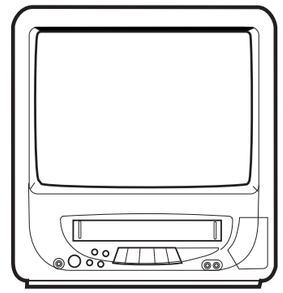
Memorex®

MVT2196

SERVICE MANUAL

COLOR TELEVISION/
VIDEO CASSETTE RECORDER

ORIGINAL
MFR'S VERSION A



VHS

SPECIFICATIONS

(TV SECTION)	
PICTURE SIZE:	19 inch
SYSTEM:	NTSC
FREQUENCY RANGE	
VHF:	2-13ch
UHF:	14-69 ch
CATV:	14-36 (A)-(W) ch
	37-59 (AA)-(WW) ch
	60-85 (AAA)-(ZZZ) ch
	86-94 (86)-(94) ch
	95-99 (A-5)-(A-1) ch
	100-125 (100)-(125) ch
	01 (5A) ch
INTERMEDIATE FREQUENCY	
Picture IF Carrier Frequency:	45.75 MHz
Sound IF Carrier Frequency:	41.25 MHz
SOUND INTERMEDIATE FREQUENCY:	4.5 MHz
MAXIMUM OUTPUT POWER:	2.5 W
10% THD OUTPUT POWER:	2.0 W
SPEAKER:	16 ohm x 2
POWER SOURCE:	AC 120V, 60Hz
POWER CONSUMPTION:	86 Watts

(VCR SECTION)	
OPERATING TEMPERATURE:	5°C to 40°C
STORAGE TEMPERATURE:	-20°C to 60°C
VIDEO RECORDING SYSTEM:	VHS, 2 rotary heads helical scanning system
	Luminance: FM azimuth recording
	Color Signal: Converted subcarrier phase shift recording
HEADS:	Video: 2 Rotary Heads
	Audio/Control: 1 Stationary Head
	Erase: 1 Full Track Erase Head
TAPE WIDTH:	12.65 mm high density tape
AUDIO TRACK:	1 track
F.FWD TIME:	Approx. 3' 40"(T-120 Cassette)
REW TIME:	Approx. 2' 50"(T-120 Cassette)
TAPE SPEED:	SP: 33.35 mm/sec
	LP: 16.67 mm/sec
	SLP: 11.12 mm/sec
INPUT LEVEL:	Video: 1.0Vp-p, 75 ohm unbalanced
	Audio: 300mV, 50k ohm unbalanced
OUTPUT LEVEL:	Video: 1.0Vp-p, 75 ohm unbalanced
	Audio: 300mV, 1k ohm unbalanced
WEIGHT:	48.4 lbs
DIMENSIONS:	19 1/2"(W) x 18 5/9"(D) x19 1/16"(H)

Design and specifications are subject to change without notice.

SPEC.NO.	M546-09A
O/R NO.	W935009

Memorex®

MVT2196

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER

REVISION 1
MFR'S VERSION C

MFR'S VERSION	IC101	M2001
A	OEC7034A	EP15BB
C	OEC7034B	F2QSB02

VHS

Please file this revision with the original version.

Change of IC1001

DIFFERENCES

REF. NO.	MFR'S VERSION A		MFR'S VERSION C	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
IC1001	I56F57034A	IC OEC7034A	I56F57034B	IC OEC7034B
PCB010	A54609A01A	SYSCON PCB ASS'Y VM9149A	A54609A01B	SYSCON PCB ASS'Y VM9149A

NOTE FOR THE REPLACING OF MEMORY IC

ADDRESS	MFR'S VERSION A	MFR'S VERSION C
	DATA	DATA
14	94	04

Change of CAPSTAN DD UNIT

CHASSIS REPLACEMENT PARTS LIST

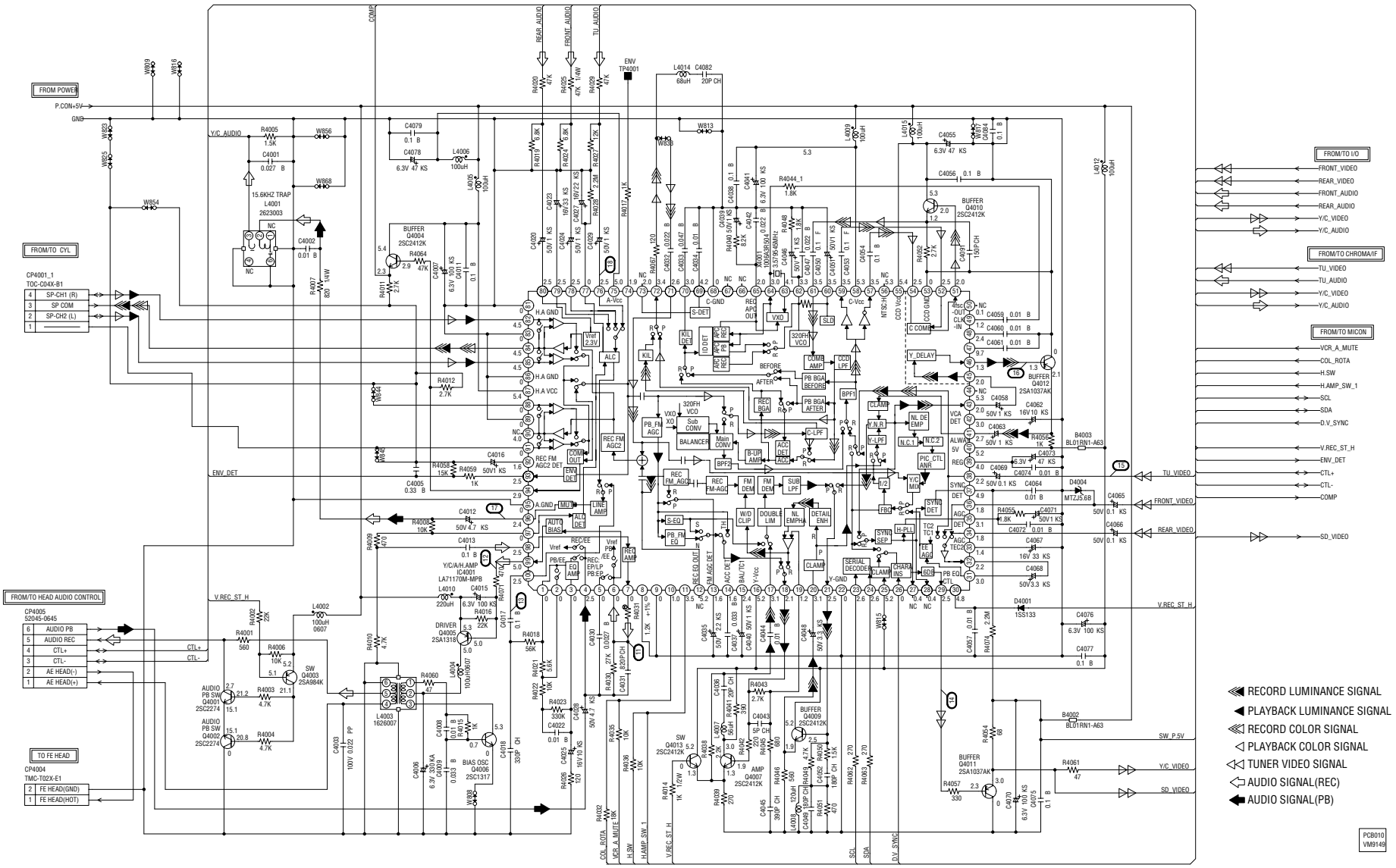
REF. NO.	MFR'S VERSION A		MFR'S VERSION C	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
M2001	1594J98007	CAPSTAN DD UNIT EP15BB	1510398030	CAPSTAN DD UNIT F2QSB02

NOTE FOR THE REPLACING OF MEMORY IC

ADDRESS	MFR'S VERSION A	MFR'S VERSION C
	DATA	DATA
10	6C	C0
11	2B	68
12	21	5C
13	15	53

SPEC.NO.	M546-09A
O/R NO.	W995015

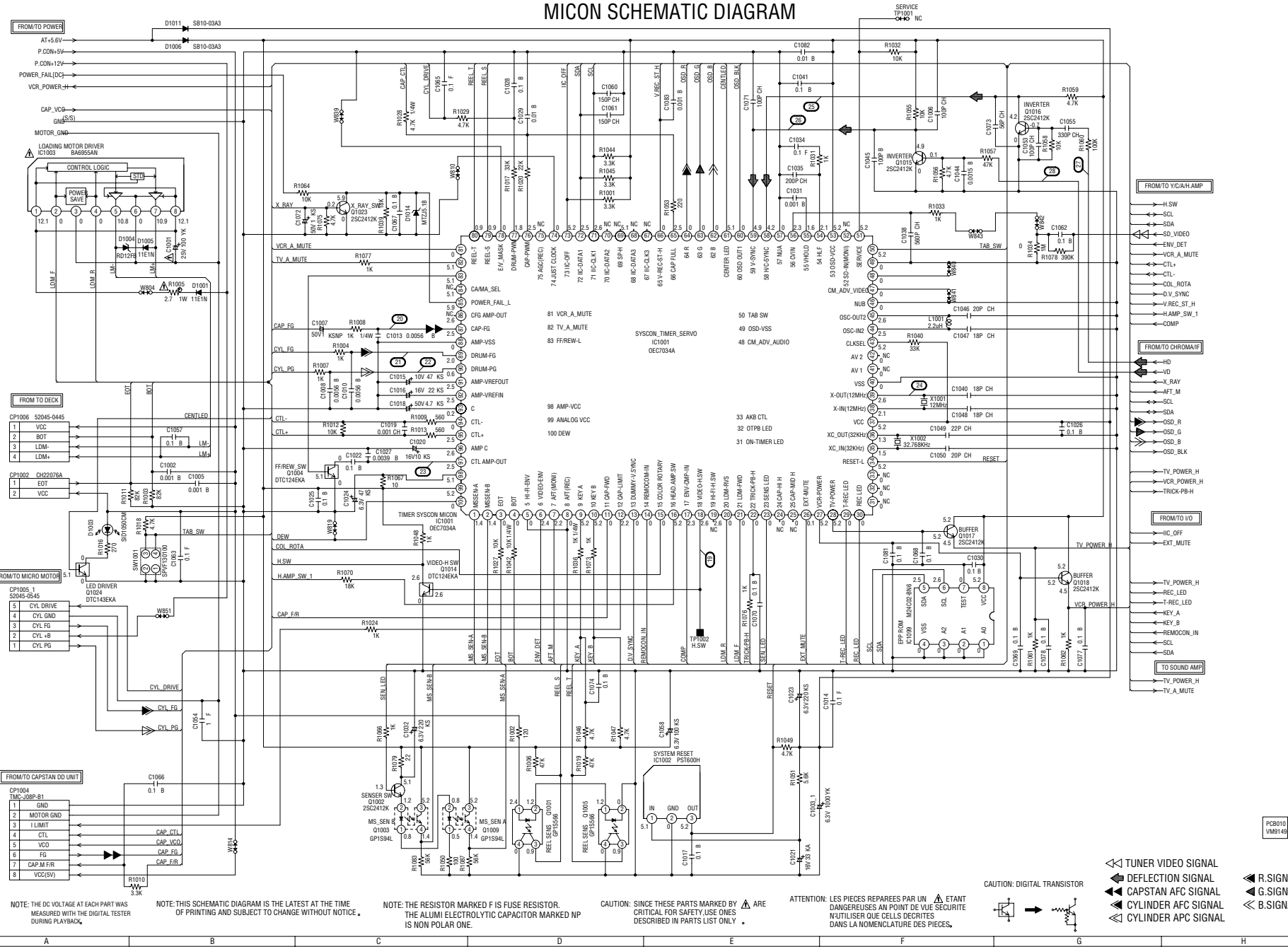
Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM



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.

MICON SCHEMATIC DIAGRAM



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

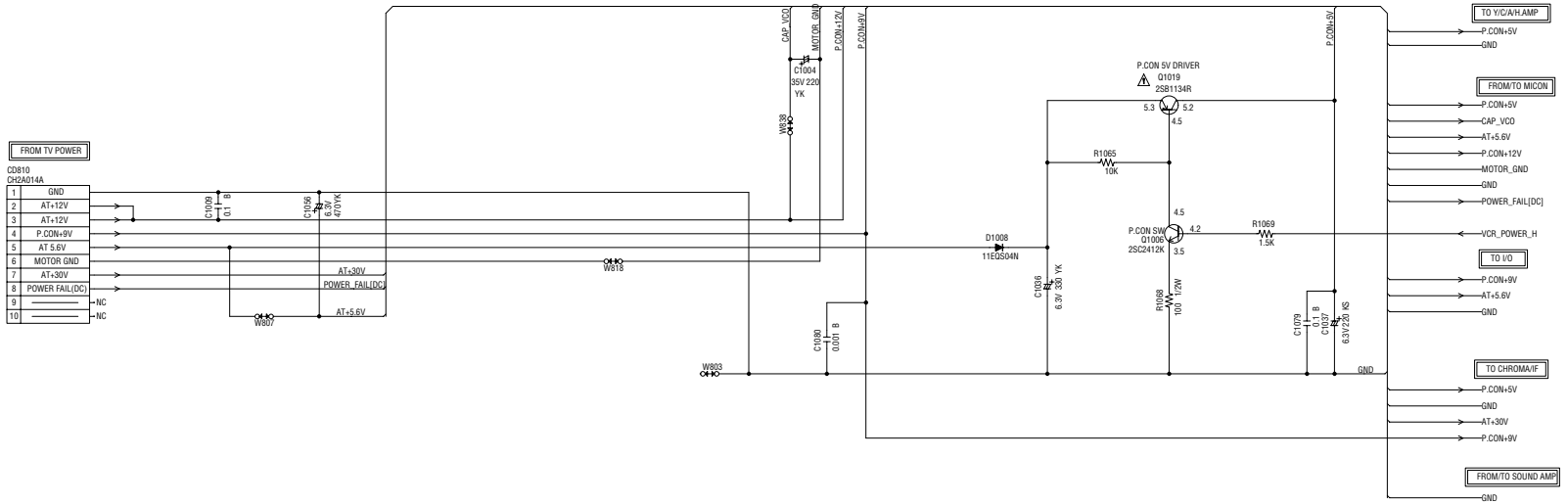
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

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。

POWER SCHEMATIC DIAGRAM



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

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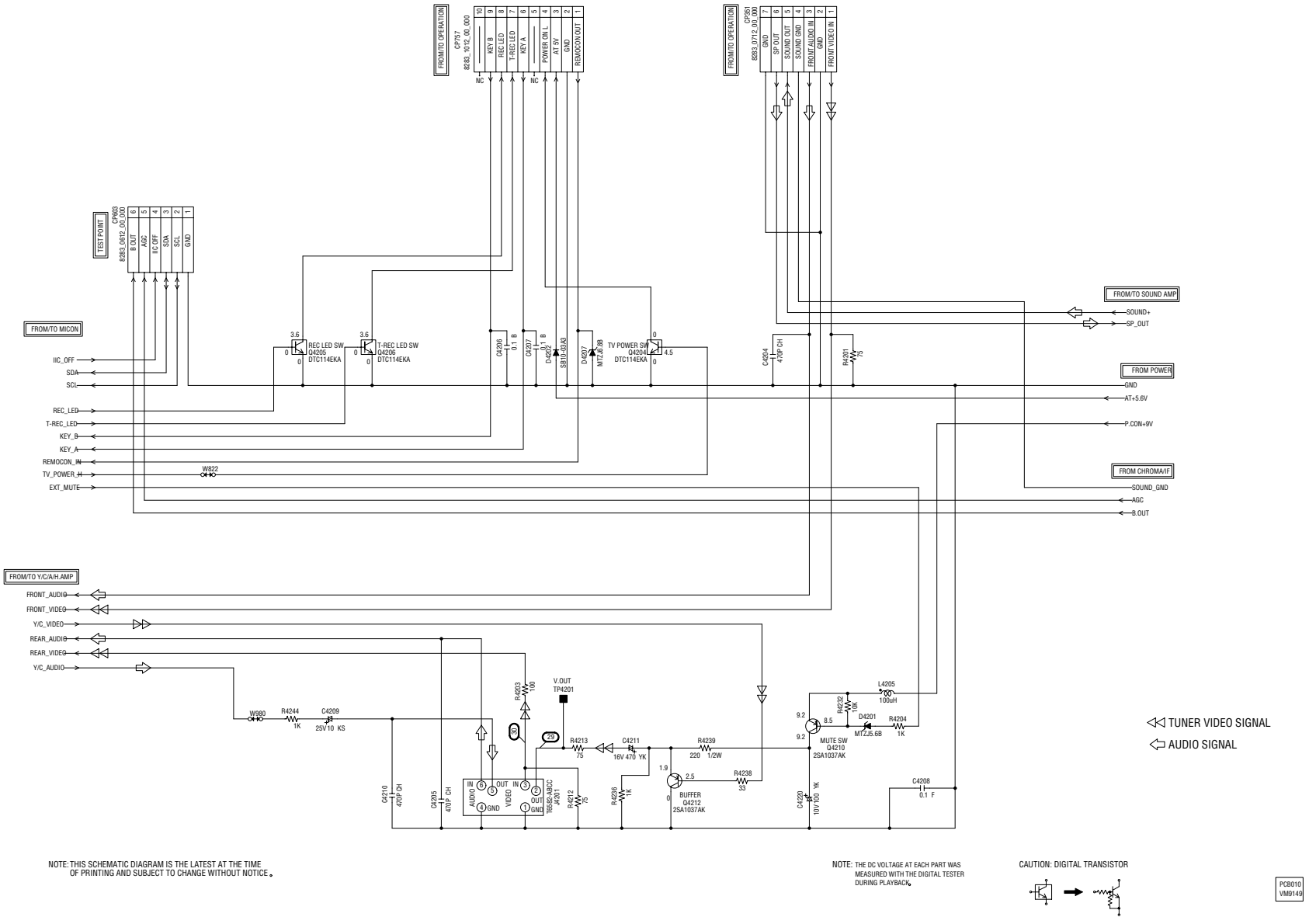
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

PCB010
VM9149

IN/OUT SCHEMATIC DIAGRAM



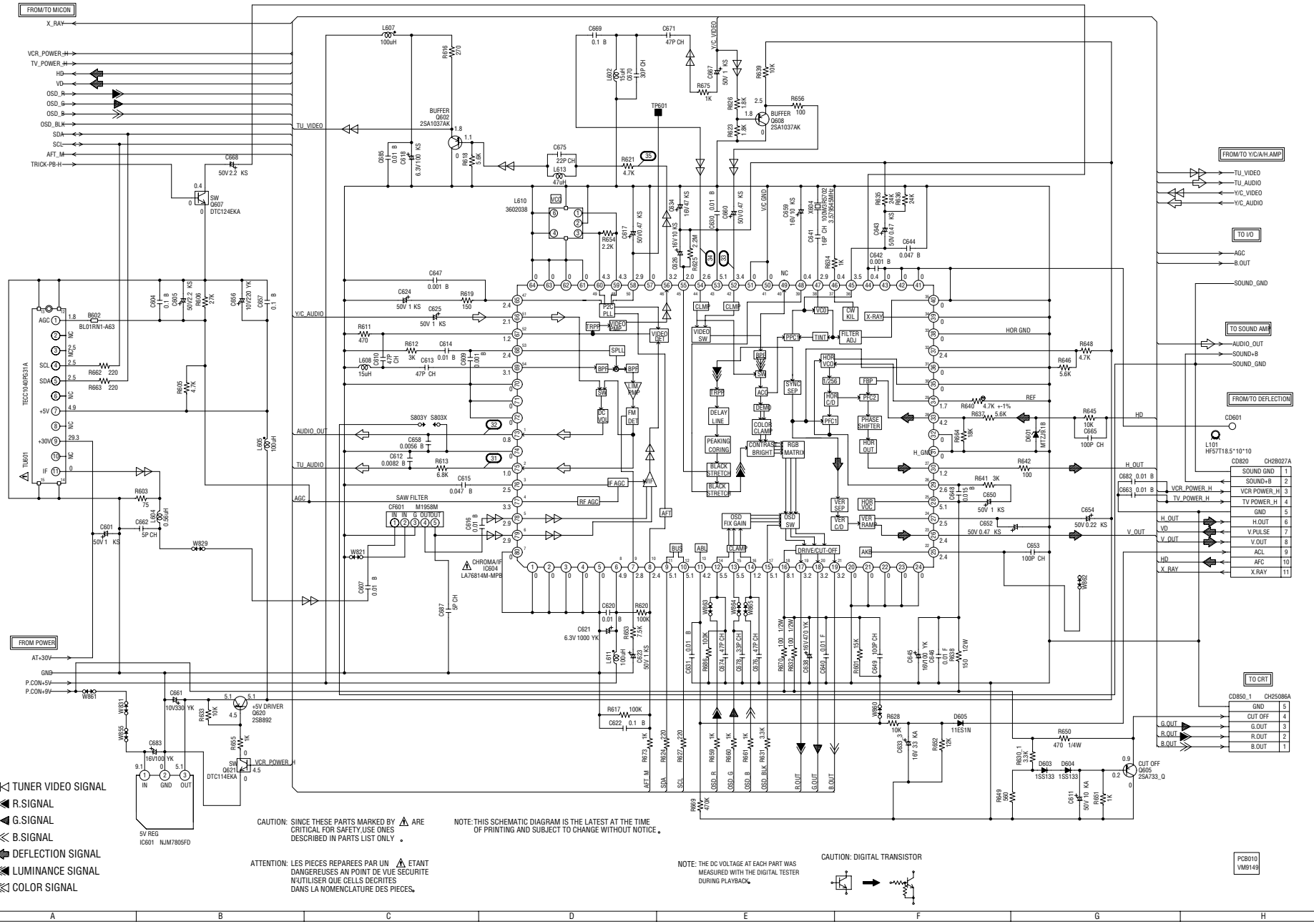
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

CAUTION: DIGITAL TRANSISTOR

PCB010
VM9149

CHROMA/IF SCHEMATIC DIAGRAM



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

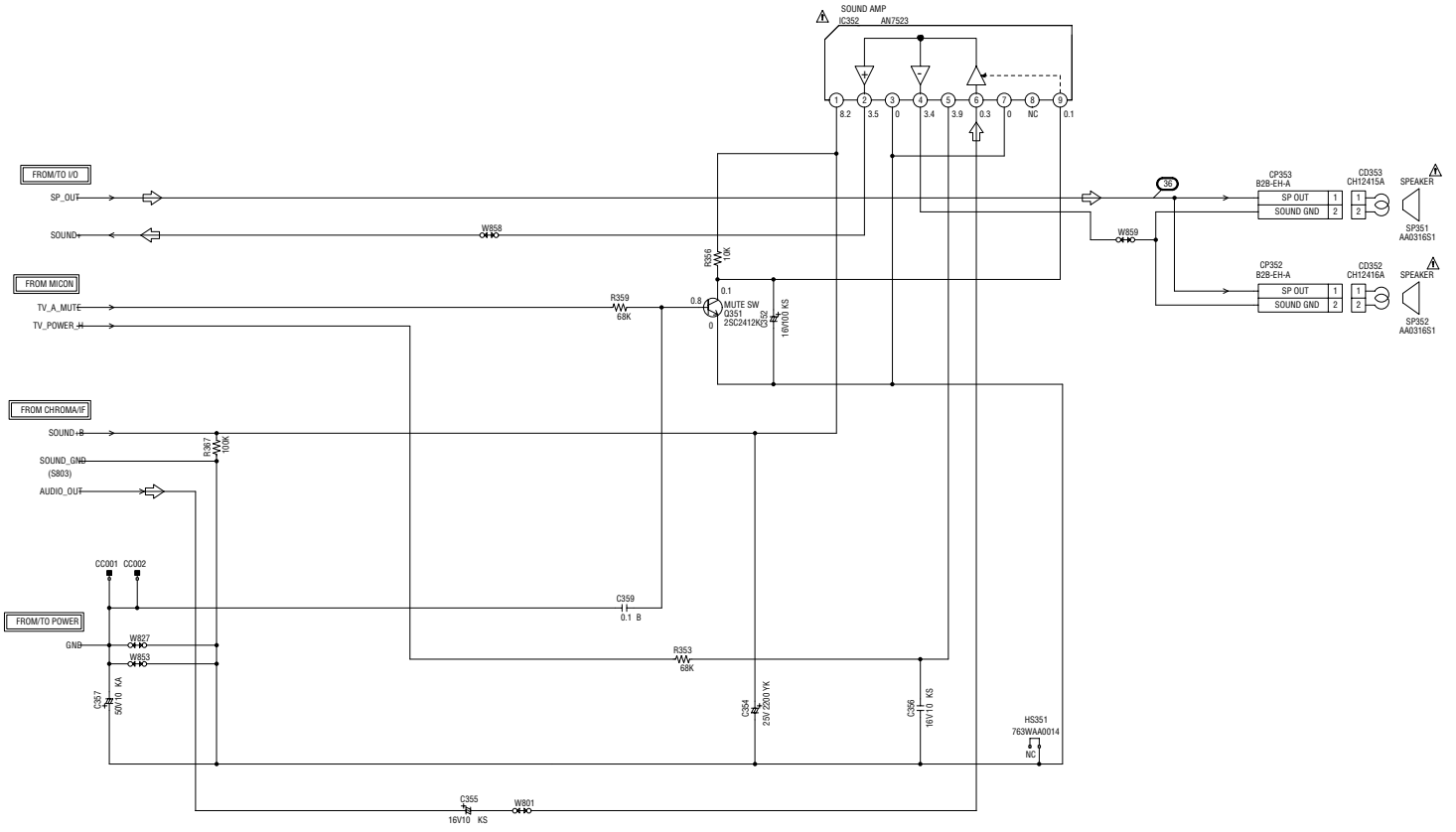
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: 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

SOUND AMP SCHEMATIC DIAGRAM



AUDIO SIGNAL

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

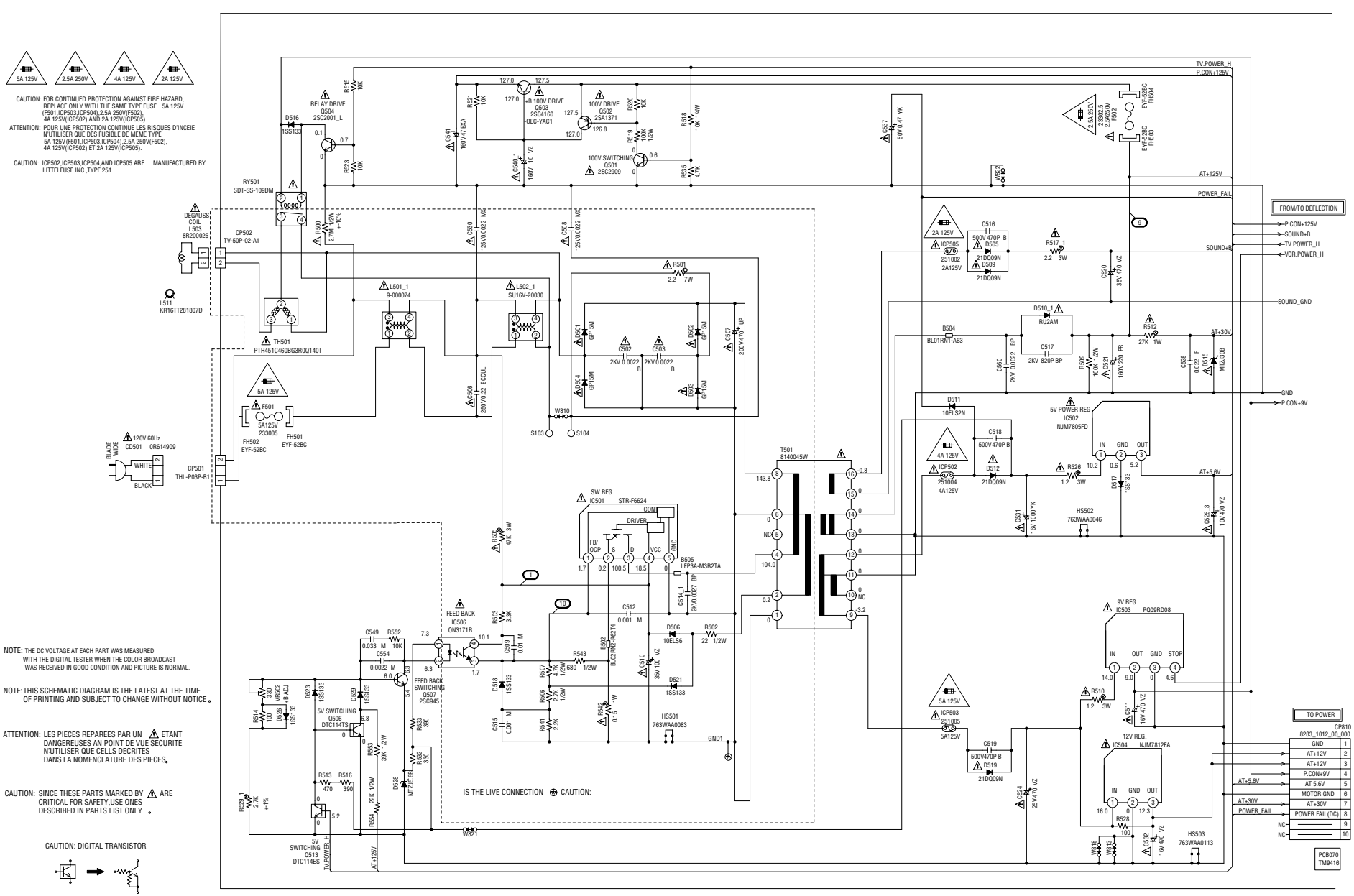
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

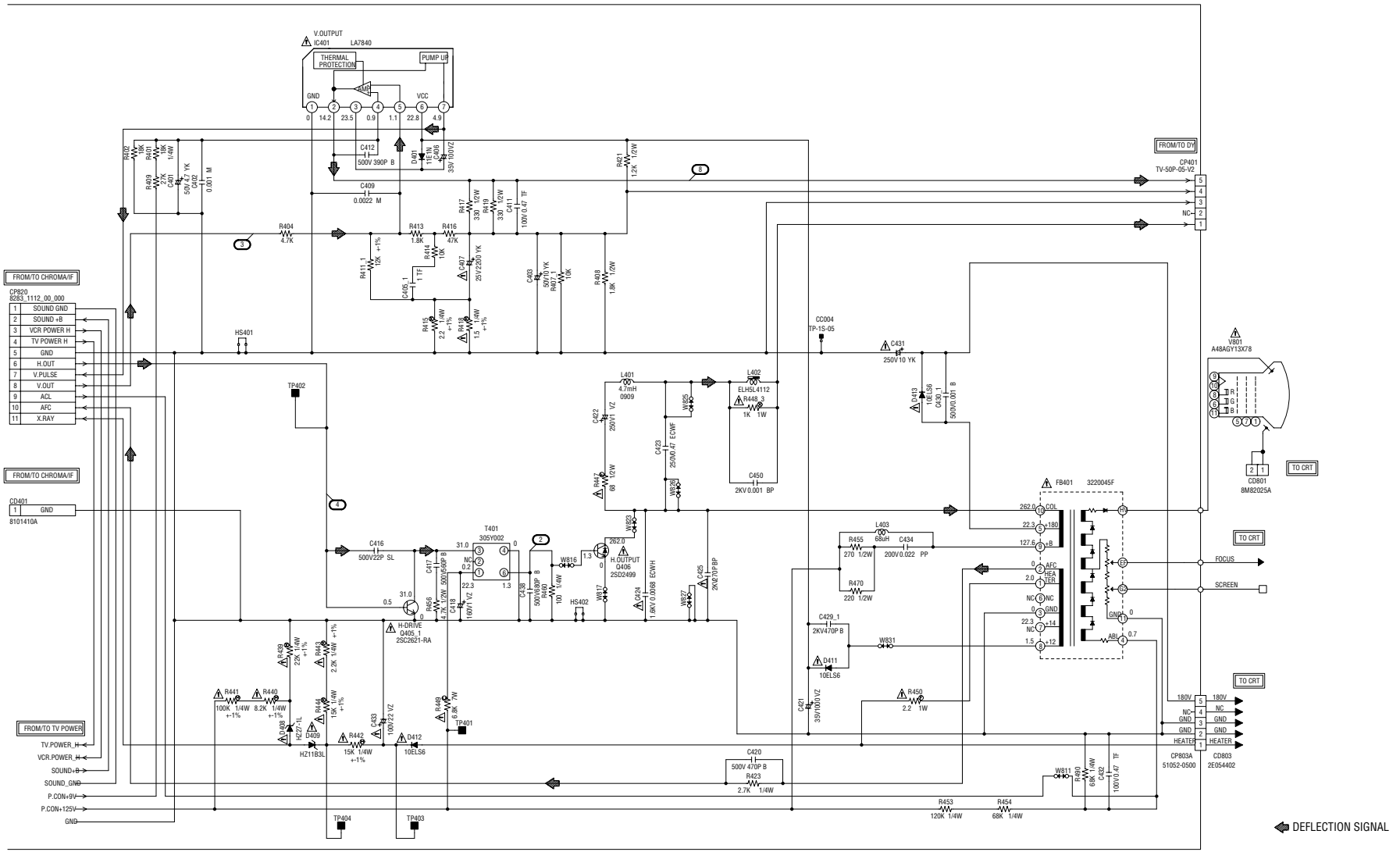
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

PCB010
VM9149

TV POWER SCHEMATIC DIAGRAM



DEFLECTION SCHEMATIC DIAGRAM



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

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

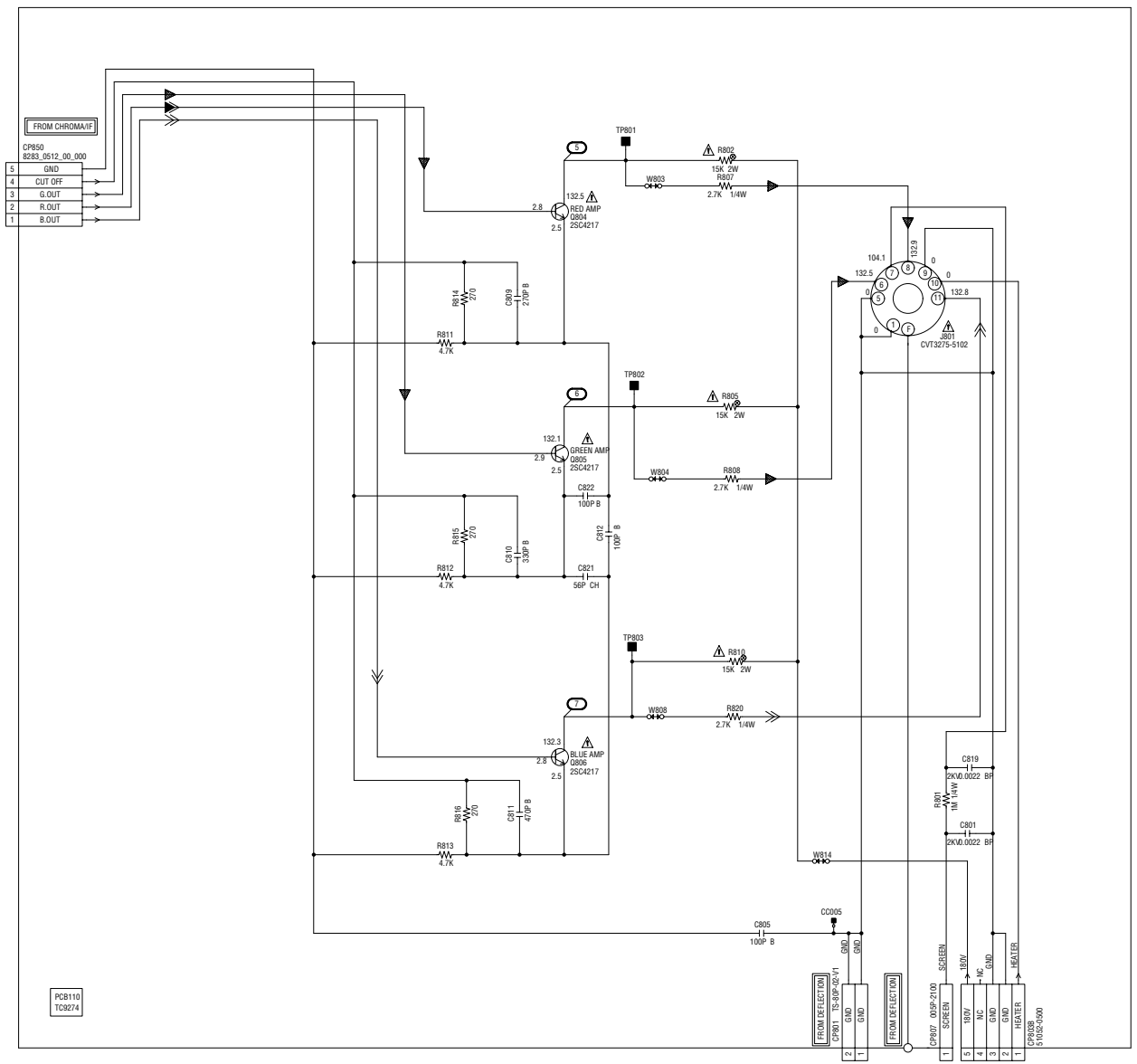
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

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

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

PCB070
TM9416

CRT SCHEMATIC DIAGRAM



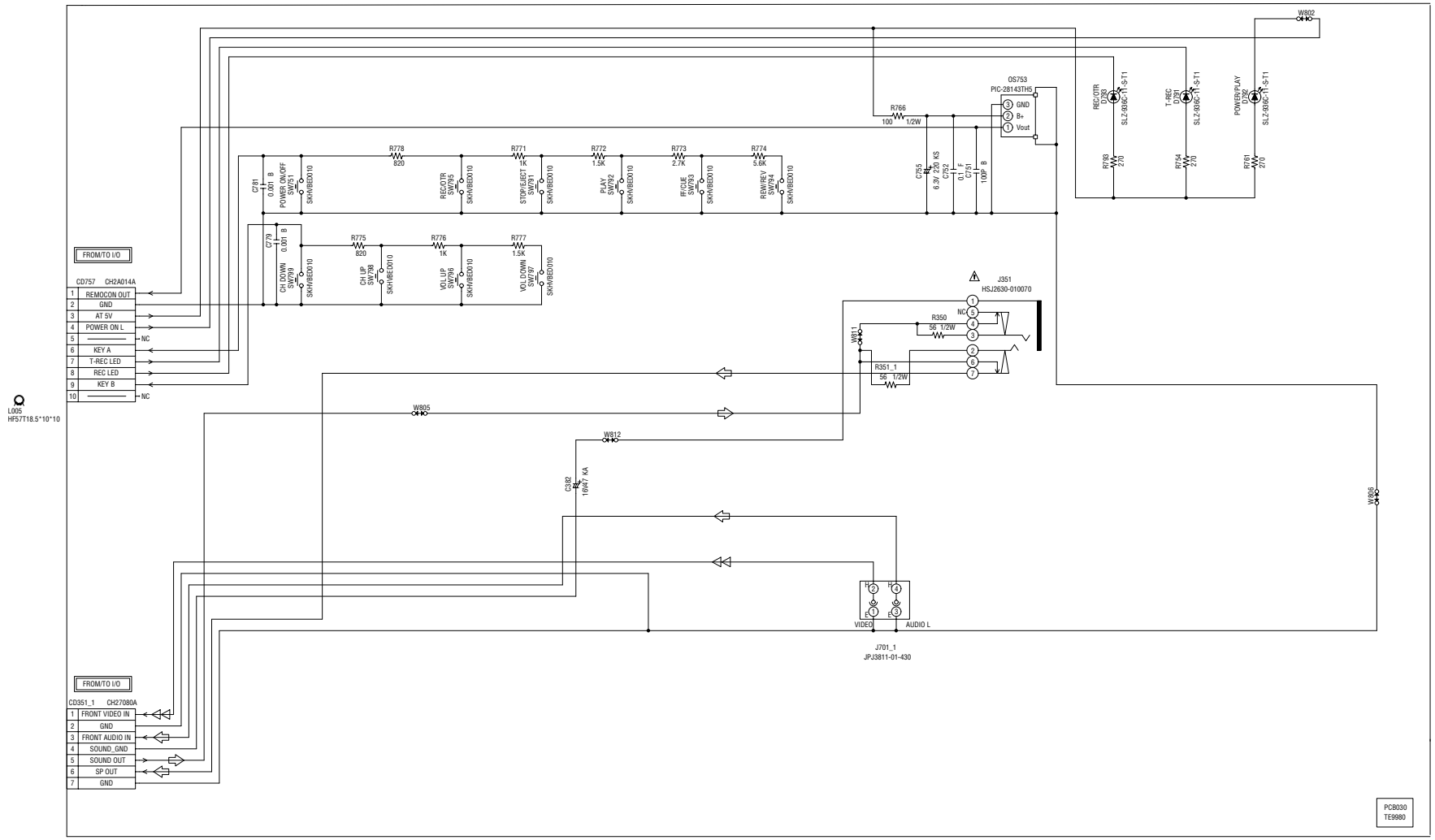
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

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

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

OPERATION SCHEMATIC DIAGRAM



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

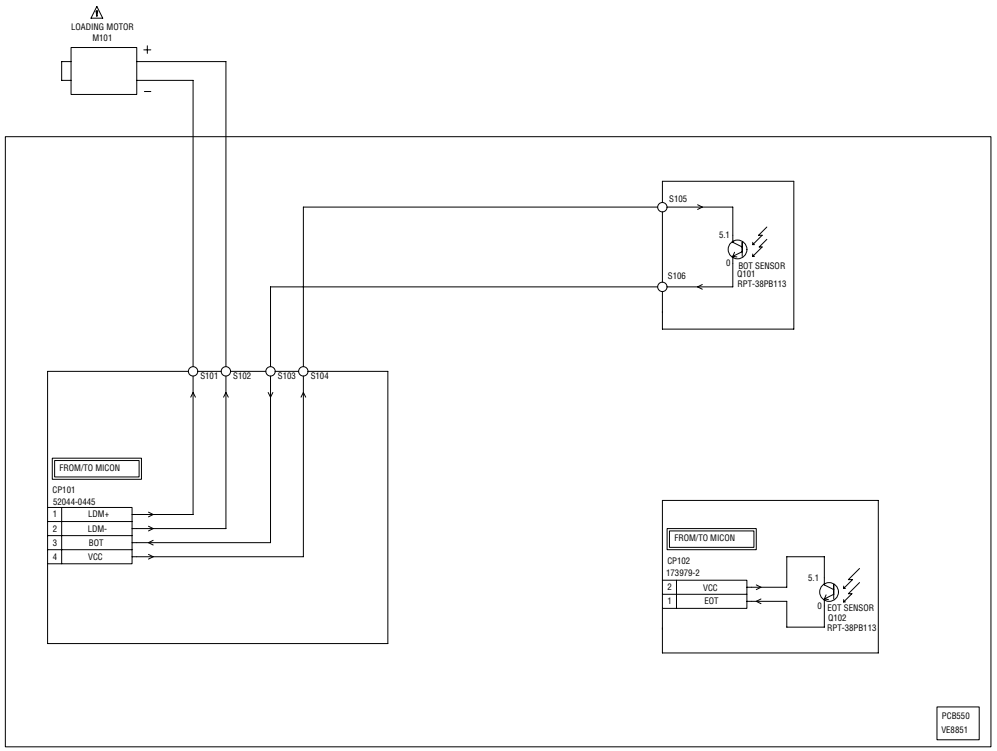
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY.

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

◁◁ TUNER VIDEO SIGNAL

◁ AUDIO SIGNAL

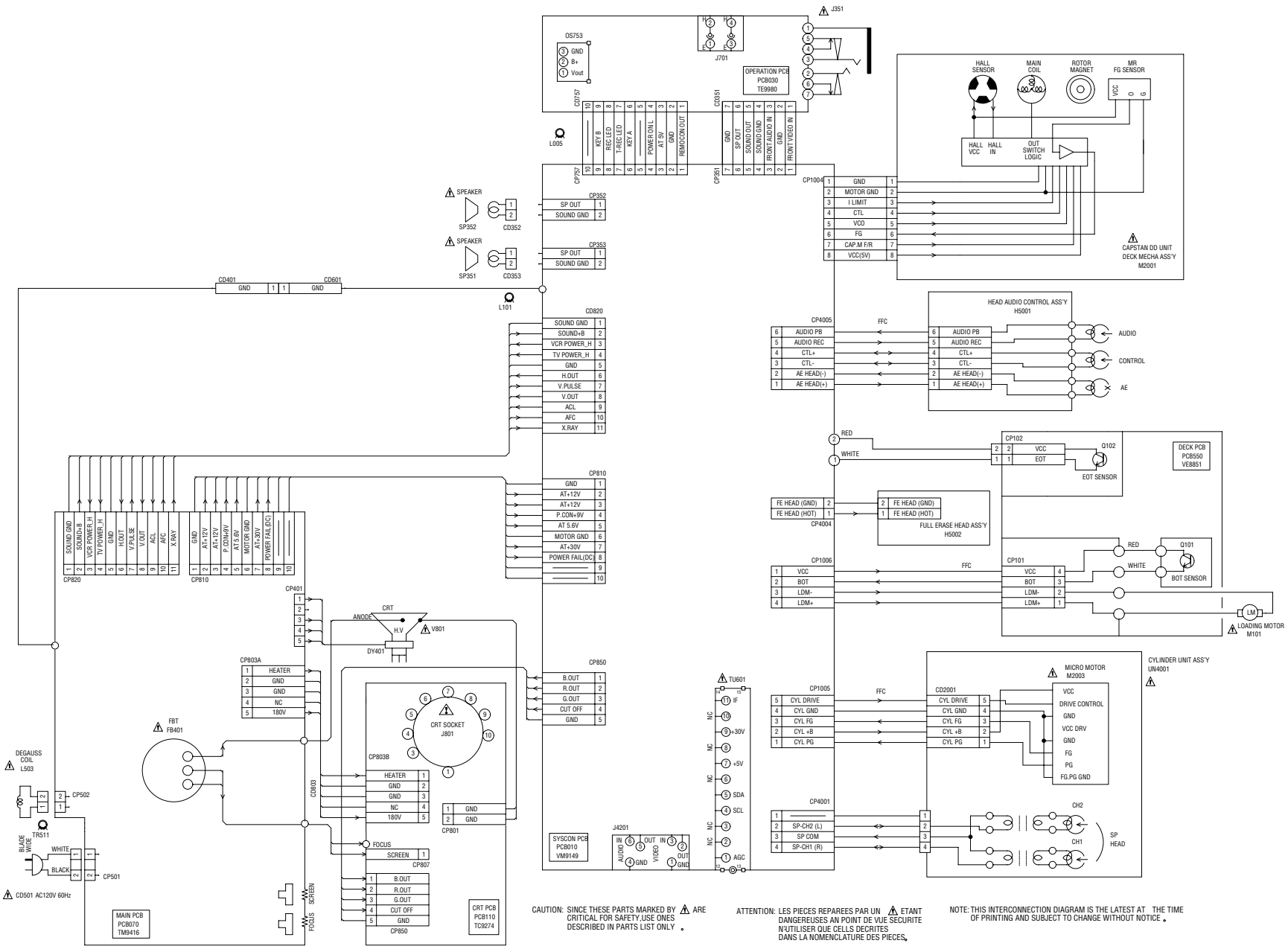
DECK SCHEMATIC DIAGRAM



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。

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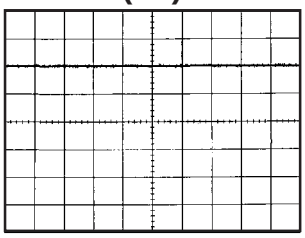
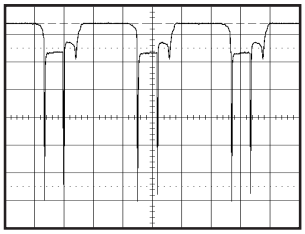
WAVEFORMS

POWER(TV)

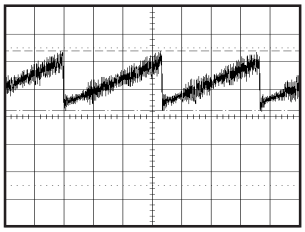


① 5.0V 20ms/div

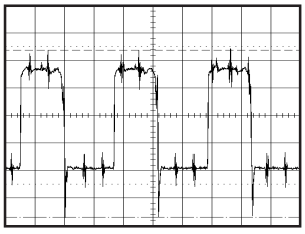
DEFLECTION



② 2.0V 20µs/div

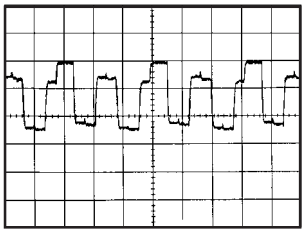


③ 0.5V 5ms/div

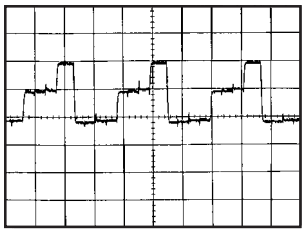


④ 200mV 20µs/div

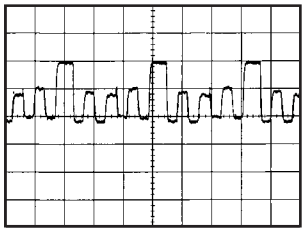
CRT



⑤ 50.0V 20µs/div

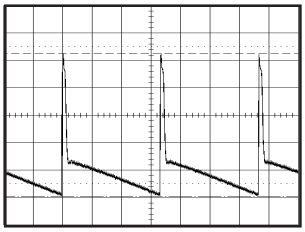


⑥ 50.0V 20µs/div



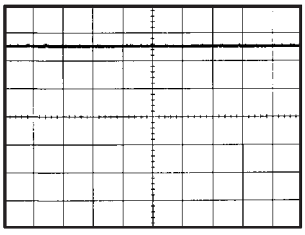
⑦ 50.0V 20µs/div

DEFLECTION

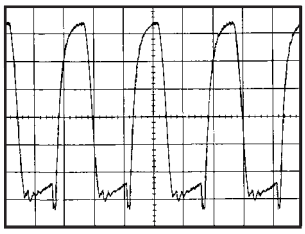


⑧ 10.0V 5ms/div

POWER(TV)

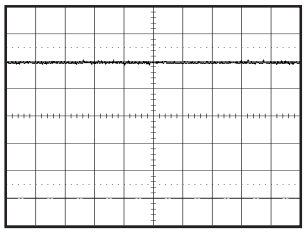


⑨ 20.0V 20µs/div

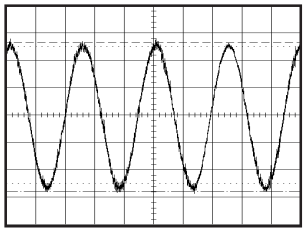


⑩ 500mV 5µs/div

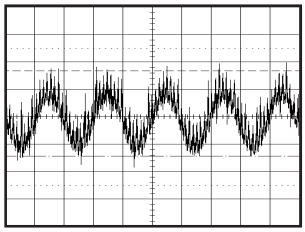
Y/C/AUDIO/HEAD AMP



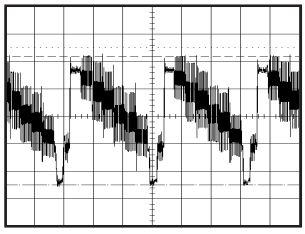
⑪ PB
0.5V 0.5ms/div



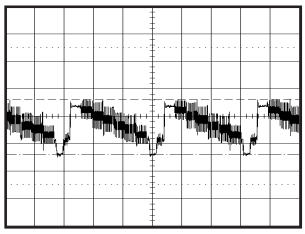
⑫ PB
100mV 1ms/div



⑬ PB
50mV 0.5ms/div



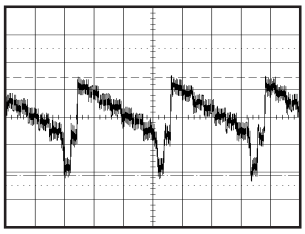
⑭ PB
0.5V 20µs/div



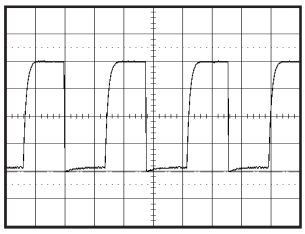
⑮ POWER ON
0.5V 20µs/div

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

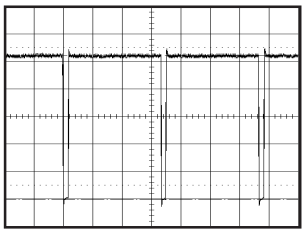
WAVEFORMS



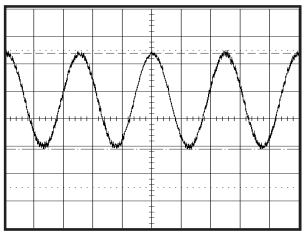
⑯ REC
100mV 20µs/div



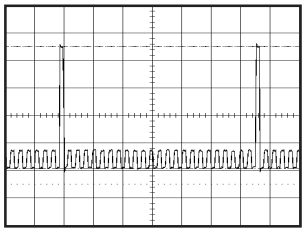
㉑ PB
1.0V 0.5ms/div



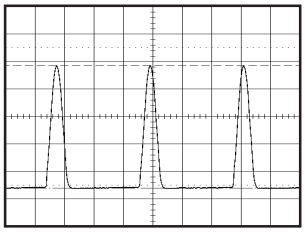
㉖ POWER ON
0.5V 10ms/div



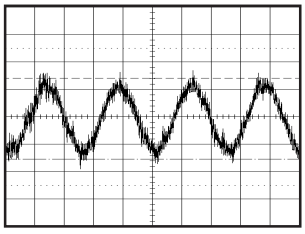
⑰ POWER ON
0.5V 1ms/div



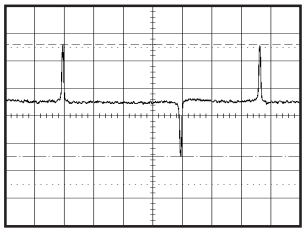
㉒ PB
1.0V 5ms/div



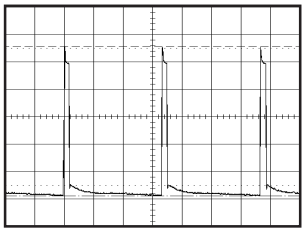
㉗ POWER ON
20.0V 20µs/div



⑱ POWER ON
50mV 1ms/div

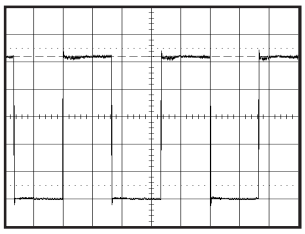


㉓ PB
1.0V 5ms/div

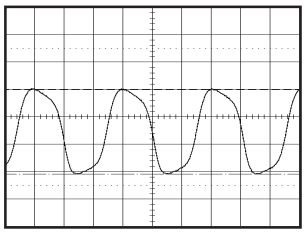


㉘ POWER ON
5.0V 5ms/div

MICON

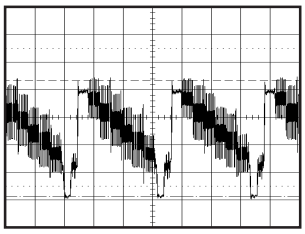


⑲ PB
1.0V 10ms/div

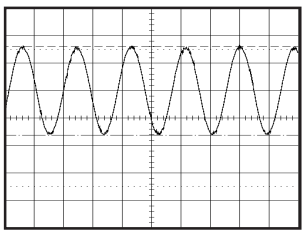


㉔ POWER ON
1.0V 10µs/div

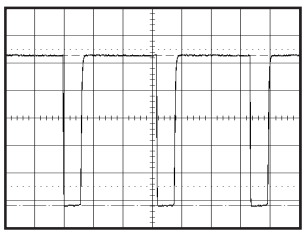
IN/OUT



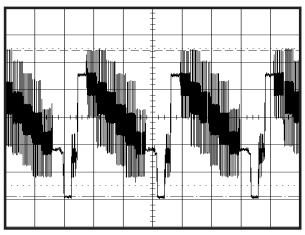
㉙ POWER ON
0.5V 20µs/div



⑳ PB
0.5V 0.5ms/div



㉕ POWER ON
1.0V 20µs/div

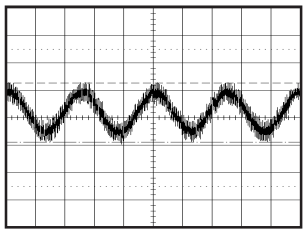


㉚ POWER ON
200mV 20µs/div

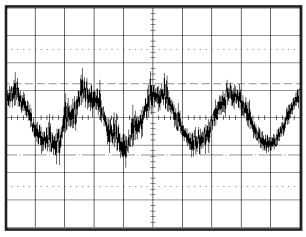
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

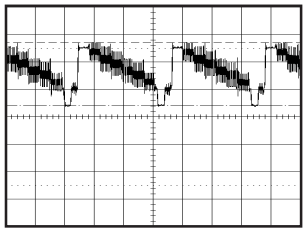
CHROMA/IF



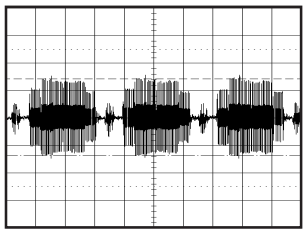
㉛ POWER ON
0.5V 1ms/div



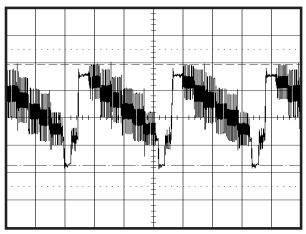
㉜ POWER ON
50mV 1ms/div



㉝ POWER ON
0.5V 20µs/div

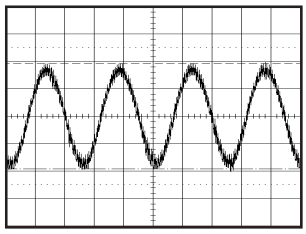


㉞ POWER ON
200mV 20µs/div



㉟ POWER ON
10.5V 20µs/div

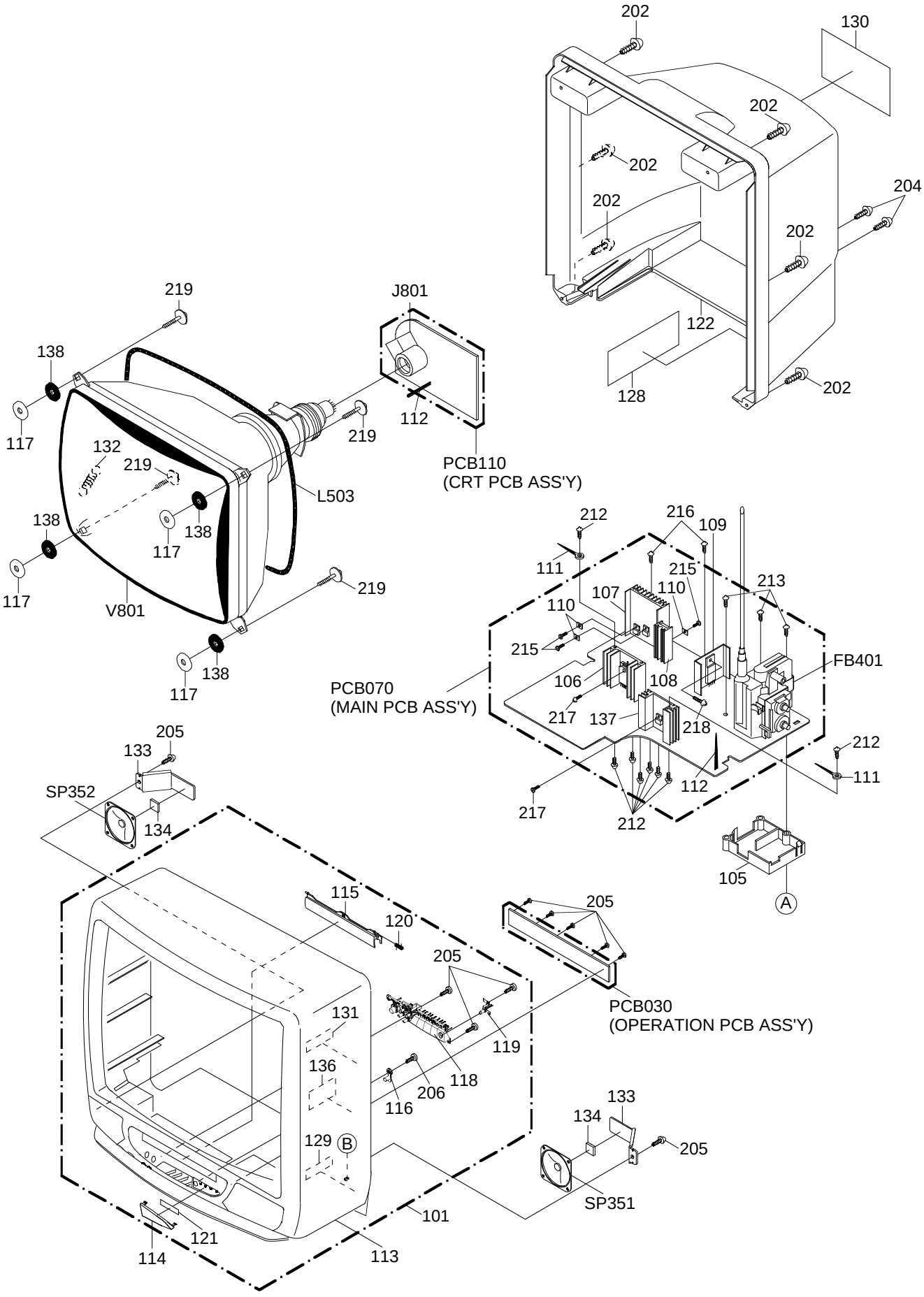
SOUND AMP



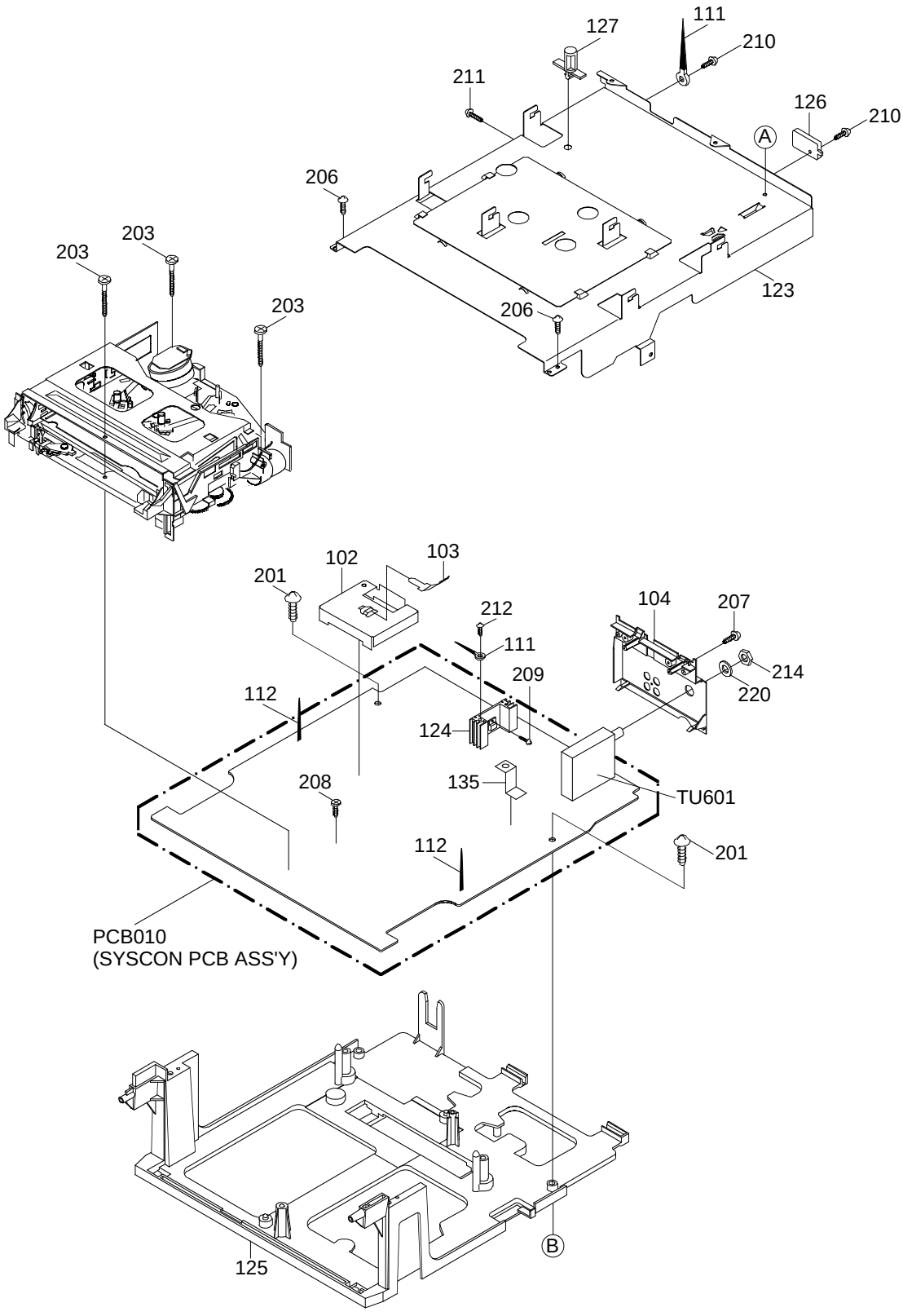
㊱ POWER ON
200mV 1ms/div

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

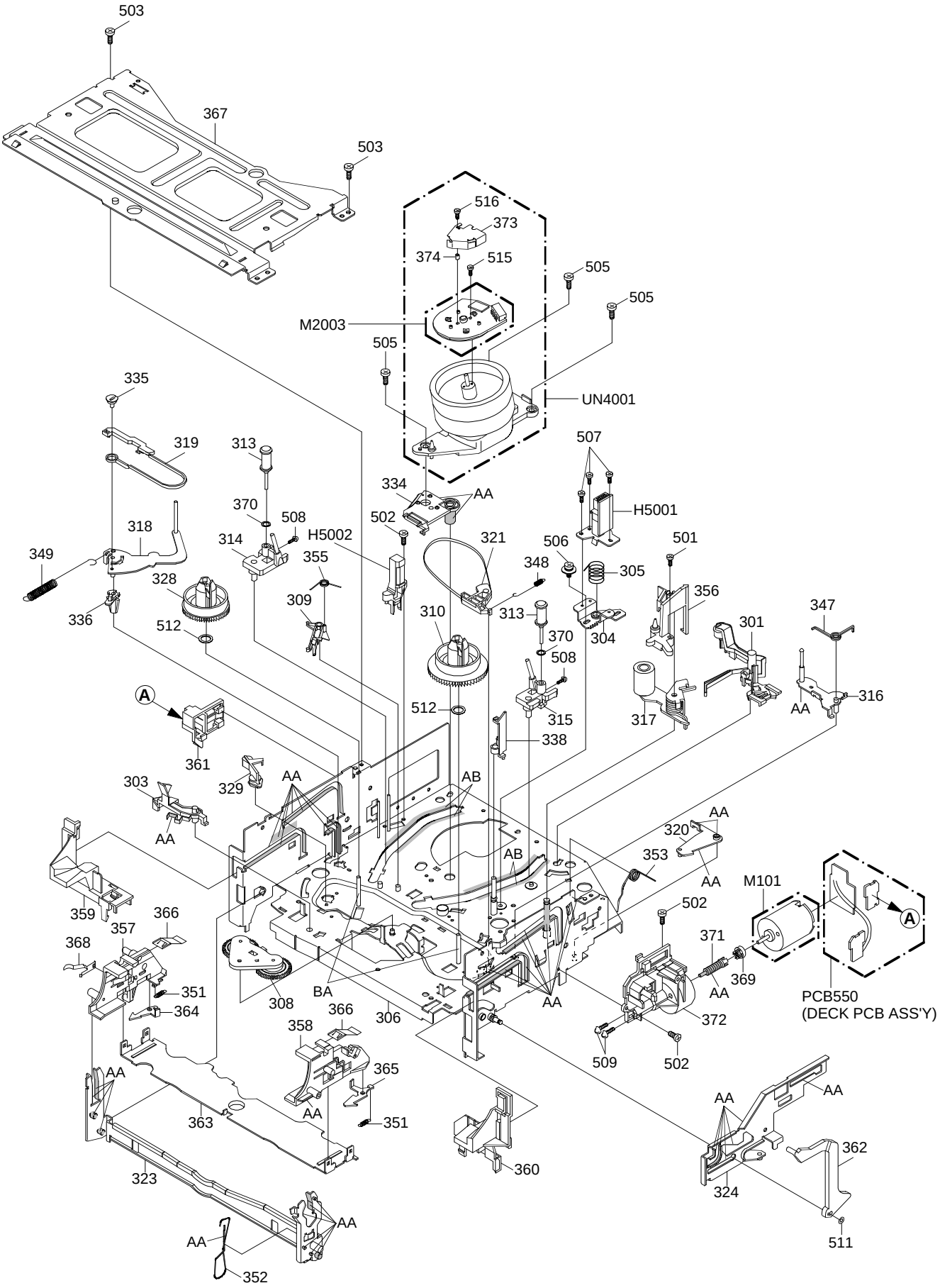
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



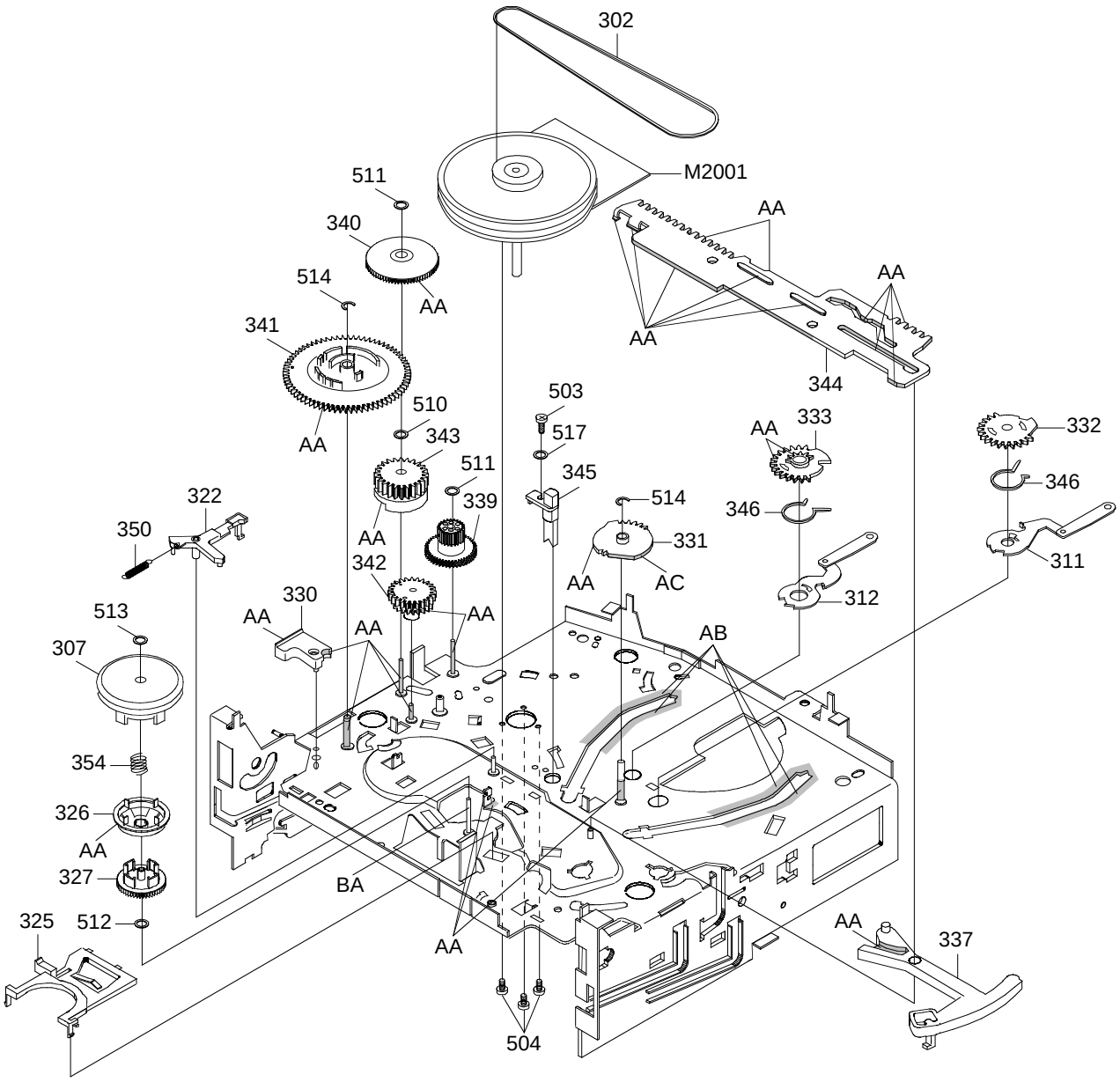
CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	G-488M	AB
	FL-721	AC
OIL	KYODO OIL SLIDAS No. 150	BA

NOTE: Applying positions AA, AB, AC 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
OIL	KYODO OIL SLIDAS No. 150	BA

NOTE: Applying positions AA, AB, AC 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	
101	A54609A720	CABINET,FRONT ASS'Y	
102	752WSA0144	SHIELD,CASE HEAD AMP	
103	753WUA0051	SPRING,EARTH HEAD AMP	
104	771WPAA010	PLATE,JACK	
105	761WPA0145	HOLDER,FBT	
106	----	HEAT SINK	
107	----	HEAT SINK	
108	----	HEAT SINK	
109	----	HEAT SINK	
110	----	METAL SPACER	
111	8995034000	CORD CLIP UL CO.	
112	----	COATING CLIP	
113	701WPJ0839	CABINET,FRONT	
114	711WPA0114	PLATE,FRONT	
115	712WPJ0621	FLAP	
116	713WPA0075	GUIDE,REMOCON	
117	769WSA0008	WASHER CRT T=2	
118	735WPJ0114	BUTTON,FRAME	
119	735WPA0402	BUTTON,REC	
120	743WKA0032	SPRING,FLAP	
121	7230006830	SHEET,LED	
122	702WPA0565	CABINET,BACK	
123	752WSA0145	PLATE,DECK SHIELD	
124	----	HEAT SINK	
125	761WPA0157	HOLDER,DECK	
126	761WPA0161	HOLDER,BACK	
127	890PS70100	PUSH SPACER	
128	7220001059	SHEET,CSA WARNING	
129	7220001107	SHEET,HWC	
130	722A080002	SHEET,RATING	
131	7230006818	SHEET,CAUTION	
132	741WUA0012	SPRING,EARTH	
133	753WSA0123	PLATE,SPEAKER	
134	800WFA0005	CUSHION	10x15xT3
135	753WSA0118	PLATE,EARTH-SYSCON	
136	7260000308	SHEET,CRT SERVICEMAN	
137	----	HEAT SINK	
138	800WR00066	SHEET CRT SUPPORT(D)	
201	8117540B04	SCREW,TAPPING(B0) TRUSS	4x20
202	8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
203	8117140A24	SCREW,TAPPING(B0) PAN	4x12
204	8110630A24	SCREW,TAP TITE(P) BRAZIER	3x12
205	8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
206	8110630804	SCREW,TAP TITE(P) BRAZIER	3x8
207	8110230A02	SCREW,TAP TITE(P) BIND	3x10
208	8110330804	SCREW,TAP TITE(P) FLAT	3x8
209	8110630604	SCREW,TAP TITE(P) BRAZIER	3x6
210	8107630604	SCREW,TAP TITE(S) BRAZIER	3x6
211	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
212	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
213	810A130B04	SCREW/WASHER(A)	M3x20
214	8300495207	NUT	
215	810A130804	SCREW/WASHER(A)	M3x8
216	810A130604	SCREW/WASHER(A)	M3x6
217	810B130A04	SCREW/WASHER(B)	M3x10
218	810B130804	SCREW/WASHER(B)	M3x8
219	8121J50B54	SCREW,TAPPING(B0) GW20	5x28
220	82A97A4077	WASHER	9.7x14xT0.7
---	791WHA0025	LAMIFILM BAG	
---	792WHAA025	PACKAGE,TOP	
---	792WHAA026	PACKAGE,BOTTOM	
---	793WCD1151	GIFT BOX	
---	JA5K0100	POLY BAG	
---	J5451001	INSTRUCTION BOOK	

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
301	85OA500022	AHC ASS'Y
302	85OP200270	BELT,CAPSTAN
303	85OP900689	LEVER,REC
304	85OP500083	BASE,AC HEAD
305	85OP800324	SPRING,AC HEAD
306	85OA000297	MAIN CHASSIS ASS'Y
307	85OA200072	CLUTCH ASS'Y
308	85OA200073	ARM,IDLER ASS'Y
309	85OP600553	ARM,S-S BRAKE
310	85OA200076	T REEL ASS'Y
311	85OA300061	LOADING ARM S ASS'Y
312	85OA300062	LOADING ARM T ASS'Y
313	85OA400102	GUIDE ROLLER ASS'Y
314	85OA400171	BASE,INCL S ASS'Y
315	85OA400172	BASE,INCL T ASS'Y
316	85OA400185	P5-2 ARM ASS'Y
317	85OA400174	PINCH ROLLER BLOCK
318	85OA400175	TENSION ARM ASS'Y
319	85OA400176	TENSION BAND ASS'Y
320	85OA400178	PINCH ROLLER LEVER ASS'Y
321	85OA600182	BRAKE T ASS'Y
322	85OA600183	CAP BRAKE ARM ASS'Y
323	85OA900213	LINK ASS'Y
324	85OA900216	LINK LEVER ASS'Y
325	85OP200261	LEVER,CLUTCH
326	85OP200262	RING,CLUTCH
327	85OP200263	GEAR,CLUTCH
328	85OP200271	REEL,S
329	85OP200273	STOPPER,REEL S
330	85OP200274	SPACER,LINK LEVER
331	85OP300178	GEAR,MAIN LOADING
332	85OP300179	GEAR,LOADING S
333	85OP300180	GEAR,LOADING T
334	85OP300185	HOLDER,LOADING GEAR
335	85OP400472	ADJUST,TENSION
336	85OP400492	HOLDER,TENSION
337	85OP400474	LEVER,TENSION
338	85OP400475	COVER,P4
339	85OP600543	GEAR,JOINT
340	85OP600544	GEAR,MIDDLE
341	85OP600545	CAM,MAIN
342	85OP600546	CAM,P5
343	85OP600547	CAM,PINCH ROLLER
344	85OP600548	ROD,MAIN
345	85OP700035	REFLECTOR,LED
346	85OP800318	SPRING,LOADING GEAR
347	85OP800319	SPRING,P5
348	85OP800321	SPRING,BRAKE T
349	85OP800322	SPRING,TENSION
350	85OP800323	SPRING,CAP BRAKE
351	85OP800325	SPRING,LOCKER
352	85OP800326	SPRING,LINK
353	85OP800328	SPRING,DAMPER
354	85OP800330	SPRING,RING
355	85OP800332	SPRING,S-S BRAKE
356	85OP900680	OPENER,CASS
357	85OP900683	CASS SIDE L
358	85OP900684	CASS SIDE R
359	85OP900702	TAPE GUIDE L(P,R)
360	85OP900686	TAPE GUIDE R
361	85OP900687	COVER,SENSOR L
362	85OP900688	LEVER,FLAP
363	85OP900690	CASS HOLDER
364	85OP900691	LOCKER,L
365	85OP900692	LOCKER,R
366	85OP900694	SPRING,PACK
367	85OP900695	BRACKET,TOP
368	85OP900696	SPRING,CASS EARTH
369	85OP600540	DRIVER,WORM
370	85OP400485	O-RING
371	85OP600541	WORM
372	85OP600542	BRACKET,MOTOR
373	85OPAA0282	SHIELD,DRUM MOTOR3
374	85OPAA0333	COLLAR,SHIELD

REF. NO.	PART NO.	DESCRIPTION	
501	8107126A04	SCREW,TAP TITE(S) PAN	2.6x10
502	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
503	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
504	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
505	810A126804	SCREW/WASHER(A)	M2.6x8
506	810B126404	SCREW/WASHER(B)	M2.6x4
507	8102120604	SCREW,PAN	M2x6
508	8102120304	SCREW,PAN	M2x3
509	8102130304	SCREW,PAN	M3.0x3.0
510	82Q3154C5N	POLYSLIDER WASHER	3.1x5.4xT0.25
511	82P266005N	POLYSLIDER WASHER(CUT)	2.6x6.0xT0.5
512	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
513	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
514	83ETW30000	E-RING	3.0
515	810A123504	SEMS A	M2.3x5.0
516	810A123A04	SCREW/WASHER(A)	M2.3x10
517	82A2675051	WASHER	2.6x7.5xT0.5
CP101	069R740018	CONNECTOR PCB SIDE	52044-0445
CP102	0694220139	CONNECTOR PCB SIDE	173979-2
H5001	1523D91034	HEAD (AUDIO CONTROL)	HVMXA1072A
H5002	1543D02013	HEAD (FULL ERASE)	HVFHP0032A
⚠ M101	1596P78001	MOTOR (LOADING)	MXN13FB11H
⚠ M2001	1594J98007	CAPSTAN DD UNIT	EP15BB
M2003	1589V11006	MICRO MOTOR	EP14BC
PCB550	A4C701B550	DECK PCB ASS'Y	VE8851
Q101	0000700320	TRANSISTOR,PHOTO	RPT-38PB113
Q102	0000700320	TRANSISTOR,PHOTO	RPT-38PB113
⚠ UN4001	A54501A500	CYLINDER UNIT ASS'Y	A54501A500

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
⚠ R418	R4X5T41R5F	R,METAL	1.5 OHM 1/4W
⚠ R439	R4X5T4223F	R,METAL	22K OHM 1/4W or
	R425T4223F	R,METAL	22K OHM 1/4W
⚠ R440	R4X5T4822F	R,METAL	8.2K OHM 1/4W or
	R425T4822F	R,METAL	8.2K OHM 1/4W
⚠ R441	R4X5T4104F	R,METAL	100K OHM 1/4W or
	R425T4104F	R,METAL	100K OHM 1/4W
⚠ R442	R4X5T4153F	R,METAL	15K OHM 1/4W or
	R425T4153F	R,METAL	15K OHM 1/4W
⚠ R443	R4X5T4222F	R,METAL	2.2K OHM 1/4W or
	R425T4222F	R,METAL	2.2K OHM 1/4W
⚠ R444	R4X5T4153F	R,METAL	15K OHM 1/4W
⚠ R447	R65582680J	R,FUSE	68 OHM 1/2W
⚠ R448	R3K181102J	R,METAL	1K OHM 1W
⚠ R449	R5Y2CE682J	R,CEMENT	6.8K OHM 7W
⚠ R450	R655812R2J	R,FUSE	2.2 OHM 1W
⚠ R500	R21202275K	R,SOLID	2.7M OHM 1/2W
⚠ R501	R5Y2CE2R2J	R,CEMENT	2.2 OHM 7W
⚠ R505	R3X28B473J	R,METAL OXIDE	47K OHM 3W
⚠ R510	R3X28B1R2J	R,METAL	1.2 OHM 3W
⚠ R512	R3X181273J	R,METAL OXIDE	27K OHM 1W
⚠ R517	R3X20B2R2J	R,METAL OXIDE	2.2 OHM 3W
⚠ R526	R3X28B1R2J	R,METAL	1.2 OHM 3W
⚠ R542	R33681R15J	R,METAL	0.15OHM 1W
⚠ R802	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R805	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R810	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R1005	R615J12R7J	R,FUSE	2.7 OHM 1W
		CAPACITORS	
C354	E02L03222M	CE	2200 UF 25V
⚠ C407	E02L03222M	CE	2200 UF 25V
C421	E53Z04102M	CE	1000 UF 35V VZ
C423	P411F3474J	CMPP	0.47 UF 250V ECWF or
	P447F2474J	CMPP	0.47 UF 200V FHS or
	P411F2474J	CMPP	0.47 UF 200V
⚠ C424	P414F9682H	CMPP	0.0068UF 1.6KV ECWH
⚠ C425	C01BBP7K2K	CC	270 PF 2KV BP
⚠ C431	E02LTD100M	CE	10 UF 250V
⚠ C433	E53ZT8220M	CE	22 UF 100V VZ
C434	P3N1F2223J	CPP	0.022 UF 200V
C450	C01BBP713K	CC	0.001 UF 2KV BP
⚠ C502	C13HB07H3K	CC	0.0022UF 2KV B
⚠ C503	C13HB07H3K	CC	0.0022UF 2KV B
⚠ C506	P2122B224M	CMP	0.22 UF 250V ECQUL
⚠ C507	E51CGC471M	CE	470 UF 200V
⚠ C508	C034E0JH3M	CC	0.0022UF 125V MX
⚠ C510	E53ZT4101M	CE	100 UF 35V VZ
⚠ C511	E53ZT2471M	CE	470 UF 16V VZ
C514	C01BBP7K3K	CC	0.0027UF 2KV BP
C517	C01BBP7W2K	CC	820 PF 2KV BP
⚠ C521	E53VFB221M	CE	220 UF 160V
⚠ C524	E53ZT3471M	CE	470 UF 25V VZ
⚠ C526	E53ZT1471M	CE	470 UF 10V VZ
⚠ C530	C034E0JH3M	CC	0.0022UF 125V MX
⚠ C531	E02LT2102M	CE	1000 UF 16V
⚠ C532	E53ZT2471M	CE	470 UF 16V VZ
⚠ C537	E02LT5R47M	CE	0.47 UF 50V or
	E01VT5R47M	CE	0.47 UF 50V
⚠ C540	E53ZTB100M	CE	10 UF 160V
⚠ C541	E62DFB470M	CE	47 UF 160V
C560	C01BBP7H3K	CC	0.0022UF 2KV BP
C801	C01BBP7H3K	CC	0.0022UF 2KV BP
C819	C01BBP7H3K	CC	0.0022UF 2KV BP
⚠ C1001	E02LT3101M	CE	100 UF 25V
C1045	CHG0B0412K	CC	100 PF 50V B
		DIODES	
D401	D28T11E1N1	DIODE,SILICON	11E1N-TA1B2
⚠ D408	D94TA27011	DIODE,ZENER	HZ27-1L TD
⚠ D409	D94TA11B13	DIODE,ZENER	HZ11B3L TD
⚠ D411	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D412	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D413	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D501	D2LTGP15M0	DIODE,RECTIFIER	GP15M-G23
⚠ D502	D2LTGP15M0	DIODE,RECTIFIER	GP15M-G23
⚠ D503	D2LTGP15M0	DIODE,RECTIFIER	GP15M-G23
⚠ D504	D2LTGP15M0	DIODE,RECTIFIER	GP15M-G23
⚠ D505	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1

REF. NO.	PART NO.	DESCRIPTION	
		DIODES	
D506	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D509	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠ D510	D2BTRU2AM0	DIODE,SILICON	RU2AM V1
D511	D28TELS2N2	DIODE,RECTIFIER	10ELS2N-TA1B2
⚠ D512	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠ D515	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D516	D1VT001330	DIODE,SILICON	1SS133T-77
D517	D1VT001330	DIODE,SILICON	1SS133T-77
D518	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D519	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D521	D1VT001330	DIODE,SILICON	1SS133T-77
D523	D1VT001330	DIODE,SILICON	1SS133T-77
D526	D1VT001330	DIODE,SILICON	1SS133T-77
D528	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D529	D1VT001330	DIODE,SILICON	1SS133T-77
D601	D97U09R11B	DIODE,ZENER	MTZJ9.1B T-77
D603	D1VT001330	DIODE,SILICON	1SS133T-77
D604	D1VT001330	DIODE,SILICON	1SS133T-77
D605	D28T11ESN1	DIODE,SILICON	11ES1N-TA1B2
D791	002132Q040	LED	SLZ-936C-11-S-T1
D792	002132Q040	LED	SLZ-936C-11-S-T1
D793	002132Q040	LED	SLZ-936C-11-S-T1
D1001	D28T11E1N1	DIODE,SILICON	11E1N-TA1B2
D1003	0010600060	LED	SID1050CM
D1004	D92T1120B0	DIODE,ZENER	RD12FB-T7
D1005	D28T11E1N1	DIODE,SILICON	11E1N-TA1B2
D1006	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D1008	D28TQS04N0	DIODE,SCHOTTKY	11EQS04N-TA1B2
D1011	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D1014	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D4001	D1VT001330	DIODE,SILICON	1SS133T-77
D4004	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D4201	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D4202	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D4207	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
		ICS	
⚠ IC352	I0FSP75230	IC	AN7523
⚠ IC401	I03SD78400	IC	LA7840
⚠ IC501	I2BT066240	IC	STR-F6624
⚠ IC502	I0Q0978050	IC	NJM7805FD
⚠ IC503	I0GA909RD0	IC	PQ09RD08
⚠ IC504	I0QK978120	IC	NJM7812FA or
	I1KA978120	IC	KIA7812PI
⚠ IC506	000210001R	PHOTO COUPLER	ON3171R
IC601	I0Q0978050	IC	NJM7805FD
⚠ IC604	I03FE76814	IC	LA76814M-MPB
⚠ IC1001	I56F57034A	IC	OEC7034A
IC1002	I9UJ0T600H	IC	PST600H
⚠ IC1003	I07SQ955AN	IC	BA6955AN
IC1099	A54601A015	IC	M24C02-BN6
IC4001	I03F371170	IC	LA71170M-MPB
		TRANSISTORS	
Q351	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q405	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC
⚠ Q406	TDUF024990	TRANSISTOR,SILICON	2SD2499
⚠ Q501	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA
⚠ Q502	TA3T1371A0	TRANSISTOR,SILICON	2SA1371(D,E)-AE
⚠ Q503	TCWQ4160E0	TRANSISTOR,SILICON	2SC4160-OEC-YAC11
⚠ Q504	TCST02001L	TRANSISTOR,SILICON	2SC2001(C)-T_L
Q506	TNYTJ03001	COMPOUND TRANSISTOR	DTC114TSTP
Q507	TCST009450	TRANSISTOR,SILICON	2SC945(C)-T(P,Q) or
	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T(P,Q)
Q513	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP
Q602	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q605	TAST00733Q	TRANSISTOR,SILICON	2SA733(C)-T_Q
Q607	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q608	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q620	TB3T008920	TRANSISTOR,SILICON	2SB892(S,T)-AE
Q621	TNYJB05001	COMPOUMD TRANSISTOR	DTC114EKAT146
⚠ Q804	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q805	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
⚠ Q806	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC
Q1001	0002G00540	PHOTO COUPLER	GP1S566
Q1002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1003	0002G00550	PHOTO COUPLER	GP1S94L
Q1004	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q1005	0002G00540	PHOTO COUPLER	GP1S566

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		TRANSISTORS	
Q1006	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1009	0002G00550	PHOTO COUPLER	GP1S94L
Q1014	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q1015	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1016	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1017	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1018	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
⚠ Q1019	TB3001134R	TRANSISTOR,SILICON	2SB1134R
Q1023	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1024	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146
Q4001	TCWT022740	TRANSISTOR,SILICON	2SC2274(E,F)-AA
Q4002	TCWT022740	TRANSISTOR,SILICON	2SC2274(E,F)-AA
Q4003	TAWT0984K0	TRANSISTOR,SILICON	2SA984K(E,F)-AA
Q4004	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q4005	TA3T013180	TRANSISTOR,SILICON	2SA1318(S,T)-AA
Q4006	TCKT013170	TRANSISTOR,SILICON	2SC1317(Q,R,S)-T
Q4007	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q4009	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q4010	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q4011	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4012	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4013	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q4204	TNYJB05001	COMPOUMD TRANSISTOR	DTC114EKAT146
Q4205	TNYJB05001	COMPOUMD TRANSISTOR	DTC114EKAT146
Q4206	TNYJB05001	COMPOUMD TRANSISTOR	DTC114EKAT146
Q4210	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4212	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
		COILS &TRANSFORMERS	
L005	02A6A8A0A1	CORE,FERRITE	HF57T18.5*10*10
L101	02A6A8A0A1	CORE,FERRITE	HF57T18.5*10*10
L401	021679472K	COIL	4.7 MH
L402	0221000013	COIL,LINEARITY	ELH5L4112
L403	021U6D680K	COIL	68 UH
⚠ L501	029K000074	COIL,LINE FILTER	9-000074
⚠ L502	029X000065	COIL,LINE FILTER	SU16V-20030
⚠ L503	028R200026	COIL,DEGAUSS	8R200026
L511	02A1281872	CORE,TRIDAL	KR16TT281807D
L602	021LA6150K	COIL	15 UH
L604	021LA6R56M	COIL	0.56 UH
L605	021673101K	COIL	100 UH
L607	021673101K	COIL	100 UH
L608	0216A6150K	COIL	15 UH
L610	0336020388	COIL VIDEO IFT	3602038
L611	021673101J	COIL	100 UH
L613	0216A6470K	COIL	47 UH
L1001	021LA62R2K	COIL	2.2 UH
L4001	0326230038	COIL,TRAP	2623003
L4002	02167D101K	COIL	100 UH
L4003	031626007S	COIL,BIAS OSC	1626007
L4004	02167D101K	COIL	100 UH
L4005	021673101J	COIL	100 UH
L4006	021673101J	COIL	100 UH
L4007	0216A6560K	COIL	56 UH
L4008	0216A6121K	COIL	120 UH
L4009	021673101J	COIL	100 UH
L4010	021673221K	COIL	220 UH
L4012	021673101K	COIL	100 UH
L4014	021LA6680K	COIL	68 UH
L4015	021673101J	COIL	100 UH
L4205	021673101K	COIL	100 UH
T401	03305Y002S	TRANS,HORIZONTAL DRIVE	305Y002
⚠ T501	048140045W	TRANSFORMER,SWITCHING	8140045W
		JACKS	
⚠ J351	0602131012	JACK,RCA,3.5	HSJ2630-010070
J701	0602101020	JACK,RCA	JPJ3811-01-430
⚠ J801	066C130015	SOCKET,CATHODE RAY TUBE	CVT3275-5102
J4201	063P000064	JACK,PLATE	T6582-ABCC
		SWITCHES	
SW751	0504201T31	SWITCH,TACT	SKHVBED010
SW791	0504201T31	SWITCH,TACT	SKHVBED010
SW792	0504201T31	SWITCH,TACT	SKHVBED010
SW793	0504201T31	SWITCH,TACT	SKHVBED010
SW794	0504201T31	SWITCH,TACT	SKHVBED010
SW795	0504201T31	SWITCH,TACT	SKHVBED010
SW796	0504201T31	SWITCH,TACT	SKHVBED010
SW797	0504201T31	SWITCH,TACT	SKHVBED010

REF. NO.	PART NO.	DESCRIPTION	
		SWITCHES	
SW798	0504201T31	SWITCH,TACT	SKHVBED010
SW799	0504201T31	SWITCH,TACT	SKHVBED010
SW1001	0508221001	SWITCH (LEAF)	SPVF130100
		VARIABLE RESISTORS	
VR502	V1263L2BTC	VOLUME,SEMI FIXED	RH063MCN2R
		P.C.BOARD ASSEMBLIES	
PCB010	A54609A01A	PCB ASS'Y	VM9149A
PCB030	A54609A03A	PCB ASS'Y	TE9980A
PCB070	A54609A07A	PCB ASS'Y	TM9416A
PCB110	A54609A11A	PCB ASS'Y	TC9274A
PCB550	A4C701B550	SEE CHASSIS REPLACEMENT PARTS LIST	
		MISCELLANEOUS	
B502	024AT03482	CORE,BEADS	BL02RN2-R62T4
B504	024AT03655	CORE,BEADS	BL01RN1-A63T6
B505	024DT03581	CORE,BEADS	LFP3A-M3R2TA
B602	024AT03655	CORE,BEADS	BL01RN1-A63T6
B4002	024AT03655	CORE,BEADS	BL01RN1-A63T6
B4003	024AT03655	CORE,BEADS	BL01RN1-A63T6
CD351	06CH27080A	CORD,CONNECTOR	CH27080A
CD352	06CH12416A	CORD,CONNECTOR	CH12416A
CD353	06CH12415A	CORD,CONNECTOR	CH12415A
CD401	068101410A	CORD,CONNECTOR	8101410A
⚠ CD501	120R614909	CORD,AC	0R614909
CD601	068101411A	CORD,CONNECTOR	8101411A
CD757	06CH2A014A	CORD,CONNECTOR	CH2A014A
CD801	068M82025A	CORD,CONNECTOR	8M82025A
CD803	122E054402	CORD,JUMPER	2E054402
CD810	06CH2A014A	CORD,CONNECTOR	CH2A014A
CD820	06CH2B027A	CORD,CONNECTOR	CH2B027A
CD850	06CH25086A	CORD,CONNECTOR	CH25086A
CF601	102E245R71	FILTER,SAW	M1958M
CP351	069E270129	CONNECTOR PCB SIDE	8283_0712_00_000
CP352	069X120249	CONNECTOR PCB SIDE	B2B-EH-A
CP353	069X120249	CONNECTOR PCB SIDE	B2B-EH-A
CP401	069W450039	CONNECTOR PCB SIDE	TV-50P-05-V2
CP501	0697320039	CORD UX CONNECTOR	THL-P03P-B1
CP502	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1
CP603	069E260129	CONNECTOR PCB SIDE	8283_0612_00_000
CP757	069E2A0129	CONNECTOR PCB SIDE	8283_1012_00_000
CP801	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1
CP807	069W010010	CONNECTOR PCB SIDE	005P-2100
CP810	069E2A0129	CONNECTOR PCB SIDE	8283_1012_00_000
CP820	069E2B0129	CONNECTOR PCB SIDE	8283_1112_00_000
CP850	069E250129	CONNECTOR PCB SIDE	8283_0512_00_000
CD1001	122L040904	CORD,JUMPER	2L040904
CD1002	122F051702	CORD,JUMPER	2F051702
CD4001	122L061501	CORD,JUMPER	2L061501
CP1002	06CH22076A	CORD,CONNECTOR	CH22076A
CP1004	0697280590	CONNECTOR PCB SIDE	TMC-J08P-B1
CP1005	069R750028	CONNECTOR PCB SIDE	52045-0545
CP1006	069R740028	CONNECTOR PCB SIDE	52045-0445
CP4001	0697240600	CONNECTOR PCB SIDE	TOC-C04X-B1
CP4004	0697120320	CONNECTOR PCB SIDE	TMC-T02X-E1
CP4005	069R760028	CONNECTOR PCB SIDE	52045-0645
CP803A	067R105019	WIRE HOLDER	51052-0500
CP803B	067R105019	WIRE HOLDER	51052-0500
CUS011	800WF00004	CUSHION-A	
CUS012	800WF00019	CUSHION-C	
CUS013	800JF00197	CUSHION-B	
⚠ F501	081PA05003	FUSE	233005-MB000
⚠ F502	080PA2R501	FUSE	23302.5-MB000
⚠ FB401	043220045F	TRANSFORMER FLYBACK	3220045F
FH501	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	06710T0006	HOLDER,FUSE	EYF-52BC
FH503	06710T0006	HOLDER,FUSE	EYF-52BC
FH504	06710T0006	HOLDER,FUSE	EYF-52BC
⚠ ICP502	083PC04002	MICRO FUSE	251004
⚠ ICP503	083PC05002	MICRO FUSE	251005
⚠ ICP505	083PC02002	MICRO FUSE	251002
OS753	077Q000017	REMOTE RECEIVER	PIC-28143TH5
⚠ RY501	0560Q10114	RELAY	SDT-SS-109DM
⚠ SP351	070J133008	SPEAKER	AA0316S1
⚠ SP352	070J133008	SPEAKER	AA0316S1
⚠ TH501	DF20G3R0Q0	DEGAUSS ELEMENT	PTH451C460BG3R0Q140T
TM010	07660CG010	TRANSMITTER	SBJU20003A
⚠ TU601	0145K00050	TUNER UHF-VHF	TECC1040PG31A

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
⚠ V801	098Q200482	CRT	A48AGY13X78
X604	100W3R5702	CRYSTAL	3.579545MHz
X1001	100CA01203	CRYSTAL	12MHz
X1002	100C32R803	CRYSTAL	32.768KHz
X4001	1006A3R504	CRYSTAL	3.579545MHz

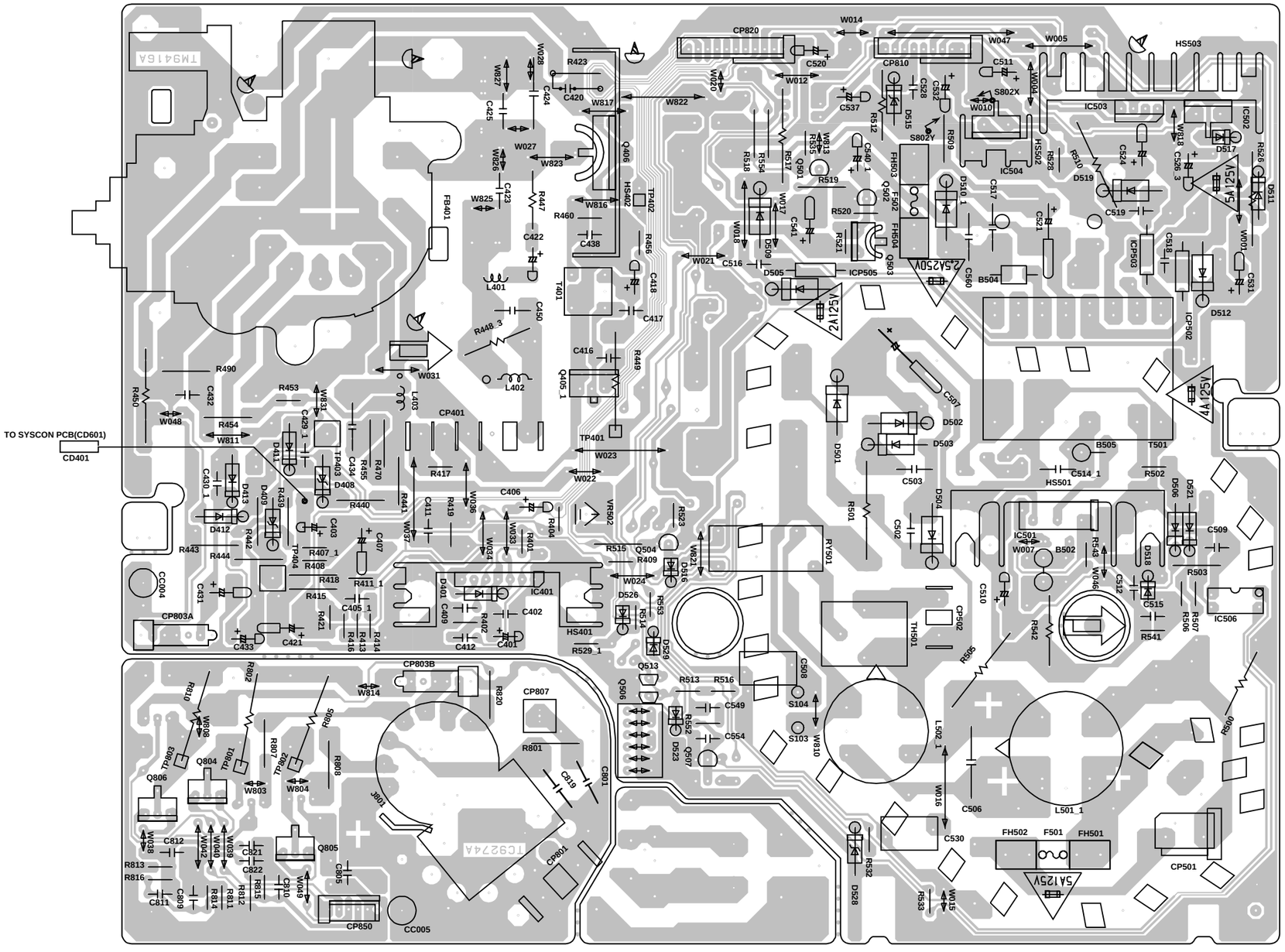
RESISTOR

RC..... CARBON RESISTOR

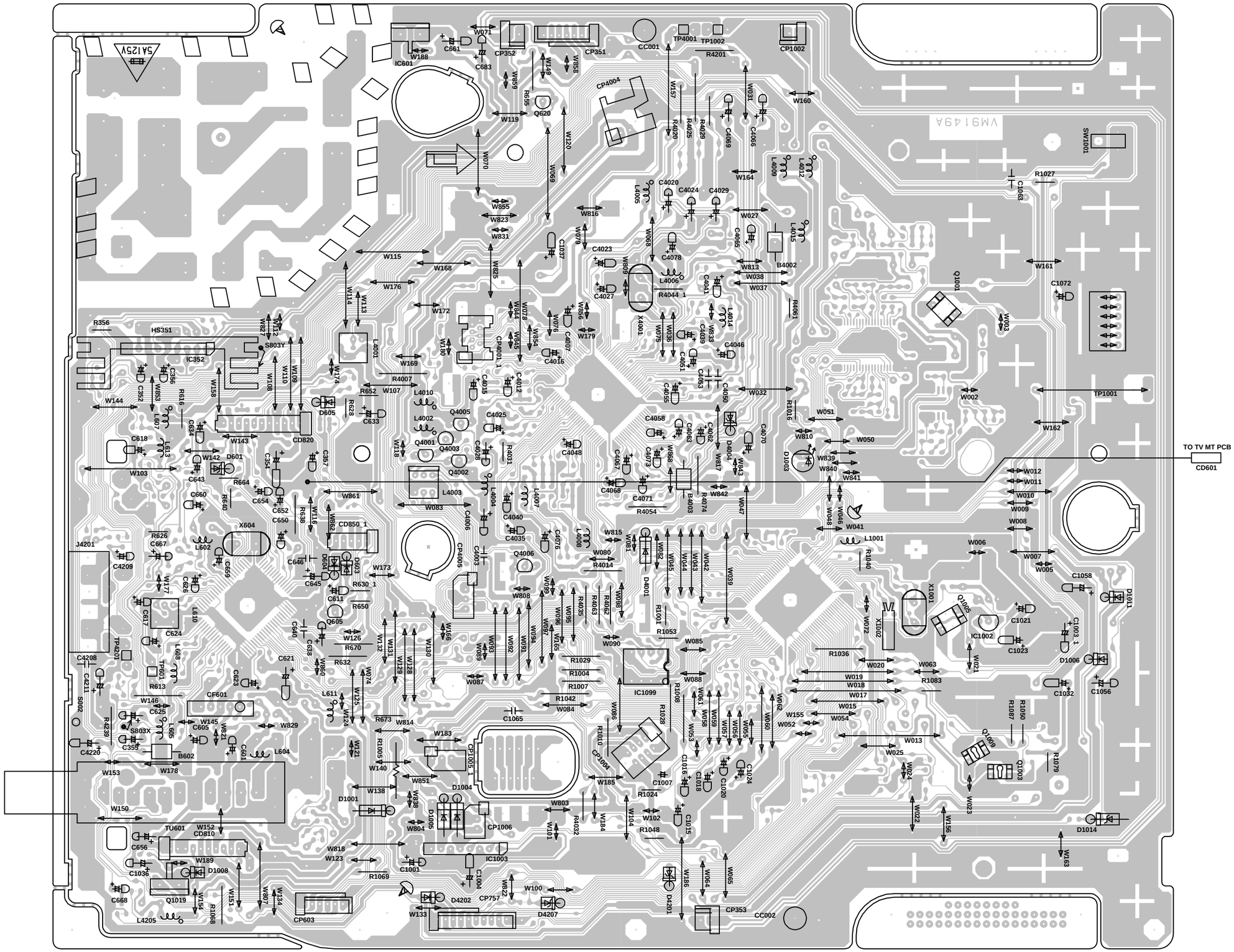
CAPACITORS

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

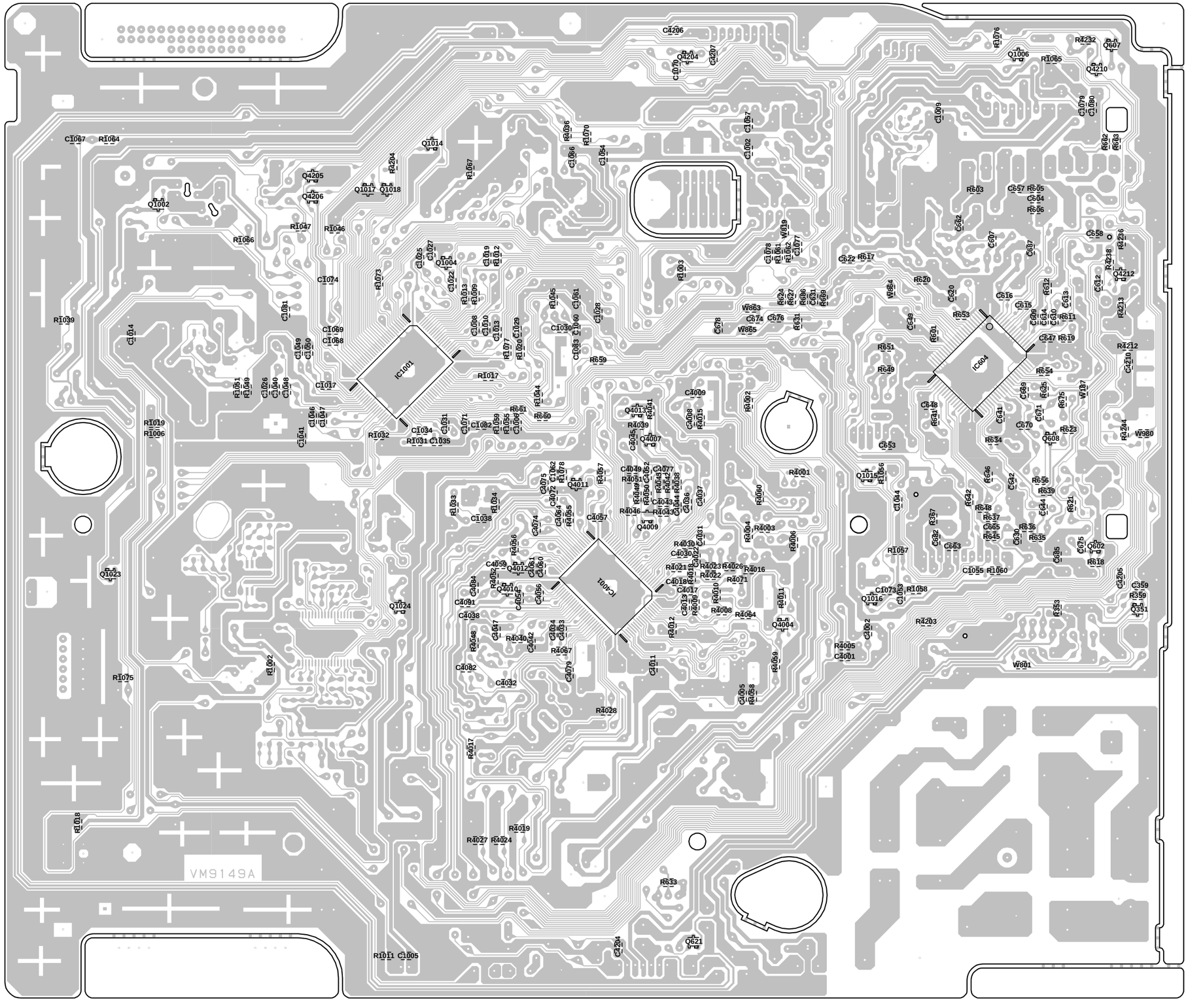
PRINTED CIRCUIT BOARDS
MAIN/CRT



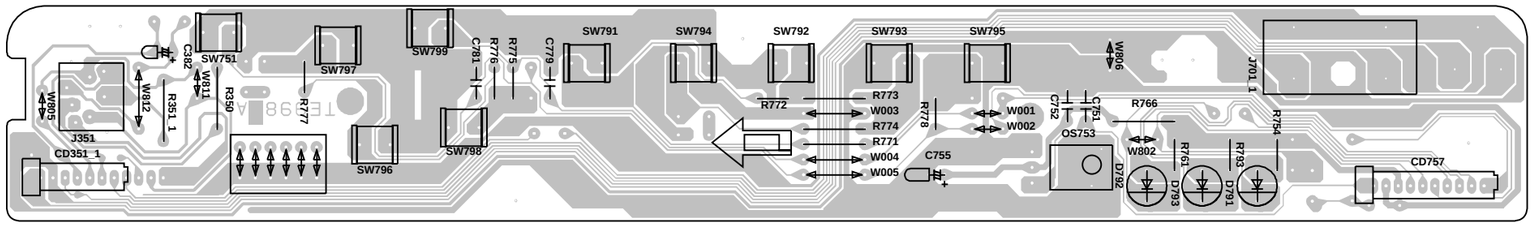
PRINTED CIRCUIT BOARDS
SYSCON
COMPONENT SIDE



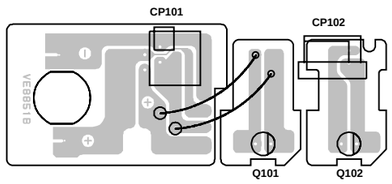
PRINTED CIRCUIT BOARDS
SYSCON
SOLDER SIDE



PRINTED CIRCUIT BOARDS
OPERATION



DECK



SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

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

2. AVOID AN ELECTRIC SHOCK

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

3. USE THE DESIGNATED PARTS

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

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

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

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

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

6. AVOID AN X-RAY

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

7. PERFORM A SAFETY CHECK AFTER SERVICING

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

(INSULATION CHECK PROCEDURE)

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

[Note 1]

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

[Note 2]

External exposure metal: Antenna terminal

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

DISASSEMBLY INSTRUCTIONS

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

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

1. Remove the 6 screws ①.
2. Remove the 2 screws ② which are used for holding the Back Cabinet.
3. Remove the Back Cabinet in the direction of arrow.

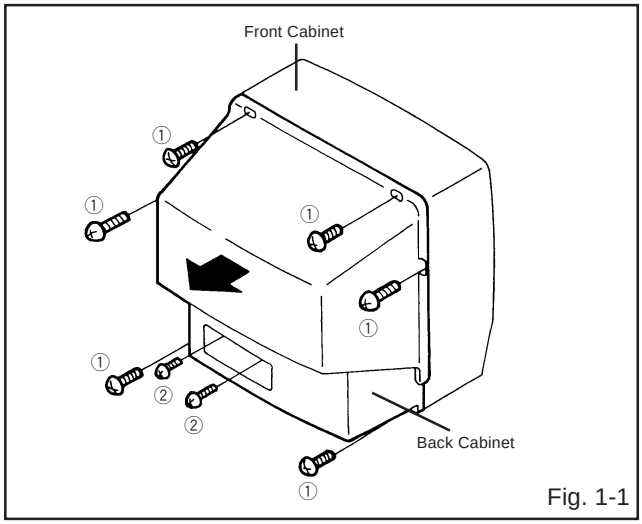


Fig. 1-1

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

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

1. Remove the Anode Cap. (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors: (CP801 and CP850).
3. Remove the CRT PCB in the direction of arrow.

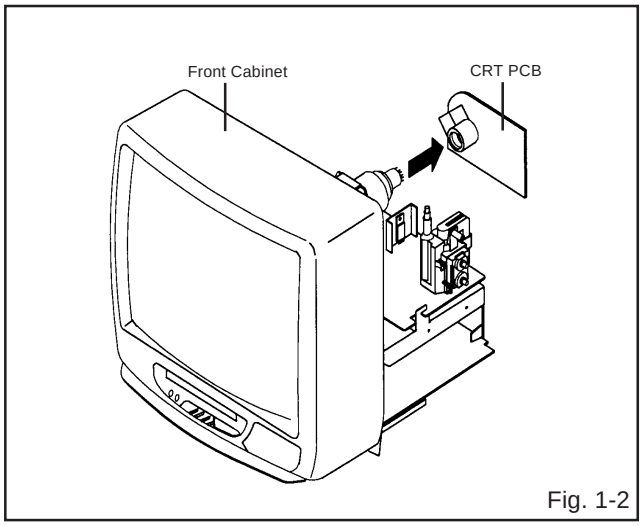


Fig. 1-2

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

1. Remove the 2 screws ①.
2. Disconnect the following connectors: (CP757, CP353, CP352, CP401, CP502 and CP351).
3. Unlock the support ②.
4. Remove the TV/VCR Block in the direction of arrow.

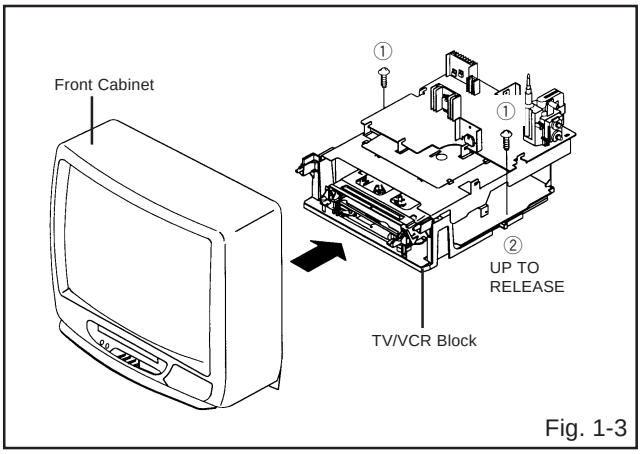


Fig. 1-3

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

1. Remove the 2 screws ②.
2. Remove the 3 screws ③.
3. Disconnect the following connectors: (CP810, CP820 and CD401).
4. Remove the Main PCB in the direction of arrow.

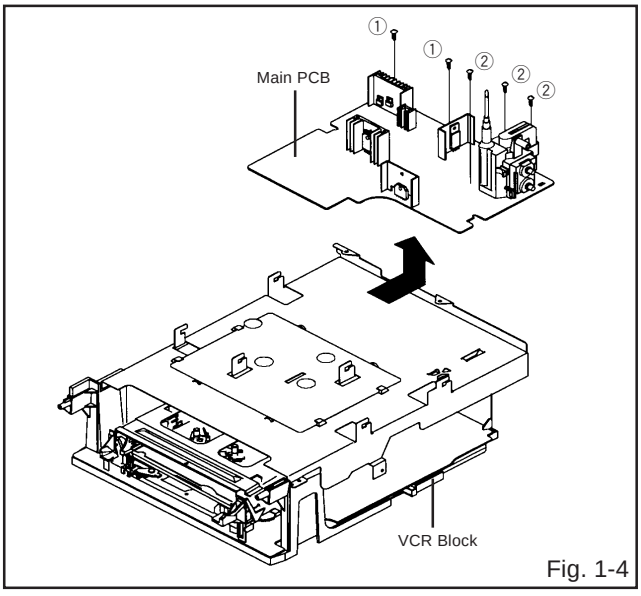


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: DECK SHIELD PLATE (Refer to Fig. 1-5)

1. Remove the 2 screws ①.
2. Remove the screw ②.
3. Remove the Deck Shield Plate in the direction of arrow.

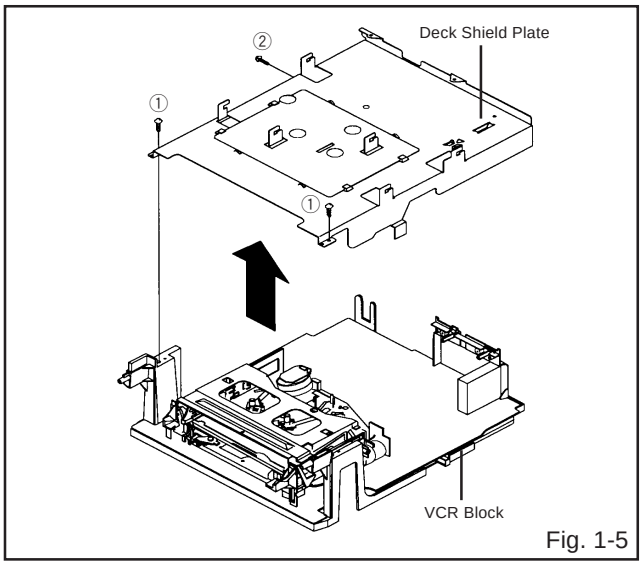


Fig. 1-5

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

1. Remove the 3 screws ①.
2. Disconnect the following connectors:
   (CP1005 , CP1006 , CP4001, CP4004 and CP4005).
3. Remove the Deck Chassis in the direction of arrow.

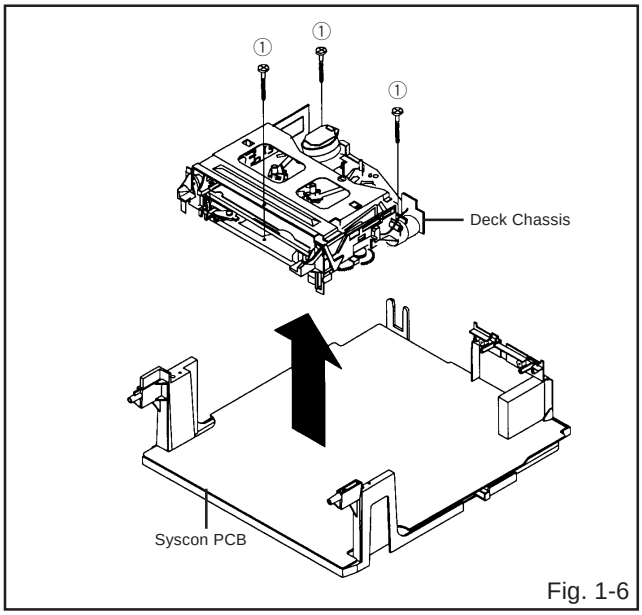


Fig. 1-6

1-7: JACK PLATE AND SYSCON PCB (Refer to Fig. 1-7)

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Remove the screw ②.
4. Remove the nut ③.
5. Remove the washer ④.
6. Unlock the 2 supports ⑤.
7. Remove the Jack Plate in the direction of arrow (B).

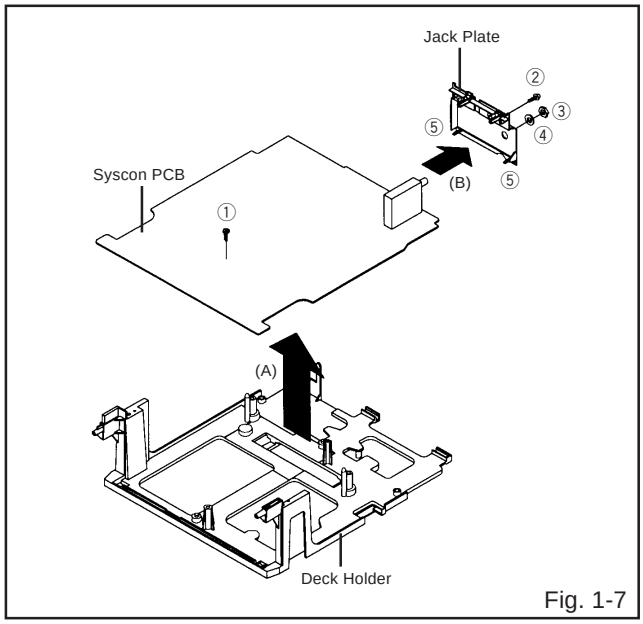


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

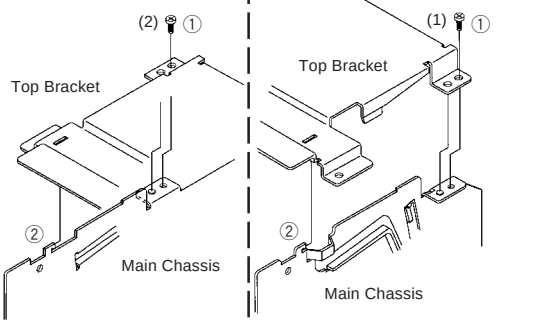
2. REMOVAL OF DECK PARTS

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. Unlock the support ② and remove the Flap Lever.
4. Unlock the 3 supports ③ and remove the Tape Guide R.

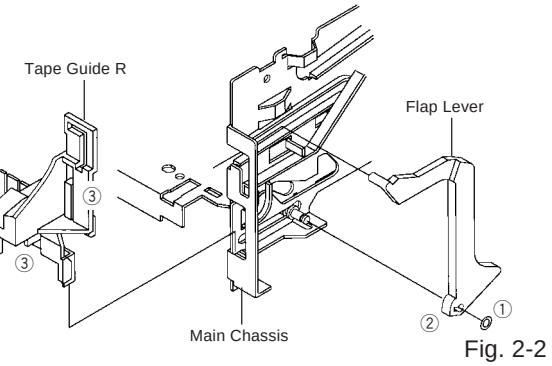
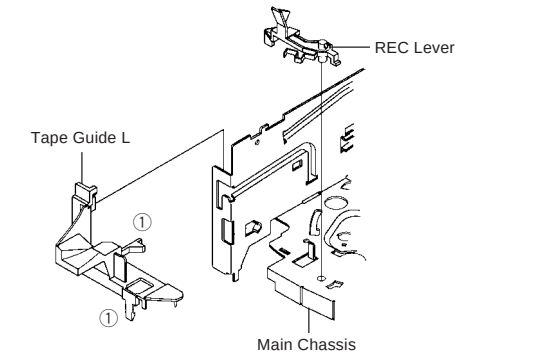


Fig. 2-2

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)

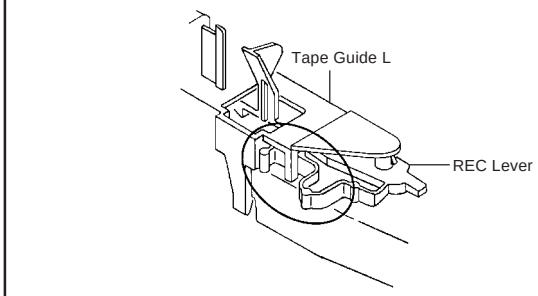


• The REC Lever is not installed on the Video Cassette Player.

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.

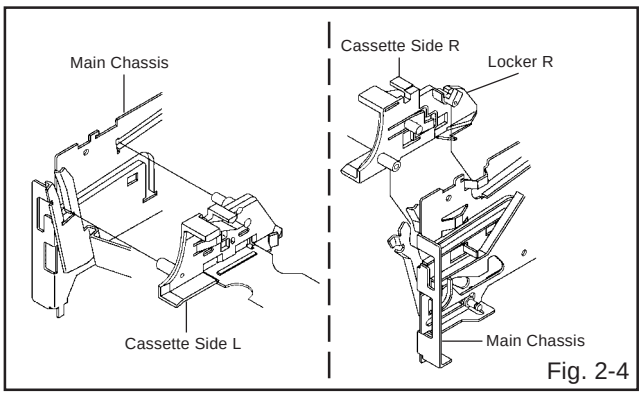


Fig. 2-4

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

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

NOTE

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

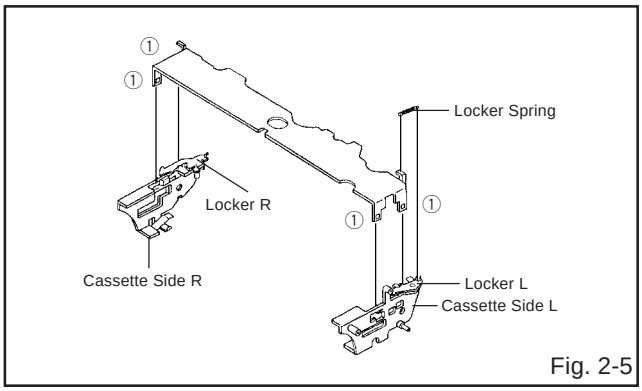


Fig. 2-5

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.

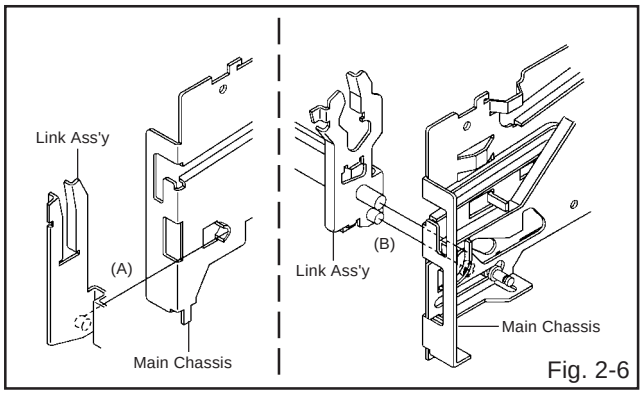
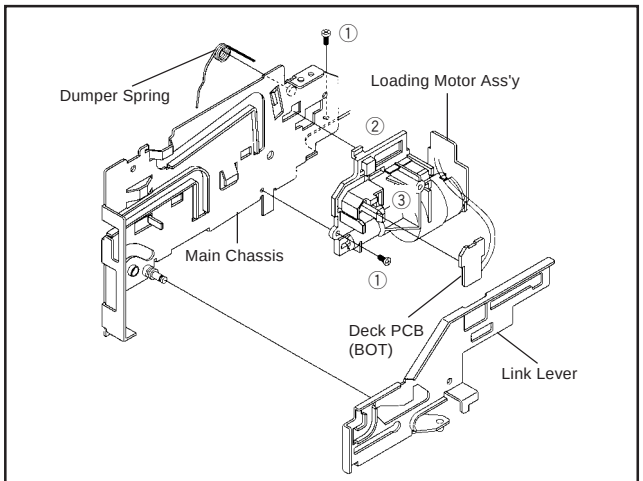


Fig. 2-6

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 L (Refer to Fig. 2-8)

1. Unlock the support ① and remove the Sensor Cover L.
2. Unlock the 2 supports ② and remove the Deck PCB (EOT).

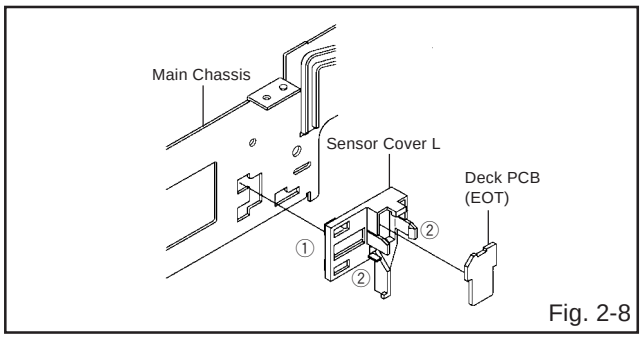


Fig. 2-8

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

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

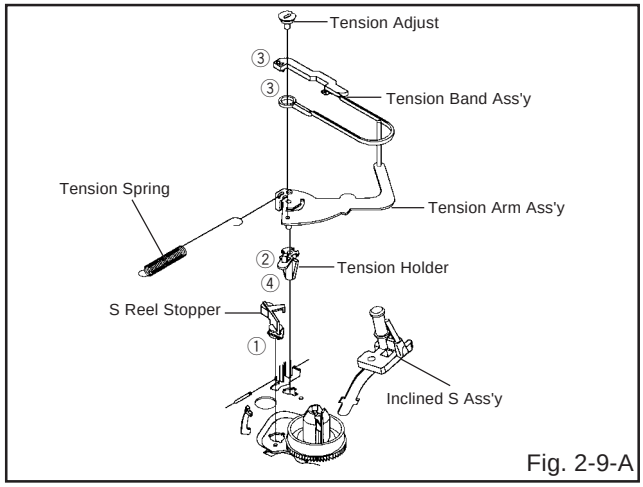


Fig. 2-9-A

NOTE

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

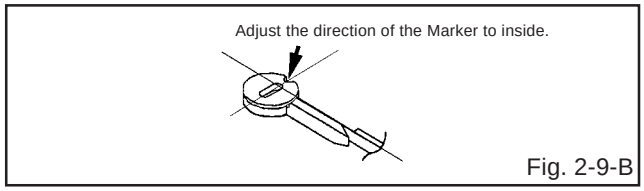


Fig. 2-9-B

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

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

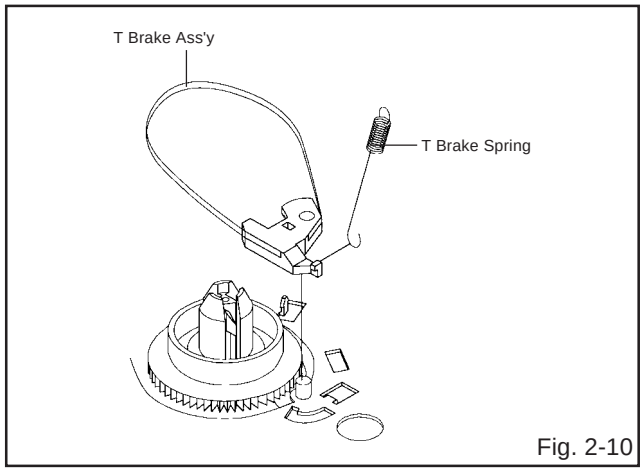


Fig. 2-10

DISASSEMBLY INSTRUCTIONS

2-11: S REEL/T REEL ASS'Y (Refer to Fig. 2-11)

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

NOTE

1. Take care not to damage the gears of the S Reel, T Reel Ass'y and Idler Ass'y.
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 Ass'y. (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 (KYODO OIL Slidas #150). (If you do not oil, noise may be heared in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

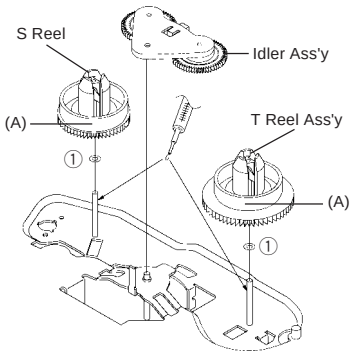
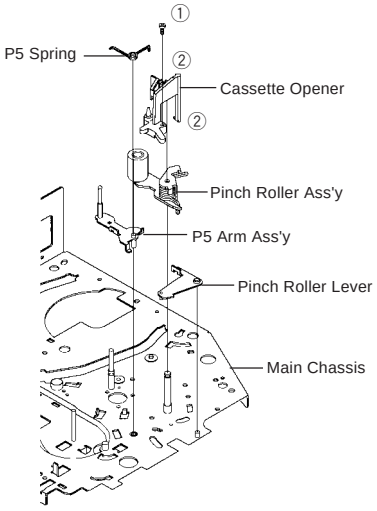


Fig. 2-11

2-12: PINCH ROLLER ASS'Y/P5 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 Ass'y, Pinch Roller Lever and P5 Arm Ass'y.



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-12-A

NOTE

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

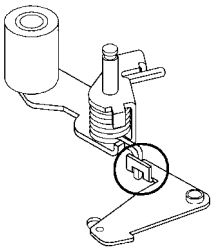


Fig. 2-12-B

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).

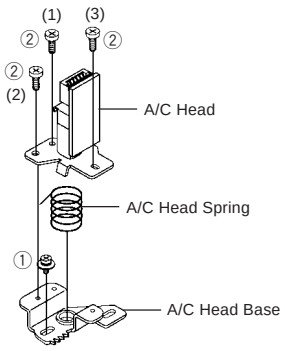


Fig. 2-13-A

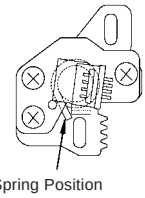
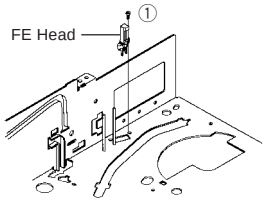


Fig. 2-13-B

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.

Fig. 2-14

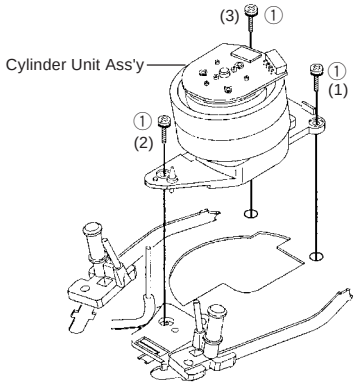
DISASSEMBLY INSTRUCTIONS

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

1. Remove the 3 screws ①.
2. 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.

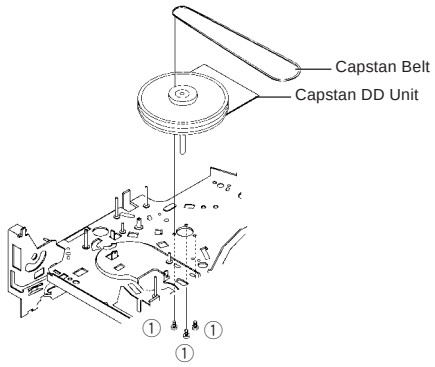


• Screw Torque: 5 ± 0.5kgf•cm

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.



• Screw Torque: 5 ± 0.5kgf•cm

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, Link Lever Spacer and P5 Cam.
3. Remove the Polyslider Washer ②, then remove the Pinch Roller Cam.
4. Remove the Polyslider Washer ③, then remove the Joint Gear.

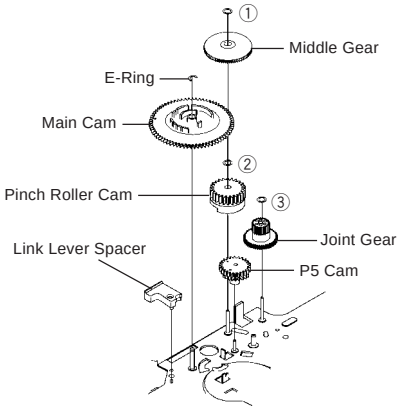


Fig. 2-17-A

NOTE

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

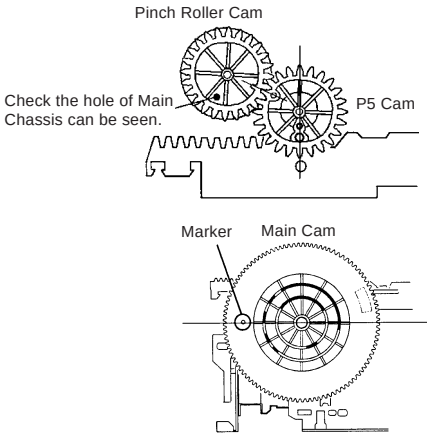


Fig. 2-17-B

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

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y, Ring Spring, Ring Clutch, Gear Clutch and Polyslider Washer ②.

NOTE

When you install the Clutch Ass'y, oil the shaft (KYODO OIL Slidas #150).

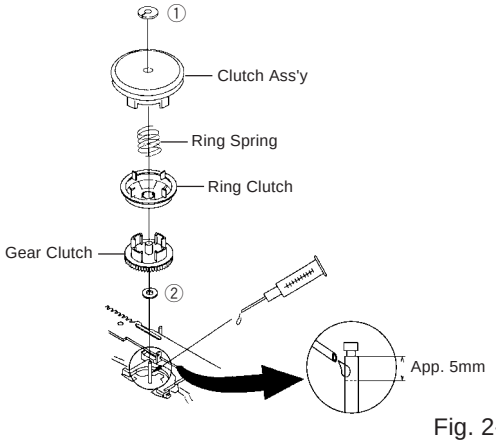


Fig. 2-18

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 Arm Ass'y.
4. Remove the Main Rod.
5. Remove the Tension Lever.
6. Unlock the 2 supports ② and remove the Clutch Lever.
7. Remove the screw ③ and washer ④.
8. Remove the LED Reflecter.
9. Remove the Loading Arm S Ass'y and Loading Arm T Ass'y.
10. Remove the Loading Gear S and Loading Gear T.
11. Remove the Loading Gear Spring.

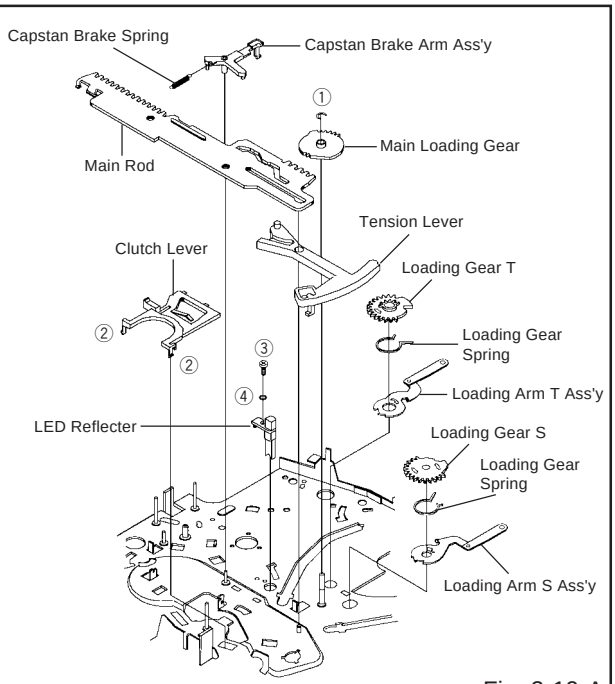


Fig. 2-19-A

NOTE

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)**

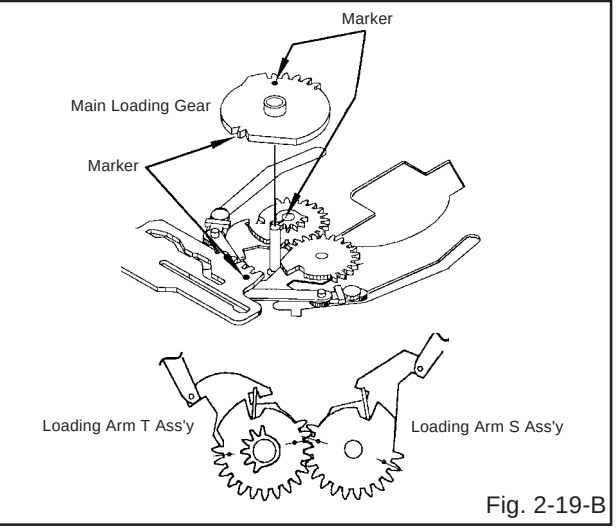


Fig. 2-19-B

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

1. Remove the S-S Brake Spring.
2. Unlock the support ① and remove the Loading Gear Holder.
3. Remove the S-S Brake Arm.
4. Remove the Incined S.
5. Remove the Incined T.
6. Remove the 2 screws ②, then remove the Guide Roller and O-Ring.

NOTE

Do not touch the roller of Guide Roller.

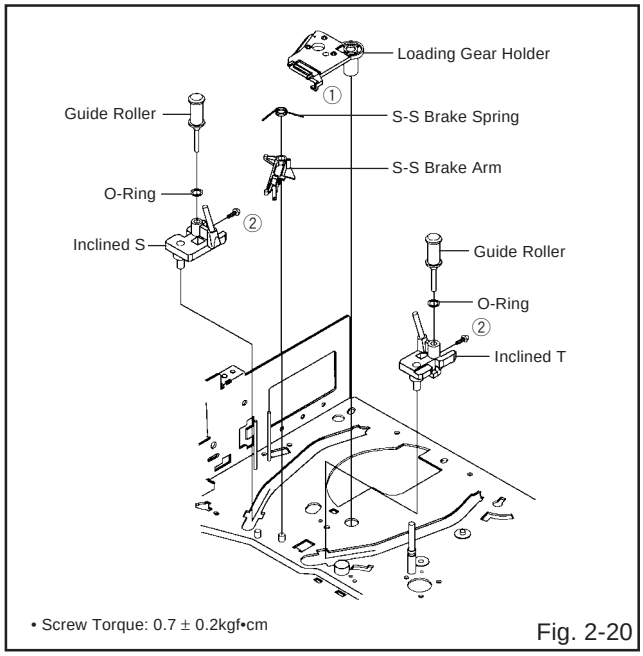


Fig. 2-20

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.

The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more tan 2 seconds during PLAY.
VOL. (-) MIN	6	POWER ON total hours and PLAY/REC total hours are displayed on the screen. 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".
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The 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

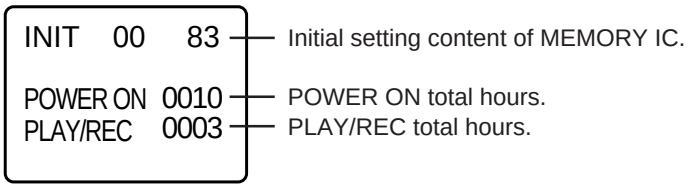
■ : Clean
● : Replace

CONFIRMATION OF USING HOURS

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

NOTE: The confirmation of using hours will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

1. Set the VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control simultaneously.
3. After the confirmation of using hours, turn off the power.



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

PREVENTIVE CHECKS AND SERVICE INTERVALS

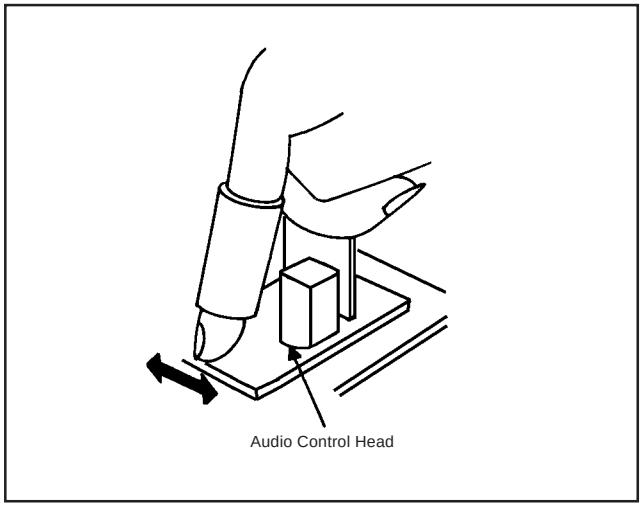
CLEANING

NOTE

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

1. AUDIO CONTROL HEAD

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

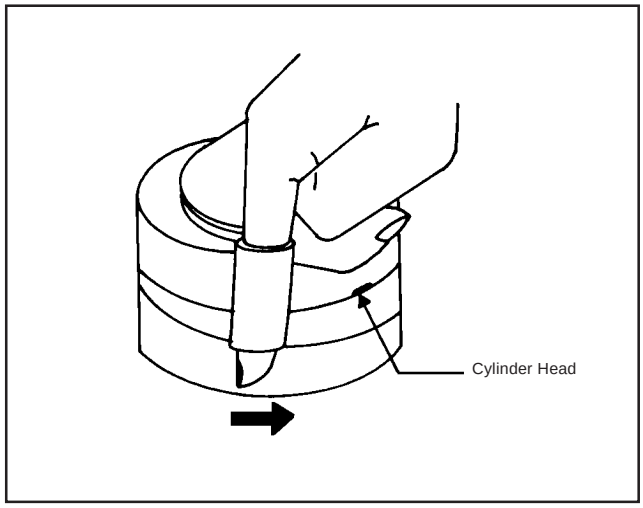
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

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.

NOTE: Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA
00	83	0A	23	14	94	1E	44
01	6D	0B	24	15	A0	1F	05
02	07	0C	00	16	61	20	79
03	00	0D	00	17	44	21	05
04	00	0E	00	18	A9	22	3E
05	00	0F	00	19	0F	23	2A
06	04	10	6C	1A	04	24	39
07	8B	11	2B	1B	C2	25	00
08	31	12	21	1C	5F	26	00
09	16	13	15	1D	F9	27	30

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control simultaneously.
3. ADDRESS and DATA should appear as FIG 1.

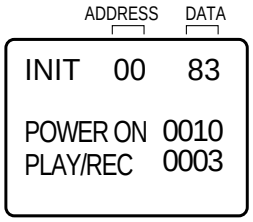
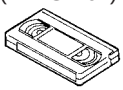
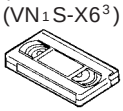
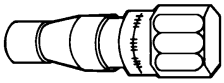
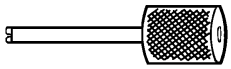
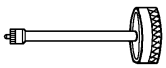
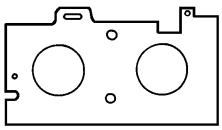
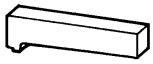
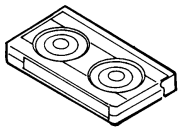
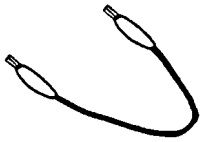
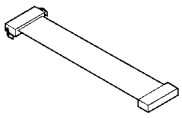
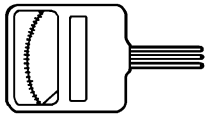


Fig. 1

4. 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.
5. Press ENTER to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using SET + or - until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

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

SERVICING FIXTURES AND TOOLS

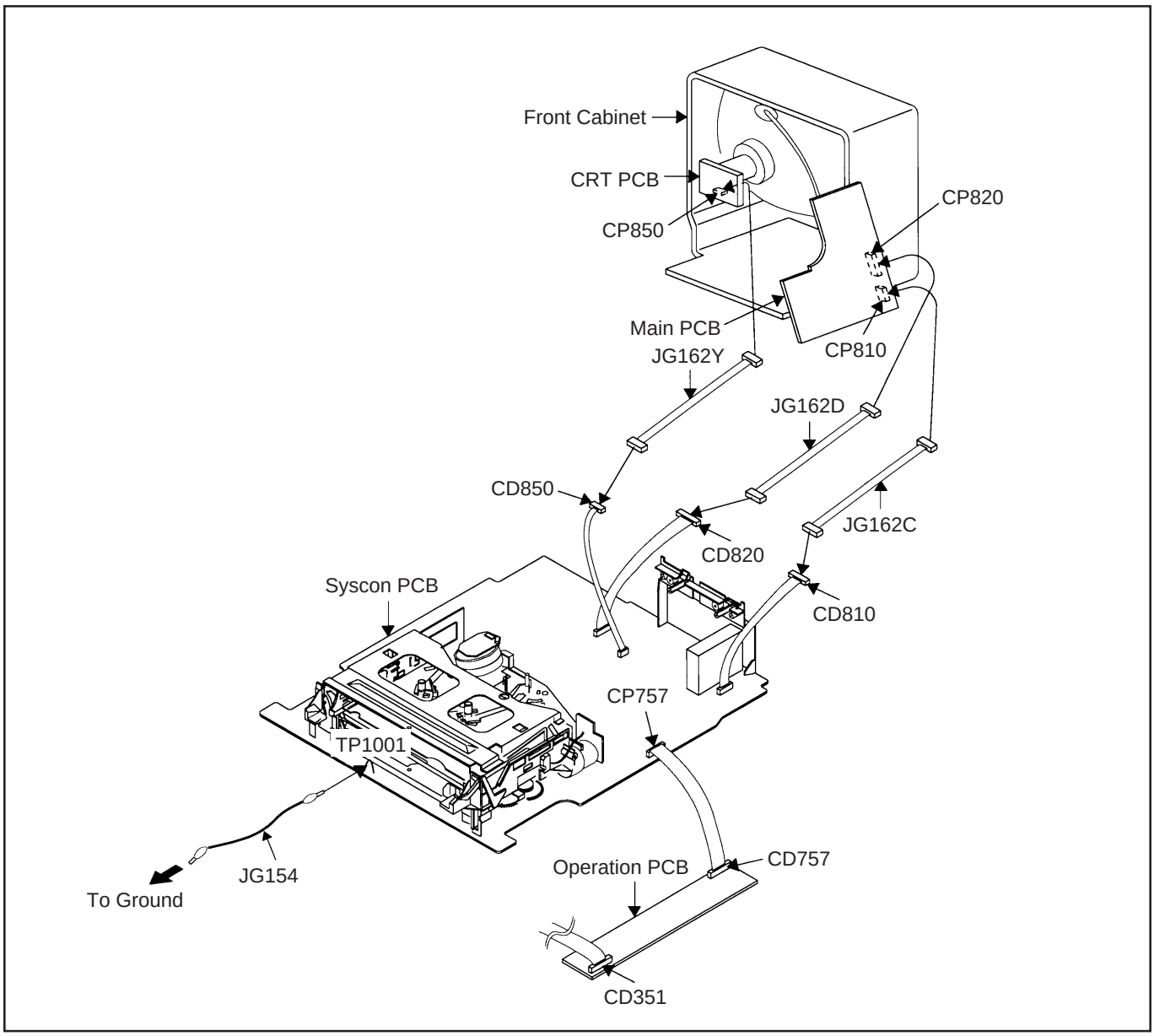
(For 2 heads model) VHS Alignment Tape JG001 (VN_2S-$LI6^3$) JG001A (VN_2S-$CO1^3$) JG001Q (VN_2S-$LI6^3H$) JG001T (VN_2S-$X6^3$) 	**(For 4 heads model)** VHS Alignment Tape JG001B (VN_1S-$LI6^3$) JG001I (VN_1S-$CO1^3$) JG001P (VN_1S-$LI6^3H$) JG001S (VN_1S-$X6^3$) 	JG002B Adapter JG002E Dial Torque 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 	JG162C Cable (10 Pins) JG162D Cable (11 Pins) JG162Y Cable (5 Pins) 	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 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 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
JG162C/JG162D	Used to connect the Syscon PCB and Main PCB
JG162Y	Used to connect the Syscon PCB and CRT PCB

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Unplug the connector CP351, CP352, CP757 and CP353, then remove the TV/VCR Block from the set.
2. Unplug the connector CP810, CP820, CP850 and CD401, then remove the Main PCB from the VCR Block.
3. Connect as shown in the below figure using the Service Fixture.
   • Connect the Syscon PCB to the Main PCB with the cable JG162C and JG162D.
   • Connect the Syscon PCB to the CRT PCB with the cable JG162Y.
4. Remove the Operation PCB from the set, then connect it with the Syscon PCB.
   If necessary, connect CP351 (Front A/V Jack Input Terminal)
5. 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.
6. 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 NOTE before starting works.

- 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.

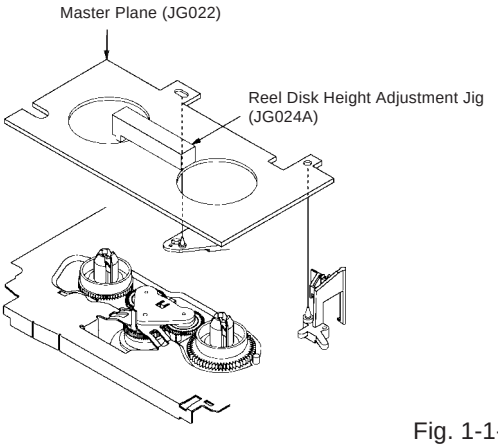


Fig. 1-1-A

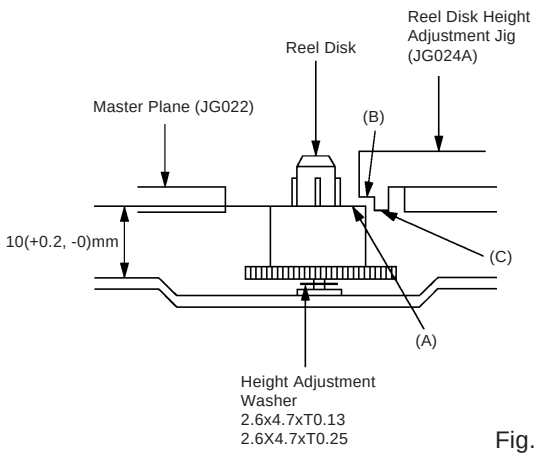


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the Tension Adjust until the length from the edge of the Tension Arm to the stdandard line of the Main Chassis is 0.5 ± 0.25mm.
   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.

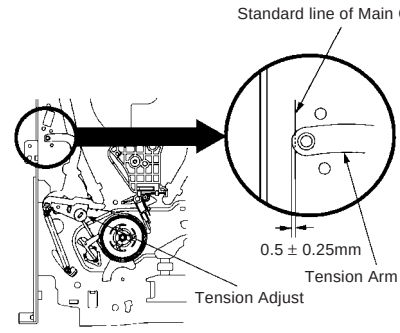


Fig. 1-2-A

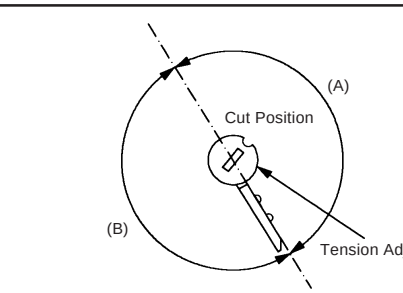


Fig. 1-2-B

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 70~130gf•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.

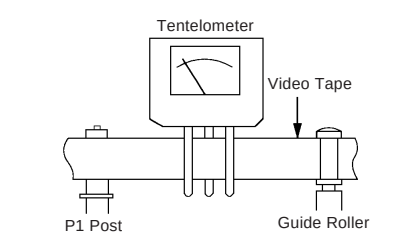


Fig. 1-3

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 70~100gf•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 Ass'y.
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 35~60gf•cm.

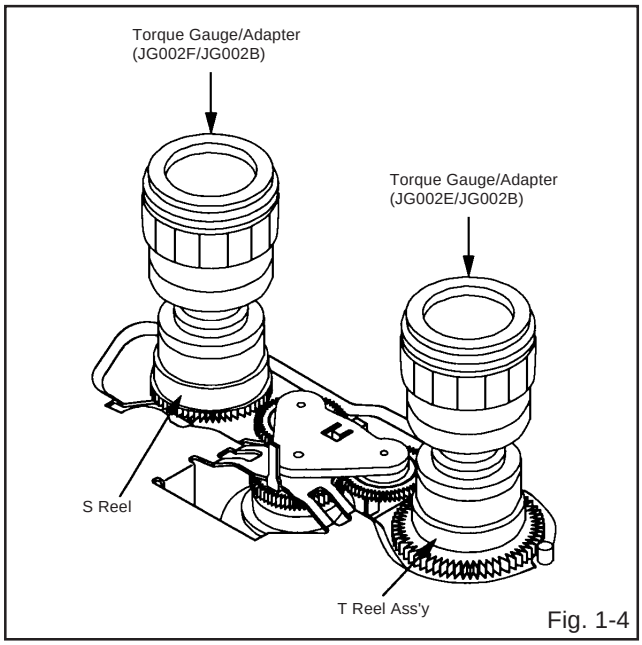


Fig. 1-4

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 begins 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)**

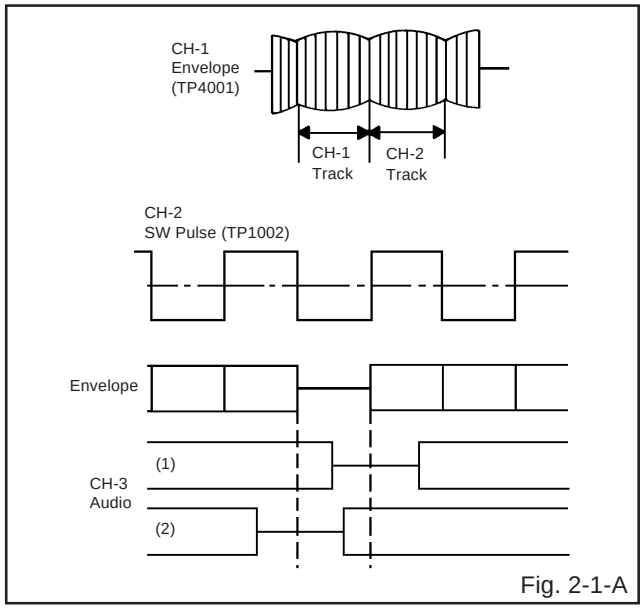


Fig. 2-1-A

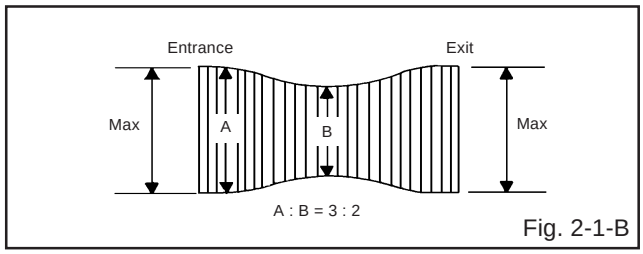


Fig. 2-1-B

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 bottomof 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.

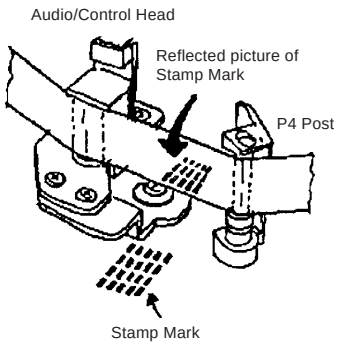


Fig. 2-2-A

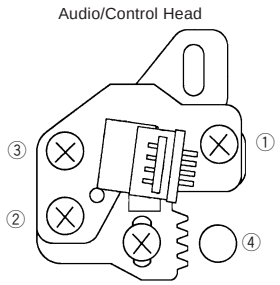


Fig. 2-2-B

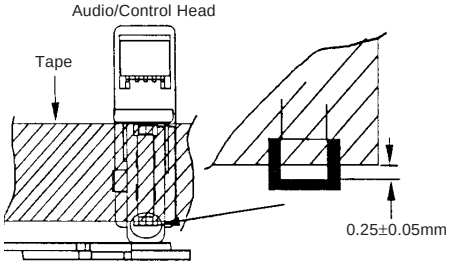


Fig. 2-2-C

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

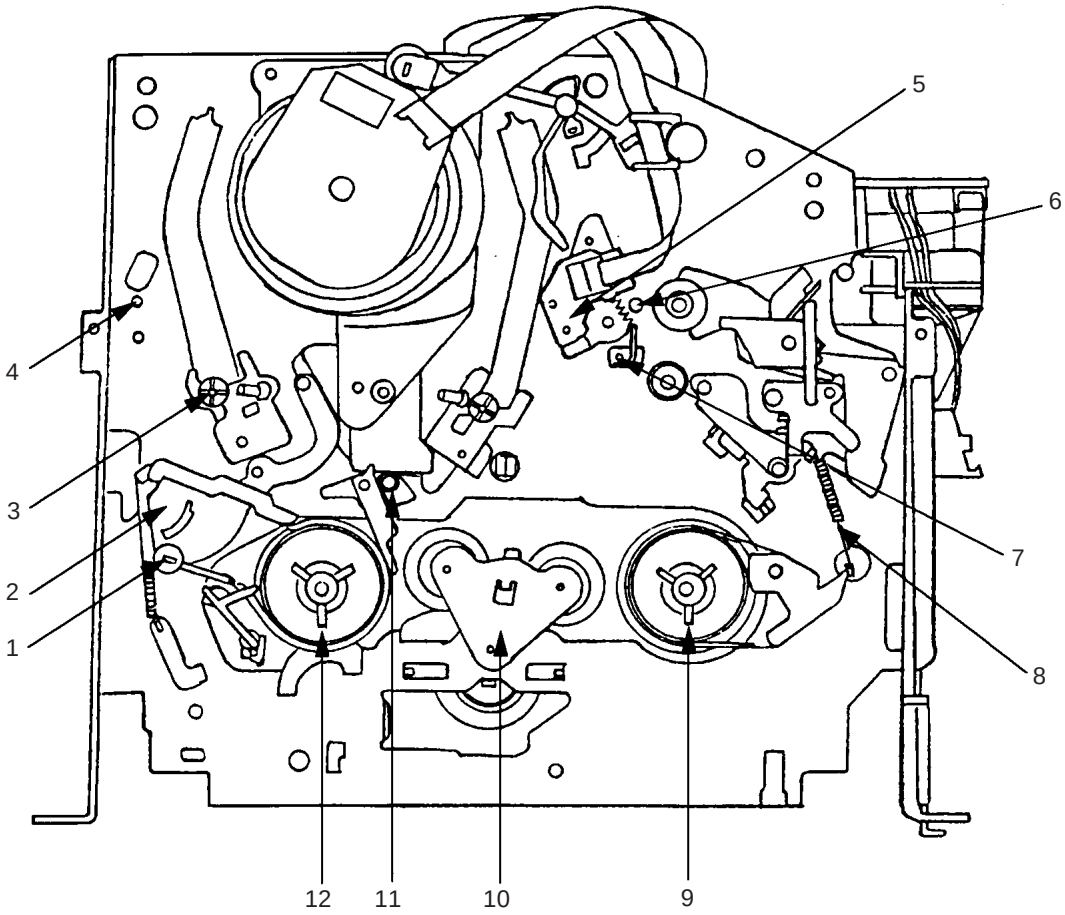
1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope 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 Ass'y
10. Idler Ass'y
11. S-S Brake Spring
12. S Reel

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

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

CAUTION

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

On-Screen Display Adjustment

1. Unplug the AC plug for more than 30 minutes to set the clock to the non-setting state. (To release the Back-Up immediately, take the short circuit between **C1003** and **GND** at the Power Off.) Then, set the volume level to minimum.
2. Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control simultaneously to display adjustment mode on the screen as shown in **Fig. 1-1**.

NOTE

Use the channel buttons **(1-8)** on the remote control to select the options shown in **Fig. 1-1.**
Press the channel button **(0)** on the remote control to end the adjustments.

1. H/V
2. AKB
3. COLOR TEMP
4. PICTURE
5. OTHERS
6. TEST PATTERN
7. STEREO/SAP
8. (VOL TEST) 0. END

Fig. 1-1

2. BASIC ADJUSTMENTS

(VCR SECTION)

2-1: PG SHIFTER

1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **TP4201**.
2. Playback the alignment tape. **(JG001A)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control simultaneously until the indicator REC disappears. If the indicator REC disappears, adjustment is completed.

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

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

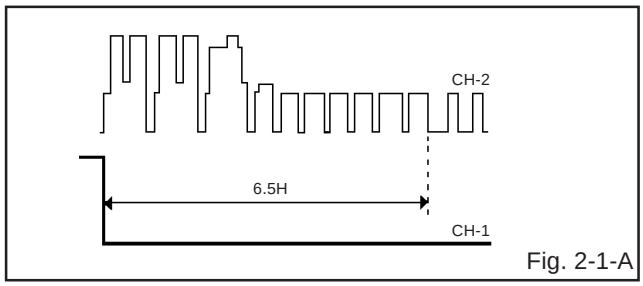


Fig. 2-1-A

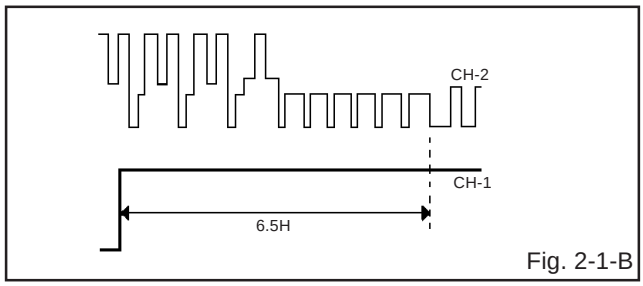


Fig. 2-1-B

2-2: RF AGC DELAY

1. Receive the monoscope pattern.
2. Connect the digital voltmeter between the **pin 5 of CP603** and the **pin 1 (GND) of CP603**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(5)** on the remote control. The **Fig. 2-2** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.3 ± 0.05V (70dB).

1. RF AGC DELAY
2. VIDEO LEVEL
3. FM LEVEL
4. OSD H
5. CUT OFF
6.
7.
8. 0. RETURN

Fig. 2-2

2-3: VCO FREERUN

1. Receive the monoscope pattern. (AFT off)
2. Connect the digital voltmeter to **TP601**.
3. Adjust the **L610** until the digital voltmeter is 3.1 ± 0.05V.

(TV SECTION)

2-4: CONSTANT VOLTAGE

1. Using the remote control, set the brightness and contrast to normal position.
2. Connect the digital voltmeter to **TP401**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR502** until the DC voltage is 135 ± 0.5V.

ELECTRICAL ADJUSTMENTS

2-5: CUT OFF

1. Place the set with Aging Test for more than 15 minutes.
2. Set condition is AV MODE without signal.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(5)** on the remote control. The **Fig. 2-2** appears on the display.
5. Press the channel button **(5)** on the remote control.
6. Adjust the **Screen Volume** until a dim raster is obtained.

2-6: FOCUS

1. Using the remote control, set the brightness and contrast to normal position.
2. Receive the monoscope pattern.
3. Turn the Focus Volume fully counterclockwise once.
4. Adjust the **Focus Volume** until picture is distinct.

2-7: SUB BRIGHTNESS (TV)

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the white 10% is starting to be visible.

1. BRIGHT
2. CONTRAST
3. COLOR
4. TINT
5. SHARPNESS
6. OSD CONT
7.
8. 0. RETURN

Fig. 2-3

2-8: SUB BRIGHTNESS (AV)

1. Receive the monoscope pattern. (Audio Video Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the white 10% is starting to be visible.

2-9: SUB COLOR (TV)

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP801**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(3)** on the remote control.
6. Adjust the VOLTS RANGE VARIABLE knob of the synchro scope until the range between white 100% and 0% is set to 4 scales on the screen of the synchro scope.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 100% of the white level. **(Refer to Fig. 2-4)**

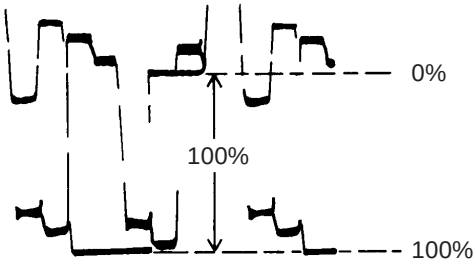


Fig. 2-4

2-10: SUB COLOR (AV)

1. Receive the color bar pattern. (Audio Video Input)
2. Connect the synchro scope to **TP801**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(3)** on the remote control.
6. Adjust the VOLTS RANGE VARIABLE knob of the synchro scope until the range between white 100% and 0% is set to 4 scales on the screen of the synchro scope.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 100% of the white level. **(Refer to Fig. 2-4)**

2-11: SUB TINT (TV)

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP803**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(4)** on the remote control.
6. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-5)**

ELECTRICAL ADJUSTMENTS

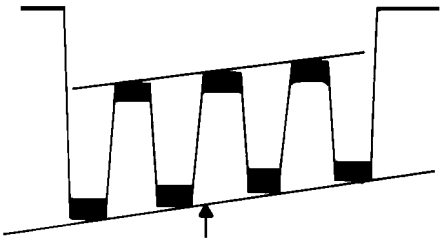


Fig. 2-5

2-12: SUB TINT (AV)

1. Receive the color bar pattern. (Audio Video Input)
2. Connect the synchro scope to **TP803**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(4)** on the remote control.
6. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-5)**

2-13: HORIZONTAL PHASE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

1. H. PHASE
2. H. BLK
3. V. SIZE
4. V. POSI
5. V. LIN
6. V. SC
7. V. COMP
8. (H FREQ) 0. RETURN

Fig. 2-6

2-14: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(3)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the horizontal over scan is equal to the vertical over scan.

2-15: VERTICAL LINEALITY

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(5)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-16: VERTICAL POSITION

1. Receive the color bar pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(4)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the horizontal line of the color bar comes to approximate center of the CRT.

2-17: OSD HORIZONTAL

1. Receive the color bar pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(5)** on the remote control. The **Fig. 2-2** appears on the display.
4. Press the channel button **(4)** on the remote control.
5. Press the VOL. UP/DOWN on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-7)**

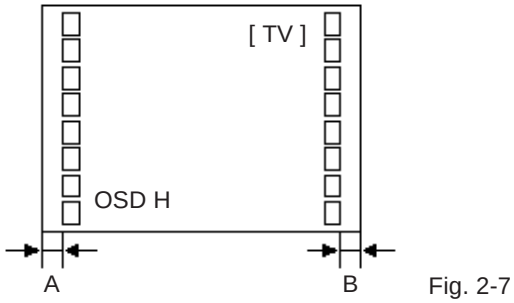
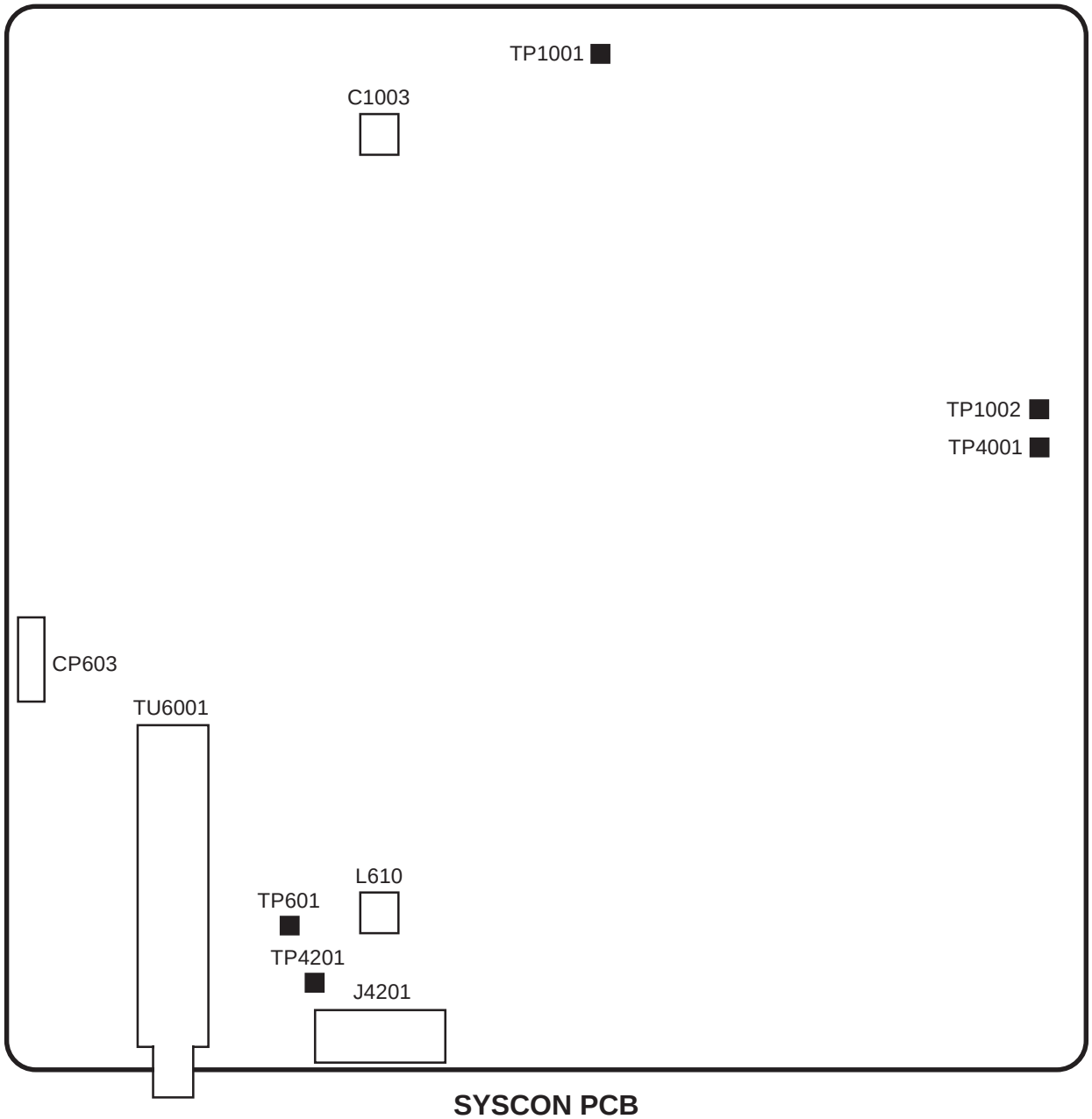


Fig. 2-7

ELECTRICAL ADJUSTMENTS

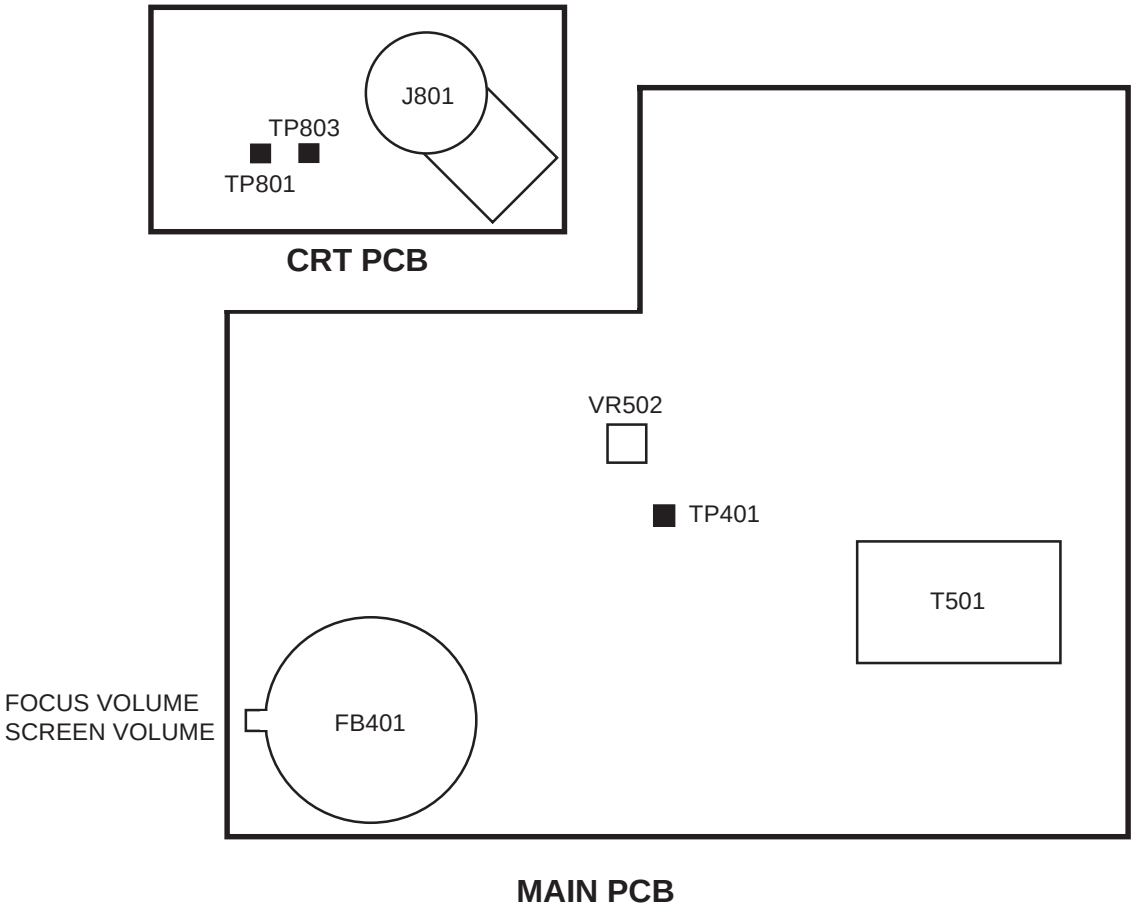
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (VCR SECTION)



SYSCON PCB

ELECTRICAL ADJUSTMENTS

(TV SECTION)



ELECTRICAL ADJUSTMENTS

4. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

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

4-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

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

4-2: PURITY

NOTE

Adjust after performing adjustments in section 4-1.

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

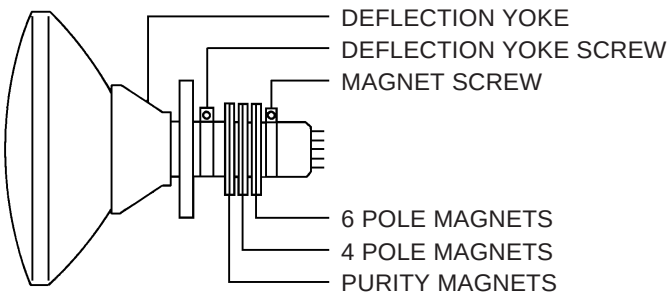


Fig. 4-1

4-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 4-2.

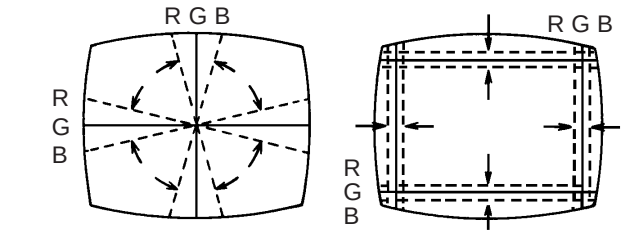
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

4-4: DYNAMIC CONVERGENCE

NOTE

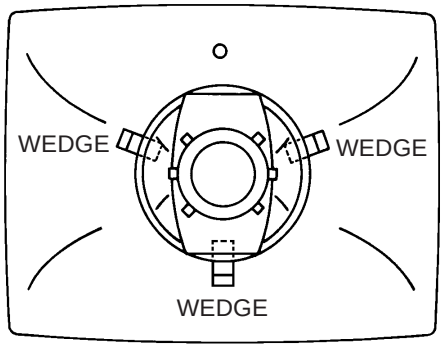
Adjust after performing adjustments in section 4-3.

1. Adjust the differences around the screen by movingthe deflection yoke upward/downward and right/left. **(Refer to Fig. 4-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 4-2-b)**



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

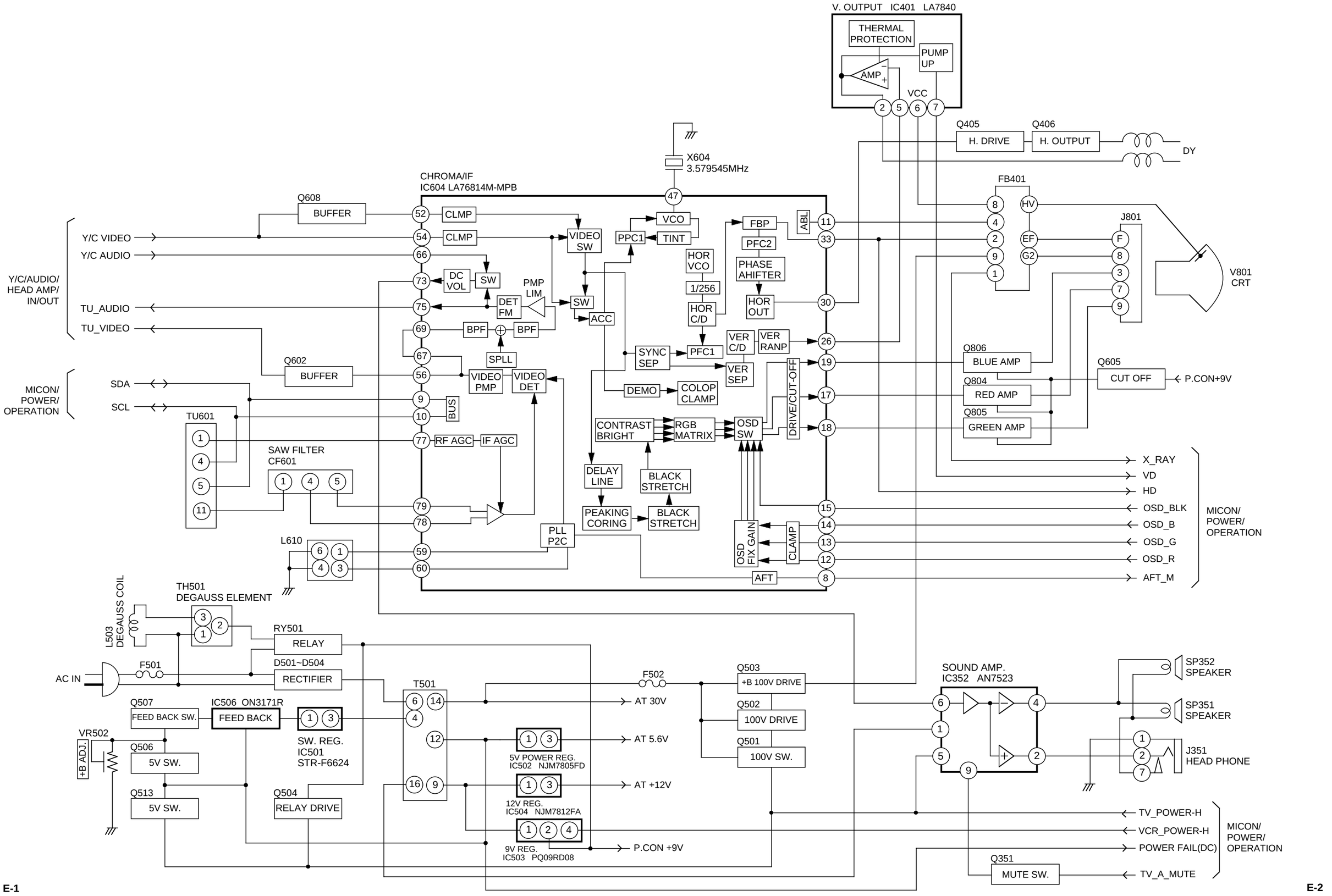
Fig. 4-2-a



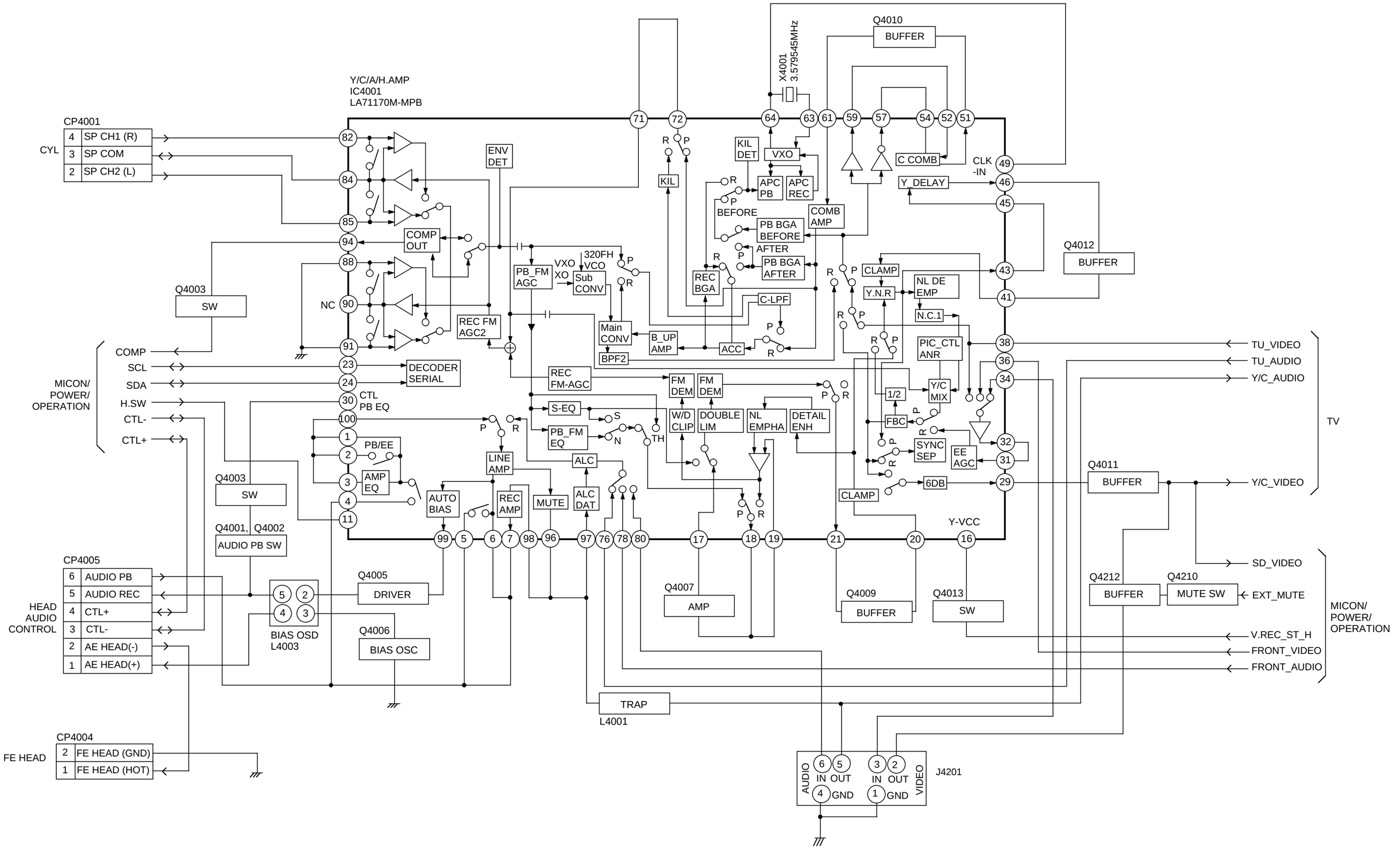
WEDGE POSITION

Fig. 4-2-b

TV BLOCK DIAGRAM



Y/C/AUDIO/HEAD AMP/IN/OUT BLOCK DIAGRAM



MICON/POWER/OPERATION BLOCK DIAGRAM