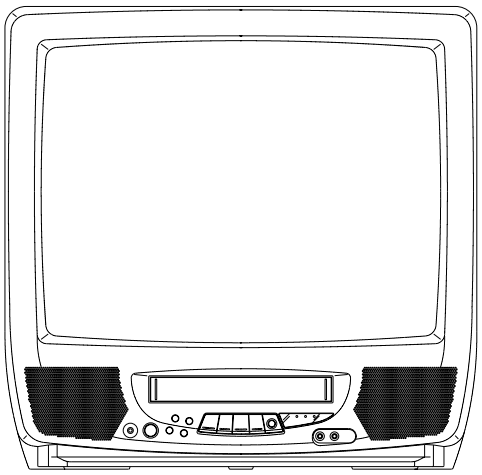
Memorex®

MVT2195B

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER



VHS

ORIGINAL
MFR'S VERSION A

Memorex®

MVT2195B

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER

REVISION 1
MFR'S VERSION C

MFR'S VERSION	M2003	IC1001
A	EP14BD	OEC7043A
C	F20EL82	OEC7043B

VHS

Please file this revision with the original version.

Change of MICRO MOTOR

DIFFERENCES

REF. NO.	MFR'S VERSION A		MFR'S VERSION C	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
M2003	1589V11007	MICRO MOTOR EP14BD	1589311005	MICRO MOTOR F20EL82

REF. NO.	MFR'S VERSION A		MFR'S VERSION C	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
CD1002	122F051702	CORD, JUMPER 2F051702	122F071701	CORD, JUMPER 2F071701
CP1005	069J750029	CONNECTOR PCB SIDE IMSA-9604S-05Z14	069J770029	CONNECTOR PCB SIDE IMSA-9604S-07Z14
PCB010	A546A5A01A	SYSCON PCB ASS'Y VMX180B	A546A5A01B	SYSCON PCB ASS'Y VMX180C

MAIN PCB's are not interchangeable.

Change of IC1001

DIFFERENCES

REF. NO.	MFR'S VERSION A		MFR'S VERSION C	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
IC1001	I56F57043A	IC OEC7043A	I56F57043B	IC OEC7043B
R677	R903N8103J	RC 10K OHM 1/8W		DEL
R685	R002T4182J	RC 1.8K OHM 1/4W		DEL
Q612	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146(R,S)		DEL
C692	CHGTF0415Z	CC 0.1UF 50V F		DEL
PCB010	A546A5A01A	SYSCON PCB ASS'Y VMX180B	A546A5A01B	SYSCON PCB ASS'Y VMX180C

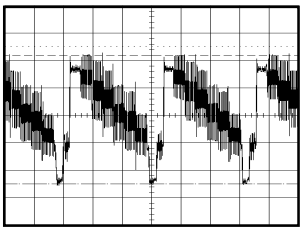
NOTE FOR THE REPLACING OF MEMORY IC

ADDRESS	MFR'S VERSION A	MFR'S VERSION C
	DATA	DATA
04	83	C3
0C	19	00

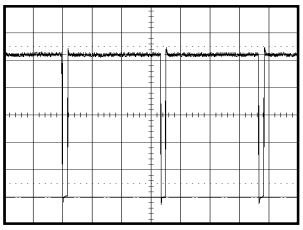
SPEC.NO.	M546-A5A
O/R NO.	W085005

WAVEFORMS

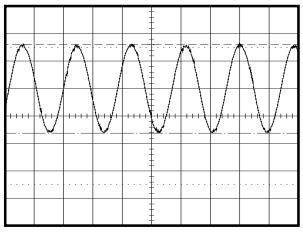
Y/C/AUDIO/HEAD AMP



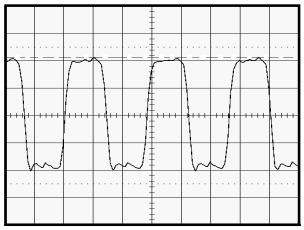
① PB
0.5V 20μs/div



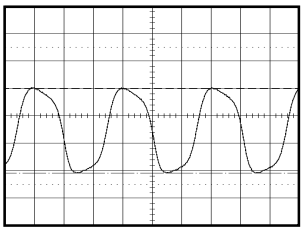
⑥ POWER ON
0.5V 10ms/div



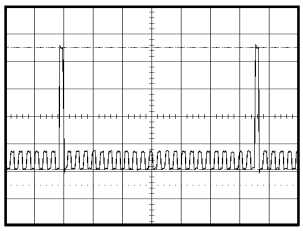
⑪ PB
0.5V 0.5ms/div



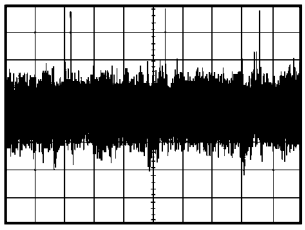
② POWER ON
100mV 0.1μs/div



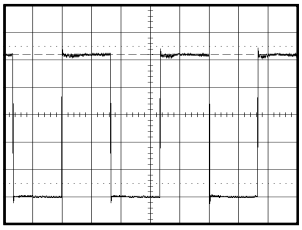
⑦ POWER ON
1.0V 10μs/div



⑫ PB
1.0V 5ms/div

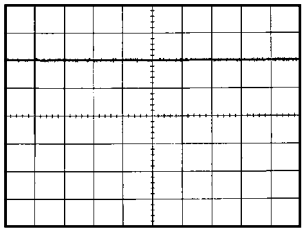


③ PB
10mV 20us/div

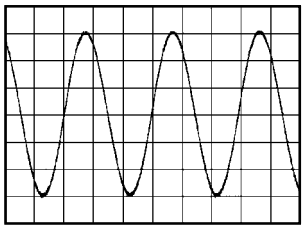


⑧ PB
1.0V 10ms/div

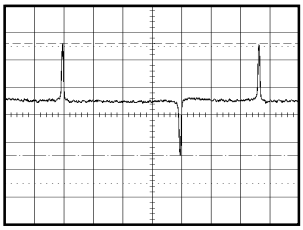
POWER



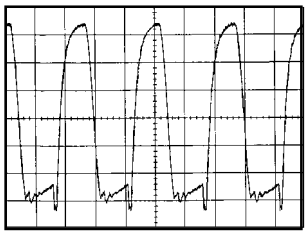
⑬ 5.0V 20ms/div



④ REC
10.0V 5us/div

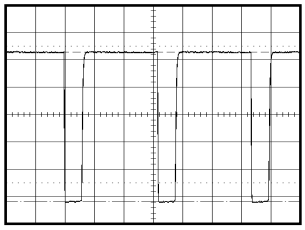


⑨ PB
1.0V 5ms/div

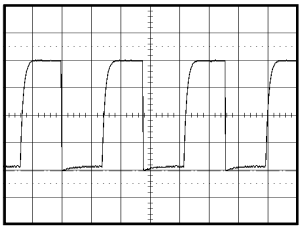


⑭ 500mV 5μs/div

MICON

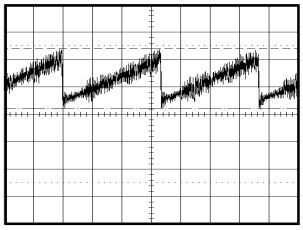


⑤ POWER ON
1.0V 20μs/div



⑩ PB
1.0V 0.5ms/div

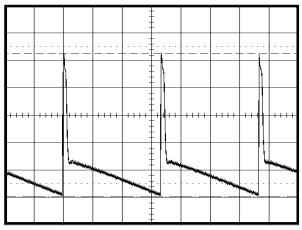
DEFLECTION



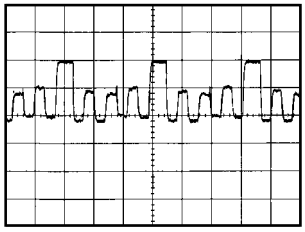
⑮ 0.5V 5ms/div

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

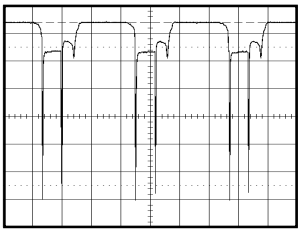
WAVEFORMS



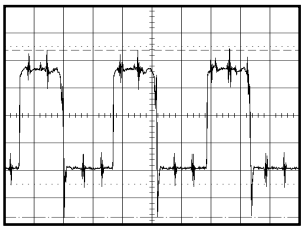
⑯ 10.0V 5ms/div



㉑ 50.0V 20µs/div

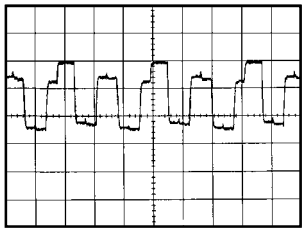


⑰ 2.0V 20µs/div

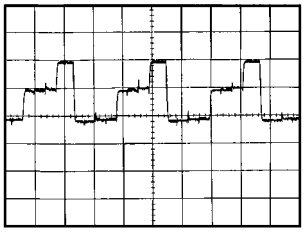


⑱ 200mV 20µs/div

CRT



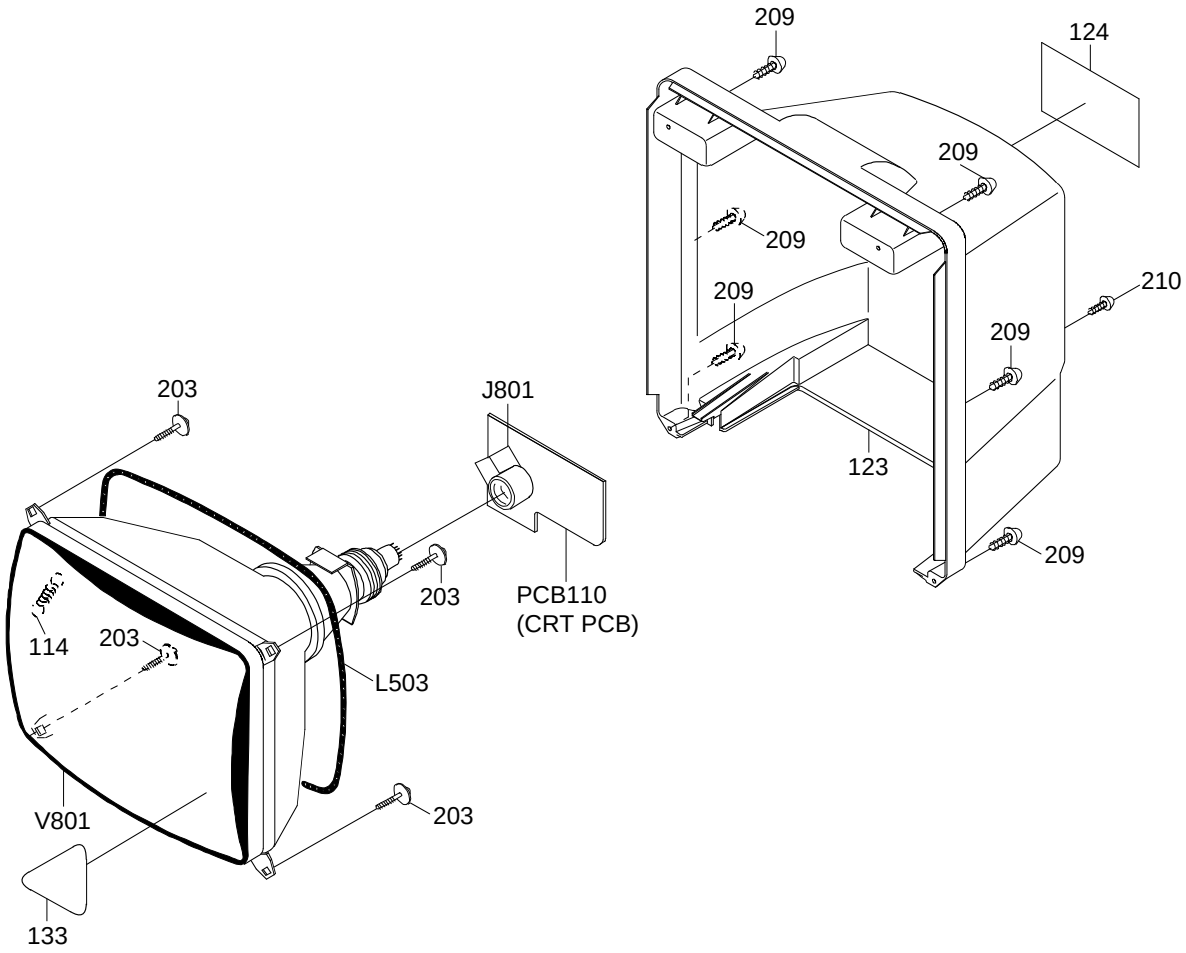
⑲ 50.0V 20µs/div

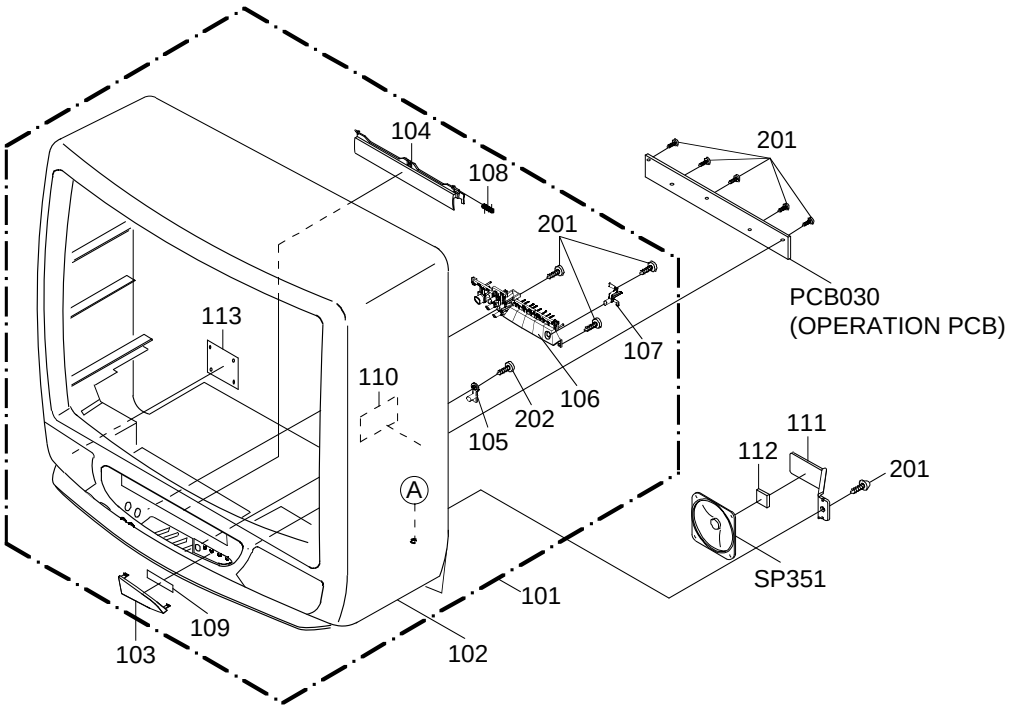


⑳ 50.0V 20µs/div

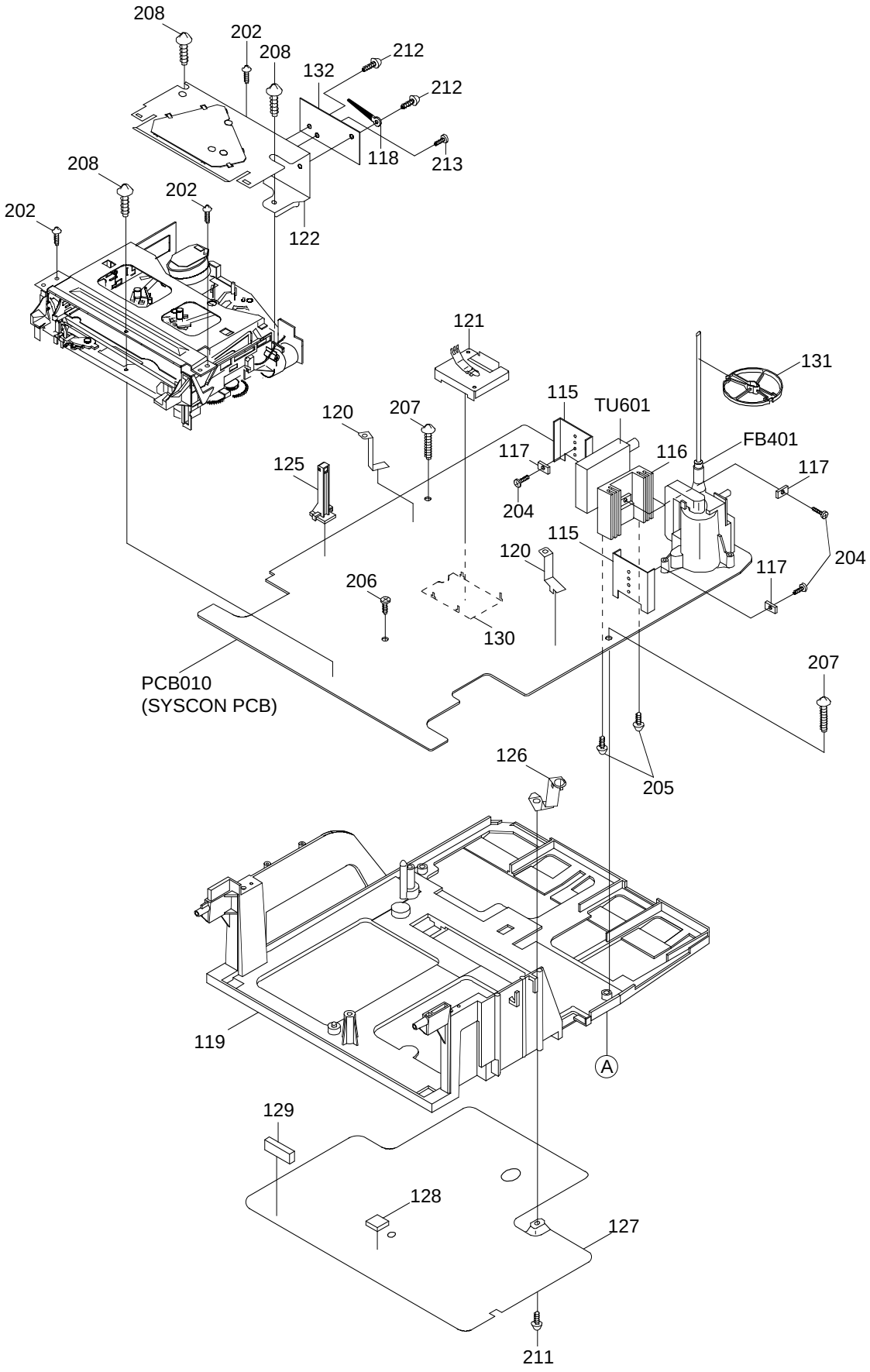
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW

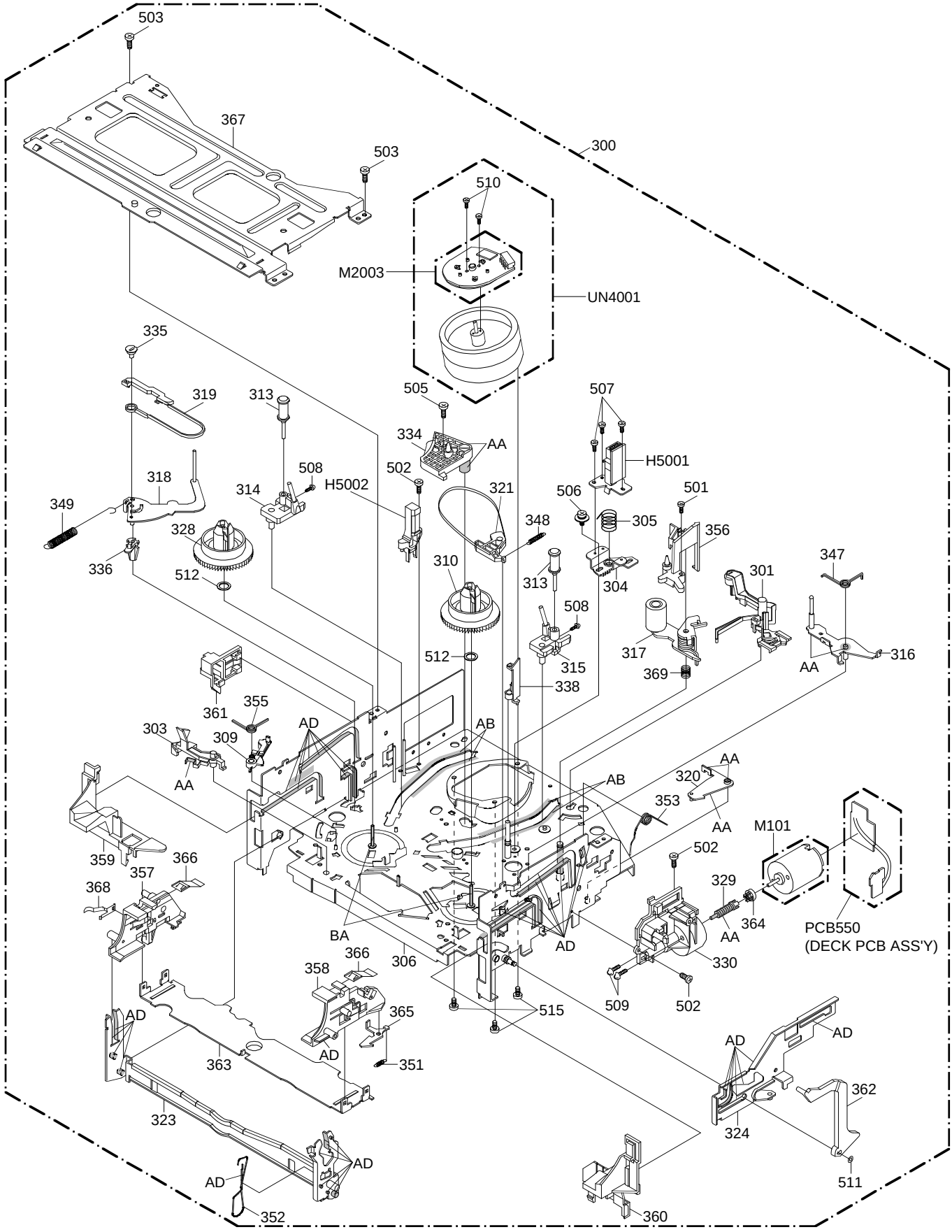




MECHANICAL EXPLODED VIEW



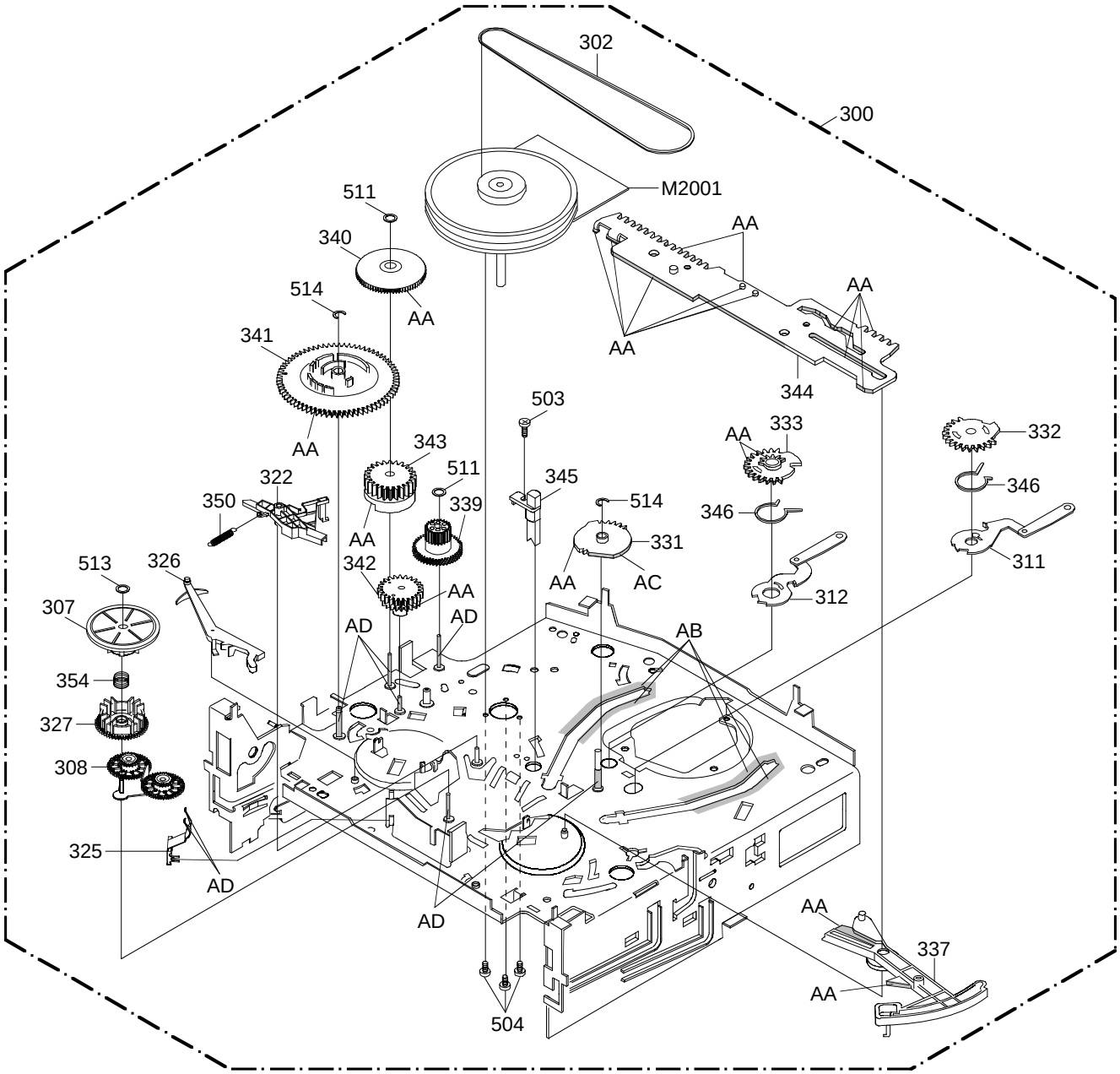
CHASSIS EXPLODED VIEW (TOP VIEW)



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

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

CHASSIS EXPLODED VIEW (BOTTOM VIEW)



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

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

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
101	A546A5A720	CABINET,FRONT ASS'Y		
102	701WPJA839	CABINET,FRONT		
103	711WPA0114	PLATE,FRONT		
104	712WPJ0621	FLAP		
105	713WPA0075	GUIDE,REMOCON		
106	735WPJ0114	BUTTON,FRAME		
107	735WPA0402	BUTTON,REC		
108	743WKA0032	SPRING,FLAP		
109	7230006830	SHEET,LED		
110	7260000323	SHEET,CRT SERVICEMAN		
111	753WSA0123	PLATE,SPEAKER		
112	800WFA0005	CUSHION		10x15
113	800WQ00048	FELT,SHEET		75x75
114	741WUA0019	SPRING,EARTH		
115	---	HEAT SINK		
116	---	HEAT SINK		
117	---	METAL SPACER		
118	8995034000	CORD CLIP UL CO.		
119	761WPA0196	HOLDER,DECK		
120	753WSA0118	PLATE,EARTH-SYSCON		
121	752WSA0192	SHIELD,CASE HEAD AMP ASS'Y		
122	752WSA0198	PLATE,DECK SHIELD		
123	702WPA0671	CABINET,BACK		
124	722A08A058	SHEET,RATING		
125	85OP700036	HOLDER,EOT SENSOR		
126	753WSA0120	PLATE,BOTTOM-EARTH		
127	752WSAA028	SHIELD,BOTTOM		
128	800WFA0038	CUSHION		10x10xT2
129	800WFA0037	CUSHION		15x5xT6
130	753WSA0130	SHIELD,COVER HEAD AMP		
131	899HV3T000	HOLDER,ANODE WIRE		
132	752WSA0206	PLATE,SI-STEEL-2		
133	723000A825	FILM,DECORATION		
201	8110630A04	SCREW,TAP TITE (P)	BRAZIER	3x10
202	8110630804	SCREW,TAP TITE (P)	BRAZIER	3x8
203	8121F50B84	SCREW,TAPPING (B0)	GW20	5x28
204	810A130804	SCREW/WASHER (A)		M3x8
205	8109630802	SCREW,TAP TITE (B)	BRAZIER	3x8
206	8110330804	SCREW,TAP TITE (P)	FLAT	3x8
207	8117540B04	SCREW,TAPPING (B0)	TRUSS	4x20
208	8117140A24	SCREW,TAPPING (B0)	PAN	4x12
209	8117540A64	SCREW,TAPPING (B0)	TRUSS	4x16
210	8117540804	SCREW,TAPPING (B0)	TRUSS	4x8
211	8110630604	SCREW,TAP TITE (P)	BRAZIER	3x6
212	8107630604	SCREW,TAP TITE (S)	BRAZIER	3x6
213	8107226604	SCREW,TAP TITE (S)	BIND	2.6x6
---	JB5K0200	POLYBAG		
---	J5126217	REGISTRATION CARD		
---	J545A201	INSTRUCTION BOOK		
---	793WCDA715	GIFT BOX		
---	791WHA0025	LAMIFILM BAG		
---	792WHAA025	PACKAGE,TOP		
---	792WHAA026	PACKAGE,BOTTOM		

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
300	A545A0A420A	DECK ASSY	A545A0A420A	501	8107126A04	SCREW,TAP TITE(S) PAN	2.6x10
				502	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
301	85OA500022	AHC ASS'Y		503	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
302	85OP200290	BELT,CAPSTAN (S)		504	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
303	85OP900710	LEVER,REC		505	810A126804	SCREW/WASHER(A)	M2.6x8
304	85OP500083	BASE,AC HEAD		506	810B126404	SCREW/WASHER(B)	M2.6x4
305	85OP800324	SPRING,AC HEAD		507	8102120604	SCREW,PAN	M2x6
306	85OA000367	MAIN CHASSIS ASS'Y (S-Z)		508	8102120304	SCREW,PAN	M2x3
307	85OA200082	CLUTCH ASS'Y(S2)		509	8102130304	SCREW,PAN	M3.0x3.0
308	85OA200080	ARM,IDLER ASS'Y (S)					
309	85OP600556	ARM,SS BRAKE (S)		510	810A123504	SEMS A	M2.3x5.0
				511	82P266005N	POLYSLIDER WASHER(CUT)	2.6x6.0xT0.5
310	85OP200292	REEL,T (S)		512	82Q2647C5N	POLYSLIDER WASHER	2.6x4.7xT0.25
311	85OA300061	LOADING ARM S ASS'Y		513	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
312	85OA300062	LOADING ARM T ASS'Y		514	83ETW30000	E-RING	3.0
313	85OA400209	GUIDE ROLLER ASS'Y		515	810A126504	SCREW/WASHER(A)	M2.6x5
314	85OA400188	BASE,INCL S ASS'Y					
315	85OA400196	BASE,INCL T(S) ASS'Y		CP101	069R740018	CONNECTOR PCB SIDE	52044-0445
316	85OA400199	P5-3 ARM ASS'Y(S)		H5001	1523D91034	HEAD (AUDIO CONTROL)	HVMXA1072A
317	85OA400205	PINCH ROLLER BLOCK		H5002	1543D02013	HEAD (FULL ERASE)	HVFHP0032A
318	85OA400175	TENSION ARM ASS'Y		⚠ M101	1596P78001	MOTOR (LOADING)	MXN13FB11H
319	85OA400184	TENSION BAND ASS'Y (S)		⚠ M2001	1510398030	CAPSTAN DD UNIT	F2QSB02
				M2003	1589V11007	MICRO MOTOR	EP14BD
320	85OA400178	PINCH ROLLER LEVER ASS'Y		PCB550	A4C831B550	DECK PCB ASS'Y	VE8851
321	85OA600188	BRAKE T ASS'Y (S)		Q101	0000700320	TRANSISTOR,PHOTO	RPT-38PB113
322	85OA600191	CAP BRAKE ASS'Y(S)		⚠ UN4001	A545A0A500	CYLINDER UNIT ASSY	A545A0A500
323	85OA900213	LINK ASS'Y					
324	85OA900216	LINK LEVER ASS'Y					
325	85OP200284	LEVER,CLUTCH (S)					
326	85OP200285	ACTUATOR,CLUTCH					
327	85OP200298	GEAR,COUPLING(S2)					
328	85OP200291	REEL,S (S)					
329	85OP600541	WORM					
330	85OP600563	BRACKET,MOTOR					
331	85OP300178	GEAR,MAIN LOADING					
332	85OP300179	GEAR,LOADING S					
333	85OP300180	GEAR,LOADING T					
334	85OP300186	HOLDER,LOADING GEAR					
335	85OP400472	ADJUST,TENSION					
336	85OP400492	HOLDER,TENSION					
337	85OP400490	LEVER,TENSION					
338	85OP400475	COVER,P4					
339	85OP600543	GEAR,JOINT					
340	85OP600544	GEAR,MIDDLE					
341	85OP600554	CAM,MAIN (S)					
342	85OP600546	CAM,P5					
343	85OP600565	CAM,PINCH ROLLER					
344	85OP600561	ROD,MAIN(S)					
345	85OP700035	REFLECTOR,LED					
346	85OP800318	SPRING,LOADING GEAR					
347	85OP800334	SPRING,P5 (S)					
348	85OP800335	SPRING,BRAKE T (S)					
349	85OP800322	SPRING,TENSION					
350	85OP800336	SPRING,CAP BRAKE (S)					
351	85OP800342	SPRING,LOCKER (S)					
352	85OP800326	SPRING,LINK					
353	85OP800328	SPRING,DAMPER					
354	85OP800330	SPRING,RING					
355	85OP800337	SPRING,SS BRAKE (S)					
356	85OP900680	OPENER,CASS					
357	85OP900704	CASS SIDE L					
358	85OP900684	CASS SIDE R					
359	85OP900709	TAPE GUIDE L (P,R)					
360	85OP900686	TAPE GUIDE R					
361	85OP900714	COVER,SENSOR L3					
362	85OP900688	LEVER,FLAP					
363	85OP900690	CASS HOLDER					
364	85OP600540	DRIVER,WORM					
365	85OP900713	LOCKER,R2					
366	85OP900694	SPRING,PACK					
367	85OP900695	BRACKET,TOP					
368	85OP900696	SPRING,CASS EARTH					
369	85OP800341	SPRING,P/R ARM					

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		RESISTORS		
⚠ R415	R426T22R2F	R, METAL	2.2 OHM 1/2W	
⚠ R420	R801R7822F	RC	8.2K OHM 1/10W	
⚠ R422	R3X10A4R7J	R, METAL	4.7 OHM 2W	
⚠ R439	R801R7223F	RC	22K OHM 1/10W	
⚠ R440	R801R7513J	RC	51K OHM 1/10W	
⚠ R441	R801R7563J	RC	56K OHM 1/10W	
⚠ R442	R801R7153F	RC	15K OHM 1/10W	
⚠ R443	R801R7682J	RC	6.8K OHM 1/10W	
⚠ R444	R801R7223F	RC	22K OHM 1/10W	
⚠ R447	R65582680J	R, FUSE	68 OHM 1/2W	
⚠ R449	R655U4680J	R, FUSE	68 OHM 1/4W	
⚠ R450	R6558A2R7J	R, FUSE	2.7 OHM 2W	
R500	R0G3K2275K	RC	2.7M OHM 1/2W	
⚠ R501	R5Y2CE2R2J	R, CEMENT	2.2 OHM 7W	
⚠ R510	R002T2124J	RC	120K OHM 1/2W	
⚠ R512	R3X181273J	R, METAL OXIDE	27K OHM 1W	
R515	R002T4103J	RC	10K OHM 1/4W	
⚠ R529	R4X5T4272F	R, METAL	2.7K OHM 1/4W	
⚠ R542	R33681R18J	R, METAL	0.18OHM 1W	
⚠ R543	R635U4681J	R, FUSE	680 OHM 1/4W	
⚠ R632	R3X18A221J	R, METAL OXIDE	220 OHM 2W	
R686	R00202102J	RC	1K OHM 1/2W	
⚠ R802	R3K18A153J	R, METAL	15K OHM 2W	
⚠ R805	R3K18A153J	R, METAL	15K OHM 2W	
⚠ R810	R3K18A153J	R, METAL	15K OHM 2W	
R1005	R615J12R7J	R, FUSE	2.7 OHM 1W	
R4070	R00104106J	RC	10M OHM 1/4W	
		CAPACITORS		
C354	E02LF1222M	CE	2200 UF 10V	
⚠ C407	E02L03102M	CE	1000 UF 25V	
C423	P411F3474J	CMPP	0.47 UF 250V ECWF	
⚠ C424	P414F9682H	CMPP	0.0068UF 1.6KV ECWH	
⚠ C425	C01BBP7B3K	CC	0.0012UF 2KV BP	
⚠ C433	E5EZT5470M	CE	47 UF 50V	
⚠ C502	C13HB07H3K	CC	0.0022UF 2KV B	
⚠ C503	C13HB07H3K	CC	0.0022UF 2KV B	
⚠ C506	P2122B104M	CMP	0.1 UF 250V ECQUL	
⚠ C507	E51CGC471M	CE	470 UF 200V	
⚠ C510	E5EZT4101M	CE	100 UF 35V	
⚠ C511	E02LT3471M	CE	470 UF 25V	
⚠ C513	P2122B104M	CMP	0.1 UF 250V ECQUL	
C514	C01BBP7K3K	CC	0.0027UF 2KV BP	
C517	C01BBP7W2K	CC	820 PF 2KV BP	or
	C0300R7W2K	CC	820 PF 2KV R	
⚠ C520	E02LT2471M	CE	470 UF 16V	
⚠ C521	E53VFB221M	CE	220 UF 160V	
⚠ C523	E5EZT4471M	CE	470 UF 35V	
C524	E5EZT3102M	CE	1000 UF 25V	
⚠ C529	C034E0JH3M	CC	0.0022UF 125V MX	
⚠ C530	C034F0JL3M	CC	0.0033UF 125V MX	
C560	C01BBP7H3K	CC	0.0022UF 2KV BP	or
	C0300R7H3K	CC	0.0022UF 2KV R	
⚠ C659	E50HU2470M	CE	47UF 16V	
⚠ C660	CS0RB0315K	CC	0.1UF 25V	
C687	P6M9T0104J	CMPL	0.1 UF 50V TF	
C801	C13HB07H3K	CC	0.0022UF 2KV B	
C819	C13HB07H3K	CC	0.0022UF 2KV B	
C1001	E02LU3101M	CE	100 UF 25V	
C1064	E0EL02471M	CE	470 UF 16V	
C4014	P1S300473J	CP	0.047 UF 50V	
C4026	E50HU0101M	CE	100 UF 6.3V	
		DIODES		
D401	D2WT011E10	DIODE, SILICON	11E1-EIC	
⚠ D408	D94TA27011	DIODE, ZENER	HZ27-1L TD	
⚠ D409	D94TA11B13	DIODE, ZENER	HZ11B3L TD	
D410	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
⚠ D412	D2LTPG06J0	DIODE, SILICON	RMPG06J-G3	
⚠ D413	D2LTPG06J0	DIODE, SILICON	RMPG06J-G3	
⚠ D501	D4LZBL06L0	DIODE, SILICON	GBL06L-6177	
D502	D1VT001330	DIODE, SILICON	1SS133T-77	
D503	D23U1003A3	DIODE, SCHOTTKY	SB10-03A3	
⚠ D505	D28T21DQN9	DIODE, SCHOTTKY	21DQ09N-TA2B1	
D506	D2LTPG06J0	DIODE, SILICON	RMPG06J-G3	

REF. NO.	PART NO.	DESCRIPTION		
		DIODES		
⚠ D507	D28015DF60	DIODE, SILICON	15DF6	
⚠ D509	D28T21DQN9	DIODE, SCHOTTKY	21DQ09N-TA2B1	
D510	D2BTRU2AM0	DIODE, SILICON	RU2AM V1	
⚠ D512	D28T21DQN9	DIODE, SCHOTTKY	21DQ09N-TA2B1	
⚠ D515	D97U03001B	DIODE, ZENER	MTZJ30B T-77	
D516	D1VT001330	DIODE, SILICON	1SS133T-77	
D517	D28TELS2N2	DIODE, RECTIFIER	10ELS2N-TA1B2	
D518	D1VT001330	DIODE, SILICON	1SS133T-77	
⚠ D519	D28T21DQN9	DIODE, SCHOTTKY	21DQ09N-TA2B1	
D521	D1VT001330	DIODE, SILICON	1SS133T-77	
D523	D1VT001330	DIODE, SILICON	1SS133T-77	
D528	D97U05R61B	DIODE, ZENER	MTZJ5.6B T-77	
D529	D1VT001330	DIODE, SILICON	1SS133T-77	
D601	D1VT001330	DIODE, SILICON	1SS133T-77	
D602	D97U08R21B	DIODE, ZENER	MTZJ8.2B T-77	
D604	D1VT001330	DIODE, SILICON	1SS133T-77	
D605	D2WT11ES10	DIODE, SILICON	11ES1-EIC	
D606	D1VT001330	DIODE, SILICON	1SS133T-77	
D607	D1VT001330	DIODE, SILICON	1SS133T-77	
D608	D23U1003A3	DIODE, SCHOTTKY	SB10-03A3	
D609	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D610	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D611	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D612	D1VT001330	DIODE, SILICON	1SS133T-77	
D613	D1VT001330	DIODE, SILICON	1SS133T-77	
D614	D1VT001330	DIODE, SILICON	1SS133T-77	
D615	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D616	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D617	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D618	D1VT001330	DIODE, SILICON	1SS133T-77	
D619	D1VT001330	DIODE, SILICON	1SS133T-77	
D620	D1VT001330	DIODE, SILICON	1SS133T-77	
D621	D1VT001330	DIODE, SILICON	1SS133T-77	
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	D2WT011E10	DIODE, SILICON	11E1-EIC	
D1002	D1VT001330	DIODE, SILICON	1SS133T-77	
D1003	0010600060	LED	SID1050CM	
D1004	D92T1120B0	DIODE, ZENER	RD12FB-T7	
D1005	D2WT011E10	DIODE, SILICON	11E1-EIC	
D1007	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D1008	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D1013	D28TQS04N0	DIODE, SCHOTTKY	11EQS04N-TA1B2	
D1014	D97U05R11B	DIODE, ZENER	MTZJ5.1B T-77	or

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
RESISTORS				
D4005	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D4006	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
D4202	D23U1003A3	DIODE, SCHOTTKY	SB10-03A3	
D4207	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77	or
	D94TA6RB12	DIODE, ZENER	HZ6B2L TD	or
	D94TA7RA12	DIODE, ZENER	HZ7A2L TD	or
	D94TA7RB11	DIODE, ZENER	HZ7B1L TD	or
	D94TA7RC12	DIODE, ZENER	HZ7C2L TD	
ICS				
⚠ IC351	I01DP75110	IC	AN7511	
⚠ IC401	I03TD80400	IC	LA78040	
⚠ IC501	I1KA97805A	IC	KIA7805API	
⚠ IC502	I2BT066230	IC	STR-G6623	
⚠ IC506	0002500450	PHOTO COUPLER	TLP621(GR)	
IC601	I06FC12030	IC	M61203BFP	
IC1001	I56F57043A	IC	OEC7043A	
IC1002	I9UJ0T600H	IC	PST600H	
⚠ IC1003	I07SQ955AN	IC	BA6955AN	or
	I07SQ69550	IC	BA6955N	
IC1099	A546A5A015	IC	S-24C02BDP-11	
IC4001	I03F31077B	IC	LA71077BM-MPB	or
	I03F31067M	IC	LA71067M-MPB	
TRANSISTORS				
Q401	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146	
⚠ Q402	TB3T008920	TRANSISTOR, SILICON	2SB892(S,T)-AE	
Q403	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146	
Q404	TPYJD05001	COMPOUND TRANSISTOR	DTA144EKAT146	
⚠ Q405	TC3T022710	TRANSISTOR, SILICON	2SC2271(D,E)-AE	
⚠ Q406	TD30026270	TRANSISTOR, SILICON	2SD2627LS-CBC11	
Q501	TD3T008630	TRANSISTOR, SILICON	2SD863(E,F)-AE	or
	TD3T012070	TRANSISTOR, SILICON	2SD1207(S,T)-AE	
⚠ Q504	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)	
Q506	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146	
Q507	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)	
Q513	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q602	TC5T021204	TRANSISTOR, SILICON	2SC2120Y(TPE2)	
Q603	TC5T021204	TRANSISTOR, SILICON	2SC2120Y(TPE2)	
Q604	TDWT00400E	TRANSISTOR, SILICON	2SD400E	or
	TD3T012070	TRANSISTOR, SILICON	2SD1207(S,T)-AE	
Q605	TDWT00400E	TRANSISTOR, SILICON	2SD400E	or
	TD3T012070	TRANSISTOR, SILICON	2SD1207(S,T)-AE	
Q606	TD3T008630	TRANSISTOR, SILICON	2SD863(E,F)-AE	or
	TD3T012070	TRANSISTOR, SILICON	2SD1207(S,T)-AE	
Q608	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146R,S	
Q609	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q611	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q612	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146 R,S	
⚠ 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	0002M00570	PHOTO COUPLER	SG-260	
Q1002	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146 R,S	
Q1003	0002G00550	PHOTO COUPLER	GP1S94L	
Q1004	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146	
Q1005	0002M00570	PHOTO COUPLER	SG-260	
Q1007	TNYTB05001	COMPOUND TRANSISTOR	DTC114EKT147	
Q1008	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
Q1009	0002G00550	PHOTO COUPLER	GP1S94L	
Q1013	0000100380	PHOTO TRANSISTOR	PNA2604M010R	
Q1023	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146 R,S	
Q1024	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146	
Q4001	TC3T033310	TRANSISTOR, SILICON	2SC3331(S,T,U)-A	
Q4002	TC3T033310	TRANSISTOR, SILICON	2SC3331(S,T,U)-A	
Q4003	TPYTC03001	COMPOUND TRANSISTOR	DTA124ESTP	
Q4005	TA3T013180	TRANSISTOR, SILICON	2SA1318(S,T)-AA	
Q4006	TD3T007340	TRANSISTOR, SILICON	2SD734(E,F)-AA	
Q4007	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146R,S	
Q4008	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146 R,S	
Q4009	T6YA1037K0	TRANSISTOR, SILICON	2SA1037KT147	

REF. NO.	PART NO.	DESCRIPTION		
TRANSISTORS				
Q4011	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146	
Q4204	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146	
COILS &TRANSFORMERS				
L005	02A6A8A0A1	CORE, FERRITE	HF57T18.5x10x10	
L401	021679472K	COIL	4.7 MH	
⚠ L502	029X000088	COIL, LINE FILTER	SS24V-150	
⚠ L503	028R200026	COIL, DEGAUSS	8R20026	
L601	021LA61R0M	COIL	1 UH	
L603	021673101K	COIL	100 UH	
L605	021LA61R0M	COIL	1 UH	
L607	021LA6120K	COIL	12 UH	
L610	021673560K	COIL	56 UH	or
	021B73560K	COIL	56 UH	
L612	021LA66R8K	COIL	6.8 UH	
L801	021673101J	COIL	100 UH	
L1001	021LA62R2K	COIL	2.2 UH	
L4001	02167F101J	COIL	100 UH	
L4002	02167F101J	COIL	100 UH	
L4003	021673101J	COIL	100 UH	
L4004	0326230038	COIL, TRAP	2623003	
L4005	02167F470J	COIL	47 UH	
L4007	021LA6101J	COIL	100 UH	
L4008	02167F101J	COIL	100 UH	
L4009	02167F101J	COIL	100 UH	
L4010	02167F101J	COIL	100 UH	
L4011	021LA6220J	COIL	22 UH	
L4012	021LA6680J	COIL	68 UH	
T401	03305Y002S	TRANS, HORIZONTAL DRIVE	305Y002	
⚠ T501	048129015S	TRANSFORMER, SWITCHING	8129015S	
T4001	031626007S	COIL, BIAS OSC	1626007	
JACKS				
⚠ J351	0602131012	JACK, RCA 3.5	HSJ2630-010070	or
	060G131014	RCA, JACK	HTJ-035-28A	
J701	0602101020	JACK, RCA	JPJ3811-01-430	or
	060Q401870	RCA, JACK	AV2-24-5	
⚠ J801	066C130015	SOCKET, CATHODE RAY TUBE	CVT3275-5102	
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	
SW798	0504201T31	SWITCH, TACT	SKHVBED010	
SW799	0504201T31	SWITCH, TACT	SKHVBED010	
SW1001	0508221001	SWITCH (LEAF)	SPVF130100	
VARIABLE RESISTORS				
VR502	V1263L2BTC	VOLUME, SEMI FIXED	RH063MCN2R	or
	V1163L2BTC	VOLUME, SEMI FIXED	EVNCYAA03BY2	
P.C.BOARD ASSEMBLIES				
PCB010	A546A5A01A	PCB ASS'Y	VMX180B	
PCB030	A545B0A03A	PCB ASS'Y	TEXA28A	
PCB110	A546A3A11A	PCB ASS'Y	TCX312B	
PCB550	A4C831B550	SEE CHASSIS REPLACEMENT PARTS LIST		
MISCELLANEOUS				
B402	024AT03655	CORE, BEADS	BL01RN1-A63T6	
B403	024AT03655	CORE, BEADS	BL01RN1-A63T6	
B405	024AT03655	CORE, BEADS	BL01RN1-A63T6	
B502	024AT03482	CORE, BEADS	BL02RN2-R62T4	
B503	024AT03655	CORE, BEADS	BL01RN1-A63T6	
B505	024AT03482	CORE, BEADS	BL02RN2-R62T4	
B602	024DT03581	CORE, BEADS	LFP3A-M3R2TA	
B4201	024DT03581	CORE, BEADS	LFP3A-M3R2TA	
CD351	06CH27090A	CORD, CONNECTOR	CH27090A	
CD352	06CH12435A	CORD, CONNECTOR	CH12435A	
⚠ CD501	120R614909	CORD, AC	0R614909	or
	1207614909	CORD, AC	07614909	
CD757	06CH2A019A	CORD, CONNECTOR	CH2A019A	
CD801	068M82025A	CORD, CONNECTOR	8M82025A	
CF601	1022T45R72	FILTER, SAW	SAF45MFY220ZR	
CF603	1011T4R504	FILTER, CERAMIC	EFCT4R5YS5A	
CF604	1011T4R517	FILTER, CERAMIC	EFCT4R5MW5	
CP351	069E260129	CONNECTOR PCB SIDE	8283_0612_00_000	
CP353	0694270139	CONNECTOR PCB SIDE	173979-7	
⚠ CP401	069X450029	CONNECTOR PCB SIDE	B05B-DVS	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
⚠ CP501	0697320039	CORD, UX CONNECTOR	THL-P03P-B1
⚠ CP502	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1
CP757	06942A0139	CONNECTOR PCB SIDE	1-173979-0
CP801	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1
CD1001	122L040904	CORD, JUMPER	2L040904
CD1002	122F051702	CORD, JUMPER	2F051702
CD4001	122L061501	CORD, JUMPER	2L061501
CP1003	0694240139	CONNECTOR PCB SIDE	173979-4
CP1004	0697280590	CONNECTOR PCB SIDE	TMC-J08P-B1
CP1005	069J750029	CONNECTOR PCB SIDE	IMSA-9604S-05Z14
CP1006	069J740029	CONNECTOR PCB SIDE	IMSA-9604S-04Z14
CP4001	0697240600	CONNECTOR PCB SIDE	TOC-C04X-B1
CP4002	069J760029	CONNECTOR PCB SIDE	IMSA-9604S-06Z14
CP4003	0697120320	CONNECTOR PCB SIDE	TMC-T02X-E1
CP851A	067R010019	WIRE HOLDER	51048-1000
CP851B	067R010019	WIRE HOLDER	51048-1000
CUS011	800WF00004	CUSHION-A	
CUS012	800WF00019	CUSHION-C	
EL001	124116281A	EYE LET	XRY16X28BD
EL002	124120301A	EYE LET	XRY20X30BD
⚠ F501	081PA05003	FUSE	233005-MB000
⚠ F502	080PA2R501	FUSE	23302.5-MB000
⚠ FB401	043219010F	TRANSFORMER, FLYBACK	3219010F
FH501	06710T0006	HOLDER, FUSE	EYF-52BC
FH502	06710T0006	HOLDER, FUSE	EYF-52BC
FH503	06710T0006	HOLDER, FUSE	EYF-52BC
FH504	06710T0006	HOLDER, FUSE	EYF-52BC
⚠ ICP501	083PC05003	MICRO FUSE	251005RT
⚠ ICP502	083PC05003	MICRO FUSE	251005RT
⚠ ICP503	083PC05002	MICRO FUSE	251005
⚠ ICP505	083PC04003	MICRO FUSE	251004RT
OS753	077Q000017	REMOTE RECEIVER	PIC-28143TH5
⚠ RY501	0560Q20114	RELAY	SDT-S-112LMR
⚠ SP351	070W133014	SPEAKER	P-300S-2
⚠ TH501	DF20A3R0Q0	DEGAUSS, ELEMENT	PTH451A3R0Q11
TM101	07660CG010	TRANSMITTER	SBJU20003A
⚠ TU601	0145K00050	TUNER, UHF-VHF	TECC1040PG31A
⚠ V801	098Q200481	CRT W/DY	A48AGY13X77
X602	100CT3R505	CRYSTAL HC-49/C	3.579545MHz
X1001	100CT01207	CRYSTAL HC-49/U-S	12MHz
X1002	100DA32R01	CRYSTAL DT-26	32.768KHz
X4001	100CF3R512	CRYSTAL HC-49/U	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

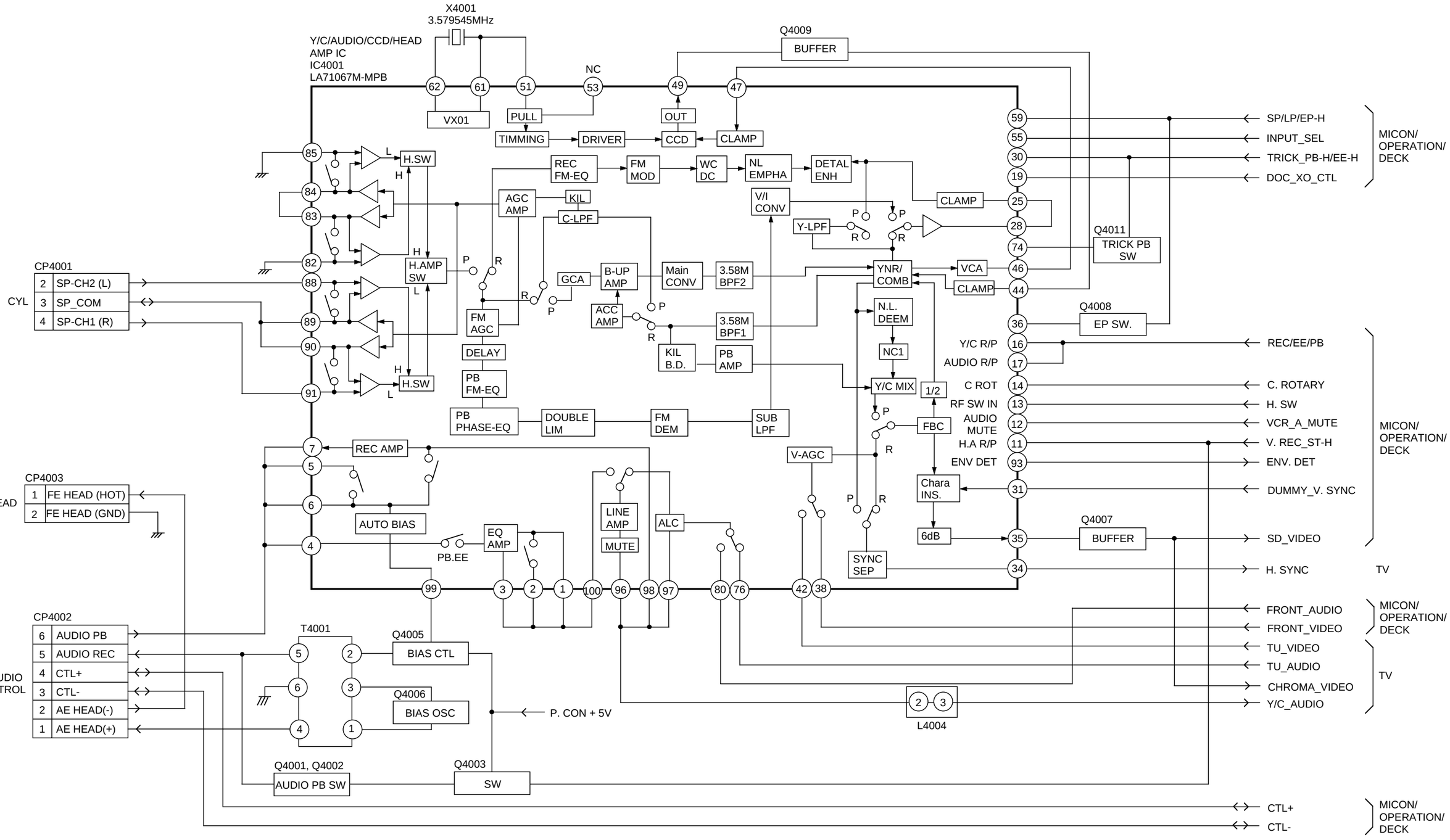
SPEC.NO.	M546-A5A
O/R NO.	W045012

TV BLOCK DIAGRAM

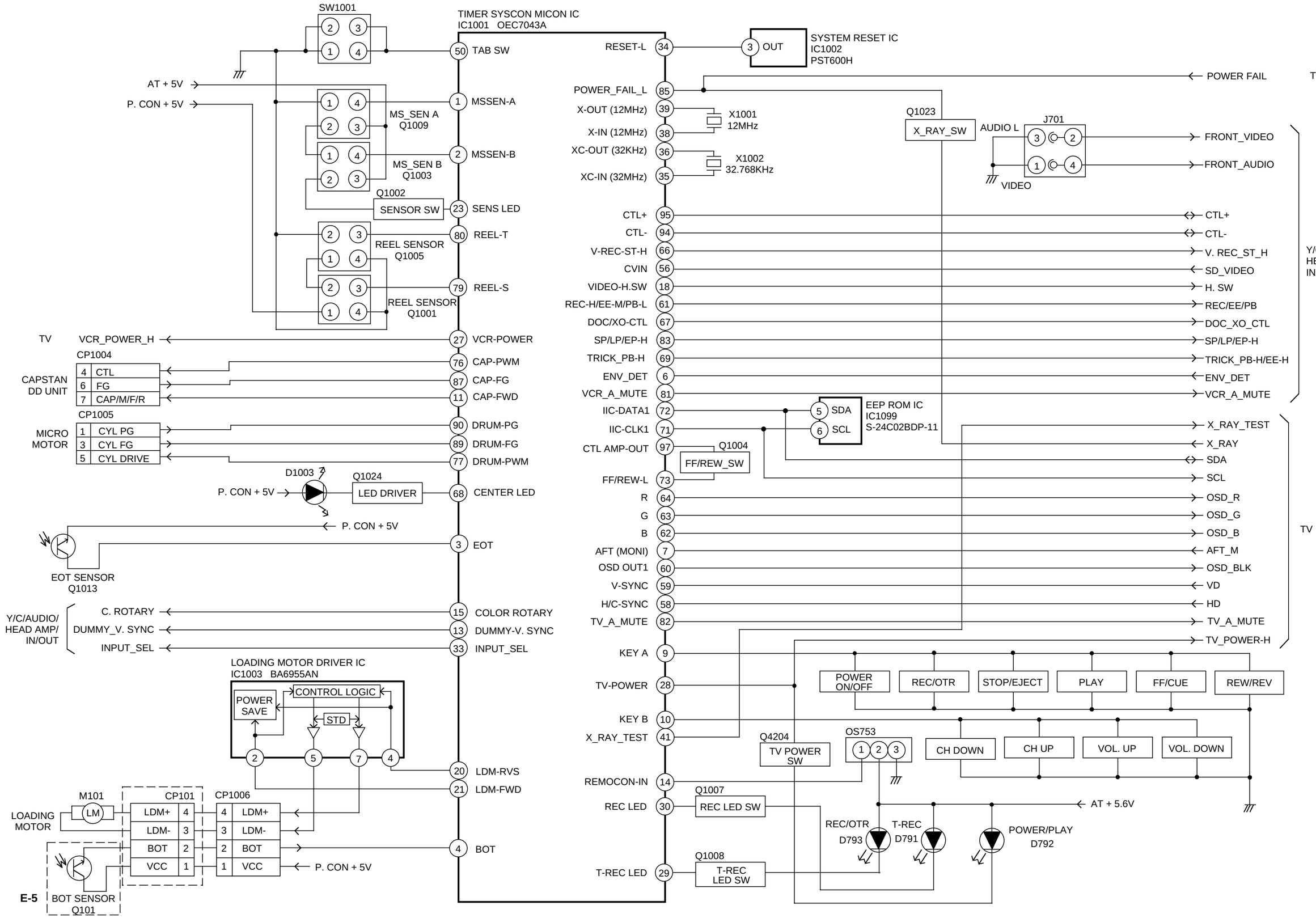
MICON/ OPERATION/ DECK
SCL
SDA
AT + 5V
AT + 25V
Y/C/AUDIO/ HEAD AMP/ IN/OUT
TU_AUDIO
TU_VIDEO
Y/C_AUDIO
CHROMA_VIDEO
CHROMA IC
IC601 M61203BFP
NC NC
63 48 52 56 57 55 41 42 33 39 46 13 53
NC
Q602, Q603
REG.
Q606
REG.
P. CON + 8V
Q604, Q605
REG.
AT + 5V
DELAY ADJ
TU601
1 4 5 11
SAW FILTER
CF601
1 4 5
62 1 64 60
RF AGC
IF AGC
VCO
VIF AMP
VIDEO DET
APC DET
AFT
LOCK DET
DEFEAT AFT OUT
5.7Vreg
RESET
P-ON-ON
POWER ON CONTROL
BUS I/F
50 10 5
27 14 15 16
RGB MATRIX CONTRAST
BRIGHT
DRIVE AMP
CLAMP
HV BLK
R G B CUT OFF
BLACK STRETCH GAMMA
VIDEO MUTE
CLAMP
DEMODULATOR
Y/C/AUDIO/ HEAD AMP/ IN/OUT
H. SYNC
31
VERTICAL COUNT DOWN
V.RAMP
17 29
HORIZONTAL COUNT DOWN
AFC 1
H VCO
AFC 2
VIDEO TONE
CHROMA BPF
KILLER DET
DELAY
ACC
ACC DET
CHROMA TRAP
HPF
CHROMA APC DET
VCXO
VCO ADJ
36 34 35 32 12 6 7
NC
X602
3.579545MHz
THERMAL PROTECTION
V. OUTPUT IC
IC401
LA78040
AMP
PUMP UP
VCC
1 2 3 5 7
Q405
H-DRIVE
Q406
H. OUTPUT
DY
FB401
1 COL
2 +B
6 E180
7 ABL
9 AFC
10 HEA
HV
F
S
J801
F 7 11 8 6
V801
CRT
E180V
Q804
BLUE AMP
Q608
CUT OFF
P. CON + 8V
Q806
RED AMP
Q805
GREEN AMP
X_RAY-TEST
Q403, Q404
SW
X_RAY
VD
HD
OSD_BLK
OSD_B
OSD_R
OSD_G
AFT_M
MICON/ OPERATION/ DECK
TH501
DEGAUSS ELEMENT
L503
DEGAUSS COIL
3 1 2
RY501
RELAY
Q504
RELAY DRIVE
Q609
POWER ON SW
Q611
POWER FAIL SW
Q612
SYNC SW
Q402
DRIVER
SOUND AMP IC
IC351 AN7511
2 5 6 8 1 4
J351
HEAD JACK
CD352
SP+
SP–
SP351
SPEAKER
AC IN
F501
D501
RECTIFIER
T501
8 16 3 14 13 11 9
IC506 TLP621(GR)
FEED BACK
5 1
POWER REG. IC
IC502
STR-G6623
AT + 12V
UNREG + 8V
F502
Q507
FEED BACK SW
Q506
5V SW
Q513
5V SW
VR502
+B ADJ
Q501
POWER SW
5V REG IC
1 2 3
IC501 KIA7805PI
P. CON + 5V
Q401
SW
POWER FAIL
VCR_POWER-H
TV_POWER-H
TV_A_MUTE
MICON/ OPERATION/ DECK

E-1
E-2

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

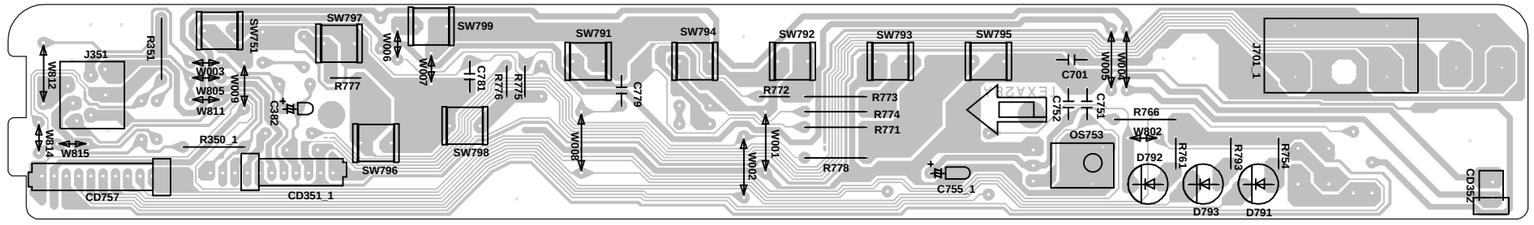


MICON/OPERATION/DECK BLOCK DIAGRAM

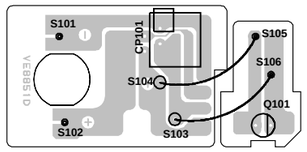


PRINTED CIRCUIT BOARDS

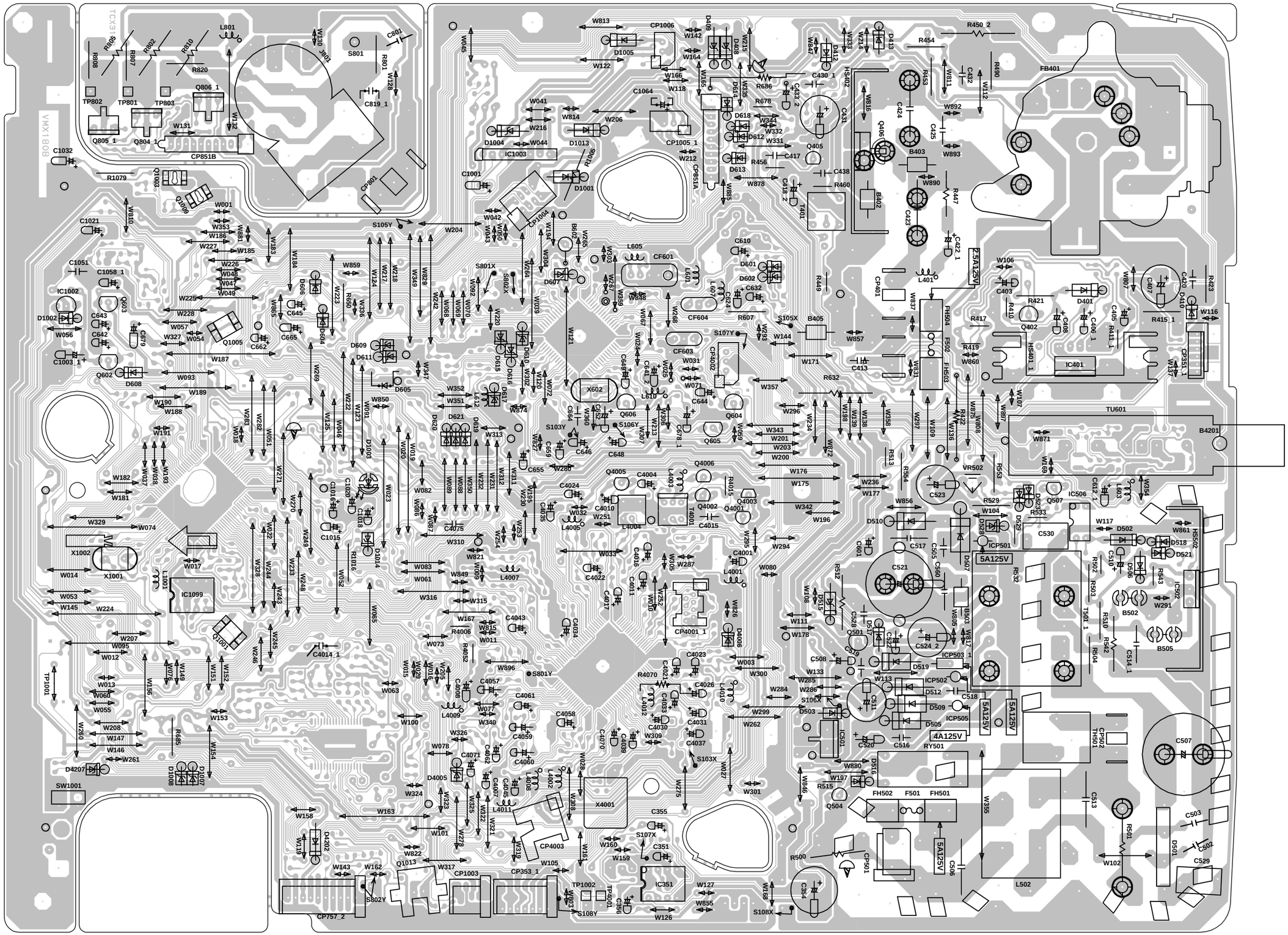
OPERATION
SOLDER SIDE



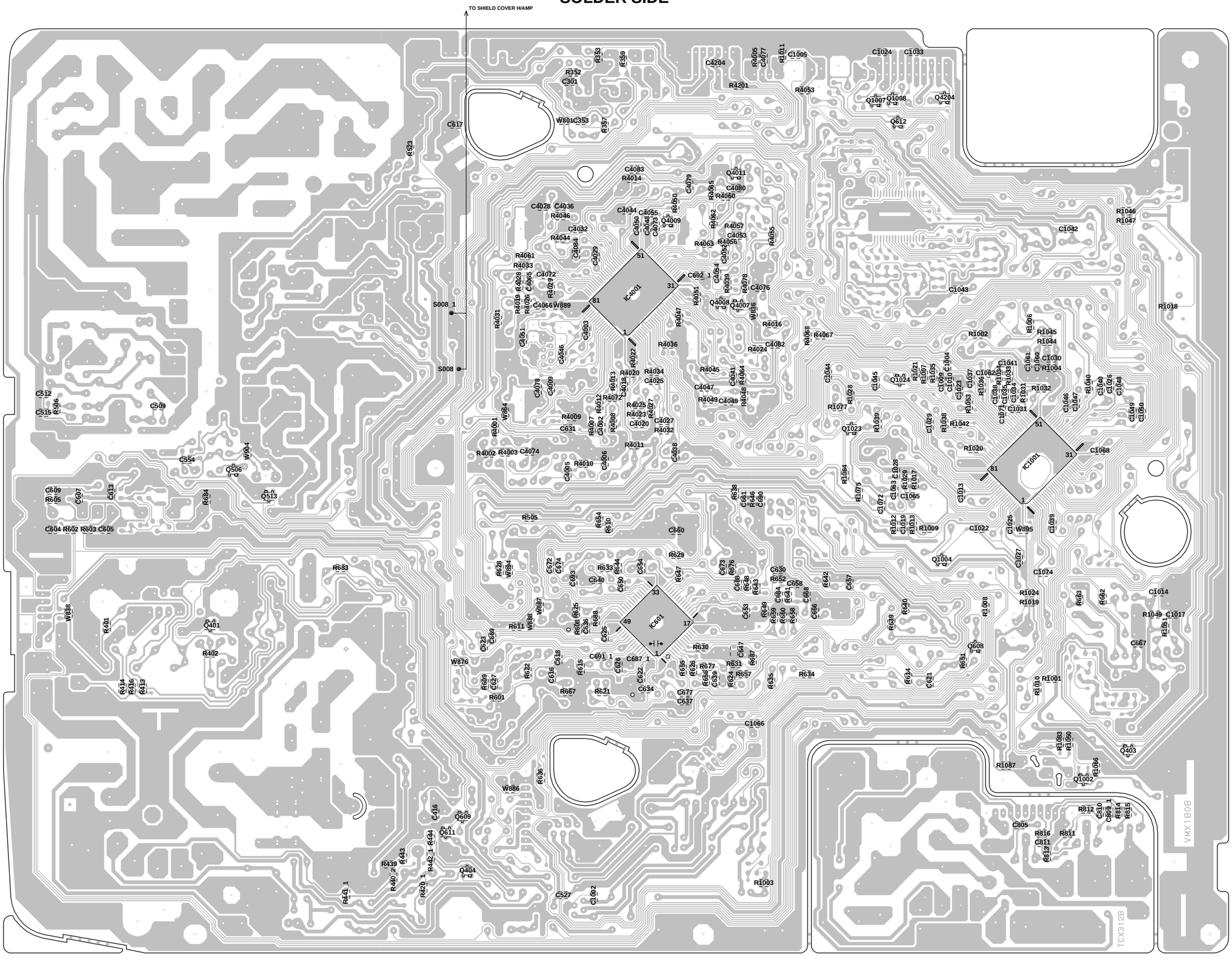
DECK
SOLDER SIDE



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

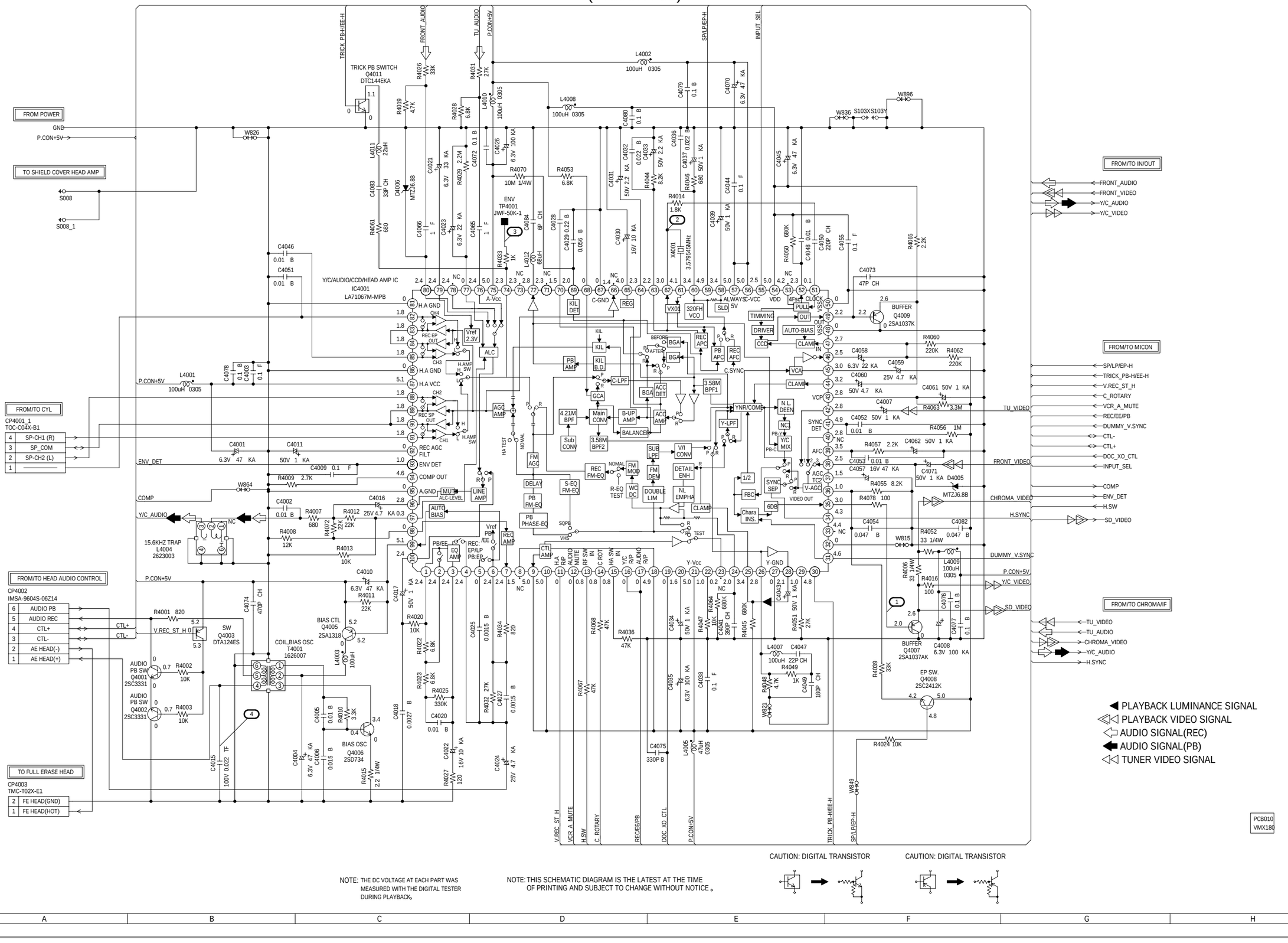


PRINTED CIRCUIT BOARDS
SYSCON/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

(SYSCON PCB)

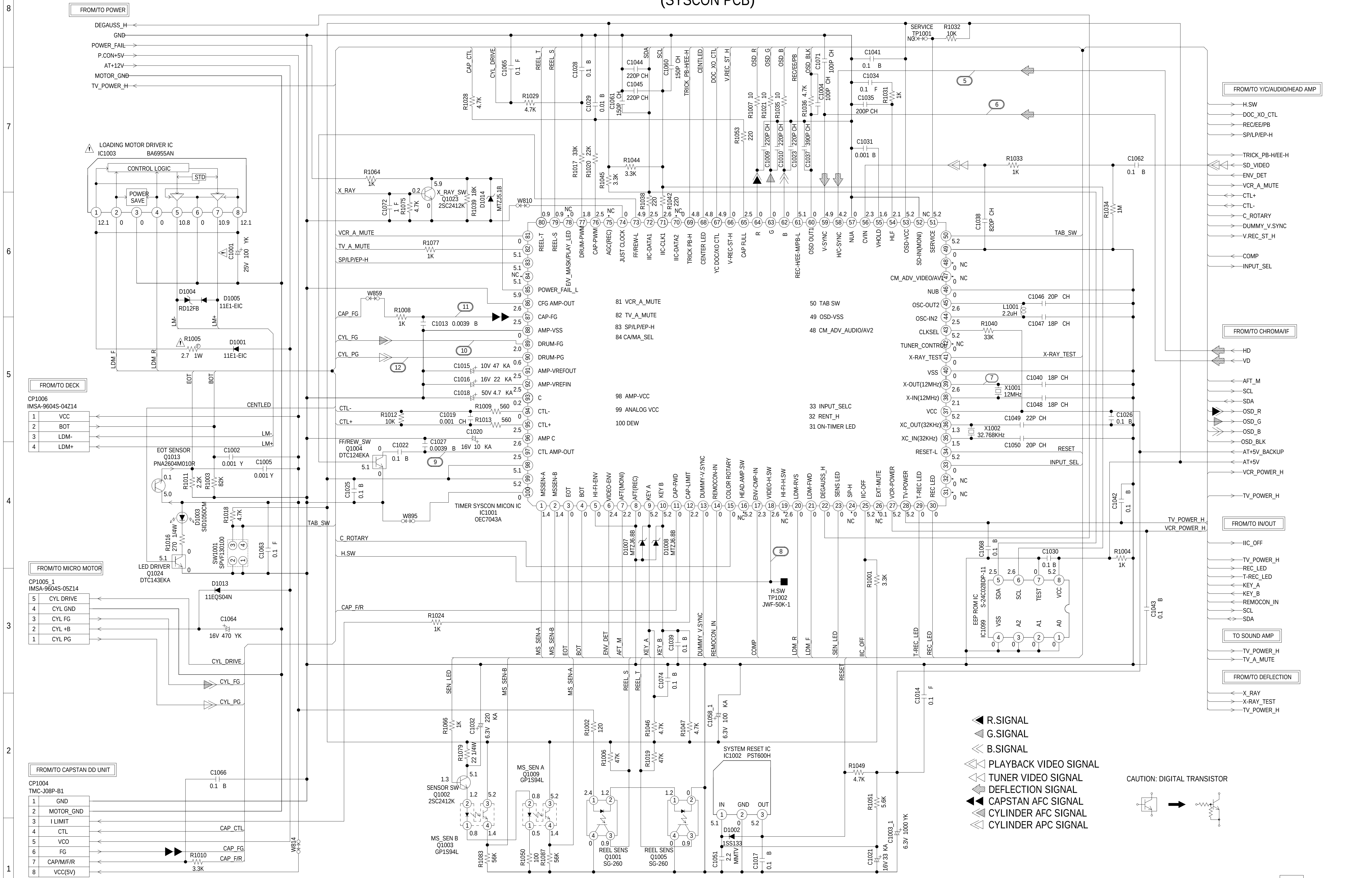


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

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

MICON SCHEMATIC DIAGRAM

(SYSCON PCB)



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

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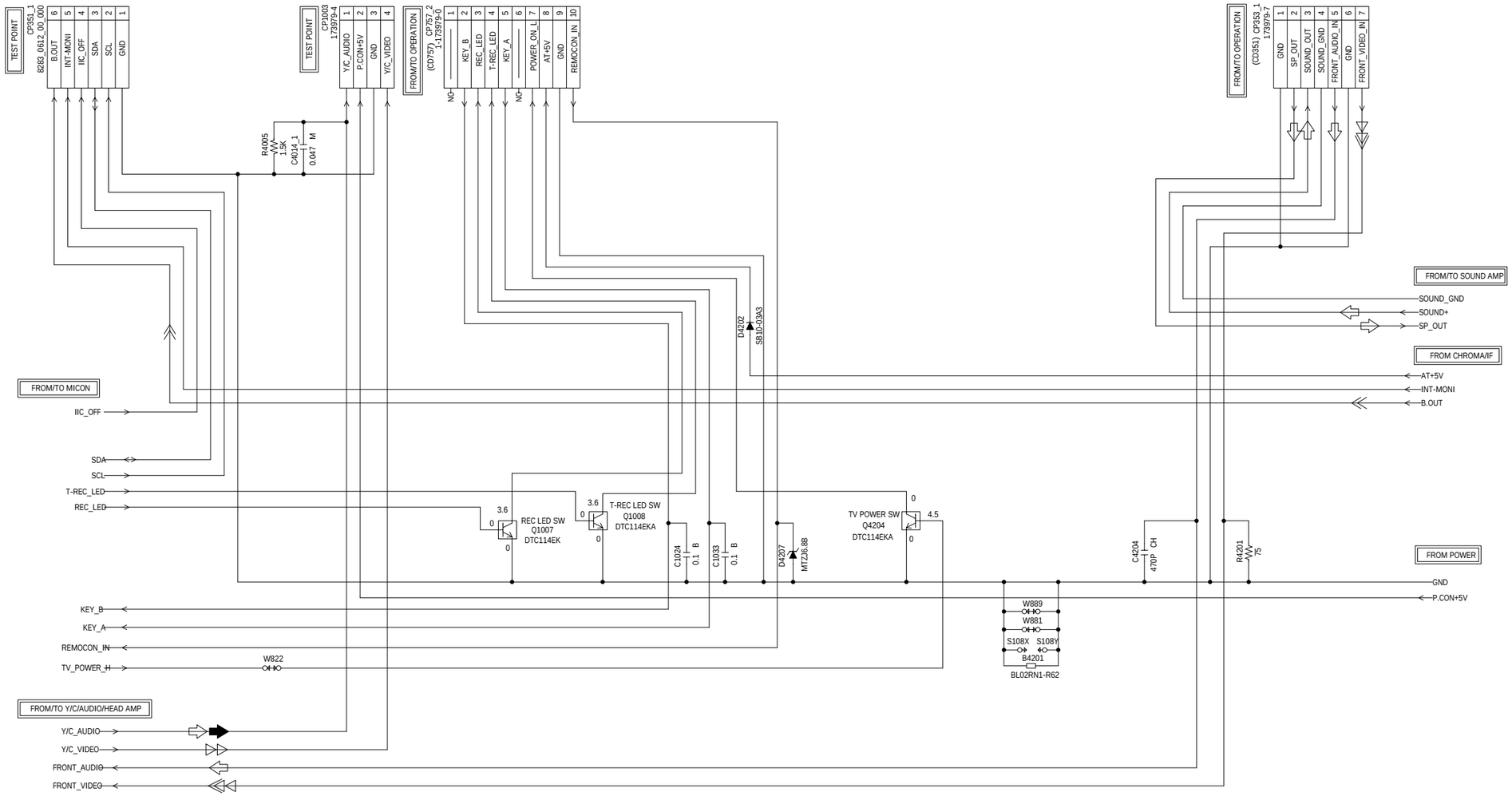
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

IN/OUT SCHEMATIC DIAGRAM
(SYSCON PCB)



B.SIGNAL
PLAYBACK VIDEO SIGNAL
TUNER VIDEO SIGNAL
AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)

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

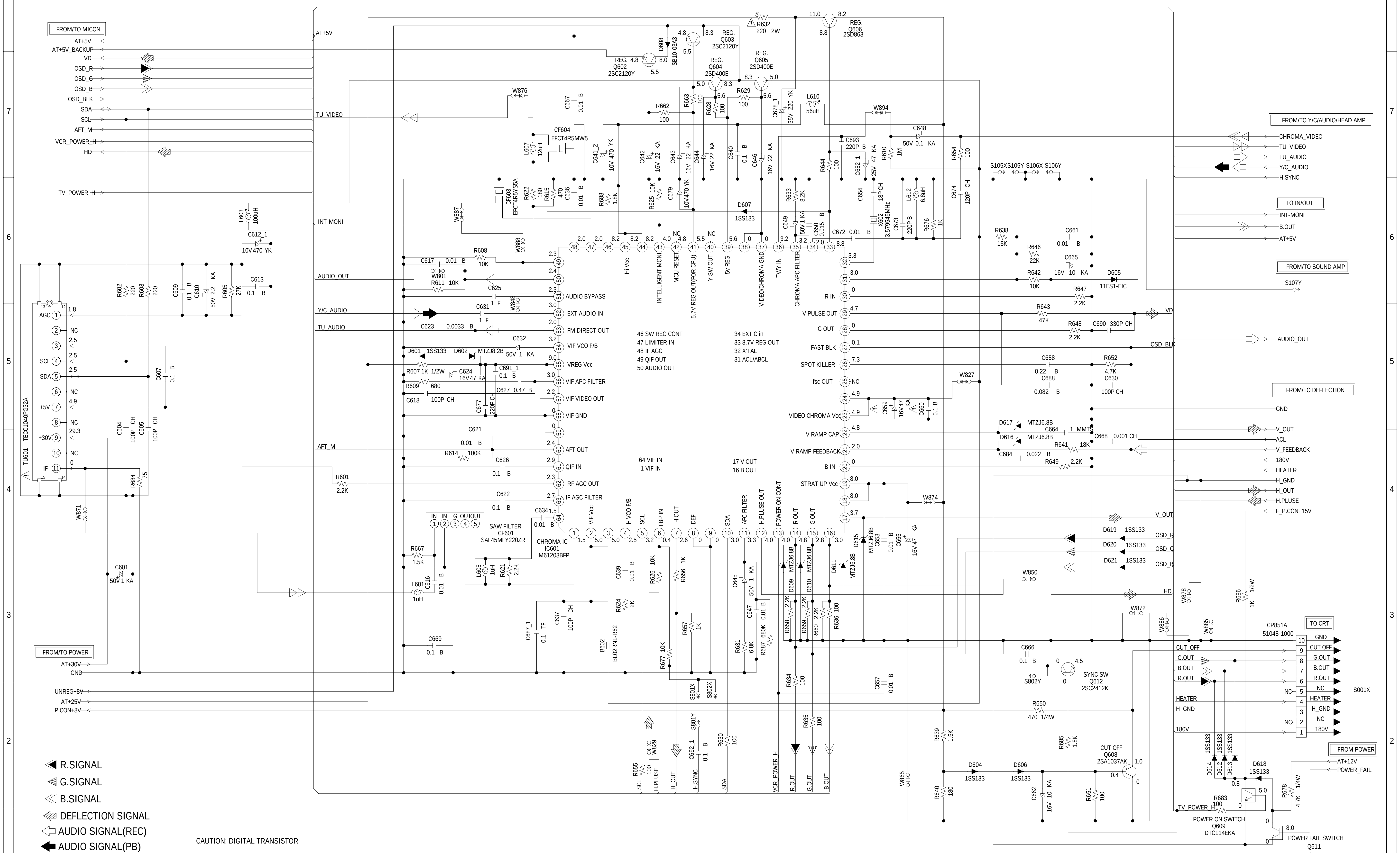
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: DIGITAL TRANSISTOR

PCB010
VMX180

CHROMA/IF SCHEMATIC DIAGRAM

(SYSCON PCB)



FROM/TO MICON
AT+5V
AT+5V_BACKUP
VD
OSD_R
OSD_G
OSD_B
OSD_BLK
SDA
SCL
AFT_M
VCR_POWER_H
HD
TV_POWER_H
FROM/TO POWER
AT+30V
GND
UNREG+8V
AT+25V
P.CON+8V
TU_VIDEO
INT-MONI
AUDIO_OUT
Y/C_AUDIO
TU_AUDIO
TU601 TECC1040PG32A
CHROMA IC IC601 M61203BFP
SAW FILTER CF601 SAF45MFY220ZR
CF604 EFCT4R5MW5
REG. Q602 2SC2120Y
REG. Q603 2SC2120Y
REG. Q604 2SD400E
REG. Q605 2SD400E
REG. Q606 2SD863
R632 220 2W
46 SW REG CONT
47 LIMITER IN
48 IF AGC
49 QIF OUT
50 AUDIO OUT
34 EXT C in
33 8.7V REG OUT
32 X'TAL
31 ACL/ABCL
64 VIF IN
1 VIF IN
17 V OUT
16 B OUT
FROM/TO Y/C/AUDIO/HEAD AMP
CHROMA_VIDEO
TU_VIDEO
TU_AUDIO
Y/C_AUDIO
H.SYNC
TO IN/OUT
INT-MONI
B.OUT
AT+5V
FROM/TO SOUND AMP
S107Y
AUDIO_OUT
FROM/TO DEFLECTION
GND
V_OUT
ACL
V_FEEDBACK
180V
HEATER
H_GND
H_OUT
H.PLUSE
F_P.CON+15V
TO CRT
CP851A 51048-1000
GND
CUT OFF
G.OUT
B.OUT
R.OUT
NC
HEATER
H_GND
NC
180V
S001X
FROM POWER
AT+12V
POWER_FAIL
SYNC SW Q612 2SC2412K
CUT OFF Q608 2SA1037AK
POWER ON SWITCH Q609 DTC114EKA
POWER FAIL SWITCH Q611 DTC114EKA
R.SIGNAL
G.SIGNAL
B.SIGNAL
DEFLECTION SIGNAL
AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
PLAYBACK VIDEO SIGNAL
TUNER VIDEO SIGNAL
CAUTION: DIGITAL TRANSISTOR

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

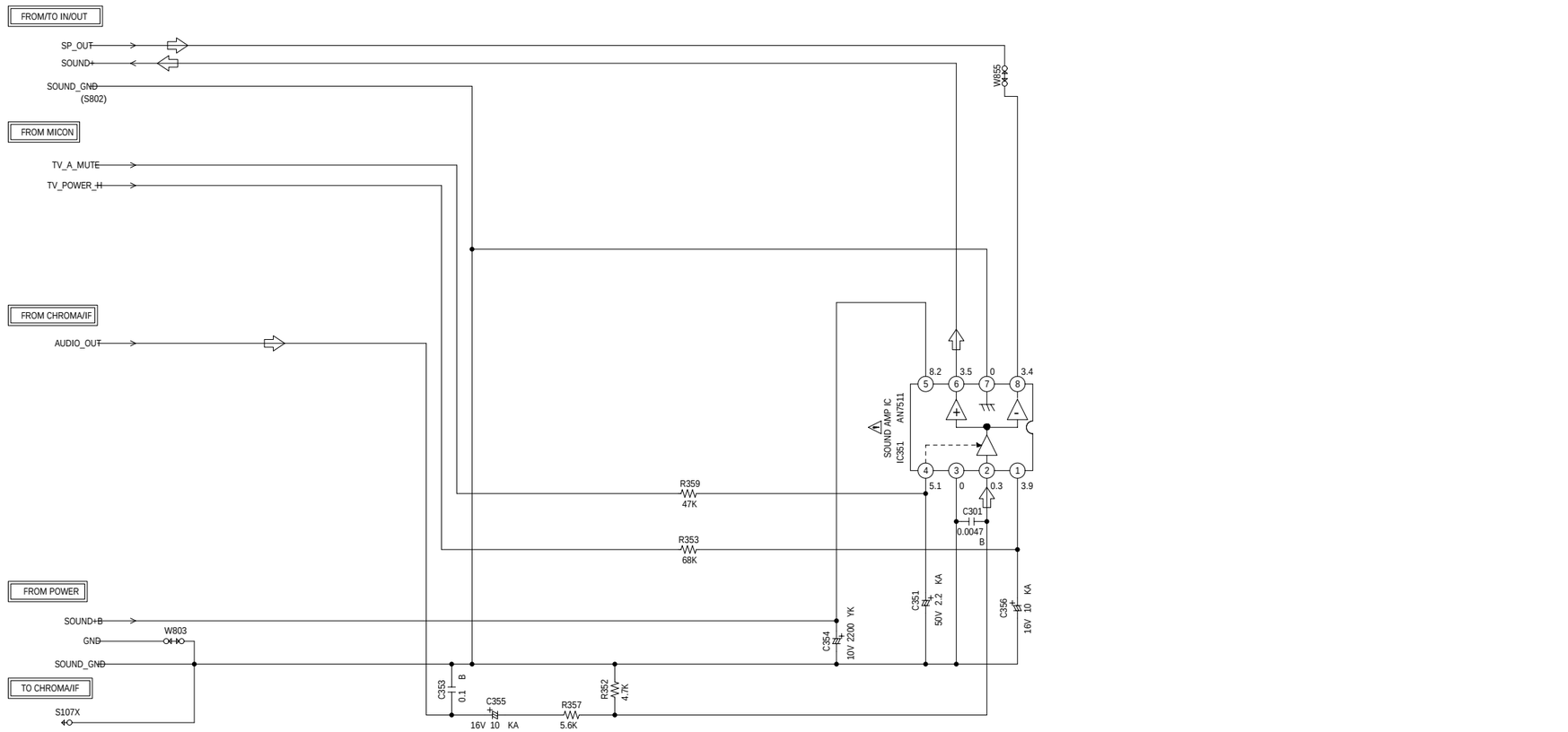
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

PCB010
VMX180

SOUND AMP SCHEMATIC DIAGRAM
(SYSCON PCB)



AUDIO SIGNAL(REC)

PCB010
VMX180

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

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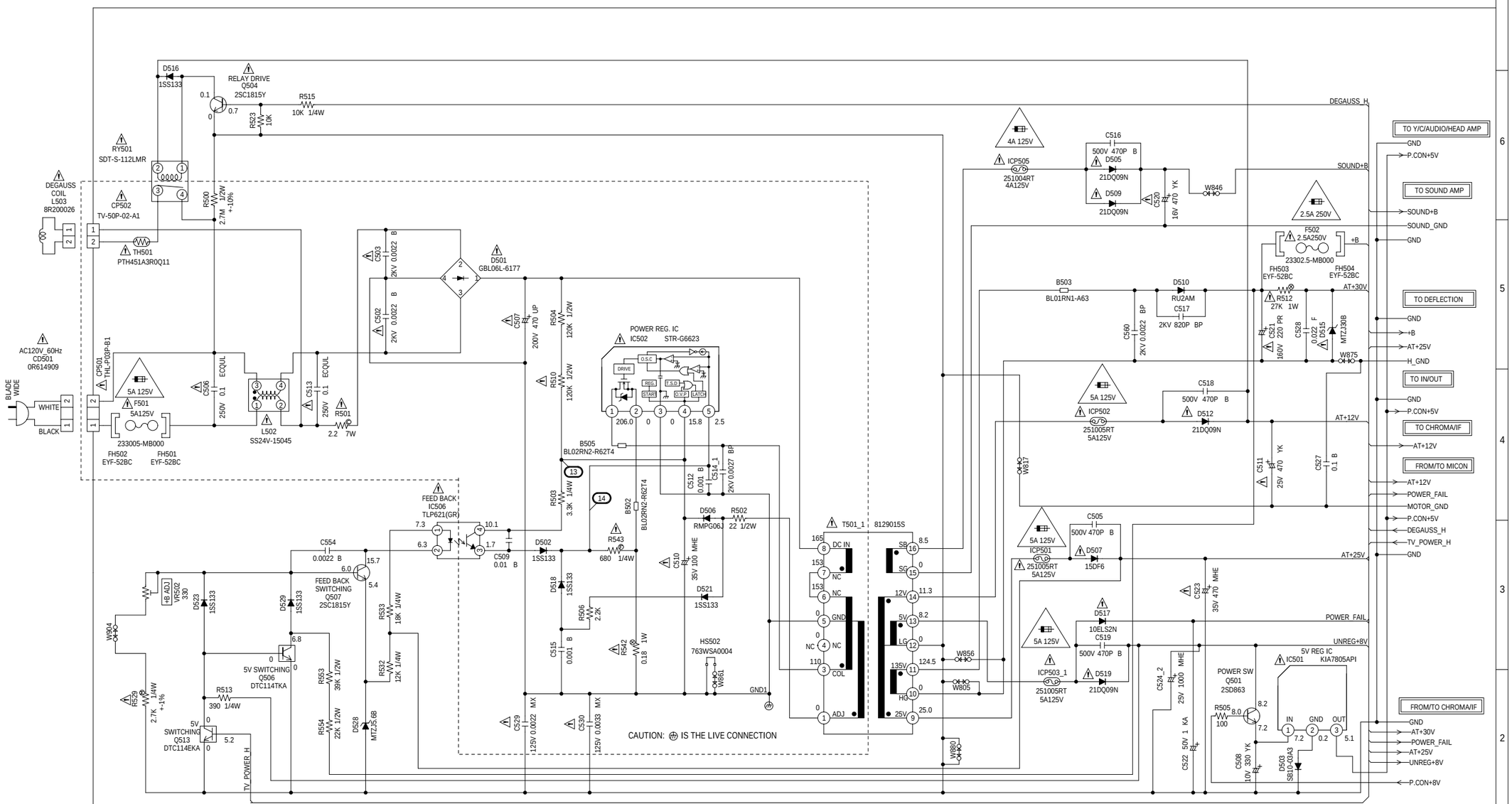
POWER SCHEMATIC DIAGRAM
(SYSCON PCB)

5A 125V 2.5A 250V 4A 125V

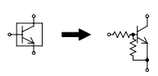
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 5A 125V (F501,ICP501,ICP502,ICP503),2.5A 250V(F502), AND 4A 125V(ICP505).

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 5A 125V (F501,ICP501,ICP502,ICP503),2.5A 250V(F502), ET 4A 125V(ICP505).

CAUTION: ICP501,ICP502,ICP503,AND ICP505 ARE MANUFACTURED BY LITTELFUSE INC.,TYPE 251.



CAUTION: DIGITAL TRANSISTOR



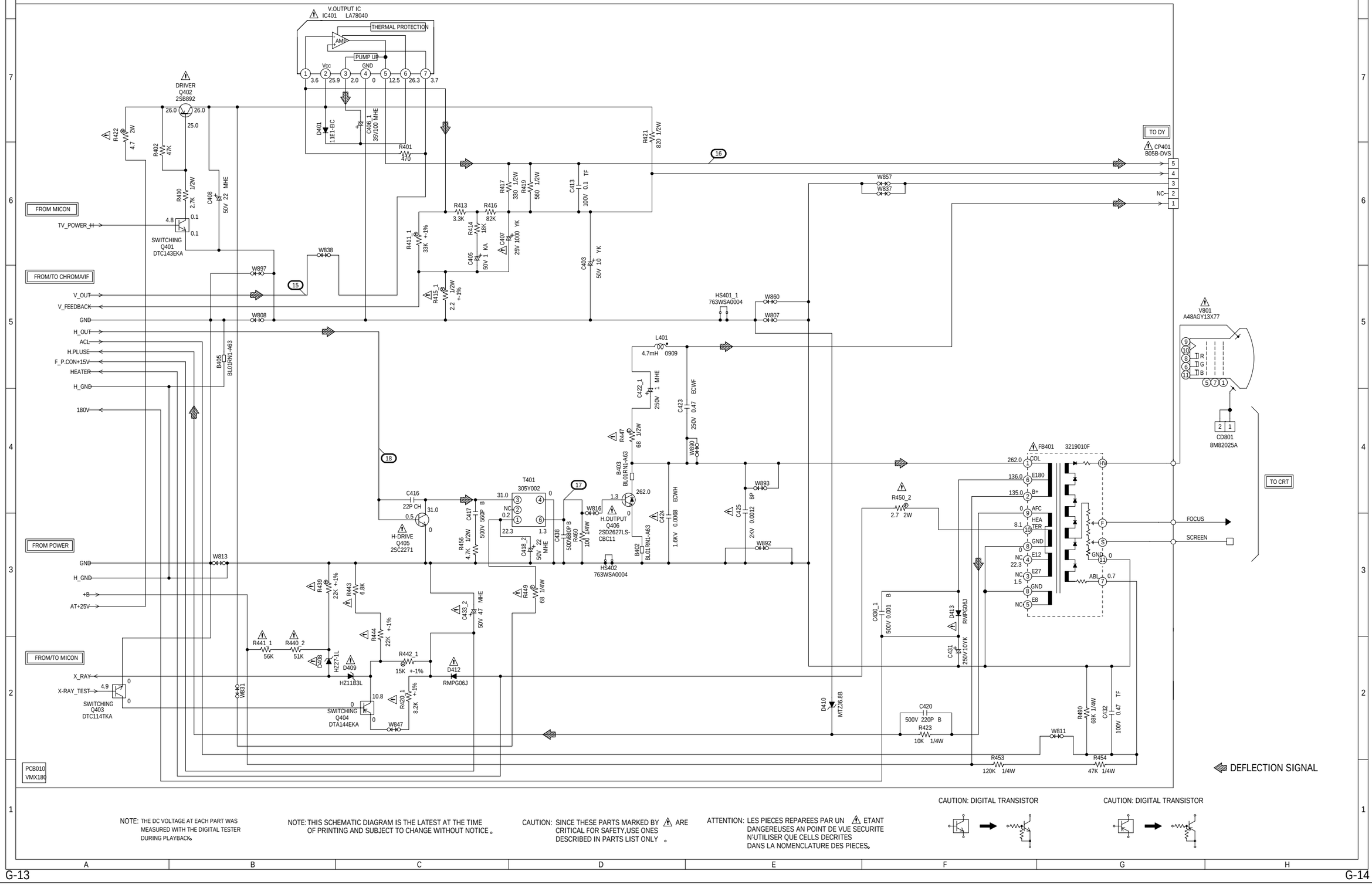
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK。

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

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

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

DEFLECTION SCHEMATIC DIAGRAM
(SYSCON PCB)



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

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

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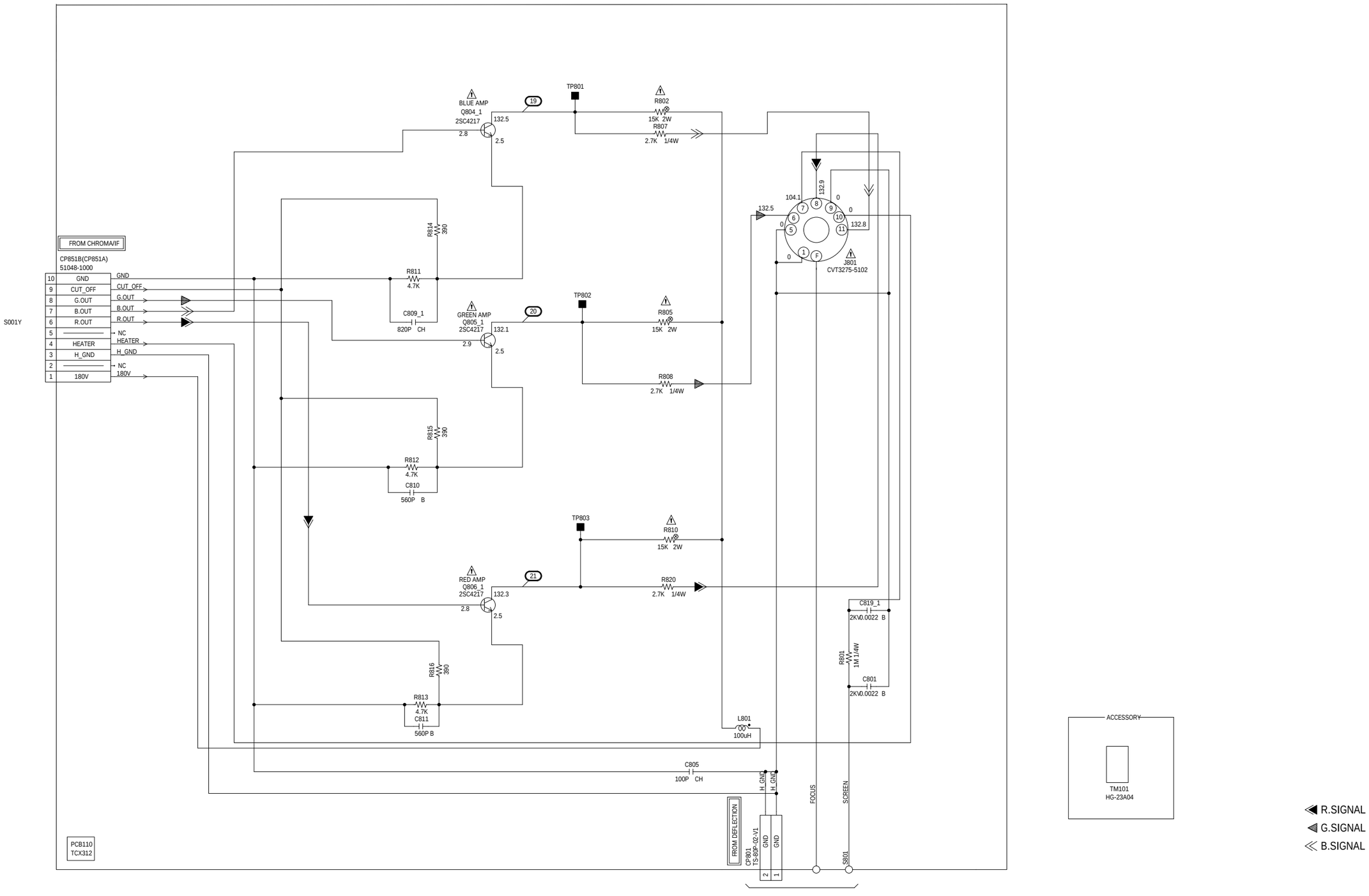
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

CRT SCHEMATIC DIAGRAM
(SYSCON PCB)



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

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

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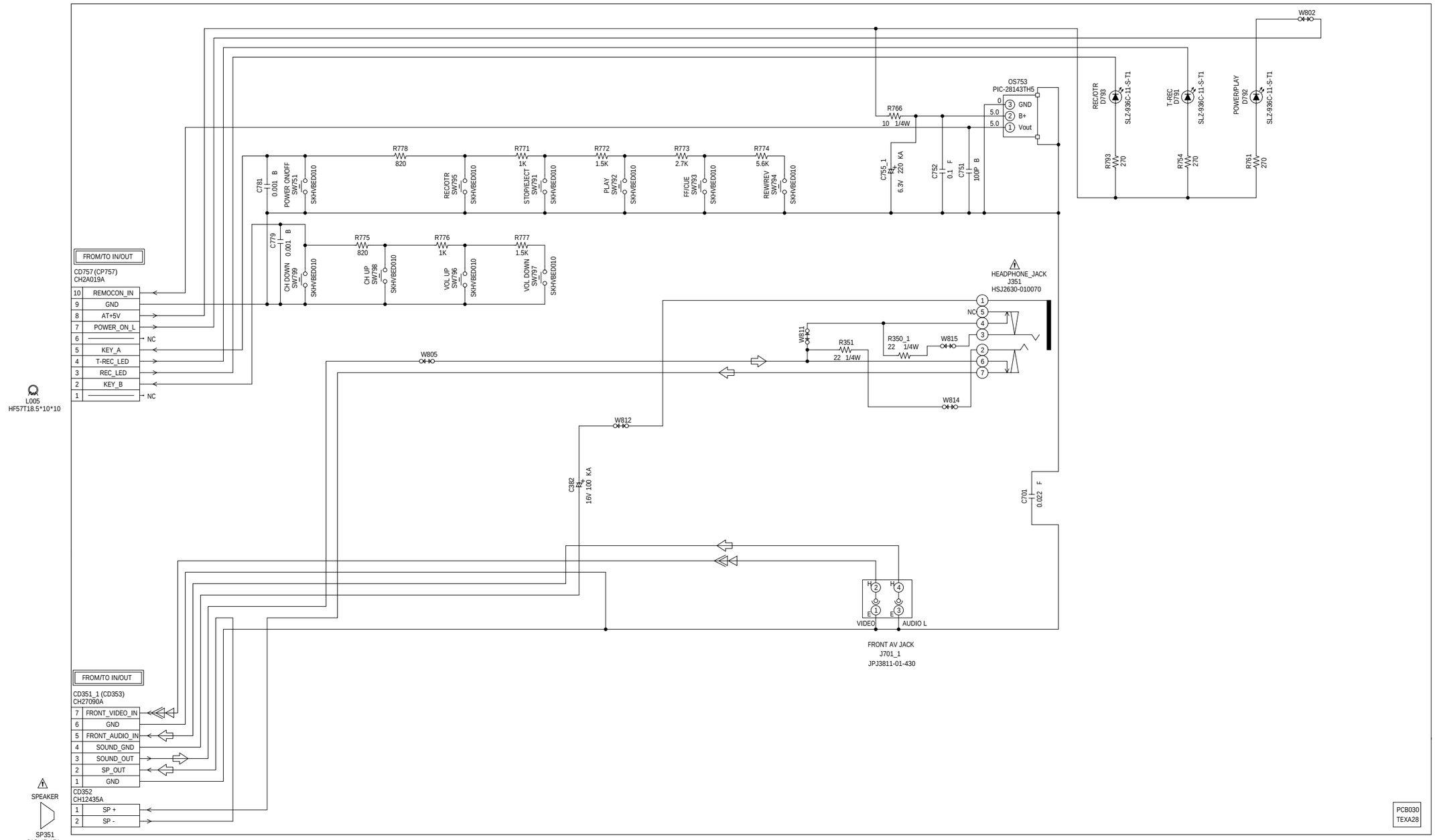
OPERATION SCHEMATIC DIAGRAM
(OPERATION PCB)



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

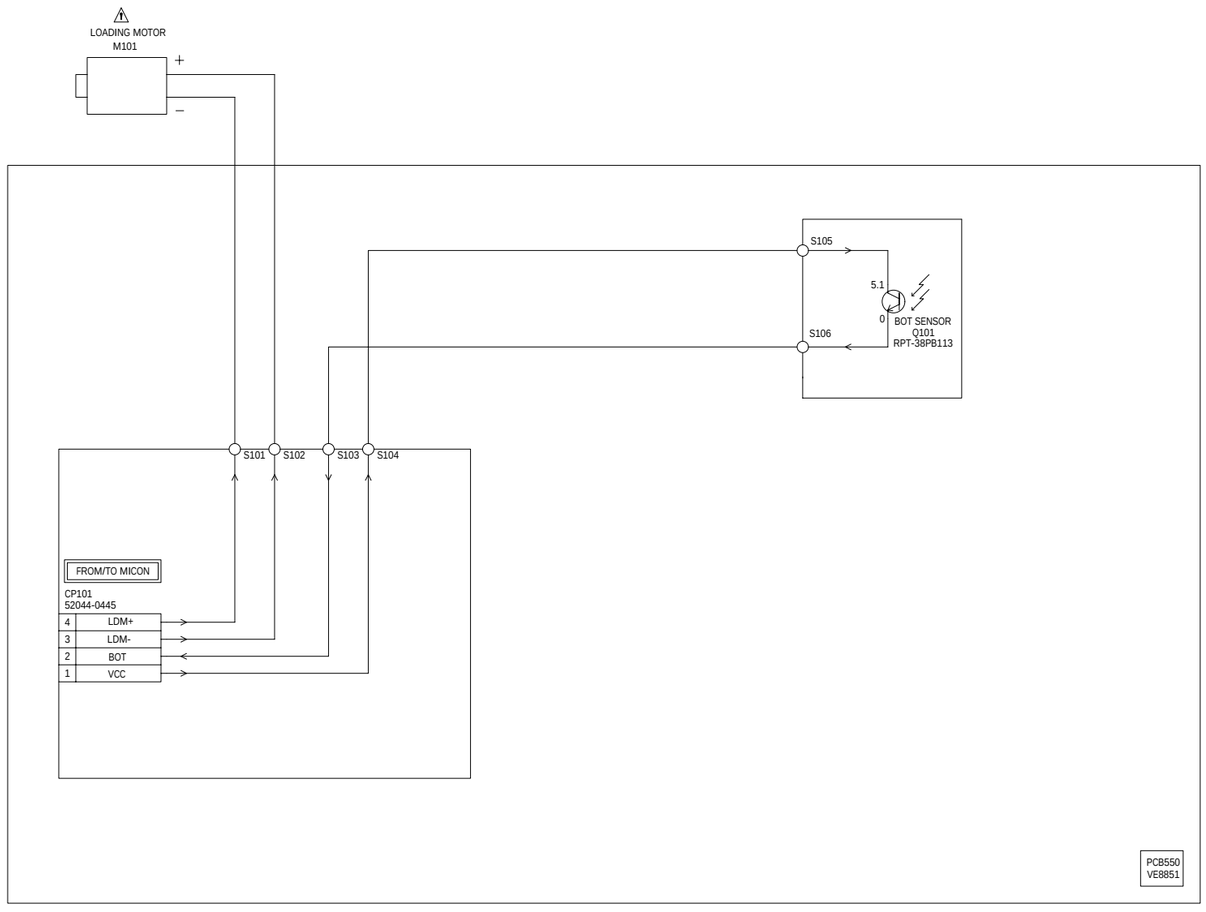
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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

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

⋘ PLAYBACK VIDEO SIGNAL
⇦ AUDIO SIGNAL(REC)

DECK SCHEMATIC DIAGRAM
(DECK PCB)



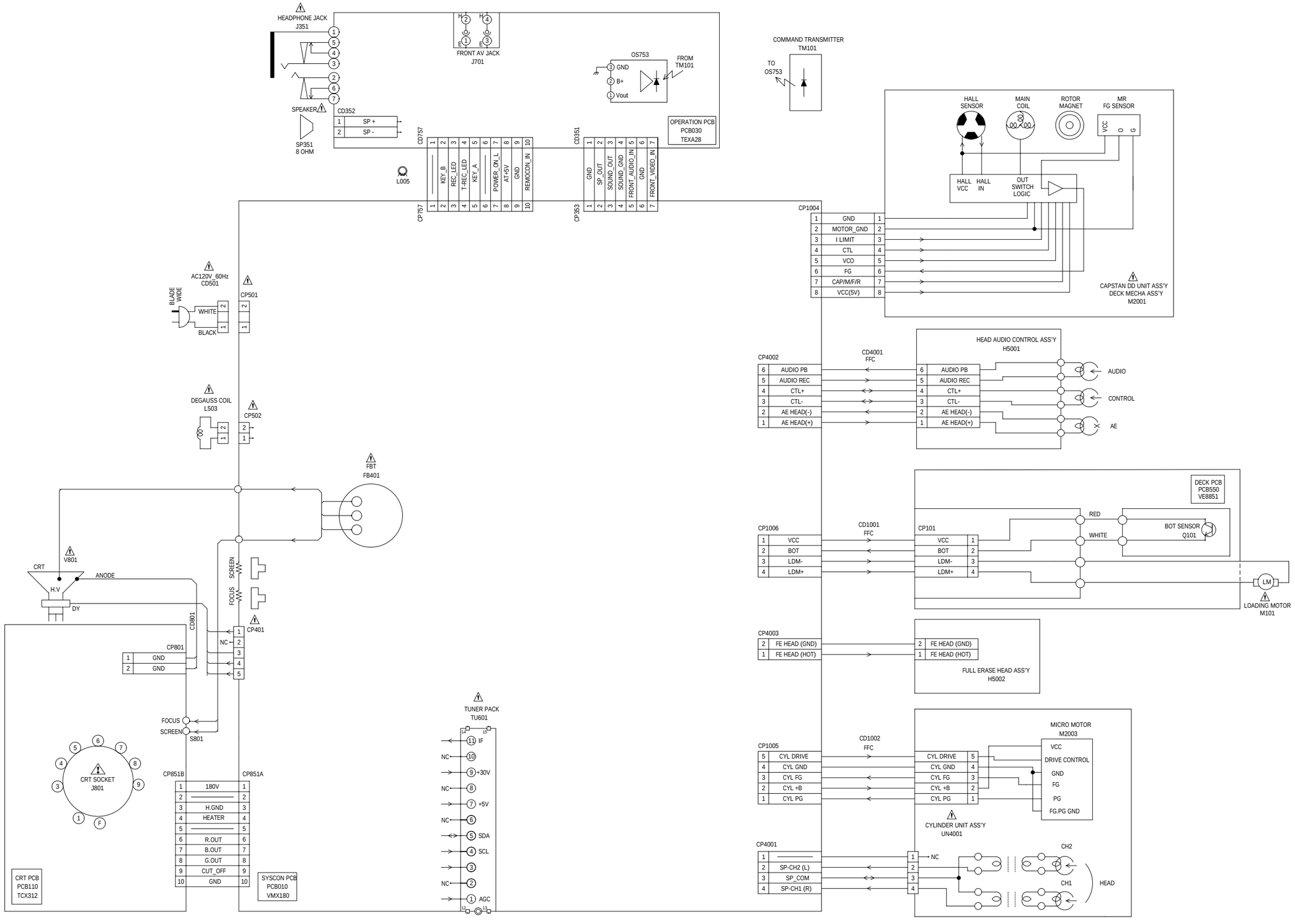
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

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

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

INTERCONNECTION DIAGRAM



NOTE: THIS INTERCONNECTION 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。

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 **[Note1]** .
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

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

[Note 2]

External exposure metal: Antenna terminal
Earphone Jack

HOW TO ORDER PARTS

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

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

CONTENTS

GENERAL SPECIFICATIONS

G-1.Outline of the Product

19 inch(480.0mmV):Measured diagonally
Color CRT 90 degree deflection
3 -Speed 1/2" Video Cassette Recorder
☒VHS ☒Recorder/Player
☐VHS-C ☐Player

G-2.VCR Format

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

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

G-4.Broadcasting System US System M

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

G-6.NTSC Playback(PAL 60Hz) ☐Yes ☒No

G-7.MESECAM ☐Yes ☒No

G-8.Cassette Tape

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

G-9.Tape Speed

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

G-10.Recording/Playback Time

NTSC or PAL-M
☒at SP Mode Max. 210 min. (with T-210 cassette)
☒at LP Mode Max. 420 min. (with T-210 cassette)
☒at SLP Mode Max. 630 min. (with T-210 cassette)
PAL or SECAM
☐at SP Mode Max. 300 min. (with E-300 cassette)
☐at LP Mode Max. 600 min. (with E-300 cassette)

G-11.Use Deck

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

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

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

G-13.Search Speed

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

G-14.Slow Speed

☐SP _____ Times
☐LP _____ Times
☐SLP _____ Times

G-15.Frame Advance

☐SP _____ Times
☐LP _____ Times
☐SLP _____ Times

G-16.Antenna Input Impedance

VHF/UHF 75 ohm unbalanced

GENERAL SPECIFICATIONS

G-17.Tuner and Receiving channel ☒1Tuner System ☐2Tuner System

Tuner : Contactless Electric tuner

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

Channel Coverage

__2 ~ 69__, __4A__, __A-5 ~ A-1__, __A ~ I__, __J ~ W__, __W+1~ W+84__

Tuning System

☒Frequency syn. ☐Voltage syn. ☐Others

G-18.Preset Channel: __--__channels

G-19.Intermediate Frequency

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

G-20.Stereo/Dual TV Sound

☐Yes(☐NICAM ☐GERMAN ☐USA ☐JAPAN) ☒No

G-21.Video Signal

Input Level __1__ Vp-p / __75__ohm

Output Level __--__ Vp-p / __--__ohm

S/N Ratio __50__ dB (Weighted)

Horizontal Resolution at SP Mode __220__ Lines

G-22.Audio Signal

Input Level

Line __--__ dB / __--__Kohm

RCA __- 8__ dB / __50__Kohm

Output Level

Line __--__ dB / __--__Kohm

RCA __--__ dB / __--__Kohm

(0dB=0.775 V rms.)

S/N Ratio at SP Mode __38__ dB

Harmonic Distortion : __1.5__ % (1KHz)

Frequency Response : at SP Mode __100__ Hz ~ __10__ kHz

at LP Mode __100__ Hz ~ __6__ kHz

at SLP Mode __100__ Hz ~ __4__ kHz

Hi-Fi Audio Signal ☒NONE

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

Dynamic Range : More than __--__ dB

Wow And Flutter : Less than __--__ % Wrms

Channel Separation : More than __--__ dB

Harmonic Distortion : Less than __--__ %

G-23.Heads

Video	☒__2__	Rotary Heads
FM Audio	☐_____	Rotary Heads
Audio / Control	☒__1__	Stationary Head (☒Mono ☐Stereo(L,R))
Erase	☒__1__	Full Track Erase

G-24.Motor: __3__Motors

☒Tape/Cassette Loading

☒Cylinder (Direct Drive)

☒Capstan (Direct Drive)

G-25.Power Source

__120__V ☐AC 50Hz ☒AC 60Hz

☐EXT DC Jack __--__V

GENERAL SPECIFICATIONS

G-26.Power Consumption: 86 W at AC 120 V 60 Hz
-- W at DC --- V(at TV and VCR ON)
Stand by: 5 W at AC 120 V 60 Hz
Per Year: -- kWh / Year

G-27.Dimensions(Approx.)
489 mm(W) 462.5 mm(D) 479.5 mm(H)

G-28.Weight(Approx.) Net : 22.0 Kg (48.7 lbs)
Gross: 25.0 Kg (55.3 lbs)

G-29.Cabinet Material

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

G-30.Cassette Loading System: ☒Front Cassette Loading System
☐Top Loading System

G-31.Tape Counter: Linear Time Tape Counter

G-32.Protector: ☒Power Fuse ☐Dew Sensor

G-33.Regulation

Safety

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

Radiation

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

X- Radiation

☒DHHS	☐HWC	☐PTB	☐DENTORI	☐NONE

G-34.Temperature
Operation 5 ˚C ~ 40 ˚C
Storage -20 ˚C ~ 60 ˚C

G-35.Operating Humidity Less than 80 %RH

G-36.Clockand Timer
Calendar: 1990/1/1~2081/12/31
Built-in 1 Month 8 Events Programmable Timer
One Touch Recording : Max Time 5 Hours

Sleep Timer	☒Yes Max 120 Min.(10 Min. Step)	☐No
On/Off Timer	☒Yes 1 Programs	☐No
Wake Up Timer	☐Yes _____ Programs	☒No

G-37.Timer back up Time
More than 1/12 Minutes (at Power Off Mode)

GENERAL SPECIFICATIONS

G-38.Terminals

☒VHF/UHF Antenna Input ☐ Din Type ☒ F-Type ☐ France Type
☒Front Video Input (RCA ø8.3)
☒Front Audio Input (RCA ø8.3)
☐Rear Video Input (RCA ø8.3)
☐Rear Audio Input (RCA ø8.3)
☐Rear Video Output (RCA ø8.3)
☐Rear Audio Output (RCA ø8.3)
☐21 Pin ☐DC Jack 12V (Center +)
☐AC Inlet ☐Ext. Speaker
☐Diversity ☐Ear Phone
☒Head Phone

G-39.Indicator

☒Power (Red) ☐Stand By (___) ☒Rec/Otr (Red) ☒T-Rec (Red) ☐Tape In (___)
☐On Timer (___) ☐OTPB (___)

G-40.On Screen Display

☒Menu ☒Timer Rec Set
☒Ch Set Up ☒TV/CATV ☒Auto Ch Memory
☒Add/Delete ☐Guide Ch Set
☒TV Set Up ☒V-Chip Set ☒On/Off Timer
☒Picture ☐Audio
☐Sap On/Off
☒Auto Repeat On/Off
☒System Set Up ☒Clock Set(☒Calendar ☒12H ☐24H)
☒Language ☒Auto Clock On/Off
☒Standard Time ☒Daylight Saving Time
☐G-CODE(or SHOWVIEW or PLUSCODE)No. Entry
☒Clock/Date ☒CH/AV
☒Tape Counter ☒Tape Speed
☒Sleep Time ☒Tape In
☒Control Level (Vol, Bright, Cont, Color, Tint, Sharpness)
☐Control Level (Vol, Bright, Cont, Color, Sharpness)
☒Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject(Symbol Mark)
☒Auto Tracking/Manual Tracking ☒Caption/Text 1/2
☐Index ☒Repeat
☒Add/Delete ☐Stereo/SAP
☒Muting

G-41.OSD Language

☒Eng ☐Ger ☒Fre ☒Spa ☐Ita ☐Por ☐Jan

OSD Language Setting

☒Eng ☐Ger ☐Fre ☐Spa ☐Ita ☐Por ☐Jan

☐ Not Applicable

G-42.Speaker

Position ☒Front ☐Side ☐Bottom
Size 3 inches
Imp. 8 ohm x 1 pcs
Output Max 1.5 W
10% 1.0 W (Typical)

G-43.EXT Speaker : ☐Yes -- W Imp -- ohm ☒No

GENERAL SPECIFICATIONS

G-44.Carton

Master Carton: ☐Need ☒No Need
Content: ____ Set
Material: ____ / ____ Corrugated Carton
Dimensions: ____mm(W) ____mm(D) ____mm(H)
Description of Original ☐Yes ☐No
Gift Box : Material ☐ Double/Brown Corrugated Carton (☐with Photo Label)
☒ Double/White Corrugated Carton (☐with Photo Label)
☐ Double Full Color Carton W/Photo
Dimensions: 559 mm(W) 538 mm(D) 555 mm(H)
Design: As Per Buyer 's
Description of Origin: ☒Yes ☐No
Drop Test Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
Height ☐25cm ☐31cm ☒46cm ☐62cm ☐80cm
Container Stuffing: 352 Sets / 40' container

G-45.Accessories

☐Channel Film ☐Dew Caution Sheet
☒Owner's Manual(☐W/Gurantee Card) [English/Spanish]
☐AC Plug Adapter
☒Remote Control Unit ☐Quick Set-up Sheet
☐Rod Antenna (☐One Pole ☐Two Pole/☐F-Type ☐DIN Type ☐France Type)
☐Loop Antenna(☐F-Type ☐DIN Type ☐France Type)
☐U/V Mixer ☐Battery (UM- 4 x 2)
☐DC Car Cord (Center+) ☐AC Cord
☐Guarantee Card ☐AV Cord (2Pin-1Pin)
☐Warning Sheet ☒Registration Card(W/Guarantee Card)
☐Circuit Diagram ☐PTB Sheet
☐Antenna Change Plug ☐300 ohm to 75 ohm Antenna Plug
☐Service Facility List ☐Euro Warranty Information Sheet
☐Important Safeguard

G-46.Other Features

☒Auto Head Cleaning ☐Index Search
☒Auto Tracking ☒Auto Clock
☐VIDEO PLUS+(SHOWVIEW,G-CODE) ☒Auto Shut Off
☒HQ (VHS Standard High Quality)
☒Auto Power On, Auto Play, Auto Rewind, Auto Eject
☒Forward / Reverse Picture Search ☐SQPB
☐One Touch Playback ☒CATV
☒Auto CH Memory ☐Just Clock Function
☐Rental Mode ☒Closed Caption
☒TV Monitor ☒CM Skip(30secX6Times)
☒V-chip(☒USA ☐Canada) ☐CM Advance
☒Energy Star ☐Dirty Head Warning

G-47.Switch

Front	☒ Power(Tact)	☒Channel Up	☒Volume Up
	☒Play	☒Channel Down	☒Volume Down
	☐Pause/Still	☒F.FWD/Cue	☒Rew/Rev
	☐System Select	☒Eject/Stop	☒Rec/OTR
	☐One Touch Playback	☐Main Power SW	
Rear	☐Color On/Off (SECAM only)		☐Degauss
	☐Main Power SW		☐AC/DC

G-48.Magnetic Field

☒BV : +0.45G	☐BV : +0.35G	☐BV : +0.25G
BH : 0.18G	BH : 0.30G	BH : 0.30G
☐BV : -0.15G	☐BV : -0.25G	☐BV : -0.50G
BH : 0.15G	BH : 0.15G	BH : 0.30G

GENERAL SPECIFICATIONS

G-49.Remote Control Unit: RC-CG

Glow in Dark Remocon ☒Yes ☐No

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

Control Key: Total 41 Key

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

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 screw ② which are used for holding the Back Cabinet.
3. Remove the AC cord from the AC cord hook ③.
4. Remove the Back Cabinet in the direction of arrow.

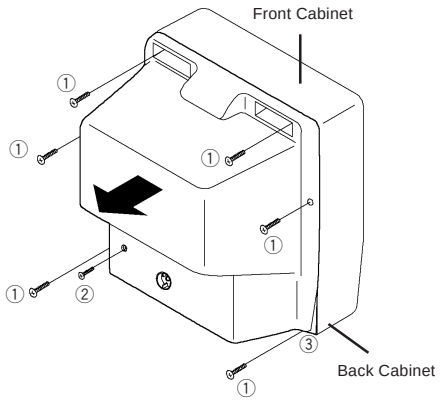


Fig. 1-1

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 connector: (CP801).
3. Remove the CRT PCB in the direction of arrow.

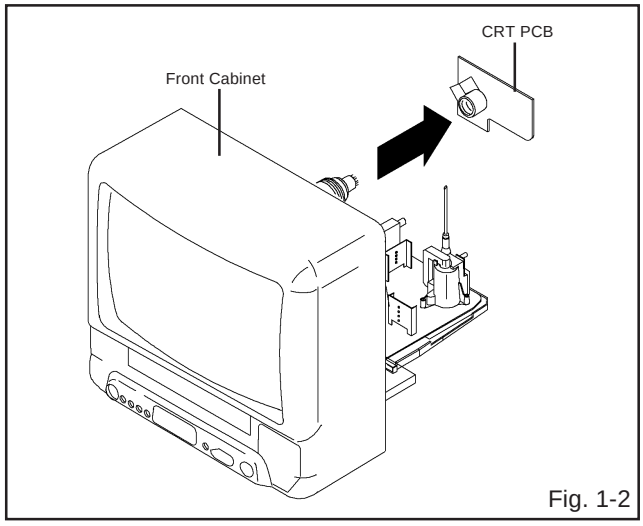


Fig. 1-2

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

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

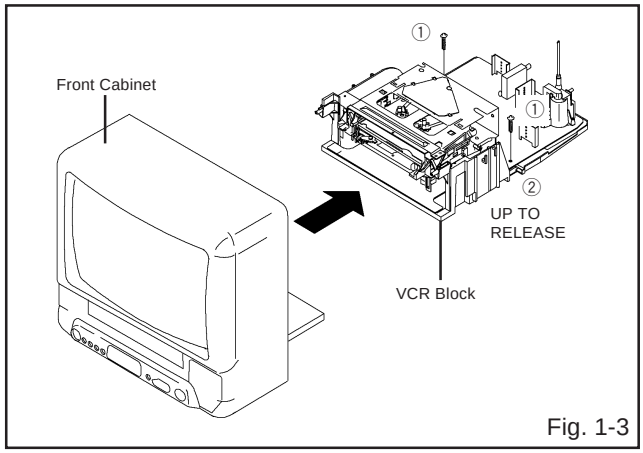


Fig. 1-3

DISASSEMBLY INSTRUCTIONS

1-4: DECK SHIELD PLATE, DECK CHASSIS AND BOTTOM SHIELD (Refer to Fig. 1-4)

1. Remove the 3 screws ①.
2. Remove the 3 screws ②.
3. Remove the Deck Shield Plate in the direction of arrow (A).
4. Disconnect the following connectors: (CP1004, CP1005, CP1006, CP4001, CP4002 and CP4003).
5. Remove the Deck Chassis in the direction of arrow (B).
6. Remove the screw ③.
7. Remove the Bottom Shield in the direction of arrow (C).

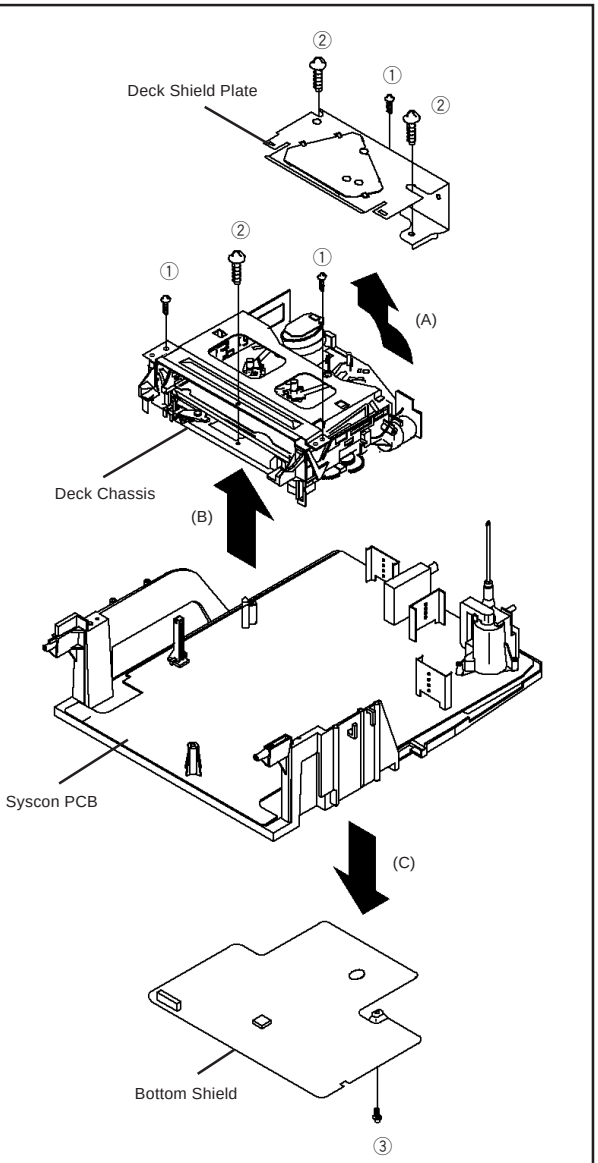


Fig. 1-4

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

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow.

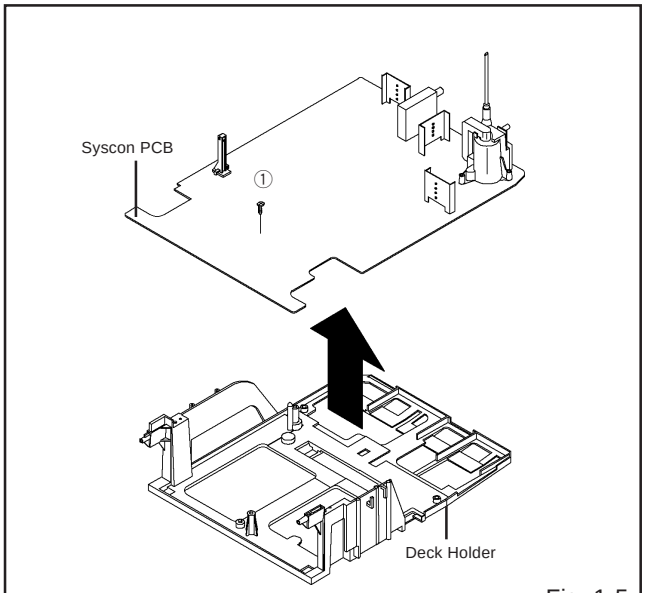


Fig. 1-5

DISASSEMBLY INSTRUCTIONS

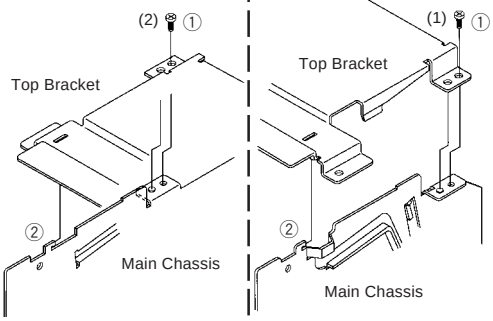
2. REMOVAL OF DECK PARTS

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

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

NOTE

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



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-1

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

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

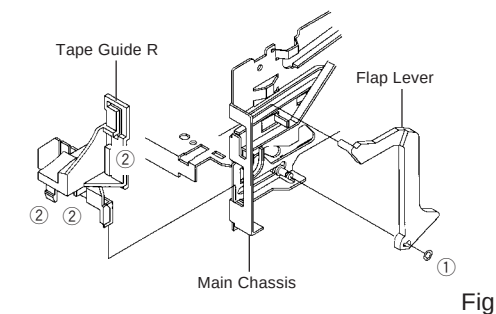
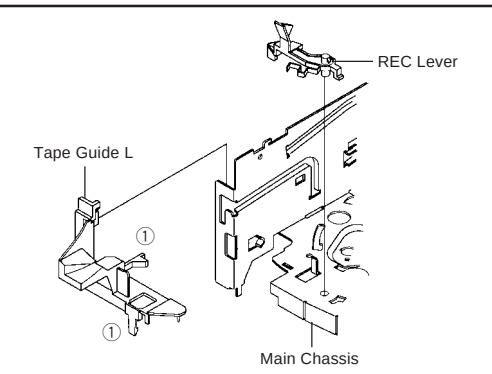


Fig. 2-2

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

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

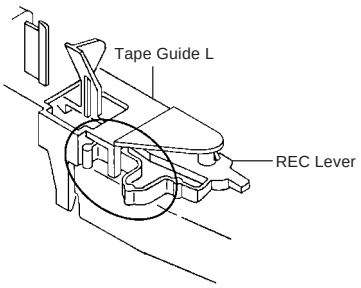


• The REC Lever is not installed on the Video Cassette Player.

Fig. 2-3-A

NOTE

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



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

Fig. 2-3-B

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

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

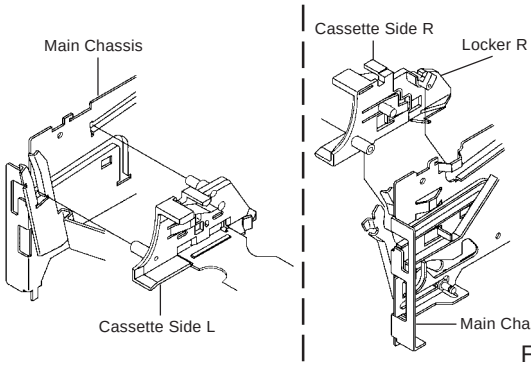


Fig. 2-4

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

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

NOTE

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

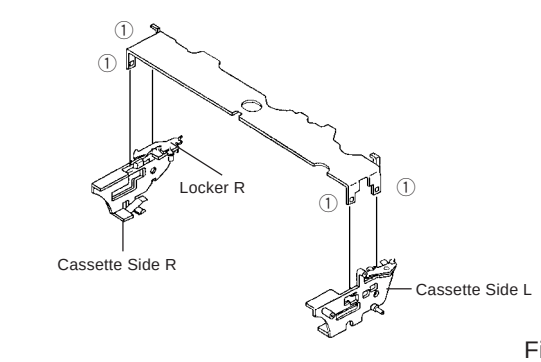


Fig. 2-5

DISASSEMBLY INSTRUCTIONS

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

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

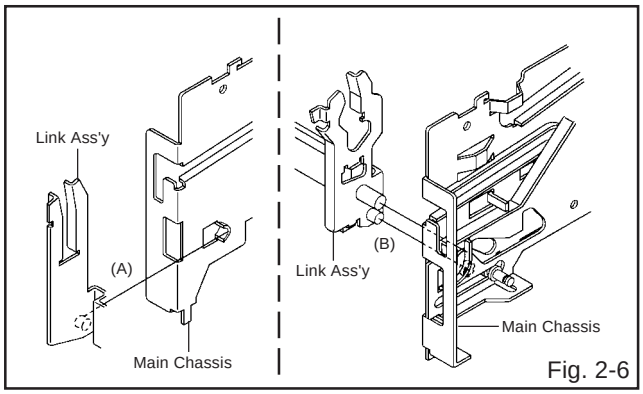
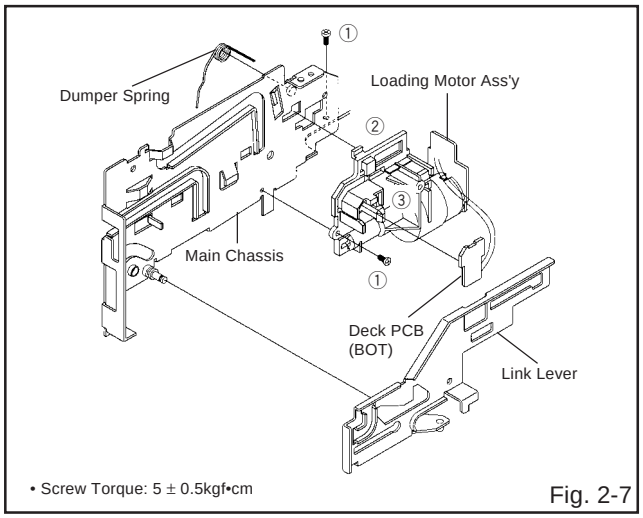


Fig. 2-6

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

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



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-7

2-8: SENSOR COVER L3 (Refer to Fig. 2-8)

1. Unlock the support ① and remove the Sensor Cover L3.

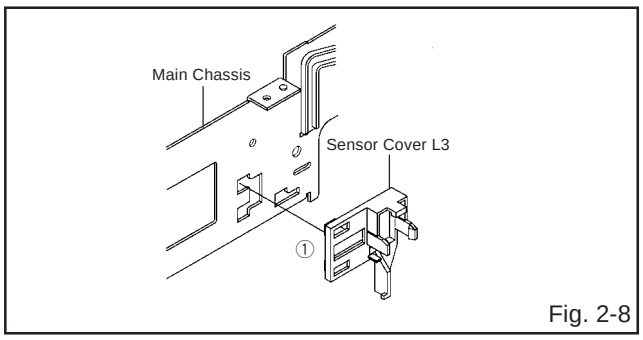


Fig. 2-8

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

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

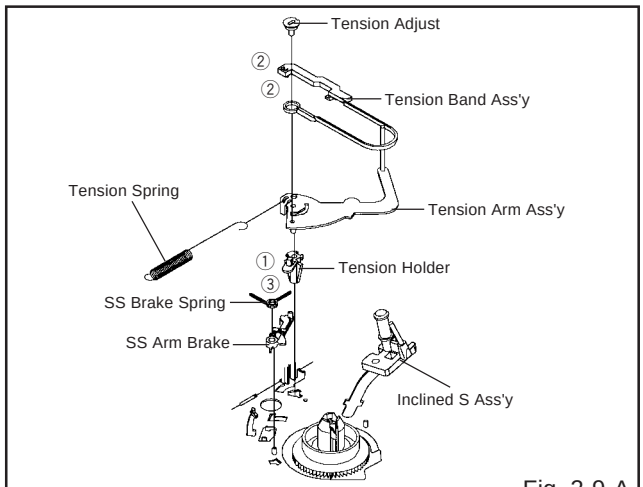


Fig. 2-9-A

NOTE

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

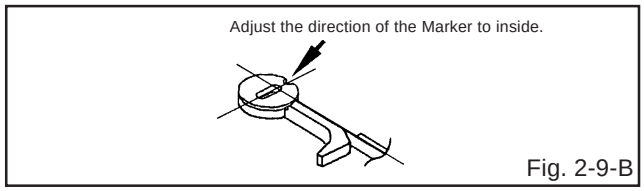


Fig. 2-9-B

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

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

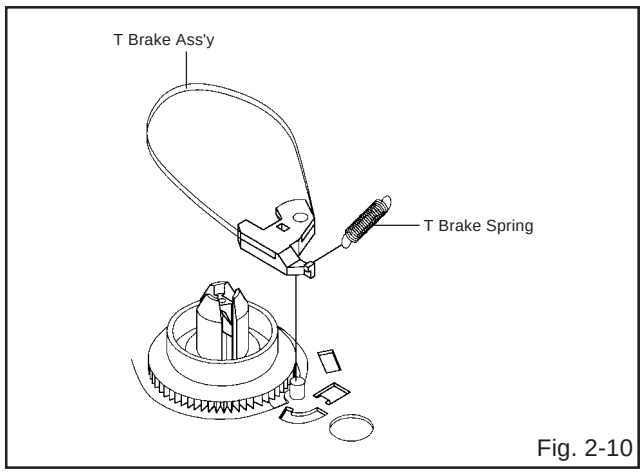


Fig. 2-10

DISASSEMBLY INSTRUCTIONS

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

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

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-11)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and oil it (FL OIL #6115). (If you do not oil, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

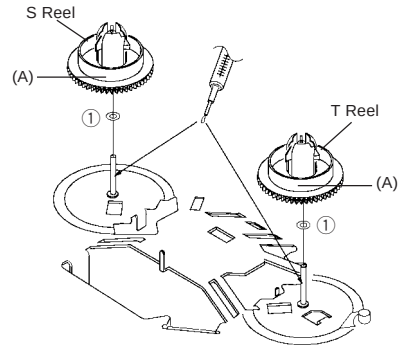
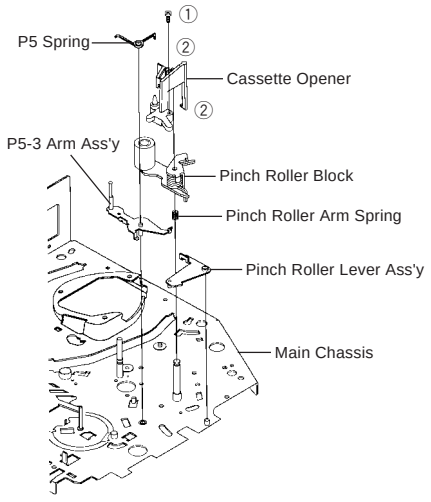


Fig. 2-11

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

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



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-12-A

NOTE

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

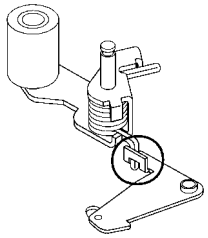


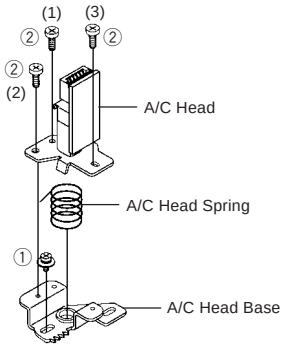
Fig. 2-12-B

2-13: A/C HEAD (Refer to Fig. 2-13-A)

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

NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-13-B. **(Refer to Fig. 2-13-B)**
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).



• Screw Torque: 4 ± 0.5kgf•cm (Screw ①)

Fig. 2-13-A

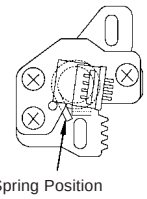
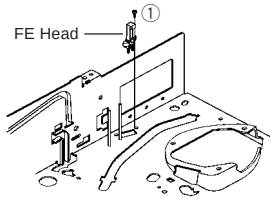


Fig. 2-13-B

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

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



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

Fig. 2-14

DISASSEMBLY INSTRUCTIONS

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

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

NOTE

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

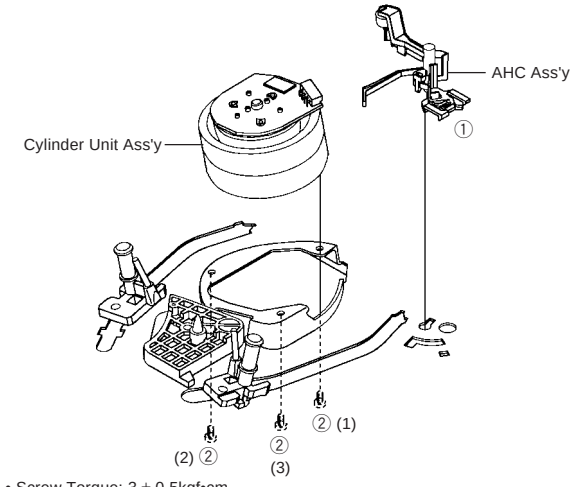


Fig. 2-15

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

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

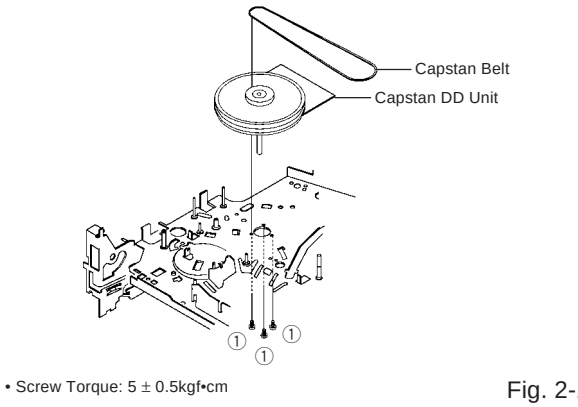


Fig. 2-16

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

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

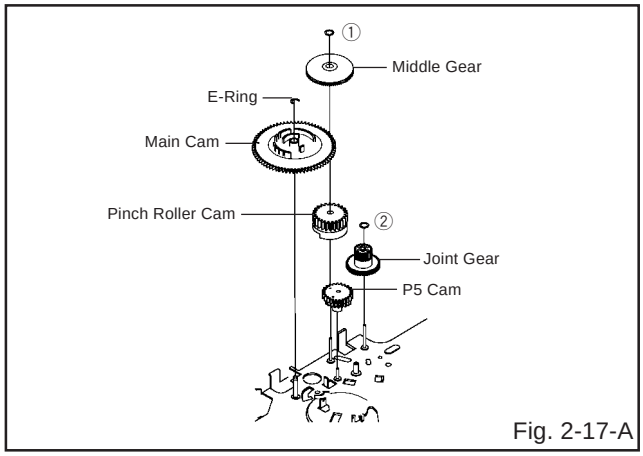


Fig. 2-17-A

NOTE

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

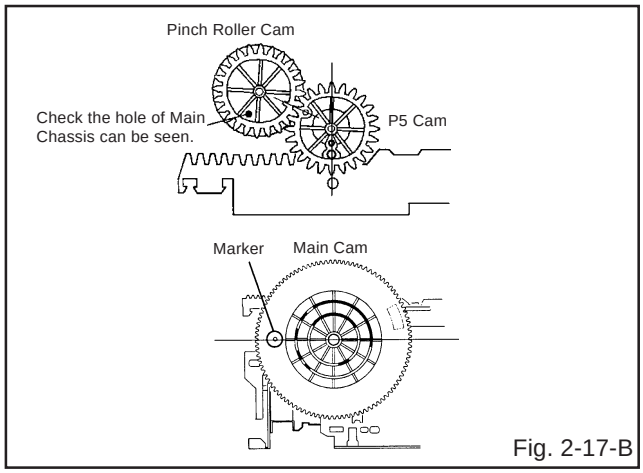


Fig. 2-17-B

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

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

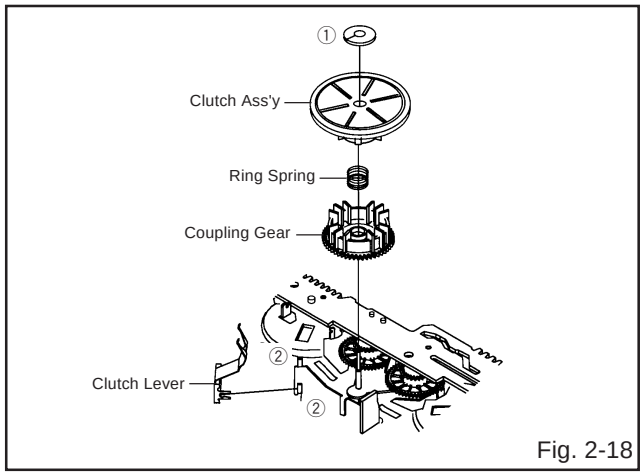
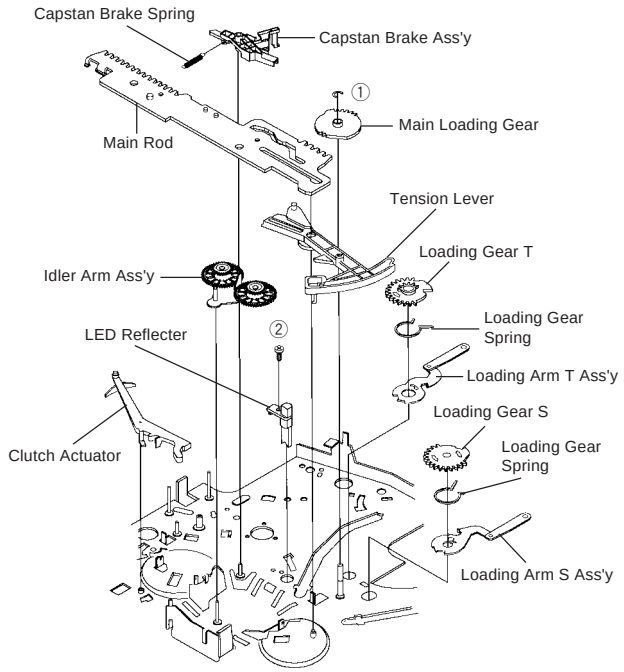


Fig. 2-18

DISASSEMBLY INSTRUCTIONS

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

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



• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-19-A

NOTES

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

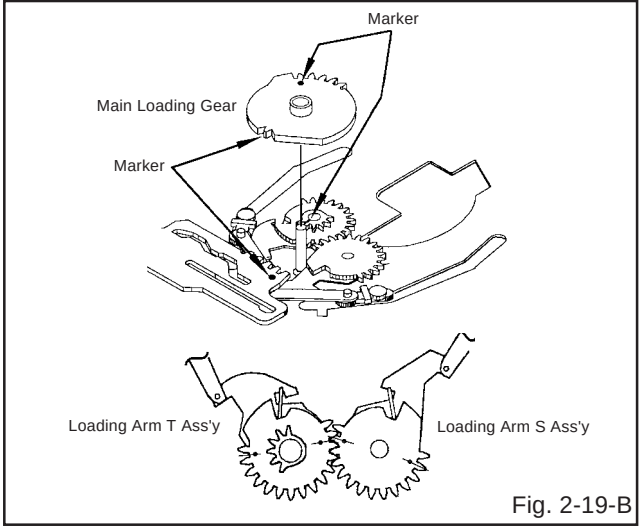


Fig. 2-19-B

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

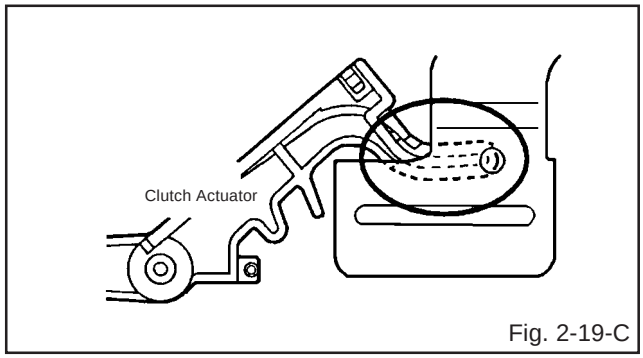


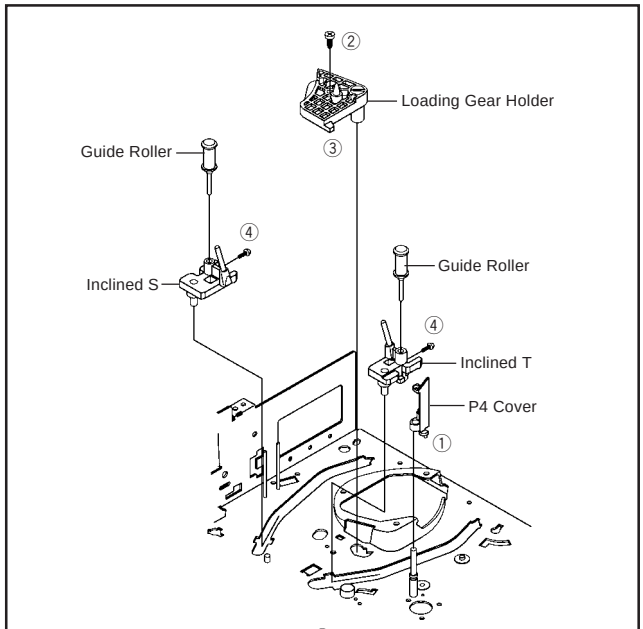
Fig. 2-19-C

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

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

NOTE

Do not touch the roller of Guide Roller.



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

Fig. 2-20

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF ANODE CAP

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

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

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground. While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

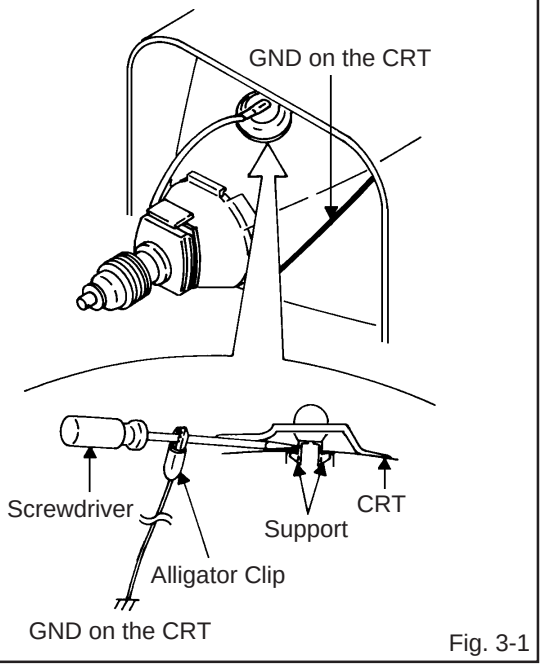


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

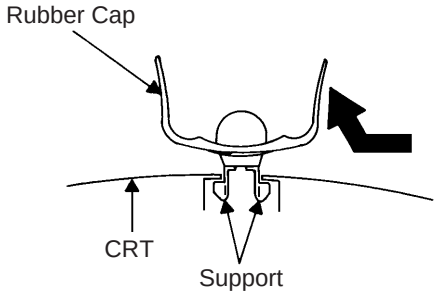


Fig. 3-2

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

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

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

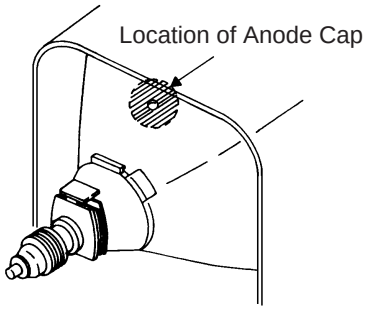


Fig. 3-3

NOTE

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

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

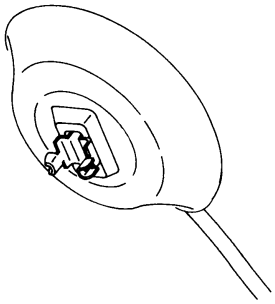


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5**.

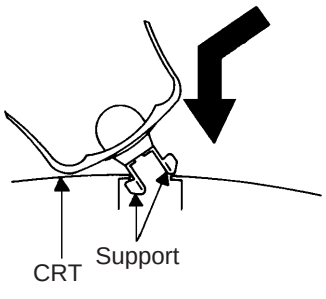


Fig. 3-5

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

KEY TO ABBREVIATIONS

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

KEY TO ABBREVIATIONS

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

SERVICE MODE LIST

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

To enter SERVICE MODE, unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key simultaneously.

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

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing.
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 than 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	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
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

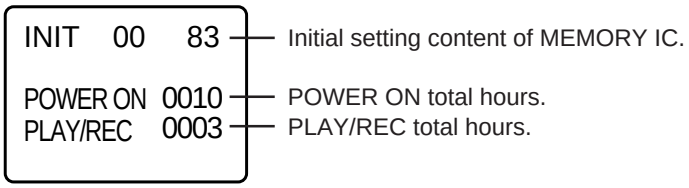
■ : Clean
● : Replace

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 5 seconds before Power On.

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

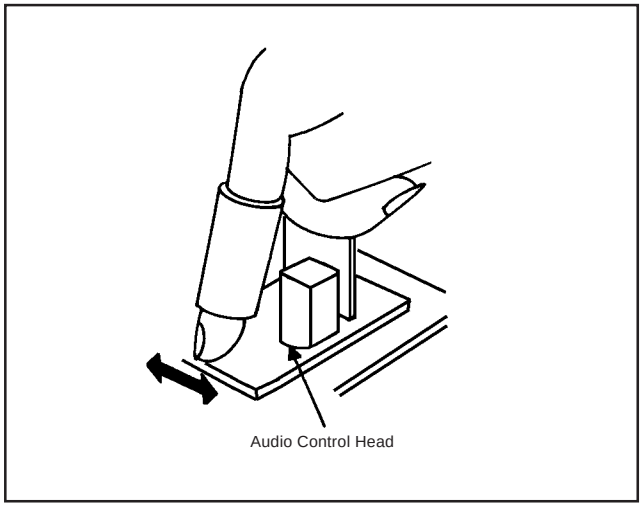
CLEANING

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

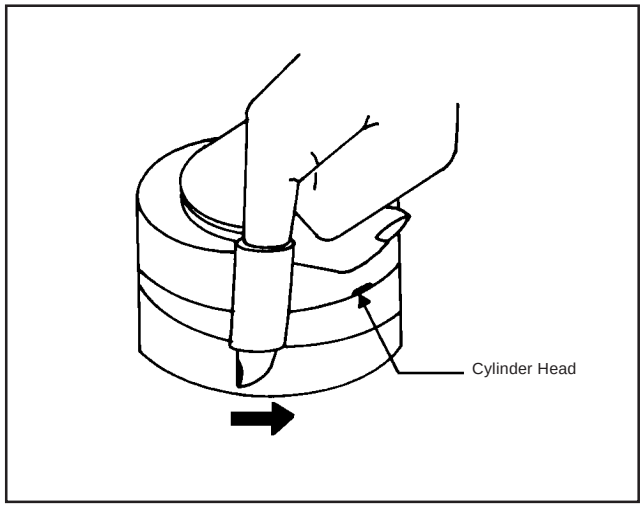
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

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 5 seconds before Power On.

ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA
00	08	07	89	0E	00	15	00	1C	04	23	00
01	1B	08	75	0F	00	16	00	1D	39	24	00
02	C0	09	3B	10	8C	17	05	1E	8D	25	00
03	63	0A	10	11	68	18	05	1F	00	26	00
04	83	0B	97	12	5C	19	00	20	00	27	00
05	14	0C	19	13	53	1A	A9	21	00	28	01
06	34	0D	00	14	00	1B	0F	22	00	29	00

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. ADDRESS and DATA should appear as FIG 1.

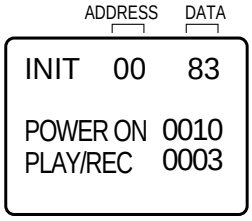
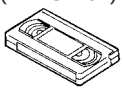
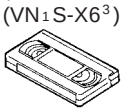
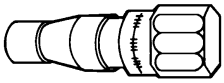
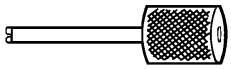
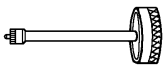
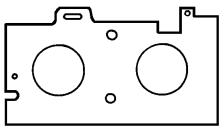
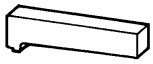
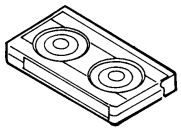
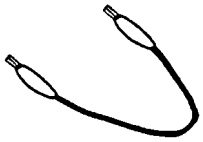
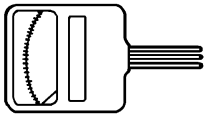


Fig. 1

3. 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.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using SET + or - until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

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

SERVICING FIXTURES AND TOOLS

(For 2 heads model) VHS Alignment Tape JG001 (VN_2S-$LI6^3$) JG001A (VN_2S-$CO1^3$) JG001Q (VN_2S-$LI6^3H$) JG001T (VN_2S-$X6^3$) 	**(For 4 heads model)** VHS Alignment Tape JG001B (VN_1S-$LI6^3$) JG001I (VN_1S-$CO1^3$) JG001P (VN_1S-$LI6^3H$) JG001S (VN_1S-$X6^3$) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 
JG153 X Value Adjustment Screwdriver 	JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 
JG154 Cable 	Tentelometer 		

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

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Unplug the connector CP757 and CP353, then remove the TV/VCR Block from the set.
2. Remove the Operation PCB from the set, then connect it with the Syscon PCB.
   If necessary, connect CP353. (Front A/V Jack Input Terminal)
3. Short circuit between **TP1001** and **Ground** with the cable JG154.
   (Refer to MAJOR COMPONENTS LOCATION GUIDE)
4. The EOT, BOT and Reel Sensor do not work at this moment.
   At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)
- When you activate the deck without the Cassette Holder, short circuit between **TP1001** and **GND**. **(Refer to ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE)** In this condition the BOT/EOT/Reel Sensor will not function.

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024A)** on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A**.
3. Confirm that "A" of the reel disk is lower than "B" of the reel disk height adjustment jig **(JG024A)** , and is higher than "C". If it is not enough height, adjust to 10(+0.2, -0) mm with the height adjustment washer.
4. Adjust the other reel in the same way.

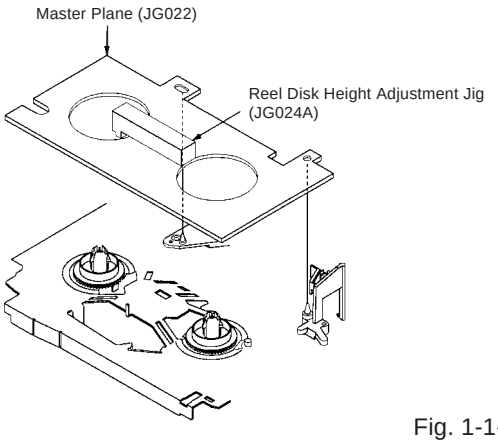


Fig. 1-1-A

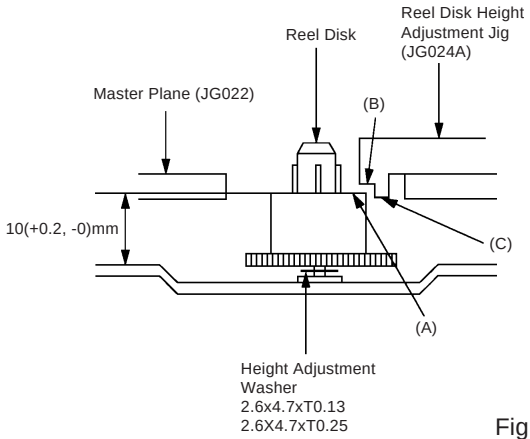


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

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

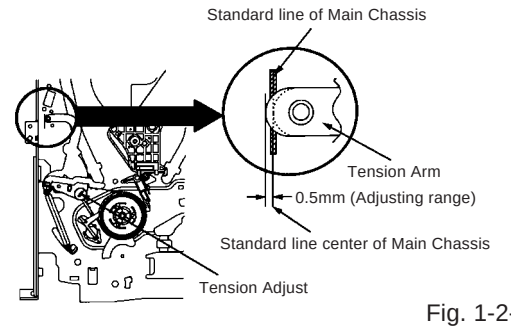


Fig. 1-2-A

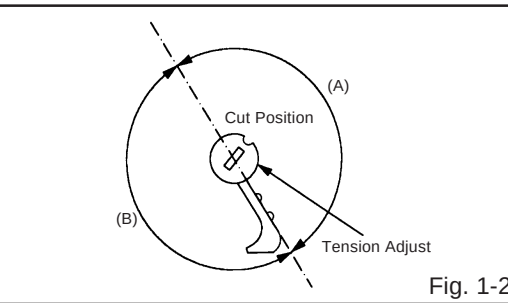


Fig. 1-2-B

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

1. Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3**. Confirm that the meter indicates 20 ± 2gf in the beginning of playback.

• USING A CASSETTE TYPE TORQUE TAPE **(JG100A)**

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 60~110gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

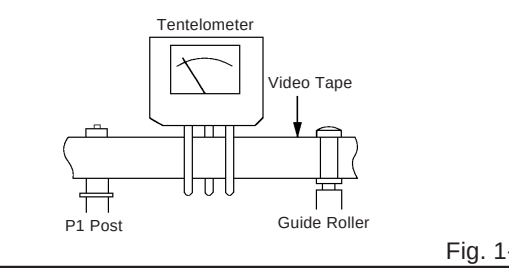


Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Operate within 4~5 seconds after the reel disk begins to turn.
2. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Rewind mode. **(Refer to Fig.1-4)**
3. Then, confirm that it indicates 120~180gf•cm.

NOTE

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

1-5: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Set to the STOP mode.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Turn the Torque Gauge **(JG002F)** clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

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

1. Set to the STOP mode.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge **(JG002E)** and Adapter **(JG002B)** on the T reel. Turn the Torque Gauge **(JG002E)** counterclockwise.
4. Then, confirm that it indicates 45~70gf•cm.

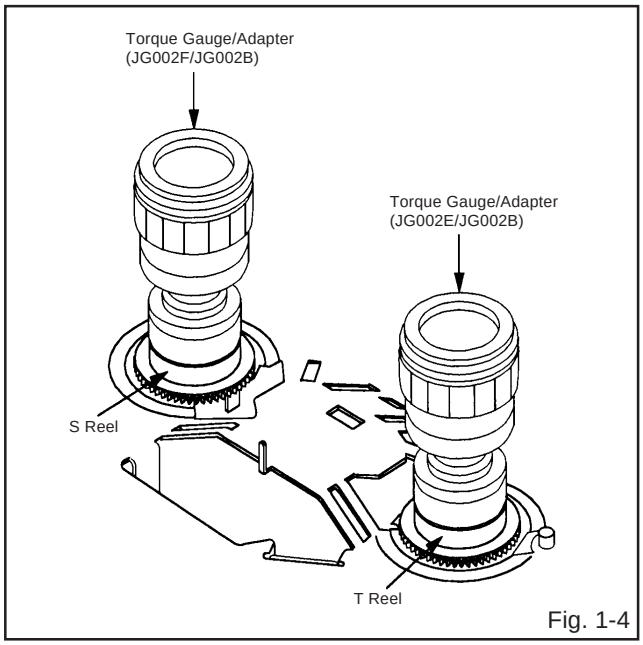


Fig. 1-4

NOTE

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

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	T Brake Spring/Tension Spring

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

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

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape **(JG001 or JG001B)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP4001 (Envelope)** and CH-2 to **TP1002 (SW Pulse)**.
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Adjusting Driver **(JG005)** slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

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

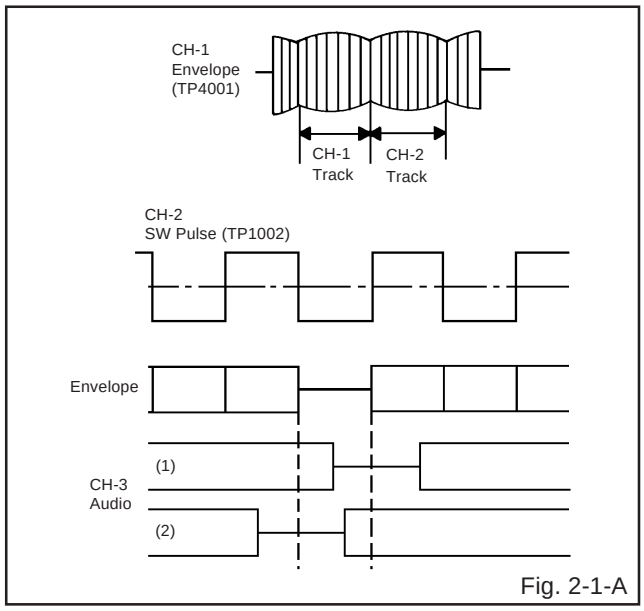


Fig. 2-1-A

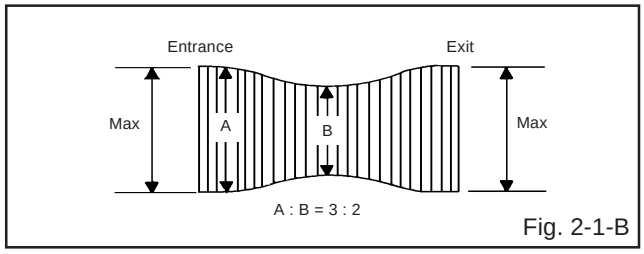


Fig. 2-1-B

MECHANICAL ADJUSTMENTS

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

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

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

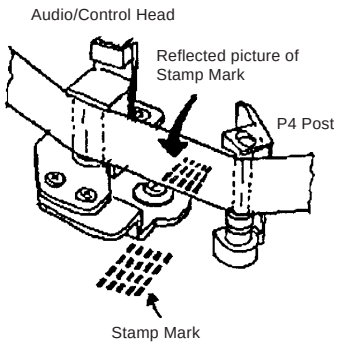


Fig. 2-2-A

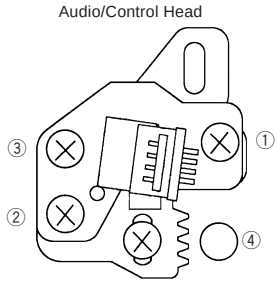


Fig. 2-2-B

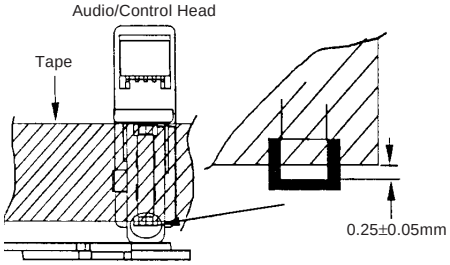


Fig. 2-2-C

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

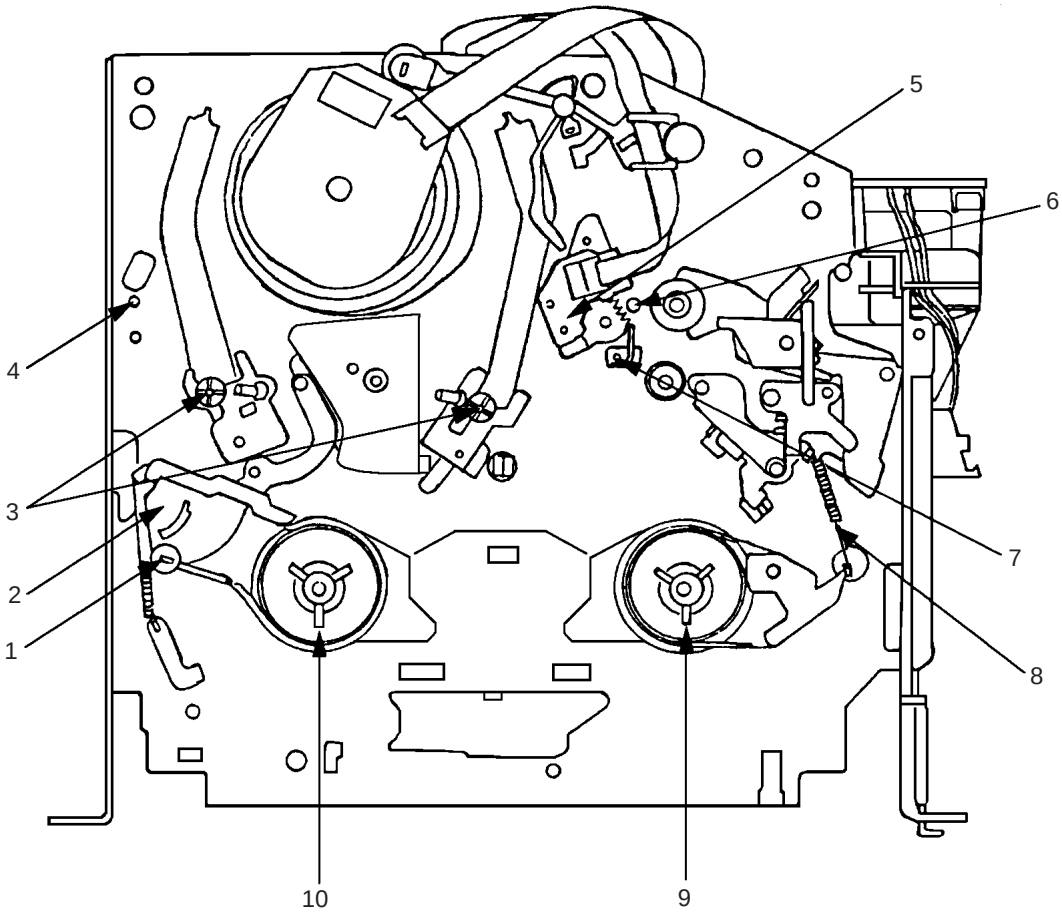
1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP1002** and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape **(JG001S or JG001T)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the ④ of **Fig. 2-2-B**. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-1-A**.

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

1. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP1002** and CH-3 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape **(JG001P or JG001Q)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
6. Confirm that the difference between these counted steps number in the above items are within 2 steps. If the difference are more than 3 steps, do Tape Running Adjustment again. **(Refer to item 2-3)**

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



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

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

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

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
  Inferior silicon grease can damage IC's and transistors.
- When replacing IC's and transistors, use only specified silicon grease (YG6260M).
  Remove all old silicon before applying new silicon.

On-Screen Display Adjustment

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

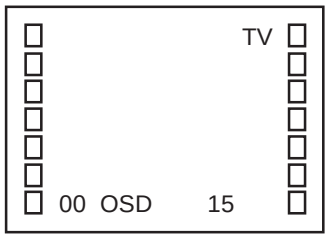


Fig. 1-1

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

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	13	BRIGHTNESS
01	CUT OFF	14	CONTRAST
02	RF AGC	15	COLOR
03	VIF VCO	16	TINT
04	H VCO	17	SHARPNESS
05	H PHASE	18	FM LEVEL
06	V SIZE	19	LEVEL
07	V SHIFT	20	SEPARATION 1
08	R DRIVE	21	SEPARATION 2
09	B DRIVE	22	TEST MONO
10	R BIAS	23	TEST STEREO
11	G BIAS	24	X-RAY TEST
12	B BIAS		

Fig. 1-2

2. BASIC ADJUSTMENTS (VCR SECTION)

2-1: PG SHIFTER

1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **pin 4 of CP1003**.
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.

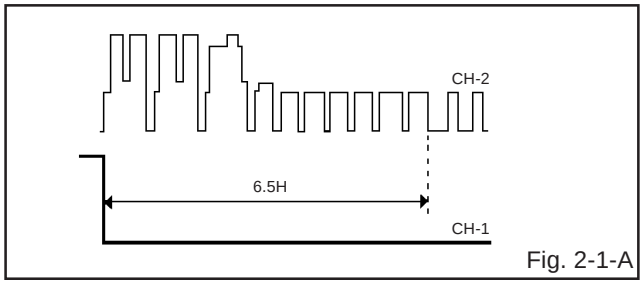


Fig. 2-1-A

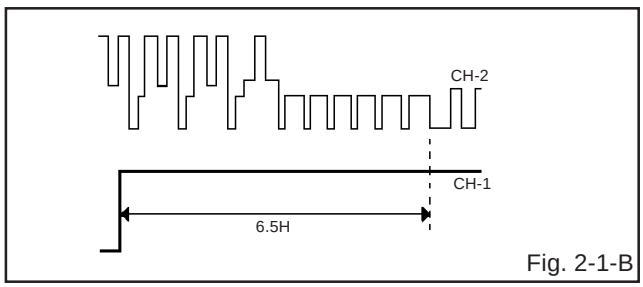


Fig. 2-1-B

2-2: VCO FREERUN

1. Place the set with Aging Test for more than 10 minutes.
2. Receive the VHF HIGH.
3. Disconnect the Antenna while receiving the VHF HIGH and set to the Noise screen.
4. Once turn off the Power and turn on the Power again.
5. Approxi. 3 seconds later, input the Antenna again.
6. Connect the digital voltmeter between the **pin 5 of CP351** and the **pin 1 (GND) of CP351**.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "VIF VCO".
8. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.5 ± 0.5V.

ELECTRICAL ADJUSTMENTS

2-3: RF AGC

1. Receive a 70dB monoscope pattern.
2. Connect the digital voltmeter between the **pin 5 of CP351** and the **pin 1 (GND) of CP351**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "RF AGC".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.4 ± 0.05V.

(TV SECTION)

2-4: CONSTANT VOLTAGE

1. Connect the digital voltmeter to the **FUSE HOLDER of FH503**.
2. Set condition is AV MODE without signal.
3. Adjust the **VR502** until the digital voltmeter is 135 ± 0.5V.

2-5: CUT OFF

1. Adjust the unit to the following settings.
   R BIAS=64, G BIAS=64, B BIAS=64,
   BRIGHTNESS=128, CONTRAST=64
2. Place the set with Aging Test for more than 15 minutes.
3. Set condition is AV MODE without signal.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

2-6: FOCUS

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

2-7: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the color bar pattern.
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 **(10)** on the remote control to select "R.BIAS".
5. Using the VOL. UP/DOWN button on the remote control, adjust the R.BIAS.
6. Press the CH. UP/DOWN button on the remote control to select the "R.DRIVE", "B.DRIVE", "G.BIAS" or "B.BIAS".
7. Using the VOL. UP/DOWN button on the remote control, adjust the R.DRIVE, B.DRIVE, G.BIAS or B.BIAS.
8. Perform the above adjustments 6 and 7 until the white color is looked like a white.

2-8: HORIZONTAL PHASE

1. Receive the center cross signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(05)** on the remote control to select "H PHASE".
3. Press the VOL. UP/DOWN button on the remote control until the vertical line becomes fit to the notch of the shadow mask.

2-9: VERTICAL SHIFT

1. Receive the center cross signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "V SHIFT".
3. Press the VOL. UP/DOWN button on the remote control until the horizontal line becomes fit to the notch of the shadow mask.

2-10: VERTICAL SIZE

1. Receive the cross hatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "V SIZE".
3. Press the VOL. UP/DOWN button on the remote control until the rectangle on the center of the screen becomes square.
4. Receive a broadcast and check if the picture is normal.

2-11: SUB BRIGHTNESS

1. Receive the black pattern*. (RF Input)
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "BRIGHTNESS".
3. Press the VOL. UP/DOWN button on the remote control until the screen begin to shine.
4. Receive the black pattern*. (Audio Video Input)
5. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~3.

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

2-12: SUB CONTRAST

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(14)** on the remote control to select "CONTRAST".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "100"
3. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 1~2.

ELECTRICAL ADJUSTMENTS

2-13: SUB TINT

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP803**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "TINT".
4. Press the VOL. UP/DOWN button on the remote control until the waveform becomes as shown in **Fig. 2-2**.
5. Receive the color bar pattern. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.

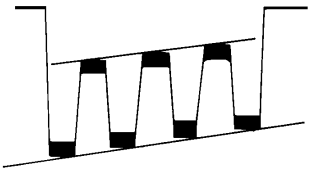


Fig. 2-2

2-14: SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP801**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(15)** on the remote control to select "COLOR".
4. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 110% of the white level. **(Refer to Fig. 2-3)**
5. Receive the color bar pattern. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.

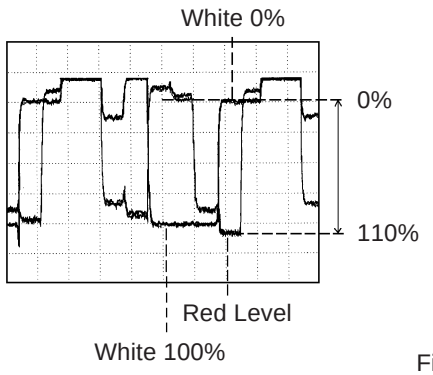


Fig. 2-3

2-15: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-4)**

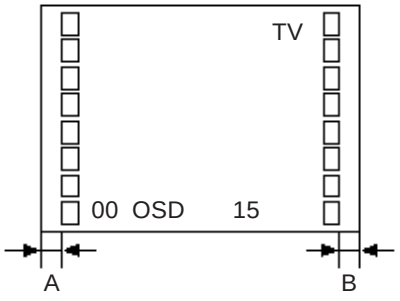
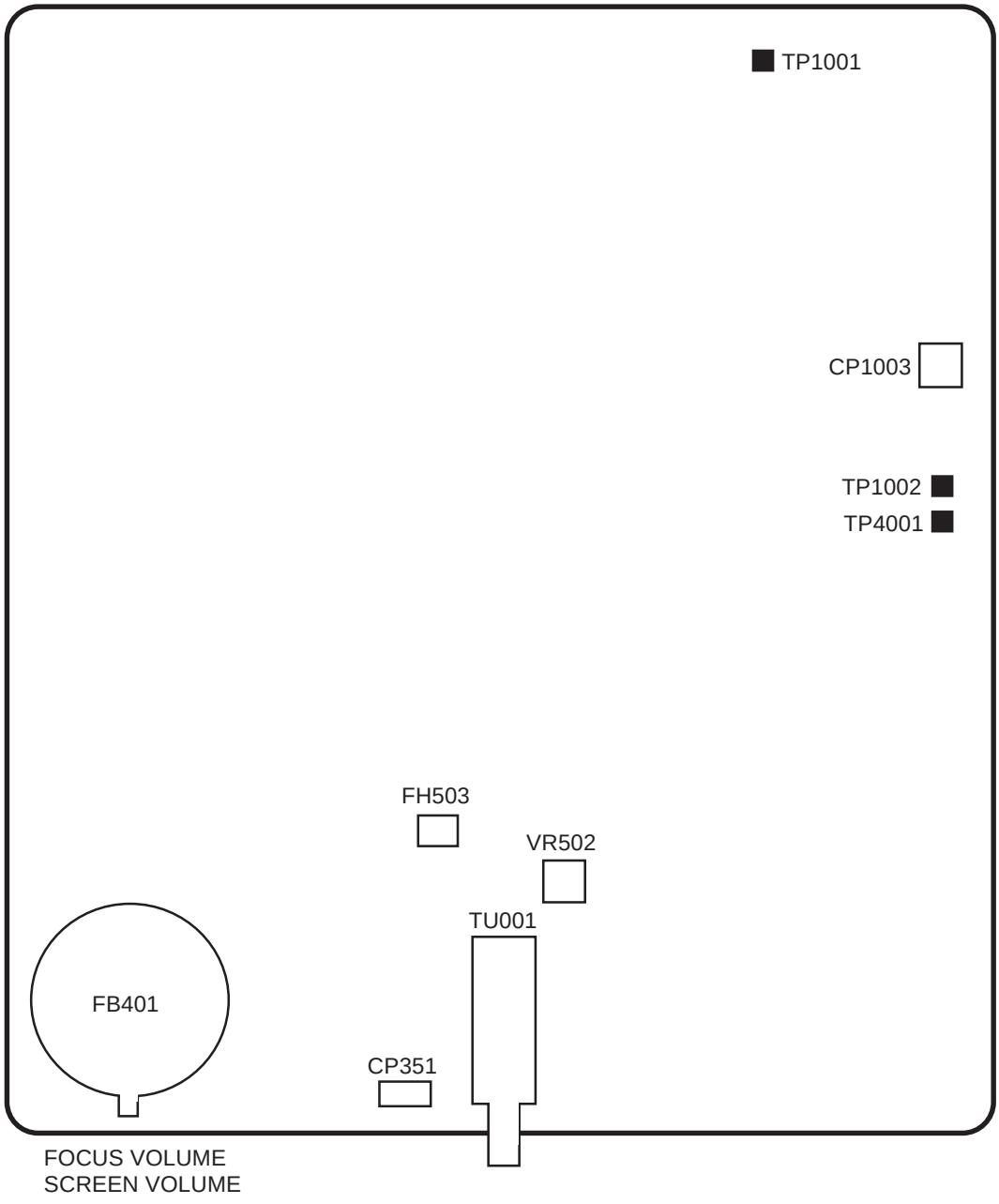


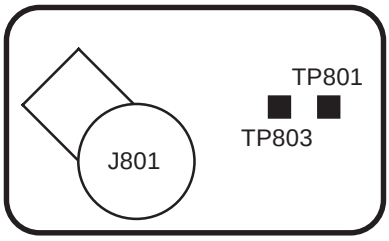
Fig. 2-4

ELECTRICAL ADJUSTMENTS

3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE



SYSCON



CRT

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 funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

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.

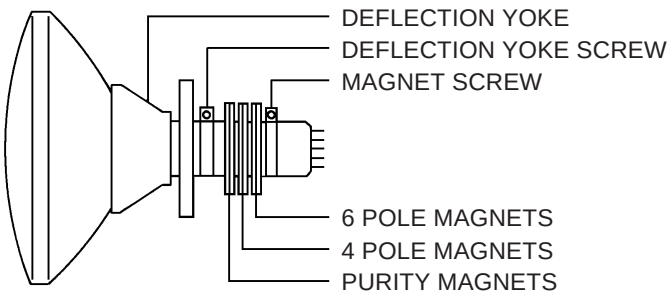


Fig. 4-1

4-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 4-2.

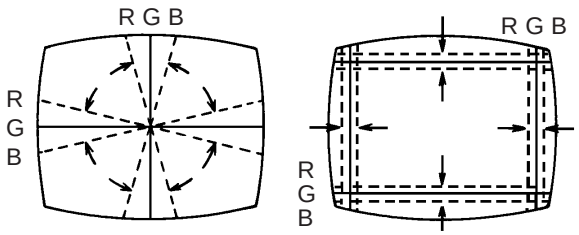
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

4-4: DYNAMIC CONVERGENCE

NOTE

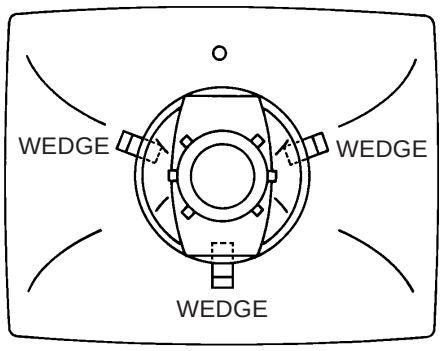
Adjust after performing adjustments in section 4-3.

1. Adjust the differences around the screen by moving the 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