

Service Manual

PIONEER®
The Art of Entertainment



Illustration shows model XR-3000

ORDER NO.
RRV1720

STEREO FILE-TYPE CD CASSETTE DECK RECEIVER

XR-3000

XR-3000S

XR-2000

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model			Power Requirement	Remarks
	XR-3000	XR-3000S	XR-2000		
KU	○	—	—	AC120V	
KUXJN	○	—	○	AC120V	
KCXJN	—	○	○	AC120V	

- The "S" at the end of the model number indicates that a programmable remote control unit is supplied.

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

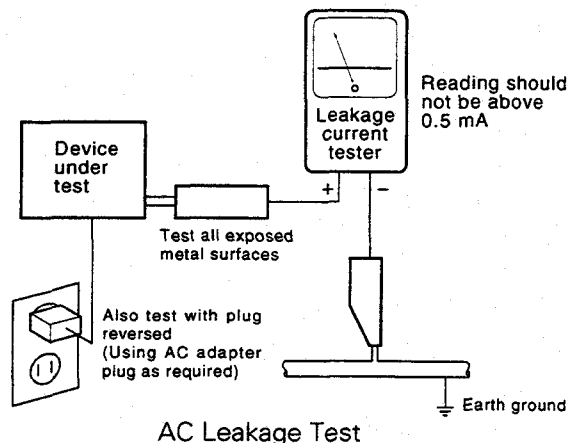
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  on the schematics and on the parts list in this Service Manual.

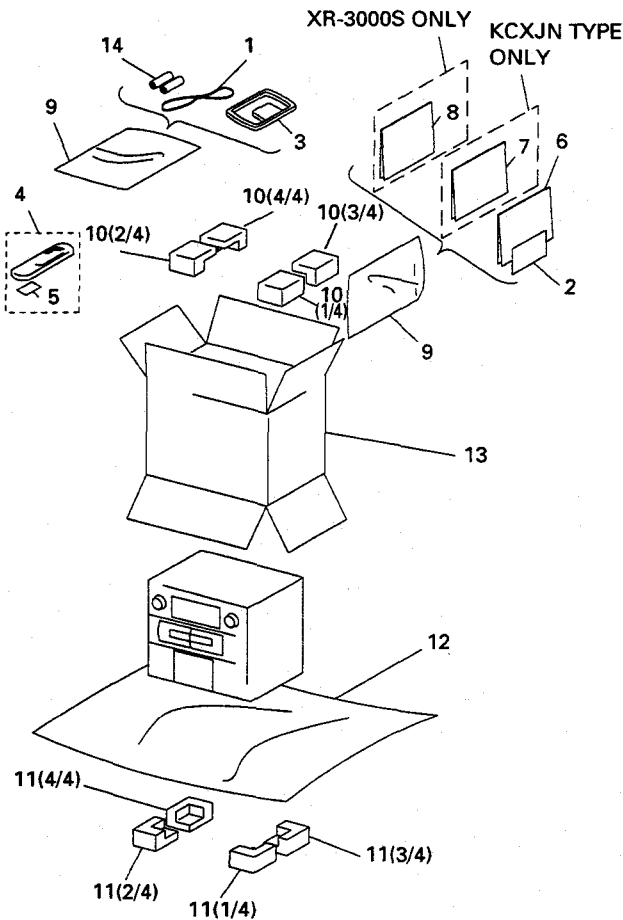
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

- NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ∇ mark on the product are used for disassembly.

2.1 PACKING



(1) PARTS LIST

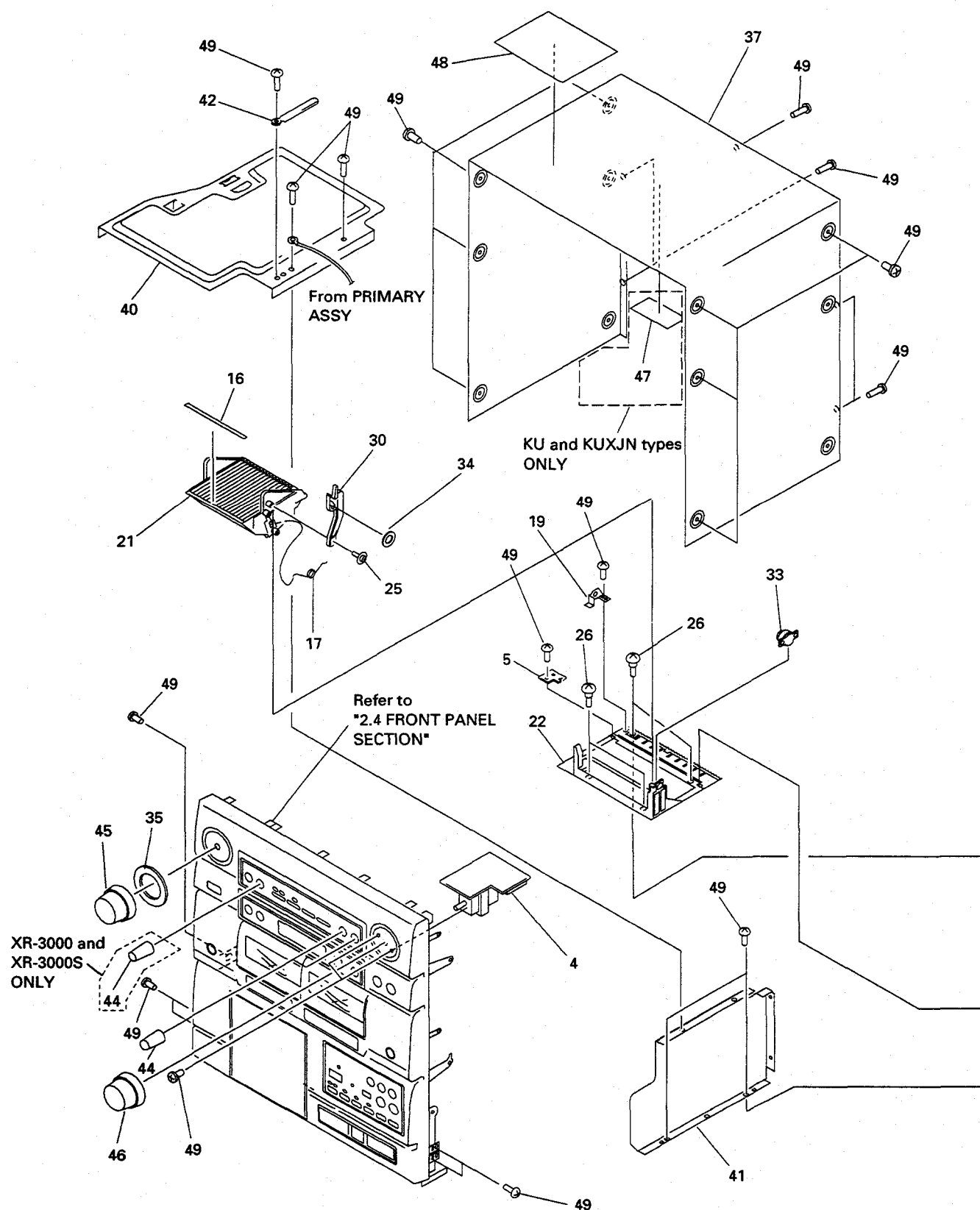
Mark	No.	Description	Parts No.
NSP	1	FM Antenna	See Contrast table (2)
	2	Warranty Card	See Contrast table (2)
	3	AM Loop Antenna	See Contrast table (2)
	4	Remote Control Unit	See Contrast table (2)
	5	Battery Cover	See Contrast table (2)
	6	Instruction Manual E	RRB1173
	7	Operating Instructions (French)	See Contrast table (2)
	8	Operating Instructions (English/French) (for remote control unit)	See Contrast table (2)
	9	Polyethylene Bag	Z21-038
	10	Protector U	RHA1216
	11	Protector D	RHA1217
	12	Packing Sheet	RHC1067
	13	Packing Case	See Contrast table (2)
NSP	14	Dry Cell Batterie	See Contrast table (2)

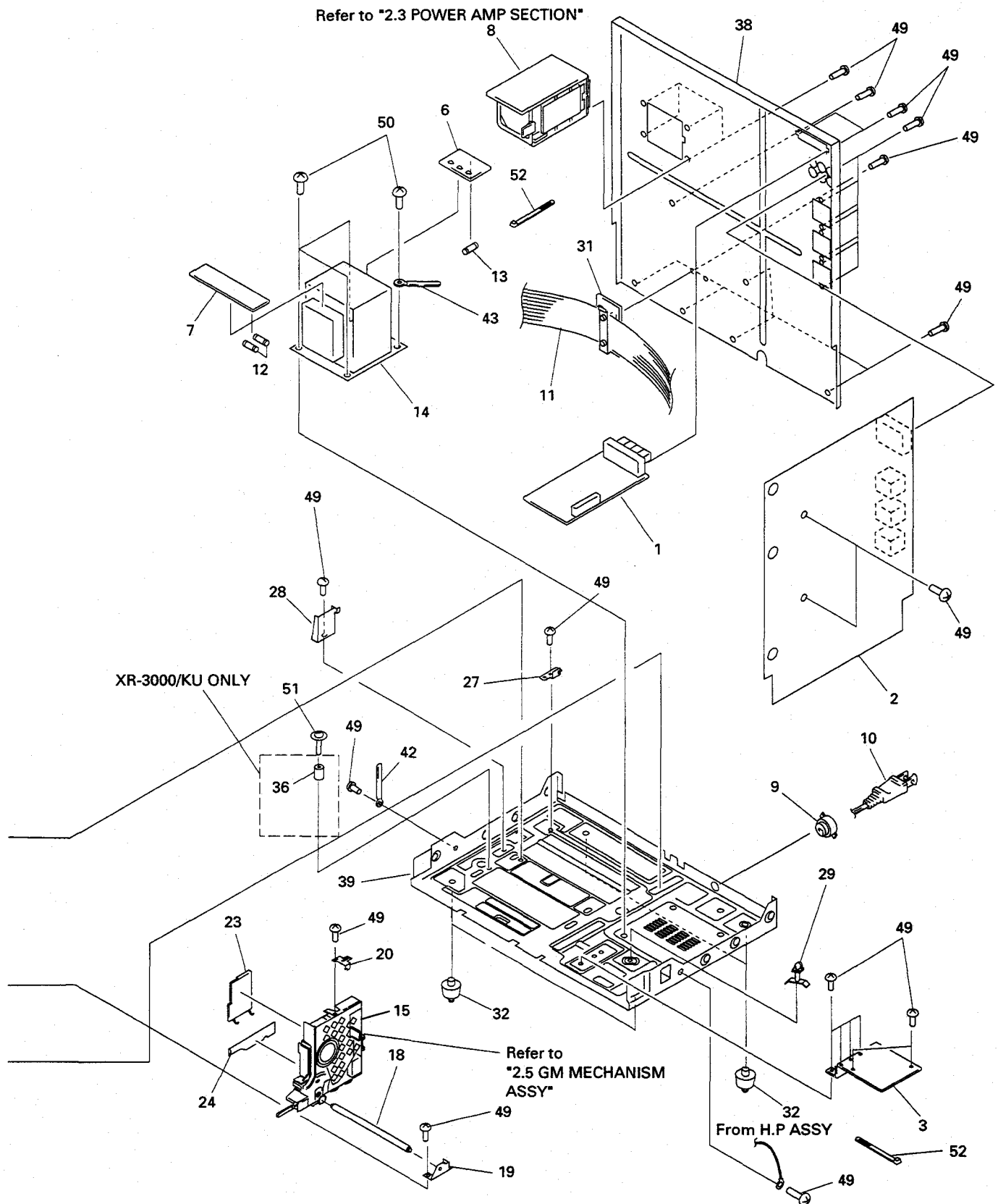
(2) CONTRAST TABLE

XR-3000/KUXJN, XR-3000S/KCXJN, XR-2000/KUXJN, KCXJN and XR-3000/KU have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.					Remarks
			XR-3000		XR-3000S	XR-2000		
			KU	KUXJN	KCXJN	KUXJN	KCXJN	
NSP	1	FM Antenna	ADH1017	ADH7004	ADH7004	ADH7004	ADH7004	
	2	Warranty Card	ARY1044	ARY1051	ARY1075	ARY1051	ARY1075	
	3	AM Loop Antenna	ATB7004	ATB7009	ATB7009	ATB7009	ATB7009	
	4	Remote Control Unit (CU-XR035)	RPX1116	RPX1116	Not used	Not used	Not used	
	4	Remote Control Unit (CU-AV011)	Not used	Not used	RPX1111	Not used	Not used	
	4	Remote Control Unit (CU-XR034)	Not used	Not used	Not used	RPX1120	RPX1120	
	5	Battery Cover	AZA7148	AZA7148	AZN2256	AZA7148	AZA7148	
	7	Instruction Manual (French)	Not used	Not used	RRD1188	Not used	RRD1188	
NSP NSP	8	Instruction Manual (English/French) (for Remote Control Unit)	Not used	Not used	RRE1129	Not used	Not used	
	13	Packing Case	RHG1800	RHG1766	RHG1780	RHG1781	RHG1837	
	14	Dry Cell Battery (R6P, AA)	VEM-013	VEM-013	Not used	VEM-013	VEM-013	
	14	Dry Cell Battery (LR03, AAA)	Not used	Not used	PEM1005	Not used	Not used	

2.2 EXTERIOR





XR-3000, XR-3000S, XR-2000

(1) PARTS LIST

Mark	No.	Description	Parts No.
	1	FM/AM TUNER MODULE	AXQ7061
	2	AF ASSY	See Contrast table (2)
	3	POWER SUPPLY ASSY	See Contrast table (2)
	4	VOLUME ASSY	See Contrast table (2)
NSP	5	HOME SW ASSY	RWZ4147
NSP	6	PRIMARY ASSY	RWZ4148
NSP	7	SECONDARY ASSY	RWZ4153
	8	POWER AMP UNIT	See Contrast table (2)
	8	POWER AMP MODULE	See Contrast table (2)
	9	Cord Stopper	CM-22C
△	10	AC Power Cord	PDG1015
	11	22P F•C/30V	PDD1170
△	12	Fuse (FU201, FU202:1.6A)	REK1077
△	13	Fuse (FU1:8A)	REK1086
△	14	Power Transformer (T1)	See Contrast table (2)
NSP	15	GM Mechanism Assy	RXA1754
	16	Disc Rack Panel	AAK7251
	17	Rack Spring	ABH7057
	18	Guide Shaft-25	ALA7007
	19	Shaft Holder	ANB7021
	20	Assist Angle 2	ANB7065
	21	Dist Rack	ANW7069
	22	Rackbase S	ANW7070
	23	Servo Cover	ANW7073
	24	Nice Cover	ANW7074
	25	Screw	IBZ30P080FMC
	26	Screw C	PBA1106
	27	Home Lock Angle 2	PNB1549
	28	F.B Stopper	PNB1565
NSP	29	PCB Holder	PNW2174
	30	Link	PNW2614
	31	FFC Holder	PNW2615
	32	Foot Ass'y	See Contrast table (2)
	32	Supporting Feet	See Contrast table (2)
	33	Damper Assy	PXA1584
	34	Link Spacer Ring	REB1304
	35	Spacer	REC1300
	36	Bush	See Contrast table (2)
	37	Bonnet	REA1255
	38	Rear Panel	See Contrast table (2)
	39	Chassis	RNB1121
	40	Home Lock Plate	RNE1896
	41	Barrier Plate	RNE1897
	42	Cord Clamper	RNH-184
NSP	43	Binder	ZCB-4772B
	44	Balance Knob	AAB7016
	45	Select Knob	RAC2128
	46	Volume Knob	RAC2147
	47	65 Label	See Contrast table (2)
	48	Caution Label 25	PRW1423
	49	Screw	BBZ30P080FZK
	50	Screw	FBT40P080FZK
	51	Screw	See Contrast table (2)
	52	Binder	ZCA-SKB90BK

(2) CONTRAST TABLE

XR-3000/KUXJN, XR-3000S/KCXJN, XR-2000/KUXJN, KCXJN and XR-3000/KU have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.					Remarks
			XR-3000		XR-3000S	XR-2000		
			KU	KUXJN	KCXJN	KUXJN	KCXJN	
⚠	2	AF ASSY	RWZ4136	RWZ4136	RWZ4136	RWZ4137	RWZ4137	
	3	POWER SUPPLY ASSY	RWZ4140	RWZ4140	RWZ4140	RWZ4141	RWZ4141	
	4	VOLUME ASSY	RWZ4144	RWZ4144	RWZ4144	RWZ4145	RWZ4145	
	8	POWER AMP UNIT	RXQ7025	RXQ7025	RXQ7025	Not used	Not used	
	8	POWER AMP MODULE	Not used	Not used	Not used	AXQ7017	AXQ7017	
	14	POWER TRANSFORMER	RTT1322	RTT1322	RTT1322	RTT1323	RTT1323	
	32	Foot Assy	PXA1201	Not used	Not used	Not used	Not used	
	32	Supporting Feet	Not used	AXA7010	AXA7010	AXA7010	AXA7010	
	36	Bush	REF1006	Not used	Not used	Not used	Not used	
	38	Rear Panel	RNA2142	RNA2099	RNA2125	RNA2126	RNA2126	
	47	65 Label	ORW1069	ORW1069	Not used	ORW1069	Not used	
	51	Screw	IBZ30P100FMC	RBA1126	RBA1126	RBA1126	RBA1126	

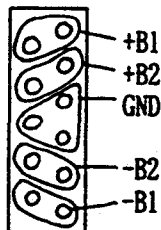
2.3 POWER AMP SECTION

- When you change Power Module, do discharge C101-C104 capacitors.
Be sure to perform after disconnecting the power cord.
- パワーモジュールを交換するときは、必ずC101-C104のケミコンのディスチャージを行ってください。
必ず電源コードを抜いてから行ってください。

	How to discharge.	ディスチャージの方法
Do short by your short jig.	+B1 to GND C101	+B2 to GND C103
	-B1 to GND C102	-B2 to GND C104

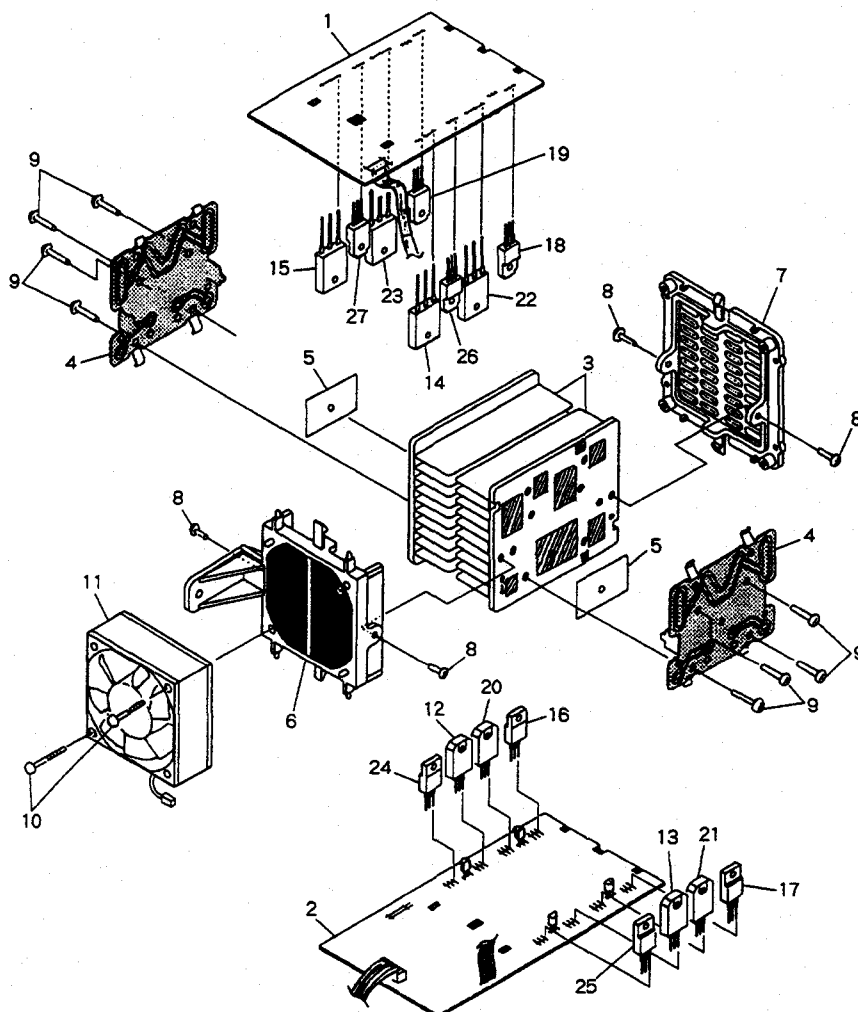
See from pattern side.

CN8101
(in AF ASSY)



XR-3000, XR-3000S, XR-2000

● POWER AMP UNIT (for RXQ7025:XR-3000 and XR-3000S)

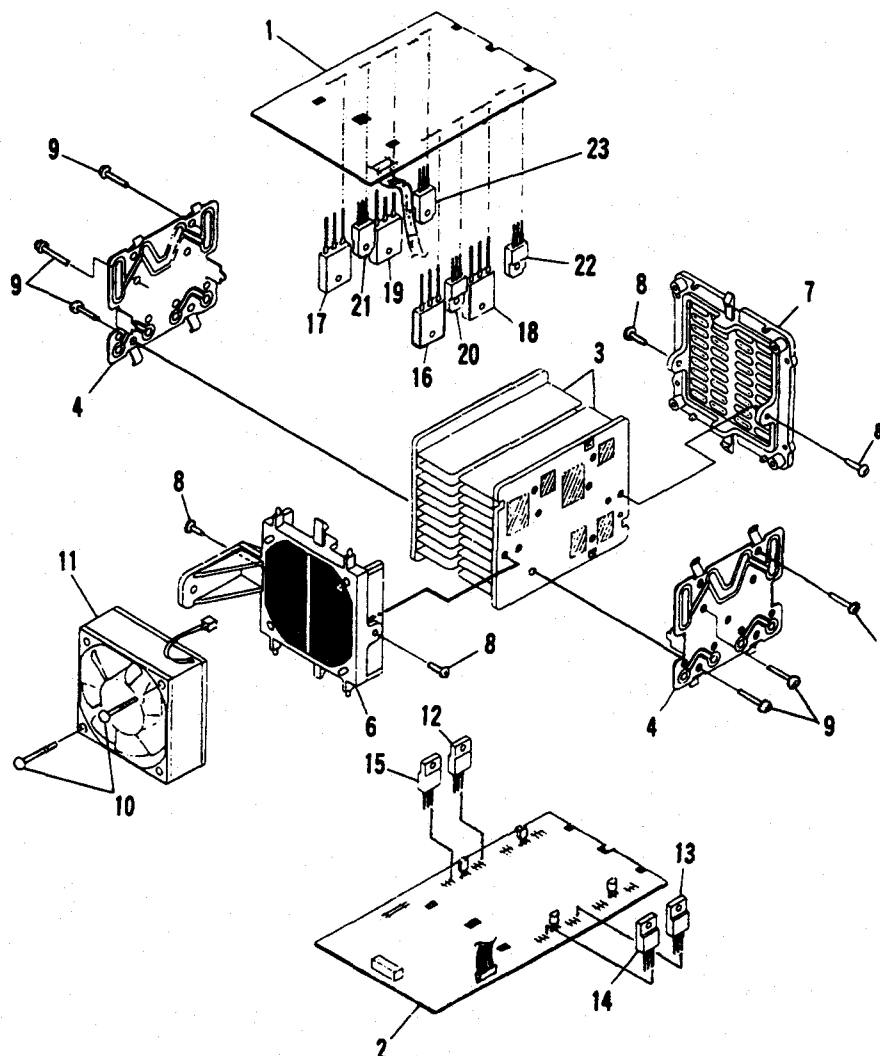


NOTE: Ensure that silicon grease does not adhere to the Mold A (No.6) and Mold B (No.7)

(1) PARTS LIST

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FRONT ASSY	RWZ4134	△	16	Transistor (Q13)	2SA1837
	2	REAR ASSY	RWZ4135	△	17	Transistor (Q14)	2SA1837
	3	Heat Sink	ANH7008	△	18	Transistor (Q53)	2SA1837
	4	Bracket	RNE1881	△	19	Transistor (Q54)	2SA1837
	5	Mica Sheet	REE1029	△	20	Transistor (Q17)	2SC3181N
	6	Mold A	AMR7005	△	21	Transistor (Q18)	2SC3181N
	7	Mold B	AMR7006	△	22	Transistor (Q57)	2SC3181N
	8	Screw (3 x 10)	ABA1021	△	23	Transistor (Q58)	2SC3181N
	9	Screw	BBZ30P140FZK	△	24	Transistor (Q11)	2SC4793
	10	Screw	BPZ30P350FZK	△	25	Transistor (Q12)	2SC4793
	11	DC Fan Motor	AXM7003	△	26	Transistor (Q51)	2SC4793
△	12	Transistor (Q15)	2SA1264N	△	27	Transistor (Q52)	2SC4793
△	13	Transistor (Q16)	2SA1264N				
△	14	Transistor (Q55)	2SA1264N				
△	15	Transistor (Q56)	2SA1264N				

● POWER AMP MODULE (for AXQ7017:XR-2000)

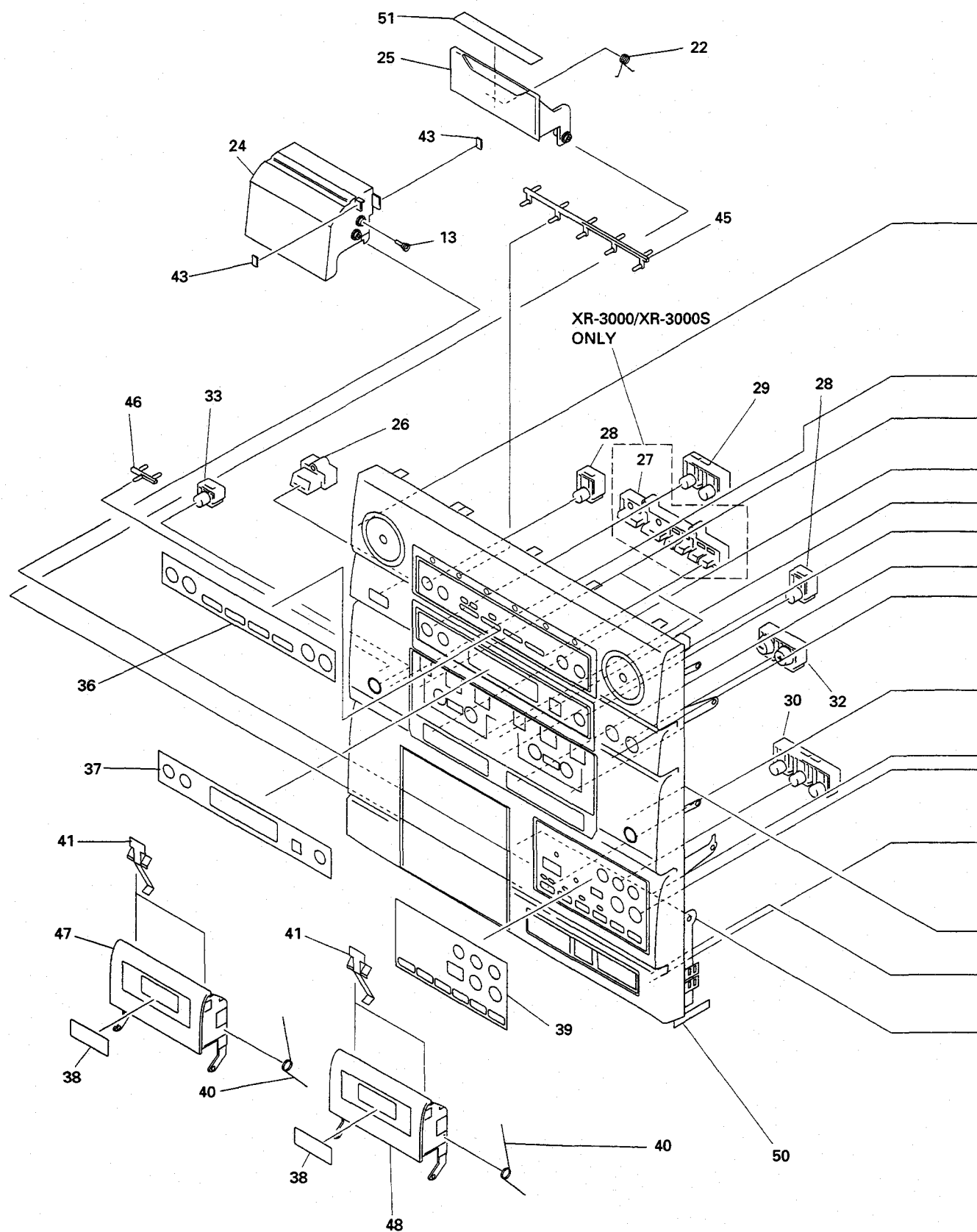


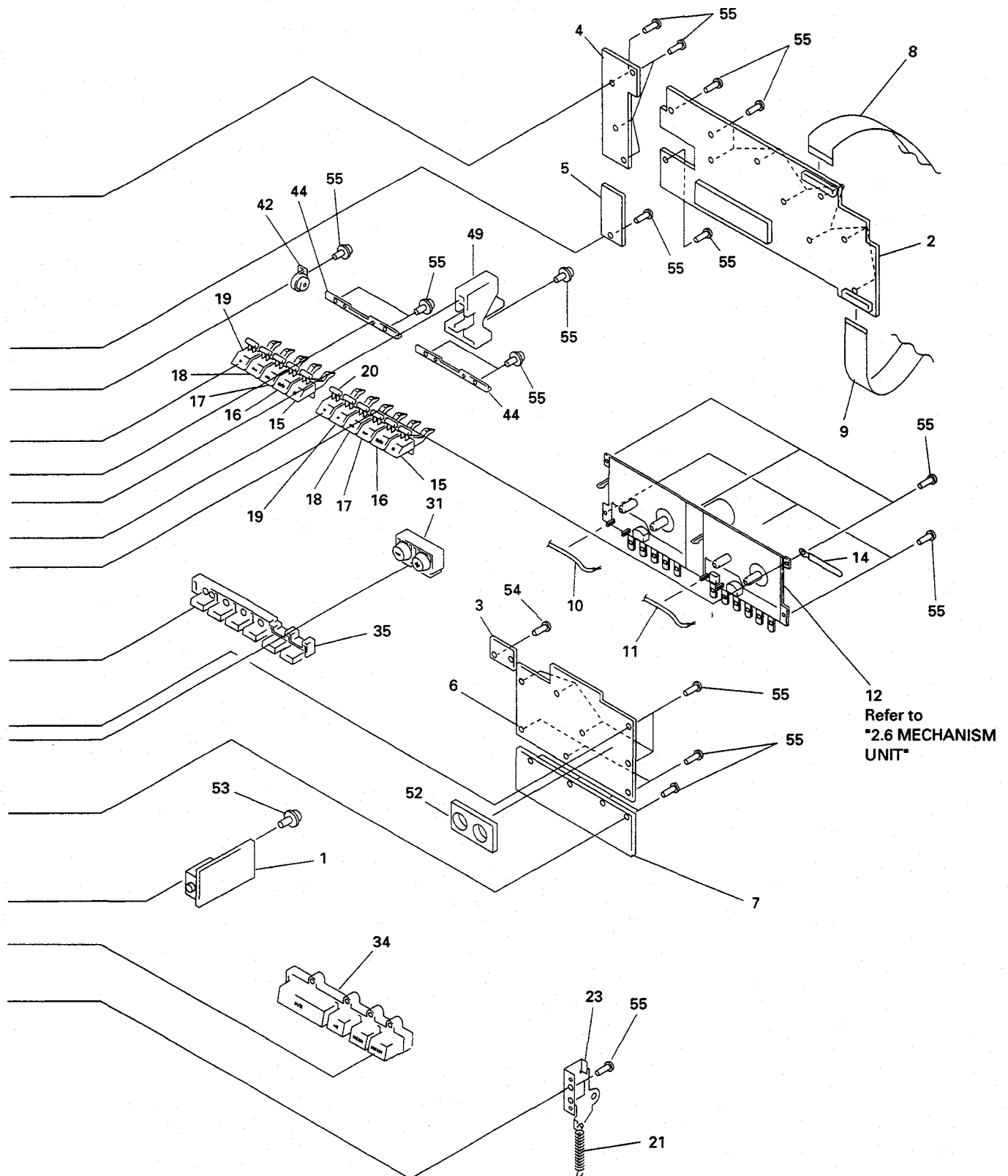
NOTE: Ensure that silicon grease does not adhere to the Mold A (No.6) and Mold B (No.7)

(1) PARTS LIST

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
1	FRONT 100W ASSY	AWZ8209	△ 16	Transistor (Q7511)	2SA1264N
2	REGULATOR ASSY	AWZ8210	△ 17	Transistor (Q7512)	2SA1264N
3	Heat Sink	ANH7008	△ 18	Transistor (Q7513)	2SC3181N
4	Holder	ANG7009	△ 19	Transistor (Q7514)	2SC3181N
5			△ 20	Transistor (Q7503)	2SC4793
6	Mold A	AMR7005	△ 21	Transistor (Q7504)	2SC4793
7	Mold B	AMR7006	△ 22	Transistor (Q7509)	2SA1837
8	Screw (3 x 10)	ABA1021	△ 23	Transistor (Q7510)	2SA1837
9	Screw	BBZ30P140FZK			
10	Screw	BPZ30P350FZK			
11	DC Fan Motor	AXM7003			
12	Regulator IC (IC7401)	NJM7812FA			
13	Regulator IC (IC7402)	NJM7912FA			
14	Regulator IC (IC7403)	NJM7812FA			
15	Regulator IC (IC7404)	NJM7805FA			

2.4 FRONT PANEL SECTION





XR-3000, XR-3000S, XR-2000

(1) PARTS LIST

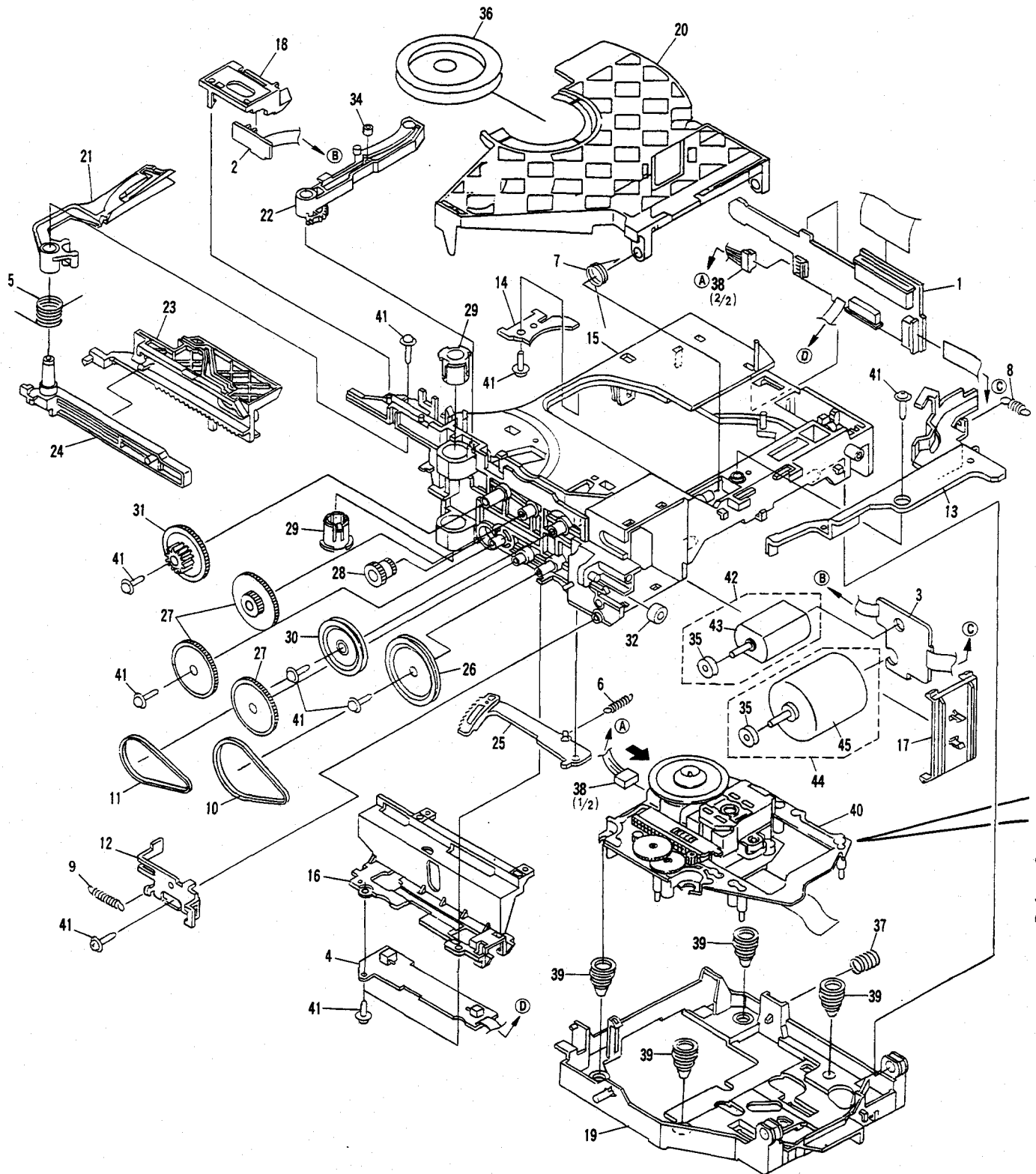
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
NSP	1	H.P ASSY	See Contrast table (2)	30	Best Button	REA1260	
	2	FRONT ASSY	See Contrast table (2)	31	Disc Button	RAC2132	
	3	HOOD SW ASSY	RWZ4146	32	Tuning Button	RAC2148	
	4	POWER SW ASSY	RWZ4149	33	Dolby Button	RAC2149	
	5	DOLBY SW ASSY	RWZ4150	34	Play Button	RAC2150	
	6	LED ASSY	RWZ4151	35	Random Button	RAC2151	
	7	TACT ASSY	RWZ4152	36	Amp Panel	See Contrast table (2)	
	8	Lead Card 37P (J13)	See Contrast table (2)	37	Tuner Panel	RAH2753	
	8	Lead Card 33P (J13)	See Contrast table (2)	38	CT Panel	RAH2754	
	9	29P F•F•C/30V (J12)	RDD1376	39	CD Panel	RAH2755	
NSP	10	Connector Assy 3P	RKP1767	40	Door Spring	RBH1415	
	11	Connector Assy 5P	RKP1768	41	Spring	RBK1004	
	12	Mechanism Unit	RYM1254	42	Damper Assy	REC1241	
	13	Screw P	PBA1105	43	Cushion	RED1042	
	14	Binder	ZCB-4772B	44	Bracket	RNE1765	
	15	Deck Knob A	AAE7006	45	Function Lens	RNK2222	
	16	Deck Knob B	AAE7007	46	Dolby Lens	RNK2223	
	17	Deck Knob C	AAE7008	47	CT Door L	RNK2224	
	18	Deck Knob D	AAE7009	48	CT Door R	RNK2225	
	19	Deck Knob E	AAE7010	49	Door Bracket	RNK2238	
NSP	20	Deck Knob F	AAE7011	50	Front Panel	See Contrast table (2)	
	21	Link Spring	PBH1215	51	Caution Label	RRW1269	
	22	Door Spring	PBH1216	52	LED Holder D	RNK2227	
	23	Hood Angle R	PNB1547	53	Screw With Washer	ABA1005	
	24	Hood	PNW2613	54	Screw	BBZ30P080FZK	
	25	Door	PNW2616	55	Screw	BPZ30P080FMC	
	26	Power Button	RAC2129				
	27	Logic Button	See Contrast table (2)				
	28	Station Button	REA1258				
	29	Memory Button	REA1259				

(2) CONTRAST TABLE

XR-3000/KUXJN, XR-3000S/KCXJN, XR-2000/KUXJN, KCXJN and XR-3000/KU have the same construction except for the following:

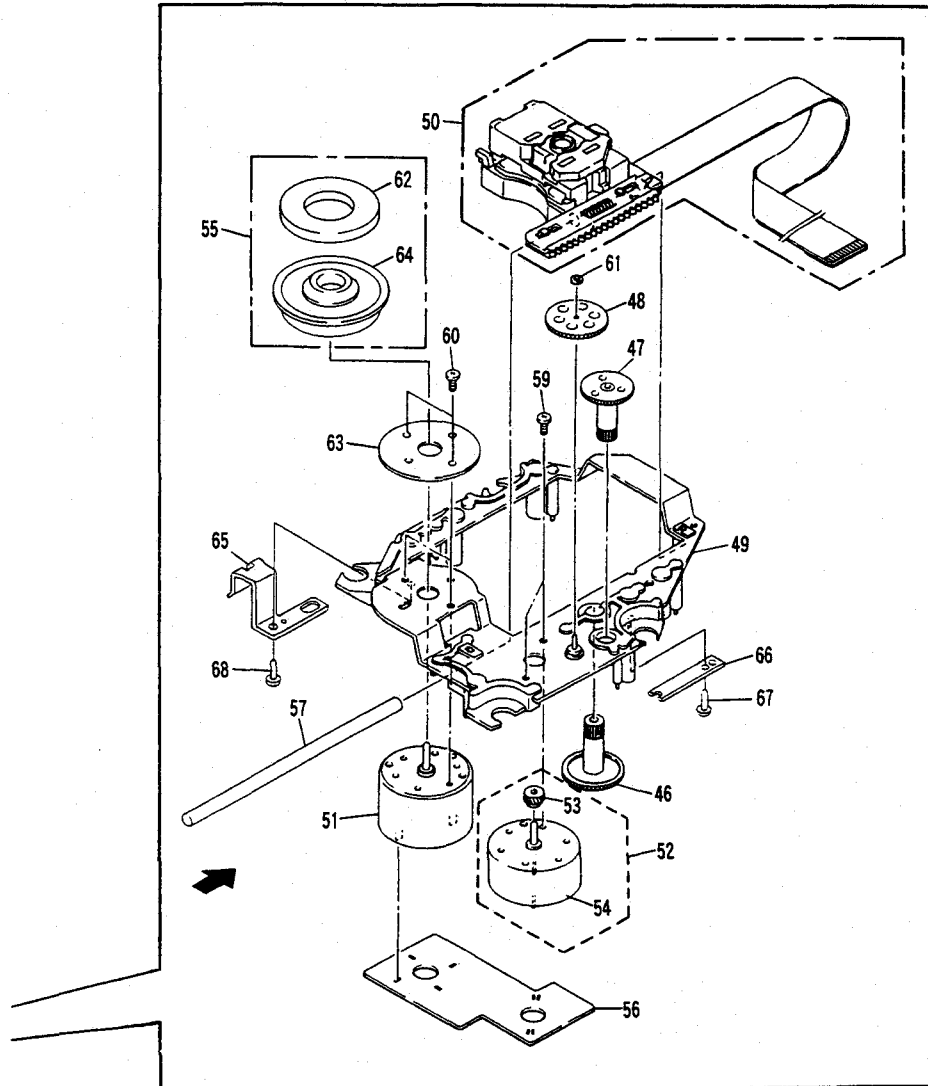
Mark	No.	Symbol & Description	Part No.					Remarks
			XR-3000		XR-3000S	XR-2000		
			KU	KUXJN	KCXJN	KUXJN	KCXJN	
	1	H.P ASSY	RWZ4138	RWZ4138	RWZ4138	RWZ4139	RWZ4139	
	2	FRONT ASSY	RWZ4142	RWZ4142	RWZ4142	RWZ4143	RWZ4143	
	8	Lead Card 37P (J13)	RDD1364	RDD1364	RDD1364	Not used	Not used	
	8	Lead Card 33P (J13)	Not used	Not used	Not used	RDD1375	RDD1375	
	27	Logic Button	RAC2130	RAC2130	RAC2130	Not used	Not used	
	36	Amp Panel	RAH2752	RAH2752	RAH2752	RAH2784	RAH2784	
	50	Front Panel	RNT1243	RNT1243	RNT1243	RNT1245	RNT1245	

2.5 GM MECHANISM ASSY



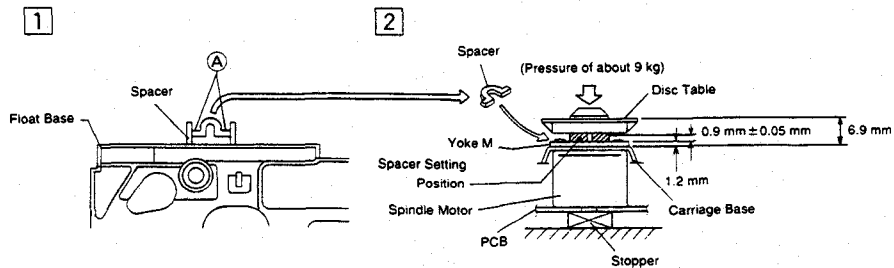
Refer to Servo Mechanism Assy GM

Servo Mechanism Assy GM



● How to install the disc table

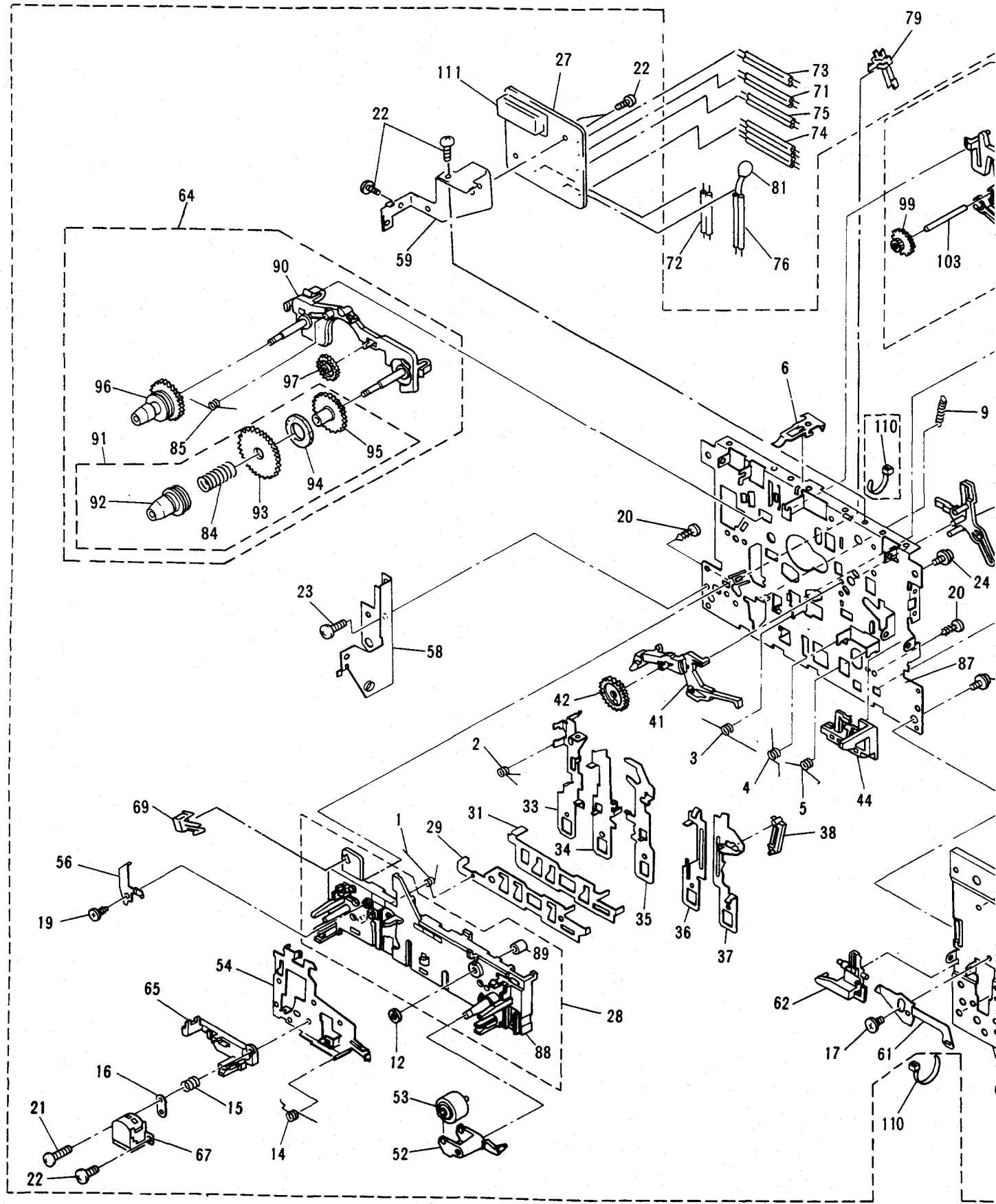
- 1 Use nipper or other tool to cut the two sections marked A figure 1. Then remove the spacer.
- 2 While supporting the spindle motor shaft with the stopper, put spacer on top of the yoke M, and stick the disc table on top (takes about 9kg pressure). Take off the spacer.

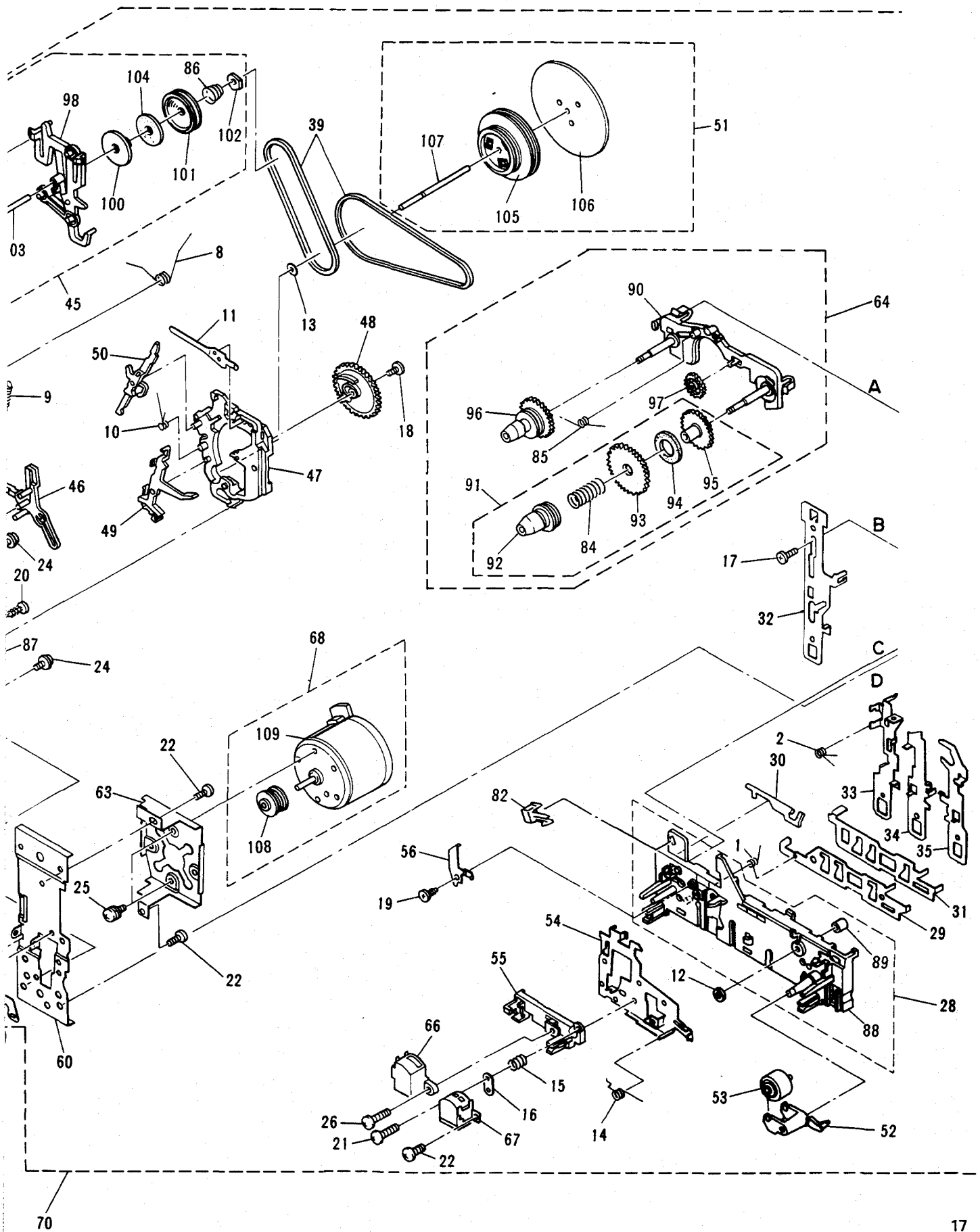


(1) PARTS LIST

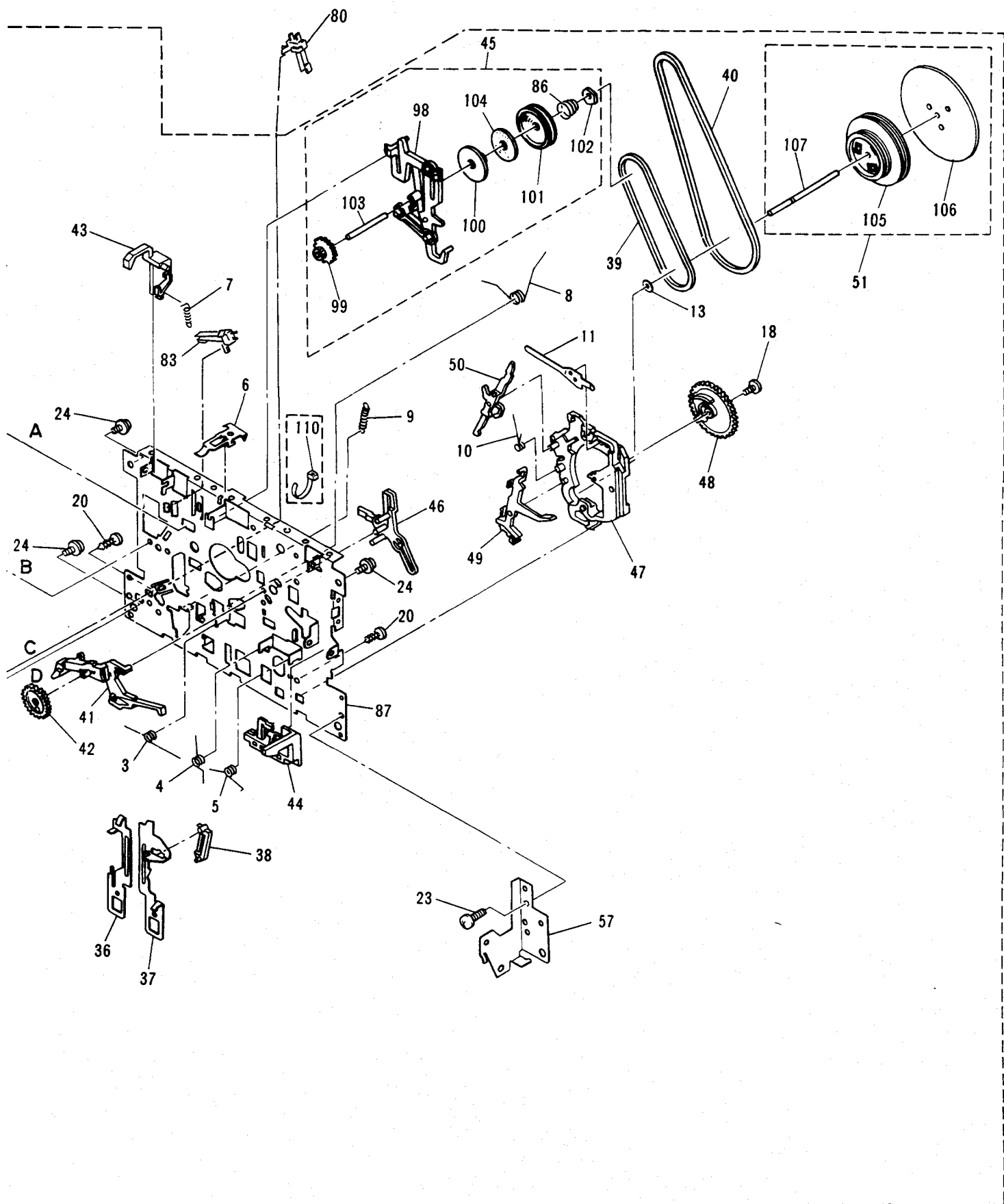
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
NSP	1	MECHA PCB ASSY	AWZ8802		58		
NSP	2	SENSOR PCB ASSY	AWZ7836		59	SCREW	JFZ17P025FZK
NSP	3	MOTOR PCB ASSY	AWZ7837		60	SCREW	JFZ20P040FMC
NSP	4	SW PCB ASSY	AWZ7838		61	WASHER	WT12D032D025
	5	ARM A SPRING 2	ABH7124		62	CLAMP MAGNET	PMF1014
	6	GEAR PLATE SPRING	ABH7051		63	YOKE M	PNB1312
	7	CLAMP SPRING	ABH7107	NSP	64	DISC TABLE	PNW2410
	8	LOCK LEVER SPRING B	ABH7142	NSP	65	FLOAT ANGLE	ANB7020
	9	LOCK ANGLE SPRING 2	ABH7123		66	GEAR STOPPER	PNB1303
	10	LOADING BELT	AEB7029		67	SCREW	BPZ20P060FMC
	11	BELT	AEB7030		68	SCREW	BPZ26P100FMC
NSP	12	LOCK ANGLE	ANB7027				
NSP	13	LOCK LEVER	ANB7042				
NSP	14	SERVO STOPPER S	ANB7047			FROIL (for service)	GYA1001
	15	LOADING BASE	ANW7086			HA NARL (for service)	GEM1016
	16	CAM COVER	ANW7052				
	17	MOTOR HOLDER	ANW7053				
	18	SENSOR HOLDER	ANW7054				
	19	FLOAT BASE	ANW7055				
	20	CLAMPER HOLDER	ANW7084				
	21	ARM (A)	ANW7057				
	22	ARM (B)	ANW7058				
	23	DRIVE PLATE	ANW7059				
	24	ARM PLATE	ANW7060				
	25	GEAR PLATE	ANW7082				
	26	GEAR PULLEY (B)	ANW7062				
	27	GEAR A	ANW7063				
	28	DRIVE GEAR	ANW7064				
	29	BEARING	ANW7065				
	30	GEAR PULLEY A	ANW7066				
	31	SELECT GEAR	ANW7067				
	32	ROLLER	ANW7068				
	33						
	34	ROLLER B	ANW7075				
	35	MOTOR PULLEY	PNW1634				
	36	CLAMPER	ANW7085				
	37	FLOAT SPRING	ABH7049				
	38	CONNECTOR ASSY (4P)	ADE7006				
	39	FLOAT RUBBER	AEB7059				
NSP	40	SERVO MECHANISM ASSY GM	AXA7028				
	41	SCREW	IPZ20P080FMC				
	42	MOTOR ASSY (SELECT)	AEA7005				
NSP	43	MOTOR	PXM1002				
	44	MOTOR ASSY	AEA7006				
	45	LOADING MOTOR	VXM1034				
	46	GEAR 1	PNW2052				
	47	GEAR 2	PNW2053				
	48	GEAR 3	PNW2054				
	49	CARRIAGE BASE	PNW2699				
	50	PICKUP ASSY	AEA7004				
	51	D.C. MOTOR ASSY (SPDL)	PEA1235				
	52	CARRIAGE DC MOTOR ASSY					
	53	PINION GEAR	PNW2055				
NSP	54	CARRIAGE DC MOTOR/0.3W	PXM1027				
	55	DISC TABLE ASSY	PEA1314				
	56	MECHANISM BOARD ASSY	PWX1192				
	57	GUIDE BAR	PLA1094				

2.6 MECHANISM UNIT





XR-3000, XR-3000S, XR-2000



(1) PARTS LIST

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Spring	AZB1336		61	Connect Arm	AZN2167
	2	Spring	AZB1337		62	Release Arm	AZN2168
	3	Spring	AZB1338		63	Motor Holder	AZN2246
	4	Spring	AZB1339	NSP	64	Base SPI Assy	AZN2171
	5	Spring	AZB1340		65	Tape Guide	AZN2174
	6	Cassette Spring	AZB1378		66	E Head	AZP1025
	7	Spring	AZB1344		67	R/P Head	AZP1036
	8	Spring	AZB1346		68	Motor Assy	AZX7008
	9	Spring	AZB1347		69	Switch (S2)	ASX1014
	10	Spring	AZB1348		70	Cassette Mecha	AWY1150
	11	Plate Spring	AZB1349		71	2P Wire Assy A (J4)	ADD1104
	12	Washer	AZB1350		72	2P Wire Assy B (J5)	ADD1105
	13	Washer	AZB1351		73	2P Wire Assy C (J7)	ADD1106
	14	Spring	AZB1352		74	4P Jumper Wire (J8)	ADD1107
	15	Spring	AZB1353		75	2P Wire Assy D (J3)	ADD1108
	16	Earth Lug	AZB1354		76	2P Wire Assy E (J6)	ADD1109
	17	Screw	AZB1355		77		
	18	Screw	AZB1356		78		
	19	Screw	AZB1357		79	Switch (S1)	ASX1014
	20	Screw	AZB1358		80	Switch (S3)	ASX1014
	21	Screw	AZB1359		81	Ceramic Capacitor (C1)	CKCYF223Z50
	22	Screw	AZB1360		82	Switch (S4)	ASX1014
	23	Screw	AZB1361		83	Switch (S5)	ASX1014
	24	Screw	AZB1362	NSP	84	Spring	AZB1341
	25	Screw	AZB1363		85	Spring	AZB1342
	26	Screw	AZB1364	NSP	86	Spring	AZB1345
	27	PC Board	AZN2111		87	Chassis	AZN2112
	28	Frame Assy	AZN2113	NSP	88	FRAM	AZN2114
	29	Function Plate	AZN2116	NSP	89	Metal	AZN2115
	30	REC Stopper	AZN2117		90	Spindle Base	AZN2130
	31	SW Lever	AZN2118		91	T Reel Assy	AZN2131
	32	REC Lever	AZN2119	NSP	92	Reel Cap	AZN2132
	33	PLAY Lever	AZN2120	NSP	93	Reel Gear	AZN2133
	34	REW Lever	AZN2121	NSP	94	Felt	AZN2134
	35	FF Lever	AZN2122	NSP	95	T Reel	AZN2135
	36	SE Lever	AZN2123		96	S Reel	AZN2136
	37	PAUSE Lever	AZN2124		97	FF Idler	AZN2137
	38	PAUSE Arm	AZN2125	NSP	98	Idler Base	AZN2141
	39	Belt	AZN2126	NSP	99	PF Idler	AZN2142
	40	Belt	AZN2127	NSP	100	PF Pulley Holder	AZN2143
	41	P Idler Arm	AZN2128	NSP	101	PF Pulley	AZN2144
	42	PL Idler	AZN2129	NSP	102	PF Bush	AZN2145
	43	Inter Lock	AZN2138	NSP	103	Shaft	AZN2146
	44	Eject Lever	AZN2139	NSP	104	Felt	AZN2147
	45	PF FF Idler Assy	AZN2140	NSP	105	Fly Wheel	AZN2154
	46	Senser	AZN2148	NSP	106	Ring	AZN2155
	47	AS Base	AZN2149	NSP	107	Capstan Shaft	AZN2156
	48	Cam Gear	AZN2150	NSP	108	Motor Pulley	AZN2170
	49	Senser Lever	AZN2151	NSP	109	Motor	AZX7009
	50	Control Lever	AZN2152		110	Nylon Binder	AEC-093
	51	FW Assy	AZN2153	NSP	111	Jumper Connector (7P)	KPD7L
	52	Pinch Arm	AZN2157				
	53	Pinch Roller	AZN2158				
	54	Head Base	AZN2159				
	55	Head Holder	AZN2160				
	56	Switch Plate	AZN2162				
	57	Button R Holder	AZN2163				
	58	Button L Holder	AZN2164				
	59	P Holder	AZN2165				
	60	Connect Plate	AZN2166				

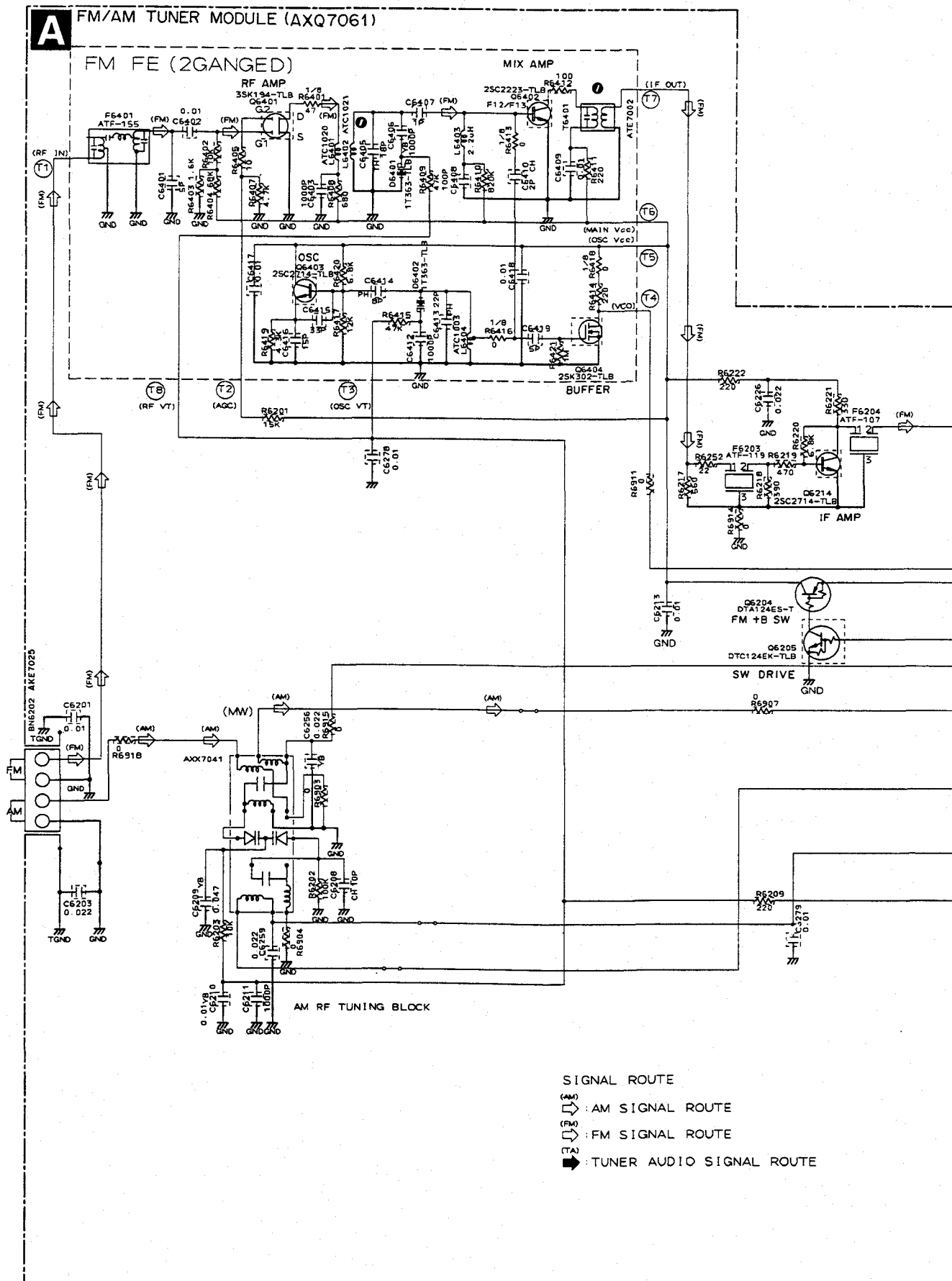
3. SCHEMATIC DIAGRAM

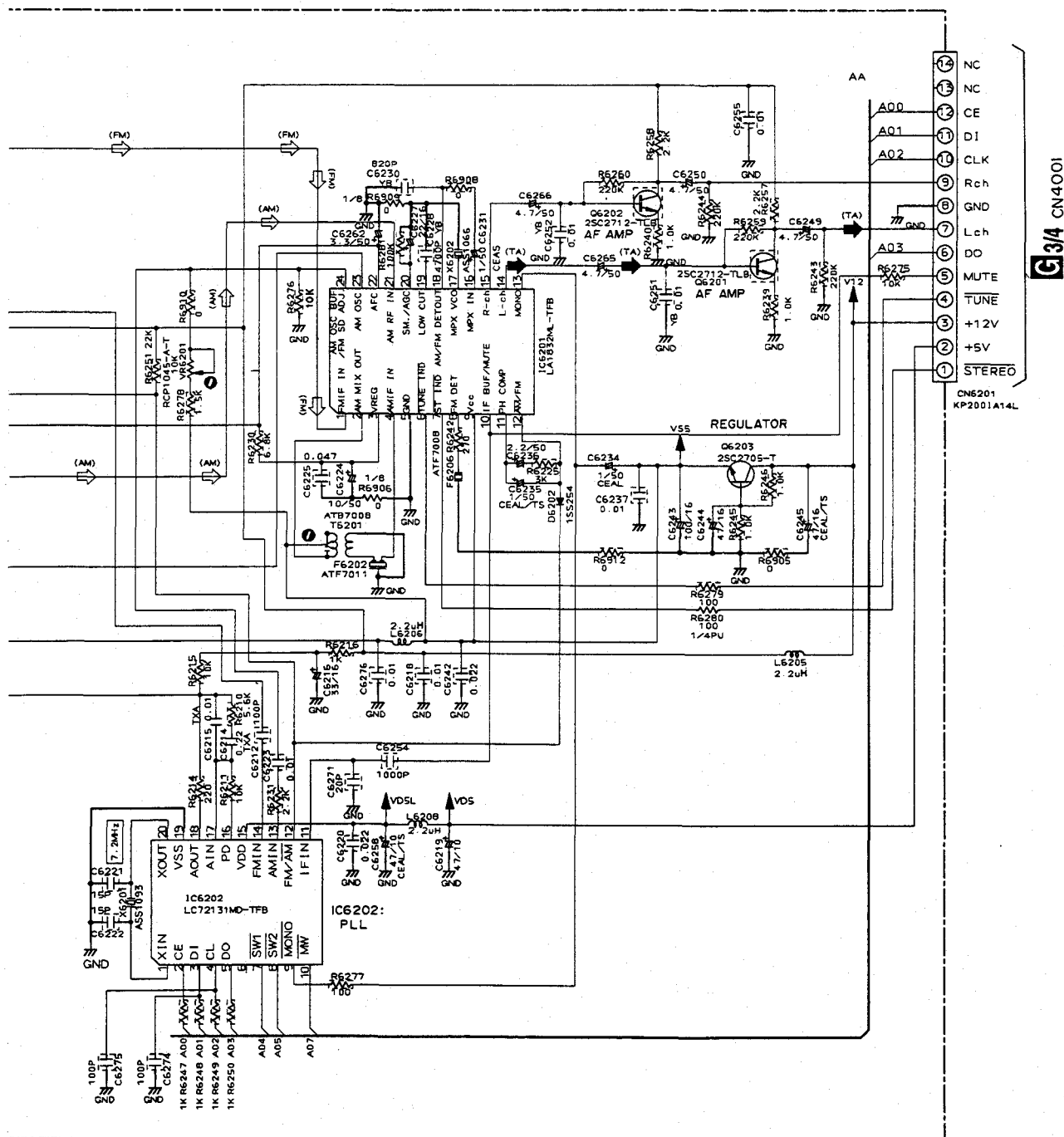
NOTE: When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".



[illegible]

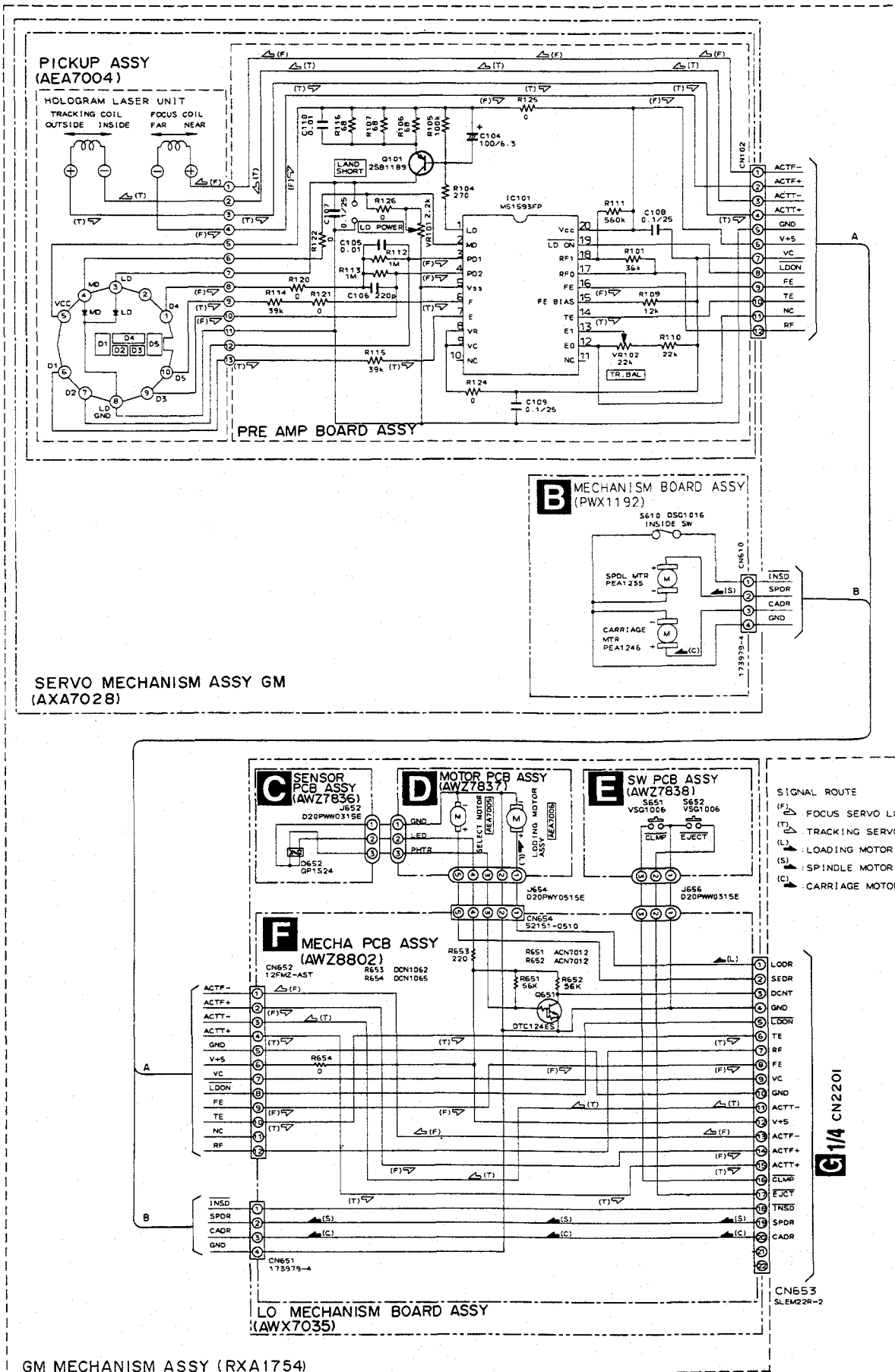
3.2 FM/AM TUNER MODULE





G3/4 CN4001

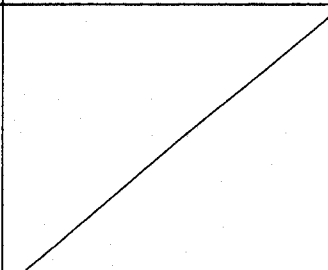
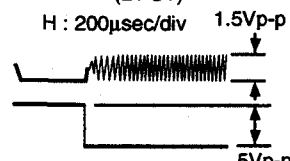
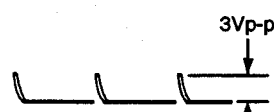
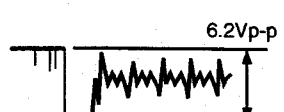
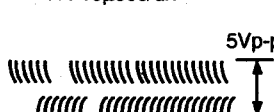
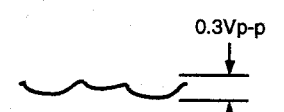
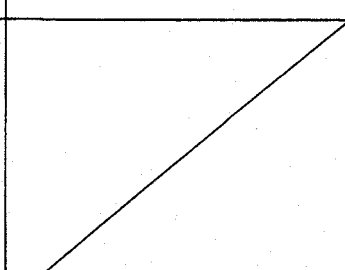
3.3 GS MECHANISM ASSY AND GM MECHANISM ASSY



Note : The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP : After switching to the pause mode, press the manual search key.

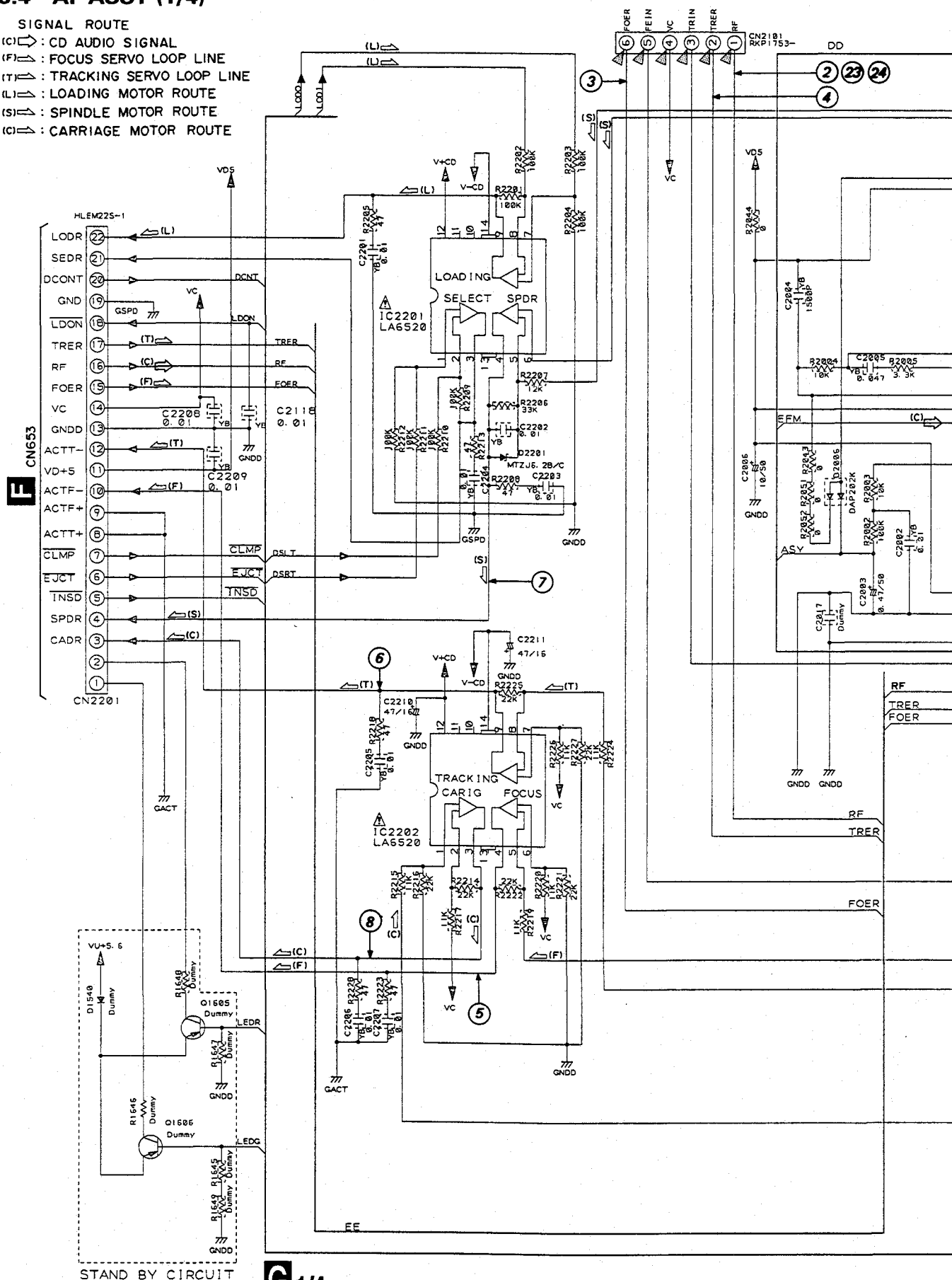
*2 FOCUS-IN : Press the key without loading a disc.

② CN2101- Pin 1 : PLAY MODE (RF) H : 500nsec/div 	⑤ IC2202- Pin 4 : PLAY MODE (ACTF-) H : 1msec/div 	⑧ IC2202- Pin 3 : TRACK SEARCH MODE (CADR) H : 200msec/div 	①⑨ IC2001- Pin 52 : PLAY MODE (1kHz) (PCMD) H : 500nsec/div 	
② CN2101- Pin 1 : TRACK SEARCH MODE (RF) H : 200μsec/div 	⑥ IC2202- Pin 9 : PLAY MODE (ACTT-) H : 1msec/div 	⑨ IC2101- Pin 32 : PLAY MODE (EFM) H : 500nsec/div 	②③ TRACK SEARCH MODE Upper:CN2101-Pin1(RF) Lower:IC2101-Pin 29 (MIRR) H : 200μsec/div 	
③ CN2101- Pin 6 : PLAY MODE (FOER) H : 10msec/div 	⑥ IC2202- Pin 9 : 50T-JUMP(*1) MODE (ACTT-) H : 1msec/div 			②④ PLAY MODE Upper:CN2101-Pin1(RF) Lower:IC2101-Pin 30 (DFCT) H : 200μsec/div 
④ CN2101- Pin 2 : PLAY MODE (TRER) H : 10msec/div 	⑦ IC2201- Pin 4 : PLAY MODE (SPDR) H : 50msec/div 			③③ IC2001- Pin 27 : PLAY MODE (MDP) H : 2μsec/div 
④ CN2101- Pin 2 : 50T- JUMP(*1)MODE (TRER) H : 1msec/div 	⑦ IC2201- Pin 4 : TRACK SEARCH MODE (SPDR) H : 50msec/div 	①⑥ IC2001- Pin 54 : PLAY MODE (1kHz) (BCK) H : 500nsec/div 	⑤③ IC2001- Pin 38 : PLAY MODE (PCO) H : 10μsec/div 	
⑤ IC2202- Pin 4 : FOCUS-IN(*2) MODE (ACTF-) H : 200msec/div 	⑧ IC2202- Pin 3 : PLAY MODE (CADR) H : 2sec/div 	①⑧ IC2001- Pin 50 : PLAY MODE (1kHz) (LRCK) H : 10μsec/div 		

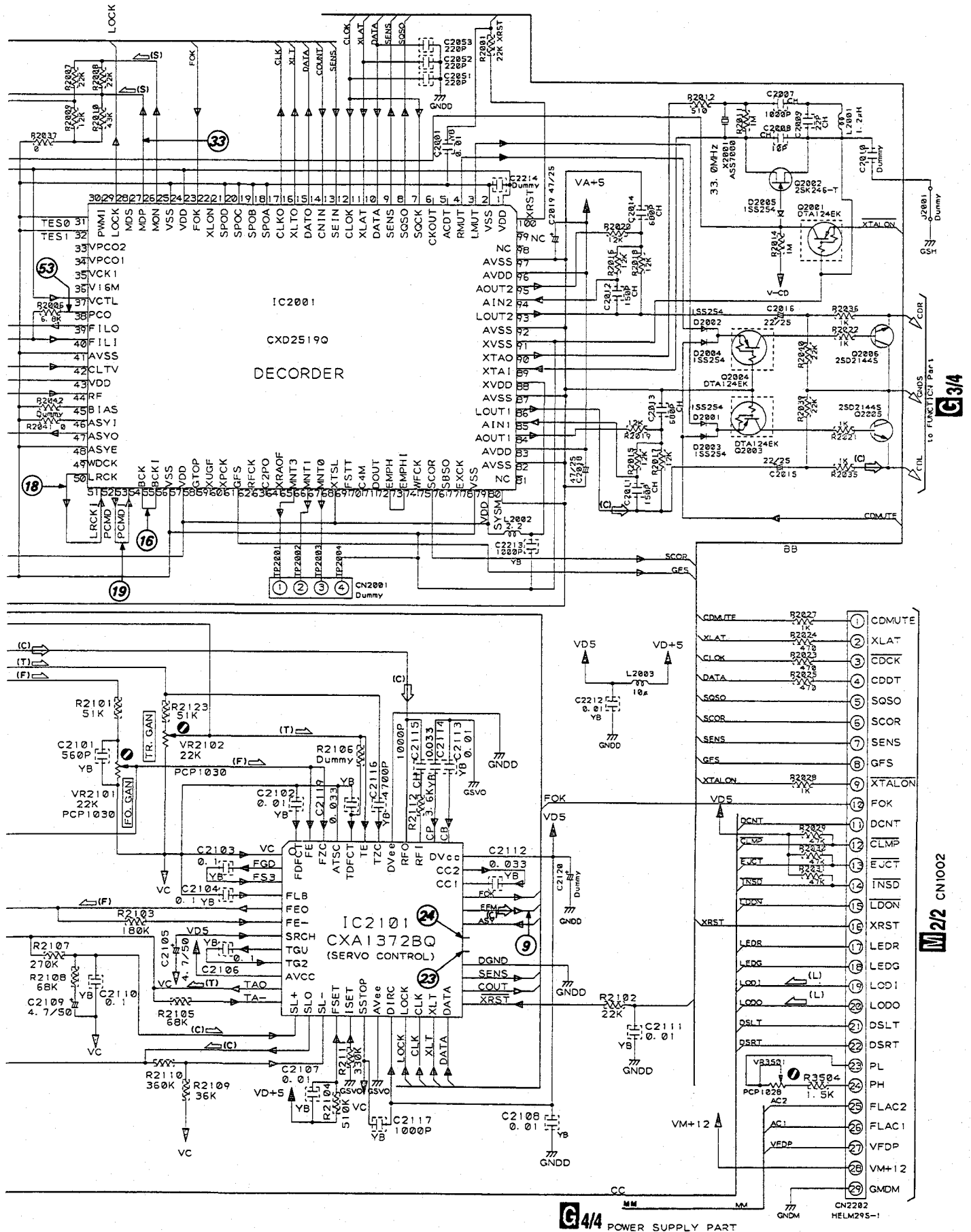
3.4 AF ASSY (1/4)

SIGNAL ROUTE

- (C) ⇨ : CD AUDIO SIGNAL
- (F) ⇨ : FOCUS SERVO LOOP LINE
- (T) ⇨ : TRACKING SERVO LOOP LINE
- (L) ⇨ : LOADING MOTOR ROUTE
- (S) ⇨ : SPINDLE MOTOR ROUTE
- (C) ⇨ : CARRIAGE MOTOR ROUTE



G1/4 AF ASSY (1/4)
(RWZ4136 : XR-3000 and XR-3000S)
(RWZ4137 : XR-2000)



G4/4 POWER SUPPLY PART

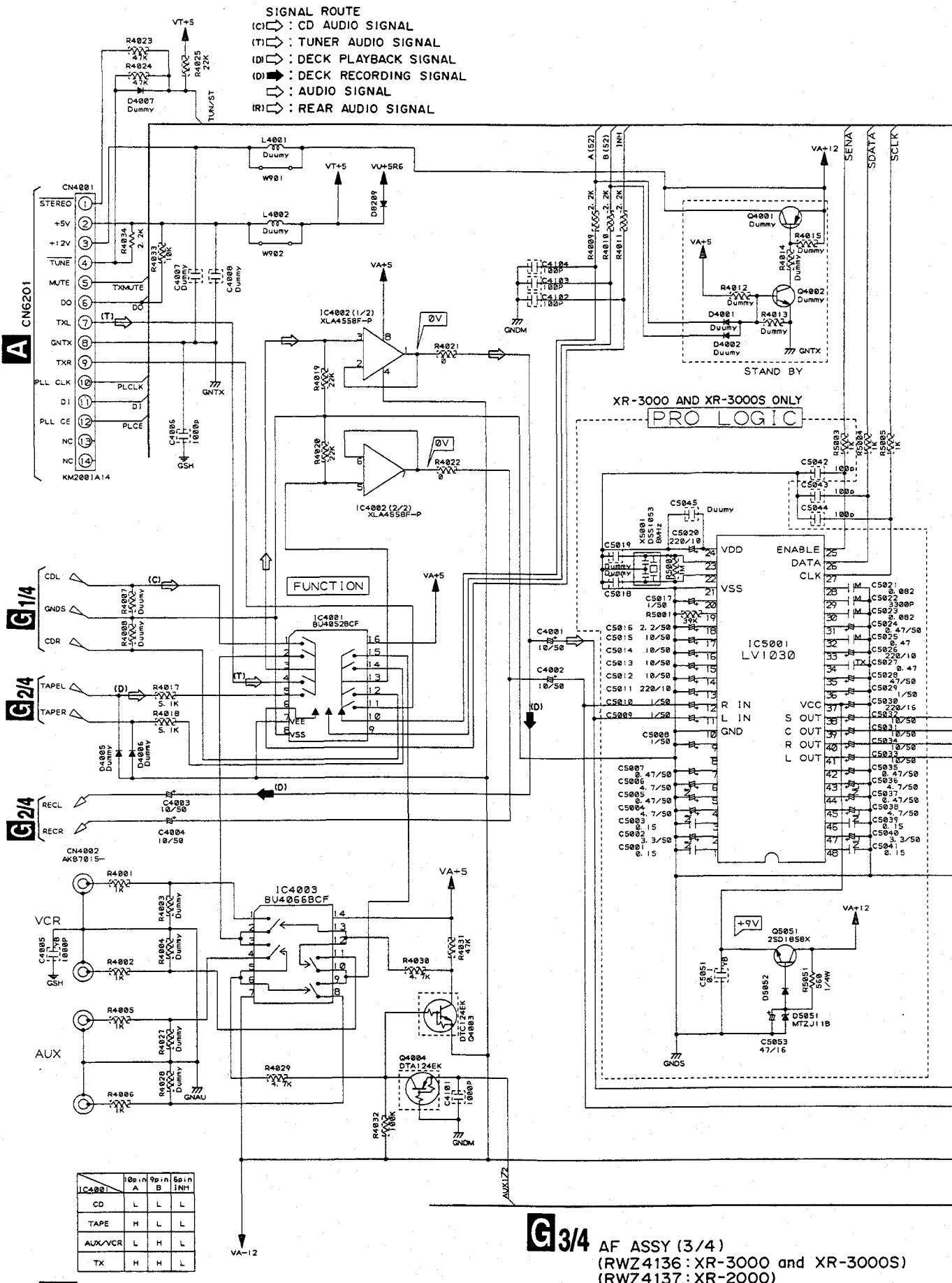
3.5 AF ASSY (2/4)



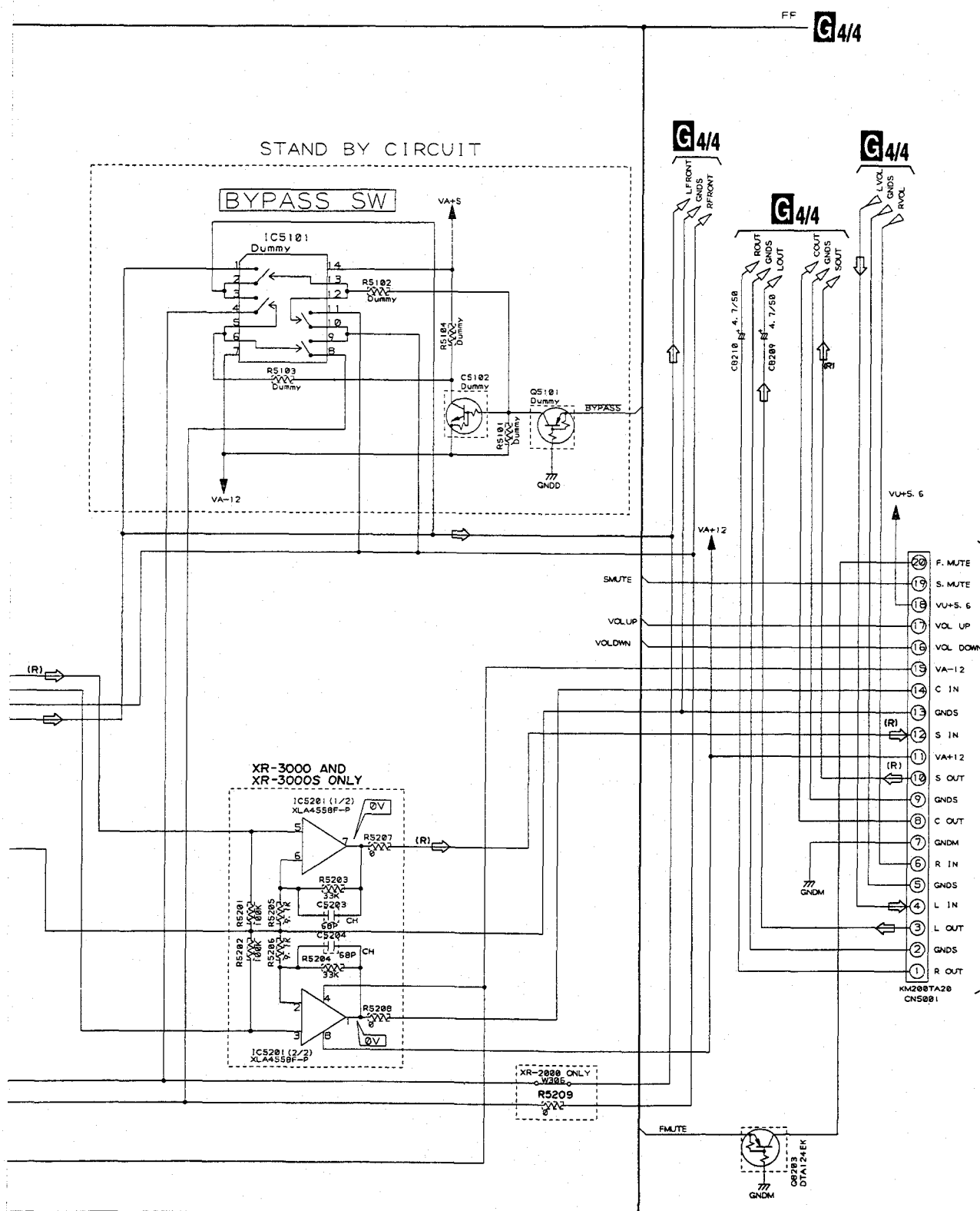
AF ASSY (2/4)
(RWZ4136:XR-3000 and XR-3000S)
(RWZ4137:XR-2000)



3.6 AF ASSY (3/4)



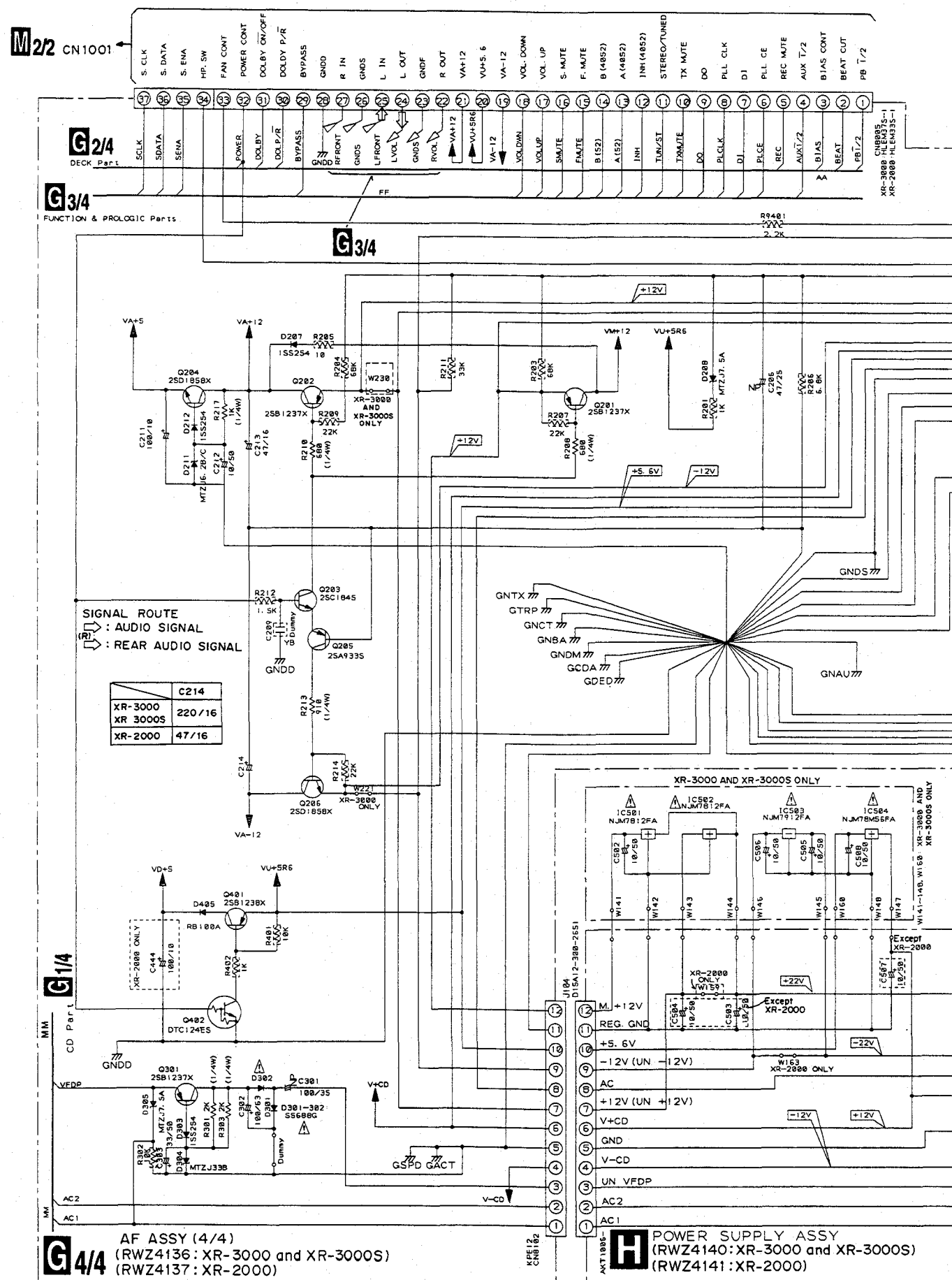
G3/4 AF ASSY (3/4)
(RWZ4136 : XR-3000 and XR-3000S)
(RWZ4137 : XR-2000)



DIODES OTHERWISE NOTED
ARE 1SS254.

XR-3000, XR-3000S, XR-2000

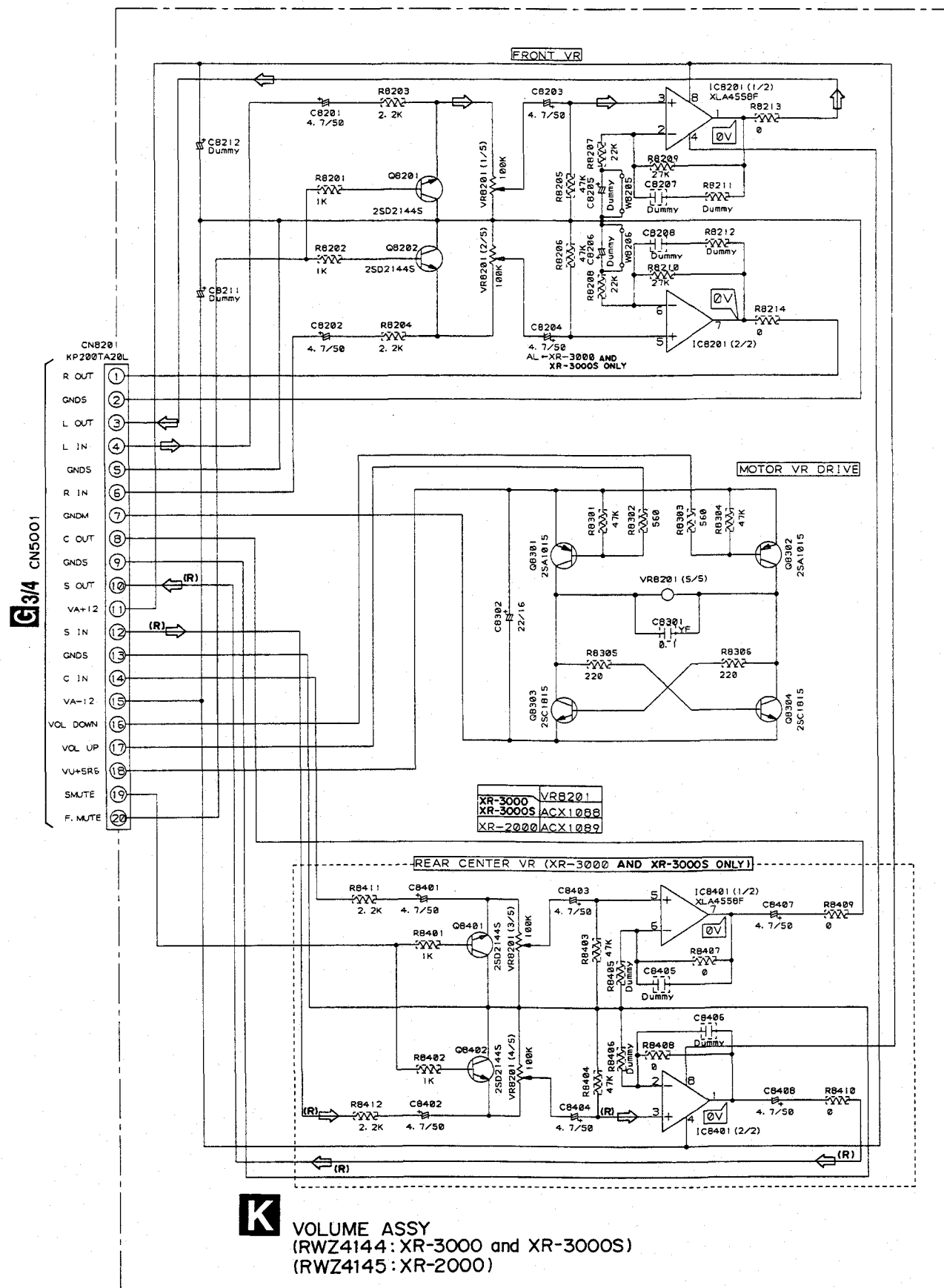
3.7 AF ASSY (4/4), POWER SUPPLY ASSY, SECONDARY ASSY AND PRIMARY ASSY



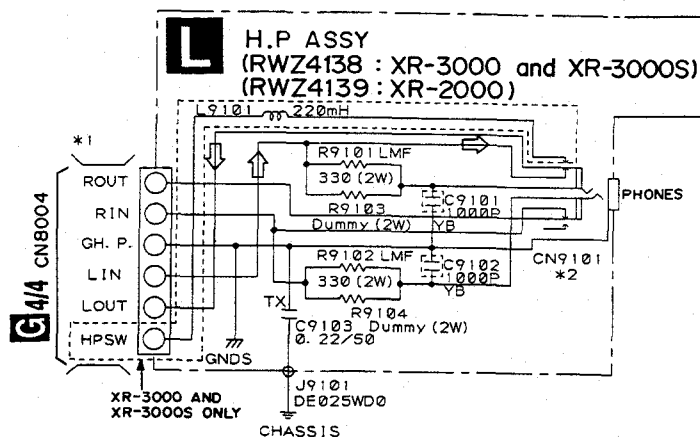
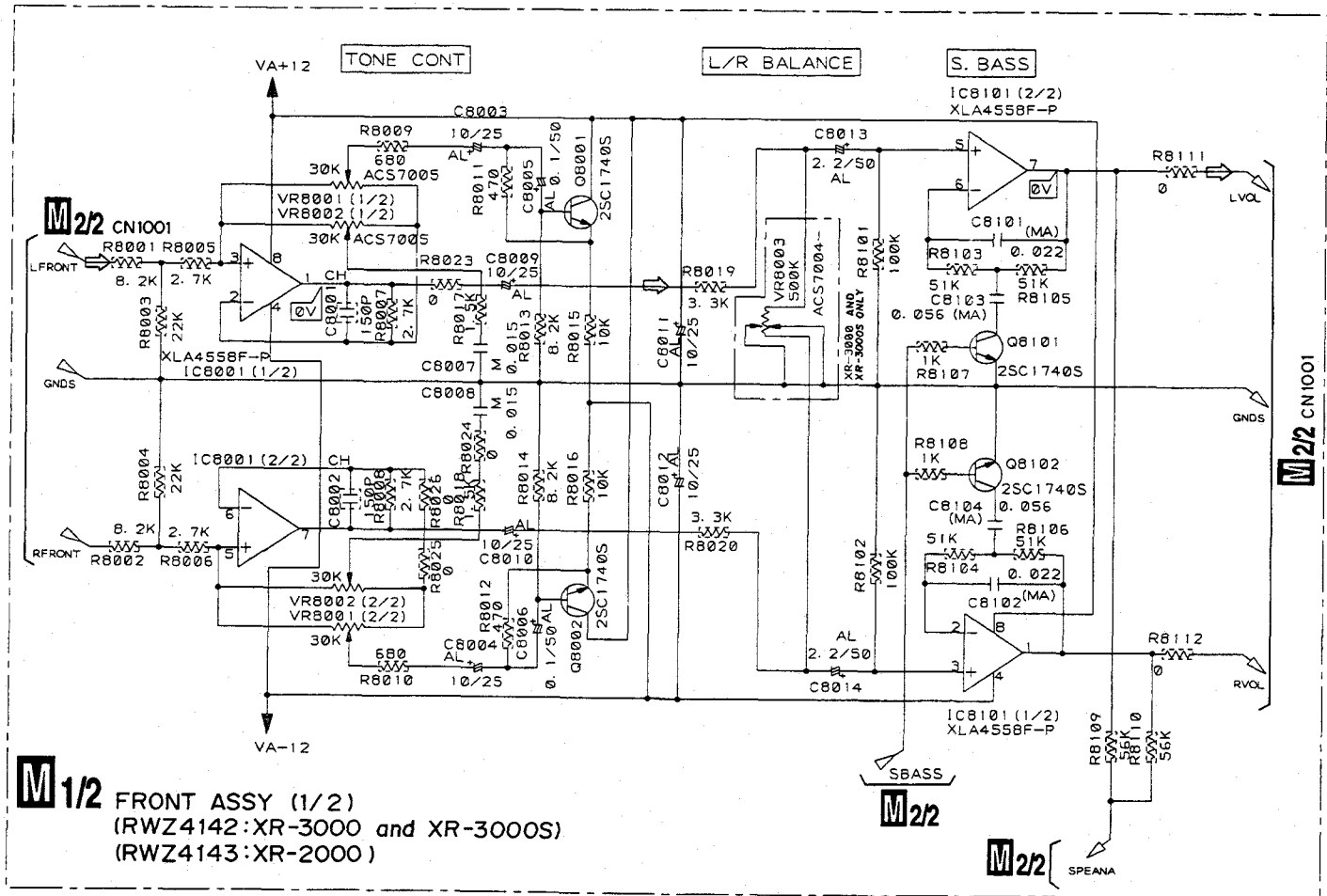


3.8 VOLUME ASSY, H.P ASSY AND FRONT ASSY (1/2)

SIGNAL ROUTE
 ⇨ : AUDIO SIGNAL
 (R)⇨ : REAR AUDIO SIGNAL



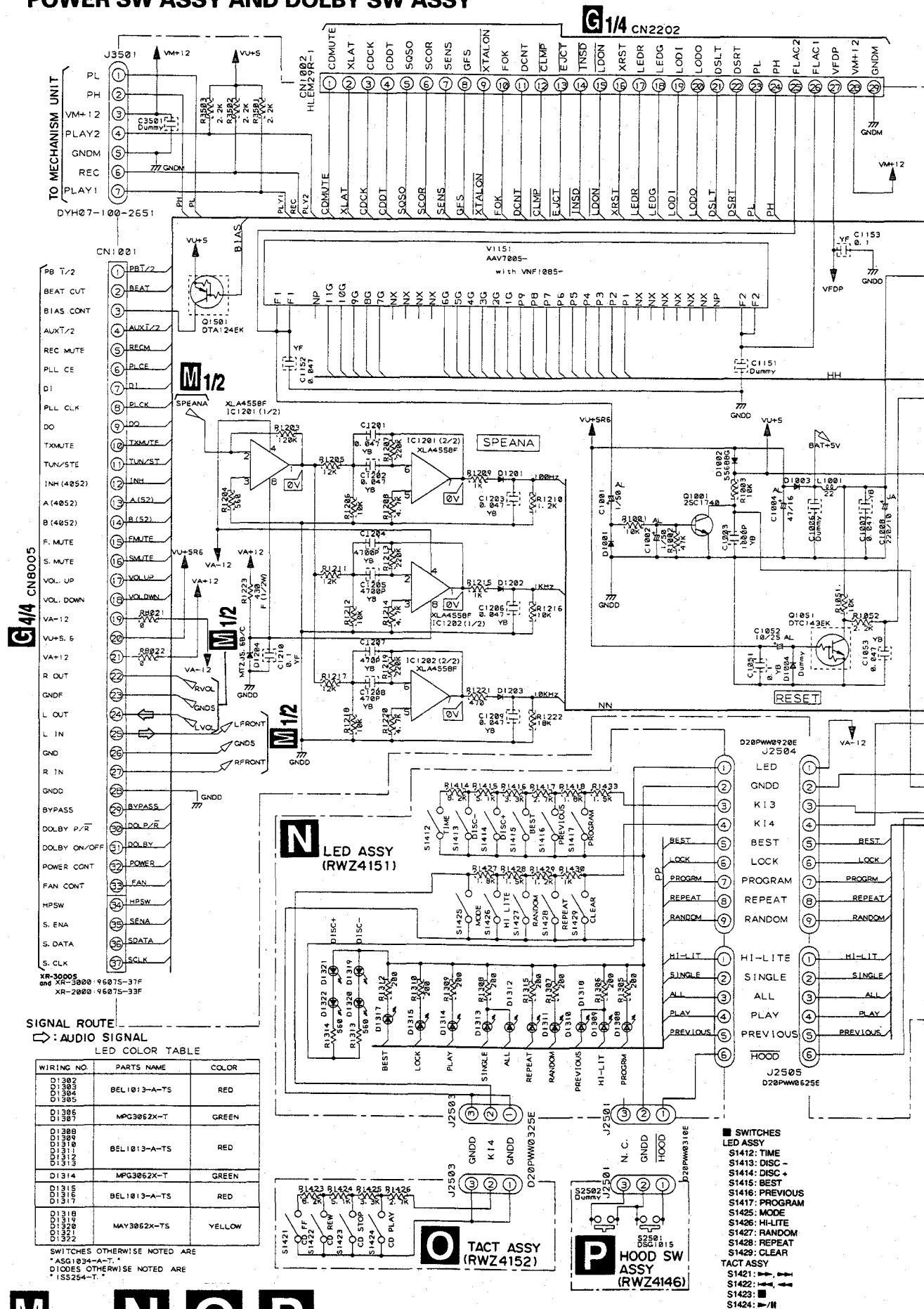
SIGNAL ROUTE
 : AUDIO SIGNAL



	XR-3000 XR-3000S	XR-2000
*1	DYH06-500 -2651 (J8004)	DYH05-500 -2651 (J8005)
*2	AKN1025	AKN1010

XR-3000, XR-3000S, XR-2000

3.9 FRONT ASSY (2/2) AND LED ASSY, TACT ASSY, HOOD SW ASSY, HOME SW ASSY, POWER SW ASSY AND DOLBY SW ASSY



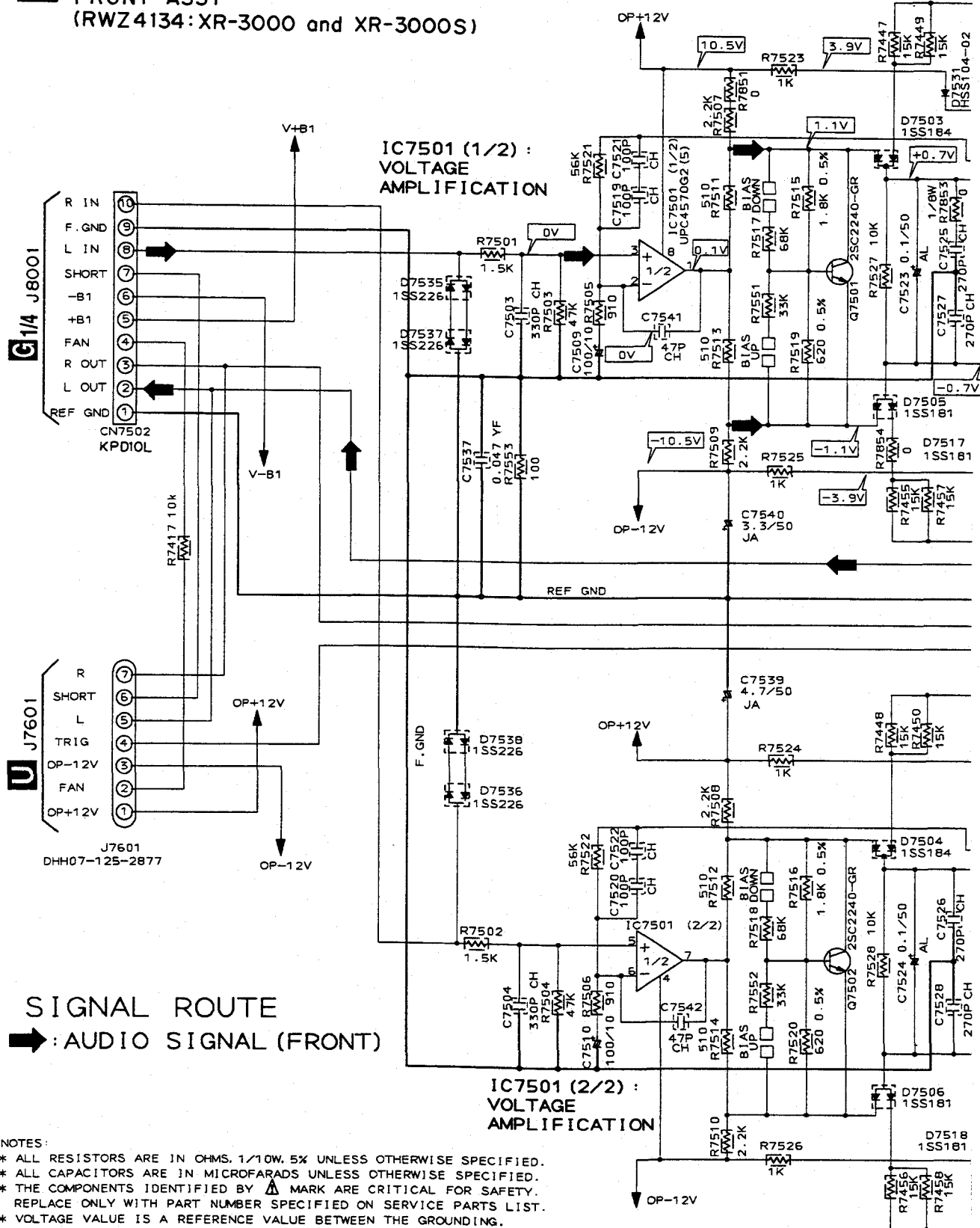
S1407: SUPER BASS
S1408: FM/AM/STA
S1409: MONO
S1418: TUNING/STATION +
S1419: TUNING/STATION -
S1420: MEMORY



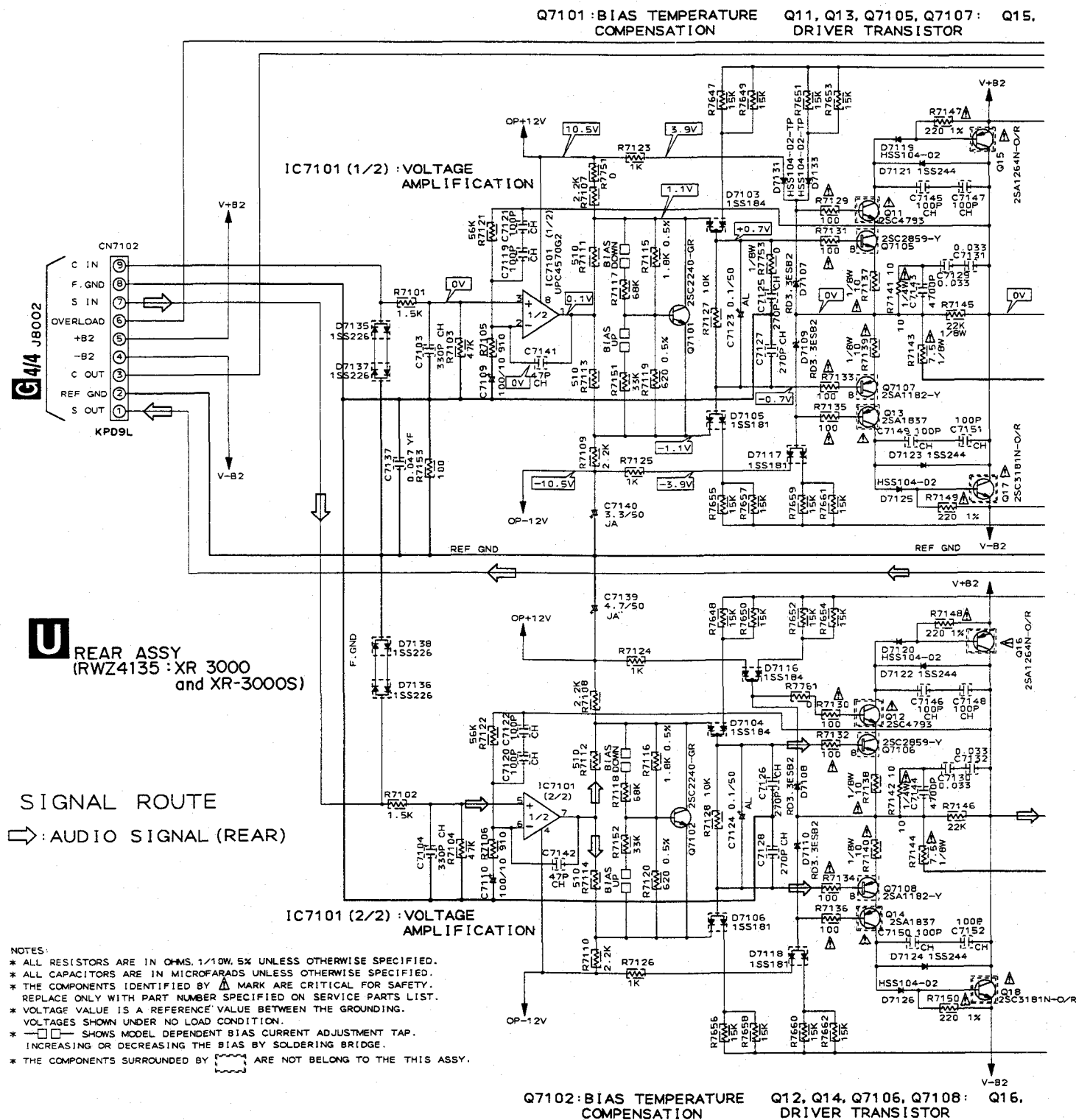
3.10 FRONT ASSY



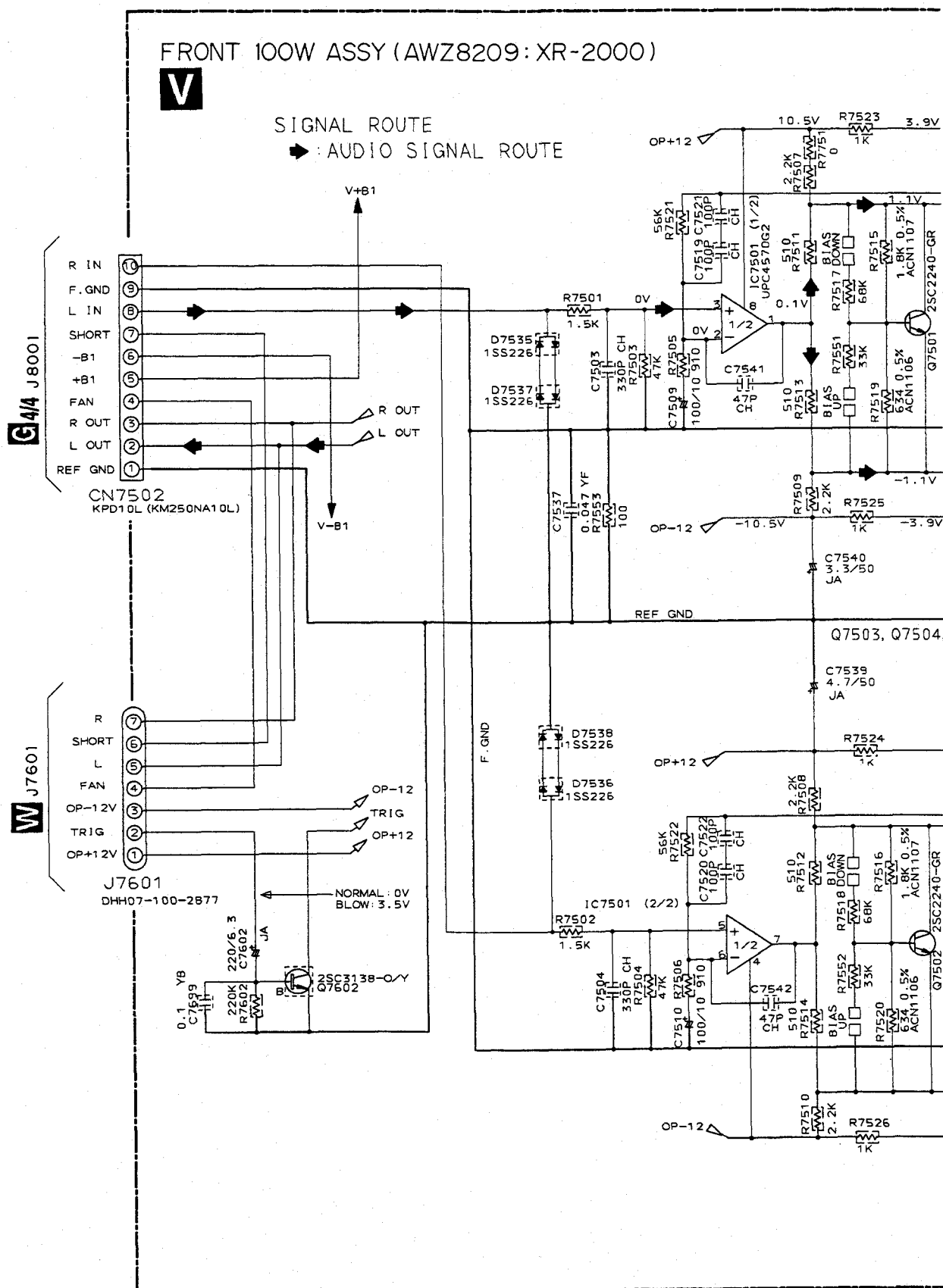
FRONT ASSY
(RWZ4134:XR-3000 and XR-3000S)

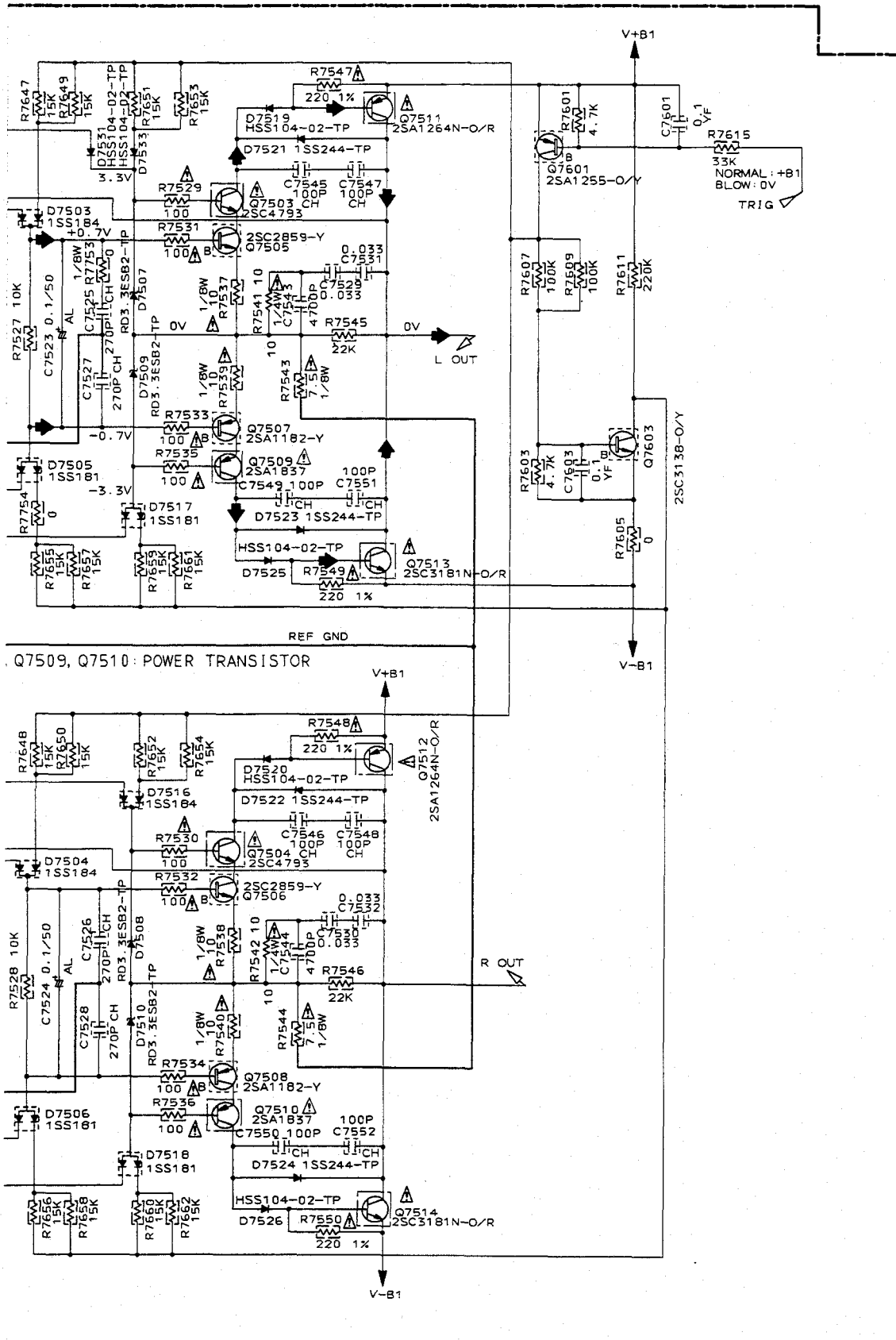


3.11 REAR ASSY



3.12 FRONT 100W ASSY

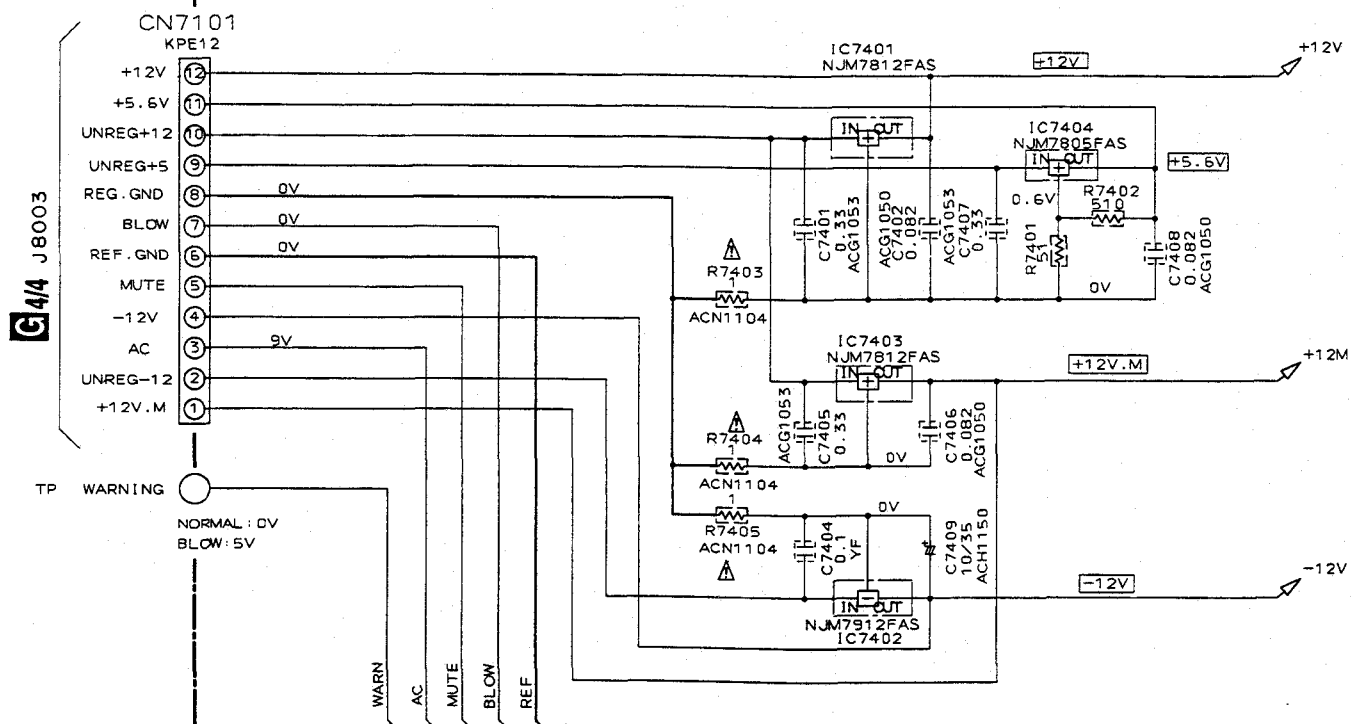


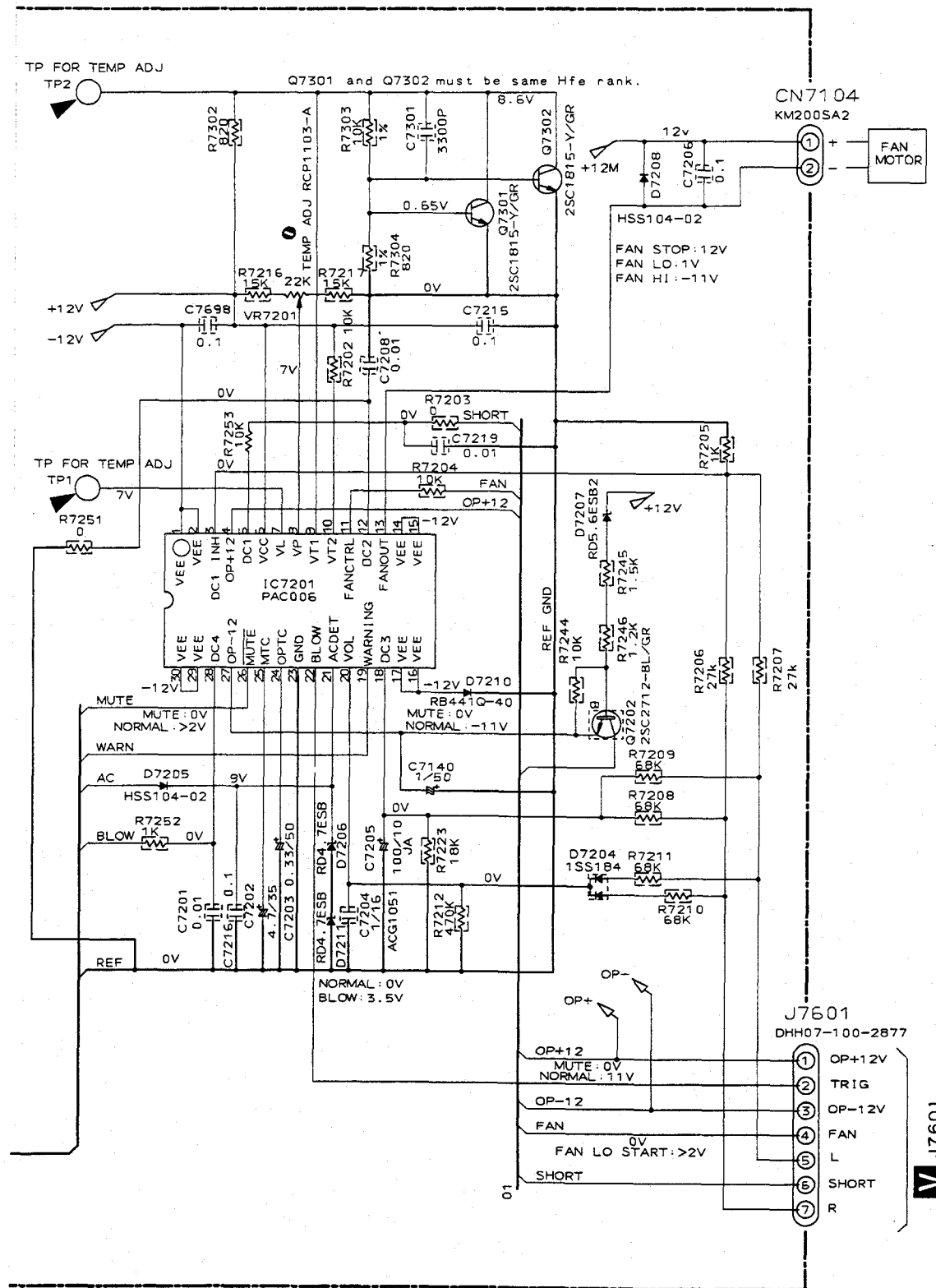


3.13 REGULATOR ASSY

REGULATOR ASSY (AWZ8210: XR-2000)

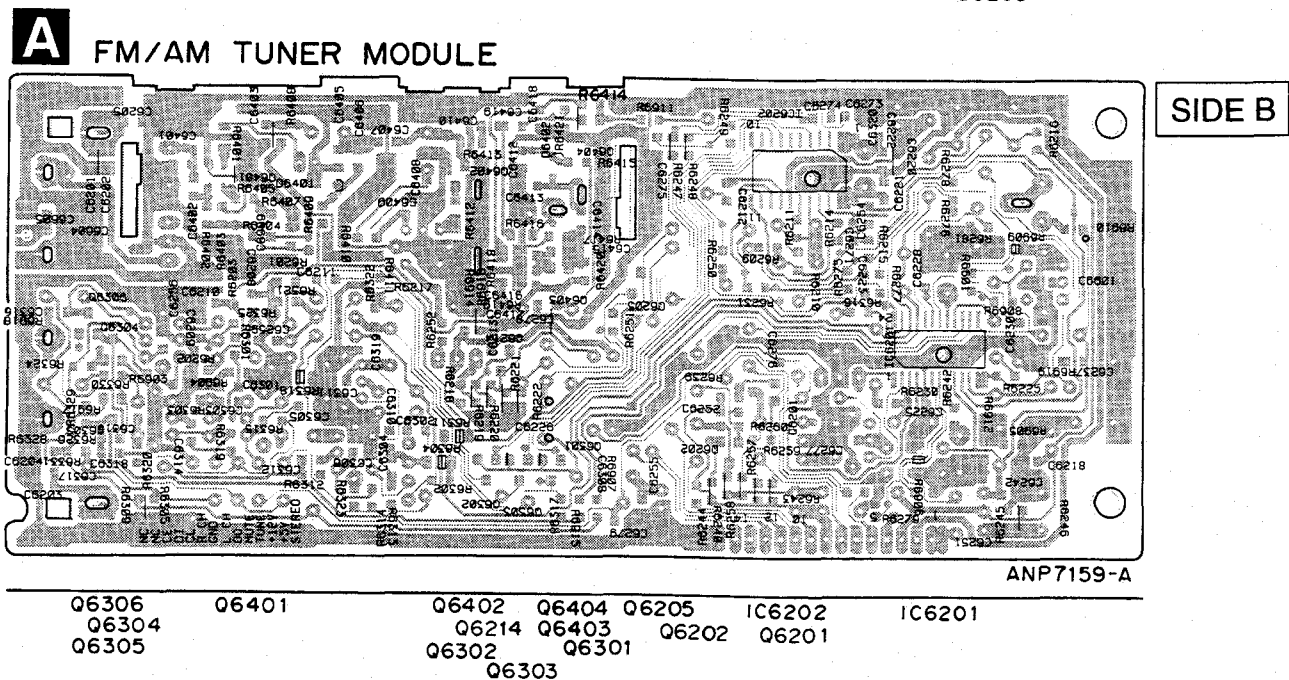
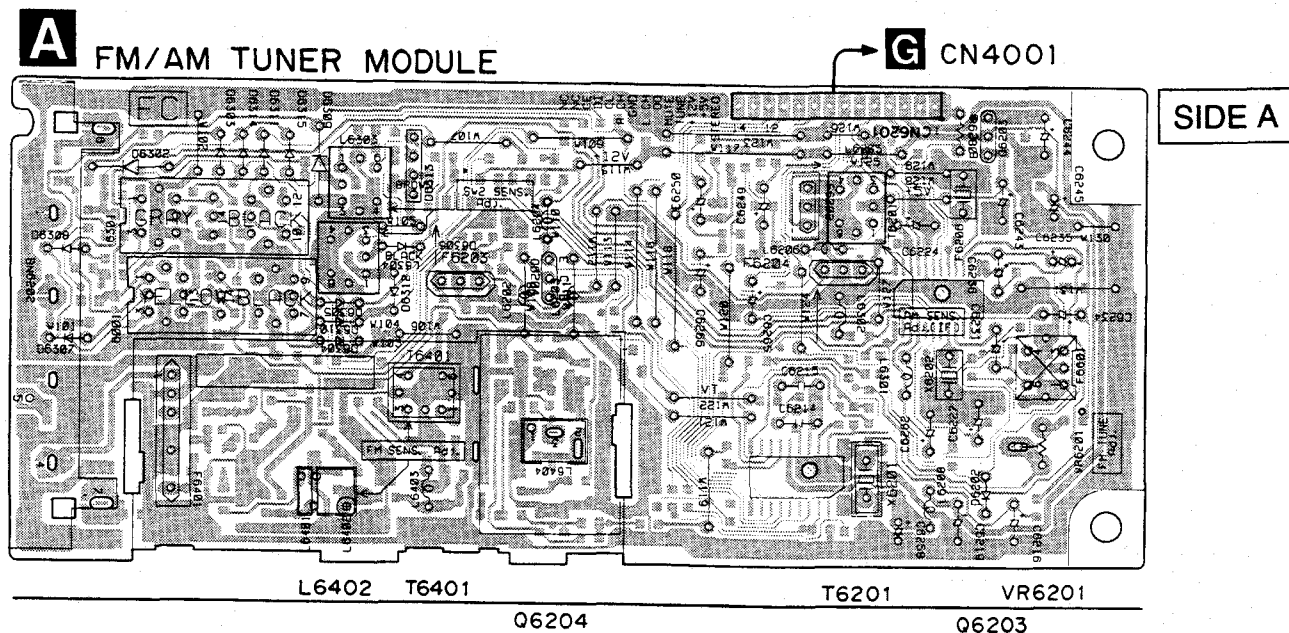
W





4. PCB CONNECTION DIAGRAM

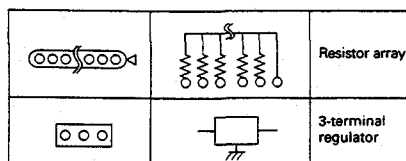
4.1 FM/AM TUNER MODULE



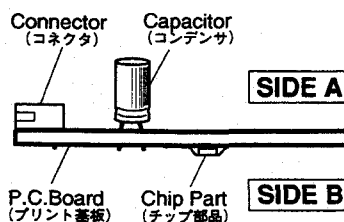
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor



3. The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.
4. Viewpoint of PCB diagrams

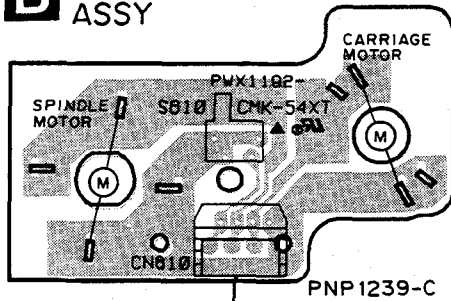


4.2 GM MECHANISM ASSY AND POWER SUPPLY ASSY

SIDE A

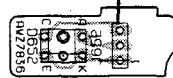
GM MECHANISM ASSY

B MECHANISM BOARD ASSY

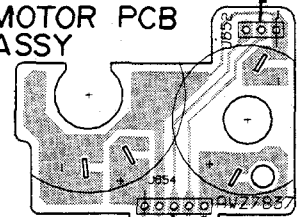


PNP1239-C

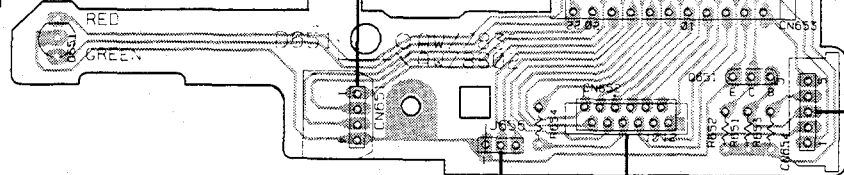
C SENSOR PCB ASSY



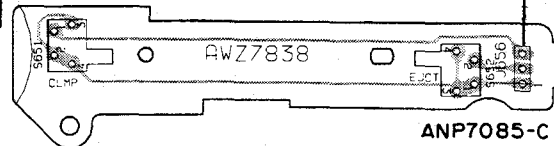
D MOTOR PCB ASSY



F MECHA PCB ASSY



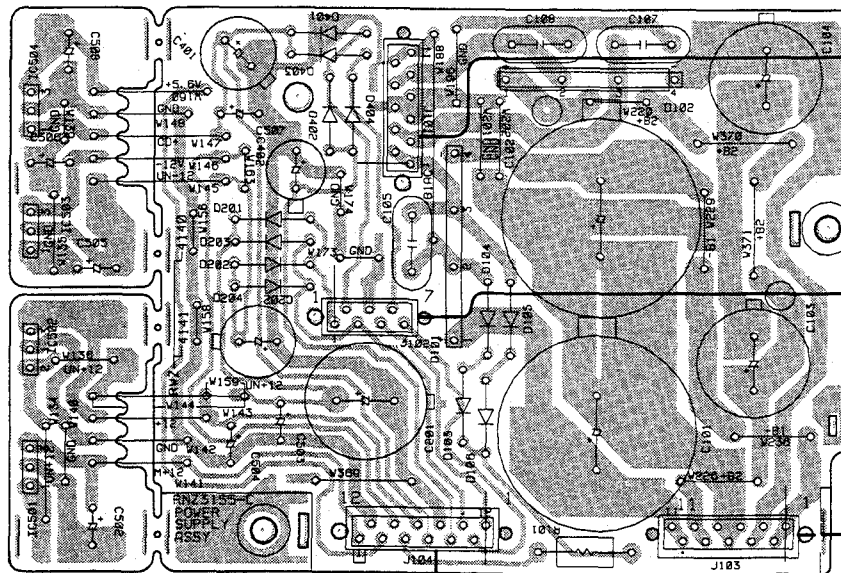
E SW PCB ASSY



G CN2201

TO PICKUP assy

H POWER SUPPLY ASSY



RNP1685-C

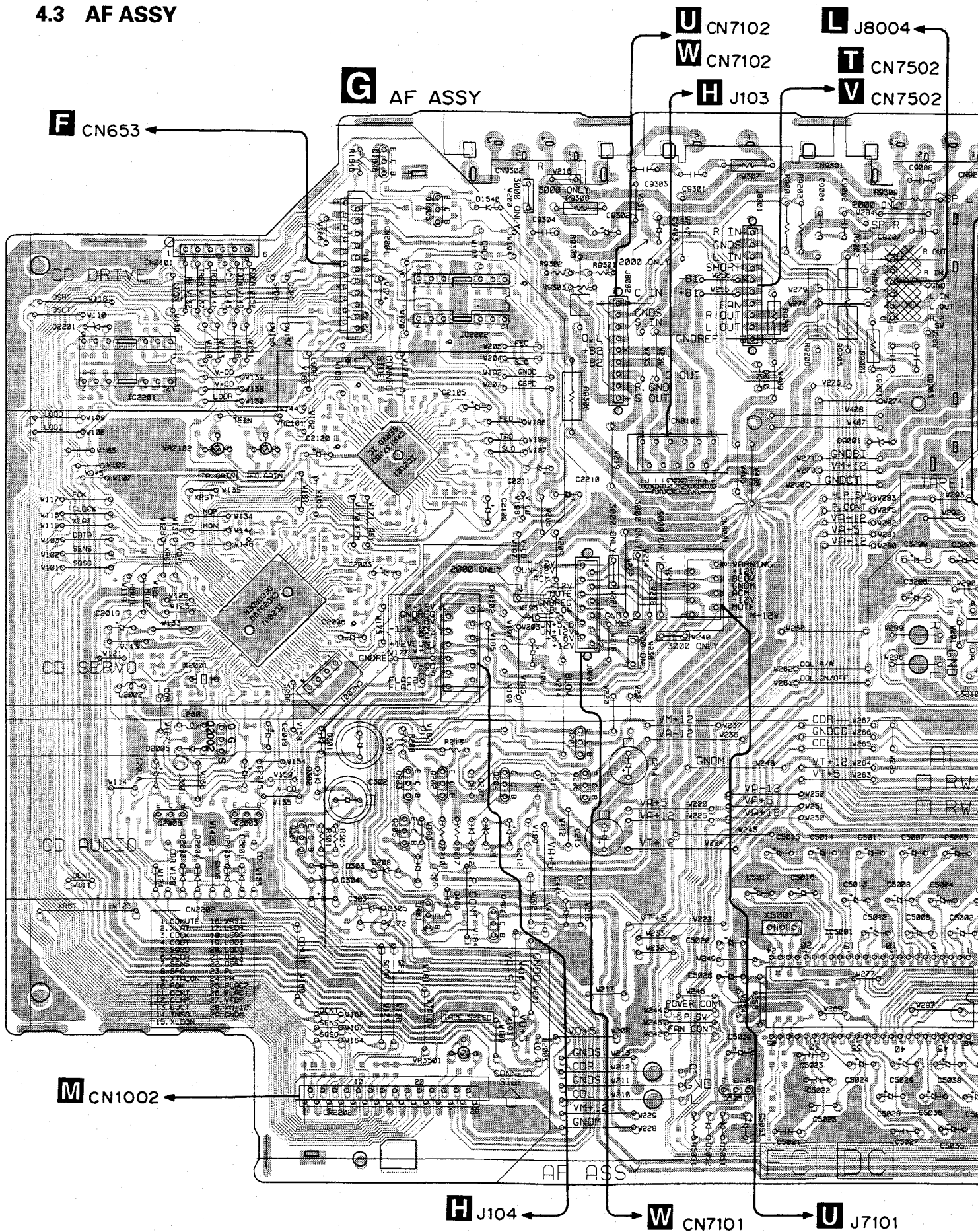
IC504
IC503
IC502
IC501

G CN8102

B C D E F H

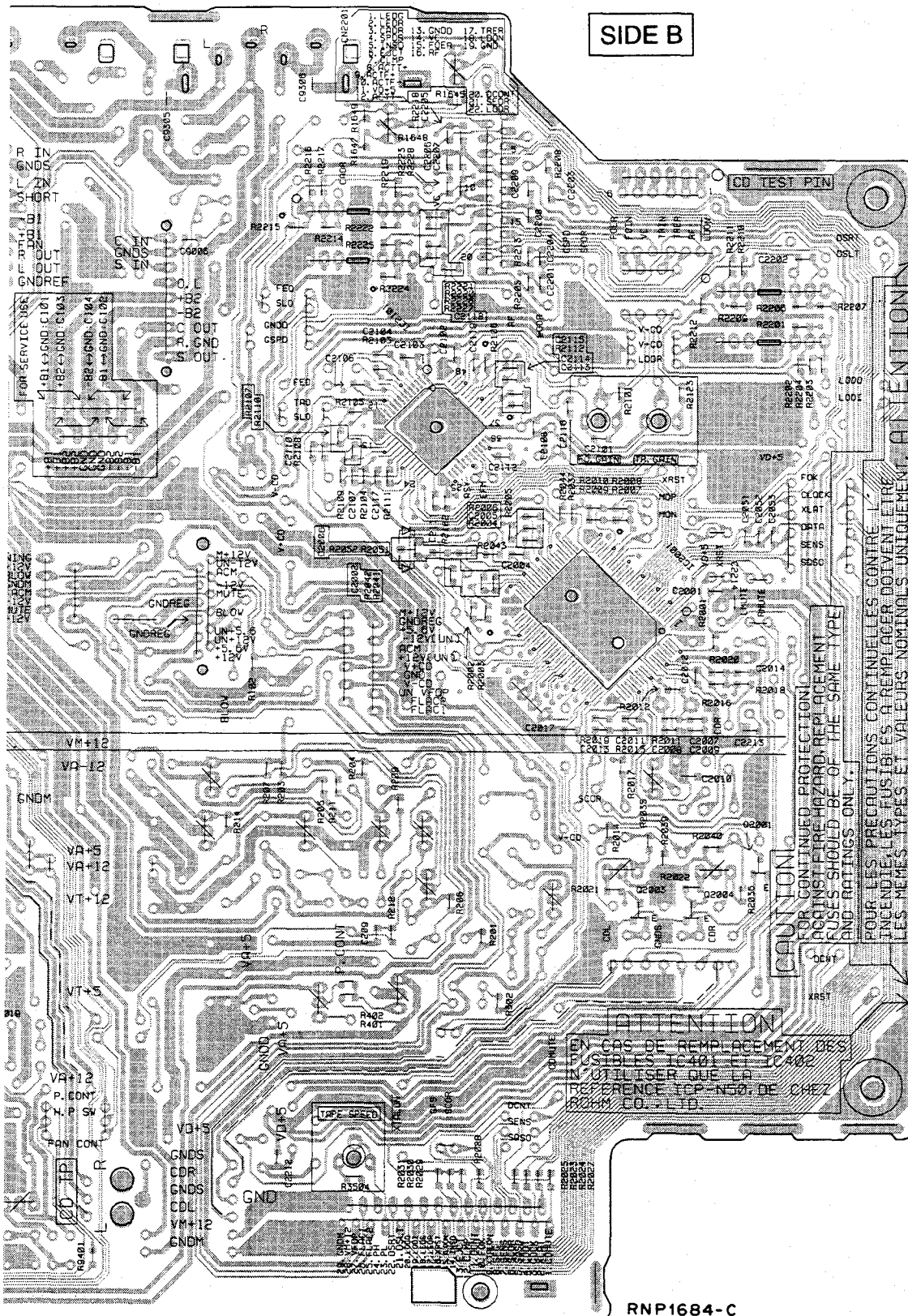
XR-3000, XR-3000S, XR-2000

4.3 AF ASSY



→ **M** CN1001





Q4003
Q4004

IC3301 Q3305
Q3306

IC3001
Q3406 IC3002
IC2101
Q3006 Q3005

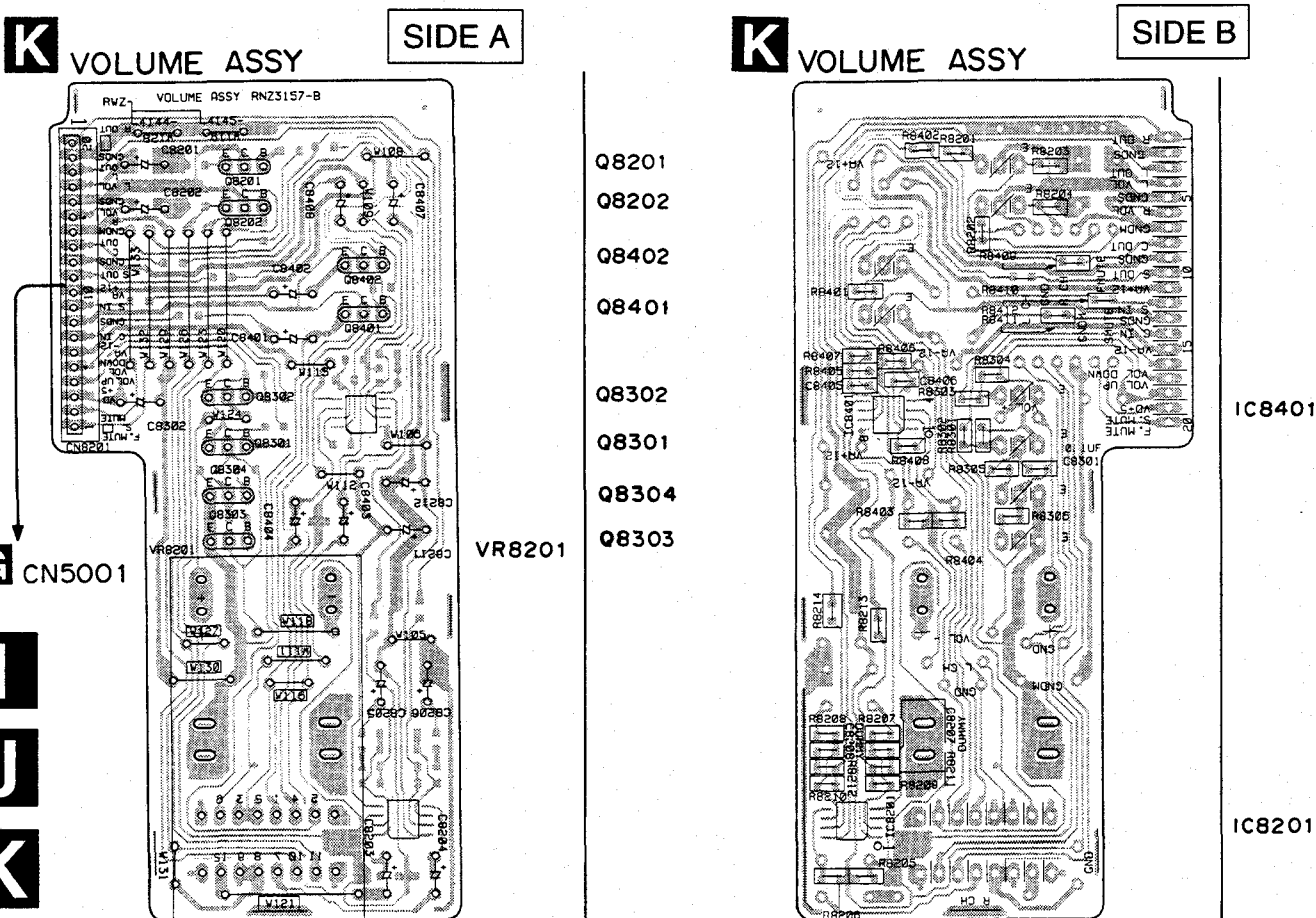
IC2001

Q2001
IC4001 IC4002
Q2003 Q2004

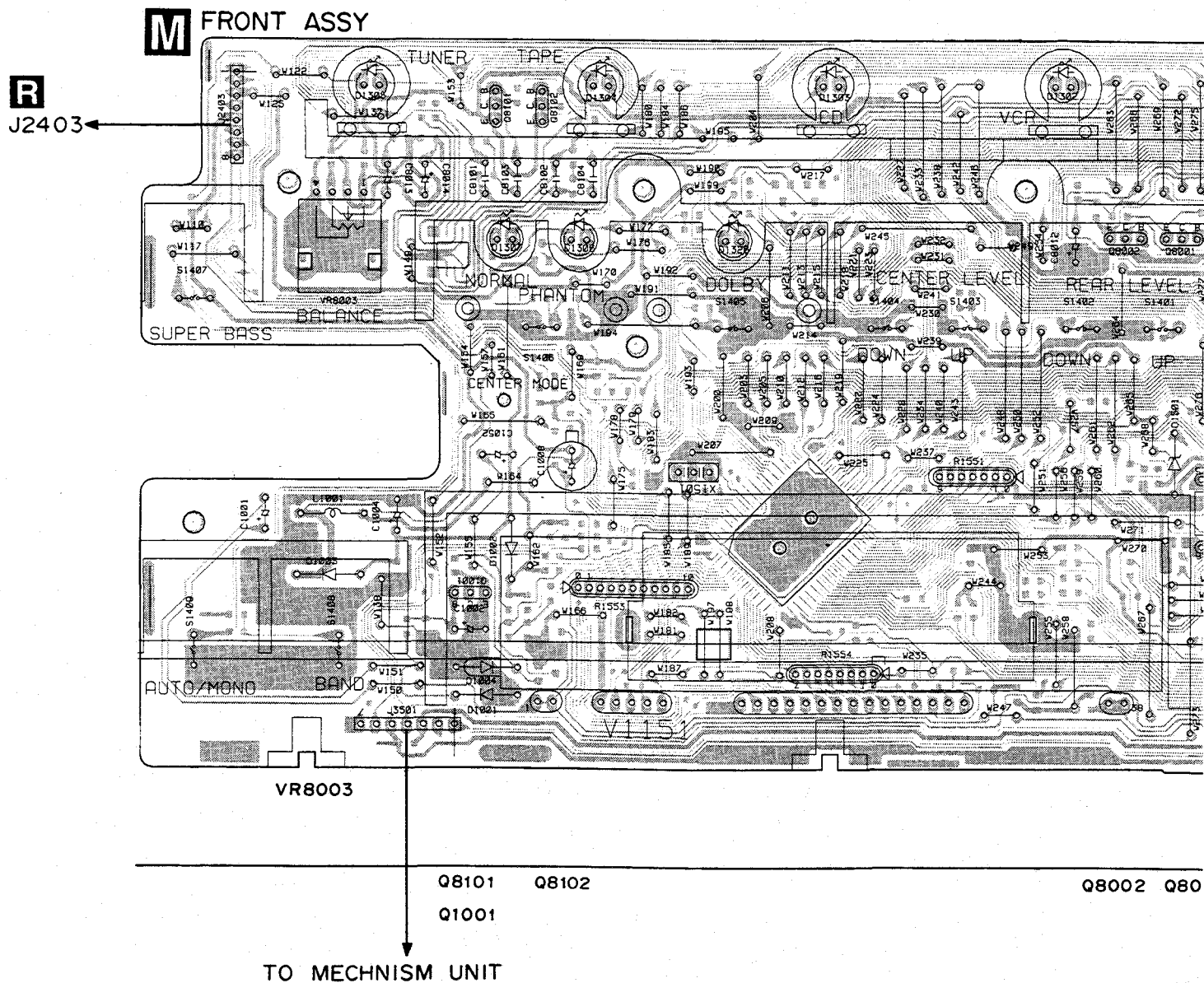
IC5101
IC5201 Q5102

Q8203 Q5101

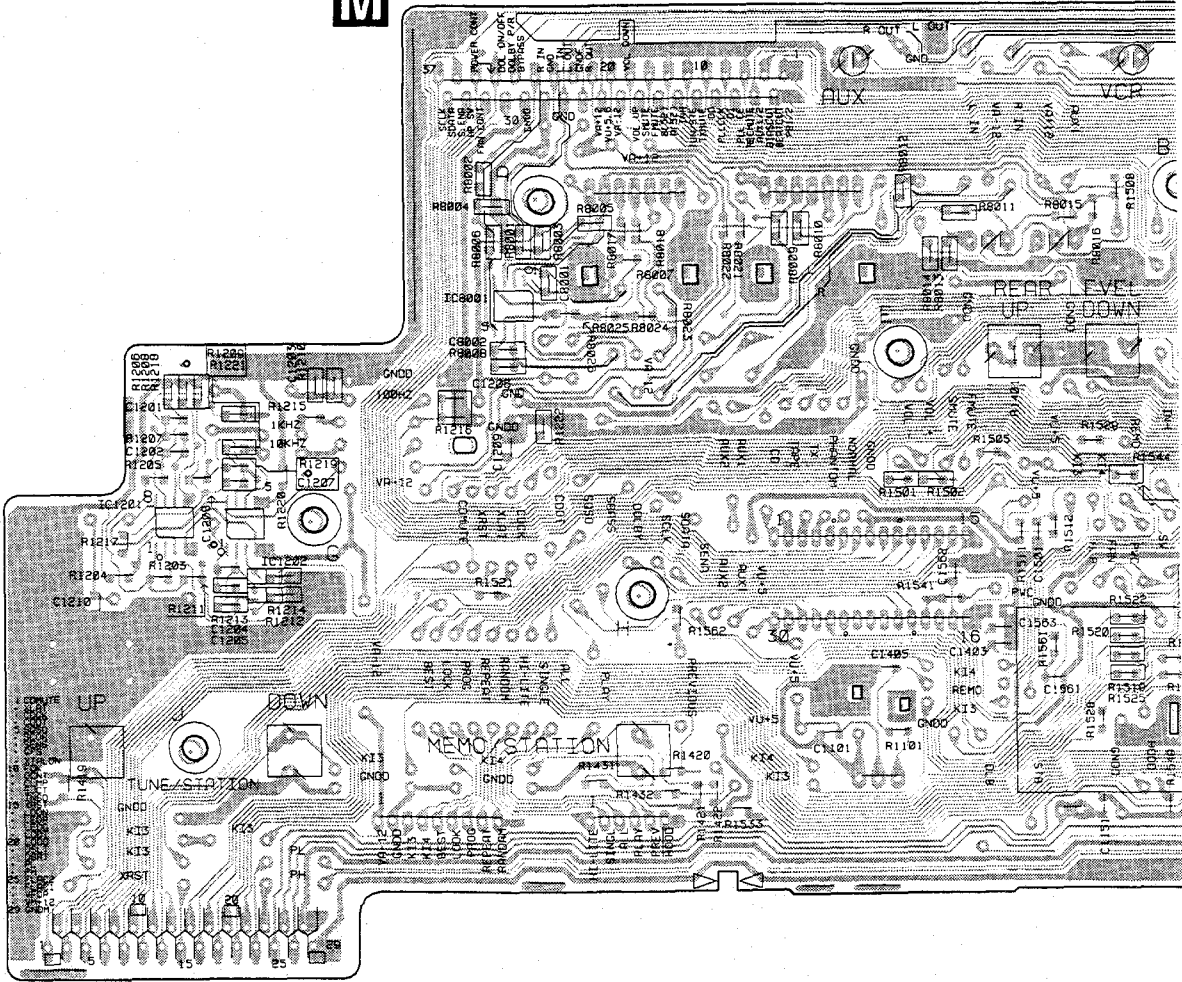
4.4 SECONDARY ASSY, PRIMARY ASSY AND VOLUME ASSY



4.6 H.P ASSY AND FRONT ASSY

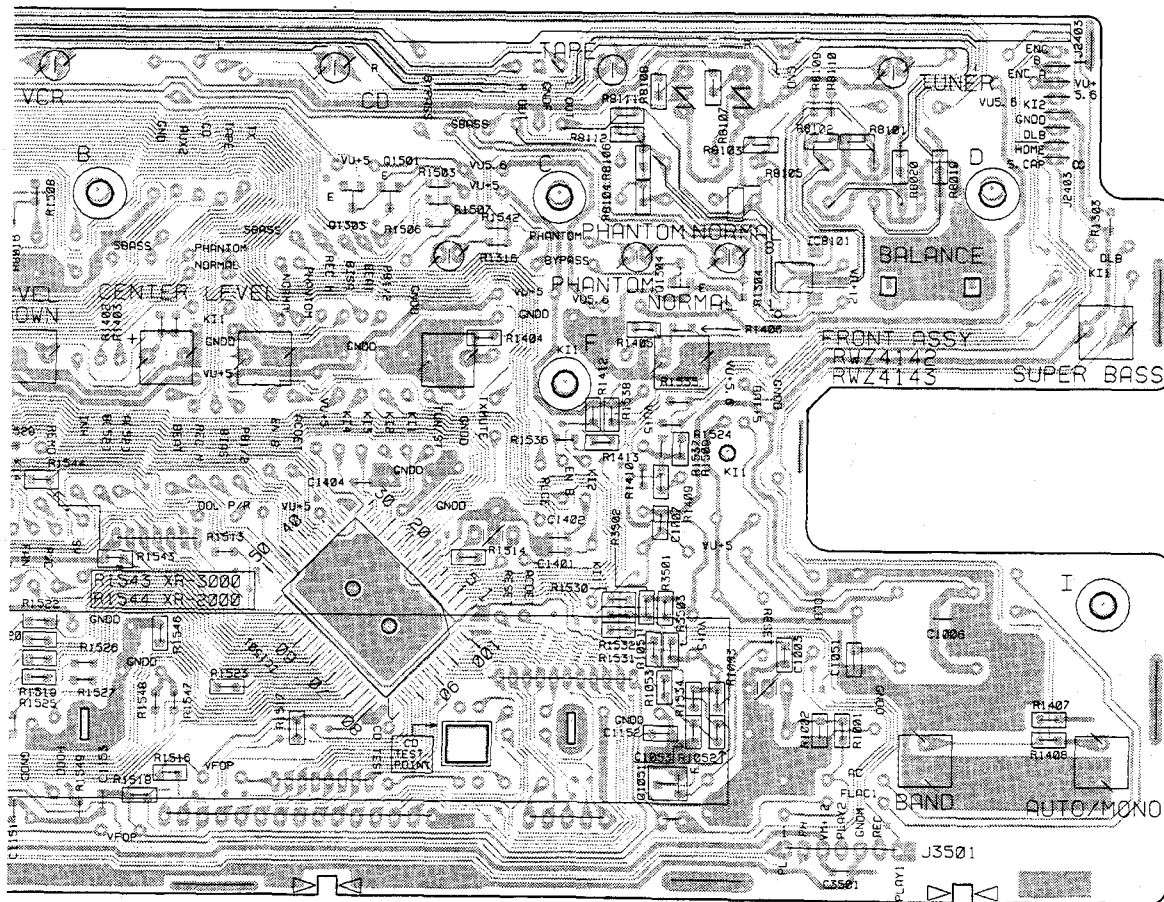


M FRONT ASSY



IC1201 IC1202 IC8001

SIDE B

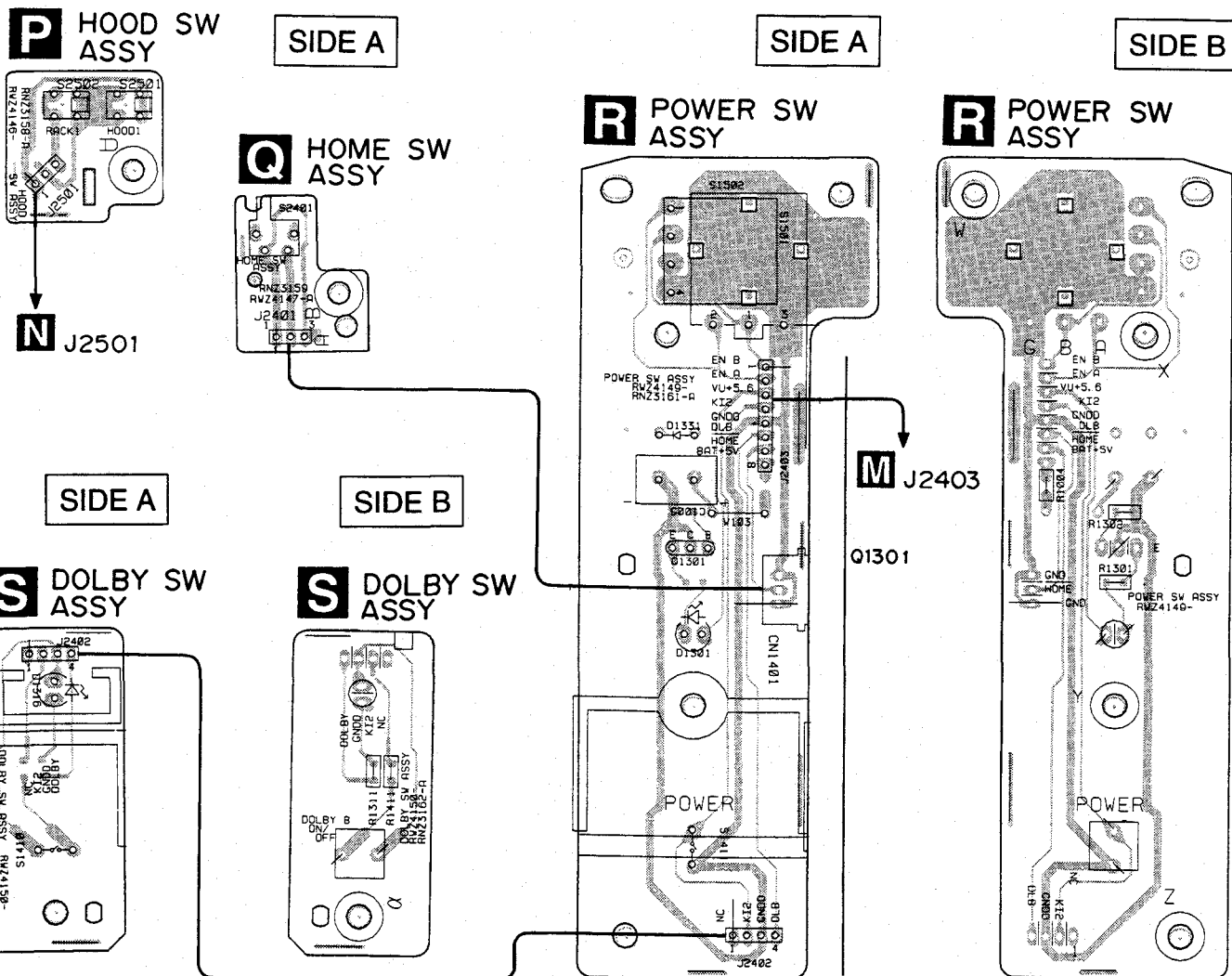
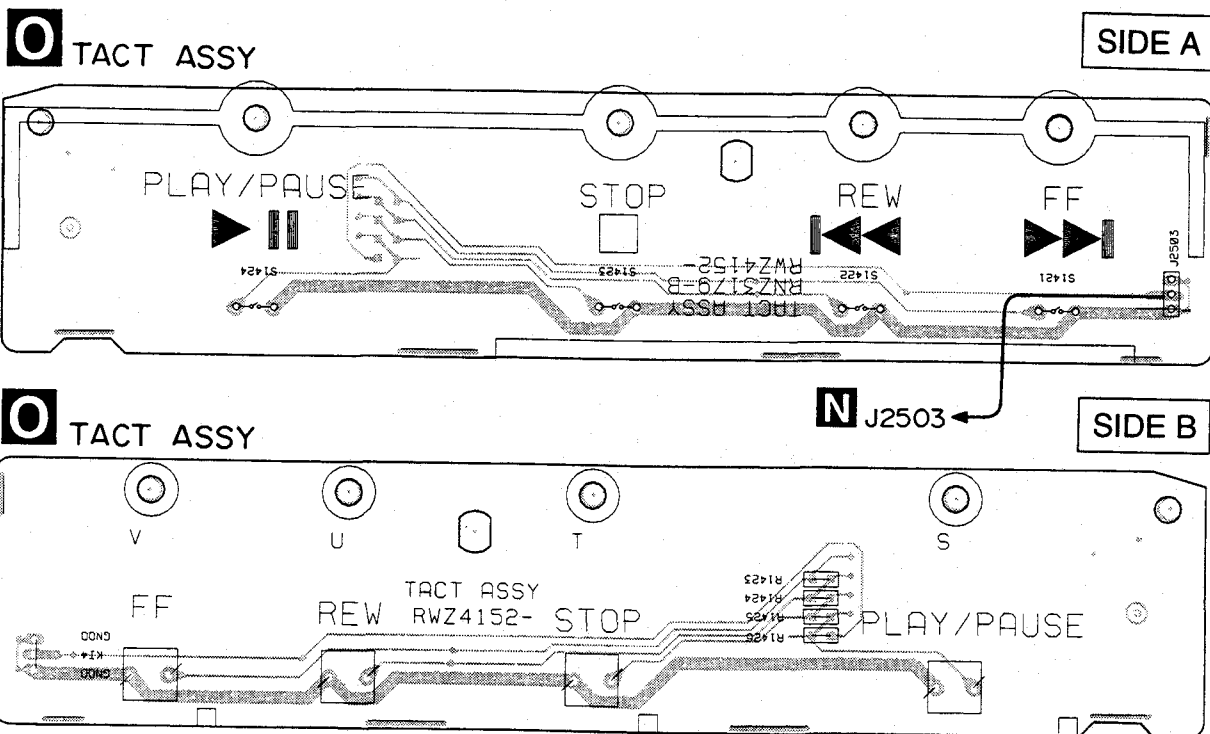


RNP1685-C

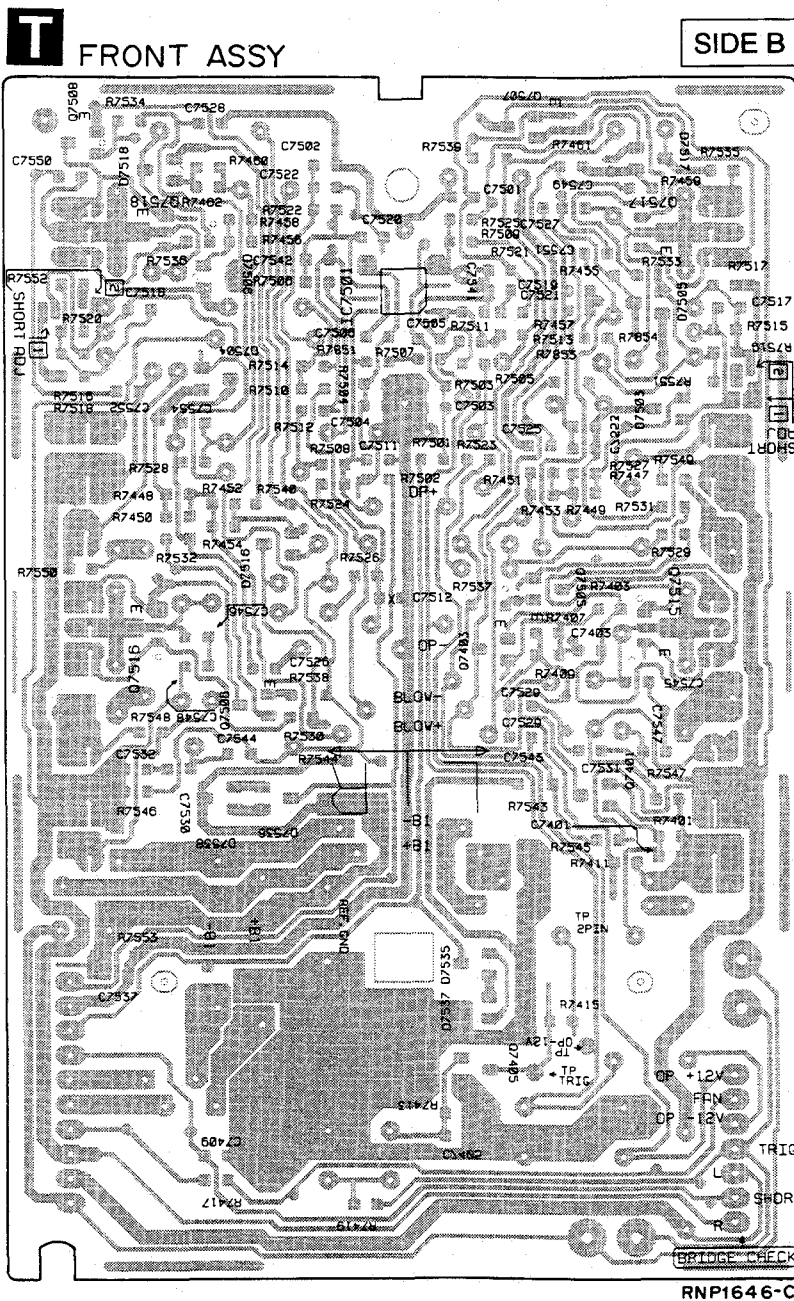
Q1303 Q1501
IC1501

Q1051 IC8101

4.7 TACT ASSY, HOOD SW ASSY, HOME SW ASSY, POWER SW ASSY AND DOLBY SW ASSY







Q7507
Q7508

Q7517
Q7518

IC7501

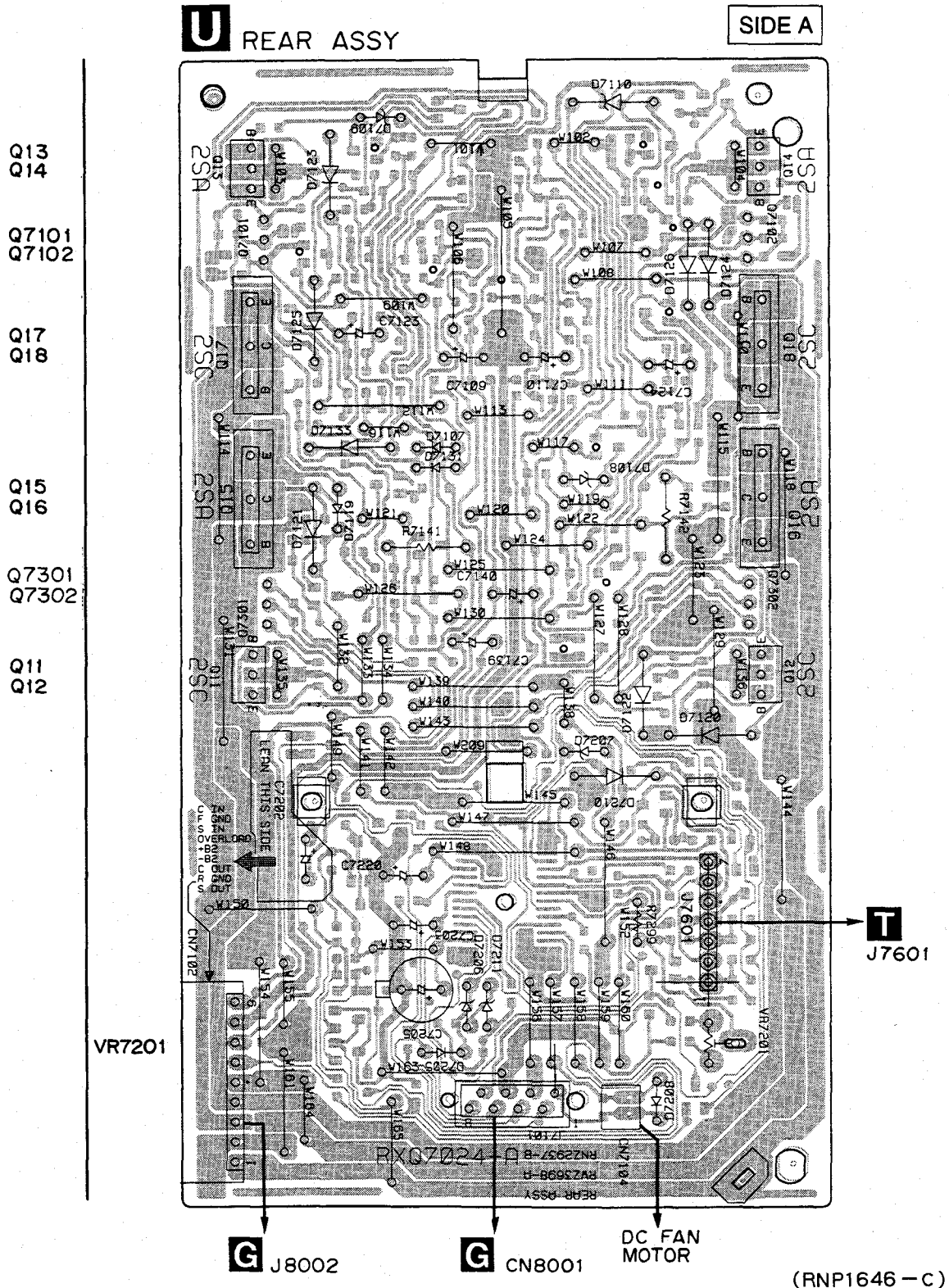
Q7515
Q7505

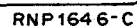
Q7403
Q7516
Q7506

Q7401

Q7405

4.8.2 REAR ASSY





Q7108
Q7107
Q7112
Q7115

IC7101

Q7105

Q7603
Q7106

Q7601
Q7114
Q7113

Q7604
Q7202
Q7606

IC7201

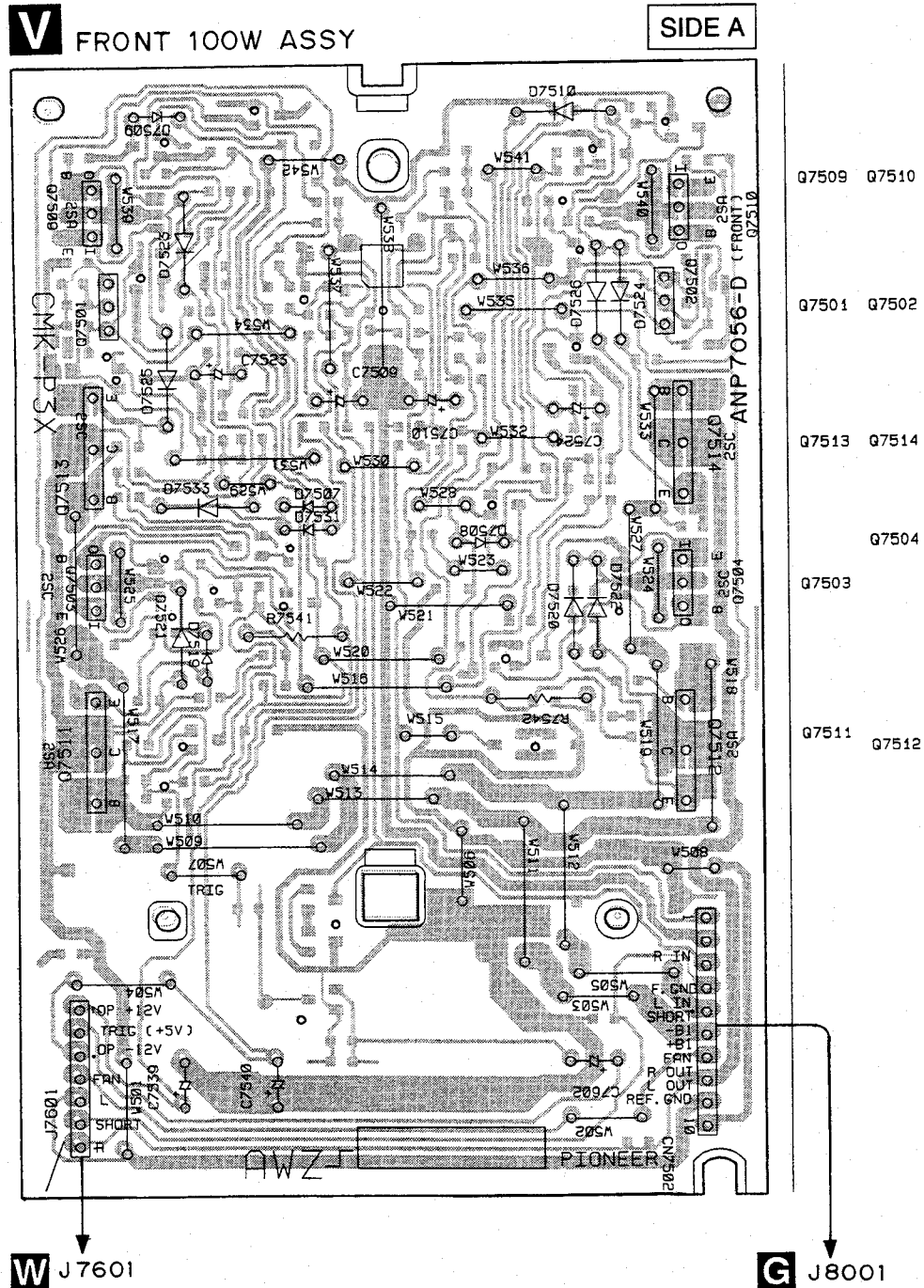
Q7605
Q7607

Q7203

Q7204

4.9 POWER AMP MODULE (for XR-2000)

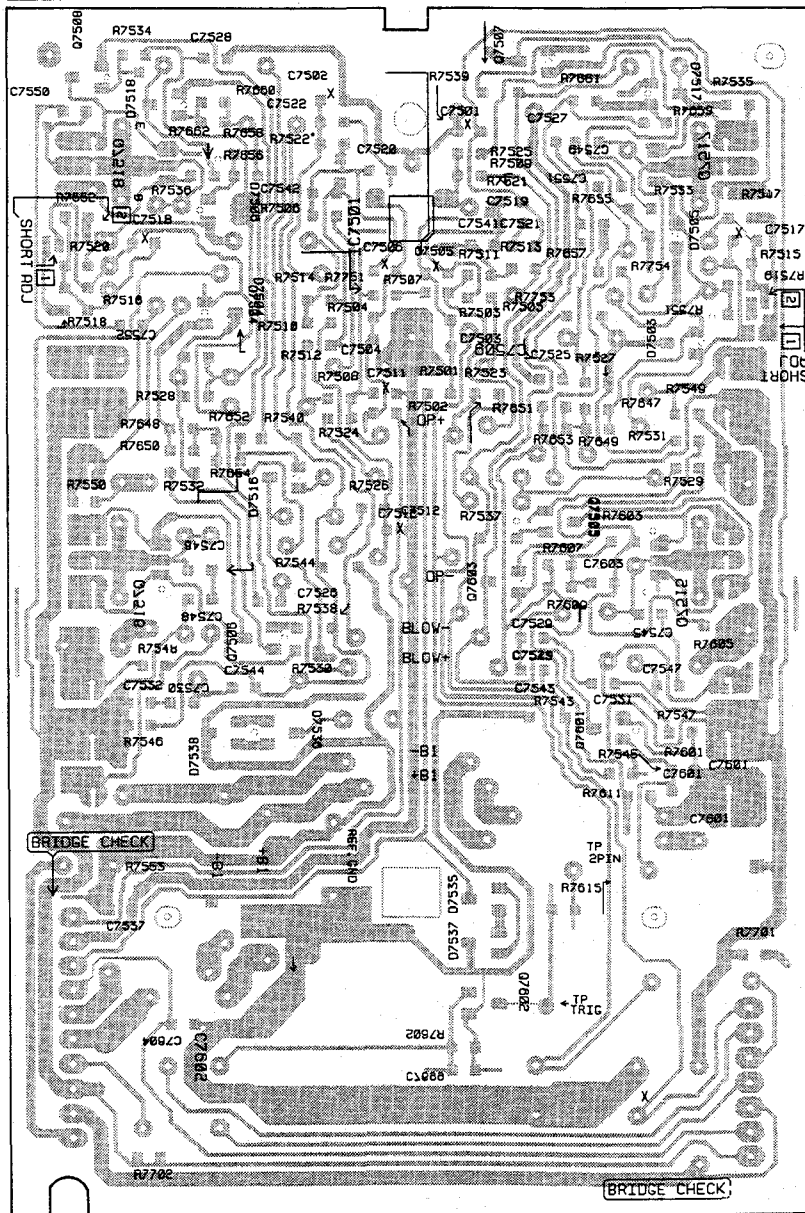
4.9.1 FRONT 100W ASSY



V

FRONT 100W ASSY

SIDE B



Q7508
Q7507

IC7501

Q7505

Q7603

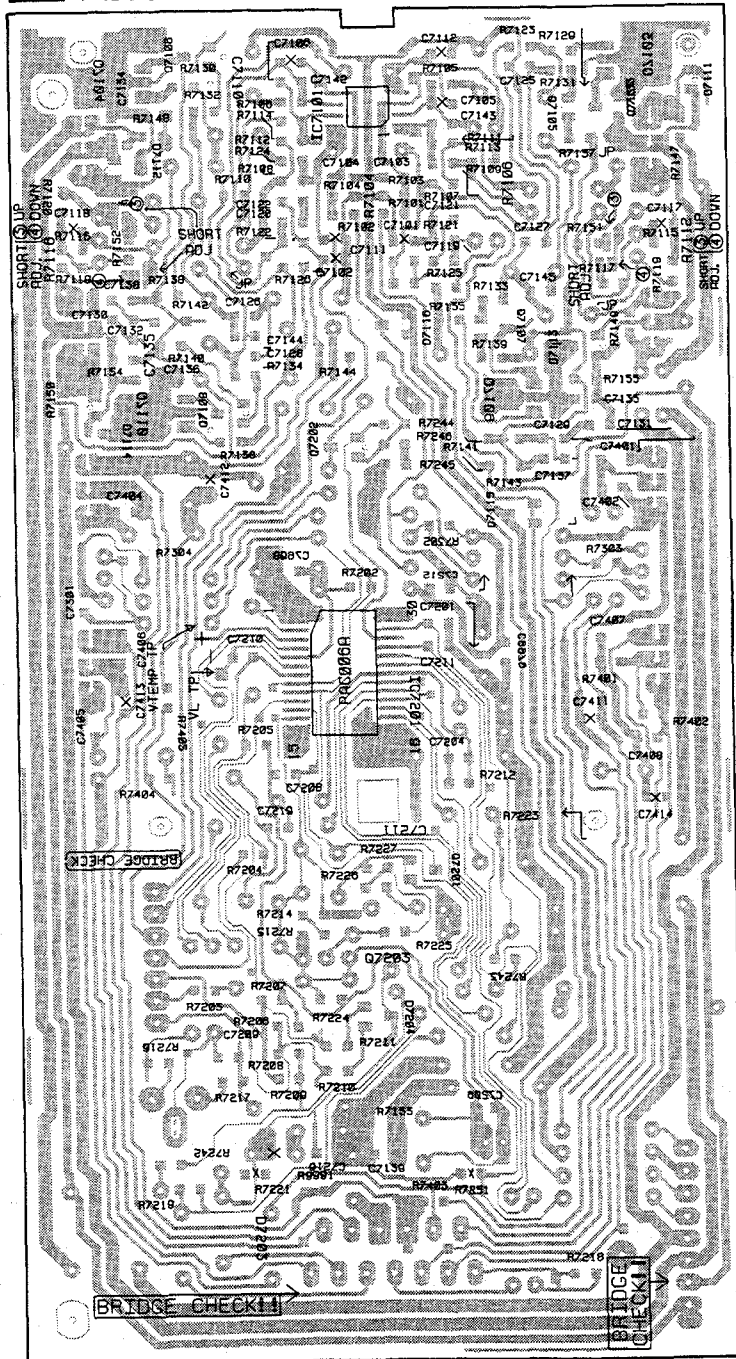
Q7506

Q7601

Q7602

ANP7056-D

SIDE B



ANP7056 - D

Q7106
IC7101
Q7105

Q7107

Q7108
Q7202

IC7201

Q7201

Q7203

5. PCB PARTS LIST

- NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47K ohm (tolerance is shown by J=5%, and K=10%).

560 Ω $\rightarrow 56 \times 10^1 \rightarrow 561$ RD1/4PU $\boxed{5}\boxed{6}\boxed{1}$ J

47 k Ω $\rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PU $\boxed{4}\boxed{7}\boxed{3}$ J

0.5 Ω $\rightarrow R50$ RN2H $\boxed{R}\boxed{5}\boxed{0}$ K

1 Ω $\rightarrow 1R0$ RS1P $\boxed{1}\boxed{R}\boxed{0}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 k Ω $\rightarrow 562 \times 10^1 \rightarrow 5621$ RN1/4PC $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$ F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	PCB Assemblies	Part No.					Remarks
		XR-3000		XR-3000S	XR-2000		
		KU	KUXJN	KCXJN	KUXJN	KCXJN	
NSP	FM/AM TUNER MODULE	AXQ7061	AXQ7061	AXQ7061	AXQ7061	AXQ7061	
	MAIN ASSY	RWM2002	RWM2002	RWM2002	RWM2003	RWM2003	
	└ AF ASSY	RWZ4136	RWZ4136	RWZ4136	RWZ4137	RWZ4137	
	└ H.P ASSY	RWZ4138	RWZ4138	RWZ4138	RWZ4139	RWZ4139	
NSP	SUB ASSY	RWM2004	RWM2004	RWM2004	RWM2005	RWM2005	
	└ POWER SUPPLY ASSY	RWZ4140	RWZ4140	RWZ4140	RWZ4141	RWZ4141	
	└ FRONT ASSY	RWZ4142	RWZ4142	RWZ4142	RWZ4143	RWZ4143	
	└ VOLUME ASSY	RWZ4144	RWZ4144	RWZ4144	RWZ4145	RWZ4145	
NSP	└ HOOD SW ASSY	RWZ4146	RWZ4146	RWZ4146	RWZ4146	RWZ4146	
NSP	└ HOME SW ASSY	RWZ4147	RWZ4147	RWZ4147	RWZ4147	RWZ4147	
NSP	└ PRIMARY ASSY	RWZ4148	RWZ4148	RWZ4148	RWZ4148	RWZ4148	
	└ POWER SW ASSY	RWZ4149	RWZ4149	RWZ4149	RWZ4149	RWZ4149	
	└ DOLBY SW ASSY	RWZ4150	RWZ4150	RWZ4150	RWZ4150	RWZ4150	
	└ LED ASSY	RWZ4151	RWZ4151	RWZ4151	RWZ4151	RWZ4151	
	└ TACT ASSY	RWZ4152	RWZ4152	RWZ4152	RWZ4152	RWZ4152	
NSP	└ SECONDALY ASSY	RWZ4153	RWZ4153	RWZ4153	RWZ4153	RWZ4153	
	POWER AMP UNIT	RXQ7025	RXQ7025	RXQ7025	Not used	Not used	
	└ FRONT ASSY	RWZ4134	RWZ4134	RWZ4134	Not uesd	Not uesd	
	└ REAR ASSY	RWZ4135	RWZ4135	RWZ4135	Not used	Not used	
	POWER AMP MODULE	Not used	Not used	Not used	AXQ7017	AXQ7017	
	└ FRONT 100W ASSY	Not uesd	Not uesd	Not uesd	AWZ8209	AWZ8209	
	└ REGULATOR ASSY	Not used	Not used	Not used	AWZ8210	AWZ8210	
	GM MECHANISM ASSY	RXA1754	RXA1754	RXA1754	RXA1754	RXA1754	
	└ LO MECHANISM BOARD ASSY	AWX7035	AWX7035	AWX7035	AWX7035	AWX7035	
NSP	└ └ SENSOR PCB ASSY	AWZ7836	AWZ7836	AWZ7836	AWZ7836	AWZ7836	
NSP	└ └ MOTOR PCB ASSY	AWZ7837	AWZ7837	AWZ7837	AWZ7837	AWZ7837	
NSP	└ └ SW PCB ASSY	AWZ7838	AWZ7838	AWZ7838	AWZ7838	AWZ7838	
NSP	└ └ MECHA PCB ASSY	AWZ8802	AWZ8802	AWZ8802	AWZ8802	AWZ8802	
NSP	└ SERVO MECHANISM ASSY GM	AXA7028	AXA7028	AXA7028	AXA7028	AXA7028	
	└ └ MECHANISM BOARD ASSY	PWX1192	PWX1192	PWX1192	PWX1192	PWX1192	

■ CONTRAST OF PCB ASSEMBLIES

L H.P ASSY

RWZ4139 and RWZ4138 have the same construction except for the following.

Mark	Symbol & Description	Part No.		Remarks
		RWZ4138	RWZ4139	
	L9101 CN9101 HEADPHONE JACK	LAU221J AKN1025	Not used AKN1010	

H POWER SUPPLY ASSY

RWZ4141 and RWZ4140 have the same construction except for the following.

Mark	Symbol & Description	Part No.		Remarks
		RWZ4140	RWZ4141	
△	IC501, IC502	NJM7812FA	Not used	
△	IC503	NJM7912FA	Not used	
△	IC504	NJM78M56FA	Not used	
△	D102	D3SBA20(B)	Not used	
	C103, C104 (3300 μ F/50V)	RCH1129	Not used	
	C107, C108	CQMA473K2E	Not used	
	C113	Not used	CKSQYB103K50	
	C115	CKSQYF473Z50	Not used	
	C502-C508	CEAS100M50	Not used	

M FRONT ASSY

RWZ4143 and RWZ4142 have the same construction except for the following.

Mark	Symbol & Description	Part No.		Remarks
		RWZ4142	RWZ4143	
	Q1304	DTC124EK	Not used	
	D1306, D1307	MPG3062X	Not used	
	D1326	BEL1013	Not used	
	D1501	MTZJ7.5A	Not used	
	S1401-S1406	ASG1034	Not used	
	C1501	CKSQYB103K50	Not used	
	C1562, C1563	CCSQCH121J50	CCSQCH221J50	
	R1304, R1316	RS1/10S201J	Not used	
	R1401	RS1/10S822J	Not used	
	R1402	RS1/10S512J	Not used	
	R1403	RS1/10S332J	Not used	
	R1404	RS1/10S272J	Not used	
	R1405	RS1/10S182J	Not used	
	R1406	RS1/10S152J	Not used	
	R1512	RS1/10S102J	Not used	
	R1543	RS1/10S0R0J	Not used	
	R1544	Not used	RS1/10S0R0J	
	VR8003 (500 k Ω)	ACS7004	Not used	
	CN1001 37P FFC CONNECTOR	9607S-37F	Not used	
	CN1001 33P FFC CONNECTOR	Not used	9607S-33F	

K VOLUME ASSY

RWZ4145 and RWZ4144 have the same construction except for the following.

Mark	Symbol & Description	Part No.		Remarks
		RWZ4144	RWZ4145	
	IC8401	XLA4558F-P	Not used	
	Q8401, Q8402	2SD2144S	Not used	
	C8204	CEAL4R7M50	CEAS4R7M50	
	C8401-C8404, C8407, C8408	CEAS4R7M50	Not used	
	R8401, R8402	RS1/10S102J	Not used	
	R8403, R8404	RS1/10S473J	Not used	
	R8407-R8410	RS1/10S0R0J	Not used	
	R8411, R8412	RS1/10S222J	Not used	
	VR8201 (100 k Ω -3B)	ACX1088	ACX1089	

XR-3000, XR-3000S, XR-2000

Mark	No.	Description	Parts No.
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G AF ASSY (RWZ4137:FOR XR-2000)

SEMICONDUCTORS

	IC4001	BU4052BCF
	IC3001, IC4003	BU4066BCF
	IC3201	CXA1101P
	IC2101	CXA1372BQ
	IC2001	CXD2519Q
Δ	IC2201, IC2202	LA6520
	IC3002	UPC4570G2
	IC3301, IC4002	XLA4558F-P
	Q205	2SA933S
	Q201, Q202, Q301	2SB1237X
	Q401	2SB1238X
	Q3003, Q3004, Q3009, Q3101-Q3104	2SC1740S
	Q3301-Q3304	2SC1740S
	Q203, Q3402	2SC1845
	Q3403	2SC2240
	Q204, Q206	2SD1858X
	Q3401	2SD1859X
	Q2005, Q2006	2SD2144S
	Q2002	2SK246
	Q3001, Q3002	2SK373
	Q2001, Q2003, Q2004, Q3005	DTA124EK
	Q3007, Q3008, Q3305, Q4004, Q8203	DTA124EK
	Q3006, Q3306, Q3406, Q4003	DTC124EK
	Q402	DTC124ES
	D2001-D2005, D207, D210, D212	1SS254
	D3001-D3003, D303, D3101, D3102	1SS254
	D3301, D3401-D3404, D8209	1SS254
	D2006	DAP202K
	D304	MTZJ33B
	D211, D2201, D9001	MTZJ6.2B
	D208, D305	MTZJ7.5A
	D405	RB100A
Δ	D301, D302	S5688G

COILS AND FILTERS

	L2003	LAU100J
	L2001	LAU1R2J
	L3001, L3002	LAU221J
	L2002	LAU2R2J
	L3401	LTA102J
	L3301, L3302	LTA332J
	L3303, L3304	LTA822J
	F3101, F3102	RTF1209

CAPACITORS

	C3313, C3314	CCCSL271K2H
	C2008, C3005, C3006	CCSQCH100D50
	C4102-C4104, C5043, C5044	CCSQCH101J50
	C2007, C2115	CCSQCH102J50
	C2011, C2012	CCSQCH151J50
	C2009	CCSQCH220J50
	C2051-C2053	CCSQCH221J50
	C2013, C2014	CCSQCH681J50

Mark	No.	Description	Parts No.
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	C3001, C3002, C3007, C3008	CCSSQL471J50
	C3311, C3312	CCSSQL681J50
	C301	CEANP101M35
	C206	CEANP470M25
	C2006, C212, C3103, C3211, C3212	CEAS100M50
	C3301, C3302, C3408, C4001-C4004	CEAS100M50
	C211, C3208, C444	CEAS101M10
	C3207	CEAS101M16
	C302	CEAS101M63
	C2015, C2016, C3104	CEAS220M25
	C9302, C9403	CEAS220M50
	C3203-C3206, C3403	CEAS2R2M50
	C3011, C3012, C3303, C3304	CEAS330M35
	C303	CEAS330M50
	C106	CEAS3R3M50
	C213, C214, C2210, C2211, C3401	CEAS470M16
	C2018, C2019	CEAS470M25
	C2105, C2109, C8209, C8210	CEAS4R7M50
	C2003	CEASR47M50
	C3201, C3202, C3209, C3210	CEASR68M50
	C2117, C2213, C4005, C4006, C4101	CKSQYB102K50
	C9305	CKSQYB102K50
	C2001, C2002, C2102, C2107, C2108	CKSQYB103K50
	C2111, C2113, C2118, C2201-C2209	CKSQYB103K50
	C2212, C3101, C3102	CKSQYB103K50
	C2103, C2104, C2106, C2110	CKSQYB104K25
	C3017, C3018	CKSQYB104K25
	C2004	CKSQYB152K50
	C3013, C3014	CKSQYB153K50
	C2112, C2114, C2119, C3015, C3016	CKSQYB333K50
	C2116	CKSQYB472K50
	C2005, C3019, C3020, C3213	CKSQYB473K50
	C2101	CKSQYB561K50
	C9401	CKSQYF104Z50
	C3407	CQMA103K2E
	C3406	CQMA103K2G
	C9001-C9004	CQMA104J50
	C3305, C3306	CQMA223J50
	C3309, C3310	CQMA272J50
	C3404	CQMA333K2E
	C3405	CQMA473J50
	C3009, C3010	CQMA682J50
	C3307, C3308	CQMA683J50

RESISTORS

Δ	R9203	RD1/4LMF751J
	R9201, R9202	RD1/4PM102J
	R3405	RD1/4PM180J
	R9001, R9002	RD1/4PMF7R5J
	R217	RD1/4PU102J
	R4033	RD1/4PU103J
	R301, R303	RD1/4PU202J
	R208, R210	RD1/4PU681J
	R213	RD1/4PU911J
	R3402	RS2LMF470J

Mark	No.	Description	Parts No.
	R9205, R9206		RS3LMFR22J
	VR3501 (4.7 kΩ)		PCP1028
	VR3301, VR3302 (10 kΩ)		PCP1029
	VR2101, VR2102, VR3003, VR3004 (22 kΩ)		PCP1030
	VR3001, VR3002, VR3401, VR3402 (100 kΩ)		PCP1032

Other Resistors RS1/10S□□□□

OTHERS

CN4002	4P PIN JACK	AKB7015
CN9201, CN9302	SPEAKER TERMINAL	AKE7001
X2001	CRYSTAL RESONATOR (33.8688 MHz)	ASS7000
CN2201	22P FFC CONNECTOR	HLEM22S-1
CN2202	29P FFC CONNECTOR	HLEM29S-1
CN8005	33P FFC CONNECTOR	HLEM33S-1
CN4001	14P PLUG	KM2001A14
CN5001	20P PLUG	KM200TA20
CN3001	3P PLUG	KM250MA3
CN3002	5P PLUG	KM250MA5
CN8101	11P JUMPER CONNECTOR	KPE11
CN8102	12P JUMPER CONNECTOR	KPE12
CN2101	6P CONNECTOR	RKP1753
	PCB BINDER	VEF1008
	PCB BINDER	VEF1040

V FRONT 100W ASSY (FOR XR-2000)

SEMICONDUCTORS

IC7501	UPC4570G2(5)
Q7507, Q7508	2SA1182
Q7601	2SA1255
Q7501, Q7502	2SC2240
Q7505, Q7506	2SC2859
Q7602, Q7603	2SC3138
D7505, D7506, D7517, D7518	1SS181
D7503, D7504, D7516	1SS184
D7535-D7538	1SS226
D7521-D7524	1SS244
D7519, D7520, D7525, D7526, D7531	HSS104-02
D7533	HSS104-02
D7507-D7510	RD3.3ESB2

CAPACITORS

C7519-C7522, C7545-C7552	CCSQCH101J50
C7525-C7528	CCSQCH271J50
C7503, C7504	CCSQCH331J50
C7541, C7542	CCSQCH470J50
C7523, C7524	CEALR10M50
C7509, C7510	CEAS101M10
C7602	CEJA221M6R3
C7540	CEJA3R3M50
C7539	CEJA4R7M50
C7699	CKSQYB104K25
C7529-C7532	CKSQYB333K50
C7543, C7544	CKSQYB472K50
C7601, C7603	CKSQYF104Z50
C7537	CKSQYF473Z50

Mark	No.	Description	Parts No.
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RESISTORS

	R7515, R7516 (1.8 kΩ)	ACN1107
△	R7541, R7542	RD1/4PMF100J
	R7519, R7520	RN1/10SE6200D
△	R7529-R7536	RS1/10S101J
△	R7547-R7550	RS1/10S2200F
	R7753	RS1/8S0R0J
△	R7537-R7540	RS1/8S100J
	R7553	RS1/8S101J
△	R7543, R7544	RS1/8S7R5J
	Other Resistors	RS1/10S□□□□

W REGULATOR ASSY (FOR XR-2000)

SEMICONDUCTORS

IC7201	PAC006C
Q7301, Q7302	2SC1815
Q7202	2SC2712
D7204	1SS184
D7205, D7208	HSS104-02
D7210	RB441Q-40
D7206, D7211	RD4.7ESB
D7207	RD5.6ESB2

CAPACITORS

C7402, C7406, C7408 (0.082 μF)	ACG1050
C7204 (1 μF/16V)	ACG1051
C7401, C7405, C7407 (0.33 μF/50V)	ACG1053
C7409 (10 μF/35V)	ACH1150
C7202 (4.7 μF/35V)	ACH7041

C7140	CEAS1R0M50
C7205	CEJA101M10
C7203	CEJAR33M50
C7201, C7208, C7219	CKSQYB103K50
C7301	CKSQYB332K50
C7404	CKSQYB473K50
C7206, C7215, C7216, C7698	CKSQYF104Z50
C7697	CQMA104J50

RESISTORS

△	R7403-R7405 (1 Ω)	ACN1104
	R7252	RD1/4PU102J
	R7253	RD1/4PU103J
	R7304	RS1/10S8200F
	R7303	RS1/10S1002F

VR7201 (22 kΩ)	RCPI103
Other Resistors	RS1/10S□□□□

OTHERS

CN7101	12P JUMPER CONNECTOR	KPE12
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XR-3000, XR-3000S, XR-2000

PCB PARTS LIST FOR XR-3000/KU

Mark	No.	Description	Parts No.
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A FM/AM TUNRE MODULE (AXQ7061)

SEMICONDUCTORS

IC6201	LA1832ML
IC6202	LC72131MD
Q6402	2SC2223
Q6203	2SC2705
Q6201, Q6202	2SC2712

Q6214, Q6403	2SC2714
Q6404	2SK302
Q6401	3SK194
Q6204	DTA124ES
Q6205	DTC124EK

D6202	1SS254
D6401, D6402	1T363

COILS AND FILTERS

L6404	ATC1003
L6401	ATC1020
L6402	ATC1021
F6204	ATF-107
F6203	ATF-119

F6401	ATF-155
F6206	ATF7008
F6202 (455 kHz)	ATF7011
L6206, L6208, L6403	LAU2R2J

TRANSFORMERS

T6201	ATB7008
T6401	ATE7002

CAPACITORS

C6208	CCSQCH100D50
C6212, C6274, C6275, C6408	CCSQCH101J50
C6221, C6222, C6416	CCSQCH150J50
C6271	CCSQCH200J50
C6415	CCSQCH330J50

C6401, C6419	CCSQCH5R0C50
C6407	CCSQCK1R0C50
C6410	CCSQCK2R0C50
C6413	CCSQPH220J50
C6414	CCSQPH8R0D50
C6405	CCSQTH180J50

C6234, C6235	CEAL1R0M50
C6245	CEAL470M16
C6224	CEAS100M50
C6243	CEAS101M16
C6231	CEAS1R0M50

C6227	CEAS220M16
C6236	CEAS2R2M50
C6216	CEAS330M16
C6262	CEAS3R3M50
C6219	CEAS470M10

C6244	CEAS470M16
C6249, C6250, C6265, C6266	CEAS4R7M50
C6258	CEJA470M16

Mark	No.	Description	Parts No.
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C6215	CFTXA103J50
C6214	CFTXA224J50

C6211, C6254, C6403, C6406, C6412	CKSQYB102K50
C6201, C6205, C6210, C6213, C6237	CKSQYB103K50
C6276, C6278, C6280, C6281, C6402	CKSQYB103K50
C6409, C6417, C6418	CKSQYB103K50
C6251, C6252	CKSQYB153K50

C6203, C6259	CKSQYB223K50
C6228	CKSQYB472K50
C6209	CKSQYB473K50
C6230	CKSQYB821K50
C6218, C6223, C6255	CKSQYF103Z50

C6220, C6226, C6242, C6256	CKSQYF223Z50
C6225	CKSQYF473Z50

RESISTORS

R6280	RD1/4PU101J
R6413, R6416, R6418, R6906, R6909	RS1/8S0R0J
R6401	RS1/8S470J
VR6201 (10 k Ω)	RCP104S
Other Resistors	RS1/10S□□□J

OTHERS

BN6202	4P TERMINAL	AKE7025
X6202	CERAMIC RESONATOR(456 kHz)	ASS1066
X6201	CRYSTAL RESONATOR (7.2000 MHz)	ASS1093
CN6201	14P SOCKET	KP2001A14L
	AM RF TUNING BLOCK	AXX7041

G AF ASSY (RWZ4136)

SEMICONDUCTORS

IC4001	BU4052BCF
IC3001, IC4003	BU4066BCF
IC3201	CXA1101P
IC2101	CXA1372BQ
IC2001	CXD2519Q

Δ IC2201, IC2202	LA6520
IC5001	LV1030
IC3002	UPC4570G2
IC3301, IC4002, IC5201	XLA4558F-P
Q205	2SA933S

Q201, Q202, Q301	2SB1237X
Q401	2SB1238X
Q3003, Q3004, Q3009, Q3101-Q3104	2SC1740S
Q3301-Q3304	2SC1740S
Q203, Q3402	2SC1845

Q3403	2SC2240
Q204, Q206, Q5051	2SD1858X
Q3401	2SD1859X
Q2005, Q2006	2SD2144S
Q2002	2SK246

Q3001, Q3002	2SK373
Q2001, Q2003, Q2004, Q3005	DTA124EK
Q3007, Q3008, Q3305, Q4004, Q8203	DTA124EK

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
		Q3006, Q3306, Q3406, Q4003	DTC124EK			C5028	CEAS470M50
		Q402	DTC124ES			C2105, C2109, C8209, C8210	CEAS4R7M50
						C2003, C5005, C5007, C5024, C5035	CEASR47M50
		D2001-D2005, D207, D210, D212	1SS254			C5037	CEASR47M50
		D3001-D3003, D303, D3101, D3102	1SS254			C3201, C3202, C3209, C3210	CEASR68M50
		D3301, D3401-D3404, D5052, D8209	1SS254			C5027	CFTXA474J50
		D2006	DAP202K			C2117, C2213, C4005, C4006, C4101	CKSQYB102K50
		D5051	MTZJ11B			C9305, C9306	CKSQYB102K50
		D304	MTZJ33B				
		D211, D2201, D9001	MTZJ6.2B			C2001, C2002, C2102, C2107, C2108	CKSQYB103K50
		D208, D305	MTZJ7.5A			C2111, C2113, C2118, C2201-C2209	CKSQYB103K50
		D405	RB100A			C2212, C3101, C3102	CKSQYB103K50
Δ		D301, D302	S5688G			C2103, C2104, C2106, C2110	CKSQYB104K25
						C3017, C3018, C5051	CKSQYB104K25
COILS AND FILTERS							
		L2003	LAU100J			C2004	CKSQYB152K50
		L2001	LAU1R2J			C3013, C3014	CKSQYB153K50
		L3001, L3002	LAU221J			C2112, C2114, C2119, C3015, C3016	CKSQYB333K50
		L2002	LAU2R2J			C2116	CKSQYB472K50
		L3401	LTA102J			C2005, C3019, C3020, C3213	CKSQYB473K50
		L3301, L3302	LTA332J			C2101	CKSQYB561K50
		L3303, L3304	LTA822J			C9401	CKSQYF104Z50
		F3101, F3102	RTF1209			C3407	CQMA103K2E
						C3406	CQMA103K2G
						C9001-C9004, C9301-C9304	CQMA104J50
CAPACITORS							
		C3313, C3314	CCCSL271K2H			C5001, C5003, C5039, C5041	CQMA154J50
		C2008, C3005, C3006	CCSQCH100D50			C3305, C3306	CQMA223J50
		C4102-C4104, C5042-C5044	CCSQCH101J50			C3309, C3310	CQMA272J50
		C2007, C2115	CCSQCH102J50			C5022	CQMA332J50
		C2011, C2012	CCSQCH151J50			C3404	CQMA333K2E
		C2009	CCSQCH220J50			C3405, C5025	CQMA473J50
		C2051-C2053	CCSQCH221J50			C3009, C3010	CQMA682J50
		C5203, C5204	CCSQCH680J50			C3307, C3308	CQMA683J50
		C2013, C2014	CCSQCH681J50			C5021, C5023	CQMA823K50
		C3001, C3002, C3007, C3008	CCSQL471J50				
		C3311, C3312	CCSQL681J50	RESISTORS			
		C5002, C5040	CEANL3R3M50	Δ		R9203	RD1/4LMF751J
		C5004, C5006, C5036, C5038	CEANL4R7M50			R9201, R9202	RD1/4PM102J
		C301	CEANP101M35			R3405	RD1/4PM180J
		C206	CEANP470M25			R9001, R9002, R9307, R9308	RD1/4PMF7R5J
						R217, R9301-R9303	RD1/4PU102J
		C2006, C212, C3103, C3211, C3212	CEAS100M50				
		C3301, C3302, C3408, C4001-C4004	CEAS100M50			R4033	RD1/4PU103J
		C5012-C5015, C5031-C5034	CEAS100M50			R301, R303	RD1/4PU202J
		C211, C3208	CEAS101M10			R5051	RD1/4PU561J
		C3207	CEAS101M16			R208, R210	RD1/4PU681J
						R213	RD1/4PU911J
		C302	CEAS101M63				
		C5008-C5010, C5017, C5029	CEAS1R0M50			R3402	RS2LMF470J
		C2015, C2016, C3104	CEAS220M25			R9305, R9306	RS2LMFR22J
		C5011, C5020, C5026	CEAS221M10			R9205, R9206	RS3LMFR22J
		C5030, C214	CEAS221M16			VR3501 (4.7 kΩ)	PCP1028
						VR3301, VR3302 (10 kΩ)	PCP1029
		C3203-C3206, C3403, C5016	CEAS2R2M50				
		C3011, C3012, C3303, C3304	CEAS330M35			VR2101, VR2102, VR3003, VR3004 (22 kΩ)	PCP1030
		C303	CEAS330M50			VR3001, VR3002, VR3401, VR3402 (100 kΩ)	PCP1032
		C106	CEAS3R3M50			Other Resistors	RS1/10S□□□□
		C213, C2210, C2211, C3401	CEAS470M16				
				OTHERS			
		C5053	CEAS470M16			CN4002 4P PIN JACK	AKB7015
		C2018, C2019	CEAS470M25			CN9301 2P SPEAKER TERMINAL	AKE1032

XR-3000, XR-3000S, XR-2000

Mark	No.	Description	Parts No.
	CN9201, CN9302	4P SPEAKER TERMINAL	AKE7001
	X2001	CRYSTAL RESONATOR (33.8688 MHz)	ASS7000
	X5001	CERAMIC RESONATOR (8.00 MHz)	DSS1053
	CN2201	22P FFC CONNECTOR	HLEM22S-1
	CN2202	29P FFC CONNECTOR	HLEM29S-1
	CN8005	37P FFC CONNECTOR	HLEM37S-1
	CN4001	14P PLUG	KM2001A14
	CN5001	20P PLUG	KM200TA20
	CN3001	3P PLUG	KM250MA3
	CN3002	5P PLUG	KM250MA5
	CN8101	11P JUMPER CONNECTOR	KPE11
	CN8102	12P JUMPER CONNECTOR	KPE12
	CN8001	8P JUMPER CONNECTOR	KPE8
	CN2101	6P CONNECTOR	RKP1753
		PCB BINDER	VEF1008
		PCB BINDER	VEF1040

L H.P ASSY (RWZ4138)

COILS AND FILTERS

L9101	LAU221J
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CAPACITORS

C9103	CFTXA224J50
C9101, C9102	CKSQYB102K50

RESISTORS

R9101, R9102	RS2LMF331J
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OTHERS

CN9101	HEADPHONE JACK	AKN1025
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H POWER SUPPLY ASSY (RWZ4140)

SEMICONDUCTORS

△	IC501, IC502	NJM7812FA
△	IC504	NJM78M56FA
△	IC503	NJM7912FA
△	D102	D3SBA20(B)
△	D101	D5SBA20(B)

△	D103-D106, D201-D204	S5688G
△	D401-D404	S5688G

CAPACITORS

C101, C102 (4700 μF/63V)	ACH1249
C502-C508	CEAS100M50
C402	CEAS102M16
C202	CEAS102M35
C401	CEAS222M16
C201	CEAS222M35
C111, C112, C114, C115	CKSQYF473Z50
C105, C107, C108	CQMA473K2E

Mark	No.	Description	Parts No.
	C103, C104 (3300 μF/50V)		RCH1129

RESISTORS

△	R101	RS2LMF182J
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M FRONT ASSY (RWZ4142)

SEMICONDUCTORS

IC1301	NJU3719L
IC1501	PD4740B
IC1201, IC1202, IC8001, IC8101	XLA4558F-P
Q1001, Q8001, Q8002, Q8101, Q8102	2SC1740S
Q1501	DTA124EK

Q1303, Q1304	DTC124EK
Q1051	DTC143EK
D1001, D1003, D1201-D1203	1SS254
D1302-D1305, D1325, D1326	BEL1013
D1306, D1307	MPG3062X

D1204	MTZJ5.6B
D1501	MTZJ7.5A
D1002	S5688G

COILS AND FILTERS

L1001	LAU220J
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SWITCHES AND RELAYS

S1401-S1409, S1418-S1420	ASG1034
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CAPACITORS

C1405	CCSQCH101J50
C1562, C1563	CCSQCH121J50
C8001, C8002	CCSQCH151J50
C1561	CCSQCH221J50
C1052, C8003, C8004, C8009-C8012	CEAL100M25

C1001, C1002	CEAL1R0M50
C8013, C8014	CEAL2R2M50
C1004	CEAL470M16
C8005, C8006	CEALR10M50
C1008	CEJA221M10

C1003	CKSQYB102K50
C1501	CKSQYB103K50
C1051	CKSQYB104K25
C1101	CKSQYB223K50
C1207, C1208	CKSQYB471K50

C1204, C1205	CKSQYB472K50
C1007, C1053, C1201-C1203, C1206	CKSQYB473K25
C1209	CKSQYB473K25
C1152, C1153, C1210	CKSQYF104Z50
C8007, C8008	CQMA153J50

C8101, C8102	CQMA223J50
C8103, C8104	CQMA563J50

RESISTORS

R1551	RA6T103J
R1223	RD1/2PMF431J
VR8003 (500 kΩ-B)	ACS7004
VR8001, VR8002 (30 kΩ-Bx2)	ACS7005

Mark	No.	Description	Parts No.
		Other Resistors	RS1/10S□□□J

OTHERS

CN1001	37P FFC CONNECTOR	9607S-37F
VI151	FL TUBE	AAV7005
	REMOTE RECEIVER UNIT	GPIU28X
CN1002	29P FFC CONNECTOR	HLEM29R-1
	FL HOLDER	VNF1085
X1501	CERAMIC RESONATOR (4.19MHz)	VSS1014

K VOLUME ASSY (RWZ4144)

SEMICONDUCTORS

IC8201, IC8401	XLA4558F-P
Q8301, Q8302	2SA1015
Q8303, Q8304	2SC1815
Q8201, Q8202, Q8401, Q8402	2SD2144S

CAPACITORS

C8302	CEAS220M16
C8201-C8204, C8401-C8404	CEAS4R7M50
C8407, C8408	CEAS4R7M50
C8301	CKSQYF104Z50

RESISTORS

VR8201 (100 kΩ-3B)	ACX1088
Other Resistors	RS1/10S□□□J

OTHERS

CN8201 20P SOCKET	KP200TA20L
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P HOOD SW ASSY

SWITCHES AND RELAYS

S2501	DSG1015
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Q HOME SW ASSY

SWITCHES AND RELAYS

S2401	DSG1016
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J PRIMARY ASSY

CAPACITORS

△ C1 (0.01 μF/AC400V)	ACG1054
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RESISTORS

△ R1 (2.2 MΩ, 1/2W)	ACN-208
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OTHERS

△ H3, H4 FUSE HOLDER	AKR-035
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R POWER SW ASSY

SWITCHES AND RELAYS

S1411	ASG1034
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Mark	No.	Description	Parts No.
	S1501		RSX1007

CAPACITORS

C1005 (0.047 F/5.5V)	ACH1246
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RESISTORS

All Resistors	RS1/10S□□□J
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S DOLBY SW ASSY

SEMICONDUCTORS

D1316	BEL1013
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SWITCHES AND RELAYS

S1410	ASG1034
-------	---------

RESISTORS

All Resistors	RS1/10S□□□J
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N LED ASSY

SEMICONDUCTORS

DI308-DI313, DI315, DI317	BEL1013
DI318-DI322	MAY3062X
DI314	MPG3062X

SWITCHES AND RELAYS

S1412-S1417, S1425-S1429	ASG1034
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RESISTORS

R1313, R1314	RD1/4PU561J
Other Resistors	RS1/10S□□□J

O TACT ASSY

SWITCHES AND RELAYS

S1421-S1424	ASG1034
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RESISTORS

All Resistors	RS1/10S□□□J
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I SECONDALY ASSY

SEMICONDUCTORS

△ IC401, IC402	ICP-N50
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OTHERS

△ H201-H204 FUSE CLIP PCB BINDER	AKR1003 VEF1040
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T FRONT ASSY (RWZ4134)

SEMICONDUCTORS

IC7501	UPC4570G2(5)
Q7507, Q7508	2SA1182
Q7401	2SA1255
Q7501, Q7502	2SC2240

XR-3000, XR-3000S, XR-2000

Mark	No.	Description	Parts No.
	Q7505, Q7506		2SC2859
	Q7403, Q7405		2SC3138
	D7505, D7506, D7517, D7518		1SS181
	D7503, D7504, D7516		1SS184
	D7535-D7538		1SS226
	D7521-D7524		1SS244
	D7519, D7520, D7525, D7526, D7531		HSS104-02
	D7533		HSS104-02
	D7507-D7510		RD3.3ESB2

CAPACITORS

C7519-C7522, C7545-C7552	CCSQCH101J50
C7525-C7528	CCSQCH271J50
C7503, C7504	CCSQCH331J50
C7541, C7542	CCSQCH470J50
C7523, C7524	CEALR10M50
C7509, C7510	CEAS101M10
C7540	CEJA3R3M50
C7419	CEJA470M16
C7539	CEJA4R7M50
C7405	CKSQYB104K25
C7529-C7532	CKSQYB333K50
C7543, C7544	CKSQYB472K50
C7401, C7403	CKSQYF104Z50
C7537	CKSQYF473Z50

RESISTORS

△ R7515, R7516 (1.8 kΩ)	ACN1107
△ R7541, R7542	RD1/4PMF100J
△ R7519, R7520	RN1/10SE6200D
△ R7529-R7536	RS1/10S101J
△ R7547-R7550	RS1/10S2200F
R7853	RS1/8S0R0J
△ R7537-R7540	RS1/8S100J
R7553	RS1/8S101J
△ R7543, R7544	RS1/8S7R5J
Other Resistors	RS1/10S□□□J

U REAR ASSY (RWZ4135)

SEMICONDUCTORS

IC7201	PAC006C
IC7101	UPC4570G2
Q7605, Q7606	2PD601A
Q7204	2SA1162
Q7107, Q7108	2SA1182
Q7601	2SA1255
Q7301, Q7302	2SC1815
Q7101, Q7102	2SC2240
Q7202, Q7203	2SC2712
Q7105, Q7106	2SC2859
Q7603, Q7604	2SC3138
Q7607	DTA124EK
D7105, D7106, D7117, D7118	1SS181

Mark	No.	Description	Parts No.
	D7103, D7104, D7116, D7204, D7212		1SS184
	D7135-D7138		1SS226
	D7121-D7124		1SS244
	D7119, D7120, D7125, D7126, D7131		HSS104-02
	D7133, D7205, D7208		HSS104-02
	D7210		RB441Q-40
	D7107-D7110		RD3.3ESB2
	D7206, D7211		RD4.7ESB
	D7207		RD5.6ESB2

CAPACITORS

C7204 (1 μF/16V)	ACG1051
C7119-C7122, C7145-C7152	CCSQCH101J50
C7125-C7128	CCSQCH271J50
C7103, C7104	CCSQCH331J50
C7141, C7142	CCSQCH470J50
C7220	CEALIR0M50
C7123, C7124	CEALR10M50
C7202	CEANL4R7M50
C7109, C7110	CEAS101M10
C7205	CEJA221M10
C7140	CEJA3R3M50
C7139	CEJA4R7M50
C7203	CEJAR33M50
C7201, C7208, C7219, C7697	CKSQYB103K50
C7301	CKSQYB332K50
C7129-C7132	CKSQYB333K50
C7143, C7144	CKSQYB472K50
C7206, C7215, C7216, C7601, C7603	CKSQYF104Z50
C7698	CKSQYF104Z50
C7137	CKSQYF473Z50

RESISTORS

△ R7115, R7116 (1.8 kΩ)	ACN1107
△ R7141, R7142	RD1/4PMF100J
△ R7119, R7120	RN1/10SE6200D
△ R7129-R7136	RS1/10S101J
△ R7147-R7150	RS1/10S2200F
△ R7623, R7753, R7759, R7760	RS1/8S0R0J
△ R7137-R7140	RS1/8S100J
R7153	RS1/8S101J
R7145	RS1/8S223J
△ R7143, R7144	RS1/8S7R5J
VR7201 (22 kΩ)	RCP1103
Other Resistors	RS1/10S□□□J

OTHERS

PCB BINDER

VEF1040

C SENSOR PCB ASSY

SEMICONDUCTORS

D652

GP1S24

OTHERS

J652 3P JUMPER WIRE

D20PWW0315E

Mark	No.	Description	Parts No.
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D MOTOR PCB ASSY**OTHERS**

		LOADING MOTOR	VXM1034
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E SW PCB ASSY**SWITCHES AND RELAYS**

		S651, S652	VSG1006
--	--	------------	---------

OTHERS

	J656	3P JUMPER WIRE	D20PWW0315E
--	------	----------------	-------------

F MECHA PCB ASSY**SEMICONDUCTORS**

		Q651	DTC124ES
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RESISTORS

		R651, R652 (56 k Ω)	ACN7012
		R653 (220 Ω)	DCN1062
		R654 (0 Ω)	DCN1065

OTHERS

	CN652	FPC CONNECTOR	12FMZ-AST
	CN651	4P MT CONNECTOR	173979-4
	CN653	22P FPC CONNECTOR	SLEM22R-2

B MECHANISM BOARD ASSY**SWITCHES AND RELAYS**

		S610	DSG1016
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OTHERS

	CN610	4P MT CONNECTOR	173979-4
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6. ADJUSTMENT

6.1 TUNER SECTION

6.1.1 FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1-1.

Step No.	Adjustment Title	FM SG (1kHz, ± 75 kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dB μ V)			
1	Front End Sensitivity	98	0-30	98MHz	L6402 T6401	Adjust so that the DC voltage between the IC6201-Pin 20 becomes at maximum level.
2	TUNED IND. Lighting Level	98	18 $\pm$ 2	98MHz	VR6201	Adjust so that the indicator of TUNED IND. starts to light up.

Notes:

- Before adjusting, make sure there is no gap between L6401 and L6402. If there is a gap between them, bring them into contact with each other first, and then make adjustments.

6.1.2 AM Tuner Section

- Set the mode selector to AM BAND.
- Connect the wiring as shown in Fig. 1-1.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dB μ V/m)			
1	AM Front End Sensitivity Adjustment	999*1	35-45	999kHz*1	T6201	Adjust so that the DC voltage between the IC6201-Pin 20 becomes at maximum level.

*1: For the area using 10kHz step, frequencies should be 1000 kHz

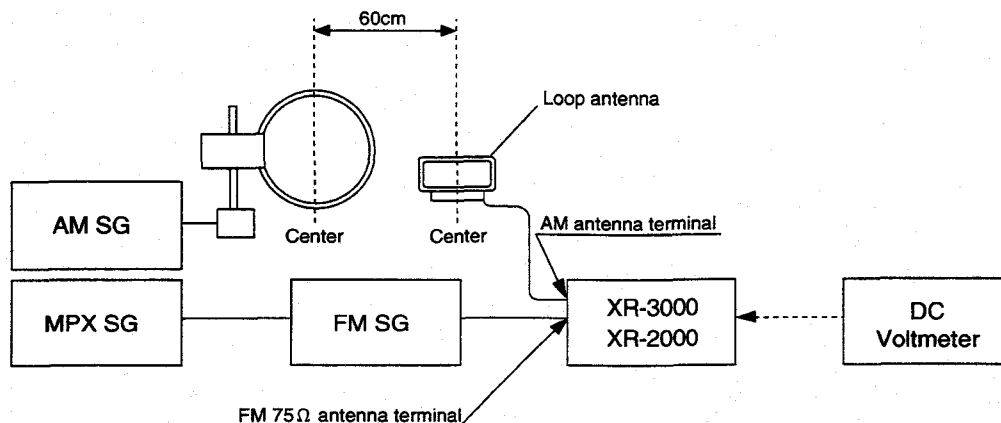


Fig. 1-1 AM and FM Adjustment Wiring Diagram

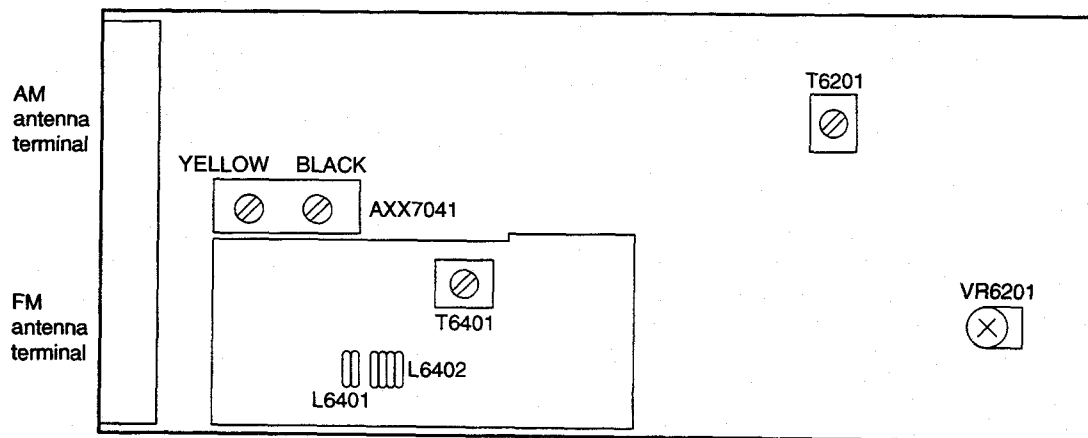


Fig. 1-2 Adjustment Points

6.2 CASSETTE DECK SECTION

- Adjustment points and test points are shown in Fig. 2-3 and Fig. 2-4.

6.2.1 Mechanical Adjustment

- Test tape: STD-301 or NCT-111 (3kHz, 30min).

(1) Tape Speed Adjustment

No.	Mode	Test Tape	Adjusting Points	Measurement Points	Adjustment Procedure	Remarks
1	Deck I PLAY	STD-301 or NCT-111 (Playback: 3kHz)	AF BOARD Assy VR3501	TAPE TEST POINT (Rch) (AF Assy)	Press the PLAY SW and adjust so that the reading becomes 3010Hz $\pm$ 10Hz. Confirm that wow & flutter level is below 0.2% (in the reverse direction, confirm that the reading is within 3000Hz $\pm$ 60Hz).	

6.2.2 Electrical Adjustment

■ Check the following before starting.

- (1) Confirm that the tape speed adjustment has been completed.
- (2) Clean the heads and demagnetize them using a head eraser.
- (3) Set the measurement level to 0 dBV = 1 Vrms.
- (4) Use the specified tape for adjustment. Use the labeled (A) side of the test tape.
STD-331E: For playback adjustment
STD-631 or STD-632: Normal blank tape
- (5) Provide yourself with the following measuring devices:
 - AC millivoltmeter
 - Low-frequency oscillator
 - Attenuator
 - Oscilloscope
- (6) Adjust both right and left channels unless otherwise specified.
- (7) Turn the DOLBY NR switch off unless otherwise specified.
- (8) Warm up the unit for several minutes before adjustment.
In particular, be sure to warm up the unit in the REC/PLAY mode for 3 to 5 minutes before starting recording/playback frequency characteristics adjustment.
- (9) Always follow the indicated adjustment order.
Otherwise, a complete adjustment may not be achieved.

■ Playback Adjustment (Decks I and II)

- (1) Head Azimuth Adjustment
- (2) Playback Level Adjustment

■ Recording Adjustment (Deck II)

- (1) Recording Bias Adjustment
- (2) Recording Level Adjustment.

* As the reference recording level is 250 nwb/m for STD-331E, the recording level will be higher by 4 dB for STD-331B (160 nwb/m). When adjusting, pay careful attention to the type of tape used.

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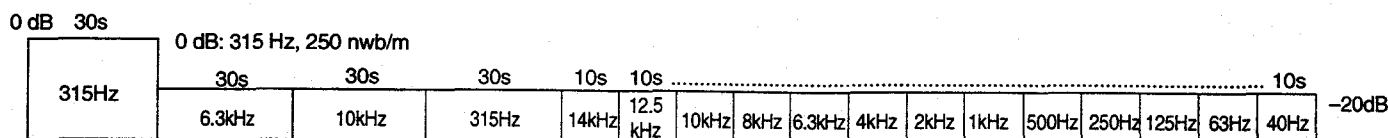


Fig. 2-1 STD-331E Test Tape

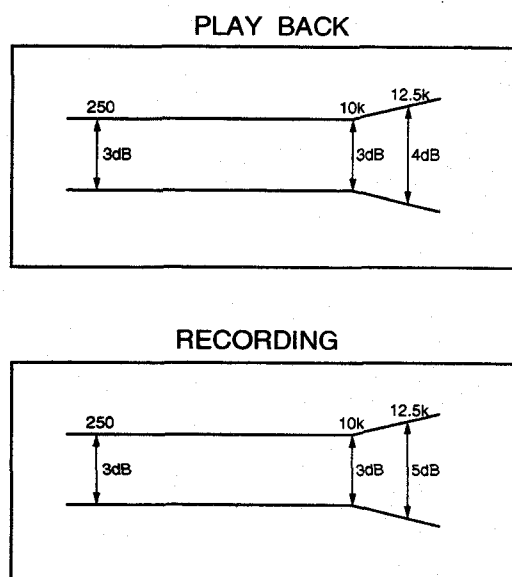


Fig. 2-2 Frequency Characteristics

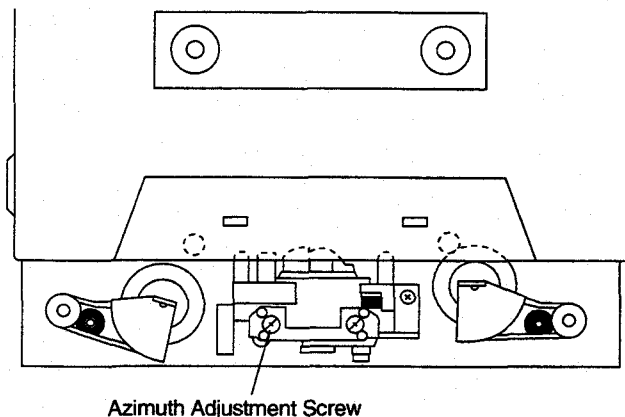


Fig. 2-3 Head Azimuth Adjustment

6.2.3 Playback Adjustment

(1) Head Azimuth Adjustment

- This unit is equipped with auto tape selector.
- Do not switch between forward and reverse operation with the screwdriver inserted.

Step	Mode	Input Signal/ Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	PLAY	STD-331E or NCT-132X test tape (Playback: 10kHz, -20dB)	Deck I	Head azimuth adjustment screw (Fig. 2-3)	TAPE TEST POINT (L, Rch) (AF ASSY)	Max. playback signal level	After adjustment, apply silicon bond to the head azimuth adjustment screw.
			Deck II				

(2) Playback Level Adjustment

- Since this adjustment determines playback Dolby NR level, perform it carefully.

Step	Mode	Input Signal/ Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	PLAY	STD-331E or NCT-132X test tape (Playback: 315Hz, 0dB)	Deck I	VR3004 (Lch) VR3003 (Rch)	TAPE TEST POINT (L, Rch) (AF ASSY)	- 4.2 dBV	
			Deck II	VR3002 (Lch) VR3001 (Rch)			

*Note: Please execute playback level adjustment always in the order of deck I → deck II
When deck I has been adjusted, always adjust deck II also.*

6.2.4 Recording Adjustment

(1) Recording Bias Adjustment

Step	Mode	Input Signal/Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Input a 315Hz signal to the AUX terminal and set the input selector to AUX.	Deck I	—	TAPE TEST POINT (L, Rch) (AF ASSY)	- 24.2 dBV	
			Deck II	Input signal level			
2	REC→ PLAY	Load the STD-631 or STD-632 test tape and record/playback the 315Hz and 10kHz signals. (see the Note below)	Deck I	—	TAPE TEST POINT (L, Rch) (AF ASSY)		Repeat adjustment until playback level of the 10kHz signal is within 0±0.5dB from that of the 315Hz signal.
			Deck II	VR3401 (Lch) VR3402 (Rch)			

Note: Set the 10kHz input signal level to the same value as the 315Hz input signal level of step 1.

(2) Recording Level Adjustment

Step	Mode	Input Signal/Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Input a 315Hz signal to the AUX terminal and set the input selector to AUX.	Deck I	Input signal level	TAPE TEST POINT (L, Rch) (AF ASSY)	- 8.2 dBV	
			Deck II				
2	REC → PLAY	STD-631 or STD-632 test tape and record/playback the 315Hz signal.	Deck I	—	TAPE TEST POINT (L, Rch) (AF ASSY)	Repeat recording, playback and adjustment until playback level of the 315Hz signal becomes -8.2dBV.	
			Deck II	VR3301 (Lch) VR3302 (Rch)			

AF ASSY

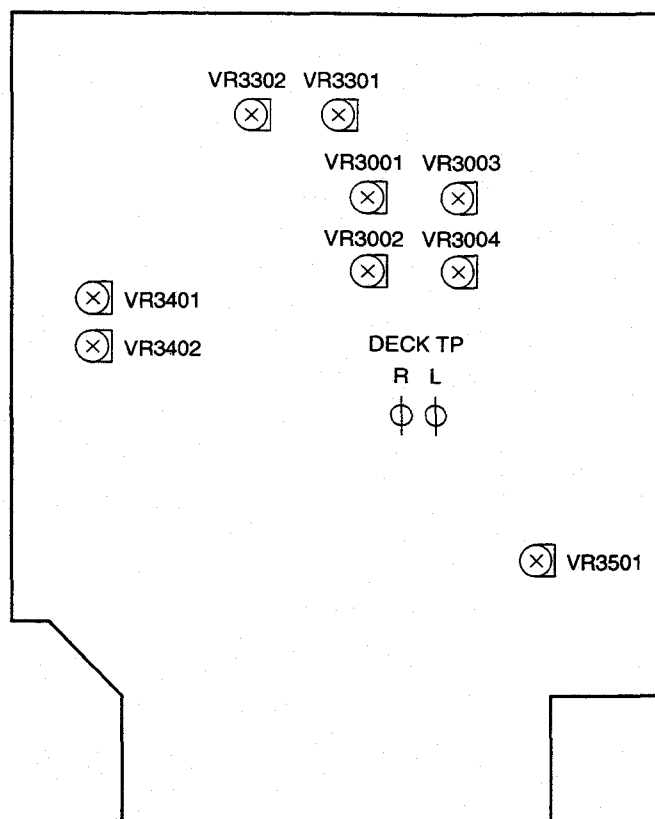
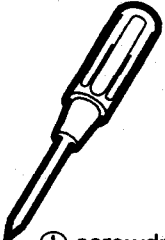
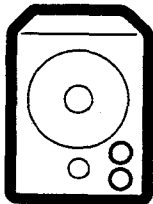
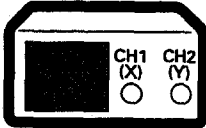
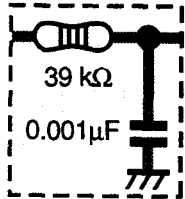


Fig. 2-4 Adjustment and Measurement points

6.3 CD SECTION (CD部の調整)

6.3.1 PREPARATIONS (準備)

(1) Jigs and Measuring Instruments (使用測定器/治工具類)

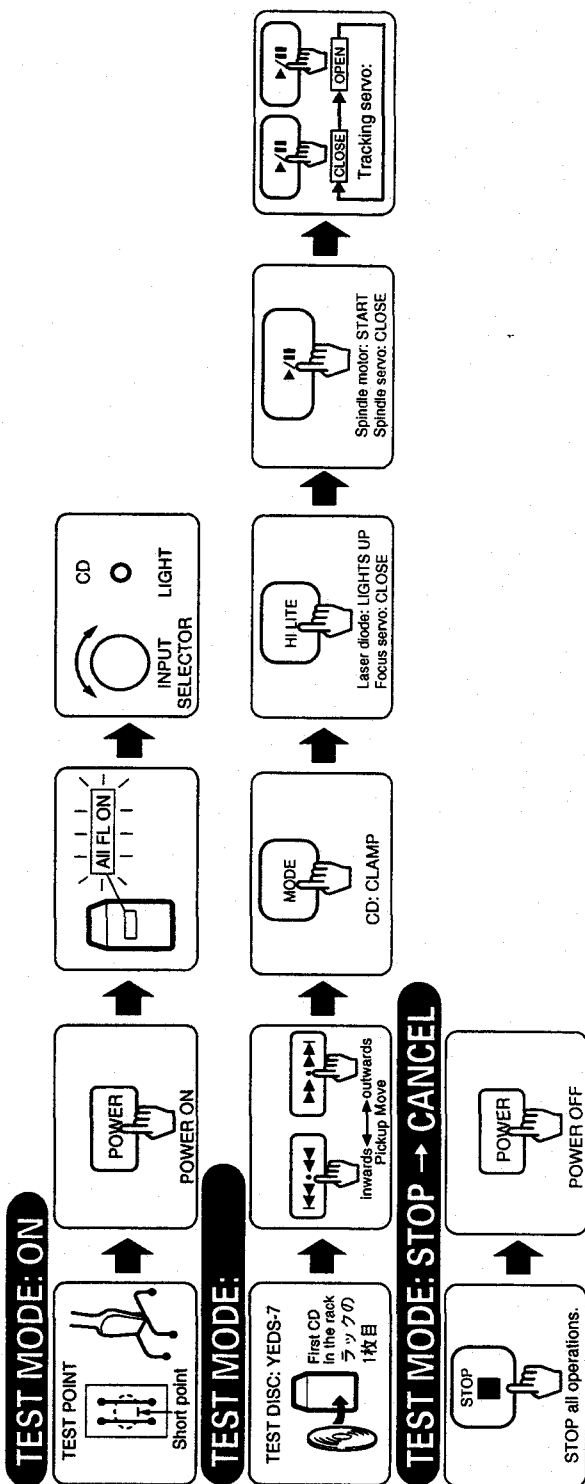
 CD TEST DISC (YEDS-7)	 ⊖ Precise screwdriver	 ⊖ screwdriver (small)	 ⊕ screwdriver (medium)
 ⊕ screwdriver (large)	 Low-frequency oscillator	 Dual-trace oscilloscope (10 : 1 probe)	 Low pass filter (39 kΩ + 0.001μF)

(2) Necessary Adjustment Points (調整に必要な項目)

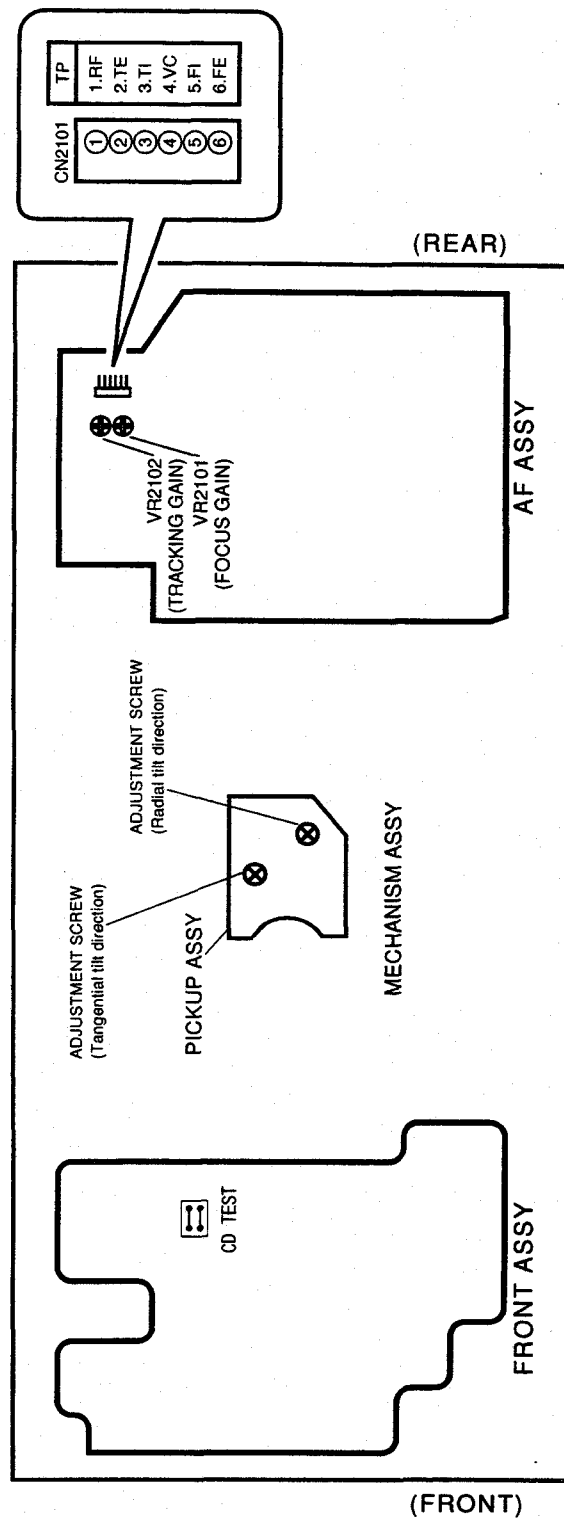
When (このような時)	Adjustment points
Exchange PICKUP (ピックアップを交換した時)	1.2.3.4.5.6. → Page 85—87
Exchange CD ASSY (CD ASSYを交換した時)	1.2.3.4.5.6. → Page 85—87
Exchange SERVO MECH ASSY (サーボメカ ASSYを交換した時)	1.2.3.4.5.6. → Page 85—87
Exchange SPINDLE MOTOR (スピンドルモーターを交換した時)	 ADJ → Page 14

6.3.2 ADJUSTMENT (調整)

(1) How to Start/Cancel Test Mode (テストモードの設定/解除)



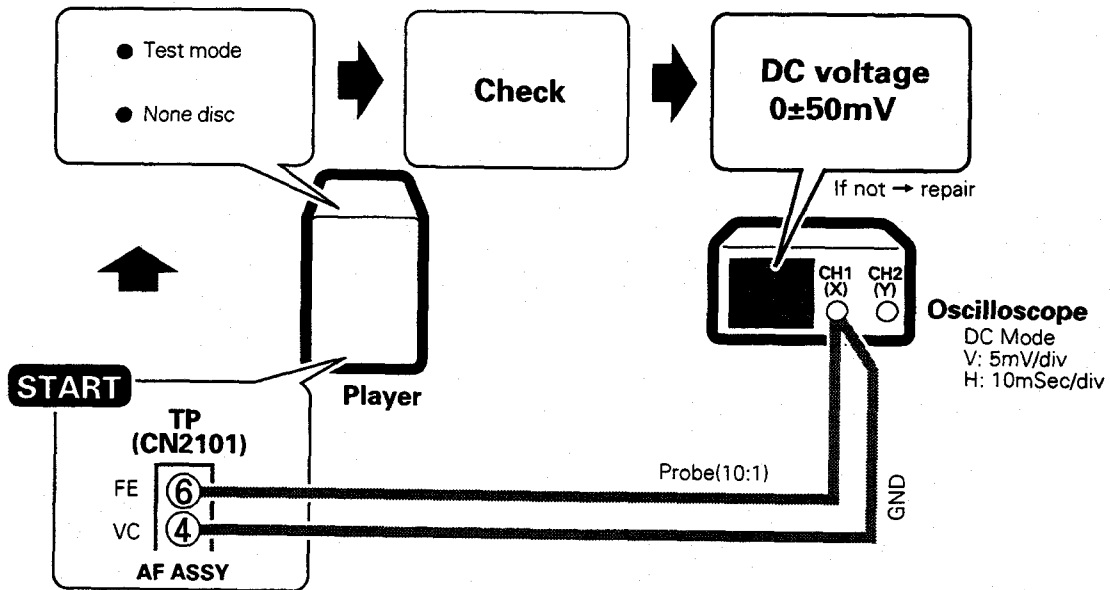
(2) Adjustment Locations (テストポイントと調整用VRの位置)



(3) Check and Adjustment (確認、調整)

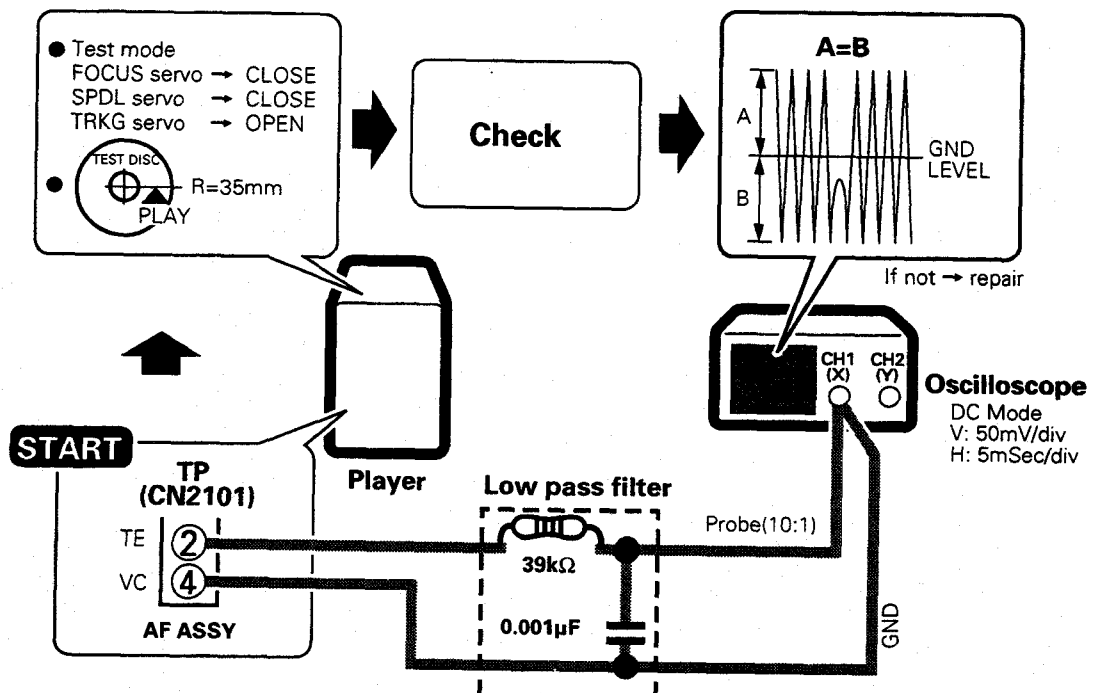
1. Focus Offset Check

(フォーカスオフセット確認)



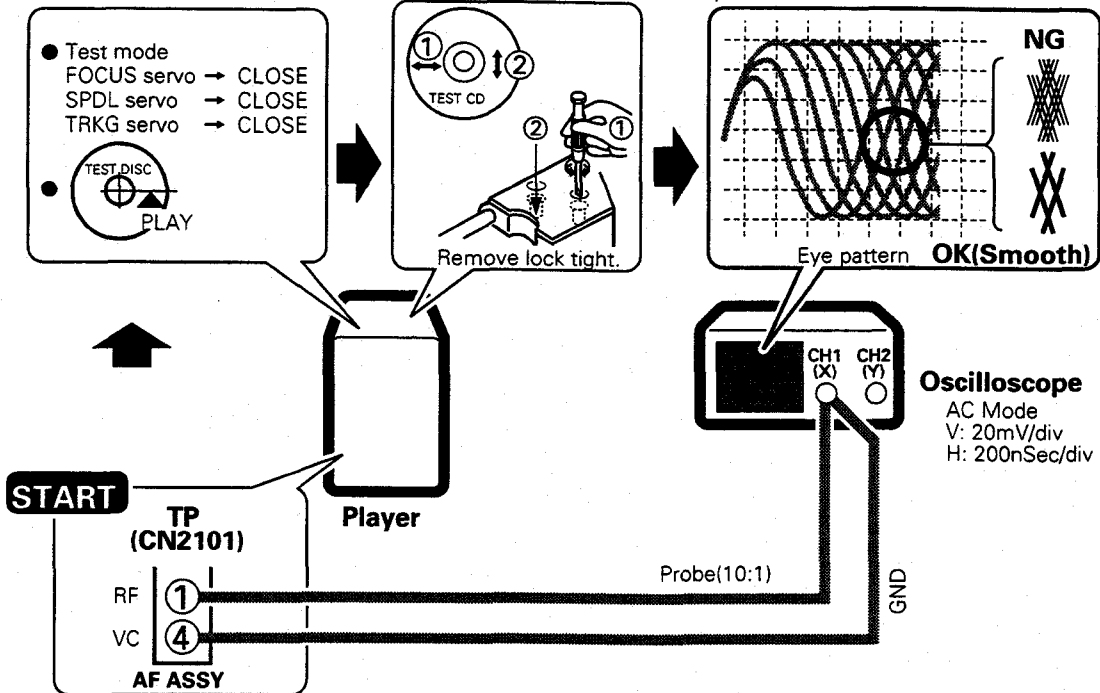
2. Tracking Error Balance Check

(トラッキングエラーバランス確認)



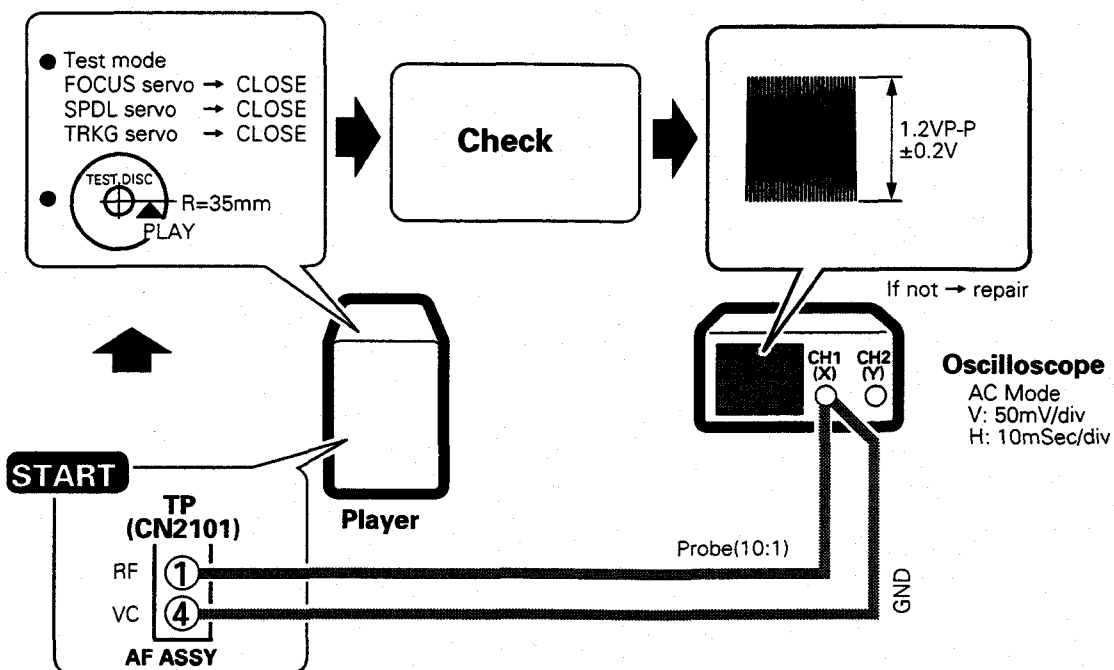
3. PICKUP ①RADIAL / ②TANGENTIAL DIRECTION TILT ADJUSTMENT

(ピックアップ①ラジアル方向②タンジェンシャル方向の傾き調整)



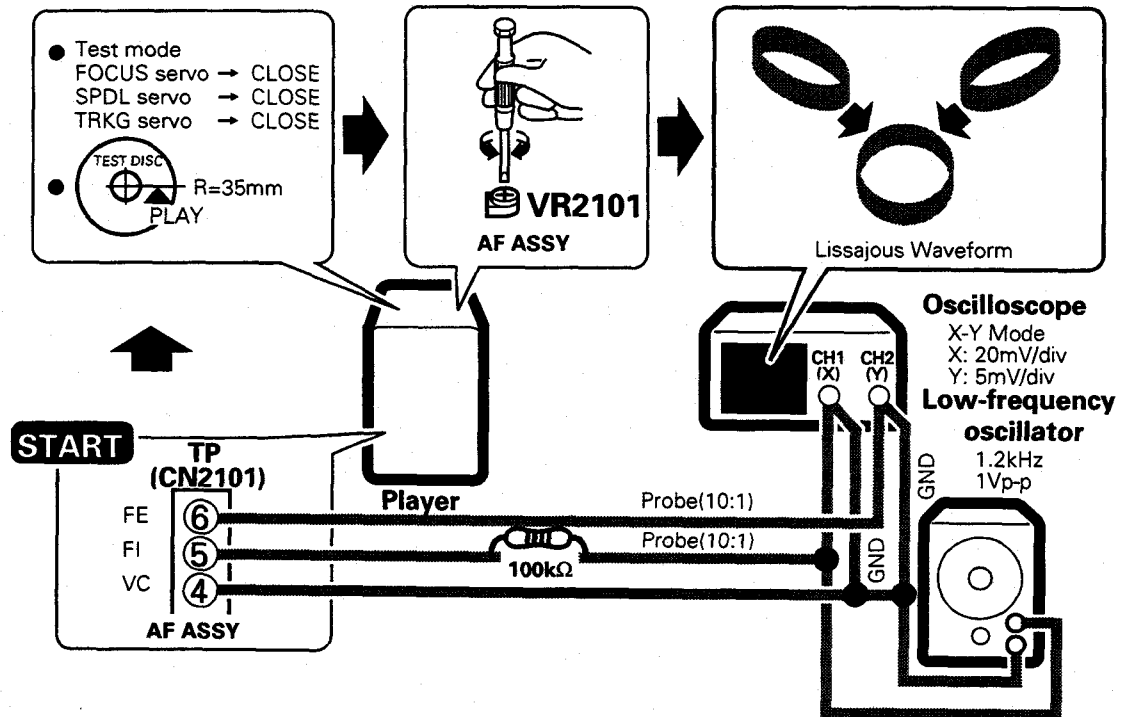
4. RF LEVEL CHECK

(RFレベル確認)



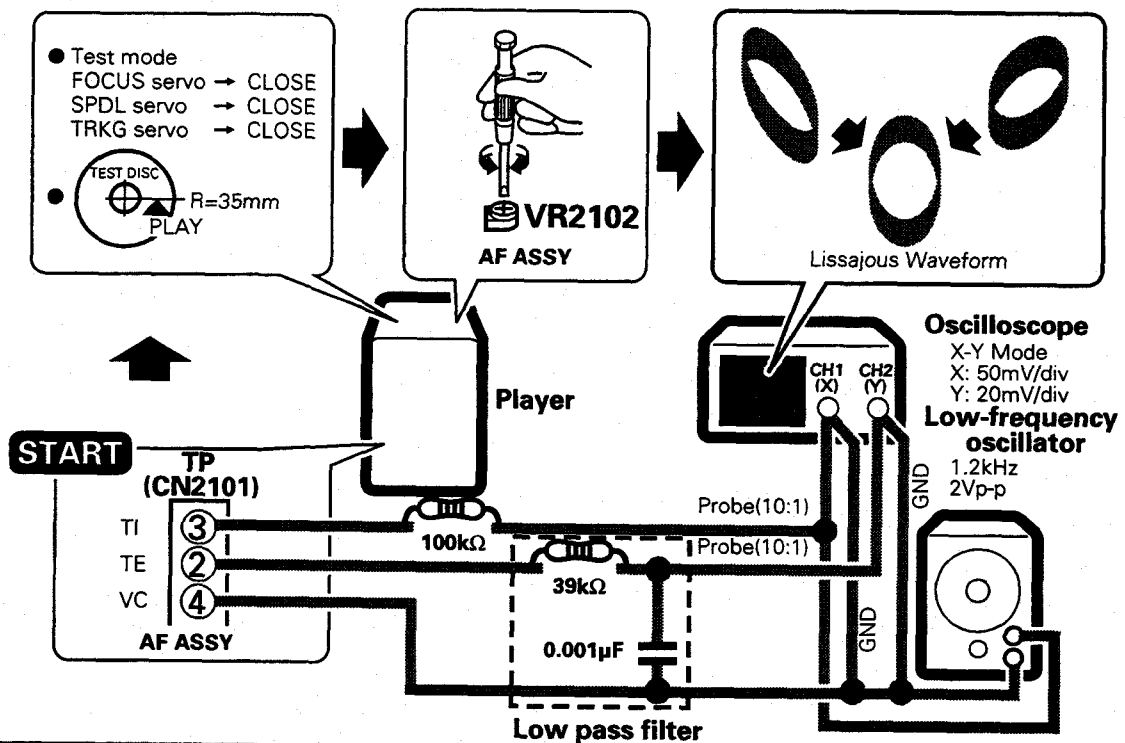
5. Focus Servo Loop Gain Adjustment

(フォーカスサーボループゲイン調整)



6. Tracking Servo Loop Gain Adjustment

(トラッキングサーボループゲイン調整)



6.4 POWER AMP UNIT SECTION (for XR-3000 and XR-3000S)

6.4.1 Handling Precautions

- Since the heat sink and transistor metallic parts are connected to the Front Amp. output, make sure they do not contact the GND (chassis) or other circuits.
- Since there is residual high voltage in the POWER AMP unit $\pm B1$ (FRONT assy) and $\pm B2$ (REAR assy) even when the power is OFF, caution should be exercised. (If necessary, the voltage should be discharged).
- When handling the POWER AMP unit, make sure you do not touch the fan motor blade.

CAUTION :

Before performing this adjustment, short the blow trigger shorting pin (shown in Fig. 4-2) of the FRONT assy to prevent the protection IC from malfunction. After adjustment is completed, remove the short-circuit.

6.4.2 Adjustment and Confirmation of Idle Current

- Basically, the idle current needs to be confirmed when replacing a power transistor, driver transistor, or bias transistor, or when the entire split board assy of the POWER AMP unit has been replaced.
- Make sure the heat sink has cooled sufficiently before measuring the idle current. (Temperature should be the same as room temperature ; 25°C is ideal, if possible.)
- Idle current stipulated value : 3 - 50mA.

■ Front Amp. side (FRONT assy)

Step	Measurement	Item	Remarks
1	L ch side	Short both sides of C7123 and C7124 on the Rear Amp. side.	Do not operate the Rear Amp. side.
2		Insert a resistor (0.22 Ω , 3W or more) in series in the connector CN7502 + B1 (or - B1) line (terminal No. 5 or 6). (Refer to Fig. 4-3.)	For measuring voltage at both sides of resistor.
3		Short both sides of C7524.	Do not operate R ch side.
4		Turn the power ON, wait 6 seconds, and then measure the resistance voltage in Step 2.	L ch Idle current $I=V/0.22 (\Omega)$
5	R ch side	• Same as Steps 1 and 2 above. • Short both sides of C7523.	Do not operate L ch side.
6		Turn the power ON under the above conditions, and after 6 seconds measure the resistance voltage in Step 2.	
7	—	If the measured idle current is greater than 50mA, perform the following procedure.	
8	L ch side	Short between the Point ㉔ pattern in Fig. 4-4 using solder.	Connect R7517 to R7515 in a parallel circuit.
9	R ch side	Short between the Point ㉕ pattern in Fig. 4-4 using solder.	Connect R7518 to R7516 in a parallel circuit.
10	—	After performing Step 8 and 9, remeasure the idle current and confirm that it is below 50mA.	
11	—	If the idle current is below 3mA, perform the following procedure.	
12	L ch side	Short between the point ㉖ pattern in Fig. 4-4 using solder.	Connect R7551 to R7519 in a parallel circuit.
13	R ch side	Short between the point ㉗ pattern in Fig. 4-4 using solder.	Connect R7552 to R7520 in a parallel circuit.
14	—	After performing steps 12 and 13, remeasure the idle current and confirm that it is greater than 3mA (within 3 - 50mA).	

■ Rear Amp. side (REAR assy)

Step	Measurement	Item	Remarks
1	Center amp. side	Short both sides of C7523 and C7524 on the Front Amp. side.	Do not operate the Front Amp. side.
2		Insert a resistor (0.22 Ω , 3W or more) in series in the connector CN7102 + B2 (or - B2) line (terminal No. 4 or 5). (Refer to Fig. 4-5.)	For measuring voltage at both sides of resistor.
3		Short both sides of C7124 on the Surround amp. side.	Do not operate the Surround Amp.
4		Turn the power ON, wait 6 seconds, and then measure the resistance voltage in Step 2.	Idle current : $I=V/0.22 (\Omega)$
5	Surround amp. side	- Same as Steps 1 and 2 above. - Short both sides of C7123 on Center amp. side.	Do not operate the Center Amp.
6		Turn the power ON under the conditions in steps 1 and 2, and after 6 seconds measure the resistance voltage in Step 2.	
7	—	If the measured idle current is greater than 50mA, perform the following procedure.	
8	Center amp. side	Short between the Point ⑥ pattern in Fig. 4-6 using solder.	Connect R7117 to R7115 in a parallel circuit.
9	Surround amp. side	Short between the Point ⑦ pattern in Fig. 4-6 using solder.	Connect R7118 to R7116 in a parallel circuit.
10	—	After performing steps 8 and 9, remeasure the idle current and confirm that it is below 50mA.	
11	—	If the idle current is below 3mA, perform the following procedure.	
12	Center amp. side	Short between the point ③ pattern in Fig. 4-6 using solder.	Connect R7151 to R7119 in a parallel circuit.
13	Surround amp. side	Short between the point ④ pattern in Fig. 4-6 using solder.	Connect R7152 to R7120 in a parallel circuit.
14	—	After performing steps 12 and 13, remeasure the idle current and confirm that it is greater than 3mA (within 10-50mA).	

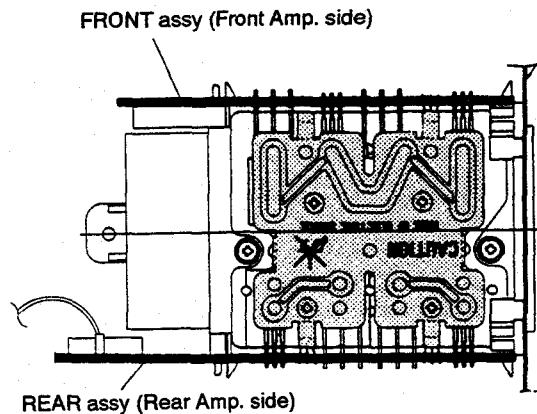


Fig. 4-1 POWER AMP unit

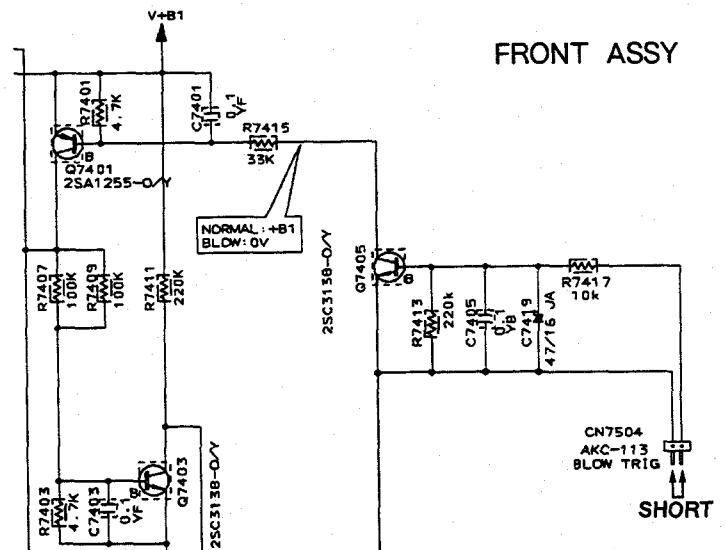


Fig. 4-2 Blow trigger circuit

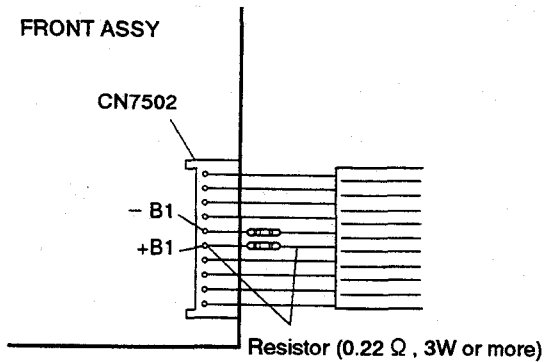


Fig. 4-3 Checking for voltage at both sides of resistor

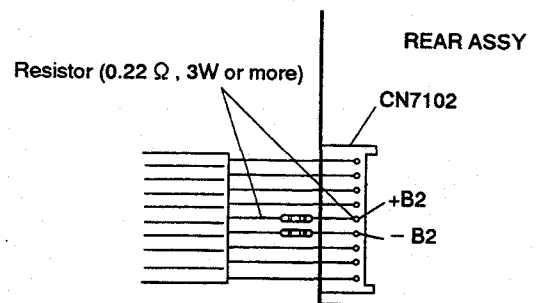


Fig. 4-5 Checking for voltage at both sides of resistor

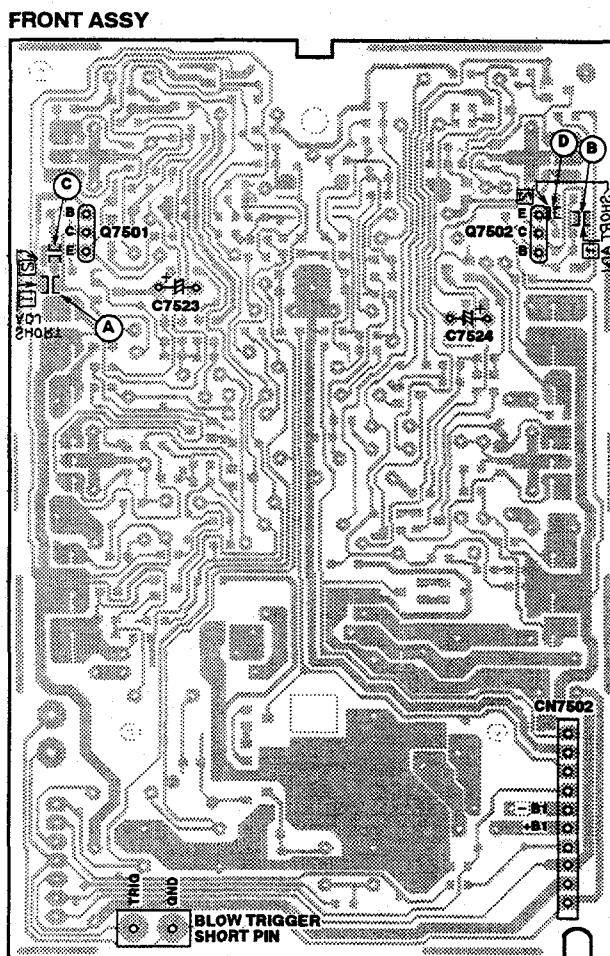


Fig. 4-4 Adjustment point

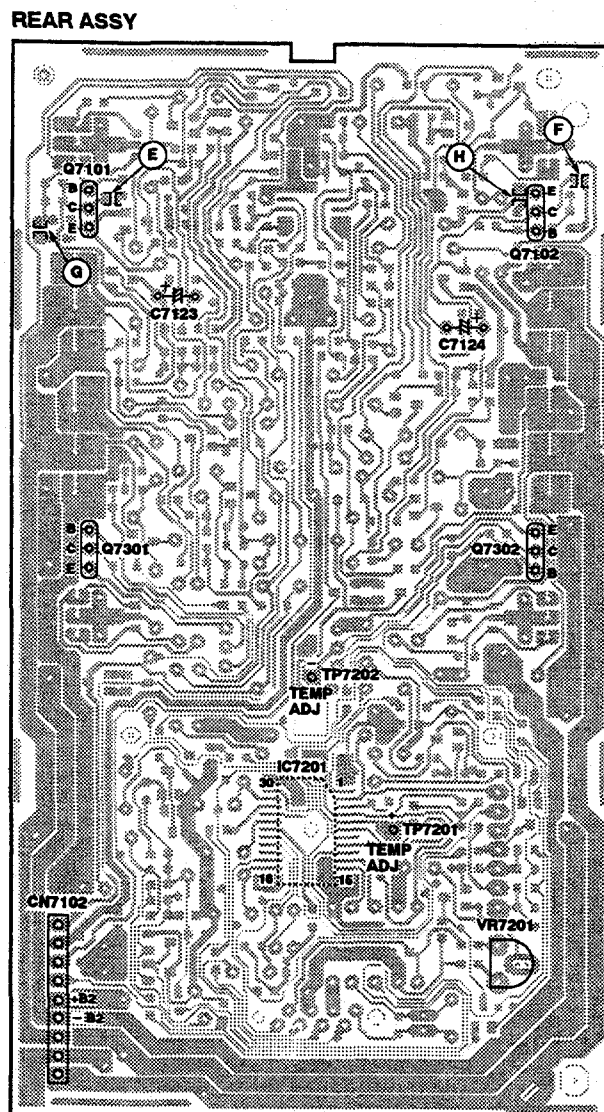


Fig. 4-6 Adjustment point

6.4.3 Adjusting the Operating Temperature Setting of the Fan Motor (VR7201)

This adjustment is necessary when IC1013 (REGULATOR assy : +12V regulator), Q7301 and Q7302 (temperature sensors) or VR7201 has been replaced, or when the entire split board assy of the POWER AMP unit has been replaced.

CAUTION :

Before performing this adjustment, short the blow trigger shorting pin (shown in Fig. 4-2) of the FRONT assy to prevent the protection IC from malfunction. After adjustment is completed, remove the short-circuit.

■ Adjustment-Related Cautions

- Make sure the heat sink has sufficiently cooled (is the same as room temperature T_a .)
- Once the power has been turned ON, make measurements and adjustments as quickly as possible. (If too much time is taken, the heat sink temperature will rise, and the measurements will deviate from the T_a measurement point.)

■ Adjustment

- (1) Connect a voltmeter between TP7201 and TP7202 (or between IC7201 terminals No. 7 and 9).

(Refer to Fig. 4-6 and 4-7.)

- (2) Determine the fan motor operating temperature setting by means of the following formula. (Tolerance is within $\pm 30\text{mV}$.)

$$\text{Formula : } (75^\circ\text{C} - T_a) \times 19(\text{mV})$$

T_a : ambient temperature ($^\circ\text{C}$)

- (3) Adjust VR7201 so that the voltage between TP7201 and TP7202 is the value obtained from the above formula.

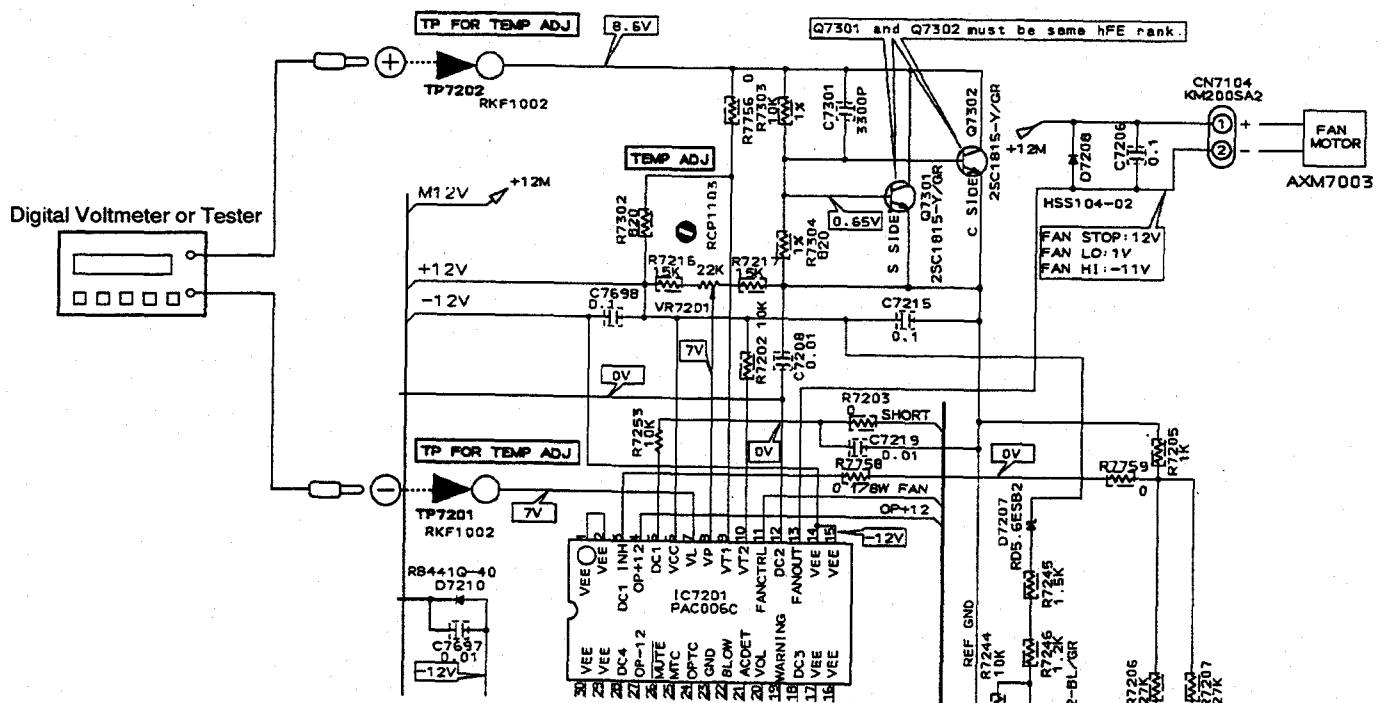
For example:

when the room temperature is 25°C ,

$$\begin{aligned} \text{set value} &= (75 - 25) \times 19(\text{mV}) \\ &= 950\text{mV}(\text{tolerance within } \pm 30\text{mV}) \end{aligned}$$

Note :

Adjustment during service should be $\pm 30\text{mV}$, but if this value cannot be obtained with the measuring instruments used for adjustment, $\pm 50\text{mV}$ is acceptable.



6.5 POWER AMP MODULE SECTION (for XR-2000)

6.5.1 Handling Precautions

- Since the heat sink and transistor metallic parts are connected to the Front Amp output, make sure they do not contact the GND (chassis) or other circuits.
- Since there is residual high voltage in the Power Amp Module $\pm B1$ (FRONT 100W ASSY) and $\pm B2$ (REGULATOR ASSY) even when the power is OFF, caution should be exercised. (If necessary, the voltage should be discharged).
- When handling the Power Amp Module, make sure you do not touch the fan motor blade.

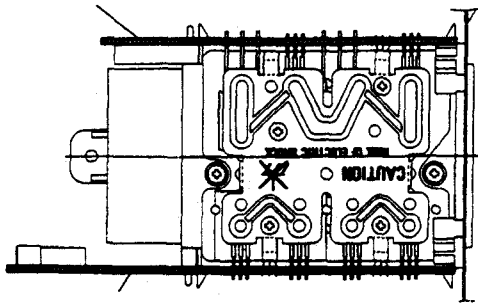
6.5.2 Adjustment and Confirmation of Idle Current

- Basically, the idle current needs to be confirmed when replacing a power transistor, driver transistor, or bias transistor, or when the entire split board Assy of the Power Amp Module has been replaced.
- Make sure the heat sink has cooled sufficiently before measuring the idle current. (Temperature should be the same as room temperature; 25°C is ideal, if possible.)
- Idle current stipulated value: 3–100mA.

■ Front Amp Side (FRONT 100W ASSY)

Step	Measurement	Item	Remarks
1	Lch side	Insert a resistor (0.22 Ω , 3W or more) in series in the connector CN7502 +B1 (or-B1) line (terminal No. 5 or 6). (Refer to Fig 5-2.)	For measuring voltage at both sides of resistor
2		Short both sides of C7524.	Do not operate Rch side.
3		Turn the power ON, wait 6 seconds, and then measure the resistance voltage in Step 1.	Lch Idle current $I=V/0.22 (\Omega)$
4	Rch side	• Same as Step 1 above. • Short both sides of C7523.	Do not operate Lch side.
5		Turn the power ON under the above conditions, and after 6 seconds measure the resistance voltage in Step 1.	
6	—	If the measured idle current is greater than 100mA, perform the following procedure.	
7	Lch side	Short between the Point ㉑ pattern in Fig. 5-3 using solder.	Connect R7517 to R7515 in a parallel circuit.
8	Rch side	Short between the Point ㉒ pattern in Fig. 5-3 using solder.	Connect R7518 to R7516 in a parallel circuit.
9	—	After performing Steps 7 and 8, remeasure the idle current and confirm that it is below 100mA.	
10	—	If the idle current is below 3mA, perform the following procedure.	
11	Lch side	Short between the point ㉓ pattern in Fig. 5-3 using solder.	Connect R7551 to R7519 in a parallel circuit.
12	Rch side	Short between the point ㉔ pattern in Fig. 5-3 using solder.	Connect R7552 to R7520 in a parallel circuit.
13	—	After performing step 11 and 12, remeasure the idle current and confirm that it is greater than 3mA (within 3–100mA).	

FRONT ASSY FOR 100W (Front Amp Side)



REAR REGULATOR ASSY (Rear Amp Side)

Fig. 5-1 PCB Location of Power Amp Module

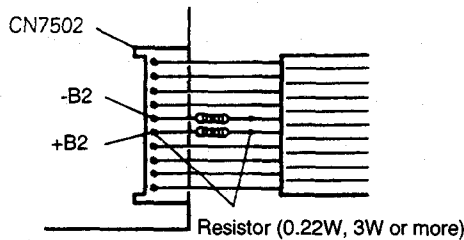


Fig. 5-2 FRONT 100W ASSY

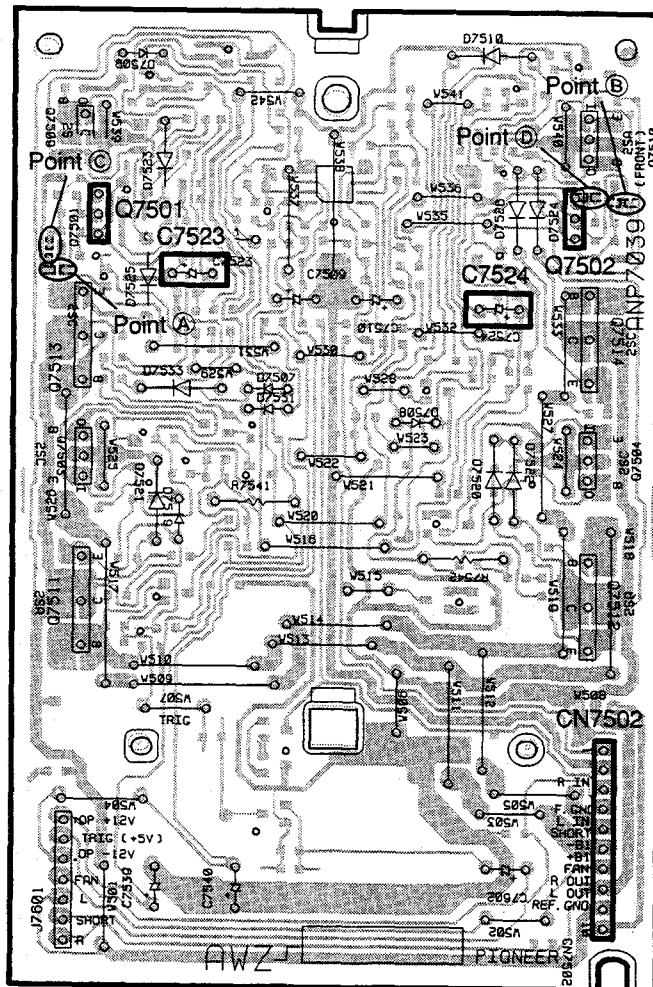


Fig. 5-3 FRONT 100W ASSY

6.5.3 Adjusting the Operating Temperature Setting of the Fan Motor (VR7201)

This adjustment is necessary when IC7401 (+12V regulator), Q7301 and Q7302 (temperature sensors), IC7201 (protection IC) or VR7201 has been replaced, or when the entire split board Assy of the Power Amp Module has been replaced.

■ Adjustment-Related Cautions

- Make sure the heat sink has sufficiently cooled (is the same as room temperature T_a .)
- Once the power has been turned ON, make measurements and adjustments as quickly as possible. (If too much time is taken, the heat sink temperature will rise, and the measurements will deviate from the T_a measurement point.)

■ Adjustment

- (1) Connect a voltmeter between VTEMP and VL (or between IC7201 terminals No.9 and 7). (Refer to Fig. 5-4.)
- (2) Determine the fan motor operating temperature setting by means of the following formula. (Tolerance is within $\pm 30\text{mV}$.)

$$\text{Formula: } (75^\circ\text{C} - T_a) \times 19 (\text{mV})$$

T_a : ambient temperature ($^\circ\text{C}$)

- (3) Adjust VR7201 so that the voltage between VTEMP and VL is the value obtained from the above formula.

For example:

when the room temperature is 25°C ,

$$\text{set value} = (75 - 25) \times 19 (\text{mV})$$

$$= 950\text{mV (tolerance within } \pm 30\text{mV).}$$

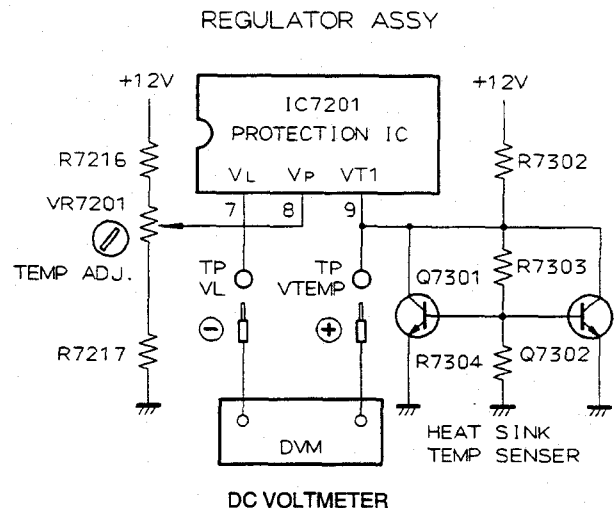


Fig. 5-4 Adjustment of Operating Temperature Setting of Fan Motor

7. GENERAL INFORMATION

7.1 IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PD4740B (IC1501 : FRONT ASSY)

● Pin Function

No.	Pin Name	I/O	Description	No.	Pin Name	I/O	Description
1	VDD	-	Vdd	34	AVDD	-	+5V
2	PLY2	I	DECK PLAY 2 reading	35	AVREF	-	AD conversion reference potential
3	REC	I	DECK REC reading	36	SCOR	I	CD subcode sync.
4	PLY1	I	DECK PLAY 1 reading	37	AC DET	I	AC pulse detection
5	HOME	I	CD GM mechanism home position switch	38	ENCODER B	I	JOG reading B
6	ENCODER A	I	JOG reading A	39	REMOKON	I	Remote control signal reading
7	DI	O	Tuner DATA OUT LC72131 (PLL frequency synthesizer for electronic sync.)	40	VSS	-	GND
8	PLCK	O	Tuner CLOCK LC72131 (PLL frequency synthesizer for electronic sync.)	41	VOL UP	O	Volume UP
9	DO	I	Tuner DATA IN LC72131 (PLL frequency synthesizer for electronic sync.)	42	VOL DOWN	O	Volume DOWN
10	RESET	I	Reset	43	PB 1/2	O	DECK PLAY 1/2 switching. 1:L, 2:H.
11	X2	-	Clock	44	BIAS	O	DECK REC BIAS. L:Oscillation, H:Stop.
12	X1	-	Clock	45	DOL P/R	O	DECK Dolby NR. H:PLAY, L:REC.
13	IC(VPP)	-	Not used	46	VDD	-	+5V
14	XT2	-	Not used	47	RECM	O	DECK REC MUTE
15	P04/XT1	-	Not used	48	BEAT	O	DECK REC BEAT CUT. L:CUT2, H:CUT1.
16	VDD	-	+5V	49	S MUTE	O	Center, rear muting
17	PLCE	O	Chip enable LC72131 (PLL frequency synthesizer for electronic sync.)	50	F MUTE	O	Front muting.
18	TXMUTE	O	Tuner module muting	51	TEST POINT	I	Test mode point
19	CD MUTE	O	CD Analog decoder output muting	52	3000/2000	I	Model switching. L:3000, H:2000.
20	LDON	O	CD Laser diode. L:ON, H:OFF.	53	A(52)	O	Function switching (BU4052) A
21	XLAT	O	CD CXD2519 LATCH	54	B(52)	O	Function switching (BU4052) B
22	CDCK	O	CD CXD2519 CLOCK	55	INH	O	Function switching (BU4052) 1NH
23	CDDT	O	CD CXD2519 DATA	56	SDATA	O	DATA (LED driver (NJU3719)). (PRO LOGIC (LV1030)).
24	SQSO	I	CD sub-Q data input	57	SCLK	O	CLOCK (LED driver (NJU3719)). (PRO LOGIC (LV1030)).
25	AVSS	-	GND	58	SENA	O	ENABLE (PRO LOGIC (LV1030))
26	TUN/ST	I	Tuner TUNE/STEREO input	59	POWER	O	Power control. H:ON, L:OFF.
27	KI1	I	Key input 1	60	HPSW	I	Headphone input. H:Inserted, L:Not inserted.
28	KI2	I	Key input 2	61	FAN	O	Power module fan control/MUTE. L:Fan stopped (mute ON) H:Fan rotated (mute OFF).
29	KI3	I	Key input 3	62	SENS	I	CD SENS input
30	KI4	I	Key input 4	63	GFS	I	CD H:GFS OK
31	10KHz	I	Spectral analyzer 10 kHz reading	64	XTALON	O	CD decoder IC clock. L:Oscillation, H:Stop.
32	1KHz	I	Spectral analyzer 1k Hz reading	65	FOK	I	CD focus OK
33	100Hz	I	Spectral analyzer 100 Hz reading				

No.	Pin Name	I/O	Description	No.	Pin Name	I/O	Description
66	DCNT	I	CD discount (GM mechanism disc position detection)	81	P1	O	FL segments output
67	CLMP	I	CD GM mechanism clamp completion detection. L:Clamp completed.	82	P2	O	FL segments output
68	EJCT	I	CD GM mechanism eject completion detection. L:Eject completed.	83	P3	O	FL segments output
69	INSD	I	CD carriage inside SW. L:Inside.	84	P4	O	FL segments output
70	HOOD	I	CD rack hood SW. H:Open, L:Close.	85	P5	O	FL segments output
71	XRST	O	CD CXD2519 reset.	86	P6	O	FL segments output
72	N.C	O	N.C	87	P7	O	FL segments output
73	N.C	O	N.C	88	P8	O	FL segments output
74	LODI	O	CD GM mechanism disc loading. H:GM→rack.	89	P9	O	FL segments output
75	LODO	O	CD GM mechanism disc loading. H:rack→GM.	90	G1	O	FL girds output
76	DSLT	O	CD GM mechanism left	91	G2	O	FL girds output
77	DSRT	O	CD GM mechanism right	92	G3	O	FL girds output
78	STB	O	LED driver STB	93	G4	O	FL girds output
79	VLOAD	-	31V	94	G5	O	FL girds output
80	N.C	O	N.C	95	G6	O	FL girds output
				96	G7	O	FL girds output
				97	G8	O	FL girds output
				98	G9	O	FL girds output
				99	G10	O	FL girds output
				100	G11	O	FL girds output

7.2 TEST MODE

7.2.1 Setting the test mode

(Unit test mode)

- In standby mode, while short-circuiting the test points, press the POWER button of the unit.
- * To turn OFF the mode, turn OFF the power.

(Initial operation)

- AUX function (AMP test mode) is forcibly set.
- All FL displays light up.
- Only keys on the unit are accepted in the test mode.

7.2.2 Functions and operations during the test mode

- Functions and operations differ depending on amplifier, tuner, and CD functional blocks.

(1) AMP

Test Item	Key	Operation
FL lighting	MONO	
	MEMORY	Right half ON ↔ All ON
	CLEAR	Left half ON ↔ All ON
LED lighting	FM/AM/STA	
Electronic VOL operation	TUN/STA	Electronic VOL up
	TUN/STA	Electronic VOL down
Center level	CENTER	12dB(MIN) • 0 • 12dB(MAX)
	CENTER	12dB(MIN) • 0 • 12dB(MAX)
Rear level	REAR	12dB(MIN) • 0 • 12dB(MAX)
	REAR	12dB(MIN) • 0 • 12dB(MAX)
PRO LOGIC (normal operation)	PRO LOGIC	OFF ↔ PRO LOGIC
	CENTER MODE	NORMAL ↔ PHANTOM
Mode switching	FUNCTION	AUX AMP TUNER TUNER CD CD

(2) Tuner

- When the tuner function is selected, the test mode below is set.

Test Item	Key	Operation			
Auto tuning Mono/Stereo function	FM/AM/STA		start frequency	mono	direction
			FM 88.5 MHz	on	up
			FM 89.5 MHz	off	down
			AM 954 kHz		up
			AM 1062 kHz		down

* 9kHz step fixed (regardless of destination)

* Mono/Stereo function can be checked using the stereo SG.

FM	90.00 MHz	tuned mono	
FM	90.00 MHz	tuned	stereo
AM	954 kHz	tuned	
AM	954 kHz	tuned	

(3) CD

- When the CD function is selected, the test mode below is set.
- The aging mode can be set using the REPEAT/BEST key.

Test Item	Key	Operation
GM Servo Mechanism Test	MODE	1st rack is clamped. Laser diode lights up.
	HI LITE	Focus servo ON. The laser diode lights up without carriage movement, and the focus actuator moves up and down to turn ON the focus servo.
	PLAY/PAUSE	Spindle kick, tracking servo, and slider servo are turned ON and OFF.
	STOP	STOP
	TRACK	Carriage IN
	TRACK	Carriage OUT
	TIME	The time elapsed from the start of music being played back is displayed when the tracking servo and slider servo are ON.
Aging	REPEAT	CD aging mode (endless)
	BEST	CD aging mode (only one time)

XR-3000, XR-3000S, XR-2000

(4) CD aging mode

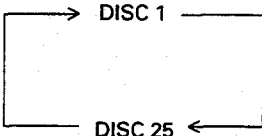
[Requirements to start]

- The CD test mode should be set.
- "NG" does not occur during the selector stop.

[Operation]

- When TOC is successfully read, the next disc is set. Not played back.

[Display]

Mode	Operation	FL display
Endless		= = = = = = = = = = = = = = = = 1.01 (25.01) (When error occurs:) An error code is displayed and the unit stops its operation.
Only one time	DISC 1 ↓ DISC 12 ↓ DISC 13 ↓ DISC 25 ↓ DISC 25 ↓ DISC 13 ↓ DISC 12 ↓ DISC 1 ↓ END	= 1.01 = = 12.01 = = = 13.01 = = = = 25.01 = = = = 25.01 = = = = 13.01 = = = = 01.01 = = = = End (When error occurs:) The unit stops as it is. An error code is not displayed.

[Error code table]

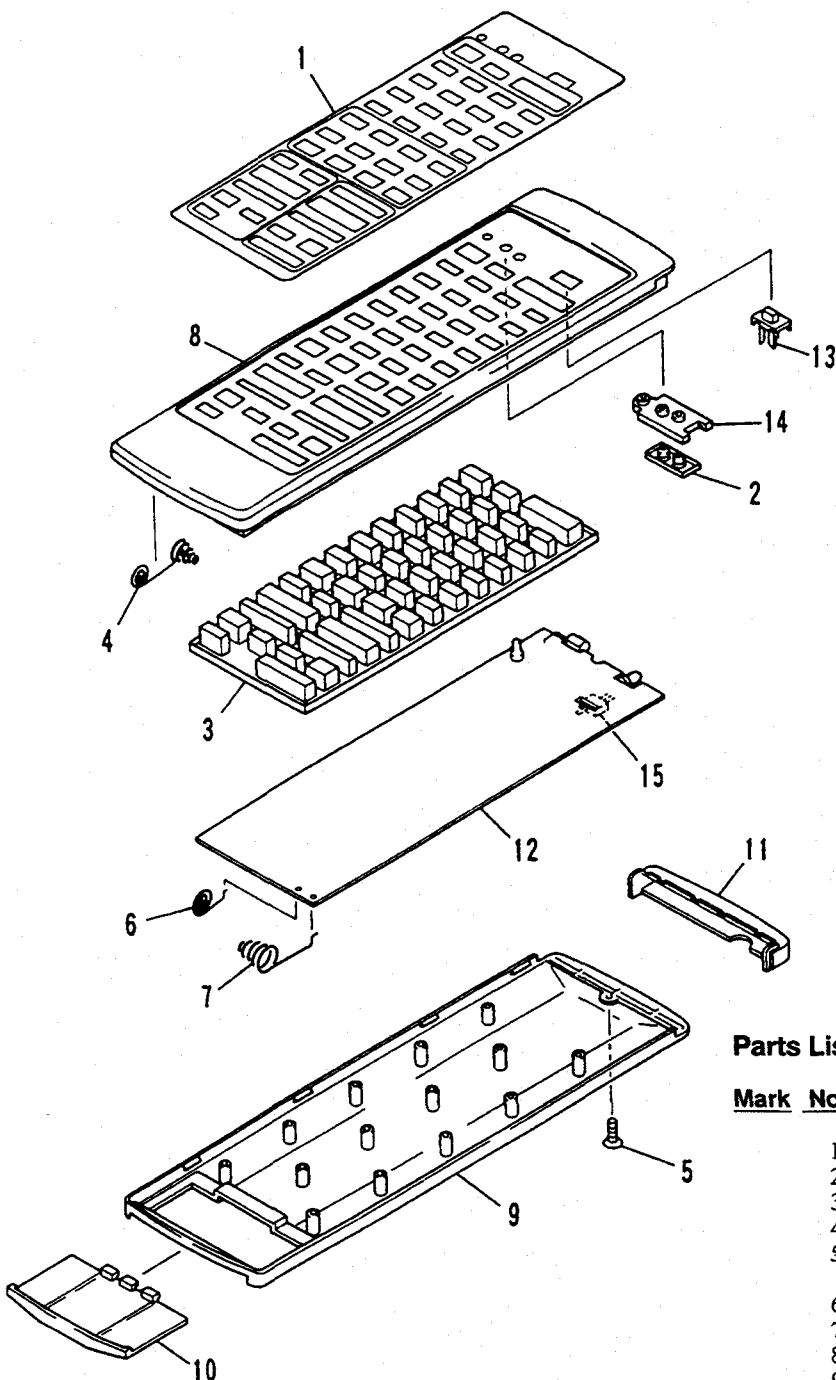
* Displayed only in the aging mode. Not displayed in the normal operation and CD test mode.

Error code	Cause of operation stop
Err 1	Focusing is not performed correctly when attempting play back after disc loading. Possible causes: No disc, disc is upside down, or disc is dirty. The disc is not loaded correctly, etc.
Err 2	The disc is not rotated correctly when attempting play back after disc loading. Possible causes: The disc is upside down, or disc is dirty. The disc is not loaded correctly, etc.
Err 3	The mechanism stops since the desired disc cannot be selected.
Err 4	The disc is not loaded correctly. (The disc cannot be taken out of the rack.)
Err 5	The disc is not returned correctly. (The disc cannot be returned to the rack.)
Err 6	TOC cannot be read since RF is dirty.

7.3 REMOTE CONTROL UNIT (XR-3000S ONLY)

7.3.1 EXPLODED VIEWS AND PARTS LIST

- NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ∇ mark on the product are used for disassembly.



Parts List

Mark	No.	Description	Part No.
	1	Plate	RZA1013
	2	Rubber sheet (A) (S102)	AZA1985
	3	Rubber sheet (B) (S103)	RZA1014
	4	Terminal	AZB1334
	5	Screw	AZB1335
	6	Terminal (A)	AZB1379
	7	Terminal (B)	AZB1380
	8	Case (A)	RZN1039
	9	Case (B)	AZN2255
	10	Battery cover	AZN2256
NSP	11	Filter	AZN2257
	12	P. C. Board	RZN1040
	13	Knob (VIDEO/AUDIO)	AZN2259
	14	Frame	AZN2260
	15	Slide switch (S101)	AZS1134

7.3.2 SCHEMATIC AND PCB DIAGRAM

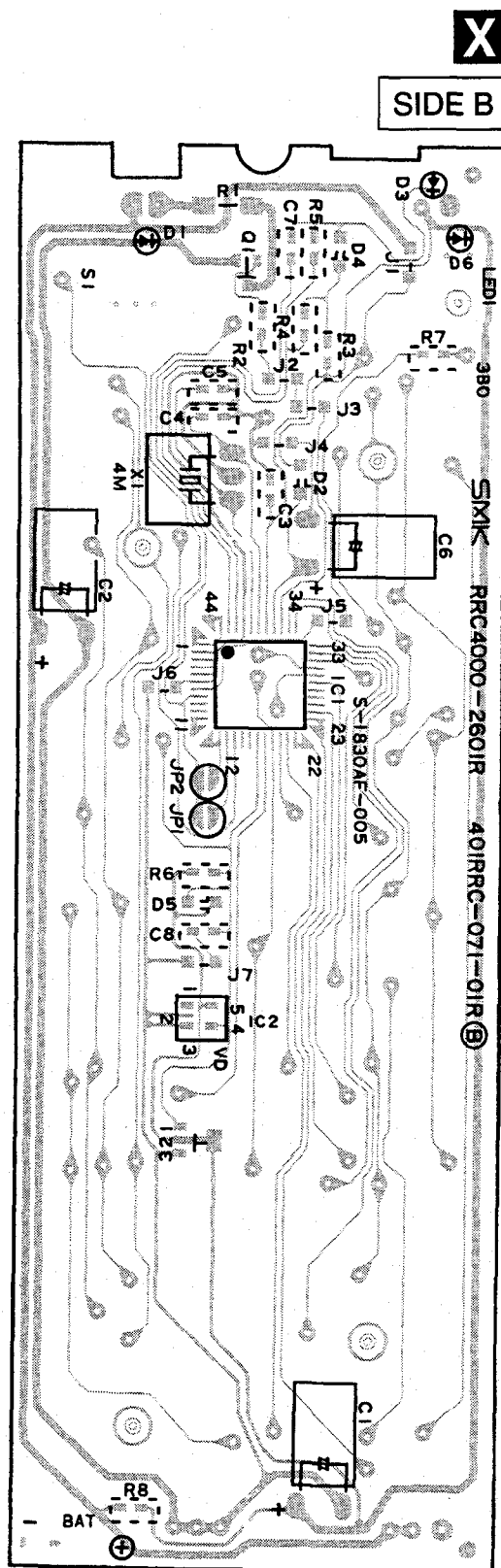
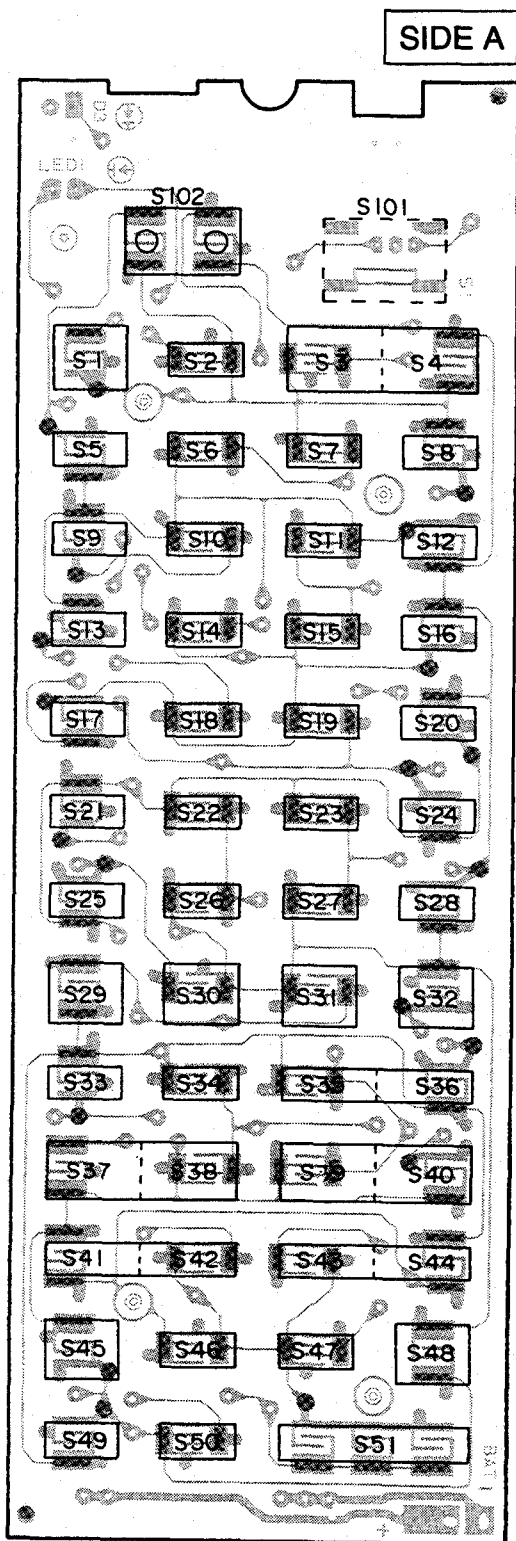
■ PCB DIAGRAM

$\overline{R}$: Indicates a chip resistor.

$\overline{\text{---}}$: Indicates a chip capacitor.

—: Indicates a chip transistor.

⊕: Indicates a chip diode.

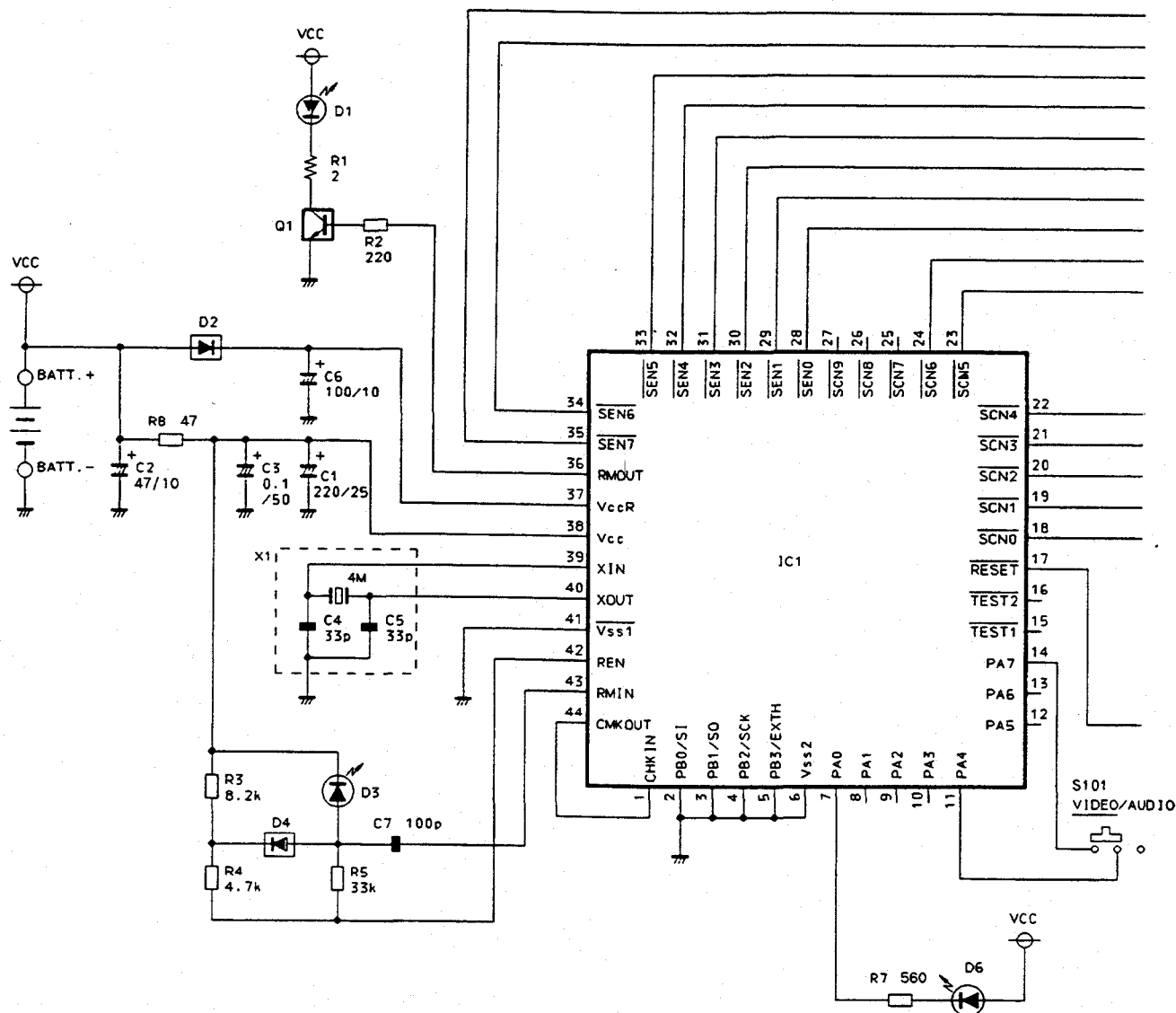


■ SCHEMATIC DIAGRAM

NOTE: When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

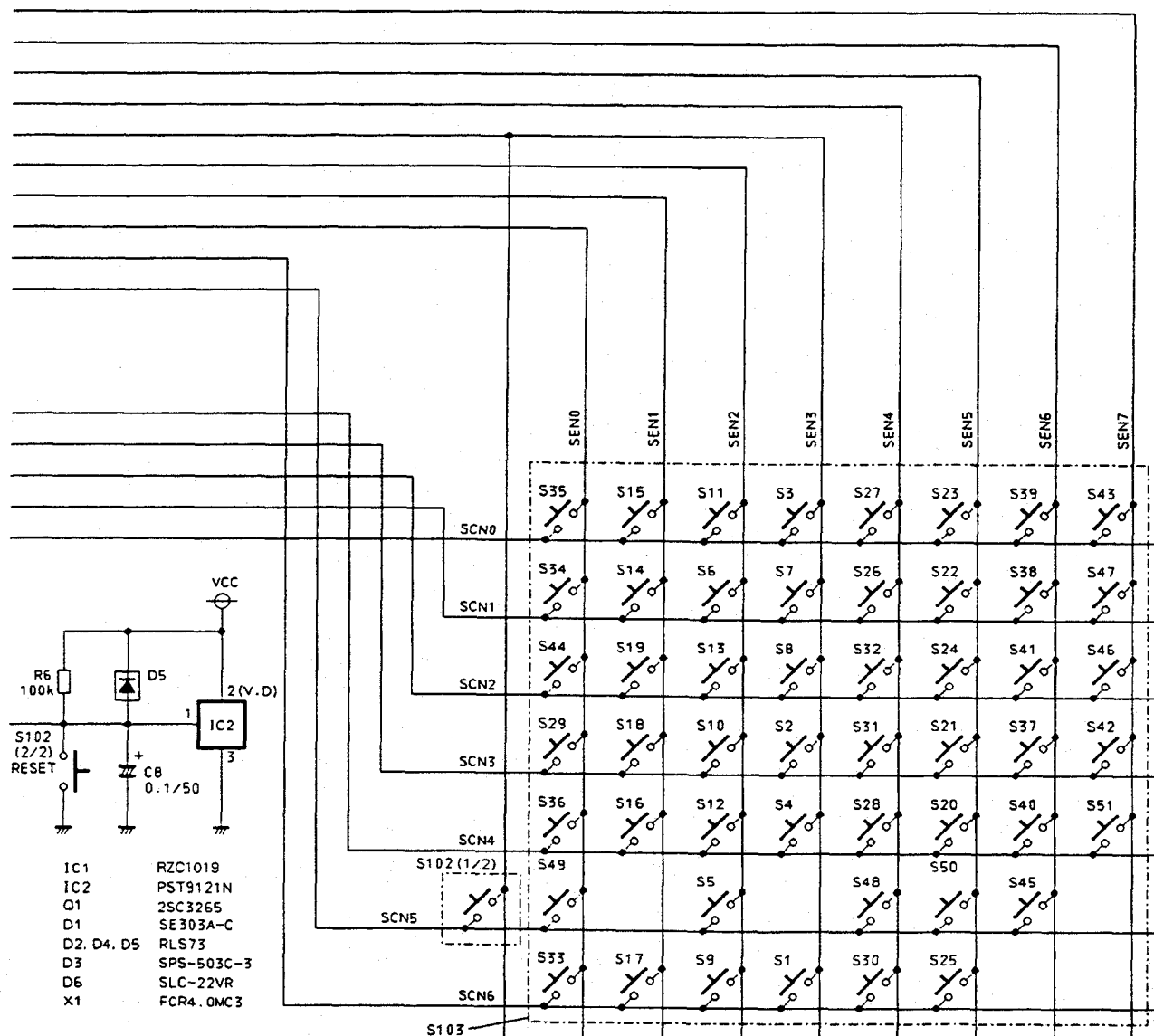
NOTE

-  : Indicates a chip resistor.
-  : Indicates a chip capacitor.
-  : Indicates a chip transistor.
-  : Indicates a chip diode.



SWITCHES (Underline indicates switch position):

- | | |
|--------------------------|-----------------------|
| S101 : AUDIO/VIDEO | S25 : TV POWER |
| S102 : LEARN-RESET | S26 : TV FUNC/BAND |
| S1 : DECK RECEIVER POWER | S27 : TV VOLUME - |
| S2 : FUNCTION | S28 : TV VOLUME + |
| S3 : MASTER VOLUME - | S29 : DISC A - |
| S4 : MASTER VOLUME + | S30 : DISC B + |
| S5 : REAR LEVEL - | S31 : TV CH/STATION - |
| S6 : REAR LEVEL + | S32 : TV CH/STATION + |
| S7 : S. BASS | S33 : BEST (◀◀) |
| S8 : PRO LOGIC | S34 : PREVIOUS (▶▶) |
| S9 : CENTER LEVEL - | S35 : CH - |
| S10 : CENTER LEVEL + | S36 : CH + |
| S11 : CENTER MODE | S37 : CD/LD II |
| S12 : TEST TONE | S38 : CD/LD ▶ |
| S13 : 1 (1/13) | S39 : VCR II |
| S14 : 2 (2/14) | S40 : VCR ▶ |
| S15 : 3 (3/15) | S41 : CD/LD ◀◀ |
| S16 : 4 (4/16) | S42 : CD/LD ▶▶ |
| S17 : 5 (5/17) | S43 : VCR ◀◀ |
| S18 : 6 (6/18) | S44 : VCR ▶▶ |
| S19 : 7 (7/19) | S45 : CD/LD POWER |
| S20 : 8 (8/20) | S46 : CD/LD ■ |
| S21 : 9 (9/21) | S47 : VCR ■ |
| S22 : 0 (10/22) | S48 : VCR POWER |
| S23 : DISC (11/23) | S49 : SHIFT |
| S24 : TRACK (12/24) | S50 : TV/VCR |



- | | |
|------------|------------|
| IC1 | RZC1019 |
| IC2 | PST9121N |
| Q1 | 2SC3265 |
| D1 | SE303A-C |
| D2, D4, D5 | RLS73 |
| D3 | SPS-503C-3 |
| D6 | SLC-22VR |
| X1 | FCR4.0MC3 |

7.3.3 PCB PARTS LIST

- NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47K ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	$\rightarrow 56 \times 10^1 \rightarrow 561$	RD1/4PU 561 J
47 k Ω	$\rightarrow 47 \times 10^3 \rightarrow 473$	RD1/4PU 473 J
0.5 Ω	$\rightarrow R50$	RN2H R50 K
1 Ω	$\rightarrow 1R0$	RS1P 1R0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

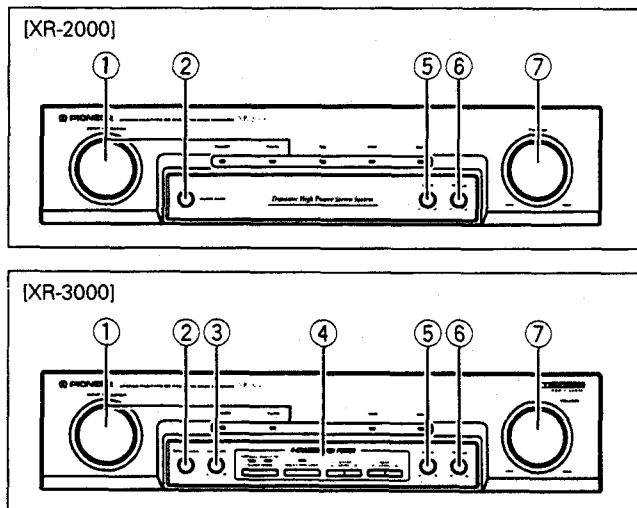
5.62 k Ω	$\rightarrow 562 \times 10^1 \rightarrow 5621$	RN1/4PC 5621 F
-----------------	--	----------------

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC1		RZC1019
	IC2		PTS9121N
	Q1		2SC3265
	D1		SE303A-C
	D2, D4, D5		RLS73
	D3		SPS-503C-3
	D6		SLC-22VR
CAPACITORS			
	C1		CEAS221M25
	C2		CEAS470M10
	C3, C8		CGCYF104Z25
	C6		CEAS101M10
	C7		CCCSL101J50
RESISTORS			
	All resistors		RD1/4PU□□□J
OTHERS			
	X1	RESONATOR	FCR4.0MC3

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ AMPLIFIER SECTION



① INPUT SELECTOR/indicator

The indicators lights for the specified functions. See page 12 for details.

② SUPER BASS control button

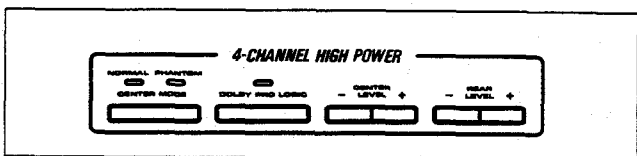
Set to ON to emphasize bass sounds. The S.BASS of the tuner section display lights.

③ BALANCE control (XR-3000/3000S only)

Use this control to adjust the left—right balance for the front speakers.

④ SURROUND function button(s)/indicator (XR-3000/3000S only)

Surround play back is not possible with a monophonic sound source (no sound from rear speakers).



CENTER MODE button/indicator

This button selects the surround center mode. Refer to pages 6 and 14.

DOLBY PRO LOGIC surround button/indicator

This button switches the DOLBY PRO LOGIC ON/OFF.

CENTER LEVEL control

Use this control to independently adjust the center speaker system volume level for the optimum front-center volume balance. The CENTER indicator of display section lights.

REAR LEVEL control

Use this control to independently adjust the rear speaker system volume level for the optimum front-rear volume balance. The REAR indicator of display section lights.

NOTE for XR-2000

The rear speaker level can be adjusted only with the master VOLUME control.

⑤ BASS control

Use this control to adjust the low-frequency tone.

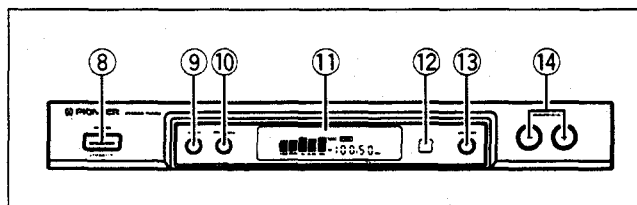
⑥ TREBLE control

Use this control to adjust the high-frequency tone.

⑦ VOLUME control

The volume is increased when this control is turned clockwise and decreased when turned counterclockwise.

■ TUNER SECTION



⑧ POWER (STANDBY/ON) switch

This is the switch for electric power.

ON:

When set to the ON position, power is supplied and the unit becomes operational.

STANDBY:

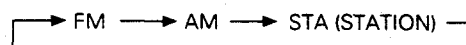
When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

⑨ MONO button

It may not be possible to tune in a desired FM station because it is too far away or because its signals are too weak. In cases like these, press this button to set the reception to the monaural mode (MONO indicator lights) and tune in the station. The FM stereo broadcast will be heard in mono. This button will not function for AM reception. The MONO setting is memorized along with station frequency when presetting a station.

⑩ FM/AM/STA select button

Each press of this button changes the mode in order of FM → AM → Station.



⑪ Display section

Shows the received broadcast frequency or station call number, reception conditions, and CD disc and track numbers.

FM and MHz light:

FM reception

AM and kHz light:

AM reception

Channel display:

Station call no. display

STEREO indicator:

Lights when an FM stereo broadcast is received.

TUNED indicator:

Lights when a broadcast is received and tuned in well.

Spectrum analyzer display:

5 band level display

⑫ REMOTE SENSOR window

⑬ MEMORY button

This button is used for the station memory operation. To store the frequency of a station in memory, first tune in the frequency to be stored, then press the MEMORY button. When "*** ch" display blinks, press the MEMORY button again if you want to store the station frequency in the preset channel with this number. Now the memory operation is complete.

⑭ TUNING/STATION (-/+) buttons

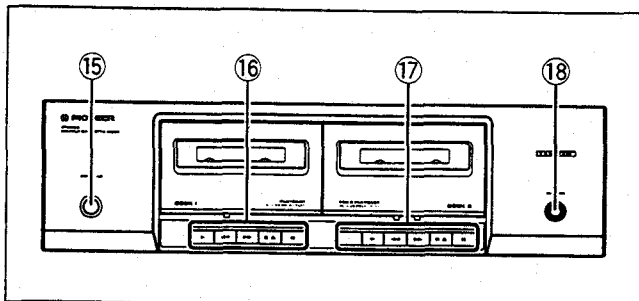
In FM or AM mode:

Press either button to increase or decrease the tuned frequency by one step.

In STA (STATION) mode:

Press either button to increase or decrease the preset station channel number (between 1 and 24).

■ CASSETTE DECK SECTION



Use TYPE I (Normal) tapes.

⑮ DOLBY* NR button/indicator

Press to activate the DOLBY NR system. Use to play back tapes recorded using Dolby B-type NR.

- Tapes recorded using Dolby B-type NR should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby B-type NR system on.
- It is recommended that tapes recorded using Dolby B-type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction button during playback.

*

• *Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.*

• *"DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.*

⑯ DECK I buttons

- ▶ (PLAY): Playback
- ◀◀ (REW): Rewind
- ▶▶ (FF): Fast forward
- /▲ (STOP EJECT): Stops tape travel. Ejects cassette if pressed when tape is stopped.
- ⏸ (PAUSE): Stops temporarily. The pause mode is canceled when the button is pressed again.

⑰ DECK II buttons

- (REC): Set to the recording mode.
- ▶ (PLAY): Playback
- ◀◀ (REW): Rewind
- ▶▶ (FF): Fast forward
- /▲ (STOP EJECT): Stops tape travel. Ejects cassette if pressed when tape is stopped.
- ⏸ (PAUSE): Stops temporarily. The pause mode is canceled when the button is pressed again.

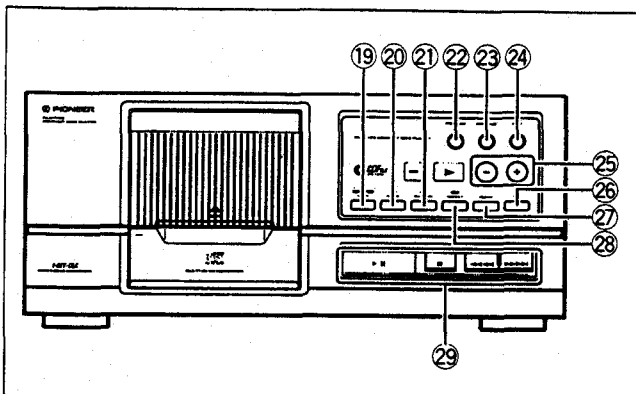
⑱ PHONES jack

This is a "standard plug-type jack" for headphones.

NOTE:

Sound is not heard from the speakers when headphones are in use.

■ FILE-TYPE CD SECTION



⑲ MODE button

⑳ HI-LITE button

㉑ RANDOM button

㉒ PROGRAM button

㉓ PREVIOUS button

㉔ BEST button

㉕ DISC (←, →) buttons

㉖ TIME button

㉗ CLEAR button

㉘ REPEAT button

㉙ CD operation buttons

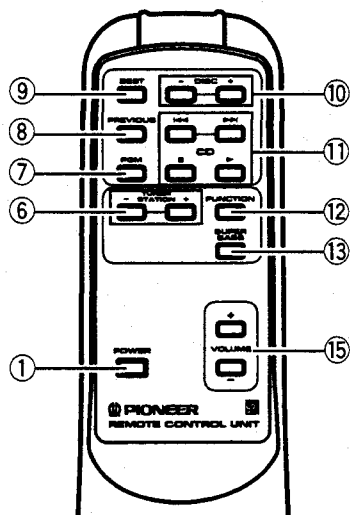
- ▶/⏸: Playback/Pause
- : Stop
- ◀◀◀, ▶▶▶▶: Track/Manual search

[XR-3000/3000S]

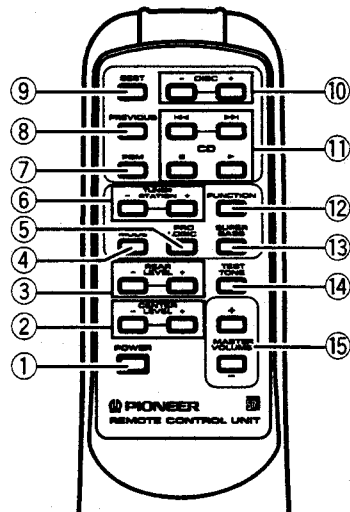
Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby", the double-D symbol and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

■ REMOTE CONTROL UNIT (for XR-3000 and XR-2000)

[XR-2000]



[XR-3000]

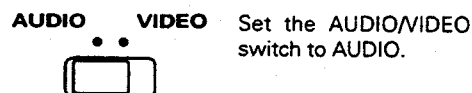


The remote control buttons which have the same names as the buttons on the main unit function in the same way as the main unit buttons. For the operation of these buttons, refer to the descriptions of the main unit buttons given in their respective reference pages.

- ① **POWER** button
- ② **CENTER LEVEL - (down), + (up) buttons (XR-3000 only)**
- ③ **REAR LEVEL - (down), + (up) buttons (XR-3000 only)**
- ④ **CENTER MODE** button (XR-3000 only)
- ⑤ **PRO LOGIC** button (XR-3000 only)
- ⑥ **TUNER STATION - (down), + (up) buttons**
- ⑦ **CD PGM (Program)** button
- ⑧ **PREVIOUS** button
- ⑨ **BEST** button
- ⑩ **DISC (-, +) buttons**
- ⑪ **CD operation buttons**
 ■: Stop
 ►: Playback
 ◀, ▶: Track search
- ⑫ **FUNCTION** button
- ⑬ **SUPER BASS** button
- ⑭ **TEST TONE** button (XR-3000 only)
- ⑮ **MASTER VOLUME - (down), + (up) buttons**

XR-3000, XR-3000S, XR-2000

■ REMOTE CONTROL UNIT (for XR-3000S)



SURROUND function buttons:

REAR LEVEL $-/+$ buttons:

This functions as a REAR LEVEL button.

Adjust the sound level of the rear speakers.

CENTER LEVEL $-/+$ buttons:

This functions as a CENTER LEVEL button.

Adjust the sound level of the center speaker.

SUPER BASS button:

Use to switch the SUPER BASS function ON and OFF. (for emphasized bass sound).

PRO LOGIC button:

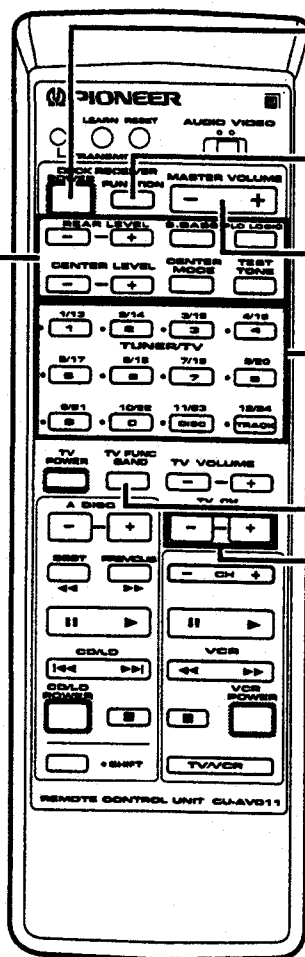
Switches the DOLBY PRO LOGIC SURROUND function ON and OFF.

CENTER MODE button:

Sets the DOLBY PRO LOGIC center mode to NORMAL/PHANTOM.

TEST TONE button:

Used when the DOLBY PRO LOGIC SURROUND is in the on



DECK RECEIVER POWER button:

When the power to this unit (Deck Receiver XR-3000S) is ON, you can switch power ON and OFF (standby) with the POWER button on the remote control.

FUNCTION button:

Used to change the tuner control amplifier function.

MASTER VOLUME $- , +$ buttons:

Adjusts the overall volume.

1-24(STATION CALL) buttons:

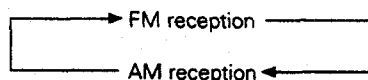
For direct tuning of stations stored in STATION CALL memory.

Each time you press any one of the buttons, the indications displayed at the top of the buttons change in sequence.

This lets you select desired numbers when specifying station channels.

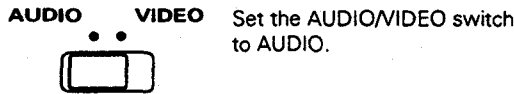
BAND button:

Used to select the band of the desired station. The bands change alternately each time the button is pressed.



STATION($-/+$) buttons:

These are used to preset stations and recall preset stations.



CD/LD POWER button:

Switches CD player power ON and OFF.

DISC (disc no.) SELECT button:

Use to select discs loaded in a file type CD player. On a multi-play compact disc player, you can use only the "+" button.

BEST button:

Pressing this button while a CD is playing lets you easily memorize the track that's playing. Pressing it when a CD is not playing starts play of the memorized track.

PREVIOUS button:

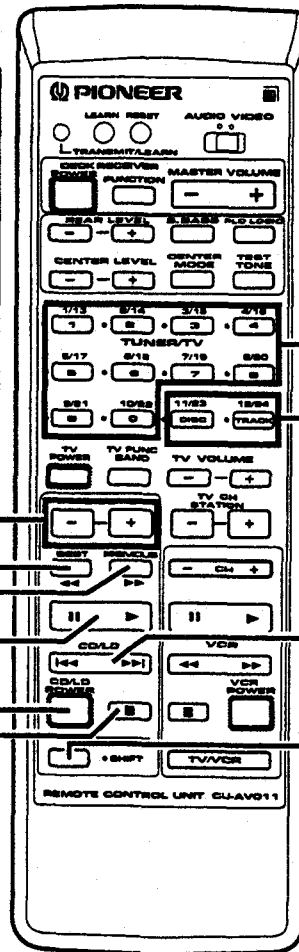
Press this button, and HI-LITE scan is performed on discs in the most recently listened order.

II(PAUSE)/▶(PLAY) button:

Selects playback (▶).
Temporarily interrupts playback (II).

■ (STOP) button:

Stops playback.



0 — 9(numeric) buttons:

These buttons operate as number buttons.

DISC button and TRACK button:

These buttons can only be used with file type compact disc players.
DISC button ... Press this button after selecting the desired disc with the 0—9 buttons.

TRACK button ... Press this button after selecting the desired disc and after selecting the desired track with the 0—9 buttons.

◀◀, ▶▶ (TRACK SEARCH) button:

Returns to the beginning of the track currently playing (◀◀).
Advances to the next track (▶▶).

SHIFT button:

If you do not simultaneously press this button when using the 0—9 buttons, they will not operate.

8.2 SPECIFICATIONS

STEREO FILE-TYPE CD CASSETTE DECK RECEIVER

Amplifier Section

[XR-3000/XR-3000S]

[Front]

Continuous Average Power Output is 100 Watts* per channel, min., at 8 ohms from 70 Hertz to 20,000 Hertz, with no more than 0.9 % total harmonic distortion.**

4-Channel

Front	80 W (1 kHz, 0.2 %, 8 Ω)
Center (RMS)	80 W (1 kHz, 1 %, 8 Ω)
Rear (RMS)	80 W (1 kHz, 1 %, 8 Ω)

[XR-2000]

[Front]

Continuous Average Power Output is 100 Watts* per channel, min., at 8 ohms from 70 Hertz to 20,000 Hertz, with no more than 0.9 % total harmonic distortion.**

Input (Sensitivity/Impedance)

VCR, AUX 400 mV/1 k Ω

Signal-to-Noise Ratio (IHF, short-circuited, A network)

VCR, AUX 70 dB

* Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.

** Measured By Audio Spectrum Analyzer.

FM Tuner Section

Frequency Range	87.5 MHz to 108 MHz
Usable Sensitivity	26 dBf, IHF (5.6 μ V/75 Ω)
50 dB Quieting Sensitivity	Mono 33 dBf, IHF (12.6 μ V/75 Ω)
Signal-to-Noise Ratio (IHF, 85 dBf Input)	Mono: 60 dB
Stereo Separation	26 dB (1 kHz)
Antenna Input	75 Ω unbalanced

AM Tuner Section

Frequency Range	530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna)	800 μ V/m
Antenna	Loop Antenna

Cassette Tape Deck Section

Systems	4 track, 2-channel stereo
Heads	Recording/playback head x 1 Playback head x 1 Erasing head x 1
Wow and Flutter	0.3 % (WRMS)
Fast Winding Time	Approximately 105 seconds (C-60 tape)
Signal-to-Noise ratio	
Dolby NR OFF	40 dB
Noise Reduction Effect	
Dolby B type NR ON	More than 10 dB (at 5 kHz)

File-type CD section

Frequency response	4 Hz - 20 KHz
Level difference between channels	1.0 dB or less (EIAJ)
Wow and flutter	less than ± 0.001 % (W.PEAK) (below measurable level) (EIAJ)
Channels	2-channel (stereo)

Miscellaneous

Power Requirements	AC 120 V, 60 Hz
Power Consumption	
XR-3000/XR-3000S	290 W, 400 VA
XR-2000	260 W, 350 VA
Dimensions	420 (W) x 455 (H) x 328.2 (D) mm 16-9/16 (W) x 17-15/16 (H) x 12-15/16 (D) in.
Weight (without package)	
XR-3000/XR-3000S	12.8 kg (28 lb 4 oz)
XR-2000	11.3 kg (24 lb 15 oz)

Accessories

FM Antenna	1
AM Loop Antenna	1
Operating Instructions	(1)
Remote Control Unit	1
Dry Cell Batteries	2
Warranty card	1

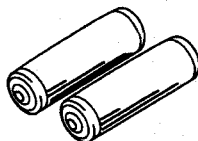
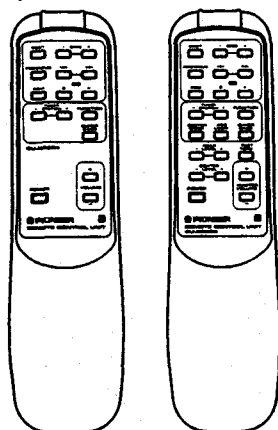
NOTE:

- Specifications and design are subject to possible modifications without notice, due to improvements.

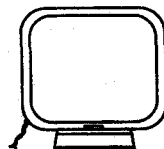
Remote Control Unit

[XR-2000]

[XR-3000]



AA/R6P
Dry Cell Batteries.



AM Loop Antenna



FM Antenna

NOTE:

The XR-3000S remote control unit and the dry cell batteries differ from the remote control unit depicted above. For details, refer to the separate remote control unit operating instructions.