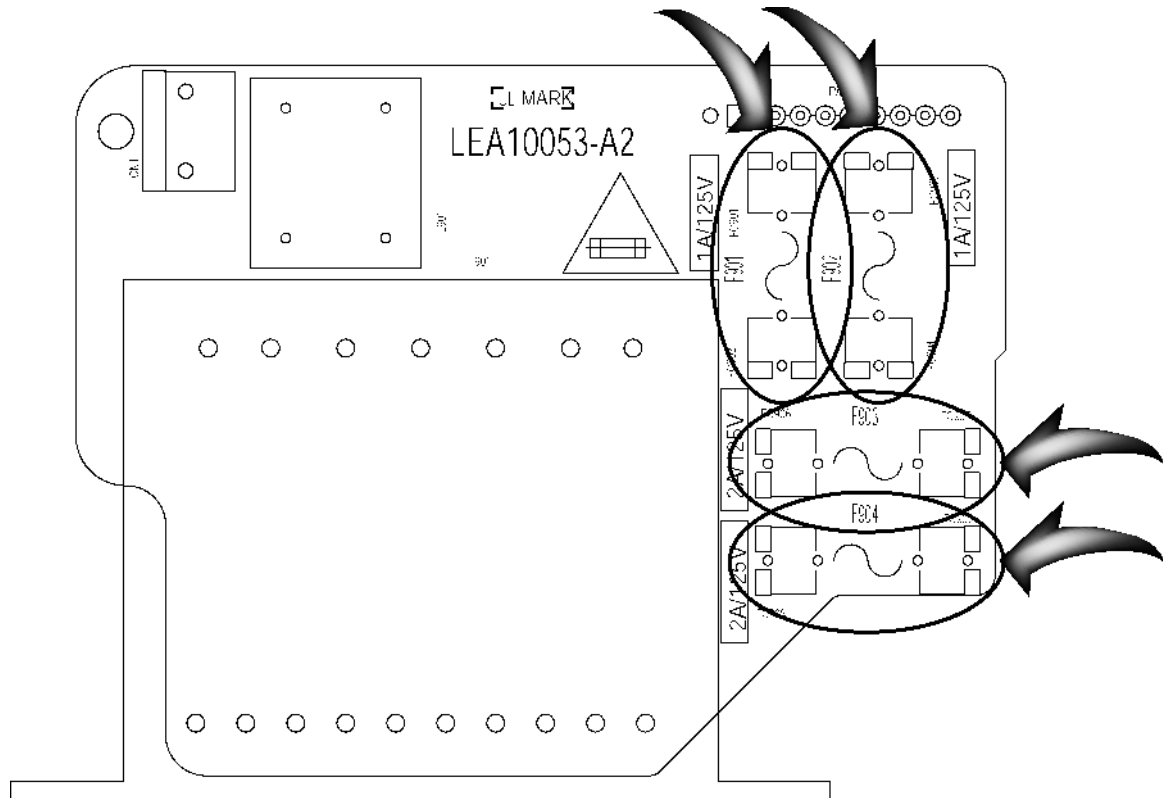
(1) Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.

(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.

1.7 Importance admistering point on the safety



Full Fuse Replacement Marking

Graphic symbol mark
(This symbol means fast blow type fuse.)



should be read as follows ;


FUSE CAUTION

FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATING OF FUSES ;

F901,F902 : 1 A / 125 V
F903,F904 : 2 A / 125 V

Marquage Pour Le Remplacement Complet De Fusible

Le symbole graphique (Ce symbole signifie fusible de type à fusion rapide.)



doit être interprété comme suit ;

PRECAUTIONS SUR LES FUSIBLES

POUR UNE PROTECTION CONTINUE CONTRE DES RISQUES D'INCENDIE, REMPLACER SEULEMENT PAR UN FUSIBLE DU MEME TYPE ;

F901,F902 : 1 A / 125 V
F903,F904 : 2 A / 125 V

1.8 Precautions for Service

1.8.1 Handling of Traverse Unit and Laser Pickup

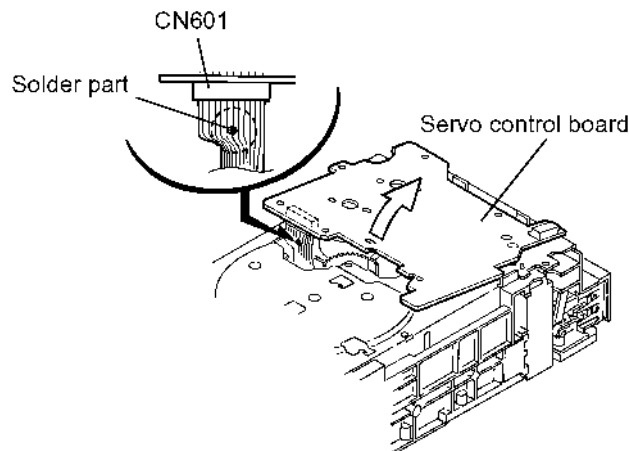
- (1) Do not touch any peripheral element of the pickup or the actuator.
- (2) The traverse unit and the pickup are precision devices and therefore must not be subjected to strong shock.
- (3) Do not use a tester to examine the laser diode. (The diode can easily be destroyed by the internal power supply of the tester.)
- (4) To replace the traverse unit, pull out the metal short pin for protection from charging.
- (5) When replacing the pickup, after mounting a new pickup, remove the solder on the short land which is provided at the center of the flexible wire to open the circuit.
- (6) Half-fixed resistors for laser power adjustment are adjusted in pairs at shipment to match the characteristics of the optical block. Do not change the setting of these half-fixed resistors for laser power adjustment.

1.8.2 Destruction of Traverse Unit and Laser Pickup by Static Electricity

Laser diodes are easily destroyed by static electricity charged on clothing or the human body. Before repairing peripheral elements of the traverse unit or pickup, be sure to take the following electrostatic protection:

- (1) Wear an antistatic wrist wrap.
- (2) With a conductive sheet or a steel plate on the workbench on which the traverse unit or the pick up is to be repaired, ground the sheet or the plate.
- (3) After removing the flexible wire from the connector (CN101), short-circuit the flexible wire by the metal clip.
- (4) Short-circuit the laser diode by soldering the land which is provided at the center of the flexible wire for the pickup. After completing the repair, remove the solder to open the circuit.

Please refer to "Fig.2-4" of "Disassembly method" for details.



SECTION 2

Disassembly method

2.1 Main body

2.1.1 Removing the top cover (see Fig.1)

- (1) Remove the four screws **A** attaching the top cover on both sides of the body.
- (2) Remove the two screws **B** attaching the top cover on the back of the body.
- (3) Remove the top cover from the body by lifting the rear part of the top cover.

ATTENTION:

Do not break the front panel tab fitted to the top cover.

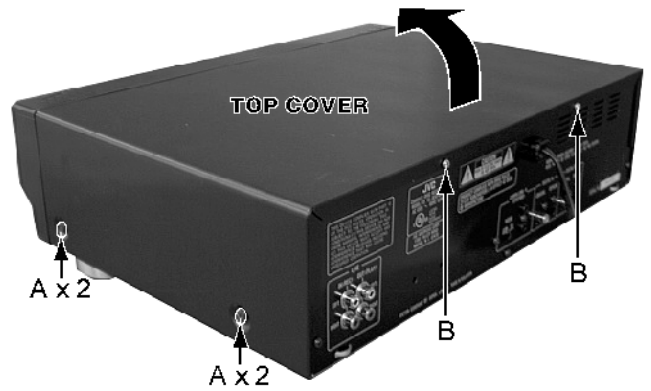


Fig.1

2.1.2 Removing the changer mechanism assembly (see Fig.2~3)

*Prior to performing the following procedure, remove the top cover.

- (1) Remove the four screws **C** attaching the changer mechanism assembly.
- (2) Disconnect the card wire from connector CN606 and CN651 on the CD servo control board respectively.
- (3) Remove the changer mechanism assembly from the body by lifting the rear part of the changer mechanism assembly.

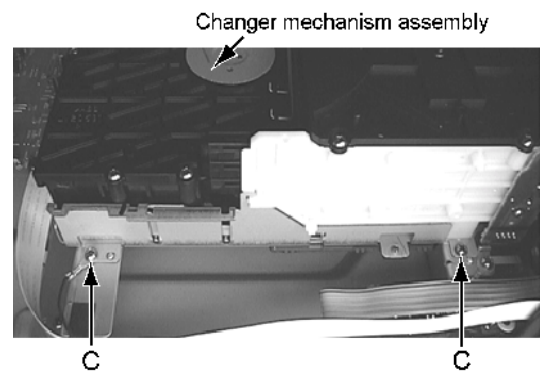


Fig.2

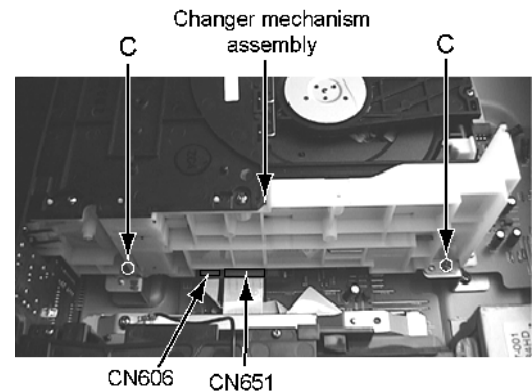


Fig.3

2.1.3 Removing the CD recording mechanism assembly (see Fig.4-6)

*Prior to performing the following procedure, remove the top cover.

*There is no need to remove the changer mechanism assembly.

- (1) Remove the two screws **E** attaching the mechanism chassis.
- (2) Remove the three screws **F** attaching the CD recording mechanism assembly.
- (3) Disconnect the card wire from connector CN702 and CN703 on the servo control board respectively.
- (4) Disconnect the connect wire from connector CN701 on the servo control board.
- (5) Remove the five screws **G** attaching the mechanism chassis.

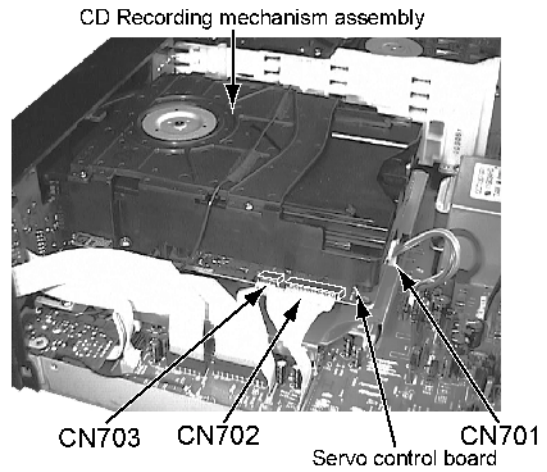


Fig.5

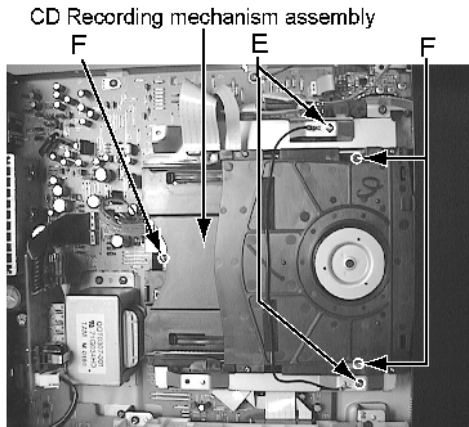


Fig.4

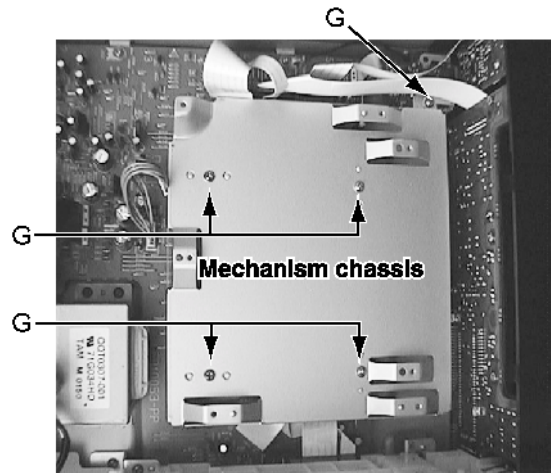


Fig.6

2.1.4 Removing the MP3 board (see Fig.7,8)

*Prior to performing the following procedure, remove the top cover, CD recording mechanism assembly.

*There is no need to remove the changer mechanism assembly.

- (1) Pull out the MP3 board from the fastener.
At this time, disconnect the connector CN401 of the MP3 board from connector CN616 on the Main board.
- (2) Disconnect the card wire from connector CN617 on the MP3 board.

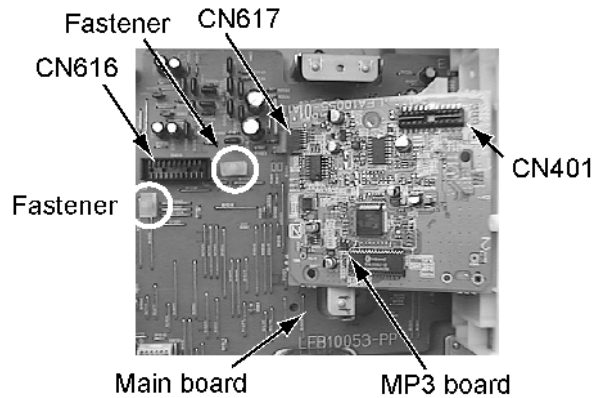


Fig.8

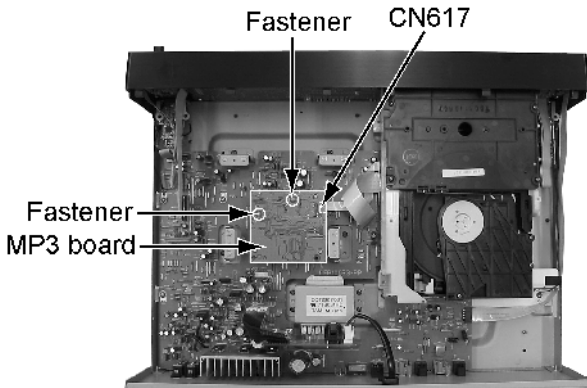


Fig.7

2.1.5 Removing the front panel assembly (see Fig.9~11)

*Prior to performing the following procedure, remove the top cover.

*There is no need to remove the changer mechanism assembly and CD recording mechanism assembly.

- (1) Remove the three screws **H** attaching the front panel assembly on the bottom of the body.
- (2) Remove the two screws **I** attaching the headphone jack bracket.
- (3) Remove the one screw **J** attaching the mic jack bracket.
- (4) Remove the one screw **K** attaching the main board.
- (5) Disconnect the card wire from connector **CN711**, **CN841** and **CN501** on the main board respectively.
- (6) Disconnect the flat wire from connector **CN601** on the main board from mic board.
- (7) Hook **a** and **b** are removed respectively, and the front panel assembly is removed.

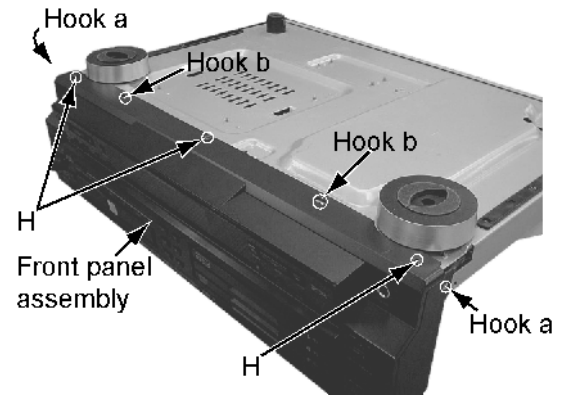
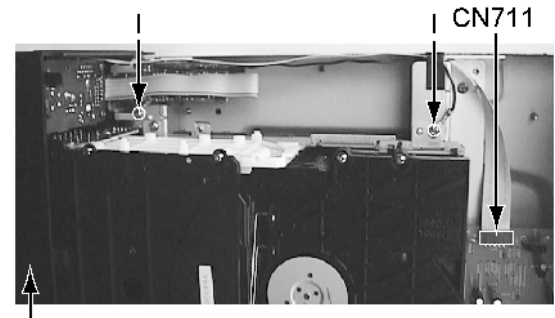


Fig.9



Front panel assembly

Fig.10

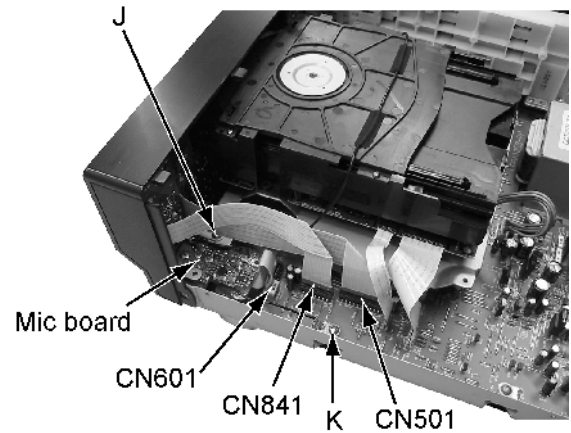


Fig.11

2.1.6 Removing the rear panel (see Fig.12,13)

*Prior to performing the following procedure, remove the top cover.

- (1) Remove the ten screws **L** attaching the rear panel.
- (2) Disconnect the power cord from connector CN1 on the power supply board.

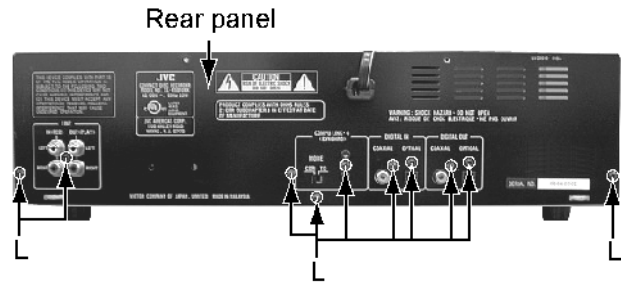


Fig.12

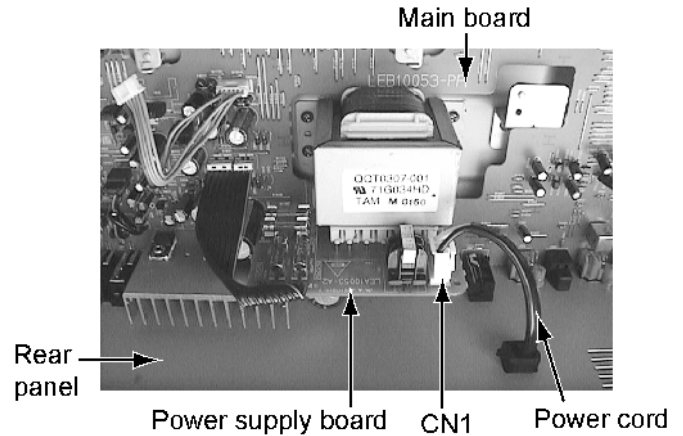


Fig.13

2.1.7 Removing the main board and power supply board (see Fig.14)

*Prior to performing the following procedure, remove the top cover, front panel assembly, changer mechanism assembly, CD recording mechanism assembly and rear panel.

- (1) Remove the four screws **M** attaching the power transformer.
- (2) Disconnect the flat wire from connector CN901 and CN902 on the main board.
- (3) Remove the six screws **N** attaching the main board.

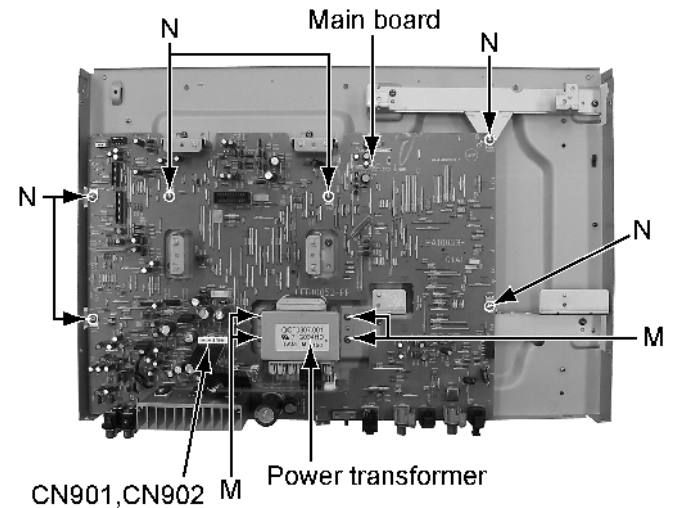


Fig.14

SECTION 3 MECHANISM

3.1 Changer mechanism assembly

3.1.1 Removing the servo control board (See Fig.1 to 5)

ATTENTION:

Make sure the sub chassis unit is locating at the lowest position. If not, perform the following procedure from 1 to 3.

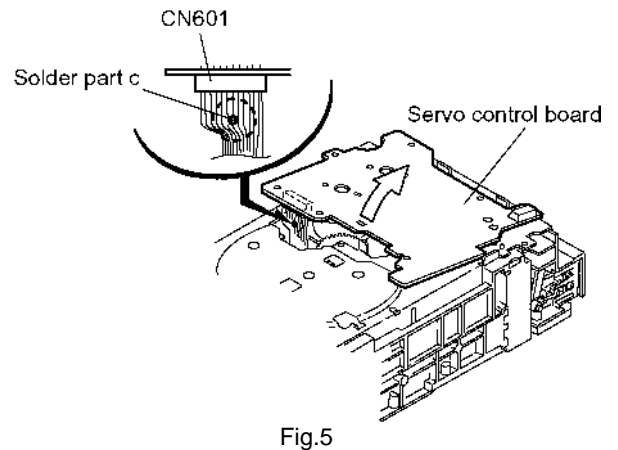
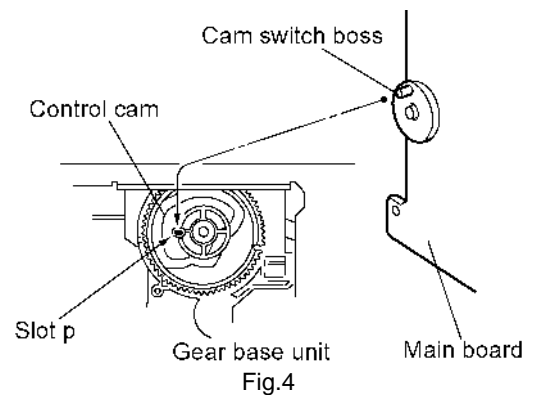
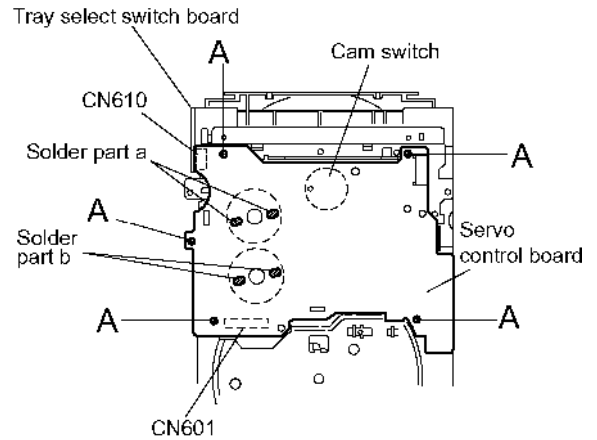
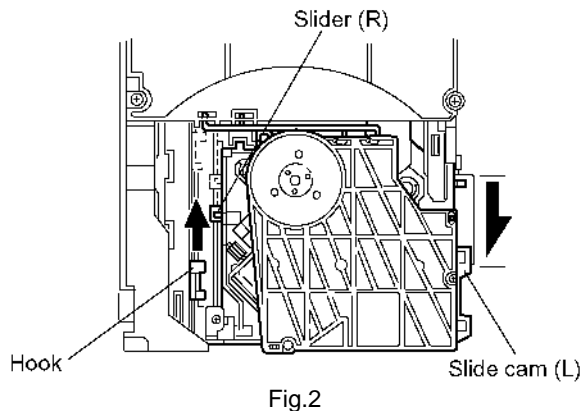
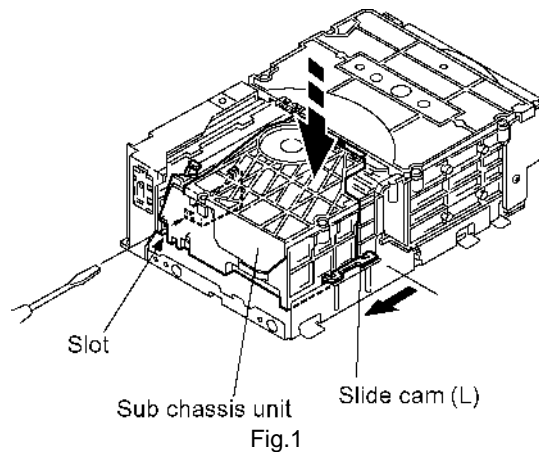
- (1) Insert a screwdriver into the sub chassis slot on the back of the body and push the slider (R) toward the front.
- (2) From the top of the body, slide the hook and the slider (R) forward until they stop.
- (3) From the right side of the body, slide the slide cam (L) backward until it stops. The sub chassis unit will move to the lowest position.
- (4) From the bottom of the body, unsolder each soldered part **a** and **b** of the motors on the servo control board.
- (5) Remove the five screws **A** attaching the servo control board.
- (6) Disconnect connector CN610 on the servo control board from the tray select switch board to suspend the servo control board tentatively. Solder the part **c** of the flexible wire connected to connector CN601 on the underside of the servo control board.
- (7) Disconnect the flexible wire from connect or CN601 and remove the servo control board from the body.

ATTENTION:

In case of disconnecting the flexible wire without soldering, the CD pick up may be damaged.

ATTENTION:

When reassembling, make sure the cam switch boss of the servo control board is fitted to the slot **p** of the control cam on the bottom of the body (Refer to Fig.3).



3.1.2 Removing the tray unit
(See Fig.6 to 9)

*The tray unit can be removed despite the position of the sub chassis unit, but the lowest position is recommended to expedite the work.

- (1) Remove the four screws **B** attaching the top cover on the top of the body.
- (2) Remove the top cover with the two rods attached to the top cover and the clamper base unit.
- (3) Pull the lock lever of the return spring on the right side of the body to eject the tray unit.
- (4) From the top of the body, release the tray from the joint hook marked **d** (Push the tray toward the front).
- (5) Release the stoppers on both sides in the direction of the arrow and pull out the tray unit from the body.

ATTENTION:

Pull out the tray unit from the top tray 3 in sequence.

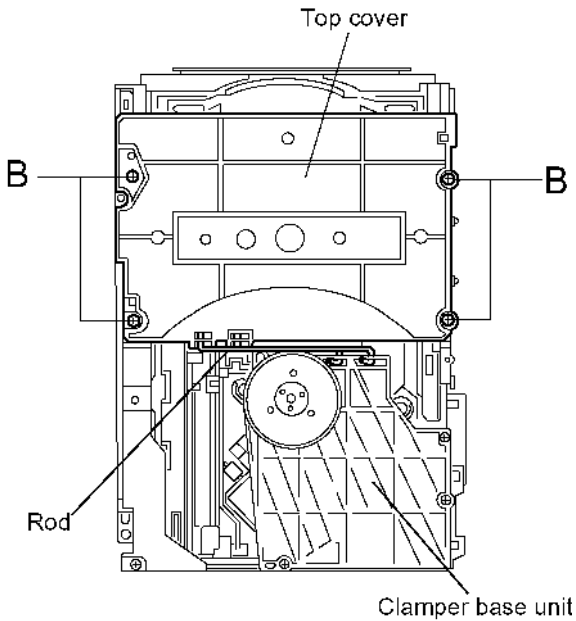


Fig.6

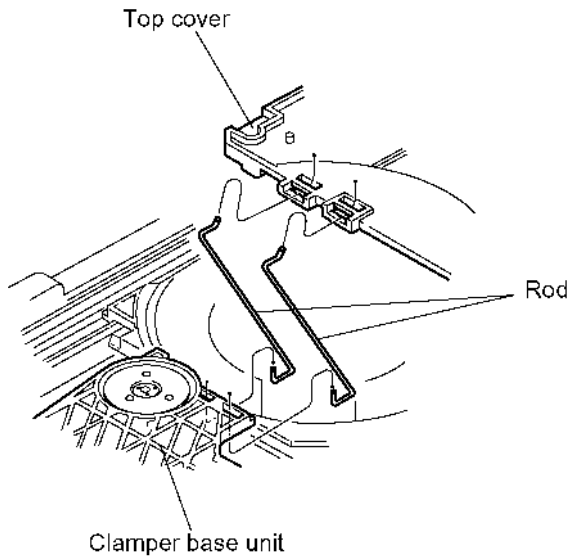


Fig.7

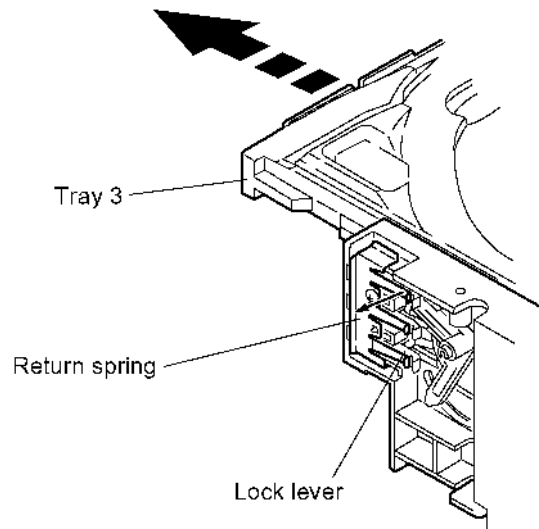


Fig.8

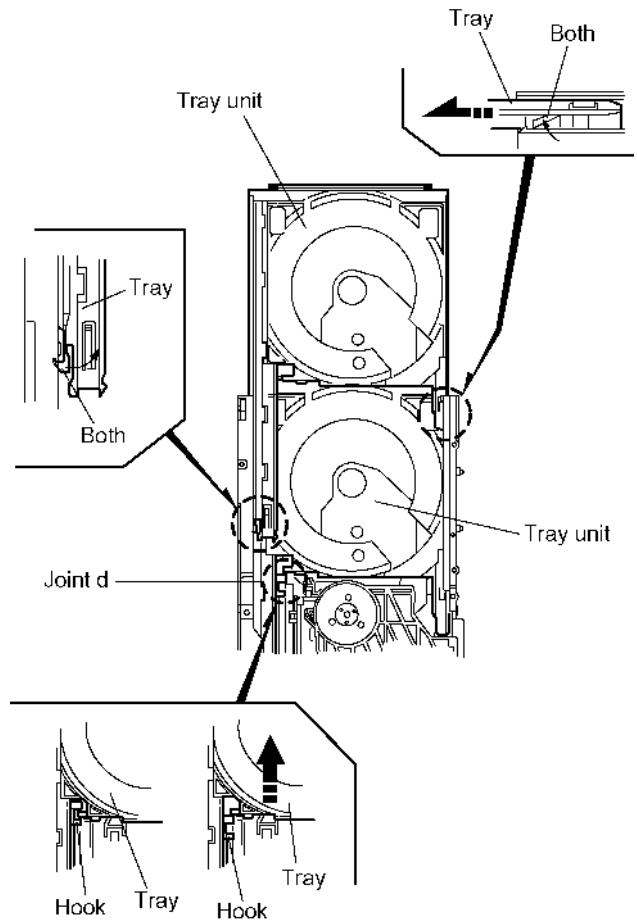


Fig.9

3.1.3 Removing the side unit (L) and (R)
(See Fig.10 to 14)

*Prior to performing the following procedures, remove the servo control board, the top cover and the tray unit.

- (1) Remove the two screws **C** attaching the side unit (L).
- (2) Slide and remove the side unit (L) toward the front while releasing the two joints **e** and the joint **f** with the chassis unit.
- (3) Slide the slide cam (L) toward the front until it stops to place the sub chassis unit at the top position.

ATTENTION:

The side unit (R) can be removed when the sub chassis unit is located at the top position.

- (4) Turn the hook gear counterclockwise to move the slide hook and the slider (R) backward until they stop.
- (5) Remove the three screws **D** attaching the side unit (R). Raise the side unit (R) upward and release the joint **g** with the chassis unit and the boss from the select arm marked **h**. Then remove the side unit (R) from the body.

ATTENTION:

When reassembling, make sure the boss is fitted to the select arm marked **h**.

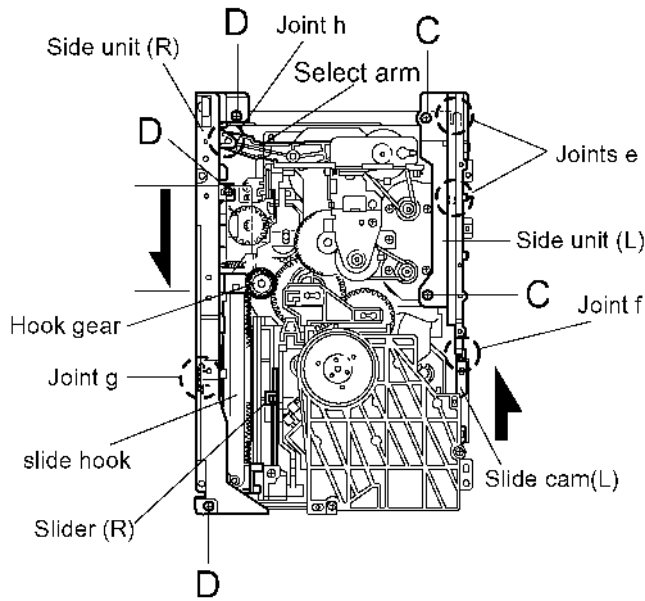


Fig.10

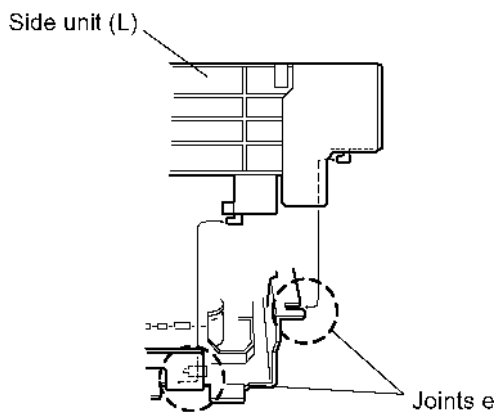


Fig.11

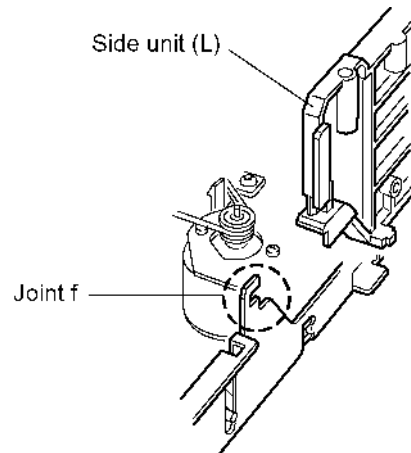


Fig.12

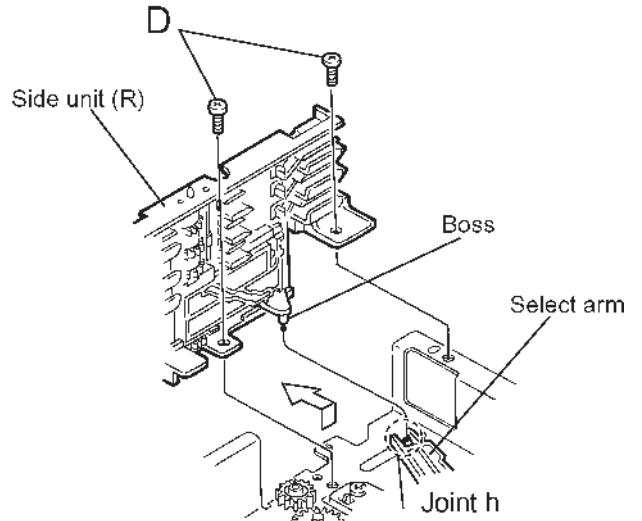


Fig.13

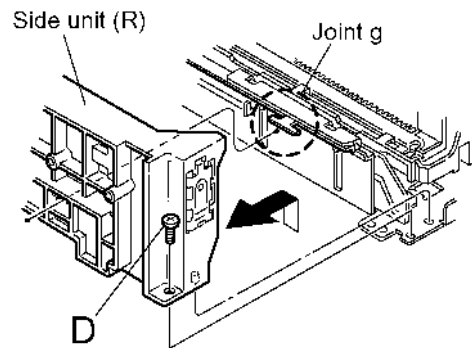


Fig.14

**3.1.4 Removing the sub chassis unit
(See Fig.15 to 17)**

*Prior to performing the following procedures, remove the servo control board, the top cover, the tray unit, the side unit (L) and the side unit (R).

- (1) Turn the hook gear counterclockwise to move the slide hook and the slider (R) backward until they stop.
- (2) Slide the slide cam (L) and the slide cam (R) in the direction of the arrow until they stop.

(The notches of each slide cam are fitted to the pins on both sides of the sub chassis unit.)

- (3) Detach the sub chassis unit upward.

ATTENTION:

When reassembling, turn the hook gear of the chassis unit counterclockwise until it stops and slide the slide hook and the slider (R) of the sub chassis unit backward until they stop.

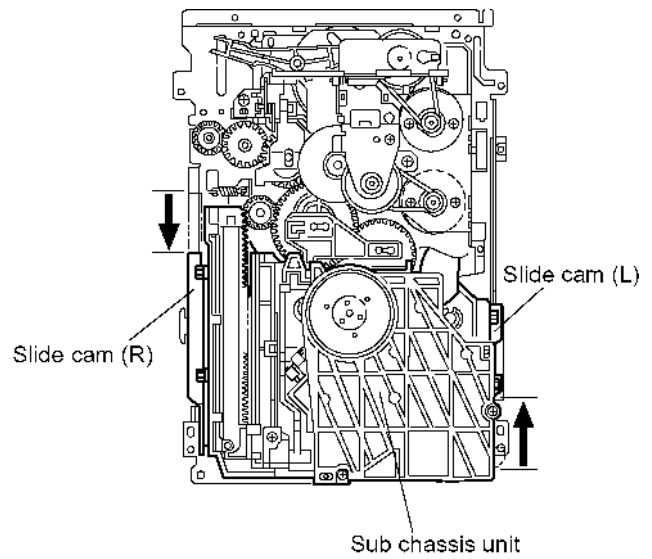


Fig.15

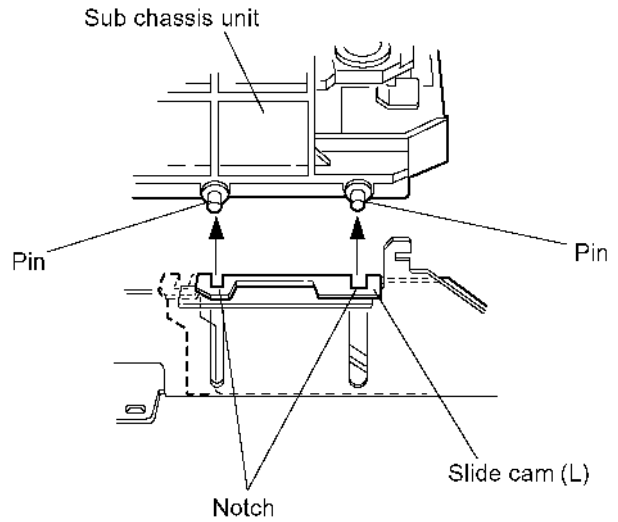


Fig.16

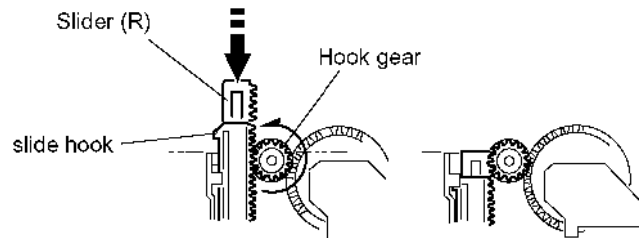


Fig.17

3.1.5 Removing the flap base unit and the gear base unit (See Fig.18 and 19)

*Prior to performing the following procedures, remove the servo control board, the top cover, the tray unit, the side unit (L) and the side unit (R).

- (1) Remove the screw **E** attaching the flap base unit. Release the joint tabs **i** and **j**, then remove the flap base unit from the body.
- (2) Remove the belts from the two pulleys on the gear base unit.
- (3) Remove the three screws **F** and remove the gear base unit from the body.

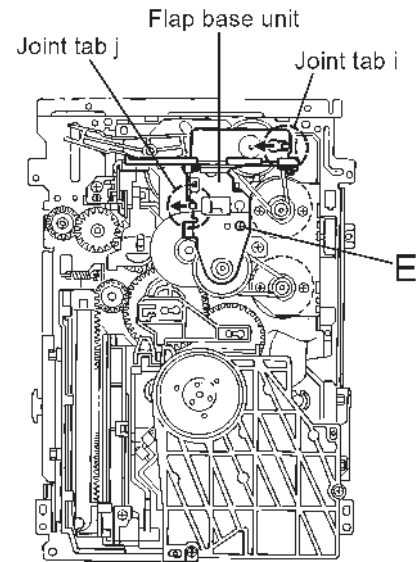


Fig.18

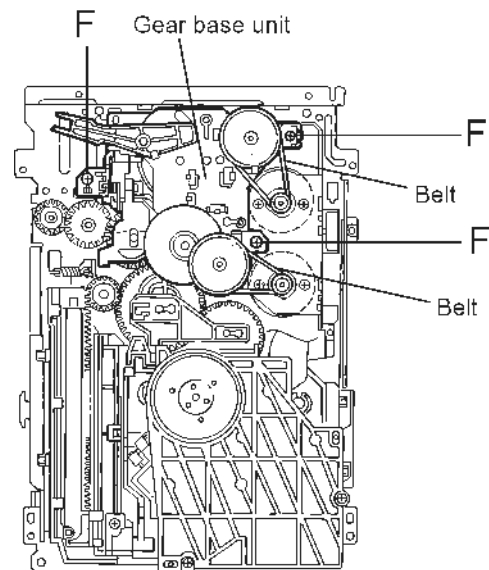


Fig.19

3.1.6 Removing the motors (See Fig.20)

*Prior to performing the following procedure, remove the main board.

- (1) Remove the belts from the two pulleys.
- (2) Remove the four screws **G** and detach each motor from the body.

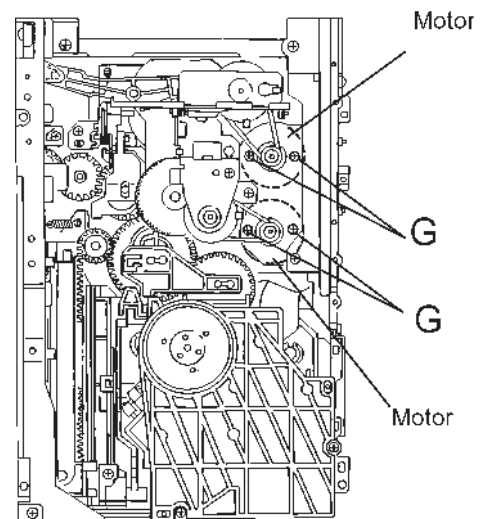


Fig.20

3.1.7 Removing the pickup
(See Fig.21 to 25)

- (1) From the top of the body, remove the three screws **H** attaching the clamper base unit.
- (2) Remove the clamper base unit with the two rods attached to the clamper base unit and the top cover.
- (3) Turn the screw shaft gear marked **k** in the direction of the arrow to move the pickup unit.
- (4) Remove the screw **I** attaching the shaft holder.
- (5) Move the screw shaft in the direction of the arrow and release it from the joint **I**. Then release it from the joint **m** with the pickup holder. Detach the pickup with the screw shaft.
- (6) Solder the part **n** of the flexible board on the underside of the pickup. After soldering, disconnect the flexible wire connected to the pickup (In case of disconnecting the flexible wire without soldering, it may cause damage to the CD pickup).
- (7) Remove the two screws **J** attaching the rack arm to the pickup unit.
- (8) Pull out the screw shaft from the pickup.

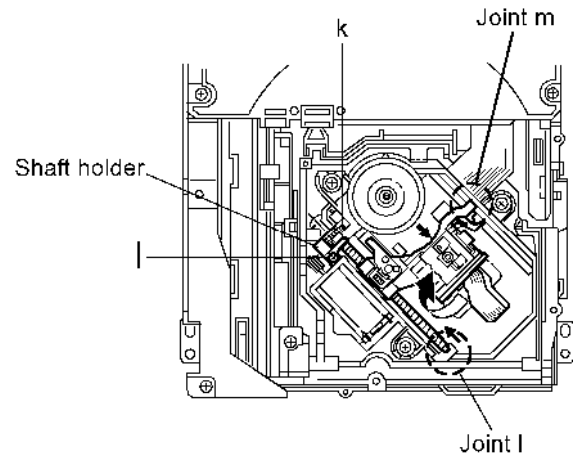


Fig.23

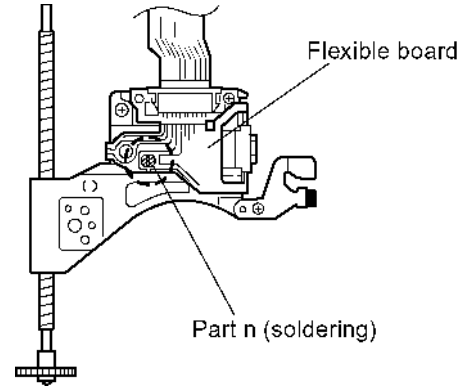


Fig.24

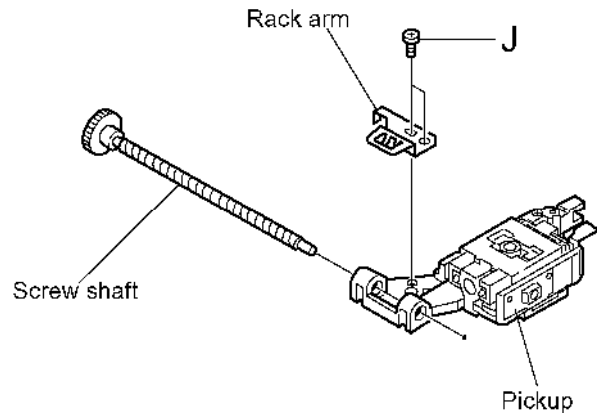


Fig.25

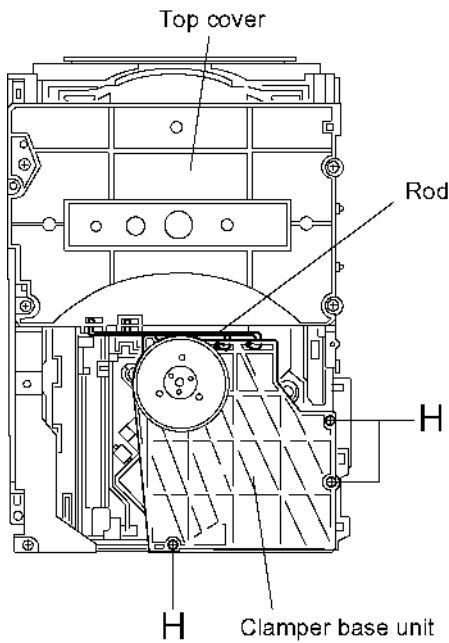


Fig.21

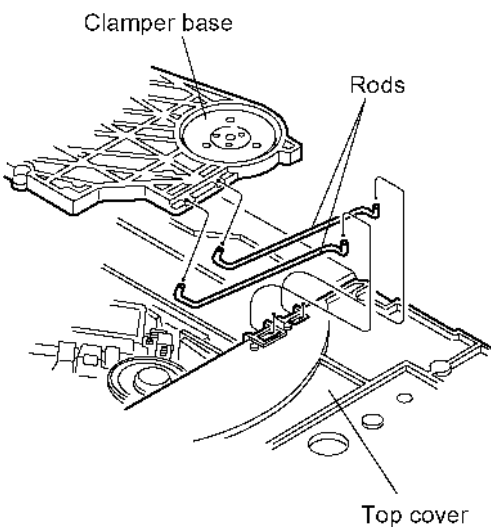


Fig.22

3.1.8 Removing the traverse mechanism assembly (See Fig.26)

*Prior to performing the following procedure, remove the servo control board and the clamper base unit.

- (1) Remove the three screws **K** attaching the traverse mechanism assembly.
- (2) Detach the rear part of the traverse mechanism assembly upward to release the joint **o** with the sub chassis unit. Then remove the assembly from the body.

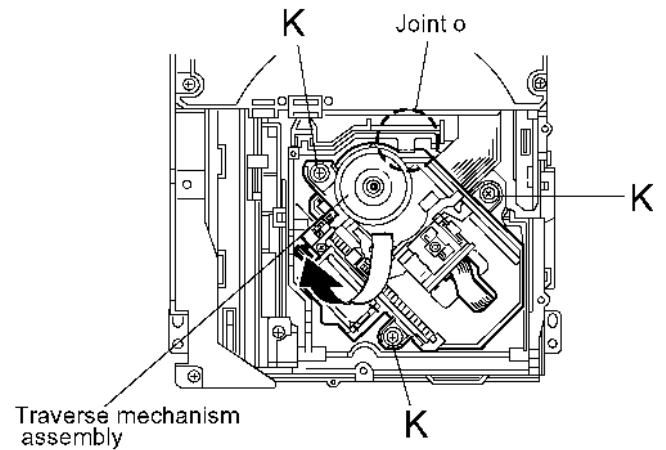


Fig.26

3.1.9 Removing the feed motor (See Fig.27)

*Prior to performing the following procedure, remove the traverse mechanism assembly.

- (1) Remove the screw **L** attaching the feed motor.

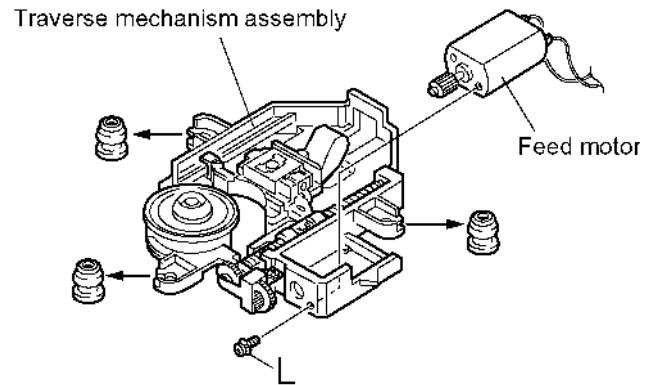


Fig.27

3.1.10 Removing the tray select switch board
(See Fig.6,7 and 28)

- (1) Remove the four screws **B** attaching the top cover on the top of the body.
- (2) Remove the top cover with the two rods attached to the top cover and the clamper base unit.
- (3) Remove the screw **M** on the right side of the body.

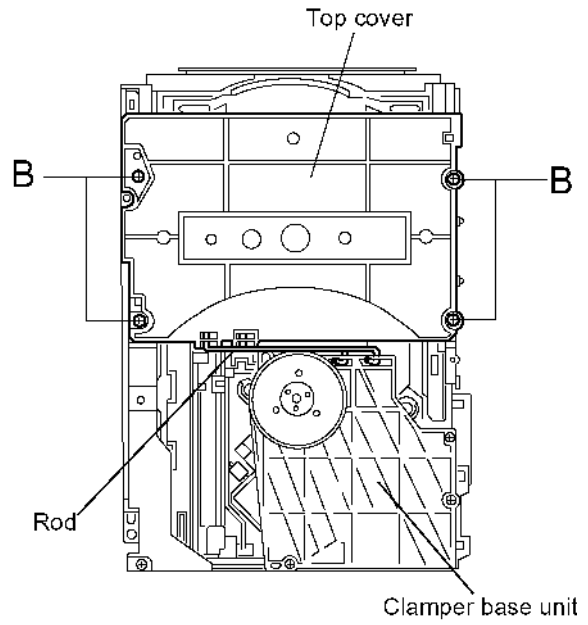


Fig.6

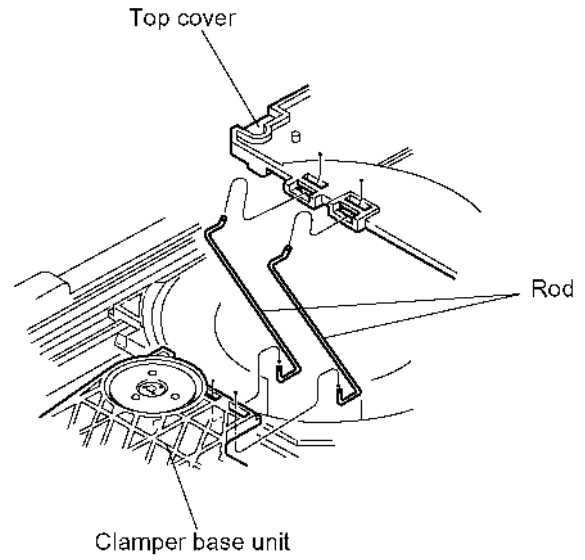


Fig.7

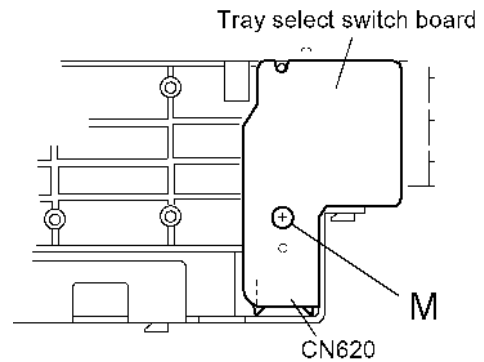


Fig.28

SECTION 4

Confirm method of operation

4.1 Check mode

All lighting FL display and reducing time operation of clock

- (1) Setting method of all lighting FL display
"STANDBY/ON" key is pushed while pushing "REC/REC MUTING" key by the stand-by state.
- (2) Setting method of reducing time operation of clock
FL display is put into the state of all lighting by the method of the above-mentioned, and "STANDBY/ON" key is pushed afterwards. The clock display comes to advance during one minute a second in actual time when changing to this mode. Because other operation can do the normal operation, Uses for the confirmation of the operation of the timer function etc.
- (3) Release method
"STANDBY/ON" key is pushed while pushing "REC/REC MUTING" key.

4.2 All release of set content

All content of the item in the following set is returned to initial state. (State of factory shipment)

- (1) Setting method
"STANDBY/ON" key is pushed while pushing "REC SOURCE SELECTOR" key by the stand-by state.

[Set items]

- Deletion of time setting
- The setting of the timer is deleted.
- The program of the program play is deleted.
- The content of the registration of the listening editing and the program editing is deleted.
The repeat setting is turned off.
- Release of disc lock
- The unit of busy is adjusted to the changer mechanism side.
- The play mode of changer mechanism is made a normal mode.
- The pitch control setting is turned off.
- The selection of the recording source is made DIGITAL of CD.
- DUB-SPEED setting is made HIGH.
- AUTO TRACK setting is turned ON.
- TRACK SPACE setting is turned ON.
- CONVERTER setting is turned ON.
- D-IN SYNCHRO setting is START
- FINALISE setting is ON

4.3 Service menu

There is an item displayed besides "SYSTEM_AGING" and "READ_VERSION" in the service menu.

However, because the effective item is only "SYSTEM_AGING" and "READ_VERSION", the function does not actually use other items. The running operation and the version of the firmware can be confirmed by the undermentioned method.

- (1) Setting method of service menu
 - a) "STANDBY/ON" key is pushed while pushing "FINALIZE" key by the stand-by state.
 - b) When the blinking display of the disk distinction ends, "MENU" key is pushed.
The menu display changes if "MULTI JOG" knob of the main body is turned.
 - c) The execution of the each item is completed or either "CANCEL"key, "CD-RW STOP"key or "MENU"key is pushed when going out of the menu mode.
- (2) Release method
 - a) If "STANDBY/ON" key is pushed, and the power supply is turned off once, becomes a normal menu.

4.4 Running operation

When this mode is executed, the operation of the recording and the playback is repeated.

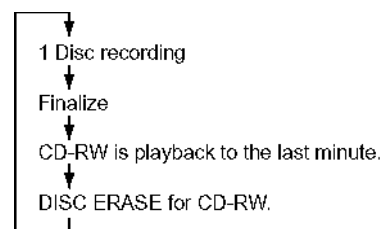
Please use to confirm operation.

It is necessary to put the recorded disk or CD-DA in tray 1 of changer mechanism beforehand to execute this item, and put CD-RW of the blank disk in recording mechanism.

- (1) Setting method of running operation
 - a) "Service menu" is made to be displayed on the FL display referring to the above-mentioned.
 - b) "SYSTEM_AGING" is made to turn "MULTI JOG" knob, and to be displayed on the FL display.
 - c) The undermentioned operation starts when "SET" key is pushed.

The undermentioned control becomes possible according to the content of the disk turned on to tray 1 of changer mechanism.

- * The time required of operation of running once
- * Movement frequency of pick-up



FL display becomes "****", and the frequency to which the running operation is done is displayed by the figure when "STOP" key is pushed to the running working or interrupted because of the error etc.

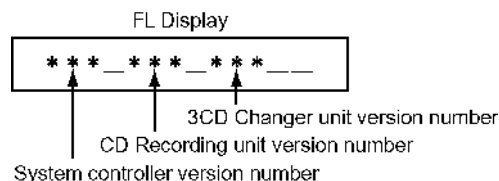
4.5 Display of version number

When this item is executed, version number "system controller", "CD recording unit", and "3CD changer unit" respectively is displayed in FL display for five seconds.

When five seconds pass, this mode is automatically made clear.

Setting method of display of version number

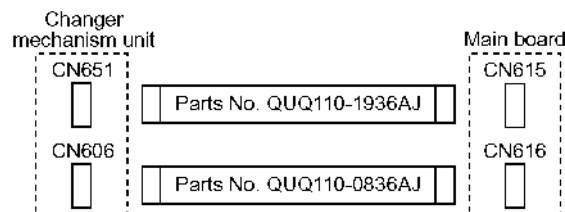
- (1) "Service menu" is made to be displayed on the FL display referring to the previous page.
- (2) "READ_VERSION" is made to turn "MULTI JOG" knob, and to be displayed on the FL display.
- (3) The undermentioned operation starts when "SET" key is pushed.



It is displayed instead of version number when failing in reading version number, "000".

4.6 Extension cord for diagnosis of changer mechanism unit

There is an extension cord to diagnose changer mechanism unit. The undermentioned connector is connected, and used mutually.



SECTION 5

Description of major ICs

5.1 AN22000A-W(IC601):RF & SERVO AMP

- Pin layout

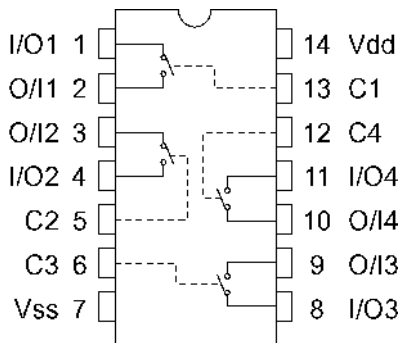
PD	1	32	A
LD	2	31	C
VCC	3	30	B
RFN	4	29	D
RFOUT	5	28	PDF
RFIN	6	27	PDE
CAGC	7	26	TBAL
ARF	8	25	FBAL
CEA	9	24	GCTRL
3TOUT	10	23	FEOUT
CBDO	11	22	FEN
BDO	12	21	TEN
COFTR	13	20	TEOUT
OFTR	14	19	TEBPF
RFDET	15	18	VDET
GND	16	17	VREF

- Pin function

Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	PD	APC Amp. Input terminal	16	GND	Connect to ground
2	LD	APC Amp. Output terminal	17	VREF	VREF output terminal
3	VCC	Power supply terminal	18	VDET	VDET output terminal
4	RFN	RF addition Amp. Reversing input terminal	19	TEBPF	VDET input terminal
5	RF OUT	RF addition Amp. Output terminal	20	TEOUT	TE Amp. output terminal
6	RF IN	AGC input terminal	21	TEN	TE Amp. reversing input terminal
7	C.AGC	Terminal of connection of capacity of AGC loop filter.	22	FEN	FE Amp. reversing input terminal
			23	FEOUT	FE Amp. output terminal
8	ARF	AGC output terminal	24	GCTRL	Terminal GCTL & APC
9	CEA	Capacity connection terminal for HPF-Amp.	25	FBAL	FBAL control terminal
10	3TOUT	3TENV output terminal	26	TBAL	TBAL control terminal
11	CBDO	Capacity connection terminal for RF shade side envelope detection	27	PDE	Tracking signal input terminal 1
			28	PDF	Tracking signal input terminal 2
12	BDO	BDO output terminal	29	D	Focus signal input terminal 4
13	COFTR	Capacity connection terminal for RF discernment side envelope detection	30	B	Focus signal input terminal 2
			31	C	Focus signal input terminal 3
14	OFTR	OFTR output terminal	32	A	Focus signal input terminal 1
15	RFDET	RFDET output terminal			

5.2 BU4066BCF-X(IC831,IC841,IC861):Source selector

- Pin layout & block diagram

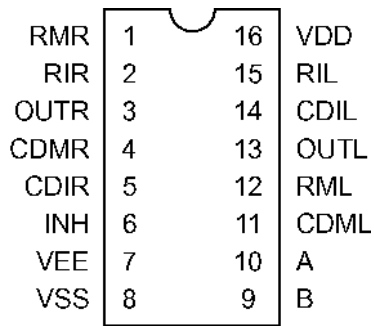


- Truth table

Control	Switch
H	ON
L	OFF

5.3 BU4052BCF-X(IC821):Channel switch controller

- Pin layout



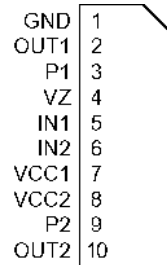
- Truth table

INHIBIT	A	B	ON SWITCH	
L	L	L	X0	Y0
L	H	L	X1	Y1
L	L	H	X2	Y2
L	H	H	X3	Y3
H	X	X	NONE	

X : Don't Care

5.4 LB1641 (IC851,IC852) : DC Motor driver

- Pin layout

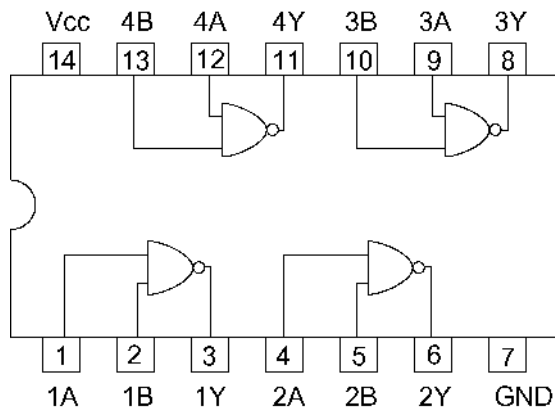


- Truth table

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

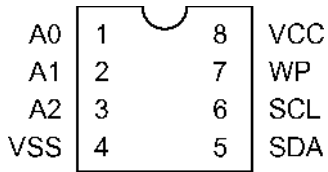
5.5 TC74HC00AF(IC301,IC311):Digital I/O selector

- Pin layout & block diagram

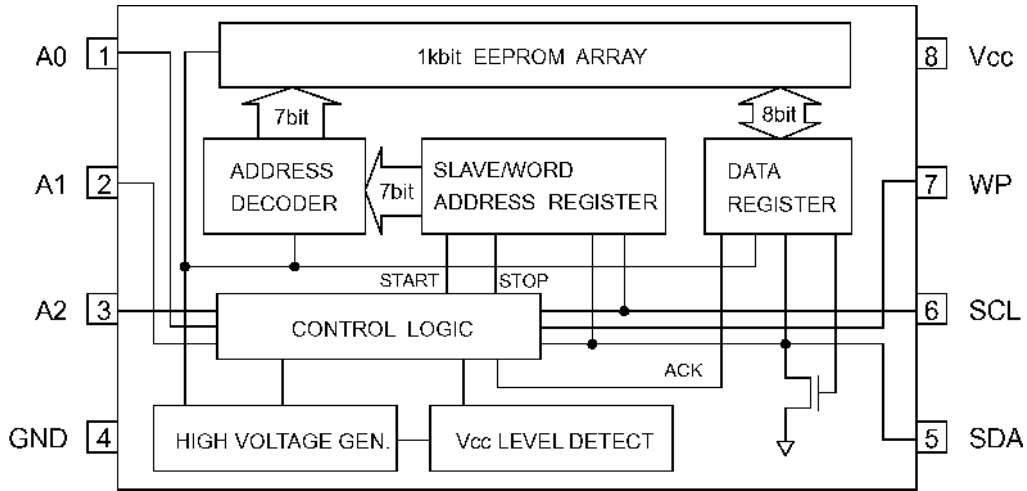


5.6 BR24C01AFV-W-X (IC201) : EEPROM

- Pin layout



- Block diagram



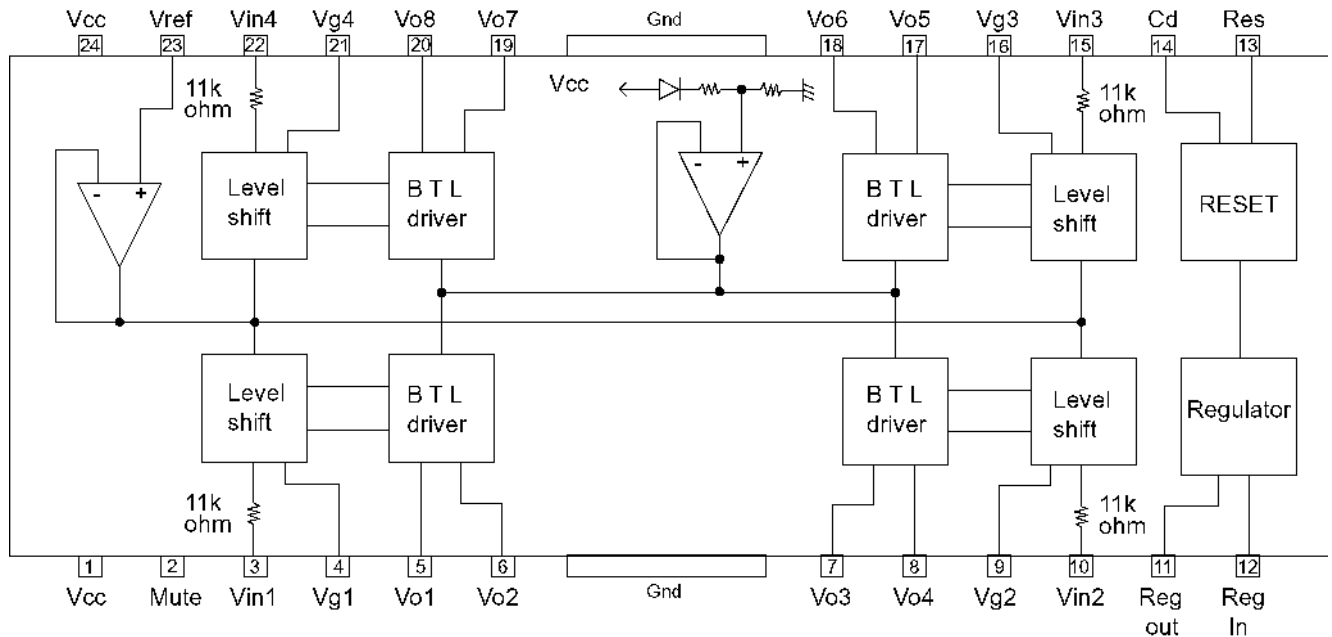
- Pin function

Pin name	I/O	Description
Vcc	-	Power supply
GND	-	Ground (0v)
A0A1A2	IN	Slave address set
SCL	IN	Serial clock input
SDA	IN / OUT	Slave and word address,serial data input serial data output *1
WP	IN	Write protect input

*1 An open drain output requires a pull-up resister.

5.7 LA6541-X (IC801) : Focus & Spindle & Feed & Tracking BTL driver

• Pin layout & Block diagram

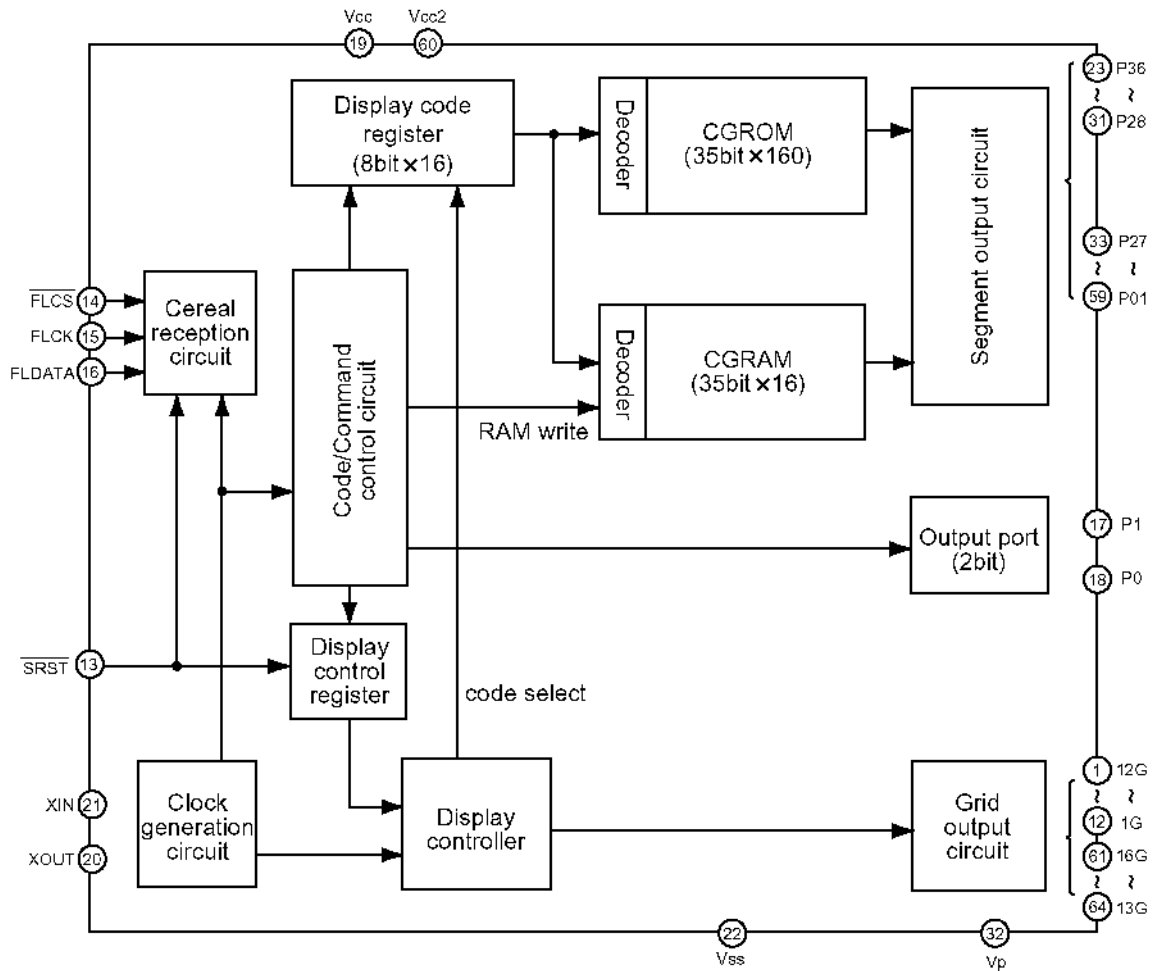


• Pin function

Pin No.	Symbol	Description
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)

5.8 M66004SP(IC721):FL Driver

- Block diagram



- Pin function

Pin.No.	Symbol	I/O	Description
1~12	12G~1G	O	FL grid control signal output.
13	SRST	I	Reset signal input
14	FLCS	I	Chip select signal input.
15	FLCLK	I	Shift clock signal input.
16	FLDATA	I	Serial data input.
17	P1	O	Output port (static operation)
18	P0	O	Output port (static operation)
19	VCC1	-	Power supply for internal logic.
20	XOUT	O	Clock signal output.
21	XIN	I	Clock signal input.
22	VSS	-	Connect to ground.
23~31	P36~P28	O	FL Segment control signal output.
32	VP	-	Power supply.
33~59	P27~P01	O	FL Segment control signal output.
60	VCC2	-	Power supply for grid output and segment output.
61~64	16G~13G	O	FL grid control signal output.

5.9 MN35505-X (IC361) : DAC

- Terminal layout

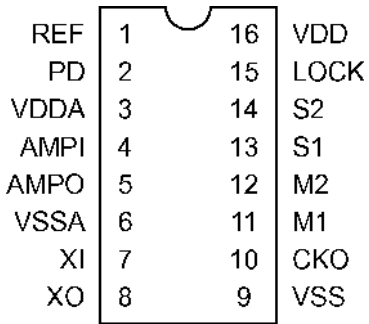
M5	1	28	M6
DIN	2	27	M4
LRCK	3	26	M8
BCK	4	25	M7
M3	5	24	DVDD1
DVDD2	6	23	VCOF
CKO	7	22	XIN
DVSS2	8	21	XOUT
M2	9	20	DVSS1
M1	10	19	M9
OUT1C	11	18	OUT2C
AVDD1	12	17	AVDD2
OUT1D	13	16	OUT2D
AVSS1	14	15	AVSS2

- Pin function

Pin No.	Symbol	I/O	Description
1	M5	I	Control signal for DAC
2	DIN	I	Digital data input
3	LRCK	I	L and R clock for DAC
4	BCK	I	Bit clock for DAC
5	M3	I	Control signal for DAC
6	DVDD2	-	Power supply terminal
7	CKO	-	Non connect
8	DVSS2	-	Connect to ground
9	M2	I	Control signal for DAC
10	M1	I	Control signal for DAC
11	OUT1C	O	Analog output 1
12	AVDD1	-	Power supply terminal
13	OUT1D	O	Analog output 1
14	AVSS1	-	Connect to ground
15	AVSS2	-	Connect to ground
16	OUT2D	O	Analog output 2
17	AVDD2	-	Power supply terminal
18	OUT2C	O	Analog output 2
19	M9	-	Non connect
20	DVSS1	-	Connect to ground
21	XOUT	-	Non connect
22	XIN	-	Non connect
23	VCOF	I	VCO Frequency
24	DVDD1	-	Power supply D+5V
25	M7	I	System clock rate selection
26	M8	I	System clock rate selection
27	M4	I	Control signal for DAC
28	M6	-	Connect to ground

5.10 TC9246F-X(IC404):Clock generation for digital audio

- Pin layout

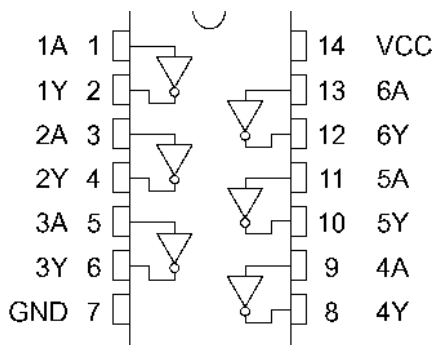


- Pin function

Pin No.	Symbol	I/O	Description
1	REF	I	Standard signal input terminal
2	PD	O	Phase difference signal output terminal
3	VDDA	-	Power supply voltage terminal for analog circuit
4	AMPI	I	AMP input terminal for LPF or oscillator 1
5	AMPO	O	AMP output terminal for LPF or oscillator 1
6	VSSA	-	Connect to ground for analog circuit
7	XI	I	AMP input terminal for oscillator 3
8	XO	O	AMP output terminal for oscillator 3
9	VSS	-	Connect to ground for digital circuit
10	CKO	O	Oscillation clock output terminal
11	M1	I	Mode select terminal
12	M2	I	Mode select terminal
13	S1	I	Parallel mode : Dividing frequency selection terminal Serial mode : Microcomputer data input terminal
14	S2	I	Parallel mode : Dividing frequency selection terminal Serial mode : Shift clock input terminal
15	LOCK	O	Lock detect signal output terminal
16	VDD	-	Power supply voltage terminal for digital circuit

5.11 TC74HCU04AF-W(IC331):Digital input selector

- Pin layout & block diagram

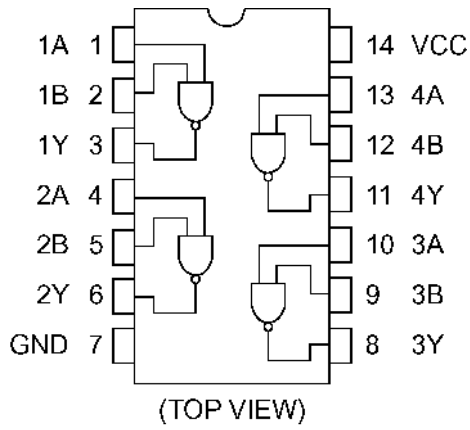


- Truth table

A	Y
L	H
H	L

5.1274VHC00MTC-X (IC406) : 2-input nand gate

- Pin layout



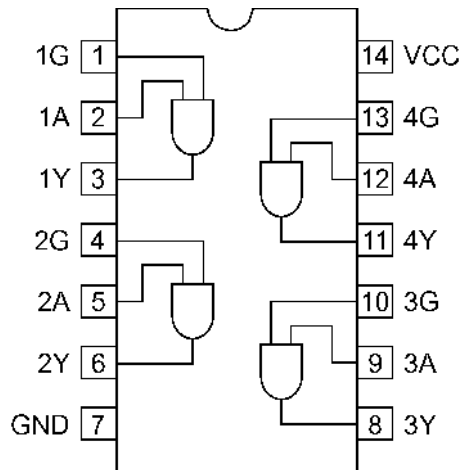
- Truth table

A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

L : High impedance

5.1374VHC08SJ-X(IC407):2-input AND gate

- Pin layout

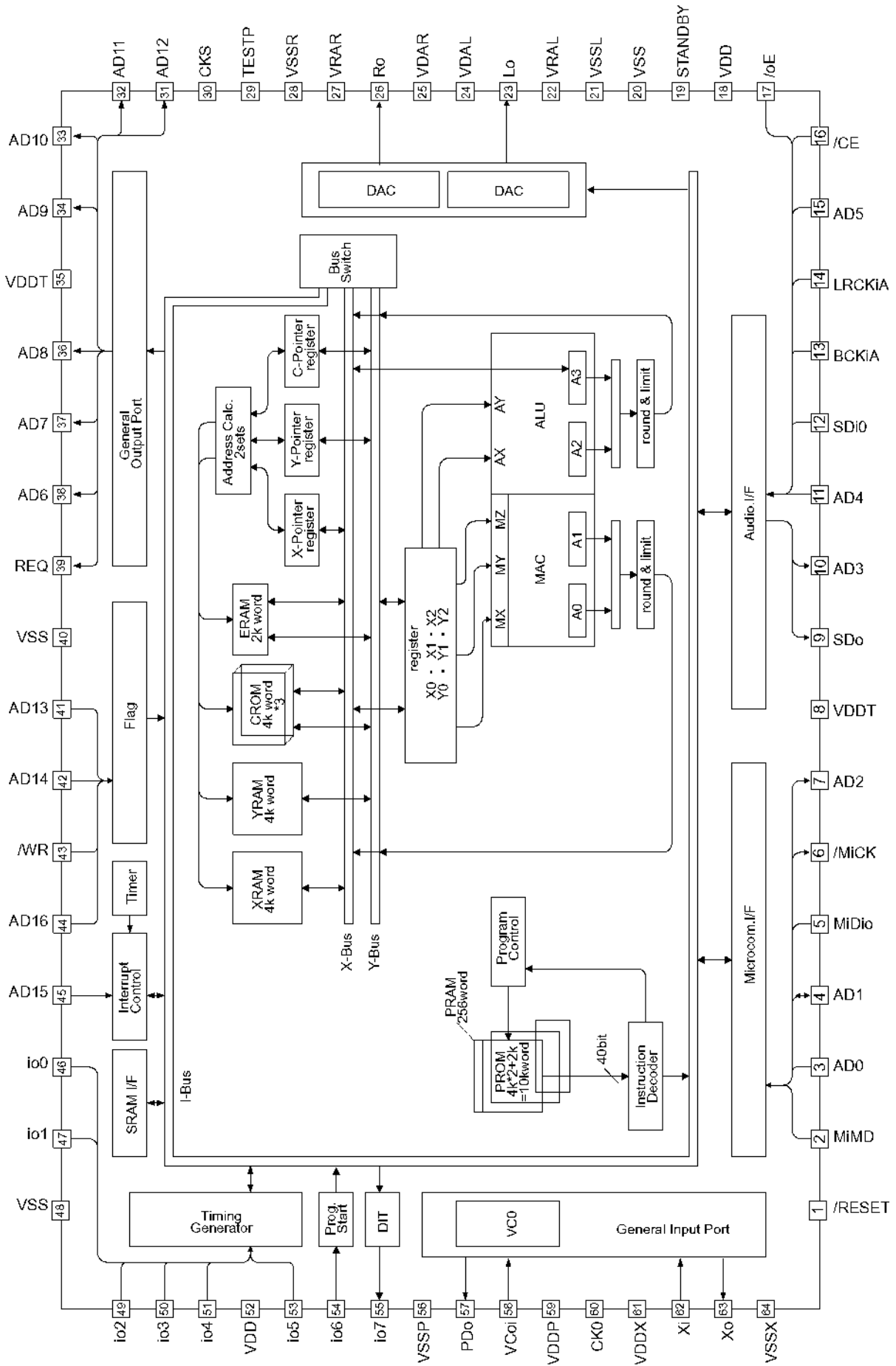


- Truth table

G	Y	A
L	Z	L
L	Z	H
H	Z	L
H	L	H

5.14TC94A02F-005(IC401) : MP3 Decoder

- Block diagram



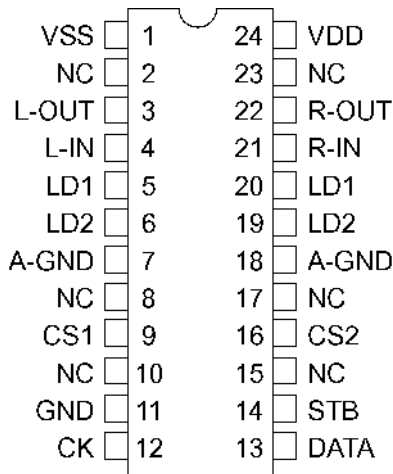
• Pin function

Pin No.	Symbol	I/O	Description
1	/RESET	I	Hard reset input terminal(H:Normal operation L: Reset)
2	MiMD	I	Micon I/F mode select input terminal
3	AD0	O	External SRAM address output 0 terminal
4	AD1	O	External SRAM address output 1 terminal
5	MiDio	I/O	Micon I/F data input/output terminal
6	/MiCK	I	Micon I/F clock input terminal
7	AD2	O	External SRAM address output 2 terminal
8	VDDT	-	Digital power supply (3.3V)
9	SDo	O	Data output terminal
10	AD3	O	External SRAM address output 3 terminal
11	AD4	O	External SRAM address output 4 terminal
12	SDi0	I	Data input terminal 0
13	BCKiA	I	Bit clock input terminal A
14	LRCKiA	I	LR clock input terminal A
15	AD5	O	External SRAM address output 5 terminal
16	CE	O	External SRAM chip enable terminal
17	OE	O	External SRAM output enable terminal
18	VDD	-	Digital power supply (2.5V)
19	STANBY	I	Standby mode control terminal
20	VSS	-	Digital GND
21	VSSL	-	DAC Lch GND
22	VRAL	-	DAC Lch reference voltage terminal
23	LO	O	DAC Lch output terminal
24	VDAL	-	DAC Rch power supply terminal(2.5V)
25	VDAR	-	DAC Lch power supply terminal(2.5V)
26	RO	O	DAC Rch output terminal
27	VRAR	-	DAC Rch reference voltage terminal
28	VSSR	-	DAC Rch GND
29	TESTP	I	Test terminal
30	CKS	I	VCO select terminal
31	AD12	O	External SRAM address output 12 terminal
32	AD11	O	External SRAM address output 11 terminal
33	AD10	O	External SRAM address output 10 terminal
34	AD9	O	External SRAM address output 9 terminal
35	VDDT	-	Digital power supply terminal (3.3V)
36	AD8	O	External SRAM address output 8 terminal
37	AD7	O	External SRAM address output 7 terminal
38	AD6	O	External SRAM address output 6 terminal
39	REQ	O	Squeeze request terminal to host
40	VSS	-	Digital GND
41	AD13	O	External SRAM address output 13 terminal
42	AD14	O	External SRAM address output 14 terminal
43	WR	O	External SRAM write signal
44	AD16	O	External SRAM address output 16 terminal
45	AD15	O	External SRAM address output 15 terminal
46	io0	I/O	External SRAM data input/output 0 terminal
47	io1	I/O	External SRAM data input/output 1 terminal

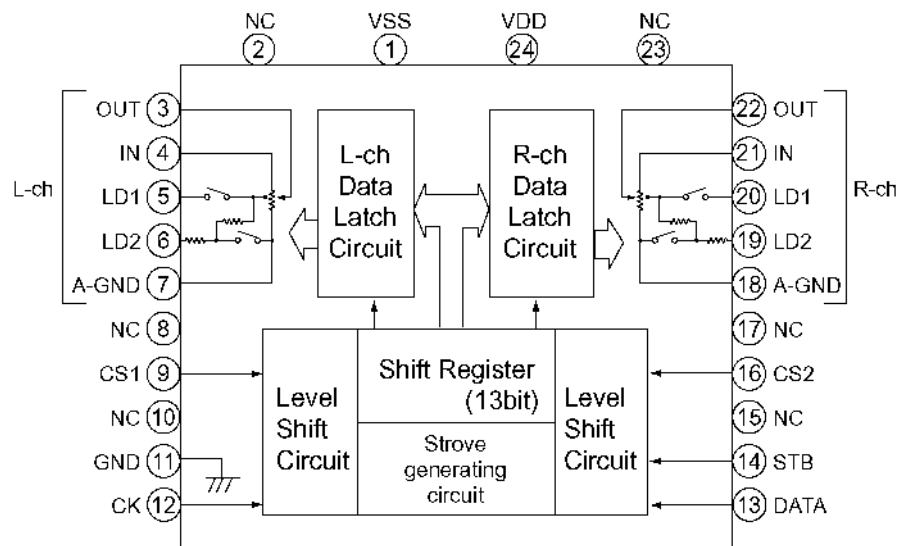
Pin No.	Symbol	I/O	Description
48	VSS	-	Digital GND
49	io2	I/O	External SRAM data input/output 2 terminal
50	io3	I/O	External SRAM data input/output 3 terminal
51	io4	I/O	External SRAM data input/output 4 terminal
52	VDD	-	Digital power supply (2.5V) terminal
53	io5	I/O	External SRAM data input/output 5 terminal
54	io6	I/O	External SRAM data input/output 6 terminal
55	io7	I/O	External SRAM data input/output 7 terminal
56	VSSP	-	VCO GND
57	Pdo	O	PLL phase error detection signal output terminal
58	Vcoi	I	VCO control voltage input terminal
59	VDDP	-	VCO power supply
60	Cko	O	16.934 MHz clock output terminal
61	VDDX	-	Power supply (2.5V) terminal for oscillator
62	Xi	I	Connection terminal for oscillator (input)
63	Xo	O	Connection terminal for oscillator (output)
64	VSSX	-	GND for oscillator

5.15 TC9412AF(IC891) : Rec Level

- Pin layout



- Block diagram

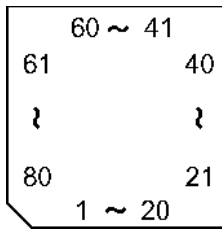


- Pin functions

Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	VSS	Negative power supply terminal	13	DATA	Volume setup serial data input terminal
2	NC	Non connect	14	STB	Data write strobe input terminal
3	L-OUT	L-ch Volume output terminal	15	NC	Non connect
4	L-IN	L-ch Volume input terminal	16	CS2	Chip select terminal
5	LD1	L-ch Loudness tap output terminal	17	NC	Non connect
6	LD2	L-ch Loudness tap output terminal	18	A-GND	R-ch Analog ground
7	A-GND	L-ch Analog ground	19	LD2	R-ch Loudness tap output terminal
8	NC	Non connect	20	LD1	R-ch Loudness tap output terminal
9	CS1	Chip select input terminal	21	R-IN	R-ch Volume input terminal
10	NC	Non connect	22	R-OUT	R-ch Volume output terminal
11	GND	Digital ground	23	NC	Non connect
12	CK	Data transfer clock input terminal	24	VDD	Positive power supply terminal

5.16MN662790RSC(IC651):Digital servo & processor

• Pin layout



• Pin function

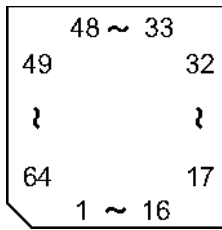
MN662790RSC (1/2)

Pin No.	Symbol	I/O	Description
1	BCLK	O	Bit clock output for SRDATA
2	LRCK	O	Identifying signal output of LR
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

Pin No.	Symbol	I/O	Functions
41	PLLF2	I/O	Terminal for loop filter characteristic switch for PLL
42	DSLBDATA	-	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	DSLFB	I/O	Loop filter terminal for DSL
48	PLLF	I/O	Loop filter terminal for PLL
49	VCOFB	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	DSLBO	O	PLL extraction clock output
54	VCOFB2	I/O	Loop filter terminal for VCO
55	SUBCO	O	Sub code serial output
56	SBCCK	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

5.17UPD780076GK-533(IC251):Unit microcomputer

- Pin layout



- Pin layout

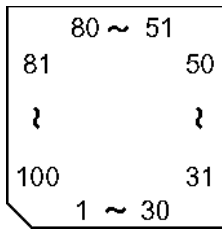
UPD780076GK-533 1/2

Pin No.	Symbol	I/O	Description
1	E2SCK	O	Serial clock output to IC201
2	E2SDL	I/O	Serial data input/output with IC201
3	MCS	I	Communication method selection input from system microcomputer L : Synchronization H : Asynchronous
4	MRDY	O	Signal output to system microcomputer by which command can be received L→H : Status output enable H→L : command can be received
5	ITRVP3	I	Play position switch (SW3) detection input
6	ITRVP2	I	Play position switch (SW2) detection input
7	ITRVP1	I	Play position switch (SW1) detection input
8	ITRYSoc	I	Sub tray open/close detection switch input
9	VSS0	-	Connect to ground
10	VDD0	-	Power supply terminal (+)
11	RESET	I	REST switch detection input (traverse mechanism)
12,13		-	Non connect
14	ICAMP1	I	Cam switch position 1 input
15	KCMND/TXD	I/O	Command input from system microcomputer (synchronization) or status output (asynchronous)
16	MSTAT/RXD	I/O	Status output to system microcomputer (synchronization) or command input (asynchronous)
17	KCLK	I	System microcomputer data/serial/clock input
18	SUBQ	I	Sub code Q data input
19	CDCOPY	O	Right or wrong of CD copy signal output
20	SQCK	O	Clock output for sub code Q register
21	CDINDEX	O	CD index information
22	CDTNO	O	CD track information
23	ICAMP2	I	Cam switch position 2 input
24	VDD1	-	Power supply terminal (+)
25	AVSS	-	Connect to ground for A/D converter
26	VDET_LEVEL	I	Input for vibration detecting changeable level
27	KEY2	I	Output voltage monitor of regulator (IC291)
28	TRY3CLOSE	I	Main tray 3 close switch detection input
29	TRY3OPEN	I	Main tray 3 open switch detection input
30	TRY2CLOSE	I	Main tray 2 close switch detection input
31	TRY2OPEN	I	Main tray 2 open switch detection input
32	TRY1OPEN	I	Main tray 1 open switch detection input
33	TRY1CLOSE	I	Main tray 1 close switch detection input
34	AVREF	-	Standard voltage of A/D converter and analog power supply
35	CAM_CW	O	Cam motor drive signal output (clockwise)
36	RESET	I	System reset input

Pin No.	Symbol	I/O	Description
37	XT2	-	Non connect
38	XT1	I	Sub system clock oscillation terminal
39	IC	I	Connect to ground
40	X2	O	Main system clock output
41	X1	I	Main system clock input
42	VSS1	-	Connect to ground
43	FLAG	I	Flag (C1 error) signal input
44	BLKCK	I	Sub code/block/clock signal input
45	RFDET	I	RF signal detection input
46	CAM_CCW	O	Cam motor drive signal output (counterclockwise)
47	ACT_CCW	O	Actuator motor drive signal output (counterclockwise)
48	ACT_CW	O	Actuator motor drive signal output (clockwise)
49		-	Non connect
50	EQX2	O	Equalizer switch output (H:one time velocity L:double-speed/four time velocity)
51	ICAMP3	I	Cam switch position 3 input
52	ICAMP4	I	Cam switch position 4 input
53	RESET	O	Reset output to IC651
54	STAT	I	Status signal input from IC651
55	DMUTE	O	Muting output to IC651 H : muting
56	P.ON	O	Control signal output of 3.5V regulator (IC291)
57	MLD	O	Command load signal output to IC651
58	MDATA	O	Command data signal output to IC651
59	MCLK	O	Command clock signal output to IC651
60	CLKSW	O	Clock output control terminal to the outside
61	EQX4	I	Equalizer switch output (H:one time velocity/double-speed L:four time velocity)
62,63		-	Non connect
64	DR_MUTE	O	Driver IC muting output H : muting

5.18UPD784215AGF513(IC501):System controller

- Pin layout



- Pin function

UPD784215AGF513 1/2

Pin No.	Symbol	I/O	Description
1	CKSL2	-	Not use
2	CKSL1	-	Not use
3	IDFS2	-	Not use
4	TEST-	I	Test mode input terminal L : Test mode
5	VR_STB	O	Strobe signal output to IC891
6	VR_DATA	O	Data output to IC891
7	VR_CK	O	Clock signal output to IC891
8	NC	-	Non connect
9	VDD	-	Power supply terminal +5V
10,11	CS1/CS2	I	Chip select terminal
12,13	JOGA/JOGB	I	Multi jog dial A/B input
14	FLDAT	O	Serial data output to FL driver
15	FLCLK	O	Shift clock signal output to FL driver
16	FLCS	O	Chip select signal output to FL driver L : data output
17,18	NC	-	Non connect
19	PLL LOOK	I	PLL LOCK detect signal from IC404
20	DIN_COA	-	When digital input is coaxial for output H
21	NC	-	Non connect
22	VPP	-	Connect to ground
23	DIG_LED	O	Digital LED control signal output L : Lighting
24	CD_LED	O	3CD LED control signal output L : Lighting
25	LIN_LED	O	Line IN LED control signal output L : Lighting
26	MIC_LED	O	MIC LED control signal output L : Lighting
27	CC LED	-	Non use
28	MIXBL	I	Mix balance volume level input
29	DIN_OPT	O	When digital input is optical for output H
30	SMUTE	O	System muting signal output
31	DACMUTE	O	DAC muting signal output
32	CD_DRT	O	It is a power output to the direct connection of analog recording source 3CD to the A/D input of CD-RW as for L
33	SCD	O	Analog recording source 3CD select control output L : selected 3CD
34,35	SLIN1/SLIN2	O	Analog recording source select control output
36	SMIC	O	Analog recording source MIC select control output L : selected MIC
37	VDD	-	Power supply terminal +5V (connects with the backup capacitor at power supply off.)
38	X2	O	Main system clock output terminal 10MHz
39	X1	I	Main system clock input terminal 10MHz
40	VSS	-	Connect to ground
41	XT2	O	Sub clock output terminal 32.768KHz
42	XT1	I	Sub clock input terminal 32.768KHz
43	RESET	I	Reset signal input

Pin No.	Symbol	I/O	Description
44	REM	I	Remote control signal input
45	NC	-	Non connect
46	ACON	I	The AC power supply existence detection terminal L : No AC power supply (backup mode) H : AC power supply having (normal mode : Backup mode Release)
47	CDR_RREQ	I	Request demand input from CD-RW unit
48	MP3REQ	I	Request demand input from MP3 decoder
49	DOCD	O	Output select control H : selected 3CD L : selected CD-RW
50	SLCDR	O	Output select control H : selected CD-RW L : selected 3CD
51	AVDD	-	Power supply terminal +5V (connects with the backup capacitor at power supply off.)
52	AVREF0	-	3CD Analog signal level reference voltage
53~56	KEY1~4	I	Operation switch input terminal 1~4
57	NC	-	Non use
58	3CDINR	I	3CD analog signal level input (for Rch level meter)
59	3CDINL	I	3CD analog signal level input (for Lch level meter)
60	MODE	I	DCS mode setting switch input
61	AVSS	-	Connect to ground
62	DCSI	I	DCS command input
63	DCSO	O	DCS command output
64	AVREF1	-	Power supply terminal +5V
65	NC	-	Non connect
66	NC	-	Non connect
67	NC	-	Non connect
68	STAT	I	3CD status input
69	COMD	O	3CD command output
70	ASCK1	I	Connect to ground
71	SRST	O	System reset signal output L : active
72	POWER	O	System power supply control terminal / standby LED control H : power OFF / LED turning off L : power ON / LED lighting
73	CDR_DTI	I	Serial data input from CD-RW unit
74	CDR_DTO	O	Serial data output to CD-RW unit
75	CDR_ACLK	I	Clock signal input from CD-RW unit
76	CDR_SREQ	O	Request signal output to CD-RW unit L : active
77	SYS_RDY	O	System ready output to CD-RW unit L : active
78	NC	-	Non connect
79	DACPD	O	DAC power down control output
80	SLCD	O	Output select control H : 3CD L : CD-RW
81	3CD_RES	O	Reset signal output to 3CD unit micom (IC251)
82	NC	-	Non connect
83	DOCDR	O	Digital output select control H : selected CD-RW L : selected 3CD
84~88	NC	-	Non connect
89	MP3BYPAS	O	Bypass signal output to IC406 L : MP3 decoder is bypassed
90	MP3LED	O	MP3LED control signal output L : Lighting
91,92	NC	-	Non connect
93	MP3RST	O	Reset signal output to MP3 decoder(IC401) L : Reset
94	DIFENA	O	MP3 Board(LEB10055) enable/disable control signal output H : operable
95	MP3SDA	I/O	MP3 Decoder I/F data input/output terminal
96	MP3SCL	O	MP3 Decoder I/F clock output terminal
97	NC	-	Non connect
98	CDRRST	O	Reset signal output to CD-RW unit L : reset ON
99	STBY_LED	O	Standby LED control signal output L : lighting
100	VSS	-	Connect to ground

5.19W24L010AJ-12-X (IC402) : SRAM

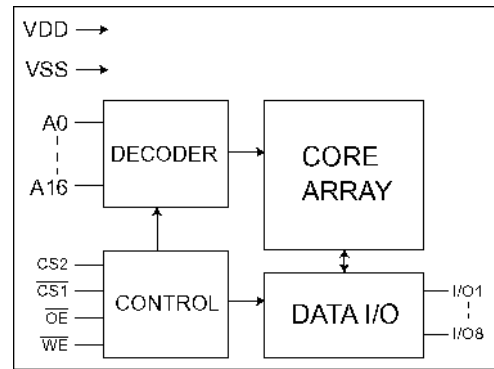
• Pin layout

NC	1	32	VDD
A16	2	31	A15
A14	3	30	CS2
A12	4	29	WE
A7	5	28	A13
A6	6	27	A8
A5	7	26	A9
A4	8	25	A11
A3	9	24	OE
A2	10	23	A10
A1	11	22	CS1
A0	12	21	I/O8
I/O1	13	20	I/O7
I/O2	14	19	I/O6
I/O3	15	18	I/O5
Vss	16	17	I/O4

• Pin functions

Symbol	Description
A0-A16	Address inputs
I/O1-I/O8	Data inputs/outputs
CS1,CS2	Chip select input
WE	Write enable input
OE	Output enable input
VDD	Power supply
VSS	Ground
NC	No connection

• Block diagram





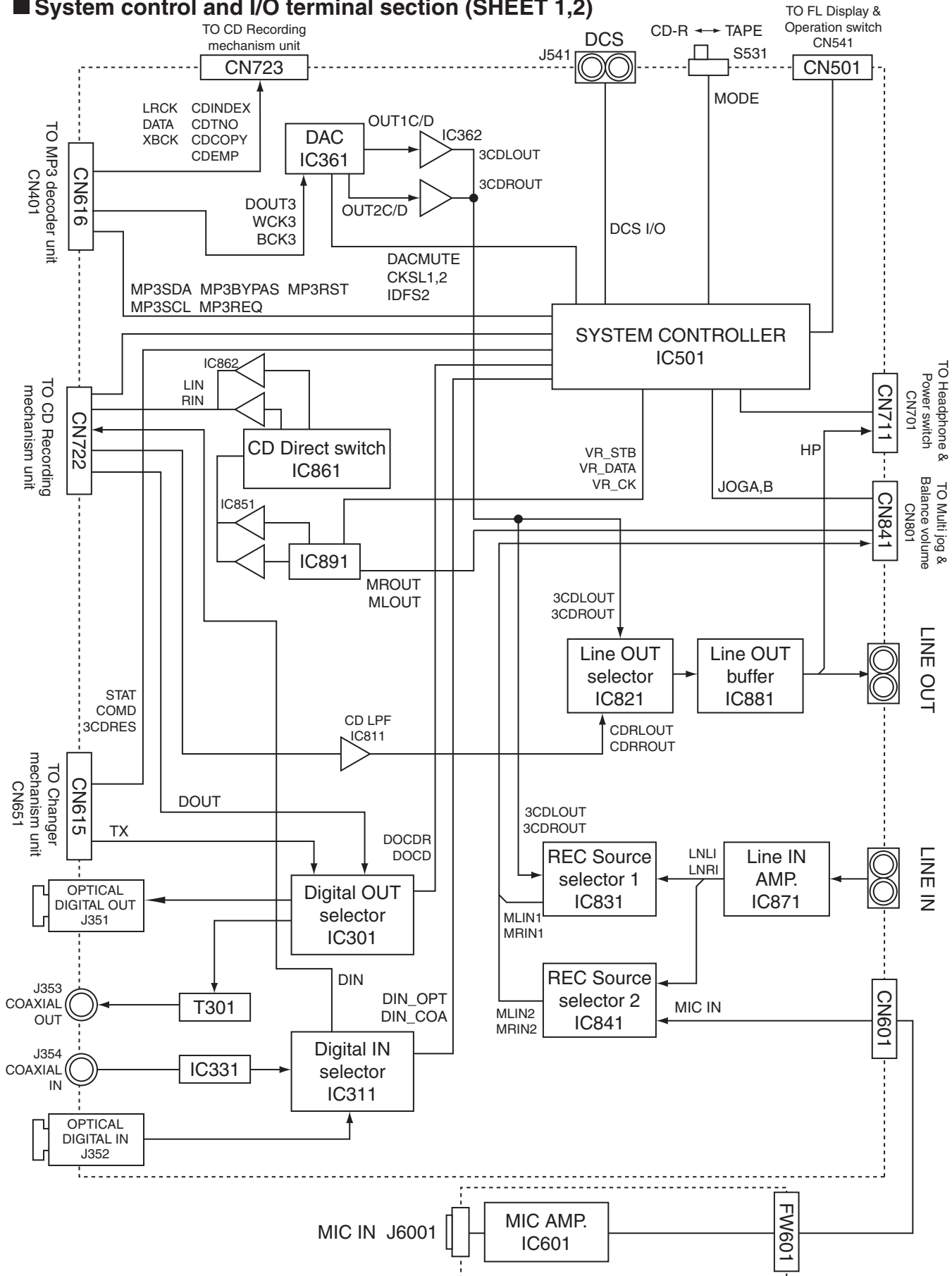
VICTOR COMPANY OF JAPAN, LIMITED
PERSONAL & MOBILE NETWORK BUSINESS UNIT
1644, Shimotsuruma, Yamato, Kanagawa 242-8514, Japan

Safety precaution

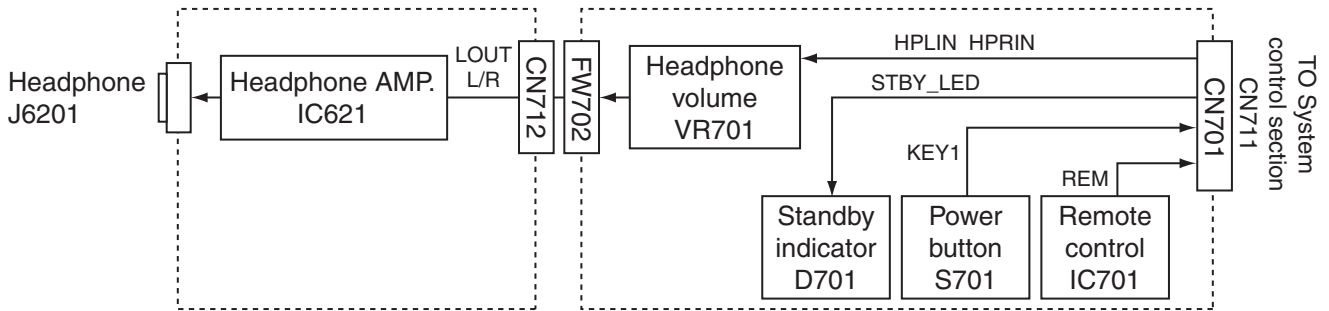
In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (■), diode (⬤) and ICP (●) or identified by the "⚠" mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

Block diagrams

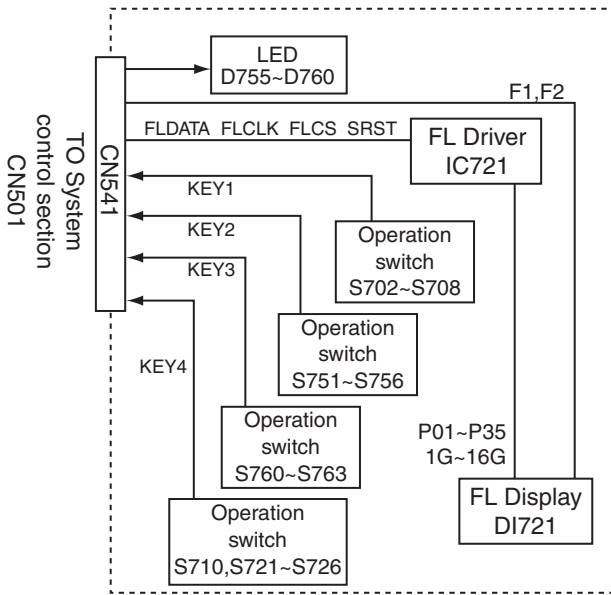
System control and I/O terminal section (SHEET 1,2)



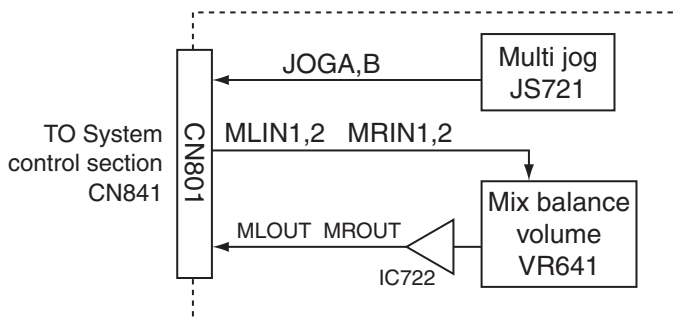
■ Headphone & power switch section (SHEET 3)



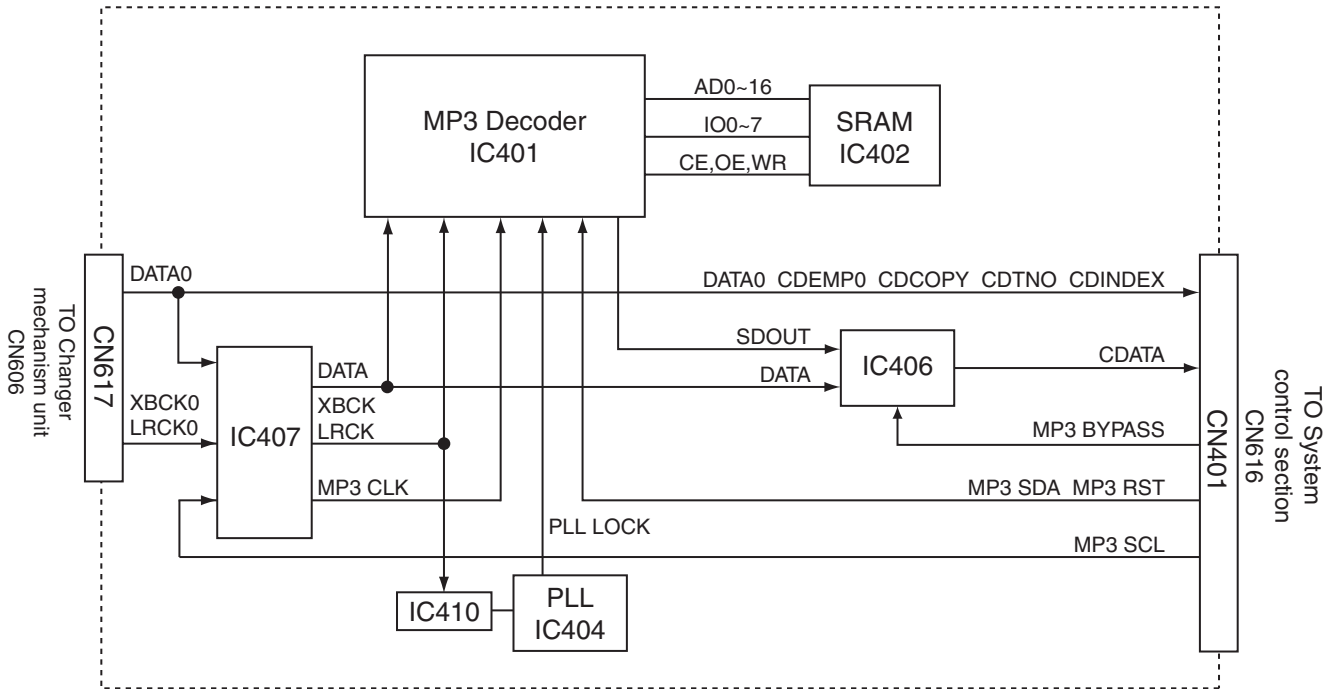
■ FL Display & Operation switch section (SHEET 3)



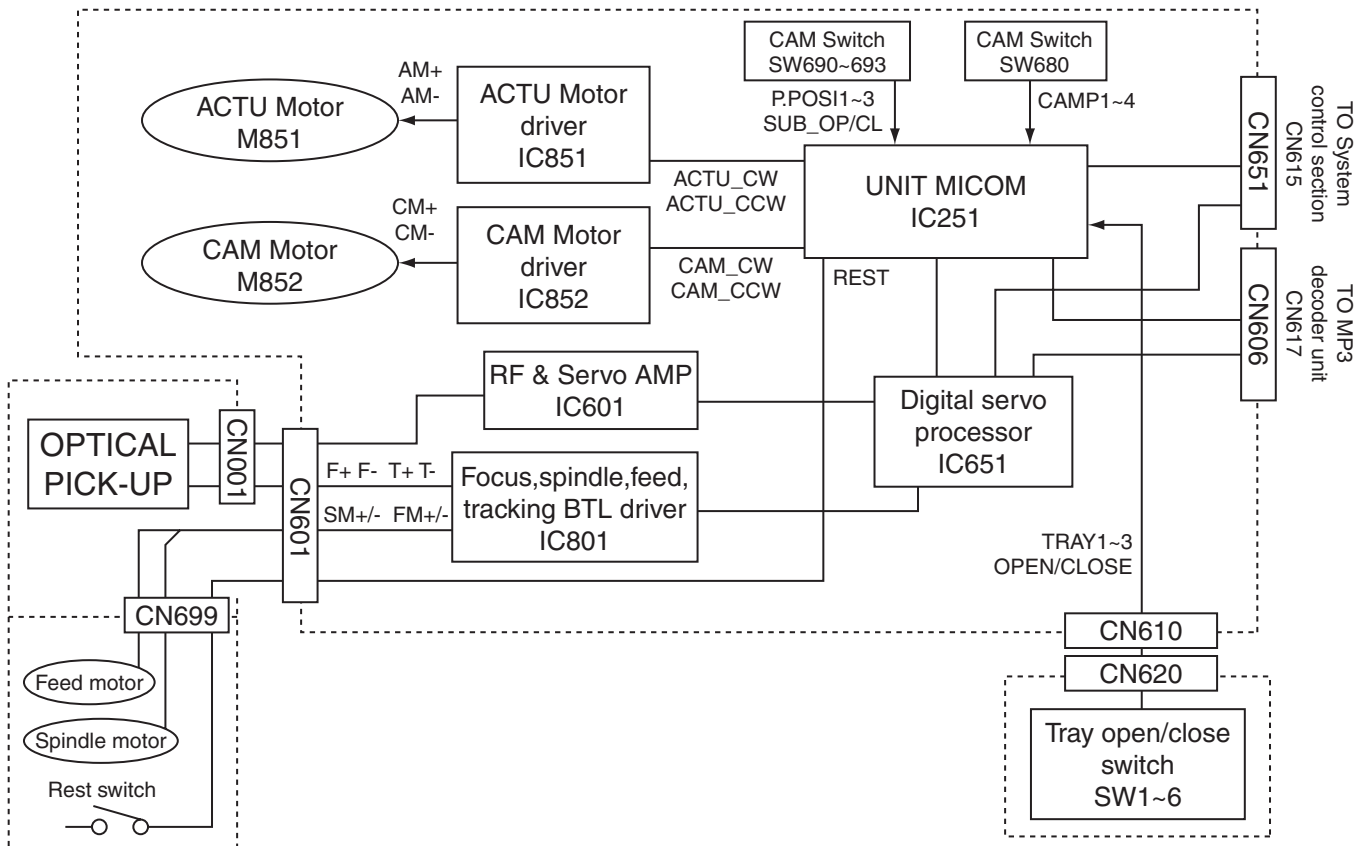
■ Multi jog & Balance volume section (SHEET 3)



■ MP3 decoder section (SHEET 4)

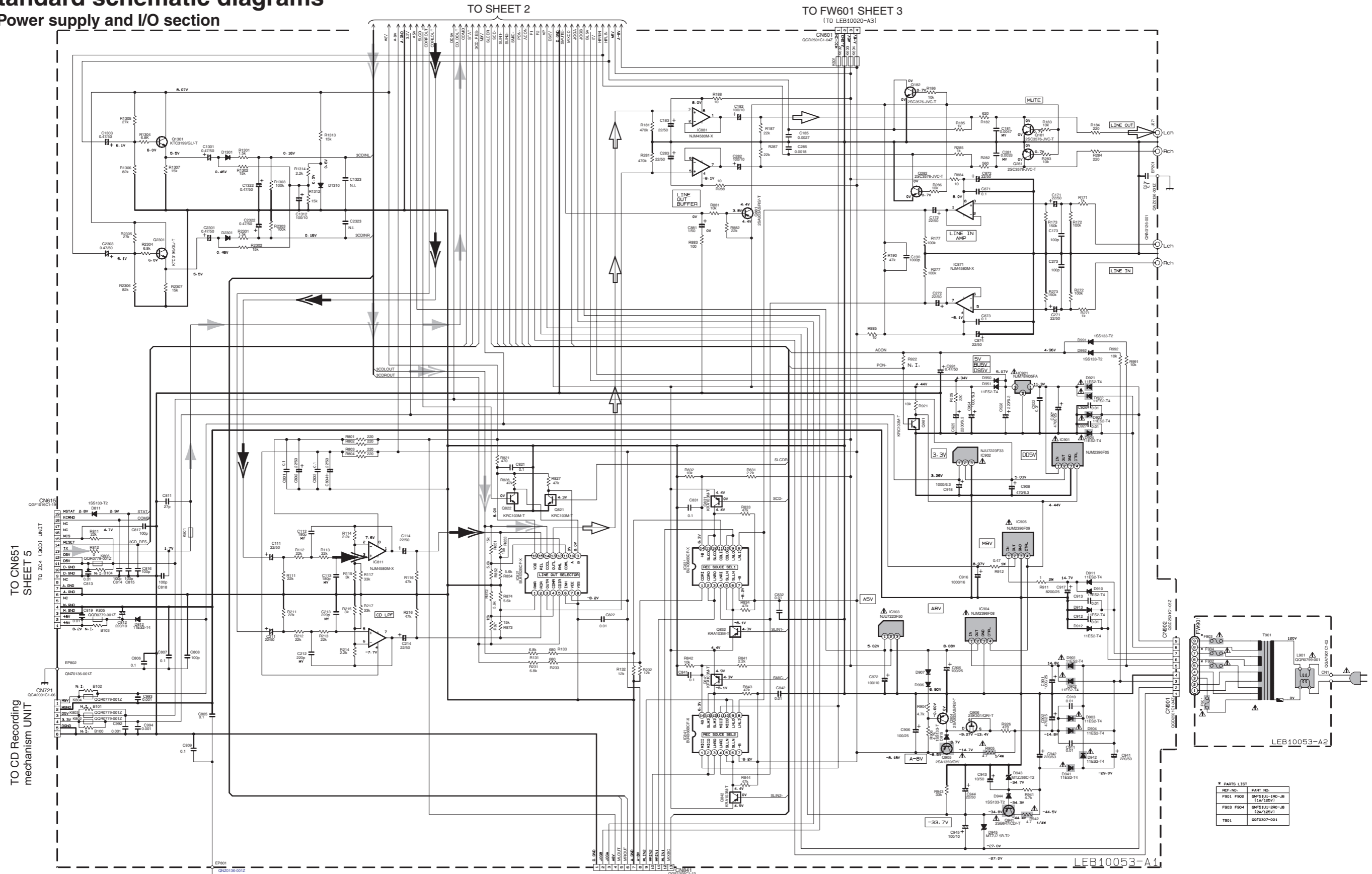


■ 3CD Changer mechanism section (SHEET 5)



Standard schematic diagrams

Power supply and I/O section



TO CN615 SHEET 5

TO CD Recording mechanism UNIT

TO SHEET 2

TO FW601 SHEET 3
(TO LEB10020-A3)

TO CN801 SHEET3

* PARTS LIST

REF. NO.	PART NO.
F903 F902	OPF5U1-180-08 (11/128V)
F903 F904	OPF5U1-290-08 (EM/20V)
T901	0070307-001

NOTES

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL. CONDITION --- CD1 PLAY MODE
- UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/4W CARBON RESISTORS. ALL RESISTANCE VALUES ARE IN OHM(Ω). ALL CAPACITANCE VALUES ARE IN pF(pF). ALL CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE/ RATED VOLTAGE (V). ALL DIODES ARE 1SS133. ALL FERRITE BEADS ARE NPO227-004X.

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

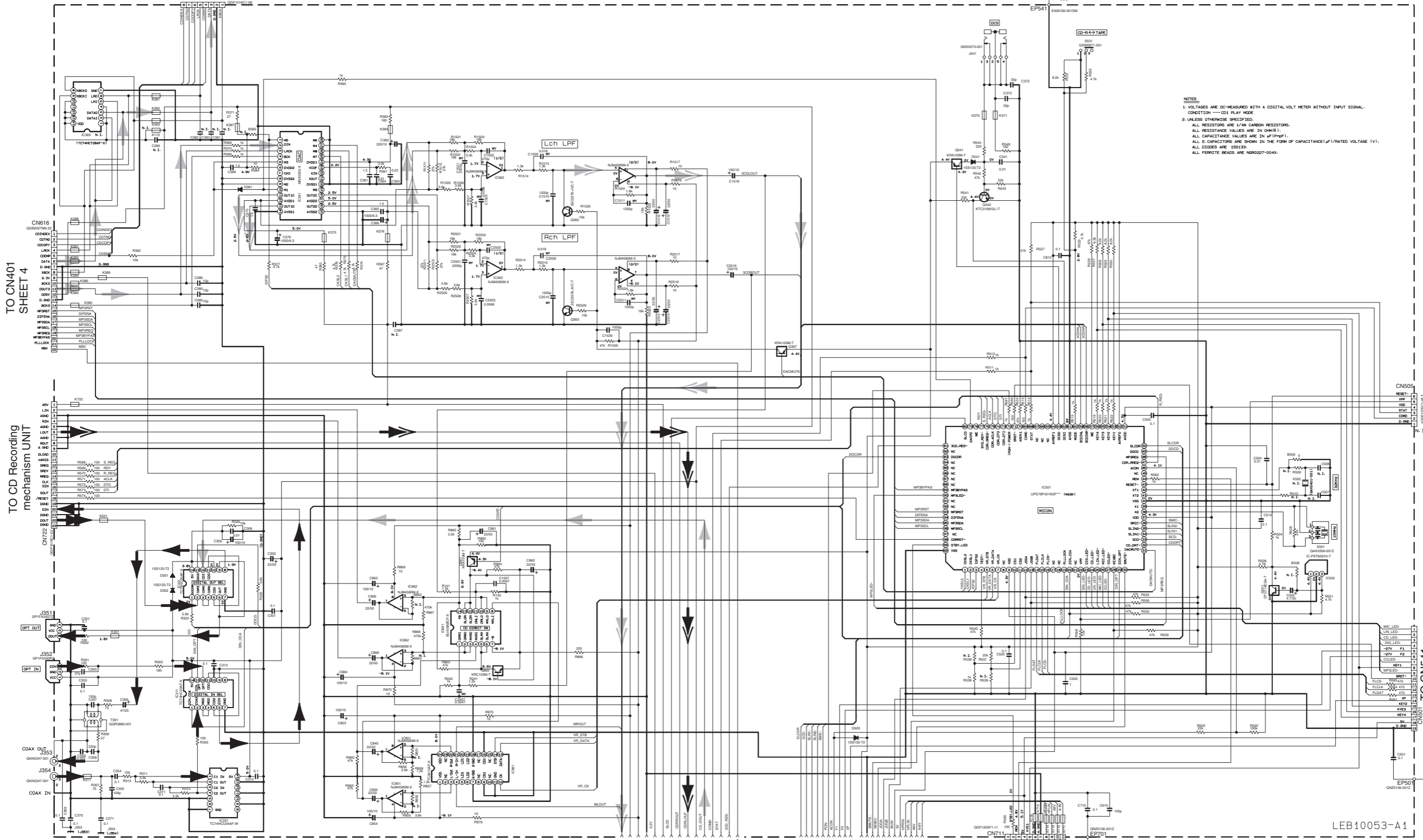
3CD Digital signal
 3CD Analog signal
 CD-R Analog signal
 Analog signal

System control and digital I/O terminal section

TO CD Recording mechanism UNIT

CN723

QSP19021-08



NOTES
 1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
 CONDITION — CD1 PLAY MODE.
 2. UNLESS OTHERWISE SPECIFIED:
 ALL RESISTORS ARE 1/4W CARBON RESISTORS.
 ALL RESISTANCE VALUES ARE IN OHMS (Ω).
 ALL CAPACITANCE VALUES ARE IN μF (μF).
 ALL CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE/μF/RATED VOLTAGE (V).
 ALL DIODES ARE 1S8133.
 ALL FERRITE BEADS ARE NGR027-004X.

TO CN401 SHEET 4

TO CD Recording mechanism UNIT

CN722

QSP19021-08

J351

QSP19021-08

J352

QSP19021-08

J353

QSP19021-08

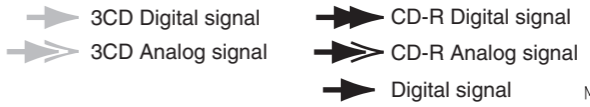
J354

QSP19021-08

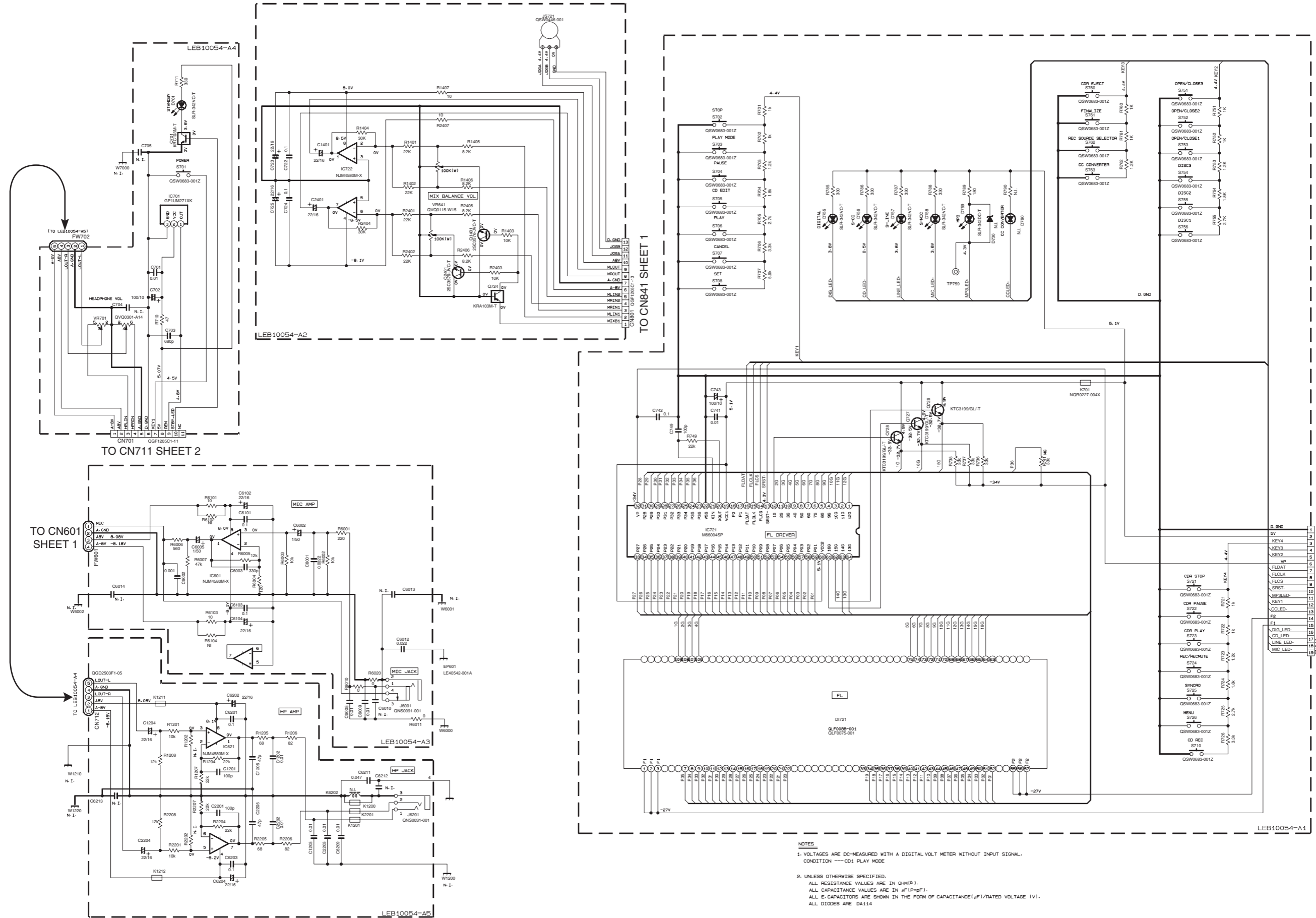
TO SHEET 1

TO CN701 SHEET 3

TO CN541 SHEET 3



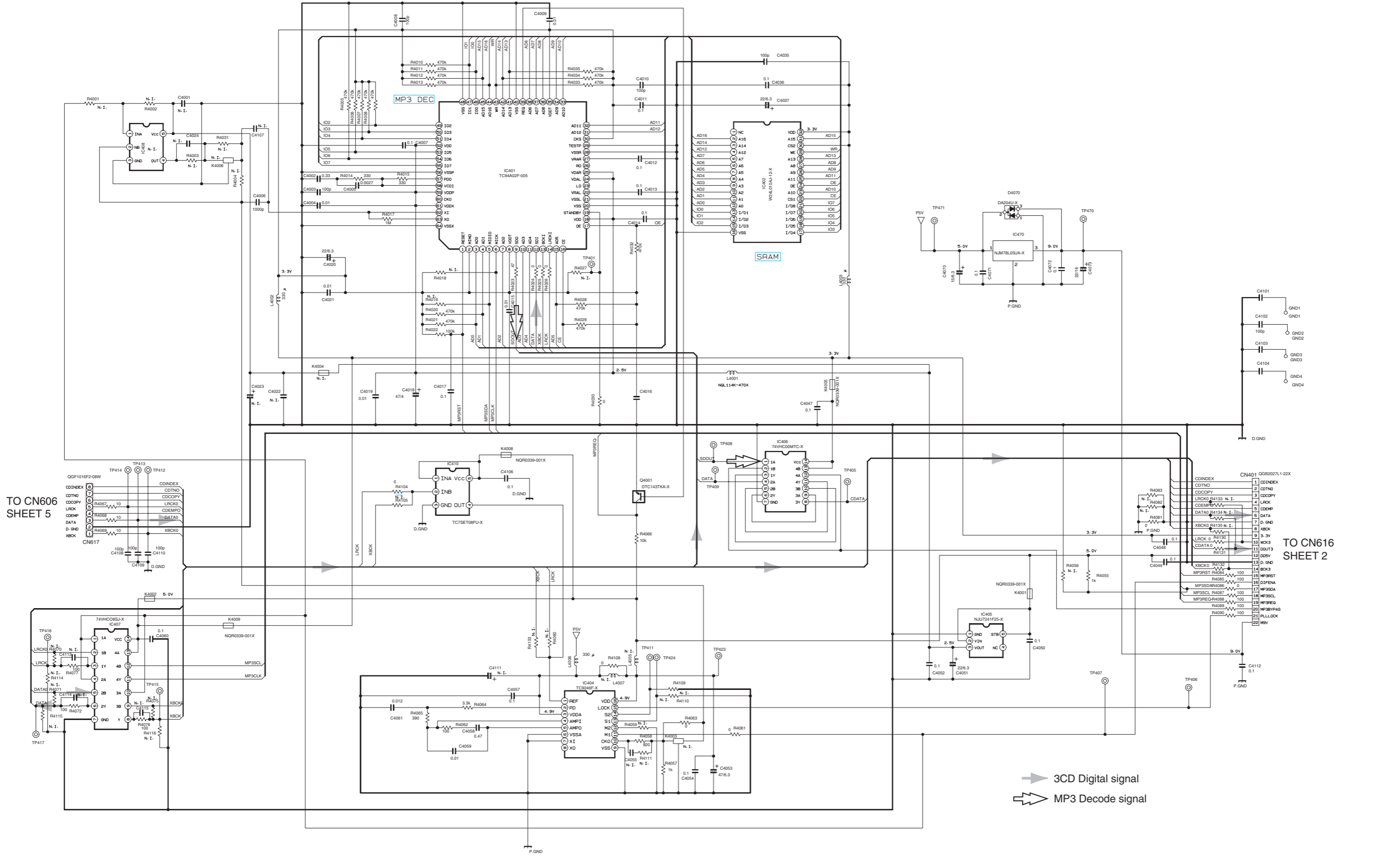
FL Display and operation switch section



NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL. CONDITION — C01 PLAY MODE.
2. UNLESS OTHERWISE SPECIFIED. ALL RESISTANCE VALUES ARE IN OHM(Ω). ALL CAPACITANCE VALUES ARE IN μF(μF) OR PPF. ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V). ALL DIODES ARE DA114.

MP3 decoder section

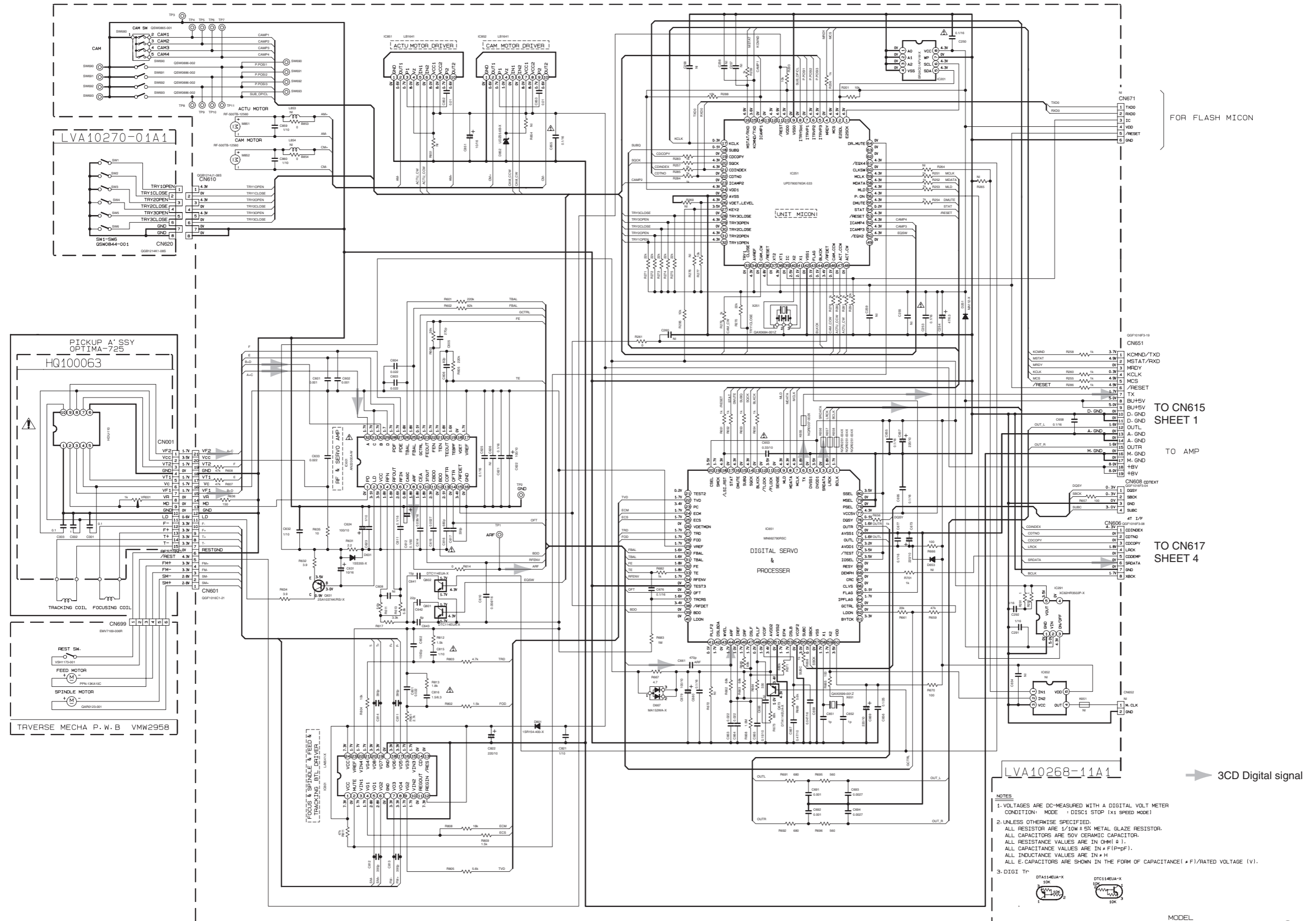


TO CN606 SHEET 5

TO CN616 SHEET 2

➔ 3CD Digital signal
 ⚡ MP3 Decode signal

3CD Changer mechanism section

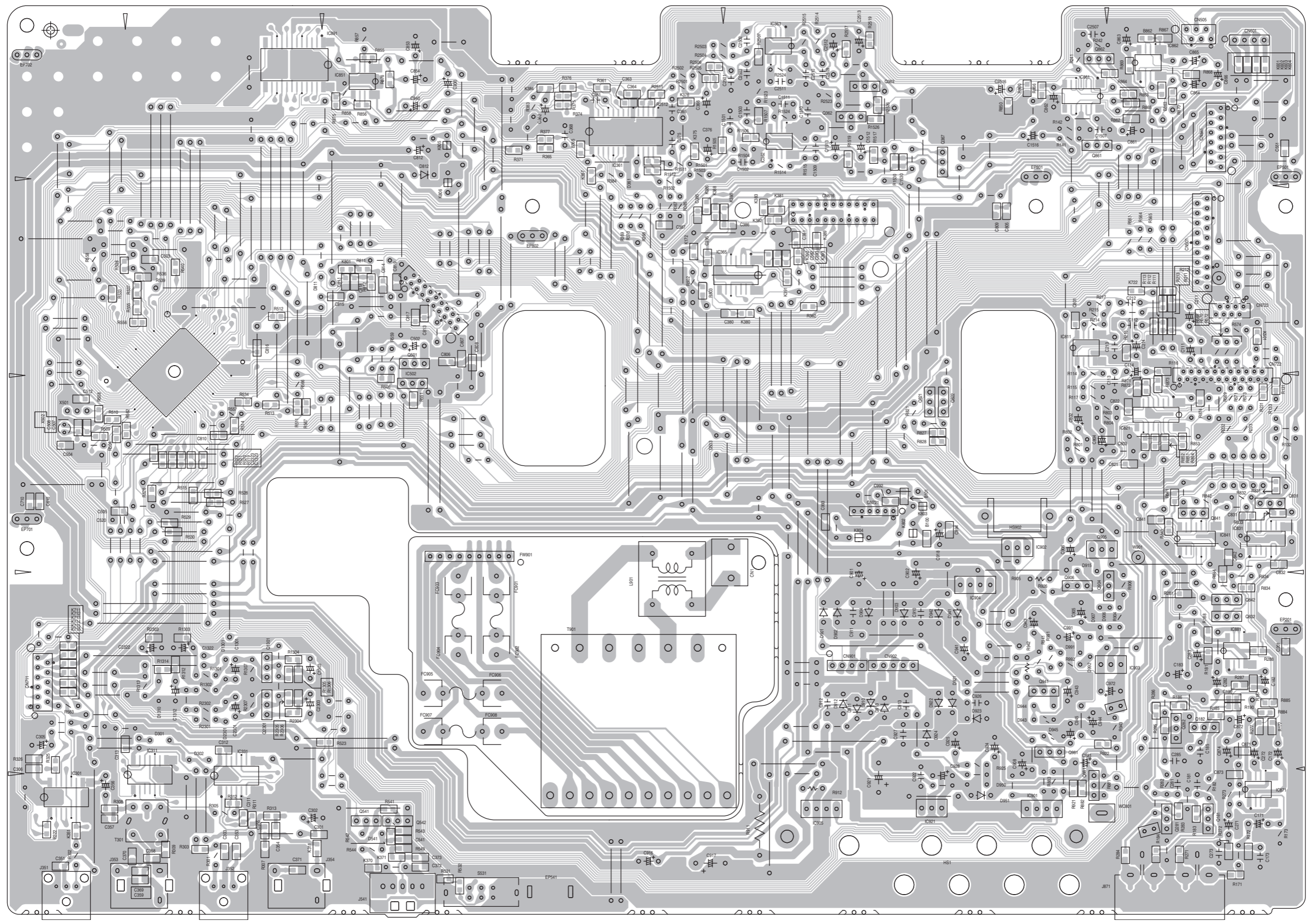


- NOTES**
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER
CONDITION: MODE : DISC1 STOP (X1 SPEED MODE)
 2. UNLESS OTHERWISE SPECIFIED.
ALL RESISTOR ARE 1/10W ± 5% METAL GLAZE RESISTOR.
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR.
ALL RESISTANCE VALUES ARE IN OHM (Ω).
ALL CAPACITANCE VALUES ARE IN P (p-pf).
ALL INDUCTANCE VALUES ARE IN μH.
ALL E. CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (•F)/RATED VOLTAGE (V).
 3. DIGI TP

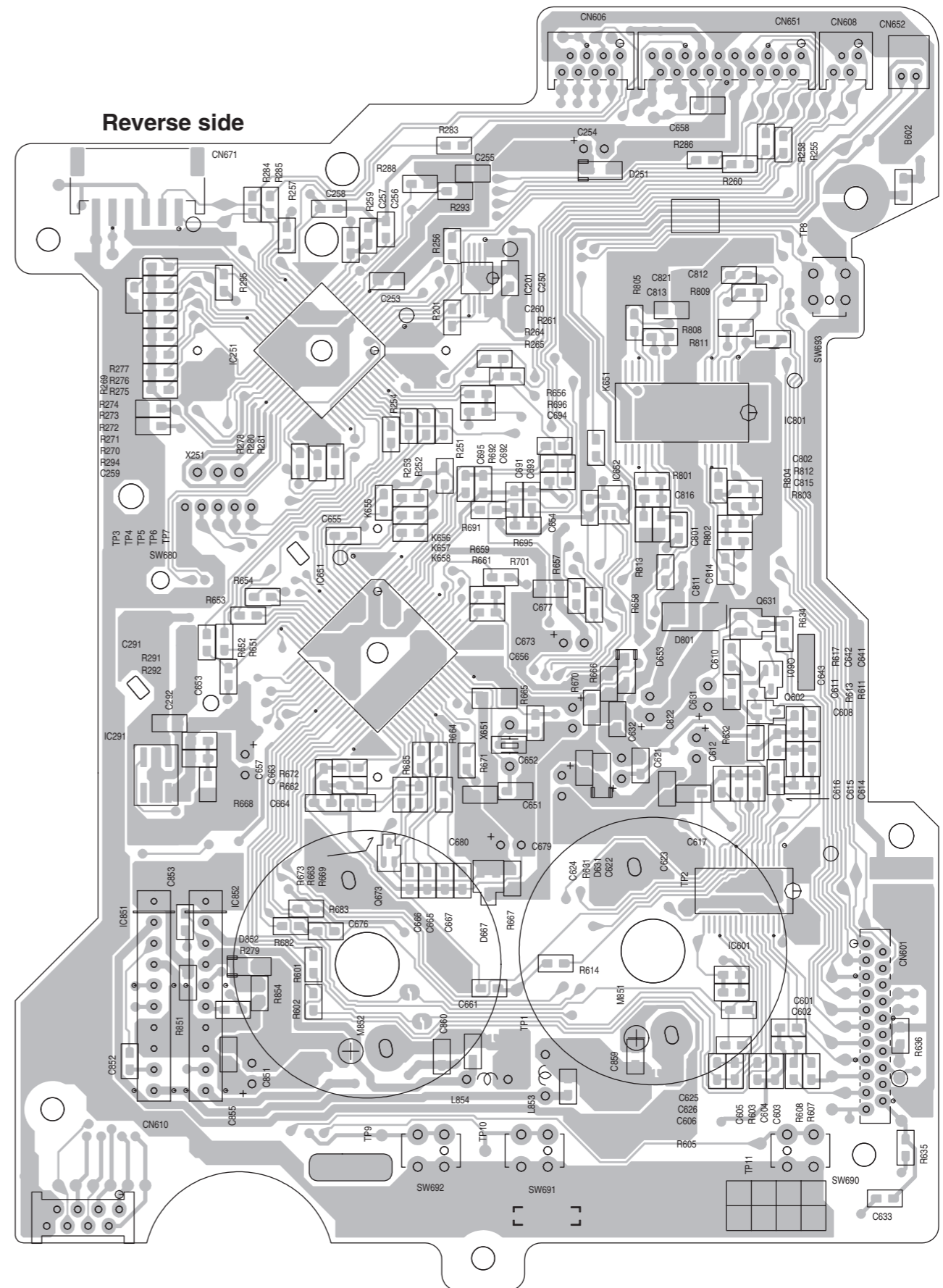
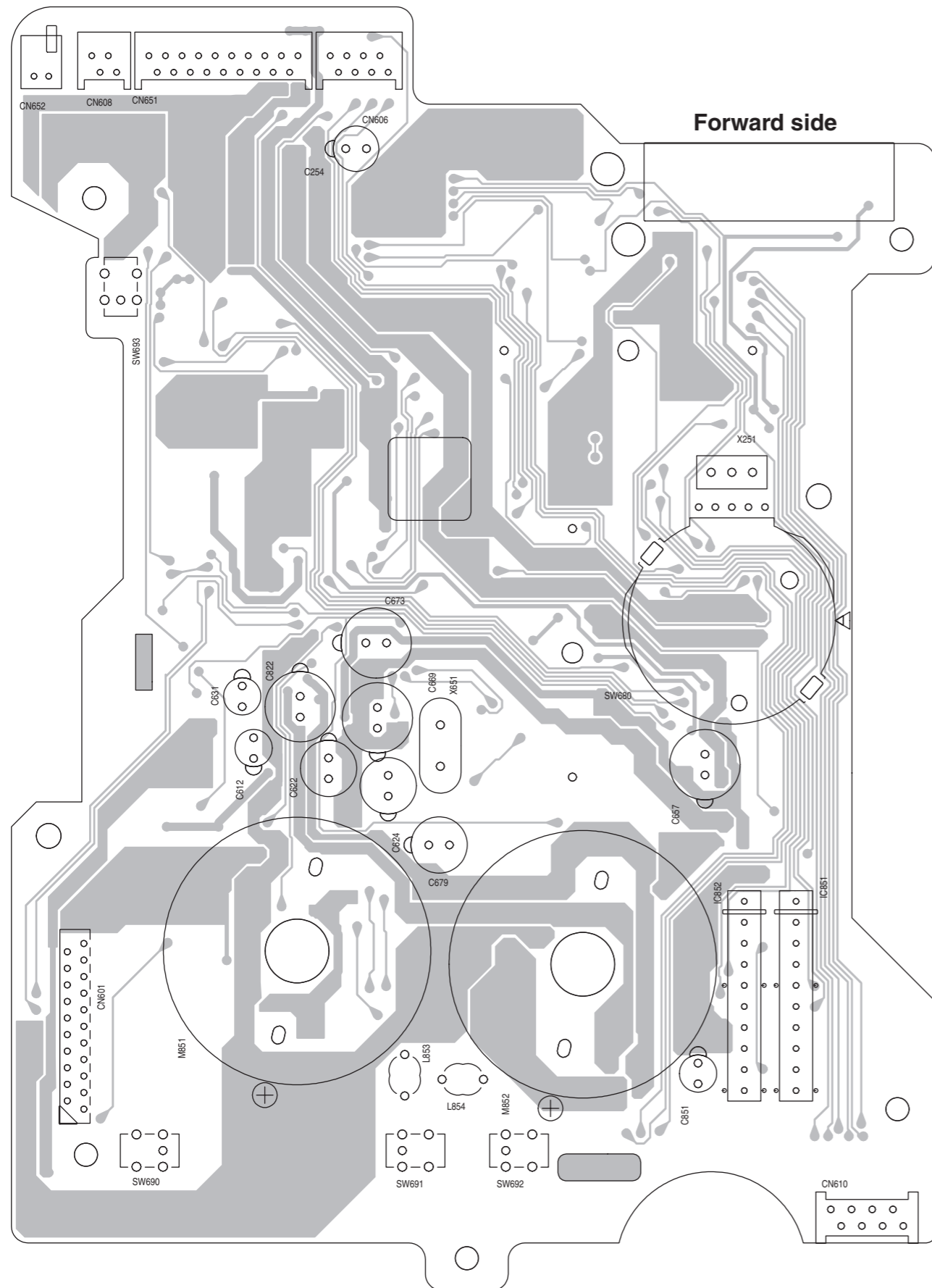


Printed circuit boards

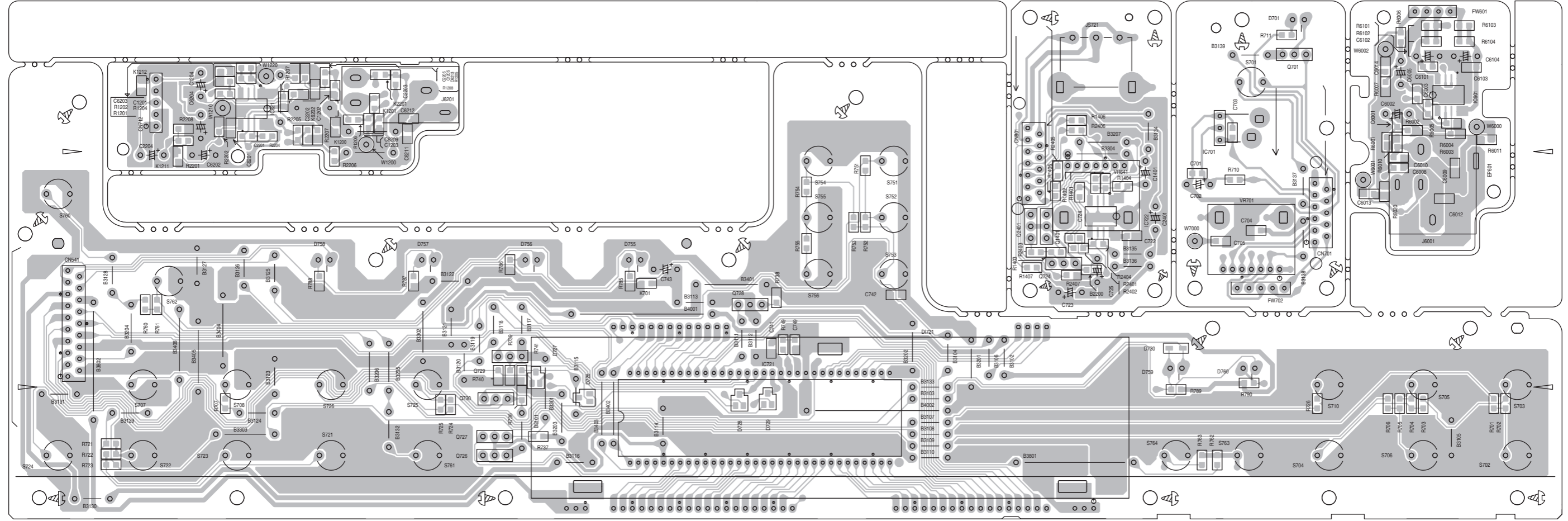
■ Main board



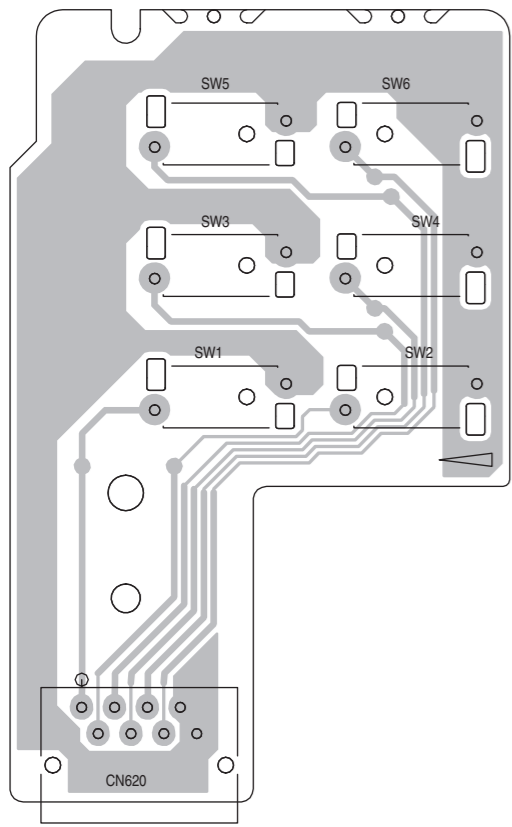
Changer mechanism & servo control board



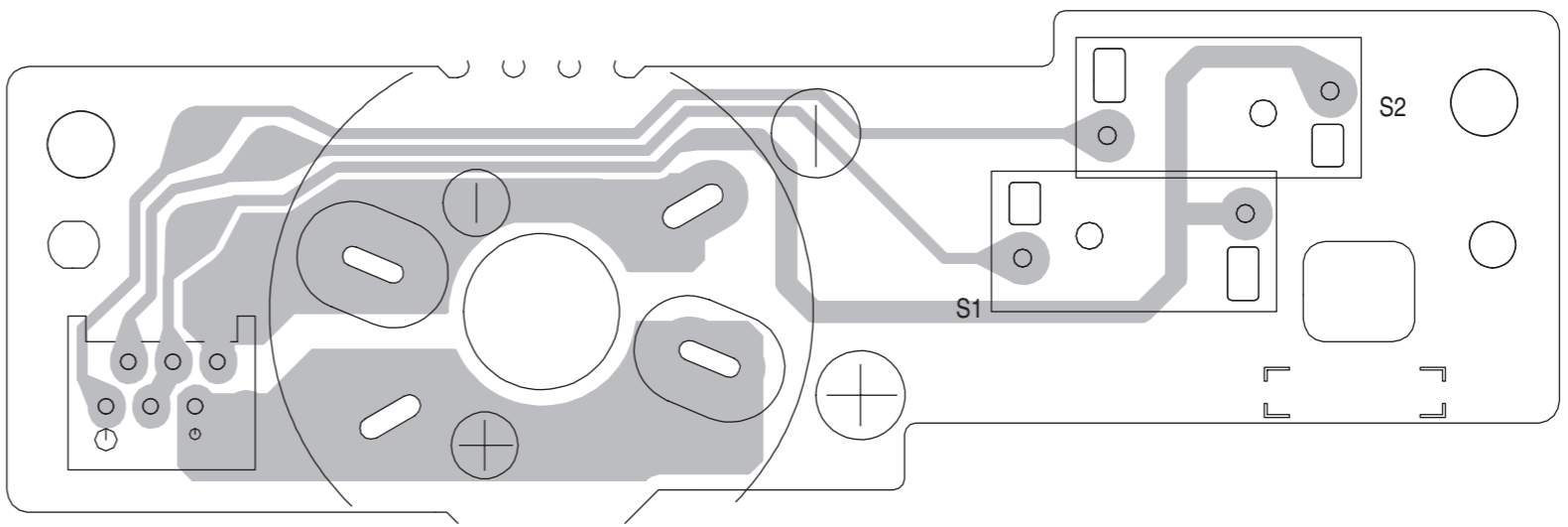
Front board



Detection switch board

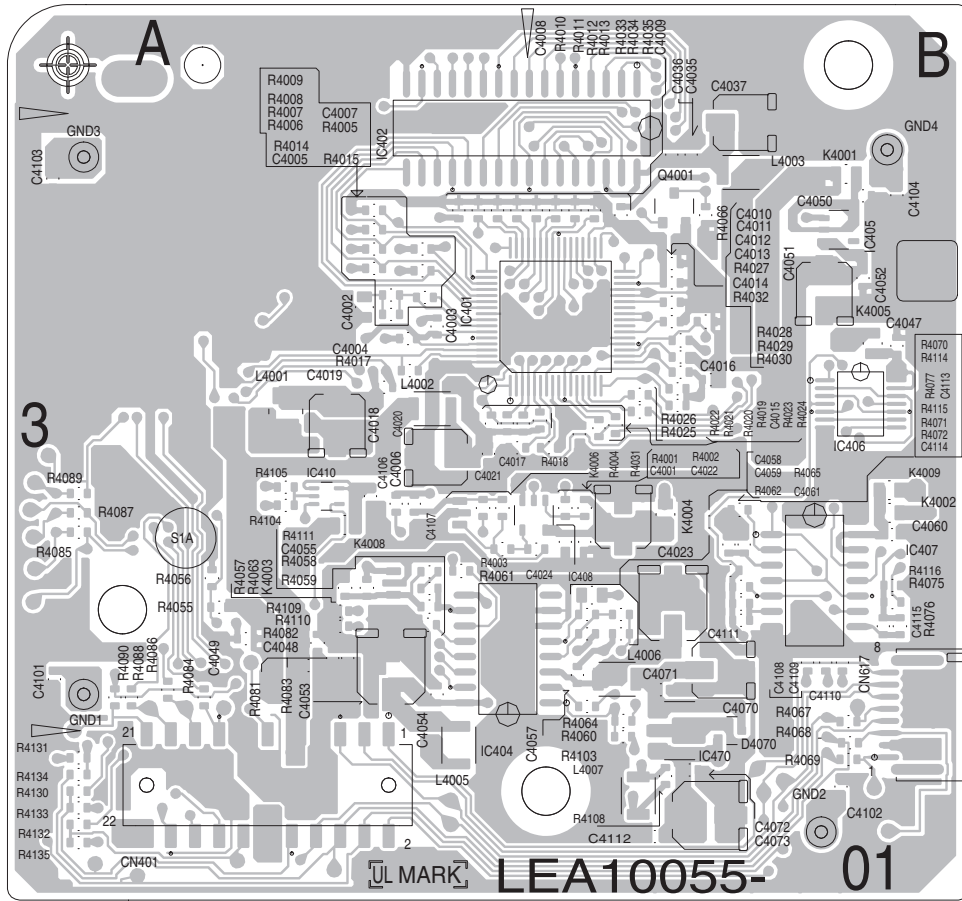


Loading motor board

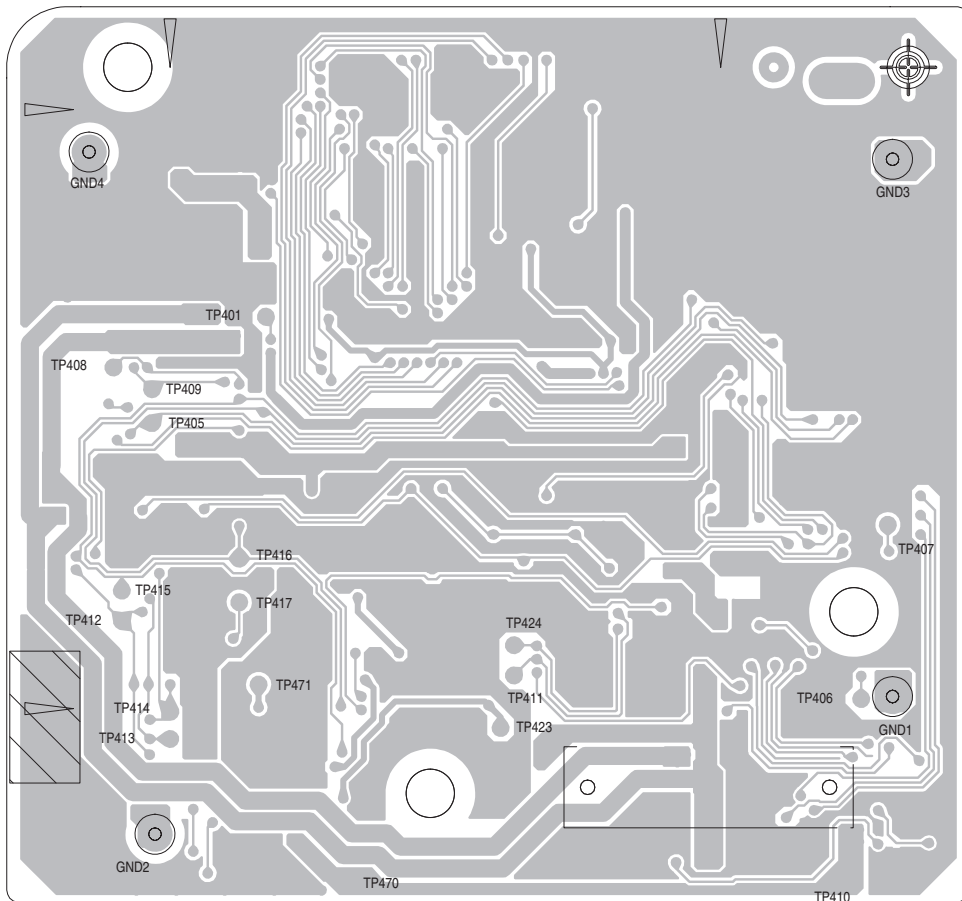


■ MP3 decoder board

Forward side



Reverse side



PARTS LIST

[XL-R5020BK]

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

Area Suffix
J ----- U.S.A.

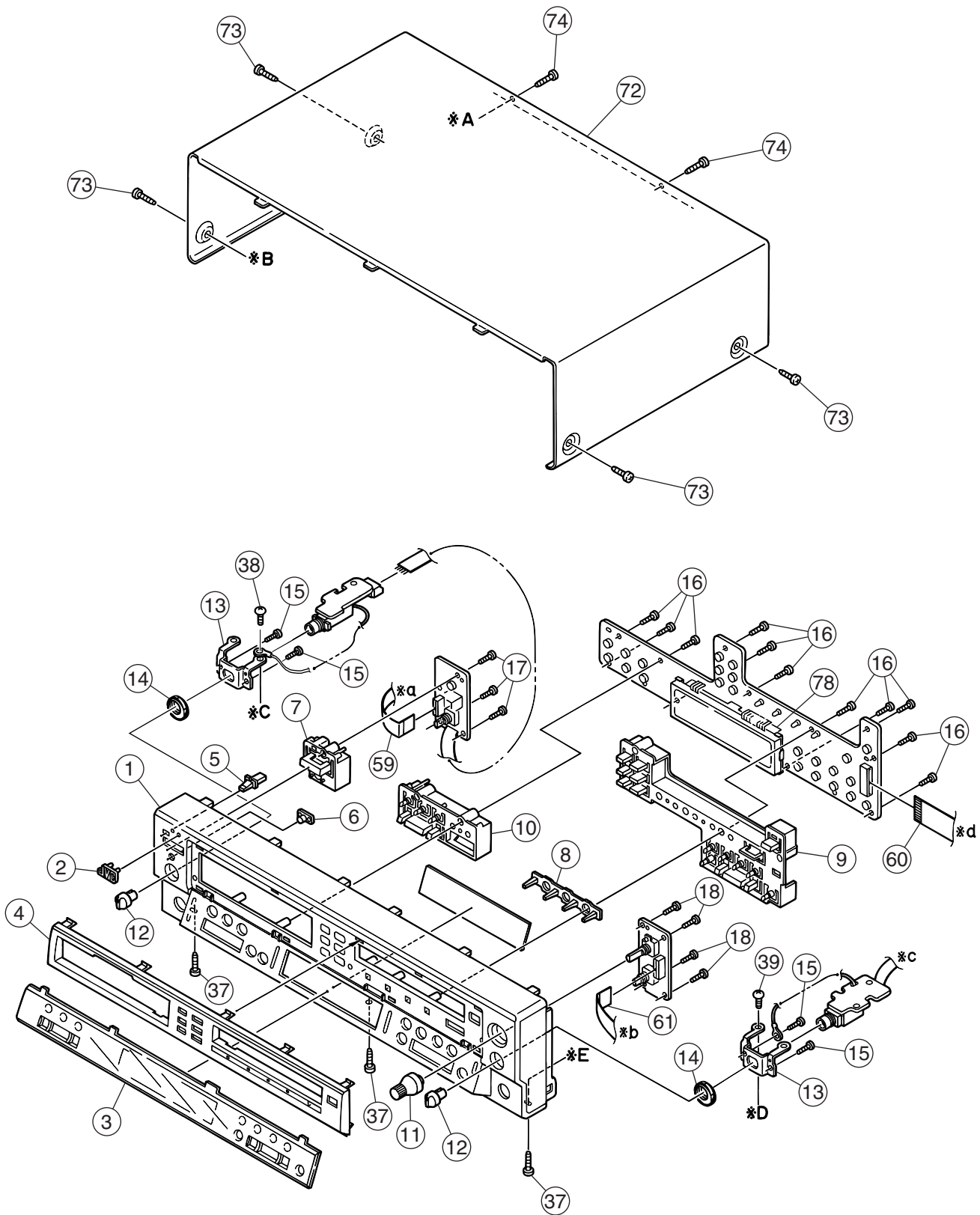
- Contents -

Exploded view of general assembly and parts list	3-2
3CD changer mechanism assembly and parts list	3-6
CD-R/RW Loading mechanism assembly and parts list.....	3-8
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Packing materials and accessories parts list	3-20

Exploded view of general assembly and parts list

■ Exploded view of general assembly 1/2

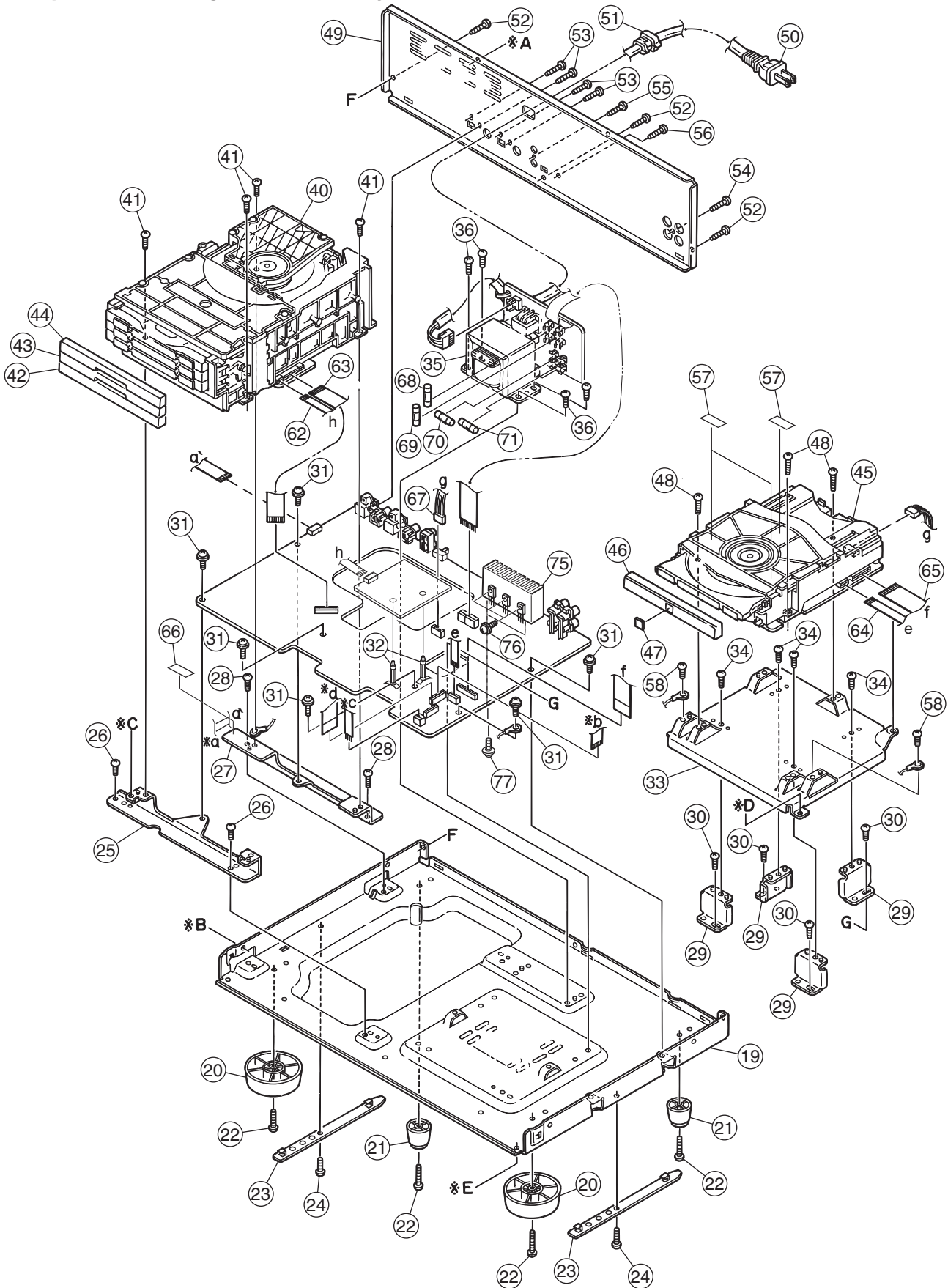
Block No. M 1 M M



■ Exploded view of general assembly 2/2

Block No.

M	1	M	M
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■ Parts list (General assembly) 1/2

Block No. M1MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LE10247-006A	FRONT PANEL	1		
	2	VJD5429-001SS	JVC MARK	1		
	3	LE20529-004A	WINDOW SCREEN	1		
	4	LE10249-001A	SUB PANEL	1		
	5	LE40746-001A	INDICATOR	1	POWER	
	6	E408131-002	REMOTE LENS	1		
	7	LE20533-001A	P.BUTTON	1	POWER	
	8	LE30893-001A	INDICATOR	1	SOURCE	
	9	LE10248-001A	P.BUTTON	1		
	10	LE20528-001A	P.BUTTON	1		
	11	LE30894-001A	JOG KNOB	1		
	12	LV40061-001A	KNOB	2	PHONE/MIX	
	13	LE40748-001A	MIC BRACKET	2		
	14	LE40844-001A	NUT	2	JACK	
	15	QYSDSF2608Z	SCREW	4	MIC BKT	
	16	QYSDSF2608Z	SCREW	11	FRONT CB	
	17	QYSDSF2608Z	SCREW	3	P.SW CB	
	18	QYSDSF2608Z	SCREW	4	JOG CB	
	19	LV10014-003A	CHASSIS BASE	1		
	20	QZF6019-001	FOOT	2	FRONT	
	21	E47227-037SM	FOOT ASS'Y	2	REAR	
	22	QYSBST3010Z	T.SCREW	4	FOOT	
	23	LV31244-002A	SPACER	2		
	24	QYSDSG3008M	SCREW	2	+CHASSIS	
	25	LE30918-001A	CD BKT(F)	1		
	26	QYSBST3006Z	T.SCREW	2	CD BKT(F)	
	27	LE30919-001A	CD BKT(R)	1		
	28	QYSBST3006Z	T.SCREW	2		
	29	LE40754-001A	CDR BRACKET	4		
	30	QYSBST3006Z	T.SCREW	4	CDR BKT	
	31	QYSBSTG3006E	T.SCREW	6	MAIN CB	
	32	QZW0091-001	PC SUPPORT	2		
	33	LE20531-001A	MECHA BASE	1		
	34	QYSBST3006Z	T.SCREW	4	MECHA BASE	
△	35	QQT0307-001	POWER TRANS	1	J/C	
	36	QYSBST3006Z	T.SCREW	4	P.TRANS	
	37	QYSDSG3008M	SCREW	3	+CHASSIS	
	38	QYSBST3006Z	T.SCREW	1	+CD BKT	
	39	QYSBST3006Z	T.SCREW	1		
	40	-----	3CD CAHNGER MEC	1	See page 3-6	
	41	QYSBST3006Z	T.SCREW	4	ZC4+CD BKT	
	42	LE20564-001A	FITTING(1)	1		
	43	LE20565-001A	FITTING(2)	1		
	44	LE20566-001A	FITTING(3)	1		
	45	EMU-R7-1M	CDR UNIT	1	See page 3-8	
	46	LE20530-001A	FITTING	1		
	47	LE40763-001A	MARK	1		
	48	QYSBST3010Z	T.SCREW	3	+CDR MECHA	

■ Parts list (General assembly) 2/2

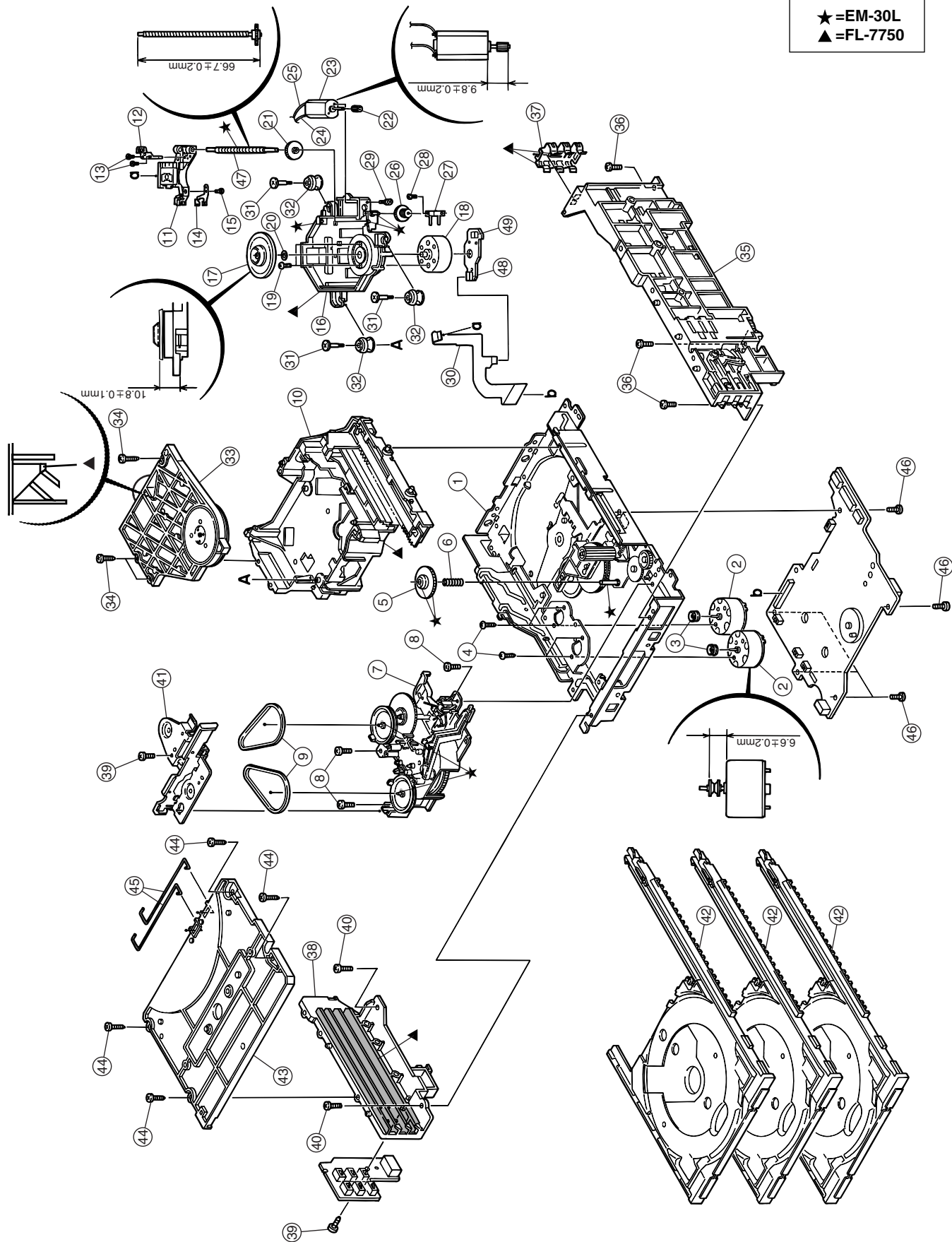
Block No. M1MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	49	LV20010-039A	REAR PANEL	1		
△	50	QMPD330-200-JD	POWER CORD	1		
	51	QHS4077-108	S.R BUSHING	1		
	52	QYSBSGY3008E	SPECIAL SCREW	3	+CHASSIS	
	53	QYSBSGY3008E	SPECIAL SCREW	4	IN/OUT	
	54	QYSBSGY3008E	SPECIAL SCREW	1	LINE	
	55	QYSBSGY3008E	SPECIAL SCREW	1	COMPU LINK	
	56	QYSBSGY3008E	SPECIAL SCREW	1	EARTH PLAT	
	57	LV30225-090A	SPACER	3		
	58	QYSBST3006Z	T.SCREW	2		
	59	QUQ412-1134CJ	FFC WIRE	1	HP VOL - MAIN	
	60	QUQ412-1917CJ	FFC WIRE	1	FL - MAIN	
	61	QUQ412-1318CJ	FFC WIRE	1	JOG - MAIN	
	62	QUQ110-0810AJ	FFC WIRE	1		
	63	QUQ110-1912AJ	FFC WIRE	1		
	64	QUQ110-0810AJ	FFC WIRE	1		
	65	QUQ110-2310AJ	FFC WIRE	1		
	66	LV30225-090A	SPACER	1		
	67	QJJ015-061001	SIN CR C-C WIRE	1	CDR POWER - MAI	
△	68	QMF51U1-1R0-J8	FUSE	1	F901	
△	69	QMF51U1-1R0-J8	FUSE	1	F902	
△	70	QMF51U1-2R0-J8	FUSE	1	F903	
△	71	QMF51U1-2R0-J8	FUSE	1	F904	
	72	LV20009-311A	METAL COVER	1		
	73	E406308-003	SPECIAL SCREW	4	SIDE	
	74	QYSBSGY3008E	SPECIAL SCREW	2	REAR	
	75	LE31033-001A	HEAT SINK	1	IC901,905,921	
	76	QYSDSP3008Z	SCREW	3		
	77	QYSDSP3008M	SCREW	2		
	78	LV31897-001A	FL HOLDER	1		

3CD changer mechanism assembly and parts list

FMU-ZC4-11M Block No. M 2 M M

Grease
 ★ = EM-30L
 ▲ = FL-7750

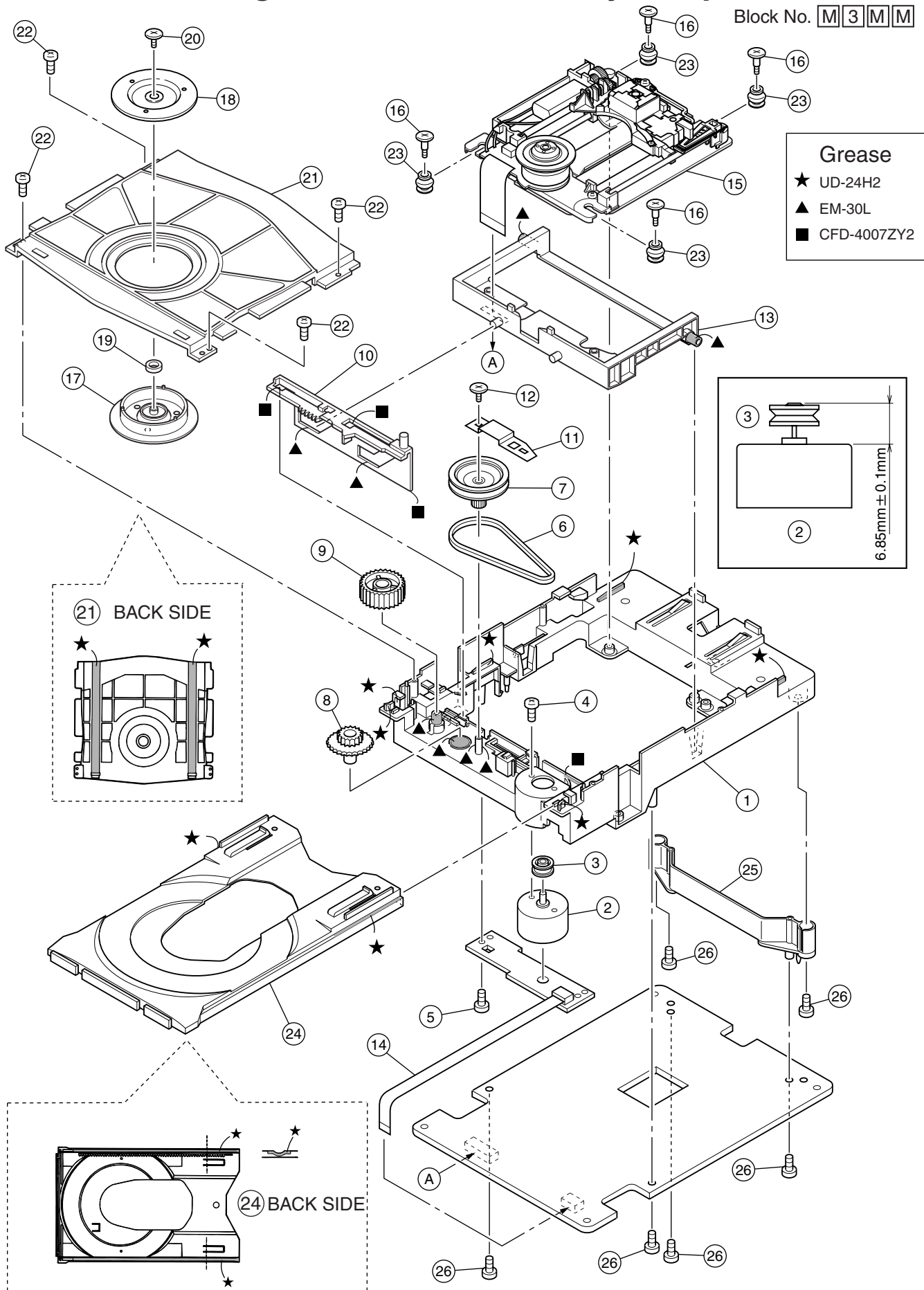


■ Parts list (CD Changer mechanism)

Block No. M2MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	01	LV20581-001A	CHASSIS UNIT	1		
	02	RF-500TB-12560	MOTOR	2		
	03	VKS5548-001	MOTOR PULLEY	2		
	04	QYSPSP2603Z	SCREW	4		
	05	LV31586-001A	SELECT GEAR	1		
	06	LV41427-001A	SELECT SPRING	1		
	07	LV20588-001A	GEAR BASE UNIT	1		
	08	QYSDST2606Z	SCREW	3		
	09	LV41431-001A	BELT	2		
	10	LV20586-003A	SUB CHAS. UNIT	1		
	11	OPTIMA-725B2	CD PICK UP	1		
	12	LV32013-003A	RACK ARM	1		
	13	QYSPSPT1720M	MINI SCREW	2		
	14	LV31744-001A	P.S.SPRING	1		
	15	QYSPSGT1425M	TAP SCREW	1		
	16	VKS1161-006	T.MECHA CHASSIS	1		
	17	LV31745-001A	TURN TABLE ASSY	1		
	18	QAR0123-001	SPINDLE MOTOR	1		
	19	VKZ4743-001	SPECIAL SCREW	2		
	20	WFM214025	WASHER	1		
	21	VKS5556-001	S.S. GEAR	1		
	22	VKS5557-001	F.M. GEAR	1		
	23	PPN-13KA10C	MOTOR	1		
	24	VWE292-07AZAZ	UL VINYL WIRE	1		
	25	VWE290-08AZAZ	WIRE	1		
	26	VKS5558-001	MIDDLE GEAR	1		
	27	VKM3904-001	SHAFT HOLDER	1		
	28	VKZ4248-204	MINI TAP SCREW	1		
	29	QYSPSPL2004Z	SCREW	1		
	30	LVB30006-002A	FPC	1		
	31	LV41424-001A	SPECIAL SCREW	3		
	32	LV41659-001A	INSULATOR	3		
	33	LV31799-003A	CLAMPER UNIT	1		
	34	QYSBSF2608Z	T.SCREW	3		
	35	LV20594-002A	SIDE(R) UNIT	1		
	36	QYSDST2606Z	SCREW	3		
	37	LV31575-001A	CLICK SPRING	1		
	38	LV10308-001A	SIDE BKT(L)	1		
	39	QYSBSF2608Z	T.SCREW	1		
		QYSBSF2608Z	T.SCREW	1		
	40	QYSDST2606Z	SCREW	2		
	41	LV32067-001A	FLAP BASE UNIT	1		
	42	LV20590-002A	TRAY UNIT	3		
	43	LV10309-001A	TOP COVER	1		
	44	QYSBSF2608Z	T.SCREW	4		
	45	LV41429-002A	ROD	2		
	46	QYSDST2606Z	SCREW	5		
	47	LV42703-001A	SCREW SHAFT	1		
	48	EMV7169-006R	CONNECTOR	1	CN699	
	49	VSH1173-001	LEAF SWITCH	1	S699	

CD-R/RW Loading mechanism assembly and parts list



Parts list (CD-R/RW Loading mechanism assembly)

Block No. M3MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV10454-007A-CK	LOADING BASE	1		
	2	QAR0164-001	MOTOR	1		
	3	LV42087-001A	MOTOR PULLEY	1		
	4	QYSPSPU1730Z	SCREW	1		
	5	VKZ4777-003	MINI SCREW	1		
	6	LV42209-001A	BELT	1		
	7	LV42084-002A	PULLEYGEAR	1		
	8	LV42085-002A	MIDDLE GEAR	1		
	9	LV42086-001A	IDLE GEAR	1		
	10	LV32514-002A	SLIDE CAM	1		
	11	LV42348-001A	GEAR BRACKET	1		
	12	VKZ4777-003	SCREW	1		
	13	LV20912-002A	ELEVATOR	1		
	14	QUQ110-0606AJ	FFC WIRE	1		
	15	-----	CD-R/RW TRAVERSE MECHA.	1		
	16	LV41424-001A	SCREW	4		
	17	LV32417-001A	CLAMPER	1		
	18	LV42089-002A	YOKE	1		
	19	LV41118-003A	MAGNET	1		
	20	LV41741-001A	SPECIAL SCREW	1		
	21	LV20913-002A	CLAMPER BASE	1		
	22	QYSBSF2008Z	SCREW	4		
	23	LV41659-001A	INSULATOR	4		
	24	LV10455-002A-CK	TRAY	1		
	25	LV32525-002A	PWB BKT	1		
	26	QYSBSF2608Z	T.SCREW	6		

Electrical parts list (Loading motor board)

Block No. 06

△	Item	Parts number	Parts name	Remarks	Area
	CN 1	QGF1016F3-06	CONNECTOR		
	S 1	QSW0910-002	SWITCH		
	S 2	QSW0910-002	SWITCH		

<ATTENTION>

**CD-R/RW recording mechanism can be replaced in either of the following ways:
unit of the whole mechanism can be replaced, or parts in loading mechanism
can be changed.**

**Neither assembly unit or parts of the traverse mechanism nor assembly unit or
parts of the servo control board are not provided.**

**Part number of CD-R/RW recording mechanism assembly (Refer to page 3-4 item 45)
Part number : EMU-R7-1M**

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	C 111	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 112	QFLC1HJ-181Z	M CAPACITOR	180PF 5% 50V	
	C 113	QFLC1HJ-181Z	M CAPACITOR	180PF 5% 50V	
	C 114	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 171	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 172	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 173	QFLC1HJ-101Z	M CAPACITOR	100PF 5% 50V	
	C 181	QFLC1HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 182	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 183	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 185	QFLC1HJ-272Z	M CAPACITOR	2700PF 5% 50V	
	C 190	NCB31HK-102X	C CAPACITOR	FOR MUTE TR	
	C 201	NCF31CZ-104X	C CAPACITOR	FOR PIN JACK	
	C 211	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 212	QFLC1HJ-181Z	M CAPACITOR	180PF 5% 50V	
	C 213	QFLC1HJ-181Z	M CAPACITOR	180PF 5% 50V	
	C 214	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 271	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 272	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 273	QFLC1HJ-101Z	M CAPACITOR	100PF 5% 50V	
	C 281	QFLC1HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 282	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 283	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 285	QFLC1HJ-272Z	M CAPACITOR	2700PF 5% 50V	
	C 301	NCF31CZ-104X	C CAPACITOR		
	C 302	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 303	NCS31HJ-270X	C CAPACITOR		
	C 305	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 306	NCB31HK-103X	C CAPACITOR		
	C 311	NCF31CZ-104X	C CAPACITOR		
	C 312	NCF31CZ-104X	C CAPACITOR		
	C 313	NCF31CZ-104X	C CAPACITOR		
	C 351	NCF31CZ-104X	C CAPACITOR		
	C 353	NCF31CZ-104X	C CAPACITOR		
	C 354	NCF31CZ-104X	C CAPACITOR		
	C 355	NCS31HJ-101X	C.CAPA. C.M		
	C 356	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C 357	NCS31HJ-151X	C CAPACITOR		
	C 358	NCB31HK-221X	C CAPACITOR		
	C 359	NCB31EK-223X	C CAPACITOR		
	C 361	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 362	QETN1AM-227Z	E CAPACITOR	220MF 20% 10V	
	C 363	NCF31CZ-224X	C CAPACITOR		
	C 364	NCB31HK-103X	C CAPACITOR		
	C 365	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 366	QETN0JM-108Z	E CAPACITOR	1000MF 20% 6.3V	
	C 368	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 369	NCF31CZ-104X	C CAPACITOR		
	C 370	NCF31CZ-104X	C CAPACITOR		
	C 371	NCF31CZ-104X	C CAPACITOR		
	C 372	NCS31HJ-330X	C CAPACITOR		
	C 373	NCS31HJ-330X	C CAPACITOR		
	C 375	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 376	QETN0JM-108Z	E CAPACITOR	1000MF 20% 6.3V	
	C 380	NCS31HJ-100X	C CAPACITOR	FOR DOUT3(DAC)	
	C 385	NCS31HJ-100X	C CAPACITOR	FOR BCK3(DAC)	
	C 386	NCS31HJ-100X	C CAPACITOR	FOR WCK3(DAC)	
	C 502	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	
	C 503	NCF31CZ-104X	C CAPACITOR		
	C 504	NCB31HK-103X	C CAPACITOR		
	C 505	NCF31CZ-104X	C CAPACITOR		
	C 512	NCF31CZ-104X	C CAPACITOR		
	C 520	QCFB1HZ-105Y	C CAPACITOR	1.0MF +80:-20%	
	C 541	NCB31HK-103X	C CAPACITOR	FOR DCS	
	C 551	NCF31CZ-104X	C CAPACITOR	FOR EP501	
	C 610	NCS31HJ-101X	C.CAPA. C.M		

△	Item	Parts number	Parts name	Remarks	Area
	C 710	NCF31CZ-104X	C CAPACITOR	FOR EP701	
	C 801	NCF31CZ-104X	C CAPACITOR		
	C 802	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 803	NCF31CZ-104X	C CAPACITOR		
	C 804	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 805	NCF31CZ-104X	C CAPACITOR	FOR EP802	
	C 806	NCF31CZ-104X	C CAPACITOR	FOR EP802	
	C 807	NCF31CZ-104X	C CAPACITOR	FOR EP802	
	C 808	NCS31HJ-101X	C.CAPA. C.M	FOR EP802	
	C 809	NCF31CZ-104X	C CAPACITOR	FOR EP801	
	C 810	NCF31CZ-104X	C CAPACITOR	FOR IC501	
	C 811	NCS31HJ-270X	C CAPACITOR	FOR ZC4 TX	
	C 812	QER61AM-227Z	E CAPACITOR	FOR ZC4 M8V	
	C 813	NCB31HK-103X	C CAPACITOR	FOR ZC4 5V	
	C 814	NCS31HJ-101X	C.CAPA. C.M	FOR ZC4 KCMND	
	C 815	NCS31HJ-101X	C.CAPA. C.M	FOR ZC4 MSTAT	
	C 816	NCS31HJ-101X	C.CAPA. C.M	FOR ZC4 RESET	
	C 817	NCS31HJ-101X	C.CAPA. C.M	FOR ZC4 MCS	
	C 818	NCS31HJ-101X	C.CAPA. C.M	FOR ZC4 TX	
	C 819	NCB31HK-103X	C CAPACITOR	FOR ZC4 8V	
	C 821	NCF31CZ-104X	C CAPACITOR		
	C 822	NCB31HK-103X	C CAPACITOR		
	C 830	QER61CM-226Z	E CAPACITOR	22MF 20% 16V	
	C 831	NCF31CZ-104X	C CAPACITOR		
	C 832	NCB31HK-103X	C CAPACITOR		
	C 840	QER61CM-226Z	E CAPACITOR	22MF 20% 16V	
	C 841	NCF31CZ-104X	C CAPACITOR		
	C 842	NCB31HK-103X	C CAPACITOR		
	C 853	QER61AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 854	QER61AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 861	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 862	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 863	QETN1AM-107Z	E CAPACITOR	FOR IC862	
	C 864	QETN1AM-107Z	E CAPACITOR	FOR IC862	
	C 865	QETN1HM-226Z	E CAPACITOR	ZC4 TO R7(L)	
	C 866	QETN1HM-226Z	E CAPACITOR	ZC4 TO R7(R)	
	C 871	NCF31CZ-104X	C CAPACITOR		
	C 872	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 873	NCF31CZ-104X	C CAPACITOR		
	C 874	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 881	QETN1HM-105Z	E CAPACITOR	FOR MUTE TR	
	C 901	QETM1EM-108	E CAPACITOR	1000MF 20% 25V	
	C 902	QETN1EM-477Z	E CAPACITOR	470MF 20% 25V	
	C 905	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 906	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 908	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
	C 910	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 911	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 912	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 913	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 916	QETN1CM-108Z	E CAPACITOR	1000MF 20% 16V	
	C 917	QETM1EM-828	E CAPACITOR	8200MF 20% 25V	
	C 918	QETN0JM-108Z	E CAPACITOR	1000MF 20% 6.3V	
	C 921	QETM1EM-478	E CAPACITOR	4700MF 20% 25V	
	C 922	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 924	QETN0JM-108Z	E CAPACITOR	1000MF 20% 6.3V	
	C 925	QETN0JM-228Z	E CAPACITOR	2200MF 20% 6.3V	
	C 926	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 927	QCF31HZ-103Z	C CAPACITOR	.010MF +80:-20%	
	C 928	QETN0JM-227Z	E CAPACITOR	220MF 20% 6.3V	
	C 941	QETN1HM-227Z	E CAPACITOR	220MF 20% 50V	
	C 942	QETN1JM-227Z	E CAPACITOR	220MF 20% 63V	
	C 943	QETN1HM-106Z	E CAPACITOR	10MF 20% 50V	
	C 944	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 945	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 972	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	

■ Electrical parts list (Main board)

Block No. 01

Item	Parts number	Parts name	Remarks	Area	Item	Parts number	Parts name	Remarks	Area
C 991	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		D 941	11ES2-T4	DIODE I.M		
C 992	NCB31HK-102X	C CAPACITOR			D 942	11ES2-T4	DIODE I.M		
C 993	NCB31HK-102X	C CAPACITOR			D 943	MTZJ36C-T2	Z.DIODE I.M		
C 994	NCB31HK-102X	C CAPACITOR			D 944	1SS133-T2	SI DIODE IM		
CN 1	QGA7901C1-02	CONNECTOR	AC IN		D 945	MTZJ7.5B-T2	Z.DIODE I.M		
CN501	QGF1205C1-19	CONNECTOR	FRONT PWB		D 950	1SS133-T2	SI DIODE IM		
CN601	QGD2501C1-04Z	SOCKET	TO MIC JACK PWB		D 951	11ES2-T4	DIODE I.M		
CN615	QGF1016C1-19	CONNECTOR	TO CD UNIT		D 991	1SS133-T2	SI DIODE IM		
CN616	QGB2027M4-22S	CONNECTOR	FROM D.I/F		D 992	1SS133-T2	SI DIODE IM		
CN711	QGF1205F1-11	CONNECTOR	TO HP VOL PWB		D1301	1SS133-T2	SI DIODE IM	FOR LEVEL	
CN721	QGA2001C1-06	6P PLUG ASSY	CDR UNIT POWER		D1310	1SS133-T2	SI DIODE IM		
CN722	QGF1016C1-23	CONNECTOR	TO CDR GENERAL		D2301	1SS133-T2	SI DIODE IM	FOR LEVEL	
CN723	QGF1016C1-08	CONNECTOR	TO CDR SREAL		EP201	QNZ0136-001Z	EARTH PLATE		
CN841	QGF1205C1-13	CONNECTOR	TO JOG PWB		EP501	QNZ0136-001Z	EARTH PLATE		
CN901	QGD2501C1-04Z	SOCKET	DENGEN		EP541	E409182-001SM	GRAND TERMINAL		
CN902	QGD2501C1-05Z	SOCKET I.M	DENGEN		EP701	QNZ0136-001Z	EARTH PLATE		
C1301	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		EP801	QNZ0136-001Z	EARTH PLATE		
C1303	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		EP802	QNZ0136-001Z	EARTH PLATE		
C1312	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V		FC901	QNG0019-001Z	FUSE CLIP		
C1322	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		FC902	QNG0019-001Z	FUSE CLIP		
C1501	QFLC1HJ-222Z	M CAPACITOR	2200PF 5% 50V		FC903	QNG0019-001Z	FUSE CLIP		
C1502	QFLC1HJ-471Z	M CAPACITOR	470PF 5% 50V		FC904	QNG0019-001Z	FUSE CLIP		
C1503	QFLC1HJ-682Z	M CAPACITOR	6800PF 5% 50V		FC905	QNG0019-001Z	FUSE CLIP		
C1507	QFLC1HJ-472Z	M CAPACITOR	4700PF 5% 50V		FC906	QNG0019-001Z	FUSE CLIP		
C1509	QFLC1HJ-183Z	M CAPACITOR	.018MF 5% 50V		FC907	QNG0019-001Z	FUSE CLIP		
C1510	QFLC1HJ-122Z	M CAPACITOR	1200PF 5% 50V		FC908	QNG0019-001Z	FUSE CLIP		
C1511	QFLC1HJ-122Z	M CAPACITOR	1200PF 5% 50V		FW801	QUM132-06Z4Z4	PARA RIBON WIRE	MAIN JUMP	
C1512	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V		FW901	QUM139-12DGZ3	PARA RIBON WIRE	TRANS-MAIN	
C1513	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V		IC301	TC74HC00AF-X	IC	D.OUT SEL	
C1516	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V		IC311	TC74HC00AF-X	IC		
C1530	NCB31HK-102X	C CAPACITOR	FOR MUTE TR		IC331	TC74HC004AF-W	IC	DATA SLICE	
C2301	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		IC361	MN35505-X	IC C M	DAC	
C2303	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		IC362	NJM4580M-X	IC	DAC LPF .ZC4	
C2322	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		IC363	NJM4580M-X	IC	DAC LPF .ZC4	
C2501	QFLC1HJ-222Z	M CAPACITOR	2200PF 5% 50V		IC501	UPD784215AGF513	IC	PP ONLY(FLASH)	
C2502	QFLC1HJ-471Z	M CAPACITOR	470PF 5% 50V		IC502	IC-PST600/H-T	IC	RESET	
C2503	QFLC1HJ-682Z	M CAPACITOR	6800PF 5% 50V		IC811	NJM4580M-X	IC	CDR LPF	
C2507	QFLC1HJ-472Z	M CAPACITOR	4700PF 5% 50V		IC821	BU4052BCF-X	IC	LINE OUT SEL	
C2509	QFLC1HJ-183Z	M CAPACITOR	.018MF 5% 50V		IC831	BU4066BCF-X	IC	REC SEL1	
C2510	QFLC1HJ-122Z	M CAPACITOR	1200PF 5% 50V		IC841	BU4066BCF-X	IC	REC SEL2	
C2511	QFLC1HJ-122Z	M CAPACITOR	1200PF 5% 50V		IC851	NJM4580M-X	IC	D.VOL BUFFER	
C2512	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V		IC861	BU4066BCF-X	IC	CD DRT SWITCH	
C2513	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V		IC862	NJM4580M-X	IC	CD OUT BUFFER	
C2516	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V		IC871	NJM4580M-X	IC	LINE IN AMP	
D 301	1SS133-T2	SI DIODE IM			IC881	NJM4580M-X	IC	LINE OUT BUFFER	
D 302	1SS133-T2	SI DIODE IM			IC891	TC9412AF-X	IC	LINE IN VOLUME	
D 361	1SS133-T2	SI DIODE IM			△ IC901	NJM2396F05	I.C.	DD5V	
D 503	1SS133-T2	SI DIODE IM			△ IC902	NJU7223F33	IC	3.3V	
D 541	1SS133-T2	SI DIODE IM			△ IC903	NJU7223F50	IC	A+5V	
D 811	1SS133-T2	SI DIODE IM	CD STATUS		△ IC904	NJM2396F08	IC	A+8V	
D 812	11ES2-T4	DIODE I.M	1V DOWN ZC4 8V		△ IC905	NJM2396F09	IC	M9V	
△ D 901	11ES2-T4	DIODE I.M			△ IC921	NJM78M05FA	IC	DS5V	
△ D 902	11ES2-T4	DIODE I.M			J 351	GP1FA550TZ	OPT TRANSMITTER	OPT OUT	
△ D 903	11ES2-T4	DIODE I.M			J 352	GP1FA550RZ	OPT RECEIVER	OPT IN	
△ D 904	11ES2-T4	DIODE I.M			J 353	QNN0347-001	PIN JACK	COAX OUT	
D 906	1SS133-T2	SI DIODE IM			J 354	QNN0347-001	PIN JACK	COAX IN	
D 907	1SS133-T2	SI DIODE IM			J 541	QNS0073-001	JACK	DCS JACK	
D 910	11ES2-T4	DIODE I.M			J 871	QNN0126-001	PIN JACK	LINE JACK	
D 911	11ES2-T4	DIODE I.M			K 311	NQR0227-004X	FERRITE BEADS		
D 912	11ES2-T4	DIODE I.M			K 351	NQR0227-004X	FERRITE BEADS		
D 913	11ES2-T4	DIODE I.M			K 370	NQR0227-004X	FERRITE BEADS		
D 915	1SS133-T2	SI DIODE IM			K 371	NQR0227-004X	FERRITE BEADS		
△ D 921	11ES2-T4	DIODE I.M			K 375	NQR0227-004X	FERRITE BEADS		
△ D 922	11ES2-T4	DIODE I.M			K 376	NQR0227-004X	FERRITE BEADS		
△ D 923	11ES2-T4	DIODE I.M			K 380	NQR0227-004X	FERRITE BEADS	+5V	
△ D 924	11ES2-T4	DIODE I.M			K 381	NQR0227-004X	FERRITE BEADS	LRCK(ZC4)	

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	K 382	NQR0227-004X	FERRITE BEADS	DATA(ZC4)	
	K 383	NQR0227-004X	FERRITE BEADS	XBCK(ZC4)	
	K 384	NQR0227-004X	FERRITE BEADS	DAMCLK(ZC4)	
	K 385	NQR0227-004X	FERRITE BEADS		
	K 386	NQR0227-004X	FERRITE BEADS		
	K 387	NQR0227-004X	FERRITE BEADS		
	K 388	NQR0227-004X	FERRITE BEADS		
	K 389	NQR0227-004X	FERRITE BEADS		
	K 391	NQR0227-004X	FERRITE BEADS		
	K 392	NQR0227-004X	FERRITE BEADS		
	K 393	NQR0227-004X	FERRITE BEADS		
	K 501	NQR0227-004X	FERRITE BEADS	CDR DOUT	
	K 601	NQR0227-004X	FERRITE BEADS		
	K 602	NQR0227-004X	FERRITE BEADS		
	K 603	NQR0227-004X	FERRITE BEADS		
	K 604	NQR0227-004X	FERRITE BEADS		
	K 711	NQR0227-004X	FERRITE BEADS		
	K 712	NQR0227-004X	FERRITE BEADS		
	K 713	NQR0227-004X	FERRITE BEADS		
	K 714	NQR0227-004X	FERRITE BEADS		
	K 715	NQR0227-004X	FERRITE BEADS		
	K 716	NQR0227-004X	FERRITE BEADS		
	K 722	NQR0227-004X	FERRITE BEADS		
	K 801	NQR0227-004X	FERRITE BEADS		
	K 802	QQR0779-001Z	INDUCTOR		
	K 803	QQR0779-001Z	INDUCTOR		
	K 804	QQR0779-001Z	INDUCTOR		
	K 805	QQR0779-001Z	INDUCTOR		
	K 806	QQR0779-001Z	INDUCTOR		
△	L 901	QQR0799-001	INDUCTOR		
	Q 181	2SC3576-JVC-T	TRANSISTOR I/M	L.OUT MUTING	
	Q 182	2SC3576-JVC-T	TRANSISTOR I/M	HP MUTE	
	Q 281	2SC3576-JVC-T	TRANSISTOR I/M	L.OUT MUTING	
	Q 282	2SC3576-JVC-T	TRANSISTOR I/M	HP MUTE	
	Q 362	2SC3576-JVC-T	TRANSISTOR I/M		
	Q 363	2SC3576-JVC-T	TRANSISTOR I/M		
	Q 367	KRA103M-T	TRANSISTOR *		
	Q 501	DTC114ESA-T	DIGITAL.TR TAPE		
	Q 541	KRA103M-T	TRANSISTOR *		
	Q 542	KTC3199/GL/-T	TRANSISTOR		
	Q 821	KRC103M-T	TR I/M		
	Q 822	KRC103M-T	TR I/M		
	Q 831	KRA103M-T	TRANSISTOR *		
	Q 832	KRA103M-T	TRANSISTOR *		
	Q 841	KRA103M-T	TRANSISTOR *		
	Q 842	KRA103M-T	TRANSISTOR *		
	Q 861	KRA103M-T	TRANSISTOR *		
	Q 862	KRC103M-T	TR I/M		
	Q 881	2SA933AS/RS/-T	TRANSISTOR		
	Q 904	2SA933AS/RS/-T	TRANSISTOR		
△	Q 905	2SA1359/OY/	TRANSISTOR		
	Q 906	2SK301/QR/-T	FET I/M		
△	Q 941	2SB647/CD/-T	TRANSISTOR		
	Q 981	KRC103M-T	TR I/M	POWER ON SW	
	Q1301	KTC3199/GL/-T	TRANSISTOR		
	Q2301	KTC3199/GL/-T	TRANSISTOR		
	R 111	NRSA63J-223X	MG RESISTOR		
	R 112	NRSA63F-223X	MG RESISTOR		
	R 113	NRSA63F-223X	MG RESISTOR		
	R 114	QRA14CF-2201Y	MF RESISTOR	22 1/4W	
	R 115	QRA14CF-3001Y	MF RESISTOR	30 1/4W	
	R 116	NRSA63J-473X	MG RESISTOR		
	R 117	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
	R 131	NRSA63J-682X	MG RESISTOR		
	R 132	QRE141J-123Y	C RESISTOR	12K 5% 1/4W	
	R 133	QRA14CF-3001Y	MF RESISTOR	30 1/4W	

△	Item	Parts number	Parts name	Remarks	Area
	R 141	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 142	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 171	NRSA63J-102X	MG RESISTOR		
	R 172	NRSA63J-104X	MG RESISTOR		
	R 173	QRE141J-154Y	C RESISTOR	150K 5% 1/4W	
	R 177	NRSA63J-104X	MG RESISTOR		
	R 181	NRSA63J-474X	MG RESISTOR		
	R 182	QRA14CF-6200Y	MF RESISTOR	62 1/4W	
	R 183	NRSA63J-103X	MG RESISTOR		
	R 184	NRSA63J-221X	MG RESISTOR		
	R 185	NRSA63J-102X	MG RESISTOR		
	R 186	NRSA63J-103X	MG RESISTOR		
	R 187	NRSA63J-223X	MG RESISTOR		
	R 188	NRSA63J-100X	MG RESISTOR		
	R 190	NRSA63J-473X	MG RESISTOR		
	R 211	NRSA63J-223X	MG RESISTOR		
	R 212	NRSA63F-223X	MG RESISTOR		
	R 213	NRSA63F-223X	MG RESISTOR		
	R 214	QRA14CF-2201Y	MF RESISTOR	22 1/4W	
	R 215	QRA14CF-3001Y	MF RESISTOR	30 1/4W	
	R 216	NRSA63J-473X	MG RESISTOR		
	R 217	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
	R 231	NRSA63J-682X	MG RESISTOR		
	R 232	QRE141J-123Y	C RESISTOR	12K 5% 1/4W	
	R 233	QRA14CF-3001Y	MF RESISTOR	30 1/4W	
	R 241	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 242	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 271	NRSA63J-102X	MG RESISTOR		
	R 272	NRSA63J-104X	MG RESISTOR		
	R 273	QRE141J-154Y	C RESISTOR	150K 5% 1/4W	
	R 277	NRSA63J-104X	MG RESISTOR		
	R 281	NRSA63J-474X	MG RESISTOR		
	R 282	QRA14CF-6200Y	MF RESISTOR	62 1/4W	
	R 283	NRSA63J-103X	MG RESISTOR		
	R 284	NRSA63J-221X	MG RESISTOR		
	R 285	NRSA63J-102X	MG RESISTOR		
	R 286	NRSA63J-103X	MG RESISTOR		
	R 287	NRSA63J-223X	MG RESISTOR		
	R 288	NRSA63J-100X	MG RESISTOR		
	R 301	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 302	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 303	NRSA63J-181X	MG RESISTOR		
	R 305	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 307	NRSA63J-750X	MG RESISTOR		
	R 308	NRSA63J-750X	MG RESISTOR		
	R 309	NRSA63J-270X	MG RESISTOR		
	R 311	NRSA63J-332X	MG RESISTOR		
	R 312	NRSA63J-332X	MG RESISTOR		
	R 313	NRSA63J-101X	MG RESISTOR		
	R 322	NRSA63J-562X	MG RESISTOR		
	R 325	NRSA63J-562X	MG RESISTOR		
	R 326	NRSA63J-103X	MG RESISTOR		
	R 361	NRSA63J-332X	MG RESISTOR		
	R 362	NRSA63J-103X	MG RESISTOR		
	R 365	NRSA63J-102X	MG RESISTOR	DAC P.DOWN	
	R 367	QRE141J-470Y	C RESISTOR	47 5% 1/4W	
	R 368	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 369	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 370	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 371	NRSA63J-270X	MG RESISTOR		
	R 374	NRSA63J-472X	MG RESISTOR		
	R 375	NRSA63J-472X	MG RESISTOR		
	R 376	NRSA63J-472X	MG RESISTOR		
	R 377	NRSA63J-472X	MG RESISTOR		
	R 383	QRE141J-181Y	C RESISTOR	180 5% 1/4W	
	R 384	QRE141J-100Y	C RESISTOR	10 5% 1/4W	

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	R 385	QRE141J-470Y	C RESISTOR	47 5% 1/4W	
	R 502	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
	R 503	NRSA63J-223X	MG RESISTOR		
	R 504	NRSA63J-102X	MG RESISTOR		
	R 506	NRSA63J-472X	MG RESISTOR		
	R 508	NRSA63J-223X	MG RESISTOR		
	R 511	NRSA63J-102X	MG RESISTOR		
	R 512	NRSA63J-102X	MG RESISTOR		
	R 513	NRSA63J-151X	MG RESISTOR		
	R 514	NRSA63J-102X	MG RESISTOR		
	R 515	NRSA63J-102X	MG RESISTOR		
	R 519	NRSA63J-102X	MG RESISTOR		
	R 520	NRSA63J-102X	MG RESISTOR		
	R 521	NRSA63J-102X	MG RESISTOR		
	R 522	NRSA63J-102X	MG RESISTOR		
	R 523	NRSA63J-472X	MG RESISTOR		
	R 526	NRSA63J-473X	MG RESISTOR		
	R 527	NRSA63J-822X	MG RESISTOR		
	R 528	NRSA63J-822X	MG RESISTOR		
	R 529	NRSA63J-822X	MG RESISTOR		
	R 530	NRSA63J-822X	MG RESISTOR		
	R 531	NRSA63J-822X	MG RESISTOR		
	R 532	NRSA63J-472X	MG RESISTOR		
	R 533	NRSA63J-473X	MG RESISTOR		
	R 534	NRSA63J-473X	MG RESISTOR		
	R 536	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 537	NRSA63J-223X	MG RESISTOR		
	R 540	NRSA63J-473X	MG RESISTOR		
	R 541	NRSA63J-223X	MG RESISTOR		
	R 542	NRSA63J-473X	MG RESISTOR		
	R 543	NRSA63J-223X	MG RESISTOR		
	R 544	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 549	NRSA63J-101X	MG RESISTOR		
	R 551	NRSA63J-472X	MG RESISTOR		
	R 555	NRSA63J-473X	MG RESISTOR	JOG-A PULL UP	
	R 556	NRSA63J-473X	MG RESISTOR	JOG-B PULL UP	
	R 557	QRE141J-473Y	C RESISTOR	STATUS PULL UP	
	R 558	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 559	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 561	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 562	NRSA63J-102X	MG RESISTOR		
	R 563	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 564	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 565	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 566	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 567	NRSA63J-102X	MG RESISTOR		
	R 568	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 569	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 570	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 571	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 572	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 573	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 574	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 801	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 802	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 803	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 804	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 811	NRSA63J-223X	MG RESISTOR		
	R 812	NRSA63J-0R0X	MG RESISTOR		
	R 821	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 827	NRSA63J-473X	MG RESISTOR		
	R 828	NRSA63J-473X	MG RESISTOR		
	R 831	NRSA63J-222X	MG RESISTOR		
	R 832	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 833	NRSA63J-473X	MG RESISTOR		
	R 834	NRSA63J-473X	MG RESISTOR		

△	Item	Parts number	Parts name	Remarks	Area
	R 841	NRSA63J-222X	MG RESISTOR		
	R 842	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 843	NRSA63J-473X	MG RESISTOR		
	R 844	NRSA63J-473X	MG RESISTOR		
	R 850	NRSA63J-473X	MG RESISTOR		
	R 851	NRSA63J-153X	MG RESISTOR		
	R 852	NRSA63J-562X	MG RESISTOR		
	R 853	NRSA63J-153X	MG RESISTOR		
	R 854	NRSA63J-562X	MG RESISTOR		
	R 855	NRSA63F-362X	MG.RES C.M		
	R 856	NRSA63F-362X	MG.RES C.M		
	R 857	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 858	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 860	NRSA63J-473X	MG RESISTOR		
	R 862	NRSA63J-103X	MG RESISTOR		
	R 863	NRSA63J-473X	MG RESISTOR		
	R 864	NRSA63J-473X	MG RESISTOR		
	R 865	NRSA63J-222X	MG RESISTOR		
	R 866	NRSA63J-221X	MG RESISTOR		
	R 867	NRSA63J-474X	MG RESISTOR		
	R 868	NRSA63J-474X	MG RESISTOR		
	R 869	NRSA63J-100X	MG RESISTOR		
	R 870	NRSA63J-100X	MG RESISTOR		
	R 871	NRSA63J-153X	MG RESISTOR		
	R 872	NRSA63J-562X	MG RESISTOR		
	R 873	NRSA63J-153X	MG RESISTOR		
	R 874	NRSA63J-562X	MG RESISTOR		
	R 875	NRSA63J-100X	MG RESISTOR		
	R 876	NRSA63J-100X	MG RESISTOR		
	R 881	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 882	NRSA63J-223X	MG RESISTOR		
	R 883	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 884	NRSA63J-100X	MG RESISTOR		
	R 885	NRSA63J-100X	MG RESISTOR		
	R 904	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
△	R 905	QRZ9006-4R7X	F RESISTOR	4.7 1/0W	
	R 906	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 911	QRT027J-1R0	UNF.MF.RES.	1.0 5% 1/2W	
	R 912	QRT01DJ-R47X	MF RESISTOR	5% 1/1W	
	R 921	NRSA63J-103X	MG RESISTOR		
	R 925	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
	R 926	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
△	R 941	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
△	R 942	QRJ146J-4R7X	UNF C RESISTOR	4.7 5% 1/4W	
	R 943	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
	R 991	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 992	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R1301	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
	R1302	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R1303	NRSA63J-104X	MG RESISTOR		
	R1304	NRSA63J-682X	MG RESISTOR		
	R1305	NRSA63J-273X	MG RESISTOR		
	R1306	NRSA63J-823X	MG RESISTOR		
	R1307	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R1312	NRSA63J-153X	MG RESISTOR		
	R1313	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R1314	NRSA63J-222X	MG RESISTOR		
	R1501	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R1502	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R1503	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R1504	QRA14CF-3301Y	MF RESISTOR	33 1/4W	
	R1505	NRSA63F-362X	MG.RES C.M		
	R1506	NRSA63F-362X	MG.RES C.M		
	R1507	NRSA63F-362X	MG.RES C.M		
	R1511	NRSA63J-273X	MG RESISTOR		
	R1512	NRSA63J-273X	MG RESISTOR		

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	R1514	QRA14CF-1301Y	MF RESISTOR	13 1/4W	
	R1515	QRA14CF-1301Y	MF RESISTOR	13 1/4W	
	R1517	NRSA63J-100X	MG RESISTOR		
	R1519	NRSA63J-100X	MG RESISTOR		
	R1523	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R1524	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
	R1526	NRSA63J-103X	MG RESISTOR		
	R1530	NRSA63J-473X	MG RESISTOR		
	R2301	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
	R2302	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R2303	NRSA63J-104X	MG RESISTOR		
	R2304	NRSA63J-682X	MG RESISTOR		
	R2305	NRSA63J-273X	MG RESISTOR		
	R2306	NRSA63J-823X	MG RESISTOR		
	R2307	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
	R2501	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R2502	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R2503	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R2504	QRA14CF-3301Y	MF RESISTOR	33 1/4W	
	R2505	NRSA63F-362X	MG.RES C.M		
	R2506	NRSA63F-362X	MG.RES C.M		
	R2507	NRSA63F-362X	MG.RES C.M		
	R2511	NRSA63J-273X	MG RESISTOR		
	R2512	NRSA63J-273X	MG RESISTOR		
	R2514	QRA14CF-1301Y	MF RESISTOR	13 1/4W	
	R2515	QRA14CF-1301Y	MF RESISTOR	13 1/4W	
	R2517	NRSA63J-100X	MG RESISTOR		
	R2519	NRSA63J-100X	MG RESISTOR		
	R2523	QRA14CF-1802Y	MF RESISTOR	18 1/4W	
	R2524	QRE141J-182Y	C RESISTOR	1.8K 5% 1/4W	
	R2526	NRSA63J-103X	MG RESISTOR		
	S 531	QSW0871-001	SLIDE SWITCH	TAPE/CDR	
	T 301	QQR0880-001	PULSE TRANS		
	X 501	QAX0356-001Z	RESONATOR	10MHZ EFO-EC100	

■ Electrical parts list (Front board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	C 701	NCB31HK-103X	C CAPACITOR				K1212	NQR0227-004X	FERRITE BEADS		
	C 702	QER61AM-107Z	E CAPACITOR	100MF 20% 10V			K2201	NQR0227-004X	FERRITE BEADS		
	C 703	NCB31HK-681X	C CAPACITOR				Q 701	KRC103M-T	TR I/M	FOR POWER LED	
	C 722	NCF31CZ-104X	C CAPACITOR				Q 724	KRA103M-T	TRANSISTOR *	HP DIST KAIZEN	
	C 723	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			Q 726	KTC3199/GLJ-T	TRANSISTOR	FOR 1G	
	C 724	NCF31CZ-104X	C CAPACITOR				Q 727	KTC3199/GLJ-T	TRANSISTOR	FOR 15G	
	C 725	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			Q 728	KTC3199/GLJ-T	TRANSISTOR	FOR 16G	
	C 741	NCB31HK-103X	C CAPACITOR				Q1401	2SC3576-JVC-T	TRANSISTOR I/M	MIX VR SW	
	C 742	NCF31CZ-104X	C CAPACITOR				Q2401	2SC3576-JVC-T	TRANSISTOR I/M	MIX VR SW	
	C 743	QER61AM-107Z	E CAPACITOR	100MF 20% 10V			R 701	NRSA63J-102X	MG RESISTOR		
	C 749	NCS31HJ-101X	C.CAPA. C.M				R 702	NRSA63J-102X	MG RESISTOR		
	CN541	QGF1205F1-19	CONNECTOR	FRONT - MAIN			R 703	NRSA63J-122X	MG RESISTOR		
	CN701	QGF1205C1-11	CONNECTOR	H.P. - MAIN			R 704	NRSA63J-182X	MG RESISTOR		
	CN712	QGD2503F1-05	SOCKET	H.P - H.P JACK			R 705	NRSA63J-272X	MG RESISTOR		
	CN801	QGF1205C1-13	CONNECTOR	JOG PWB TO MAIN			R 706	NRSA63J-332X	MG RESISTOR		
	C1201	NCS31HJ-101X	C.CAPA. C.M				R 707	NRSA63J-562X	MG RESISTOR		
	C1202	NCB31HK-103X	C CAPACITOR				R 710	NRSA63J-470X	MG RESISTOR		
	C1203	NCB31HK-103X	C CAPACITOR				R 711	NRSA63J-331X	MG RESISTOR	FOR STANBY LED	
	C1204	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 721	NRSA63J-102X	MG RESISTOR		
	C1205	NCS31HJ-470X	C.CAPA. C.M				R 722	NRSA63J-102X	MG RESISTOR		
	C1401	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 723	NRSA63J-122X	MG RESISTOR		
	C2201	NCS31HJ-101X	C.CAPA. C.M				R 724	NRSA63J-182X	MG RESISTOR		
	C2202	NCB31HK-103X	C CAPACITOR				R 725	NRSA63J-272X	MG RESISTOR		
	C2203	NCB31HK-103X	C CAPACITOR				R 726	NRSA63J-332X	MG RESISTOR		
	C2204	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 736	NRSA63J-333X	MG RESISTOR		
	C2205	NCS31HJ-470X	C.CAPA. C.M				R 737	NRSA63J-333X	MG RESISTOR		
	C2401	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 738	NRSA63J-333X	MG RESISTOR		
	C6001	NCB31HK-222X	C CAPACITOR				R 741	NRSA63J-333X	MG RESISTOR		
	C6002	QER61HM-105Z	E CAPACITOR	1.0MF 20% 50V			R 749	NRSA63J-223X	MG RESISTOR		
	C6003	NCB31HK-331X	C CAPACITOR				R 751	NRSA63J-102X	MG RESISTOR		
	C6005	QER61HM-105Z	E CAPACITOR	1.0MF 20% 50V			R 752	NRSA63J-102X	MG RESISTOR		
	C6008	NCB31HK-103X	C CAPACITOR				R 753	NRSA63J-122X	MG RESISTOR		
	C6009	NCB31HK-103X	C CAPACITOR				R 754	NRSA63J-182X	MG RESISTOR		
	C6012	NCB31HK-223X	C CAPACITOR				R 755	NRSA63J-272X	MG RESISTOR		
	C6101	NCF31CZ-104X	C CAPACITOR				R 760	NRSA63J-102X	MG RESISTOR		
	C6102	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 761	NRSA63J-102X	MG RESISTOR		
	C6103	NCF31CZ-104X	C CAPACITOR				R 762	NRSA63J-122X	MG RESISTOR		
	C6104	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 785	NRSA63J-331X	MG RESISTOR	FOR DIGITAL LED	
	C6201	NCF31CZ-104X	C CAPACITOR				R 786	NRSA63J-331X	MG RESISTOR	FOR S-CD LED	
	C6202	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 787	NRSA63J-331X	MG RESISTOR	FOR S-LINE LED	
	C6203	NCF31CZ-104X	C CAPACITOR				R 788	NRSA63J-331X	MG RESISTOR	FOR S-MIC LED	
	C6204	QER61CM-226Z	E CAPACITOR	22MF 20% 16V			R 789	NRSA63J-181X	MG RESISTOR	FOR MP3 LED	
	C6209	NCB31HK-103X	C CAPACITOR				R1201	NRSA63J-103X	MG RESISTOR		
	C6211	NCF31CZ-473X	C CAPACITOR				R1202	NRSA63J-104X	MG RESISTOR		
	D 701	SLR-342VC-T	LED	STANBY			R1204	NRSA63J-223X	MG RESISTOR		
	D 755	SLR-342VC-T	LED	DIGITAL			R1205	NRSA63J-680X	MG RESISTOR		
	D 756	SLR-342VC-T	LED	S-CD			R1206	NRSA63J-820X	MG RESISTOR		
	D 757	SLR-342VC-T	LED	S-LINE			R1207	NRSA63J-223X	MG RESISTOR		
	D 758	SLR-342VC-T	LED	S-MIC			R1208	NRSA63J-123X	MG RESISTOR		
	D 759	SLR-342DC-T	LED I.M	MP3			R1401	NRSA63J-223X	MG RESISTOR		
	DI721	QLF0088-001	FL TUBE				R1402	NRSA63J-223X	MG RESISTOR		
	EP601	LE40542-001A	EARTH PLATE	FOR MIC JACK			R1403	NRSA63J-103X	MG RESISTOR		
	FW601	QUM024-08DGZ3	PARA RIBON WIRE	MIC +-8V MAIN			R1404	NRSA63J-303X	MG RESISTOR		
	FW702	QUM025-14DGZ3	PARA RIBON WIRE	TO CN712			R1405	NRSA63J-822X	MG RESISTOR		
	IC601	NJM4580M-X	IC	MIC AMP			R1406	NRSA63J-822X	MG RESISTOR		
	IC621	NJM4580M-X	IC	HP AMP			R1407	NRSA63J-100X	MG RESISTOR		
	IC701	GP1UM271XK	IR DETECT UNIT				R2201	NRSA63J-103X	MG RESISTOR		
	IC721	M66004SP	FL DRIVER IC				R2202	NRSA63J-104X	MG RESISTOR		
	IC722	NJM4580M-X	IC	MIX AMP			R2204	NRSA63J-223X	MG RESISTOR		
	JS721	QSW0446-001	R ENCODER	JOG			R2205	NRSA63J-680X	MG RESISTOR		
	J6001	QNS0091-001	JACK	MIC JACK			R2206	NRSA63J-820X	MG RESISTOR		
	J6201	QNS0031-001	JACK	HP JACK			R2207	NRSA63J-223X	MG RESISTOR		
	K 701	NQR0227-004X	FERRITE BEADS				R2208	NRSA63J-123X	MG RESISTOR		
	K1200	NQR0227-004X	FERRITE BEADS				R2401	NRSA63J-223X	MG RESISTOR		
	K1201	NQR0227-004X	FERRITE BEADS				R2402	NRSA63J-223X	MG RESISTOR		
	K1211	NQR0227-004X	FERRITE BEADS				R2403	NRSA63J-103X	MG RESISTOR		

■ Electrical parts list (Front board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area
	R2404	NRSA63J-303X	MG RESISTOR		
	R2405	NRSA63J-822X	MG RESISTOR		
	R2406	NRSA63J-822X	MG RESISTOR		
	R2407	NRSA63J-100X	MG RESISTOR		
	R6001	NRSA63J-221X	MG RESISTOR		
	R6002	NRSA63J-103X	MG RESISTOR		
	R6003	NRSA63J-103X	MG RESISTOR		
	R6004	NRSA63J-121X	MG RESISTOR		
	R6005	NRSA63J-123X	MG RESISTOR		
	R6006	NRSA63J-561X	MG RESISTOR		
	R6007	NRSA63J-473X	MG RESISTOR		
	R6010	NRSA63J-0R0X	MG RESISTOR		
	R6011	NRSA63J-0R0X	MG RESISTOR		
	R6020	NRSA63J-0R0X	MG RESISTOR		
	R6101	NRSA63J-100X	MG RESISTOR		
	R6103	NRSA63J-100X	MG RESISTOR		
	S 701	QSW0683-001Z	PUSH SWITCH	POWER	
	S 702	QSW0683-001Z	PUSH SWITCH	STOP	
	S 703	QSW0683-001Z	PUSH SWITCH	PLAY MODE	
	S 704	QSW0683-001Z	PUSH SWITCH	PAUSE	
	S 705	QSW0683-001Z	PUSH SWITCH	CD EDIT	
	S 706	QSW0683-001Z	PUSH SWITCH	PLAY	
	S 707	QSW0683-001Z	PUSH SWITCH	CANCEL	
	S 708	QSW0683-001Z	PUSH SWITCH	SET	
	S 710	QSW0683-001Z	PUSH SWITCH	CD REC	
	S 721	QSW0683-001Z	PUSH SWITCH	STOP	
	S 722	QSW0683-001Z	PUSH SWITCH	PAUSE	
	S 723	QSW0683-001Z	PUSH SWITCH	PLAY	
	S 724	QSW0683-001Z	PUSH SWITCH	REC/REC MUTE	
	S 725	QSW0683-001Z	PUSH SWITCH	DIG.SYNC	
	S 726	QSW0683-001Z	PUSH SWITCH	MENU	
	S 751	QSW0683-001Z	PUSH SWITCH	OPEN/CLOSE3	
	S 752	QSW0683-001Z	PUSH SWITCH	OPEN/CLOSE2	
	S 753	QSW0683-001Z	PUSH SWITCH	OPEN/CLOSE1	
	S 754	QSW0683-001Z	PUSH SWITCH	DISC3	
	S 755	QSW0683-001Z	PUSH SWITCH	DISC2	
	S 756	QSW0683-001Z	PUSH SWITCH	DISC1	
	S 760	QSW0683-001Z	PUSH SWITCH	EJECT	
	S 761	QSW0683-001Z	PUSH SWITCH	FINALIZE	
	S 762	QSW0683-001Z	PUSH SWITCH	REC SOURCE SELE	
	VR641	QVQ0115-W15	V RESISTOR	MIX VOL	
	VR701	QVQ0301-A14	V RESISTOR	H.P.VOL	
	W6000	QUB220-09HPDM	SIN TWIST WIRE	MIC - EP	

■ Electrical parts list (MP3 Decoder board)

Block No. 03

△	Item	Parts number	Parts name	Remarks	Area
	CN401	QGB2027L1-22X	CONNECTOR	TO MAIN	
	CN617	QGF1037F1-08W	CONNECTOR C.M	FROM CD UNIT	
	C4002	NCB21CK-334X	C.CAPA. C.M		
	C4003	NDC31HJ-101X	C.CAPACITOR		
	C4004	NCB31HK-103X	C CAPACITOR		
	C4005	NCB31HK-272X	C CAPACITOR		
	C4006	NCB31HK-102X	C CAPACITOR		
	C4007	NCF31CZ-104X	C CAPACITOR		
	C4008	NDC31HJ-101X	C.CAPACITOR		
	C4009	NCB31HK-103X	C CAPACITOR		
	C4010	NDC31HJ-101X	C.CAPACITOR		
	C4011	NCF31CZ-104X	C CAPACITOR		
	C4012	NCF31CZ-104X	C CAPACITOR		
	C4013	NCF31CZ-104X	C CAPACITOR		
	C4014	NCF31CZ-104X	C CAPACITOR		
	C4015	NCB31HK-103X	C CAPACITOR		
	C4017	NCF31CZ-104X	C CAPACITOR		
	C4018	NEA70GM-476X	E.CAPA. C.M.		
	C4019	NCB31HK-103X	C CAPACITOR		
	C4020	NEA70JM-226X	E CAPACITOR		
	C4021	NCB31HK-103X	C CAPACITOR		
	C4035	NDC31HJ-101X	C.CAPACITOR		
	C4036	NCF31CZ-104X	C CAPACITOR		
	C4037	NEA70JM-226X	E CAPACITOR		
	C4047	NCF31CZ-104X	C CAPACITOR		
	C4048	NCF31CZ-104X	C CAPACITOR		
	C4049	NCF31CZ-104X	C CAPACITOR		
	C4050	NCF31CZ-104X	C CAPACITOR		
	C4051	NEA70JM-226X	E CAPACITOR		
	C4052	NCF31CZ-104X	C CAPACITOR		
	C4053	NEA70JM-476X	E.CAPACITOR		
	C4054	NCF31CZ-104X	C CAPACITOR		
	C4057	NCF31CZ-104X	C CAPACITOR		
	C4058	NCB21CK-474X	C CAPACITOR		
	C4059	NCB31HK-103X	C CAPACITOR		
	C4060	NCF31CZ-104X	C CAPACITOR		
	C4061	NCB31HK-123X	C CAPACITOR		
	C4070	NEX50JM-156X	E.CAPA.C.M		
	C4071	NCF31CZ-104X	C CAPACITOR		
	C4072	NCF31CZ-104X	C CAPACITOR		
	C4073	NEA71CM-226X	E.CAPAP. C.M		
	C4106	NCF31CZ-104X	C CAPACITOR		
	C4108	NDC31HJ-101X	C.CAPACITOR		
	C4109	NDC31HJ-101X	C.CAPACITOR		
	C4110	NDC31HJ-101X	C.CAPACITOR		
	C4112	NCF31CZ-104X	C CAPACITOR		
	D4070	DA204U-X	DIODE		
	IC401	TC94A02F-005	IC		
	IC402	W24L010AJ-12-X	IC		
	IC404	TC9246F-X	IC		
	IC405	NJU7241F25-X	IC		
	IC406	74VHC00MTC-X	IC		
	IC407	74VHC08SJ-X	IC		
	IC410	TC7SET08FU-X	IC		
	IC470	NJM78L05UA-X	IC		
	K4001	NQR0339-001X	F.BEADS		
	K4005	NQR0339-001X	F.BEADS		
	K4008	NQR0339-001X	F.BEADS		
	K4009	NQR0339-001X	F.BEADS		
	L4001	NQL114K-470X	INDUCTOR		
	L4002	NQL044K-331X	INDUCTOR C.M		
	L4003	NQL044K-331X	INDUCTOR C.M		
	L4006	NQL044K-331X	INDUCTOR C.M		
	Q4001	DTC143TKA-X	DIGI TRANSISTOR		
	R4005	NRSA63J-474X	MG RESISTOR		
	R4006	NRSA63J-474X	MG RESISTOR		

△	Item	Parts number	Parts name	Remarks	Area
	R4007	NRSA63J-474X	MG RESISTOR		
	R4008	NRSA63J-474X	MG RESISTOR		
	R4009	NRSA63J-474X	MG RESISTOR		
	R4010	NRSA63J-474X	MG RESISTOR		
	R4011	NRSA63J-474X	MG RESISTOR		
	R4012	NRSA63J-474X	MG RESISTOR		
	R4013	NRSA63J-474X	MG RESISTOR		
	R4014	NRSA63J-331X	MG RESISTOR		
	R4015	NRSA63J-331X	MG RESISTOR		
	R4017	NRSA63J-105X	MG RESISTOR		
	R4020	NRSA63J-474X	MG RESISTOR		
	R4021	NRSA63J-474X	MG RESISTOR		
	R4022	NRSA63J-104X	MG RESISTOR		
	R4023	NRSA63J-470X	MG RESISTOR		
	R4024	NRSA63J-0R0X	MG RESISTOR		
	R4025	NRSA63J-0R0X	MG RESISTOR		
	R4026	NRSA63J-0R0X	MG RESISTOR		
	R4028	NRSA63J-474X	MG RESISTOR		
	R4029	NRSA63J-474X	MG RESISTOR		
	R4030	NRSA63J-0R0X	MG RESISTOR		
	R4032	NRSA63J-474X	MG RESISTOR		
	R4033	NRSA63J-474X	MG RESISTOR		
	R4034	NRSA63J-474X	MG RESISTOR		
	R4035	NRSA63J-474X	MG RESISTOR		
	R4055	NRSA63J-102X	MG RESISTOR		
	R4057	NRSA63J-102X	MG RESISTOR		
	R4058	NRSA63J-821X	MG RESISTOR		
	R4061	NRSA63J-0R0X	MG RESISTOR		
	R4062	NRSA63J-101X	MG RESISTOR		
	R4063	NRSA63J-0R0X	MG RESISTOR		
	R4064	NRSA63J-332X	MG RESISTOR		
	R4065	NRSA63J-391X	MG RESISTOR		
	R4066	NRSA63J-103X	MG RESISTOR		
	R4067	NRSA63J-100X	MG RESISTOR		
	R4068	NRSA63J-100X	MG RESISTOR		
	R4069	NRSA63J-100X	MG RESISTOR		
	R4072	NRSA63J-101X	MG RESISTOR		
	R4076	NRSA63J-101X	MG RESISTOR		
	R4077	NRSA63J-101X	MG RESISTOR		
	R4081	NRSA63J-0R0X	MG RESISTOR		
	R4084	NRSA63J-101X	MG RESISTOR		
	R4085	NRSA63J-101X	MG RESISTOR		
	R4086	NRSA63J-0R0X	MG RESISTOR		
	R4087	NRSA63J-101X	MG RESISTOR		
	R4088	NRSA63J-101X	MG RESISTOR		
	R4089	NRSA63J-101X	MG RESISTOR		
	R4090	NRSA63J-101X	MG RESISTOR		
	R4104	NRSA63J-0R0X	MG RESISTOR		
	R4108	NRSA63J-0R0X	MG RESISTOR		
	R4130	NRSA63J-0R0X	MG RESISTOR		
	R4131	NRSA63J-0R0X	MG RESISTOR		
	R4132	NRSA63J-0R0X	MG RESISTOR		

■ Electrical parts list (Changer mecha. control board)

Block No.04

△	Item	Parts number	Parts name	Remarks	Area
	C 250	NCB31CK-104X	C CAPACITOR	E2P VDD-VSS	
	C 253	NCB31CK-104X	C CAPACITOR	VDD-VSS	
	C 254	QERF0JM-476Z	E CAPACITOR	VDD-VSS	
	C 291	NCB21CK-105X	C CAPACITOR	+5V-D.GND	
	C 292	NCB21CK-105X	C CAPACITOR		
	C 601	NCB31HK-102X	C CAPACITOR	PU E	
	C 602	NCB31HK-102X	C CAPACITOR	PU F	
	C 603	NCB31HK-223X	C CAPACITOR	TBAL	
	C 604	NCB31HK-223X	C CAPACITOR	FBAL	
	C 605	NCS31HJ-271X	C CAPACITOR	FE	
	C 606	NCS31HJ-820X	C CAPACITOR	TE	
	C 610	NCB31CK-563X	C CAPACITOR	RFENV	
	C 611	NCB31CK-104X	C CAPACITOR	RF	
	C 612	QERF1HM-104Z	E CAPACITOR	CAGC	
	C 614	NCB31CK-393X	C CAPACITOR	CEA	
	C 615	NCB31HK-272X	C CAPACITOR	CBDO	
	C 616	NCB31HK-681X	C CAPACITOR	COFTR	
	C 617	NCB31HK-331X	C CAPACITOR	OFT-D.GND	
	C 621	NCB31CK-104X	C CAPACITOR	VREF-D.GND	
	C 622	QERF1AM-107Z	E CAPACITOR	VREF-D.GND	
	C 623	NCF31AZ-105X	C CAPACITOR	VCC-D.GND	
	C 624	QERF1AM-107Z	E CAPACITOR	VCC-D.GND	
	C 625	NCB31CK-104X	C CAPACITOR	VREF-D.GND	
	C 631	QERF1CM-106Z	E CAPACITOR	APC +5V-BASE	
	C 632	NCF31AZ-105X	C CAPACITOR	APC +5V-D.GND	
	C 633	NCB31HK-223X	C CAPACITOR	PU K-VREF	
	C 641	NCS31HJ-150X	C CAPACITOR	EQ X1X2	
	C 642	NCS31HJ-220X	C CAPACITOR	EQ X1	
	C 643	NCS31HJ-6R0X	C CAPACITOR		
	C 651	NCS31HJ-1R0X	C.CAPA. C.M	X1	
	C 652	NCS31HJ-1R0X	C.CAPA. C.M	X2	
	C 653	NCB31AK-334X	C.CAPA. C.M	RST-VSS	
	C 655	NCB31CK-104X	C CAPACITOR	DVDD1-DVSS1	
	C 656	NCB11EK-104X	C.CAPA. C.M	VDD-VSS	
	C 657	QERF1AM-227Z	E CAPACITOR	DVDD1-DVSS1	
	C 658	NCB31CK-104X	C CAPACITOR	A.GND-D.GND	
	C 659	NCB31CK-473X	C CAPACITOR		
	C 661	NCS31HJ-471X	C CAPACITOR	ARF	
	C 663	NCB31HK-223X	C CAPACITOR	ARF	
	C 664	NCB31HK-223X	C CAPACITOR	IREF	
	C 665	NCB31AK-154X	C CAPACITOR	PLLF	
	C 667	NCB31AK-474X	C CAPACITOR	VCOF	
	C 669	QERF1AM-227Z	E CAPACITOR	VDD-VSS	
	C 673	QERF1AM-227Z	E CAPACITOR	AVDD1-AVSS1	
	C 676	NCB31CK-104X	C CAPACITOR	OFT	
	C 677	NCB31CK-104X	C CAPACITOR	AVDD1-AVSS1	
	C 679	QERF1AM-107Z	E CAPACITOR	AVDD2-AVSS2	
	C 680	NCB31CK-104X	C CAPACITOR	AVDD2-AVSS2	
	C 691	NCS31HJ-102X	C CAPACITOR	OUTL	
	C 692	NCS31HJ-102X	C CAPACITOR	OUTR	
	C 693	NCB31HK-272X	C CAPACITOR	OUTL	
	C 694	NCB31HK-272X	C CAPACITOR	OUTR	
	C 695	NCB31CK-104X	C CAPACITOR	VCC4.3V-GND	
	C 801	NCB31HK-223X	C CAPACITOR	VG3	
	C 802	NCS31HJ-102X	C CAPACITOR	TRD	
	C 811	NCS31HJ-391X	C CAPACITOR	FOCUS	
	C 812	NCS31HJ-391X	C CAPACITOR	SPINDLE	
	C 813	NCS31HJ-391X	C CAPACITOR	FEED	
	C 814	NCS31HJ-391X	C CAPACITOR	TRACKING	
	C 815	NCB21AK-105X	C CAPACITOR	TRD	
	C 816	NCB20JK-155X	C.CAPA. C.M	FOD	
	C 821	NCF31AZ-105X	C CAPACITOR	VCC-M.GND	
	C 822	QERF1AM-227Z	E CAPACITOR	VCC-M.GND	
	C 851	QERF1CM-106Z	E CAPACITOR	VCC-M.GND	

△	Item	Parts number	Parts name	Remarks	Area
	C 852	NCB31HK-103X	C CAPACITOR		
	C 853	NCB31HK-103X	C CAPACITOR		
	C 855	NCB31CK-104X	C CAPACITOR	VCC-M.GND	
	C 859	NCF31AZ-105X	C CAPACITOR	CAM MOTOR	
	C 860	NCF31AZ-105X	C CAPACITOR	ACTU MOTOR	
	CN601	QGF1016C1-21	CONNECTOR	TRAVERSE	
	CN606	QGF1016F3-08	CONNECTOR	4T I/F	
	CN608	QGF1016F3-04	CONNECTOR	CD-TEXT	
	CN610	QGB1214J1-08S	CONNECTOR	TO SW CB(CN620)	
	CN651	QGF1016F3-19	CONNECTOR	MAIN	
	D 251	MA112-X	DIODE		
	D 631	1SS355-X	DIODE C.M		
	D 667	MA152WA-X	DIODE		
	D 801	1SR154-400-X	DIODE		
	D 852	UDZS5.6B-X	Z DIODE	VZ	
	IC201	BR24C01AFV-W-X	IC	E2PROM	
	IC251	UPD780076GK-533	IC	MICOM	
	IC291	XC62HR3502P-X	IC		
	IC601	AN22000A-W	I.C C.M	RF AMP	
	IC651	MN662790RSC	IC	DSP & DAC	
	IC801	LA6541-X	IC	PU DRIVE	
	IC851	LB1641	IC	ACTU MOTOR DRIV	
	IC852	LB1641	IC	CAM MOTOR DRIVE	
	K 655	NQR0007-002X	FERRITE BEADS	TX	
	K 656	NQR0251-004X	FERRITE BEADS	SRDATA	
	K 657	NQR0251-004X	FERRITE BEADS	LRCK	
	K 658	NQR0251-004X	FERRITE BEADS	BCLK	
	Q 601	DTC114EUA-X	TRANSISTOR	EQX2	
	Q 602	DTC114EUA-X	TRANSISTOR	EQX4	
	Q 631	2SA1037AK/RS/-X	TRANSISTOR	APC	
	Q 673	DTA114EUA-X	DIGITAL.TR	IREF CHANGE	
	R 201	NRSA63J-103X	MG RESISTOR	SDA PULL UP	
	R 251	NRSA63J-102X	MG RESISTOR	MCLK	
	R 252	NRSA63J-102X	MG RESISTOR	MDATA	
	R 253	NRSA63J-102X	MG RESISTOR	MLD	
	R 254	NRSA63J-102X	MG RESISTOR	/DMUTE	
	R 255	NRSA63J-102X	MG RESISTOR	MCS	
	R 256	NRSA63J-102X	MG RESISTOR	MRDY	
	R 257	NRSA63J-102X	MG RESISTOR	SQCK	
	R 258	NRSA63J-102X	MG RESISTOR	KCMND	
	R 259	NRSA63J-102X	MG RESISTOR	MSTAT	
	R 260	NRSA63J-102X	MG RESISTOR	KCLK	
	R 261	NRSA63J-0R0X	MG RESISTOR		
	R 270	NRSA63J-223X	MG RESISTOR	TRY1 CLOSE	
	R 271	NRSA63J-223X	MG RESISTOR	TRY1OP PULL-UP	
	R 272	NRSA63J-223X	MG RESISTOR	TRY2OP PULL-UP	
	R 273	NRSA63J-223X	MG RESISTOR	TRY2 CLOSE	
	R 274	NRSA63J-223X	MG RESISTOR	TRY3OP PULL-UP	
	R 275	NRSA63J-223X	MG RESISTOR	TRY3 CLOSE	
	R 277	NRSA63J-103X	MG RESISTOR		
	R 278	NRSA63J-102X	MG RESISTOR	CAM CCW	
	R 279	NRSA63J-102X	MG RESISTOR	CAM CW	
	R 280	NRSA63J-102X	MG RESISTOR	ACTU CCW	
	R 281	NRSA63J-102X	MG RESISTOR	ACTU CW	
	R 283	NRSA63J-102X	MG RESISTOR	CDEMF	
	R 284	NRSA63J-102X	MG RESISTOR	CDCOPY	
	R 285	NRSA63J-102X	MG RESISTOR	CDTNO	
	R 286	NRSA63J-102X	MG RESISTOR		
	R 288	NRSA63J-103X	MG RESISTOR	CDTNO PULL UP	
	R 291	NRSA63J-1R0X	MG RESISTOR		
	R 292	NRSA63J-1R0X	MG RESISTOR		
	R 293	NRSA63J-103X	MG RESISTOR	/REST PULL UP	
	R 294	NRSA63J-103X	MG RESISTOR	IC PULL DOWN	
	R 295	NRSA63J-103X	MG RESISTOR		

■ Electrical parts list (Changer mecha. control board) Block No. 04

■ Electrical parts list (Changer mecha. switch board) Block No. 05

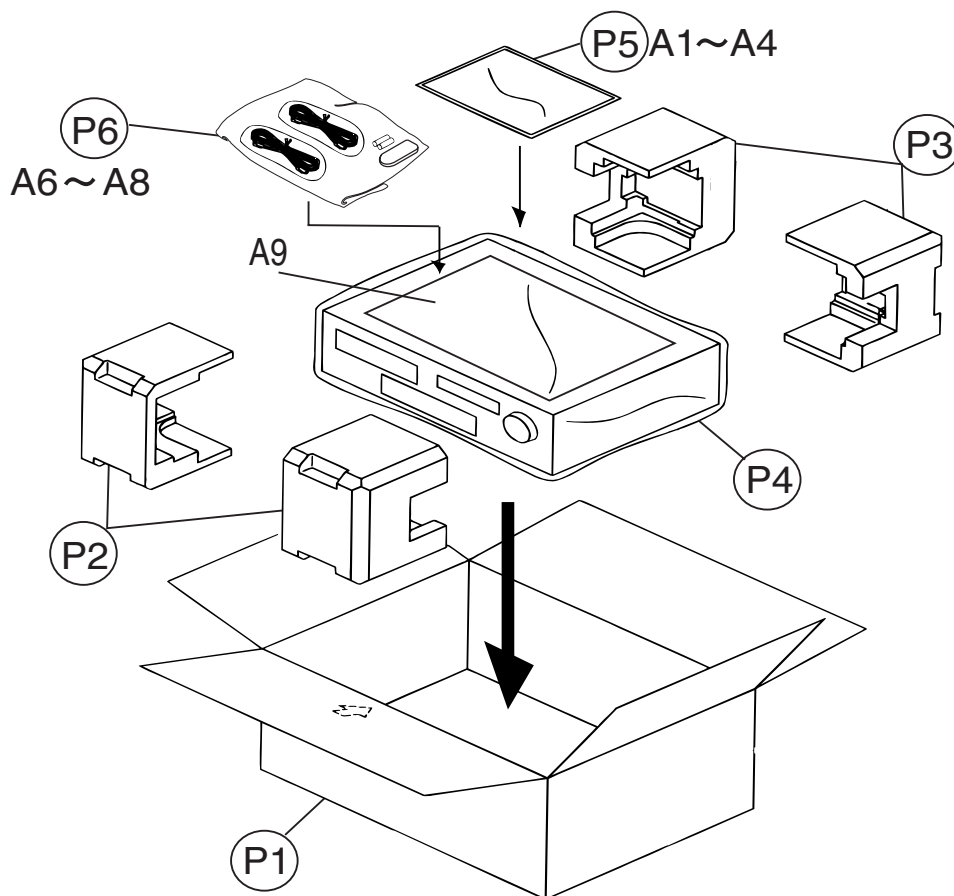
△	Item	Parts number	Parts name	Remarks	Area
	R 601	NRSA63J-224X	MG RESISTOR	TBAL	
	R 602	NRSA63J-823X	MG RESISTOR	FBAL	
	R 603	NRSA63J-393X	MG RESISTOR	FE	
	R 605	NRSA63J-224X	MG RESISTOR	TE	
	R 607	NRSA63J-473X	MG RESISTOR	PDE	
	R 608	NRSA63J-473X	MG RESISTOR	PDF	
	R 611	NRSA63J-562X	MG RESISTOR	RF	
	R 613	NRSA63J-562X	MG RESISTOR	RF	
	R 614	NRSA63J-0R0X	MG RESISTOR	ARF	
	R 617	NRSA63J-332X	MG RESISTOR		
	R 631	NRSA02J-2R2X	MG RESISTOR	+5V DE-COUPLE	
	R 632	NRSA02J-3R9X	MG RESISTOR	APC EMITTER	
	R 634	NRSA02J-3R9X	MG RESISTOR	APC COLECTOR	
	R 635	NRSA63J-100X	MG RESISTOR	PU K	
	R 636	NRSA63J-151X	MG RESISTOR	PU LD	
	R 651	NRSA63J-102X	MG RESISTOR	LSI RESET	
	R 652	NRSA63J-102X	MG RESISTOR	STATAS	
	R 653	NRSA63J-102X	MG RESISTOR	SUBQ	
	R 654	NRSA63J-102X	MG RESISTOR	BLKCK	
	R 656	NRSA63J-102X	MG RESISTOR	DQSY	
	R 657	NRSA63J-101X	MG RESISTOR	SBCK	
	R 658	NRSA63J-102X	MG RESISTOR	SUBC	
	R 659	NRSA63J-473X	MG RESISTOR	LD ON	
	R 661	NRSA63J-203X	MG RESISTOR	LDON	
	R 662	NRSA63J-683X	MG RESISTOR	ARFF	
	R 663	NRSA63J-683X	MG RESISTOR	IREF	
	R 664	NRSA63J-331X	MG RESISTOR	PLL F	
	R 665	NRSA63J-101X	MG RESISTOR	X2	
	R 666	NRSA02J-101X	MG RESISTOR	AVDD1 DE-COUPLE	
	R 667	NRSA02J-4R7X	MG RESISTOR	AVDD2 DE-COUPLE	
	R 668	NRSA63J-155X	MG RESISTOR		
	R 669	NRSA63J-562X	MG RESISTOR	VCOF	
	R 670	NRSA02J-101X	MG RESISTOR	VDD DE-COUPLE	
	R 671	NRSA63J-684X	MG RESISTOR	DSLB-DSL F	
	R 673	NRSA63J-683X	MG RESISTOR	IREF CHANGE	
	R 682	NRSA63J-102X	MG RESISTOR	TE	
	R 683	NRSA63J-105X	MG RESISTOR	TRSRC	
	R 685	NRSA63J-683X	MG RESISTOR	DRF	
	R 691	NRSA63J-681X	MG RESISTOR	OUTL	
	R 692	NRSA63J-681X	MG RESISTOR	OUTR	
	R 695	NRSA63J-561X	MG RESISTOR	OUTL	
	R 696	NRSA63J-561X	MG RESISTOR	OUTR	
	R 701	NRSA63J-102X	MG RESISTOR	DEMPH	
	R 801	NRSA63J-272X	MG RESISTOR	VG3	
	R 802	NRSA63J-152X	MG RESISTOR	FOD	
	R 803	NRSA63J-472X	MG RESISTOR	TRD	
	R 804	NRSA63J-103X	MG RESISTOR	TRD	
	R 805	NRSA63J-562X	MG RESISTOR	TVD	
	R 808	NRSA63J-183X	MG RESISTOR	ECM	
	R 809	NRSA63J-152X	MG RESISTOR	ECS	
	R 811	NRSA63J-473X	MG RESISTOR	/DRMUTE	
	R 812	NRSA63J-152X	MG RESISTOR	TRD	
	R 813	NRSA63J-182X	MG RESISTOR	FOD	
	SW680	QSW0865-001	CAM SWITCH	CAM SW	
	SW690	QSW0886-002	DETECT SWITCH	P.POSI1	
	SW691	QSW0886-002	DETECT SWITCH	P.POSI2	
	SW692	QSW0886-002	DETECT SWITCH	P.POSI3	
	SW693	QSW0886-002	DETECT SWITCH	SUB.TRY OP/CL	
	X 251	QAX0684-001Z	C RESONATOR	FOR IC251 8.38M	
	X 651	QAX0599-001Z	CRYSTAL	FOR IC651	

△	Item	Parts number	Parts name	Remarks	Area
	CN620	QGB1214K1-08S	CONNECTOR		
	SW 1	QSW0844-001	PUSH SWITCH		
	SW 2	QSW0844-001	PUSH SWITCH		
	SW 3	QSW0844-001	PUSH SWITCH		
	SW 4	QSW0844-001	PUSH SWITCH		
	SW 5	QSW0844-001	PUSH SWITCH		
	SW 6	QSW0844-001	PUSH SWITCH		

Packing materials and accessories parts list

Block No. M4MM

Block No. M5MM



■ Packing parts list

Block No. M4MM

Item	Parts number	Parts name	Q'ty	Description	Area
P 1	LE20556-009A	PACKING CASE	1		
P 2	LE20554-001A	P.PAD(F)	1		
P 3	LE20555-001A	P.PAD(R)	1		
P 4	QPC06506515P	POLY BAG	1	SET	
P 5	QPC02503510P	POLY BAG	1	INST	
P 6	QPA01502505	ENVELOPE	1	REMOCON	

■ Accessories parts list

Block No. M5MM

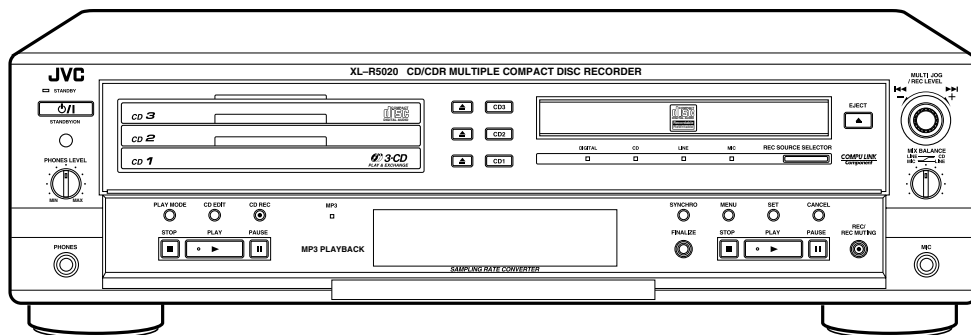
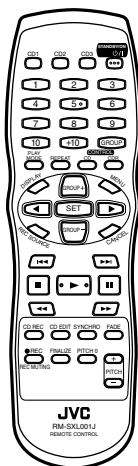
Item	Parts number	Parts name	Q'ty	Description	Area
A 1	LET0206-001A	INST BOOK	1	English	
A 2	BT-51001-5	J=W.CARD	1	J	
A 3	BT-51028-2	J=REGIST CARD	1	J	
A 4	YU20333	SAFETY INST.	1	J/C	
A 5	QAM0223-001	PLUG CORD	1		
A 6	QAM0424-001	PIN CORD	2		
A 7	RM-SXL001J	REMOCON UNIT	1		
A 8	-----	BATTERY	2	REMOCON	
A 9	LV32110-001A	CAUTION SHEET	1		

JVC



CD/CDR MULTIPLE COMPACT DISC RECORDER

XL-R5020BK



COMPACT
disc
DIGITAL AUDIO

COMPACT
disc
DIGITAL AUDIO
Recordable
ReWritable

3-CD
PLAY & EXCHANGE

COMPU LINK
Component

INSTRUCTIONS

For Customer Use:

Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

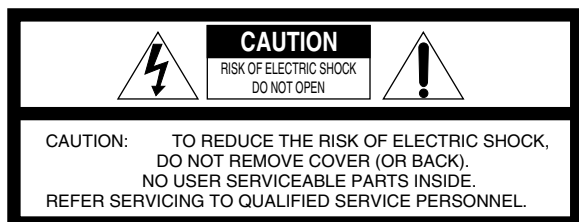
Model No. _____

Serial No. _____

LET0206-001A

[J]

Warnings, Cautions and Others



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT FOR LASER PRODUCTS


1. CLASS 1 LASER PRODUCT
2. **DANGER:** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION:** Do not open the top cover. There are no user serviceable parts inside the Unit; leave all servicing to qualified service personnel.

CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

Caution — STANDBY/ON button!

Disconnect the mains plug to shut the power off completely. The STANDBY/ON  button in any position does not disconnect the mains line. The power can be remote controlled.

For U.S.A.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

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Introduction

We would like to thank you for purchasing one of our JVC products. Before operating this unit, read this manual carefully and thoroughly to obtain the best possible performance from your unit, and retain this manual for future reference.

About This Manual

This manual is organized as follows:

- You can use the buttons and controls both on the remote control and on the unit for the same operations if they have the same or similar names (or marks), unless mentioned otherwise.
- Basic and common information that is the same for many functions is grouped in one place, and is not repeated in each procedure. For instance, we do not repeat the information about turning on/off the unit and others, which are explained in the section "Basic Operations" on page 9.
- The following marks are used in this manual:

	Gives you warning and caution to prevent from damage or risk of fire/electric shock. Furthermore, gives you information which is not good for obtaining the best possible performance from the unit.
	Gives you information and hints you had better know.

Precautions

Installation

- Install the unit in a place which is level, dry and neither too hot nor too cold—between 5°C (41°F) and 35°C (95°F).
- Install the unit in a location with adequate ventilation to prevent internal heat build-up in the unit.



DO NOT install the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust or vibration.

Power sources

- When unplugging the unit from the wall outlet, always pull the plug, not the AC power cord.



DO NOT handle the AC power cord with wet hands.

Moisture condensation

Moisture may condense on the lens inside the unit in the following cases:

- After starting heating in the room
 - In a damp room
 - If the unit is brought directly from a cold to a warm place
- Should this occur, the unit may malfunction. In this case, leave the unit turned on for a few hours until the moisture evaporates, unplug the AC power cord, then plug it in again.

Others

- Should any metallic object or liquid fall into the unit, unplug the AC power cord and consult your dealer before operating any further.
- If you are not going to operate the unit for an extended period of time, unplug the AC power cord from the wall outlet.



DO NOT disassemble the unit since there are no user serviceable parts inside.

If anything goes wrong, unplug the AC power cord and consult your dealer.

Precautions on Disc Playback and Recording

Playback

This unit has been designed to play back discs bearing the following logos:



CD ReWritable (CD-RW)



CD Recordable (CD-R)



Audio CD

In addition to the above discs, this unit can play back audio data recorded on CD-G (CD Graphics), CD-Text, CD-Extra and CD-R/CD-RW (single session) including MP3 tracks (files).

Notes on playing a CD-R or CD-RW:

- The built-in CD Recorder can play back **both finalized and unfinalized CD-Rs/CD-RWs**, however 3-CD Changer cannot play back **unfinalized CD-RWs**.
- Either on 3-CD Changer or on CD Recorder, you can play back CD-Rs or CD-RWs recorded on a personal computer only if they have been recorded in the CD audio format. Also 3-CD Changer can play back CD-Rs/CD-RWs (single session) including MP3 tracks (files).
- Some CD-Rs and CD-RWs may not be played back either on 3-CD Changer or on CD Recorder because of their disc characteristics, damage or stains.

Important notice:

- Continuous use of irregular-shaped discs (heart-shape, octagonal, etc.) can damage the disc rotating mechanism.



- CD-RWs may require a longer read-out time. This is caused by the fact that the reflectance of CD-RWs is lower than for regular CDs.
- MP3 discs require a longer read-out time. It differs depending on the complexity of the group/track configuration.

Recording

This unit has been designed to record on the discs bearing the following logos:



CD ReWritable (CD-RW)



CD Recordable (CD-R)

In addition to the logos shown above, the words shown below or their equivalent should also be indicated somewhere on the package or accompanying documentation.

- FOR CONSUMER
- FOR CONSUMER USE
- FOR MUSIC USE ONLY

Make sure the words, DIGITAL AUDIO, is shown on the discs.

The following discs cannot be used for recording:

- Discs bearing logos other than the above.
- Discs intended for professional use.
- Discs intended for recording computer data.

Important notice:

- The manufacturer assumes no liability whatsoever for any damage resulting from missed opportunity or accidental erasure that occurs while conducting recording or playback operations due to malfunctioning of or trouble in the unit, or for any incidental damage.
- Before recording on a CD-R, it is recommended to make a test recording using a CD-RW.
- If PCA (Power Calibration Area) or PMA (Program Memory Area) of the disc is already recorded fully, any further recording cannot be performed on this disc even though there are still unused memory spaces on the disc. (See "Glossary" on page 42.)

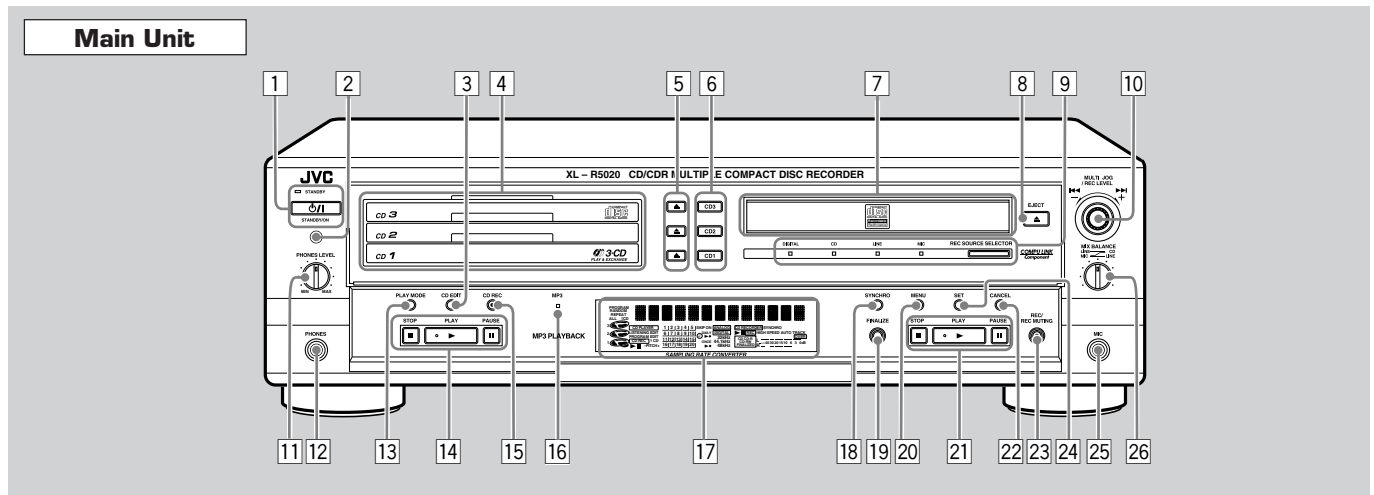


- DO NOT subject the unit to any shock or vibration while recording.
- DO NOT use a dusty or scratched CD-R/CD-RW for recording; otherwise, you cannot obtain the satisfactory recording quality.

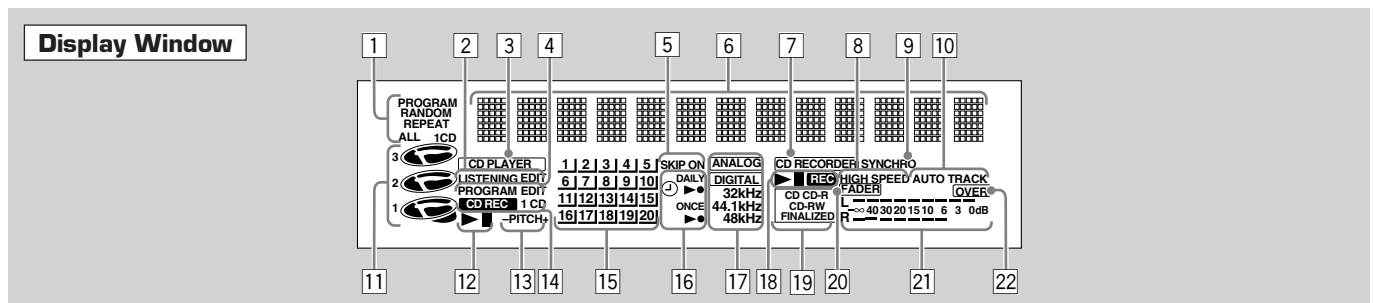
It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable program and in any literary, dramatic, musical, or artistic embodied therein.

Parts Identification

See pages in the parentheses for details.

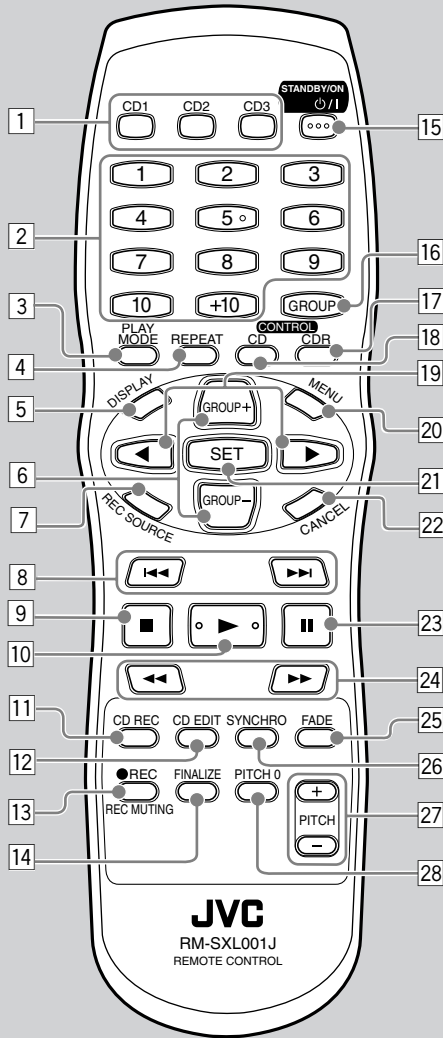


- | | |
|--|--|
| <ul style="list-style-type: none"> 1 STANDBY/ON button and STANDBY lamp (9, 38) 2 Remote sensor 3 CD EDIT button (29, 30) 4 3-CD Changer disc trays (CD1, CD2, CD3) (10, 19) 5 3-CD Changer disc eject buttons (CD1, CD2, CD3) (10, 15) 6 3-CD Changer disc number buttons (CD1, CD2, CD3) (9, 10, 19) 7 CD Recorder disc tray (16) 8 CD Recorder EJECT button 9 REC SOURCE SELECTOR button and recording source lamps (DIGITAL, CD, LINE, MIC) (22, 31, 32) 10 MULTI JOG / (11, 17, 20)
REC LEVEL +/- control (23, 32) 11 PHONES LEVEL control (9) 12 PHONES jack (9) 13 PLAY MODE button (12, 14) | <ul style="list-style-type: none"> 14 3-CD Changer operating buttons
STOP button
PLAY button
PAUSE button 15 CD REC button (26, 28) 16 MP3 lamp (19) 17 Display window (See below.) 18 SYNCHRO button (31) 19 FINALIZE button (33) 20 MENU button 21 CD Recorder operating buttons
STOP button
PLAY button
PAUSE button 22 CANCEL button 23 REC/REC MUTING button (22, 24, 30, 32) 24 SET button 25 MIC jack (21) 26 MIX BALANCE control (32) |
|--|--|



- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Disc play mode indicators (12, 14, 15, 17, 20)
• PROGRAM, RANDOM, REPEAT (ALL/1CD/1) indicators 2 LISTENING EDIT indicator (29) 3 CD PLAYER indicator (10) 4 PROGRAM EDIT indicator (30) 5 SKIP ON indicator (35) 6 Display 7 CD RECORDER indicator (16) 8 HIGH SPEED indicator (25) 9 SYNCHRO indicator (26, 28, 31) 10 AUTO TRACK indicator (34) 11 Disc indicators (11) 12 3-CD Changer operating indicators
• (play), (pause) indicators 13 PITCH +/- indicators (15) | <ul style="list-style-type: none"> 14 Direct recording indicators (26, 28)
• CD REC 1CD, CD REC 1 indicators 15 Track number indicators 16 Timer indicators (38, 39)
• (timer), DAILY (playing) and (recording),
ONCE (playing) and (recording) 17 Signal indicators
• ANALOG, DIGITAL, 32 kHz, 44.1 kHz, 48 kHz indicators 18 CD Recorder operating indicators
• (play), (pause), REC (recording) indicators 19 CD Recorder disc type indicators (16)
• CD, CD-R, CD-RW, FINALIZED indicators 20 FADER indicator (24) 21 Level meter 22 OVER indicator (23) |
|---|--|

Remote Control



- 1 Disc number buttons (CD1, CD2, CD3) (9, 11, 19)
- 2 Number buttons (11, 17, 20)
- 3 PLAY MODE button (12, 14)
- 4 REPEAT button (15, 17, 20)
- 5 DISPLAY button (20, 24)
- 6 GROUP +/- buttons (20)
- 7 REC SOURCE button (22, 31, 32)
- 8 ►► / ◄◄ (fast reverse/fast forward) buttons (11, 17, 20)
- 9 ■ (stop) button
- 10 ► (play) button
- 11 CD REC button (26, 28)
- 12 CD EDIT button (29, 30)
- 13 ● REC/REC MUTING button (22, 24, 30, 32)
- 14 FINALIZE button (33)
- 15 STANDBY/ON button (9, 38)
- 16 GROUP button (20)
- 17 CONTROL CDR button (17)
- 18 CONTROL CD button
- 19 ► / ◄ buttons
- 20 MENU button
- 21 SET button
- 22 CANCEL button
- 23 || (pause) button
- 24 ►► / ◄◄ (fast reverse/fast forward) buttons (11, 17, 20)
- 25 FADE button (24)
- 26 SYNCHRO button (31)
- 27 PITCH +/- buttons (15)
- 28 PITCH 0 button (15)

IMPORTANT

When using the remote control to operate 3-CD Changer or CD Recorder, press CONTROL CD or CONTROL CDR before pressing other operating buttons (8, 9, 10, 23, 24);

- To operate 3-CD Changer, press CONTROL CD.
- To operate CD Recorder, press CONTROL CDR.

Menu Configuration

You can show a menu on the display by pressing MENU while neither 3-CD Changer nor CD Recorder are playing (in stop mode). By turning MULTI JOG ►► / ◄◄ on the unit, or pressing ► or ◄ on the remote control, menu items change as follows. See pages in the parentheses for details.

TRACK ERASE (36)	↔	DISC ERASE (36)	↔	UNFINALIZE (34)	↔
TRACK SKIP (35)	↔	DUB-SPEED (25)	↔	AUTO FINALIZE (25)	↔
DISC DUB MODE (27)	↔	AUTO TRACK (34)	↔	TRACK SPACE (35)	↔
CONVERTER (35)	↔	DIG-IN SYNC (34)	↔	ANALOG SYNC (33)	↔
SET DEFAULT*	↔	CLOCK/TIMER (37)	↔	Back to the beginning	

* You can reset all of the menu items to the initial settings when you purchased this unit. To reset:

1. While 3-CD Changer and CD Recorder are in stop mode, press MENU.
2. Turn MULTI JOG ►► / ◄◄ on the unit, or press ► or ◄ on the remote control to select "SET DEFAULT," then press SET. "SET DEFAULT ?" appears on the display.
 - To cancel the reset, press CANCEL.
3. Press SET. All of the menu items are reset to the initial settings when you purchased this unit.

Initial settings

Menu item	Initial setting
DUB-SPEED	HIGH
AUTO FINALIZE	OFF
DISC DUB MODE	NORMAL
AUTO TRACK	ON
TRACK SPACE	ON
CONVERTER	ON
DIG-IN SYNC	ALL
ANALOG SYNC	START

Getting Started

Supplied Accessories

After unpacking, check to be sure that you have all the following items.

The number in the parentheses indicates the quantity of the pieces supplied.

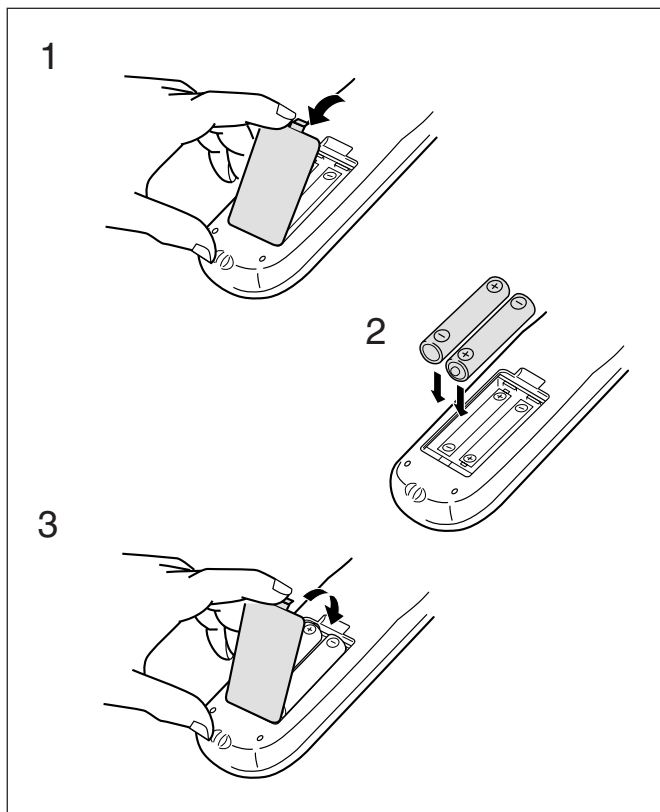
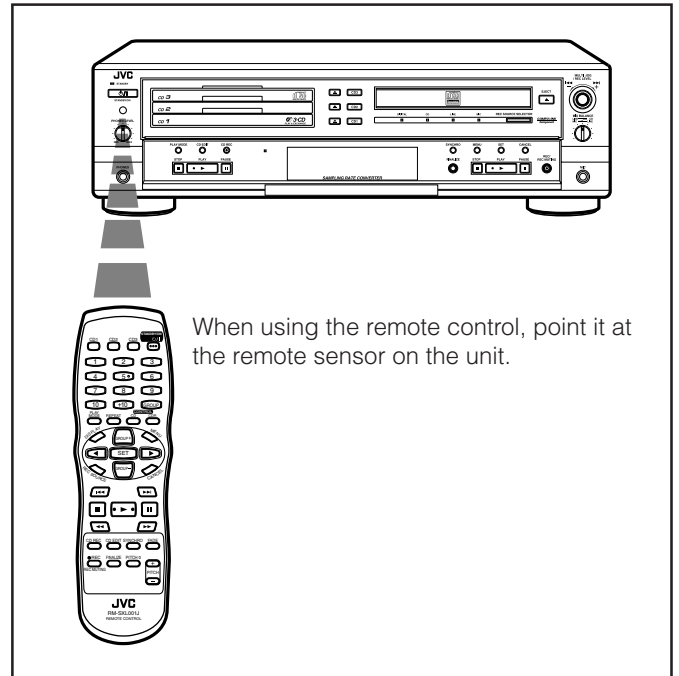
- Remote control—RM-SXL001J (1)
- Batteries—R6P(SUM-3)/AA(15F) (2)
- Audio cord with RCA pin plugs (2)
- Cable with monaural mini-plugs (1)

If anything is missing, consult your dealer immediately.

Putting the Batteries into the Remote Control

Insert the batteries—R6(SUM-3)/AA(15F)—into the remote control, by matching the polarity (+ and -) on the batteries with the + and - markings on the battery compartment.

When the remote control can no longer operate the unit, replace both batteries at the same time.



- DO NOT use an old battery together with a new one.
- DO NOT use different types of batteries together.
- DO NOT expose batteries to heat or flame.
- DO NOT leave the batteries in the battery compartment when you are not going to use the remote control for an extended period of time. Otherwise, it will be damaged from battery leakage.

Connecting Other Components

When you connect and use other components, refer also to the manuals supplied with them.



- DO NOT connect other components while the power is on.
- DO NOT plug in any component until all connections are complete.

To connect an analog component

White plugs and jacks are for left audio signals, and red ones for right audio signals.

You can enjoy playback and recording on the connected component.

By using audio cords with RCA pin plugs (supplied), connect:

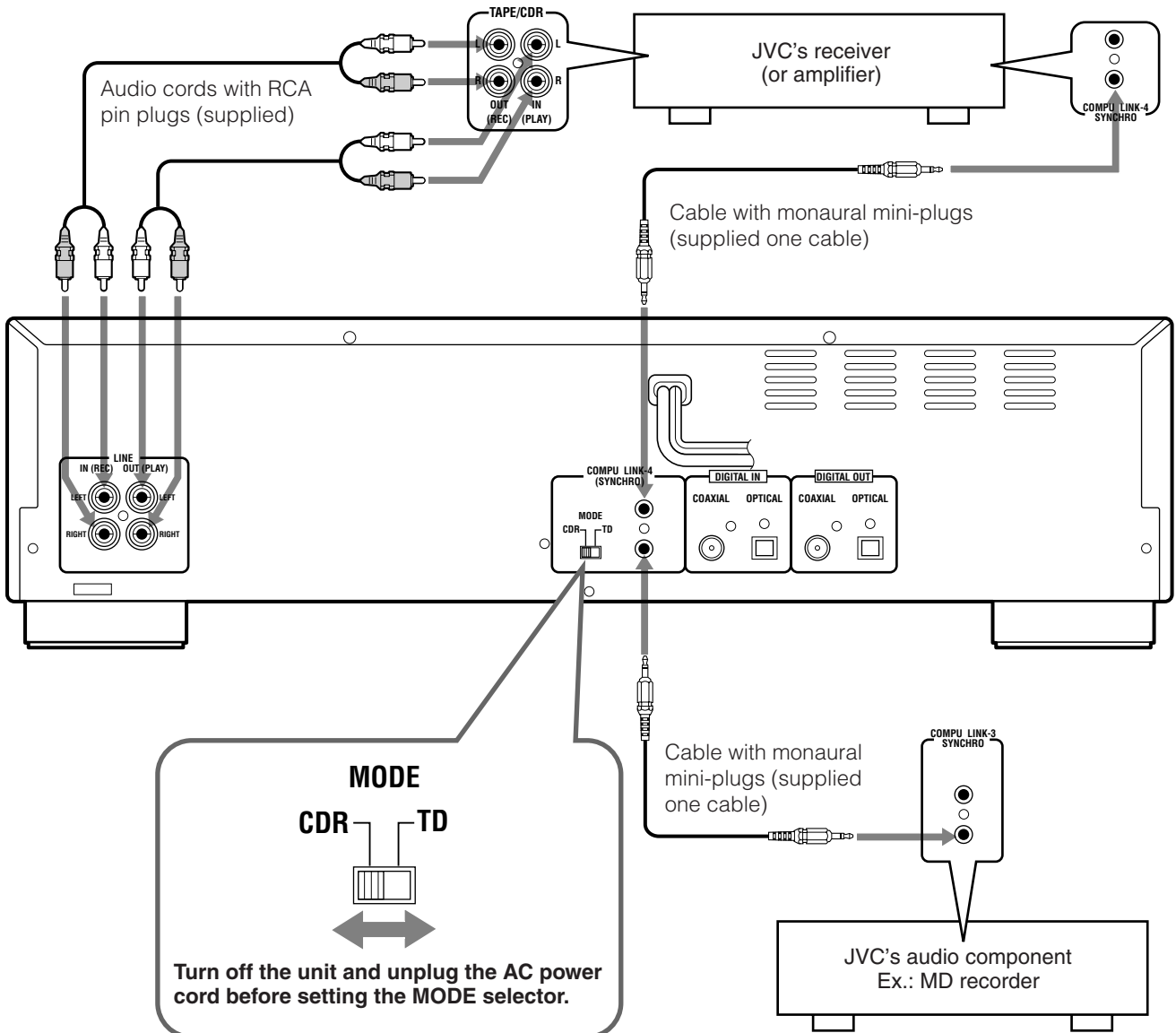
- Between the audio input jacks on the other component and the LINE OUT (PLAY) jacks.
- Between the audio output jacks on the other component and the LINE IN (REC) jacks.

When connecting a JVC audio component equipped with the COMPU LINK remote control system

You can use COMPU LINK remote control system (see page 40) by connecting this unit and a JVC audio component through the COMPU LINK-4 (SYNCHRO) jacks using cables with monaural mini-plugs in addition to the audio cord connection.

When using COMPU LINK remote control system for operating a receiver equipped with TAPE and/or CDR jacks, set the MODE selector to the appropriate position (see below).

- **Set the MODE selector to "CDR"** when connecting to the CDR input/output jacks on the receiver. The connected receiver (or amplifier) recognizes this unit as a CD recorder.
- **Set the MODE selector to "TD"** when connecting to the TAPE/MD or TAPE input/output jacks on the receiver. The connected receiver (or amplifier) recognizes this unit as a cassette deck.

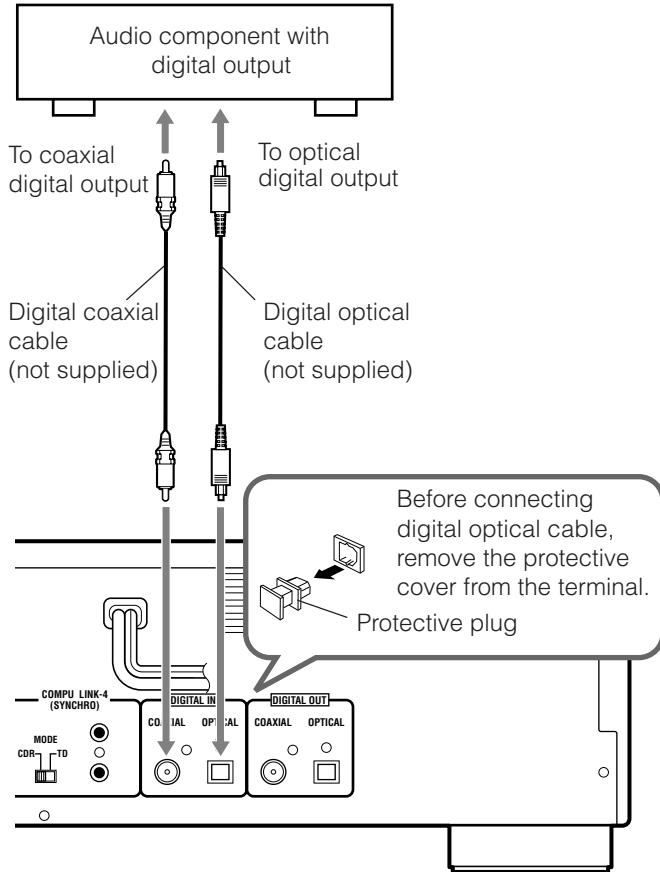


To connect digital components

This unit is equipped with two types of digital input/output terminals—coaxial and optical.

When connecting a digital component equipped with a digital output terminal

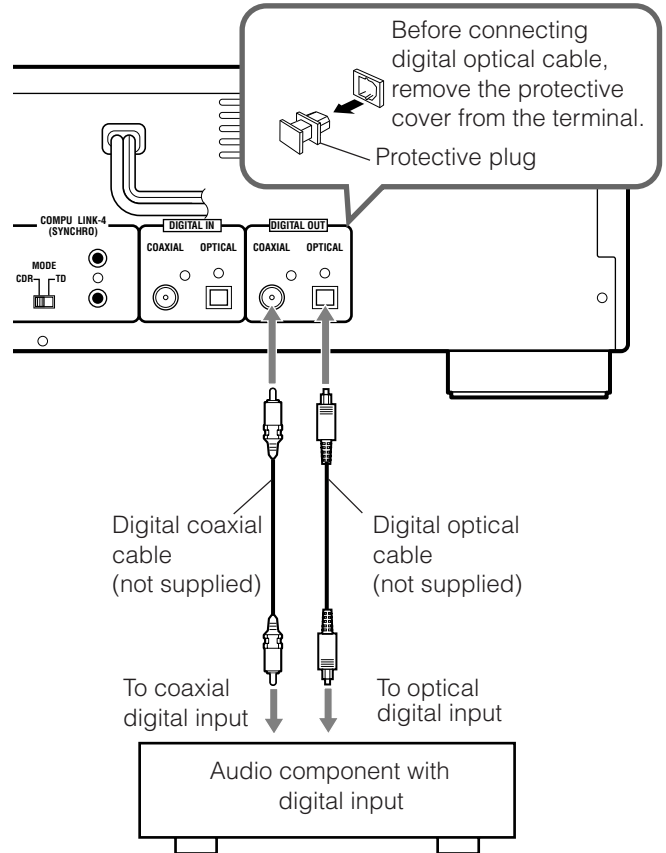
The following connection allows you to perform digital-to-digital recording on this unit (through the digital terminals).



- When playing back an MP3 disc, digital signal cannot be output from this unit. Connect also this unit to LINE OUT (PLAY) jacks by using audio cords with RCA pin plugs (supplied).
- Digital signal cannot be output through the DIGITAL OUT terminals while recording digitally from an external component.

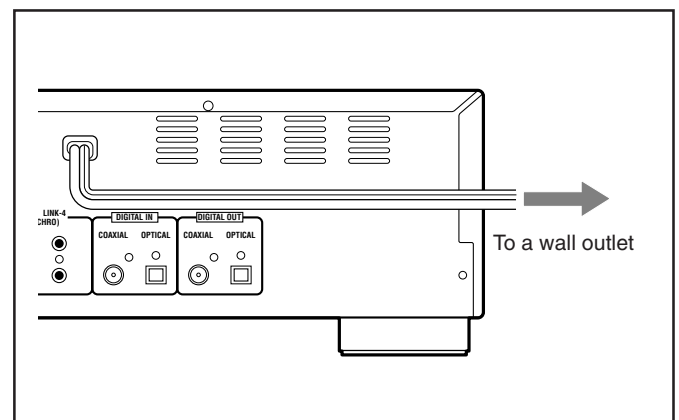
When connecting a digital component equipped with a digital input terminal

The following connection allows you to perform digital-to-digital recording (from 3-CD Changer onto the other component).



When this unit cannot recognize a component connected to the DIGITAL IN COAXIAL or OPTICAL terminal, "UNLOCK" appears on the display. If this happens, press PLAY ► for 3-CD Changer so that the connected component will be recognized.

NOW, you can plug in the unit and other connected components FINALLY!

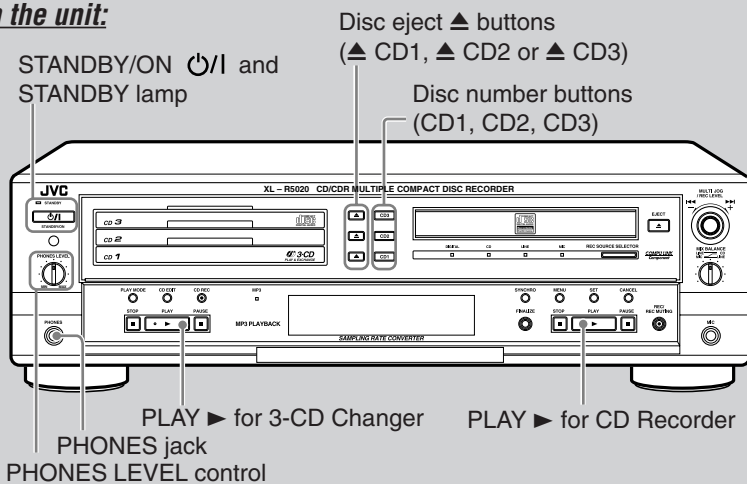


Basic Operations

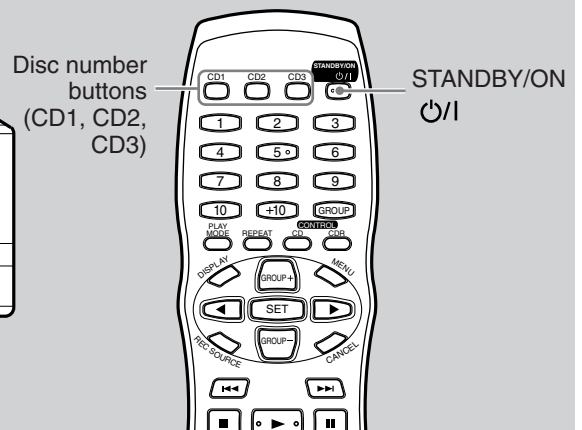
IMPORTANT

When using operating buttons (▶, ■, II) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.

On the unit:



Remote control:

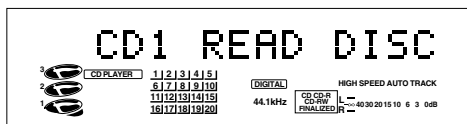


Before operating the unit any further, first set the clock built in this unit (see page 37).

Turning On and Off the Power

To turn on the unit without playing, press STANDBY ON \odot/I so that the STANDBY lamp on the unit goes off.

- Last selected disc tray is selected again.



Ex.: When previously selected disc is CD1 on 3-CD Changer.

To start playback after turning on the unit, press one of the following buttons.

Disc number buttons (CD1, CD2 or CD3)

—3-CD Changer starts continuous play from the selected disc.

PLAY \blacktriangleright for 3-CD Changer on the unit

—3-CD Changer starts playing the last selected disc (if a disc is loaded on the disc tray).

PLAY \blacktriangleright for CD Recorder on the unit

—CD Recorder starts playing if a disc is loaded on the CD Recorder tray.

- Pressing 3-CD Changer disc eject \blacktriangle buttons (\blacktriangle CD1, \blacktriangle CD2 or \blacktriangle CD3) or EJECT \blacktriangle for CD Recorder also turns on the unit and opens the corresponding disc tray, but the currently selected disc does not change, and the playback will not start.

To turn off the unit (on standby), press STANDBY/ON \odot/I again so that the STANDBY lamp lights red and current time appears on the display.

- A little power is always consumed even while the unit is in standby mode.
To switch off the power supply completely, unplug the AC power cord from the AC outlet.



When you unplug the AC power cord or if a power failure occurs, the clock will be reset to "AM 12:00" and the timer settings will be erased. If this happens, set the clock and the timer again.

Listening with Headphones

When this unit is not connected to a receiver (amplifier), you can listen to the sound reproduced on 3-CD Changer or CD Recorder by connecting a pair of headphones to PHONES jack on the unit.

To increase the volume level, turn PHONE LEVEL control to the right.

To decrease the volume level, turn PHONE LEVEL control to the left.

- Be sure to turn down PHONE LEVEL fully before connecting or putting on the headphones.

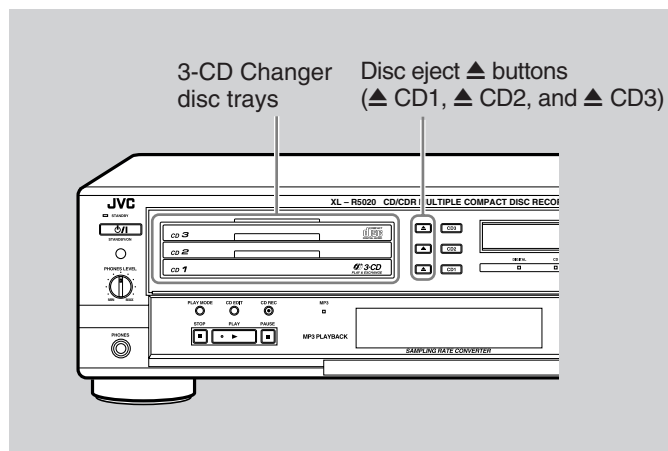
Playing Back Discs on 3-CD Changer

- For the playable discs on 3-CD Changer, refer to page 3.
- This 3-CD Changer can play back MP3 discs. You can place either an audio disc or an MP3 disc on any disc tray. See page 18 for details.

IMPORTANT

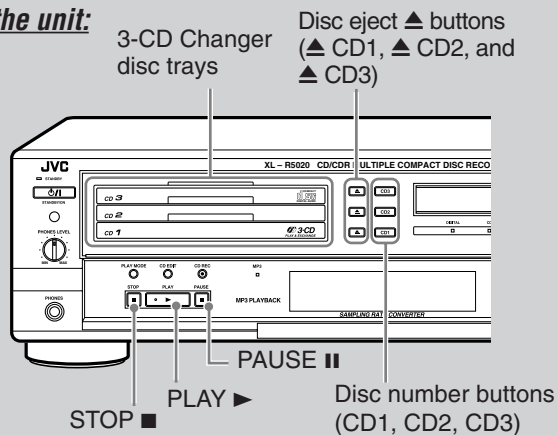
When using operating buttons (▶, ■, ||) on the remote control for the following operations, check the CD PLAYER (3-CD Changer) indicator lights up on the display. If not, press CONTROL CD to select 3-CD Changer.

Loading Discs



Playing Back All Loaded Discs—Continuous Play

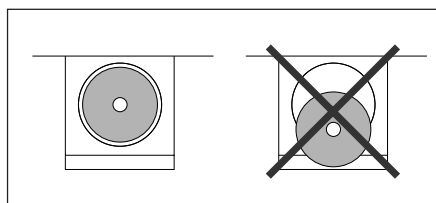
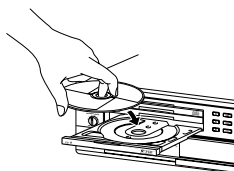
On the unit:



On the unit ONLY:

- 1 Press one of the 3-CD Changer disc eject ▲ buttons (▲ CD1, ▲ CD2, and ▲ CD3) for the disc tray you want to load a disc onto.**
The unit automatically turns on and the selected disc tray comes out.

- 2 Load a disc correctly on the circle of the disc tray, with its label side up.**



- When using a CD single (8 cm), place it on the inner circle of the disc tray.

- 3 Press the same 3-CD Changer disc eject button (▲ CD1, ▲ CD2, or ▲ CD3) you have pressed in step 1.**

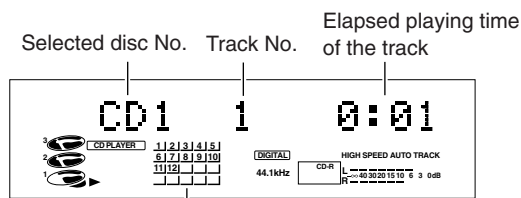
The disc tray closes.

- When loading more than one disc continuously, press the 3-CD Changer disc eject button (▲ CD1, ▲ CD2, or ▲ CD3) for the next tray you want to load another disc onto. The first disc tray automatically closes and the next disc tray comes out.

- 1 Load discs onto the 3-CD Changer disc trays (see the left).**
- 2 Press one of the disc number buttons (CD1, CD2 or CD3).**

The CD PLAYER indicator lights up on the display and 3-CD Changer reads out the disc contents. The playback starts with the first track of the selected disc.

- 3-CD Changer stops playing after playing back all loaded discs once.



All track numbers of the selected disc*

- * Track numbers already played go off from the display. If a disc includes more than 20 tracks, the track numbers exceeding 20 cannot be shown.

- Pressing PLAY ▶ for 3-CD Changer also starts playing back with the currently selected disc (the disc marked with ◀ on the display).

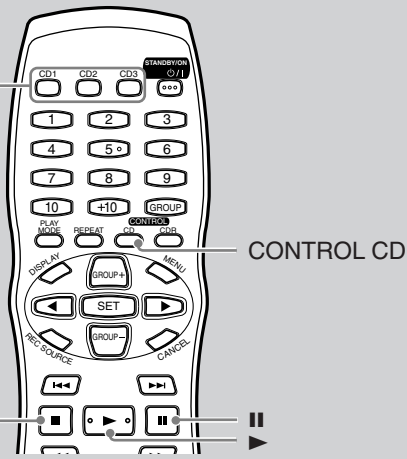
To stop playback for a moment, press PAUSE ||. To resume play, press PLAY ▶. The playback starts from where it has been stopped.

To stop playback, press STOP ■.

To remove a disc, press the corresponding 3-CD Changer disc eject ▲ button (▲ CD1, ▲ CD2, or ▲ CD3).

Remote control:

Disc number buttons (CD1, CD2, CD3)



CONTROL CD

1 Load discs onto the 3-CD Changer disc trays (see page 10).

2 Press one of the disc number buttons (CD1, CD2 or CD3).

The CD PLAYER indicator lights up on the display and 3-CD Changer reads out the disc contents. The playback starts with the first track of the selected disc.

- 3-CD Changer stops playing after playing back all loaded discs once.
- Pressing ► also starts playing back with the currently selected disc (the disc marked with ◀ on the display).

To stop playback for a moment, press ■. To resume play, press ►. The playback starts from where it has been stopped.

To stop during play, press ■.

About disc indicators

The disc indicator rotates when a disc on the corresponding disc tray plays back (in this example, CD1). It goes off when no disc is loaded on the CD1 disc tray.



This indicates the currently selected disc tray.

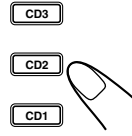


- When 3 discs are loaded on the disc trays, they are played in one of the following sequences.
 - When CD 1 is pressed : CD 1 ⇒ CD 2 ⇒ CD 3 (then stops)
 - When CD 2 is pressed : CD 2 ⇒ CD 3 ⇒ CD 1 (then stops)
 - When CD 3 is pressed : CD 3 ⇒ CD 1 ⇒ CD 2 (then stops)
- * If no disc is on a disc tray, 3-CD Changer skips such an empty tray.

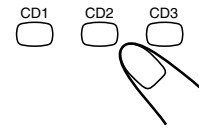
Basic Disc Operations

To start playing a disc during playback of another disc

Press one of the disc number buttons (CD1, CD2 or CD3). The selected disc starts playing.



On the unit

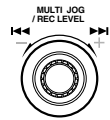


From the remote control

To go to another track

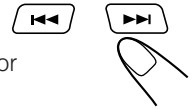
On the unit:

Turn MULTI JOG ►► / ◀◀.



From the remote control:

Press ►► or ◀◀.



- ►►: Skips to the beginning of the next or succeeding tracks.
- ◀◀: Goes back to the beginning of the current or previous tracks.



While the last track of a disc is playing, turning MULTI JOG ►► / ◀◀ on the unit to the right or pressing ►► on the remote control goes to the first track of the next disc.

To go to another track directly

From the remote control ONLY:

Select a track number using the number buttons.

Ex.: For track number 5, press 5.

For track number 15,

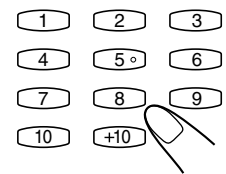
press +10, then 5.

For track number 20,

press +10, then 10.

For track number 32,

press +10, +10, +10, then 2.

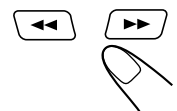


To locate a particular point in a track during play

From the remote control ONLY:

Press and hold ►► or ◀◀.

- ►►: Fast-forwards the tracks.
- ◀◀: Fast-reverses the tracks.



- If you press and hold ►► or ◀◀ during pause, no sound comes out. When you release your finger from the button, the pause mode will resume.
- While the last track of a disc is playing, holding down ►► goes to the first track of the next disc.

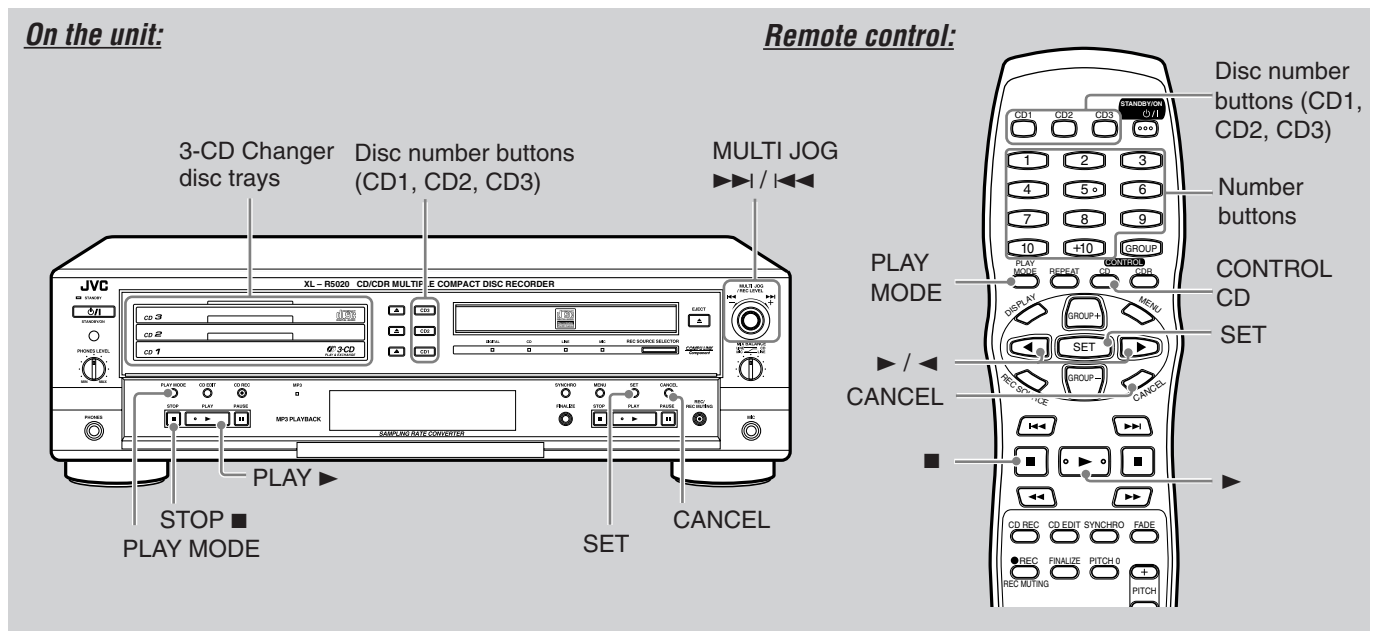
Programming the Playing Order of the Tracks—Program Play

You can arrange the playing order in which the tracks play before you start playing. You can program up to **32** tracks. The programmed tracks can be also recorded (see page 30).

- Program Play is possible only on 3-CD Changer.

IMPORTANT

When using operating buttons (▶, ■, ||) on the remote control for the following operations, check the CD PLAYER (3-CD Changer) indicator lights up on the display. If not, press CONTROL CD to select 3-CD Changer.



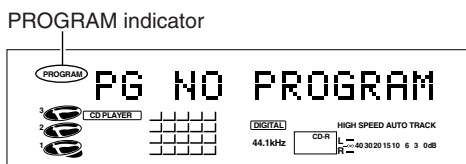
You cannot make a program using MP3 discs.

1 Load discs onto the 3-CD Changer disc trays.

- If the current disc is CD Recorder:
- On the unit: Press PLAY ▶, then STOP ■ for 3-CD Changer.
- From the remote control: Press CONTROL CD.

2 Press PLAY MODE repeatedly until “PG” appears on the display.

- The PROGRAM indicator also lights up on the display.
- If a program has been memorized, it is called up. If no program is stored, “NO PROGRAM” appears on the display.

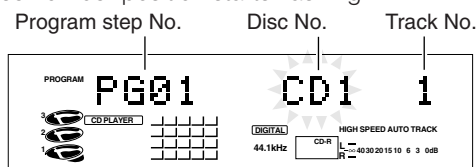


- Each time you press the button, the play mode changes as follows:



3 Press SET.

The disc number position starts flashing.



4 Select a disc number you want.

On the unit:

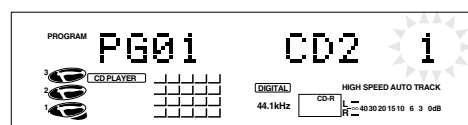
Turn MULTI JOG ▶▶ / ◀◀, then press SET.

From the remote control:

Press ▶ or ◀, then press SET.

The track number position starts flashing.

- You can also select a disc number by pressing one of the disc number buttons (CD1, CD2, CD3). When using the disc number buttons (CD1, CD2, CD3), you do not have to press SET.



Ex.: When selecting “CD2.”

5 Select a track number you want.

On the unit:

Turn MULTI JOG ▶▶ / ◀◀, then press SET.

From the remote control:

Press ▶ or ◀, then press SET.

- You can also select a track number by using the number buttons on the remote control. When using the number buttons, you do not have to press SET.

6 Repeat steps 4 and 5 to program more tracks.

- You can program up to 32 tracks.

7 Start playing.

On the unit:

Press **PLAY ►** for 3-CD Changer.

From the remote control:

Press **►**.

The tracks are played in the order you have programmed. Program Play stops when all the programmed tracks are played once (unless Repeat Play is activated—see page 15).

To stop playing, press **STOP ■** for 3-CD Changer on the unit or **■** on the remote control.

To exit from Program Play, before or after play, press **PLAY MODE** once or twice so that the unit enters another play mode (Random Play or Continuous Play).



- You cannot program the track numbers exceeding 99.
- If you try to program a 33rd step, "MEMORY FULL" will appear on the display.
- If you have a track number which does not exist, or if you select an empty disc tray number, such a step may be programmed but skipped during the Program Play.
- MP3 disc cannot be played back even though they can be programmed. If this unit detects an MP3 disc during Program Play, the playback will stop. ("CANNOT PLAY" appears on the display.)

To modify the program

You can modify the program before or after play.

To add steps, select the disc number and the track number you want to add by following steps 3 to 6 on page 12.

To erase the last step, press **CANCEL** twice.

- The track number of the last step is erased by pressing **CANCEL** once, and pressing it again erases the disc number of the last step.

To erase a particular programmed track, select the program step number you want to erase by turning **MULTI JOG ►► / ◀◀** on the unit or pressing **►** or **◀** on the remote control, then press **CANCEL**.

To erase all programmed tracks, press **CANCEL** repeatedly until "PG NO PROGRAM" appears on the display.

- The program you have made is also erased:
 - when unplugging the AC power cord.
 - when ejecting the currently selected disc tray.

To check the programmed contents

On the unit:

Turn **MULTI JOG ►► / ◀◀** before starting playback.

From the remote control:

Press **►** or **◀** before starting playback.

- **►► / ►** : Shows the programmed tracks in the programmed order.
- **◀◀ / ◀** : Shows them in the reverse order.

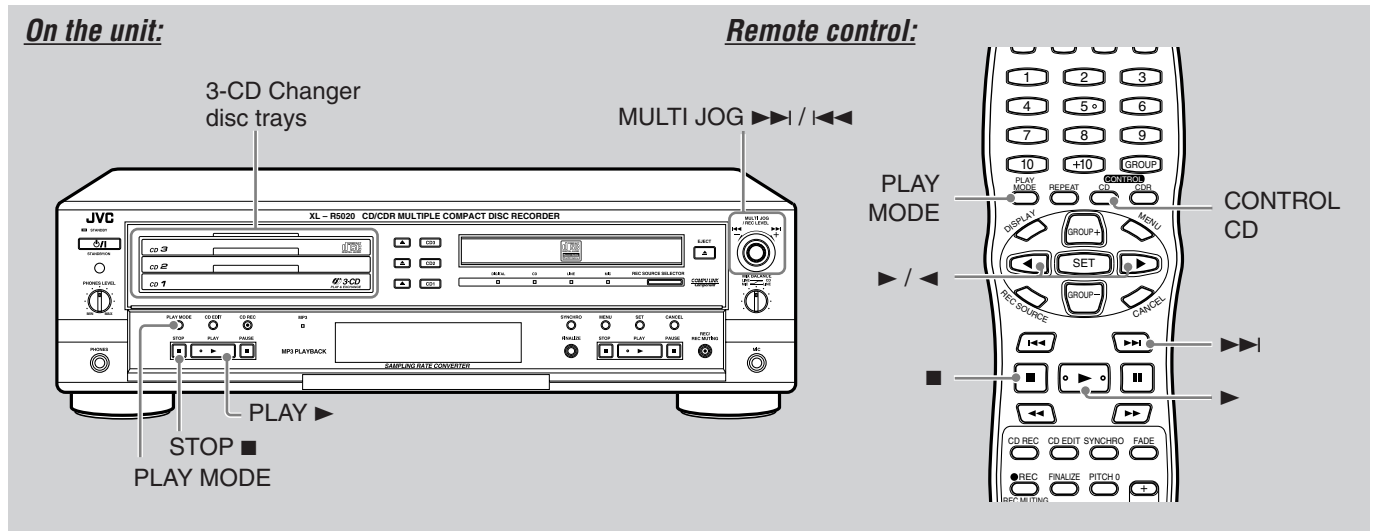
Playing at Random—Random Play

The tracks of all loaded discs in 3-CD Changer will play at random.

- Random Play is possible only on 3-CD Changer.

IMPORTANT

When using operating buttons (▶, ■, ||) on the remote control for the following operations, check the CD PLAYER (3-CD Changer) indicator lights up on the display. If not, press CONTROL CD to select 3-CD Changer.



You cannot use Random Play for MP3 discs.

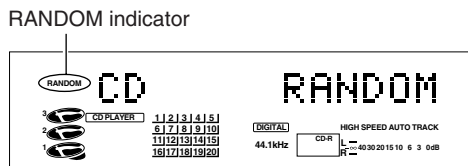
1 Load discs onto the 3-CD Changer disc trays.

If the current disc is CD Recorder:

- On the unit: Press PLAY ▶, then STOP ■ for 3-CD Changer.
- From the remote control: Press CONTROL CD.

2 Press PLAY MODE repeatedly until “CD RANDOM” appears on the display.

The RANDOM indicator also lights up on the display.



- Each time you press the button, the play mode changes as follows:



3 Start playing.

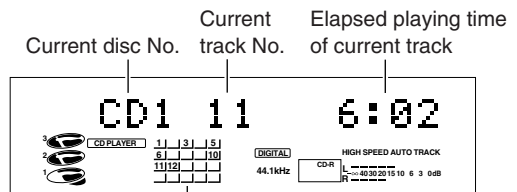
On the unit:

Press PLAY ▶ for 3-CD Changer.

From the remote control:

Press ▶.

The tracks are played at random up to 99 tracks. Random Play stops when all the tracks are played once (unless Repeat Play is activated—see page 15).



Track numbers already played go off.

To go to another track, turn MULTI JOG ▶▶ / ◀◀ on the unit to the right or press ▶▶ on the remote control.

- Even if you turn MULTI JOG ▶▶ / ◀◀ on the unit to the left or press ◀◀, you cannot go back to the previous tracks.

To stop Random Play during play, press STOP ■ for 3-CD Changer or ■ on the remote control.

- Ejecting the currently playing disc also cancels Random Play.

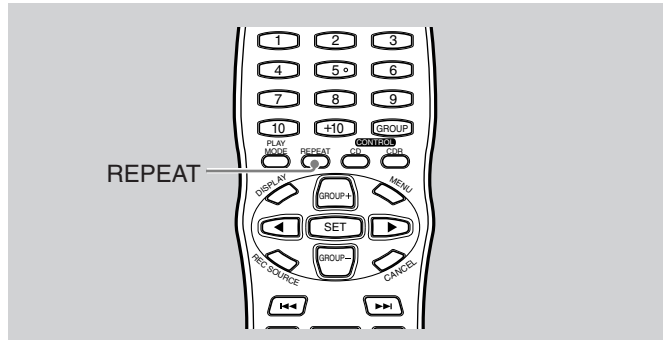
To exit from Random Play, before or after play, press PLAY MODE once or twice so that the unit enters another play mode (Program Play or Continuous Play).



- The track numbers exceeding 99 are not played back.
- The skip marked tracks are not played back.
- You cannot select track numbers by using the number buttons.
- If this unit detects an MP3 disc during Random Play, the playback will stop. (“CANNOT PLAY” appears on the display.)

Repeating Tracks—Repeat Play

You can repeat playing all the discs, the program or the individual track currently playing as many times as you like.

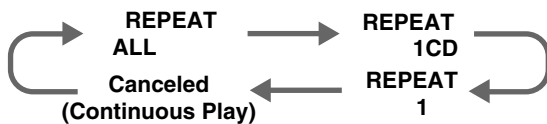


From the remote control ONLY:

Press REPEAT during or before playing.

The REPEAT indicator lights up on the display.

- Each time you press the button, Repeat Play changes as follows:



- REPEAT ALL:** Repeats all the tracks on all the loaded discs (continuously or at random), or all the tracks in the program.
- REPEAT 1CD*:** Repeats all the tracks on one disc.
- REPEAT 1:** Repeats one track.

* REPEAT 1CD is not used for Program Play and Random Play.

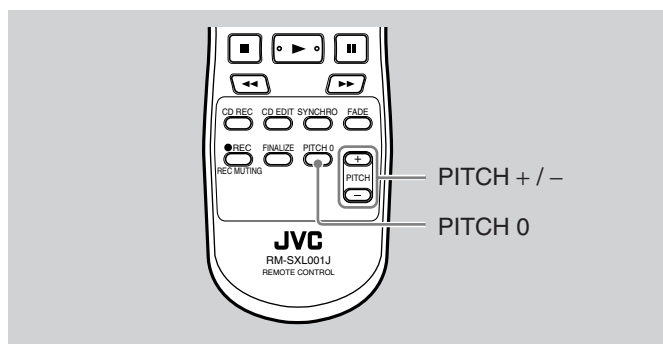
To cancel Repeat Play, press REPEAT repeatedly until the REPEAT indicator goes off from the display.

- Ejecting the currently playing disc also cancels Repeat Play.

Adjusting the Playback Speed—Pitch Control

You can change the playback speed up to 12% faster or 12% slower when playing back a disc on 3-CD Changer. This function will be useful when you want to enjoy singing along.

- You can also record tracks with adjusted speed on this CD Recorder using analog recording.



From the remote control ONLY:

Press PITCH + or – during play.

- PITCH +:** Increases the playback speed (pitch) up to 12% faster. The PITCH + indicator lights up on the display.
- PITCH –:** Decreases the playback speed (pitch) up to 12% slower. The PITCH – indicator lights up on the display.

To restore normal speed playback, press PITCH 0.

The PITCH + or PITCH – indicator goes off from the display.

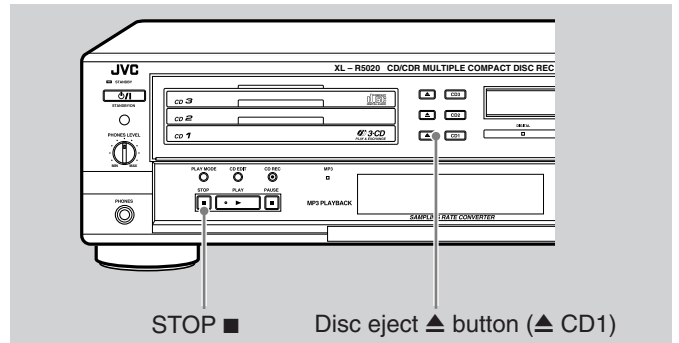
- Ejecting the currently playing disc also restores the normal playback speed.



- During CD Synchronized Recording from 3-CD Changer to CD Recorder, playback speed adjustment is automatically canceled temporarily. The PITCH + or PITCH – indicator goes off from the display.
- Pitch Control is available only for analog signal. No signal comes out of the DIGITAL OUT terminals.
- Pitch Control is not available while playing back a disc on CD Recorder.
- Pitch Control is not available for MP3 discs.

Prohibiting Disc Ejection—Tray Lock

You can prohibit the disc ejection both from 3-CD Changer and from CD Recorder.



On the unit ONLY:

Press STOP ■ for 3-CD Changer and disc eject ▲ CD1 at the same time while the unit is in standby mode.

- “TRAY LOCKED” appears on the display for a while, and the loaded discs (both in 3-CD Changer and in CD Recorder) are locked.

TRAY LOCKED

To cancel the prohibition and unlock the discs, press STOP ■ for 3-CD Changer and disc eject ▲ CD1 at the same time again while the unit is in standby mode.

- “TRAY UNLOCKED” appears on the display for a while, and the loaded discs (both in 3-CD Changer and in CD Recorder) are unlocked.



- If you try to eject discs when trays are locked, “TRAY LOCKED” appears on the display to inform you that the Tray Lock is in use.
- Tray Lock is released when unplugging the power cord.

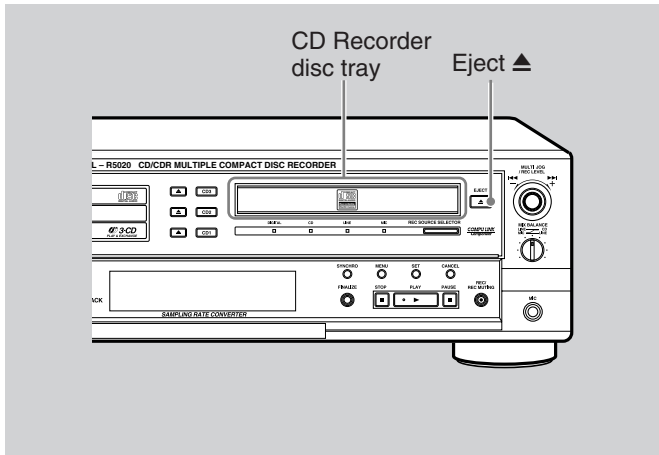
Playing Back a Disc on CD Recorder

- You can play back both finalized and unfinalized discs on CD Recorder.
- Program Play, Random Play and Pitch Control cannot be used on CD Recorder.

IMPORTANT

When using operating buttons (▶, ■, ||) on the remote control for the following operations, check the CD RECORDER indicator lights up on the display. If not, press CONTROL CDR to select CD Recorder.

Loading a Disc

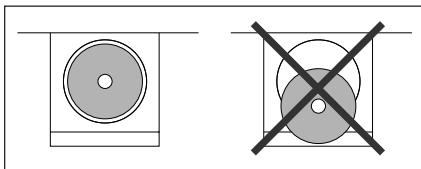
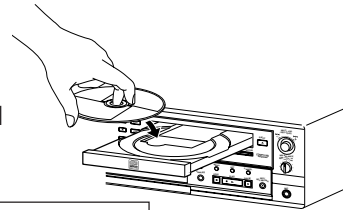


On the unit ONLY:

1 Press EJECT ▲.

The unit automatically turns on and the selected disc tray comes out.

2 Load a disc correctly on the circle of the disc tray, with its label side up.



- When using a CD single (8 cm), place it on the inner circle of the disc tray.

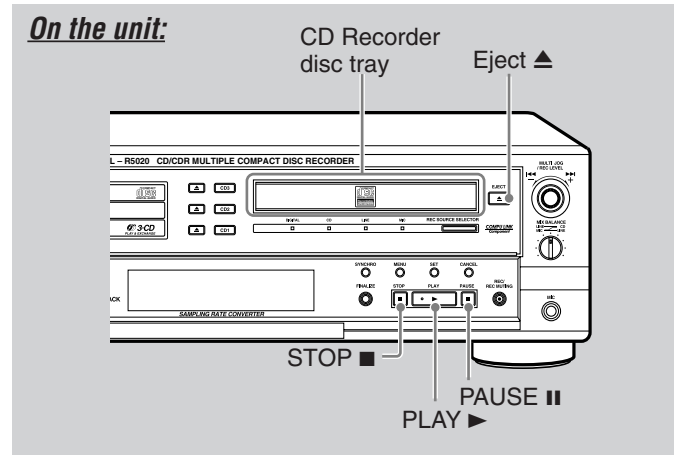
3 Press EJECT ▲ again.

The disc tray closes.

- CD Recorder requires a longer read-out time than 3-CD Changer does. This is caused by the fact that CD Recorder needs to read out more disc information.

Playing Back a Disc—Normal Play

On the unit:

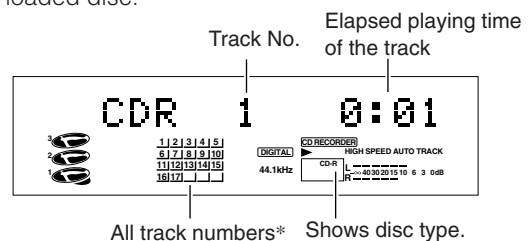


1 Load a disc onto the CD Recorder disc tray (see the left).

2 Press PLAY ▶ for CD Recorder.

The CD RECORDER indicator lights up on the display. CD Recorder reads out the disc contents and the playback starts with the first track.

- CD Recorder stops playing after playing back the loaded disc.



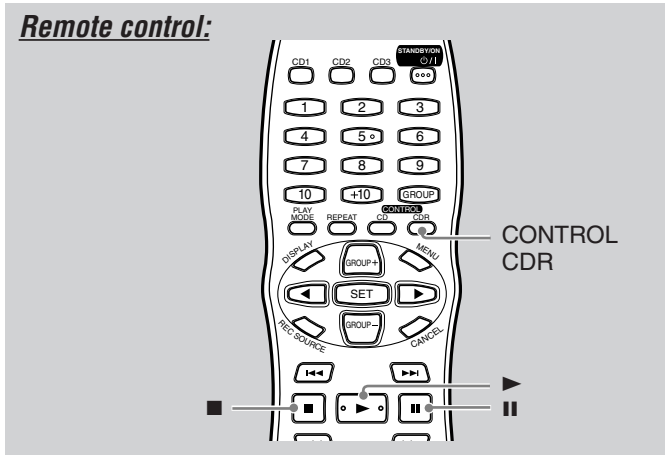
- * Track numbers already played go off from the display. If a disc includes more than 20 tracks, the track numbers exceeding 20 cannot be shown.

To stop playback for a moment, press PAUSE ||. To resume play, press PLAY ▶. The playback starts from where it has been stopped.

To stop playback, press STOP ■.

To remove the disc, press EJECT ▲.

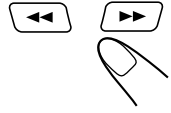
Remote control:



To locate a particular point in a track during play

From the remote control ONLY:

- Press and hold ►► or ◀◀.
- ►►: Fast-forwards the tracks.
- ◀◀: Fast-reverses the tracks.



If you press and hold ►► or ◀◀ during pause, no sound comes out. When you release your finger from the button, the pause mode will resume.

1 Load a disc onto the CD Recorder disc tray (see page 16).

2 Press **CONTROL CDR**, then ►.

The CD RECORDER indicator lights up on the display. CD Recorder reads out the disc contents and the playback starts with the first track.

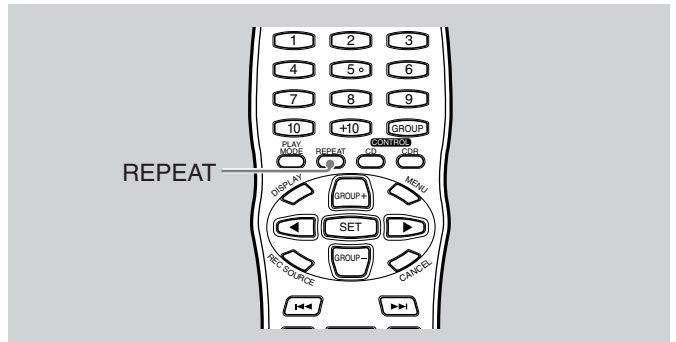
- CD Recorder stops playing after playing back the loaded disc.

To stop playback for a moment, press ||. To resume play, press ►. The playback starts from where it has been stopped.

To stop during playback, press ■.

Repeating Tracks—Repeat Play

You can repeat playing individual tracks or all tracks in a disc as many times as you like.



From the remote control ONLY:

Press REPEAT during or before playing.

- The REPEAT indicator lights up on the display.
- Each time you press the button, Repeat Play mode changes as follows:



- REPEAT 1CD: Repeats all the tracks on the loaded disc.
- REPEAT 1: Repeats one track.

To cancel Repeat Play, press REPEAT repeatedly until the REPEAT indicator goes off from the display.

- Ejecting the disc also cancels Repeat Play.

Basic Disc Operations

To go to another track

On the unit:

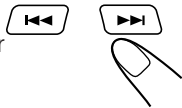
Turn MULTI JOG ►►/◀◀.



From the remote control:

Press ►► or ◀◀.

- ►►: Skips to the beginning of the next or succeeding tracks.
- ◀◀: Goes back to the beginning of the current or previous tracks.



To go to another track directly

From the remote control ONLY:

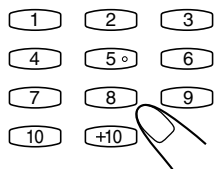
Select a track number using the number buttons.

Ex.: For track number 5, press 5.

For track number 15, press +10, then 5.

For track number 20, press +10, then 10.

For track number 32, press +10, +10, +10, then 2.



Playing Back MP3 Discs on 3-CD Changer

- You can play back MP3 tracks (files) recorded on MP3 discs (CD-R/CD-RW) on the built-in 3-CD Changer.
- You cannot record MP3 tracks using the built-in CD Recorder.
- Program Play, Random Play and Pitch Control are not available for MP3 discs.

About MP3

MP3 is an abbreviation of Motion Picture Experts Group (or MPEG) Audio Layer 3. MP3 is simply a file format with a data compression ratio of 1:10 (128 kbps*). That means, by using MP3 format, one CD-R or CD-RW can contain 10 times as much data volume as a regular CD can.

* Bit rate is the average number of bits that one second of audio data will consume. The unit used is kbps (1024 bits/second). To get a better audio quality, choose a higher bit rate. The most popular bit rate for encoding and the most recommended for this 3-CD Changer is 128 kbps.

Compatible with ID3v1

Extra information data such as album title, performer name, song title, recording year, music genre and a brief comment can be stored within an MP3 track.

3-CD Changer can show ID3v1 tags (album title, performer name and song title) on the display.

- Some characters cannot be shown correctly.
- 3-CD Changer is not compatible with ID3v2.

Other Main Features in this unit:

- Maximum number of groups (directories)/files (files): 512 (total)
- Available characters for group/track names: A-Z, 0-9, _ (underscore)
- Maximum number of characters for track name (ISO 9660 Level 1): 12 (inclusive of separation mark—“.” and extension code—“mp3”)
(ISO 9660 Level 2): 31 (inclusive of separation mark—“.” and extension code—“mp3”)
- Maximum number of characters for group name: 31



- 3-CD Changer cannot read or play an MP3 track without the extension code—mp3.
- 3-CD Changer can only read MP3 tracks compliant with ISO 9660 Level 1 or Level 2.
- Unfinalized discs cannot be played back.
- “Packet Writing” discs cannot be played back.
- If a disc is recorded with multiple sessions, only the first session can be played back. However if a session is not closed (not finalized), it cannot be played back.

MP3 Disc Structure

MP3 “tracks (files)” can be recorded in “groups (directories)” —in PC terminology.

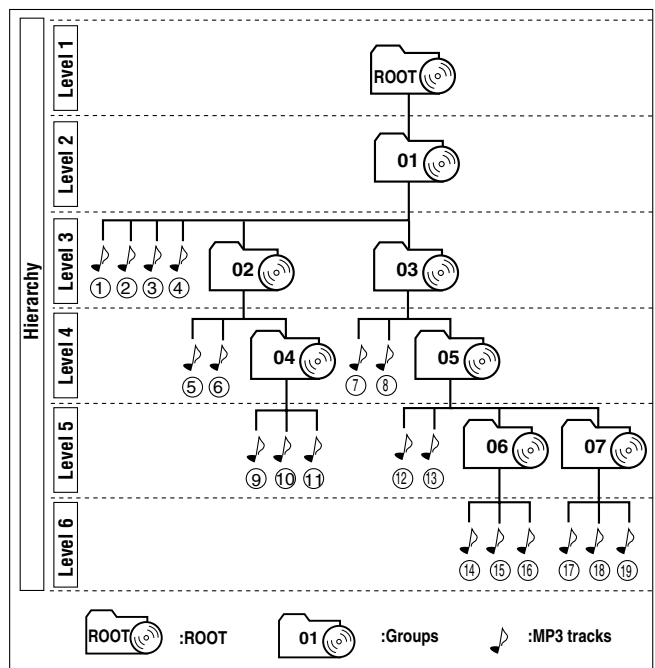
During recording, the tracks and groups can be arranged in a way similar to arranging files and directories of computer data.

“Root” is similar to the root of a tree. Every track and group can be linked to and be accessed from the root.

Playback order, track search order, and group search order of the MP3 tracks recorded on a disc are determined by the writing (or encoding) application; therefore, playback order may be different from the one you have intended while recording the groups and the tracks.

The illustration below shows an example of how MP3 tracks are recorded on a CD-R or CD-RW, how they are played back, and how they are searched for on this 3-CD Changer.

MP3 group/track configuration



MP3 playback and search order

- The numbers in circles below the MP3 tracks (♪) indicate the playback order and search order of the MP3 tracks. Normally 3-CD Changer plays back MP3 tracks in the recorded order.
- The numbers inside the groups indicate the playback order and search order of the groups on an MP3 disc. Normally 3-CD Changer plays back MP3 tracks in the groups in the recorded order.

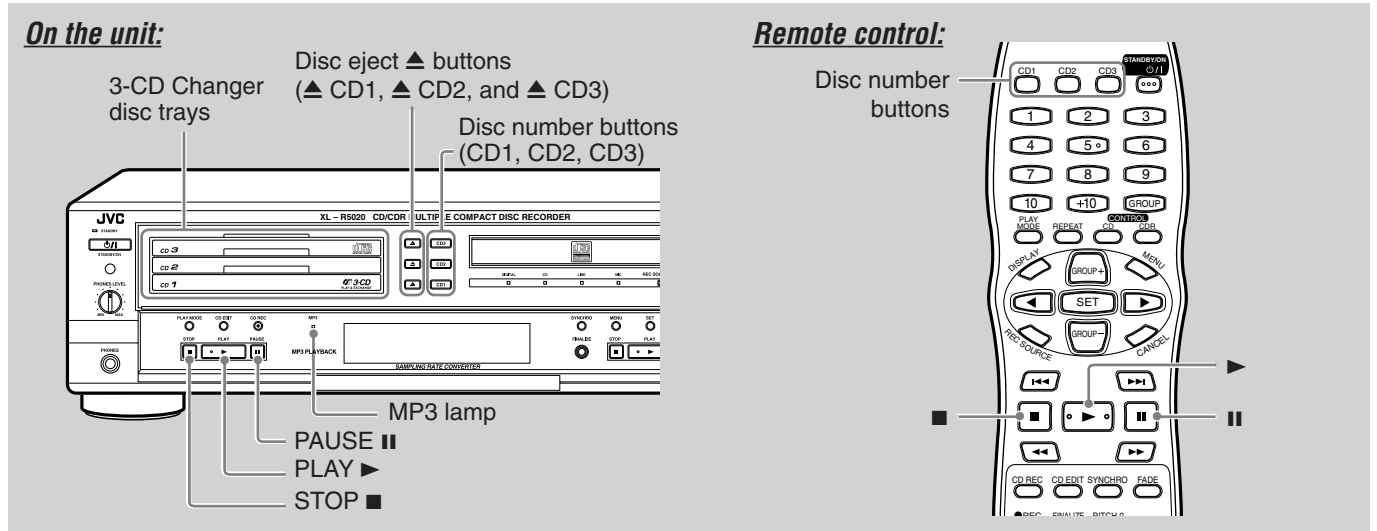
Playing Back MP3 Discs

You can play back MP3 discs on 3-CD Changer.

- You can place either an audio CD or an MP3 disc on any disc tray.

IMPORTANT

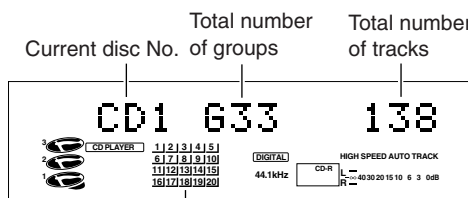
When using operating buttons (▶, ■, ||) on the remote control for the following operations, check the CD PLAYER (3-CD Changer) indicator lights up on the display. If not, press CONTROL CD to select 3-CD Changer.



1 Load MP3 discs onto the 3-CD Changer disc trays (see page 10).

2 Press one of the disc number buttons (CD1, CD2 or CD3) you want to play.

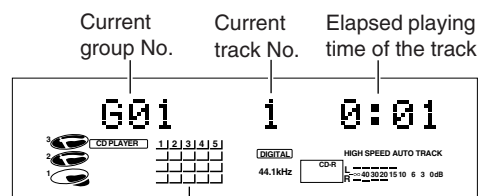
The CD PLAYER indicator lights up on the display. When 3-CD Changer reads out the disc contents and detects it as an MP3 disc, the disc information appears on the display as follows. The MP3 lamp on the unit lights up.



All track numbers included in the selected disc

Playback starts with the first track of the first group. (For playback order of an MP3 disc, see page 18.) The playback information appears on the display as follows.

- If a track has ID3v1 tags, album title, performer name and song title also appear on the display. If not, group (directory) name and track (file) name appear.



All track numbers included in the currently playing group*

* Track numbers already played go off from the display.

- 3-CD Changer stops after playing back all loaded discs once.

- Pressing PLAY ▶ for 3-CD Changer on the unit, or pressing CD CONTROL then ▶ on the remote control also starts playing back from the disc marked ▲.

To stop playback for a moment, press PAUSE || for 3-CD Changer on the unit or || on the remote control. To resume recording, press PLAY ▶ for 3-CD Changer on the unit or ▶ on the remote control.

To stop playback, press STOP ■ for 3-CD Changer on the unit or ■ on the remote control.

To remove a disc, press the corresponding 3-CD Changer disc eject ▲ button (▲ CD1, ▲ CD2, or ▲ CD3) on the unit.



- MP3 discs may require a longer read-out time (either CD-R or CD-RW). This is due to the complexity of the group/track configuration.
- No signal comes out through the DIGITAL OUT terminals while playing back an MP3 disc.

Basic MP3 Disc Operations

To go to another track

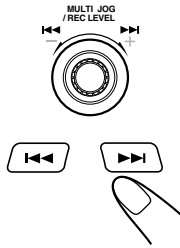
On the unit:

Turn MULTI JOG $\blacktriangleright\blacktriangleright\blacktriangleright$ / $\blacktriangleleft\blacktriangleleft\blacktriangleleft$.

From the remote control:

Press $\blacktriangleright\blacktriangleright\blacktriangleright$ or $\blacktriangleleft\blacktriangleleft\blacktriangleleft$.

- $\blacktriangleright\blacktriangleright\blacktriangleright$: Skips to the beginning of the next or succeeding tracks (beyond the group boundaries).
- $\blacktriangleleft\blacktriangleleft\blacktriangleleft$: Goes back to the beginning of the current or previous tracks (beyond the group boundaries).



While the last track of the last group is playing, turning MULTI JOG $\blacktriangleright\blacktriangleright\blacktriangleright$ / $\blacktriangleleft\blacktriangleleft\blacktriangleleft$ on the unit to the right or pressing $\blacktriangleright\blacktriangleright\blacktriangleright$ on the remote control goes to the first track of the next disc.

To go to another track within a group directly

From the remote control ONLY:

Select a track number using the number buttons.

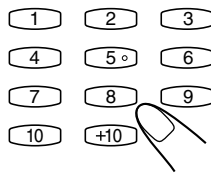
Ex.: For track number 5, press 5.

For track number 15, press +10, then 5.

For track number 20, press +10, then 10.

For track number 32, press +10 three times, then 2.

For track number 125, press +10 twelve times, then 5.

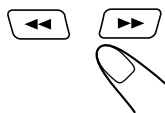


To locate a particular point in a track during play

From the remote control ONLY:

Press and hold $\blacktriangleright\blacktriangleright$ or $\blacktriangleleft\blacktriangleleft$.

- $\blacktriangleright\blacktriangleright$: Fast-forwards the tracks.
- $\blacktriangleleft\blacktriangleleft$: Fast-reverses the tracks.



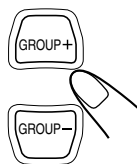
- If you press and hold $\blacktriangleright\blacktriangleright$ or $\blacktriangleleft\blacktriangleleft$ during pause, no sound comes out. When you release your finger from the button, the pause mode will resume.
- Fast-forward and fast-reverse may not be performed smoothly on MP3 discs.

To go to another group

From the remote control ONLY:

Press GROUP + or GROUP -.

- GROUP +: Skips to the beginning of the next groups.
- GROUP -: Goes back to the beginning of the previous groups.



To go to another group directly

From the remote control ONLY:

Press GROUP, then select a group number by pressing the number buttons.

Ex.: For group number 5, press 5.

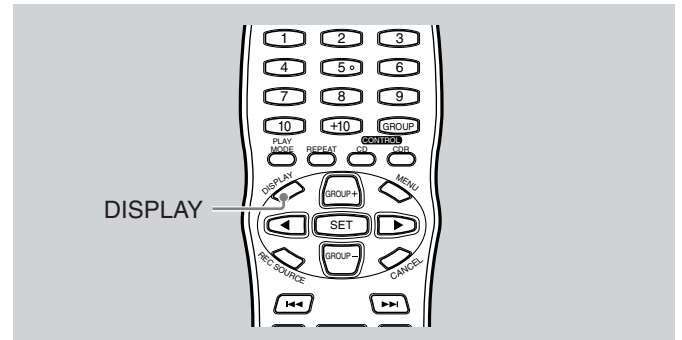
For group number 15, press +10, then 5.

For group number 32, press +10 three times, then 2.



To change the display information

You can change the information on the display.



From the remote control ONLY:

Press DISPLAY while playing.

The display shows album title, performer name and song title (or group name and track name appear) for about 3 seconds.

Tracks with ID3v1 tags

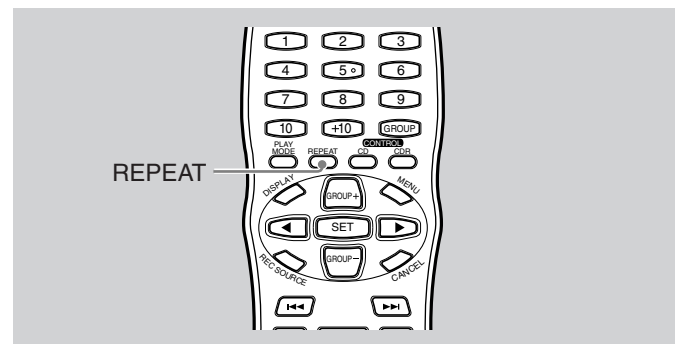
Group No., track No. and elapsed track playing time ↔ Album title, performer name and song title

Tracks without ID3v1 tags

Group No., track No. and elapsed track playing time ↔ Group name and track name

Repeating Tracks—Repeat Play

You can repeat playing individual tracks or all tracks in a disc as many times as you like.

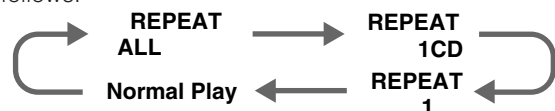


From the remote control ONLY:

Press REPEAT repeatedly during or before playing.

The REPEAT indicator lights up on the display.

- Each time you press the button, Repeat Play changes as follows:



- REPEAT ALL: Repeats all tracks on all the loaded discs.
- REPEAT 1CD: Repeats all the tracks on one disc.
- REPEAT 1: Repeats one track.

To cancel Repeat Play, press REPEAT repeatedly until the REPEAT indicator goes off from the display.

- Ejecting the current playing disc also cancels Repeat Play.

Recording on a CD-R/CD-RW

Before You Start Recording

Before you start, remember...

- Perform recording onto a CD-R AUDIO or CD-RW AUDIO disc (see page 3).
- When you record onto a partially recorded unfinalized CD-R or CD-RW, its contents are not erased or overwritten. The recording starts from the point following the last recorded track of the disc.
For CD-RW only: If you want to record on such a CD-RW from the beginning, you have to erase its contents first (see “Erasing all tracks (only for CD-RW)—Disc Erase” on page 36). (You cannot erase the contents recorded on a CD-R.)
- You can record up to 99 tracks on a CD-R or CD-RW. When the data recordable memory area of a CD-R or CD-RW becomes full while recording, recording will stop automatically.
- If PCA (Power Calibration Area) or PMA (Program Memory Area) of the disc is recorded fully, recording cannot be performed on this disc even though there are still unused memory spaces on it.
- Before recording on a CD-R, it is recommended to make a test recording on a CD-RW.
- You cannot perform digital-recording from the digitally recorded CD-R or CD-RW because only the first generation digital copy is allowed; This is to protect copyrights (see page 42).



- *CD Recorder automatically selects appropriate recording—either digital or analog—during CD Synchronized Recording. When digital source is selected as the playback sound, it will be recorded digitally if it is a first-generation digital copy (see page 42). If not, CD Recorder selects analog recording.*
- *MP3 files cannot be recorded on this CD Recorder. If you are going to record MP3 files on CD Recorder, “CANNOT REC” appears on the display.*
- *Before recording, finalizing, or adding track skip marks, make sure that all the disc trays are closed. You cannot open any disc tray while these operations are done.*

Available recording methods

This CD Recorder provides a variety of the recording methods.

You can select and use the following recording methods according to the playback source.

■ Recording from any source

—Standard Recording:

- Standard Recording—see page 22.

■ Recording from 3-CD Changer

—CD Synchronized Recording:

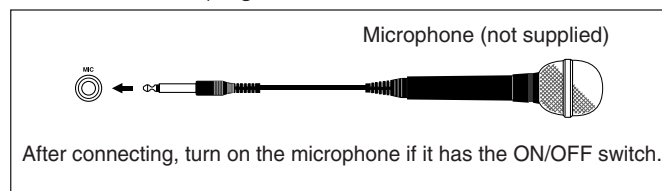
- Disc Direct Recording—see page 26.
- One Track Recording—see page 28.
- Listening Edit Recording—see page 29.
- Program Edit Recording—see page 30.

■ Recording from external components

- Sound Synchronized Recording—see page 31.
- Sound Mixing Recording—see page 32.

Connecting a microphone

You can record your voice through MIC jack on the unit. When using a microphone, connect a microphone with a standard 6.3 mm plug.



Finalization

This is the final process in recording on a CD-R or CD-RW. “Finalizing a disc” means writing the TOC (Table of Contents) on the recorded disc.

Only after this process is completed, a recorded CD-R or CD-RW can be played back on a CD player compatible with CD-R/CD-RW. It is also recommended to finalize a disc before playing back on this 3-CD Changer.

CD-R : You cannot add any track after finalizing.

CD-RW : You can add tracks after finalizing by unfinalizing the disc (see page 34).

About track-marking

Whenever you turn on the unit, auto track-marking is activated. (The AUTO TRACK indicator lights up on the display.)

When auto track-marking is activated

- Recording from 3-CD Changer (CD DIGITAL, CD ANALOG):
Track marks are recorded automatically at the points where the tracks change.
- Recording from an external component connected to the LINE IN and MIC jacks (LINE IN, MIC IN, CD+LINE MIX, CD+MIC MIX, LINE+MIC MIX):
If there is a blank of 4 seconds or more, CD Recorder will consider it as a blank separating 2 tracks and consequently put a track mark.
- Recording through the DIGITAL IN terminals (OPTICAL IN, COAXIAL IN):
—If the playback source is an MD recorder, CD player or DAT deck, they are recorded automatically at the points where the tracks change.
—If the playback source is other than above, this unit functions in the same way for recording an analog source.

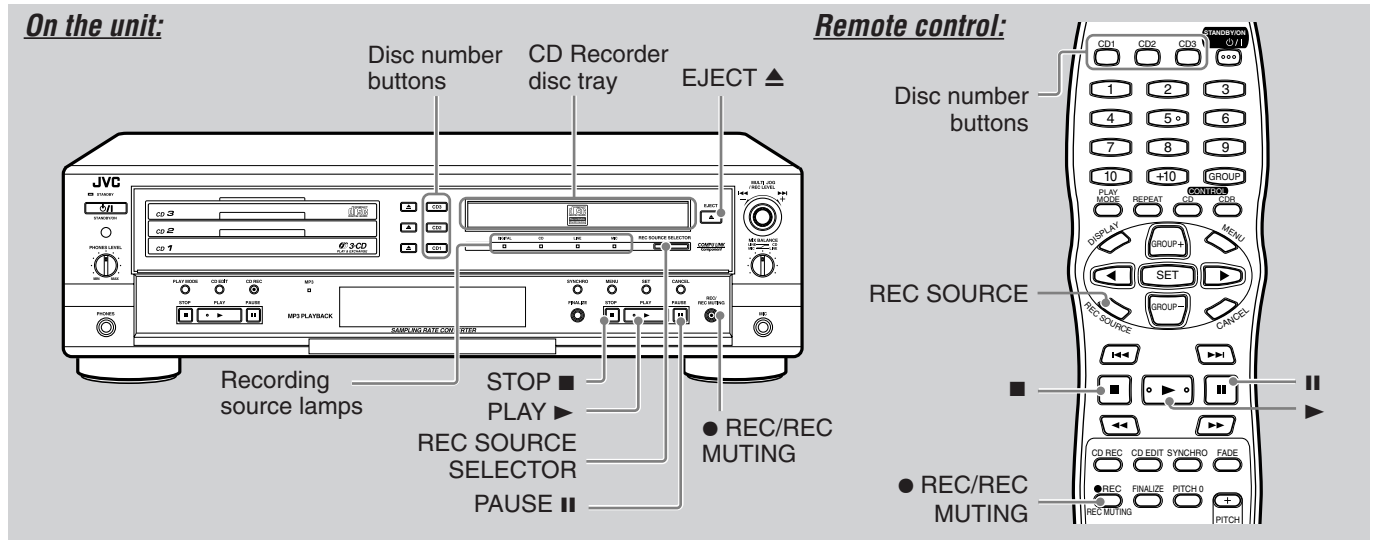
To cancel auto track-marking and use manual track-marking, see “Recording track marks manually” on page 34.

Recording Manually—Standard Recording

You can use this method to record any sources and to record any combination of two sources.

IMPORTANT

When using operating buttons (▶, ■, ||) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.



1 Load a recordable CD-R or CD-RW onto the CD Recorder disc tray.

2 Press REC SOURCE SELECTOR on the unit or REC SOURCE on the remote control to select a source to record from.

Selected recording source lamp on the unit lights up.

- Each time you press the button, the following recording sources appear:

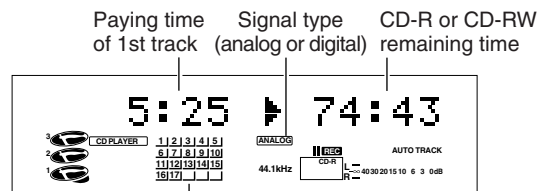
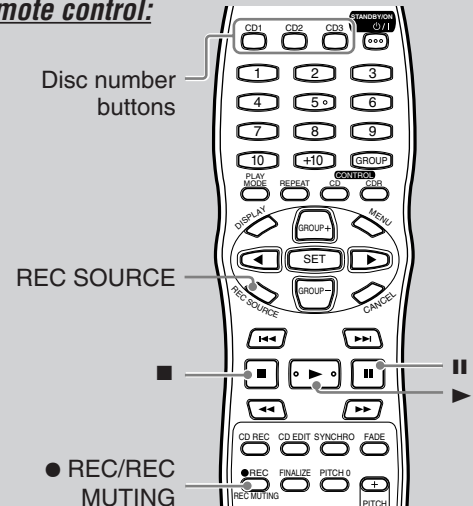
- OPTICAL IN** :Records through the DIGITAL IN/OPTICAL terminal (digital recording). The DIGITAL lamp lights up.
- COAXIAL IN** :Records through the DIGITAL IN/COAXIAL terminal (digital recording). The DIGITAL lamp lights up.
- CD DIGITAL** :Records from 3-CD Changer (digital recording). The CD lamp lights up. Prepare discs on the 3-CD Changer disc trays.
- CD ANALOG** :Records from 3-CD Changer (analog recording). The CD lamp lights up. Prepare discs on the 3-CD Changer disc trays.
- LINE IN** :Records through the LINE IN (REC) jacks (analog recording). The LINE lamp lights up.
- MIC IN** :Records through the MIC jack (analog recording). The MIC lamp lights up.
- CD+LINE MIX** :See page 32.
- CD+MIC MIX** :See page 32.
- LINE+MIC MIX** :See page 32.

3 Press ● REC/REC MUTING.

The unit enters recording pause. The remaining time of CD-R or CD-RW is shown on the display. The || and REC indicators light up on the display.

- If OPC (see page 42) is being performed, "UPDATE OPC" flashes on the display.

Remote control:



All track numbers of the selected disc

EX.: When selecting "CD ANALOG" as a recording source.

4 Adjust the recording level when recording from an external component connected to the LINE IN and MIC jacks (see page 23 for details).

- Recording level adjustment is stored until you change the recording source.

5 Start recording.

When recording from 3-CD Changer:

1) Press PLAY ▶ for CD Recorder on the unit or ▶ on the remote control.

Recording starts. The ▶ and REC indicators light up on the display.

- Pressing ● REC/REC MUTING also starts recording.

2) Press one of the disc number buttons (CD1, CD2, CD3) you want.

When recording from another source:

1) Press PLAY ▶ for CD Recorder on the unit or ▶ on the remote control.

Recording starts. The ▶ and REC indicators light up on the display.

- Pressing ● REC/REC MUTING also starts recording.

2) Start playback of the external components.

To stop recording for a moment, press PAUSE **||** for CD Recorder on the unit or **||** on the remote control. To resume recording, press PLAY **▶** for CD Recorder on the unit or **▶** on the remote control. (A track mark is recorded when you resume recording.)

To stop recording, press STOP **■** for CD Recorder on the unit or **■** on the remote control.

To eject the disc, press EJECT **▲**.

“FINALIZE ?” appears on the display.

—To finalize, press FINALIZE or SET. After finalizing, the disc is ejected.

—Not to finalize, press EJECT **▲** again or wait for 5 seconds so that the disc comes out without being finalized.



- If “UNLOCK” appears on the display when selecting “OPTICAL IN” or “COAXIAL IN,” digital component connected to the DIGITAL IN terminals is not recognized. Check the connection (see page 8).
- When selecting “CD DIGITAL” as the recording source with Pitch Control activated (see page 15), the recording source is automatically changed to “CD ANALOG.”

To adjust the analog recording level

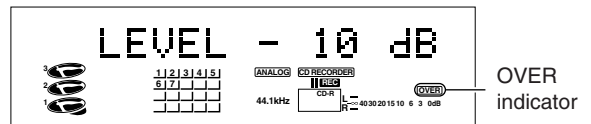
You can adjust the recording level when recording from an external component connected to the LINE IN jacks.

- When you record through the microphone, you can also adjust the recording level.

1 While CD Recorder is in recording pause mode (or recording), press MENU.

2 Turn REC LEVEL +/- control on the unit or press ▶ or ◀ on the remote control to adjust the recording level.

- Adjust the recording level so that the OVER indicator never lights. If the OVER indicator lights up in red intermittently, the recorded sound will be distorted.



- You can adjust the recording level within the range of -68 dB to +12 dB. Normally set it to 0 dB (initial setting).

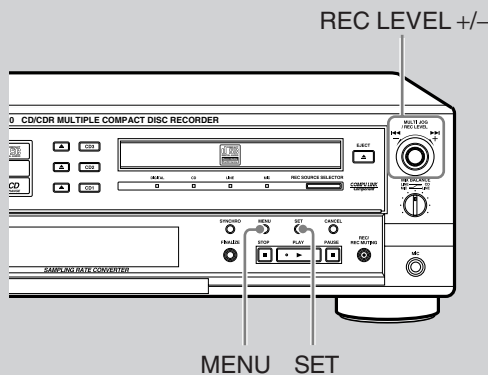
3 Press SET or MENU to finish the adjustment.

- Recording level adjustment is stored until the recording source is changed.

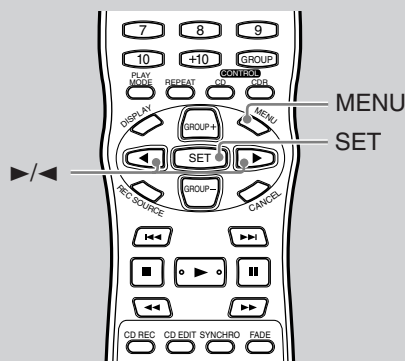


When you unplug the AC power cord or if a power failure occurs recording level adjustment will be erased. If this happens, adjust the recording level again.

On the unit:

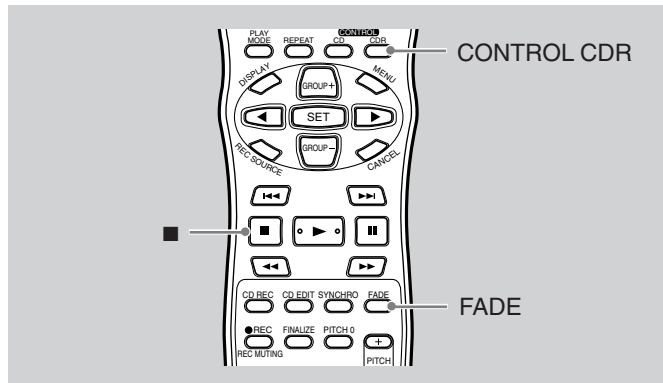


Remote control:



To fade in and out recording—only for analog source

You can fade in and fade out the for about 5 seconds when recording analog source is either “LINE IN,” “MIC IN,” “CD+LINE MIX,” “CD+MIC MIX” or “LINE+MIC MIX.”



From the remote control ONLY:

To start recording by fading in—press FADE when the unit is in recording pause mode.

The FADER indicator lights up for a while.

To finish recording by fading out—press FADE while the unit is recording.

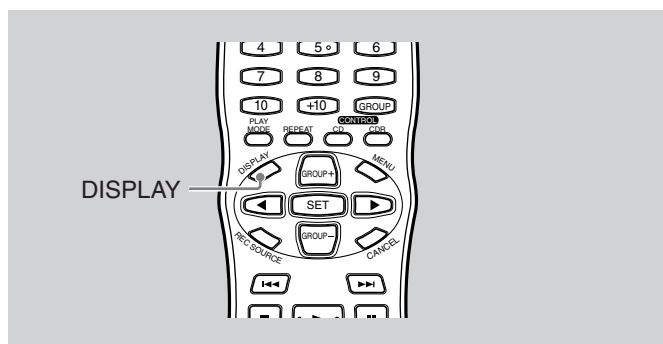
The FADER indicator lights up for a while.

- The unit enters recording pause after fading out.

To stop recording, press CONTROL CDR, then ■.

To change the display information while recording

You can change the information on the main display.



From the remote control ONLY:

Press DISPLAY to change the display information.

The display changes to show track information for 3 seconds as follows:

■ When the recording source is 3-CD Changer

15:21 ▶ 24:43 ◀▶ CD1 1▶CDR 1

Elapsed playing time of current track CDR remaining time Current disc & track no. Current CDR track no.

■ When the recording source is other than 3-CD Changer

CDR REM 64:43 ◀▶ LINE >CDR 3

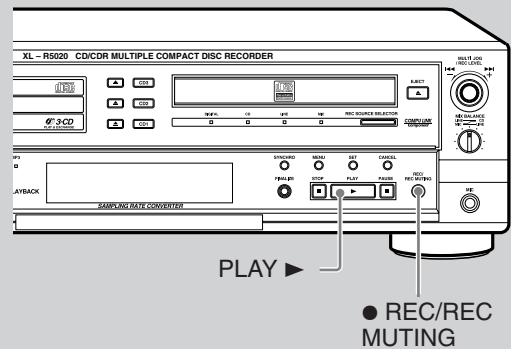
CDR remaining time Recording source Current CDR track no.

Ex.: When “LINE IN” is selected as a recording source.

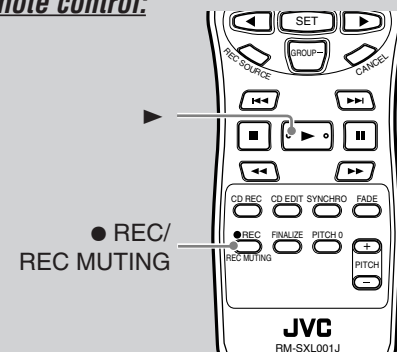
To make a silent portion while recording

You can record a 4-second silence when using Standard Recording.

On the unit:



Remote control:



Press ● REC/REC MUTING while recording to make a silent portion.

Recording enters recording pause after recording a 4-second silence.

- You can also make a silent portion as long as you want by holding the button.

To resume recording, press PLAY ▶ for CD Recorder on the unit or ▶ on the remote control. (A track mark is recorded when you resume recording.)

Preparing for CD Synchronized Recording

The following four methods are available when recording from discs in 3-CD Changer onto a CD-R or CD-RW in CD Recorder.

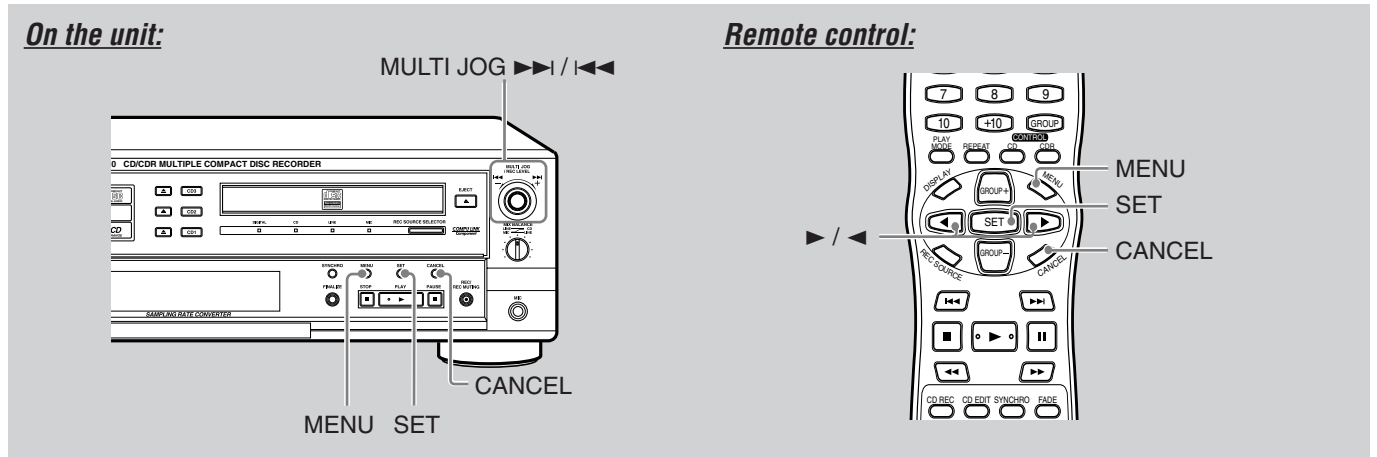
Disc Direct Recording—Records a disc in 3-CD Changer (see page 26).

One Track Recording—Records a track of a disc in 3-CD Changer (see page 28).

Listening Edit Recording—Records only tracks you select while playing back discs in 3-CD Changer (see page 29).

Program Edit Recording—Records tracks you program from discs in 3-CD Changer (see page 30).

When using these CD Synchronized Recording, you can set the following settings before recording if necessary.



■ Changing the recording speed

The speed of digital recording on a CD-R and CD-RW is initially set to high speed—4 times normal speed for CD-Rs and 2 times for CD-RWs. (The HIGH SPEED indicator lights up on the display.) You cannot listen playback sound while recording. To change the setting to normal speed follow the procedure below.

- When analog recording is performed, the recording speed is fixed to normal speed.

Available recording methods

Disc Direct Recording, One Track Recording, Listening Edit Recording, Program Edit Recording

- 1** While 3-CD Changer and CD Recorder are in stop mode, press MENU.
- 2** Turn MULTI JOG >>>|/|<<< on the unit or press ► or ◀ on the remote control until “DUB-SPEED” appears on the display, then press SET.
“SPEED HIGH” (initial setting) appears on the display.
 - To cancel the setting, press CANCEL.
- 3** Turn MULTI JOG >>>|/|<<< on the unit or press ► or ◀ on the remote control to select “SPEED 1X,” then press SET.

To set to the high speed again, select “SPEED HIGH” in step 3. The HIGH SPEED indicator lights up on the display.

■ Finalizing discs automatically

CD-R and CD-RW are not finalized automatically when performing Listening Edit Recording and Program Edit Recording, since they are expected further additional recordings. To finalize a disc automatically after these recordings are performed, follow the procedure below.

Available recording methods

Disc Direct Recording, Listening Edit Recording, Program Edit Recording

- 1** While 3-CD Changer and CD Recorder are in stop mode, press MENU.
- 2** Turn MULTI JOG >>>|/|<<< on the unit or press ► or ◀ on the remote control until “AUTO FINALIZE” appears on the display, then press SET.
“FINALIZE OFF” (initial setting) appears on the display.
 - To cancel the setting, press CANCEL.
- 3** Turn MULTI JOG >>>|/|<<< on the unit or press ► or ◀ on the remote control to select “FINALIZE ON,” then press SET.

How this function actually works?

When you start one of the recording methods—Disc Direct Recording, Listening Edit Recording and Program Edit Recording, “ADD FINALIZE?” appears.

—To finalize the disc after recording is done, press SET.

—Not to finalize the disc, press CANCEL.

- If you do not press any button within 5 seconds, recording will start automatically. After recording is over, the disc will be finalized.

To turn off the automatic finalization, select “FINALIZE OFF” in step 3.



Finalization is not performed when the recording is stopped manually.

Recording from 3-CD Changer—CD Synchronized Recording

Using the synchronized recording methods, you can start playback and record at the same time.

- CD Recorder automatically selects appropriate recording—either digital or analog—during CD Synchronized Recording. When digital source is selected as the playback sound, it will be recorded digitally only if it is a first-generation digital copy (see page 42).
- Initial setting of digital recording speed on CD-R is 4 times normal speed and 2 times for CD-RW, so that no sound is heard while recording. To change the recording speed, see page 25.

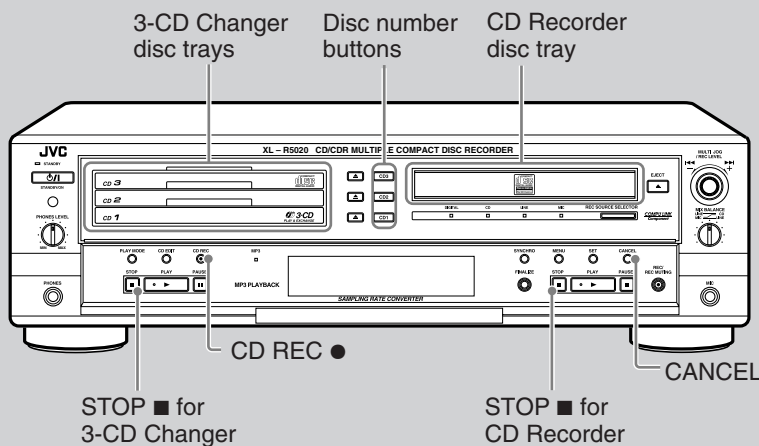
IMPORTANT

When using operating buttons (▶, ■, II) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.

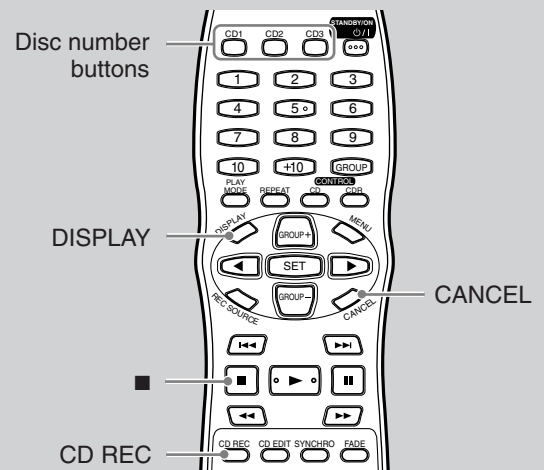
■ Disc Direct Recording

Synchronized Disc Direct Recording allows you to easily record a disc in 3-CD Changer onto a CD-R or CD-RW in CD Recorder.

On the unit:



Remote control:



1 Load discs onto the 3-CD Changer disc trays and a recordable CD-R or CD-RW onto the CD Recorder disc tray.

2 Select the disc number you want to record from.

1) Press one of the disc number buttons (CD1, CD2 or CD3).

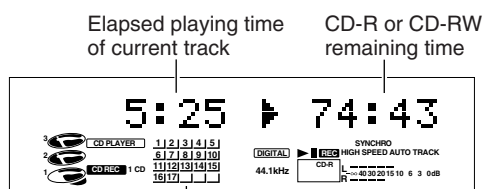
Playback starts.

2) Press STOP ■ to stop playback.

3 Press CD REC (●) to start recording.

- If OPC (see page 42) is being performed, "UPDATE OPC" flashes on the display before starting.
- If "AUTO FINALIZE" is set to "FINALIZE ON," "ADD FINALIZE?" appears on the Display.
 - To finalize after recording automatically, press SET.
 - Not to finalize, press CANCEL (see page 25).

"DISC DUBBING" appears on the display and 3-CD Changer starts playing and CD Recorder starts recording at the same time. The SYNCHRO and CD REC 1CD indicators light up on the display.



All track numbers of the selected disc

Recording stops when the selected disc is recorded, then "STOP DUBBING" flashes on the display for a while.

To stop recording during play, press STOP ■ either for 3-CD Changer or CD Recorder on the unit, or ■ on the remote control. "STOP DUBBING" flashes on the display for a while.

- Even though "AUTO FINALIZE" is set to "FINALIZE ON," Finalization is not performed automatically when you stop recording manually.

To check the current track number during play, press DISPLAY on the remote control. The currently played track number appears for 3 seconds (see page 24).



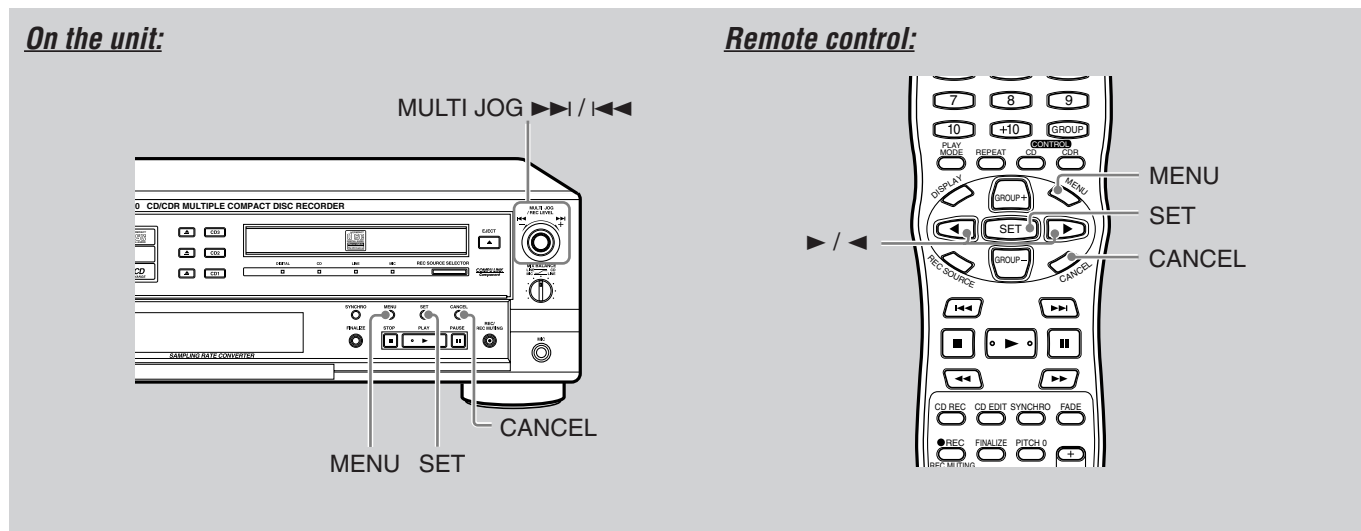
- If "SHORT REMAIN" appears, there is not enough remaining time left on a CD-R or CD-RW and the recording does not start. Eject and change the disc. To start recording on the disc, press CD REC (●) again.
- Repeat Play is canceled temporarily during Disc Direct Recording.

Recording the entire disc without any interruption

When recording from a disc to another disc, the contents of the original disc are duplicated usually track by track. This means if some sounds are recorded between the tracks, they will not be recorded on a newly duplicated disc.

For example, when you play a live disc, you may hear audience clapping their hands; however, these sounds are usually recorded between the tracks so they cannot be recorded. If you want to record these sounds between the tracks on a newly duplicated disc, follow the procedure below.

- This function is only available for Disc Direct Recording.



1 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

2 Turn MULTI JOG ▶▶| / |◀◀ on the unit or press ▶ or ◀ on the remote control until "DISC DUB MODE" appears on the display, then press SET. "NORMAL" (initial setting) appears on the display.
• To cancel the setting, press CANCEL.

3 Turn MULTI JOG ▶▶| / |◀◀ on the unit or press ▶ or ◀ on the remote control to select "DUB SEAMLESS," then press SET.

To release the seamless recording, select "NORMAL" in step 3.



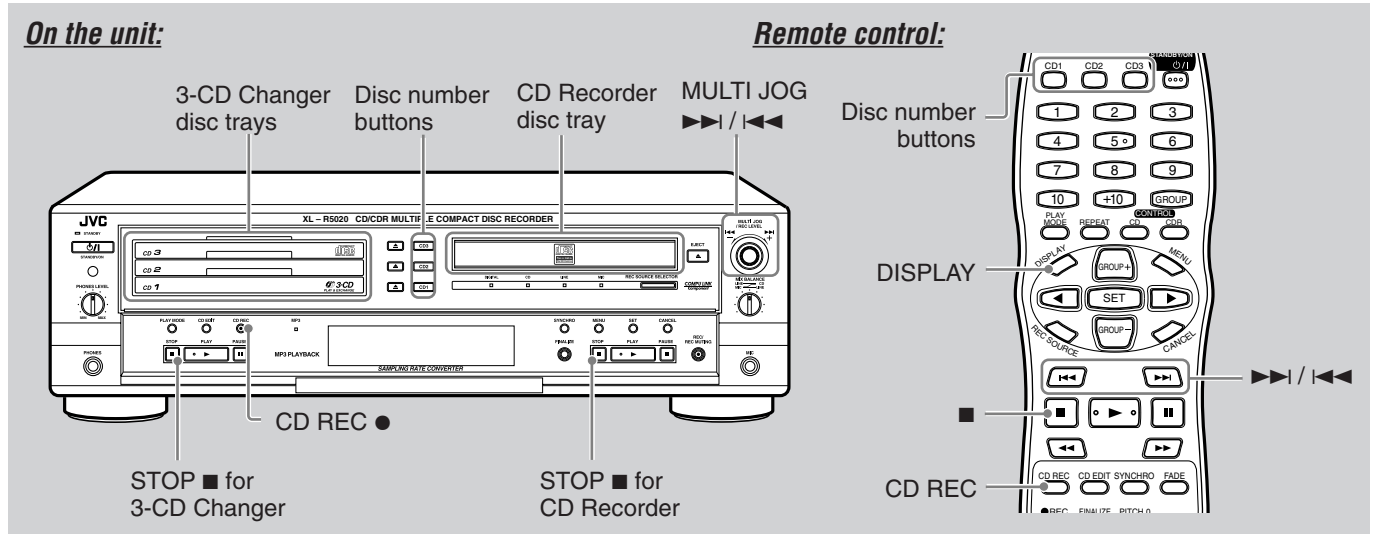
You cannot record from a disc restricted by SCMS (see page 42). If the unit detects such a disc, "SCMS PROTECT" appears on the display and the recording will be stopped.

■ One Track Recording

Synchronized One Track Recording allows you to record a track of a disc in 3-CD Changer onto a CD-R or CD-RW in CD Recorder. This recording method is convenient to make a disc of your best albums.

IMPORTANT

When using operating buttons (▶, ■, II) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.



1 Load discs onto the 3-CD Changer disc trays and a recordable CD-R or CD-RW onto the CD Recorder disc tray.

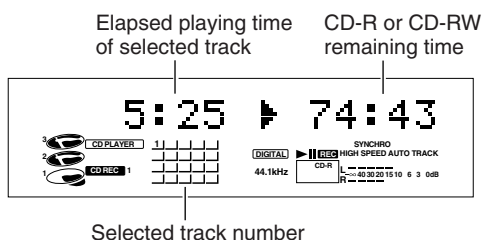
2 Start playing a track you want to record.

- 1) Press one of the disc number buttons (CD1, CD2 or CD3) you want to record from.
- 2) Press the number button(s) on the remote control to select the track you want to record.
 - You can also use MULTI JOG ▶▶/◀◀ on the unit or ▶▶/◀◀ on the remote control to select a track.

3 Press CD REC (●) while playing back a track you want to record.

“1TR DUBBING” appears on the display. Playback of the track is stopped, and the same track starts playing from the beginning again. This time CD Recorder starts recording the track. The SYNCHRO, CD REC 1 indicators light up on the display.

- If OPC (see page 42) is being performed, “UPDATE OPC” flashes on the display before starting.



Recording stops when the selected track is recorded, then “STOP DUBBING” flashes on the display for a while.

To stop recording during play, press STOP ■ either for 3-CD Changer or CD Recorder on the unit, or ■ on the remote control. “STOP DUBBING” flashes on the display for a while.

To check the current track number during play, press DISPLAY on the remote control. The currently played track number appears for 3 seconds (see page 24).



- If “SHORT REMAIN” appears on the display, there is not enough remaining time left on a CD-R or CD-RW and the recording does not start. Eject and change the disc. To start recording on the disc, press CD REC (●) again.
- Repeat Play is canceled temporarily during One Track Recording.

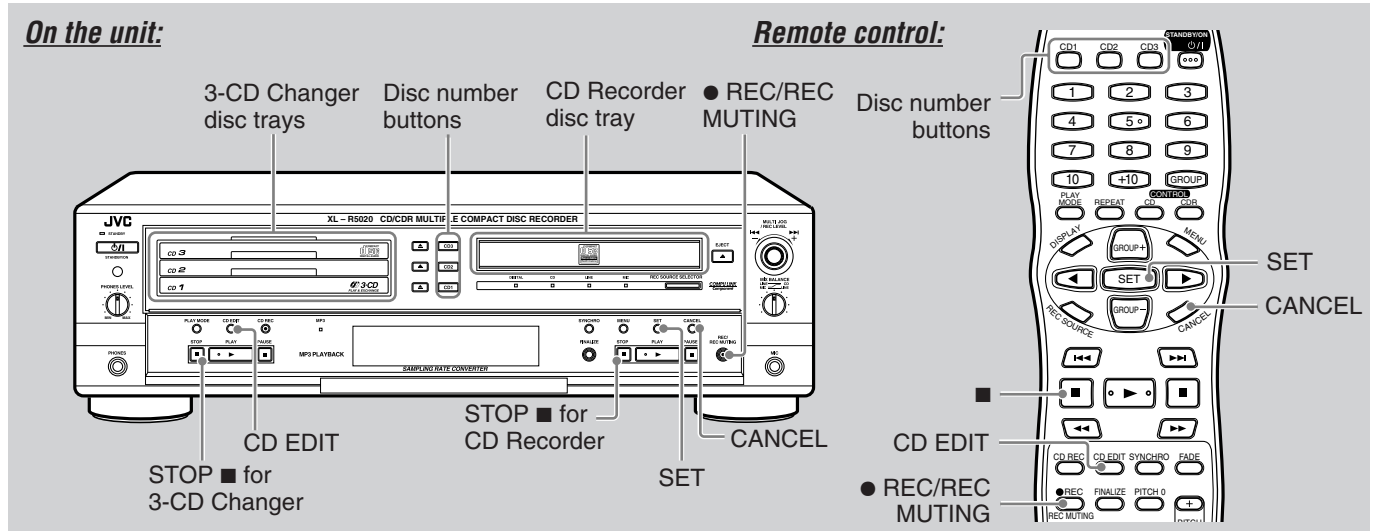
■ Listening Edit Recording

Listening Edit Recording allows you to make a program while listening to and checking each track of the loaded discs (up to 3 discs) in 3-CD Changer, then to start recording the program.

- You can program up to **32** tracks.

IMPORTANT

When using operating buttons (▶, ■, II) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.



1 Load discs onto the 3-CD Changer disc trays and a recordable CD-R or CD-RW onto the CD Recorder disc tray.

2 Select a disc number you want to record from.

1) Press one of the disc number buttons (CD1, CD2 or CD3).

Playback starts.

2) Press STOP ■ to stop playback.

3 Press CD EDIT once to select “LISTEN EDIT.”

The LISTENING EDIT indicator lights up on the display and the first track of the selected disc starts playing.

- If a program has been memorized, the stored program is called up. “LAST L-PG OK?” appears on the display. —To record the previously edit program, press SET. —To record a newly edit program, press CANCEL.

4 Decide if you want to include the current track in the program or to skip it.

- To include the currently playing track in the program, press SET.

The track is programed and the next track starts playing. After the last track of a disc is programed, the first track of the next disc starts playing.

- To skip the currently playing track, press CANCEL.

The currently playing track is not programed and the next track starts playing.

If you do not press either button, the currently playing track is not add to the program.

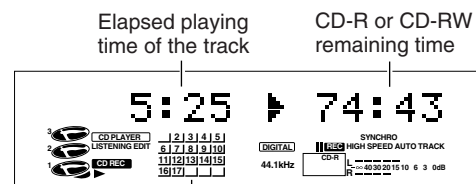
5 To program other tracks, repeat step 4.

- When 32 tracks are programed or after listening through all the tracks, “START TO DUB?” appears on the display.

6 Press ● REC/REC MUTING to start recording.

The tracks are recorded in the order you have programed.

- If OPC (see page 42) is being performed, “UPDATE OPC” flashes on the display before starting.
- If “AUTO FINALIZE” is set to “FINALIZE ON,” “ADD FINALIZE?” appears on the Display. —To finalize after recording automatically, press SET. —Not to finalize, press CANCEL (see page 25).



Track numbers already played are erased.

Recording stops when programed tracks are recorded. “STOP DUBBING” flashes on the display for a while.

To stop recording during play, press STOP ■ either for 3-CD Changer or CD Recorder on the unit, or ■ on the remote control. “STOP DUBBING” flashes on the display for a while.

- Even though “AUTO FINALIZE” is set to “FINALIZE ON,” Finalization is not performed automatically when you stop recording manually.

To erase all programed tracks, press CANCEL in step 4.

- The program you have made is also erased: —when unplugging the AC power cord. —when ejecting the currently selected disc tray.



- “▶ NO REM” appears for tracks which cannot be recorded because there is not enough remaining time left on a CD-R or CD-RW. Even though, you can record by pressing ● REC/REC MUTING (“SHORT REM” appears on the display), then SET. The tracks indicated “▶ NO REM” are not recorded.
- Repeat Play is canceled temporarily during Listening Edit Recording.

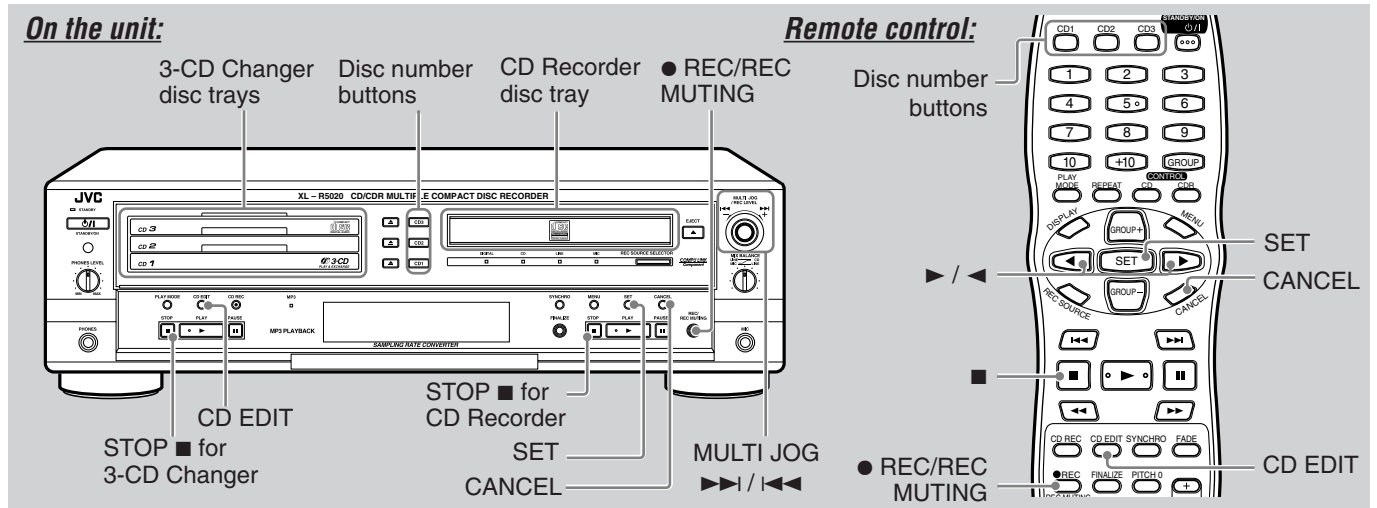
■ Program Edit Recording

You can arrange the recording order of tracks of the discs in 3-CD Changer before you start playing.

- You can program up to **32** tracks.

IMPORTANT

When using operating buttons (▶, ■, II) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.



1 Load discs onto the 3-CD Changer disc trays and a recordable CD-R or CD-RW onto the CD Recorder disc tray.

2 Select a disc number you want to recorded from.

1) Press one of the disc number buttons (CD1, CD2 or CD3).

Playback starts.

2) Press STOP ■ to stop playback.

3 Press CD EDIT twice to select “PROGRAM EDIT.”

The PROGRAM EDIT indicator lights up on the display and the disc number position flashes.

- If a program has been memorized, it is called up. “LAST P-PG OK?” appears on the display.
 - To record the previously edit program, press SET.
 - To record a newly edit program, press CANCEL.

4 Select a disc number you want to program.

On the unit:

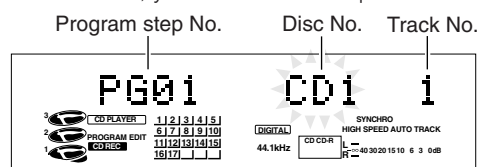
Turn MULTI JOG ▶▶/◀◀, then SET.

From the remote control:

Press ▶ or ◀, then SET

The track number position flashes.

- You can also select a disc number by pressing one of the disc number buttons (CD1, CD2, CD3). When using these buttons, you do not have to press SET.



5 Select a track number you want to program.

On the unit:

Turn MULTI JOG ▶▶/◀◀, then SET.

From the remote control:

Press ▶ or ◀, then SET.

- You can also select a track number by using the number buttons on the remote control. When using the number buttons, you do not have to press SET.

6 To program other tracks, repeat steps 4 and 5.

If you program exceeding the remaining time on a CD-R or CD-RW, “CDR NO REM” appears on the display.

- When 32 steps are programmed, “START TO DUB?” appears on the display.

7 Press ● REC/REC MUTING after you have programmed all the tracks you want.

- If OPC (see page 42) is being performed, “UPDATE OPC” flashes on the display before starting.
- If “AUTO FINALIZE” is set to “FINALIZE ON,” “ADD FINALIZE?” appears on the Display.
 - To finalize after recording automatically press SET.
 - Not to finalize, press CANCEL (see page 25).

The tracks are recorded in the order you have programmed. Playback stops when all the programmed tracks are recorded. “STOP DUBBING” flashes on the display for a while.

To stop during recording, press STOP ■ either for

3-CD Changer or CD Recorder on the unit, or ■ on the remote control. “STOP DUBBING” flashes on the display for a while.

- Even though “AUTO FINALIZE” is set to “FINALIZE ON,” Finalization is not performed automatically when you stop recording manually.

To erase the program, press CANCEL in step 3.

- The program you have made is also erased:
 - when unplugging the AC power cord.
 - when ejecting the currently selected disc tray.



- “CD NO REM” appears for tracks which cannot be recorded because there is not enough remaining time left on a CD-R or CD-RW. Even though, you can record by pressing ● REC/REC MUTING (“SHORT REM” appears on the display), then SET. The tracks indicated “CD NO REM” are not recorded.
- If you have tried to program a track from an empty tray, or a track number that does not exist on the disc (for example, selecting track 14 on a disc that only has 12 tracks), such entries are ignored.
- MP3 disc cannot be played back even though they can be programmed. If this unit detects an MP3 disc, the playback will stop. (“CANNOT REC” appears on the display.)
- You cannot confirm the programmed contents or order even though you turn MULTI JOG ▶▶/◀◀ on the unit or press ▶ or ◀ on the remote control.

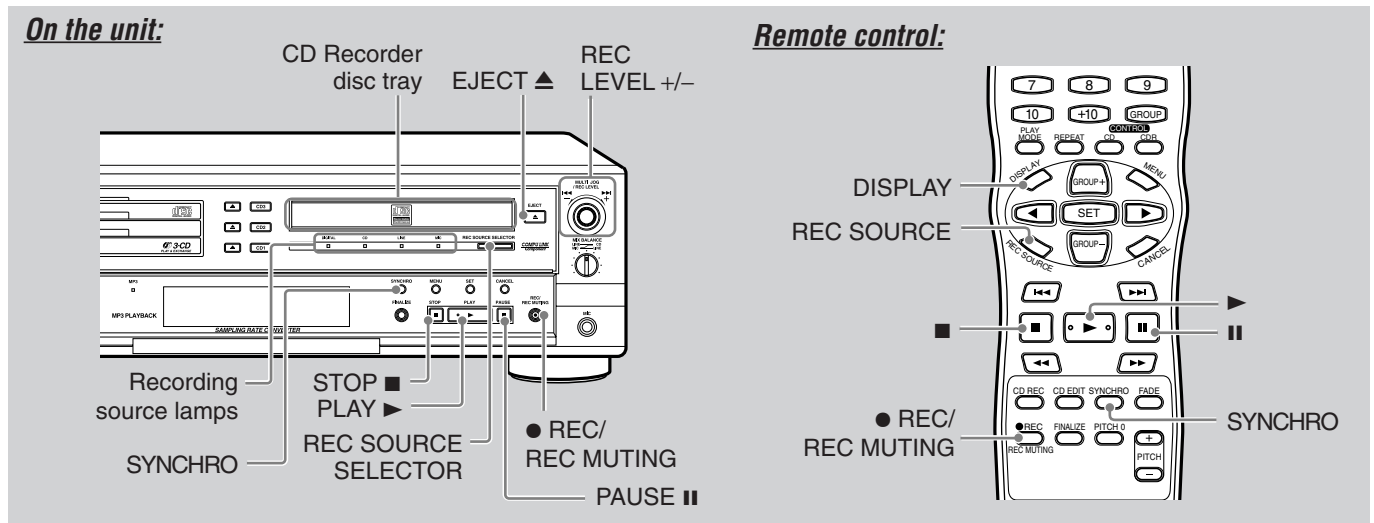
Recording from the External Sources—Sound Synchronized Recording

With this recording method, playback and recording start automatically when the playback sound comes into this unit through the DIGITAL IN terminals, LINE IN jacks or MIC jack.

- Recording can be also stopped automatically when the playback sound stops coming in (see page 33).
- When you purchase this unit, digital recording from MDs, CDs or DATs is set to record the entire discs or tapes. If you want to record the tracks one by one, see page 34.

IMPORTANT

When using operating buttons (▶, ■, ||) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.



1 Load a recordable CD-R or CD-RW onto the CD Recorder disc tray.

2 Press REC SOURCE SELECTOR on the unit or REC SOURCE on the remote control to select a source to record from.

Selected recording source lamp on the unit lights up.

- OPTICAL IN** :Records through the DIGITAL IN/OPTICAL terminal (digital recording). The DIGITAL lamp lights up.
- COAXIAL IN** :Records through the DIGITAL IN/COAXIAL terminal (digital recording). The DIGITAL lamp lights up.
- LINE IN** :Records through the LINE IN (REC) jacks (analog recording). The LINE lamp lights up.
- MIC IN** :Records through the MIC jack (analog recording). The MIC lamp lights up.

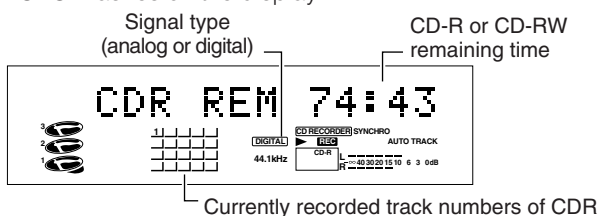
3 Adjust the recording level if necessary—only for LINE IN and MIC IN.

See details on page 23.

4 Press SYNCHRO.

The unit enters recording pause mode and the SYNCHRO indicator lights up on the display. The remaining time of CD-R or CD-RW is shown on the display.

- If OPC (see page 42) is being performed, “UPDATE OPC” flashes on the display.



5 Start playback of the selected external component.

Recording starts automatically when the sound comes in.

To stop recording for a moment, press PAUSE || for CD Recorder on the unit or || on the remote control. To resume play, press PLAY ▶ for CD Recorder on the unit or ▶ on the remote control. (A track mark is recorded when you resume recording.)

To stop recording, press STOP ■ for CD Recorder on the unit or ■ on the remote control.

To eject the disc, press EJECT ▲.

“FINALIZE ?” appears on the display.

—To finalize, press FINALIZE or SET. After finalizing, the disc is ejected.

—Not to finalize, press EJECT ▲ again or wait for 5 seconds so that the disc comes out without being finalized.

To check the current track number during play, press DISPLAY on the remote control. The current track number appears for 3 seconds (see page 24).



- If “UNLOCK” appears on the display when selecting “OPTICAL IN” or “COAXIAL IN,” digital component connected to the DIGITAL IN terminals is not recognized. Check the connection.
- If Sound Synchronized Recording do not work correctly when “LINE IN” is selected as recording source, use the Standard Recording method (see page 22). If the sound signal is too weak for this unit to detect, Sound Synchronized Recording will not start (or will stop even while the source is being played).

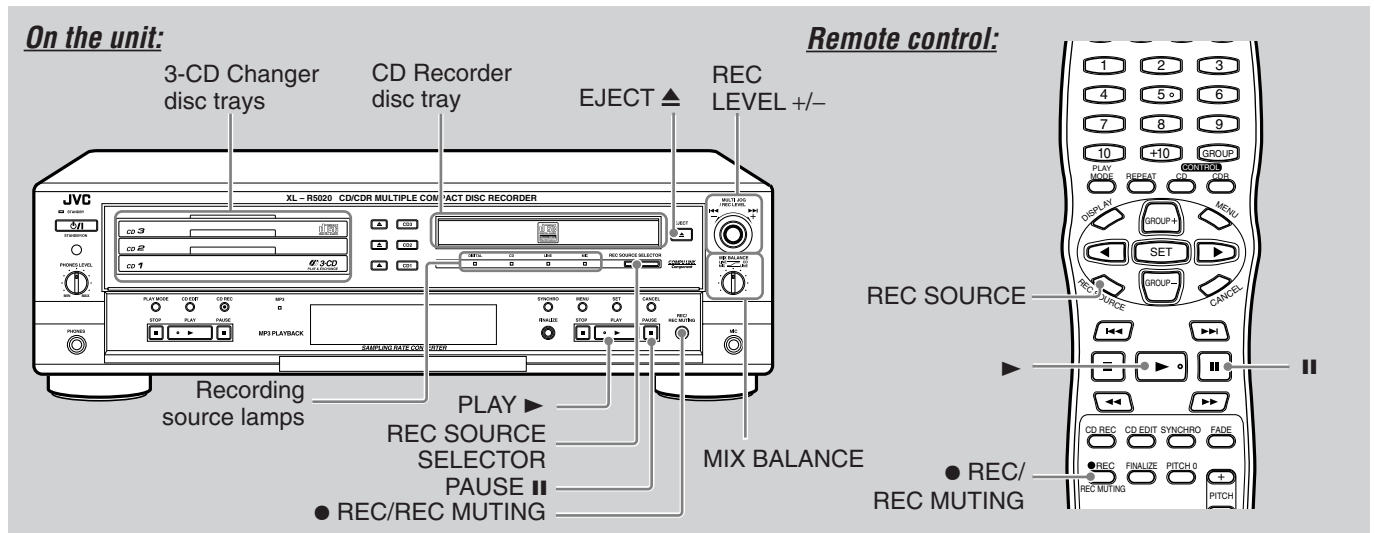
Recording from the Two Sources Mixed—Sound Mixing Recording

You can record sounds mixing 2 sources. When using this method, analog recording is always performed.

- Recording can be also stopped automatically when the playback sound stops coming in (see page 33).
- While mixing, no sounds come out of the DIGITAL OUT terminals.

IMPORTANT

When using operating buttons (▶, ■, ||) on the remote control, check which indicator lights up on the display—CD PLAYER (3-CD Changer) or CD RECORDER. If the incorrect indicator is lit, press CONTROL CD or CONTROL CDR to select the correct target source.



1 Load discs onto the 3-CD Changer disc trays and a recordable CD-R or CD-RW onto the CD Recorder disc tray.

2 Press **REC SOURCE SELECTOR** on the unit or **REC SOURCE** on the remote control to select a source to record from.

Selected recording source lamps on the unit light up.

CD+LINE MIX :Records mixed sound of 3-CD Changer and an external component through the LINE IN jacks. The CD and LINE lamps light up.

CD+MIC MIX :Records mixed sound of 3-CD Changer and a microphone through the MIC jack. The CD and MIC lamps light up.

LINE+MIC MIX :Records mixed sound of an external component through the LINE IN jacks and a microphone connected to the MIC jack. The LINE and MIC lamps light up.

3 Press ● **REC/REC MUTING**.

The unit enters recording pause mode. The remaining time of CD-R or CD-RW is shown on the display. The || and REC indicators light up on the display.

- If OPC (see page 42) is being performed, "UPDATE OPC" flashes on the display.

4 Start playback of the selected components or speaking into the microphone to adjust the recording level and mixing balance.

1) Adjust the recording level.

See details on page 23.

2) Turn MIX BALANCE control on the unit to adjust the mixing balance.

Source	MIX BALANCE LINE — CD MIC — LINE	MIX BALANCE LINE — CD MIC — LINE
CD+LINE	Reduce recording level of CD.	Reduce recording level of line input.
CD+MIC	Reduce recording level of CD.	Reduce recording level of microphone.
LINE+MIC	Reduce recording level of line input.	Reduce recording level of microphone.

5 When the adjustment is correctly done, stop playback of the selected components or speaking into the microphone.

6 Press ▶ **PLAY**.

Recording starts. The REC indicator flashes on the display.

7 Start playback of the selected components or speaking into the microphone.

To stop recording for a moment, press PAUSE || for CD Recorder on the unit or || on the remote control. To resume play, press PLAY ▶ for CD Recorder on the unit or ▶ on the remote control. (A track mark is recorded when you resume recording.)

To stop during recording, press STOP ■ for CD Recorder on the unit, or ■ on the remote control. "STOP DUBBING" flashes on the display for a while.

To eject the disc, press EJECT ▲.

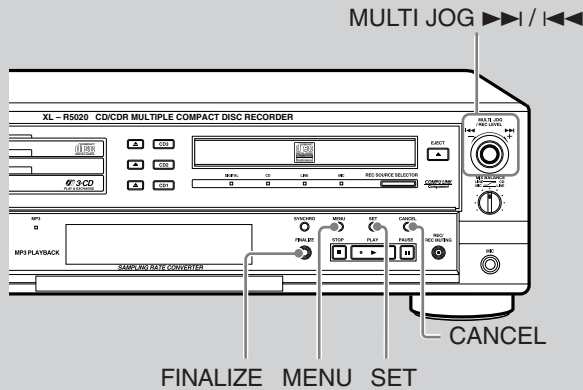
"FINALIZE ?" appears on the display.

—To finalize, press FINALIZE or SET. After finalizing, the disc is ejected.

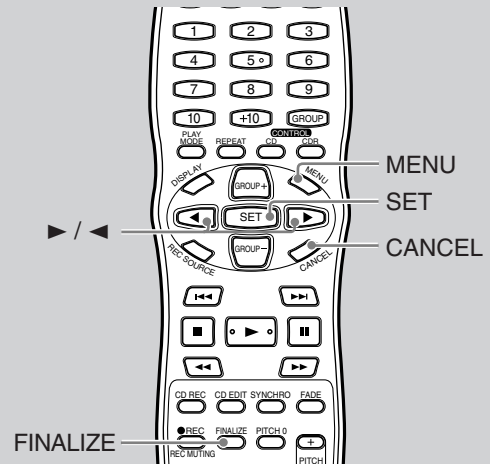
—Not to finalize, press EJECT ▲ again or wait for 5 seconds so that the disc comes out without being finalized.

Other Recording Functions

On the unit:



Remote control:



■ Setting auto-stop for analog Synchronized Recording

When using Synchronized Recording for recording from analog sources, you can stop recording automatically as well as starting. To use this function, follow the procedure below. Recording stops if weak signal that this unit cannot detect comes in for more than 6 seconds.

- When you purchase this unit, Synchronized Recording for analog sources is set to start automatically, but not to stop.

Available sources

CD ANALOG, LINE IN, MIC IN, CD+LINE MIX, CD+MIC MIX, LINE+MIC MIX

1 While 3-CD Changer and CD Recorder are in stop mode, press **MENU**.

2 Turn **MULTI JOG** **▶▶| / |◀◀** on the unit or press **▶** or **◀** on the remote control until “**ANALOG SYNC**” appears on the display, then press **SET**.
“**START**” (initial setting) is flashing on the display.
• To cancel the setting, press **CANCEL**.

3 Turn **MULTI JOG** **▶▶| / |◀◀** on the unit or press **▶** or **◀** on the remote control to select “**START&STOP**” then press **SET**.

To use Synchronized Recording only for the starting, select “**START**” in step 3.

■ Finalizing a disc—CD-R/CD-RW

Finalization is the final process in recording on a CD-R or CD-RW. “Finalizing a disc” means writing the TOC (Table of Contents) on the recorded disc.

Only after this process is completed, a recorded CD-R or CD-RW can be played back on a CD player compatible with CD-R/CD-RW.

IMPORTANT

- Once a CD-R has been finalized, no further recording can be made on the disc.
- When you unplug the power cord or when a power failure occurs during finalization process, recorded data will be lost and the disc may not be utilized any more if it is a CD-R.

1 Load a recorded disc you want to finalize onto the CD Recorder disc tray.

2 While 3-CD Changer and CD Recorder are in stop mode, press **FINALIZE**.

“**FINALIZE?**” appears on the display.

- If a finalized disc is loaded, “**ALREADY FINAL**” appears on the display.

3 Press **FINALIZE** again to finalize a disc.

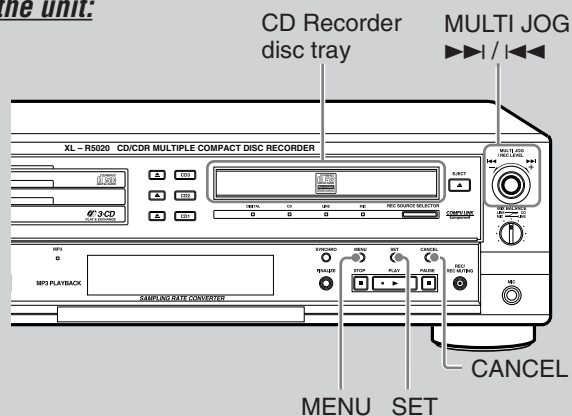
Finalization starts. The **REC** indicator lights up and the **▶** indicator and “**FINALIZE**” start flashing on the display.

- Finalization requires a few minutes to complete. (When the disc is finalized, the **REC** indicator goes off, and the **▶** indicator and “**FINALIZE**” stop flashing then go off.)

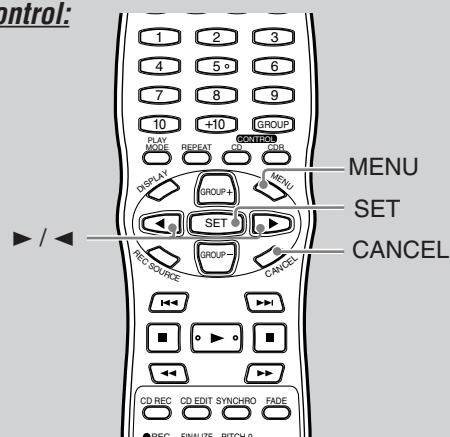
To cancel the finalization, press **CANCEL** in step 2.

To unfinalize CD-RWs, see “Unfinalizing a disc—only for CD-RW” on the next page.

On the unit:



Remote control:



Unfinalizing a disc—only for CD-RW

By erasing the TOC (Table of Contents) of a finalized CD-RW, you will be able to record on the CD-RW again. This erasing process of the TOC is called “Unfinalization.”

- Unfinalization is just to erase the TOC, but not the recorded music signals on the disc.

IMPORTANT

When you unplug the power cord or when a power failure occurs while “UNFINALIZE” is flashing on the display, the disc may not be utilized any more.

1 Load a finalized disc you want to unfinalize on the CD Recorder disc tray.

The CD-RW and FINALIZED indicators light up on the display.

2 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

3 Turn MULTI JOG ►►| / ◀◀ on the unit or press ► or ◀ on the remote control until “UNFINALIZE” appears on the display then press SET.

“UNFINALIZE?” appears on the display.

- If an unfinalized disc is loaded, “ALREADY UNFIN” appears on the display.

4 Press SET to unfinalize the disc.

Unfinalization starts. The REC indicator lights up and the ► indicator and “UNFINALIZE” start flashing on the display.

- Unfinalization requires a few minutes to complete. (When the disc is unfinalized, the REC indicator goes off and the ► indicator and “UNFINALIZE” stop flashing then go off.)

To cancel the unfinalization, press CANCEL in step 3.

Recording only one track from an external component

Digital recording from an MD recorder, a CD player, or a DAT deck connected to the DIGITAL IN terminals is initially set to record entire disc. You can also use Synchronized Recording for recording only one track. To use Synchronized Recording for one track, follow the procedure below.

Available source

OPTICAL IN, COAXIAL IN

1 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

2 Turn MULTI JOG ►►| / ◀◀ on the unit or press ► or ◀ on the remote control until “DIG-IN SYNC” appears on the display, then press SET.

“SYNC ALL” (initial setting) appears on the display.

- To cancel the setting, press CANCEL.

3 Turn MULTI JOG ►►| / ◀◀ on the unit or press ► or ◀ on the remote control to select “SYNC 1-TRACK” then press SET.

To use Synchronized Recording for recording all tracks, select “SYNC ALL” in step 3.



Digital signal cannot be output through the DIGITAL OUT terminals while recording digitally from an external component.

Recording track marks manually

When auto track-marking is activated (initial setting), track marks are recorded automatically. To cancel auto track-marking and use manual track marking, follow the procedure below.

1 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

2 Turn MULTI JOG ►►| / ◀◀ on the unit or press ► or ◀ on the remote control until “AUTO TRACK” appears on the display then press SET.

“AUTO TR ON” (initial setting) appears on the display.

- To cancel the setting, press CANCEL.

3 Turn MULTI JOG ►►| / ◀◀ on the unit or press ► or ◀ on the remote control to select “AUTO TR OFF,” then press SET.

The AUTO TRACK indicator goes off from the display, and auto track-marking is canceled. Now you can put track marks manually during recording.

To put track marks during recording manually, press SET at the point where you want to put a track mark. You can add up to 99 track marks.

To activate auto track-marking again, select "AUTO TR ON" in step 3.



- Track marks must be recorded apart from each other by 4 seconds. If you press SET twice within 4 seconds, the second press will be ignored (only one track mark will be recorded where you press SET for the first time).
- You cannot put track marks manually during CD Synchronized Recording. (Auto track-marking is activated temporarily.)

■ Separating recording tracks automatically

When this function is turned on, CD Recorder automatically places a 2-second blank space at the beginning of each track in recording (initial setting).

To turn off the function, follow the procedure below.

Available recording method

Standard Recording, Disc Direct Recording (except seamless recording), One Track Recording, Listening Edit Recording, Program Edit Recording

1 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

2 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control until "TRACK SPACE" appears on the display, then press SET.

"TR SPACE ON" (initial setting) appears on the display.

- To cancel the setting, press CANCEL .

3 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "TR SPACE OFF;" then press SET.

To activate automatic track spacing again, select "TR SPACE ON" in step 3.

■ Turning on or off sampling frequency rate converter

The sampling frequency rate converter built in CD Recorder allows you to record a digital source having sampling frequency (fs) of 32 kHz, 44.1 kHz, or 48 kHz. It can convert the fs of the source signals into 44.1 kHz so that CD Recorder can record the source.

When the sampling frequency converter is turned "OFF," digital signals are sent to CD Recorder bypassing the sampling frequency converter (without conversion).

Normally set it to "ON" (Initial setting). Only when you record dts* or HDCD*** signal coming through the DIGITAL IN terminals, turn off the sampling frequency rate converter. To turn off the converter, follow the procedure below.

1 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

2 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control until "CONVERTER" appears on the display, then press SET.

"CONVERTER ON" (initial setting) appears on the display.

- To cancel the setting, press CANCEL.

3 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "CONVERTER OFF;" then press SET.

To activate the converter, select "CONVERTER ON" in step 3.

- * dts is a trademark of Digital Theater Systems, Inc.
- **HDCD® is a registered trademark of Pacific Microsonic, Inc.

■ Recording skip marks onto a CD-R/CD-RW—Track Skip

Before finalizing a disc, you can record a skip mark to an unwanted track so that it will be skipped (ignored as if it does not exist) during play.

- You can record up to 21 skip marks on a disc.

IMPORTANT

- Once skip marks are recorded, they cannot be erased (you can only erase skip marks by erasing the tracks with skip marks).
- When you unplug the power cord or when a power failure occurs while "WRITE SKIP" is flashing on the display, the disc may not be utilized any more if it is a CD-R.

1 Load a recorded disc on the CD Recorder disc tray.

2 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

3 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control until "TRACK SKIP" appears on the display, then press SET.

"SKIP ?" appears on the display.

- To cancel the setting, press CANCEL.

4 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select a track you want to skip, then press SET.

"WRITE SKIP" appears on the display and starts recording a skip track.

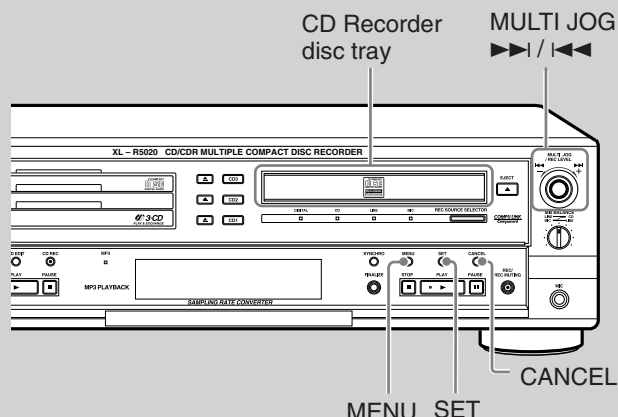
- The skip marked tracks are not shown on the track number indicators and the SKIP ON indicator lights up on the display.

5 To record skip marks for other tracks, repeat steps 2 and 4.

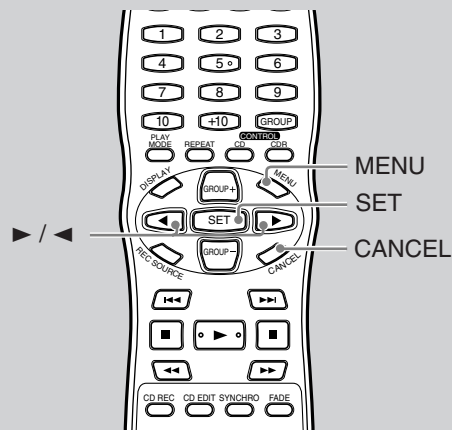


- "Skipping tracks during play" does not mean erasing recorded data. Therefore the remaining time of the disc will not change.
- Tracks with skip marks will be skipped only when playing the disc on CD Recorder and other CD player which can read these skip marks.

On the unit:



Remote control:



■ Erasing tracks (only for CD-RW)—Track Erase

Before finalizing a disc, you can erase recorded tracks—from a selected track up to the last track—on a **CD-RW** at a time.

- To erase recorded tracks on a finalized CD-RW, unfinalize the disc first (see page 34).

IMPORTANT

- Once erasure is performed, erased data cannot be restored.
- When you unplug the power cord or when a power failure occurs while “ERASE TRACK” is flashing on the display, the disc may not be utilized any more.

1 Load an unfinalized disc on the CD Recorder disc tray.

The total recorded track numbers and total playing time are shown on the display.

2 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

3 Turn MULTI JOG $\blacktriangleright\blacktriangleright\blacktriangleright$ / $\blacktriangleleft\blacktriangleleft\blacktriangleleft$ on the unit or press \blacktriangleright or \blacktriangleleft on the remote control until “TRACK ERASE” appears on the display, then press SET.

The following message appears on the display.

- To cancel the erasing, press CANCEL.

ERASE ?-17 ?

Erasing from this track number Last recorded track number

4 Turn MULTI JOG $\blacktriangleright\blacktriangleright\blacktriangleright$ / $\blacktriangleleft\blacktriangleleft\blacktriangleleft$ on the unit or press cursor \blacktriangleright or \blacktriangleleft on the remote control to select erasure start track, then press SET.

All the tracks between the selected track and the last one are erased.

- The erased track numbers go off from the track numbers indicators on the display.

■ Erasing all tracks (only for CD-RW)—Disc Erase

You can erase all the recorded tracks—whether or not finalized—on a **CD-RW** at a time.

IMPORTANT

- Once erasure is performed, erased data cannot be restored.
- When you unplug the power cord or when a power failure occurs while “ERASE DISC” is flashing on the display, the disc may not be utilized any more.

1 Load a recorded disc on the CD Recorder disc tray.

The all recorded track numbers and total playing time are shown on the display.

2 While 3-CD Changer and CD Recorder are in stop mode, press MENU.

3 Turn MULTI JOG $\blacktriangleright\blacktriangleright\blacktriangleright$ / $\blacktriangleleft\blacktriangleleft\blacktriangleleft$ on the unit or press \blacktriangleright or \blacktriangleleft on the remote control until “DISC ERASE” appears on the display, then press SET.

“ERASE DISC?” appears on the display.

- To cancel the setting, press CANCEL.

4 Press SET again.

The erasure starts. The REC indicator lights up, and the indicator and “ERASE DISC” start flashing on the display.

- Erasure requires a few minutes to complete. When erasure is done, “BLANK DISC” appears on the display.

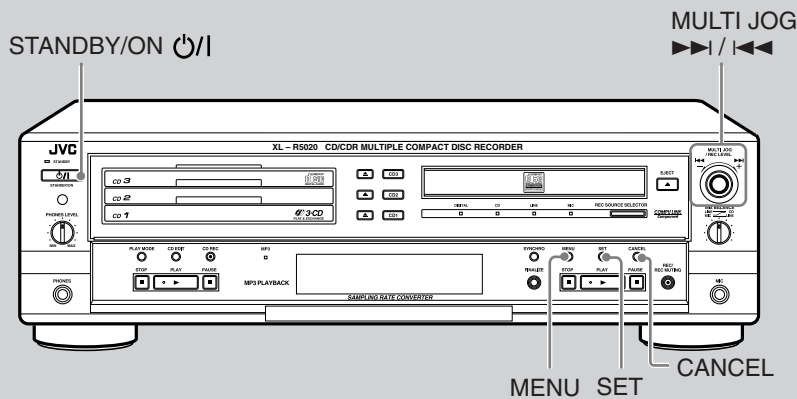


Skip-marked tracks can also be erased.

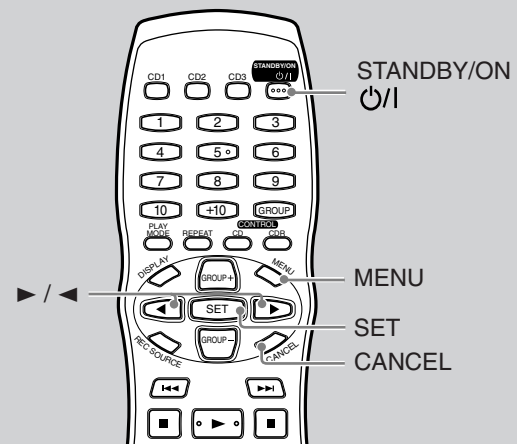
Using the Timer

- Before using the timers—Daily Timer and Once Timer, you need to set the clock built in the unit.

On the unit:



Remote control:



Setting the Clock

You can set the clock whether the unit is turned on or off (on standby).

To set the clock first time

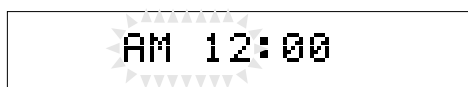
1 When the unit is in standby mode

- 1) Press MENU.
“CLOCK SET” appears on the display.
- 2) Press SET.

When the unit is turned on

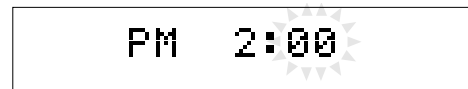
- 1) Press MENU.
- 2) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “CLOCK/TIMER” then press SET.

The hour digit on the display starts flashing.



2 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to adjust the hour, then press SET.

The minute digit on the display starts flashing.



- To correct the hour after pressing SET, press CANCEL. The hour digit starts flashing again.

3 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to adjust the minute, then press SET.

The built-in clock starts working.

To adjust the clock again

You can adjust the clock whether the unit is turned on or off (on standby).

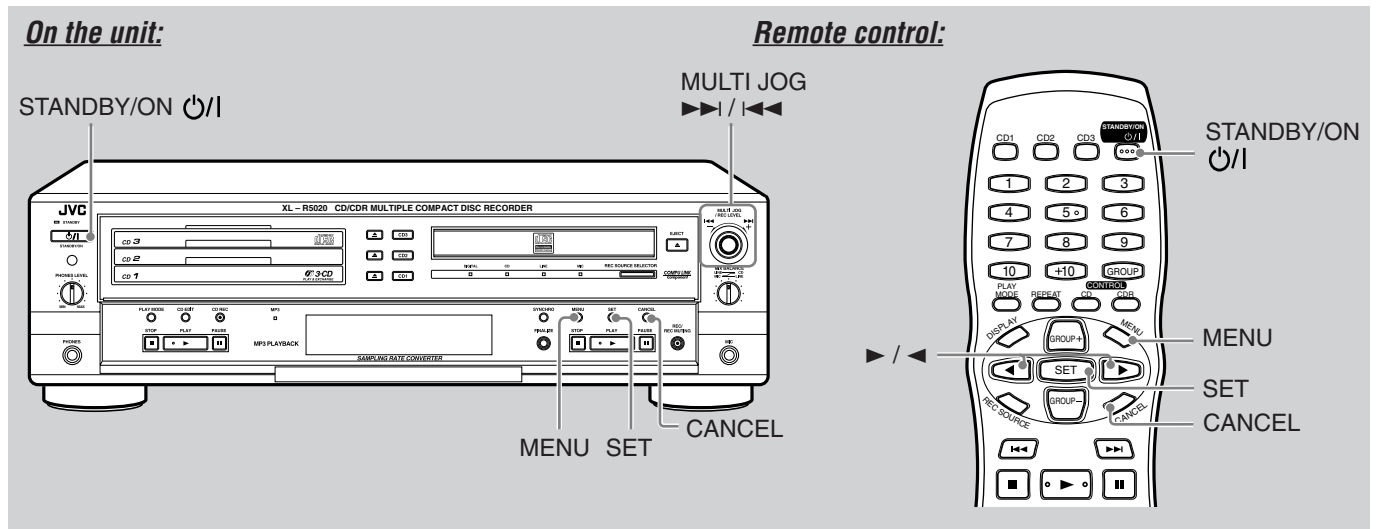
- 1 While 3-CD Changer and CD Recorder are in stop mode or the unit is in standby mode, press MENU.
- 2 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “CLOCK/TIMER” then press SET.
- 3 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “CLOCK SET” then press SET.
The hour digit on the display starts flashing.
- 4 Set the clock according to the procedure of the steps 2 and 3 on the left.



When you unplug the AC power cord or if a power failure occurs, the clock will be reset to “AM 12:00” and the timer memory will be erased. If this happens set the clock and the timer again.

Using Daily Timer and Once Timer

You can wake up to your favorite music (Playing Timer) or start recording sounds at the time you set (Recording Timer).



- You can set one Daily Timer and Once Timer whether the unit is turned on or off (on standby).
- To correct a misentry or cancel the setting any time during the process, press CANCEL.

How Timers actually work

The unit automatically turns on about 3 minutes before on-time, then starts playing/recording the specified source when the timer on-time comes. When the timer off-time comes, the unit automatically turns off (stands by).

Daily Timer activates every day; on the other hand, Once Timer will activate once, and then be canceled.

1 While 3-CD Changer and CD Recorder are in stop mode or the unit is in standby mode, press MENU.

2 Select “DAILY TIMER” or “ONCE TIMER.”

When the unit is turned on

- 1) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “CLOCK/TIMER,” then press SET.
- 2) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “DAILY TIMER” or “ONCE TIMER,” then press SET.

When the unit is in standby mode

Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “DAILY TIMER” or “ONCE TIMER,” then press SET.

The Ⓢ (Timer) indicator lights up on the display. The unit enters on-time setting mode.



EX.: When selecting “DAILY TIMER.”

Remote control:

To activate the timer every day, select “DAILY TIMER.” The DAILY indicator also starts flashing on the display. To activate the timer once, select “ONCE TIMER.” The ONCE indicator also starts flashing on the display.

- Either ► (Playing Timer) or ● (Recording Timer) indicator also starts flashing.

3 Set the timer on-time.

- 1) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to set the hour, then press SET.
- 2) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to set the minute, then press SET.

The unit enters off-time setting mode.

4 Set the timer off-time.

- 1) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to set the hour, then press SET.
- 2) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to set the minute, then press SET.

The unit enters timer selection mode—Playing Timer or Recording Timer.

5 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select “PLAY” or “REC,” then press SET.

- To use Playing Timer, select “PLAY.”
→ Go to “Setting Playing Timer.”
- To use Recording Timer, select “REC.”
→ Go to “Setting Recording Timer.”

Setting Playing Timer

6 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select the source—"CD" or "CDR," then press SET.

DAILY ► indicator or ONCE ► indicator stops flashing and remains lit. The setting you have done are shown on the display in sequence.

CD: Plays a disc in 3-CD Changer.
→ Prepare a disc, then press CD1, CD2 or CD3 you like to play.

CDR: Plays a disc in CD Recorder.
→ Prepare a disc.

7 Press STANDBY/ON ◻/I to turn off the unit (on standby) if you have set the timer with the unit turned on.

Adjust the volume level of the connected components.

Setting Recording Timer

6 Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select the source, then press SET.

DAILY ► indicator or ONCE ► indicator stops flashing and remains lit. The setting you have done are shown on the display in sequence.

- Adjust the recording level if necessary (see page 23).

OPTIC: Records through the DIGITAL IN/OPTICAL terminal (digital recording).

COAX: Records through the DIGITAL IN/COAXIAL terminal (digital recording).

LINE: Records through the LINE IN (REC) jacks (analog recording).

MIC: Records through the MIC jack (analog recording).

- To operate an external component with Recording Timer, it also needs to have timer function.

7 Press STANDBY/ON ◻/I to turn off the unit (on standby) if you have set the timer with the unit turned on.

To turn off (or on) Playing Timer and Recording Timer after their settings are done

- 1 While 3-CD Changer and CD Recorder are in stop mode or the unit is in standby mode, press MENU.
- 2 To turn off Playing Timer or Recording Timer
When the unit is turned on
1) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "CLOCK/TIMER," then press SET.
2) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "DAILY TIMER" or "ONCE TIMER," then press CANCEL.

When the unit is in standby mode

Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "DAILY TIMER" or "ONCE TIMER," then press CANCEL.

To turn on Playing Timer or Recording Timer

When the unit is turned on

- 1) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "CLOCK/TIMER," then press SET.
- 2) Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "DAILY TIMER" or "ONCE TIMER," then press SET.

When the unit is in standby mode

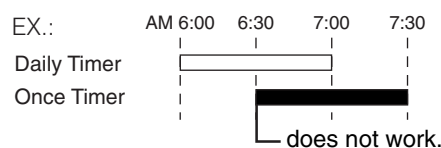
Turn MULTI JOG ►►► / ◀◀◀ on the unit or press ► or ◀ on the remote control to select "DAILY TIMER" or "ONCE TIMER," then press SET.



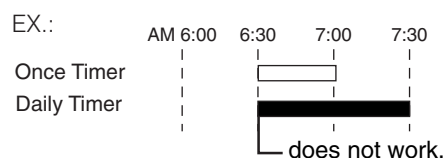
- If the unit is kept turned on when the timer on-time comes, Timer does not work at all.
- The timer settings remain stored in memory until you reset them.

Timer Priority

- When Daily Timer and Once Timer overlap, the timer for which on-time is set earlier works.



- When both Daily Timer and Once Timer are set to start at the same time, Once Timer has priority.



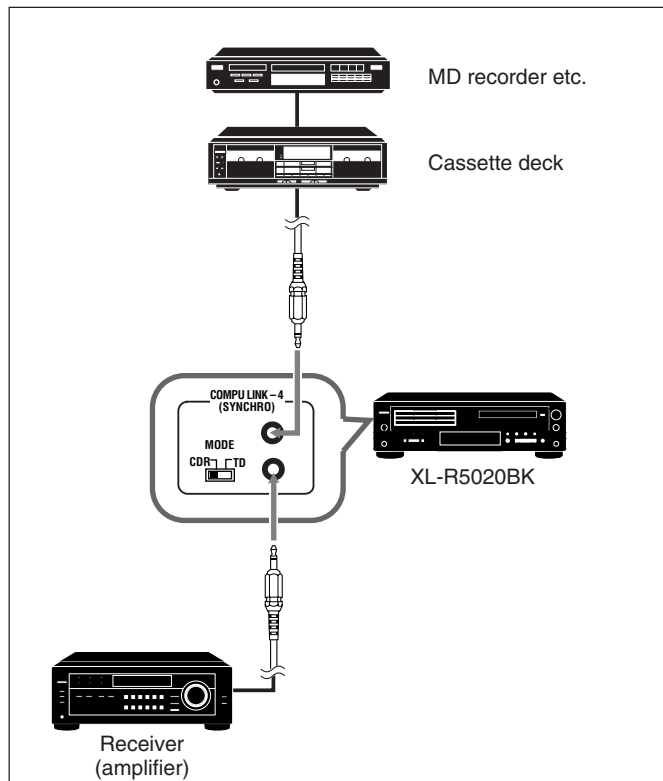
COMPU LINK Remote Control System

The COMPU LINK remote control system allows you to operate JVC's audio components like this unit through the remote sensor on a receiver (amplifier).

Connection

To use this remote control system, you need to connect JVC's audio components through the COMPU LINK-4 (SYNCHRO) or COMPU LINK-3 (SYNCHRO) jacks (see below) in addition to the connections using audio cables with RCA pin plugs (see page 7).

- Make sure that the AC power cords of these components are unplugged before connection. Plug the AC power cords only after all connections are complete.
- When using COMPU LINK remote control system for operating a receiver (amplifier) equipped with TAPE and/or CDR jacks, set the MODE selector to the appropriate position (see page 7).



Available functions

This remote control system allows you to use the functions listed below.

Automatic source selection

This unit will turn on (or off) automatically:

- when you turn on (or off) the receiver (amplifier), and
- when you select TAPE or CDR on the receiver (amplifier).

Automatic power on/off (standby): only possible with the COMPU LINK-3 and COMPU LINK-4

- When pressing the buttons listed below, the source is changed to TAPE or CDR on the connected receiver (amplifier):
 - PLAY ► for 3-CD Changer on the unit
 - PLAY ► for CD Recorder on the unit
 - Disc number buttons (CD1, CD2 or CD3)
 - on the remote control
- When this unit is selected (TAPE or CDR) as the source on a receiver (amplifier), the currently selected disc on this unit—3-CD Changer or CD Recorder—will start playing.



- There are four versions of COMPU LINK remote control system. This unit is equipped with the fourth version—COMPU LINK-4 which has systematic operations with the CD recorder added to the previous version—COMPU LINK-3.
- If your audio component has two COMPU LINK jacks, you can use either one. If it has only one COMPU LINK jack, connect it so that it is the last item in the series of components.
- You cannot use the number buttons on the remote control supplied with a receiver (amplifier). Use the remote control supplied with this unit.
- You cannot use synchronized recording by using COMPU LINK remote control system.
- Refer also to the manuals supplied with your audio components.

Maintenance

To get the best performance of the unit, keep your discs and mechanism clean.

General Notes

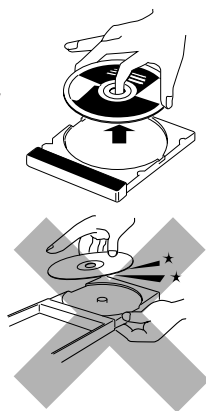
In general, you will have the best performance by keeping your discs and the mechanism clean.

- Store discs in their cases, and keep them in cabinets or on shelves.
- Keep the disc trays closed when not in use.

To handle discs

When removing a disc from its case, press down the center holder of the case and lift the disc out, holding it by the edges.

- Always hold the disc by the edges. Do not touch its recording surface.
When storing a disc into its case, gently insert the disc around the center holder (with the printed surface facing up).
- Make sure to store discs into the cases after use.
- Be careful not to scratch the surface of the disc when placing it back in its case.
- Avoid exposure to direct sunlight, temperature extremes, and moisture.



To clean the disc

Wipe the disc with a soft cloth in a straight line from center to edge.



DO NOT use any solvent—such as conventional record cleaner, spray, thinner, or benzine—to clean the disc.

To play new discs

New discs may have some rough spots around the inner and outer edges. If such a disc is used, this unit may reject the disc.

To remove these rough spots, rub the edges with a pencil or ballpoint pen, etc.

Moisture condensation

Moisture may condense on the lenses inside the unit in the following cases:

- After starting the heater.
- When the unit is moved from the extremely hot place to the extremely cold place.

Should this occur, the unit may malfunction. In this case, eject the disc and leave the unit turned on for a few hours until the moisture evaporates.



- DO NOT expose discs to direct sunlight or any heat source or place them in a place subject to high temperature and humidity.
- DO NOT leave discs in a car.

To clean the unit

- Stains on the unit
Should be wiped off with a soft cloth. If the unit is heavily stained, wipe it with a cloth soaked in water-diluted neutral detergent and wrung well, then wipe clean with a dry cloth.
- Since the unit may deteriorate in quality, become damaged or get its paint peeled off, be careful about the followings.
 - DO NOT wipe it with a hard cloth.
 - DO NOT wipe it strong.
 - DO NOT wipe it with thinner or benzine.
 - DO NOT apply any volatile substance such as insecticides to it.
 - DO NOT allow any rubber or plastic to remain in contact with it for a long time.

OPC (Optimum Power Control)

OPC is a function that checks the loaded disc and automatically adjusts the laser for optimum recording setting before recording.

PCA (Power Calibration Area)

A space reserved at the beginning of a CD-R/CD-RW for calibrating the laser output power required to record on that disc.

PMA (Program Memory Area)

A temporary memory area on a CD-R/CD-RW, where the information about the recordings on the disc—track numbers, tracks' start points and end points, etc. is stored until the disc is finalized.

When the disc is finalized, this information is written in the TOC (see below).

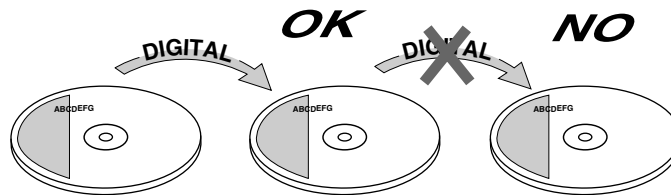
Sampling Frequency

When analog signal are converted into digital signals, they are divided into many points and digitized. This dividing method is called "sampling." The sampling frequency indicates how many points one second is divided into—for example, for CD sound, one second is divided into 44 100 points since its sampling frequency is 44.1 kHz.

SCMS (Serial Copy Management System)

Digital audio components, such as CD recorder, MD (Mini-Disc) recorder and DAT (Digital Audio Tape) recorder, can exchange audio signal in the digital forms through digital input/output terminals. The digital audio components allow digital copy of music signal with little deterioration. This has made it necessary to have a copy restriction rule for protecting the copyright, and "SCMS (Serial Copy Management System)" has been established as a result.

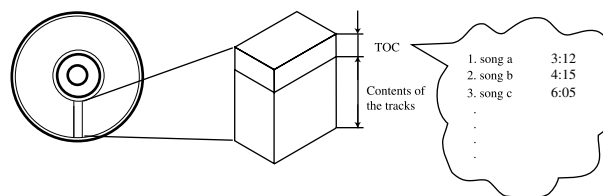
To protect the copyright, the SCMS allows only first-generation digital copies to be made from premastered software (like CDs or prerecorded MDs).



TOC (Table of Contents)

TOC is a kind of disc information containing sub-data (track number, playing time, etc.) that enables us to search for tracks quickly on the disc.

To write the TOC on a CD-R or CD-RW, you need to finalize the disc.



Message

Message	Signification	Solution
ALL SKIP TR	Skip marks are recorded to all the tracks.	Replace the disc.
ALREADY FINAL	You are trying to record on a finalized disc.	Replace the disc.
ALREADY UNFIN.	You are trying to unfinalize an unfinalized disc.	_____
BLANK DISC	No track is recorded on the loaded disc.	_____
CANNOT ERASE	Loaded CD-RW disc is damaged. Erasure on this disc is impossible.	_____
CANNOT FIN.	Loaded disc is damaged. Finalization on this disc is impossible.	Replace the disc.
CANNOT PLAY	On 3-CD Changer, damaged disc is loaded or an MP3 disc is detected during Program Play and Random Play.	_____
CANNOT REC	Recording on this disc is impossible due to the disc type—for example, an MP3 disc, and to incorrect connection.	Check the disc or connection.
CANNOT UNFIN.	Loaded CD-RW disc is damaged. Unfinalization on this disc is impossible.	Replace the disc.
CDR DISC NG	Loaded CD-R is damaged.	Replace the disc.
DAO DISC	You are trying to unfinalize a CD-RW which has been recorded using the “Disc At Once” recording system.	Replace the disc.
DISC FULL	You are trying to record on a fully recorded CD-R or CD-RW.	Replace the disc.
NOT AUDIO IN	Incoming digital signal from the external component is not of an audio format.	Check the source played on the external component connected to the DIGITAL IN terminals.
NOT REC MUTE	You are trying to use the REC MUTE button during Synchronized Recording.	You can only use the REC MUTE button during Standard Recording.
NO AUDIO DISC	Loaded disc is not an audio disc or an MP3 disc.	Replace the disc.
NO RW DISC	You are trying to perform one of the functions for a CD or CD-R which is only possible on a CD-RW.	Load a CD-RW.
NO R/RW DISC	You are trying to perform one of the functions for a CD which is only possible on a CD-R or CD-RW.	Load a CD-R or CD-RW.
OPC ERROR	OPC cannot be performed. No recording or erasure can be performed on this disc.	Replace the disc.
OPC FULL	OPC is full. No recording or erasure can be performed on this disc.	Replace the disc.
PMA FULL	PMA is full. No recording or erasure can be performed on this disc.	Replace the disc.
SCMS PROTECT	Digital recording is prohibited in accordance with SCMS regulations.	See “SCMS” on page 42.
SHORT REMAIN	The remaining time on a disc is shorter than the playing time of the track you are trying to record.	_____
SKIP FULL	21 skip marks are already recorded.	To record skip marks, delete skip-marked tracks first. See page 35.
TNO FULL	99 tracks have been recorded. No further recording is possible.	To record other tracks, delete unwanted tracks first (CD-RW only).
TRAY LOCKED	You are trying to eject a disc while Tray Lock is in use.	Unlock Tray Lock (see page 15).
UNLOCK	The external digital component is not connected properly or is turned off, or its signals are incompatible.	Check the connection, or playback source.
UPDATE OPC	OPC is being performed before recording, when a disc is just inserted in CD Recorder.	This is normal. After OPC is correctly done, recording starts.

Troubleshooting

If you are having a problem with your unit, check this list for a possible solution before calling for service. If you cannot solve the problem from the hints given here, or the unit has been physically damaged, call a qualified person, such as your dealer, for service.

	Symptom	Possible Cause	Action
3-CD Changer/ CD Recorder	The disc does not play.	<ul style="list-style-type: none"> The disc is loaded upside down. Data CD-ROM is loaded. 	<ul style="list-style-type: none"> Load the disc with the label side up. Data CD-ROM cannot be played back. Replace the disc.
	The disc play is skipped.	The disc is dirty or scratched.	Clean or replace the disc. (See page 41.)
	Loaded discs cannot be ejected.	<ul style="list-style-type: none"> AC power cord is unplugged. Tray Lock is in use. 	<ul style="list-style-type: none"> Plug in the AC power cord. Unlock Tray Lock. (See page 15.)
CD Recorder	Unable to record on a CD-R or CD-RW.	<ul style="list-style-type: none"> Finalized CD-R or CD-RW is loaded. 	<ul style="list-style-type: none"> CD-R: Replace the disc. CD-RW: Unfinalize the disc. (See page 34.)
		<ul style="list-style-type: none"> Selecting MP3 tracks for recording. 	<ul style="list-style-type: none"> Cannot record MP3 tracks. Replace the disc.
		<ul style="list-style-type: none"> Digital recording is tried to perform from a digitally dubbed disc. 	<ul style="list-style-type: none"> Select analog recording. (See page 22.)
<ul style="list-style-type: none"> The disc is loaded upside down. Disc is dirty or scratched. 		<ul style="list-style-type: none"> Load the disc with the label side up. Clean or replace the disc. (See page 41.) 	
No sound is heard while recording.	High-speed recording is selected.	Select normal speed. (See page 25.)	
General	Unable to operate the remote control.	<ul style="list-style-type: none"> The path between the remote control and the remote sensor on the unit is blocked. The batteries have lost their charge. 	<ul style="list-style-type: none"> Remove the obstruction. Replace the batteries. (See page 6.)
	The clock is flashing on the display.	AC power cord is unplugged or power failure occurs.	Set the clock and timer again.
	Operations are disabled.	The built-in microprocessor has malfunctioned due to external electrical interference.	Unplug the unit then plug it back in.

IMPORTANT

- If you are going to record something important, always test-record first to check that the recording turns out properly before proceeding with the actual recording.
- The manufacturer assumes no liability whatsoever for any damage resulting from missed opportunity or accidental erasure that occurs while conducting recording or playback operations due to malfunctioning of or trouble in the unit, or for any incidental damage.

Common specification

Audio input sensitivity/Impedance (at 1 kHz)

Analog input:

LINE IN (REC): 300 mV/50 k Ω

MiC IN: 3 mV/600 Ω – 10 k Ω

Digital input:

DIGITAL IN: OPTICAL

Input level: -21 dBm to -15 dBm

DIGITAL IN: COAXIAL

0.5 V(p-p)/75 Ω

(With the built-in sampling rate converter, corresponding to 32 kHz/44.1 kHz/48 kHz)

Audio output level/Impedance (at 1 kHz)

Analog output:

LINE OUT (PLAY): 2 V/10 k Ω

HEADPHONE: 9.3 mW/ 32 Ω

Digital output:

DIGITAL OUT: OPTICAL

Output level: -21 dBm to -15 dBm

DIGITAL OUT: COAXIAL

0.5 V(p-p)/75 Ω

CD player

System: Compact disc digital audio system

CD Capacity: 3 CDs

Dynamic range: 96 dB

Signal-to-noise ratio: 100 dB

Frequency response: 4 Hz to 20 kHz (± 0.5 dB)

Wow and flutter: Immeasurable

Pitch control: $\pm 12\%$

Total harmonic distortion: 0.005 %

CD recorder

System: Compact disc digital audio recording system

Sampling frequency: 44.1 kHz

Dynamic range: 91 dB (during playback)

Signal-to-noise ratio: 95 dB (during playback)

Frequency response: 4 Hz to 20 kHz

Wow and flutter: Immeasurable

Total harmonic distortion: 0.0063 %

General

Power requirement: AC 120 V \sim , 60 Hz

Power consumption: 37 W (at operation)

5 W (on standby)

Dimensions (approx.): 435 mm \times 127 mm \times 334 mm

(17 $^{-3/16}$ inch \times 5 inch \times 13 $^{-3/16}$ inch)(W/H/D)

Mass (approx.): 6.3 kg (13.9 lbs)

Supplied accessories

See page 6.

Design and specifications are subject to change without notice.

Authorized Service Centers

QUALITY **JVC**[®] SERVICE

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE: 1 (800) 537-5722

<http://www.jvc.com>

Dear Customer,

In order to receive the most satisfaction from your purchase, please read the instruction booklet before operating the unit. In the event that repairs are necessary, please call 1 (800)537-5722 for your nearest authorized servicer or visit our website at **www.JVC.com**

Remember to retain your Bill of Sale for Warranty Service.

Do not service the television yourself

Caution

To prevent electrical shock, do not open the cabinet. There are no user serviceable parts inside. Please refer to qualified service personnel for repairs.

Accessories

To purchase accessories for your JVC product, please call toll free: 1 (800)882-2345 or on the web at **www.JVC.com**



LIMITED WARRANTY

AUDIO-1

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period")

PARTS	1 YR	LABOR	1 YR
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THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY (50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

WHAT WE WILL DO:

If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

WHAT YOU MUST DO FOR WARRANTY SERVICE:

Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800) 537-5722.

If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus a letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number.

If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

WHAT IS NOT COVERED:

This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model number or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus (Needle) are covered for 90 days from the date of purchase;
7. Accessories
8. Batteries (except that Rechargeable Batteries are covered for 90 days from the date of purchase);

There are no express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA 1700 Valley Road
 DIVISION OF JVC AMERICAS CORP. Wayne, NJ 07470

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:
 Enter below the Model No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. : _____ Serial No. : _____
 Purchase data : _____ Name of dealer : _____



JVC

VICTOR COMPANY OF JAPAN, LIMITED