SERVICE MANUAL

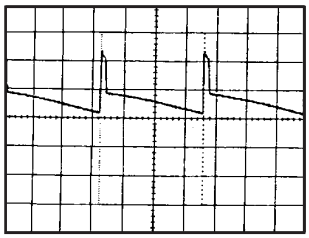
INFORMATION FOR USING THE DECK PARTS (OVD-5)

Parts on the deck of our product are very similar as shown below.
Make sure to use the parts listed by Parts No. in the service manual for the repair, because the deck or your important tape will be damaged.

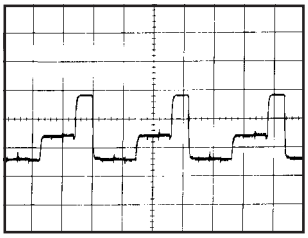
S/M CODE NO.: OVD5ASM DATE OF ISSUE 12/1997

WAVEFROMS

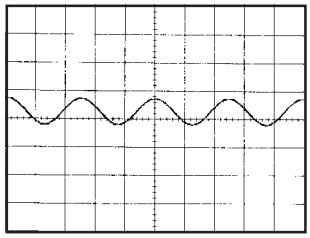
DEFLECTION



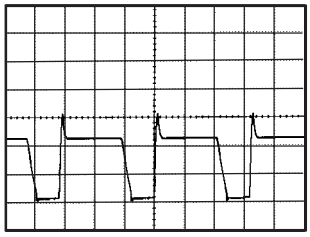
① 20V 5ms/div



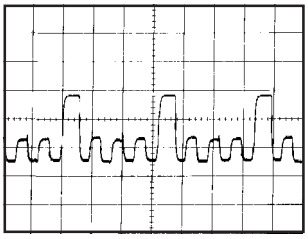
⑥ 50V 20μs/div



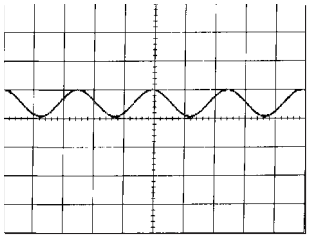
⑪ 1V 1ms/div



② 5V 20μs/div

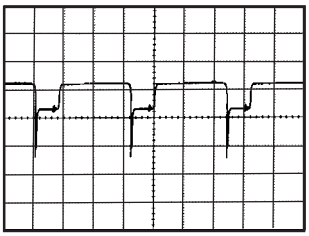


⑦ 50V 20μs/div

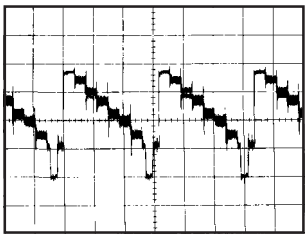


⑫ 1V 1ms/div

IF/CHROMA

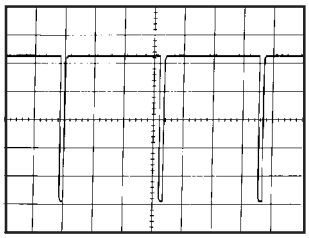


③ 5V 20μs/div

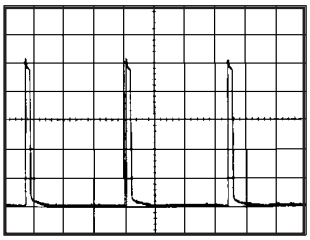


⑧ 200mV 20μs/div

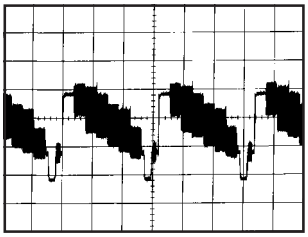
TIMER MICON



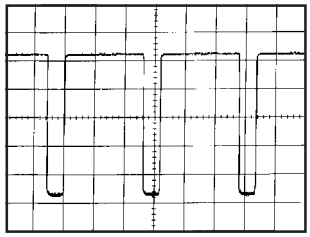
⑬ 1V 5ms/div



④ 5V 5ms/div

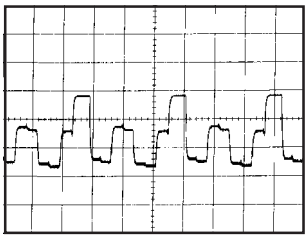


⑨ 500mV 20μs/div

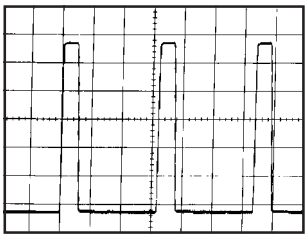


⑭ 1V 20μs/div

CRT

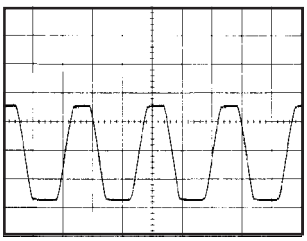


⑤ 50V 20μs/div



⑩ 2V 20μs/div

SOUND AMP

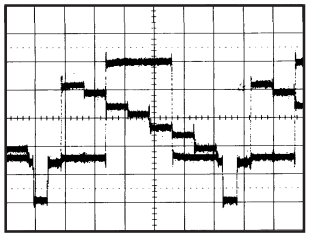


⑮ 5V 1ms/div

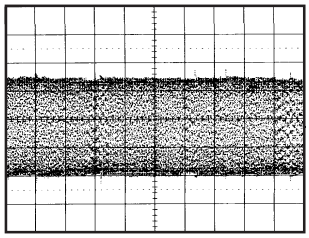
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFROMS

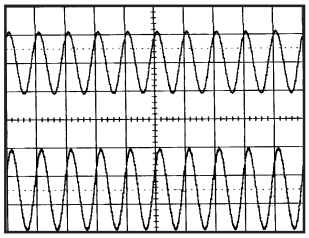
Y/C/AUDIO



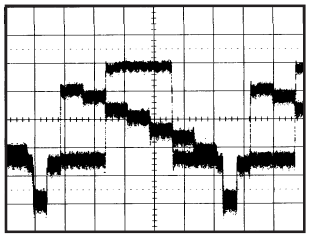
⑯ REC
0.5V P-P



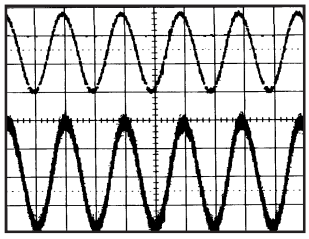
㉑ REC
0.34V P-P



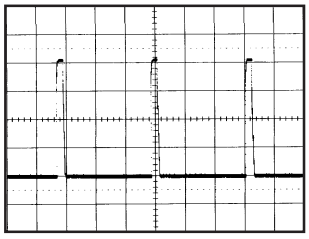
㉖ REC/PB
0.5V 1ms/div



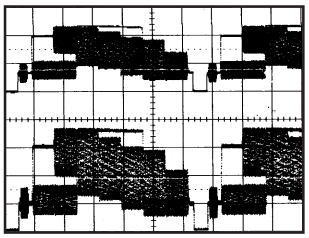
⑰ PB
0.51V P-P



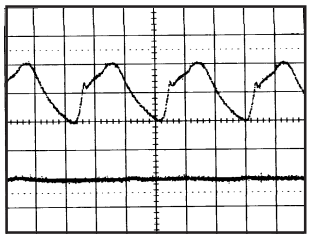
㉒ PB
20mV 5ms/div



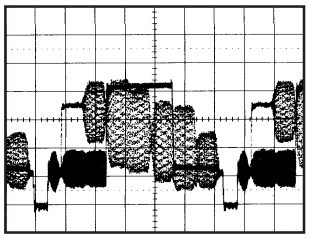
㉗ REC/PB
0.4V P-P



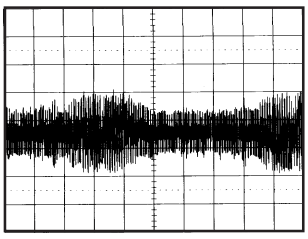
⑱ REC
0.5V P-P



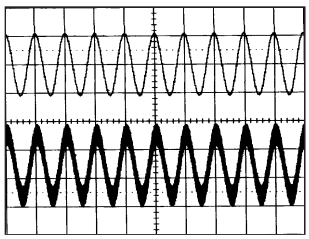
㉓ REC
500mV 5μs/div



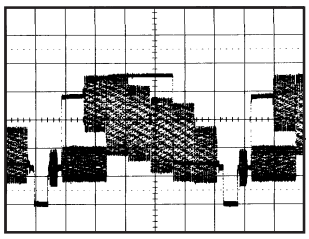
㉘ PB
2.06V P-P



⑲ PB
100mV 20μs/div

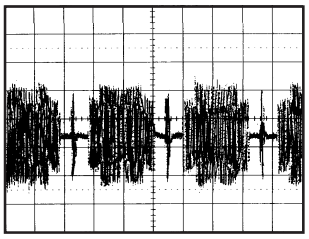


㉔ REC
1V 1ms/div

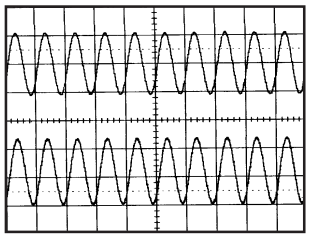


㉙ REC/PB
0.96V P-P

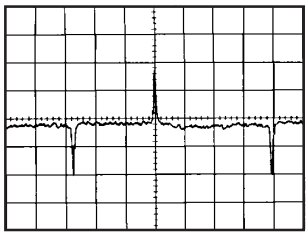
SYSCON/SERVO



⑳ REC
0.3V P-P



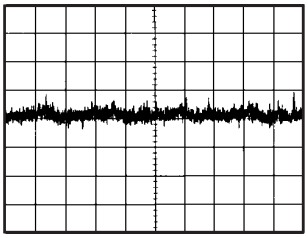
㉕ REC
1V 1ms/div



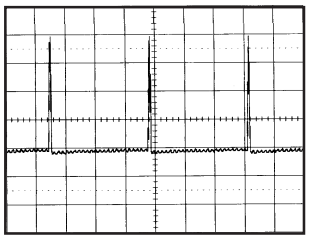
㉚ REC/PB
0.5V 5ms/div

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

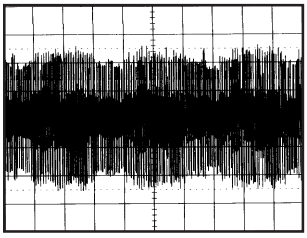
WAVEFROMS



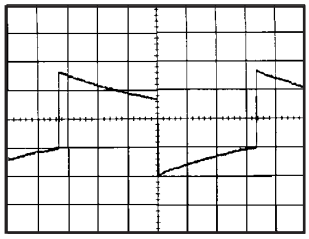
㉛ REC/PB
20mV 5ms/div



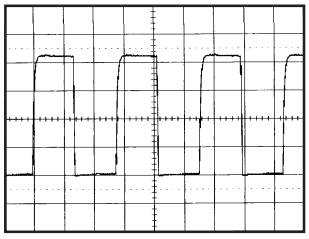
㉟ REC/PB
1V 10ms/div



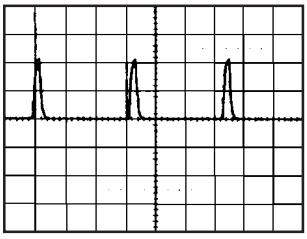
㊵ PB
100mV 20μs/div



㉜ REC/PB
2V 5ms/div

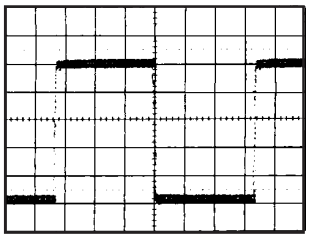


㊱ REC/PB
1V 0.5ms/div

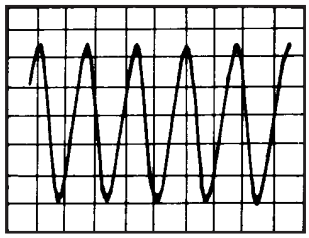


㊶ REC
1V 20μs/div

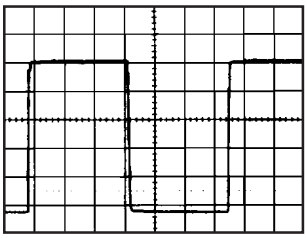
IN/OUT



㉜ REC/PB
0.5V 5ms/div

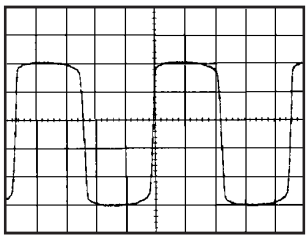


㊲ REC/PB
1.2V P-P

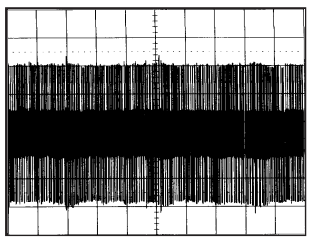


㊷ REC
500mV 5ms/div

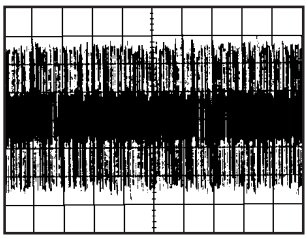
HEAD AMP



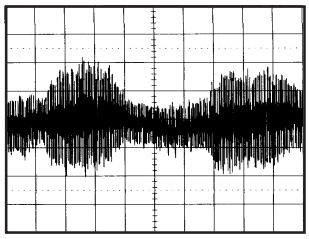
㉝ REC/PB
0.5V 0.2ms/div



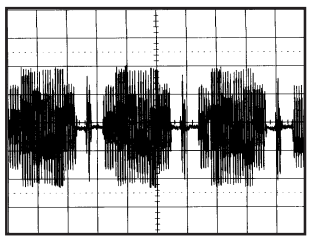
㊳ REC
50mV 20μs/div



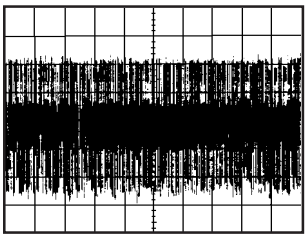
㊸ REC
50mV 50ms/div



㉞ REC/PB
20mV 0.5ms/div



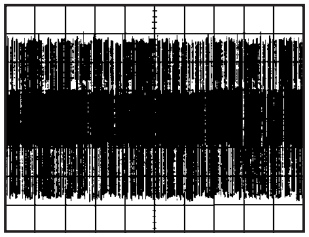
㊴ REC
100mV 20μs/div



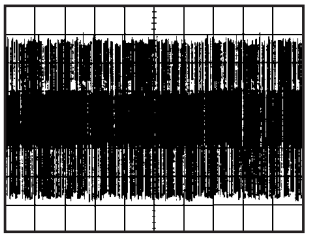
㊹ REC
50mV 0.1s/div

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

WAVEFROMS



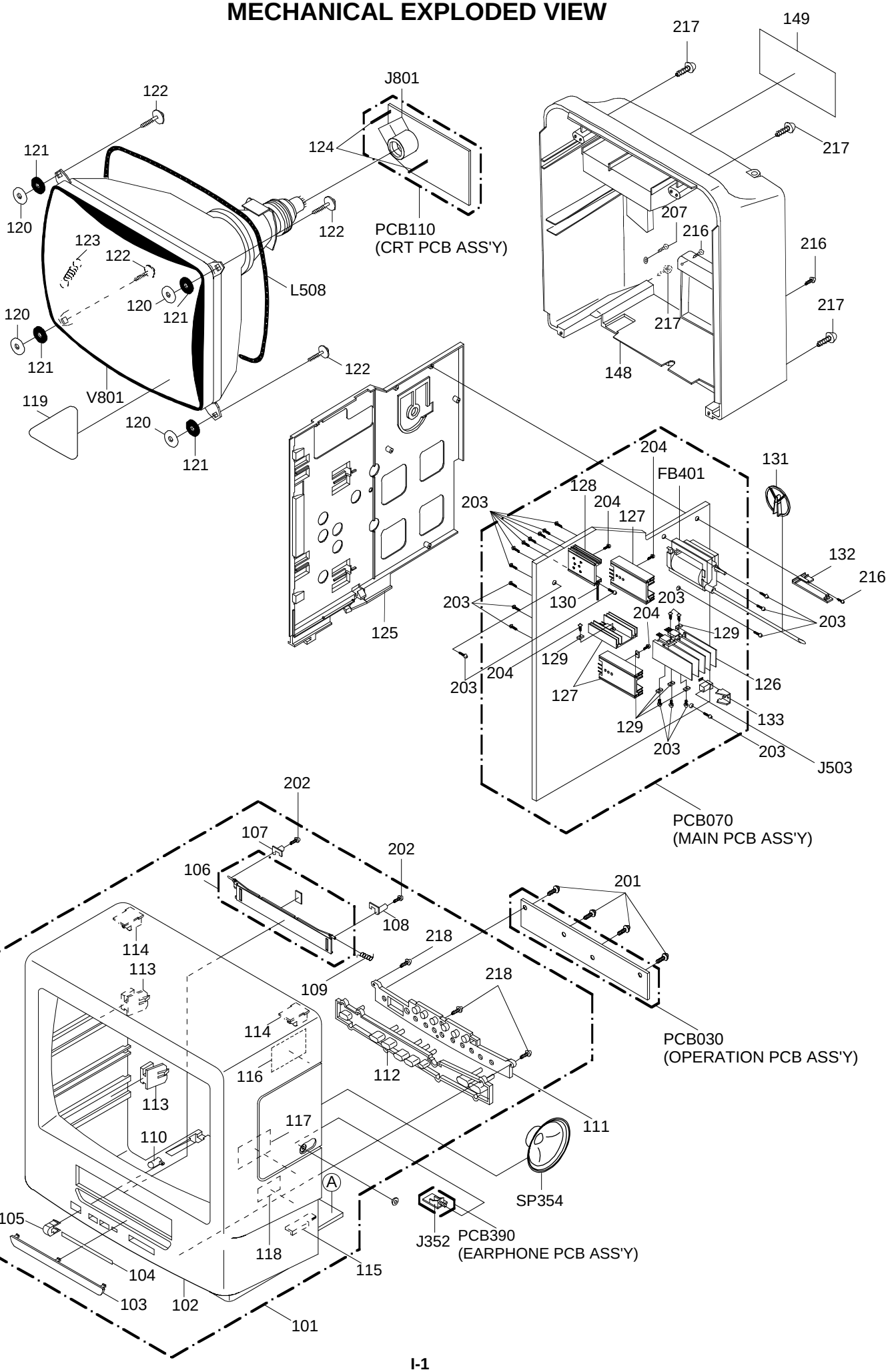
㊺ REC
500mV 50ms/div



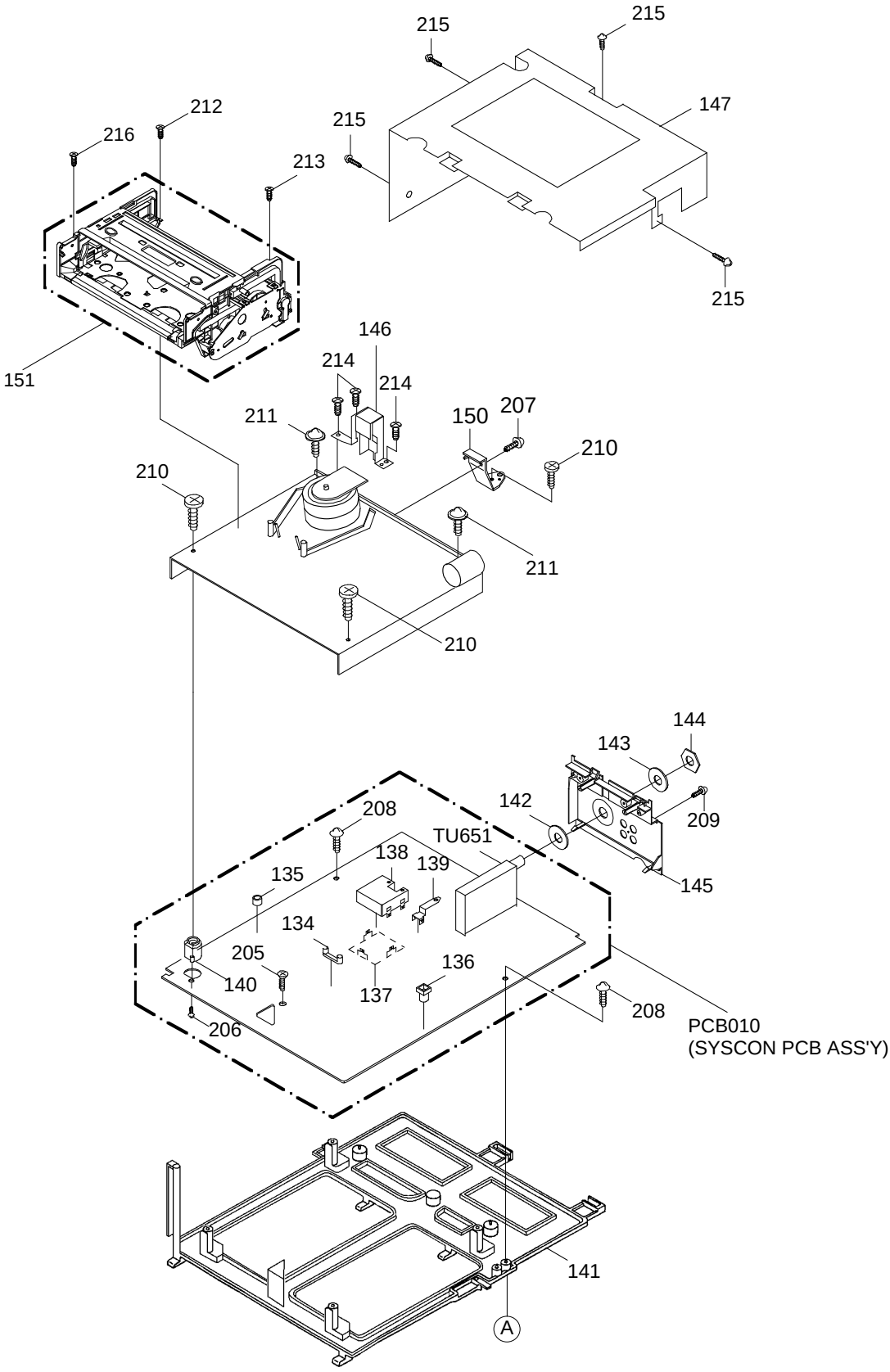
㊻ REC
500mV 50ms/div

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

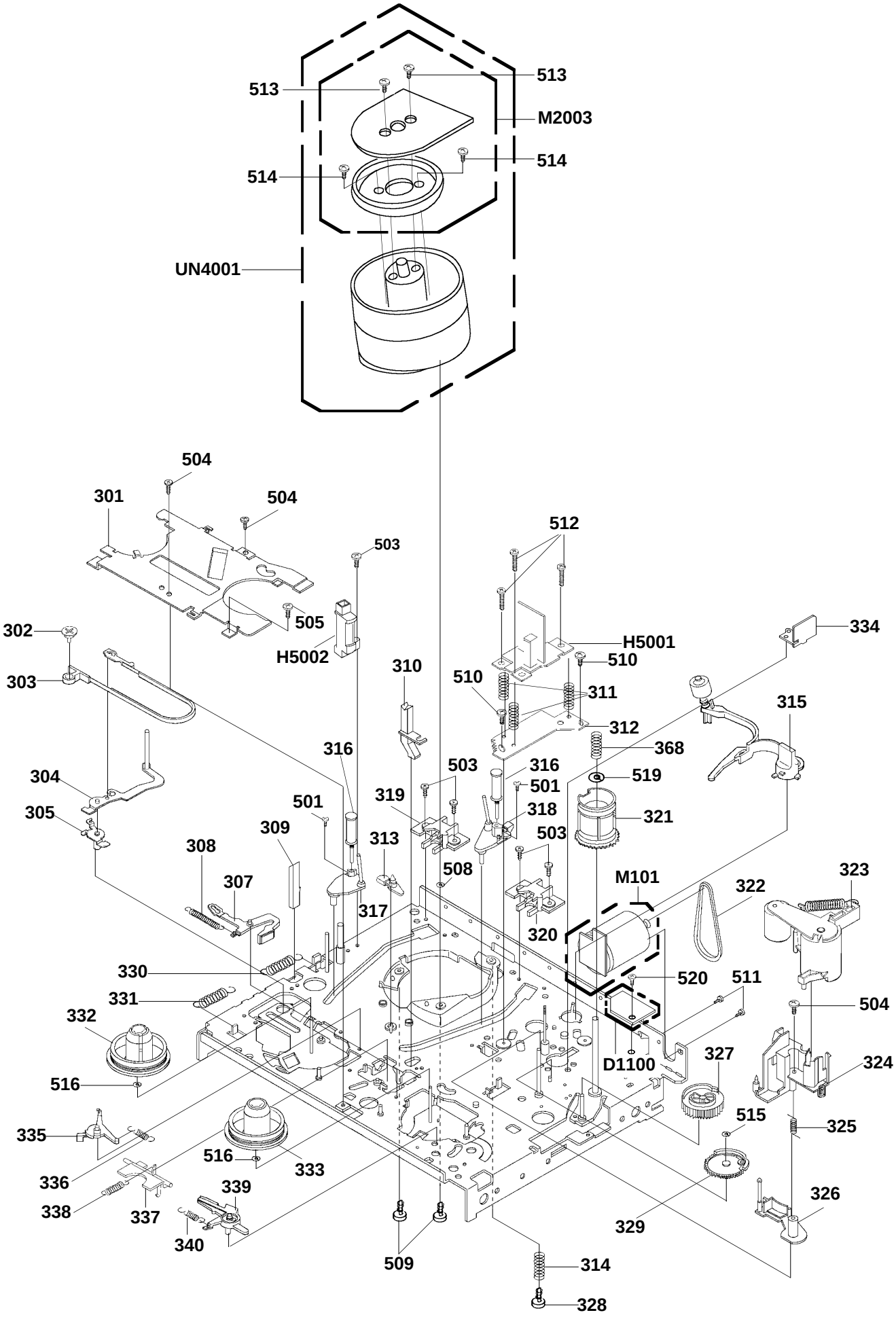
MECHANICAL EXPLODED VIEW



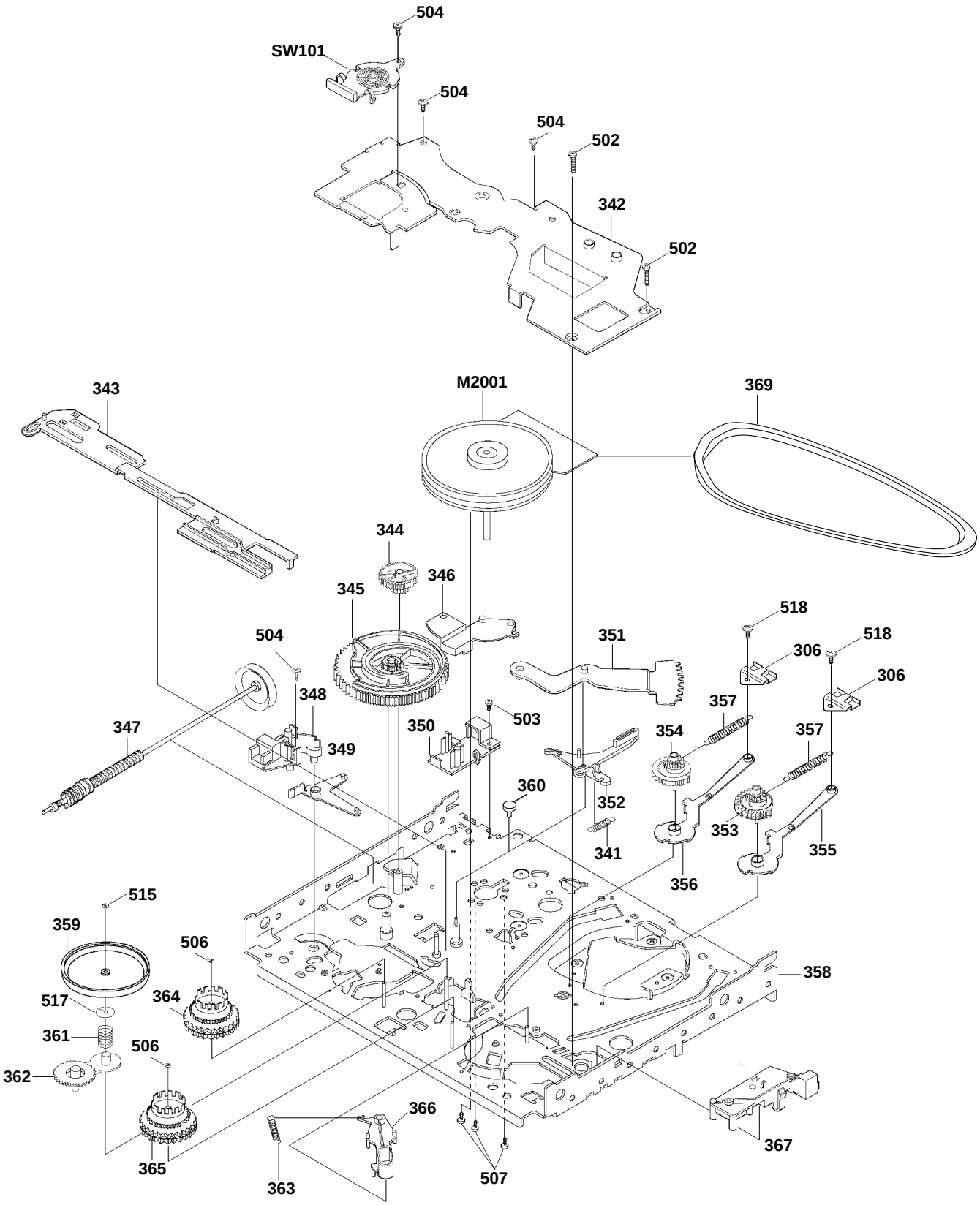
MECHANICAL EXPLODED VIEW



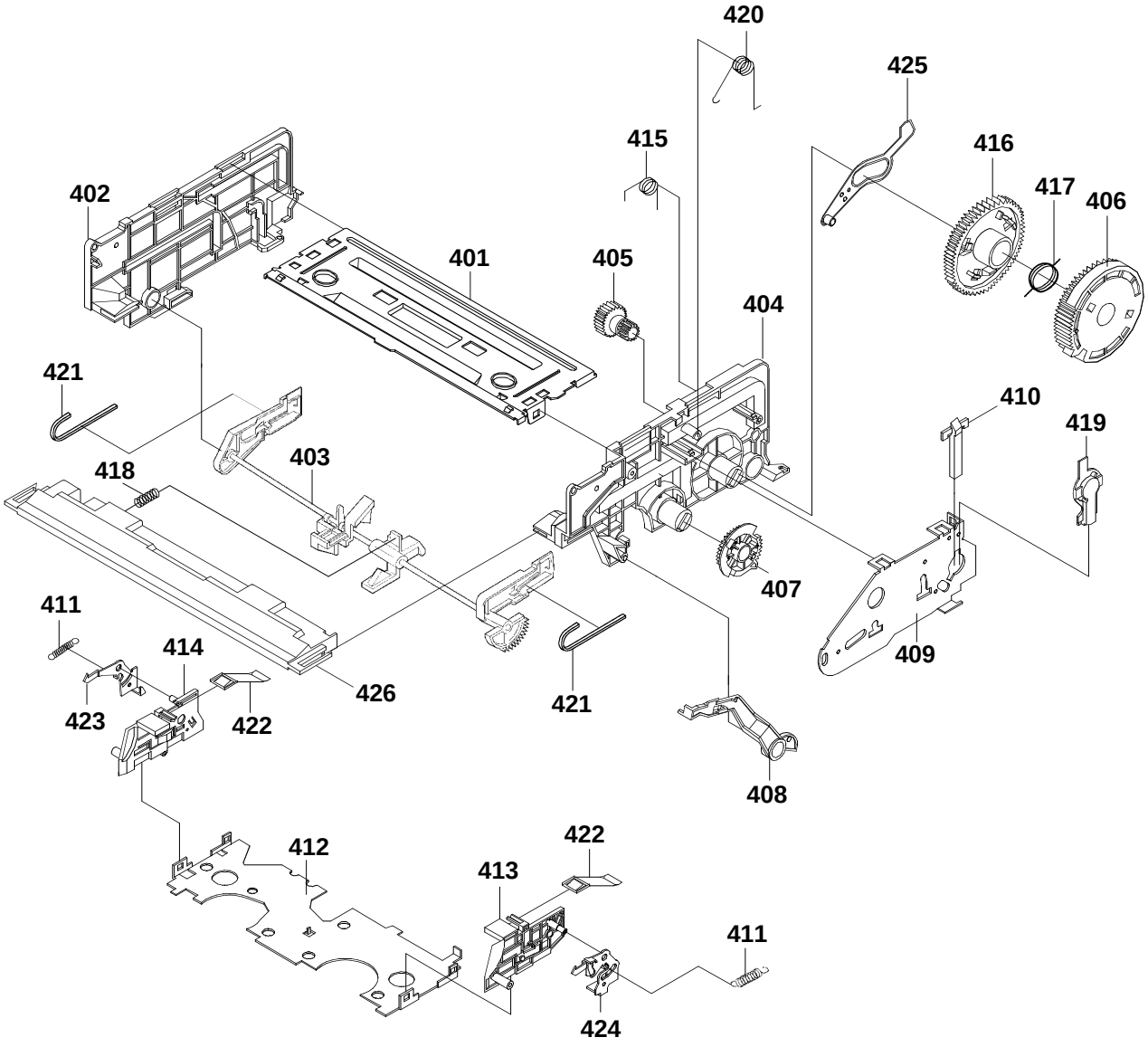
CHASSIS EXPLODED VIEW (TOP VIEW)



CHASSIS EXPLODED VIEW (BOTTOM VIEW)



FRONT LOADING UNIT 15 EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			REF. NO.	PART NO.	DESCRIPTION		
101	A51286P720	CABINET,FRONT ASS'Y			140	85OP000441	SPACER,P.C.B.		
102	701WPJA537	CABINET,FRONT			141	761WPA0091	HOLDER,DECK		
103	711WPDA199	PLATE,FRONT			142	800WR00024	SHEET,CRT SUPPORT		
104	7230005780	SHEET,LED			143	82A97A4077	WASHER		9.7x14xT0.7
105	711WPA0063	PLATE,REMOCON			144	8300495207	NUT		
106	712WPJA357	FLAP			145	771WPA0211	PLATE,JACK		
	800WF00039	CUSHION			146	752WSA0113	SHIELD,CASE		
107	756WPA0042	HOLDER,FLAP (L)			147	752WSA0123	PLATE,DECK SHIELD		
108	756WPA0044	HOLDER,FLAP (R)			148	702WPA0464	CABINET,BACK		
109	743WKA0032	SPRING,FLAP			149	722A08A023	SHEET,RATING		
110	713WPA0049	GUIDE,REMOCON			150	761WSA0030	ANGLE,DECK BACK		
111	735WPA0335	BUTTON,BASE			151	85OA900207	FRONT LOADING UNIT 15		
112	735WPB0008	BUTTON,FRAME							
113	761WPA0027	HOLDER,PCB (2)			201	8110630A04	SCREW,TAP TITE (P)	BRAZIER	3x10
114	---	CABINET HOLDER			202	8117B26804	SCREW,TAPPING (B0)	WH6	2.6x8
115	709WPA0019	HOLDER,CABI SEIZE			203	8109630802	SCREW,TAP TITE (B)	BRAZIER	3x8
116	726000A011	SHEET,CRT SERVICEMAN			204	810A130A04	SCREW/WASHER (A)		M3x10
117	7220001059	SHEET,CSA WARNING			205	8117340A24	SCREW,TAPPING (B0)	FLAT	4x12
118	7220001107	SHEET,HWC			206	8117330A04	SCREW,TAPPING (B0)	FLAT	3x10
119	7230006603	FILM,DECORATION			207	8107230602	SCREW,TAP TITE (S)	BIND	3x6
					208	8117540B04	SCREW,TAPPING (B0)	TRUSS	4x20
120	769WSA0002	WASHER		9.1x22xT1	209	8110230A02	SCREW,TAP TITE (P)	BIND	3x10
121	800WR0A003	SHEET,CRT SUPPORT							
122	8111J50D04	SCREW,TAPPING (A)	GW22	5x40	210	8117140A24	SCREW,TAPPING (B0)	PAN	4x12
123	741WUA0001	SPRING,EARTH			211	8117D30A04	SCREW,TAPPING (B0)	WH8 BRAZIER	3x10
124	---	COATING CLIP			212	8107226604	SCREW,TAP TITE (S)	BIND	2.6x6
125	761WPA0148	HOLDER,TV PCB			213	8107126805	SCREW,TAP TITE (S)	PAN	2.6x8
126	---	HEAT SINK			214	8107630504	SCREW,TAP TITE (S)	BRAZIER	3x5
127	---	HEAT SINK			215	8107630604	SCREW,TAP TITE (S)	BRAZIER	3x6
128	---	HEAT SINK			216	8110630A24	SCREW,TAP TITE (P)	BRAZIER	3x12
129	---	METAL SPACER			217	8117540A64	SCREW,TAPPING (B0)	TRUSS	4x16
					218	8110630804	SCREW,TAP TITE (P)	BRAZIER	3x8
130	8995034000	CORD CLIP UL CO.							
131	759WPA0005	HOLDER,ANODE WIRE			---	JA5K0100	POLY BAG		
132	761WPA0118	HOLDER,CRT WIRE			---	J5128601	INSTRUCTION BOOK		
133	762WSA0031	BRACKET,DC JACK			---	791WHAA016	LAMIFILM BAG		
134	85OP700031	HOLDER,LED			---	792WHA0134	PACKAGE,TOP		
135	754WPAA003	COVER,LED (L)			---	792WHA0135	PACKAGE,BOTTOM		
136	754WPAA004	COVER,LED (R)			---	793WCDA479	GIFT BOX		
137	753WSA0057	SHIELD,AUDIO							
138	752WSA0112	SHIELD,HEAD AMP							
139	753WSA0058	PLATE,EARTH SYSCON							

CHASSIS/FRONT LOADING UNIT 15 REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	
# 301	85OP600531	BRACKET,BRAKE(VP)	401	85OP900700	BRACKET,TOP(2)	
302	85OP400358	ADJUST,TENSION	402	85OP900675	BRACKET,SIDE L	
303	85OA400122	TENSION BAND ASS'Y	403	85OA900210	LINK ASS'Y 3	
304	85OA400124	TENSION ARM ASS'Y	404	85OP900615	BRACKET,SIDE R	
305	85OA400123	TENSION LEVER 2 ASS'Y	405	85OP900601	GEAR,JOINT	
306	85OP300169	SLIDER,LOADING 2	406	85OP900602	GEAR,CAM	
# 307	85OA600178	MAIN BRAKE T(VP)ASS'Y	407	85OP900609	GEAR,LINK R	
# 308	85OP800308	SPRING,MAIN BRAKE (VP)	408	85OP900672	LEVER,FLAP 2	
309	85OP900564	REFLECTOR,EOT	409	85OP900616	BRACKET,SIDE R2	
310	85OP400434	REFLECTOR,LED 2	410	85OP900621	REFLECTOR,BOT	
311	85OP800315	SPRING,AC HEAD 2	411	85OP800296	SPRING,LOCKER	
312	85OP500060	BASE,AC HEAD	412	85OP900611	CASS,HOLDER	
313	85OP000394	POST,CASS GUIDE L	413	85OP900613	CASS,SIDE R	
314	85OP800245	SPRING,AZIMUTH 2	414	85OP900668	CASS,SIDE L	
# 315	85OA500013	AHC ASS'Y	415	85OP800298	SPRING,BRACKET R	
316	85OA400102	GUIDE ROLLER ASS'Y	416	85OP900608	GEAR,CLUTCH	
317	85OA400179	BASE,S INCLINED 2 ASS'Y	417	85OP800297	SPRING,CLUTCH	
318	85OA400180	BASE,T INCLINED 2 ASS'Y	418	85OP800317	SPRING,LEVER REC(2)	
319	85OP400330	CATCHER,S	419	85OP900620	COVER,SENSOR BOT	
320	85OP400332	CATCHER,T	420	85OP800290	SPRING,EARTH	
# 321	85OP400430	CAM,PINCH ROLLER (PB)	421	85OP800294	SPRING,LINK	
322	85OP600487	BELT,LOADING	422	85OP800299	SPRING,PACK	
# 323	85OA400157	PINCH ROLLER (PB) BLOCK	423	85OP900605	LOCKER,L	
324	85OP900541	CASS,OPENER	424	85OP900606	LOCKER,R	
325	85OP800264	SPRING,P5	425	85OP900610	LEVER,BOT	
# 326	85OA400168	P5 ARM ASS'Y(PB)	426	85OP900677	TAPE,GUIDE PIECE(2)	
327	85OP400342	CAM,GEAR				
328	8146230A14	JOINT SCREW BIND M3x11	501	8110217401	SCREW,TAP TITE(P) BIND	1.7x4.0
# 329	85OP400450	CAM,P5	502	8109226A64	SCREW,TAP TITE(B) BIND	2.6x16
			503	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
330	85OP400356	SPRING,TENSION ARM 2	504	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
# 331	85OP400357	SPRING,TENSION ARM 1	505	8107123604	SCREW,TAP TITE(S) PAN	2.3x6
332	85OP200216	REEL S	506	82P166005N	POLYSLIDER WASHER(CUT)	1.6x6.0xT0.5
333	85OP200217	REEL T	507	8109126804	SCREW,TAP TITE(B)PAN	2.6x8
# 334	85OP400446	CATCHER,P5 (VP)	508	82Q3154B3N	POLYSLIDER WASHER	3.1x5.4xT0.13
335	85OP600465	SUB BRAKE S	509	810A130604	SCREW/WASHER(A)	M3x6
336	85OP800253	SPRING,S-S BRAKE				
337	85OP200247	ARM.JOINT	510	810B126604	SCREW/WASHER(B)	M2.6x6.0
338	85OP800262	SPRING,JOINT ARM	511	8102130304	SCREW,PAN	M3.0x3.0
339	85OA600157	SUB BRAKE T ASS'Y	512	8102126A04	SCREW,PAN	M2.6x10
			513	810A123504	SEMS A	M2.3x5.0
340	85OP800254	SPRING,T-S BRAKE	514	85OPAA0197	SCREW,MOTOR	M3x5
341	85OP800255	SPRING,CAP BRAKE	515	82P266005N	POLYSLIDER WASHER(CUT)	2.6x6.0xT0.5
342	85OP600485	PLATE,BOTTOM	516	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
# 343	85OP600527	ROD, MAIN(VP)	517	82P26A005N	POLYSLIDER WASHER(CUT)	2.6x10xT0.5
344	85OP400341	GEAR,MIDDLE	518	8149117805	SCREW,TAP-TITE(P)	1.7x8 P3
# 345	85OP600529	CAM,MAIN(VP)	519	82Q4070C5N	POLYSLIDER WASHER	4.1x7.0xT0.25
# 346	85OP600530	LEVER,MAIN BRAKE (VP)				
# 347	85OA600179	WORM (VP)ASS'Y	520	8107226404	SCREW,TAP TITE(S) BIND	2.6x4
348	85OP600483	BRACKET,WORM F				
349	85OP600526	LEVER,RATCHET	D1100	DAK0000160	DEW SENSOR(W/AL,PLATE)	HDP-05-24
350	85OP600484	BRACKET,WORM R	H5001	1523D91032	HEAD (AUDIO CONTROL)	HVMXA1031A
351	85OA300058	LOADING LEVER ASS'Y	H5002	1543D02010	HEAD,FULL ERASE	HVFHF0059A
352	85OA600174	CAPSTAN BRAKE ASS'Y (M.J)				
353	85OP300152	GEAR,LOADING S	M101	85OA600180	LOADING MTR.(D)ASS'Y	
354	85OP300153	GEAR,LOADING T	M2001	1594J98005	CAPSTAN DD UNIT	SP39BE
355	85OA300053	LOADING ARM S ASS'Y	M2003	1589V11004	MICRO MOTOR	EP14BA
356	85OA300054	LOADING ARM T ASS'Y				
357	85OP800263	SPRING,LOADING GEAR	# SW101	0520244007	MODE SWITCH	SRZZ0B091K
# 358	85OA000231	MAIN CHASSIS ASS'Y				
359	85OP200213	CENTER,PULLEY	⚠ UN4001	A51904B500	CYLINDER UNIT ASS'Y	A51904B500
360	85OP000443	SPACER,CAPSTAN				
361	85OP800261	SPRING,C-PULLEY				
# 362	85OA200067	ARM IDLER (VP) ASS'Y				
363	85OP800270	SPRING,LEVER TENSION				
# 364	85OA200069	CLUTCH GEAR T (VP) ASS'Y				
# 365	85OA200068	CLUTCH GEAR S (VP) ASS'Y				
366	85OP400360	LEVER,TENSION				
# 367	85OP400359	HOLDER,TENSION				
368	85OP800310	SPRING,CAM PINCH				
369	85OP200215	BELT,CAPSTAN				

Note: Some parts labeled # are not compatible, but they are very similar before servicing, be sure to check the parts in the INFORMATION FOR USING THE DECK PARTS (OVD-5) for the repair. Because if you use wrong parts, the deck or tape will be damaged.

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
RESISTORS			
⚠ R361	R0L2U2010J	RC	1 OHM 1/2W
⚠ R362	R0L2U2010J	RC	1 OHM 1/2W
⚠ R407	R3K181102J	R, METAL	1K OHM 1W
⚠ R408	R3U20B5R6J	R, METAL OXIDE	5.6 OHM 3W
⚠ R409	R3K20B5R6J	R, METAL	5.6 OHM 3W
⚠ R412	R425T4472F	R, METAL	4.7K OHM 1/4W
⚠ R413	R425T4683F	R, METAL	68K OHM 1/4W
⚠ R467	R6148A5R6J	R, FURE	5.6 OHM 2W
⚠ R471	R425T4183F	R, METAL	18K OHM 1/4W
⚠ R472	R425T4123F	R, METAL	12K OHM 1/4W
⚠ R474	R615U2100J	R, FUSE	10 OHM 1/2W
⚠ R476	R6358A4R7J	R, FUSE	4.7 OHM 2W
⚠ R480	R3U28B120J	R, METAL OXIDE	12 OHM 3W
⚠ R481	R3K20B120J	R, METAL	12 OHM 3W
⚠ R494	R3118A4R7J	R, METAL OXIDE	4.7 OHM 2W
⚠ R500	R21202275K	R, SOLID	2.7M OHM 1/2W
⚠ R501	R5Y2CE2R2J	R, CEMENT	2.2 OHM 7W
⚠ R504	R0L2U2154J	RC	150K OHM 1/2W
⚠ R505	R3K28B333J	R, METAL	33K OHM 3W or
	R3U28B333J	R, METAL OXIDE	33K OHM 3W
⚠ R508	R3328D473J	R, METAL OXIDE	47K OHM 5W
⚠ R511	R5Y2CF1R8J	R, CEMENT	1.8 OHM 10W
⚠ R526	R61581100J	R, FUSE	10 OHM 1W
⚠ R544	R0L2U2154J	RC	150K OHM 1/2W
⚠ R558	R635844R7J	R, FUSE	4.7 OHM 1/4W
R561	R3U18A220J	R, METAL OXIDE	22 OHM 2W
⚠ R598	R63584220J	R, FUSE	22 OHM 1/4W
⚠ R688	R3X1818R2J	R, METAL	8.2 OHM 1W
⚠ R802	R3U18A153J	R, METAL	15K OHM 2W
⚠ R805	R3U18A153J	R, METAL	15K OHM 2W
⚠ R810	R3U18A153J	R, METAL	15K OHM 2W
⚠ R1042	R655812R7J	R, FUSE	2.7 OHM 1W
CAPACITORS			
⚠ C354	E02LF3102M	CE	1000 UF 25V
⚠ C403	E53ZF3102M	CE	1000 UF 25V VZ
C404	E53ZF4102M	CE	1000 UF 35V VZ
C406	P1S300222J	CP	0.0022 UF 50V
⚠ C415	E02LF3102M	CE	1000 UF 25V
⚠ C420	E53ZF4102M	CE	1000 UF 35V VZ
⚠ C435	P3N1F5123J	CPP	0.012 UF 630V
⚠ C438	C01BBP7H3K	CC	0.0022 UF 2KV BP
⚠ C439	P3N1F5563J	CPP	0.056 UF 630V
⚠ C449	E53ZT2331M	CE	330 UF 16V VZ
⚠ C470	E51ZT6220M	CE	22 UF 63V
⚠ C471	E53ZT54R7M	CE	4.7 UF 50V VZ
⚠ C472	E53FF56R8K	CE	6.8 UF 50V NP
⚠ C474	E0ELFD470M	CE	47 UF 250V
⚠ C475	E53Z02222M	CE	2200 UF 16V VZ
C502	C13HB07H3K	CC	0.0022 UF 2KV B
C503	C13HB07H3K	CC	0.0022 UF 2KV B
⚠ C506	P2222B224K	CMP	0.22 UF 250V AC
⚠ C507	E51CGC471M	CE	470 UF 200V
⚠ C508	E632T1471D	CE	470 UF 10V
⚠ C515	E02LTB010M	CE	1 UF 160V
⚠ C519	E53YF3222M	CE	2200 UF 25V
⚠ C520	E53YF3472M	CE	4700 UF 25V
⚠ C521	E03F04221M	CE	220 UF 35V
⚠ C522	E142T36R8M	CE	6.8 UF 25V
⚠ C528	E53ZF2102M	CE	1000 UF 16V VZ
⚠ C531	C034E0J13M	CC	0.001 UF 125V MX
C532	P21503685K	CMP	6.8 UF 250V
⚠ C533	C034F0JL3M	CC	0.0033 UF 125V MX
⚠ C542	E02LT2470M	CE	47 UF 16V
C547	C01BBP7W2K	CC	820 PF 2KV BP
C550	P21503475K	CMP	4.7 UF 250V
C551	P3N1F5103J	CPP	0.01 UF 630V
C642	E02LT2102M	CE	1000 UF 16V
⚠ C1011	E50HU2101M	CE	100 UF 16 V
DIODES			
D102	D1VT001330	DIODE, SILICON	1SS133T-77
D111	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D112	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D116	D1VT001330	DIODE, SILICON	1SS133T-77
D117	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77
D121	D97U06R81B	DIODE, ZENER	MTZJ6.8B T-77
D352	D1VT001330	DIODE, SILICON	1SS133T-77
D354	D1VT001330	DIODE, SILICON	1SS133T-77

REF. NO.	PART NO.	DESCRIPTION	
DIODES			
D355	D1VT001330	DIODE, SILICON	1SS133T-77
⚠ D404	D28A0KF400	DIODE, SILICON	F10KF40
⚠ D405	D28T10ELS6	DIODE, RECTIFIER	10ELS6TA1B2
D406	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
⚠ D407	D94TA12B12	DIODE, ZENER	HZ12B2L TD
⚠ D409	D28T10ELS6	DIODE, RECTIFIER	10ELS6TA1B2
⚠ D410	D28T10ELS6	DIODE, RECTIFIER	10ELS6TA1B2
⚠ D411	D2B000RG20	DIODE, SILICON	RG2
⚠ D413	D28T10ELS6	DIODE, RECTIFIER	10ELS6TA1B2
⚠ D418	D94TA11B13	DIODE, ZENER	HZ11B3L TD
⚠ D501	D2BTRM11C0	DIODE, RECTIFIER	RM11C
⚠ D502	D2BTRM11C0	DIODE, RECTIFIER	RM11C
⚠ D503	D2BTRM11C0	DIODE, RECTIFIER	RM11C
⚠ D504	D2BTRM11C0	DIODE, RECTIFIER	RM11C
D505	D25TGWJ420	DIODE, SCHOTTKY	2GWJ42
D506	D25T1R5NU0	DIODE, SILICON	1R5NU41
D507	D28T10ELS6	DIODE, RECTIFIER	10ELS6TA1B2
⚠ D508	D2BT0EG01Z	DIODE, SILICON	EG01Z-V0
⚠ D509	D28A0KF200	DIODE, SILICON	F10KF20B
⚠ D510	D280F5KF20	DIODE, FAST RECOVERY	F5KF20
D512	D28TQS04N0	DIODE, SCHOTTKY	11EQS04N-TA1B2
⚠ D513	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D514	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D515	D1VT001330	DIODE, SILICON	1SS133T-77
D516	D1VT001330	DIODE, SILICON	1SS133T-77
D517	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D518	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D519	D1VT024720	DIODE, SILICON	1S2472T-77
D520	D28T21DQN4	DIODE, SCHOTTKY	21DQ04N-TA2B1
D522	D97U01601B	DIODE, ZENER	MTZJ16B T-77
⚠ D525	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D526	D1VT024720	DIODE, SILICON	1S2472T-77
D527	D28T11ESN1	DIODE, SILICON	11ES1N-TA1B2
D530	D1VT001330	DIODE, SILICON	1SS133T-77
⚠ D531	D2BT0EG01Z	DIODE, SILICON	EG01Z-V0
⚠ D532	D2BT0EG01Z	DIODE, SILICON	EG01Z-V0
D601	D1VT001330	DIODE, SILICON	1SS133T-77
D602	D97U07R51B	DIODE, ZENER	MTZJ7.5B T-77
D603	D97U01201B	DIODE, ZENER	MTZJ12B T-77
D604	D28T11ESN1	DIODE, SILICON	11ES1N-TA1B2
D606	D97U01201B	DIODE, ZENER	MTZJ12B T-77
D607	D28TELS2N2	DIODE, RECTIFIER	10ELS2N-TA1B2
D608	D28TELS2N2	DIODE, RECTIFIER	10ELS2N-TA1B2
D610	DD3RLFB01L	DIODE, SILICON	LFB-01L
D611	DD3RLFB01L	DIODE, SILICON	LFB-01L
D612	DD3RLFB01L	DIODE, SILICON	LFB-01L
D613	D1VT001330	DIODE, SILICON	1SS133T-77
D705	D28TQS04N0	DIODE, SCHOTTKY	11EQS04N-TA1B2
D753	002132Q040	LED	SLZ-936C-11-S-T1
D754	002132Q040	LED	SLZ-936C-11-S-T1
D756	002132Q040	LED	SLZ-936C-11-S-T1
D757	002132Q040	LED	SLZ-936C-11-S-T1
D801	D1VT001330	DIODE, SILICON	1SS133T-77
D802	D1VT001330	DIODE, SILICON	1SS133T-77
D1001	0001300030	LED	SLR-938C-4-AB
D1004	D28T11E1N1	DIODE, SILICON	11E1N-TA1B2
D1005	D28T11ESN1	DIODE, SILICON	11ES1N-TA1B2
D1007	D1VT001330	DIODE, SILICON	1SS133T-77
D1008	D1VT001330	DIODE, SILICON	1SS133T-77
D1009	D1VT001330	DIODE, SILICON	1SS133T-77
D1014	D28T11ESN1	DIODE, SILICON	11ES1N-TA1B2
D4001	D1VTB721Q0	DIODE, SCHOTTKY	RB721QT-77
D4002	DD3RLFB01L	DIODE, SILICON	LFB-01L
D4006	DD3RLFB01L	DIODE, SILICON	LFB-01L
D4007	D1VT001330	DIODE, SILICON	1SS133T-77
D4206	D97U01301B	DIODE, ZENER	MTZJ13B T-77
ICS			
⚠ IC101	I53D03033B	IC	OEC3033B
IC102	I53D001BN6	IC	M24C01-BN6
IC103	I9UJ0T600H	IC	PST600H
⚠ IC401	I03SD78400	IC	LA7840
⚠ IC501	I0ED046050	IC	TDA4605-3
⚠ IC502	I07S061610	IC	BA6161N
⚠ IC503	I0BK9050S0	IC	SI-8050S LF1101
⚠ IC504	I0GA99RF10	IC	PQ09RF1
⚠ IC505	I07D003580	IC	BA10358 or
	I0QK978120	IC	NJM7812FA

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		ICS	
⚠ IC506	I1KA978120	IC	KIA7812PI
⚠ IC601	I03DE76170	IC	LA76170
IC1001	I51K08068B	IC	OEC8068B
⚠ IC1002	I07S09029A	IC	OEC9029A
IC4001	I03F371022	IC	LA71022M
IC4101	I03FG70001	IC	LA70001M-TRM
		TRANSISTORS	
Q100	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q101	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q102	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q104	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q105	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q106	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q107	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q109	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146(R,S)
Q351	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q352	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
⚠ Q354	TC5T018154	TRANSISTOR, SILICON	2SC1815Y(TPE2)
⚠ Q355	TDWT00400E	TRANSISTOR, SILICON	2SD400E
⚠ Q356	TBWT00544E	TRANSISTOR, SILICON	2SB544E
Q357	TB3T008920	TRANSISTOR, SILICON	2SB892(S,T)-AE
Q358	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146
⚠ Q401	TD30018250	TRANSISTOR, SILICON	2SD1825Z
⚠ Q402	TC304424M0	TRANSISTOR, SILICON	2SC4424(M,N)
⚠ Q500	T25FK26620	TRANSISTOR, FIELD EFFECT	2SK2662
Q501	TPYTB03001	COMPOUND TRANSISTOR	DTA114ESTP
⚠ Q502	TF6FR2AM80	THYRISTOR	CR2AM-8-F8
⚠ Q503	TB30008270	TRANSISTOR, SILICON	2SB827R,S
Q504	TDWT011110	TRANSISTOR, SILICON	2SD1111-AA
Q505	TCYT1740S0	TRANSISTOR, SILICON	2SC1740SP(R,S) TP
Q506	TCYT1740S0	TRANSISTOR, SILICON	2SC1740SP(R,S) TP
Q507	TAYT0933S0	TRANSISTOR, SILICON	2SA933STP(R,S)
Q508	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP
⚠ Q509	TDWT011110	TRANSISTOR, SILICON	2SD1111-AA
Q510	TCST02001L	TRANSISTOR, SILICON	2SC2001(C)-T_L
Q512	TCST02001L	TRANSISTOR, SILICON	2SC2001(C)-T_L
Q514	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP
Q515	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP
⚠ Q516	TB3T008920	TRANSISTOR, SILICON	2SB892(S,T)-AE
Q517	TCST009450	TRANSISTOR, SILICON	2SC945(C)-T(P,Q)
Q604	T8YA2412K0	TRANSISTOR, SILICON	2SC2412KT147(R,S)
Q606	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q607	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q609	T8YA2412K0	TRANSISTOR, SILICON	2SC2412KT147(R,S)
Q613	T8YA2412K0	TRANSISTOR, SILICON	2SC2412KT147(R,S)
Q616	TCYT1740S0	TRANSISTOR, SILICON	2SC1740SP(R,S) TP
Q801	TAST007330	TRANSISTOR, SILICON	2SA733(C)-T(P,Q)
⚠ 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	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146(R,S)
Q1002	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
⚠ Q1005	TB3T008920	TRANSISTOR, SILICON	2SB892(S,T)-AE
Q1006	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q1012	TB3T008920	TRANSISTOR, SILICON	2SB892(S,T)-AE
Q1013	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q1051	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q1052	TCYT2872S0	TRANSISTOR, SILICON	2SC2872S
Q1053	0002700530	PHOTO COUPLER	RPI-352Q01
Q1054	0002700530	PHOTO COUPLER	RPI-352Q01
Q1055	0000700320	TRANSISTOR, PHOTO	RPT-38PB113
Q1056	0000700320	TRANSISTOR, PHOTO	RPT-38PB113
Q4001	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4003	TCWT022740	TRANSISTOR, SILICON	2SC2274(E,F)-AA
Q4004	TCWT022740	TRANSISTOR, SILICON	2SC2274(E,F)-AA
Q4007	TAWT0984K0	TRANSISTOR, SILICON	2SC2274(E,F)-AA
Q4008	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4009	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4010	TCKT013170	TRANSISTOR, SILICON	2SC1317(Q,R,S)-T
Q4011	TCWT022740	TRANSISTOR, SILICON	2SC2274(E,F)-AA
Q4012	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146(R,S)
Q4013	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4014	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4022	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146(R,S)
Q4202	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4205	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q4206	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)

REF. NO.	PART NO.	DESCRIPTION	
		TRANSISTORS	
Q4207	T8YJ2412K0	TRANSISTOR, SILICON	2SC2412KT146(R,S)
Q4212	T6YJ1037K0	TRANSISTOR, SILICON	2SA1037AKT146(R,S)
		COILS &TRANSFORMERS	
L001	02A6A8A0A1	CORE, FERRITE	HF57T18.5*10*10
L101	02167B4R7G	COIL	4.7 UH
L402	021614102K	COIL	1 MH
L404	022100028A	COIL, LINEARITY	ELH5L6113 or
	022G00027A	COIL, LINEARITY	2G-27
L501	021W67331K	COIL	330 UH
⚠ L502	029A000002	COIL, LINE FILTER	FK0B160MH14
⚠ L503	029X000065	COIL, LINE FILTER	SU16V-20030
L504	021207100M	COIL	10 UH
L505	021805330L	COIL	33 UH
L506	021805330L	COIL	33 UH
⚠ L508	028R140024	COIL, DEGAUSS	8R140024
L509	021W24222K	COIL	2.2 MH
L601	03361A011S	COIL, VIDEO IFT	361A011
L603	0336020378	COIL, VIDEO IFT	3602037
L605	021LA6180K	COIL	18 UH
L606	021LA6150K	COIL	15 UH
L607	021LA61R5K	COIL	1.5 UH
L608	021LA6150K	COIL	15 UH
L609	021LA6680K	COIL	68 UH
L613	021LA6560K	COIL	56 UH
L614	021673101K	COIL	100 UH
L615	021LA6560K	COIL	56 UH
L1001	02167D100K	COIL	10 UH
L4001	021LA6151K	COIL	150 UH
L4002	021LA6221K	COIL	220 UH
L4003	02167D101K	COIL	100 UH
L4004	021LA6680K	COIL	68 UH
L4005	031626007S	COIL, BIAS OSC	1626007
L4006	02167D101K	COIL	100 UH
L4007	02167D102K	COIL	1 MH
L4008	02167D101K	COIL	100 UH
L4010	021LA6101K	COIL	100 UH
L4011	021LA6271K	COIL	270 UH
L4012	021LA6680K	COIL	68 UH
L4101	021LA6220K	COIL	22 UH
L4102	021673101K	COIL	100 UH
L4205	021673101K	COIL	100 UH
T401	0450190101	TRANS, HORIZONTAL DRIVE	5019010
⚠ T501	048140044W	TRANSFORMER, SWITCHING	8140044W
		JACKS	
J352	060C121010	EARPHONE, JACK 3.5	TC38-001-05-T
⚠ J503	0602602001	JACK, DC	HEC0470-01-630
⚠ J801	066X120014	SOCKET, CRT	HPS3200-010501
J4201	060M021002	JACK, PLATE	T6551-ABCC
		SWITCHES	
SW771	0504201T31	SWITCH, TACT	SKHVBED010
SW772	0504201T31	SWITCH, TACT	SKHVBED010
SW775	0504201T31	SWITCH, TACT	SKHVBED010
SW776	0504201T31	SWITCH, TACT	SKHVBED010
SW777	0504201T31	SWITCH, TACT	SKHVBED010
SW778	0504201T31	SWITCH, TACT	SKHVBED010
SW779	0504201T31	SWITCH, TACT	SKHVBED010
SW781	0504201T31	SWITCH, TACT	SKHVBED010
SW1010	0501W02005	PUSH SWITCH	MPU20460MLB0
		VARIABLE RESISTOR	
VR502	V116313BT6	VOLUME, SEMI FIXED	EVNDXAA03B13
		P.C.BOARD ASSEMBLIES	
PCB010	A51286P01A	PCB ASS'Y	VM8135C
PCB030	A51286P03A	PCB ASS'Y	TE8940A
PCB070	A51275P07A	PCB ASS'Y	TM8410A
PCB110	A51275P11A	PCB ASS'Y	TC8269A
PCB390	A51259B39A	PCB ASS'Y	VE8818B
		MISCELLANEOUS	
⚠ ANT001	125C108027	ANTENNA, ROD	T4-216BNK-BK
B402	024AT03655	CORE, BEADS	BL01RN1-A63T6
B501	024DT03581	CORE, BEADS	LFP3A-M3R2TA
B502	024AT03655	CORE, BEADS	BL01RN1-A63T6
B503	024AT03655	CORE, BEADS	BL01RN1-A63T6
B504	024AT03655	CORE, BEADS	BL01RN1-A63T6
B505	024AT03655	CORE, BEADS	BL01RN1-A63T6
B506	024AT03655	CORE, BEADS	BL01RN1-A63T6
B507	024AT03655	CORE, BEADS	BL01RN1-A63T6
CD351	06CH12406A	CORD, CONNECTOR	CH12406A or

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		MISCELLANEOUS		
CD351	068112406A	CORD, CONNECTOR	8112406A	or
	068D12240A	CORD, CONNECTOR	8D12240A	
⚠ CD501	120R614904	CORD, AC	120R614904	
⚠ CD503	121B164101	CORD, CAR BATTERY	SI-PC107-67	
CD757	06CH2A012A	CORD, CONNECTOR	CH2A012A	
CD801	068M82025A	CORD, CONNECTOR	8M82025A	
CD803	122E042302	CORD, JUMPER	2E042302	
CD810	06CH28096A	CORD, CONNECTOR	CH28096A	
CD820	06CH2B026A	CORD, CONNECTOR	CH2B026A	
CD840	06CH22077A	CORD, CONNECTOR	CH22077A	
CD850	06CH25080A	CORD, CONNECTOR	CH25080A	
CF601	1012T4R509	FILTER, CERAMIC	SFSH4.5MCB-TF21	
CF602	1011T4R517	FILTER, CERAMIC	EFCT4R5MW5	
CF603	102E245R01	FILTER, SAW	M1964M	
CF605	1002AR5002	CERAMIC OSCILLATOR	CSB503F44	
CP351	0694120099	CONNECTOR PCB SIDE	171825-2	
CP354	0694120010	CONNECTOR PCB SIDE	2-171825-2	
CP401	069W340018	CONNECTOR PCB SIDE	TS-80P-04-V1	
CP501	0694430100	CORD, UX CONNECTOR	2-173270-3	
CP502	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1	
CP601	069E250129	CONNECTOR PCB SIDE	8283_0512_00_000	
CP757	069E2A0129	CONNECTOR PCB SIDE	8283_1012_00_000	
CP801	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1	
CP807	069W010010	CONNECTOR PCB SIDE	005P-2100	
CP810	069E280124	CONNECTOR PCB SIDE	8283_0812_00_003	
CP820	069E2B0129	CONNECTOR PCB SIDE	8283_1112_00_000	
CP830	069E260129	CONNECTOR PCB SIDE	8283_0612_00_000	
CD1004	122L051101	CORD, JUMPER	2L051101	
CD4002	06CH22070A	CORD, CONNECTOR	CH22070A	
CD4106	122L061101	CORD, JUMPER	2L061101	
CP1001	0697150310	CONNECTOR PCB SIDE	TAS-X05X-D1	
CP1002	06CH24055A	CORD, CONNECTOR	CH24055A	
CP1003	06972A0580	CONNECTOR PCB SIDE	TKC-G10P-A1	
CP1004	069R750028	CONNECTOR PCB SIDE	52045-0545	
CP1005	069E220129	CONNECTOR PCB SIDE	8283_0212_00_000	
CP4101	0697740590	CONNECTOR PCB SIDE	TOC-T04X-A1	
CP4106	069R760028	CONNECTOR PCB SIDE	52045-0645	
CP803A	067R104019	WIRE HOLDER	51052-0400	
CP803B	067R104019	WIRE HOLDER	51052-0400	
CUS011	800WF00004	CUSHION-A		
CUS012	800WF00004	CUSHION-A		
CUS013	800WF00004	CUSHION-A		
CUS014	800WF00019	CUSHION-C		
CUS015	800WF00019	CUSHION-C		
CUS016	800WF00019	CUSHION-C		
CUS017	800WF00019	CUSHION-C		
CUS018	800WF00019	CUSHION-C		
CUS019	800WF00019	CUSHION-C		
CUS021	800WF00004	CUSHION-A		
CUS022	800WF00019	CUSHION-C		
⚠ F501	081PA04002	FUSE	237004	
⚠ F502	081PA6R302	FUSE	23706.3	
⚠ F503	081PA04002	FUSE	237004	
⚠ FB401	043214026B	TRANSFORMER, FLYBACK	3214026	
FH501	06710T0006	HOLDER, FUSE	EYF-52BC	
FH502	06710T0006	HOLDER, FUSE	EYF-52BC	
FH503	06710T0006	HOLDER, FUSE	EYF-52BC	
FH504	06710T0006	HOLDER, FUSE	EYF-52BC	
FH505	06710T0006	HOLDER, FUSE	EYF-52BC	
FH506	06710T0006	HOLDER, FUSE	EYF-52BC	
⚠ ICP501	083PC02002	MICRO FUSE	251002	
⚠ ICP502	083PC07002	MICRO FUSE	251007	
MS501	1283200022	SILICON, SHEET	TC-30CG-TO-3P	
OS751	0779014001	REMOTE RECEIVER	GP1U281R	
PF4001	0326230038	COIL, TRAP	2623003	
⚠ RY501	0560150106	RELAY	AJZ32197	
⚠ RY502	0560150106	RELAY	AJZ32197	
⚠ RY504	0560152102	RELAY	AJE649	
⚠ SP354	070W132002	SPEAKER	P-300W	
TM101	076R0BH01A	TRANSMITTER	R25-0578	
⚠ TU651	0145K00049	TUNER, UHF-VHF	TECC1070PG26A	
⚠ V801	098R140490	COLOR PICTURE TUBE W/DY	A34JFQ90X23(VW)	
X101	100C32R803	CRYSTAL DSVT-200	32.768KHz	
X102	1002T01205	CERAMIC OSCILLATOR	12.08MHz	
X601	100W357903	CRYSTAL HC-49/U	3.579545MHz	
X1001	100CA01603	CRYSTAL HC-49/U-S	16MHz	
X4001	100DA3R525	CRYSTAL AT-49	3.579545MHz	

RESISTOR

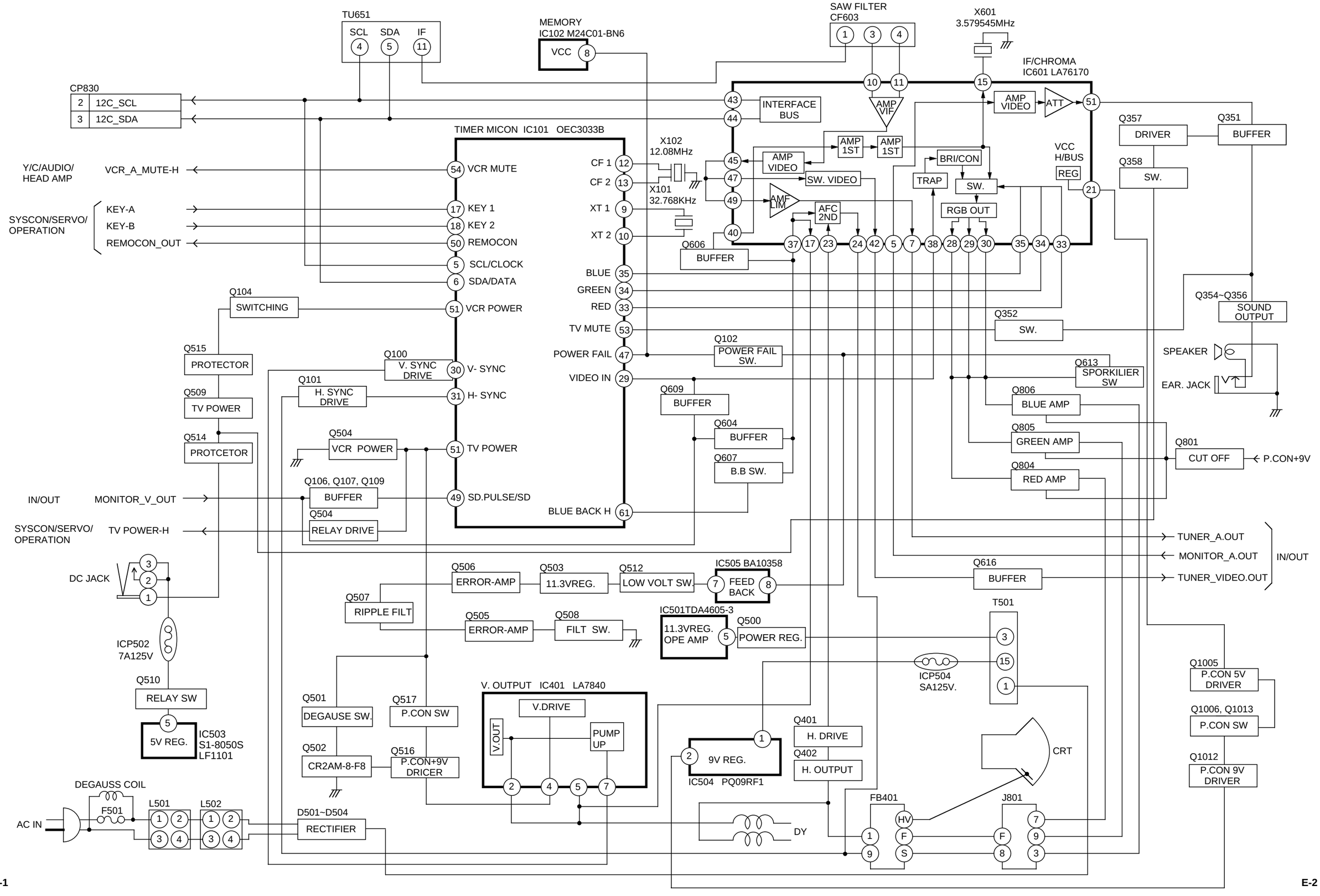
RC..... CARBON RESISTOR

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.	M512-86P
O/R NO.	W935029

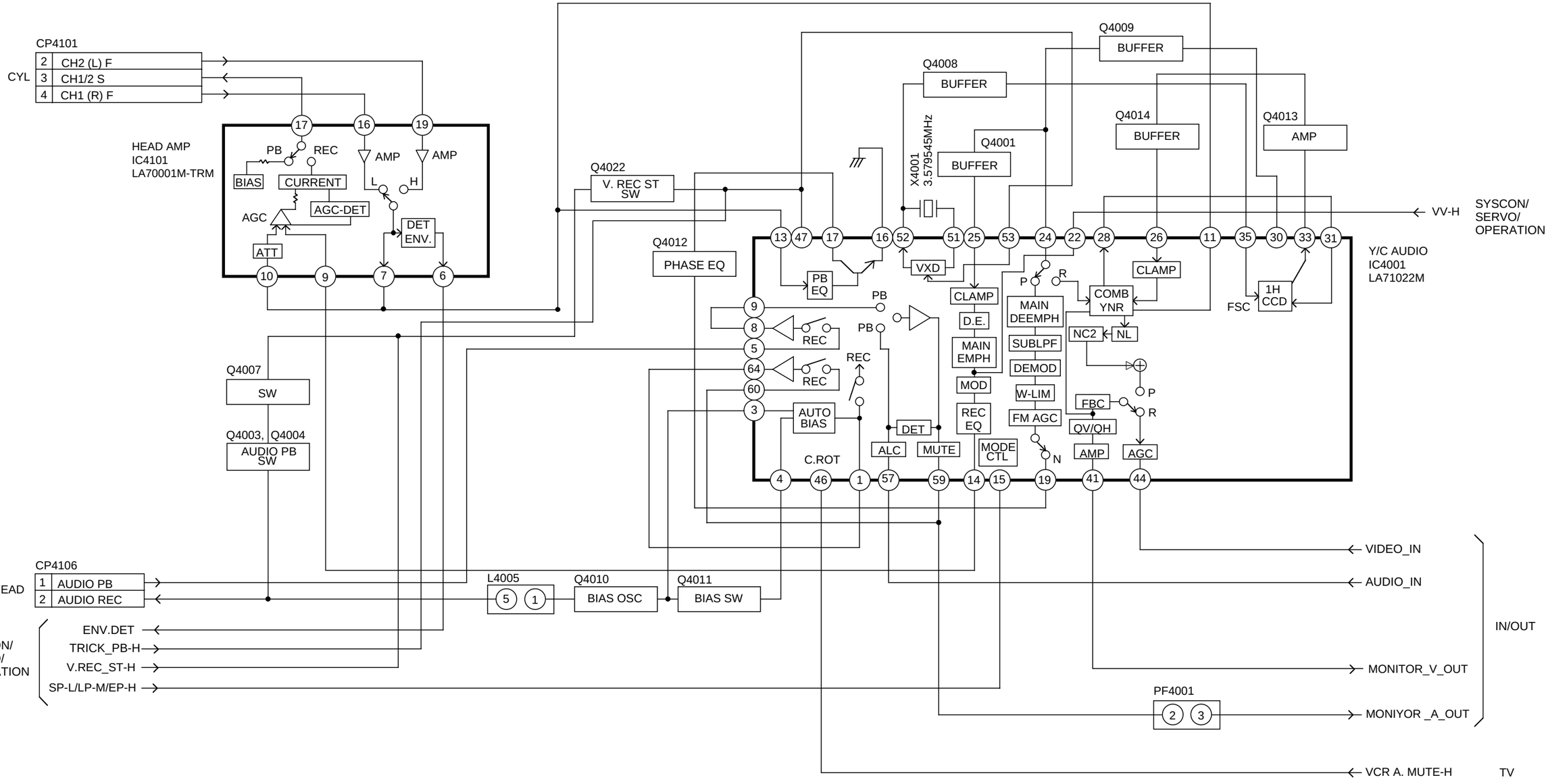
TV BLOCK DIAGRAM



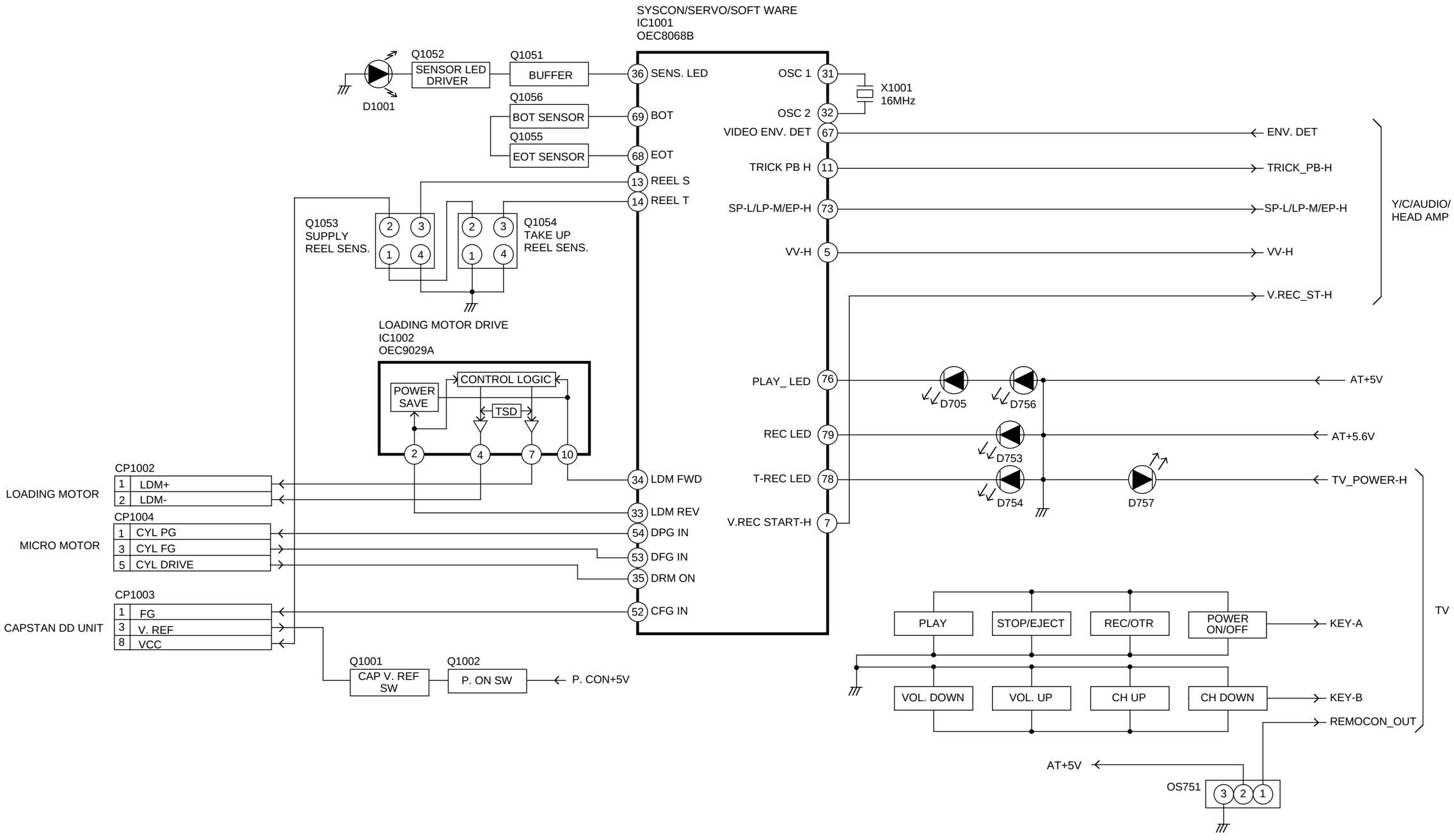
E-1

E-2

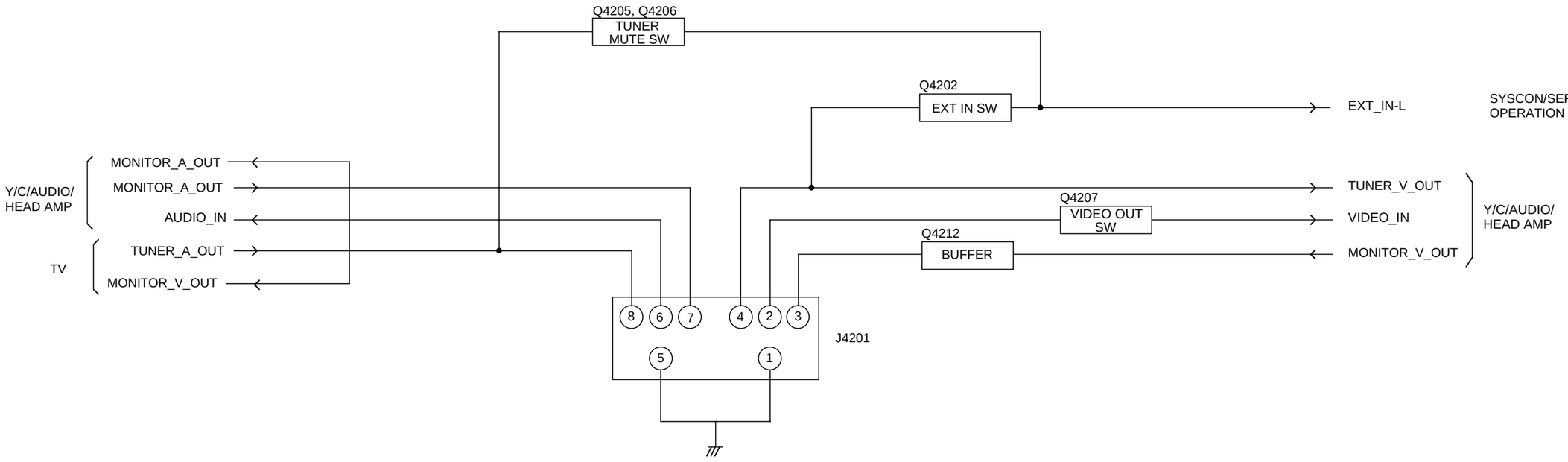
Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM



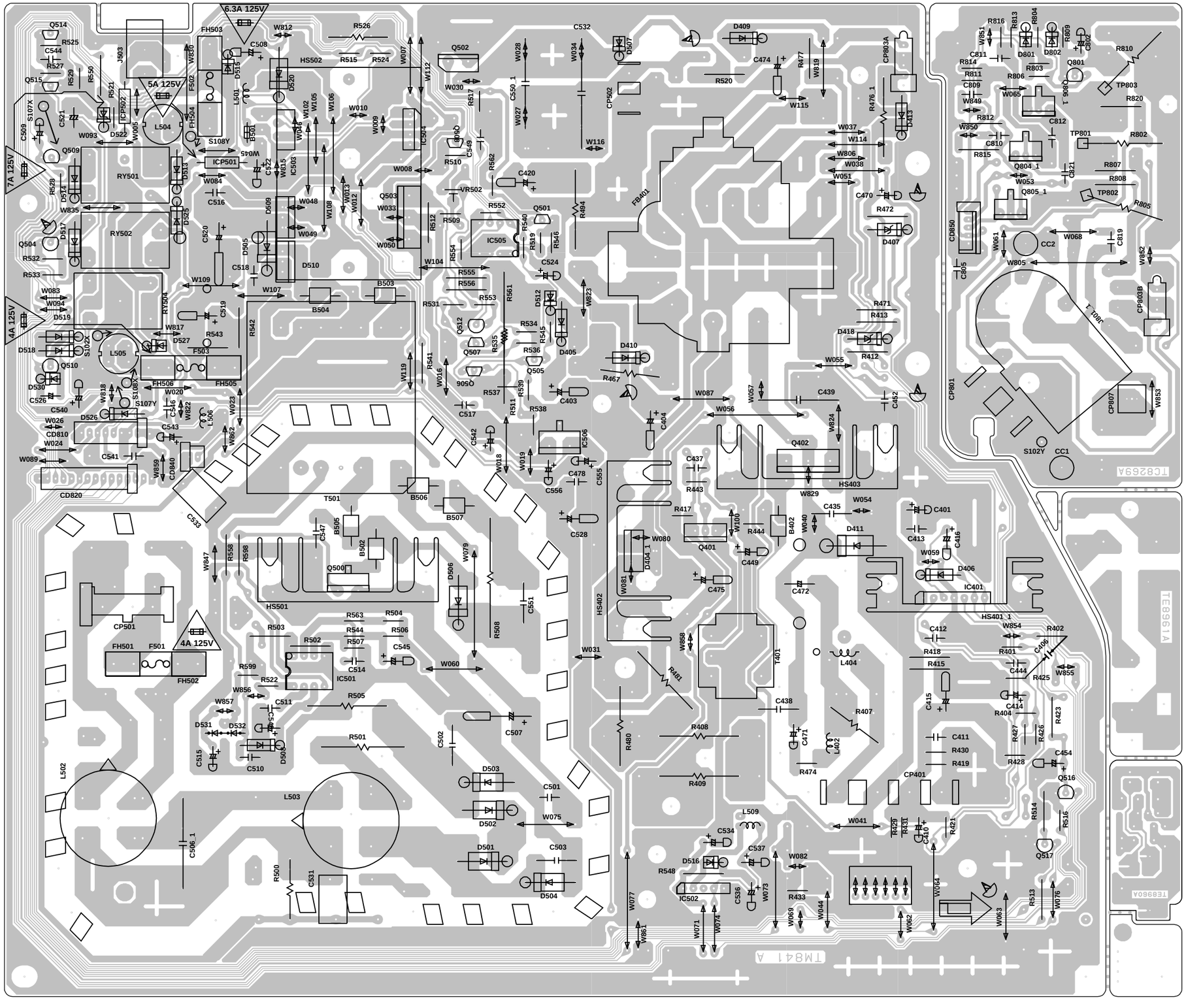
SYSCON/SERVO/OPERATION BLOCK DIAGRAM



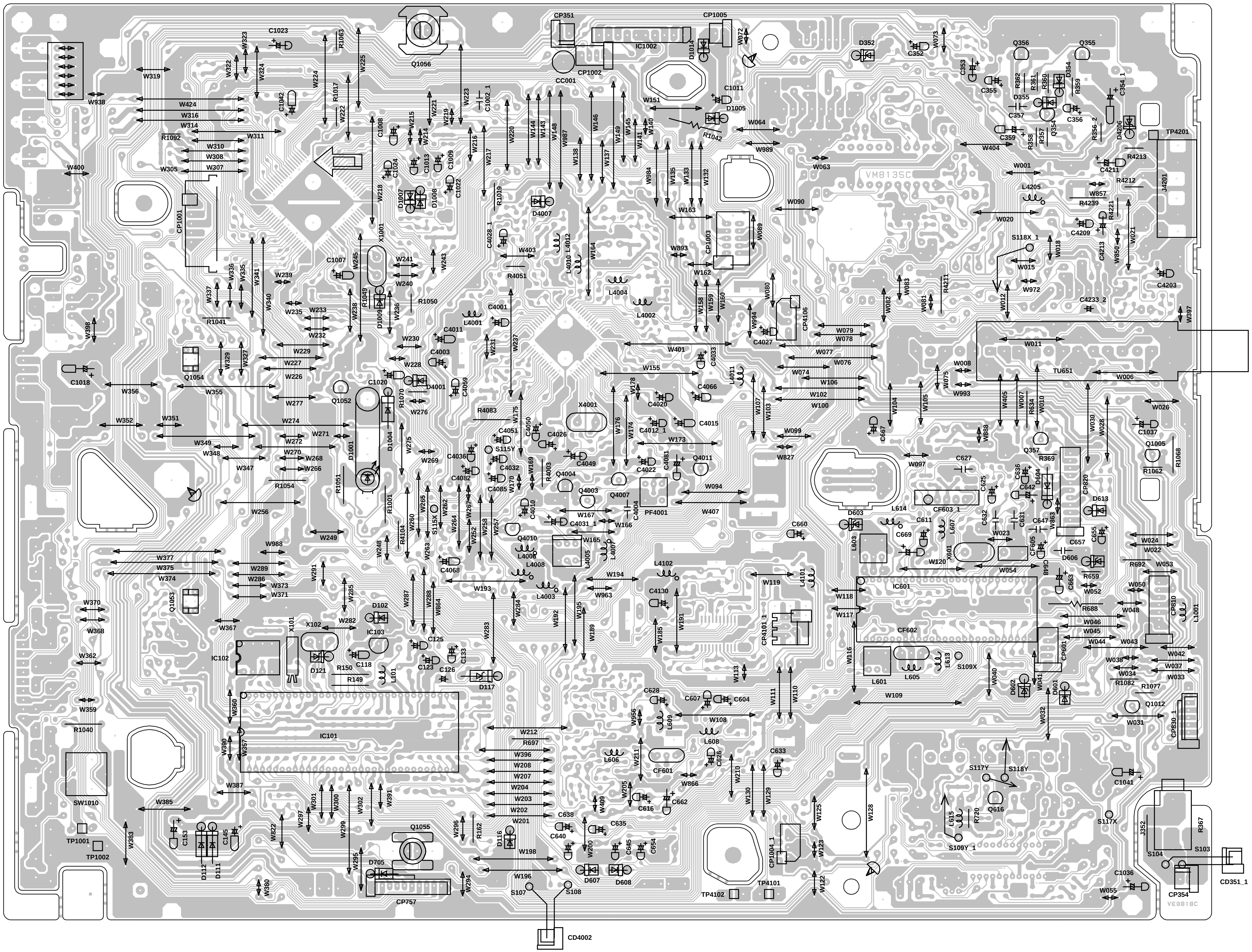
IN/OUT BLOCK DIAGRAM



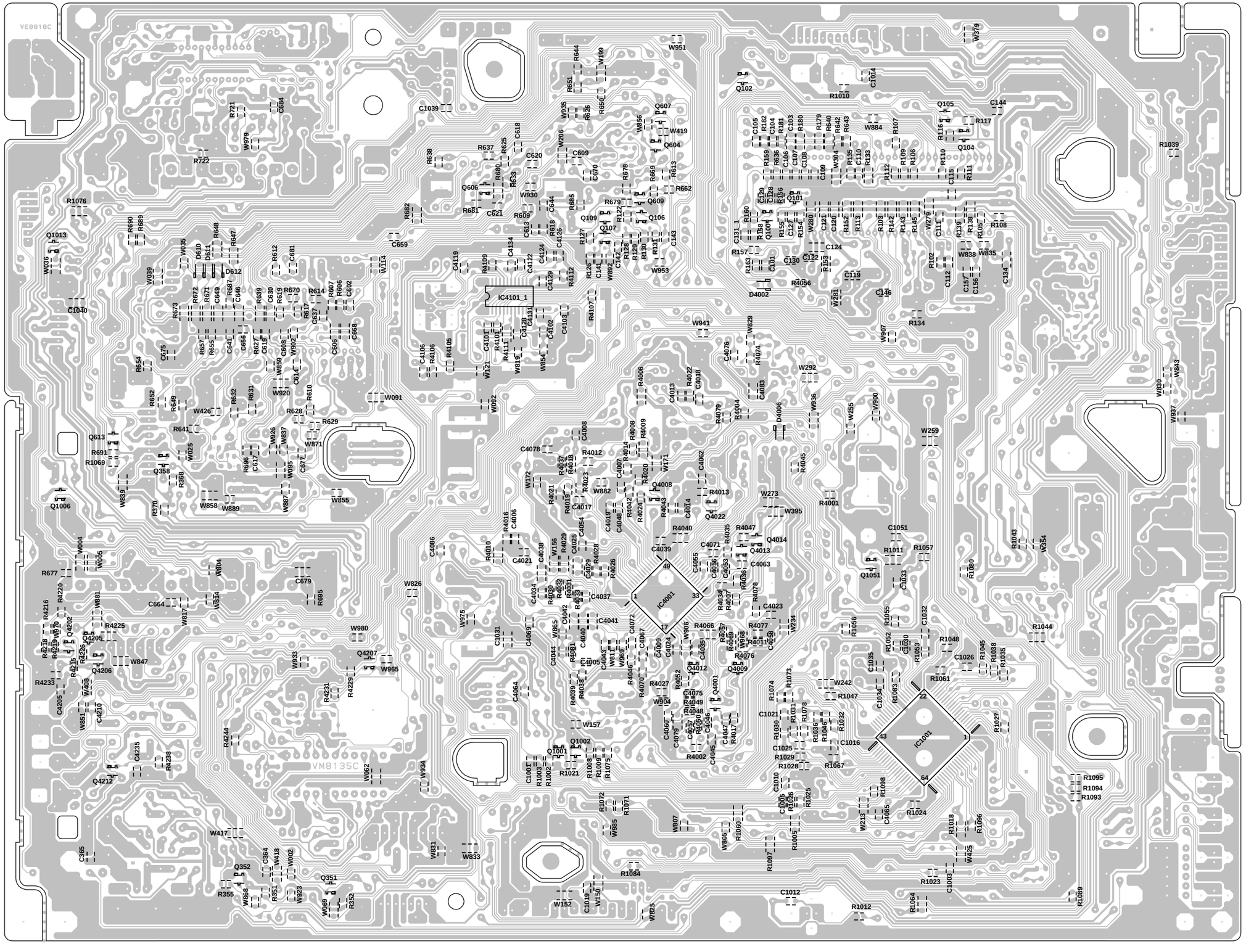
PRINTED CIRCUIT BOARDS
MAIN/CRT
SOLDER SIDE



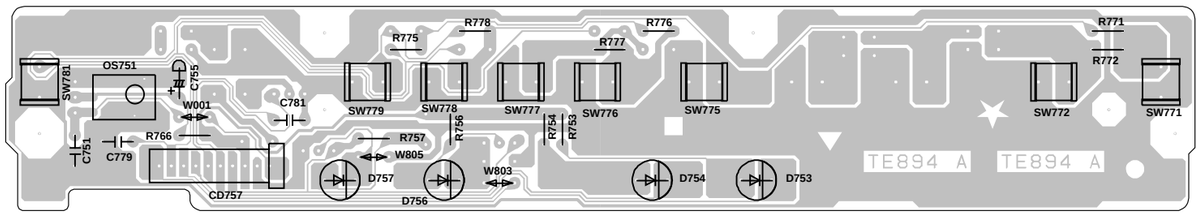
PRINTED CIRCUIT BOARDS
SYSCON/EARPHONE (INSERTED PARTS)
SOLDER SIDE



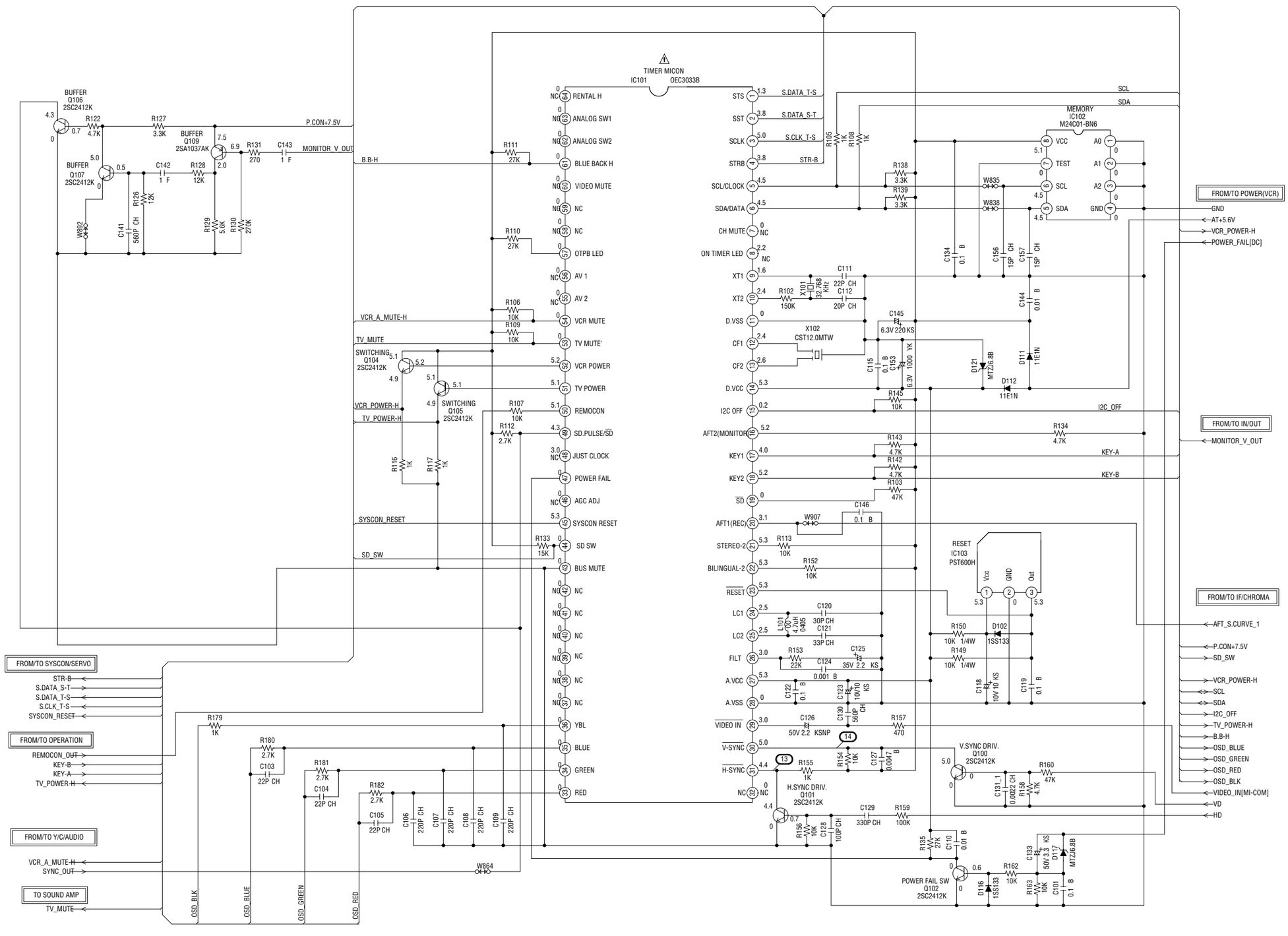
PRINTED CIRCUIT BOARDS
SYSCON (CHIP MOUNTED PARTS)
SOLDER SIDE



OPERATION
SOLDER SIDE



TIMER MICON SCHEMATIC DIAGRAM



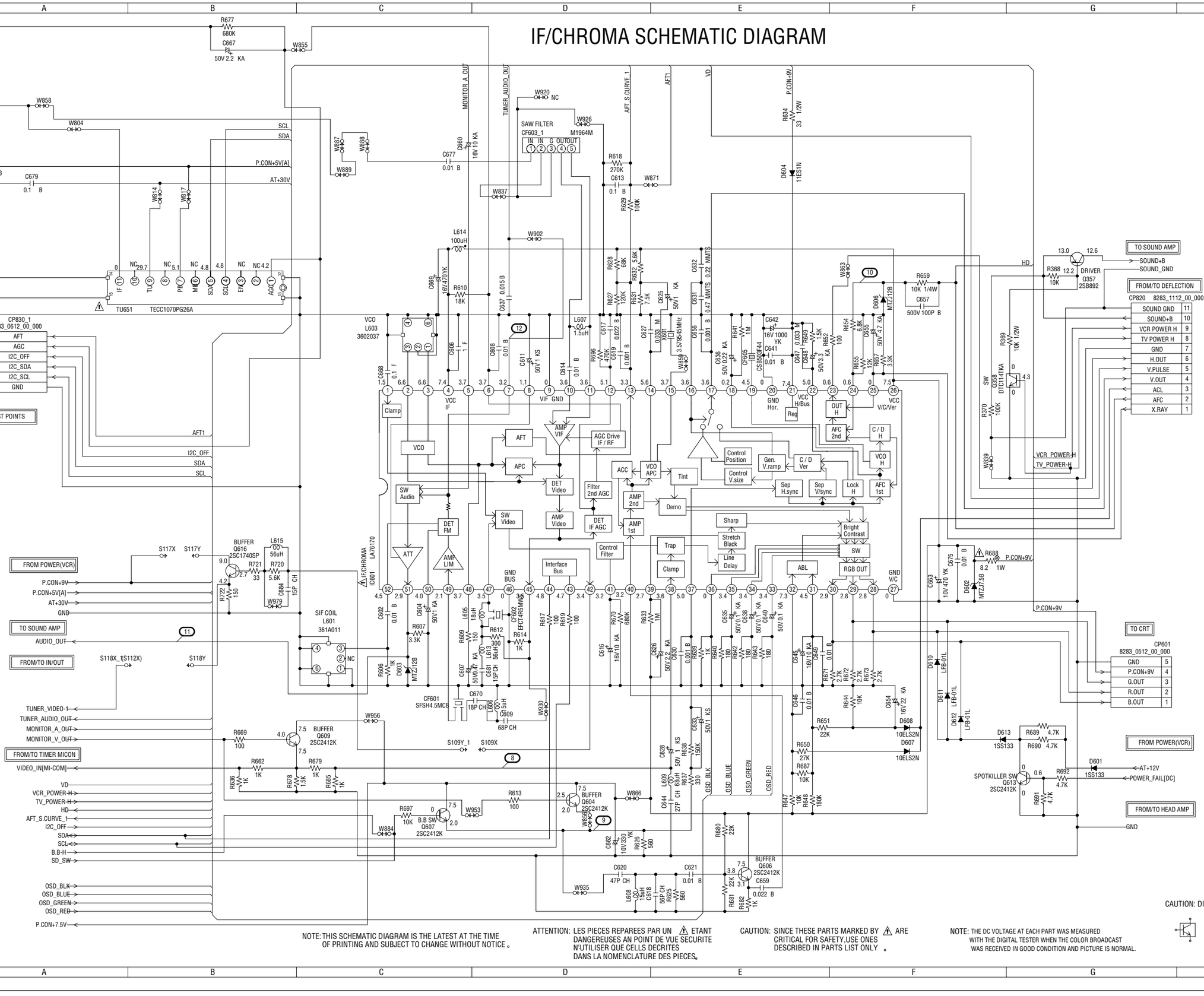
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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

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

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.

IF/CHROMA SCHEMATIC DIAGRAM



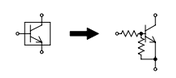
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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

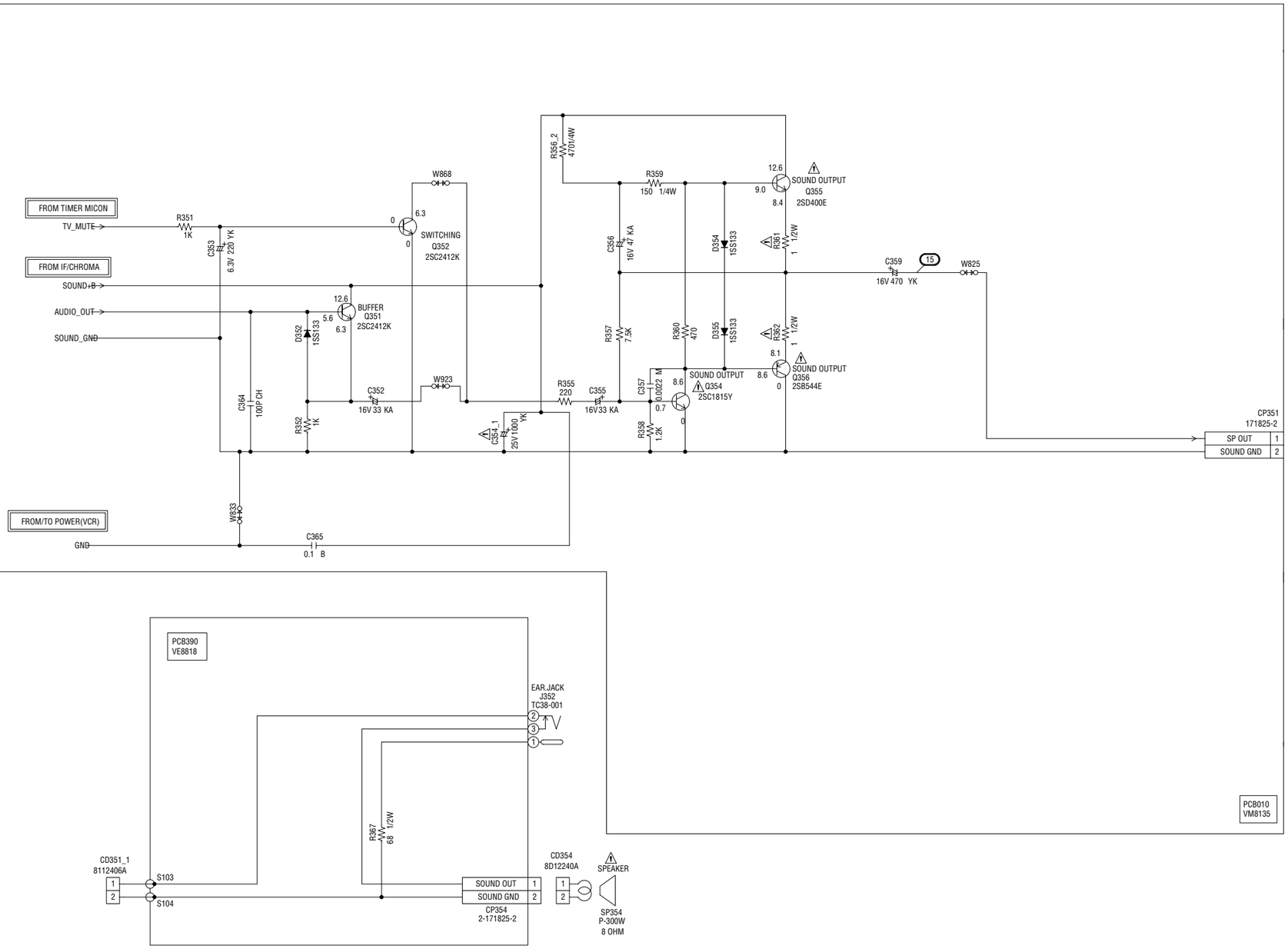
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

CAUTION: DIGITAL TRANSISTOR



SOUND AMP SCHEMATIC DIAGRAM



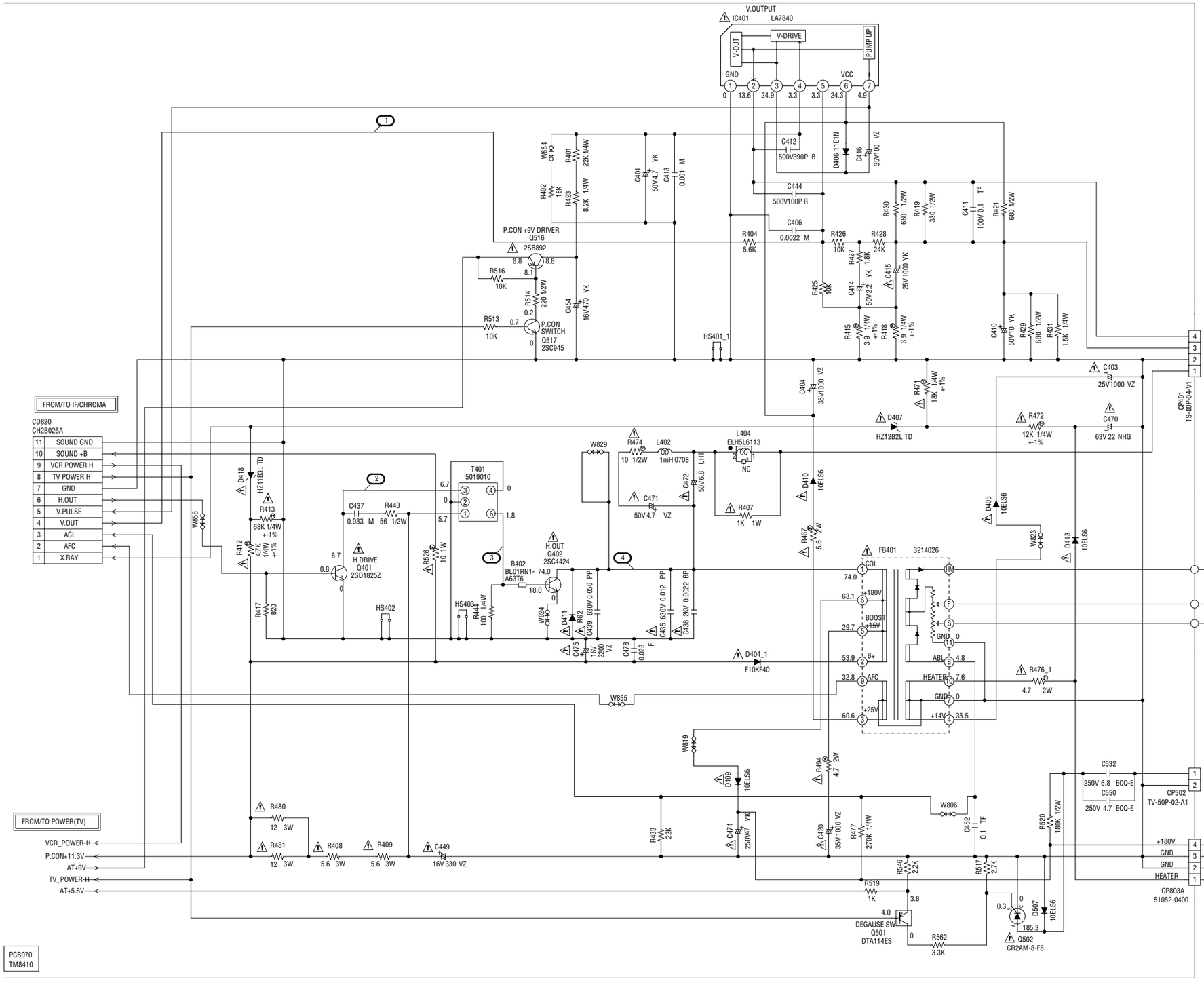
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

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

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

DEFLECTION SCHEMATIC DIAGRAM



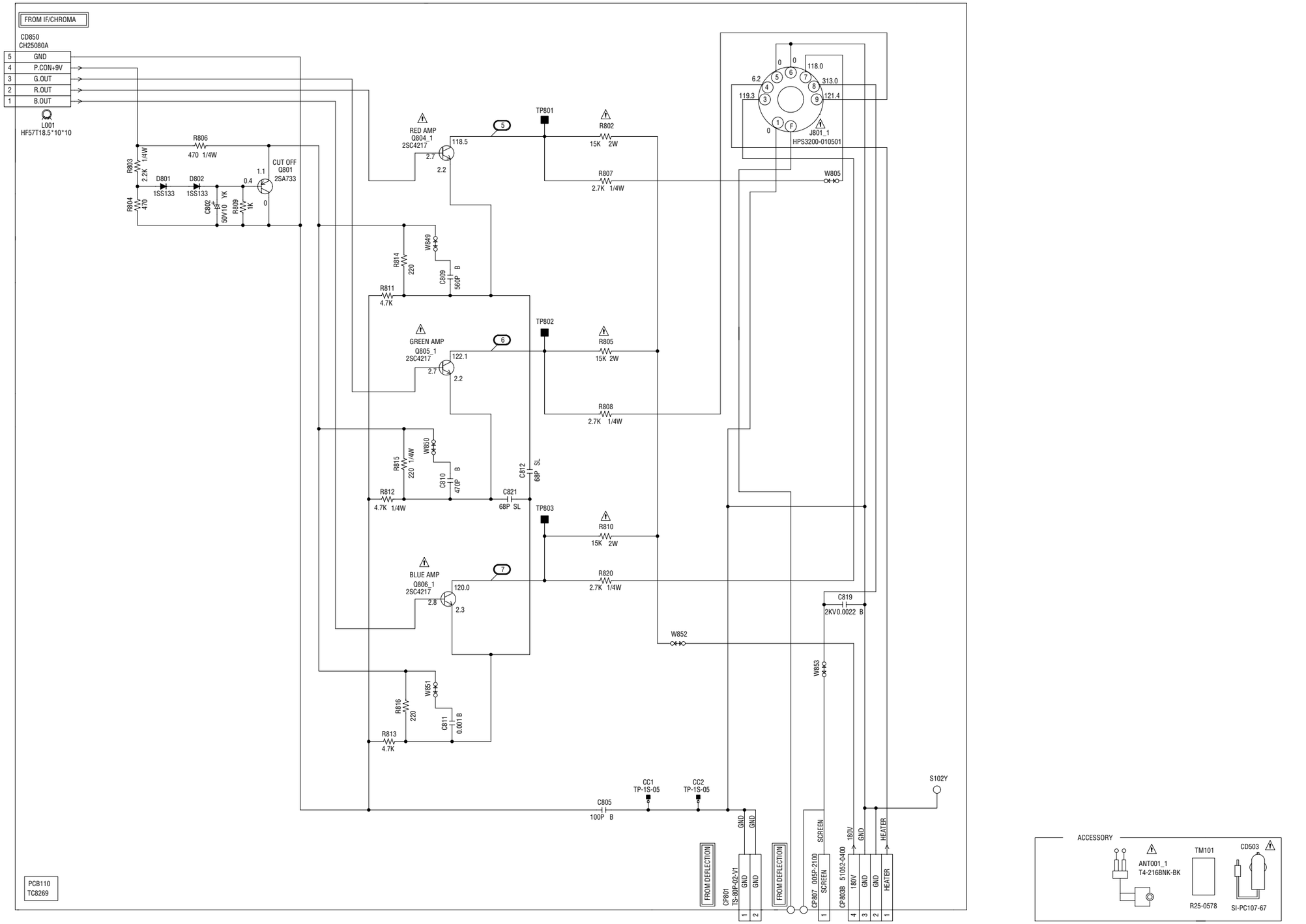
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY USE ONES DESCRIBED IN PARTS LIST ONLY 。

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

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

CRT SCHEMATIC DIAGRAM



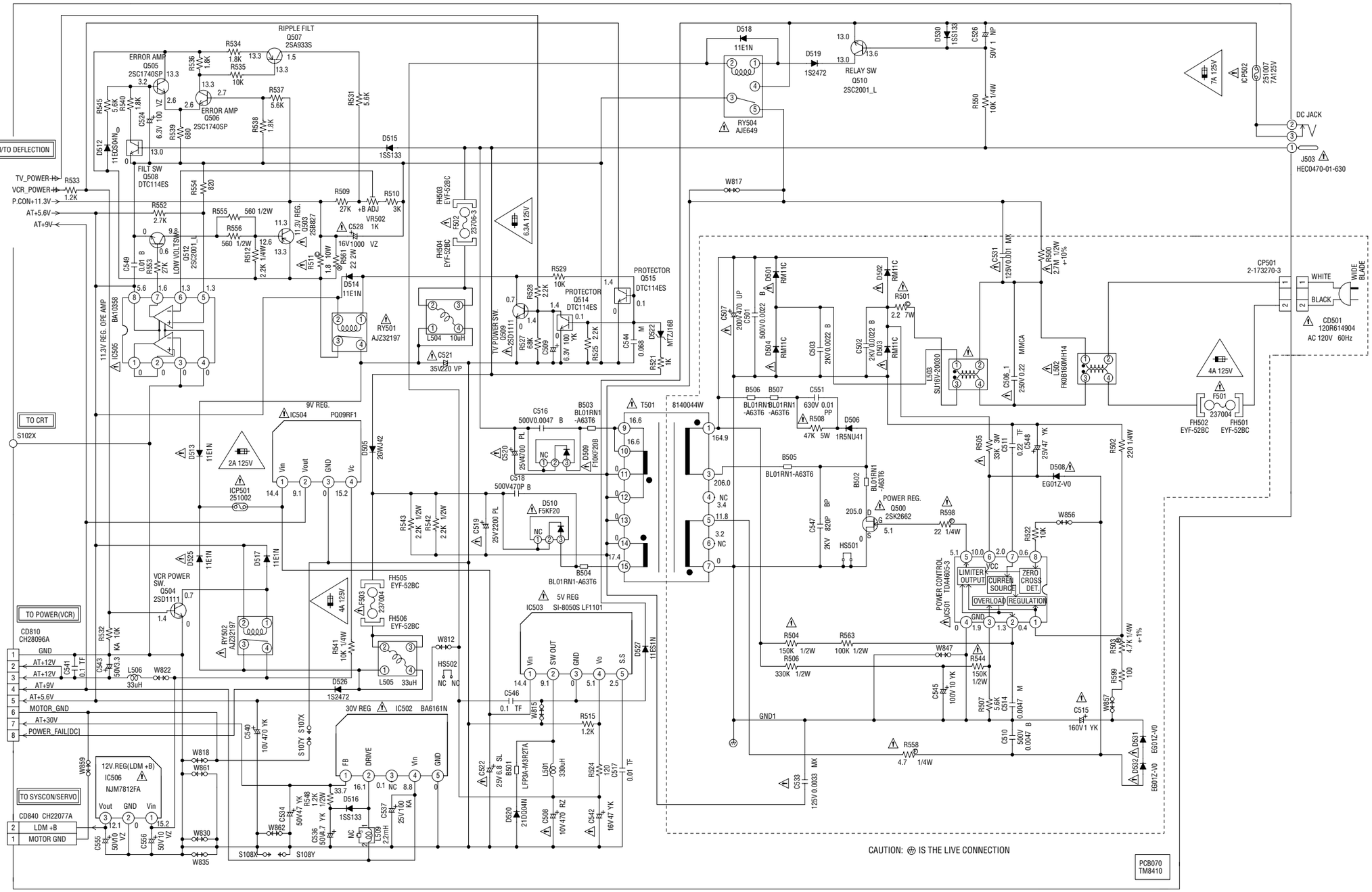
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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

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

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.

POWER(TV) SCHEMATIC DIAGRAM



4A 125V 6.3A 125V 2A 125V 7A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 4A 125V (F501.F503), 6.3A 125V (F502),2A 125V (ICP501),AND 7A 125V (ICP502)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 125V (F501.F503), 6.3A 125V (F502),2A 125V (ICP501),ET 7A 125V (ICP502)

CAUTION: DIGITAL TRANSISTOR

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

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

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

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

OPERATION(2) SCHEMATIC DIAGRAM

FROM/TO OPERATION(1)

CD757 CH2A012A

1	REMOCON OUT
2	GND
3	AT 5V
4	P.C 5V/TV PWR-H
5	NC
6	KEY-A
7	T-REC LED
8	REC LED
9	KEY-B
10	PLAY LED

C751 100P B

OS751 GP1U281R

0 ③ GND

5.2 ② B+

5.1 ① Vout

R766 100

C755 220 KA 6.3V

R753 330

REC/OTR D753 SLZ-936C-T1-S-T1

R754 330

T-REC D754 SLZ-936C-T1-S-T1

W803

R756 390

PLAY LED D756 SLZ-936C-T1-S-T1

R757 270

POWER D757 SLZ-936C-T1-S-T1

W805

C781 0.001 B

POWER ON/OFF SW781 SKHVBED010

R775 820

REC/OTR SW775 SKHVBED010

R771 1K

STOP/EJECT SW771 SKHVBED010

R772 1.5K

PLAY SW772 SKHVBED010

C779 0.001 B

CH DOWN SW779 SKHVBED010

R778 820

CH UP SW778 SKHVBED010

R776 1K

VOL UP SW776 SKHVBED010

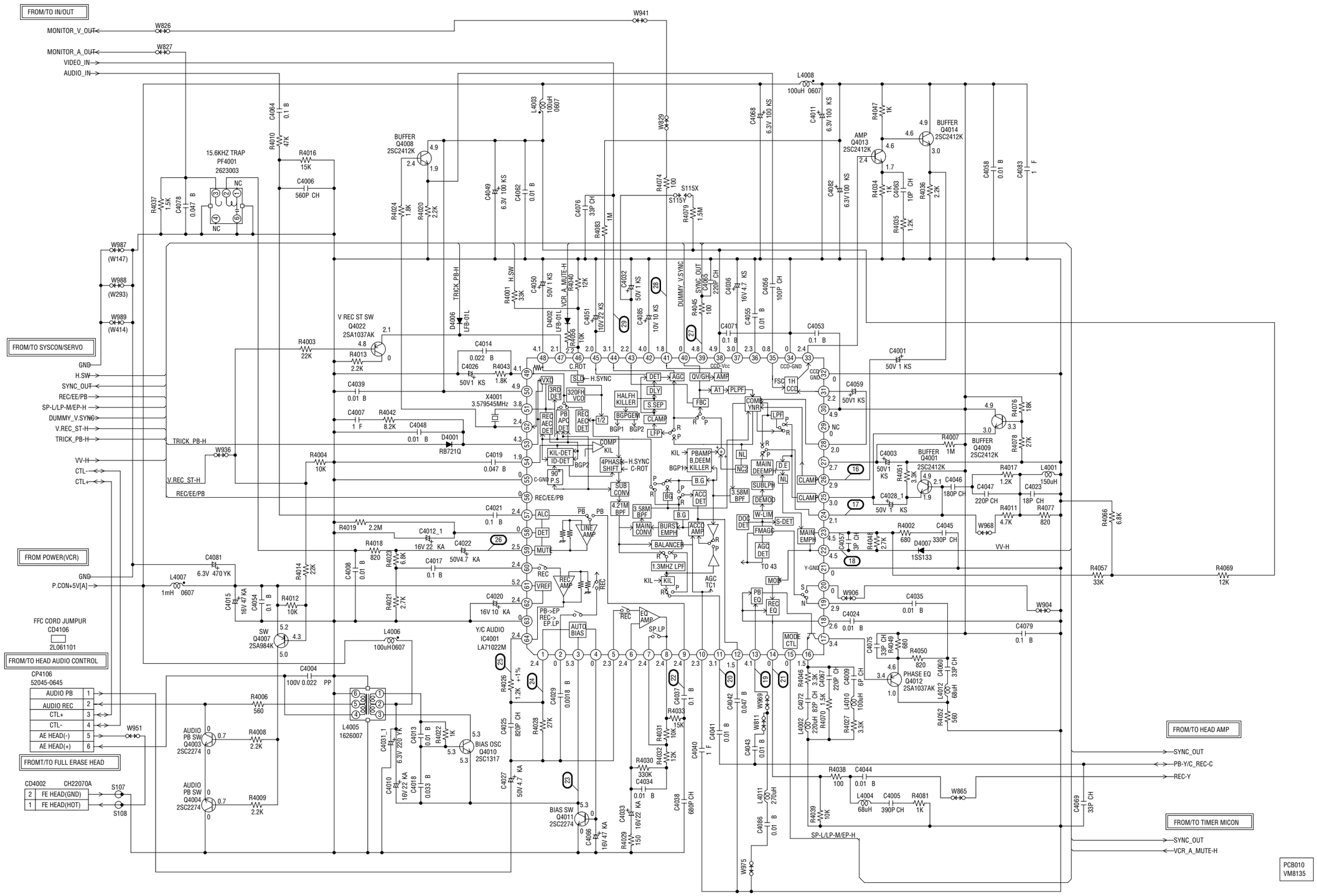
R777 1.5K

VOL DOWN SW777 SKHVBED010

PCB030
TE8940

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

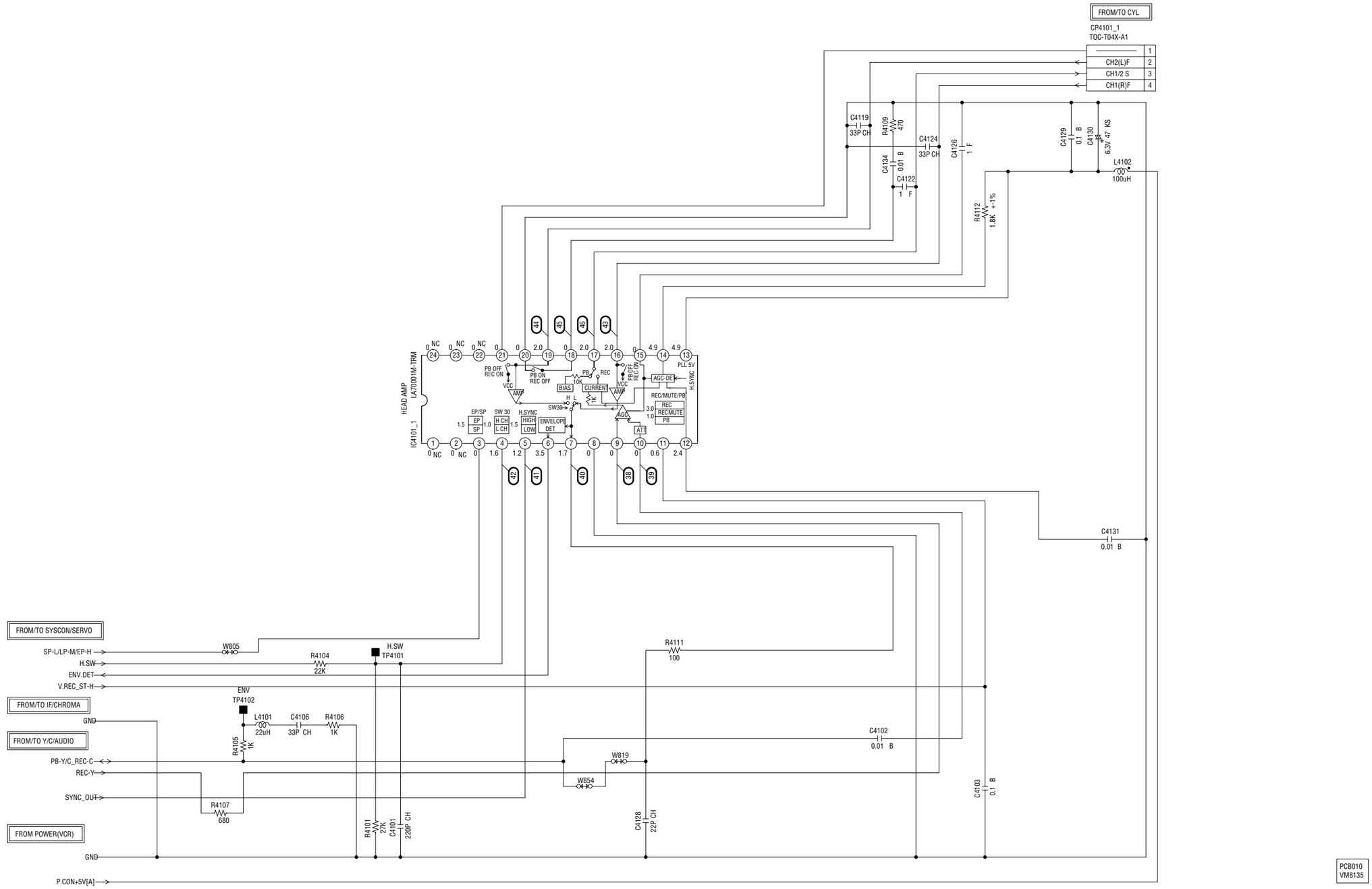
Y/C/AUDIO SCHEMATIC DIAGRAM



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

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

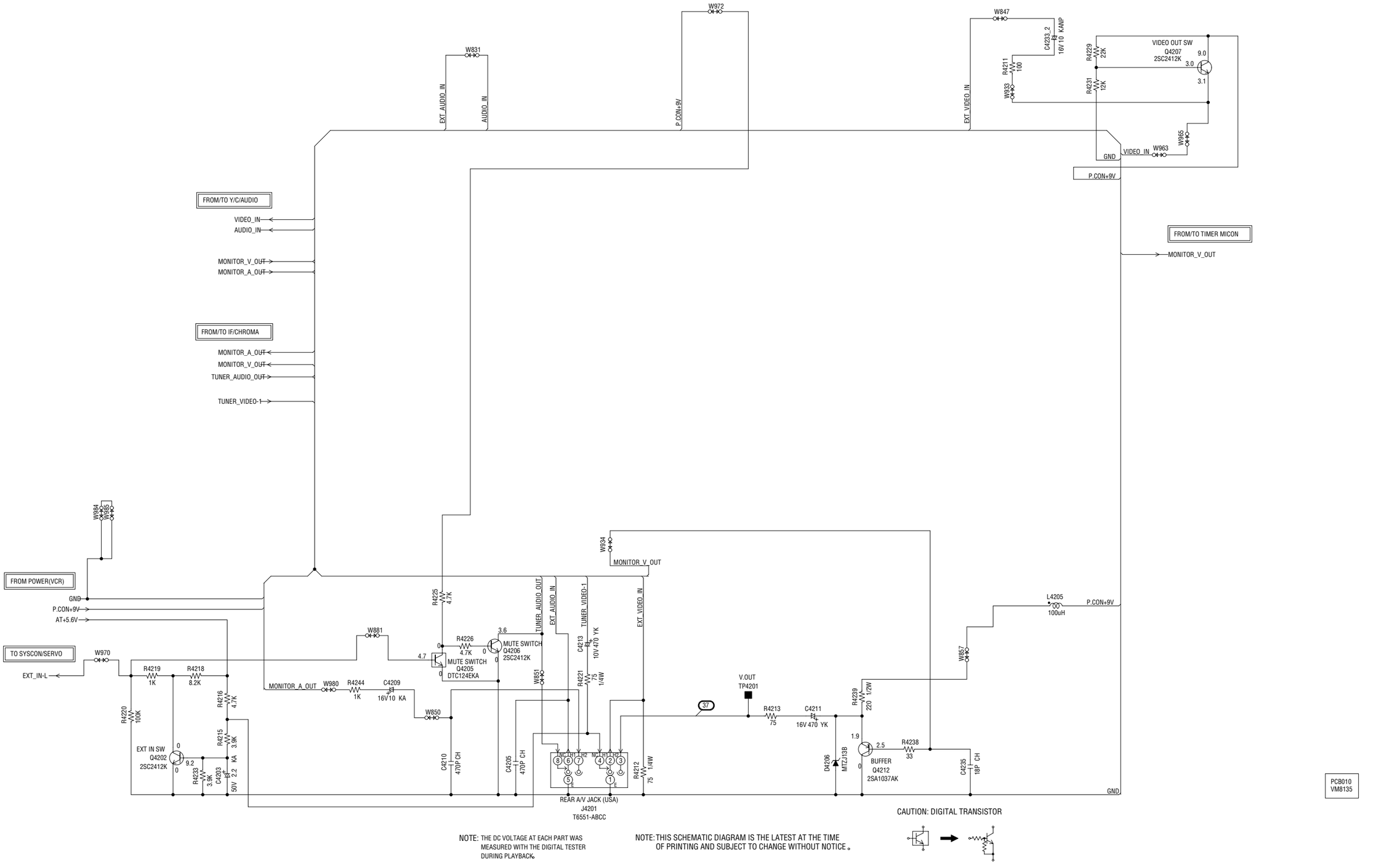
HEAD AMP SCHEMATIC DIAGRAM



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

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

IN/OUT SCHEMATIC DIAGRAM



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

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

SYSTEM CONTROL/SERVO SCHEMATIC DIAGRAM

FROM/TO DECK
CP1004_1 52045-0545
1 CYL PG
2 CYL +B
3 CYL FG
4 CYL GND
5 CYL DRIVE

FFC CORD JUMPER CD1004 2L051101

FROM/TO CAPSTAN DD UNIT
CP1003 TKC-G10P-A1
1 FG
2 CAP/M F/R
3 V.REF
4 MOTOR GND
5 I LIMIT
6 VCO
7 GND
8 VCC
9 CTL
10 NC

FROM/TO LOADING MOTOR
CP1002 CH24055A
1 LDM+
2 LDM-
3 DEW
4 GND

FROM MODE SW
CP1001 TAS-X05X-D1
1 MS SW3
2 MS SW2
3 MS SW COM
4 MS SW1
5 MS SW0

FROM/TO TIMER MICON
S.DATA_S-T
S.DATA_T-S
S.CLK_T-S
STR-B
SYSCON_RESET

SYSCON/SERVO/SOFTWARE IC1001 OEC8068B

1 MS SW3
2 MS SW2
3 MS SW1
4 MS SW0
5 VV-H
6 COLOR TRICK
7 V.REC START-H
8 REC-H
9 HIFI/NORMAL
10 19/26 SW
11 TRICK PB H
12 CTL AMP SW
13 REEL-S
14 REEL-T
15 EXT-H
16 S.CLK
17 S.DATA T-S
18 S.DATA S-T
19 RESET
20 NC
21 V.H.SW

9 L:HIFI H:NOMAL
10 L:19 H:26
48 LOW SPEED:L HIGH SPEED:H
47 H:4HEAD L:2HEAD

43 CAP ON
44 CAP F/R
45 STEREO L
46 BILIN GAL L
47 2HEAD/4HEAD
48 SEARCH SPEED SW
49 SEARCH PB MM
50 FGI
51 CFG OUT
52 CFG IN
53 DFG IN
54 DPG IN
55 VRO
56 VRI
57 PZ
58 CTL-
59 CTL+
60 A VDD
61 CTL AMP-
62 A VSS
63 CTL AMP +

LOADING MOTOR DRIVE IC1002 OEC9029A
COTROL LOGIC
POWER SAVE
TSD

FROM POWER(TV)
CP1005 8283_0212_00_000
LDM+B 2
MOTOR GND 1

FROM IN/OUT
EXT_IN-L

FROM/TO Y/C/AUDIO
VV-H
SP-L/LP-M/EP-H
REC/EE/PB
V.REC_ST-H
H.SW
DUMMY_V.SYNC
TRICK_PB-H
CTL+
CTL-
SYNC_OUT

FROM/TO HEAD AMP
ENV.DET
SP-L/LP-M/EP-H
V.REC_ST-H
H.SW

FROM POWER(VCR)
GND
AT+12V
P.CON+5V[A]
AT+5V
AT+5.6V
MOTOR_GND

TO OPERATION
T-REC_LED
REC_LED
PLAY_LED

CAUTION: DIGITAL TRANSISTOR

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

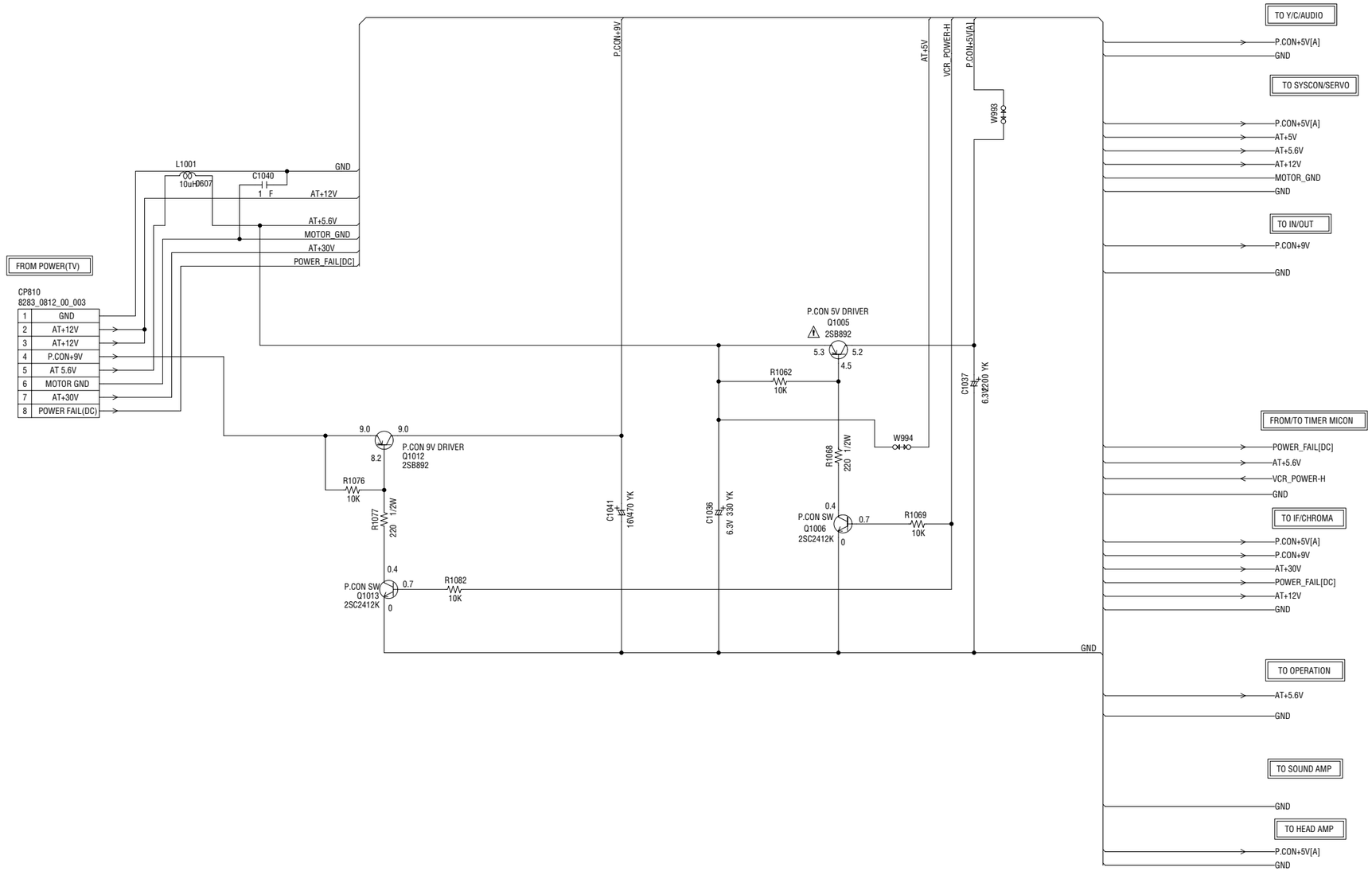
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

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
VM8135

POWER(VCR) SCHEMATIC DIAGRAM

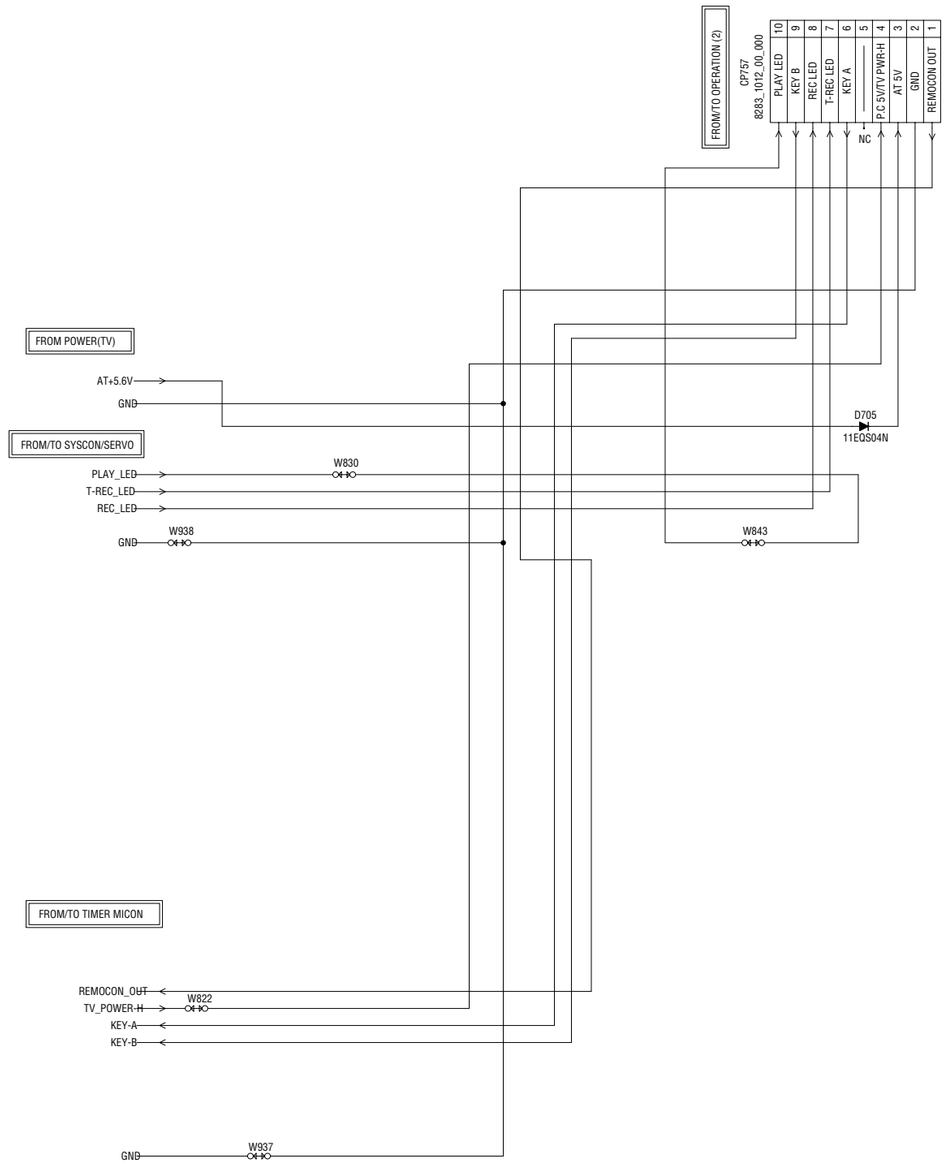


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB010
VM8135

OPERATION(1) SCHEMATIC DIAGRAM



PCB010
VM8135

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

INTERCONNECTION DIAGRAM

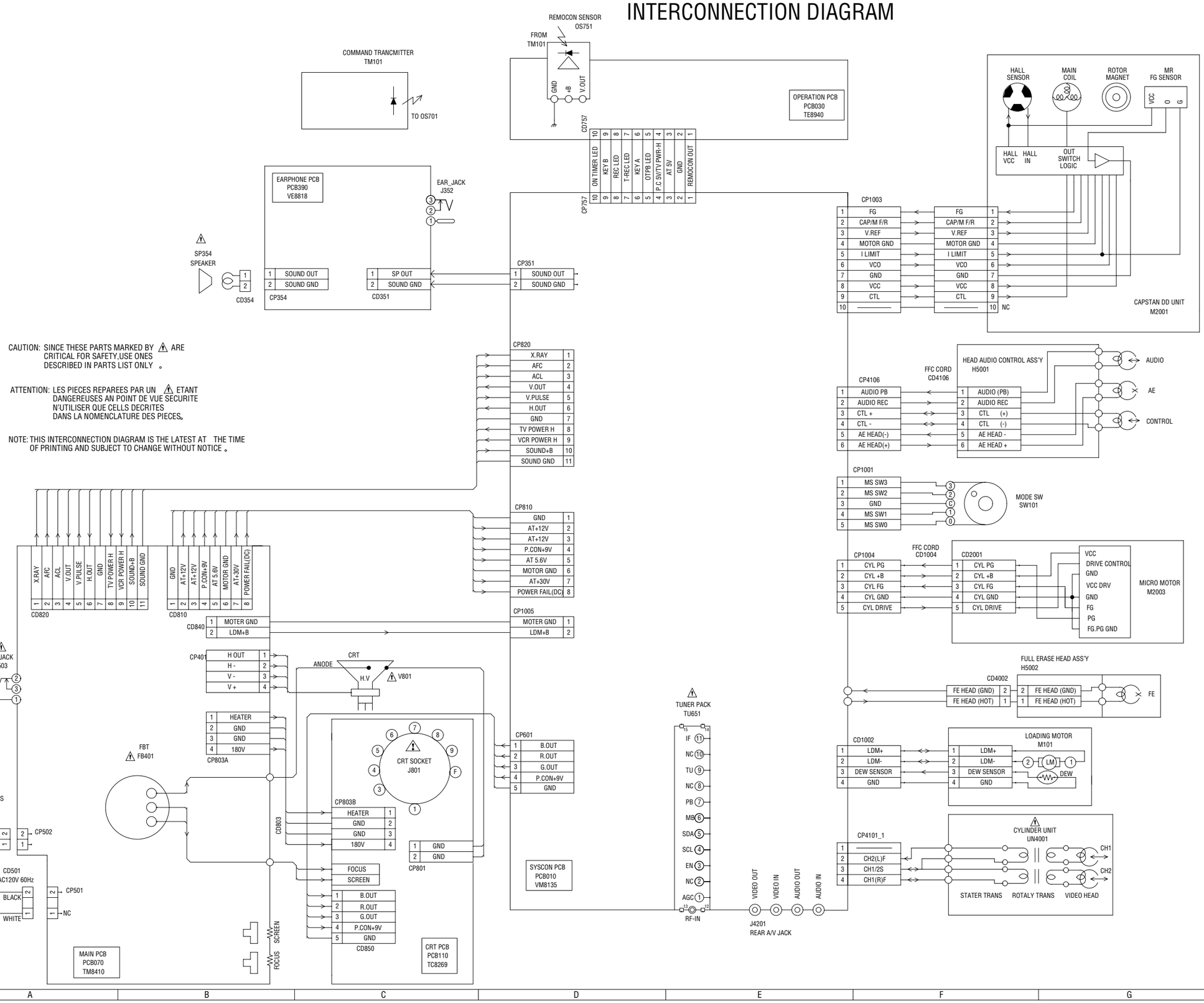


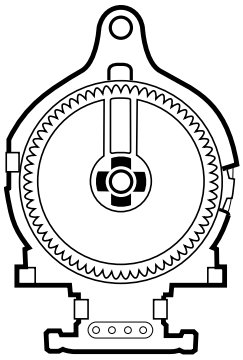
TABLE OF CONTENTS

The following parts can not be distinguished by the external appearance.

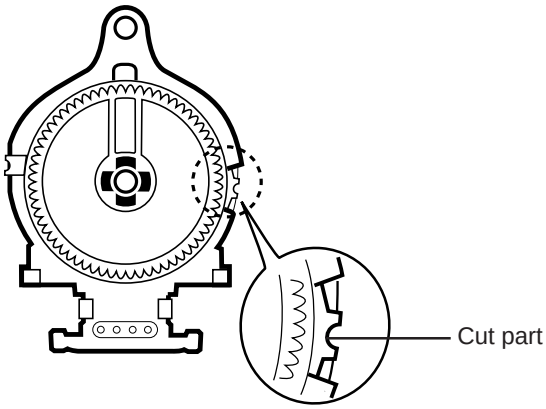
- SPRING, MAIN BRAKE and SPRING, MAIN BRAKE (VP)
- SPRING, TENSION ARM 1 and SPRING, TENSION ARM (1S)
- PINCH ROLLER BLOCK and PINCH ROLLER (PB) BLOCK

So before repairing, please identify each part by referring to the Parts List and Parts No. of Service Manual.

NAME: MODE SWITCH
PART NO.: 0520244003 or 0520244006

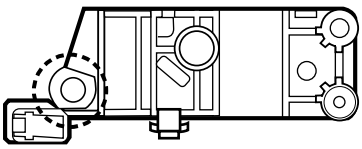


NAME: MODE SWITCH
PART NO.: 0520244005 or 0520244007

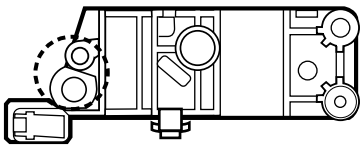


Distinction: You can distinguish by the cut part.

NAME: HOLDER, TENSION
PART NO.: 85OP400359

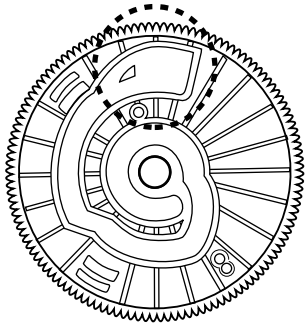


NAME: HOLDER, TENSION (S)
PART NO.: 85OP400452

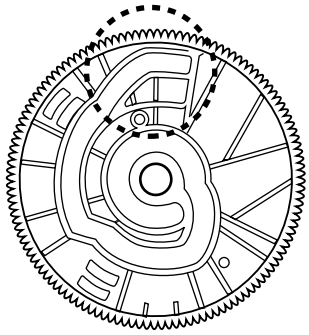


Distinction: You can distinguish by the shape in the dotted circle.

NAME: CAM, MAIN
PART NO.: 85OP600535

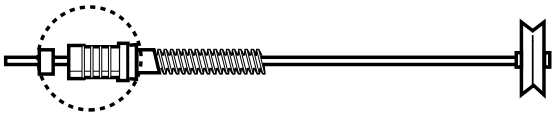


NAME: CAM, MAIN (VP)
PART NO.: 85OP600529

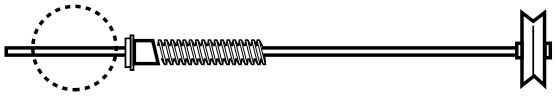


Distinction: You can distinguish by the shape in the dotted circle.

NAME: WORM ASS'Y
PART NO.: 85OA600159

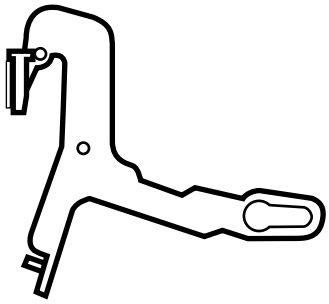


NAME: WORM (VP) ASS'Y
PART NO.: 85OA600179

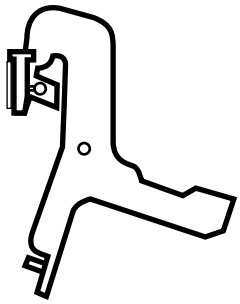


Distinction: You can distinguish by the shape in the dotted circle.

NAME: MAIN BRAKE T ASS'Y
PART NO.: 85OA600156

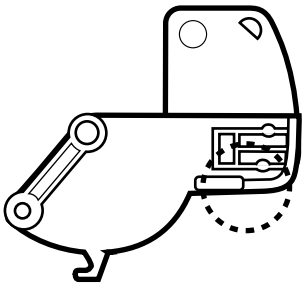


NAME: MAIN BRAKE T (VP) ASS'Y
PART NO.: 85OA600178

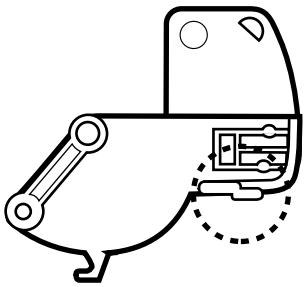


Distinction: You can distinguish by the shape.

NAME: LEVER, MAIN BRAKE
PART NO.: 85OP600468

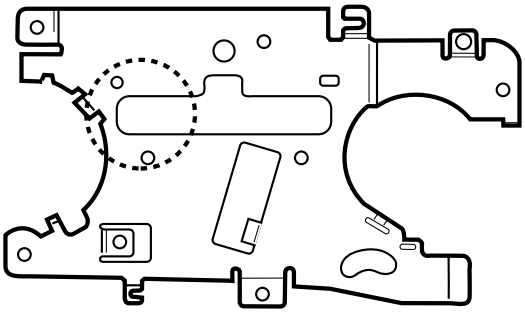


NAME: LEVER, MAIN BRAKE (VP)
PART NO.: 85OP600530

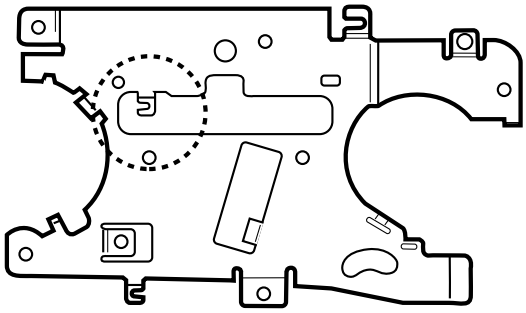


Distinction: You can distinguish by the shape in the dotted circle.

NAME: BRACKET, BRAKE
PART NO.: 85OP600471

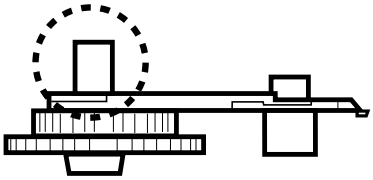


NAME: BRACKET, BRAKE (VP)
PART NO.: 85OP600531

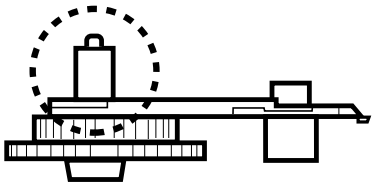


Distinction: You can distinguish by the shape in the dotted circle.

NAME: ARM IDLER ASS'Y
PART NO.: 85OA200065

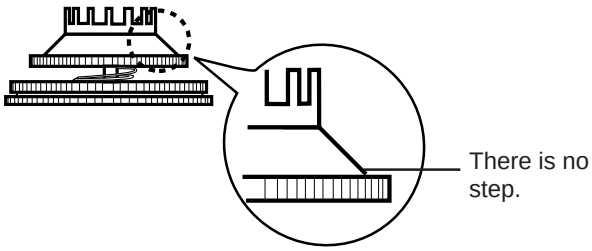


NAME: ARM IDLER (VP) ASS'Y
PART NO.: 85OA200067

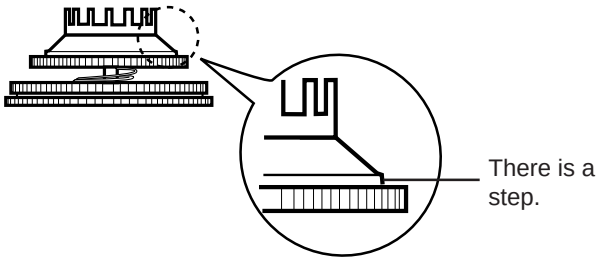


Distinction: You can distinguish by the shape in the dotted circle.

NAME: CLUTCH GEAR T ASS'Y
PART NO.: 85OA200064
NAME: CLUTCH GEAR S ASS'Y
PART NO.: 85OA200063
NAME: CLUTCH GEAR S (S) ASS'Y
PART NO.: 85OA200070



NAME: CLUTCH GEAR T (VP) ASS'Y
PART NO.: 85OA200069
NAME: CLUTCH GEAR S (VP) ASS'Y
PART NO.: 85OA200068
NAME: CLUTCH GEAR S (VPS) ASS'Y
PART NO.: 85OA200071



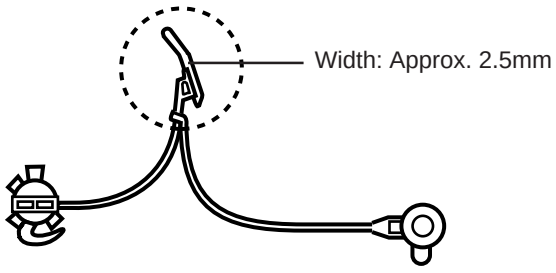
Distinction: You can distinguish by the existence of the step.

NOTE: The following parts can't be distinguished by the external appearance.

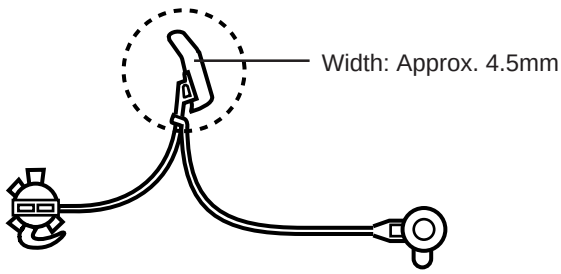
- CLUTCH GEAR S ASS'Y and CLUTCH GEAR S (S) ASS'Y
- CLUTCH GEAR S (VP) ASS'Y and CLUTCH GEAR S (VPS) ASS'Y

So before repairing, please identify each parts by referring to the Parts List and Parts No. of Service Manual.

NAME: AHC ASS'Y
PART NO.: 85OA500013
MATERIAL COLOR: WHITE



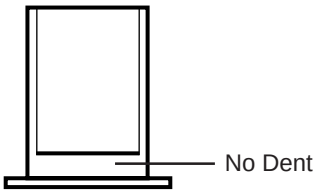
NAME: AHC ASS'Y (2)
PART NO.: 85OA500020
MATERIAL COLOR: GRAY



Distinction: You can distinguish by the material color and shape in the dotted circle.

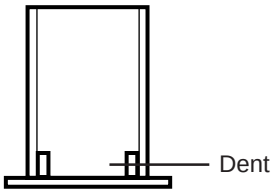
NAME: CAM PINCH ROLLER
PART NO.: 85OP400433
MATERIAL COLOR: WHITE

Cross Section



NAME: CAM PINCH ROLLER (PB)
PART NO.: 85OP400430
MATERIAL COLOR: GRAY

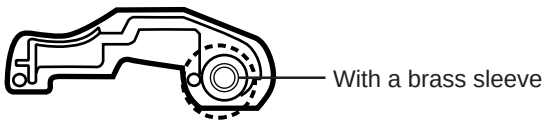
Cross Section



Distinction: You can distinguish by the material color and the dent.

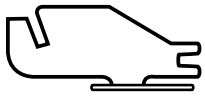
NAME: P5 ARM ASS'Y
PART NO.: 85OA400120

NAME: P5 ARM ASS'Y (PB)
PART NO.: 85OA400168

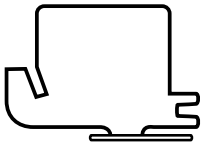


Distinction: You can distinguish by the shape in the dotted circle.

NAME: CATCHER P5 2
PART NO.: 85OP400402

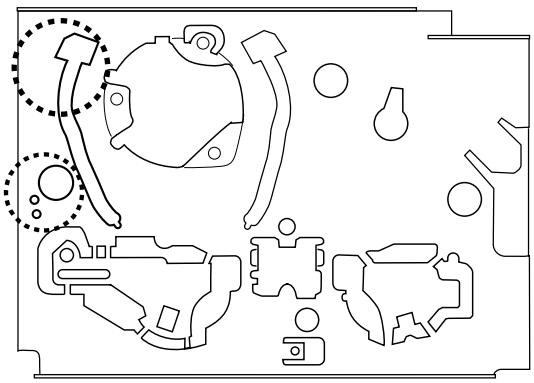


NAME: CATCHER P5 (VP)
PART NO.: 85OP400446

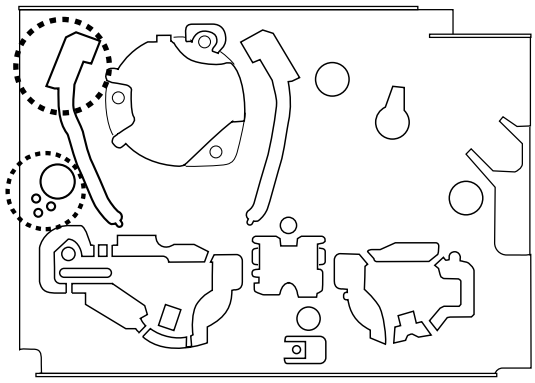


Distinction: You can distinguish by the shape.

NAME: MAIN CHASSIS ASS'Y
PART NO.: 85OA000173, 85OA000221, 85OA000222, 85OA000229 or 85OA000231

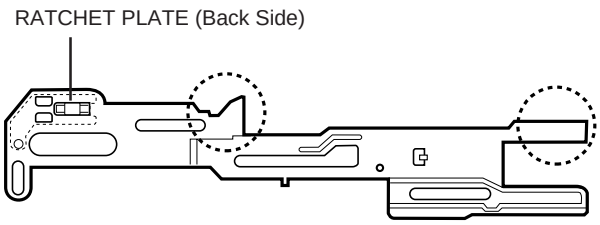


NAME: MAIN CHASSIS ASS'Y
PART NO.: 85OA000227, 85OA000226 or 85OA000230

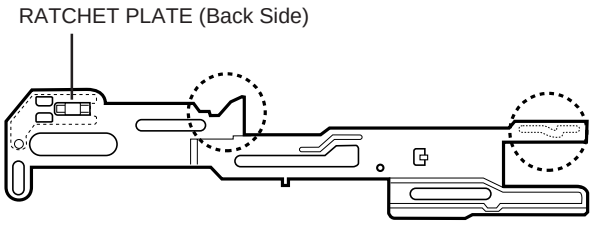


Distinction: You can distinguish by the shape in the dotted circle.

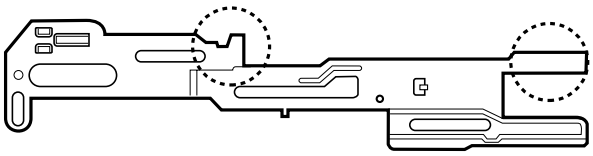
NAME: ROD, MAIN ASS'Y
PART NO.: 85OA600176



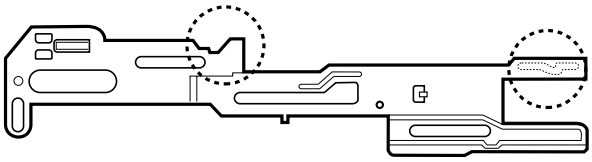
NAME: ROD, MAIN (S)
PART NO.: 85OA600181



NAME: ROD, MAIN (VP)
PART NO.: 85OP600527

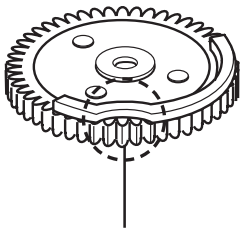


NAME: ROD, MAIN (VPS)
PART NO.: 85OP600538



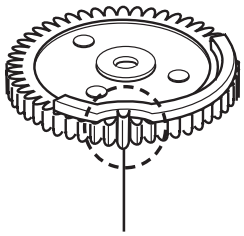
Distinction: You can distinguish by the shape in the dotted circle.

NAME: CAM, P5
PART NO.: 85OP400344



All teeth are the same height.

NAME: CAM, P5
PART NO.: 85OP400450



Only one tooth is high.

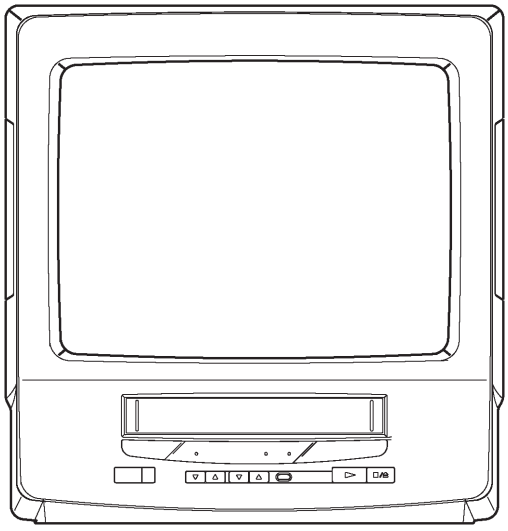
Distinction: You can distinguish by the tooth height of circled section.

Memorex®

MVT2138

SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER



VHS

ORIGINAL
MFR'S VERSION C

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

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

2. AVOID AN ELECTRIC SHOCK

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

3. USE THE DESIGNATED PARTS

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

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

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

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

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

6. AVOID AN X-RAY

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

7. PERFORM A SAFETY CHECK AFTER SERVICING

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

(INSULATION CHECK PROCEDURE)

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

[Note 1]

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

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

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

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

CONTENTS

GENERAL SPECIFICATIONS

G-1.Outline of the Product

13 inch(335.4mmV):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.Rewind/Fast Forward Time(Approx.)

2' 30" ☒(with T-120 cassette) ☐(with E-180 cassette)

G-12.Search Speed

☒SP 3 and 5 Times

☒LP 7 and 9 Times

☒SLP 9 and 15 Times

G-13.Slow Speed

☐SP _____ Times

☐LP _____ Times

☐SLP _____ Times

G-14.Frame Advance

☐SP _____ Times

☐LP _____ Times

☐SLP _____ Times

GENERAL SPECIFICATIONS

G-15.Antenna Input Impedance

VHF/UHF 75 ohm unbalanced

G-16.Tuner and Receiving channel ☒1Tuner Syatem ☐2Tuner System

Tuner : Contactless Electric tuner

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

Receiving channel

VHF	(LOW)	2 ch~ 6 ch		
	(HIGH)	7 ch~ 13 ch		
	(CATV)	A5 ch~ I ch	J ch~ W+29 ch	GGG ch~ W+84 ch
UHF		14 ch~ 69 ch		

Tuning System

☒Frequency syn. ☐Voltage syn. ☐Others

G-17.Preset Channel

-- channels

G-18.Intermediate Frequency

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

G-19. Stereo/Dual TV Sound

☐Yes(☐NICAM ☐GERMAN ☐USA ☐JAPAN) ☒No

G-20.Video Signal

Input Level 1 Vp-p / 75 ohm

Output Level 1 Vp-p / 75 ohm

S/N Ratio 50 dB (Weighted)

Horizontal Resolution at SP Mode 230 Lines

G-21.Audio Signal

Input Level

Line	-- dB / --	Kohm
RCA	- 8 dB / 50	Kohm

Output Level

Line	-- dB / --	Kohm
RCA	- 6 dB / 1	Kohm

(0dB=0.775 V rms)

S/N Ratio at SP Mode 42 dB

Harmonic Distortion : 1.5 % (1KHz)

Frequency Response : at SP Mode 120 Hz ~ 10 KHz

at LP Mode 120 Hz ~ 6 KHz

at SLP Mode 120 Hz ~ 4 KHz

G-22.Heads

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

G-23.Motor: 3 Motors

☒Tape/Cassette Loading

☒Cylinder (Direct Drive)

☒Capstan (Direct Drive)

G-24.Power Source

120 V ☐AC 50Hz ☒AC 60Hz

☒EXT DC Jack 12 V

GENERAL SPECIFICATIONS

G-25.Power Consumption: 88 W at AC 120 V 60 Hz
54 W at DC 12 V
(at TV and VCR ON)
Stand by: 10 W at AC 120 V 60 Hz
Per Year: -- kWh / Year

G-26.Dimensions(Approx.)
365 mm(W) 370 mm(D) 382 mm(H)

G-27.Weight(Approx.) Net : 12.5 Kg (27.6 lbs)
Gross: 14.5 Kg (32.2 lbs)

G-28.Cabinet Material

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

G-29.Cassette Loading System: ☒Front Cassette Loading System
☐Top Loading System

G-30.Tape Counter: Linear Time Tape Counter

G-31.Protector: ☒Power Fuse ☒Dew Sensor

G-32.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

☐PTB	☒DHHS	☒HWC	☐DENTORI	☐NONE

G-33.Temperature

Operation	5	ºC~ 40 ºC
Storage	-20	ºC~ 60 ºC

G-34.Operating Humidity Less than 80 %RH

G-35.Clockand Timer
Built-in 1 Month 7 Events Programmable Timer
One Touch Recording : Max Time 5 Hours

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

G-36.Timer back up Time
More than 1/12 Minutes (at Power Off Mode)

GENERAL SPECIFICATIONS

G-37.Terminals

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

G-38.Indicator

☒Power (Red)	☒Rec/OTR (Red)	☒Play (Red)	☐Tape-In (___)	☒Timer Rec (Red)
☐Stand By (___)	☐On Timer (___)	☐Rental Mode(or Clear Picture) (___)		
☐One Touch Playback(Button Lights)		☐Charge (___)		
☒Dew Sensor(Play LED Flush)		☐NONE		

G-39.On Screen Display

☒Menu

☒Clock Set(☒Calendar ☒12H ☐24H)	
☒Timer Rec Set	☒Language
☒Auto Repeat On/Off	☐Area Code
☐On/Off Timer Set	☒Channel Set
☐Guide CH Set	☒Picture
☐ATS	☐System Select
☐Protect On/Off	☐User Registration

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

☒Clock	☒CH
☒Tape Counter/Memory	☒Tape Speed
☒Sleep Time	☐EXT.Input

☒Control Level (Vol,Bright,Cont,Color,Tint,Sharpness)

☐Control Level (Vol,Bright,Cont,Color,Sharpness)

☒Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause

☒Auto Tracking/Manual Tracking	☒Caption 1/2
☐Index	☒Sound Mute
☒Add/Delete	☐Auto Wide On/Off
☐Wide Select	☐Picture Position
☐Tone 1/2	☐Stereo

G-40.OSD Language

☒Eng ☐Ger ☒Fre ☒Spa ☐Ita ☐Por ☐Jan

OSD Language Setting

☒Eng ☐Ger ☐Fre ☐Spa ☐Ita ☐Por ☐Jan

☐Not Applicable

G-41.Speaker

Position	☐Front ☒Side ☐Bottom
Size	3 inches
Imp	8 ohm x 1 pcs
Power	Max 1.0 W (Typical)
	10% 0.7 W (Typical)

GENERAL SPECIFICATIONS

G-42.EXT Speaker : ☐Yes __--__ W Imp __--__ ohm

G-43.Carton

Master Carton: ☐Need ☒No Need

Content: __----__ Set

Material: __----__ / __----__ Corrugated Carton

Dimensions: __----__mm(W) __----__mm(D) __----__mm(H)

Description of Origin ☐Yes ☐No

Gift Box

Material ☐AB Double/Brown Corrugated Carton (☐with Photo Label)
☒AB Double/White Corrugated Carton (☐with Photo Label)
☐AB Double Full Color Carton W/Photo

Dimensions: __447__mm(W) __423__mm(D) __443__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: __700__Sets / 40' container

G-44.Accessories

☐Channel Film ☐Dew Caution Sheet
☒Owner's Manual (☐W/Guarantee Card) [English/French]
☒Remote Control Unit ☐AC Plug Adaptor
☒Rod Antenna (☐One Pole ☒Two Pole/☒F-Type ☐DIN Type ☐France Type)
☐Loop Antenna(☐F-Type ☐DIN Type ☐France Type)
☐U/V Mixer ☐Quick Set-up Sheet
☒DC Car Cord (Center+) ☐Battery (UM-__4 x 2__)
☒Guarantee Card ☐AC Cord
☐Warning Sheet ☐AV Cord (2Pin-1Pin)
☐Circuit Diagram ☐Registration Card
☐Antenna Change Plug ☐PTB Sheet
☐Service Facility List ☐300 ohm to 75 ohm Antenna Plug
☐Euro Warranty Information Sheet

G-45.Other Features

☒Auto Head Cleaning ☐Index Search
☒Auto Tracking ☐Auto Search
☐CH Auto Set-Up/Auto Clock ☐ATS
☐VIDEO PLUS+(SHOWVIEW,G-CODE) ☐PDC
☒HQ (VHS Standard High Quality) ☐VPS
☒Auto Power On, Auto Play, Auto Rewind, Auto Eject,Auto Repeat System
☒Forward / Reverse Picture Search ☐SQPB
☐One Touch Playback ☒CATV(181CH)
☐Auto CH Memory ☐Anti-Theft
☐Just Clock Function ☐Rental Mode
☒Closed Caption ☐Fastext
☐Toptext ☐Unitext
☒TV Auto Shutt off Function ☒TV Monitor
☐NTSC Playback PAL TV (PAL 60Hz) ☐TV/Rec Monitor
☒One Touch Automatic Channel Programing

GENERAL SPECIFICATIONS

G-46.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-47.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

G-48.Remote Control Unit: RC-BH

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

☒ 0	☒Power	☒Prog.CFM
☒ 1	☒Rec/OTR	☒Enter
☒ 2	☒Play	☒Set +
☒ 3	☒F.Fwd	☒Set -
☒ 4	☒Rew	☐Auto Ch Memory
☒ 5	☒Pause/Still	☐Delete
☒ 6	☒Stop	☐Add
☒ 7	☐Eject	☒Tracking Auto
☒ 8	☐Slow	☒Tracking Up
☒ 9	☐Clock/Counter	☒Tracking Down
☐10	☒Counter Memory	☒Call
☐11	☒Counter Reset	☒TV/Caption/Text
☐12	☐TV/VCR	☐Caption On/Off
☒Ch Up	☒Speed	☒Ch.1/2
☒Ch Down	☐Index	☐Caption 1/2
☒Volume Up	☒Sleep Timer	☒Mute
☒Volume Down	☐Repeat	☐Preset (Ch Set)
☒Quick View	☐Bar Select	☐AFT
☐Clock/Prog	☐Normalize	☐Select
☒Menu	☒Cancel	☒Timer Rec
☐Search Up	☒TV Monitor	☐Ch.Set
☐Search Down	☐Mute/Normal	☐Daily
☐Fine Tuning Up/Tracking Up		☐Rental Mode
☐Fine Tuning Down/Tracking Down		☐Input Select
☐Tuning Select (Auto Search On/Off)		☐Once
☐One Touch Playback	☐VIDEO PLUS+ (SHOWVIEW,G-CODE)	
☐Weekly	☐F/T/B	☐Text/Mix/TV
☐Red	☐Cyan	☐Yellow
☐Green	☐Status	☒Reset

DISASSEMBLY INSTRUCTIONS

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

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

1. Remove the 4 screws ①.
2. Remove the 2 screws ②.
3. Remove the screw ③.
4. Remove the Back Cabinet in the direction of arrow.

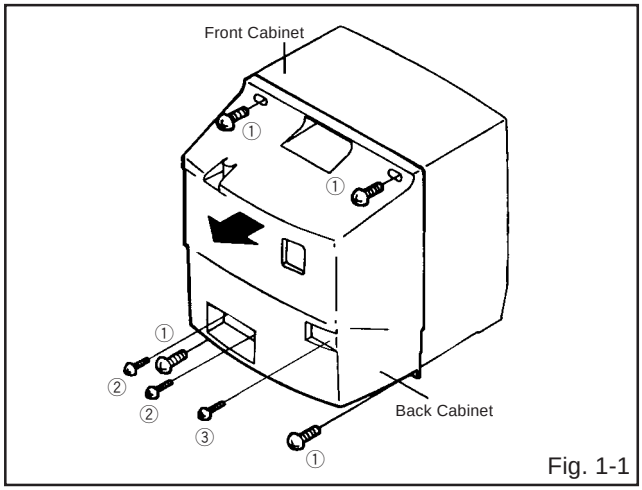


Fig. 1-1

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.

1-2: TV BLOCK (Refer to Fig. 1-2)

1. Remove the CRT PCB in the direction of arrow (A), then unplug the following connector: (CP801).
2. Remove the Anode Cap. (Refer to REMOVAL OF ANODE CAP)
3. Disconnect the following connectors: (CP820, CP810, CD850, CP401, CD840 and CP502).
4 Slide out the TV Block in the direction of arrow (B).

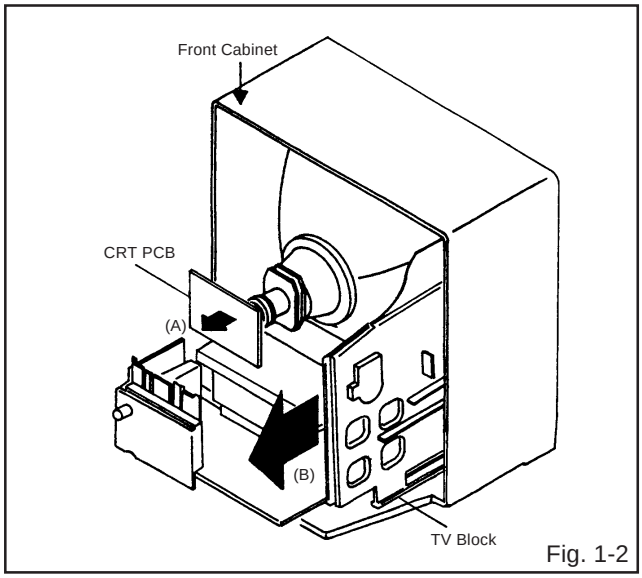


Fig. 1-2

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

1. Remove the 2 screws ①.
2. Disconnect the following connector: (CP351).
3. Unlock the support ②.
4. Remove the VCR Block in the direction of arrow.

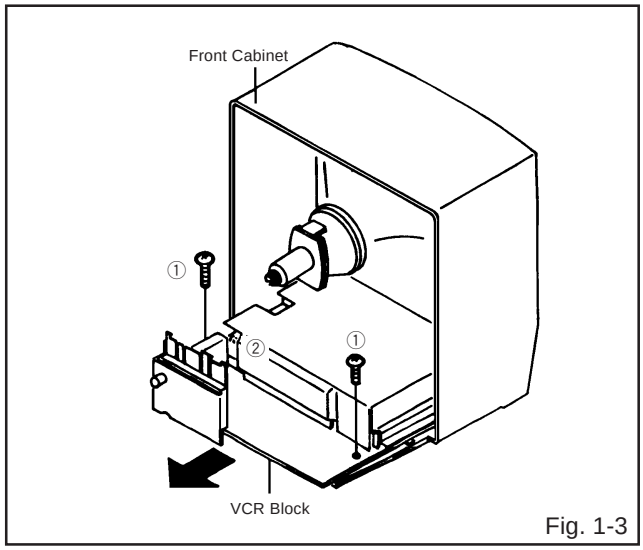


Fig. 1-3

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

1. Remove the 5 screws ①.
2. Remove the screw ②.
3. Unlock the 2 supports ③ and remove the Main PCB in the direction of the arrow.

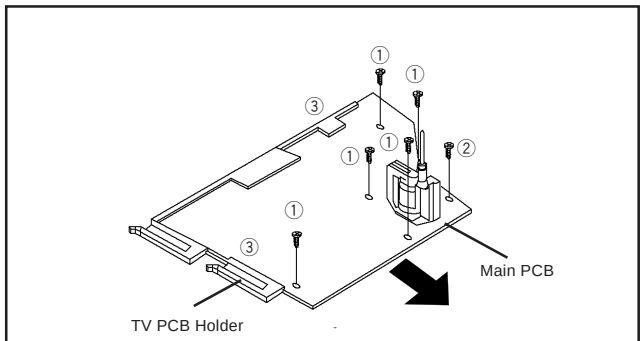


Fig. 1-4

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

1. Remove the 4 screws ①.
2. Remove the Deck Shield Plate in the direction of arrow.

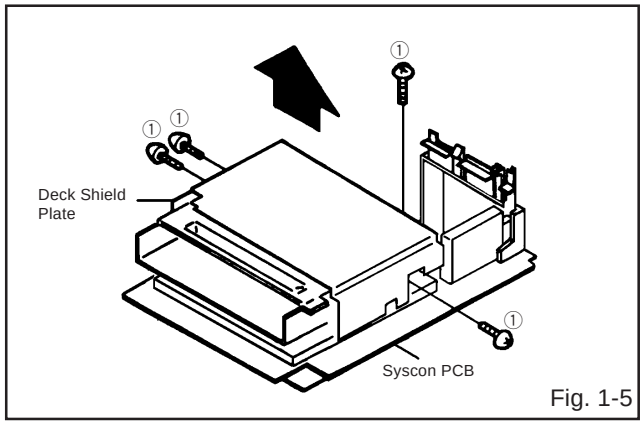


Fig. 1-5

DISASSEMBLY INSTRUCTIONS

1-6: FRONT LOADING UNIT 15, CHASSIS SECTION AND CASE SHIELD (Refer to Fig. 1-6-A)

1. Remove the 3 screws ①.
2. Remove the Case Shield.
3. Remove the screw ②.
4. Remove the screw ③.
5. Remove the Front Loading Unit 15 in the direction of arrow (A).
6. Remove the 3 screws ④.
7. Remove the 2 screws ⑤.
8. Disconnect the following connector: (CP4101 , CD1002, CD4002, CP1004 and CP4106).
9. Remove Chassis Section in the direction of arrow (B).

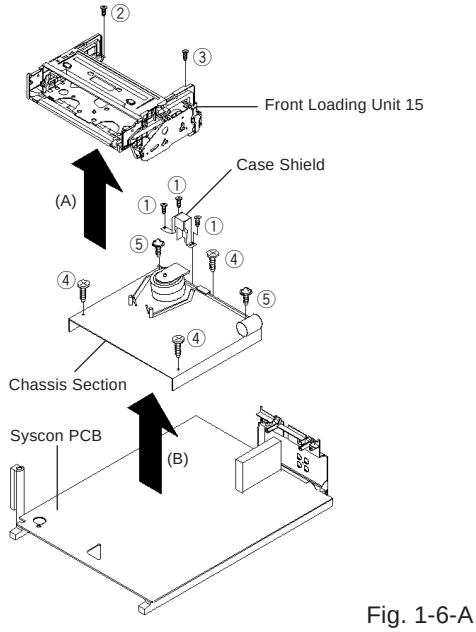


Fig. 1-6-A

NOTE

When installing the Front Loading Unit 15, align the timing marks and pull the Cassette Holder Ass'y in the direction of arrow (C). **(Refer to Fig. 1-6-B)**

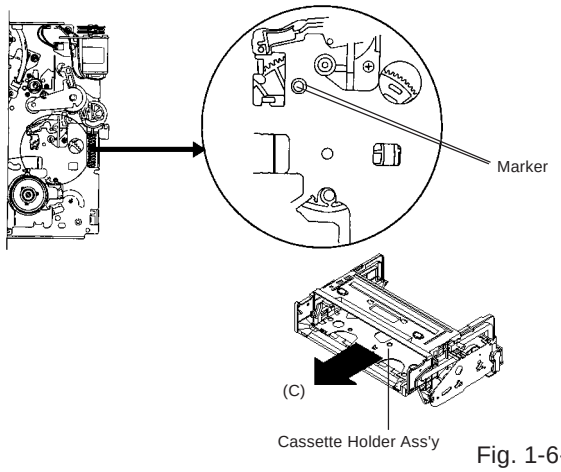


Fig. 1-6-B

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

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Remove the screw ②.
4. Remove the Nut ③.
5. Unlock the 2 support ④ and remove the Jack Plate in the direction of arrow (B).

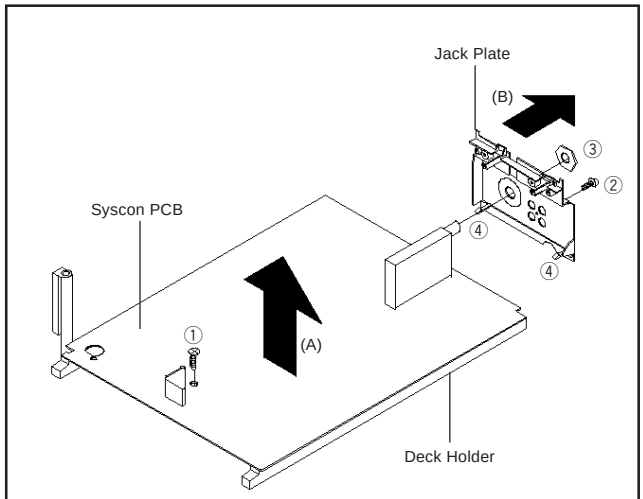


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DECK PARTS

2-1: LINK GEAR (R) / CAM GEAR (Refer to Fig. 2-1)

1. Unlock the support ①.
2. Remove the BOT Sensor Cover and BOT Reflector.
3. Unlock the 3 supports ②.
4. Remove the Side Bracket R2 and Spring Earth.
5. Remove the Flap Lever, Link Gear (R) , Cam Gear Ass'y and BOT Lever.

NOTES

1. When installing the BOT Lever, insert the BOSS into the hole of Link Gear (R).
2. When installing the Link Ass'y 3 and Link Gear (R), align the timing Marks.

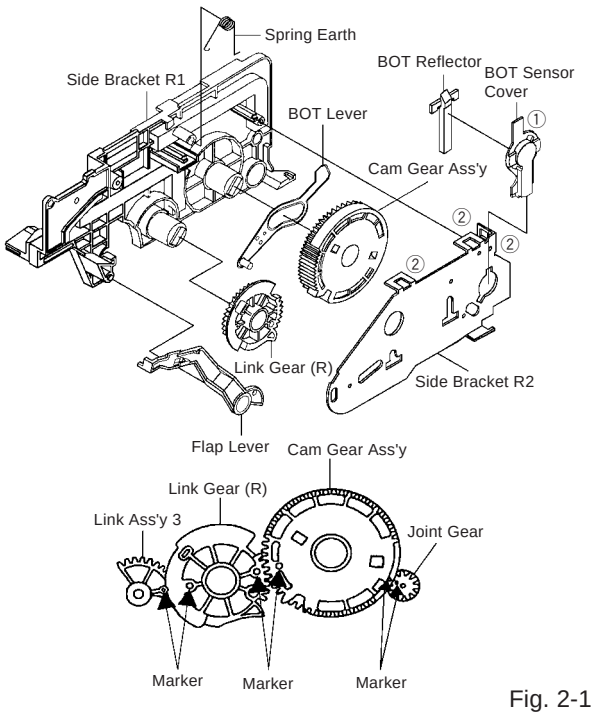


Fig. 2-1

2-2: TOP BRACKET / TAPE PIECE GUIDE (Refer to Fig. 2-2)

1. Remove the Rec Lever Spring.
2. Unlock the 2 supports ①.
3. Remove the Tape Piece Guide.
4. Unlock the 4 supports ②.
5. Remove the Top Bracket.
6. Remove the Side Bracket R1 and Side Bracket L.
7. Unlock the support ③.
8. Remove the Joint Gear.
9. Remove the Bracket R Spring.

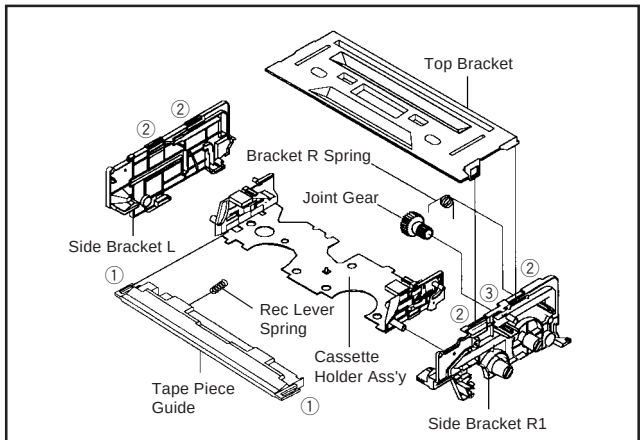


Fig. 2-2

2-3: LINK ASS'Y 3 (Refer to Fig. 2-3)

1. After removing in the direction (A) of Link Ass'y 3, remove the Link Ass'y 3 in the direction (B).

NOTE

Install the (B) first, then install the (A).

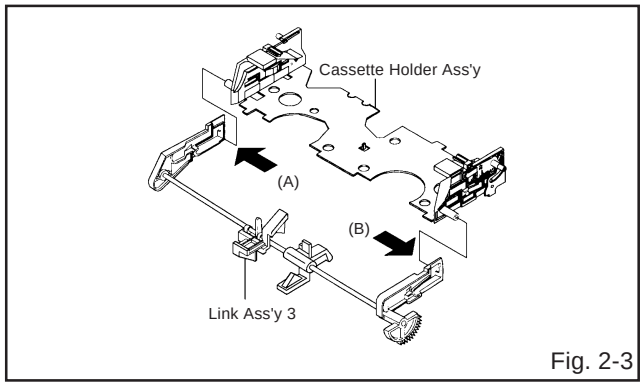


Fig. 2-3

2-4: CASSETTE SIDE R (Refer to Fig. 2-4)

1. Unlock the 2 supports ①.
2. Remove the Cassette Side R.
3. Remove the Pack Spring.
4. Remove the Locker Spring.
5. Unlock support ②.
6. Remove the Locker R.

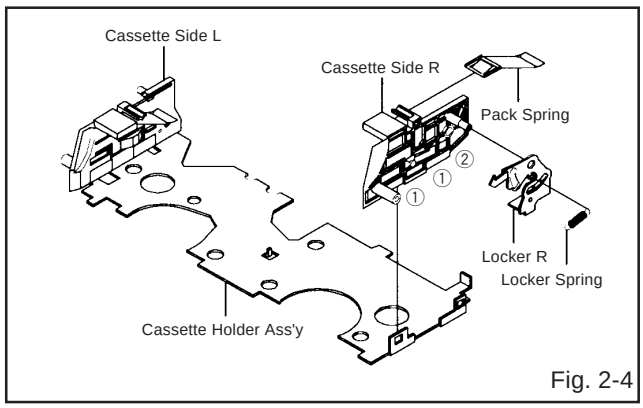


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

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

1. Unlock the 2 supports ①.
2. Remove the Cassette Side L.
3. Remove the Pack Spring.
4. Remove the Locker Spring.
5. Unlock the support ②.
6. Remove the Locker L.

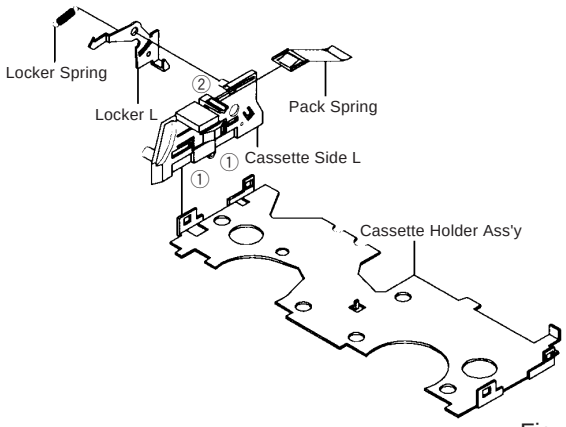


Fig. 2-5

2-6: BRAKE BRACKET (Refer to Fig. 2-6)

1. Remove the Main Brake Spring, S-S Brake Spring, Joint Arm Spring and T-S Brake Spring.
2. Remove the 2 screws ①.
3. Remove the screw ②.
4. Remove the Brake Bracket.
5. Remove the Sub Brake S, Sub Brake T and Main Brake T Ass'y.
6. Remove the Joint Arm.
7. Remove the Reflector LED 2.

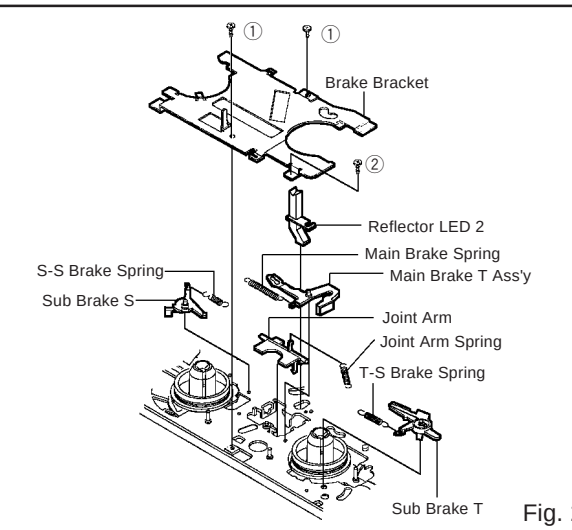


Fig. 2-6

2-7: TENSION BAND (Refer to Fig. 2-7)

1. Remove the Tension Arm Spring 1.
2. Remove the Tension Arm Spring 2.
3. Remove the Tension Adjust.
4. Remove the Tension Arm Ass'y.
5. Remove the Tension Band Ass'y.
6. Remove the Tension Lever 2 Ass'y.

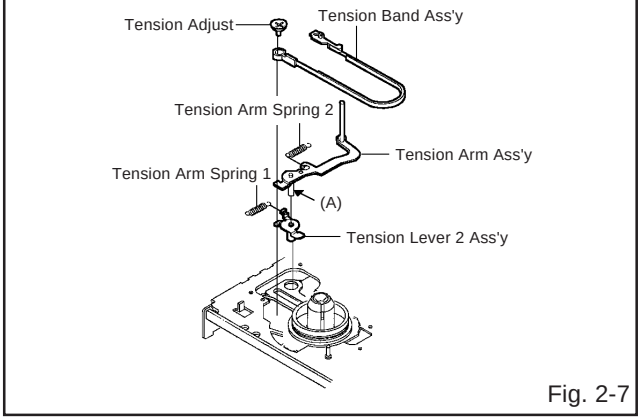


Fig. 2-7

NOTE

1. Install the Tension Band Ass'y without twisting it.
2. Turbine Oil (Lubricating Grade #150) the area marked with A in **Fig. 2-7**.

EX: KYOUDO Oil Sulaidasu #150
IDEMITSU Oil Super Multi #150

2-8: REEL DISK (Refer to Fig. 2-8)

1. Remove the Reel Disk S and Reel Disk T.
2. Remove the 2 polyslider washers.

NOTES

1. Installation of Reel Disk after performing step 1, 2 and 3 in section 2-7 of DISASSEMBLY INSTRUCTIONS.
2. The Height Adjustment washers are sometimes attached to the back of the Reel Disk.
3. Clean the Reel Disk Shaft and put in height adjusting washers.
4. Be careful not to damage the Tension Band Ass'y at the time of removal and installation.
5. Be careful not to scratch the Reel Disk Shaft with the polyslider washer or the tool at the time of removal and installation.
6. After oiling (Lubricating Grade #150) the Reel Disk Shaft, install the new Reel Disk S and Reel Disk T again.

EX: KYOUDO Oil Sulaidasu #150
IDEMITSU Oil Super Multi #150

7. After installation, adjust the height of the Reel Disk. **(Refer to item 1-1 of MECHANICAL ADJUSTMENTS)**
8. After installation, adjust and confirm the tension post position. **(Refer to item 1-2 of MECHANICAL ADJUSTMENTS)**

DISASSEMBLY INSTRUCTIONS

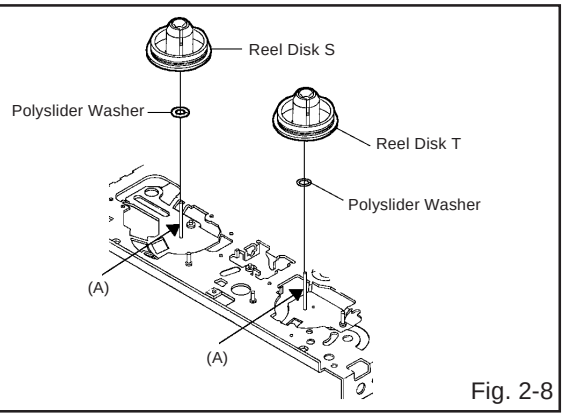


Fig. 2-8

2-9: PINCH ROLLER / CASSETTE OPENER (Refer to Fig. 2-9)

1. Unlock the support ①.
2. Remove the Pinch Roller.
3. Remove the screw ②.
4. Unlock the 2 supports ③.
5. Remove the Cassette Opener.
6. Remove the Spring P5 and Arm P5 Ass'y.
7. Remove the Cam Gear, Polyslider Washer ④, Spring Cam Pinch and Cam Pinch Roller.
8. Remove the Polyslider Washer ⑤ and Cam P5.

NOTES

1. Do not touch the Pinch Roller. (Use gloves.)
2. When installing the Cam P5, Cam Pinch Roller and Cam Gear, align the timing marks.

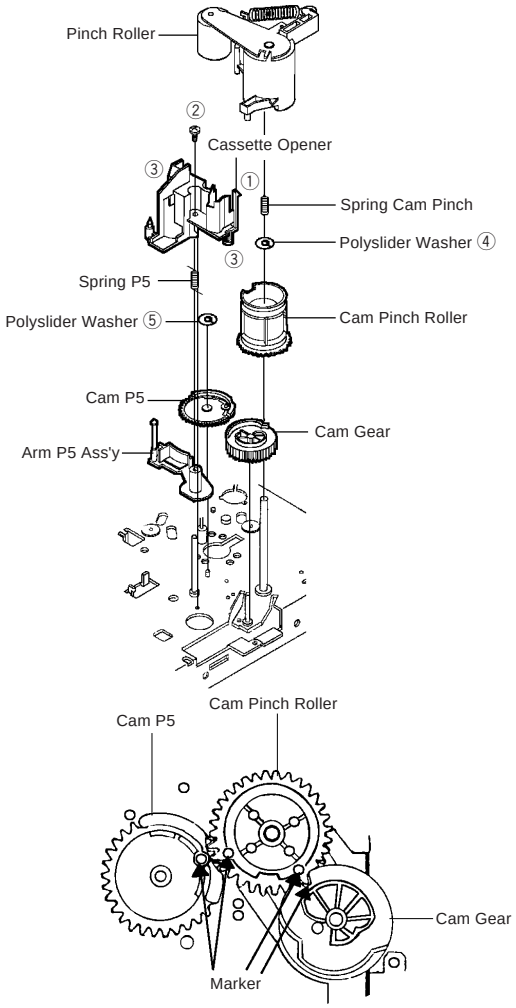


Fig. 2-9

2-10: AUDIO CONTROL HEAD (Refer to Fig. 2-10)

1. Remove the 3 screws ①.
2. Remove the 3 Audio Control Head Springs.
3. Remove the Audio Control Head.

NOTES

1. Do not touch the head by any means when replacing the Audio Control Head. (Use gloves.)
2. After replacement, confirm the following adjustments.
   a. MECHANICAL ADJUSTMENTS: ITEM 2-2
   b. MECHANICAL ADJUSTMENTS: ITEM 2-3

DISASSEMBLY INSTRUCTIONS

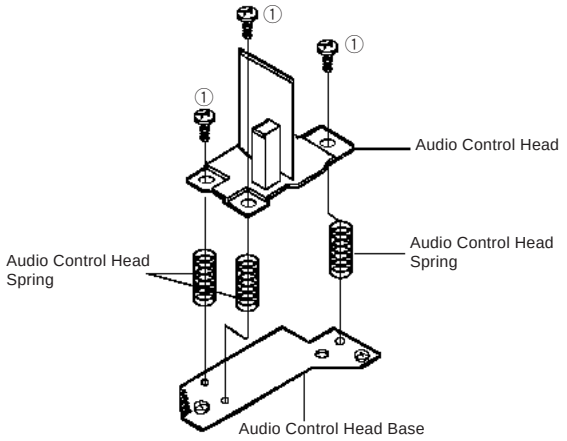


Fig. 2-10

2-11: CYLINDER UNIT (Refer to Fig. 2-11)

1. Remove the Joint Screw, then remove the Azimuth Spring.
2. Remove the 2 screws ①, then remove the Polyslider Washer and Cylinder Unit from the Main Chassis.

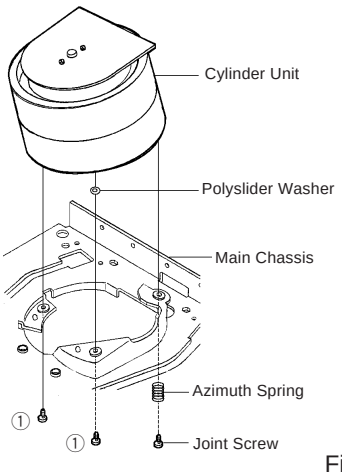


Fig. 2-11

2-12: PLATE BOTTOM (Refer to Fig. 2-12)

1. Remove the Capstan Belt.
2. Remove the 2 screws ①.
3. Remove the 3 screws ②.
4. Remove the Mode Switch.
5. Remove the Tension Lever Spring.
6. Remove the Plate Bottom.

NOTE

When installing the Mode Switch, align the timing position.

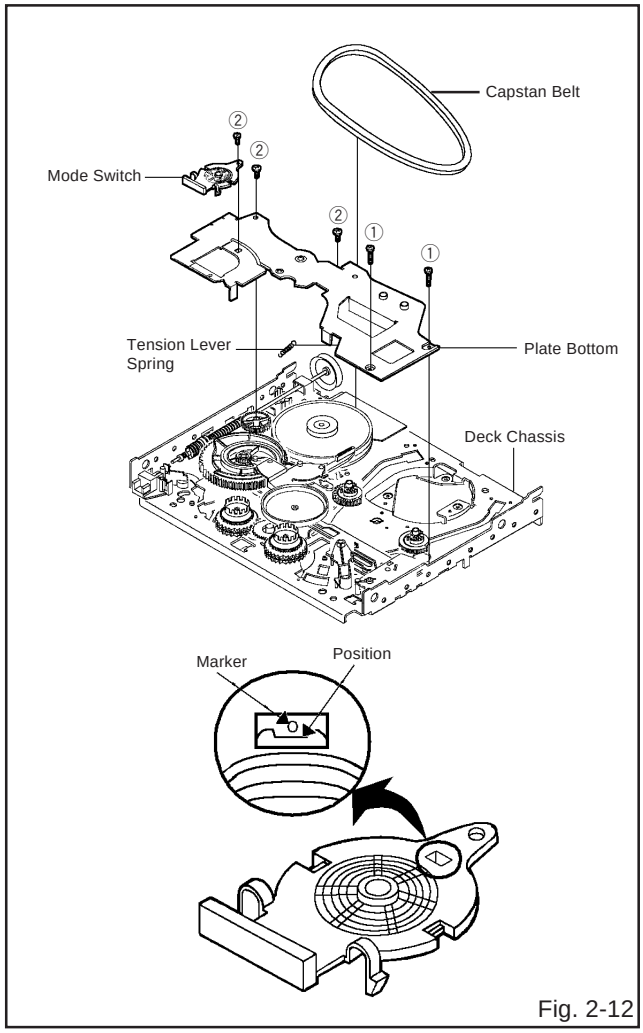


Fig. 2-12

2-13: CENTER PULLEY (Refer to Fig. 2-13)

1. Remove the Polyslider Washer ①.
2. Remove the Center Pulley.
3. Remove the Polyslider Washer ②.
4. Remove the Center Pulley Spring.
5. Remove the Idler Arm Ass'y.
6. Remove the 2 Polyslider Washers ③.
7. Remove the Clutch Gear T Ass'y and Clutch Gear S Ass'y.

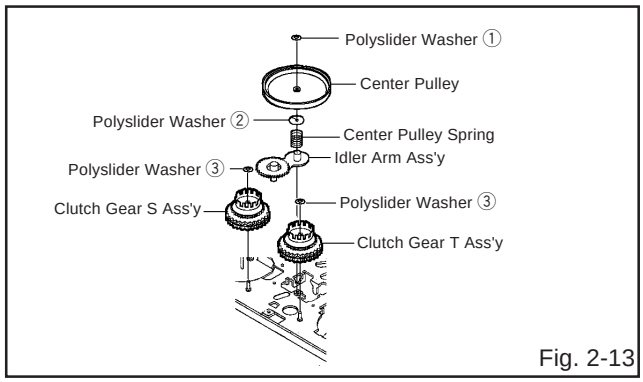


Fig. 2-13

DISASSEMBLY INSTRUCTIONS

2-14: MAIN CAM (Refer to Fig. 2-14)

1. Remove the Loading Lever.
2. Remove the Main Brake Lever.
3. Remove the Capstan Brake Spring.
4. Remove the Capstan Brake Ass'y.
5. Remove the Tension Holder.
6. Remove the Tension Lever.
7. Remove the Main Cam.
8. Remove the Middle Gear.
9. Remove the Main Rod Ass'y.

NOTES

1. When installing the Main Rod Ass'y, install side (B) first, then install side (A).
2. When installing the Loading Lever, align the timing marks.

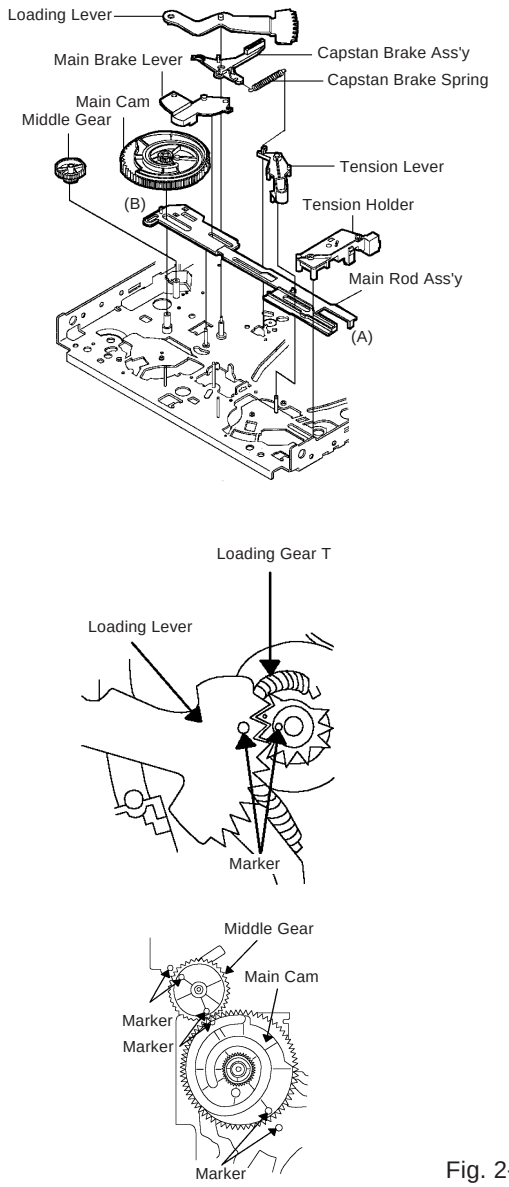


Fig. 2-14

2-15: CAPSTAN DD UNIT (Refer to Fig. 2-15)

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

NOTE

Use the specified screw to hold the Capstan DD Unit.

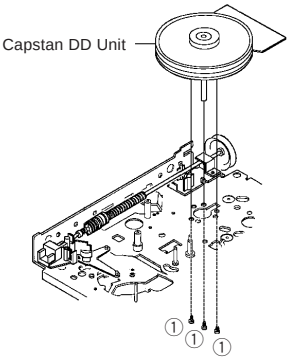


Fig. 2-15

2-16: INCLINED T ASS'Y / INCLINED S ASS'Y (Refer to Fig. 2-16)

1. Remove the 4 screws ①.
2. Remove the Catcher S and Catcher T.
3. Remove the 2 screws ②.
4. Remove the Slider Loadings.
5. Remove the Inclined T Ass'y and Inclined S Ass'y.
6. Remove the Loading Gear T Ass'y.
7. Remove the Loading Gear S Ass'y.

NOTE

When installing the Inclined T Ass'y and Inclined S Ass'y, align the timing marks.

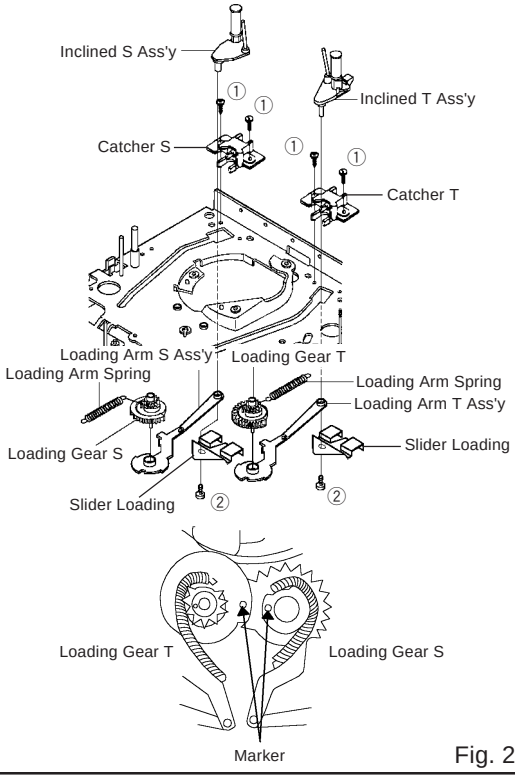


Fig. 2-16

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.

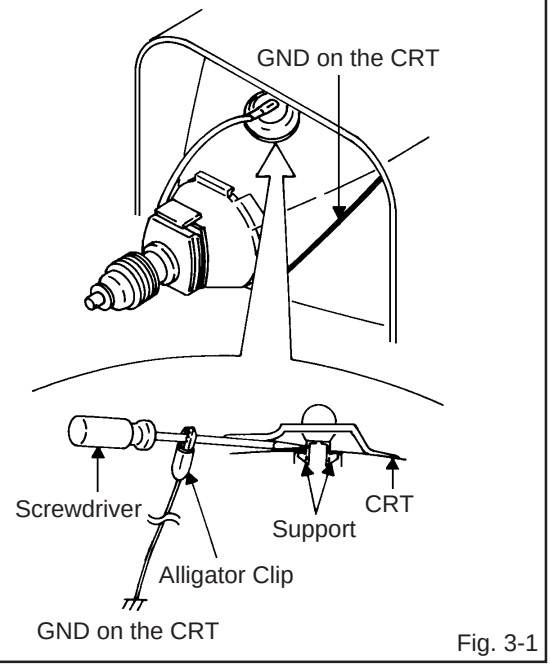


Fig. 3-1

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.)**

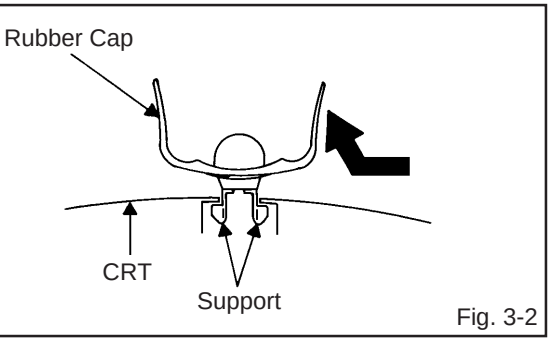


Fig. 3-2

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.)**

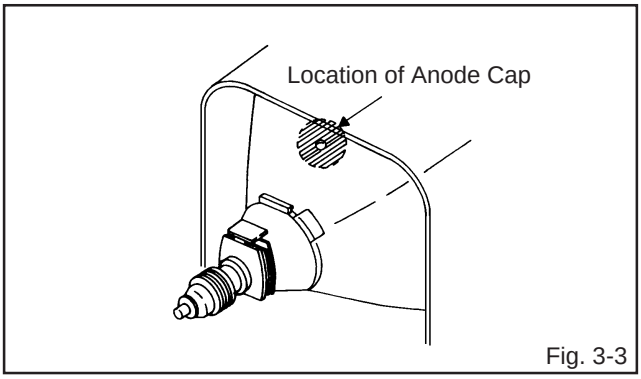


Fig. 3-3

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.)**

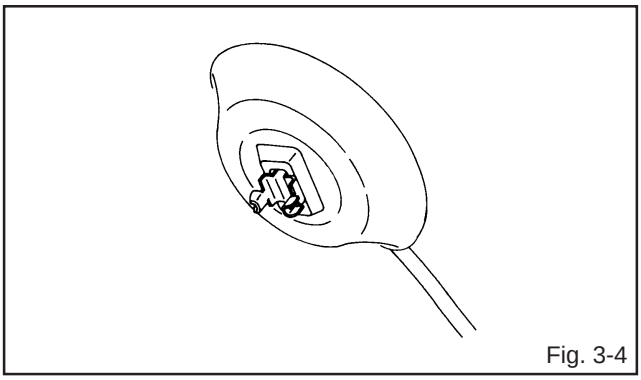


Fig. 3-4

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

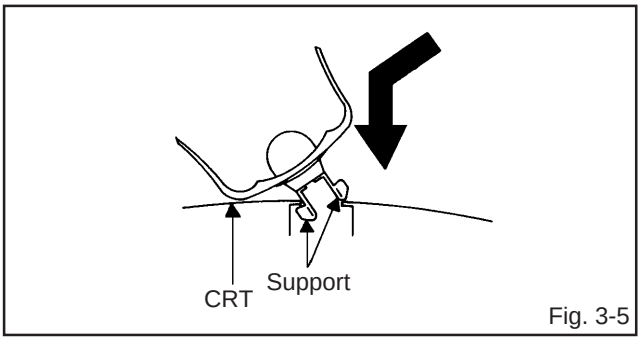


Fig. 3-5

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	:	Mech 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

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	■	■	■	■	■	
Loading Motor Belt			■	■	●	Clean the rubber, and parts which the rubber touches.
Reel Belt			■	■	●	
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.

● : Replace ■ : Clean

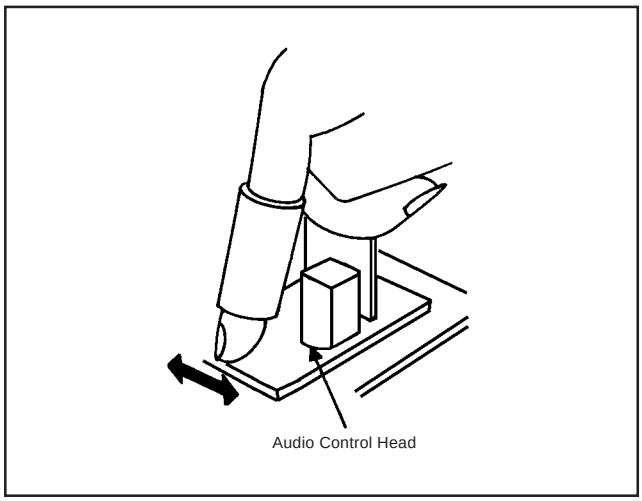
CLEANING

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

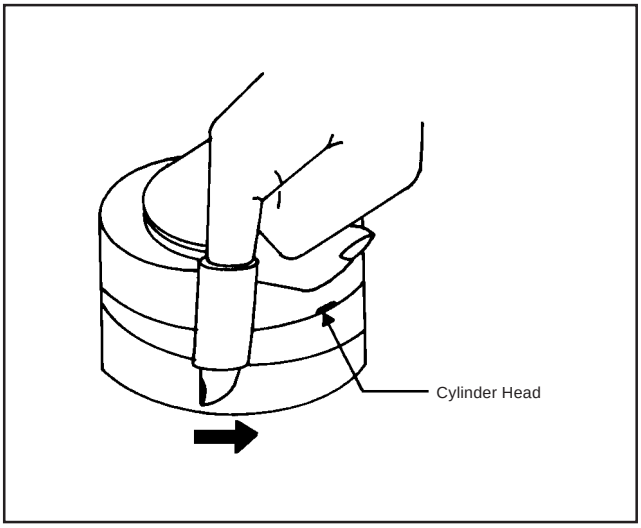
○ When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

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 up or down since this can damage the head. Always use a piece of chamois for cleaning.



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 1 hour before Power On or alternatively, discharge backup capacitor.**
- **No need the setting for after INI 6.**

ADDRESS	INI 01	INI 02	INI 03	INI 04	INI 05	INI 06
DATA	0C	09	2B	16	56	30

Table 1

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

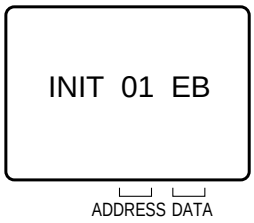


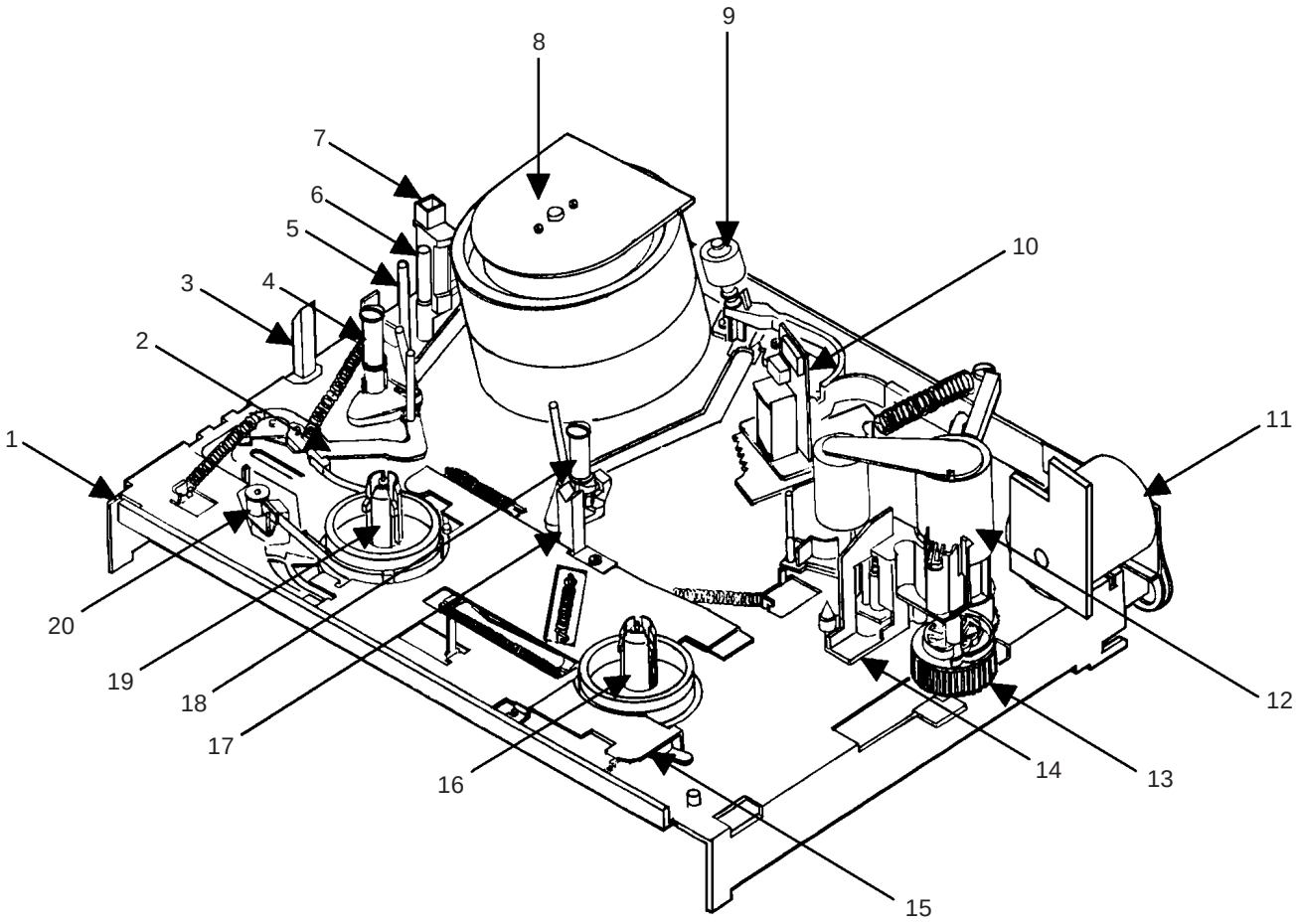
Fig. 1

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

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

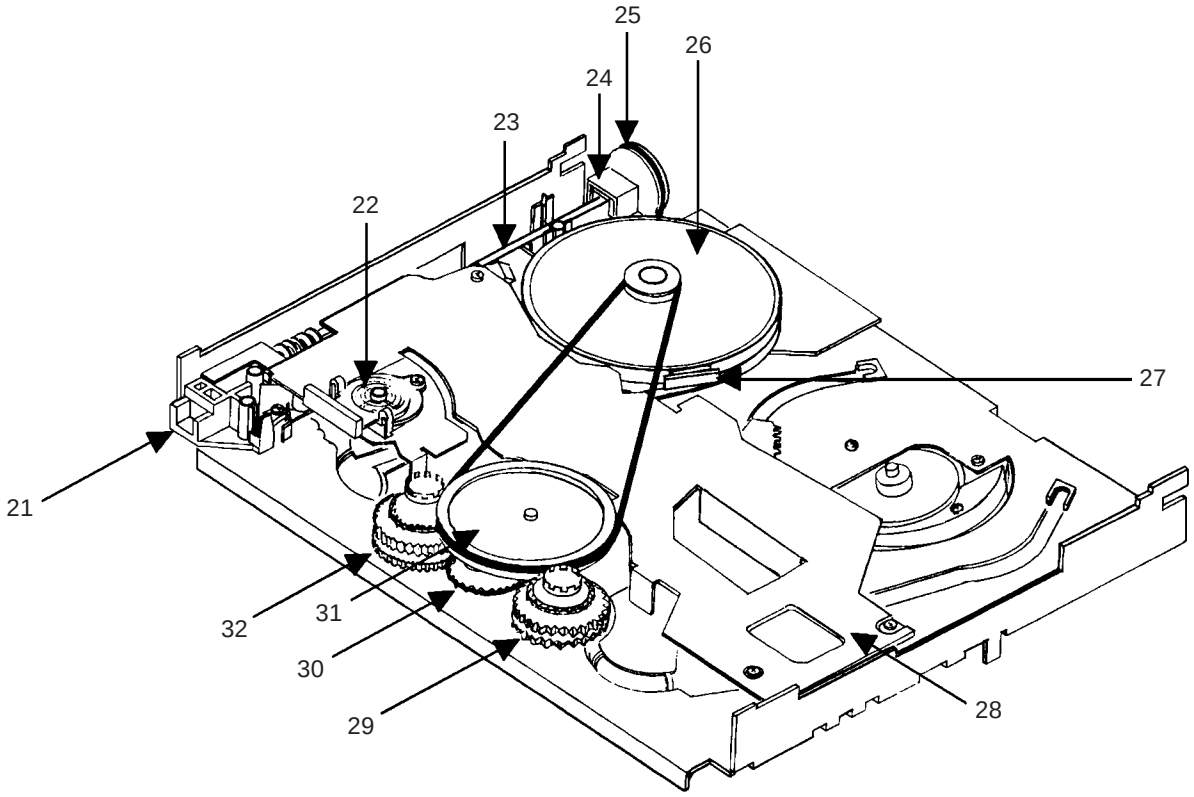
DECK PARTS LOCATIONS

(TOP VIEW)



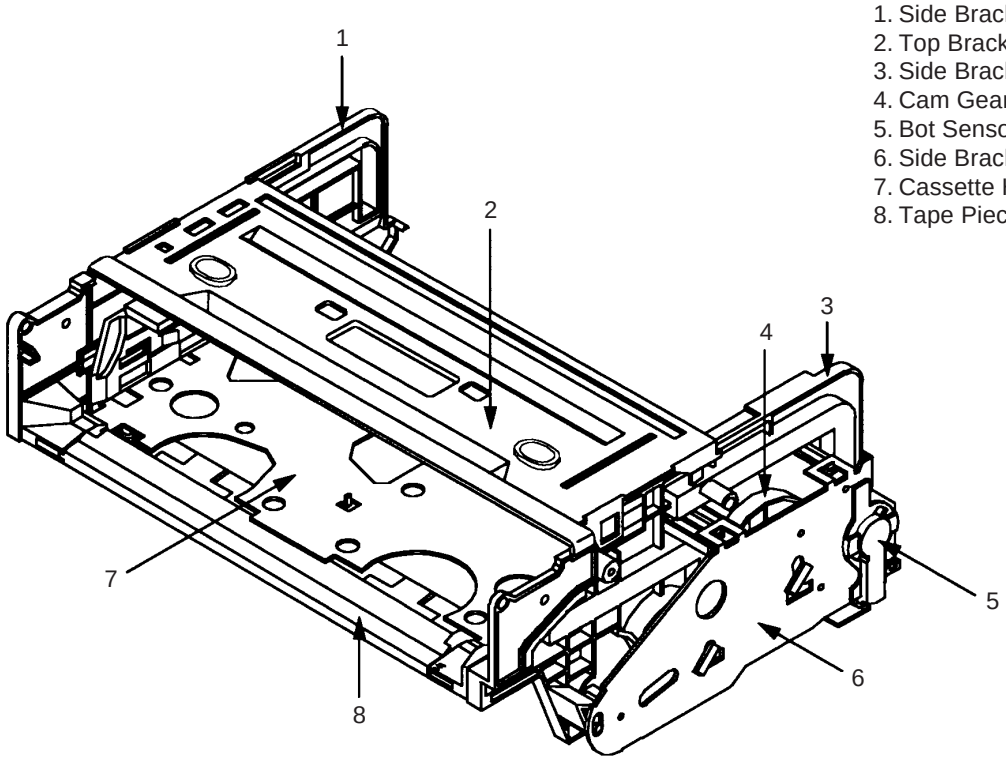
1. Main Chassis
2. Tension Arm Ass'y
3. EOT Reflector
4. Guide Roller S Ass'y
5. P0 Post
6. P1 Post
7. FE Head
8. Cylinder Unit
9. Auto Head Cleaning
10. Audio/Control Head
11. Loading Motor Ass'y
12. Pinch Roller Block
13. Cam Gear
14. Cassette Opener
15. Brake Bracket
16. Reel T
17. LED Reflector
18. Guide Roller T Ass'y
19. Reel S
20. Tension Band Ass'y

DECK PARTS LOCATIONS
(BOTTOM VIEW)



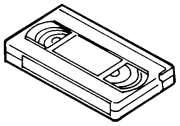
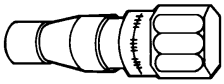
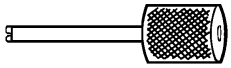
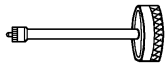
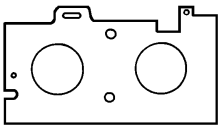
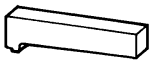
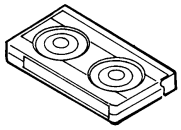
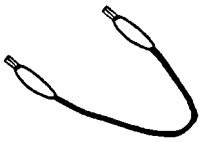
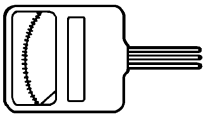
21. Worm Bracket F Ass'y
22. Mode Switch
23. Worm Ass'y
24. Worm Bracket R Ass'y
25. Loading Motor Belt
26. Capstan DD Unit
27. Capstan Brake Ass'y
28 Bottom Plate
29. Clutch Gear S Ass'y
30. Idler Arm Ass'y
31. Center Pulley
32. Clutch Gear T Ass'y

(FRONT LOADING UNIT 15)



1. Side Bracket L
2. Top Bracket Ass'y
3. Side Bracket R Ass'y
4. Cam Gear Ass'y
5. Bot Sensor Cover
6. Side Bracket R2
7. Cassette Holder Ass'y
8. Tape Piece Guide

SERVICING FIXTURES AND TOOLS

VHS Alignment Tape JG001 (VN_2S-LI6^3) JG001A (VN_2S-CO1^3) 	JG002B Adapter JG002F Dial Torque Gauge (60~600gf•cm) JG002G (100~1200gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 	JG153 X Value Adjustment Screwdriver 
JG022 Master Plane 	JG024 Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 	JG154 Cable 
Tentelometer 			

Part No.	Remarks
JG001	Monoscope, 6KHz
JG001A	Color Bar, 1KHz
JG002F	Playback Take Up Torque
JG002G	Fast Forward Torque, Rewind Torque, Brake Torque (Take up Reel/Supply Reel)
JG005	Guide Roller Adjustment
JG153	X-Value Adjustment
JG022/JG024	Reel Disk Height Adjustment
JG100A	Playback Back Tension Torque
JG154	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Short circuit between **TP1001** and **TP1002** with the cable JG154.
   (Refer to MAJOR COMPONENTS LOCATION GUIDE)
   The EOT, BOT and Reel Sensor do not work at this moment.
   At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTED items before starting work.

- Place an object which weighs between 350g and 500g on the Cassette Tape to keep it steady when you want to make the tape run without the Front Loading Unit 15. (Do not place an object which weighs over 500g.)
- When you activate the deck without the Front Loading Unit 15, short circuit between **TP1001** and **TP1002**. 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 **(JG024)** on mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A**.
3. Confirm that the reel disk is lower than "A" of the reel disk height adjustment jig **(JG024)** on the master plane and higher than "B" as shown in **Fig. 1-1-B**. If it is not, adjust to less than 7.5mm±0.2mm with the height adjustment washer.
4. Perform the same adjustment for other reel.

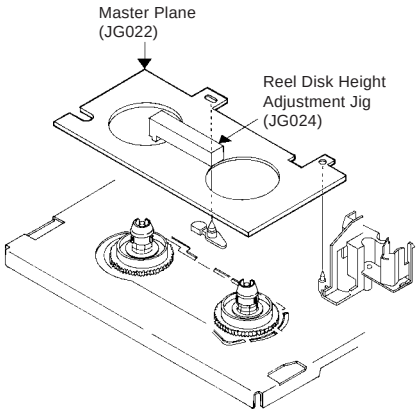


Fig. 1-1-A

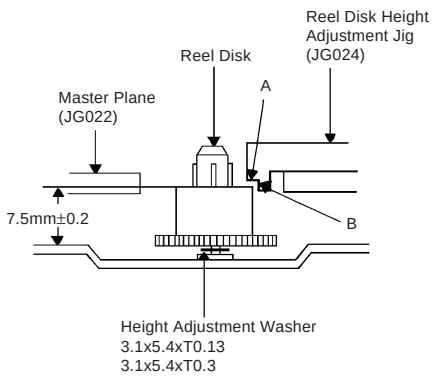


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Turn on the power and set to the PLAY mode adjust the Tension so that the Tension Post is at the position of 0.3mm~0.5mm from the Rib. **(Refer to Fig. 1-2)**
2. Confirm that the video tape is not curling at the flange of P1 post or is not running on flanges.

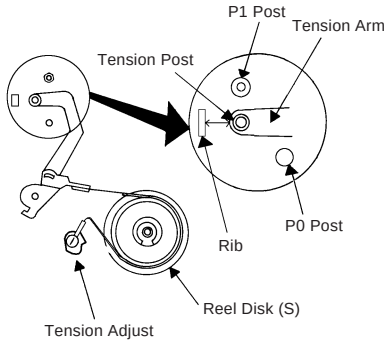


Fig. 1-2

1-3: CONFIRMATION AND ADJUSTMENT OF BACK TENSION ON PLAYBACK

1. Load a video tape recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3**. Confirm the value is within 20~27gf at this time.

• IN CASE OF USING A CASSETTE TYPE TORQUE TAPE.

1. After adjustment, confirm and adjust the tension post position **(Refer to item 1-2)** for the tension arm, install the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the left hand side tension value of the torque tape is 25~38gf•cm for the standard mode tape.

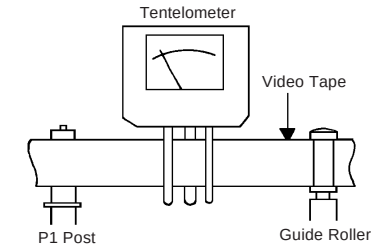


Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF FAST FORWARD TORQUE

1. Set torque gauge **(JG002G)** on take-up reel disk, and place unit in FAST FORWARD mode. **(Refer to Fig. 1-4)**
2. Confirm that torque is more than 400gf•cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place.
Push the FAST FORWARD button and the reel disk will begin to turn.

1-5: CONFIRMATION OF REWIND TORQUE

1. Operate within 4 or 5 seconds after the reel disk begins to turn.
2. Set torque gauge **(JG002G)** on supply reel disk, and place the unit in REWIND mode. **(Refer to Fig. 1-4)**.
3. Confirm that torque is more than 400gf•cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place.
Push the REWIND button and the reel disk will begin to turn.

1-6: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Set to STOP mode.
2. Set the torque gauge **(JG002G)** to the take-up reel and turn it counterclockwise.
3. Confirm that it is more than 45±10gf•cm at that time.

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

1. Set to STOP mode.
2. Set the torque gauge **(JG002G)** to the supply reel and turn it clockwise.
3. Confirm that it is more than 95±40gf•cm at that time.

NOTE

Separate the idler from the reel and confirm the brake torque.

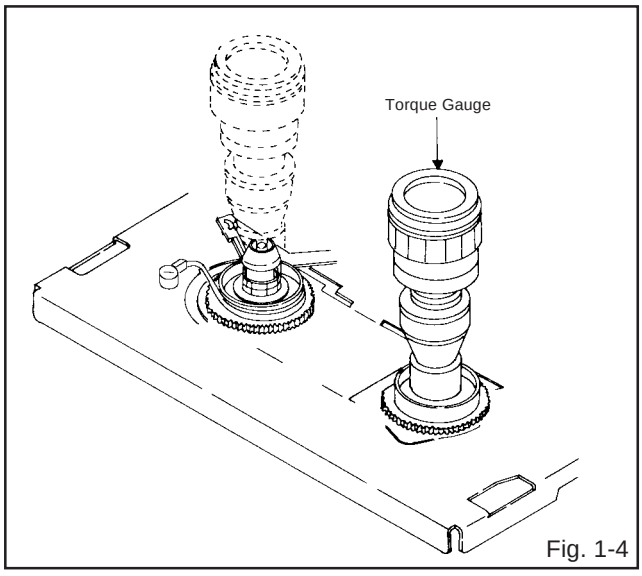


Fig. 1-4

NOTE

If the torque value checked is out of tolerance, replace the appropriate parts as follows.

Check Items	Replace Parts
1-4	Idler Ass'y or Clutch ASS'Y
1-5	Idler Ass'y or Clutch ASS'Y
1-6	Main Brake T Ass'y or Main Brake S Ass'y

2. TAPE RUNNING CONFIRMATION AND ADJUSTMENT

• Tape running is adjusted precisely at the factory. Normally, it is not necessary to make adjustments. It is necessary to confirm and make adjustments when the parts of the tape running mechanism are replaced because of extensive usage or failure.

2-1: GUIDE ROLLER

1. Connect CH-1 on the oscilloscope to **TP4102 (PB Envelope)** and CH-2 to **TP4101 (SW Pulse)**.
2. Set the tracking to manual center position in the following way. Press and hold the tracking auto button more than 2 seconds to set the tracking to center position.
3. Trigger with SW pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
4. Adjust the guide roller height while observing the envelope, and make the envelope flat. Adjust the envelope so that the flatness will not be affected even when the tracking control button is pressed. (Use the adjustment screwdriver **JG005**).
5. Press and hold the tracking control button and (at the point that the envelope waveform starts to reduce) adjust the envelope so that the A : B ratio is better than 3 : 2. **(Refer to Fig. 2-1-B)**
6. Adjust the PG shifter **(ELECTRICAL ADJUSTMENTS : ITEM 3-1)** in the PLAY mode.

NOTE

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

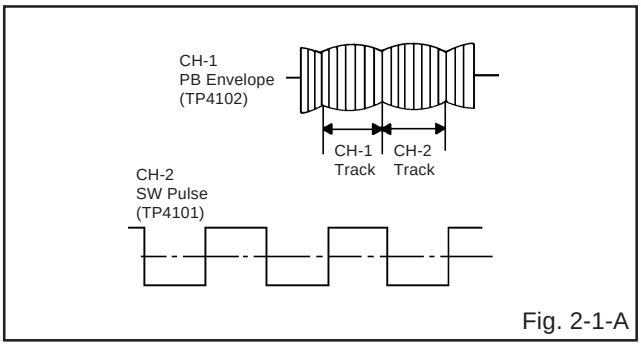


Fig. 2-1-A

MECHANICAL ADJUSTMENTS

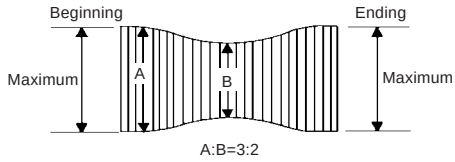


Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF A/C HEAD TILT

When the tape is running abnormally, perform the following adjustments.

1. Insert a new tape and play it back.
2. Confirm that there is no crease on the tape between the P4 post and guide roller (R) and the tape is running smoothly. (It is absolutely impossible to get satisfactory sound if the tape is distorted between the A/C head and P4 post.)
3. If the tape still does not run smoothly, turn the screw ① and adjust the tilt of the A/C head. **(Refer to Fig. 2-2)**

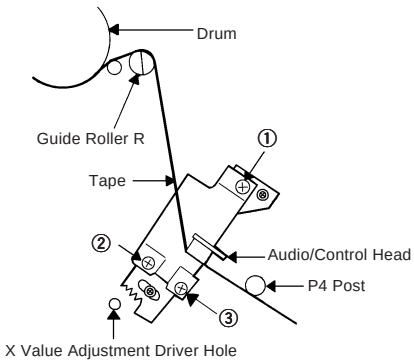


Fig.2-2

2-3: ADJUSTMENT OF A/C HEAD HEIGHT AND AZIMUTH

1. Playback a VHS alignment tape **(JG001)** and observe the waveform at the audio output terminal.
2. Turn the screw ② slowly to change the azimuth of the A/C head. Adjust the height so that the audio output becomes maximum. **(Refer to Fig. 2-2)**
3. Adjust the screw ③, **(Refer to Fig. 2-2)** until the height of the A/C head reaches the position against the tape as shown in **Fig. 2-3**.
4. When the control head height is not correct. (When you must turn the screw more than 45 degrees), Turn all of the screws ①, ② and ③ to the same degrees.
   Then confirm the angle of the audio/control head and adjust again.

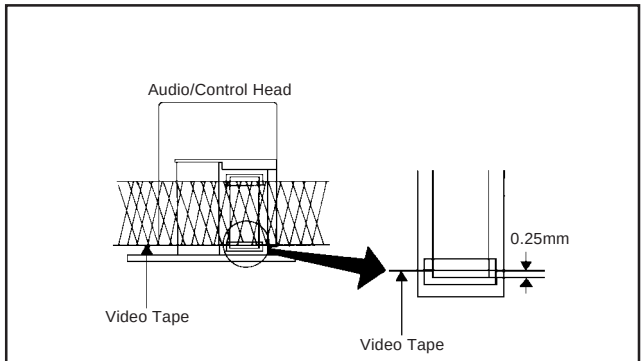


Fig. 2-3

2-4: TAPE RUNNING ADJUSTMENT

1. Adjust the height of reel disk.
   (Refer to item 1-1)
2. Confirm and adjust tension post position.
   (Refer to item 1-2)
3. Adjust the guide roller.
   (Refer to item 2-1)
4. Adjust the A/C head tilt.
   (Refer to item 2-2)
5. Adjust the A/C head height and azimuth.
   (Refer to item 2-3)
6. Connect CH-1 on the oscilloscope to **TP4101** and CH-2 to **TP4102**. Playback the VHS alignment tape **(JG001)**.
   Set the tracking to manual center. Adjust X with the screw driver for X **(JG153)** as the **Fig. 2-1-A** and **Fig. 2-1-B**.
   (Refer to No. 2 of the item 2-1).

ELECTRICAL ADJUSTMENTS

(VCR SECTION)

3. ADJUSTMENT PROCEDURE

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

CAUTION

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

On-Screen Display Adjustment

1. Set the volume level to minimum after unplugging the power cord once from the AC source in order to set the TV/VCR to the reset mode.
2. Press the VOL. DOWN on the set and the channel button **(9)** on the remote control simultaneously to display adjustment mode on the screen as shown in **Fig. 3-1, Fig. 3-2, Fig. 3-3 and Fig. 3-4**.

NOTE

Use the 1-8 keys on the remote control to select the options shown in **Fig. 3-1, Fig. 3-2, Fig. 3-3 and Fig. 3-4.** Press the 8 key to end the adjustments.

ADJUST MODE 1
1. H PHASE
2. V DC
3. V SIZE
4. OSD H
5.
6. CUT OFF
7. NEXT 8. END

Fig. 3-1

ADJUST MODE 2
1. RED BIAS
2. GREEN BIAS
3. BLUE BIAS
4. RED DRIVE
5. GREEN DRIVE
6. BLUE DRIVE
7. NEXT 8. END

Fig. 3-2

ADJUST MODE 3
1. BRIGHT
2. CONTRAST
3. TINT
4. COLOR
5. SHARPNESS
6.
7. NEXT 8. END

Fig. 3-3

ADJUST MODE 4
1. APC OFFSET
2. VCO FREE RUN
3. RF AGC DELAY
4. VIDEO LEVEL
5. FM LEVEL
6. V COMP
7. NEXT 8. END

Fig. 3-4

3-1: PG SHIFTER

1. Playback the alignment tape. **(JG001)**
2. Set the volume level to minimum after unplugging the power cord once from the AC source in order to set the TV/VCR to the reset mode.
3. 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;)

1. Connect CH-1 on the synchro scope to **TP4101** and CH-2 to **TP4201**.
2. Playback the alignment tape. **(JG001)**
3. Press the VOL. DOWN button on the set and the channel button **(4)** on the remote control simultaneously.
4. Adjust the Tracking +/- key so that the waveform of the synchro scope measures 6.5 ± 0.5(H) at both leading and trailing edges. **(Refer to Fig. 3-5-A, B)**
5. Press the Tracking Auto key.

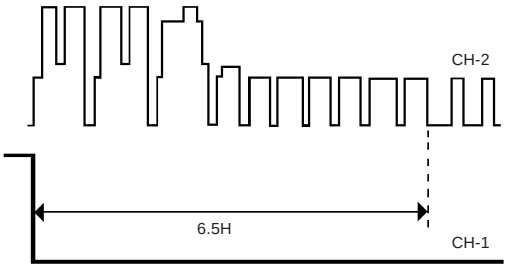


Fig. 3-5-A

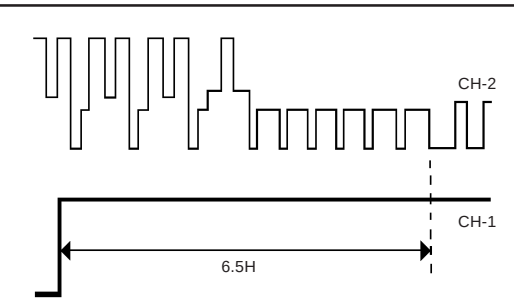


Fig. 3-5-B

ELECTRICAL ADJUSTMENTS

3-2: VCO FREE RUN

1. Connect the DC voltmeter between the **pin 6 of CP830** and the **pin 1 (GND) of CP830**.
2. Receive an 80dB monoscope signal at the tuner antenna input (using a VHF channel frequency).
3. Activate the adjustment mode display of **Fig. 3-4** and press the channel button **(2)** on the remote control.
4. Press the VOL.UP/DOWN button on the remote control until the VCO FREE RUN level becomes 64±5 steps.
5. Adjust **L603** until the DC voltmeter is 2.8 ± 0.2V.

3-3: RF AGC DELAY

1. Connect the DC voltmeter between the **pin 5 of CP830** and the **pin 1 (GND) of CP830**.
2. Receive an 80dB monoscope signal at the tuner antenna input (using a VHF channel frequency).
3. Activate the adjustment mode display of **Fig. 3-4** and press the channel button **(3)** on the remote control.
4. Press the VOL.UP/DOWN button on the remote control until the DC voltmeter is 4.0 ± 0.2V.

(TV SECTION)

4. BASIC ADJUSTMENTS

4-1: CUT OFF

1. Activate the adjustment mode display of **Fig. 3-1** and press the channel button **(6)** on the remote control.
2. Adjust the **Screen Volume** until a dim raster is obtained.

4-2: WHITE BALANCE

NOTE

Adjust after performing adjustments in section 4-1.

1. Receive the color bar pattern.
2. Adjust form the adjustment mode display of **Fig. 3-2** until the white color of color bar becomes white.

4-3: FOCUS

1. Receive a monoscope signal sharper than 70dB at the tuner antenna input.
2. Adjust the **Focus Volume** until picture is distinct.

4-4: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set brightness to normal position and set contrast to maximum position.
3. Activate the adjustment mode display of **Fig. 3-1** and press the channel button **(1)** on the remote control.
4. Press the VOL.UP/DOWN button on the remote control until the right and left screen edges are equal.

4-5: VERTICAL POSITION

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

4-6: VERTICAL SIZE

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

4-7: SUB COLOR, SUB BRIGHT, SUB TINT (TV,AV)

4-7-A: SUB COLOR (TV)

1. Receive the color bar pattern.(RF Input)
2. Connect the synchro scope to **TP801**.
3. Activate the adjustment mode display of **Fig. 3-3** and press the channel button **(4)** on the remote control.
4. Adjust the VOLT RANGE VARIABLE knob of the synchro scope until the range between white 0% and 100% is set to 4 scales on the screen of the synchro scope.
5. Press the VOL.UP/DOWN button on the remote control until the red color level is adjusted to 4 scales (100% ± 5%) for the white level.**(Refer to Fig. 4-1)**

ELECTRICAL ADJUSTMENTS

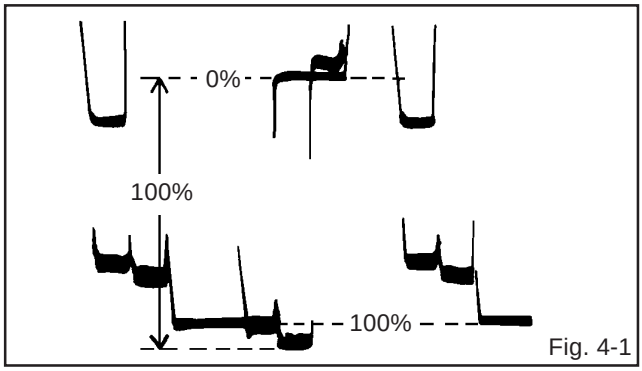


Fig. 4-1

4-7-B: SUB COLOR (AV)

1. Receive the color bar pattern.(Audio Video Input)
2. Connect the synchro scope to **TP801**.
3. Activate the adjustment mode display of **Fig. 3-3** and press the channel button **(4)** on the remote control.
4. Press the TV/AV button on the remote control to select AV input.
5. Adjust the VOLT RANGE VARIABLE knob of the synchro scope until the range between white 0% and 100% is set to 4 scales on the screen of the synchro scope.
6. Press the VOL.UP/DOWN button on the remote control until the red color level is adjusted to 4 scales (100% ± 5%) for the white level.**(Refer to Fig. 4-1)**

4-7-C: SUB BRIGHT (TV)

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

4-7-D: SUB BRIGHT (AV)

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

4-7-E: SUB TINT (TV)

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP803**.
3. Activate the adjustment mode display of **Fig. 3-1** and press the channel button **(3)** on the remote control.
4. Press the VOL. UP/DOWN key on the remote control until the waveform becomes as shown in **Fig. 4-2**.

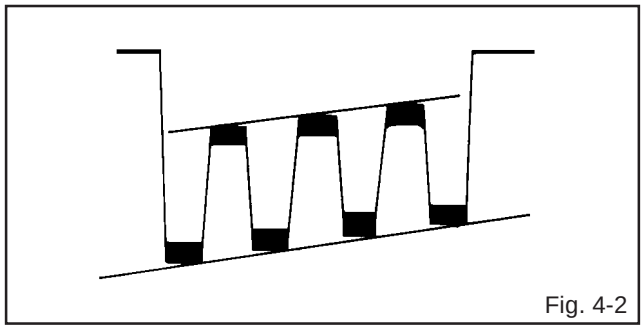


Fig. 4-2

4-7-F: SUB TINT (AV)

1. Receive the color bar pattern. (Audio Video Input)
2. Connect the synchro scope to **TP803**.
3. Activate the adjustment mode display of **Fig. 3-3** and press the channel button **(3)** on the remote control.
4. Press the TV/AV button on the remote control to select AV input.
5. Press the VOL. UP/DOWN button on the remote control until the waveform becomes as shown in **Fig. 4-2**.

4-8: OSD HORIZONTAL

1. Using the remote control, set brightness to normal position and set contrast to maximum position.
2. Activate the adjustment mode display of **Fig. 3-1** and press the channel button **(4)** on the remote control.
3. Press the VOL. UP/DOWN on the remote control until the difference of A and B becomes equal. **(Refer to Fig. 4-3)**

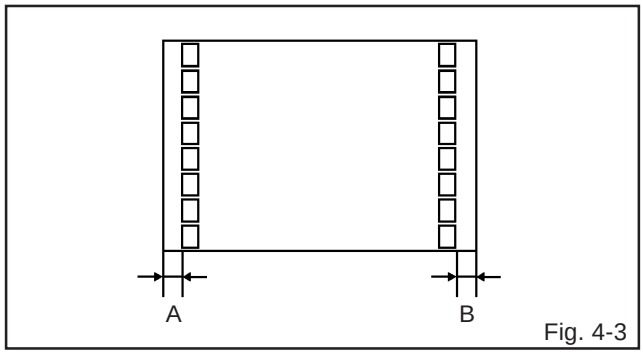


Fig. 4-3

4-9: CONSTANT VOLTAGE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness to normal position and set contrast to maximum position.
3. Connect the digital voltmeter to **C528**.
4. Adjust the **VR502** until the DC voltage is 11.3 ± 0.1V.

ELECTRICAL ADJUSTMENTS

5. 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.

5-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 5-1)**
   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.

5-2: PURITY

NOTE

Adjust after performing adjustments in section 5-1.

1. Receive the green raster pattern from the 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.

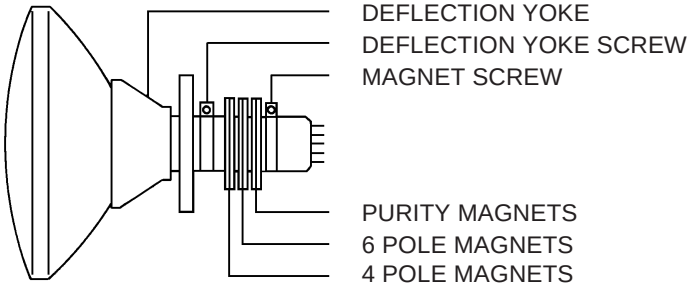


Fig. 5-1

5-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 5-2.

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.

5-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 5-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 5-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 5-2-b)**

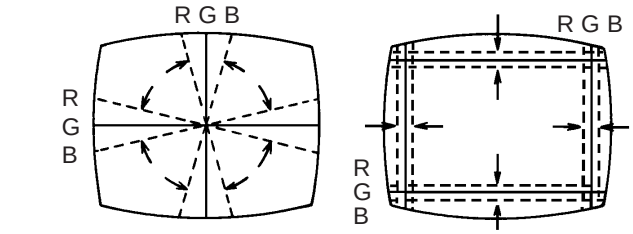


Fig. 5-2-a

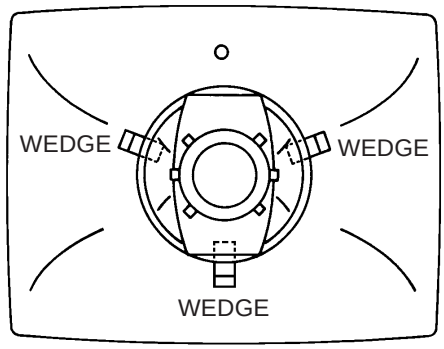
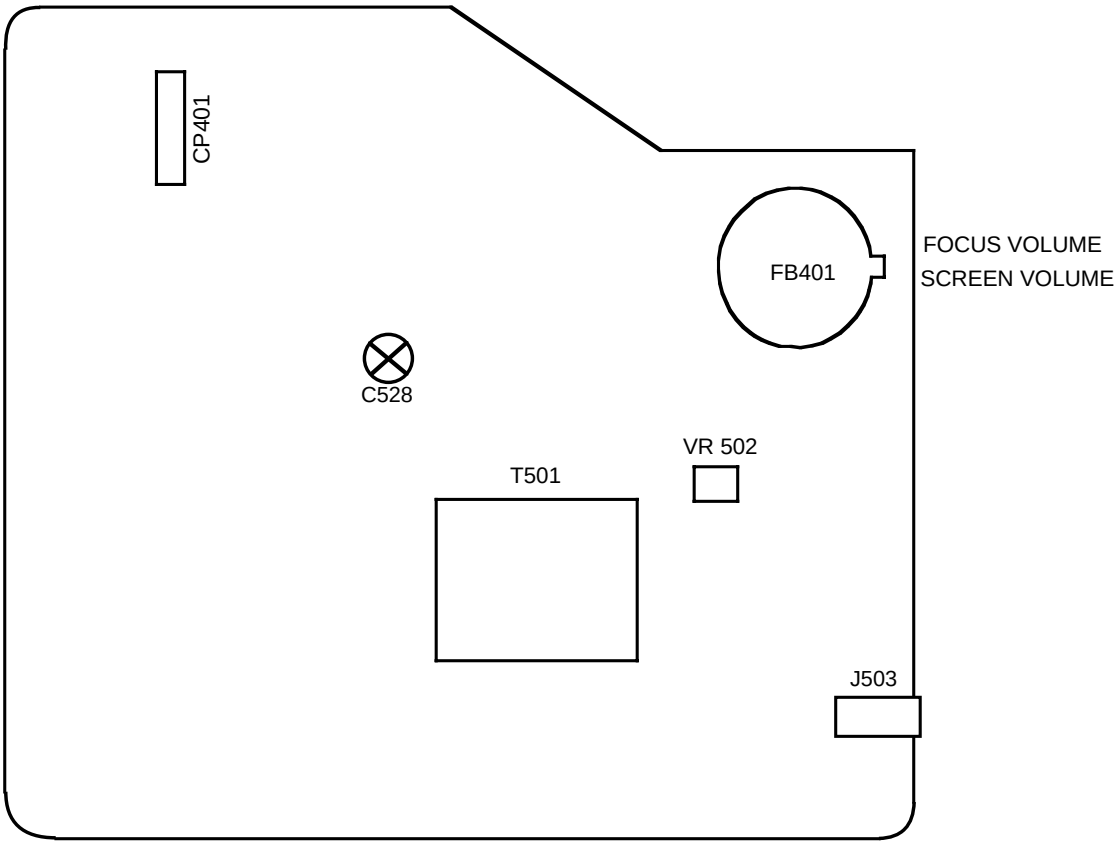


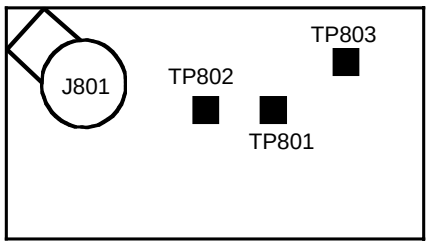
Fig. 5-2-b

MAJOR COMPONENTS LOCATION GUIDE

(TV SECTION)



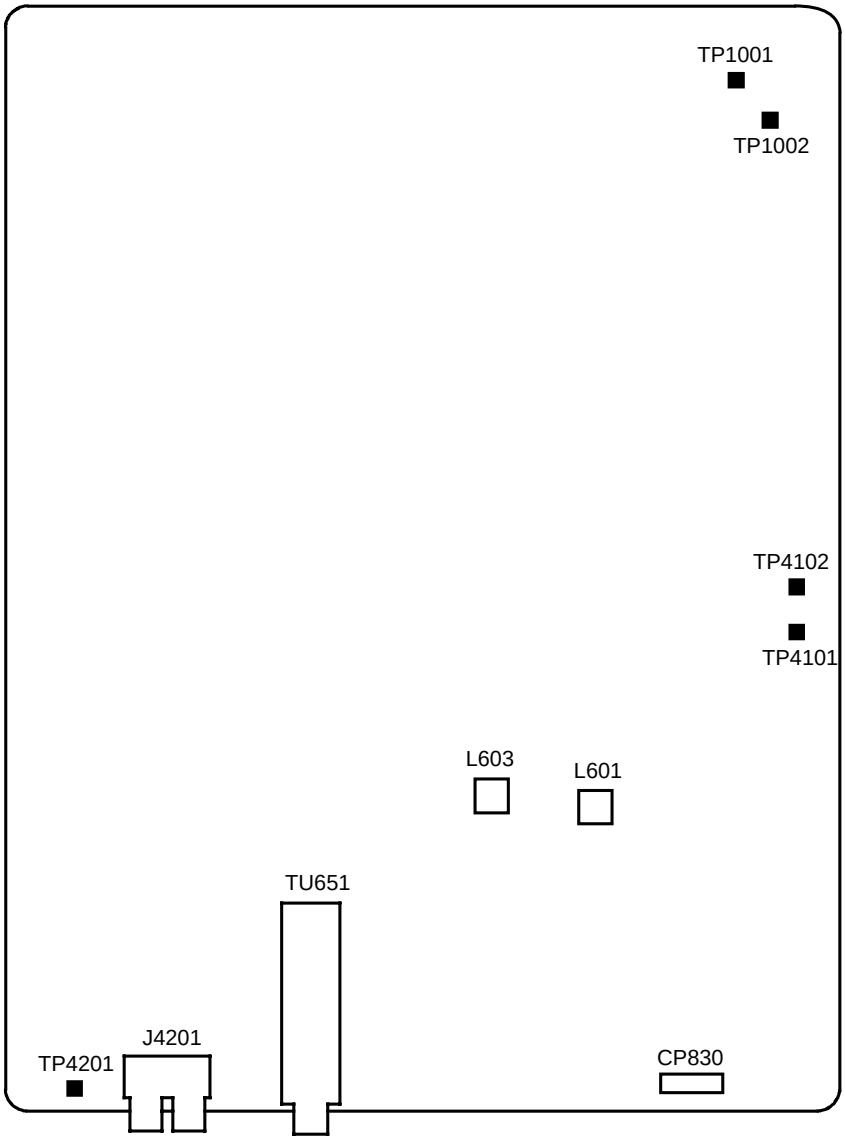
MAIN



CRT

MAJOR COMPONENTS LOCATION GUIDE

(VCR SECTION)



SYSCON