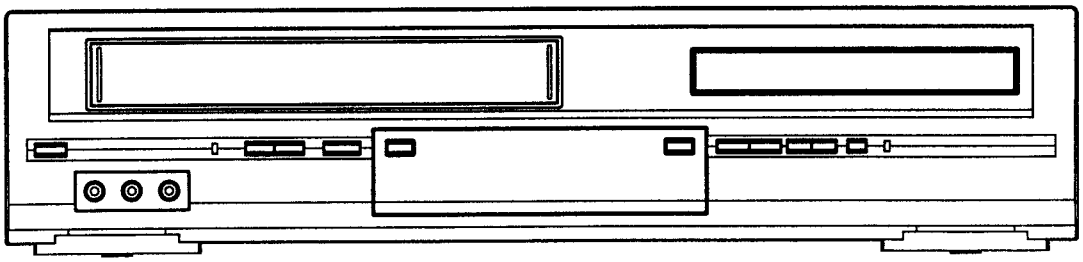
SERVICE MANUAL

Teil 1

ORION

DVD/VR-2961 / 2963 SI

DVD VIDEO PLAYER & VHS VIDEO CASSETTE RECORDER



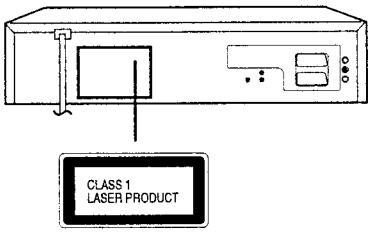
ORIGINAL CHASSIS CODE A

Best. Nr. SM2963

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.



(Printed on the Rear Panel)

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 ⚠ 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 CHASSIS CODE.)
1. MODEL NUMBER and CHASSIS CODE
   The MODEL NUMBER can be found on the back of each product and the CHASSIS CODE can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

CONTENTS

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.

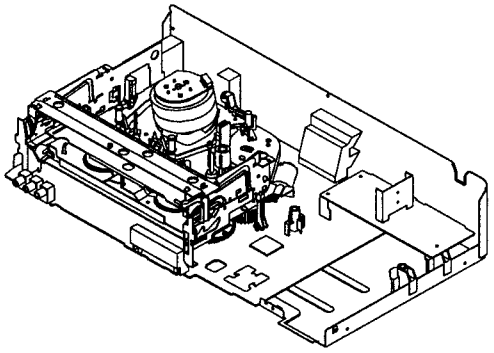


Fig. 1

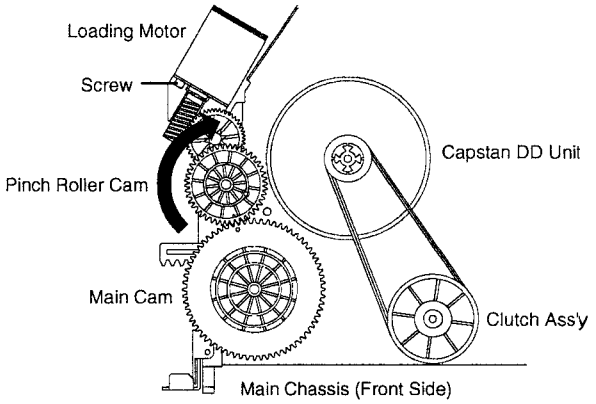


Fig. 2

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)**

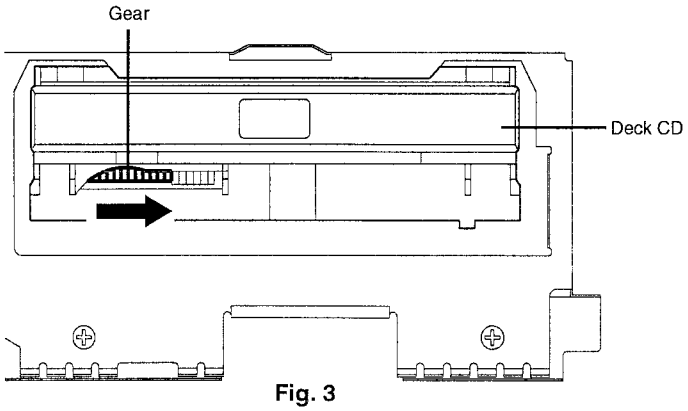


Fig. 3

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

GENERAL SPECIFICATIONS

G-1	Outline of the product				DVD VIDEO PLAYER & VHS Player / Recorder
G-2	DVD System	Color System			PAL
		Disc			DVD, CD-DA, CD-R/RW, VIDEO CD,SVCD
		Disc Diameter			120 mm , 80 mm
		Deck	Disc Loading System		Front Disc Loading
			Motor		3 Motors
		Pick up			1-Lens 2-Beams System
		Playback time (Max)	DVD 1-Layer		135min (4.7GB)
			DVD 2-Layer		245min (8.5GB)
			CD		74min
			VIDEO CD		74min
		Search speed	Fwd		2-20 times / 4 step
				Actual	2-45 times (DVD, VIDEO CD)
					4-40 times (CD)
			Rev		2-20 times / 4 step
				Actual	2-45 times (DVD, VIDEO CD)
					4-40 times (CD)
		Slow speed	Fwd		1/7 -1/2 times
				Actual	--
			Rev		--
				Actual	--
G-3	VCR System	System			VHS Player / Recorder
		Video System			PAL
		Hi-Fi STEREO			Yes
		NTSC PB(PAL60Hz)			Yes
		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 Speed	Rec	PAL	SP/LP
				NTSC	-
			Play	PAL	SP/LP
				NTSC	SP
		Fast Forward / Rewind Time (Approx.) at 25oC			FF:1'12"/REW:1'12"
				with Cassette	E-180
		Forward/Reverse Picture Search	NTSC or PAL-M		SP=3x, 5x
			PAL or SECAM		SP/LP=5x, 7x / 7x, 13x
		Frame Advance			Yes
		Slow Speed			1/5, 1/10,1/30
G-4	Tuning System	Broadcasting System			CCIR System BG
		Tuner and Receive CH	System		1Tuner
			Destination		Oscar(W/HYPER)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 OHM
			CH Coverage		E2~E4, X~Z+2, S1~S10, E5~E12,S11~S41,E21~E69
		Intermediate Frequency	Picture(FP)		38.9 MHz
			Sound(FS)		33.4 MHz
			FP-FS		5.5 MHz
		Auto Tuning Method			C.C.I.R CH PLAN
		Auto Guide Ch Area			-
		Preset CH			80CH
		RF Converter Output			Yes
			Channel		23~69 CH
			Level/Impedance		73 dBu / 75 Ohm
			Sound Selector		No
		Stereo/Dual TV Sound			G.ST/NICAM DUAL
		Tuner Sound Muting			Yes
G-5	Power	Power Source	AC		230V 50Hz
			DC		-
		Power Consumption			20 W at 230V 50Hz
			Stand by		5 W at 230V 50Hz
			Per Year		-- W
		Protector	Power Fuse		Yes
G-6	Regulation		Safety		CE
			Radiation		CE
G-7	Temperature		Operation		5oC - 40oC
			Storage		-20oC - 60oC
G-8	Operating Humidity				Less than 80% RH

GENERAL SPECIFICATIONS

G-9	Signal	Video Signal	Output Level	1 V p-p/75 ohm (DVD,VCR)
			S/N Ratio (Weighted)	65 dB(DVD) 53 dB(VCR)
			Horizontal Resolution	500 Lines (DVD) 240 Lines(VCR at SP)
		RGB Signal	Output Level	0.7V p-p / 75 ohm
		Audio Signal	Input Level Microphone	-
			Input Level Line	-3.8 dBm/ 50k ohm(VCR)
			Output Level Line	-3.8 dBm/ 1k ohm (VCR, 0dB=0.775Vrms) -12dB/ 1k ohm (DVD, -20dBFs 0dBFs=2.0Vrms)
			Digital Output Level	0.5 V p-p / 75 ohm(DVD)
			S/N Ratio at (Weighted)	90dB(DVD) 42dB(VCR at SP)
			Harmonic Distortion (1KHz) Typical	0.06% (DVD) 1.5% (VCR at SP)
			Frequency Response : DVD Mode at DVD	4 Hz - 22 KHz
			DVD Mode at VIDEO CD	4 Hz - 20 KHz
				4 Hz - 20 KHz
			DVD Mode at CD	4 Hz - 20 KHz
			VCR Mode at SP	100Hz - 10 KHz
			VCR Mode at LP	100Hz - 5 KHz
			VCR Mode at SLP	-
		Hi-Fi Audio Signal	Dynamic Range : More than	75dB
			Frequency Response	20Hz ~20kHz
			Wow And Flutter : Less than	0.01 %Wrms
			Channel Separation : More than	60 dB
			Harmonic Distortion : Less than	0.01

GENERAL SPECIFICATIONS

G-10	On Screen Display (DVD)	Menu			Yes
			Menu Type		Character
			Language		Yes
				Menu	Yes
				Subtitle	Yes
				Audio	Yes
			Picture		Yes
				TV Screen Size	Yes
				OSD Display On/Off	Yes
				Slide Show	No
				Interval Time	No
				JPEG Interval	Yes
				Select Files	Yes
			Sound		Yes
				DRC (Dynamic Range Control)	Yes
				dts Decode	No
				Output (5.1ch/ 2ch)	No
				Surround On/Off	No
				Center On/Off	No
				Sub Woofer On/Off	No
			Parental		Yes
				Password Lock/Un Lock	Yes
				Rating Level	Yes
			Other		Yes
				OSD Language (Set up Language)	Yes
				Output (RGB/Video)	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 (CD,MP3,Video CD,SVCD,WMA,JPEG)
		Repeat			Yes
		Slow+ ##			Yes
		Slow- ##			No
		Search+ ##			Yes
		Search- ##			Yes
		Jump			Yes
		Resume			Yes
		Title No.			Yes
		Chapter No.			Yes
		Track No.			Yes
		Time			Yes
		Sub Title No.			Yes
		Angle No.			Yes
		Vocal On/Off			Yes
		Audio No.			Yes
		Audio Stereo L/R			Yes (Video CD,SVCD)
		Zoom			Yes
		Marker No.			Yes
		Program Play Back			Yes (CD,MP3,Video CD,SVCD,WMA,JPEG)
		Spatializer On/Off			No
		MP3	Folder Name		Yes
			File Name		Yes
			File No		Yes
			Time		Yes
			Track No		Yes

GENERAL SPECIFICATIONS

	On Screen Display(VCR)	Menu		Yes	
		Menu	Type	Character	
		ATS			No
		Timer Rec Set		Yes	
		Auto Repeat On/Off		Yes	
		VCR Set-Up		Yes	
			NICAM Auto/Off	Yes	
			Audio Mix On/Off	Yes	
			Color System		No
		CH Set-Up		Yes	
			CH Tuning	Yes	
			Auto Tuning	Yes	
			CH Mapping	Yes	
			Guide CH Set		No
		System Set-Up		Yes	
			Clock Set	Yes	(Calendar 24H)
			Language	Yes	
			AV2 DEC/AV (LINE)	Yes	
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry		Yes	
		NICAM 1/2,NICAM Off,Audio Output		Yes	
		Stereo,Audio Output,Bilingual		Yes	
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In/Zero Return (Symbol Mark)		Yes	
		Others	CH/AV (LINE)	Yes	
			Clock	Yes	
			Repeat		No
			Tape Counter	Yes	
			Index	Yes	
			Tape Speed	Yes	
			Manual Tracking (Bar Setting)	Yes	
			Hi-Fi	Yes	
			VPS		No
			PDC		No
			TEST Signal	Yes	
G-11	**OSD Language**			English/French/Spanish/German/Italian	
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		6 Hours	
		OTPB Valid Time			No
		Timer Back-up (at Power Off Mode)		30	Min
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 (24h)	
			AM		No
			PM		No
			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 (ITR)		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	Yes	
			Auto Tuning	Yes	
			Eject	Yes	
			Tape In	Yes	
			Remocon Custom Code		No

GENERAL SPECIFICATIONS

G-14	Remote Control	Unit		RC-FI
		Glow in Dark Remocon		No
		Power Source	Voltage (D.C)	3V
			UM size x pcs	UM-3 x 2 pcs
		Total Keys		50 Keys
		Keys	Power	Yes
			DISPLAY/CALL	Yes
			EJECT	Yes
			OPEN/CLOSE	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0/AV	Yes
			CH+	Yes
			CH-	Yes
			SHOWVIEW/PROGRAM	Yes
			PROGRAM	No
			TIMER REC	Yes
			REC/OTR	Yes
			MARKER/SPEED	Yes
			JUMP/ZERO RETURN	Yes
			CLOCK / COUNTER	Yes
			COUNTER RESET	Yes
			TV/VCR	Yes
			E.A.M.	No
			REC.END.SEARCH	No
			VCR	Yes
			DVD	Yes
			SET UP/MENU	Yes
			DVD MENU	Yes
			UP	Yes
			DOWN	Yes
			LEFT / TRACKING-	Yes
			RIGHT / TRACKING+	Yes
			ENTER / SELECT	Yes
			TITLE	Yes
			RETURN	Yes
			STOP	Yes
			PLAY	Yes
			PAUSE /STILL/STEP	Yes
			SKIP- / INDEX-	Yes
			SKIP+ / INDEX+	Yes
			REW(Review)/SEARCH-	Yes
			FF(Cue)/SEARCH+	Yes
			CANCEL	Yes
			REPEAT A-B	Yes
			ZOOM	Yes
			SLOW(Forward)	Yes
			ANGLE	Yes
			PLAY MODE	Yes
			SUBTITLE	Yes
			AUDIO	Yes

GENERAL SPECIFICATIONS

G-15	Features (DVD)	Auto Power Off		No
		Parental Lock		Yes
		Progressive Video Out		No
		Video CD Playback		Yes
		SVCD Playback		Yes
			Overlay Graphics And Text	No
			Command List	No
			Entry Point Jump	No
		MP3 Playback		Yes
		WMA Playback		Yes
		JPEG Playback		Yes
		Digital Out	(Dolby Digital)	Yes
			(MPEG)	Yes
			(PCM)	Yes
			(DTS)	Yes
		Down Mix Out	(Dolby Digital)	Yes
			(DTS)	No
		Spatializer (N-2-2)		No
		Dynamic Range Control		Yes
		Screen Saver		No
		Auto Stop		No
	Features (VCR)	Auto Head Cleaning		Yes
		Auto Tracking		Yes
		Index Search		Yes
		HQ (VHS Standard High Quality)		Yes
		Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes
		Auto Repeat		Yes
		Auto Power Off		No
		VIDEO PLUS+ (SHOWVIEW, G-CODE)		Yes
		Auto Set Up (CH Auto Set Up/ Auto Clock)		No
		ATS		No
		PDC		No
		VPS		No
		Remote Control Code 1/2/3/4		No
		SQPB (PAL SP Mode Only)		No
		CM Skip(30sec x 6 Times)		No
		Copy (Disc to Tape)		Yes (by Conditioning)
G-16	Accessories	Owner's Manual		Yes
			Language	German
			w/Guarantee Card	Yes
		Remote Control Unit		Yes
		Dew Caution Sheet		No
		Battery		Yes
			UM size x pcs	UM-3 x 2 pcs
		Tape Rewinder		No
		Safety Tip		No
		Toll Free Insert Sheet		No
		Quick Set-Up Sheet		Yes
		Information Sheet		Yes
		75 Ohm Coaxial Cable		Yes (0.9m)
			type	Double shield
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Facility List		No
		Important Safeguard		No
		Dew/AHC Caution Sheet		No
		AC Plug Adapter		No
		AC Cord		No
		AV Cord (2Pin-1Pin)		No
		Registration Card		No
		21pin Cable (Double Shield)		Yes
		300 ohm to 75 ohm Antenna Adapter		No

GENERAL SPECIFICATIONS

G-17	Interface	Switch	Front	Power	Yes
				Play	Yes
				Eject (VCR)	Yes
				Stop	Yes
				Rec/OTR	Yes
				Open/Close (DVD)	Yes
				CH +	Yes
				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)	No
				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	No
				Audio Output	RCA x 2(Stereo, White/Red) Coaxial x 1 (Digital Audio,DVD Signal Only)
				Video Input	No
				Audio Input	No
				Optical Digital Audio Out (Option)	No
				Euro Scart	2SCART
				Ext Speaker	No
				VHF/UHF Antenna Input/Output	DIN Type
				AC Inlet	No
		Indicator	LED	Power	No
				Rec	No
				T-Rec	No
				TV/VCR	No
				DVD	Yes (GREEN)
				VCR	Yes (GREEN)
				Surround	No
				Level Meter	No
G-18	Set Size			Approx. W x D x H (mm)	430 x 253 x 99
G-19	Weight			Net (Approx.)	4.0 kg(8.8 lbs)
				Gross (Approx.)	5.0 kg(11.0 lbs)
G-20	Carton		Master Carton		No
				Content	--- Sets
				Material	--- / ---
				Dimensions W x D x H(mm)	---
				Description of Origin	---
			Gift Box		Yes
				Material	Single/Full Color
				W/Color Photo Label	No
				Dimensions W x D x H(mm)	497 x 360 x 180
				Pulp Package	No
				Design	As Per BUYER 's
				Description of Origin	No
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	80 cm
			Container Stuffing		1,985 Sets/40' container
G-21	Material		Cabinet	Front	PS 94HB
			PCB	Non-Halogen Demand	No
				Eyelet Demand	No

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

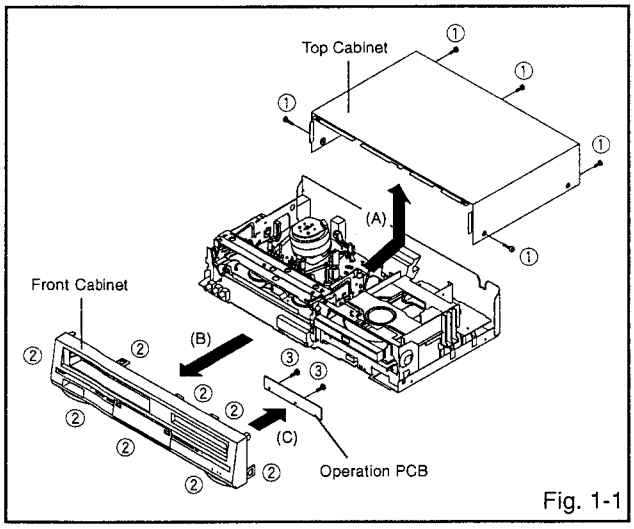


Fig. 1-1

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

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

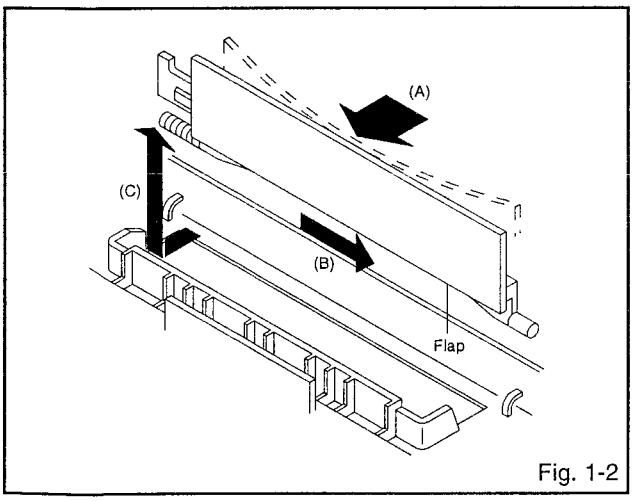


Fig. 1-2

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

1. Make the short circuit on the position as shown **Fig. 1-3** using a soldering. If you remove the Deck CD with no soldering, the Laser may be damaged.
2. Unlock the support ① and remove the Deck Top Holder in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the 2 screws ③.
5. Disconnect the following connectors: (CP2301, CP2302, CP2601).
6. Remove the Deck CD in the direction of arrow (B).
7. Remove the 3 screws ④.
8. Remove the Front Angle in the direction of arrow (C).

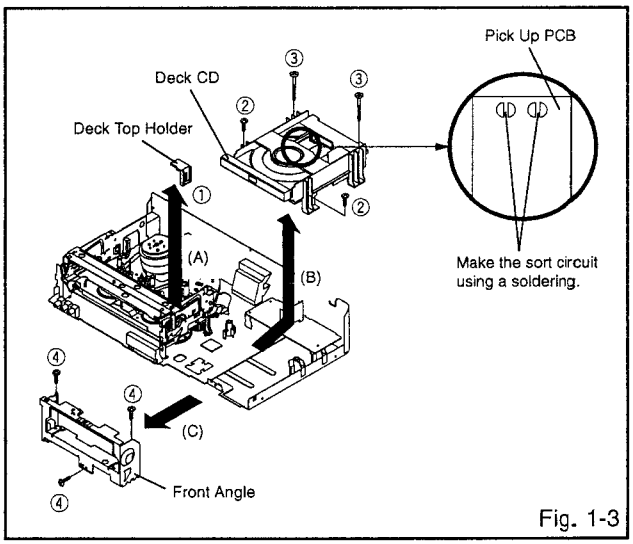


Fig. 1-3

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 VCR/DVD PCB connector.

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

1. Remove the screw ①.
2. Remove the 2 screws ②.
3. Disconnect the following connector: (CP502).
4. Remove the Power PCB in the direction of arrow.

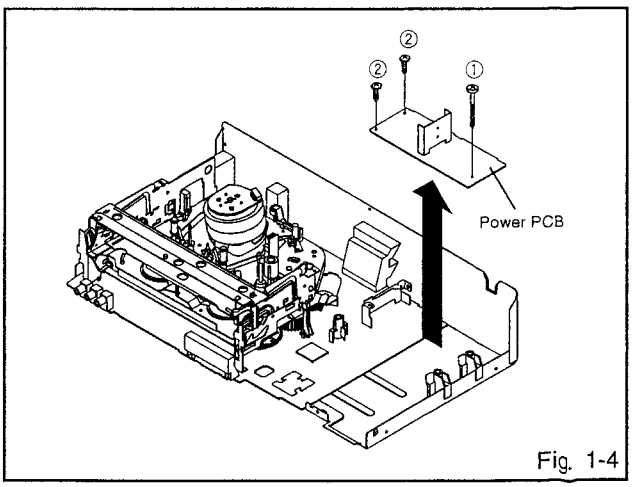


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

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

NOTE

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

1. Remove the screw ①.
2. Remove the FE Head.
3. Remove the 3 screws ②.
4. Disconnect the following connectors: (CP101, CP102, and CP3001).
5. Remove the AC Head Cover and VCR Deck in the direction of arrow.

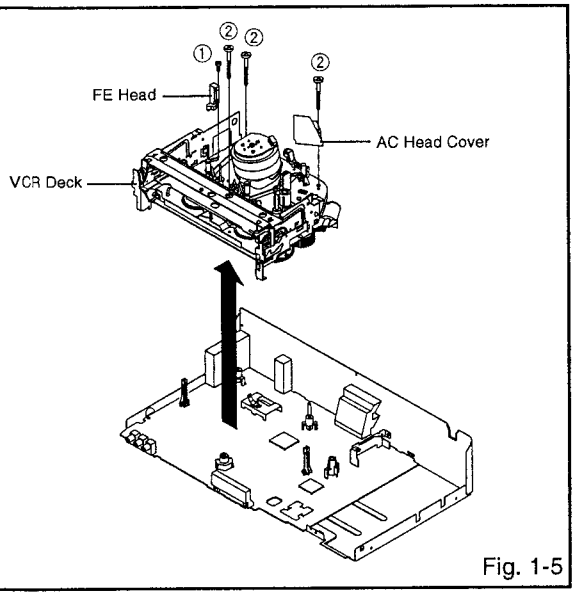


Fig. 1-5

1-6: VCR/DVD PCB (Refer to Fig. 1-6)

1. Remove the screw ① and Fiber Washer.
2. Remove the 4 screws ②.
3. Remove the 3-Pin Shield.
4. Remove the VCR/DVD PCB in the direction of arrow.

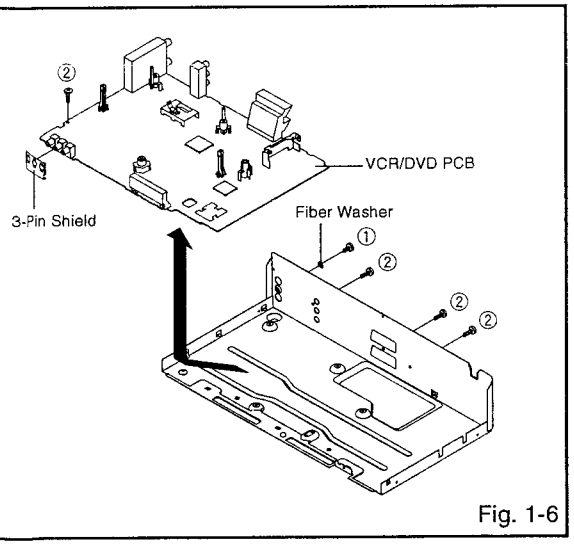


Fig. 1-6

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.

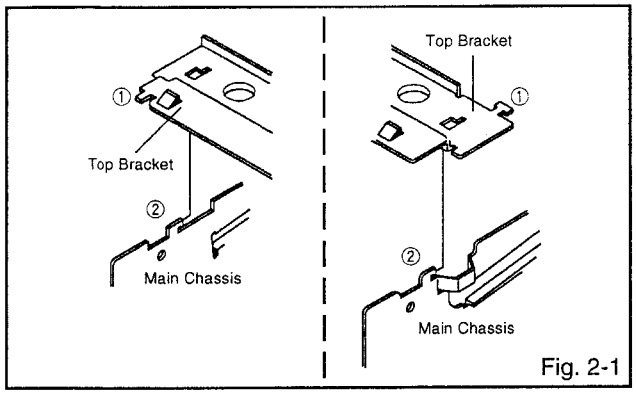


Fig. 2-1

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.

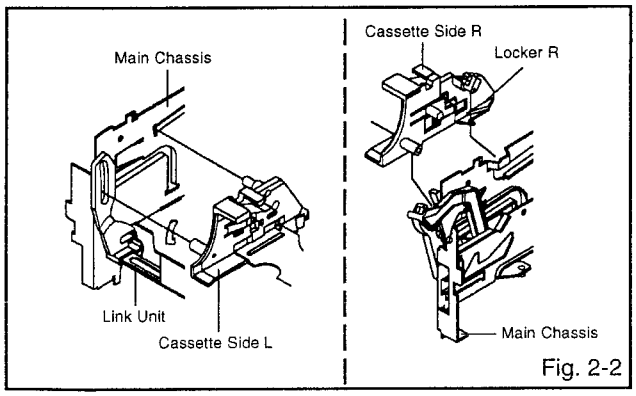


Fig. 2-2

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.

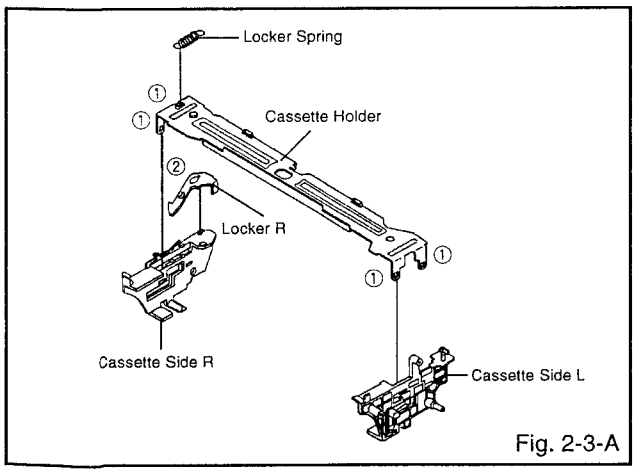


Fig. 2-3-A

NOTE

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

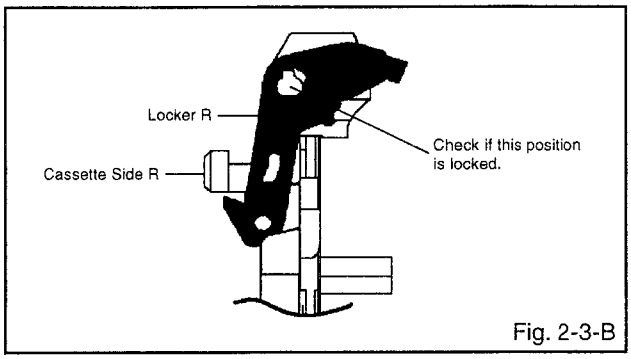


Fig. 2-3-B

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

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

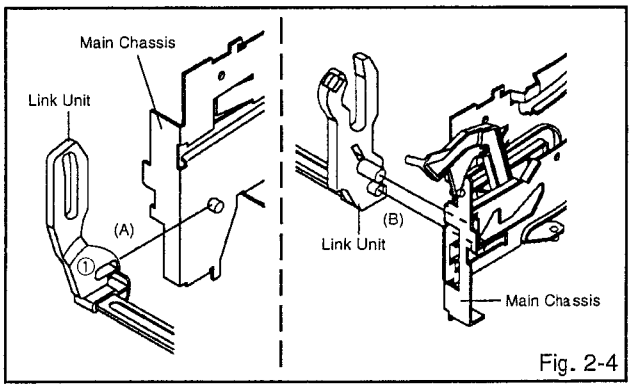


Fig. 2-4

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

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

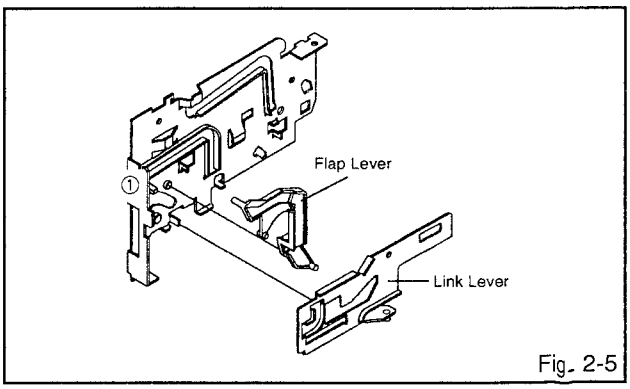


Fig. 2-5

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.

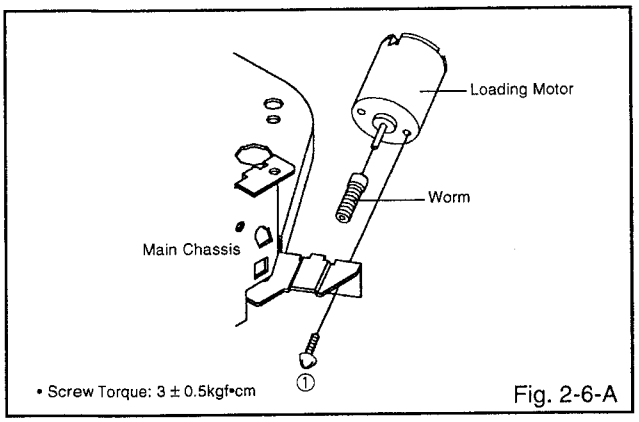


Fig. 2-6-A

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.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.

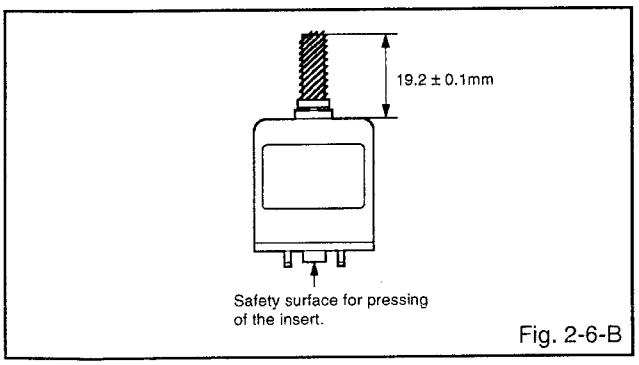


Fig. 2-6-B

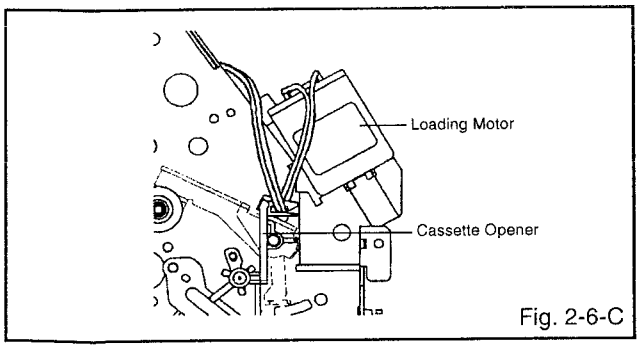


Fig. 2-6-C

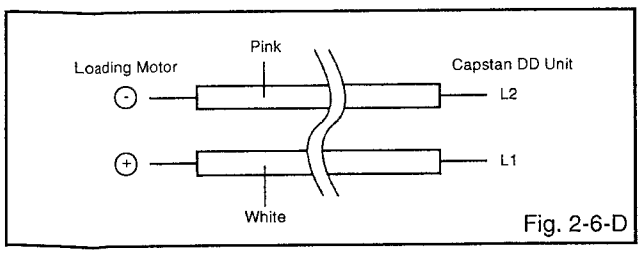


Fig. 2-6-D

2-7: TENSION 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.

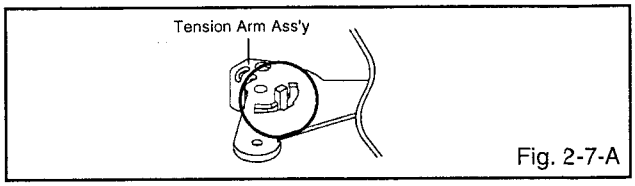


Fig. 2-7-A

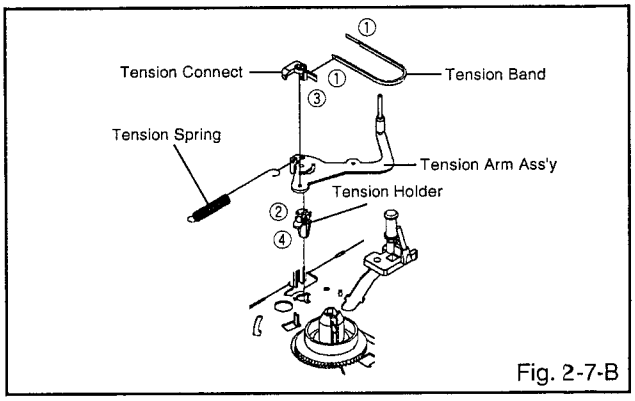


Fig. 2-7-B

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.

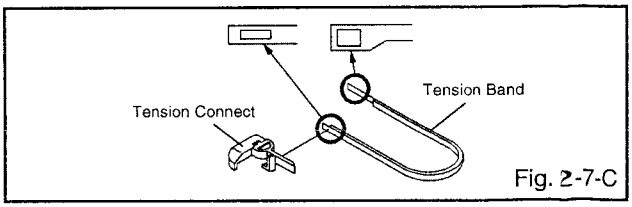


Fig. 2-7-C

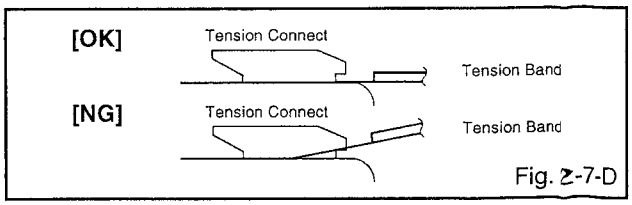


Fig. 2-7-D

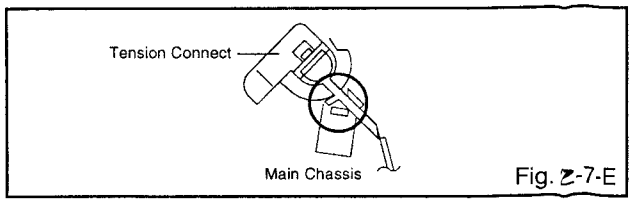


Fig. 2-7-E

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.

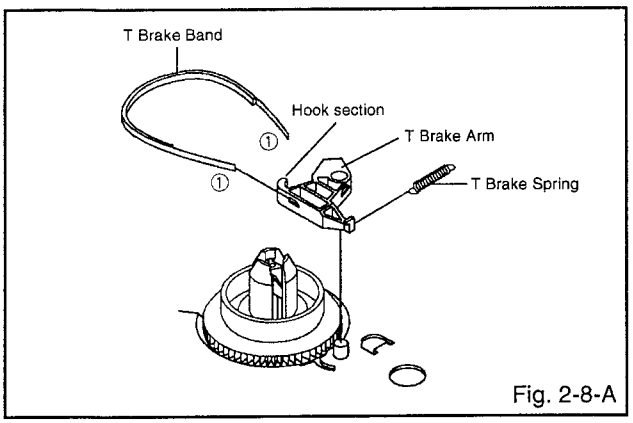


Fig. 2-8-A

NOTE

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

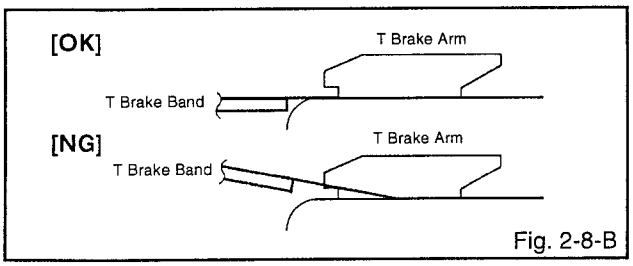


Fig. 2-8-B

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)**

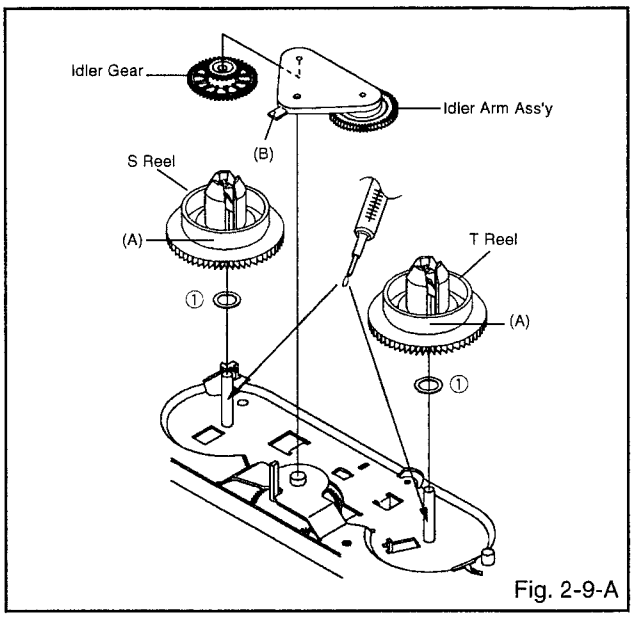


Fig. 2-9-A

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.

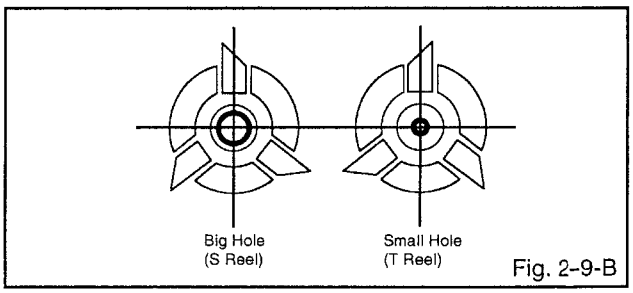


Fig. 2-9-B

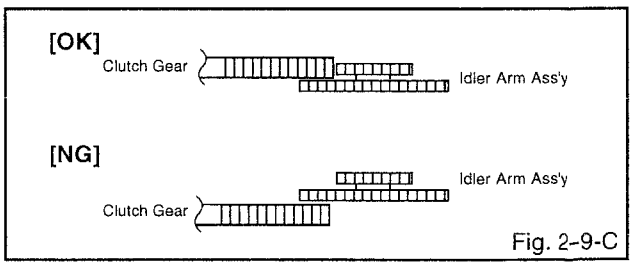


Fig. 2-9-C

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.

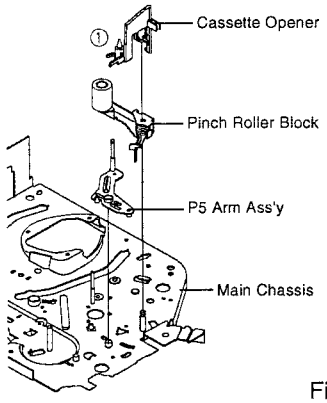


Fig. 2-10-A

NOTE

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

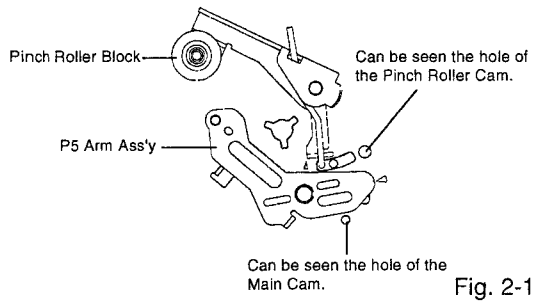


Fig. 2-10-B

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

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

NOTE

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

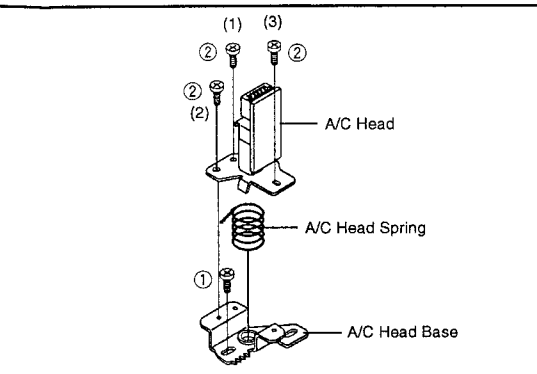


Fig. 2-11-A

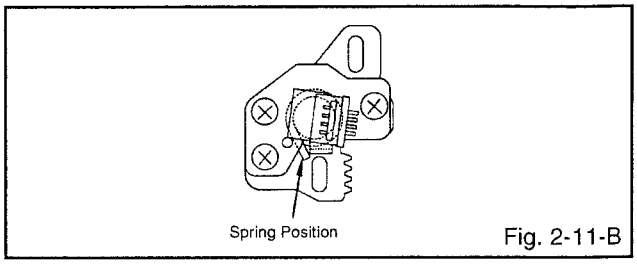


Fig. 2-11-B

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

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

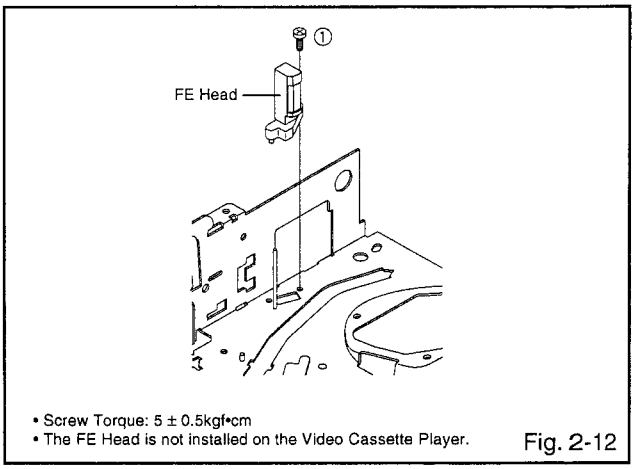


Fig. 2-12

2-13: AHC 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.

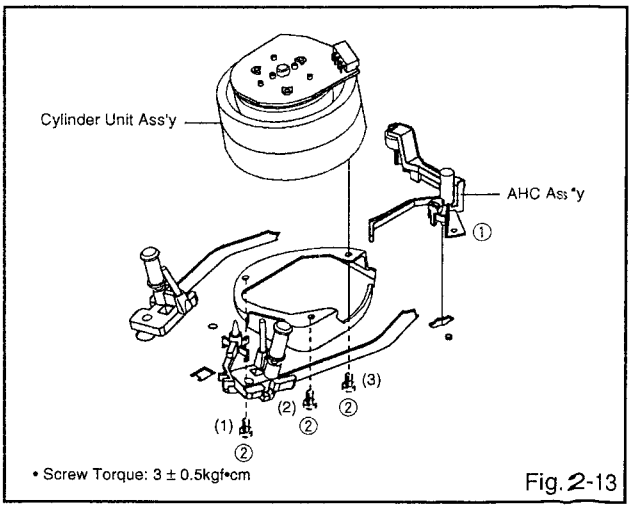


Fig. 2-13

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.

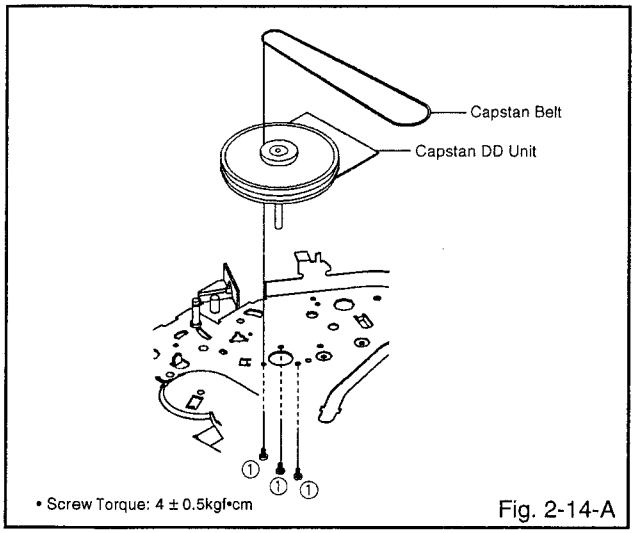


Fig. 2-14-A

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)**

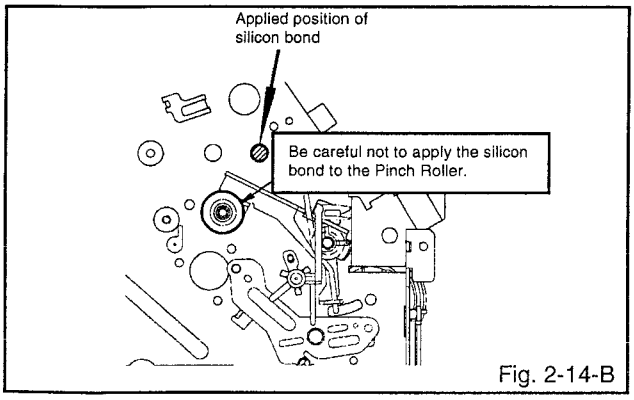


Fig. 2-14-B

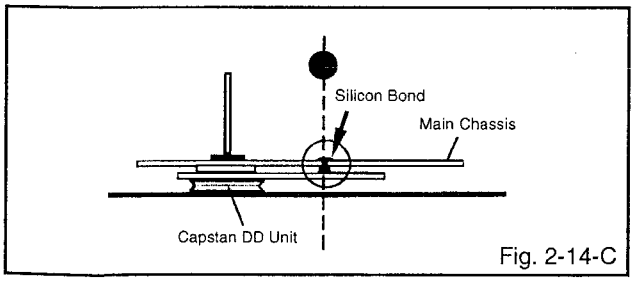


Fig. 2-14-C

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.

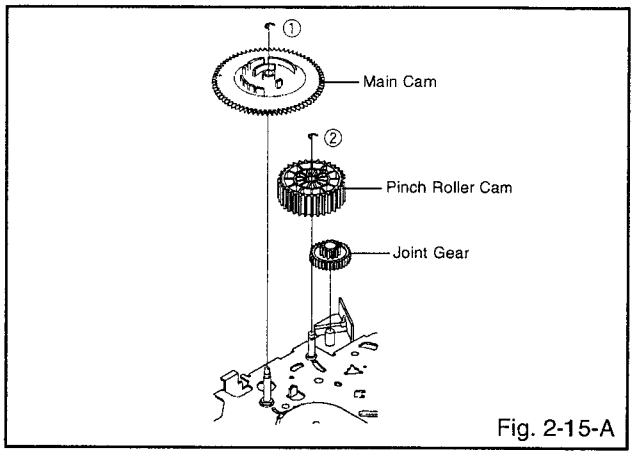


Fig. 2-15-A

NOTE

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

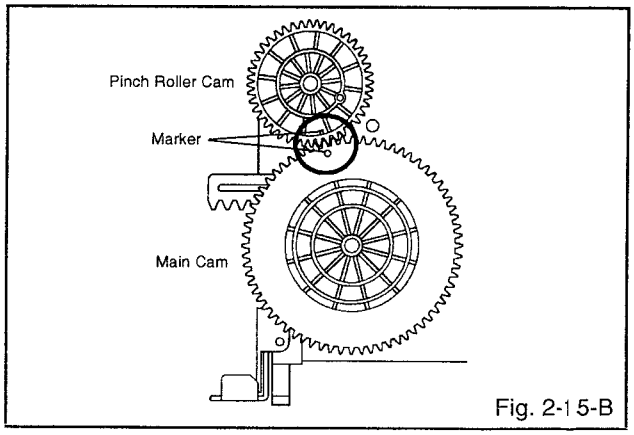


Fig. 2-15-B

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

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

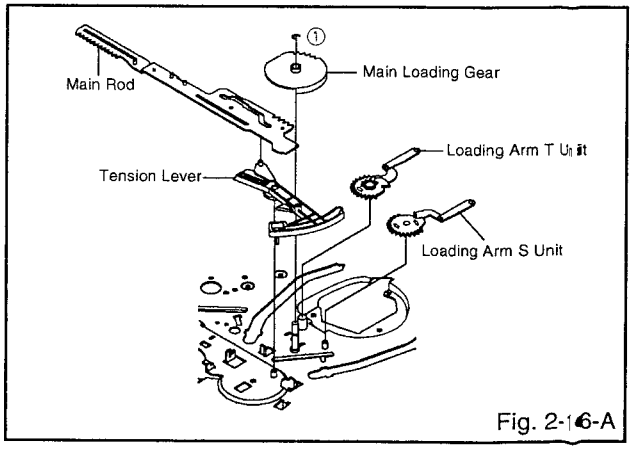


Fig. 2-16-A

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)**

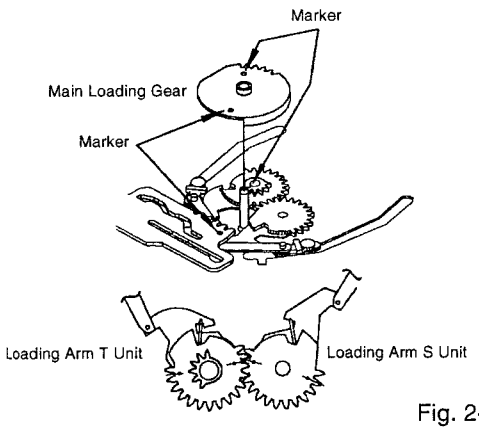


Fig. 2-16-B

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.

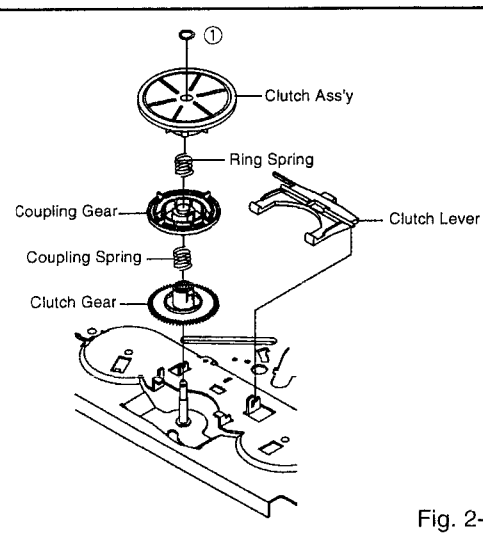


Fig. 2-17-A

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)**

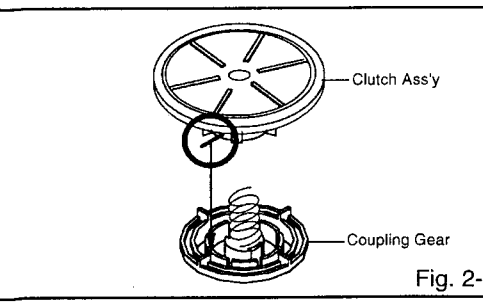


Fig. 2-17-B

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

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

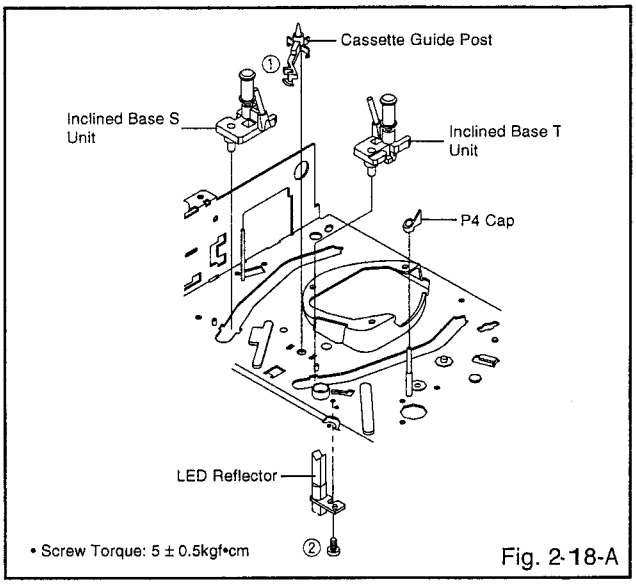


Fig. 2-18-A

NOTE

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

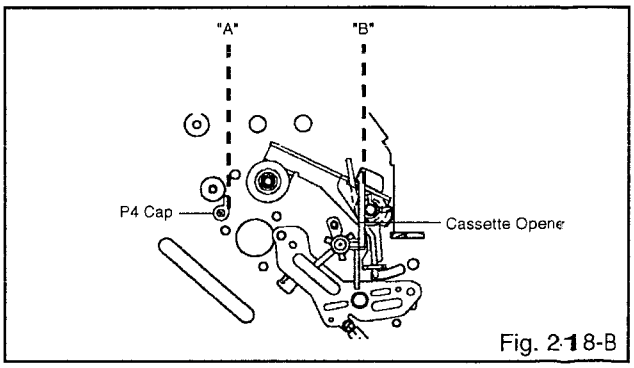


Fig. 2-18-B

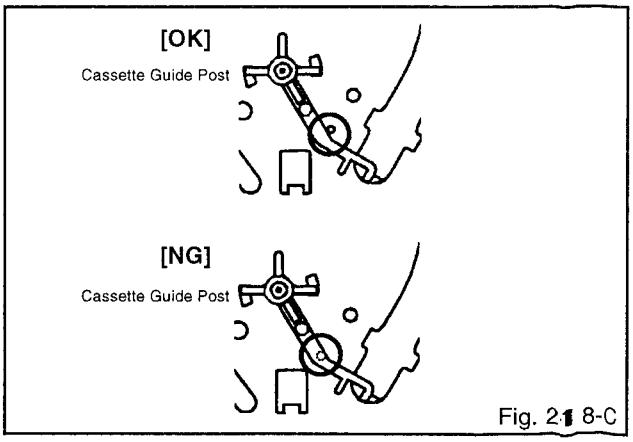


Fig. 2-18-C

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.

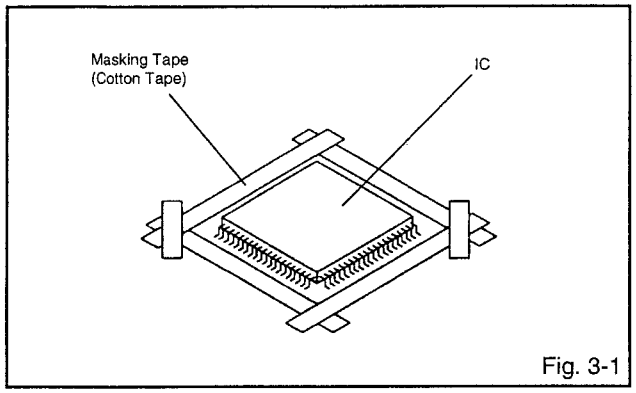


Fig. 3-1

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.

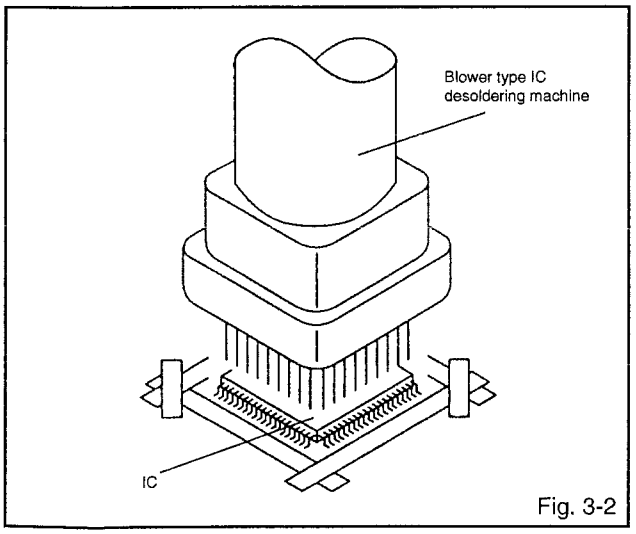


Fig. 3-2

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.

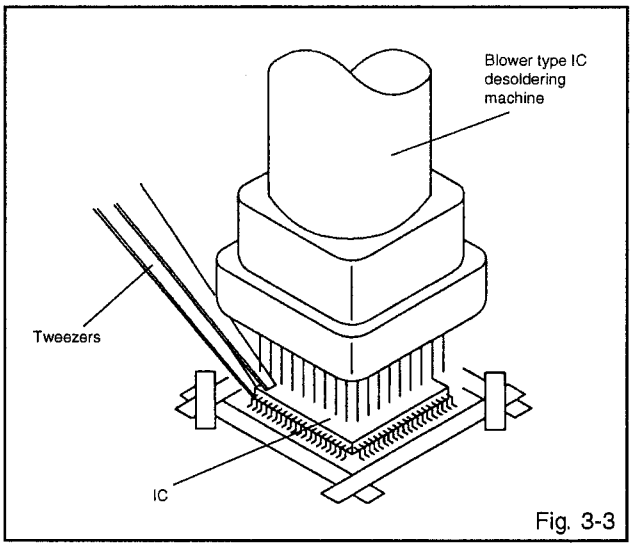


Fig. 3-3

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.

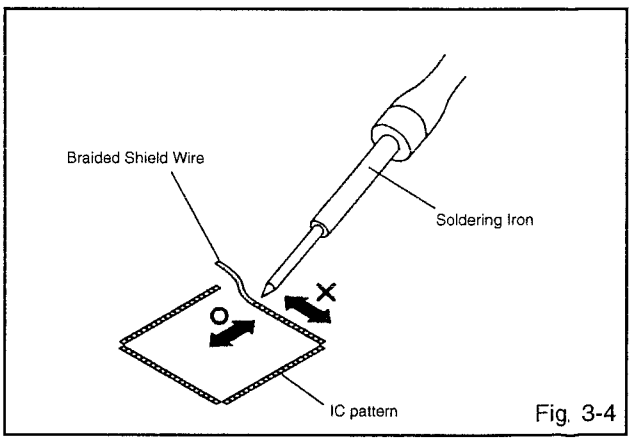


Fig. 3-4

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.)**

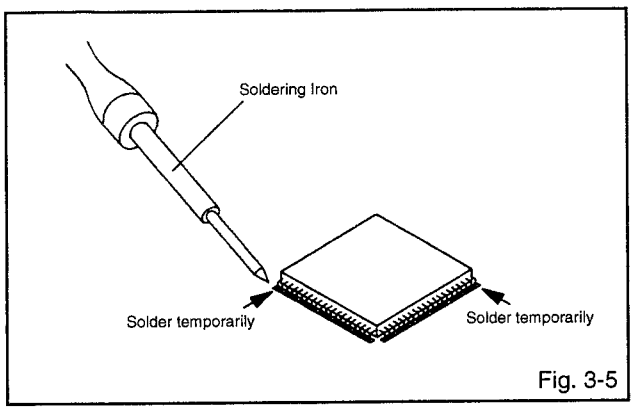


Fig. 3-5

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.)**

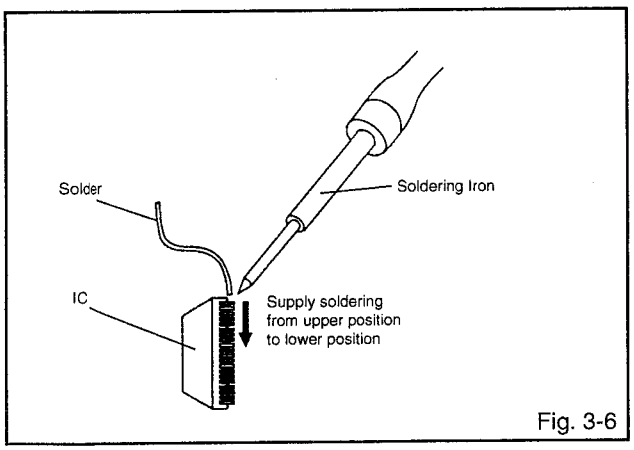


Fig. 3-6

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.

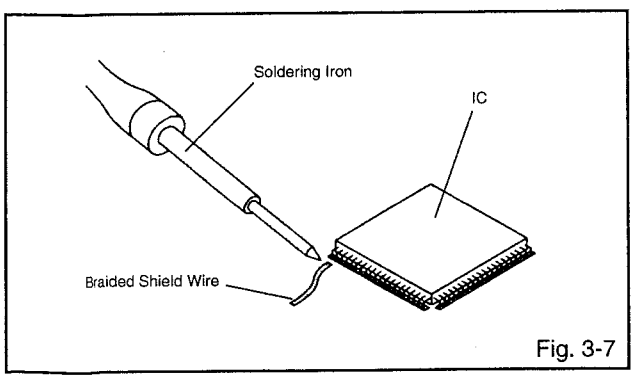


Fig. 3-7

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.)**

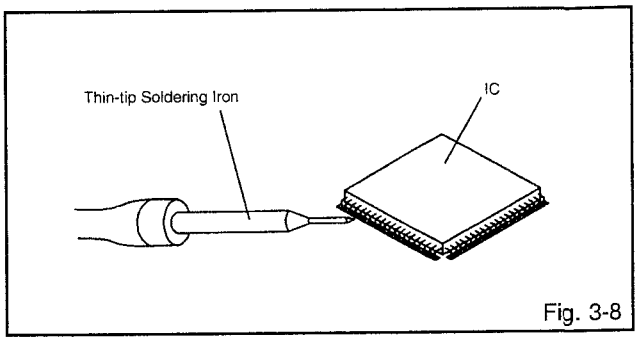


Fig. 3-8

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

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	**X'TAL**	:	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 FIP. 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.
VCR EJECT	REC	2	The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape. NOTE: It can also be done by making the short circuit between the test point of SERVICE and the GND.

Set Key	Remocon Key	Standard Time (seconds)	Operations
REC	4	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.
STOP	2	3	Releasing of PARENTAL LOCK. Refer to the "PARENTAL CONTROL - RATING LEVEL". NOTE: The function will only work without the setting of DVD disc at DVD mode.

Method	Operations
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	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

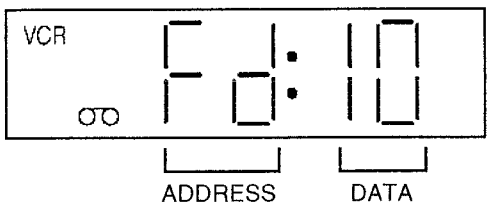
■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

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

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

1. Turn on the POWER.
2. While pressing the CH UP button on the set, press the FF button on the set for more than 2 seconds.
3. Adjust the ADDRESS to "FD" by TRACKING + or - button and read the DATA.
   (This DATA becomes the thousands digit and hundreds digit value of the following formula.)
4. Adjust the ADDRESS to "FE" by TRACKING + or - button and read the DATA.
   (This DATA becomes the tens digit and ones digit value of the following formula.)
5. After the confirmation of using hours, turn off the power.



(16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)

PREVENTIVE CHECKS AND SERVICE INTERVALS

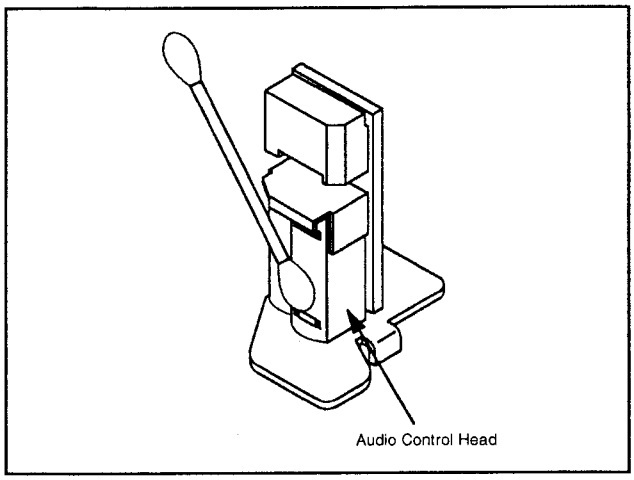
CLEANING

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

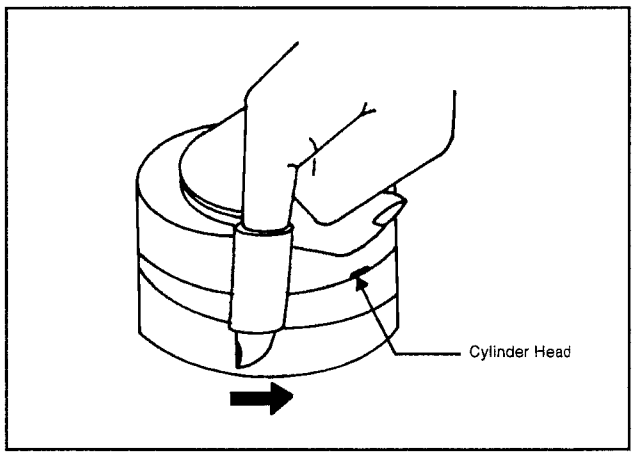
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

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 FD.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
B0	---	---	---	---	---	---	---	---	---	1D	42	00	44	00	02	38
C0	44	50	04	89	9F	82	18	07	00	B2	B2	9F	8E	8E	00	00
D0	00	08	42	30	60	56	65	5F	00	DB	20	F9	5F	00	00	00
E0	00	00	00	00	00	00	00	00	00	00	00	5F	00	DF	01	F9
F0	5F	00	00	00	21	01	80	3D	68	08	89	3A	90	---	---	---

Table 1

1. Turn on the POWER.
2. 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 FIP as Fig 1.

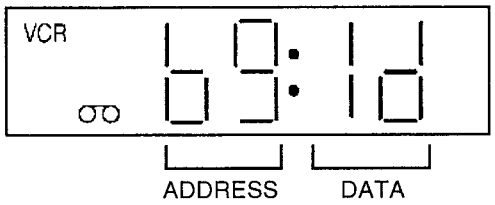
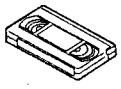
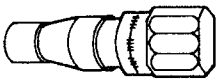
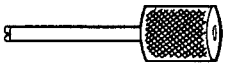
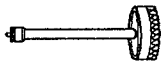
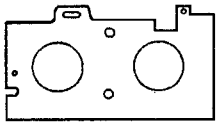
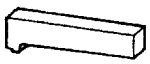
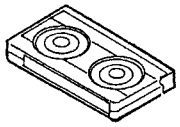
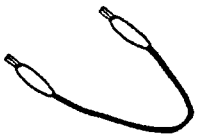
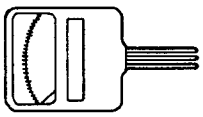


Fig. 1

3. ADDRESS is now selected and should "blink". Using the TRACKING + or - button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using TRACKING + or - button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. 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

(For 2 head 1 speed model, 4 head model) VHS Alignment Tape JG001E (VP1 S-LI6^3) JG001F (VP1 S-CO1^3) JG001R (VP1 S-LI6^{3}H) JG001U (VP1 S-X6^3) 	**(For 2 head 2 speed model)** VHS Alignment Tape JG001C (VP2 S-LI6^3) JG001D (VP2 S-CO1^3) JG001V (VP2 S-X6^3) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 
JG153 X Value Adjustment Screwdriver 	JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 
JG154 Cable 	Tentelometer 		

Ref. No.	Part No.	Parts Name	Remarks
JG001E	APJG001E00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 1 speed model, 4 head model)**
JG001F	APJG001F00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 1 speed model, 4 head model)**
JG001R	APJG001R00	VHS Alignment Tape	Hi-Fi Audio **(For Hi-Fi model)**
JG001U	APJG001U00	VHS Alignment Tape	X Value Adjustment **(For 2 head 1 speed model, 4 head model)**
JG001C	APJG001C00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 2 speed model)**
JG001D	APJG001D00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 2 speed model)**
JG001V	APJG001V00	VHS Alignment Tape	X Value Adjustment **(For 2 head 2 speed 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

1. Press both VCR EJECT button on the set and the REC button on the set for more than 2 seconds.
   (The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape.)
2. In case of using a cassette tape, press the EJECT button to insert or eject a cassette tape.
   Turn on the power and re-check the cable before checking the trouble points.

NOTE: It can also be done by making the short circuit between the **TP3001** and the **Ground** with the cable JG154.

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.

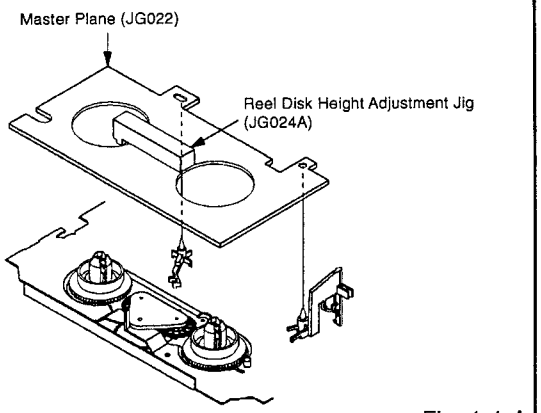


Fig. 1-1-A

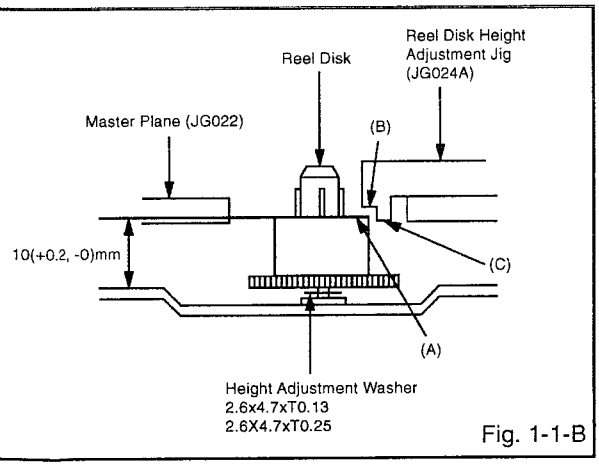


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

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

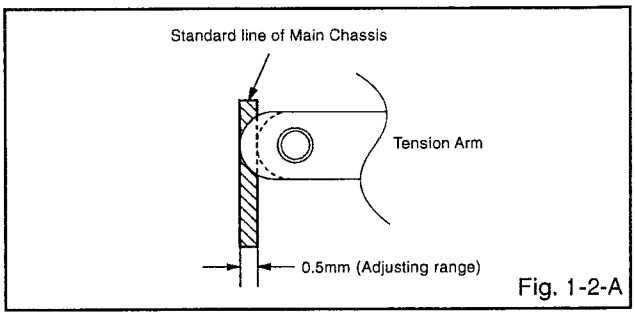


Fig. 1-2-A

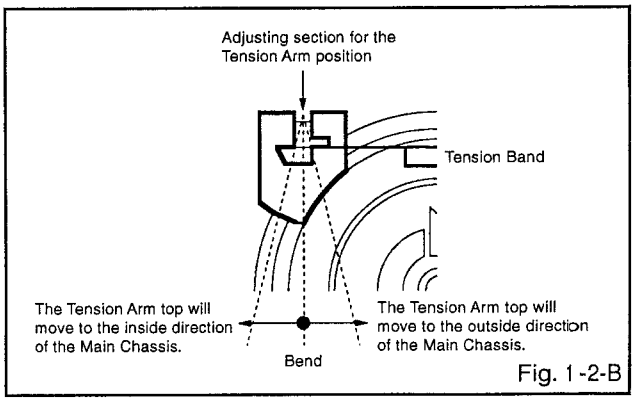


Fig. 1-2-B

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

1. Load a video tape (E-180) 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 ± 2gf 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.

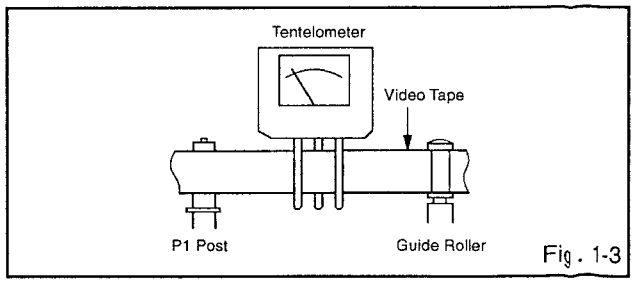


Fig. 1-3

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 Ass'y 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 Ass'y 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.

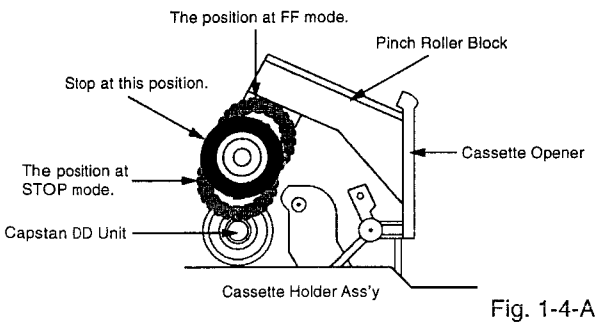


Fig. 1-4-A

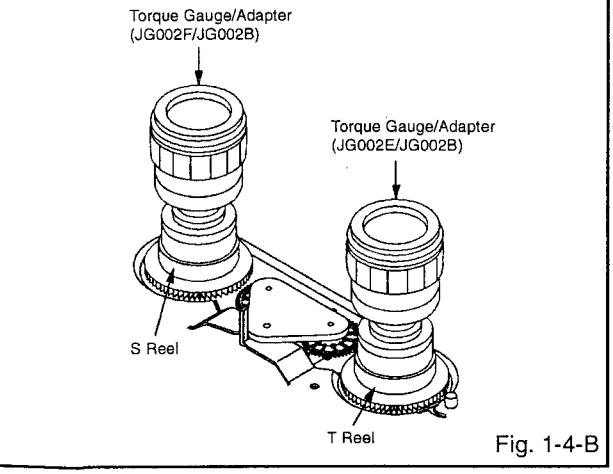


Fig. 1-4-B

NOTE

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

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y 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 **(JG001C or JG001E)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP103 (Envelope)** and CH-2 to **TP102 (SW Pulse).**
3. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
4. 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.
5. 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).
6. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

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

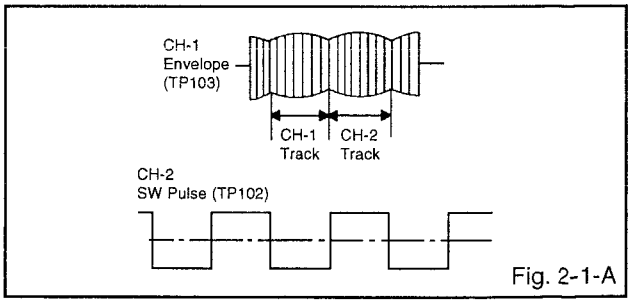


Fig. 2-1-A

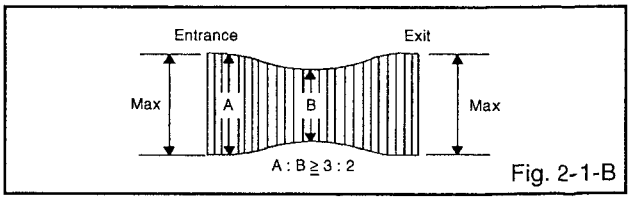


Fig. 2-1-B

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 **(JG001C or JG001E). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A.**
   a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C.**
   c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

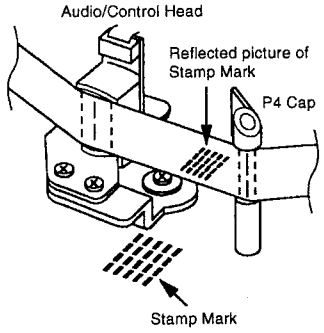


Fig. 2-2-A

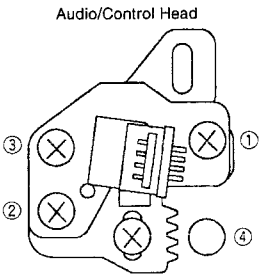


Fig. 2-2-B

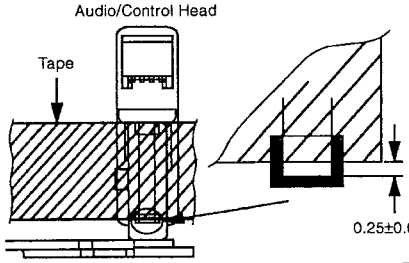


Fig. 2-2-C

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

1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP102**, CH-2 to **TP103** and CH-3 to **pin 19 of J8004.**
6. Playback the VHS Alignment Tape **(JG001U or JG001V). (Refer to SERVICING FIXTURE AND TOOLS)**
7. 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.**

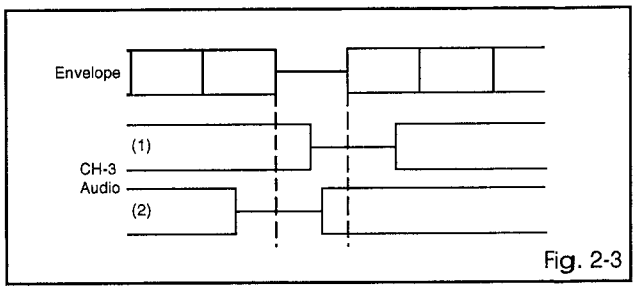


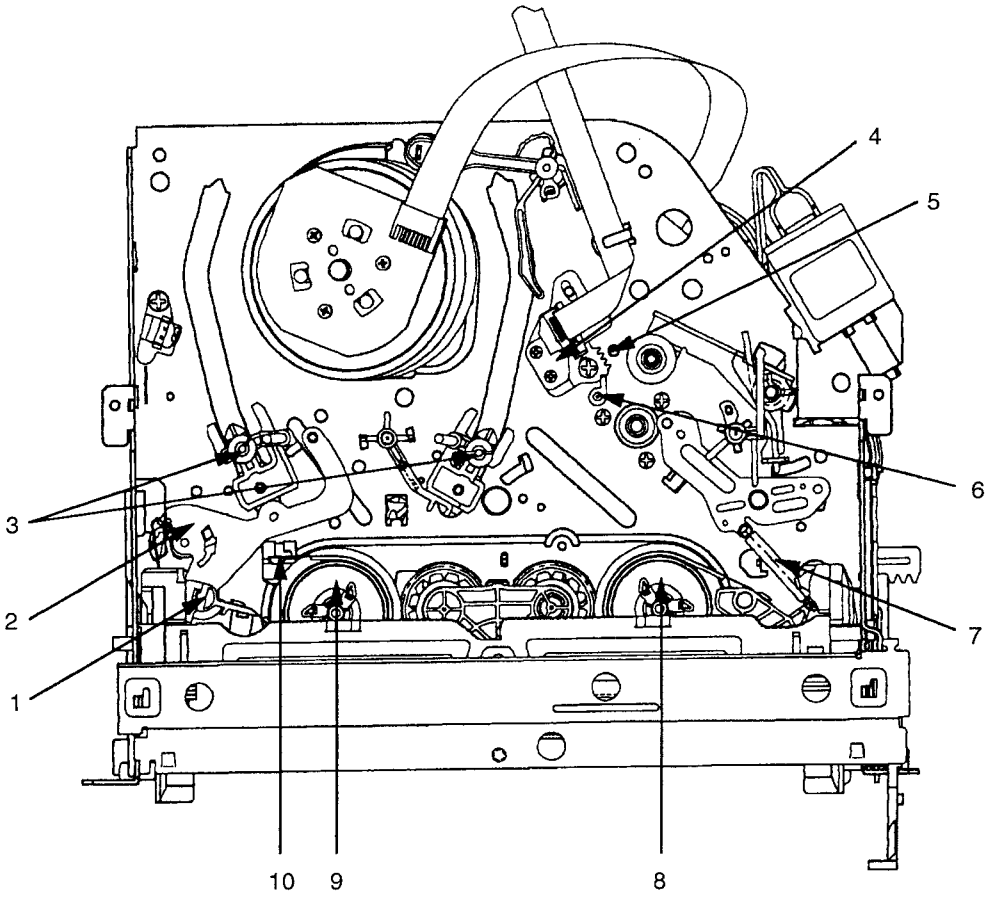
Fig. 2-3

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

1. Connect CH-1 of the oscilloscope to **TP103** and CH-2 to the **pin 19 of J8004.**
2. Playback the VHS Alignment Tape **(JG001R). (Refer to SERVICING FIXTURE AND TOOLS)**
3. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
4. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. 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
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position

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 **(JG001E)**

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP102** and CH-2 to **pin 19 of J8004.**
2. Playback the alignment tape. **(JG001E)**
3. Press both CH UP button on the set and the STOP button on the set for more than 2 seconds.

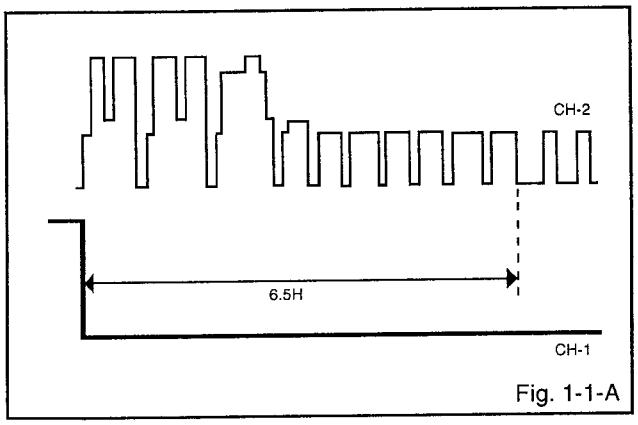


Fig. 1-1-A

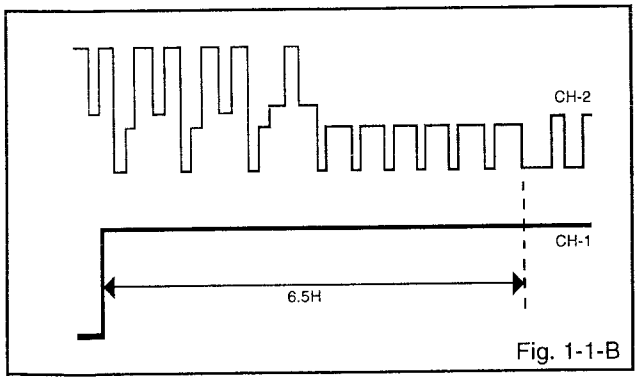
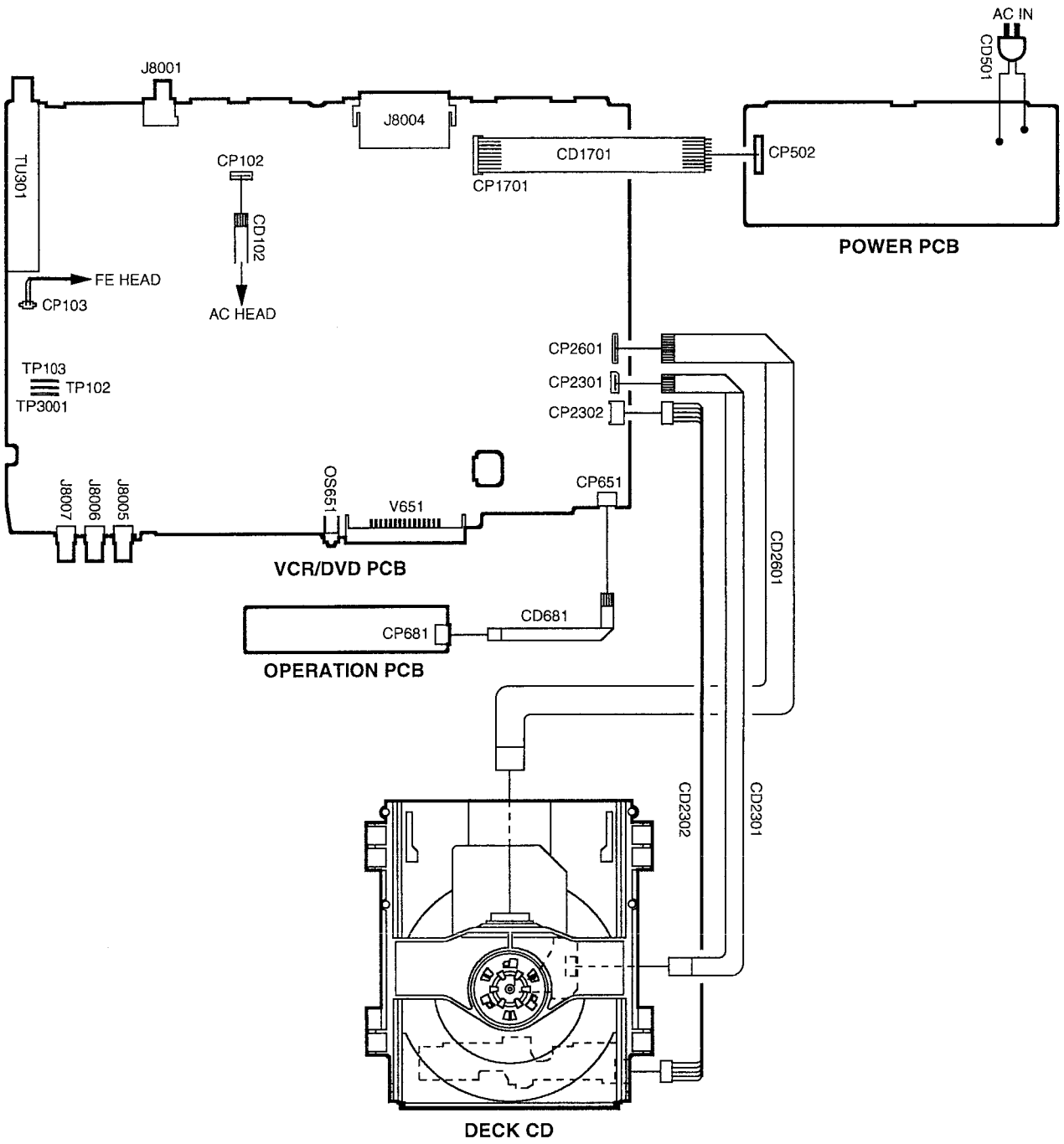


Fig. 1-1-B

ELECTRICAL ADJUSTMENTS

2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



Zentralwerkstatt und
Ersatzteildepot
für ORION-Produkte

Schwalbe
Service & Versand GmbH

Postfach 10 10 26
63264 Dreieich
Max-Planck-Str. 20
63303 Dreieich

Ersatzteil-Bestellung
Tel.: (06103) 39 99-95 Fax.: (06103) 39 99-79

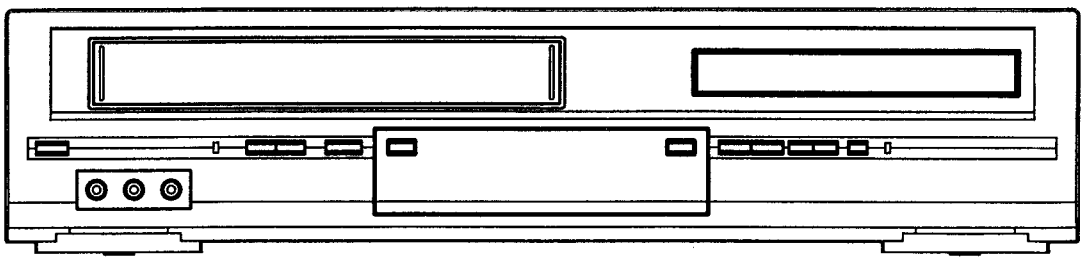
SERVICE MANUAL

Teil 2

ORION

DVD/VR-2961 / 2963 SI

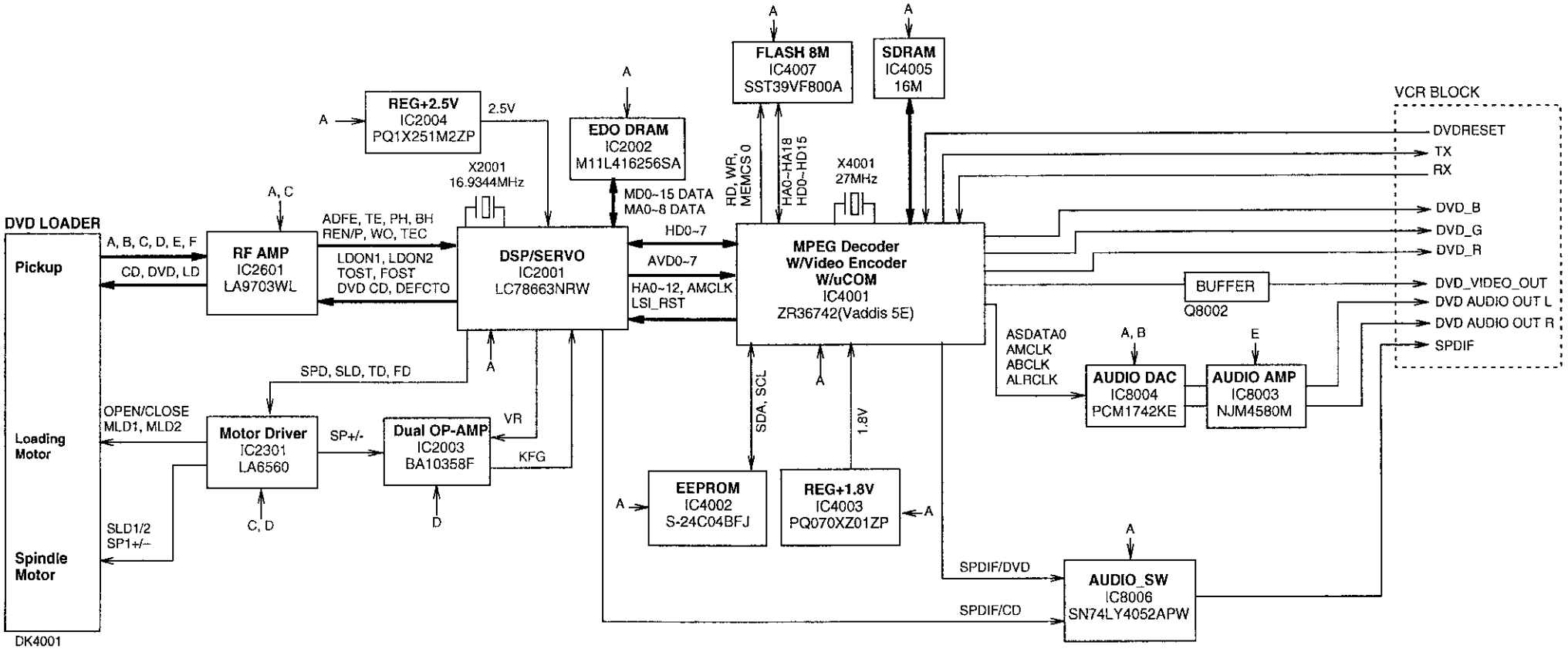
DVD VIDEO PLAYER & VHS VIDEO CASSETTE RECORDER



ORIGINAL CHASSIS CODE A

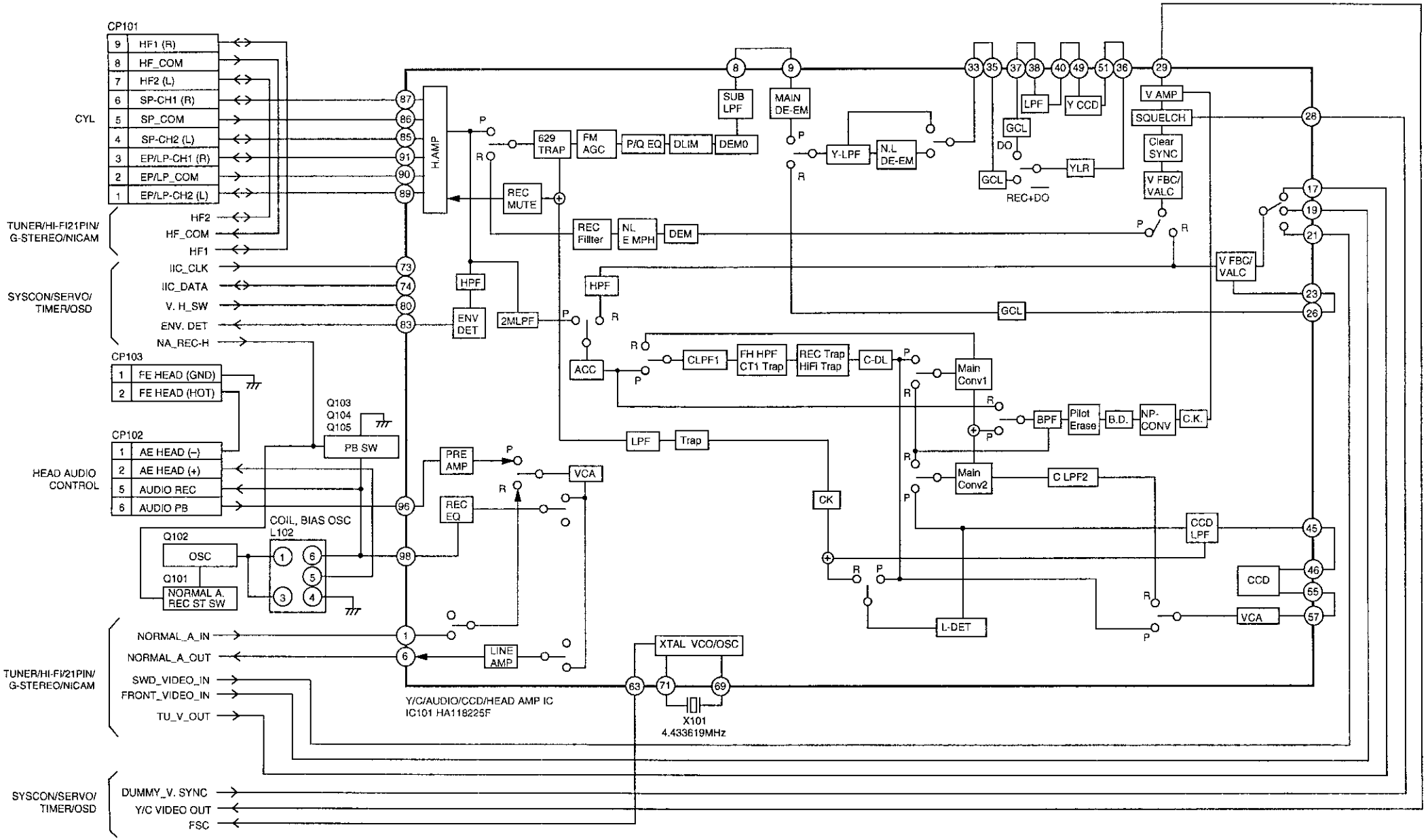
Best. Nr. SM2963-2

DVD BLOCK DIAGRAM

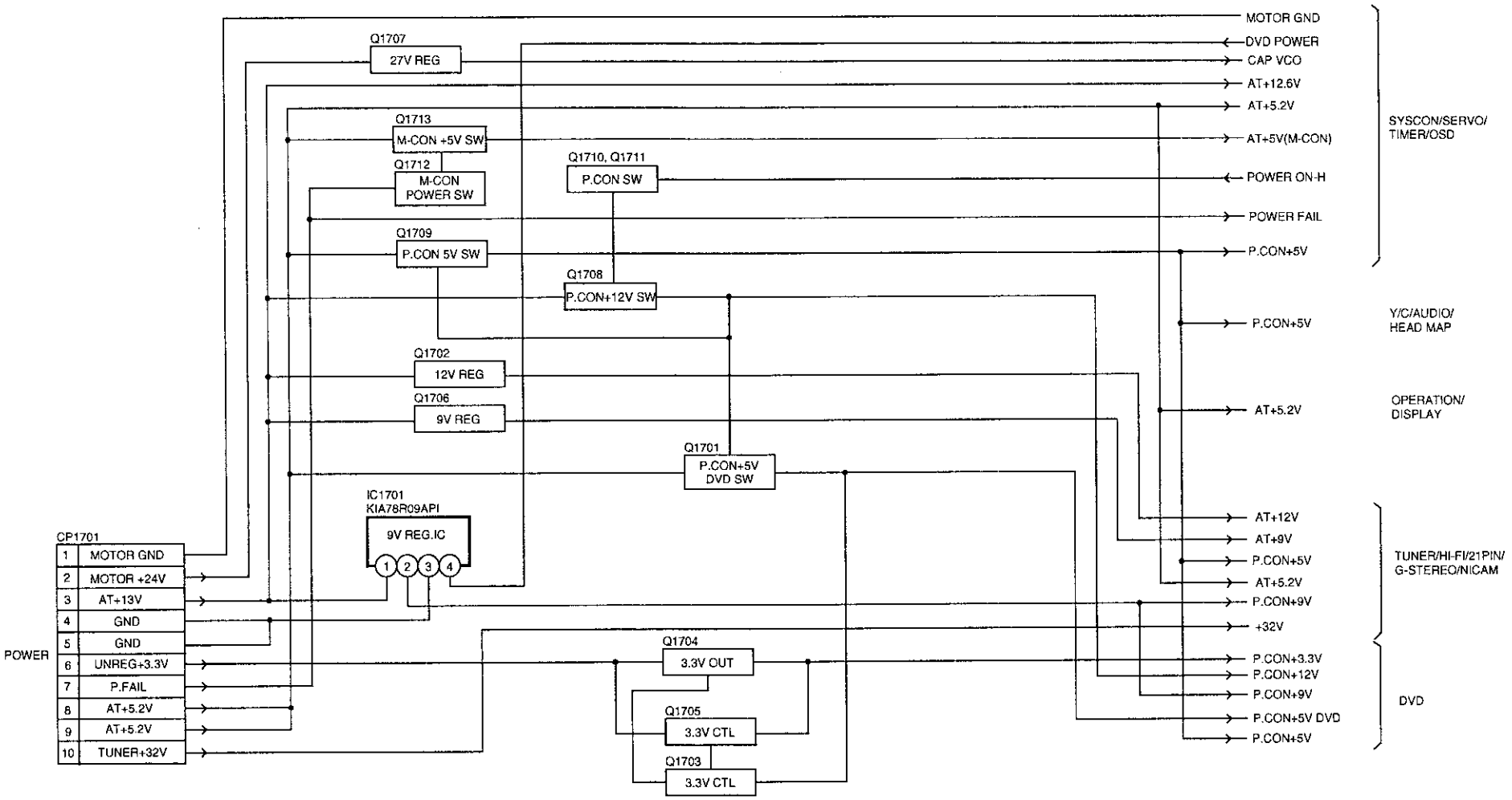


A P.CON+3.3V
B P.CON+5V
C P.CON+A5V
D P.CON+9V_DVD
E P.CON+12V

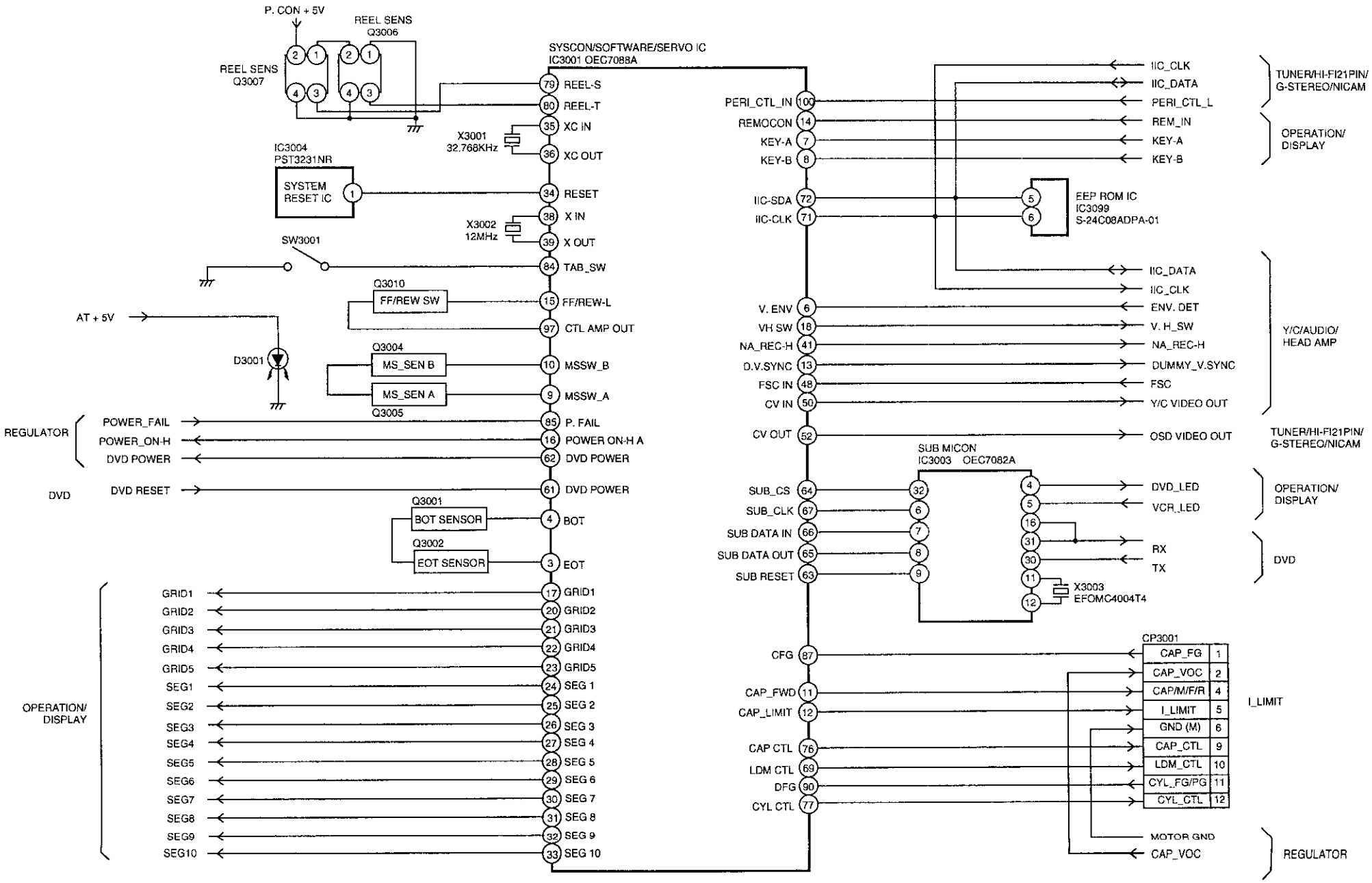
Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM



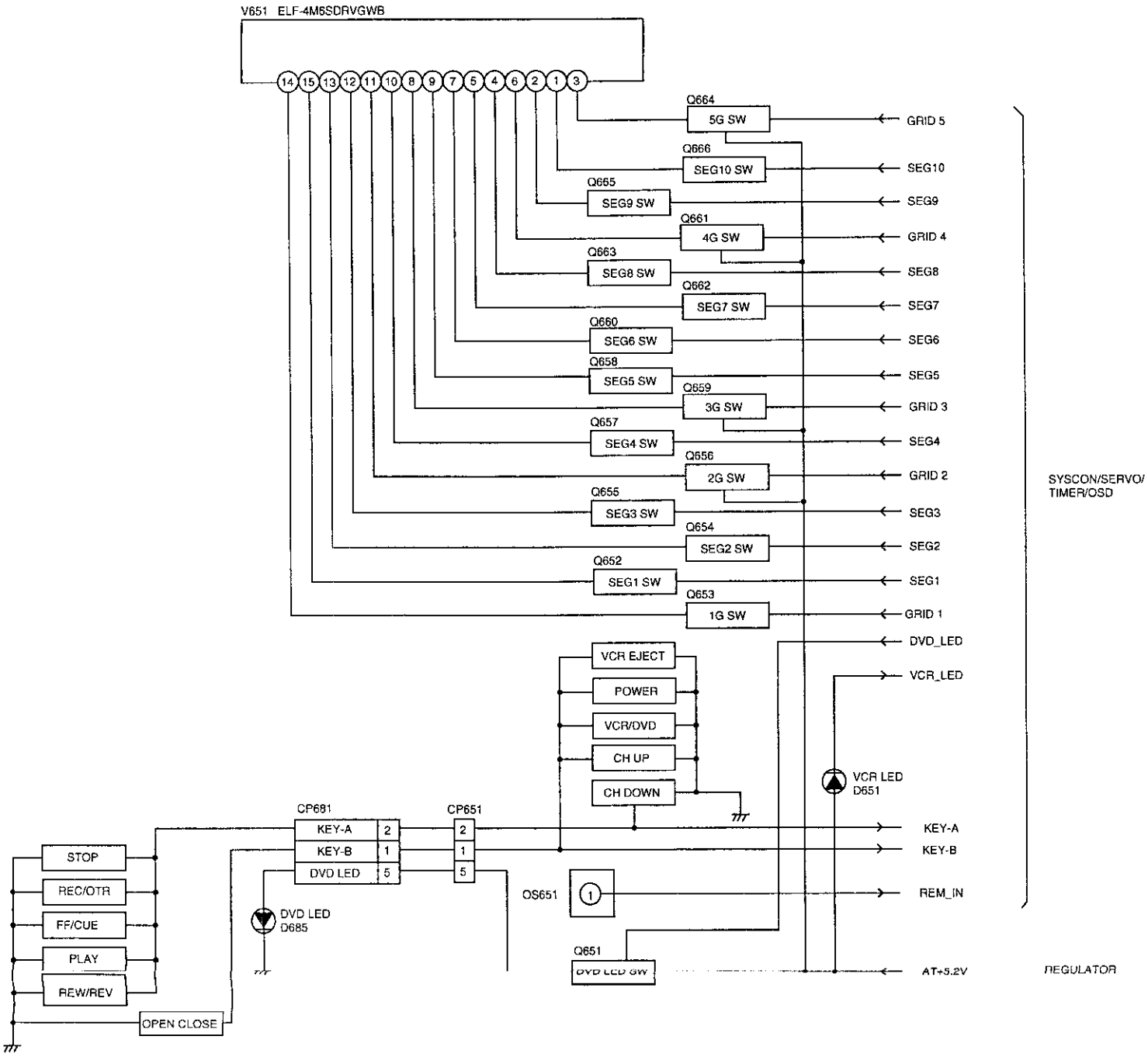
REGULATOR BLOCK DIAGRAM



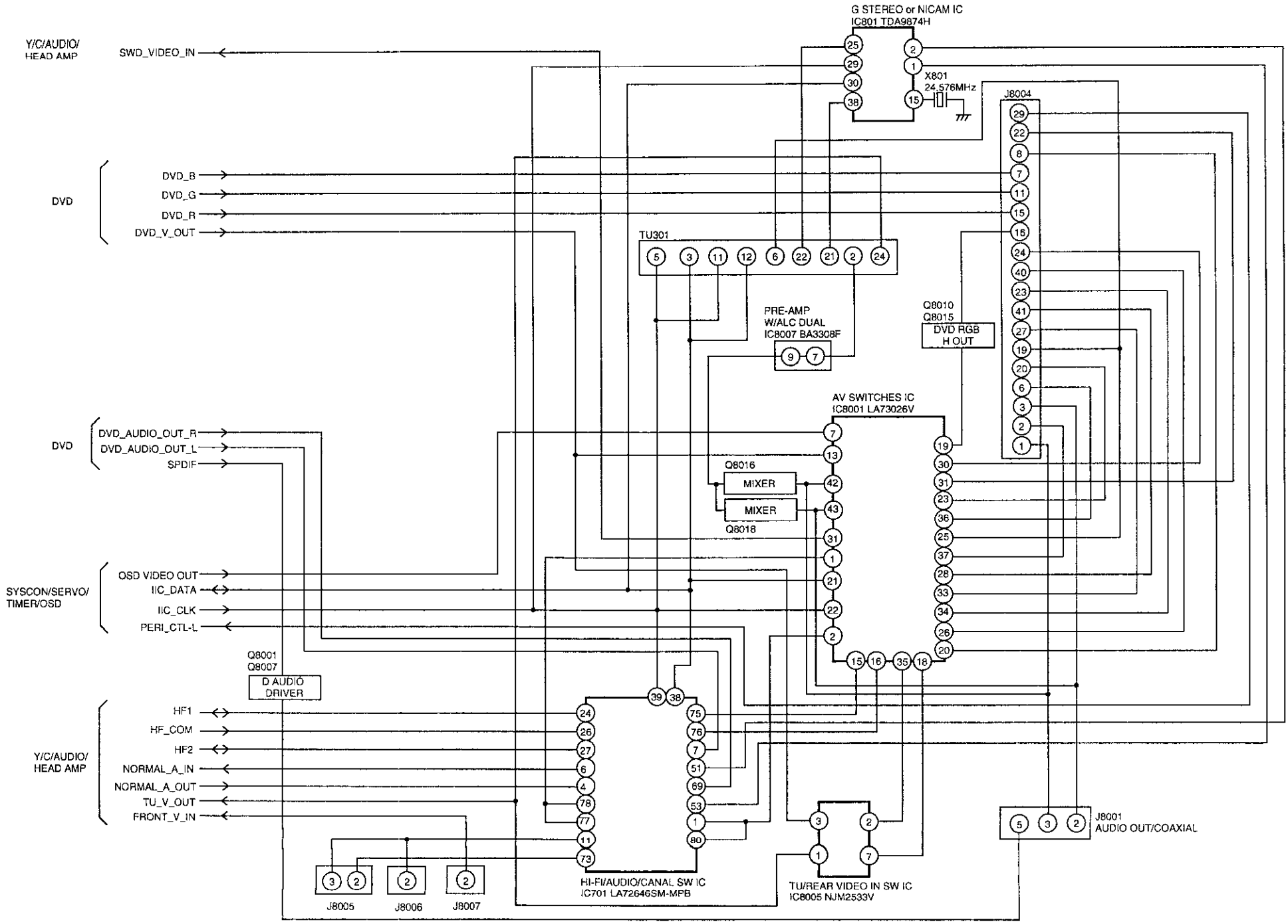
SYSTEM CONTROL/SERVO/TIMER/OSD BLOCK DIAGRAM



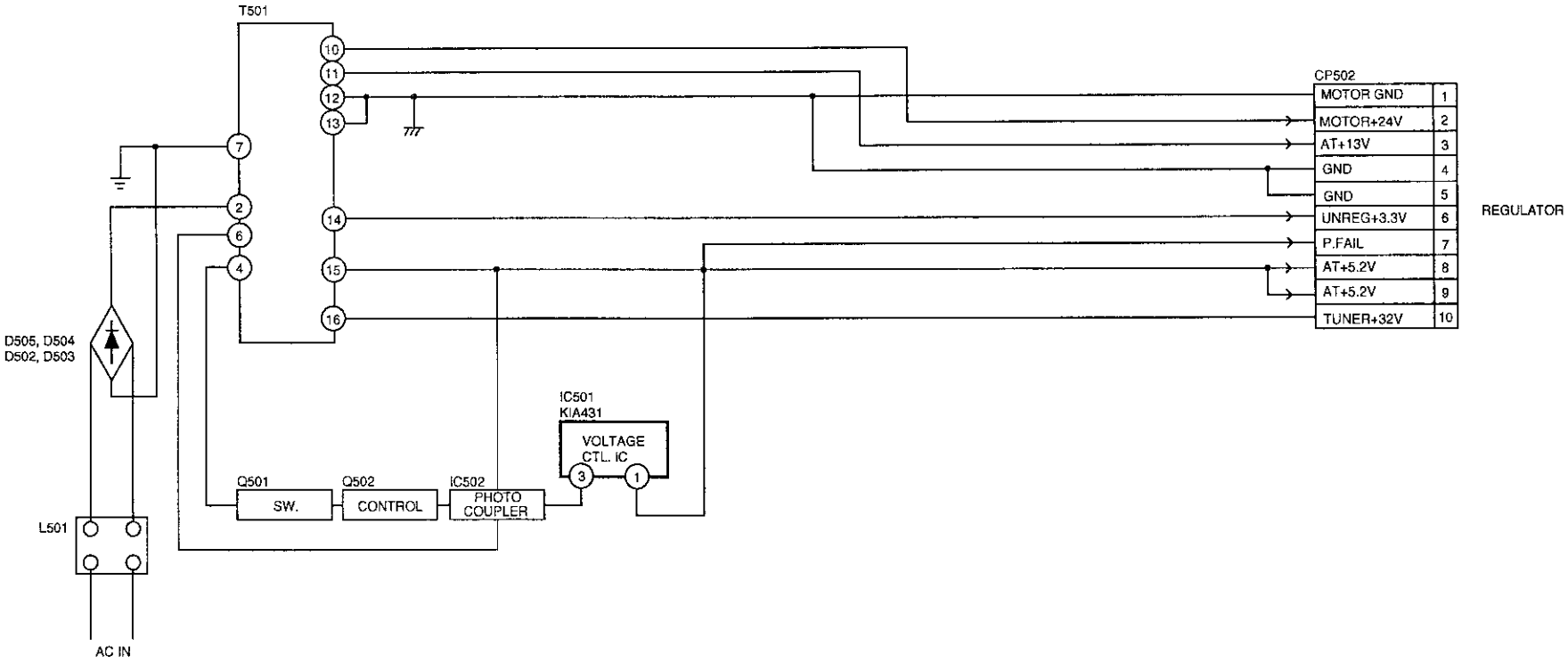
OPERATION/DISPLAY BLOCK DIAGRAM



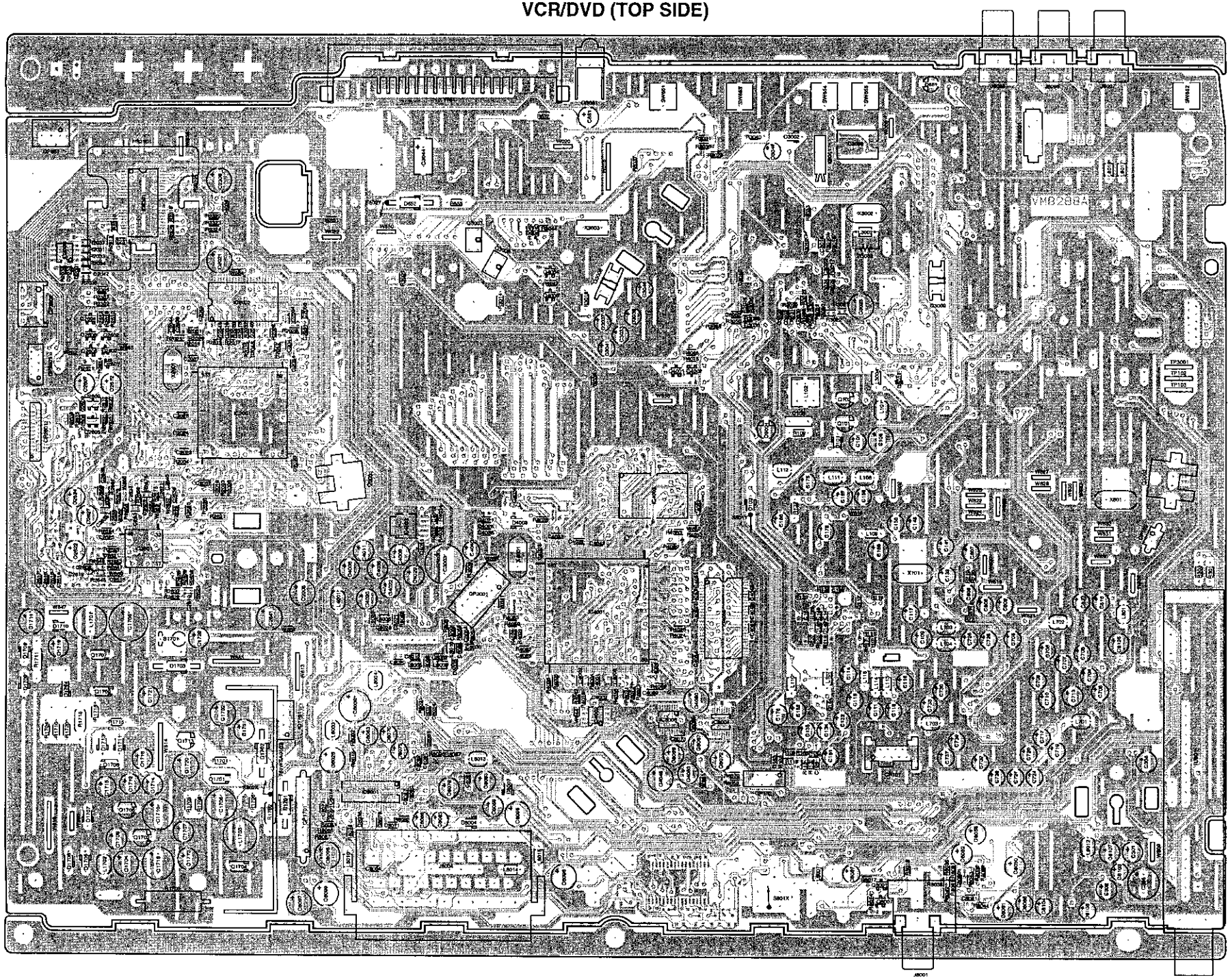
TUNER/Hi-Fi/21PIN/G-STEREO/NICAM BLOCK DIAGRAM



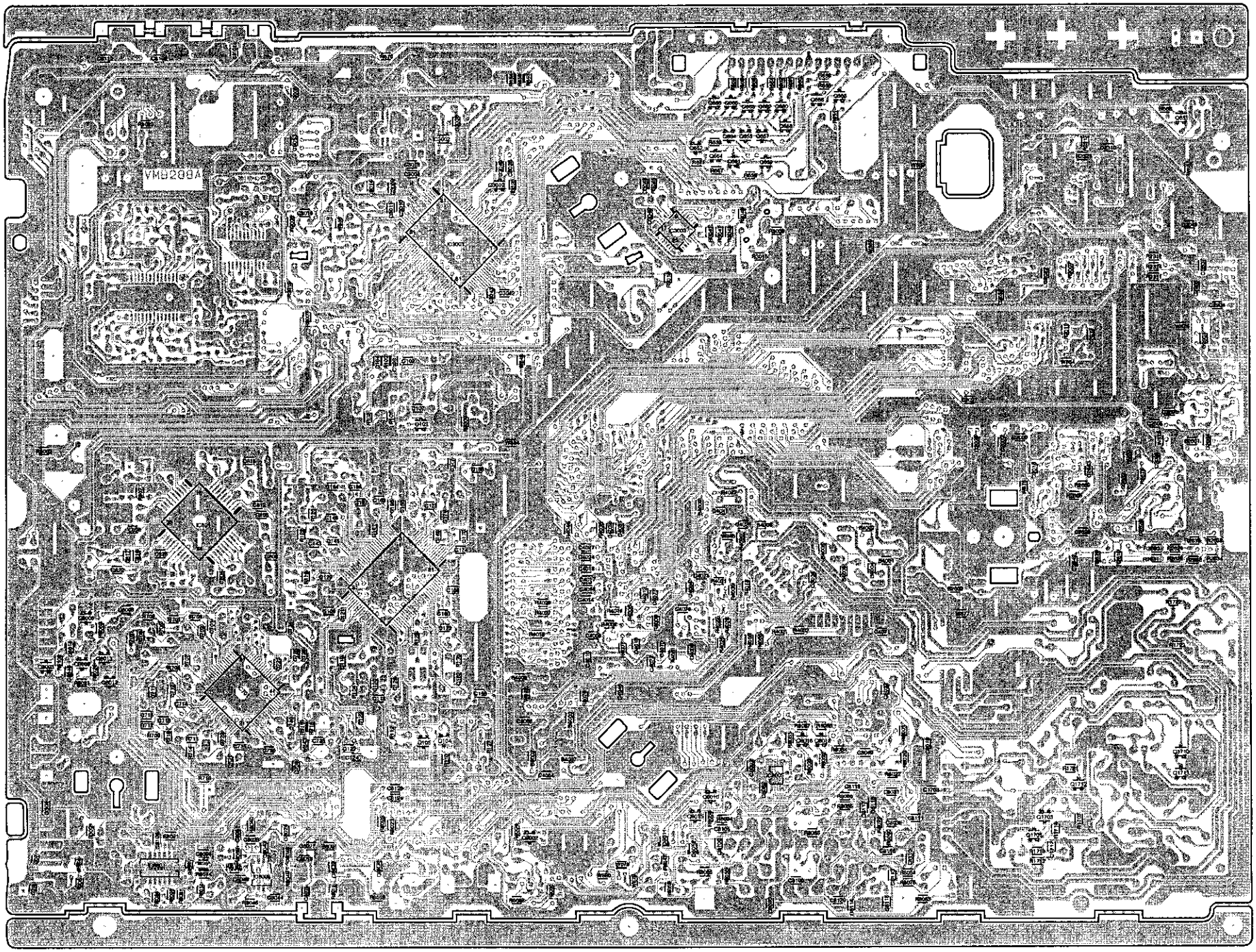
POWER BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
VCR/DVD (TOP SIDE)

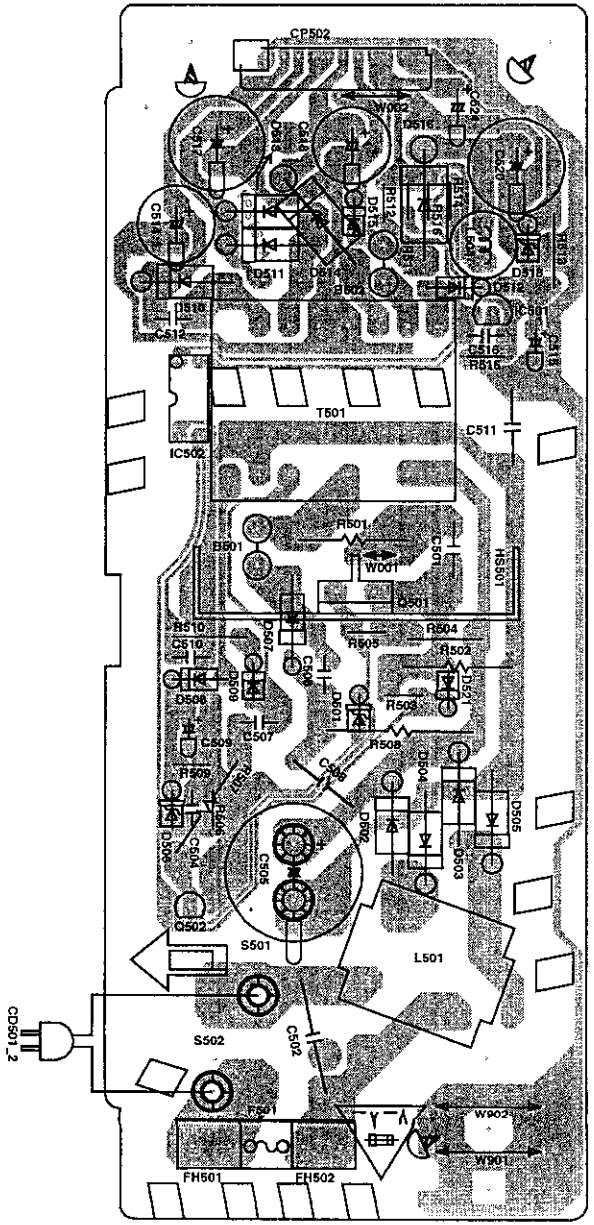


PRINTED CIRCUIT BOARDS
VCR/DVD (BOTTOM SIDE)

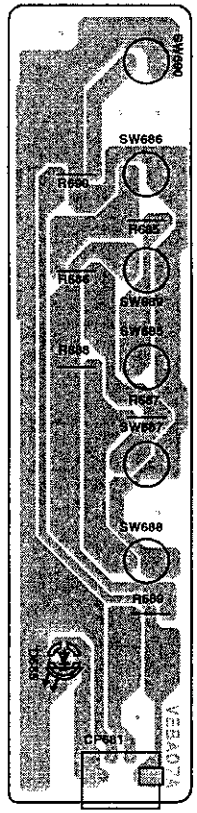


PRINTED CIRCUIT BOARDS

POWER
SOLDER SIDE



OPERATION
SOLDER SIDE



SYSCON/SERVO/TIMER/VPS SCHEMATIC DIAGRAM (VCR/DVD PCB)

FROM/TO REGULATOR

GND
MOTOR_GND
POWER_ON-H
POWER_FAIL
DVD_POWER
AT+5.2V
AT-5V(M-CON)
P CON-5V
CAP_VCC
AT+12.6V

FROM/TO DECK

CP3001
TMC_J12P-B2

1	CAP_FG
2	CAP_VCO
3	VCC
4	CAP/M/F/R
5	I LIMIT
6	GND[M]
7	GND
8	LD/CY_VCO
9	CAP_CTL
10	LDM_CTL
11	CYL_FG/PG
12	CYL_CTL

SYSTEM RESET IC IC3002 PST3231NR

SYSCON/SOFTWARE/SERVO IC
IC3001
OEC7088A

SUB MICON IC
IC3003
OEC7082A

MS_SEN A Q3006 RPI-352C40N
MS_SEN B Q3003 RPI-352C40N
REEL SENSOR-T Q3008 RPI-303
REEL SENSOR-S Q3009 RPI-303
BOT SENSOR Q3001 ST-3041
EOT SENSOR Q3002 ST-3041
CENTER LED D3001 LTE-3271T-012A-O
REC SAFETY SW SW3001 LSA-1144EAU
EEP ROM IC IC3099 S-24C08ADPA-01

FROM/TO Y/C/AUDIO/H.AMP

V.H_SW
NA_REC-H
DUMMY_V.SYNC
SYNC
A_MUTE-H
IIC_DATA
IIC_CLK
ENV.DET
CTL+
CTL-
Y/C_VIDEO_OUT
FSC
S_DET_OUT
MESECAM-H

FROM/TO 21PIN/TUNER

PERI_CTL_IN
IIC_CLK
IIC_DATA
OSD_VIDEO_OUT
AFT_S_CURVE

FROM/TO OPERATION/DISPLAY

SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
SEG7
SEG8
SEG9
SEG10
GRID1
GRID2
GRID3
GRID4
GRID5
KEY-A
KEY-B
REMOCON
VCR_LED
DVD_LED

FROM/TO HI-FI/DEMODULATOR

HIFI_REC_MUTE
HIFI_ENV.DET
HIFI_H.SW
IIC_CLK
IIC_DATA
A_MUTE-H

FROM/TO MPEG/MICON

DVD_RESET
TX
RX

FROM/TO AUDIO/VIDEO

DVD_MUTE

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

NOTE:THE DC VOLTAGE 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.

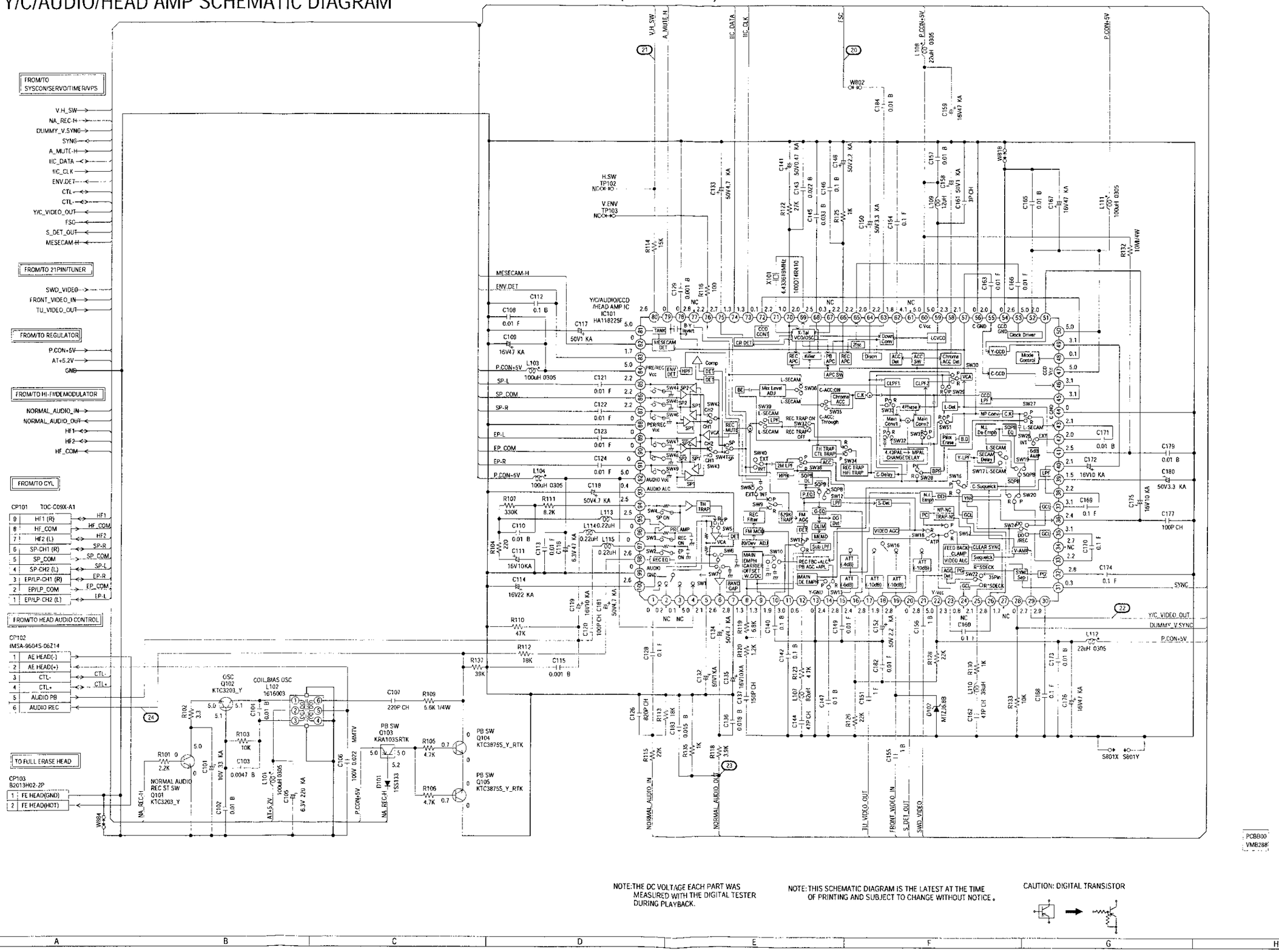
PCBB00
VMB288

G-3

G-4

Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

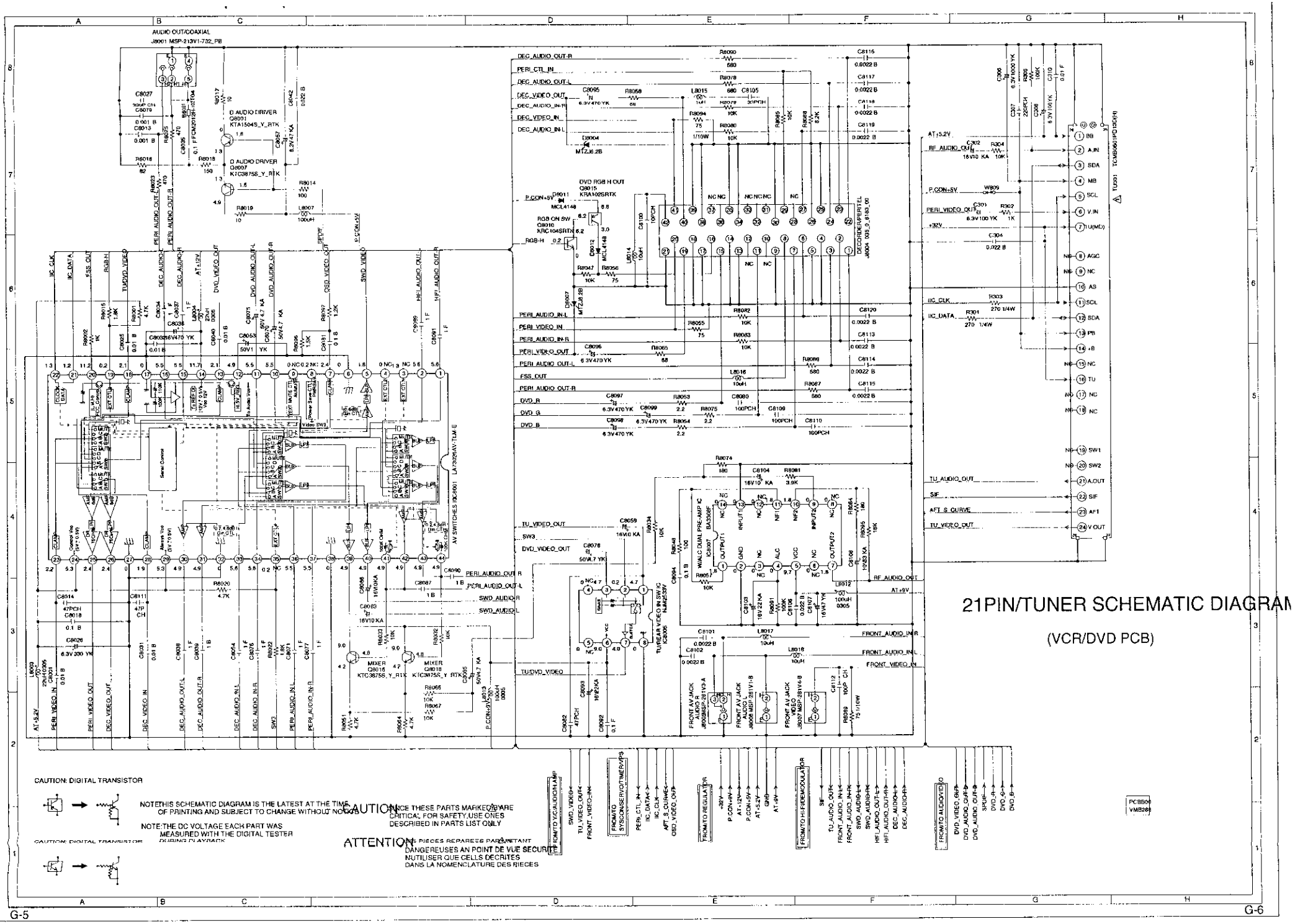
(VCR/DVD PCB)



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

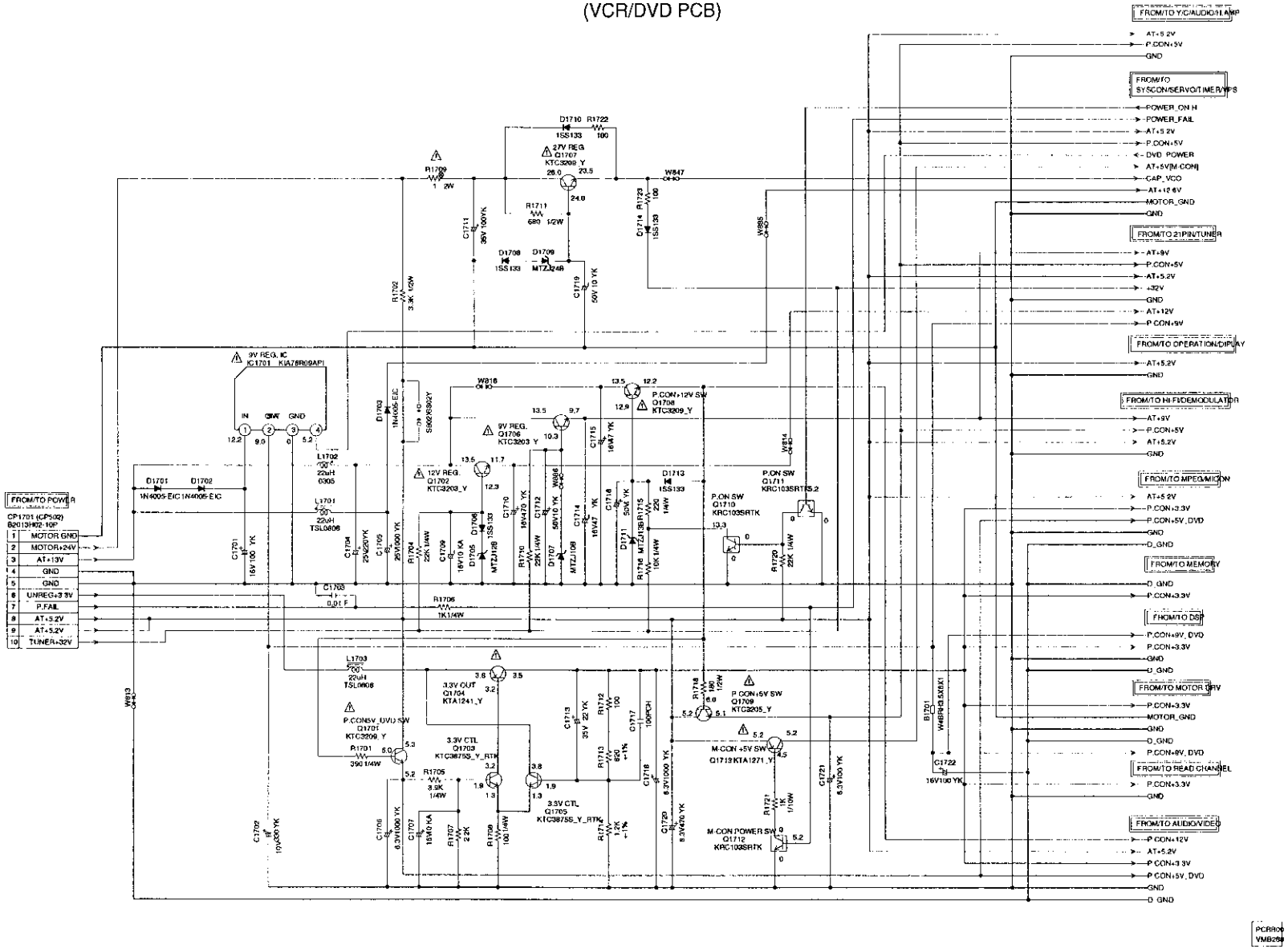
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR


21PIN/TUNER SCHEMATIC DIAGRAM
(VCR/DVD PCB)
CAUTION: DIGITAL TRANSISTOR
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK
ATTENTION: SINCE THESE PARTS MARKED ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY
ATTENTION: POUR DES PIECES REPEREES PARTICULIEREMENT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES RIECES
G-5
G-6

REGULATOR SCHEMATIC DIAGRAM

(VCR/DVD PCB)

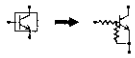


NOTE:THE DC VOLTAGE EACH PART NO. IN THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.
FOR PRINTING AND SUBJECT TO CHANGE WITHOLD NOTICE

ATTENTION
LES PIECES REPAREES PARMI CELLES DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES RIECES

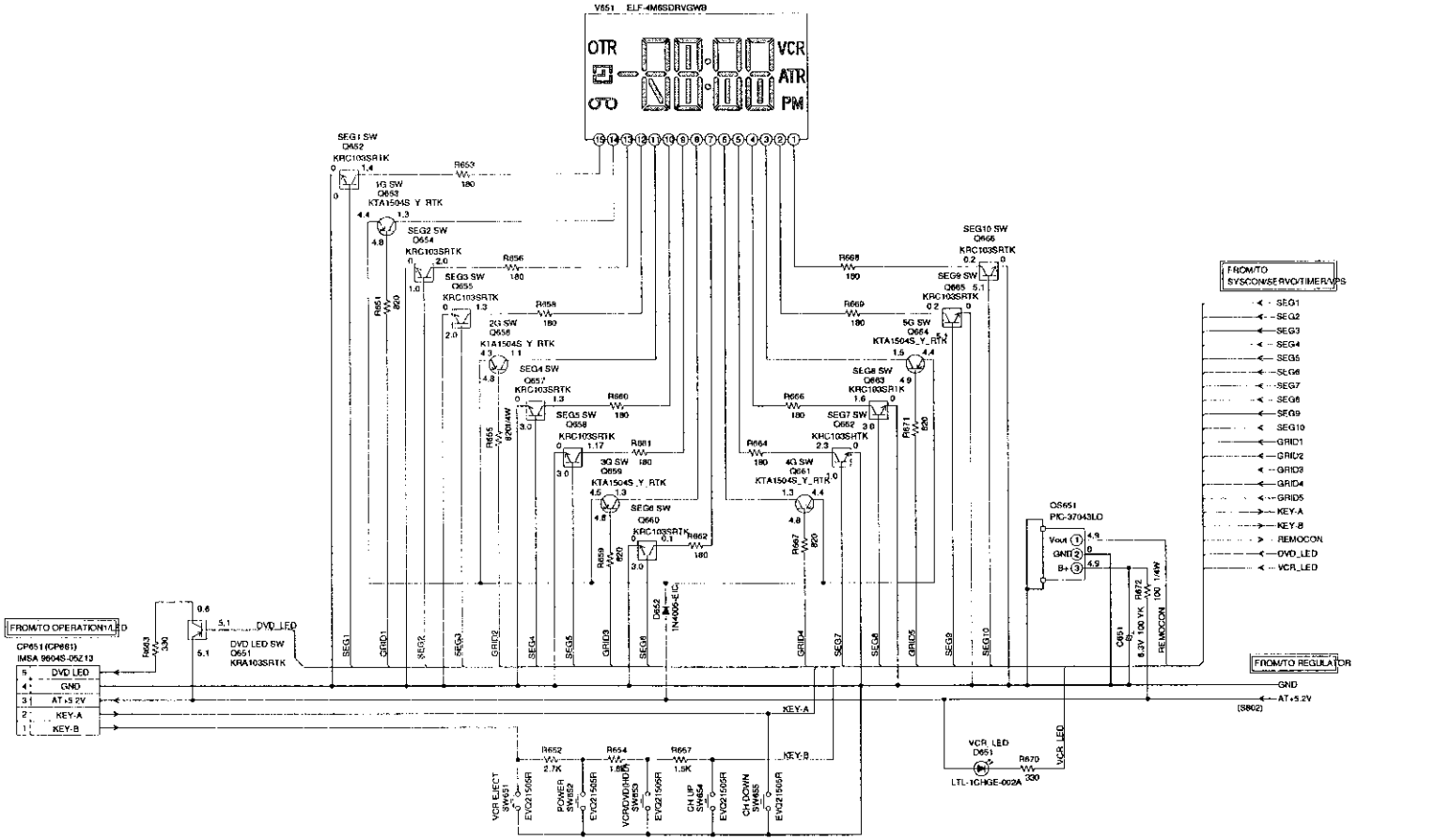
CAUTION
SERVICE THESE PARTS MARKED ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

CAUTION: DIGITAL TRANSISTOR

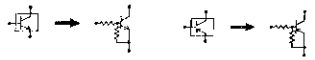


OPERATION/DISPLAY SCHEMATIC DIAGRAM

(VCR/DVD PCB)



CAUTION: DIGITAL TRANSISTOR



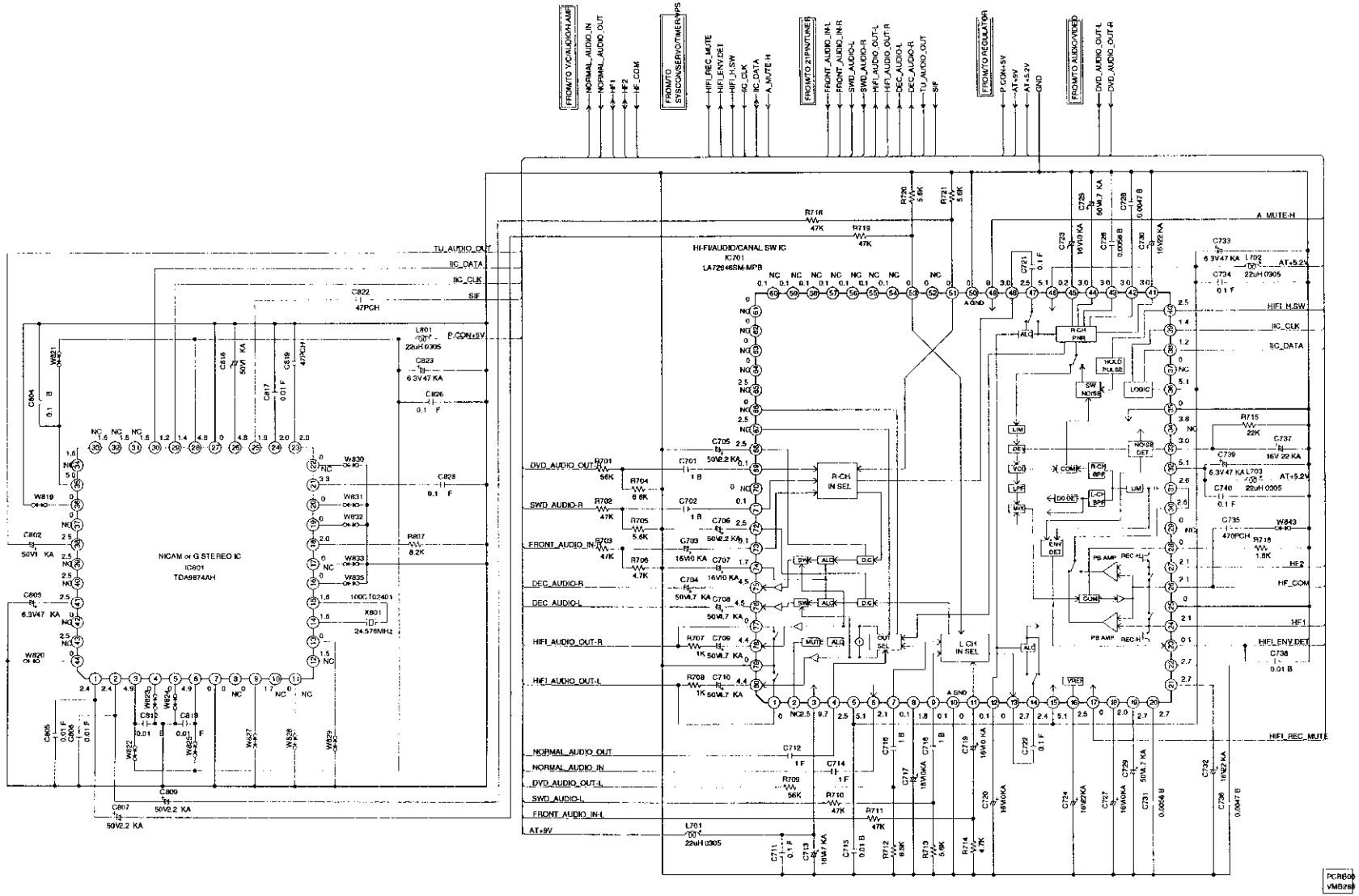
CAUTION: DIGITAL TRANSISTOR

NOTE:THE DC VOLTAGE 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

Hi-Fi/DEMODULATOR SCHEMATIC DIAGRAM

(VCR/DVD PCB)



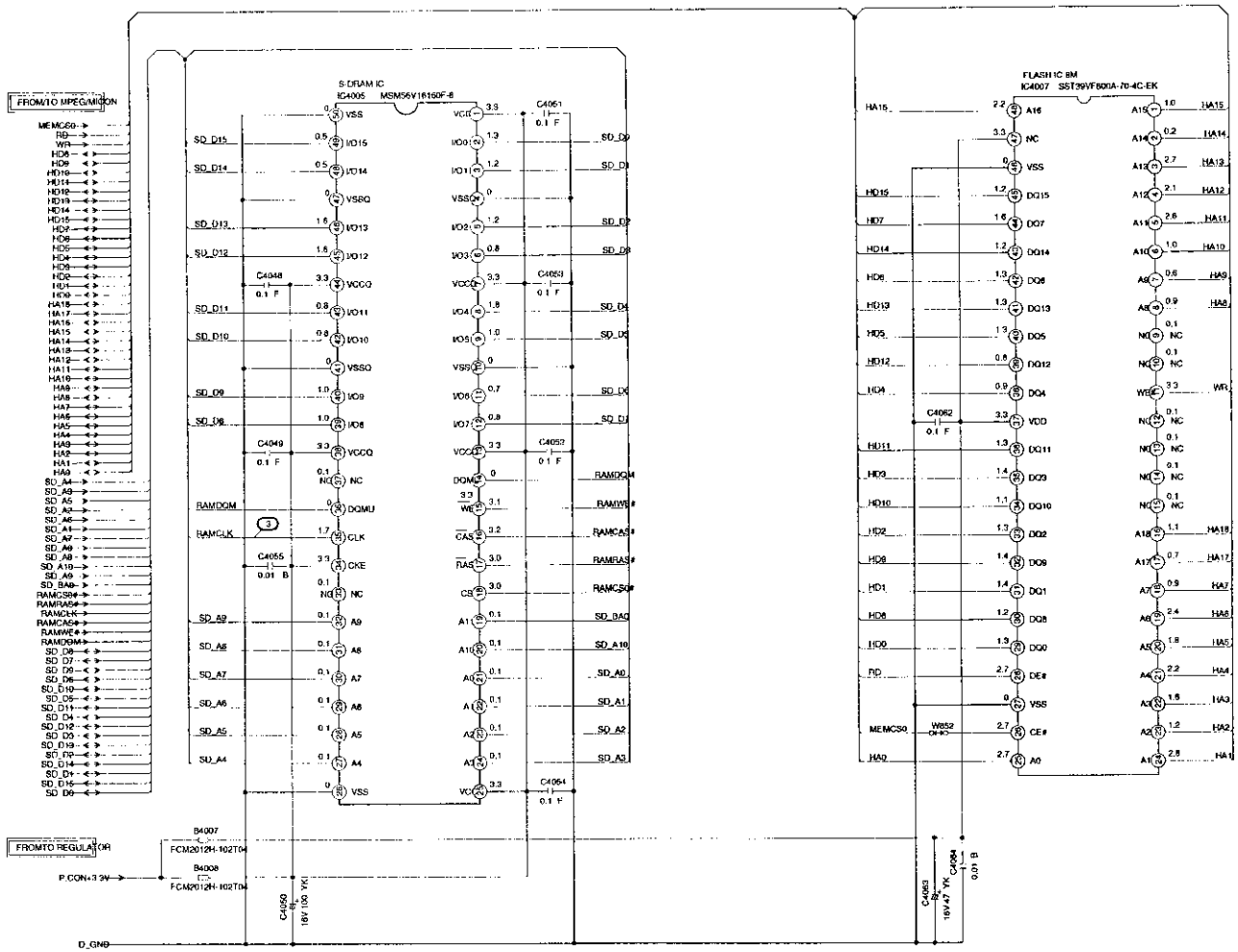
PIN	G.STEREO TDA9873H	NICAM TDA9874AH
1	OUTL	OUTL
2	OUTR	OUTR
3	CDE1	VDDA1
4	NC	VSSA1
5	NC	VSSD1
6	CDE2	VDDO1
7	AGND	VSSD2
8	AFI1	NC
9	NC	TP2
10	AFI0	NICAM
11	NC	TP1
12	NC	PCLK
13	AFR	ADDR1
14	LF1	XTALO
15	XTAL	XTALI
16	NC	TP3
17	NC	TEST2
18	LF2	IREF
19	NC	ADDR2
20	NC	VSSA2
21	MAD	VDEC
22	NC	TEST1
23	NC	SIF2
24	CAF1	VREF1
25	IFINT	SIF1
26	CAF2	CRESET
27	DGND	VSSA3
28	VCC	VDDA3
29	SCL	SCL
30	SDA	SDA
31	LPF	SDO
32	AF20	WS
33	AF21	SCK
34	CTRIG	SYSCLK
35	CID	VDDD3
36	NC	VSSD3
37	P1	P1
38	EXTM	MONOIN
39	EXTR	EXTR
40	EXTL	EXTL
41	VREF	VREF2
42	P2	P2
43	OUTM	OUTM
44	NC	VSSA4

NOTE:THE DC VOLTAGE 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

MEMORY SCHEMATIC DIAGRAM

(VCR/DVD PCB)



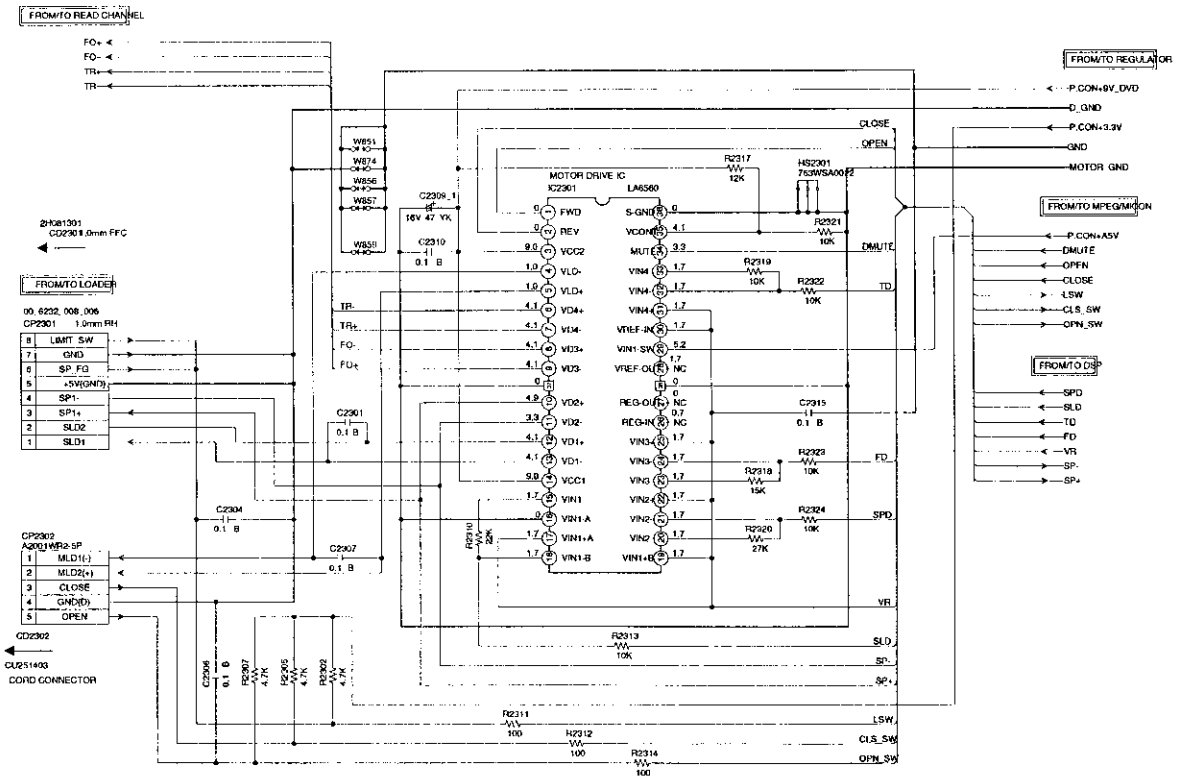
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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

PCB806
VM9258

MOTOR DRIVE SCHEMATIC DIAGRAM

(VCR/DVD PCB)



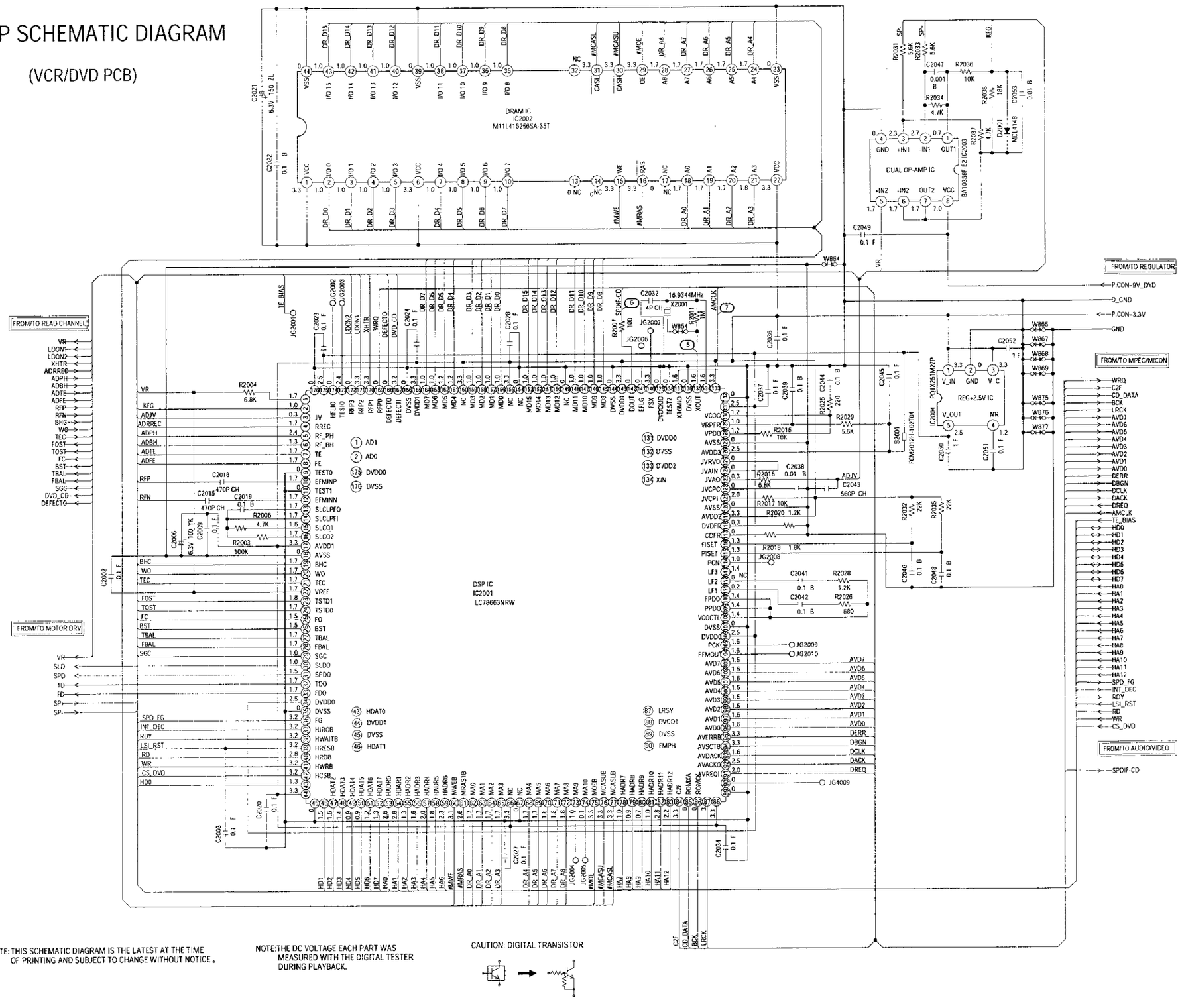
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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

PCB900
VMB288

DSP SCHEMATIC DIAGRAM

(VCR/DVD PCB)

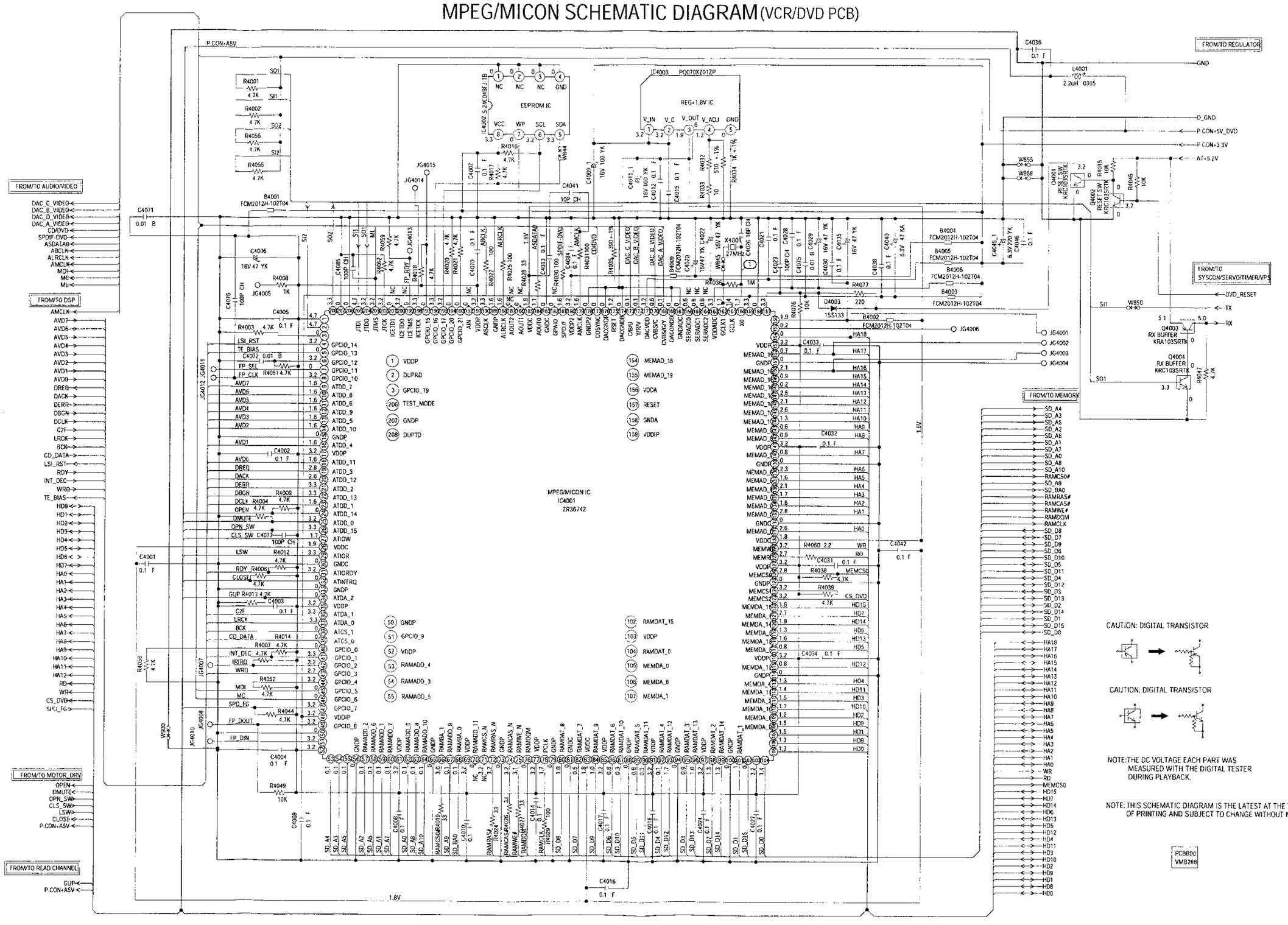


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

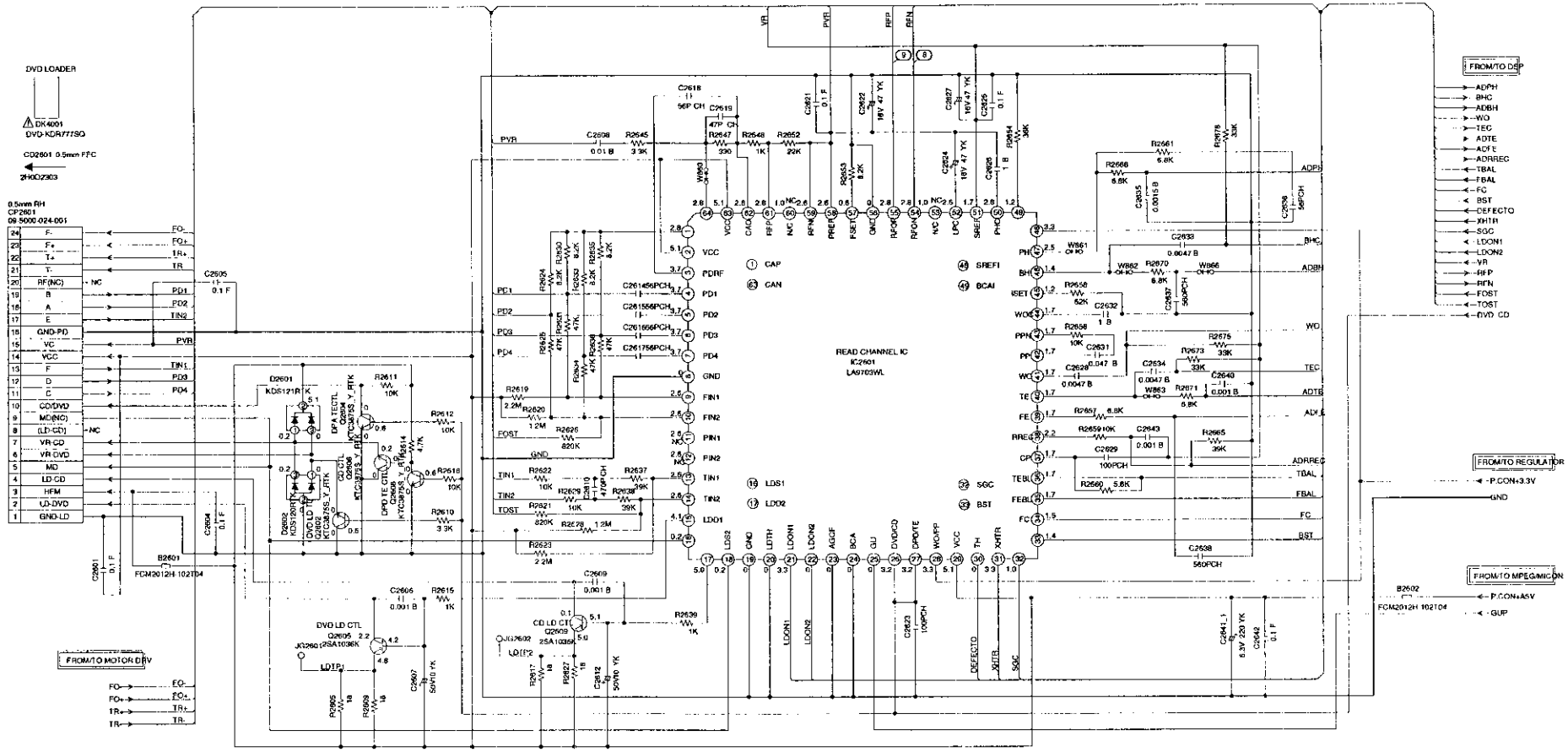
CAUTION: DIGITAL TRANSISTOR

MPEG/MICON SCHEMATIC DIAGRAM (VCR/DVD PCB)



READ CHANNEL SCHEMATIC DIAGRAM

(VCR/DVD PCB)

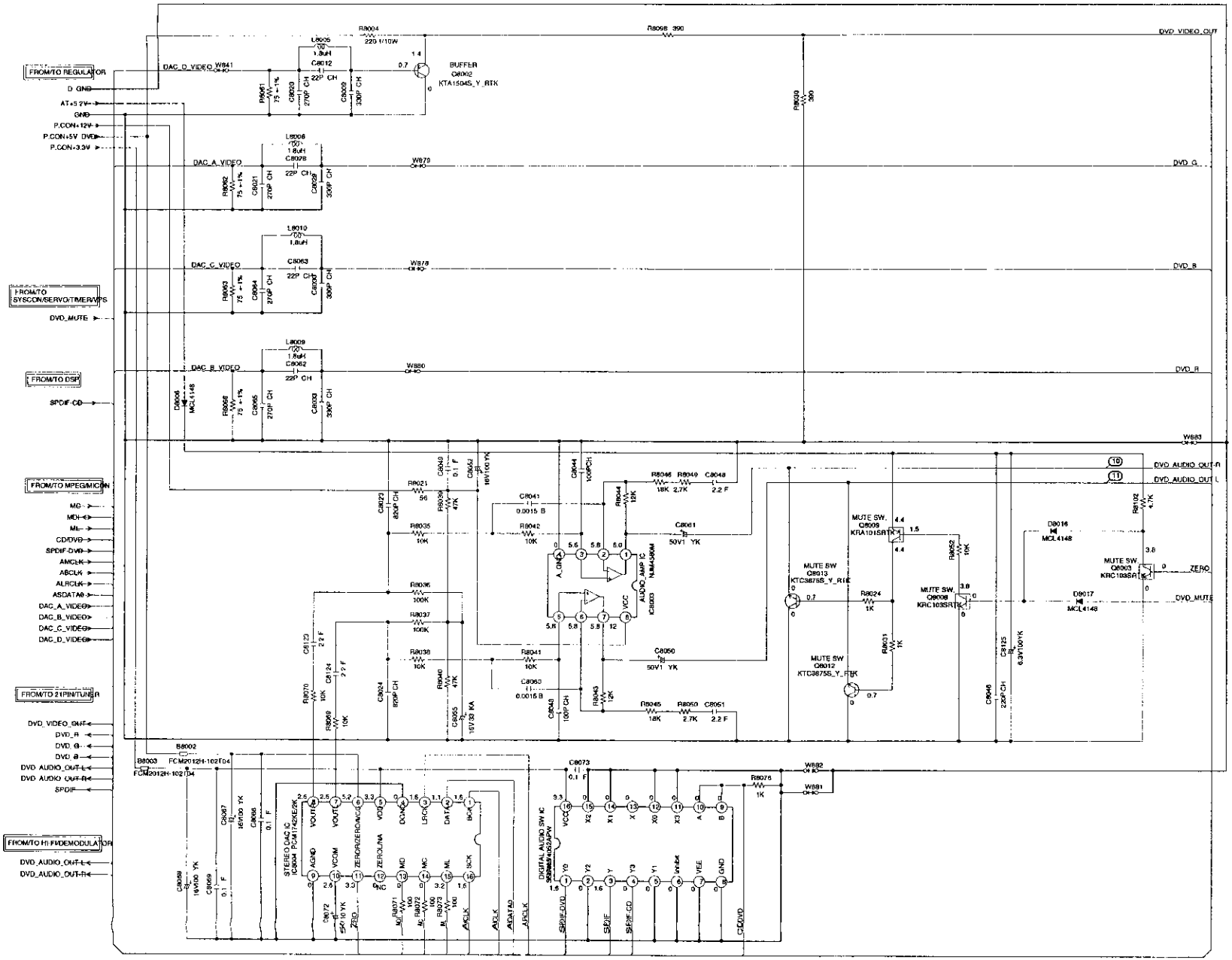


NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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

CAUTION: DIGITAL TRANSISTOR

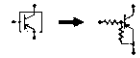
AUDIO/VIDEO SCHEMATIC DIAGRAM (MAIN DVD PCB)



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

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR



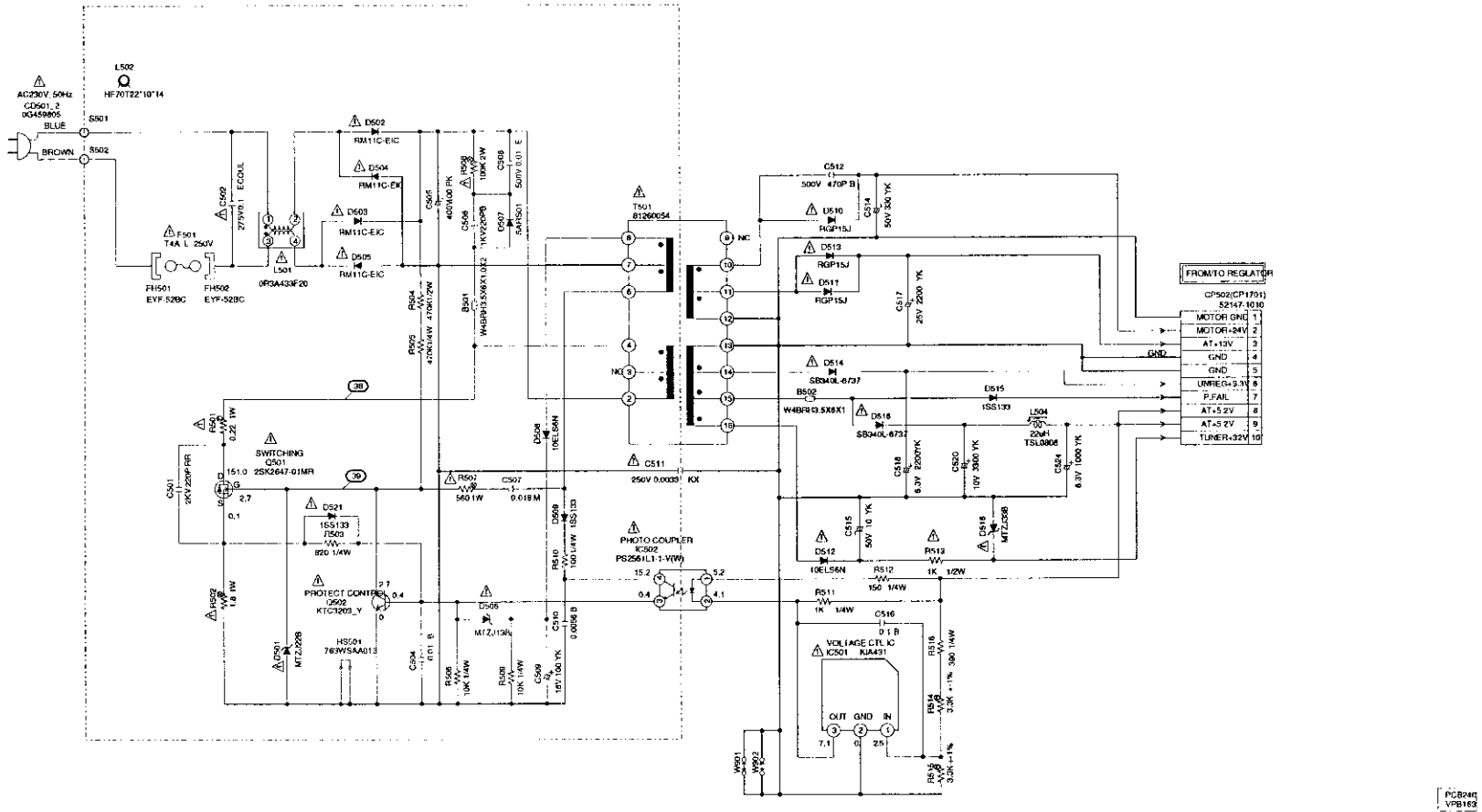
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB800
VMB288

POWER SCHEMATIC DIAGRAM

(POWER PCB)



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

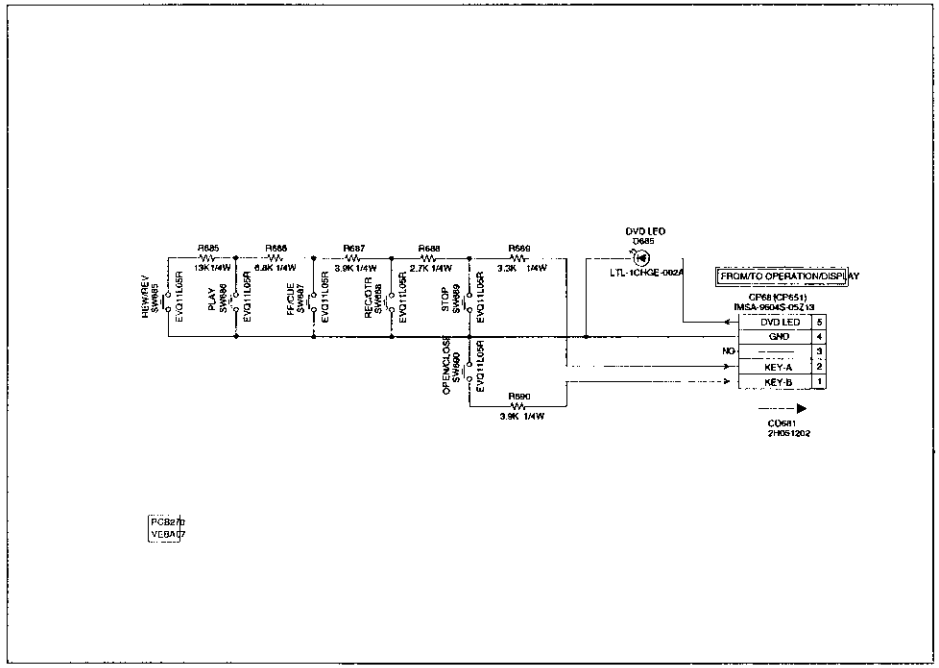
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

⚠CAUTION: NOTICE THESE PARTS MARKED⚠ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

⚠ATTENTION: LES PIECES REPAREES PARQ⚠ETANT DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES RIECES

OPERATION SCHEMATIC DIAGRAM

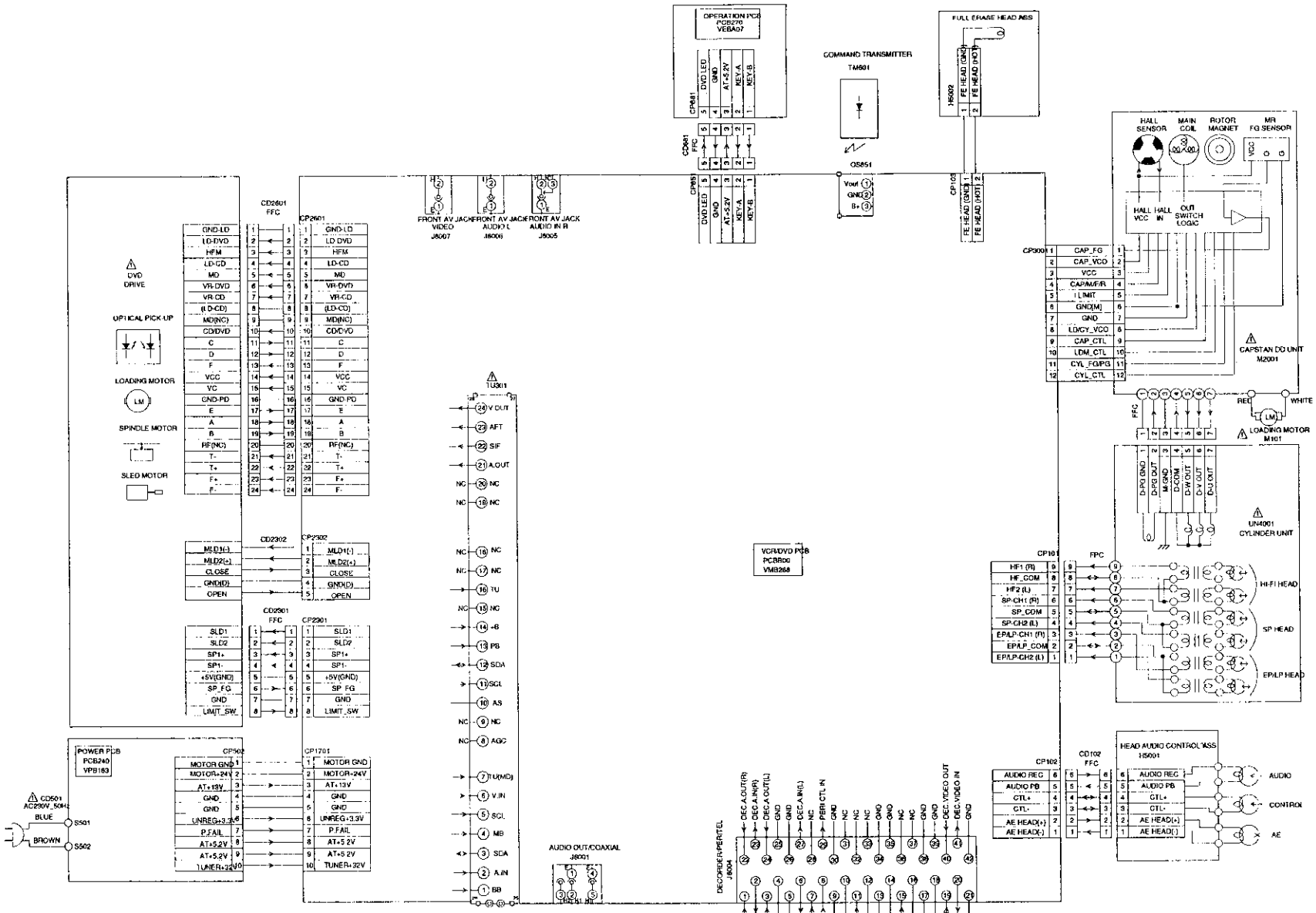
(OPERATION PCB)



NOTE:THE DC VOLTAGE 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



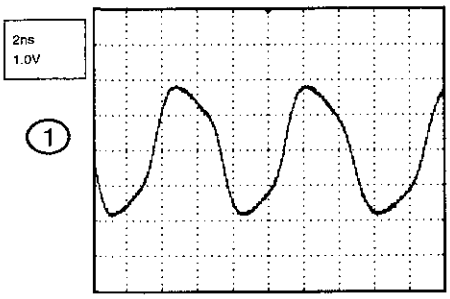
CAUTION: MAKE SURE THESE PARTS MARKED ⚠ ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: POUR LES PIECES REPAREES PARTICULIERS DANGEREUSES AU POINT DE VUE SECURITE, N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

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

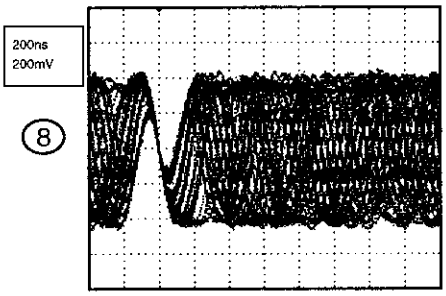
WAVEFORMS

MPEG/MICON

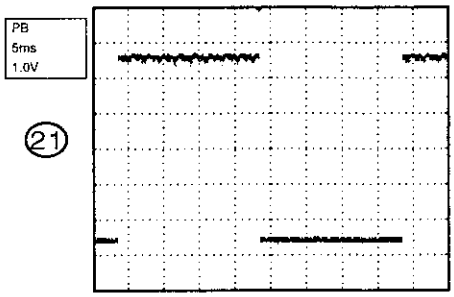


①

READ CHANNEL

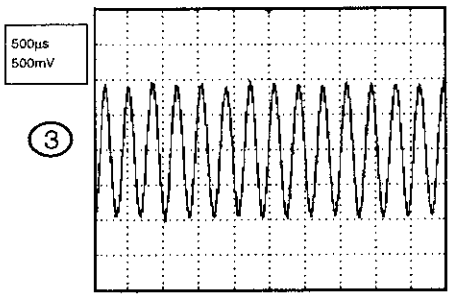


⑧

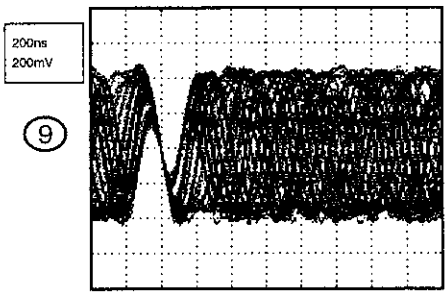


㉑

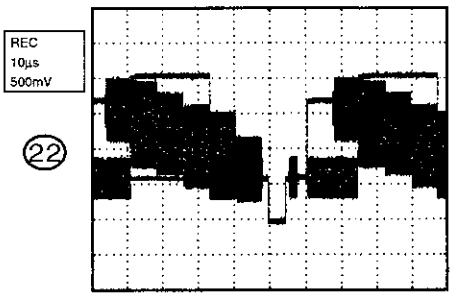
MEMORY



③



⑨

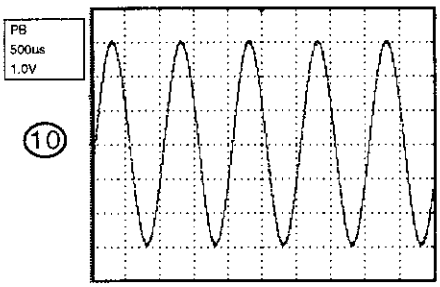


㉒

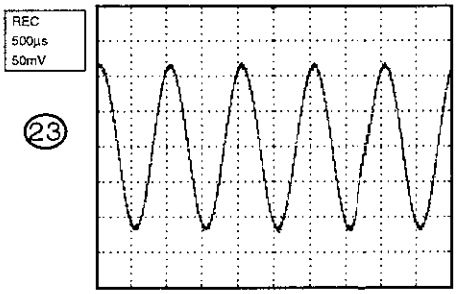
DSP

⑤

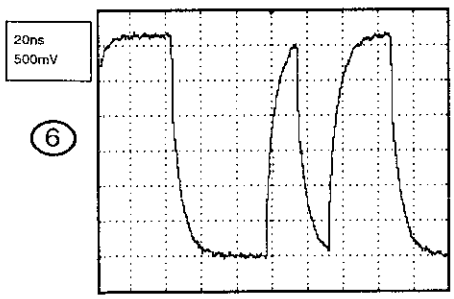
AUDIO/VIDEO



⑩



㉓



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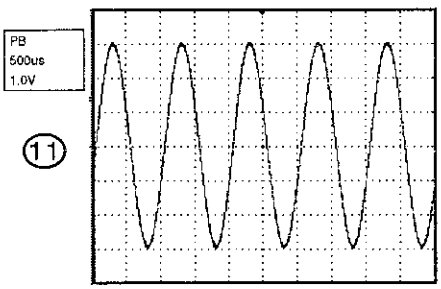
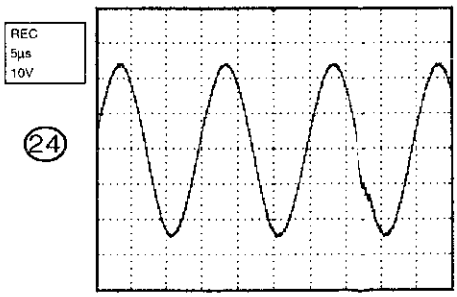


⑪



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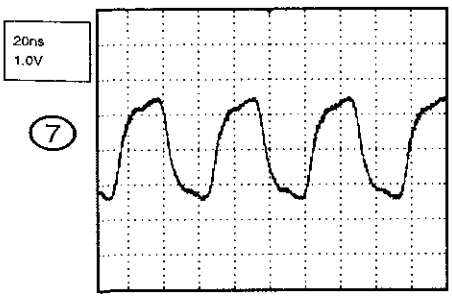
Y/C/AUDIO/HEAD AMP



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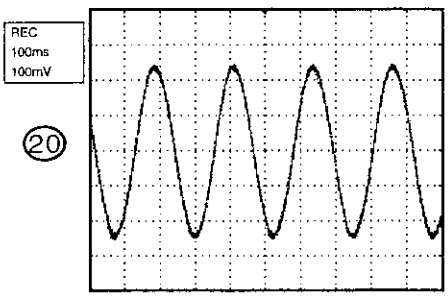
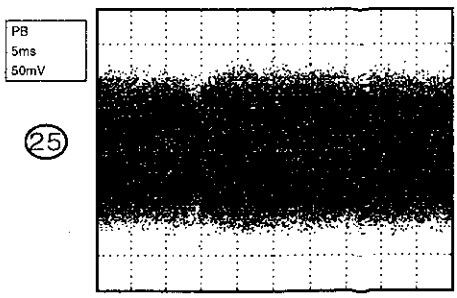


⑳



㉕

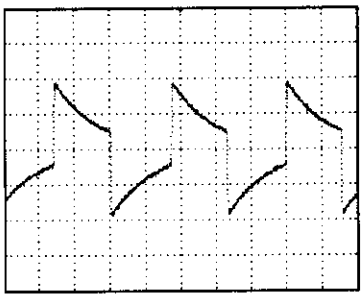
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

SYSCON/SERVO/TIMER/VPS

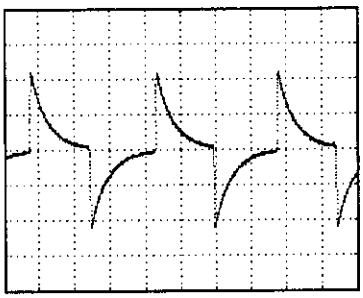
PB
200ms
2.0V

(26)



PB
500ms
2.0V

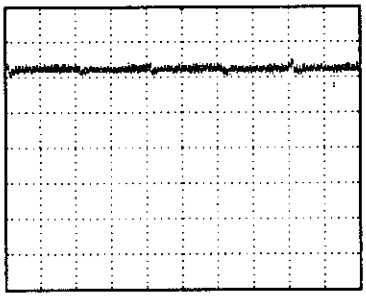
(27)



Hi-Fi/DEMODULATOR

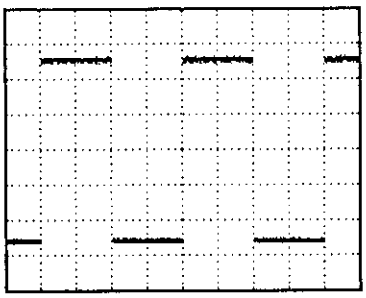
PB
10ms
1.0V

(31)



PB
10ms
1.0V

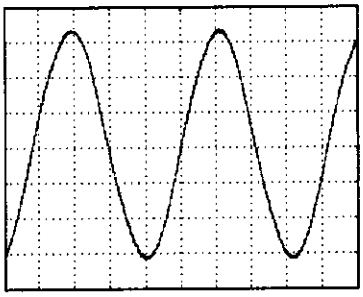
(32)



POWER

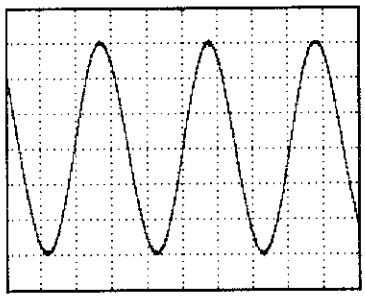
REC
20ns
50mV

(28)



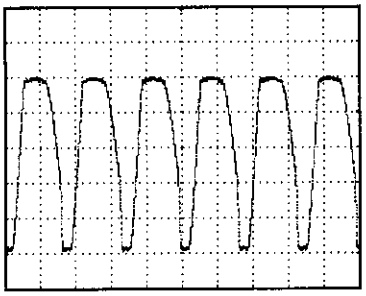
REC
10µs
20mV

(29)



REC
5µs
100V

(38)



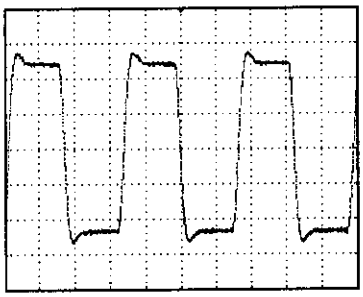
REC
5µs
5.0V

(39)

21PIN/TUNER

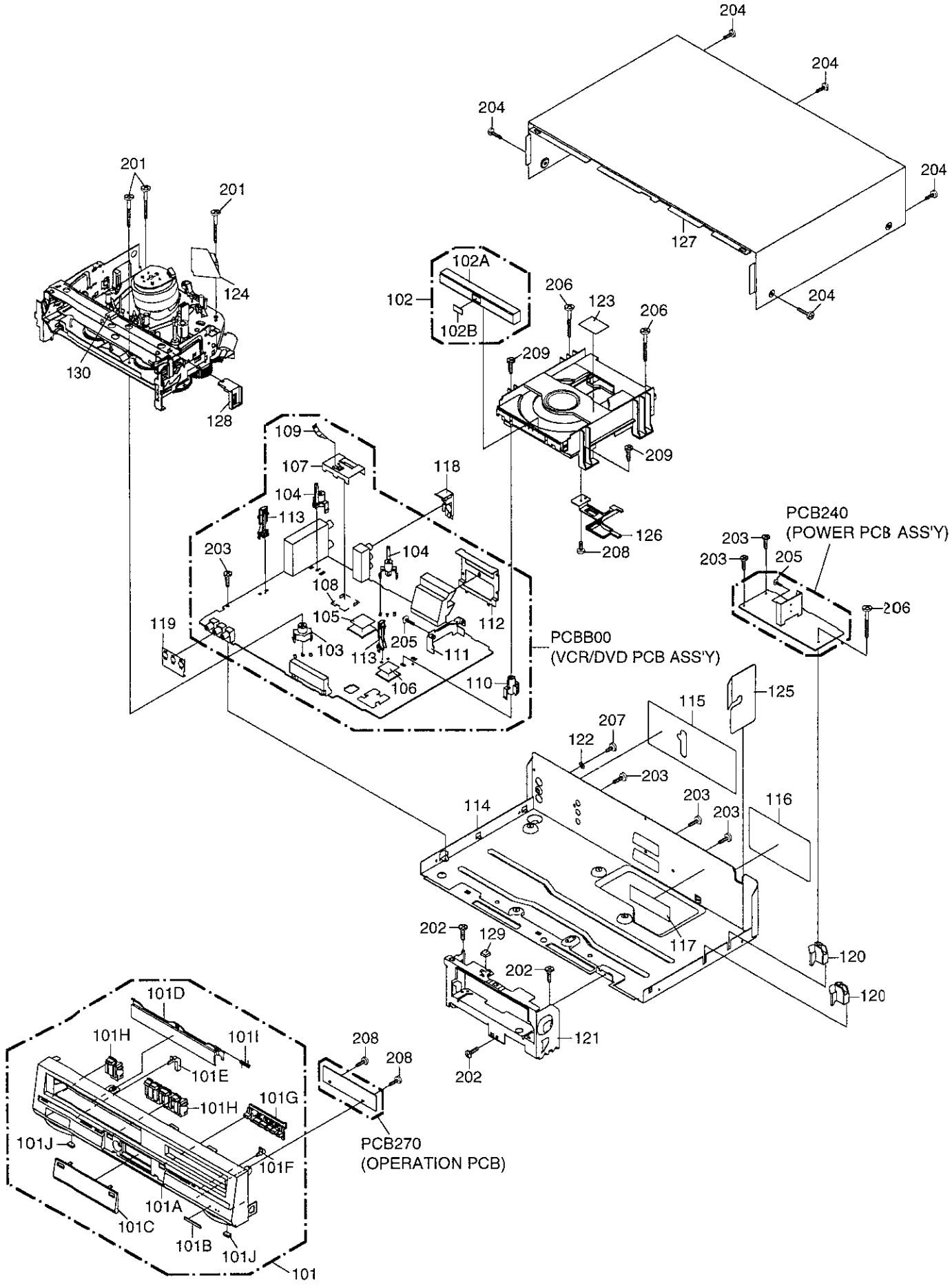
PB
200ns
10mV

(30)

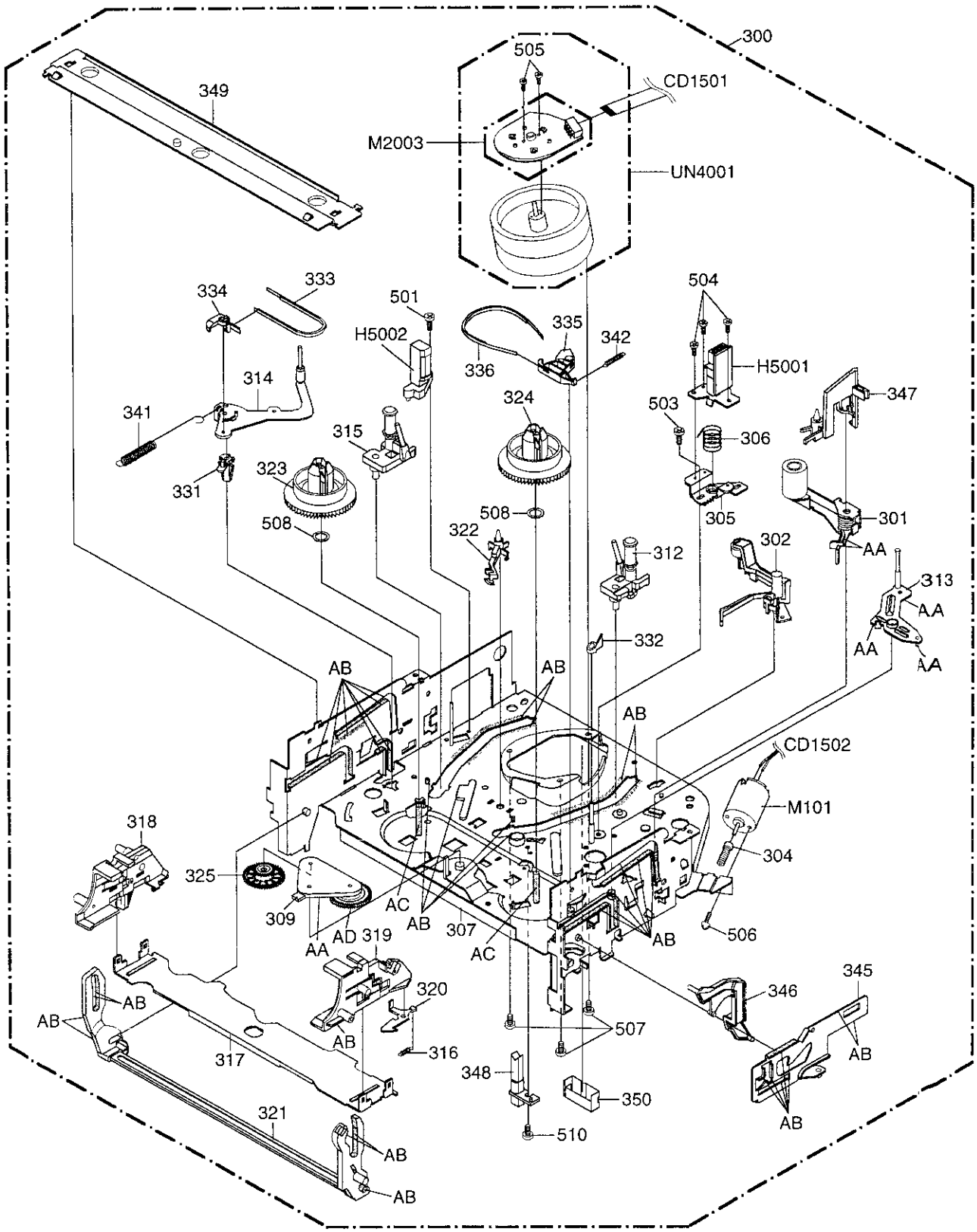


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



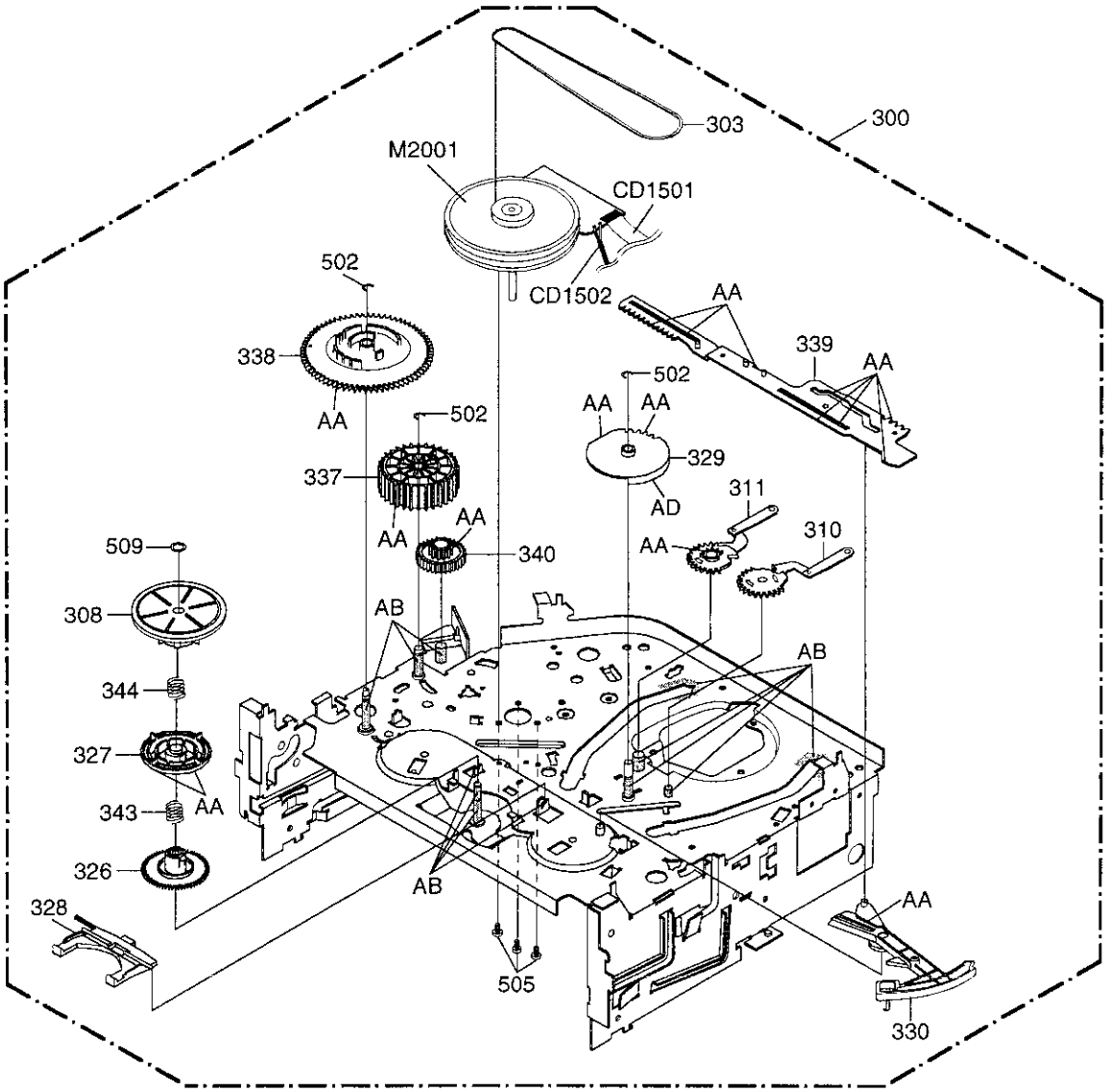
CHASSIS EXPLODED VIEW (TOP VIEW)



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	
101	A2C412T720K	CABINET,FRONT ASSY	
101A	701WPJ1200	CABINET,FRONT	
101B	711WPC0005	BADGE,BRAND	
101C	711WPD0638	PLATE,DISPLAY	
101D	712WPJ0814	FLAP	
101E	713WPA0193	GLASS,LED-VCR	
101F	713WPA0194	GLASS,LED-DVD	
101G	735WPB0258	BUTTON,FRAME-DVD	
101H	735WPB0259	BUTTON,FRAME-VCR	
101I	743WKA0042	SPRING,FLAP	
101J	800WFA0051	CUSHION,LEG	
102	A2C412T770K	PLATE TRAY FRONT ASSY	
102A	712WPB0140	PLATE,TRAY-FRONT	
102B	7235630001	SHEET,DVD	
103	701WPA0686	HOLDER,DECK	
104	701WPA0751	HOLDER,DECK	
105	7230007556	SHEET,IC	
106	7230007623	SHEET,IC	
107	752WSA0230	SHIELD,CASE HEAD AMP	
108	752WSA0308	SHIELD,COVER HEAD AMP	
109	753WUAA006	SPRING,EARTH HEAD AMP	
110	761WPA0260	HOLDER,DVD BL	
111	761WSA0102	ANGLE,PCB	
112	761WSA0104	SHIELD,21PIN	
113	85OP700038	HOLDER,END SENSOR	
114	702WSA0168	PLATE,BOTTOM	
115	7220001168	SHEET,JACK	
116	7222022630	SHEET,RATING	
117	7260000341	SHEET,CAUTION	
118	752WSA0290	SHIELD,COMPO	
119	752WUA0001	SHIELD,3-PIN	
120	761WPA0261	HOLDER,DVD BR	
121	761WSA0101	ANGLE,FRONT	
122	800WB00004	FIBER WASHER	7x3.2xT0.5
123	7260000342	SHEET,CAUTION	
124	752WSA0275	COVER,AC HEAD	
125	755WNA0021	SHEET,POWER	
126	761WPA0250	HOLDER,FFC	
127	702WSB0081	CABINET,TOP	
128	761WPA0262	HOLDER,DECK TOP	
129	8965TS1010	CUSHION	65TS 10-10H L=10
130	8965TS1017	CUSHION	65TS10-10H L17.5
201	8109130B94	SCREW,TAP TITE(B) R PAN	3x29
202	8109230704	SCREW,TAP TITE(B) R BIND	3x7
203	8109230804	SCREW,TAP TITE(B) BIND	3x8
204	8109K30601	SCREW,TAP TITE(B) BIND(3D)	3x6
205	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
206	8154D30334	SCREW,TAP TITE(B) WH8	3x33R
207	8107130404	SCREW,TAP TITE(S) PAN	3x4
208	8110226804	SCREW,TAP TITE(P) BIND	2.6x8
209	8102230804	SCREW,BIND	M3x8
---	791UHA0014	GIFT SHEET	
---	792UHA0186	PACKAGE,FRONT	
---	792UHA0187	PACKAGE,BACK	
---	793UCD1190	GIFT BOX	
---	795UCA0021	PAD,DVD/VR	155x250
---	A2C412N975	INSTRUCTION BOOK KIT	
---	JB5X0300	POLYBAG,INSTRUCTION	
---	J2C41201A	INSTRUCTION BOOK	
---	J2C41207A	QUICK SET-UP SHEET	
---	J4E00129	INFORMATION SHEET	

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	
300	A2C412N420A	DECK ASSY A2C412N420A	501	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
			502	83ETW30000	E-RING	3.0
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	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
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 UINT 3S	H5001	1523Q91003	HEAD (AUDIO CONTROL)	VTR-1X2RPE22-756
313	85OA400232	P5 ARM ASS'Y 2	H5002	1543Q02014	HEAD (FULL ERASE)	VTR-1X2ERS11-154
314	85OA400235	TENSION ARM ASS'Y 2	⚠ M101	1596S98001	MOTOR (LOADING)	MDB2B66
315	85OA400231	INCLINED BASE S UNIT	⚠ M2001	1510S98036	CAPSTAN DD UNIT	F2QVB08
316	85OP800358	SPRING,LOCKER	M2003	1589S11017	MICRO MOTOR	I2OAL05 or
317	85OP900736	CASS,HOLDER		1589S11015	MICRO MOTOR	I2OAL01
318	85OP900748	CASS,SIDE L	⚠ UN4001	A2A741B500	CYLINDER UNIT ASS'Y	A2A741B500
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	85OP400542	BAND,TENSION				
334	85OP400533	CONNECT,TENSION				
335	85OP600573	ARM,BRAKE T				
336	85OP600584	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	85OP700035	REFLECTOR,LED				
349	85OP900746	BRACKET,TOP 3V				
350	752WSA0327	SHIELD,COVER FPC				

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
⚠ R501	R63581R22J	R,FUSE	0.22 OHM 1W
R502	R3X1811R8J	R,METAL OXIDE	1.8 OHM 1W
⚠ R507	R3X181561J	R,METAL OXIDE	560 OHM 1W
⚠ R508	R3X18A104J	R,METAL OXIDE	100K OHM 2W
⚠ R513	R002T2102J	RC	1K OHM 1/2W
⚠ R1709	R3X18A010J	R,METAL OXIDE	1 OHM 2W
R3052	R002T4472J	RC	4.7K OHM 1/4W
		CAPACITORS	
C501	C0PLRR7H2K	CC	220 PF 2KV R
⚠ C502	P2122B104M	CMP	0.1 UF 275V ECQUL or
	P2472B104M	CMP	0.1 UF 275V PHE840
C505	E62QFH101M	CE	100 UF 400V
C508	C0JFE0514M	CC	0.01 UF 500V E
⚠ C511	CD39E0ML3M	CC	0.0033UF 250V
C517	E02LF3222M	CE	2200 UF 25V
C520	E02LF1332M	CE	3300 UF 10V
C1705	E02LF3102M	CE	1000 UF 25V
		DIODES	
D101	D1VT001330	DIODE,SILICON	1SS133T-77
D102	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
⚠ D501	D97U02201B	DIODE,ZENER	MTZJ22B T-77
⚠ D502	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D503	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D504	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D505	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D506	D97U01301B	DIODE,ZENER	MTZJ13B T-77
D507	D2BXARS010	DIODE,SILICON	SARS01-V1
D508	D28TELS6N6	DIODE,RECTIFER	10ELS6N-TA1B2
D509	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D510	D23TGP15J0	DIODE,SILICON	RGP15J-G23
⚠ D511	D23TGP15J0	DIODE,SILICON	RGP15J-G23
⚠ D512	D28TELS6N6	DIODE,RECTIFER	10ELS6N-TA1B2
⚠ D513	D23TGP15J0	DIODE,SILICON	RGP15J-G23
⚠ D514	D2LKB340L0	DIODE,SCHOTTKY	SB340L-6737
D515	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D516	D2LKB340L0	DIODE,SCHOTTKY	SB340L-6737
⚠ D518	D97U03301B	DIODE,ZENER	MTZJ33B T-77
⚠ D521	D1VT001330	DIODE,SILICON	1SS133T-77
D651	0021E5Q210	LED	LTL-1CHGE-002A
D652	D2WXN40050	DIODE,SILICON	1N4005-EIC
D685	0021E5Q210	LED	LTL-1CHGE-002A
D1701	D2WXN40050	DIODE,SILICON	1N4005-EIC
D1702	D2WXN40050	DIODE,SILICON	1N4005-EIC
D1703	D2WXN40050	DIODE,SILICON	1N4005-EIC
D1705	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D1706	D1VT001330	DIODE,SILICON	1SS133T-77
D1707	D97U01001B	DIODE,ZENER	MTZJ10B T-77
D1708	D1VT001330	DIODE,SILICON	1SS133T-77
D1709	D97U02401B	DIODE,ZENER	MTZJ24B T-77
D1710	D1VT001330	DIODE,SILICON	1SS133T-77
D1711	D97U01301B	DIODE,ZENER	MTZJ13B T-77
D1713	D1VT001330	DIODE,SILICON	1SS133T-77
D1714	D1VT001330	DIODE,SILICON	1SS133T-77
D2001	DDDRL41480	DIODE,SILICON	MCL4148
D2601	DDARDS1210	DIODE,SILICON	KDS121RTK
D2602	DDARDS1200	DIODE,SILICON	KDS120RTK
D3001	0010E00330	INFRARED LED	LTE-3271T-012A-O
D3002	D1VT001330	DIODE,SILICON	1SS133T-77
D4003	D1VT001330	DIODE,SILICON	1SS133T-77
D8004	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D8006	DDDRL41480	DIODE,SILICON	MCL4148
D8007	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D8011	DDDRL41480	DIODE,SILICON	MCL4148
D8012	DDDRL41480	DIODE,SILICON	MCL4148
D8016	DDDRL41480	DIODE,SILICON	MCL4148
D8017	DDDRL41480	DIODE,SILICON	MCL4148
		ICS	
IC101	I04F38225F	IC	HA118225F
⚠ IC501	I1KJ9A4310	IC	KIA431
⚠ IC502	000220001W	PHOTO COUPLER	PS2561L1-1-V(W)
IC701	I03F7646SM	IC	LA72646SM-MPB
IC801	I0KFA9874A	IC	TDA9874AH
⚠ IC1701	I1KA98R09A	IC	KIA78R09API
IC2001	I53K08663R	IC	LC78663NRW
IC2002	ICUJ062569	IC	M11L416256SA-35T
IC2003	I07E00358F	IC	BA10358F-E2
IC2004	I0GF9X2510	IC	PQ1X251M2ZP

REF. NO.	PART NO.	DESCRIPTION	
		ICS	
IC2301	I03F065600	IC	LA6560
IC2601	I03FR97030	IC	LA9703WL
IC3001	I56F57088A	IC	OEC7088A
IC3002	I9UF032310	IC	PST3231NR
IC3003	I56F07082A	IC	OEC7082A
IC3099	A2C412TB05	IC	S-24C08ADP-01
IC4001	ICQK067420	IC	ZR36742
IC4002	I5HJ004BF0	IC	S-24C04BFJ-TB
IC4003	I0GF9XZ010	IC	PQ070XZ01ZP
IC4005	I59J0160FB	IC	MSM56V16160F-8
IC4007	ICMJ0800A7	IC	SST39VF800A-70-4C-EK
IC8001	I03F0026A0	IC	LA73026AV-TLM-E
IC8003	I0QF045800	IC	NJM4580M
IC8004	I17F0742K0	IC	PCM1742KE/2K
IC8005	I0QF02533V	IC	NJM2533V(TE2)
IC8006	I5CF040520	IC	SN74LV4052APW
IC8007	I07F033080	IC	BA3308F
		TRANSISTORS	
Q101	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q102	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q103	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q104	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q105	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠ Q501	T410K26470	FET	2SK2647-01MR
⚠ Q502	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q651	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q652	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q653	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q654	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q655	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q656	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q657	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q658	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q659	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q660	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q661	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q662	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q663	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q664	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q665	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q666	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1701	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q1702	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q1703	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1704	TAAT01241Y	TRANSISTOR,SILICON	KTA1241_Y-AT
Q1705	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1706	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q1707	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q1708	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q1709	TCAT03205Y	TRANSISTOR,SILICON	KTC3205_Y-AT
Q1710	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1711	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1712	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1713	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q2602	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q2604	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q2605	T67J1036K0	TRANSISTOR,SILICON	2SA1036KT1G
Q2606	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q2608	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q2609	T67J1036K0	TRANSISTOR,SILICON	2SA1036KT1G
Q3001	0000M00390	PHOTO TRANSISTOR	ST-304L
Q3002	0000M00390	PHOTO TRANSISTOR	ST-304L
Q3003	0002700680	PHOTO COUPLER	RPI-352C40N
Q3006	0002700680	PHOTO COUPLER	RPI-352C40N
Q3008	0002700690	PHOTO COUPLER	RPI-303
Q3009	0002700690	PHOTO COUPLER	RPI-303
Q3010	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q4001	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q4002	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q4003	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4004	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q8001	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q8002	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q8003	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q8007	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q8008	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q8009	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		TRANSISTORS		
Q8010	TNAAD05001	COMPOUND TRANSISTOR	KRC104SRTK	
Q8012	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8013	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8015	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK	
Q8016	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8018	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
		COILS &TRANSFORMERS		
L101	02167F101J	COIL	100 UH	
L102	031616003R	COIL,BIAS OSC	1616003	
L103	02167F101J	COIL	100 UH	
L104	02167F101J	COIL	100 UH	
L107	0216A6820K	COIL	82 UH	or
	021LA6820K	COIL	82 UH	
L108	02167F220J	COIL	22 UH	
L109	0216A6120K	COIL	12 UH	or
	021LA6120K	COIL	12 UH	
L110	0216A6390K	COIL	39 UH	or
	021LA6390K	COIL	39 UH	
L111	02167F101J	COIL	100 UH	
L112	02167F220J	COIL	22 UH	
L113	021LA6R22M	COIL	0.22 UH	
L114	021LA6R22M	COIL	0.22 UH	
L115	021LA6R22M	COIL	0.22 UH	
⚠ L501	029T000083	COIL,LINE FILTER	0R3A433F20	
L502	02A6B2E0A1	CORE,FERRITE	HF70T22*10*14	
L504	02167E220K	COIL	22 UH	
L701	02167F220J	COIL	22 UH	
L702	02167F220J	COIL	22 UH	
L703	02167F220J	COIL	22 UH	
L801	02167F220J	COIL	22 UH	
L1701	02167E220K	COIL	22 UH	
L1702	02167F220J	COIL	22 UH	
L1703	02167E220K	COIL	22 UH	
L3002	0216A62R2K	COIL	2.2 UH	or
	021LA62R2K	COIL	2.2 UH	
L3004	0216A6101K	COIL	100 UH	
L4001	02167F2R2J	COIL	2.2 UH	
L8003	02167F220J	COIL	22 UH	
L8004	02167F220J	COIL	22 UH	
L8005	0216S71R8J	COIL	1.8 UH	
L8006	0216S71R8J	COIL	1.8 UH	
L8007	0216A6101K	COIL	100 UH	or
	021LA6101K	COIL	100 UH	
L8009	0216S71R8J	COIL	1.8 UH	
L8010	0216S71R8J	COIL	1.8 UH	
L8012	02167F101J	COIL	100 UH	
L8013	02167F101J	COIL	100 UH	
L8014	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L8015	021LA61R0M	COIL	1 UH	
L8016	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L8017	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L8018	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
⚠ T501	0481260054	TRANSFORMER,SWITCHING	81260054	
		JACKS		
J8001	060J411029	RCA JACK	MSP-213V1-732_PBSN	
J8004	063G000072	SOCKET,21PIN	035_0_8183_00	
J8005	060J421023	RCA JACK	MSP-281V3-A	
J8006	060J401080	RCA JACK	MSP-281V1-B	
J8007	060J401079	RCA JACK	MSP-281V4-B	
		SWITCHES		
SW651	0504101T34	SWITCH,TACT	EVQ21505R	
SW652	0504101T34	SWITCH,TACT	EVQ21505R	
SW653	0504101T34	SWITCH,TACT	EVQ21505R	
SW654	0504101T34	SWITCH,TACT	EVQ21505R	
SW655	0504101T34	SWITCH,TACT	EVQ21505R	
SW685	0504R01T38	SWITCH,TACT	EVQ11L05R	or
	0504201T32	SWITCH,TACT	SKQNAED010	
SW686	0504R01T38	SWITCH,TACT	EVQ11L05R	or
	0504201T32	SWITCH,TACT	SKQNAED010	
SW687	0504R01T38	SWITCH,TACT	EVQ11L05R	or
	0504201T32	SWITCH,TACT	SKQNAED010	
SW688	0504R01T38	SWITCH,TACT	EVQ11L05R	or
	0504201T32	SWITCH,TACT	SKQNAED010	

REF. NO.	PART NO.	DESCRIPTION		
		SWITCHES		
SW689	0504R01T38	SWITCH,TACT	EVQ11L05R	or
	0504201T32	SWITCH,TACT	SKQNAED010	
SW690	0504R01T38	SWITCH,TACT	EVQ11L05R	or
	0504201T32	SWITCH,TACT	SKQNAED010	
SW3001	0508S11001	SWITCH (LEAF)	LSA-1144EAU	
		P.C.BOARD ASSEMBLIES		
PCB240	A2C412T240K	PCB ASS'Y	VPB163A	
PCB270	A2C412T270K	PCB ASS'Y	VEBA07A	
PCBB00	A2C412TB00K	PCB ASS'Y	VMB288A	
		MISCELLANEOUS		
B501	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2	
B502	024HT03564	CORE,BEADS	W4BRH3.5X6X1	
B1701	024HT03564	CORE,BEADS	W4BRH3.5X6X1	
B2001	024HC31022	CORE,BEADS	FCM2012H-102T04	
B2601	024HC31022	CORE,BEADS	FCM2012H-102T04	
B2602	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4001	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4002	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4003	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4004	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4005	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4006	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4007	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4008	024HC31022	CORE,BEADS	FCM2012H-102T04	
B4009	024HC31022	CORE,BEADS	FCM2012H-102T04	
B8001	024HC31022	CORE,BEADS	FCM2012H-102T04	
B8002	024HC31022	CORE,BEADS	FCM2012H-102T04	
B8003	024HC31022	CORE,BEADS	FCM2012H-102T04	
BT601	141L003010	BATTERY,MANGAN	R6P(AR)XICI	
CD102	122H061504	CORD,JUMPER	2H061504	
⚠ CD501	120G459805	CORD,AC BUSH	0G459805	
CD601	06CDVA5003	CABLE,21PIN	S-1002B	
CD681	122H051202	CORD,JUMPER	2H051202	
CP101	0697290620	CONNECTOR PCB SIDE	TOC-C09X-A1	
CP102	069J760029	CONNECTOR PCB SIDE	IMSA-9604S-05Z14	
CP103	067U002019	WIRE HOLDER	B2013H02-2P	
CP502	069R2A0589	CONNECTOR PCB SIDE	52147-1010	
CP651	069J750019	CONNECTOR PCB SIDE	IMSA-9604S-05Z13	
CP681	069J750019	CONNECTOR PCB SIDE	IMSA-9604S-05Z13	
CD1701	WHL6010038	FLAT CABLE AWM2468 AWG26 10C BLACK 100MM		
CD2301	122H081301	CORD,JUMPER	2H081301	
CD2302	06CU251403	CORD,CONNECTOR	CU251403	
CD2601	122H0O2303	CORD,JUMPER	2H0O2303	
CD6002	06CDL02002	RF CABLE PAL FTZ	CDL02002	
CP1701	067U010049	WIRE HOLDER	B2013H02-10P	
CP2301	069EV83010	CONNECTOR PCB SIDE	00_6232_008_0O6_800	
CP2302	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P	
CP2601	069GYOT079	CONNECTOR PCB SIDE	09-5000-024-01-006	
CP3001	06972C0010	CONNECTOR PCB SIDE	TMC-J12P-B2	
CUSB01	800WFAA006	CUSHION A		
CUSB02	800WFAA008	CUSHION C		
⚠ DK4001	169G00023A	DECK CD	DVD-KDR777SQ	
EL001	124120301A	EYE LET	XRY20X30BD	
EL002	124116281A	EYE LET	XRY16X28BD	
⚠ F501	080NT04004	FUSE	50T040H	
FH501	06710T0006	HOLDER,FUSE	EYF-52BC	
FH502	06710T0006	HOLDER,FUSE	EYF-52BC	
OS651	077Q037001	REMOTE RECEIVER	PIC-37043LO	
TM601	076D0FI080	TRANSMITTER	ORV201N3809	
⚠ TU301	0162K01031	RF UNIT	TCMB0601PD3D(H)	
V651	0040F94003	LED DISPLAY	ELF-4M6SDR\GWB	
X101	100DT4R410	CRYSTAL	AT-49	
X801	100CT02401	CRYSTAL	HC-49/U	
X2001	100BT01613	CRYSTAL	HC-49U/S	
X3001	100DA32R01	CRYSTAL	DT-26	
X3002	100CT01207	CRYSTAL	HC-49/U-S	
X3003	1001T4R010	CERAMIC OSCILLATOR	EFOMC4004T4	
X4001	100BT02701	CRYSTAL	HC-49U/S	

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

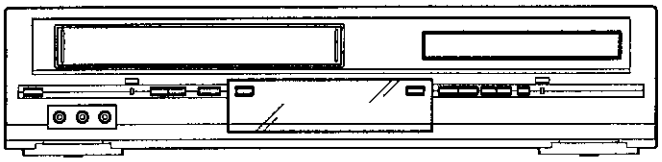
SPEC.NO.	M2C4-12T
O/R NO.	U312510

ORION

DVD/VR-2961 SI

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER



VHS
PAL

SUPPLEMENT
CHASSIS CODE A

This SUPPLEMENT must be used together SERVICE MANUAL for DVD/VR-2963 SI.
All other test and repair procedures are as shown in the ORIGINAL MANUAL.
Please file this SUPPLEMENT with the ORIGINAL VERSIONS.

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	DVD/VR-2963 SI		DVD/VR-2961 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
TM601	076D0FI080	TRANSMITTER ORV201N38090	076D0FI090	TRANSMITTER ORV201N38100

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	DVD/VR-2963 SI		DVD/VR-2961 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101	A2C412T720K	CABINET FRONT ASS'Y	A2C411T720K	CABINET FRONT ASS'Y
101A	701WPJ1200	CABINET,FRONT	701WPJ1202	CABINET,FRONT
101C	711WPD0638	PLATE,DISPLAY	711WPD0640	PLATE,DISPLAY
101D	712WPJ0814	FLAP	712WPJ0816	FLAP
116	7222022630	SHEET,RATING	722202A696	SHEET,RATING
---	793UCD1190	GIFT BOX	793UCDB129	GIFT BOX
---	J2C41201A	INSTRUCTION BOOK	J2C41101A	INSTRUCTION BOOK
---	J2C41207A	QUICK SET-UP SHEET	J2C41107A	QUICK SET-UP SHEET
---	A2C412N975	INSTRUCTION BOOK KIT	A2C411T975	INSTRUCTION BOOK KIT

WHEN REPLACING EEPROM (MEMORY) IC

ADDRESS	TVBR1352Z Series A	CTSGT-8118T Series A
	DATA	DATA
BD	00	40
FD	---	00
FE	---	00
FF	---	00

SPEC NO.	M2C4-11T
ORDER NO.	U332520

ORION

CLASS 1
LASER PRODUCT

DVD/VR-2961B SI

SERVICE MANUAL

DVD VIDEO PLAYER & VHS VIDEO CASSETTE RECORDER

This SUPPLEMENT must be used together with the SERVICE MANUAL for DVD/VR-2963 SI.
All other test and repair procedures are as shown in the ORIGINAL MANUAL.
Please file this SUPPLEMANT with the ORIGINAL VERSION.

VHS PAL

SUPPLEMENT
CHASSIS CODE A

WHEN REPLACING EEPROM (MEMORY) IC

ADDRESS	DVD/VR-2963 SI DATA	DVD/VR-2961B SI DATA
BA	42	46
BD	00	40
C2	04	28

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	DVD/VR-2963 SI		DVD/VR-2961B SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101A	701WPJ1200	CABINET,FRONT	701WPJ1202	CABINET,FRONT
101D	712WPJ0814	FLAP	712WPJ0816	FLAP
101C	711WPD0638	PLATE,DISPLAY	711WPD0640	PLATE,DISPLAY
116	7222022630	SHEET,RATING	7222022631	SHEET,RATING
---	793UCD1190	GIFT BOX	793UCD1191	GIFT BOX
---	J2C41201A	INSTRUCTION BOOK	J2C44001A	INSTRUCTION BOOK(F)
---		———	J2C44010A	INSTRUCTION BOOK(D)
---	J2C41207A	QUICK SET-UP SHEET	J2C44007A	QUICK SET-UP SHEET
---	J4E00129	INFORMATION SHEET		DELETE
---	A2C412N975	INSTRUCTION BOOK KIT	A2C441T975	INSTRUCTION BOOK KIT

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	DVD/VR-2963 SI		DVD/VR-2961B SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
CD6002	06CDL02002	RF CABLE PAL FTZ CDL02002	06CDL02003	CABLE,PAL CDL02003
TM601	076D0FI080	TRANSMITTER ORV201N38090	076D0FI090	TRANSMITTER ORV201N38100

SPEC.NO.	M2C4-40T
O/R NO.	U312504