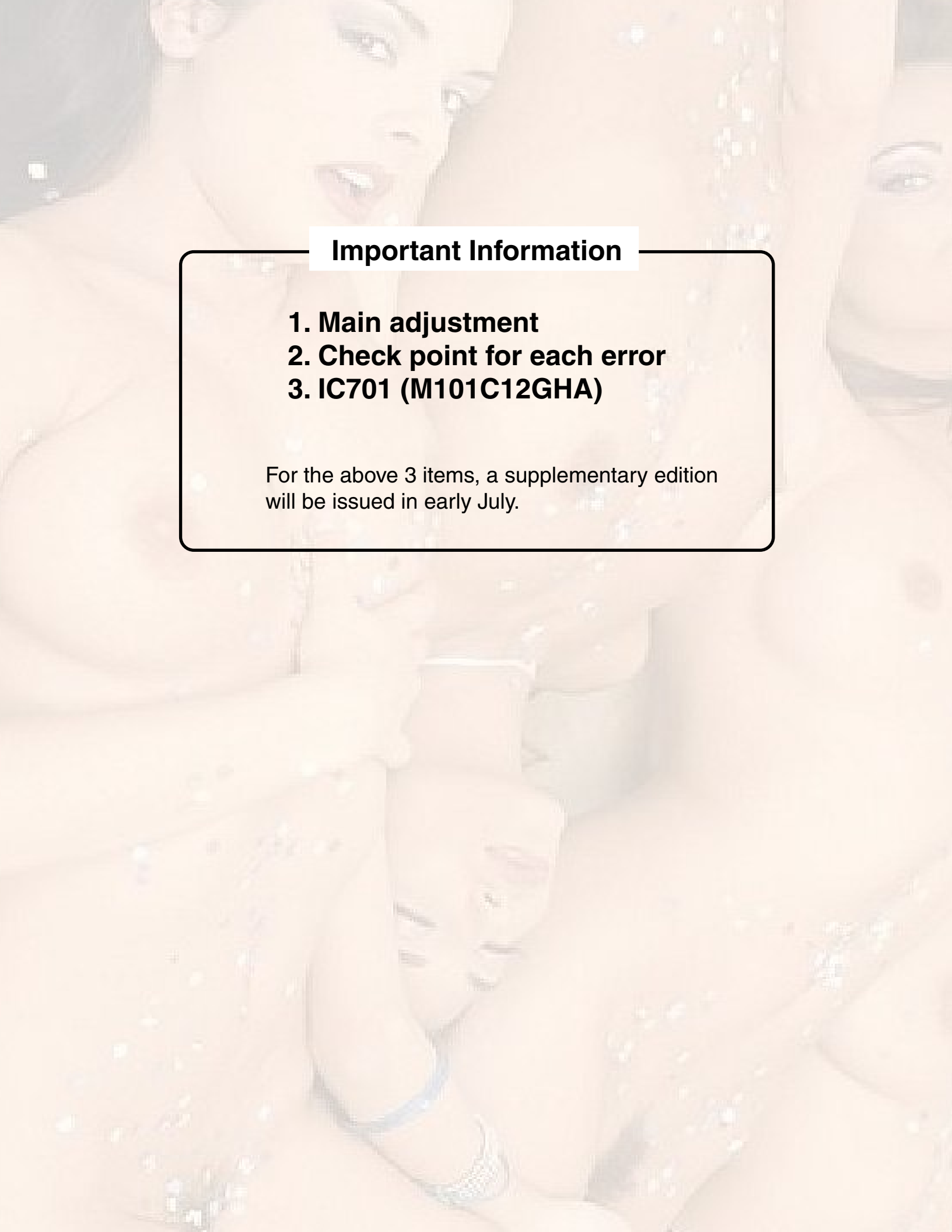




Important Information

- 1. Main adjustment**
- 2. Check point for each error**
- 3. IC701 (M101C12GHA)**

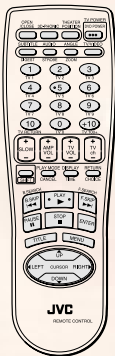
For the above 3 items, a supplementary edition will be issued in early July.

JVC

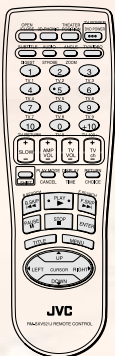
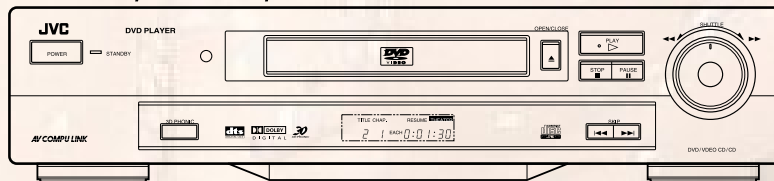
SERVICE MANUAL

DVD PLAYER

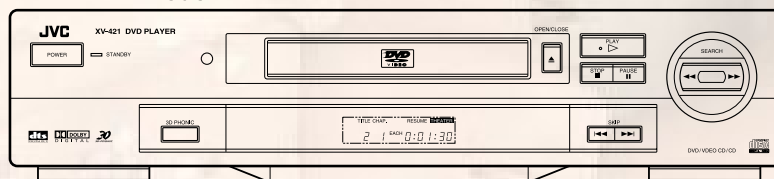
XV-521BK/523GD XV-525BK/421BK



XV-521BK/XV-523GD/XV-525BK models



XV-421BK model



Area Suffix

XV-421BK

J U.S.A

Area Suffix

XV-525BK/523GD

J U.S.A

Area Suffix

XV-521BK

C Canada



Video CD



Contents

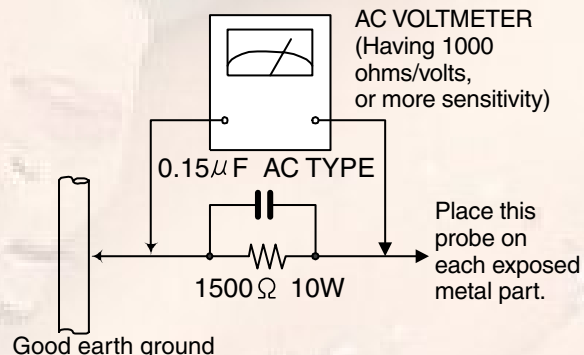
Safety precautions	1-2
Importance administering	
point on the safety	1-3
Dismantling and assembling	
the traverse unit	1-4

Disassembly method	1-5
Precautions for service	1-15
Description of major ICs	1-16

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (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 re-assembling.
5. Leakage current check (Electrical shock hazard testing)
After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.)
- Alternate check method
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. voltage measured Any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

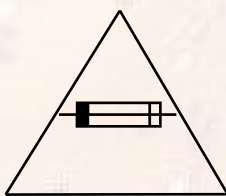
1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety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

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

Importance administering point on the safety



For USA and Canada / pour États - Unis d'Amérique et Canada



Caution: For continued protection against risk of fire, replace only with same type 1.6A/250V for F901. This symbol specifies type of fast operating fuse.

Précaution: Pour éviter risques de feux, remplacez le fusible de sûreté de comme le meme type que 1.6A/250V pour F901.
Ce sont des fusibles sêretes qui fonctionnes rapide.

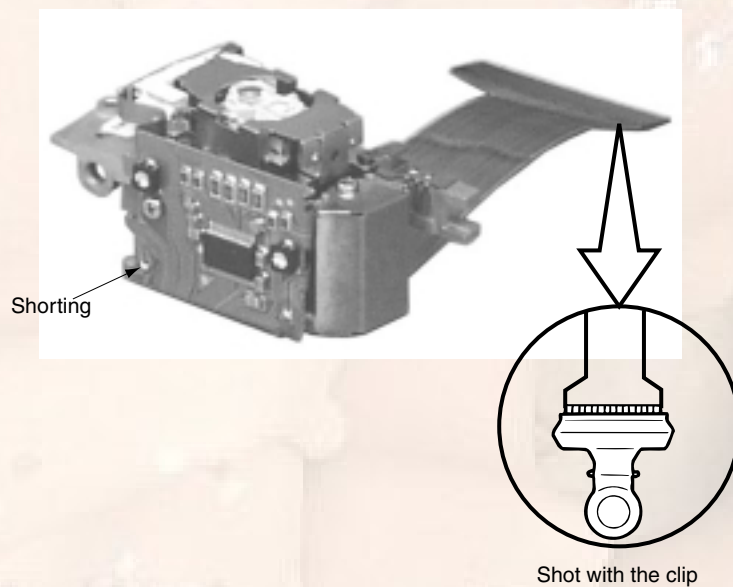
Dismantling and assembling the traverse unit

1. Notice regarding replacement of optical pickup

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 to the optical pickup or connected devices.

(Refer to the section regarding anti-static measures.)

1. Do not touch the area around the laser diode and actuator.
2. Do not check the laser diode using a tester, as the diode may easily be destroyed.
3. It is recommended that you use a grounded soldering iron when shorting or removing the laser diode.
Recommended soldering iron: HAKKO ESD-compatible product
4. Solder the land on the optical pickup's flexible cable.
 - Note : Short the land after shorting the terminal on the flexible cable using a clip, etc., when using an ungrounded soldering iron.
 - Note : After shorting the laser diode according to the procedure above, remove the solder according to the text explanation.



Disassembly method

< Main body >

■ Removing the top cover (See Fig.1)

1. Remove the four screws A on both side of the body.
2. Remove the two screws B on the back of the body.
3. Lift up the rear part of the top cover while pulling the lower part of the sides, then detach upward.

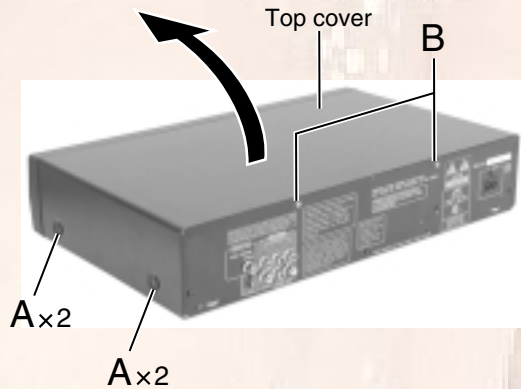


Fig.1

■ Removing the rear panel (See Fig.2)

- Prior to performing the following procedure, remove the top cover.
1. Remove the seven screws C on the back of the body.

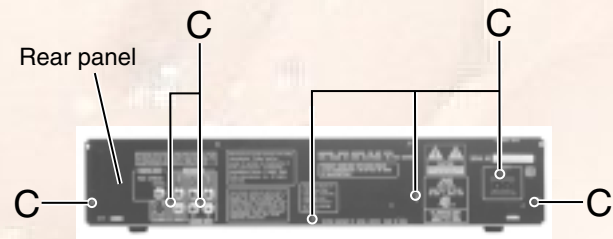


Fig.2

■ Removing the fitting (See Fig.3 to 6)

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

ATTENTION: To remove the front panel assembly and the DVD mechanism assembly, remove the fitting in advance.

— by hand —

1. Turn over the body. Insert a screwdriver into the hole of the bottom chassis and turn it. The loading tray will be ejected out of the front panel assembly.
2. Pull the loading tray toward the front.
3. Remove the fitting upward from the loading tray at the joints b.
4. Push and return the loading tray.

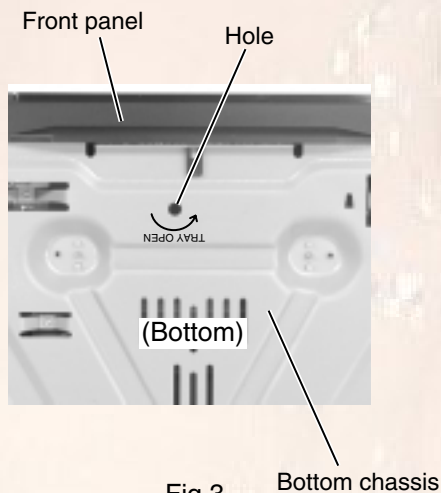


Fig.3

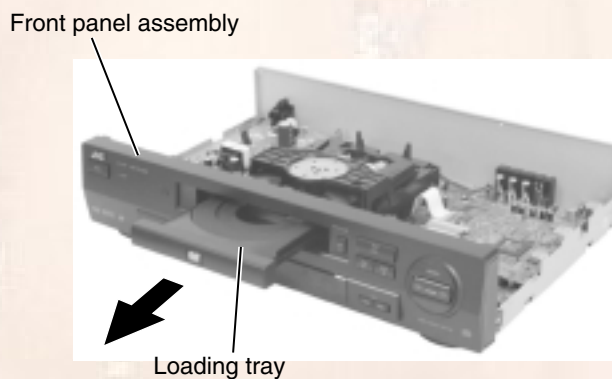


Fig.4

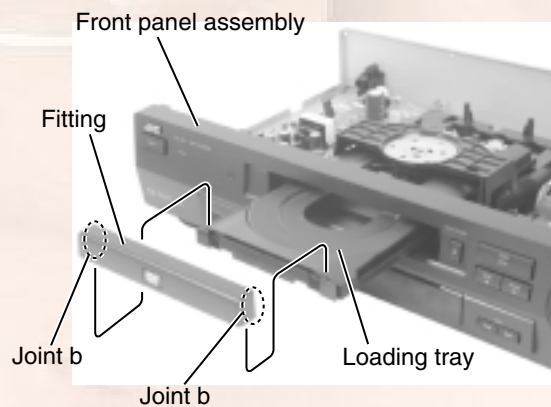


Fig.5

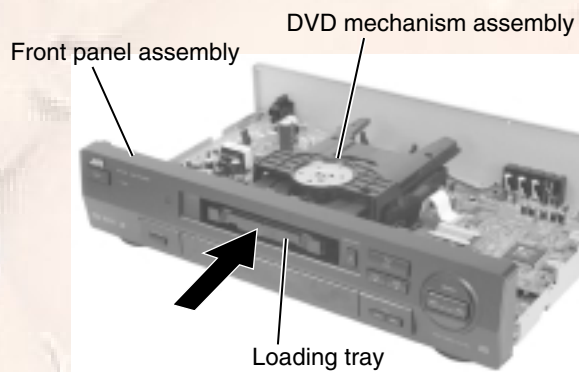
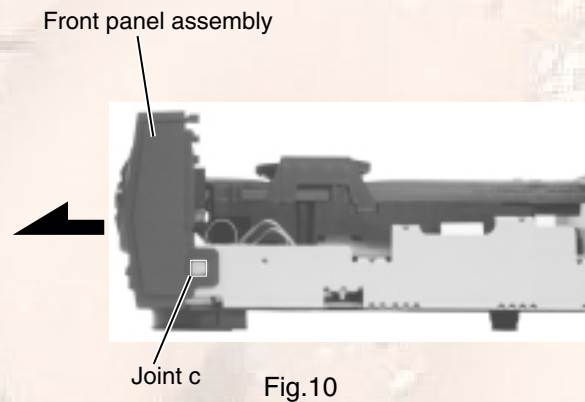
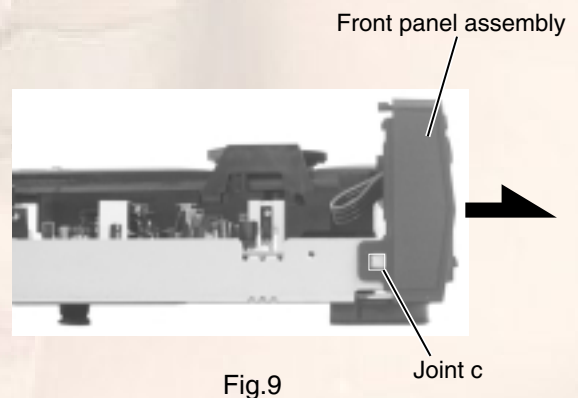
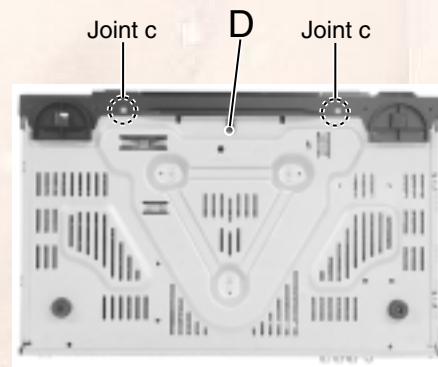
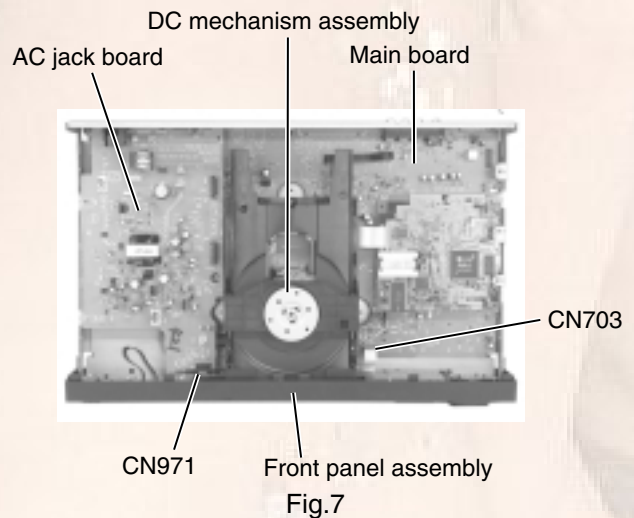


Fig.6

■ Removing the front panel assembly (See Fig.7 to 10)

- Prior to performing the following procedure, remove the top cover and the fitting.
1. Disconnect the card wire from connector CN703 on the main board.
 2. Turn over the body and remove the screw D attaching the front panel assembly.
 3. Release the five joints c on both sides and bottom of the body and remove the front panel assembly toward the front.

ATTENTION: The connector CN832 on the front panel assembly and CN971 on the AC jack board will be disconnected at the same time.



■ Removing the DVD mechanism assembly (See Fig.11 to 14)

• Prior to performing the following procedure, remove the top cover and the front panel assembly.

1. Disconnect the card wire from connector CN101 on the DVD Servo.
2. Disconnect the harness from connector CN031 on the DVD mechanism assembly.
3. Remove the screw E on the rear left part of the loading tray.
3. From the front side of the DVD mechanism assembly, move the lever d in the direction of the arrow and pull out the loading tray.
4. Remove the two screws F on the upper side of the DVD mechanism assembly. Then release the two joints e and detach the clamper base back-upward.
5. Remove the three screws G attaching the DVD mechanism assembly.

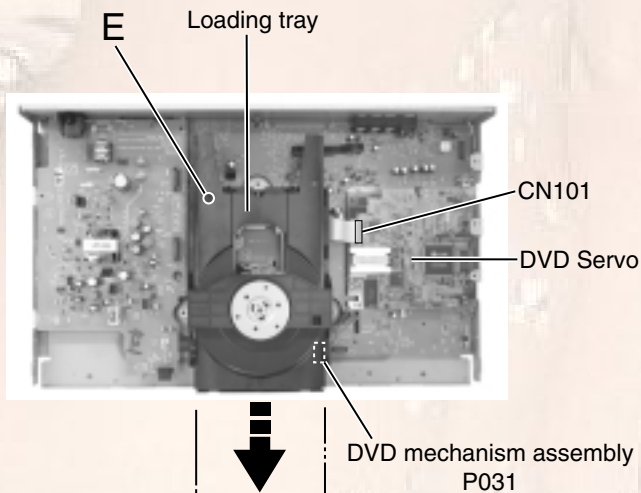


Fig.11

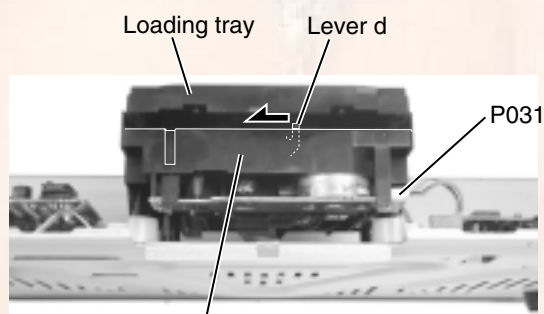


Fig.12

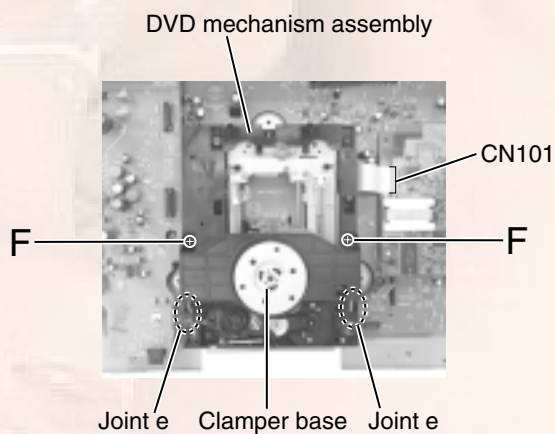


Fig.13

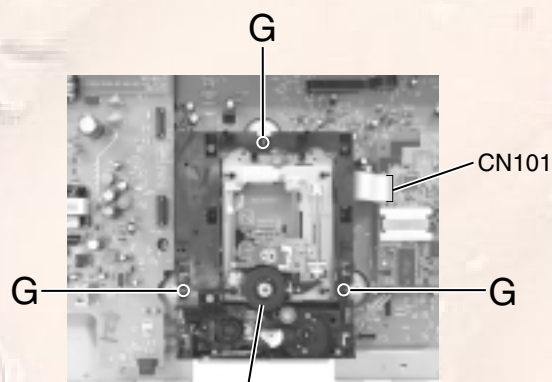


Fig.14

■ Removing the AC jack board (See Fig.15 and 16)

- Prior to performing the following procedure, remove the top cover and the front panel assembly.
1. Remove the two screws H attaching the AC jack board.
 2. Remove the two screws C on the rear panel.
 3. Disconnect connector CN951 and CN961 on the AC jack board from CN704 and CN705 on the main board respectively.

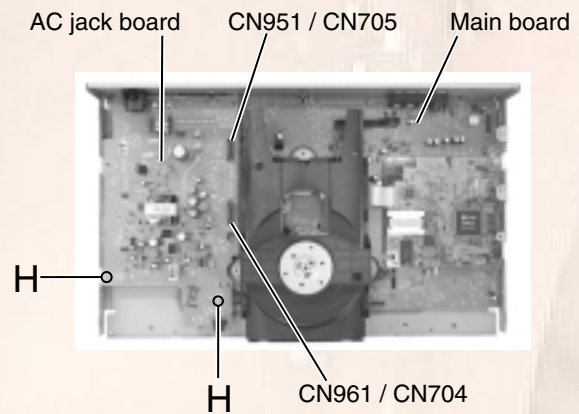


Fig.15



Fig.16

■ Removing the DVD Servo (See Fig.17 and 18)

- Prior to performing the following procedure, remove the top cover.
1. Remove the screw I attaching the DVD Servo.
 2. Pull out the DVD Servo from the fix f while pinching the fix f.
 3. Disconnect connector CN501, CN502 and CN503 on the DVD Servo from CN601, CN701 and CN706 on the main board respectively.

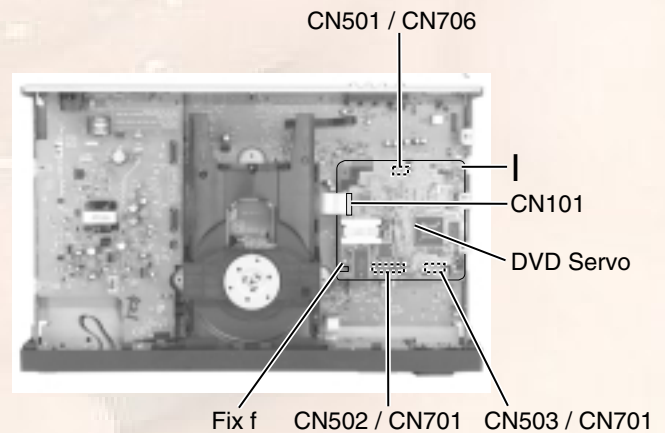


Fig.17

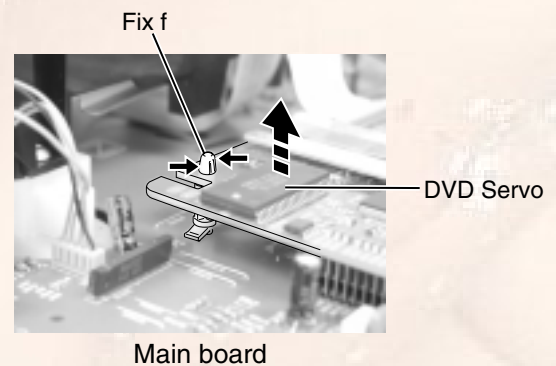


Fig.18

■ Removing the main board (See Fig.19 and 20)

- Prior to performing the following procedure, remove the top cover, the front panel assembly, the DVD mechanism assembly, the AC jack board and the DVD Servo.

1. Remove the three screws J attaching the main board.
2. Remove the two screws C on the rear panel.

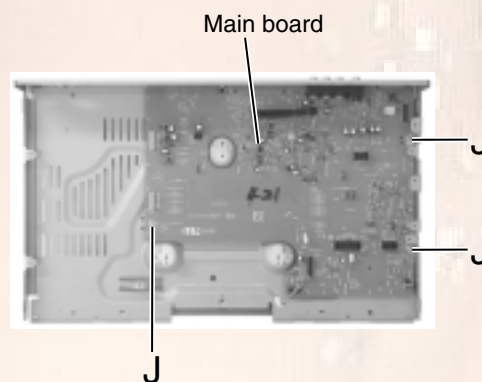


Fig.19

<Front panel assembly>

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

■ Removing the power switch board (See Fig.21)

1. Unsolder connector FW841 on the power switch board on the back of the front panel assembly.
2. Remove the two screws K attaching the power switch board.
3. Push the two tabs g in the direction of the arrow and remove the power switch board.

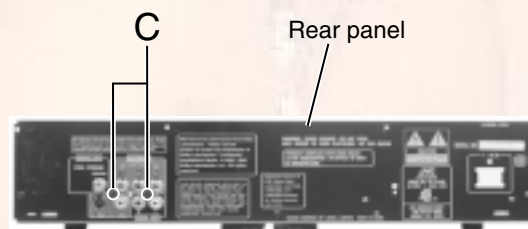


Fig.20

■ Removing the LCD board (See Fig.22)

1. Unsolder connector FW802 and soldering h on the LCD board.
2. Remove the four screws L attaching the LCD board.

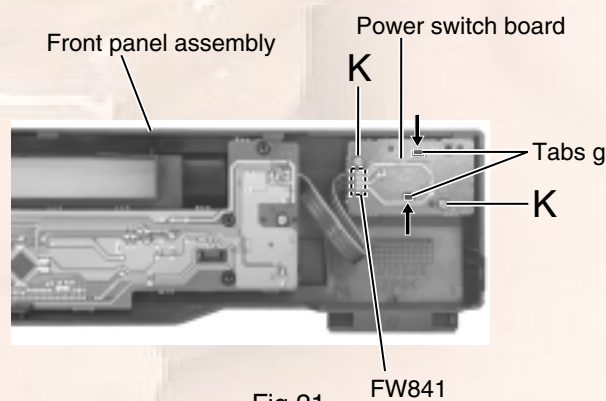


Fig.21

■ Removing the search switch board (See Fig.20)

1. Unsolder soldering i on the search switch board.
2. Remove the three screws M.
3. Release the four tabs j in the direction of the arrow and remove the search switch board.

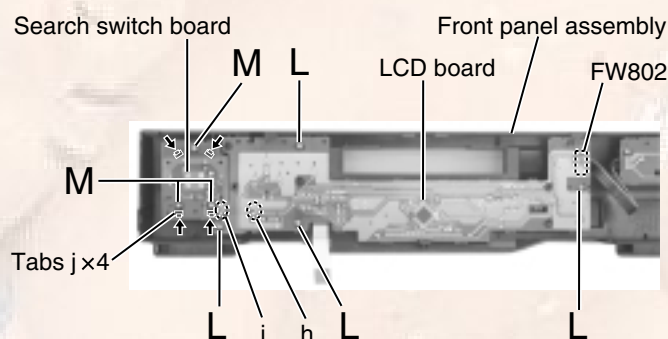


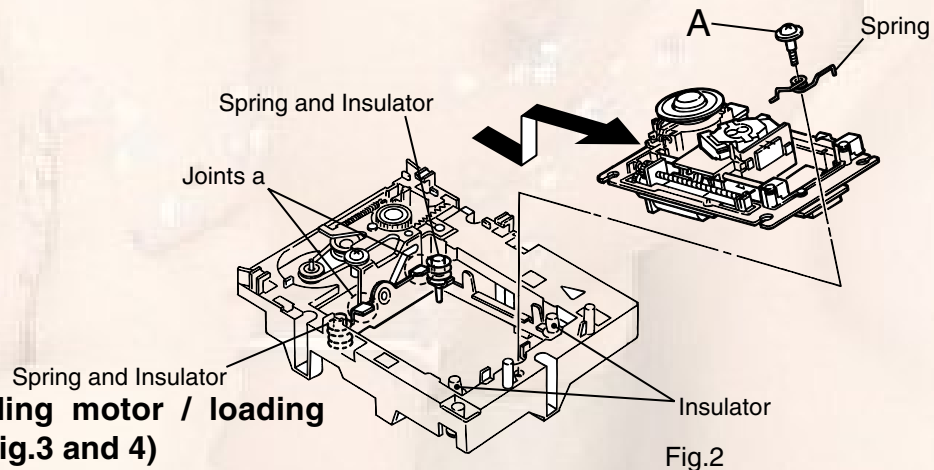
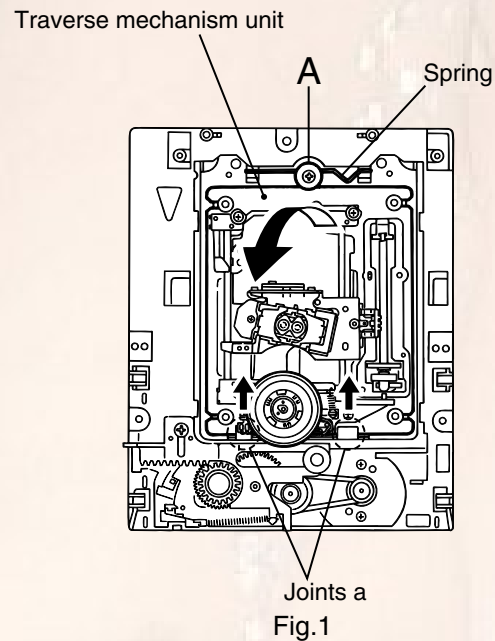
Fig.22

<DVD mechanism>

■ Removing the traverse mechanism unit (See Fig.1 and 2)

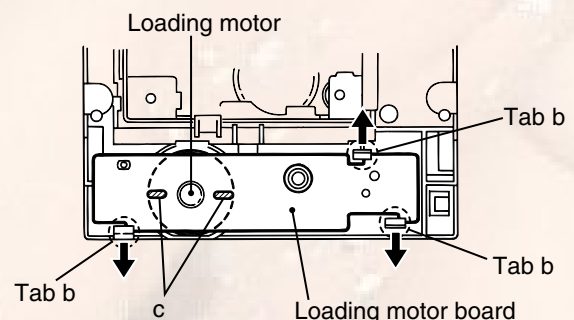
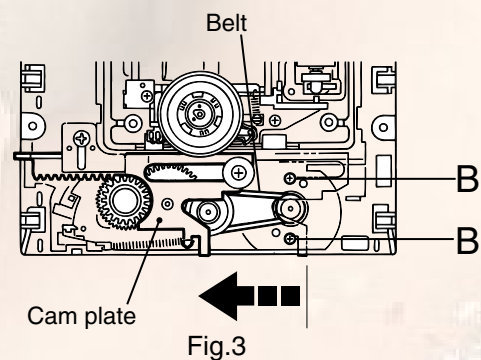
1. Remove the screw A and the spring on the upper side of the loading base assembly.
2. Move the rear part of the traverse mechanism unit upward and pull backward to release the two joints a with the base chassis.

ATTENTION: When reattaching, engage the two joints a and make sure the front springs and the four insulators of the traverse mechanism unit are correctly attached.



■ Removing the loading motor / loading motor board (See Fig.3 and 4)

1. Move the cam plate on the upper side of the loading base assembly in the direction of the arrow.
2. Remove the belt from the motor pulley.
3. Remove the two screws B attaching the loading motor.
4. Turn over the loading base assembly and release the loading motor board from the three tabs b while spreading them outward. The loading motor board will be detached with the loading motor.
5. Unsolder soldering c on the loading motor board and remove the loading motor.



Ref.: To remove the loading motor board only, unsolder soldering c on the loading motor and release the three tabs b.

■ Removing the pickup (See Fig.5 to 9)

✕ It is not necessary to remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Remove the screw C attaching the shaft stopper (R) on the upper side of the traverse mechanism unit. Pull the side of the shaft stopper (R) outward to release the joint e and remove it upward. Remove the skew spring at the same time.
4. Move the shaft in the direction of the arrow to release it from the part f.
5. Release the joint g with the shaft and remove the pickup with the shaft.
6. Pull out the shaft.
7. Remove the screw D attaching the switch actuator.

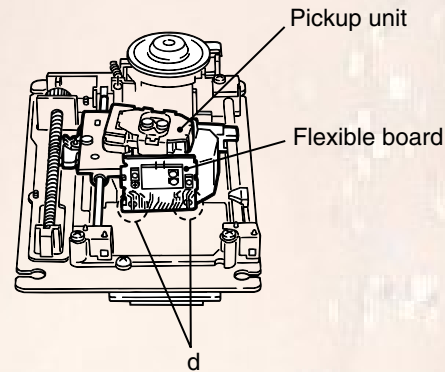


Fig.5

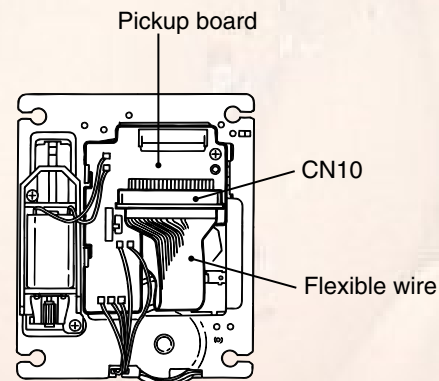


Fig.6

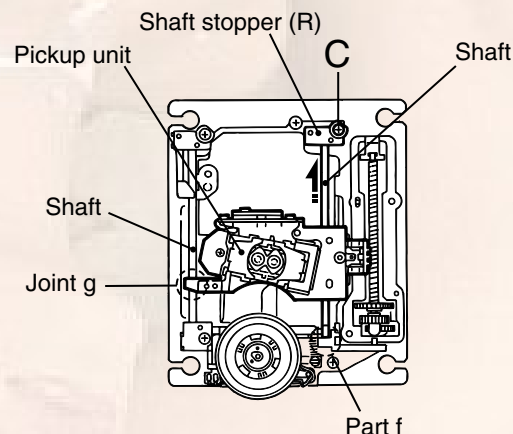


Fig.7

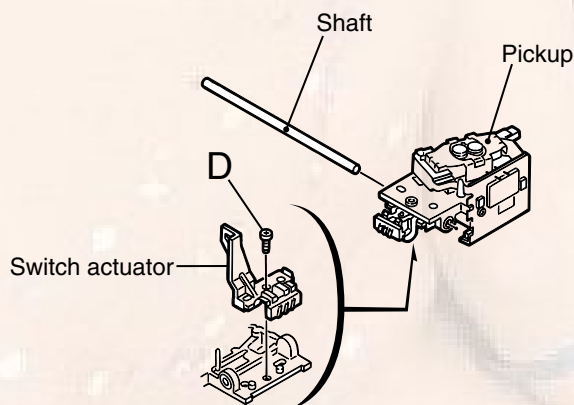


Fig.9

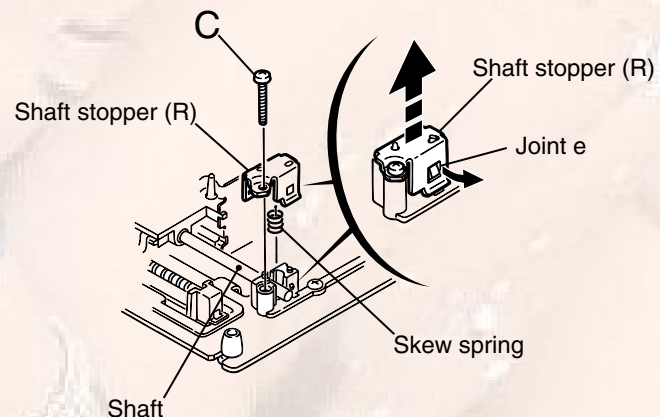


Fig.8

■ Removing the pickup board (See Fig.5 and 10)

※It is not necessary to remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Unsolder soldering h, i and j of each harness on the pickup board.
4. Remove the screw E attaching the pickup board and release the two joints k.

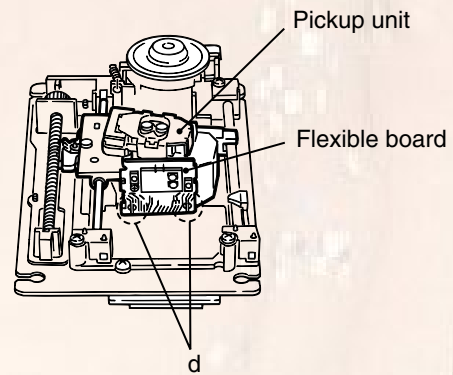


Fig.5

■ Removing the feed motor assembly (See Fig.5, 10 and 11)

- Prior to performing the following procedure, remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Unsolder soldering h of the motor harness on the pickup board.
4. Remove the two screws F attaching the feed motor assembly and remove the thrust spring. Move the feed motor assembly in the direction of the arrow to pull it out from the feed holder.

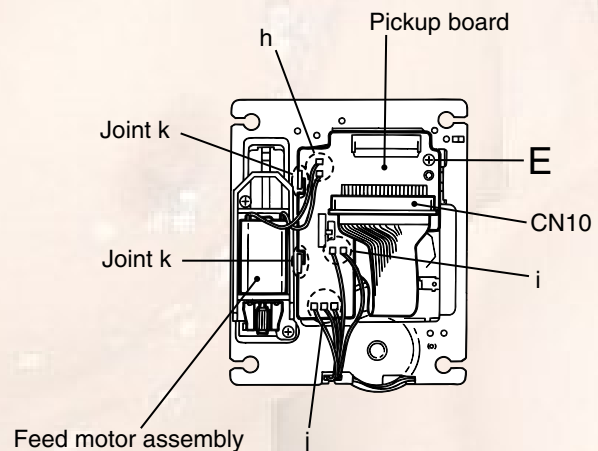


Fig.10

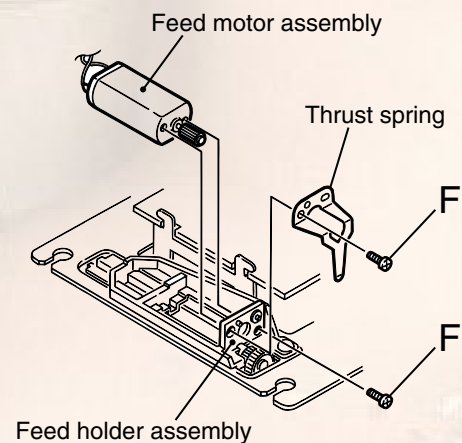


Fig.11

■ Removing the turn table assembly (See Fig.5, 10, 12 and 13)

- Prior to performing the following procedure, remove the traverse mechanism unit.
1. Solder soldering d on the flexible board next to the pickup unit.
 2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.
- ATTENTION:** Disconnecting the flexible wire without soldering may cause damage to the pickup.
3. Unsolder soldering i and j of the harness extending from the turning table assembly to the pickup board.
 4. Remove the screw G attaching the shaft stopper (F) on the upper side of the traverse mechanism unit. Pull the side of the shaft stopper (F) outward to release the joint I and remove it upward. Remove the spring at the same time.
 5. Remove the screw H attaching the turn table assembly.
 6. Move the turn table assembly outward and pull out from the shaft. Then remove it from the base chassis.

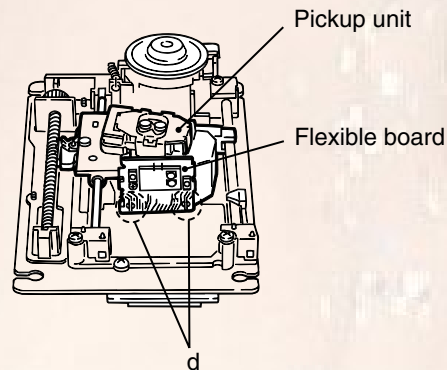


Fig.5

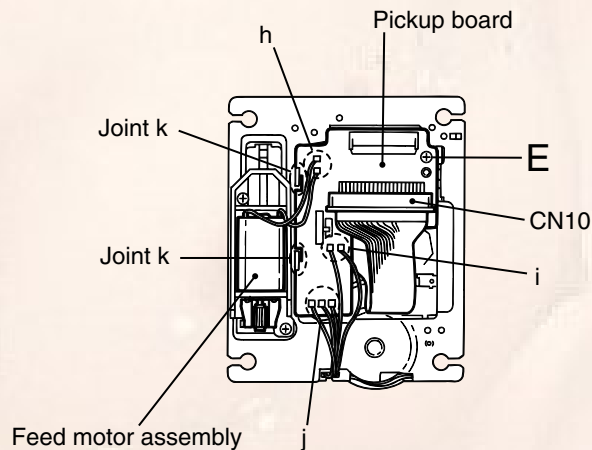


Fig.10

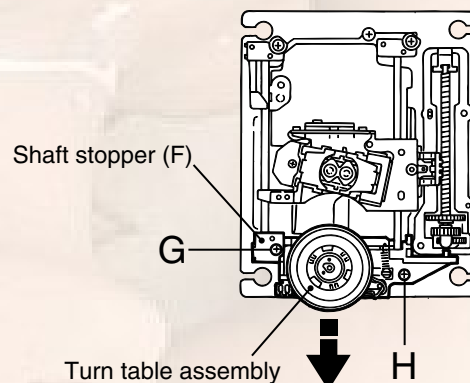


Fig.12

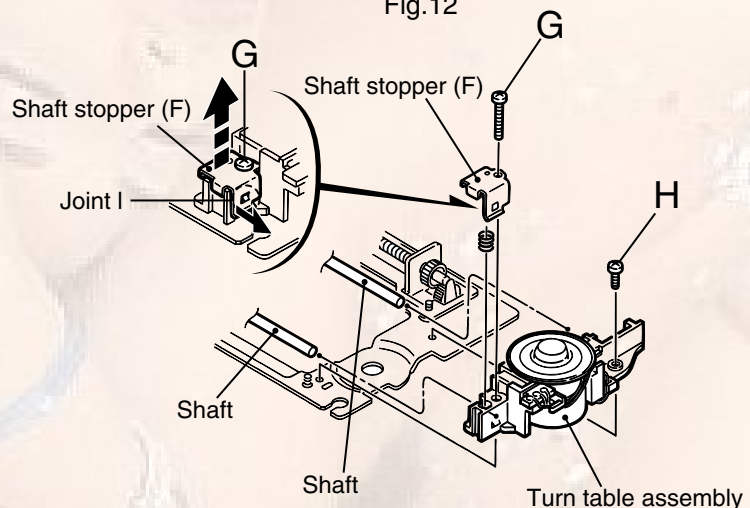


Fig.13

Precautions for Service

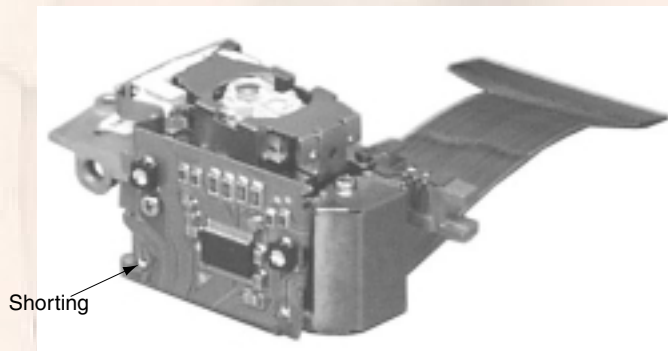
Handling of Traverse Unit and Laser Pickup

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.

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.

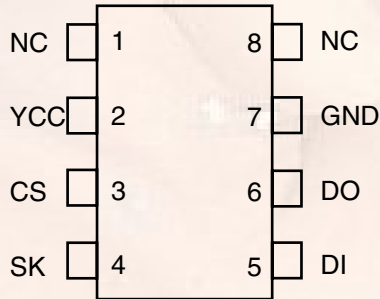


When replacing the Mechanism Unit, turn ON the laser switch that is located at the lower of the pick up after replacement.

Description of major ICs

■ AK93C45AF-W (IC791) : CMOS EEPROM

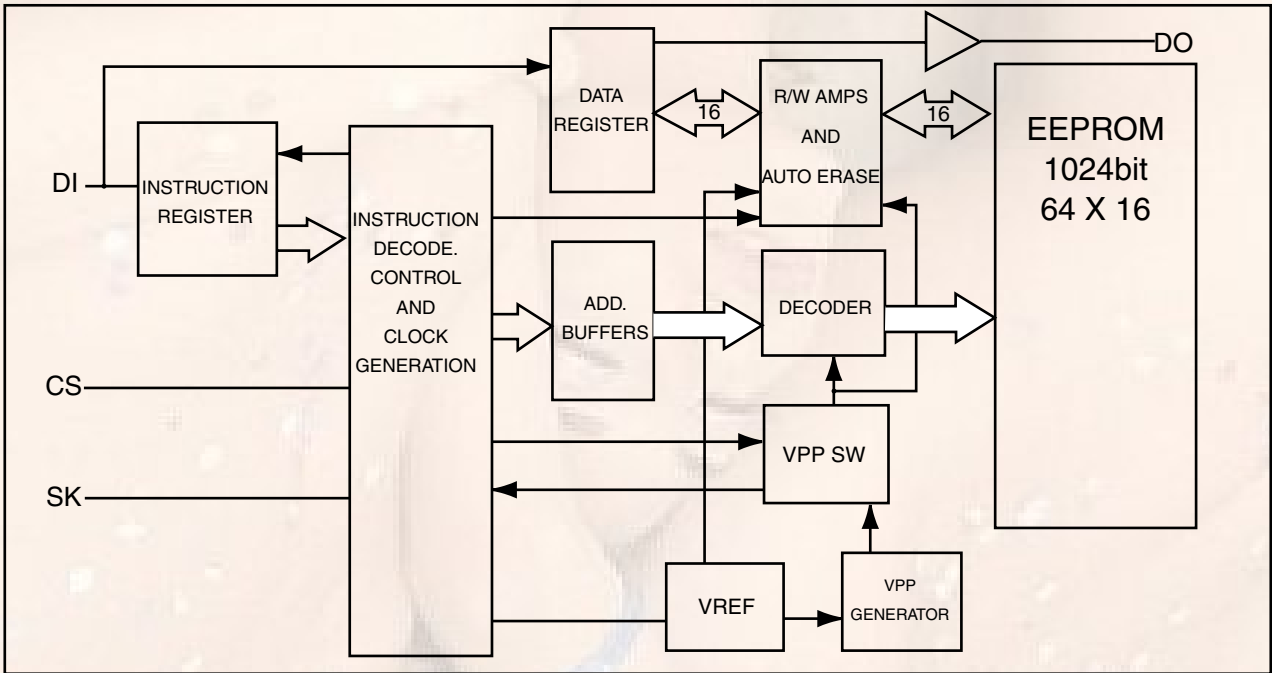
1.Pin Layout
AK93C45AF



2.Pin Functions

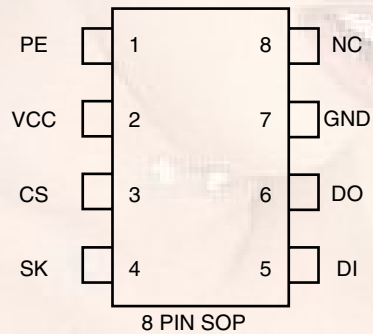
Symbol	Function
CS	Chip Select
SK	Serial Clock Input
DI	Serial Data Input
DO	Serial Data Output
Vcc	Power Supply
GND	Ground
NC	Non connection

3.Block Diagram

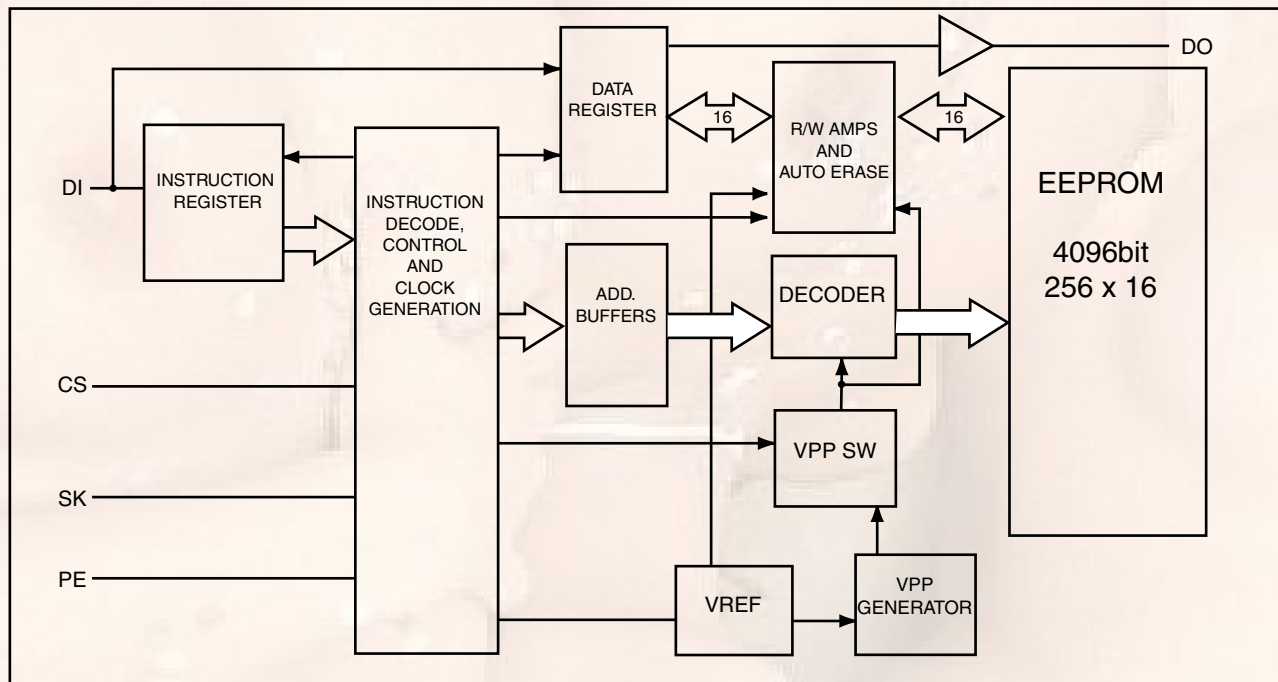


■ AK93C65AF-X (IC403) : EEPROM

1.Terminal layout



2.Block diagram



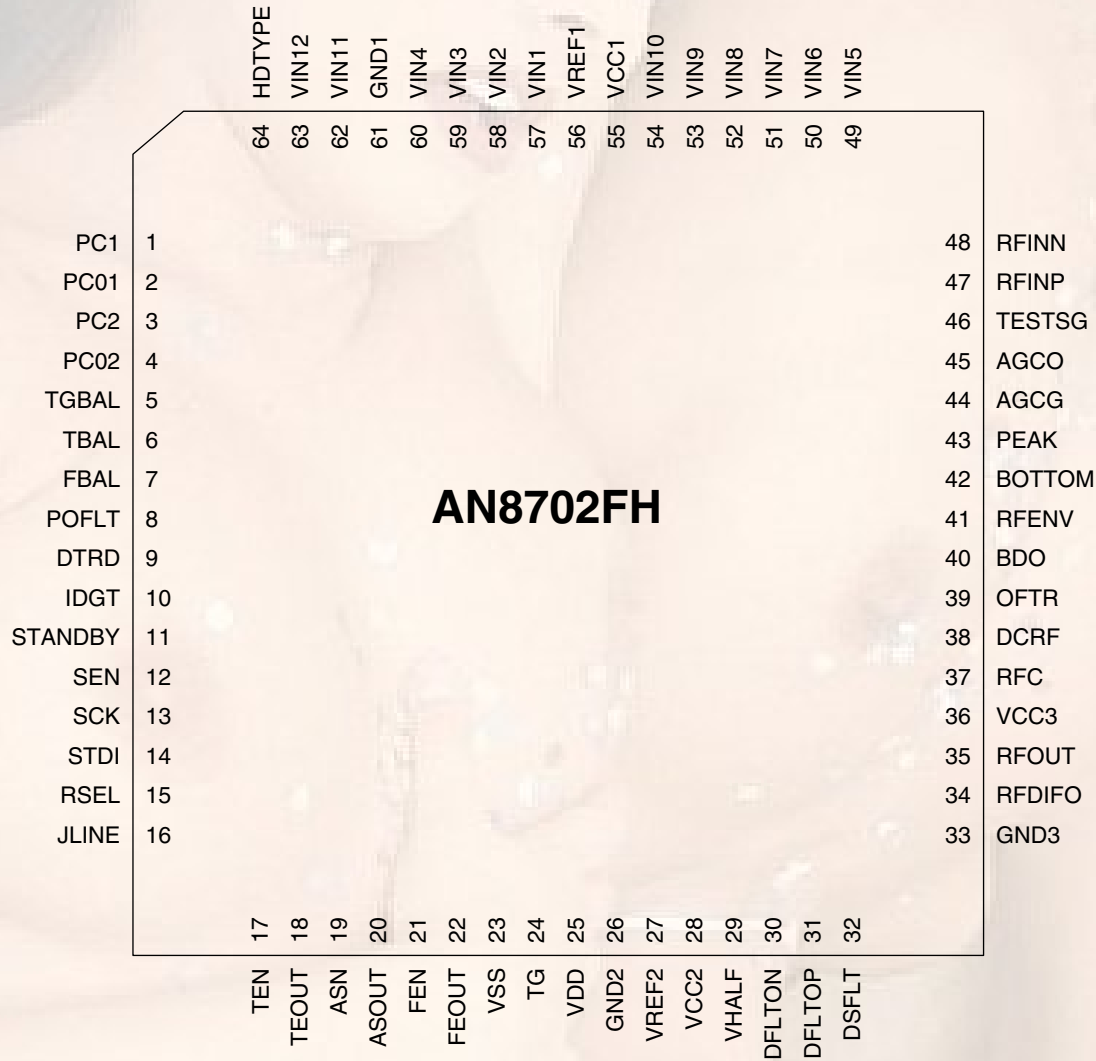
3.Pin function

Pin no.	Symbol	Function
1	PE	Program enable (With built-in pull-up resistor)
2	VCC	Power supply
3	CS	Chip selection
4	SK	Cereal clock input
5	DI	Cereal data input
6	DO	Cereal data output
7	GND	Ground
8	NC	No connection

NOTE : The pull-up resistor of the PE pin is about 2.5M Ω (VCC=5V)

■ AN8702FH (IC101) : Front end processor

1. Terminal Layout



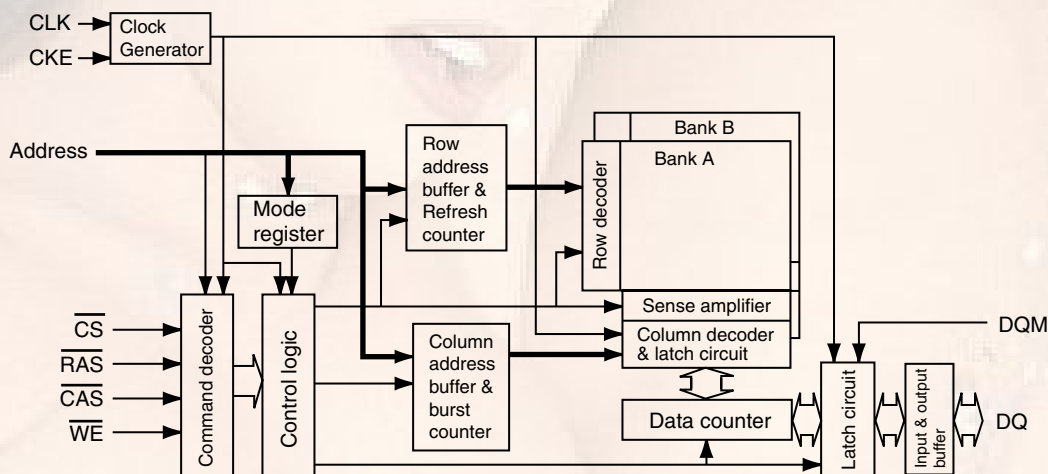
2. Pin Functions

Pin No.	Symbol	I/O	Function
1	PC1		
2	PC01		
3	PC2		
4	PC02		
5	TGBAL	I	Tangential phase balance control terminal
6	TBAL	I	Tracking balance control terminal
7	FBAL	I	Focus balance control terminal
8	POFLT	O	Track detection threshold value level terminal
9	DTRD	I	Data slice part data read signal input terminal (For RAM)
10	IDGT	I	Data slice part address part gate signal input terminal (For RAM)
11	STANDBY	I	Standby mode control terminal
12	SEN	I	SEN (Serial data input terminal)
13	SCK	I	SCK (Serial data input terminal)
14	STDI	I	STDI (Serial data input terminal)
15	RSEL		
16	JLINE		
17	TEN		
18	TEOUT	O	Tracking error signal output terminal

Pin No.	Symbol	I/O	Function
19	ASN		
20	ASOUT		
21	FEN	I	Focus error output amplifier reversing input terminal
22	FEOUT	O	Focus error signal output terminal
23	VSS	-	Ground
24	TG	O	Tangential phase error signal output terminal
25	VDD	-	Apply 3V
26	GND2	-	Ground
27	VREF2	O	VREF2 voltage output terminal
28	VCC2	-	Apply 5V
29	VHALF	O	VHALF voltage output terminal
30	DFLTON		
31	DFLTOP		
32	DSFLT		
33	GND3	-	Ground
34	RFDIFO		
35	RFOUT		
36	VCC3	-	Apply 5V
37	RFC		
38	DCRF	O	All addition amplifier capacitor terminal
39	OFTR	O	OFTR output terminal
40	BDO		
41	RFENV	O	RF envelope output terminal
42	BOTTOM	O	Bottom envelope detection filter terminal
43	PEAK	O	Peak envelope detection filter terminal
44	AGCG	O	AGC amplifier gain control terminal
45	AGCO		
46	TESTSG	I	TEST signal input terminal
47	RFINP	I	RF signal positive input terminal
48	RFINN	I	RF signal negative input terminal
49	VIN5	I	Focus input of external division into two terminal
50	VIN6	I	Focus input of external division into two terminal
51	VIN7	I	
52	VIN8	I	I
53	VIN9	I	
54	VIN10	I	
55	VCC1	-	Apply 5V
56	VREF1	O	VREF1 voltage output terminal
57	VIN1	I	External division into four (DVD/CD) RF input terminal1
58	VIN2	I	External division into four (DVD/CD) RF input terminal2
59	VIN3	I	External division into four (DVD/CD) RF input terminal3
60	VIN4	I	External division into four (DVD/CD) RF input terminal4
61	GND1	-	Ground
62	VIN11	I	
63	VIN12	I	
64	HDTYPE		

■ HY57V161610DTC8 or KM416S1120DT-G8 (IC504,IC505) : 16MB SDRAM

1. Block diagram

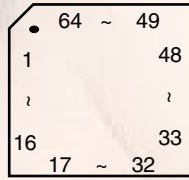


2. Pin function

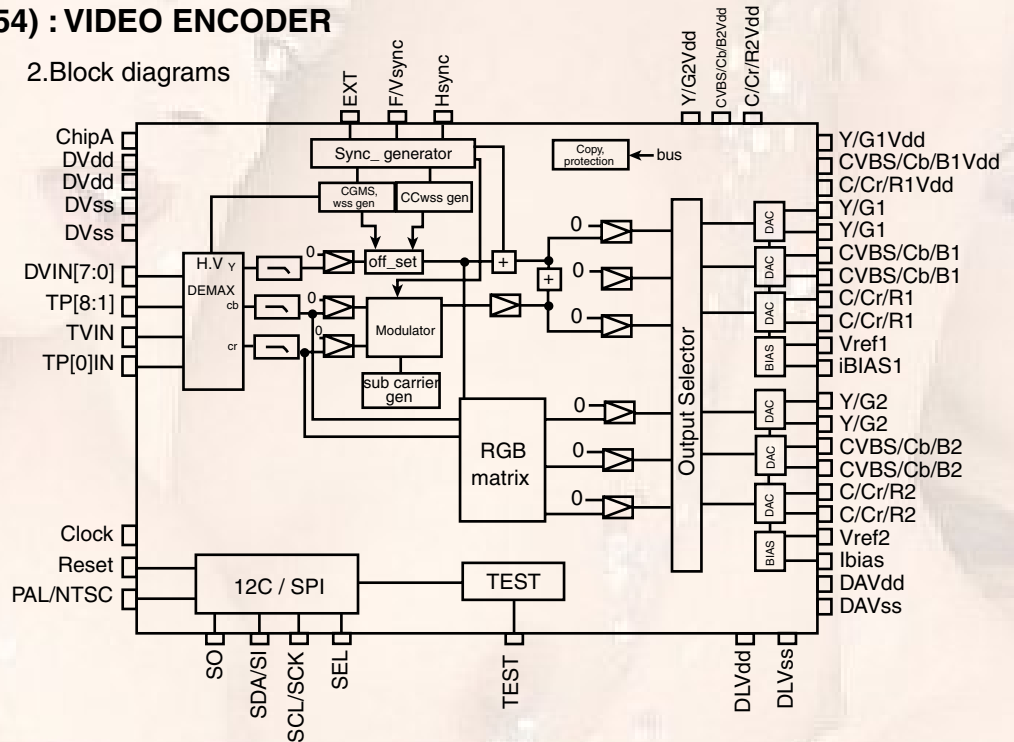
Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	VCC	Power supply	26	VSS	Connect to GND
2,3	DQ0,1	Data input/output	27~32	A4~9	Address inputs
4	VSS	Connect to GND	33	NC	Non connect
5,6	DQ2,3	Data input/output	34	CKE	Clock enable
7	VDD	Power supply	35	CLK	System clock input
8,9	DQ4,5	Data input/output	36	UDQM	Upper DQ mask enable
10	VSS	Connect to GND	37	NC	Non connect
11,12	DQ6,7	Data input/output	38	VCC	Power supply
13	VCC	Power supply	39,40	DQ8,9	Data input/output
14	LDQM	Lower DQ mask enable	41	VSS	Connect to GND
15	$\overline{WE}$	Write enable	42,43	DQ10,11	Data input/output
16	$\overline{CAS}$	Column address strobe	44	VDD	Power supply
17	$\overline{RAS}$	Row address strobe	45,46	DQ12,13	Data input/output
18	$\overline{CS}$	Chip enable	47	VSS	Connect to GND
19,20	A11,10	Address inputs	48,49	DQ14,15	Data input/output
21~24	A0~3	Address inputs	50	VSS	Connect to GND
25	VCC	Power supply			

■ MC44724AVFU (IC554) : VIDEO ENCODER

1. Terminal layout



2. Block diagrams

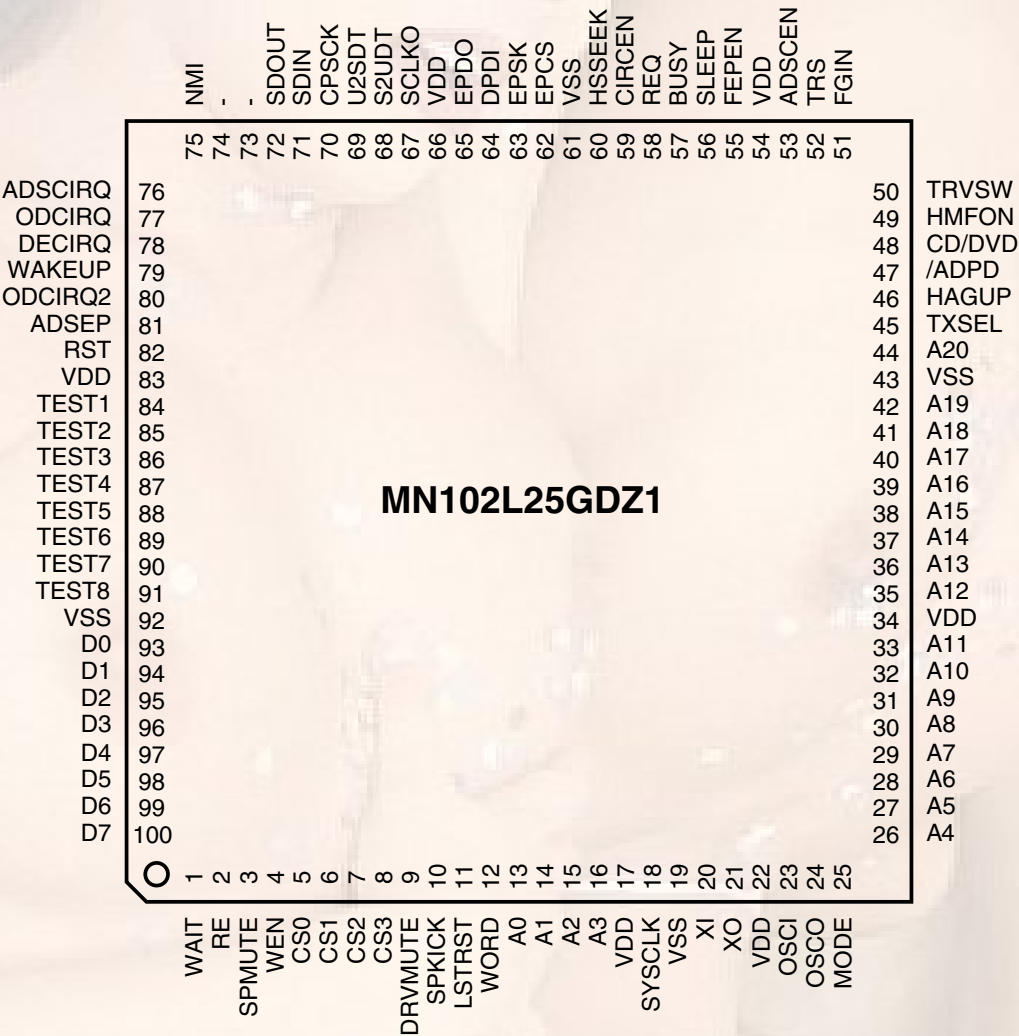


3. Pin function

No.	Symbol	I/O	Function	No.	Symbol	I/O	Function
1	CVBS/Cb/B1	O	Analog composite drive signal (+)	33	SO	-	Non connect
2	CVBS/Cb/B1	O	Analog composite drive signal (-)	34	SDA/SI	I	SPI Mode : Serial data input
3	CVBS/Cb/B1Vdd	-	Power supply for CVBS/Cb/B DAC1	35	SCL/SCK	I	Serial clock input
4	Y/G1	O	Analog brightness signal/G drive signal (+)	36	SEL	I	Power supply for serial data, chip select, digital
5	Y/G1	O	Analog brightness signal/G drive signal (-)	37	DVdd	--	Power supply for digital circuit
6	Y/G1/Vdd	-	Power supply for Y/G DAC	38	DVss	--	Digital ground
7	C/Cr/R1	O	Analog chroma signal (+)	39	DVIN7	I/O	Y data input / test data I/O
8	C/Cr/R1	O	Analog chroma signal (-)	40	DVIN6	I/O	Y data input / test data I/O
9	C/Cr/R1Vdd	-	Power supply for C/Cr/RDAC	41	DVIN5	I/O	Y data input / test data I/O
10	DAVss	-	Connect to ground for DAC	42	DVIN4	I/O	Y data input / test data I/O
11	TBIAS1	O	Standard BIAS for DAC1	43	DVIN3	I/O	Y data input / test data I/O
12	Vref1	-	Standard voltage for DAC1	44	DVIN2	I/O	Y data input / test data I/O
13	DAVdd	-	Power supply for DAC	45	DVIN1	I/O	Y data input / test data I/O
14	Vref2	-	Standard voltage for DAC2	46	DVIN0	I/O	Y data input / test data I/O
15	TBIAS2	O	Standard BIAS for DAC2	47	TVIN	I	VIDEO mute on Reset(0:nomal, 1:mute)
16	NC	-	Non connect	48	EXT	I/O	Frame output / VBI information input
17	CVBS/Cb/B2	O	Analog composite drive signal (+)	49	F/Vsyac	I/O	Frame / Vertical, synchronous I/O
18	CVBS/Cb/B2	O	Analog composite drive signal (-)	50	Chsyac	I/O	The horizontal, synchronous I/O
19	CVBS/Cb/B2Vdd	-	Power supply for CVBS/Cb/B DAC2	51	DATST	I	Data input
20	Y/G2	O	Analog brightness signal/G drive signal (+)	52	TP-8	I/O	Multiplex data input
21	Y/G2	O	Analog brightness signal/G drive signal (-)	53	TP7	I/O	Multiplex data input
22	Y/GVdd	-	Power supply for Y/G DAC	54	TP6	I/O	Multiplex data input
23	C/Cr/R2	O	Analog chroma signal (+)	55	TP5	I/O	Multiplex data input
24	C/Cr/R2	O	Analog chroma signal (-)	56	DVss	-	Ground for digital circuit
25	C/Cr/R2Vdd	-	Power supply for C/Cr/RDAC2	57	DVdd	-	Power supply for digital circuit
26	ChipA	-	Chip address selection	58	TP4	I/O	Data input / Test data I/O
27	TEST	I	Connect to test pin	59	TP3	I/O	Data input / Test data I/O
28	DVdd	-	Digital ground	60	TP2	I/O	Data input / Test data I/O
29	CLOCK	I	Clock signal input (27MHz)	61	TP1	I/O	Data input / Test data I/O
30	DVss	-	Power supply for digital circuit	62	TP0	I/O	Data input / Test data I/O
31	Reset	I	Reset signal input L:ON	63	DLVdd	-	Power supply for D/A converter
32	PAL/NTSC	I	Selection NTSC/PAL NTSC:L PAL:H	64	DLVss	-	Ground for D/A converter

■ MN102L25GDZ1 (IC401) : UNIT CPU

1.Terminal layout

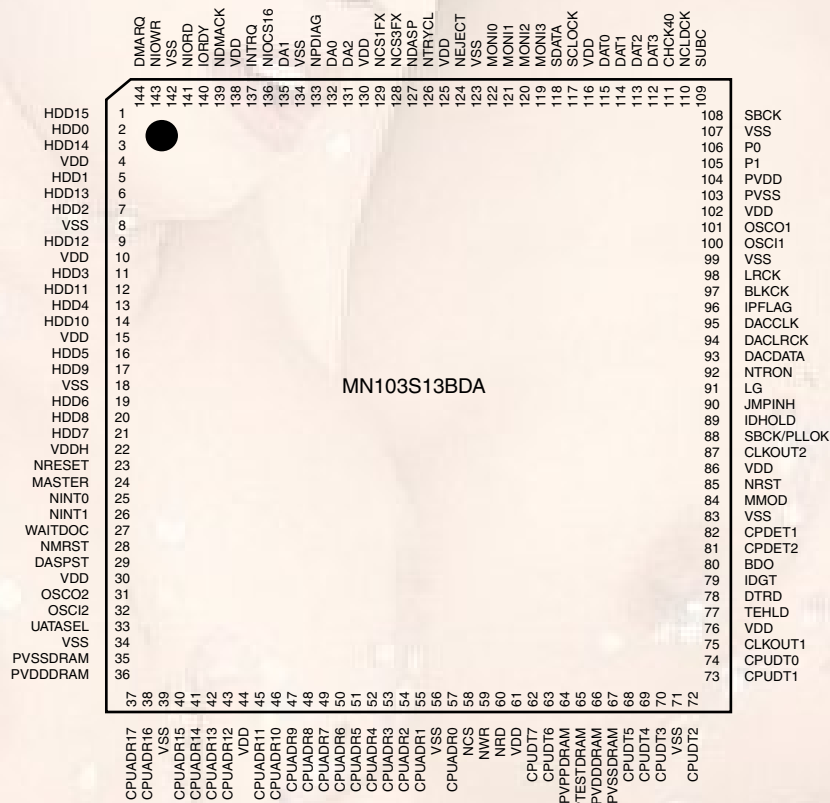


2.Pin function

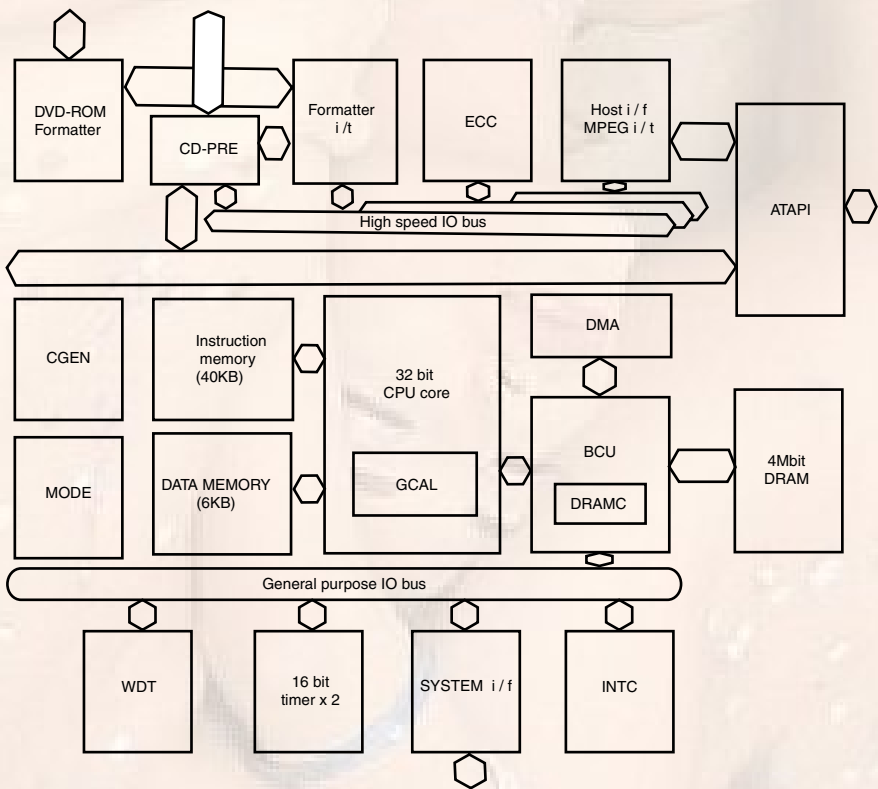
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	WAIT	I	Micon wait signal input	51	FGIN	I	Photo input
2	RE	O	Read enable	52	TRS		
3	SPMUTE	O		53	ADSCEN	O	Serial enable signal for ADSC
4	WEN	O	Write enable	54	VDD	-	Power supply
5	CS0	O	Non connect	55	FEPEN	O	Serial enable signal for FEP
6	CS1	O	Chip select for ODC	56	SLEEP	O	Standby signal for FEP
7	CS2	O	Chip select for ZIVA	57	BUSY	I	Communication busy
8	CS3	O	Chip select for outer ROM	58	REQ	O	Communication Request
9	DRVMUTE	O	Driver mute	59	CIRCEN	O	CIRC command select
10	SPKICK	O	Spin kick (Non connect)	60	HSSEEK	O	Seek select
11	LSIRST	O	LSI reset	61	VSS	-	Ground
12	WORD	O	Bus selection input	62	EPCS	O	EEPROM chip select
13	A0	O	Address bus 0 for CPU	63	EPSK	O	EEPROM clock
14	A1	O	Address bus 1 for CPU	64	DPDI	I	EEPROM data input
15	A2	O	Address bus 2 for CPU	65	EPDO	O	EEPROM data output
16	A3	O	Address bus 3 for CPU	66	VDD	-	Power supply
17	VDD	-	Power supply	67	SCLKO	I	Communication clock
18	SYSCLK	O	System clock signal output	68	S2UDT	I	Communication input data
19	VSS	-	Ground	69	U2SDT	O	Communication output data
20	XI	-	Not use (Connect to vss)	70	CPSCK	O	Clock for ADSC serial
21	XO	-	Non connect	71	SDIN	I	ADSC serial data input
22	VDD	-	Power supply	72	SDOUT	O	ADSC serial data output
23	OSCI	I	Clock signal input(13.5MHz)	73	-	-	Not use
24	OSCO	O	Clock signal output(13.5MHz)	74	-	-	Not use
25	MODE	I	CPU Mode selection input	75	NMI	-	Not use
26	A4	O	Address bus 4 for CPU	76	ADSCIRQ	I	Interrupt input of ADSC
27	A5	O	Address bus 5 for CPU	77	ODCIRQ	I	Interrupt input of ODC
28	A6	O	Address bus 6 for CPU	78	DECIRQ	I	Interrupt input of ZIVA
29	A7	O	Address bus 7 for CPU	79	WAKEUP	O	Not use
30	A8	O	Address bus 8 for CPU	80	ODCIRQ2	I	
31	A9	O	Address bus 9 for CPU	81	ADSEP	I	Address data selection input
32	A10	O	Address bus 10 for CPU	82	RST	I	Reset input
33	A11	O	Address bus 11 for CPU	83	VDD	-	Power supply
34	VDD	-	Power supply	84	TEST1	I	Test signal 1 input
35	A12	O	Address bus 12 for CPU	85	TEST2	I	Test signal 2 input
36	A13	O	Address bus 13 for CPU	86	TEST3	I	Test signal 3 input
37	A14	O	Address bus 14 for CPU	87	TEST4	I	Test signal 4 input
38	A15	O	Address bus 15 for CPU	88	TEST5	I	Test signal 5 input
39	A16	O	Address bus 16 for CPU	89	TEST6	I	Test signal 6 input
40	A17	O	Address bus 17 for CPU	90	TEST7	I	Test signal 7 input
41	A18	O	Address bus 18 for CPU	91	TEST8	I	Test signal 8 input
42	A19	O	Address bus 19 for CPU	92	VSS	-	Ground
43	VSS	-	Ground	93	D0	I/O	Data bus 0 of CPU
44	A20	O	Address bus 20 for CPU	94	D1	I/O	Data bus 1 of CPU
45	TXSEL	O	TX Select	95	D2	I/O	Data bus 2 of CPU
46	HAGUP	O		96	D3	I/O	Data bus 3 of CPU
47	/ADPD			97	D4	I/O	Data bus 4 of CPU
48	CD/DVD	O		98	D5	I/O	Data bus 5 of CPU
49	HMFON			99	D6	I/O	Data bus 6 of CPU
50	TRVSW	I	Detection switch of traverse inside	100	D7	I/O	Data bus 7 of CPU

■ MN103S13BDA (IC301) : Optical disc controller

1.Terminal layout



2.Block diagram



3.Pin function

Pin NO.	Symbol	I/O	Function
1	HDD15	I/O	ATAPI data
2	HDD0	I/O	ATAPI data
3	HDD14	I/O	ATAPI data
4	VDD	-	Apply 3V
5	HDD1	I/O	ATAPI data
6	HDD13	I/O	ATAPI data
7	HDD2	I/O	ATAPI data
8	VSS	-	GND
9	HDD12	I/O	ATAPI data
10	VDD	-	Apply 2.7V
11	HDD3	I/O	ATAPI data
12	HDD11	I/O	ATAPI data
13	HDD4	I/O	ATAPI data
14	HDD10	I/O	ATAPI data
15	VDD	-	Apply 3V
16	HDD5	I/O	ATAPI data
17	HDD9	I/O	ATAPI data
18	VSS	-	GND
19	HDD6	I/O	ATAPI data
20	HDD8	I/O	ATAPI data
21	HDD7	I/O	ATAPI data
22	VDDH		
23	NRESET	I	ATAPI reset
24	MASTER	I/O	ATAPI master / slave selection
25	NINT0	O	System control interruption 0
26	NINT1	O	System control interruption 1
27	WAITDOC	O	System control wait control
28	NMRST	O	System control reset (Connect to TP302)
29	DASPST	I	DASP signal initializing (VSS connected)
30	VDD	-	Apply 3V
31	OSCO2	O	OPEN (Connect to TP140)
32	OSCI2	I	OPEN (Connect to TP303)
33	UATASEL	I	VSS connected
34	VSS	-	GND
35	PVSSDRAM		VSS connected
36	PVDDDRAM		VDD (2.7V) connected
37	CPUADR17	I	System control address
38	CPUADR16	I	System control address
39	VSS	-	GND
40	CPUADR15	I	System control address
41	CPUADR14	I	System control address
42	CPUADR13	I	System control address
43	CPUADR12	I	System control address
44	VDD	-	Apply 2.7V
45	CPUADR11	I	System control address

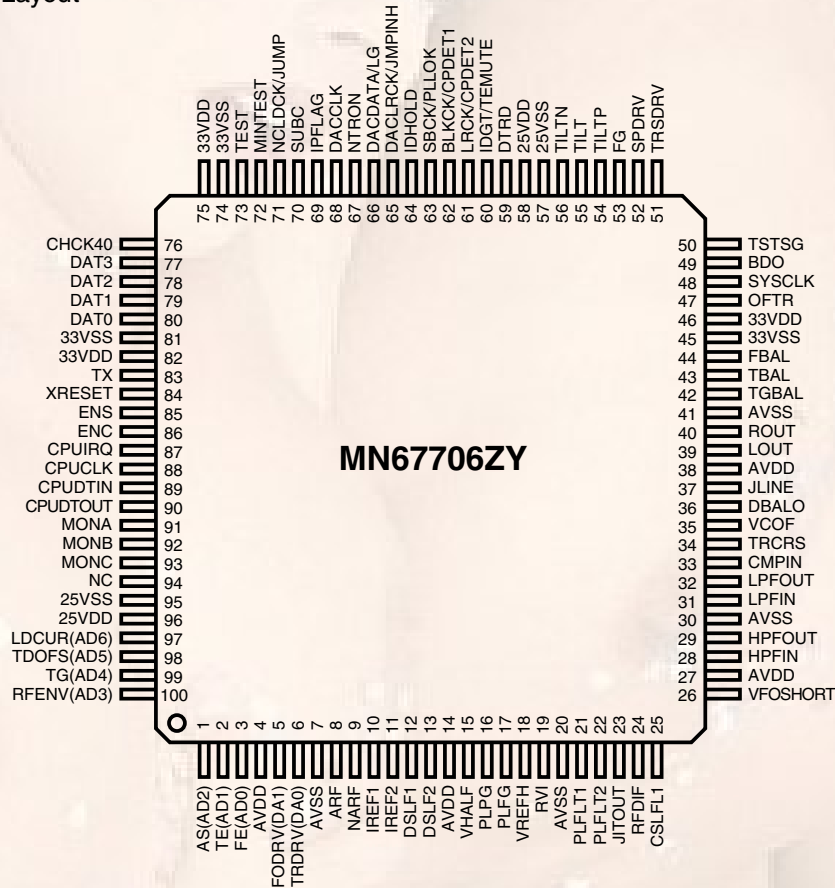
Pin NO.	Symbol	I/O	Function
46	CPUADR10	I	System control address
47	CPUADR9	I	System control address
48	CPUADR8	I	System control address
49	CPUADR7	I	System control address
50	CPUADR6	I	System control address
51	CPUADR5	I	System control address
52	CPUADR4	I	System control address
53	CPUADR3	I	System control address
54	CPUADR2	I	System control address
55	CPUADR1	I	System control address
56	VSS	-	GND
57	CPUADR0	I	System control address
58	NCS	I	System control chip selec
59	NWR	I	System control write
60	NRD	I	System control read
61	VDD	-	Apply 3V
62	CPUDT7	I/O	System control data
63	CPUDT6	I/O	System control data
64	PVPPDRAM	O	VSS connected
65	PTESTDRAM	I	VSS connected
66	PVDDDRAM		VDD (2.7V) connected
67	PVSSDRAM		VSS connected
68	CPUDT5	I/O	System control data
69	CPUDT4	I/O	System control data
70	CPUDT3	I/O	System control data
71	VSS	-	GND
72	CPUDT2	I/O	System control data
73	CPUDT1	I/O	System control data
74	CPUDT0	I/O	System control data
75	CLKOUT1	O	16.9/11.2/8.45MHz clock
76	VDD	-	Apply 3V
77	TEHLD	O	Mirror gate (Connect to TP141)
78	DTRD	O	Data part frequency control switch (Connect to TP304)
79	IDGT	O	Part CAPA switch (Connect to TP305)
80	BDO	I	RF dropout / BCA data of making to binary
81	CPDET2	I	Outer side CAPA detection
82	CPDET1	I	Side of surroundings on inside
83	VSS	-	GND
84	MMOD	I	VSS connected
85	NRST	I	System reset
86	VDD	-	Apply 3V
87	CLKOUT2	O	16.9MHz clock
88	SBCK/PLLOK	O	Frame mark detection
89	IDOHOLD	O	ID gate for tracking holding (Connect to TP307)
90	JMPINH	O	Jump prohibition

Pin NO.	Symbol	I/O	Function
91	LG	O	Land / group switch
92	NTRON	I	Tracking ON
93	DACDATA	O	Sereal output (Connect to TP148)
94	DACLCK	O	L and R identification output (Connect to TP149)
95	DACCLK	I	Clock for serial output
96	IPFLAG	I	Interpolation flag input
97	BLKCK	I	Sub-code,Block clock input (VSS connected)
98	LRCK	I	L and R identification signal output (VSS connected)
99	VSS	-	GND
100	OSCI1	I	16.9MHz oscillation
101	OSCO1	O	16.9MHz oscillation
102	VDD	-	Apply 3V
103	PVSS	-	GND
104	PVDD	-	Apply 3V
105	P1	I/O	Terminal MASTER polarity switch input (VDD 3V connected)
106	P0	I/O	CIRC-RAM OVER/UNDER Interruption signal input (VDD 3V connected)
107	VSS	-	GND
108	SBCK	O	Sub-code, Clock output for serial input (Connect to TP306)
109	SUBC	I	Sub-code, Serial input
110	NCLDCK	I	Sub-code, Frame clock input
111	CHCK40	I	Read clock to DAT3~0 (Output of dividing frequency four from ADSC)
112	DAT3	I	Read data from DISC (Parallel output from ADSC)
113	DAT2		
114	DAT1		
115	DAT0		
116	VDD	-	Apply 3V
117	SCLOCK	I/O	Debugging serial clock (Not use) (270Ω pull up)
118	SDATA	I/O	Debugging serial data (Not use) (270Ω pull up)
119	MONI3	O	Internal goods title monitor (Connect to TP150-TP153)
120	MONI2	O	
121	MONI1	O	
122	MONI0	O	
123	VSS	-	GND
124	NEJECT	I	Eject detection
125	VDD	-	Apply 2.7V
126	NTRYCL	I	Tray close detection (Not use)
127	NDASP	I/O	ATAPI Drive active/ Slave connection I/O
128	NCS3FX	I	ATAPI host chip selec (Not use)
129	NCS1FX	I	ATAPI host chip selec (Not use)
130	VDD	-	Apply 3V
131	DA2	I/O	ATAPI host address
132	DA0	I/O	ATAPI host address (Not use)

Pin NO.	Symbol	I/O	Function
133	NPDIAG	I/O	ATAPI slave master diagnosis input
134	VSS	-	GND
135	DA1	I/O	ATAPI host address (Not use)
136	NIOCS16	O	ATAPI output of selection of width of host data bus
137	INTRQ	O	ATAPI host interruption output
138	VDD	-	Apply 3V
139	NDMACK	I	ATAPI host DMA response (Not use)
140	IORDY	O	ATAPI host ready output (Connect to TP157)
141	NIORD	I	ATAPI host read (Not use)
142	VSS	-	GND
143	NIOWR	I/O	ATAPI host writes
144	DMARQ	O	ATAPI host DMA request (Connect to TP159)

■ MN67706ZY (IC201) : ADSC

1.Terminal Layout



2.Pin Functions

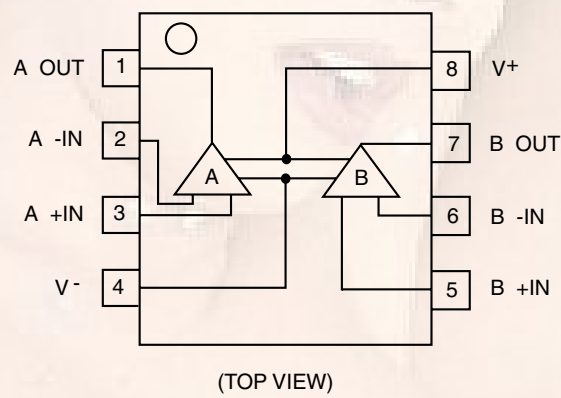
Pin No.	Symbol	I/O	Function
1	AS(AD2)	I	AS : Full adder signal(FEP)
2	TE(AD1)	I	Phase difference/3 beam tracking error(FEP)
3	FE(AD0)	I	Focus error(FEP)
4	AVDD	-	Apply 3.3V(For analog circuit)
5	FODRV(DA1)	O	Focus drive(DRVIC)
6	TRDRV(DA0)	O	Tracking drive(DRVIC)
7	AVSS	-	Ground(For analog circuit)
8	ARF	I	Equivalence RF+(FEP)
9	NARF	I	Equivalence RF-(FEP)
10	IREF1	I	Reference current1(For DBAL)
11	IREF2	I	Reference current2(For DBAL)
12	DSLF1	I/O	Connect to capacitor1 for DSL
13	DSLF2	I/O	Connect to capacitor2 for DSL
14	AVDD	-	Apply 3.3V(For analog circuit)
15	VHALF	I	Reference voltage 1.65+-0.1V(FEP)
16	PLPG	-	Not use(PLL phase gain setting resistor terminal)
17	PLFG	-	Not use(PLL frequency gain setting resistor terminal)
18	VREFH	I	Reference voltage 2.2V+-0.1V(FEP)
19	RVI	I/O	Connect to resistor for VREFH reference current source
20	AVSS	-	Ground(For analog circuit)
21	PLFLT1	O	Connect to capacitor1 for PLL
22	PLFLT2	O	Connect to capacitor2 for PLL
23	JIOUT	I/O	Output for jitter signal monitor
24	RFDIF	I	Not use
25	CSLFL1	I/O	Pull-up to VHALF

Pin No.	Symbol	I/O	Function
26	VFOSHORT	O	VFO short output
27	AVDD	-	Apply 3.3V(For analog circuit)
28	HPFIN	I	Pull-up to VHALF
29	HPFOUT	O	Connect to TP208
30	AVSS	-	Ground(For analog circuit)
31	LPFIN	I	Pull-up to VHALF
32	LPFOUT	O	Not use
33	CMPIN	I	Connect to TP210
34	TRCRS	I	Input signal for track cross formation
35	VCOF	I/O	JFVCO control voltage
36	DBALO	O	DSL balance adjust output
37	JLINE	O	J-line setting output(FEP)
38	AVDD	-	Apply 3.3V(For analog circuit)
39	LOUT	O	Connect to TP203 (Analog audio left output)
40	ROUT	O	Connect to TP204 (Analog audio right output)
41	AVSS	-	Ground(For analog circuit)
42	TGBAL	O	Tangential balance adjust(FEP)
43	TBAL	O	Tracking balance adjust(FEP)
44	FBAL	O	Focus balance adjust(FEP)
45	33VSS	-	Ground(For I/O)
46	33VDD	-	Apply 3.3V(For I/O)
47	OFTR	I	Off track signal
48	SYSCLK	I	16.9344MHz system clock input(ODC)
49	BDO	I	Drop out(FEP)
50	TSTSG	O	Calibration signal(FEP)
51	TRSDRV	O	Traverse drive(DRVIC)
52	SPDRV	O	Spindle drive output(DRVIC)
53	FG	I	FG signal input (Spindle motor driver)
54	TILTP	O	Connect to TP205
55	TILT	O	Connect to TP206
56	TILTIN	O	Connect to TP207
57	25VSS	-	Ground(For internal core)
58	25VDD	-	Apply 2.5V(For internal core)
59	DTRD	I	Data read control signal(ODC)
60	IDGT/TEMUTE	I	Pull-down to Ground
61	LRCK/CPDET2	O	LR channel data strobe(ODC)/
62	BLKCK/CPDET1	O	CD sub code synchronous signal(ODC)/
63	SBCK/PLLOK	I	CD sub code data shift clock(ODC)/PLL pull-in OK signal input
64	IDHOLD	I	Pull-down to Ground
65	DACLCK/JMPINH	I	1bit DAC-LR channel data strobe(ODC)/
66	DACDATA/LG	I	CD 1bit DAC channel data(ODC)
67	NTRON	O	L : Tracking ON(ODC)
68	DACCLK	O	1bit DAC channel data shift clock(ODC)
69	IPFLAG	O	CIRC error flag(ODC)
70	SUBC	O	CD sub code(ODC)
71	NCLDCK/JUMP	O	CD sub code data frame clock(ODC)/DVD JUMP signal(ODC)
72	MINTEST	I	Pull-down to Ground(For MINTEST)
73	TEST	I	Pull-down to Ground(For TEST)
74	33VSS	-	Ground(For I/O)
75	33VDD	-	Apply 3.3V(For I/O)
76	CHCK40	O	Clock for SRDATA(ODC)
77	DAT3	O	SRDATA3(ODC)
78	DAT2	O	SRDATA2(ODC)
79	DAT1	O	SRDATA1(ODC)
80	DAT0	O	SRDATA0(ODC)

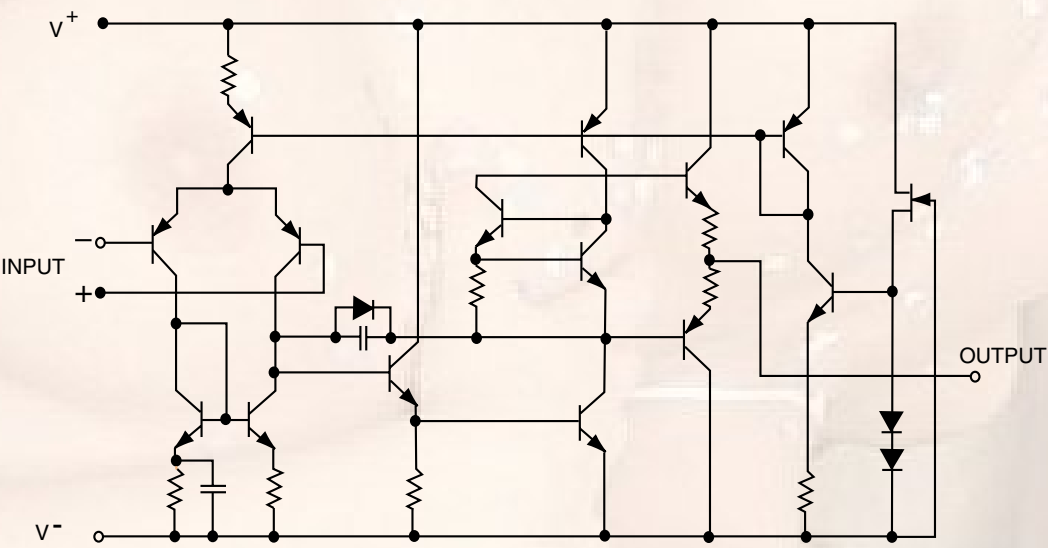
Pin No.	Symbol	I/O	Function
81	33VSS	-	Ground(For I/O)
82	33VDD	-	Apply 3.3V(For I/O)
83	TX	O	Digital audio interface
84	XRESET	I	Reset input (System control)
85	ENS	I	Servo DSC serial I/F chip select (System control)
86	ENC	I	CIRC serial I/F chip select (System control)
87	CPUIRQ	O	Interrupt request (System control)
88	CPUCLK	I	Syscon serial I/F clock (System control)
89	CPUDTIN	I	Syscon serial I/F data input (System control)
90	CPUDTOUT	O	Syscon serial I/F data output (System control)
91	MONA	O	Connect to TP226 (Monitor terminal A)
92	MONB	O	Connect to TP225 (Monitor terminal A)
93	MONC	O	Connect to TP224 (Monitor terminal A)
94	NC	O	Connect to TP211
95	25VSS	-	Ground(For internal core)
96	25VDD	-	Apply 2.5V(For internal core)
97	LDCUR(AD6)	I	
98	TDOFS(AD5)	I	
99	TG(AD4)	I	Tangential phase difference(FEP)
100	RFENV(AD3)	I	RF envelope input(FEP)

■ NJM4580D (IC741, IC751) : LPF, Mic and H.phone Amp.

1.Terminal layout

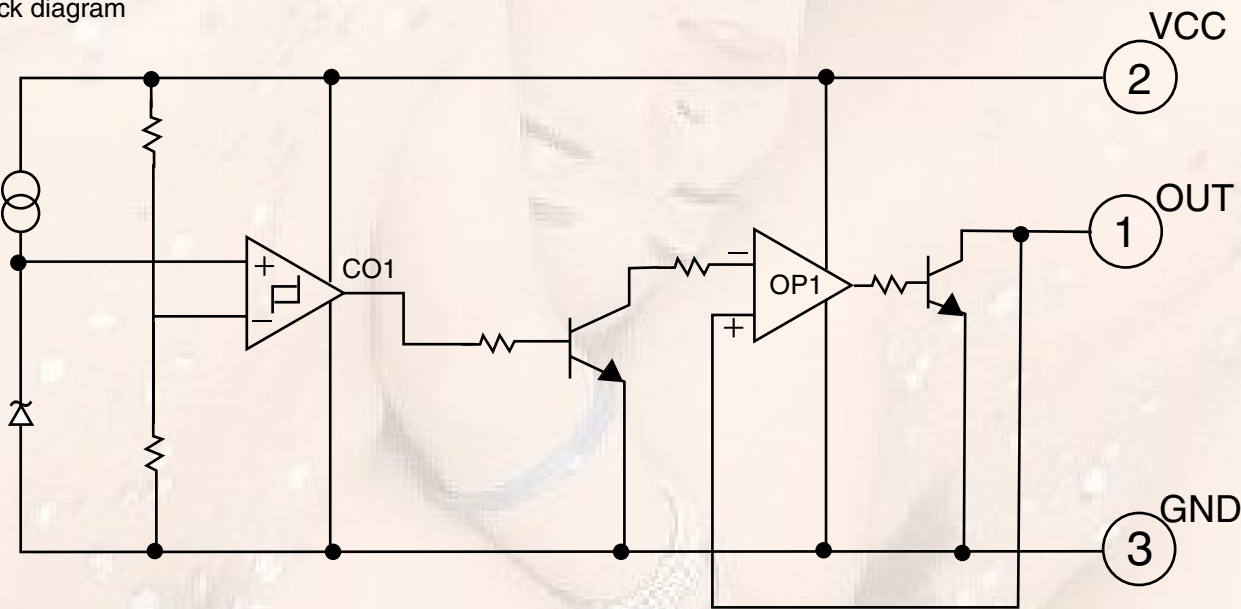


2.Block diagram



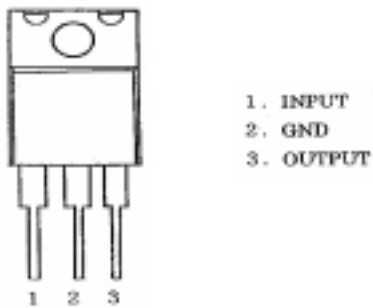
■ IC-PST9140-T (IC702) : Reset IC

1. Block diagram

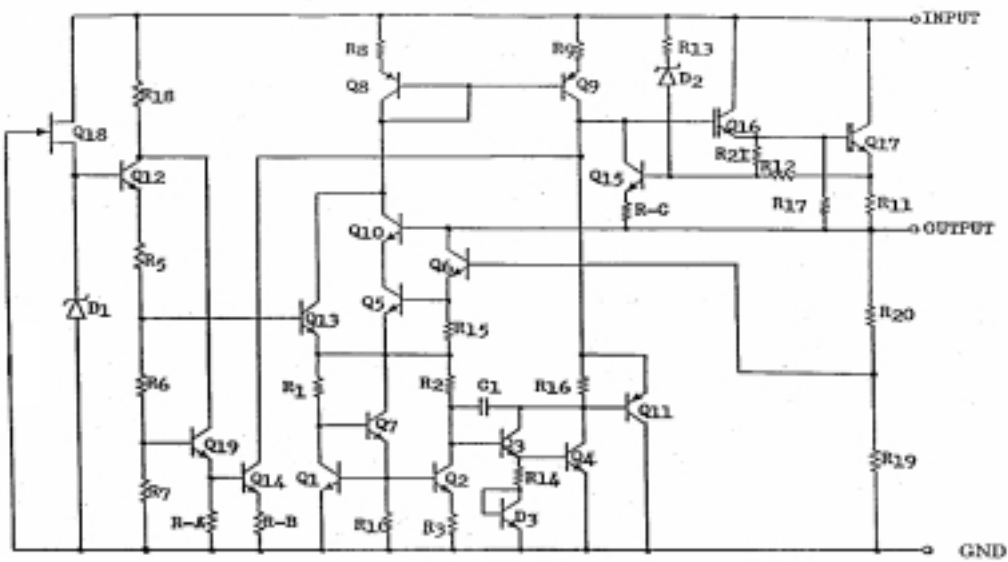


■ NJM78M05FA (IC953) : Regulator

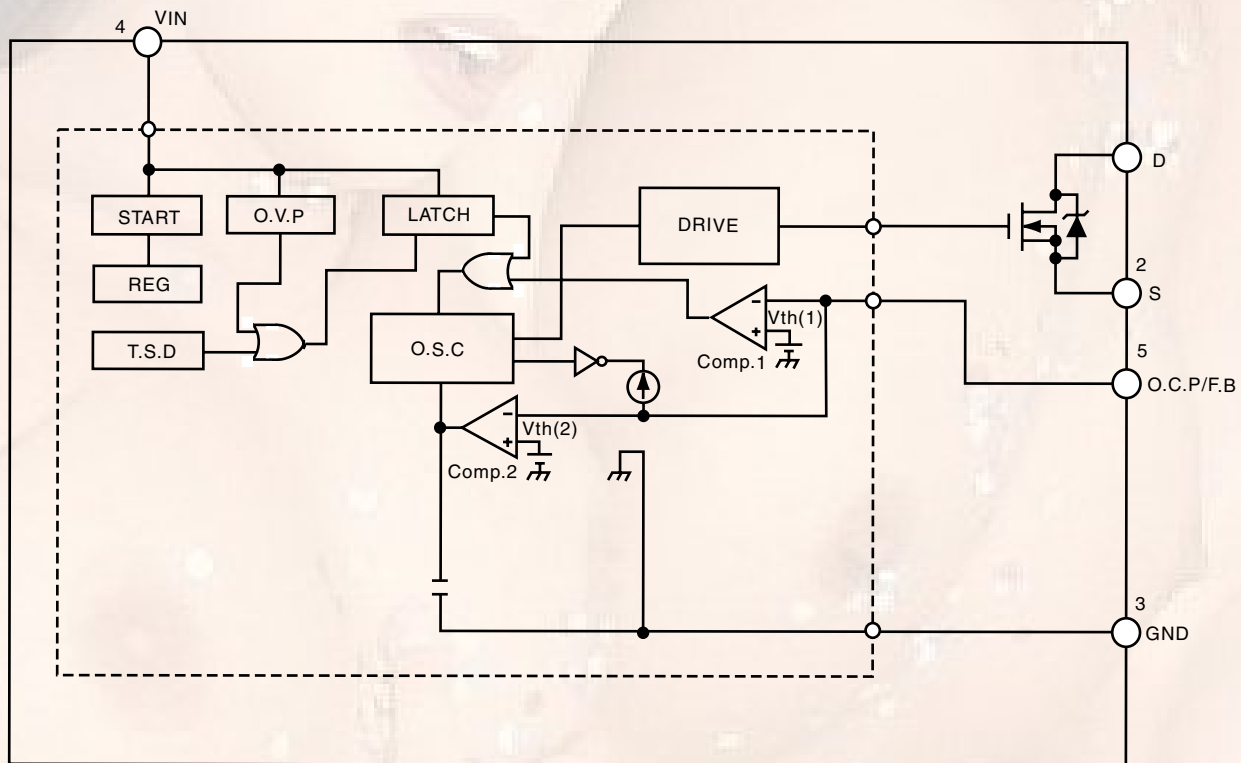
1. Terminal layout



2. Block diagram

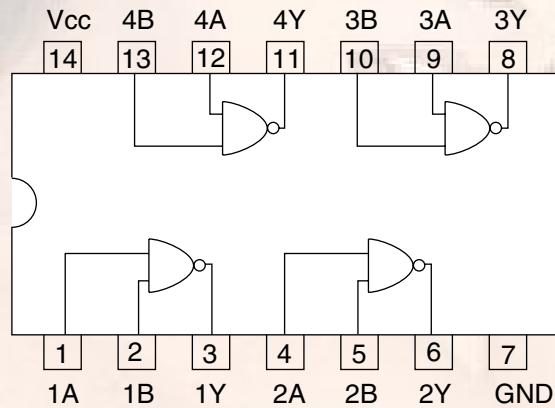


STR-G6651 (IC901) : Switch regulator



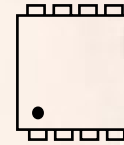
■ TC74VHC00FT-X (IC503) : Wright timing control

1. Terminal layout / Block diagram

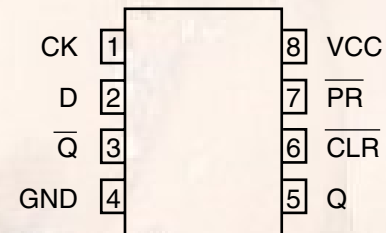


■ TC7WH74FU-X (IC374) : Clock buffer

1. Terminal layout

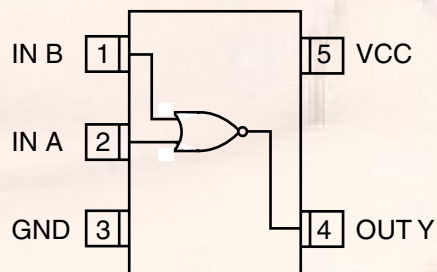


2. Block diagram



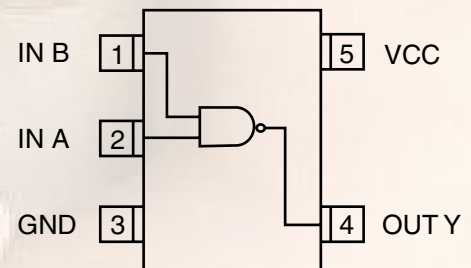
■ TC7SH32FU-X (IC312) : Timing control

1. Terminal layout



■ TC7SH08FU-X (IC311) : Timing control

1. Terminal layout



■ ZIVA3-PE0 (IC501) : AV Decoder

ZIVA3-PE0 (1/5)

Pin No.	Symbol	I/O	Function
1	PIO0	I/O	Programmable I/O pins. Input mode after reset.
2	HDATA0	I/O	8-bit bi-directional host data bus. writes data to the decoder Code FIFO via HDATA. MSB of the 32-bit word is written first. The host also reads and writes the decoder internal registers and local SDRAM via HDATA.
3	HDATA1		
4	HDATA2		
5	VDD-3.3	-	3.3-V supply voltage for I/O signals.
6	HDATA3	I/O	8-bit bi-directional host data bus. writes data to the decoder Code FIFO via HDATA. MSB of the 32-bit word is written first. The host also reads and writes the decoder internal registers and local SDRAM via HDATA.
7	VSS	-	Ground for core logic and I/O signals.
8	HDATA4	I/O	8-bit bi-directional host data bus. writes data to the decoder Code FIFO via HDATA. MSB of the 32-bit word is written first. The host also reads and writes the decoder internal registers and local SDRAM via HDATA.
9	HDATA5		
10	HDATA6		
11	HDATA7		
12	VDD-2.5	-	2.5-V supply voltage for core logic.
13	RESET	I	Hardware reset. An external device asserts RESET(active LOW) to execute a decoder hardware reset. To ensure proper initialization after power is stable, assert RESET for at least 20 ms.
14	VSS	-	Ground for core logic and I/O signals.
15	WAIT/DTACK	O	Transfer not complete / data acknowledge. Active LOW to indicate host initiated transfer is not complete. WAIT is asserted after the falling edge of CS and reasserted when decoder is ready to complete transfer cycle. Open drain signal, must be pulled-up via 1kW to 3.3 volts. Driven high for 10 ns before tristate.
16	INT	O	Host interrupt. Open drain signal, must be pulled-up via 4.7kW to 3.3 volts. Driven high for 10 ns before tristate.
17	VDD-3.3	-	3.3-V supply voltage for I/O signals.
18	NC	O	No Connection
19	VSS	-	Ground for core logic and I/O signals.
20	NC	O	No Connection
21	PIO11	I/O	Programmable I/O pins. Input mode after reset
22	PIO12		
23	PIO13		
24	PIO14		
25	PIO15		
26	PIO16		
27	VDD-3.3	-	3.3-V supply voltage for I/O signals.
28	PIO17	I/O	Programmable I/O pins. Input mode after reset
29	VSS	-	Ground for core logic and I/O signals.
30	PIO18	I/O	Programmable I/O pins. Input mode after reset
31	PIO19	I/O	Programmable I/O pins. Output mode after reset
32	PIO20		
33	PIO21		
34	PIO22		
35	PIO23		
36	VDD-3.3	-	3.3-V supply voltage for I/O signals.
37	PIO24	I/O	Programmable I/O pins. Output mode after reset
38	VSS	-	Ground for core logic and I/O signals.
39	PIO25	I/O	Programmable I/O pins. Output mode after reset
40	VDD-2.5	-	2.5-V supply voltage for core logic.
41	PIO26	I/O	Programmable I/O pins. Output mode after reset
42	VSS	-	Ground for core logic and I/O signals.

Pin No.	Symbol	I/O	Function
44	PIO28	I/O	Programmable I/O pins. Output mode after reset
45	PIO29		
46	PIO30		
47	VDD-3.3	-	3.3-V supply voltage for I/O signals.
48	PIO31	I/O	Programmable I/O pins. Output mode after reset
49	VSS	-	Ground for core logic and I/O signals.
50	NC	O	No Connection
51			
52	PIO1	I/O	Programmable I/O pins. Input mode after reset
53	MDATA15	I/O	Memory data
54	MDATA0	I/O	Memory data
55	VDD-3.3	-	3.3-V supply voltage for I/O signals.
56	MDATA14	I/O	Memory data.
57	VSS	-	Ground for core logic and I/O signals.
58	MDATA1	I/O	Memory data.
59	MDATA13		
60	MDATA2		
61	VDD-3.3	-	3.3-V supply voltage for I/O signals.
62	MDATA12	I/O	Memory data.
63	VSS	-	Ground for core logic and I/O signals.
64	MDATA3	I/O	Memory data.
65	VDD-2.5	-	2.5-V supply voltage for core logic.
66	MDATA11	I/O	Memory data.
67	VSS	-	Ground for core logic and I/O signals.
68	MDATA4	I/O	Memory data.
69	VDD-3.3	-	3.3-V supply voltage for I/O signals.
70	MDATA10	I/O	Memory data.
71	VSS	-	Ground for core logic and I/O signals.
72	MDATA5	I/O	Memory data.
73	MDATA9		
74	MDATA6		
75	VDD-3.3	-	3.3-V supply voltage for I/O signals.
76	MDATA8	I/O	Memory data.
77	VSS	-	Ground for core logic and I/O signals.
78	MDATA7	I/O	Memory data.
79	LDQM	O	SDRAM LDQM.
80	UDQM	O	SDRAM UDQM.
81	VDD-3.3	-	3.3-V supply voltage for I/O signals.
82	MWE	O	SDRAM write enable. Decoder asserts active LOW to request a write operation to the SDRAM array.
83	VSS	-	Ground for core logic and I/O signals.
84	SD-CLK	O	SDRAM system clock.
85	SD-CAS	O	Active LOW SDRAM column address.
86	SD-RAS	O	Active LOW SDRAM row address.
87	VDD-3.3	-	3.3-V supply voltage for I/O signals.
88	SD-CS1	O	Active LOW SDRAM bank select.
89	VSS	-	Ground for core logic and I/O signals.
90	SD-CS0	O	Active LOW SDRAM bank select.
91	VDD-2.5	-	2.5-V supply voltage for core logic.
92	NC	O	No Connection.
93	VSS	-	Ground for core logic and I/O signals.
94	NC	O	No Connection.
95	VDD-3.3	-	3.3-V supply voltage for I/O signals.
96	MADDR9	O	Memory address.
97	VSS	-	Ground for core logic and I/O signals.
98	MADDR11	O	Memory address.

Pin No.	Symbol	I/O	Function
99	MADDR8	O	Memory address.
100	MADDR10		
101	VDD-3.3	-	3.3-V supply voltage for I/O signals.
102	MADDR7	O	Memory address.
103	VSS	-	Ground for core logic and I/O signals.
104	MADDR0	O	Memory address.
105	MADDR6		
106	MADDR1		
107	VDD-3.3	-	3.3-V supply voltage for I/O signals.
108	MADDR5	O	Memory address.
109	VSS	-	Ground for core logic and I/O signals.
110	MADDR2	O	Memory address.
111	MADDR4		
112	MADDR3		
113	VDD-3.3	-	3.3-V supply voltage for I/O signals.
114	NC	O	No Connection
115	VSS	-	Ground for core logic and I/O signals.
116	NC	O	No Connection
117	VDD-2.5	-	2.5-V supply voltage for core logic.
118	NC	O	No Connection
119	VSS	-	Ground for core logic and I/O signals.
120	NC	O	No Connection
121			
122			
123	VDD-3.3	-	3.3-V supply voltage for I/O signals.
124	NC	O	No Connection
125	VSS	-	Ground for core logic and I/O signals.
126	NC	O	No Connection
127	RESERVED	O	Open drain signal, must be pulled-up via 4.7k Ω to 3.3 volts.
128			
129	PIO2	I/O	Programmable I/O pins. Input mode after reset.
130	NC	O	No Connection
131	RESERVED	I	Tie to VSS or VDD-3.3
132			
133	PIO3	I/O	Programmable I/O pins. Input mode after reset.
134	VDD-3.3	-	3.3-V supply voltage for I/O signals.
135	RESERVED	I	Tie to VSS or VDD-3.3
136	VSS	-	Ground for core logic and I/O signals.
137	RESERVED	I	Tie to VSS or VDD-3.3
138	PIO4	I/O	Programmable I/O pins. Input mode after reset.
139	RESERVED	I	Tie to VSS or VDD-3.3
140			
141	PIO5	I/O	Programmable I/O pins. Input mode after reset.
142	VDATA0	O	Video data bus. Byte serial CbYCrY data synchronous with VCLK. At power-up, the decoder does not drive VDATA. During boot-up, the decoder uses configuration parameters to drive or 3-state VDATA
143	VDATA1		
144	VDD-2.5	-	2.5-V supply voltage for core logic.
145	VDATA2	O	Video data bus. Byte serial CbYCrY data synchronous with VCLK. At power-up, the decoder does not drive VDATA. During boot-up, the decoder uses configuration parameters to drive or 3-state VDATA
146	VSS	-	Ground for core logic and I/O signals.
147	PIO6	I/O	Programmable I/O pins. Input mode after reset.
148	VDATA3	O	Video data bus. Byte serial CbYCrY data synchronous with VCLK. At power-up, the decoder does not drive VDATA. During boot-up, the decoder uses configuration parameters to drive or 3-state VDATA

Pin No.	Symbol	I/O	Function
149	VDD-3.3	-	3.3-V supply voltage for I/O signals.
150	VDATA4	O	Video data buses for byte sequential CbYCrY data. The decoder does not run VDATA during the power up procedure. However, during booting the decoder uses operational configuration parameters or 3-state VDATA.
151	VSS	-	Ground for core logic and I/O signals.
152	VDATA5	O	Video data buses for byte sequential CbYCrY data. The decoder does not run VDATA during the power up procedure. However, during booting the decoder uses operational configuration parameters or 3-state VDATA.
153	PIO7	I/O	Programmable I/O pin. Input mode after resetting.
154	VDATA6	O	Video data buses for byte sequential CbYCrY data.
155	VDATA7	O	The decoder does not run VDATA during the power up procedure. However, during booting the decoder uses operational configuration parameters or 3-state VDATA.
156	PIO8	I/O	Programmable I/O.
157	HSYNC	I/O	pins. Input mode after reset. Horizontal sync. The decoder begins outputting pixel data for a new horizontal line
158	VSYNC	I/O	after the falling (active) edge of HSYNC. Vertical sync. Bi-directional, the decoder outputs the top border of a new field on the first HSYNC after the falling edge of VSYNC. VSYNC can accept vertical synchronization or top/bottom field notification from an external source.
159	DA-IEC	O	(VSYNC HIGH = bottom field. VSYNC LOW = Top field)
160	VDD-3.3	-	Bistream data in IEC-1937 or PCM data out in IEC-958 format.
161	DA-DATA0	O	3.3-V supply voltage for I/O signals.
162	VSS	-	PCM data out, eight channels. Serial audio samples relative to DA-BCK clock.
163	DA-DATA1	O	Ground for core logic and I/O signals.
164	DA-DATA2	O	PCM data out, eight channels. Serial audio samples relative to DA-BCK clock.
165	DA-DATA3	O	
166	DA-LRCK	O	PCM left-right clock. Identifies the channel for each audio sample. the polarity is programmable.
167	DA-BCK	O	PCM bit clock. Divided by 8 from DA-XCK can be either 48 or 32 times the sampling clock.
168	VDD-2.5	-	2.5-V supply voltage for core logic.
169	DA-XCK	I/O	Audio master frequency clock. Used to generate DA-BCK and DA-LRCK. DA-XCK can be either 384 or 256 times the sampling frequency.
170	VSS	-	Ground for core logic and I/O signals.
171	DAI-DATA	I	PCM input data. two channels. Serial audio samples relative to DAI-BCK clock.
172	DAI-LRCK	I	PCM input left-right clock.
173	DAI-BCK	I	PCM input bit clock.
174	PIO9	I/O	Programmable I/O pins. Input mode after reset.
175	CLKSEL	I	Clock Select: Internal = VDD, External = VSS
176	A-VDD	-	3.3-V analog supply voltage.
177	VCLK	I	Video clock. Clocks out data on input. VDATA7. Clock is typically 27 MHz.
178	SYSCLK	I	System clock. Decoder requires external 27 MHz TTL oscillator.
179	A-VSS	-	Drive with the same 27-MHz as VCK.
180	DVD-DATA0 /CD-DATA	I	Analog ground for PLL Serial CD data. This pin is shared with DVD compressed data DVD-DATA0.
181	VDD-3.3	-	3.3-V supply voltage for I/O signals.
182	DVD-DATA1 /CD-LRCK	I	Programmable polarity 16-bit word synchronization to the decoder (right channel HIGH). This pin is shared with DVD compressed data DVD-DATA1.
183	VSS	-	Ground for core logic and I/O signals.
184	DVD-DATA2 /CD-BCK	I	CD bit clock. Decoder accept multiple BCK rates. This pin is shared with DVD compressed data DVD-DATA2.
185	DVD-DATA3 /CD-C2PO	I	Asserted HIGH indicates a corrupted byte. Decoder keeps the previous valid picture on-screen until the next valid picture is decoded. This pin is shared with DVD compressed data DVD-DATA3.

Pin No.	Symbol	I/O	Function
186	DVD-DATA7	I	DVD parallel compressed data from DVD DSP. When DVD DSP sends 32-bit words, it must write the MSB first. CDG-SDATA:CD+G (Subcode) Data. Indicates serial subcode data input. CDG-VSFY:CD+G (Subcode)Frame Sync. Indicates frame-start or composite synchronization input. CDG-SOS1:CD+G (Subcode) Block Sync. Indicates block-start synchronization input. CDG-SCLK: CD+G(Subcode)Clock. Indicates subcode data clock input or output.
187	/CDG-SCLK		
188	DVD-DATA6		
189	/CDG-SOS1		
	DVD-DATA5 /CDG-VFSY DVD-DATA4 /CDG-SDATA		
190	PIO10	I/O	Programmable I/O pins. Input mode after reset.
191	VREQUEST	O	Video request. Decoder asserts VREQUEST to indicate that the video input buffer has available space. Polarity is programmable.
192	VSTROBE	I	Video strobe. Programmable dual mode pulse. Asynchronous and synchronous. In Asynchronous mode, an external source pulses VSTROBE to indicate data is ready for transfer. In synchronous mode VSTROBE clock data.
193	VDD-3.3	-	3.3-V supply voltage for I/O signals.
194	NC	O	No Connection
195	VSS	-	Ground for core logic and I/O signals.
196	V-DACK	I	In synchronous mode, Video data acknowledge. Asserted when DVD data is valid. Polarity is programmable.
197	VDD-2.5	-	2.5-V supply voltage for core logic.
198	RESERVED	I	Tie to VSS or VDD-3.3
199	VSS	-	Ground for core logic and I/O signals.
200	ERROR	I	Error in input data. If ERROR signal is not available from the DSP it must be grounded.
201	HOST8SEL	I	Always Tie to VDD-3.3
202	HADDR0	I	Host address bus. 3-bit address bus selects one of eight host interface registers.
203	HADDR1		
204	HADDR2		
205	DTACKSEL	I	Tie HIGH to select $\overline{\text{WAIT}}$ signal, LOW to select $\overline{\text{DTACK}}$ signal (Motorola 68K mode).
206	$\overline{\text{CS}}$	I	Host chip select. Host asserts CS to select the decoder for a read or write operation. The falling edge of this signal triggers the read or write operation.
207	$\overline{\text{R/W}}$	I	Read/write strobe in M mode. write strobe in I mode. Host asserts R/W LOW to select write and LOW to select read.
208	$\overline{\text{RD}}$	I	Read strobe in I mode. Must be held HIGH in M Mode

XV-521BK/523GD
XV-525BK/421BK

JVC

VICTOR COMPANY OF JAPAN, LIMITED

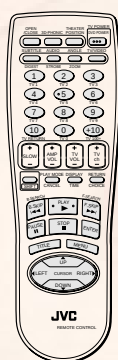
OPTICAL DISC BUSINESS DIV. PERSONAL & MOBILE NETWORK BUSINESS UNIT
AV & MULTIMEDIA COMPANY 1644, Shimotsuruma, Yamato, Kanagawa 242-8514, Japan

JVC

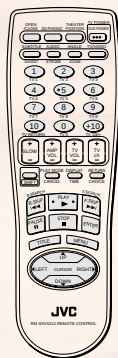
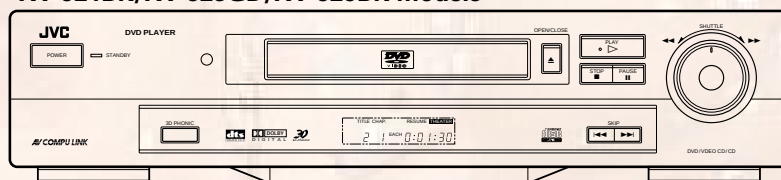


DVD VIDEO PLAYER

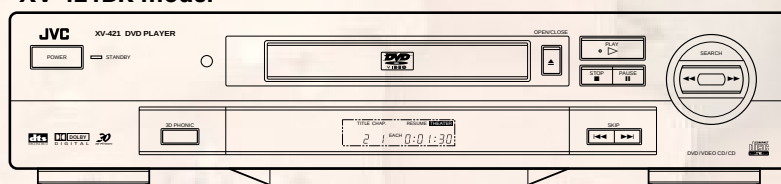
XV-521BK/XV-523GD/XV-525BK XV-421BK



XV-521BK/XV-523GD/XV-525BK models



XV-421BK model



Video CD



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Preliminary knowledge	4
Getting started	12
Basic operations	17
Advanced operations	20
Initial settings	35
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INSTRUCTIONS

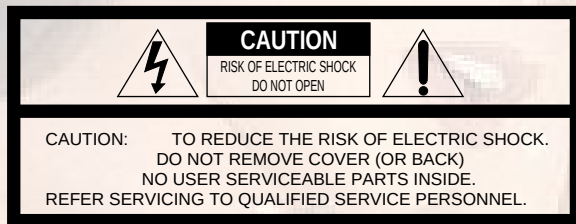
For Customer Use:

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

Model No. _____

Serial No. _____

Warnings, Cautions and Others Mises en garde, précautions et indications diverses



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.

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.

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

For Canada/pour le Canada

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND

For Canada/pour le Canada

THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE INTERFERENCE-CAUSING EQUIPMENT STANDARD ENTITLED "DIGITAL APPARATUS", ICES-003 OF THE DEPARTMENT OF COMMUNICATIONS.

CET APPAREIL NUMERIQUE RESPECTE LES LIMITES DE BRUITS RADIOELECTRIQUES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASSE B PRESCRITES DANS LA NORME SUR LE MATERIEL BROUILLEUR: "APPAREILS NUMERIQUES", NMB-003 EDICTEE PAR LE MINISTRE DES COMMUNICATIONS.

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.

ATTENTION

Afin d'éviter tout risque d'électrocution, d'incendie, etc.:

1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

Caution -- POWER switch!

Disconnect the mains plug to shut the power off completely. The POWER switch in any position does not disconnect the mains line. The power can be remote controlled.

Attention -- Commutateur POWER!

Déconnecter la fiche de secteur pour couper complètement le courant. Le commutateur POWER ne coupe jamais complètement la ligne de secteur, quelle que soit sa position. Le courant peut être télécommandé.

IMPORTANT FOR LASER PRODUCTS IMPORTANT POUR LES PRODUITS LASER

1. CLASS 1 LASER PRODUCT

2. **DANGER:** Visible 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.

1. PRODUIT LASER CLASSE 1

2. **ATTENTION:** Radiation laser visible quand l'appareil est ouvert ou que le verrouillage est en panne ou désactivé. Eviter une exposition directe au rayon.

3. **ATTENTION:** Ne pas ouvrir le couvercle du dessus. Il n'y a aucune pièce utilisable à l'intérieur. Laisser à un personnel qualifié le soin de réparer votre appareil.

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Features

Picture functions

■ Strobe function

The unit can display nine continuous still pictures on the TV screen.

■ Digest function

You can select the desired title from the opening scenes displayed on the TV screen.

■ Angle function*

You can select a desired angle from multiple camera angles recorded on the DVD VIDEO disc.

■ Zoom function

You can view scenes close-up.

■ Parental lock*

You can restrict the playback of DVD VIDEO discs with scenes which you do not want children to see, such as adult or violent films.

■ Theater position

You can select the picture character according to the lighting of your room.

Audio functions

■ High quality digital sound

You can enjoy high quality sound with Dolby Digital or Linear-PCM.

■ Surround function*

The unit is compatible with Dolby Digital surround and DTS surround.
(DTS surround is available for digital output only.)

■ 3D Phonic function

You can enjoy surround sound with your 2-channel system.

Other functions

■ Multi-language subtitles and sound*

You can select a subtitle or sound language from those recorded on the DVD VIDEO disc.

■ Multi-disc playback

You can enjoy Audio CD discs and Video CD discs, as well as DVD VIDEO discs.

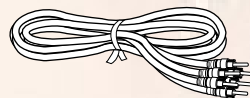
■ Operation from the on-screen display

User-friendly on-screen displays allow you to operate the unit easily.

Functions with (*) mark only work on a DVD VIDEO disc that is compatible with each function.

Supplied accessories

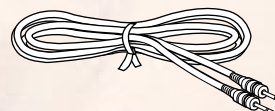
- Audio/video cable (x 1)



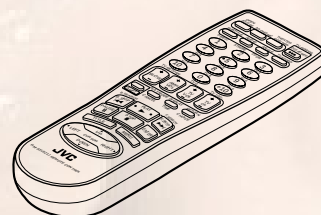
- S-video cable (x 1)



- AV compulink cord (x 1)
(except XV-421BK)



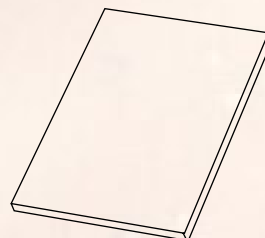
- Remote Control Unit (x 1)



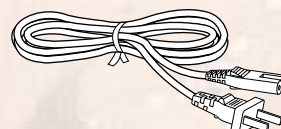
- R6P(SUM-3)/AA(15F) batteries (x 2)



- Instruction manual (x 1)



- AC power cord (x 1)



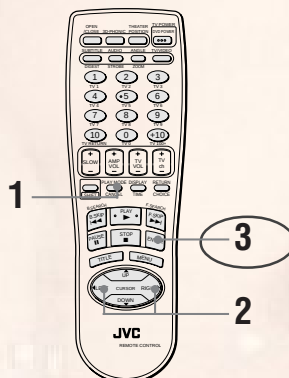
About this instruction manual

This instruction manual basically explains operations as follows:

To playback in random order [RANDOM]



You can play titles or tracks in random order by using the Random function.

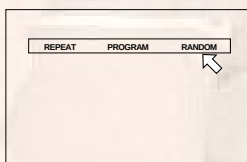


■ While stopped

1 Press PLAY MODE - CANCEL.

The play mode menu appears on the TV screen.

2 Use CURSOR ◀▶ to move to [RANDOM].



The "RANDOM" indicator appears in the display window on the front panel.

3 Press ENTER.

The unit starts random playback.

After playing all titles/tracks of the disc, random playback ends.



The same title or track will not be played back more than once during random play.

• To stop/quit random playback in the middle

Press STOP to stop playback. The unit is still in random playback mode, so pressing PLAY starts random playback again.

To quit random playback, press STOP again while stopped. The "RANDOM" indicator in the display window turns off.

NOTE

Some DVD VIDEO discs may not be played back correctly in random mode.

These symbols indicate the types of discs which the operation can be used for.

The number indicates the following procedural step(s) in which the button(s) is(are) used.

You may also use the corresponding buttons on the front panel of the unit if available.

The number indicates the procedural step.

Other convenient procedures, etc.

Additional supplemental remarks

The names of buttons on the remote control unit (or on the front panel of the unit) are all given in uppercase letters.

Notes on handling

Important cautions

Installation of the unit

- Select a place which is level, dry and neither too hot nor too cold (between 5°C and 35°C, 41°F and 95°F).
- Leave sufficient distance between the unit and the TV.
- Do not use the player in a place subject to vibrations.

Power cord

- Do not handle the power cord with wet hands!
- A small amount of power (3.0 watts) is always consumed while the power cord is connected to the wall outlet.
- When unplugging the player from the wall outlet, always pull the plug, not the power cord.

To prevent malfunction of the unit

- There are no user-serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
- Do not insert any metallic object into the unit.
- Do not use any non-standard shape disc available on the market, because it may damage the unit.
- Do not use a disc with tape, seals, or paste on it, because damage to the unit may result.

Note about copyright laws

- Please check the copyright laws in your country before recording from DVD VIDEO, Audio CD, and Video CD discs. Recording of copyrighted material may infringe copyright laws.

Note about the copyguard system

- The DVD VIDEO disc is protected by the copyguard system. When you connect the unit to your VCR directly, the copyguard system activates and the picture may not be played back correctly.

Safety precautions

Avoid moisture, water and dust

Do not place the unit in moist or dusty places.

Avoid high temperatures

Do not expose the unit to direct sunlight or place it near a heating device.

When you're away

When away on travel or otherwise for an extended period of time, remove the plug from the wall outlet.

Do not insert foreign objects into the unit

Do not insert wires, hairpins, coins, etc. into the unit.

Do not block the vents

Blocking the vents may damage the unit.

Care of the cabinet

When cleaning the unit, use a soft cloth and follow the relevant instructions on the use of chemically-coated cloths. Do not use benzene, thinner or other organic solvents and disinfectants. These may cause deformation or discoloring.

If water gets inside the unit

Turn off the power switch and remove the plug from the wall outlet, then call the store where you made your purchase. Using the unit in this state may cause a fire or electrical shock.

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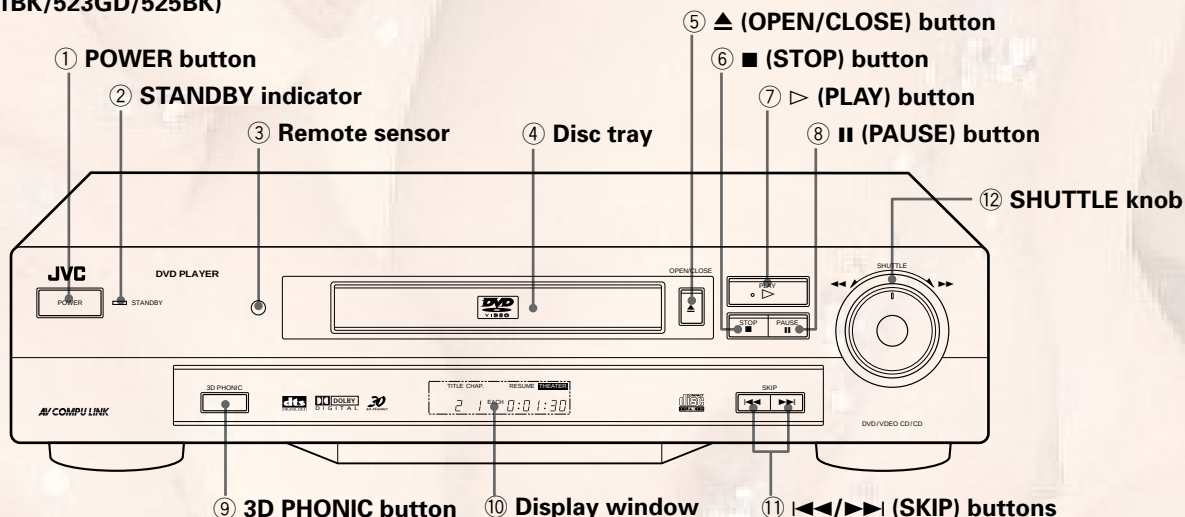
© 1996 Digital Theater Systems, Inc. All Rights Reserved.

Names of parts and controls

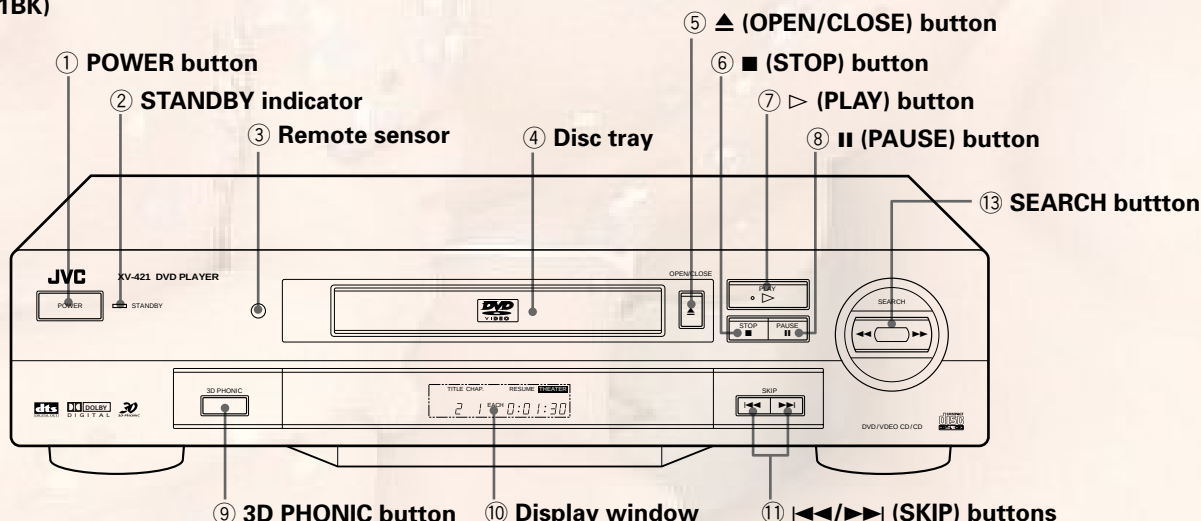
Refer to the corresponding pages indicated in () for details.

Front panel

(For XV-521BK/523GD/525BK)



(For XV-421BK)



① POWER button (17)

Turns the unit on or off (standby).

② STANDBY indicator

Lights when the power cord is connected and the unit is on standby. When the unit is turned on, the STANDBY indicator goes off.

③ Remote sensor

Receives the signal from the remote control unit.

④ Disc tray (17)

Used to load a disc.

⑤ ▲ (OPEN/CLOSE) button (17)

Used to open and close the disc tray.

⑥ ■ (STOP) button (18)

Stops playback.
Also used to erase all programmed tracks for the program play.

⑦ ▷ (PLAY) button (18)

Starts playback. Also, used as a SELECT button for the PBC of Video CDs.

⑧ || (PAUSE) button (18)

Pauses playback.

⑨ 3D PHONIC button (32)

Produces a simulated surround effect.

⑩ Display window

Indicates the current status of the unit.

⑪ ◀◀/▶▶ (SKIP) buttons (19, 21)

Used to skip a chapter, title or track.
Also, used for the page selection of a menu screen (for DVD VIDEO/Video CD).
Holding down ◀◀ or ▶▶ during playback reverses or advances playback rapidly.

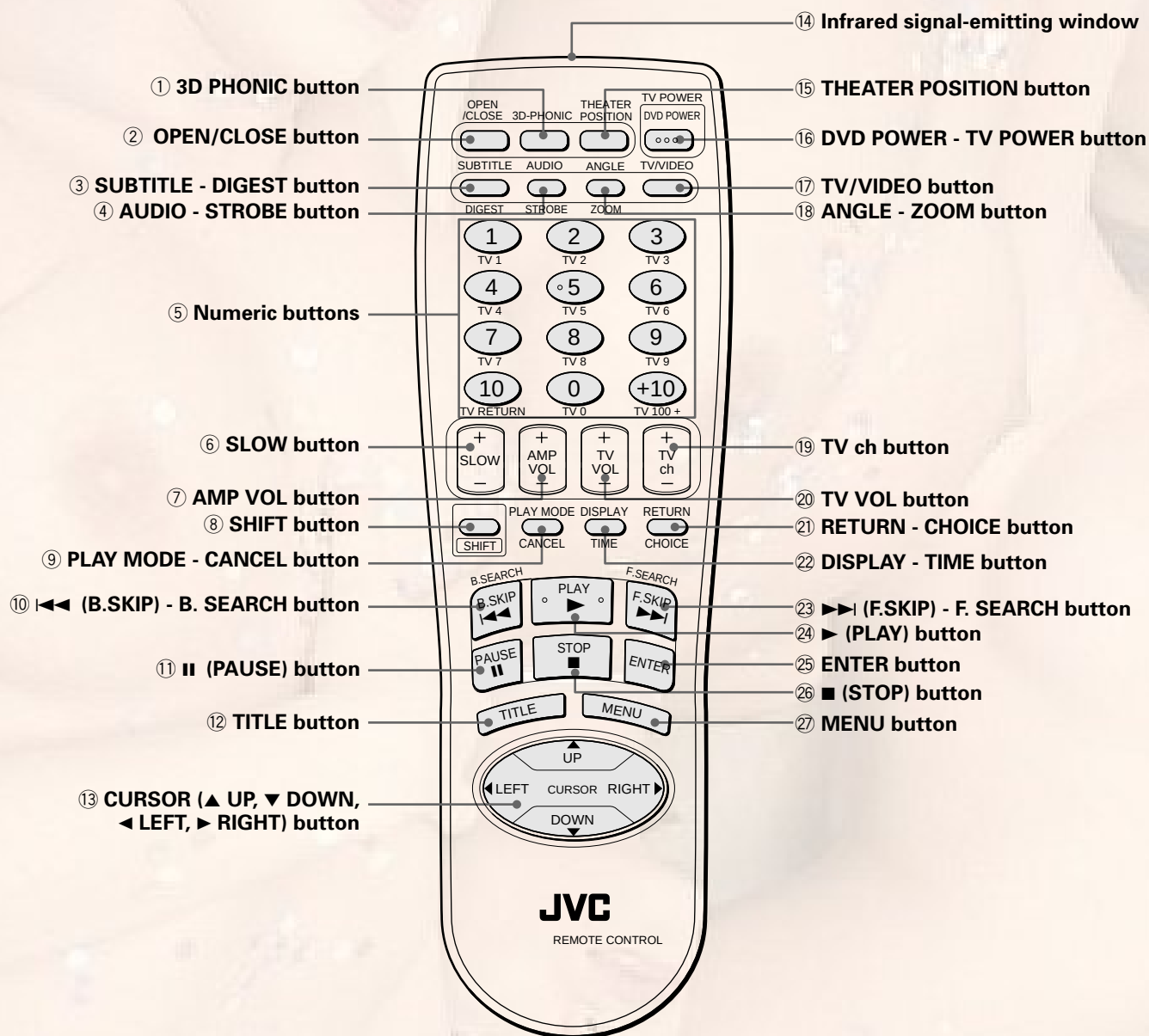
⑫ SHUTTLE knob (19, 25) (for XV-521BK/XV-523GD/XV-525BK)

Performs rapid advance/reverse playback operations.
Also used for slow-motion playback of a picture (for DVD VIDEO/Video CD).

⑬ ◀◀/▶▶ (SEARCH) button (19, 25) (XV-421BK only)

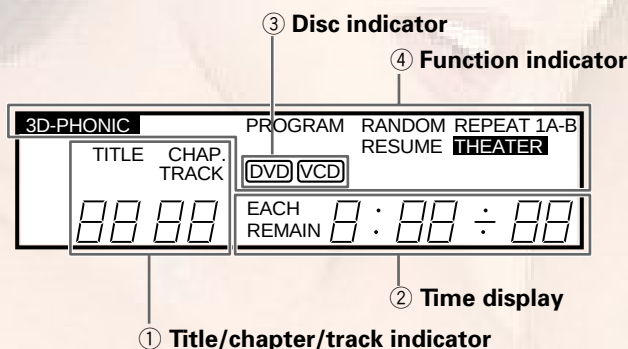
Pressing ◀◀ or ▶▶ during playback reverses or advances playback rapidly. Each press of the button during rapid playback increases the playback speed.
Also used for slow-motion playback of a picture (for DVD VIDEO/Video CD).

Remote control unit



- ① **3D PHONIC button (32)**
Produces a simulated surround effect.
- ② **OPEN/CLOSE button (17)**
Opens and closes the disc tray.
- ③ **SUBTITLE - DIGEST button (23, 31)**
Used to display the subtitle selection display on the TV screen, as well as used to turn the subtitle on or off (for DVD VIDEO).
Pressing this button while holding down the SHIFT button displays beginning scenes of each title, chapter or track on the TV screen (for DVD VIDEO/Video CD).
- ④ **AUDIO - STROBE button (24, 31)**
Selects the audio (for DVD VIDEO/Video CD). Pressing this button while holding down the SHIFT button displays nine continuous still pictures (for DVD VIDEO/Video CD).
- ⑤ **Numeric buttons (10, 16)**
Used to select a title or track number, as well as used to enter a time for the Time search and a chapter number for the Chapter search.
Also used to select a TV channel in conjunction with the SHIFT button.
- ⑥ **SLOW button (25)**
Used for slow-motion playback of a picture (for DVD VIDEO/Video CD).
- ⑦ **AMP VOL button (16)**
Used to control the volume of a JVC audio amplifier/receiver.
- ⑧ **SHIFT button**
Used together with other buttons for activating their second functions.
- ⑨ **PLAY MODE - CANCEL button (27)**
Displays an on-screen display for controlling the advanced playback functions. Pressing this button while holding down the SHIFT button cancels the last selection of the program.
- ⑩ **◀◀ (B.SKIP) - B. SEARCH button (19, 21, 23)**
Skips back a chapter, title or track. Also used for the page selection of a menu screen (for DVD VIDEO/Video CD). Holding down this button during playback reverses playback rapidly.
Pressing the button while holding down the SHIFT button during playback also reverses playback rapidly. If you press the button while holding down the SHIFT button during rapid reverse playback, the speed increases.
- ⑪ **⏸ (PAUSE) button (18)**
Pauses playback.
- ⑫ **TITLE button (20)**
Displays the title menu of a DVD VIDEO disc on the TV screen.
- ⑬ **CURSOR (▲ UP, ▼ DOWN, ◀ LEFT, ▶ RIGHT) buttons**
Used to select an item from a menu or on-screen display, or to change the setting of an item in the on-screen display.
- ⑭ **Infrared signal-emitting window**
Point this window toward the remote sensor on the front panel when pressing buttons.
- ⑮ **THEATER POSITION button (32)**
Selects a picture character from 4 options (for DVD VIDEO/Video CD).
- ⑯ **DVD POWER - TV POWER button (17)**
Turns the unit on or off (standby). Pressing this button while holding down the SHIFT button turns the TV on or off.
- ⑰ **TV/VIDEO button (16)**
Switches the TV input mode.
- ⑱ **ANGLE - ZOOM button (26, 30)**
Changes camera angles during playback of a DVD VIDEO disc containing multiple camera angles. Pressing this button while holding down the SHIFT button zooms in the picture (for DVD VIDEO/Video CD).
- ⑲ **TV ch button (16)**
Changes the TV channels.
- ⑳ **TV VOL button (16)**
Adjusts the TV volume.
- ㉑ **RETURN - CHOICE button (20, 35)**
Returns to the previous menu (for DVD VIDEO/Video CD). Pressing this button while holding down the SHIFT button displays Preference on-screen display on the TV screen.
- ㉒ **DISPLAY - TIME button (33, 34)**
Displays the status information (only for DVD disc) or the time information (for any disc types). When the time information appears, pressing this button while holding the SHIFT button changes the time mode.
- ㉓ **▶▶ (F.SKIP) - F. SEARCH button (19, 21, 23)**
Skips forward a chapter, title or track. Also used for the page selection of a menu screen (for DVD VIDEO/Video CD). Holding down this button during playback advances playback rapidly.
Pressing the button while holding down the SHIFT button during playback also advances playback rapidly. If you press the button while holding down the SHIFT button during rapid advance playback, the speed increases.
- ㉔ **▶ (PLAY) button (18)**
Starts playback. Also used as a SELECT button for PBC of Video CDs.
- ㉕ **ENTER button**
Executes the selected item in a menu or on-screen display.
- ㉖ **■ (STOP) button (18)**
Stops playback.
Also used to erase all the programmed tracks for the program play.
- ㉗ **MENU button (20)**
Displays a DVD menu on the TV screen.

Display window



① Title/chapter/track indicator

Displays title/chapter, or track number.

② Time display

Shows the cumulative or remaining time of the track or disc, or the total disc time.

③ Disc indicator

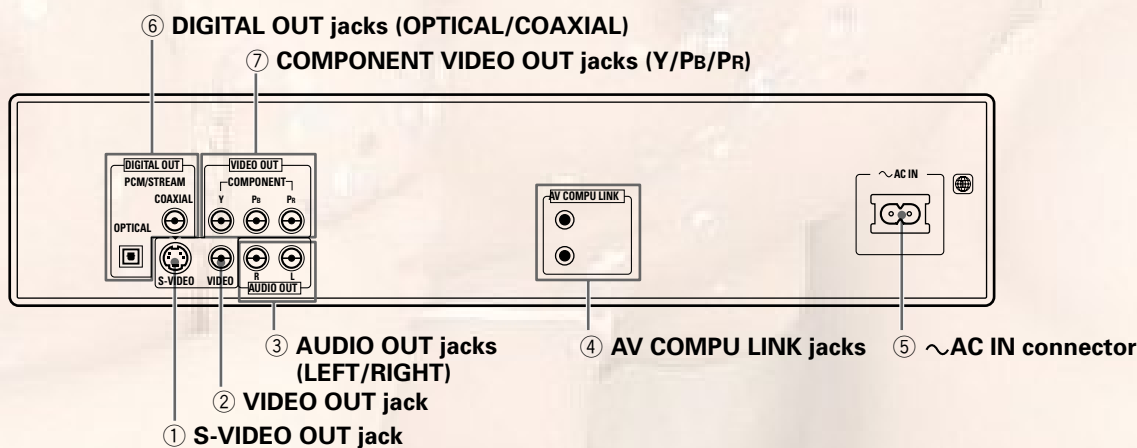
Indicates the type of the disc set in the tray. When a DVD VIDEO or Video CD disc is set, "DVD" or "VCD" is indicated. When an Audio CD is set, there is no indication.

④ Function indicator

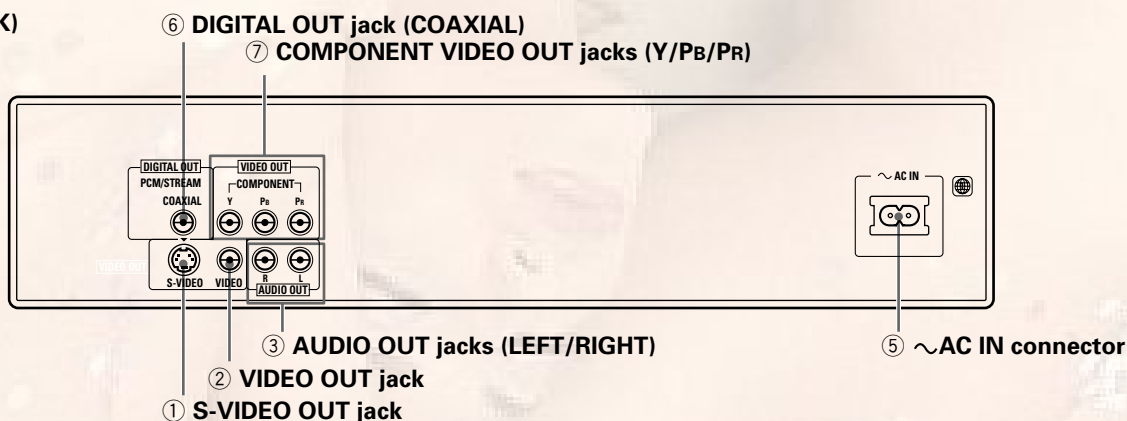
Activated function indicators light up.

Rear panel

(For XV-521BK/523GD/525BK)



(For XV-421BK)



① S-VIDEO OUT jack (12)

Outputs an S-video signal.

② VIDEO OUT jack (12)

Outputs a composite video signal.

③ AUDIO OUT jacks (L/R) (12)

Output stereo analog audio signals.

④ AV COMPU LINK jacks (41) (except XV-421BK)

Connect with other JVC equipment supporting the AV Compulink function to facilitate integrated operations.

⑤ ~ AC IN connector (14)

Connects to the wall outlet using the supplied AC power cord.

⑥ DIGITAL OUT jacks (14)

Output digital audio signals. You must select the signal type correctly according to the external device connected to via the Preference display. The XV-521BK/523GD/525BK provides both the OPTICAL and COAXIAL connectors, while XV-421BK provides only the COAXIAL connector.

⑦ COMPONENT VIDEO OUT jacks (Y/Pb/Pr) (13)

Output component video signals.

Operational Principles

On-screen displays

The unit provides several on-screen displays. With some displays, you can set or select preferences or functions, while the others are display-only.

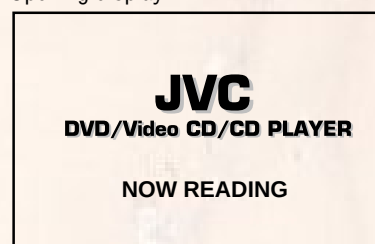
Opening displays

The Opening display appears automatically in some conditions.

At the bottom, the following information are indicated depending on the unit's status.

- **NOW READING:** The unit is now reading the disc information (TOC).
- **REGION CODE ERROR!:** The DVD VIDEO disc loaded cannot be played because the region code of the disc does not match the unit.
- **OPEN:** The disc tray is now opening.
- **CLOSE:** The disc tray is now closing.

Opening display



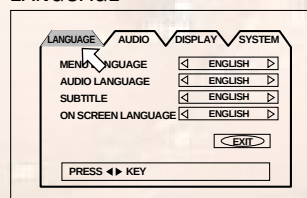
Preference displays

When the unit is stopped, pressing the RETURN-CHOICE button while holding the SHIFT button accesses the preference display for setting the preferences.

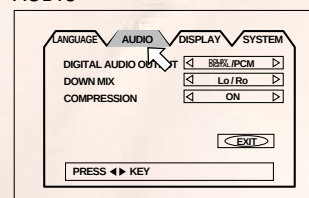
There are four pages: LANGUAGE, AUDIO, DISPLAY and SYSTEM as shown in the right.

See page 35 for detailed information.

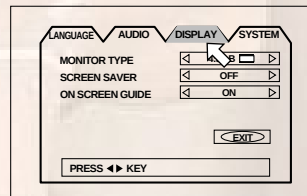
LANGUAGE



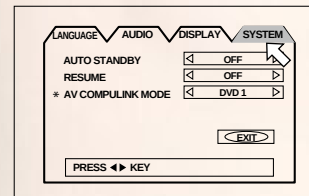
AUDIO



DISPLAY



SYSTEM



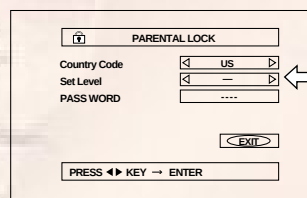
* The "AV COMPULINK MODE" selection is not available with the XV-421BK.

PARENTAL LOCK displays

When no disc is inserted or a DVD VIDEO disc is stopped, pressing the ENTER button while holding down the SHIFT button accesses the PARENTAL LOCK display in which you can set the level for limiting playback.

See page 39 for detailed information.

PARENTAL LOCK

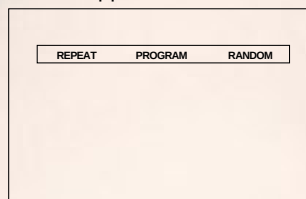


Play mode displays

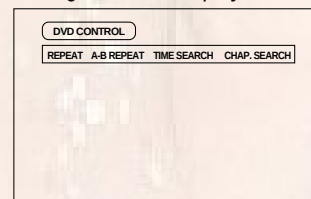
Pressing the PLAY MODE button accesses the play mode display in which you can control playback functions.

Different displays appear depending on the disc type and the unit's status.

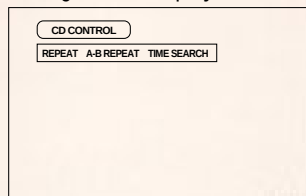
While stopped



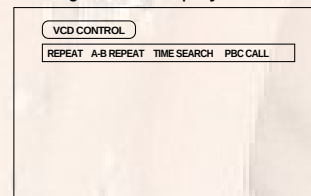
During DVD VIDEO playback



During Audio CD playback



During Video CD playback



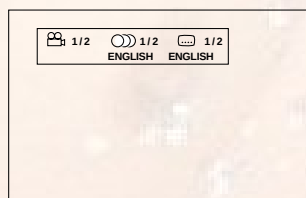
Status displays

Pressing the DISPLAY-TIME button during playback accesses the status display.

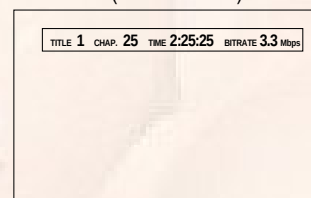
For a DVD VIDEO disc, pressing the DISPLAY-TIME button toggles between the DVD VIDEO function status display, and the disc/time display and off.

For a Video CD or Audio CD disc, pressing the DISPLAY-TIME button switches the disc/time display on and off.

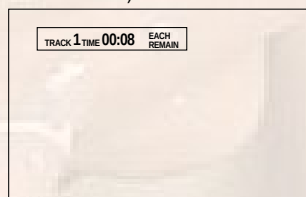
DVD VIDEO function status



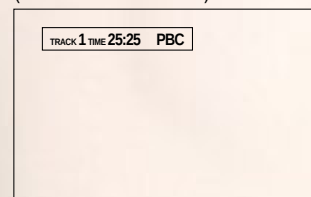
Disc/time (DVD VIDEO)



Disc/time (Audio CD/Video CD without PBC)



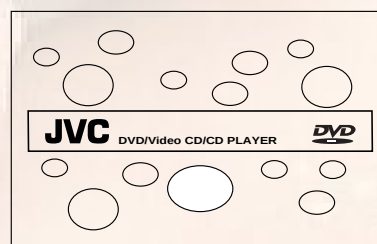
Disc/time (Video CD with PBC)



To prevent the monitor from burning out [SCREEN SAVER]

A television monitor screen may be burned out if a static picture is displayed for a long time. To prevent this, the unit automatically activates the screen saver function if a static picture, such as an on-screen display or menu, is displayed for over 5 minutes.

- Pressing any button on the unit or the remote control unit will release the screen saver function and return to the previous display.
- You can select one of several screen saver modes available (see page 37).
- The screen saver function is not activated during Audio CD playback or after stopping Audio CD playback.



On-screen guide icons

During DVD playback, you may see icons displayed over the picture. These have the following meanings.



: Displayed at the beginning of a scene recorded from multiple angles. (See page 30.)



: Displayed at the beginning of a scene recorded with multiple audio languages. (See page 31.)



: Displayed at the beginning of a scene recorded with multiple subtitle languages. (See page 31.)

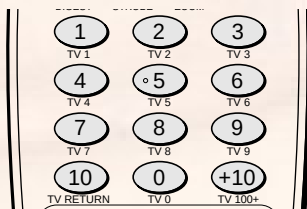
You can set the unit not to display on-screen icons above via the preference settings described on page 38.

About invalid operation icon

When you press a button, if the unit does not accept its operation,  appears on your television screen. Operations are occasionally unacceptable even if  is not displayed.

Note that some operations may not be accepted. For example, some discs may not allow rapid advance/reverse or slow-motion playback.

How to use numeric buttons



To select a track/title number

- **To select a number between 1 and 10**
Press the corresponding button for the number.
- **To select a number higher than 10**
Use the +10 button.

Examples:

To select 13 +10 → 3

To select 34 +10 → +10 → +10 → 4

To select 40 +10 → +10 → +10 → 10

To enter a time or chapter number

The method for entering a time for Time search or chapter number for Chapter search is different from above. See the corresponding sections in this manual for the details.

To select a TV channel.

Press the corresponding numeric buttons (between 0 and 9) while holding down the SHIFT button.

About discs

Playable disc types

Playable and non-playable disc types are as follows:

Playable discs

DVD VIDEO	Video CD	Audio CD	CD-R CD-RW
	 		

The DVD VIDEO Logo is a trademark.

- CD-R and CD-RW discs recorded with the audio CD format can be played back, though some may not be played back because of the disc characteristics or recording condition.
- DVD VIDEO players and DVD VIDEO discs have their own Region Code numbers. This unit only can play back DVD VIDEO discs whose Region Code numbers include “1”.

Examples of playable DVD VIDEO discs:



This unit accommodates the NTSC television system and can playback discs recorded with the NTSC system. Note that the unit cannot playback discs recorded with the PAL system.

Non-playable discs

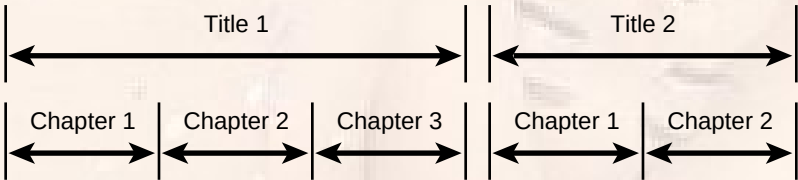
DVD-ROM, DVD-RAM, DVD AUDIO, DVD-R, DVD-RW, CD-ROM, PHOTO CD, CD-EXTRA, CD-G, CD-TEXT

- Playing back discs listed as “Non-playable discs” above may generate noise and damage speakers.
- This unit can play back audio recorded in CD-G, CD-EXTRA and CD-TEXT discs.

Disc structure

A DVD VIDEO disc is comprised of “titles,” while an Audio CD, Video CD is comprised of “tracks.” Each title may be divided into some “chapters.” For example, if a DVD VIDEO disc contains some movies, each movie may have its own title number, and each movie may be divided into some chapters. In a DVD VIDEO karaoke disc, each song usually has its own title number and does not have chapters. In general, each title has independent content, while each chapter in the same title has continuity.

(Example: DVD VIDEO disc)



(Example: Audio CD/Video CD)



Connections

*In the following description, "TV" may be substituted with "monitor" or "projector."

*Before using the unit, you have to connect the unit to a TV and/or amplifier.

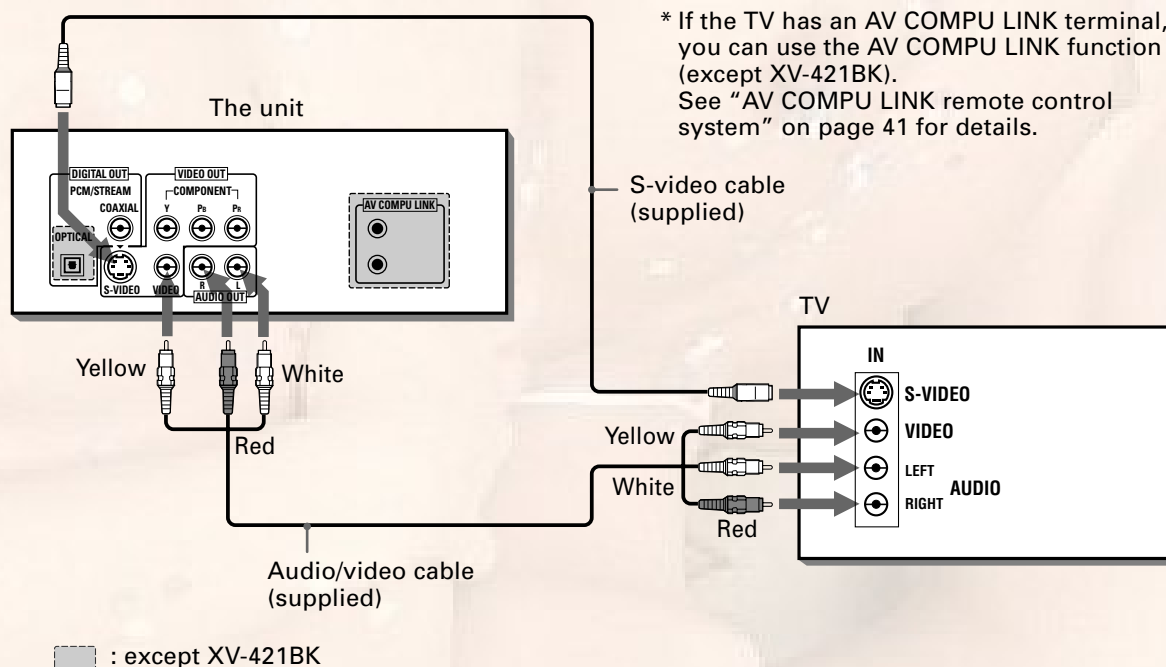
*In the following connection examples, the rear panel drawing of the unit is based on XV-521BK/523GD/525BK. The XV-421BK rear panel looks different.

Before making any connections

- **Do not connect the AC power cord until all other connections have been made.**
- Since different components often have different terminal names, carefully read the instructions supplied with the component you are going to connect.

To connect to a TV

You can enjoy using the unit by simply connecting it to a TV. To improve audio sound quality, connect the audio outputs to your separate audio equipment. (See the following pages.)



Connect the unit to a TV equipped with stereo audio input and video input jacks using the supplied audio/video cables.

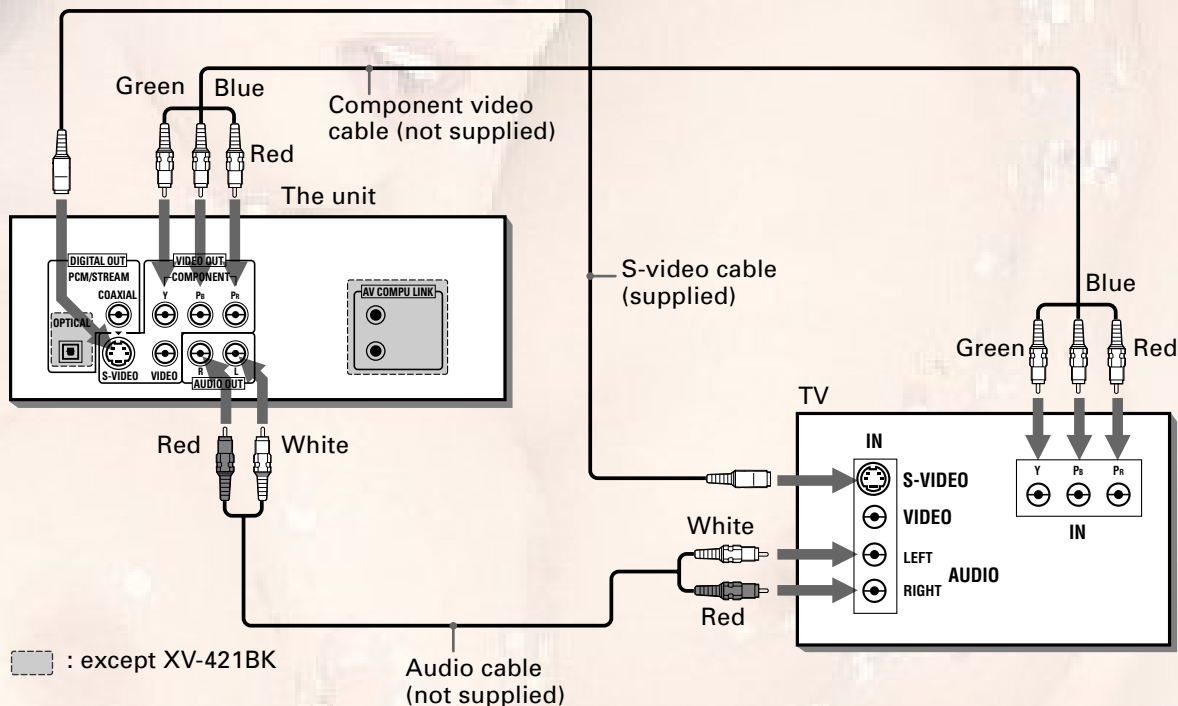
- If your TV has a monaural audio input instead of stereo, you need to use an optional audio cable which converts stereo audio output to monaural.
- If your TV has an S-video input, you should connect it with the S-VIDEO output of the unit using the supplied S-video cable in addition to the (standard) video connection to get better picture quality.

NOTES

- Connect VIDEO OUT of the unit directly to the video input of your TV. Connecting VIDEO OUT of the unit to a TV via a VCR may cause a monitor problem when playing back a copy-protected disc.
- Connect the unit to an NTSC television. Do not connect the unit to a PAL television.

To connect to a TV with the component video input jacks

You can enjoy high picture quality by connecting the unit's COMPONENT VIDEO OUT jacks to the COMPONENT VIDEO IN jacks of your TV with the video cables.



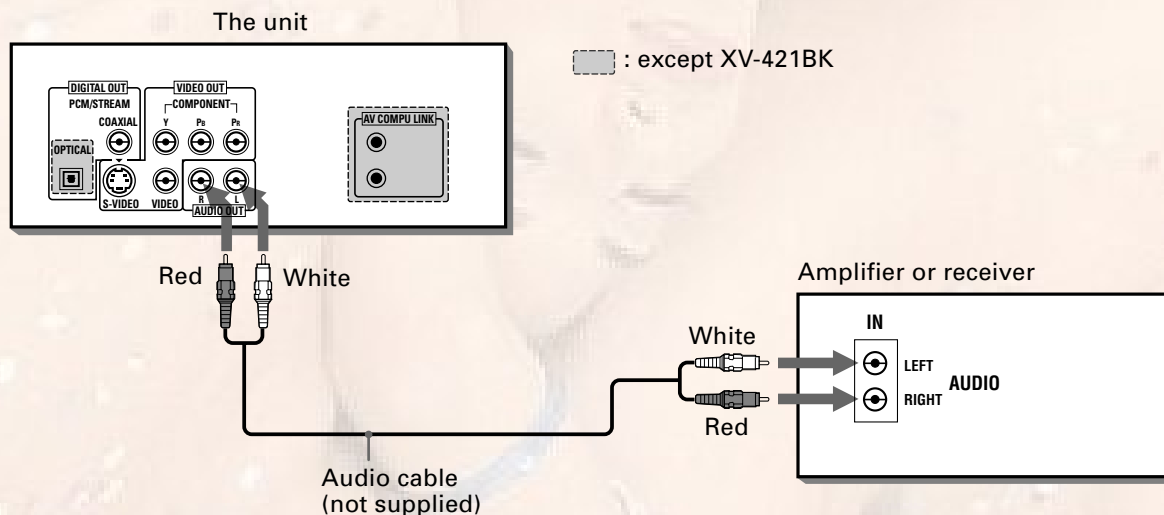
- Connect "Y" to "Y," "PB" to "PB," and "PR" to "PR" correctly.

NOTES

- When the component video input jacks of the TV are of the BNC type, use an adapter to convert the pin jacks to BNC jacks (optional).
- If you do not connect the unit with the S-video cable, some functions of your TV may not work.
- Connect the unit to an NTSC television. Do not connect the unit to a PAL television.

To connect to an audio amplifier or receiver

You can enjoy high-quality audio by connecting the unit's audio output to your amplifier or receiver.

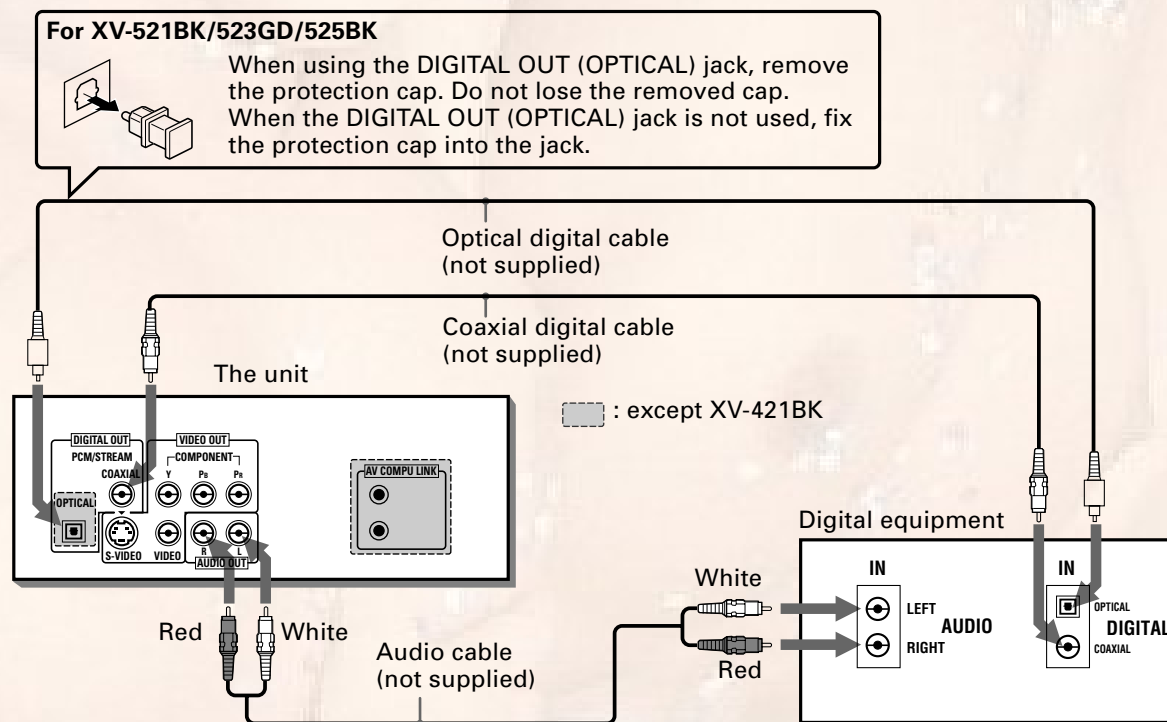


- Connect the unit's AUDIO OUT to any line-level inputs (such as AUX, DVD, CD, etc.) of an audio amplifier or receiver.

To connect to audio equipment with a digital input

You can enhance the sound quality by connecting the unit's DIGITAL OUT to the digital input of an amplifier, DAT or MD by using an optional digital cable (the XV-521BK/523GD/525BK provides both the optical and coaxial jacks while the XV-421BK only provides the coaxial jack). The digital audio signal from a disc is directly transferred. If you connect the unit to a Dolby Digital or DTS decoder or an amplifier with a built-in decoder by using an optional digital cable, you can enjoy high-quality surround sound.

When you make the digital connection, also make the analog connection, because, depending on the disc type, no audio may be reproduced from the DIGITAL OUT.



NOTES

- When you connect the unit's DIGITAL OUT to digital audio equipment, before using, make the "DIGITAL AUDIO OUTPUT" setting in the "AUDIO" page of the preference display correctly according to the connected audio equipment. If the "DIGITAL AUDIO OUTPUT" is not set correctly, loud noise may be generated from speakers, causing damage to your speakers. See "DIGITAL AUDIO OUTPUT" on page 36.
- With the digital connection, the unit's settings for COMPRESSION and DOWN MIX in the AUDIO page of the preference display are invalid. Settings for these items must be made from the decoder.

To connect the power cord

When all the audio/video connections have been made, insert the smaller plug of the supplied AC power cord to the unit's AC IN connector, then insert the other end to the wall outlet. Make sure that plugs are inserted firmly. The STANDBY indicator lights and setup is completed.

Warning

- Disconnect the power cord if you are not going to use the unit for a long time.
- Disconnect the power cord before cleaning the unit.
- Disconnect the power cord before moving the unit.
- Do not connect or disconnect the power cord with wet hands.
- Do not pull the power cord when disconnecting it, as this may damage the cord and cause fire, electric shock, or other accidents.

Caution

- Do not damage, alter, twist, or pull the power cord, as this may cause fire, electric shock, or other accidents.
- To prevent any accidents or damages caused by an unsuitable AC power cord, only use the supplied power cord. If the cord is damaged, contact a dealer and get the new power cord.
- Do not put anything heavy, or the unit, on the power cord, as this may cause fire, electric shock, or other accidents.

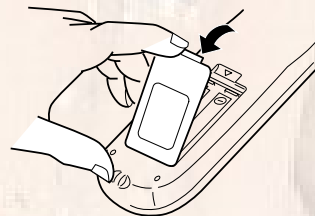
Using the remote control unit

Using the remote control, you can operate not only all the functions of the unit but also basic functions of your TV.

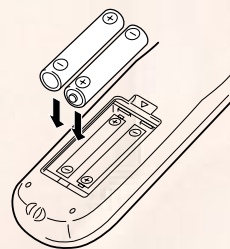
To install batteries in the remote control unit

The battery compartment is located on the back of the remote control unit.

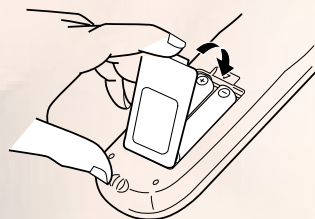
- 1 Press down on the point shown by the arrow at the top of the compartment cover, and pull up the cover to open the compartment.



- 2 Place the two accessory R6P (SUM-3)/AA(15F) batteries in the remote control according to the polarity markings ("+" and "-") inside the compartment and on the batteries.



- 3 Place the cover over the compartment, and press down lightly.



- The batteries will last about six months with normal use. If the functions of the remote control become erratic, replace the batteries. See below for more information.

Precautions for the safe use of batteries

Observe the following precautions for the safe use of batteries. If they are used improperly their life will be shortened, they may burst or their contents may leak.

Precaution

- Remove the batteries from the remote control if it is not going to be used for a long period of time.
- Remove dead batteries and dispose of them properly.
- Never leave dead batteries lying around, take them apart, mix them with other refuse, or throw them into an incinerator.
- Never touch liquid that has leaked out of a battery.
- Do not mix new and old batteries, or batteries of different types, when replacing them.

To use the remote control unit for TV operation

You can operate your TV from the remote control unit.

Setting the remote control signal for operating your TV.

- 1 Holding down TV/VIDEO, enter the manufacturer code of your TV listed below by using the numeric buttons (0 - 9). Do not release TV/VIDEO. Keep holding it until the next step is completed.

Manufacturer code list

No.	Manufacturer
01	JVC
02	MAGNAVOX
03	MITSUBISHI
04	PANASONIC
05	RCA
06	SHARP
07	SONY
08	TOSHIBA
09	ZENITH

No.	Manufacturer
10	HITACHI
11	PANASONIC
12	SAMSUNG
13	SANYO
14	SANYO
15	SAMSUNG

Example:

To enter the manufacturer code "01":
Press "0" then "1."

- 2 Press ■ (STOP) while holding down TV/VIDEO.

The following buttons can be used for operating the TV:

 + 	Turns the TV on or off.
	Changes the TV channels.
	Adjusts the TV volume.
 +  to   	Selects the TV channels. *For some TVs, pressing "+10" while holding down SHIFT functions as the "100+." "+10" functions as the ENTER button if your TV requires pressing the ENTER button after selecting a channel number.
 + 	Returns to the previously selected channel (only valid for JVC TVs).
	Switches input mode (either TV or VIDEO).

- 3 Try to operate your TV by pressing DVD POWER - TV POWER while holding SHIFT.
If your TV turns on or off, you have successfully set the control signal.

NOTES

- The remote control unit is initially set for operating a JVC TV.
- If there is more than one code listed for the manufacturer of your TV, try them one by one until you succeed.

To control the volume of a JVC's amplifier or receiver

You can control the volume of a JVC's amplifier or receiver by using the AMP VOL button on the remote control unit.

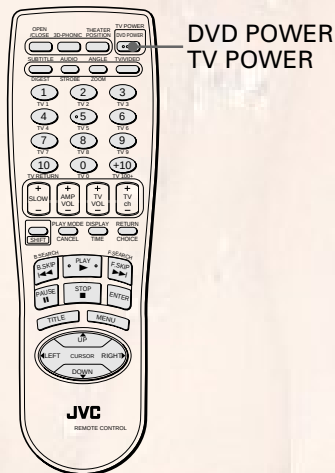
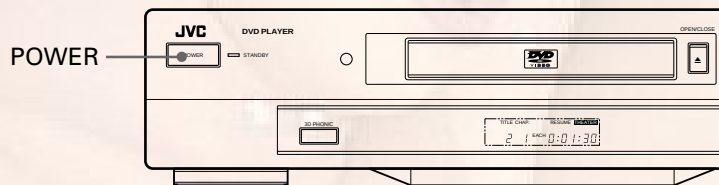


Basic operations

In the following description, the buttons on the remote control unit are mainly used, however, you may use the corresponding buttons on the front panel of the unit if available.

Turning on/off the unit

Press POWER on the front panel or press DVD POWER - TV POWER on the remote control unit.



Hints

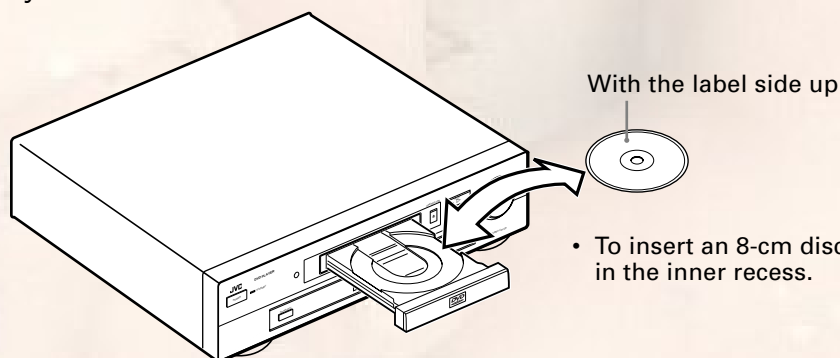
- You can turn on the unit by pressing the PLAY button on the front panel or the remote control unit. In this operation, the unit starts playback if the disc is set in the disc tray. If no disc is set, the disc tray opens.
- You can also turn on the unit by pressing the OPEN/CLOSE button on the front panel or the remote control unit. In this case, the disc tray opens.

NOTE

Even if you press the POWER or DVD POWER - TV POWER button to turn off the unit, the unit is not disconnected from the AC power source as long as it is connected to the wall outlet. This state is called the standby mode. In this state, the unit is designed to consume a very small quantity of power.

Inserting and removing discs

- 1 Press OPEN/CLOSE to open the disc tray.
- 2 Place the disc in the tray.



- To insert an 8-cm disc, place it in the inner recess.

- 3 Press OPEN/CLOSE to close the disc tray.

NOTES

- The unit can playback DVD VIDEO, Audio CD, and Video CD discs only. Do not load other disc types. For details about playable disc types, see page 11.
- When loading a disc in the tray, be sure to position the disc inside the recess. Otherwise, the disc may be damaged when the tray is closed, and the disc may not be removed from the unit.

Basic playback

Now you can play a disc. First, let's enjoy simple playback according to following procedure.

To start playback

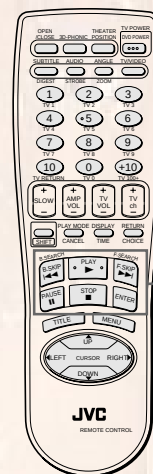
DVD VIDEO Audio CD Video CD

Press PLAY.

The unit starts playback from the beginning.

NOTES

- During playback, the display window shows the title/chapter or track number being played.
- With Video CD discs with PBC control or some DVD discs, the menu display may appear on the TV screen after starting playback. In such a case, select an item to be played back from the menu.
- For operation using a menu, see page 20.
- With some DVD discs, the unit starts playback automatically after inserting the disc.



Basic control buttons

To stop playback completely

DVD VIDEO Audio CD Video CD

Press STOP.

The unit stops playback.

To stop playback temporarily

DVD VIDEO Audio CD Video CD

Press PAUSE.

The unit pauses playback. To continue playback, press PLAY.

To advance or reverse playback rapidly while monitoring

DVD VIDEO Audio CD Video CD

■ During playback

From the remote control unit

Hold down ◀◀ or ▶▶.

Holding down ▶▶ advances playback rapidly, while holding down ◀◀ reverses playback at 5 times the normal speed.

Releasing the button returns the unit to normal playback.

or

Press ◀◀ or ▶▶ while holding down the SHIFT button.

Each press of ◀◀ or ▶▶ while holding down the SHIFT button increases the playback speed from 2x to 60x the normal speed.

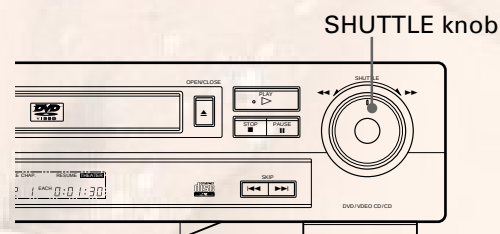
Pressing PLAY returns the unit to normal playback.

From the front panel

(For XV-521BK/523GD/525BK)

Use the SHUTTLE knob.

To advance playback rapidly, turn the shuttle knob to the right and hold, and to reverse play rapidly, turn the shuttle knob to the left and hold. By releasing the shuttle knob, the unit returns to normal playback. The playback speed changes according to the amount you turn the shuttle knob.



(For XV-421BK)

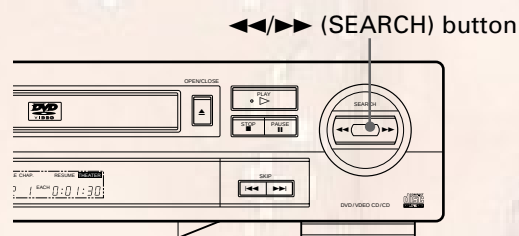
Press ◀◀ or ▶▶.

Each press of ◀◀ or ▶▶ increases the playback speed from 2x to 60x the normal speed.

Pressing PLAY returns the unit to normal playback.



Holding down the ◀◀ or ▶▶ button on the front panel also advances or reverses playback rapidly.



To locate the beginning of the scene or song



■ During playback

Press ◀◀ or ▶▶.

Press ◀◀ to locate the beginning of the current chapter, title, or track, and press ▶▶ to locate the beginning of the next chapter, title, or track.

NOTE

When you play a Video CD disc with the PBC function or a DVD VIDEO disc, the unit may locate a different place, but it will generally locate the beginning of the title or chapter or track.

To resume playback

The unit can memorize the position on a disc where you interrupt playback, and resume playback from that position next time you press PLAY.

To memorize the interrupted position



- 1 Set the RESUME setting on the SYSTEM page of the preference display to ON.
(See page 38 for details about how to set.)
- 2 At the position you want to interrupt playback, press STOP, or press DVD POWER - TV POWER on the remote control or POWER on the front panel.

The unit memorizes the interrupted position, while [RESUME] lights in the display window.



If you interrupt playback by pressing STOP in step 2 above and then turn off the power, the memory is not cleared.

To resume playback



■ While the disc you interrupt playback last time is still in the disc tray.

Press PLAY.

The unit starts playback from the position where you interrupted playback last time.

● To clear the resume position memory

Operate one of the followings:

- * Take out the disc from the tray
- * Press STOP while stopped
- * Turn on the unit by pressing DVD POWER - TV POWER (on the remote control) or POWER (on the front panel).

NOTES

- Do not press POWER (on the front panel) or DVD POWER - TV POWER (on the remote control) to turn on the unit if you want to resume playback, which will clear the resume position memory.
- The resume function does not work with Audio CD discs.
- The resume function does not work if RESUME on the SYSTEM page of the preference display is set to OFF.
- In the case of a Video CD disc with PBC function, the unit may resume playback from a point slightly earlier than the resume point you stored.
- The resume function does not work in the program or random mode.

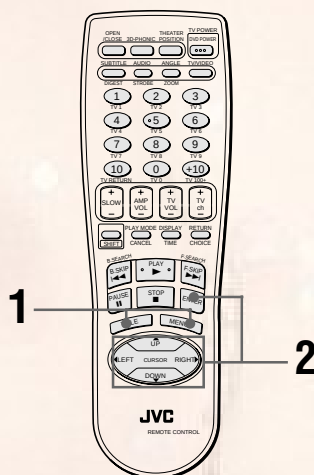
Playing from a specific position on a disc

You can play a disc from the selected track, title or chapter, or from the specified time.

To locate a desired scene from the DVD menu



DVD VIDEO discs generally have their own menus which show the disc contents. These menus contain various items such as titles of a movie, names of songs, or artist information, and display them on the TV screen. You can locate a desired scene by using the menu.



■ Whenever a DVD VIDEO disc is loaded

1 Press MENU or TITLE.

The menu appears on the TV screen.

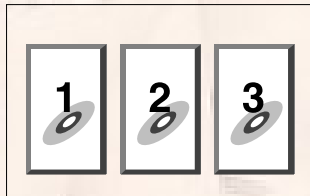


About menu

Normally, a DVD VIDEO disc which contains more than one title may have a "title" menu which lists the titles. In this case, the menu appears on the TV screen by pressing the TITLE button. Some DVD VIDEO discs may also have a different menu which appears by pressing the MENU button.

See the instructions of each DVD VIDEO disc for its particular menu.

Example



2 Use CURSOR ◀/▶/▲/▼ to select a desired item, then press ENTER.

The unit starts playback of the selected item.



With some discs, you can also select items by entering the corresponding number using the numeric buttons, which may cause the unit to automatically start playback.

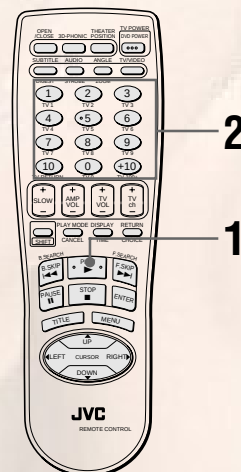
NOTES

- When appears on the TV screen by pressing TITLE in step 1:
The disc does not have a menu listing the titles.
- When appears on the TV screen by pressing MENU in step 1:
The disc does not have a menu
- The menu button does not work while stopped.

To locate a desired scene from the menu of the Video CD with PBC



Some Video CD discs are compatible with the PBC function. PBC is an abbreviation of "PlayBack Control." A Video CD disc recorded with PBC has its own menus, such as a list of the songs of the disc and items recorded on the disc. You can also locate a specific scene by using the menu.

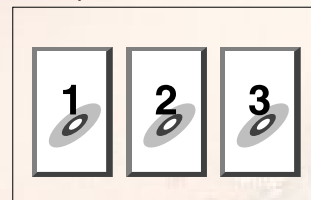


■ When a Video CD disc with PBC is stopped

1 Press PLAY.

A disc menu appears on the TV screen (The PBC function is activated).

Example:



"Pbc" is indicated in the display window on the front panel.

2 Use the numeric buttons to select the desired number of the item.

- See page 10 for details about how to use the numeric buttons.

Playback starts from the selected item.

You can return to the menu by pressing RETURN - CHOICE.

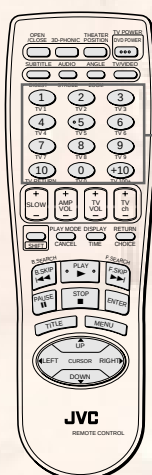
When "NEXT" or "PREVIOUS" appears on the TV screen, the unit generally works as follows:

- Pressing ►► advances to the next page.
- Pressing ◄◄ returns to the previous page.
- * The method of the operation is different depending on the disc.

Hints

- To activate the PBC function when a PBC-compatible Video CD disc is being played back without the PBC function, press STOP then press PLAY.
- You can also activate the PBC function using the play mode menu display as follows.
 1. Press PLAY MODE - CANCEL.
 2. Use the CURSOR ◄► to move to [PBC CALL], then press ENTER.
- If you want to playback a PBC-compatible Video CD disc without activating the PBC function, start playback by using the numeric buttons instead of the PLAY button. See the next paragraph.

To locate a desired selection using the numeric buttons



DVD VIDEO Audio CD Video CD

You can play a desired title (DVD VIDEO) or track (Audio CD/Video CD) by specifying the number.

- For DVD VIDEO: While stopped
- For Audio CD: Whenever an Audio CD disc is loaded
- For Video CD: During playback without PBC function or while stopped

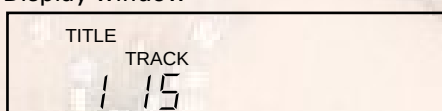
1 Use the numeric buttons to specify the desired title or track number.

The unit starts playback from the selected title or track.

- See page 10 for details about how to use the numeric buttons.

The selected title or track number appears in the display window on the front panel.

Display window

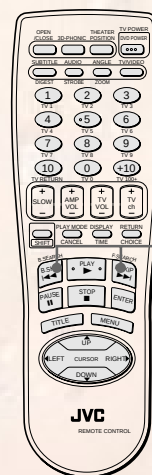


NOTES

- When ⓧ appears on the TV screen.
The title or track you have specified is not contained in the disc.
- This function does not work during Video CD playback with PBC function

To locate a desired selection using ◄◄ or ►►

DVD VIDEO Audio CD Video CD



- For DVD VIDEO: During playback
- For Audio CD: During playback
- For Video CD: During playback without PBC function

1 Press ◄◄ or ►►.

With an Audio CD or Video CD, pressing the button skips a track. With a DVD VIDEO disc, pressing the button skips a chapter or title depending on the disc configuration.

The selection number appears in the display window on the front panel.

- To locate a subsequent selection, press ►► once or repeatedly until the desired selection number appears in the display.
- To locate to beginning of the current selection, press ◄◄ once.
- To locate a former selection, press ◄◄ repeatedly until the desired selection number appears in the display.

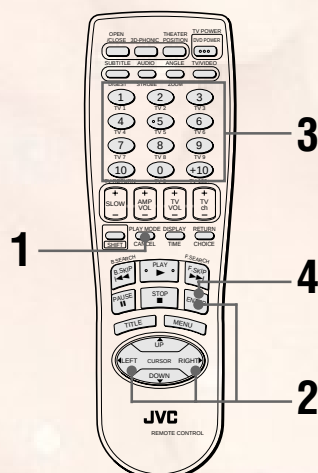
NOTES

- This function may not work with some DVD VIDEO discs.
- This function does not work during Video CD playback with PBC function

To locate a desired scene by specifying the chapter number [CHAP. SEARCH]



If the current title of a DVD VIDEO disc being played is divided into chapters, you can skip to a desired chapter by specifying the chapter number using the on-screen display.



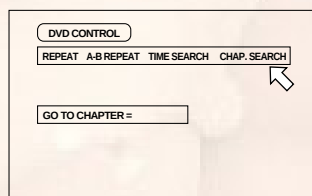
■ During DVD VIDEO playback

1 Press PLAY MODE - CANCEL.

The DVD play mode menu appears on the TV screen.

2 Use CURSOR ◀/▶ to move to [CHAP. SEARCH], then press ENTER.

"GO TO CHAPTER =" appears under the menu.



3 Use the numeric buttons (0 ~ 9) to enter the desired chapter number.

Example:

To select chapter number 8:

Press "8" → ENTER.

To select chapter number 37:

Press "3" → "7" → ENTER.

4 Press ENTER.

The unit starts playback from the selected chapter.

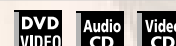


The "10" and "+10" buttons are not used in this function.

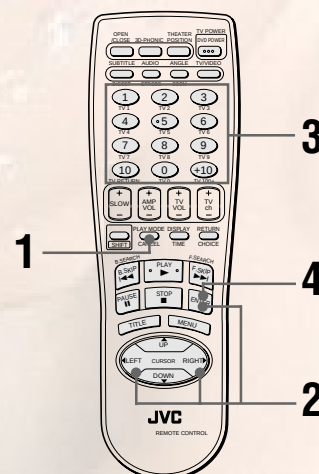
NOTES

- When the chapter number is incorrect in step 3:
Overwrite the incorrect number with the correct number.
- When  is displayed in the TV screen in step 4:
The chapter you have selected is not contained in the disc, or chapter search does not work on the disc.
- With some discs, the unit automatically starts searching for the chapter after entering the chapter number in step 3.
- To turn off the play mode menu:
Press PLAY MODE.

To locate a desired position in the current title or track [TIME SEARCH]



You can play a disc from the desired position by specifying the elapsed time from the beginning of the current title or track using the TIME SEARCH function. Note that some DVD VIDEO discs do not contain time information, and the TIME SEARCH function cannot be used.



■ For DVD VIDEO: During playback

For Audio CD: During playback

For Video CD: During playback without PBC function

1 Press PLAY MODE - CANCEL.

The play mode menu appears on the TV screen.

2 Use CURSOR ◀/▶ to move to [TIME SEARCH], then press ENTER.

"GO TO" appears under the menu.

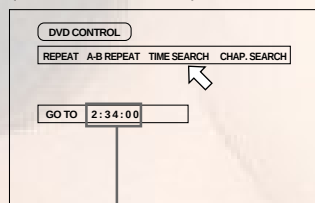
3 Use the numeric buttons (0 ~ 9) to enter the time.

You can specify the elapsed time of the current title or track to set the location which you want to playback from.

4 Press ENTER.

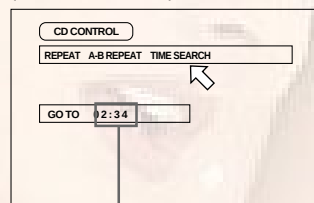
The unit starts playback from the specified time.

(for DVD VIDEO)



Selected time

(for Audio CD)

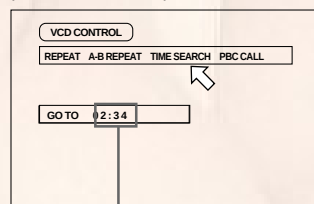


Selected time



- "10" and "+10" buttons are not used in this function.
- You can specify the time in hour/minute/second format for DVD VIDEO discs, and in minute/second format for Audio and Video CD discs.

(for Video CD)



Selected time

Example (for DVD VIDEO):

To playback from 2(H):34(M):00(S)

GO TO _ : _ : _

↓ Press "2".

GO TO 2 : _ : _

↓ Press "3".

GO TO 2 : 3 _ : _

↓ Press "4".

GO TO 2 : 3 4 : _ _

↓ Press ENTER.

You do not have to press "0" to enter the trailing zeros (for the last two digits in the example above). Of course, it is possible to enter them.

• When you make a mistake

Move the cursor to the incorrect value, then press the correct button to re-select the value.

GO TO 2 : 3 5 : _ _

↓ Press CURSOR ◀.

GO TO 2 : 3 _ : _ _

↓ Press "4".

GO TO 2 : 3 4 : _ _

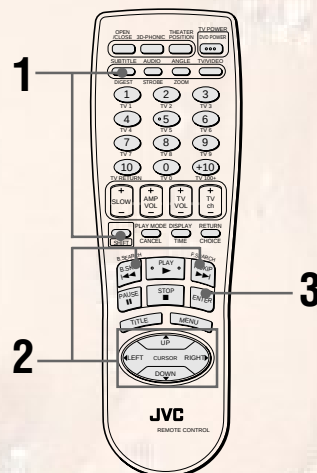
NOTES

- **When**  **appears on the TV screen in step 2:**
The time you have selected is not contained on the disc, or the time search function does not work on the disc.
Also note that the time search function does not work during Video CD playback with the PBC function.
- **To turn off the play mode menu:**
Press PLAY MODE.
- **The TIME SEARCH function cannot be used during program playback.**

To locate a desired scene from the digest display [DIGEST]



The unit can display the opening scene of each title or chapter on a DVD VIDEO or each track of a Video CD. You can select a desired scene from those displayed on the TV screen.



- For DVD VIDEO: While stopped or during playback
- For Video CD: While stopped or during playback without PBC function.

1 Press SUBTITLE - DIGEST while holding down SHIFT.

Up to nine opening scenes are displayed.

- While a DVD VIDEO disc is stopped:
The opening scene of each title appears on the TV screen.
- During DVD VIDEO disc playback:
The opening scene of each chapter in the current title appears on the TV screen.
- When a Video CD disc is loaded:
The opening scene of each track appears on the TV screen.



2 Use CURSOR ◀/▶/▲/▼ to select the desired scene.

The selected scene is indicated by .

If there are more than 9 scenes, the digest screen will have more than one page. In this case, pressing ▶▶ advances to the next page, while pressing ◀◀ returns to the previous page.



Selected scene



- When the lower right scene is selected, pressing CURSOR ► advances to the next page if available. Similarly, when the upper left scene is selected, pressing CURSOR ◀ returns to the previous page (if available).
- When there are more than one digest page, after pressing SUBTITLE - DIGEST while holding down SHIFT, pressing ► before all 9 scenes of the first page appear on the TV screen will advance to the next page. Similarly, pressing ◀ before all the scenes of the second or latter page appear on the TV screen will return to the previous page.

3 Press ENTER.

The unit starts playback from the selected title or track.

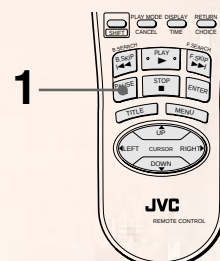
NOTE

With some discs, depending on the contents, it may take some time until all the scenes appear on the screen.

Special picture playback

The unit provides special picture playback functions including Frame-by-frame, Strobe, Slow-motion and Zoom.

To advance a still picture frame-by-frame



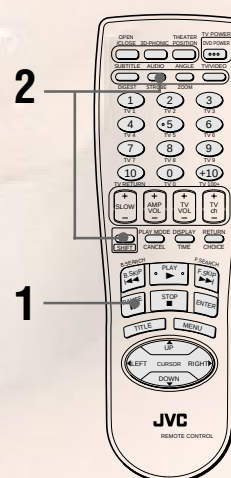
■ While paused (still)

1 Press PAUSE.

Each time you press PAUSE, the still picture advances to the next frame.

Pressing PLAY returns to the normal playback mode.

To display still pictures [STROBE]



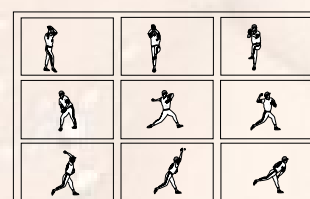
■ During playback

1 At the point you want to view as continuous photographs, press PAUSE.

The unit pauses playback.

2 Press AUDIO - STROBE while holding down SHIFT.

Nine continuous still pictures appear on the TV screen.



- Pressing PAUSE when the nine still pictures appear will advance to the next nine still pictures.

- **To cancel strobe play**

Press AUDIO - STROBE while holding down SHIFT.

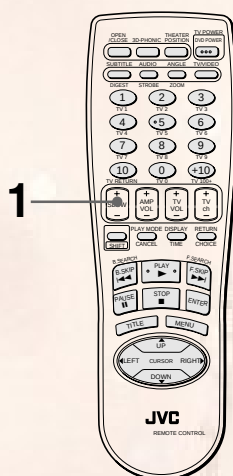
NOTES

- Pressing and holding PAUSE for more than 1 second also activates the Strobe function.
- If you press AUDIO - STROBE while holding down SHIFT during playback, nine still pictures also appear but they advance in realtime.

To playback in slow-motion [SLOW]

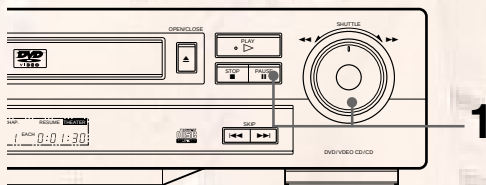
■ During playback

From the remote control unit

**1 Press SLOW.**

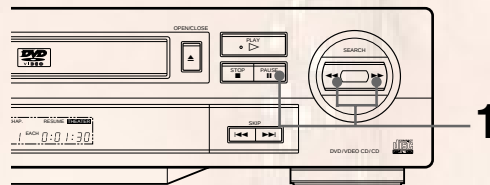
To play forward slow-motion, press SLOW "+", and to play reverse slow-motion (for DVD VIDEO discs only), press SLOW "-". First, the unit plays the slowest speed, and each time you press the button, the playback speed increases.

From the front panel (for XV-521BK/523GD/525BK)

**1 Press PAUSE, then use the SHUTTLE knob.**

To play forward slow-motion, turn the SHUTTLE knob to the right. To play reverse slow-motion (for DVD VIDEO discs only), turn it to the left. The more you turn the knob, the more the slow-motion speed increases.

From the front panel (for XV-421BK)

**1 Press PAUSE then use <<||>>.**

To play forward slow-motion, press >>>, and to play reverse slow-motion (for DVD VIDEO discs only), press <<<. First, the unit plays the slowest speed, and each time you press the button, the playback speed increases.

- **To return to normal playback**

Press PLAY.

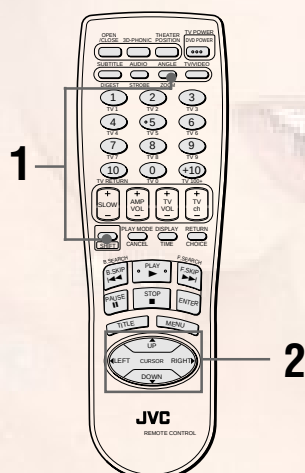
- **To pause slow-motion playback**

Press PAUSE.

NOTES

- The sound is muted during slow-motion playback.
- Reverse slow-motion playback is not possible for a Video CD.

To zoom a scene [ZOOM]

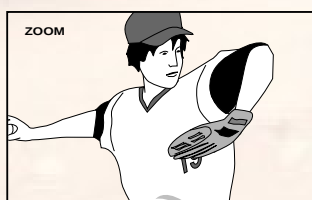


■ During playback or while paused

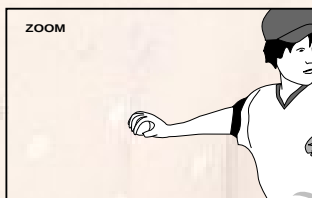
- 1 Press **ANGLE - ZOOM** while holding down **SHIFT**.

"ZOOM" appears on the TV screen.

The unit zooms in to the center part of the scene to produce a double-sized image.



- 2 Use **CURSOR** $\leftarrow/\rightarrow/\uparrow/\downarrow$ to move the zoomed-in scene.



- **To pause zoom play**
Press **PAUSE**.
To resume zoom play, press **PLAY**.
- **To return to normal playback**
Press **ANGLE - ZOOM** while holding down **SHIFT**.

NOTE

During Zoom play, the picture may be garbled or noisy.

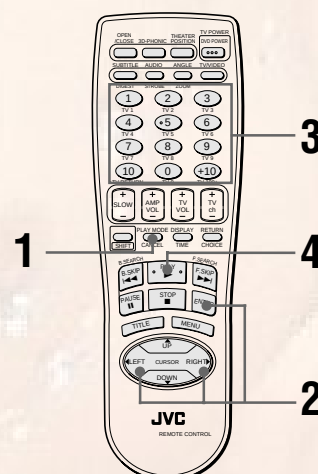
Changing the playback order

You can play titles or tracks in the desired order or in random order.

To playback in the desired order [PROGRAM]

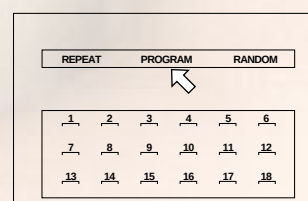


You can play titles or tracks in the desired order by using the Program function.



■ While stopped

- 1 Press **PLAY MODE - CANCEL**.
The play mode menu appears on the TV screen.
- 2 Use **CURSOR** $\leftarrow/\rightarrow$ to move $\nwarrow$ to [PROGRAM] and press **ENTER**.



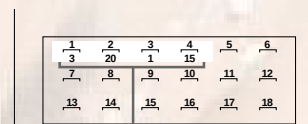
The program table appears under the menu bar (as shown above).

The "PROGRAM" indicator appears in the display window on the front panel.

- 3 Select the titles or tracks in the desired order using the numeric buttons.

See page 10 for details about how to use the numeric buttons.

Up to 18 titles or tracks can be programmed. You may select the same title or track more than once.



The programmed title/track number is shown under each program number.

- **When you specify a wrong selection**
Press PLAY MODE - CANCEL while holding down the SHIFT. The last selection programmed is erased.
- **To clear the program**
Press STOP.

4 Press PLAY to start program play.

When all of the programmed titles/tracks have finished playback, the unit stops but the program remains.

NOTES

- Some DVD VIDEO discs may not be played back correctly in program mode.
 - During program playback, pressing ►► skip to the next selection of the program. Pressing ◄◄ returns to the beginning of the current selection, however, you cannot skip back to the previous selection.
 - By pressing PLAY MODE - CANCEL during program playback, the program table is displayed on the TV screen and the current program number is indicated in yellow.
- **To quit program playback**
Press STOP and press STOP again.
The "PROGRAM" indicator in the display window turns off and the program is cleared.

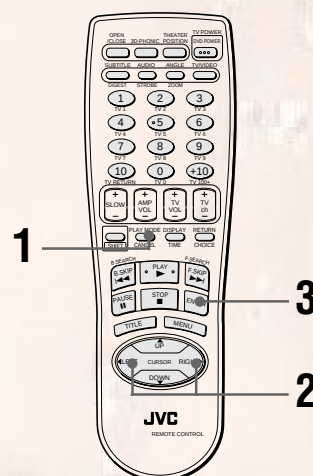


While stopped and the play mode menu is displayed on the TV screen, by moving ◄► to [PROGRAM] and pressing ENTER, the program mode quits. Note that the program remains.

To playback in random order [RANDOM]

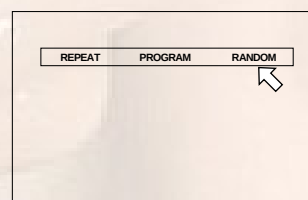


You can play titles or tracks in random order by using the Random function.



■ While stopped

- 1 Press PLAY MODE - CANCEL.
The play mode menu appears on the TV screen.
- 2 Use CURSOR ◄► to move ◄► to [RANDOM].



The "RANDOM" indicator appears in the display window on the front panel.

- 3 Press ENTER.
The unit starts random playback.
After playing all titles/tracks of the disc, random playback ends.



The same title or track will not be played back more than once during random play.

- **To stop/quit random playback in the middle**
Press STOP to stop playback. The unit is still in random playback mode, so pressing PLAY starts random playback again.
To quit random playback, press STOP again while stopped. The "RANDOM" indicator in the display window turns off.

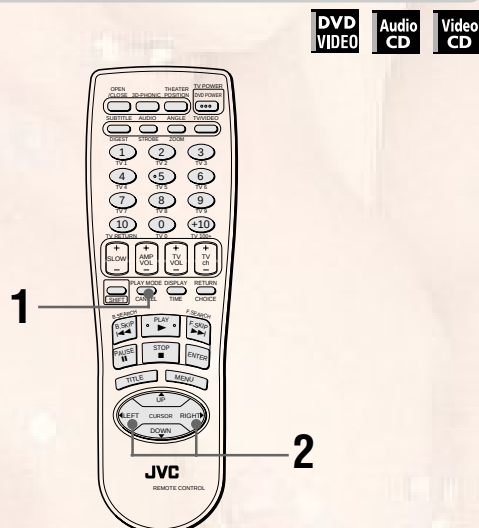
NOTE

Some DVD VIDEO discs may not be played back correctly in random mode.

Repeat playback

You can repeat playback of the current selection or all disc contents. You can also repeat playback of a desired part.

To repeat the current selection or all disc contents [REPEAT]



■ In any condition except Video CD playback with PBC

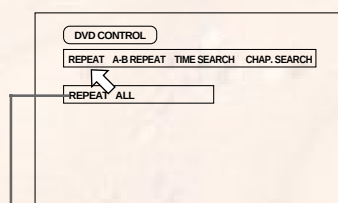
1 Press PLAY MODE - CANCEL.

The play mode menu appears on the TV screen.

2 Use CURSOR ◀▶ to move [REPEAT], then press ENTER.

Each time you press ENTER, the repeat mode changes as follows:

• For DVD VIDEO



The selected repeat mode appears on the TV screen.

REPEAT ALL (all title repeat)

*** REPEAT TITLE (current title repeat)**

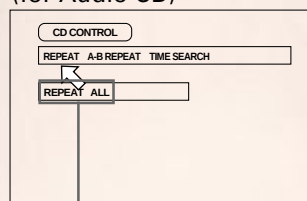
*** REPEAT CHAPTER (current chapter repeat)**

No indication (off)

* While stopped, you cannot select REPEAT TITLE or REPEAT CHAPTER.

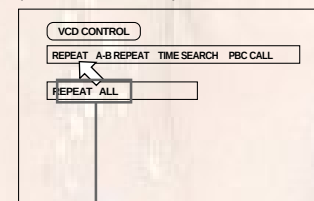
• For Audio/Video CD

(for Audio CD)



Selected repeat mode

(for Video CD)



Selected repeat mode

REPEAT ALL (all track repeat)

REPEAT 1 (current track repeat)

No indication (off)

• To stop repeat playback

Press STOP.



- If you press STOP in REPEAT ALL mode, the unit stops playback but remains in the mode.
- If you press STOP in REPEAT1, TITLE REPEAT or CHAPTER REPEAT mode, the unit stops playback and quits the mode.

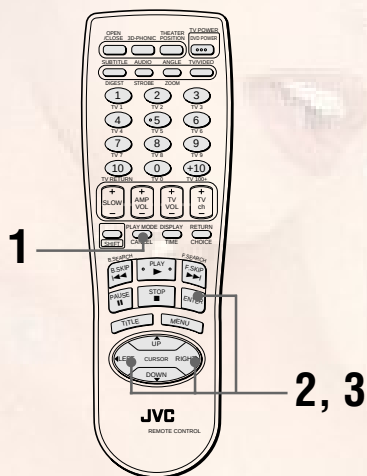
• To quit repeat playback

With [REPEAT] pointed at, press ENTER repeatedly until the mode is set to off.

NOTES

- Some DVD VIDEO discs do not allow the title repeat or/ and chapter repeat.
- Some DVD VIDEO discs automatically stops playback in the middle of the disc.
- Repeat playback function cannot be used during Video CD playback with PBC function.
- To turn off the play mode menu display
Press PLAY MODE - CANCEL.

To repeat a desired part [A-B REPEAT]



To quit A-B repeat playback

Press STOP. The unit stops playback and quits the A-B repeat mode.



- During playback, pressing ENTER when is pointed at [A-B REPEAT] quits the A-B repeat mode and continues playback.
- You can also quit the A-B repeat mode by pressing or .

NOTES

To turn off the play mode menu

Press PLAY MODE - CANCEL.

If appears when pressing ENTER in step 2 during DVD playback

You cannot repeat the selected portion because of the disc contents.

The A-B REPEAT function cannot be used during program playback.

■ During playback

1 Press PLAY MODE - CANCEL.

The play mode menu appears on the TV screen.

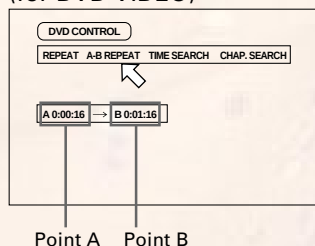
2 Use CURSOR to move to [A-B REPEAT], then press ENTER at the beginning of the part you want to repeat (point A).

Make sure that REPEAT mode is off. If any one of the REPEAT modes is selected, you cannot move to [A-B REPEAT].

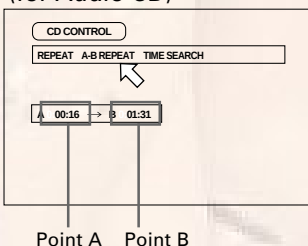
3 Press ENTER at the end of the part you want to repeat (point B).

The unit locates "A" and starts repeat playback between "A" and "B."

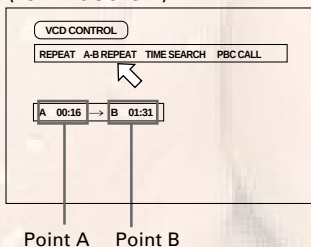
(for DVD VIDEO)



(for Audio CD)



(for Video CD)



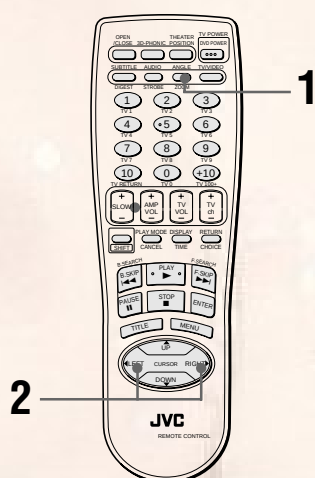
Selecting a scene angle of DVD VIDEO

You can enjoy a variety of scene angles if the DVD VIDEO disc contains "multi-angle" parts, where multiple cameras were used to shoot the same scene from different angles.



At the beginning of "multi-angle" parts, appears on the TV screen.

To select a scene angle from the normal screen [ANGLE]



■ During DVD VIDEO playback

1 Press ANGLE - ZOOM.

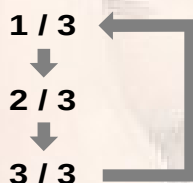
The Angle selectin display appears on the TV screen.



2 Press ANGLE - ZOOM or CURSOR ◀/▶ to select the desired angle.

Each time you press ANGLE or CURSOR ◀/▶, the angle changes.

Example:

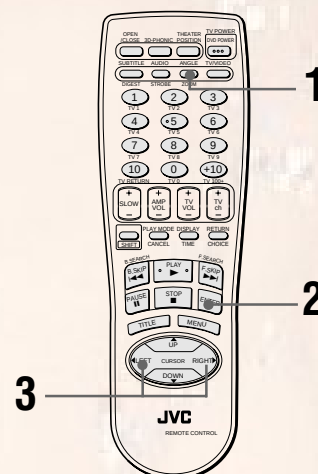


NOTES

- The Angle selection display will automatically disappear if you do not change the angle for 10 seconds.
- To turn off the Angle selection display manually, press ENTER.
- When appears on the TV screen
The current scene is not recorded from multiple angles.

To select a scene angle from the angle list display [ANGLE]

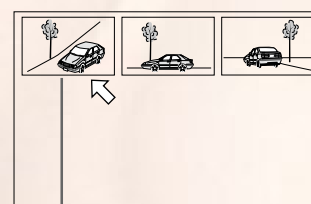
DVD VIDEO



■ During DVD VIDEO playback

1 Press and hold ANGLE - ZOOM for more than 1 second.

Up to nine camera angles recorded on a disc appear on the TV screen.



The selected camera angle

2 Use CURSOR ▲/▼/◀/▶ to select the desired angle.

3 Press ENTER.

■ The selected angle appears on the TV screen.

NOTES

- When appears on the TV screen in step 1:
The current scene is not recorded from multiple angles.
- During the operation above, audio is muted.

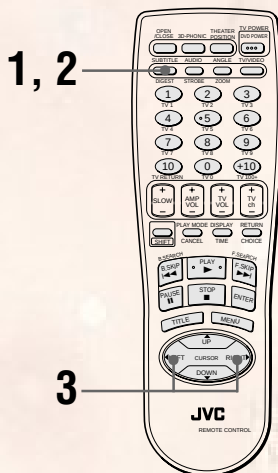
Changing the language and sound

For DVD VIDEO discs, you can select the subtitle language, as well as the audio language/sound included on a disc.

For Video CD discs, you can select the audio channel(s).

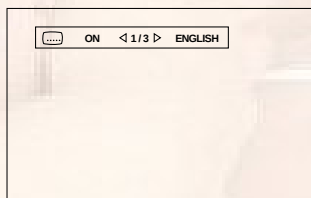
To select the subtitle language [SUBTITLE]

■ During DVD VIDEO playback



1 Press SUBTITLE.

The Subtitle selection display appears on the TV screen.

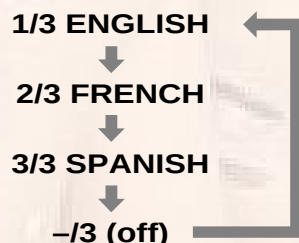


2 To turn the subtitle on and off, press SUBTITLE.

3 To select the desired subtitle language, press CURSOR <1/3>.

Each time you press CURSOR <1/3>, the subtitle language changes.

Example:



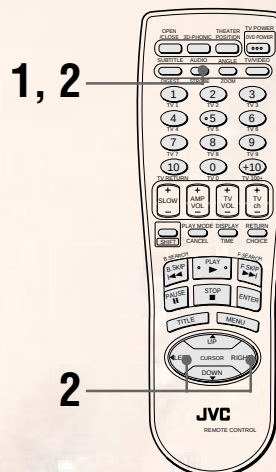
NOTES

- For DVD VIDEO, the selected language may be abbreviated on the TV screen. See "Appendix A: Table of languages and their abbreviations" at the end of this manual.
- The Subtitle selection display will automatically disappear if you do not change the subtitle for 10 seconds.
- To turn off the Subtitle selection display manually, press ENTER.
- When  appears on the TV screen: You cannot select the subtitle.

To change the audio language or sound [AUDIO]



By AUDIO selection, you can choose the audio language of movies or choose to enjoy karaoke with or without the vocal.

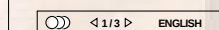


■ During playback

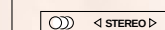
1 Press AUDIO - STROBE.

The Audio selection display appears on the TV screen.

(DVD VIDEO)



(Video CD)



2 Press AUDIO - STROBE or CURSOR <1/3> to select the desired audio.

• For DVD VIDEO

Each time you press AUDIO - STROBE or CURSOR <1/3>, the audio language or sound changes.

Example:



• For Video CD

Each time you press AUDIO - STROBE or CURSOR <1/3>, the playback audio changes as follows.



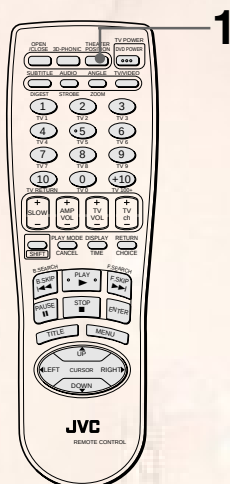
NOTES

- For DVD VIDEO, the selected language may be abbreviated on the TV screen. See "Appendix A: Table of languages and their abbreviations" at the end of this manual.
- The Audio selection display will automatically disappear if you do not change the audio for 10 seconds.
- To turn off the Audio selection display manually, press ENTER.
- When  appears on the TV screen (for a DVD VIDEO disc): You cannot select the audio.

Selecting the picture character

You can select the quality of the image from among four options (OFF, 1, 2 and 3) according to the type of programming, picture tone or personal preferences.

To select the picture character [THEATER POSITION]



DVD VIDEO Video CD

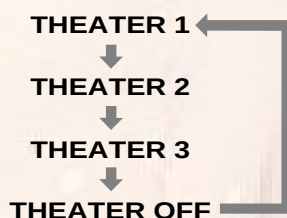
■ During playback

- 1 Press THEATER POSITION to select the desired picture character.

Each time you press the button, the picture character changes as follows:



Selected picture character



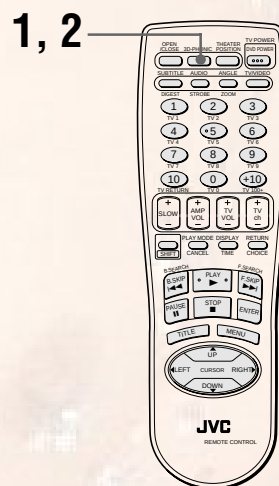
"THEATER OFF" is the normal position. Selecting a higher number tones down the picture character.

Enjoying virtual surround sound

Using the 3D Phonic function, you can get a simulated surround effect from your stereo system.

To simulate surround sound [3D PHONIC]

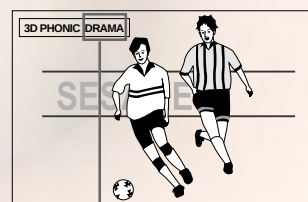
DVD VIDEO Audio CD Video CD



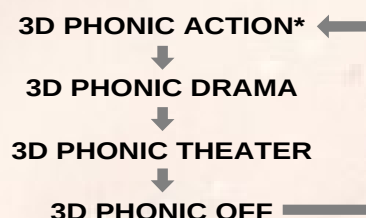
■ During playback

- 1 Press 3D PHONIC.
- 2 Select the desired effect mode by pressing 3D PHONIC.

Each time you press 3D PHONIC, the effect mode changes as follows:



Selected effect mode



- **ACTION:**
Suitable for action movies and sports programs in which sounds dynamically move.
- **DRAMA:**
Natural and warm sound. You can enjoy movies in a relaxed mood.
- **THEATER:**
You can enjoy sound effects like in a major theater in Hollywood.

* When you play a DVD VIDEO disc recorded in Dolby Digital which contains more than 2 channels, ACTION does not appear.

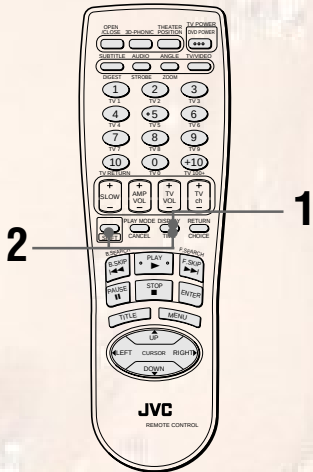
NOTES

- With a Video CD disc, if the AUDIO setting is set to L or R, you cannot activate the 3D Phonic function (i.e. the 3D Phonic mode is fixed to OFF).
Conversely, when the 3D Phonic function is active, changing the AUDIO setting to L or R from STEREO cancels the 3D Phonic function.
- The 3D phonic function works correctly when playing back discs recorded in the Dolby Surround or Dolby Digital 5.1-CH format.
It also works when playing back discs other than those above, but does not provide the correct effect.
- The 3D Phonic function does not affect the DTS or Dolby Digital bitstream signal from the DIGITAL OUT jack.
- The sound effect will not be set or operate, even if 3D PHONIC is pressed, for the sound of DVD VIDEO discs recorded in Linear PCM.
- When you set the 3D PHONIC function to on, the DOWN MIX and COMPRESSION settings in the AUDIO page of the preference display are disabled.

Checking the status

You can check the disc/time information, as well as the DVD functions, of the disc.

To check the disc/time information



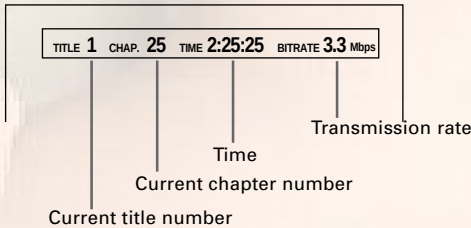
■ During playback

- Press DISPLAY - TIME once for a Audio CD or Video CD disc, or twice for a DVD VIDEO disc.
The disc/time display appears on the TV screen.

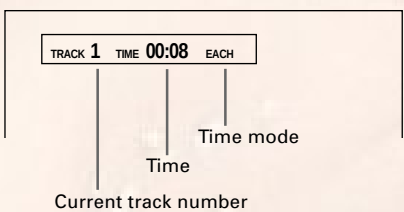


During playback of a DVD VIDEO disc, pressing DISPLAY - TIME while holding down SHIFT directly turns on the disc/time display.

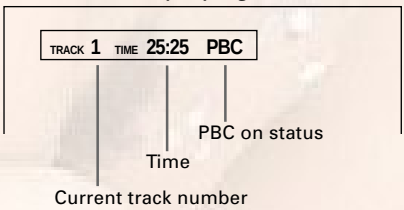
(for DVD VIDEO)



(for Audio CD or Video CD playing without PBC)



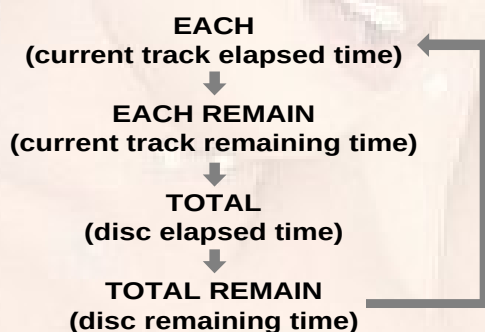
(for Video CD playing with PBC)



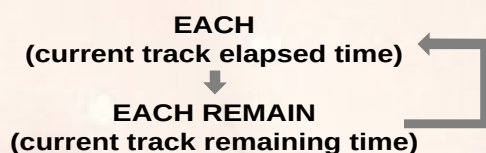
- 2** To change the time display mode (only for Audio CD or Video CD without PBC), press DISPLAY - TIME while holding down SHIFT.

The time display mode cycles as below.

(for Audio CD)



(for Video CD without PBC)



The selected time information is displayed on the TV screen, as well as in the front panel display window.

■ While stopped

You can check the total disc time and current (selected) track time of an Audio CD/Video CD only from the front panel display window.

- 1** Press DISPLAY - TIME while holding down SHIFT.

When EACH and REMAIN are indicated, the current (selected) track time appears. When only REMAIN is indicated, the total disc time appears.



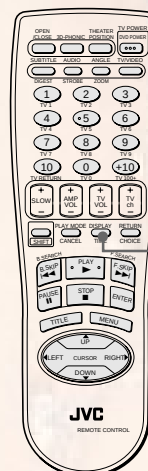
You can change the current (selected) track by pressing ◀◀ or ▶▶.

- **To turn off the disc/time display**
Press DISPLAY-TIME.

To check the DVD function status

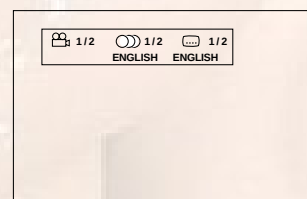
DVD
VIDEO

- During DVD VIDEO playback



- 1** Press DISPLAY - TIME.

The DVD function status display appears on the TV screen.



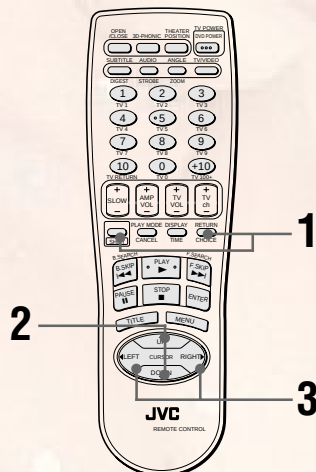
The current selections of the camera angle, audio language and subtitle language are displayed.

- **To turn off the DVD function status display**
Press DISPLAY-TIME twice.

Selecting preferences

You can set various preferences for playback via four dedicated displays.

How to set preferences

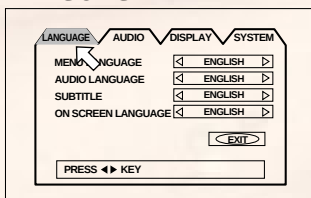


- 1 When the unit is stopped or no disc is inserted, press RETURN-CHOICE while holding down SHIFT.

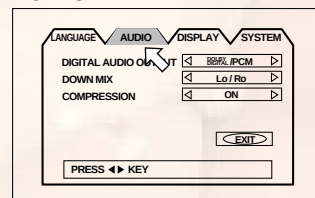
One of the preference pages appears on the TV screen.

There are four preference pages: LANGUAGE, AUDIO, DISPLAY and SYSTEM. To turn the page, move to the desired tab using CURSOR .

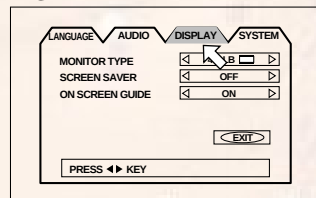
LANGUAGE



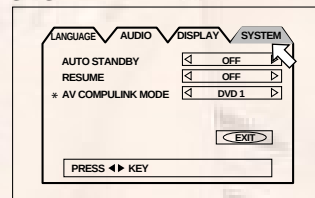
AUDIO



DISPLAY

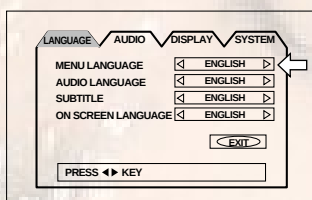


SYSTEM



* The "AV COMPULINK MODE" selection is not available with the XV-421BK.

- 2 Move to select the item you want to set by using CURSOR .



- 3 Press CURSOR to select the setting you want.

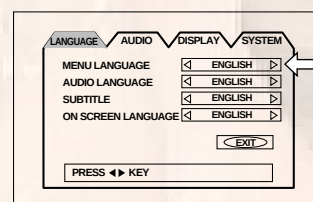
- To turn off the preference display, press RETURN-CHOICE while holding down SHIFT, or move to [EXIT] and press ENTER.
- For details about each setting, see the following paragraphs:

LANGUAGE page

MENU LANGUAGE

You can select the default "display" language to be displayed if it is contained on the disc.

Each time you press CURSOR , the language setting changes in the following order:



ENGLISH → SPANISH → FRENCH → CHINESE → GERMAN → ITALIAN → JAPANESE → language code from AA to ZU

(See "Table of languages and their abbreviations" at the end of this manual.)

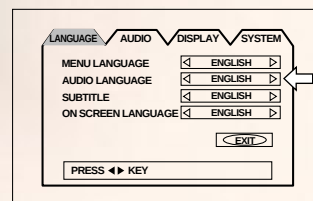
Pressing CURSOR changes the language setting in the reverse order of the above.

- * If the selected language is not recorded, the disc's default display language will be displayed.

AUDIO LANGUAGE

You can select the default audio language to be played if it is contained on the disc.

Each time you press CURSOR , the language setting changes in the following order:



ENGLISH → SPANISH → FRENCH → CHINESE → GERMAN → ITALIAN → JAPANESE → language code from AA to ZU

(See "Table of languages and their abbreviations" at the end of this manual.)

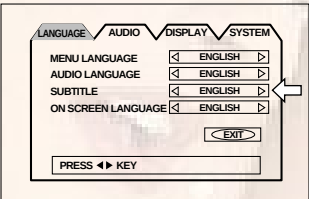
Pressing CURSOR changes the language setting in the reverse order of the above.

- * If the selected language is not recorded, the disc's default audio language will be played.

SUBTITLE

You can select the default subtitle language to be displayed if it is contained on the disc.

Each time you press CURSOR ►, the language setting changes in the following order:



ENGLISH → SPANISH → FRENCH → CHINESE → GERMAN → ITALIAN → JAPANESE → language code from AA to ZU

(See “Table of languages and their abbreviations” at the end of this manual.)

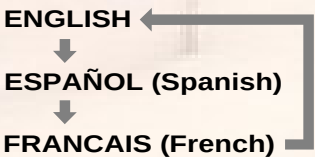
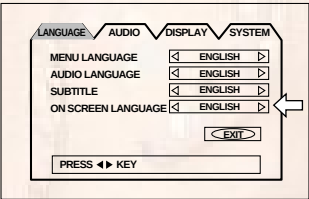
Pressing CURSOR ◀ changes the language setting in the reverse order of the above.

* If the selected language is not recorded, the disc’s default subtitle language will be displayed.

ON SCREEN LANGUAGE

You can select the on-screen display language to be displayed.

Each time you press CURSOR ►, the language setting changes as follows:



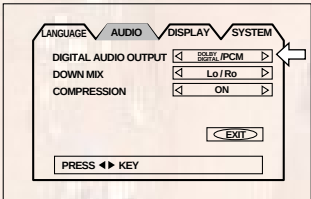
English	ON SCREEN LANGUAGE ◀ ENGLISH ▶
Spanish	IDIOMA EN PANTALLA ◀ ESPAÑOL ▶
French	LANGUE D'ECRAN ◀ FRANCAIS ▶

Pressing CURSOR ◀ changes the language setting in the reverse order of the above.

AUDIO page

DIGITAL AUDIO OUTPUT

To connect the unit’s digital output to an external device equipped with a digital input, this item must be set correctly.



- **PCM ONLY:**
When you connect the DIGITAL OUT jack of the unit to the linear PCM digital input of other audio equipment.
- **STREAM/PCM:**
When you connect to the digital input of an amplifier to a built-in DTS, Dolby Digital, or MPEG multichannel decoder.
- **DOLBY DIGITAL/PCM:**
When you connect to the digital input of a Dolby Digital decoder, or an amplifier with a built-in Dolby Digital decoder.

The following chart shows the relationship between types of playback discs and output signals.

Playback discs	Output		
	STREAM/PCM	DOLBY DIGITAL/PCM	PCM ONLY
DVD with 48-kHz, 16-bit linear PCM	48-kHz, 16-bit linear PCM	←	←
DVD with 48-kHz, 20/24-bit linear PCM	48-kHz, 20-bit linear PCM	←	←
DVD with 96-kHz, linear PCM	No output	←	←
DVD with DTS	DTS bitstream	No output	←
DVD with Dolby Digital	Dolby Digital bitstream	←	48-kHz, 16-bit linear PCM
DVD with MPEG multichannel	MPEG bitstream	48-kHz, 16-bit linear PCM	←
Video CD	44.1-kHz, 16-bit linear PCM	←	←
Audio CD	44.1-kHz, 16-bit linear PCM	←	←
Audio CD with DTS	DTS bitstream	←	←

NOTES

- The unit does not provide the DTS decoding function.
- When playing a DVD VIDEO or Audio CD disc with DTS, use a DTS decoder to get correct signals from your speakers. Never use the unit’s analog output jacks, which output incorrect signals that may damage your speakers.

If you connect the analog outputs and digital outputs simultaneously, be sure to select the source of the amplifier correctly, or set the level control of the amplifier connected to the analog outputs to minimum.

DOWN MIX

To playback a DVD VIDEO disc recorded with surround multichannel audio correctly, the DOWN MIX setting must be properly made according to your audio system.

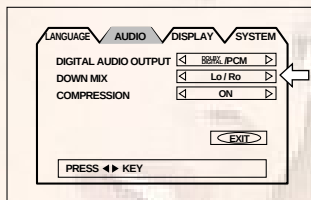
Note that this setting affects the output signal from the AUDIO (both DIGITAL and ANALOG) output jacks when playing back a DVD VIDEO disc recorded with surround multichannel audio.

• Lt/Rt

When you enjoy multichannel surround audio by connecting the unit's AUDIO output (normally, the DIGITAL output) to a surround decoder.

• Lo/Ro

When you enjoy conventional 2-channel stereo audio by connecting the unit's AUDIO output(s) to a stereo amplifier/receiver or television set, or when you duplicate audio of a DVD VIDEO disc recorded with surround audio to your MD, cassette, etc.

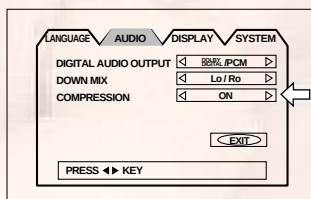


NOTE

The Down mix function does not work when the 3D PHONIC function is activated.

COMPRESSION

You can compress the dynamic range of the sound if needed. Using this function, you can listen to sound at low volumes easily.



• ON

Audio is played back with the dynamic range compressed.

• OFF

Audio is played back as it was recorded.

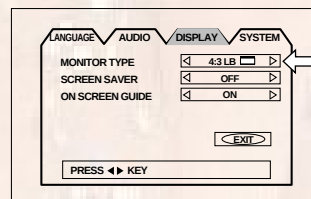
NOTES

- The Compression function works only when playing back a disc recorded with DOLBY DIGITAL 1CH or 2CH. The setting is not effective for other discs.
- The Compression function does not work when the 3D PHONIC function is activated.

DISPLAY page

MONITOR TYPE

You can select the monitor type to match your TV when you playback DVD VIDEO discs recorded for wide screen televisions.



• 4:3 LB (Letter Box Conversion)

When you connect a normal TV to the unit.

When you play a wide picture recorded on a DVD VIDEO disc, the picture is displayed with bands across the upper and lower portions of the screen.

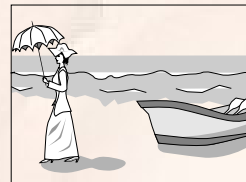


• 4:3 PS (Pan Scan Conversion)

When you connect a normal TV to the unit.

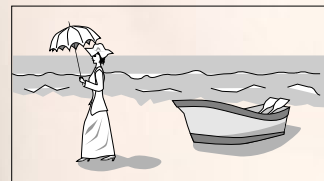
When you play a wide picture recorded on a DVD VIDEO disc, a portion of the picture is automatically cut off from the left and right sides of the image.

Depending on the disc, it may not be possible to playback in this mode. In that case, the picture is played back as in 4:3 LB  mode.



• 16:9 WIDE (Wide Television screen)

When you connect a wide-screen TV to the unit.



SCREEN SAVER

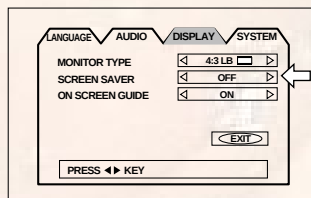
A television monitor screen may be burned out if a static picture is displayed for a long time. To prevent this, the unit automatically activates the screen saver function if a static picture, such as an on-screen display or menu, is displayed for over 5 minutes.

• MODE 1

The current picture gets dark.

• MODE 2

The "screen saver" picture appears and its brightness changes.



• OFF

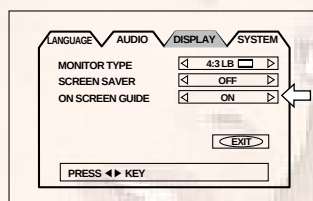
The screen saver function is off.

NOTES

- The monitor screen of a projector or projection TV is easily burned out if the screen saver mode is set to OFF and a static picture is displayed for a long time.
- The screen saver function is not activated when the selected disc is an Audio CD.

ON SCREEN GUIDE

The unit can display “on-screen guide” icons or characters on the picture, which show what is happening to the disc or the unit.



- **ON**

The on-screen guide will be displayed.

- **OFF**

The on-screen guide will not be displayed.

Examples of “on-screen guide” icons or characters:

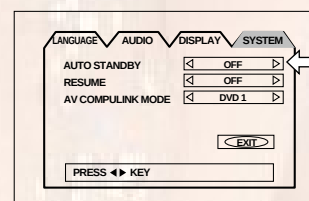


SYSTEM page

AUTO STANDBY

When the unit is stopped for more than 30 minutes or 60 minutes, the unit enters standby mode automatically.

(XV-521BK/523GD/525BK)



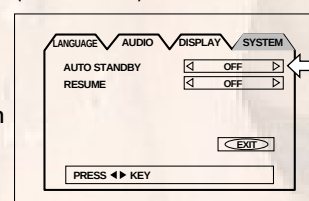
- **60**

Time is set to 60 minutes.

- **30**

Time is set to 30 minutes.

(XV-421BK)



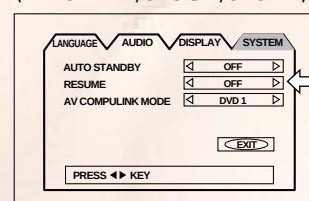
- **OFF**

The auto standby function is off.

RESUME

You can select the resume function to be on or off. See page 19.

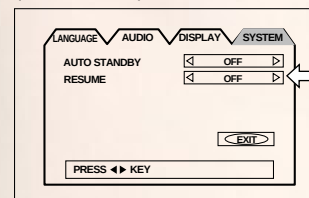
(XV-521BK/523GD/525BK)



- **ON**

Pressing PLAY while stopped or on standby starts playback from the resume point if it is memorized.

(XV-421BK)

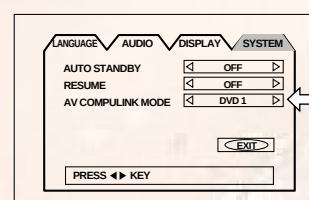


- **OFF**

Pressing PLAY while stopped or on standby starts playback from the beginning of the disc.

AV COMPULINK MODE (except XV-421BK)

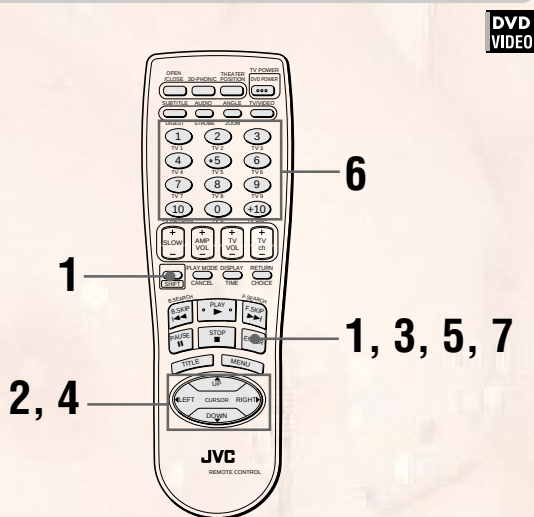
If you use the AV Compulink system, you must set this item correctly. Select from the three options: “DVD1,” “DVD2” and “DVD3” according to the equipment to be connected. See page 41.



Limiting playback by children

This function restricts playback of DVD VIDEO discs which contain violent (and other) scenes according to the level set by the user. For example, if a movie which includes violent scenes supports the parental lock feature, such scenes which you do not want to let children view can be cut or replaced with other scenes.

To set Parental Lock for the first time [PARENTAL LOCK]



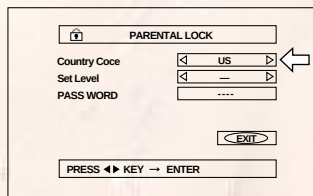
■ While a DVD VIDEO disc is stopped or no disc is inserted

1 Press ENTER while holding down SHIFT.

The Parental Lock on-screen display appears on the TV screen.

← points [Country Code].

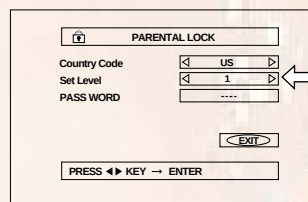
2 While ← points [Country Code], use CURSOR ←/→ to select "US" for country code.



3 Press ENTER.

← moves to [Set Level].

4 While ← points [Set Level], use CURSOR ←/→ to select the parental lock level.



Each time you press CURSOR ←/→, the parental level changes as follows:



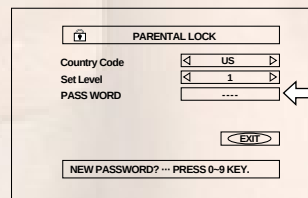
"1" is the strictest level. "-" means no restriction.

Discs rated higher than the selected level are restricted.

5 Press ENTER.

← moves to [PASSWORD].

6 Enter your 4-digit password using the numeric buttons (0 to 9).



7 Press ENTER.

The parental level and password are set.

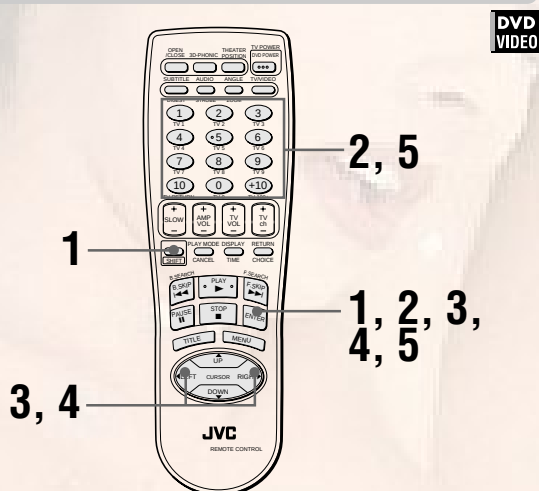
← moves to [EXIT].

Pressing ENTER again returns to the opening display.



If you enter an undesired password in step 6 above, reenter the password before pressing ENTER.

To change the settings [PARENTAL LOCK]



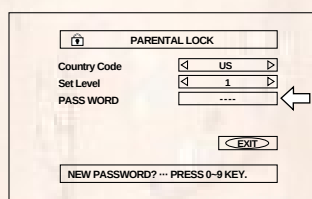
You can change the Parental lock settings later.

- While a DVD VIDEO disc is stopped or no disc is inserted

1 Press ENTER while holding down SHIFT.

The Parental Lock on-screen display appears on the TV screen.

◀ points [PASSWORD].



2 Enter your current 4-digit password using the numeric buttons (0 to 9) and press ENTER.

◀ moves to [Country Code] if you enter the correct password.

If you enter the wrong password, "WRONG! RETRY....." appears on the TV screen, and you cannot go to next step.

3 To change the country code, use CURSOR ◀/▶ to select the desired country code and press ENTER.

◀ moves to [Set Level].

When you change the country code, you must select the parental level.

4 To change the set level, use CURSOR ◀/▶ to select the desired level while ◀ points [Set Level], and then press ENTER.

◀ moves to [PASSWORD].

5 Enter the password using the numeric buttons (0 to 9) and press ENTER.

◀ moves to [EXIT].

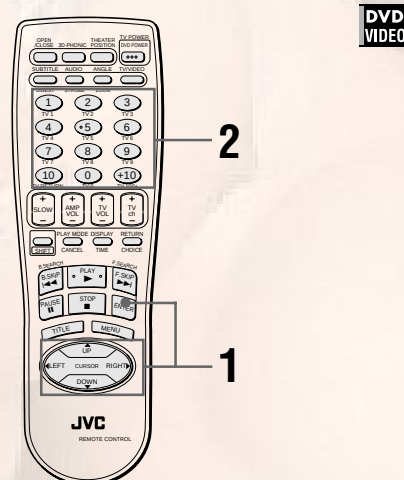
The password entered in the above step becomes the new password. If you do not change the password, enter the same password as in the step 2.

Even if you want to change only the country code and/or parental level, do not forget to enter the password after changing the country code and/or parental level. Otherwise, the new country code and/or parental level will not become effective. Pressing ENTER again returns to the opening display.

NOTES

- When you enter the wrong password more than 3 times in step 2 above, ◀ moves to [EXIT] automatically and CURSOR ▲/▼ does not work.
- If you forget your password in step 2 Enter "8888."

To temporarily release the Parental lock [PARENTAL LOCK]

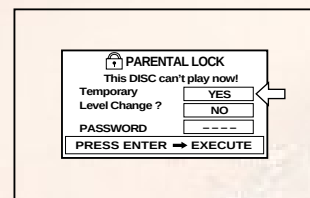


When you set the parental level strictly, some discs may not be played back at all. When you insert such a disc and try to play it, the following Parental Lock on-screen display appears on the TV screen, asking you whether you want the parental lock to be temporarily released or not.

1 Use the CURSOR ▲/▼ to move ◀ to [YES], then press ENTER.

◀ moves to the PASSWORD field.

When selecting [NO], press OPEN/CLOSE to remove the disc.



2 Enter your 4-digit password using the numeric buttons (0 to 9).

If you enter the wrong password, "WRONG! RETRY..." appears on the TV screen, and you cannot go to next step.

The Parental lock is released, and the unit starts playback.

NOTE

When you enter the wrong password more than 3 times in step 2 above, ◀ moves to [NO] automatically and CURSOR ▲/▼ do not work.

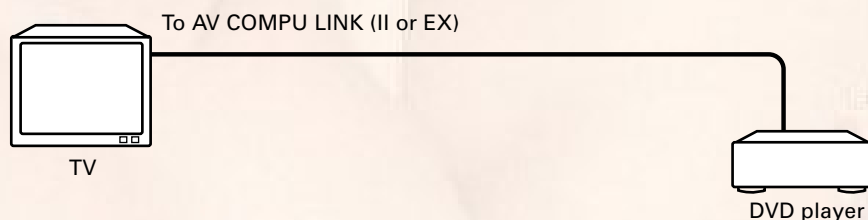
AV COMPU LINK remote control system (not available with XV-421BK)

When you buy a separate TV, VCR, DVD player, receiver, or other component and connect them to each other, you have to operate each component individually. JVC's AV COMPU LINK remote control system meets the demands of a system made up of single components and has the ease of operation of a single unit.

AV COMPU LINK

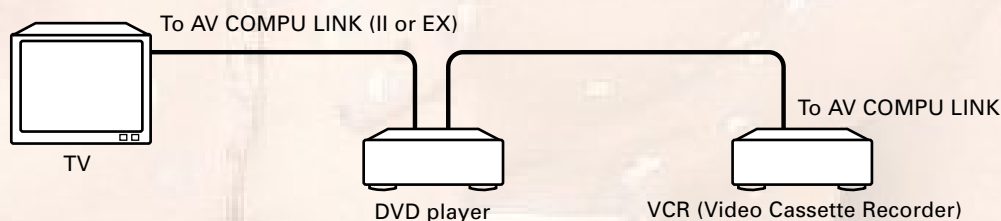
Connection and setup

Using the AV COMPU LINK cable, connect the AV COMPU LINK terminals of each component to one another.



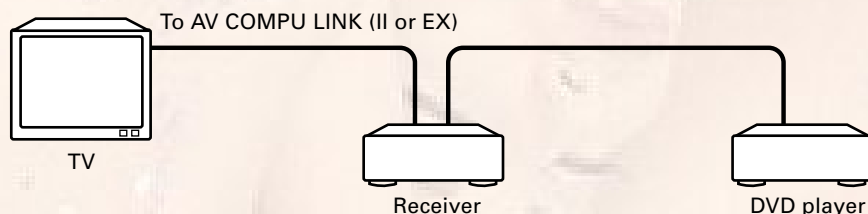
- If you connect a DVD player to a television via AV COMPU LINK, set the DVD player's AV COMPU LINK setting as follows.

- When connecting to VIDEO-1 input terminal of the television: DVD2
- When connecting to VIDEO-2 input terminal of the television: DVD3



- If you connect a DVD player to a television and VCR via AV COMPU LINK, set the VCR's Remote Control Code and DVD player's AV COMPU LINK setting as follows.

- When connecting to VIDEO-1 input terminal of the television:
DVD player's AV COMPU LINK setting: DVD2
VCR's Remote Control Code: B
- When connecting to VIDEO-2 input terminal of the television:
DVD player's AV COMPU LINK setting: DVD3
VCR's Remote Control Code: A



- If you connect a DVD player to a television and receiver via AV COMPU LINK, set the DVD player's AV COMPU LINK setting to DVD1.
- The DVD player's AV COMPU LINK setting is operated in the SYSTEM page of the preference display. See page 38 for operation.
- For information on the connection between the TV and the Receiver, refer to the Receiver's Instructions.

IMPORTANT!

If you connect the component video output to your TV:

- set the DVD player's AV COMPULINK setting to DVD1.
- make the video/audio connection between the DVD player and your receiver using the supplied audio/video cable, and do not make the S-VIDEO connection.

Notes for connection

- If you connect a DVD player to a receiver via AV COMPU LINK in a system including a Dolby digital decoder, some functions may not be performed automatically.
- The AV COMPU LINK terminal on some televisions indicates "II." Do not connect the terminal indicating "II" with the AV COMPU LINK terminal on a receiver. If connected, the system will not work correctly.
- Connect the AUDIO OUT jacks of the DVD player to the audio input jacks of a receiver that indicating "DVD." Otherwise, the system will not work correctly.
- There may be no description about connections to a DVD player in the instruction manual of a television or VCR. However a television or VCR with AV COMPU LINK terminals indicating "II" or "EX" can be connected to a DVD player.

Operation

You can enjoy pictures and/or sound by just putting a source component (which plays back the pictures and/or sound such as a DVD player or VCR) into play mode. You do not have to operate the TV and receiver including not having to perform power switching.

- 1 Turn on the main power of the television.
- 2 Insert a disc into the source component.
- 3 Press PLAY of the source component.

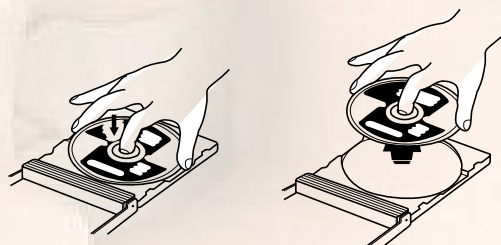
The following actions are performed automatically:

- Turning on the power for the television.
- Setting the source of the television to the external input (VIDEO-1 or VIDEO-2).
- Turning on the power for the receiver.
- Setting the source of the receiver to the component which has started playback.

Care and handling of discs

How to handle discs

When handling a disc, do not touch the surface of the disc. Since discs are made of plastic, they are easily damaged. If a disc gets dirty, dusty, scratched or warped, the images and sound will not be picked up correctly, and such a disc may cause the player to malfunction.



Label side

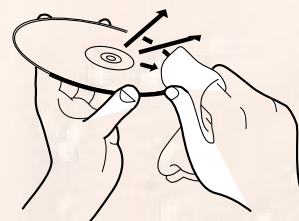
Do not damage the label side, stick paper to or use any adhesive on its surface.

Storage

Make sure that discs are kept in their cases. If discs are piled on top of one another without their protective cases, they can be damaged. Do not put discs in a location where they may be exposed to direct sunlight, or in a place where the humidity or temperature is high. Avoid leaving discs in your car!

Maintenance of discs

If there are fingerprints or other dirt adhering to a disc, wipe with a soft dry cloth, moving from the center outwards. If a disc is difficult to clean, wipe with a cloth moistened with water. Never use record cleaners, petrol, alcohol or any anti-static agents.



CAUTION

Sometimes during play noise or images may be garbled. This is sometimes due to the disc. (It may not be up to industry standards.)

These symptoms are caused by the discs, not by the malfunction of the unit.

Troubleshooting

What appears to be a malfunction may not always be serious. Please go through the following list before requesting service.

Symptom	Possible case	Remedy
Power does not come on.	Power plug is not inserted securely.	Plug in securely.
Remote control does not work.	Too far from the unit.	Move closer to the unit.
	The tip of the remote unit is not pointed in the right direction.	Point the infrared light-emitting window toward the remote sensor on the front panel.
	Batteries are exhausted.	Replace the batteries with new ones.
	Battery polarity is incorrect.	Take out the batteries and insert them again in the correct direction.
No picture is displayed on the monitor.	Connection of video cable is incorrect.	Connect the cable correctly.
	Input selection of TV is incorrect.	Select correctly.
	Disc is not playable.	Use a playable disc. (See page 11.)
Picture is noisy.	The unit is connected to a VCR directly and the copyguard function is activated.	Connect the unit so that the picture signal flows directly to the TV.
No audio is reproduced.	Connection is incorrect.	Check the connections.
	Input selection of amplifier is incorrect.	Select correctly.
No audio is reproduced when playing back a DVD disc recorded with 96-kHz, linear PCM audio.	The audio signal is derived from the unit's DIGITAL OUT.	Use the AUDIO OUT when playing back such discs.
Sound is distorted or noise is generated.	Disc is dirty.	Wipe the disc surface.
Picture does not fit the television screen.	MONITOR TYPE is not correctly set.	Select monitor type correctly. (See page 37.)
	Television is not correctly set.	Set the television correctly.
Operation is not possible.	Microcomputer malfunction due to lightning or static electricity.	Turn off the power and unplug the power cord, then connect the power cord again.
	Moisture condensation caused by a sudden change of temperature or humidity.	Turn off the power, then turn it on a few hours later.

Specifications

General

Readable discs: DVD VIDEO, Audio CD, Video CD
Video format: NTSC

Other

Power requirements: AC 120V ~ , 60Hz
Power consumption: 16 W (POWER ON), 3.0 W (STANDBY mode)
Mass: 3.2 kg (7.1 lbs)
Dimensions (W x H x D):
XV-521BK/XV-523GD/XV-525BK:
435 x 95 x 297 mm
(17-3/16 x 3-3/4 x 11-3/4 inch)
XV-421BK:
435 x 95 x 288 mm
(17-3/16 x 3-3/4 x 11-3/8 inch)

Video output

COMPONENT (pin jacks): Y Output: 1.0 Vp-p (75 Ω)
PB/PR Output: 0.7 Vp-p (75 Ω)
VIDEO OUT (pin jack): 1.0 Vp-p (75 Ω)
S-VIDEO OUT (S jack): Y Output: 1.0 Vp-p (75 Ω)
C Output: 286 mVp-p (75 Ω)
Horizontal resolution: 500 Lines
Signal to noise ratio: 65 dB

Audio output

ANALOG OUT (pin jack): 2.0 Vrms (10 kΩ)
DIGITAL OUT: COAXIAL: 0.5 Vp-p (75 Ω termination)
OPTICAL: – 21 to –15 dBm (Peak) (except XV-421BK)

Audio characteristics

Frequency response: CD (sampling frequency 44.1 kHz): 2 Hz to 20 kHz
DVD (sampling frequency 48 kHz): 2 Hz to 22 kHz
DVD (sampling frequency 96 kHz): 2 Hz to 44 kHz
Dynamic range: 16 bit: More than 98 dB
20 bit: More than 106 dB
24 bit: More than 106 dB
Wow and flutter: Unmeasurable (less than ± 0.002%)
Total harmonic distortion: Less than 0.002%

* Specifications and appearance subject to change without prior notice.

Appendix A: Table of languages and their abbreviations

When you select the subtitle language or sound, the languages shown below are displayed as abbreviations. To select the desired language, select the abbreviation corresponding the language you want to.

AA	Afar
AB	Abkhazian
AF	Afrikaans
AM	Ameharic
AR	Arabic
AS	Assamese
AY	Aymara
AZ	Azerbaijani
BA	Bashkir
BE	Byelorussian
BG	Bulgarian
BH	Bihari
BI	Bislama
BN	Bengali, Bangla
BO	Tibetan
BR	Breton
CA	Catalan
CO	Corsican
CS	Czech
CY	Welsh
DA	Danish
DZ	Bhutani
EL	Greek
EO	Esperanto
ET	Estonian
EU	Basque
FA	Persian
FI	Finnish
FJ	Fiji
FO	Faroese
FY	Frisian
GA	Irish
GD	Scots Gaelic
GL	Galician
GN	Guarani
GU	Gujarati
HA	Hausa
HI	Hindi
HR	Croatian
HU	Hungarian
HY	Armenian
IA	Interlingua
IE	Interlingue

IK	Inupiak
IN	Indonesian
IS	Icelandic
IW	Hebrew
JI	Yiddish
JW	Javanese
KA	Georgian
KK	Kazakh
KL	Greenlandic
KM	Cambodian
KN	Kannada
KO	Korean (KOR)
KS	Kashmiri
KU	Kurdish
KY	Kirghiz
LA	Latin
LN	Lingala
LO	Laothian
LT	Lithuanian
LV	Latvian, Lettish
MG	Malagasy
MI	Maori
MK	Macedonian
ML	Malayalam
MN	Mongolian
MO	Moldavian
MR	Marathi
MS	Malay (MAY)
MT	Maltese
MY	Burmese
NA	Nauru
NE	Nepali
NL	Dutch
NO	Norwegian
OC	Occitan
OM	(Afan) Oromo
OR	Oriya
PA	Panjabi
PL	Polish
PS	Pashto, Pushto
PT	Portuguese
QU	Quechua
RM	Rhaeto-Romance

RN	Kirundi
RO	Rumanian
RU	Russian
RW	Kinyarwanda
SA	Sanskrit
SD	Sindhi
SG	Sangho
SH	Serbo-Croatian
SI	Singhalese
SK	Slovak
SL	Slovenian
SM	Samoan
SN	Shona
SO	Somali
SQ	Albanian
SR	Serbian
SS	Siswati
ST	Sesotho
SU	Sundanese
SV	Swedish
SW	Swahili
TA	Tamil
TE	Telugu
TG	Tajik
TH	Thai
TI	Tigrinya
TK	Turkmen
TL	Tagalog
TN	Setswana
TO	Tonga
TR	Turkish
TS	Tsonga
TT	Tatar
TW	Twi
UK	Ukrainian
UR	Urdu
UZ	Uzbek
VI	Vietnamese
VO	Volapuk
WO	Wolof
XH	Xhosa
YO	Yoruba
ZU	Zulu

Appendix B: Country code list for parental lock

This list is used for the parental Lock operation. For details, see page 39.

AD	Andorra
AE	United Arab Emirates
AF	Afghanistan
AG	Antigua and Barbuda
AI	Anguilla
AL	Albania
AM	Armenia
AN	Netherlands Antilles
AO	Angola
AQ	Antarctica
AR	Argentina
AS	American Samoa
AT	Austria
AU	Australia
AW	Aruba
AZ	Azerbaijan
BA	Bosnia and Herzegovina
BB	Barbados
BD	Bangladesh
BE	Belgium
BF	Burkina Faso
BG	Bulgaria
BH	Bahrain
BI	Burundi
BJ	Benin
BM	Bermuda
BN	Brunei Darussalam
BO	Bolivia
BR	Brazil
BS	Bahamas
BT	Bhutan
BV	Bouvet Island
BW	Botswana
BY	Belarus
BZ	Belize
CA	Canada
CC	Cocos (Keeling) Islands
CF	Central African Republic
CG	Congo
CH	Switzerland
CI	Côte d'Ivoire
CK	Cook Islands
CL	Chile
CM	Cameroon
CN	China
CO	Colombia
CR	Costa Rica
CU	Cuba
CV	Cape Verde
CX	Christmas Island
CY	Cyprus
CZ	Czech Republic
DE	Germany
DJ	Djibouti
DK	Denmark
DM	Dominica
DO	Dominican Republic
DZ	Algeria
EC	Ecuador
EE	Estonia
EG	Egypt
EH	Western Sahara
ER	Eritrea

ES	Spain
ET	Ethiopia
FI	Finland
FJ	Fiji
FK	Falkland Islands (Malvinas)
FM	Micronesia (Federated States of)
FO	Faroe Islands
FR	France
FX	France, Metropolitan
GA	Gabon
GB	United Kingdom
GD	Grenada
GE	Georgia
GF	French Guiana
GH	Ghana
GI	Gibraltar
GL	Greenland
GM	Gambia
GN	Guinea
GP	Guadeloupe
GQ	Equatorial Guinea
GR	Greece
GS	South Georgia and the South Sandwich Islands
GT	Guatemala
GU	Guam
GW	Guinea-Bissau
GY	Guyana
HK	Hong Kong
HM	Heard Island and McDonald Islands
HN	Honduras
HR	Croatia
HT	Haiti
HU	Hungary
ID	Indonesia
IE	Ireland
IL	Israel
IN	India
IO	British Indian Ocean Territory
IQ	Iraq
IR	Iran (Islamic Republic of)
IS	Iceland
IT	Italy
JM	Jamaica
JO	Jordan
JP	Japan
KE	Kenya
KG	Kyrgyzstan
KH	Cambodia
KI	Kiribati
KM	Comoros
KN	Saint Kitts and Nevis
KP	Korea, Democratic People's Republic of
KR	Korea, Republic of
KW	Kuwait
KY	Cayman Islands
KZ	Kazakhstan
LA	Lao People's Democratic Republic

LB	Lebanon
LC	Saint Lucia
LI	Liechtenstein
LK	Sri Lanka
LR	Liberia
LS	Lesotho
LT	Lithuania
LU	Luxembourg
LV	Latvia
LY	Libyan Arab Jamahiriya
MA	Morocco
MC	Monaco
MD	Moldova, Republic of
MG	Madagascar
MH	Marshall Islands
ML	Mali
MM	Myanmar
MN	Mongolia
MO	Macau
MP	Northern Mariana Islands
MQ	Martinique
MR	Mauritania
MS	Montserrat
MT	Malta
MU	Mauritius
MV	Maldives
MW	Malawi
MX	Mexico
MY	Malaysia
MZ	Mozambique
NA	Namibia
NC	New Caledonia
NE	Niger
NF	Norfolk Island
NG	Nigeria
NI	Nicaragua
NL	Netherlands
NO	Norway
NP	Nepal
NR	Nauru
NU	Niue
NZ	New Zealand
OM	Oman
PA	Panama
PE	Peru
PF	French Polynesia
PG	Papua New Guinea
PH	Philippines
PK	Pakistan
PL	Poland
PM	Saint Pierre and Miquelon
PN	Pitcairn
PR	Puerto Rico
PT	Portugal
PW	Palau
PY	Paraguay
QA	Qatar
RE	Réunion
RO	Romania
RU	Russian Federation
RW	Rwanda

SA	Saudi Arabia
SB	Solomon Islands
SC	Seychelles
SD	Sudan
SE	Sweden
SG	Singapore
SH	Saint Helena
SI	Slovenia
SJ	Svalbard and Jan Mayen
SK	Slovakia
SL	Sierra Leone
SM	San Marino
SN	Senegal
SO	Somalia
SR	Suriname
ST	Sao Tome and Principe
SV	El Salvador
SY	Syrian Arab Republic
SZ	Swaziland
TC	Turks and Caicos Islands
TD	Chad
TF	French Southern Territories
TG	Togo
TH	Thailand
TJ	Tajikistan
TK	Tokelau
TM	Turkmenistan
TN	Tunisia
TO	Tonga
TP	East Timor
TR	Turkey
TT	Trinidad and Tobago
TV	Tuvalu
TW	Taiwan, Province of China
TZ	Tanzania, United Republic of
UA	Ukraine
UG	Uganda
UM	United States Minor Outlying Islands
US	United States
UY	Uruguay
UZ	Uzbekistan
VA	Vatican City State (Holy See)
VC	Saint Vincent and the Grenadines
VE	Venezuela
VG	Virgin Islands (British)
VI	Virgin Islands (U.S.)
VN	Vietnam
VU	Vanuatu
WF	Wallis and Futuna Islands
WS	Samoa
YE	Yemen
YT	Mayotte
YU	Yugoslavia
ZA	South Africa
ZM	Zambia
ZR	Zaire
ZW	Zimbabwe

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE : 1-800-537-5722

<http://www.jvcservice.com>

Dear customer:

In order to receive the most satisfaction from your purchase, read the instruction booklet before operating the unit. In the event that repair is necessary, or for the address nearest your location, please refer to the factory service center list below or within the Continental United States, Call 1-800-537-5722 for your authorized servicer. Remember to retain your Bill of Sale for Warranty Service.

—JVC

JVC SERVICE & ENGINEERING COMPANY OF AMERICA

DIVISION OF JVC AMERICAS CORP.

FACTORY SERVICE CENTER LOCATIONS

10 New Maple Avenue
Pine Brook, NJ 07058-9641
(973)396-1000

1500 Lakes Parkway
Lawrenceville, GA 30243-5857
(770) 339-2582

705 Enterprise Street
Aurora, IL 60504-8149
(630) 851-7855

5665 Corporate Avenue
Cypress, CA 90630-0024
(714) 229-8011

2969 Mapunapuna Place
Honolulu, HI 96819-2040
(808) 833-5828

10700 Hammerly, Suite 110
Houston, TX 77043
(713) 935-9331

13 Cummings Park
Woburn, MA 01801
(781)376-9100

8192 State Road 84
Davie, FL 33324
(954) 472-1960

890 Dubuque Avenue
South San Francisco, CA 94080-1804
(650) 871-2666

Sophisticated electronic products may require occasional service. Just as quality is a keyword in the engineering and production of the wide array of JVC products, service is the key to maintaining the high level of performance for which JVC is world famous. The JVC service and engineering organization stands behind our products.

**NATIONAL HEADQUARTERS
JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF JVC AMERICAS CORP.
1700 Valley Road
Wayne, NJ 07470**

If you ship the product • • •

Pack your JVC unit in the original carton or one of equivalent size and strength. Enclose, with the unit, a letter stating the problem or symptom that exists and also a copy of the receipt or bill of sale you received when you purchased your JVC unit. Print your home return address on the outside and the inside of the carton. Send to the appropriate JVC Factory Service Center as listed above.

Don't service it yourself.

CAUTION

*To prevent electrical shock, do not open the cabinet. No user serviceable parts inside.
Refer servicing to qualified service personnel.*

ACCESSORIES

*To purchase accessories for your JVC product, you may contact your local JVC Dealer.
Or from the 48 Continental United States call toll free : 800-882-2345*



LIMITED WARRANTY

CONSUMER VIDEO 1-90

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 MATERIAL AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period.")

PARTS	LABOR
1 YR	90 DAYS

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 and 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 the 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 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 last, 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
DIVISION OF JVC AMERICAS CORP.

1700 Valley Road
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. and Serial 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 date: _____

Name of dealer: _____



JVC

VICTOR COMPANY OF JAPAN, LIMITED

PARTS LIST

[XV-525/521/421BK]
[XV-523GD]

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

XV-525BK/XV-421BK/XV-523GD

Area suffix

J ----- U.S.A.

XV-521BK

Area suffix

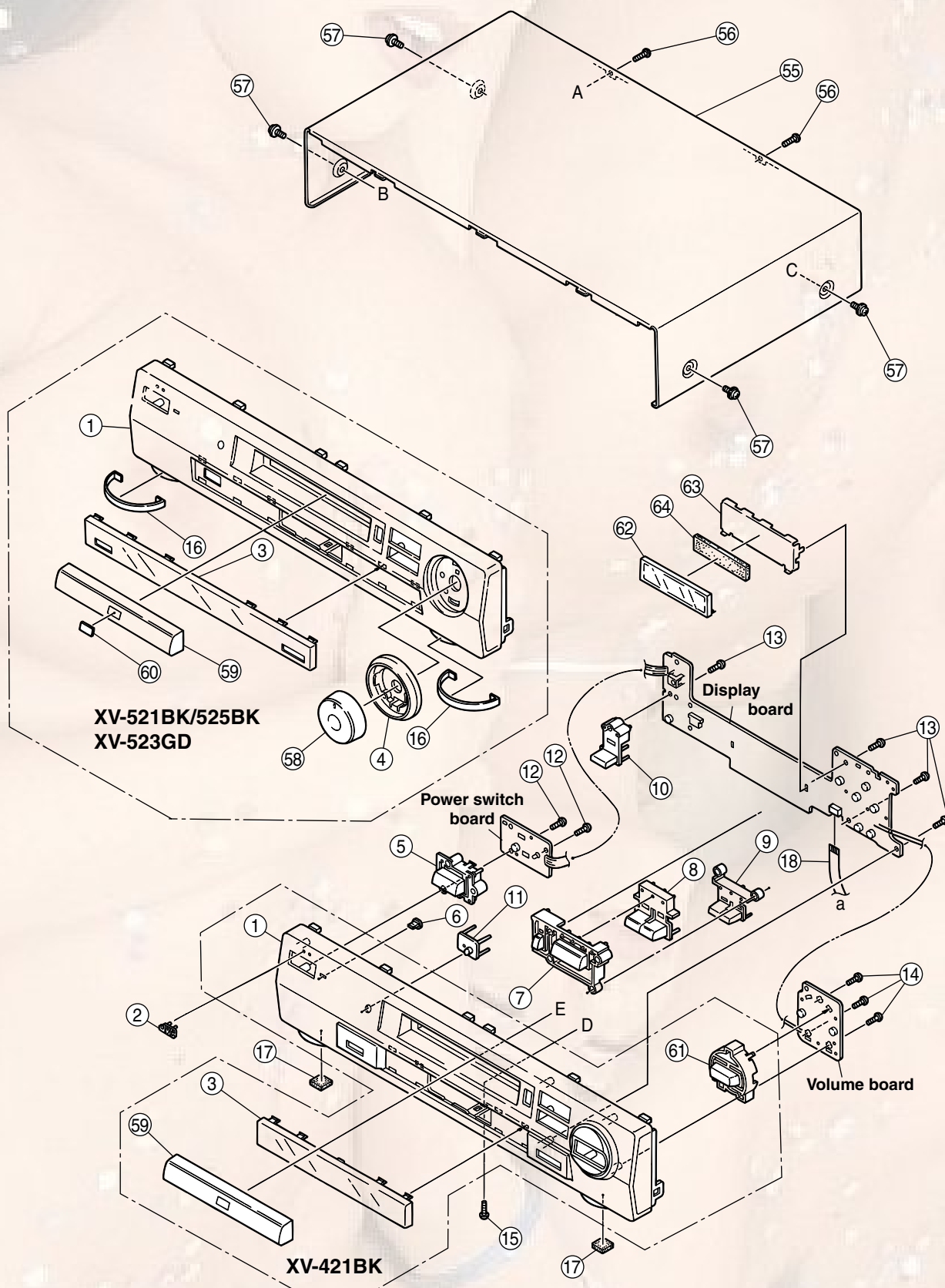
C ----- Canada

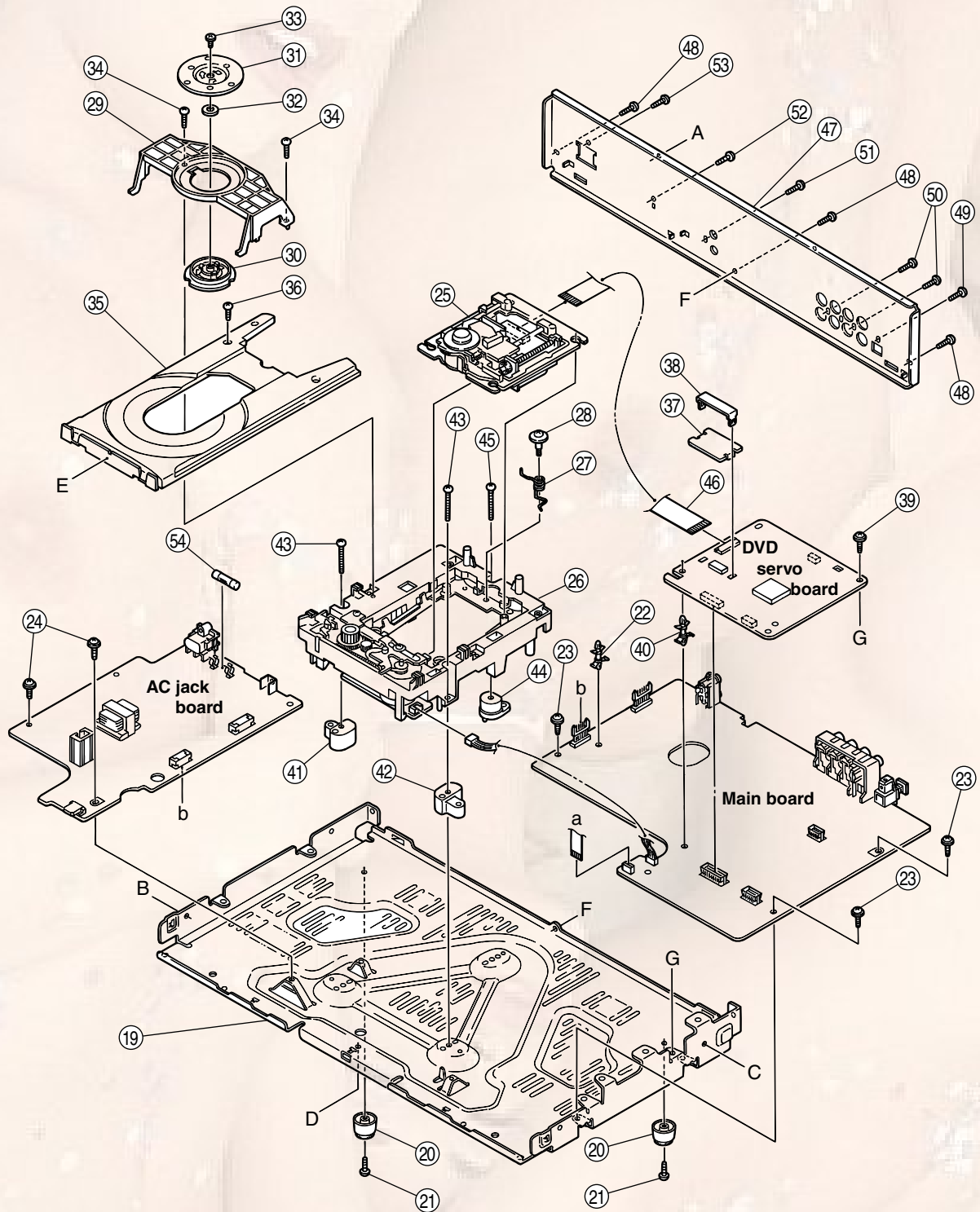
- Contents -

Exploded view of general assembly and parts list	3-2
DVD mechanism assembly and parts list	3-6
DVD loading base assembly and parts list	3-8
Electrical parts list	3-10
Packing materials and accessories parts list	3-20

Exploded view of general assembly and parts list

Block No. M 1 M M





■ Parts list (General assembly)

Block No. M1MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV10320-001A	FRONT PANEL	1	XV-521BK	
		LV10320-010A	FRONT PANEL	1	XV-421BK	
		LV10320-006A	FRONT PANEL	1	XV-525BK	
		LV10320-011A	FRONT PANEL	1	XV-523GD	
	2	VJD5429-001SS	JVC MARK	1		
	3	LV20630-001A	FRONT LENS(A)	1	XV-525BK/521BK	
		LV20630-003A	FRONT LENS(A)	1	XV-523GD	
		LV20707-001A	FRONT LENS(B)	1	XV-421BK	
	4	LV31163-001A	SHUTTLE RING	1	XV-525BK/521BK	
		LV31163-002A	SHUTTLE RING	1	XV-523GD	
	5	LV31655-004A	POWER BUTTON	1	XV-523GD	
		LV31655-001A	POWER BUTTON	1	XV-525BK/521BK/421BK	
	6	FSJD4001-002	INDICATOR	1	FOR POWER LED	
	7	LV31656-001A	PUSH BUTTON(A)	1	XV-525BK/521BK/421BK	
		LV31656-002A	PUSH BUTTON(A)	1	XV-523GD	
	8	LV31657-001A	PUSH BUTTON(B)	1	XV-525BK/521BK/421BK	
		LV31657-002A	PUSH BUTTON(B)	1	XV-523GD	
	9	LV31658-001A	PUSH BUTTON(C)	1	XV-525BK/521BK/421BK	
		LV31658-002A	PUSH BUTTON(C)	1	XV-523GD	
	10	LV31659-001A	PUSH BUTTON(3D)	1	3D PHONIC	
	11	E308744-003	REMOTE LENS	1	XV-523GD	
		E308744-002	REMOTE LENS	1	XV-525BK/521BK/421BK	
	12	QYSBSF2608Z	T.SCREW	2	BIND --> BRAZIE	
	13	QYSBSF2608Z	T.SCREW	4	BIND --> BRAZIE	
	14	QYSBSF2608Z	T.SCREW	3	BIND --> BRAZIE	
	15	QYSBSG3008M	T.SCREW	1	ONLY CENTER POS	
	16	LV31790-001A	FOOT PLATE	2	XV-525BK/521BK/523GD	
	17	E75896-001	FELT SPACER	2	FOR FOOT	
	18	QUQB12-0809AJ	FFC WIRE	1	FRONT --> AUDIO	
	19	LV10321-001A	CHASSIS BASE	1		
	20	E47227-008	FOOT	2	REAR	
	21	QYSBST3008Z	T.SCREW	2	FOR FOOT	
	22	LV41875-001A	FASTENER	1		
	23	QYSBSGG3006E	SCREW	3	SYSTEM + CHASSIS	
	24	QYSBSGG3006E	SCREW	2	POWER + CHASSIS	
	25	-----	DVD TRAVERSE MECHA	1		
	26	-----	DVD LOADING BASE	1		
	27	LV41842-001A	TORSION SPRING	1	FOR ELEVATOR BA	
	28	E406293-001	SPECIAL SCREW	1	FOR ELEVATOR BA	
	29	E26756-222SS	CD CLAMPER BASE	1		
	30	LV31675-002A	CLAMPER	1		
	31	LV31676-001A	YOKE	1		
	32	LV41118-001A	MAGNET	1		
	33	LV41741-001A	SPECIAL SCREW	1	CLAMPER + YOKE	
	34	QYSBSF3008M	SCREW	2	C.BASE + L.BASE	
	35	LV10324-001A	TRAY	1		
	36	QYSBSF3008M	SCREW	1	FOR TRAY STOPPER	
	37	LV41362-001A	HEAT SINK	1	FOR IC ON MODUL	

■ Parts list (General assembly)

Block No. M1MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
△	38	LV41363-002A	HOLDER	1	FOR HEAT SINK	
	39	QYSBSGG3006E	SCREW	1	MODULE + CHASSIS	
	40	E408621-002	FASTENER	1		
	41	E309322-001SC	STAND(L)	1	MECHA FORE SIDE	
	42	E309321-001SC	STAND(R)	1	MECHA FORE SIDE	
	43	QYSBST3020Z	T.SCREW	2	MECHA + CHASSIS	
	44	E309323-001SC	STAND(REAR)	1	MECHA REAR SIDE	
	45	QYSBST3020Z	T.SCREW	1	MECHA + CHASSIS	
	46	QUQ605-4015AJ	FFC WIRE	1	MECHA --> MODUL	
	47	LV20698-025A	REAR PANEL	1	XV-523GD	
		LV20698-023A	REAR PANEL	1	XV-525BK	
		LV20698-022A	REAR PANEL	1	XV-521BK	
		LV20698-024A	REAR PANEL	1	XV-421BK	
	48	QYSBSGY3008M	SPECIAL SCREW	3	REAR + CHASSIS	
	49	QYSBSGY3008M	SPECIAL SCREW	1	XV-525BK/521BK/523GD	
	50	QYSBSGY3008M	SPECIAL SCREW	2	LEFT & RIGHT ON	
	51	QYSBSGY3008M	SPECIAL SCREW	1	XV-525BK/521BK/523GD	
	52	QYSBSGY3008M	SPECIAL SCREW	1	FOR GND TERMINA	
	53	QYSBSGY3008M	SPECIAL SCREW	1	AC INLET	
	54	QMF51U1-1R6-J8	FUSE	1		
	55	LE20082-002A/S/	METAL COVER	1	XV-523GD	
		LE20082-004A/S/	METAL COVER	1	XV-525BK/521BK/421BK	
	56	QYSBSGY3008E	SPECIAL SCREW	2	METAL + REAR	
	57	E406308-003	SPECIAL SCREW	4	XV-525BK/521BK/421BK	
		E406308-004	SPECIAL SCREW	4	XV-523GD	
	58	LE30714-001A	SHUTTLE KNOB	1	XV-525/521BK	
		LE30714-005A	SHUTTLE KNOB	1	XV-523GD	
	59	LV20631-001A	TRAY FITTING	1	XV-525/521BK	
		LV20631-002A	TRAY FITTING	1	XV-523GD	
		LV20631-003A	TRAY FITTING	1	XV-421BK	
	60	LE40564-002A	MARK	1	XV-525BK/521BK/523GD	
	61	LV31791-001A	PUSH BUTTON(E)	1	XV-421BK	
	62	QLF0064-001	FL TUBE	1	DI801	
	63	E308192-331	FL HOLDER	1	BK801	
	64	E306805-134	SPACER	1		

DVD mechanism assembly and parts list

Block No.

M	2	M	M
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FXL-V6-1C

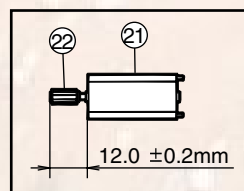
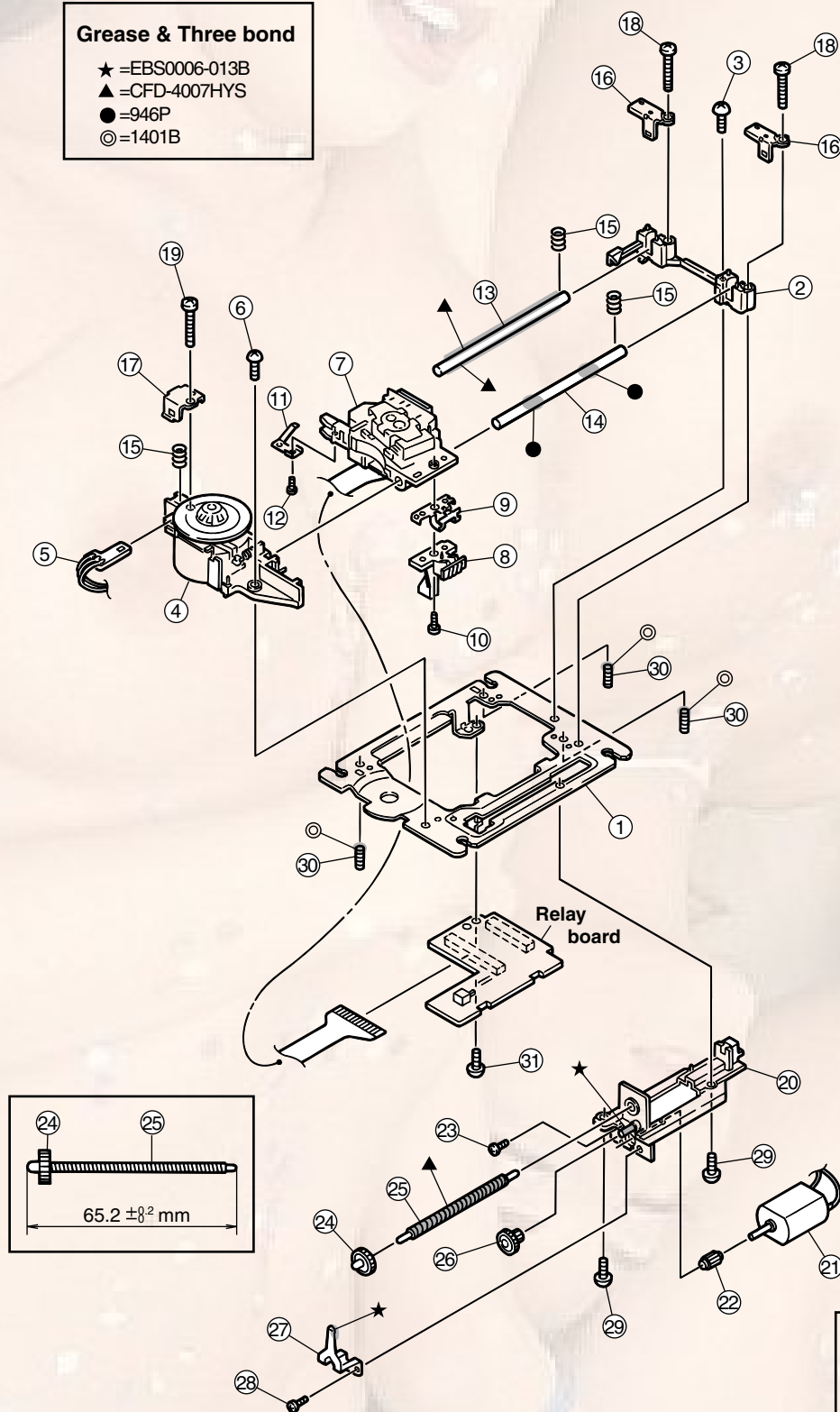
Grease & Three bond

★ =EBS0006-013B

▲ =CFD-4007HYS

●=946P

©=1401B



■ Parts list (DVD mechanism)

Block No. M2MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV20638-001A	MECHA BASE	1		
	2	LV20635-001A	SHAFT HOLDER	1		
	3	QYSBST2606M	T.SCREW	1		
	4	VDG1099001TSVME	SP. MOTOR ASS'Y	1		
	5	QUM193-08B2B2	PARA RIBON WIRE	1		
	6	QYSBST2606M	T.SCREW	1	FOR S.BASE&M.BA	
	7	OPTIMA-2010A1	DVD PICKUP	1		
	8	LV31670-001A	SWITCH ACTUATOR	1		
	9	LV31666-002A	LEAD SPRING	1		
	10	QYSPSGT2040M	SCREW	1		
	11	LV31743-002A	P.U. SPRING	1		
	12	QYSPSGT1416M	MINI SCREW	1		
	13	LV41121-002A	SHAFT	1	MAIN SHAFT	
	14	LV41121-002A	SHAFT	1	SUB SHAFT	
	15	LV41732-001A	SKEW SPRING	3		
	16	LV31669-001A	SHAFT STOPPER R	2		
	17	LV31668-001A	SHAFT STOPPER F	1		
	18	QYSPST2614M	SCREW	2	FOR SSTOPER R	
	19	QYSPST2614M	SCREW	1	FOR SSTOPER F	
	20	LV31746-003A	FEED HOLDER ASY	1		
	21	QAR0127-001	FEED MOTOR	1		
	22	LV41510-001A	FEED GEAR T	1		
	23	QYSPSPU2040M	SCREW	1	FOR F.M	
	24	LV41512-001A	FEED GEAR E	1		
	25	LV41517-001A	LEAD SCREW	1		
	26	LV41511-002A	FEED GEAR M	1		
	27	LV31667-001A	THRUST SPRING	1		
	28	QYSPSPU2040M	SCREW	1	FOR F.M	
	29	QYSBST2606M	T.SCREW	2	FOR F.HOLDER	
	30	QYYASPF2608N	HEX SCREW	3	FOR TILT ADJUST	
	31	QYSBST2606M	T.SCREW	1	FOR PW BOARD	

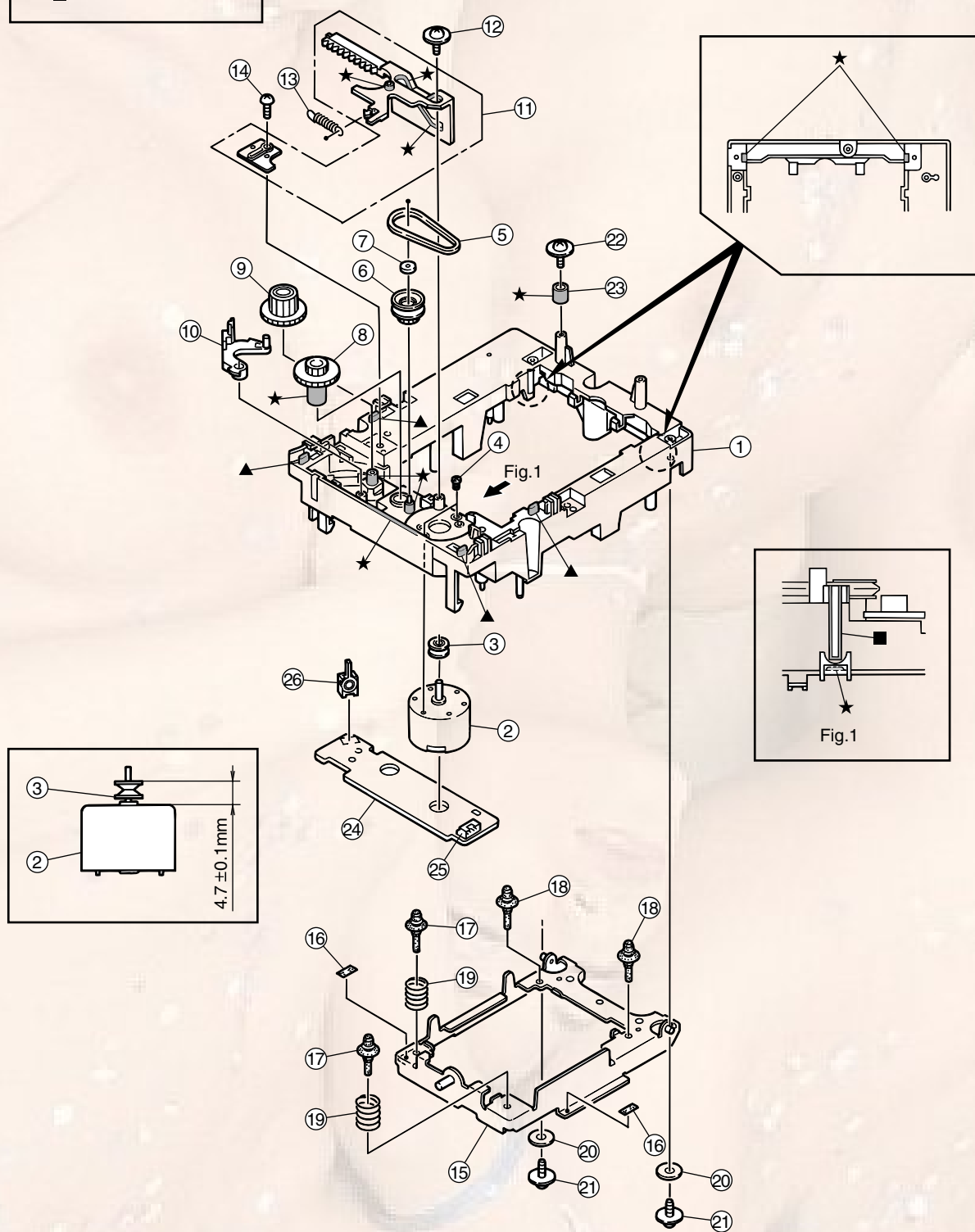
DVD loading base assembly and parts list

Block No. M 3 M M

FLM-121-1C

Grease

- ★ =G-474C
- ▲ =EBS0006-009B
- =G-330



■ Parts list (DVD loading base)

Block No. M3MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
	1	E102357-441	LOADING BASE	1		
	2	MMN-6F1LB8K	MOTOR	1		
	3	E75984-001SC	MOTOR PULLEY	1		
	4	QYSPSPT2640Z	MINI SCREW	2		
	5	E75950-002	BELT	1		
	6	E75985-222SS	GEAR(1)	1		
	7	E60912-005SS	SPEED NUT	1		
	8	E75986-221SS	GEAR (2)	1		
	9	E75987-221SS	GEAR (3)	1		
	10	E307162-331	LEVER	1		
	11	E307252-331	CAM PLATE	1		
	12	E65923-003	TAPPING SCREW	1		
	13	E75989-001	SPRING	1		
	14	QYSBSF3008Z	SCREW	1		
	15	E307179-332	E.BASE ASS'Y	1		
	16	LV30225-089A	SPACER	2		
	17	LV41527-001A	INSULATOR	2		
	18	LV41527-002A	INSULATOR	2		
	19	E406871-001	SPRING	2		
	20	LV30226-019A	SPACER	2		
	21	E65923-003	TAPPING SCREW	2		
	22	QYSBSFG3008Z	T.SCREW	1		
	23	LV41961-001A	TRAY TUBE	1		
	24	EMW10095-003	P.C.BOARD	1	LOADING MOTOR	
	25	QGA2001F1-05	5P PLUG ASSY	1		
	26	QSW0472-001	SWITCH	1		

■ Electrical parts list (Power board)

Block No. 01

Item	Parts number	Parts name	Remarks	Area	Item	Parts number	Parts name	Remarks	Area
C 801	QCFC1HZ-104Y	C CAPACITOR	.10MF +80:-20%		D 910	ERA18-04-T1	FR DIODE		
C 802	QKCC1AM-476Z	E CAPACITOR	47MF 20% 10V		D 911	1SS133-T2	SI DIODE		
C 811	QCFC1HZ-104Y	C CAPACITOR	.10MF +80:-20%		D 950	MTZJ22C-T2	ZENER DIODE		
C 812	QKCC0JM-476Z	E CAPACITOR	47MF 20% 6.3V		D 951	ERA18-04-T1	FR DIODE		
C 813	QCFC1HZ-104Y	C CAPACITOR	.10MF +80:-20%		D 952	ERA18-04-T1	FR DIODE		
C 814	QCS11HJ-220	C CAPACITOR	22PF 5% 50V		△ D 953	FMB-24	FUSEIODE		
C 821	QKCC1HM-475Z	E CAPACITOR	4.7MF 20% 50V		△ D 954	ERA18-04-T1	FR DIODE		
△ C 902	QFZ9040-683	M CAPACITOR	.068MF		△ D 956	ERA18-04-T1	FR DIODE		
△ C 906	QCZ9079-102	C CAPACITOR	1000PF		D 957	ERA18-04-T1	FR DIODE		
△ C 907	QETM2DM-157	E CAPACITOR	150MF 20%		D 960	MTZJ2.0A-T2	ZENER DIODE		
C 908	QCZ0136-332Z	C CAPACITOR	3300PF		D 970	1SS133-T2	SI DIODE		
C 909	QCZ0136-101Z	C CAPACITOR	100PF		D 972	1SS133-T2	SI DIODE		
C 910	QCB1HK-221Y	C CAPACITOR	220PF 10% 50V		D 973	1SS133-T2	SI DIODE		
C 913	QCZ0136-101Z	C CAPACITOR	100PF		D 974	1SS133-T2	SI DIODE		
C 914	QEMX1EM-396Z	E CAPACITOR	39MF 20% 25V		D 991	MTZJ5.1C-T2	ZENER DIODE		
C 915	QCB1HK-471Y	C CAPACITOR	470PF 10% 50V		FC901	QNG0003-001Z	FUSE CLIP		
△ C 916	QCZ9079-332	C CAPACITOR	3300PF		FC902	QNG0003-001Z	FUSE CLIP		
C 918	QCFC1HZ-104Y	C CAPACITOR	.10MF +80:-20%		FW802	QUM124-13Z4Z4	FLAT WIRE	TO FW841(PSW)	
C 951	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		HS964	LE40505-001A	HEAT SINK		
C 952	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		IC801	GP1U271X	RM RECIVER		
C 953	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		IC802	M35500BGP	FL DRIVER		
C 954	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		IC901	STR-G6651	IC		
C 956	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		IC951	PQ05RD21	IC		
C 957	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		IC953	NJM78M05FA	IC		
C 960	QEMX1AM-826Z	E CAPACITOR	82MF 20% 10V		K 902	QQR0601-001Z	FERRITE BEADS		
C 961	QCZ0205-155Z	ML C CAPACITOR	1.5MF		△ L 901	QQR1105-001	LINE FILTER		
C 962	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V		L 951	QQL01BK-R22Z	P COIL		
C 963	QEMX1HM-396Z	E CAPACITOR	39MF 20% 50V		L 952	QQR1098-001	INDUCTOR		
C 964	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V		L 955	QQR1098-001	INDUCTOR		
C 965	QEMV1AM-108	E CAPACITOR	1000MF 20% 10V		L 957	QQR1098-001	INDUCTOR		
C 966	QETN1AM-477Z	E CAPACITOR	470MF 20% 10V		L 959	QQR1098-001	INDUCTOR		
C 967	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V		△ P 901	QNC0046-001	AC INLET		
C 968	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V		PC901	PC123F	IC(PHOTO COUPLE		
C 969	QETN1AM-227Z	E CAPACITOR	220MF 20% 10V		PC902	PC123F	IC(PHOTO COUPLE		
C 970	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V		Q 951	2SC2060/QR/-T	TRANSISTOR		
C 973	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V		Q 952	KRA104M-T	D.TRANSISTOR		
C 976	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V		Q 953	2SA1175/FE/-T	TRANSISTOR		
C 977	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V		Q 964	2SB1565/EF/-	TRANSISTOR		
C 978	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V		Q 965	2SC2785/FE/-T	TRANSISTOR		
C 979	QEMV1CM-82Z	E CAPACITOR	820MF 20% 16V		Q 966	2SA1175/FE/-T	TRANSISTOR		
C 981	QCZ0205-155Z	ML C CAPACITOR	1.5MF		Q 991	2SC2785/FE/-T	TRANSISTOR		
C 982	QEMV1EM-567	E CAPACITOR	560MF 20% 25V		R 801	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
C 984	QETN1EM-227Z	E CAPACITOR	220MF 20% 25V		R 802	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
C 987	QEMX1EM-187Z	E CAPACITOR	180MF 20% 25V		R 803	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
C 989	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V		R 804	QRE141J-222Y	C RESISTOR	XV-525BK/521BK/523GD	
C 992	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V		R 805	QRE141J-222Y	C RESISTOR	XV-525BK/521BK/523GD	
C 993	QCB1HK-101Y	C CAPACITOR	100PF 10% 50V		R 806	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
C 994	QDVB1EZ-223Y	C CAPACITOR			R 807	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
C 995	QETN1CM-227Z	E CAPACITOR	220MF 20% 16V		R 808	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
C 996	QETN1CM-226Z	E CAPACITOR	22MF 20% 16V		R 809	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
C 997	QETN1CM-227Z	E CAPACITOR	220MF 20% 16V		R 813	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
CN801	VMC0163-R08	CONNECTOR	TO CN703(SYS)		R 814	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
CN832	QGB1216K1-06S	CONNECTOR	TO CN971(POW)		R 816	QRE141J-431Y	C RESISTOR	XV-421BK	
CN951	QGB2011L1-08	B TO B CONNECTO	TO CN705(SYS)		R 821	QRE141J-102Y	C RESISTOR	XV-525BK/521BK/523GD	
CN961	QGB2011L1-08	B TO B CONNECTO	TO CN704(SYS)		R 844	QRE141J-222Y	C RESISTOR	XV-421BK	
CN971	QGB1216J1-06S	CONNECTOR	TO CN832(FL)		R 845	QRE141J-431Y	C RESISTOR	430 5% 1/4W	
△ CP951	ICP-N10-T	ICP			R 846	QRE141J-681Y	C RESISTOR	680 5% 1/4W	
CP952	ICP-N5-T	ICP			R 847	QRE141J-112Y	C RESISTOR	1.1K 5% 1/4W	
△ D 801	SLR-342VC-T	LED	STANDBY		R 848	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
D 901	S1WB/A/60-4101	BRIDGE DIODE			R 900	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
D 902	ERA18-04-T1	FR DIODE			R 901	QRL01DJ-683X	OMF RESISTOR	68K 5% 1/1W	
D 903	ERA18-04-T1	FR DIODE			R 903	QRE141J-270Y	C RESISTOR	27 5% 1/4W	
D 904	ERA18-04-T1	FR DIODE			R 904	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
D 908	ERA18-04-T1	FR DIODE			R 905	QRL027J-683	OMF RESISTOR	68K 5% 1/2W	

■ Electrical parts list (Power board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	R 906	QRE141J-681Y	C RESISTOR	680 5% 1/4W	
	R 907	QRT022J-R47	OMF RESISTOR	5% 1/2W	
	R 908	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 910	QRE141J-754Y	C RESISTOR	750K 5% 1/4W	
	R 911	QRE141J-754Y	C RESISTOR	750K 5% 1/4W	
	R 952	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 953	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
△	R 954	QRZ9006-4R7X	F RESISTOR	4.7 1/0W	
	R 955	QRE141J-223Y	C RESISTOR	22K 5% 1/4W	
	R 956	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 960	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 961	QRE141J-681Y	C RESISTOR	680 5% 1/4W	
	R 962	QRE141J-105Y	C RESISTOR	1.0M 5% 1/4W	
	R 963	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 964	QRE141J-105Y	C RESISTOR	1.0M 5% 1/4W	
	R 965	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 969	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 971	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
	R 972	QRE141J-122Y	C RESISTOR	1.2K 5% 1/4W	
	R 973	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 974	QRE141J-562Y	C RESISTOR	5.6K 5% 1/4W	
	R 975	QRE141J-562Y	C RESISTOR	5.6K 5% 1/4W	
	R 976	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 980	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	S 801	QSW0683-001Z	PUSH SWITCH	POWER	
	S 811	QSW0683-001Z	PUSH SWITCH	3D-PHONIC	
	S 821	QSW0683-001Z	PUSH SWITCH	OPEN/CLOSE	
	S 831	QSW0683-001Z	PUSH SWITCH	STOP	
	S 832	QSW0683-001Z	PUSH SWITCH	PAUSE	
	S 833	QSW0683-001Z	PUSH SWITCH	PLAY	
	S 834	QSW0683-001Z	PUSH SWITCH	F.SKIP	
	S 835	QSW0683-001Z	PUSH SWITCH	B.SKIP	
	S 841	QVQ0123-B15	SHUTTLE VR	XV-525BK/521BK/523GD	
	S 842	QSW0683-001Z	PUSH SWITCH	XV-421BK	
	S 843	QSW0683-001Z	PUSH SWITCH	XV-421BK	
	SP802	VYH7653-002	IC HOLDER	FOR IC802	
△	T 901	QQS0076-001	SW TRANSF		

■ Electrical parts list (Main board)

Block No. 02

Item	Parts number	Parts name	Remarks	Area
C 601	QCB1HK-181Y	C CAPACITOR	180PF 10% 50V	
C 603	QCS11HJ-680	C CAPACITOR	68PF 5% 50V	
C 604	QCS11HJ-150	C CAPACITOR	15PF 5% 50V	
C 609	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 611	QCB1HK-181Y	C CAPACITOR	180PF 10% 50V	
C 613	QCS11HJ-680	C CAPACITOR	68PF 5% 50V	
C 614	QCS11HJ-150	C CAPACITOR	15PF 5% 50V	
C 619	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 621	QCB1HK-121Y	C CAPACITOR	120PF 10% 50V	
C 623	QCS11HJ-470	C CAPACITOR	47PF 5% 50V	
C 624	QCS11HJ-100	C CAPACITOR	10PF 5% 50V	
C 629	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 631	QCB1HK-121Y	C CAPACITOR	120PF 10% 50V	
C 633	QCS11HJ-470	C CAPACITOR	47PF 5% 50V	
C 634	QCS11HJ-100	C CAPACITOR	10PF 5% 50V	
C 639	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
C 641	QCB1HK-121Y	C CAPACITOR	120PF 10% 50V	
C 643	QCS11HJ-470	C CAPACITOR	47PF 5% 50V	
C 644	QCS11HJ-100	C CAPACITOR	10PF 5% 50V	
C 649	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 659	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 663	QCB1HK-151Y	C CAPACITOR	150PF 10% 50V	
C 699	QCB1HK-221Y	C CAPACITOR	220PF 10% 50V	
C 701	QETN1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
C 702	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
C 705	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
C 706	QFVC1HJ-104Z	M.M.CAPACITOR	.10MF 5% 50V	
C 707	QETN0JM-107Z	E CAPACITOR	XV-525BK/521BK/523GD	
C 709	QCB1HK-331Y	C CAPACITOR	XV-525BK/521BK/523GD	
C 710	QETN1AM-477Z	E CAPACITOR	470MF 20% 10V	
C 711	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
C 712	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 713	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 714	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 715	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
C 716	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 717	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
C 718	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	
C 720	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
C 721	QCZ0205-155Z	ML C CAPACITOR	1.5MF	
C 722	QCFB1HZ-104Y	C CAPACITOR	XV-525BK/521BK/523GD	
C 723	QCF11HZ-473	C CAPACITOR	.047MF +80:-20%	
C 724	QCF11HZ-103	C CAPACITOR	.010MF +80:-20%	
C 725	QETN1CM-477Z	E CAPACITOR	470MF 20% 16V	
C 726	QETN1CM-227Z	E CAPACITOR	220MF 20% 16V	
C 727	QETN1AM-227Z	E CAPACITOR	220MF 20% 10V	
C 728	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
C 729	QCB1HK-271Y	C CAPACITOR	XV-525BK/521BK/523GD	
C 730	QFVC1HJ-474Z	M.M.CAPACITOR	.47MF 5% 50V	
C 731	QDYB1CM-103Y	C CAPACITOR		
C 732	QDGB1HK-102Y	C CAPACITOR		
C 733	QDGB1HK-102Y	C CAPACITOR		
C 734	QDX31EM-473Z	C CAPACITOR		
C 735	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
C 736	QCFB1HZ-104Y	C CAPACITOR	XV-525BK/521BK/523GD	
C 740	QFN32AJ-152Z	M CAPACITOR	1500PF 5% 100V	
C 741	QCB1HK-181Y	C CAPACITOR	180PF 10% 50V	
C 742	QFN32AJ-333Z	M CAPACITOR	.033MF 5% 100V	
C 743	QFN32AJ-152Z	M CAPACITOR	1500PF 5% 100V	
C 744	QFN32AJ-182Z	M CAPACITOR	1800PF 5% 100V	
C 745	QFN32AJ-103Z	M CAPACITOR	.010MF 5% 100V	
C 746	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
C 747	QFN32AJ-152Z	M CAPACITOR	1500PF 5% 100V	
C 750	QFN32AJ-152Z	M CAPACITOR	1500PF 5% 100V	

Item	Parts number	Parts name	Remarks	Area
C 751	QCB1HK-181Y	C CAPACITOR	180PF 10% 50V	
C 752	QFN32AJ-333Z	M CAPACITOR	.033MF 5% 100V	
C 753	QFN32AJ-152Z	M CAPACITOR	1500PF 5% 100V	
C 754	QFN32AJ-182Z	M CAPACITOR	1800PF 5% 100V	
C 755	QFN32AJ-103Z	M CAPACITOR	.010MF 5% 100V	
C 756	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
C 757	QFN32AJ-152Z	M CAPACITOR	1500PF 5% 100V	
C 761	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 762	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 771	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 772	QETN1CM-107Z	E CAPACITOR	100MF 20% 16V	
C 773	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
C 778	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
C 797	QDYB1CM-103Y	C CAPACITOR		
C 798	QDYB1CM-103Y	C CAPACITOR		
CN601	QGB2027M3-10S	CONNECTOR	TO CN503	
CN701	QGB2027M4-22S	CONNECTOR	TO CN502(MDUL)	
CN702	QJK021-050800	SIN CR C-B WIRE	TO	
CN703	QGF1205C1-08	CONNECTOR	TO CN801(FL)	
CN704	EMV5159-1008	B TO B CONNECTO	TO CN961(POWER)	
CN705	EMV5159-1008	B TO B CONNECTO	TO CN951(POWER)	
CN706	QGB2027M3-10S	CONNECTOR	TO CN501(MODUL)	
D 609	1SS133-T2	SI DIODE		
D 619	1SS133-T2	SI DIODE		
D 629	1SS133-T2	SI DIODE		
D 639	1SS133-T2	SI DIODE		
D 649	1SS133-T2	SI DIODE		
D 701	1SS133-T2	SI DIODE		
D 709	1SS133-T2	SI DIODE	XV-525BK/521BK/523GD	
D 731	KV1555N-T	VARI CAPACITOR		
D 732	KV1555N-T	VARI CAPACITOR		
D 733	MTZJ5.1C-T2	ZENER DIODE		
D 734	ERA18-04-T1	FR DIODE		
D 735	ERA18-04-T1	FR DIODE		
D 791	1SS133-T2	SI DIODE		
D 792	1SS133-T2	SI DIODE		
D 793	MTZJ3.3B-T2	ZENER DIODE		
FW701	QUM124-10Z4Z4	PARA RIBON WIRE	FW701 TO FW702	
IC701	MN101C12GHA	IC	SYSTEM MICOM	
IC702	IC-PST9140-T	IC		
IC703	MN35503-X	IC		
IC711	PQ05RD21	IC		
IC712	BA6208A	IC		
IC741	NJM4580D	IC		
IC751	NJM4580D	IC		
IC791	AK93C45AF-W	IC		
IC792	TC74HC08AP	IC		
J 601	QNN0333-001	PIN JACK	COMPONENT	
J 702	QNS0083-001	3.5 JACK	XV-525BK/521BK/523GD	
J 703	GP1F32T	OPTICAL JACK	XV-525BK/521BK/523GD	
K 603	QQR0601-001Z	FERRITE BEADS		
K 604	QQR0601-001Z	FERRITE BEADS		
K 605	QQR0601-001Z	FERRITE BEADS		
K 705	QQR0601-001Z	FERRITE BEADS		
K 706	QQR0601-001Z	FERRITE BEADS		
K 710	QQR0601-001Z	FERRITE BEADS		
K 712	QQR0601-001Z	FERRITE BEADS		
K 714	QQR0601-001Z	FERRITE BEADS		
K 715	QQR0601-001Z	FERRITE BEADS		
K 716	QQR0601-001Z	FERRITE BEADS		
K 717	QQR0601-001Z	FERRITE BEADS		
K 718	QQR0601-001Z	FERRITE BEADS	XV-525BK/521BK/523GD	
L 601	QQL071J-120Y	INDUCTOR		
L 602	QQL071J-5R6Y	INDUCTOR		

■ Electrical parts list (Main board)

Block No. 02

Item	Parts number	Parts name	Remarks	Area
L 611	QQL071J-120Y	INDUCTOR		
L 612	QQL071J-5R6Y	INDUCTOR		
L 621	QQL071J-120Y	INDUCTOR		
L 622	QQL071J-5R6Y	INDUCTOR		
L 631	QQL071J-120Y	INDUCTOR		
L 632	QQL071J-5R6Y	INDUCTOR		
L 641	QQL071J-120Y	INDUCTOR		
L 642	QQL071J-5R6Y	INDUCTOR		
L 731	QQL071J-1R2Y	INDUCTOR		
Q 601	2SA1175/FE/-T	TRANSISTOR		
Q 611	2SA1175/FE/-T	TRANSISTOR		
Q 621	2SA1175/FE/-T	TRANSISTOR		
Q 631	2SA1175/FE/-T	TRANSISTOR		
Q 641	2SA1175/FE/-T	TRANSISTOR		
Q 709	KRC107M-T	D.TRANSISTOR	XV-525BK/521BK/523GD	
Q 711	KRA102M-T	D.TRANSISTOR		
Q 741	2SC3576-JVC-T	TRANSISTOR	FREQ	
Q 743	2SC3576-JVC-T	TRANSISTOR	AMUTE1	
Q 751	2SC3576-JVC-T	TRANSISTOR	FREQ	
Q 753	2SC3576-JVC-T	TRANSISTOR	AMUTE1	
Q 791	KRA102M-T	D.TRANSISTOR		
R 601	QRE141J-120Y	C RESISTOR	12 5% 1/4W	
R 602	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
R 603	QRE141J-120Y	C RESISTOR	12 5% 1/4W	
R 604	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
R 605	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 606	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 609	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
R 611	QRE141J-120Y	C RESISTOR	12 5% 1/4W	
R 612	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
R 613	QRE141J-120Y	C RESISTOR	12 5% 1/4W	
R 614	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
R 615	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 616	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 619	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
R 621	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 622	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 623	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 624	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 625	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 626	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 629	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
R 632	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
R 634	QRE141J-361Y	C RESISTOR	360 5% 1/4W	
R 635	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 636	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 639	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
R 641	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 642	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 643	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 644	QRE141J-751Y	C RESISTOR	750 5% 1/4W	
R 645	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 646	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 649	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
R 659	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
R 687	QRE141J-270Y	C RESISTOR	27 5% 1/4W	
R 701	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 702	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
R 703	QRE141J-105Y	C RESISTOR	1.0M 5% 1/4W	
R 704	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 705	QRE141J-2R2Y	C RESISTOR	XV-525BK/521BK/523GD	
R 707	QRE141J-101Y	C RESISTOR	XV-525BK/521BK/523GD	
R 708	QRE141J-101Y	C RESISTOR	XV-525BK/521BK/523GD	
R 709	QRE141J-103Y	C RESISTOR	XV-525BK/521BK/523GD	

Item	Parts number	Parts name	Remarks	Area
R 711	QRE141J-560Y	C RESISTOR	56 5% 1/4W	
R 712	QRE141J-560Y	C RESISTOR	56 5% 1/4W	
R 713	QRE141J-560Y	C RESISTOR	56 5% 1/4W	
R 714	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
R 715	QRE141J-560Y	C RESISTOR	56 5% 1/4W	
R 716	QRE141J-152Y	C RESISTOR	1.5K 5% 1/4W	
R 717	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
R 721	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 722	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 723	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 724	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 725	QRE141J-511Y	C RESISTOR	510 5% 1/4W	
R 726	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 727	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 728	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 729	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
R 730	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
R 731	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 732	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
R 733	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
R 734	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
R 735	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
R 736	QRE141J-181Y	C RESISTOR	180 5% 1/4W	
R 737	QRE141J-104Y	C RESISTOR	100K 5% 1/4W	
R 738	QRE141J-153Y	C RESISTOR	15K 5% 1/4W	
R 739	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R 740	QRE141J-243Y	C RESISTOR	24K 5% 1/4W	
R 741	QRE141J-243Y	C RESISTOR	24K 5% 1/4W	
R 742	QRE141J-163Y	C RESISTOR	16K 5% 1/4W	
R 743	QRE141J-163Y	C RESISTOR	16K 5% 1/4W	
R 744	QRE141J-682Y	C RESISTOR	6.8K 5% 1/4W	
R 745	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
R 746	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
R 747	QRE141J-362Y	C RESISTOR	3.6K 5% 1/4W	
R 748	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 749	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
R 750	QRE141J-243Y	C RESISTOR	24K 5% 1/4W	
R 751	QRE141J-243Y	C RESISTOR	24K 5% 1/4W	
R 752	QRE141J-163Y	C RESISTOR	16K 5% 1/4W	
R 753	QRE141J-163Y	C RESISTOR	16K 5% 1/4W	
R 754	QRE141J-682Y	C RESISTOR	6.8K 5% 1/4W	
R 755	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
R 756	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
R 757	QRE141J-362Y	C RESISTOR	3.6K 5% 1/4W	
R 758	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 759	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
R 760	QRE141J-105Y	C RESISTOR	1.0M 5% 1/4W	
R 761	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 762	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
R 764	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
R 765	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 766	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
R 767	QRE141J-151Y	C RESISTOR	150 5% 1/4W	
R 768	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
R 770	QRE141J-105Y	C RESISTOR	1.0M 5% 1/4W	
R 771	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 772	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
R 774	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
R 775	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
R 776	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
R 777	QRE141J-151Y	C RESISTOR	150 5% 1/4W	
R 778	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
R 782	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 783	QRE141J-221Y	C RESISTOR	220 5% 1/4W	

■ Electrical parts list (Main board)

Block No. 02

Item	Parts number	Parts name	Remarks	Area
R 786	QRE141J-333Y	C RESISTOR	33K 5% 1/4W	
R 792	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 793	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
R 796	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
R 797	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
R 798	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
R1701	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1702	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1703	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1704	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
R1706	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1707	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1708	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1709	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1710	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1711	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1712	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
R1713	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
R1714	QRE141J-472Y	C RESISTOR	4.7K 5% 1/4W	
R1715	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
R1716	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1717	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1720	QRE141J-750Y	C RESISTOR	75 5% 1/4W	
R1723	QRE141J-221Y	C RESISTOR	XV-525BK/521BK/523GD	
R1724	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
R1726	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
R1730	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1731	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
R1732	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
SP701	VYH7653-001	IC HOLDER	FOR IC701	
SP703	VYH7653-003SC	IC HOLDER	FOR IC703	
T 601	QQR0880-001	PULSE TRANS		
X 701	QAX0356-001Z	RESONATOR		

■ Electrical parts list (DVD servo board)

Block No. 03

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	C 1	NCB31CK-104X	C CAPACITOR				C 237	NCB31CK-104X	C CAPACITOR		
	C 2	NEA70JM-226X	E CAPACITOR				C 238	NCB31CK-104X	C CAPACITOR		
	C 3	NEA70JM-226X	E CAPACITOR				C 239	NCB31CK-183X	C CAPACITOR		
	C 4	NCB31CK-104X	C CAPACITOR				C 240	NCS31HJ-470X	C CAPACITOR		
	C 5	NEX40JM-156X	E CAPACITOR				C 241	NCB31CK-103X	C CAPACITOR		
	C 6	NCB31CK-104X	C CAPACITOR				C 242	NCB11CK-105X	C CAPACITOR		
	C 11	NEA70JM-107X	E CAPACITOR				C 244	NCB31CK-104X	C CAPACITOR		
	C 12	NCB31CK-104X	C CAPACITOR				C 245	NCB31CK-103X	C CAPACITOR		
	C 15	NCB31CK-104X	C CAPACITOR				C 246	NCB31CK-104X	C CAPACITOR		
	C 16	NBE20JM-106X	TS E CAP SVB20J				C 247	NCB31CK-104X	C CAPACITOR		
	C 17	NCB31CK-104X	C CAPACITOR				C 248	NCB21CK-154X	C CAPACITOR		
	C 101	NCB31HK-561X	C CAPACITOR				C 249	NCB31CK-104X	C CAPACITOR		
	C 102	NCB31CK-104X	C CAPACITOR				C 250	NCB31CK-104X	C CAPACITOR		
	C 103	NCB31CK-104X	C CAPACITOR				C 251	NCB31CK-104X	C CAPACITOR		
	C 104	NCB31CK-104X	C CAPACITOR				C 252	NCB31CK-104X	C CAPACITOR		
	C 105	NCB31CK-104X	C CAPACITOR				C 253	NCB31CK-104X	C CAPACITOR		
	C 109	NEA70JM-476X	E CAPACITOR				C 254	NEA70GM-336X	E CAPACITOR		
	C 112	NEA70JM-476X	E CAPACITOR				C 255	NCB31CK-104X	C CAPACITOR		
	C 118	NCB21CK-154X	C CAPACITOR				C 256	NEA70GM-107X	E CAPACITOR		
	C 119	NCS31HJ-221X	C CAPACITOR				C 257	NCB11CK-105X	C CAPACITOR		
	C 120	NCS31HJ-820X	C CAPACITOR				C 258	NEA70GM-107X	E CAPACITOR		
	C 121	NCS31HJ-220X	C CAPACITOR				C 259	NCB11CK-105X	C CAPACITOR		
	C 122	NCB31HK-271X	C CAPACITOR				C 260	NCB31HK-561X	C CAPACITOR		
	C 123	NCB31CK-104X	C CAPACITOR				C 261	NCB31CK-104X	C CAPACITOR		
	C 124	NCB31CK-104X	C CAPACITOR				C 262	NCB31CK-104X	C CAPACITOR		
	C 125	NCB31CK-104X	C CAPACITOR				C 263	NCB31CK-104X	C CAPACITOR		
	C 126	NEX40JM-566X	E CAPACITOR				C 264	NCB21CK-474X	C CAPACITOR		
	C 127	NCB31HK-102X	C CAPACITOR				C 271	NCB31EK-332X	C CAPACITOR		
	C 128	NCB31CK-104X	C CAPACITOR				C 272	NCB31HK-331X	C CAPACITOR		
	C 130	NCB31CK-104X	C CAPACITOR				C 276	NCB31CK-104X	C CAPACITOR		
	C 131	NCS31HJ-120X	C CAPACITOR				C 277	NCB31CK-104X	C CAPACITOR		
	C 132	NCB31CK-104X	C CAPACITOR				C 278	NCB31HK-102X	C CAPACITOR		
	C 133	NCB31HK-561X	C CAPACITOR				C 279	NCB31HK-272X	C CAPACITOR		
	C 134	NCB31HK-561X	C CAPACITOR				C 281	NCB31CK-103X	C CAPACITOR		
	C 135	NCB31CK-273X	C CAPACITOR				C 283	NCB31CK-223X	C CAPACITOR		
	C 136	NCB31CK-473X	C CAPACITOR				C 284	NCB31CK-473X	C CAPACITOR		
	C 138	NCB31CK-104X	C CAPACITOR				C 288	NCB31CK-223X	C CAPACITOR		
	C 139	NCB31CK-104X	C CAPACITOR				C 289	NCB31CK-104X	C CAPACITOR		
	C 140	NEA70JM-226X	E CAPACITOR				C 291	NCB31CK-104X	C CAPACITOR		
	C 141	NCB31CK-104X	C CAPACITOR				C 292	NEA70JM-226X	E CAPACITOR		
	C 143	NCB31CK-104X	C CAPACITOR				C 293	NEA71CM-226X	E CAPACITOR		
	C 144	NCB31CK-104X	C CAPACITOR				C 301	NCB31CK-104X	C CAPACITOR		
	C 145	NCB31CK-103X	C CAPACITOR				C 302	NCB31CK-104X	C CAPACITOR		
	C 151	NEX40JM-156X	E CAPACITOR				C 303	NCB31CK-104X	C CAPACITOR		
	C 152	NEX40JM-156X	E CAPACITOR				C 304	NCB31CK-104X	C CAPACITOR		
	C 153	NCB31CK-104X	C CAPACITOR				C 305	NCB31CK-104X	C CAPACITOR		
	C 159	NCB31CK-104X	C CAPACITOR				C 306	NCB31CK-104X	C CAPACITOR		
	C 160	NCB31CK-104X	C CAPACITOR				C 307	NCB31CK-104X	C CAPACITOR		
	C 161	NEA70GM-336X	E CAPACITOR				C 309	NCB31CK-104X	C CAPACITOR		
	C 202	NCB31HK-561X	C CAPACITOR				C 310	NCB31CK-104X	C CAPACITOR		
	C 203	NCB31HK-561X	C CAPACITOR				C 311	NCB31CK-104X	C CAPACITOR		
	C 204	NCB31HK-331X	C CAPACITOR				C 312	NCS31HJ-180X	C CAPACITOR		
	C 205	NCS31HJ-121X	C CAPACITOR				C 313	NCS31HJ-180X	C CAPACITOR		
	C 206	NCS31HJ-271X	C CAPACITOR				C 314	NCB31CK-104X	C CAPACITOR		
	C 207	NCB31HK-471X	C CAPACITOR				C 315	NCB31CK-104X	C CAPACITOR		
	C 208	NCB31CK-104X	C CAPACITOR				C 316	NEA70GM-107X	E CAPACITOR		
	C 209	NCB31HK-102X	C CAPACITOR				C 317	NCB11CK-105X	C CAPACITOR		
	C 210	NCB31HK-102X	C CAPACITOR				C 318	NCB31CK-104X	C CAPACITOR		
	C 222	NCB31HK-562X	C CAPACITOR				C 319	NCB31CK-104X	C CAPACITOR		
	C 223	NCB31HK-102X	C CAPACITOR				C 320	NCB31CK-104X	C CAPACITOR		
	C 224	NCB31CK-104X	C CAPACITOR				C 321	NCB31CK-104X	C CAPACITOR		
	C 225	NBE91CM-105X	E CAPACITOR				C 324	NCB31CK-104X	C CAPACITOR		
	C 227	NCB31HK-102X	C CAPACITOR				C 326	NCB31CK-104X	C CAPACITOR		
	C 228	NCB31HK-102X	C CAPACITOR				C 327	NEA70GM-107X	E CAPACITOR		

■ Electrical parts list (DVD servo board)

Block No. 03

Item	Parts number	Parts name	Remarks	Area	Item	Parts number	Parts name	Remarks	Area
C 341	NCB31CK-104X	C CAPACITOR			C 564	NCB31CK-104X	C CAPACITOR		
C 342	NCB31CK-104X	C CAPACITOR			C 565	NCB31CK-104X	C CAPACITOR		
C 343	NCB31CK-104X	C CAPACITOR			C 566	NCB31CK-104X	C CAPACITOR		
C 344	NCB31CK-104X	C CAPACITOR			C 567	NEA70JM-226X	E CAPACITOR		
C 345	NEA70JM-107X	E.CAPACITOR			C 568	NCB31CK-104X	C CAPACITOR		
C 346	NCB11CK-105X	C CAPACITOR			C 569	NEA70JM-226X	E CAPACITOR		
C 373	NCB31CK-104X	C CAPACITOR			C 570	NCB31CK-104X	C CAPACITOR		
C 401	NCB31CK-104X	C CAPACITOR			CN101	QGF0501F3-40X	FFC/FPC CONNE	PU	
C 402	NCB31CK-104X	C CAPACITOR			CN501	QGB2027L1-10X	W TO B CONNE	POWER	
C 405	NCB31CK-104X	C CAPACITOR			CN502	QGB2027L1-22X	CONNECTOR	SYSTEM	
C 406	NCB31CK-104X	C CAPACITOR			CN503	QGB2027L1-10X	W TO B CONNE	VIDEO	
C 407	NCB31CK-104X	C CAPACITOR			D 501	1SR154-400-X	DIODE		
C 408	NEA70JM-226X	E CAPACITOR			D 551	1SS355-X	DIODE		
C 409	NCB31CK-104X	C CAPACITOR			D 552	1SS355-X	DIODE		
C 411	NCB31CK-104X	C CAPACITOR			IC 1	RN5RZ33BA-X	IC		
C 412	NCB31CK-104X	C CAPACITOR			IC101	AN8702FH	IC		
C 501	NCB31CK-104X	C CAPACITOR			IC102	RN5RZ33BA-X	IC		
C 502	NCB31CK-104X	C CAPACITOR			IC201	MN67706ZY	IC		
C 503	NCB31CK-104X	C CAPACITOR			IC202	TC7WT125FU-X	IC(DIGITAL)		
C 504	NCB31CK-104X	C CAPACITOR			IC271	M56788FP-W	IC		
C 505	NCB31CK-104X	C CAPACITOR			IC301	MN103S13BDA	IC		
C 506	NCB31CK-104X	C CAPACITOR			IC311	TC7SH08FU-X	IC		
C 507	NCB31CK-104X	C CAPACITOR			IC312	TC7SH32FU-X	IC		
C 508	NCB31CK-104X	C CAPACITOR			IC321	TC7WH74FU-X	IC		
C 509	NCB31CK-104X	C CAPACITOR			IC322	TC74VHC00FT-X	IC		
C 510	NCB31CK-104X	C CAPACITOR			IC401	MN102L25GDZ3	IC	OTP	
C 511	NCB31CK-104X	C CAPACITOR			IC402	MSM531622F83G-X	IC		
C 512	NCB31CK-104X	C CAPACITOR			IC403	AK93C65AF-X	IC		
C 513	NCB31CK-104X	C CAPACITOR			IC501	ZIVA3-PE0	IC		
C 514	NCB31CK-104X	C CAPACITOR			IC502	NAX0393-001X	CXO C.M	27MHZ	
C 515	NCB31CK-104X	C CAPACITOR			IC503	TC74VHC00FT-X	IC		
C 516	NCB31CK-104X	C CAPACITOR			IC504	HY57V161610DTC8	IC		
C 517	NCB31CK-104X	C CAPACITOR			IC505	HY57V161610DTC8	IC		
C 518	NCB31CK-104X	C CAPACITOR			IC554	MC44724AVFU	IC		
C 519	NCB31CK-104X	C CAPACITOR			K 102	NQR0007-002X	FERRITE BEADS		
C 520	NCB31CK-104X	C CAPACITOR			K 103	NQR0007-002X	FERRITE BEADS		
C 521	NCB31CK-104X	C CAPACITOR			K 201	NQR0007-002X	FERRITE BEADS		
C 522	NCB31CK-104X	C CAPACITOR			K 202	NQR0007-002X	FERRITE BEADS		
C 523	NCB31CK-104X	C CAPACITOR			K 203	NQR0007-002X	FERRITE BEADS		
C 524	NCB31CK-104X	C CAPACITOR			K 301	NQR0007-002X	FERRITE BEADS		
C 525	NCB31CK-104X	C CAPACITOR			K 302	NQR0007-002X	FERRITE BEADS		
C 526	NCB31CK-104X	C CAPACITOR			K 303	NQR0007-002X	FERRITE BEADS		
C 527	NCB31CK-104X	C CAPACITOR			K 401	NQR0007-002X	FERRITE BEADS		
C 528	NCB31CK-104X	C CAPACITOR			K 402	NQR0007-002X	FERRITE BEADS		
C 529	NCB31CK-104X	C CAPACITOR			K 501	NQR0007-002X	FERRITE BEADS		
C 530	NEA70JM-107X	E CAPACITOR			K 502	NQR0007-002X	FERRITE BEADS		
C 531	NCB31CK-104X	C CAPACITOR			K 503	NQR0007-002X	FERRITE BEADS		
C 532	NCB31CK-104X	C CAPACITOR			K 504	NQR0201-001X	FERRITE BEADS		
C 533	NCB31CK-104X	C CAPACITOR			K 505	NQR0269-001X	FERRITE BEADS		
C 534	NEA70JM-107X	E CAPACITOR			K 506	NQR0007-002X	FERRITE BEADS		
C 535	NCB31CK-104X	C CAPACITOR			K 507	NQR0007-002X	FERRITE BEADS		
C 536	NCB31CK-103X	C CAPACITOR			K 550	NQR0007-002X	FERRITE BEADS		
C 537	NEA70JM-226X	E CAPACITOR			K 551	NQR0007-002X	FERRITE BEADS		
C 538	NCB31CK-104X	C CAPACITOR			K 553	NQR0007-002X	FERRITE BEADS		
C 539	NCB31CK-104X	C CAPACITOR			K 554	NQR0007-002X	FERRITE BEADS		
C 540	NEA70JM-226X	E CAPACITOR			K 555	NQR0007-002X	FERRITE BEADS		
C 541	NCB31CK-104X	C CAPACITOR			K 556	NQR0007-002X	FERRITE BEADS		
C 542	NEA70JM-226X	E CAPACITOR			K 557	NQR0007-002X	FERRITE BEADS		
C 543	NCB31CK-104X	C CAPACITOR			K 558	NQR0007-002X	FERRITE BEADS		
C 556	NEA70JM-107X	E CAPACITOR			K 559	NQR0007-002X	FERRITE BEADS		
C 557	NCB31CK-104X	C CAPACITOR			K 561	NQR0007-002X	FERRITE BEADS		
C 561	NCB31CK-104X	C CAPACITOR			K 562	NQR0007-002X	FERRITE BEADS		
C 562	NEA70JM-226X	E CAPACITOR			K 563	NQR0007-002X	FERRITE BEADS		
C 563	NCB31CK-104X	C CAPACITOR			K 564	NQR0007-002X	FERRITE BEADS		

■ Electrical parts list (DVD servo board)

Block No. 03

Item	Parts number	Parts name	Remarks	Area	Item	Parts number	Parts name	Remarks	Area
K 565	NQR0007-002X	FERRITE BEADS			R 212	NRSA63J-273X	MG RESISTOR		
K 566	NQR0007-002X	FERRITE BEADS			R 213	NRSA63J-562X	MG RESISTOR		
K 567	NQR0007-002X	FERRITE BEADS			R 214	NRSA63J-123X	MG RESISTOR		
K 568	NQR0007-002X	FERRITE BEADS			R 215	NRSA63J-105X	MG RESISTOR		
K 569	NQR0007-002X	FERRITE BEADS			R 218	NRSA63J-153X	MG RESISTOR		
K 570	NQR0007-002X	FERRITE BEADS			R 219	NRSA63J-473X	MG RESISTOR		
K 571	NQR0007-002X	FERRITE BEADS			R 220	NRSA63J-473X	MG RESISTOR		
K 572	NQR0007-002X	FERRITE BEADS			R 223	NRSA63J-473X	MG RESISTOR		
K 574	NQR0007-002X	FERRITE BEADS			R 224	NRSA63J-0R0X	MG RESISTOR		
K 575	NQR0007-002X	FERRITE BEADS			R 225	NRSA63J-682X	MG RESISTOR		
K 576	NQR0007-002X	FERRITE BEADS			R 227	NRSA63J-102X	MG RESISTOR		
K 577	NQR0007-002X	FERRITE BEADS			R 228	NRSA63J-183X	MG RESISTOR		
K 578	NQR0007-002X	FERRITE BEADS			R 229	NRSA63J-273X	MG RESISTOR		
K 579	NQR0007-002X	FERRITE BEADS			R 230	NRSA63J-273X	MG RESISTOR		
L 1	NQL044K-100X	INDUCTOR			R 232	NRSA63J-472X	MG RESISTOR		
Q 1	2SD2150/RS/-W	POW TRANSISTOR			R 233	NRSA63J-472X	MG RESISTOR		
Q 101	2SB1424/QR/-X	TRANSISTOR			R 234	NRSA63J-472X	MG RESISTOR		
Q 102	2SB1424/QR/-X	TRANSISTOR			R 235	NRSA63J-0R0X	MG RESISTOR		
Q 275	DTC144EE-X	TRANSISTOR			R 237	NRSA63J-221X	MG RESISTOR		
R 1	NRSA63J-100X	MG RESISTOR			R 238	NRSA63J-221X	MG RESISTOR		
R 103	NRS125J-270X	MG RESISTOR			R 239	NRSA63J-221X	MG RESISTOR		
R 104	NRS125J-270X	MG RESISTOR			R 240	NRSA63J-221X	MG RESISTOR		
R 107	NRSA63J-0R0X	MG RESISTOR			R 241	NRSA63J-221X	MG RESISTOR		
R 108	NRSA63J-183X	MG RESISTOR			R 242	NRSA63J-102X	MG RESISTOR		
R 109	NRSA63J-0R0X	MG RESISTOR			R 243	NRSA63J-102X	MG RESISTOR		
R 110	NRSA63J-273X	MG RESISTOR			R 244	NRSA63J-102X	MG RESISTOR		
R 111	NRSA63J-0R0X	MG RESISTOR			R 245	NRSA63J-102X	MG RESISTOR		
R 112	NRSA63J-273X	MG RESISTOR			R 246	NRSA63J-102X	MG RESISTOR		
R 113	NRSA63J-682X	MG RESISTOR			R 248	NRSA63J-473X	MG RESISTOR		
R 114	NRSA63J-102X	MG RESISTOR			R 249	NRSA63J-473X	MG RESISTOR		
R 115	NRVA63D-243X	MG RESISTOR			R 250	NRSA63J-473X	MG RESISTOR		
R 116	NRSA63J-393X	MG RESISTOR			R 253	NRS125J-4R7X	MG RESISTOR		
R 117	NRSA63J-123X	MG RESISTOR			R 255	NRSA63J-123X	MG RESISTOR		
R 118	NRSA63J-223X	MG RESISTOR			R 256	NRSA63J-0R0X	MG RESISTOR		
R 121	NRSA63J-0R0X	MG RESISTOR			R 257	NRSA63J-0R0X	MG RESISTOR		
R 122	NRSA63J-0R0X	MG RESISTOR			R 271	NRSA63J-563X	MG RESISTOR		
R 123	NRSA63J-0R0X	MG RESISTOR			R 272	NRSA63J-103X	MG RESISTOR		
R 124	NRSA63J-0R0X	MG RESISTOR			R 273	NRS125J-1R0X	MG RESISTOR		
R 125	NRSA63J-0R0X	MG RESISTOR			R 274	NRSA63J-0R0X	MG RESISTOR		
R 126	NRSA63J-0R0X	MG RESISTOR			R 275	NRSA63J-103X	MG RESISTOR		
R 127	NRSA63J-222X	MG RESISTOR			R 276	NRSA63J-103X	MG RESISTOR		
R 128	NRSA63J-105X	MG RESISTOR			R 277	NRSA63J-103X	MG RESISTOR		
R 129	NRSA63J-105X	MG RESISTOR			R 278	NRSA63J-103X	MG RESISTOR		
R 131	NRSA63J-822X	MG RESISTOR			R 279	NRSA63J-103X	MG RESISTOR		
R 132	NRSA63J-103X	MG RESISTOR			R 280	NRSA63J-103X	MG RESISTOR		
R 144	NRSA63J-333X	MG RESISTOR			R 282	NRSA63J-103X	MG RESISTOR		
R 145	NRSA63J-103X	MG RESISTOR			R 283	NRSA63J-103X	MG RESISTOR		
R 152	NRS125J-1R0X	MG RESISTOR			R 284	NRSA63J-472X	MG RESISTOR		
R 153	NRS125J-4R7X	MG RESISTOR			R 285	NRSA63J-103X	MG RESISTOR		
R 155	NRSA63J-0R0X	MG RESISTOR			R 286	NRSA63J-103X	MG RESISTOR		
R 156	NRSA63J-333X	MG RESISTOR			R 287	NRSA63J-103X	MG RESISTOR		
R 160	NRSA63J-0R0X	MG RESISTOR			R 288	NRSA63J-103X	MG RESISTOR		
R 161	NRSA63J-0R0X	MG RESISTOR			R 289	NRSA63J-103X	MG RESISTOR		
R 162	NRSA63J-0R0X	MG RESISTOR			R 290	NRSA63J-103X	MG RESISTOR		
R 163	NRSA63J-0R0X	MG RESISTOR			R 292	NRSA63J-223X	MG RESISTOR		
R 166	NRSA63J-182X	MG RESISTOR			R 295	NRSA63J-103X	MG RESISTOR		
R 202	NRSA63J-473X	MG RESISTOR			R 296	NRSA63J-103X	MG RESISTOR		
R 203	NRSA63J-473X	MG RESISTOR			R 297	NRS125J-1R0X	MG RESISTOR		
R 204	NRSA63J-473X	MG RESISTOR			R 301	NRSA63J-473X	MG RESISTOR		
R 205	NRSA63J-473X	MG RESISTOR			R 302	NRSA63J-473X	MG RESISTOR		
R 208	NRSA63J-473X	MG RESISTOR			R 303	NRSA63J-473X	MG RESISTOR		
R 209	NRSA63J-123X	MG RESISTOR			R 304	NRSA63J-473X	MG RESISTOR		
R 210	NRSA63J-473X	MG RESISTOR			R 305	NRSA63J-473X	MG RESISTOR		
R 211	NRSA63J-273X	MG RESISTOR			R 306	NRSA63J-473X	MG RESISTOR		

■ Electrical parts list (DVD servo board)

Block No. 03

Item	Parts number	Parts name	Remarks	Area
R 307	NRSA63J-473X	MG RESISTOR		
R 308	NRSA63J-473X	MG RESISTOR		
R 309	NRSA63J-103X	MG RESISTOR		
R 310	NRSA63J-102X	MG RESISTOR		
R 311	NRSA63J-102X	MG RESISTOR		
R 312	NRSA63J-102X	MG RESISTOR		
R 316	NRSA63J-105X	MG RESISTOR		
R 317	NRSA63J-0R0X	MG RESISTOR		
R 318	NRSA63J-0R0X	MG RESISTOR		
R 322	NRSA63J-473X	MG RESISTOR		
R 324	NRSA63J-473X	MG RESISTOR		
R 328	NRSA63J-473X	MG RESISTOR		
R 342	NRSA63J-0R0X	MG RESISTOR		
R 343	NRSA63J-102X	MG RESISTOR		
R 345	NRSA63J-562X	MG RESISTOR		
R 346	NRSA63J-472X	MG RESISTOR		
R 347	NRSA63J-102X	MG RESISTOR		
R 348	NRSA63J-102X	MG RESISTOR		
R 349	NRSA63J-102X	MG RESISTOR		
R 350	NRSA63J-102X	MG RESISTOR		
R 364	NRSA63J-0R0X	MG RESISTOR		
R 403	NRSA63J-472X	MG RESISTOR		
R 405	NRSA63J-472X	MG RESISTOR		
R 408	NRSA63J-472X	MG RESISTOR		
R 410	NRSA63J-0R0X	MG RESISTOR		
R 411	NRSA63J-472X	MG RESISTOR		
R 412	NRSA63J-103X	MG RESISTOR		
R 413	NRSA63J-472X	MG RESISTOR		
R 414	NRSA63J-472X	MG RESISTOR		
R 415	NRSA63J-472X	MG RESISTOR		
R 416	NRSA63J-472X	MG RESISTOR		
R 417	NRSA63J-472X	MG RESISTOR		
R 418	NRSA63J-472X	MG RESISTOR		
R 422	NRSA63J-0R0X	MG RESISTOR		
R 423	NRSA63J-0R0X	MG RESISTOR	XV-525BK/521BK/523GD	
R 424	NRSA63J-0R0X	MG RESISTOR	XV-525BK/521BK/523GD	
R 431	NRSA63J-472X	MG RESISTOR		
R 432	NRSA63J-472X	MG RESISTOR		
R 501	NRSA63J-102X	MG RESISTOR		
R 502	NRSA63J-222X	MG RESISTOR		
R 504	NRSA63J-330X	MG RESISTOR		
R 505	NRSA63J-330X	MG RESISTOR		
R 506	NRSA63J-330X	MG RESISTOR		
R 507	NRSA63J-330X	MG RESISTOR		
R 508	NRSA63J-330X	MG RESISTOR		
R 509	NRSA63J-330X	MG RESISTOR		
R 510	NRSA63J-330X	MG RESISTOR		
R 511	NRSA63J-330X	MG RESISTOR		
R 512	NRSA63J-330X	MG RESISTOR		
R 513	NRSA63J-330X	MG RESISTOR		
R 514	NRSA63J-330X	MG RESISTOR		
R 515	NRSA63J-330X	MG RESISTOR		
R 516	NRSA63J-330X	MG RESISTOR		
R 517	NRSA63J-330X	MG RESISTOR		
R 518	NRSA63J-330X	MG RESISTOR		
R 519	NRSA63J-330X	MG RESISTOR		
R 520	NRSA63J-330X	MG RESISTOR		
R 521	NRSA63J-330X	MG RESISTOR		
R 522	NRSA63J-330X	MG RESISTOR		
R 523	NRSA63J-181X	MG RESISTOR		
R 524	NRSA63J-181X	MG RESISTOR		
R 525	NRSA63J-181X	MG RESISTOR		
R 526	NRSA63J-181X	MG RESISTOR		
R 527	NRSA63J-181X	MG RESISTOR		

Item	Parts number	Parts name	Remarks	Area
R 528	NRSA63J-181X	MG RESISTOR		
R 529	NRSA63J-181X	MG RESISTOR		
R 530	NRSA63J-181X	MG RESISTOR		
R 531	NRSA63J-330X	MG RESISTOR		
R 532	NRSA63J-0R0X	MG RESISTOR		
R 533	NRSA63J-330X	MG RESISTOR		
R 534	NRSA63J-330X	MG RESISTOR		
R 535	NRSA63J-330X	MG RESISTOR		
R 536	NRSA63J-330X	MG RESISTOR		
R 537	NRSA63J-330X	MG RESISTOR		
R 538	NRSA63J-330X	MG RESISTOR		
R 539	NRSA63J-330X	MG RESISTOR		
R 540	NRSA63J-330X	MG RESISTOR		
R 541	NRSA63J-0R0X	MG RESISTOR		
R 542	NRSA63J-0R0X	MG RESISTOR		
R 543	NRSA63J-0R0X	MG RESISTOR		
R 544	NRSA63J-0R0X	MG RESISTOR		
R 545	NRSA63J-472X	MG RESISTOR		
R 547	NRSA63J-222X	MG RESISTOR		
R 548	NRSA63J-332X	MG RESISTOR		
R 550	NRSA63J-0R0X	MG RESISTOR		
R 564	NRVA63D-152X	MG RESISTOR		
R 565	NRVA63D-332X	MF RESISTOR		
R 571	NRSA63J-100X	MG RESISTOR		
R 572	NRSA63J-181X	MG RESISTOR		
R 573	NRSA63J-181X	MG RESISTOR		
R 574	NRSA63J-181X	MG RESISTOR		
R 575	NRSA63J-181X	MG RESISTOR		
R 576	NRSA63J-181X	MG RESISTOR		
R 577	NRSA63J-181X	MG RESISTOR		
R 578	NRSA63J-181X	MG RESISTOR		
R 579	NRSA63J-181X	MG RESISTOR		
R 580	NRSA63J-181X	MG RESISTOR		
R 581	NRSA63J-101X	MG RESISTOR		
R 582	NRSA63J-181X	MG RESISTOR		
R 586	NRVA63D-122X	MG RESISTOR		
R 587	NRVA63D-122X	MG RESISTOR		
R 588	NRVA63D-102X	CMF RESISTOR		
R 589	NRVA63D-102X	CMF RESISTOR		
X 301	NAX0375-001X	CRYSTAL	16.9344MHZ	
X 401	NAX0331-001X	C RESONATOR		

■ Electrical parts list (Relay board)

Block No. 04

△	Item	Parts number	Parts name	Remarks	Area
	C 13	NCS31HJ-101X	C CAPACITOR		
	CN 10	QGF0501F4-40X	FFC/FPC CONNE	FOR MAIN	
	CN 12	QGF1012F1-30X	FPC CONNE	FOR P.U	
	IC 1	GP2S60B-X	IC(PHOTO COUPLE		
	K 10	NQR0265-003X	FERRITE BEADS		
	K 11	NQR0265-003X	FERRITE BEADS		
	K 12	NQR0265-003X	FERRITE BEADS		
	K 13	NQR0265-003X	FERRITE BEADS		
	K 14	NQR0265-003X	FERRITE BEADS		
	K 15	NQR0265-003X	FERRITE BEADS		
	K 16	NQR0265-003X	FERRITE BEADS		
	K 17	NQR0265-003X	FERRITE BEADS		
	K 18	NQR0265-003X	FERRITE BEADS		
	R 10	NRSA63J-391X	MG RESISTOR		
	R 11	NRSA63J-910X	MG RESISTOR		
	R 12	NRSA63J-911X	MG RESISTOR		
	S 10	QSW0620-001	SWITCH	REST SWITCH	
	S 11	NSW0127-001X	SLIDE SWITCH	SHORT SWITCH	

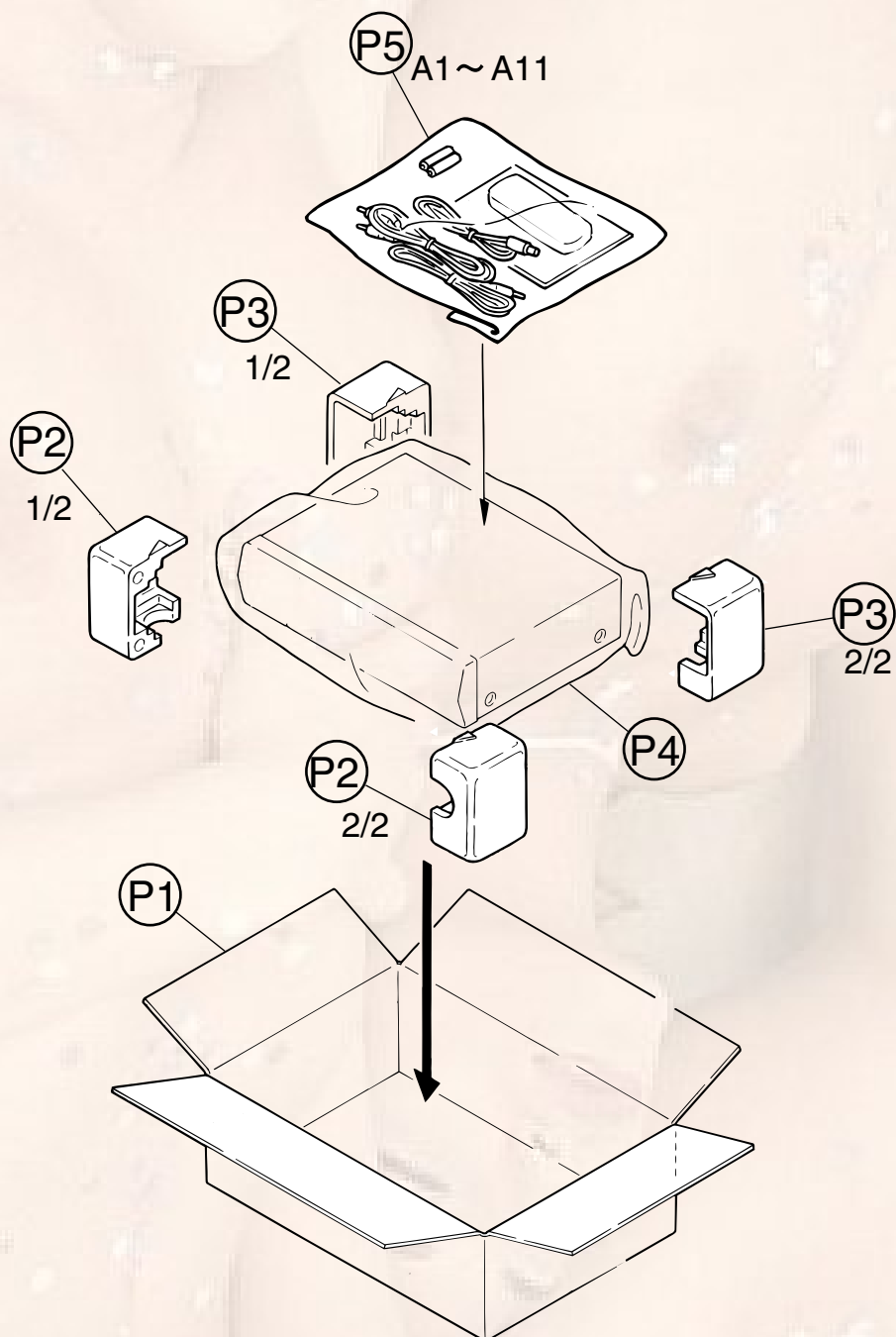
Packing materials and accessories parts list

Block No.

M	4	M	M
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Block No.

M	5	M	M
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■ Packing parts list

Block No. M4MM

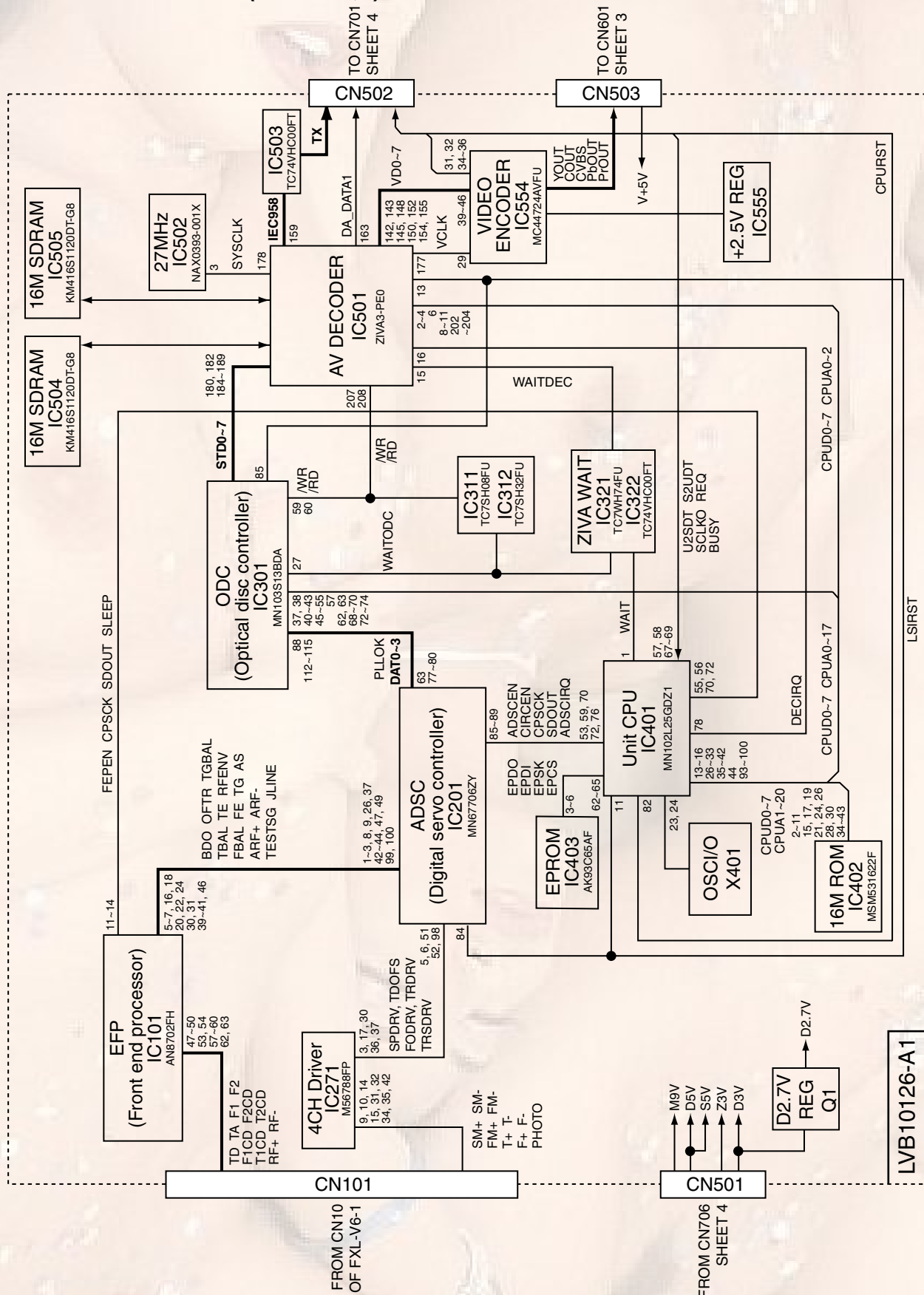
⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	LV20708-010A	PACKING CASE	1	XV-521BK	
		LV20710-001A	PACKING CASE	1	XV-421BK	
		LV20709-002A	PACKING CASE	1	XV-525BK	
		LV20711-011A	PACKING CASE	1	XV-523GD	
	P 2	LV20699-001A	CUSHION(F)	1		
	P 3	LV20700-001A	CUSHION(R)	1		
	P 4	QPC06506515P	POLY BAG	1	FOR SET	
	P 5	QPC02504015P	POLY BAG	1	FOR ACC,INST	

■ Accessories list

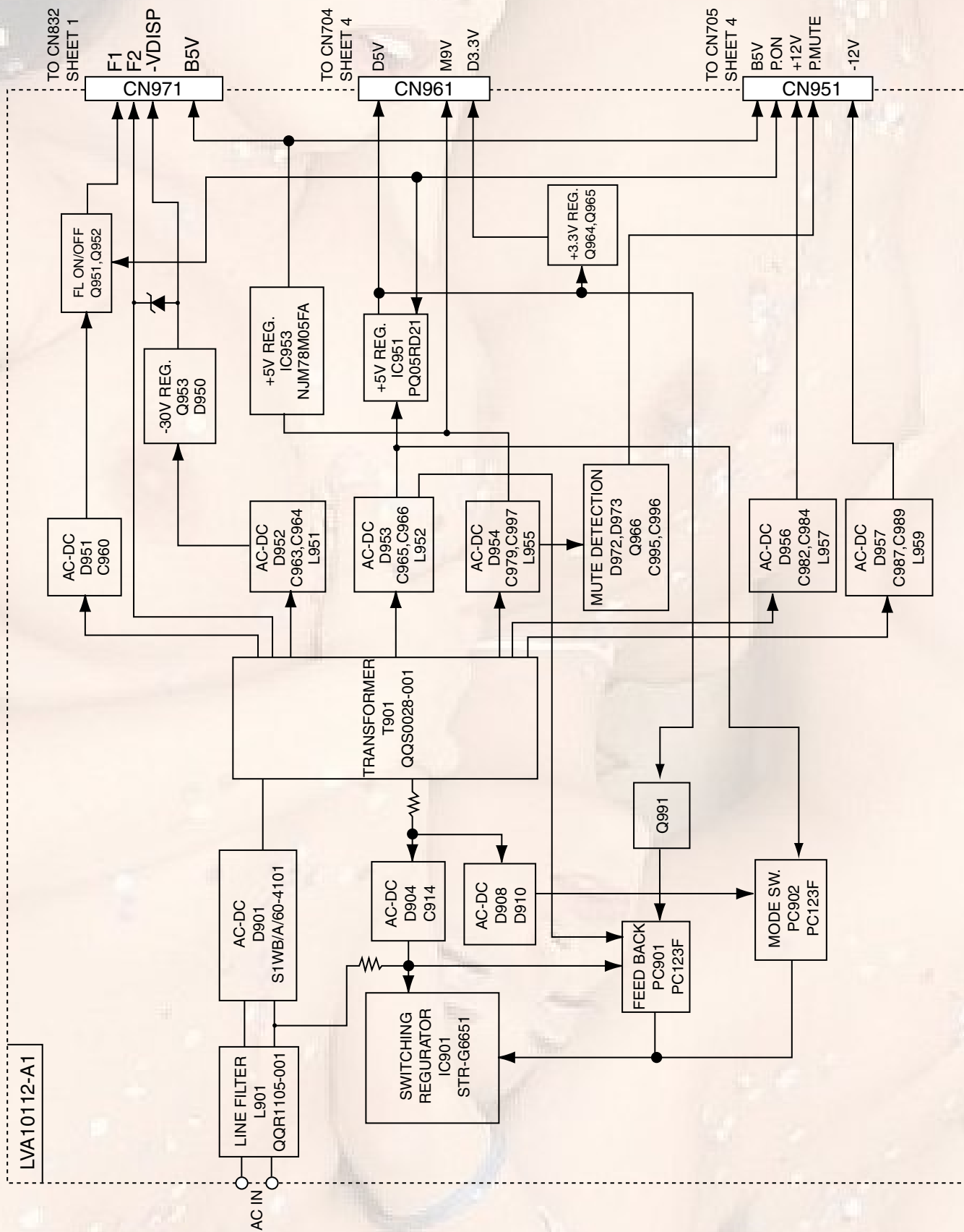
Block No. M5MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	LVT0435-001B	INST.BOOK	1	ENG	J
		LVT0435-002A	INST.BOOK	1	ENG	C
⚠	A 2	QMPE090-183-JD	POWER CORD	1		
	A 3	BT-51020-2	REGIST CARD	1		J
	A 4	YU20333	SAFETY INST.	1		J
	A 5	PEAC0359-120	AV CORD 3P	1	AV CORD	
	A 6	QAM0005-002	S-VIDEO CORD	1	S-VIDEO	
	A 7	EWP805-014	1P PLUG CORD	1	XV-525BK/521BK/523GD	
	A 8	RM-SXV521J	W.LESS REMOCON	1	XV-521BK/421BK	
		RM-SXV523J	W.LESS REMOCON	1	XV-523GD	
		RM-SXV525J	W.LESS REMOCON	1	XV-525BK	
	A 9	-----	BATTERY	1	FOR REMOCON	
	A 10	BT-52004-1	WARRANTY CARD	1		C
	A 11	BT-20071B	SERVICE NETWORK	1		C

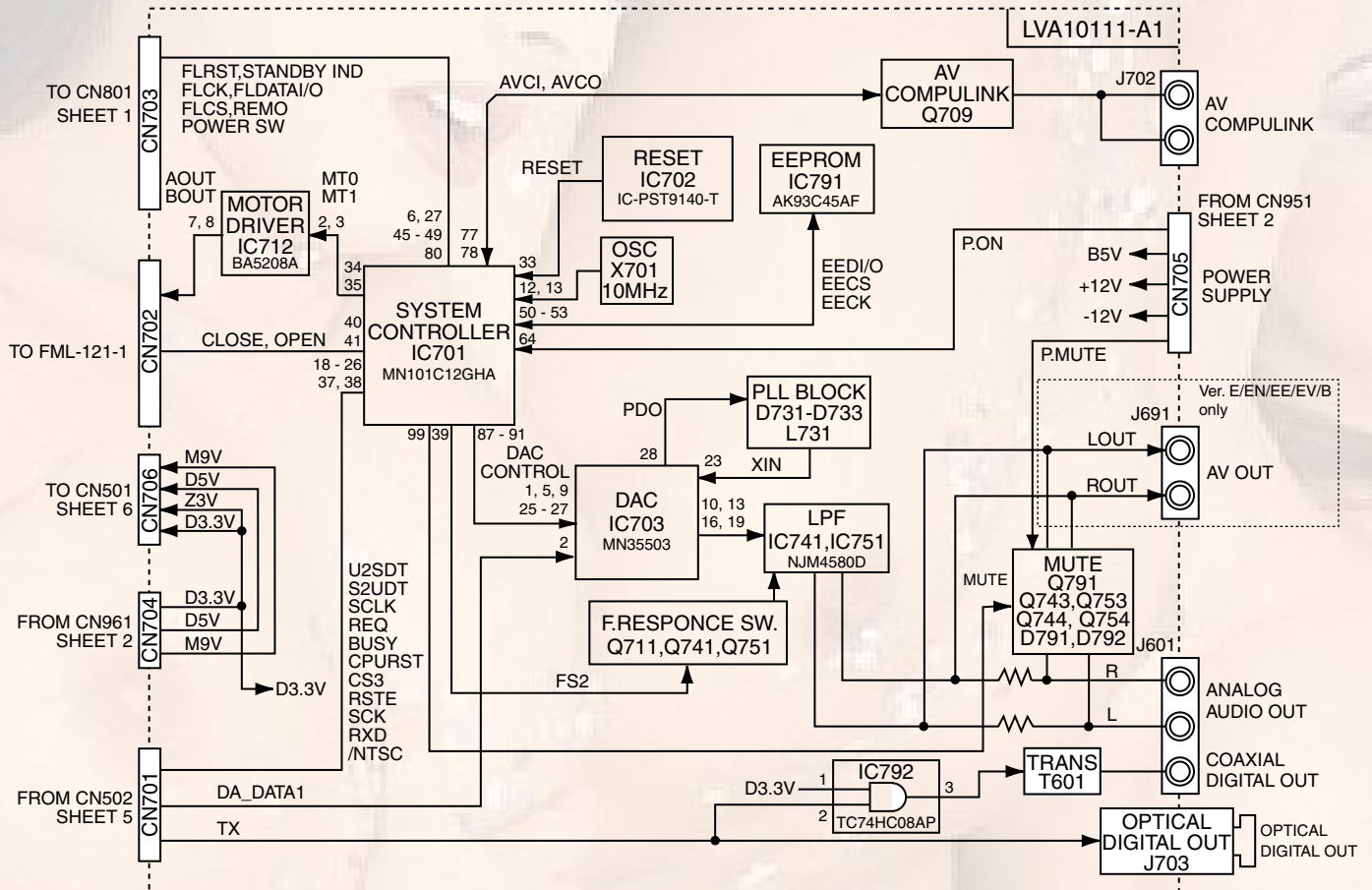
**■ DVD Servo control and DSP section
(SHEET 5,6)**



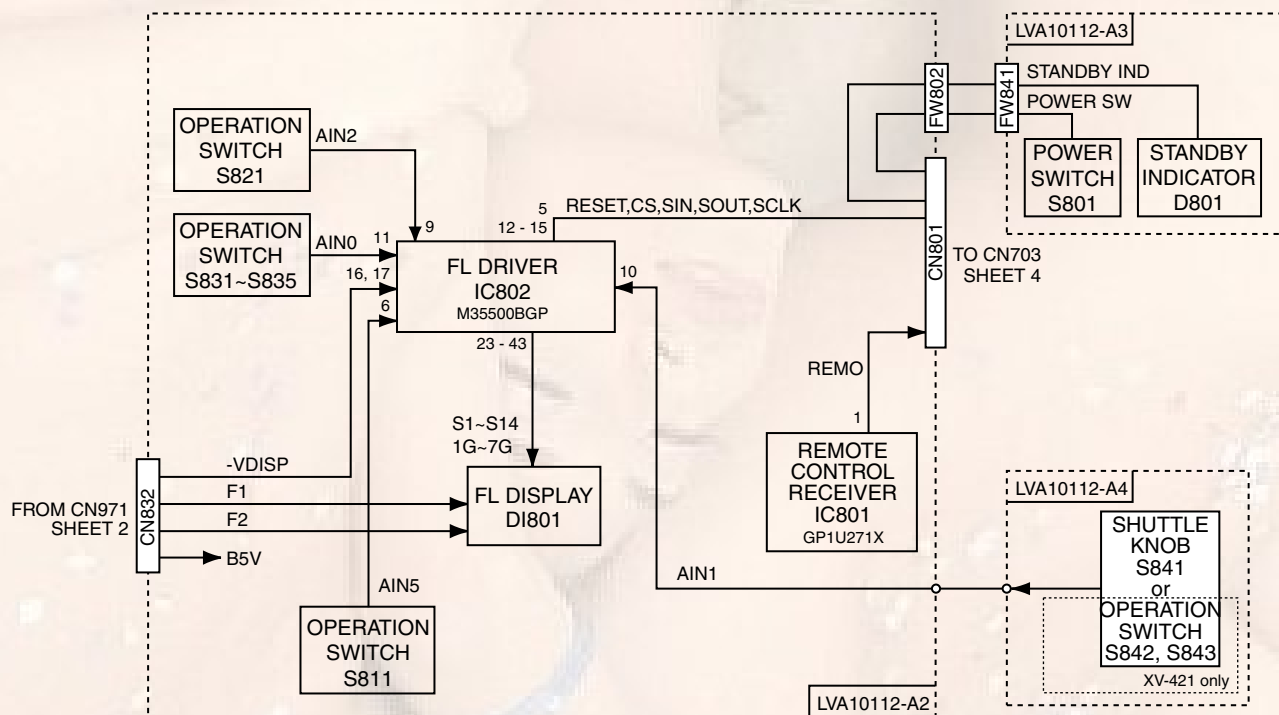
■ DC Regurator section (SHEET 2)



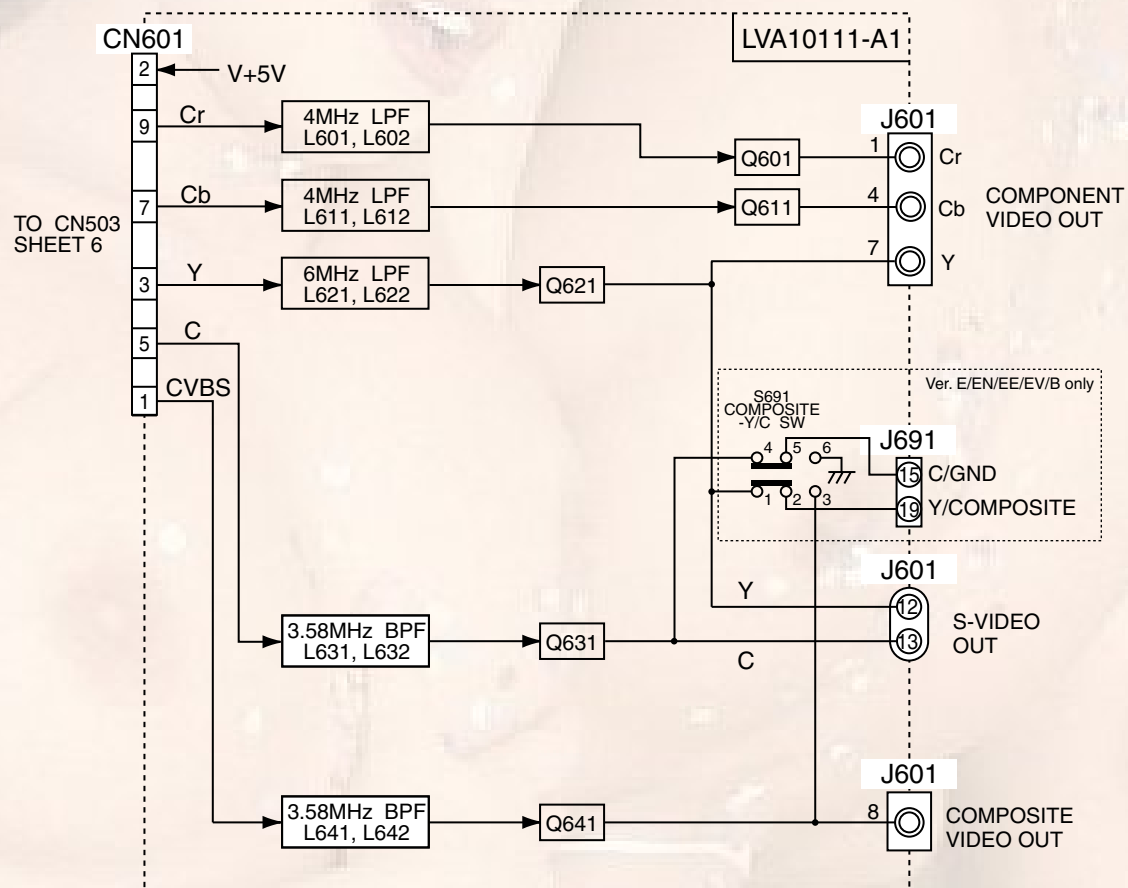
System control and Audio out section (SHEET 4)



FL Driver section (SHEET 1)

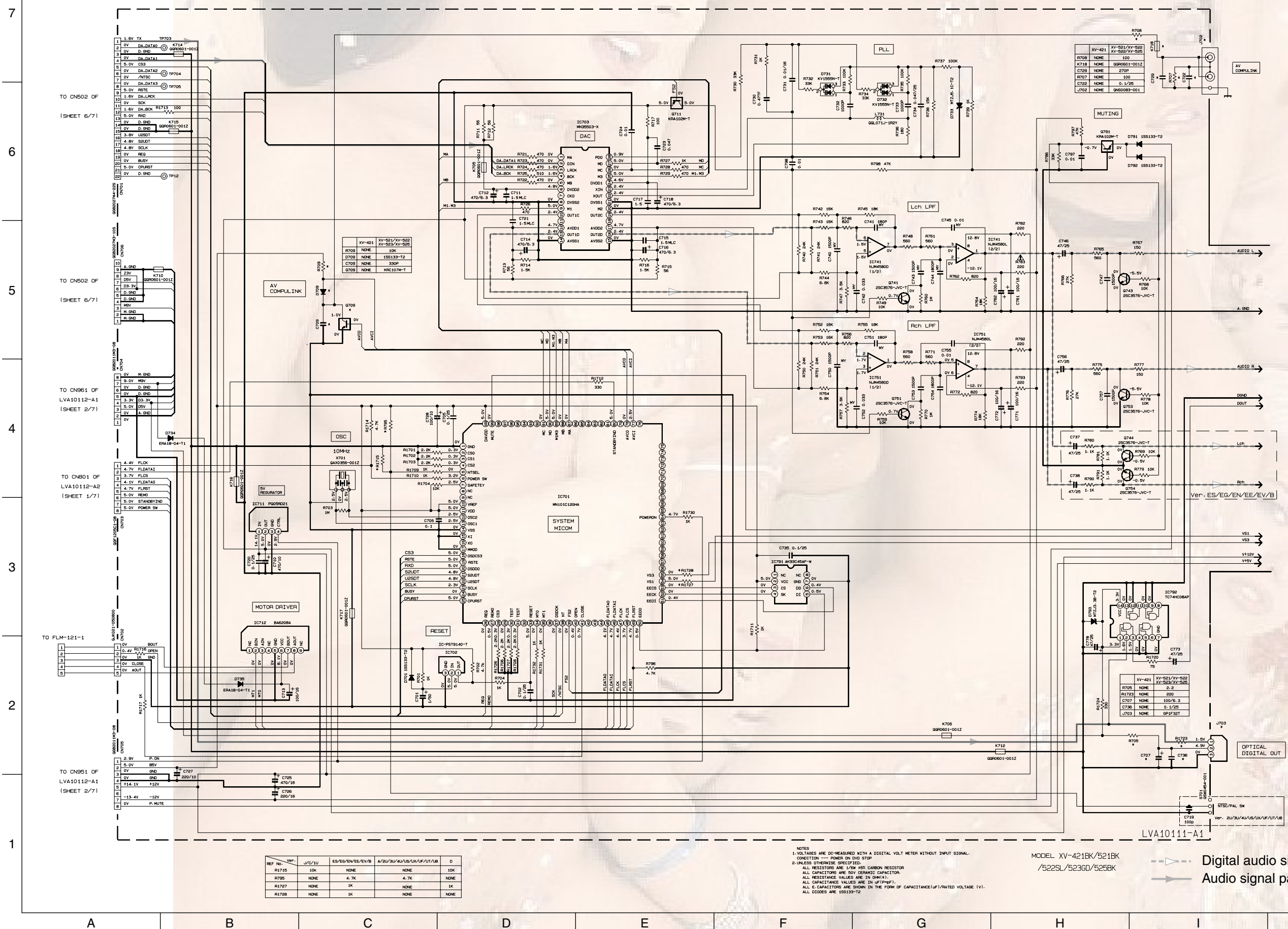


■ Video out section (SHEET 3)



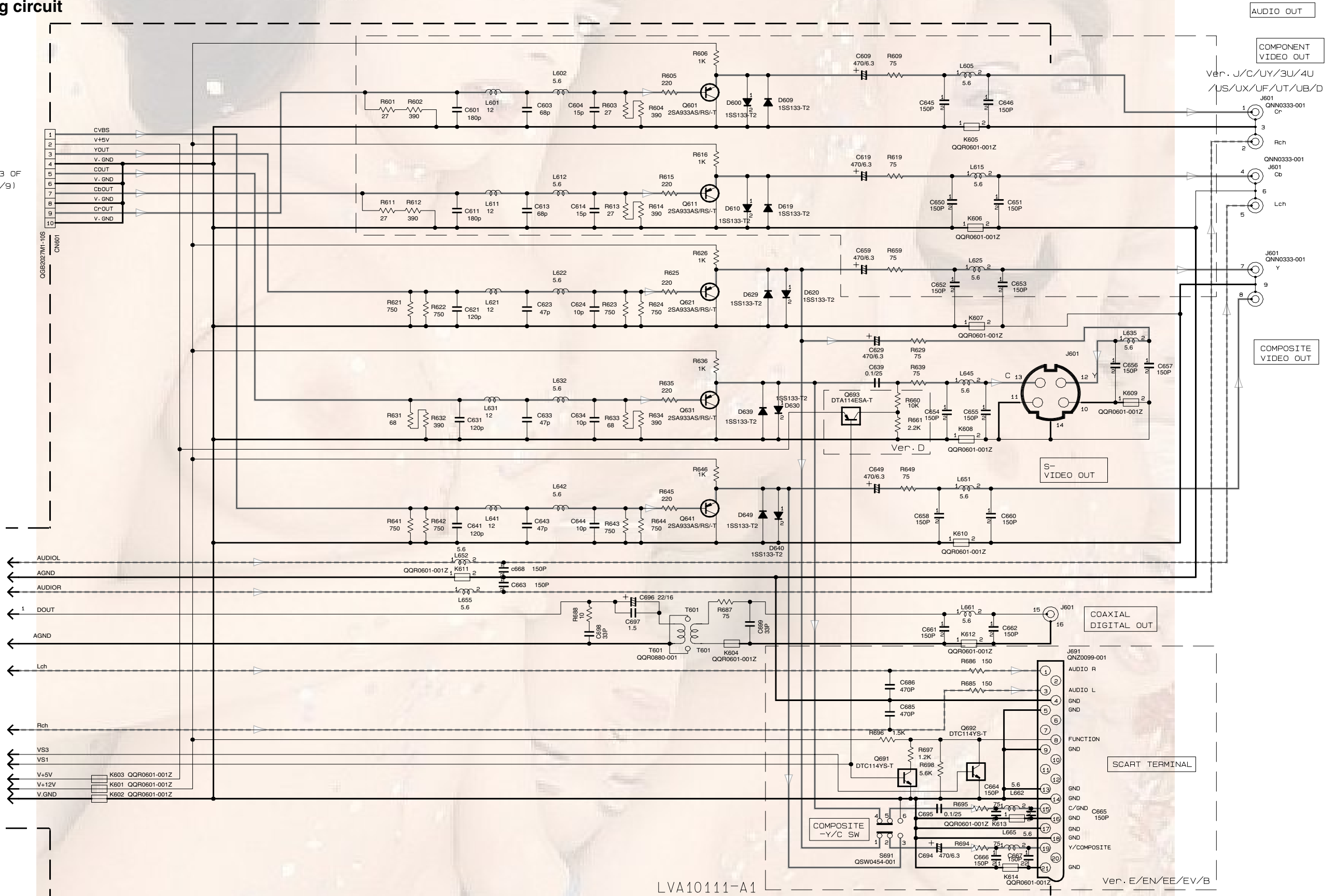
Standard schematic diagrams

■ System control circuit



■ Analog circuit

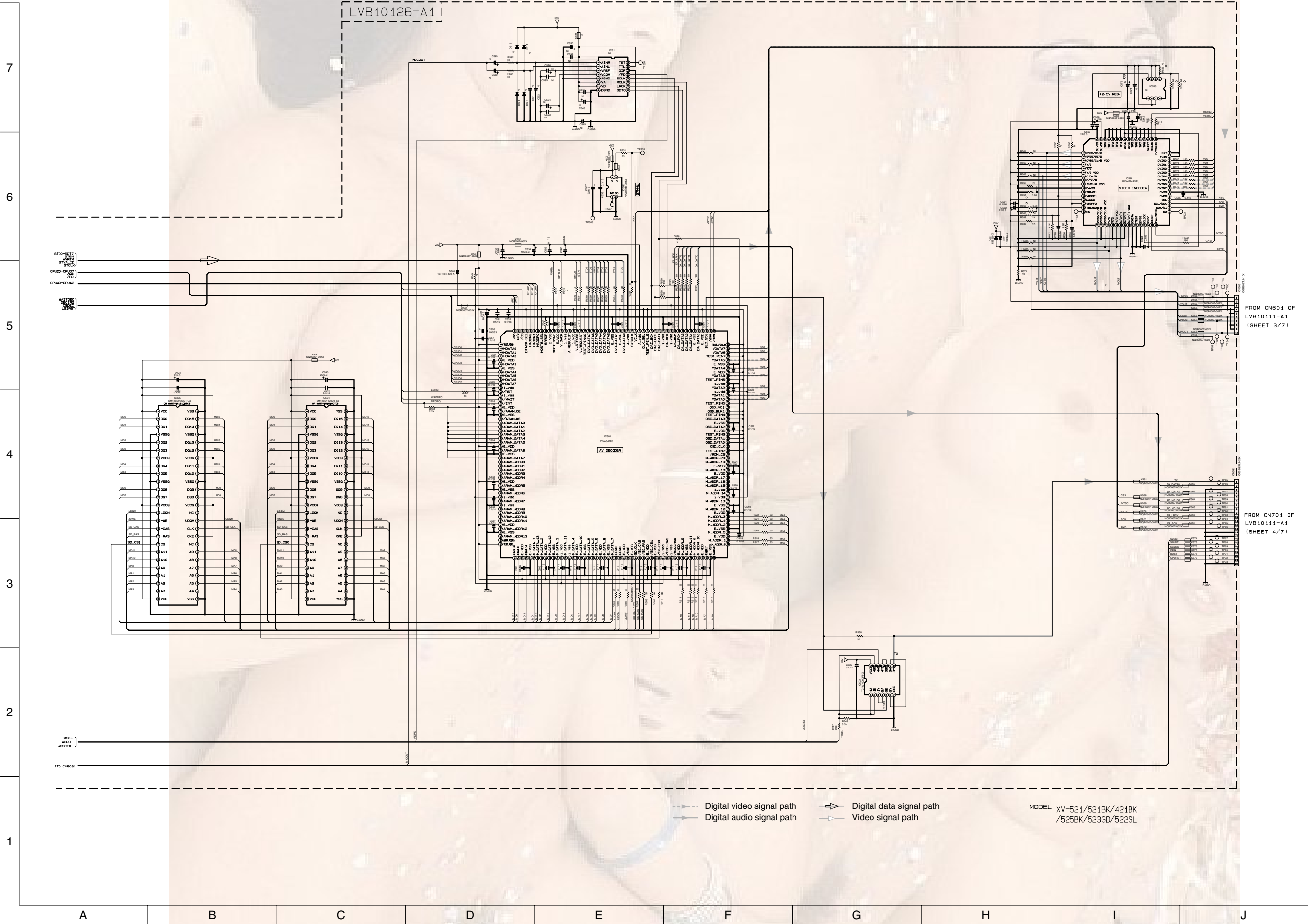
FROM CN503 OF
(SHEET 6/9)



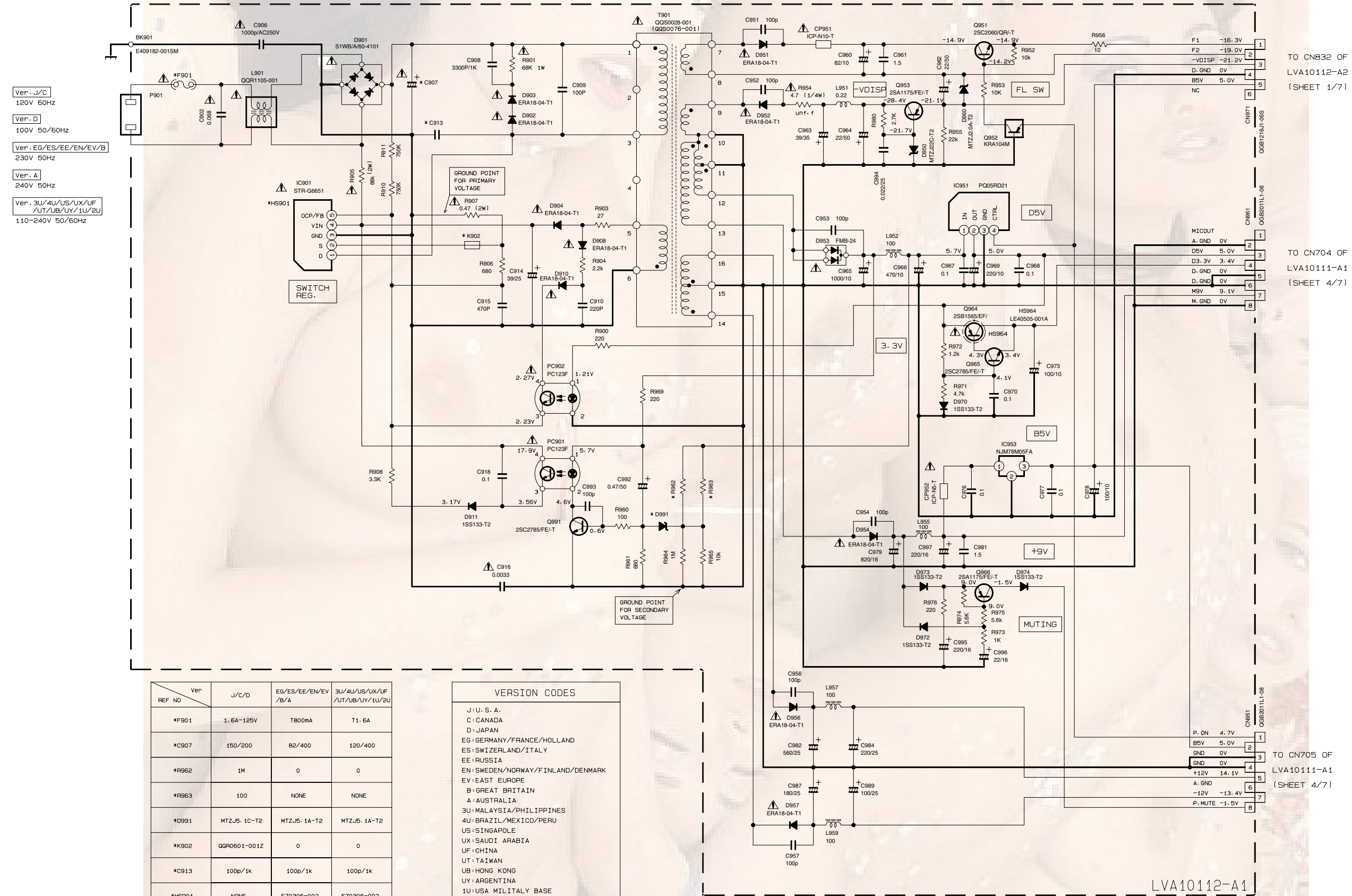
Video signal path
Audio signal path

XV-521

DSP circuit



■ Power supply circuit

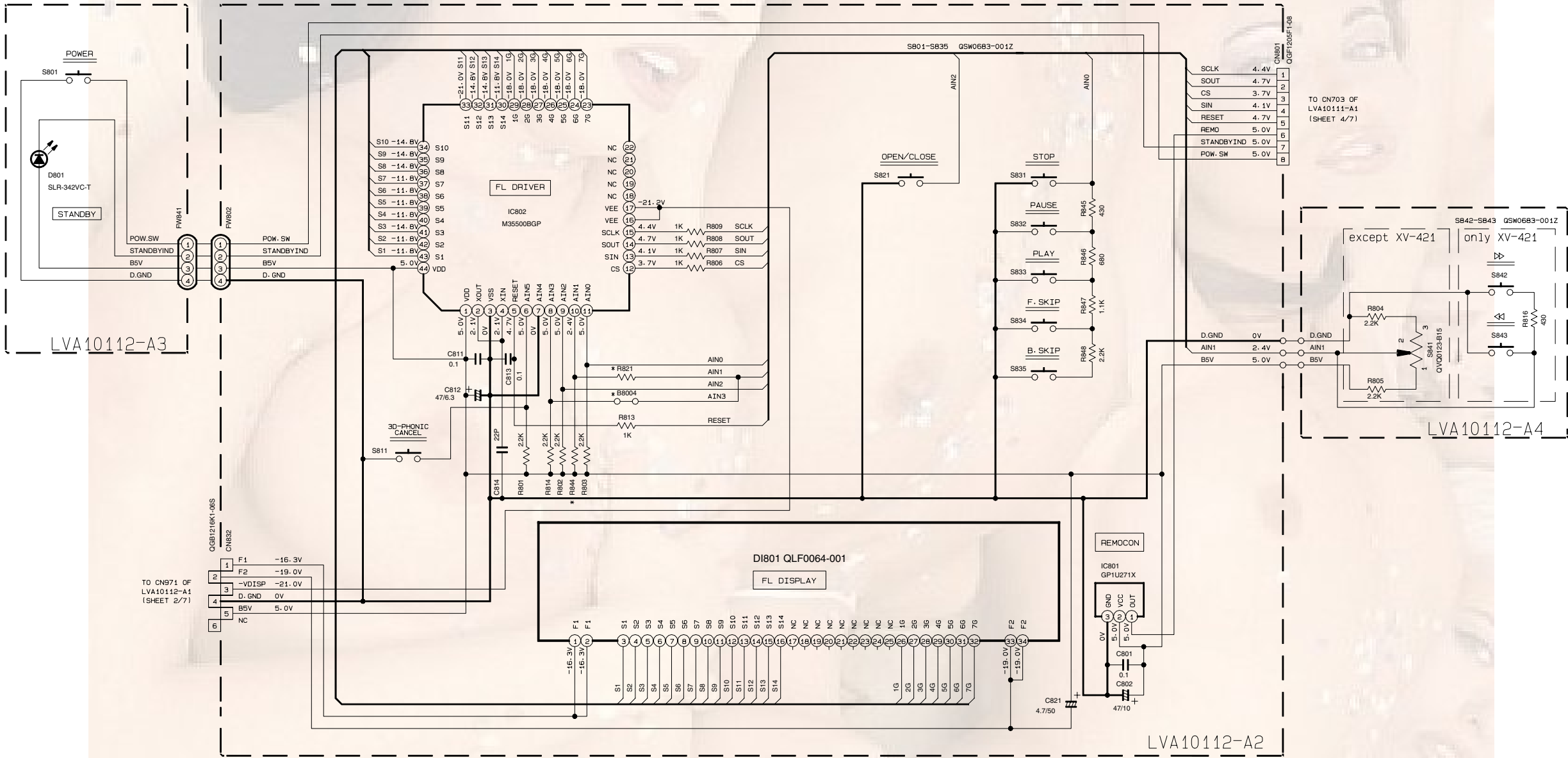


Ver. REF NO	J/C/D	E6/ES/EE/EN/EV /B/A	3U/4U/US/UX/UF /UT/UB/UY/1U/2U
*F901	1. 6A-125V	T800mA	T1. 6A
*C907	150/200	82/400	120/400
*R962	1M	0	0
*R963	100	NONE	NONE
*D991	MTZJ5. 1C-T2	MTZJ5. 1A-T2	MTZJ5. 1A-T2
*K902	QQR0601-001Z	0	0
*C913	100p/1k	100p/1k	100p/1k
*HS901	NONE	E70306-002	E70306-002

VERSION CODES	
J:	U. S. A.
C:	CANADA
D:	JAPAN
EG:	GERMANY/FRANCE/HOLLAND
ES:	SWITZERLAND/ITALY
EE:	RUSSIA
EN:	SWEDEN/NORWAY/FINLAND/DENMARK
EV:	EAST EUROPE
B:	GREAT BRITAIN
A:	AUSTRALIA
3U:	MALAYSIA/PHILIPPINES
4U:	BRAZIL/MEXICO/PERU
US:	SINGAPOLE
UX:	SAUDI ARABIA
UF:	CHINA
UT:	TAIWAN
UB:	HONG KONG
UY:	ARGENTINA
1U:	USA MILITARY BASE
2U:	TURKEY/EGYPT/SOUTHAFRICA

MODEL
XV-521/521BK/421BK
/525BK/523GD/522SL

Display circuit



REF NO	MODEL	XV-421	except XV-421
*B8004	QUY150-050Y	NONE	
*R821	NONE	NONE	1k
*R844	2.2k	NONE	

NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
CONDITION --- POWER ON NO DISC

2. UNLESS OTHERWISE SPECIFIED.

ALL RESISTORS ARE 1/6W ±5% CARBON RESISTOR.
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR.
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITANCE VALUES ARE IN μF(P=pF).
ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).

XV-521/521BK/421BK
/525BK/523GD/522SL

■ Voltage value section

IC101		NO	DC(V)	NO	DC(V)
1	OV	51	2.2V		
2	4.2V	52	2.2V		
3	OV	53	2.2V		
4	4.3V	54	2.2V		
5	1.7V	55	4.8V		
6	1.7V	56	2.2V		
7	1.7V	57	2.2V		
8	4.1V	58	2.2V		
9	3.3V	59	2.2V		
10	OV	60	2.2V		
11	4.9V	61	OV		
12	4.9V	62	2.2V		
13	4.5V	63	2.2V		
14	4.9V	64	1.6V		
15	1.5V				
16	1.7V				
17	1.7V				
18	1.7V				
19	1.7V				
20	1.7V				
21	1.7V				
22	1.7V				
23	OV				
24	1.7V				
25	3.3V				
26	OV				
27	2.1V				
28	4.8V				
29	4.8V				
30	2.1V				
31	2.1V				
32	2.0V				
33	OV				
34	1.3V				
35	2.4V				
36	3.3V				
37	1.9V				
38	2.4V				
40	OV				
41	1.7V				
42	1.5V				
43	1.6V				
44	1.1V				
45	2.5V				
46	2.1V				
47	2.1V				
48	2.1V				
49	2.2V				
50	2.2V				

IC102		NO	DC(V)
1	OV		
2	5.0V		
3	OV		
4	OV		
5	OV		

IC201		NO	DC(V)	NO	DC(V)
1	1.7V	51	1.7V		
2	1.7V	52	1.7V		
3	1.7V	53	3.2V		
4	3.2V	54	OV		
5	1.7V	55	OV		
6	1.7V	56	OV		
7	OV	57	OV		
8	1.6V	58	2.6V		
9	1.6V	59	OV		
10	1.5V	60	OV		
11	1.5V	61	OV		
12	1.7V	62	OV		
13	1.5V	63	OV		
14	3.2V	64	OV		
15	1.7V	65	OV		
16	2.7V	66	OV		
17	0.2V	67	3.3V		
18	2.2V	68	1.7V		
19	1.5V	69	3.3V		
20	OV	70	2.5V		
21	1.6V	71	OV		
22	1.6V	72	OV		
23	1.5V	73	OV		
24	1.7V	74	OV		
25	1.9V	75	3.3V		
26	2.1V	76	1.7V		
27	3.2V	77	1.1V		
28	1.7V	78	1.1V		
29	OV	79	1.1V		
30	OV	80	1.1V		
31	1.7V	81	OV		
32	OV	82	3.3V		
33	1.7V	83	3.3V		
34	1.7V	84	4.8V		
35	0.1V	85	4.9V		
36	1.6V	86	4.9V		
37	1.7V	87	3.3V		
38	3.2V	88	4.9V		
39	1.6V	89	4.9V		
40	1.6V	90	0.9V		
41	OV	91	1.7V		
42	1.7V	92	2.8V		
43	1.7V	93	3.3V		
44	1.7V	94	0.7V		
45	OV	95	OV		
46	3.3V	96	2.6V		
47	OV	97	1.8V		
48	1.7V	98	1.6V		
49	OV	99	1.6V		
50	0.3V	100	1.7V		

IC202		NO	DC(V)
1	OV		
2	3.3V		
3	4.9V		
4	OV		
5	OV		
6	4.9V		
7	OV		
8	4.9V		

IC271		NO	DC(V)
1	OV		
2	OV		
3	OV		
4	9V		
5	9V		
6	OV		
7	OV		
8	1.37V		
9	3.9V		
10	3.4V		
11	OV		
12	3.4V		
13	4.5V		
14	5.7V		
15	3V		
16	OV		
17	OV		
18	OV		
19	OV		
20	1.37V		
21	OV		
22	1.37V		
23	1.37V		
24	OV		
25	OV		
26	3.18V		
27	1.37V		
28	OV		
29	1.41V		
30	2.37V		
31	2.56V		
32	OV		
33	2.39V		
34	2.56V		
35	OV		
36	1.37V		
37	4.93V		
38	OV		
39	OV		
40	1.37V		
41	3.2V		
42	3V		

IC301		NO	DC(V)	NO	DC(V)	NO	DC(V)
1	3.3V	51	1.0V	101	1.6V		
2	3.3V	52	1.0V	102	3.3V		
3	3.3V	53	3.6V	103	OV		
4	3.3V	54	3.8V	104	3.3V		
5	OV	55	1.0V	105	3.3V		
6	3.3V	56	OV	106	3.3V		
7	3.3V	57	0.7V	107	OV		
8	OV	58	4.9V	108	OV		
9	3.3V	59	4.9V	109	2.5V		
10	3.6V	60	4.4V	110	OV		
11	3.3V	61	3.3V	111	1.7V		
12	3.3V	62	1.2V	112	1.1V		
13	3.3V	63	2.4V	113	1.1V		
14	3.3V	64	OV	114	1.1V		
15	3.3V	65	OV	115	1.1V		
16	3.3V	66	2.6V	116	3.3V		
17	3.3V	67	OV	117	3.3V		
18	OV	68	1.0V	118	3.3V		
19	OV	69	2.1V	119	OV		
20	3.3V	70	1.0V	120	OV		
21	3.3V	71	OV	121	OV		
22	4.5V	72	2.3V	122	OV		
23	4.5V	73	0.6V	123	OV		
24	OV	74	0.6V	124	3.3V		
25	0.1V	75	1.7V	125	2.6V		
26	4.9V	76	3.3V	126	1.3V		
27	4.9V	77	OV	127	OV		
28	1.4V	78	3.3V	128	1.4V		
29	OV	79	OV	129	1.1V		
30	3.3V	80	3.3V	130	3.3V		
31	OV	81	OV	131	1.6V		
32	3.3V	82	OV	132	3.3V		
33	OV	83	OV	133	OV		
34	OV	84	OV	134	OV		
35	OV	85	4.8V	135	3.3V		
36	2.6V	86	2.6V	136	1.3V		
37	OV	87	1.7V	137	OV		
38	0.3V	88	OV	138	3.3V		
39	OV	89	OV	139	1.3V		
40	4.1V	90	OV	140	1.0V		
41	3.3V	91	OV	141	1.1V		
42	4.2V	92	3.3V	142	OV		
43	1.6V	93	OV	143	3.3V		
44	2.6V	94	3.3V	144	3.3V		
45	3.3V	95	OV				
46	3.6V	96	3.3V				
47	3.7V	97	OV				
48	3.8V	98	OV				
49	3.7V	99	OV				
50	3.8V	100	1.6V				

IC311		NO	DC(V)
1	5.0V		
2	4.6V		
3	OV		
4	4.7V		
5	5.0V		

IC312		NO	DC(V)
1	5.0V		
2	4.7V		
3	OV		
4	5.0V		
5	5.0V		

IC321		NO	DC(V)
1	5.0V		
2	5.0V		
3	5.0V		
4	OV		
5	OV		
6	OV		
7	5.0V		
8	5.0V		

IC322		NO	DC(V)
1	5.0V		
2	5.0V		
3	OV		
4	OV		
5	OV		
6	5.0V		
7	OV		
8	5.0V		
9	OV		
10	OV		
11	OV		
12	5.0V		
13	5.0V		
14	5.0V		

IC372		NO	DC(V)
1	OV		
2	1.4V		
3	OV		
4	1.6V		
5	3.2V		

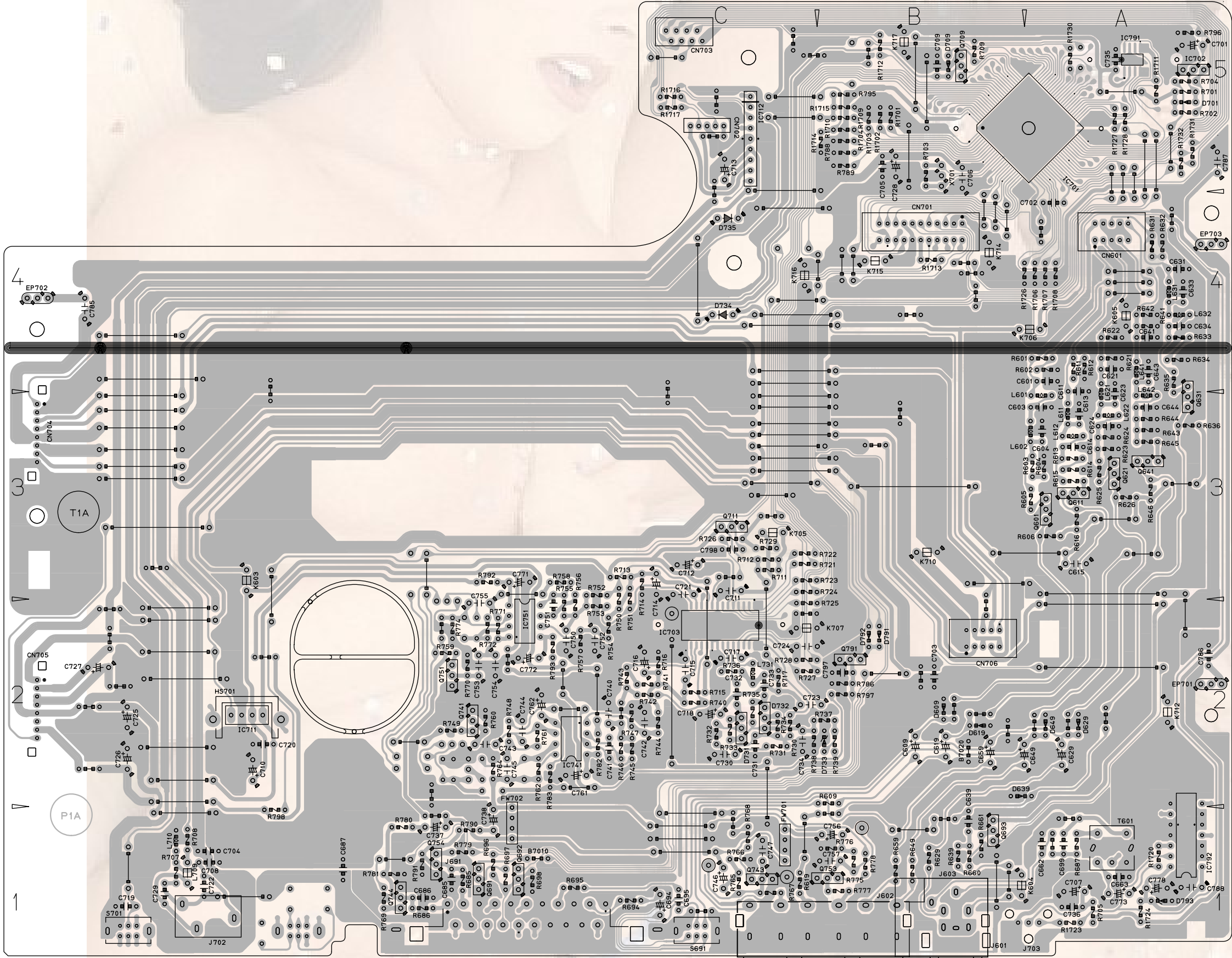
IC401		NO	DC(V)	NO	DC(V)
1	5.0V	51	0.6V		
2	5.0V	52	5.0V		
3	5.0V	53	5.0V		
4	5.0V	54	5.0V		
5	OV	55	5.0V		
6	5.0V	56	5.0V		
7	5.0V	57	OV		
8	4.4V	58	OV		
9	OV	59	5.0V		
10	OV	60	OV		
11	4.8V	61	OV		
12	5.0V	62	OV		
13	OV	63	OV		
14	OV	64	OV		
15	2.1V	65	OV		
16	1.9V	66	5.0V		
17	5.0V	67	4.8V		
18	2.3V	68	3.8V		
19	OV	69	4.8V		
20	OV	70	5.0V		
21	5.0V	71	OV		
22	5.0V	72	5.0V		
23	2.4V	73	5.0V		
24	2.4V	74	5.0V		
25	5.0V	75	5.0V		
26	2.7V	76	5.0V		
27	1.8V	77	5.0V		
28	2.1V	78	3.1V		
29	1.7V	79	OV		
30	3.5V	80	5.0V		
31	3.5V	81	5.0V		
32	2.1V	82	4.9V		
33	2V	83	5.0V		
34	5.0V	84	5.0V		
35	2.6V	85	OV		
36	4.3V	86	OV		
37	4V	87	OV		
38	OV	88	5.0V		
39	OV	89	5.0V		
40	OV	90	5.0V		
41	OV	91	5.0V		
42	OV	92	OV		
43	OV	93	1.1V		
44	OV	94	1.5V		
45	OV	95	OV		
46	OV	96	OV		
47	OV	97	2.3V		
48	5V	98	2.3V		
49	OV	99	2.3V		
50	5.0V	100	2.4V		

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||
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(surface side)



(bottom side)



(bottom side)

