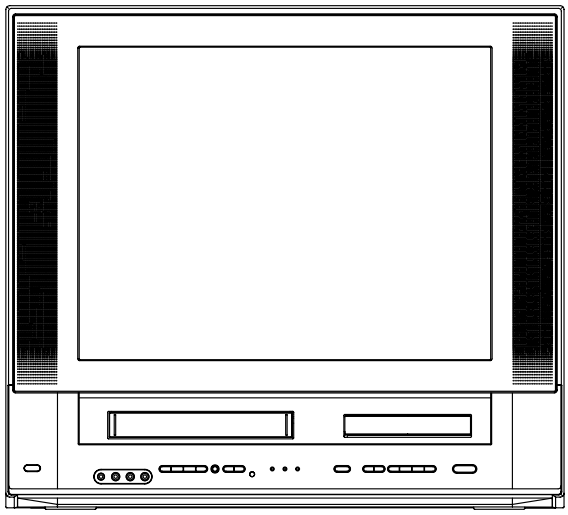
Memorex®

MVDT2002

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER/ DVD VIDEO PLAYER



VHS

ORIGINAL
MFR'S VERSION A

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. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. 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.

4. 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.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. 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.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

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

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

WHEN REPLACING DVD DECK

[Removing the DVD Deck]

Before removing Pick Up PCB and DVD PCB connector, short circuit the position shown in **Fig. 1** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[Installing the DVD Deck]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

NOTE

- Before your operation, please read “PREPARATION OF SERVICING”.
- Use the Lead Free solder.
- Manual soldering conditions
  - Soldering temperature: 320 ± 20˚C
  - Soldering time: Within 3 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
- When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to keep the Flux smoke away from it.

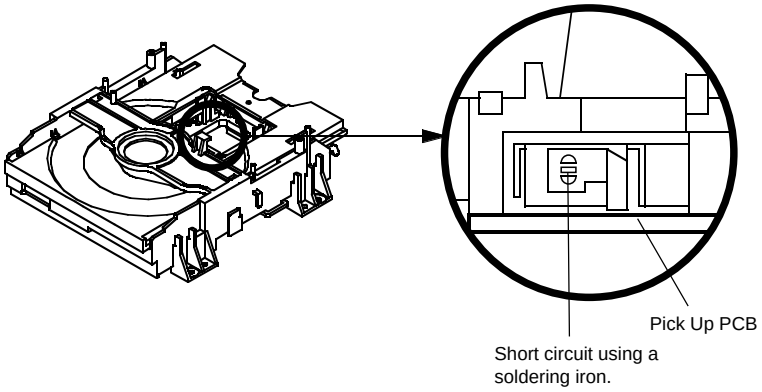


Fig. 1

PREPARATION OF SERVICING

The laser diode used for a pickup head may be destroyed with external static electricity. Moreover, even if it is operating normally after repair when static electricity discharge is received at the time of repair, the life of the product may be shortened.
Please perform the following measure against static electricity, be careful of destruction of a laser diode at the time of repair.

- Place the unit on a workstation equipped to protect against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the TV/DVD/VCR block from the main unit as shown in **Fig. 1** below. **(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 direction to wind the Video Tape in the Cassette Case.
5. Repeat steps 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch the tape.

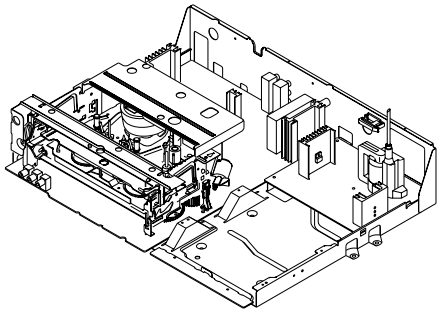


Fig. 1

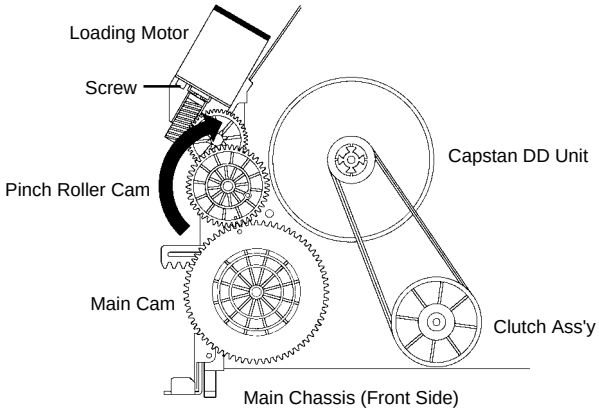


Fig. 2

DISC REMOVAL METHOD AT NO POWER SUPPLY

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

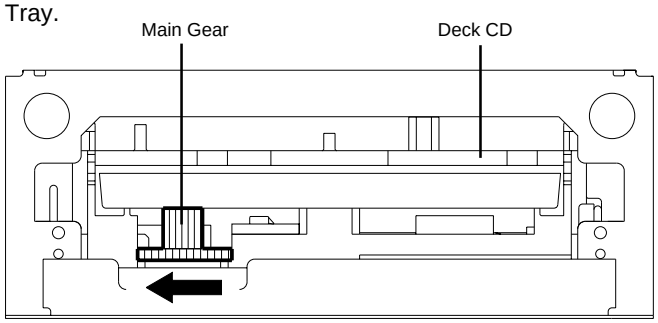


Fig. 1

PARENTAL CONTROL - RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

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

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

TABLE OF CONTENTS

GENERAL SPECIFICATIONS

G-1	TV System	CRT		CRT Size / Visual Size	20 inch / 508.0mmV
				CRT Type	Flat
				Magnetic Field BV/BH	+0.45G / 0.18G
		Color System			NTSC
		Speaker			2 Speaker
				Position	Front
				Size	1.8 x 3.9 Inch
				Impedance	8 ohm
		Sound Output		MAX	1.5W + 1.5W
				10%(Typical)	—
G-2	VCR System	System			VHS Player / Recorder
		Video System			NTSC
		Hi-Fi STEREO			Yes
		NTSC PB			-
		Deck			OVD-7
		Heads	Video Head		4 Heads
			FM Audio Head		2 Heads
			Audio /Control		Mono /Yes
			Erase(Full Track Erase)		Yes
		Tape Speed	Rec	PAL	-
				NTSC	SP/SLP
			Play	PAL	-
				NTSC	SP/LP/SLP
		Fast Forward / Rewind Time (Approx.) at 25oC			FF:1'48"/REW:1'48"
				with Cassette	T-120
		Forward/Reverse Picture Search		NTSC or PAL-M	SP/LP/SLP=3x,5x/7x,9x/9x,15x
		Frame Advance			Yes
		Slow Speed			1/10
G-3	DVD System	Color System			NTSC
		Disc			DVD, CD-DA, CD-R/RW DVD-R/RW (Video Format Only)
		Disc Diameter			120 mm , 80 mm
		Drive			DM3PA
		Search speed		Fwd	4 step
				Actual	2-45 times(DVD) 4-40 times (CD)
				Rev	4 step
				Actual	2-45 times(DVD) 4-40 times (CD)
		Slow speed			Fwd 1/7 - 1/2 times
				Actual	--
					Rev --
				Actual	--
G-4	Tuning System	Broadcasting System			US System M
		Tuner and Receive CH		System	1 Tuner
				Destination	US(w/CABLE)
				CH Coverage	2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84
		Intermediate Frequency		Picture(FP)	45.75MHz
				Sound(FS)	41.25MHz
				FP-FS	4.5MHz
		Preset CH			No
		Stereo/Dual TV Sound			US-Stereo
		Tuner Sound Muting			Yes
G-5	Signal	Video Signal		Input Level	1 V p-p/75 ohm
				Output Level	1 V p-p/75 ohm
				S/N Ratio (Weighted) at DVD Mode	65dB
				S/N Ratio (Weighted) at VCR Mode	50dB
				Horizontal Resolution at DVD Mode	400 Lines
				Horizontal Resolution at VCR(SP)Mode	220 Lines
		RGB Signal		Output Level	-
		Audio Signal		Input Level	-8.0dBm/50k ohm
			VCR	Output Level(0dB=0.775Vrms)	-8.0dBm/1k ohm
			DVD	Output Level(-20dBFs 0dBFs=2.0Vrms)	-12.0dBm/1k ohm
				Digital Output Level	0.5 V p-p/75 ohm(DVD)
				S/N Ratio at DVD (Weighted)	90 dB
				S/N Ratio at VCR (SP)(CCIR Filter:ON)	38 dB
				Harmonic Distortion at DVD Mode	0.06% (1kHz)
				Harmonic Distortion at VCR(SP) Mode	1.5% (1kHz) Typical
				Frequency Response :	
				DVD Mode at DVD	4Hz - 22kHz
				at Video CD	-
				at SVCD	-
				at CD	4Hz - 20kHz
				VCR Mode at SP	100Hz - 10kHz

GENERAL SPECIFICATIONS

				at LP	100Hz - 6kHz
				at SLP	100Hz - 4kHz
		Hi-Fi Audio Signal		Dynamic Range : More than	90 dB
				Frequency Response :	20Hz - 20kHz
				Wow And Flutter : Less than	0.01 %Wrms
				Channel Separation : More than	60 dB
				Harmonic Distortion : Less than	1.0 %
G-6	Power	Power Source		AC	120V,60Hz
				DC	-
		Power Consumption		at AC	110 W at 120 V 60 Hz
				at DC	-
				Stand by (at AC)	4 W at 120 V 60 Hz
				Per Year	-
		Protector		Power Fuse	Yes
				Safety Circuit	Yes
				IC Protector(Micro Fuse)	No
				Dew Sensor	No
G-7	Regulation			Safety	UL
				Radiation	FCC
				X-Radiation	DHHS
				Laser	DHHS
G-8	Temperature			Operation	+5°C ~ +40°C
				Storage	-20°C ~ +60°C
G-9	Operating Humidity				Less than 80% RH
G-10	On Screen Display (TV/VCR)		Menu		Yes
			Menu	Type	Icon
			System Setup		Yes
				Clock Set	Yes
				On/Off Timer Set	Yes
				Auto Clock On/Off	Yes
				Standard Time	Yes
				Daylight Saving Time	Yes
			TV Setup		Yes
				Language	Yes
				Picture	Yes
				Audio	Yes
				Picture Preference	Yes
			Channel Setup		Yes
				TV/CABLE	Yes
				Auto CH Memory	Yes
				Add/ Delete	Yes
			V-chip Setup		Yes
			Tape Setup		Yes
				Timer Rec Set	Yes
				Auto Repeat On/Off	Yes
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry			No
		Clock / Date			Yes
		TV/VCR			Yes
		DVD			Yes
		CH/AV(LINE)			Yes
		Tape Counter(Linear Counter)			Yes
		Tape Speed			Yes
		Sleep Time			Yes
		Stereo/Audio Output			Yes
				Bilingual	No
				SAP	Yes
		Control Level	Volume		Yes
			Brightness/Contrast/Sharpness/Color		Yes
			Tint		Yes
			Bass/Treble/Balance		Yes
			Manual Tracking		Yes
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes
		Auto Tracking/Manual Tracking			Yes
		Caption / Text			Yes
		Index			Yes
		Mute			Yes
		Hi-Fi			Yes
		Repeat			Yes
		Zero Return			Yes
		DEW			No
G-11	On Screen Display (DVD)	Menu (DVD)			Yes
			Menu Type		Icon
			Language		Yes
				Menu	Yes
				Subtitle	Yes
				Audio	Yes
				OSD Language(Set up Language)	No

GENERAL SPECIFICATIONS

		Video			Yes	
			E.B.L. (Enhanced Black Level)		No	
			TV Screen Size(4:3)		Yes	
			OSD Display On/Off		Yes	
			Picture Mode (Video/Film/Auto)		Yes	
			JPEG Interval		Yes	
		Audio			Yes	
			DRC (Dynamic Range Control)		Yes	
			Dialogue (On DRC[TV] / Off DRC[Std])		No	
			Surround		No	
		System			Yes	
			Disc/Card Slot		No	
			Password Lock/ Un Lock		Yes	
			Parental		Yes	
			Select Files		Yes	
			HDMI (480p/1080i/720p)		No	
			Output		No	
		Open			Yes	
		Close			Yes	
		No Disc			Yes	
		Reading Disc			Yes	
		Play			Yes	
		Still/Pause			Yes	
		Stop			Yes	
		Prohibit Mark			Yes	
		PBC			No	
		Step			Yes	
		Skip(>>|)			Yes	
		Skip(|<<)			Yes	
		Random			Yes (CD,MP3,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			No	
		Audio No.			Yes	
		Audio Stereo L/R			No	
		Zoom			Yes	
		Marker No.			No	
		Program Play Back			Yes (CD, MP3, WMA, JPEG)	
		Surround On/Off			No	
		Screen Saver			No	
		MP3, WMA, JPEG		Folder Name	Yes	
				File Name	Yes	
				File No	Yes	
				Time	Yes (MP3,WMA Only)	
				Track No	Yes	
G-12	**OSD Language**				English French Spanish	
G-13	**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	
		Sleep Timer	Max Time		120	Min
			Step		10	Min
		On/Off Timer	Program(On Timer / Off Timer)		1	Program
		Auto Shut Off	No Signal		15	Min
			No Operation		-	Min
		Timer Back-up (at Power Off Mode)			5	Sec
G-14	**Remote Control Unit**	Unit			RC-HH	
		Glow in Dark Remocon			No	
		Remocon Format			ORION	
		Format			NEC	
		Custom Code			71-8E	
		Power Source	Voltage(D.C)		3V	
			UM size x pcs		UM-4 x 2 pcs	
		Total Keys			52	
		Keys	TV/VCR		Yes	
			DVD		Yes	
			Power		Yes	

			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Channel-	Yes
			Channel+	Yes
			Volume-	Yes
			Volume+	Yes
			Display (Call)	Yes
			Sleep	Yes
			Audio Select	Yes
			Mute	Yes
			Index- / Skip-	Yes
			Index+ / Skip+	Yes
			T-REC	Yes
			Rec/OTR	Yes
			Slow+	Yes
			Play	Yes
			Stop	Yes
			Rew / Search-	Yes
			F. Fwd / Search+	Yes
			Pause / Still	Yes
			CM Skip	Yes
			Speed / Return	Yes
			Counter Reset / Angle	Yes
			Zero Return / Subtitle	Yes
			Input Select / Zoom	Yes
			Menu /Set Up	Yes
			Program / Repeat A-B	Yes
			ATR / Top Menu	Yes
			Tracking+ / DVD Menu	Yes
			Tracking- / Play Mode	Yes
			Cancel	Yes
			3D Surround	No
			Cursor Up	Yes
			Cursor Down	Yes
			Cursor Left	Yes
			Cursor Right	Yes
			Enter	Yes
			Eject	Yes
			Open/Close	Yes
			TV Monitor	Yes
			Closed Caption	Yes
			Quick View / Jump	Yes
			CABLE	No
			WIDE	No
			Position	No
G-15	**Features (TV/VCR)**	Auto Head Cleaning		Yes
		VIDEO PLUS+(SHOWVIEW,G-CODE)		No
		Auto Clock		Yes
		Picture Preference		Yes
		Auto Setup		No
		Forward / Reverse Picture Search		Yes
		Auto CH Memory		Yes
		Surround		Yes
		Stable Sound		Yes
		Closed Caption		Yes
		TV Auto Shut off Function		Yes
		End Call		No
		Index Search		Yes
		SQPB		No
		CABLE		Yes
		CM Skip(30sec x 6 Times)		Yes
		Comb Filter (2Lines)		Yes
		VM Circuit		No
		TV Monitor		Yes
		Program Extend		No
		Choke Coil		No
		Energy Star		No
		Protect of FBT Leak Circuit		Yes
		Zero Return		Yes

GENERAL SPECIFICATIONS

		Power On Memory			No
		V-chip	USA V-chip	Yes	
			CANADA V-chip		No
	Features (DVD)	Tray Lock			No
		Auto Stop	(Pause, and Resume Stop after 5min.)	Yes	
		Card Slot Reading (Not secured Data)			No
			xD-Picture Card		No
			Memory Stick		No
			Multi Media Card		No
			SD Memory Card		No
			Compact Flash		No
			Micro Drive		No
			SmartMedia		No
		Video CD Playback			No
		SVCD Playback			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
		3D Surround			No
		Screen Saver			No
		Audio DAC		192kHz / 24bit	
		Copy (Disc to Tape)			No
G-16	**Accessories**	Owner's Manual	Language	English / Spanish	
			w/Guarantee Card		No
		Remote Control Unit		Yes	
		Battery			No
			UM size x pcs	-	
			OEM Brand	-	
		Rod Antenna			No
			Poles	-	
			Terminal	-	
		Loop Antenna			No
			Terminal	-	
		U/V Mixer			No
		300 ohm to 75 ohm Antenna Adapter			No
		Antenna Change Plug			No
		DC Car Cord (Center+)			No
		AC Plug Adapter			No
		AC Cord			No
		AV Cord (2Pin-1Pin)			No
		Guarantee Card		Yes	
		Registration Card			No
		ESP Card			No
		Warning Sheet			No
		Dew/AHC Caution Sheet			No
		Quick Set-up Sheet			No
		Circuit Diagram			No
		Service Facility List			No
		Important Safeguard			No
		Sheet Information (Return)			No
G-17	**Interface**	Switch	Front Power (Tact)	Yes	
			Channel Up	Yes	
			Channel Down	Yes	
			Volume Up	Yes	
			Volume Down	Yes	
			Play (VCR)	Yes	
			Stop / Eject (VCR)	Yes	
			F.FWD/Cue (VCR)	Yes	
			Rew/Rev (VCR)	Yes	
			REC/OTR (VCR)	Yes	
			Play (DVD)	Yes	
			Stop (DVD)	Yes	
			Skip+ /Search+ (DVD)	Yes	
			Skip- /Search- (DVD)	Yes	
			Open/Close (DVD)	Yes	
			Input Select		No
			Main Power SW		No
		Indicator	Power	Yes(Red)	
			REC/OTR	Yes(Red)	
			T-REC	Yes(Red)	
			TV/VCR		No

GENERAL SPECIFICATIONS

			DVD		No
		Terminals	Front	Video Input	RCA x 1
				Audio Input	RCA x 2(Stereo)
				4 in 1 Card Slot	No
				Compact Flash Card Slot	No
				Other Terminal	HeadPhone (Stereo & Mono, 3.5mm)
			Rear	Video Input	RCA x 1
				Audio Input	RCA x 2(Stereo)
				Video Output	RCA x1
				Audio Output	RCA x 2(Stereo)
				Digital Audio Output	Coaxial (DVD Only)
				VHF/UHF Antenna Input	F Type
				AC Inlet	No
G-18	**Set Size**			Approx. W x D x H (mm)	573 x 485 x 517
G-19	**Weight**			Net (Approx.)	27.0kg (59.5lbs)
				Gross (Approx.)	30.5kg (67.3lbs)
G-20	**Carton**		Master Carton		No
				Content	-
				Material	-
				Dimensions W x D x H(mm)	-
				Description of Origin	-
			Gift Box	Material	Double/Brown
				Dimensions W x D x H(mm)	658 x 575 x 625
				Description of Origin	Yes
			Drop Test	Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	31
			Container Stuffing(40' container)		216 Sets
G-21	**Material**		Cabinet	Front	PS 94V0 DECABROM
				Rear	PS 94V0 DECABROM
				Jack Panel	-
			PCB	Non-Halogen Demand	No
				Eyelet Demand	Yes
G-22	**Environment**		Environmental standard requirement (by buyer)		No
				Pb-free	No

DISASSEMBLY INSTRUCTIONS

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

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 6 screws (1).
2. Remove the 2 screws (2).
3. Remove the Back Cabinet in the direction of arrow.

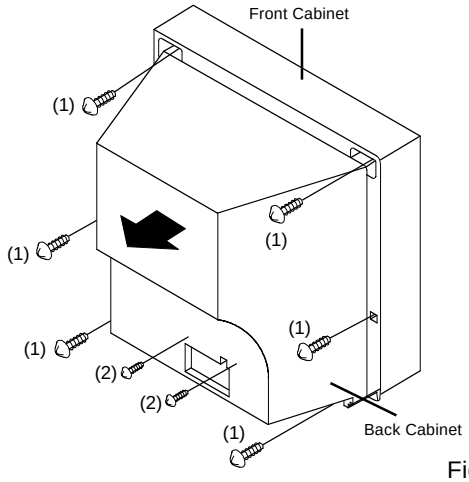


Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors:
   (CP603B, CP803 and CP805).
3. Remove the CRT PCB in the direction of arrow.

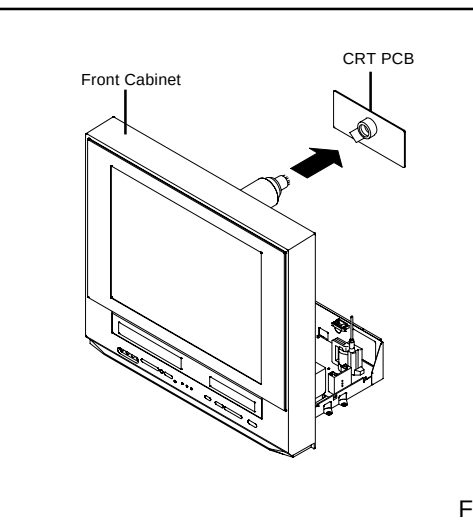


Fig. 1-2

1-3: TV/DVD/VCR BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws (1).
2. Disconnect the following connectors:
   (CP303, CP404 and CP1704).
3. Remove the TV/DVD/VCR Block in the direction of arrow.

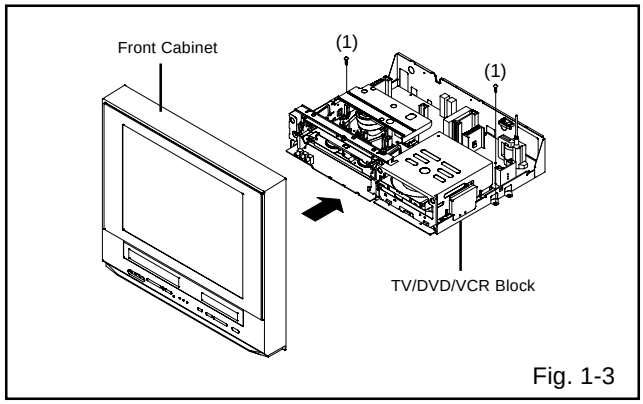


Fig. 1-3

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

NOTE

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

1. Remove the 2 screws (1).
2. Remove the VCR Top.
3. Move the Cassette Holder Ass'y to the back side.
4. Remove the 3 screws (2).
5. Remove the 2 screws (3).
6. Remove the Deck Shield Cover.
7. Remove the screw (4).
8. Remove the FE Head.
9. Disconnect the following connectors:
   (CP101, CP4501 and CP4502).
10. Remove the VCR Deck in the direction of arrow.

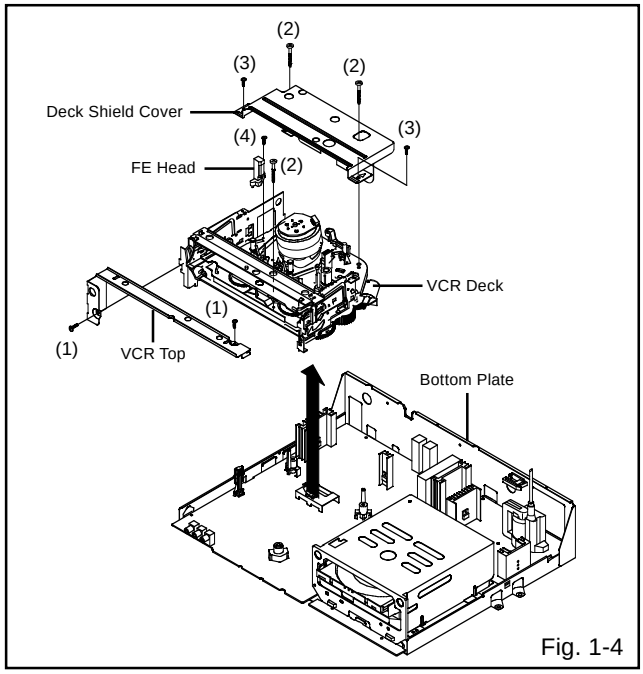


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

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

1. Remove the 6 screws (1).
2. Remove the screw (2).
3. Remove the AV Jack Shield.
4. Disconnect the following connectors:
   (CP001, CP602B, CP604, CP2201, CP8001 and CP8002).
5. Remove the VCR PCB in the direction of arrow.

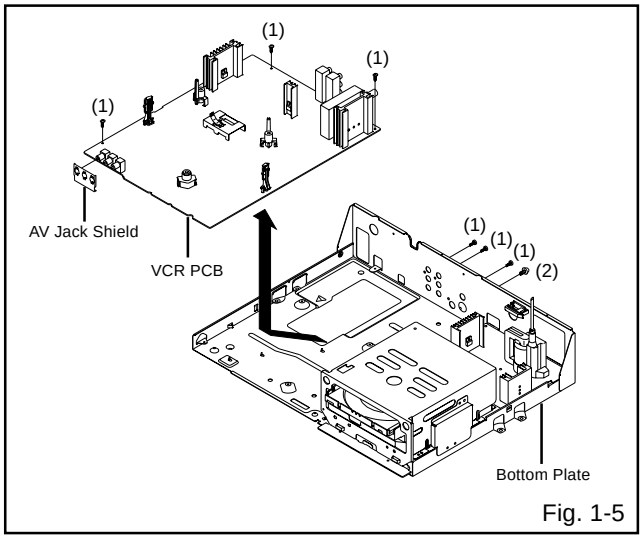


Fig. 1-5

1-6: VCR DECK (Refer to Fig. 1-6)

1. Remove the 4 screws (1).
2. Remove the DVD Block in the direction of arrow (A).
3. Remove the 2 screws (2).
4. Remove the Operation PCB in the direction of arrow (B).

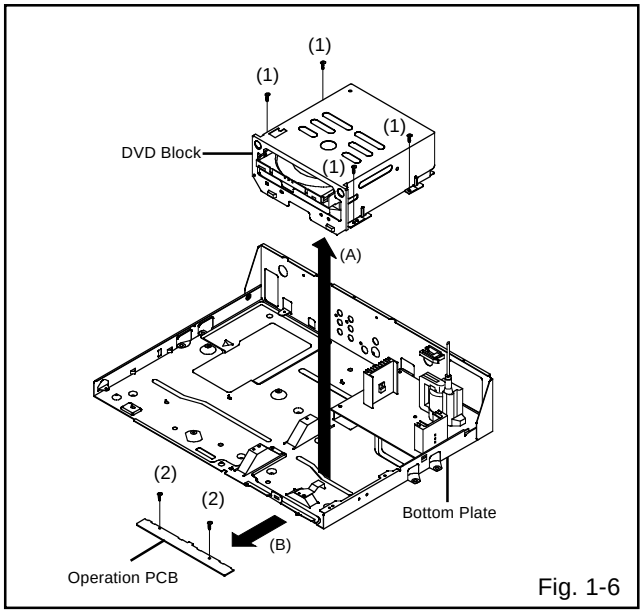


Fig. 1-6

1-7: DVD PCB/DVD DECK (Refer to Fig. 1-7)

1. Short circuit the position shown in **Fig. 1-7** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Remove the 4 screws (1).
3. Remove the DVD Top in the direction of arrow (A).
4. Remove the 2 screws (2).
5. Remove the DVD PCB in the direction of arrow (B).
6. Disconnect the following connectors:
   (CP2301, CP2302 and CP2303).
7. Remove the 4 screws (3).
8. Remove the DVD Deck in the direction of arrow (C).

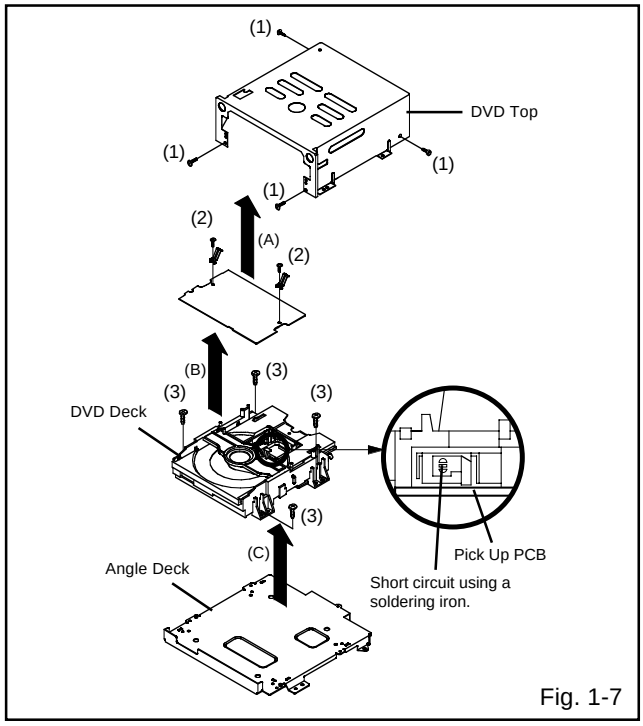


Fig. 1-7

NOTE

1. Before your operation, please read “PREPARATION OF SERVICING”.
2. Use the Lead Free solder.
3. Manual soldering conditions
   - Soldering temperature: 320 ± 20˚C
   - Soldering time: Within 3 seconds
   - Soldering combination: Sn-3.0Ag-0.5Cu
4. When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to keep the Flux smoke away from it.
5. When installing the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

DISASSEMBLY INSTRUCTIONS

1-8: DEFLECTION PCB (Refer to Fig. 1-8)

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

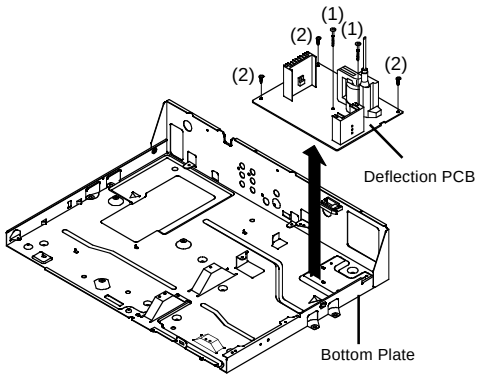


Fig. 1-8

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

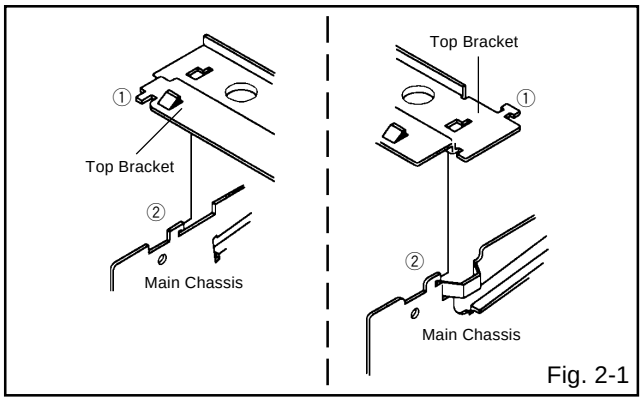


Fig. 2-1

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.

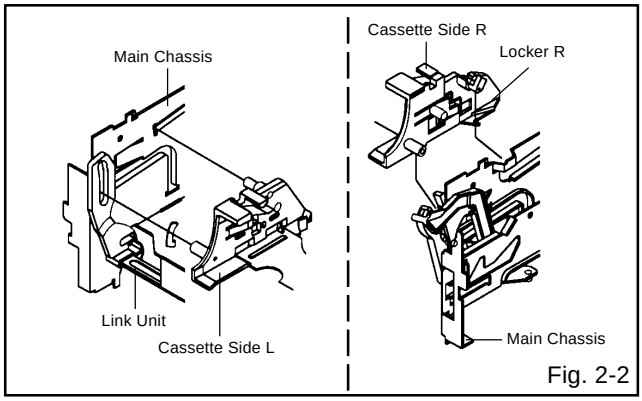


Fig. 2-2

2-3: LINK UNIT (Refer to Fig. 2-3)

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.

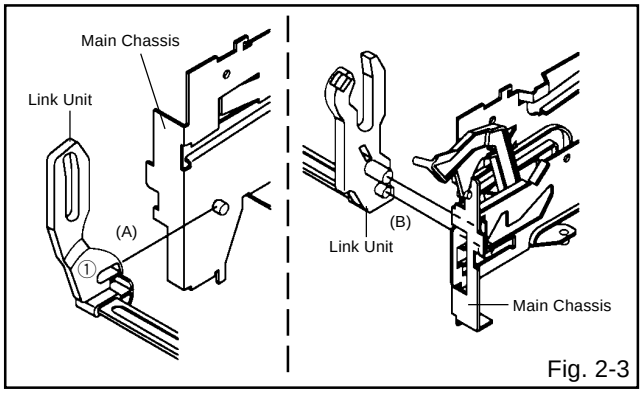


Fig. 2-3

2-4: LINK LEVER/FLAP LEVER (Refer to Fig. 2-4)

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

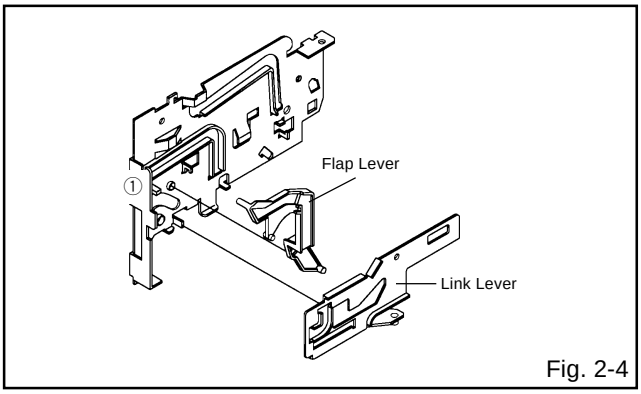


Fig. 2-4

2-5: LOADING MOTOR/WORM (Refer to Fig. 2-5-A)

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

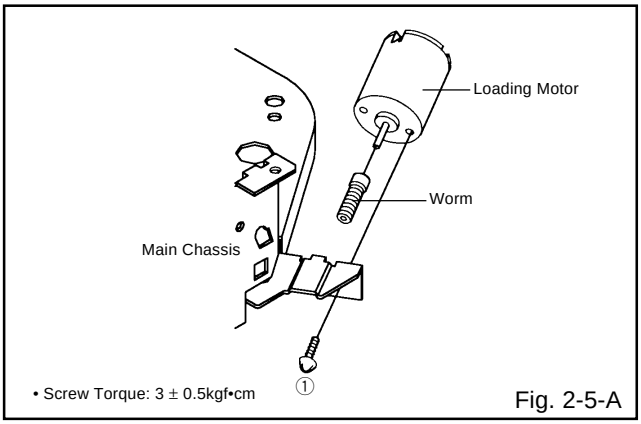


Fig. 2-5-A

NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-5-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-5-C.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-5-D.

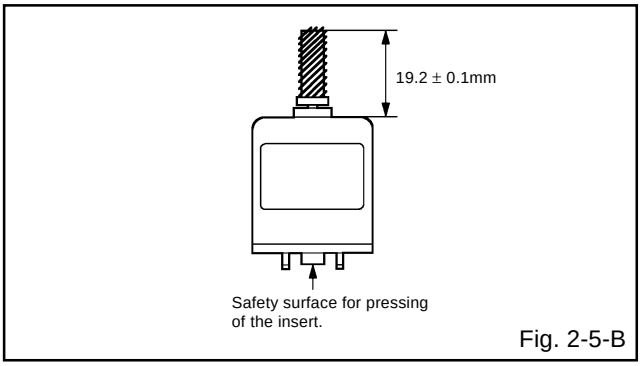


Fig. 2-5-B

DISASSEMBLY INSTRUCTIONS

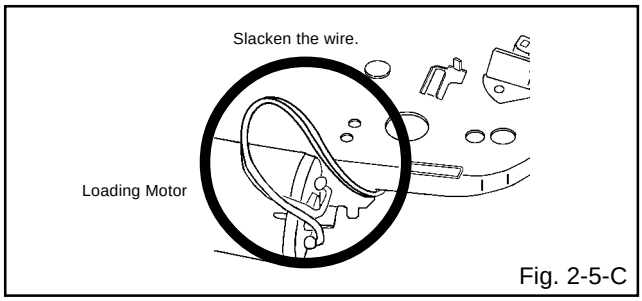


Fig. 2-5-C

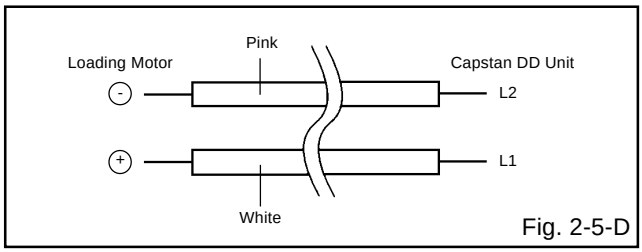


Fig. 2-5-D

2-6: TENSION ASS'Y (Refer to Fig. 2-6-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-6-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.

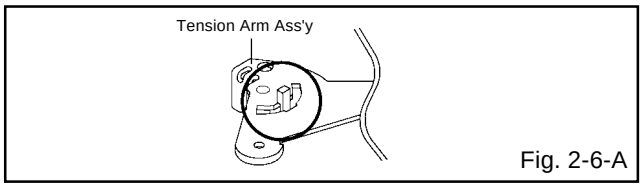


Fig. 2-6-A

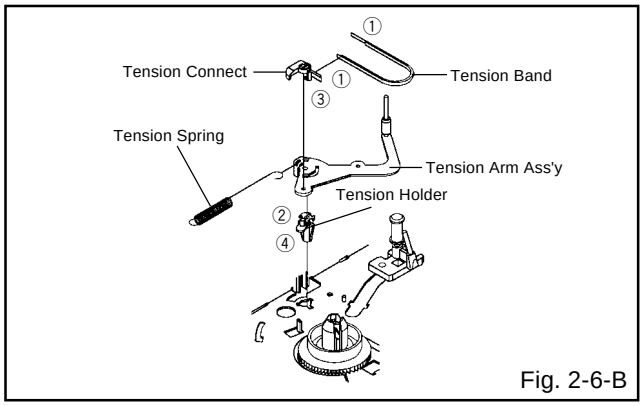


Fig. 2-6-B

NOTE

1. In case of the Tension Band installation, note the direction of the installation. **(Refer to Fig. 2-6-C)**
2. In case of the Tension Band installation, install correctly as Fig. 2-6-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-6-E.

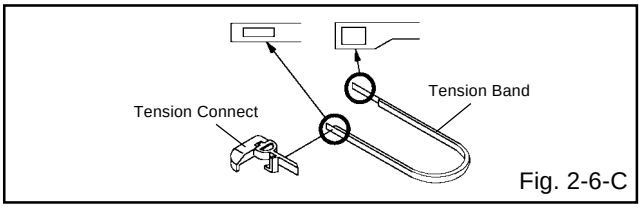


Fig. 2-6-C

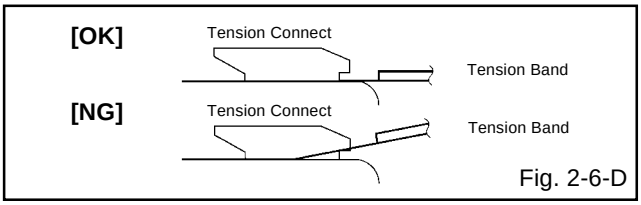


Fig. 2-6-D

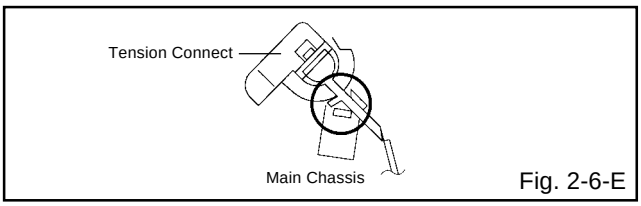


Fig. 2-6-E

2-7: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-7-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.

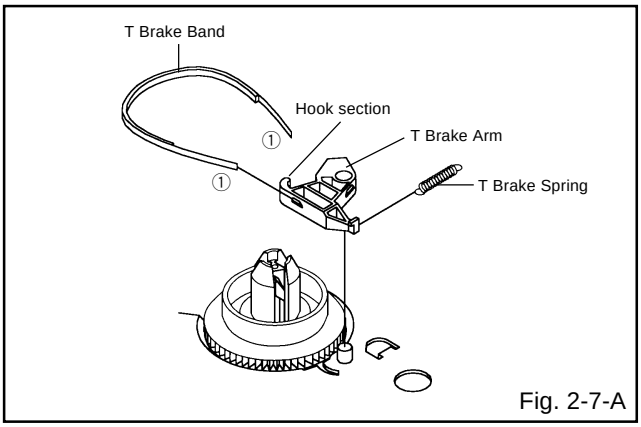


Fig. 2-7-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-7-B.

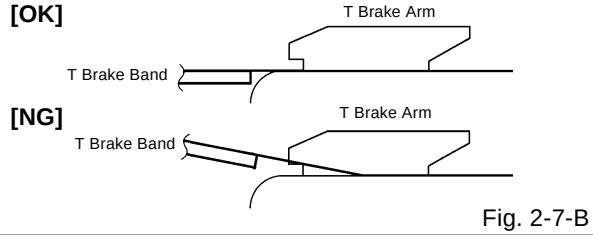


Fig. 2-7-B

2-8: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-8-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 remain on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-8-A)** Touching may leave stains on section "A"
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)**

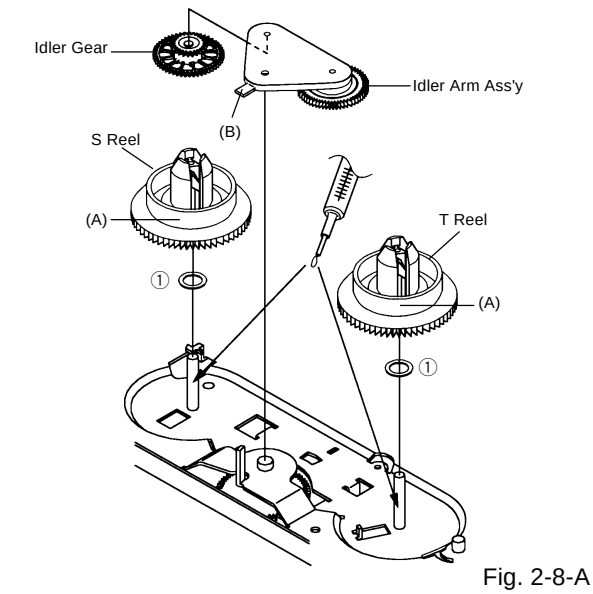


Fig. 2-8-A

NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. **(Refer to Fig. 2-8-B)**
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-8-C. And also set it so that the section "B" of Fig. 2-8-A is placed under the Main Chassis tab.

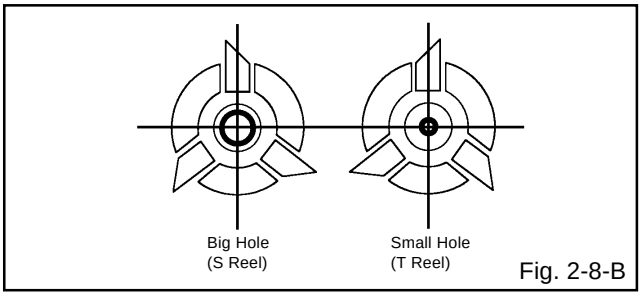


Fig. 2-8-B

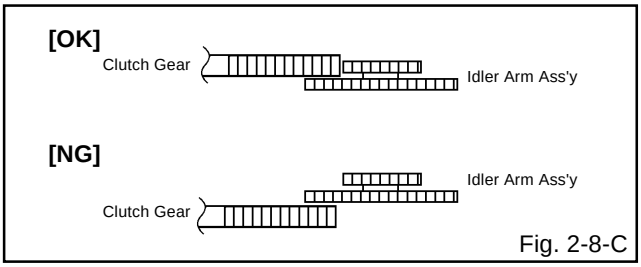


Fig. 2-8-C

2-9: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-9-A)

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

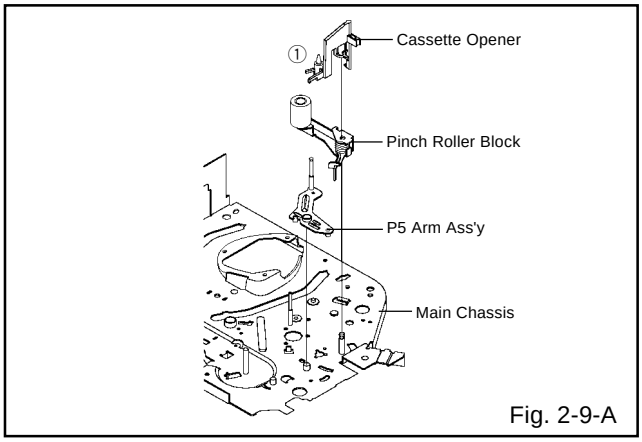


Fig. 2-9-A

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. 2-9-B.

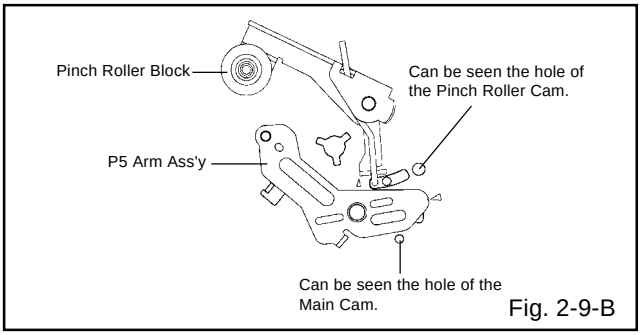


Fig. 2-9-B

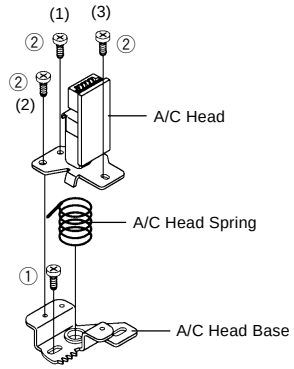
DISASSEMBLY INSTRUCTIONS

2-10: A/C HEAD (Refer to Fig. 2-10-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. 2-10-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-10-A

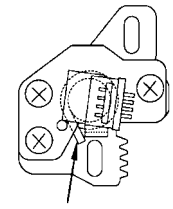
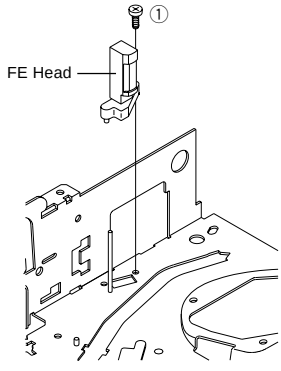


Fig. 2-10-B

2-11: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-11)

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



• Screw Torque: 5 ± 0.5kgf•cm
• The FE Head is not installed on the Video Cassette Player.

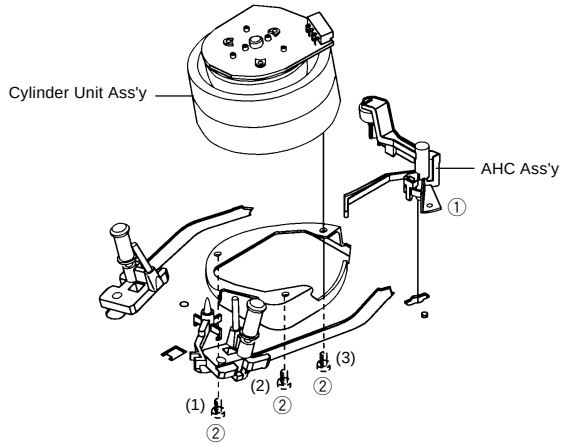
Fig. 2-11

2-12: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-12)

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.

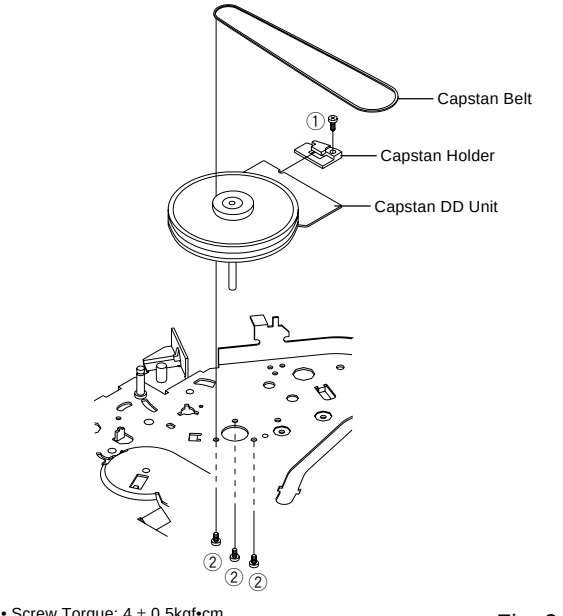


• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-12

2-13: CAPSTAN DD UNIT (Refer to Fig. 2-13)

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



• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-13

DISASSEMBLY INSTRUCTIONS

2-14: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-14-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.

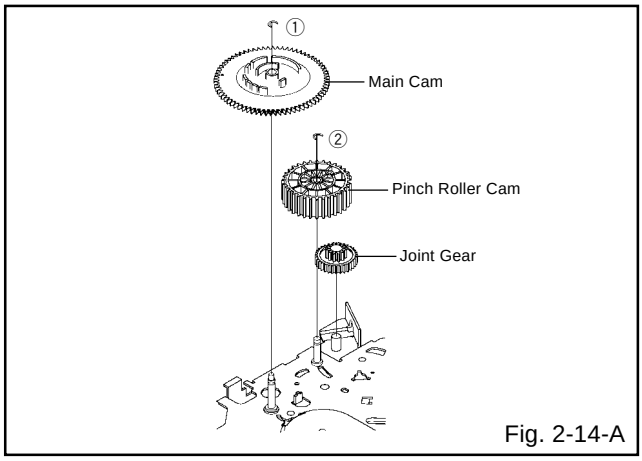


Fig. 2-14-A

NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as shown in the circled section of Fig. 2-15-B so that the markers meet. **(Refer to Fig. 2-14-B)**
   And also can be seen the Main Chassis hole through the Main Cam maker hole.

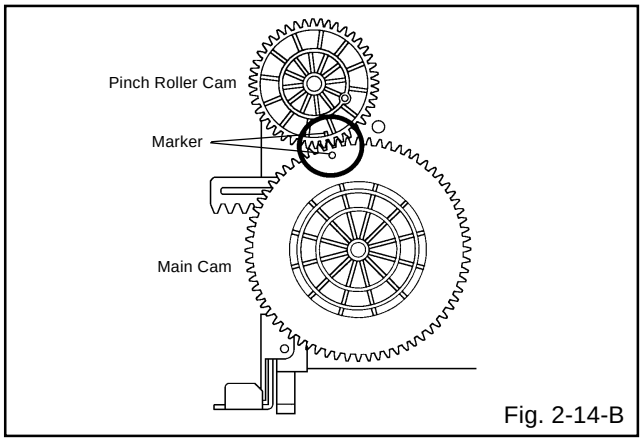


Fig. 2-14-B

2-15: LOADING GEAR S/T UNIT (Refer to Fig. 2-15-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.

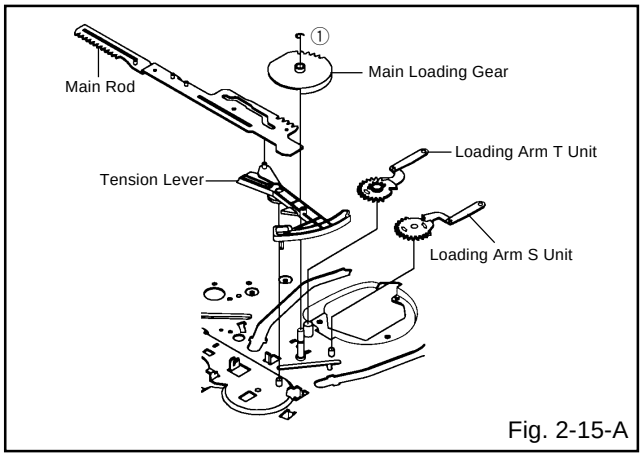


Fig. 2-15-A

NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. **(Refer to Fig. 2-15-B)**

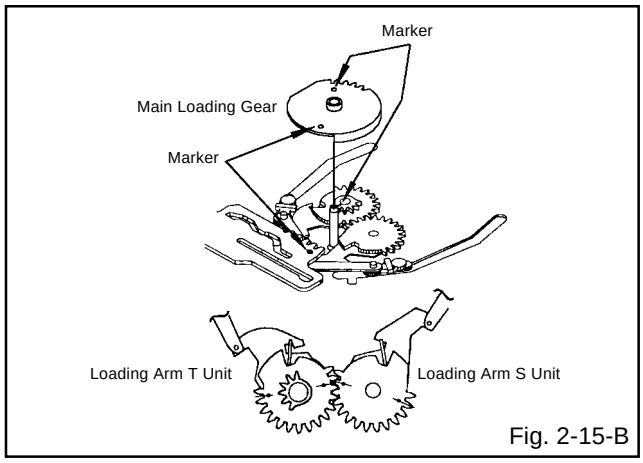


Fig. 2-15-B

2-16: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/ CLUTCH GEAR (Refer to Fig. 2-16-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.

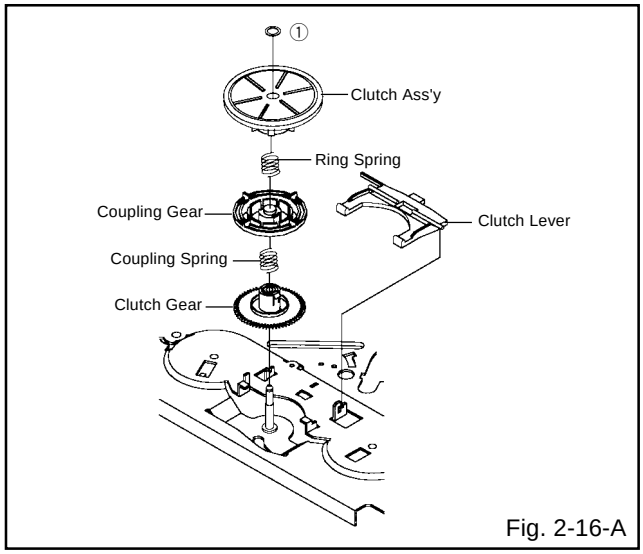


Fig. 2-16-A

DISASSEMBLY INSTRUCTIONS

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. 2-16-B)**

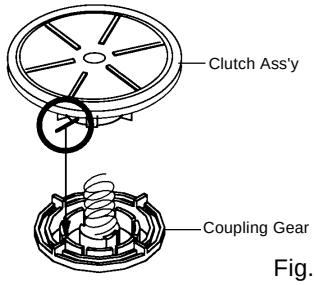


Fig. 2-16-B

2-17: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP/LED REFLECTOR (Refer to Fig. 2-17-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.

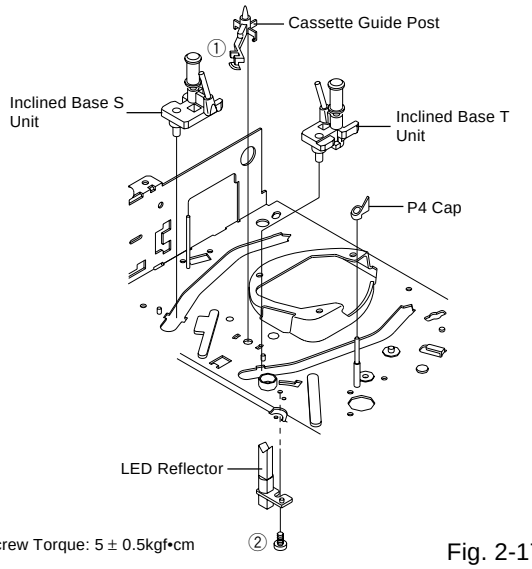


Fig. 2-17-A

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. 2-17-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-17-C.

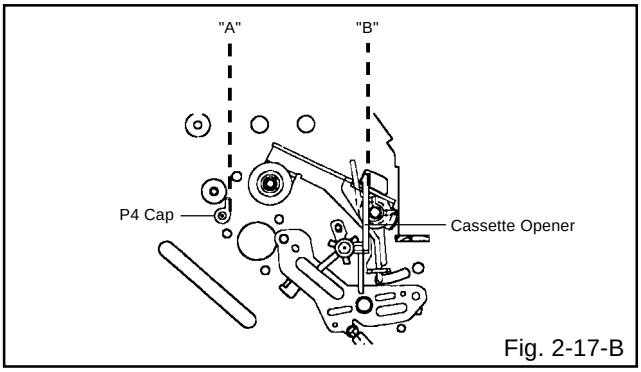


Fig. 2-17-B

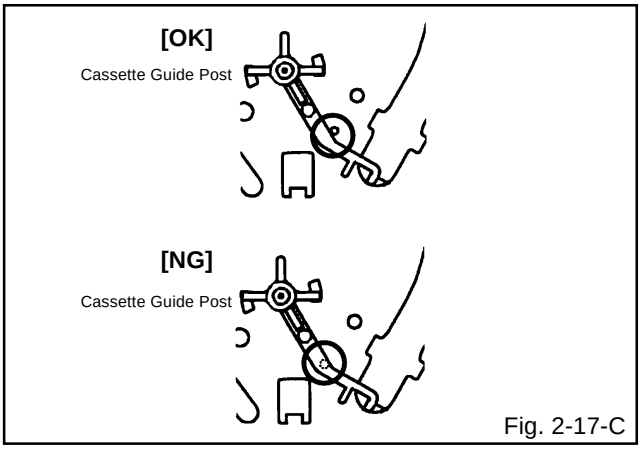


Fig. 2-17-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF DVD DECK PARTS

NOTE

1. Disassemble only the DVD DECK PARTS parts listed here. Minute adjustments are needed if the disassembly is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

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

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

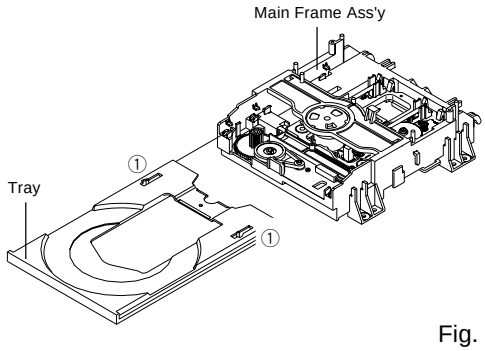


Fig. 3-1-A

NOTE

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

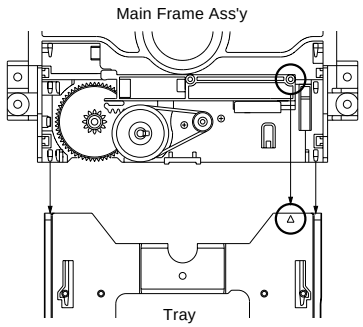
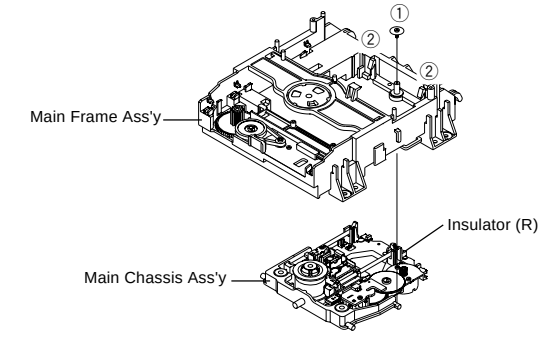


Fig. 3-1-B

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

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



• Screw Torque: 2.0 ± 0.3kgf•cm

Fig. 3-2-A

NOTE

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

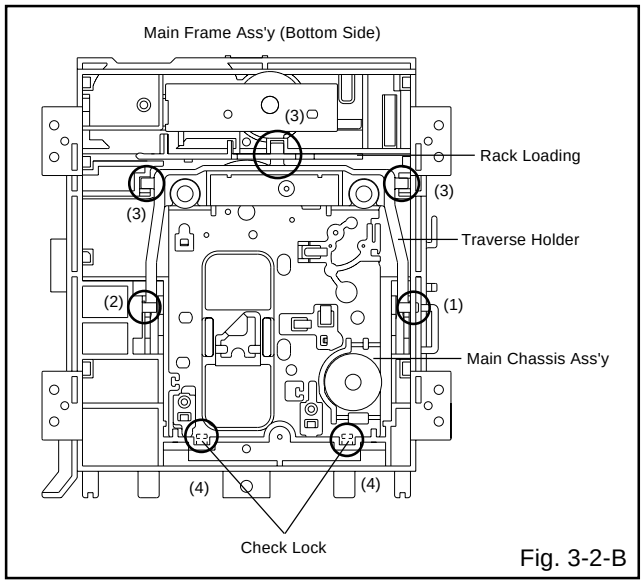


Fig. 3-2-B

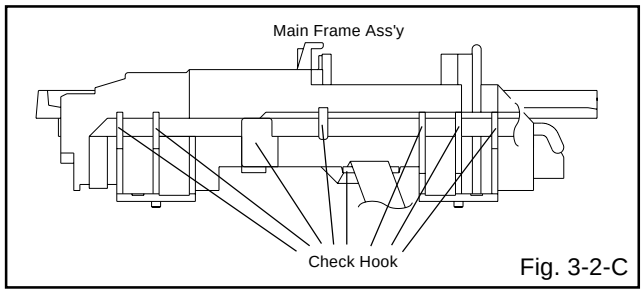
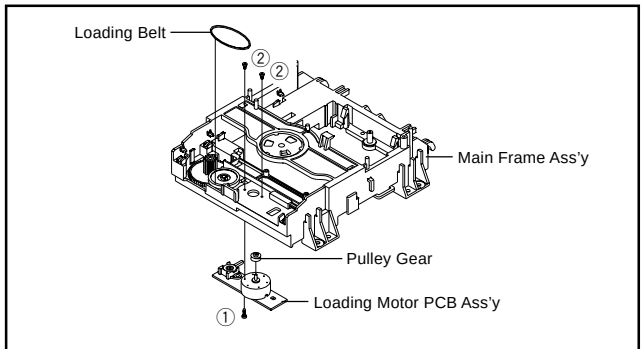


Fig. 3-2-C

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

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



• Screw Torque: 2.5 ± 0.3kgf•cm (Screw ①)
• Screw Torque: 1.0 ± 0.3kgf•cm (Screw ②)

Fig. 3-3-A

DISASSEMBLY INSTRUCTIONS

NOTE

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

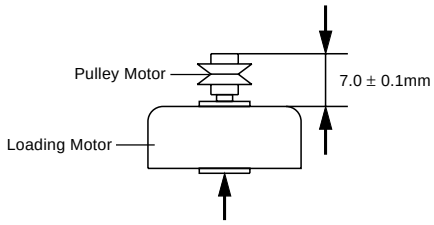


Fig. 3-3-B

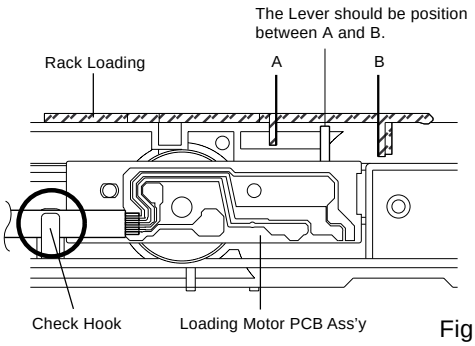


Fig. 3-3-C

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

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

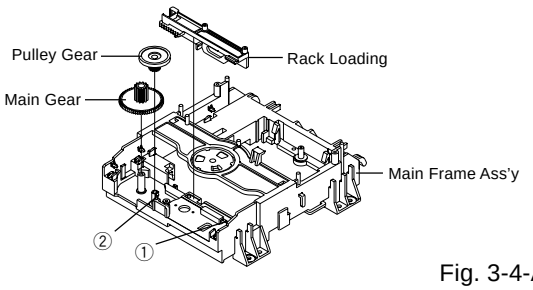


Fig. 3-4-A

NOTE

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

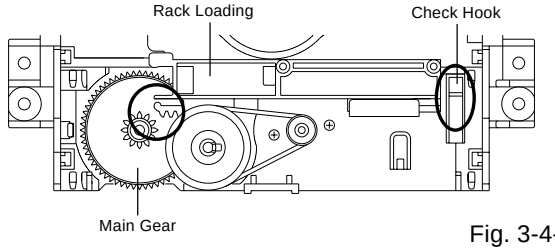


Fig. 3-4-B

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

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

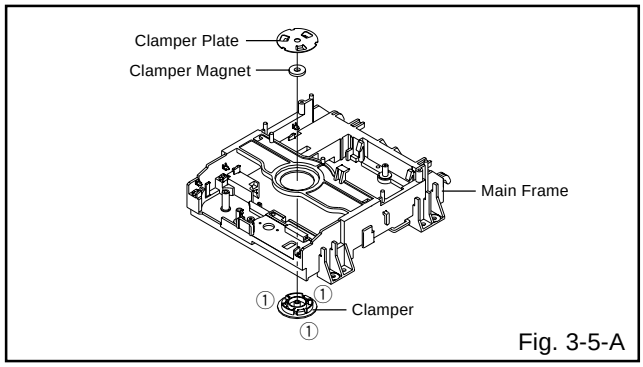


Fig. 3-5-A

NOTE

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

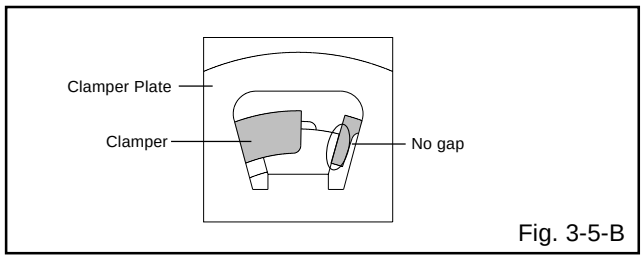


Fig. 3-5-B

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

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

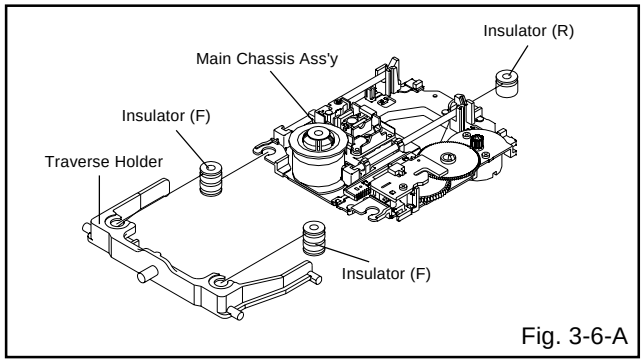


Fig. 3-6-A

NOTE

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

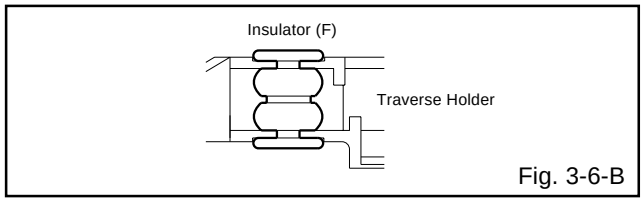


Fig. 3-6-B

DISASSEMBLY INSTRUCTIONS

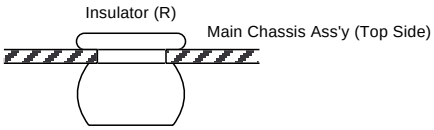
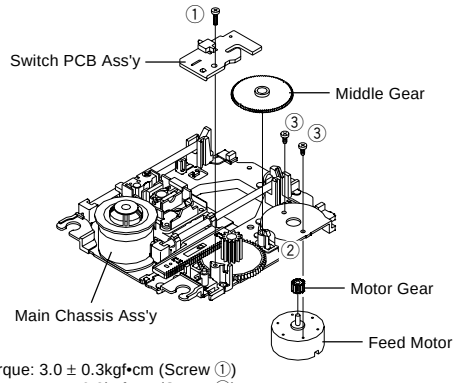


Fig. 3-6-C

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

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



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

Fig. 3-7-A

NOTE

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

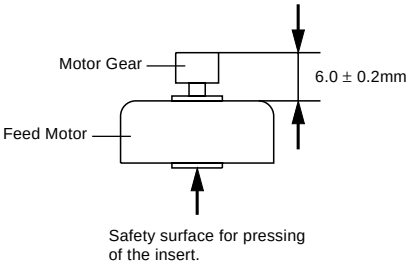


Fig. 3-7-B

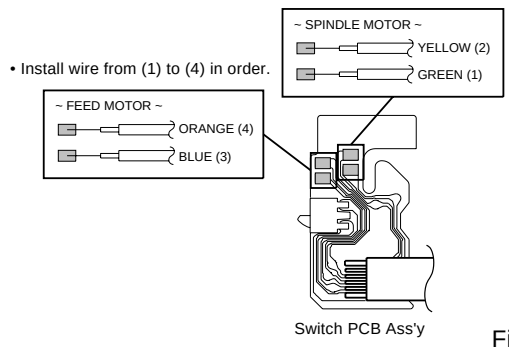
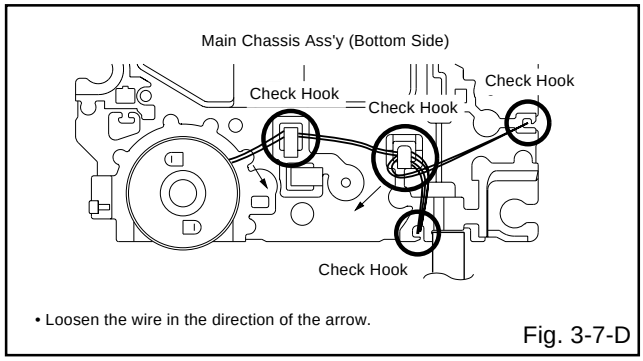


Fig. 3-7-C



• Loosen the wire in the direction of the arrow.

Fig. 3-7-D

3-8: FFC WIRE HANDLING

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

NOTE

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

[24 pin FFC]

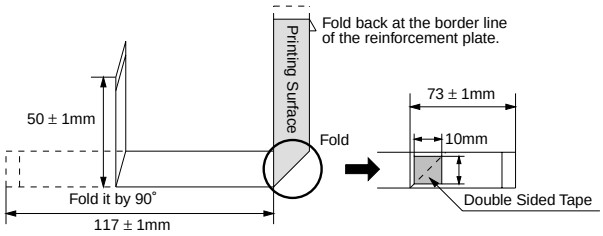
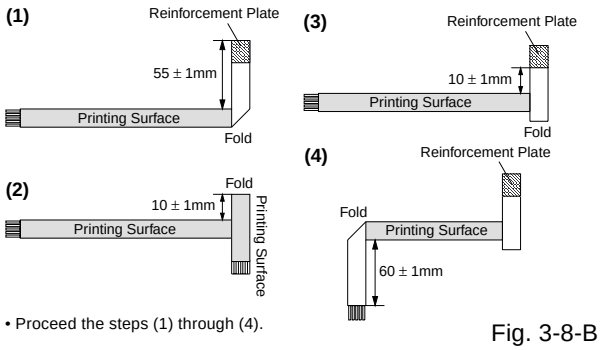


Fig. 3-8-A

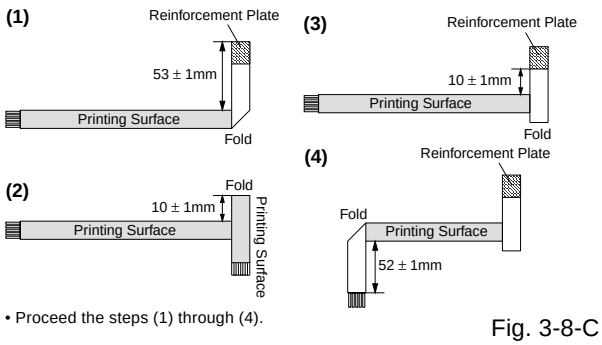
[5 pin FFC]



• Proceed the steps (1) through (4).

Fig. 3-8-B

[6 pin FFC]



• Proceed the steps (1) through (4).

Fig. 3-8-C

DISASSEMBLY INSTRUCTIONS

4. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 4-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground. While holding the plastic part of the insulated screwdriver, touch the support of the Anode with the tip of the screwdriver.
   A cracking noise will be heard as the voltage is discharged.

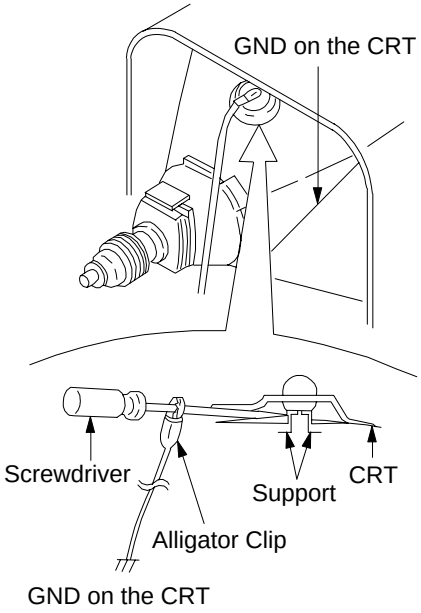


Fig. 4-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 4-2.)**

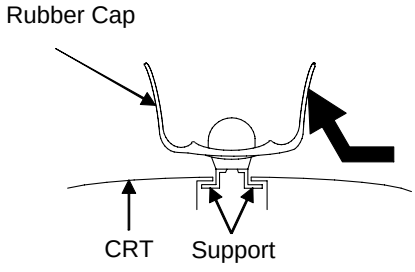


Fig. 4-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 4-3.)**

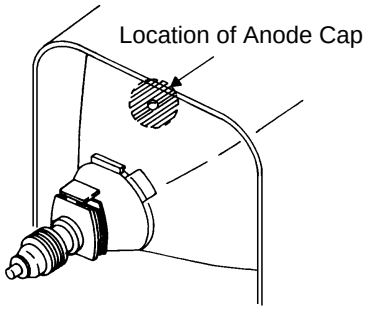


Fig. 4-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 4-4.)**

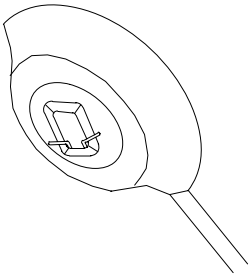


Fig. 4-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 4-5**.

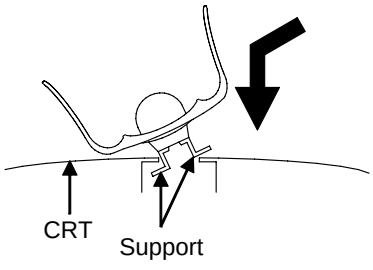


Fig. 4-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

5. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 5-1.)**

   NOTE

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

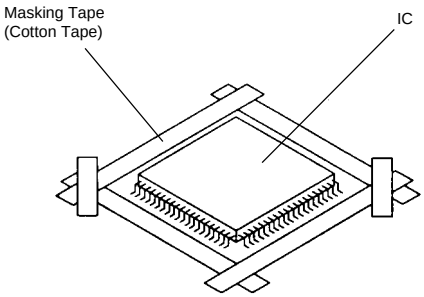


Fig. 5-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 5-2.)**

   NOTE

   Do not rotate or move the IC back and forth until IC can move back and forth easily after desoldering the leads completely.

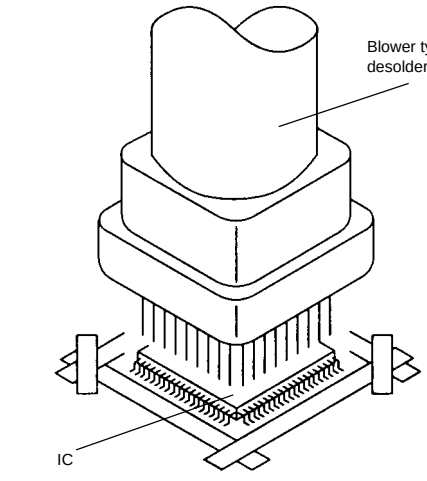


Fig. 5-2

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. 5-3.)**

   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.

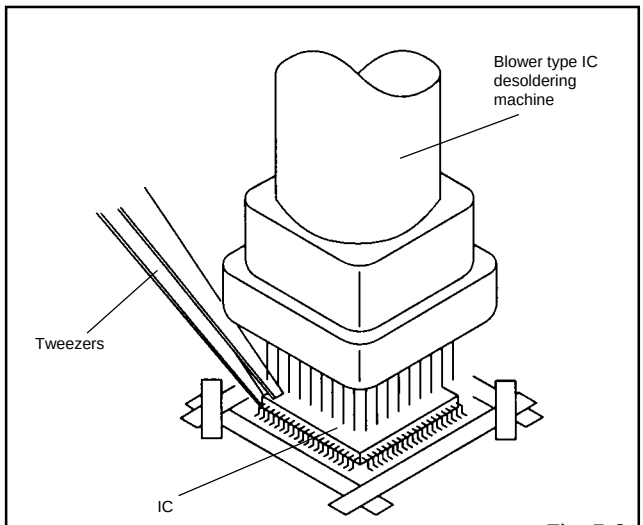


Fig. 5-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 5-4.)**

   NOTE

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

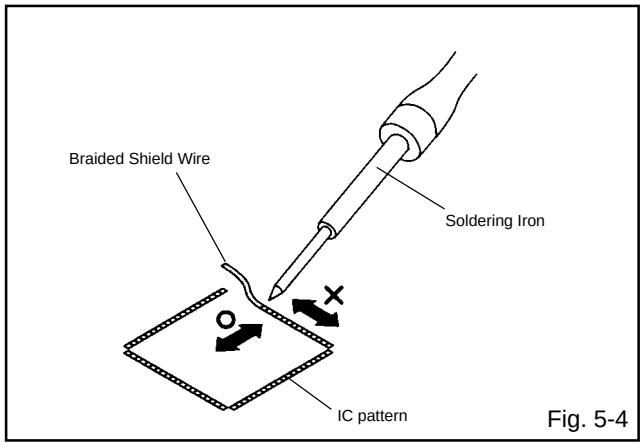


Fig. 5-4

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. 5-5.)**

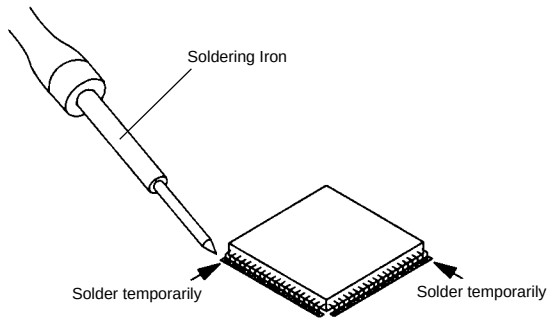


Fig. 5-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 5-6.)**

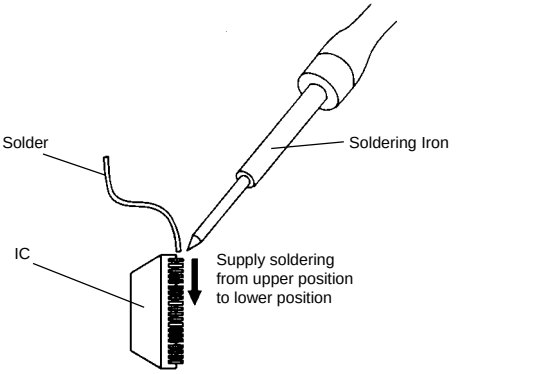


Fig. 5-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 5-7.)**

   NOTE

   Do not absorb the solder to excess.

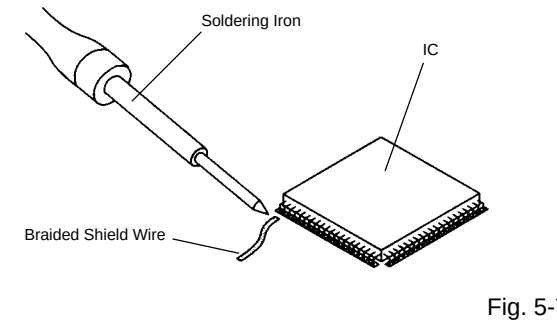


Fig. 5-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 5-8.)**

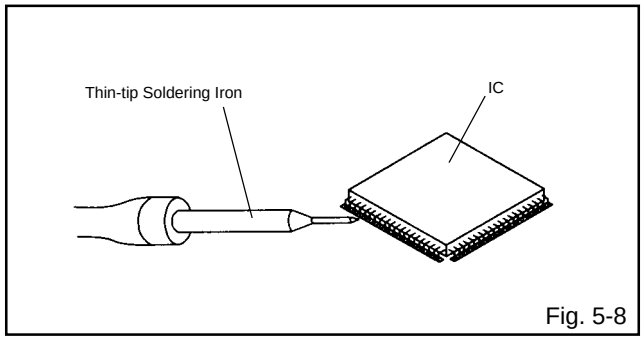


Fig. 5-8

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 is provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter to the SERVICE MODE, unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key simultaneously.
The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

Set Key	Remocon Key	Standard Time (seconds)	Operations
VOL. (-) MIN	0	2	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	2	Initialization of factory data. NOTE: Do not use this for normal servicing. If you set factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
VOL. (-) MIN	2	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	2	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	2	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	2	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more than 2 seconds during PLAY.
VOL. (-) MIN	6	2	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	9	2	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
REC/OTR	4	2	Initialization of factory DVD data. NOTE: Do not use this for normal servicing. This 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 (DVD)	7	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.

Set Key	Set Key	Standard Time (seconds)	Operations
VOL. (-) MIN	FF	2	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"

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjust Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).

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

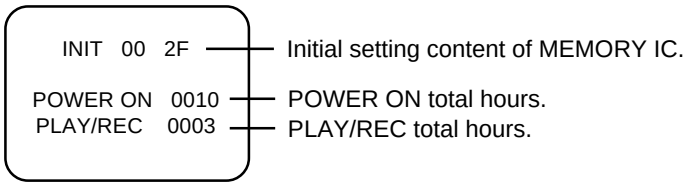
■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

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

NOTE: If you set factory initialization, the total hours is reset to "0".
Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On or alternatively, discharge backup capacitor.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and the Channel button **(6)** on the remote control for more than 2 seconds.
3. 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

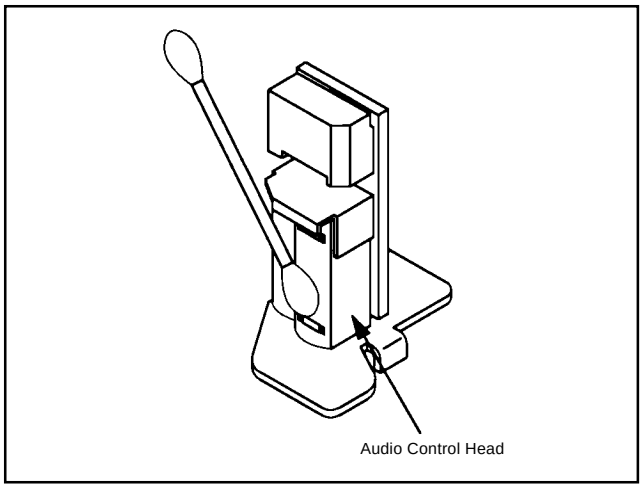
CLEANING

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 a cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

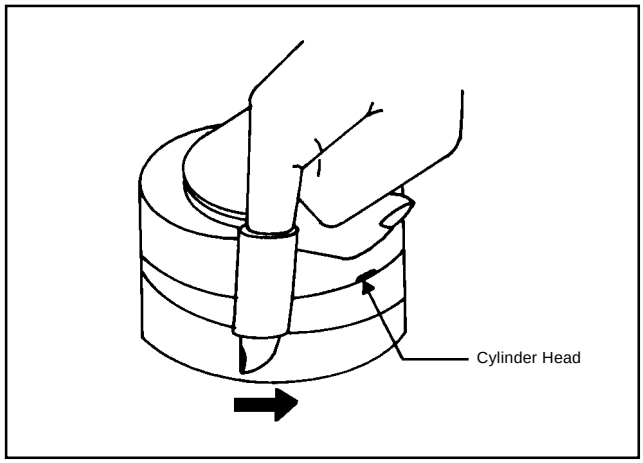
When cleaning the tape transport system, use gauze moistened with isopropyl alcohol.

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 to set data for the position of the mark "@" due to the adjustment value.
No need to set data after position INI 44 due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	2F	40	34	02	C3	DD	47	22	86	00	D0	18	A6	01	86	55
10	40	0F	E3	52	03	02	00	48	00	F4	15	4B	1D	54	83	B1
20	99	96	8B	9F	B7	A5	91	B6	1A	0B	3D	18	37	16	27	30
30	45	31	19	FF	00	@	@	00	00	23	FF	FF	FF	80	88	83
40	88	89	88	FF	FF	---	---	---	---	---	---	---	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and the Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.

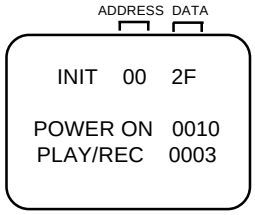


Fig. 1

3. ADDRESS is now selected and should "blink". Using the UP or DOWN 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 UP or DOWN 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.

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

9. Turn POWER on.
10. Press both VOL. DOWN button on the set and the Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

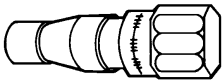
The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

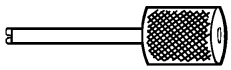
(For 2 heads model)
VHS Alignment Tape
JG001 (VN_2S-$LI6^3$)
JG001A (VN_2S-$CO1^3$)
JG001Q (VN_2S-$LI6^3H$)
JG001T (VN_2S-$X6^3$)

(For 4 heads model)
VHS Alignment Tape
JG001B (VN_1S-$LI6^3$)
JG001I (VN_1S-$CO1^3$)
JG001P (VN_1S-$LI6^3H$)
JG001S (VN_1S-$X6^3$)

JG002B Adapter
JG002E Dial Torque Gauge (10~90gf•cm)
JG002F (60~600gf•cm)

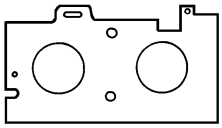


JG005 Post Adjustment Screwdriver
Part No. SV-TG0-030-000 (small)

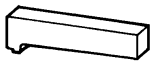


JG153 X Value Adjustment Screwdriver

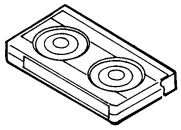
JG022 Master Plane



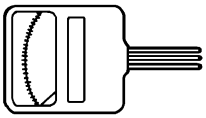
JG024A Reel Disk Height Adjustment Jig



JG100A Torque Tape (VHT-063)



JG185 Tentelometer



Ref. No.	Part No.	Parts Name	Remarks
JG001	APJG001000	VHS Alignment Tape	Monoscope, 6KHz **(For 2 heads model)**
JG001A	APJG001A00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 heads model)**
JG001Q	APJG001Q00	VHS Alignment Tape	Hi-Fi Audio **(For 2 heads model)**
JG001T	APJG001T00	VHS Alignment Tape	X Value Adjustment **(For 2 heads model)**
JG001B	APJG001B00	VHS Alignment Tape	Monoscope, 6KHz **(For 4 heads model)**
JG001I	APJG001I00	VHS Alignment Tape	Color Bar, 1KHz **(For 4 heads model)**
JG001P	APJG001P00	VHS Alignment Tape	Hi-Fi Audio **(For 4 heads model)**
JG001S	APJG001S00	VHS Alignment Tape	X Value Adjustment **(For 4 heads model)**
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG185	APJG185000	Tentelometer	Confirmation of Tape Tension on Playback

PREPARATION FOR SERVICING

NOTE: The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

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

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.

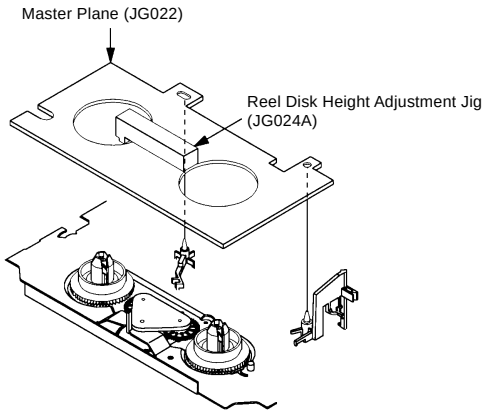


Fig. 1-1-A

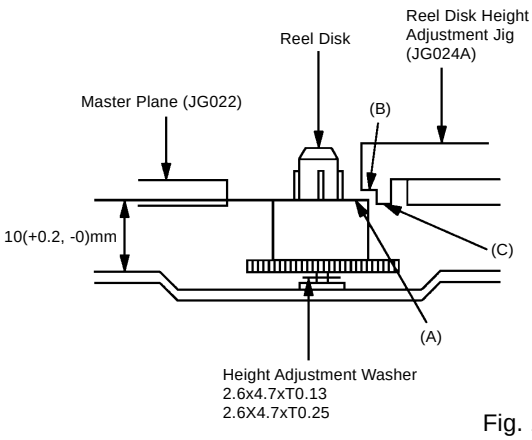


Fig. 1-1-B

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.

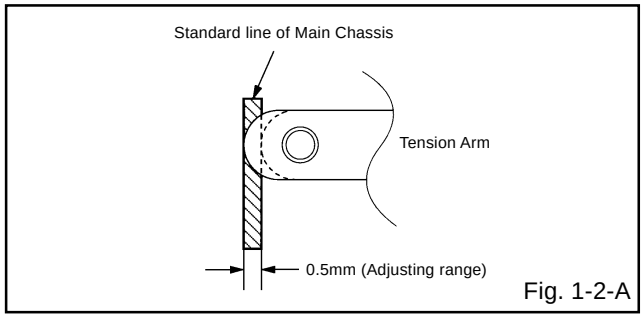


Fig. 1-2-A

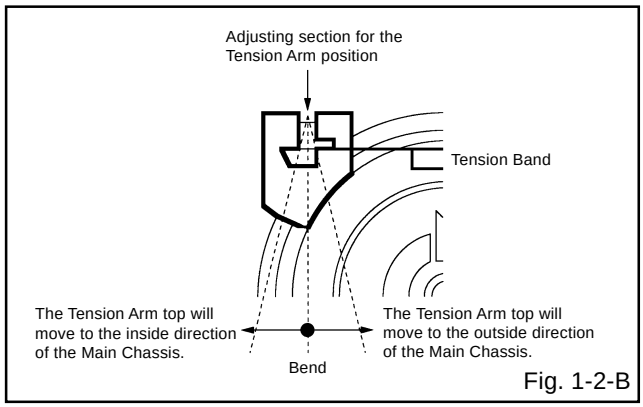


Fig. 1-2-B

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

1. Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer (JG185) 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.

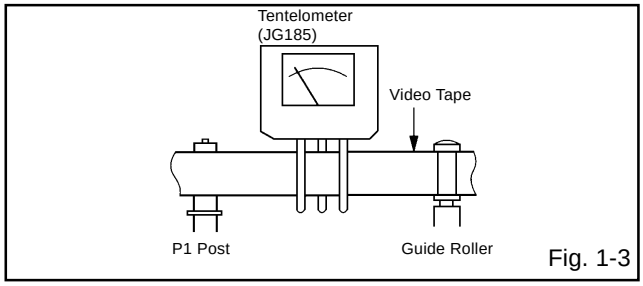


Fig. 1-3

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.

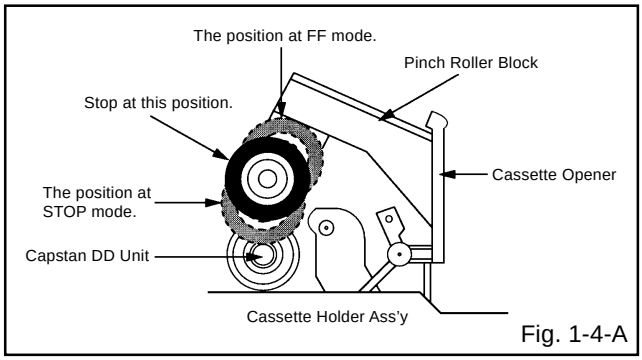


Fig. 1-4-A

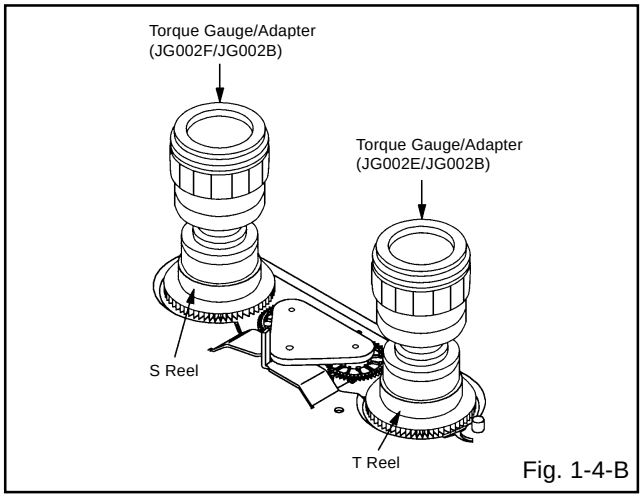


Fig. 1-4-B

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 **(JG001 or JG001B)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP4501 (Envelope)** and CH-2 to **TP102 (SW Pulse).**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Adjusting Driver **(JG005)** slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

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

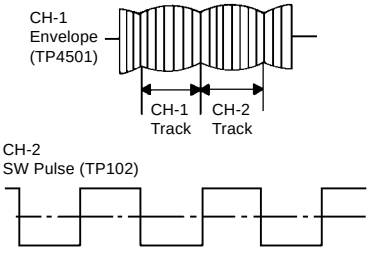


Fig. 2-1-A

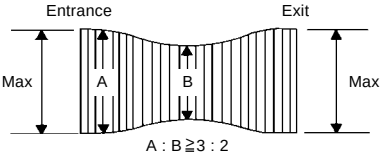


Fig. 2-1-B

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 **(JG001 or JG001B)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A**.
   a) When the reflected picture is distorted, turn the screw (1) clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw (1) counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw (2) to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C**.
   c) When the height is not correct, turn the screw (3) to adjust the height. Then, adjust the 1~3 again.

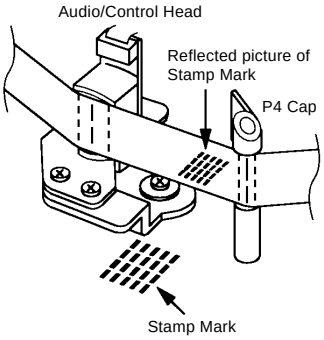


Fig. 2-2-A

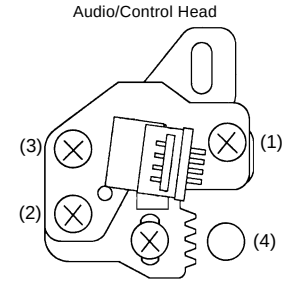


Fig. 2-2-B

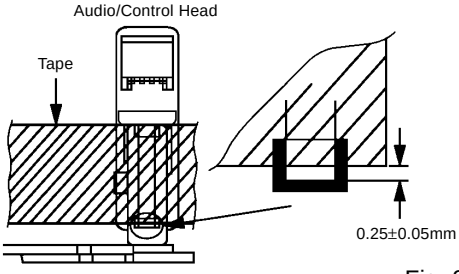


Fig. 2-2-C

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 **TP4501** and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape **(JG001S or JG001T)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the (4) of **Fig. 2-2-B**. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3.**

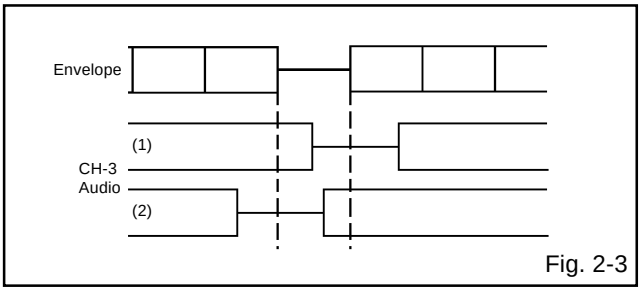


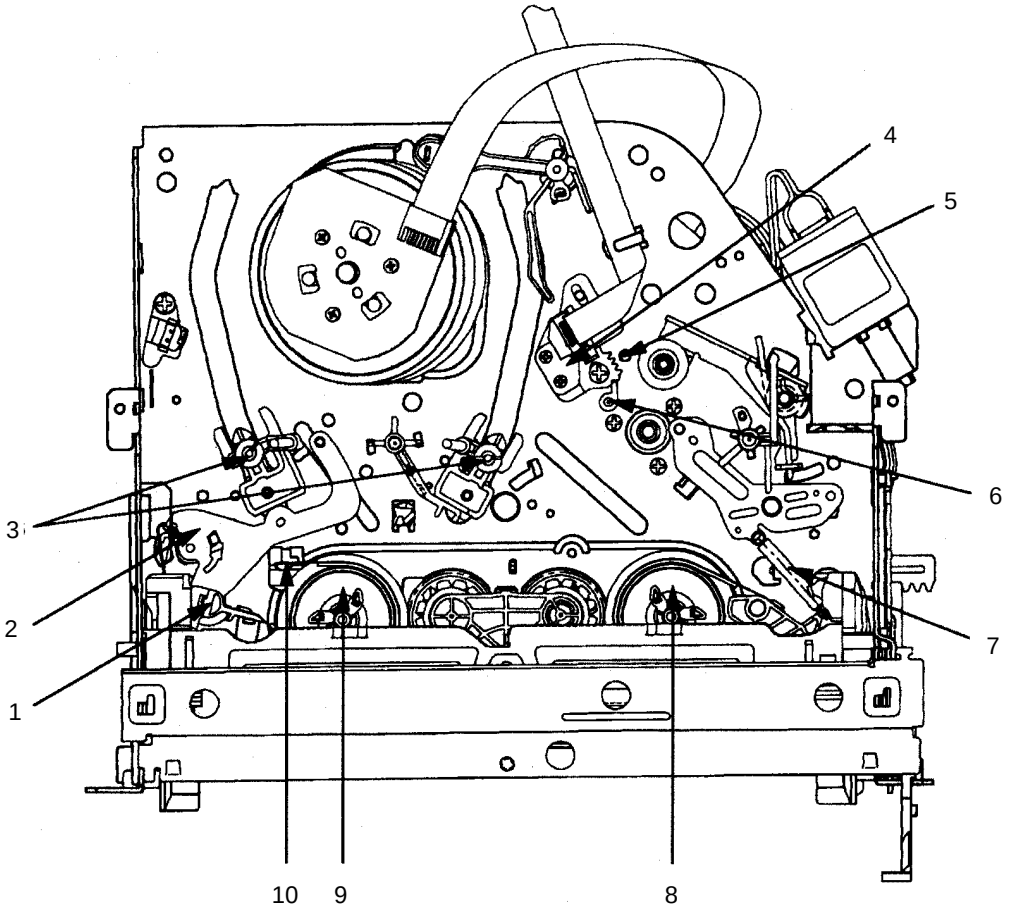
Fig. 2-3

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

1. Connect CH-1 of the oscilloscope to **TP4501** and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape **(JG001P or JG001Q). Refer to SERVICING FIXTURE AND TOOLS)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver **(JG153)** to (4) of **Fig. 2-2-B**. Change the X Value and adjust it so that the value becomes within 2 steps.

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect
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

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply 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).

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Multi-sound Generator
4. Pattern Generator

On-Screen Display Adjustment

1. Unplug the AC plug for more than 5 seconds to set the clock to the non-setting state. Then, set the volume level to minimum.
2. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

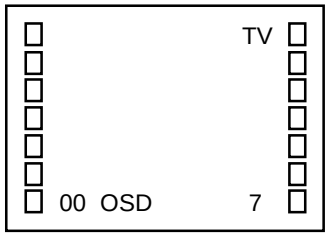


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	20	CONT CENT
01	OSD C	21	CONT MAX
02	CUT OFF	22	CONT MIN
03	H.POSI	23	COL CENT
04	H.BLK L	24	COL MAX
05	H.BLK R	25	COL MIN
06	V.SIZE	26	TINT
07	V.POSI	27	SHARP
08	V.LIN	28	SUB BIAS
09	VS.CORR	29	H.SIZE
10	V.COMP	30	PARABOLA
11	R.BIAS	31	TRAPEZIUM
12	G.BIAS	32	COR TOP
13	B.BIAS	33	COR BTM
14	R.DRV	34	H.COMP
15	G.DRV	35	T.STE
16	B.DRV	38	H.FREQ
17	BRI CENT		
18	BRI MAX		
19	BRI MIN		

Fig. 1-2

2. BASIC ADJUSTMENTS (VCR SECTION)

2-1: PG SHIFTER

1. Connect CH-1 on the oscilloscope to **TP102** and CH-2 to **VIDEO OUT of J4202.**
2. Playback the alignment tape. **(JG001P)**
3. Press both VOL. DOWN button on the set and the Channel button **(5)** on the remote control for more than 2 seconds to set tracking to center.
4. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control for more than 2 seconds until the indicator REC disappears. If the indicator REC disappears, adjustment is completed.

(If the above adjustments doesn't work well:)

5. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control for more than 2 seconds until the indicator REC disappears.
6. When the REC indicator is blinking, press both VOL. DOWN button on the set and the channel button **(4)** on the remote control for more than 2 seconds and adjust the Tracking +/- button until the arising to the down of Head Switching Pulse becomes 6.5 ± 0.5H. **(Refer to Fig. 2-1-A, B)**

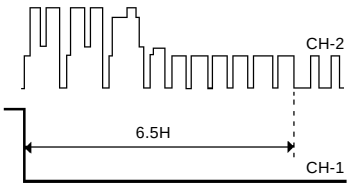


Fig. 2-1-A

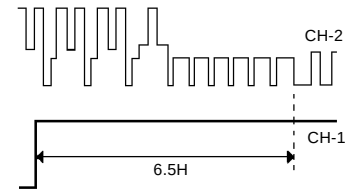


Fig. 2-1-B

ELECTRICAL ADJUSTMENTS

(TV SECTION)

2-2: CONSTANT VOLTAGE

1. Place the set in AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the digital voltmeter to **TP401**.
4. Adjust the **VR1701** until the digital voltmeter is 114 ± 0.5V.

2-3: CUT OFF

1. Adjust the unit to the following settings.
   BRI.CENTER=127, CONT MAX=100,R.BIAS=127, G.BIAS=127, B.BIAS=127, R.DRV=63, G.DRV=07, B.DRV=63.
2. Place the set in Aging Test for more than 15 minutes.
3. Place the set in AV MODE without signal.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "CUT OFF".
6. Adjust the **Screen Volume** until a dim raster is obtained.

2-4: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator with Burst On.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(11)** on the remote control to select "R.BIAS".
5. Press the CH. UP/DOWN button on the remote control to select the "R.BIAS", "G.BIAS", "B.BIAS", "R.DRV", "B.DRV" or "G.DRV".
6. Adjust the LEFT/RIGHT button on the remote control to whiten the R.BIAS, G.BIAS, B.BIAS, R.DRV, B.DRV, and G.DRV at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is achieved.

2-5: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "H.POSI".
4. Press the LEFT/RIGHT button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-6: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-7: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "V.SIZE".
4. Press the LEFT/RIGHT button on the remote control until the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.

2-8: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-5. After the adjustment of Vertical Linearity, reconfirm the Vertical Position and Vertical Size adjustments.

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "V.LIN".
4. Press the LEFT/RIGHT button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-9: BRIGHT CENTER

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRI CENT".
2. Press the LEFT/RIGHT button on the remote control until the white 10% is starting to be visible.
3. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 1, 2.
4. Press the DVD button on the remote control to set to the DVD mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRI CENT".
6. Press the LEFT/RIGHT button on the remote control to set the same step numbers as the AV mode.

ELECTRICAL ADJUSTMENTS

2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the LEFT/RIGHT button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-2)**

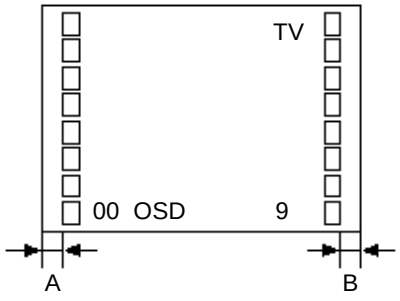


Fig. 2-2

2-11: TINT

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP803**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(26)** on the remote control to select "TINT".
5. Press the LEFT/RIGHT button on the remote control until the section "A" becomes a straight line **(Refer to Fig. 2-3)**.
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.
8. Press the DVD button on the remote control to set to the DVD mode.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(26)** on the remote control to select "TINT".
10. Press the LEFT/RIGHT button on the remote control until the tint step No. becomes "67".

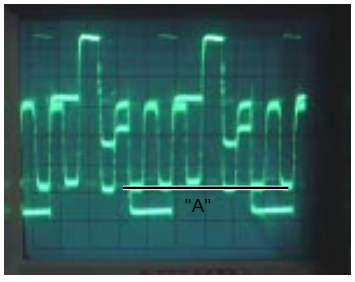


Fig. 2-3

2-12: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "V.POSI".
4. Check if the step No. V POSI is "02".
5. Adjust the **VR404** until the horizontal line becomes fit to notch of the shadow mask. **(Refer to Fig. 2-4)**

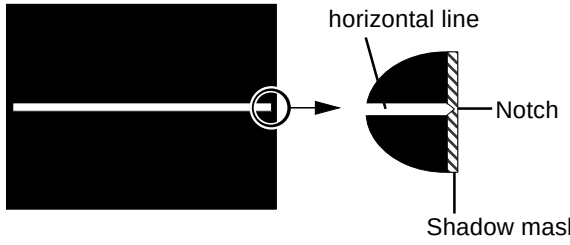


Fig. 2-4

2-13: COLOR CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP802**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(23)** on the remote control to select "COL CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the LEFT/RIGHT button on the remote control until the red color level is adjusted to 90 ± 5% of the white level. **(Refer to Fig. 2-5)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.
9. Press the DVD button on the remote control to set to the DVD mode.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(23)** on the remote control to select "COL CENT".
11. Press the LEFT/RIGHT button on the remote control to set the same step numbers as the AV mode.

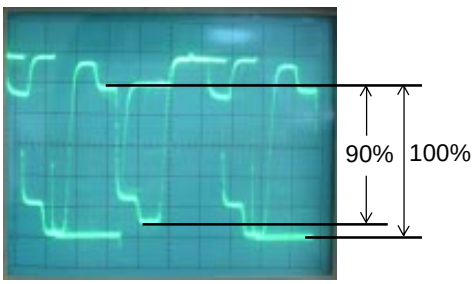


Fig. 2-5

ELECTRICAL ADJUSTMENTS

2-14: CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(21)** on the remote control to select "CONT MAX".
2. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "60".
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.
5. Press the DVD button on the remote control to set to the DVD mode.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(21)** on the remote control to select "CONT MAX".
7. Press the LEFT/RIGHT button on the remote control to set the same step numbers as the AV mode.

2-15: Confirmation of Fixed Value (step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF	AV	DVD
01	OSD CONT	02	02	02
04	H.BLK L	02	02	02
05	H.BLK R	02	02	02
09	VS.CORR	07	07	07
10	V.COMP	03	03	03
15	G.DRV	07	07	07
18	BRI MAX	100	100	100
19	BRI MIN	25	25	25
20	CONT CENT	25	25	25
22	CONT MIN	10	10	10
24	COL MAX	127	127	127
25	COL MIN	00	00	00
27	SHARPNESS	30	30	15
28	SUB BIAS	20	20	20
29	H.SIZE	00	00	00
30	PARABOLA	00	00	00
31	TRAPEZIUM	00	00	00
32	COR TOP	00	00	00
33	COR BOT	00	00	00
34	H.COMP	00	00	00
35	T.STE	00	00	00

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue color.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

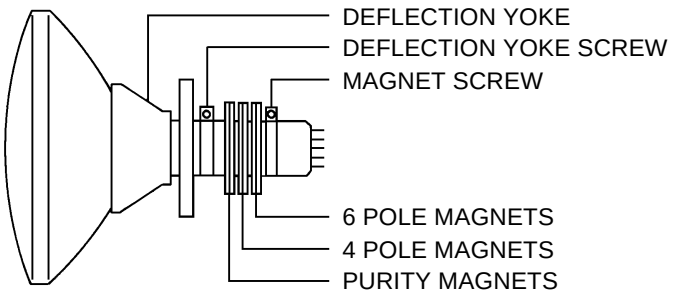


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

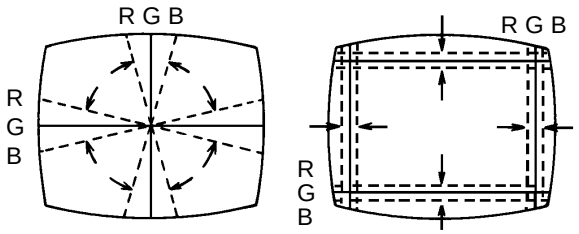
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

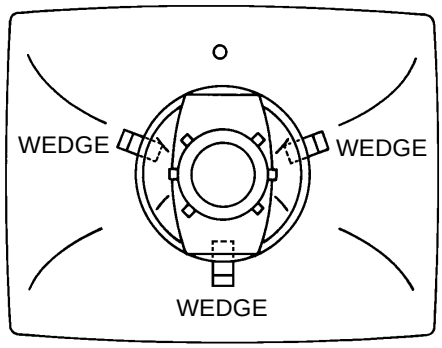
Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

Fig. 3-2-a

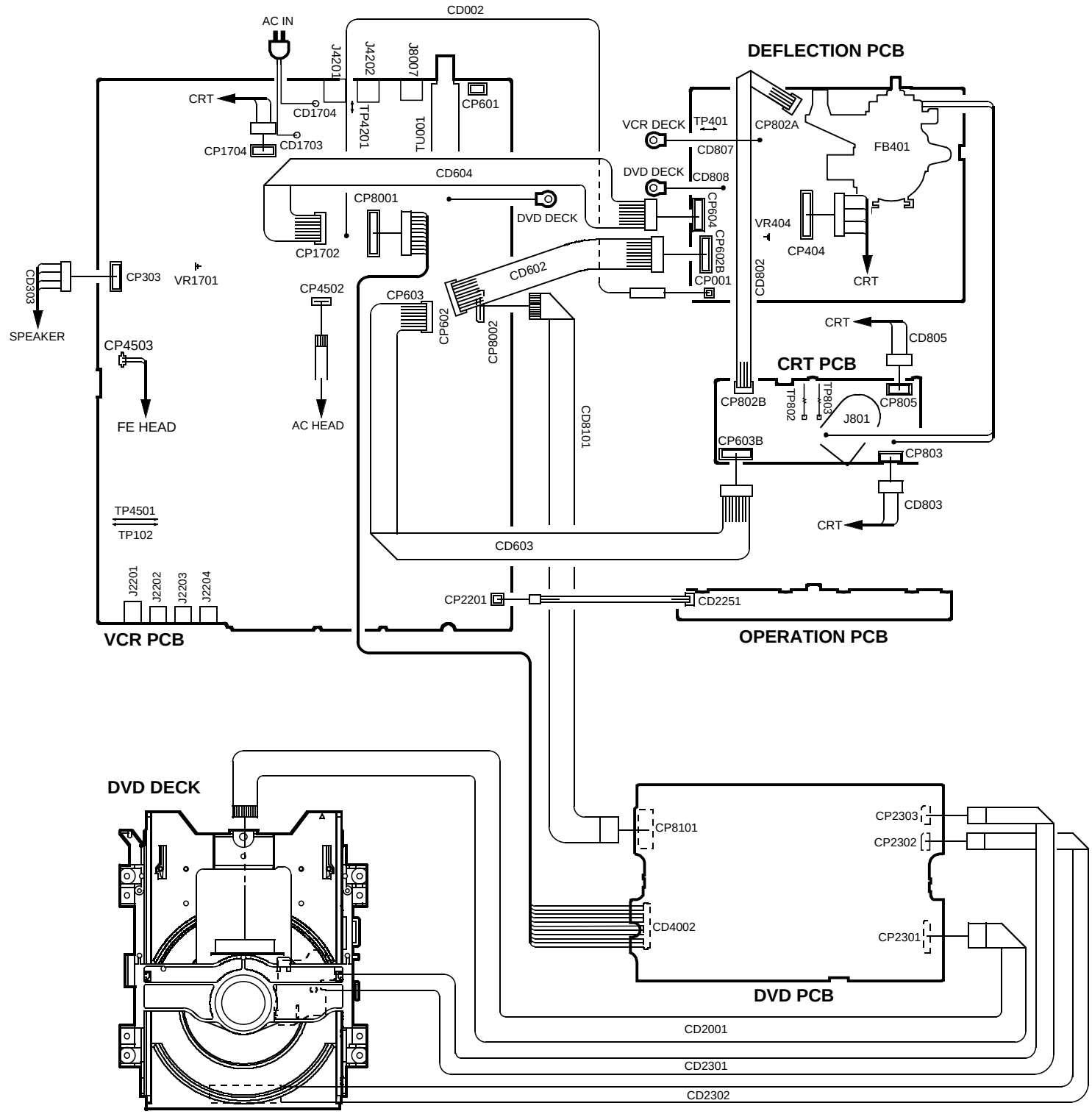


WEDGE POSITION

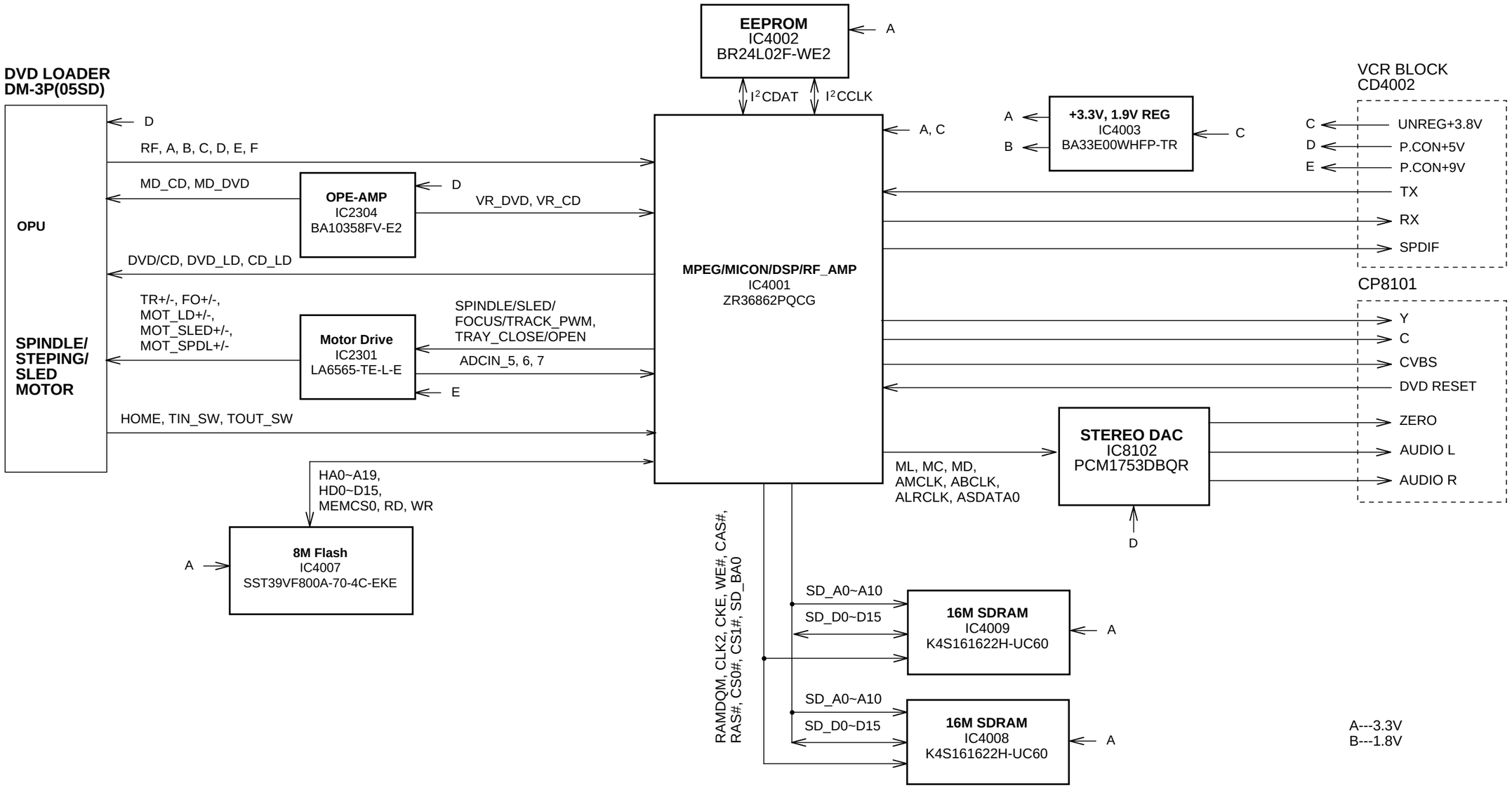
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

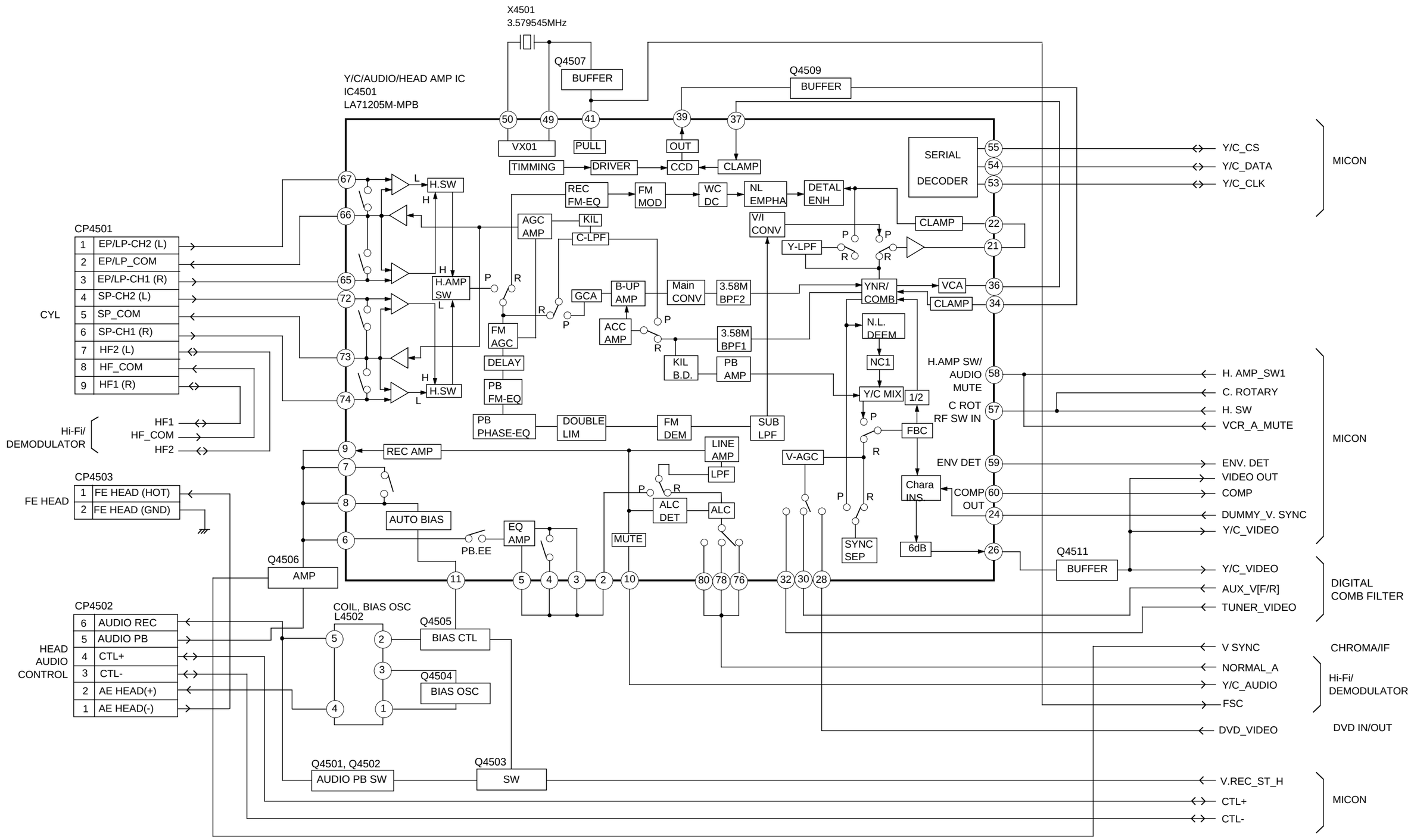
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



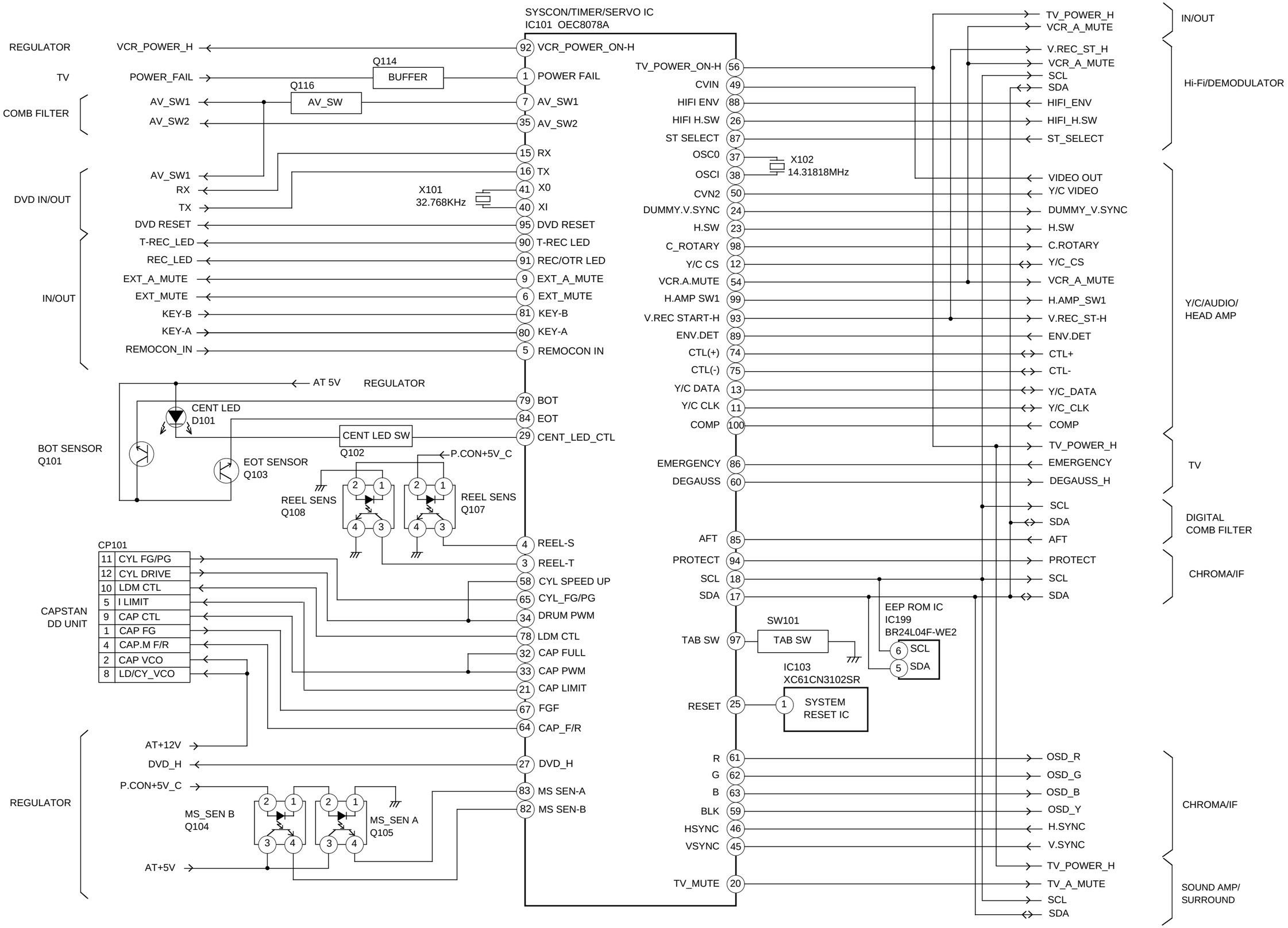
DVD BLOCK DIAGRAM



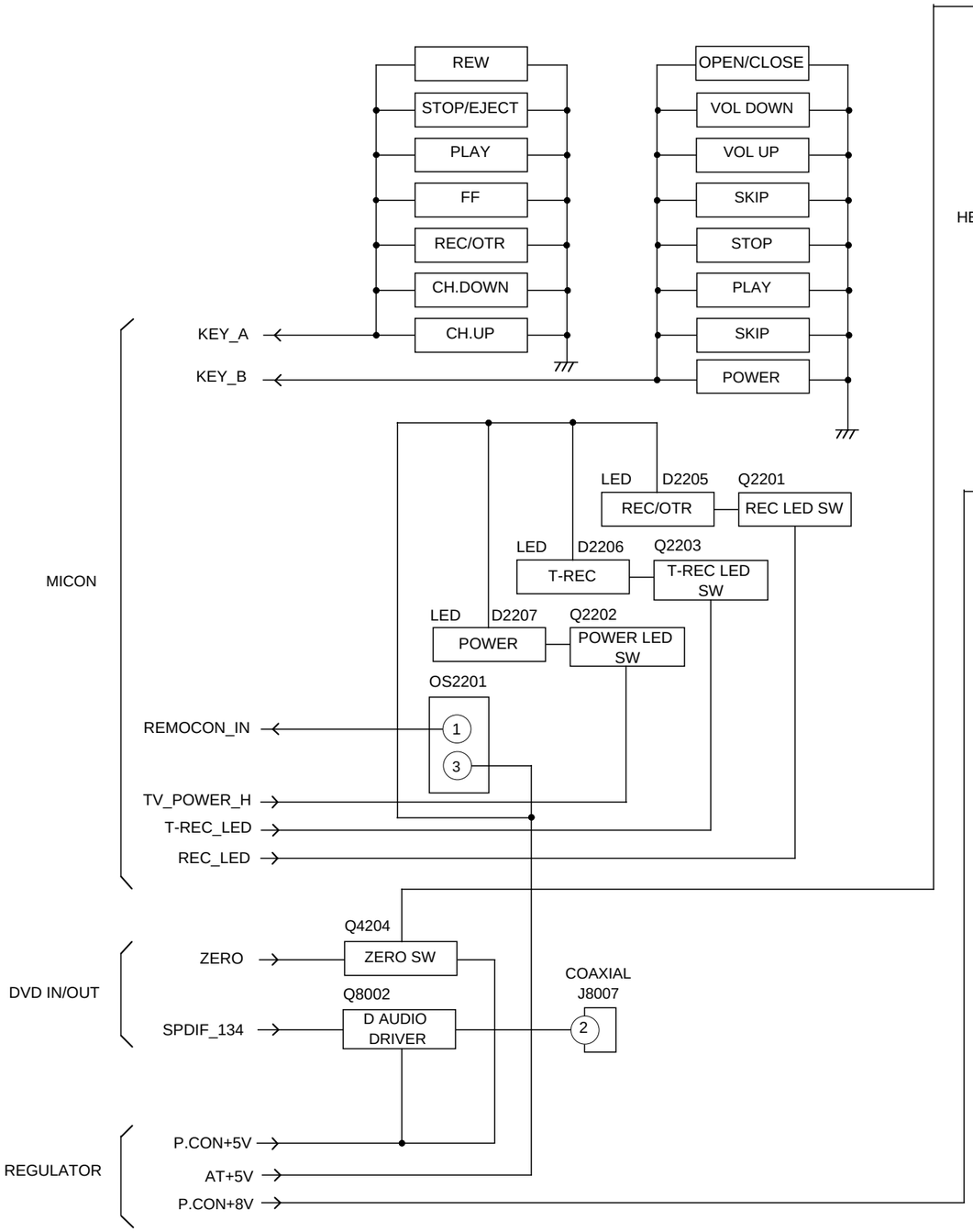
Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM

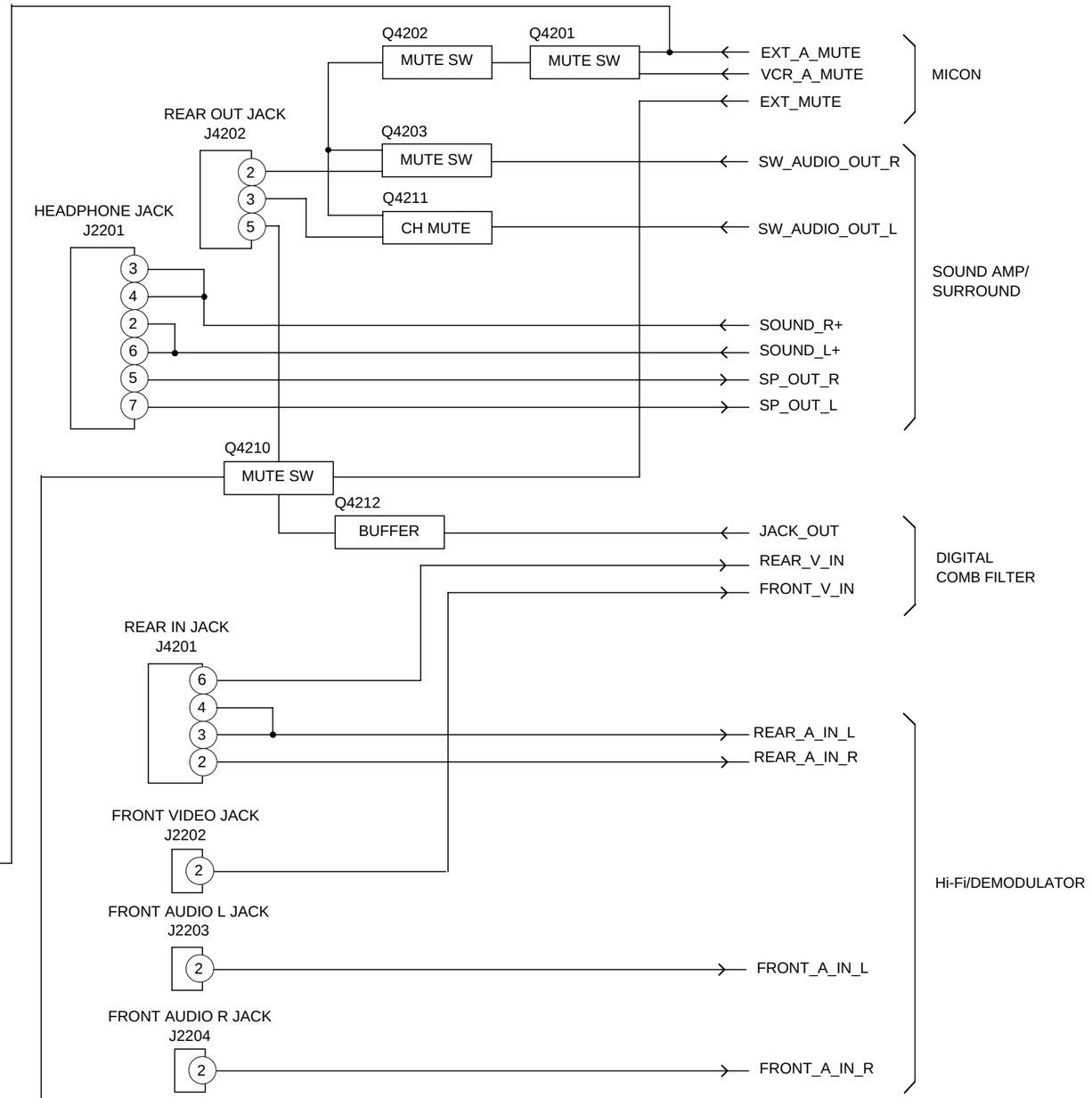


MICON BLOCK DIAGRAM

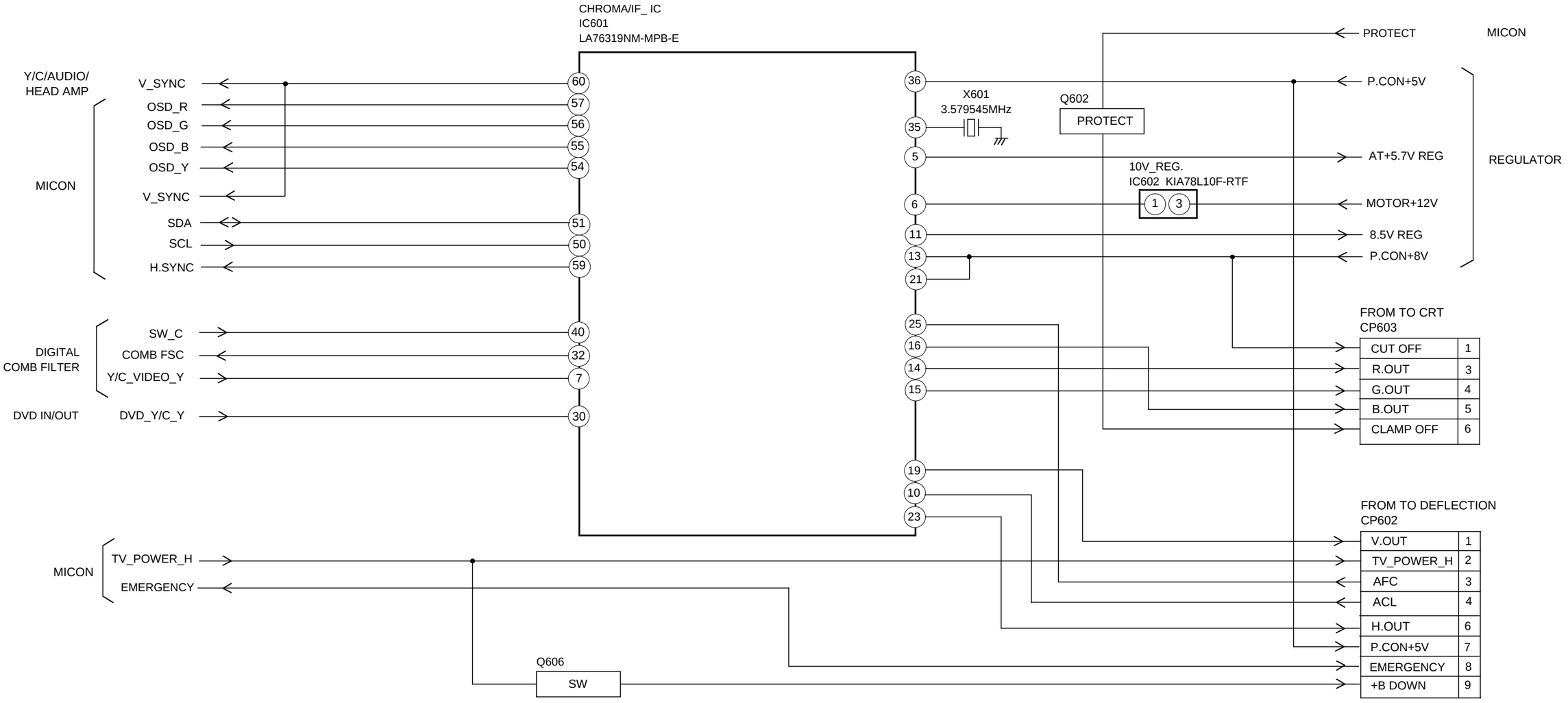


IN/OUT BLOCK DIAGRAM

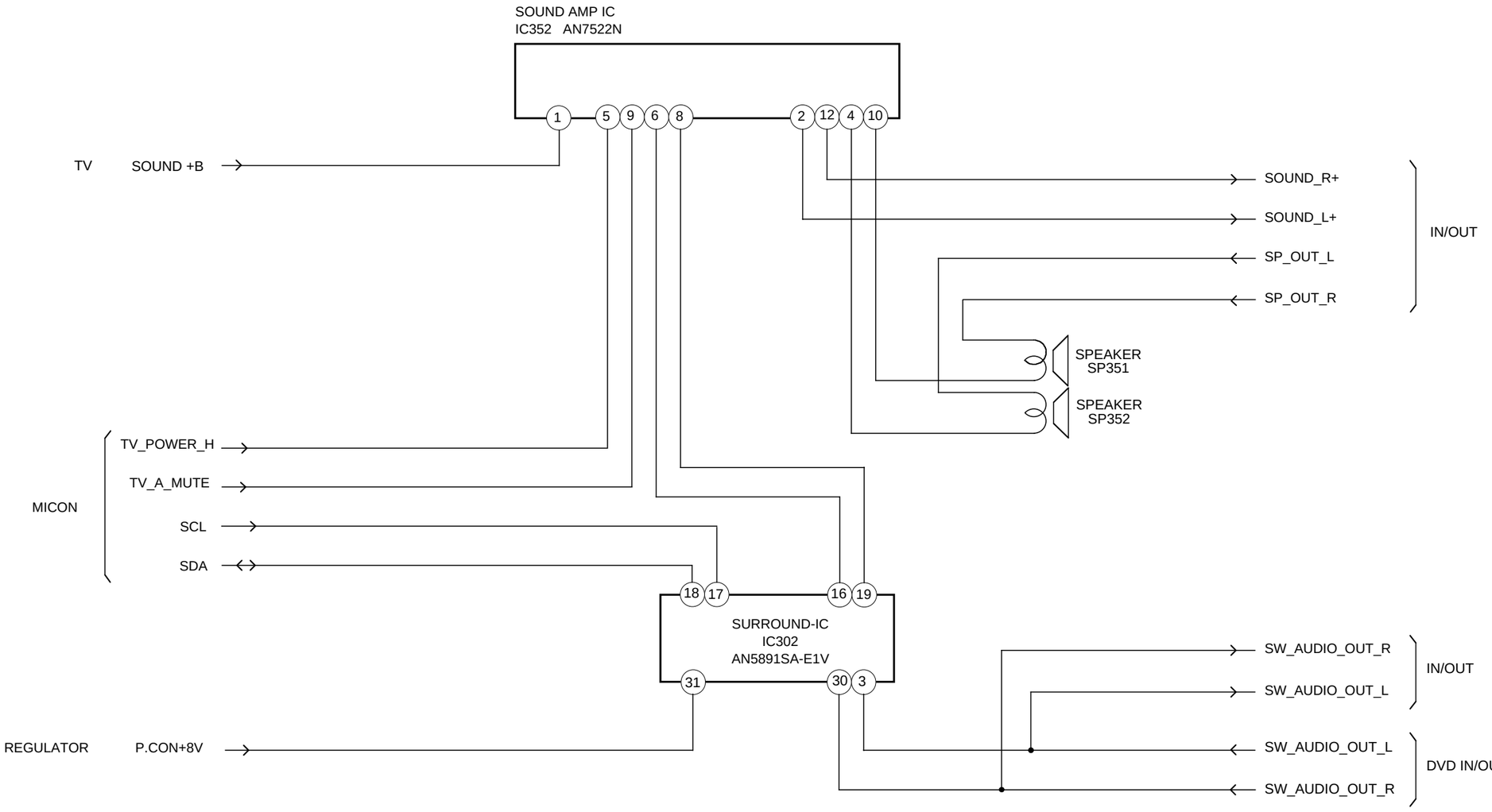




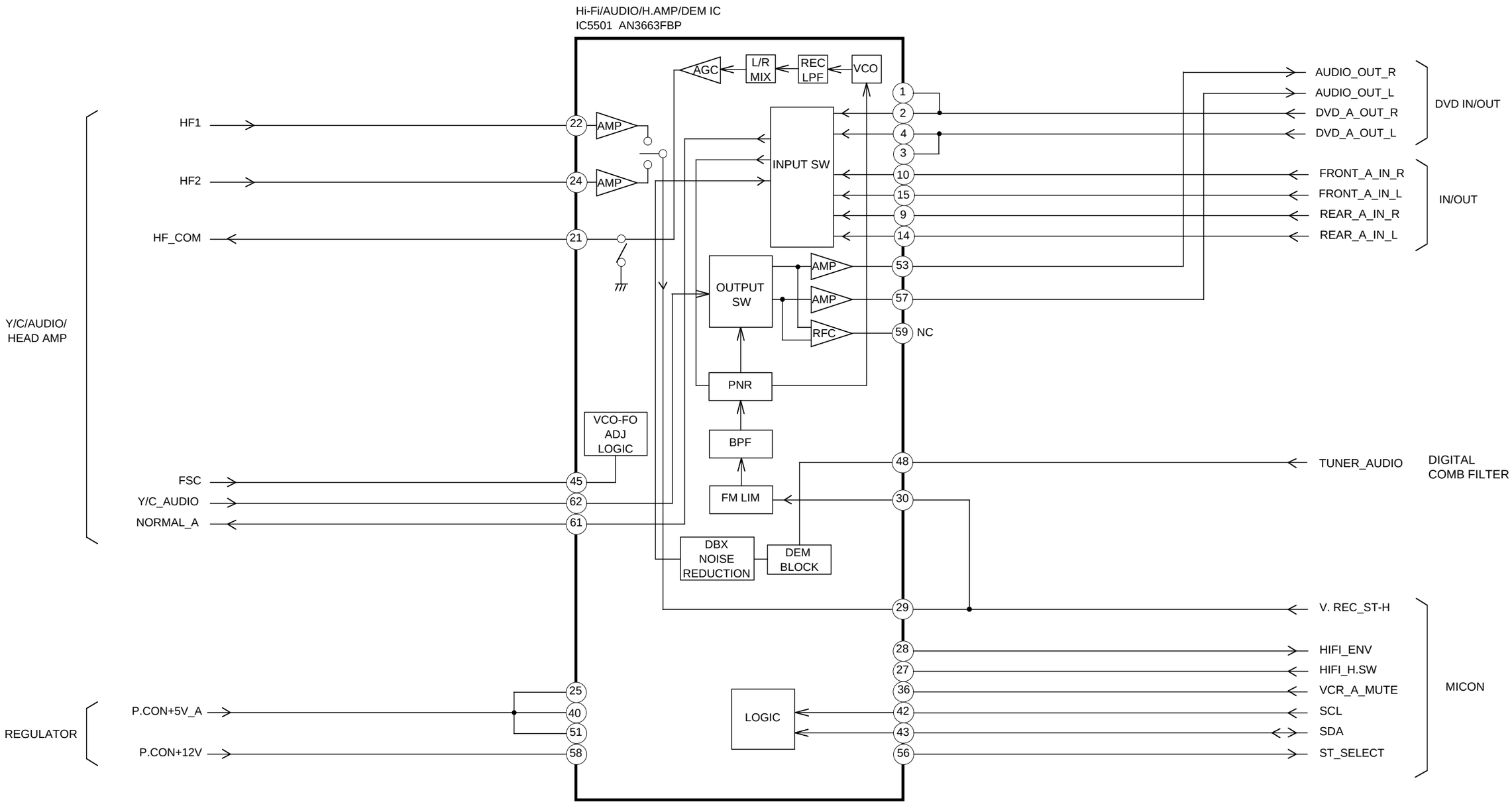
CHROMA/IF BLOCK DIAGRAM



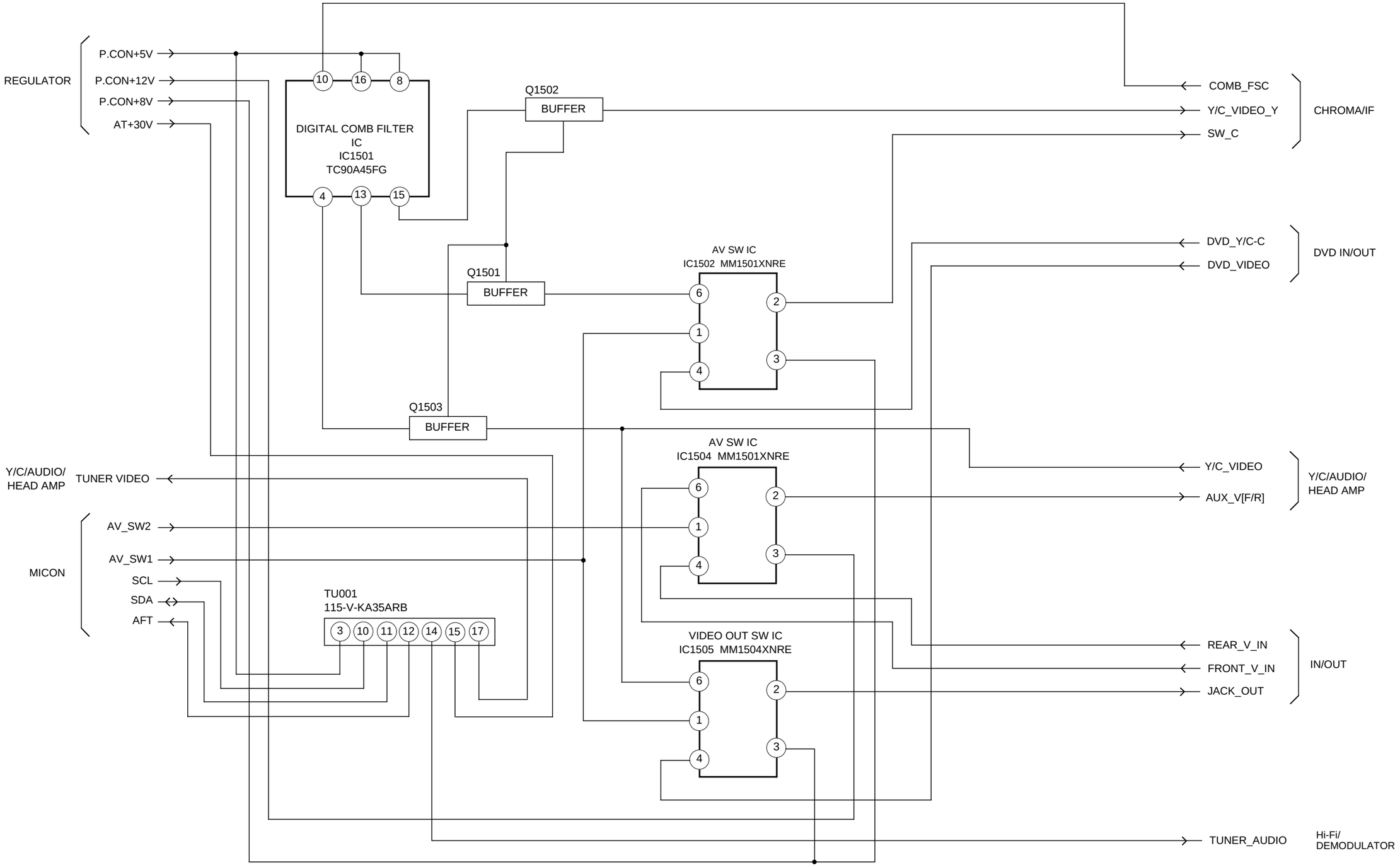
SOUND AMP/SURROUND BLOCK DIAGRAM



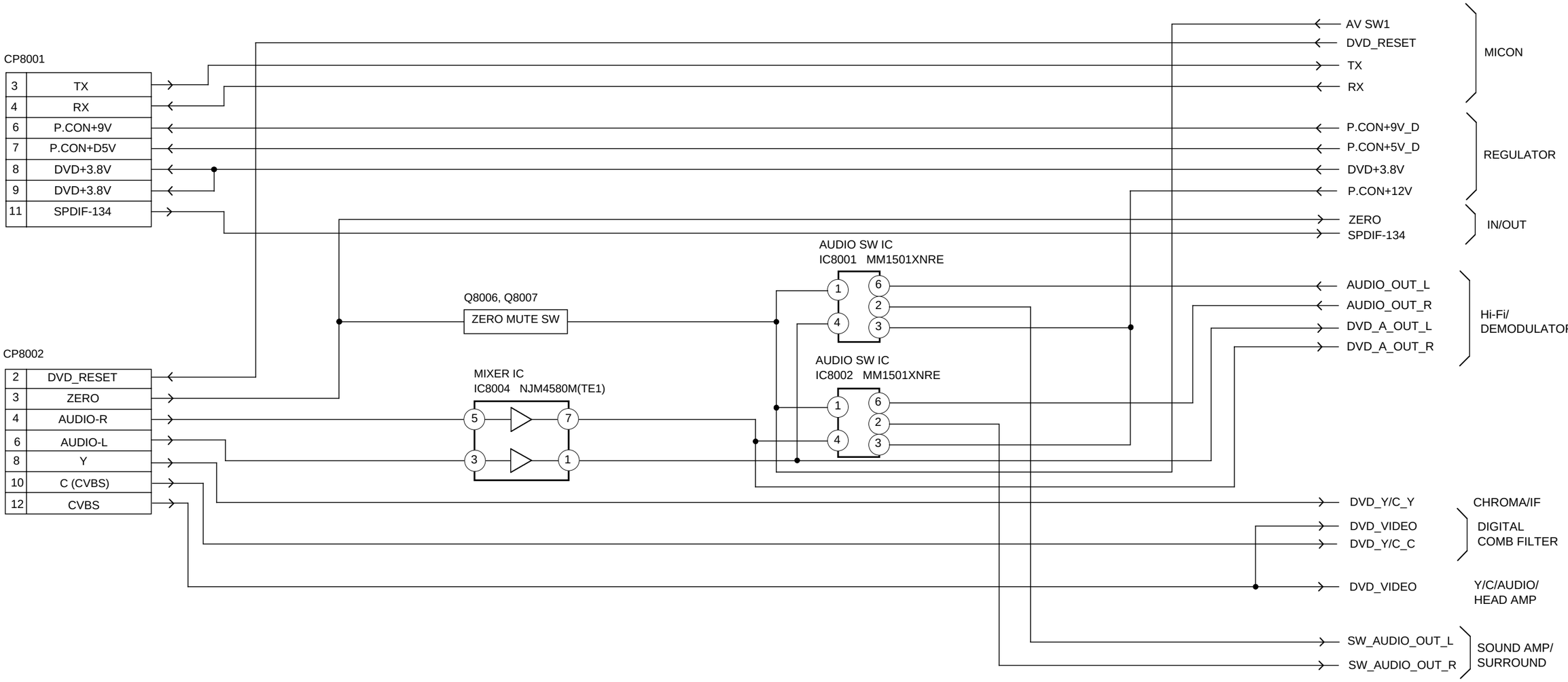
Hi-Fi/DEMODULATOR BLOCK DIAGRAM



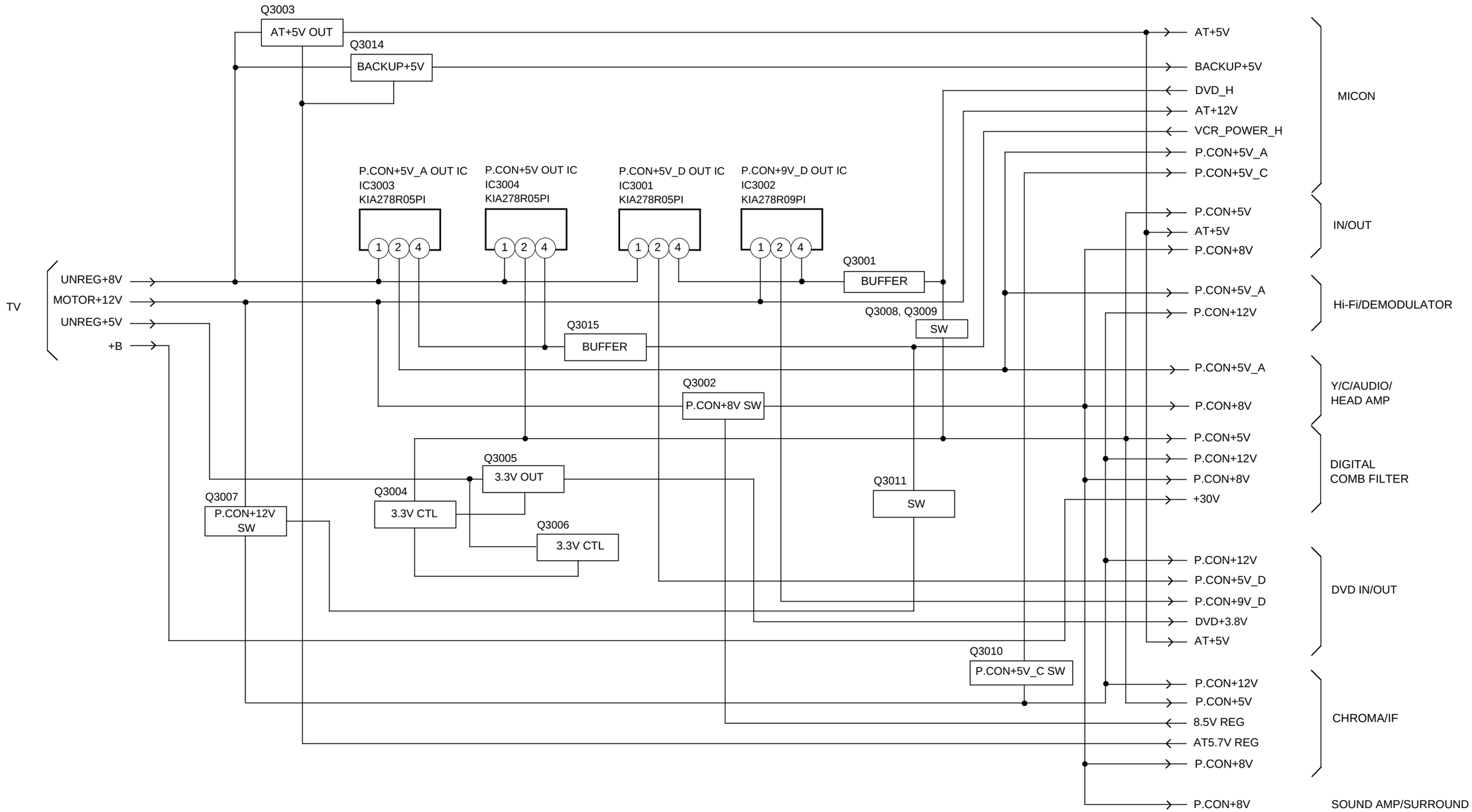
DIGITAL COMB FILTER BLOCK DIAGRAM



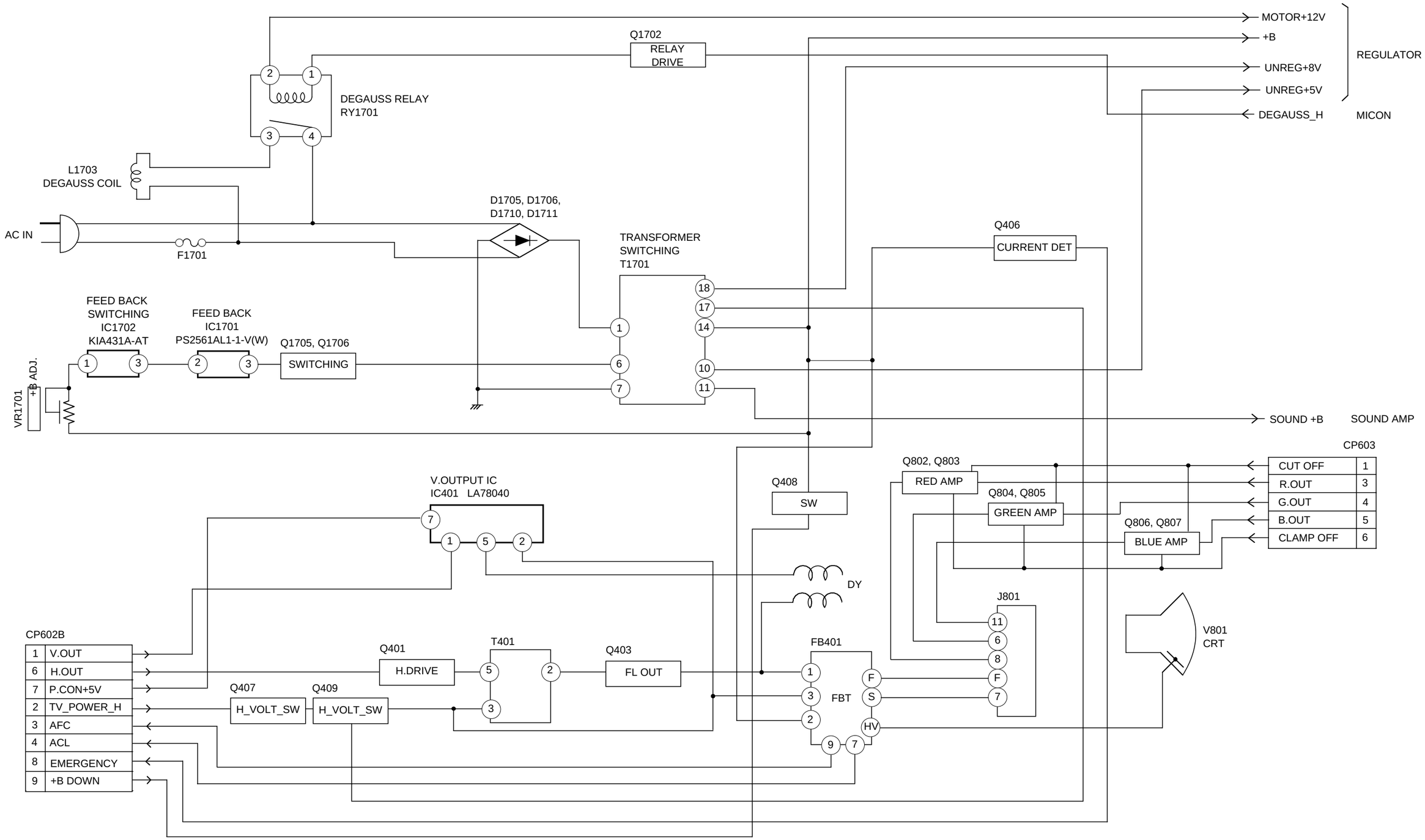
DVD IN/OUT BLOCK DIAGRAM



REGULATOR BLOCK DIAGRAM

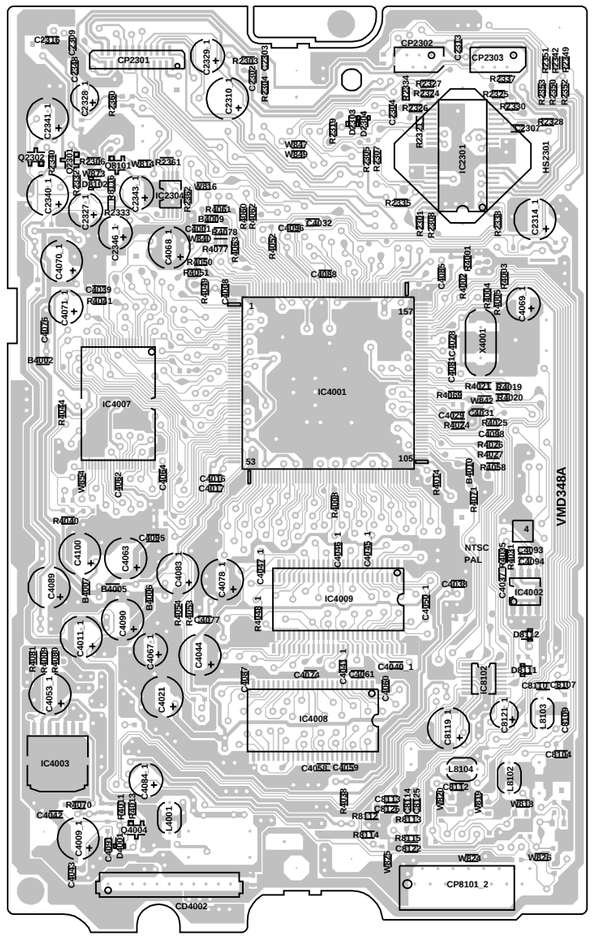


TV BLOCK DIAGRAM

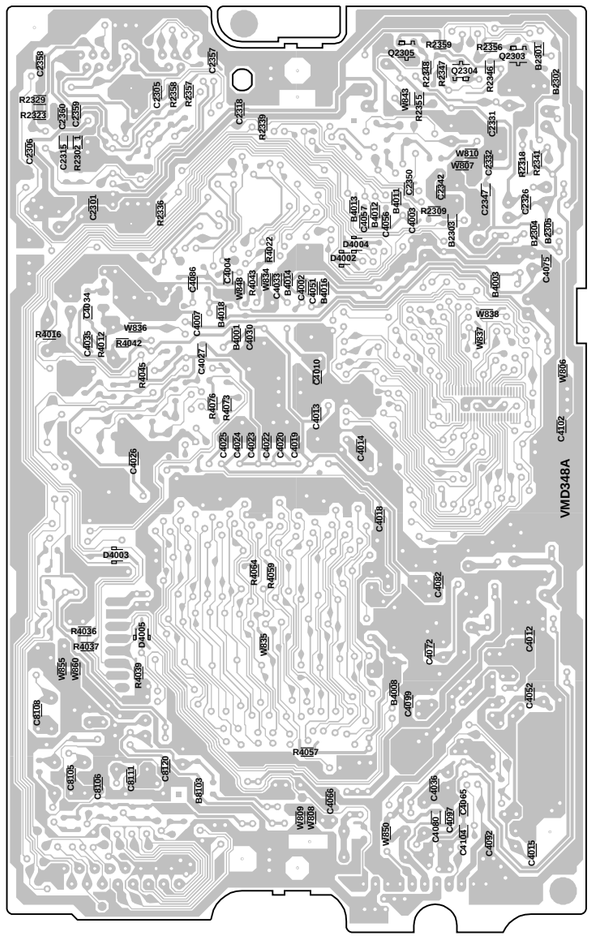


PRINTED CIRCUIT BOARDS

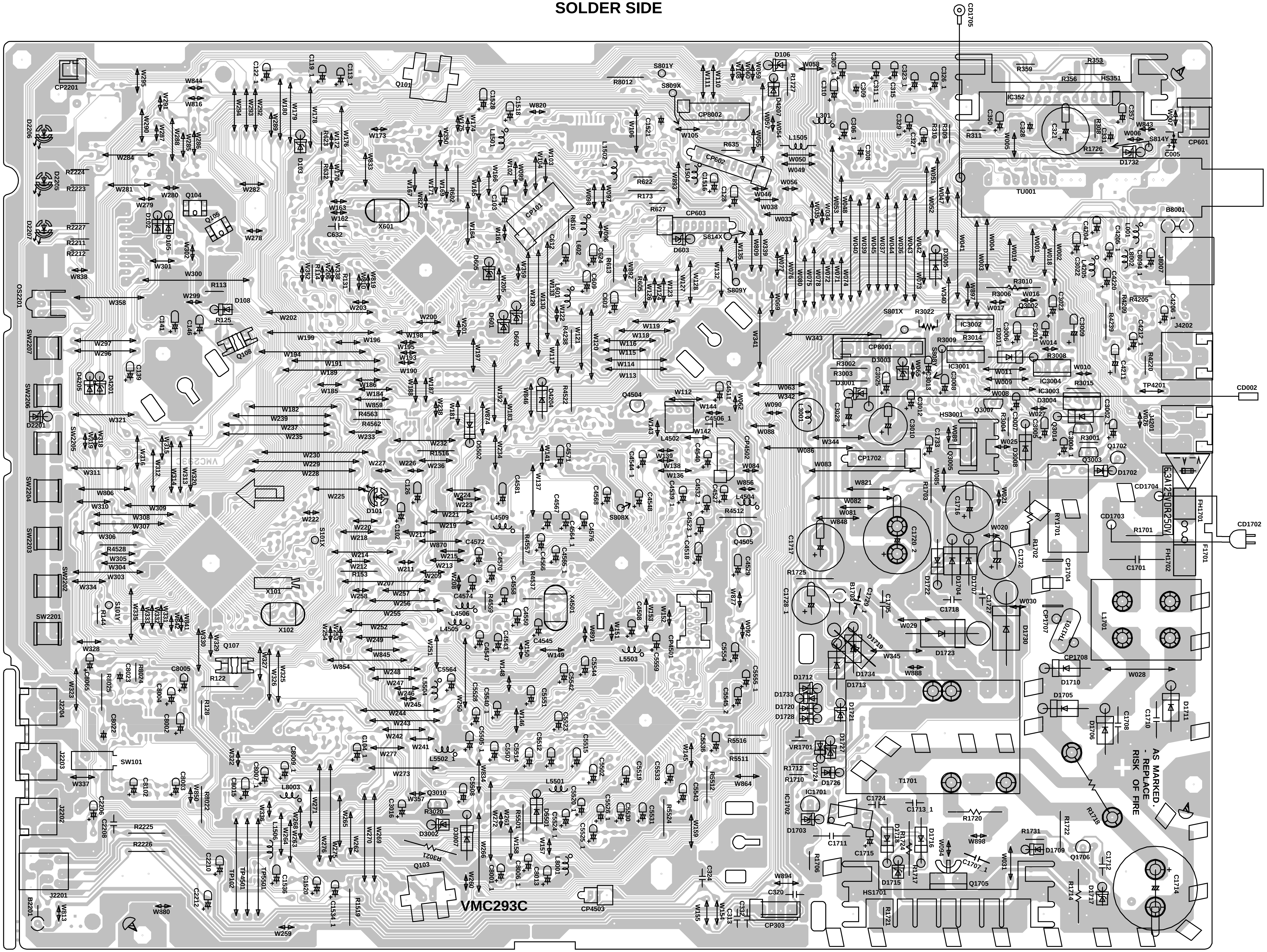
DVD (TOP SIDE)



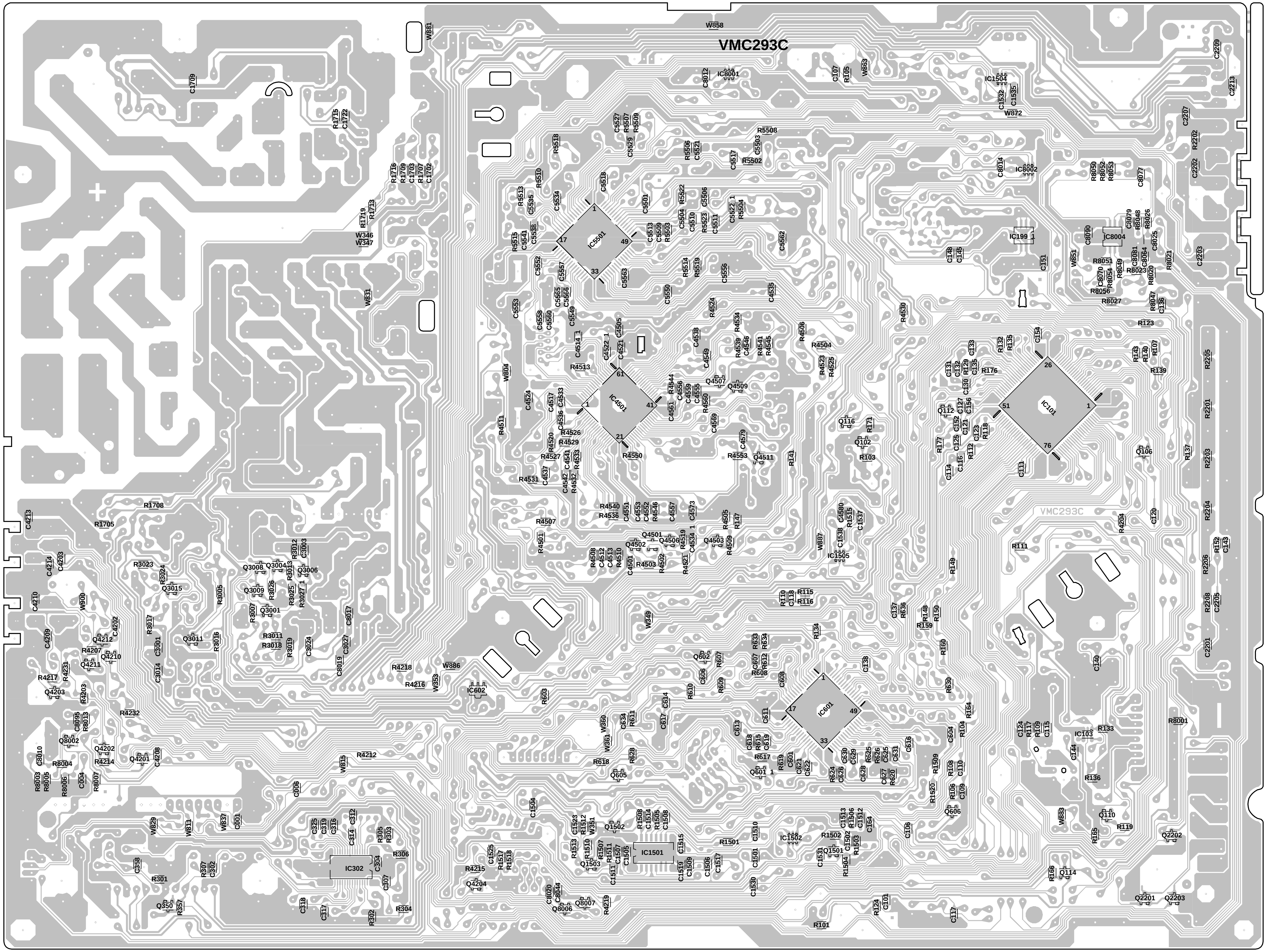
DVD (BOTTOM SIDE)



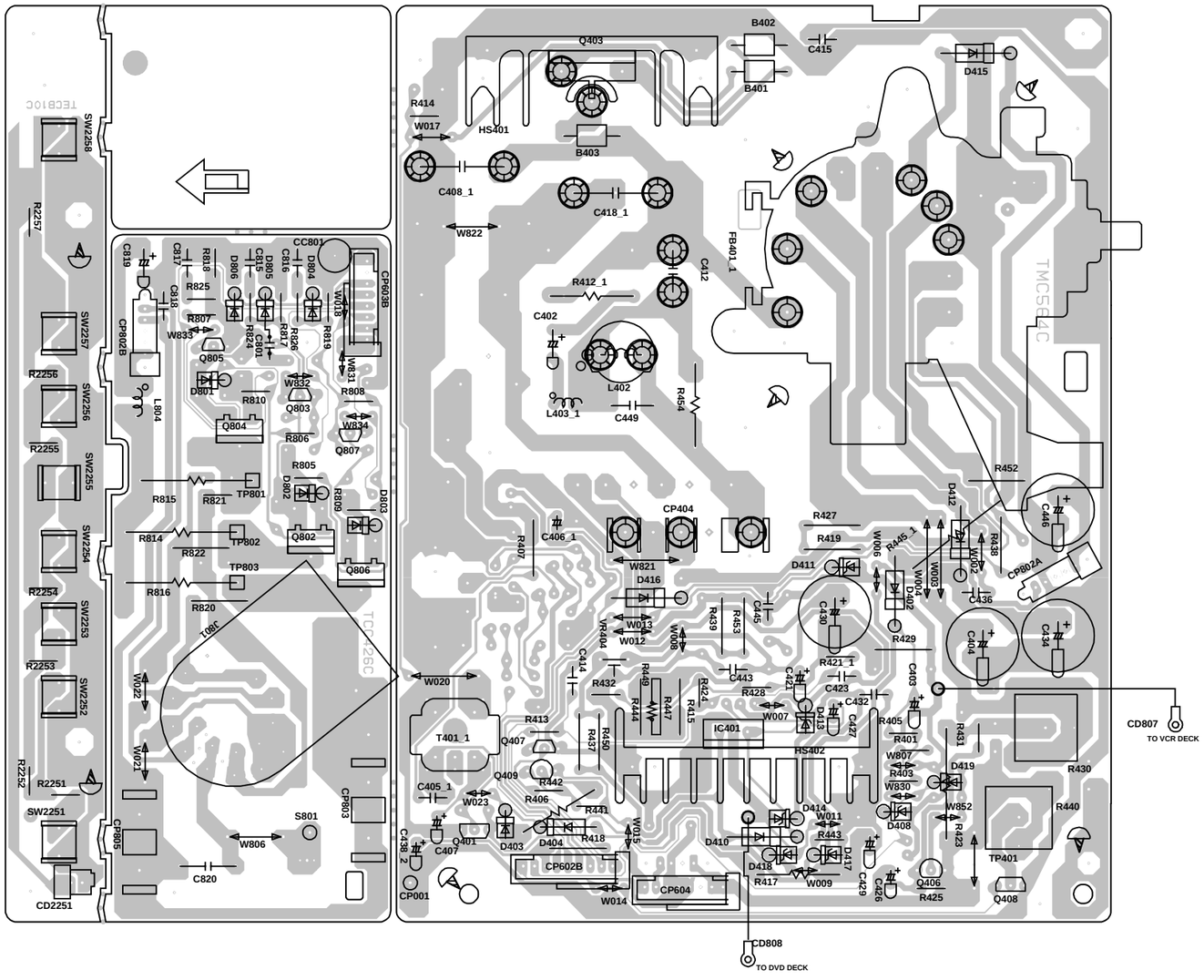
PRINTED CIRCUIT BOARDS
VCR (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
VCR (CHIP MOUNTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
DEFLECTION/CRT/OPERATION
SOLDER SIDE



MPEG/MICON/DSP SCHEMATIC DIAGRAM

(DVD PCB)

FROM/TO MEMORY

FROM/TO AUDIO/VIDEO

FROM/TO MOTOR DRIVE

FROM/TO DVD IN/OUT

MPEG/MICON/DSP/RF_AMP IC
IC4001
ZR36862PQCG

REG+3.3V +1.9V IC
IC4003
BA33E00WHFP-TR

EEPROM IC
BR24L02F-WE2

L4002
W5T29X7.5X19

L4001
2.2uH
0305

DVD/VR 130mm
DVD COMBO 250mm
CD4002 (CP8001)
C32B3303

PCB130
VMD348

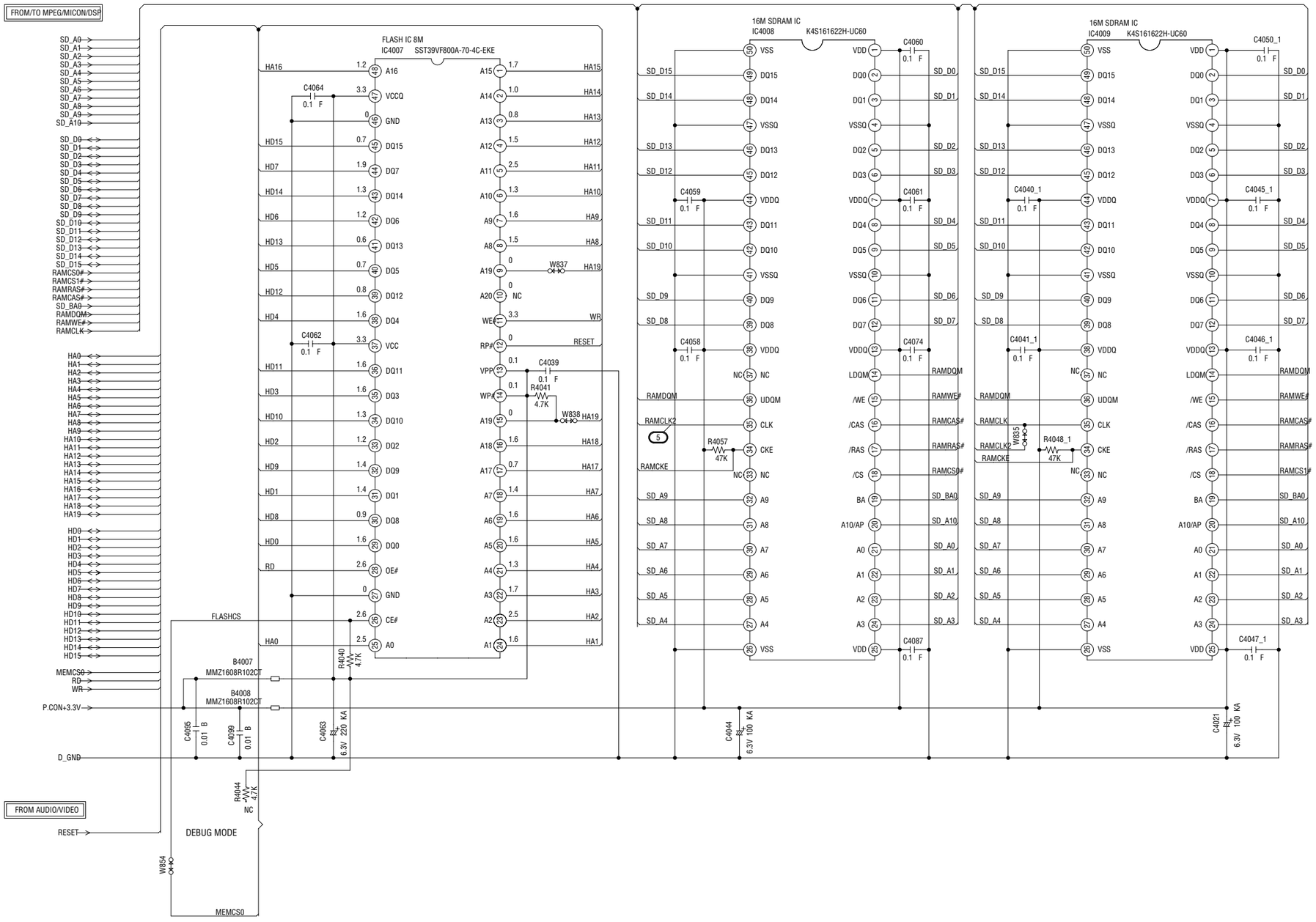
DIGITAL AUDIO SIGNAL(PB)

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

(DVD PCB)



MOTOR DRIVE SCHEMATIC DIAGRAM

(DVD PCB)

DM3P(05SD)

FROM/TO LOADER

CP2301
09-5000-024-001-001

1	GND
2	F
3	Vref
4	VCC
5	E
6	D
7	C
8	SW1(DVD/CD)
9	VRF(RF_OUT)
10	B
11	A
12	VR(DVD)
13	VR COM
14	VR(CD)
15	GND
16	LD(CD)
17	PD/GND
18	LD(DVD)
19	GND
20	NC
21	T DRV
22	T RTN
23	F DRV
24	F RTN

CP2302
00_6232_005_006_800+

5	LD-
4	LD+
3	OPEN
2	GND(D)
1	CLOSE

CP2303
00_6232_006_006_800+

6	SW(GND)
5	LIMIT SW
4	SLD-
3	SLD+
2	SP1-
1	SP1+

TO AUDIO/VIDEO

CD_LD_CTL

RF_GND

FROM/TO MPEG/MICON/DSP

DVD_CD
DVD_LD
CD_LD
VR_DVD
VR_CD
RF
OPU_A
OPU_B
OPU_C
OPU_D
OPU_E
OPU_F
VC
HOME
GND
D_GND
TOUT_SW
TIN_SW
P.CON+A5V
TRACK_PWM
FOCUS_PWM
P.CON+3.3V
DRVSB
SPINDLE_PWM
SLED_PWM
ADCIN_7
ADCIN_5
ADCIN_6
VCC+9V
M_GND
SPDL_SENS+
SPDL_SENS-
TRAY_CLOSE
TRAY_OPEN

MOTOR DRIVE IC
LA6565-TE-L-E
IC2301

0	4.0	2.6	2.6	1.5	1.5	1.6	1.5	NC	NC	0	0	NC	NC	NC	NC	NC	0	1.5	1.5	1.7	1.5	1.5		
36	35	34	33	32	31	30	29	28	38	27	26	25	24	23	22	21	20	19						
S-GND	VCONT	MUTE1	MUTE234	VIN4-	VIN4	VREF-IN	VREF-OUT	REG-OUT		REG-IN	VIN+OP	VIN-OP	VO_OP	VIN3	VIN3-	VIN2	VIN2-	VIN2+						
1	2	3	4	5	6	7	8	9	37	10	11	12	13	14	15	16	17	18						
0	0	8.8	0.8	0.9	4.1	4.1	4.1	4.1	0	5.1	3.0	4.0	4.1	8.8	8.8	1.5	1.5	1.5						
FWD	REV	VCC2	VLD-	VLD+	VD4-	VD4+	VD3+	VD3-		VD2+	VD2-	VD1-	VD1+	VCC1	VCCS	VIN1+A	VIN1-A	VIN 1						

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.

PCB130
VMD348

AUDIO/VIDEO SCHEMATIC DIAGRAM

(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

FROM/TO MPEG/MICON/DSP

DAC_VIDEO_C
DAC_VIDEO_B
DAC_VIDEO_D
P.CON+5V
RESET
MC
MD
ML
AMCLK
ABCLK
ALRCLK
ASDATA0
SYS_MUTE
GND
D_GND

C8105 12P CH, L8102 1uH 0305, C8104 150P CH, C8106 150P CH
C8108 12P CH, L8103 1uH 0305, C8107 150P CH, C8109 150P CH
C8111 12P CH, L8104 1uH 0305, C8110 100P CH, C8112 33P CH

W818 C/B/U
W819 Y/R/V
W820 CVBS/C

8 DAC_C_VIDEO
9 DAC_B_VIDEO
10 DAC_D_DVD_VIDEO

W815 W835 W860 W808 W809

TO MEMORY
RESET

B8103 MMZ1608R102CT
C8120 0.1 F
C8119_1 6.3V 100 KA

FROM MOTOR DRIVE
CD_LD_CTL
RF_GND

C8114 1 B, C8125 1 B → R8113 470 → 6
C8113 1 B, C8126 1 B → R8112 470 → 7
R8114 100K
R8115 100K

STEREO DAC IC IC8102 PCM1753DBQR

2.4	2.5	4.9	3.3	NC	0	1.6	1.1	1.6							
8 VOUTR	7 VOUTL	6 VCC	5 VDD	4 DGND	3 LRCK	2 DATA	1 BCK								
0	2.4	3.3	0	0	0	3.3	1.7								
9 AGND	10 VCOM	11 ZERO/ZERO0A	12 ZEROL/NA	13 MD	14 MC	15 ML	16 SCK								

C8121_1 25V 10 KA
ZERO MD MC ML AMCLK ABCLK ASDATA0 ALRCLK

P.CON+A5V
CD_LD_CTL → D8102 1SS355 → W873 → R8116 470
CD_LD_CTL → Q8101 DTC124EKAT146 (0.2 / 3.1 / 0) → W814

TP8102 NC
TP8103 NC
TP8104 NC
TP8105 NC
TP8101
W825
TP8106
W826
TP8107
TP8108
W824
TP8109
TP8110
TP8111
TP8112
TP8113
TP8114

RESET
ZERO → D8111 1SS355
R_AUDIO
L_AUDIO
DAC_B_VIDEO
DAC_C_VIDEO
DAC_D_DVD_VIDEO
SYS_MUTE → D8112 1SS355
C8122 0.001 B

FROM/TO DVD IN/OUT

DVD/VR 95mm
DVD COMBO 180mm
CP8101_2 (CP8002)
IMSA-9604S-12F

DVD-H(GND)	12
DVD RESET	11
ZERO	10
AUDIO-R	9
GND	8
AUDIO-L	7
GND	6
Y	5
GND	4
C	3
GND	2
CVBS	1

PCB130
VMD348

◀ R.SIGNAL+ COMPONENT SIGNAL(U)
≪ B.SIGNAL+ COMPONENT SIGNAL(V)
⬅ AUDIO SIGNAL(PB)
⋘◁ PLAYBACK VIDEO SIGNAL

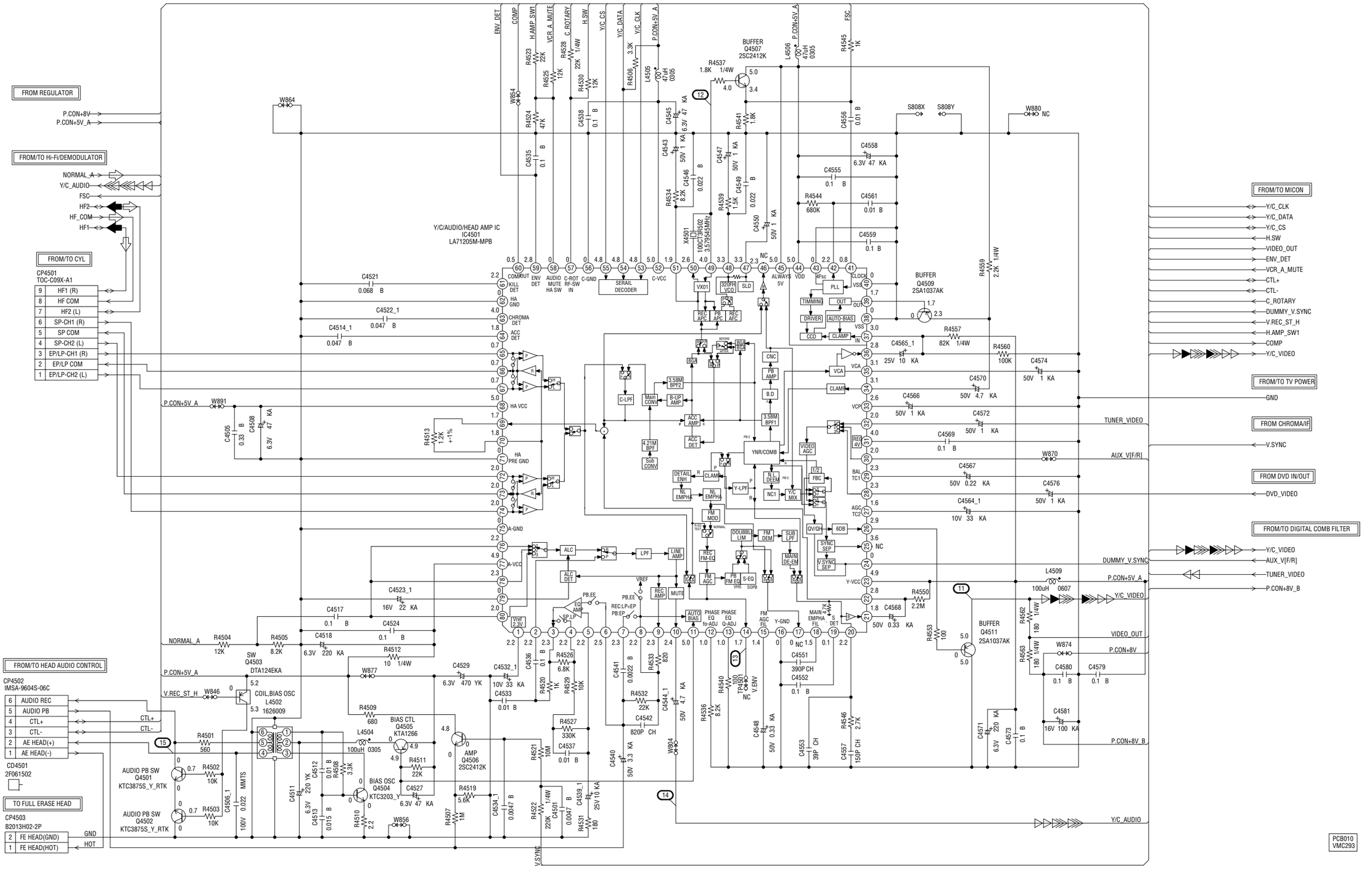
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

CAUTION: DIGITAL TRANSISTOR

Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

(VCR PCB)



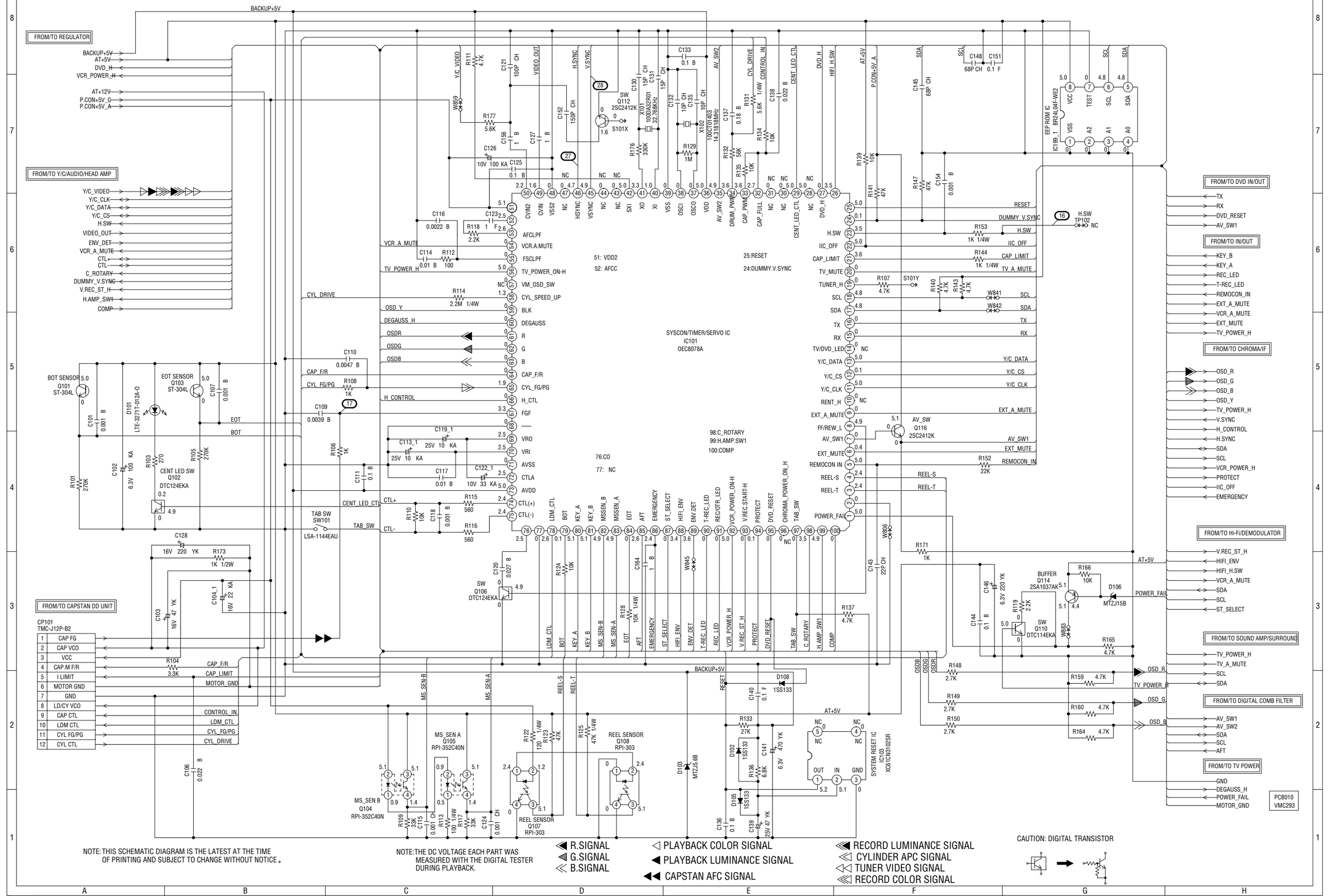
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

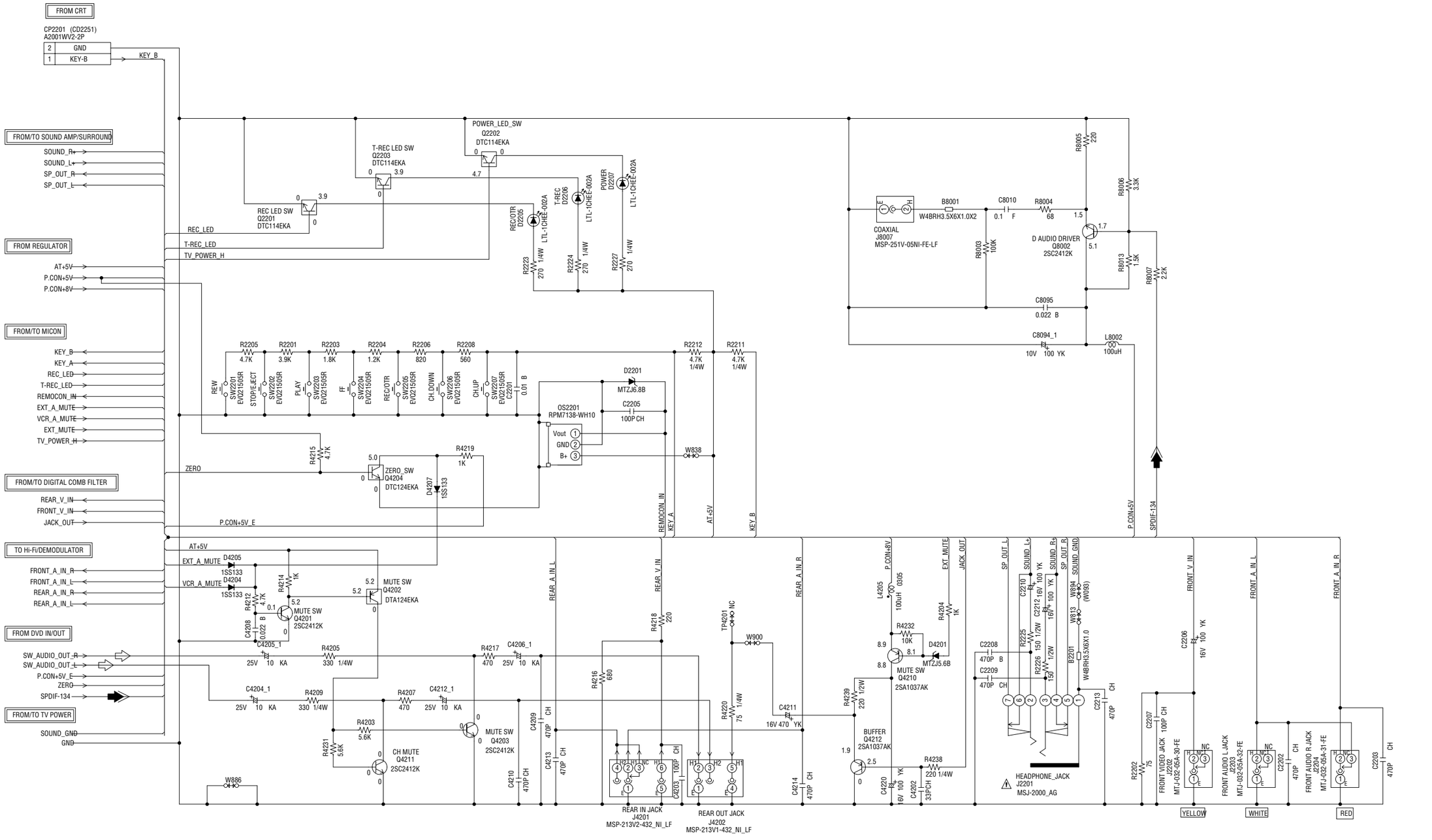
CAUTION: DIGITAL TRANSISTOR

AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
TUNER VIDEO SIGNAL
RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL
PLAYBACK COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL

MICON SCHEMATIC DIAGRAM (VCR PCB)



IN/OUT SCHEMATIC DIAGRAM
(VCR PCB)



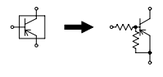
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

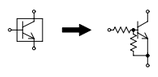
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

CAUTION: DIGITAL TRANSISTOR



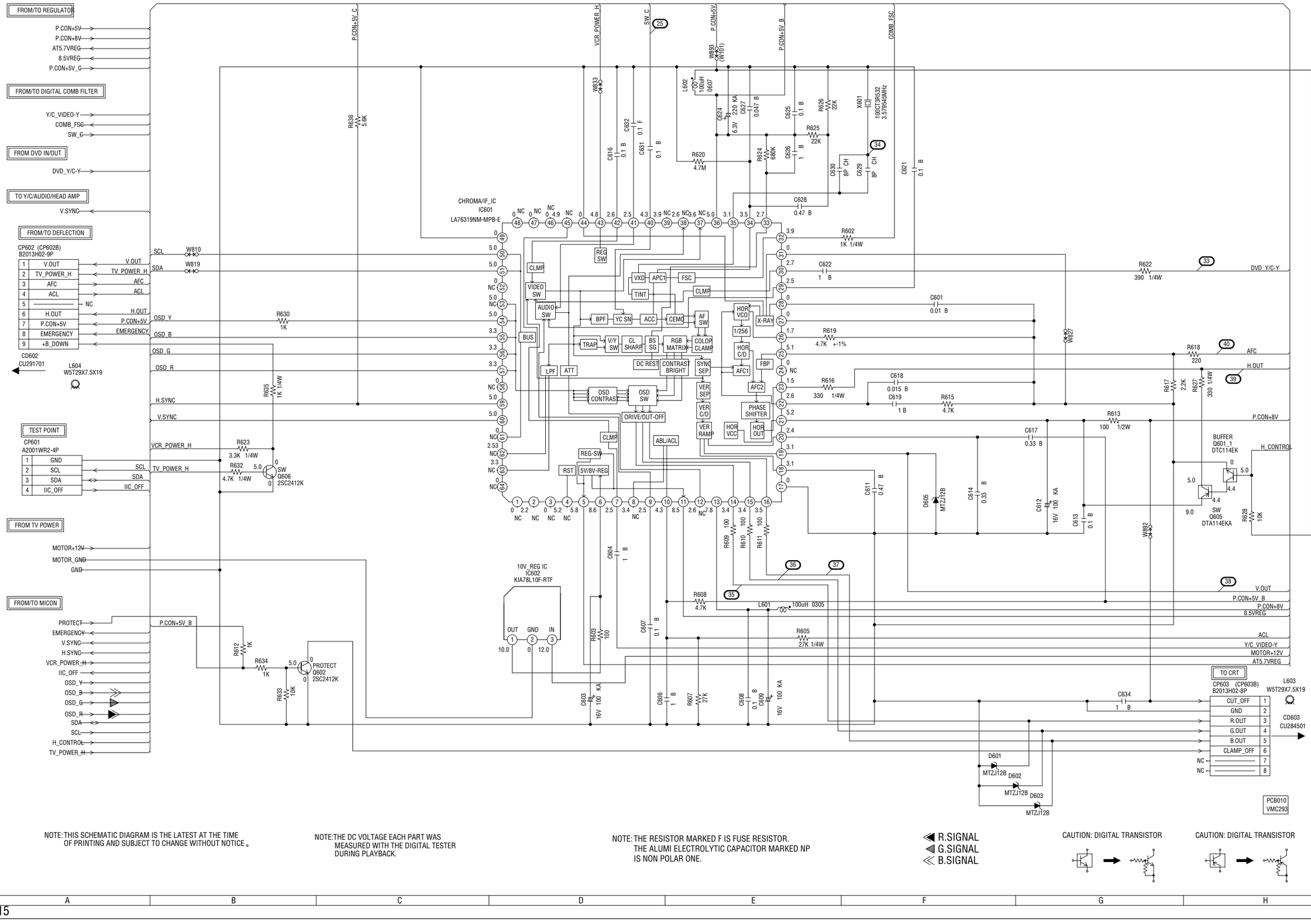
CAUTION: DIGITAL TRANSISTOR



AUDIO SIGNAL(REC)

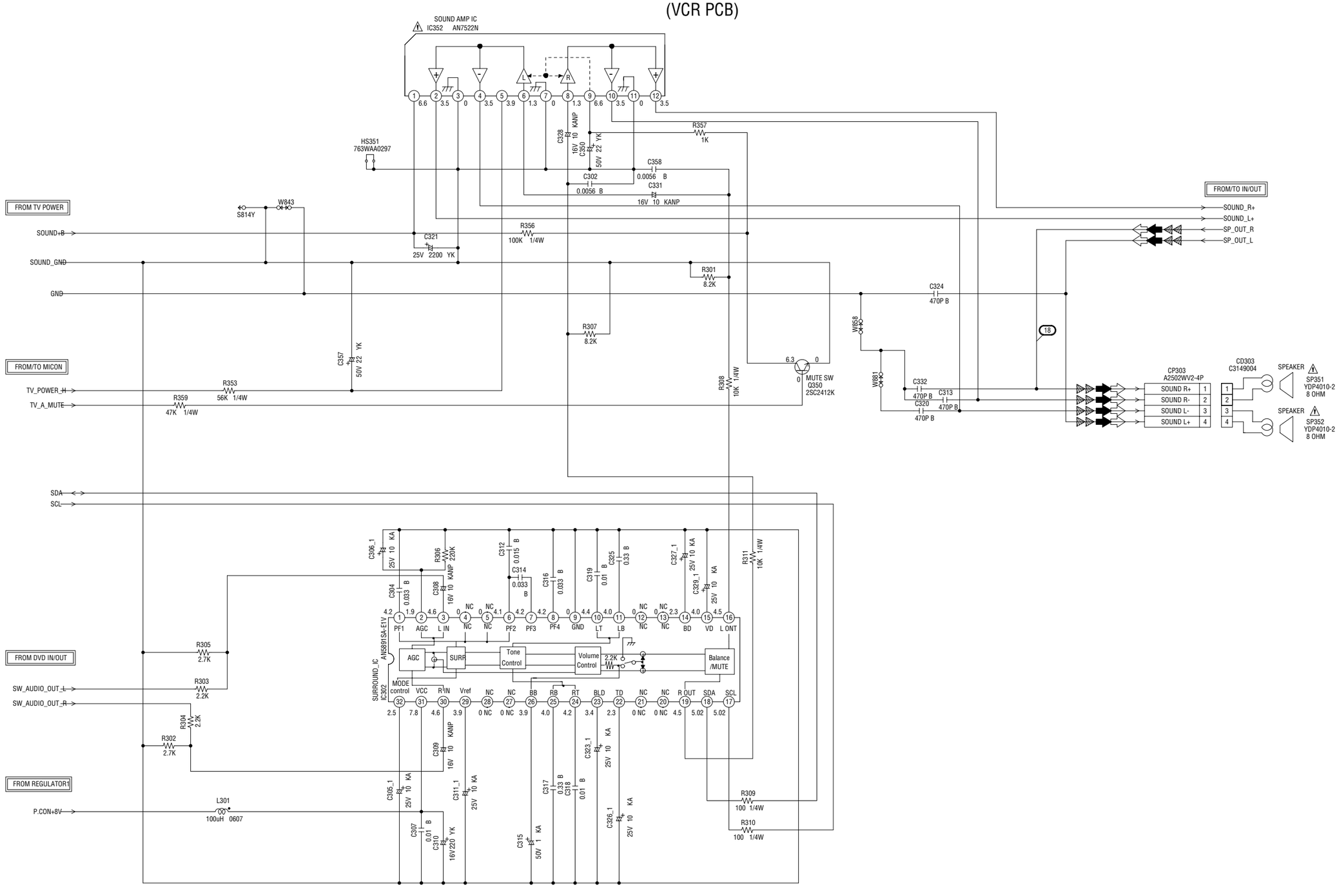
DIGITAL AUDIO SIGNAL(PB)

CHROMA/IF SCHEMATIC DIAGRAM (VCR PCB)



SOUND AMP/SURROUND SCHEMATIC DIAGRAM

(VCR PCB)



PCB010
VMC293

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.

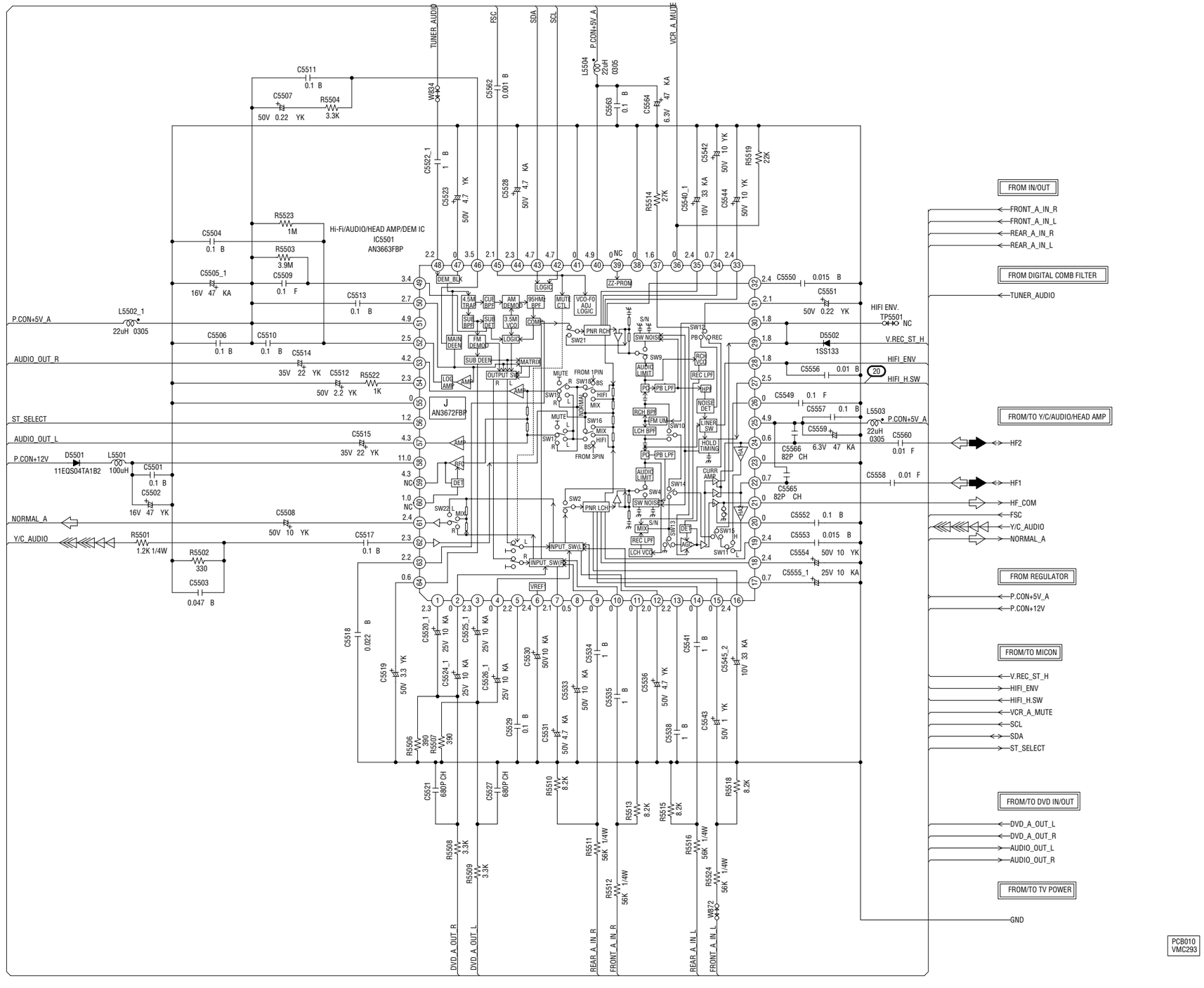
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

TUNER AUDIO SIGNAL
AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)

Hi-Fi/DEMODULATOR SCHEMATIC DIAGRAM

(VCR PCB)



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

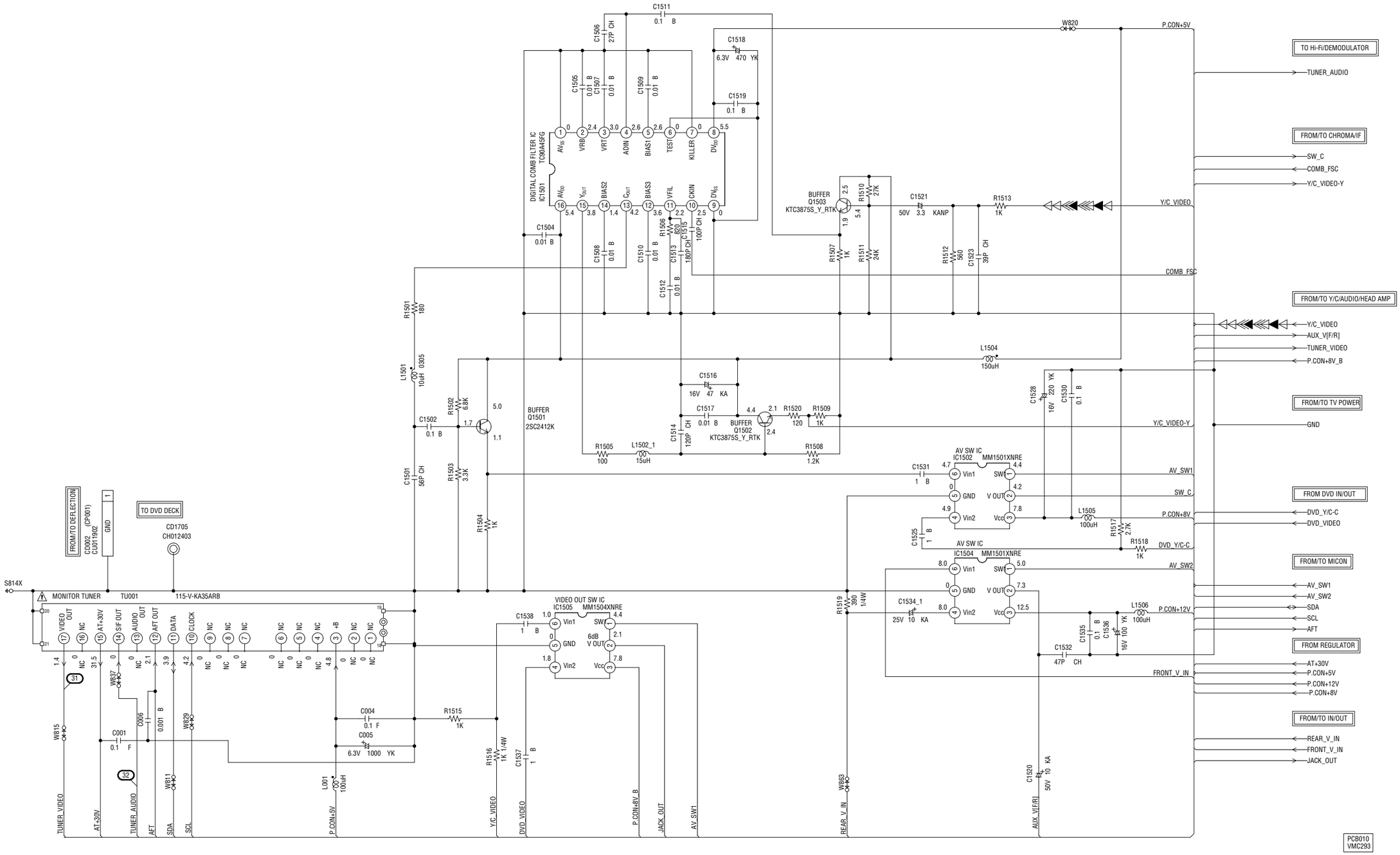
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

⇦ AUDIO SIGNAL(REC)
⬅ AUDIO SIGNAL(PB)
◁◁ TUNER VIDEO SIGNAL

⋘ RECORD COLOR SIGNAL

DIGITAL COMB FILTER SCHEMATIC DIAGRAM

(VCR 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.

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

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

⋘◀ RECORD LUMINANCE SIGNAL
⋘ RECORD COLOR SIGNAL
◁ PLAYBACK COLOR SIGNAL
◀ PLAYBACK LUMINANCE SIGNAL
◁◁ TUNER VIDEO SIGNAL

DVD IN/OUT SCHEMATIC DIAGRAM
(VCR PCB)

FROM/TO MPEG/MICON/DSP

CP8001 (CD4002)
A2001WV2-11P

1	GND
2	GND
3	TX
4	RX
5	GND
6	P.CON+9V
7	P.CON+D5V
8	P.CON+3.8V
9	P.CON+3.8V
10	GND
11	SPDIF-134

W844 TX
W816 RX
C8019 56P CH
P.CON+9V_DH
P.CON+5V_D
P.CON+3.8V
C8017 0.01 B
SPDIF-134
S801X S801Y
R8001 4.7K

FROM/TO AUDIO/VIDEO

CP8002 (CP8101_2)
IMSA-9604S-12C

12	CVBS
11	GND
10	C(CVBS)
9	GND
8	Y
7	GND
6	AUDIO-L
5	GND
4	AUDIO-R
3	ZERO
2	DVD RESET
1	(DVD_H) GND

W887 DVD_VIDEO
DVD_Y/C-C
DVD_Y/C-Y
ZERO
DVD_RESET
S809X S809Y
C8020 100P CH
C8044 0.1 B

ZERO MUTE SW
Q8007
DTC124EKA
ZERO MUTE SW
Q8006
2SC2412K

R8012 4.7K 1/4W

P.CON+12V
R8022 10 1/4W
C8070 820P CH
R8023 10K
R8049 10K
R8027 1K
R8020 4.7K
C8023 50V 2.2 NA
R8024 100K 1/4W
R8021 4.7K
C8022 50V 2.2 NA
R8025 100K 1/4W
R8026 10K
C8064 820P CH
C8025 820P CH
R8047 1K
C8065 10V 33 KA
R8048 10K
C8077 820P CH
C8079 100P CH
C8081 100P CH
R8051 12K
R8050 12K
R8054 8.2K
R8056 3.9K
R8052 8.2K
R8053 3.9K
C8004 16V 22 KA
C8003 16V 22 KA
C8102 50V 2.2 KA
C8090 0.1 F
C8002 16V 220 YK
C8005 50V 2.2 KA
W851
W850
29
30

MIXER IC
IC8004
NJM4580M(TE1)
A_GND
VCC

AV_SW1
AUDIO_OUT_L
C8001_1 25V 10 KA

AUDIO SW IC
IC8001 MM1501XNRE
Vin1 SW1 Vin2 GND V OUT Vcc

C8006_1 25V 10 KA
C8012 0.1 B
C8013 16V 100 YK
L8001 100uH 0305
P.CON+12V
SW_AUDIO_OUT_L

C8009_1 25V 10 KA
AUDIO_OUT_R

AUDIO SW IC
IC8002 MM1501XNRE
Vin1 SW1 Vin2 GND V OUT Vcc

AV_SW1
SW_AUDIO_OUT_R
C8007_1 25V 10 KA
C8014 0.1 B
C8015 16V 100 KA
L8003 100uH 0305
P.CON+12V
AT+5V
P.CON+5V_E
DVD_A_OUT_L
DVD_A_OUT_R

TO SOUND AMP/SURROUND
SW_AUDIO_OUT_L
SW_AUDIO_OUT_R

TO IN/OUT
SW_AUDIO_OUT_L
SW_AUDIO_OUT_R
ZERO
SPDIF-134
P.CON+5V_E

TO DIGITAL COMB FILTER
DVD_Y/C-C
DVD_VIDEO

TO CHROMA/IF
DVD_Y/C-Y

FROM/TO MICON
TX
RX
DVD_RESET
AV_SW1

FROM/TO TV POWER
GND

FROM REGULATOR
P.CON+3.8V
P.CON+5V_D
P.CON+12V
P.CON+9V_DH
AT+5V

TO Y/C/AUDIO/HEAD AMP
DVD_VIDEO

FROM/TO Hi-Fi/DEMODULATOR
DVD_A_OUT_L
DVD_A_OUT_R
AUDIO_OUT_L
AUDIO_OUT_R

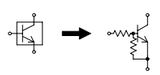
PCB010
VMC293

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

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

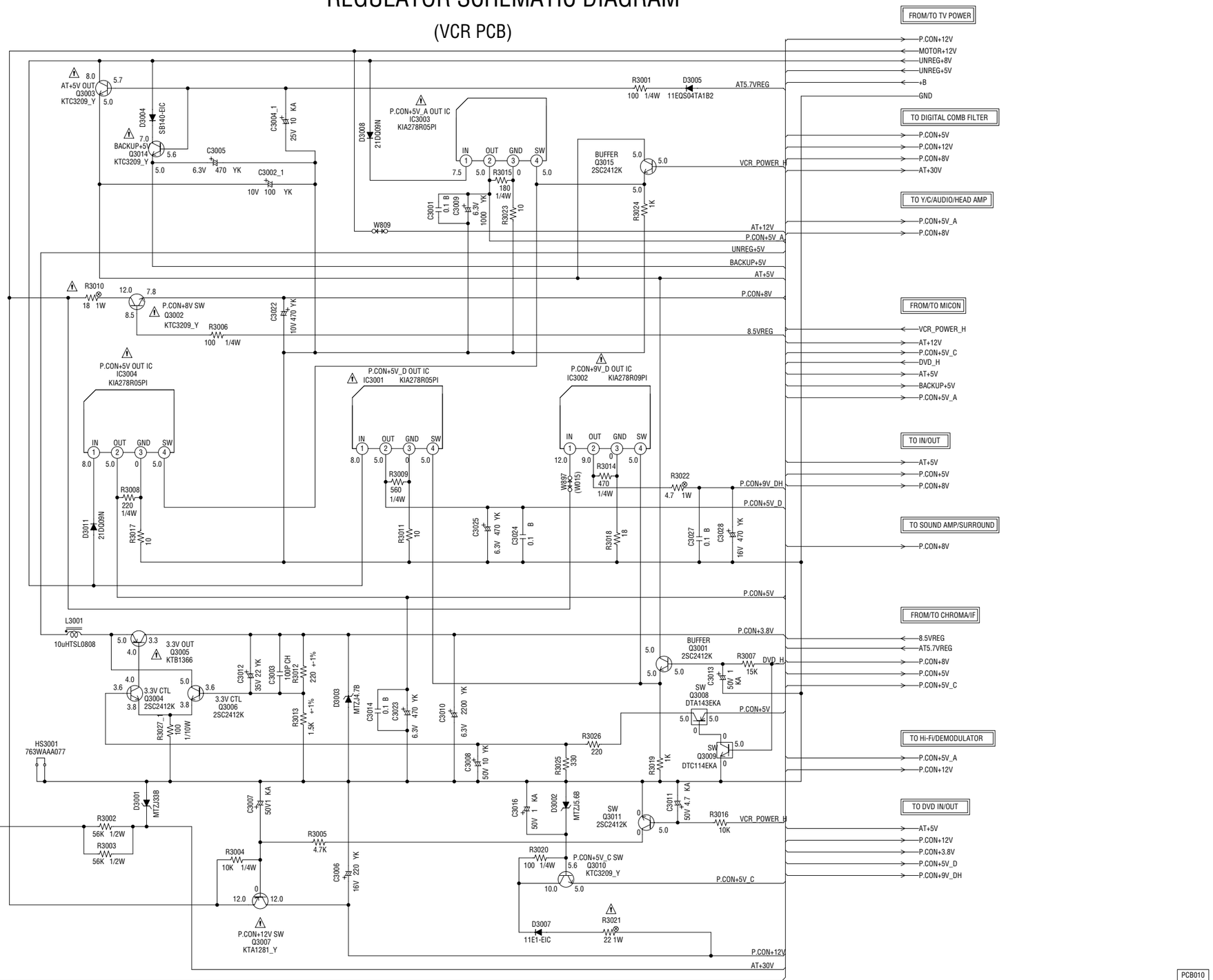
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR



REGULATOR SCHEMATIC DIAGRAM

(VCR PCB)



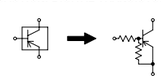
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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

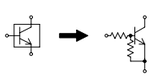
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

CAUTION: DIGITAL TRANSISTOR

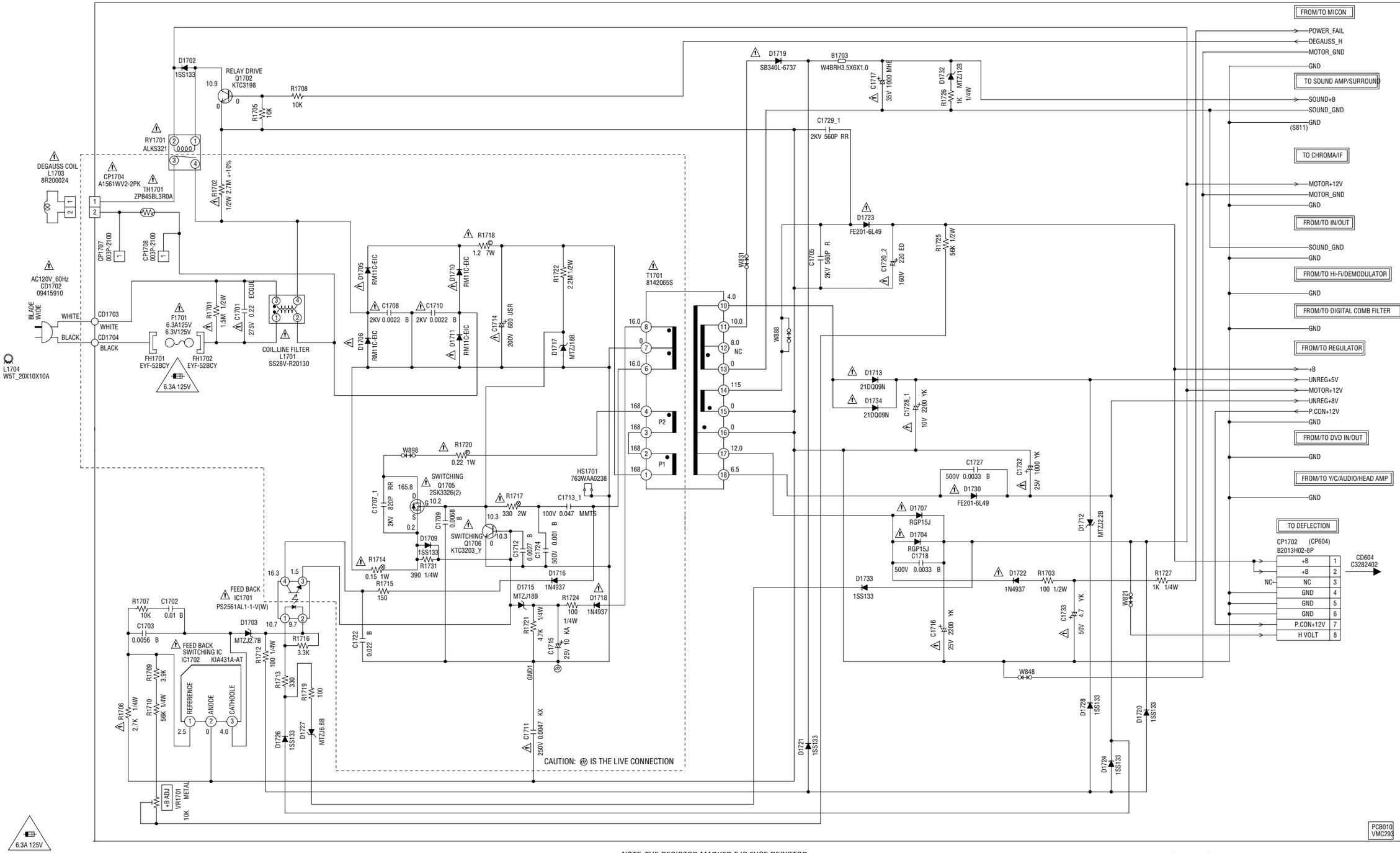


CAUTION: DIGITAL TRANSISTOR



TV POWER SCHEMATIC DIAGRAM

(VCR PCB)



6.3A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V (F1701)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V (F1701)

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

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

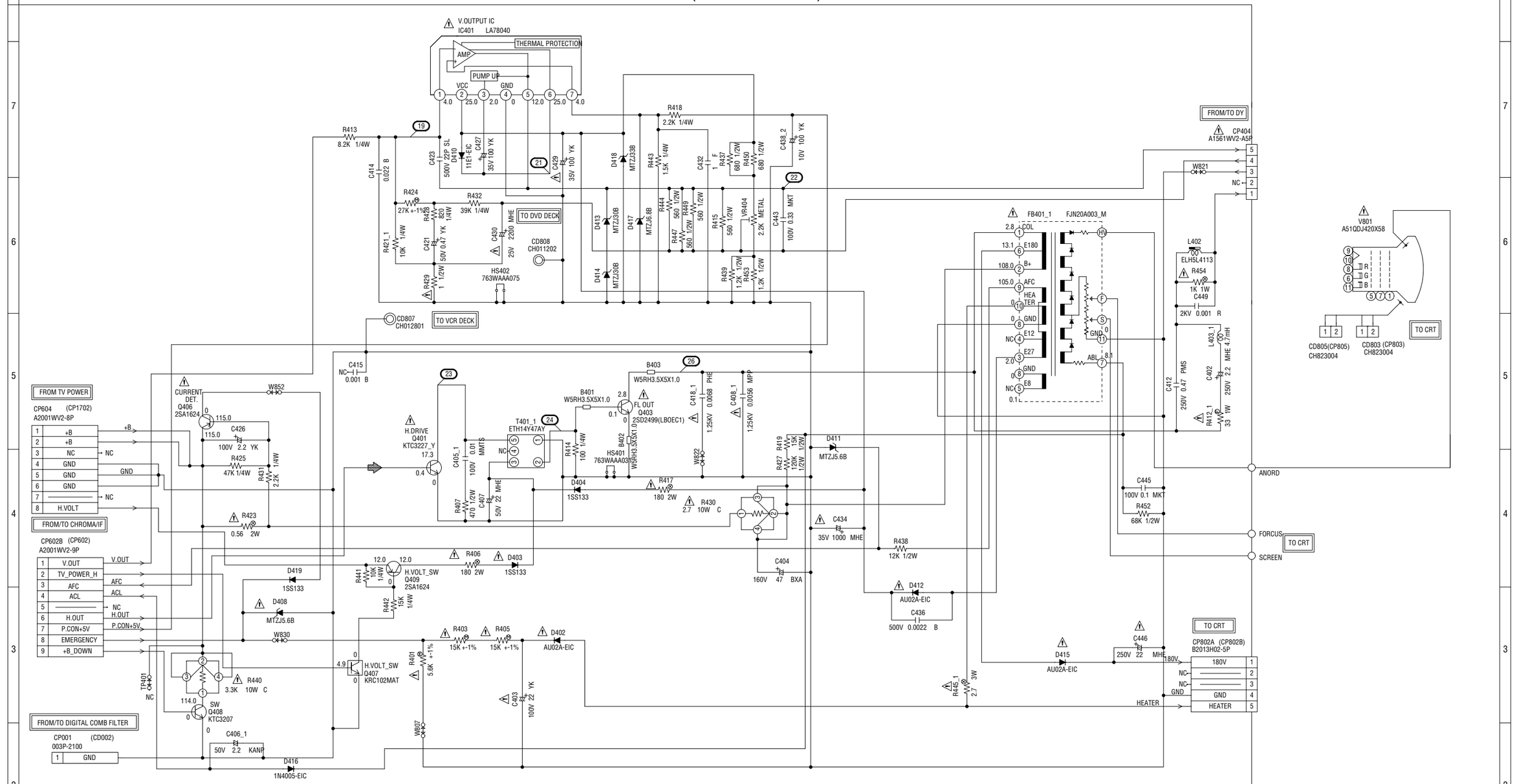
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

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

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

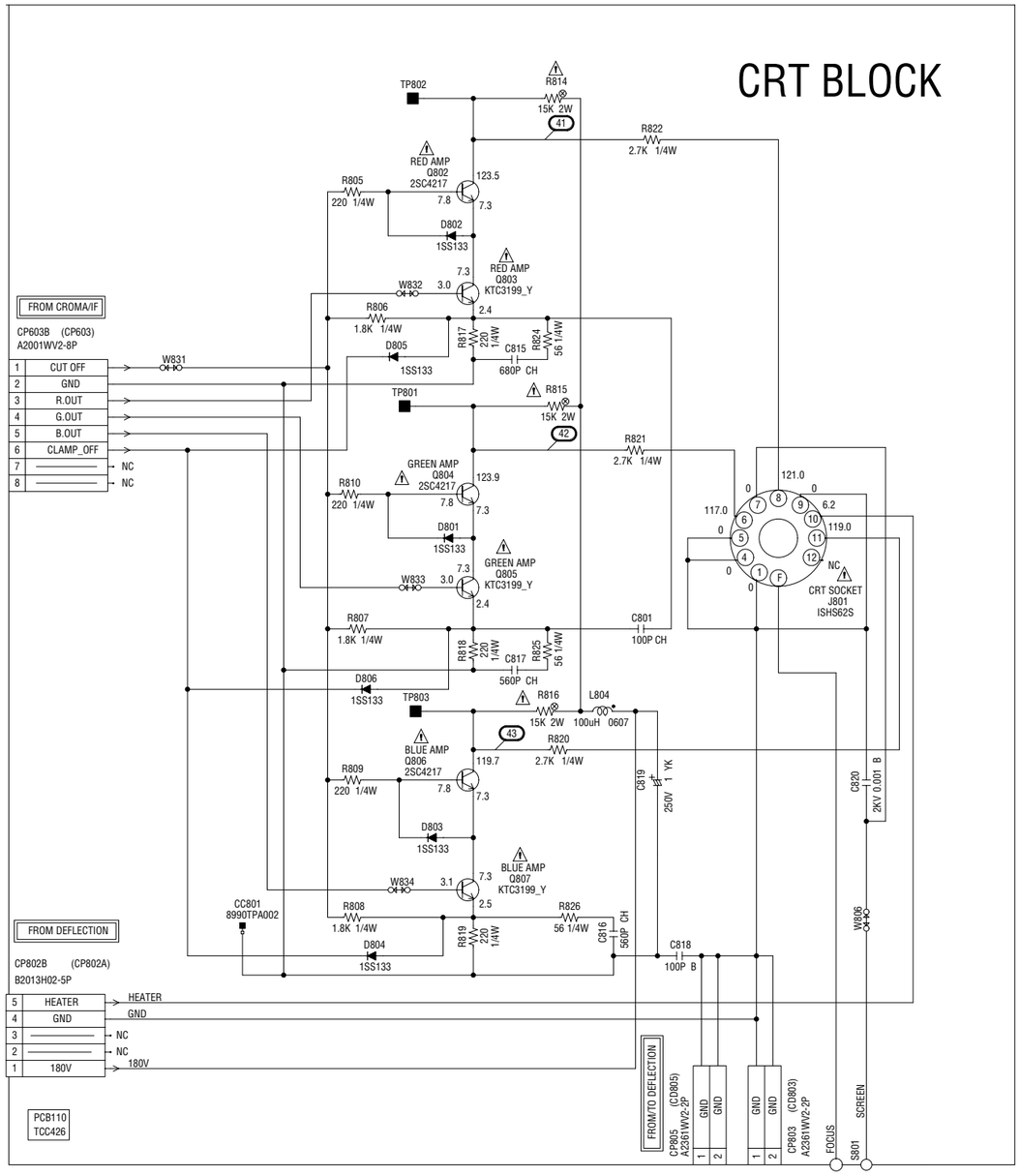
DEFLECTION SCHEMATIC DIAGRAM

(DEFLECTION PCB)



CRT/OPERATION SCHEMATIC DIAGRAM(CRT PCB)

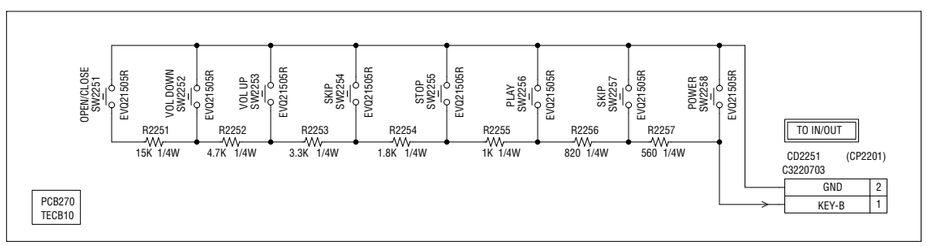
CRT BLOCK



ACCESSORY

TM101
R56-0487

(OPERATION PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

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

INTERCONNECTION DIAGRAM

DVD DRIVE DM-3

	CD2001	CP2301
T-	1	1 T-
T+	2	2 T+
F-	3	3 F-
F+	4	4 F+
MON(DVD)	5	5 MON(DVD)
NC(SW)	6	6 NC(SW)
VOL(DVD)	7	7 VOL(DVD)
GND(DVD)	8	8 GND(DVD)
LD(DVD)	9	9 LD(DVD)
LD(CD)	10	10 LD(CD)
VOL(CD)	11	11 VOL(CD)
GND(CD)	12	12 GND(CD)
MON(COM)	13	13 MON(COM)
DVD/CD	14	14 DVD/CD
RF	15	15 RF
C	16	16 C
B	17	17 B
A	18	18 A
D	19	19 D
F	20	20 F
E	21	21 E
VCC	22	22 VCC
Vref	23	23 Vref
GND(PDIC)	24	24 GND(PDIC)

L4002

	CD4002	CP8001
GND	1	1 GND
GND	2	2 GND
TX	3	3 TX
RX	4	4 RX
GND(M)	5	5 GND(M)
P.CON+9V	6	6 P.CON+9V
P.CON+5V	7	7 P.CON+D5V
P.CON+3.8V	8	8 P.CON+3.8V
P.CON+3.8V	9	9 P.CON+3.8V
GND	10	10 GND
SPDIF-134	11	11 SPDIF-134

	CP8101_2	FFC	CP8002
CVBS	1	1 12	12 CVBS
GND	2	2 11	11 GND
C(CVBS)	3	3 10	10 C(CVBS)
GND	4	4 9	9 GND
Y	5	5 8	8 Y
GND	6	6 7	7 GND
AUDIO-L	7	7 6	6 AUDIO-L
GND	8	8 5	5 GND
AUDIO-R	9	9 4	4 AUDIO-R
ZERO	10	10 3	3 ZERO
DVD RESET	11	11 2	2 DVD RESET
GND	12	12 1	1 GND

SPINDLE MOTOR

FG SENSER

	FFC	CP2302
CLOSE	1	1 CLOSE
GND(D)	2	2 GND(D)
OPEN	3	3 OPEN
LD+	4	4 LD+
LD-	5	5 LD-

	CP2303
SP1+	1 SP1+
SP1-	2 SP1-
SLD+	3 SLD+
SLD-	4 SLD-
LIMIT SW	5 LIMIT SW
SW(GND)	6 SW(GND)

DVD PCB
PCB130
VMD348

CD2251 KEY-B GND

OPERATION PCB
PCB270
TECB10

CP2201 KEY-B GND

SPEAKER SP351 8 OHM

SPEAKER SP352 8 OHM

CD3303 4 3 2 1

CP801 GND SCL SDA IIC_OFF

CP303 SOUND L+ SOUND L- SOUND R- SOUND R+

COMMAND TRANSMITTER
TM101

OS2201 Vout GND B+

FULL ERASE HEAD ASS'Y

H5002 FE HEAD (HOT) FE HEAD (GND)

CP4503 FE HEAD(HOT) FE HEAD(GND)

HALL SENSOR
MAIN COIL
ROTOR MAGNET
MR FG SENSOR (VCC O G)

HALL VCC
HALL IN
OUT SWITCH LOGIC

	CP101
CAP FG	1 1
CAP VCO	2 2
VCC	3 3
CAP.M F/R	4 4
I LIMIT	5 5
MOTOR GND	6 6
GND	7 7
LD/CY VCO	8 8
CAP CTL	9 9
LDM CTL	10 10
CYL FG/PG	11 11
CYL CTL	12 12

CAPSTAN DD UNIT ASS'Y
M2001

FFC 1 2 3 4 5 6 7

RED WHITE

LM

LOADING MOTOR
M101

D-PG GND
D-PG OUT
M-GND
D-COM
D-W OUT
D-V OUT
D-U OUT

UN4001
CYLINDER UNIT ASS'Y

	CP001
GND	1

	CD002
	1 GND

	CP602B	CD602 FFC	CP602
V.OUT	1		1 V.OUT
TV_POWER_H	2		2 TV_POWER_H
AFC	3		3 AFC
ACL	4		4 ACL
———	5		5 ———
H.OUT	6		6 H.OUT
P.CON+5V	7		7 P.CON+5V
EMERGENCY	8		8 EMERGENCY
+B_DOWN	9		9 +B_DOWN

L604

TV MT PCB
PCB080
TMC564

	CP604	CD604 FFC	CP1702
+B	1		1 +B
+B	2		2 +B
NC	3		3 NC
GND	4		4 GND
GND	5		5 GND
GND	6		6 GND
P.CON+12V	7		7 P.CON+12V
H.VOLT	8		8 H VOLT

FBT FB401_1

CP802A 180V GND HEATER

CP404 5 4 3 2 1 NC

FOCUS SCREEN

	CD603 FFC	CP603
CUT_OFF		1 CUT_OFF
GND		2 GND
R.OUT		3 R.OUT
G.OUT		4 G.OUT
B.OUT		5 B.OUT
CLAMP_OFF		6 CLAMP_OFF
———		7 ———
———		8 ———

SB01 SCREEN FOCUS

CP802B 180V GND HEATER

V801 H.V CRT ANODE

DEGAUSS COIL
L1703

CP1704 1 2

L603

CRT SOCKET J801

	CP603B
CUT_OFF	1
GND	2
R.OUT	3
G.OUT	4
B.OUT	5
CLAMP_OFF	6
———	7
———	8

BLADE WIDE

WHITE CD1703 WHITE

BLACK CD1704 BLACK

AC120V_60Hz
CD1702

L1704

CRT PCB
PCB110
TCC426

CP805 GND GND

CP803 GND GND

CD805 CD803

VCR MT PCB
PCB010
VMC293

MONITOR TUNER
TU001

17	VIDEO OUT
16	NC
15	AT+30V
14	SIF OUT
13	AUDIO OUT
12	AFT OUT
11	DATA
10	CLOCK
9	NC
8	NC
7	NC
6	NC
5	NC
4	NC
3	+B
2	NC
1	NC

COAXIAL J8007

YELLOW FRONT VIDEO JACK J2202

WHITE FRONT AUDIO L JACK J2203

RED FRONT AUDIO R JACK J2204

REAR A/V JACK J4201

REAR OUT JAK J4202

HEADPHONE_JACK J2201

CD1705

TO DVD DECK

	CP4501	FFC
HF1_(R)	9	9 9
HF_COM	8	8 8
HF2 (L)	7	7 7
SP-CH1 (R)	6	6 6
SP_COM	5	5 5
SP-CH2 (L)	4	4 4
EP/LP-CH1 (R)	3	3 3
EP/LP_COM	2	2 2
EP/LP-CH2 (L)	1	1 1

HI-FI HEAD

SP HEAD

EP/LP HEAD

HEAD AUDIO CONTROL ASS'Y
H5001

	CP4502	FFC
AUDIO REC	6	6 6
AUDIO PB	5	5 5
CTL+	4	4 4
CTL-	3	3 3
AE HEAD(+)	2	2 2
AE HEAD(-)	1	1 1

AUDIO

CONTROL

AE

CD4501

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

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

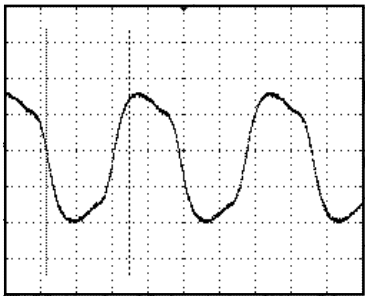
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

WAVEFORMS

MPEG/MICON/DSP

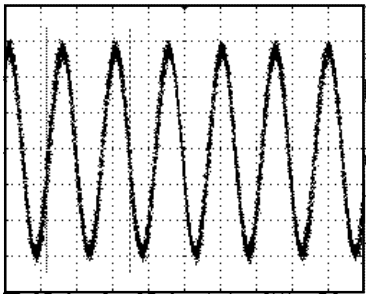
10ns
100mV

①



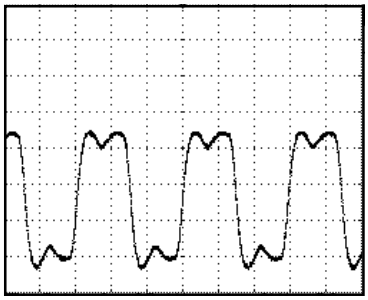
5ns
20mV

②



20ns
1.0V

③



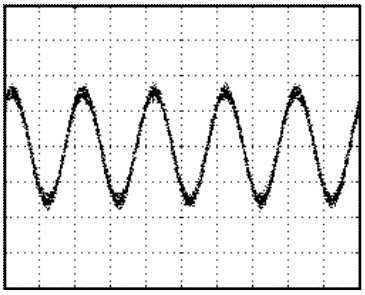
200ns
1.0V

④

AUDIO/VIDEO

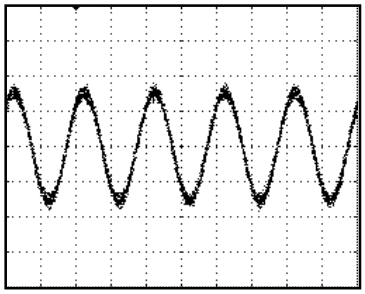
500µs
500mV

⑥



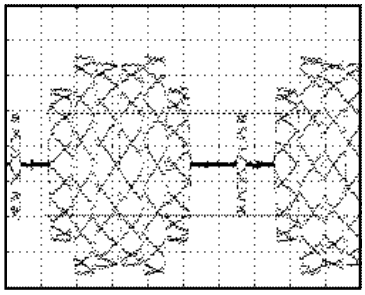
500µs
500mV

⑦



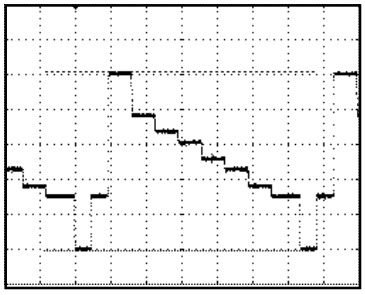
10µs
100mV

⑧



100µs
200mV

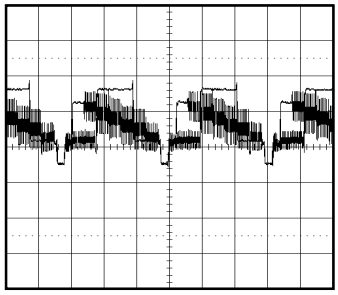
⑨



Y/C/AUDIO/HEAD AMP

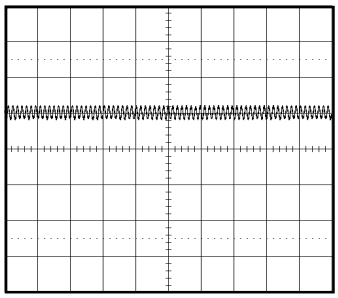
20µs
1.0V

⑪



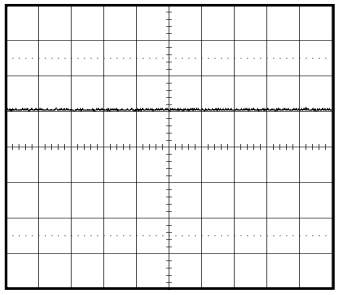
2µs
1.0V

⑫



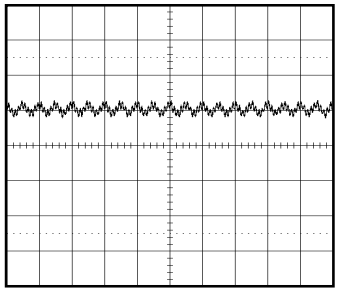
1ms
1.0V

⑬



5ms
2.0V

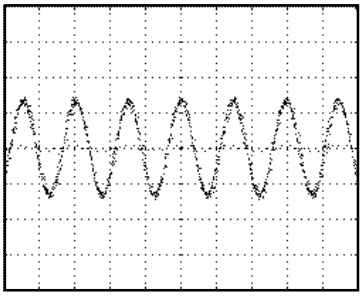
⑭



MEMORY

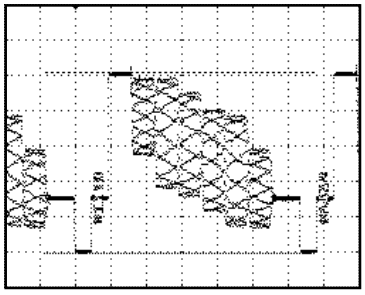
5ns
500mV

⑤



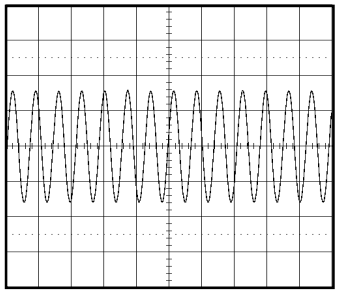
10µs
200mV

⑩



20µs
20V

⑮

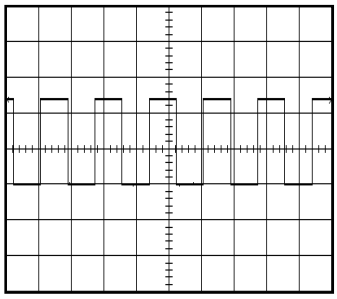


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

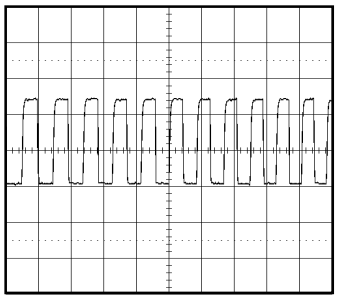
MICON

20ms
2.0V



⑯

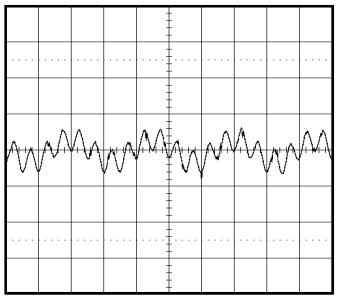
1ms
2.0V



⑰

SOUND AMP/SURROUND

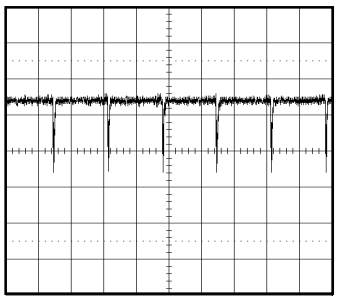
1ms
200mV



⑱

DEFLECTION

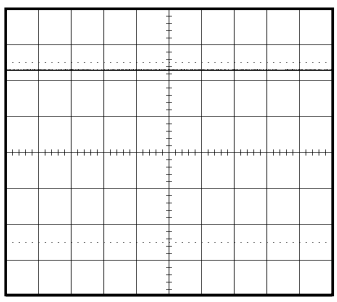
10ms
0.5V



⑲

Hi-Fi/DEMODULATOR

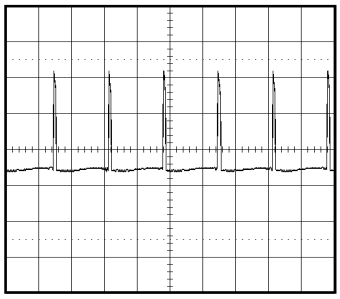
1ms
1.0V



⑳

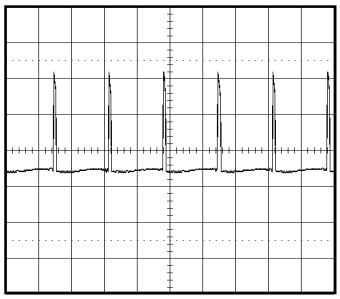
DEFLECTION

10ms
10V



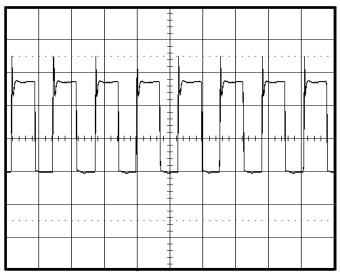
㉑

10ms
10V



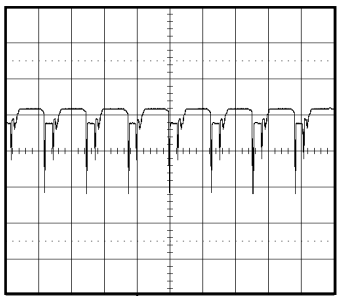
㉒

50µs
10V



㉓

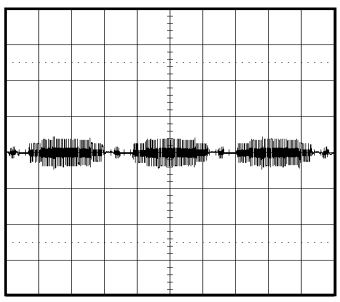
50µs
5.0V



㉔

CHROMA/IF

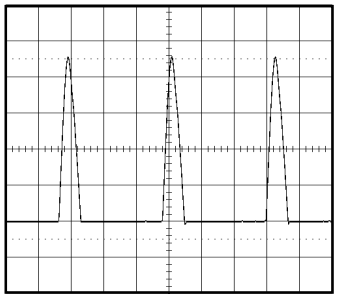
20µs
0.5V



㉕

DEFLECTION

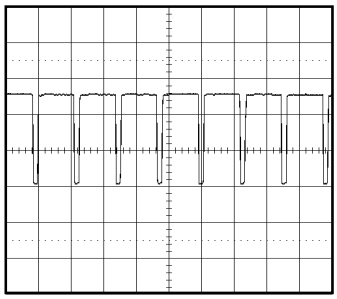
20µs
200V



㉖

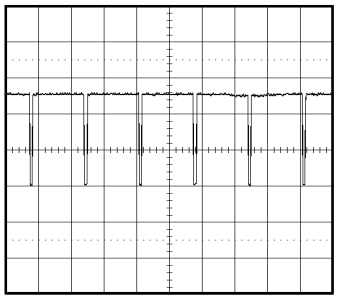
MICON

50µs
2.0V



㉗

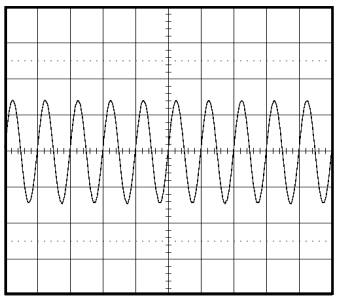
10ms
2.0V



㉘

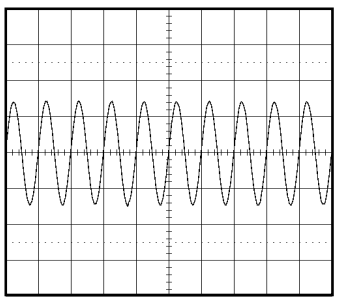
DVD IN/OUT

1ms
2.0V



㉙

1ms
2.0V



㉚

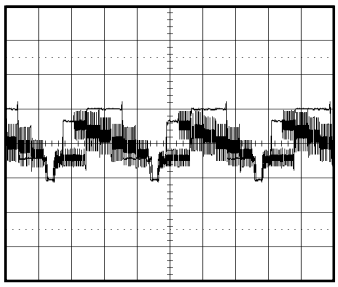
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

DIGITAL COMB FILTER

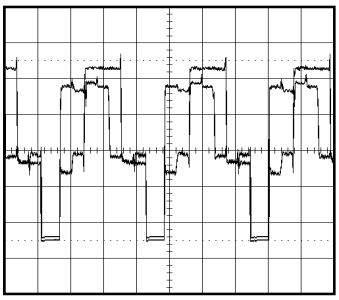
20µs
0.5V

(31)



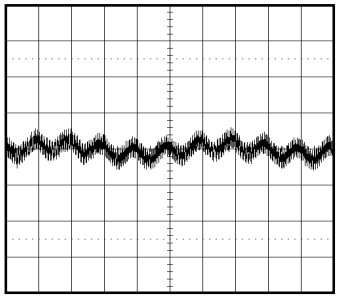
20µs
1.0V

(36)



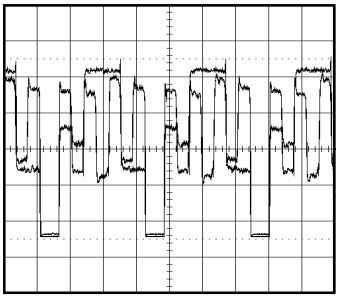
0.5ms
0.5V

(32)



20µs
1.0V

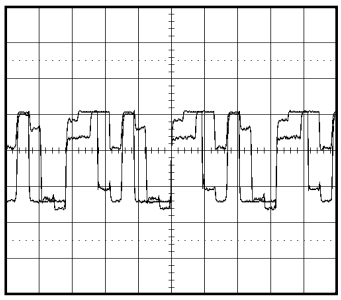
(37)



CRT/OPERATION

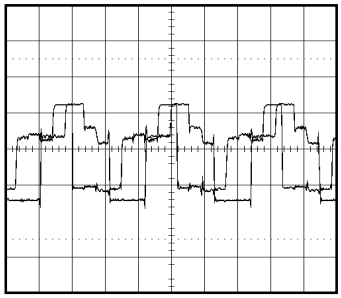
20µs
50V

(41)



20µs
50V

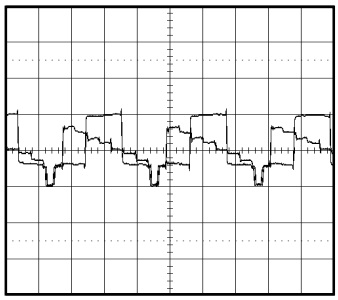
(42)



CHROMA/IF

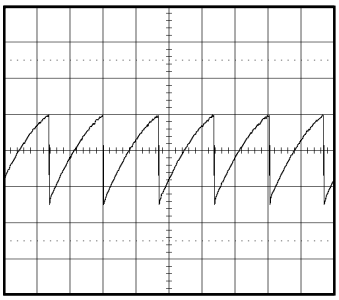
20µs
0.5V

(33)



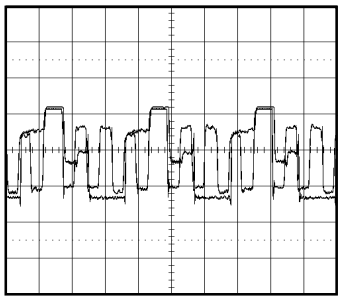
10ms
1.0V

(38)



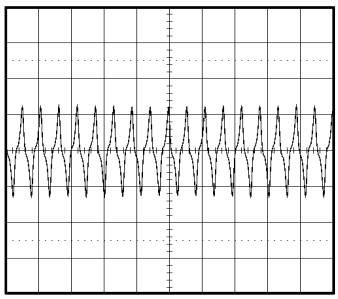
20µs
50V

(43)



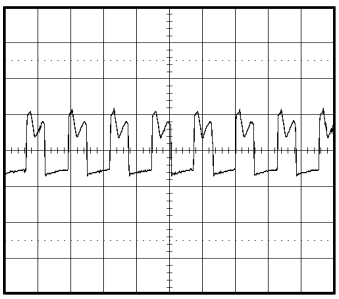
0.5µs
100mV

(34)



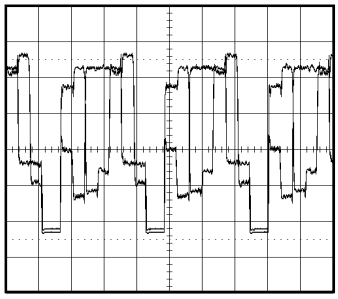
50µs
0.5V

(39)



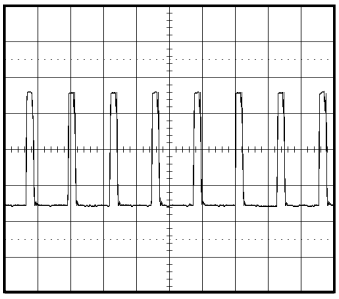
20µs
1.0V

(35)



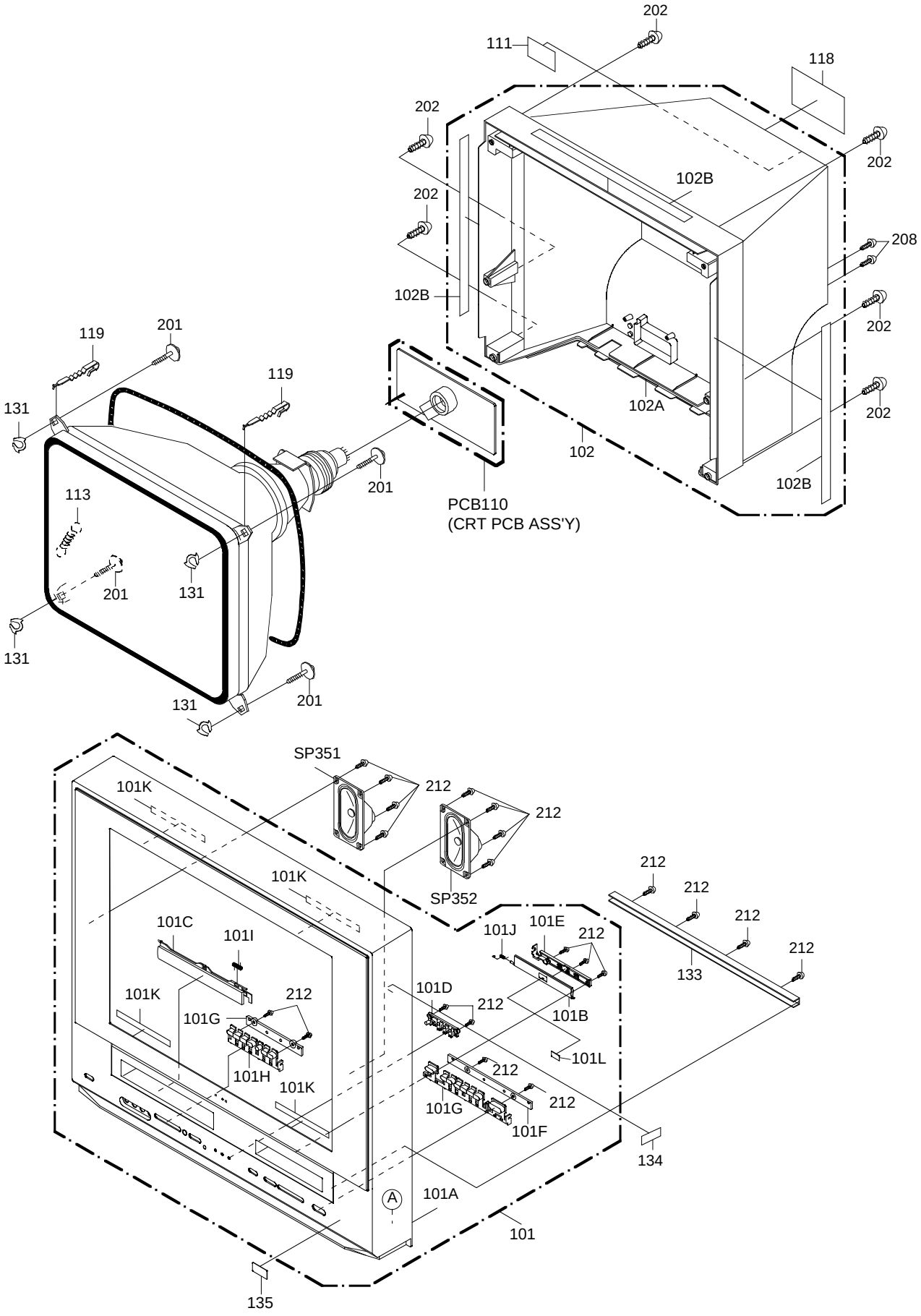
50µs
2.0V

(40)

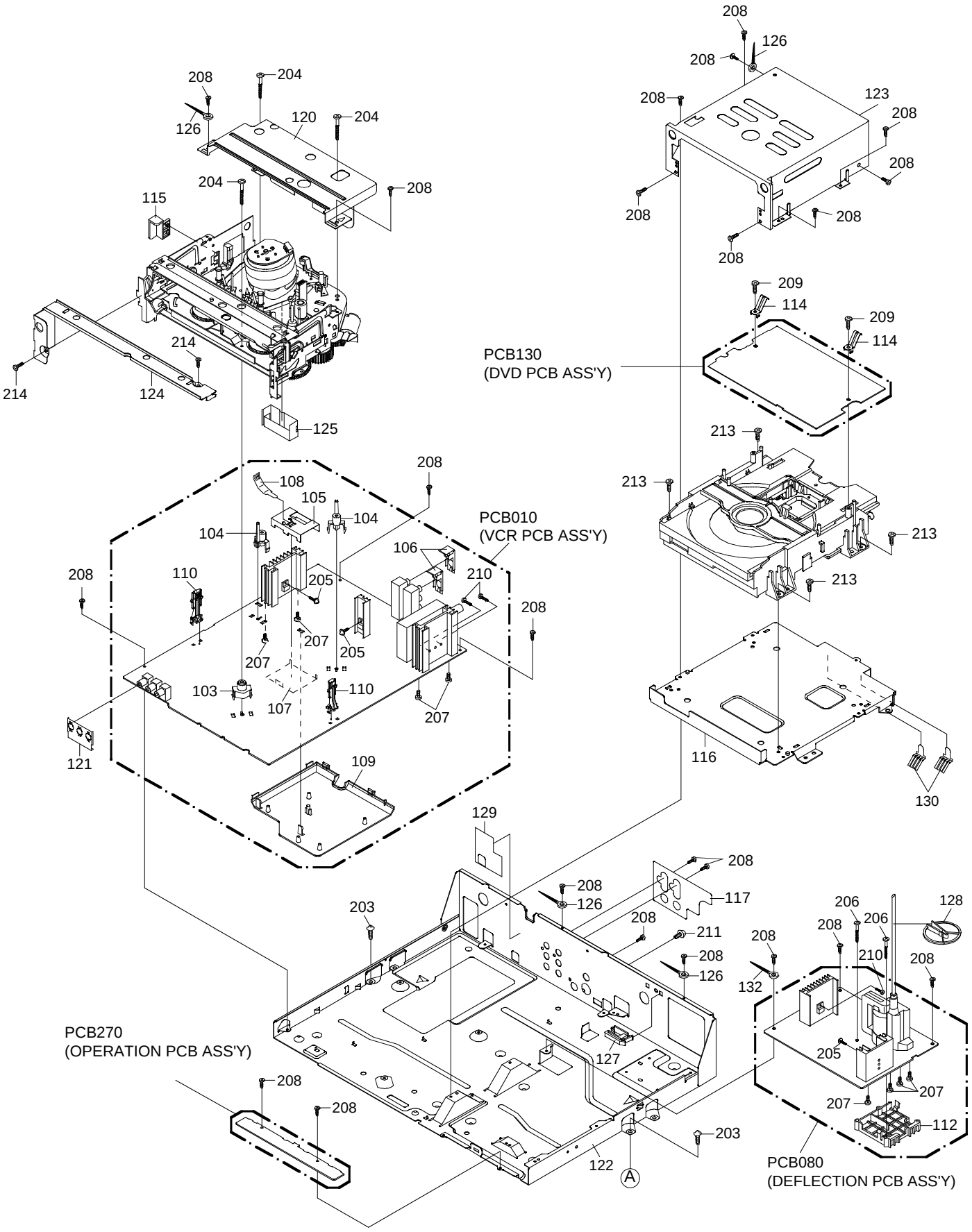


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

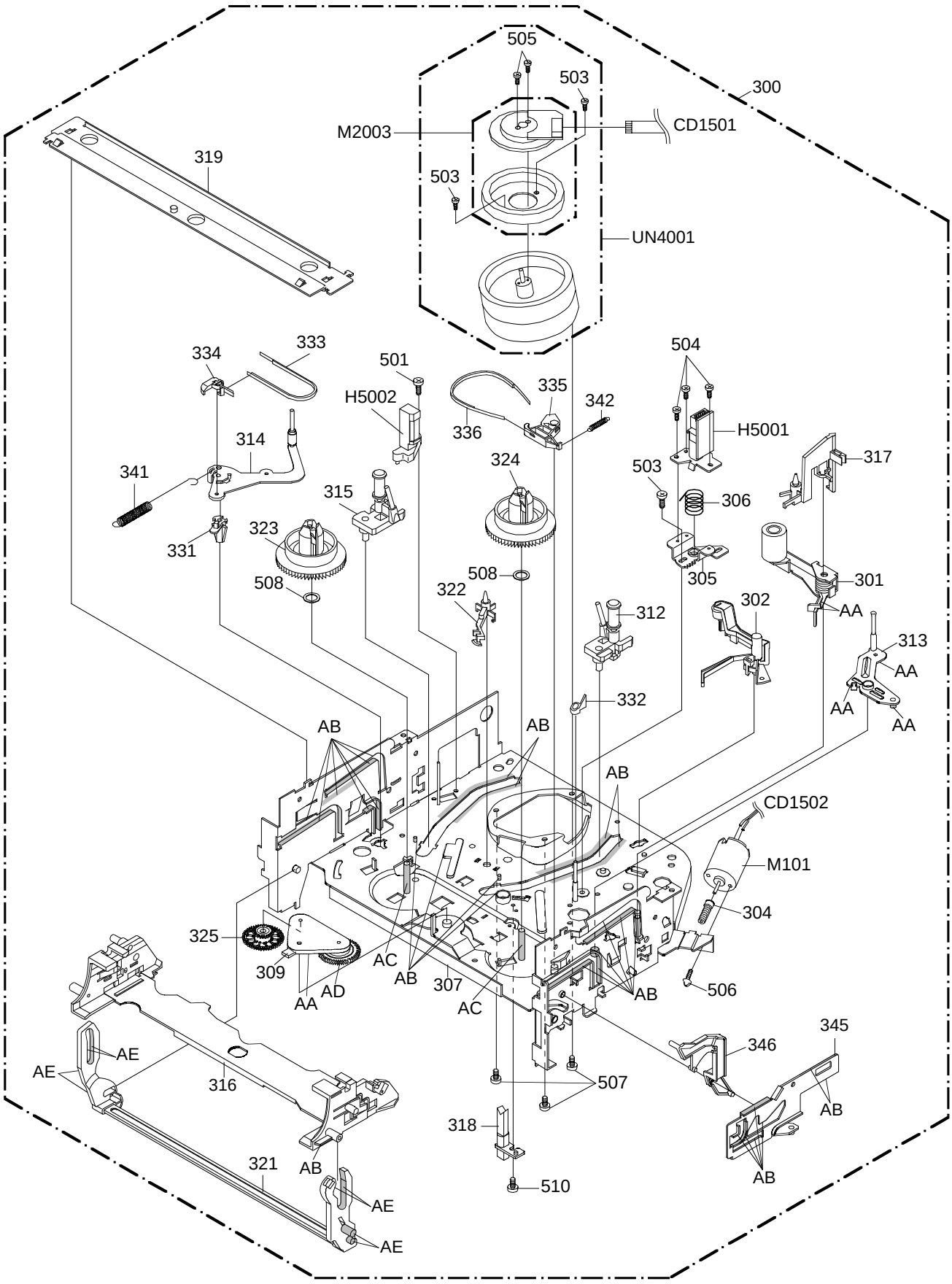
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



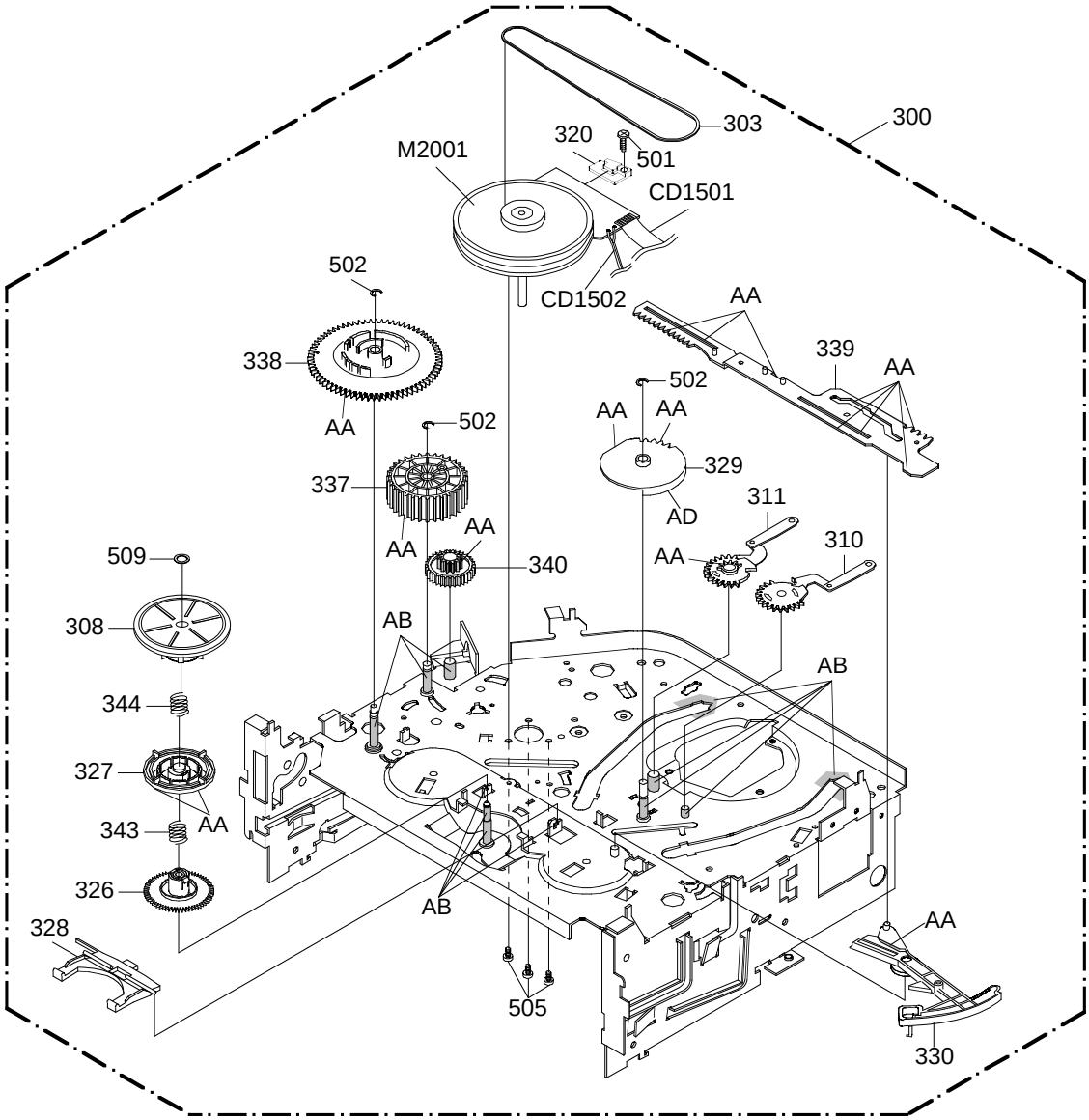
CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315071000	MG-33	AB
	Y31D011000	FG-84M	AC
	Y315041000	FL-721	AD
	Y315141000	G-313Y	AE

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

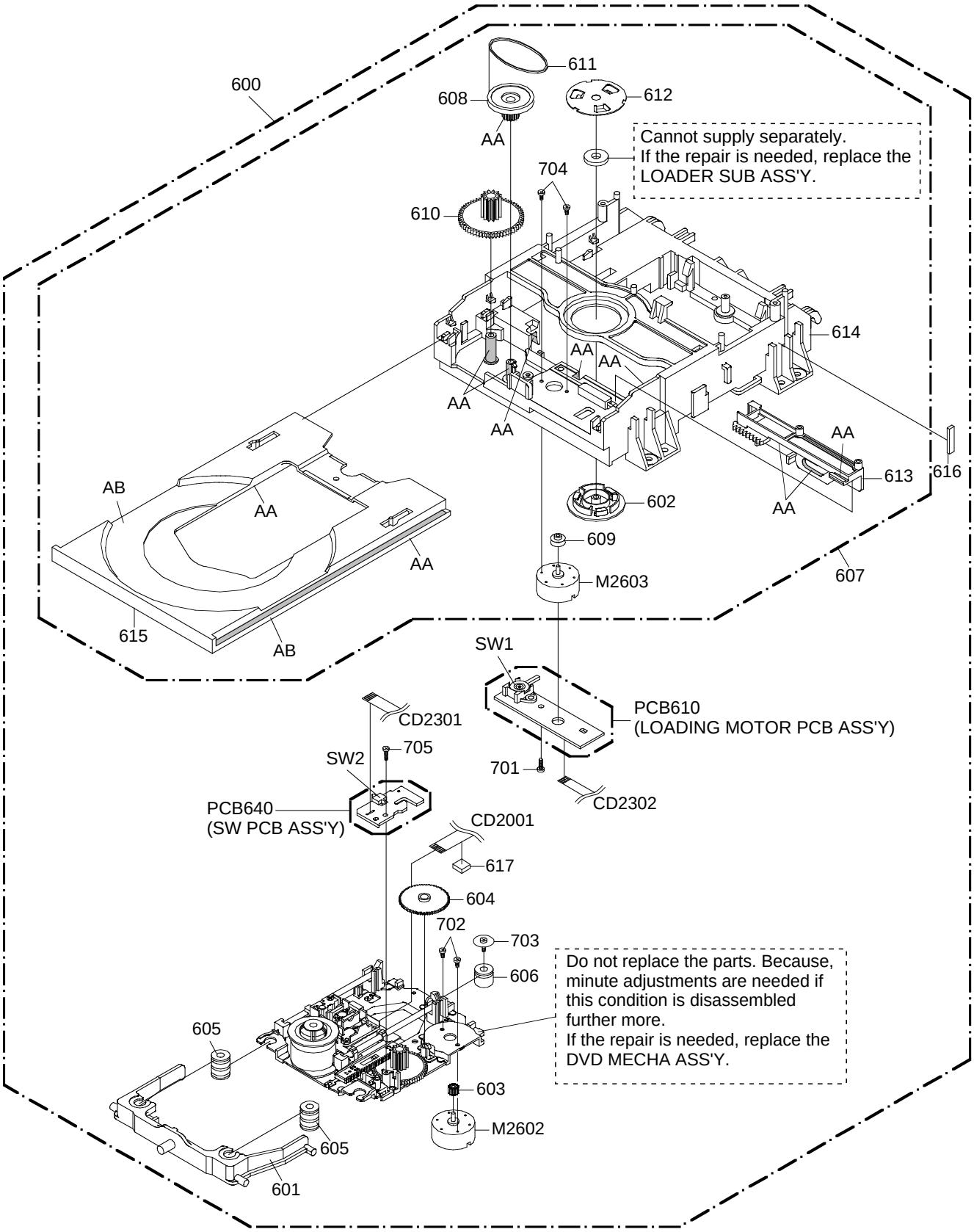
CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315071000	MG-33	AB
	Y31D011000	FG-84M	AC
	Y315041000	FL-721	AD
	Y315141000	G-313Y	AE

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

DVD DECK EXPLODED VIEW



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

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

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION		
101	7A701A528A	FRONT,CABI ASS'Y		201	8141J50C5U	SCREW,TAP TITE(P)	GW22	5x35
101A	701WPJD127	CABINET,FRONT		202	8117540A6U	SCREW,TAP TITE(B0)	TRUSS	4x16
101B	712WPBA146	FLAP,DVD		203	811754080U	SCREW,TAP TITE(B0)	TRUSS	4x8
101C	712WPJC184	FLAT,FLAP		204	8109130B9U	SCREW,TAP TITE(B)R	PAN	3x29
101D	713WPA0292	GLASS,LED		205	8109I30A0U	SCREW,TAP TITE(B)	WH7	3x10
101E	735WPAA614	HOLDER FLAP		206	8107630A8U	SCREW,TAP TITE(S)	BRAZIER	3x18
101F	735WPAA748	STOPPER,BUTTON		207	810963080Q	SCREW,TAP TITE(B)	BRAZIER	3x8
101G	735WPBB460	BUTTON,FRAME 1		208	810923080U	SCREW,TAP TITE(B)	BIND	3x8
101H	735WPBB461	BUTTON,FRAME 2		209	811022680U	SCREW,TAP TITE(P)	BIND	2.6x8
101I	743WKA0037	SPRING,FLAP						
101J	743WKA0043	SPRING,FLAP-DVD		210	810763080U	SCREW,TAP TITE(S)	BRAZIER	3x8
101K	800WQ0A052	FELT,SHEET	5x150xT=0.3	211	810723040U	SCREW,TAP TITE(S)	BIND	3x4
101L	7235630001	SHEET,DVD(NEW)		212	811063080U	SCREW,TAP TITE(P)	BRAZIER	3x8
				213	810F13080U	SEMS(F)		3x8
102	7A702A050A	BACK,CABI ASS'Y		214	810723060U	SCREW,TAP TITE(S)	BIND	3x6
102A	702WPAA747	CABINET,BACK						
102B	800WQ0A092	FELT,SHEET	9x390xT=0.5	---	791WHAA113	FILM,BAG		
				---	792WHA0537	PACKAGE,TOP		
103	701WPA0686	HOLDER,DECK		---	792WHAA136	PACKAGE,BOTTOM		
104	701WPA0751	HOLDER,DECK		---	791WHAA134	LIGHTLON SHEET		
105	752WSA0230	SHIELD,CASE HEAD AMP		---	793WCDC871	GIFT BOX		
106	752WSA0290	SHIELD,COMPO		---	795WCDA019	PAD		
107	752WSA0308	SHIELD,COVER HEAD AMP		---	J3T10902A	WARRANTY SHEET		
108	753WUAA006	SPRING,EARTH HEAD AMP		---	J5T40901A	INSTRUCTION BOOK(E)		
109	755WPA0035	COVER,PCB		---	J5T40910A	INSTRUCTION BOOK(S)		
				---	JA5N0300	POLYBAG,INSTRUCTION		
110	85OP700038	HOLDER,END SENSOR		---	A5T409Q975	INSTRUCTION BOOK KIT		
111	726000A083	SHEET,CRT SERVICEMAN						
112	761WPA0223	HOLDER,FBT						
113	741WUA0021	SPRING,EARTH						
114	753WUA0069	SPRING,EARTH						
115	755WPAA012	PLATE,COVER LIGHT (L)						
116	761WSAA023	ANGLE,DECK						
117	7230007691	SHEET,JACK						
118	722A08A163	SHEET,RATING						
119	762WPA0011	HOLDER,CRT WIRE						
120	752WSAA122	SHIELD,COVER DECK						
121	752WSA0292	SHIELD,AV JACK						
122	752WSAA075	PLATE,BOTTOM						
123	752WSA0489	DVD,TOP						
124	752WSAA080	VCR,TOP						
125	752WSA0327	SHIELD,COVER FPC						
126	8995034000	CORD CLIP UL CO.						
127	774WPA0005	HOLDER,WIRE-2						
128	899HV3T000	HOLDER,ANODE WIRE						
129	7250000596	SHEET,PC						
130	744WUA0013	SPRING,EARTH						
131	769WSAA012	WASHER CRT T=0.5						
132	899EFBA002	WIRING-CLIP						
133	752WSAA083	ANGLE,FRONT						
134	723000C727	SHEET,CAUTION						
135	7230007882	SHEET,DTS(S)						

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			REF. NO.	PART NO.	DESCRIPTION	
300	A5T8016420A	DECK ASSY	A5T8016420A		501	810722680U	SCREW,TAP TITE(S) BIND	M2.6x8
					502	83ETW3000U	E-RING	3
301	85OA400240	PINCH ROLLER BLOCK (VA)		or	503	810722640U	SCREW,TAP TITE(S) BIND	M2.6x4
	85OA400245	PINCH ROLLER BLOCK VA2			504	810212060U	SCREW,PAN	M2x6
302	85OA500026	AHC ASS'Y			505	810912660U	SCREW,TAP TITE(B) PAN	M2.6x6
303	85OP200290	BELT,CAPSTAN (S)			506	810A13040U	SCREW/WASHER(A)	M3x4
304	85OP600581	WORM			507	810A12650U	SCREW/WASHER(A)	M2.6x5
305	85OP500091	BASE,AC HEAD			508	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
306	85OP800324	SPRING,AC HEAD			509	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
307	85OA000528	MAIN CHASSIS ASS'Y						
308	85OA200089	CLUTCH ASS'Y			510	810722660U	SCREW,TAP TITE(S) BIND	2.6x6
309	85OA200092	ARM IDLER ASS'Y						
					CD1501	122H071704	CORD JUMPER	2H071704
310	85OA300068	LOADING ARM S UNIT			CD1502	122Y021002	CORD JUMPER	2Y021002
311	85OA300070	LOADING ARM T UNIT			H5001	1523Q91003	HEAD (AUDIO CONTROL)	VTR-1X2RPE22-756
312	85OA400223	INCLINED BASE T UINT 3S			H5002	1543Q02014	HEAD (FULL ERASE)	VTR-1X2ERS11-154
313	85OA400249	P5 ARM ASS'Y 2			⚠ M101	1596S98002	MOTOR,LOADING	MDB2B66B
314	85OA400248	TENSION ARM ASS'Y 2			⚠ M2001	1510S98044	CAPSTAN DD UNIT	F2QVB73B
315	85OA400231	INCLINED BASE S UNIT			⚠ M2003	1589S11025	MICRO MOTOR	I20AL34K
316	85OA900234	CASS HOLDER ASS'Y			⚠ UN4001	A5T8016500	CYLINDER UNIT ASS'Y	A5T8016500
317	85OP900745	CASS,OPENER						
318	85OP700035	REFLECTOR,LED						
319	85OP900755	BRACKET,TOP 3V						
320	85OP400549	HOLDER,CAPSTAN		or				
	85OP400554	HOLDER,CAPSTAN						
321	85OA900233	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	85OP600585	ROD,MAIN						
340	85OP600582	GEAR,JOINT						
341	85OP800322	SPRING,TENSION						
342	85OP800360	SPRING,BRAKE T						
343	85OP800355	SPRING,COUPLING						
344	85OP800356	SPRING,RING						
345	85OP900754	LEVER,LINK						
346	85OP900744	LEVER,FLAP						

DVD DECK REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
⚠ 600	A2F401H650	DVD MECHA ASS'Y	A2F401H650
601	92P100109A	HOLDER,TRAVERSE	
602	92P100094A	CLAMPER	
603	92P100088A	GEAR,MOTOR	
604	92P100108A	GEAR,MIDDLE	
605	92P200013A	INSULATOR(F)	
606	92P200014A	INSULATOR(R)	
607	92SBB0029A	LOADER SUB ASS'Y	
608	92P100095A	GEAR,PULLEY	
609	92P100097A	PULLEY,MOTOR	
610	92P100096A	GEAR,MAIN	
611	92P200012A	BELT,LOADING	
612	92P000014A	PLATE,CLAMPER	
613	92P100093A	RACK,LOADING	
614	92P100091A	FRAME,MAIN	
615	92P100092A	TRAY	
616	800WFAA008	CUSHION C	
617	7230007850	SHEET,FFC	
701	811022680U	SCREW,TAP TITE(P) BIND	2.6x8
702	814011723U	SCREW,PAN	M1.7x2.3 P3
703	816112080U	SEMS.TAP TITE(P)PAN	W10 2x8
704	814011730U	SCREW,PAN	M1.7x3 P3
705	811022080U	SCREW,TAP TITE(P) BIND	2x8
CD2001	122H0O1901	CORD JUMPER	2H0O1901
CD2301	122H062102	CORD JUMPER	2H062102
CD2302	122H052601	CORD JUMPER	2H052601
⚠ M2602	1515S98003	FEED MOTOR	BCZ3B03B
⚠ M2603	1596S18003	MOTOR,LOADING	BCZ3B52B
PCB610	A5R801V610	PCB ASS'Y	DED003A
PCB640	A2F401H640	PCB ASS'Y	DED012B
SW1	0515S32002	SWITCH	SSS-13-2
SW2	0500101037	PUSH SWITCH	ESE22MH24

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
RESISTORS			
⚠ R401	R4X5T6562F	R,METAL	5.6K OHM 1/6W
⚠ R403	R4X5T6153F	R,METAL	15K OHM 1/6W
⚠ R405	R4X5T6153F	R,METAL	15K OHM 1/6W
⚠ R406	R3X28A181J	R,METAL	180 OHM 2W
⚠ R412	R63881330J	R,FUSE	33 OHM 1W
⚠ R417	R3X28A181J	R,METAL	180 OHM 2W
⚠ R423	R3X18AR56J	R,METAL OXIDE	0.56 OHM 2W
⚠ R429	R002T2010J	RC	1 OHM 1/2W
⚠ R430	R5X34F2R7J	R,CEMENT	0 2.7 OHM 10W
⚠ R440	R5X34F332J	R,CEMENT	0 3.3K OHM 10W
⚠ R445	R3X28B2R7J	R,METAL OXIDE	2.7 OHM 3W
R449	R00202561J	RC	560 OHM 1/2W
⚠ R454	R3K181102J	R,METAL OXIDE	1K OHM 1W
⚠ R814	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R815	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R816	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R1701	R002T2155J	RC	1.5M OHM 1/2W
⚠ R1702	R0G3K2275K	RC	2.7M OHM 1/2W
⚠ R1706	R002T4272J	RC	2.7K OHM 1/4W
⚠ R1714	R3X181R15J	R,METAL OXIDE	0.15 OHM 1W
⚠ R1717	R3X28A331J	R,METAL OXIDE	330 OHM 2W
⚠ R1718	R5X2CE1R2J	R,CEMENT	1.2 OHM 7W or
	R5Y2CE1R2J	R,CEMENT	1.2 OHM 7W
⚠ R1720	R63881R22J	R,FUSE	0.22 OHM 1W
⚠ R3010	R3X181180J	R,METAL OXIDE	18 OHM 1W
⚠ R3021	R3X181220J	R,METAL OXIDE	22 OHM 1W
R3022	R3X1814R7J	R,METAL OXIDE	4.7 OHM 1W
CAPACITORS			
C005	E02L00102M	CE	1000 UF 6.3V
C321	E02LF3222M	CE	2200 UF 25V
⚠ C403	E02LU8220M	CE	22 UF 100V
C404	E62DFB470M	CE	47 UF 160V
⚠ C408	P4N8FJ562H	CMPP	0.0056UF 1.25KV
C412	P4J7F3474J	CMPP	0.47 UF 250V PMS
⚠ C418	P4G8FJ682H	CMPP	0.0068UF 1.25KV PHE
⚠ C429	E02LU4101M	CE	100 UF 35V
⚠ C430	E5EZF3222M	CE	2200 UF 25V
⚠ C434	E5EZF4102M	CE	1000 UF 35V
⚠ C446	E5EZFD220M	CE	22 UF 250V
C449	C0PLRR713K	CC	0.001 UF 2KV R
C801	CQG0CH412J	CC	100 PF 50V CH
C820	C0JBB0713K	CC	0.001 UF 2KV B
⚠ C1701	P2122B224M	CMP	0.22 UF 275V ECQUL
C1705	C0PLRR7S2K	CC	560 PF 2KV R
C1707	C0PLRR7W2K	CC	820 PF 2KV RR
⚠ C1708	C0JBB07H3K	CC	0.0022UF 2KV B
⚠ C1710	C0JBB07H3K	CC	0.0022UF 2KV B
⚠ C1711	CD39E0MQ3M	CC	0.0047UF 250V
⚠ C1714	E52DHC681M	CE	5 680 UF 200V
⚠ C1716	E02L03222M	CE	2200 UF 25V
⚠ C1717	E5EZF4102M	CE	1000 UF 35V
⚠ C1720	E61DFB221M	CE	220 UF 160V
⚠ C1728	E02L01222M	CE	2200 UF 10V
C1729	C0PLRR7S2K	CC	560 PF 2KV R
⚠ C1732	E02L03102M	CE	1000 UF 25V
⚠ C1733	E02LU54R7M	CE	4.7 UF 50V
DIODES			
D101	0010E00330	INFRARED LED	LTE-3271T-012A-O
D102	D1VT001330	DIODE,SILICON	1SS133T-77
D103	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D105	D1VT001330	DIODE,SILICON	1SS133T-77
D106	D97U01501B	DIODE,ZENER	MTZJ15B T-77
D108	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D402	D2WTAU02A0	DIODE SILICON	AU02A-EIC
⚠ D403	D1VT001330	DIODE,SILICON	1SS133T-77
D404	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D408	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D410	D2WT011E10	DIODE SILICON	11E1-EIC
D411	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠ D412	D2WTAU02A0	DIODE SILICON	AU02A-EIC
D413	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D414	D97U03001B	DIODE,ZENER	MTZJ30B T-77
⚠ D415	D2WTAU02A0	DIODE SILICON	AU02A-EIC
D416	D2WXN40050	DIODE SILICON	1N4005-EIC
D417	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D418	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D419	D1VT001330	DIODE,SILICON	1SS133T-77

REF. NO.	PART NO.	DESCRIPTION	
DIODES			
D601	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D602	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D603	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D605	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D801	D1VT001330	DIODE,SILICON	1SS133T-77
D802	D1VT001330	DIODE,SILICON	1SS133T-77
D803	D1VT001330	DIODE,SILICON	1SS133T-77
D804	D1VT001330	DIODE,SILICON	1SS133T-77
D805	D1VT001330	DIODE,SILICON	1SS133T-77
D806	D1VT001330	DIODE,SILICON	1SS133T-77
D1702	D1VT001330	DIODE,SILICON	1SS133T-77
D1703	D97U02R71B	DIODE,ZENER	MTZJ2.7B T-77
⚠ D1704	D23TGP15J0	DIODE SILICON	RGP15J-G23
⚠ D1705	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D1706	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D1707	D23TGP15J0	DIODE SILICON	RGP15J-G23
D1709	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D1710	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D1711	D2WTRM11C0	DIODE SILICON	RM11C-EIC
D1712	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
⚠ D1713	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D1715	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D1716	D2WXN49370	DIODE SILICON	1N4937
D1717	D97U01801B	DIODE,ZENER	MTZJ18B T-77
⚠ D1718	D2WXN49370	DIODE SILICON	1N4937
⚠ D1719	D2LKB340L0	DIODE SCHOTTKY	SB340L-6737
D1720	D1VT001330	DIODE,SILICON	1SS133T-77
D1721	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D1722	D2WXN49370	DIODE SILICON	1N4937
⚠ D1723	D2CF2016L0	DIODE SILICON	FE201-6L49
D1724	D1VT001330	DIODE,SILICON	1SS133T-77
D1726	D1VT001330	DIODE,SILICON	1SS133T-77
D1727	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D1728	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D1730	D2CF2016L0	DIODE SILICON	FE201-6L49
D1732	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D1733	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D1734	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D2201	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D2205	0021E2Q140	LED	LTL-1CHEE-002A
D2206	0021E2Q140	LED	LTL-1CHEE-002A
D2207	0021E2Q140	LED	LTL-1CHEE-002A
D2303	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D2304	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D3001	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D3002	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D3003	D97U04R71B	DIODE,ZENER	MTZJ4.7B T-77
D3004	D2WXSB1400	DIODE SCHOTTKY	SB140-EIC
D3005	D28TEQS040	DIODE,SCHOTTKY	11EQS04TA1B2
D3007	D2WT011E10	DIODE SILICON	11E1-EIC
D3008	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D3011	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D4001	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D4002	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D4003	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D4004	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D4005	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D4201	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D4204	D1VT001330	DIODE,SILICON	1SS133T-77
D4205	D1VT001330	DIODE,SILICON	1SS133T-77
D4207	D1VT001330	DIODE,SILICON	1SS133T-77
D5501	D28TEQS040	DIODE,SCHOTTKY	11EQS04TA1B2
D5502	D1VT001330	DIODE,SILICON	1SS133T-77
D8102	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D8111	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D8112	DD7R0S3550	DIODE SILICON	1SS355 TE-17
ICS			
IC101	I51F58078A	IC	OEC8078A
IC103	IE2F031020	IC	XC61CN3102SR
IC199	A5T409Q015	INIT DATA	BR24L04F-WE2
IC302	I01FF58910	IC	AN5891SA-E1V
⚠ IC352	I0FSP7522N	IC	AN7522N
⚠ IC401	I03TD80400	IC	LA78040
IC601	I03FC319N0	IC	LA76319NM-MPB-E
IC602	I1KF98L100	IC	KIA78L10F-RTF
IC1501	I05FEA45FG	IC	TC90A45FG
IC1502	I0UF015010	IC	MM1501XNRE

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
ICS			
IC1504	I0UF015010	IC	MM1501XNRE
IC1505	I0UF015040	IC	MM1504XNRE
⚠ IC1701	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
⚠ IC1702	I1KJ9A431A	IC	KIA431A-AT
IC2301	I03F065650	IC	LA6565-TE-L-E
IC2304	I07J003580	IC	BA10358FV-E2
⚠ IC3001	I1KA78R050	IC	KIA278R05PI
⚠ IC3002	I1KA78R090	IC	KIA278R09PI
⚠ IC3003	I1KA78R050	IC	KIA278R05PI
⚠ IC3004	I1KA78R050	IC	KIA278R05PI
IC4001	ICQK068620	IC	ZR36862PQCG
IC4002	I57J0L02F0	IC	BR24L02F-WE2
IC4003	I07F9E00W0	IC	BA33E00WHFP-TR
IC4007	ICMJ0CEKE8	IC	SST39VF800A-70-4C-EKE
IC4008	IFLJ0622H6	IC	K4S161622H-UC60 or
	ICLJ0610EX	IC	HY57V161610ETP-7
IC4009	IFLJ0622H6	IC	K4S161622H-UC60 or
	ICLJ0610EX	IC	HY57V161610ETP-7
IC4501	I03F3205M0	IC	LA71205M-MPB
IC5501	I01F63FBP0	IC	AN3663FBP
IC8001	I0UF015010	IC	MM1501XNRE
IC8002	I0UF015010	IC	MM1501XNRE
IC8004	I0QJ045800	IC	NJM4580M(TE1)
IC8102	I17F017530	IC	PCM1753DBQR
TRANSISTORS			
Q101	0000M00390	PHOTO TRANSISTOR	ST-304L
Q102	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q103	0000M00390	PHOTO TRANSISTOR	ST-304L
Q104	0002700680	PHOTO COUPLER	RPI-352C40N
Q105	0002700680	PHOTO COUPLER	RPI-352C40N
Q106	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q107	0002700690	PHOTO COUPLER	RPI-303
Q108	0002700690	PHOTO COUPLER	RPI-303
Q110	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q112	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q114	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q116	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q350	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q401	TCAT03227Y	TRANSISTOR SILICON	KTC3227_Y-AT
⚠ Q403	TDUU024990	TRANSISTOR SILICON	2SD2499(LB0EC1)
⚠ Q406	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
Q407	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT
Q408	TCAT032070	TRANSISTOR SILICON	KTC3207-AT
Q409	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
Q601	TNYTB05001	COMPOUND TRANSISTOR	DTC114EKT147
Q602	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q605	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
Q606	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q802	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q803	TCATC3199Y	TRANSISTOR SILICON	KTC3199_Y-AT
⚠ Q804	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q805	TCATC3199Y	TRANSISTOR SILICON	KTC3199_Y-AT
⚠ Q806	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q807	TCATC3199Y	TRANSISTOR SILICON	KTC3199_Y-AT
Q1501	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1502	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1503	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1702	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠ Q1705	T220033260	FET	2SK3326(2)
⚠ Q1706	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q2201	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q2202	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q2203	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q2301	T67J1036K0	TRANSISTOR SILICON	2SA1036KT146
Q2302	T67J048TL0	TRANSISTOR SILICON	2SA2048TL
Q2303	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2304	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2305	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3001	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q3002	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
⚠ Q3003	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
Q3004	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q3005	TBA0013660	TRANSISTOR SILICON	KTB1366(O,Y)
Q3006	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q3007	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q3008	TPYJA05001	COMPOUND TRANSISTOR	DTA143EKAT146
Q3009	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146

REF. NO.	PART NO.	DESCRIPTION	
TRANSISTORS			
Q3010	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
Q3011	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q3014	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
Q3015	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4004	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4201	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4202	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q4203	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4204	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q4210	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4211	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4212	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4501	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4502	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4503	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q4504	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q4505	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q4506	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4507	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4509	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4511	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q8002	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8006	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8007	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q8101	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
COILS &TRANSFORMERS			
L001	021673101J	COIL	100 UH
L301	02167D101K	COIL	100 UH
L402	022100027A	COIL,LINEARITY	ELH5L4113
L403	021L75472J	COIL	4.7 MH
L601	02167F101J	COIL	100 UH
L602	02167D101K	COIL	100 UH
L603	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L604	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L804	02167D101K	COIL	100 UH
L1501	02167F100J	COIL	10 UH
L1502	021LA6150K	COIL	15 UH
L1504	021673151K	COIL	150 UH
L1505	021LA6101K	COIL	100 UH
L1506	021LA6101K	COIL	100 UH
⚠ L1701	029X000116	COIL,LINE FILTER	SS28V-R20130
⚠ L1703	028R200024	COIL,DEGAUSS	8R200024
L1704	02AHB0A0A4	CORE FERRITE	W5T_20X10X10A
L3001	02167E100K	COIL	10 UH
L4001	02167F2R2J	COIL	2.2 UH
L4002	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L4205	02167F101J	COIL	100 UH
L4502	031626009R	COIL,BIAS OSC	1626009
L4504	02167F101J	COIL	100 UH
L4505	02167F470J	COIL	47 UH
L4506	02167F470J	COIL	47 UH
L4509	02167D101K	COIL	100 UH
L5501	021LA6101K	COIL	100 UH
L5502	02167F220J	COIL	22 UH
L5503	02167F220J	COIL	22 UH
L5504	02167F220J	COIL	22 UH
L8001	02167F101J	COIL	100 UH
L8002	021LA6101K	COIL	100 UH
L8003	02167F101J	COIL	100 UH
L8102	02167F1R0K	COIL	1 UH
L8103	02167F1R0K	COIL	1 UH
L8104	02167F1R0K	COIL	1 UH
T401	045013003J	TRANS,HORIZONTAL DRIVE	ETH14Y47AY
⚠ T1701	048142065S	TRANSFORMER,SWITCHING	8142065S
JACKS			
⚠ J801	066F130021	SOCKET,CATHODE RAY,TUBE	ISHS62S
⚠ J2201	060J131016	HEADPHONE JACK	MSJ-2000_AG
J2202	060J421036	RCA JACK	MTJ-032-05A-30-FE
J2203	060J421037	RCA JACK	MTJ-032-05A-32-FE
J2204	060J421030	RCA JACK	MTJ-032-05A-31-FE
J4201	060J431020	RCA JACK	MSP-213V2-432_NI_LF
J4202	060J411031	RCA JACK	MSP-213V1-432_NI_LF
J8007	060J401102	RCA JACK	MSP-251V-05NI-FE-LF
SWITCHES			
SW101	0508S11001	SWITCH (LEAF)	LSA-1144EAU
SW2201	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	0504101T34	SWITCH,TACT	EVQ21505R

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		SWITCHES	
SW2203	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	0504101T34	SWITCH,TACT	EVQ21505R
SW2205	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	0504101T34	SWITCH,TACT	EVQ21505R
SW2207	0504101T34	SWITCH,TACT	EVQ21505R
SW2251	0504101T34	SWITCH,TACT	EVQ21505R
SW2252	0504101T34	SWITCH,TACT	EVQ21505R
SW2253	0504101T34	SWITCH,TACT	EVQ21505R
SW2254	0504101T34	SWITCH,TACT	EVQ21505R
SW2255	0504101T34	SWITCH,TACT	EVQ21505R
SW2256	0504101T34	SWITCH,TACT	EVQ21505R
SW2257	0504101T34	SWITCH,TACT	EVQ21505R
SW2258	0504101T34	SWITCH,TACT	EVQ21505R
		VARIABLE RESISTORS	
VR404	V1K63H3BTE	VOLUME,SEMI FIXED	NVG6TLTAB222
VR1701	V1K6314BTE	VOLUME,SEMI FIXED	NVG6TLTAB103
		P.C.BOARD ASSEMBLIES	
PCB010	A5T409Q010	PCB ASS'Y	VMC293C
PCB080	A5T402Q080	PCB ASS'Y	TMC564C
PCB110	A5T402Q110	PCB ASS'Y	TCC426C
PCB130	A5T402Q130	PCB AAS'Y	VMD348A
PCB270	A5T402Q270	PCB ASS'Y	TECB10C
		MISCELLANEOUS	
B401	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B402	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B403	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B1703	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B2201	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B2301	0246C51024	CORE,BEADS	MMZ1608R102CT
B2302	0246C51024	CORE,BEADS	MMZ1608R102CT
B2303	0246C51024	CORE,BEADS	MMZ1608R102CT
B2304	0246C51024	CORE,BEADS	MMZ1608R102CT
B2305	0246C51024	CORE,BEADS	MMZ1608R102CT
B4001	0246C51024	CORE,BEADS	MMZ1608R102CT
B4002	0246C51024	CORE,BEADS	MMZ1608R102CT
B4003	0246C51024	CORE,BEADS	MMZ1608R102CT
B4005	0246C51024	CORE,BEADS	MMZ1608R102CT
B4006	0246C51024	CORE,BEADS	MMZ1608R102CT
B4007	0246C51024	CORE,BEADS	MMZ1608R102CT
B4008	0246C51024	CORE,BEADS	MMZ1608R102CT
B4009	0246C51024	CORE,BEADS	MMZ1608R102CT
B4010	0246C51024	CORE,BEADS	MMZ1608R102CT
B4011	0246C51024	CORE,BEADS	MMZ1608R102CT
B4012	0246C51024	CORE,BEADS	MMZ1608R102CT
B4013	0246C51024	CORE,BEADS	MMZ1608R102CT
B4014	0246C51024	CORE,BEADS	MMZ1608R102CT
B4016	0246C51024	CORE,BEADS	MMZ1608R102CT
B4018	0246C51024	CORE,BEADS	MMZ1608R102CT
B8001	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B8103	0246C51024	CORE,BEADS	MMZ1608R102CT
CD002	06CU011902	CORD CONNECTOR	CU011902
CD303	06C3149004	CORD CONNECTOR	C3149004
CD602	06CU291701	CORD CONNECTOR	CU291701
CD603	06CU284501	CORD CONNECTOR	CU284501
CD604	06C3282402	CORD CONNECTOR	C3282402 or
	06CU282401	CORD CONNECTOR	CU282401
CD802	WCL6844038	FLAT CABLE AWM2468	AWG26 5C GRAY 440MM
CD803	06CH823004	CORD CONNECTOR	CH823004
CD805	06CH823004	CORD CONNECTOR	CH823004
CD807	06CH012801	CORD EIS CONNECTOR	CH012801
CD808	06CH011202	CORD EIS CONNECTOR	CH011202
CP001	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP101	06972C0010	CONNECTOR PCB SIDE	TMC-J12P-B2
CP303	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
⚠ CP404	069S450089	CONNECTOR PCB SIDE	A1561WV2-A5P
CP601	069S240639	CONNECTOR PCB SIDE	A2001WR2-4P
CP602	067U009039	WIRE HOLDER	B2013H02-9P
CP603	067U008029	WIRE HOLDER	B2013H02-8P
CP604	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CP803	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP805	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
⚠ CD1702	1209415910	CORD AC BUSH	9415910
CD1705	06CH012403	CORD EIS CONNECTOR	CH012403
CD2251	06C3220703	CORD CONNECTOR	C3220703
CD4002	06C32B3303	CORD CONNECTOR	C32B3303
CD4501	122F061502	CORD JUMPER	2F061502
CD4503	W9L6012042	FLAT CABLE AWM2468	AWG26 2C BLACK 120MM

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
CD8101	122F0C1602	CORD JUMPER	2F0C1602
CP1702	067U008029	WIRE HOLDER	B2013H02-8P
⚠ CP1704	069S420099	CONNECTOR PCB SIDE	A1561WV2-2PK
CP1707	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP1708	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP2201	069S220629	CONNECTOR PCB SIDE	A2001WV2-2P
CP2301	069GYOT119	CONNECTOR PCB SIDE	09-5000-024-001-001
CP2302	069EV53030	CONNECTOR PCB SIDE	00_6232_005_006_800+
CP2303	069EV63030	CONNECTOR PCB SIDE	00_6232_006_006_800+
CP4501	0697290620	CONNECTOR PCB SIDE	TOC-C09X-A1
CP4502	069J760599	CONNECTOR PCB SIDE	IMSA-9604S-06C
CP4503	067U002019	WIRE HOLDER	B2013H02-2P
CP602B	069S290629	CONNECTOR PCB SIDE	A2001WV2-9P
CP603B	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CP8001	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP8002	069J7C0599	CONNECTOR PCB SIDE	IMSA-9604S-12C
CP802A	067U005049	WIRE HOLDER	B2013H02-5P
CP802B	067U005049	WIRE HOLDER	B2013H02-5P
CP8101	069J7C0589	CONNECTOR PCB SIDE	IMSA-9604S-12F
CUS011	800WFAA007	CUSHION B	
CUS012	800WFAA008	CUSHION C	
EL001	124120301A	EYE LET	XRY20X30BD
EL002	124116281A	EYE LET	XRY16X28BD
EL003	124120301A	EYE LET	XRY20X30BD
EL004	124116281A	EYE LET	XRY16X28BD
⚠ F1701	081PC6R305	FUSE	51MS063L
⚠ FB401	043220059F	TRANSFORMER,FLYBACK	FJN20A003_M
FH1701	06710T0009	HOLDER,FUSE	EYF-52BCY
FH1702	06710T0009	HOLDER,FUSE	EYF-52BCY
OS2201	0773071003	REMOTE RECEIVER	RPM7138-WH10
⚠ RY1701	0560V20115	RELAY	ALKS321
⚠ SP351	070N546012	SPEAKER	YDP4010-2
⚠ SP352	070N546012	SPEAKER	YDP4010-2
TM101	076R0HH01B	TRANSMITTER	R56-0487
⚠ TU001	0163300018	RF UNIT	115-V-KA35ARB
⚠ TH1701	DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A
⚠ V801	098S210461	CRT W/DY	A51QDJ420X58
X101	100DA32R01	CRYSTAL	DT-26
X102	100CT01403	CRYSTAL	HC-49/U-S
X601	100CT3R532	CRYSTAL	HC-49/U-S
X4001	100BT02701	CRYSTAL	HC-49U/S
X4501	100CT3R502	CRYSTAL	HC-49/U

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.	M5T4-09Q
O/R NO.	W575047

Memorex

MVDT2002

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER/ DVD VIDEO PLAYER

REVISION 1
MFR'S VERSION B

MFR'S VERSION	PRODUCT IMPROVEMENT
A	-
B	SH COMPLIANT

Please file the revision with the original version.

Chang of SH COMPLIANT

WHEN REPLACING EEPROM (MEMORY) IC

	MFR'S VERSION A	MFR'S VERSION B
ADDRESS	DATA	DATA
E5	A5	AA

MECHANICAL REPLACEMENT PARTS LIST

	MFR'S VERSION A		MFR'S VERSION B	
REF. NO.	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
111	726000A083	SHEET,CRT SERVICEMAN	726000A123	SHEET,CRT SERVICEMAN

ELECTRICAL REPLACEMENT PARTS LIST

	MFR'S VERSION A		MFR'S VERSION B	
REF. NO.	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
R3009	R002T4561J	RC 560 OHM 1/4W	R002T4331J	RC 330 OHM 1/4W
R3013	R803R9152F	RC 1.5K OHM 1/16W	R803R9821F	RC 820 OHM 1/16W
R3015	R002T4181J	RC 180 OHM 1/4W	R002T4271J	RC 270 OHM 1/4W
R3022	R3X1814R7J	R,METAL OXIDE 4.7 OHM 1W		————————
R3027	R801R7101J	RC 100 OHM 1/10W	R803R9221J	RC 220 OHM 1/16W
R3028		————————	R3X1814R7J	R,METAL OXIDE 4.7 OHM 1W
R3031		————————	R803R9221J	RC 220 OHM 1/16W
R4519	R803R9562J	RC 5.6K OHM 1/16W	R803R9152J	RC 1.5K OHM 1/16W
R4521	R803R9106J	RC 10M OHM 1/16W	R803R9185J	RC 1.8M OHM 1/16W
C112		————————	CS0PB0315K	CC 0.1 UF 25V B
C4501	CS0PB04Q3K	CC 0.0047UF 50V B	CS0PB04H3K	CC 0.0022UF 50V B
IC103	IE2F031020	IC XC61CN3102SR	I9UF032310	IC PST3231NR
Q102	TNYJC05001	COMPOUND TRANSISTOR DTC124EKAT146	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
Q106	TNYJC05001	COMPOUND TRANSISTOR DTC124EKAT146	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
Q110	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q112	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q114	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK
Q116	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q350	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q601	TNYTB05001	COMPOUND TRANSISTOR DTC114EKT147	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q602	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q605	TPYJB05001	COMPOUND TRANSISTOR DTA114EKAT146	TPAAB05001	COMPOUND TRANSISTOR KRA102SRTK

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	MFR'S VERSION A		MFR'S VERSION B	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
Q606	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q1501	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q2201	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q2202	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q2203	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q3001	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q3004	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q3006	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q3008	TPYJA05001	COMPOUND TRANSISTOR DTA143EKAT146	TPAAA05001	COMPOUND TRANSISTOR KRA101SRTK
Q3009	TNYJB05001	COMPOUND TRANSISTOR DTC114EKAT146	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q3011	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q3015	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q4201	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q4202	TPYJC05001	COMPOUND TRANSISTOR DTA124EKAT146	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK
Q4203	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q4204	TNYJC05001	COMPOUND TRANSISTOR DTC124EKAT146	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK
Q4210	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK
Q4211	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q4212	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK
Q4503	TPYJC05001	COMPOUND TRANSISTOR DTA124EKAT146	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK
Q4506	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q4507	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q4509	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK
Q4511	T6YJ1037K0	TRANSISTOR,SILICON 2SA1037AKT146R,S	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK
Q8002	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q8006	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q8007	TNYJC05001	COMPOUND TRANSISTOR DTC124EKAT146	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK

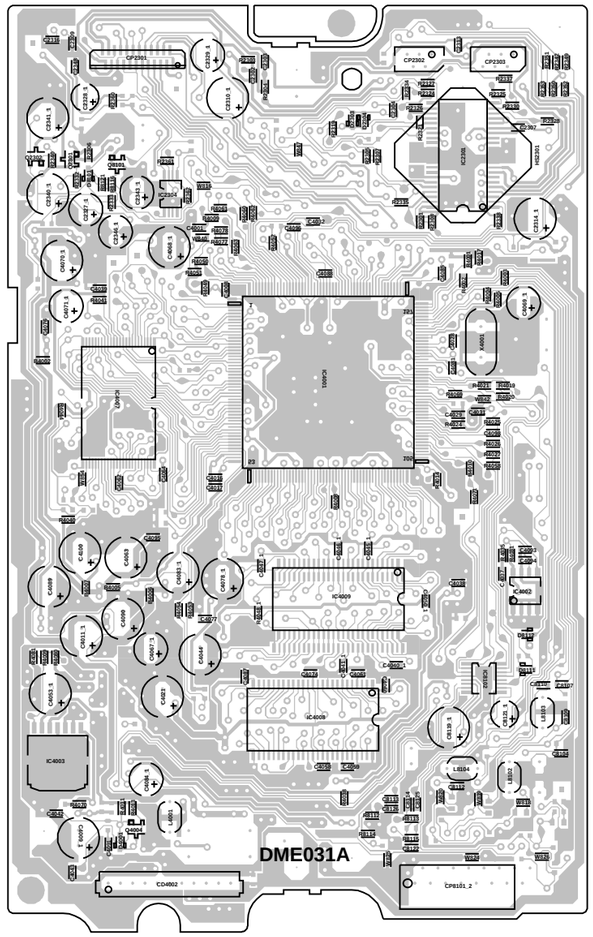
ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	MFR'S VERSION A		MFR'S VERSION B	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
SW101	0508S11001	SWITCH (LEAF) LSA-1144EAU	0508A11001	SWITCH(LEAF) MXS01350MVP0
⚠ CP1704	069S420099	CONNECTOR PCB SIDE A1561WV2-2PK	069S420110	CONNECTOR PCB SIDE A1561WV2-2P
PCB010	A5T409Q010	VCR PCB ASS'Y (VERSION A) VMC293C	A5T410J010	VCR PCB ASS'Y (VERSION B) DME034A
⚠ R412	R63881330J	R,FUSE 33 OHM 1W	R65582680J	R,FUSE 68 OHM 1/2W
⚠ R445	R3X28B2R7J	R,METAL OXIDE 2.7 OHM 3W	R3X28B2R2J	R,METAL OXIDE 2.2 OHM 3W
C402	E5EZTD2R2M	CE 2.2 UF 250V	E5EZTD010M	CE 1 UF 250V
C412	P4J7F3474J	CMPP 0.47 UF 250V PMS	P4J7F3434J	CMPP 0.43 UF 250V PMS
PCB080	A5T402Q080	DEFECTION PCB ASS'Y (VERSION A) TMC564C	A5T410J080	DEFECTION PCB ASS'Y (VERSION B) CME029A
PCB110	A5T402Q110	CRT PCB ASS'Y (VERSION A) TCC426C	A5T410J110	CRT PCB ASS'Y (VERSION B) CCE024A
R4004	R803R9750F	RC 75 OHM 1/16W	R803R9680F	RC 68 OHM 1/16W
R4017		———	R803R9153J	RC 15K OHM 1/16W
R8116	R803R9471J	RC 470 OHM 1/16W	R803R9561J	RC 560 OHM 1/16W
R8121		———	R803R9561J	RC 560 OHM 1/16W
C4102	CS0PB0413K	CC 0.001 UF 50V B		———
D8101		———	DD7R0S3550	DIODE SILICON 1SS355 TE-17
D8102	DD7R0S3550	DIODE SILICON 1SS355 TE-17		
CD4002	06C32B3303	CORD CONNECTOR C32B3303	06CU2B3301	CORD CONNECTOR CU2B3301
PCB130	A5T402Q130	DVD PCB ASS'Y (VERSION A) VMD348A	A5T410J130	DVD PCB ASS'Y (VERSION B) DME031A
CD2251	06C3220703	CORD CONNECTOR C3220703	06CU220701	CORD CONNECTOR CU220701
PCB270	A5T402Q270	OPERATION PCB ASS'Y (VERSION A) TECB10C	A5T410J270	OPERATION PCB ASS'Y (VERSION B) CEE055A
CD303	06C3149004	CORD CONNECTOR C3149004	06CU149003	CORD CONNECTOR CU149003
⚠ V801	098S210461	CRT W/DY A51QDJ420X58	098Q210464	CRT W/DY A51AKL13X04(M)

VCR PCB's, DEFECTION's, CRT PCB's, OPERATION PCB's and DVD PCB 's are not interchangeable.

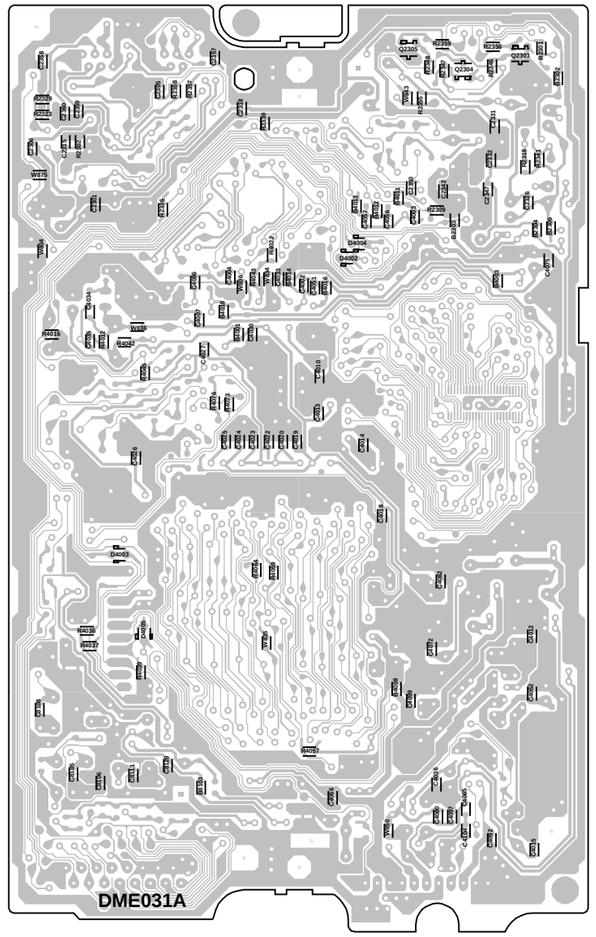
PRINTED CIRCUIT BOARDS
(MFR'S VERSION B)

DVD (TOP SIDE)



ADD R4017
R8121
D8101

DVD (BOTTOM SIDE)



ADD W804
W875

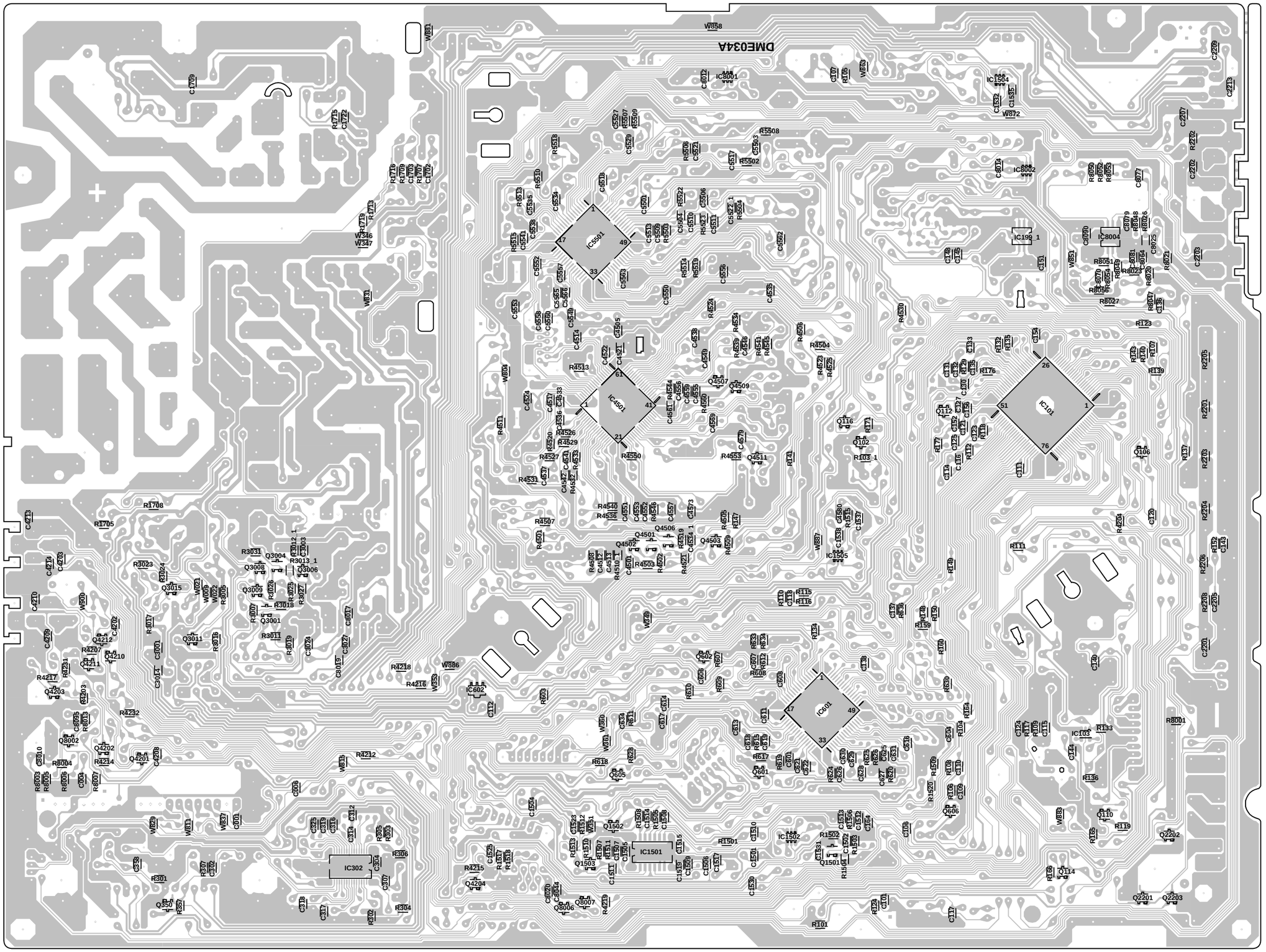
PRINTED CIRCUIT BOARDS
VCR (INSERTED PARTS)
SOLDER SIDE
(MFR'S VERSION B)

ADD R3028
R3031
W899
W903
W908
W912
W913

DME034A

PRINTED CIRCUIT BOARDS
VCR (CHIP MOUNTED PARTS)
SOLDER SIDE
(MFR'S VERSION B)

ADD C112



MPEG/MICON/DSP/RF_AMP SCHEMATIC DIAGRAM

(DVD PCB) (MFR'S VERSION B)

MPEG/MICON/DSP/RF_AMP IC
IC4001
ZR36862PQCG

CAUTION

SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION

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

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

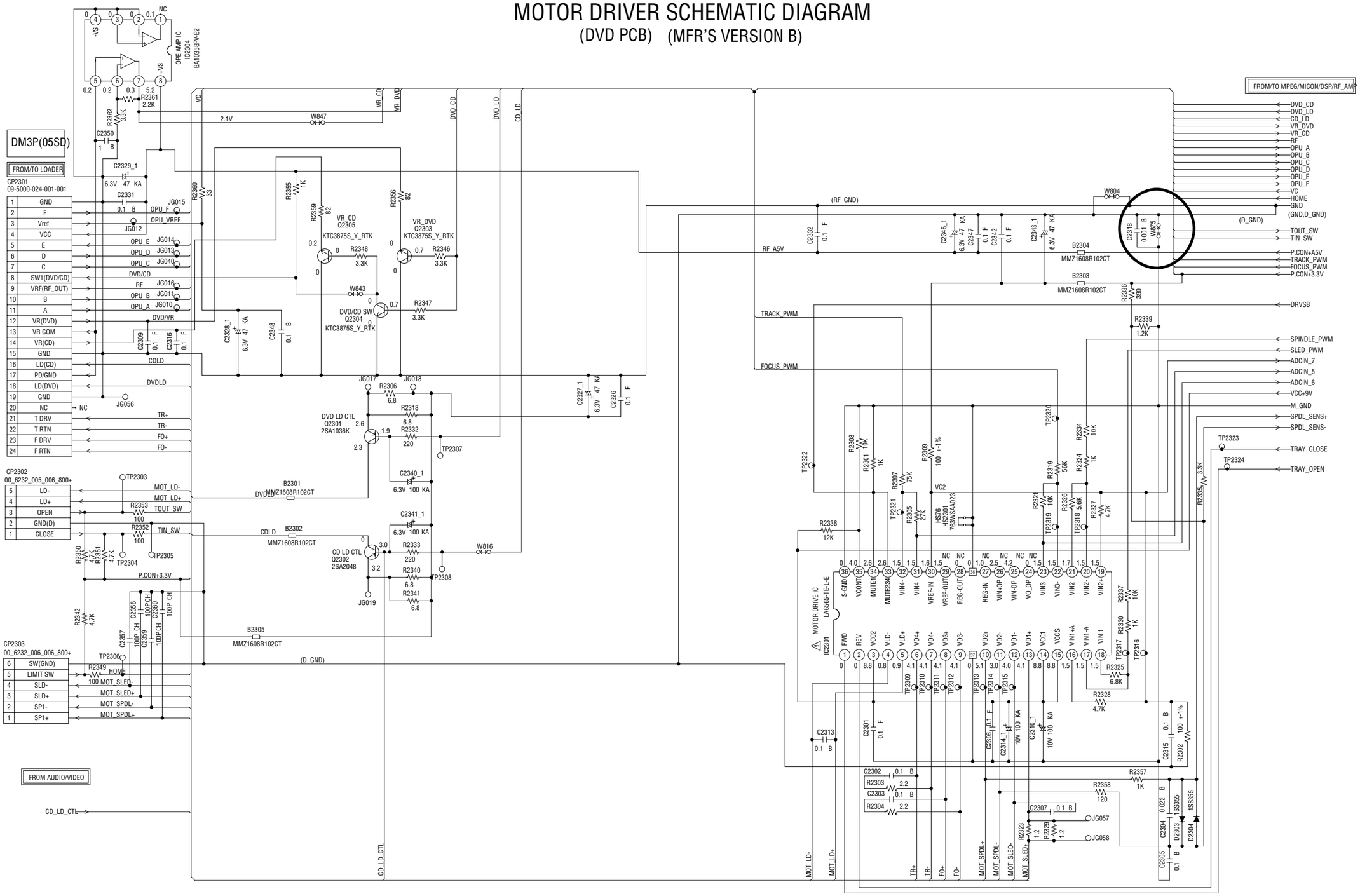
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

◀ DIGITAL AUDIO SIGNAL(PB)

PCB130
DME031

MOTOR DRIVER SCHEMATIC DIAGRAM

(DVD PCB) (MFR'S VERSION B)



PCB130
DME031

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

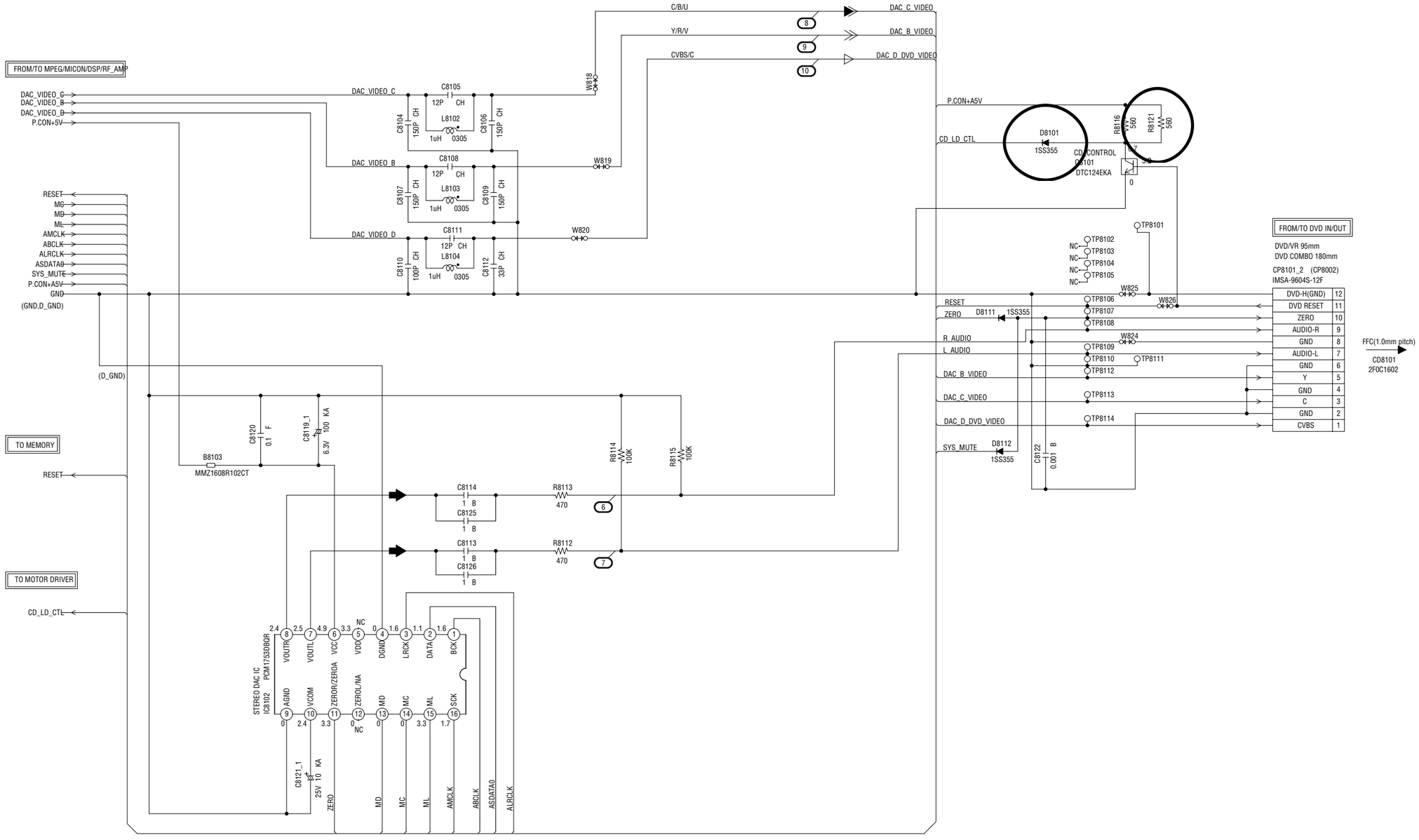
ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

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

AUDIO/VIDEO SCHEMATIC DIAGRAM

(DVD PCB) (MFR'S VERSION B)

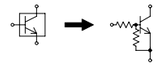


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

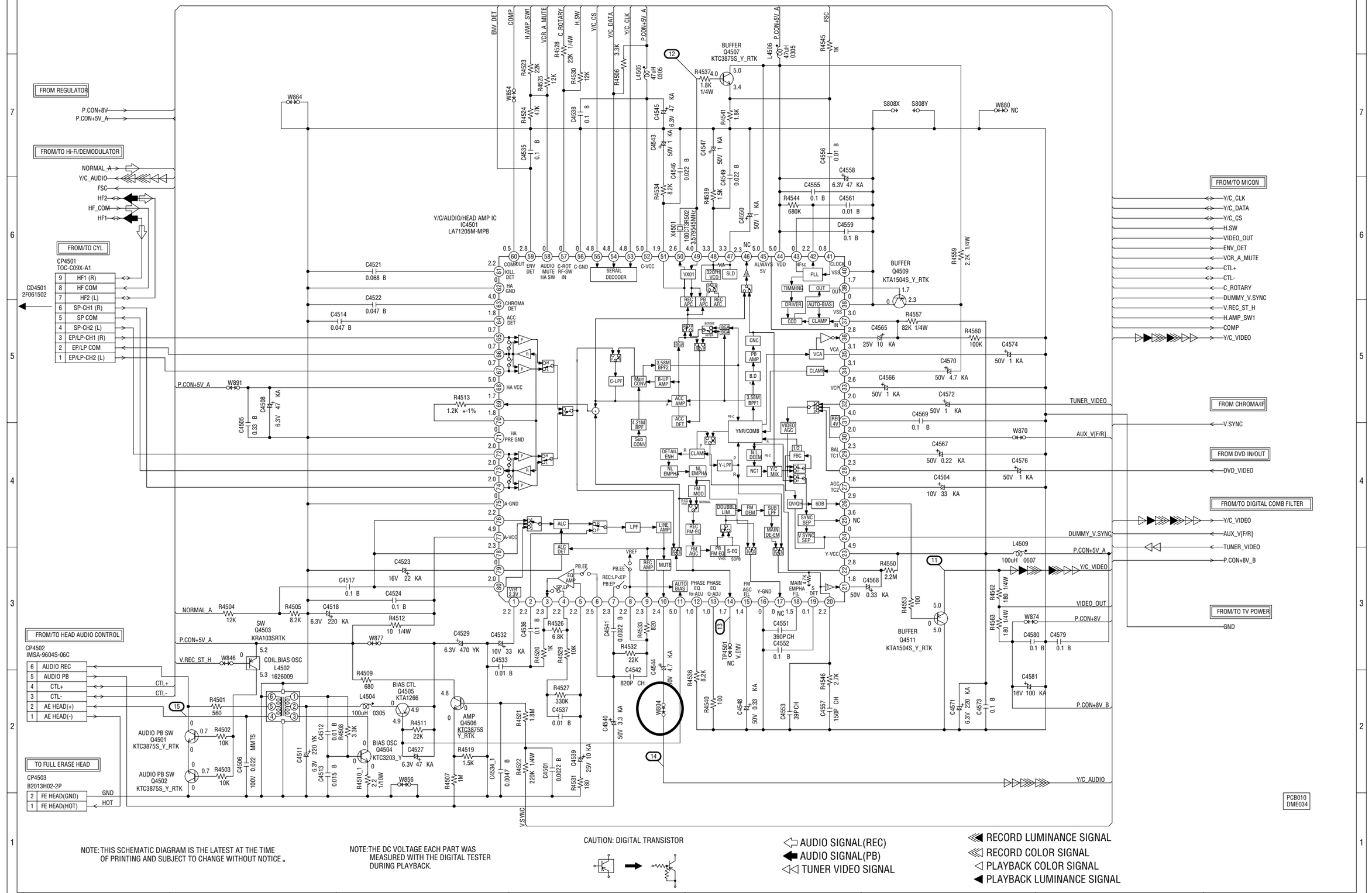
◀◀ R.SIGNAL + COMPONENT SIGNAL(U)
≪ B.SIGNAL + COMPONENT SIGNAL(V)
◁ PLAYBACK COLOR SIGNAL
⬅ AUDIO SIGNAL(PB)

CAUTION: DIGITAL TRANSISTOR



Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

(VCR PCB) (MFR'S VERSION B)



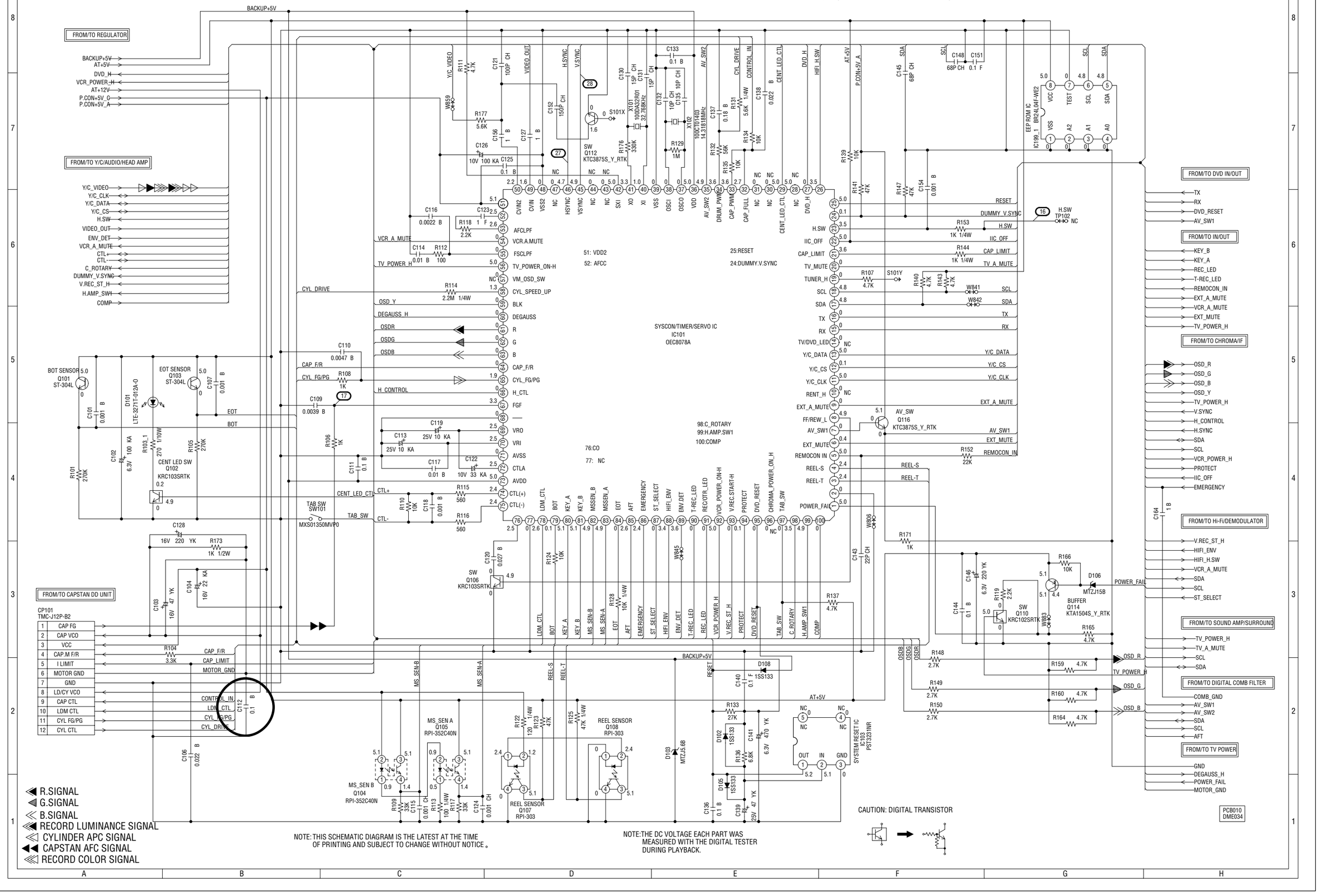
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

CAUTION: DIGITAL TRANSISTOR

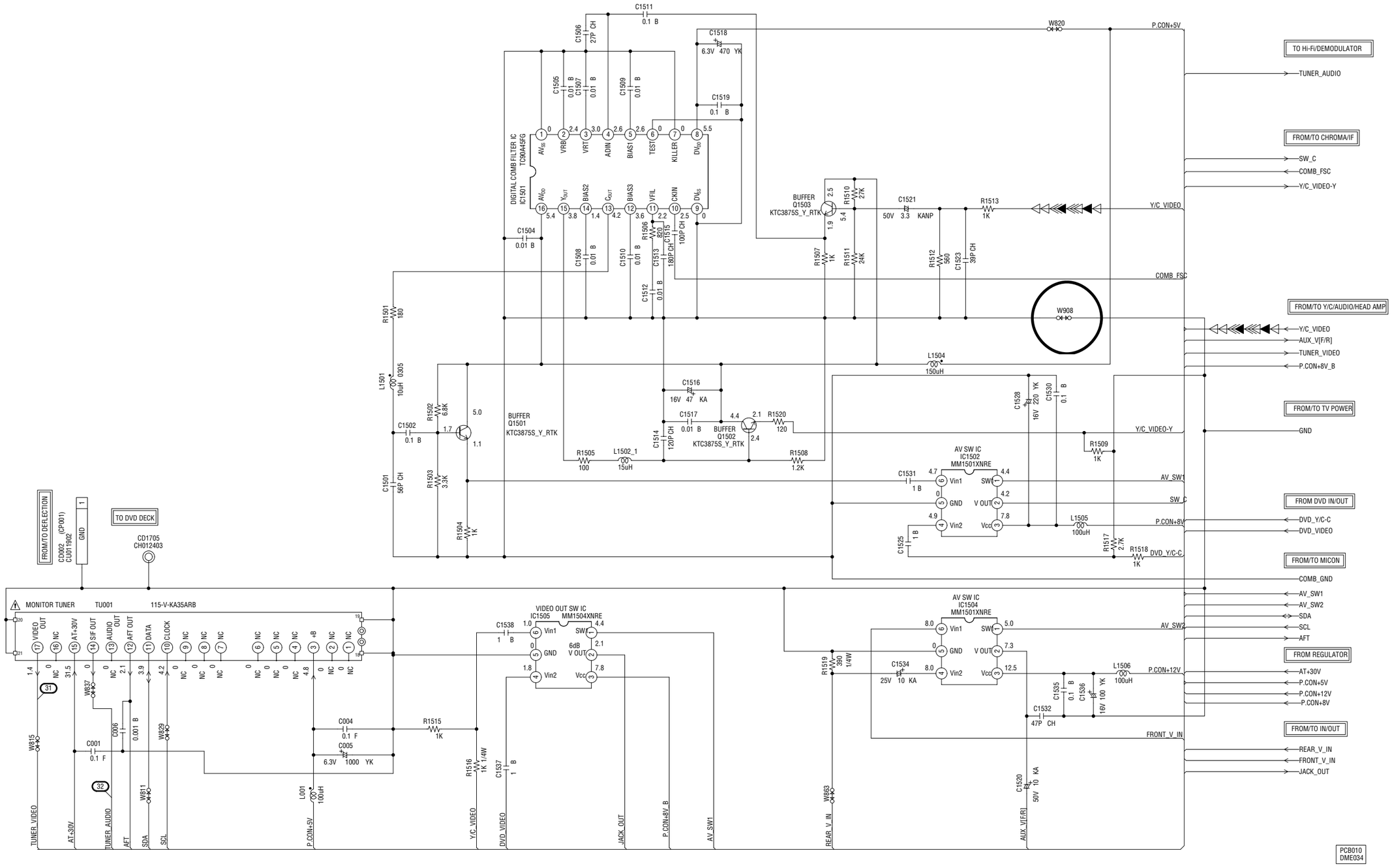
AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
TUNER VIDEO SIGNAL
RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL
PLAYBACK COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL

MICON SCHEMATIC DIAGRAM (VCR PCB) (MFR'S VERSION B)



DIGITAL COMB FILTER SCHEMATIC DIAGRAM

(VCR PCB) (MFR'S VERSION B)



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

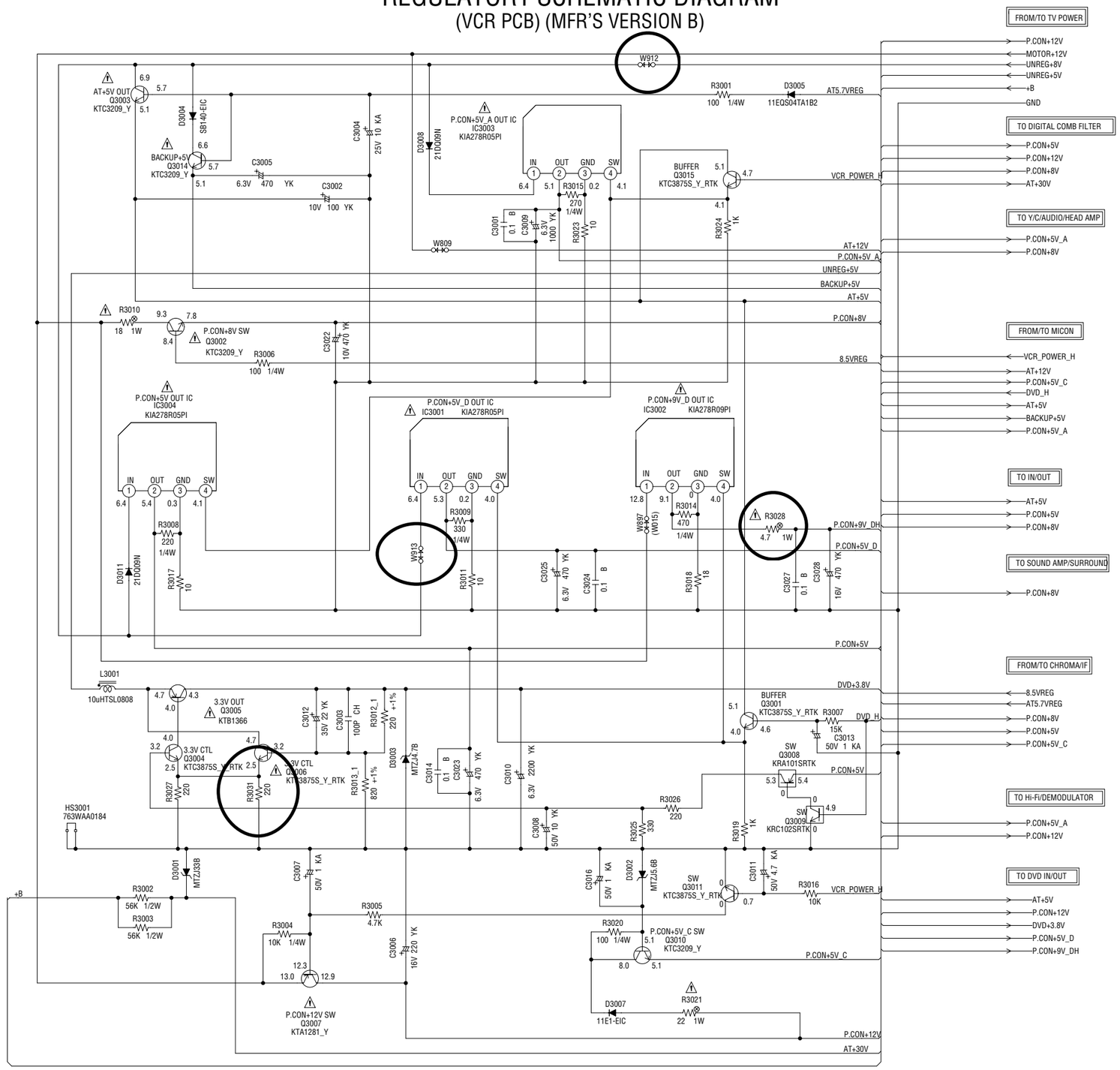
ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

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

- ⋘◀ RECORD LUMINANCE SIGNAL
- ⋘ RECORD COLOR SIGNAL
- ◁ PLAYBACK COLOR SIGNAL
- ◀ PLAYBACK LUMINANCE SIGNAL
- ◁◁ TUNER VIDEO SIGNAL

REGULATOR1 SCHEMATIC DIAGRAM
(VCR PCB) (MFR'S VERSION B)



PCB010
DME034

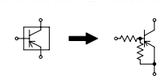
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

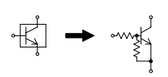
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

CAUTION: DIGITAL TRANSISTOR

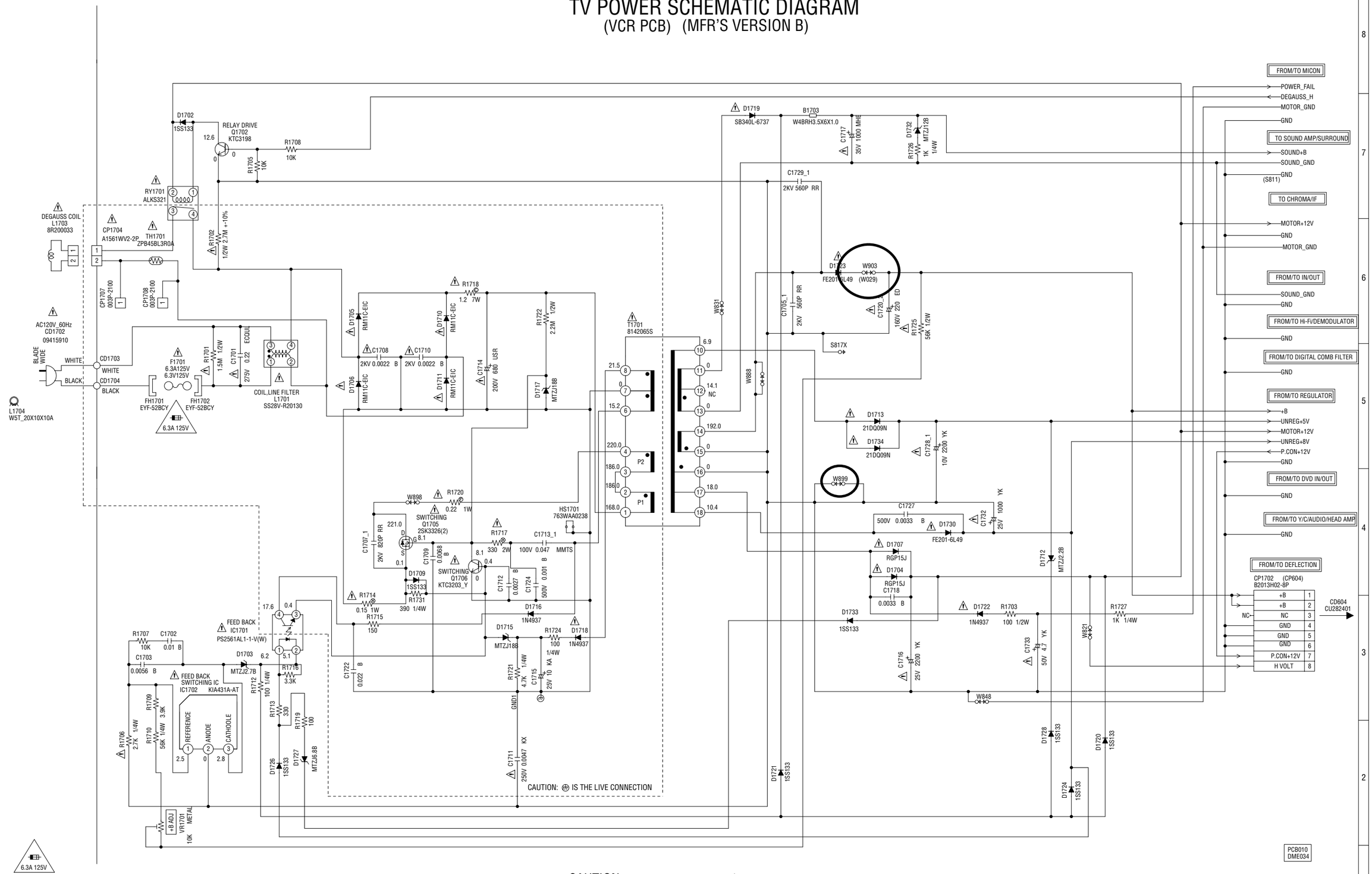


CAUTION: DIGITAL TRANSISTOR



TV POWER SCHEMATIC DIAGRAM

(VCR PCB) (MFR'S VERSION B)



6.3A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V (F1701)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V (F1701)

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

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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

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

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

SPEC.NO.	M5T4-10J
O/R NO.	W585048