Memorex®

MVR4046A

SERVICE MANUAL

VIDEO CASSETTE RECORDER

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. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

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

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

4. PERFORM A SAFETY CHECK AFTER SERVICING

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

HOW TO ORDER PARTS

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

CONTENTS

GENERAL SPECIFICATIONS

G-1.Outline of the Product

3 -Speed 1/2" Video Cassette Recorder

G-2.VCR Format

VHS Standard ☒NTSC ☐PAL ☐SECAM ☐PAL-M ☐PAL-N
☒VHS Hi-Fi Audio System

G-3.Video Recording System : Rotary,slant azimuth two head helical scan system
Luminance Component : FM recording
Chrominance Component: Low frequency converted direct recording

G-4.Broadcasting System

US System M

G-5.Color System ☒NTSC ☐PAL ☐SECAM or Monochrome

G-6.NTSC Playback(PAL60Hz) ☐Yes ☒No

G-7.MESECAM ☐Yes ☒No

G-8.Cassette Tape

☒VHS type video cassette tape Width 12.65mm (1/2 Inch)
☐VHS-C type video cassette tape Width 12.65mm (1/2 Inch)

G-9.Tape Speed

NTSC or PAL-M		PAL or SECAM	
☒SP	33.35 mm/sec	☐SP	23.39 mm/sec
☒LP	16.67 mm/sec	☐LP	11.69 mm/sec
☒SLP	11.12 mm/sec		

G-10.Recording/Playback Time

NTSC or PAL-M
☒at SP Mode Max. 210 min. (with T-210 cassette)
☒at LP Mode Max. 420 min. (with T-210 cassette)
☒at SLP Mode Max. 630 min. (with T-210 cassette)

PAL or SECAM
☐at SP Mode Max. 300 min. (with E-300 cassette)
☐at LP Mode Max. 600 min. (with E-300 cassette)

G-11.Deck

☐OVD-5 ☐OVD-6 ☒OVD-6S ☐OVD-6S(Vertical)

G-12.Rewind/Fast Forward Time(Approx.)

FF:1' 48" / Rew:1' 48" ☒(with T-120 cassette)
☐(with E-180 cassette)

G-13.Search Speed

☒SP 3 and 5 Times
☒LP 7 and 9 Times
☒SLP 9 and 15 Times

G-14.Slow Speed

☒SP 1/5 ~ 1/30 Times
☒LP 1/5 ~ 1/30 Times
☒SLP 1/5 ~ 1/30 Times

G-15.Frame Advance

☒SP 1/10 Times
☒LP 1/10 Times
☒SLP 1/10 Times

G-16.Antenna Input Impedance

VHF/UHF 75 ohm unbalanced

GENERAL SPECIFICATIONS

G-17.Tuner and Receiving Channel

Tuner: Contactless Electric Tuner

☐Oscar(W/O HYPER) ☐Oscar(W/ HYPER) ☐France CATV ☒Others

Channel coverage

2 ~ 69 , 4A , A-5 ~ A-1 , A ~ I , J ~ W , W+1 ~ W+84

Tuning System

☒Frequency syn. ☐Voltage syn. ☐Others

G-18.Preset Channel

No – channels

Allocation ch ~ ch

ch ~ ch

ch ~ ch

G-19.Intermediate Frequency

Picture(FP)	45.75 MHz	MHz	MHz
Sound (FS)	41.25 MHz	MHz	MHz
FP-FS	4.50 MHz	MHz	MHz

G-20.RF Converter Output

Channel 3 or 4 ch. ~

Level/Impedance 66 dBμ / 75 ohm

Sound Selector ☐Yes(☐G ☐I ☐K) ☒No

G-21.Stereo/Dual TV Sound

☒Yes(☐NICAM ☐GERMAN ☒USA ☐JAPAN) ☐No

G-22.Video Signal

Input Level 1 Vp-p / 75 ohm

Output Level 1 Vp-p / 75 ohm

S/N Ratio 50 dB (Weighted)

Horizontal Resolution at SP Mode 230 Lines

G-23.Audio Signal

Input Level	Microphone	-- dB / --	Kohm
	Line	-- dB / --	Kohm
	RCA	- 8 dB / 50	Kohm
Output Level	Line	-- dB / --	Kohm
	RCA	- 8 dB / 1	Kohm(0dB=0.775 Vrms)

S/N Ratio at SP Mode 42 dB (Weighted)

Harmonic Distortion : 1.5 % (1KHz)

Frequency Response :

at SP	Mode	100	Hz ~	10	KHz
at LP	Mode	100	Hz ~	6	KHz
at SLP	Mode	100	Hz ~	4	KHz

Hi-Fi Audio Signal ☐NONE

Depth Multiplex Recording Rotary, Slant Azimuth Two Head System Helical Scan System

Dynamic Range : More than 90 dB

Wow And Flutter : Less than 0.01 % Wrms

Channel Separation : More than 60 dB

Harmonic Distortion : Less than 1 %

G-24.Heads

Video	☒	4	Rotary Heads
FM Audio	☒	2	Rotary Heads
Audio / Control	☒	1	Stationary Head (☒Mono ☐Stereo(L,R))
Erase	☒	1	Full Track Erase

G-25.Motor: 3 Motors

☒Tape/Cassette Loading

☒Cylinder (Direct Drive)

☒Capstan (Direct Drive)

GENERAL SPECIFICATIONS

G-26.Power Source

120 V ☐AC 50Hz ☒AC 60Hz

G-27.Power Consumption: 11 W at AC 120 V 60 Hz

Stand by: 1.5 W at AC 120 V 60 Hz

Per Year: – kWh / Year

G-28.Dimensions(Approx.)

360 mm(W) 240 mm(D) 95 mm(H)

G-29.Weight(Approx.) Net : 3.2 Kg (7.1 lbs)

Gross : 3.8 Kg (8.4 lbs)

G-30.Cabinet Material

Cabinet Front: ☒PS ☐ABS ☐94HB ☒94V2 ☐94V0 ☒DECABROM ☐NON-DECA

G-31.Cassette Loading System: Front Cassette Loading System

G-32.Tape Counter: Linear Time Tape Counter

G-33.Protector: ☒Power Fuse ☐Dew Sensor

G-34.Regulation

Safety

☒UL	☒CSA	☐SAA	☐SI	☐CE	☐SEV
☐NEMKO	☐FEMKO	☐DEMKO	☐IEC65	☐CNS	☐SISIR
☐SEMKO	☐NZ	☐HOMOLO	☐SABS	☐GOST	
☐NOM	☐AS3159	☐DENTORI	☐UNE	☐NONE	

Radiation

☒FCC	☒DOC	☐PTT	☐CE	☐SEV
☐SABA	☐SI	☐NZ	☐HOMOLO	☐UNE
☐CNS	☐CISPR13	☐DENTORI	☐AS/NZS	☐NONE

G-35.Temperature

Operation 5 ºC ~ 40 ºC

Storage -20 ºC ~ 60 ºC

G-36.Operating Humidity : Less than 80 %RH

G-37.Clock and Timer

Built-in 1 Month 8 Events Programmable Timer

One Touch Recording : Max Time 5 Hours

G-38.Timer back up Time

More than 1/12 Minutes (at Power Off Mode)

G-39.Terminals

☒VHF/UHF Antenna Input/Output ☐Din Type ☒F-Type ☐France Type

☒Front Video Input<RCA ø8.3>

☒Front Audio Input<RCA ø8.3> x2

☐Rear Video Input<RCA ø8.3>

☐Rear Audio Input<RCA ø8.3>

☒Rear Video Output<RCA ø8.3>

☒Rear Audio Output<RCA ø8.3> x2

☐21 Pin

G-40.Indicator

☒Power (Red)	☐Play (_____)	☐ATR (_____)	☐Repeat (_____)	☐Tape In (_____)
☒TV/VCR (Red)	☒REC (Red)	☒T-REC (Red)		☐NONE

GENERAL SPECIFICATIONS

G-41.Display

Fluorescent Indicator ☐Yes ☒No

☐Clock/Counter,Channel,Timer Rec,OTR,Play,Rec,FF(Cue),Rew(Rev), Pause,ATR,Eject

☐WKL,Y.M.D,Start,End ☐AFT ☐Repeat

☐VCR ☐Memory ☐Index ☐VPS ☐PDC

☐SP ☐LP ☐SLP ☐AM ☐PM

On Screen Display

☒Menu

☒Clock Set(☒Calendar ☒12H ☐24H)

☒Timer Rec Set

☒Auto Repeat On/Off

☒CH Set ☒TV/CATV

☒Auto CH Memory

☒ADD/Delete

☒Sap On/Off

☒No Noise Back Ground

☒Language

☐G-CODE(or SHOWVIEW or PLUSCODE)No. Entry

☐NICAM M1/2,NICAM Off,Audio Output

☐Stereo,Audio Output,Bilingual

☒Stereo,Audio Output,SAP ☐Stereo,Audio Output

☒Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause

☒CH/AV ☒Clock ☐Memory ☐Pin Code

☒Tape Counter ☒Index ☐Hotel Lock ☒Tape Speed

☒Tracking ☒Hi-Fi ☒Tape In ☒Repeat

☐Dirty Head

G-42.OSD Language

☒Eng ☐Ger ☒Fre ☒Spa ☐Ita ☐Por ☐Jan

OSD Language Setting

☒Eng ☐Ger ☐Fre ☐Spa ☐Ita ☐Por ☐Jan

☐Not Applicable

G-43.Carton

Master Carton: ☐Need ☐No Need

Content: ____---____ Set

Material: ____---____ / ____---____ Corrugated Carton

Dimensions: ____---____mm(W) ____---____mm(D) ____---____mm(H)

Description of Origin ☐Yes ☐No

Gift Box ☐Need ☐No Need

Material ☐Single/Brown Corrugated Carton (☐ with Photo Label)

☒Single/White Corrugated Carton (☐ with Photo Label)

☐Single Full Color Carton W/Photo

Dimensions: __430__mm(W) __310__mm(D) __165__mm(H)

Design: As Per __BUYER__'s

Description of Origin: ☒Yes ☐No

Drop Test Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces

Height ☐25cm ☐31cm ☐46cm ☐62cm ☒80cm ☐100cm

Container Stuffing: __2,828__Sets / 40' container

GENERAL SPECIFICATIONS

G-44.Accessories

- ☒Owner's Manual (☒W/Guarantee Card) [English/French]
- ☒Remote Control Unit
- ☐Video Cassette Tape
- ☐Safety Tip
- ☐Guarantee Card
- ☐Warning Sheet ☐Quick Set-Up Sheet
- ☐Information Sheet
- ☒75 ohm Coaxial Cable (☒Single Shield ☐Double Shield)
- ☐300 ohm to 75 ohm VHF Antenna Adaptor
- ☐21pin Cable
- ☐Dew Caution Sheet
- ☐Battery (UM-4 x 2)
- ☐Toll Free Insert Sheet
- ☐Audio-Video Cord (RCA)
- ☐U/V Mixer
- ☐Car Cord

G-45.Other Features

- ☒Auto Head Cleaning
- ☒Auto Tracking
- ☐CH Auto Set-Up/Auto Clock
- ☐VIDEO PLUS+, SHOWVIEW, G-CODE
- ☒HQ (VHS Standard High Quality)
- ☒Auto Power On, Auto Play, Auto Rewind, Auto Eject, Auto Power Off
- ☐Premiere/ Canal+
- ☒Forward / Reverse Picture Search
- ☐One Touch Playback
- ☒CATV
- ☒Auto CH Memory
- ☐Just Clock Function
- ☐Kurupika Guide
- ☐Rental
- ☐Self Seeking
- ☒Energy Star
- ☒Index Search
- ☐Auto Search
- ☐ATS
- ☐PDC
- ☐VPS
- ☒Full OSD
- ☐SQPB
- ☒SAP
- ☐Channel Lock
- ☐Anti Theft
- ☐Hotel Lock
- ☒CM Skip(30s x 6 Times)
- ☐Game Position
- ☐Dirty Head Warning

G-46.Switch

Front

- ☒Power
- ☒Play
- ☐Pause/Still
- ☐System Select
- ☐One Touch Playback
- ☒Channel Up
- ☒F.FWD/Cue
- ☒Eject/Stop
- ☐Input Select
- ☒Channel Down
- ☒Rew/Rev
- ☒Rec/OTR
- ☐Output Select

Rear

- ☒RF-Converter Output Channel Selector(☐1 or 2CH ☒3 or 4CH)
- ☐TV/CATV Selector
- ☐SIF Selector

GENERAL SPECIFICATIONS

G-47.Remote Control Unit: RC-DC

Glow in Dark Remocon ☒Yes ☐No

Power Source: D.C 3 V Battery UM - 4 x 2

Control Key :Total 40 Key

☒ 0	☒Ch Up	☒Power
☒ 1	☒Ch Down	☒Eject
☒ 2	☒Input Select	☒Play
☒ 3	☒Audio Select	☒Stop
☒ 4	☒TV/VCR	☒F.FWD
☒ 5	☒Pause/Still	☒Rew
☒ 6	☒Slow	☒Timer Rec
☒ 7	☒Slow Speed Up	☒REC/OTR
☒ 8	☒Slow Speed Down	☒Auto Tracking
☒ 9	☒Skip Search	☒Tracking Up
☒Menu	☒Speed	☒Tracking Down
☒Set Up	☒TV Monitor	☒Counter Reset
☒Set Down	☐Index	☐Clock/Counter
☒Enter	☐Program	☐Zero Return
☒Cancel	☐Video Plus	☐One Touch Playback
☒Call	☐Program/Video Plus	

DISASSEMBLY INSTRUCTIONS

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

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

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

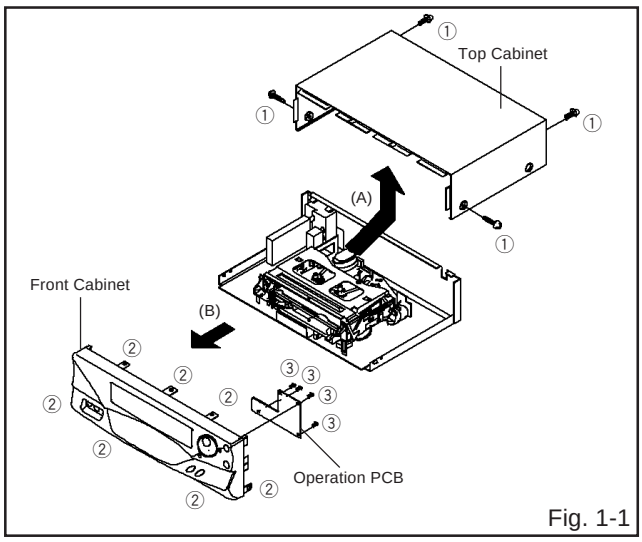


Fig. 1-1

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).

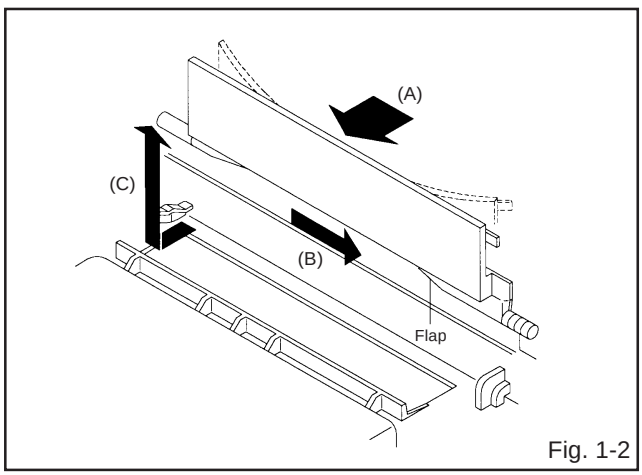


Fig. 1-2

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

1. Remove the 3 screws ①.
2. Remove the screw ②.
3. Disconnect the following connectors: (CP1001, CP1002, CP1003, CP4001, CP4002 and CP4003).
4. Remove the Deck Chassis in the direction of arrow.

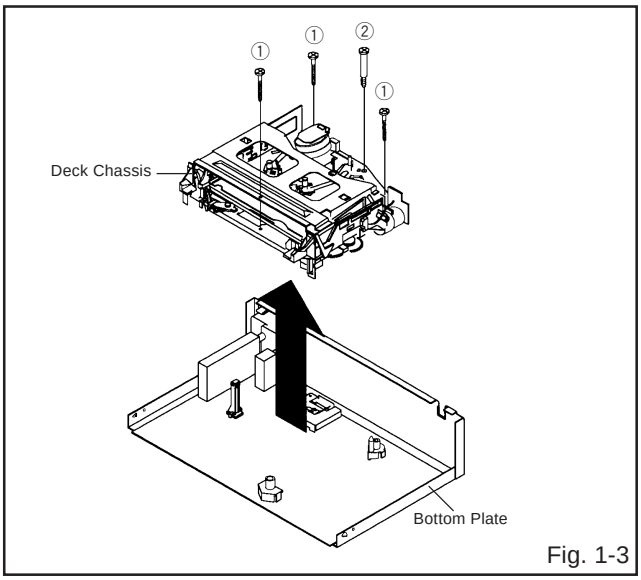


Fig. 1-3

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

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Unlock the 2 supports ②.
4. Remove the Jack Plate in the direction of arrow (B).

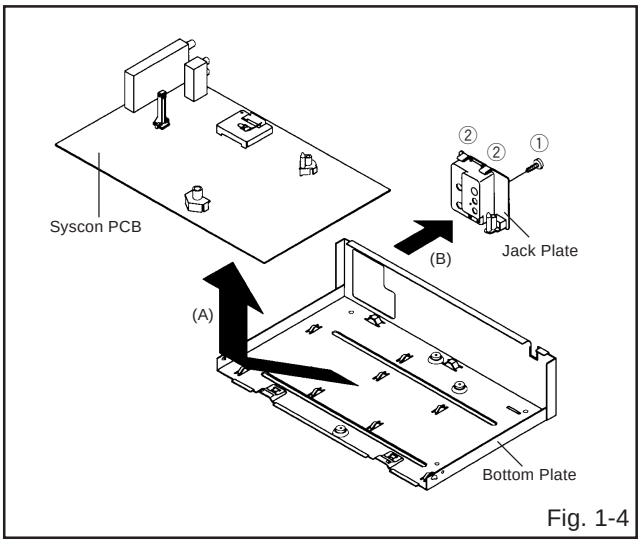


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

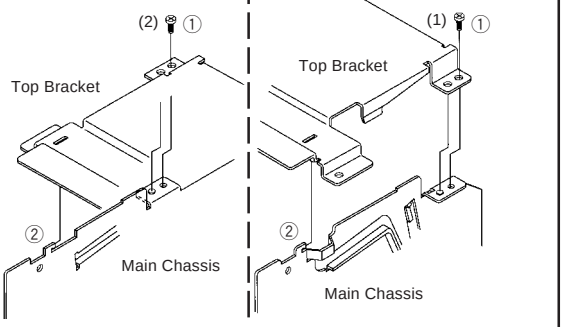
2. REMOVAL OF DECK PARTS

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

1. Remove the 2 screws ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

When you install the Top Bracket, install the screw (1) first, then install the screw (2).



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-1

2-2: FLAP LEVER/TAPE GUIDE R (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the back side.
2. Remove the Polyslider Washer ①.
3. Remove the Flap Lever.
4. Unlock the 3 supports ② and remove the Tape Guide R.

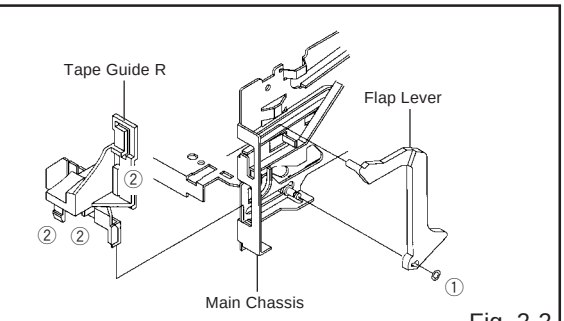
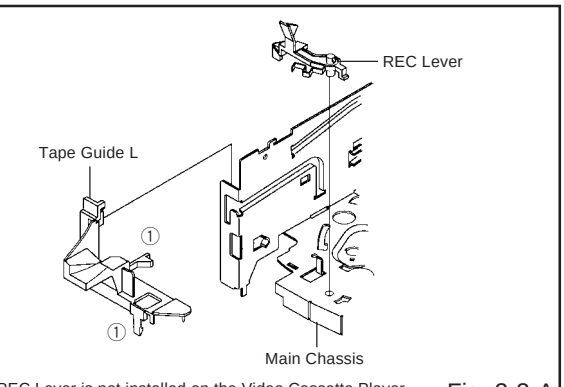


Fig. 2-2

2-3: TAPE GUIDE L (Refer to Fig. 2-3-A)

1. Move the Cassette Holder Ass'y to the back side.
2. Unlock the 2 supports ① and remove the Tape Guide L.
3. Remove the REC Lever. (Recorder only)

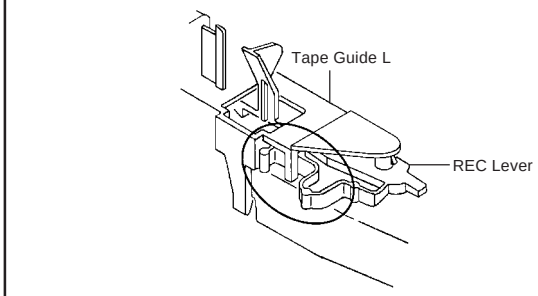


• The REC Lever is not installed on the Video Cassette Player.

Fig. 2-3-A

NOTE

When you install the Tape Guide L, install as shown in the circle of Fig. 2-3-B. **(Refer to Fig. 2-3-B)**



• The REC Lever is not installed on the Video Cassette Player.

Fig. 2-3-B

2-4: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-4)

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.

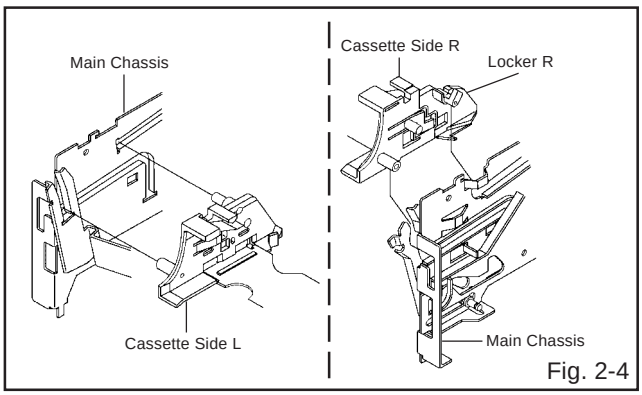


Fig. 2-4

2-5: CASSETTE SIDE L/R (Refer to Fig. 2-5)

1. Unlock the 4 supports ① and then remove the Cassette Side L/R.

NOTE

When you install the Cassette Side R, be sure to move the Locker R after installing.

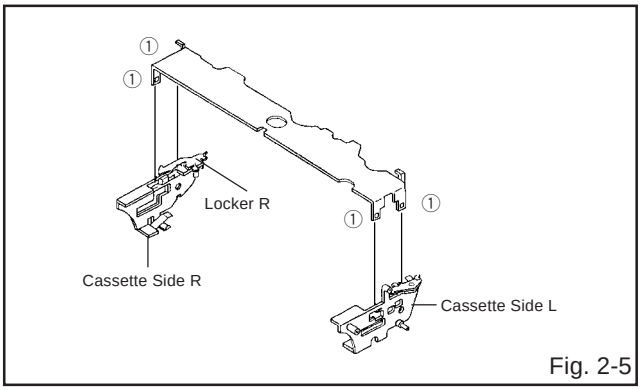


Fig. 2-5

DISASSEMBLY INSTRUCTIONS

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

1. Set the Link Ass'y to the Eject position.
2. Remove the (A) side of the Link Ass'y first, then remove the (B) side.

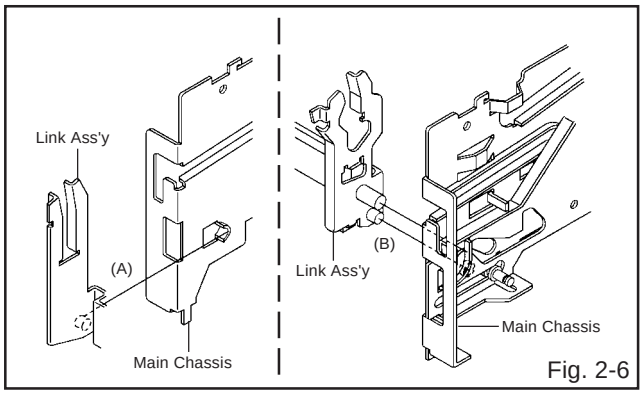
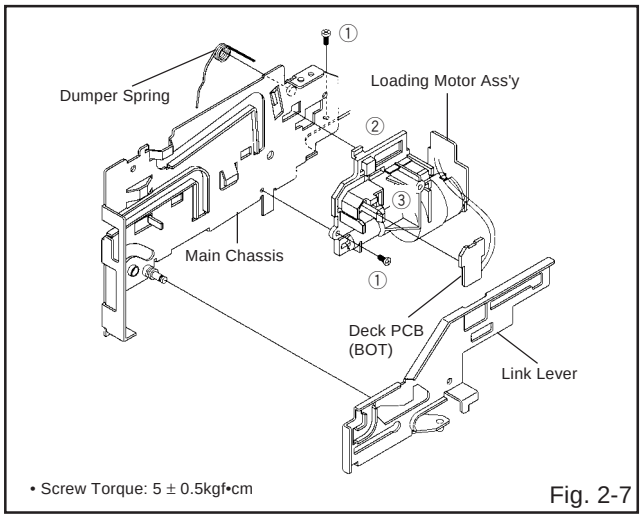


Fig. 2-6

2-7: LOADING MOTOR ASS'Y (Refer to Fig. 2-7)

1. Remove the Link Lever.
2. Remove the Dumper Spring.
3. Remove the 2 screws ①.
4. Unlock the support ② and remove the Loading Motor Ass'y.
5. Unlock the 2 supports ③ and remove the Deck PCB (BOT).



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-7

2-8: SENSOR COVER L2 (Refer to Fig. 2-8)

1. Unlock the support ① and remove the Sensor Cover L2.

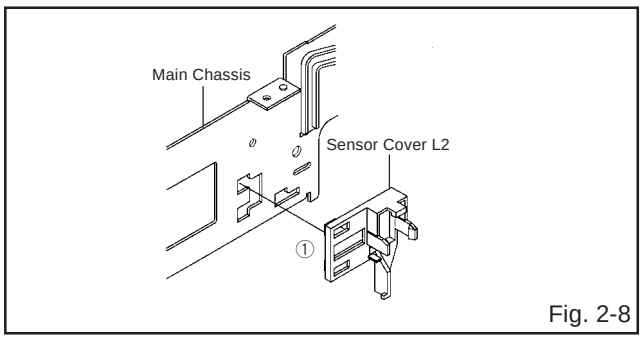


Fig. 2-8

2-9: TENSION ASS'Y (Refer to Fig. 2-9-A)

1. Move the Inclined S Ass'y to the back side.
2. Remove the Tension Spring.
3. Unlock the support ① and remove the Tension Arm Ass'y.
4. Remove the Tension Adjust.
5. Unlock the 2 supports ② and remove the Tension Band Ass'y.
6. Unlock the support ③ and remove the Tension Holder.
7. Remove the SS Brake Spring.
8. Remove the SS Arm Brake.

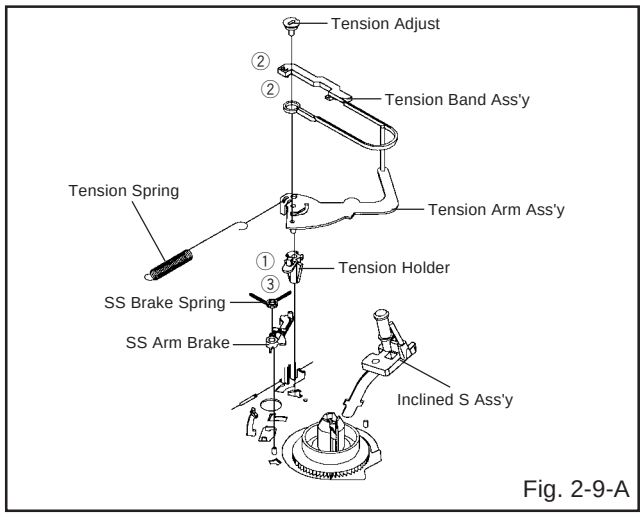


Fig. 2-9-A

NOTE

When you install the Tension Adjust, install as shown in Fig. 2-9-B. **(Refer to Fig. 2-9-B)**

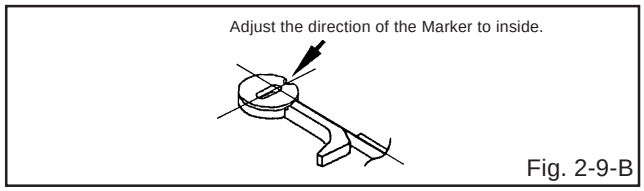


Fig. 2-9-B

2-10: T BRAKE ASS'Y (Refer to Fig. 2-10)

1. Remove the T Brake Spring.
2. Remove the T Brake Ass'y.

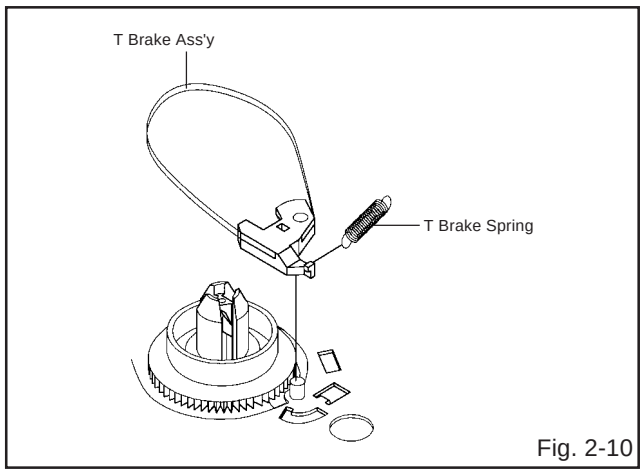


Fig. 2-10

DISASSEMBLY INSTRUCTIONS

2-11: S REEL/T REEL (Refer to Fig. 2-11)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.

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. 2-11)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and oil it (FL OIL #6115). (If you do not oil, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

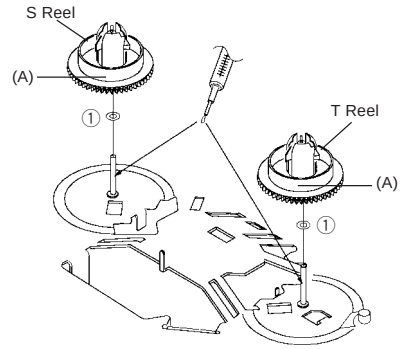
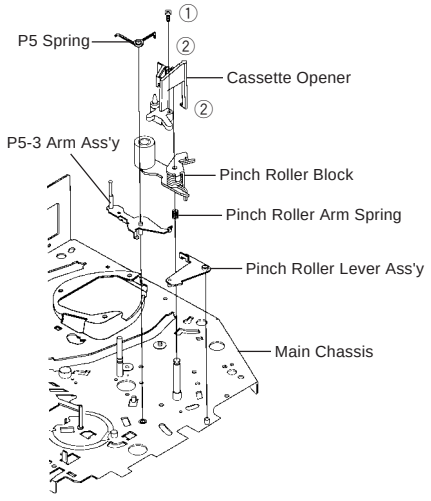


Fig. 2-11

2-12: PINCH ROLLER BLOCK/P5-3 ARM ASS'Y (Refer to Fig. 2-12-A)

1. Remove the P5 Spring.
2. Remove the screw ①.
3. Unlock the 2 supports ② and remove the Cassette Opener.
4. Remove the Pinch Roller Block, Pinch Roller Arm Spring, Pinch Roller Lever Ass'y and P5-3 Arm Ass'y.



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-12-A

NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. When you install the Pinch Roller Block, install as shown in the circle of Fig. 2-12-B. **(Refer to Fig. 2-12-B)**

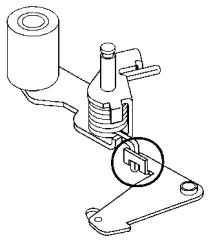


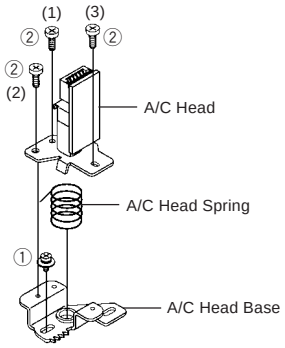
Fig. 2-12-B

2-13: A/C HEAD (Refer to Fig. 2-13-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. 2-13-B. **(Refer to Fig. 2-13-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: 4 ± 0.5kgf•cm (Screw ①)

Fig. 2-13-A

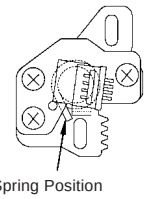
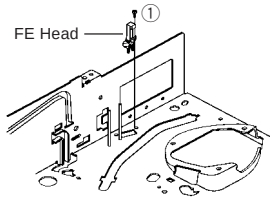


Fig. 2-13-B

2-14: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-14)

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



• The FE Head is not installed on the Video Cassette Player.
• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-14

DISASSEMBLY INSTRUCTIONS

2-15: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-15)

1. Unlock the support ① and remove the AHC Ass'y.
2. Remove the 3 screws ②.
3. Remove the Cylinder Unit Ass'y.

NOTE

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

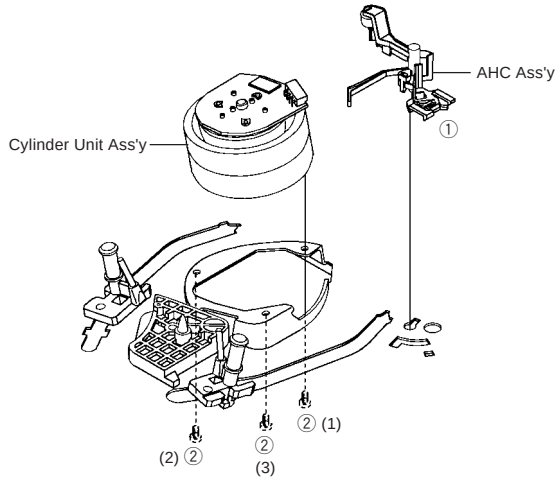


Fig. 2-15

2-16: CAPSTAN DD UNIT (Refer to Fig. 2-16)

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

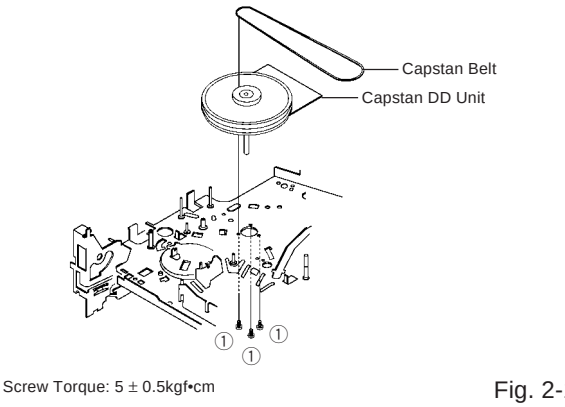


Fig. 2-16

2-17: MIDDLE GEAR/MAIN CAM (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①, then remove the Middle Gear.
2. Remove the E-Ring, then remove the Main Cam, P5 Cam and Pinch Roller Cam.
3. Remove the Polyslider Washer ②, then remove the Joint Gear.

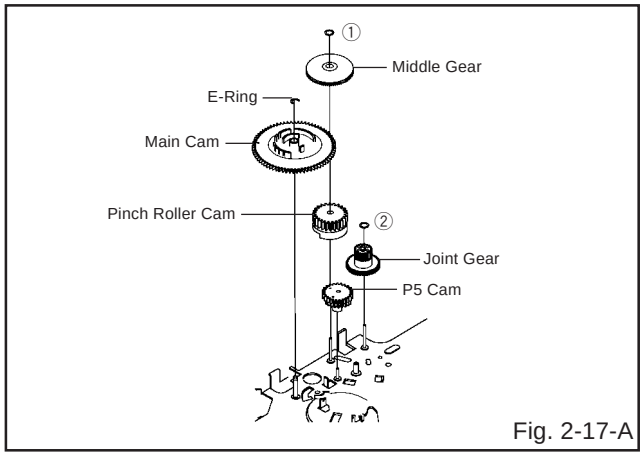


Fig. 2-17-A

NOTE

When you install the Pinch Roller Cam, P5 Cam and Main Cam, align each marker. **(Refer to Fig. 2-17-B)**

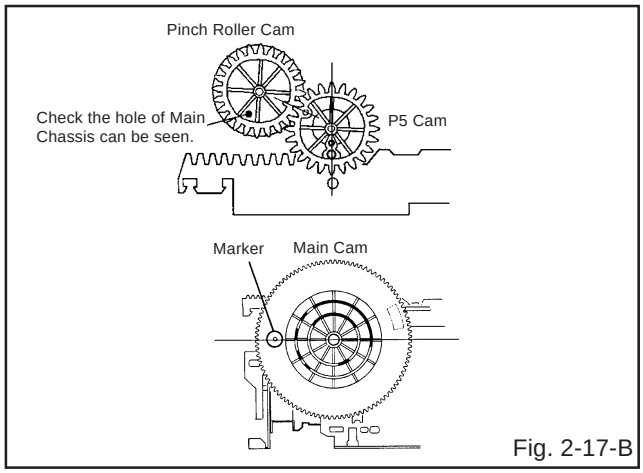


Fig. 2-17-B

2-18: CLUTCH ASS'Y (Refer to Fig. 2-18)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y, Ring Spring and Coupling Gear.
3. Unlock the 2 supports ② and remove the Clutch Lever.

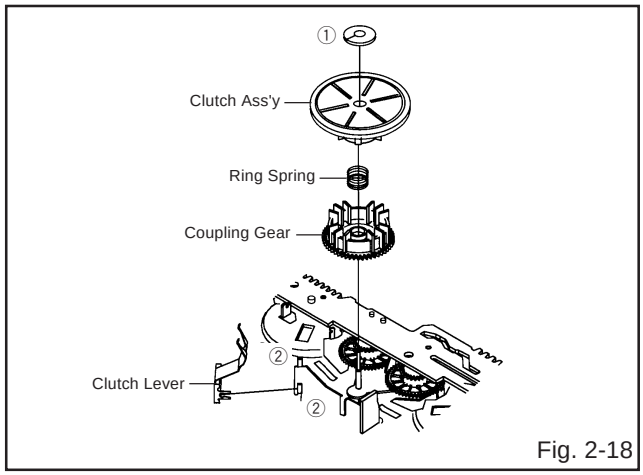
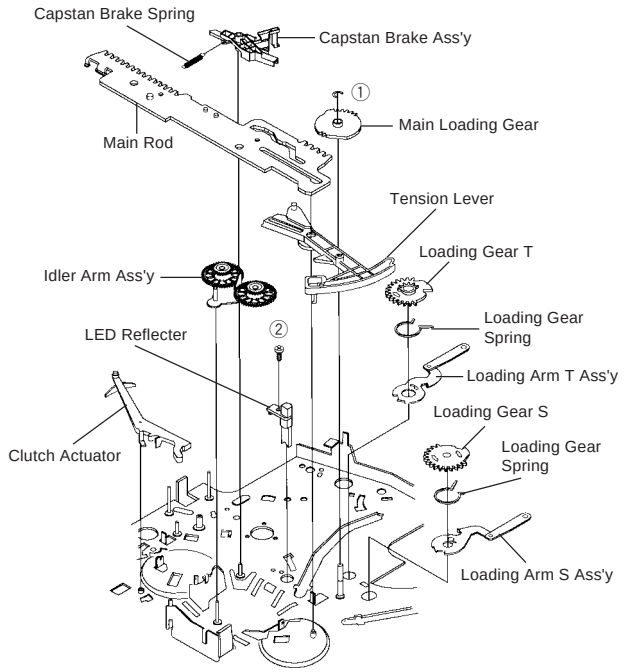


Fig. 2-18

DISASSEMBLY INSTRUCTIONS

2-19: LOADING GEAR S/T ASS'Y (Refer to Fig. 2-19-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Capstan Brake Spring.
3. Slide the Main Rod and remove the Capstan Brake Ass'y.
4. Remove the Main Rod, Tension Lever, Clutch Actuator, Idler Arm Ass'y.
5. Remove the screw ②.
6. Remove the LED Reflecter.
7. Remove the Loading Arm S Ass'y and Loading Arm T Ass'y.
8. Remove the Loading Gear S and Loading Gear T.
9. Remove the Loading Gear Spring.



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-19-A

NOTES

1. When you install the Loading Arm S Ass'y, Loading Arm T Ass'y and Main Loading Gear, align each marker. **(Refer to Fig. 2-19-B)**

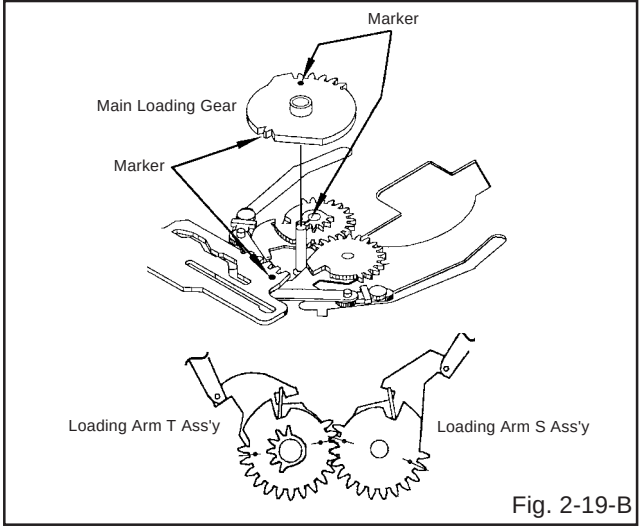


Fig. 2-19-B

2. When you install the Clutch Actuator, install as shown in the circle of Fig. 2-19-C. **(Refer to Fig. 2-19-C)**

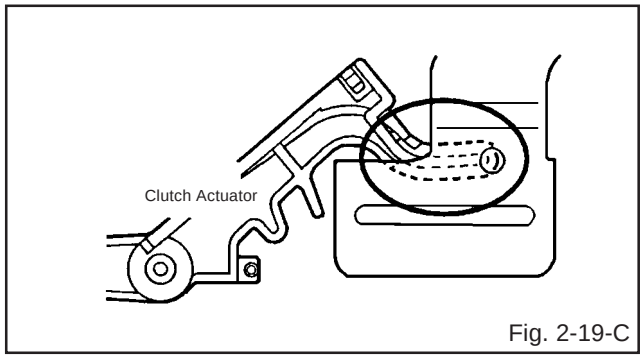


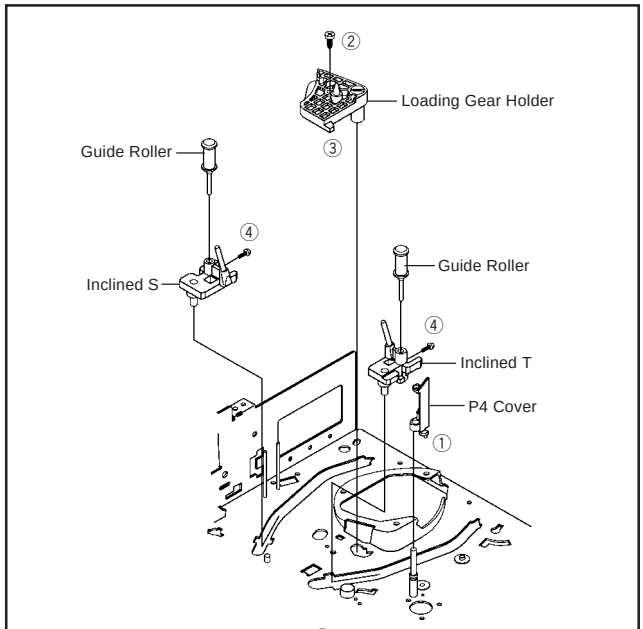
Fig. 2-19-C

2-20: INCLINED S/T ASS'Y (Refer to Fig. 2-20)

1. Unlock the support ① and remove the P4 Cover.
2. Remove the screw ②.
3. Unlock the support ③ and remove the Loading Gear Holder.
4. Remove the Inclined S.
5. Remove the Inclined T.
6. Remove the 2 screws ④, then remove the Guide Roller.

NOTE

Do not touch the roller of Guide Roller.



• Screw Torque: 5 ± 0.2kgf•cm (Screw ②)
• Screw Torque: 0.7 ± 0.2kgf•cm (Screw ④)

Fig. 2-20

KEY TO ABBREVIATIONS

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

KEY TO ABBREVIATIONS

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

SERVICE MODE LIST

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

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.
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 USING HOURS). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "NOTE FOR THE REPLACING OF 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).
Make the short circuit between the test point of SERVICE and the GND.	The EOT/BOT/Reel sensor do not work at this moment. 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.

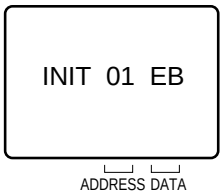
Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Audio Control Head	■	■	■	■	■	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	■	■	
Capstan Belt			■	■	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	■	■	■	■ ●	
Capstan DD Unit					●	
Loading Motor					●	
Tension Band					●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	■	■	■	●	Clean the Head

■ : Clean
● : Replace

CONFIRMATION OF USING HOURS

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

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. While pressing the CH UP button on the set, press the FF button on the set for more than 2 seconds.
4. Adjust the ADDRESS to "7D" by SET +/- button and read the DATA.
   (This DATA becomes the thousands digit and hundreds digit value of the following formula.)
5. Adjust the ADDRESS to "7E" by SET +/- button and read the DATA.
   (This DATA becomes the tens digit and ones digit value of the following formula.)
6. 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

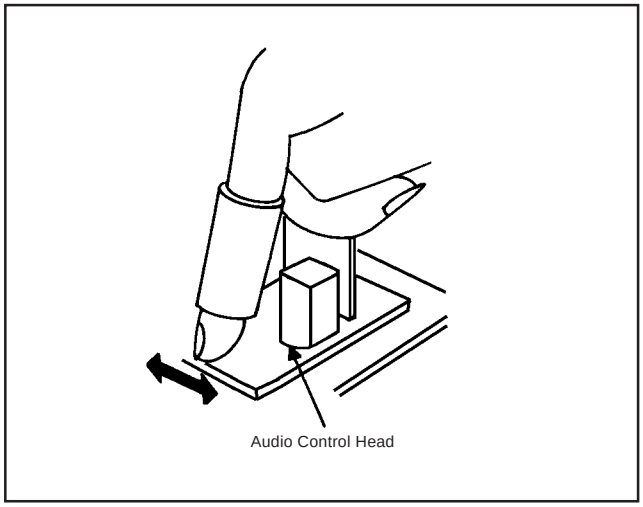
CLEANING

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

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol and clean the audio control head by wiping it horizontally. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

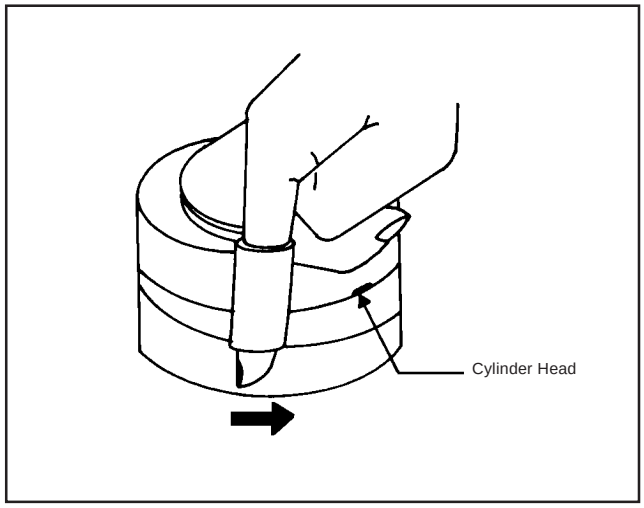
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

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.



NOTE FOR THE REPLACING OF 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.

ADDRESS	INI 00	INI 01	INI 02	INI 03	INI 04	INI 05	INI 06	INI 07	INI 08	INI 09	INI 0A	INI 0B	INI 0C
DATA	08	00	00	64	64	4A	0A	0B	26	8A	45	0C	08
ADDRESS	INI 0D	INI 0E	INI 0F	INI 10	INI 11	INI 12	INI 13	INI 14	INI 15	INI 16	INI 17	INI 18	INI 19
DATA	0C	0C	8C	68	5C	53	00	00	00	00	00	00	00

Table 1

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. While pressing the CH UP key on the set, press the FF key on the set for more than 2 seconds.
4. ADDRESS and DATA will appear on TV Monitor as FIG 1.

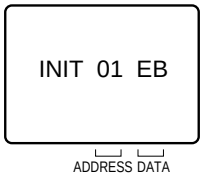
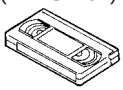
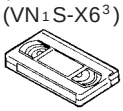
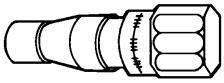
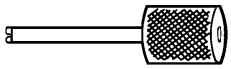
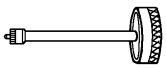
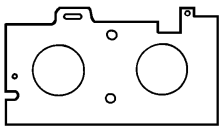
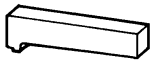
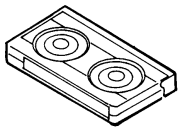
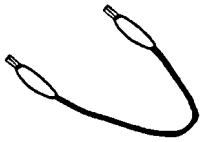
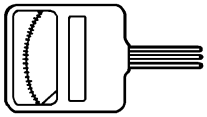


Fig. 1

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

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

SERVICING FIXTURES AND TOOLS

(For 2 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) 
JG154 Cable 	Tentelometer 		

Part No.	Remarks
JG001	Monoscope, 6KHz **(For 2 heads model)**
JG001A	Color Bar, 1KHz **(For 2 heads model)**
JG001Q	Hi-Fi Audio **(For 2 heads Hi-Fi model)**
JG001T	X Value Adjustment **(For 2 heads model)**
JG001B	Monoscope, 6KHz **(For 4 heads model)**
JG001I	Color Bar, 1KHz **(For 4 heads model)**
JG001P	Hi-Fi Audio **(For 4 heads Hi-Fi model)**
JG001S	X Value Adjustment **(For 4 heads model)**
JG002B	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	Brake Torque (T Reel Ass'y)
JG002F	VSR Torque, Brake Torque (S Reel)
JG005	Guide Roller Adjustment
JG153	X Value Adjustment
JG022/JG024A	Reel Disk Height Adjustment
JG100A	Playback Torque, Back Tension Torque During Playback
JG154	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

1. Short circuit between **TP1001** and **Ground** with the cable JG154.
   (Refer to MAJOR COMPONENTS LOCATION GUIDE)
   The EOT, BOT and Reel Sensor do not work at this moment.
   At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.

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.)
- When you activate the deck without the Cassette Holder, short circuit between **TP1001** and **GND**. **(Refer to ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE)** In this condition the BOT/EOT/Reel Sensor will not function.

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. Confirm that "A" of the reel disk is lower than "B" of the reel disk height adjustment jig **(JG024A)** , and is higher than "C". If it is not enough height, adjust to 10(+0.2, -0) mm with the height adjustment washer.
4. Adjust the other reel in the same way.

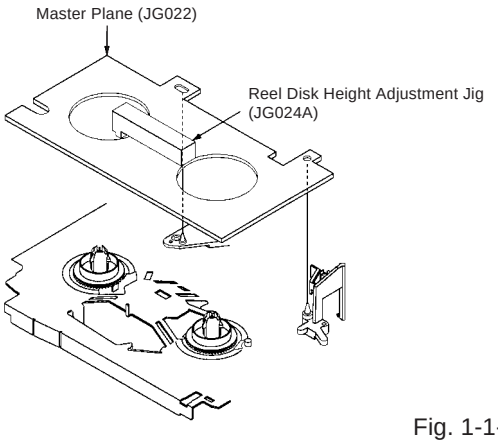


Fig. 1-1-A

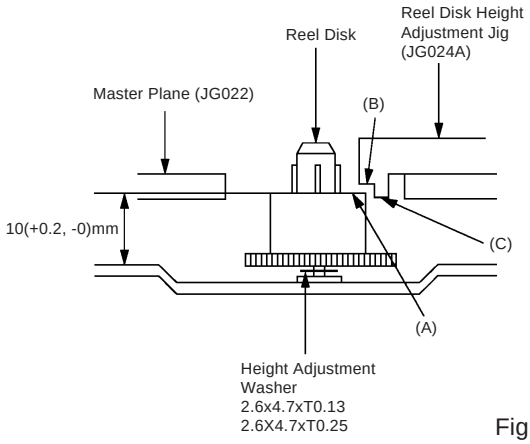


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the Tension Adjust until the edge of the Tension Arm is positioning within 0.5mm range from the standard line center of Main Chassis.
   After this adjustment, confirm that the cut position is located in "A" area as shown in **Fig. 1-2-B**. If it is located in "B" area, adjust again.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

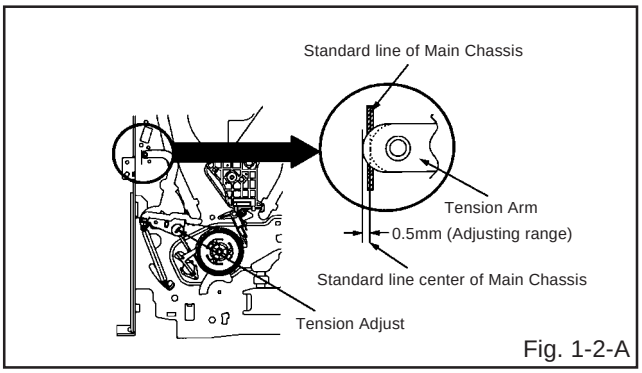


Fig. 1-2-A

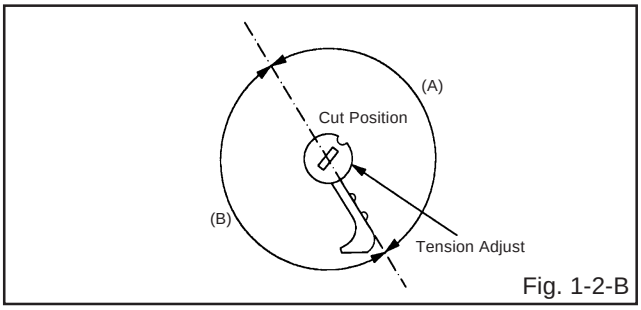


Fig. 1-2-B

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 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 60~110gf•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.

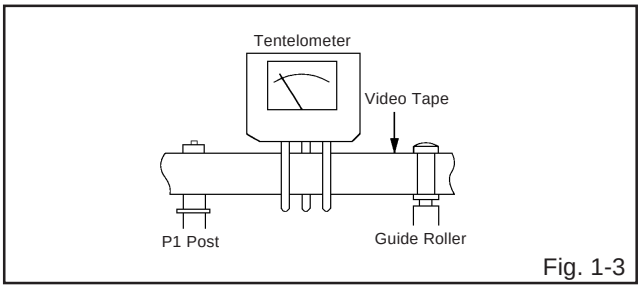


Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Operate within 4~5 seconds after the reel disk begins to turn.
2. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Rewind mode. **(Refer to Fig.1-4)**
3. 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)**

1. Set to the STOP mode.
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)**

1. Set to the STOP mode.
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 45~70gf•cm.

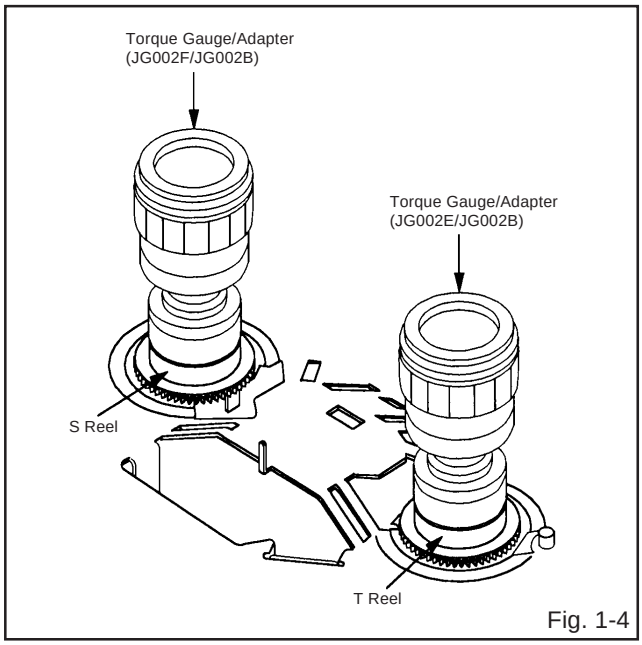


Fig. 1-4

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	T Brake Spring/Tension Spring

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 **TP4001 (Envelope)** and CH-2 to **TP1002 (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)**

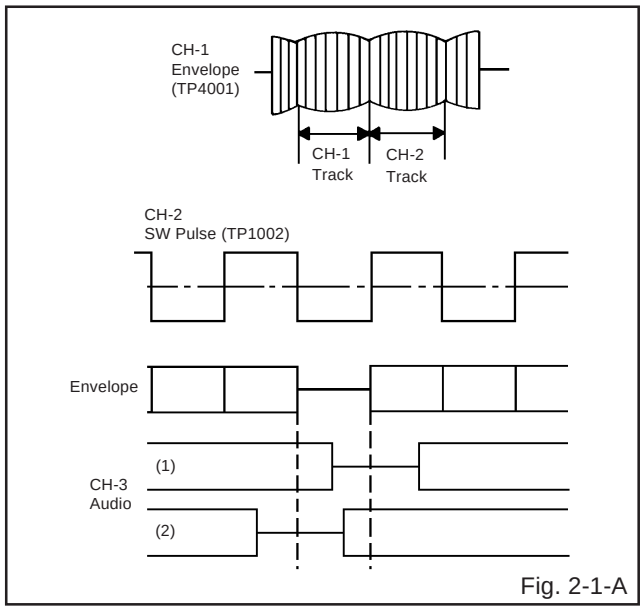


Fig. 2-1-A

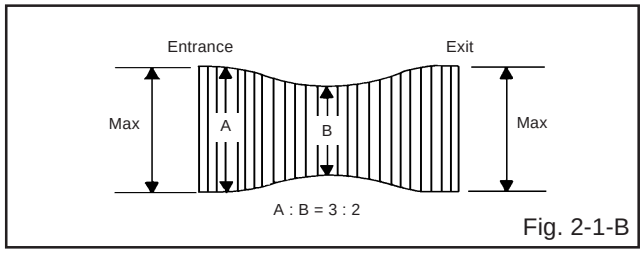


Fig. 2-1-B

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.

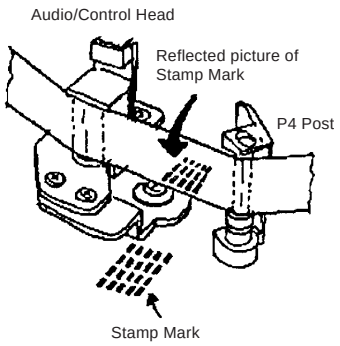


Fig. 2-2-A

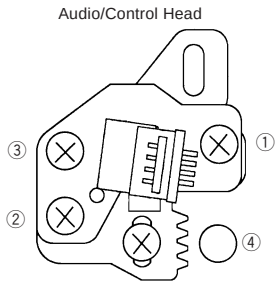


Fig. 2-2-B

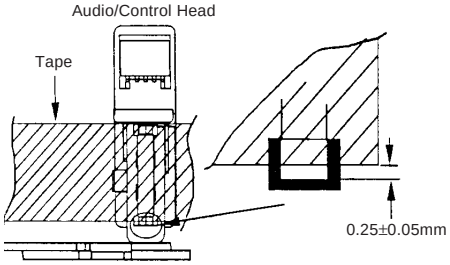


Fig. 2-2-C

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

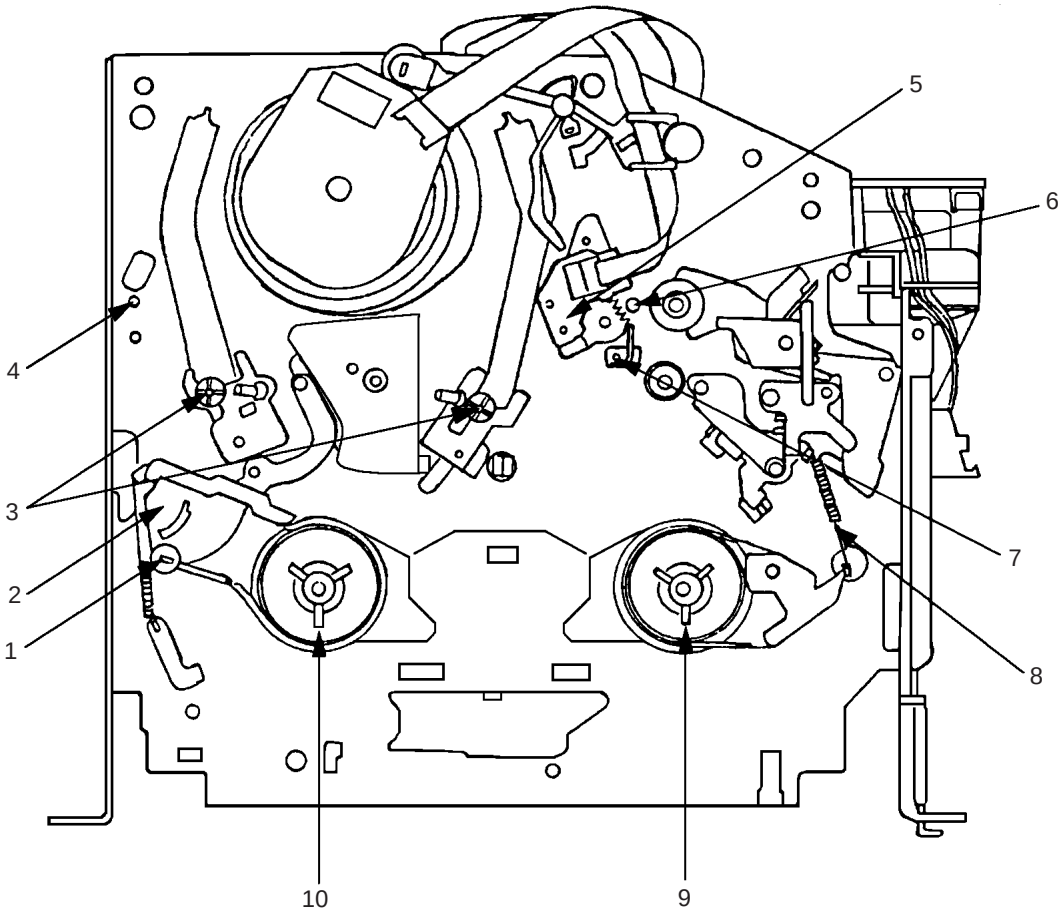
1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP1002** 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. 2-1-A**.

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

1. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP1002** and CH-3 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 the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
6. Confirm that the difference between these counted steps number in the above items are within 2 steps. If the difference are more than 3 steps, do Tape Running Adjustment again. **(Refer to item 2-3)**

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Adjust
2. Tension Arm
3. Guide Roller
4. P1 Post
5. Audio/Control Head
6. X value adjustment driver hole
7. P4 Post
8. T Brake Spring
9. T Reel
10. S Reel

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 transistors, use only specified silicon grease **(YG6260M)**.
(To prevent the damage to IC's and transistors.)

1-1: PG SHIFTER

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape **(JG001B)**

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **TP4201**.
2. Playback the alignment tape. **(JG001B)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Adjust the **VR1001** until the waveform of the oscilloscope measures 6.5 ± 0.5(H) at both leading and trailing edges. **(Refer to Fig. 1-1-A, B)**

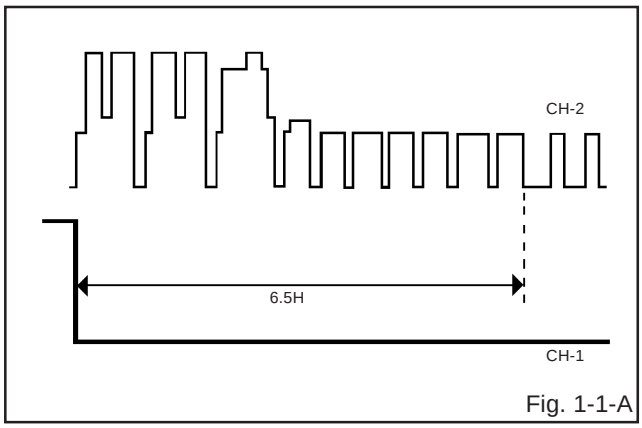


Fig. 1-1-A

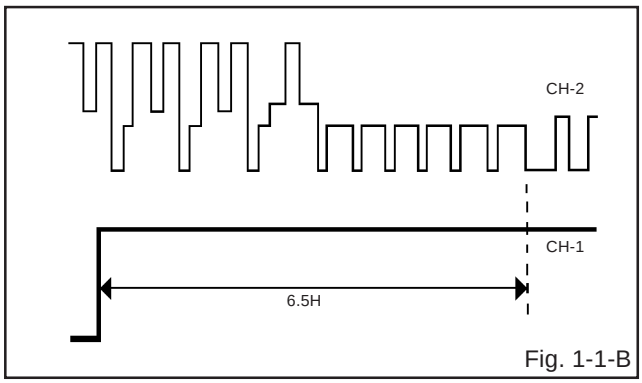
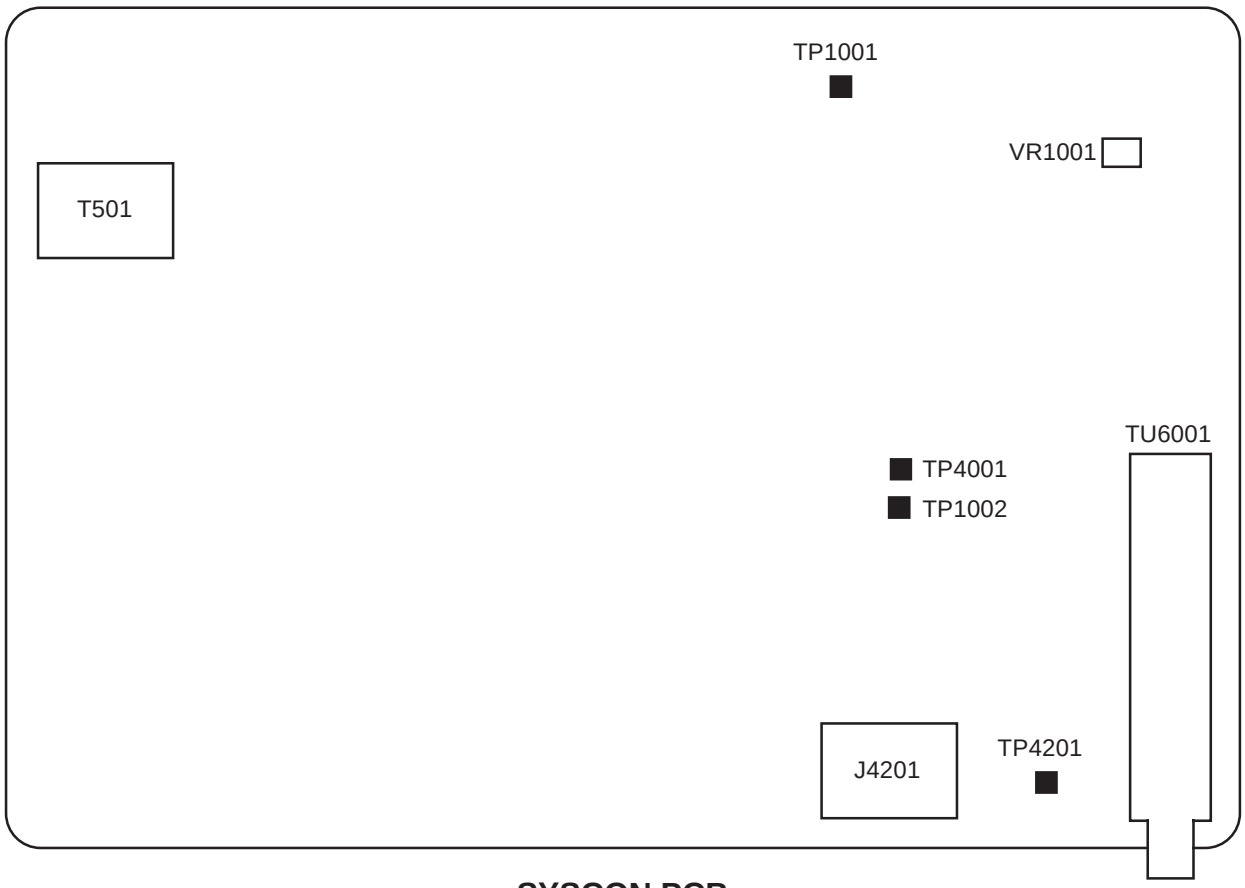


Fig. 1-1-B

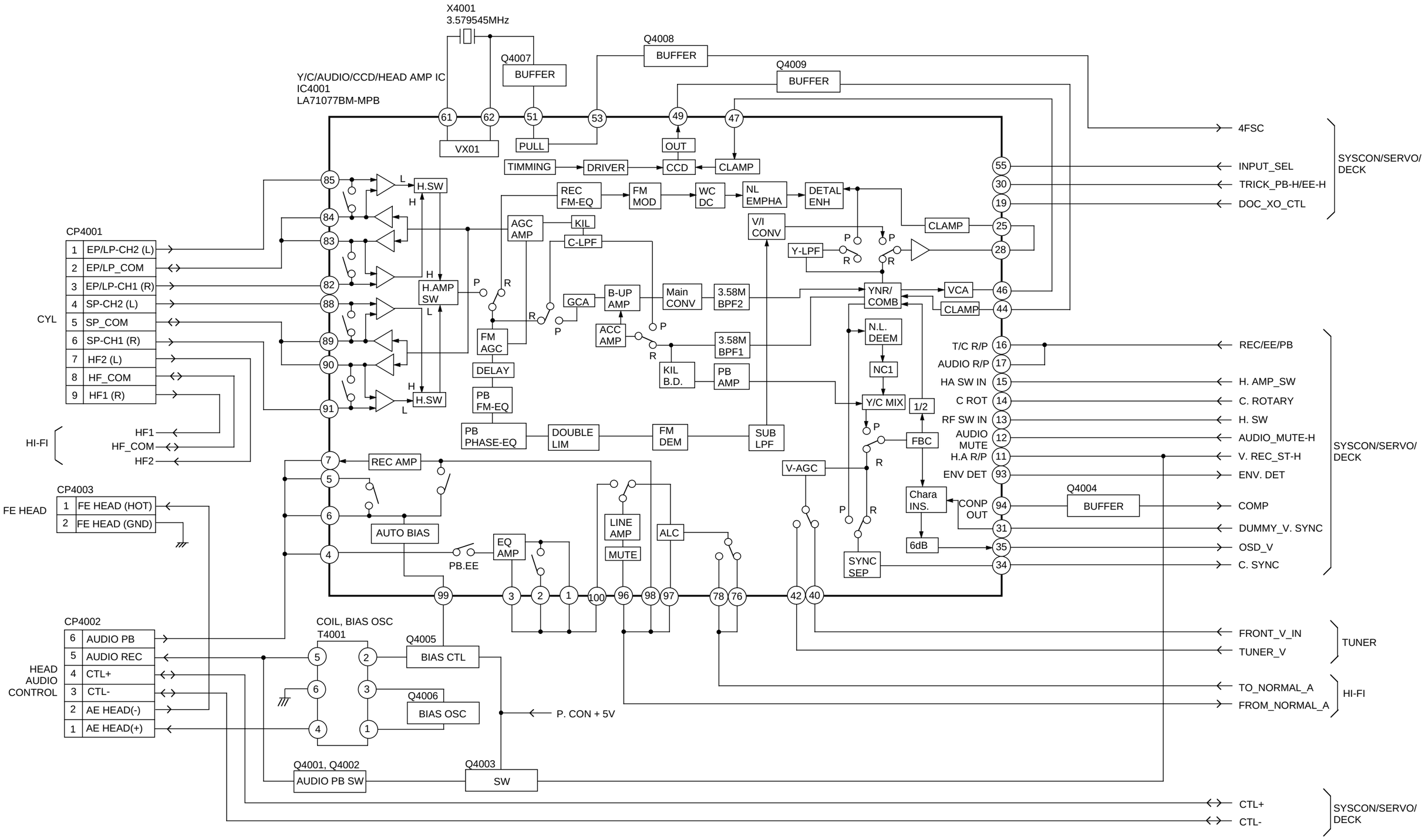
ELECTRICAL ADJUSTMENTS

2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE

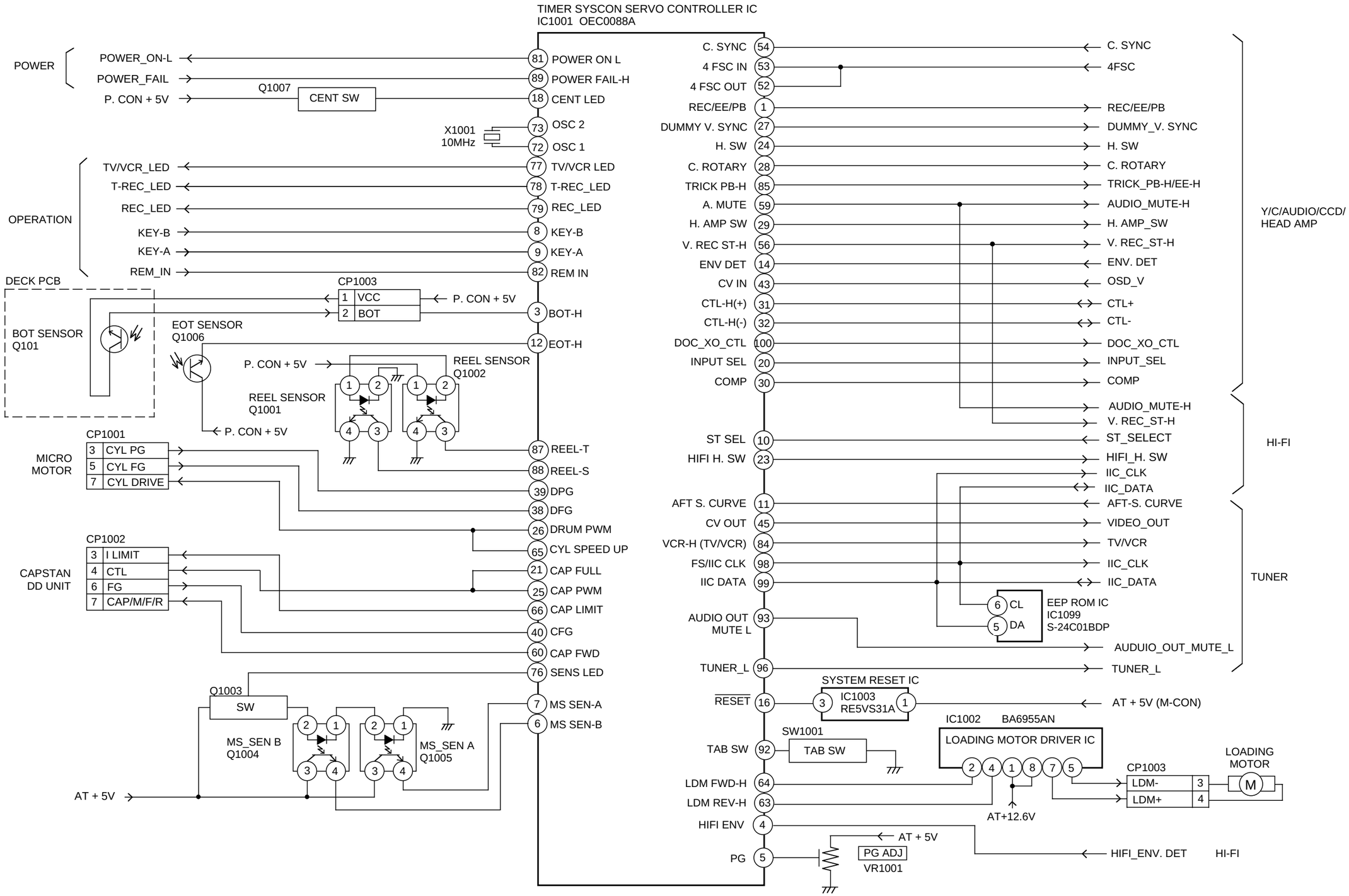


SYSCON PCB

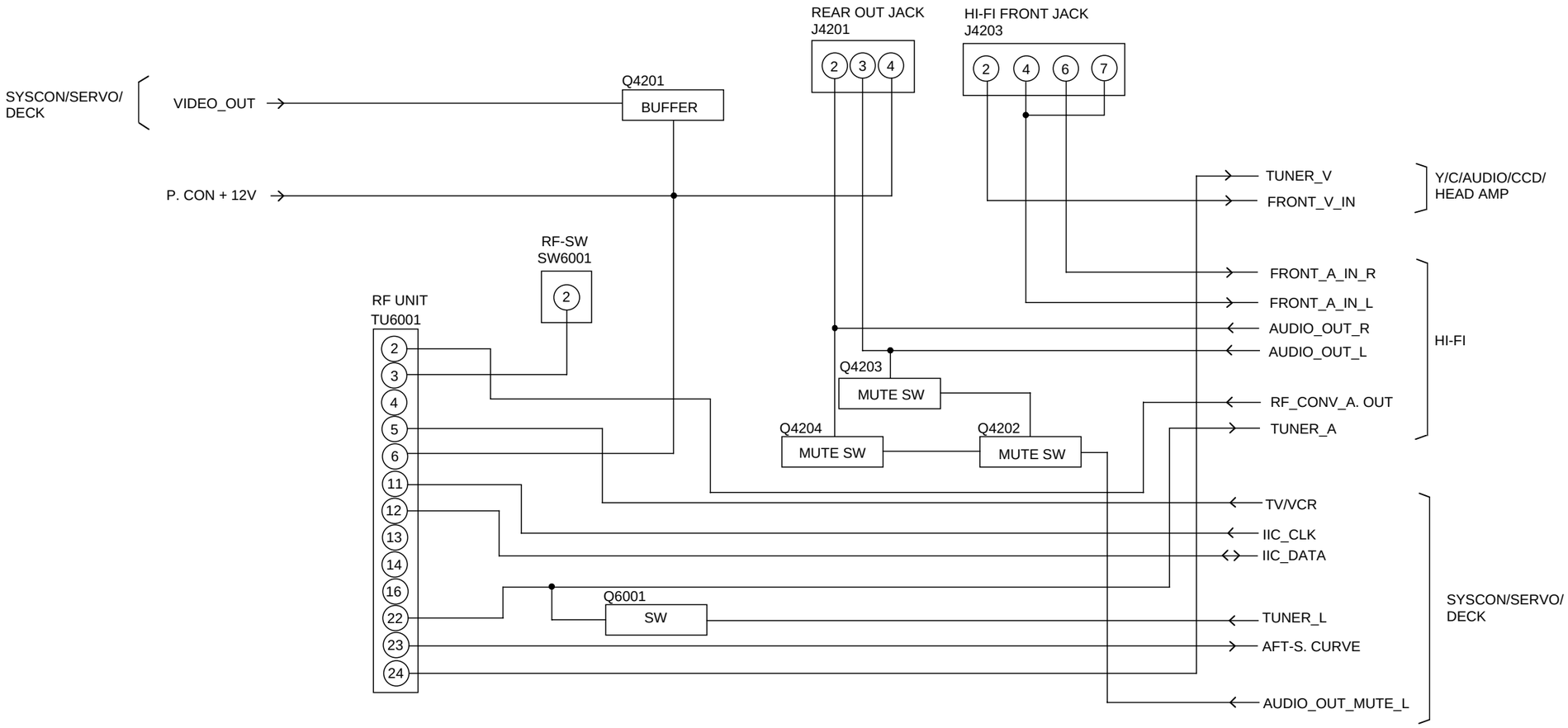
Y/C/AUDIO/CCD/HEAD AMP BLOCK DIAGRAM



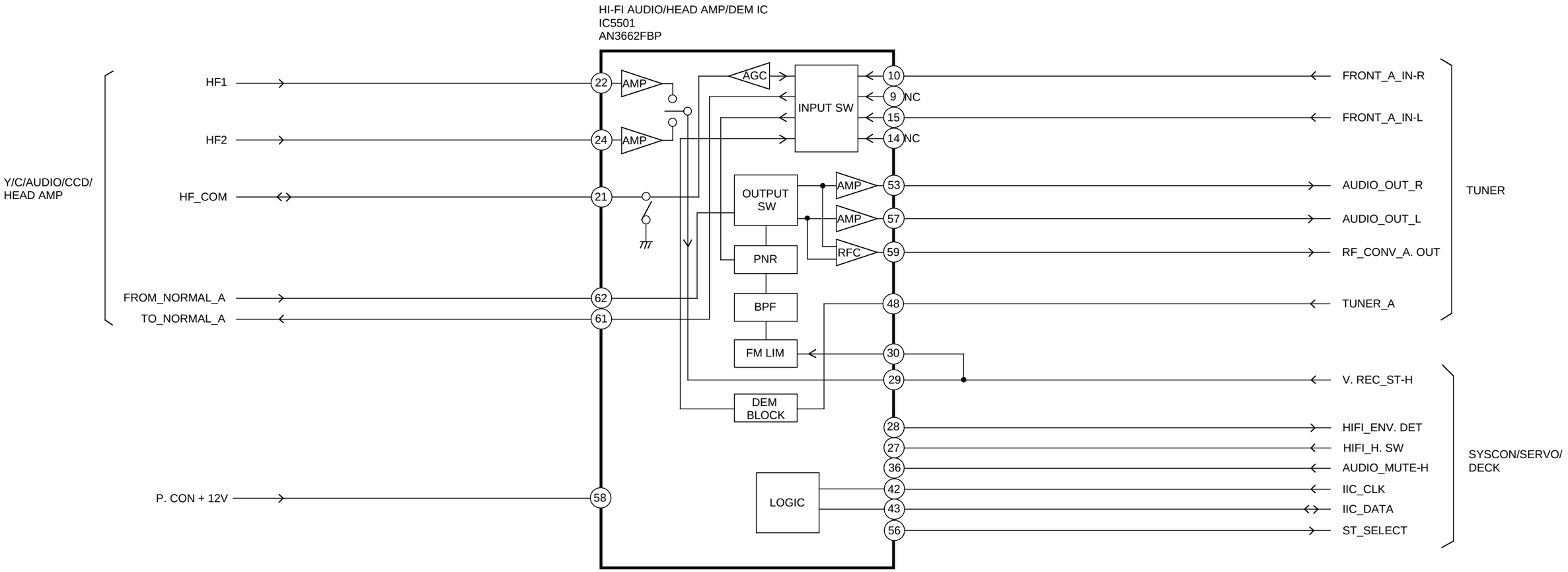
SYSTEM CONTROL/SERVO/DECK BLOCK DIAGRAM



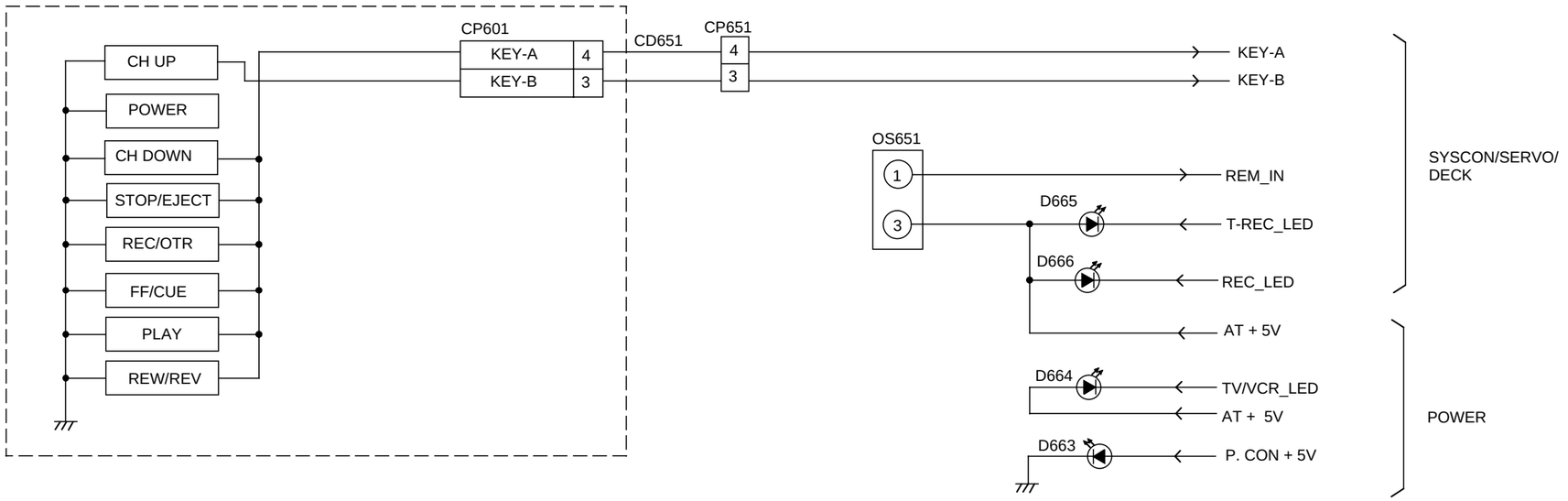
TUNER BLOCK DIAGRAM



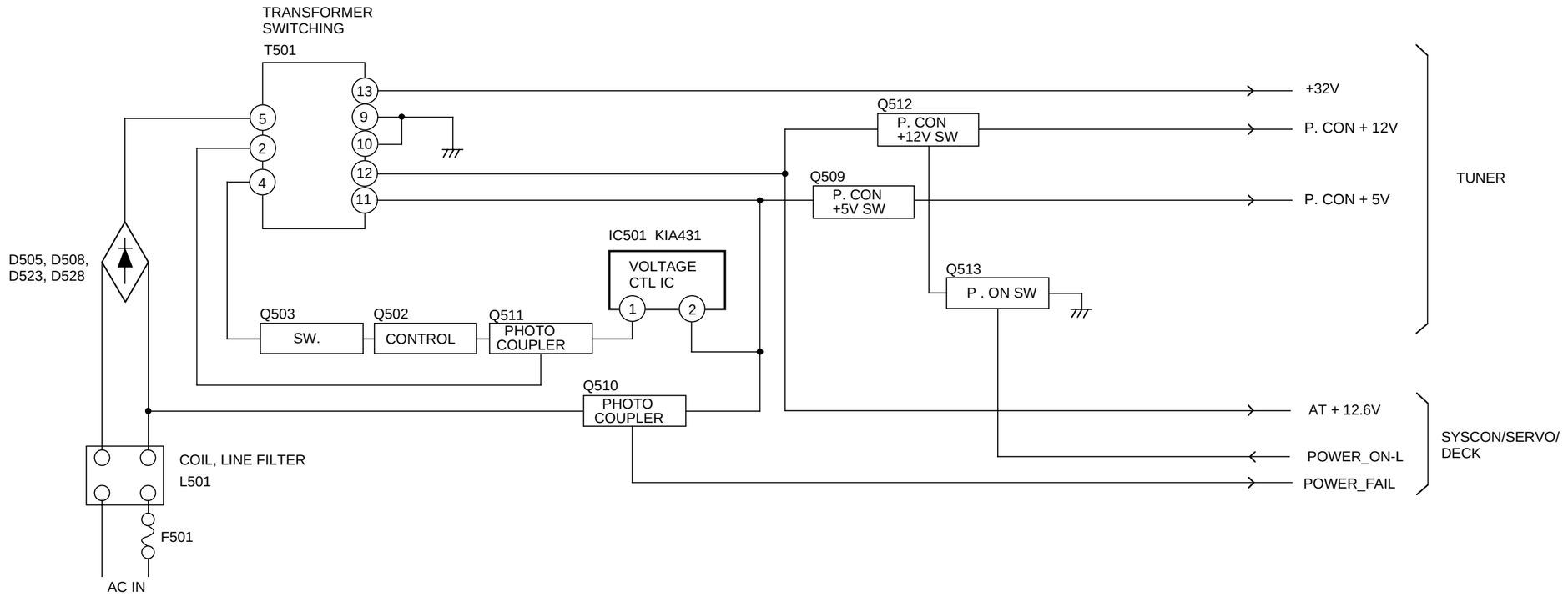
HI-FI BLOCK DIAGRAM



OPERATION BLOCK DIAGRAM

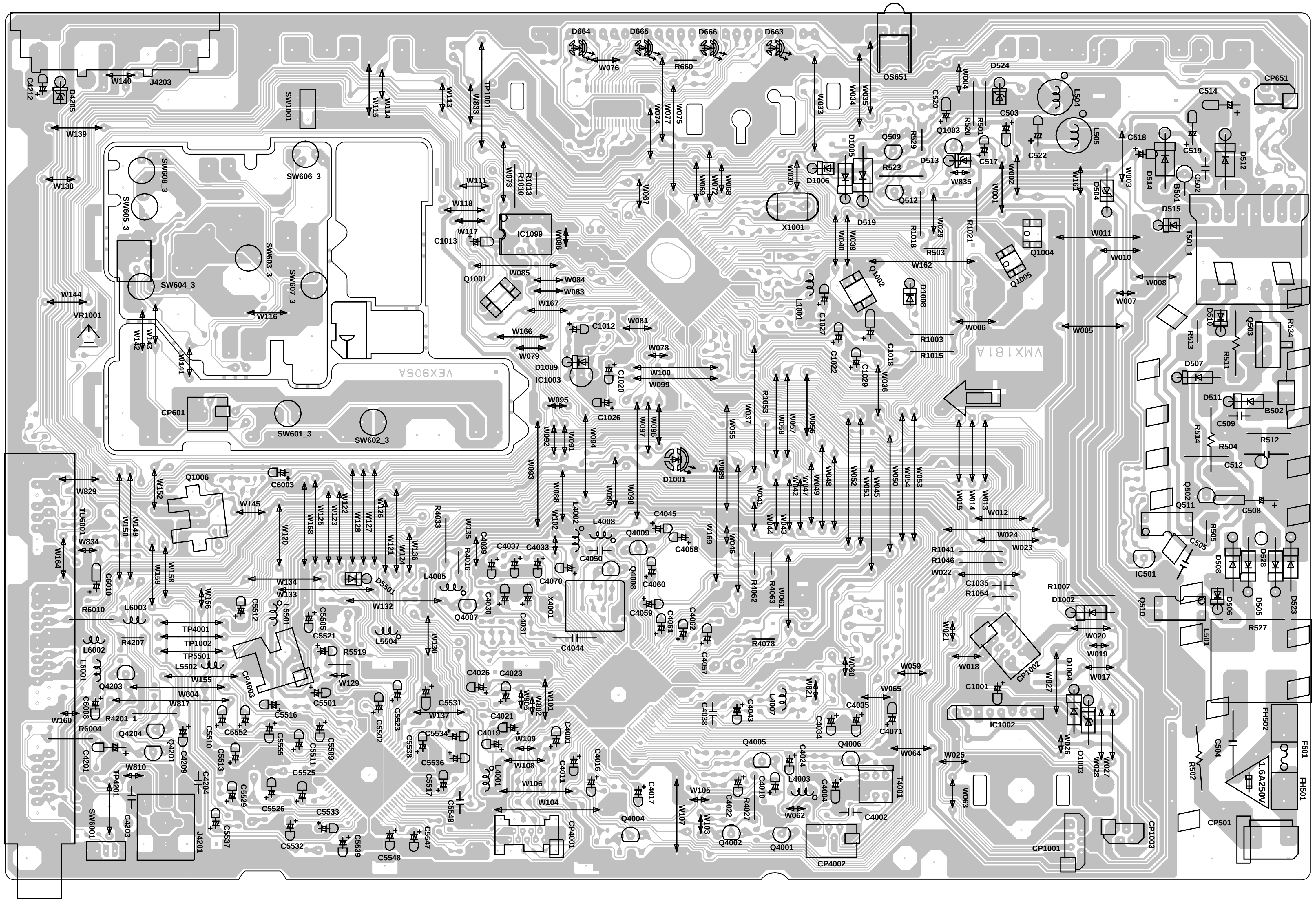


POWER BLOCK DIAGRAM

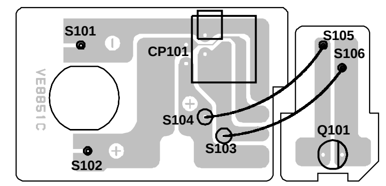


PRINTED CIRCUIT BOARDS

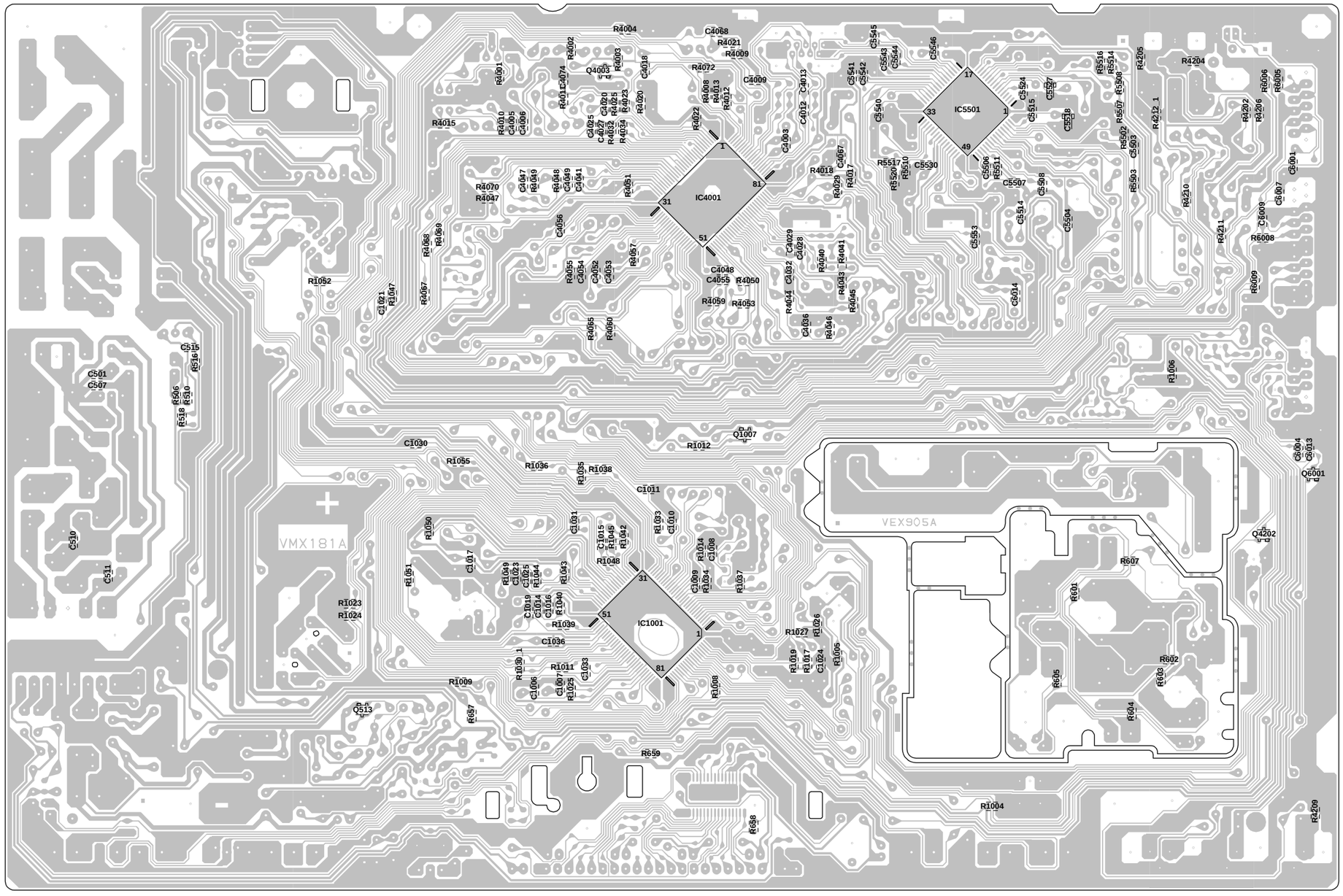
SYSCON/OPERATION (INSERTED PARTS)
SOLDER SIDE



DECK
SOLDER SIDE

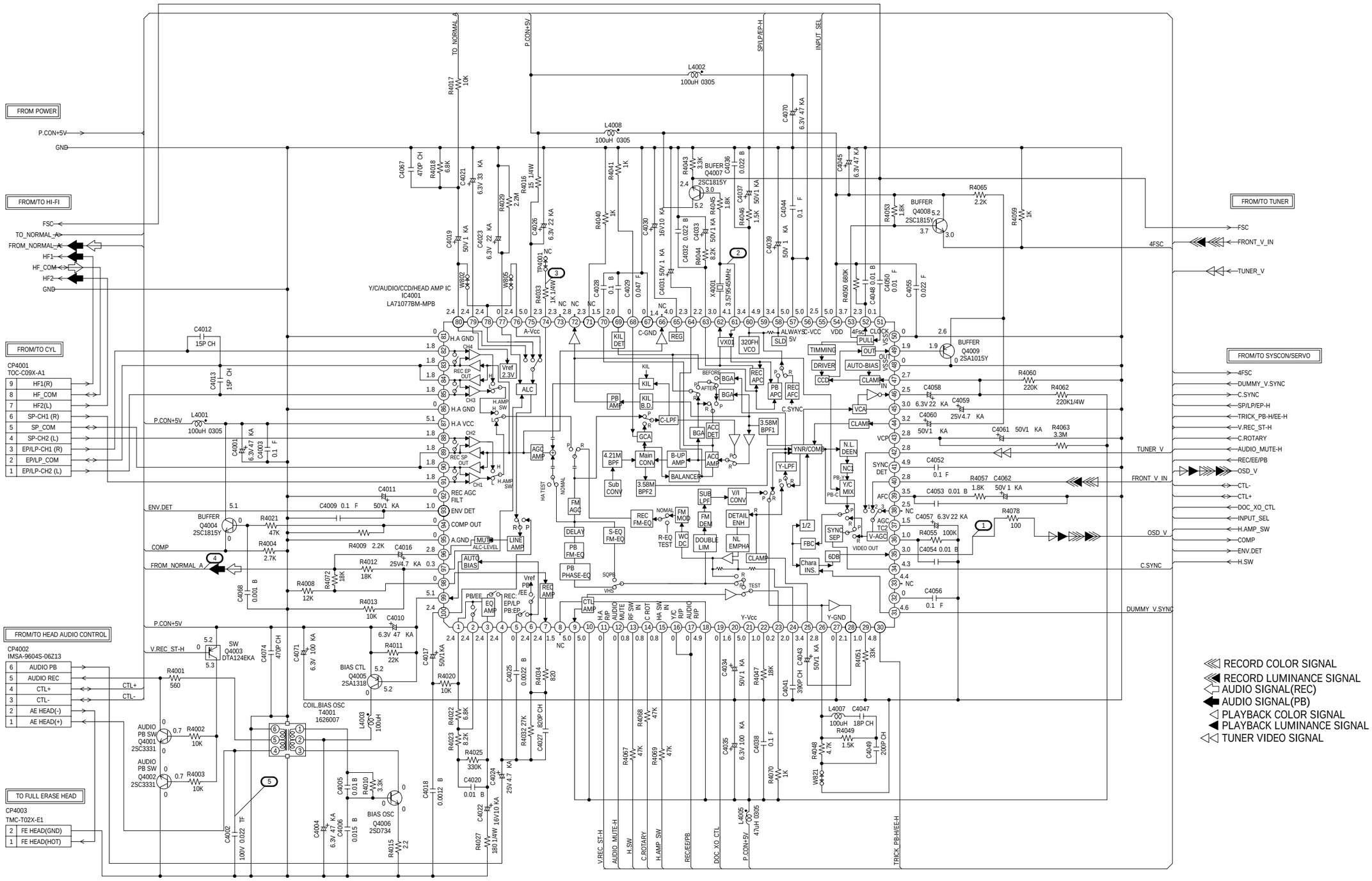


PRINTED CIRCUIT BOARDS
SYSCON/OPERATION (CHIP MOUNTED PARTS)
SOLDER SIDE



Y/C/AUDIO/CCD/HEAD AMP SCHEMATIC DIAGRAM

(SYSCON PCB)



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

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

CAUTION: DIGITAL TRANSISTOR

PCB010
VMX181

SYSTEM CONTROL/SERVO SCHEMATIC DIAGRAM

(SYSCON PCB)

RECORD COLOR SIGNAL
RECORD LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL

FROM/TO POWER
POWER_FAIL
MODEVCC
POWER_ON-L
AT+5V[M-CON]
P.CON+5V
AT+5V
AT+12.6_V
GND (S/S)
GND (CAP)
GND (LDM)
R1008 10K
POWER_FAIL-AC
R1010 33K 1/4W
LOADING MOTOR DRIVER IC
IC1002 BA6955AN
CONTROL LOGIC
STD
POWER SAVE
LDM.F
LDM.R
LM-
LM+
W827 3440
D1002 1N4005E
R1004 47K

FROM/TO DECK
CP1003(CP101)
IMSA-9604S-04Z14
1 VCC
2 BOT
3 LDM-
4 LDM+
BOT
LM-
LM+
D1001 SID1D50CM
D1004
D1003 TMPG06-12A
1N4005E
R1007 82K 1/4W
SW1001 SPVF130100
R1012 270
CENT SW Q1007 DTC124EKA
CENT_LED
R1003 120 1/4W
REEL-T
REEL SENSOR Q1009 SG-260
REEL SENSOR Q1001 SG-260
R1009 47K
REEL-S
R1005 47K

FROM/TO MICRO MOTOR
CP1001
IMSA-9604S-07Z14
7 CYL DRIVE
6 CYL GND
5 CYL FG
4 CYL +B
3 CYL PG
2 GND
1 CYL VCC 5V
EOT SENSOR Q1006 PNA2604M010R
R1006 2.2K
EOT
CYL_DRIVE
CYL_FG
CYL_PG

FROM/TO CAPSTAN DD UNIT
CP1002
TMC-J08P-B1
1 GND
2 MOTOR_GND
3 I LIMIT
4 CTL
5 VCO(12V)
6 FG
7 CAP/M/F/R
8 VCC(5V)
C1001 16V10 KA
C1035 0.0039 X
CAP_LIMIT
CONTROL_IN
CAP_FG
F/R

POWER_ON-L
REM_IN
SP/LP/EP-H
TV/VCR
TRICK_PB-H/EE-H
JUST CLOCK
REEL-T
REEL-S
POWER_FAIL-AC
R1013 47K 1/4W
AUDIO_OUT_MUTE_L
SERVICE
TAB SW
AUDIO OUT MUTE L
FL_CS
FL_S_CLK
TUNER_L
FL_SD_OUT
IIC_CLK
IIC_DATA
DOC_XO_CTL
SERVICE TP1001 NC
R1017 3.3K
R1019 3.3K

REC_LED
T-REC_LED
TV/VCR_LED
SENS_LED
SUB-RESET(TV/VCR LED)
CAP_LIMIT
CYL_DRIVE
LDM.F
LDM.R
F/R
AUDIO_MUTE-H
V.REC_ST-H
4FSC
C.SYNC
R1051 10K
D1008 1SS133
C1019 82P CH
C1033 0.022 B
C1006 15P CH
C1007 15P CH
X1001 10MHz
R1025 1M
R1011 22K
R1039_1 1M
C1036 0.1 B
R1039 1M
C1014 33P CH
C1016 27P CH
R1040 820
L1001 15uH
R1015 18 1/4W
R1053 15KJ/4W

FROM/TO TUNER
IIC_DATA
IIC_CLK
AFT-S.CURVE
AUDIO_OUT_MUTE_L
TV/VCR
VIDEO_OUT
TUNER_L

FROM/TO HI-FI
V.REC_ST-H
HIFI_ENV.DET
HIFI_H.SW
AUDIO_MUTE-H
IIC_CLK
IIC_DATA
ST_SELECT

FROM/TO Y/C/AUDIO/CCD/HEAD AMP
4FSC
DUMMY_V.SYNC
C.SYNC
SP/LP/EP-H
TRICK_PB-H/EE-H
V.REC_ST-H
C.ROTARY
AUDIO_MUTE-H
REC/EE/PB
OSD_V
CTL-
CTL+
DOC_XO_CTL
INPUT_SEL
H.AMP_SW
COMP
ENV.DET
H.SW

FROM/TO OPERATION
REM_IN

KEY-B
KEY-A
TV/VCR_LED
T-REC_LED
REC_LED

TIMER SYSCON SERVO CONTROLLER IC
IC1001
OEC0088A

81 POWER ON L
82 REM IN
83 SP/LP/EP-H
84 VCR-H(TV/VCR)
99 IIC DATA
100 DOC_XO_CTL
50 D OSC IN
49 VSS(OS)
48 AFC OSC
32 CTL-H(-)
31 CTL-H(+)

SYSTEM RESET IC
IC1003 RE5VS31A
IN GND OUT
R1034 4.7K
D1009 1SS133
R1037 5.6K
C1012 6.3V 33 KA
C1013 6.3V 220 YK
R1014 180K

MS_SEN A Q1005 RPI-352Q01R
MS_SEN B Q1004 RPI-352Q01R
SENS_LED
R1018 1K 1/4W
SW Q1003 2SC1815Y
R1021 10K 1/4W
R1023 33K
R1024 33K

PG ADJ VR1001 10K
R1026 10K
R1027 10K
MODEVCC
BOT
CENT_LED
C1008 0.01 B
C1009 0.1 F
C1010 0.022 B
C1011 0.18 B
R1036 5.6K
CYL_DRIVE
R1038 10K
CONTROL_IN
IIC_DATA
IIC_CLK

AFC LPF
CHR BIAS
CV OUT
V.REF
CV IN
Vcc(OSD)
VCC(SV)
CFG
DPG
DFG
CTL AMP
CTL BIAS
CTL AMP(-)
CTL GAIN SW
VSS(SV)
C1017 0.1 F
C1025 120P CH
R1049 820
C1027 25V4.7 KA
R1043 2.7K
C1023 0.1 B
R1044 4.7K
VIDEO_OUT
C1022 6.3V 22 KA
R1050 470K
C1018 6.3V 100 KA
C1029 25V4.7 KA
C1030 0.047 B
C1031 0.022 B
R1055 1K CAP_FG
R1054 1K CYL_PG
R1052 1K CYL_FG
C1015 220P CH
C1020 6.3V 47 KA
C1026 6.3V 22 KA
R1042 220
R1048 270K
R1045 47K
VIDEO H.SW TP1002 NC
R1041 560 1/4W
R1046 560 1/4W
C1021 0.001 B
R1047 6.8K
CTL+
CTL-

EEP ROM IC S-24C01BDP IC1099
DA CL TEST VCC
VSS A2 A1 A0
C1024 0.1 F

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

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

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

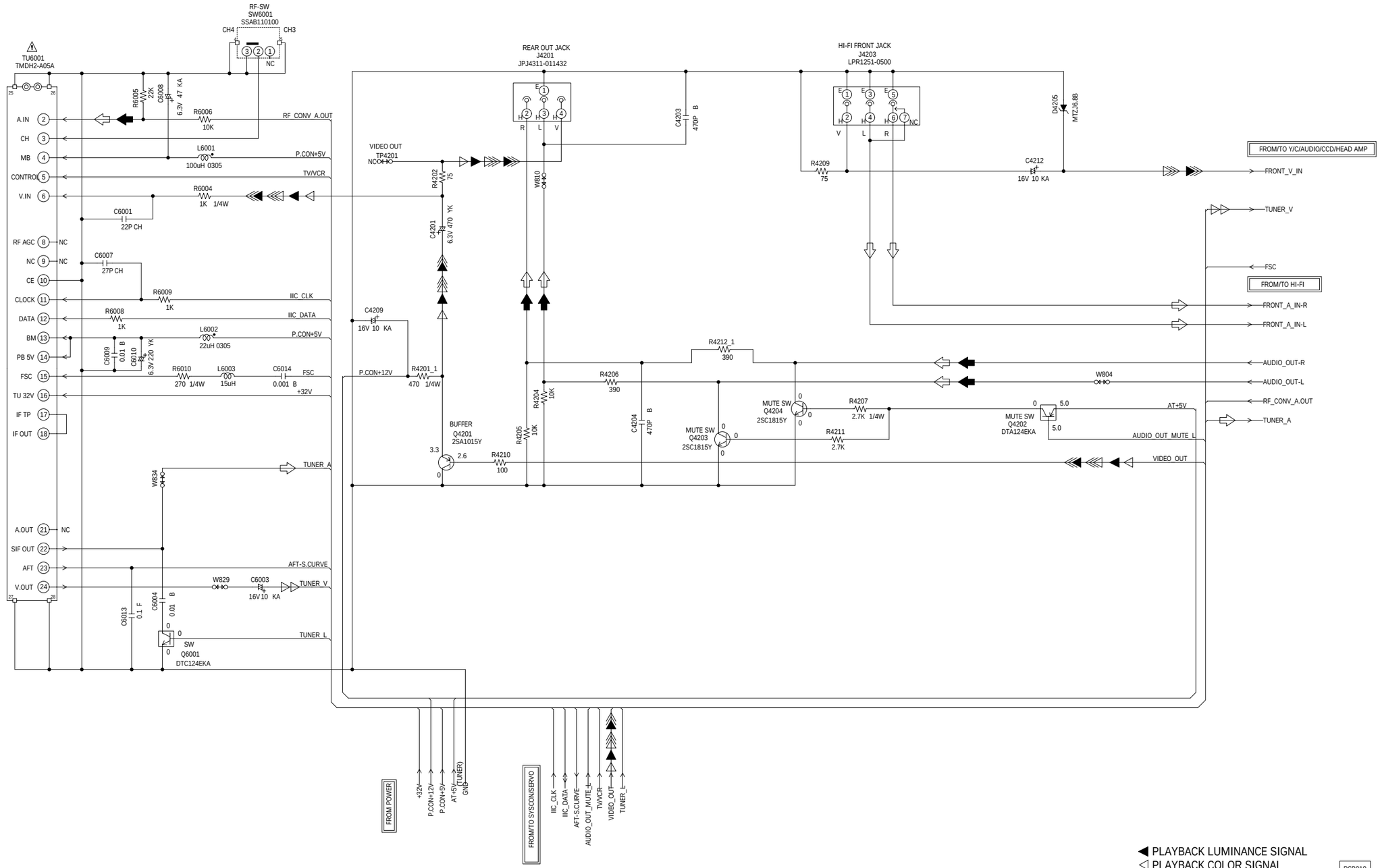
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY .

CAUTION: DIGITAL TRANSISTOR

PCB010
VMX181

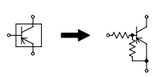
TUNER SCHEMATIC DIAGRAM

(SYSCON PCB)



CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR



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

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

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

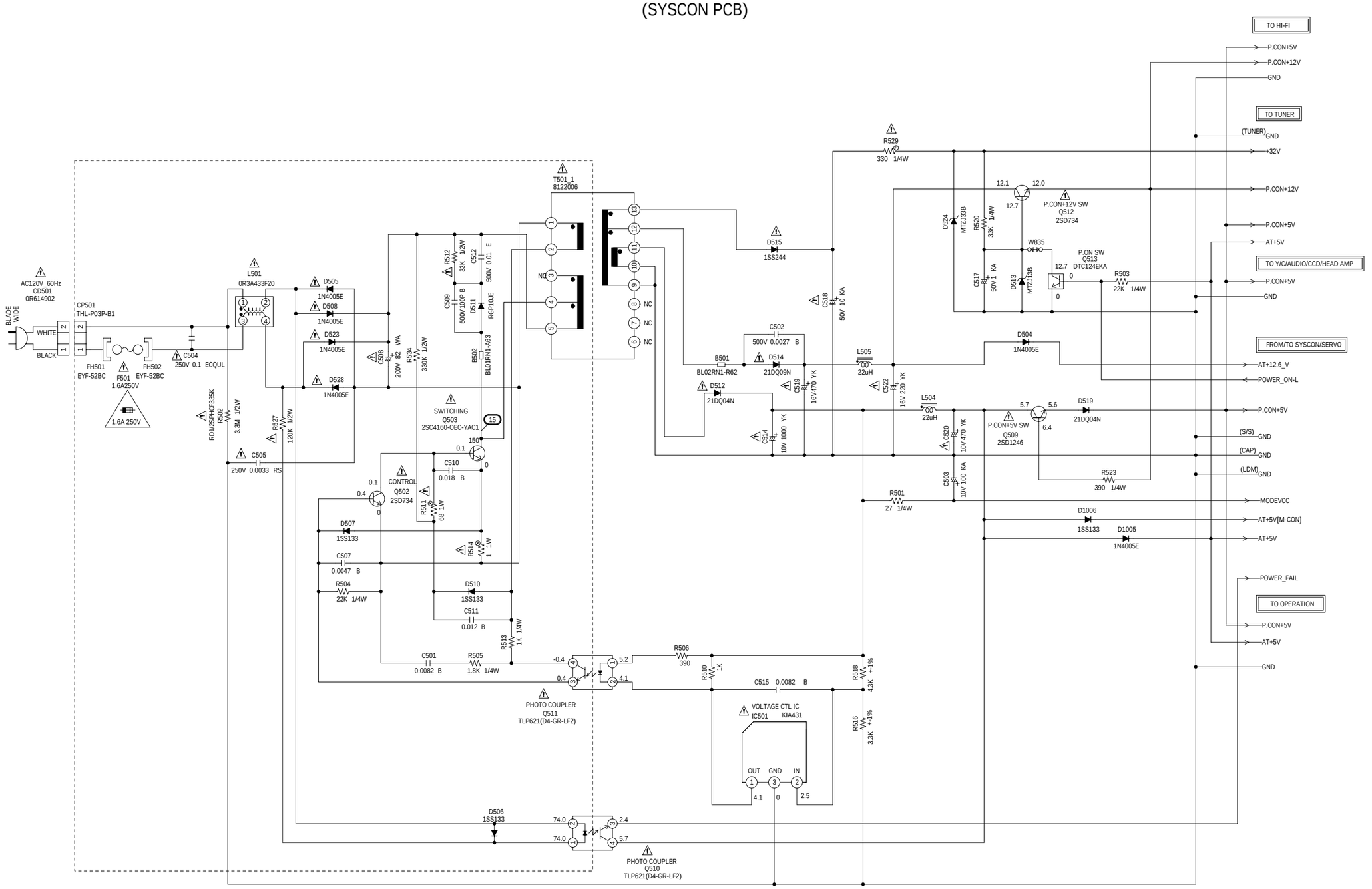
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

◀ PLAYBACK LUMINANCE SIGNAL
◁ PLAYBACK COLOR SIGNAL
⋘ RECORD LUMINANCE SIGNAL
⋘ RECORD COLOR SIGNAL
⇦ AUDIO SIGNAL(REC)
⬅ AUDIO SIGNAL(PB)
◁◁ TUNER VIDEO SIGNAL

PCB010
VMX181

POWER SCHEMATIC DIAGRAM

(SYSCON PCB)



1.6A 250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 1.6A 250V (F501).

ATTENTION: POUR LINEPROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 1.6A 250V (F501).

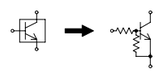
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

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

ATTENTION: LES 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 。

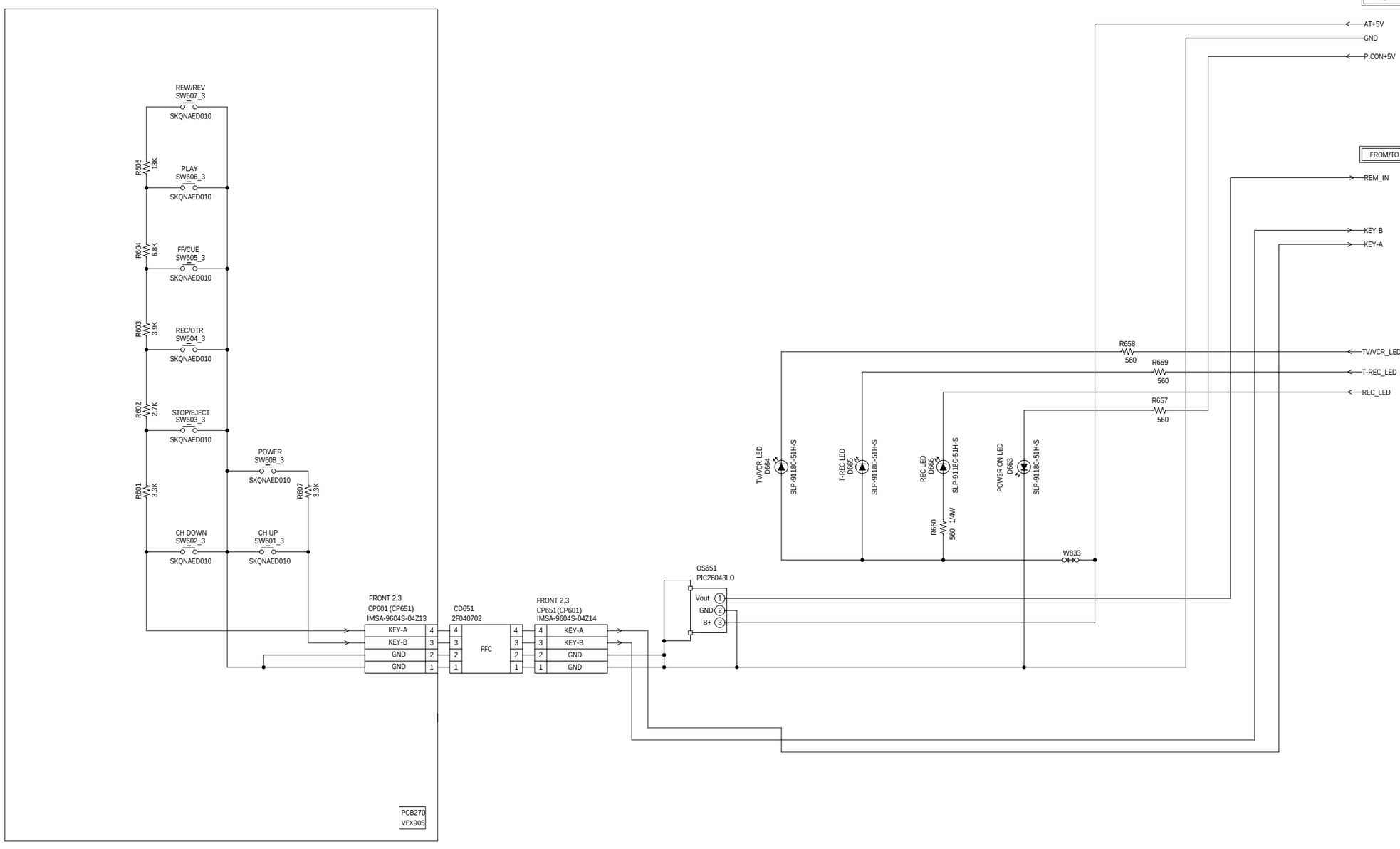
CAUTION: DIGITAL TRANSISTOR



PCB010
VMX181

OPERATION SCHEMATIC DIAGRAM

(SYSCON PCB)



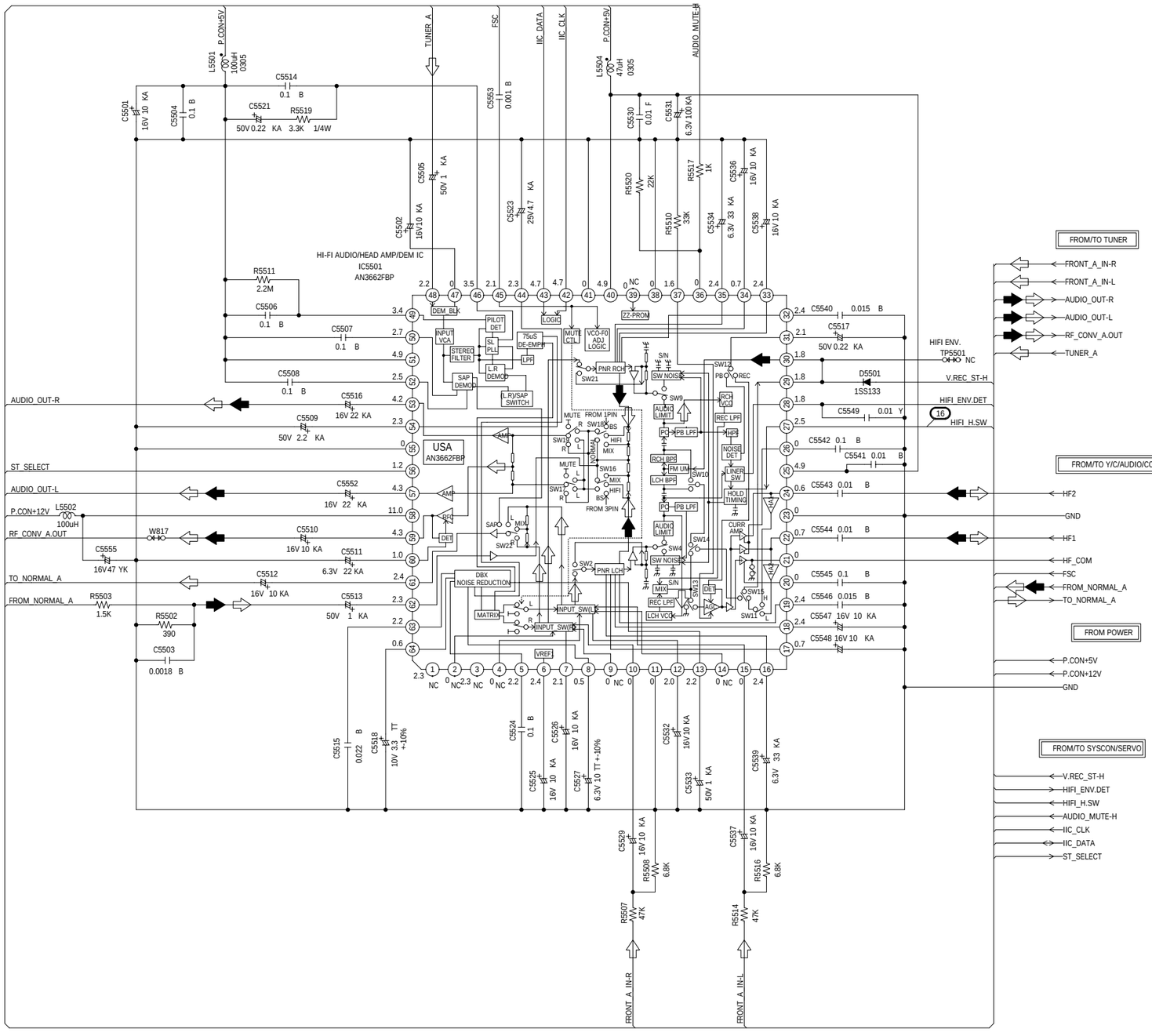
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB010
VMX181

HI-FI SCHEMATIC DIAGRAM

(SYSCON PCB)

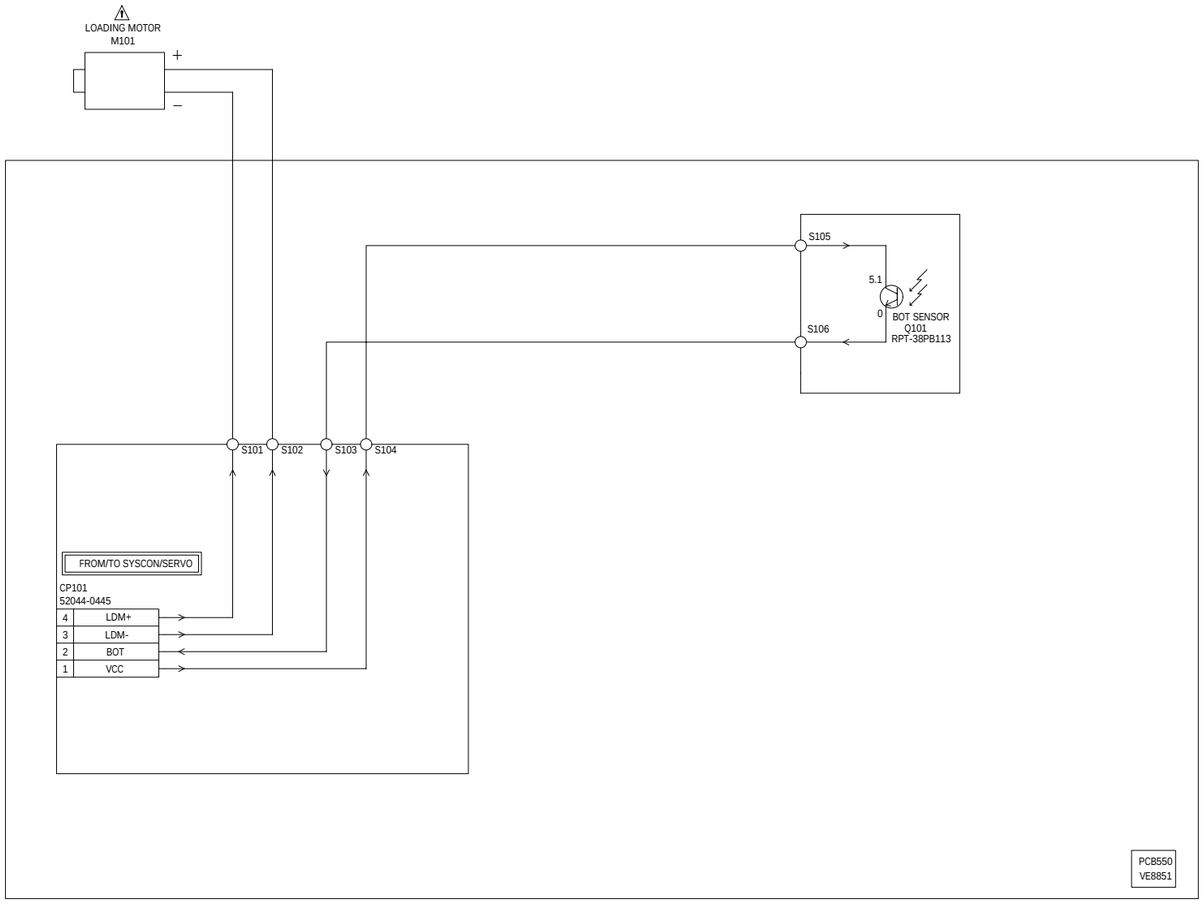


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

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

AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)

DECK SCHEMATIC DIAGRAM



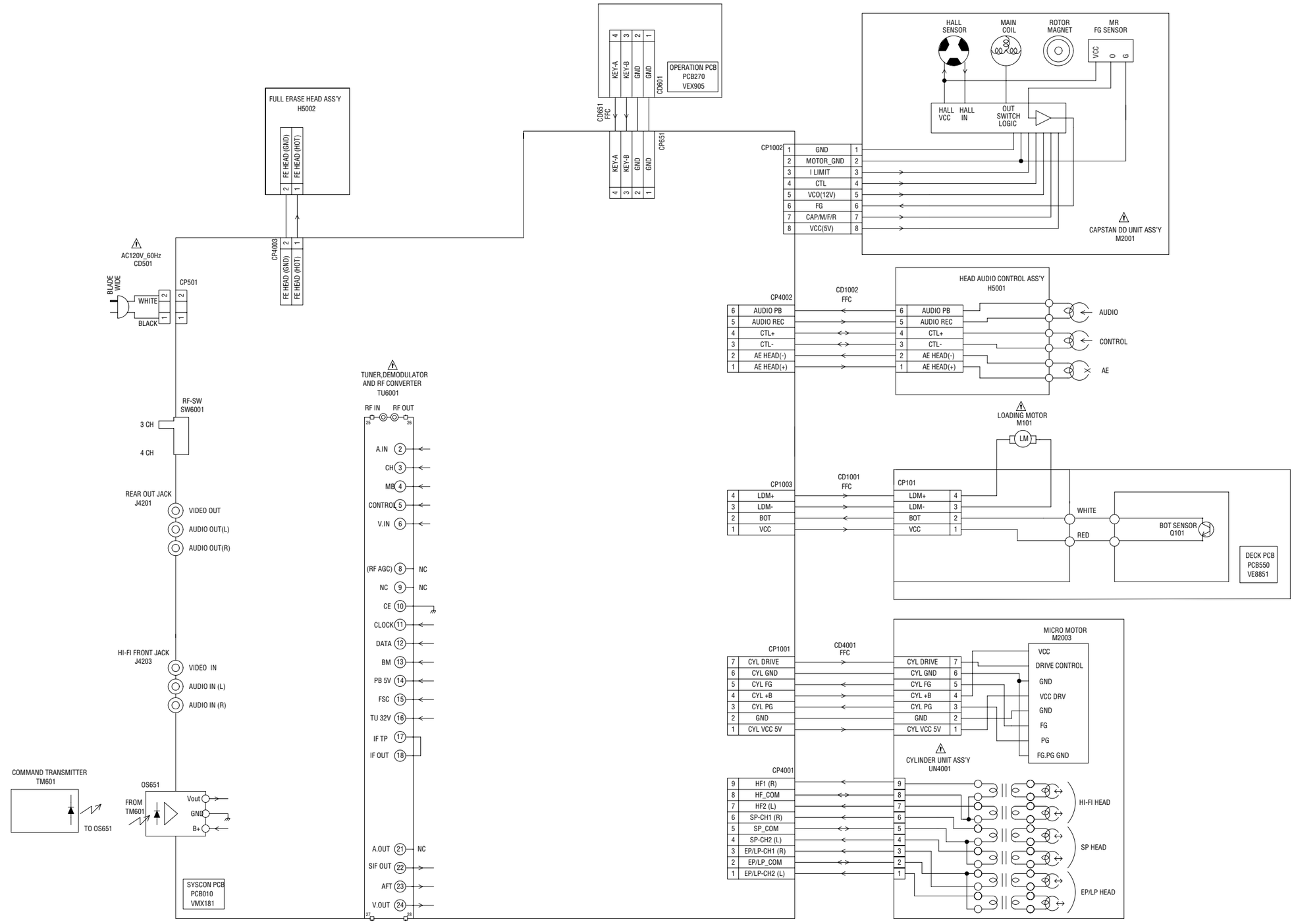
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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 DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

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

INTERCONNECTION DIAGRAM



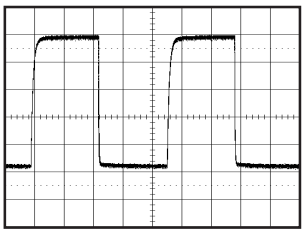
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

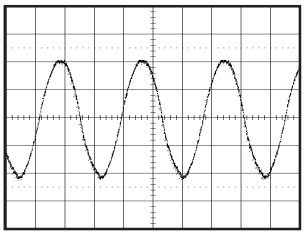
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

WAVEFORMS

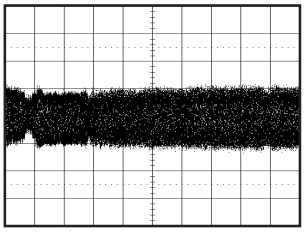
Y/C/AUDIO/CCD/HEAD AMP



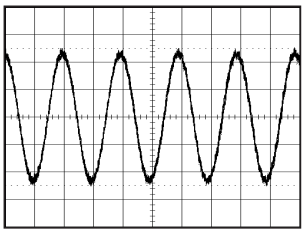
① PB
1V 0.2ms/div



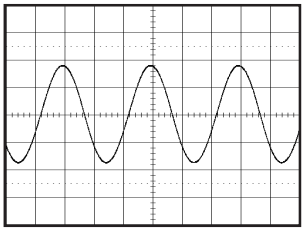
② POWER ON
100mV 0.1µs/div



③ PB
200mV 1ms/div

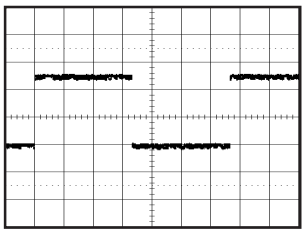


④ PB
200mV 0.5ms/div

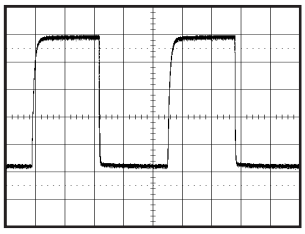


⑤ REC
20V 5µs/div

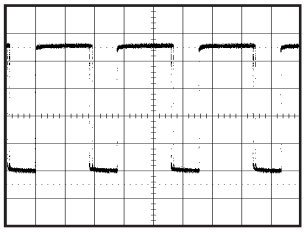
SYSCON/SERVO



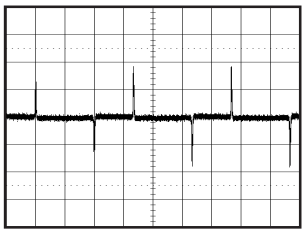
⑥ PB
2V 5ms/div



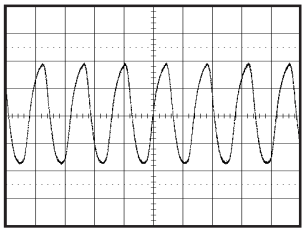
⑦ PB
1V 0.2ms/div



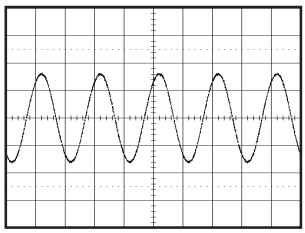
⑧ PB
1V 0.5ms/div



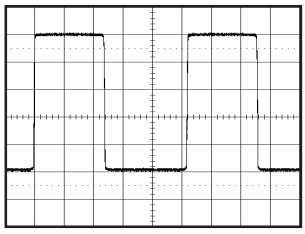
⑨ PB
0.5V 10ms/div



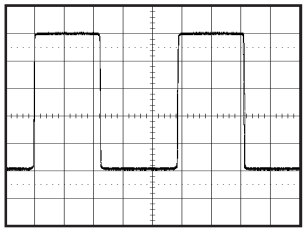
⑩ POWER ON
0.5V 50ns/div



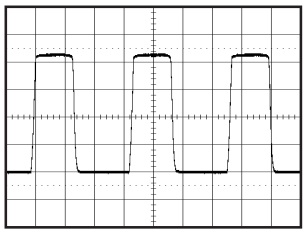
⑪ POWER ON
1V 50ns/div



⑫ PB
1V 0.2s/div

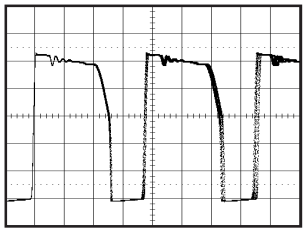


⑬ PB
1V 0.2s/div



⑭ POWER ON
1V 5ms/div

POWER

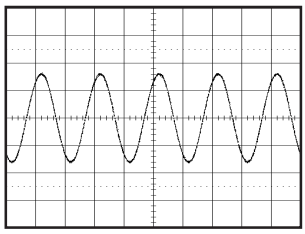


⑮ PB
50V 2µs/div

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

WAVEFORMS

HI-FI

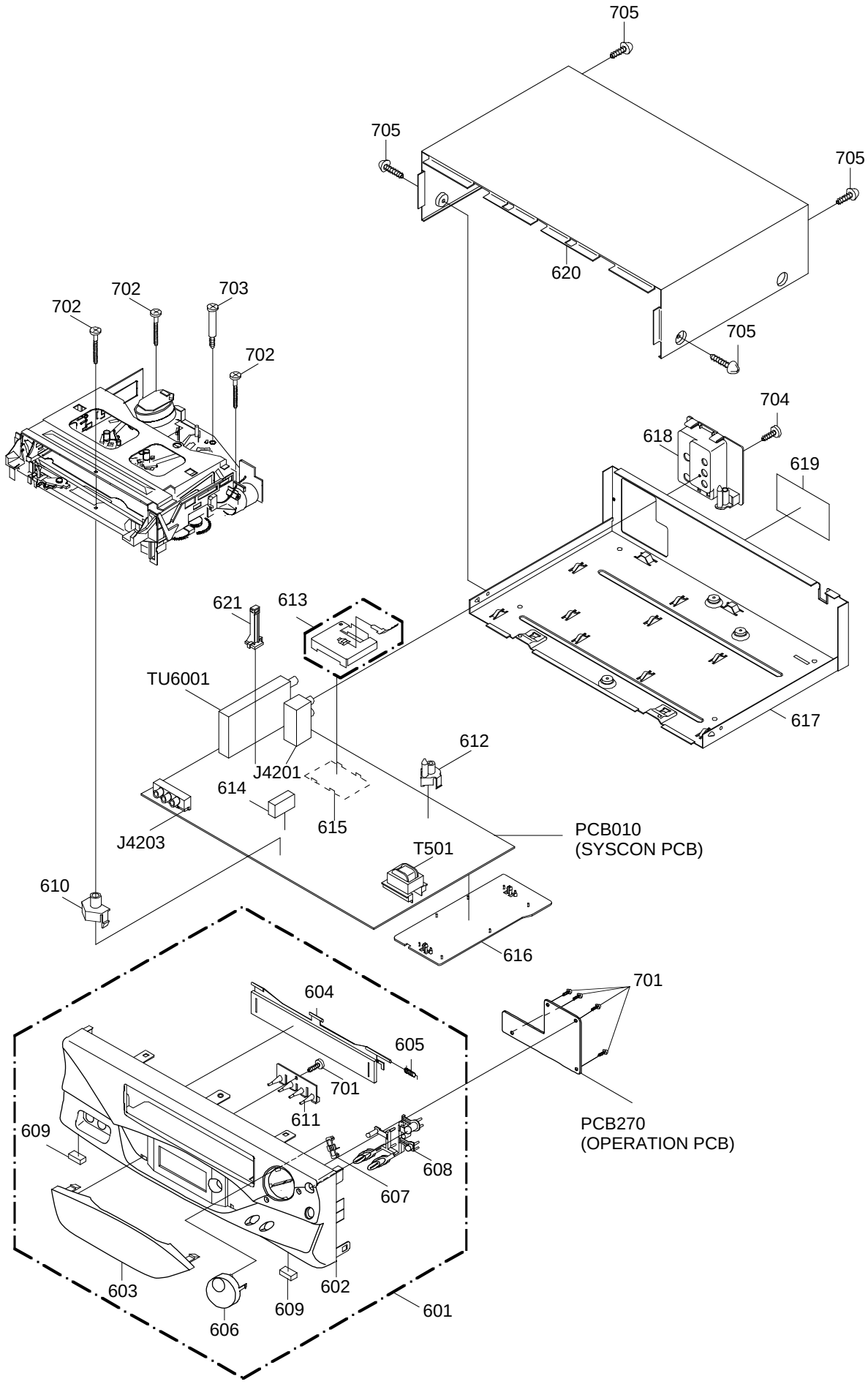


⑯ PB

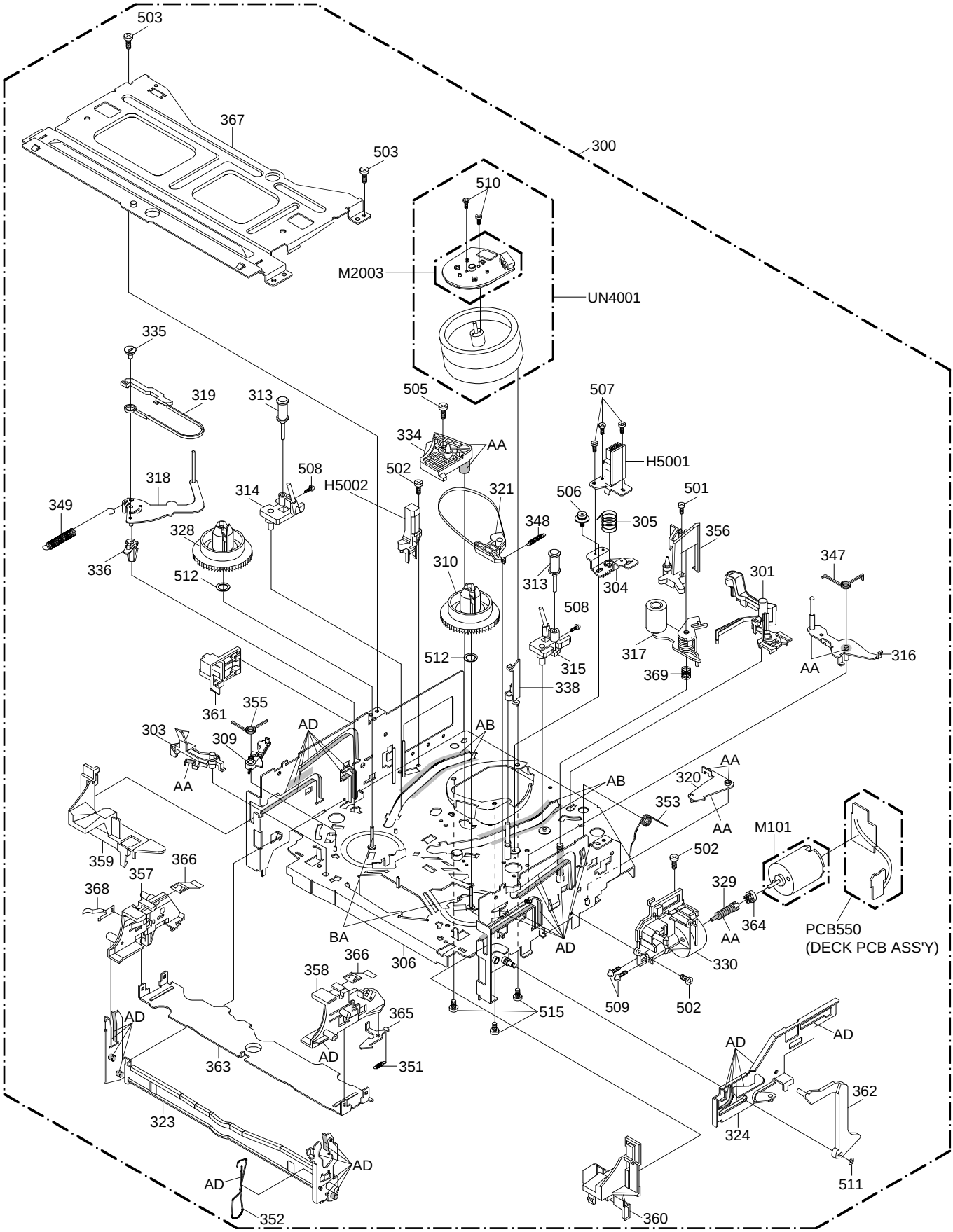
1V 5ms/div

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

MECHANICAL EXPLODED VIEW



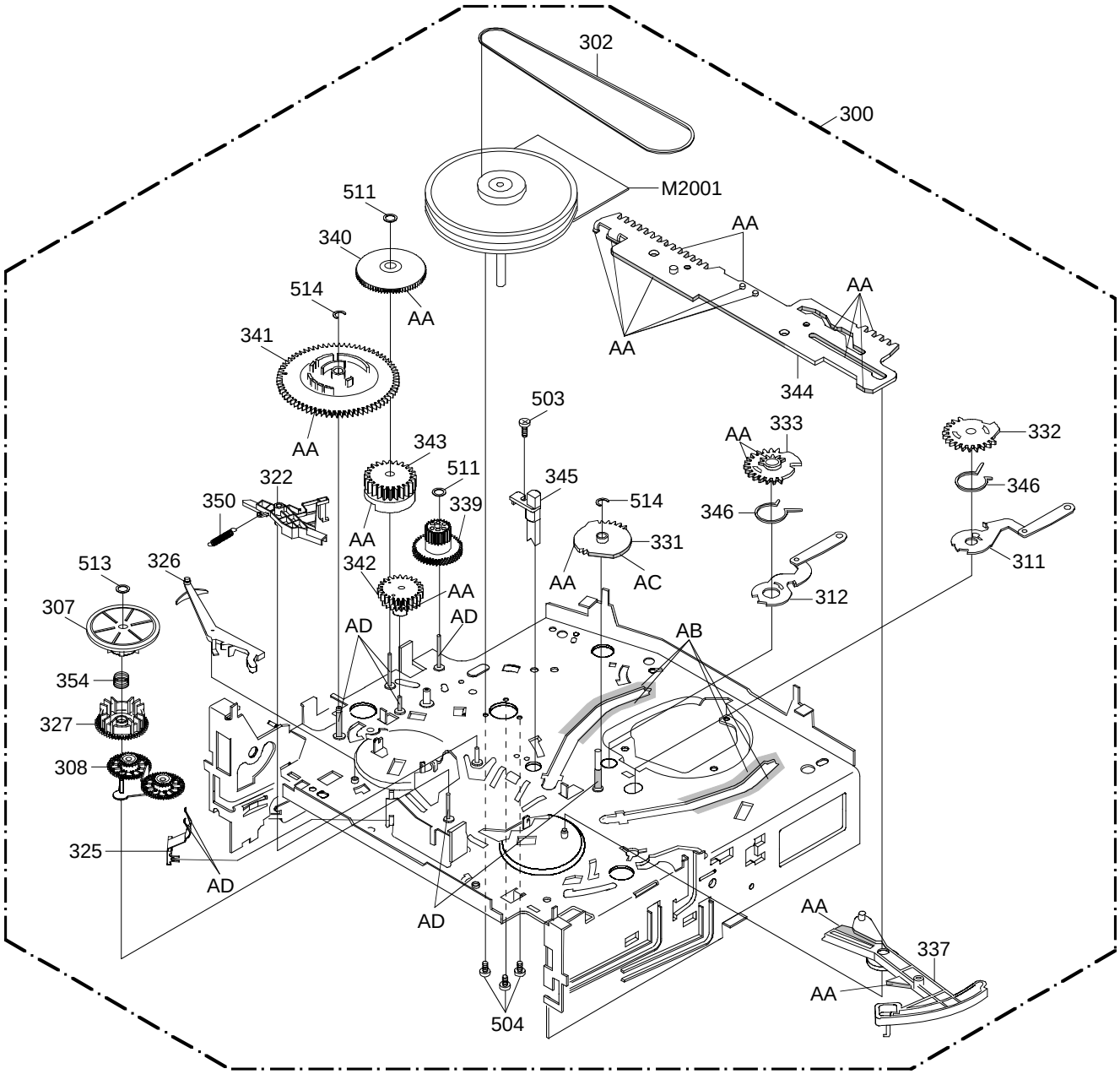
CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	G-488M	AB
	FL-721	AC
	MG-33	AD
OIL	FL OIL No. 6115	BA

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

CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	G-488M	AB
	FL-721	AC
	MG-33	AD
OIL	FL OIL No. 6115	BA

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

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
601	A4C9A6B720	CABINET,FRONT ASS'Y		
602	701WPJA799	CABINET,FRONT		
603	711WPDA265	PLATE,DISPLAY		
604	712WPJA572	FLAP		
605	743WKAA001	SPRING,FLAP		
606	735WPDA266	BUTTON,PLAY/STOP		
607	735WPA0376	BUTTON,HOLDER		
608	735WPDA267	BUTTON,FRAME		
609	800WFA0020	CUSHION,LEG		
610	701WPA0423	HOLDER,DECK		
611	713WPA0086	GLASS,LED		
612	704WPA0007	HOLDER,DECK (R)		
613	752WSA0192	SHIELD,CASE HEAD AMP ASS'Y		
614	800WR00071	RUBBER,SYSCON		8x15xT17.5
615	753WSA0124	SHIELD,COVER HEAD AMP		
616	755WPA0015	PLATE,COVER POWER		
617	702WSA0059	PLATE,BOTTOM		
618	702WPA0646	PLATE,JACK		
619	722A08A046	SHEET,RATING		
620	702WSB0015	CABINET,TOP		
621	85OP700036	HOLDER,EOT SENSOR		
701	8110226804	SCREW,TAP TITE (P)	BIND	2.6x8
702	8107140B94	SCREW,TAP TITE (S)	PAN	4x29
703	8146240644	SCREW,TAP TITE (S)	BIND	4x6
704	8110230A02	SCREW,TAP TITE (P)	BIND	3x10
705	8107240802	SCREW,TAP TITE (S)	BIND	4x8
---	JA5U0100	POLYBAG		
---	J4C9A601	INSTRUCTION BOOK		
---	791WHA0010	GIFT SHEET		
---	792WHA0214	PACKAGE		
---	793WCDA650	GIFT BOX		

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
300	A4C931B420A	DECK ASS'Y	A4C931B420A	501	8107126A04	SCREW,TAP TITE(S) PAN	2.6x10
				502	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
301	85OA500022	AHC ASS'Y		503	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
302	85OP200290	BELT,CAPSTAN (S)		504	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
303	85OP900710	LEVER,REC		505	810A126804	SCREW/WASHER(A)	M2.6x8
304	85OP500083	BASE,AC HEAD		506	810B126404	SCREW/WASHER(B)	M2.6x4
305	85OP800324	SPRING,AC HEAD		507	8102120604	SCREW,PAN	M2x6
306	85OA000361	MAIN CHASSIS ASS'Y (S)		508	8102120304	SCREW,PAN	M2x3
307	85OA200077	CLUTCH ASS'Y (S)		509	8102130304	SCREW,PAN	M3.0x3.0
308	85OA200080	ARM,IDLER ASS'Y (S)					
309	85OP600556	ARM,SS BRAKE (S)		510	810A123504	SEMS A	M2.3x5.0
				511	82P266005N	POLYSLIDER WASHER(CUT)	2.6x6.0xT0.5
310	85OP200292	REEL,T (S)		512	82Q2647C5N	POLYSLIDER WASHER	2.6x4.7xT0.25
311	85OA300061	LOADING ARM S ASS'Y		513	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
312	85OA300062	LOADING ARM T ASS'Y		514	83ETW30000	E-RING	3.0
313	85OA400187	G-ROLLER ASS'Y		515	810A126504	SCREW/WASHER(A)	M2.6x5
314	85OA400188	BASE,INCL S ASS'Y					
315	85OA400196	BASE,INCL T(S) ASS'Y		CP101	069R740018	CONNECTOR PCB SIDE	52044-0445
316	85OA400199	P5-3 ARM ASS'Y(S)		H5001	1523D91034	HEAD (AUDIO CONTROL)	HVMXA1072A
317	85OA400205	PINCH ROLLER BLOCK		H5002	1543D02013	HEAD (FULL ERASE)	HVFHP0032A
318	85OA400175	TENSION ARM ASS'Y		⚠ M101	1596P78001	MOTOR (LOADING)	MXN13FB11H
319	85OA400184	TENSION BAND ASS'Y (S)		⚠ M2001	1510398030	CAPSTAN DD UNIT	F2QSB02
				M2003	1589311005	MICRO MOTOR	F2OEL82
320	85OA400178	PINCH ROLLER LEVER ASS'Y		PCB550	A4C831B550	DECK PCB ASS'Y	VE8851
321	85OA600188	BRAKE T ASS'Y (S)		Q101	0000700320	TRANSISTOR,PHOTO	RPT-38PB113
322	85OA600191	CAP BRAKE ASS'Y(S)		⚠ UN4001	A4C931B500	CYLINDER UNIT ASSY	A4C931B500
323	85OA900213	LINK ASS'Y					
324	85OA900216	LINK LEVER ASS'Y					
325	85OP200284	LEVER,CLUTCH (S)					
326	85OP200285	ACTUATOR,CLUTCH					
327	85OP200286	GEAR,COUPLING					
328	85OP200291	REEL,S (S)					
329	85OP600541	WORM					
330	85OP600563	BRACKET,MOTOR					
331	85OP300178	GEAR,MAIN LOADING					
332	85OP300179	GEAR,LOADING S					
333	85OP300180	GEAR,LOADING T					
334	85OP300186	HOLDER,LOADING GEAR					
335	85OP400472	ADJUST,TENSION					
336	85OP400492	HOLDER,TENSION					
337	85OP400490	LEVER,TENSION					
338	85OP400475	COVER,P4					
339	85OP600543	GEAR,JOINT					
340	85OP600544	GEAR,MIDDLE					
341	85OP600554	CAM,MAIN (S)					
342	85OP600546	CAM,P5					
343	85OP600547	CAM,PINCH ROLLER					
344	85OP600561	ROD,MAIN(S)					
345	85OP700035	REFLECTOR,LED					
346	85OP800318	SPRING,LOADING GEAR					
347	85OP800334	SPRING,P5 (S)					
348	85OP800335	SPRING,BRAKE T (S)					
349	85OP800322	SPRING,TENSION					
350	85OP800336	SPRING,CAP BRAKE (S)					
351	85OP800342	SPRING,LOCKER (S)					
352	85OP800326	SPRING,LINK					
353	85OP800328	SPRING,DAMPER					
354	85OP800330	SPRING,RING					
355	85OP800337	SPRING,SS BRAKE (S)					
356	85OP900680	OPENER,CASS					
357	85OP900704	CASS,SIDE L					
358	85OP900684	CASS SIDE R					
359	85OP900709	TAPE GUIDE L (P,R)					
360	85OP900686	TAPE GUIDE R					
361	85OP900703	COVER,SENSOR L2					
362	85OP900688	LEVER,FLAP					
363	85OP900690	CASS HOLDER					
364	85OP600540	DRIVER,WORM					
365	85OP900713	LOCKER,R2					
366	85OP900694	SPRING,PACK					
367	85OP900695	BRACKET,TOP					
368	85OP900696	SPRING,CASS EARTH					
369	85OP800341	SPRING,P/R ARM					

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
⚠ R502	R0G3K2335K	RC	3.3M OHM 1/2W
⚠ R511	R3X181680J	R, METAL OXIDE	68 OHM 1W
⚠ R512	R002T2333J	RC	33K OHM 1/2W
⚠ R514	R3X181010J	R, METAL OXIDE	1 OHM 1W
⚠ R527	R0X2X2124J	RC	120K OHM 1/2W
⚠ R529	R655U4331J	R, FUSE	330 OHM 1/4W
		CAPACITORS	
⚠ C504	P2122B104M	CMP	0.1 UF 250V ECQUL
⚠ C505	CBNLE0ML3M	CC	0.0033UF 250VAC
⚠ C508	E02AFC820M	CE	82 UF 200V
C512	C0JFE0514M	CC	0.01 UF 500V E
⚠ C514	E02LT1102M	CE	1000 UF 10V
⚠ C518	E50HU5100M	CE	10 UF 50V
⚠ C519	E02LT2471M	CE	470 UF 16V
⚠ C520	E02LU1471M	CE	470 UF 10V
⚠ C522	E02LT2221M	CE	220 UF 16V
		DIODES	
D504	D2LXE65800	DIODE, SILICON	1N4005E-G23
⚠ D505	D2LXE65800	DIODE, SILICON	1N4005E-G23
D506	D1VT001330	DIODE, SILICON	1SS133T-77
D507	D1VT001330	DIODE, SILICON	1SS133T-77
⚠ D508	D2LXE65800	DIODE, SILICON	1N4005E-G23
D510	D1VT001330	DIODE, SILICON	1SS133T-77
D511	D2LTP10JE0	DIODE, RECTIFIER	RGP10JE-G3
⚠ D512	D28T21DQN4	DIODE, SCHOTTKY	21DQ04N-TA2B1
D513	D97U01301B	DIODE, ZENER	MTZJ13B T-77
⚠ D514	D28T21DQN9	DIODE, SCHOTTKY	21DQ09N-TA2B1
⚠ D515	D17T002440	DIODE, SILICON	1SS244T-77
D519	D28T21DQN4	DIODE, SCHOTTKY	21DQ04N-TA2B1
⚠ D523	D2LXE65800	DIODE, SILICON	1N4005E-G23
D524	D97U03301B	DIODE, ZENER	MTZJ33B T-77
⚠ D528	D2LXE65800	DIODE, SILICON	1N4005E-G23
D663	0021320220	LED	SLP-9118C-51H-S-T1
D664	0021320220	LED	SLP-9118C-51H-S-T1
D665	0021320220	LED	SLP-9118C-51H-S-T1
D666	0021320220	LED	SLP-9118C-51H-S-T1
D1001	0010600060	LED	SID1050CM
D1002	D2LXE65800	DIODE, SILICON	1N4005E-G23
D1003	D93T11201A	DIODE, ZENER	TMPG06-12A-G3
D1004	D2LXE65800	DIODE, SILICON	1N4005E-G23
D1005	D2LXE65800	DIODE, SILICON	1N4005E-G23
D1006	D1VT001330	DIODE, SILICON	1SS133T-77
D1008	D1VT001330	DIODE, SILICON	1SS133T-77
D1009	D1VT001330	DIODE, SILICON	1SS133T-77
D4205	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77
D5501	D1VT001330	DIODE, SILICON	1SS133T-77
		ICS	
⚠ IC501	I1KJ9A4310	IC	KIA431
IC1001	I54F50088A	IC	OEC0088A
⚠ IC1002	I07SQ955AN	IC	BA6955AN
IC1003	IE1J0S31AH	IC	RE5VS31A
IC1099	A4C9A6B015	IC	S-24C01BDP
IC4001	I03F31077B	IC	LA71077BM-MPB
IC5501	I01F62FBP0	IC	AN3662FBP
		TRANSISTORS	
⚠ Q502	TD3T007340	TRANSISTOR, SILICON	2SD734(E,F)-AA
⚠ Q503	TCWQ4160E0	TRANSISTOR, SILICON	2SC4160-OEC-YAC1
⚠ Q509	TD3T012460	TRANSISTOR, SILICON	2SD1246(S,T)-AA
⚠ Q510	0002500560	PHOTO COUPLER	TLP621(D4-GR-LF2)
⚠ Q511	0002500560	PHOTO COUPLER	TLP621(D4-GR-LF2)
⚠ Q512	TD3T007340	TRANSISTOR, SILICON	2SD734(E,F)-AA
Q513	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q1001	0002M00570	PHOTO COUPLER	SG-260
Q1002	0002M00570	PHOTO COUPLER	SG-260
Q1003	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)
Q1004	0002700530	PHOTO COUPLER	RPI-352Q01R
Q1005	0002700530	PHOTO COUPLER	RPI-352Q01R
Q1006	0000100380	PHOTO TRANSISTOR	PNA2604M010R
Q1007	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q4001	TC3T033310	TRANSISTOR, SILICON	2SC3331(S,T,U)-A
Q4002	TC3T033310	TRANSISTOR, SILICON	2SC3331(S,T,U)-A
Q4003	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q4004	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)
Q4005	TA3T013180	TRANSISTOR, SILICON	2SA1318(S,T)-AA
Q4006	TD3T007340	TRANSISTOR, SILICON	2SD734(E,F)-AA
Q4007	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)
Q4008	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)

REF. NO.	PART NO.	DESCRIPTION	
		TRANSISTORS	
Q4009	TA5T010154	TRANSISTOR, SILICON	2SA1015Y(TPE2)
Q4201	TA5T010154	TRANSISTOR, SILICON	2SA1015Y(TPE2)
Q4202	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q4203	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)
Q4204	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)
Q6001	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
		COILS &TRANSFORMERS	
⚠ L501	029T000083	COIL, LINE FILTER	0R3A433F20
L504	021W66220M	COIL	22 UH
L505	021W66220M	COIL	22 UH
L1001	021LA6150K	COIL	15 UH
L4001	02167F101J	COIL	100 UH
L4002	02167F101J	COIL	100 UH
L4003	021673101J	COIL	100 UH
L4005	02167F470J	COIL	47 UH
L4007	021LA6101K	COIL	100 UH
L4008	02167F101J	COIL	100 UH
L5501	02167F101J	COIL	100 UH
L5502	021LA6101K	COIL	100 UH
L5504	02167F470J	COIL	47 UH
L6001	02167F101J	COIL	100 UH
L6002	02167F220J	COIL	22 UH
L6003	021LA6150K	COIL	15 UH
⚠ T501	0481220064	TRANSFORMER, SWITCHING	8122006
T4001	031626007S	COIL, BIAS OSC	1626007
		JACKS	
J4201	0602411006	JACK, RCA	JPJ4311-011432
J4203	0607431012	JACK, RCA 3.5	LPR1251-0500
		SWITCHES	
SW601	0504201T32	SWITCH, TACT	SKQNAED010
SW602	0504201T32	SWITCH, TACT	SKQNAED010
SW603	0504201T32	SWITCH, TACT	SKQNAED010
SW604	0504201T32	SWITCH, TACT	SKQNAED010
SW605	0504201T32	SWITCH, TACT	SKQNAED010
SW606	0504201T32	SWITCH, TACT	SKQNAED010
SW607	0504201T32	SWITCH, TACT	SKQNAED010
SW608	0504201T32	SWITCH, TACT	SKQNAED010
SW1001	0508221001	SWITCH (LEAF)	SPVF130100
SW6001	0501201010	SWITCH, SLIDE	SSAB110100
		VARIABLE RESISTOR	
VR1001	V126314BTC	VOLUME, SEMI FIXED	RH063MC14R
		P.C.BOARD ASSEMBLIES	
PCB010	A4C9A6B01A	PCB ASS'Y	VMX181A
PCB270	A4C9A6B27A	PCB ASS'Y	VEX905A
PCB550	A4C831B550	SEE CHASSIS REPLACEMENT PARTS LIST	
		MISCELLANEOUS	
B501	024AT03481	CORE, BEADS	BL02RN1-R62T2
B502	024AT03655	CORE, BEADS	BL01RN1-A63T6
⚠ CD501	120R614902	CORD, AC	U4N 0R614902
CD651	122F040702	CORD, JUMPER	2F040702
CP501	0697320039	CORD, UX CONNECTOR	THL-P03P-B1
CP601	069J740019	CONNECTOR PCB SIDE	IMSA-9604S-04Z13
CP651	069J740029	CONNECTOR PCB SIDE	IMSA-9604S-04Z14
CD1001	122F040702	CORD, JUMPER	2F040702 or
	122S040703	CORD, JUMPER	2S040703
CD1002	122F061501	CORD, JUMPER	2F061501 or
	122S061401	CORD, JUMPER	1.25X6X138XC
CD4001	122F071701	CORD, JUMPER	2F071701 or
	122S071702	CORD, JUMPER	1.25X7X170XC
CD6002	06CQL02006	CABLE	SI-C108-40
CP1001	069J770029	CONNECTOR PCB SIDE	IMSA-9604S-07Z14
CP1002	0697280590	CONNECTOR PCB SIDE	TMC-J08P-B1
CP1003	069J740029	CONNECTOR PCB SIDE	IMSA-9604S-04Z14
CP4001	0697290620	CONNECTOR PCB SIDE	TOC-C09X-A1
CP4002	069J760019	CONNECTOR PCB SIDE	IMSA-9604S-06Z13
CP4003	0697120320	CONNECTOR PCB SIDE	TMC-T02X-E1
⚠ F501	080PA1R601	FUSE	23301.6-MB000
FH501	06710T0006	HOLDER, FUSE	EYF-52BC
FH502	06710T0006	HOLDER, FUSE	EYF-52BC
OS651	077Q000018	REMOTE RECEIVER	PIC26043LO
TM601	076R0DC030	TRANSMITTER	R25-1374
⚠ TU6001	0162600018	RF, UNIT	TMDH2-A05A
X1001	100CT01002	CRYSTAL HC-49/U-S	10MHz
X4001	100CF3R512	CRYSTAL HC-49/U	3.579545MHz

ELECTRICAL REPLACEMENT PARTS LIST

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

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

SPEC.NO.	M4C9-A6B
O/R NO.	B024009