

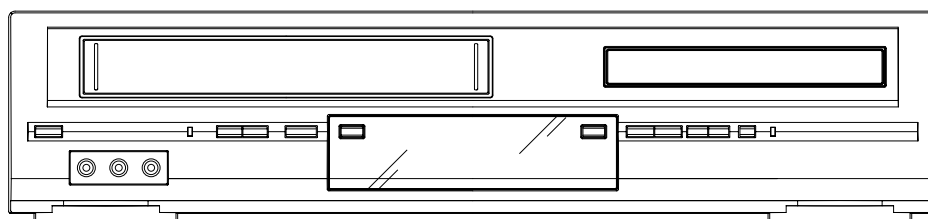
Memorex[®]

CLASS 1
LASER PRODUCT

MVD4540

SERVICE MANUAL

DVD VIDEO PLAYER & VHS VIDEO CASSETTE RECORDER



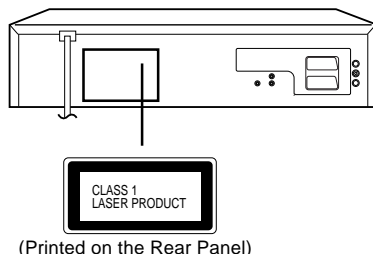
**ORIGINAL
MFR'S VERSION A**

IMPORTANT WARNING

CAUTION:

DVD PLAYER IS A CLASS 1 LASER PRODUCT. HOWEVER THIS PLAYER USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE PLAYER CORRECTLY AS INSTRUCTED.

THE FOLLOWING CAUTION LABEL IS LOCATED ON THE REAR PANEL OF THE PLAYER.



WHEN THIS PLAYER IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS PLAYER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a \triangle mark, the designated parts must be used.

3. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

4. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet, Front Cabinet and DVD Block and the Fig. 1 below can be seen. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Remove one screw of the Loading Motor from the insert hole for screw driver and remove the Loading Motor.
3. Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape. **(Refer to Fig. 2)**
4. Rotate the Clutch Ass'y 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.

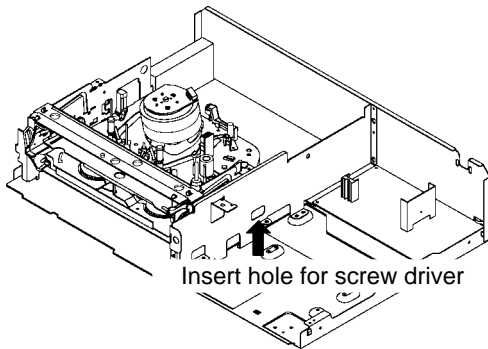


Fig. 1

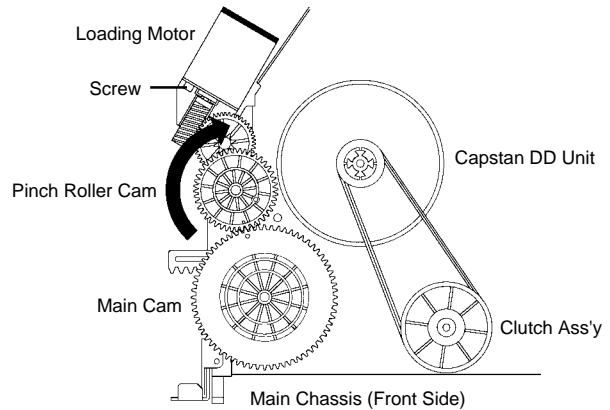


Fig. 2

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet and Front Cabinet. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the gear of Deck CD section in the direction of the arrow by hand, remove the disc from Deck CD. **(Refer to Fig. 3)**

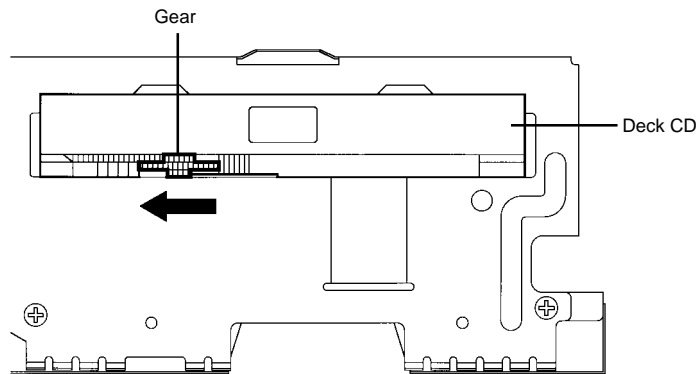


Fig. 3

PARENTAL CONTROL - RATING LEVEL 4-DIGIT SECURITY CODE CANCELLATION

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

1. Connect the set to TV Monitor.
2. Turn on the power, and set to the DVD stop mode.
3. Press the SET UP button to display the DVD menu.
4. Press the SET +/- button to select the "Operation" menu.
5. Press the CH UP/DOWN button to select the Parental Lock, then press the ENTER button.
6. Press the CH UP/DOWN button to select the ON or OFF, then press the ENTER button.
7. Press the STOP button four times on the remote control, then press the ENTER button.
The 4-digit security code is cleared.
8. Press the SET UP button to disappear the DVD menu.

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GENERAL SPECIFICATIONS

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	
			Motor	Front Disc Loding
				3 Motors
		Pick up		1-Lens 2-Beams System
		Playback time (Max)	DVD 1-Layer	135min (4.7GB)
				245min (8.5GB)
			CD	74min
			VIDEO CD	--min
		G-3	VCR System	System
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		
Tape	Rec	PAL	-	
Speed		NTSC	SP/SLP	
	Play	PAL	-	
		NTSC	SP/LP/SLP	
	Fast Forward / Rewind Time (Approx.) at 25oC		FF:1'48"/REW:1'48"	
		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		1/10	
	Slow Speed		1/10	
G-4	Tuning System	Broadcasting System	US System M	
		Tuner and	System	
		Receive CH	Destination	1Tuner
			Tuning System	US(w/CATV)
			Input Impedance	F-Synth
			CH Coverage	VHF/UHF 75 OHM
				2-69,4A,A-5- A-1,A-1,
				J- W, W+1-W+84
		Intermediate	Picture(FP)	45.75 MHz
		Frequency	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	
			DC	
		Power Consumption	20 W at 120V 60Hz	
	Stand by	3 W at 120V 60Hz		
	Per Year	-- W		
	Protector	Power Fuse	Yes	
G-6	Regulation	Safety	UL	
		Radiation	FCC	
		Laser	DHHS	
G-7	Temperature	Operation	5°C - 40°C	
		Storage	-20°C - 60°C	
G-8	Operating Humidity		Less then 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)
			(0dB=0.775Vrms) Output Level Line	-8 dBm/ 1k ohm(DVD,VCR)
			Digital Output Level	0.5 V p-p / 75 ohm(DVD)
	S/N Ratio at (Weighted)	90dB(DVD), 42dB(VCR at SP)		

GENERAL SPECIFICATIONS

		Harmonic Distortion (1KHz) Typical	0.008% (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
G-10	On Screen Display (DVD)	Menu	Yes
		Menu Type	Icon
		Picture	Yes
		TV Shape	Yes
		Output Sound	Yes
		Audio Out Select	Yes
		Dynamic Range Control	Yes
		Karaoke Vocal	Yes
		Language	Yes
		On-Screen Language	Yes
		Disc Menu Language	Yes
		Audio Language	Yes
		Subtitle Language	Yes
		Display	Yes
		On-Screen Displays	Yes
		Background	Yes
		Screen Saver	Yes
		Operational	Yes
		Pause/Still	Yes
		Parental Lock	Yes
		Title Stop	Yes
		PBC	No
		Initial Setup	Yes
		On-Screen Language	Yes
		TV Shape	Yes
		Audio Out Select	Yes
		Open	Yes
		Close	Yes
		No disc	Yes
		Reading	Yes
		Play	Yes
		Still/Pause	Yes
		Stop	Yes
		Prohibit Mark	Yes
		Step	Yes
		Skip+	Yes
		Skip-	Yes
		Random	Yes
		Repeat	Yes
		A-B Repeat	Yes
		Slow+	Yes
		Slow-	No
		Search+	Yes
		Search-	Yes
		Resume	Yes
		Title No.	Yes
		Chapter No.	Yes
		Track No.	Yes
		Time	Yes
		Sub Title No.	Yes
Angle No.	Yes		
Audio No.	Yes		
Zoom	Yes		
Enter	Yes		
Exit	Yes		
Bit Rate	Yes		
Memory	Yes		
On Screen Display(VCR)	Menu	Menu Type	Yes
		Timer Rec Set	Character
		Auto Repeat On/Off	Yes
		SAP On/Off	Yes
		Surround On/Off	No
		CH Set-Up	Yes
		TV/CATV	Yes
		Auto CH Memory	Yes
		Add/Delete	Yes
		Guide CH	No
		System Set Up	Yes
		Clock Set	Yes (Calendar 12H)
		Language	Yes

GENERAL SPECIFICATIONS

		No Noise Back Ground	Yes
		Auto Clock	Yes
		Standard Time	Yes
		Daylight Saving Time	Yes
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry	No
		Stereo,Audio Output,SAP	Yes
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In/Repeat (Symbol Mark)	Yes
		CH/AV	Yes
		Clock	Yes
		Repeat	Yes
		Pin Code	No
		Tape Counter	Yes
		Index	Yes
		Hotel Lock	No
		Tape Speed	Yes
		ATR / Manual Tracking	Yes
		Hi-Fi	Yes
G-11	OSD Language	DVD OSD	Eng Fre Spa
		VCR OSD	Eng Fre Spa
G-12	Clock,Timer and Timer Back-up	Calendar	1990/1/1 ~ 2081/12/31
		Timer Events	8 Program/ 1 Month
		One Touch Recording Max Time	5 Hours(30,60,90,120,180,240,300)
		OTPB Valid Time	No
		Timer Back-up (at Power Off Mode)	5sec
G-13	Display	DISPLAY	Yes
		DISPLAY type	LED Module (Green, "Rec" &Timer symbol = Red)
		Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR,Eject	No
		VCR	Yes
		DVD	Yes
		CD	Yes
		Clock	Yes (12h)
		AM	No
		PM	Yes
		Counter	VCR Yes (hour:min)
			DVD Yes (hour:min)
			CD Yes (min:sec)
		Counter Remain	No
		Play	Yes
		Stop	No
		Rec	Yes
		FF / Cue	No
		REW /Review	No
		Pause/Still	Yes
		OTR	No
		T-Rec	Yes
		Chapter	No
		TITLE	No
		TRACK	Yes
		Repeat	No
		Hi-Fi	No
		SP	No
		LP	No
		SLP	No
		CH	Yes
		RF Output CH	No
		Eject	Yes
		Tape In	Yes
G-14	Remote Control	Unit	RC-ET
		Glow in Dark Remocon	No
		Power Source	Voltage(D.C) 3V
		UM size x pcs	UM-4 x 2 pcs
		Total Keys	45 Key
		Keys	Power Yes
		DISPLAY/CALL	Yes
		1	Yes
		2	Yes
		3	Yes
		4	Yes
		5	Yes
		6	Yes
		7	Yes
		8	Yes
		9	Yes
		0	Yes
		Input Select	Yes
		UP/CH+	Yes
		DOWN/CH-	Yes
		LEFT/ SET- / TRACKING-	Yes
		RIGHT/ SET+ / TRACKING+	Yes
		VCR/DVD	Yes
		TV/VCR	Yes
		DVD MENU	Yes

GENERAL SPECIFICATIONS

		TITLE		Yes	
		SET UP MENU/VCR MENU		Yes	
		SELECT/ENTER		Yes	
		CLEAR/CANCEL		Yes	
		RETURN		Yes	
		PLAY		Yes	
		STOP		Yes	
		PAUSE/STILL		Yes	
		FF(Cue)/SEARCH+		Yes	
		REW(Review)/SEARCH-		Yes	
		REC/OTR		Yes	
		SKIP+ / INDEX+		Yes	
		SKIP- / INDEX-		Yes	
		AUDIO / AUDIO SELECT		Yes	
		ANGLE/COUNTER RESET		Yes	
		SUB TITLE/ATR		Yes	
		PLAY MODE/SPEED		Yes	
		T-REC		Yes	
		CLOCK / COUNTER		Yes	
		MEMORY/ZERO RETURN		Yes	
		ZOOM		Yes	
		REPEAT A-B		Yes	
		SLOW(Forward)		Yes	
		MARKER		No	
		OPEN/CLOSE		Yes	
		EJECT		Yes	
G-15	Features (DVD)	Auto Power Off		No	
		Parental Lock		Yes	
		Video CD Playback		No	
		MP3 Playback		Yes	
		Digital Out	Dolby Digital	Yes	
			PCM	Yes	
			DTS	Yes	
			MPEG1,MPEG2	Yes	
		Down Mix Out	(Dolby Digital, MPEG1,MPEG2)	Yes	
		Self Diagnostic		No	
		Spatializer (N-2-2)		No	
		Screen Saver		Yes	
		Features (VCR)	Auto Head Cleaning		Yes
			Auto Tracking		Yes
			HQ (VHS Standard High Quality)		Yes
	Auto Power On, Auto Play, Auto Rewind, Auto Eject			Yes	
	Auto Power Off			No	
	Forward/Reverse Picture Search			Yes	
	VIDEO PLUS+(SHOWVIEW,G-CODE)			No	
	One Touch Playback			No	
	Auto CH Memory			Yes	
	AREA CODE			No	
	Auto Clock Set		Yes		
	Index Search		Yes		
	SQPB		No		
CATV		Yes			
Energy Star		No			
MTS(SAP)		Yes			
CM Skip(30sec x 6 Times)		No			
Power On Memory		No			
Surround		No			
G-16	Accessories	Owner's Manual	Language w/Guarantee Card	English /Spanish	
				No	
		Remote Control Unit		Yes	
		Guarantee Card		Yes	
		Registration Card		No	
		Warning Sheet		No	
		Service Station List		No	
		Important Tag		No	
		AC Plug Adapter		No	
		Quick Set-up Sheet		No	
		Battery		No	
			UM size x pcs	--	
		AC Cord		No	
		AV Cord		Yes (1.2m)	
		75 Ohm Coaxial Cable		Yes (0.9m)	
		S-Video Cable		No	
		21pin cable		No	
		800 No Sticker		No	
		Toll Free Insert Sheet		No	
		Safety Tip		No	
G-17	Interface	Switch	Front	Power	
				Play	
				Eject (VCR)	
				Stop	
				Rec/OTR	
				Open/Close (DVD)	
				CH +	

GENERAL SPECIFICATIONS

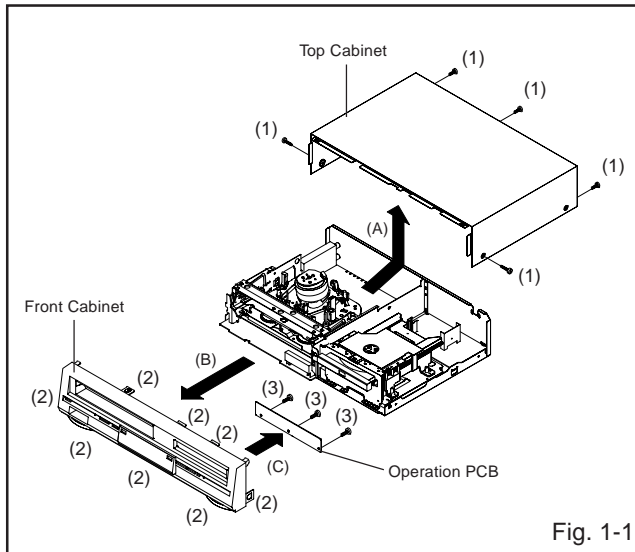
		CH -	Yes
		FF/ Search(>>)	Yes
		Rew/Search(<<)	Yes
		Still/Pause	No
		Shuttle(Search/REV/FWD)	No
		DVD/VCR	Yes
		Main Power SW	No
	Rear	Attenuator	No
		Video/RGB Selector	No
		RF Out(Slide SW)	Yes (3ch/4ch)
		Main Power SW	No
	Volume	Phones Volume	No
		Mic Volume	No
		Echo Volume	No
		Rec/OTR	No
	Terminals	Front	Video In RCA x1(Yellow)
			Audio In RCA x 2(Stereo, White/Red)
		Rear	Video Output RCA x1(Yellow) S-Video x 1(DVD Signal Only) Component x1 (RCA 3pin,DVD Signal Only)
			Audio Output RCA x 4(Stereo, White/Red) Coaxial x 1 (Digital Audio,DVD Signal Only)
			Optical Out (Option) Yes (Digital Audio,DVD Signal Only)
			Video Input (Option) No
			Audio Input (Option) No
			RF Input / Output Yes
			Euro Scart No
			AC Inlet No
	Indicator	LED	Power No
			Rec No
			T-Rec No
			TV/VCR No
			DVD Yes (RED)
			VCR Yes (RED)
			Surround No
			Level Meter No
G-18	Set Size	Approx. W x D x H (mm)	430 x 314.5 x 99
G-19	Weight	Net (Approx.)	4.5 kg(9.9lbs)
		Gross (Approx.)	5.5 kg(12.1lbs)
G-20	Carton	Master Carton	No
		Content	--- Sets
		Material	--- / ---
		Dimensions W x D x H(mm)	---
		Description of Origin	---
		Gift Box	Yes
		Material	Dbule / White
		W/Color Photo Label	No
		Dimensions W x D x H(mm)	500 x 430 x 180
		Design	As Per BUYER 's
		Description of Origin	Yes
		Drop Test	Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
		Height (cm)	80 cm
		Container Stuffing	1,595 Sets/40' container
G-21	Cabinet Material	Cabinet Front	PS 94V2 or More/ DECABROM

DISASSEMBLY INSTRUCTIONS

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

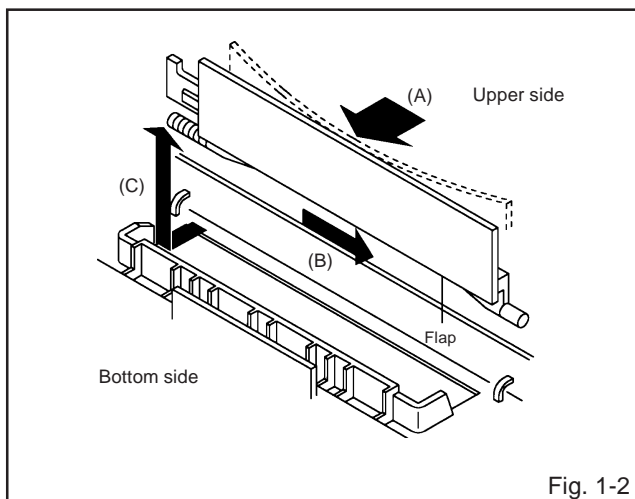
1-1: TOP CABINET AND FRONT CABINET (Refer to Fig. 1-1)

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 3 screws (3).
7. Remove the Operation PCB in the direction of arrow (C).



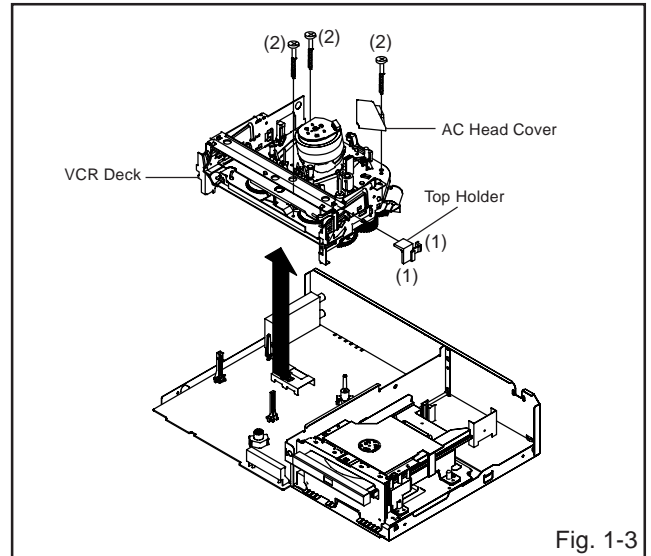
1-2: FLAP (Refer to Fig. 1-2)

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).



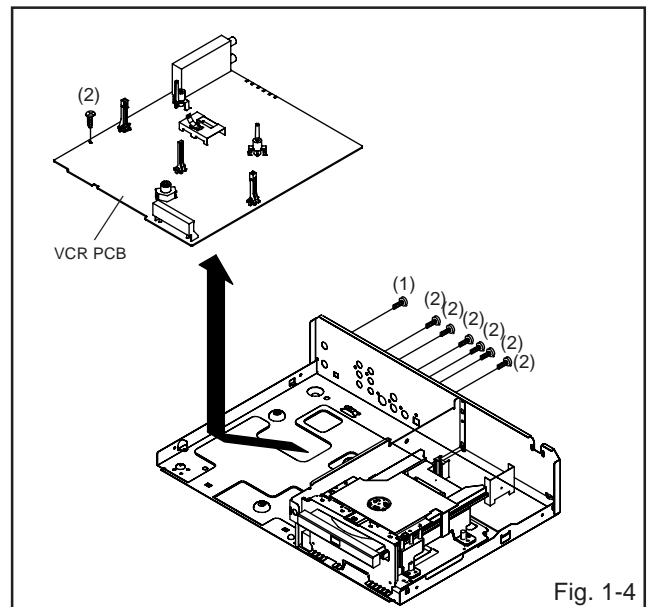
1-3: VCR DECK (Refer to Fig. 1-3)

1. Unlock the 2 supports (1) and remove the Top Holder.
2. Remove the 3 screws (2).
3. Disconnect the following connectors: (CP101, CP102, CP103 and CP3001).
4. Remove the AC Head Cover and VCR Deck in the direction of arrow.



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

1. Remove the screw (1).
2. Remove the 7 screws (2).
3. Disconnect the following connectors: (CP1701, CP8001 and CP8002).
4. Remove the VCR PCB in the direction of arrow.



DISASSEMBLY INSTRUCTIONS

1-5: DECK CD AND DVD PCB (Refer to Fig. 1-5)

1. Make the short circuit on the position as shown Fig. 1-5 using a soldering. If you remove the Deck CD with no soldering, the Laser may be damaged.
2. Disconnect the following connector: (CP503).
3. Remove the 4 screws (1).
4. Remove the Deck Angle in the direction of arrow (A).
5. Remove the 2 screws (2).
6. Remove the Front-DVD Shield in the direction of arrow (B).
7. Remove the 4 screws (3).
8. Disconnect the following connectors: (CP2601, CP2602 and CP2603).
9. Remove the Deck CD in the direction of arrow (C).
10. Remove the 4 screws (4).
11. Remove the DVD PCB in the direction of arrow (D).

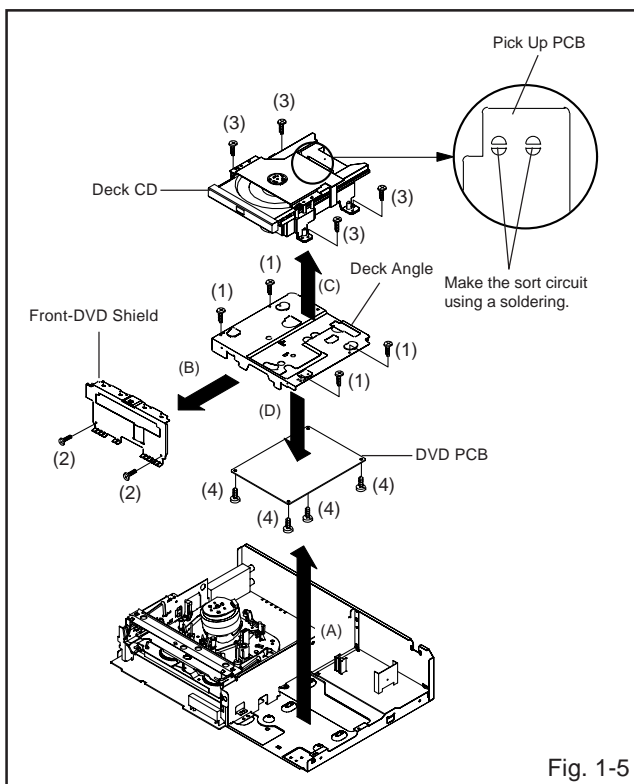


Fig. 1-5

NOTE

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

1-6: POWER PCB (Refer to Fig. 1-6)

1. Remove the 3 screws (1).
2. Remove the Power PCB in the direction of arrow.

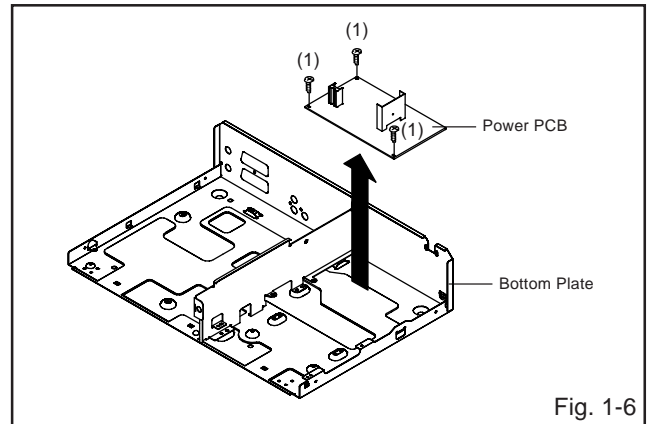


Fig. 1-6

DISASSEMBLY INSTRUCTIONS

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.

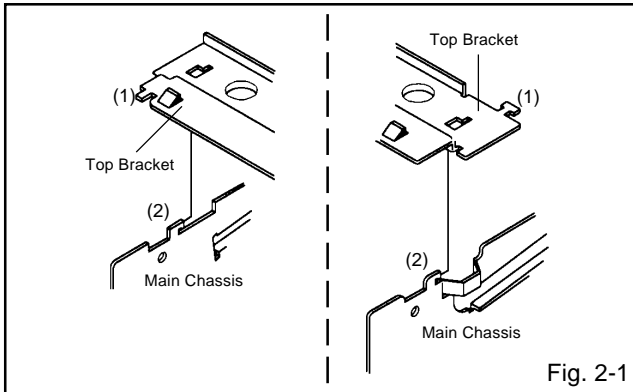


Fig. 2-1

2-2: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-2)

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

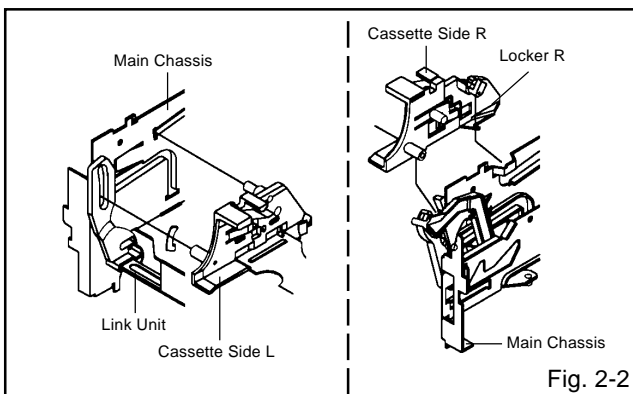


Fig. 2-2

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.

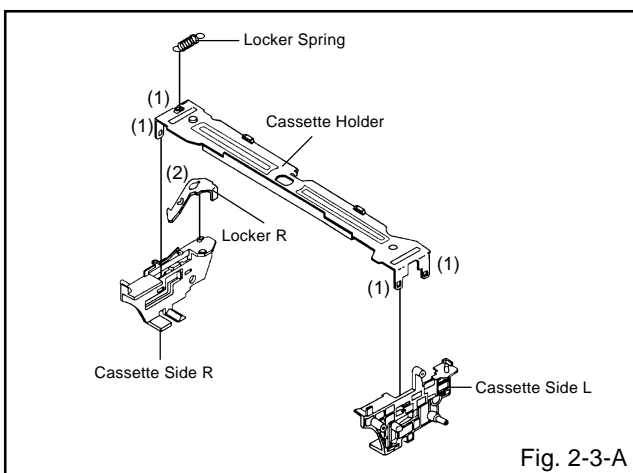


Fig. 2-3-A

NOTE

1. In case of the Locker R installation, check if the two positions 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.

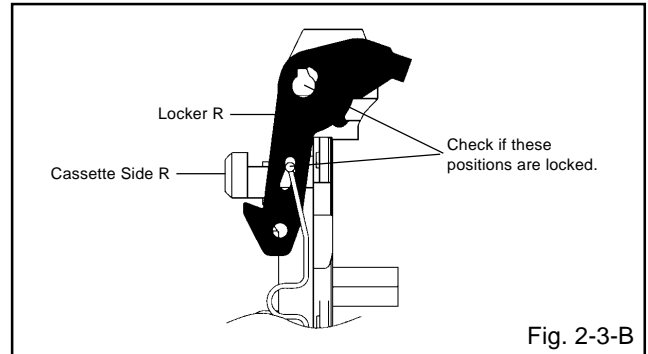


Fig. 2-3-B

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.

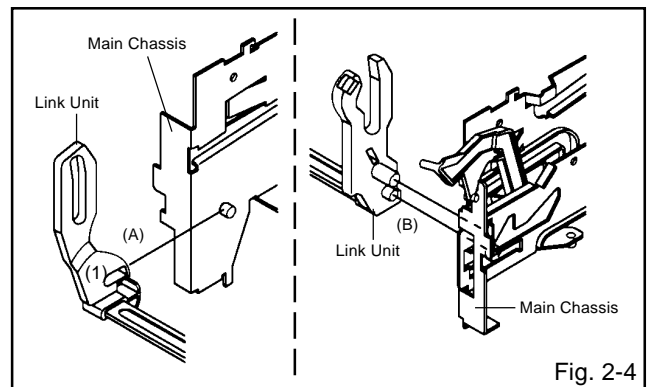


Fig. 2-4

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.

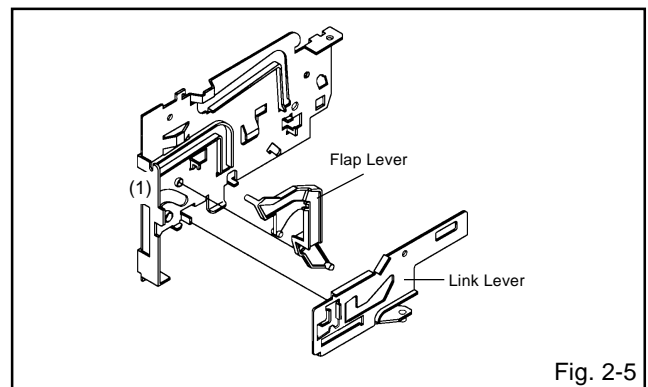


Fig. 2-5

DISASSEMBLY INSTRUCTIONS

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.

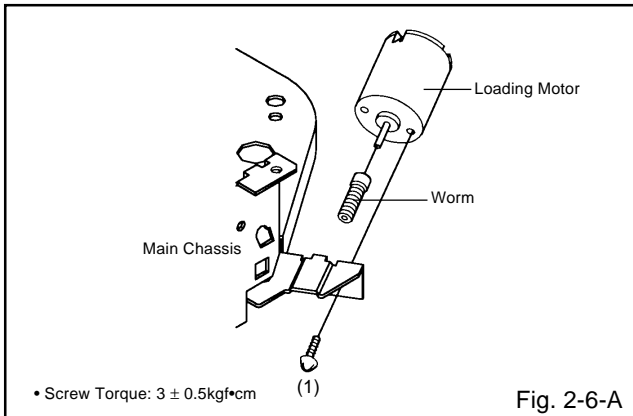


Fig. 2-6-A

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.

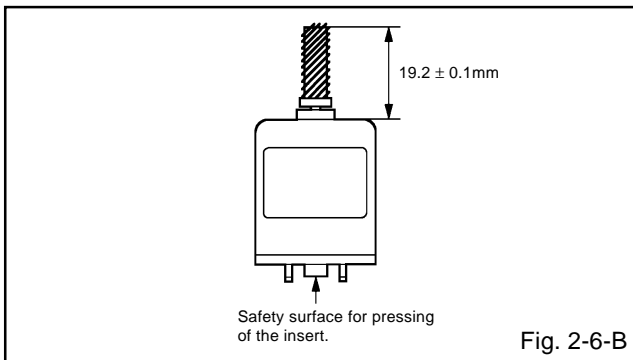


Fig. 2-6-B

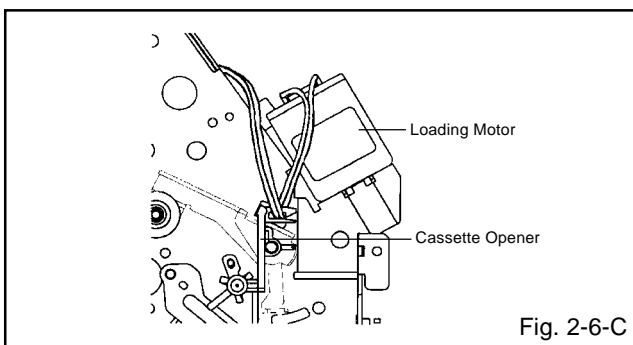


Fig. 2-6-C

2-7: TENSION ASS'Y (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 Ass'y.
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 Ass'y.
5. Unlock the support (3) and remove the Tension Connect.
6. Float the hook (4) and turn it clockwise then remove the Tension Holder.

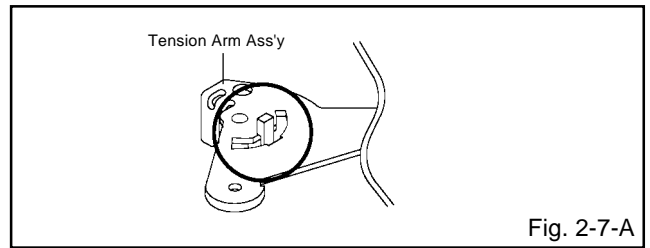


Fig. 2-7-A

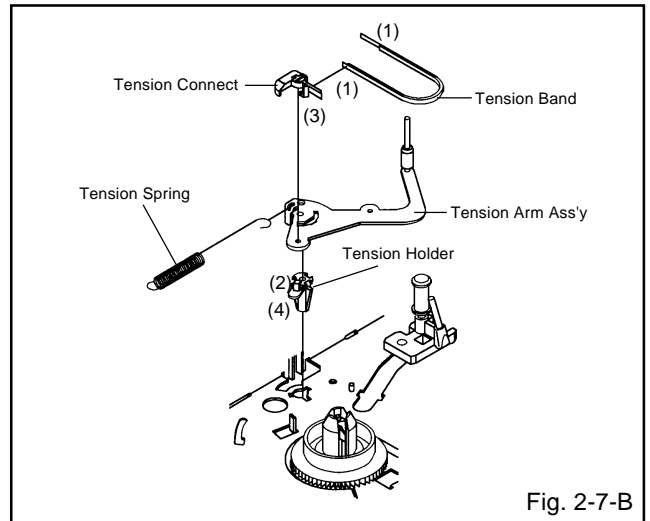


Fig. 2-7-B

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.

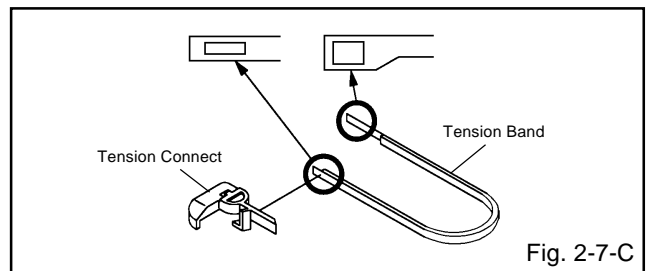


Fig. 2-7-C

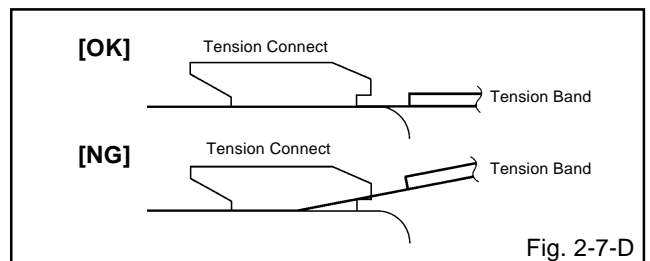


Fig. 2-7-D

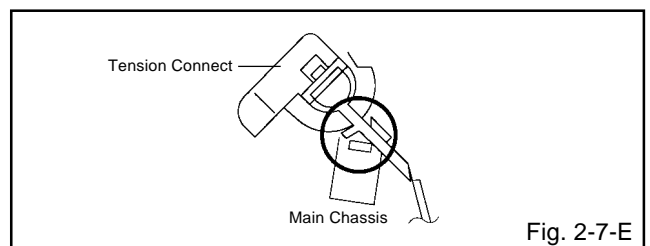


Fig. 2-7-E

DISASSEMBLY INSTRUCTIONS

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.

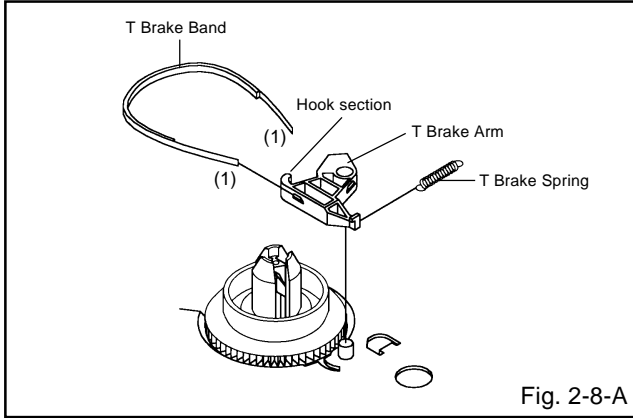


Fig. 2-8-A

NOTE

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

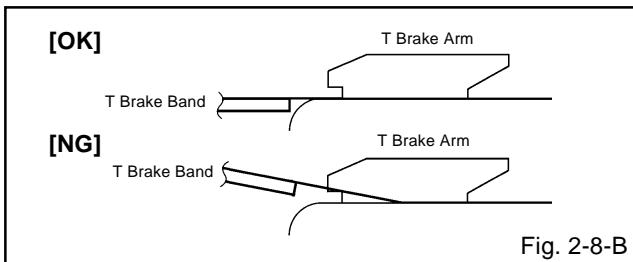


Fig. 2-8-B

2-9: S REEL/T REEL/IDLER ARM ASS'Y/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 Ass'y 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)

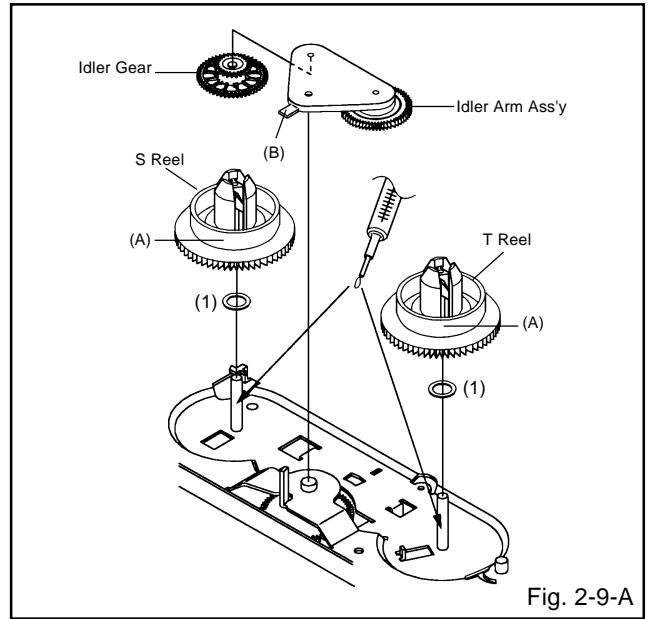


Fig. 2-9-A

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 Ass'y 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.

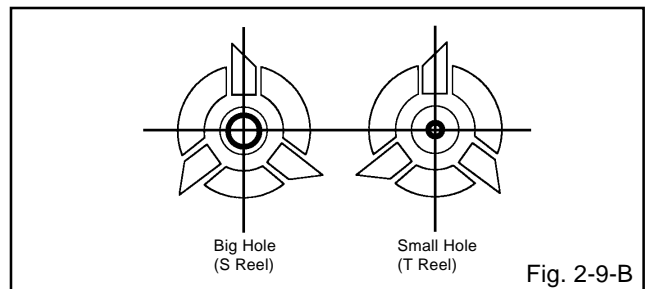


Fig. 2-9-B

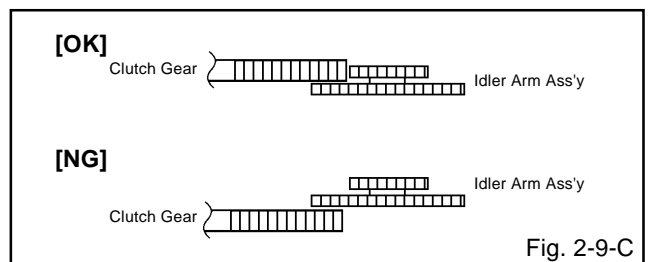
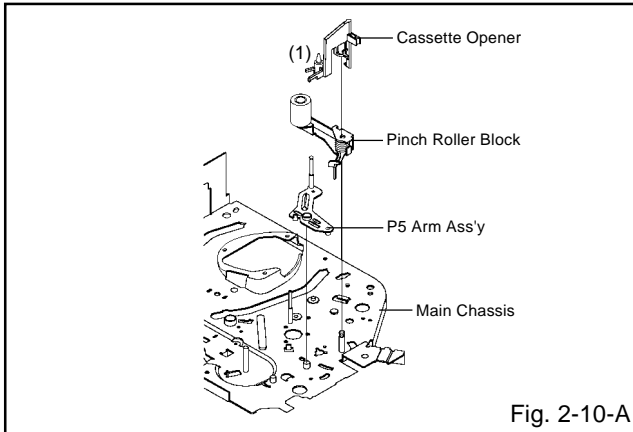


Fig. 2-9-C

DISASSEMBLY INSTRUCTIONS

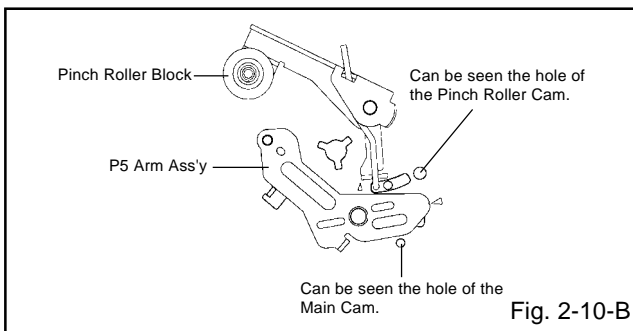
2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support (1) and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.



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.

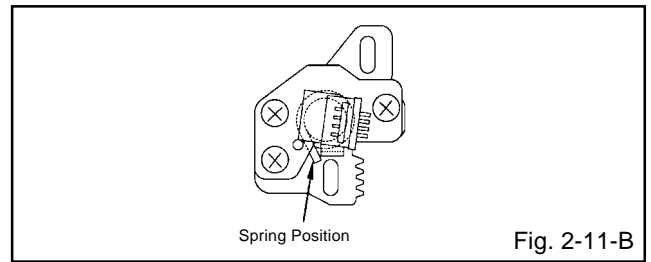
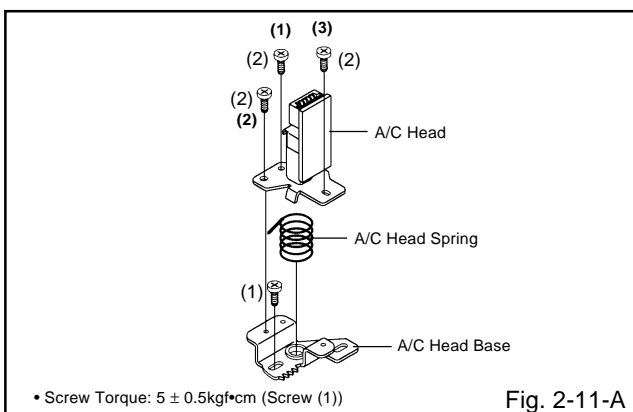


2-11: A/C HEAD (Refer to Fig. 2-11-A)

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.

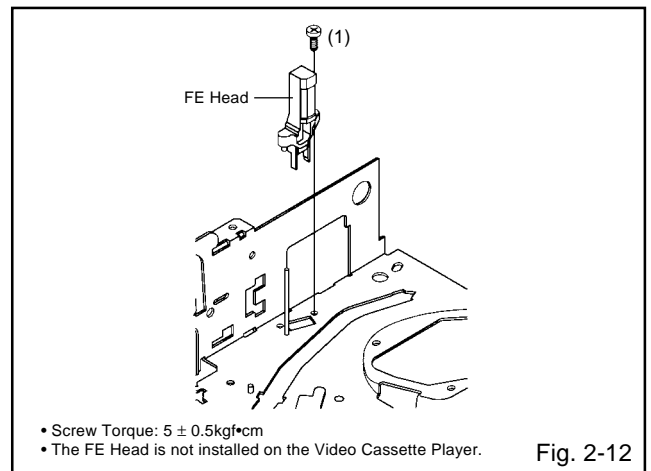
NOTE

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).



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

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

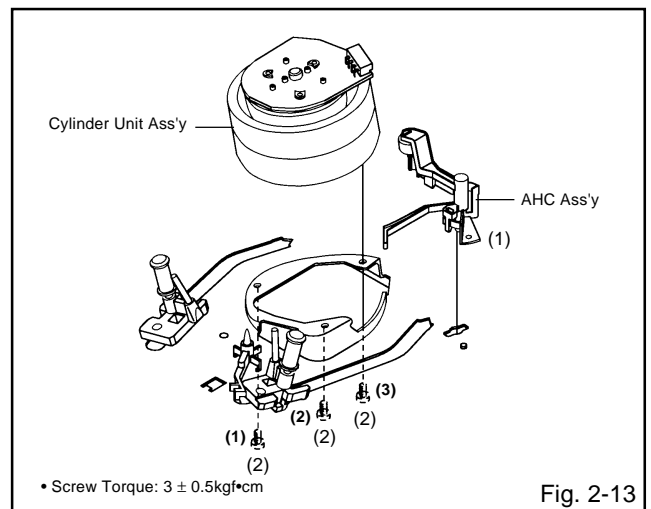


2-13: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

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

NOTE

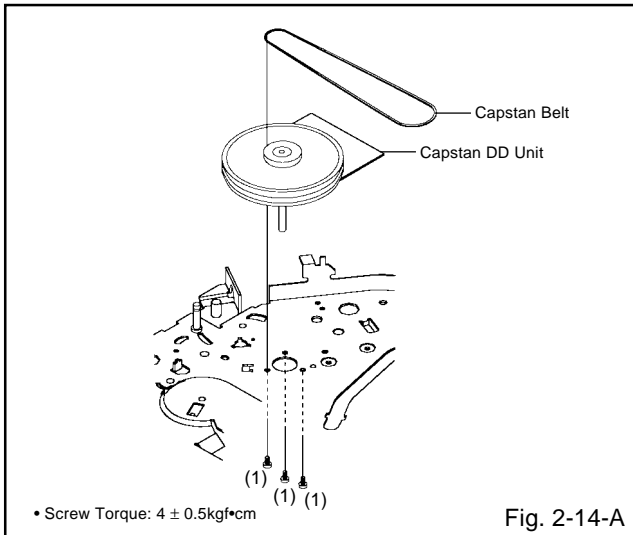
1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.



DISASSEMBLY INSTRUCTIONS

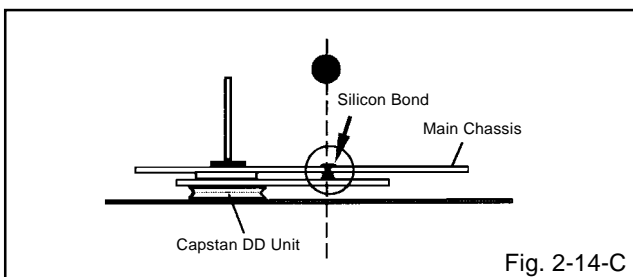
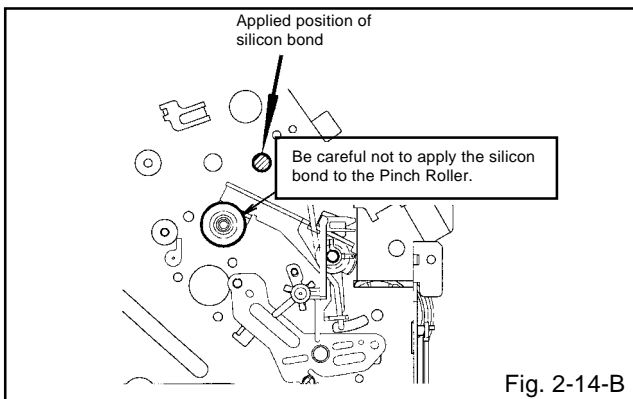
2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

1. Remove the Capstan Belt.
2. Remove the 3 screws (1).
3. Remove the Capstan DD Unit.



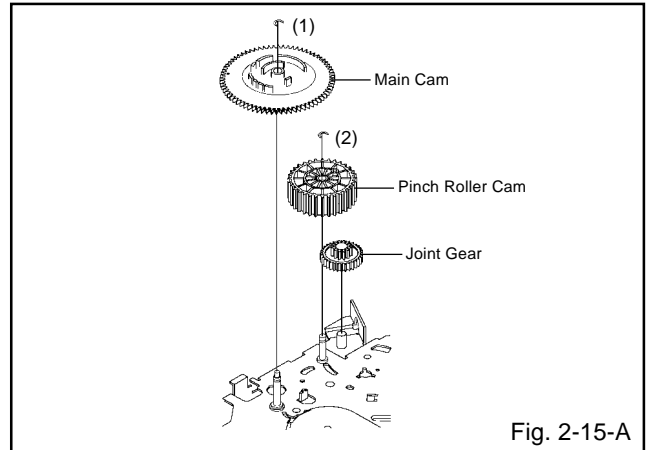
NOTE

1. In case of the Capstan DD Unit installation, apply the silicon bond (TSE3843-W) on the position Fig. 2-14-B correctly. (If no silicon bond applied, abnormal noise will be heard on the deck operation.)
(Refer to Fig. 2-14-B, C)



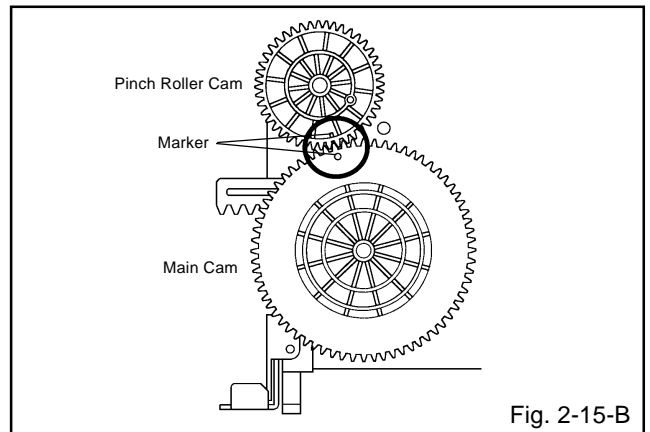
2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

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.



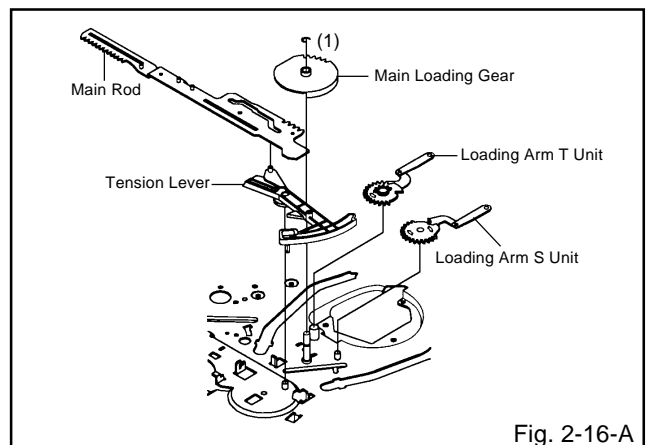
NOTE

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)



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

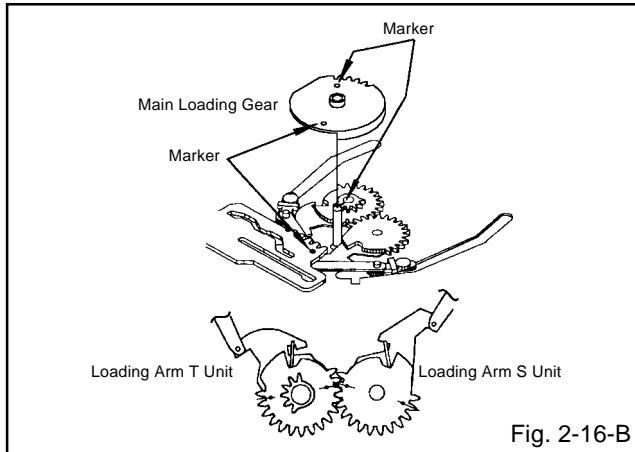
1. Remove the E-Ring (1) and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.



DISASSEMBLY INSTRUCTIONS

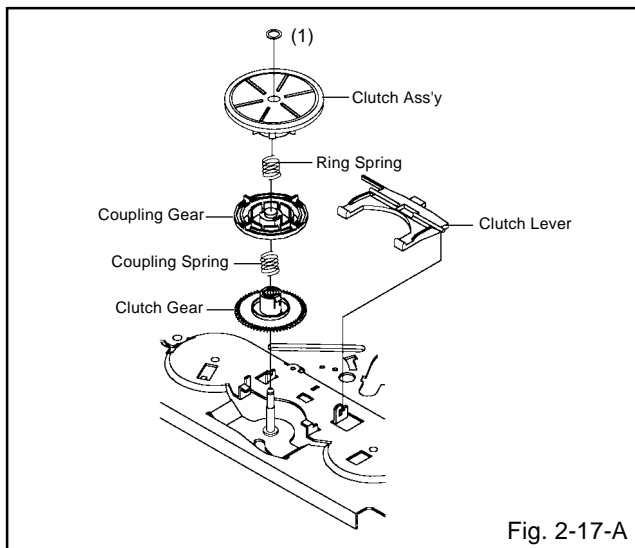
NOTE

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)



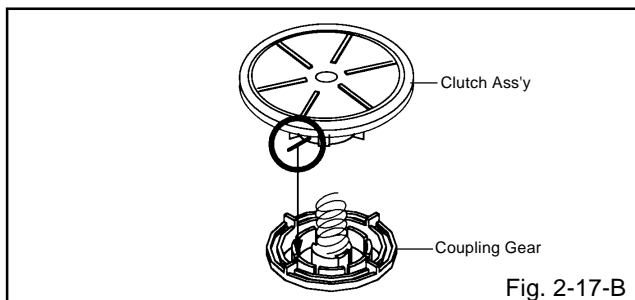
2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer (1).
2. Remove the Clutch Ass'y and Ring Spring.
3. Remove the Clutch Lever.
4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.



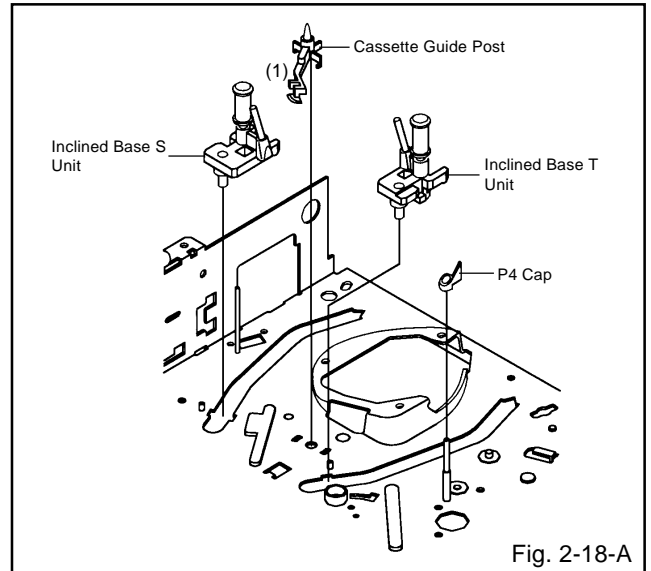
NOTE

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



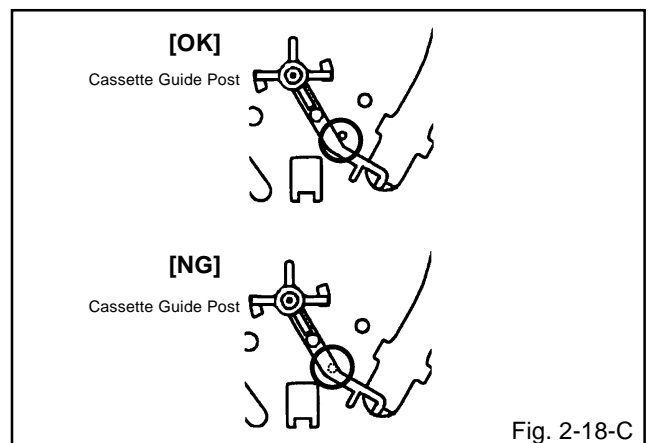
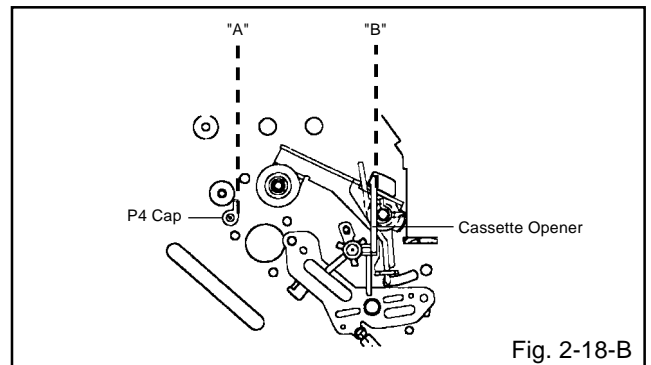
2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support (1) and remove the Cassette Guide Post.
3. Remove the Inclined Base S Unit and Inclined Base T Unit.



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.



DISASSEMBLY INSTRUCTIONS

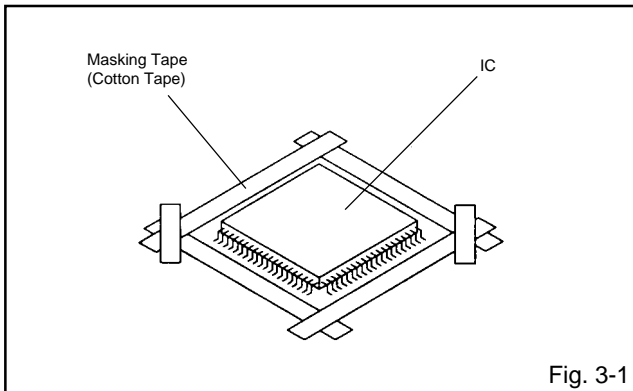
3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 3-1.)

NOTE

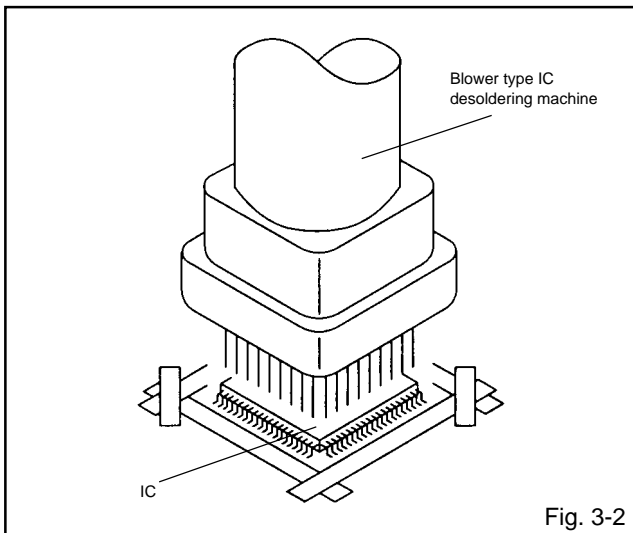
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 3-2.)

NOTE

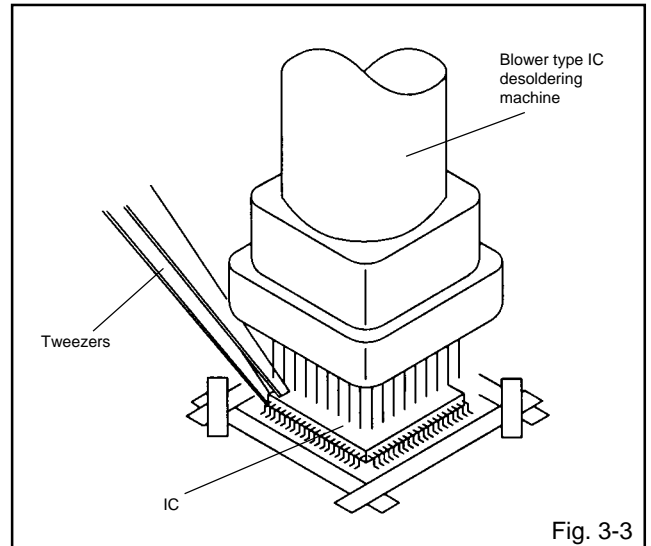
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 3-3.)

NOTE

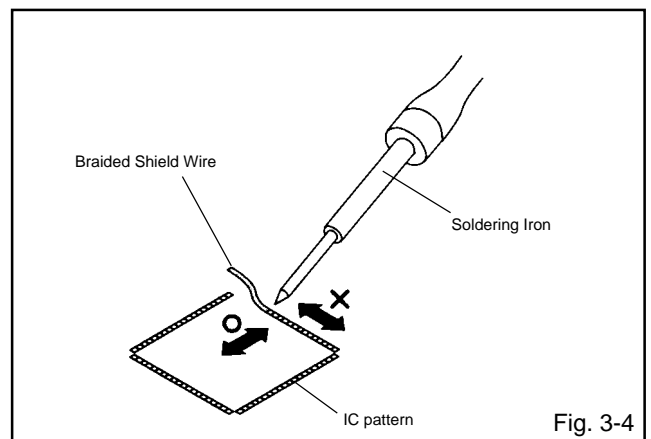
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 3-4.)

NOTE

Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. (Refer to Fig. 3-5.)

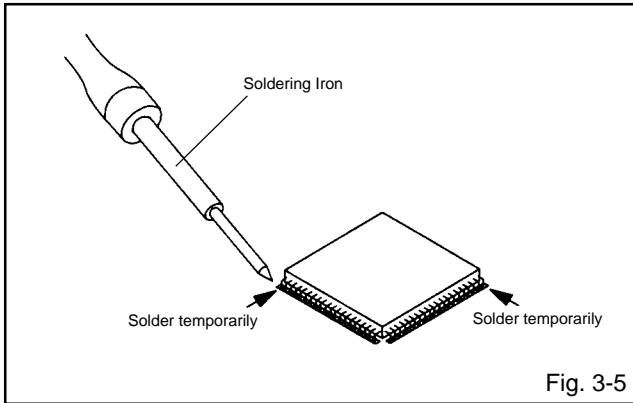


Fig. 3-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 3-6.)

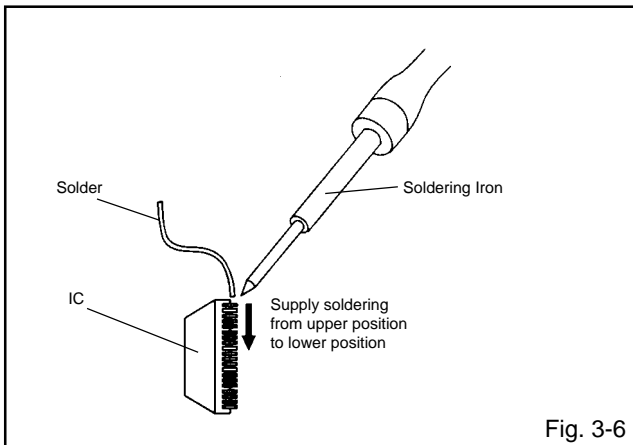


Fig. 3-6

3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 3-7.)

NOTE

Do not absorb the solder to excess.

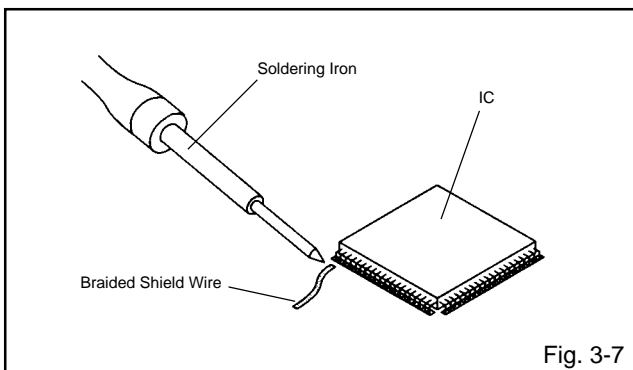


Fig. 3-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. (Refer to Fig. 3-8.)

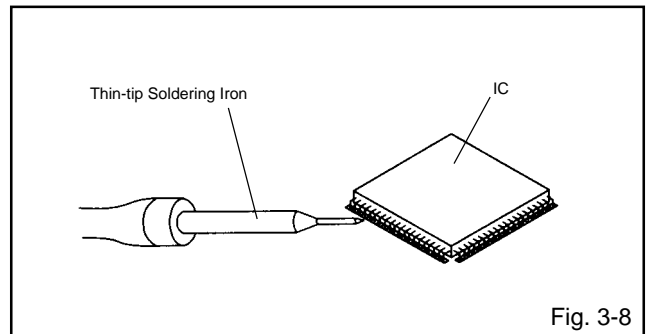


Fig. 3-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass. Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

KEY TO ABBREVIATIONS

A	A/C	: Audio/Control	H.SW	: Head Switch	
	ACC	: Automatic Color Control	Hz	: Hertz	
	AE	: Audio Erase	I	IC	: Integrated Circuit
	AFC	: Automatic Frequency Control		IF	: Intermediate Frequency
	AFT	: Automatic Fine Tuning		IND	: Indicator
	AFT DET	: Automatic Fine Tuning Detect		INV	: Inverter
	AGC	: Automatic Gain Control	K	KIL	: Killer
	AMP	: Amplifier	L	L	: Left
	ANT	: Antenna		LED	: Light Emitting Diode
	A.PB	: Audio Playback		LIMIT AMP	: Limiter Amplifier
	APC	: Automatic Phase Control		LM, LDM	: Loading Motor
	ASSY	: Assembly		LP	: Long Play
	AT	: All Time		L.P.F	: Low Pass Filter
	AUTO	: Automatic		LUMI.	: Luminance
	A/V	: Audio/Video	M	M	: Motor
B	BGP	: Burst Gate Pulse		MAX	: Maximum
	BOT	: Beginning of Tape		MINI	: Minimum
	BPF	: Bandpass Filter		MIX	: Mixer, mixing
	BRAKE SOL	: Brake Solenoid		MM	: Monostable Multivibrator
	BUFF	: Buffer		MOD	: Modulator, Modulation
	B/W	: Black and White		MPX	: Multiplexer, Multiplex
C	C	: Capacitance, Collector		MS SW	: Mecha State Switch
	CASE	: Cassette	N	NC	: Non Connection
	CAP	: Capstan		NR	: Noise Reduction
	CARR	: Carrier	O	OSC	: Oscillator
	CH	: Channel		OPE	: Operation
	CLK	: Clock	P	PB	: Playback
	CLOCK (SY-SE)	: Clock (Syscon to Servo)		PB CTL	: Playback Control
	COMB	: Combination, Comb Filter		PB-C	: Playback-Chrominance
	CONV	: Converter		PB-Y	: Playback-Luminance
	CPM	: Capstan Motor		PCB	: Printed Circuit Board
	CTL	: Control		P. CON	: Power Control
	CYL	: Cylinder		PD	: Phase Detector
	CYL-M	: Cylinder-Motor		PG	: Pulse Generator
	CYL SENS	: Cylinder-Sensor		P-P	: Peak-to Peak
D	DATA (SY-CE)	: Data (Syscon to Servo)	R	R	: Right
	dB	: Decibel		REC	: Recording
	DC	: Direct Current		REC-C	: Recording-Chrominance
	DD Unit	: Direct Drive Motor Unit		REC-Y	: Recording-Luminance
	DEMODO	: Demodulator		REEL BRK	: Reel Brake
	DET	: Detector		REEL S	: Reel Sensor
	DEV	: Deviation		REF	: Reference
E	E	: Emitter		REG	: Regulated, Regulator
	EF	: Emitter Follower		REW	: Rewind
	EMPH	: Emphasis		REV, RVS	: Reverse
	ENC	: Encoder		RF	: Radio Frequency
	ENV	: Envelope		RMC	: Remote Control
	EOT	: End of Tape		RY	: Relay
	EQ	: Equalizer	S	S. CLK	: Serial Clock
	EXT	: External		S. COM	: Sensor Common
F	F	: Fuse		S. DATA	: Serial Data
	FBC	: Feed Back Clamp		SEG	: Segment
	FE	: Full Erase		SEL	: Select, Selector
	FF	: Fast Forward, Flipflop		SENS	: Sensor
	FG	: Frequency Generator		SER	: Search Mode
	FL SW	: Front Loading Switch		SI	: Serial Input
	FM	: Frequency Modulation		SIF	: Sound Intermediate Frequency
	FSC	: Frequency Sub Carrier		SO	: Serial Output
	FWD	: Forward		SOL	: Solenoid
G	GEN	: Generator		SP	: Standard Play
	GND	: Ground		STB	: Serial Strobe
H	H.P.F	: High Pass Filter		SW	: Switch

KEY TO ABBREVIATIONS

S	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	XITAL	:	Crystal
Y	Y/C	:	Luminance/Chrominance

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 (second).

Set Key	Set Key	Standard Time (seconds)	Operations
CH UP	FF	2	PLAY/REC total hours are displayed on the screen. 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".
CH UP	STOP	2	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
CH UP	PLAY	2	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.
CH DOWN	POWER	2	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 Key	Remocon Key	Standard Time (seconds)	Operations
REC	8	2	Initialization of the factory on DVD. NOTE: Do not use this for the normal servicing. The function will only work without the setting of DVD disc at DVD mode. While pressing the Remocon Key for more than the Standard Time, press the Set Key simultaneously.

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"

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 Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	
Cylinder Unit	■	●	●	●	●	Clean the Head

■ : Clean

● : Check it and if necessary, replace it.

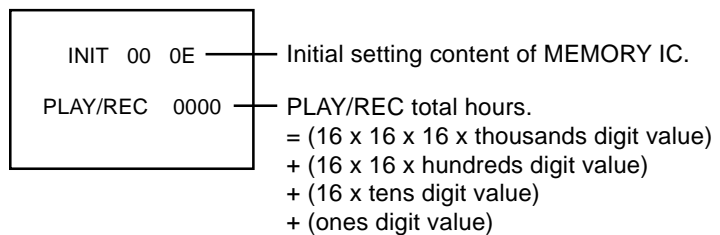
CONFIRMATION OF HOURS USED

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.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
4. After the confirmation of using hours, turn off the power.



PREVENTIVE CHECKS AND SERVICE INTERVALS

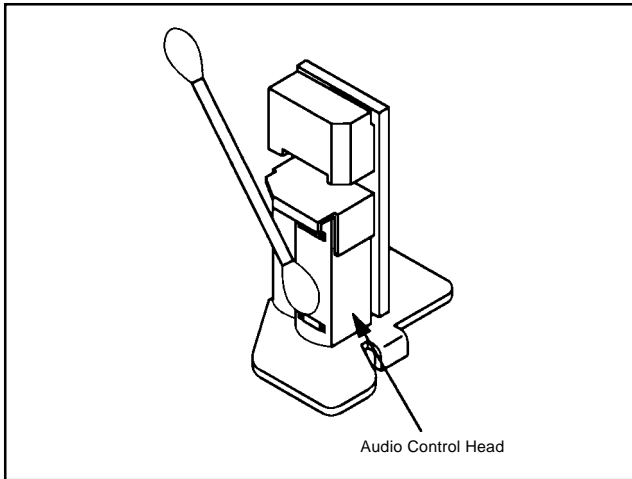
CLEANING

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

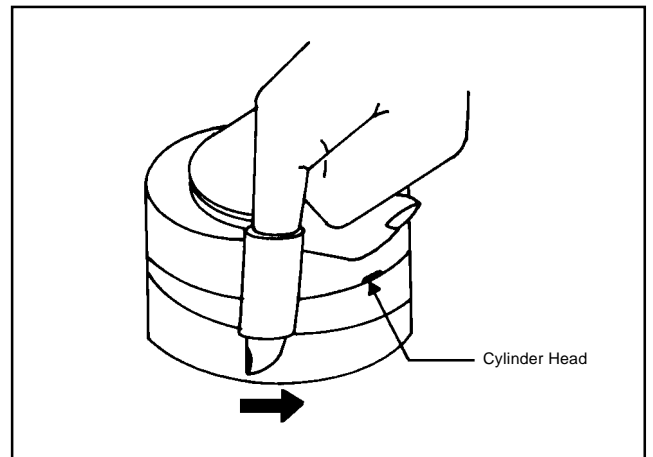
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

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.



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: No need setting for after INI 2E.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	0E	00	D8	10	64	64	4A	E6	0B	2F	86	2F	0A	08	0A	0F
10	AF	97	95	8A	B0	55	31	04	88	A5	9F	3A	00	10	BF	00
20	29	01	15	77	61	31	29	04	00	00	00	00	A2	B0	02	---

Table 1

1. Connect the set to TV Monitor.
2. Turn on the POWER.
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.

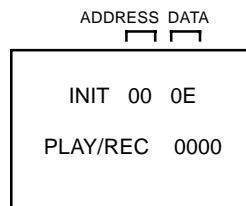
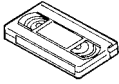
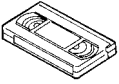
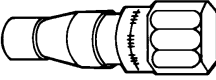
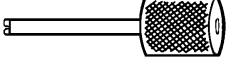
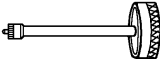
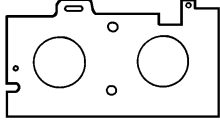
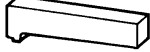
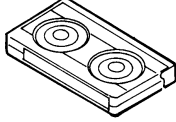
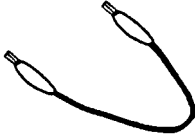
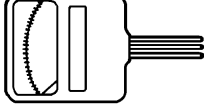


Fig. 1

4. ADDRESS is now selected and should "blink". Using the SET + 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 SET + 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.
The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

<p>(For 2 heads model) VHS Alignment Tape JG001 (VN₂S-LI6³) JG001A (VN₂S-CO¹³) JG001Q (VN₂S-LI6³H) JG001T (VN₂S-X6³)</p> 	<p>(For 4 heads model) VHS Alignment Tape JG001B (VN₁S-LI6³) JG001I (VN₁S-CO¹³) JG001P (VN₁S-LI6³H) JG001S (VN₁S-X6³)</p> 	<p>JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm)</p> 	<p>JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small)</p> 
<p>JG153 X Value Adjustment Screwdriver</p> 	<p>JG022 Master Plane</p> 	<p>JG024A Reel Disk Height Adjustment Jig</p> 	<p>JG100A Torque Tape (VHT-063)</p> 
<p>JG154 Cable</p> 	<p>Tentelometer</p> 		

Ref. No.	Part No.	Parts Name	Remarks
JG001	APJG001000	VHS Alignment Tape	Monoscope, 6KHz (For 2 heads model)
JG001A	APJG001A00	VHS Alignment Tape	Color Bar, 1KHz (For 2 heads model)
JG001Q	APJG001Q00	VHS Alignment Tape	Hi-Fi Audio (For 2 heads model)
JG001T	APJG001T00	VHS Alignment Tape	X Value Adjustment (For 2 heads model)
JG001B	APJG001B00	VHS Alignment Tape	Monoscope, 6KHz (For 4 heads model)
JG001I	APJG001I00	VHS Alignment Tape	Color Bar, 1KHz (For 4 heads model)
JG001P	APJG001P00	VHS Alignment Tape	Hi-Fi Audio (For 4 heads model)
JG001S	APJG001S00	VHS Alignment Tape	X Value Adjustment (For 4 heads model)
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

How to use the Servicing Fixture

- While pressing the POWER button on the set for more than 2 seconds, press the CH DOWN button on the set simultaneously at the Power OFF. Although the DVD is connected, the DVD mode cannot be selected.
- Short circuit between **TP3001** and **Ground** with the cable JG154.
(The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape.)
- In case of using a cassette tape, press the STOP/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.

MECHANICAL ADJUSTMENTS

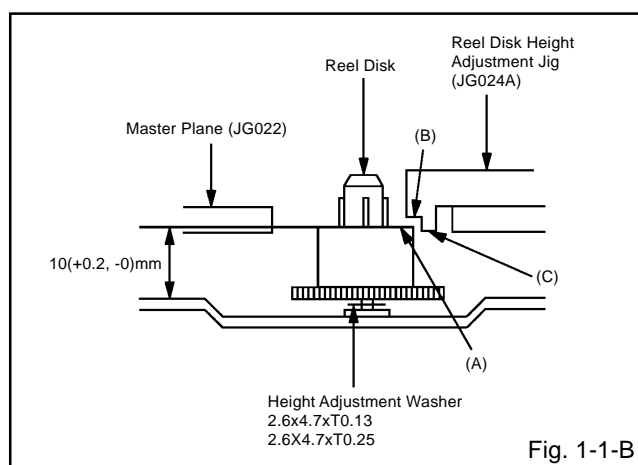
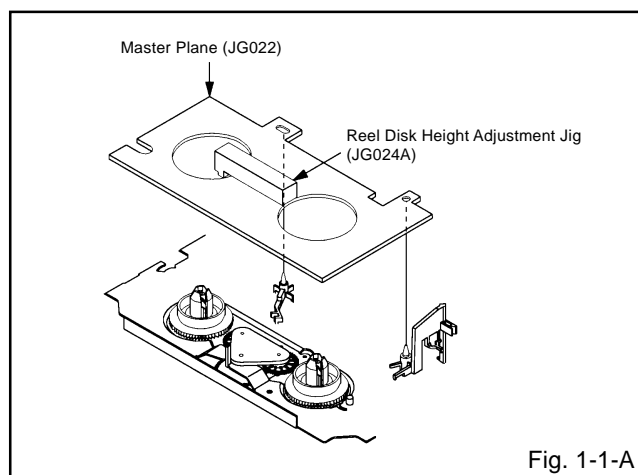
1. CONFIRMATION AND ADJUSTMENT

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.)

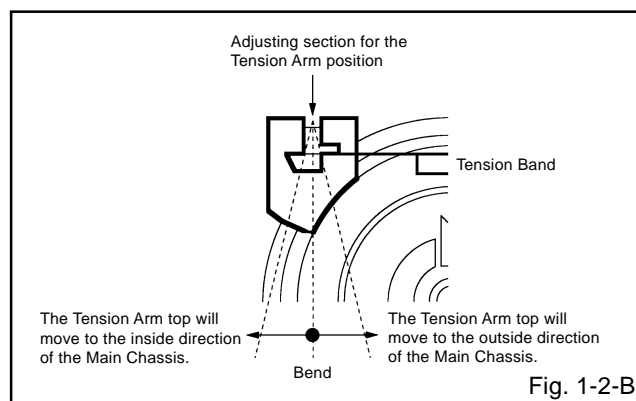
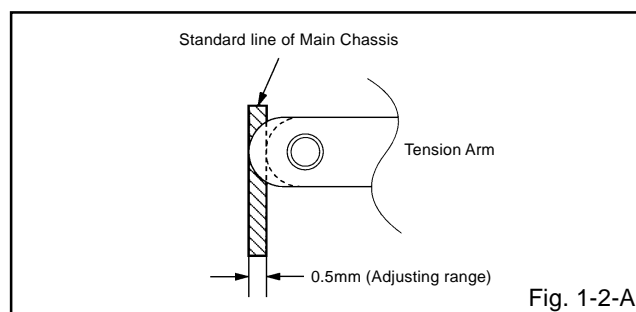
1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane (**JG022**) and reel disk height adjustment jig (**JG024A**) 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 (**JG024A**) 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.



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.

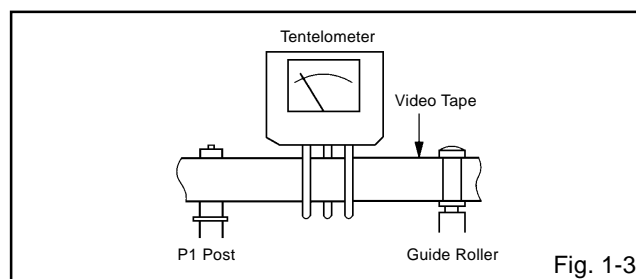


1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3**. Confirm that the meter indicates $20 \pm 2\text{gf}$ in the beginning of playback.

USING A CASSETTE TYPE TORQUE TAPE (**JG100A**)

1. After confirmation and adjustment of Tension Post position (**Refer to item 1-2**), load the cassette type torque tape (**JG100A**) 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.



MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge (**JG002F**) and Adapter (**JG002B**) 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.

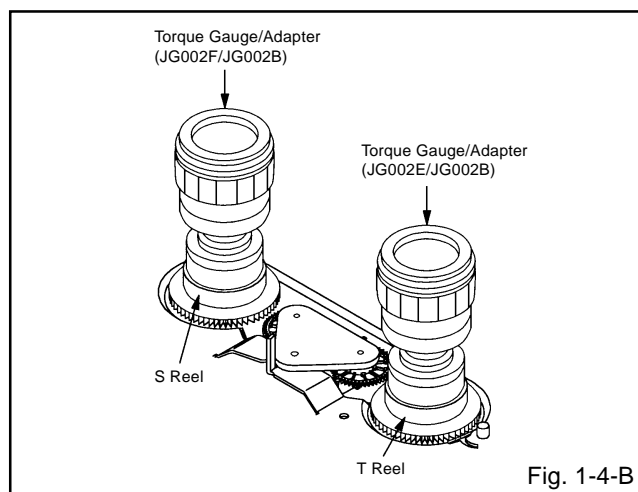
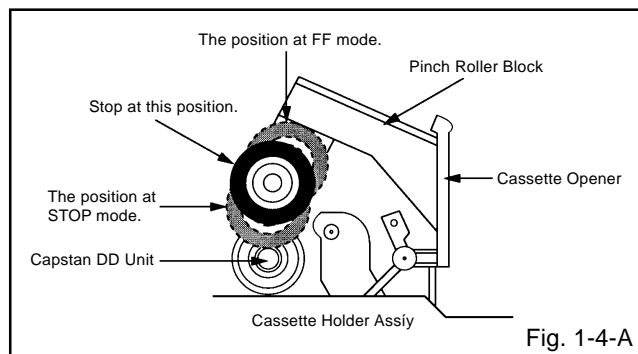
1-5: CONFIRMATION OF REEL BRAKE TORQUE

(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 Assiy from the S Reel.
3. Install the Torque Gauge (**JG002F**) and Adapter (**JG002B**) on the S Reel. Turn the Torque Gauge (**JG002F**) 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 Assiy from the T Reel.
3. Install the Torque Gauge (**JG002E**) and Adapter (**JG002B**) on the T reel. Turn the Torque Gauge (**JG002E**) counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.



NOTE

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

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

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

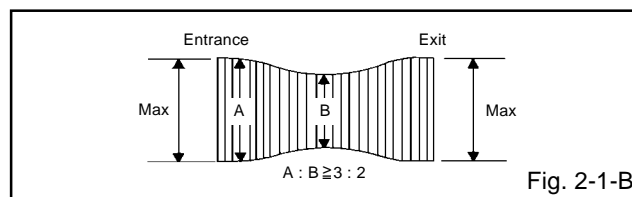
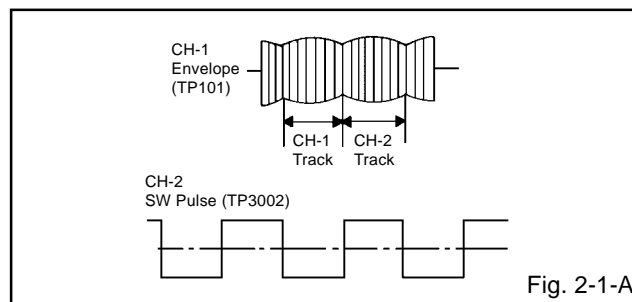
Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape (**JG001** or **JG001B**). (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 Tracking-Auto 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 (**JG005**) 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)

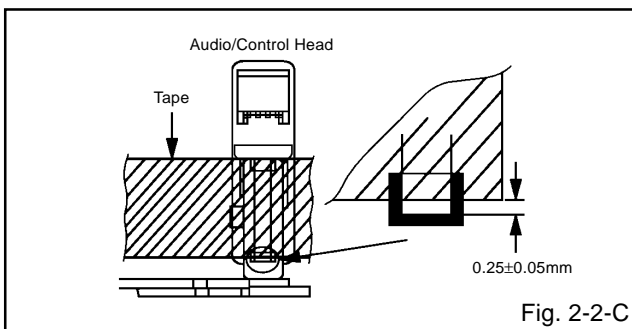
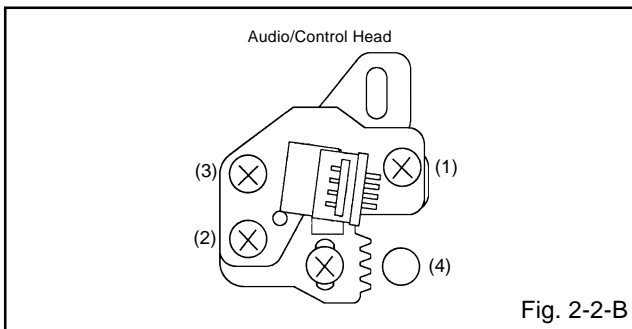
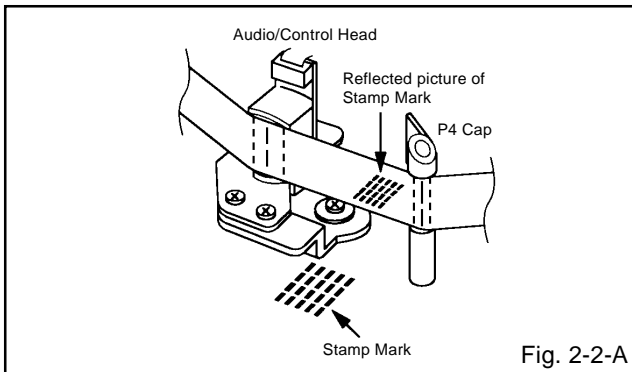


MECHANICAL ADJUSTMENTS

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

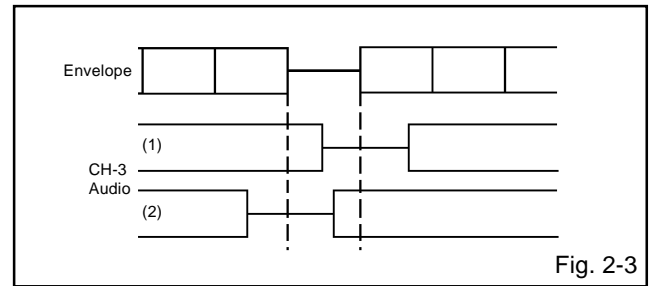
When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape (**JG001 or JG001B**). (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**.
 - a) When the height is not correct, turn the screw (3) to adjust the height. Then, adjust the 1~3 again.



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 (**JG001S or JG001T**). (Refer to **SERVICING FIXTURE AND TOOLS**)
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver (**JG153**) 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**.

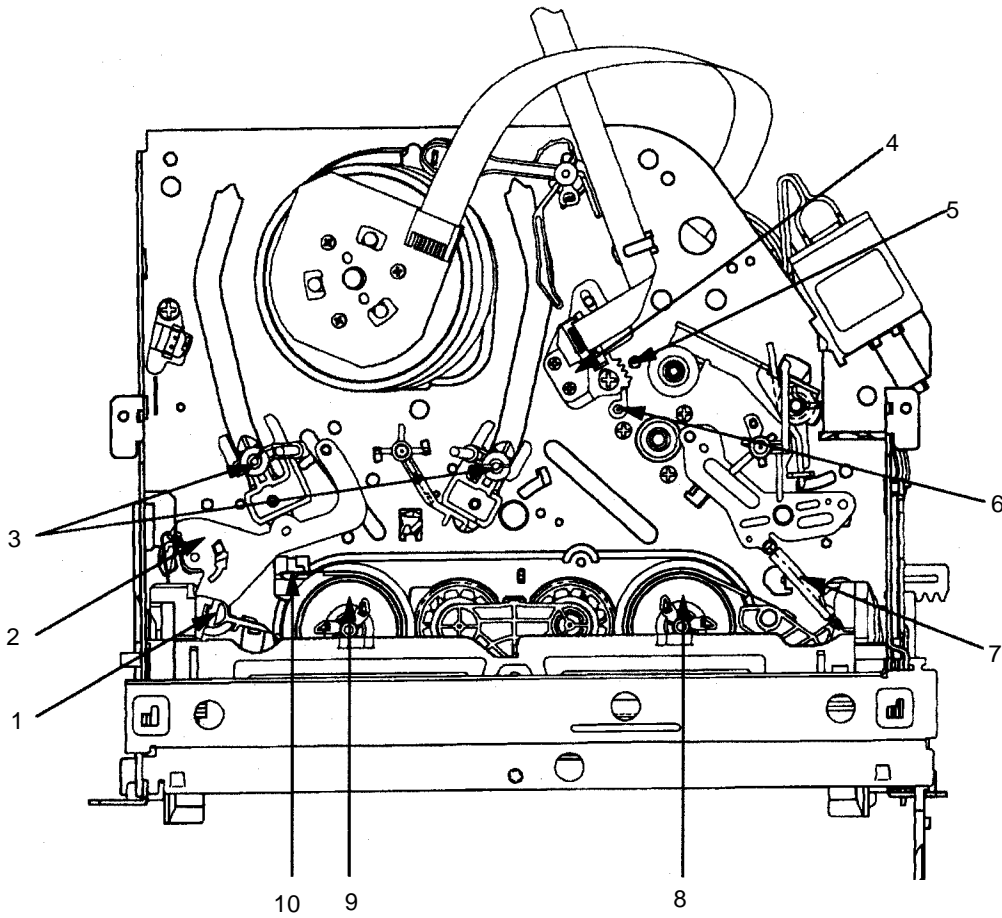


2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP3002** and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape (**JG001P or JG001Q**). (Refer to **SERVICING FIXTURE AND TOOLS**)
3. Press and hold the Tracking-Auto 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 Tracking-Auto 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 (**JG153**) to (4) of **Fig. 2-2-B**. Change the X Value and adjust it so that the value becomes within 2 steps.

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



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

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 (**YG6260M**) 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

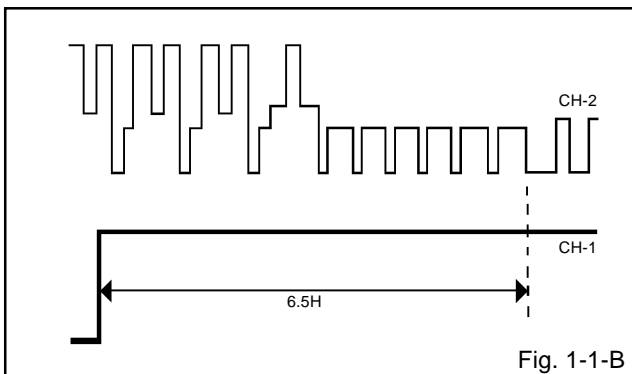
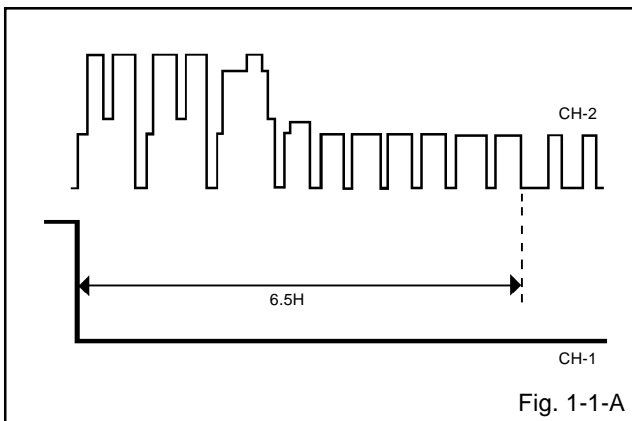
CONDITIONS

MODE-PLAYBACK

Input Signal-Alignment Tape (**JG001P**)

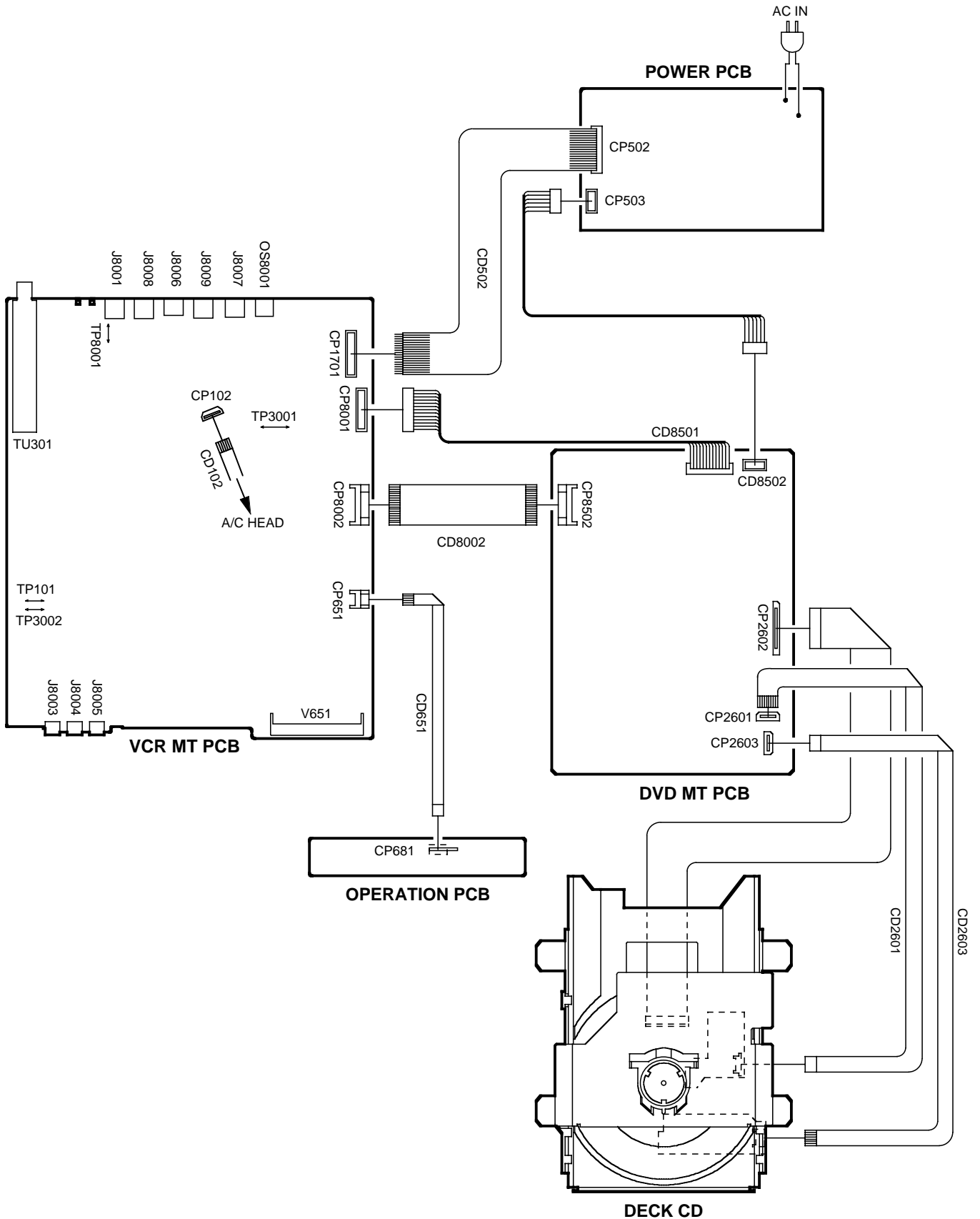
INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP3002** and CH-2 to **TP8001**.
2. Playback the alignment tape. (**JG001P**)
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.

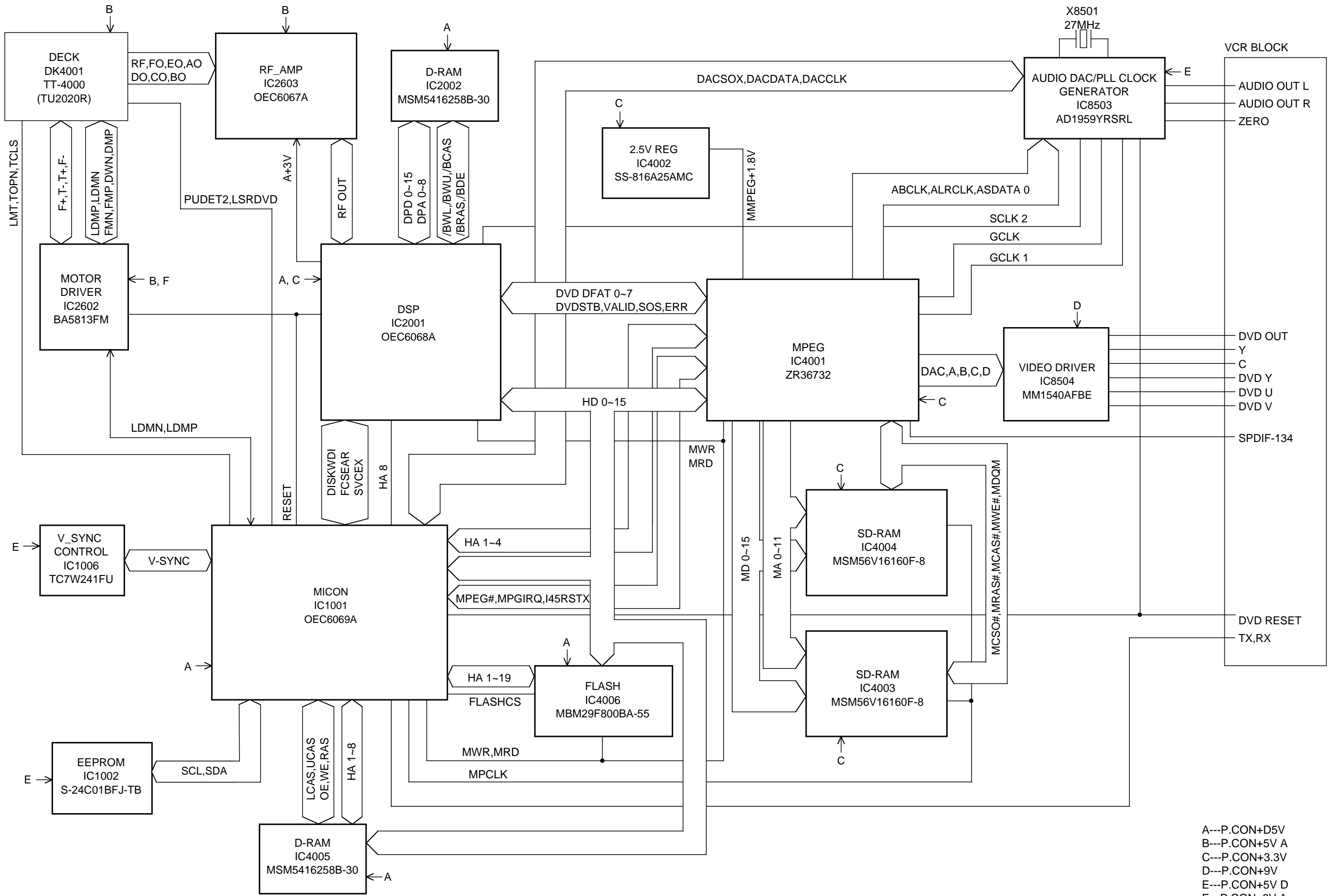


ELECTRICAL ADJUSTMENTS

2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

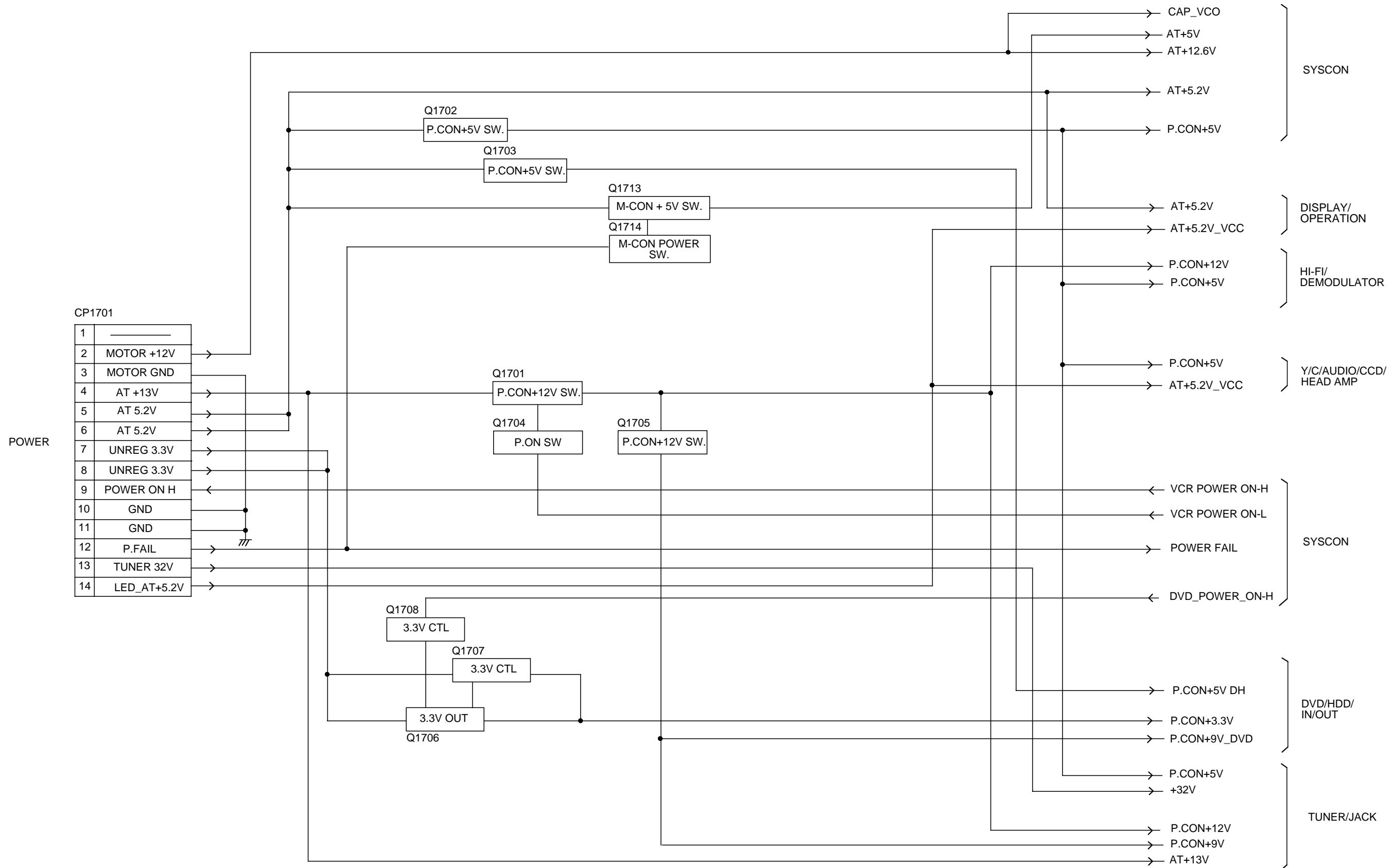


DVD BLOCK DIAGRAM

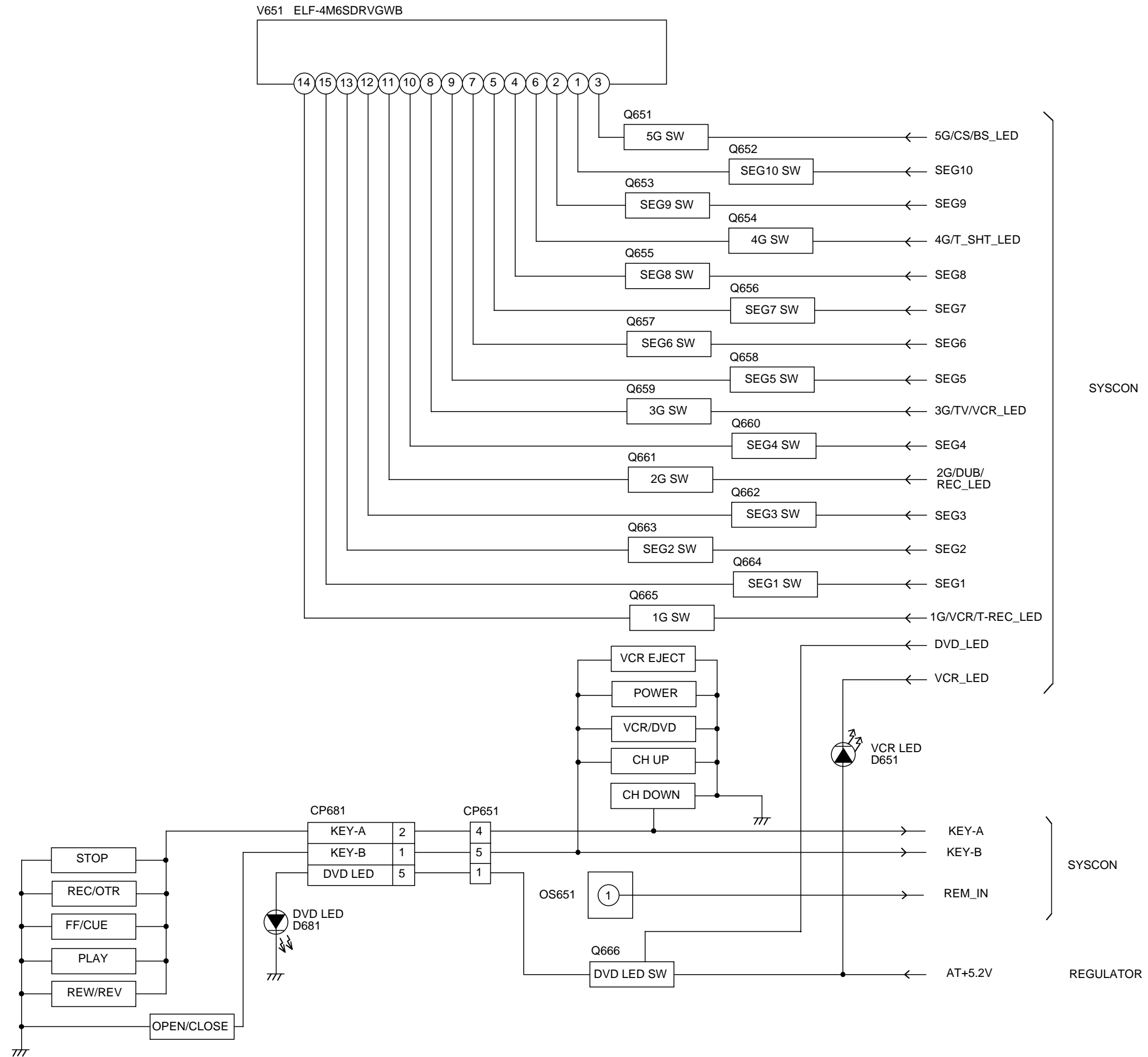


A---P.CON+D5V
 B---P.CON+5V A
 C---P.CON+3.3V
 D---P.CON+9V
 E---P.CON+5V D
 F---P.CON+9V A

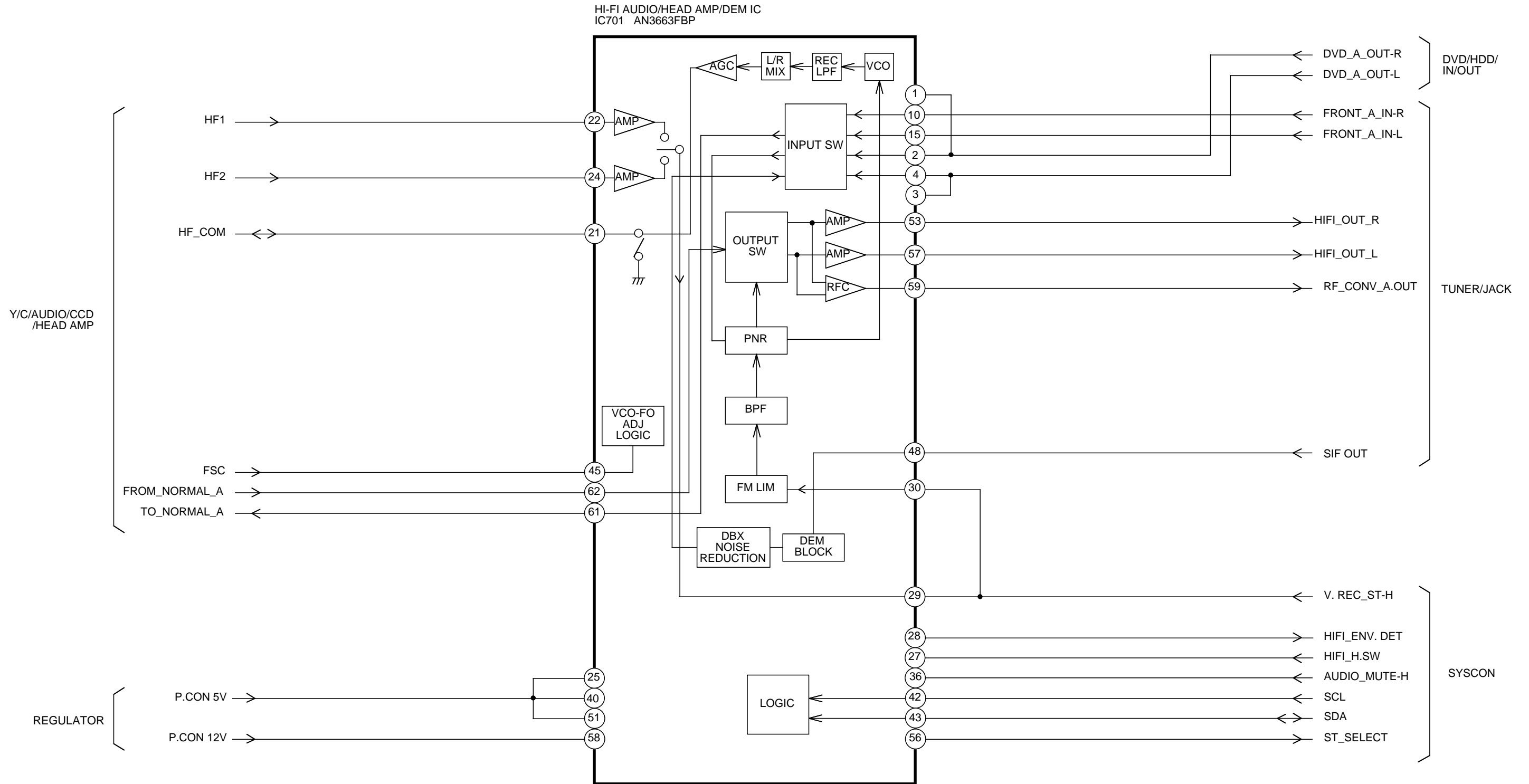
REGULATOR BLOCK DIAGRAM



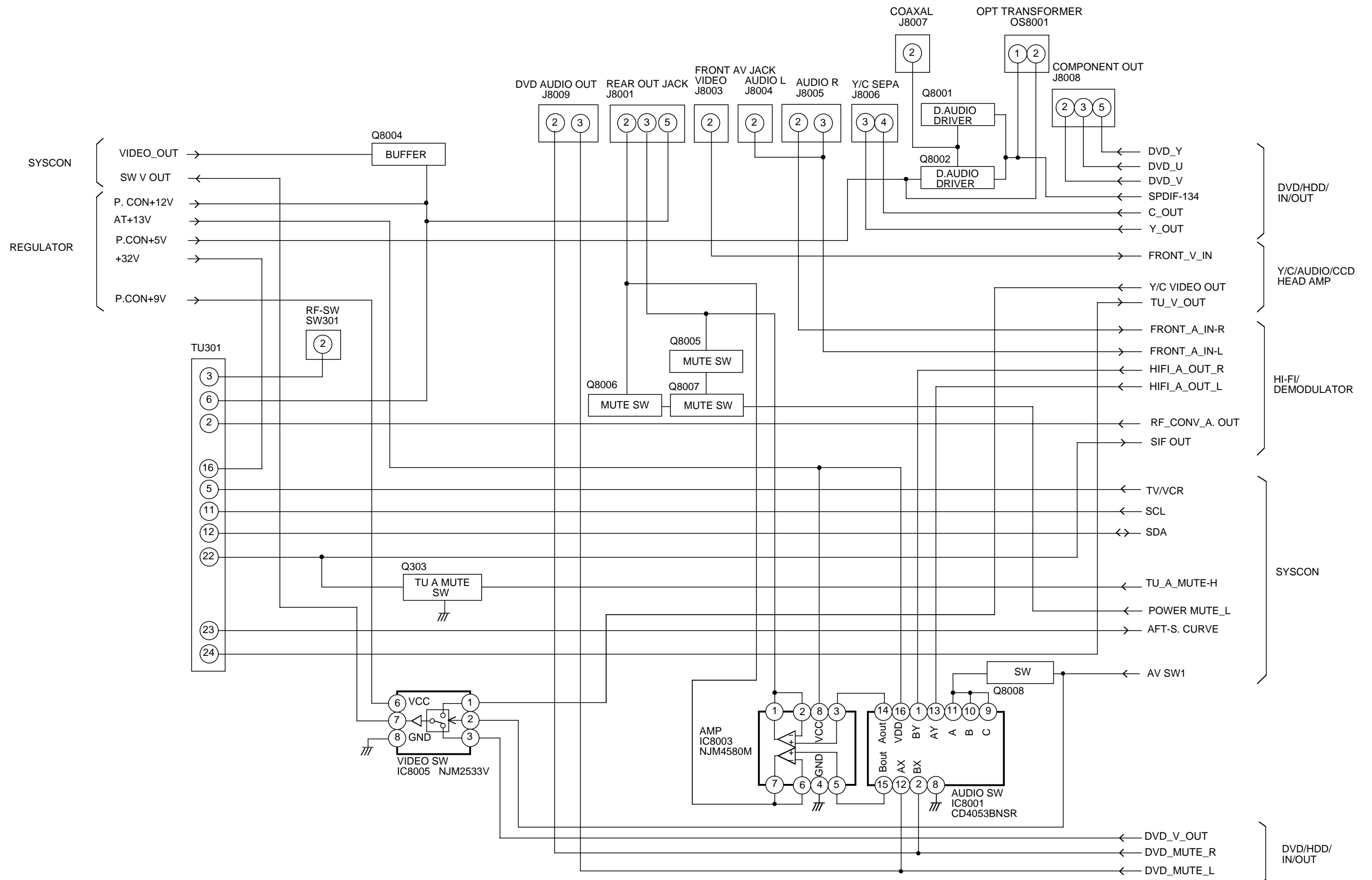
DISPLAY/OPERATION BLOCK DIAGRAM



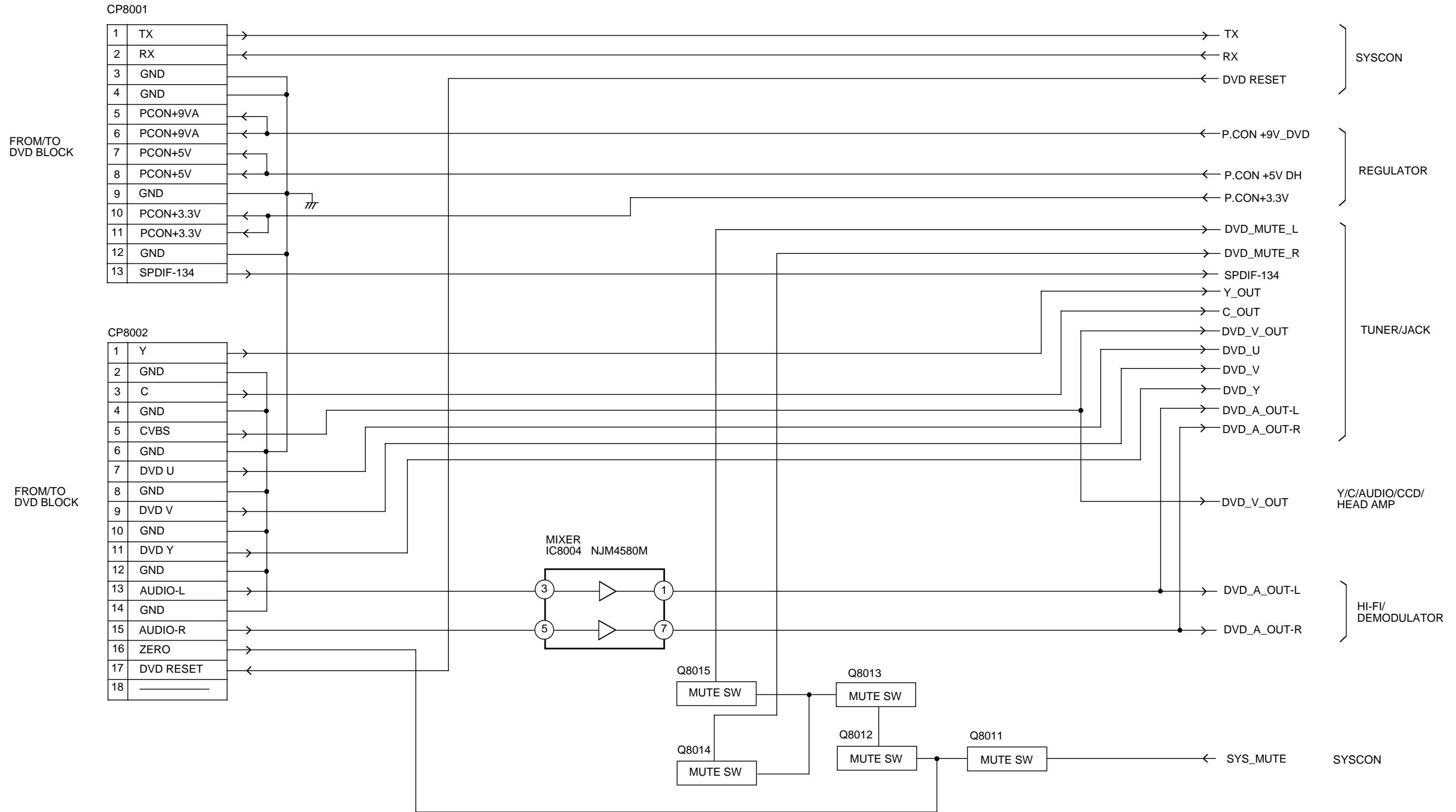
HI-FI/DEMODULATOR BLOCK DIAGRAM



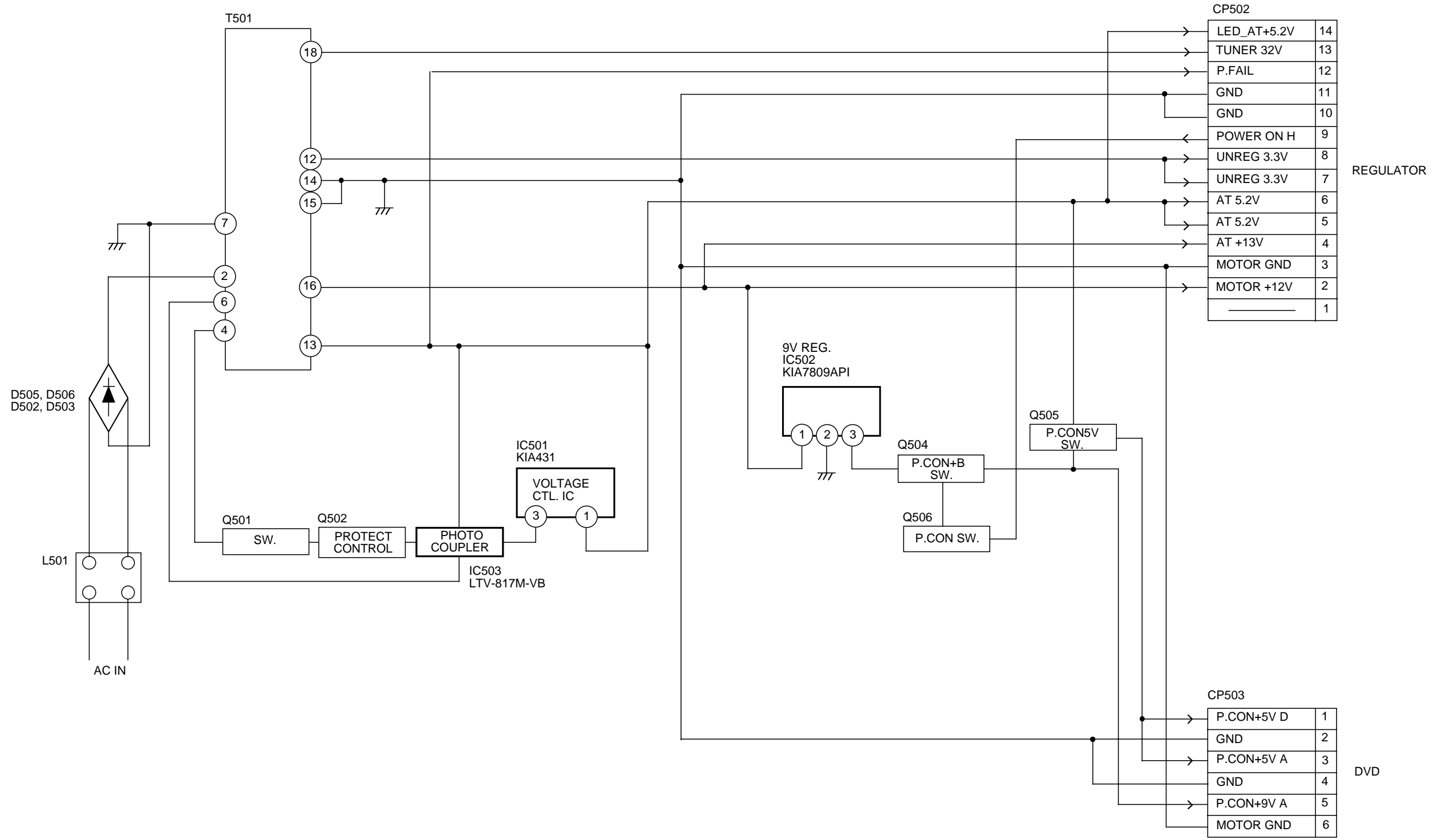
TUNER/JACK BLOCK DIAGRAM



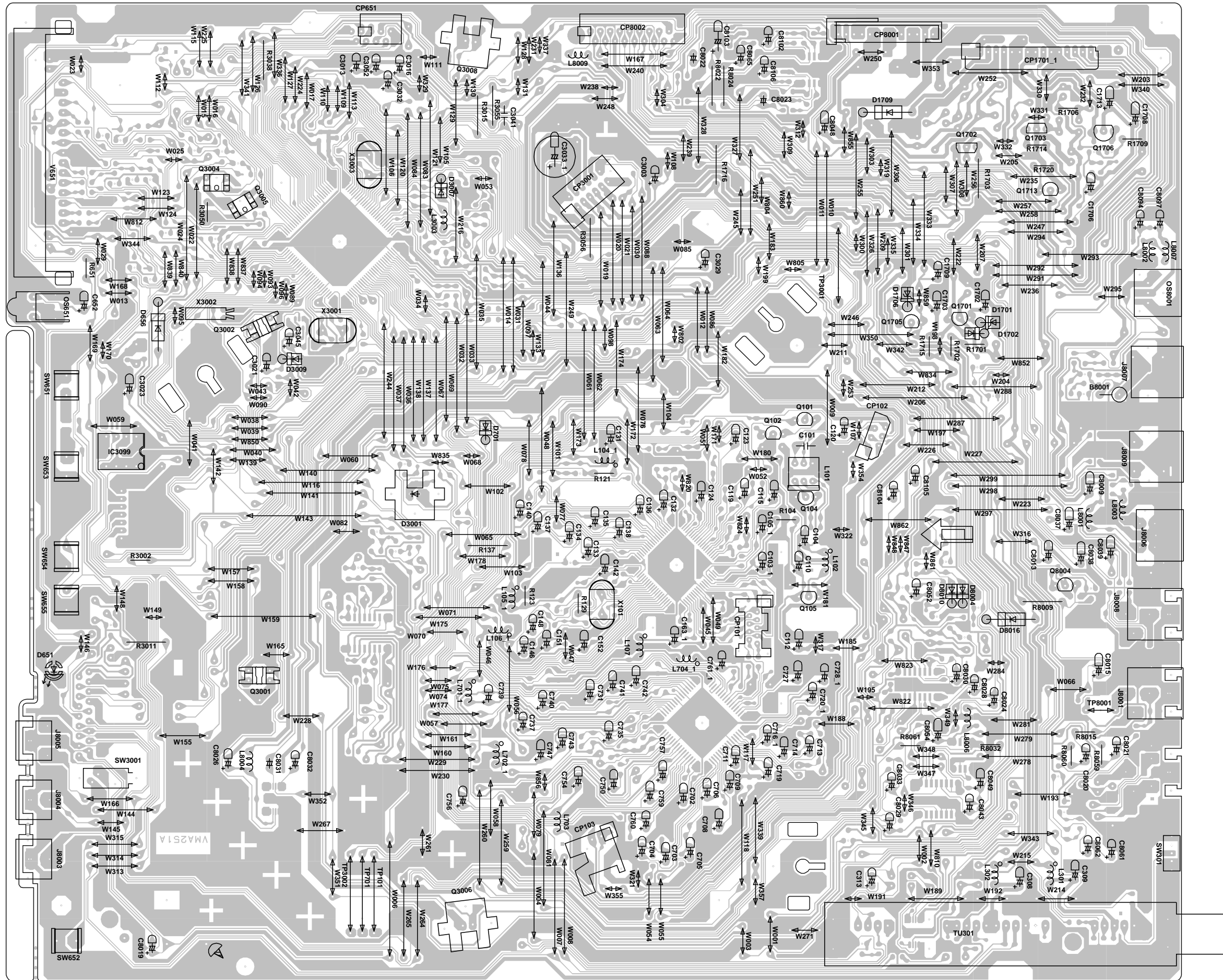
DVD/HDD IN/OUT BLOCK DIAGRAM



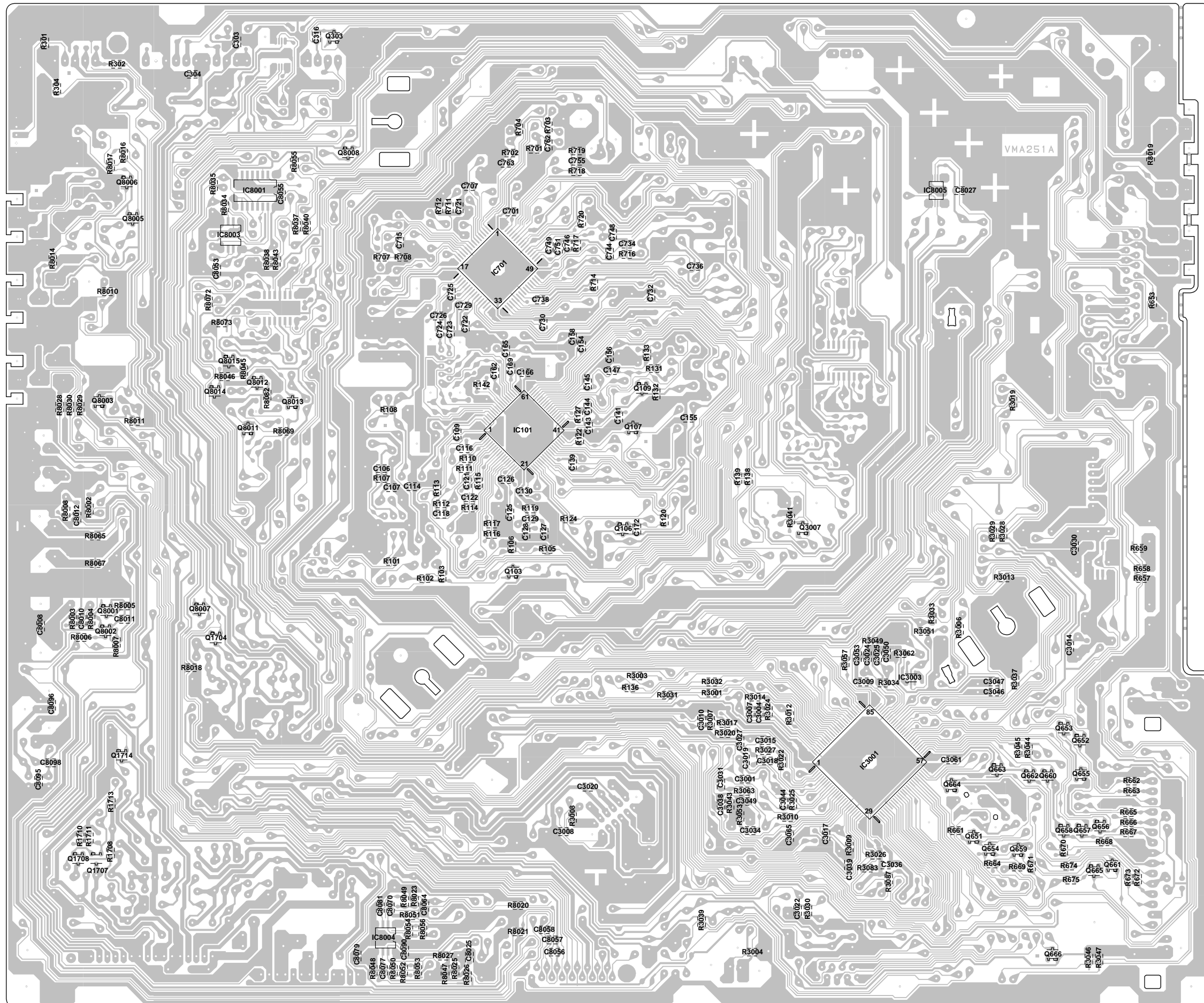
POWER BLOCK DIAGRAM



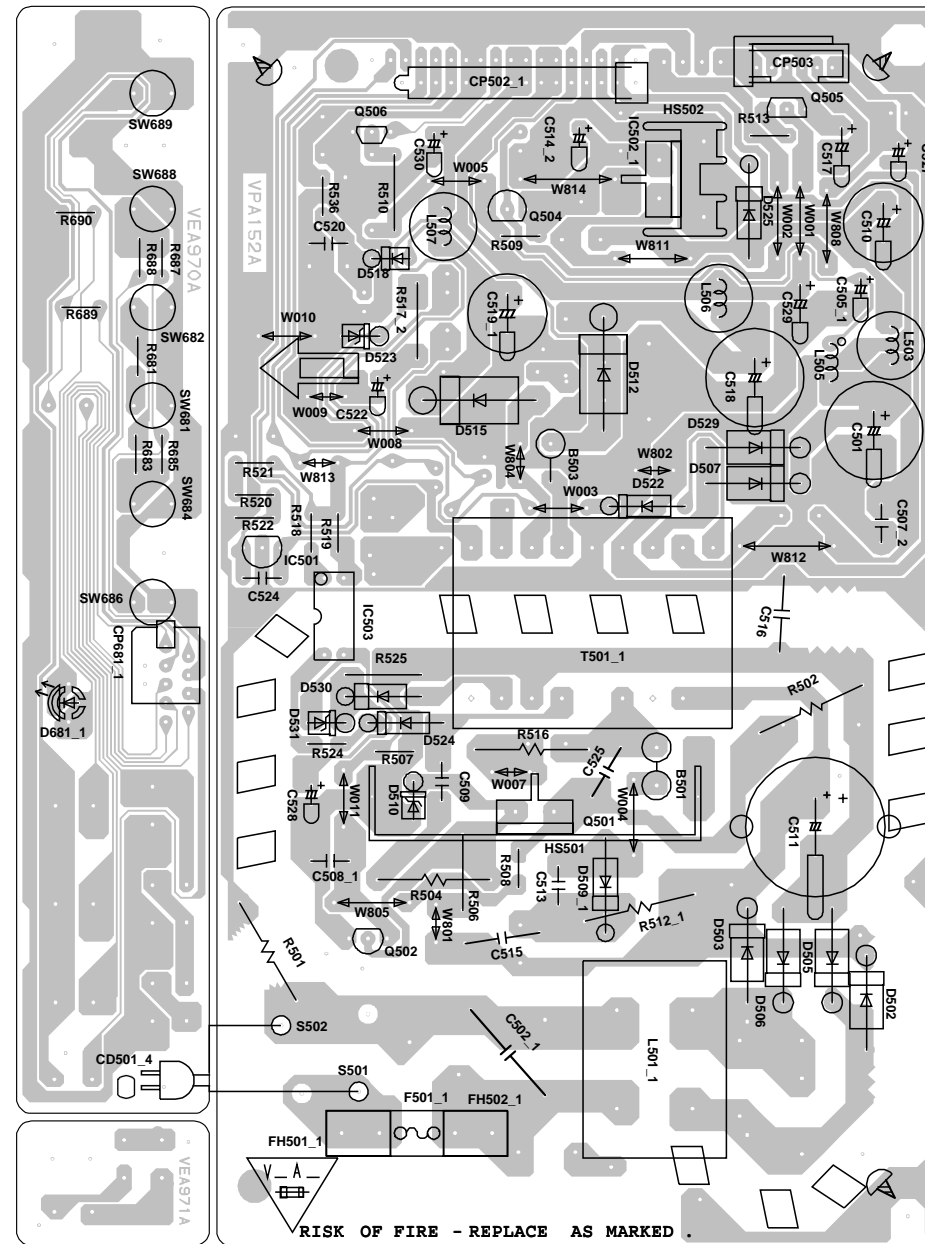
PRINTED CIRCUIT BOARDS
VCR MT (INSERTED PARTS)
SOLDER SIDE



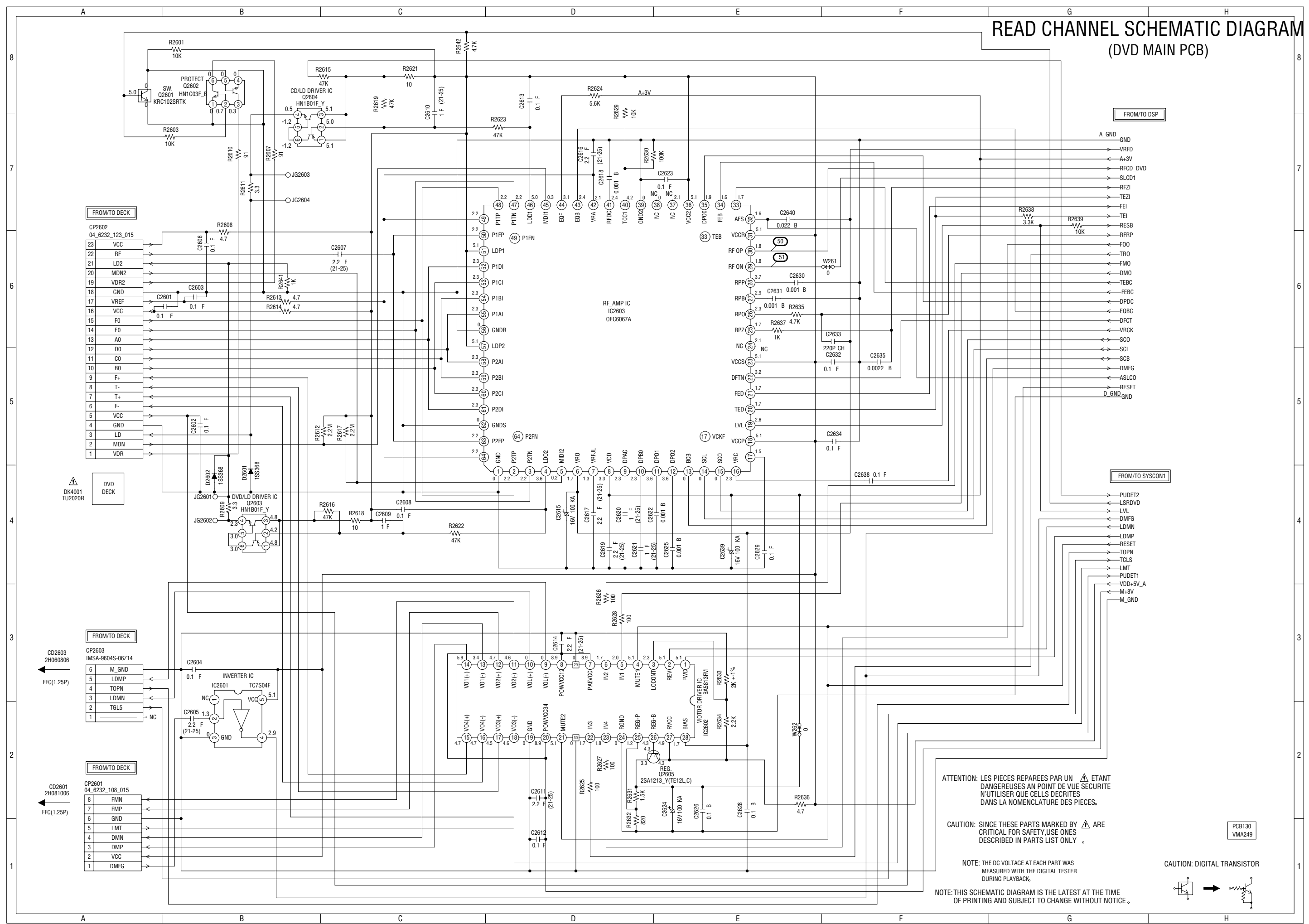
PRINTED CIRCUIT BOARDS
VCR MT (CHIP MOUNTED PARTS)
SOLDER SIDE



**PRINTED CIRCUIT BOARDS
POWER/OPERATION
SOLDER SIDE**



READ CHANNEL SCHEMATIC DIAGRAM (DVD MAIN PCB)



FROM/TO DSP

- A_GND GND
- VRFD
- A+3V
- RFCD_DVD
- SLCD1
- RFZI
- FEI
- TEI
- RESB
- RFRP
- FOO
- TRO
- FMO
- DMO
- TEBC
- FEBC
- DPOC
- EQBC
- DFCT
- VRCK
- SCO
- SCL
- SCB
- DMFG
- ASLCO
- RESET
- D_GND GND

FROM/TO SYSCON1

- PUDET2
- LSRVDV
- LVL
- DMFG
- LDMN
- LDMP
- RESET
- TOPN
- TCLS
- LMT
- PUDET1
- VDD+5V_A
- M+5V
- M_GND

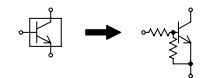
ATTENTION: LES PIECES REPARÉES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

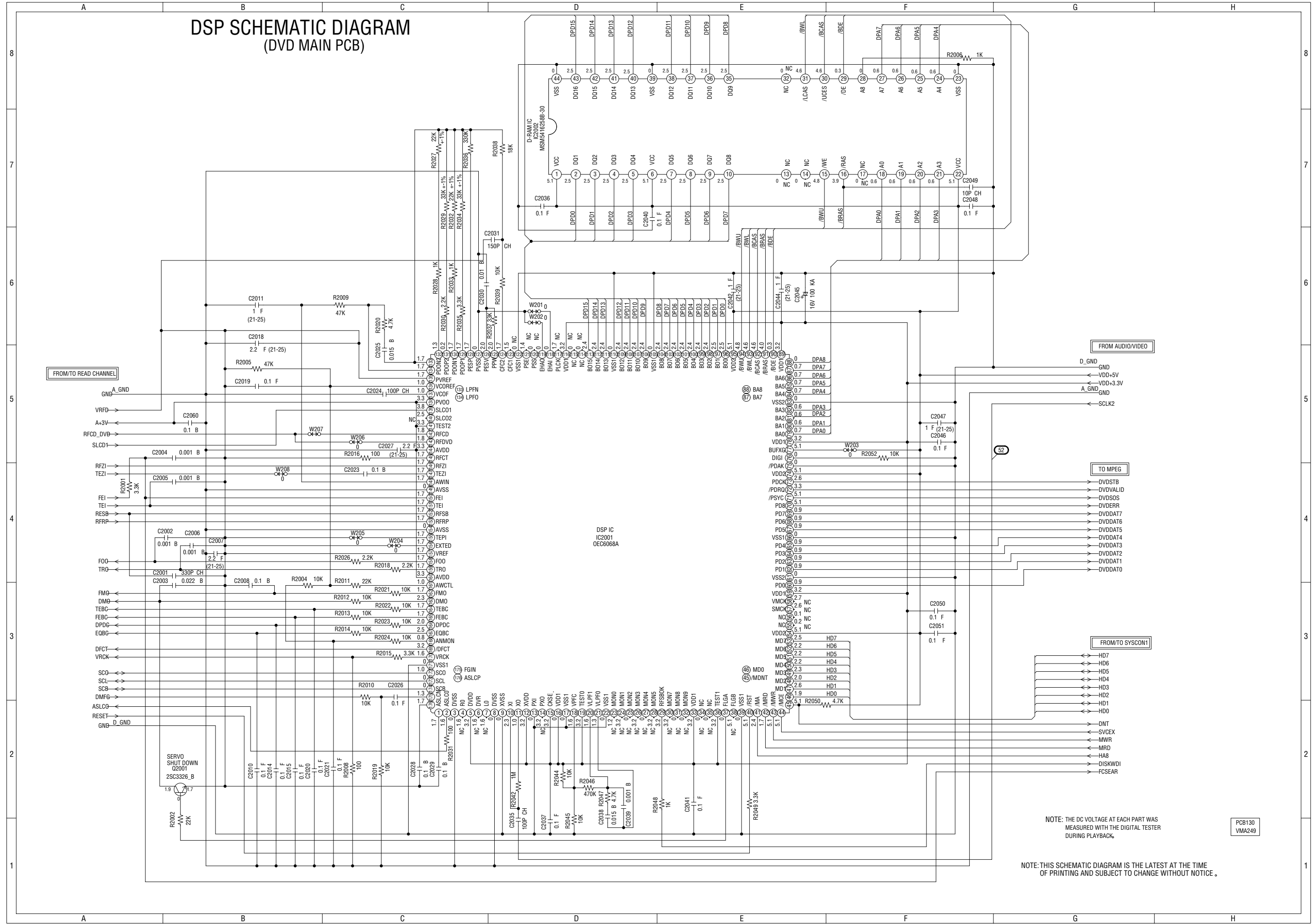
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



PCB130
VMA249

DSP SCHEMATIC DIAGRAM (DVD MAIN PCB)

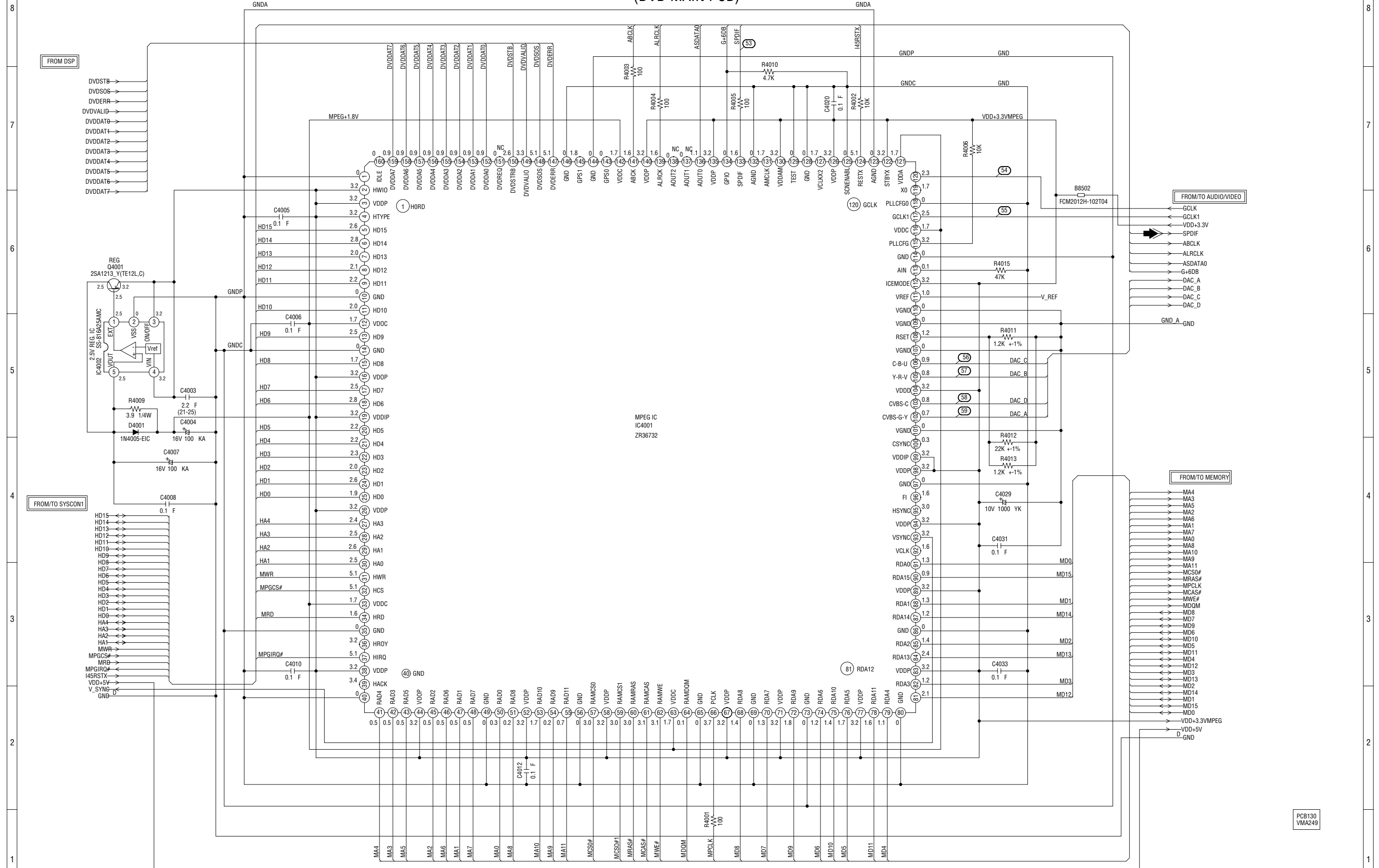


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB130
VMA249

MPEG SCHEMATIC DIAGRAM (DVD MAIN PCB)



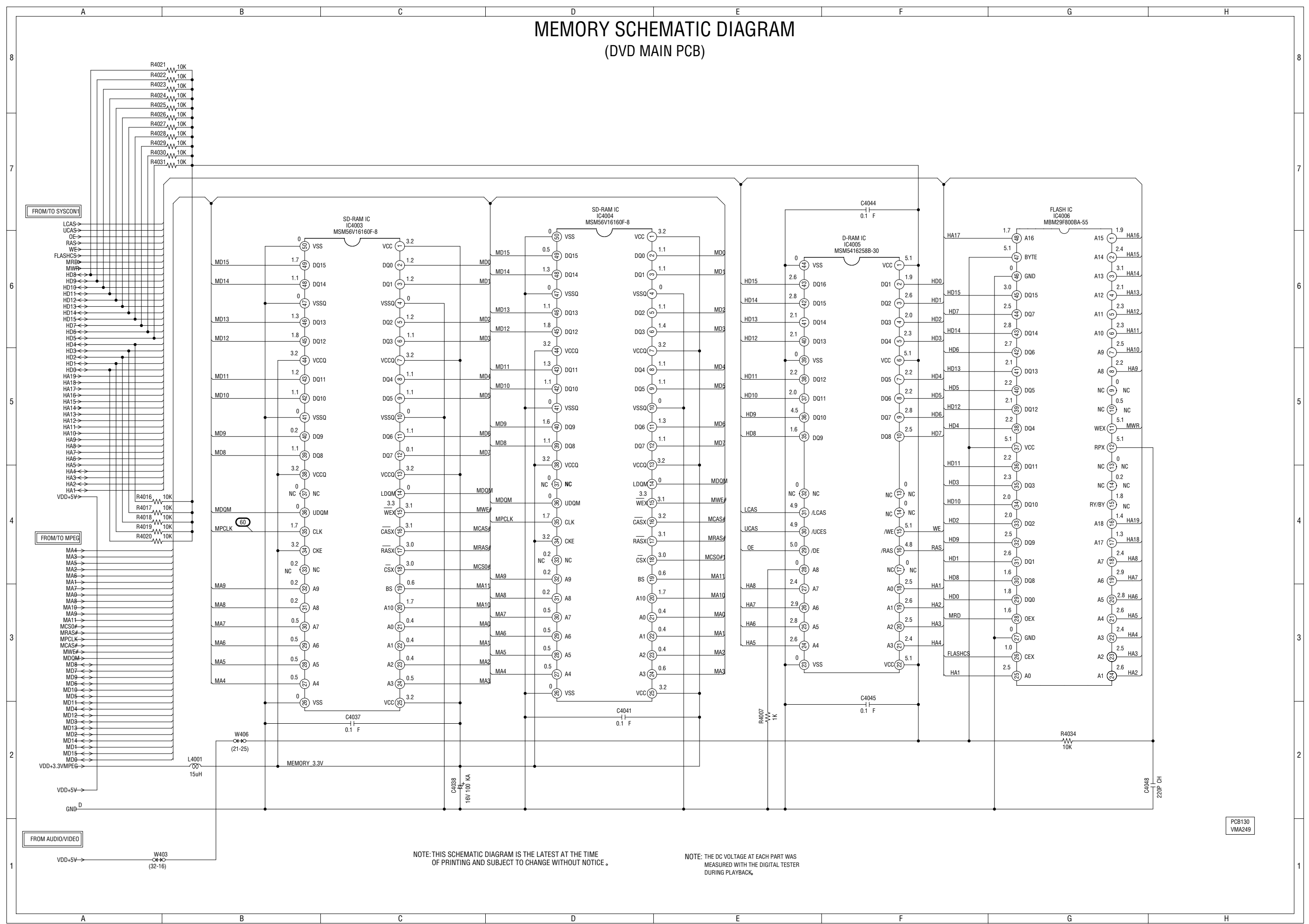
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

← DIGITAL AUDIO SIGNAL (PB)

PCB130
VMA249

MEMORY SCHEMATIC DIAGRAM (DVD MAIN PCB)



FROM/TO SYSCON

FROM/TO MPEG

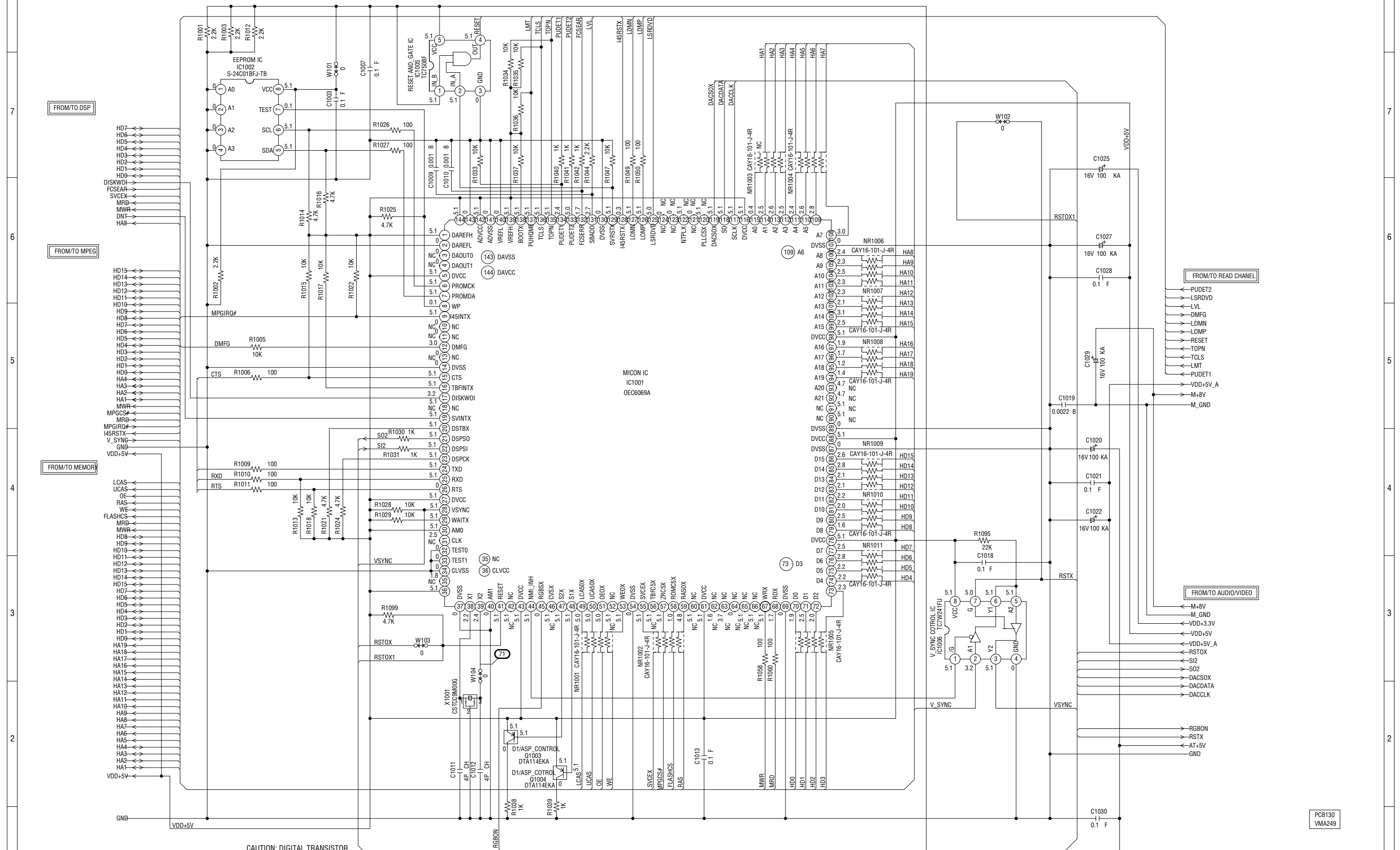
FROM AUDIO/VIDEO

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

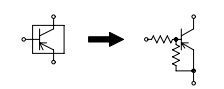
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB130
VMA249

SYSCON1 SCHEMATIC DIAGRAM (DVD MAIN PCB)



CAUTION: DIGITAL TRANSISTOR

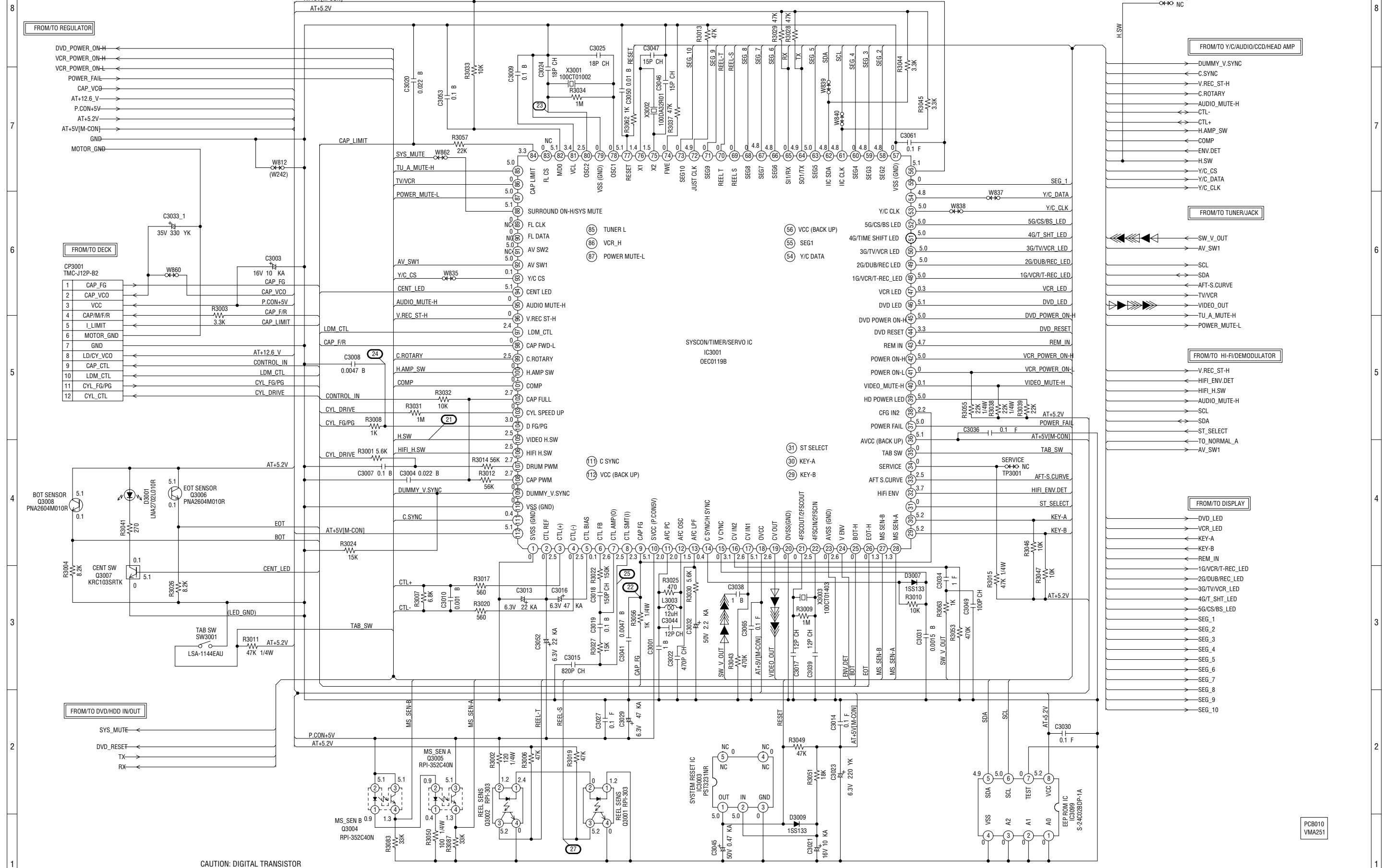


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB130
VMA249

VCR SYSCON SCHEMATIC DIAGRAM(VCR MAIN PCB)



FROM/TO REGULATOR

FROM/TO DECK

FROM/TO DVD/HDD IN/OUT

FROM/TO Y/C/AUDIO/CCD/HEAD AMP

FROM/TO TUNER/JACK

FROM/TO HI-FI/DEMULATOR

FROM/TO DISPLAY

CAUTION: DIGITAL TRANSISTOR

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

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

- ▶ RECORD LUMINANCE SIGNAL
- ▶ RECORD COLOR SIGNAL
- ▶ PLAYBACK LUMINANCE SIGNAL
- ▶ PLAYBACK COLOR SIGNAL

REGULATOR SCHEMATIC DIAGRAM (VCR MAIN PCB)


FROM/TO POWER

CP1701_1 (CP502_1)
52147-1410

1	NC
2	MOTOR+12V
3	MOTOR_GND
4	AT+13V
5	AT+5.2V
6	AT+5.2V
7	UNREG+3.3V
8	UNREG+3.3V
9	POWER_ON_H
10	GND
11	GND
12	P.FAIL
13	TUNER+32V
14	LED_AT+5.2V

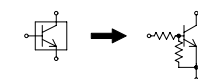
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

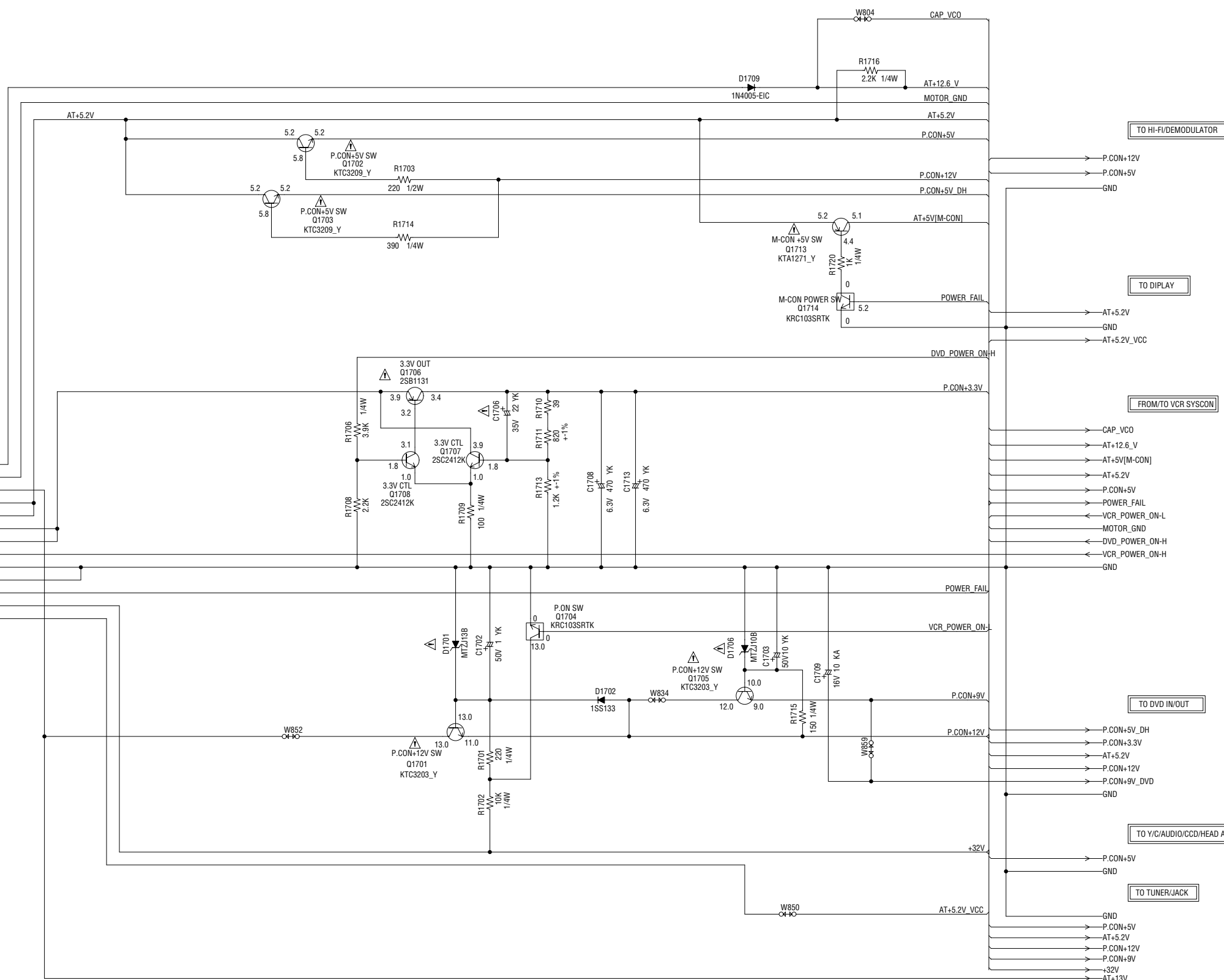
ATTENTION: LES PIÈCES RÉPARÉES PAR UN  ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ, N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

CAUTION: DIGITAL TRANSISTOR



PCB010
VMA251



TO HI-FI/DEMOMULATOR

TO DIPLAY

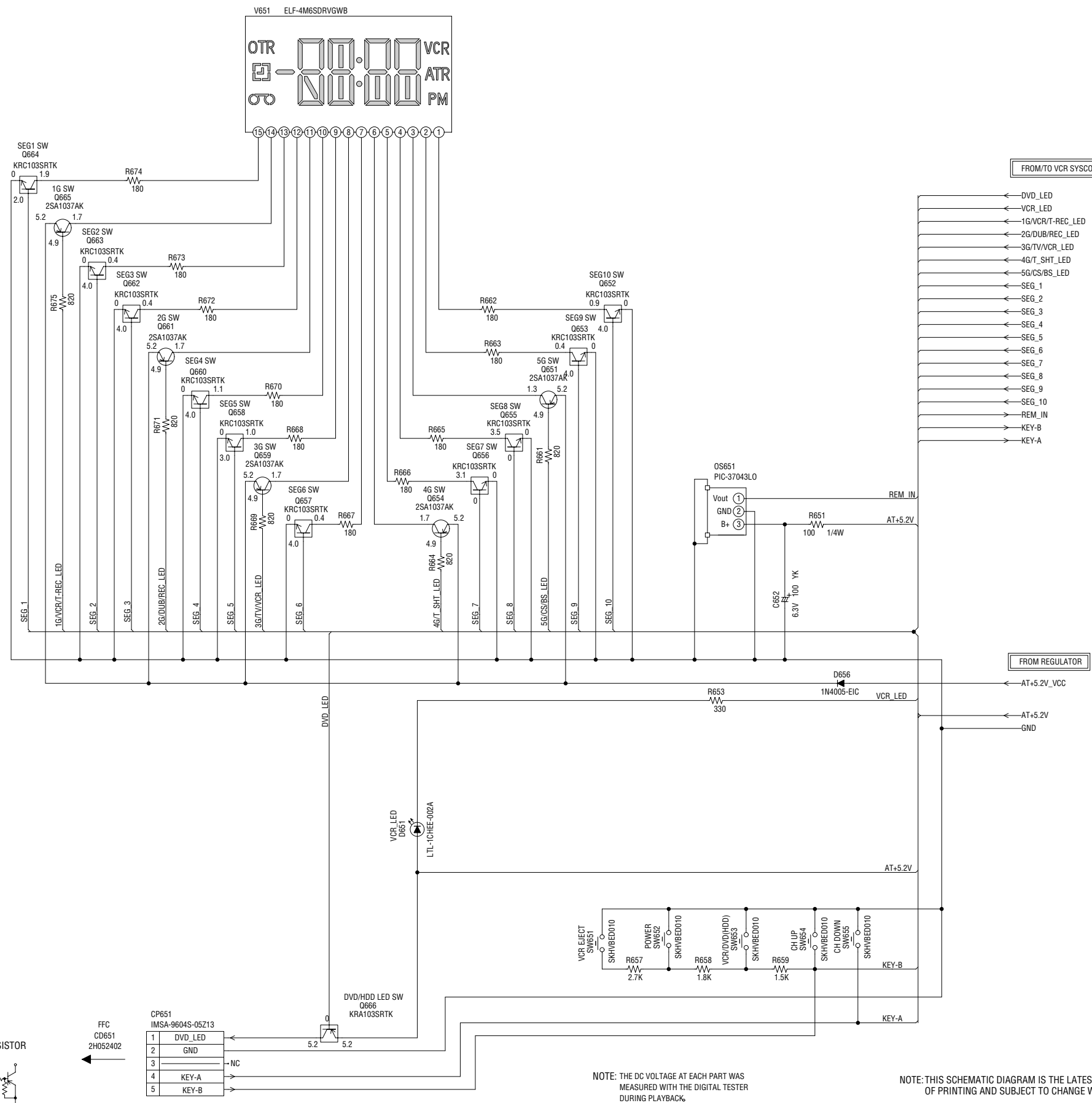
FROM/TO VCR SYSCON

TO DVD IN/OUT

TO Y/C/AUDIO/CCD/HEAD AMP

TO TUNER/JACK

DISPLAY SCHEMATIC DIAGRAM (VCR MAIN PCB)



FROM/TO VCR SYSCON

FROM REGULATOR

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

FFC CD651 2H052402

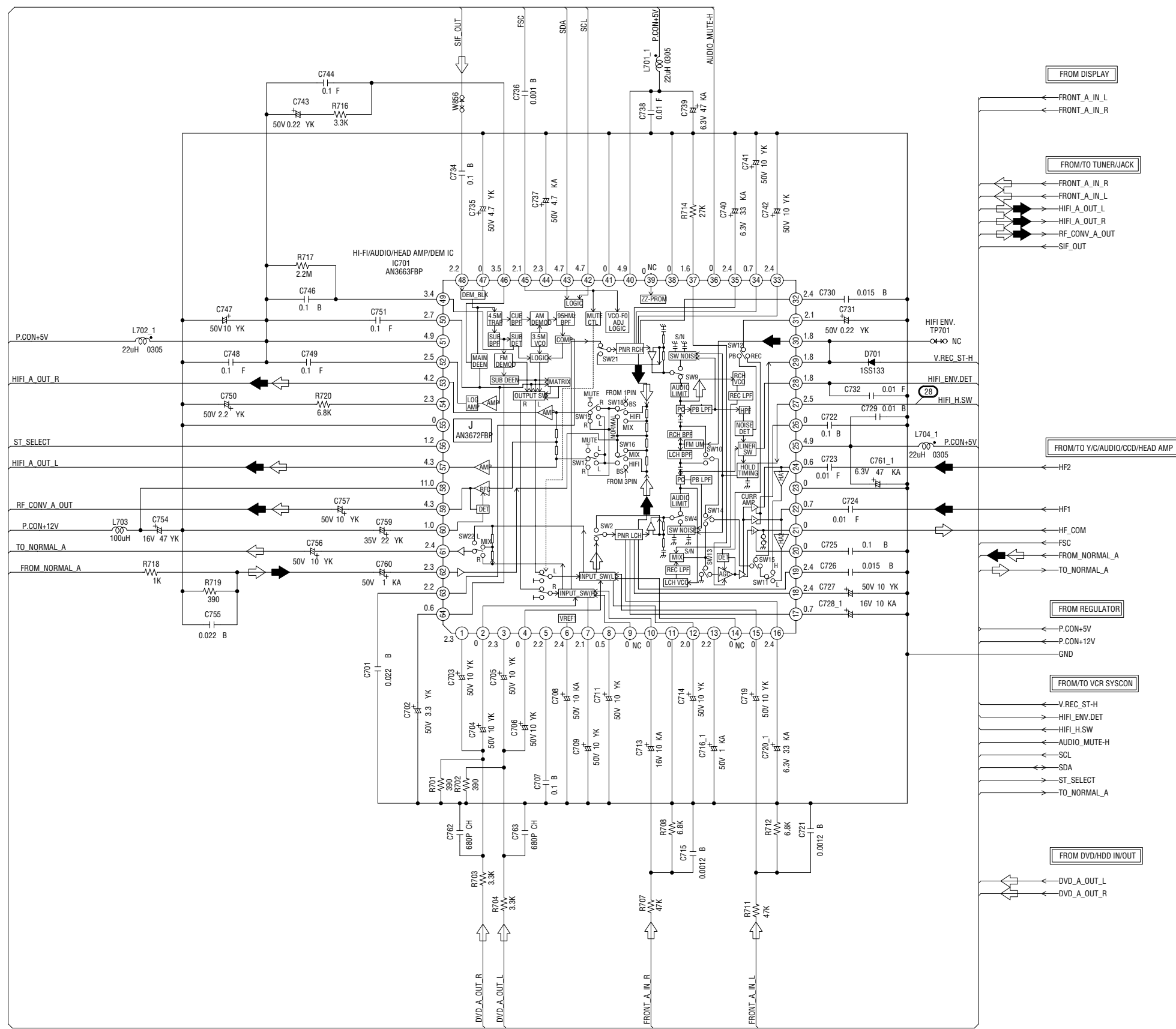
CP651 IMSA-9604S-05Z13	
1	DVD_LED
2	GND
3	NC
4	KEY-A
5	KEY-B

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

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB010 VMA251

HI-FI/DEMODULATOR SCHEMATIC DIAGRAM (VCR MAIN PCB)



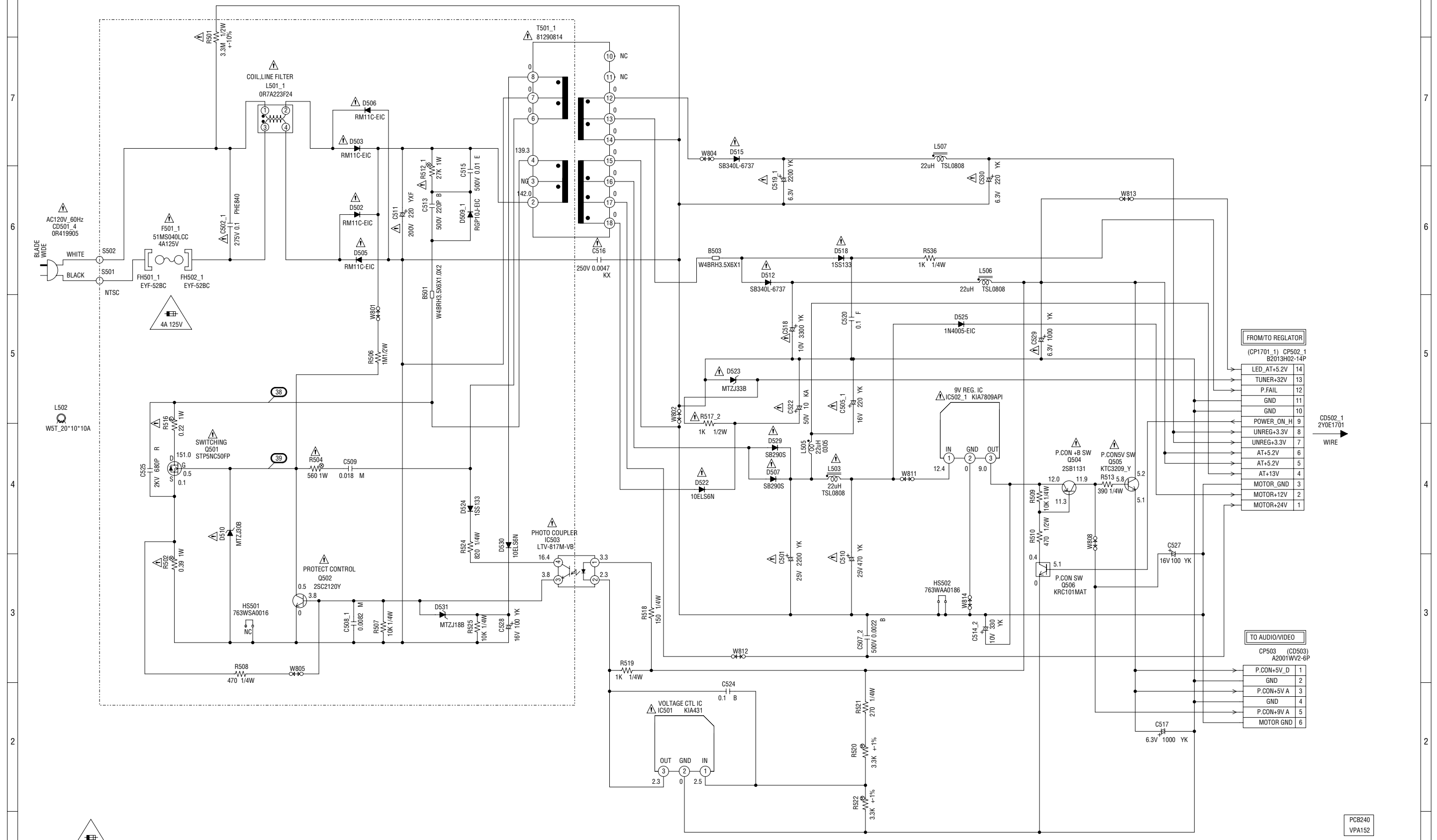
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

⇐ AUDIO SIGNAL(REC)
 ⇨ AUDIO SIGNAL(PB)

PCB010
VMA251

POWER SCHEMATIC DIAGRAM (POWER PCB)



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 4A 125V(F501).
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 125V(F501).

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

CAUTION: DIGITAL TRANSISTOR

FROM/TO REGULATOR

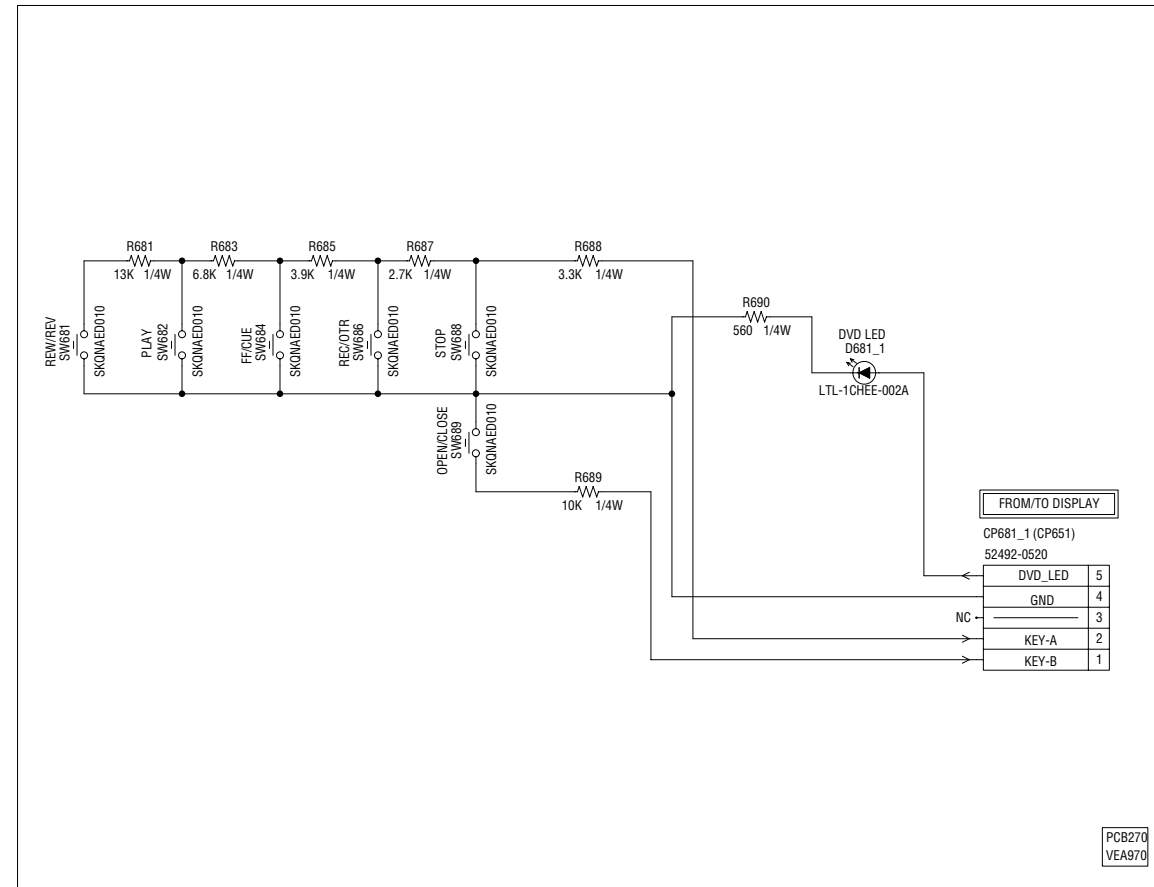
(CP1701.1) CP502.1	14
B2013H02-14P	
LED_AT+5.2V	14
TUNER+32V	13
P.FAIL	12
GND	11
GND	10
POWER_ON_H	9
UNREG+3.3V	8
UNREG+3.3V	7
AT+5.2V	6
AT+5.2V	5
AT+13V	4
MOTOR_GND	3
MOTOR+12V	2
MOTOR+24V	1

TO AUDIO/VIDEO

CP503 (CD503)	
A2001WV2-6P	
P.CON+5V_D	1
GND	2
P.CON+5V A	3
GND	4
P.CON+9V A	5
MOTOR GND	6

PCB240
VPA152

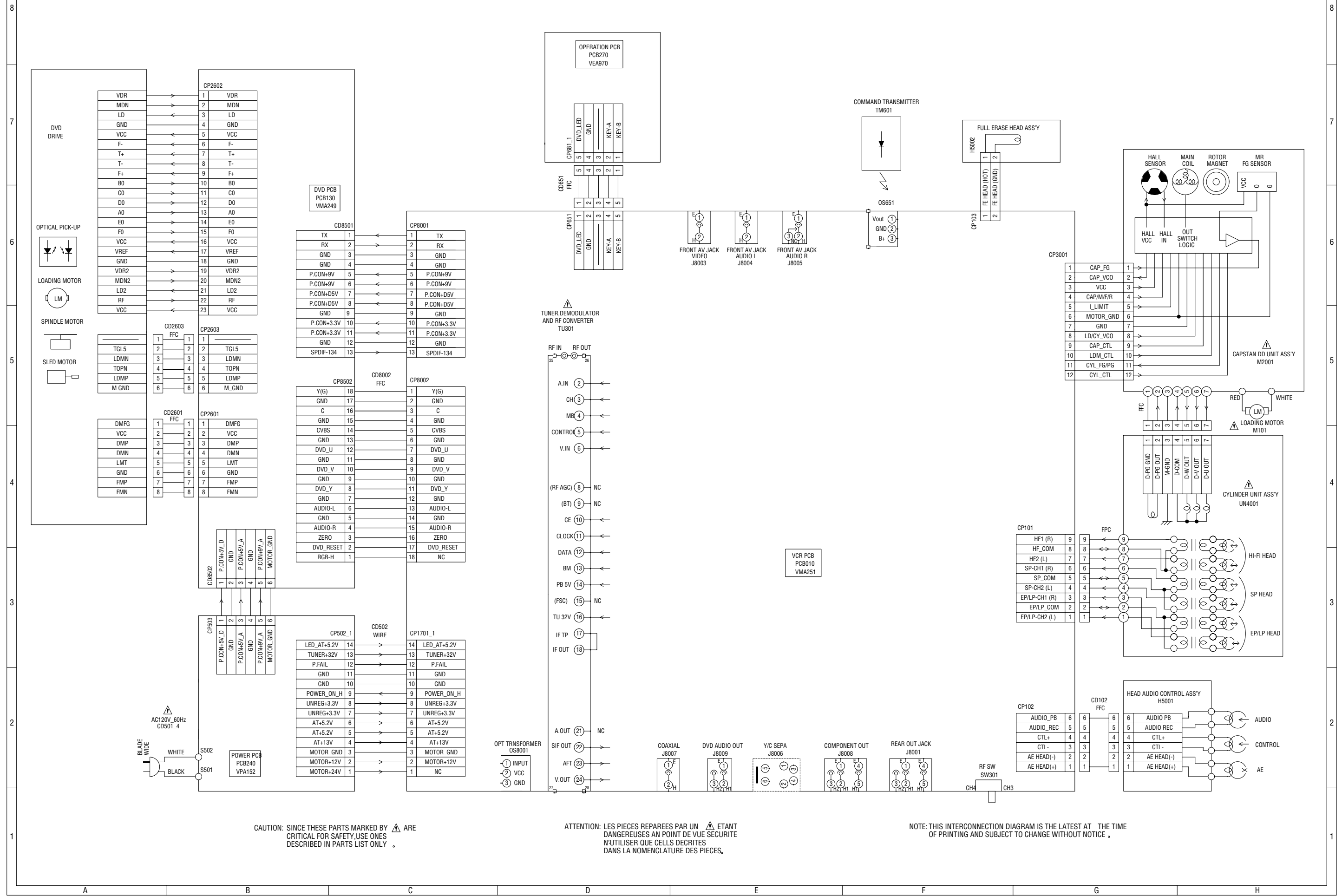
OPERATION SCHEMATIC DIAGRAM (OPERATION PCB)



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

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

INTERCONNECTION DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

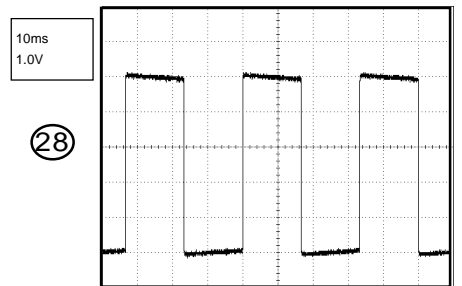
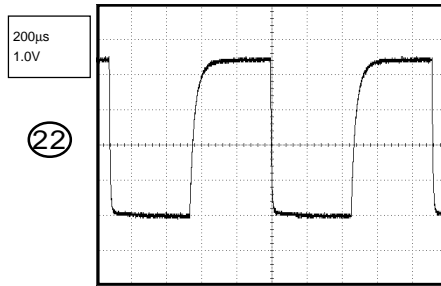
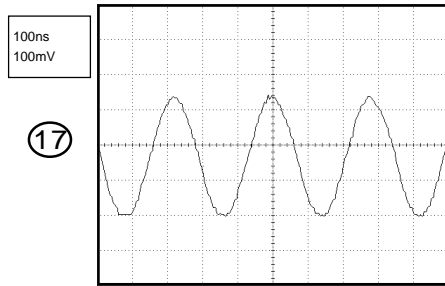
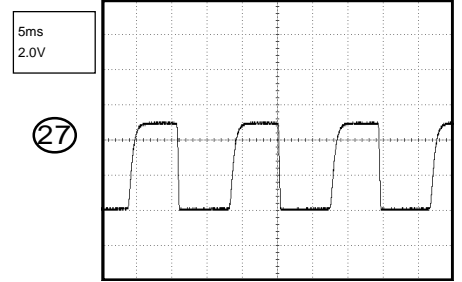
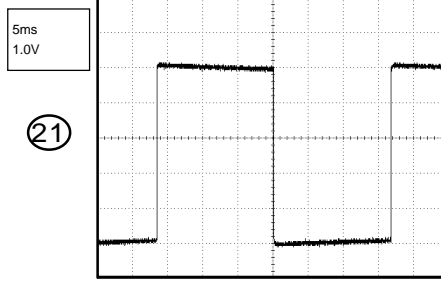
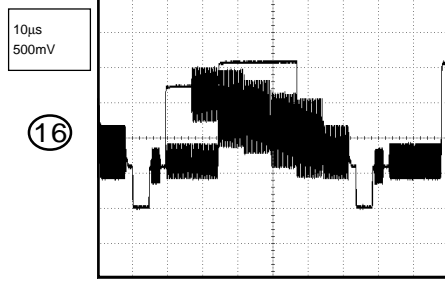
ATTENTION: LES PIÈCES REPAREES PAR UN ETANT DANGEREUSES AU POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIÈCES.

NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

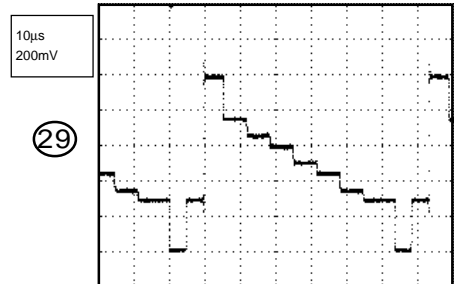
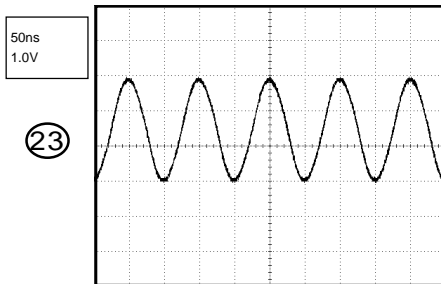
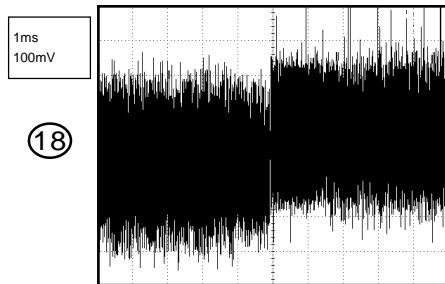
WAVEFORMS

Y/C/AUDIO/CCD/HEAD AMP

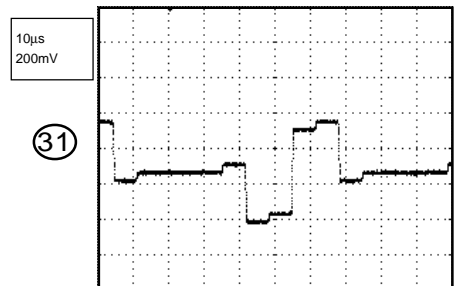
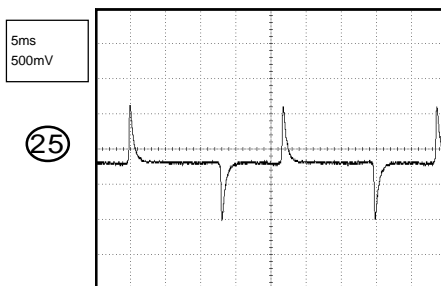
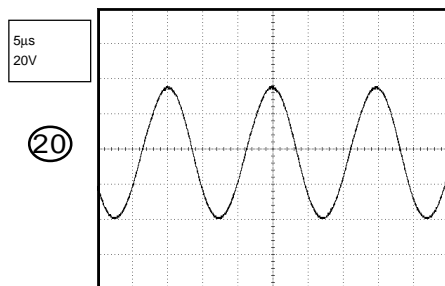
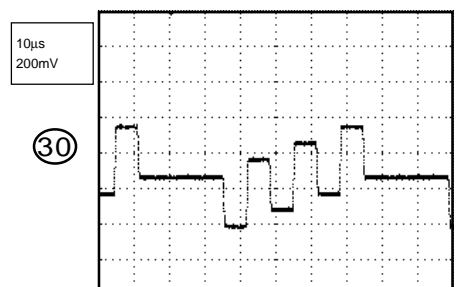
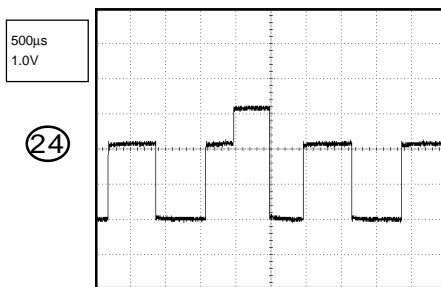
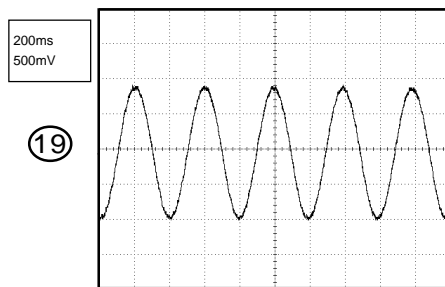
VCR SYSCON



HI-FI/DEMODULATOR

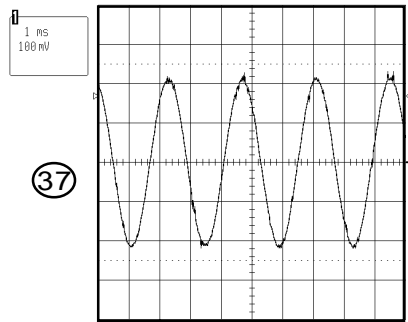
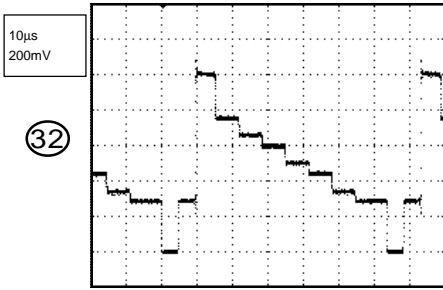


TUNER/JACK

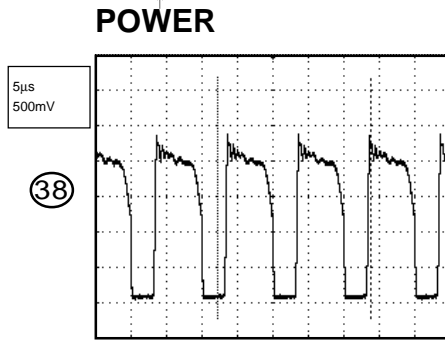
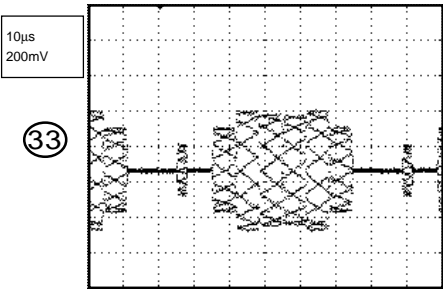
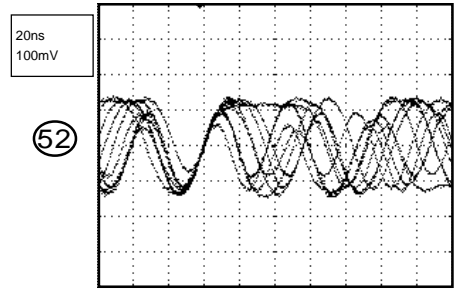


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

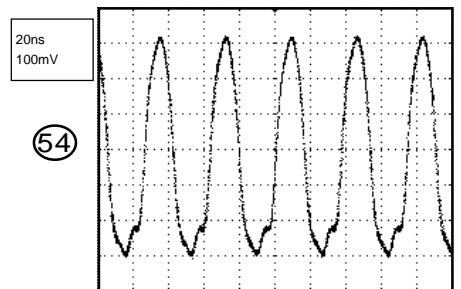
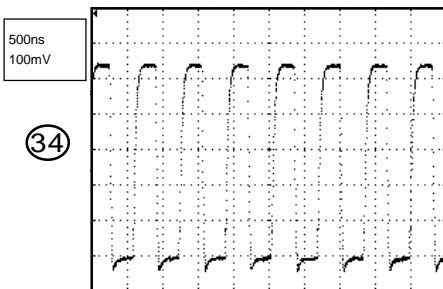
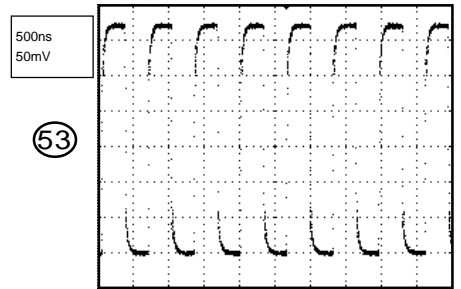
WAVEFORMS



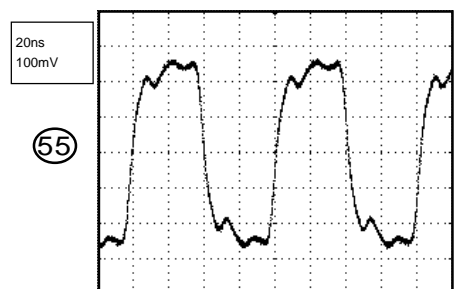
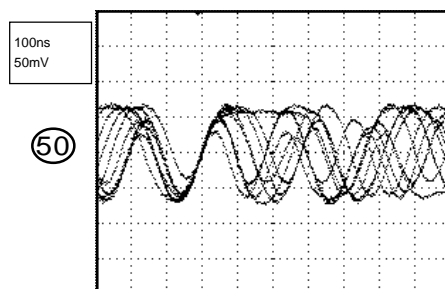
DSP



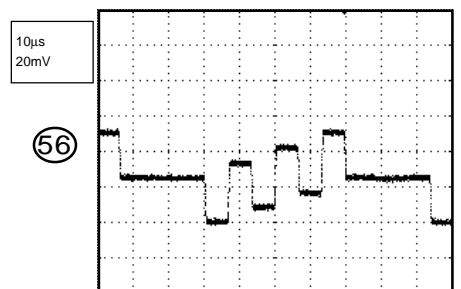
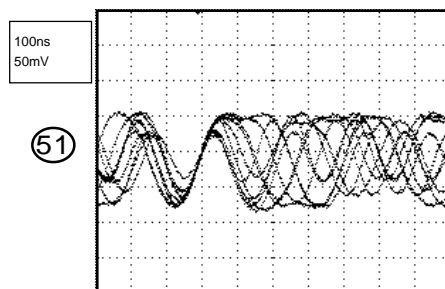
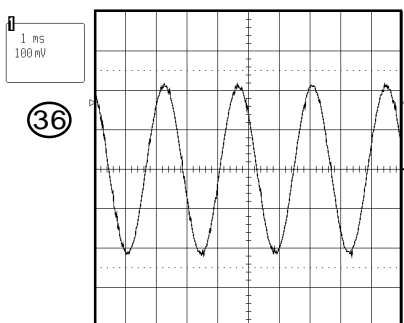
MPEG



READ CHANNEL

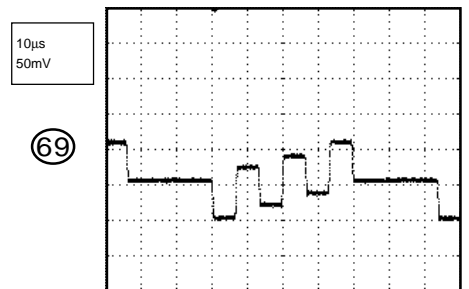
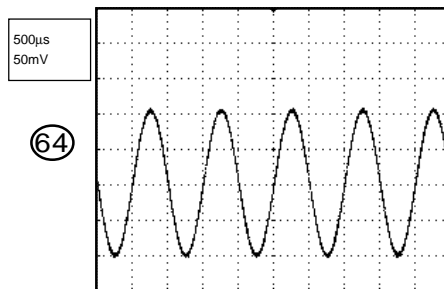
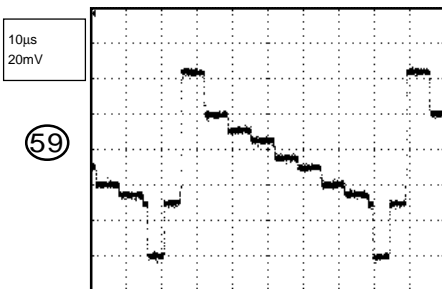
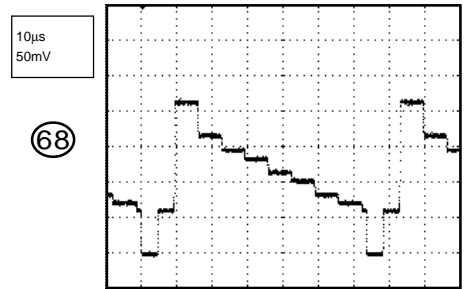
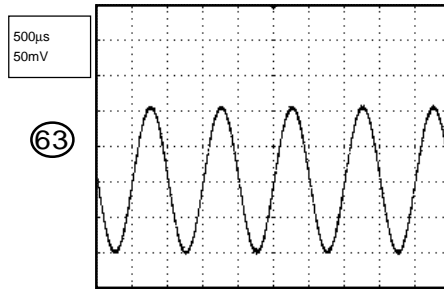
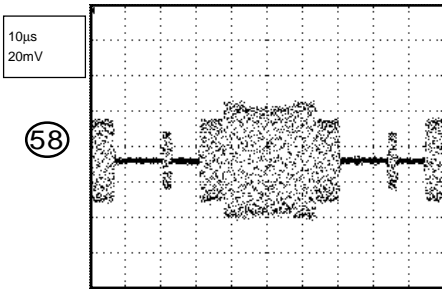
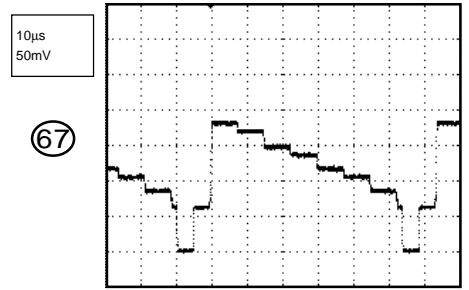
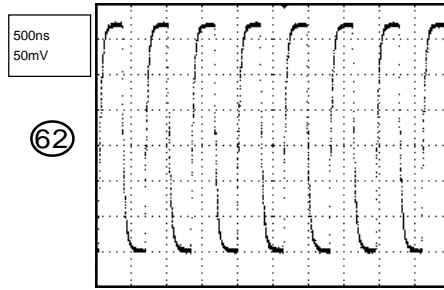
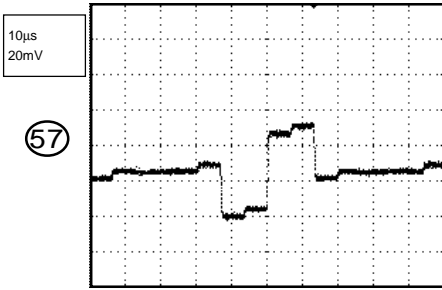


DVD/HDD IN/OUT

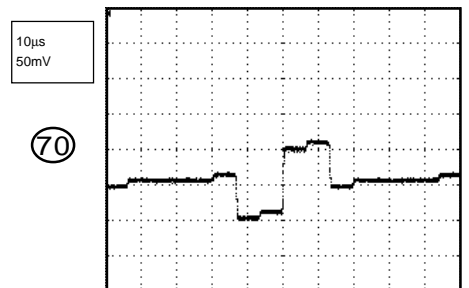
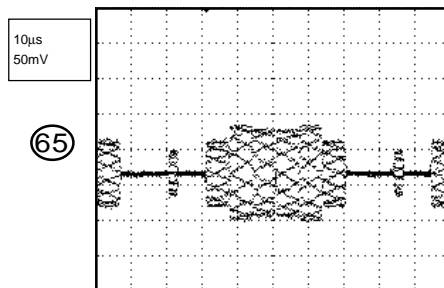
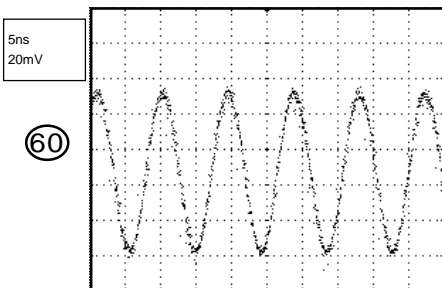


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

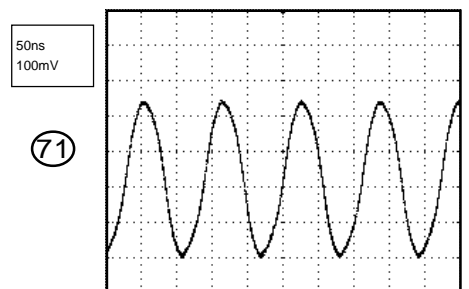
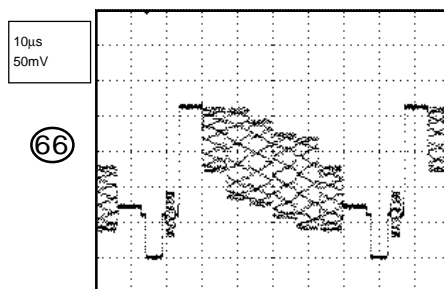
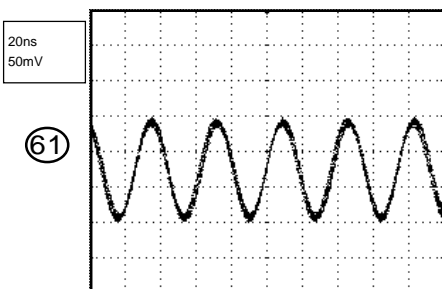
WAVEFORMS



MEMORY



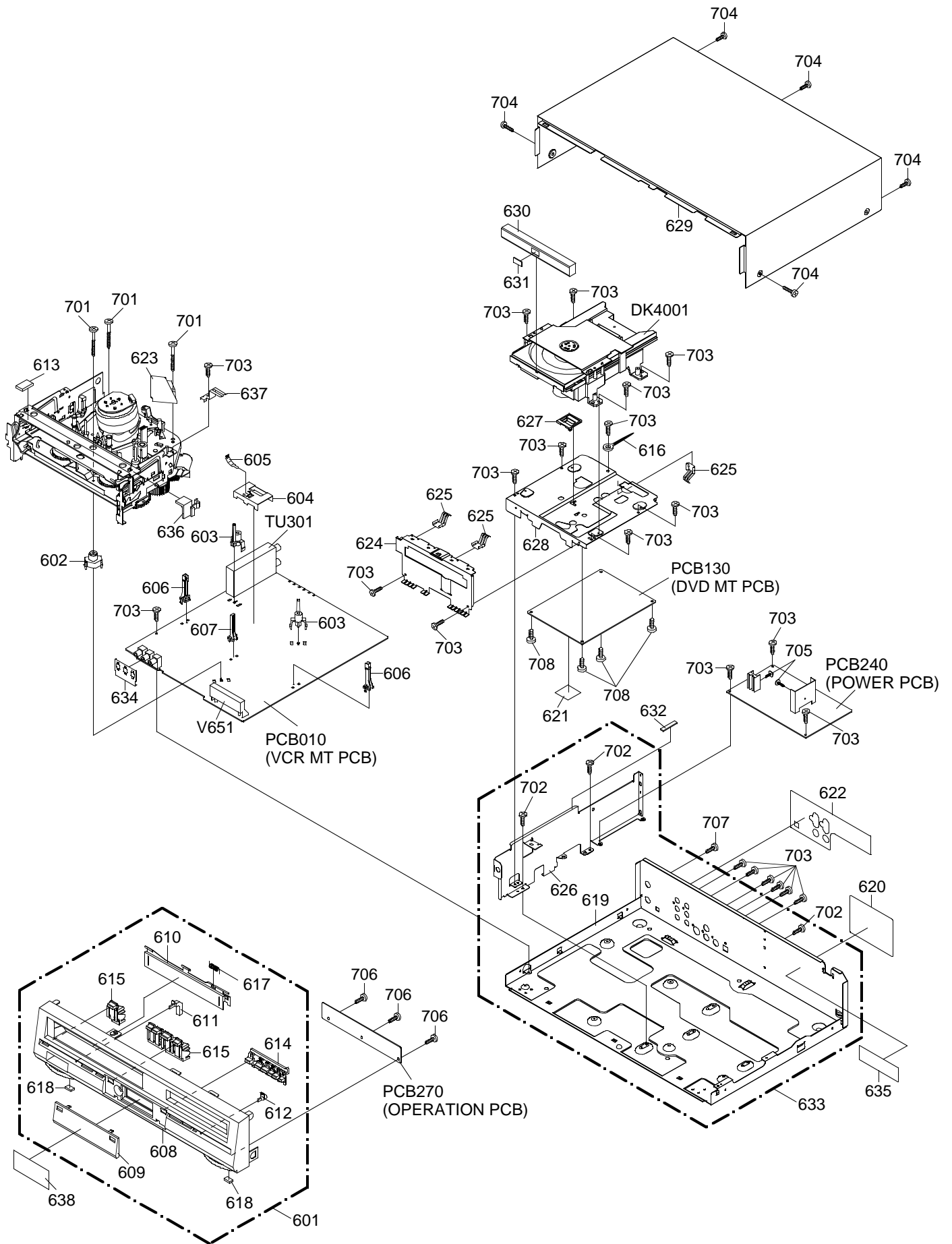
AUDIO/VIDEO



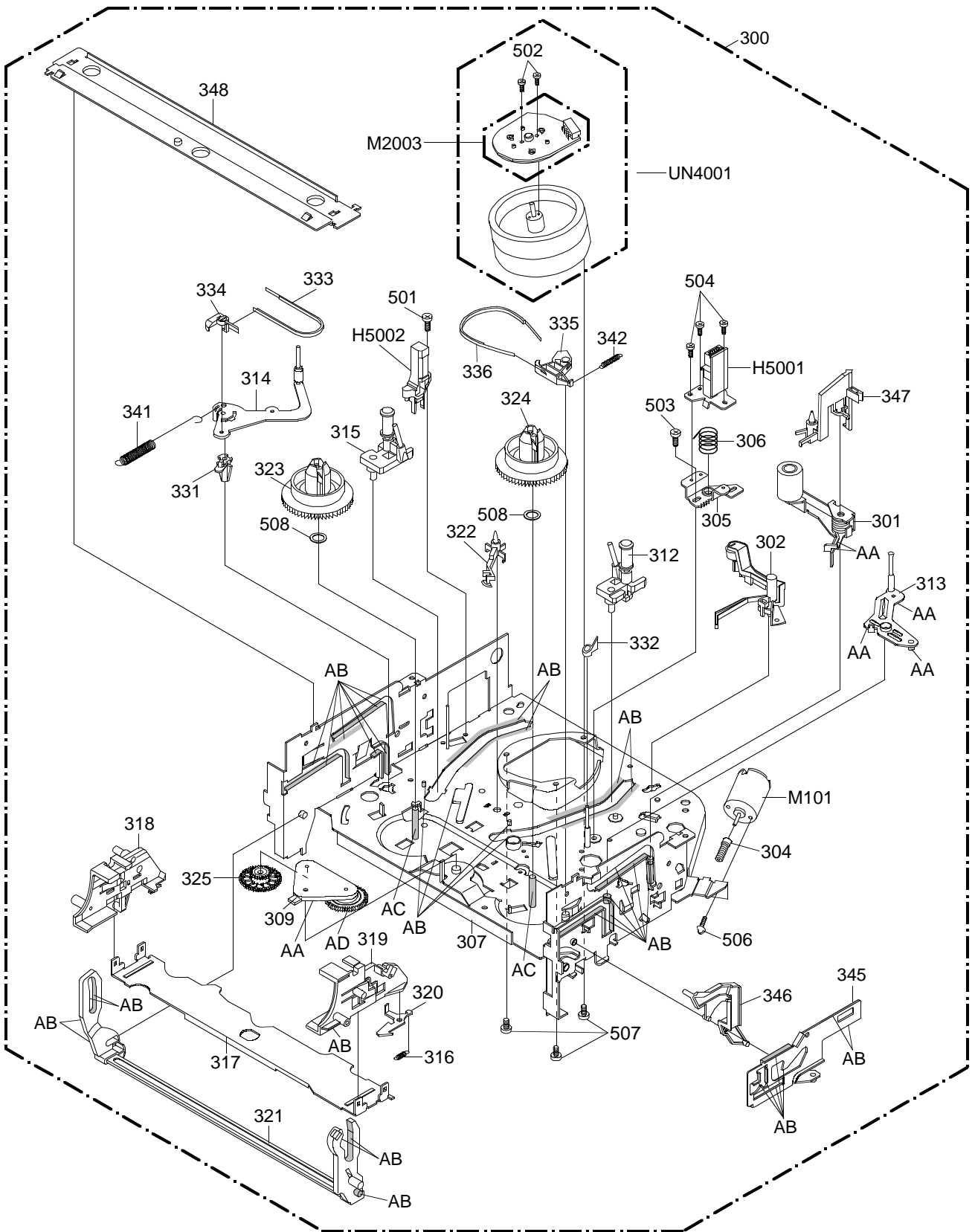
SYSCON1

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



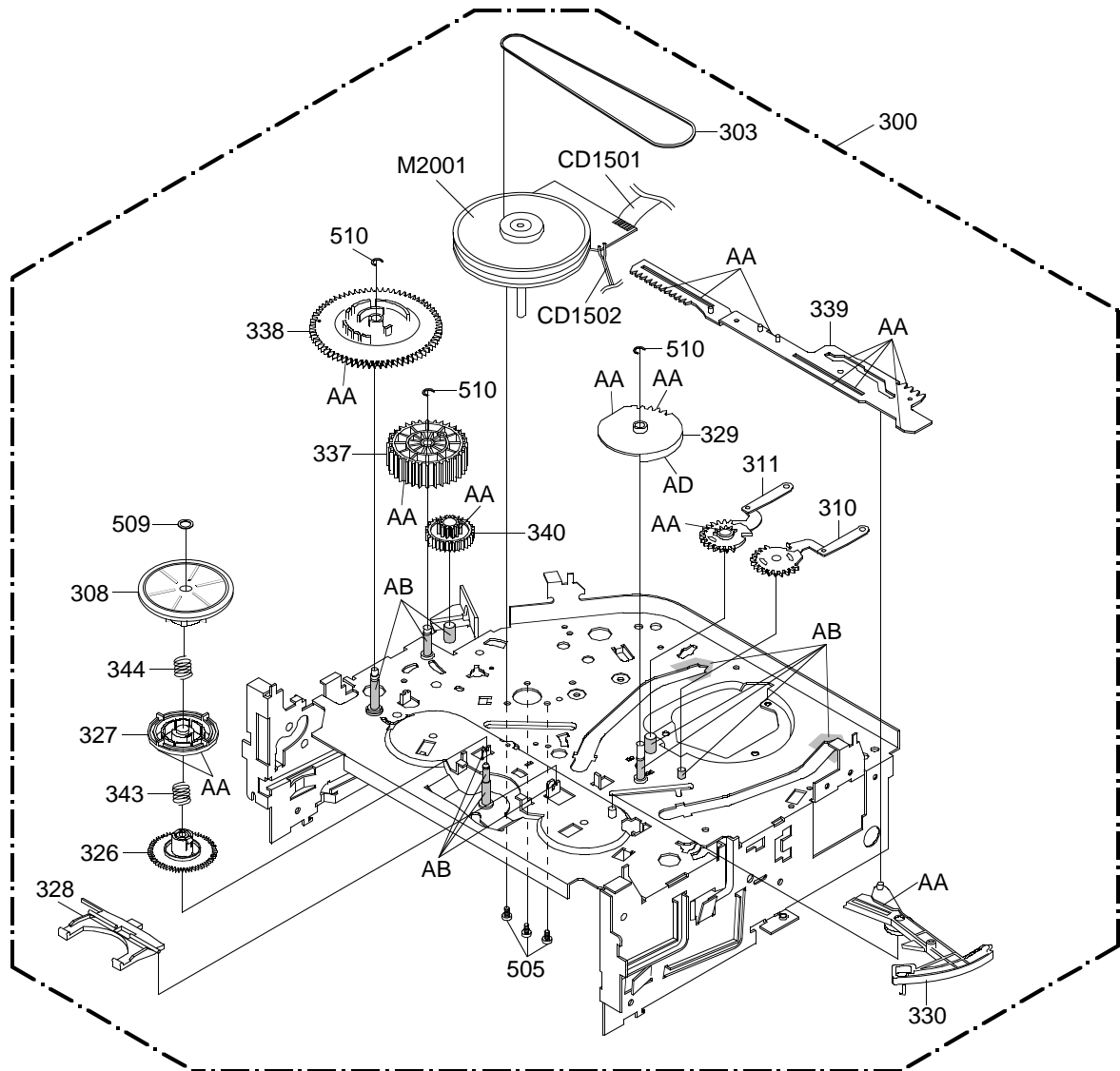
CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

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

CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

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

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
601	A2A795C720	CABINET,FRONT ASSY
602	701WPA0686	HOLDER,DECK
603	701WPA0751	HOLDER,DECK
604	752WSA0230	SHIELD,CASE HEAD AMP
605	753WUAA006	SPRING,EARTH HEAD AMP
606	85OP700036	HOLDER EOT SENSOR
607	85OP700037	HOLDER,LED
608	701WPJB727	CABINET,FRONT
609	711WPD0612	PLATE,DISPLAY
610	712WPJB438	FLAP
611	713WPA0193	GLASS,LED-VCR
612	713WPA0194	GLASS,LED-DVD
613	800WFAA013	CUSHION,LEG
614	735WPBA360	BUTTON,FRAME-DVD
615	735WPBA361	BUTTON,FRAME-VCR
616	8995034000	CORD CLIP UL CO.
617	743WKA0042	SPRING,FLAP
618	800WFA0051	CUSHION,LEG
619	702WSA0109	PLATE,BOTTOM
620	722A08A117	SHEET,RATING
621	7230007461	SHEET,IC
622	7230007399	SHEET,JACK
623	752WSA0275	COVER,AC HEAD
624	753WSA0151	SHIELD,FRONT-DVD
625	753WUAA0060	SPRING,EARTH
626	761WSA0082	ANGLE,CENTER
627	761WPA0244	HOLDER,FFC
628	761WSA0089	ANGLE,DECK
629	702WSB0065	CABINET,TOP
630	712WPB0105	PLATE,TRAY-FRONT
631	7235630001	SHEET,DVD(NEW)
632	800WFA0055	CUSHION 20x5xT1
633	A2A795C730	CABINET BOTTOM ASSY
634	752WSA0280	SHIELD,3-PIN
635	7260000332	SHEET,CAUTION
636	701WPA0781	HOLDER,TOP
637	753WUAA0062	SPRING,EARTH-TOP
638	723000A698	SHEET,DISPLAY
701	8109130B94	SCREW,TAP TITE(B)R PAN 3x29
702	8109230704	SCREW,TAP TITE(B) R BIND 3x7
703	8109230804	SCREW,TAP TITE(B) BIND 3x8
704	8109K30601	SCREW,TAP TITE(B) BIND(3D) 3x6
705	8109I30A04	SCREW,TAP TITE(B) WH7 3x10
706	8110226804	SCREW,TAP TITE(P) BIND 2.6x8
707	8107230404	SCREW,TAP TITE(S) BIND 3x4
708	8109I30804	SCREW,TAP TITE(B) WH7 3x8
---	791WHA0100	GIFT,SHEET
---	792WHA0358	PACKAGE,BACK
---	792WHA0359	PACKAGE,FRONT
---	793WCDB294	GIFT BOX
---	795WCA0662	PAD,DVD/VR 155x250
---	JB5U0200	POLYBAG,INSTRUCTION
---	J2A77001	INSTRUCTION BOOK
---	J3J81702	WARRANTY SHEET
---	A2A770D975	INSTRUCTION BOOK KIT

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
300	A2A301A420A	DECK ASSY A2A301A420A	501	8107226804	SCREW,TAP TITE(S) BIND 2.6x8
			502	8107226504	SCREW,TAP TITE(S) BIND 2.6x5
301	85OA400234	PINCH ROLLER BLOCK	503	8107226404	SCREW,TAP TITE(S) BIND 2.6x4
302	85OA500026	AHC ASS'Y	504	8102120604	SCREW,PAN M2x6
303	85OP200290	BELT,CAPSTAN (S)	505	8109126604	SCREW,TAP TITE(B) PAN 2.6x6
304	85OP600581	WORM	506	810A130404	SCREW/WASHER(A) M3x4
305	85OP500083	BASE,AC HEAD	507	810A126504	SCREW/WASHER(A) M2.6x5
306	85OP800324	SPRING,AC HEAD	508	82Q264713N	POLYSLIDER WASHER 2.6x4.7xT0.13
307	85OA000459	MAIN CHASSIS ASS'Y	509	82P184505N	POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5
308	85OA200089	CLUTCH ASS'Y			
309	85OA200090	ARM IDLER ASS'Y	510	83ETW30000	E-RING 3.0
310	85OA300065	LOADING ARM S UNIT	CD1501	122H071603	CORD JUMPER SMCD-7X151
311	85OA300066	LOADING ARM T UNIT	CD1502	122Y021902	CORD JUMPER 2Y021902
312	85OA400223	INCLINED BASE T UINIT 3S	H5001	1523D91034	HEAD (AUDIO CONTROL) HVMXA1072A
313	85OA400232	P5 ARM ASS'Y 2	H5002	1543D02013	HEAD (FULL ERASE) HVFHP0032A
314	85OA400235	TENSION ARM ASS'Y 2	△ M101	1596P98001	MOTOR (LOADING) MXN13FB12K3
315	85OA400231	INCLINED BASE S UNIT	△ M2001	1510S98036	CAPSTAN DD UNIT F2QVB08
316	85OP800358	SPRING,LOCKER	M2003	1589S11017	MICRO MOTOR I2OAL05
317	85OP900736	CASS,HOLDER	△ UN4001	A2A301A500	CYLINDER UNIT ASS'Y A2A301A500
318	85OP900748	CASS,SIDE L			
319	85OP900749	CASS,SIDE R			
320	85OP900739	LOCKER,R			
321	85OA900228	LINK UNIT			
322	85OP000496	POST,CASS GUIDE			
323	85OP200316	REEL,S (S)			
324	85OP200317	REEL,T (S)			
325	85OP200308	GEAR,IDLER			
326	85OP200311	GEAR,CLUTCH			
327	85OP200312	GEAR,COUPLING			
328	85OP200313	LEVER,CLUTCH			
329	85OP300194	GEAR,MAIN LOADING			
330	85OP400490	LEVER,TENSION			
331	85OP400492	HOLDER,TENSION			
332	85OP400520	CAP,P4			
333	85OP400539	BAND,TENSION			
334	85OP400533	CONNECT,TENSION			
335	85OP600573	ARM,BRAKE T			
336	85OP600583	BAND,BRAKE T			
337	85OP600577	CAM,PINCH ROLLER			
338	85OP600578	CAM,MAIN			
339	85OP600579	ROD,MAIN			
340	85OP600582	GEAR,JOINT			
341	85OP800322	SPRING,TENSION			
342	85OP800360	SPRING,BRAKE T			
343	85OP800355	SPRING,COUPLING			
344	85OP800356	SPRING,RING			
345	85OP900750	LEVER,LINK 2			
346	85OP900744	LEVER,FLAP			
347	85OP900745	CASS,OPENER			
348	85OP900746	BRACKET,TOP 3V			

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
RESISTORS			ICs		
△ R501	R0G3K2335K	RC 3.3M OHM 1/2W	IC2603	I05FR1323F	IC OEC6067A
△ R502	R3X181R39J	R,METAL OXIDE 0.39 OHM 1W	IC3001	I54F50119B	IC OEC0119B
△ R504	R3X181561J	R,METAL OXIDE 560 OHM 1W	IC3003	I9UF032310	IC PST3231NR
△ R512	R3X181273J	R,METAL OXIDE 27K OHM 1W	IC3099	A2A770D015	IC S-24C02BDP-1A
△ R516	R63581R22J	R,FUSE 0.22 OHM 1W	IC4001	ICQF067320	IC ZR36732
△ R517	R002T2102J	RC 1K OHM 1/2W	IC4002	I5HF96A250	IC S-816A25AMC-BAA-T2
R4009	R002T43R9J	RC 3.9 OHM 1/4W	IC4003	I59J0160FB	IC MSM56V16160F-8
CAPACITORS			IC4004	I59J0160FB	IC MSM56V16160F-F
△ C501	E02L03222M	CE 2200 UF 25V	IC4005	I59J0258B3	IC MSM5416258B-30
△ C502	P2472B104M	CMP 0.1 UF 275V PHE840	IC4006	I5QJ0F8125	IC MBM29F800BA-55PFTN-SFK-12
△ C505	E02LU2221M	CE 220 UF 16V	IC8001	I5CF040530	IC CD4053BNSR
△ C507	C0JTB05H3K	CC 0.0022UF 500V B	IC8003	I0QF045800	IC NJM4580M
△ C510	E02LT3471M	CE 470 UF 25V	IC8004	I0QF045800	IC NJM4580M
△ C511	E62NFC221M	CE 220 UF 200V	IC8005	I0QF02533V	IC NJM2533V(Te2)
C515	C0JFE0514M	CC 0.01 UF 500V E	IC8501	I55F0H08F0	IC TC7SH08FU(Te85L)
△ C516	CB3930MQ3M	CC 0.0047UF 250V	IC8503	I1BF019590	IC AD1959YRSRL
△ C518	E02LF1332M	CE 3300 UF 10V	IC8504	I0UFG540A0	IC MM1540AFBE
△ C519	E02LT0222M	CE 2200 UF 6.3V	TRANSISTORS		
△ C522	E50HU5100M	CE 10 UF 50V	Q101	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
C525	C03L0R7U2K	CC 680 PF 2KV R	Q102	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ C529	E02LT0102M	CE 1000 UF 6.3V	Q103	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK
△ C530	E02LU0221M	CE 220 UF 6.3V	Q104	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
△ C1706	E02LU4220M	CE 22 UF 35V	Q105	TAATA12660	TRANSISTOR,SILICON KTA1266-AT(Y,GR)
DIODES			Q106	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
△ D502	D2WTRM11C0	DIODE SILICON RM11C-EIC	Q107	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
△ D503	D2WTRM11C0	DIODE SILICON RM11C-EIC	Q109	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S
△ D505	D2WTRM11C0	DIODE SILICON RM11C-EIC	Q303	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
△ D506	D2WTRM11C0	DIODE SILICON RM11C-EIC	△ Q501	TJXG5NC500	FET STP5NC50FP
△ D507	D2WXB290S0	DIODE SILICON SB290S	△ Q502	TC5T021204	TRANSISTOR,SILICON 2SC2120Y(TPE2)
D509	D2WXGP10J0	DIODE RECTIFIER RGP10J-EIC	△ Q504	TB3T011310	TRANSISTOR SILICON 2SB1131(S,T)-AE
D510	D97U03001B	DIODE,ZENER MTZJ30B T-77	△ Q505	TCAT03209Y	TRANSISTOR SILICON KTC3209_Y-AT
△ D512	D2LKB340L0	DIODE SCHOTTKY SB340L-6737	Q506	TNATA03002	COMPOUND TRANSISTOR KRC101MAT
△ D515	D2LKB340L0	DIODE SCHOTTKY SB340L-6737	Q651	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
D518	D1VT001330	DIODE,SILICON 1SS133T-77	Q652	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
△ D522	D28TELS6N6	DIODE RECTIFER 10ELS6N-TA1B2	Q653	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D523	D97U03301B	DIODE,ZENER MTZJ33B T-77	Q654	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
D524	D1VT001330	DIODE,SILICON 1SS133T-77	Q655	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D525	D2WXN40050	DIODE SILICON 1N4005-EIC	Q656	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
△ D529	D2WXB290S0	DIODE SILICON SB290S	Q657	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D530	D28TELS6N6	DIODE RECTIFIER 10ELS6N-TA1B2	Q658	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D531	D97U01801B	DIODE,ZENER MTZJ18B T-77	Q659	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
D651	0021E2Q140	LED LTL-1CHEE-002A	Q660	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D656	D2WXN40050	DIODE SILICON 1N4005-EIC	Q661	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
D681	0021E2Q140	LED LTL-1CHEE-002A	Q662	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D701	D1VT001330	DIODE,SILICON 1SS133T-77	Q663	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D1701	D97U01301B	DIODE,ZENER MTZJ13B T-77	Q664	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D1702	D1VT001330	DIODE,SILICON 1SS133T-77	Q665	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
D1706	D97U01001B	DIODE,ZENER MTZJ10B T-77	Q666	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK
D1709	D2WXN40050	DIODE SILICON 1N4005-EIC	Q1003	TPYJB05001	COMPOUND TRANSISTOR DTA114EKAT146
D2601	DD5R003680	DIODE SILICON 1SS368(TPH3)	Q1004	TPYJB05001	COMPOUND TRANSISTOR DTA114EKAT146
D2602	DD5R003680	DIODE SILICON 1SS368(TPH3)	△ Q1701	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
D3001	0010100320	INFRARED LED LNA2702L010R	△ Q1702	TCAT03209Y	TRANSISTOR SILICON KTC3209_Y-AT
D3007	D1VT001330	DIODE,SILICON 1SS133T-77	△ Q1703	TCAT03209Y	TRANSISTOR SILICON KTC3209_Y-AT
D3009	D1VT001330	DIODE,SILICON 1SS133T-77	Q1704	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D4001	D2WXN40050	DIODE SILICON 1N4005-EIC	Q1705	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT
D8004	D1VT001330	DIODE,SILICON 1SS133T-77	△ Q1706	TB3T011310	TRANSISTOR SILICON 2SB1131(S,T)-AE
D8010	D1VT001330	DIODE,SILICON 1SS133T-77	Q1707	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S
D8016	D2WXN40050	DIODE SILICON 1N4005-EIC	Q1708	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S
D8501	DD5R002260	DIODE SILICON 1SS226(Te85L)	△ Q1713	TAAT012714	TRANSISTOR, SILICON KTA1271_Y-AT
D8502	DD5R002260	DIODE SILICON 1SS226(Te85L)	Q1714	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
D8503	DD5R002260	DIODE SILICON 1SS226(Te85L)	Q2001	T85A03326B	TRANSISTOR SILICON 2SC3326_B(Te85L)
D8504	DD5R002260	DIODE SILICON 1SS226(Te85L)	Q2601	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
D8505	DD5R002260	DIODE SILICON 1SS226(Te85L)	Q2602	TS5M000037	COMPOUND TRANSISTOR HN1C03F_B(Te85L)
ICs			Q2603	TS5M000036	COMPOUND TRANSISTOR HN1B01F_Y(Te85L)
IC101	I03F3205M0	IC LA71205M-MPB	Q2604	TS5M000036	COMPOUND TRANSISTOR HN1B01F_Y(Te85L)
△ IC501	I1KJ9A4310	IC KIA431	Q2605	T65A01213Y	TRANSISTOR SILICON 2SA1213_Y(Te12L,C)
△ IC502	I1KA97809A	IC KIA7809API	Q3001	0002700690	PHOTO COUPLER RPI-303
△ IC503	0002E00610	PHOTO COUPLER LTV-817M-VB	Q3002	0002700690	PHOTO COUPLER RPI-303
IC701	I01F63FBP0	IC AN3663FBP	Q3004	0002700680	PHOTO COUPLER RPI-352C40N
IC1001	I55K0251AF	IC OEC6069A	Q3005	0002700680	PHOTO COUPLER RPI-352C40N
IC1002	I5HJ001BF0	IC S-24C01BFJ-TB	Q3006	0000100380	PHOTO TRANSISTOR PNA2604M010R
IC1005	I55F07S08F	IC TC7S08F-TE85L	Q3007	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
IC1006	I55F0W2410	IC TC7W241FU-TE12L	Q3008	0000100380	PHOTO TRANSISTOR PNA2604M010R
IC2001	I05F094A03	IC OEC6068A	Q4001	T65A01213Y	TRANSISTOR SILICON 2SA1213_Y(Te12L,C)
IC2002	I59J0258B3	IC MSM5416258B-30	Q8001	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S
IC2601	I55F07S04F	IC TC7S04F(Te85L)	Q8002	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S
IC2602	I07FV58130	IC BA5813FM	Q8003	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
TRANSISTORS			P.C.BOARD ASSEMBLIES		
Q8004	TAATA12660	TRANSISTOR,SILICON KTA1266-AT(Y,GR)	PCB130	A2A707C130	PCB ASS'Y VMA249B
Q8005	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	PCB240	A2A701A240	PCB ASS'Y VPA152A
Q8006	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	PCB270	A2A701A270	PCB ASS'Y VEA970A
Q8007	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK	MISCELLANEOUS		
Q8008	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	B501	024HT03563	CORE,BEADS W4BRH3.5X6X1.0X2
Q8011	TNAAD05001	COMPOUND TRANSISTOR KRC104SRTK	B503	024HT03564	CORE,BEADS W4BRH3.5X6X1
Q8012	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	B8001	024HT03564	CORE,BEADS W4BRH3.5X6X1
Q8013	TPAAA05001	COMPOUND TRANSISTOR KRA101SRTK	B8501	024HC31022	CORE,BEADS FCM2012H-102T04
Q8014	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	B8502	024HC31022	CORE,BEADS FCM2012H-102T04
Q8015	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	B8503	024HC31022	CORE,BEADS FCM2012H-102T04
Q8501	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	CD102	122F061501	CORD JUMPER 2F061501
Q8502	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	△ CD501	120R419905	CORD AC BUSH 0R419905
Q8503	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	CD502	122Y0E1701	CORD JUMPER 2Y0E1701
Q8505	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	CD651	122H052402	CORD JUMPER 2H052402
Q8508	TS5M000037	COMPOUND TRANSISTOR HN1C03F_B(TE85L)	CP101	0697290620	CONNECTOR PCB SIDE TOC-C09X-A1
Q8509	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK	CP102	069J760029	CONNECTOR PCB SIDE IMSA-9604S-06Z14
Q8510	TPAAB05001	COMPOUND TRANSISTOR KRA102SRTK	CP103	0697120320	CONNECTOR PCB SIDE TMC-T02X-E1
Q8511	TPAAB05001	COMPOUND TRANSISTOR KRA102SRTK	CP502	067U014019	WIRE HOLDER B2013H02-14P
Q8512	T85A03326B	TRANSISTOR SILICON 2SC3326_B(TE85L)	CP503	069S260629	CONNECTOR PCB SIDE A2001VV2-6P
Q8513	T85A03326B	TRANSISTOR SILICON 2SC3326_B(TE85L)	CP651	069J750019	CONNECTOR PCB SIDE IMSA-9604S-05Z13
COILS & TRANSFORMERS			CP681	069R750499	CONNECTOR PCB SIDE 52492-0520
L101	031626009R	COIL,BIAS OSC 1626009	CD2601	122H081006	CORD JUMPER 2H081006
L102	02167F101J	COIL 100 UH	CD2603	122H060806	CORD JUMPER 2H060806
L104	02167F220J	COIL 22 UH	CD6002	06CQL02006	CABLE SI-C108-40
L105	02167F220J	COIL 22 UH	CD6003	06CQBA2001	CORD,RCA PIN SI-B-701-2
L106	02167F220J	COIL 22 UH	CD8002	122H011801	CORD JUMPER 2H011801
L107	02167F220J	COIL 22 UH	CD8501	06CU2D3001	CORD CONNECTOR CU2D3001
L301	021673101K	COIL 100 UH	CD8502	06CU262501	CORD CONNECTOR CU262501
L302	02167F220J	COIL 22 UH	CP1701	069R2E0589	CONNECTOR PCB SIDE 52147-1410
△ L501	029T0000A1	COIL,LINE FILTER 0R7A223F24	CP2601	069EV8T020	CONNECTOR PCB SIDE 04_6232_108_015
L502	02AHB0A0A4	CORE,FERRITE W5T_20*10*10A	CP2602	069EVNT020	CONNECTOR PCB SIDE 04_6232_123_015
△ L503	02167E220K	COIL R9 22 UH	CP2603	069J760029	CONNECTOR PCB SIDE IMSA-9604S-06Z14
L505	02167F220J	COIL 22 UH	CP3001	06972C0010	CONNECTOR PCB SIDE TMC-J12P-B2
L506	02167E220K	COIL R9 22 UH	CP8001	069S2D0629	CONNECTOR PCB SIDE A2001VV2-13P
△ L507	02167E220K	COIL R9 22 UH	CP8002	069J710019	CONNECTOR PCB SIDE IMSA-9604S-18Z13
L701	02167F220J	COIL 22 UH	CP8502	069J710019	CONNECTOR PCB SIDE IMSA-9604S-18Z13
L702	02167F220J	COIL 22 UH	CUS131	800WFAA006	CUSHION A
L703	0216A6101K	COIL 100 UH	CUS811	800WFAA006	CUSHION A
L704	02167F220J	COIL 22 UH	△ DK4001	169J00010A	DECK CD TU2020R or
L3003	021LA6120K	COIL 12 UH		169J00017A	DECK CD TU2120R
L4001	0216S3150K	COIL 15 UH	△ F501	081PC04004	FUSE 51MS040LCC
L8001	021LA6R27M	COIL 0.27 UH	FH501	06710T0006	HOLDER,FUSE EYF-52BC
L8002	0216A6101K	COIL 100 UH	FH502	06710T0006	HOLDER,FUSE EYF-52BC
L8003	021LA6R27M	COIL 0.27 UH	NR1001	110N4101M3	R,NETWORK CAY16-101-J-4R
L8004	021LA6470K	COIL 47 UH	NR1002	110N4101M3	R,NETWORK CAY16-101-J-4R
L8006	021LA6101K	COIL 100 UH	NR1003	110N4101M3	R,NETWORK CAY16-101-J-4R
L8007	0216A6101K	COIL 100 UH	NR1004	110N4101M3	R,NETWORK CAY16-101-J-4R
L8009	021LA61R5J	COIL 1.5 UH	NR1005	110N4101M3	R,NETWORK CAY16-101-J-4R
L8501	0216S3150K	COIL 15 UH	NR1006	110N4101M3	R,NETWORK CAY16-101-J-4R
L8507	02AHB9A972	CORE,FERRITE W5T29X7.5X19	NR1007	110N4101M3	R,NETWORK CAY16-101-J-4R
△ T501	0481290814	TRANSFORMER,SWITCHING 81290814	NR1008	110N4101M3	R,NETWORK CAY16-101-J-4R
JACKS			NR1009	110N4101M3	R,NETWORK CAY16-101-J-4R
J8001	060J411018	RCA JACK MSP-213V1-432 PBSN	NR1010	110N4101M3	R,NETWORK CAY16-101-J-4R
J8003	060J401079	RCA JACK MSP-281V4-B	NR1011	110N4101M3	R,NETWORK CAY16-101-J-4R
J8004	060J401080	RCA JACK MSP-281V1-B	OS651	077Q037001	REMOTE RECEIVER PIC-37043LO
J8005	060J421023	RCA JACK MSP-281V3-A	OS8001	07A9000004	OPTICAL DEVICE GP1FA550TZ
J8006	063D700005	JACK MDC-070V	TM601	076R0ET020	TRANSMITTER R25-1782 or
J8007	060J401082	RCA JACK MSP-251V-05PBSN		07660ET020	TRANSMITTER SBKM00031A
J8008	060J411024	RCA JACK MSP-213V1-652 PBSN	△ TU301	0162K00027	RF UNIT TCMN0682PA13D(4)
J8009	060J411020	RCA JACK MSP-242V2-01PBSN	V651	0040F94003	LED DISPLAY ELF-4M6SDRVGWB
SWITCHES			X101	100CT3R508	CRYSTAL HC-49/U
SW301	0510S21041	SWITCH SLIDE SLD-12-592	X1001	1002T00901	CERAMIC OSCILLATOR CSTCC9M00G53-R0
SW651	0504201T31	SWITCH,TACT SKHVBED010	X3001	100CT01002	CRYSTAL HC-49/U-S
SW652	0504201T31	SWITCH,TACT SKHVBED010	X3002	100DA32R01	CRYSTAL DT-26
SW653	0504201T31	SWITCH,TACT SKHVBED010	X3003	100CT01403	CRYSTAL HC-49/U-S
SW654	0504201T31	SWITCH,TACT SKHVBED010	X8501	100WT02706	CRYSTAL HC-49/U-S
SW655	0504201T31	SWITCH,TACT SKHVBED010			
SW681	0504201T32	SWITCH,TACT SKQNAED010			
SW682	0504201T32	SWITCH,TACT SKQNAED010			
SW684	0504201T32	SWITCH,TACT SKQNAED010			
SW686	0504201T32	SWITCH,TACT SKQNAED010			
SW688	0504201T32	SWITCH,TACT SKQNAED010			
SW689	0504201T32	SWITCH,TACT SKQNAED010			
SW3001	0508S11001	SWITCH (LEAF) LSA-1144EAU or			
	0508A11001	SWITCH(LEAF) MXS01350MVP0			
P.C.BOARD ASSEMBLIES					
PCB010	A2A795C010	PCB ASS'Y VMA251A			

ELECTRICAL REPLACEMENT PARTS LIST

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

SPEC.NO.	M2A7-95C
O/R NO.	W242013