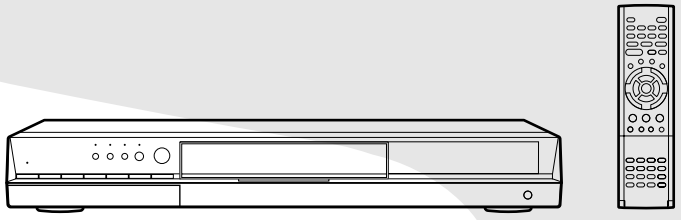
TOSHIBA

FILE NO. 810-200511

SERVICE MANUAL

HDD/DVD VIDEO RECORDER

RD-XS34SU
RD-XS34SC



DOCUMENT CREATED IN JAPAN Feb., 2005

LASER BEAM CAUTION LABEL

CLASS 1 LASER PRODUCT	APPAREIL A LASER DE CLASSE 1
CAUTION - Laser radiation when open. DO NOT STARE INTO BEAM. ATTENTION - RAYONNEMENT LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU.	
DANGER - Invisible Laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM. ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.	

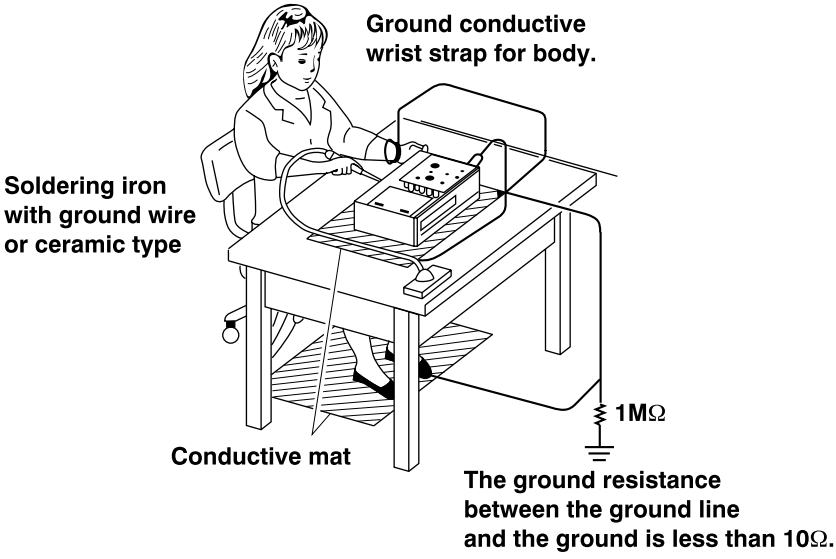
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of a laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



SAFETY NOTICE

SAFETY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 Ω per volt or more sensitivity.

Connect a 1500 Ω 10 W resistor, paralleled by a 0.15 μF 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

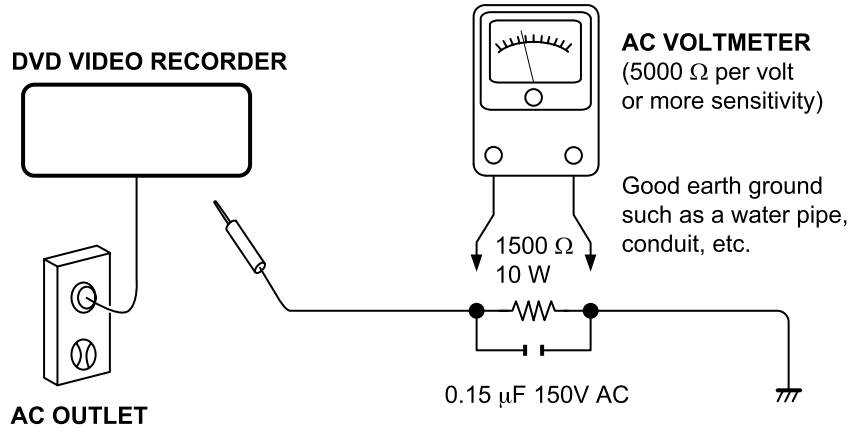
Measure the AC voltage across the 1500 Ω resistor.

The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3 V. A reading exceeding 0.3 V indicates that a dangerous potential exists, the fault must be located and corrected.

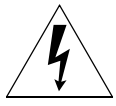
Repeat the above test with the DVD VIDEO RECORDER power plug reversed.

NEVER RETURN A DVD VIDEO RECORDER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.

READING SHOULD NOT EXCEED 0.3V



Test all exposed metal.
Voltmeter Hook-up for Leakage Current Check



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.

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SECTION 1
GENERAL DESCRIPTIONS

1. OPERATING INSTRUCTIONS

Please refer to the owner's manual about the contents.

2. LOCATION OF MAIN PARTS

2-1. Location of Main Parts

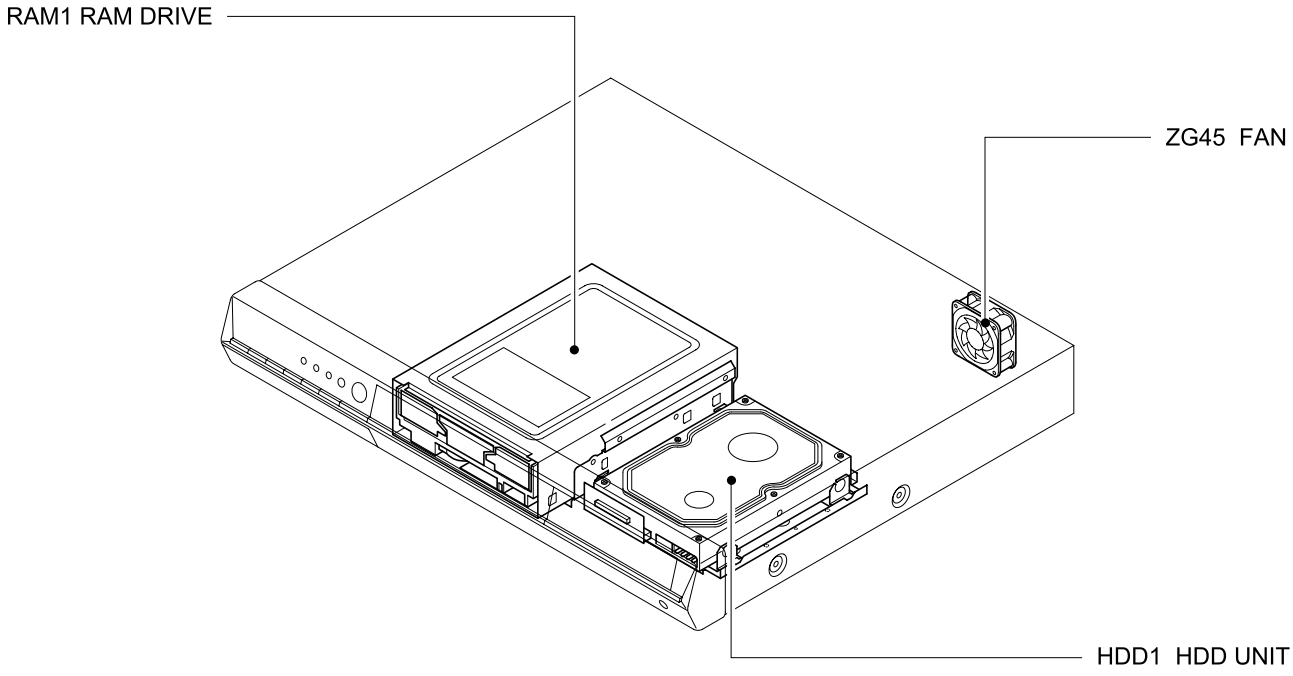


Fig. 1-2-1

2-2. Location of PC Boards

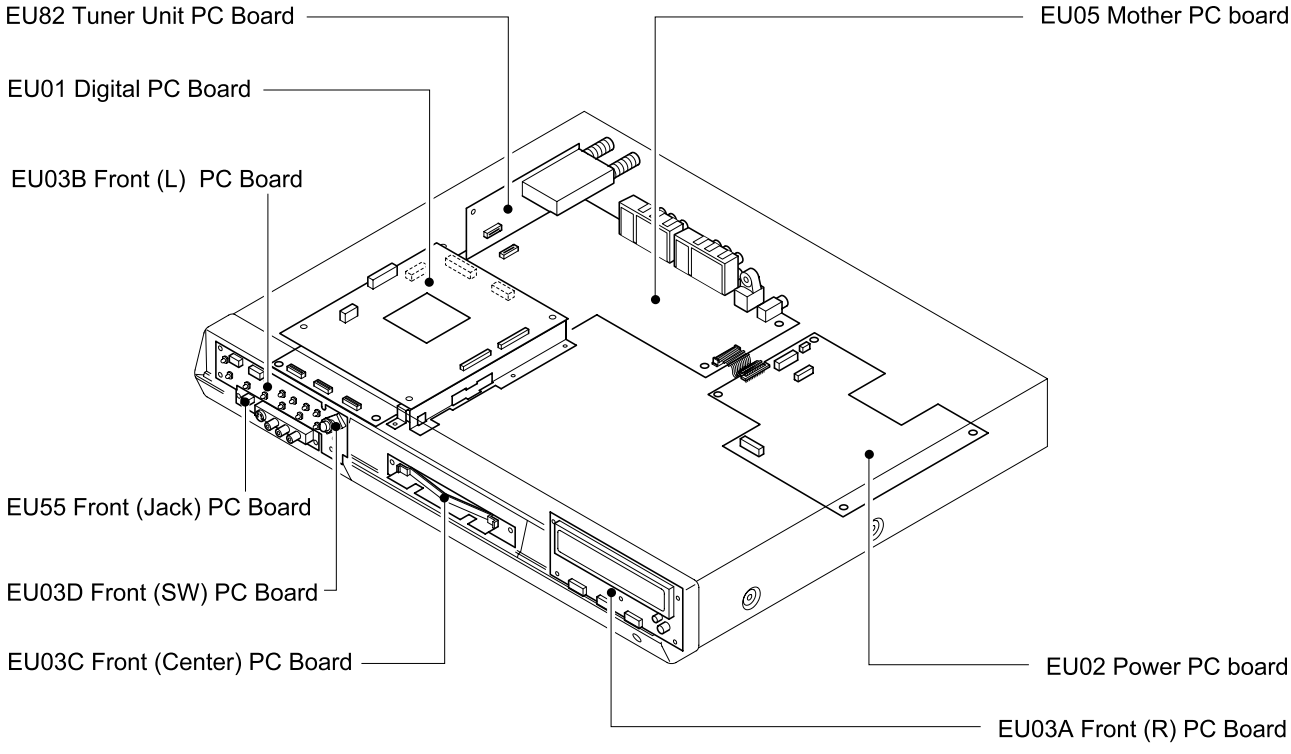


Fig. 1-2-2

SECTION 2
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING PART REPLACEMENT

Electronic parts are susceptible to static electricity and may easily damaged, so do not forget to ground as required. Many screws are used inside the unit. To prevent the screws from missing or dropping, etc. always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

1. Remove seven screws (1), then remove the top cover (2).

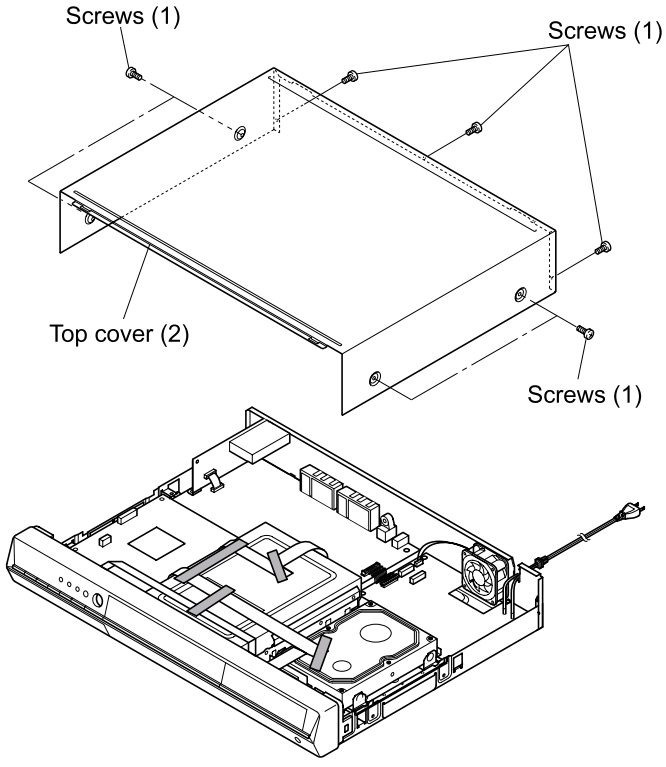


Fig. 2-1-1

1-1-2. HDD

1. Remove the top cover. (Refer to item 1-1-1.)
2. Peel off three tapes (1).
3. Remove four screws (2).
4. Disconnect the flexible cable (3) and the connector (4).
5. Remove four screws (5), then remove the dampers (7) and HDD (8).

Note:

- After replacing, attach the tape (1) to its original position.

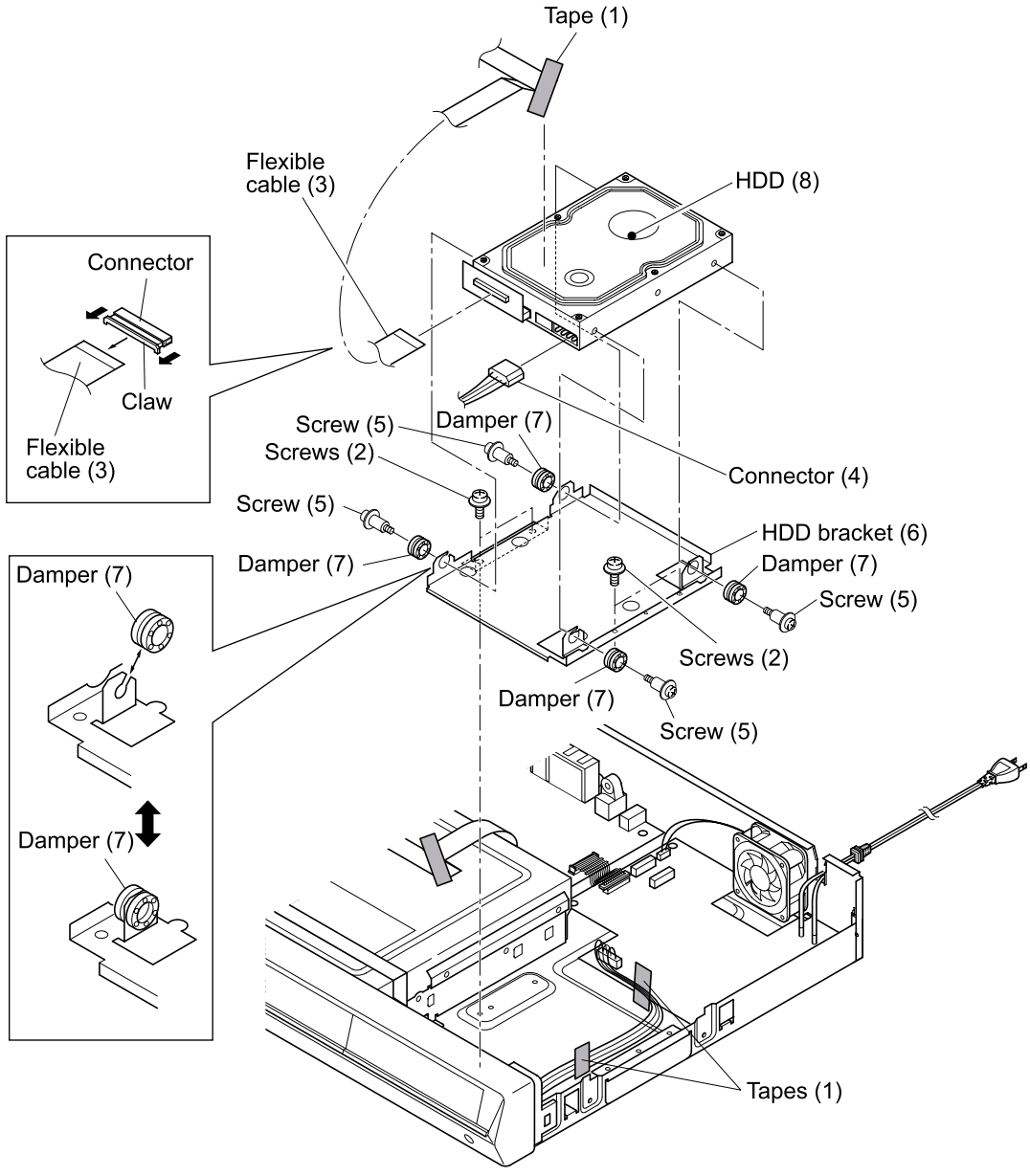


Fig. 2-1-2

1-1-3. Front Panel

1. Remove the top cover. (Refer to item 1-1-1.)
2. Peel off three tapes (1).
3. Disconnect two connectors (2) and two flexible cables (3).
4. Remove two screws (4) and two bases (5).
5. Remove two screws (6) and four claws, then remove the front panel (7).

Note:

- After replacing, attach the tape (1) to its original position.

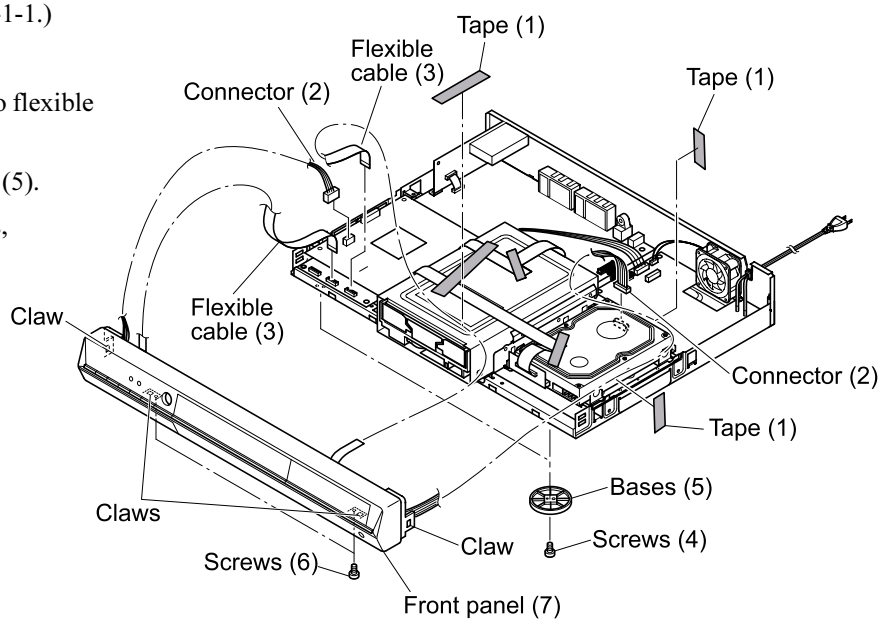


Fig. 2-1-3

1-1-4. RAM Drive

1. Remove the front panel. (Refer to item 1-1-3.)
2. Peel off three tapes (1).
3. Disconnect four flexible cable (2)
4. Remove three screws (3), then remove the RAM drive (4).
5. Remove the connector (5).
6. Remove four screws (6), then remove the fixing bracket (7).

Note:

- After replacing, attach the tape (1) to its original position.

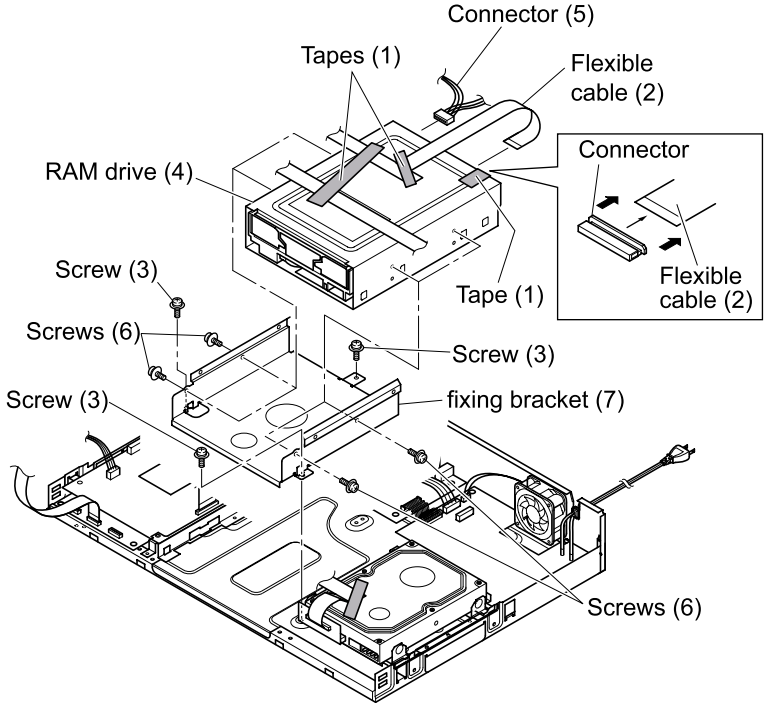


Fig. 2-1-4

1-1-5. Rear Panel

1. Remove the top cover. (Refer to item 1-1-1.)
1. Remove the screw (1) and five screws (2), then remove the screw (3).
2. Remove the bush from the rear panel (4).
3. Remove two claws, then remove the rear panel (4).
4. Remove two screws (5) and the fan (6).

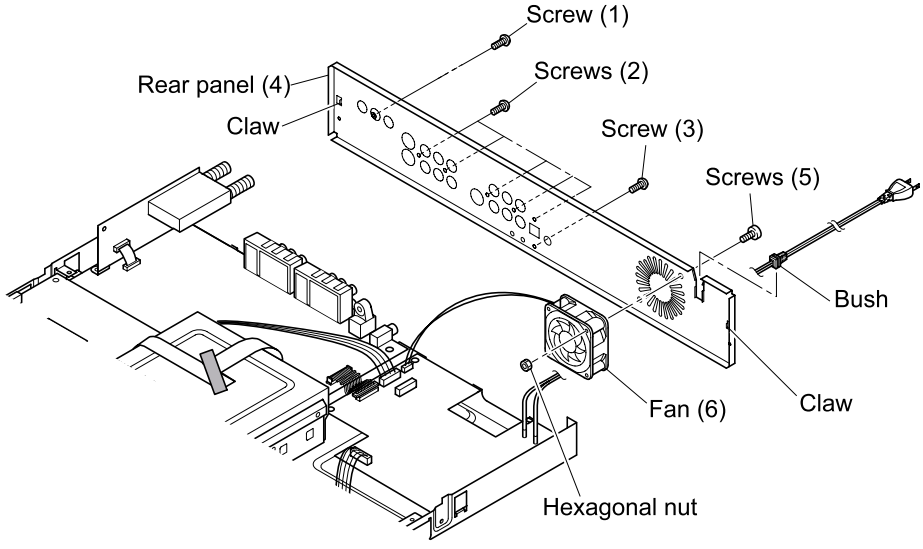


Fig. 2-1-5

1-1-6. Fan

1. Remove the top cover. (Refer to item 1-1-1.)
2. Remove the connector (1).
3. Remove two screws (2), then remove the fan (3).

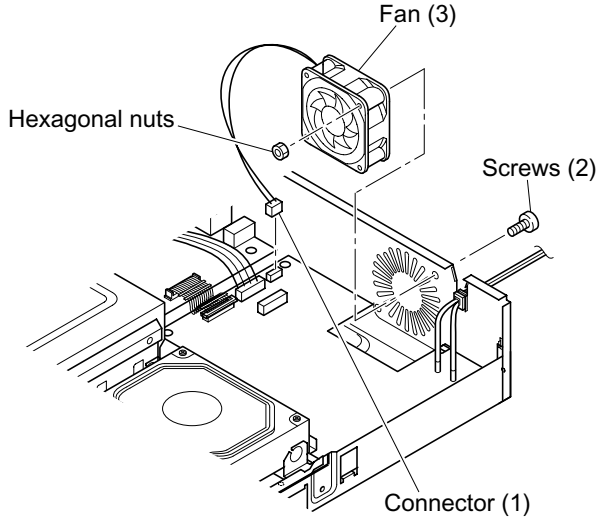


Fig. 2-1-6

1-2. PC Board Replacement

1-2-1. Tuner Unit PC Board

1. Remove the top cover. (Refer to item 1-1-1.)
2. Disconnect the flexible cable (1).
3. Remove the screw (2) and the screw (3).
4. Remove the claw, then remove the Tuner Unit PC Board (4).

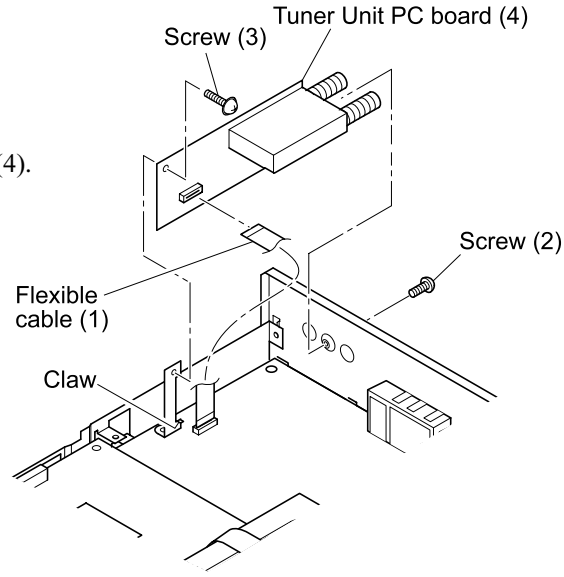


Fig. 2-1-7

1-2-2. Digital PC Board

1. Remove the top cover. (Refer to item 1-1-1.)
2. Peel off the tape (1).
3. Disconnect two flexible cables (2) and the connector (3).
4. Remove four screws (4), and the Digital PC board (5).

Note:

- After replacing, attach the tape (1) to its original position.
- The Digital PC Board (5) is connected to the Mother PC board (6) by a connector (7). Take notice when removing.

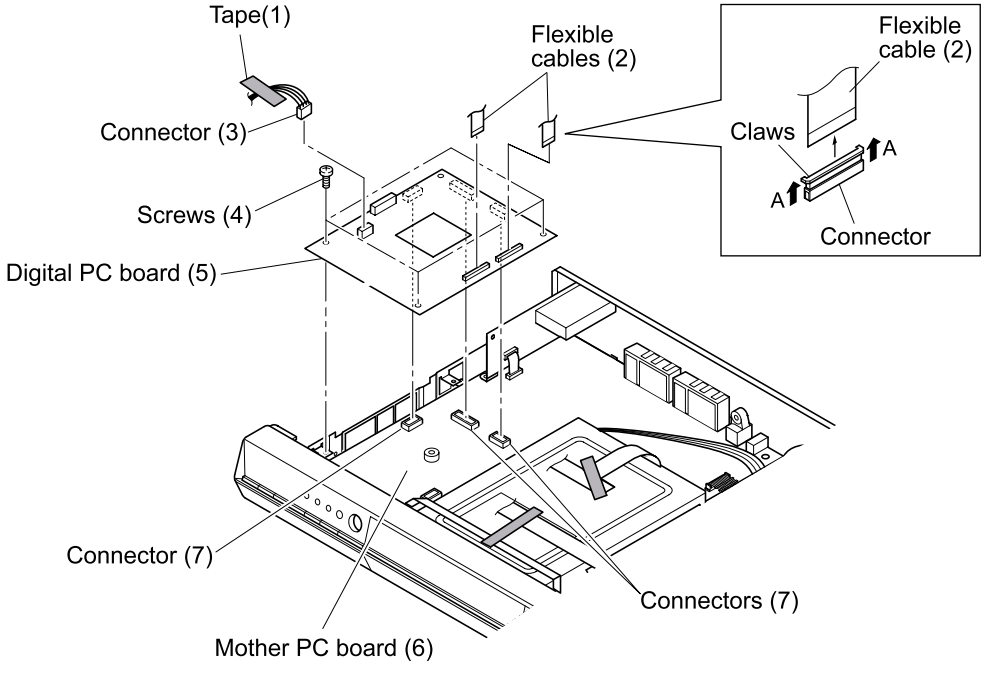


Fig. 2-1-8

1-2-3. Mother PC Board

1. Remove the front panel. (Refer to item 1-1-3.)
2. Remove the rear panel. (Refer to item 1-1-5.)
3. Remove the Tuner Unit PC board. (Refer to item 1-2-1.)
4. Remove the Digital PC board. (Refer to item 1-2-2.)
5. Disconnect two flexible cable (1) and the connector (2).
6. Remove six screws (3), then remove the Mother PC board (4).

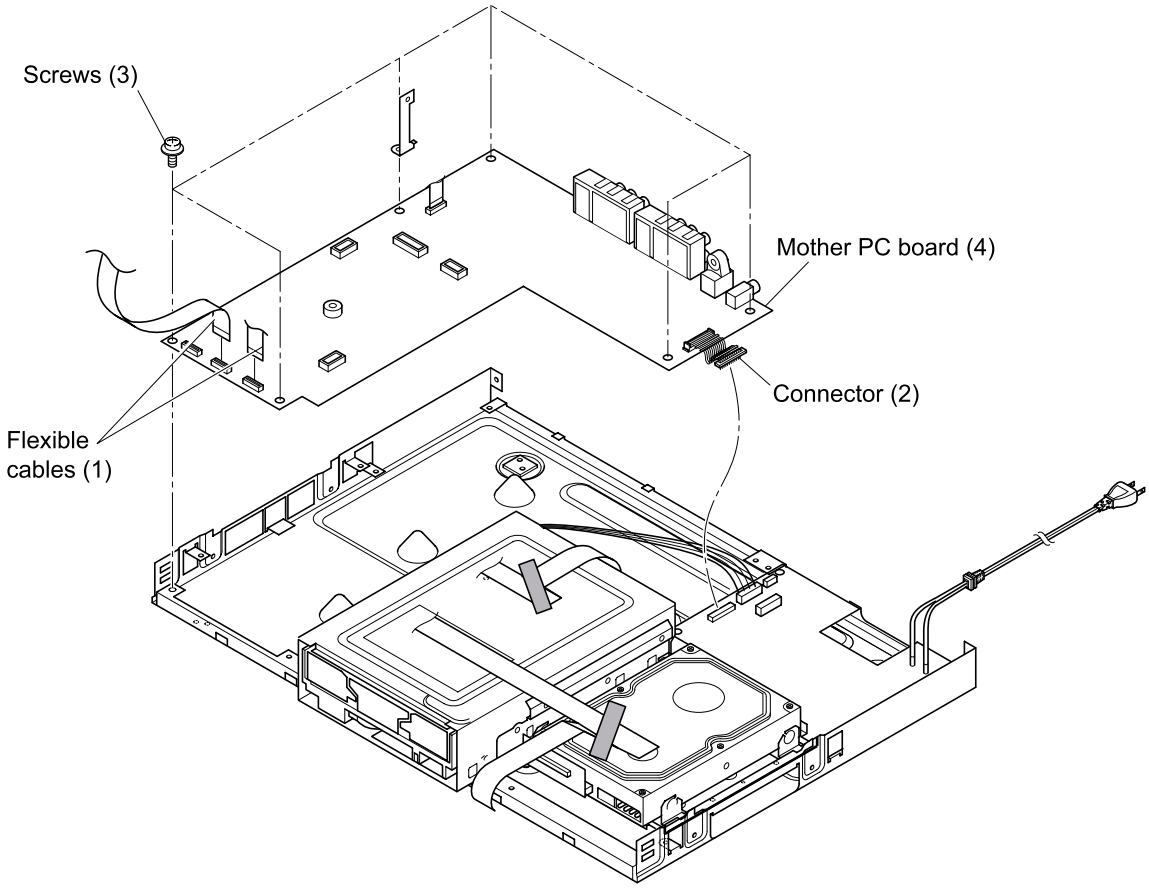


Fig. 2-1-9

1-2-4. Power PC Board

Cautions :

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**

1. Remove the top cover. (Refer to item 1-1-1.)
2. Disconnect three connectors (1) and the connector (2).
3. Remove four screws (3) and the Power PC board (4).

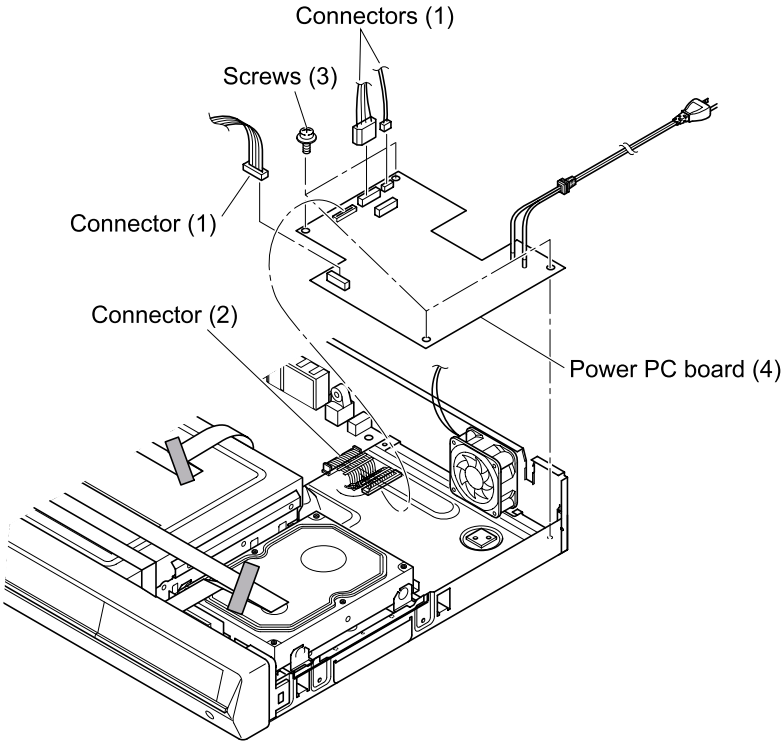


Fig. 2-1-10

1-2-5. Front (R), Front (L/SW), Front (Jack) PC Board

1. Remove the front panel. (Refer to item 1-1-3.)
2. Remove four screws (1), then remove the stay (2).
3. Remove six screws (3), then remove the Front (Center) PC Board (4) and the Front (R) PC Board (5).
5. Remove two screws (6), then remove the Front (Jack) PC board (7).
4. Remove four screws (8), then remove the Front (L/SW) PC board (9).

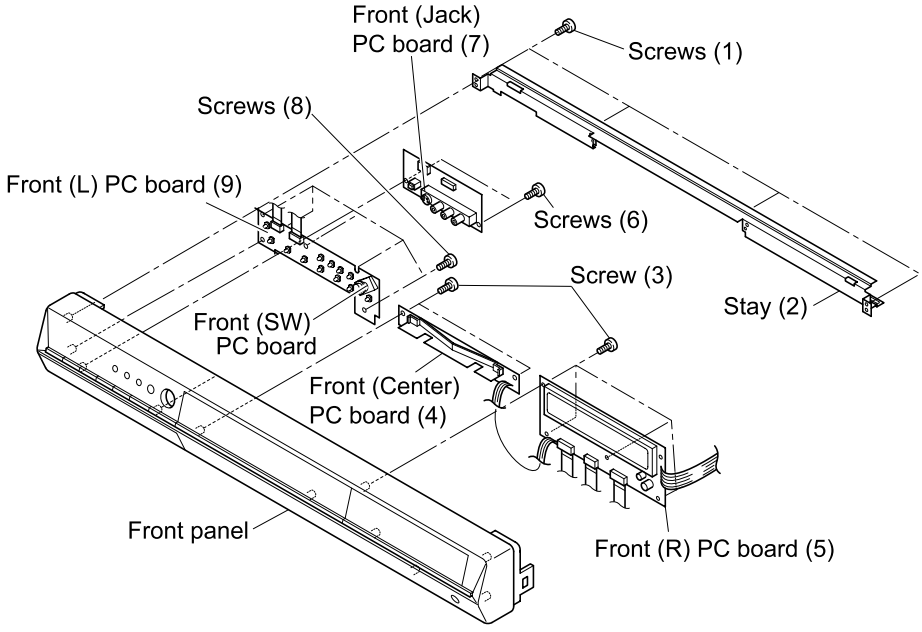


Fig. 2-1-11

Note:

- Fasten with the tape, taking care so that the wire does not hang over the tray door.

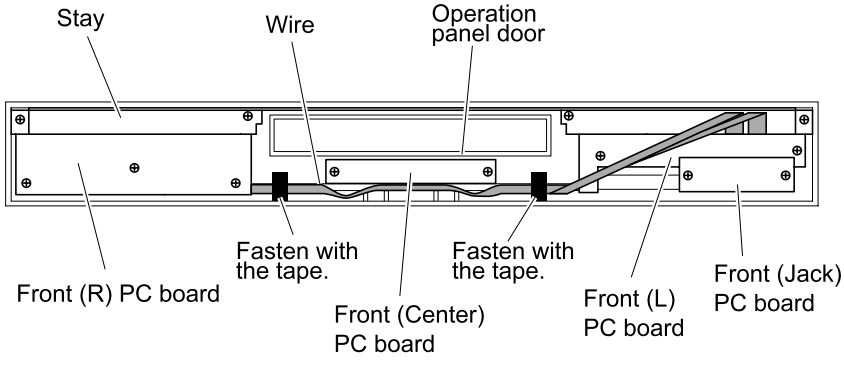


Fig. 2-1-12

2. WIRING CONNECTION DIAGRAM

After the servicing is complete, return the wiring to its original state by using the below diagram as a reference.

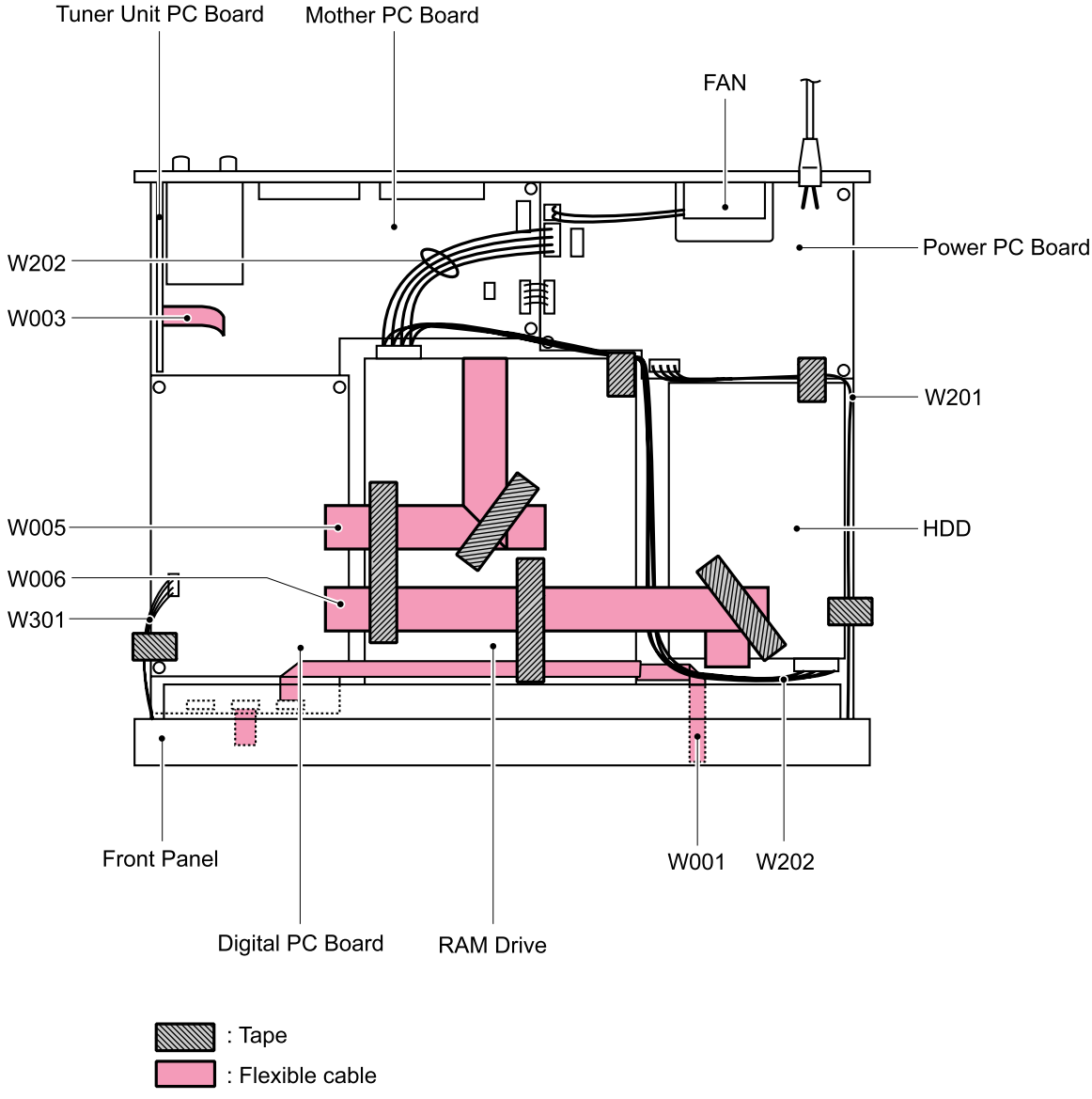


Fig. 2-2-1

SECTION 3
SERVICING DIAGRAMS

1. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

1-1. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

1-2. Solid Resistor Indication

Unit	None ..... Ω K ..... kΩ M ..... MΩ
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%
Rated Wattage	(1) Chip Parts None ..... 1/16W (2) Other Parts None ..... 1/6W Other than above, described in the Circuit Diagram.
Type	None ..... Carbon film S ..... Solid R ..... Oxide metal film M ..... Metal film W ..... Cement FR ..... Fusible

Eg. 1

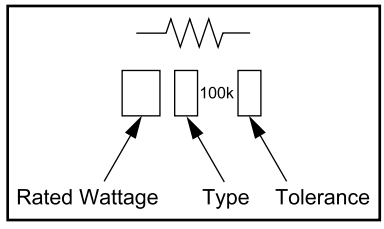


Fig. 3-1-1

1-3. Capacitance Indication

Symbol	..... Electrolytic, Special electrolytic NP ..... Non polarity electrolytic ..... Ceramic, plastic M ..... Film ..... Trimmer
Unit	None ..... F μ ..... μF p ..... pF
Rated voltage	None ..... 50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ..... ±5% or more B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ..... more than ±5 pF B ..... ±0.1 pF C ..... ±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None ..... SL For others, temperature characteristics are described. (For capacitors of 0.01 μF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 2

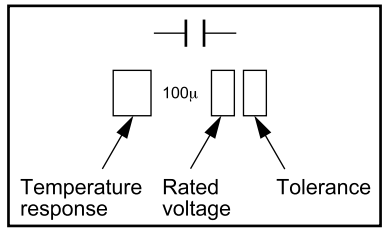


Fig. 3-1-2

Eg. 3

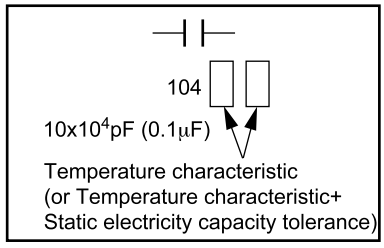


Fig. 3-1-3

1-4. Inductor Indication

Unit	None ..... H μ ..... μH m ..... mH
Tolerance	None .....±5% B .....±0.1% C .....±0.25% D .....±0.5% F .....±1% G .....±2% K .....±10% M .....±20%

Eg. 4

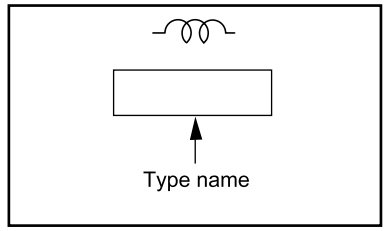


Fig. 3-1-4

1-5. Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

Eg. 5

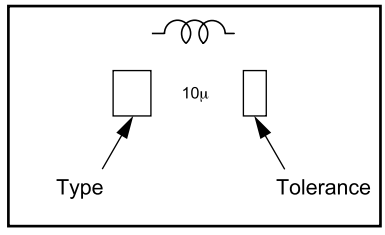


Fig. 3-1-5

1-6. Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10µF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

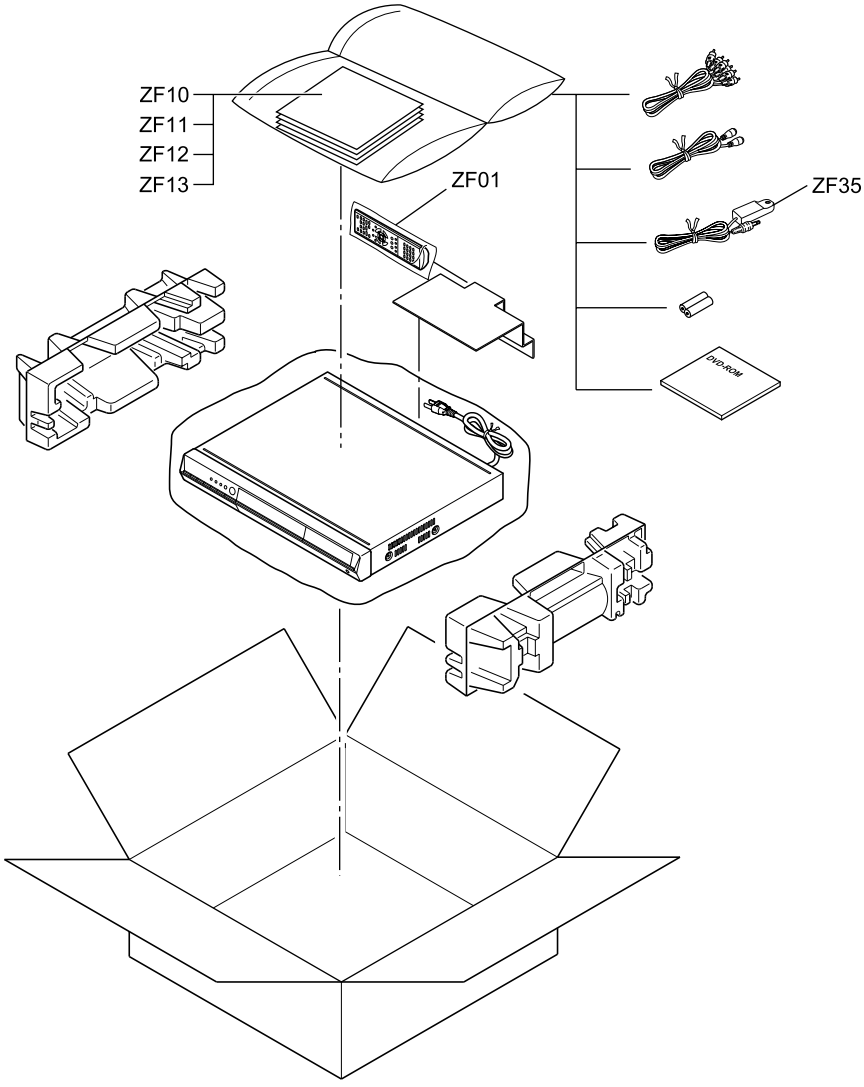
Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ΩJ = 470Ω± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly



Note: The shape of the packing material is sometimes different.

Fig. 4-4-1

4-2. Chassis Assembly

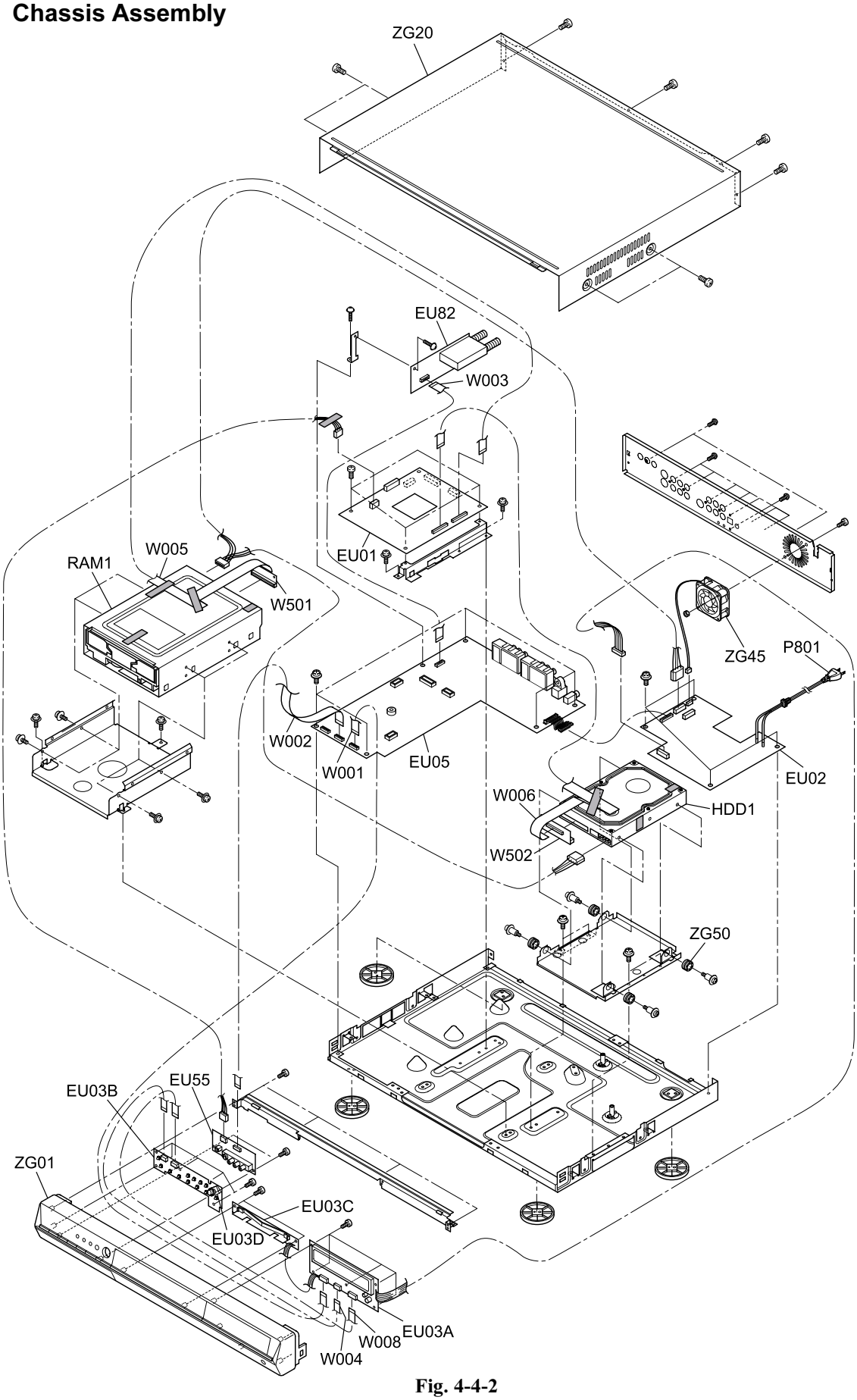


Fig. 4-4-2

5. PARTS LIST

	Location No.	Part No.	Description
			- MECHANICAL PARTS -
	HDD1	P000428190	HDD,ST3160022ACECS 160GB
!	P801	P000416780	Cord,Power UL
!	RAM1	P000432490	DVD-RAM SW-9573-ETS
	W001	P000433830	Cable,Flexible FFC,10P,L400
	W002	P000433810	Cable,Flexible FFC,11P,L120
	W003	P000433800	Cable,Flexible FFC,11P,L60
	W004	P000433840	Cable,Flexible FFC,9P,L430
	W005	P000433820	Cable,Flexible FFC,40P,L280
	W006	P000387340	Cable,Flexible FFC,40P,L360
	W008	P000433850	Cable,Flexible FFC,11P,L430
	W501	P000401270	Conv Unit,ATAPI-FFC
	W502	P000401270	Conv Unit,ATAPI-FFC
	ZF01	P000432480	Remote Control Unit,SE-R0144
!	ZF10	P000416460	Owners Manual,ST English,RD-XS34SU
!	ZF11	P000416470	Owners Manual,OP English,RD-XS34SU
!	ZF10	P000417050	Owners Manual,ST French,RD-XS34SC
!	ZF11	P000417060	Owners Manual,OP French,RD-XS34SC
!	ZF12	P000416480	Owners Manual,Quick,English
!	ZF13	P000416490	Owners Manual,Quick,Spanish,RD-XS34SU
	ZF35	P000416800	IR Blaster RWS1000-0062E
	ZG01	P000432580	Front Panel
	ZG20	P000432500	Cover,Top
	ZG45	P000432510	Fan,DC AFB0512LDP48Z
	ZG50	P000416790	Damper

	Location No.	Part No.	Description	
			- ELECTRICAL PARTS -	
	EU01	P000432530	PC Board Assy	Digital,RD-XS34SU
	EU01	P000432470	PC Board Assy	Digital,RD-XS34SC
			- INTEGRATED CIRCUITS -	
	IC303	P000416750	IC	BA25BC0FP
	IC304	P000391280	IC	PQ070XZ01ZPH
	IC305	P000391240	IC	NJM2125F
	IC307	P000391230	IC	UPD72852AGB-8EU
	IC309	P000378040	IC	SN74AHC1G08HDCKR
	IC310	79040306	IC	PST594JMT
	IC311	P000391210	IC	K4H560838D-TCB000
	IC312	P000391210	IC	K4H560838D-TCB000
	IC314	P000391210	IC	K4H560838D-TCB000
	IC315	P000391210	IC	K4H560838D-TCB000
	IC317	P000377920	IC	SN74LV244APWR
	IC603	79040074	IC	TC74HCU04AF
			- TRANSISTORS -	
	Q301	79050018	Transistor,Chip	2SA1162
	Q302	79050018	Transistor,Chip	2SA1162
	Q303	79050018	Transistor,Chip	2SA1162
	Q304	79050018	Transistor,Chip	2SA1162
	Q305	79050018	Transistor,Chip	2SA1162
	Q306	79050016	Transistor,Chip	2SC2712
	Q307	79050016	Transistor,Chip	2SC2712
	Q308	79050018	Transistor,Chip	2SA1162
	Q309	79050018	Transistor,Chip	2SA1162
			- MISCELLANEOUS -	
	X301	79089168	Oscillator,Crystal	
	X302	79089168	Oscillator,Crystal	
	X303	P000377990	Crystal	27.0M
!	EU02	P000432520	PC Board Assy	Power
	EU03A	P000432560	PC Board Assy	Front(R)
			- INTEGRATED CIRCUITS -	
	IC101	P000416700	IC	PT6315
	IC102	P000402790	IR Module	GP1UM261RKOF
	IC103	79050015	Transistor,Chip	HN1B01F
			- DIODES -	
	D110	79060028	Diode,Chip	1SS226
	D111	79060028	Diode,Chip	1SS226
	D112	79060028	Diode,Chip	1SS226
	D113	79060028	Diode,Chip	1SS226
	D114	79060028	Diode,Chip	1SS226
	D115	79060028	Diode,Chip	1SS226
	D116	79060028	Diode,Chip	1SS226
	D119	79060028	Diode,Chip	1SS226
			- MISCELLANEOUS -	
	A100	P000416630	Display,FL	HNV-10SM38T
	EU03B	P000432550	PC Board Assy	Front(L)
			- TRANSISTORS -	
	Q100	79050009	Transistor,Chip	RN1401
	Q101	79050009	Transistor,Chip	RN1401
	Q102	79050009	Transistor,Chip	RN1401
	Q103	79050009	Transistor,Chip	RN1401
	Q108	79050089	Transistor	RN2401
	Q109	79050089	Transistor	RN2401
	Q110	79050009	Transistor,Chip	RN1401

Location No.	Part No.		Description
		- DIODES -	
D103	79060077	Diode,LED	SLA-360MT
D104	P000416660	Diode,LED	EL-3105-1UYOC/S530
D105	79060091	Diode,LED	LED, MVL-354B-T
D121	79060033	Diode,LED	
D128	P000416670	Diode,LED	EL-3105-1VRT
		- MISCELLANEOUS -	
S100	P000391050	Switch,Tact	
S101	P000391050	Switch,Tact	
S102	P000391050	Switch,Tact	
S103	P000391050	Switch,Tact	
S104	P000391050	Switch,Tact	
S105	P000391050	Switch,Tact	
S106	P000391050	Switch,Tact	
S107	P000391050	Switch,Tact	
S108	P000391050	Switch,Tact	
S109	P000391050	Switch,Tact	
S110	P000391050	Switch,Tact	
EU03C	P000437410	PC Board Assy	Front Center(LED)
D106	79060091	Diode,LED	LED, MVL-354B-T
D107	79060091	Diode,LED	LED, MVL-354B-T
EU03D	P000437400	PC Board Assy	Front Switch(Jog)
EU05	P000432540	PC Board Assy	Mother
		- INTEGRATED CIRCUITS -	
IC701	P000391180	IC	PST3222NR
IC702	P000391150	IC	DC74HCT125M
IC902	P000416730	IC	NJM2115M
IC903	P000416650	IC,Terminal,OPT	LAF1001-0301F
ICA01	P000416760	IC	PCM1851PJT
ICA03	79040397	IC	MM1575ANRE
ICB10	P000395150	IC	MM1565AFBE
ICW01	P000391260	IC	MM1568DJBEG
ICX01	P000401210	IC	MM1656XJBE
ICX31	79040371	IC	BA7046F
ICX32	P000363370	IC	NJM2330MV
		- TRANSISTORS -	
Q700	79050016	Transistor,Chip	2SC2712
Q701	79050018	Transistor,Chip	2SA1162
Q904	79050001	Transistor,Chip	RN2402
Q905	79050100	Transistor,Chip	RN1402
Q906	79050001	Transistor,Chip	RN2402
Q908	79050014	Transistor,Chip	HN1C03F
QB08	79050016	Transistor,Chip	2SC2712
QW02	79050100	Transistor,Chip	RN1402
QW03	79050018	Transistor,Chip	2SA1162
QW04	79050018	Transistor,Chip	2SA1162
QX06	79050018	Transistor,Chip	2SA1162
QX09	79050018	Transistor,Chip	2SA1162
QX31	79050016	Transistor,Chip	2SC2712
QX32	79050100	Transistor,Chip	RN1402
		- DIODES -	
D701	79060019	Diode,Chip	1SS355
D702	79060028	Diode,Chip	1SS226
D703	79060028	Diode,Chip	1SS226
D704	79060028	Diode,Chip	1SS226
D901	79060019	Diode,Chip	1SS355
D902	79060019	Diode,Chip	1SS355
DB06	79060096	Diode,Zener	MTZJT-7733D
		- MISCELLANEOUS -	

	Location No.	Part No.		Description
	B701	P000377950	Buzzer	PS1240P02AT
	J702	P000432600	Jack	3.5 Small
	JW01	P000402770	Jack,6P+2Y/C	
	JX01	P000401100	Jack Board,6P+2P Y/C	
	X700	P000391040	Crystal	
	X701	P000363400	Oscillator,Crystal	
	EU82	P000432570	PC Board Assy - MISCELLANEOUS -	Tuner
!	MB01	P000416770	Tuner	ENGF6501G
	EU55	P000432590	PC Board Assy - MISCELLANEOUS -	Front(Jack)
	J170	P000387300	Jack,DV	
	J171	P000402780	Jack,3P+1Y/C	

SPECIFICATIONS

Power requirement during operation	34W
Power requirement at standby	17W or below (Front panel display: on) 16W or below (Front panel display: off)
Power supply	120V AC, 60 Hz
Mass	5.4kg
External dimension	Width 430 x Height 62 x Depth 334mm
Incoming channels	TV : 2-69CH, Cable : 1-125CH
Antenna input/output terminal	VHF/UHF : 75Ω, F Connector
Signal system	Standard NTSC Color TV system
Laser	Semiconductor laser, Wavelength : 650nm/780nm
Format	DVD-Video format
Image recording system	MPEG2
Sound recording system	Dolby Digital M1, M2, Linear PCM
Internal hard disk	160 GB
VIDEO input	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 3 systems, 2 at rear, 1 in front
VIDEO output	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 2 systems, 1 at rear
S-VIDEO input	(Y) 1.0Vp-p (75Ω), Sync signal negative, Mini DIN4 Pin x 3 systems (C) 0.286Vp-p (75Ω), 2 at rear, 1 in front
S-VIDEO output	(Y) 1.0Vp-p (75Ω), Sync signal negative, Mini DIN4 Pin x 2 systems (C) 0.286Vp-p (75Ω), 1 at rear
COMPONENT output(Y, P_B, P_R)	Y output (green), 1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system P_B, P_R output (blue, red), 0.7Vp-p (75Ω), Pin jack x 1 systems each
AUDIO input	2.0V (rms), 22kΩ or above, pin jack (L, R) x 3 systems 2 at rear, 1 in front
AUDIO output	2.0V (rms), 2.2kΩ or below, pin jack (L, R) x 1 systems 1 at rear
DIGITAL AUDIO OUTPUT BITSTREAM/PCM (OPTICAL terminal)	Optical connector x 1 system
G-LINK jack	This is for connection of the supplied IR control cable only.
DV input	4-Pin x 1 in front
Remote control	Wireless remote control (SE-R0144)
Operating conditions	Temperature: 41°F~95°F (5°C~35°C), Position: Horizontal
Clock display	12 hour digital display
Clock accuracy	Quartz (monthly deviation: approximately ±30 seconds)

- The design and specifications may change without prior notice.
- The Illustrations and screens described in this manual may be exaggerated or simplified for easy recognition and may be slightly different from the actual unit.

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