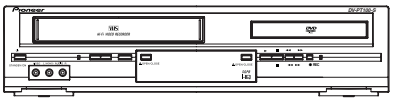
Pioneer sound.vision.soul

Service Manual



DV-PT100-S

ORDER NO.
RRV3041

DVD PLAYER & VCR

DV-PT100-S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Remarks
DV-PT100-S	KUXTL	AC120V	1	

For details, refer to "Important Check Points for Good Servicing" .

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
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T-ZZR OCT. 2004 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

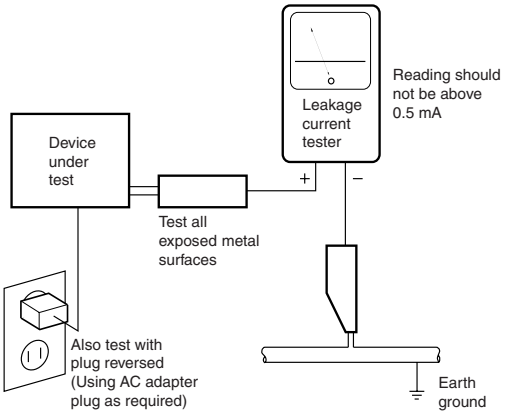
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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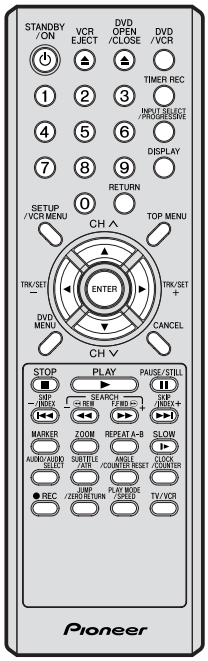
1. SPECIFCATIONS

G-1	**Outline of the product**				DVD VIDEO PLAYER & VHS Player / Recorder
G-2	**DVD System**	Color System			NTSC
		Disc			DVD, CD-DA, CD-R/RW
		Disc Diameter			120 mm , 80 mm
		Deck	Disc Loading System		Front Disc Loading
			Motor		3 Motors
		Pick up			1-Lens 2-Beams System
		Playback time (Max)	DVD 1-Layer		135min (4.7GB)
			DVD 2-Layer		245min (8.5GB)
			CD		74min
			VIDEO CD		--min
		Search speed			Fwd 4 steps
				Actual	2-45 times (DVD)
					4-40 times (CD)
					Rev 4 steps
				Actual	2-45 times (DVD)
					4-40 times (CD)
		Slow speed			Fwd 1/7-1/2 times
				Actual	--
					Rev --
				Actual	--
G-3	**VCR System**	System			VHS Player / Recorder
		Video System			NTSC
		Hi-Fi STEREO			Yes
		NTSC PB(PAL60Hz)			No
		Deck	DECK		OVD-7
			Loading System		Front
			Motor		3
		Heads	Video Head		4Head
			FM Audio Head		2Head
			Audio / Control		Mono/Yes
			Erase (Full Track Erase)		Yes
			Erase (Normal Audio Track Erase)		No
		Tape Speed	Rec	PAL	-
				NTSC	SP/SLP
			Play	PAL	-
				NTSC	SP/LP/SLP
		Fast Forward / Rewind Time (Approx.)	at 25oC		FF:4'50"/REW:2'30"
				with Cassette	T-120
		Forward/Reverse		NTSC or PAL-M	SP/LP/SLP = 3x,5x / 7x,9x / 9x,15x
		Picture Search		PAL or SECAM	-
		Frame Advance			Yes
		Slow Speed			1/10
G-4	**Tuning System**	Broadcasting System			US System M
		Tuner and Receive CH	System		1Tuner
			Destination		US (w/CATV)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 OHM
			CH Coverage		2-69,4A,A-5~ A-1,A~I, J~ W, W+1-W+84
		Intermediate Frequency	Picture (FP)		45.75 MHz
			Sound (FS)		41.25 MHz
			FP-FS		4.50 MHz
		Preset CH			-
		RF Converter Output			Yes
			Channel		3 or 4 ch
			Level / Impedance		66 dBu / 75 Ohm
			Sound Selector		No
		Stereo / Dual TV Sound			US-ST
		Tuner Sound Muting			Yes

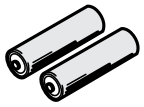
G-5	**Power**	Power Source	AC	120V 60Hz
			DC	-
		Power Consumption		18 W at 120V 60Hz
			Stand by	2 W at 120V 60Hz
			Per Year	-- W
		Protector	Power Fuse	Yes
			Safety Circuit	Yes
			IC Protector(Micro Fuse)	No
G-6	**Regulation**		Safety	UL
			Radiation	FCC
			Laser	DHHS
G-7	**Temperature**		Operation	5oC - 40oC
			Storage	-20oC - 60oC
G-8	**Operating Humidity**			Less than 80% RH
G-9	**Signal**	Video Signal	Output Level	1 V p-p/75 ohm (DVD,VCR)
			S/N Ratio (Weighted)	65 dB(DVD) 50 dB(VCR)
			Horizontal Resolution	500 Lines (DVD) 230 Lines(VCR Mode)
		RGB Signal	Output Level	-
		Audio Signal	Input Level Microphone	-
			Input Level Line	-8 dBm/ 50k ohm (VCR, 0dBm=0.775Vrms)
			Output Level Line	-8 dBm/ 1k ohm (VCR, 0dBm=0.775Vrms) -12dBm/ 1k ohm (DVD, -20dBFs 0dBFs=2.0Vrms)
			Digital Output Level	0.5 V p-p / 75 ohm(DVD)
			S/N Ratio at (Weighted)	90dB(DVD), 42dB(VCR at SP)
			Harmonic Distortion (1KHz) Typical	0.02% (1KHz) (DVD) , 1.5% (1KHz) (VCR)
			Frequency Response : DVD Mode at DVD	4 Hz - 22 KHz
			DVD Mode at VIDEO CD	-
			DVD Mode at CD	4 Hz - 20 KHz
			VCR Mode at SP	100Hz - 10 KHz
			VCR Mode at LP	-
			VCR Mode at SLP	100Hz - 4 KHz
		Hi-Fi Audio Signal	Dynamic Range : More than	90dB
			Frequency Response	20Hz ~20kHz
			Wow And Flutter : Less than	0.01 %Wrms
			Channel Separation : More than	60 dB
			Harmonic Distortion : Less than	0.01

● Accessories

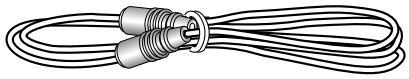
• Remote control ×1
(076R0JN020)



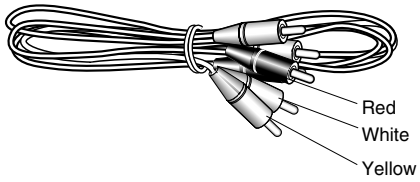
• Dry cell batteries ×2
(AAA/R03)



• RF antenna cable ×1
(06CPL02006)



• Audio / Video cable(L=1.2m) ×1
(red/white/yellow)
(06CPBA2003)

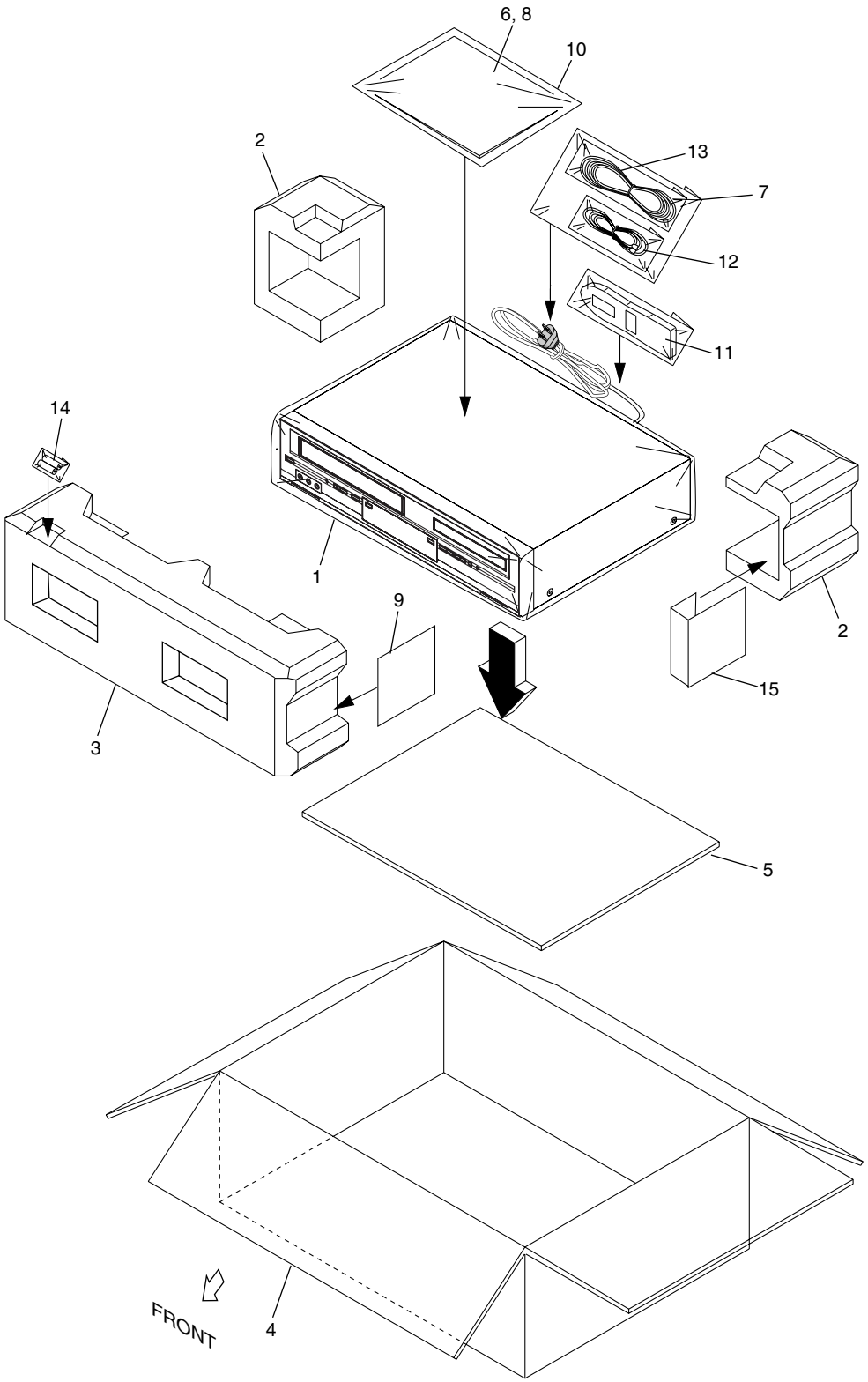


• Warranty Card
• Operating Instructions

2. EXPLODED VIEWS AND PARTS LIST

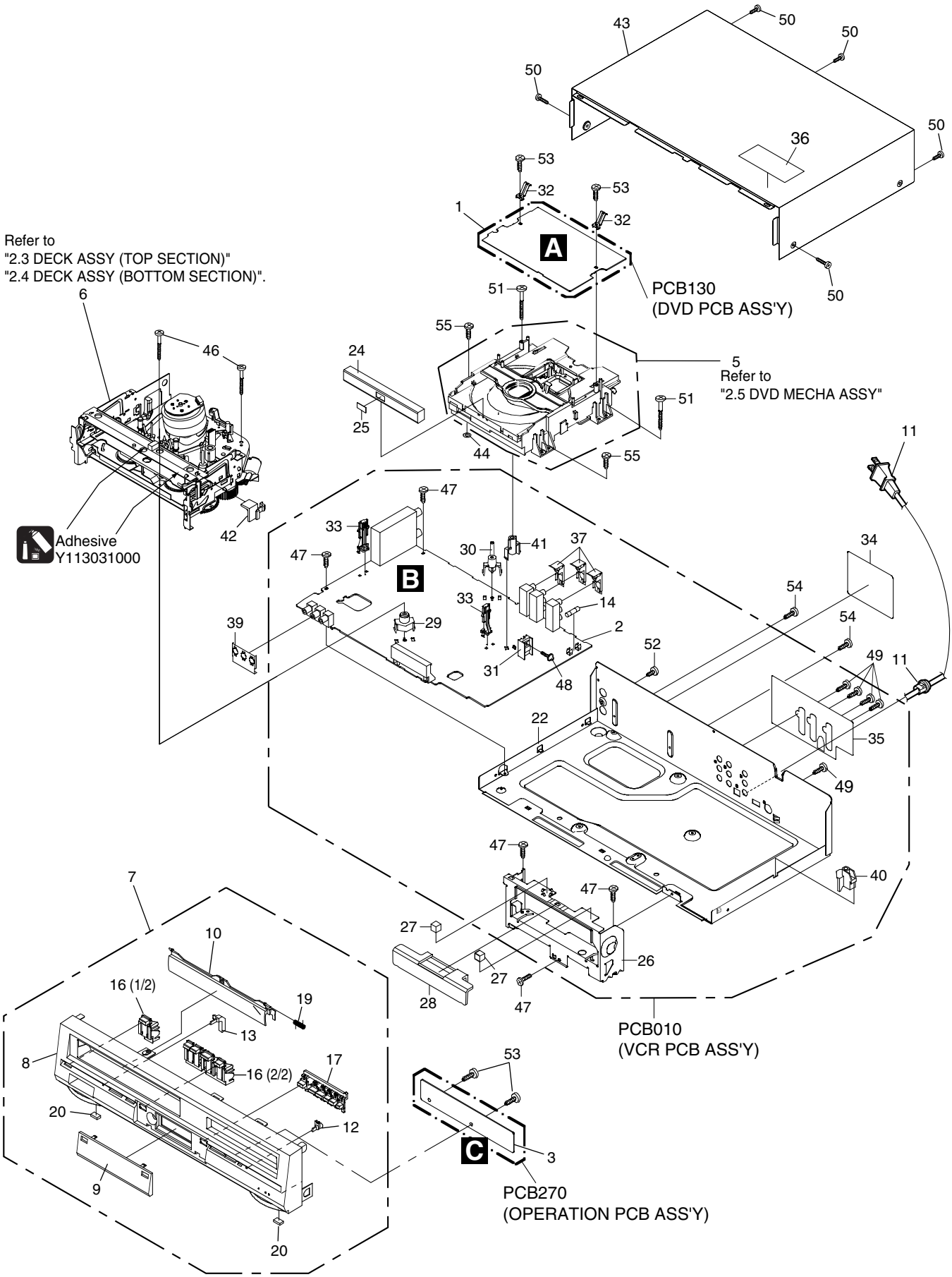
NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING



PACKING parts List

Mark	No.	Description	Part No.
	1	Gift Sheet	791WHA0100
	2	Package,Back	792WHAA117
	3	Package,Front	792WHA0558
	4	Gift Box	793WCDC541
	5	Pad,Flat	795WCA0674
	6	Instruction Book Kit (English)	J2E51401A
	7	Poly Bag (185x270xT0.04)	Y817041000
	8	Guarantee Card	J2D30902A
	9	Pad Type : B	795WCAA224
	10	Polybag,Instruction	JB5UD200
	11	Remote Control	076R0JN020
	12	RF Antenna Cable	06CPL02006
	13	Audio/Video Cable	06CPBA2003
NSP	14	Dry Cell Battery(AAA/R03)	1412004008
	15	Pad Type : A	759WCAA223

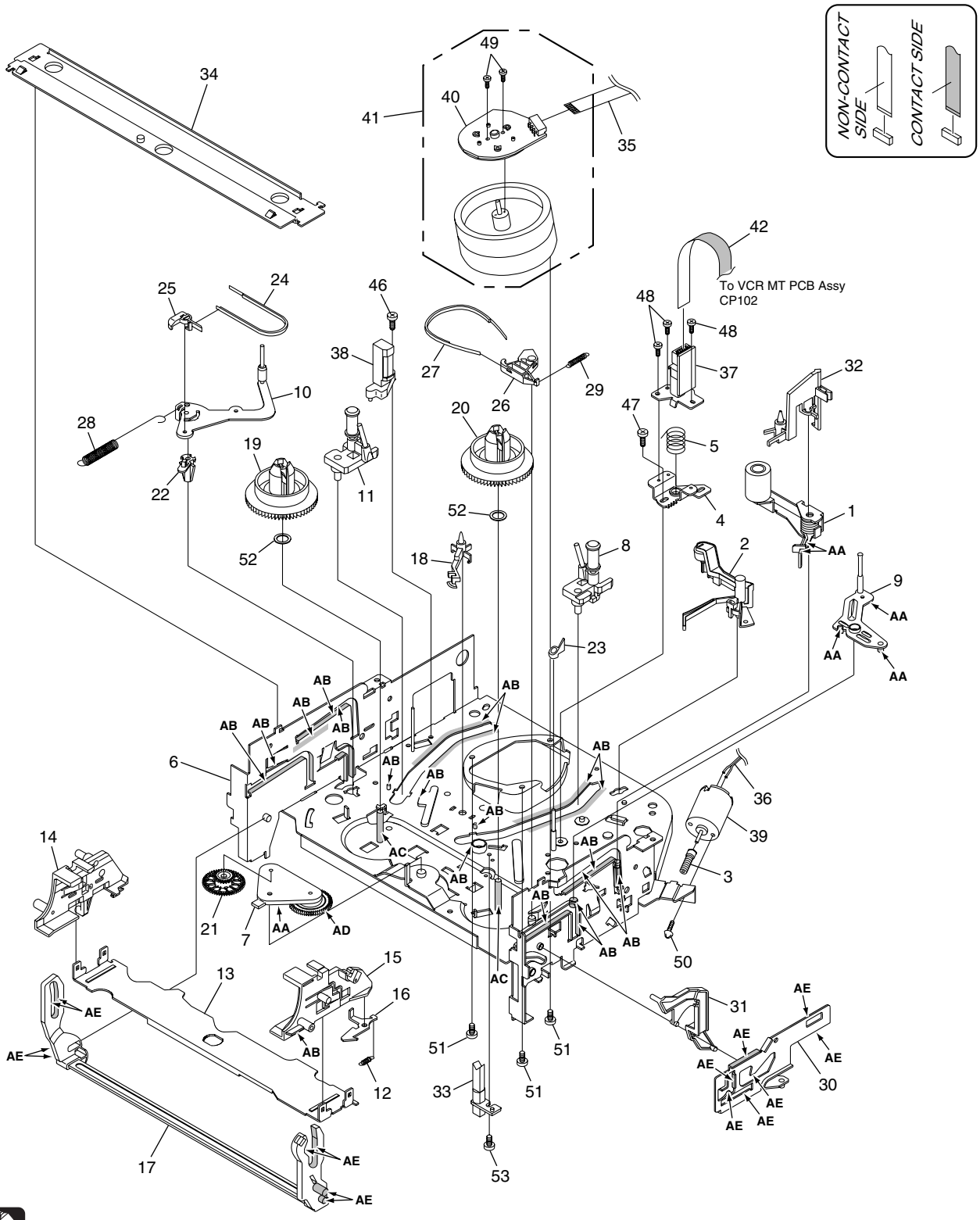

Refer to
"2.3 DECK ASSY (TOP SECTION)"
"2.4 DECK ASSY (BOTTOM SECTION)".
PCB130
(DVD PCB ASS'Y)
Refer to
"2.5 DVD MECHA ASSY"
Adhesive
Y113031000
PCB010
(VCR PCB ASS'Y)
PCB270
(OPERATION PCB ASS'Y)
A
B
C

F

EXTERIOR SECTION parts List

Mark	No.	Description	Part No.
	1	DVD PCB Assy (PCB130)	A2E514X130
	2	VCR MT PCB Assy(PCB010)	A2E514X010
	3	OPERATION PCB Assy(PCB270)	A2E514X270
	4	• • • •	
	5	DVD MECHA Assy	A2E504X650
	6	DECK Assy	A2E504X420K
	7	Front Cabi Assy	7A701A279A
	8	Cabinet, Front	701WPJC889
	9	Plate, Display	711WPDA591
	10	Flap, VCR	712WPJC092
⚠	11	AC Cord & Bush (CD501)	1209614920
	12	Glass, LED-DVD	713WPA0194
	13	Glass, LED-VCR	713WPA0193
⚠	14	Fuse (F501 : 2.5A)51MS025L	081PC2R505
	15	• • • •	
	16	Button, Frame_VCR	738WPBA107
	17	Button, Frame_DVD	738WPBA108
	18	• • • •	
	19	Spring, Flap	743WKA0042
	20	Cushion, Leg	800WFAA015
	21	Bottom Cabi Assy	7G7610007A
	22	Plate, Bottom	702WSA0216
	23	Angle, Center	761WSA0175
	24	Plate Tray_Front	712WPBA076
	25	Sheet DVD	7235630010
	26	Angle Front	761WSAA025
	27	Cushion 65TS10-10 (10 x 20 x 25)	8965TS1010
	28	Holder, Disc	761WPA0296
	29	Holder, Deck	701WPA0686
	30	Holder, Deck	701WPA0751
	31	Heat Sink IC A023	763WSAA023
	32	Spring, Earth	753WUA0065
	33	Holder, End Sensor	85OP700038
	34	Sheet, Rating	722631A001
	35	Sheet, Jack	7230007787
	36	Sheet, Caution	726000A073
	37	Shield, COMPO	752WSA0290
	38	• • • •	
	39	Shield, 3Pin Jack	752WUAA001
	40	Holder, DVD (BR)	761WPA0261
	41	Holder, DVD (BL)	761WPA0321
	42	Holder, Deck Top	761WPA0262
	43	Cabinet, Top	702WSA0212
	44	Fiber Washer (3 x 3.2 x T0.5)	800WF00004
	45	• • • •	
	46	Screw (3x29)	8109130B9U
	47	Screw (3x7)	810923070U
	48	Screw (3x10)	8109I30A0U
	49	Screw (3x8)	810923080U
	50	Screw (3x6)	8109K3060U
	51	Screw (3x33R)	8154D3033U
	52	Screw (3x4)	810713040U
	53	Screw (2.6x8)	811022680U
	54	Screw (2.6x6)	810722660U
	55	SEMS (screw 3x8)	810F13080U

2.3 DECK ASSY (TOP SECTION)



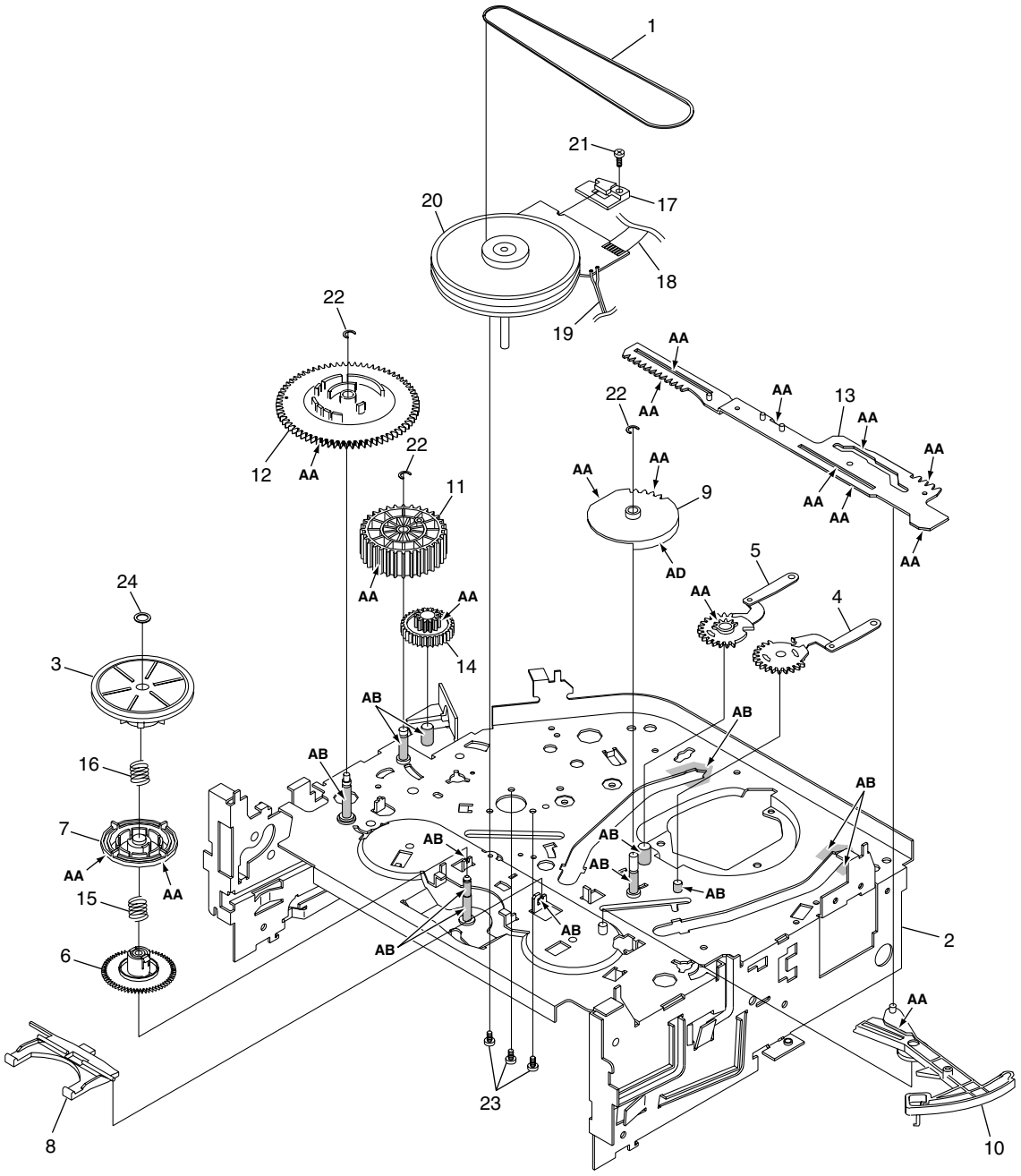
Class	Part No.	Part Name	Mark
Grease	Y315061000	G-555G	**AA**
	Y315071000	MG-33	**AB**
	Y31D011000	FG-84M	**AC**
	Y315041000	FL-721	**AD**
	Y315141000	G-313Y	**AE**

NOTE: Applying positions **AA, AB, AC, AD** and **AE** for the grease are displayed for this section.
Check if the correct grease is applied for each position.

DECK ASSY (TOP SECTION) parts List

Mark	No.	Description	Part No.
	1	Pinch Roller Block (VA)	85OA400240
	2	AHC Assy	85OA500026
	3	Worm	85OP600581
	4	Base, AC Head	85OP500083
	5	Spring, AC Head	85OP800324
	6	Main Chassis Assy	85OA000516
	7	Arm Idler Assy	85OA200090
	8	Inclined Base T Unit 3S	85OA400223
	9	P5 Arm Assy 2	85OA400232
	10	Tension Arm Assy 2	85OA400235
	11	Inclined Base S Unit	85OA400231
	12	Spring, Locker	85OP800367
	13	Cass, Holder	85OP900736
	14	Cass, Side L	85OP900748
	15	Cass, Side R	85OP900749
	16	Locker, R	85OP900739
	17	Link Unit	85OA900228
	18	Post, Cass Guide	85OP000496
	19	Reel, S (S)	85OP200316
	20	Reel, T (S)	85OP200317
	21	Gear, Idler	85OP200308
	22	Holder, Tension	85OP400492
	23	Cap. P4	85OP400520
	24	Band, Tension	85OP400542
	25	Connect, Tension	85OP400533
	26	Arm, Brake T	85OP600573
	27	Band, Brake T	85OP600584
	28	Spring, Tension	85OP800322
	29	Spring, Brake T	85OP800360
	30	Lever, Link	85OP900743
	31	Lever, Flap	85OP900744
	32	Cass, Opener	85OP900745
	33	Reflector, LED	85OP700035
	34	Bracket, Top 3V	85OP900746
	35	Cord Jumper (CD1501)	122H071704
	36	Cord Jumper (CD1502)	122Y021902
	37	Head (Audio Control)(H5001)	1523Q91004
	38	Head (Full Erase)(H5002)	1543Q02014
⚠	39	Motor, Loading (M101)	1596S98001
	40	Micro Motor (M2003)	1589S11020
⚠	41	Cylinder Unit Assy (UN4001)	A2D312H500
	42	Cord Jumper (CD102)	122T041508
	43	• • • • •	
	44	• • • • •	
	45	• • • • •	
	46	Screw (2.6x8)	8107226804
	47	Screw (2.6x4)	8107226404
	48	Screw (M2x6)	8102120604
	49	Screw (2.6x6)	8109126604
	50	Screw/Washer (A) (M3x4)	810A130404
	51	Screw/Washer (A) (M2.6x5)	810A126504
	52	Polyslider Washer	82Q264713N
	53	Screw (Bind 2.6x6)	8107226604

2.4 DECK ASSY (BOTTOM SECTION)



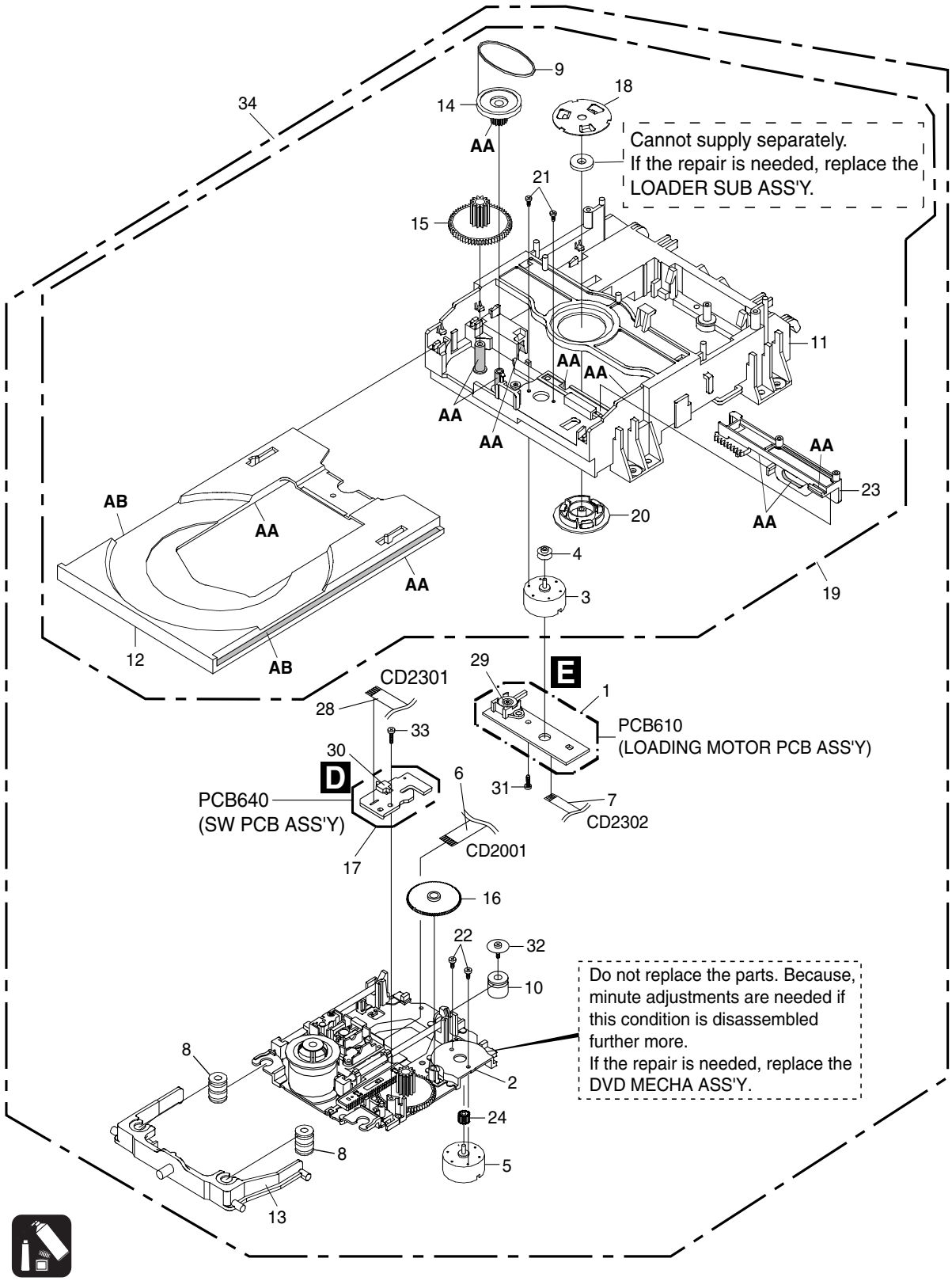
Class	Part No.	Part Name	Mark
Grease	Y315061000	G-555G	**AA**
	Y315071000	MG-33	**AB**
	Y31D011000	FG-84M	**AC**
	Y315041000	FL-721	**AD**
	Y315141000	G-313Y	**AE**

NOTE: Applying positions **AA, AB, AC, AD** and **AE** for the grease are displayed for this section.
Check if the correct grease is applied for each position.

DECK ASSY (BOTTOM SECTION) parts List

Mark	No.	Description	Part No.
	1	Belt, Capstan (S)	85OP200290
	2	Main Chassis Assy	85OA000516
	3	Clutch Assy	85OA200089
	4	Loading Arm S Unit	85OA300065
	5	Loading Arm T Unit	85OA300066
	6	Gear, Clutch	85OP200311
	7	Gear, Coupling	85OP200312
	8	Lever, Clutch	85OP200313
	9	Gear, Main Loading	85OP300194
	10	Lever, Tension	85OP400490
	11	Cam, Pinch Roller	85OP600577
	12	Cam, Main	85OP600578
	13	Rod, Main	85OP600579
	14	Gear, Joint	85OP600582
	15	Spring, Coupling	85OP800355
	16	Spring, Ring	85OP800356
	17	Holder, Capstan	85OP400549
	18	Cord Jumper (CD1501)	122H071704
	19	Cord Jumper (CD1502)	122Y021902
⚠	20	Capstan DD Unit (M2001)	1510S98042
	21	Screw (2.6x4)	8107226804
	22	E-Ring (3.0)	83ETW30000
	23	Screw (2.6x6)	8109126604
	24	Polyslider Washer (CUT)	82P184505N

2.5 DVD MECHA ASSY



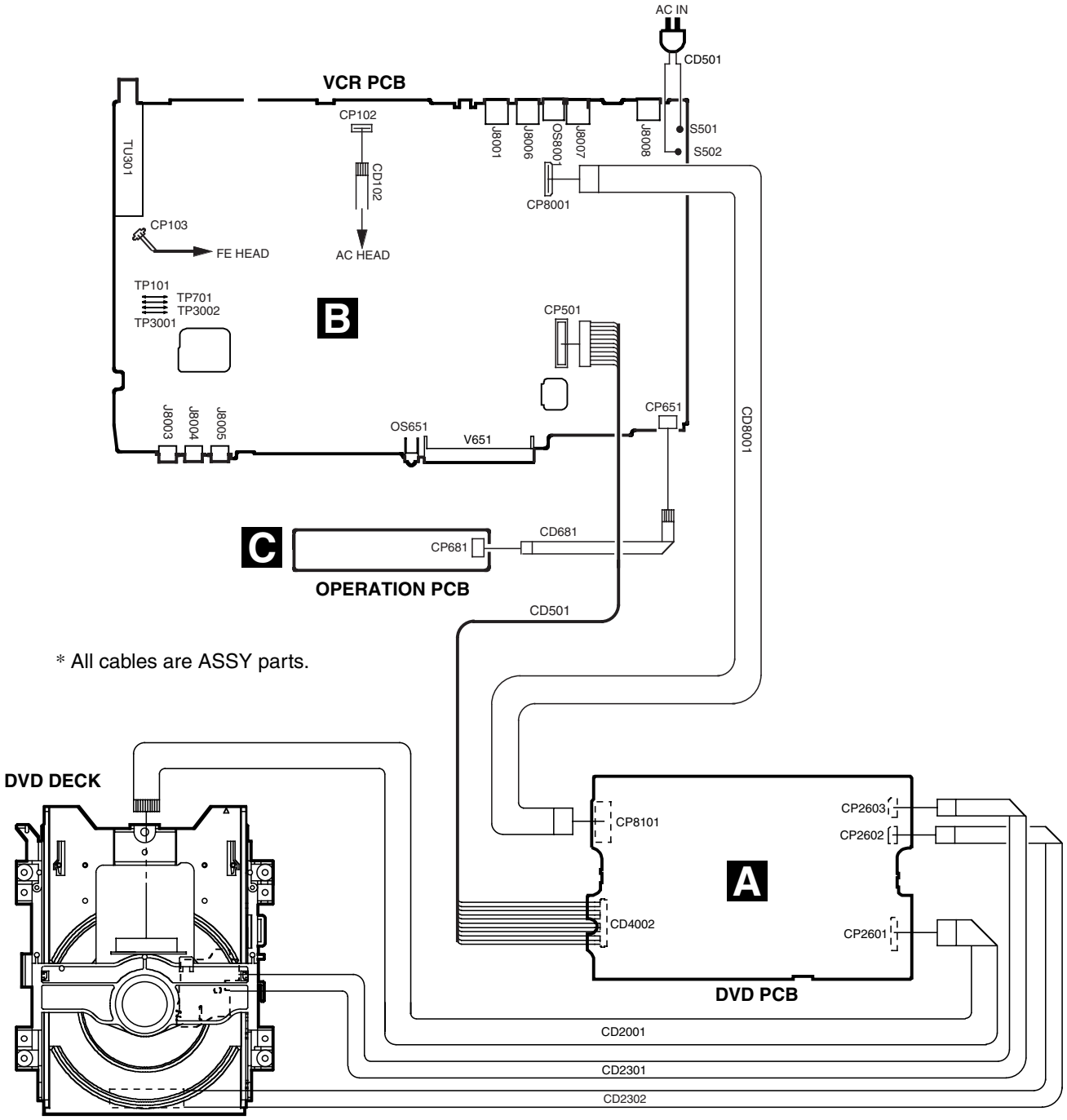
CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	**AA**
	Y315121000	SF-112	**AB**

NOTE: Applying positions **AA** and **AB** for the grease are displayed for this section.
Check if the correct grease is applied for each position.

DVD MECHA ASSY parts List

Mark	No.	Description	Part No.
NSP	1	Loading Motor PCB Assy	A2D801X610
	2	• • • •	
	3	Loading Motor Assy	1596S18002
	4	Motor Pulley	92P100097A
	5	FEED Motor	1515S98002
	6	Cord Cable (24P)(CD2001)	122H0O1901
	7	Cord Jumper (CD2302)	122H052601
	8	Insulator (F)	92P200013A
	9	Belt Loading	92P200012A
	10	Insulator (R)	92P200014A
	11	Frame main	92P100091A
	12	Tray	92P100100A
	13	Holder Traverse	92P100109A
	14	Gear Pulley	92P100095A
	15	Gear Main	92P100096A
	16	Gear Middle	92P100108A
	17	SW PCB Assy (PCB640)	A2E220T640
	18	Clamper Plate	92P000014A
	19	Loader SUB Assy	92SBB0020A
	20	Clamper	92P100094A
	21	Screw (M1.7x3)	814011730U
	22	Screw (M1.7x2.3)	814011723U
	23	Rack Loading	92P100093A
	24	Gear Motor	92P100088A
	25	• • • •	
	26	• • • •	
	27	• • • •	
	28	Cord Jumper (CD2301)	122H062102
	29	Switch (SW1)	0515S32002
	30	Push Switch (SW2)	0500101037
	31	Screw (2.6x8)	811022680U
	32	Screw (2x8)	816112080U
	33	Screw (Bind 2x8)	811022080U
	34	DVD MECHA ASSY	A2E504X650

2.6 WIRING CABLE

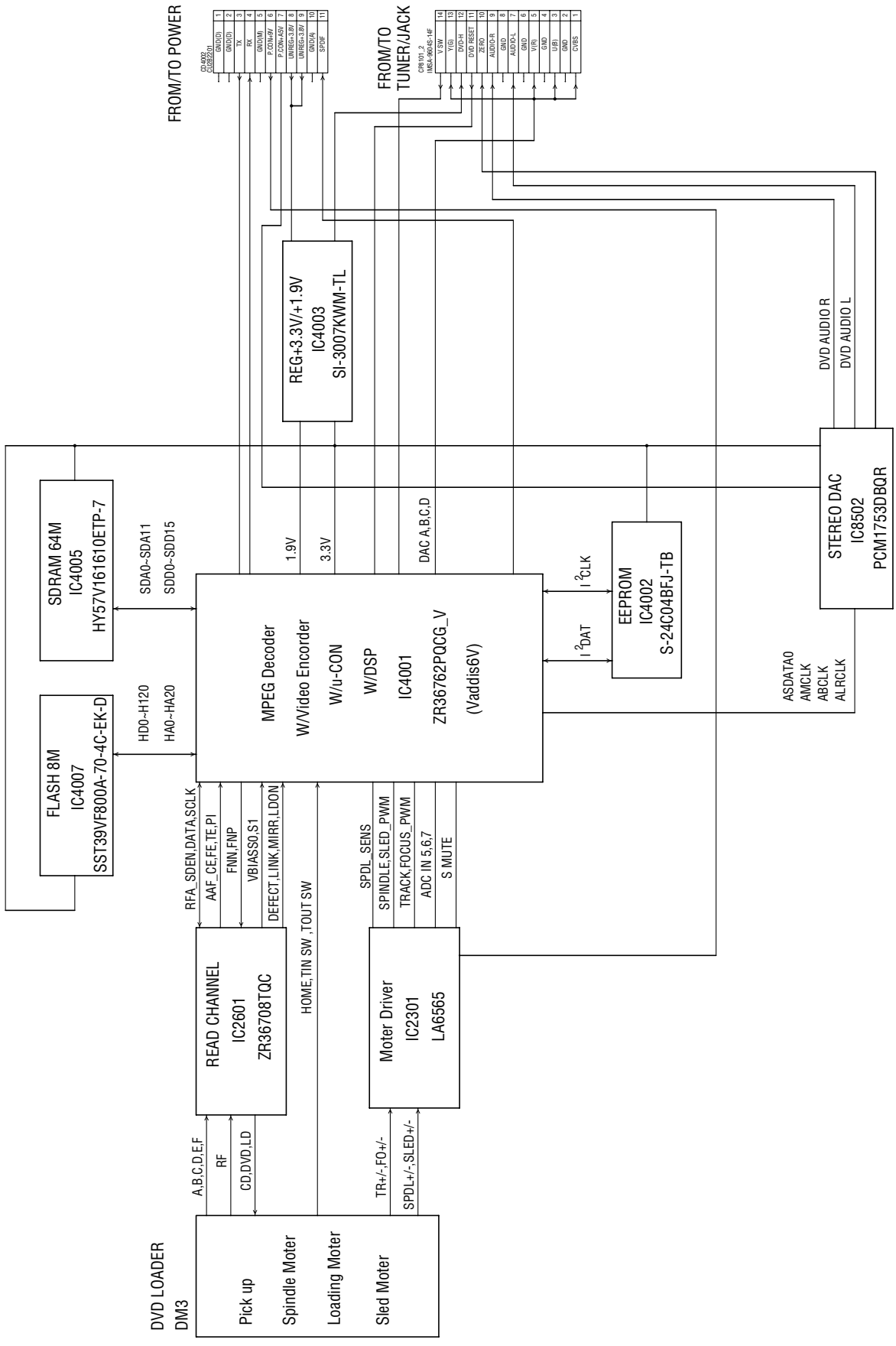


* All cables are ASSY parts.

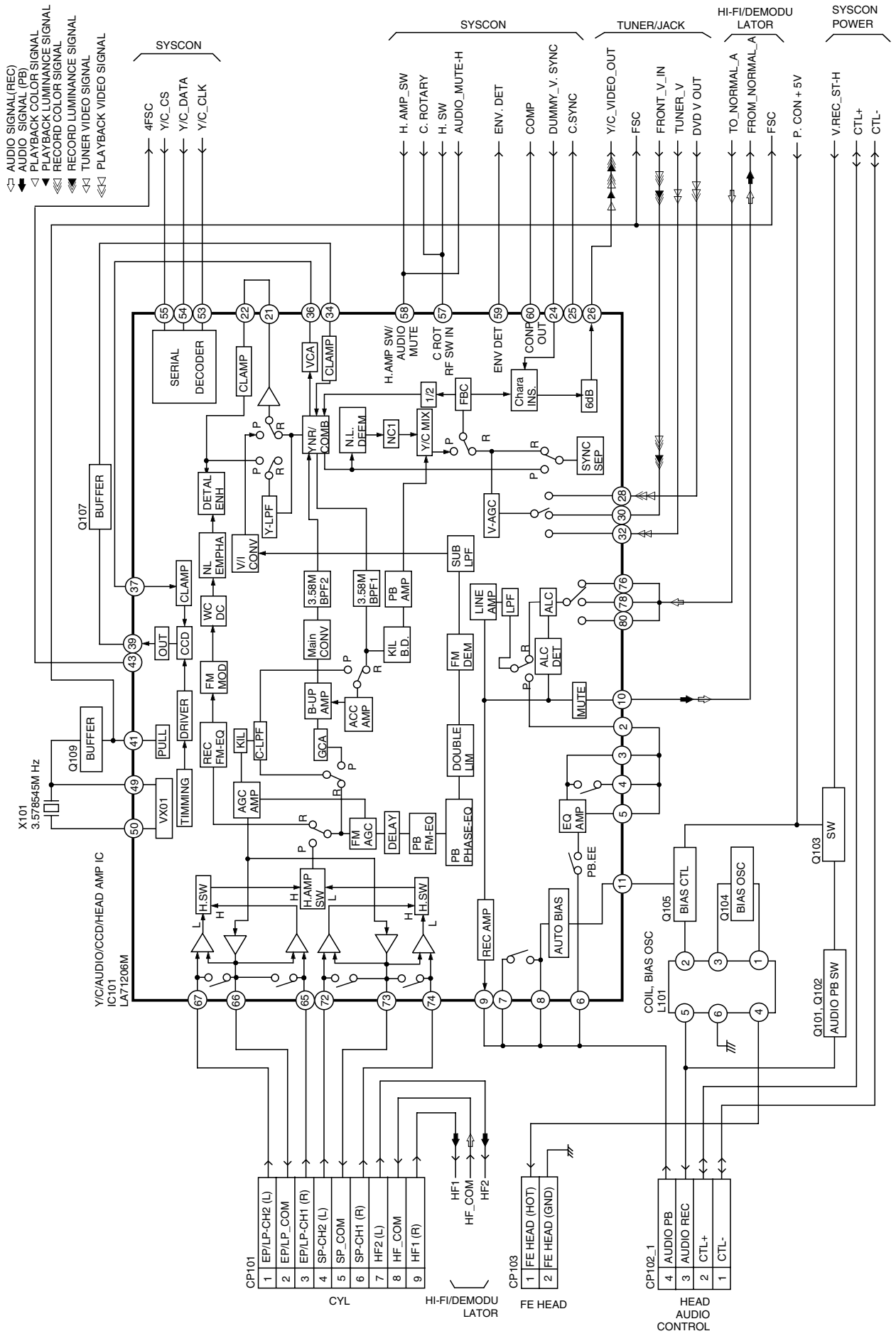
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

3.1.1 DVD BLOCK DIAGRAM

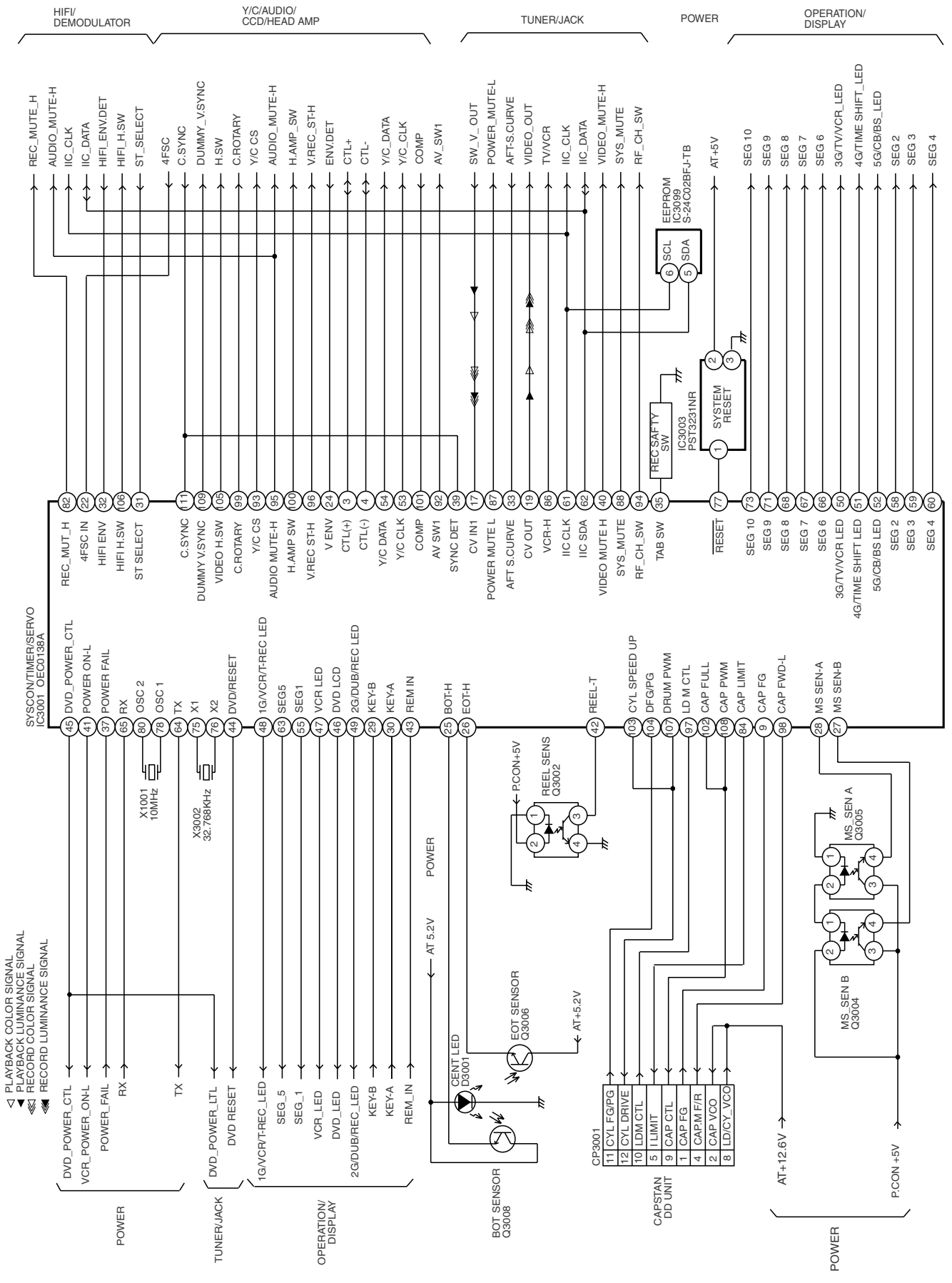


3.1.2 Y/C AUDIO / CCD / HEAD AMP BLOCK DIAGRAM

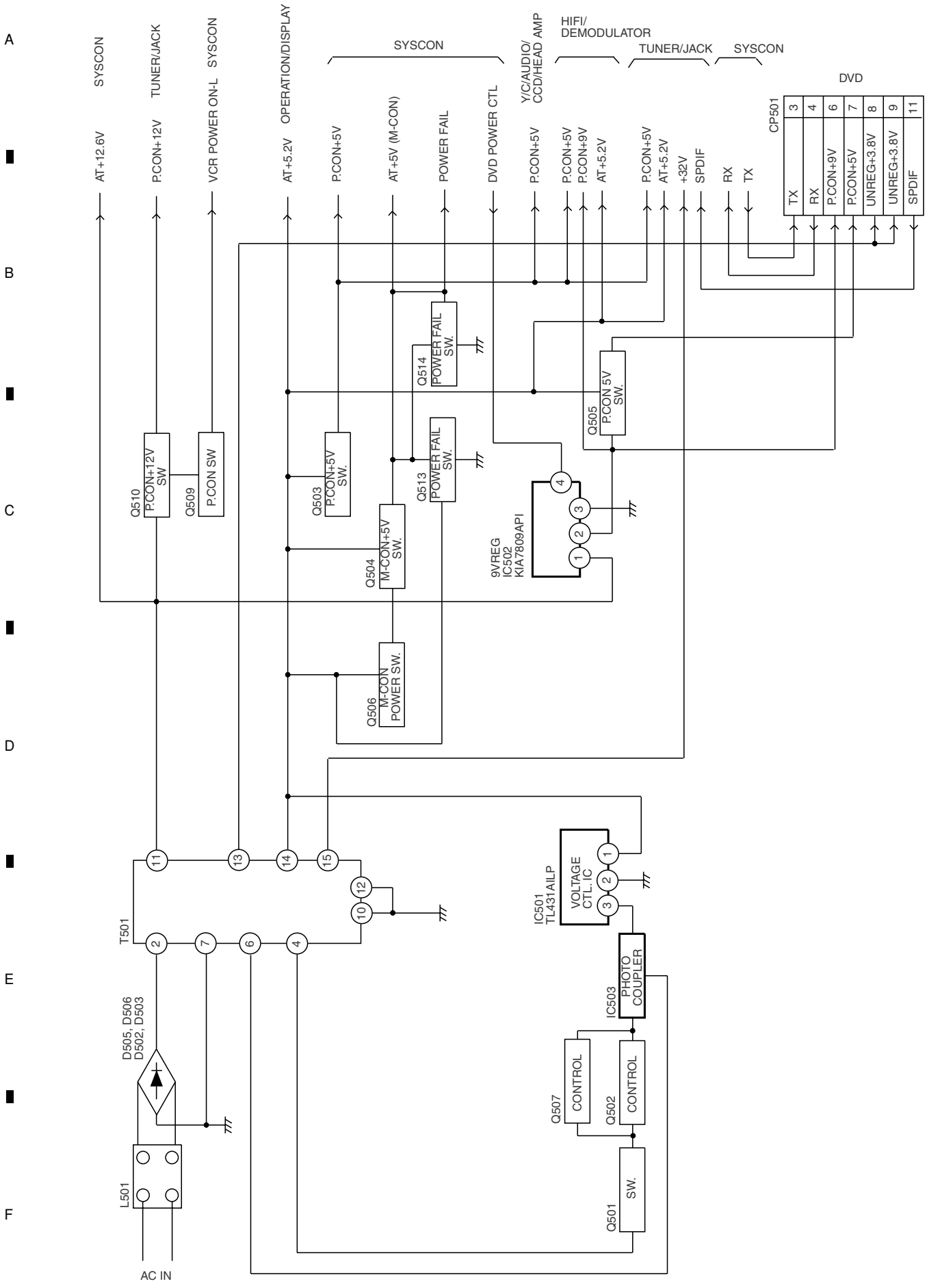


3.1.3 SYSTEM CONTROL BLOCK DIAGRAM

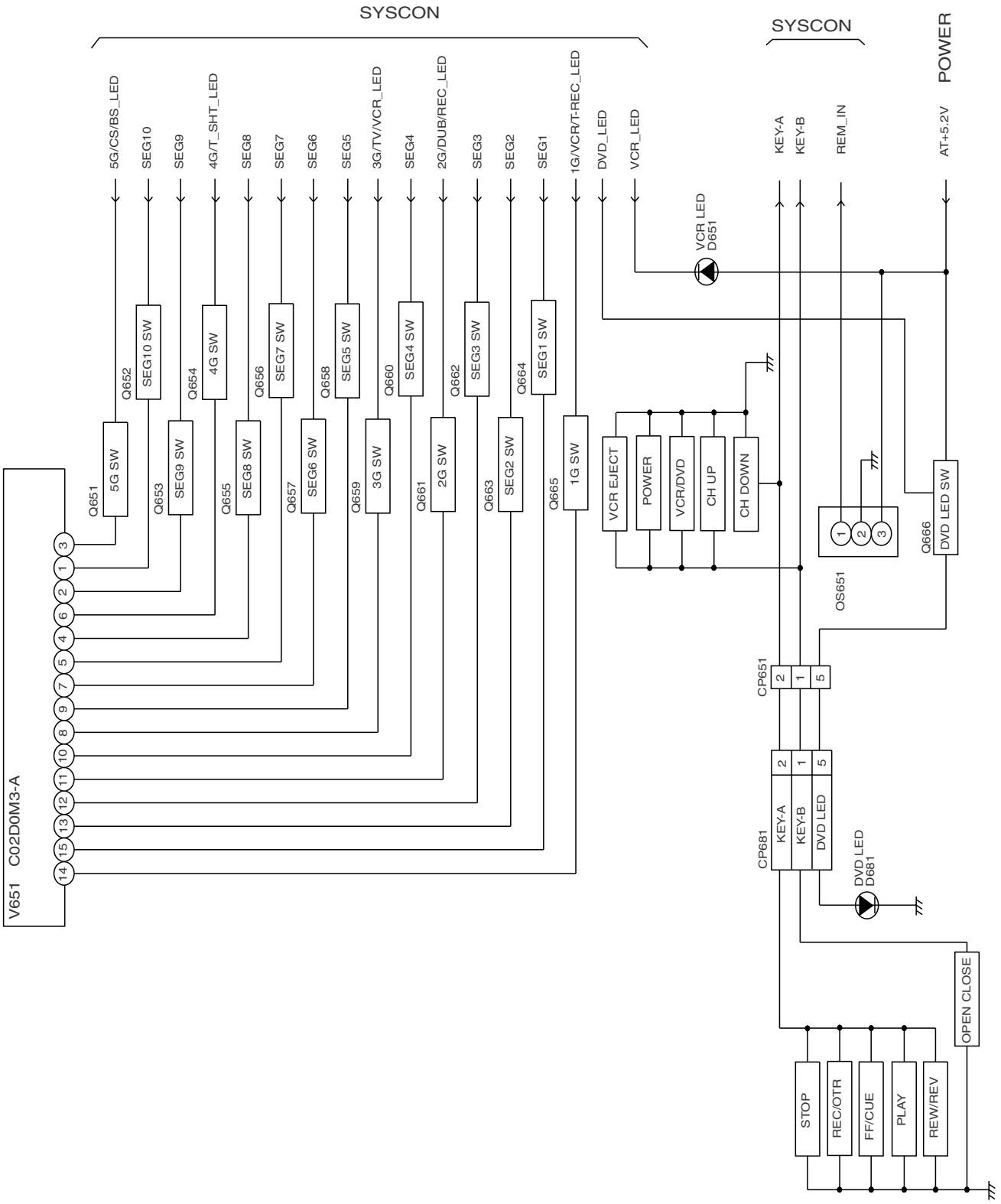
SYSTEM CONTROL BLOCK DIAGRAM



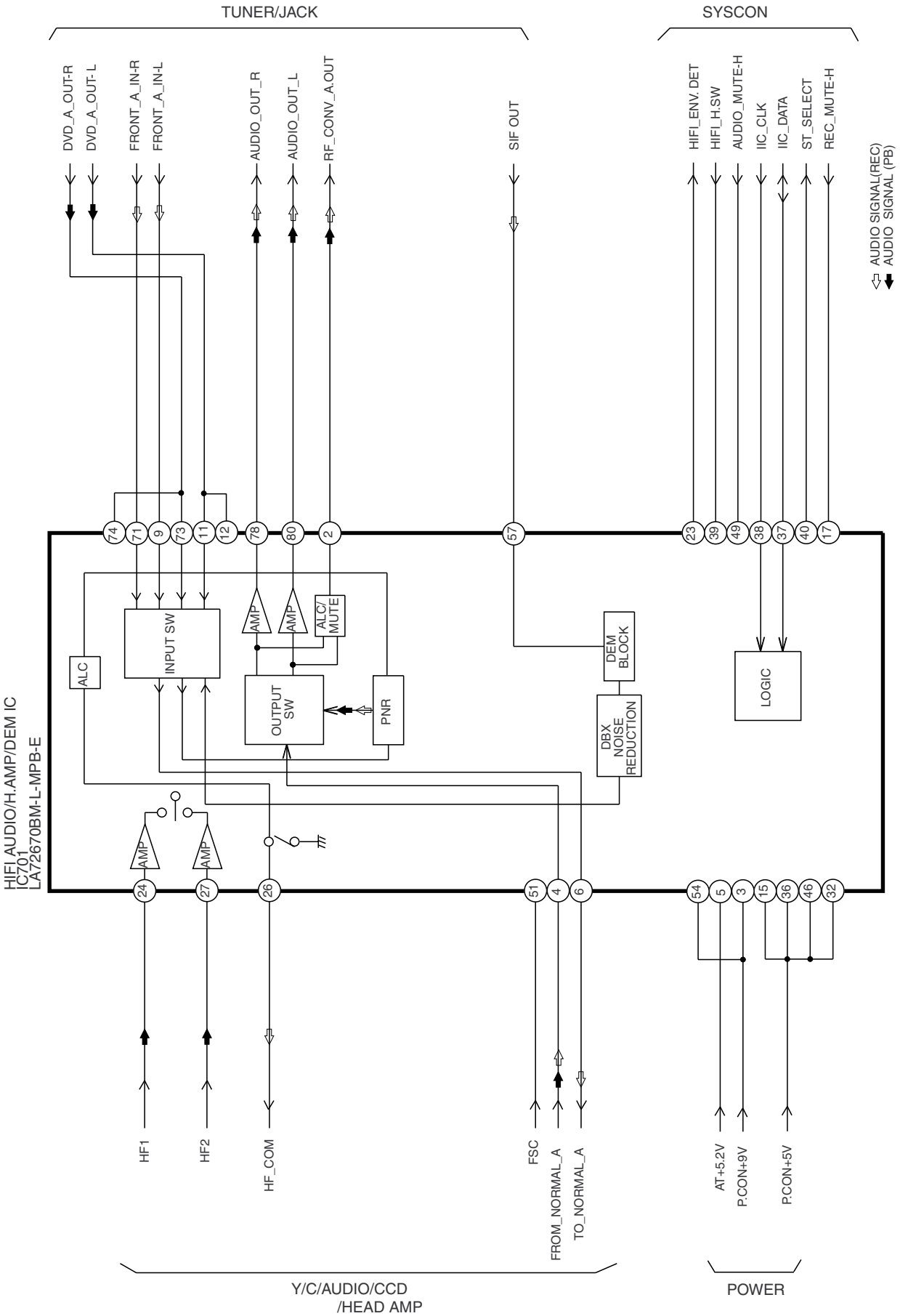
3.1.4 REGULATOR BLOCK DIAGRAM



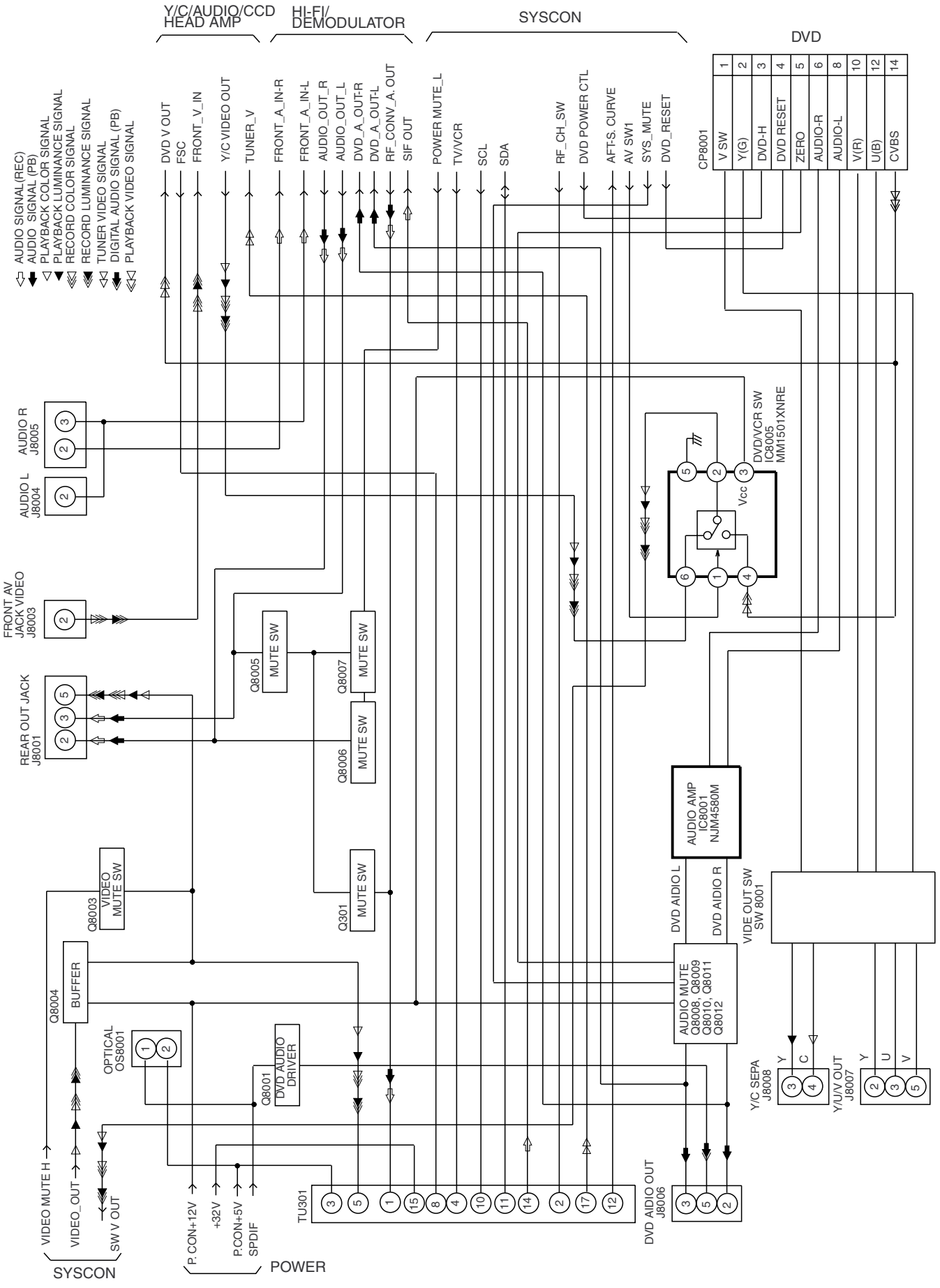
3.1.5 OPERATION / DISPLAY BLOCK DIAGRAM



3.1.6 HiFi / DEMODULATOR BLOCK DIAGRAM

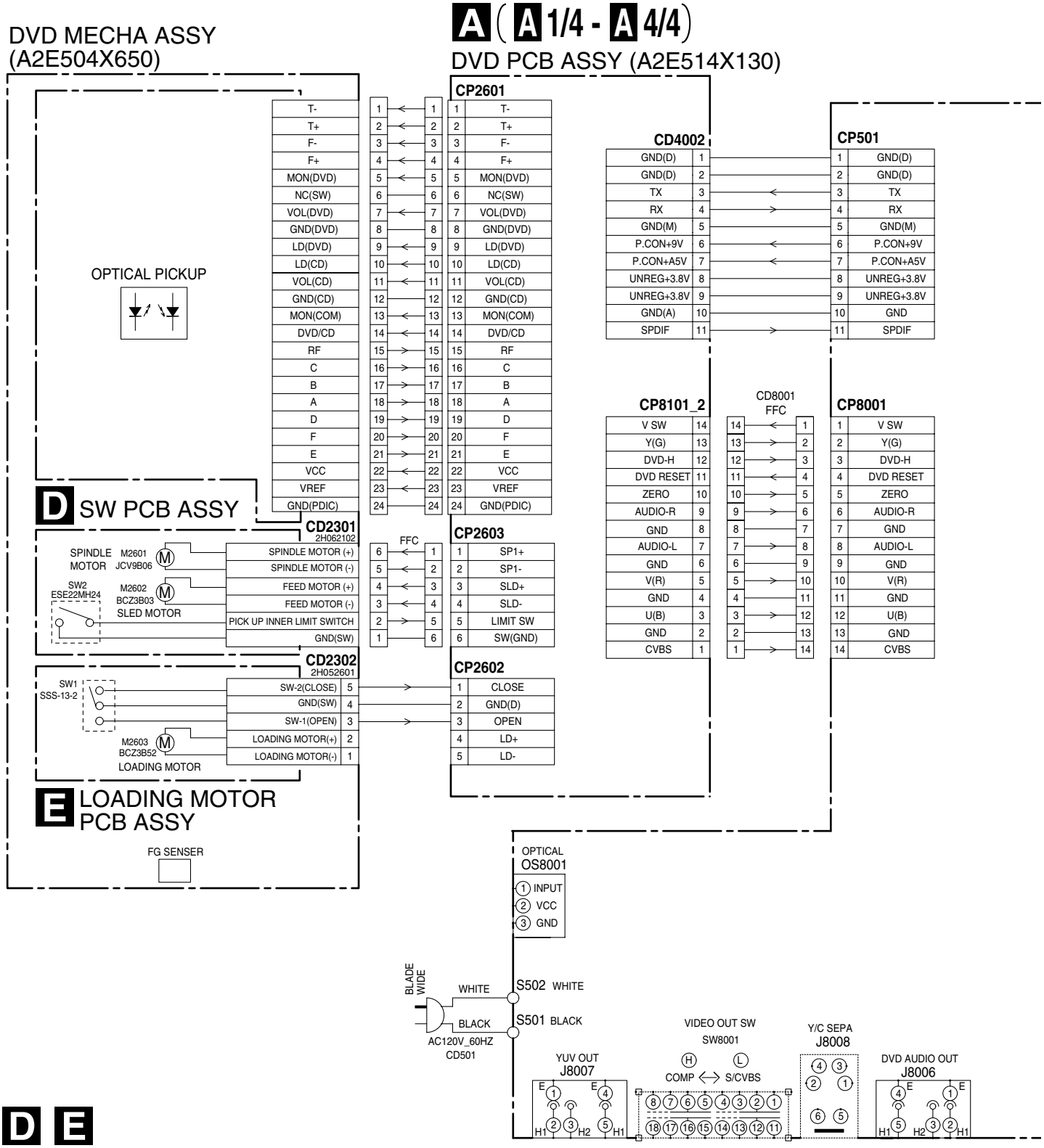


3.1.7 TUNER / JACK BLOCK DIAGRAM



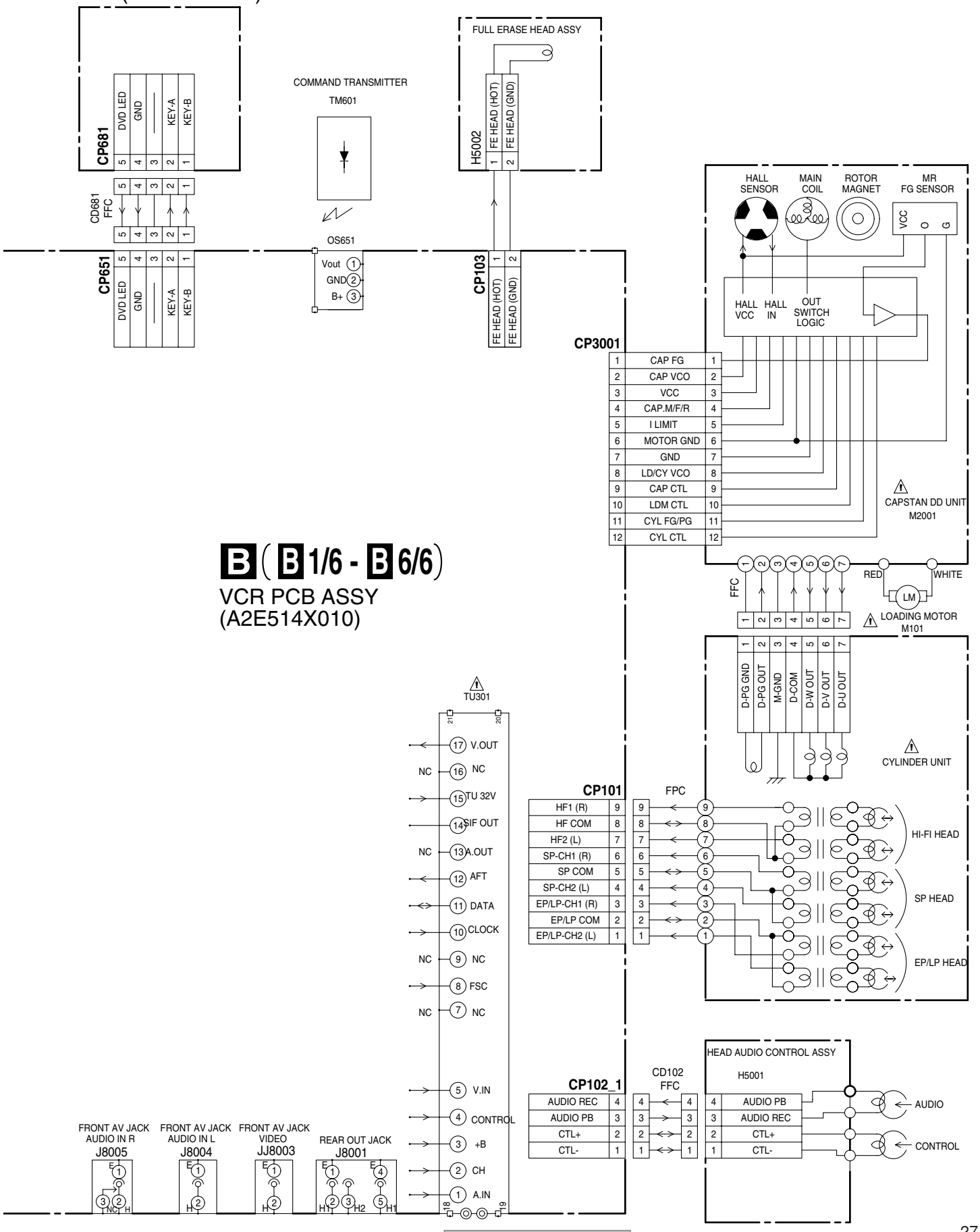
3.2 SW,LOADING MOTOR PCB ASSYS and OVERALL WIRING DIAGRAM

- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- ⬭ : The power supply is shown with the marked box.



D E

C OPERATION PCB ASSY (A2E514X270)



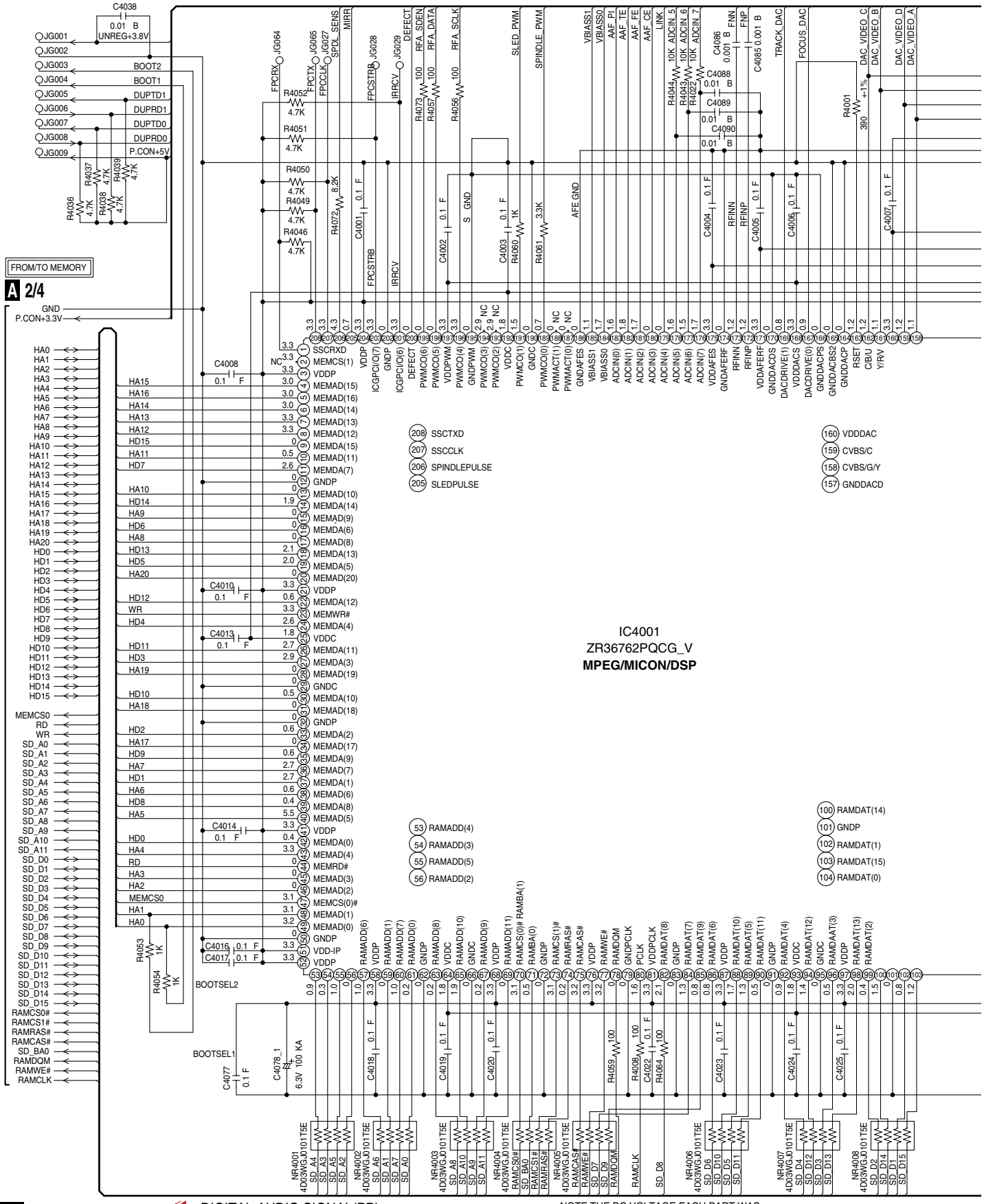
B (B 1/6 - B 6/6)

VCR PCB ASSY
(A2E514X010)

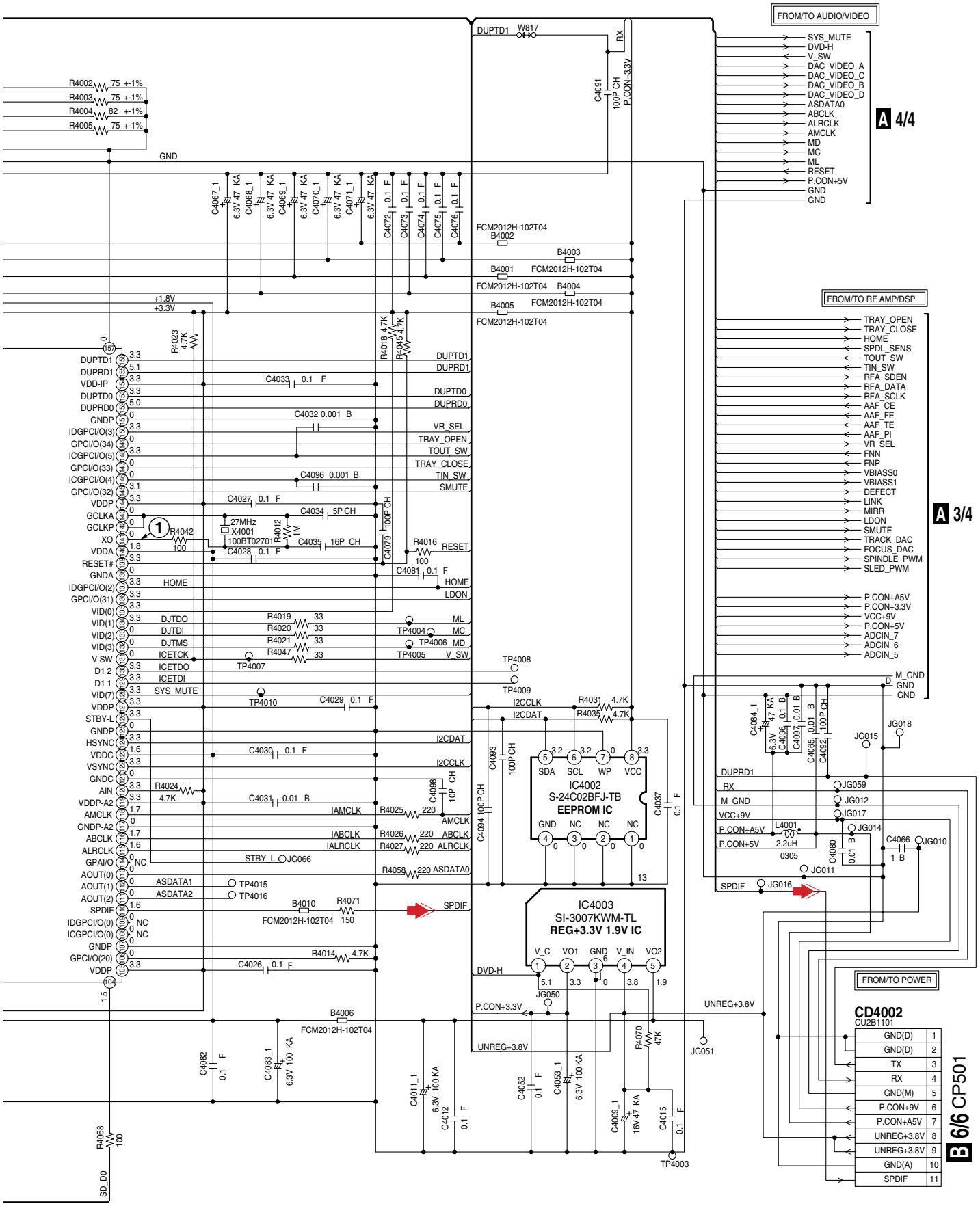
3.3 DVD PCB ASSY(1/4)

A 1/4 DVD PCB ASSY (A2E514X130)

- **MPEG/MICON/DSP BLOCK**



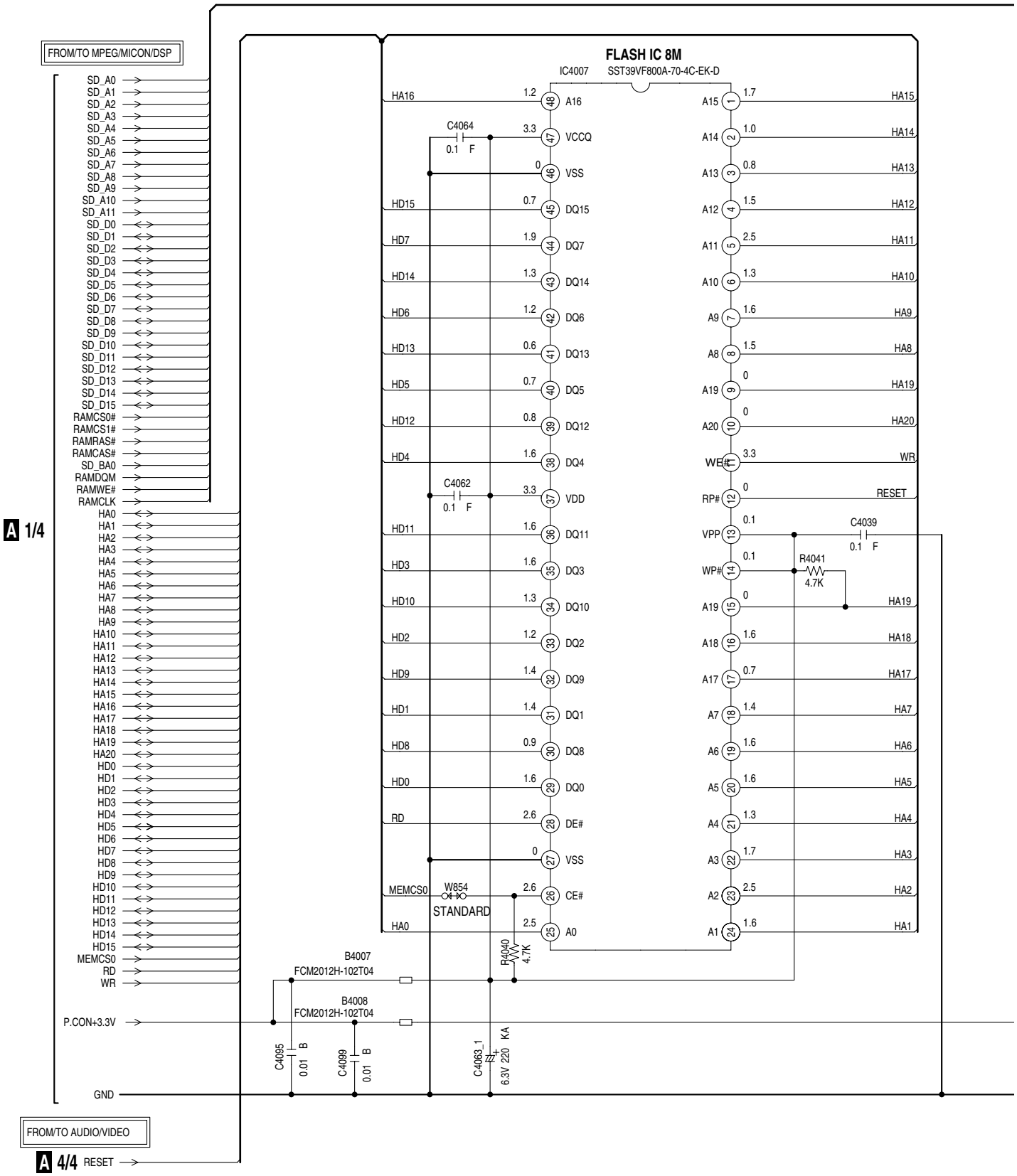
A 1/4


FROM/TO AUDIO/VIDEO
SYS_MUTE
DVD-H
V_SW
DAC_VIDEO_A
DAC_VIDEO_C
DAC_VIDEO_B
DAC_VIDEO_D
ASDATA0
ABCLK
ALRCLK
AMCLK
MD
MC
ML
RESET
P.CON+5V
GND
GND
A 4/4
FROM/TO RF AMP/DSP
TRAY_OPEN
TRAY_CLOSE
HOME
SPDL_SENS
TOUT_SW
TIN_SW
RFA_SDEN
RFA_DATA
RFA_SCLK
AAF_CE
AAF_FE
AAF_TE
AAF_PI
VR_SEL
FNN
FNP
VBIASS0
VBIASS1
DEFECT
LINK
MIRR
LDON
SMUTE
TRACK_DAC
FOCUS_DAC
SPINDLE_PWM
SLED_PWM
A 3/4
P.CON+A5V
P.CON+3.3V
VCC+9V
P.CON+5V
ADCIN_7
ADCIN_6
ADCIN_5
M_GND
GND
GND
IC4002
S-24C02BFJ-TB
EEPROM IC
IC4003
SI-3007KWM-TL
REG+3.3V 1.9V IC
FROM/TO POWER
CD4002
CU2B1101
GND(D) 1
GND(D) 2
TX 3
RX 4
GND(M) 5
P.CON+9V 6
P.CON+A5V 7
UNREG+3.8V 8
UNREG+3.8V 9
GND(A) 10
SPDIF 11
B 6/6 CP501
A 1/4

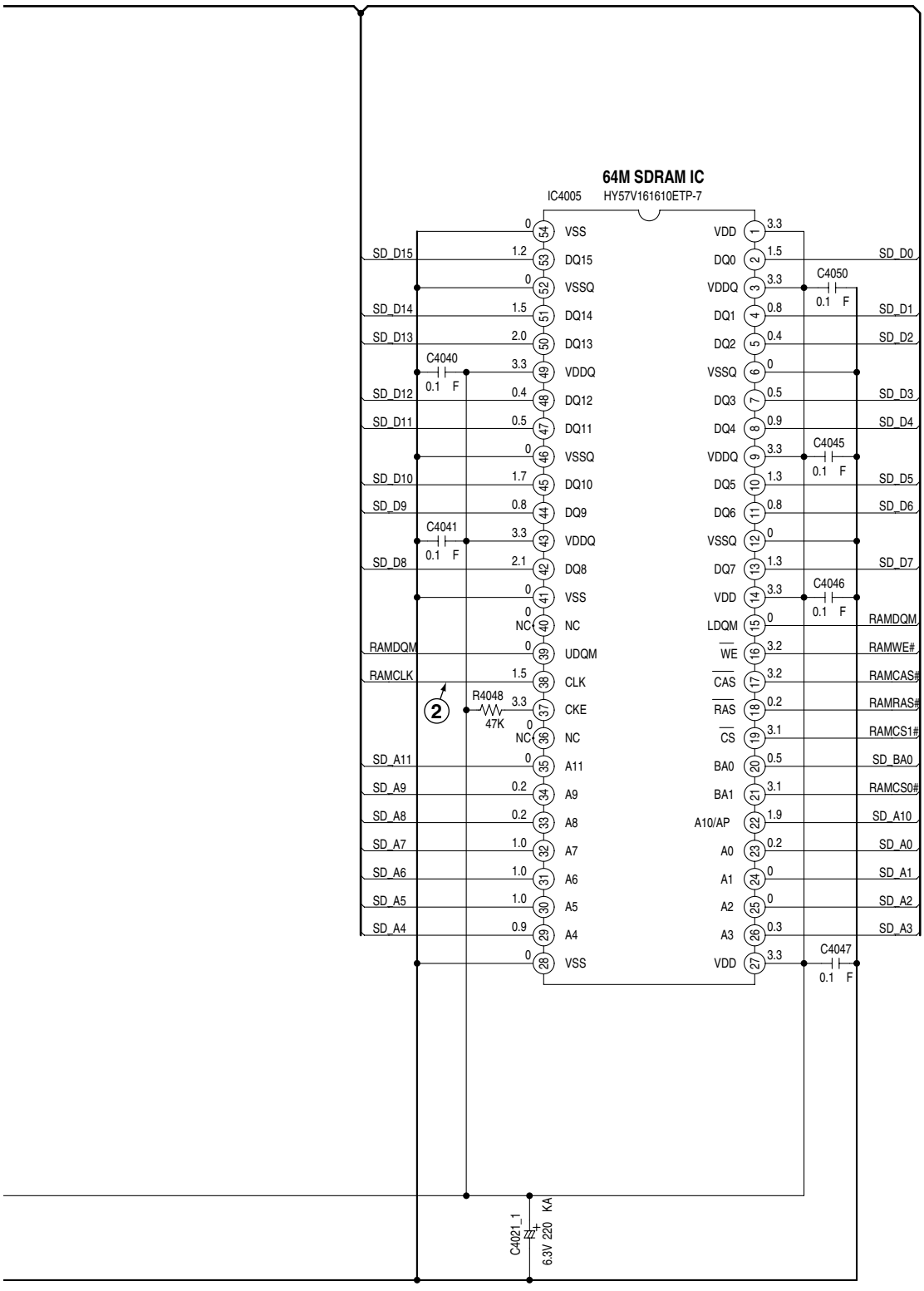
3.4 DVD PCB ASSY(2/4)

A 2/4 DVD PCB ASSY (A2E514X130)

- **MEMORY BLOCK**



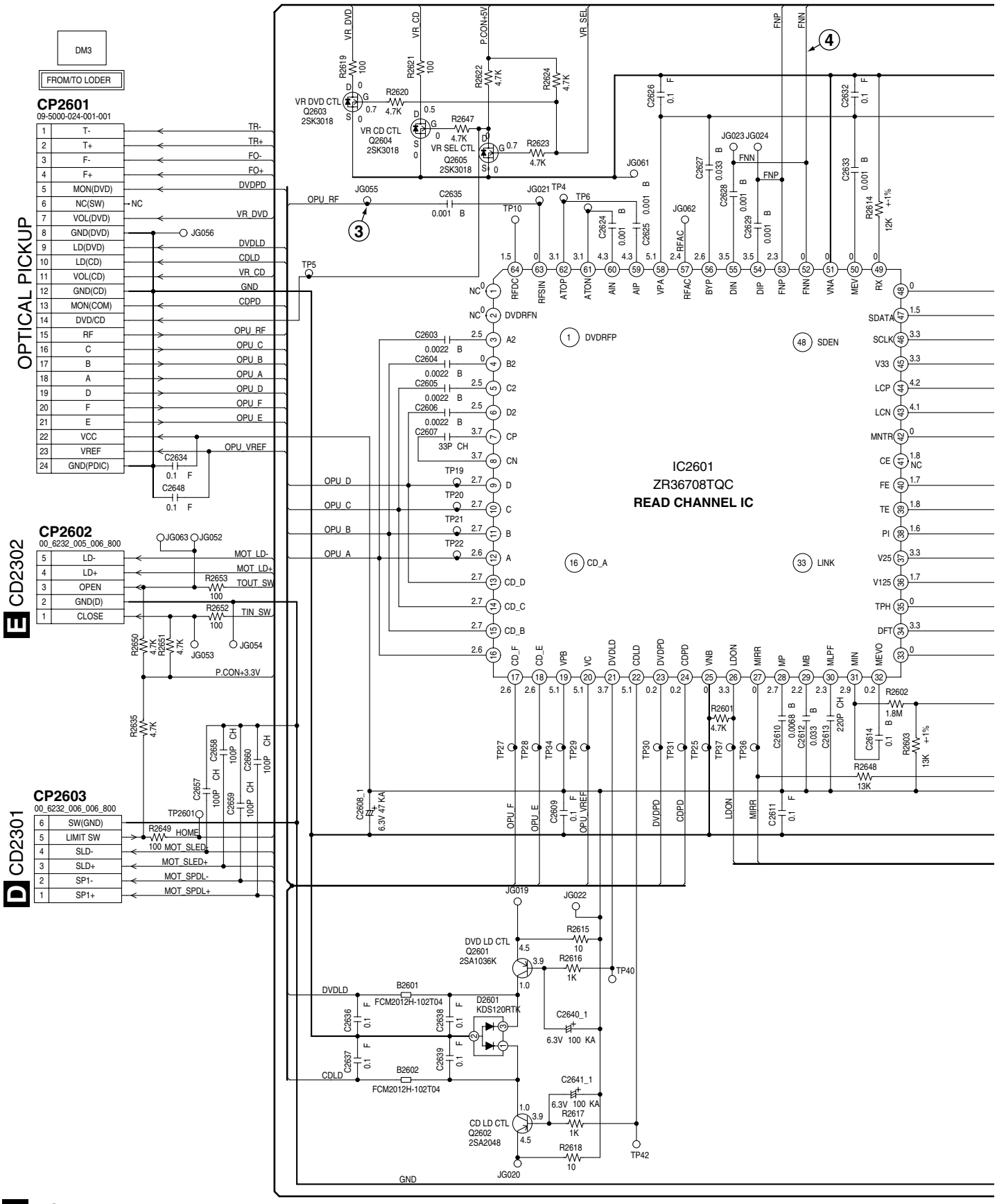
A 2/4

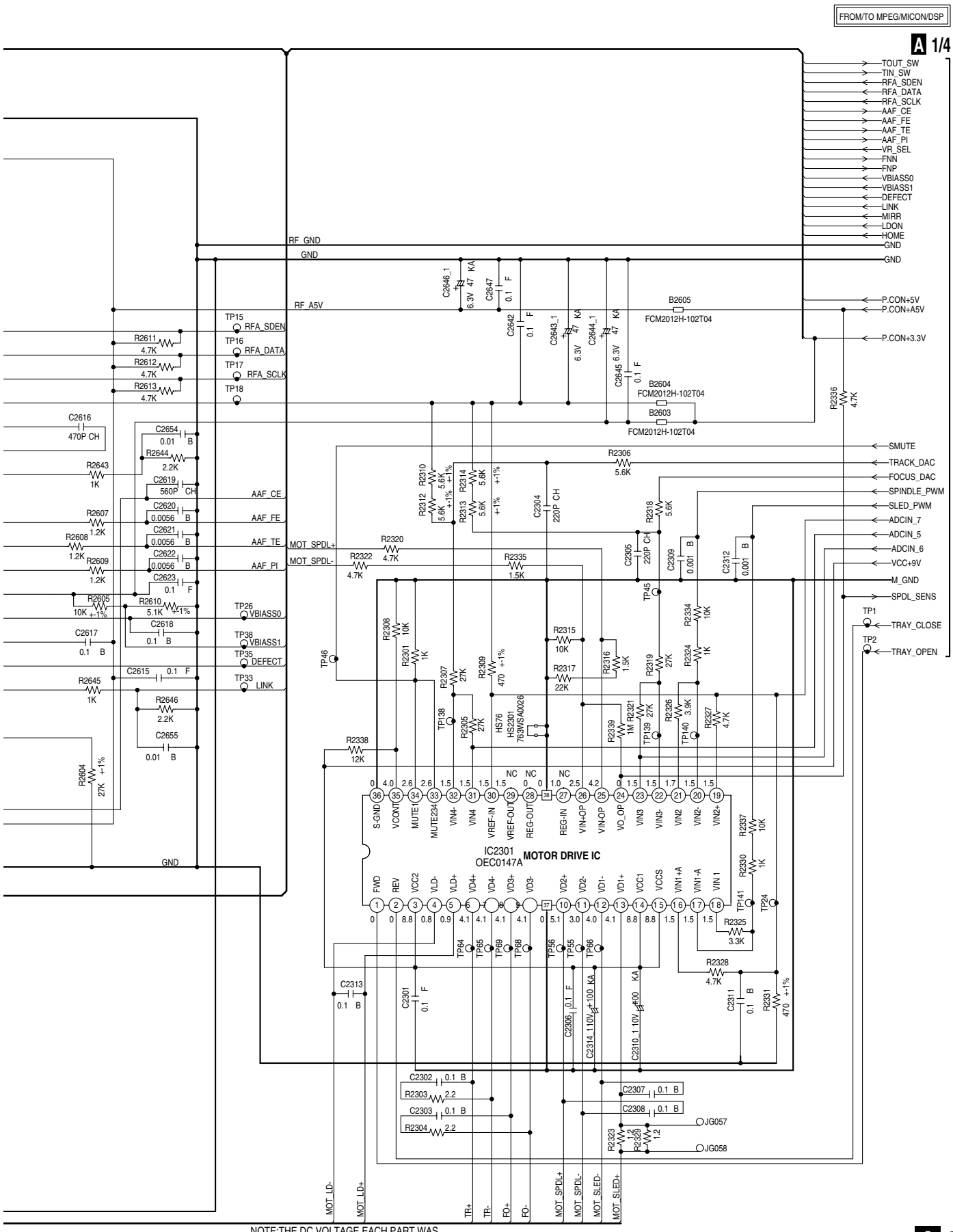

64M SDRAM IC
IC4005 HY57V161610ETP-7
VSS
DQ15
VSSQ
DQ14
DQ13
VDDQ
DQ12
DQ11
VSSQ
DQ10
DQ9
VDDQ
DQ8
VSS
NC
UDQM
CLK
CKE
NC
A11
A9
A8
A7
A6
A5
A4
VSS
VDD
DQ0
VDDQ
DQ1
DQ2
VSSQ
DQ3
DQ4
VDDQ
DQ5
DQ6
VSSQ
DQ7
VDD
LDQM
WE
CAS
RAS
CS
BA0
BA1
A10/AP
A0
A1
A2
A3
VDD
SD_D15
SD_D14
SD_D13
SD_D12
SD_D11
SD_D10
SD_D9
SD_D8
SD_A11
SD_A9
SD_A8
SD_A7
SD_A6
SD_A5
SD_A4
SD_D0
SD_D1
SD_D2
SD_D3
SD_D4
SD_D5
SD_D6
SD_D7
RAMDQM
RAMWE#
RAMCAS#
RAMRAS#
RAMCS1#
SD_BA0
RAMCS0#
SD_A10
SD_A0
SD_A1
SD_A2
SD_A3
RAMCLK
C4040
C4041
C4050
C4045
C4046
C4047
0.1 F
R4048
47K
C4021_1
6.3V 220 KA
2

3.5 DVD PCB ASSY(3/4)

A 3/4 DVD PCB ASSY (A2E514X130)

- **RF AMP/DSP BLOCK**

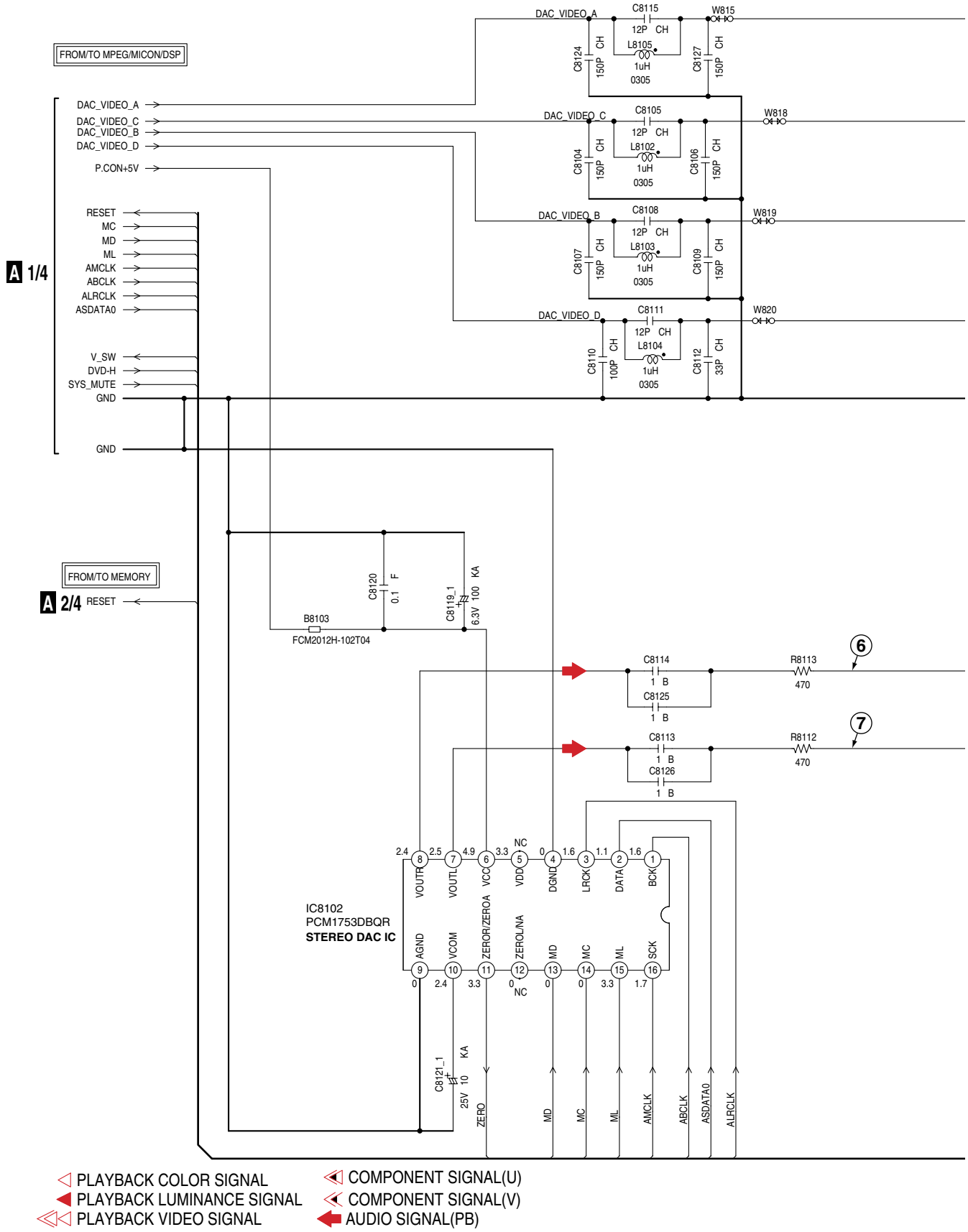



FROM/TO MPEG/MICON/DSP
A 1/4
TOUT_SW
TIN_SW
RFA_SDEN
RFA_DATA
RFA_SCLK
AAF_CE
AAF_FE
AAF_TE
AAF_PI
VR_SEL
FNN
FNP
VBIASS0
VBIASS1
DEFECT
LINK
MIRR
LDON
HOME
GND
GND
GND
RF_GND
RF_A5V
P.CON+5V
P.CON+A5V
P.CON+3.3V
B2605
FCM2012H-102T04
B2604
FCM2012H-102T04
B2603
FCM2012H-102T04
SMUTE
TRACK_DAC
FOCUS_DAC
SPINDLE_PWM
SLED_PWM
ADCIN_7
ADCIN_5
ADCIN_6
VCC+9V
M_GND
SPDL_SENS
TRAY_CLOSE
TRAY_OPEN
IC2301
OEC0147A
MOTOR DRIVE IC
S-GND
VCONT
MUTE
MUTE234
VIN4-
VIN4
VREF-IN
VREF-OUT
REG-OUT
REG-IN
VIN+OP
VIN-OP
VO_OP
VIN3
VIN3-
VIN2
VIN2-
VIN2+
FWD
REV
VCC2
VLD-
VLD+
VD4+
VD4-
VD3+
VD3-
VD2+
VD2-
VD1-
VD1+
VCC1
VCCS
VIN1+A
VIN1-A
VIN 1
MOT_LD-
MOT_LD+
TR+
TR-
FO+
FO-
MOT_SPDL+
MOT_SPDL-
MOT_SLED-
MOT_SLED+
JG057
JG058
NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.
A 3/4

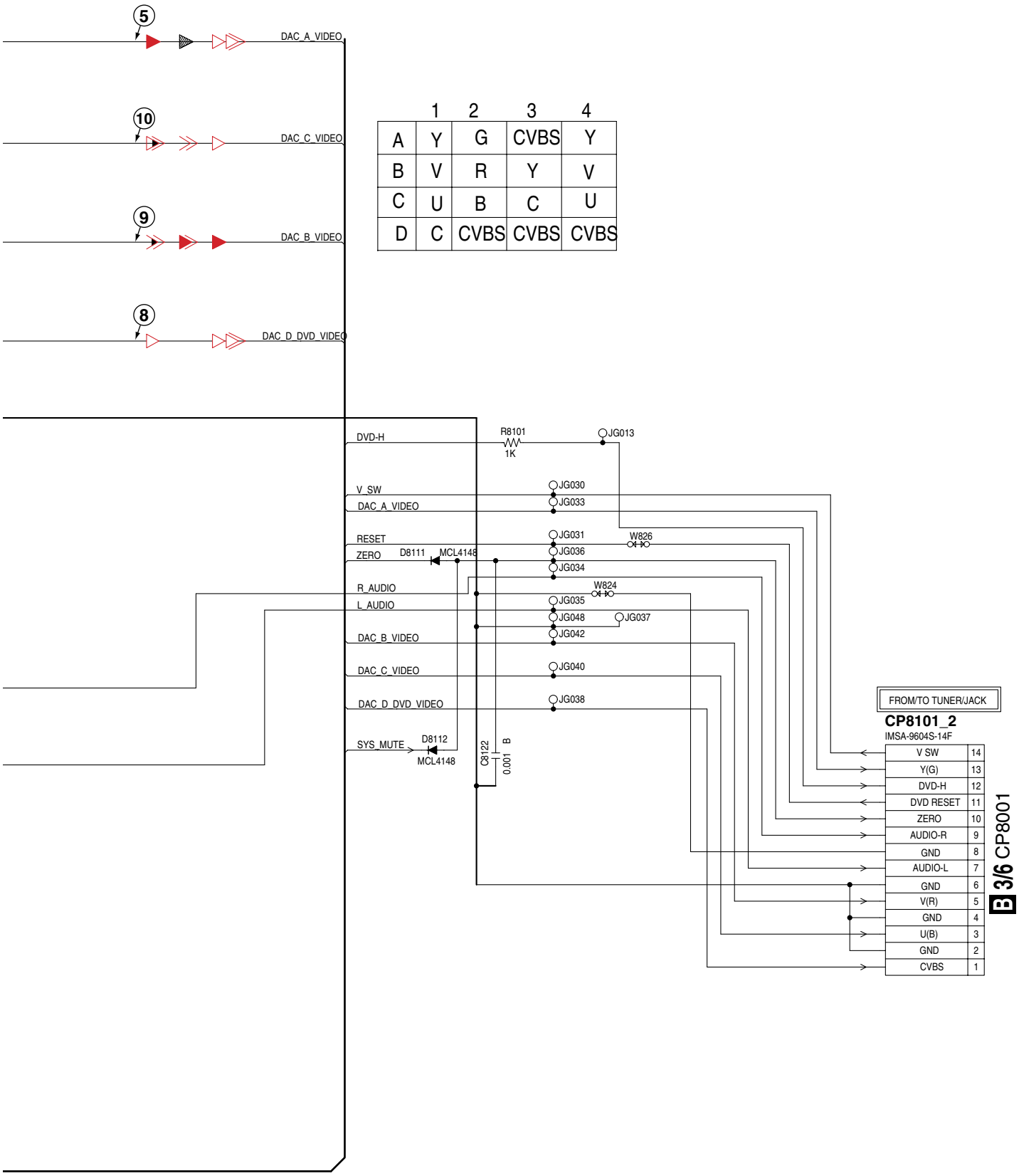
3.6 DVD PCB ASSY(4/4)

A 4/4 DVD PCB ASSY (A2E514X130)

● **AUDIO/VIDEO BLOCK**



A 4/4



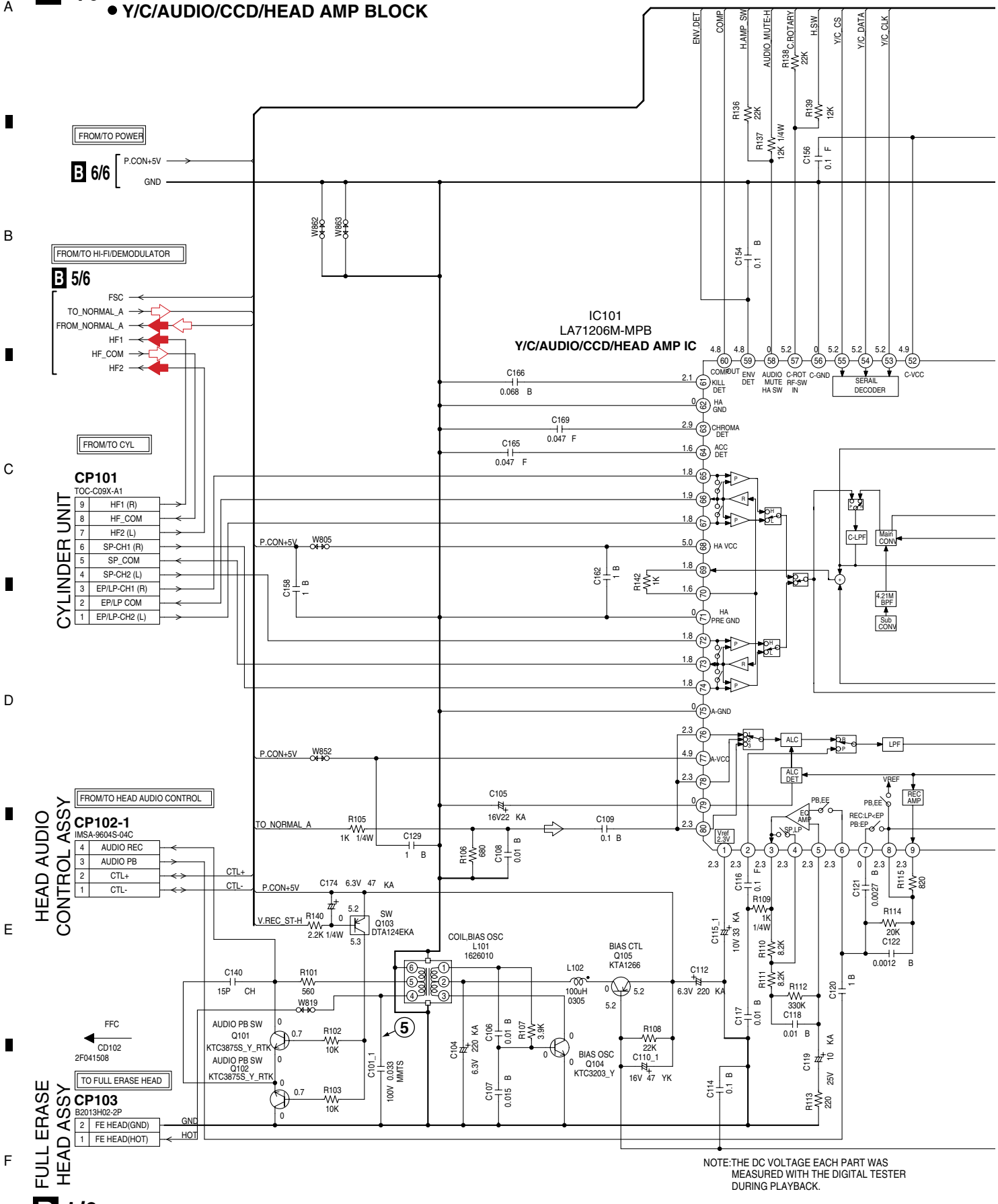
	1	2	3	4
A	Y	G	CVBS	Y
B	V	R	Y	V
C	U	B	C	U
D	C	CVBS	CVBS	CVBS

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

A 4/4

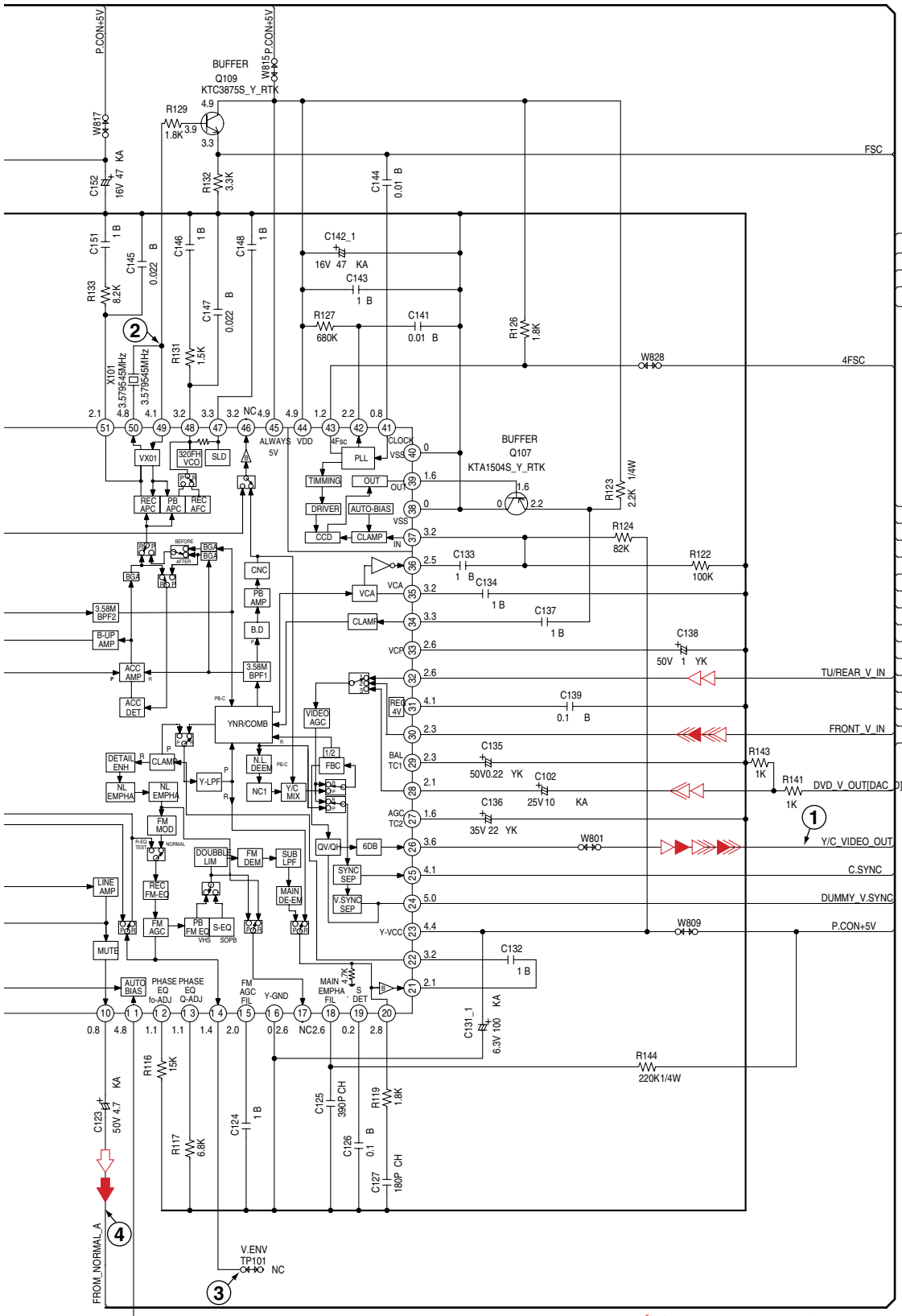
B 1/6 VCR PCB ASSY (A2E514X010)

● Y/C/AUDIO/CCD/HEAD AMP BLOCK



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

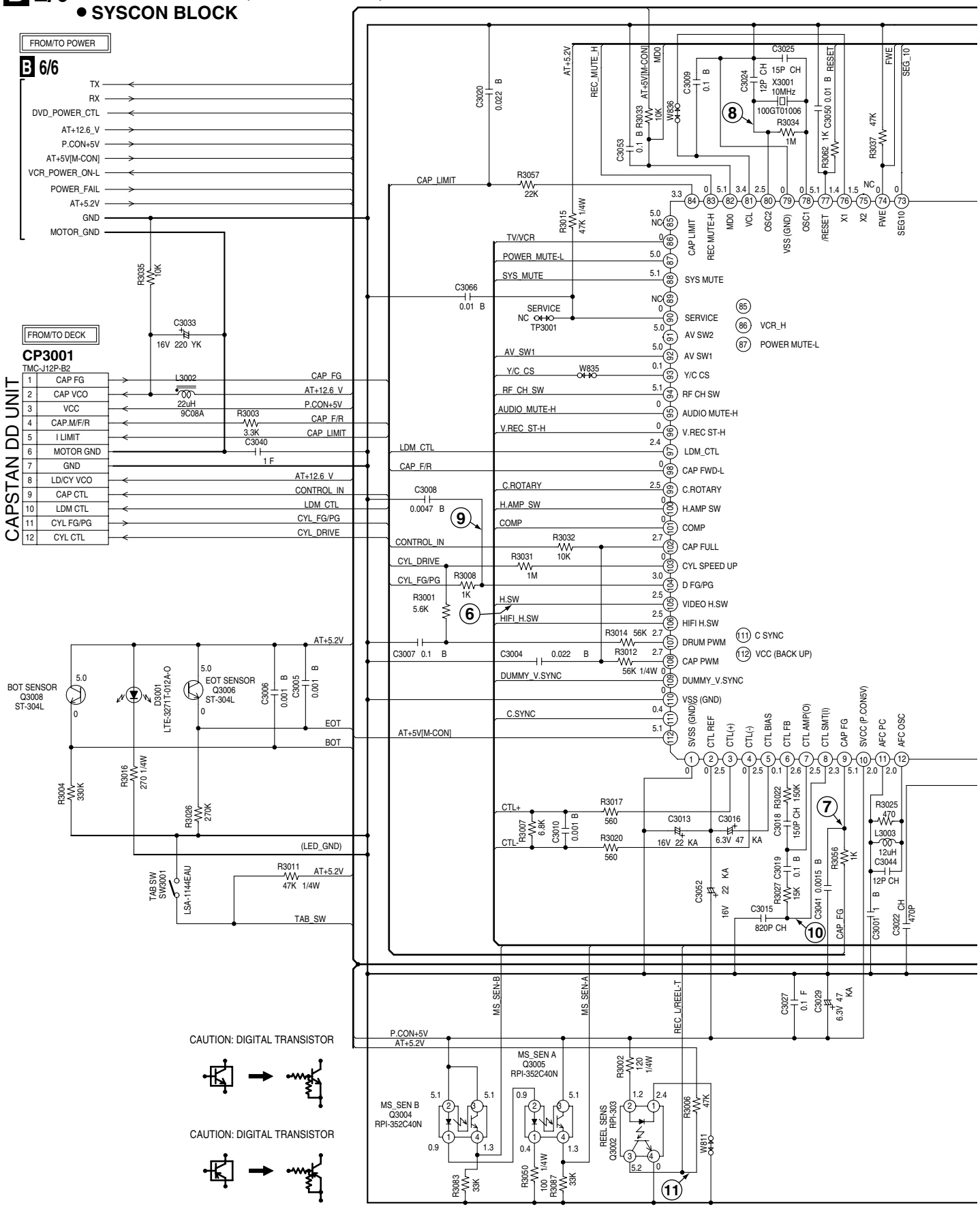
B 1/6


P.CON+5V
BUFFER
Q109
KTC3875S_Y_RTK
R129
1.8K
R132
3.3K
C152
16V 47 KA
C144
0.01 B
FSC
C151
1 B
C145
0.022 B
C146
1 B
C148
1 B
C147
0.022 B
R133
8.2K
R131
1.5K
X101
3.5795454MHz
C142_1
16V 47 KA
C143
1 B
R127
680K
C141
0.01 B
R126
1.8K
W828
4FSC
BUFFER
Q107
KTA1504S_Y_RTK
R123
2.2K 1/4W
R124
82K
R122
100K
C133
1 B
C134
1 B
C137
1 B
C138
50V 1 YK
C139
0.1 B
C135
50V0.22 YK
C102
25V10 KA
C136
35V 22 YK
R143
1K
R141
1K
W801
W809
C132
1 B
C131_1
6.3V 100 KA
R144
220K1/4W
C123
50V 4.7 KA
R116
15K
R117
6.8K
C124
1 B
C125
390P CH
R119
1.8K
C126
0.1 B
C127
180P CH
V.ENV
TP101
NC
FROM_NORMAL_A
VX01
320FH VCO
SLD
PLL
CLOCK GEN
TIMMING
DRIVER
AUTO-BIAS
CCD
CLAMP
VCA
YNR/COMB
VIDEO AGC
Y/C MIX
N.L DEEM
Y-LPF
NC1
FBC
6DB
QV/QH
SYNC SEP
V.SYNC SEP
FM DEM
SUB LPF
MAIN DE-EM
DOUBBLE LIM
FM MOD
FM AGC
S-EQ
PB FM EQ
REC FM-EQ
LINE AMP
MUTE
AUTO BIAS
PHASE EQ fo-ADJ
PHASE EQ C-ADJ
FM AGC FIL
Y-GND
MAIN EMPHA FIL
S DET
3.58M BPF2
B-UP AMP
ACC AMP
ACC DET
3.58M BPF1
B.D
PB AMP
CNC
DETAIL ENH
NL EMPHA
REC APC
PB APC
REC AFC
ROT P
ROT B
BGA
BEFORE
AFTER
Y-VCC
ALWAYS 5V
VDD
4Fsc
VSS
OUT
IN
VCP
BAL TC1
AGC TC2
REC 4V
FROM/TO TUNER/JACK
DVD_V_OUT[DAC_D]
FRONT_V_IN
TU/REAR_V_IN
Y/C_VIDEO_OUT
FSC
B 3/6
FROM/TO SYSCON
4FSC
Y/C_CLK
Y/C_DATA
Y/C_CS
DUMMY_V.SYNC
V.REC_ST-H
C.ROTARY
AUDIO_MUTE-H
CTL-
CTL+
H.AMP_SW
COMP
ENV.DET
H.SW
C.SYNC
B 2/6
TU/REAR_V_IN
FRONT_V_IN
DVD_V_OUT[DAC_D]
Y/C_VIDEO_OUT
C.SYNC
DUMMY_V.SYNC
P.CON+5V
1
2
3
4
PLAYBACK VIDEO SIGNAL
RECORD COLOR SIGNAL
RECORD LUMINANCE SIGNAL
AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
PLAYBACK COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
TUNER VIDEO SIGNAL
CAUTION: DIGITAL TRANSISTOR

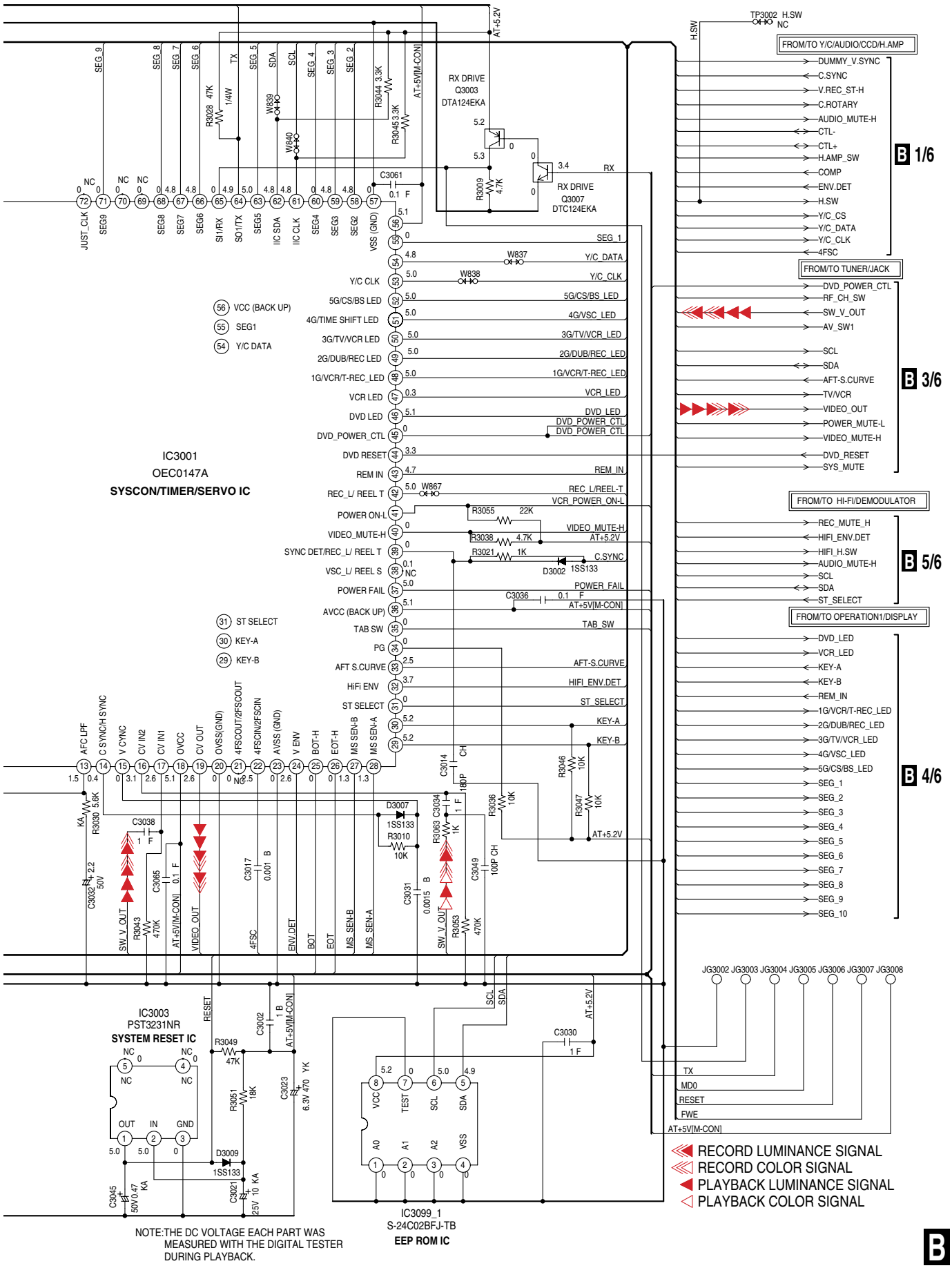
B 1/6

B 2/6 VCR PCB ASSY (A2E514X010)

● SYSCON BLOCK



B 2/6

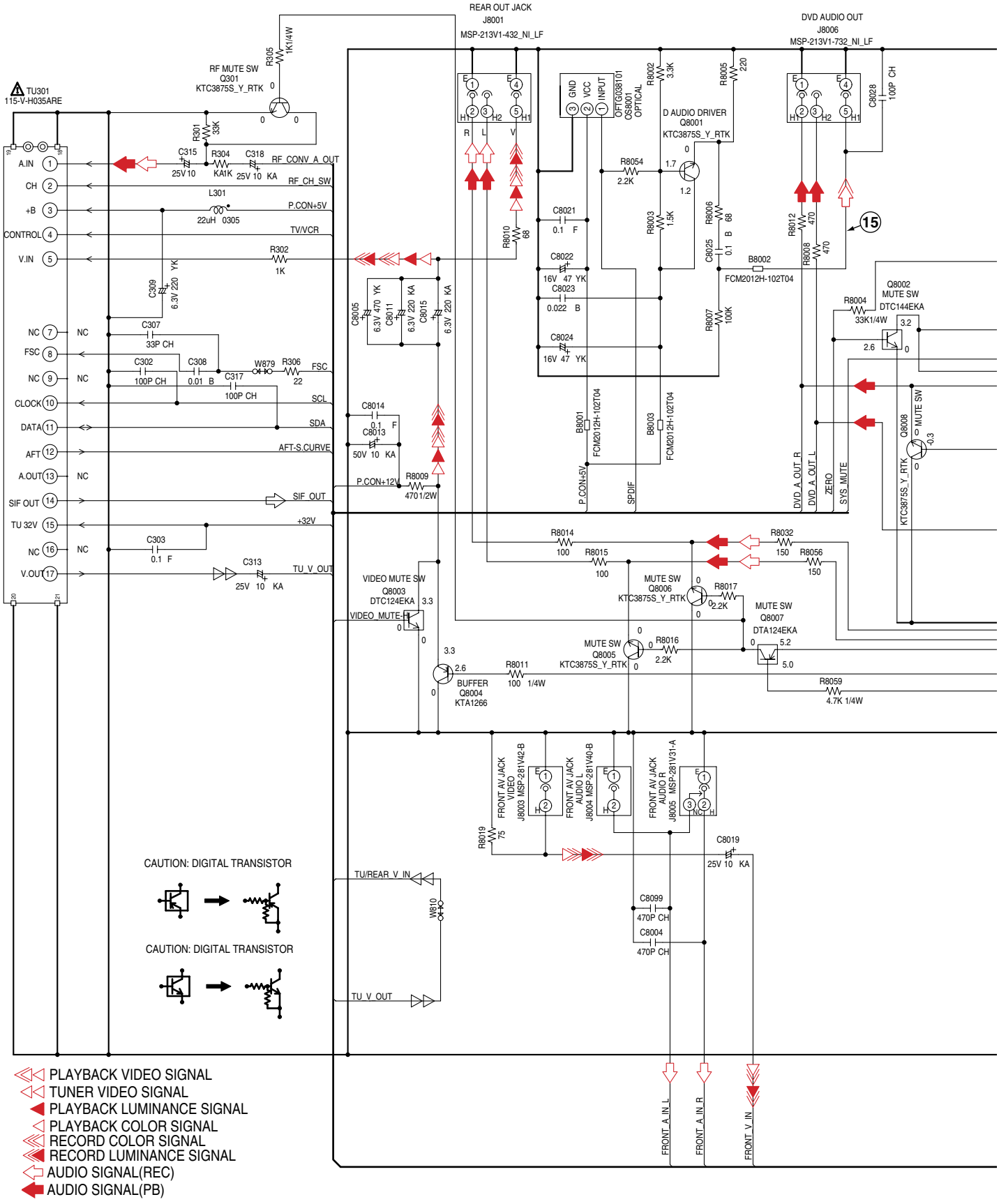


NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

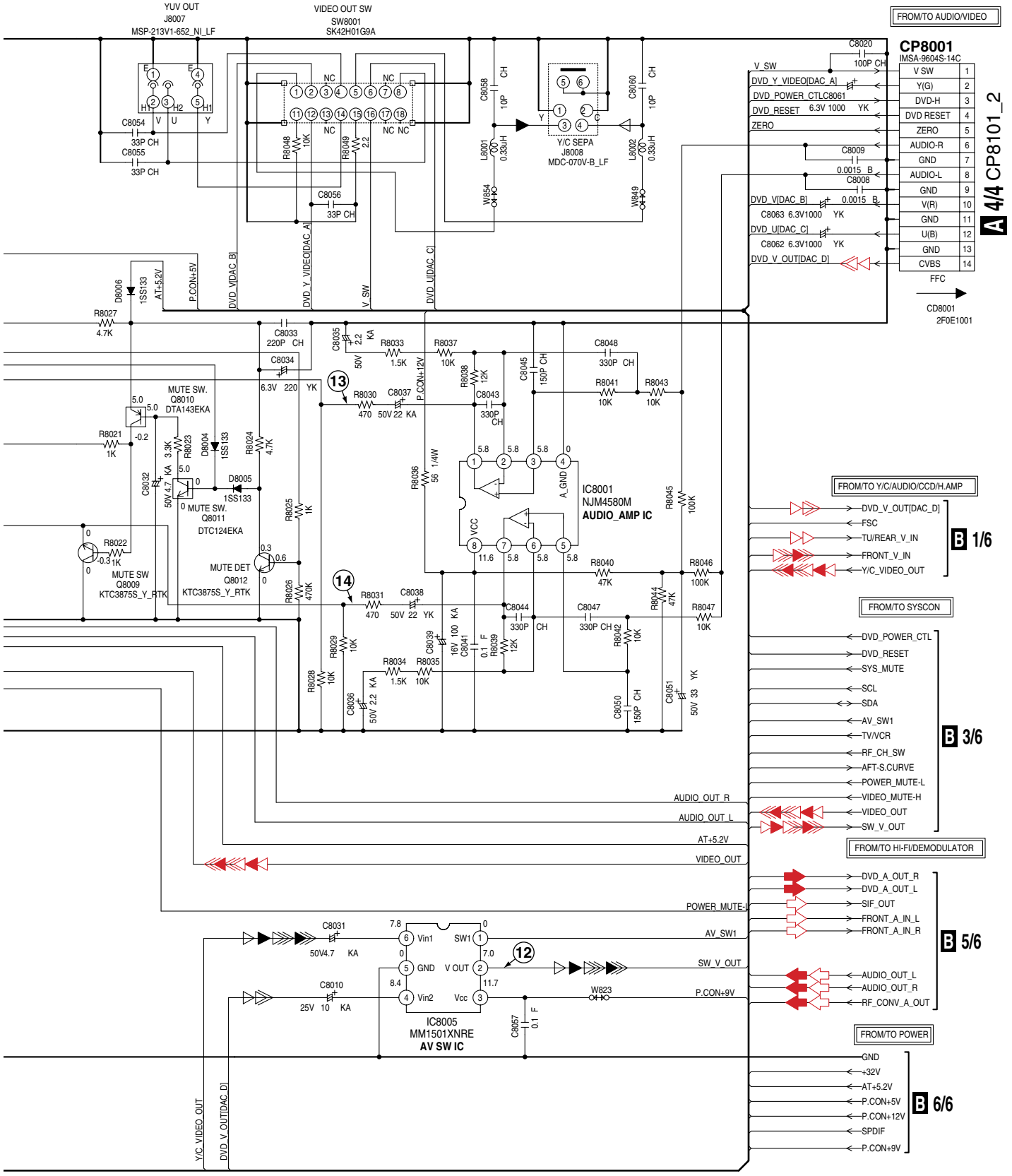
B 2/6

B 3/6 VCR PCB ASSY (A2E514X010)

● **TUNER/JACK BLOCK**



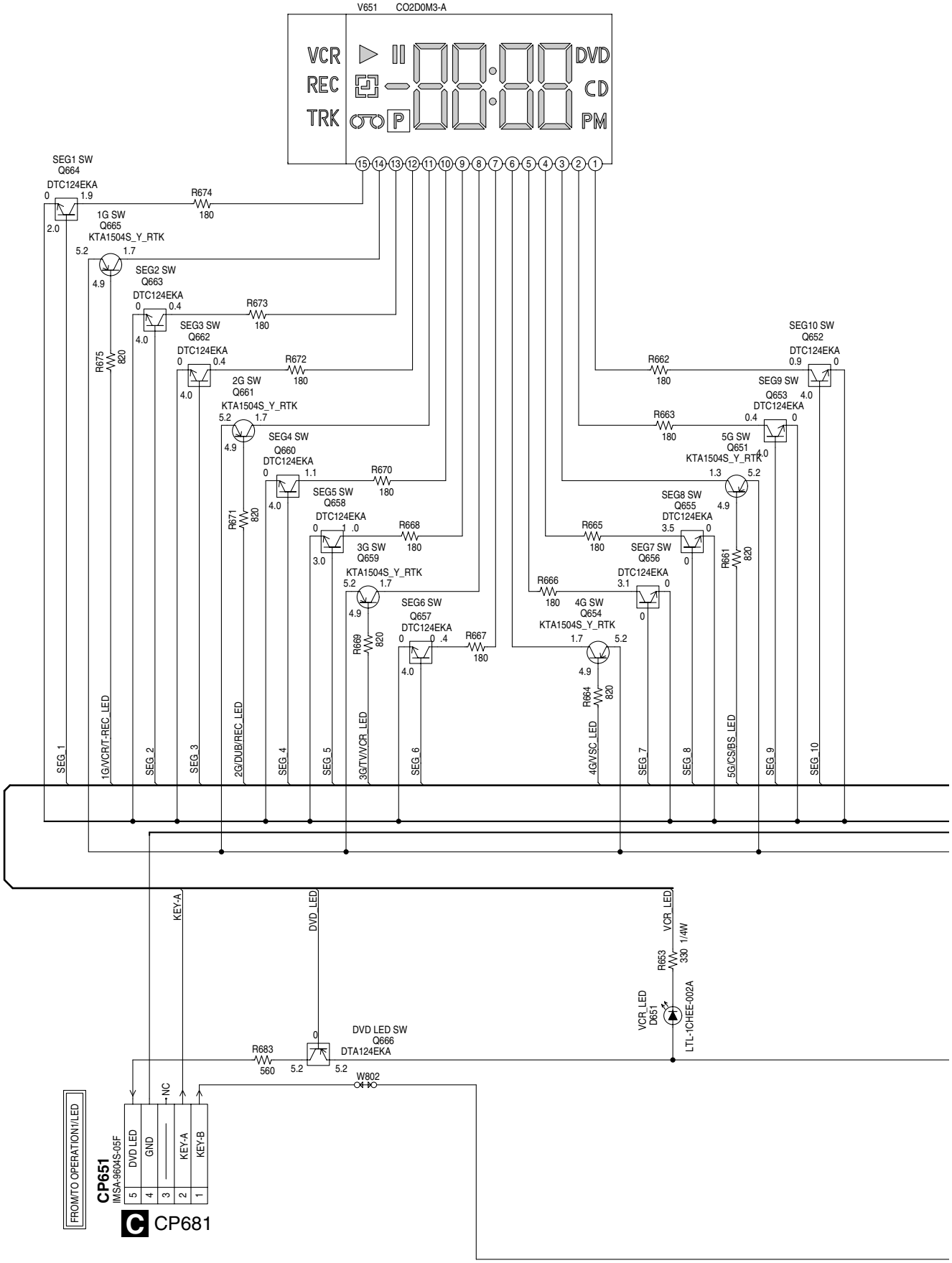
B 3/6


YUV OUT
J8007
MSP-213V1-652_NI_LF
VIDEO OUT SW
SW8001
SK42H01G9A
Y/C SEPA
J8008
MDC-070V-B_LF
FROM/TO AUDIO/VIDEO
CP8001
IMSA-9604S-14C
V SW 1
Y(G) 2
DVD-H 3
DVD RESET 4
ZERO 5
AUDIO-R 6
GND 7
AUDIO-L 8
GND 9
V(R) 10
GND 11
U(B) 12
GND 13
CVBS 14
FFC
CD8001
2F0E1001
A 4/4 CP8101_2
DVD_Y_VIDEO[DAC_A]
DVD_POWER_CTLC8061
DVD_RESET 6.3V 1000 YK
ZERO
DVD_V[DAC_B]
C8063 6.3V1000 YK
DVD_U[DAC_C]
C8062 6.3V1000 YK
DVD_V_OUT[DAC_D]
MUTE SW.
Q8010
DTA143EKA
MUTE SW.
Q8011
DTC124EKA
MUTE SW
Q8009
KTC3875S_Y_RTK
MUTE DET
Q8012
KTC3875S_Y_RTK
IC8001
NJM4580M
AUDIO_AMP IC
FROM/TO Y/C/AUDIO/CCD/H.AMP
DVD_V_OUT[DAC_D]
FSC
TU/REAR_V_IN
FRONT_V_IN
Y/C_VIDEO_OUT
B 1/6
FROM/TO SYSCON
DVD_POWER_CTL
DVD_RESET
SYS_MUTE
SCL
SDA
AV_SW1
TV/VCR
RF_CH_SW
AFT-S.CURVE
POWER_MUTE-L
VIDEO_MUTE-H
VIDEO_OUT
SW_V_OUT
B 3/6
AUDIO_OUT_R
AUDIO_OUT_L
AT+5.2V
VIDEO_OUT
FROM/TO HI-FI/DEMODULATOR
DVD_A_OUT_R
DVD_A_OUT_L
SIF_OUT
FRONT_A_IN_L
FRONT_A_IN_R
B 5/6
POWER_MUTE-L
AV_SW1
SW_V_OUT
P.CON+9V
AUDIO_OUT_L
AUDIO_OUT_R
RF_CONV_A_OUT
IC8005
MM1501XNRE
AV SW IC
FROM/TO POWER
GND
+32V
AT+5.2V
P.CON+5V
P.CON+12V
SPDIF
P.CON+9V
B 6/6
Y/C_VIDEO_OUT
DVD_V_OUT[DAC_D]
B 3/6

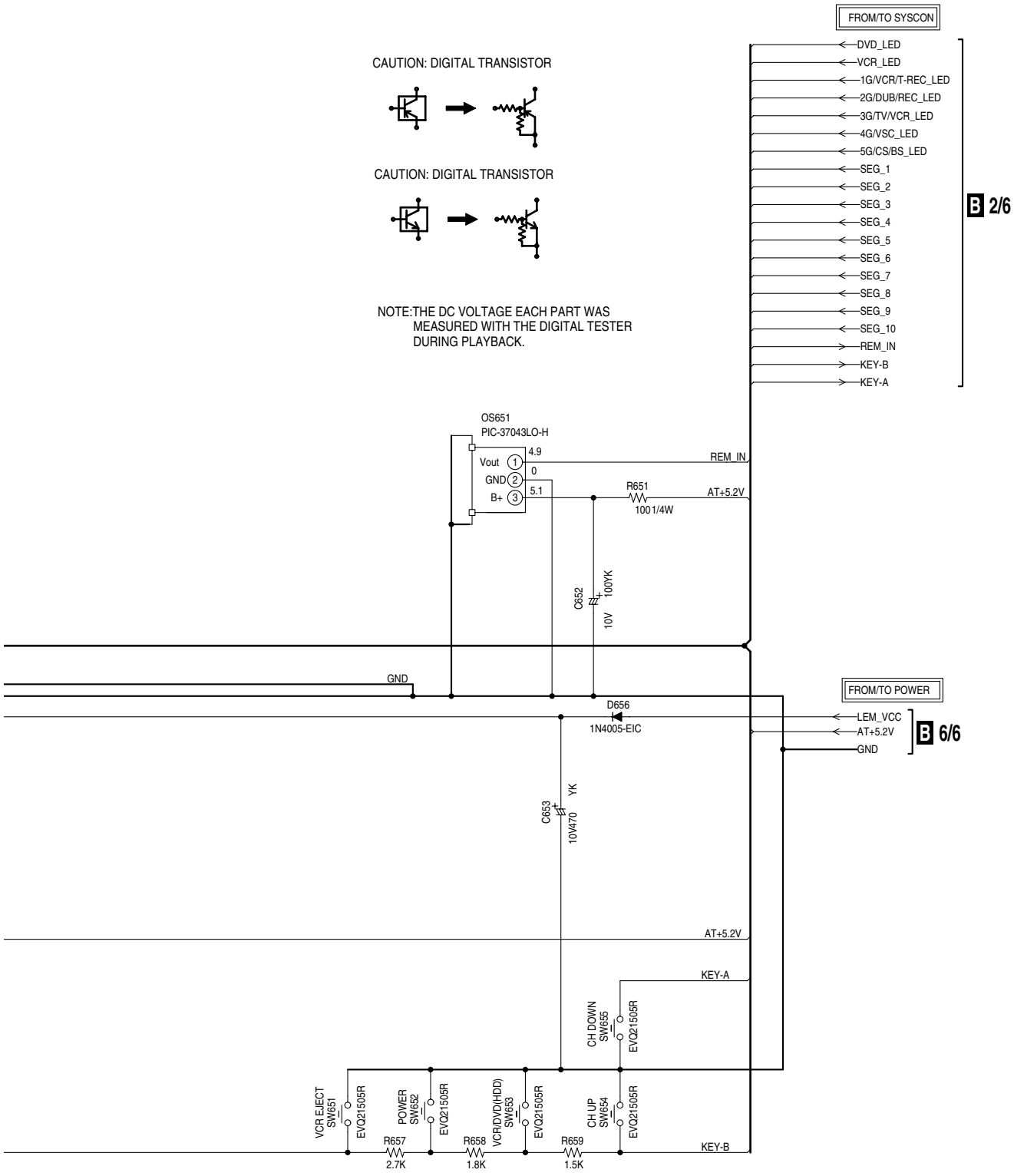
3.10 VCR PCB ASSY(4/6)

B 4/6 VCR PCB ASSY (A2E514X010)

- **OPERATION/DISPLAY BLOCK**



B 4/6

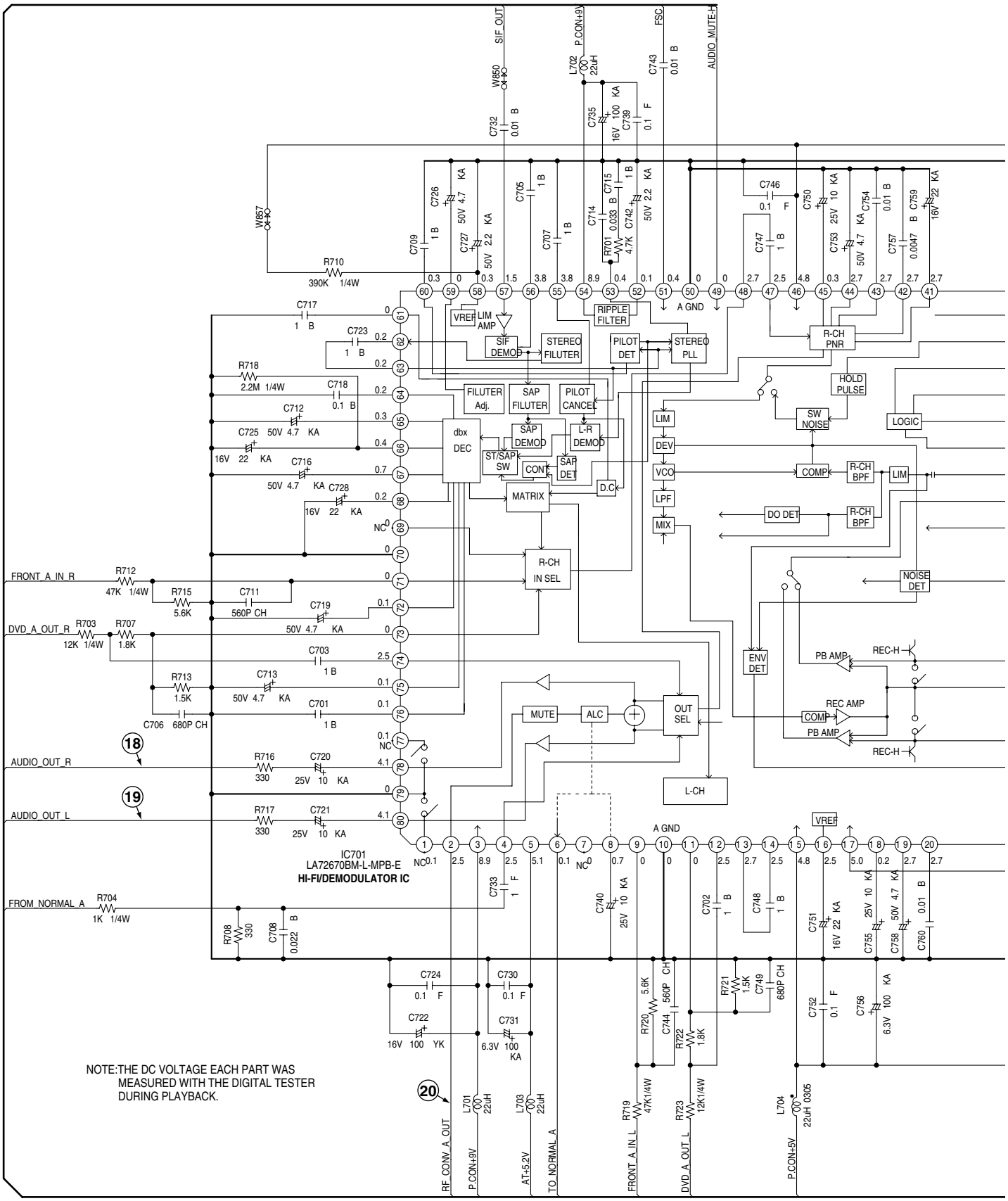

FROM/TO SYSCON
DVD_LED
VCR_LED
1G/VCR/T-REC_LED
2G/DUB/REC_LED
3G/TV/VCR_LED
4G/VSC_LED
5G/CS/BS_LED
SEG_1
SEG_2
SEG_3
SEG_4
SEG_5
SEG_6
SEG_7
SEG_8
SEG_9
SEG_10
REM_IN
KEY-B
KEY-A
B 2/6
CAUTION: DIGITAL TRANSISTOR
CAUTION: DIGITAL TRANSISTOR
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.
OS651
PIC-37043LO-H
Vout 1 4.9
GND 2 0
B+ 3 5.1
REM_IN
R651
1001/4W
AT+5.2V
C652
100YK
10V
GND
FROM/TO POWER
D656
1N4005-EIC
LEM_VCC
AT+5.2V
GND
B 6/6
C653
YK
10V470
AT+5.2V
KEY-A
CH DOWN SW655
EVQ21505R
VCR EJECT SW651
EVQ21505R
POWER SW652
EVQ21505R
VCR/DVD(HDD) SW653
EVQ21505R
CH UP SW654
EVQ21505R
R657
2.7K
R658
1.8K
R659
1.5K
KEY-B

B 4/6

3.11 VCR PCB ASSY(5/6)

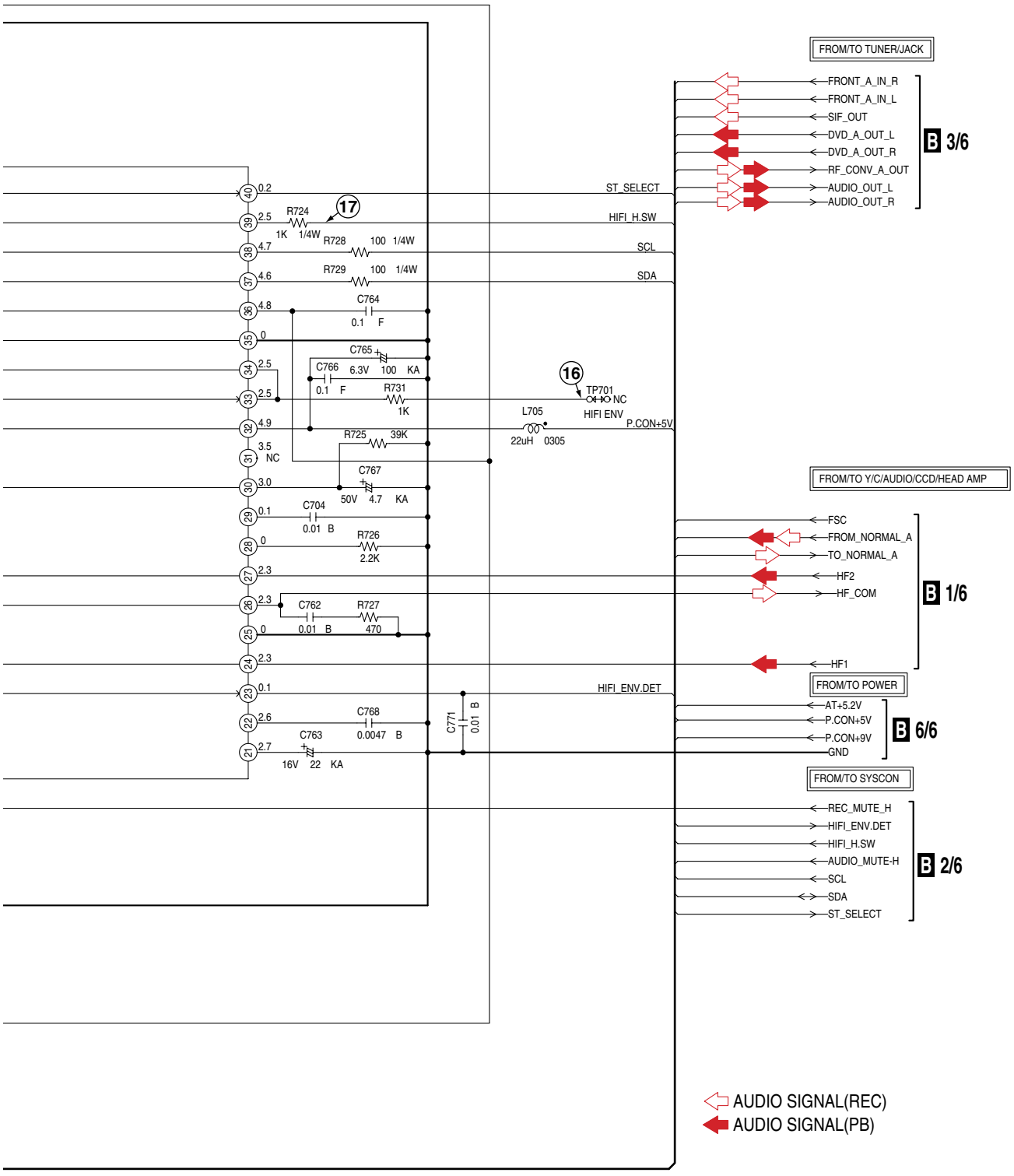
B 5/6 VCR PCB ASSY (A2E514X010)

- **Hi-Fi/DEMODULATOR BLOCK**



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

B 5/6

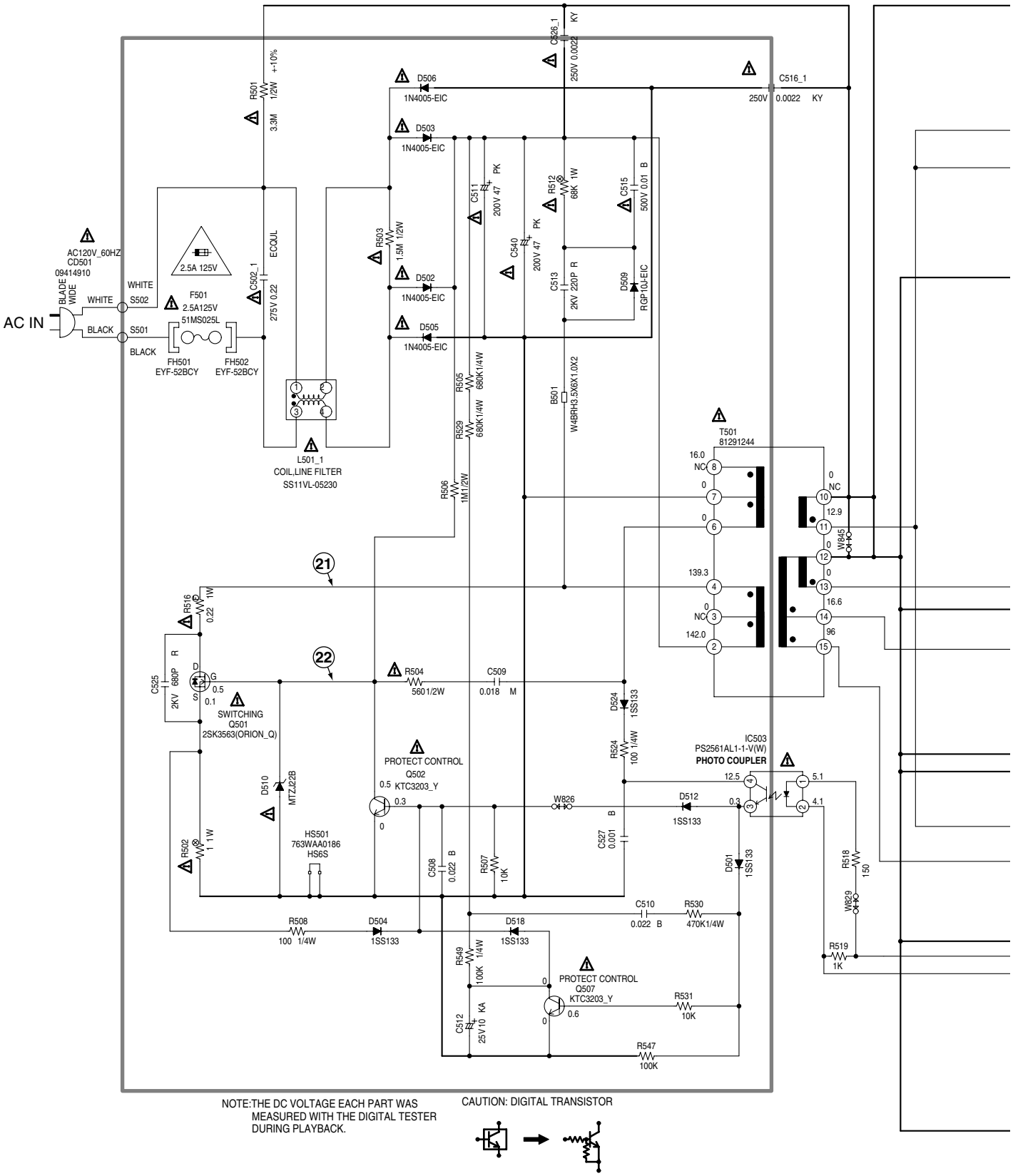

FROM/TO TUNER/JACK
FRONT_A_IN_R
FRONT_A_IN_L
SIF_OUT
DVD_A_OUT_L
DVD_A_OUT_R
RF_CONV_A_OUT
AUDIO_OUT_L
AUDIO_OUT_R
B 3/6
ST_SELECT
HIFI_H.SW
SCL
SDA
R724 1K 1/4W
R728 100 1/4W
R729 100 1/4W
C764 0.1 F
C765
C766 6.3V 100 KA
0.1 F
R731 1K
TP701 NC
HIFI ENV
L705 22uH 0305
P.CON+5V
R725 39K
C767 50V 4.7 KA
C704 0.01 B
R726 2.2K
C762 0.01 B
R727 470
C768 0.0047 B
C763 16V 22 KA
C771 0.01 B
HIFI_ENV.DET
FROM/TO Y/C/AUDIO/CCD/HEAD AMP
FSC
FROM_NORMAL_A
TO_NORMAL_A
HF2
HF_COM
B 1/6
HF1
FROM/TO POWER
AT+5.2V
P.CON+5V
P.CON+9V
GND
B 6/6
FROM/TO SYSCON
REC_MUTE_H
HIFI_ENV.DET
HIFI_H.SW
AUDIO_MUTE-H
SCL
SDA
ST_SELECT
B 2/6
AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)

B 5/6

3.12 VCR PCB ASSY(6/6)

B 6/6 VCR PCB ASSY (A2E514X010)

- **POWER BLOCK**



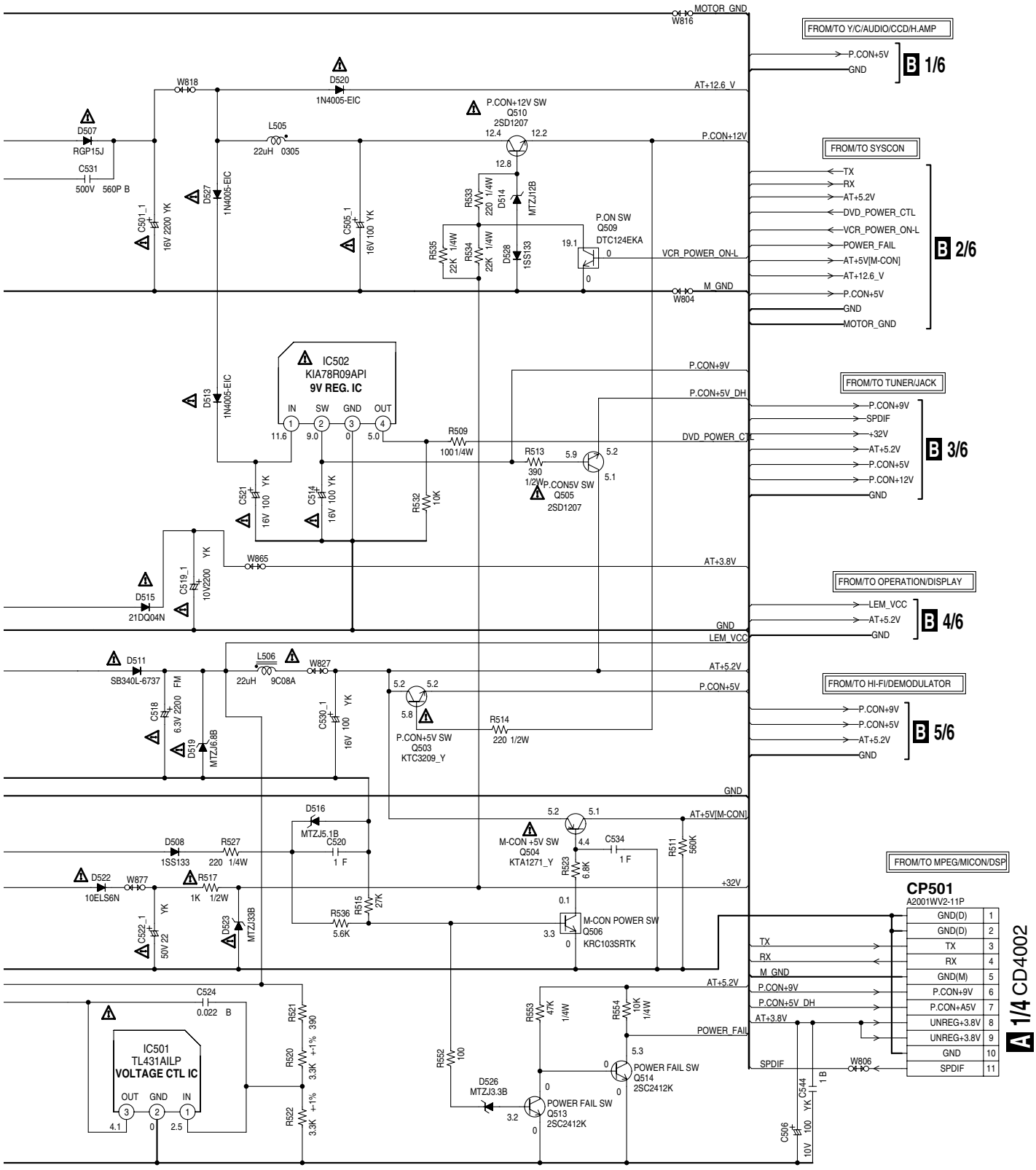
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

B 6/6

• NOTE FOR FUSE REPLACEMENT

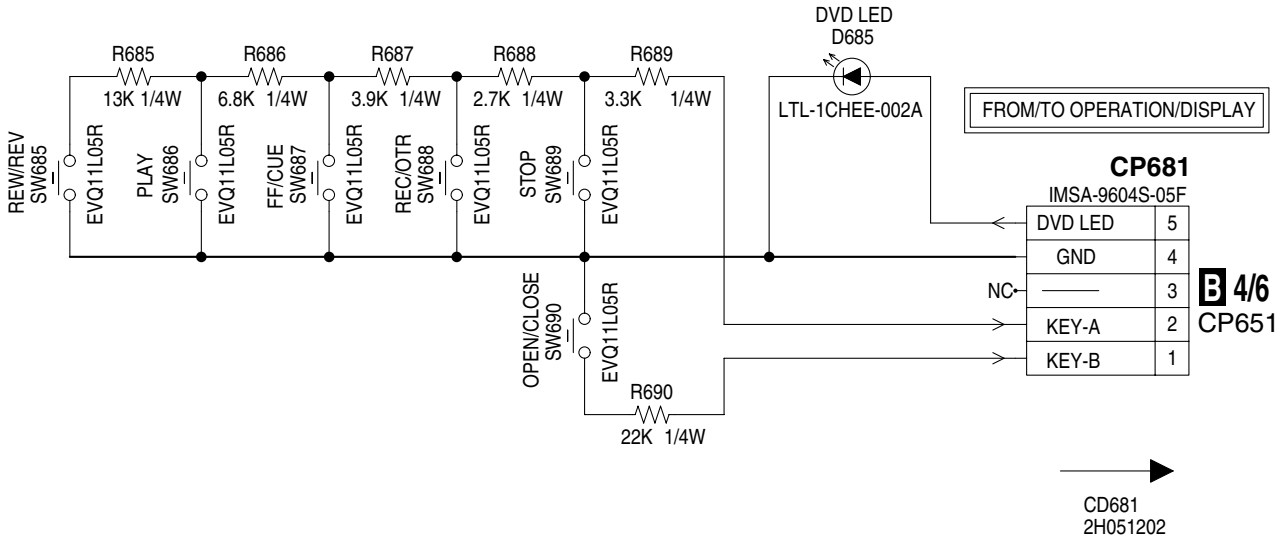
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS OF FUSE.



B 6/6

3.13 OPERATION PCB ASSY

C OPERATION PCB ASSY (A2E514X270)



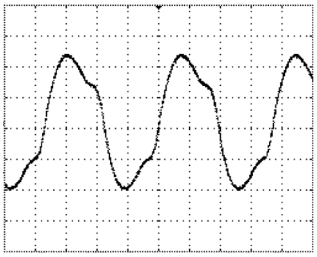
NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

3.14 WAVE FORMS

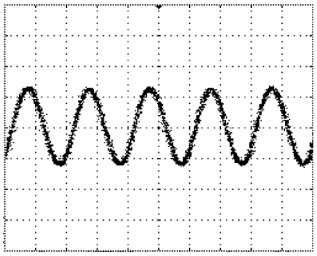
Note: The encircled numbers denote measuring point in the schematic diagram.

A DVD PCB ASSY

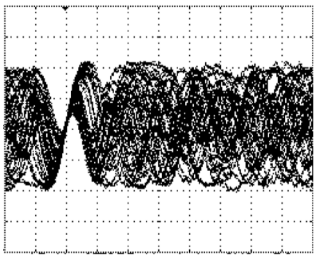
1 IC4001-pin 141 (XO)
V: 1V/div. H: 10nsec/div.



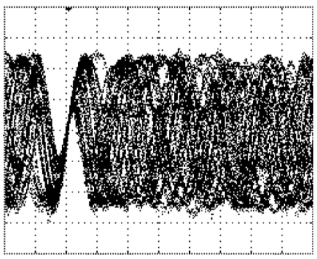
2 IC4005-pin 38 (RAM CLK)
V: 500mV/div. H: 200µsec/div.



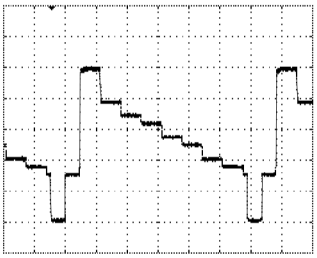
3 JG055 (OPU RF)
V: 200mV/div. H: 200nsec/div.



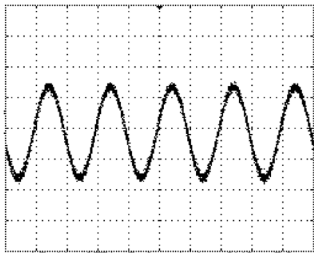
4 IC2601-pin 52 (FNN)
V: 100mV/div. H: 200nsec/div.



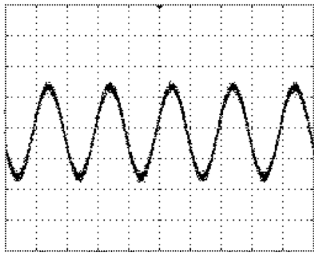
5 W815 (DAC_A_VIDEO)
V: 200mV/div. H: 10µsec/div.



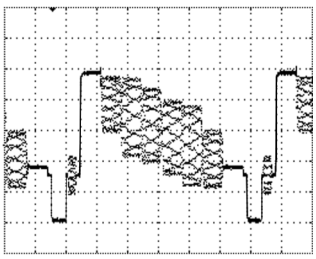
6 Foot of R8113 (R_AUDIO)
V: 1V/div. H: 500µsec/div.



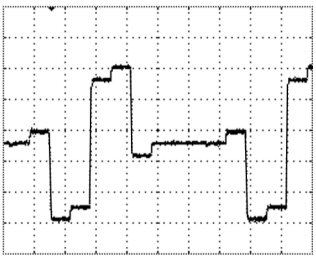
7 Foot of R8112 (L_AUDIO)
V: 1V/div. H: 500µsec/div.



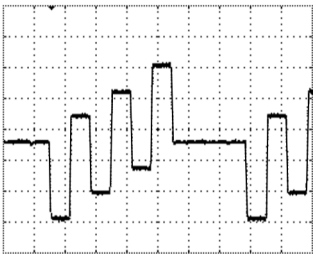
8 W820 (DAC_D_DVD_VIDEO)
V: 200mV/div. H: 10µsec/div.



9 W819 (DAC_B_VIDEO)
V: 100mV/div. H: 10µsec/div.

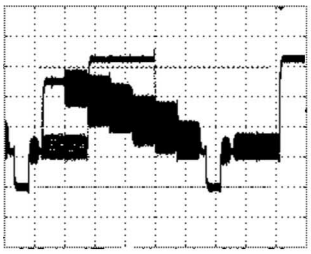


10 W818 (DAC_C_VIDEO)
V: 100mV/div. H: 10µsec/div.

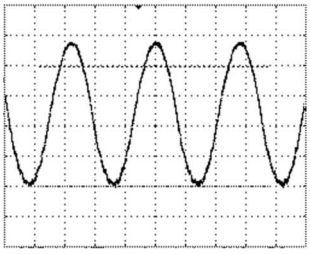


B VCR PCB ASSY

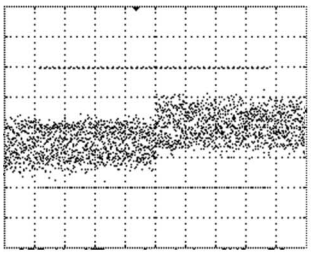
1 W801 (Y/C_VIDEO_OUT)
Playback
V: 500mV/div. H: 10µsec/div.



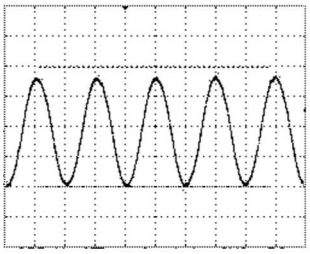
2 IC101-pin 49
Playback
V: 100mV/div. H: 100nsec/div.



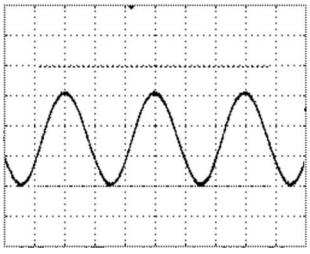
3 TP101 (V. ENV)
Playback
V: 100mV/div. H: 1msec/div.



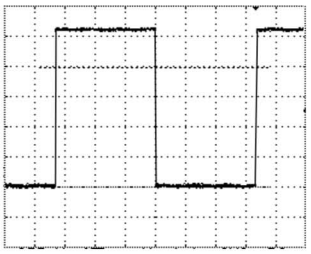
4 C123 –side (FROM_NORMAL_A)
Playback
V: 500mV/div. H: 200msec/div.



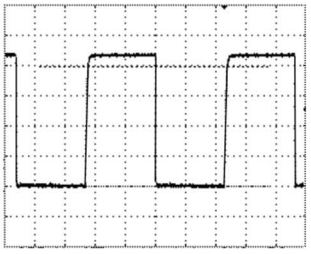
5 L101-pin 4 (HOT)
REC
V: 20V/div. H: 5µsec/div.



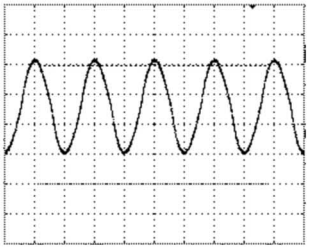
6 IC3001-pin 105 (H. SW)
Playback
V: 1V/div. H: 5msec/div.



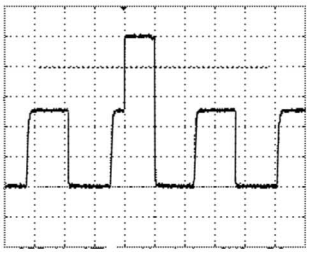
7 IC3001-pin 9 (CAP_FG)
Playback
V: 1V/div. H: 200µsec/div.



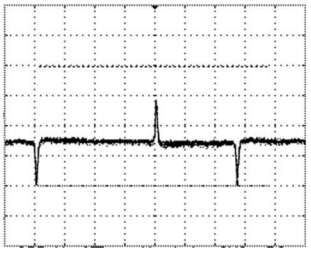
8 IC3001-pin 80 (OSC2)
Power ON
V: 1V/div. H: 50nsec/div.



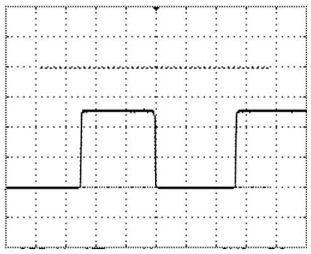
9 IC3001-pin 104 (CYL_FG/PG)
Playback
V: 1V/div. H: 500µsec/div.



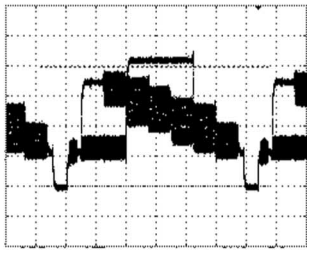
10 IC3001-pin 8 (CTL SMT (I))
Playback
V: 500mV/div. H: 5msec/div.



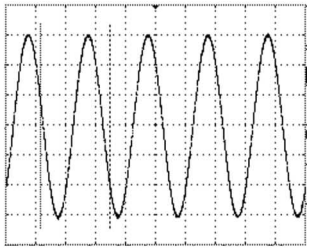
11 Q3002-pin 3 (REC_L/REEL-T)
Playback
V: 2V/div. H: 5msec/div.



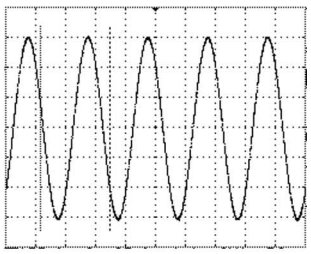
12 IC8005-pin 2 (SW V OUT)
V: 200mV/div. H: 10µsec/div.



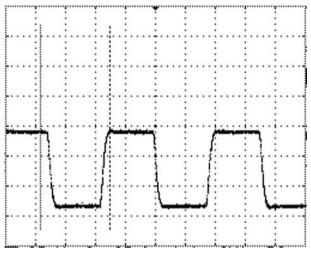
13 Foot of R8030 (DVD_A_OUT_R)
Playback
V: 100mV/div. H: 500µsec/div.



14 Foot of R8031 (DVD_A_OUT_L)
Playback
V: 100mV/div. H: 500µsec/div.

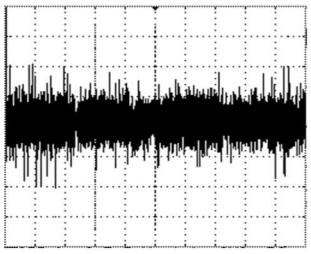


15 J8006-pin 5 (H1)
Playback
V: 200mV/div. H: 200nsec/div.

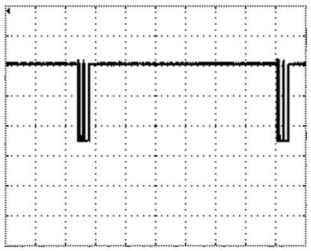


B VCR PCB ASSY

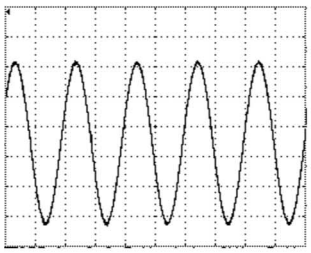
⑯ TP701 (HIFI ENV)
Playback
V: 1V/div. H: 10msec/div.



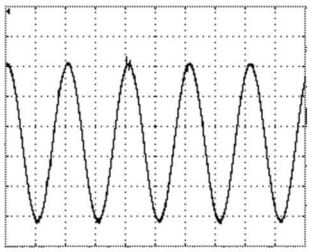
⑰ Foot of R724 (HIFI_H.SW)
Playback
V: 2V/div. H: 1msec/div.



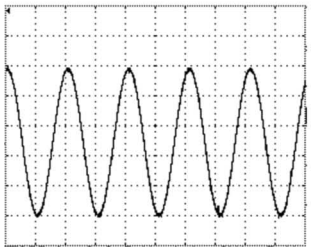
⑱ Foot of R716 (AUDIO_OUT_R)
Playback
V: 200mV/div. H: 500µsec/div.



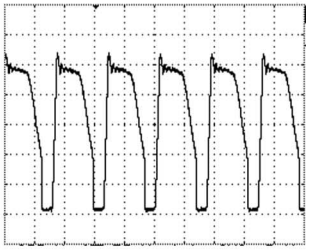
⑲ Foot of R717 (AUDIO_OUT_L)
Playback
V: 200mV/div. H: 500µsec/div.



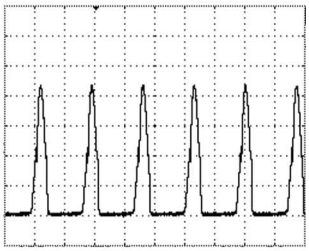
⑳ IC701-pin 2 (RF_CONV_A_OUT)
Playback
V: 200mV/div. H: 500µsec/div.



㉑ Foot of R516
Playback
V: 500mV/div. H: 5µsec/div.



㉒ Q501 Gate
Playback
V: 5V/div. H: 5µsec/div.



A

B

C

D

E

F

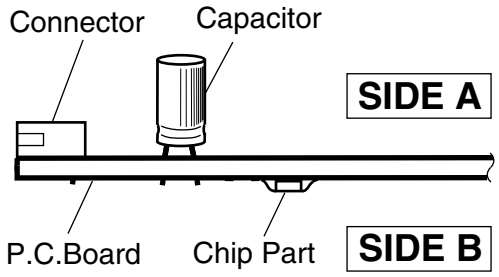
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

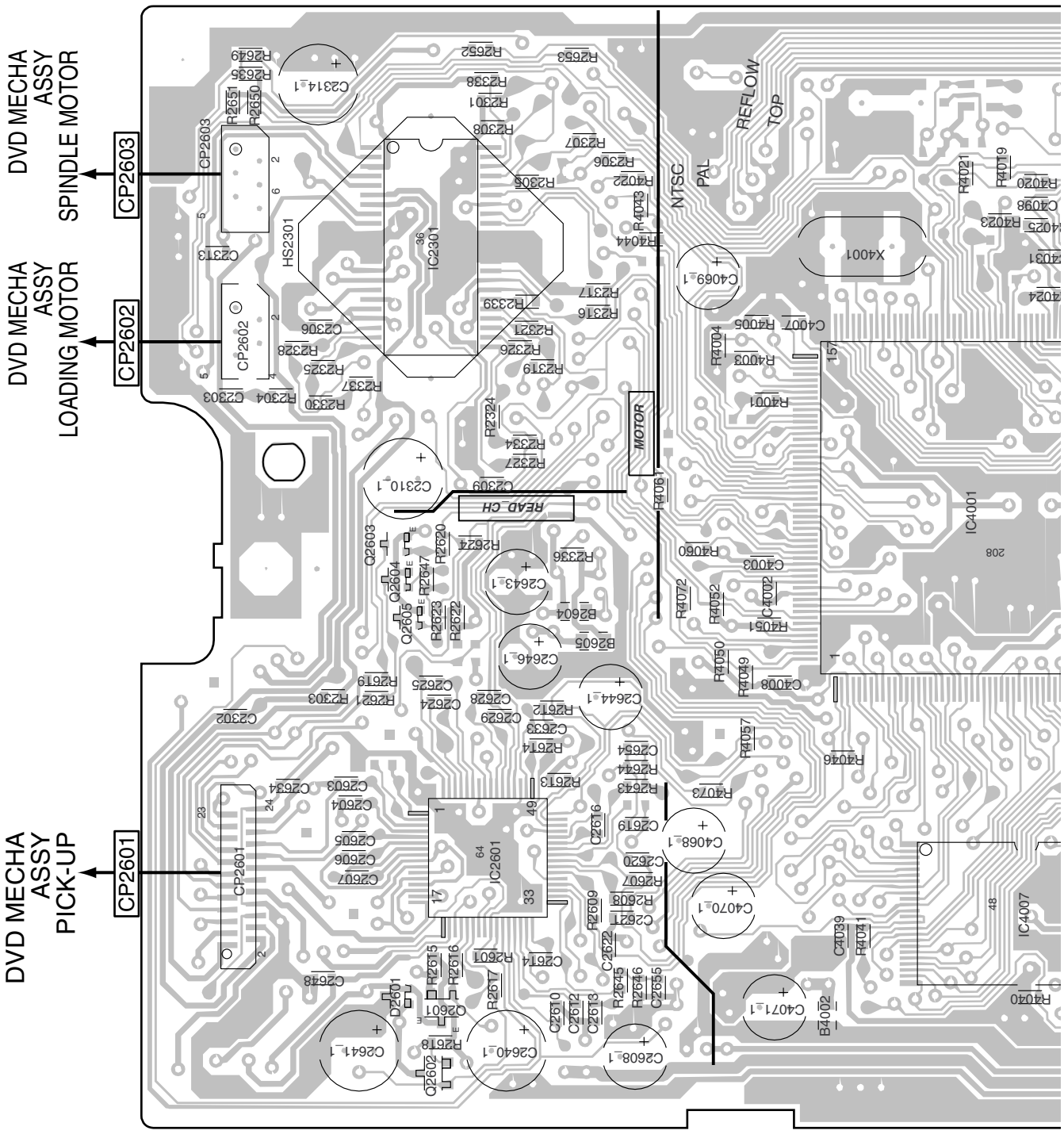
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



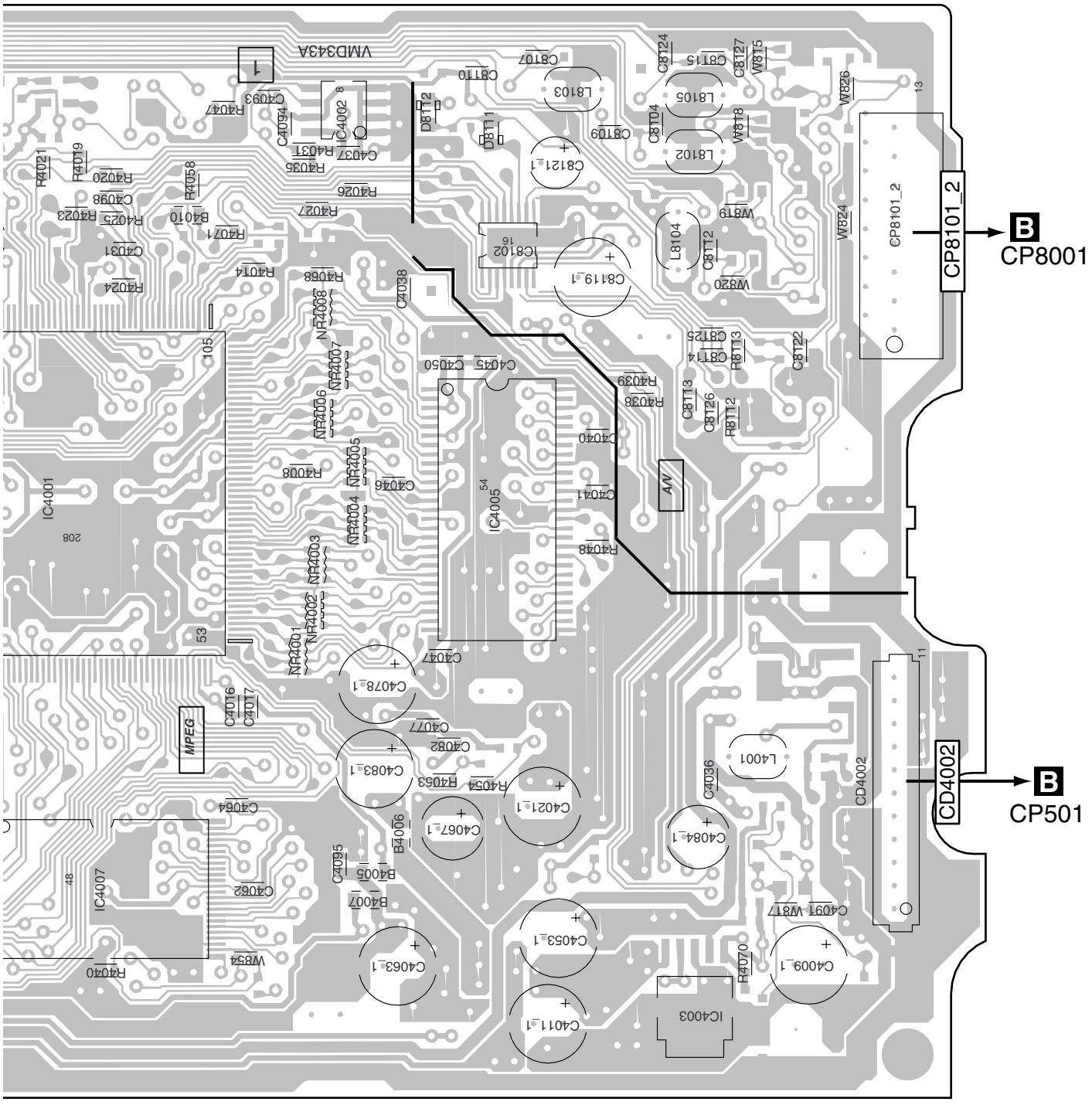
4.1 DVD PCB ASSY

SIDE A

A DVD PCB ASSY

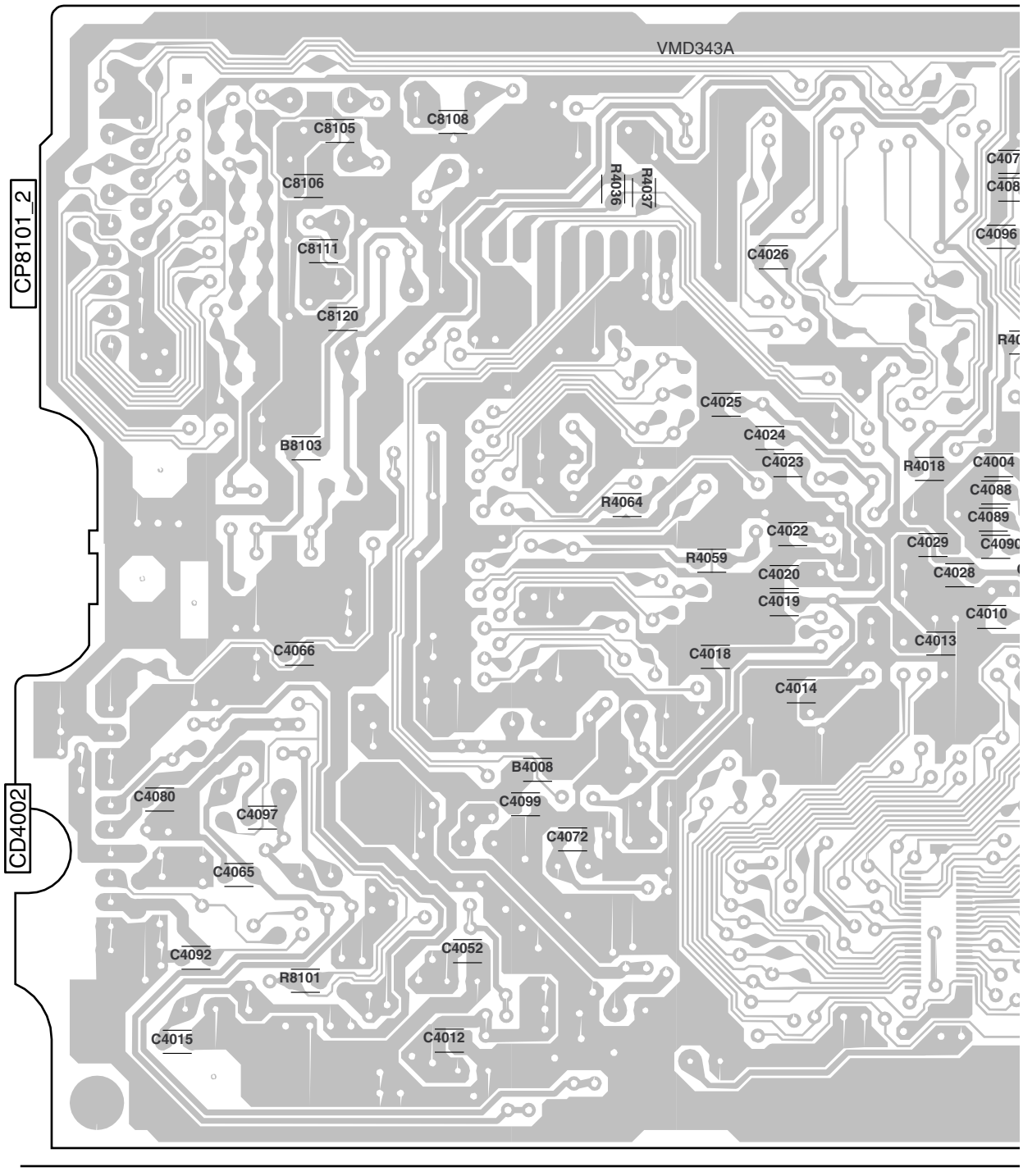


SIDE A

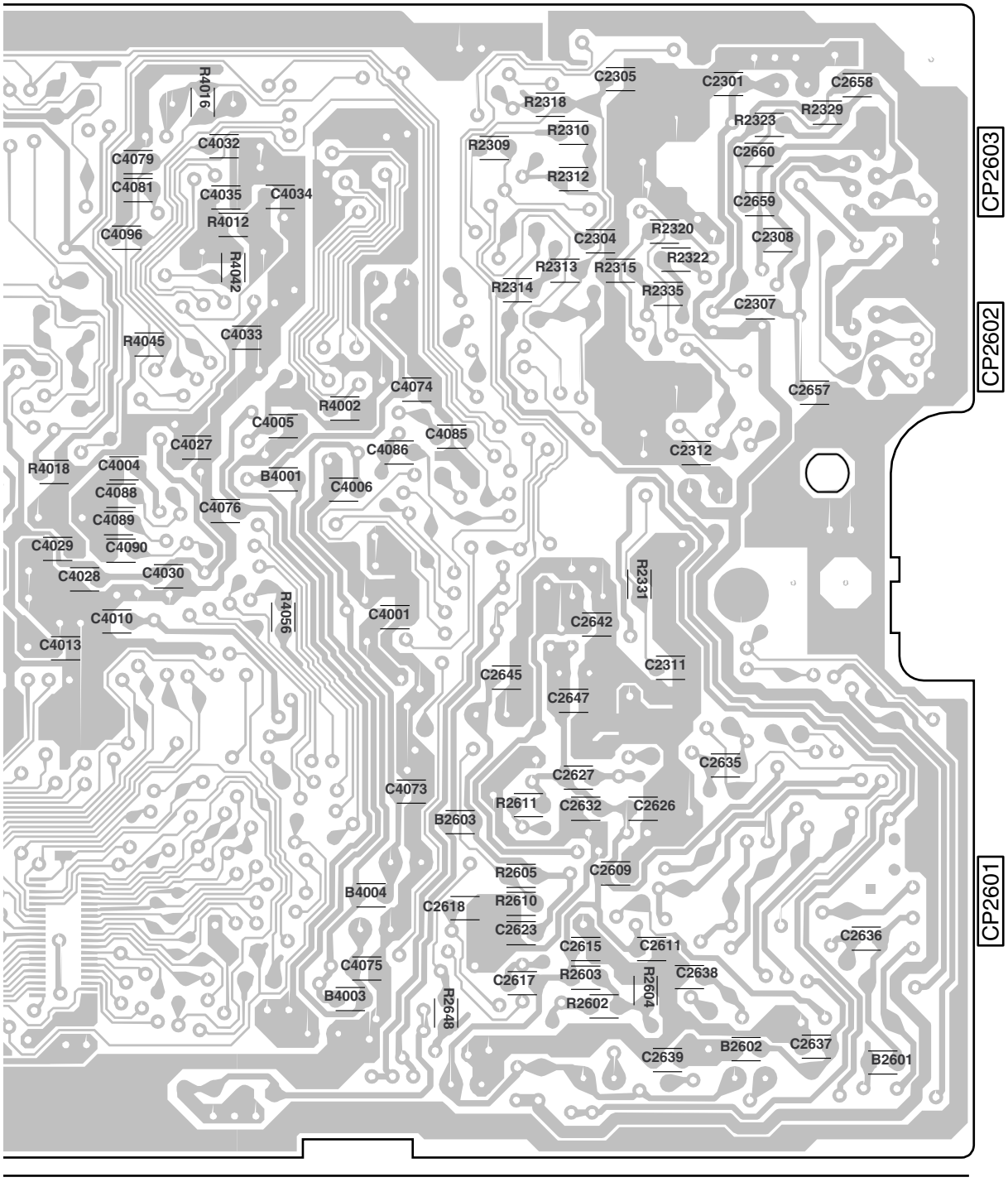

VMD343A
CP8101_2
B
CP8001
CD4002
B
CP501
IC4001
IC4007
IC4005
IC4002
IC4005
IC8102
IC4003
MPEG
AV

SIDE B

A DVD PCB ASSY



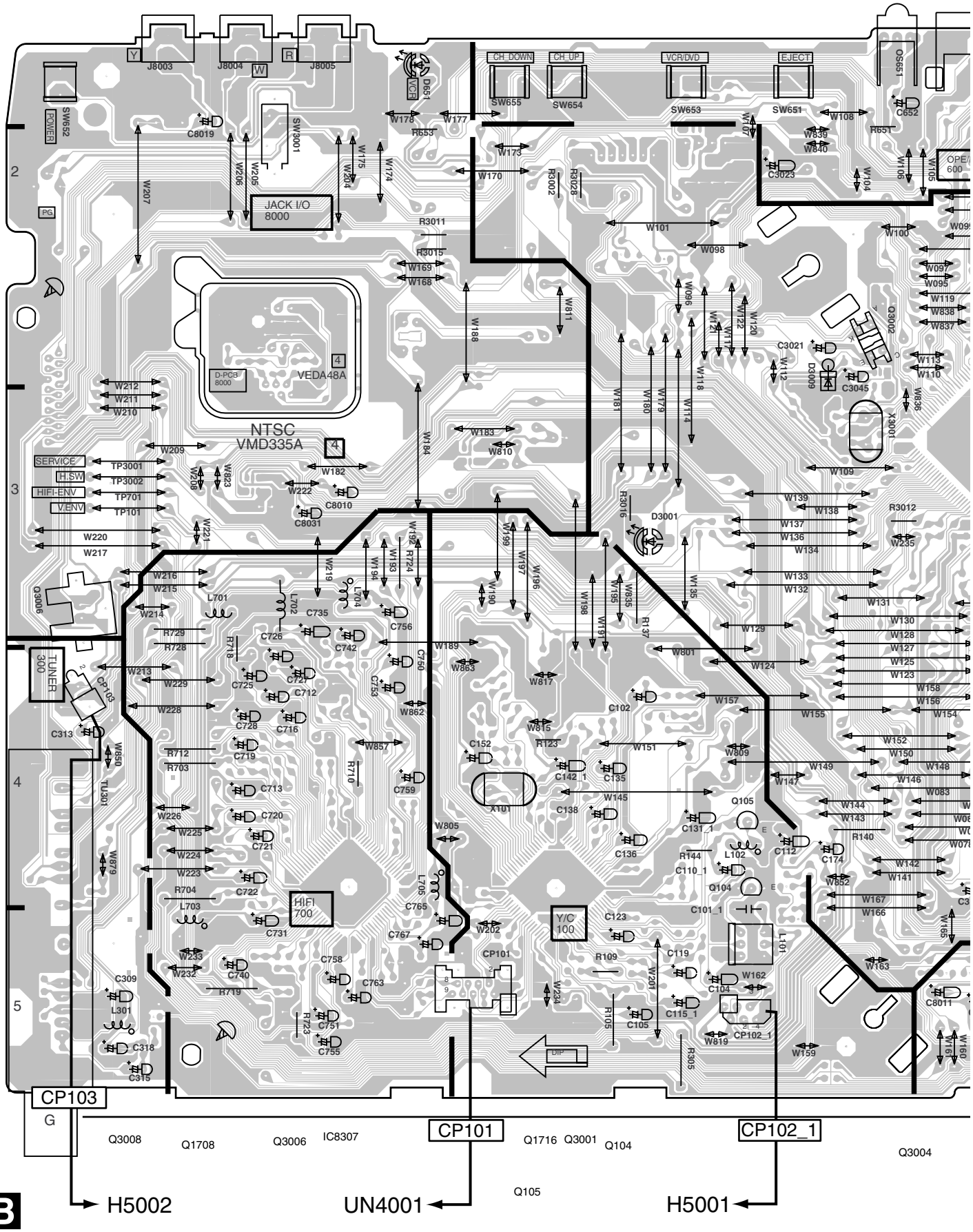
SIDE B


CP2603
CP2602
CP2601
R4016
C4032
C4079
C4081
C4035
C4034
R4012
C4096
R4042
R4045
C4033
C4074
R4002
C4005
C4027
C4085
C4086
R4018
C4004
B4001
C4006
C4088
C4089
C4076
C4029
C4090
C4028
C4030
R4056
C4010
C4001
C4013
C4073
B2603
B4004
C4075
B4003
R2648
C2618
C2617
C2305
R2318
R2310
R2309
R2312
C2304
R2313
R2315
R2314
R2320
R2322
R2335
C2301
C2658
R2329
R2323
C2660
C2659
C2308
C2307
C2657
C2312
R2331
C2642
C2311
C2645
C2647
C2635
C2627
R2611
C2632
C2626
R2605
C2609
R2610
C2623
C2615
C2611
C2636
R2603
R2604
C2638
R2602
C2639
B2602
C2637
B2601

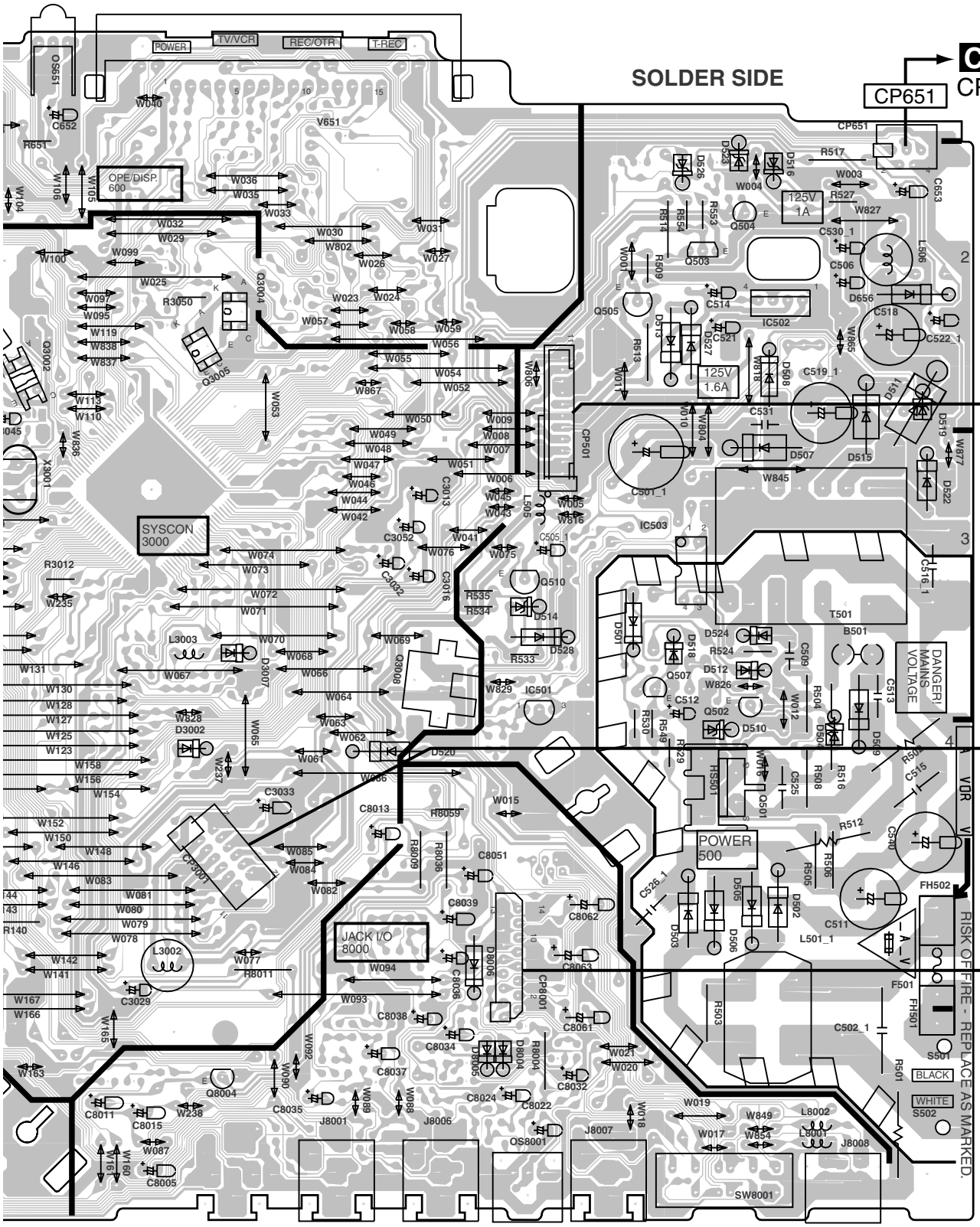
4.2 VCR PCB ASSY

SIDE A • **Parts mounted view**

B VCR PCB ASSY



SIDE A

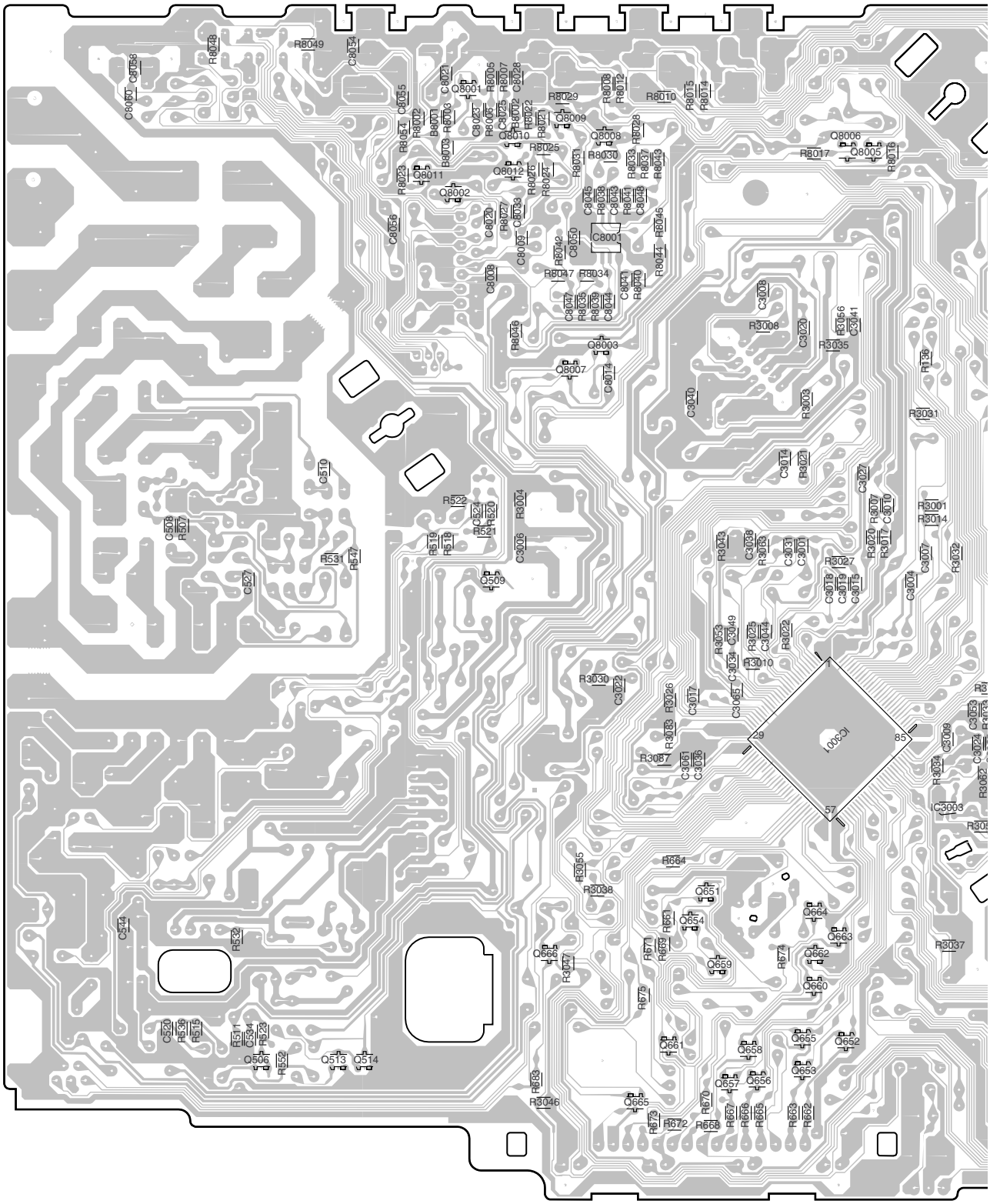


Q3004 Q1711 Q1723 Q1710 Q1713 Q1721
Q3005 Q3002

B

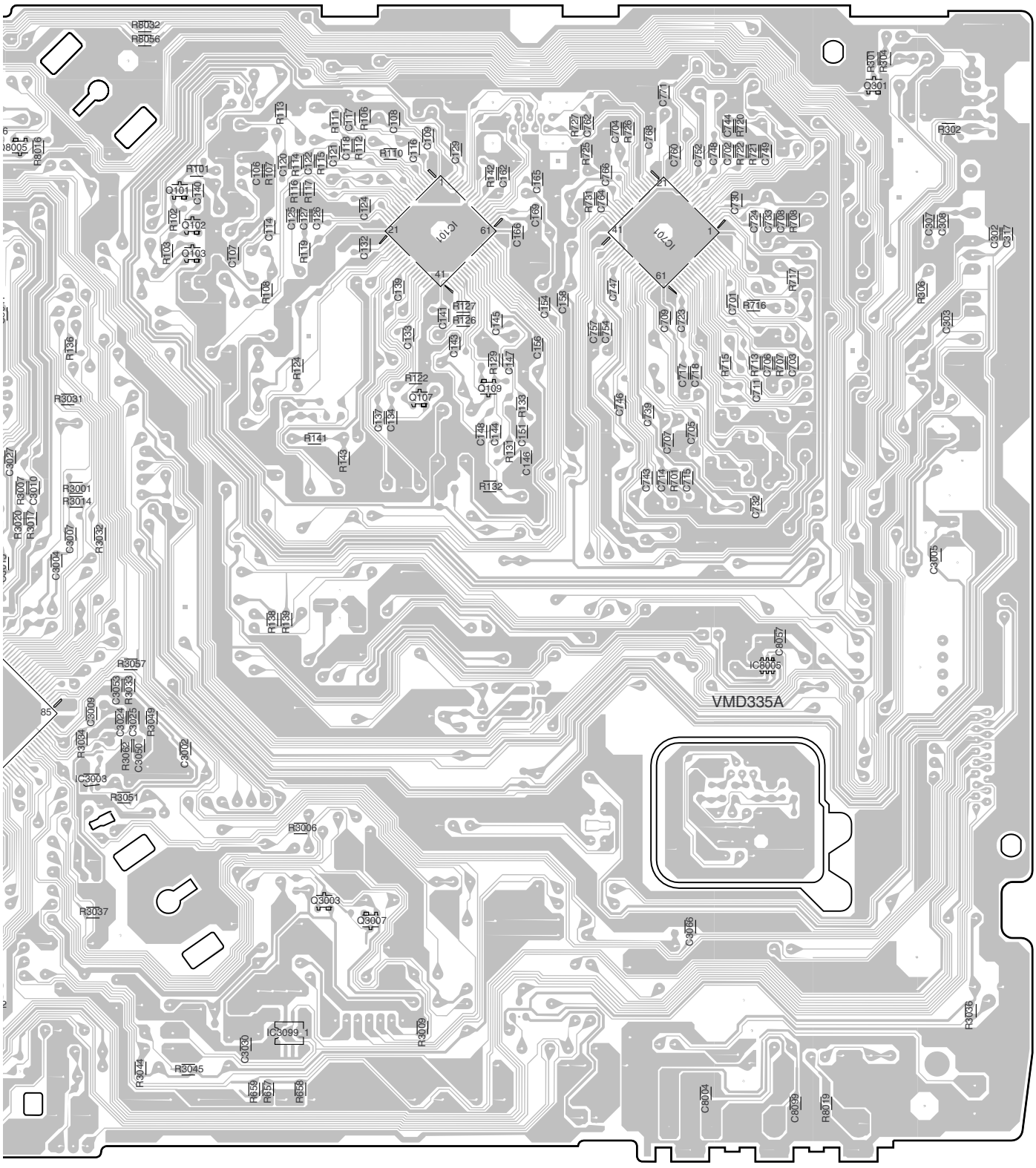
SIDE A • **Chip-parts mounted view**

B VCR PCB ASSY



Q506 Q513 Q514 Q8001 Q8010 Q8009 Q665 Q651 Q658 IC3001 IC3003
Q8011 Q8012 Q8008 Q654 Q664
Q8002 IC8001 Q661 Q659 Q656 Q663
Q509 Q666 Q8003 Q657 Q662
Q8007 Q660 Q652
Q655
Q653

SIDE A



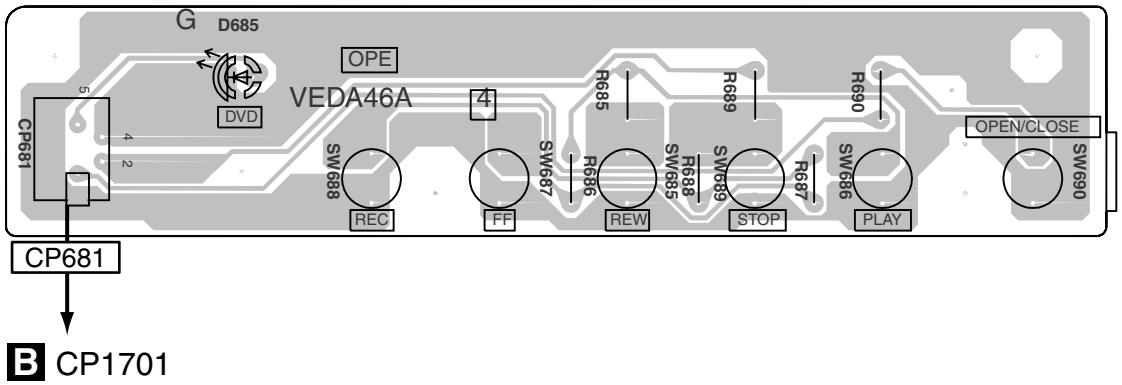
IC3003 Q101 Q102 Q103 Q3003 Q3007 Q107 Q109 IC101 IC3099_1 IC701 IC8005 Q301

B

4.3 OPERATION PCB ASSY

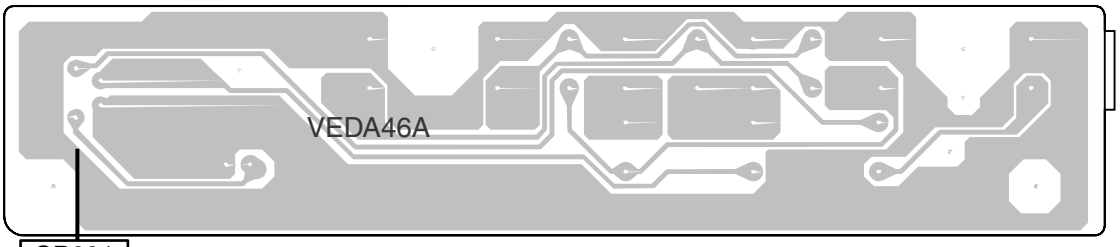
SIDE A **SIDE A**

C OPERATION PCB ASSY



B CP1701

SIDE B **SIDE B**



CP1701

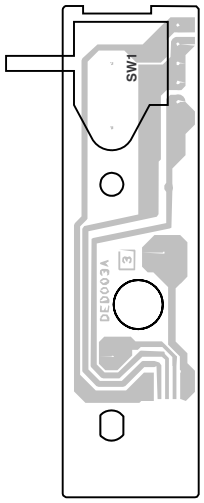
C **C**

4.4 LOADING and SW PCB ASSYS

SIDE A **SIDE B**

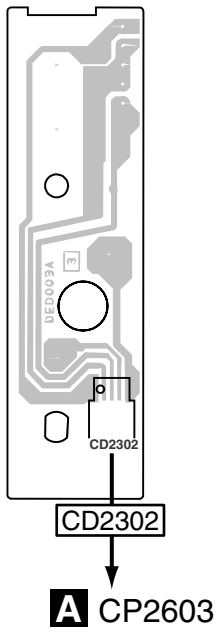
E LOADING MOTOR (INSERTED PARTS)

SOLDER SIDE



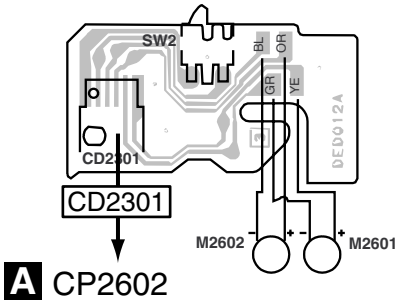
E LOADING MOTOR (CHIP MOUNTED PARTS)

SOLDER SIDE



D SW

SOLDER SIDE



5. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10[1] → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 x 10[3] → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 x 10[1] → 5621 ..... RN1/4PC 5 6 2 1 F

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
	1	..DVD PCB ASSY	A2E514X30
	1	..VCR PCB ASSY	A2E514X010
	1	..OPERATION PCB ASSY	A2E514X270

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC101	IC LA71206M-MPB	I03F3206M0
⚠	IC501	IC K1A431A-AT	I1KJ9A431A
⚠	IC502	IC KIA78R09API	I1KA98R09A
⚠	IC503	PHOTO COUPLER PS2561AL1-1-V	000220002W
	IC701	IC LA72670BM-L-MPB-E	I03F670BM0
	IC2301	IC LA6565-TE-L-E	I03F065650
	IC2601	IC ZR36708TQC	ICQK067080
	IC3001	IC OEC0147A	I54F50147A
	IC3003	IC PST3231NR	I9UF032310
	IC3099	MEMORY DATA S-24CS02AFJ	I5HJ002AF0
	IC4001	IC ZR36762PQCQ	ICQK06762V
	IC4002	IC S-24CS02AFJ-TB-G	I5HJ002AF0
		IC S-24C02BFJ-TB	I5HJ002BF0
	IC4003	IC SI-3007KWM-TL	I0BF97KWM0
	IC4005	IC HY57V161610ETP-7	ICLJ0610EX
	IC4007	MEMORY SST39VF800A-70-4C-	ICMJ0800A8
	IC4008	IC HY57V161610ETP-7	ICLJ0610EX
	IC8001	IC NJM4580M(TE1)	I0QJ045800
	IC8005	IC MM1501XNRE	I0UF015010
	IC8102	IC PCM1753DBQR	I17F017530
	Q101	TRANSISTOR, 2SC2412KT146	T8YJ2412K0
	Q102	TRANSISTOR, 2SC2412KT146	T8YJ2412K0
	Q103	TRANSISTOR DTA124EKAT146	TPYJC05001
	Q104	TRANSISTOR,SILICON KTC3203	TCAT032034
	Q105	TRANSISTOR,SILICON KTA1266	TAATA12660
	Q107	TRANSISTOR, 2SA1037AKT146	T6YJ1037K0
	Q109	TRANSISTOR, 2SC2412KT146	T8YJ2412K0
	Q301	TRANSISTOR, 2SC2412KT146	T8YJ2412K0
⚠	Q501	FET 2SK3563 (ORION_Q)	T25F035630
⚠	Q502	TRANSISTOR,SILICON KTC3203	TCAT032034
⚠	Q503	TRANSISTOR,SILICON KTC3209	TCAT03209Y
⚠	Q504	TRANSISTOR KTA1271	TAAT012714
⚠	Q505	TRANSISTOR 2SD1207	TD3T012070
	Q506	TRANSISTOR KRC103SRTK	TNAAC05002
⚠	Q507	TRANSISTOR,SILICON KTC3203	TCAT032034
	Q509	TRANSISTOR DTC124EKAT146	TNYJC05001
⚠	Q510	TRANSISTOR,SILICON 2SD1207	TD3T012070
	Q513	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	Q514	TRANSISTOR,SILICON 2SC2412KT	T8YJ2412K0
	Q651	TRANSISTOR,SILICON 2SA1037AKT	T6YJ1037K0
	Q652	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q653	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q654	TRANSISTOR,SILICON 2SA1037AKT	T6YJ1037K0
	Q655	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q656	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q657	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q658	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q659	TRANSISTOR,SILICON 2SA1037AKT	T6YJ1037K0
	Q660	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q661	TRANSISTOR,SILICON 2SA1037AKT	T6YJ1037K0
	Q662	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q663	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q664	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q665	TRANSISTOR,SILICON 2SA1037AKT	T6YJ1037K0
	Q666	TRANSISTOR DTA124EKAT146	TPYJC05001
	Q2601	TRANSISTOR,SILICON 2SA1036KT	T67J1036K0
	Q2602	TRANSISTOR,SILICON 2SA2048TL	T67J048TL0
	Q2603	FET 2SK3018	T27T030180
	Q2604	FET 2SK3018	T27T030180
	Q2605	FET 2SK3018	T27T030180
	Q2607	TRANSISTOR,SILICON 2SA1037AKT	T6YJ1037K0
	Q2608	TRANSISTOR,SILICON 2SC2412KT	T8YJ2412K0
	Q3002	PHOTO COUPLER RPI-303	2700690
	Q3003	TRANSISTOR DTA124EKAT146	TPYJC05001
	Q3004	PHOTO COUPLER RPI-352C40N	0002700680
	Q3005	PHOTO COUPLER RPI-352C40N	0002700680
	Q3006	PHOTO TRANSISTOR ST-304L	0000M00390
	Q3007	TRANSISTOR DTC124EKAT146	TNYJC05001
	Q3008	PH0T0 TRANSISTOR ST-304L	0000M00390
	Q8001	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	Q8002	TRANSISTOR DTC144EKAT	TNYJD05001
	Q8003	TRANSISTOR DTA124EKAT146	TPYJC05001
	Q8004	TRANSISTOR KTA1266-AT	TAATA12660
	Q8005	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	Q8006	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	Q8007	TRANSISTOR DTA124EKAT146	TPYJC05001
	Q8008	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	Q8009	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	Q8010	TRANSISTOR DTA143EKAT146	TPYJA05001
	Q8011	TRANSISTOR DTA124EKAT146	TNYJC05001
	Q8012	TRANSISTOR 2SC2412KT146	T8YJ2412K0
	D501	DIODE,SILICON 1SS133T-77	D1VT001330
⚠	D502	DIODE,SILICON 1N4005-EIC	D2WXN40050

Mark	No.	Description	Part No.
⚠	D503	DIODE,SILICON 1N4005-EIC	D2WXN40050
	D504	DIODE,SILICON 1SS133T-77	D1VT001330
⚠	D505	DIODE,SILICON 1N4005-EIC	D2WXN40050
⚠	D506	DIODE,SILICON 1N4005-EIC	D2WXN40050
⚠	D507	DIODE,SILICON RGP15J-G23	D23TGP15J0
	D508	DIODE,SILICON 1SS133T-77	D1VT001330
	D509	DIODE,RECTIFIER RGP10J-EIC	D2WXGP10J0
⚠	D510	DIODE,ZENER MTZJ22B T-77	D97U02201B
⚠	D511	DIODE,SCHOTTKY SB340L-6737	D2LKB340L0
	D512	DIODE,SILICON 1SS133T-77	D1VT001330
⚠	D513	DIODE,SILICON 1N4005-EIC	D2WXN40050
	D514	DIODE,ZENER MTZJ12B T-77	D97U01201B
⚠	D515	DIODE,SCHOTTKY 21DQ04N-TA2B1	D28T21DQN4
	D516	DIODE,ZENER MTZJ5.1B T-77	D97U05R11B
	D518	DIODE,SILICON 1SS133T-77	D1VT001330
	D519	DIODE,ZENER MTZJ6.8B T-77	D97U06R81B
	D520	DIODE,SILICON 1N4005-EIC	D2WXN40050
⚠	D522	DIODE,RECTIFIER 10ELS6N-TA1B2	D28TELS6N6
⚠	D523	DIODE,ZENER MTZJ33B T-77	D97U03301B
	D524	DIODE,SILICON 1SS133T-77	D1VT001330
	D526	DIODE,ZENER MTZJ3.3B T-77	D97U03R31B
	D527	DIODE,SILICON 1N4005-EIC	D2WXN40050
	D528	DIODE,SILICON 1SS133T-77	D1VT001330
	D651	LED LTL-1CHEE-002A	0021E2Q210
	D656	DIODE,SILICON 1N4005-EIC	D2WXN40050
	D685	LED LTL-1CHEE-002A	0021E2Q210
	D2601	DIODE,SILICON KDS120RTK	DDARDS1200
	D2602	DIODE, 02DZ2.2-X	DE5RB2R21X
	D3001	INFRARED LED LTE-3271T-012A-O	0010E00330
	D3002	DIODE,SILICON 1SS133T-77	D1VT001330
	D3007	DIODE,SILICON 1SS133T-77	D1VT001330
	D3009	DIODE,SILICON 1SS133T-77	D1VT001330
	D8004	DIODE,SILICON 1SS133T-77	D1VT001330
	D8005	DIODE,SILICON 1SS133T-77	D1VT001330
	D8006	DIODE,SILICON 1SS133T-77	D1VT001330
	D8111	DIODE,SILICON MCL4148	DDDRL41480
	D8112	DIODE,SILICON MCL4148	DDDRL41480

COILS AND FILTERS

	L101	COIL,BIAS OSC 1626010	031626010R
	L102	COIL 100UH	02167F101J
	L301	COIL 22UH	02167F220J
⚠	L501	COIL,LINE FILTER SS11VL-05230	029X000117
	L505	COIL 22UH	02167F220J
	L506	COIL 22UH	021W7A220K
	L701	COIL 22UH	021LA6220J
	L702	COIL 22UH	021LA6220J
	L703	COIL 22UH	02167F220J
	L704	COIL 22UH	02167F220J
	L705	COIL 22UH	02167F220J
	L3002	COIL 22UH	021W7A220K
	L3003	COIL 12UH	021LA6120J
	L4001	COIL 2.2UH	02167F2R2J
	L8001	COIL 0.33UH	021LA6R33M
	L8002	COIL 0.33UH	021LA6R33M
	L8102	COIL 1UH	02167F1R0K
	L8103	COIL 1UH	02167F1R0K
	L8104	COIL 1UH	02167F1R0K
	L8105	COIL 1UH	02167F1R0K

SWITCHES AND RELAY

	SW651	SWITCH,TACT EVQ21505R	0504101T34
	SW652	SWITCH,TACT EVQ21505R	0504101T34
	SW653	SWITCH,TACT EVQ21505R	0504101T34
	SW654	SWITCH,TACT EVQ21505R	0504101T34
	SW655	SWITCH,TACT EVQ21505R	0504101T34
	SW685	SWITCH,TACT EVQ11L05R	0504R01T38
	SW686	SWITCH,TACT EVQ11L05R	0504R01T38
	SW687	SWITCH,TACT EVQ11L05R	0504R01T38
	SW688	SWITCH,TACT EVQ11L05R	0504R01T38
	SW689	SWITCH,TACT EVQ11L05R	0504R01T38
	SW690	SWITCH,TACT EVQ11L05R	0504R01T38
	SW3001	SWITCH (LEAF) LSA-1144EAU	0508S11001
	SW8001	SWITCH SLIDE SK42H01G9A	0510Y24001

CAPACITORS

C101	CMP 0.033UF 100V MMTS	P232W1333J
C102	CE 10UF 25 V	E50HU3100M
C104	CE 220UF 6.3V	E50HU0221M
C105	CE 22UF 16 V	E50HU2220M
C106	CC 0.01UF 50V B	CS0PB0414K
C107	CC 0.015UF 50V B	CS0PB04E4K
C108	CC 0.01UF 50V B	CS0PB0414K
C109	CC 0.1UF 25V B	CS0PB0315K
C110	CE 47UF 16V	E02LU2470M
C112	CE 220UF 6.3V	E50HU0221M
C114	CC 0.1UF 25V B	CS0PB0315K
C115	CE 33UF 10 V	E50HU1330M
C116	CC 0.1UF 50V F	CS0PF0415Z
C117	CC 0.01UF 50V B	CS0PB0414K
C118	CC 0.01UF 50V B	CS0PB0414K
C119	CE 10UF 25 V	E50HU3100M
C120	CC 1UF 10V B	CS0PB0N16K
C121	CC 0.0027UF 50V B	CS0PB04K3K
C122	CC 0.0012UF 50V B	CS0PB04B3K
C123	CE 4.7UF 50V	E50HU54R7M
C124	CC 1UF 10V B	CS0PB0N16K
C125	CC 390PF 50V CH	CS0PCH4N2J
C126	CC 0.1UF 25V B	CS0PB0315K
C127	CC 180PF 50V CH	CS0PCH4G2J
C129	CC 1UF 10V B	CS0PB0N16K
C131	CE 100UF 6.3V	E50HU0101M
C132	CC 1UF 10V B	CS0PB0N16K
C133	CC 1UF 10V B	CS0PB0N16K
C134	CC 1UF 10V B	CS0PB0N16K
C135	CE 0.22UF 50V	E02LU5R22M
C136	CE 22UF 35V	E02LU4220M
C137	CC 1UF 10V B	CS0PB0N16K
C138	CE 1UF 50V	E02LU5010M
C139	CC 0.1UF 25V B	CS0PB0315K
C140	CC 15PF 50V CH	CS0PCH4E1J
C141	CC 0.01UF 50V B	CS0PB0414K
C142	CE 47UF 16V	E50HU2470M
C143	CC 1UF 10V B	CS0PB0N16K
C144	CC 0.01UF 50V B	CS0PB0414K
C145	CC 0.022UF 50V B	CS0PB04H4K
C146	CC 1UF 10V B	CS0PB0N16K
C147	CC 0.022UF 50V B	CS0PB04H4K
C148	CC 1UF 10V B	CS0PB0N16K

Mark	No.	Description	Part No.
	C151	CC 1UF 10V B	CS0PB0N16K
	C152	CE 47UF 16V	E50HU2470M
	C154	CC 0.1UF 25V B	CS0PB0315K
	C156	CC 0.1UF 50V F	CS0PF0415Z
	C158	CC 1UF 10V B	CS0PB0N16K
	C162	CC 1UF 10V B	CS0PB0N16K
	C165	CC 0.047UF 50V F	CS0PF04Q4Z
	C166	CC 0.068UF 16V B	CS0PB02U4K
	C169	CC 0.047UF 50V F	CS0PF04Q4Z
	C174	CE 47UF 6.3V	E50HU0470M
	C302	CC 100PF 50V CH	CS0PCH412J
	C303	CC 0.1UF 50V F	CS0PF0415Z
	C307	CC 33PF 50V CH	CS0PCH4L1J
	C308	CC 0.01UF 50V B	CS0PB0414K
	C309	CE 220UF 6.3V	E02LU0221M
	C313	CE 10UF 25 V	E50HU3100M
	C315	CE 10UF 25 V	E50HU3100M
	C317	CC 100PF 50V CH	CS0PCH412J
	C318	CE 10UF 25 V	E50HU3100M
⚠	C501	CE 2200UF 16V	E02LF2222M
⚠	C502	CMP 0.22UF 275V ECQUL	P2122B224M
⚠	C505	CE 100UF 16V	E02LU2101M
	C506	CE 100UF 10V	E02LU1101M
	C508	CC 0.022UF 50V B	CS0PB04H4K
	C509	CP 0.018UF 50V	P1M4T0183J
	C510	CC 0.022UF 50V B	CS0PB04H4K
⚠	C511	CE 47UF 200V	E62QFC470M
	C512	CE 10UF 25 V	E50HU3100M
	C513	CC 220PF 2KV R	C03L0R7H2K
⚠	C514	CE 100UF 16V	E02LU2101M
⚠	C515	CC 0.01UF 500V B	C0J0B0514K
⚠	C516	CC 0.0022UF 250V	CC3LE0MH3M
⚠	C518	CE 2200UF 6.3V	E61FF0222D
⚠	C519	CE 2200UF 10V	E02LF1222M
	C520	CC 1UF 10V F	CS0PF0N16Z
⚠	C521	CE 100UF 16V	E02LU2101M
⚠	C522	CE 22UF 50V	E02LU5220M
	C524	CC 0.022UF 50V B	CS0PB04H4K
	C525	CC 680PF 2KV R	C0PLRR7U2K
⚠	C526	CC 0.0022UF 250V	CC3LE0MH3
	C527	CC 0.001 UF 50V B	CS0PB0413K
	C530	CE 100UF 16V	E02LU2101M
	C531	CC 560PF 500V B	C0JTB05S2K
	C534	CC 1UF 10V F	CS0PF0N16Z
⚠	C540	CE 47UF 200V	E62QFC470M
	C544	CC 1UF 10V B	CS0PB0N16K
	C652	CE 100UF 10V	E02LU1101M
	C653	CE 470UF 10V	E02LU1471M
	C701	CC 1UF 10V B	CS0PB0N16K
	C702	CC 1UF 10V B	CS0PB0N16K
	C703	CC 1UF 10V B	CS0PB0N16K
	C704	CC 0.01UF 50V B	CS0PB0414K
	C705	CC 1UF 10V B	CS0PB0N16K
	C706	CC 680PF 50V CH	CS0PCH4U2J
	C707	CC 1UF 10V B	CS0PB0N16K
	C708	CC 0.022UF 50V B	CS0PB04H4K
	C709	CC 1UF 10V B	CS0PB0N16K
	C711	CC 560PF 50V CH	CS0PCH4S2J
	C712	CE 4.7UF 50V	E50HU54R7M
	C713	CE 4.7UF 50V	E50HU54R7M
	C714	CC 0.033UF 25V B	CS0PB03L4K
	C715	CC 1UF 10V B	CS0PB0N16K
	C716	CE 4.7UF 50V	E50HU54R7M
	C717	CC 1UF 10V B	CS0PB0N16K
	C718	CC 0.1UF 25V B	CS0PB0315K
	C719	CE 4.7UF 50V	E50HU54R7M
	C720	CE 10UF 25 V	E50HU3100M
	C721	CE 10UF 25 V	E50HU3100M
	C722	CE 100UF 16V	E02LU2101M
	C723	CC 1UF 10V B	CS0PB0N16K
	C724	CC 0.1UF 50V F	CS0PF0415Z
	C725	CE 22UF 16 V	E50HU2220M
	C726	CE 4.7UF 50V	E50HU54R7M
	C727	CE 2.2UF 50V	E50HU52R2M
	C728	CE 22UF 16 V	E50HU2220M
	C730	CC 0.1UF 50V F	CS0PF0415Z
	C731	CE 100UF 6.3V	E50HU0101M
	C732	CC 0.01UF 50V B	CS0PB0414K
	C733	CC 1UF 10V F	CS0PF0N16Z
	C735	CE 100UF 16 V	E50HU2101M
	C739	CC 0.1UF 50V F	CS0PF0415Z
	C740	CE 10UF 25 V	E50HU3100M
	C742	CE 2.2UF 50V	E50HU52R2M
	C743	CC 0.01UF 50V B	CS0PB0414K
	C744	CC 560PF 50V CH	CS0PCH4S2J
	C746	CC 0.1UF 50V F	CS0PF0415Z
	C747	CC 1UF 10V B	CS0PB0N16K
	C748	CC 1UF 10V B	CS0PB0N16K
	C749	CC 680PF 50V CH	CS0PCH4U2J
	C750	CE 10UF 25 V	E50HU3100M
	C751	CE 22UF 16 V	E50HU2220M
	C752	CC 0.1UF 50V F	CS0PF0415Z
	C753	CE 4.7UF 50V	E50HU54R7M
	C754	CC 0.01UF 50V B	CS0PB0414K
	C755	CE 10UF 25 V	E50HU3100M
	C756	CE 100UF 6.3V	E50HU0101M
	C757	CC 0.0047UF 50V B	CS0PB04Q3K
	C758	CE 4.7UF 50V	E50HU54R7M
	C759	CE 22UF 16 V	E50HU2220M
	C760	CC 0.01UF 50V B	CS0PB0414K
	C762	CC 0.01UF 50V B	CS0PB0414K
	C763	CE 22UF 16 V	E50HU2220M
	C764	CC 0.1UF 50V F	CS0PF0415Z
	C765	CE 100UF 6.3V	E50HU0101M
	C766	CC 0.1UF 50V F	CS0PF0415Z
	C767	CE 4.7UF 50V	E50HU54R7M
	C768	CC 0.0047UF 50V B	CS0PB04Q3K
	C771	CC 0.01UF 50V B	CS0PB0414K
	C2301	CC 0.1UF 50V F	CS0PF0415Z
	C2302	CC 0.1UF 25V B	CS0PB0315K
	C2303	CC 0.1UF 25V B	CS0PB0315K
	C2304	CC 220PF 50V CH	CS0PCH4H2J
	C2305	CC 220PF 50V CH	CS0PCH4H2J
	C2306	CC 0.1UF 50V F	CS0PF0415Z
	C2307	CC 0.1UF 25V B	CS0PB0315K
	C2308	CC 0.1UF 25V B	CS0PB0315K
	C2309	CC 0.001UF 50V B	CS0PB0413K
	C2310	CE 100UF 10 V	E50HU1101M
	C2311	CC 0.1UF 25V B	CS0PB0315K
	C2312	CC 0.001UF 50V B	CS0PB0413K

Mark No.	Description	Part No.
C2313	CC 0.1UF 25V B	CS0PB0315K
C2314	CE 100UF 10 V	E50HU1101M
C2603	CC 0.0022UF 50V B	CS0PB04H3K
C2604	CC 0.0022UF 50V B	CS0PB04H3K
C2605	CC 0.0022UF 50V B	CS0PB04H3K
C2606	CC 0.0022UF 50V B	CS0PB04H3K
C2607	CC 33PF 50V CH	CS0PCH4L1J
C2608	CE 47UF 6.3V	E50HU0470M
C2609	CC 0.1UF 50V F	CS0PF0415Z
C2610	CC 0.0068UF 50V B	CS0PB04U3K
C2611	CC 0.1UF 50V F	CS0PF0415Z
C2612	CC 0.033UF 25V B	CS0PB03L4K
C2613	CC 220PF 50V CH	CS0PCH4H2J
C2614	CC 0.1UF 25V B	CS0PB0315K
C2615	CC 0.1UF 50V F	CS0PF0415Z
C2616	CC 470PF 50V CH	CS0PCH4Q2J
C2617	CC 0.1UF 25V B	CS0PB0315K
C2618	CC 0.1UF 25V B	CS0PB0315K
C2619	CC 560PF 50V CH	CS0PCH4S2J
C2620	CC 0.0056UF 50V B	CS0PB04S3K
C2621	CC 0.0056UF 50V B	CS0PB04S3K
C2622	CC 0.0056UF 50V B	CS0PB04S3K
C2623	CC 0.1UF 50V F	CS0PF0415Z
C2624	CC 0.001UF 50V B	CS0PB0413K
C2625	CC 0.001UF 50V B	CS0PB0413K
C2626	CC 0.1UF 50V F	CS0PF0415Z
C2627	CC 0.033UF 25V B	CS0PB03L4K
C2628	CC 0.001UF 50V B	CS0PB0413K
C2629	CC 0.001UF 50V B	CS0PB0413K
C2632	CC 0.1UF 50V F	CS0PF0415Z
C2633	CC 0.001UF 50V B	CS0PB0413K
C2634	CC 0.1UF 50V F	CS0PF0415Z
C2635	CC 0.001UF 50V B	CS0PB0413K
C2636	CC 0.1UF 50V F	CS0PF0415Z
C2637	CC 0.1UF 50V F	CS0PF0415Z
C2638	CC 0.1UF 50V F	CS0PF0415Z
C2639	CC 0.1UF 50V F	CS0PF0415Z
C2640	CE 100UF 6.3V	E50HU0101M
C2641	CE 100UF 6.3V	E50HU0101M
C2642	CC 0.1UF 50V F	CS0PF0415Z
C2643	CE 47UF 6.3V	E50HU0470M
C2644	CE 47UF 6.3V	E50HU0470M
C2645	CC 0.1UF 50V F	CS0PF0415Z
C2646	CE 47UF 6.3V	E50HU0470M
C2647	CC 0.1UF 50V F	CS0PF0415Z
C2648	CC 0.1UF 50V F	CS0PF0415Z
C2654	CC 0.01UF 50V B	CS0PB0414K
C2655	CC 0.01UF 50V B	CS0PB0414K
C2657	CC 100PF 50V CH	CS0PCH412J
C2658	CC 100PF 50V CH	CS0PCH412J
C2659	CC 100PF 50V CH	CS0PCH412J
C2660	CC 100PF 50V CH	CS0PCH412J
C3001	CC 1UF 10V B	CS0PB0N16K
C3002	CC 1UF 10V B	CS0PB0N16K
C3004	CC 0.022UF 50V B	CS0PB04H4K
C3005	CC 0.001UF 50V B	CS0PB0413K
C3006	CC 0.001UF 50V B	CS0PB0413K
C3007	CC 0.1UF 25V B	CS0PB0315K
C3008	CC 0.0047UF 50V B	CS0PB04Q3K
C3009	CC 0.1UF 25V B	CS0PB0315K

Mark No.	Description	Part No.
C3010	CC 0.001UF 50V B	CS0PB0413K
C3013	CE 22UF 16 V	E50HU2220M
C3014	CC 180PF 50V CH	CS0PCH4G2J
C3015	CC 820PF 50V CH	CS0PCH4W2J
C3016	CE 47UF 6.3V	E50HU0470M
C3017	CC 0.001UF 50V B	CS0PB0413K
C3018	CC 150PF 50V CH	CS0PCH4E2J
C3019	CC 0.1UF 25V B	CS0PB0315K
C3020	CC 0.022UF 50V B	CS0PB04H4K
C3021	CE 10UF 25 V	E50HU3100M
C3022	CC 470PF 50V CH	CS0PCH4Q2J
C3023	CE 470UF 6.3V	E02LU0471M
C3024	CC 12PF 50V CH	CS0PCH4B1J
C3025	CC 15PF 50V CH	CS0PCH4E1J
C3027	CC 0.1UF 50V F	CS0PF0415Z
C3029	CE 47UF 6.3V	E50HU0470M
C3030	CC 1UF 10V F	CS0PF0N16Z
C3031	CC 0.0015UF 50V B	CS0PB04E3K
C3032	CE 2.2UF 50V	E50HU52R2M
C3033	CE 220UF 16V	E02LU2221M
C3034	CC 1UF 10V F	CS0PF0N16Z
C3036	CC 0.1UF 50V F	CS0PF0415Z
C3038	CC 1UF 10V F	CS0PF0N16Z
C3040	CC 1UF 10V F	CS0PF0N16Z
C3041	CC 0.0015UF 50V B	CS0PB04E3K
C3044	CC 12PF 50V CH	CS0PCH4B1J
C3045	CE 0.47UF 50V	E50HU5R47M
C3049	CC 100PF 50V CH	CS0PCH412J
C3050	CC 0.01UF 50V B	CS0PB0414K
C3052	CE 22UF 16 V	E50HU2220M
C3053	CC 0.1UF 25V B	CS0PB0315K
C3061	CC 0.1UF 50V F	CS0PF0415Z
C3065	CC 0.1UF 50V F	CS0PF0415Z
C3066	CC 0.01UF 50V B	CS0PB0414K
C4001	CC 0.1UF 50V F	CS0PF0415Z
C4002	CC 0.1UF 50V F	CS0PF0415Z
C4003	CC 0.1UF 50V F	CS0PF0415Z
C4004	CC 0.1UF 50V F	CS0PF0415Z
C4005	CC 0.1UF 50V F	CS0PF0415Z
C4006	CC 0.1UF 50V F	CS0PF0415Z
C4007	CC 0.1UF 50V F	CS0PF0415Z
C4008	CC 0.1UF 50V F	CS0PF0415Z
C4009	CE 47UF 16V	E50HU2470M
C4010	CC 0.1UF 50V F	CS0PF0415Z
C4011	CE 100UF 6.3V	E50HU0101M
C4012	CC 0.1UF 50V F	CS0PF0415Z
C4013	CC 0.1UF 50V F	CS0PF0415Z
C4014	CC 0.1UF 50V F	CS0PF0415Z
C4015	CC 0.1UF 50V F	CS0PF0415Z
C4016	CC 0.1UF 50V F	CS0PF0415Z
C4017	CC 0.1UF 50V F	CS0PF0415Z
C4018	CC 0.1UF 50V F	CS0PF0415Z
C4019	CC 0.1UF 50V F	CS0PF0415Z
C4020	CC 0.1UF 50V F	CS0PF0415Z
C4021	CE 220UF 6.3V	E50HU0221M
C4022	CC 0.1UF 50V F	CS0PF0415Z
C4023	CC 0.1UF 50V F	CS0PF0415Z
C4024	CC 0.1UF 50V F	CS0PF0415Z
C4025	CC 0.1UF 50V F	CS0PF0415Z
C4026	CC 0.1UF 50V F	CS0PF0415Z

Mark	No.	Description	Part No.
	C4027	CC 0.1UF 50V F	CS0PF0415Z
	C4028	CC 0.1UF 50V F	CS0PF0415Z
A	C4029	CC 0.1UF 50V F	CS0PF0415Z
	C4030	CC 0.1UF 50V F	CS0PF0415Z
	C4031	CC 0.01UF 50V B	CS0PB0414K
	C4032	CC 0.001UF 50V B	CS0PB0413K
	C4033	CC 0.1UF 50V F	CS0PF0415Z
	C4034	CC 5PF 50V CH	CS0PCH450C
	C4035	CC 16PF 50V CH	CS0PCH4F1J
	C4036	CC 0.1UF 25V B	CS0PB0315K
	C4037	CC 0.1UF 50V F	CS0PF0415Z
	C4038	CC 0.01UF 50V B	CS0PB0414K
	C4039	CC 0.1UF 50V F	CS0PF0415Z
B	C4040	CC 0.1UF 50V F	CS0PF0415Z
	C4041	CC 0.1UF 50V F	CS0PF0415Z
	C4045	CC 0.1UF 50V F	CS0PF0415Z
	C4046	CC 0.1UF 50V F	CS0PF0415Z
	C4047	CC 0.1UF 50V F	CS0PF0415Z
	C4050	CC 0.1UF 50V F	CS0PF0415Z
	C4052	CC 0.1UF 50V F	CS0PF0415Z
	C4053	CE 100UF 6.3V	E50HU0101M
	C4062	CC 0.1UF 50V F	CS0PF0415Z
	C4063	CE 220UF 6.3V	E50HU0221M
	C4064	CC 0.1UF 50V F	CS0PF0415Z
C	C4065	CC 0.01UF 50V B	CS0PB0414K
	C4066	CC 1UF 10V B	CS0PB0N16K
	C4067	CE 47UF 6.3V	E50HU0470M
	C4068	CE 47UF 6.3V	E50HU0470M
	C4069	CE 47UF 6.3V	E50HU0470M
	C4070	CE 47UF 6.3V	E50HU0470M
	C4071	CE 47UF 6.3V	E50HU0470M
	C4072	CC 0.1UF 50V F	CS0PF0415Z
	C4073	CC 0.1UF 50V F	CS0PF0415Z
	C4074	CC 0.1UF 50V F	CS0PF0415Z
	C4075	CC 0.1UF 50V F	CS0PF0415Z
D	C4076	CC 0.1UF 50V F	CS0PF0415Z
	C4077	CC 0.1UF 50V F	CS0PF0415Z
	C4078	CE 100UF 6.3V	E50HU0101M
	C4079	CC 100PF 50V CH	CS0PCH412J
	C4080	CC 0.01UF 50V B	CS0PB0414K
	C4081	CC 0.1UF 50V F	CS0PF0415Z
	C4082	CC 0.1UF 50V F	CS0PF0415Z
	C4083	CE 100UF 6.3V	E50HU0101M
	C4084	CE 47UF 6.3V	E50HU0470M
	C4085	CC 0.001UF 50V B	CS0PB0413K
	C4086	CC 0.001UF 50V B	CS0PB0413K
E	C4088	CC 0.01UF 50V B	CS0PB0414K
	C4089	CC 0.01UF 50V B	CS0PB0414K
	C4090	CC 0.01UF 50V B	CS0PB0414K
	C4091	CC 100PF 50V CH	CS0PCH412J
	C4092	CC 100PF 50V CH	CS0PCH412J
	C4093	CC 100PF 50V CH	CS0PCH412J
	C4094	CC 100PF 50V CH	CS0PCH412J
	C4095	CC 0.01UF 50V B	CS0PB0414K
	C4096	CC 0.001UF 50V B	CS0PB0413K
	C4097	CC 0.01UF 50V B	CS0PB0414K
	C4098	CC 10PF 50V CH	CS0PCH411D
F	C4099	CC 0.01UF 50V B	CS0PB0414K
	C8004	CC 470PF 50V CH	CS0PCH4Q2J
	C8005	CE 470UF 6.3V	E02LU0471M

Mark	No.	Description	Part No.
	C8008	CC 0.0015UF 50V B	CS0PB04E3K
	C8009	CC 0.0015UF 50V B	CS0PB04E3K
	C8010	CE 10UF 25 V	E50HU3100M
	C8011	CE 220UF 6.3V	E50HU0221M
	C8013	CE 10UF 50V	E50HU5100M
	C8014	CC 0.1UF 50V F	CS0PF0415Z
	C8015	CE 220UF 6.3V	E50HU0221M
	C8019	CE 10UF 25 V	E50HU3100M
	C8020	CC 100PF 50V CH	CS0PCH412J
	C8021	CC 0.1UF 50V F	CS0PF0415Z
	C8022	CE 47UF 16V	E02LU2470M
	C8023	CC 0.022UF 50V B	CS0PB04H4K
	C8024	CE 47UF 16V	E02LU2470M
	C8025	CC 0.1UF 25V B	CS0PB0315K
	C8028	CC 100PF 50V CH	CS0PCH412J
	C8031	CE 4.7UF 50V	E50HU54R7M
	C8032	CE 4.7UF 50V	E50HU54R7M
	C8033	CC 220PF 50V CH	CS0PCH4H2J
	C8034	CE 220UF 6.3V	E02LU0221M
	C8035	CE 2.2UF 50V	E50HU52R2M
	C8036	CE 2.2UF 50V	E50HU52R2M
	C8037	CE 22UF 50 V	E50HU5220M
	C8038	CE 22UF 50V	E02LU5220M
	C8039	CE 100UF 16 V	E50HU2101M
	C8041	CC 0.1UF 50V F	CS0PF0415Z
	C8043	CC 330PF 50V CH	CS0PCH4L2J
	C8044	CC 330PF 50V CH	CS0PCH4L2J
	C8045	CC 150PF 50V CH	CS0PCH4E2J
	C8047	CC 330PF 50V CH	CS0PCH4L2J
	C8048	CC 330PF 50V CH	CS0PCH4L2J
	C8050	CC 150PF 50V CH	CS0PCH4E2J
	C8051	CE 33UF 50V	E02LU5330M
	C8054	CC 33PF 50V CH	CS0PCH4L1J
	C8055	CC 33PF 50V CH	CS0PCH4L1J
	C8056	CC 33PF 50V CH	CS0PCH4L1J
	C8057	CC 0.1UF 50V F	CS0PF0415Z
	C8058	CC 10PF 50V CH	CS0PCH411D
	C8060	CC 10PF 50V CH	CS0PCH411D
	C8061	CE 1000UF 6.3V	E02LT0102M
	C8062	CE 1000UF 6.3V	E02LT0102M
	C8063	CE 1000UF 6.3V	E02LT0102M
	C8099	CC 470PF 50V CH	CS0PCH4Q2J
	C8104	CC 150PF 50V CH	CS0PCH4E2J
	C8105	CC 12PF 50V CH	CS0PCH4B1J
	C8106	CC 150PF 50V CH	CS0PCH4E2J
	C8107	CC 150PF 50V CH	CS0PCH4E2J
	C8108	CC 12PF 50V CH	CS0PCH4B1J
	C8109	CC 150PF 50V CH	CS0PCH4E2J
	C8110	CC 100PF 50V CH	CS0PCH412J
	C8111	CC 12PF 50V CH	CS0PCH4B1J
	C8112	CC 33PF 50V CH	CS0PCH4L1J
	C8113	CC 1UF 10V B	CS0PB0N16K
	C8114	CC 1UF 10V B	CS0PB0N16K
	C8115	CC 12PF 50V CH	CS0PCH4B1J
	C8119	CE 100UF 6.3V	E50HU0101M
	C8120	CC 0.1UF 50V F	CS0PF0415Z
	C8121	CE 10UF 25 V	E50HU3100M
	C8122	CC 0.001UF 50V B	CS0PB0413K
	C8124	CC 150PF 50V CH	CS0PCH4E2J
	C8125	CC 1UF 10V B	CS0PB0N16K

Mark	No.	Description	Part No.
	C8126	CC 1UF 10V B	CS0PB0N16K
	C8127	CC 150PF 50V CH	CS0PCH4E2J

RESISTORS

	R101	RC 560OHM 1/16W	R803R9561J
	R102	RC 10KOHM 1/16W	R803R9103J
	R103	RC 10KOHM 1/16W	R803R9103J
	R105	RC 1KOHM 1/4W	R002T4102J
	R106	RC 680OHM 1/16W	R803R9681J
	R107	RC 3.9KOHM 1/16W	R803R9392J
	R108	RC 22KOHM 1/16W	R803R9223J
	R109	RC 1KOHM 1/4W	R002T4102J
	R110	RC 8.2KOHM 1/16W	R803R9822J
	R111	RC 8.2KOHM 1/16W	R803R9822J
	R112	RC 330KOHM 1/16W	R803R9334J
	R113	RC 220OHM 1/16W	R803R9221J
	R114	RC 20KOHM 1/16W	R803R9203J
	R115	RC 820OHM 1/16W	R803R9821J
	R116	RC 15KOHM 1/16W	R803R9153J
	R117	RC 6.8KOHM 1/16W	R803R9682J
	R119	RC 1.8KOHM 1/16W	R803R9182J
	R122	RC 100KOHM 1/16W	R803R9104J
	R123	RC 2.2KOHM 1/4W	R002T4222J
	R124	RC 82KOHM 1/16W	R803R9823J
	R126	RC 1.8KOHM 1/16W	R803R9182J
	R127	RC 680KOHM 1/16W	R803R9684J
	R129	RC 1.8KOHM 1/16W	R803R9182J
	R131	RC 1.5KOHM 1/16W	R803R9152J
	R132	RC 3.3KOHM 1/16W	R803R9332J
	R133	RC 8.2KOHM 1/16W	R803R9822J
	R136	RC 22KOHM 1/16W	R803R9223J
	R137	RC 12KOHM 1/4W	R002T4123J
	R138	RC 22KOHM 1/16W	R803R9223J
	R139	RC 12KOHM 1/16W	R803R9123J
	R140	RC 2.2KOHM 1/4W	R002T4222J
	R141	RC 1KOHM 1/16W	R803R9102J
	R142	RC 1KOHM 1/16W	R803R9102J
	R143	RC 1KOHM 1/16W	R803R9102J
	R144	RC 220KOHM 1/4W	R002T4224J
	R301	RC 33KOHM 1/16W	R803R9333J
	R302	RC 1KOHM 1/16W	R803R9102J
	R304	RC 1K OHM 1/16W	R803R9102J
	R305	RC 1KOHM 1/4W	R002T4102J
	R306	RC 22OHM 1/16W	R803R9220J
⚠	R501	RC 3.3MOHM 1/2W	R0G3K2335K
⚠	R502	R,METAL OXIDE 1OHM 1W	R3X181010J
⚠	R503	RC 1.5MOHM 1/2W	R002T2155J
⚠	R504	RC 560OHM 1/2W	R002T2561J
	R505	RC 680KOHM 1/4W	R002T4684J
	R506	RC 1MOHM 1/2W	R002T2105J
	R507	RC 10KOHM 1/16W	R803R9103J
	R508	RC 100OHM 1/4W	R002T4101J
	R509	RC 100OHM 1/4W	R002T4101J
	R511	RC 560KOHM 1/16W	R803R9564J
⚠	R512	R,METAL OXIDE 68KOHM 1W	R3X181683J
	R513	RC 390OHM 1/2W	R002T2391J
	R514	RC 220OHM 1/2W	R002T2221J
	R515	RC 27KOHM 1/16W	R803R9273J
⚠	R516	R,FUSE 0.22OHM 1W	R63581R22J
⚠	R517	RC 1KOHM 1/2W	R002T2102J
	R518	RC 150OHM 1/16W	R803R9151J
	R519	RC 1KOHM 1/16W	R803R9102J
	R520	RC 3.3KOHM 1/16W	R803R9332F
	R521	RC 390OHM 1/16W	R803R9391J
	R522	RC 3.3KOHM 1/16W	R803R9332F
	R523	RC 6.8KOHM 1/16W	R803R9682J
	R524	RC 100OHM 1/4W	R002T4101J
	R527	RC 220OHM 1/4W	R002T4221J
	R529	RC 680KOHM 1/4W	R002T4684J
	R530	RC 470KOHM 1/4W	R002T4474J
	R531	RC 10KOHM 1/16W	R803R9103J
	R532	RC 10KOHM 1/16W	R803R9103J
	R533	RC 220OHM 1/4W	R002T4221J
	R534	RC 22KOHM 1/4W	R002T4223J
	R535	RC 22KOHM 1/4W	R002T4223J
	R536	RC 5.6KOHM 1/16W	R803R9562J
	R547	RC 100KOHM 1/16W	R803R9104J
	R549	RC 100KOHM 1/4W	R002T4104J
	R552	RC 100OHM 1/16W	R803R9101J
	R553	RC 47KOHM 1/4W	R002T4473J
	R554	RC 10KOHM 1/4W	R002T4103J
	R651	RC 100OHM 1/4W	R002T4101J
	R653	RC 330OHM 1/4W	R002T4331J
	R657	RC 2.7KOHM 1/16W	R803R9272J
	R658	RC 1.8KOHM 1/16W	R803R9182J
	R659	RC 1.5KOHM 1/16W	R803R9152J
	R661	RC 820OHM 1/16W	R803R9821J
	R662	RC 180OHM 1/16W	R803R9181J
	R663	RC 180OHM 1/16W	R803R9181J
	R664	RC 820OHM 1/16W	R803R9821J
	R665	RC 180OHM 1/16W	R803R9181J
	R666	RC 180OHM 1/16W	R803R9181J
	R667	RC 180OHM 1/16W	R803R9181J
	R668	RC 180OHM 1/16W	R803R9181J
	R669	RC 820OHM 1/16W	R803R9821J
	R670	RC 180OHM 1/16W	R803R9181J
	R671	RC 820OHM 1/16W	R803R9821J
	R672	RC 180OHM 1/16W	R803R9181J
	R673	RC 180OHM 1/16W	R803R9181J
	R674	RC 180OHM 1/16W	R803R9181J
	R675	RC 820OHM 1/16W	R803R9821J
	R683	RC 560OHM 1/16W	R803R9561J
	R685	RC 13KOHM 1/4W	R002T4133J
	R686	RC 6.8KOHM 1/4W	R002T4682J
	R687	RC 3.9KOHM 1/4W	R002T4392J
	R688	RC 2.7KOHM 1/4W	R002T4272J
	R689	RC 3.3KOHM 1/4W	R002T4332J
	R690	RC 22KOHM 1/4W	R002T4223J
	R701	RC 4.7KOHM 1/16W	R803R9472J
	R703	RC 12KOHM 1/4W	R002T4123J
	R704	RC 1KOHM 1/4W	R002T4102J
	R707	RC 1.8KOHM 1/16W	R803R9182J
	R708	RC 330OHM 1/16W	R803R9331J
	R710	RC 390KOHM 1/4W	R002T4394J
	R712	RC 47KOHM 1/4W	R002T4473J
	R713	RC 1.5KOHM 1/16W	R803R9152J
	R715	RC 5.6KOHM 1/16W	R803R9562J
	R716	RC 330OHM 1/16W	R803R9331J
	R717	RC 330OHM 1/16W	R803R9331J

Mark No.	Description	Part No.
R718	RC 2.2MOHM 1/4W	R002T4225J
R719	RC 47KOHM 1/4W	R002T4473J
R720	RC 5.6KOHM 1/16W	R803R9562J
R721	RC 1.5KOHM 1/16W	R803R9152J
R722	RC 1.8KOHM 1/16W	R803R9182J
R723	RC 12KOHM 1/4W	R002T4123J
R724	RC 1KOHM 1/4W	R002T4102J
R725	RC 39KOHM 1/16W	R803R9393J
R726	RC 2.2KOHM 1/16W	R803R9222J
R727	RC 470OHM 1/16W	R803R9471J
R728	RC 100OHM 1/4W	R002T4101J
R729	RC 100OHM 1/4W	R002T4101J
R731	RC 1KOHM 1/16W	R803R9102J
R2301	RC 1KOHM 1/16W	R8E3P9102J
R2303	RC 2.2OHM 1/16W	R803R92R2J
R2304	RC 2.2OHM 1/16W	R803R92R2J
R2305	RC 27KOHM 1/16W	R8E3P9273J
R2306	RC 5.6KOHM 1/16W	R803R9562J
R2307	RC 27KOHM 1/16W	R8E3P9273J
R2308	RC 10KOHM 1/16W	R8E3P9103J
R2309	RC 470OHM 1/16W	R803R9471F
R2310	RC 5.6KOHM 1/16W	R803R9562F
R2312	RC 5.6KOHM 1/16W	R803R9562F
R2313	RC 5.6KOHM 1/16W	R803R9562F
R2314	RC 5.6KOHM 1/16W	R803R9562F
R2315	RC 10KOHM 1/16W	R803R9103J
R2316	RC 1.5KOHM 1/16W	R803R9152J
R2317	RC 22KOHM 1/16W	R803R9223J
R2318	RC 5.6KOHM 1/16W	R803R9562J
R2319	RC 27KOHM 1/16W	R8E3P9273J
R2320	RC 4.7KOHM 1/16W	R803R9472J
R2321	RC 27K OHM 1/16W	R8E3P9273J
R2322	RC 4.7KOHM 1/16W	R803R9472J
R2323	RC 1.2OHM 1/16W	R803R91R2J
R2324	RC 1KOHM 1/16W	R8E3P9102J
R2325	RC 3.3KOHM 1/16W	R803R9332J
R2326	RC 3.9KOHM 1/16W	R803R9392J
R2327	RC 4.7KOHM 1/16W	R8E3P9472J
R2328	RC 4.7KOHM 1/16W	R8E3P9472J
R2329	RC 1.2OHM 1/16W	R803R91R2J
R2330	RC 1KOHM 1/16W	R8E3P9102J
R2331	RC 470OHM 1/16W	R803R9471F
R2334	RC 10KOHM 1/16W	R8E3P9103J
R2335	RC 1.5KOHM 1/16W	R803R9152J
R2336	RC 4.7KOHM 1/16W	R8E3P9472J
R2337	RC 10KOHM 1/16W	R8E3P9103J
R2338	RC 12KOHM 1/16W	R803R9123J
R2339	RC 1MOHM 1/16W	R803R9105J
R2601	RC 4.7KOHM 1/16W	R8E3P9472J
R2602	RC 1.8MOHM 1/16W	R803R9185J
R2603	RC 13KOHM 1/16W	R803R9133F
R2604	RC 27KOHM 1/16W	R803R9273F
R2605	RC 10KOHM 1/16W	R803R9103F
R2607	RC 1.2KOHM 1/16W	R803R9122J
R2608	RC 1.2KOHM 1/16W	R803R9122J
R2609	RC 1.2KOHM 1/16W	R803R9122J
R2610	RC 5.1KOHM 1/16W	R803R9512F
R2611	RC 4.7KOHM 1/16W	R803R9472J
R2612	RC 4.7KOHM 1/16W	R8E3P9472J
R2613	RC 4.7KOHM 1/16W	R8E3P9472J
R2614	RC 12KOHM 1/16W	R8E3P9123F
R2615	RC 10OHM 1/16W	R803R9100J
R2616	RC 1KOHM 1/16W	R8E3P9102J
R2617	RC 1KOHM 1/16W	R8E3P9102J
R2618	RC 10OHM 1/16W	R803R9100J
R2619	RC 100OHM 1/16W	R803R9101J
R2620	RC 4.7KOHM 1/16W	R8E3P9472J
R2621	RC 100OHM 1/16W	R803R9101J
R2622	RC 4.7KOHM 1/16W	R8E3P9472J
R2623	RC 4.7KOHM 1/16W	R8E3P9472J
R2624	RC 4.7KOHM 1/16W	R8E3P9472J
R2635	RC 4.7KOHM 1/16W	R8E3P9472J
R2643	RC 1KOHM 1/16W	R8E3P9102J
R2644	RC 2.2KOHM 1/16W	R803R9222J
R2645	RC 1KOHM 1/16W	R8E3P9102J
R2646	RC 2.2KOHM 1/16W	R803R9222J
R2647	RC 4.7KOHM 1/16W	R8E3P9472J
R2648	RC 13KOHM 1/16W	R803R9133J
R2649	RC 100OHM 1/16W	R803R9101J
R2650	RC 4.7KOHM 1/16W	R8E3P9472J
R2651	RC 4.7KOHM 1/16W	R8E3P9472J
R2652	RC 100OHM 1/16W	R803R9101J
R2653	RC 100OHM 1/16W	R803R9101J
R3001	RC 5.6KOHM 1/16W	R803R9562J
R3002	RC 120OHM 1/4W	R002T4121J
R3003	RC 3.3KOHM 1/16W	R803R9332J
R3004	RC 330KOHM 1/16W	R803R9334J
R3006	RC 47KOHM 1/16W	R803R9473J
R3007	RC 6.8KOHM 1/16W	R803R9682J
R3008	RC 1KOHM 1/16W	R803R9102J
R3009	RC 4.7KOHM 1/16W	R803R9472J
R3010	RC 10KOHM 1/16W	R803R9103J
R3011	RC 47KOHM 1/4W	R002T4473J
R3012	RC 56KOHM 1/4W	R002T4563J
R3014	RC 56KOHM 1/16W	R803R9563J
R3015	RC 47KOHM 1/4W	R002T4473J
R3016	RC 270OHM 1/4W	R002T4271J
R3017	RC 560OHM 1/16W	R803R9561J
R3020	RC 560OHM 1/16W	R803R9561J
R3021	RC 1KOHM 1/16W	R803R9102J
R3022	RC 150KOHM 1/16W	R803R9154J
R3025	RC 470OHM 1/16W	R803R9471J
R3026	RC 270KOHM 1/16W	R803R9274J
R3027	RC 15KOHM 1/16W	R803R9153J
R3028	RC 47KOHM 1/4W	R002T4473J
R3030	RC 5.6KOHM 1/16W	R803R9562J
R3031	RC 1MOHM 1/16W	R803R9105J
R3032	RC 10KOHM 1/16W	R803R9103J
R3033	RC 10KOHM 1/16W	R803R9103J
R3034	RC 1MOHM 1/16W	R803R9105J
R3035	RC 10KOHM 1/16W	R803R9103J
R3036	RC 10KOHM 1/16W	R803R9103J
R3037	RC 47KOHM 1/16W	R803R9473J
R3038	RC 4.7KOHM 1/16W	R803R9472J
R3043	RC 470KOHM 1/16W	R803R9474J
R3044	RC 3.3KOHM 1/16W	R803R9332J
R3045	RC 3.3KOHM 1/16W	R803R9332J
R3046	RC 10KOHM 1/16W	R803R9103J
R3047	RC 10KOHM 1/16W	R803R9103J
R3049	RC 47KOHM 1/16W	R803R9473J

Mark No.	Description	Part No.
R3050	RC 100OHM 1/4W	R002T4101J
R3051	RC 18KOHM 1/16W	R803R9183J
R3053	RC 470KOHM 1/16W	R803R9474J
R3055	RC 22KOHM 1/16W	R803R9223J
R3056	RC 1KOHM 1/16W	R803R9102J
R3057	RC 22KOHM 1/16W	R803R9223J
R3062	RC 1KOHM 1/16W	R803R9102J
R3063	RC 1KOHM 1/16W	R803R9102J
R3083	RC 33KOHM 1/16W	R803R9333J
R3087	RC 33KOHM 1/16W	R803R9333J
R4001	RC 390OHM 1/16W	R8E3P9391F
R4002	RC 75OHM 1/16W	R803R9750F
R4003	RC 75OHM 1/16W	R8E3P9750F
R4004	RC 82OHM 1/16W	R8E3P9820F
R4005	RC 75OHM 1/16W	R8E3P9750F
R4008	RC 100 OHM 1/16W	R803R9101J
R4012	RC 1MOHM 1/16W	R803R9105J
R4014	RC 4.7KOHM 1/16W	R8E3P9472J
R4016	RC 100OHM 1/16W	R803R9101J
R4018	RC 4.7KOHM 1/16W	R803R9472J
R4019	RC 33OHM 1/16W	R803R9330J
R4020	RC 33OHM 1/16W	R803R9330J
R4021	RC 33OHM 1/16W	R803R9330J
R4022	RC 10KOHM 1/16W	R8E3P9103J
R4023	RC 4.7KOHM 1/16W	R8E3P9472J
R4024	RC 4.7KOHM 1/16W	R8E3P9472J
R4025	RC 220OHM 1/16W	R803R9221J
R4026	RC 220OHM 1/16W	R803R9221J
R4027	RC 220OHM 1/16W	R803R9221J
R4031	RC 4.7KOHM 1/16W	R803R9472J
R4035	RC 4.7KOHM 1/16W	R8E3P9472J
R4036	RC 4.7KOHM 1/16W	R803R9472J
R4037	RC 4.7KOHM 1/16W	R803R9472J
R4038	RC 4.7KOHM 1/16W	R8E3P9472J
R4039	RC 4.7KOHM 1/16W	R8E3P9472J
R4040	RC 4.7KOHM 1/16W	R8E3P9472J
R4041	RC 4.7KOHM 1/16W	R8E3P9472J
R4042	RC 100OHM 1/16W	R803R9101J
R4043	RC 10KOHM 1/16W	R8E3P9103J
R4044	RC 10KOHM 1/16W	R8E3P9103J
R4045	RC 4.7KOHM 1/16W	R803R9472J
R4046	RC 4.7KOHM 1/16W	R8E3P9472J
R4047	RC 33OHM 1/16W	R803R9330J
R4048	RC 47KOHM 1/16W	R803R9473J
R4049	RC 4.7KOHM 1/16W	R8E3P9472J
R4050	RC 4.7KOHM 1/16W	R8E3P9472J
R4051	RC 4.7KOHM 1/16W	R8E3P9472J
R4052	RC 4.7KOHM 1/16W	R8E3P9472J
R4053	RC 1KOHM 1/16W	R8E3P9102J
R4054	RC 1KOHM 1/16W	R8E3P9102J
R4056	RC 100OHM 1/16W	R803R9101J
R4057	RC 100OHM 1/16W	R803R9101J
R4058	RC 220OHM 1/16W	R803R9221J
R4059	RC 100 OHM 1/16W	R803R9101J
R4060	RC 1KOHM 1/16W	R8E3P9102J
R4061	RC 3.3KOHM 1/16W	R803R9332J
R4064	RC 100OHM 1/16W	R803R9101J
R4068	RC 100OHM 1/16W	R803R9101J
R4070	RC 47KOHM 1/16W	R803R9473J
R4071	RC 150OHM 1/16W	R803R9151J
R4072	RC 8.2KOHM 1/16W	R803R9822J
R4073	RC 100OHM 1/16W	R803R9101J
R8002	RC 3.3KOHM 1/16W	R803R9332J
R8003	RC 1.5KOHM 1/16W	R803R9152J
R8004	RC 33KOHM 1/4W	R002T4333J
R8005	RC 220OHM 1/16W	R803R9221J
R8006	RC 68OHM 1/16W	R803R9680J
R8007	RC 100KOHM 1/16W	R803R9104J
R8008	RC 470OHM 1/16W	R803R9471J
R8009	RC 470OHM 1/2W	R002T2471J
R8010	RC 68OHM 1/16W	R803R9680J
R8011	RC 100OHM 1/4W	R002T4101J
R8012	RC 470OHM 1/16W	R803R9471J
R8014	RC 100OHM 1/16W	R803R9101J
R8015	RC 100OHM 1/16W	R803R9101J
R8016	RC 2.2KOHM 1/16W	R803R9222J
R8017	RC 2.2KOHM 1/16W	R803R9222J
R8019	RC 75OHM 1/16W	R803R9750J
R8021	RC 1KOHM 1/16W	R803R9102J
R8022	RC 1KOHM 1/16W	R803R9102J
R8023	RC 3.3KOHM 1/16W	R803R9332J
R8024	RC 4.7KOHM 1/16W	R803R9472J
R8025	RC 1KOHM 1/16W	R803R9102J
R8026	RC 470KOHM 1/16W	R803R9474J
R8027	RC 4.7KOHM 1/16W	R803R9472J
R8028	RC 10KOHM 1/16W	R803R9103J
R8029	RC 10KOHM 1/16W	R803R9103J
R8030	RC 470OHM 1/16W	R803R9471J
R8031	RC 470OHM 1/16W	R803R9471J
R8032	RC 150OHM 1/16W	R803R9151J
R8033	RC 1.5KOHM 1/16W	R803R9152J
R8034	RC 1.5KOHM 1/16W	R803R9152J
R8035	RC 10KOHM 1/16W	R803R9103J
R8036	RC 56OHM 1/4W	R002T4560J
R8037	RC 10KOHM 1/16W	R803R9103J
R8038	RC 12KOHM 1/16W	R803R9123J
R8039	RC 12KOHM 1/16W	R803R9123J
R8040	RC 47KOHM 1/16W	R803R9473J
R8041	RC 10KOHM 1/16W	R803R9103J
R8042	RC 10KOHM 1/16W	R803R9103J
R8043	RC 10KOHM 1/16W	R803R9103J
R8044	RC 47KOHM 1/16W	R803R9473J
R8045	RC 100KOHM 1/16W	R803R9104J
R8046	RC 100KOHM 1/16W	R803R9104J
R8047	RC 10KOHM 1/16W	R803R9103J
R8048	RC 10KOHM 1/16W	R803R9103J
R8049	RC 2.2OHM 1/16W	R803R92R2J
R8054	RC 2.2KOHM 1/16W	R803R9222J
R8056	RC 150OHM 1/16W	R803R9151J
R8059	RC 4.7KOHM 1/4W	R002T4472J
R8101	RC 1KOHM 1/16W	R803R9102J
R8112	RC 470OHM 1/16W	R803R9471J
R8113	RC 470OHM 1/16W	R803R9471J

OTHERS

B501	CORE,BEADS W4BRH3.5X6X1.0X2	024HT03563
B2601	CORE,BEADS MMZ1608R102CT	0246C51024
B2602	CORE,BEADS MMZ1608R102CT	0246C51024

Mark	No.	Description	Part No.
	B2603	CORE,BEADS MMZ1608R102CT	0246C51024
	B2604	CORE,BEADS MMZ1608R102CT	0246C51024
	B2605	CORE,BEADS MMZ1608R102CT	0246C51024
	B4001	CORE,BEADS MMZ1608R102CT	0246C51024
	B4002	CORE,BEADS MMZ1608R102CT	0246C51024
	B4003	CORE,BEADS MMZ1608R102CT	0246C51024
	B4004	CORE,BEADS MMZ1608R102CT	0246C51024
	B4005	CORE,BEADS MMZ1608R102CT	0246C51024
	B4006	CORE,BEADS MMZ1608R102CT	0246C51024
	B4007	CORE,BEADS MMZ1608R102CT	0246C51024
	B4008	CORE,BEADS MMZ1608R102CT	0246C51024
	B4010	CORE,BEADS MMZ1608R102CT	0246C51024
	B8001	CORE,BEADS FCM2012H-102T04	024HC31022
	B8002	CORE,BEADS FCM2012H-102T04	024HC31022
	B8003	CORE,BEADS FCM2012H-102T04	024HC31022
	B8103	CORE,BEADS MMZ1608R102CT	0246C51024
	CD102	CORD,JUMPER 2F041508	122F041508
⚠	CD501	CORD,AC BUSH 09614920	1209614920
	CD681	CORD,JUMPER 2H051202	122H051202
	CP101	CONNECTOR PCB SIDE TOC-C09X-A1	0697290620
	CP102	PCB SIDE IMSA-9604S-04C	069J740599
	CP103	WIRE HOLDER B2013H02-2P	067U002019
	CP501	CON. PCB SIDE A2001WV2-11P	069S2B0629
⚠	CP502	CON. PCB SIDE A3963WV2-3PD	069S320419
	CP651	CON. PCB SIDE IMSA-9604S-05F	069J750589
	CP681	CON. PCB SIDE IMSA-9604S-05F	069J750589
	CD4002	CORD,CONNECTOR CU2B1101	06CU2B1101
	CD6002	CABLE CPL02006	06CPL02006
	CD6003	CORD,RCA PIN TD-020301-3	06CPBA2003
	CD8001	CORD,JUMPER 2F0E1001	122F0E1001
	CP2601	CON. PCB SIDE 09-5000-024-001	069GYOT119
	CP2602	CON. PCB SIDE 00-6232-005-006	069EV53010
	CP2603	CON. PCB SIDE 00-6232-006-006	069EV63010
	CP3001	CON. PCB SIDE TMC-J12P-B2	06972C0010
	CP8001	CON. PCB SIDE IMSA-9604S-14C	069J7E0599
	CP8101	CON. PCB SIDE IMSA-9604S-14F	069J7E0589
⚠	F501	FUSE 51MS025L	081PC2R505
	FH501	HOLDER,FUSE EYF-52BCY	06710T0009
	FH502	HOLDER,FUSE EYF-52BCY	06710T0009
	NR4001	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4002	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4003	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4004	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4005	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4006	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4007	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	NR4008	R,NETWORK 4D03WGJ0101T5E	110P4101M4
	OS651	REMOTE RECEIVER PIC-37043LO-H	077Q037009
	OS8001	OPTICAL DEVICE OFTG038101	07AQ000009
⚠	TU301	RF UNIT 115-V-H035ARE	162300042
	V651	LED DISPLAY CO2D0M3-A	0040H54010
	X101	CRYSTAL HC-49/U	100DT3R528
	X3001	CRYSTAL B10000C001	100GT01006
	X3002	CRYSTAL DT-26	100DA32R01
	X4001	CRYSTAL HC-49U/S	100BT02701
⚠	T501	TRANSFORMER,SWITCHING 81291244	0481291244
	J8001	RCA JACK MSP-213V1-432	060J411031
	J8003	RCA JACK MSP-281V42-B	060J401099
	J8004	RCA JACK MSP-281V40-B	060J401098
	J8005	RCA JACK MSP-281V31-A	060J421039
	J8006	RCA JACK MSP-213V1-732	060J411033
	J8007	RCA JACK MSP-213V1-652	060J411032
	J8008	JACK MDC-070V-B_LF	063D700008
	PCB010	VCR MT ASSY VMD335B	A2E514X010
	PCB130	DVD ASSY VMD351A	A2E514X130
	PCB270	OPERATION ASSY VEDA46B	A2E514X270

Note ;

RESISTOR

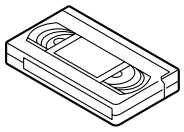
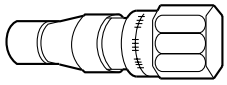
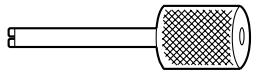
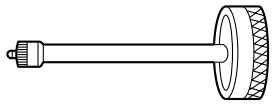
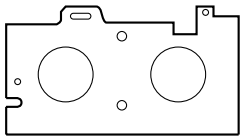
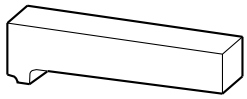
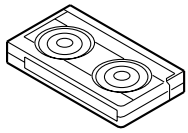
RC : CARBON RESISTOR

CAPACITORS

CC : CERAMIC CAPACITOR
CE : ALUMI ELECTROLYTIC CAPACITOR
CP : POLYESTER CAPACITOR
CPP : POLYPROPYLENE CAPACITOR
CPL : PLASTIC CAPACITOR
CMP : METAL POLYESTER CAPACITOR
CMPL : METAL PLASTIC CAPACITOR
CMPP : METAL POLYPROPYLENE CAPACITOR

6. ADJUSTMENT

6.1 SERVICING FIXTURES AND TOOLS

(For 4 heads model) VHS Alignment Tape GGV1183 (VN1S-LI63H) GGV1184 (VN1S-X63) GGV1185 (VN2E-LI63H) 	GGF1506 Adapter GGF1507 Dial Torque Gauge (10~90 gf•cm) GGF1508 (60~600 gf•cm) 	GGF1509 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 	GGF1510 X Value Adjustment Screwdriver 
GGF1511 Master Plane 	GGF1512 Reel Disk Height Adjustment Jig 	GGV1186 Torque Tape (VHT-063) 	

Part No.	Parts Name	Remarks
GGV1183	VHS Alignment Tape	Hi-Fi Audio **(For 4 heads model)**
GGV1184	VHS Alignment Tape	X Value Adjustment **(For 4 heads model)**
GGV1185	VHS Alignment Tape	EP Monoscope, 6 kHz **(For 4 heads model)**
GGF1506	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Assy)
GGF1507	Dial Torque Gauge (10~90 gf•cm)	Brake Torque (T Reel Assy)
GGF1508	Dial Torque Gauge (60~600 gf•cm)	VSR Torque, Brake Torque (S Reel)
GGF1509	Post Adjustment Screwdriver	Guide Roller Adjustment
GGF1510	X Value Adjustment Screwdriver	X Value Adjustment
GGF1511	Master Plane	Reel Disk Heifht Adjustment
GGF1512	Reel Disk Height Adjustment Jig	Reel Disk Heifht Adjustment
GGV1186	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback

■ PREPARATION FOR SERVICING

1. While pressing the CH DOWN button on the set for more than 2 seconds, press the POWER button on the set simultaneously at the Power OFF. Although the DVD is connected, the DVD mode cannot be selected.
2. Press both CH UP button on the set and the REC button on the set for more than 2 seconds. (The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape.)
3. In case of using a cassette tape, press the EJECT button to insert or eject a cassette tape. Turn on the power and re-check the cable before checking the trouble points.

When you servicing with connection of DVD, perform the operations above step 2 to step 3.

6.2 ADJUSTMENT ITEMS AND NECESSARY ADJUSTMENT POINTS

■ Adjustment Items

[Mechanism Part]

1. CONFIRMATION AND ADJUSTMENT

① 1-1 CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT
② 1-2 CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION
③ 1-3 CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK
④ 1-4 CONFIRMATION OF VSR TORQUE
⑤ 1-5 CONFIRMATION OF REEL BRAKE TORQUE

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

⑥ 2-1 GUIDE ROLLER
⑦ 2-2 CONFIRMATION AND ADJUSTMENT OF AUDIO/CONTROL HEAD
⑧ 2-3 TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)
⑨ 2-4 CONFIRM HI-FI AUDIO (Hi-Fi model only)

[Electrical Part]

1. BASIC ADJUSTMENT

⑩ 1-1 PG SHIFTER
⑪ VCR SIDE EEPROM (IC3099) INITIAL SETTING
REPLACING EEPROM (IC3099) IC

When	Adjustment Items

Replacing Parts of Mechanism Assy

When	Adjustment Items	
Replacing REEL DISK (S REEL, T REEL)	Mechanical point	①②③④⑤
	Electrical point	None
Replacing TENSION BAND TENSION CONNECT TENSION ARM ASSY T BRAKE BAND T BRAKE SPRING T BRAKE ARM IDLER ASSY CLUTCH ASSY	Mechanical point	②③④⑤
	Electrical point	None
Replacing HEAD (AUDIO CONTROL) CYLINDER UNIT ASSY	Mechanical point	⑥⑦⑧⑨
	Electrical point	⑩

Replacing PCB Assy or Electrical Parts

When	Adjustment Items	
Replacing DECK ASSY VCR MT PCB ASSY	Mechanical point	None
	Electrical point	⑩
Replacing TU301 (TUNER)	Mechanical point	None
	Electrical point	None
Replacing IC3099 (VCR SIDE EEPROM)	Mechanical point	None
	Electrical point	⑩⑪
Replacing IC4007 (DVD SIDE EEPROM)	Mechanical point	None
	Electrical point	None
Replacing DVD DECK	Mechanical point	None
	Electrical point	None

6.3 SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit or on the main unit and on the remote control for more than a standard time in the appropriate condition. (See below chart.)
In case of the main unit and remote control, press the remote control buttons first, then press the main unit buttons.

Set Condition	Set Key	Set Key	Standard Time	Operations
VCR mode	CH UP	FF	2 sec.	PLAY/REC total hours are displayed on the TV Monitor. Refer to the “PREVENTIVE CHECKS AND SERVICE INTERVALS” (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the “WHEN REPLACING EEPROM (MEMORY) IC”.
VCR mode	CH UP	PLAY	2 sec.	Initialization of the factory on VCR. **NOTE:** Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, and PLAY/REC total hours.
VCR mode (Playback)	CH UP	STOP	2 sec.	Adjust the PG SHIFTER automatically. Refer to the “ELECTRICAL ADJUSTMENT”.
Power Off	CH DOWN	POWER	2 sec.	VCR operation mode at no connection of DVD. Refer to the “PREPARATION FOR SERVICING” **NOTE:** Although the DVD is connected, the DVD mode cannot be selected.

Set Condition	Set Key	Remocon Key	Standard Time	Operations
DVD mode (No disc)	REC/OTR	4	2 sec.	Initialization of the factory on DVD. **NOTE:** Do not use this for the normal servicing. This function will only work without the setting of DVD disc at DVD mode. While pressing the Remocon Key for more than 2 seconds, press the Set Key simultaneously.
DVD mode (No disc)	STOP	7	3 sec.	Releasing of PARENTAL LOCK. Refer to the “PARENTAL CONTROL - RATING LEVEL”. **NOTE:** The function will only work without the setting of DVD disc at DVD mode.

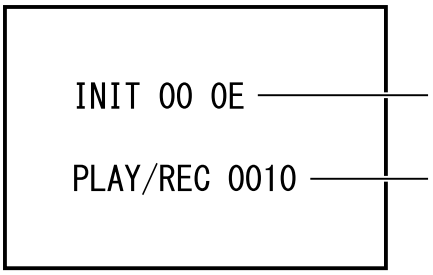
Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the “MECHANICAL ADJUSTMENT” (GUIDE ROLLER) and “ELECTRICAL ADJUSTMENT” (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape. Refer to the “PREPARATION FOR SERVICING”

6.4 CONFIRMATION OF HOURS USED

PLAY/REC total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Connect the set to TV Monitor.
2. Turn on the POWER, and set to the VCR mode.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
   The **Fig. 1** screen will appear on TV Monitor.
4. After the confirmation of using hours, turn off the power.



Initial setting content of MEMORY IC.

PLAY/REC total hours.
= (16 × 16 × 16 × thousands digit value)
+ (16 × 16 × hundreds digit value)
+ (16 × tens digit value)
+ (ones digit value)

Fig. 1

6.5 PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.
Parts replacing time does not mean the life span for individual parts.
Also, long term storage or misuse may cause transformation and aging of rubber parts.
The following list means standard hours, so the checking hours depends on the conditions.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches
Pinch Roller	■	●	●	●	●	
Capstan DD Unit		●	●	●	●	
Loading Motor					●	
Tension Band		●	●	●	●	
T Brake Band		●	●	●	●	
Clutch Assy		●	●	●	●	
Idler Arm Assy		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

■ : Clean
● : Check it and if necessary, replace it

CLEANING

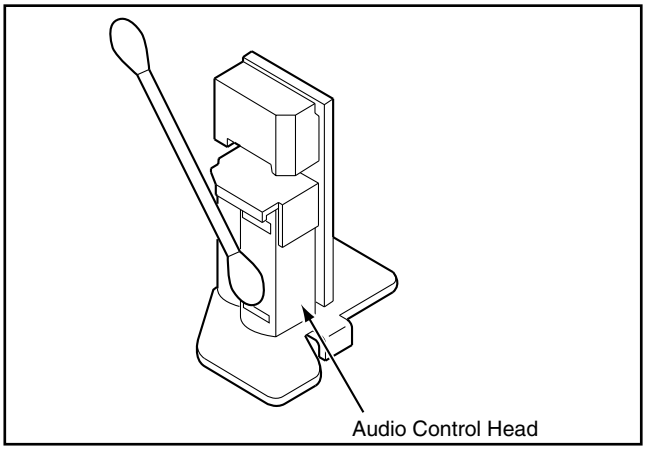
NOTE
After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

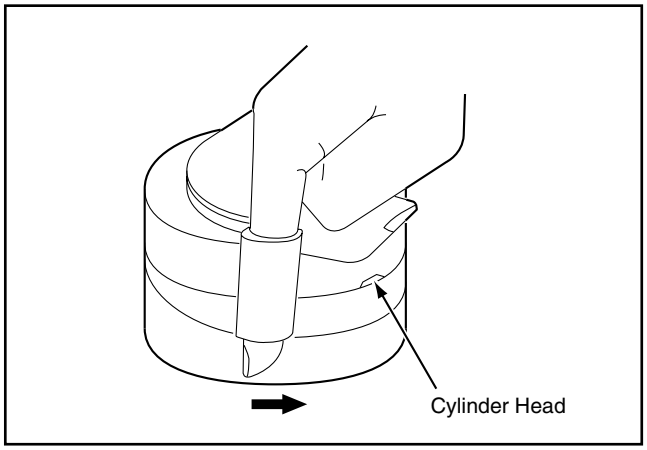
1. AUDIO CONTROL HEAD
Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**

2. TAPE RUNNING SYSTEM
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER
Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE
Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.





6.6 MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder.
  (Do not place an object which weighs over 500g.)

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane (**GGF1511**) and reel disk height adjustment jig (**GGF1512**) on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A**.
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig (**GGV1186**) and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10 (+2, -0) mm.
4. Adjust the other reel in the same way.

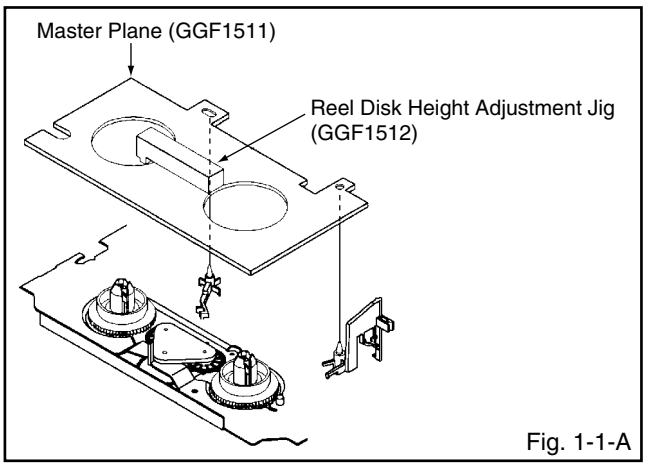


Fig. 1-1-A

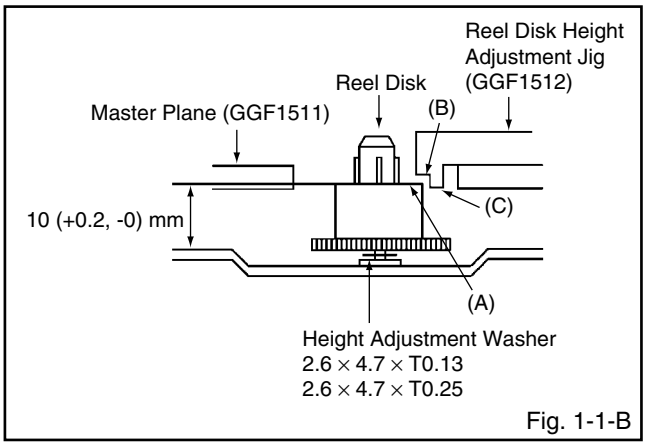


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

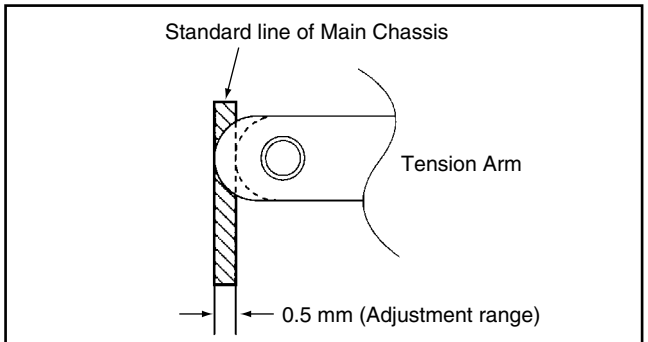


Fig. 1-2-A

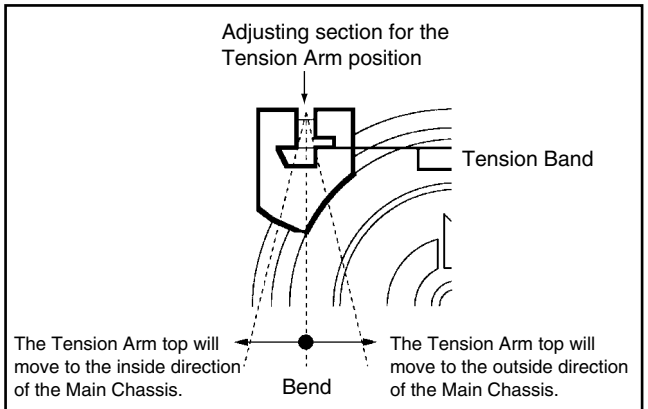


Fig. 1-2-B

• USING A CASSETTE TYPE TORQUE TAPE (**GGV1186**)

1. After confirmation and adjustment of Tension Post position (**Refer to item 1-2**), load the cassette type torque tape (GGV1186) and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 50~90gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge (**GGF1508**) and Adapter (**GGF1506**) on the S Reel. Set to the Picture Search (Rewind) mode. (**Refer to Fig.1-4-B**)
2. Then, confirm that it indicates 120~180gf•cm.

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) (**Refer to Fig. 1-4-B**)

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Assy from the S Reel.
3. Install the Torque Gauge (**GGF1508**) and Adapter (**GGF1506**) on the S Reel. Turn the Torque Gauge (**GGF1508**) clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

(T Reel Brake) (**Refer to Fig. 1-4-B**)

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Assy from the T Reel.
3. Install the Torque Gauge (**GGF1507**) and Adapter (**GGF1506**) on the T reel. Turn the Torque Gauge (**GGF1507**) counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

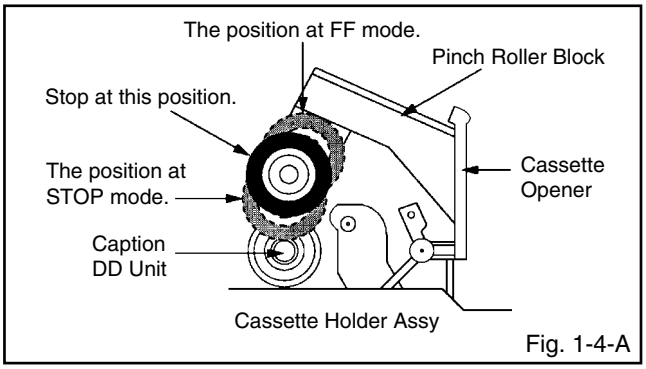


Fig. 1-4-A

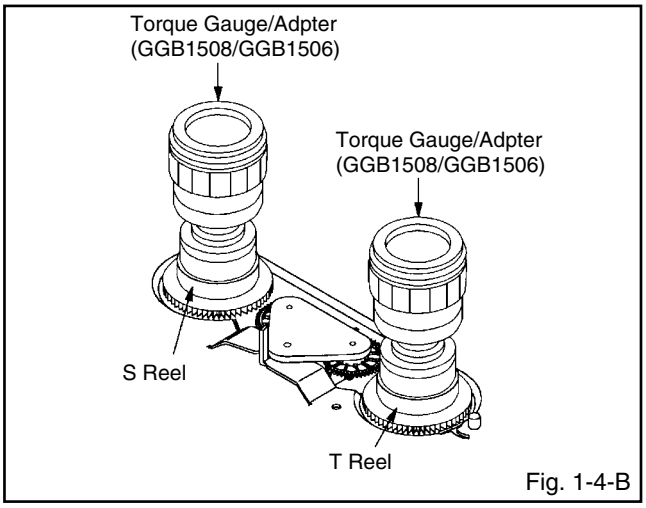


Fig. 1-4-B

NOTE

If the torque is out of the range, replace the following parts.

Check Item	Replacement Part
1-4	Idler Assy / Clutch Assy
1-5	S Reel side : S Reel/ Tension Band/Tension Connect/Tension Arm Assy T Reel side : T Reel/ Brake Band/T Brake Spring /T Brake Arm

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape (**GGV1183**). (**Refer to SERVICING FIXTURE AND TOOLS**)
2. Connect CH-1 of the oscilloscope to **TP101** (**Envelope**) and CH-2 to **TP3002** (**SW Pulse**).
3. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. (**Refer to Fig. 2-1-A**)
5. When observing the envelope, adjust the Adjusting Driver (**GGF1509**) slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

After adjustment, confirm and adjust A/C head. **(Refer to item 2-2)**

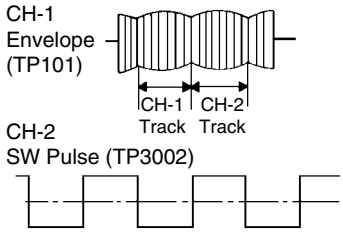


Fig. 2-1-A

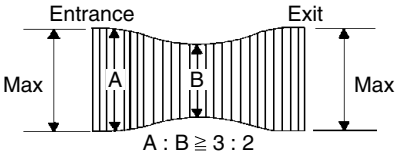


Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape (**GGV1183**). (Refer to SERVICING FIXTURE AND TOOLS)
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A**.
   a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C**.
   c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

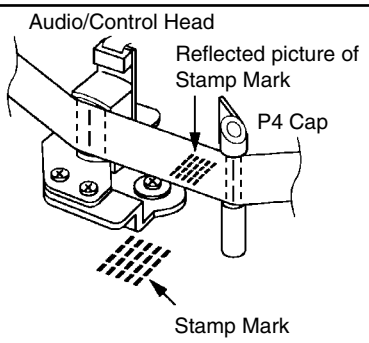


Fig. 2-2-A

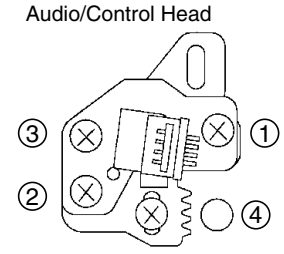


Fig. 2-2-B

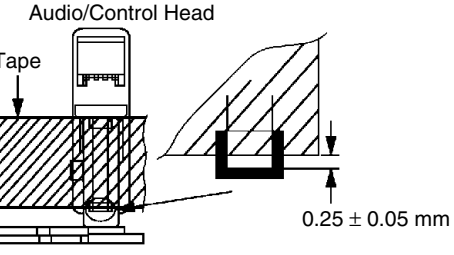


Fig. 2-2-C

2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. (**Refer to item 1-1**)
2. Confirm and adjust the position of the Tension Post. (**Refer to item 1-2**)
3. Adjust the Guide Roller. (**Refer to item 2-1**)
4. Confirm and adjust the Audio/Control Head. (**Refer to item 2-2**)
5. Connect CH-1 of the oscilloscope to **TP3002**, CH-2 to **TP101** and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape (**GGV1183**). (**Refer to SERVICING FIXTURE AND TOOLS**)
7. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver (**GGF1510**) to the ④ of
   Fig. 2-2-B. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3**.
9. Playback the VHS Alignment Tape. (**Refer to SERVICING FIXTURE AND TOOLS**)
10. Check if the picture is played back correctly.

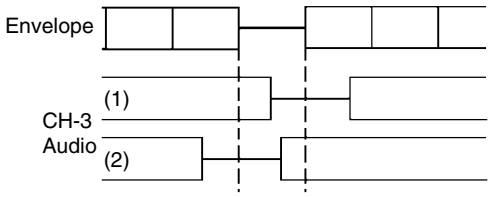
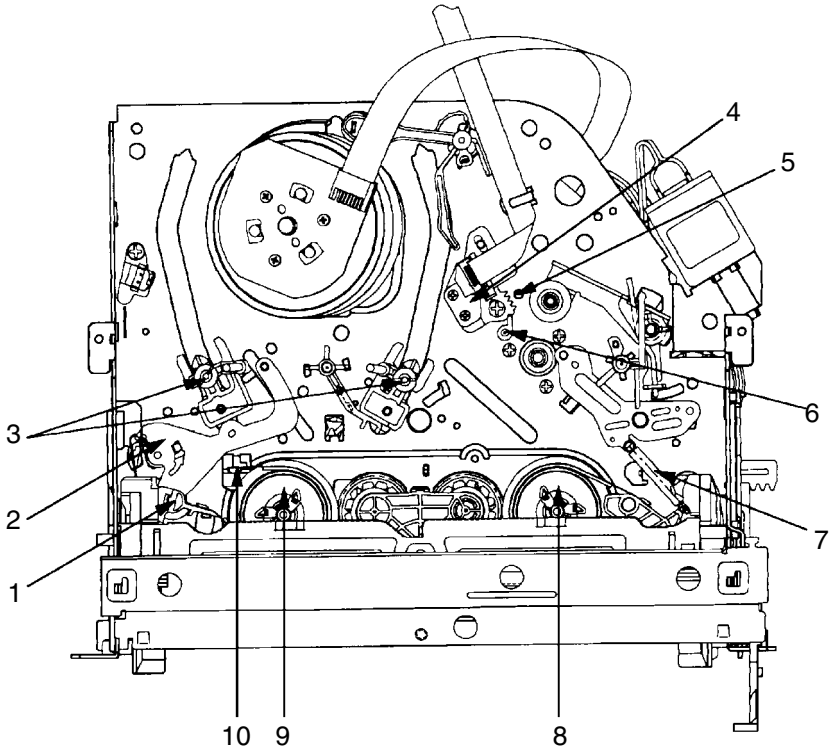


Fig. 2-3

2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP101** and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape (**GGV1185**). (**Refer to SERVICING FIXTURE AND TOOLS**)
3. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver (GGF1510) to ④ of Fig. 2-2-B. Change the X Value and adjust it so that the value becomes within 2 steps.

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position

6.7 ELECTRICAL ADJUSTMENTS

Read and perform this adjustment when repairing the circuits or replacing electrical parts or PCB assemblies.

1. BASIC ADJUSTMENT

CAUTION

When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

1-1: PG SHIFTER

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape (**GGV1183**)

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP3002** and CH-2 to **J8005**.
2. Playback the alignment tape. (**GGV1183**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press both CH UP button on the set and the STOP button on the set for more than 2 seconds.

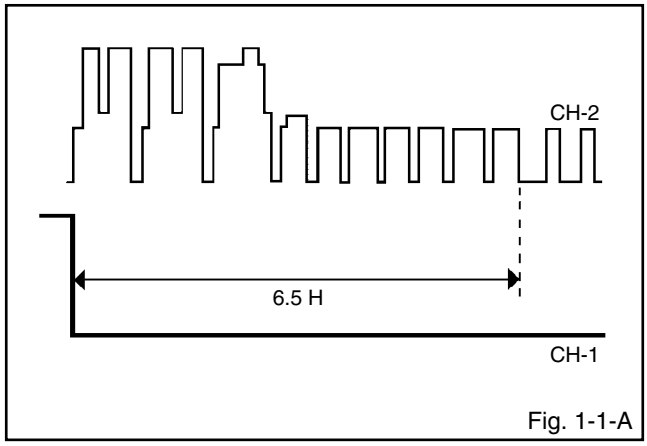


Fig. 1-1-A

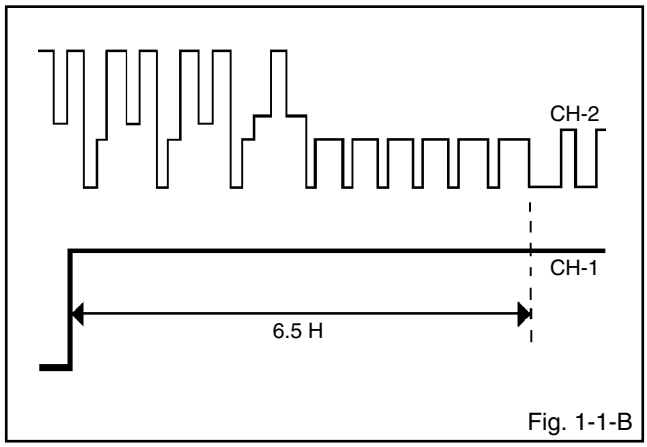
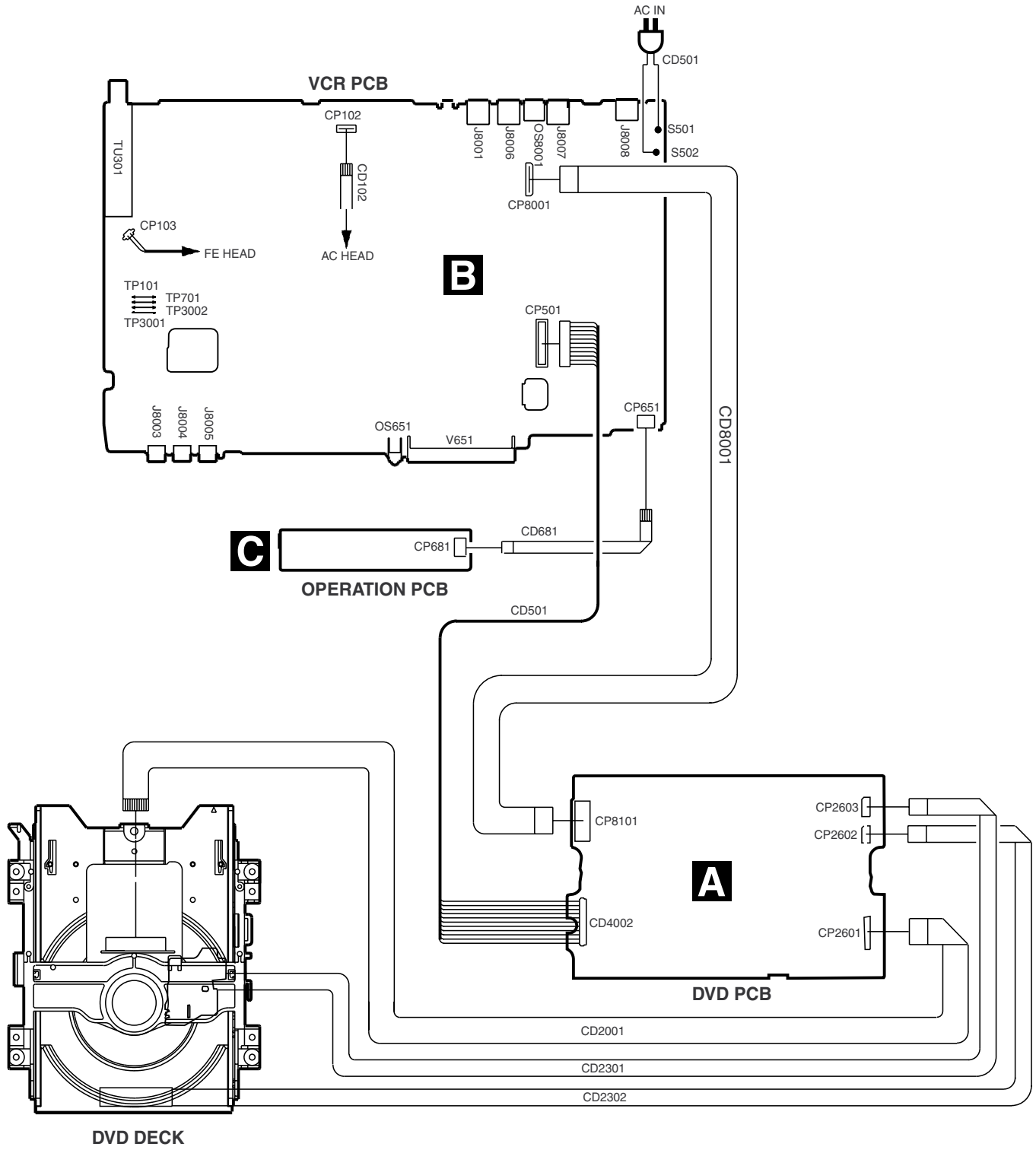


Fig. 1-1-B

2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



6.8 WHEN REPLACING DVD DECK

[When the removal of the DVD Deck]
Before removing Pick Up PCB and DVD PCB connector, make the short circuit on the position as shown **Fig. 1** using a soldering. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[When the installation of the DVD Deck]
Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

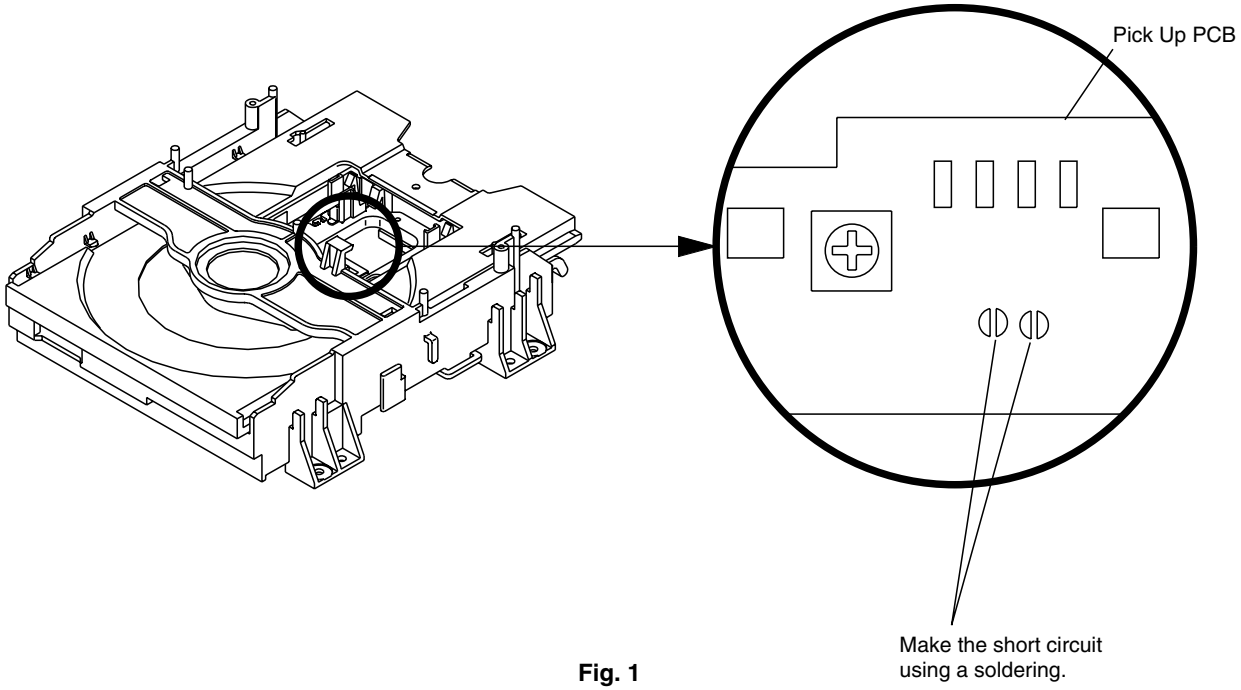


Fig. 1

6.9 WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: INI 34 and INI 35 cannot be set. Because, the total time for the PLAY/REC of the main unit is recorded.

INIT	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	0E	10	DC	60	64	64	4A	86	0B	2B	86	32	0A	08	0A	01
10	AF	97	95	8A	A0	57	31	04	88	A5	9F	3A	00	10	BF	00
20	3A	11	22	70	61	2A	3A	00	0B	00	40	C5	9A	B0	00	37
30	03	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1

1. Connect the set to TV Monitor.
2. Turn on the POWER, and set to the VCR mode.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
   ADDRESS and DATA will appear on TV Monitor as **Fig 1**.

Fig. 1

4. ADDRESS is now selected and should "blink". Using the Tracking + or - button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using Tracking + or - button until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

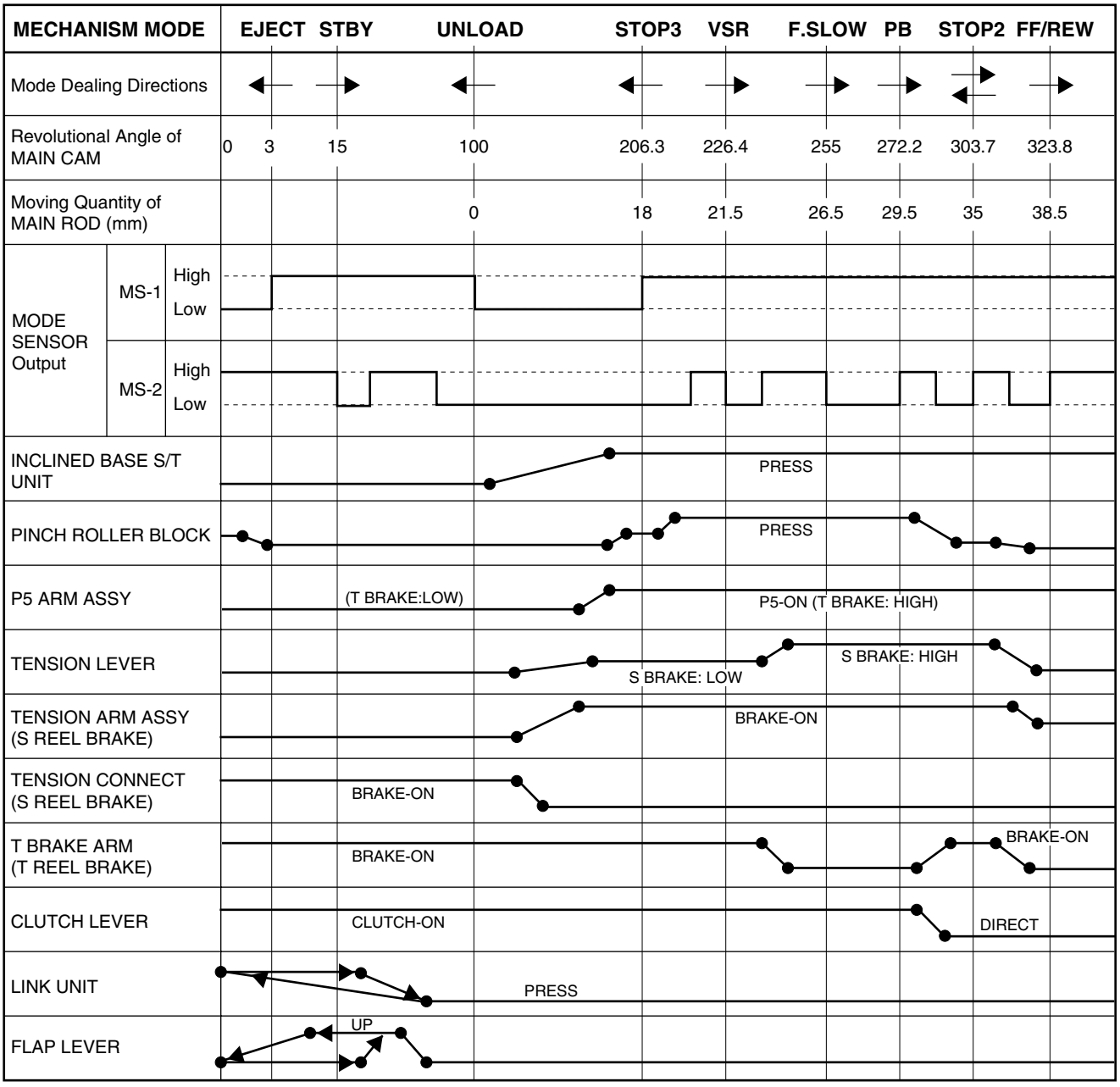
After the data input, set to the initializing of shipping.

10. Turn on the POWER, and set to the VCR mode.
11. Press both CH UP button on the set and the PLAY button on the set for more than 2 seconds.
12. After the finishing of the initializing of shipping, the unit will turn off automatically.
    The unit will now have the correct DATA for the new MEMORY IC.

7. GENERAL INFORMATION

7.1 SYSTEM SWITCH MODE

Please see the list below for the operational timing and the mode sensor output of the main parts on each mechanism modes.



7.2 TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet, Front Cabinet and DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Remove one screw ① of the Deck Chassis and remove the Loading Motor. **(Refer to Fig. 2)**
3. Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape.
4. Rotate the Clutch Assy either of the directions to wind the Video Tape in the Cassette Case.
5. Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch on the tape.

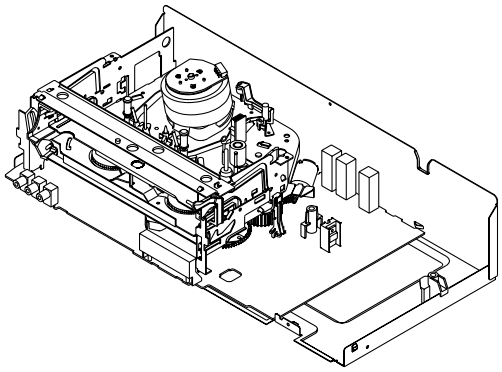


Fig. 1

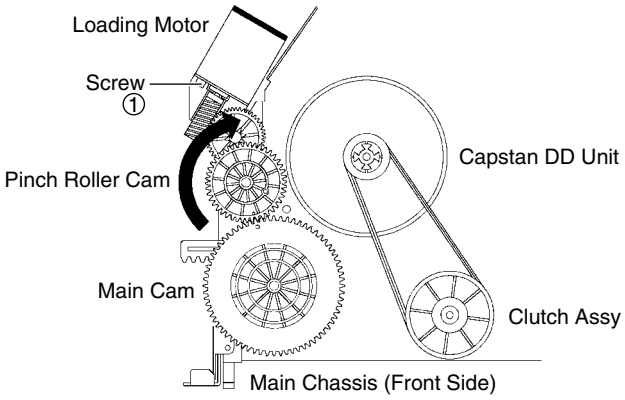


Fig. 2

7.3 DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and TV//DVD/VCR Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the Main Gear in the direction of the arrow by hand. **(Refer to Fig. 1)**
3. Draw the Tray.

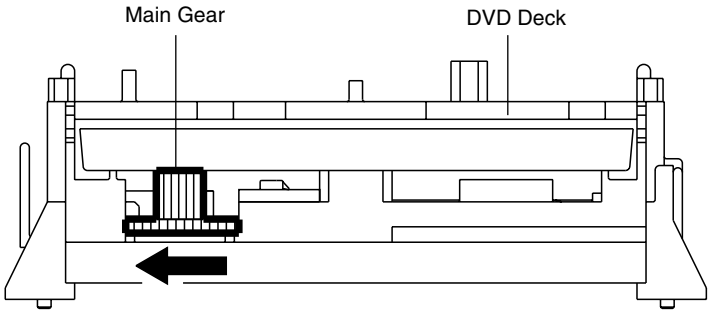


Fig. 1

7.4 PARENTAL CONTROL -RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Press and hold the '7' key on the remote control unit.
3. Simultaneously press and hold the 'STOP' key on the front panel.
4. Hold both keys for more than 2 seconds.
5. The On Screen Display message 'PASSWORD UNLOCK' will appear.
6. The 4 digit password has now been cleared.

7.5 DISASSEMBLY

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: TOP CABINET, FRONT CABINET AND OPERATION PCB ASSY (Refer to Fig. 1-1)

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connector: (CP651).
4. Unlock the 8 supports ②.
5. Remove the Front Cabinet in the direction of arrow (B).
6. Remove the 2 screws ③.
7. Remove the OPERATION PCB Assy in the direction of arrow (C).

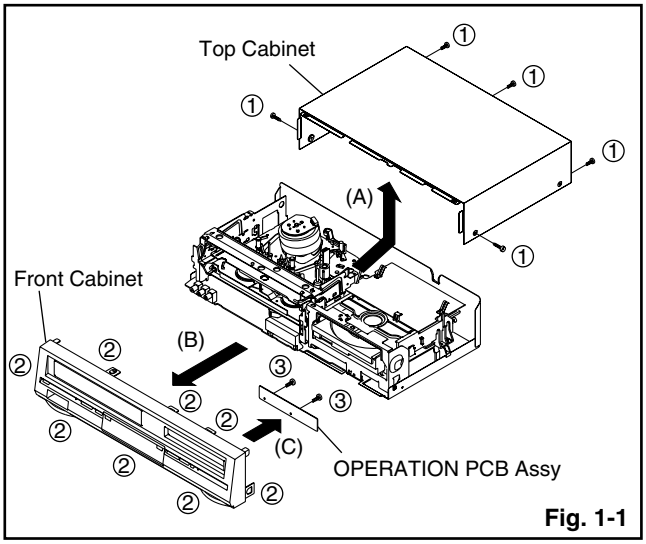


Fig. 1-1

1-2: FLAP (Refer to Fig. 1-2)

1. Open Flap to 90° and flex in direction of arrow (A), at the same time slide in direction of arrow (B).
2. Then lift in direction of arrow (C).

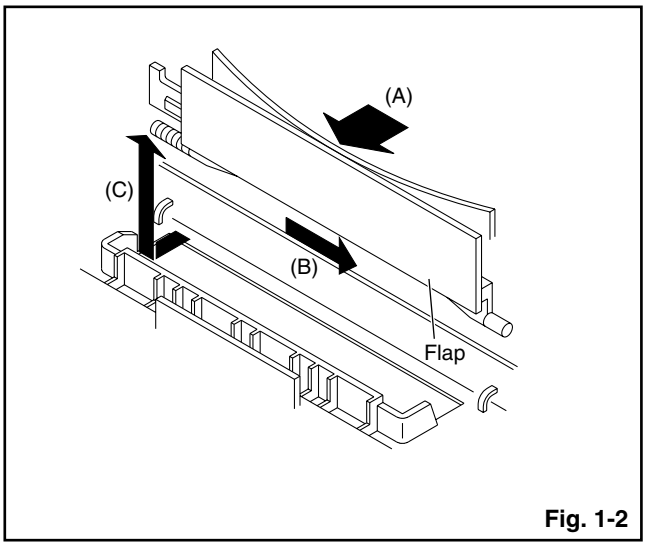


Fig. 1-2

1-3: DVD DECK/DVD PCB ASSY (Refer to Fig. 1-3)

1. Make the short circuit on the position as shown Fig. 1-3 using a soldering. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Unlock the support ① and remove the Deck Top Holder in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the 2 screws ③.
5. Disconnect the following connectors: (CP501, CP8001).
6. Remove the DVD Deck in the direction of arrow (B).
7. Remove the 2 screws ④.
8. Remove the DVD PCB Assy in the direction of arrow (C).
9. Remove the 3 screws ⑤.
10. Remove the Front Angle in the direction of arrow (D).

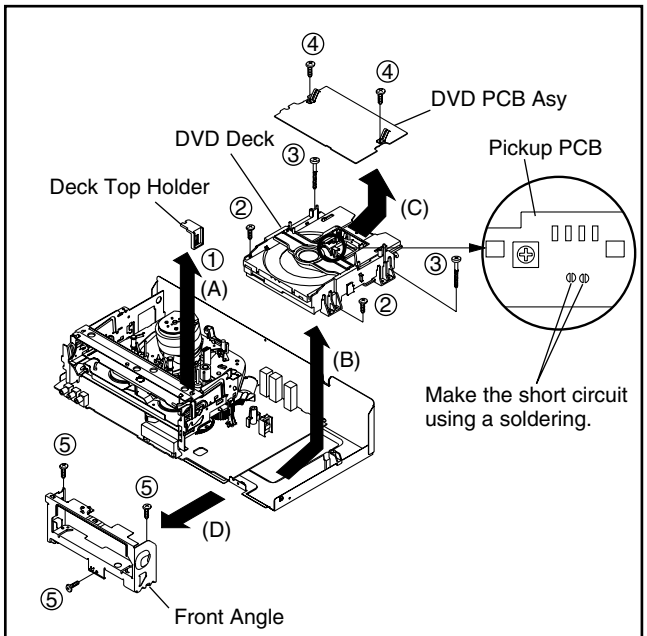


Fig. 1-3

NOTE:
When the installation of the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and VCR PCB connector.

1-4: VCR DECK (Refer to Fig. 1-4)

NOTE:

Do not remove the cable at the FE Head section. The FE Head may be damaged if you remove the cable by force.

1. Remove the screw ①.
2. Remove the FE Head.
3. Move the Cassette Holder Assy to the back side.
4. Remove the 2 screws ②.
5. Remove the 2 screws ③.
6. Disconnect the following connectors: (CP101, CP102, CP3001).
7. Remove the VCR Deck in the direction of arrow.

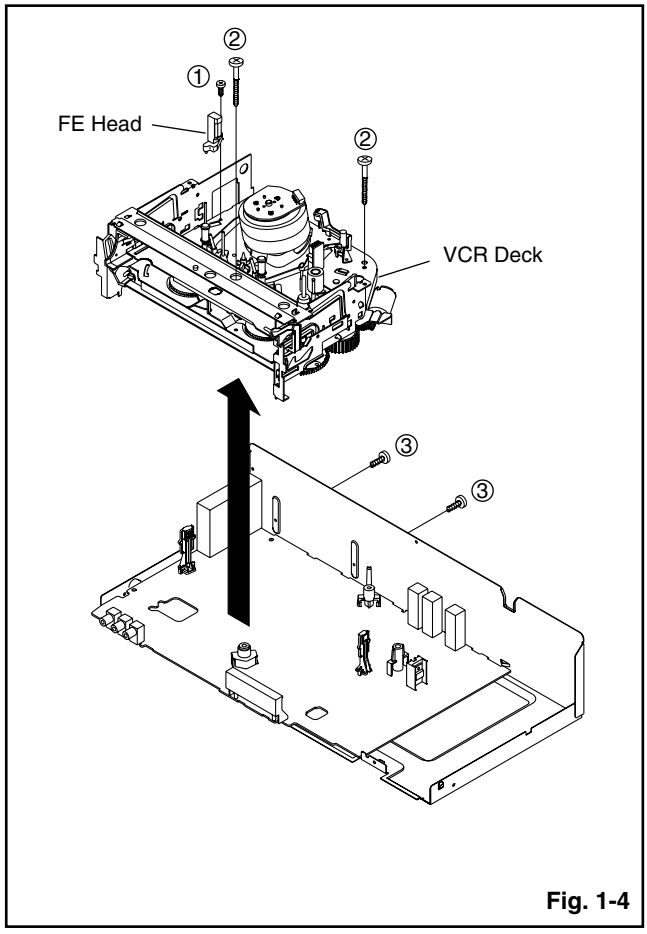


Fig. 1-4

1-5: VCR PCB (Refer to Fig. 1-5)

1. Remove the screw ①.
2. Remove the 5 screws ②.
3. Remove the 2 screws ③.
4. Remove the 3 pin Shield.
5. Remove the VCR PCB Assy in the direction of arrow.

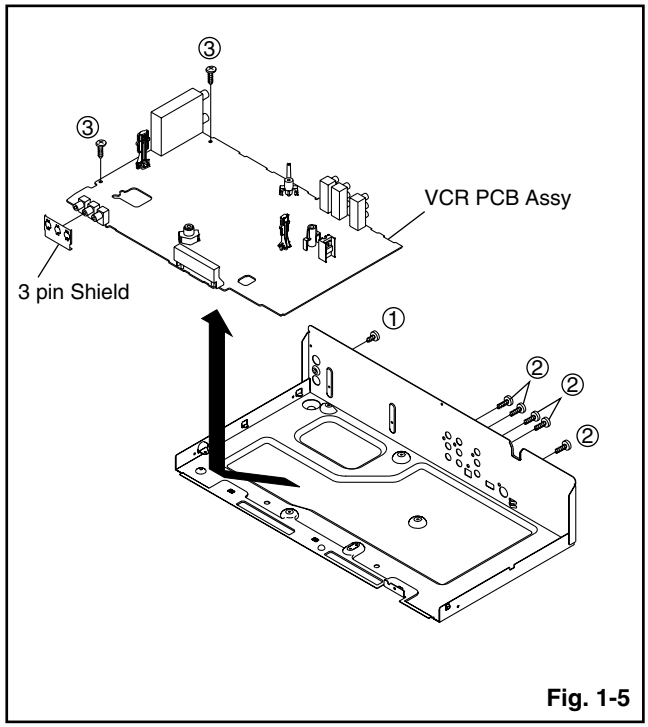


Fig. 1-5

2. REMOVAL OF VCR DECK PARTS

2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Extend the 2 supports ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE:

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

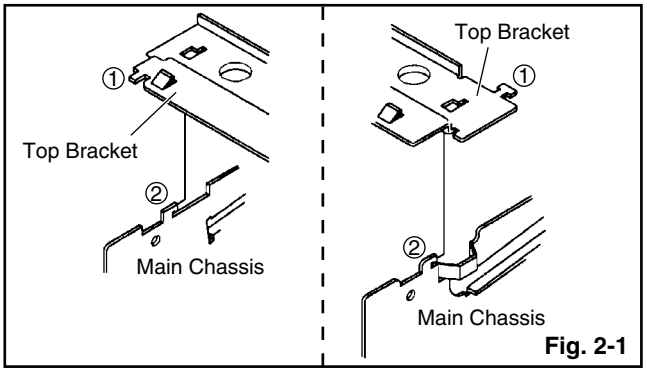


Fig. 2-1

2-2: CASSETTE HOLDER ASSY (Refer to Fig. 2-2)

1. Move the Cassette Holder Assy to the front side.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

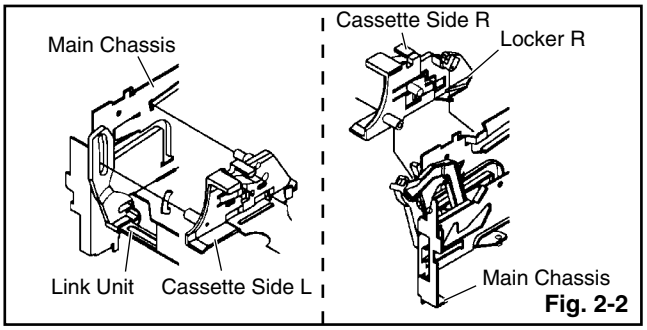


Fig. 2-2

2-3: CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.
3. Unlock the support ② and then remove the Locker R.

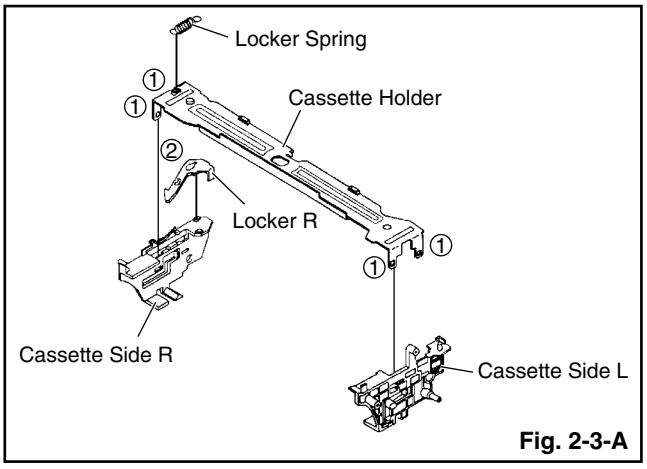


Fig. 2-3-A

NOTE:

1. In case of the Locker R installation, check if the one position of Fig.2-3-B are correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

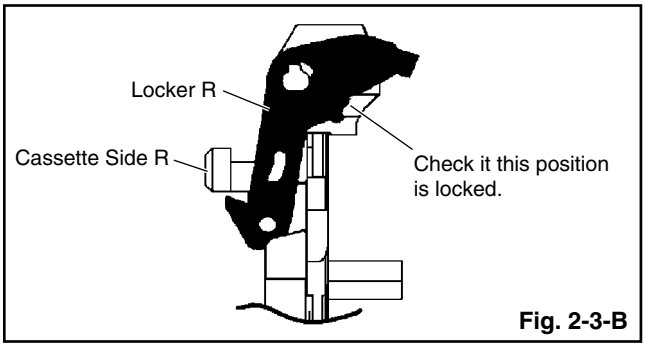


Fig. 2-3-B

2-4: LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ①.
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

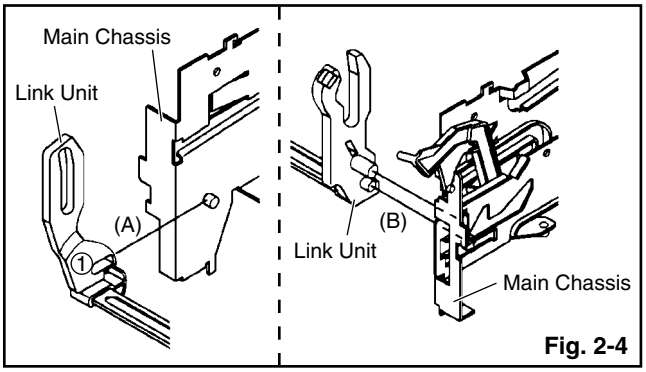


Fig. 2-4

2-5: LINK LEVER/FLAP LEVER (Refer to Fig. 2-5)

1. Extend the support ①.
2. Remove the Link Lever.
3. Remove the Flap Lever.

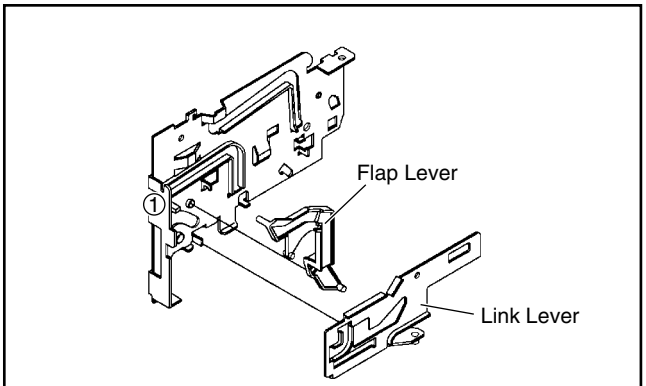


Fig. 2-5

2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.

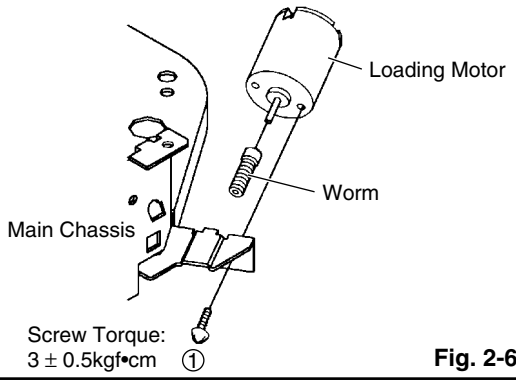


Fig. 2-6-A

NOTE:

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.

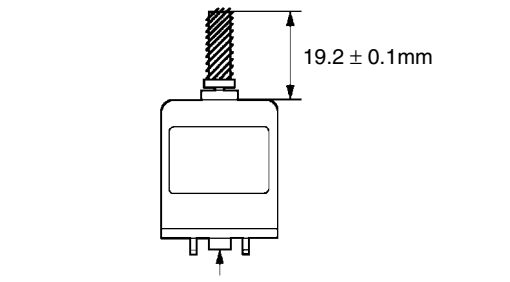


Fig. 2-6-B

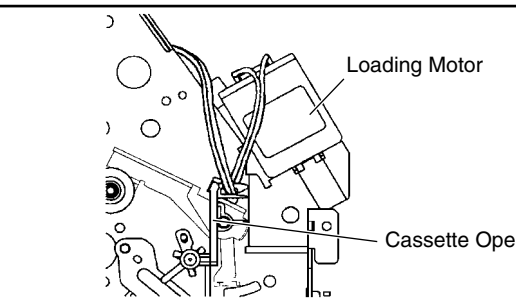


Fig. 2-6-C

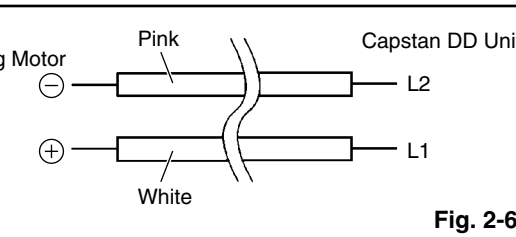


Fig. 2-6-D

2-7: TENSION ASSY (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Assy.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Assy.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.

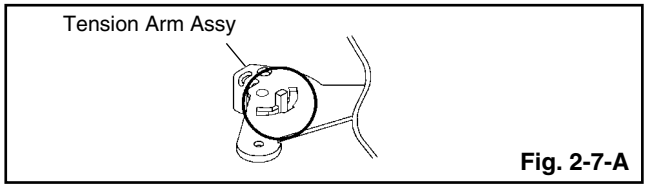


Fig. 2-7-A

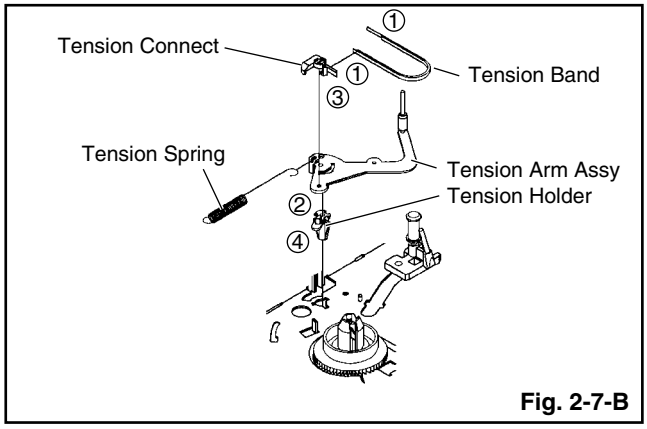


Fig. 2-7-B

NOTE:

1. In case of the Tension Band installation, note the direction of the installation. **(Refer to Fig. 2-7-C)**
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.

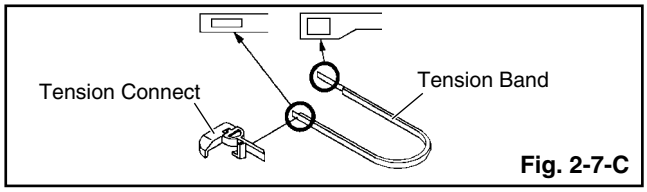


Fig. 2-7-C

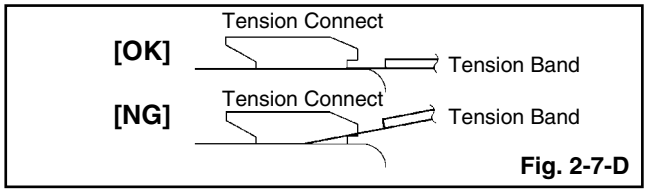


Fig. 2-7-D

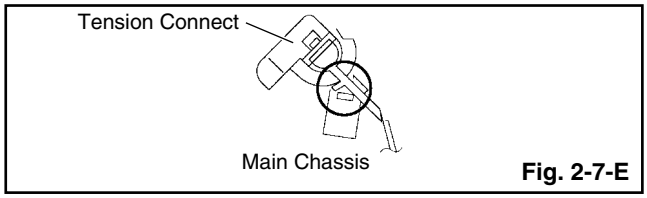


Fig. 2-7-E

2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

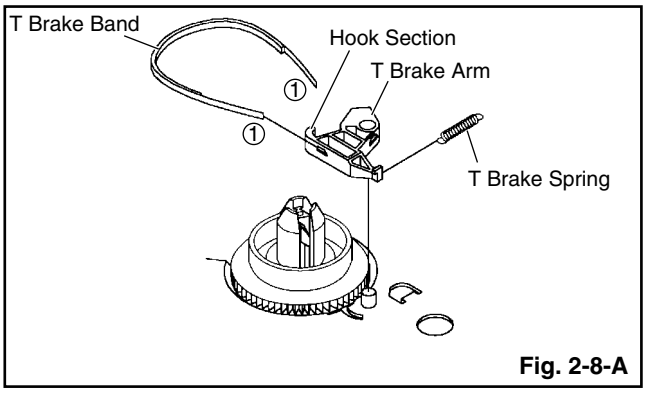


Fig. 2-8-A

NOTE:

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

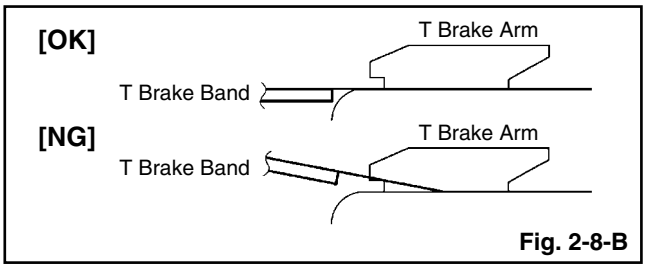


Fig. 2-8-B

2-9: S REEL/T REEL/IDLER ARM ASSY/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.
3. Remove the Idler Arm Assy and Idler Gear.

NOTE:

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-9-A)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it (FG-84M). (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

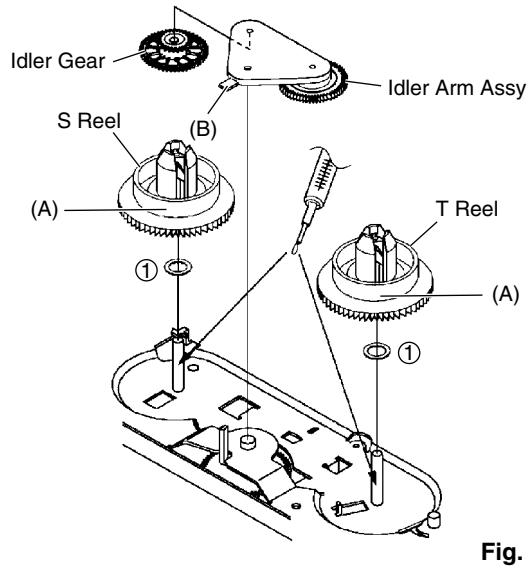


Fig. 2-9-A

NOTE:

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. **(Refer to Fig. 2-9-B)**
2. In case of the Idler Arm Assy installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.

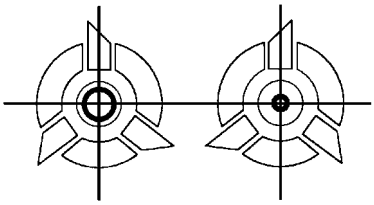


Fig. 2-9-B

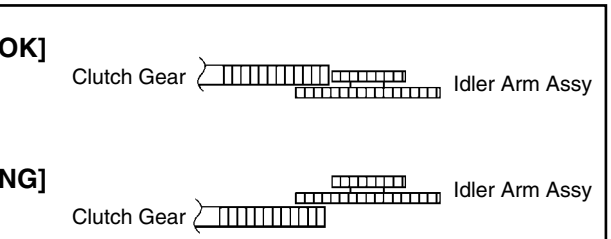


Fig. 2-9-C

2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/P5 ARM ASSY (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Assy.

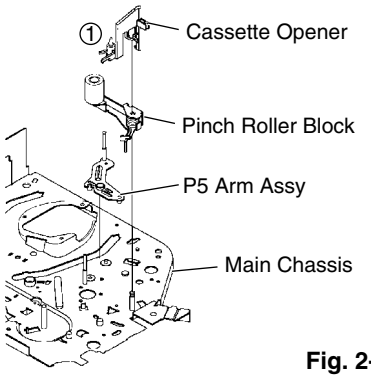


Fig. 2-10-A

NOTE:

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam installation, install correctly as Fig. 2-10-B.

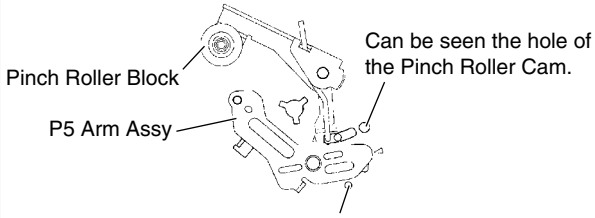


Fig. 2-10-B

2-11: A/C HEAD (Refer to Fig. 2-11-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

NOTE:

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-11-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).

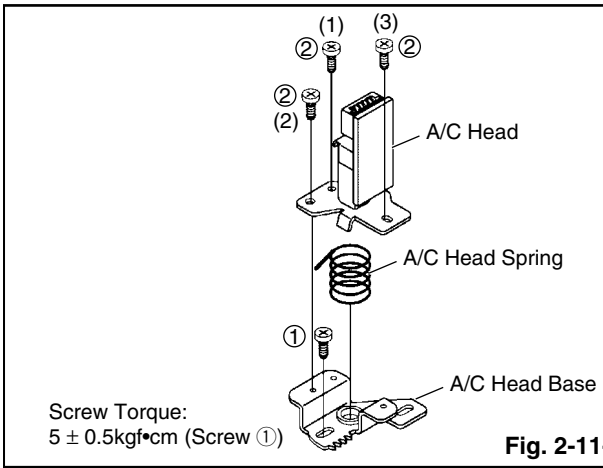


Fig. 2-11-A

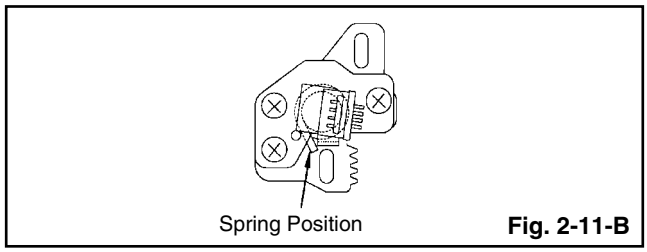


Fig. 2-11-B

2-12: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

1. Remove the screw ①.
2. Remove the FE Head.

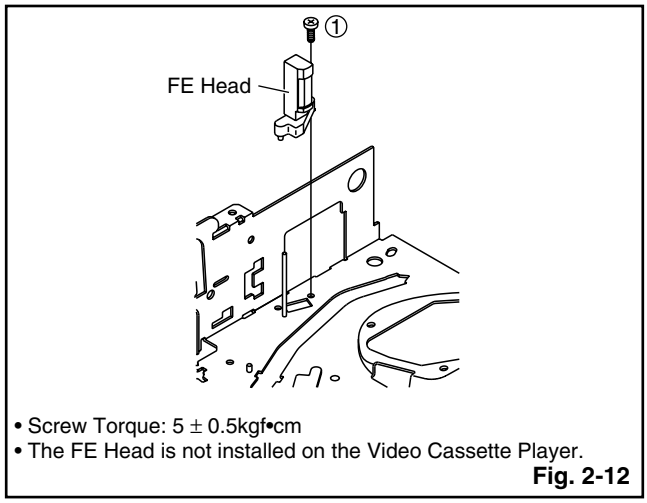


Fig. 2-12

2-13: AHC ASSY/CYLINDER UNIT ASSY (Refer to Fig. 2-13)

1. Unlock the support ① and remove the AHC Assy.
2. Disconnect the following connector: (CD2001)
3. Remove the 3 screws ②.
4. Remove the Cylinder Unit Assy.

NOTE:

1. When you install the Cylinder Unit Assy, tighten the screws from (1) to (3) in order while pulling the Assy toward the left front direction.

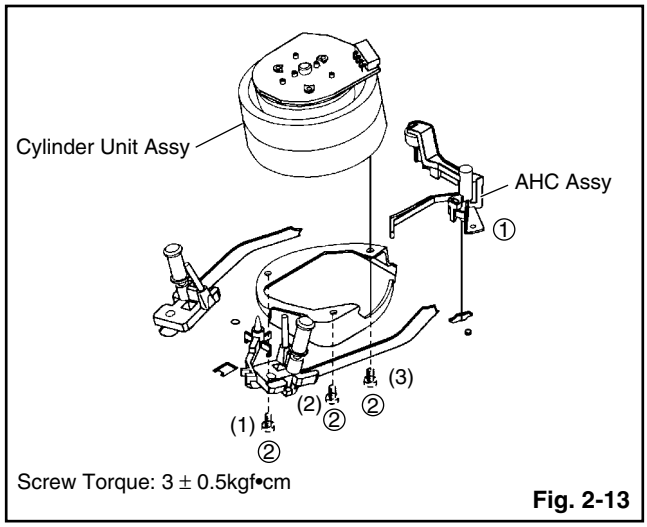
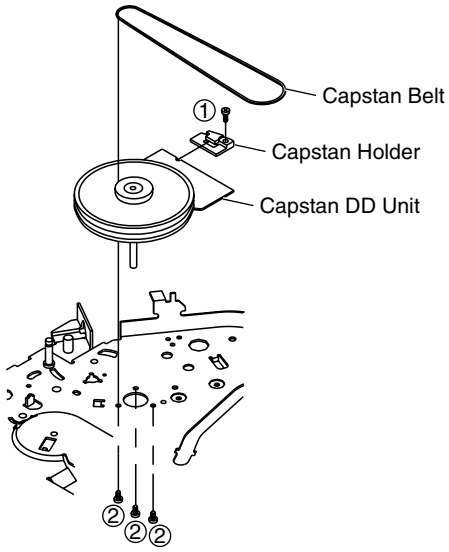


Fig. 2-13

2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14)

1. Remove the Capstan Belt.
2. Remove the screw ①.
3. Remove the Capstan Holder.
4. Remove the 3 screws ②.
5. Remove the Capstan DD Unit.



Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-14

2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.

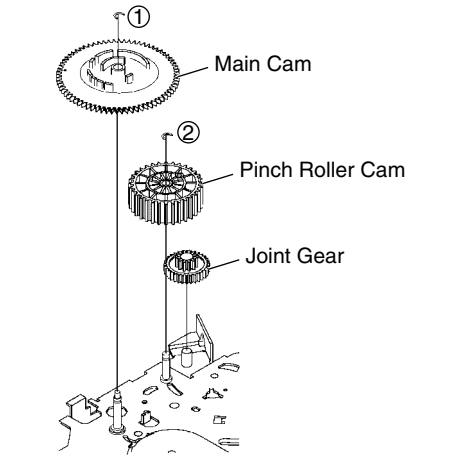


Fig. 2-15-A

NOTE:

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. **(Refer to Fig. 2-15-B)**

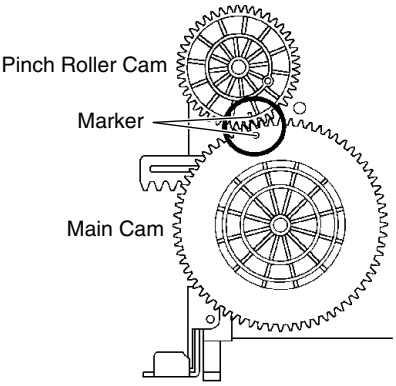


Fig. 2-15-B

2-16: LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.

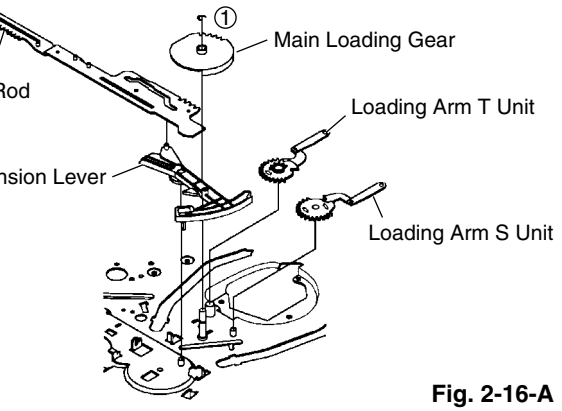


Fig. 2-16-A

NOTE:

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. **(Refer to Fig. 2-16-B)**

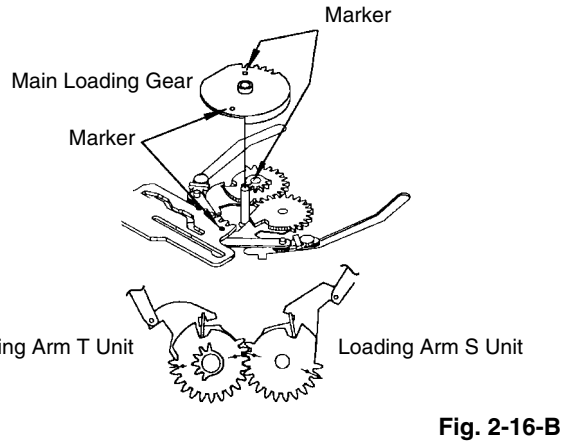


Fig. 2-16-B

2-17: CLUTCH ASSY/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Assy and Ring Spring.
3. Remove the Clutch Lever.
4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.

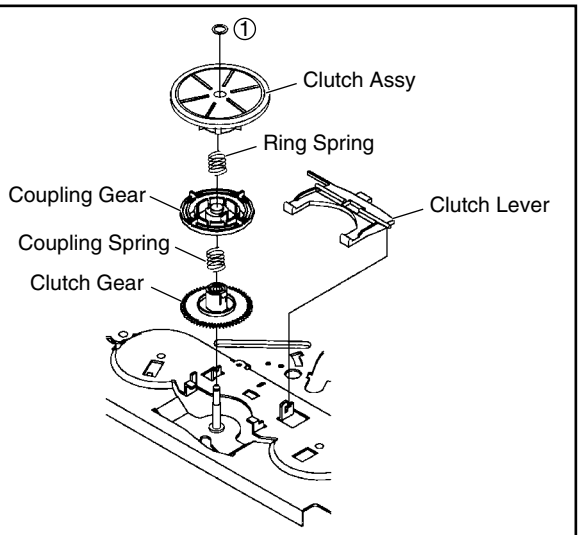


Fig. 2-17-A

NOTE:

1. In case of the Clutch Assy installation, install it with inserting the spring of the Clutch Assy into the dent of the Coupling Gear. **(Refer to Fig. 2-17-B)**

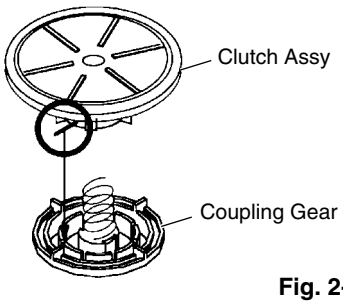
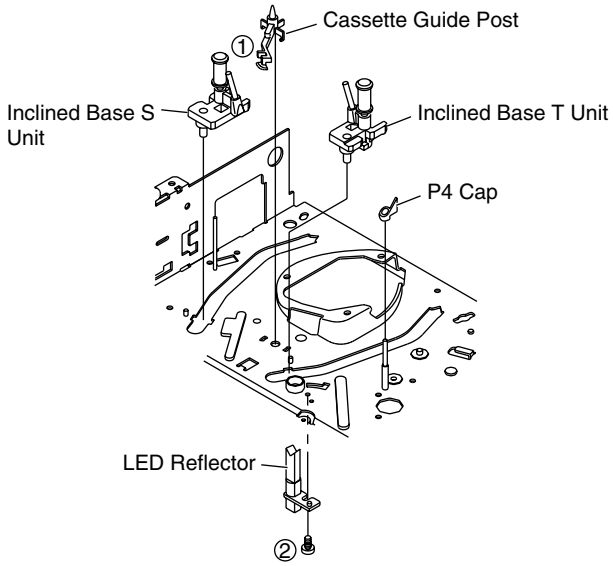


Fig. 2-17-B

2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP/LED REFLECTOR (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support ① and remove the Cassette Guide Post.
3. Remove the Inclined Base S/T Unit.
4. Remove the screw ②.
5. Remove the LED Reflector.



Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-18-A

NOTE:

1. Do not touch the roller of Guide Roller.
2. In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.

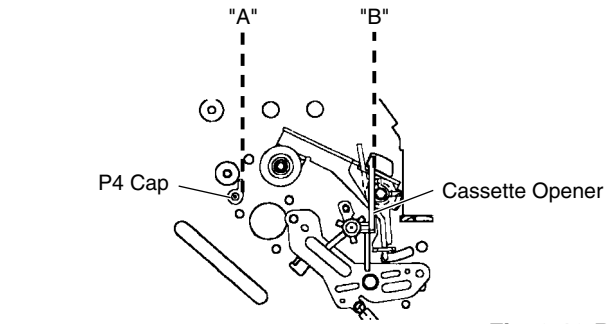


Fig. 2-18-B

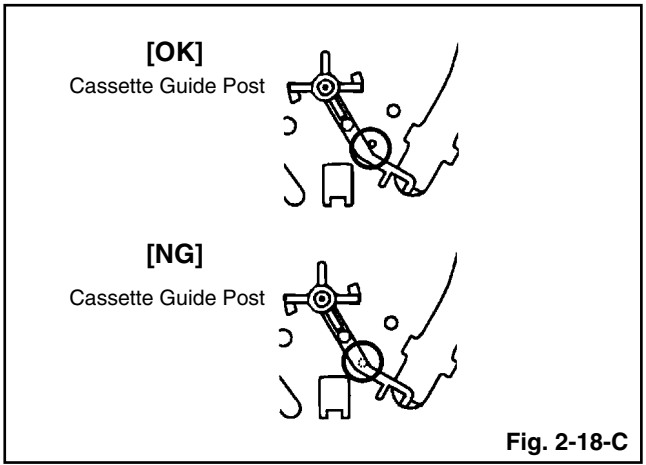


Fig. 2-18-C

7.6 DVD DECK SECTION

3. REMOVAL OF DVD DECK PARTS

NOTE

1. Do not disassemble the DVD DECK PARTS except listed parts here. Minute adjustments are needed if the disassemble is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

3-1: TRAY (Refer to Fig. 3-1-A)

1. Set the Tray opened. **(Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)**
2. Unlock the 2 supports ① and remove the Tray.

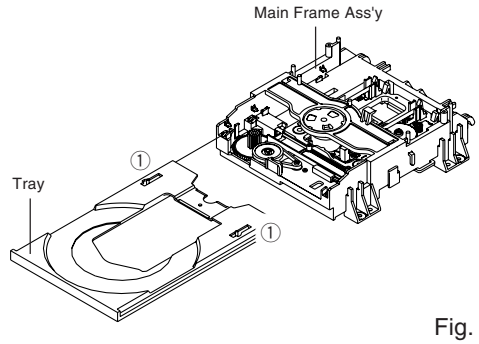


Fig. 3-1-A

NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 3-1-B so that the each markers are met.

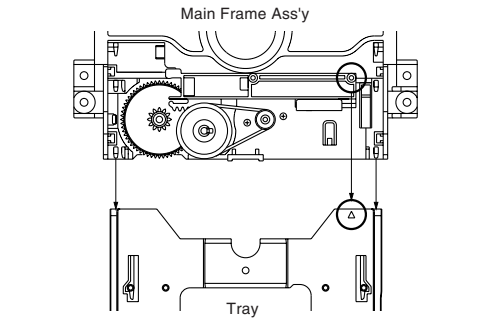


Fig. 3-1-B

3-2: MAIN CHASSIS ASS'Y (Refer to Fig. 3-2-A)

1. Remove the screw ①.
2. Unlock the 2 supports ②.
3. Remove the Insulator (R) from the Main Frame Ass'y.
4. Remove the Main Chassis Ass'y.

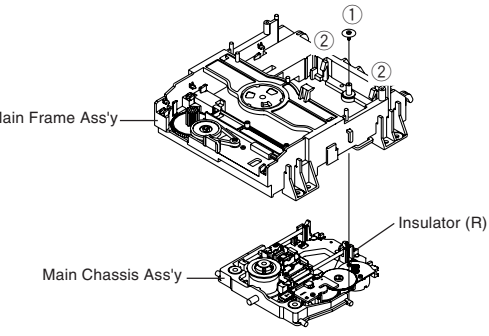


Fig. 3-2-A

NOTE

1. In case of the Main Chassis Ass'y, install it from (1) to (4) in order. **(Refer to Fig. 3-2-B)**
2. In case of the Main Chassis Ass'y installation, hook the wire on the Main Frame Ass'y as shown Fig. 3-2-C.

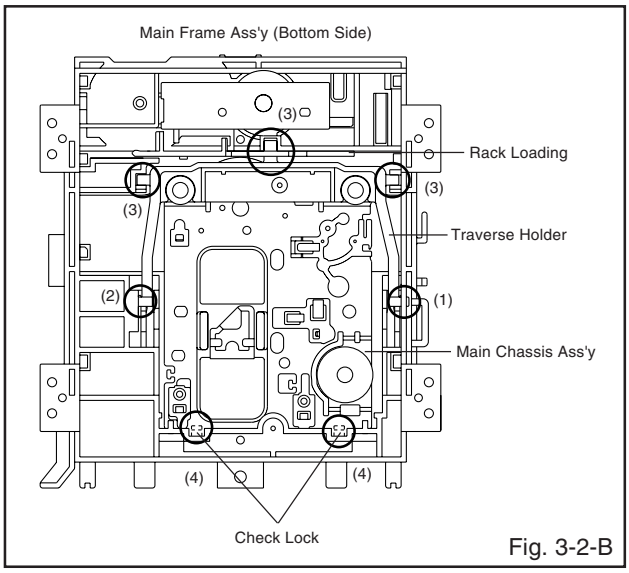


Fig. 3-2-B

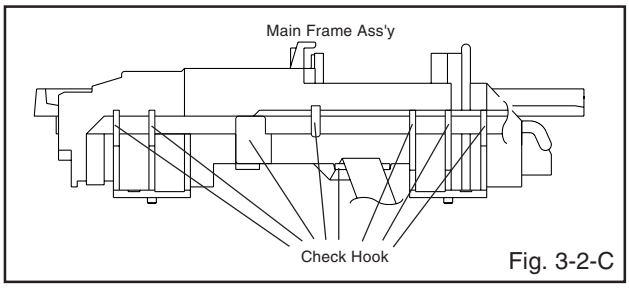


Fig. 3-2-C

3-3: LOADING MOTOR PCB ASS'Y/ LOADING BELT (Refer to Fig. 3-3-A)

1. Remove the Loading Belt.
2. Remove the screw ①.
3. Remove the 2 screws ②.
4. Remove the Loading Motor PCB Ass'y.
5. Remove the Pulley Gear.

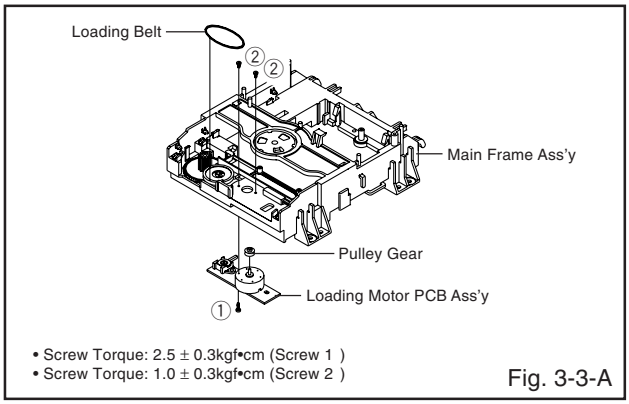


Fig. 3-3-A

NOTE

1. In case of the Pulley Motor installation, check if the value of the Fig. 3-3-B is correct.
2. When installing the Loading Motor PCB Ass'y, install it correctly as Fig. 3-3-C.
3. In case of the Loading Motor PCB Ass'y installation, hook the wire on the Main Frame Ass'y as shown Fig. 3-3-C.

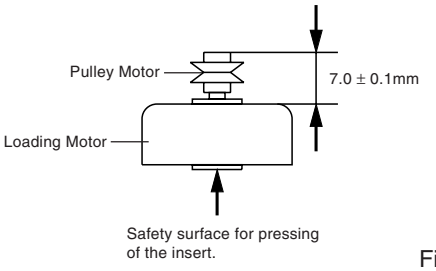


Fig. 3-3-B

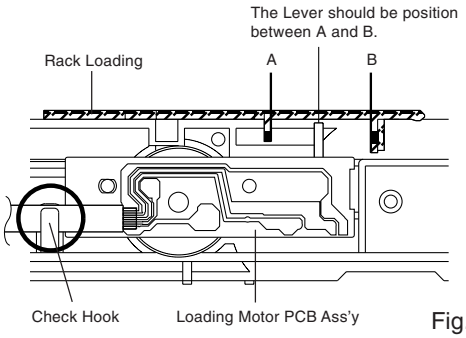


Fig. 3-3-C

3-4: RACK LOADING/MAIN GEAR/PULLEY GEAR (Refer to Fig. 3-4-A)

1. Press down the catcher ① and slide the Rack Loading.
2. Unlock the support ② and remove the Pulley Gear.
3. Remove the Main Gear.

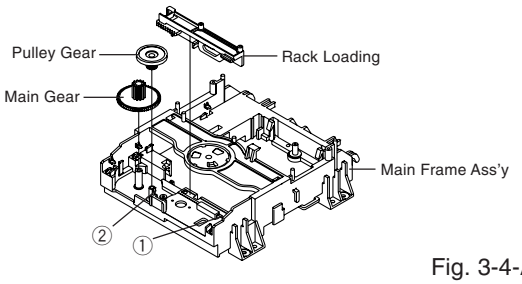


Fig. 3-4-A

NOTE

1. In case of the Rack Loading installation, do not mesh it to the Main Gear as shown the Fig. 3-4-B.

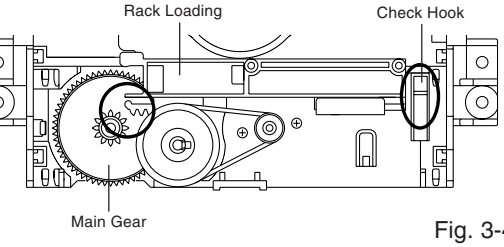


Fig. 3-4-B

3-5: CLAMPER ASS'Y (Refer to Fig. 3-5-A)

1. Press the Clamper and rotate the Clamper Plate clockwise, then unlock the 3 supports ①.
2. Remove the Clamper Plate, Clamper Magnet and Clamper.

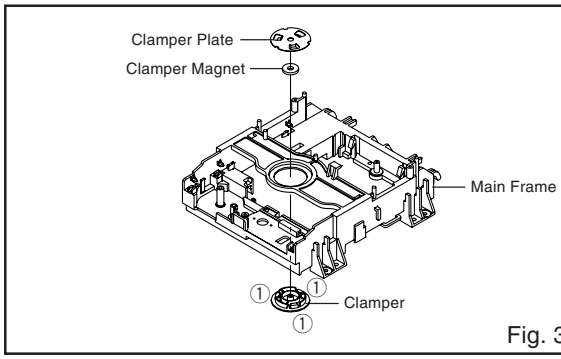


Fig. 3-5-A

NOTE

1. In case of the Clamper Ass'y installation, install correctly as Fig. 3-5-B.

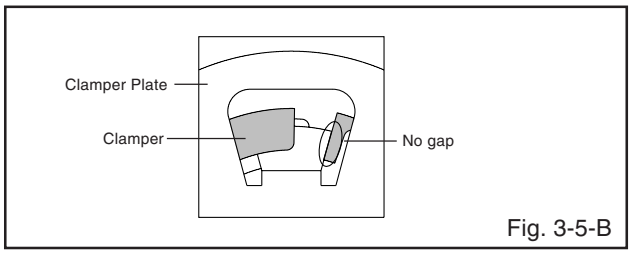


Fig. 3-5-B

3-6: TRAVERSE HOLDER/INSULATOR (F)/INSULATOR (R) (Refer to Fig. 3-6-A)

1. Remove the Traverse Holder.
2. Remove the 2 Insulator (F).
3. Remove the Insulator (R).

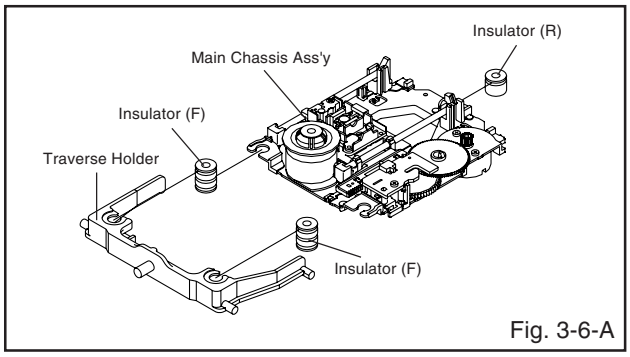


Fig. 3-6-A

NOTE

1. In case of the Insulator (F) installation, install correctly as Fig. 3-6-B.
2. In case of the Insulator (R) installation, install correctly as Fig. 3-6-C.

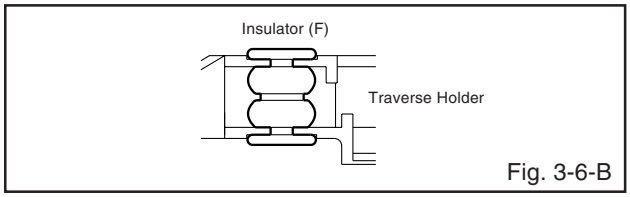


Fig. 3-6-B

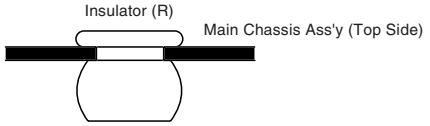
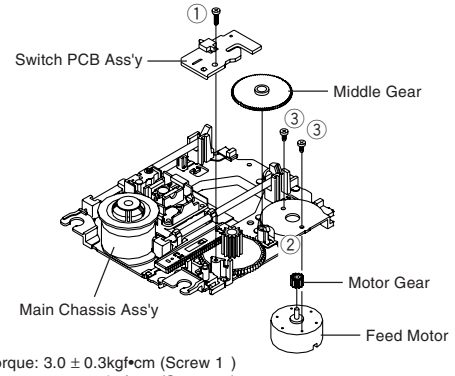


Fig. 3-6-C

3-7: SWITCH PCB ASS'Y/MIDDLE GEAR/FEED MOTOR (Refer to Fig. 3-7-A)

1. Remove the screw ①.
2. Remove the Switch PCB Ass'y.
3. Unlock the support ②.
4. Remove the Middle Gear.
5. Remove the 2 screws ③.
6. Remove the Feed Motor.
7. Remove the Motor Gear.



• Screw Torque: 3.0 ± 0.3kgf•cm (Screw 1)
• Screw Torque: 1.5 ± 0.3kgf•cm (Screw 3)

Fig. 3-7-A

NOTE

1. In case of the Motor Gear installation, check if the value of the Fig. 3-7-B is correct.
2. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 3-7-C.
3. After the assembly of the Main Chassis Ass'y, hook the wire on the Main Chassis Ass'y as shown Fig. 3-7-D.

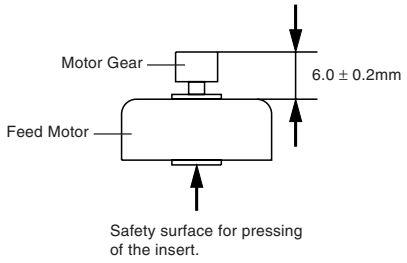


Fig. 3-7-B

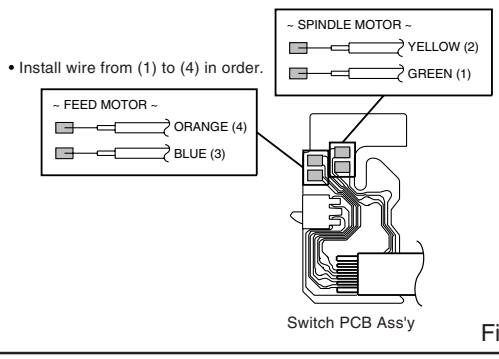
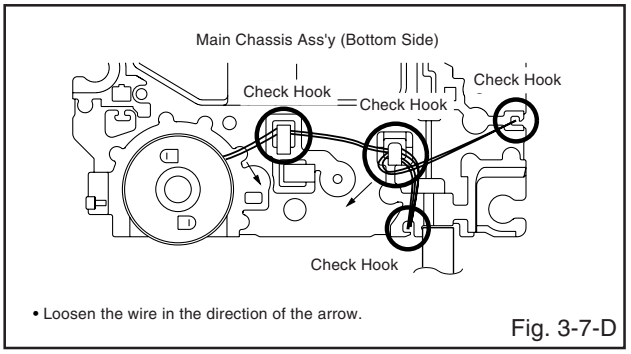


Fig. 3-7-C



• Loosen the wire in the direction of the arrow.

Fig. 3-7-D

3-7: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 3-8-A to Fig. 3-8-C.

NOTE

1. Do not make the folding lines except the specified positions for the FFC.

[24 pin FFC]

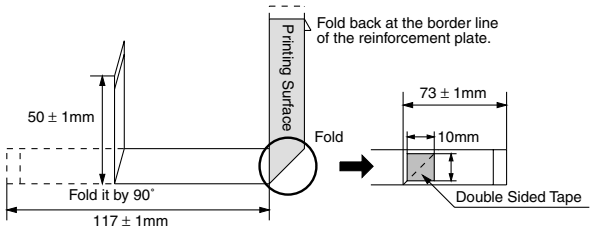
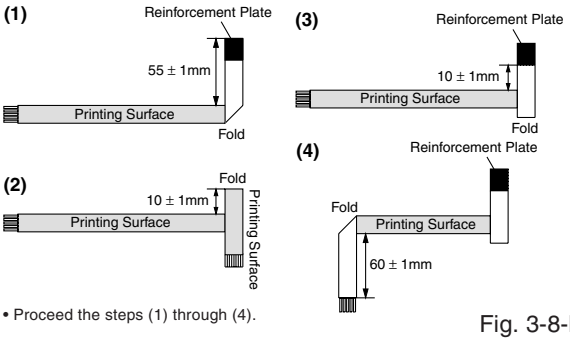


Fig. 3-8-A

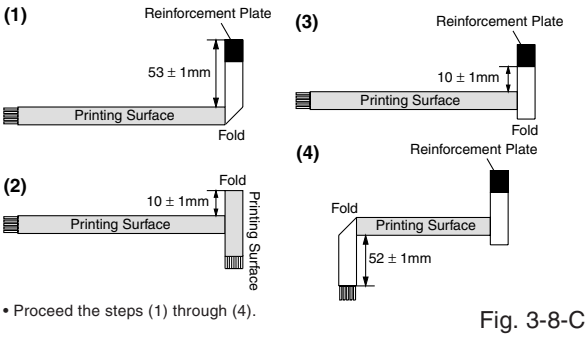
[5 pin FFC]



• Proceed the steps (1) through (4).

Fig. 3-8-B

[6 pin FFC]



• Proceed the steps (1) through (4).

Fig. 3-8-C

7.7 KEY TO ABBREVIATIONS

A	A/C	: Audio/Control
	ACC	: Automatic Color Control
	AE	: Audio Erase
	AFC	: Automatic Frequency Control
	AFT	: Automatic Fine Tuning
	AFT DET	: Automatic Fine Tuning Detect
	AGC	: Automatic Gain Control
	AMP	: Amplifier
	ANT	: Antenna
	A.PB	: Audio Playback
	APC	: Automatic Phase Control
	ASSY	: Assembly
	AT	: All Time
	AUTO	: Automatic
	A/V	: Audio/Video
B	BGP	: Burst Gate Pulse
	BOT	: Beginning of Tape
	BPF	: Bandpass Filter
	BRAKE SOL	: Brake Solenoid
	BUFF	: Buffer
	B/W	: Black and White
C	C	: Capacitance, Collector
	CASE	: Cassette
	CAP	: Capstan
	CARR	: Carrier
	CH	: Channel
	CLK	: Clock
	CLOCK (SY-SE)	: Clock (Syscon to Servo)
	COMB	: Combination, Comb Filter
	CONV	: Converter
	CPM	: Capstan Motor
	CTL	: Control
	CYL	: Cylinder
	CYL-M	: Cylinder-Motor
	CYL SENS	: Cylinder-Sensor
D	DATA (SY-CE)	: Data (Syscon to Servo)
	dB	: Decibel
	DC	: Direct Current
	DD Unit	: Direct Drive Motor Unit
	DEMOD	: Demodulator
	DET	: Detector
	DEV	: Deviation
E	E	: Emitter
	EF	: Emitter Follower
	EMPH	: Emphasis
	ENC	: Encoder
	ENV	: Envelope
	EOT	: End of Tape
	EQ	: Equalizer
	EXT	: External
F	F	: Fuse
	FBC	: Feed Back Clamp
	FE	: Full Erase
	FF	: Fast Forward, Flipflop
	FG	: Frequency Generator
	FL SW	: Front Loading Switch
	FM	: Frequency Modulation
	FSC	: Frequency Sub Carrier
	FWD	: Forward
G	GEN	: Generator
	GND	: Ground
H	H.P.F	: High Pass Filter
	H.SW	: Head Switch
	Hz	: Hertz
I	IC	: Integrated Circuit
	IF	: Intermediate Frequency
	IND	: Indicator
	INV	: Inverter
K	KIL	: Killer
L	L	: Left
	LED	: Light Emitting Diode
	LIMIT AMP	: Limiter Amplifier
	LM, LDM	: Loading Motor
L	LP	: Long Play
	L.P.F	: Low Pass Filter
	LUMI.	: Luminance
M	M	: Motor
	MAX	: Maximum
	MINI	: Minimum
	MIX	: Mixer, mixing
	MM	: Monostable Multivibrator
	MOD	: Modulator, Modulation
	MPX	: Multiplexer, Multiplex
	MS SW	: Mecha State Switch
N	NC	: Non Connection
	NR	: Noise Reduction
O	OSC	: Oscillator
	OPE	: Operation
P	PB	: Playback
	PB CTL	: Playback Control
	PB-C	: Playback-Chrominance
	PB-Y	: Playback-Luminance
	PCB	: Printed Circuit Board
	P. CON	: Power Control
	PD	: Phase Detector
	PG	: Pulse Generator
	P-P	: Peak-to Peak
R	R	: Right
	REC	: Recording
	REC-C	: Recording-Chrominance
	REC-Y	: Recording-Luminance
	REEL BRK	: Reel Brake
	REEL S	: Reel Sensor
	REF	: Reference
	REG	: Regulated, Regulator
	REW	: Rewind
	REV, RVS	: Reverse
	RF	: Radio Frequency
	RMC	: Remote Control
	RY	: Relay
S	S. CLK	: Serial Clock
	S. COM	: Sensor Common
	S. DATA	: Serial Data
	SEG	: Segment
	SEL	: Select, Selector
	SENS	: Sensor
	SER	: Search Mode
	SI	: Serial Input
	SIF	: Sound Intermediate Frequency
	SO	: Serial Output
	SOL	: Solenoid
	SP	: Standard Play
	STB	: Serial Strobe
	SW	: Switch
	SYNC	: Synchronization
	SYNC SEP	: Sync Separator, Separation
T	TR	: Transistor
	TRAC	: Tracking
	TRICK PB	: Trick Playback
	TP	: Test Point
U	UNREG	: Unregulated
V	V	: Volt
	VCO	: Voltage Controlled Oscillator
	VIF	: Video Intermediate Frequency
	VP	: Vertical Pulse, Voltage Display
	V.PB	: Video Playback
	VR	: Variable Resistor
	V.REC	: Video Recording
	VSF	: Visual Search Fast Forward
	VSR	: Visual Search Rewind
	VSS	: Voltage Super Source
	V-SYNC	: Vertical-Synchronization
	VT	: Voltage Tuning
X	X'TAL	: Crystal
Y	Y/C	: Luminance/Chrominance

7.8 DISC/CONTENT FORMAT

Discs which can be played back

In this unit, use only discs that meet the standard, such as those bearing the below logo marks on the disc label surface. If you use a non-standard disc, we cannot guarantee playback. Even if such a disc can be played back, we cannot guarantee the image or sound quality The DVD logo is a registered trademark.

Media type	Logo mark
DVD-Video	
DVD-RW	
DVD-R	
Audio CD*	
CD-R/CD-RW	

* This unit is designed to playback music Compact Discs (CD) that conform to the CD standard. CDs that contain (copy-restriction) signals to protect copyrights cannot be played back.

DVD-R/RW compatibility

- Compatible formats: DVD-Video, Video Recording (VR)*
  * Edit points may not play exactlyas edited; screen may go momentarily blank at edited points.
- Unfinalized playback: No

Region management information

This unit is designed and manufactured to support the region management information that is recorded on a DVD disc. If the region number written on the DVD disc does not correspond to the region number of this unit, this unit cannot play that disc.

- The region number of this unit is "1".
- The unit will play DVD-Video discs marked with labels containing "1" or "ALL".

Example:

Operating DVD-Video

- Some operations of DVD-Video may be prohibited by the manufacturer, or some operation methods or functions of the DVD-Video may be different from the description in this manual.
- If you attempt an operation that is prohibited by either the disc or the unit, a "✋" mark will appear on the TV monitor. For operations prohibited by the disc, see the information that came with the disc.
- When the menu screen or the operation guide appears during disc playback, follow the displayed information.

Discs which cannot be played back

The discs listed below cannot be played back in general. Even if one of these can be played back, it may not be played back correctly. If a disc is played back by mistake, extensively loud sounds may blow the speakers or may damage the hearing of those in hearing range.
Do not playback the discs listed below

CDG, Photo-CD, CD-ROM, CD-TEXT,CD-EXTRA, VCD, SVCD, SACD, PD, CDV, DVD-ROM, DVD-RAM, DVD+R/RW, DVD audio, etc.

The below DVD-Video may not be played back.

- DVD-Video that do not have the region number "1" or "ALL".
- PAL or SECAM DVD-Video.
- Prohibited or business-use DVD-Video.

CD-R/CD-RWs cannot be played back for the following reasons.

- Compatibility of the disc and this unit.
- Compatibility of the disc and the recorder used.
- Unfinalized discs.

Do not playback the following discs. Playback of these discs may cause a failure.

- Discs on which paper, labels or stickers are affixed.
- Discs that have sticky areas left by adhesive tape.
- Special-shaped discs.

PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

7.9 CLEANING

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

7.10 IC INFORMATIONS

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● **List of IC**

I54F50147A (OEC01474A)

■ I54F50147A (OEC01474A) (VCR PCB ASSY : IC3001)

• System Controller / Timers / Servo IC

● **Pin Function**

No.	Port Name	Pin Name	I/O	Pin Function
1	SVSS	SVSS	–	Ground.
2	CTL_REF	CTL_REF	O	Output terminal for CTL amp REF (1/2 SVCC)
3	CTL-H(+)	CTL-H(+)	I	Input and output terminal of Control Head.
4	CTL-H(-)	CTL-H(-)	I	Input terminal of Control Head.
5	CTL_BIAS	CTL_BIAS	O	Output terminal for bias.
6	CTL_FB	CTL_FB	I	Input terminal for CTL feedback
7	CTL_AMP(O)	CTL_AMP(O)	O	Output terminal for amp out.
8	CTL_AMP(I)	CTL_AMP(I)	I	Input terminal for CTL schmitt amp .
9	CFG	CFG	I	Input terminal for CAPSTAN FG signal detection.
10	SVCC	SVCC	–	+ 5V (Servo)
11	AFC_PC	AFC_PC	–	AFC oscillator (external circuit).
12	AFC_OSC	AFC_OSC	–	AFC oscillator (external circuit).
13	AFC_LPF	AFC_LPF	–	LPF connection for AFC OSC.
14	CSYN/HSYN	CSYNC	O	Output terminal for composite SYNC.
15	VLPF/VSYN	VSYNC	I	Input terminal for composite SYNC.(from 14pin)
16	CV_IN2	CV_IN2	I	Composite Video input terminal.(for data slicer)
17	CV_IN1	CV_IN1	I	Composite Video input terminal.(for OSD)
18	OSD VCC	OSDVCC	–	+ 5V
19	CV_OUT	CV_OUT	O	Composite Video output.(with OSD)
20	OSD_VSS	OSD_VSS	–	Ground.
21	4/2 FSC_OUT	4/2 FSC_OUT	O	4 FSC pulse.
22	4/2 FSC_IN	4/2 FSC_IN	I	4 FSC pulse.
23	AVSS	AVSS	–	Ground.
24	AN-B	VIDEO_ENV	I	Input terminal of video RF envelope.
25	AN-A	BOT-H	I	Tape start sensor input signal.
26	AN-9	EOT-H	I	Tape end sensor input signal.
27	AN8	MS_SEN-B	I	Input terminal of mecha state sensor.
28	P07/AN7	MS_SEN-A	I	Input terminal of mecha state sensor.
29	P06/AN6	KEY-B	I	Main unit key input.
30	P05/AN5	KEY-A	I	Main unit key input.
31	P04/AN4	STEREO_SEL	I	Input terminal for the judgement of voice reception condition.
32	P03/AN3	HI-FI_ENV	I	Input terminal of Hi-Fi RF envelope.
33	P02/AN2	AFT-S_CURVE	I	AFT S CURVE input for tuner.
34	P01/AN1	PG	I	Not used.
35	P00/AN0	TAB SW	I	Input terminal for judge the tape if it has TAB or not.
36	AVCC	AVCC	–	ON/OFF control Micon AD section.
37	P10/IRQ0	POWER_FAIL	I	Input terminal of Power fail signal.
38	P11/IRQ1	NC	O	Not used.
39	P12/IRQ2	SYNC DET	I	Input terminal for judgement of Sync Detector
40	P13/IRQ3	VIDEO MUTE H	O	H for at AUTO_CLOCK in POWER OFF.
41	P14/IRQ4	POWER ON L	O	For control the user power switch ON/OFF.
42	P15/IRQ5	REEL T	I	Input terminal of reel sensor take up.
43	P16/IC	REM_IN	I	Receive the remote control signal.
44	P17/TMOW	DVD RESET	O	For control the DVD RESET.

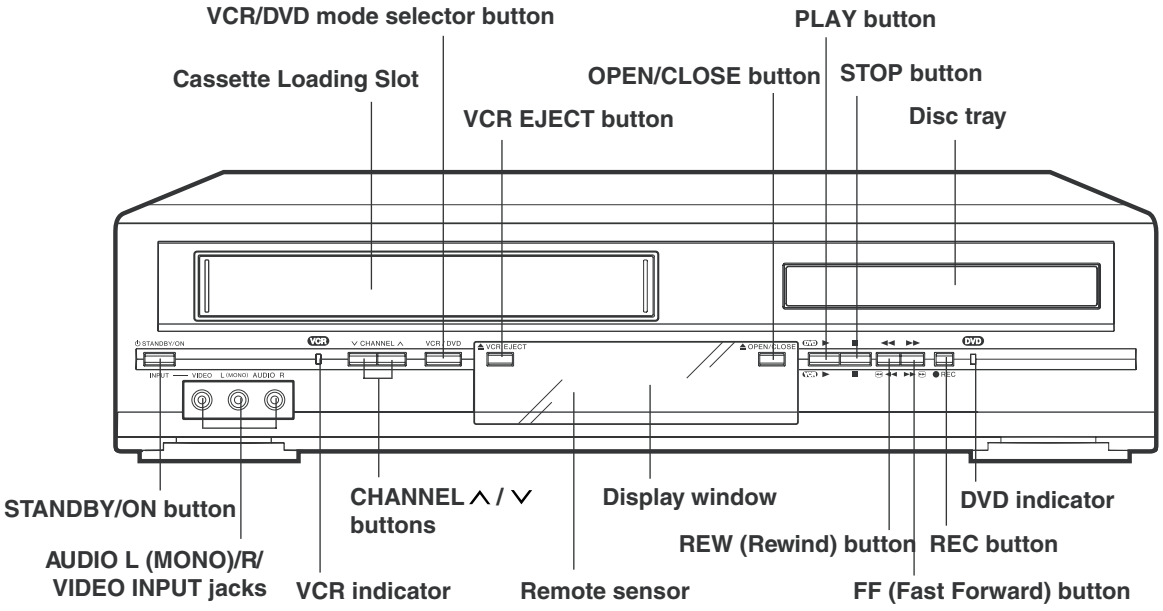
No.	Port Name	Pin Name	I/O	Pin Function
45	P67/RP7/TMB	DVD POWER CTL	O	Output terminal for DVD power CTL.(3.3V/9V)
46	P66/RP6/ADTRG	DVD LED	O	The DVD LED ON/OFF control output.
47	P65/RP5	VCR LED	O	The VCR LED ON/OFF control output.
48	P64/RP4	1G/T-REC LED	O	LEM(LED Module) control terminal.
49	P63/RP3	2G/REC LED	O	LEM(LED Module) control terminal.
50	P62/RP2	3G/TV/VCR LED	O	LEM(LED Module) control terminal.
51	P61/RP1	4G	O	LEM(LED Module) control terminal.
52	P60/RP0	5G	O	LEM(LED Module) control terminal.
53	P37/TM0	Y/C CLOCK	O	Control terminal for Y/C. (CLOCK).
54	P36/BUZZ	Y/C DATA	O	Control terminal for Y/C.(DATA).
55	P35	SEG1	O	LEM(LED Module) control terminal.
56	VCC	VCC	–	Power of CPU.
57	VSS	VSS	–	Ground.
58	P27	SEG2	O	LEM(LED Module) control terminal.
59	P26	SEG3	O	LEM(LED Module) control terminal.
60	P25	SEG4	O	LEM(LED Module) control terminal.
61	P24/SCL1	IIC CLK	O	CLOCK terminal for IIC BUS communication.
62	P23/SDA1	IIC DATA	O	DATA terminal for IIC BUS communication.
63	P22/SCK1	SEG5	O	LEM(LED Module) control terminal.
64	P21/SO1	SO1/TX	O	Input terminal for DVD communication.(asynchronous)
65	P20/SI1	SI1/RX	I	Output terminal for DVD communication.(asynchronous)
66	P47/RPTRG	SEG6	O	LEM(LED Module) control terminal.
67	P46/FTOB	SEG7	O	LEM(LED Module) control terminal.
68	P45/FTOA	SEG8	O	LEM(LED Module) control terminal.
69	P44/FTID	NC	O	Not used.
70	P43/FTIC	NC	O	Not used.
71	P42/FTIB	SEG9	O	LEM(LED Module) control terminal.
72	P41/FTIA	NC	O	Not used.
73	P40/PWM14	SEG10	O	LEM(LED Module) control terminal.
74	FEW	FEW	I	FZTAT Write protect.
75	X2	X2	O	Subclock pulse(32.768KHz)
76	X1	X1	I	Subclock pulse(32.768KHz)
77	/RESET	/RESET	I	RESET will be done when the voltage goes to HIGH after the reset signal.
78	OSC1	OSC1	I	Connect the main crystal(10MHz)
79	VSS	VSS	O	Ground.
80	OSC2	OSC2	O	Connect the main crystal(10MHz)
81	VCL	VCL	I	Connect the capacitor
82	MD0	MD0	I	FZTAT Write MODE.
83	P34/PWM2	REC MUTE-H	O	Output terminal of REC MUTE.
84	P33/PWM1	CAP_LIMIT	O	Switch the maximum output current of the Capstan Motor.
85	P32/PWM0	TUNER AUDIO MUTE-H	O	Output low at tuner and output high at external input/play.
86	P31/SV2	VCR-H	O	H for at PLAY in VCR MODE. L for except above case.
87	P30/SV1	POWER_MUTE	O	Audio mute at POWER ON/OFF.
88	P70/PPG0	SYS_MUTE	O	Audio mute for DVD at POWER ON/OFF.
89	P71/PPG1	NC	O	Not used.
90	P72/PPG2	SERVICE	I	Input terminal for Service Mode.

No.	Port Name	Pin Name	I/O	Pin Function
91	P73/PPG3	AV SW_2	O	Control rear/front video signal.(at AV X 2)
92	P74/PPG4/RP8	AV SW_1	O	Control DVD/VCR video/audio signal.
93	P75/PPG5/RP9	Y/C CS	O	Control terminal for Y/C. (CHIP SELECT).
94	P76/PPG6/RPA	RF CH SW	O	3/4 ch Selection for the RF CH.
95	P77/RPG7/RPB	AUDIO_MUTE-H	O	L for at AUDIO MUTE and POWER OFF. H for except above case.
96	P80/YCO	V_REC_ST-H	O	On control of A/V recording(Whole width erase) circuit.
97	P81/EXCAP/YBO	LDM CTL	O	Loading motor control terminal.
98	P82/EXCTL	CAP_FWD-H	O	Capstan forward and backward command.
99	P83/C,ROT/R	C.ROTARY	O	Color Rotary Control output.
100	P84/H.AMP/SW/G	H.AMP.SW	O	Switching output of Head Amp SW.
101	P85/COMP/B	COMP	I	Comparison results input of Playback Envelope level on SP/LP heads (4 heads).
102	P85/EZTTRG	CAP_FULL	O	Output the HIGH during the acceleration force of capstan motor at SLOW mode.
103	P87/DPG	CYL_SPEED_UP	O	Output terminal for correct cylinder during SLOW.
104	DFG	D FG/PG	I	Input terminal for DRUM FG signal detection.
105	VIDEO_FF	VIDEO_H.SW	O	Output terminal of Video Head SW.
106	AUDIO_FF	HI-FI H.SW	O	Output terminal of HI-FI Head SW.
107	DRUM_PWM	DRUM_PWM	O	PWM output of Cylinder control.
108	CAP_PWM	CAP_PWM	O	PWM output of Capastan control.
109	V-PULSE	DUMMY_V-SYNC	O	Virtual V Pulse output.
110	SV VSS	SV VSS	–	Ground.
111	C.SYNC_IN	SYNC	I	Input terminal for composite SYNC.
112	VCC	VCC(SV)	–	+ 5V

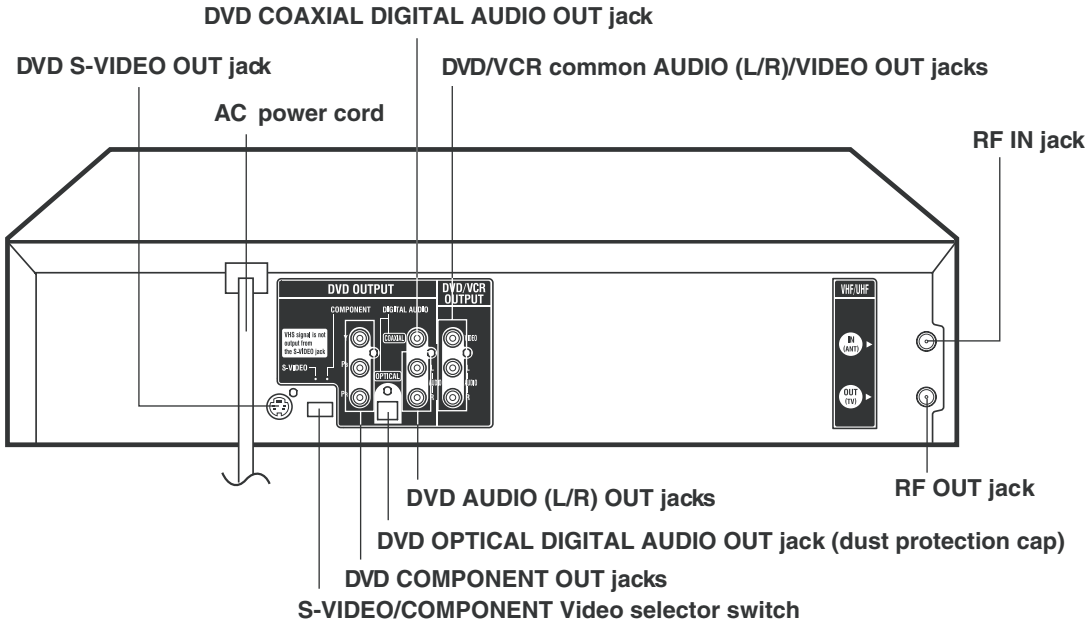
8. PANEL FACILITIES

8.1 FRONT AND REAR SECTION

Front panel

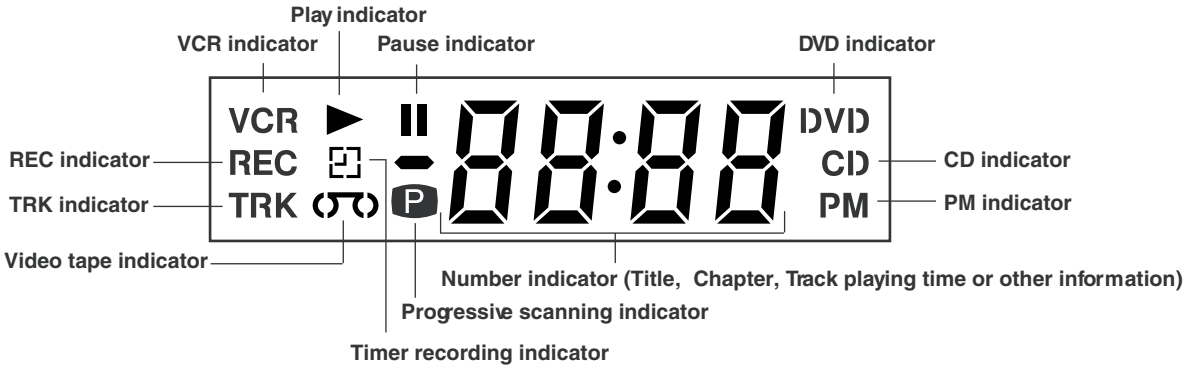


Rear panel



8.2 DISPLAY

Display window



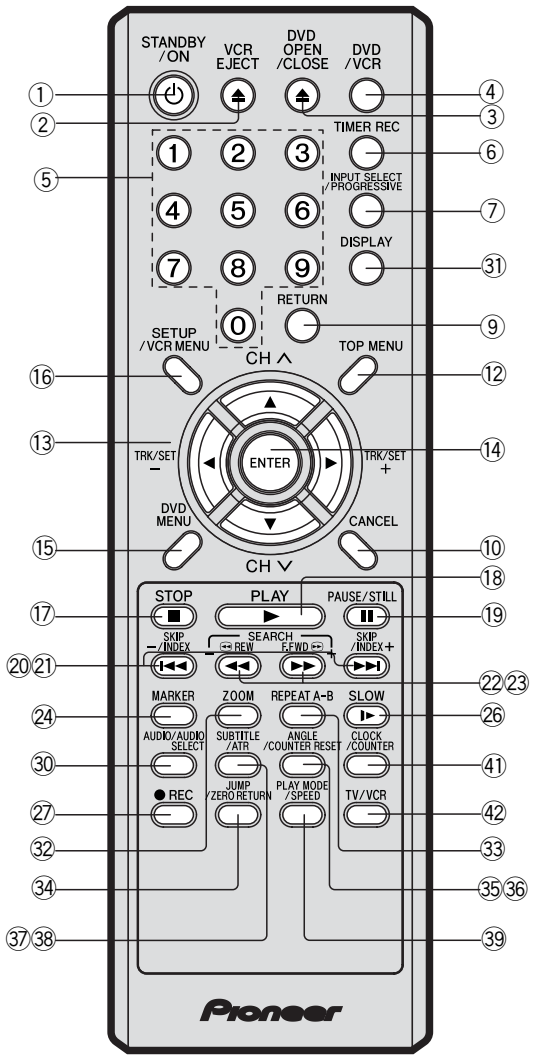
.	Display	Description
	▶	Lights during video tape playback.
	⏸	Video tape is temporarily stopped.
	●	Lights during video tape recording.
	P	Progressive scanning mode.
	◷	Timer recording display.
	SP/SLP	2 VCR recording modes. SP or SLP is selected in turn by pressing the REC MODE/SPEED repeatedly.
	CD	Appears when a CD is inserted.
	DVD	Appears when a DVD-Video is inserted.
	VCR	Appears when the tuner built into this unit is selected. When you press TV/VCR, VCR disappears.
	📼	Video tape is in the unit.
	10:00	Clock display (Colon [:] flashes).
	01H00M00S	Counter display in hour/minute/second for VCR/DVD, minute/second for CD.
	C 36CH	CATV channel display.
	2CH	TV channel display.
	TRK 002	Track number display for CD.
	PM	Display for afternoon (out in the morning).
	Err	Error display.
	▶	Lights during playback of DVD and CD. Flashes in auto resume.
	⏸	DVD or CD is temporarily stopped.

Note

- Some discs may not playback correctly or chapter number, playback time, etc may not be displayed.

8.3 REMOTE CONTROL

Remote control



1 STANDBY/ON
Turns power on/off

2 VCR EJECT
Ejects the cassette tapes.

3 DVD OPEN/CLOSE
Opens or closes the tray.

4 DVD/VCR
Switches to operation between VCR and DVD.

5 0-9
Use for direct TV channel selection of TV; setting the input entering a password ; entering a Pluscode for VCR Plus+ timer programming.

6 TIMER REC
Sets the unit to start recording at a preset time.

7 INPUT SELECT
Switches between the external inputs.

9 RETURN
Closes the menu window.

10 CLEAR/CANCEL
Cancels input data in the setting mode ; deletes the timer recording program .

11 TITLE MENU/TOP MENU
Selects titles of a DVD disc.

12 CH +/–
Use to select TV channels.
▲/▼
Up/down cursor buttons

13 TRK +/–
Use to adjust the VCR manual playback tracking.
◄/►
Left/right cursor buttons

14 ENTER/SELECT
Use to select menu options.

15 DVD MENU
Displays the menu of the DVD disc.

16 SETUP
Displays the setup menu.

17 STOP
Stops playback or recording.

18 PLAY
Starts playback.

19 PAUSE/STILL
Pauses recording or playback (press again to restart).

20 SKIP I◄◄ / ►►I
Skips forward or back chapters.

21 INDEX –I◄◄ / +►►I
Searches for INDEX marks on a tape

22 REW/SEARCH –
Rewind/review playback

23 F.FWD/SEARCH +
Fast forward/forward search playback

24 MARKER

26 SLOW
Starts slow motion playback.

27 REC
Starts recording.

30 AUDIO/AUDIO SELECT
Switches sound between mono and stereo ; changes the language of the DVD.

31 DISPLAY/CALL
Displays VCR or DVD operation status.

32 ZOOM

33 REPEAT A-B
Repeats playback between A and B.

34 ZERO RETURN
Stops the tape when the counter reaches $00_H00_M00_S$.

35 COUNTER RESET
Resets the counter to $00_H00_M00_S$.

36 ANGLE
Changes the DVD playback angle.

37 SUBTITLE
Selects subtitles of the DVD disc.

38 ATR
Digital auto tracking for VCR playback.

39 PLAY MODE / SPEED
Selects the playback mode.

40 REPEAT A-B
Selects the repeat playback mode.

41 CLOCK/COUNTER
Changes the front panel display mode.

42 TV/VCR
Switches input between the TV and VCR.

43 PROGRESSIVE
Activates the progressive scanning mode.

■ Jigs list

Name	Jig No.	Remarks
VHS Alignment Tape	GGV1183	Hi-Fi Audio (For 4 heads mode)
VHS Alignment Tape	GGV1184	X Value Adjustment (For 4 heads mode)
VHS Alignment Tape	GGV1185	EP Monoscope, 6kHz (For 4 heads mode)
Adapter	GGF1506	VSR Torque, Brake Torque (S Reel/T Reel Assy)
Dial Torque Gauge (10-90 gf•cm)	GGF1507	Brake Torque (T Reel Assy)
Dial Torque Gauge (60-600 gf•cm)	GGF1508	VSR Torque, Brake Torque (S Reel)
Post Adjustment Screwdriver	GGF1509	Guide Roller Adjustment
X Value Adjustment Screwdriver	GGF1510	X Value Adjustment
Mater Plane	GGF1511	Reel Disk Height Adjustment
Reel Disk Height Adjustment Jig	GGF1512	Reel Disk Height Adjustment
Torque Tape (VHT-063)	GGV1186	Playback Torque, Back Tension Torque During Palyback