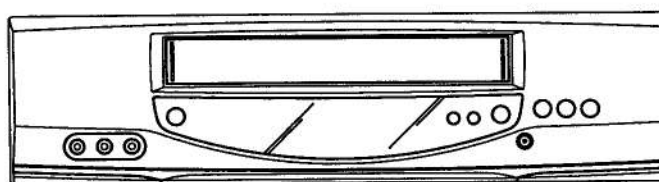


SERVICE MANUAL

ORION

VH-2911HIFISI / VH-2911HIFI

VIDEO CASSETTE RECORDER



ORIGINAL
CHASSIS CODE A

Best. Nr. SM2911

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

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

2. USE THE DESIGNATED PARTS

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

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

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

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

4. PERFORM A SAFETY CHECK AFTER SERVICING

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

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

1. MODEL NUMBER and CHASSIS CODE

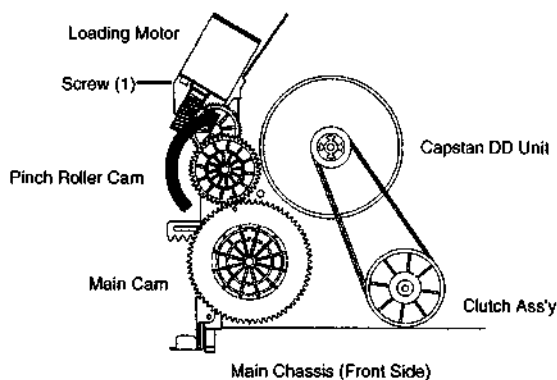
You can find it in the back of your unit.

2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

TAPE REMOVAL METHOD AT NO POWER SUPPLY

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



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GENERAL SPECIFICATIONS

G-1	VCR System	System	VHS Player / Recorder				
		Video System	PAL				
		Hi-Fi STEREO	Yes				
		NTSC PB(PAL60Hz)	Yes				
		Deck	DECK Loading System Motor	OVD-7 Front 3			
		Heads	Video Head	4Head			
			FM Audio Head	2Head			
			Audio /Control	Mono/Yes			
			Erase(Full Track Erase)	Yes			
		Tape Speed	Rec PAL NTSC	SP/LP -			
			Play PAL NTSC	SP/LP SP			
			Fast Forward / Rewind Time (Approx.) at +25Co with Cassette	FF:1'12"/REW:1'12" E-180			
			Forward/Reverse Picture Search	NTSC or PAL-M PAL or SECAM	SP=3x,5x SP/LP=5x,7x / 7x, 13x		
			Frame Advance Slow Speed	Yes Approx.	Yes 1/5, 1/10, 1/30		
		G-2	Tuning System	Broadcasting System	CCIR System BG		
Tuner and Receive CH	System Destination Tuning System Input Impedance CH Coverage			1Tuner Oscar (W/ HYPER) F-Synth VHF/UHF 75 OHM E2-E4, X-Z+2, S1-S10, E5-E12,S11-S41,E21-E69			
Intermediate Frequency	Picture(FP) Sound(FS) FP-FS			38.9MHz 33.4MHz 5.5MHz			
Auto Guide Ch Area Auto Tuning Method				- C.C.I.R. CH Plan			
Preset CH				80CH			
RF Converter Output				Yes			
	Channel Level/Impedance Sound Selector			23-69 ch 73 dBu / 75 Ohm No			
Stereo/Dual TV Sound Tuner Sound Muting				G-ST Yes			
G-3	Power			Power Source	AC DC	230V, 50Hz -	
				Power Consumption	(at AC) Stand by (at AC) Per Year	11 3 -	W at 230 V 50Hz W at 230 V 50Hz
				Protector	Power Fuse Dew Sensor	Yes -	No
				G-4	Regulation	Safety	CE
Radiation	CE						
G-5	Temperature			Operation Storage	5°C - 40°C -20°C - 60°C Less than 80% RH		
G-6	Operating Humidity				Less than 80% RH		
G-7	Signal	Video Signal	Input Level	1 V p-p/75 ohm			
			Output Level	1 V p-p/75 ohm			
			S/N Ratio (Weighted)	53 dB			
			Horizontal Resolution at SP Mode	240Line			
		Audio Signal (0dB=0.775Vrms)	Input Level	-3.8dBm/50Kohm			
			Output Level	-3.8dBm/1 Kohm			
			S/N Ratio at SP (Weighted)	42 dB			
			Harmonic Distortion at SP (1KHz) Typical	1.5%			
		Hi-Fi Audio Signal	Frequency Response at SP	100Hz - 10kHz			
			at LP	100Hz - 5kHz			
			at SLP	-			
			Dynamic Range : More than	75 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-8	On Screen Display	Menu	Yes				
		Menu Type	Character				
		ATS	No				
		Timer Rec Set	Yes				
		Auto Repeat On/Off	Yes				
		VCR Set-Up	No				
	Color System	No					

GENERAL SPECIFICATIONS

		NICAM Auto/Off	No
		BBE On/Off	No
	CH Set-Up		Yes
		CH Tuning	Yes
		Auto Tuning	Yes
		CH Mapping	Yes
		Guide CH Set	No
	System Set-Up		Yes
		Clock Set	Yes (Calendar , 24H)
		Language	Yes
		AV2 DEC/AV	Yes
		RF Output G/K/I	No
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry	No
		NICAM 1/2,NICAM Off,Audio Output	No
		Stereo,Audio Output,Bilingual	Yes
		Play/Stop/FF/Rew/Rec/OTR (ITR) /T-Rec/Pause/Eject/Tape In (Symbol Mark)	Yes
	Others	CH/AV (LINE)	Yes
		Clock	Yes
		Repeat	No
		Tape Counter	Yes
		Index	Yes
		Tape Speed	Yes
		Manual Tracking (Bar Setting)	Yes
		Hi-Fi	Yes
		Zero Return	Yes
		VPS	No
		PDC	No
		TEST Signal	Yes
G-9	OSD Language		Eng / Ger / Fre / Spa / Ita
G-10	Clock,Timer and Timer Back-up	Calendar	1990/1/1 - 2031/12/31
		Timer Events	8 prog/1 month
		One Touch Recording Max Time	SP/LP:6 Hours
		OTPB Valid Time	-
		Timer Back-up (at Power Off Mode)	30 min.
G-11	Display	Indicator	Yes
		Indicator Type	LED Module (Green + Red)
		Clock/Counter,CH,Timer Rec. Play. REC	Yes
		VCR	Yes
		PM	No
		Auto Tuning	Yes
		RF Output CH	Yes
G-12	Remote Control	Unit	RC- ED
		Glow in Dark Remocon	No
		Format type	NEC
		Power Source	3V
			UM size x 2 pcs
		Total Keys	33 Keys
		Keys	Power
			Yes
		1	Yes
		2	Yes
		3	Yes
		4	Yes
		5	Yes
		6	Yes
		7	Yes
		8	Yes
		9	Yes
		0 / AV	Yes
		CH / Tracking Up	Yes
		CH / Tracking Down	Yes
		Play / Up	No
		Play / Up / Slow	Yes
		Stop/Down	Yes
		F.Fwd / Right	Yes
		Rew / Left	Yes
		Pause	No
		Pause/Still	Yes
		Rec/OTR	Yes
		Eject	Yes
		Counter Reset	Yes
		Speed	Yes
		Timer Rec	Yes
		Index	Yes
		TV / VCR	Yes
		Program	Yes
		Program / Video Plus+	No

GENERAL SPECIFICATIONS

		Menu	Yes		
		Enter	Yes		
		Cancel/CH Skip	Yes		
		Call	Yes		
		Zero Return	Yes		
		Clock/Counter	Yes		
		Audio Select	Yes		
		Auto Tracking	No		
			No		
G-13	Features	Auto Head Cleaning	Yes		
		Auto Tracking	Yes		
		Index Search	Yes		
		HQ (VHS Standard High Quality)	Yes		
		Auto Power On, Auto Play, Auto Rewind, Auto Eject	Yes		
		Auto Repeat	Yes		
		Auto Power Off	Yes		
		VIDEO PLUS+(SHOWVIEW,G-CODE)	No		
		Auto Set Up (CH Auto Set-Up/Auto Clock)	No		
		ATS	No		
		PDC	No		
		VPS	No		
		BBE Audio	No		
		Remote Control Code 1/2	No		
RGB Through	No				
SQPB (PAL SP Mode)	No				
G-14	Accessories	Owner's Manual	Yes		
		Language w/Guarantee Card	German		
		Remote Control Unit	Yes		
		Dew Caution Sheet	No		
		Video Cassette Tape	No		
		Battery	Yes		
		UM size x pcs OEM Brand	UM-4 x 2 pcs		
		Safety Tip	No		
		Toll Free Insert Sheet	No		
		Quick Set-Up Sheet	Yes		
		Information Sheet	Yes		
		75 Ohm Coaxial Cable (0.9m)	Yes		
		type	Double shield		
		UV Mixer	No		
		DC Car Cord (Center+)	No		
		Guarantee Card	No		
		Warning Sheet	No		
		Circuit Diagram	No		
		Antenna Change Plug	No		
		Service Facility List	No		
		Important Safeguard	No		
		Dew/AHC Caution Sheet	No		
		AC Plug Adapter	No		
		AC Cord	No		
		AV Cord (1.2m)	No		
		Registration Card	No		
		PTB Sheet	No		
300 ohm to 75 ohm Antenna Adapter	No				
G-15	Interface	Switch	Power	Yes	
			Play	Yes	
			Channel Up	Yes	
			Channel Down	Yes	
			F.FWD/Cue	Yes	
			Rew/Rev	Yes	
			Eject/Stop	Yes	
		Rec/OTR	Yes		
		Indicator	Main Power SW	No	
			Power	No	
			Stand by	No	
			TV/CR	No	
			T-REC	No	
		Terminals	Front	Rec/OTR	No
				Video Input	RCA x1 (YELLOW)
				Audio Input Other Terminal	RCA x 2 (WHITE/RED) No
			Rear	Video Input	No
				Audio Input	No
				Video Output	No
Audio Output	RCA x 2 (WHITE/RED)				
Euro Scart	2-SCART				

GENERAL SPECIFICATIONS

		VHF/UHF Antenna Input/Output	DIN Type	
G-16	Set Size	Approx. W x D x H (mm)	360 x 226 x 95	
G-17	Weight	Net (Approx.)	3.2 Kg	
		Gross (Approx.)	3.8 Kg	
G-18	Carton	Master Carton	No	
		Content	-	
		Material	-	
		Dimensions W x D x H(mm)	-	
		Description of Origin	-	
		Gift Box	Yes	
		Material	Single/Full Color	
		Dimensions W x D x H(mm)	429 x 292 x 168	
		Pulp Package	Yes	
		Design	As Per BUYER'S	
		Description of Origin	No	
		Drop Test	Natural Dropping	Quelle Dropping At 2 Edges / 4 Surfaces
			Height (cm)	80
	Container Stuffing(40' container)	2992 Sets		
G-19	Material	Cabinet Front	PS 94HB	
		PCB	Non-Halogen Demand	
			Eyelet Demand	

DISASSEMBLY INSTRUCTIONS

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

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

1. Remove the 4 screws (1).
2. Remove the Top Cabinet in the direction of arrow (A).
3. Unlock the 7 supports (2).
4. Remove the Front Cabinet in the direction of arrow (B).

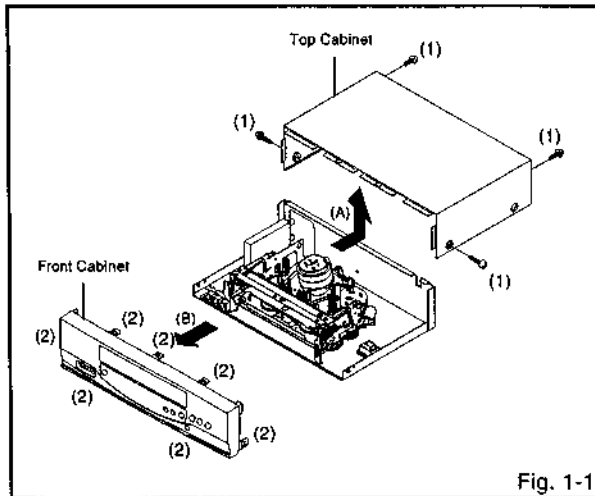


Fig. 1-1

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

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

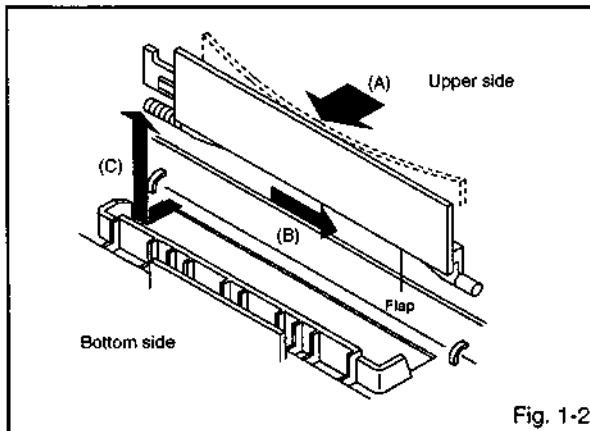


Fig. 1-2

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

NOTE

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

1. Remove the screw (1).
2. Remove the FE Head.
3. Remove the 3 screws (2).
4. Disconnect the following connectors: (CP1001, CP4001, CP4002 and CP4003).
5. Remove the Deck Chassis in the direction of arrow.

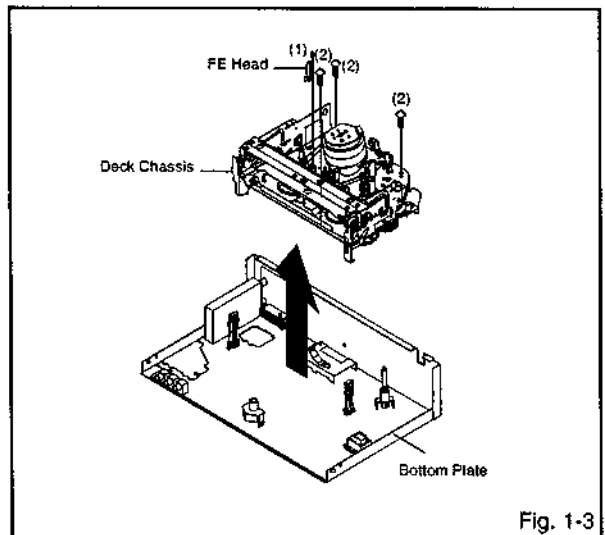


Fig. 1-3

1-4: SYSCON PCB AND AUDIO PCB (Refer to Fig. 1-4)

1. Remove the 2 screws (1).
2. Remove the screw (2).
3. Remove the Syscon PCB in the direction of arrow (A).
4. Remove the Audio PCB in the direction of arrow (B).

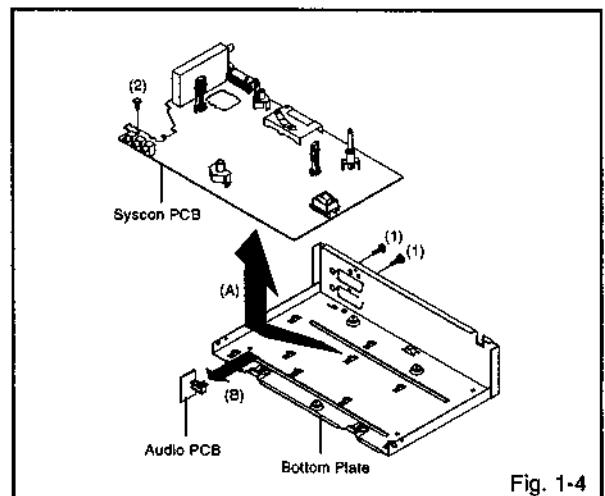


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF VCR DECK PARTS

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

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

NOTE

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

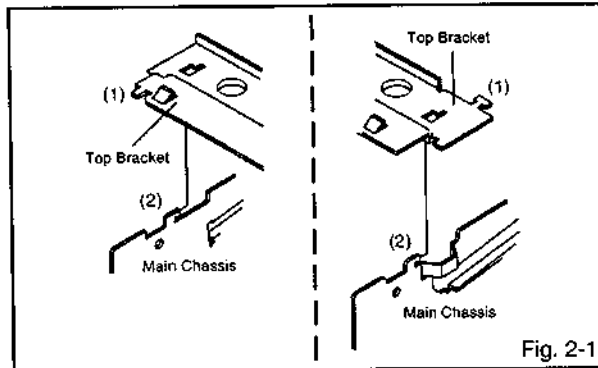


Fig. 2-1

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

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

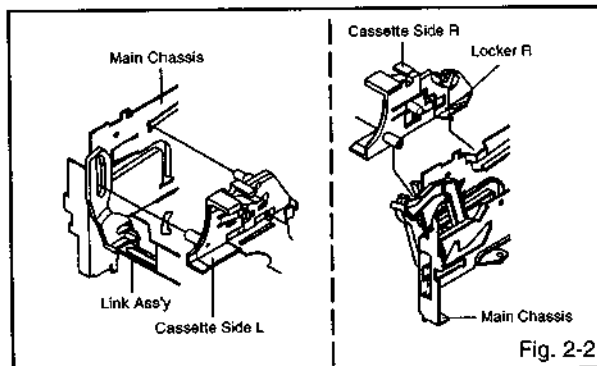


Fig. 2-2

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

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

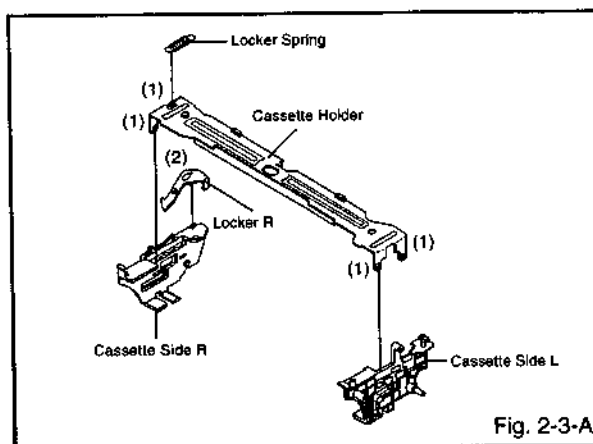


Fig. 2-3-A

NOTE

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

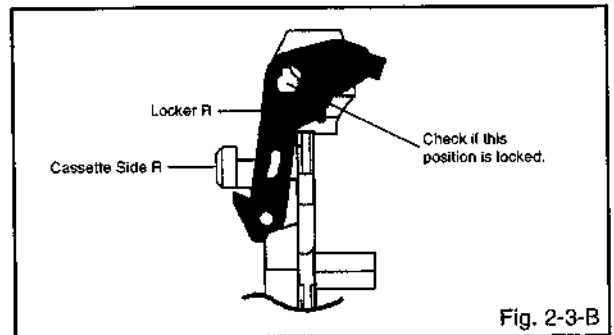


Fig. 2-3-B

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

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

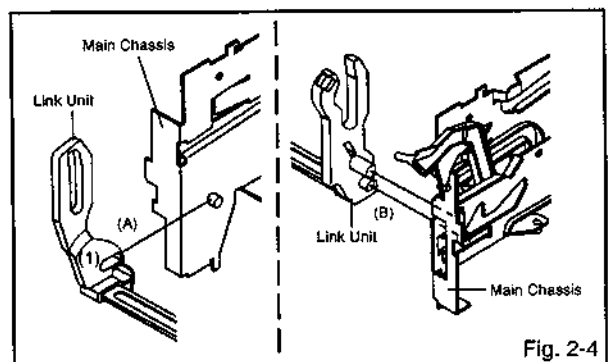


Fig. 2-4

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

1. Unlock the support (1).
2. Remove the BOT Cover.
3. Extend the support (2).
4. Remove the Link Lever.
5. Remove the Flap Lever.

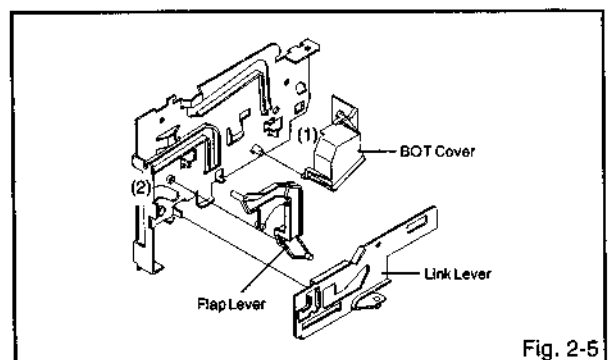
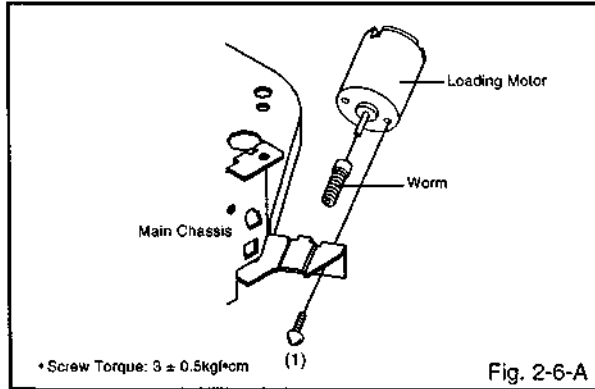


Fig. 2-5

DISASSEMBLY INSTRUCTIONS

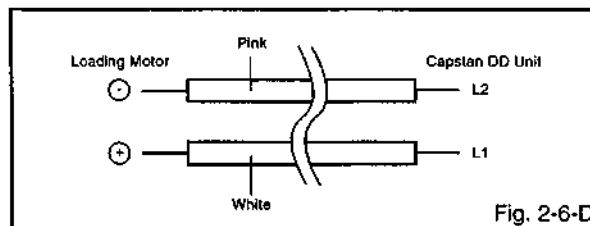
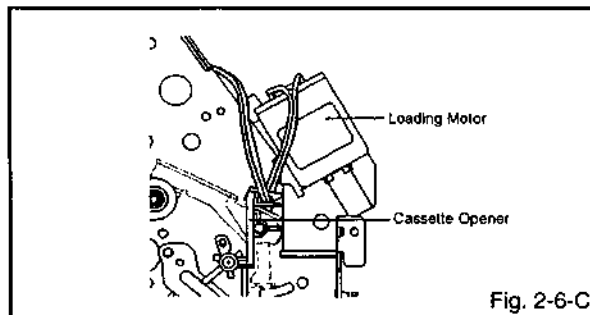
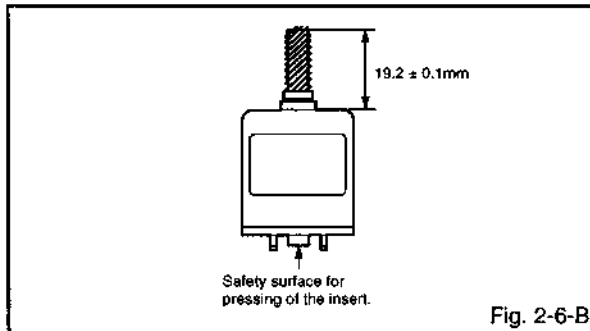
2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

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



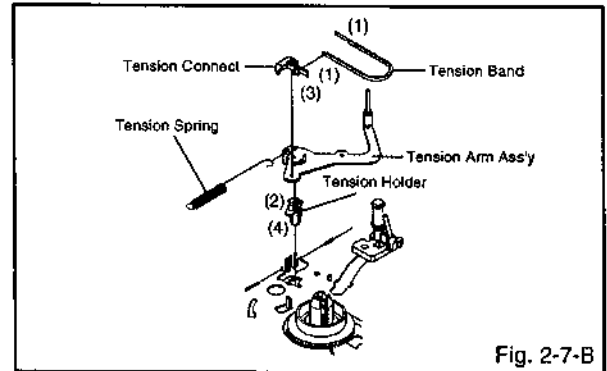
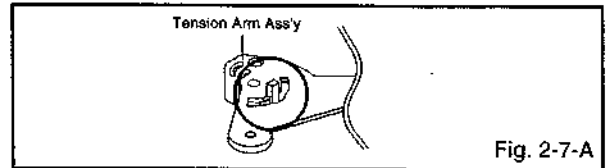
NOTE

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



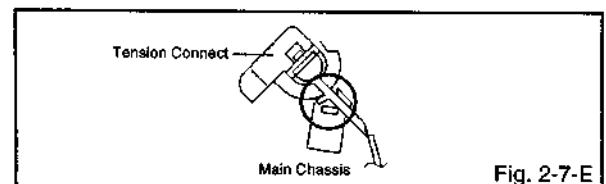
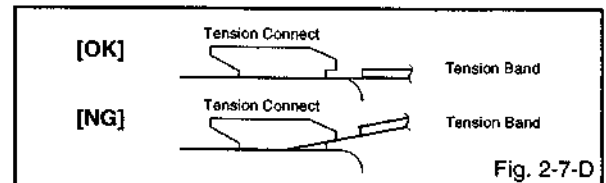
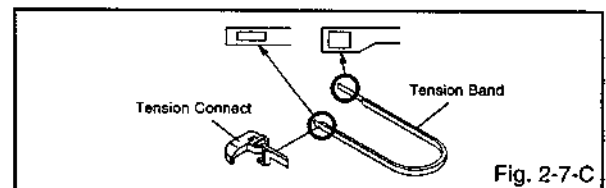
2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

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



NOTE

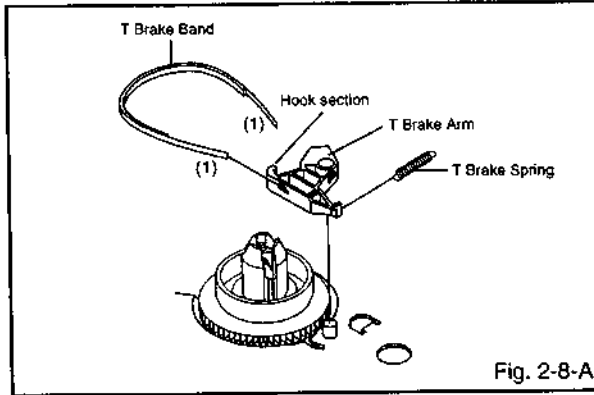
1. In case of the Tension Band installation, note the direction of the installation. (Refer to Fig. 2-7-C)
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.



DISASSEMBLY INSTRUCTIONS

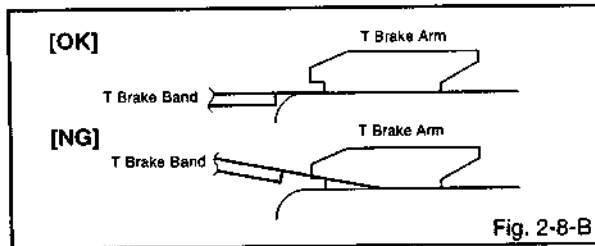
2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

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



NOTE

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

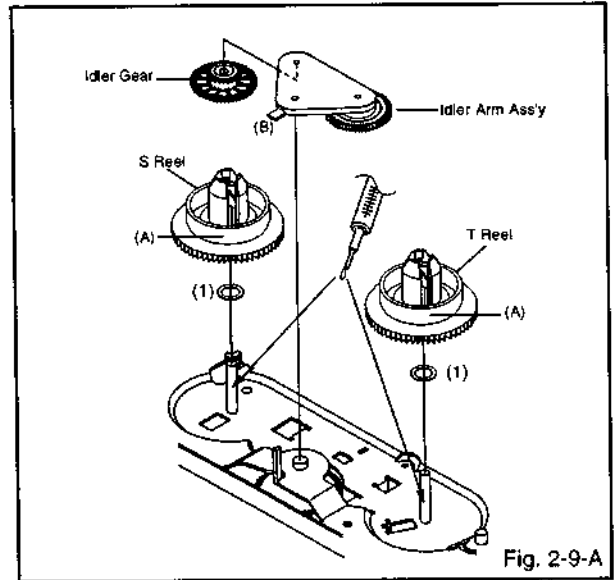


2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers (1).
3. Remove the Idler Arm Ass'y and Idler Gear.

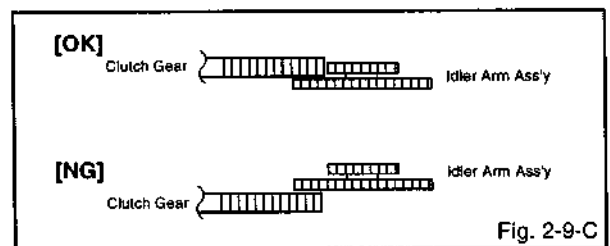
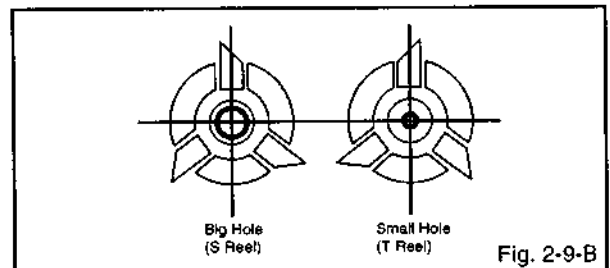
NOTE

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



NOTE

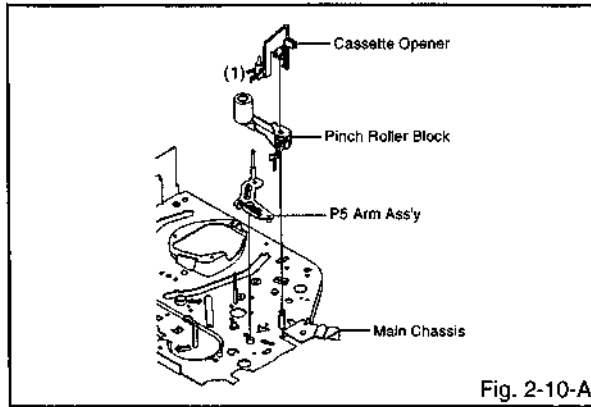
1. In case of the S Reel and T Reel installation, check if the correct parts are installed. (Refer to Fig. 2-9-B)
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C, And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.



DISASSEMBLY INSTRUCTIONS

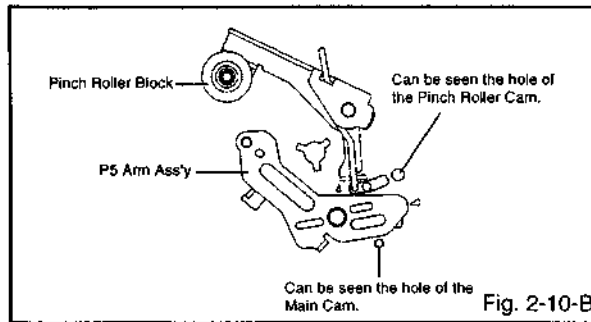
2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

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



NOTE

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

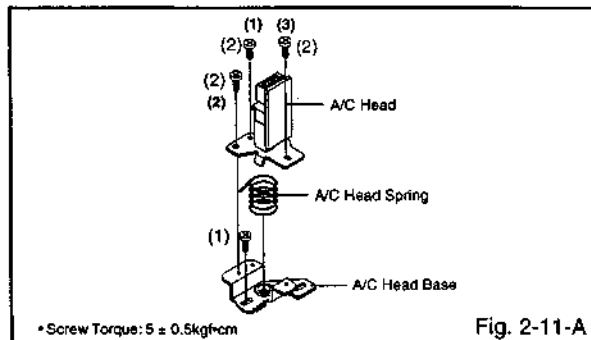


2-11: A/C HEAD (Refer to Fig. 2-11-A)

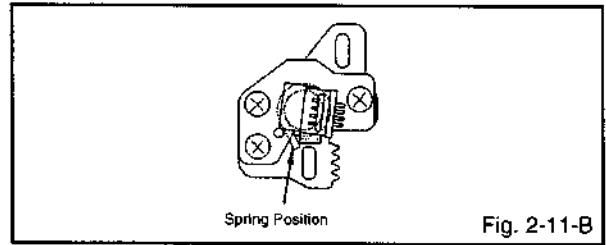
1. Remove the screw (1).
2. Remove the A/C Head Base.
3. Remove the 3 screws (2).
4. Remove the A/C Head and A/C Head Spring.

NOTE

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

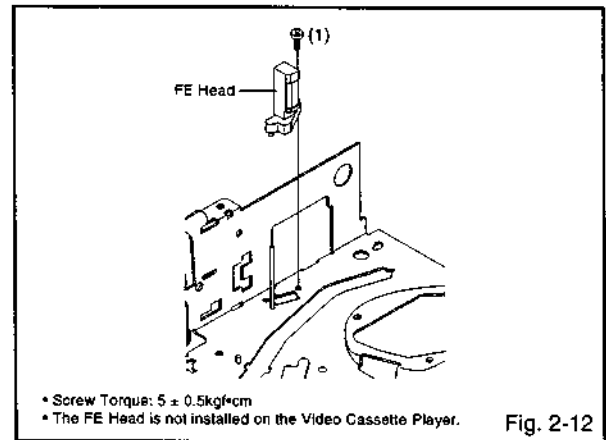


* Screw Torque: $5 \pm 0.5 \text{ kgf}\cdot\text{cm}$



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

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



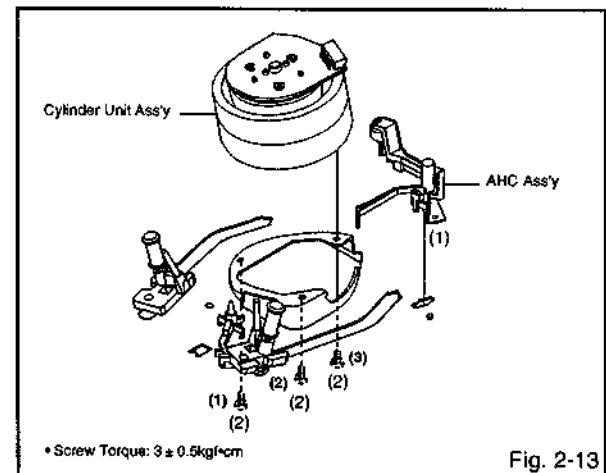
- * Screw Torque: $5 \pm 0.5 \text{ kgf}\cdot\text{cm}$
- * The FE Head is not installed on the Video Cassette Player.

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

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

NOTE

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

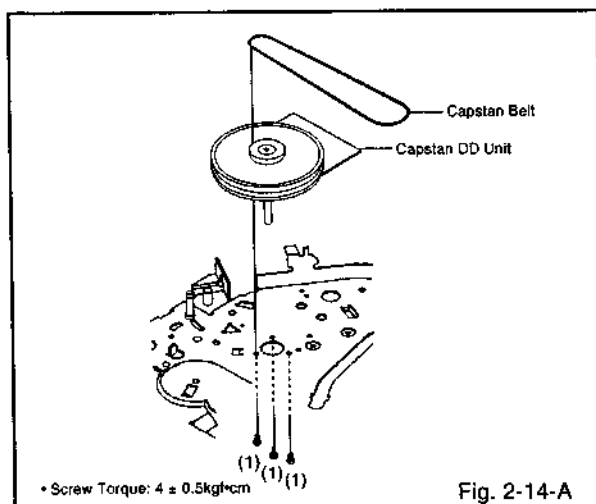


* Screw Torque: $3 \pm 0.5 \text{ kgf}\cdot\text{cm}$

DISASSEMBLY INSTRUCTIONS

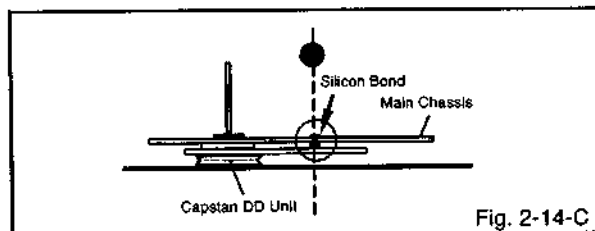
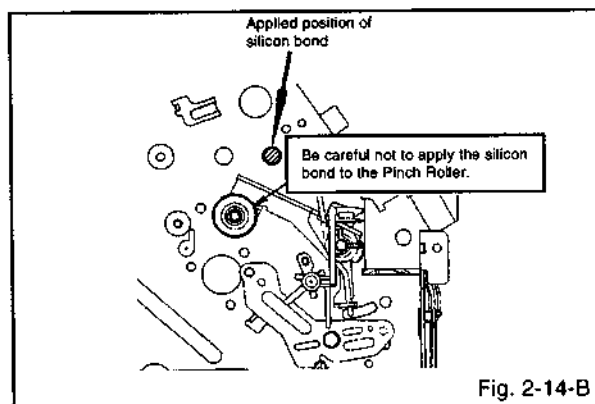
2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

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



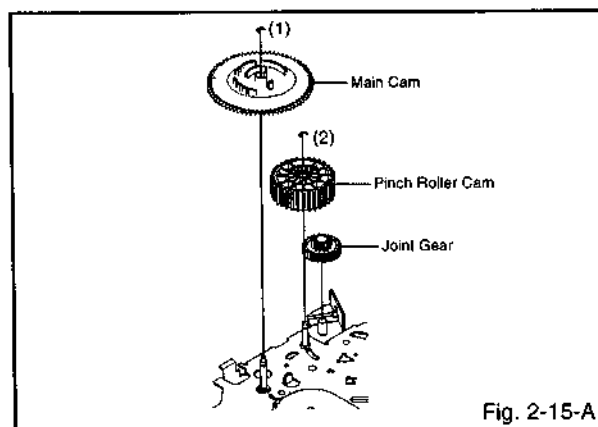
NOTE

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



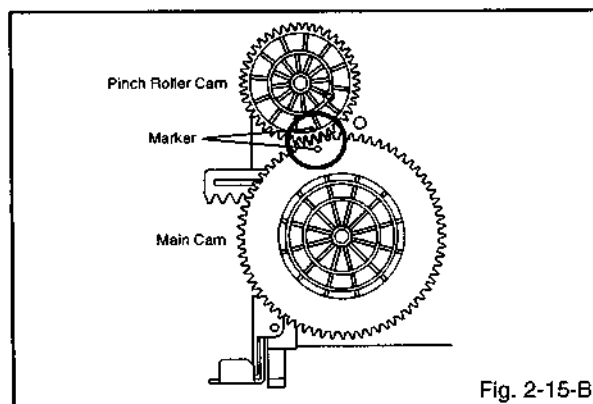
2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

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



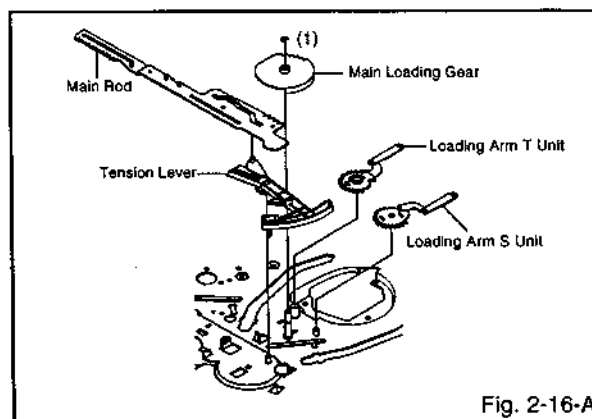
NOTE

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



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

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



DISASSEMBLY INSTRUCTIONS

NOTE

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

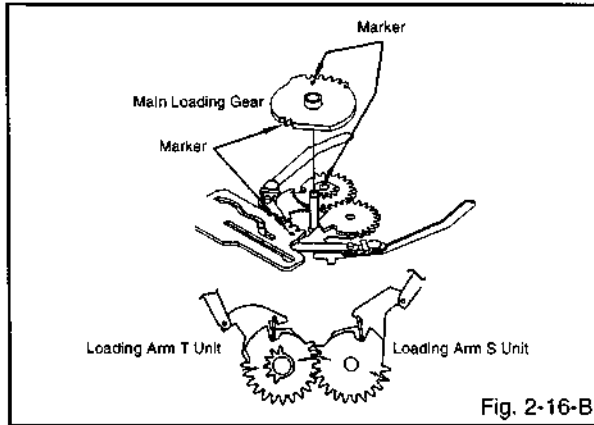


Fig. 2-16-B

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

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

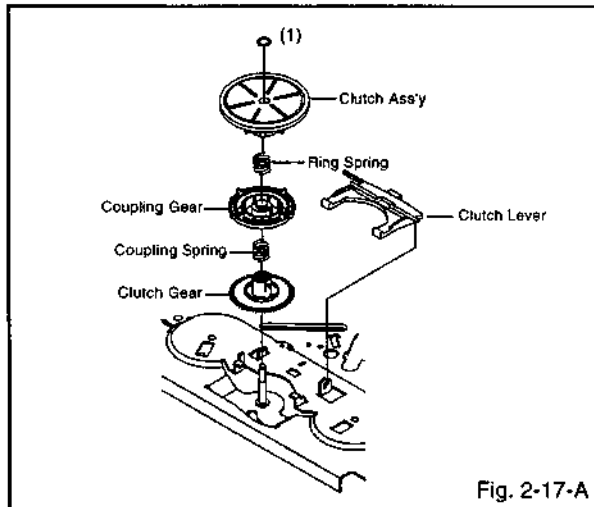


Fig. 2-17-A

NOTE

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

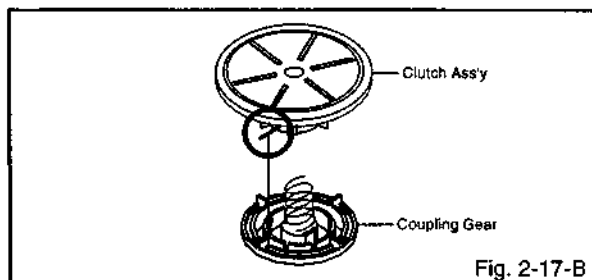


Fig. 2-17-B

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

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

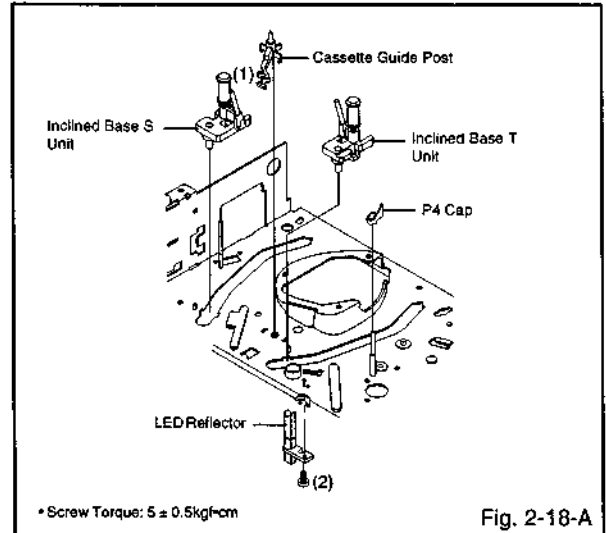


Fig. 2-18-A

NOTE

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

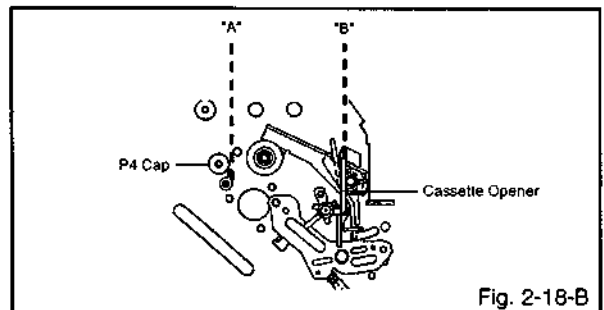


Fig. 2-18-B

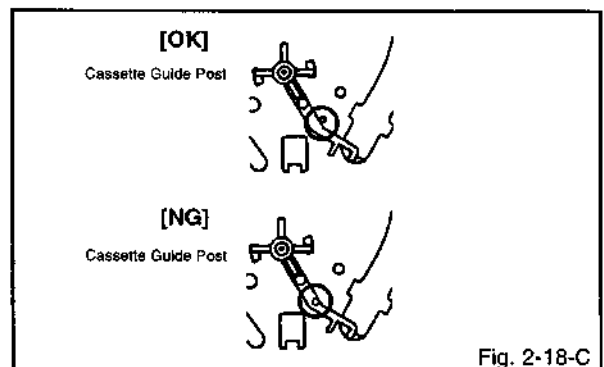


Fig. 2-18-C

DISASSEMBLY INSTRUCTIONS

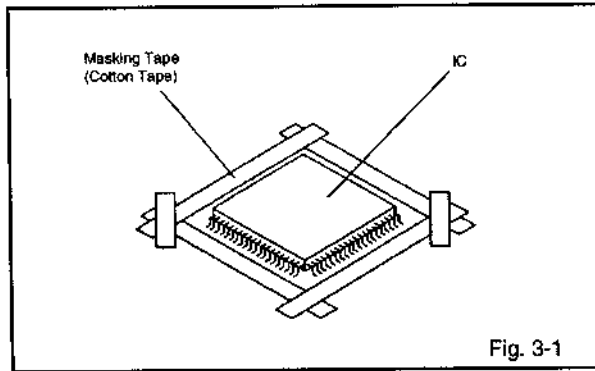
3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

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

NOTE

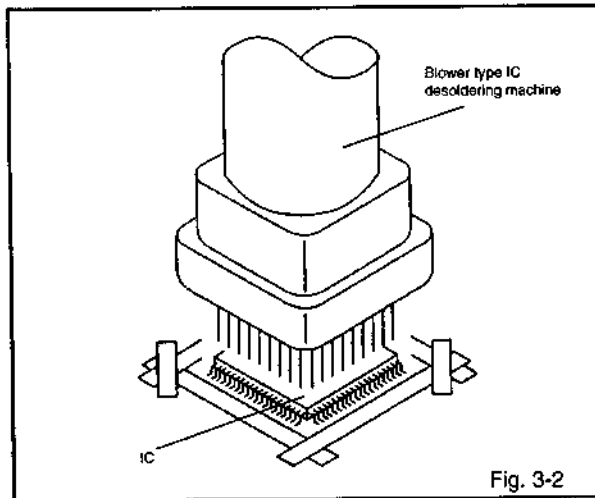
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

NOTE

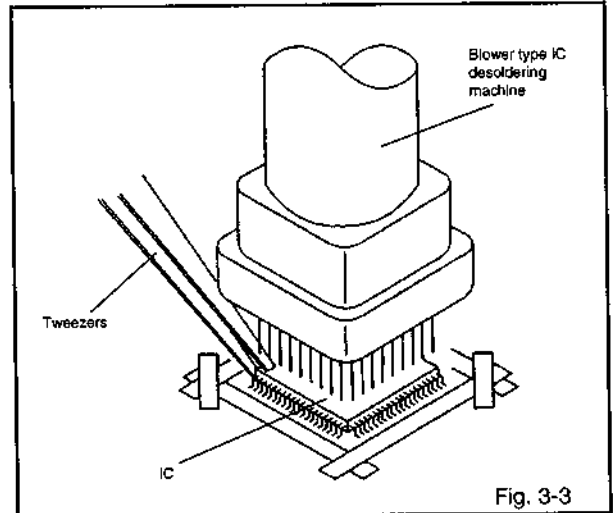
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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

NOTE

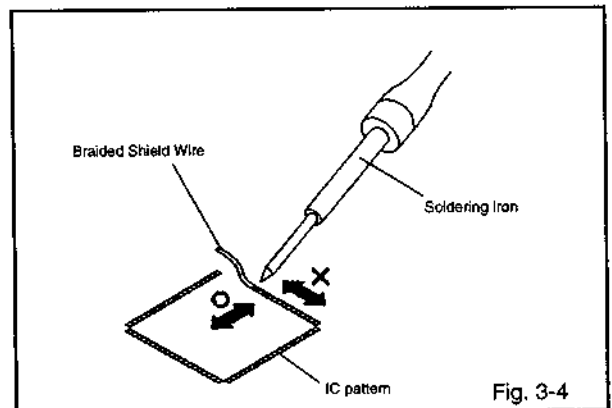
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



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

NOTE

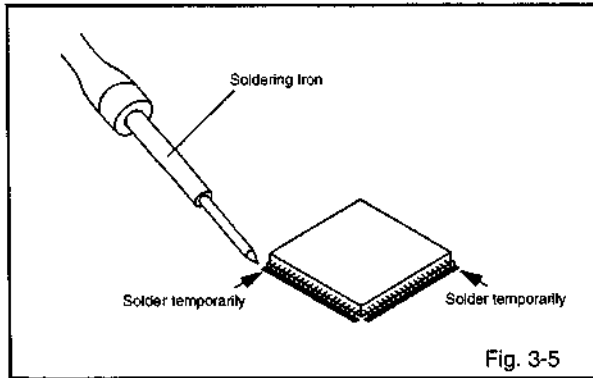
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



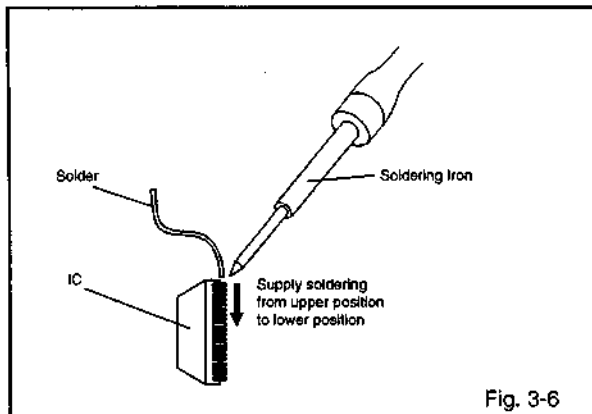
DISASSEMBLY INSTRUCTIONS

INSTALLATION

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



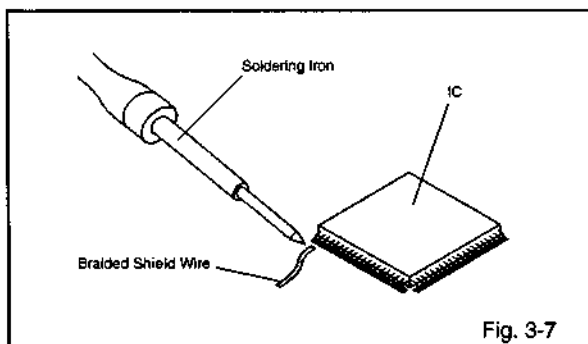
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 3-6.)



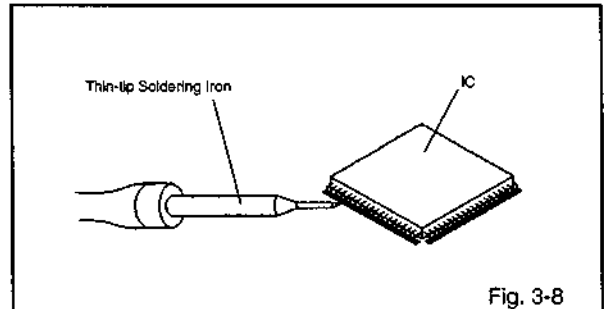
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 3-7.)

NOTE

Do not absorb the solder to excess.



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



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

NOTE

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

KEY TO ABBREVIATIONS

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

KEY TO ABBREVIATIONS

S	SYNC	: Synchronization
	SYNC SEP	: Sync Separator, Separation
T	TR	: Transistor
	TRAC	: Tracking
	TRICK PB	: Trick Playback
	TP	: Test Point
U	UNREG	: Unregulated
V	V	: Volt
	VCO	: Voltage Controlled Oscillator
	VIF	: Video Intermediate Frequency
	VP	: Vertical Pulse, Voltage Display
	V.PB	: Video Playback
	VR	: Variable Resistor
	V.REC	: Video Recording
	VSF	: Visual Search Fast Forward
	VSR	: Visual Search Rewind
	VSS	: Voltage Super Source
	V-SYNC	: Vertical-Synchronization
	VT	: Voltage Tuning
X	X'TAL	: Crystal
Y	Y/C	: Luminance/Chrominance

ERROR CODE LIST

If the error indications are appeared on the FIP, check the abnormal points by using the table below.

Indications	Error contents
Error : 00	Remocon code error
Error : 01	Reel mecha error
Error : 02	Cylinder mecha error
Error : 03	Mecha state error
Error : 04	Capstan mecha error

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

Method	Operations
Press both PLAY button and CH UP button on the set for more than 2 seconds.	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
While pressing the CH UP key on the set, press the FF key on the set for more than 2 seconds.	PLAY/REC total hours are displayed on the TV Monitor. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
While pressing the CH UP button on the set, press the STOP button on the set for more than 2 seconds during PLAY.	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape. Refer to the "PREPARATION FOR SERVICING"

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or misuse may cause transformation and aging of rubber parts.

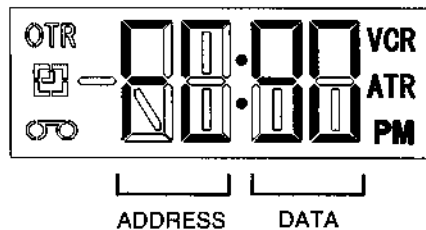
Parts Name \ Time	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	●	●	●	●	
Capstan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

- : Clean
- : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

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

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



$$(16 \times 16 \times 16 \times \text{thousands digit value}) + (16 \times 16 \times \text{hundreds digit value}) + (16 \times \text{tens digit value}) + (\text{ones digit value})$$

PREVENTIVE CHECKS AND SERVICE INTERVALS

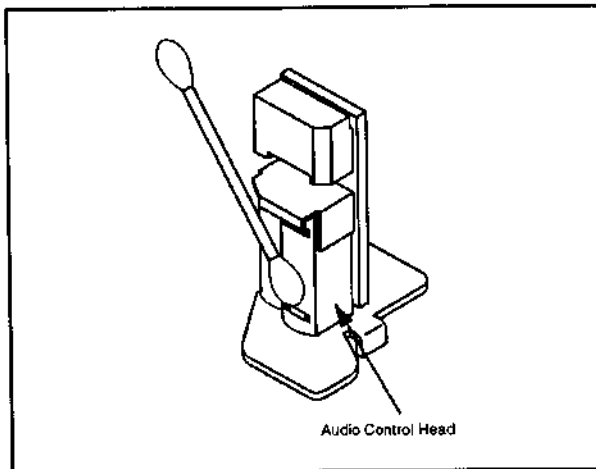
CLEANING

NOTE

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

1. AUDIO CONTROL HEAD

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



2. TAPE RUNNING SYSTEM

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

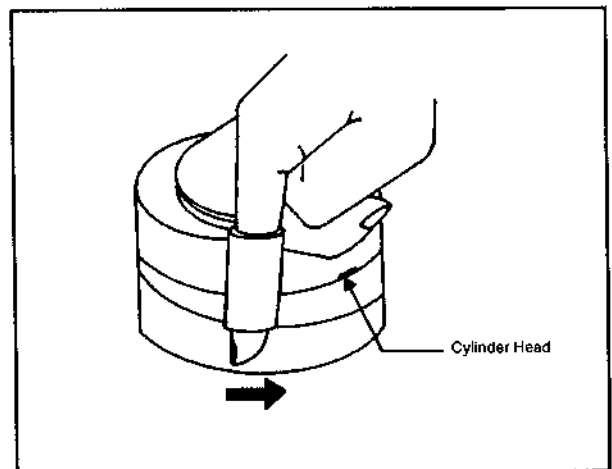
3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly.

Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). (Refer to the figure below.)

NOTE

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



WHEN REPLACING EEPROM (MEMORY) IC

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

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
B0	-	-	-	-	-	-	-	-	-	00	88	15	44	40	02	38
C0	84	84	06	81	02	9F	90	37	81	B2	B2	9A	92	8C	00	00
D0	00	00	46	00	13	6A	55	5F	00	10	50	FF	5B	00	00	00
E0	00	00	00	00	00	00	00	00	00	00	00	5E	5E	00	00	50
F0	F2	40	02	00	00	20	00	00	00	00	00	00	90			

Table 1

1. Turn on the POWER.
2. While pressing the CH UP button on the set, press the FF button on the set for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.

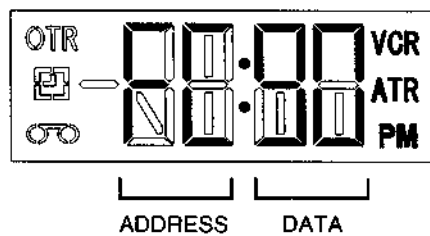





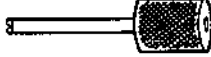
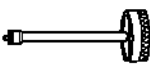
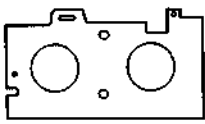
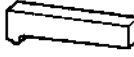
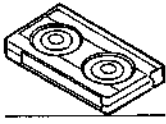


Fig. 1

3. ADDRESS is now selected and should "blink". Using the FF or REW 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 FF or REW 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. While pressing the CH UP button on the set, press the FF button on the set 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

<p>(For 2 head 1 speed model, 4 head model) VHS Alignment Tape JG001E (VP₁S-LI6³) JG001F (VP₁S-CO1³) JG001R (VP₁S-LI6³H) JG001U (VP₁S-X6³)</p> 	<p>(For 2 head 2 speed model) VHS Alignment Tape JG001C (VP₂S-LI6³) JG001D (VP₂S-CO1³) JG001V (VP₂S-X6³)</p> 	<p>JG002B Adapter JG002E Dial Torque Gauge (10-90gf*cm) JG002F (60-600gf*cm)</p> 	<p>JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small)</p> 
<p>JG153 X Value Adjustment Screwdriver</p> 	<p>JG022 Master Plane</p> 	<p>JG024A Reel Disk Height Adjustment Jig</p> 	<p>JG100A Torque Tape (VHT-063)</p> 
<p>JG154 Cable</p> 	<p>Tentelometer</p> 		

Ref. No.	Part No.	Parts Name	Remarks
JG001E	APJG001E00	VHS Alignment Tape	Monoscope, 6KHz (For 2 head 1 speed model, 4 head model)
JG001F	APJG001F00	VHS Alignment Tape	Color Bar, 1KHz (For 2 head 1 speed model, 4 head model)
JG001R	APJG001R00	VHS Alignment Tape	Hi-Fi Audio (For Hi-Fi model)
JG001U	APJG001U00	VHS Alignment Tape	X Value Adjustment (For 2 head 1 speed model, 4 head model)
JG001C	APJG001C00	VHS Alignment Tape	Monoscope, 6KHz (For 2 head 2 speed model)
JG001D	APJG001D00	VHS Alignment Tape	Color Bar, 1KHz (For 2 head 2 speed model)
JG001V	APJG001V00	VHS Alignment Tape	X Value Adjustment (For 2 head 2 speed model)
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10-90gf*cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60-600gf*cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Short circuit between **TP1001** and **Ground** with the cable JG154.
(The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape.)
2. 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

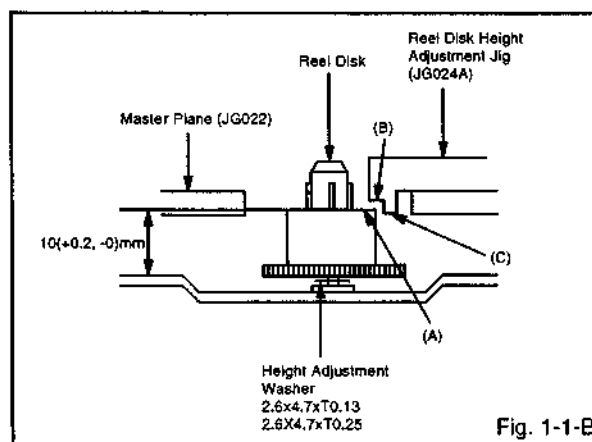
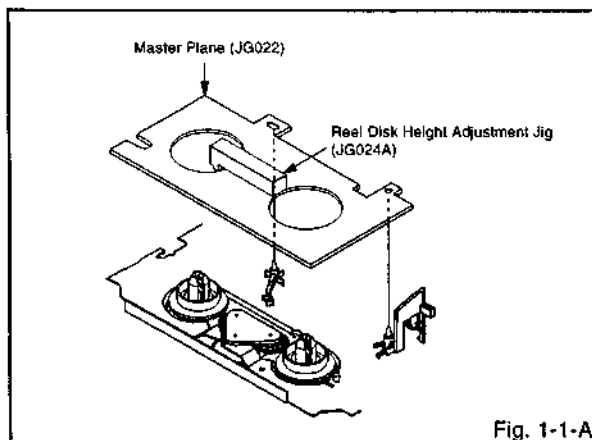
1. CONFIRMATION AND ADJUSTMENT

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.)

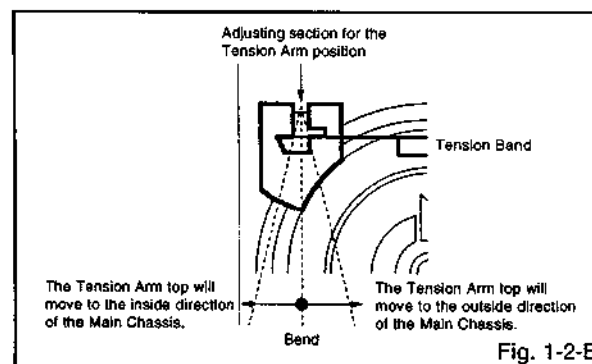
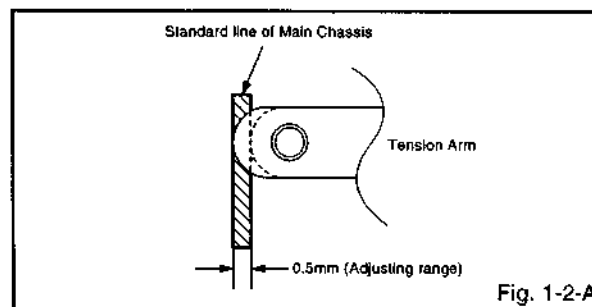
1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

- Turn on the power and set to the STOP mode.
- 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.
- 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.
- Adjust the other reel in the same way.



1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

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

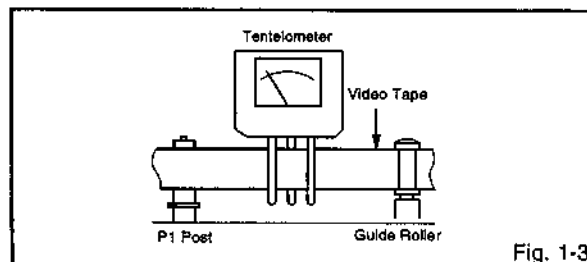


1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

- Load a video tape (E-180) recorded in standard speed mode. Set the unit to the PLAY mode.
- Install the tentelometer as shown in Fig. 1-3. Confirm that the meter indicates 20 ± 2 gf in the beginning of playback.

• USING A CASSETTE TYPE TORQUE TAPE (JG100A)

- 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.
- Confirm that the right meter of the torque tape indicates 50–90gf·cm during playback in SP mode.
- Confirm that the left meter of the torque tape indicates 25–40gf·cm during playback in SP mode.



MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Set to the Picture Search (Rewind) mode. (Refer to Fig. 1-4-B)
2. Then, confirm that it indicates 120~180gf*cm.

NOTE

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

1-5: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Turn the Torque Gauge (JG002F) clockwise.
4. Then, confirm that it indicates 60~100gf*cm.

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge (JG002E) and Adapter (JG002B) on the T reel. Turn the Torque Gauge (JG002E) counterclockwise.
4. Then, confirm that it indicates 30~50gf*cm.

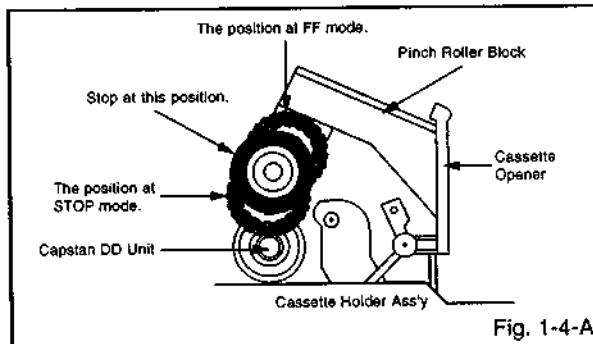


Fig. 1-4-A

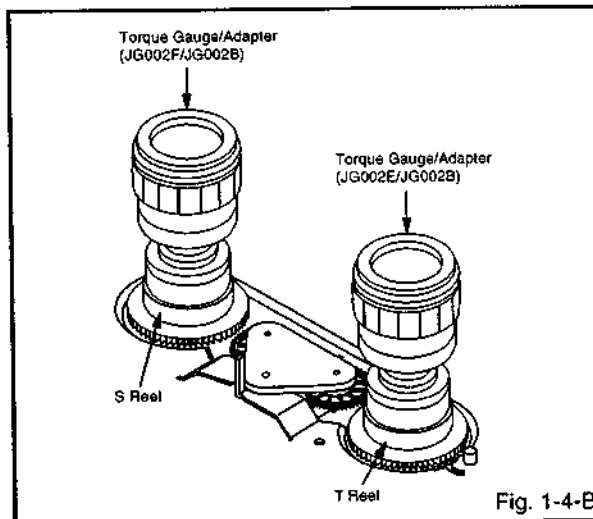


Fig. 1-4-B

NOTE

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

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

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

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape (JG001C or JG001E). (Refer to SERVICING FIXTURE AND TOOLS)
2. Connect CH-1 of the oscilloscope to TP4002 (Envelope) and CH-2 to TP4001 (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)

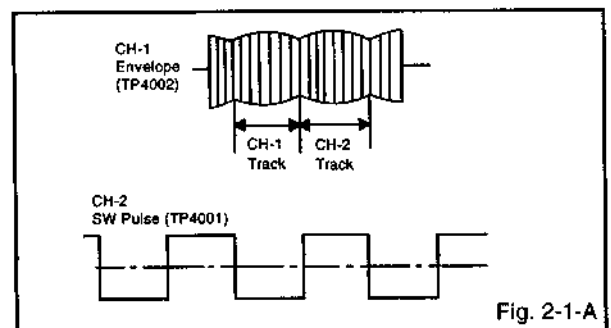


Fig. 2-1-A

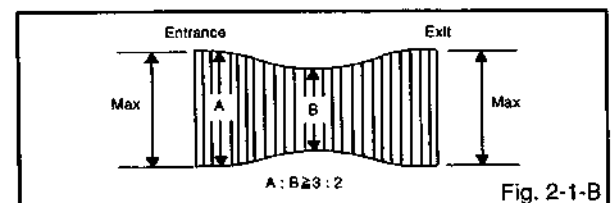


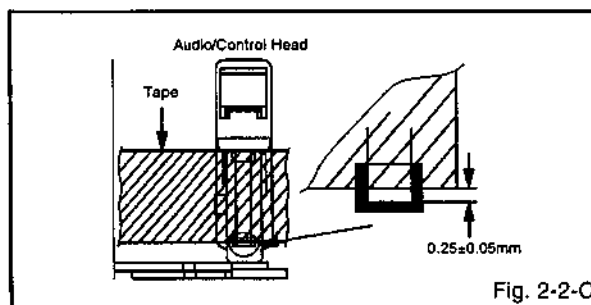
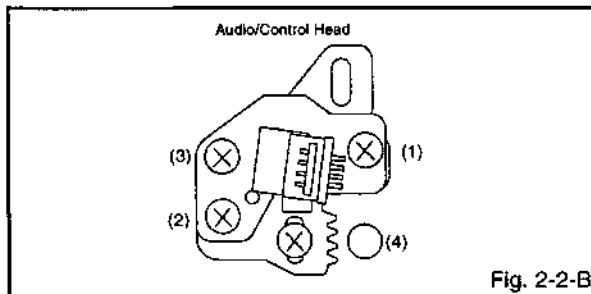
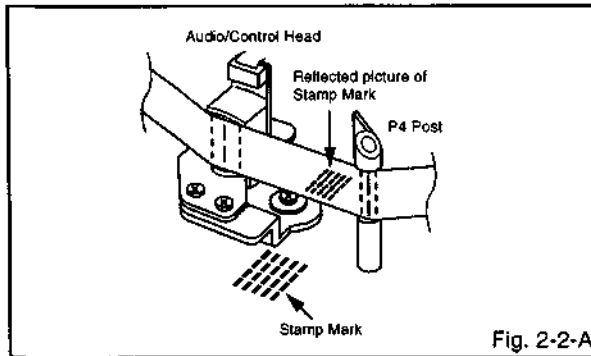
Fig. 2-1-B

MECHANICAL ADJUSTMENTS

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

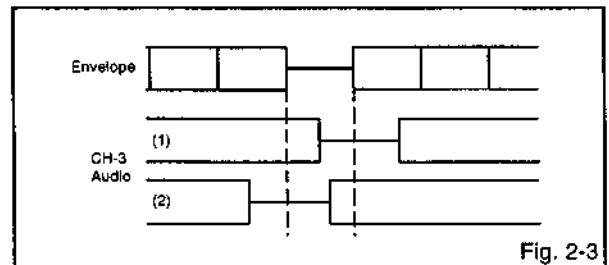
When the Tape Running Mechanism does not work well, adjust the following items.

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



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 TP4001, CH-2 to TP4002 and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape (JG001U or JG001V). (Refer to **SERVICING FIXTURE AND TOOLS**)
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver (JG153) to the (4) of Fig. 2-2-B. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of Fig. 2-3.

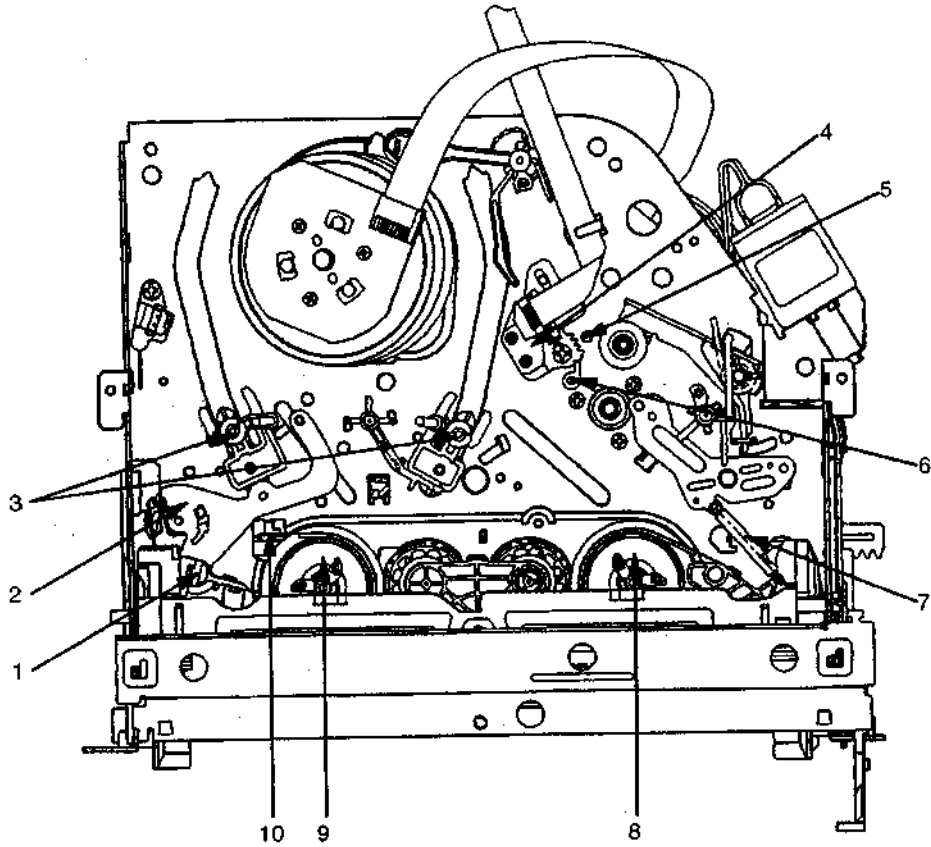


2-4: CONFIRM HI-FI AUDIO (HI-FI model only)

1. Connect CH-1 of the oscilloscope to TP4001 and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape (JG001R). (Refer to **SERVICING FIXTURE AND TOOLS**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver (JG153) to (4) of Fig. 2-2-B. Change the X Value and adjust it so that the value becomes within 2 steps.

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



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

ELECTRICAL ADJUSTMENTS

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

1. BASIC ADJUSTMENT

CAUTION

When replacing IC's or transistor, use only specified silicon grease (YG260M).
(To prevent the damage to IC's and transistors.)

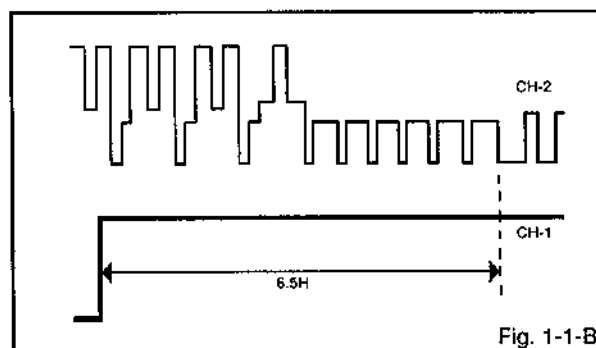
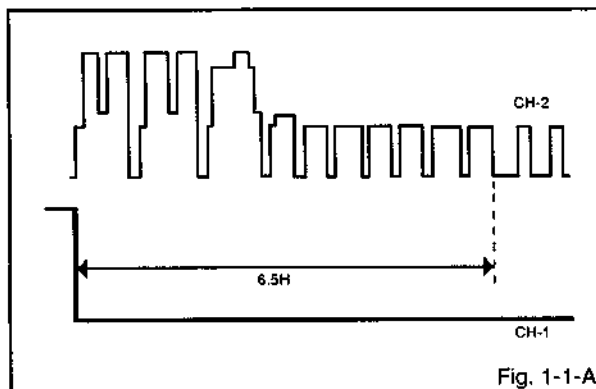
1-1: PG SHIFTER

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape (JG001R)

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to TP4002 and CH-2 to pin 19 of J4504.
2. Playback the alignment tape. (JG001R)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press both CH UP button and STOP button on the set for more than 2 seconds. If the indicator ATR disappears, the adjustment is finished. (Refer to Fig. 1-1-A, B)



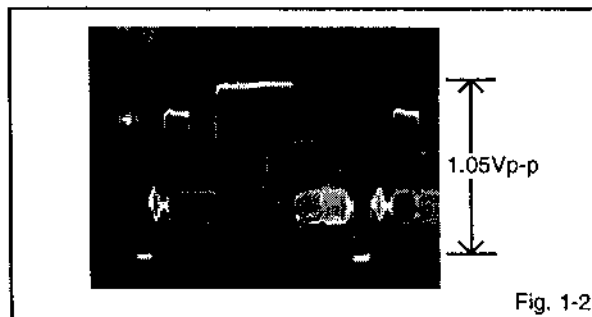
1-2: PB-Y LEVEL

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape (JG001F)

INSTRUCTIONS

1. Connect the oscilloscope to pin 19 of J4504 through 75 ohm resistor.
2. Playback the alignment tape. (JG001F)
3. Check if the VIDEO OUTPUT LEVEL is $1.05 \pm 0.15Vp-p$. (Refer to Fig. 1-2)



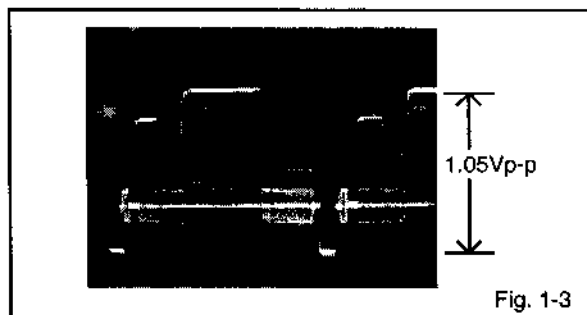
1-3: E-E LEVEL

CONDITIONS

MODE-STOP
Input Signal-PAL Color Bar

INSTRUCTIONS

1. Connect the color bar generator to pin 20 of J4504.
2. Connect the oscilloscope to pin 19 of J4504 through 75 ohm resistor.
3. Check if the VIDEO OUTPUT LEVEL is $1.05 \pm 0.15Vp-p$. (Refer to Fig. 1-3)



1-4: E-E AUDIO LEVEL

CONDITIONS

MODE-STOP
Input Signal-Audio Signal: 1KHz, 500mVrms
Input Select-AV

INSTRUCTIONS

1. Connect the color bar generator to pins 2 and 6 of J4504.
2. Connect the AC voltmeter to pins 1 and 3 of J4504 through 47K ohm resistor.
3. Check if the AUDIO OUTPUT LEVEL is $500(mVrms) \pm 2(dB)$

ELECTRICAL ADJUSTMENTS

1-5: PB AUDIO LEVEL

CONDITIONS

MODE-Self (RECORD and PLAYBACK)
Input Signal-Audio Signal: 1KHz, 500mVrms
Video Signal: PAL Color Bar
Input Select-AV

INSTRUCTIONS

1. Connect the color bar generator to **pin 20 of J4504**.
2. Connect the audio generator to **pins 2 and 6 of J4504**.
3. Connect the AC voltmeter to **pins 1 and 3 of J4504** through 47K ohm resistor.
4. After the input of audio signal and video signal, proceed with the recording.
5. Playback the recorded section and check if the **AUDIO OUTPUT LEVEL** is 500(mVrms) \pm 2(dB).

1-6: SEPARATION

CONDITIONS

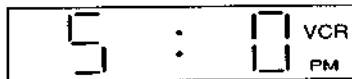
MODE-STOP
AUDIO OUTPUT SW: STEREO POSITION
Input Signal-RF Signal

INSTRUCTIONS

1. Receive the audio signal (L ch: No Signal, R ch: 1KHz).
2. Connect the AC voltmeter to **AUDIO OUT (L ch)**.
3. Press both CH UP button and STOP button on the set for more than 3 seconds.
The fluorescent display on the set displays as below.



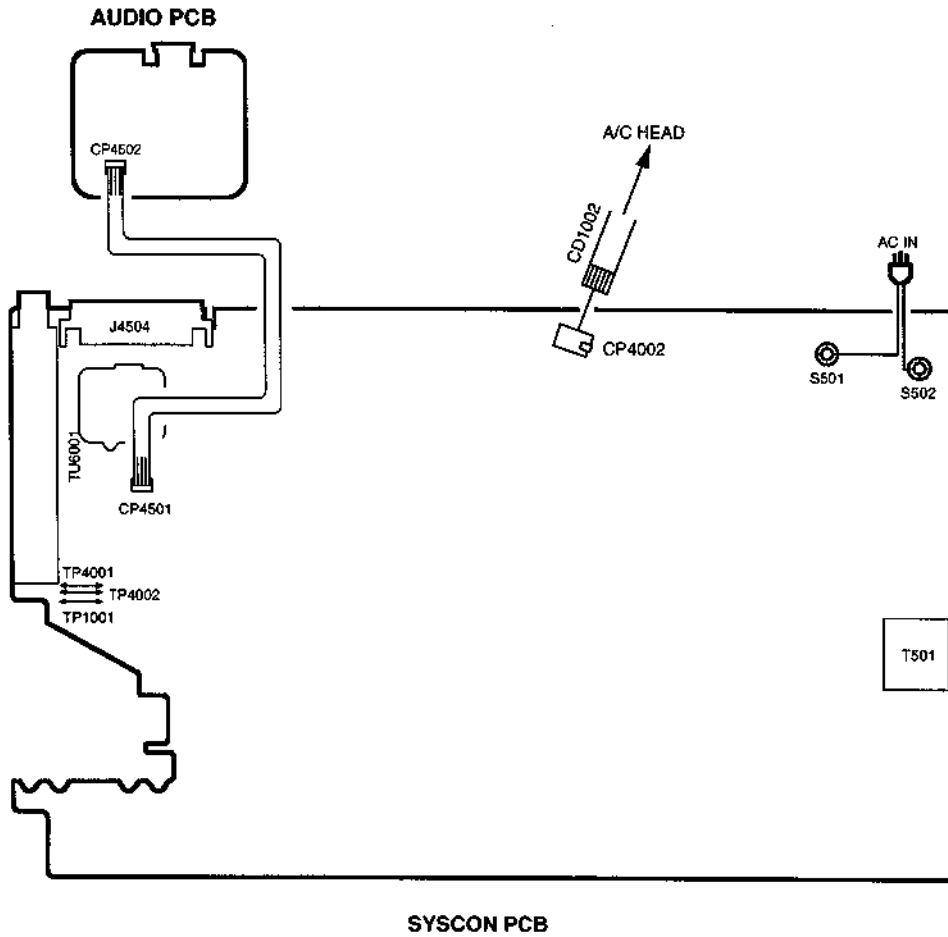
4. Press the F.FWD or REW button on the remote control.
The fluorescent display on the set displays as below.



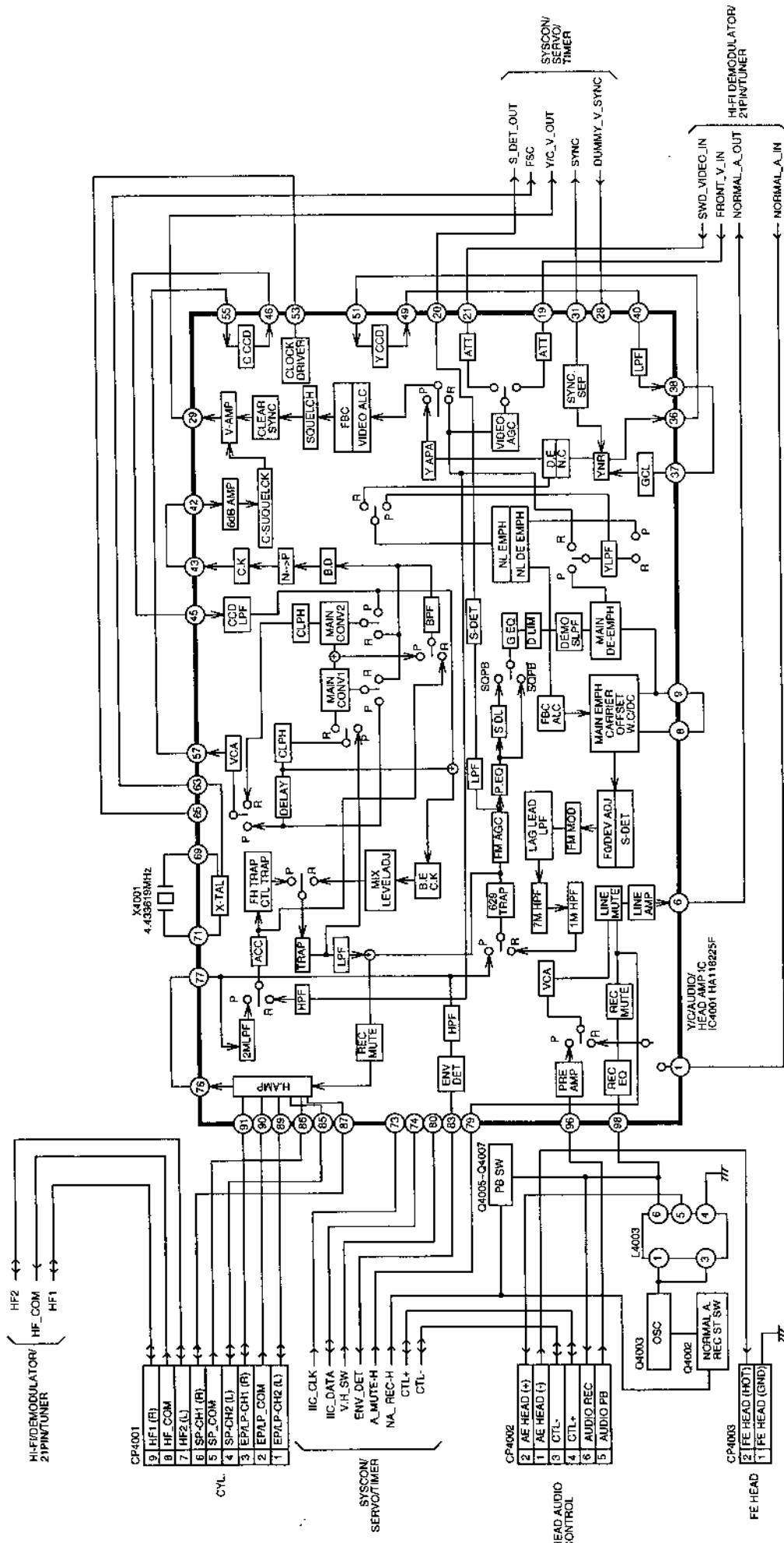
5. Adjust the F.FWD and REW button on the remote control until output signal is minimum. (more than 25dB)
6. Press both CH UP button and STOP button of the set together to complete the adjustment.
7. Receive the audio signal (L ch: 1KHz, R ch: No Signal).
8. Connect the AC voltmeter to **AUDIO OUT (R ch)**.
9. Repeat steps 3-6.

ELECTRICAL ADJUSTMENTS

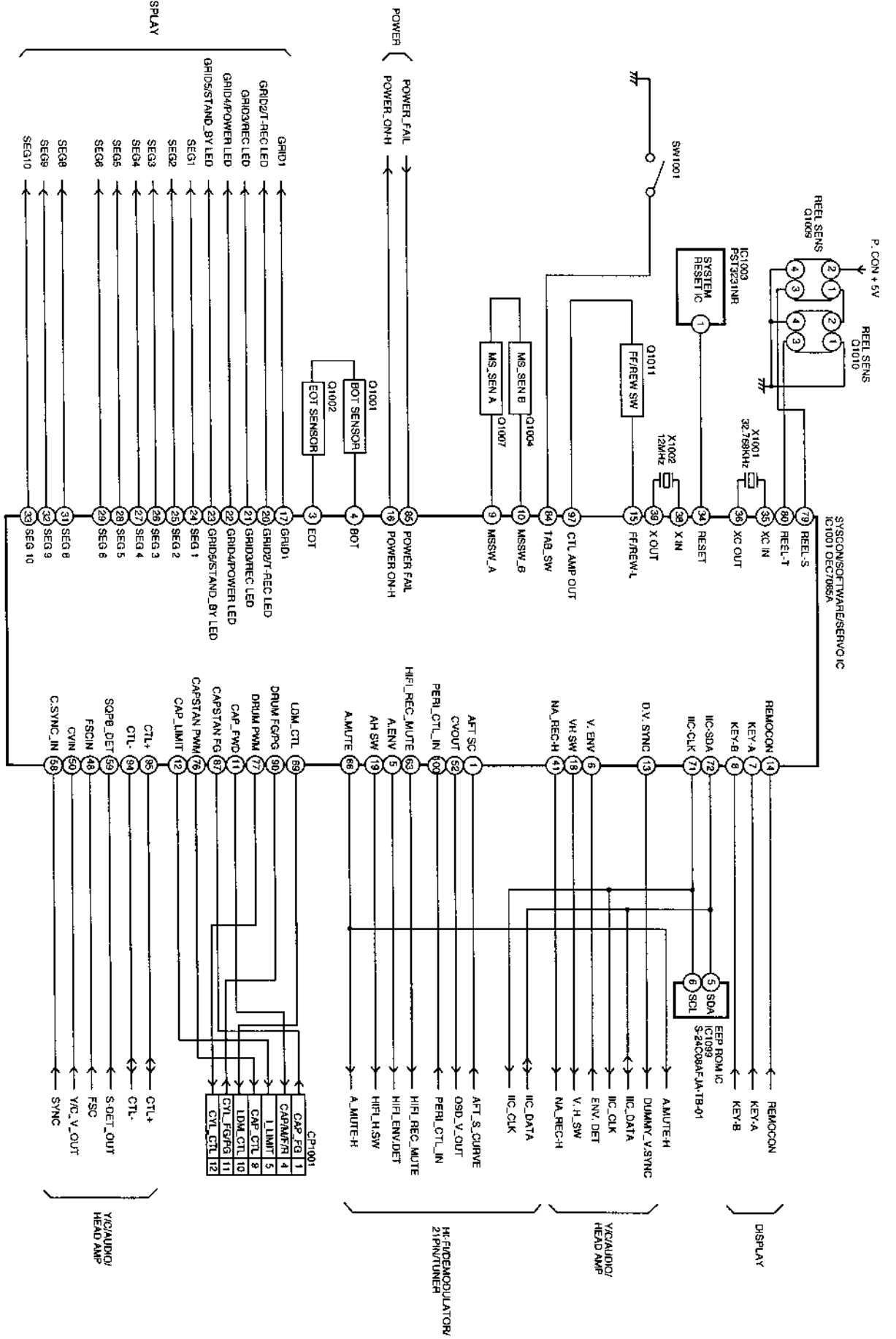
2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



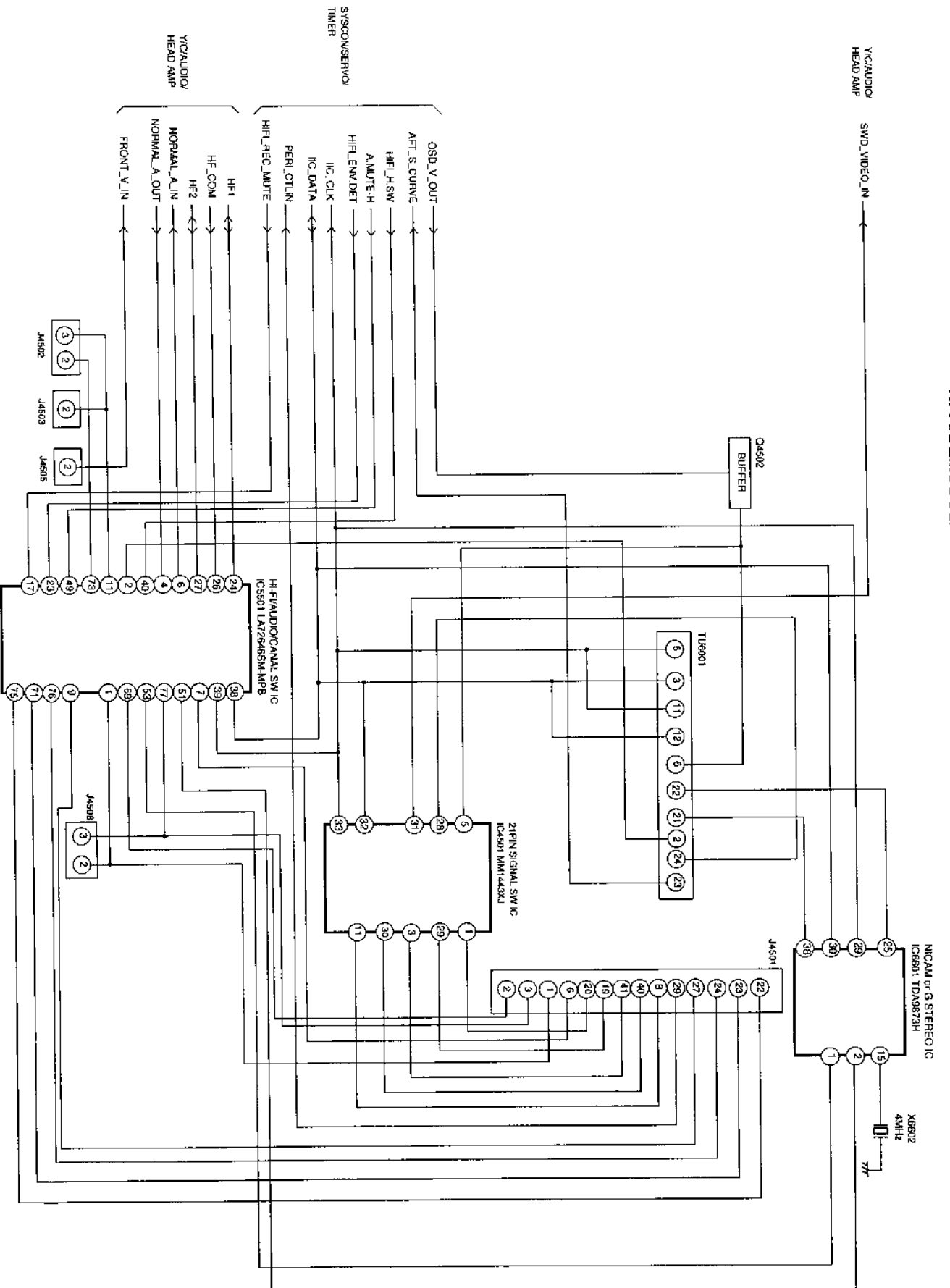
Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM



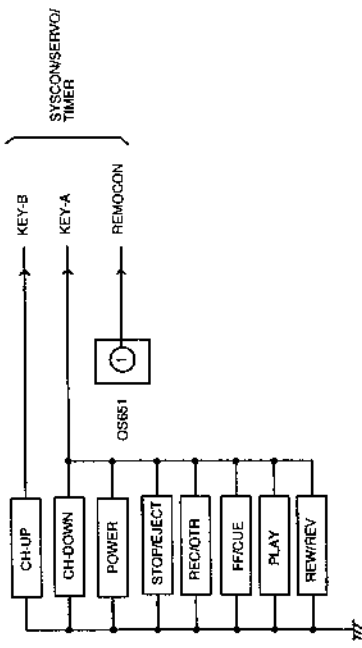
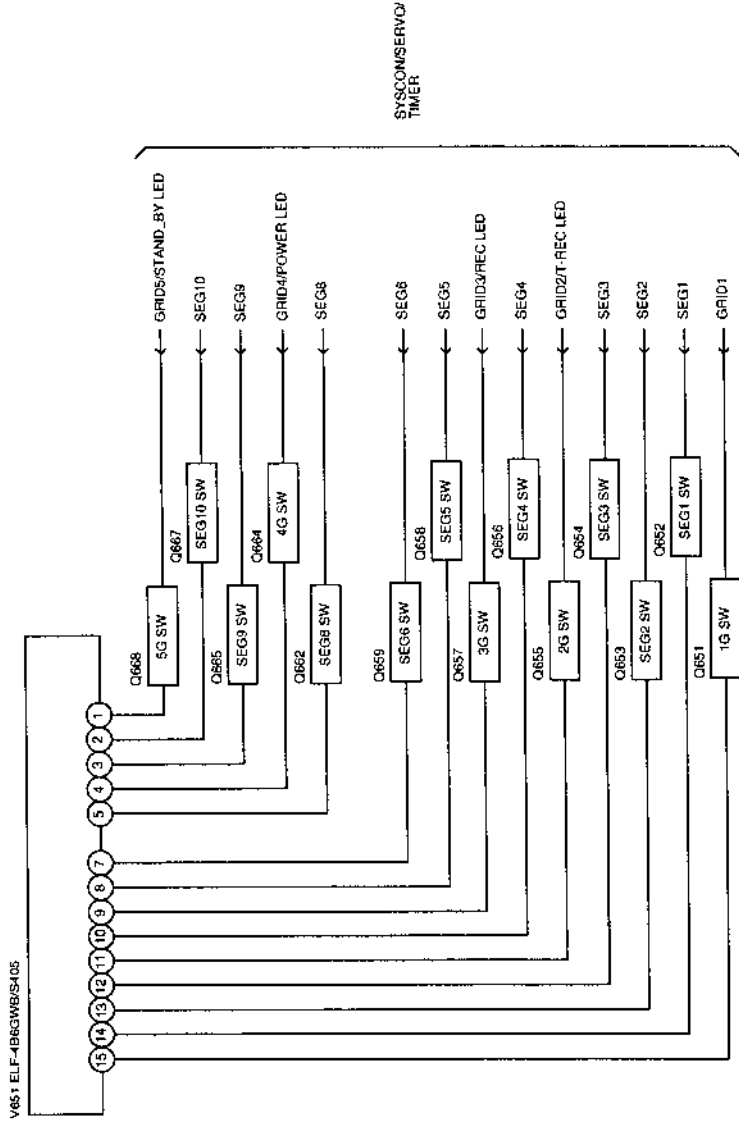
SYSTEM CONTROL/SERVOTIMER BLOCK DIAGRAM



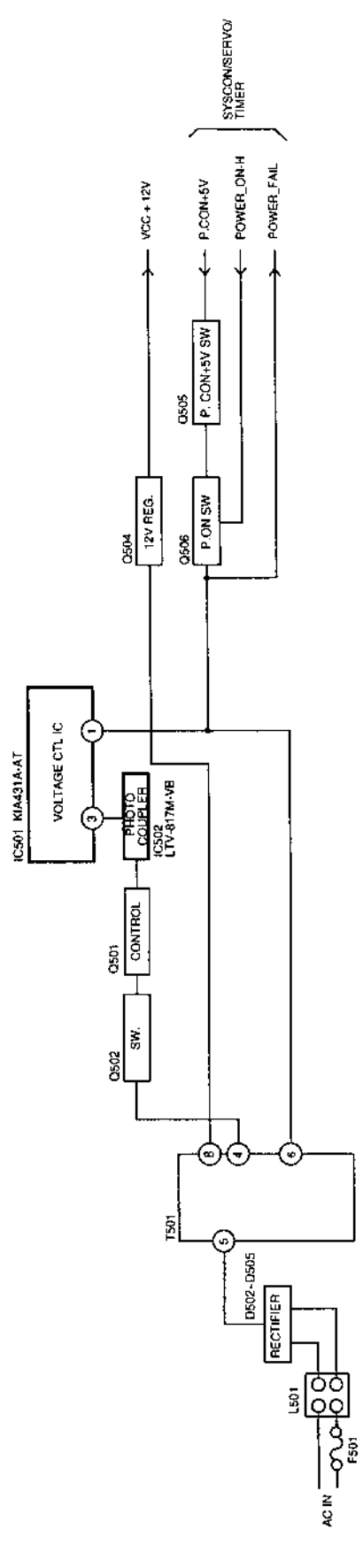
HI-FI/DEMODULATOR/21PIN/TUNER BLOCK DIAGRAM



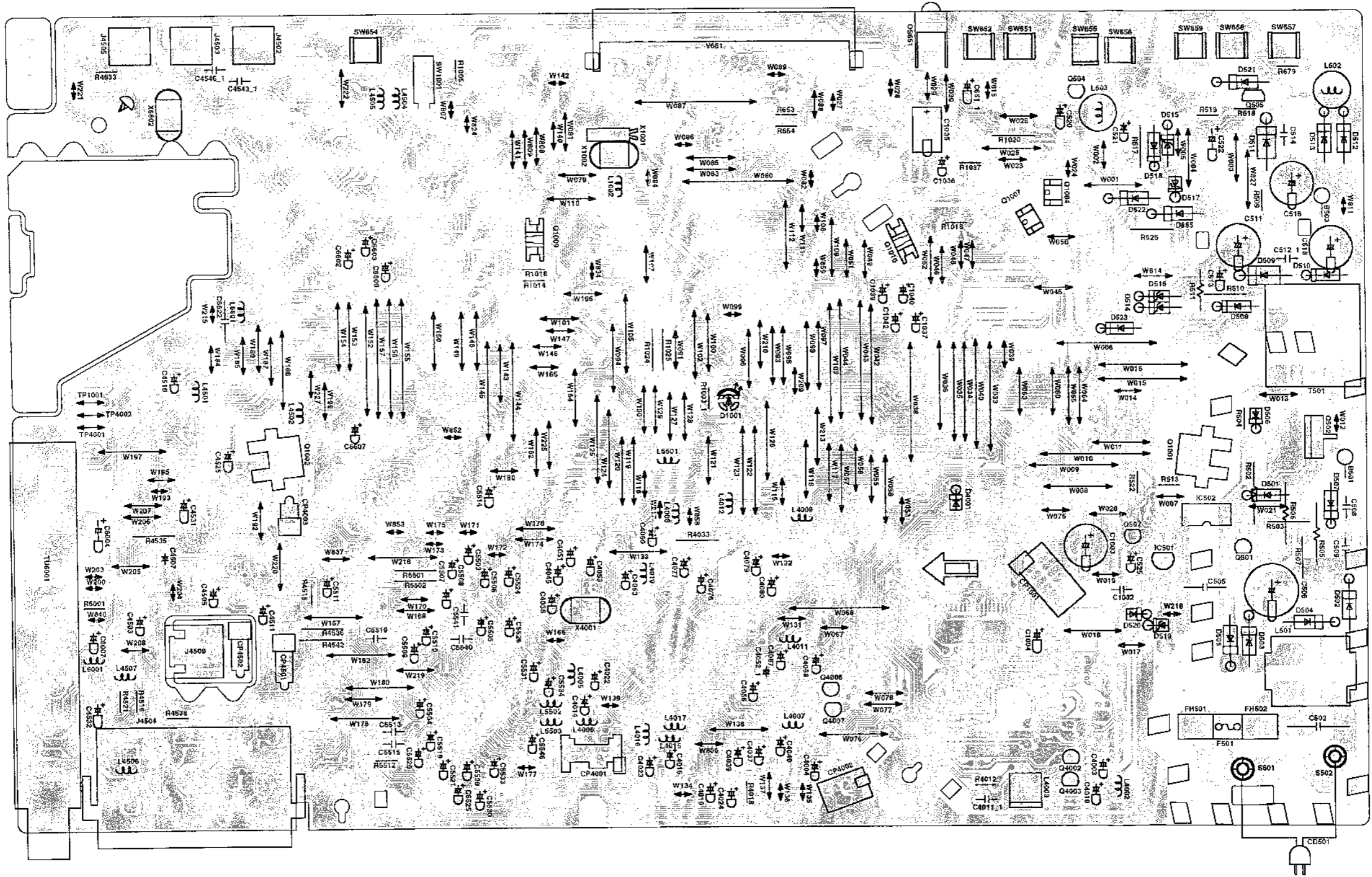
DISPLAY BLOCK DIAGRAM



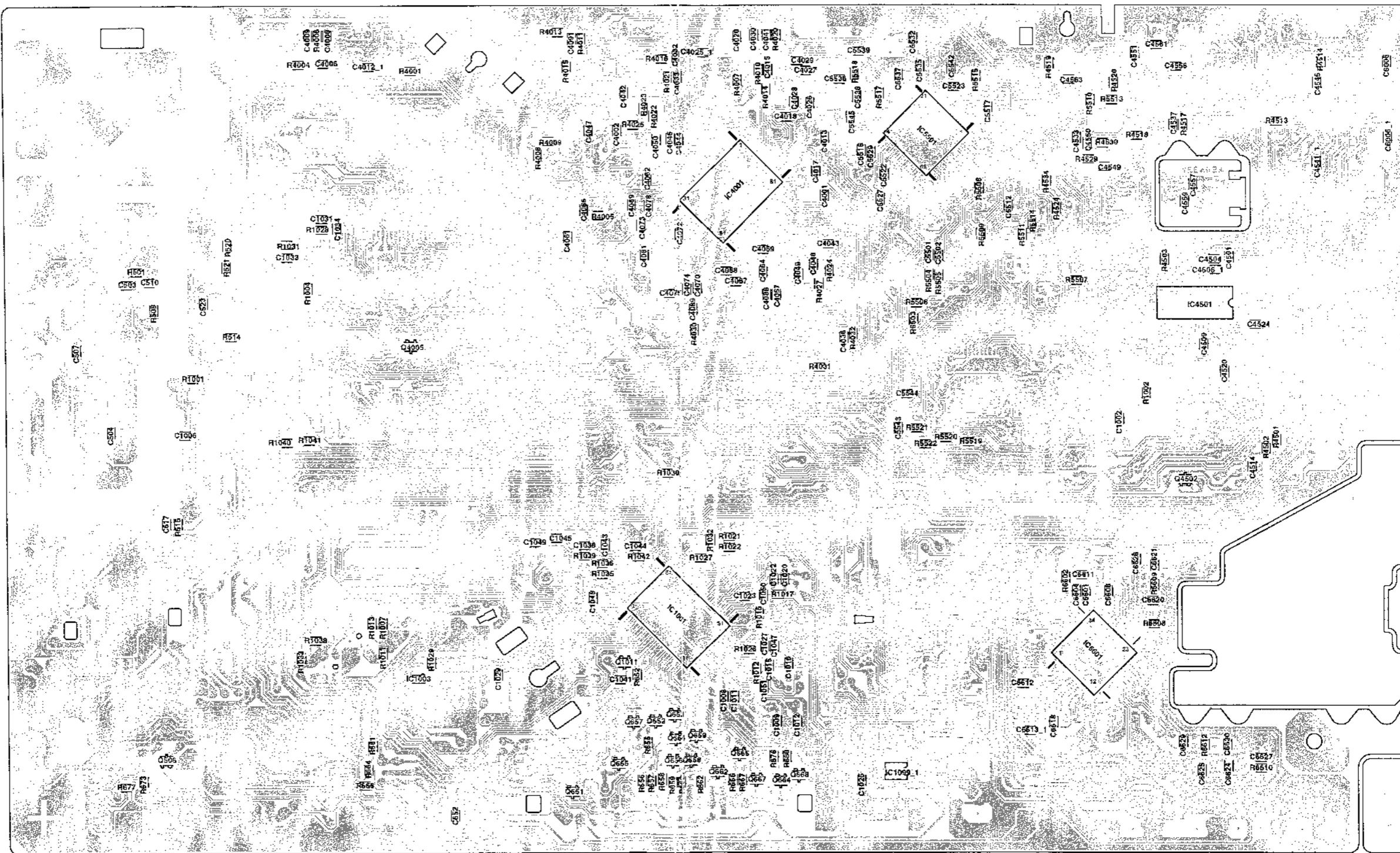
POWER BLOCK DIAGRAM



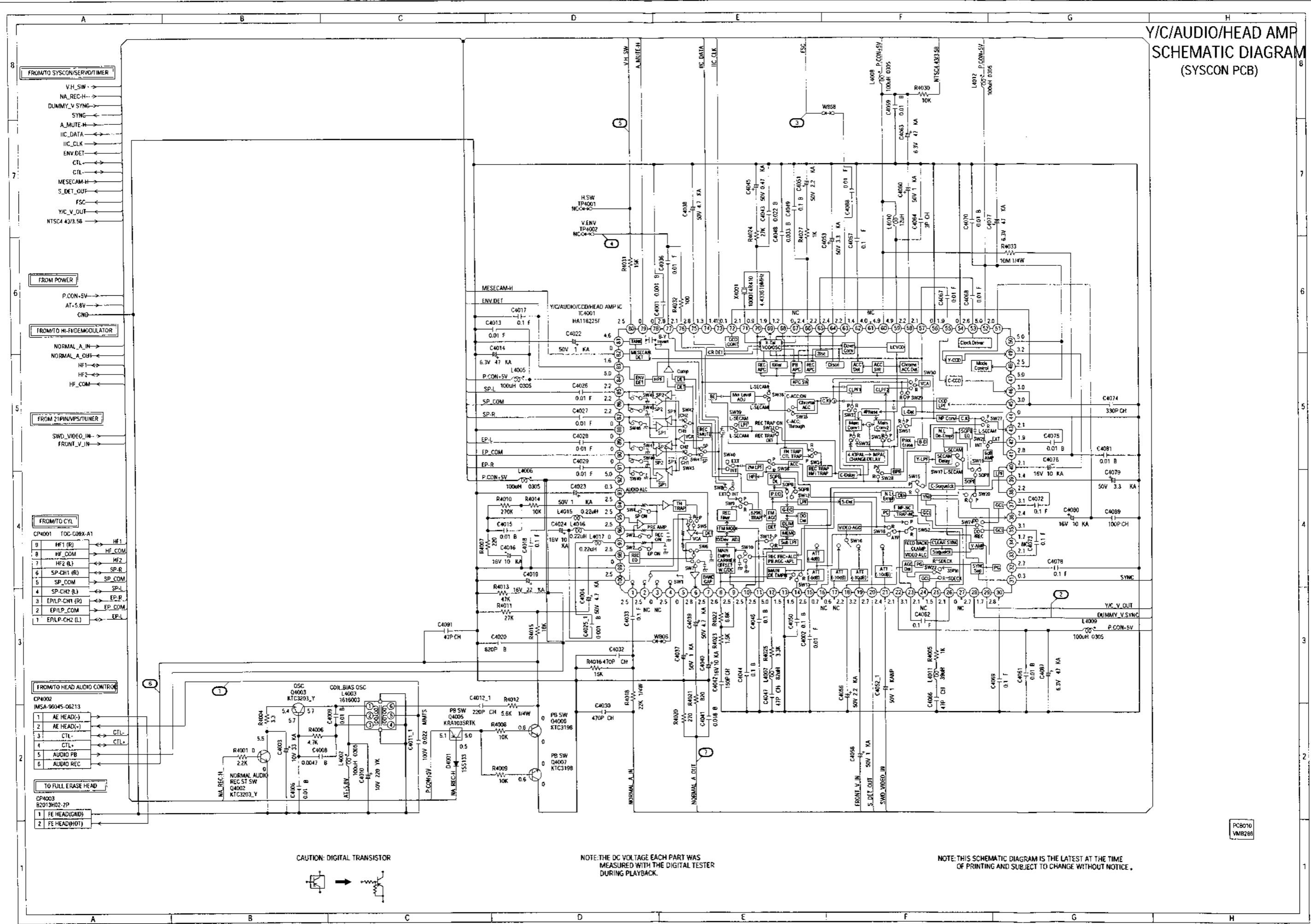
PRINTED CIRCUIT BOARDS
SYSCON/AUDIO (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
SYSCON/AUDIO (CHIP MOUNTED PARTS)
SOLDER SIDE



Y/C/AUDIO/HEAD AMP
SCHEMATIC DIAGRAM
(SYSCON PCB)

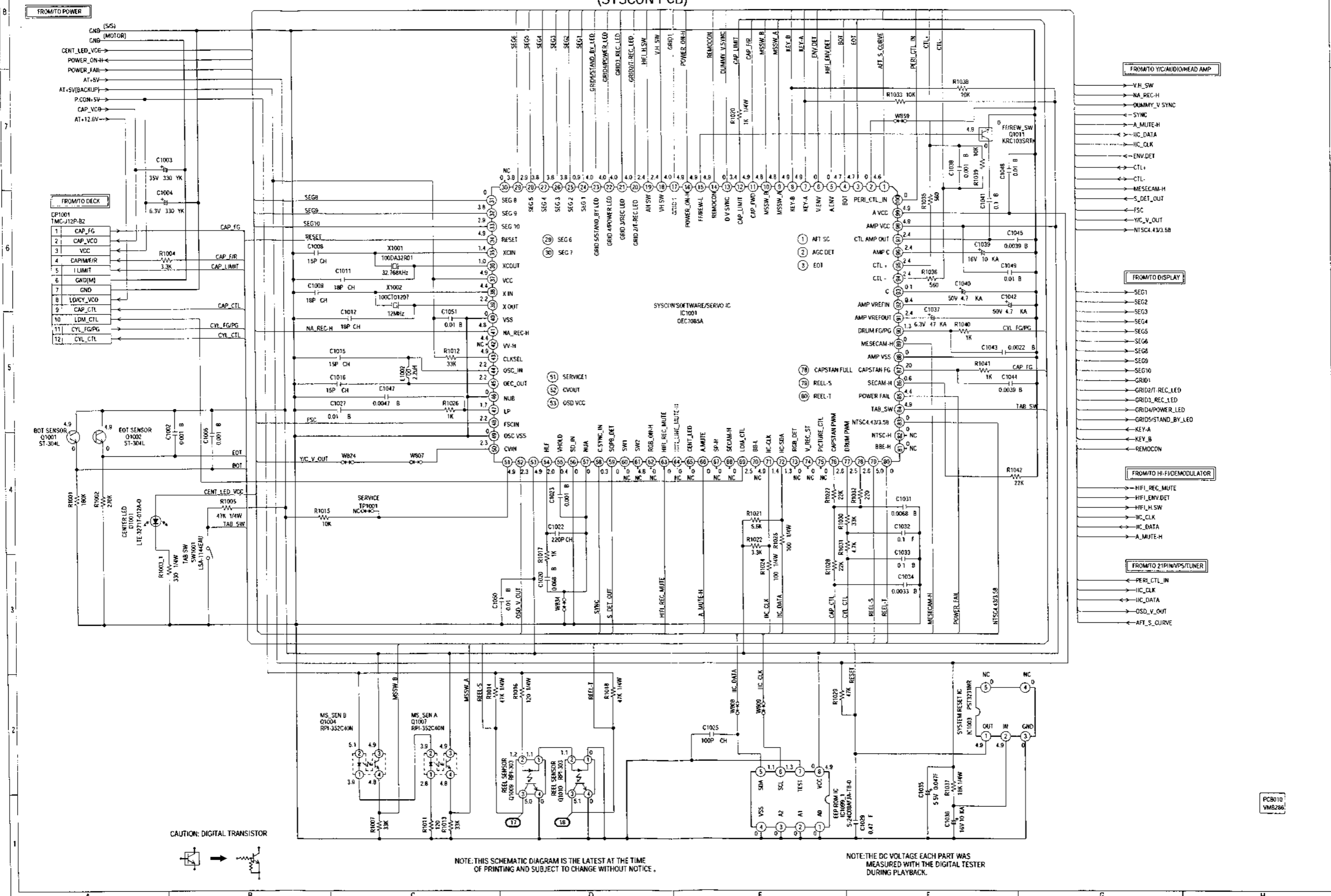


CAUTION: DIGITAL TRANSISTOR

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

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

SYSTEM CONTROL/SERVO/TIMER SCHEMATIC DIAGRAM (SYSCON PCB)



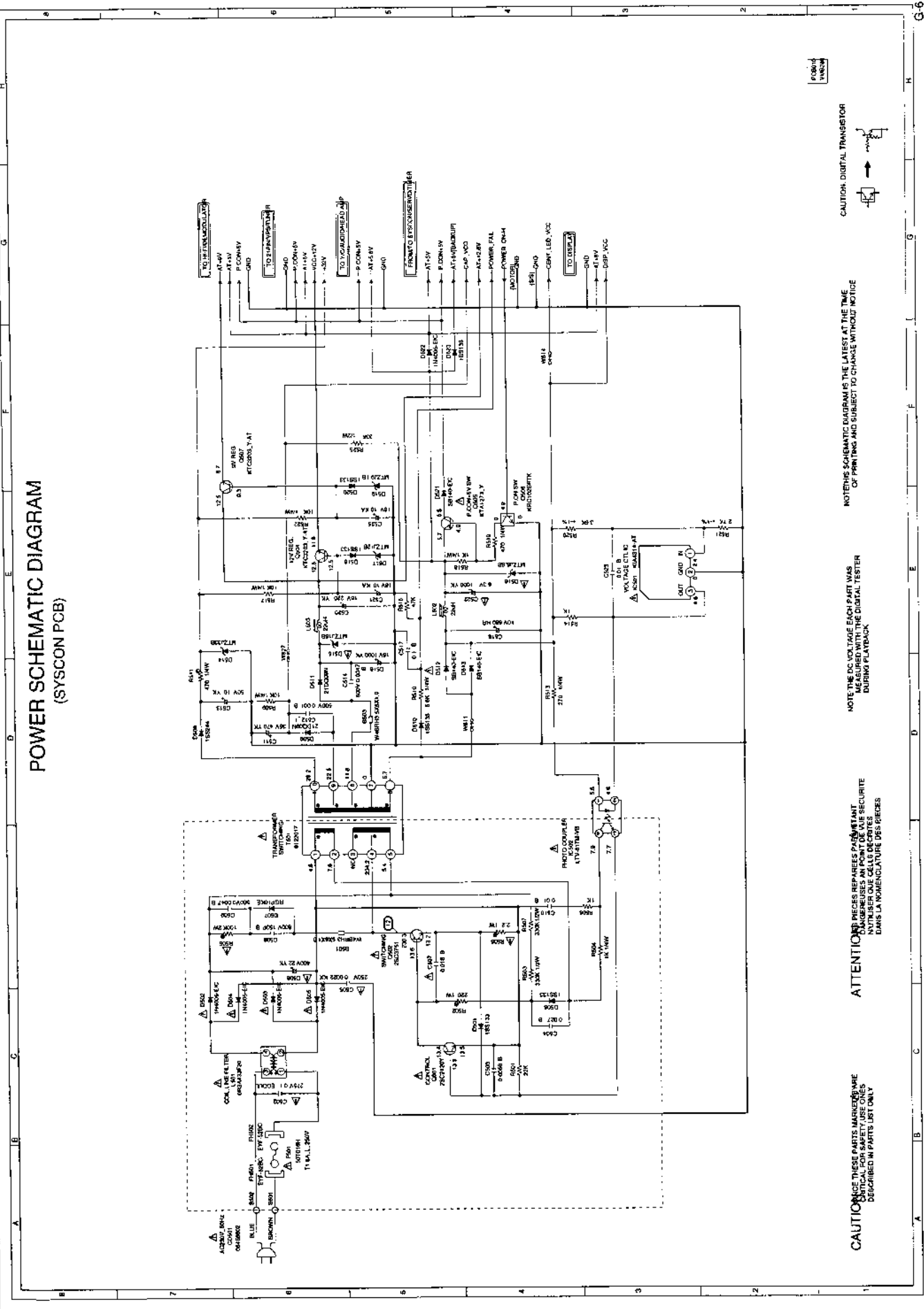
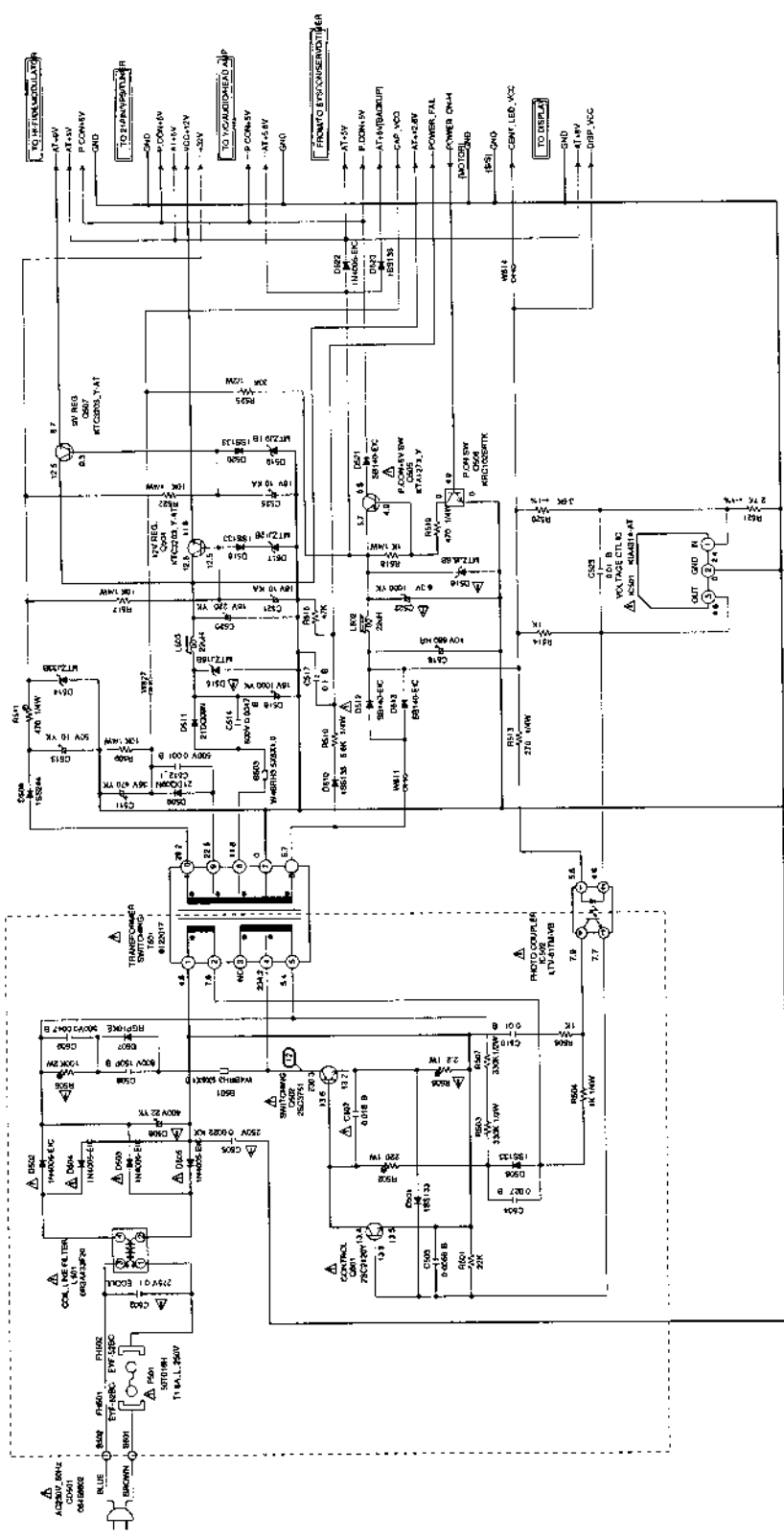
CAUTION: DIGITAL TRANSISTOR

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

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

PCB010
VMB286

POWER SCHEMATIC DIAGRAM (SYSCON PCB)



CAUTION: DIGITAL TRANSISTOR

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

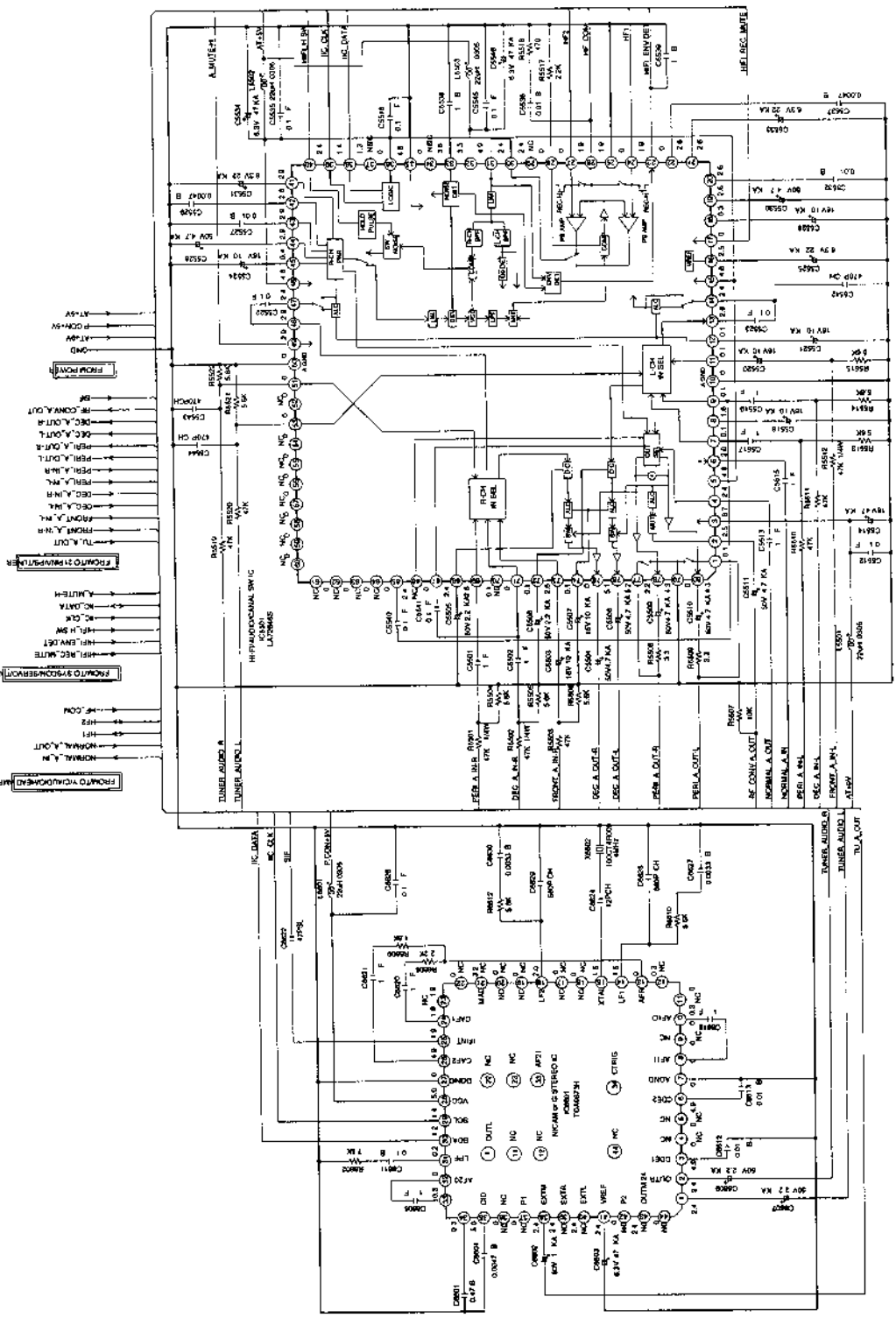
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK

ATTENTION: LES PIÈCES RÉPARÉES PAR LA MAINTENANCE SONT LES SEULES QUI SONT GARANTIES. VÉRIFIER LA NOMÉNCLATURE DES PIÈCES DANS LA NOMÉNCLATURE DES PIÈCES

CAUTION: THESE PARTS MARKED WITH THIS SYMBOL ARE THE ONLY PARTS DESCRIBED IN PARTS LIST ONLY

HI-F/DEMODULATOR SCHEMATIC DIAGRAM

(SYSCON PCB)



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

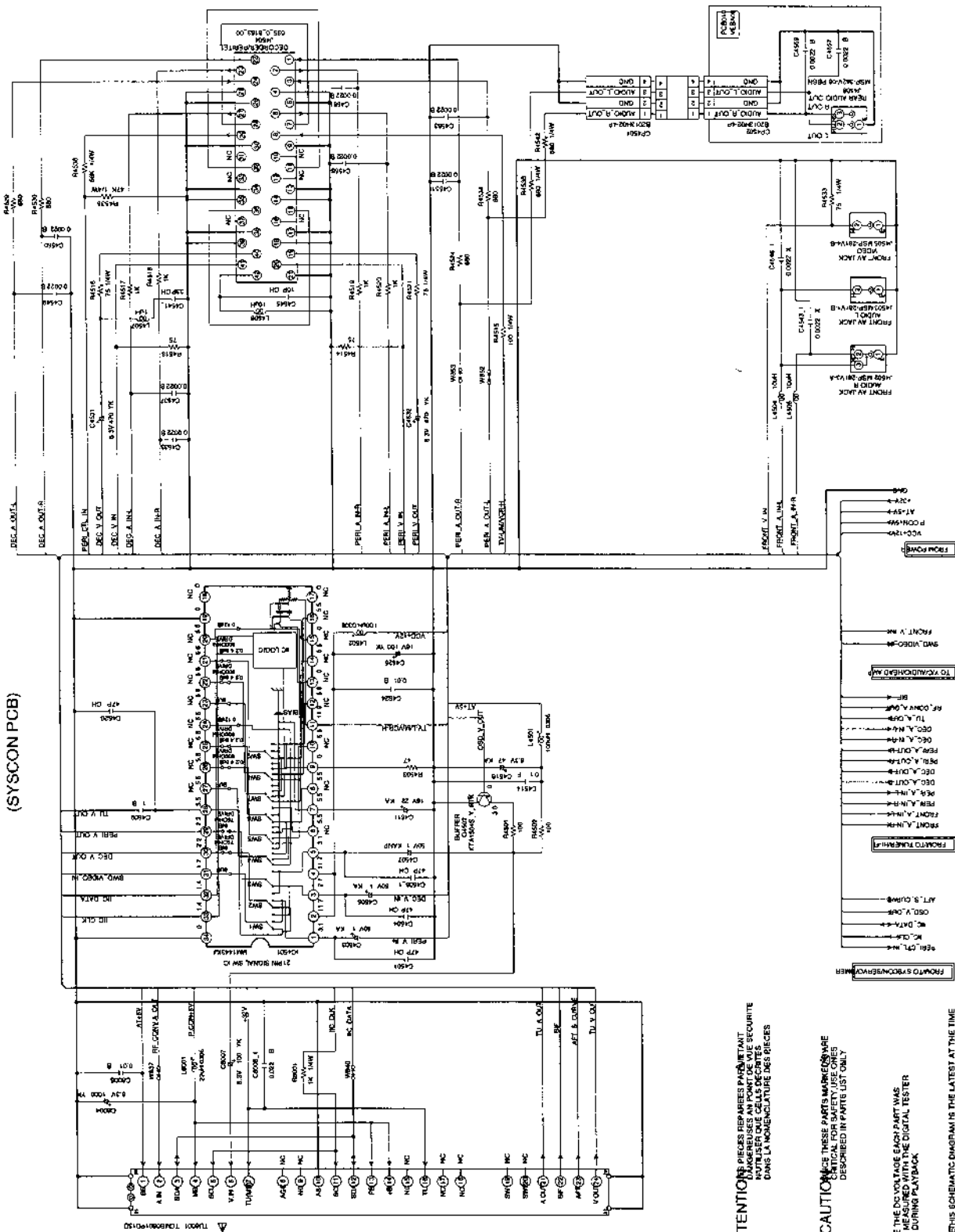
NOTE THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLATING.

PCB 001
VARIABLE

A B C D E G-9 G-10

21PIN/VPS/TUNER SCHEMATIC DIAGRAM (SYSCON PCB)

(SYSCON PCB)



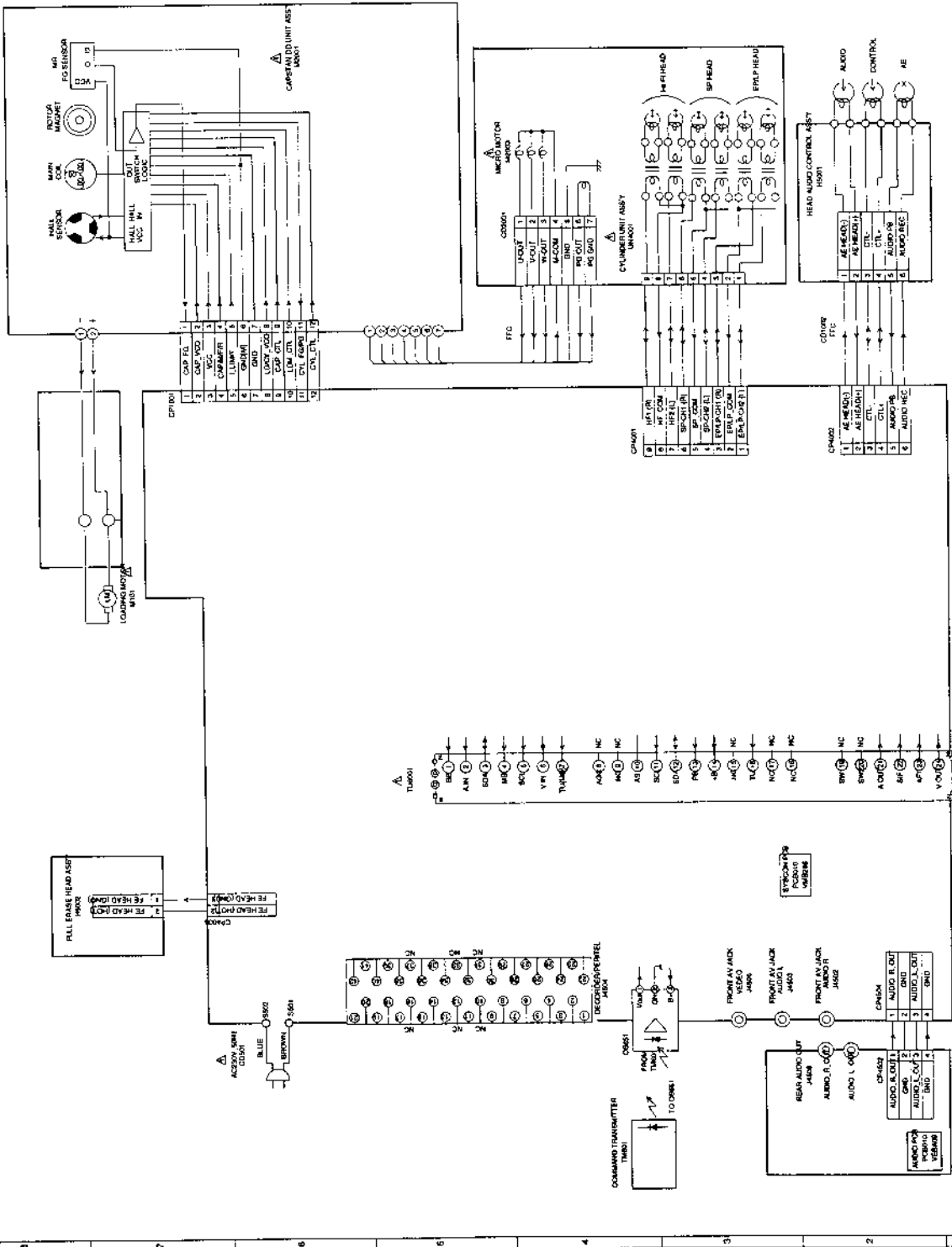
ATTENTION VEZ VUS REVERSER CHAQUE PART
 LES DIMENSIONS ANNONCEES AN PROPOS DE LA SECURITE
 N'UTILISER QUE LES CELLES DECRIENTES
 DANS LA NOMENCLATURE DES PIECES

CAUTION THESE PARTS ARE NOT
 IDENTICAL FOR SAFETY USE ONES
 DESCRIBED IN PARTS LIST ONLY

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

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

INTERCONNECTION DIAGRAM



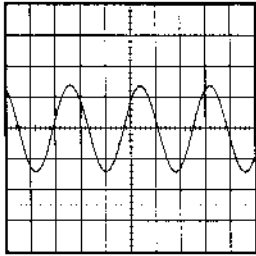
NOTES: INTERCONNECTION DIAGRAM IS THE LATEST REVISION
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

ATTENTION: PIÈCES RÉPARÉES PARMIANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLES DÉCRITES
DANS LA NOMENCLATURE DES PIÈCES

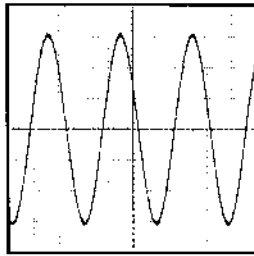
CAUTION: THESE PARTS ARE CRITICAL TO SAFETY. USE ONLY
THOSE DESCRIBED IN PARTS LIST ONLY

WAVEFORMS

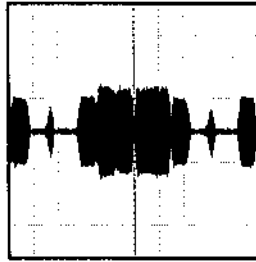
Y/C/AUDIO/HEAD AMP



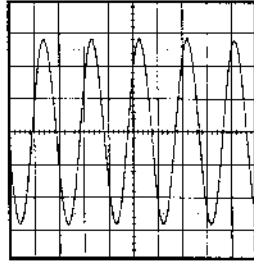
① REC
20V 5 μ s/div



⑥ REC 10V 5 μ s/div

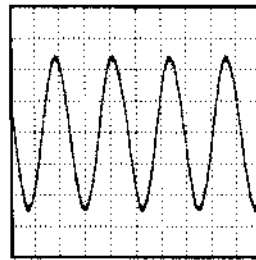


② PB
200mV 10 μ s/div

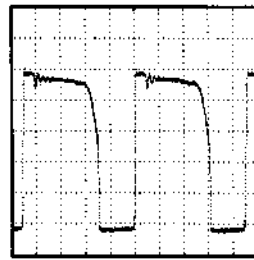


⑦ REC, PB
200mV 0.5ms/div

POWER

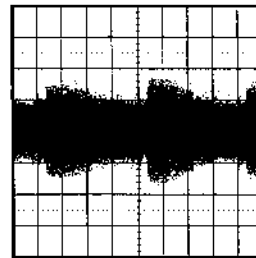


③ REC
100mV 100ms/div

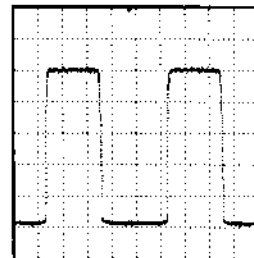


⑫ PB
50V 2 μ s/div

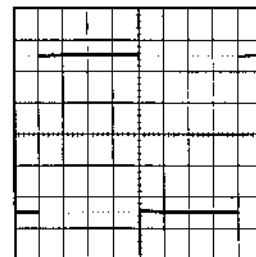
SYSCON/SERVO/TIMER



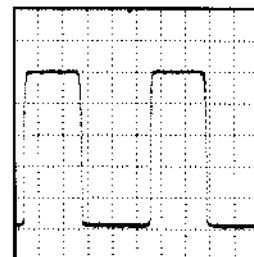
④ PB
100mV 5ms/div



⑰ PB
1V 200ms/div



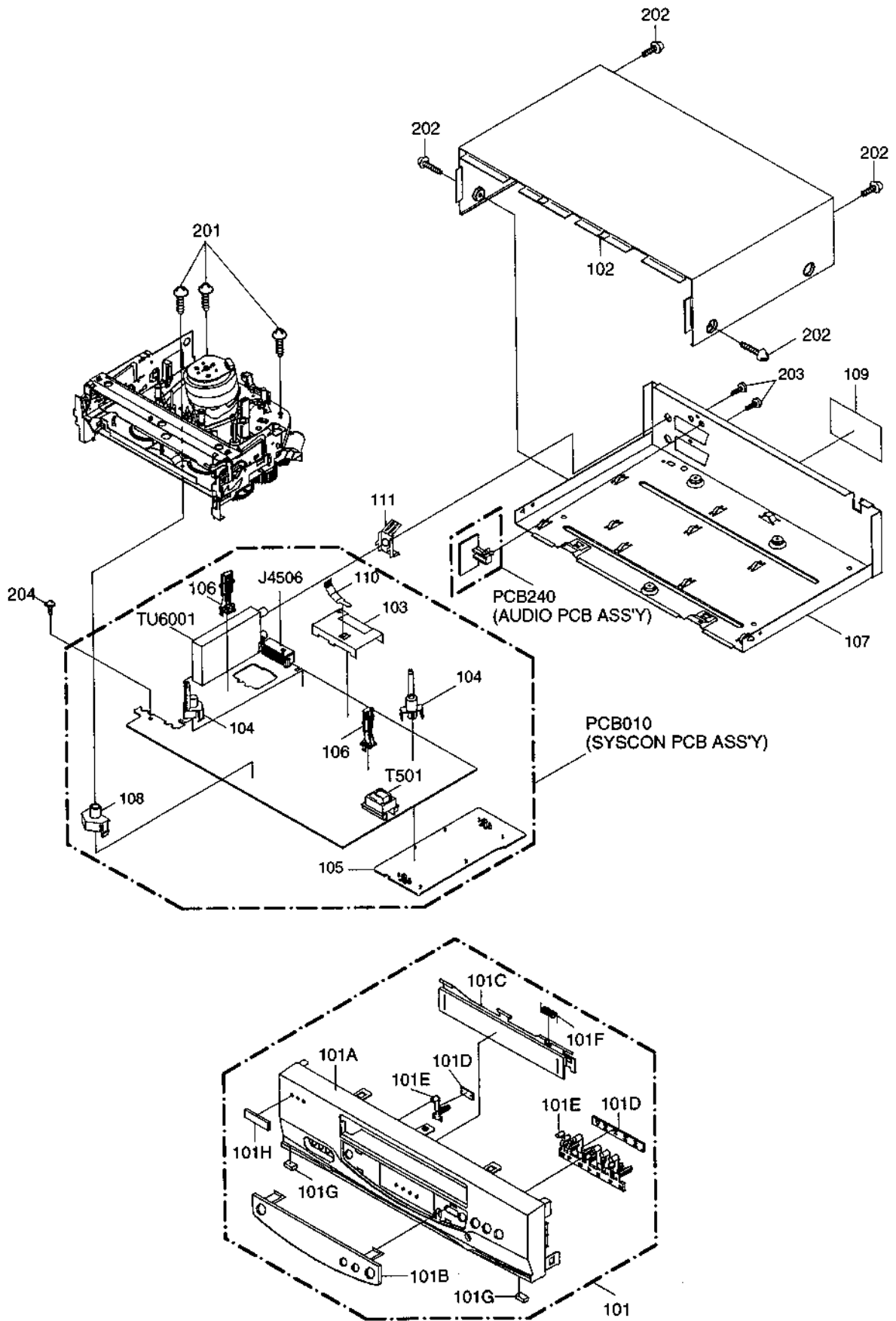
⑤ REC, PB
1V 5ms/div



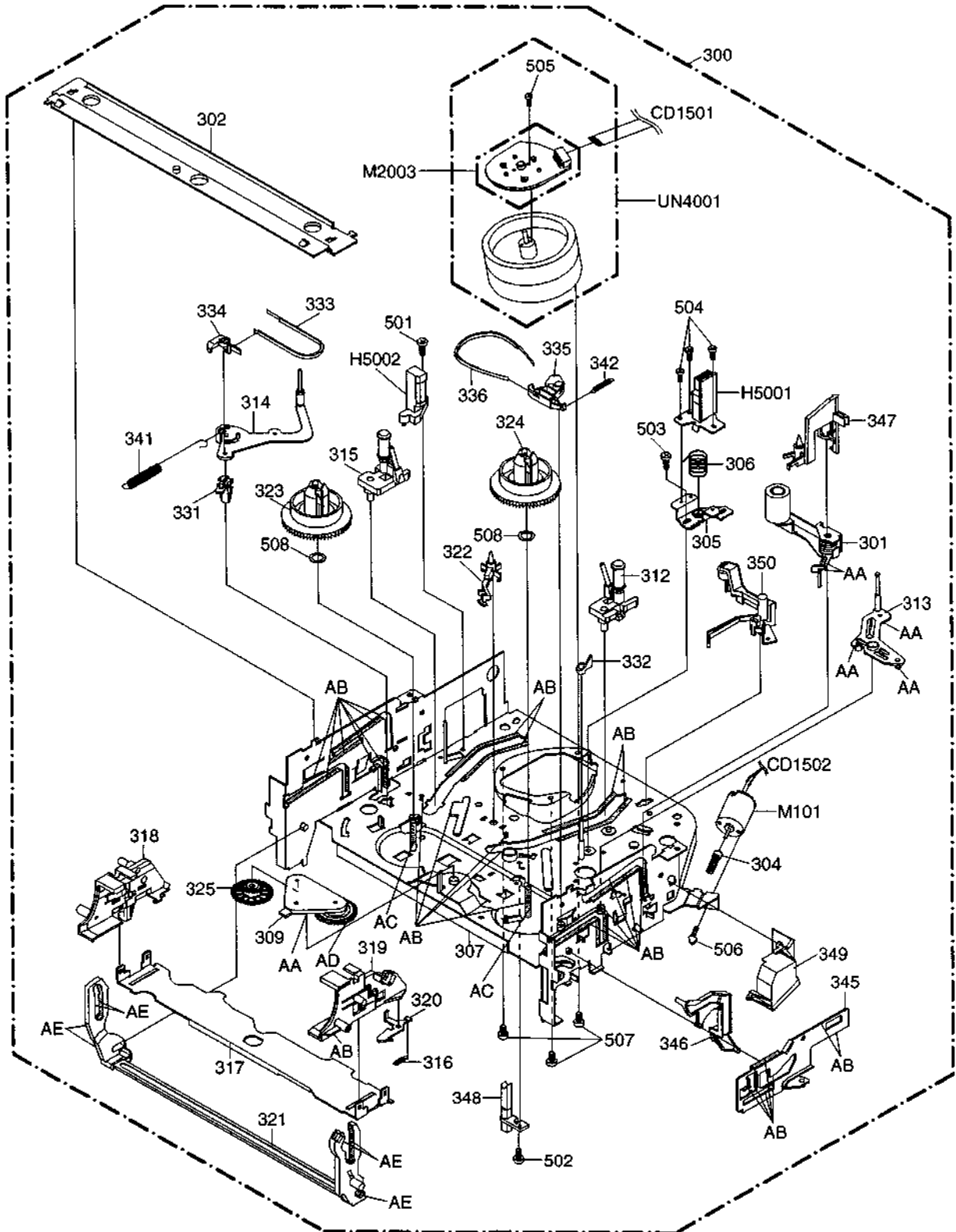
⑱ PB
1V 200ms/div

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

MECHANICAL EXPLODED VIEW



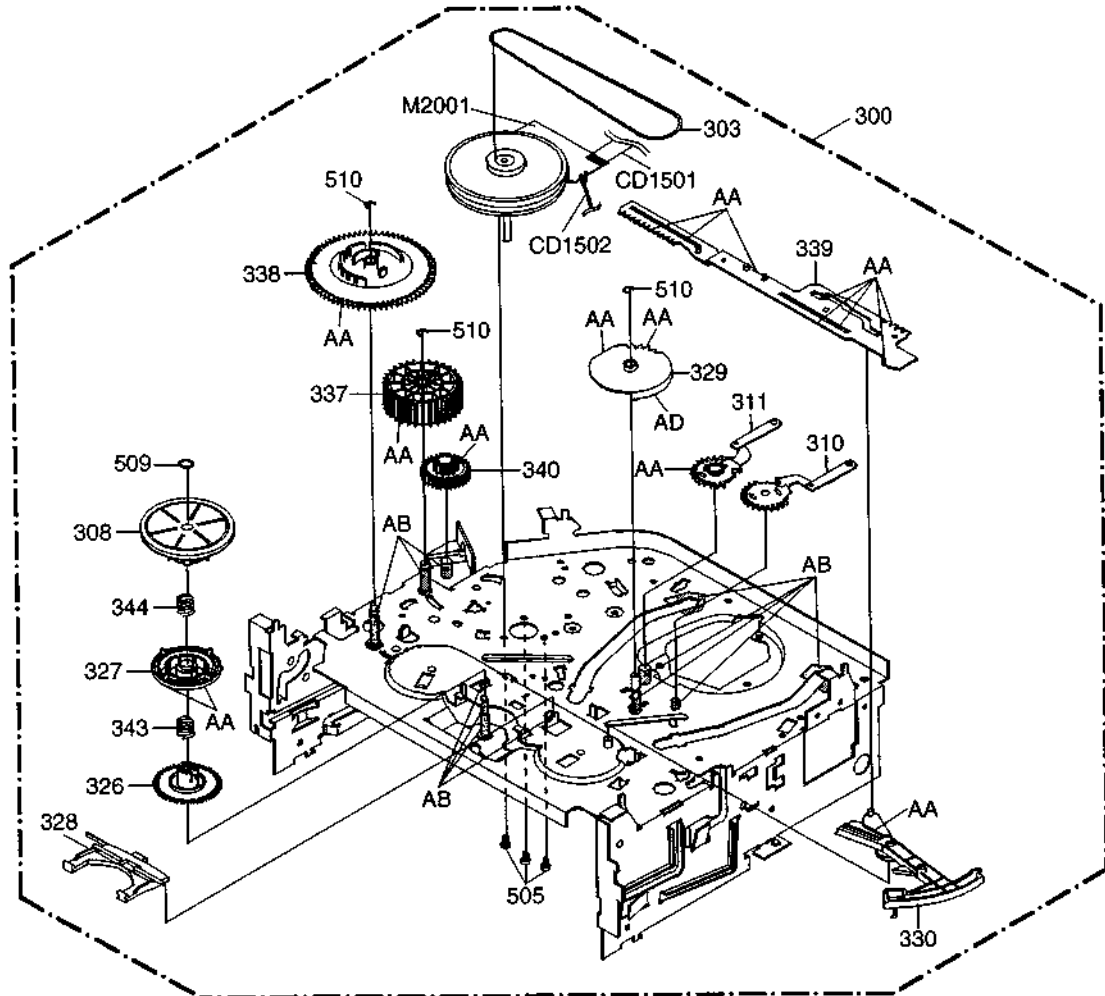
CHASSIS EXPLODED VIEW (TOP VIEW)



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

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

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
101	A4G231D720K	CABINET,FRONT ASSY		
101A	701WPJB483	CABINET,FRONT		
101B	711WPDA410	PLATE,DISPLAY		
101C	712WPJB374	FLAP		
101D	735WPAA362	BUTTON,HOLDER		
101E	735WPBA297	BUTTON,FRAME		
101F	743WKA0039	SPRING,FLAP		
101G	800WFA0045	CUSHION,LEG		
101H	711WPC0005	BADGE,BRAND		
102	702WSB0072	CABINET,TOP(VA)		
103	752WSA0230	SHIELD,CASE HEAD AMP		
104	701WPA0717	HOLDER,DECK		
105	755WPA0024	PLATE,COVER POWER		
106	850P700038	HOLDER,END SENSOR		
107	702WSAA062	PLATE,BOTTOM		
108	701WPA0686	HOLDER,DECK		
109	722202A691	SHEET,RATING		
110	753WUAA006	SPRING,EARTH HEAD AMP		
111	753WUA0057	SPRING,EARTH TUNER		
201	8109130B94	SCREW,TAP TITE(B)R	PAN	3x29
202	8109230B01	SCREW,TAP TITE(B)		3x8
203	8110230B04	SCREW,TAP TITE(P)	BIND	3x8
204	8109230704	SCREW,TAP TITE(B)R	BIND	3x7
---	791UHA0014	GIFT,SHEET		
---	792UCA0004	PULP,PACKAGE		
---	793UCDB118	GIFT BOX		
---	JB5X0300	POLYBAG,INSTRUCTION		
---	J4E00129	INFORMATION SHEET		
---	J4G23101A	INSTRUCTION BOOK		
---	J4G23107A	QUICK SET-UP SHEET		
---	A4G231B975	INSTRUCTION BOOK KIT		

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
300	A4G210B420A	DECK ASSY A4G210B420A	501	8107226804	SCREW,TAP TITE(S) BIND 2.6x8
301	85OA400234	PINCH ROLLER BLOCK	502	8107226604	SCREW,TAP TITE(S) BIND 2.6x6
302	85OP900746	BRACKET, TOP 3V	503	8107226404	SCREW,TAP TITE(S) BIND 2.6x4
303	85OP200290	BELT,CAPSTAN (S)	504	8102120604	SCREW,PAN M2x6
304	85OP600581	WORM	505	8109126604	SCREW,TAP TITE(B) PAN 2.6x6
305	85OP500083	BASE,AC HEAD	506	810A130404	SCREW/WASHER(A) M3x4
306	85OP800324	SPRING,AC HEAD	507	810A126504	SCREW/WASHER(A) M2.6x5
307	85OA000459	MAIN CHASSIS ASS'Y	508	82Q264713N	POLYSLIDER WASHER 2.6x4.7xT0.13
308	85OA200089	CLUTCH ASS'Y	509	82P184505N	POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5
309	85OA200090	ARM IDLER ASS'Y	510	83ETW30000	E-RING 3
310	85OA300065	LOADING ARM S UNIT	CD1501	122H071603	CORD JUMPER SMCD-7X151
311	85OA300066	LOADING ARM T UNIT	CD1502	122Y021902	CORD JUMPER 2Y021902
312	85OA400223	INCLINED BASE T UNIT 3S	H5001	1523Q91003	HEAD (AUDIO CONTROL) VTR-1X2RPE22-756
313	85OA400232	P5 ARM ASS'Y 2	H5002	1543Q02014	HEAD (FULL ERASE) VTR-1X2ERS11-154
314	85OA400235	TENSION ARM ASS'Y 2	△ M101	1596S98001	MOTOR (LOADING) MDB2B66
315	85OA400231	INCLINED BASE S UNIT	△ M2001	1510S98036	CAPSTAN OD UNIT F2QVB08
316	85OP800358	SPRING,LOCKER	M2003	1589S11017	MICRO MOTOR I2OAL05
317	85OP900736	CASS,HOLDER	M2003	1589S11015	MICRO MOTOR I2OAL01
318	85OP900748	CASS,SIDE L	△ UN4001	A2A787D500	CYLINDER UNIT ASS'Y A2A787D500
319	85OP900749	CASS,SIDE R			
320	85OP900739	LOCKER,R			
321	85OA900228	LINK UNIT			
322	85OP000496	POST,CASS GUIDE			
323	85OP200316	REEL,S (S)			
324	85OP200317	REEL,T (S)			
325	85OP200308	GEAR, IDLER			
326	85OP200311	GEAR,CLUTCH			
327	85OP200312	GEAR,COUPLING			
328	85OP200313	LEVER,CLUTCH			
329	85OP300194	GEAR,MAIN LOADING			
330	85OP400490	LEVER,TENSION			
331	85OP400492	HOLDER,TENSION			
332	85OP400520	CAP,P4			
333	85OP400542	BAND,TENSION			
334	85OP400533	CONNECT,TENSION			
335	85OP600573	ARM,BRAKE T			
336	85OP600584	BAND,BRAKE T			
337	85OP600577	CAM,PINCH ROLLER			
338	85OP600578	CAM,MAIN			
339	85OP600579	ROD,MAIN			
340	85OP600582	GEAR,JOINT			
341	85OP800322	SPRING,TENSION			
342	85OP800360	SPRING,BRAKE T			
343	85OP800355	SPRING,COUPLING			
344	85OP800356	SPRING,RING			
345	85OP900750	LEVER,LINK 2			
346	85OP900744	LEVER,FLAP			
347	85OP900745	CASS,OPENER			
348	85OP700035	REFLECTOR,LED			
349	85OP700038	COVER,BOT			
350	85OA500026	AHC ASS'Y			

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
RESISTORS			TRANSISTORS		
R502	R3X1B1221J	R,METAL OXIDE 220 OHM 1W	Q4005	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK
R505	R3X28A104J	R,METAL OXIDE 100K OHM 2W	Q4006	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
△ R506	R3X1B12R2J	R,METAL OXIDE 2.2 OHM 1W	Q4007	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)
R511	R65584471J	R,FUSE 470 OHM 1/4W	Q4502	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK
CAPACITORS			COILS & TRANSFORMERS		
△ C502	P2122B104M	CMP 0.1 UF 275V ECQUL	△ L501	029T000083	COIL,LINE FILTER 0R3A433F20
△ C505	CD39E0MH3M	CC 0.0022UF 250V	L502	021W7A220K	COIL 22 UH
△ C506	E02LFH220M	CE 22 UF 400V	L503	021W7A220K	COIL 22 UH
△ C507	CS0YB04G4K	CC 0.018 UF 50V B	L1002	0216A62R2K	COIL 2.2 UH
△ C522	E02LT0102M	CE 1000 UF 6.3V	L4002	02167F101J	COIL 100 UH
DIODES			L4003	031616003R	COIL,BIAS OSC 1616003
D501	D1VT001330	DIODE,SILICON 1SS133T-77	L4005	02167F101J	COIL 100 UH
△ D502	D2WXN40050	DIODE SILICON 1N4005-EIC	L4006	02167F101J	COIL 100 UH
△ D503	D2WXN40050	DIODE SILICON 1N4005-EIC	L4007	0216A6820K	COIL 82 UH
△ D504	D2WXN40050	DIODE SILICON 1N4005-EIC	L4008	02167F101J	COIL 100 UH
△ D505	D2WXN40050	DIODE SILICON 1N4005-EIC	L4009	02167F101J	COIL 100 UH
D506	D1VT001330	DIODE,SILICON 1SS133T-77	L4010	0216A6120K	COIL 12 UH
D507	D2LTP10KE0	DIODE,RECTIFIER RGP10KE-G3	L4011	0216A6390K	COIL 39 UH
D508	D17T002440	DIODE SILICON 1SS244T-77	L4012	02167F101J	COIL 100 UH
D509	D28T21DQ9N	DIODE SCHOTTKY 21DQ09N-TA2B1	L4015	0216A6R22K	COIL 0.22 UH
D510	D1VT001330	DIODE,SILICON 1SS133T-77	L4016	0216A6R22K	COIL 0.22 UH
D511	D28T21DQ9N	DIODE SCHOTTKY 21DQ09N-TA2B1	L4017	0216A6R22K	COIL 0.22 UH
△ D512	D2WXS81400	DIODE SCHOTTKY SB140-EIC	L4501	02167F101J	COIL 100 UH
D513	D2WXS81400	DIODE SCHOTTKY SB140-EIC	L4502	02167F101J	COIL 100 UH
D514	D97U03301B	DIODE,ZENER MTZJ33B T-77	L4504	0216A6100J	COIL 10 UH
△ D515	D97U01601B	DIODE ZENER MTZJ16B T-77	L4505	0216A6100J	COIL 10 UH
△ D516	D97U06R81B	DIODE,ZENER MTZJ6.8B T-77	L4506	0216A6100J	COIL 10 UH
D517	D97U01201B	DIODE,ZENER MTZJ12B T-77	L4507	0216A61R0J	COIL 1 UH
D518	D1VT001330	DIODE,SILICON 1SS133T-77	L5501	02167F220J	COIL 22 UH
D519	D97U09R11B	DIODE,ZENER MTZJ9.1B T-77	L5502	02167F220J	COIL 22 UH
D520	D1VT001330	DIODE,SILICON 1SS133T-77	L5503	02167F220J	COIL 22 UH
D521	D2WXS81400	DIODE SCHOTTKY SB140-EIC	L6001	02167F220J	COIL 22 UH
D522	D2WXN40050	DIODE SILICON 1N4005-EIC	L6601	02167F220J	COIL 22 UH
D523	D1VT001330	DIODE,SILICON 1SS133T-77	△ T501	0481220174	TRANSFORMER,SWITCHING 8122017
D655	D2WXN40050	DIODE SILICON 1N4005-EIC	JACKS		
D1001	0010E00330	INFRARED LED LTE-3271T-012A-O	J4502	060J421023	RCA JACK MSP-281V3-A
D4001	D1VT001330	DIODE,SILICON 1SS133T-77	J4503	060J401080	RCA JACK MSP-281V1-B
ICs			J4504	063G000072	SOCKET,21PIN 035_0_8183_00
△ IC501	11KJ9A431A	IC KIA431A-AT	J4505	060J401079	RCA JACK MSP-281V4-B
△ IC502	0002E00610	PHOTO COUPLER LTV-817M-VB	J4508	060J411023	RCA JACK MSP-382V-08 PBSN
IC1001	I56F57085A	IC OEC7085A	SWITCHES		
IC1003	I9UF032310	IC PST3231NR	SW651	0504101T34	SWITCH,TACT EVQ21505R
IC1099	A4G231D015	IC S-24C08AFJA-TB-01	SW652	0504101T34	SWITCH,TACT EVQ21505R
IC4001	I04F38225F	IC HA118225F	SW654	0504101T34	SWITCH,TACT EVQ21505R
IC4501	I0UF014430	IC MM1443XJ	SW655	0504101T34	SWITCH,TACT EVQ21505R
IC5501	I03F7646SM	IC LA72846SM-MPB	SW656	0504101T34	SWITCH,TACT EVQ21505R
IC6601	I0KFA9873H	IC TDA9873H	SW657	0504101T34	SWITCH,TACT EVQ21505R
TRANSISTORS			SW658	0504101T34	SWITCH,TACT EVQ21505R
△ Q501	TC5T021204	TRANSISTOR,SILICON 2SC2120Y(TPE2)	SW659	0504101T34	SWITCH,TACT EVQ21505R
△ Q502	TC3U037510	TRANSISTOR SILICON 2SC3751	SW1001	0508S11001	SWITCH (LEAF) LSA-1144EAU
Q504	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT	P.C. BOARD ASSEMBLIES		
△ Q505	TAA010273Y	TRANSISTOR SILICON KTA1273_Y	PCB010	A4G239D010K	PCB ASSY VMB286A
Q506	TNAAC05003	COMPOUND TRANSISTOR KRC102SRTK	PCB240	A4G216D240K	PCB ASSY VEBA09A
Q507	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT	MISCELLANEOUS		
Q651	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	B501	024HT03564	CORE,BEADS W4BRH3.5X6X1.0
Q652	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	B503	024HT03564	CORE,BEADS W4BRH3.5X6X1.0
Q653	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	BT601	1412004013	BATTERY,MANGAN R03(AB)2PXGPI
Q654	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	△ CD501	1206458802	CORD AC BUSH 6458802
Q655	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	CD1002	122F061502	CORD JUMPER 2F061502
Q656	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	CD4501	WBL6012038	FLAT CABEL AWG26 4C BLACK 120MM
Q657	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	CD6002	06CDL02002	RF CABLE PAL FTZ COL02002
Q658	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	CP1001	06972C0010	CONNECTOR PCB SIDE TMC-J12P-B2
Q659	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	CP4001	0697290620	CONNECTOR PCB SIDE TOC-C09X-A1
Q662	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	CP4002	069J760019	CONNECTOR PCB SIDE MSA-9604S-06Z13
Q664	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	CP4003	067U002019	WIRE HOLDER B2013H02-2P
Q665	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	CP4501	067U004029	WIRE HOLDER B2013H02-4P
Q667	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	CP4502	067U004029	WIRE HOLDER B2013H02-4P
Q668	TAAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK	EL002	124120301A	EYE LET XRY20X30BD
Q1001	0000M00390	PHOTO TRANSISTOR ST-304L	△ F501	080NT1R604	FUSE 50T016H
Q1002	0000M00390	PHOTO TRANSISTOR ST-304L	FH501	06710T0006	HOLDER,FUSE EYF-52BC
Q1004	0002700680	PHOTO COUPLER RPI-352C40N	FH502	06710T0006	HOLDER,FUSE EYF-52BC
Q1007	0002700680	PHOTO COUPLER RPI-352C40N	OS651	077Q037001	REMOTE RECEIVER PIC-37043LO
Q1009	0002700690	PHOTO COUPLER RPI-303	TM601	076N0ED180	TRANSMITTER RC-ED180
Q1010	0002700690	PHOTO COUPLER RPI-303	△ TU6001	0162K01031	RF UNIT TCMB0601PD13D(H)
Q1011	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	V651	0040F94008	LED DISPLAY ELF-4B6GWB/S405
Q4002	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT	X1001	100DA32R01	CRYSTAL DT-26
Q4003	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT	X1002	100CT01207	CRYSTAL HC-49U-S

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
MISCELLANEOUS		
X4001	100DT4R410	CRYSTAL AT-49
X6602	100CT4R009	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

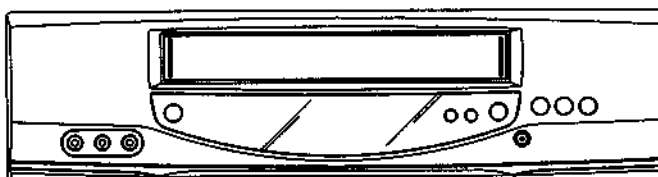
SPEC.NO.	M4G2-31D
O/R NO.	U334539

ORION

VH-2911 HiFi

SERVICE MANUAL

VIDEO CASSETTE RECORDER



**SUPPLEMENT
CHASSIS CODE A**

This SUPPLEMENT must be used together SERVICE MANUAL for VH-2911 HiFi Sl.
All other test and repair procedures are as shown in the ORIGINAL MANUAL.
Please file this SUPPLEMENT with the ORIGINAL VERSIONS.

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	VH-2911 HiFi SI		VH-2911 HiFi	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
TM601	076N0ED180	TRANSMITTER RC-ED180	076N0ED040	TRANSMITTER RC-ED040

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	VH-2911 HiFi SI		VH-2911 HiFi	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101	A4G231D720K	CABINET,FRONT ASS'Y	A4G205D720K	CABINET,FRONT ASS'Y
101A	701WPJB483	CABINET,FRONT	701WPJB469	CABINET,FRONT
101C	712WPJB374	FLAP	712WPJB373	FLAP
101E	735WPBA297	BUTTON,FRAME	735WPBA327	BUTTON,FRAME
102	702WSB0072	CABINET, TOP(VA)	702WSB0071	CABINET, TOP(VA)
109	722202A691	SHEET,RATING	722202A698	SHEET,RATING
---	793UCDB118	GIFT BOX	793UCDB137	GIFT BOX

SPEC. NO.	M4G2-05D
O/R NO.	U384511