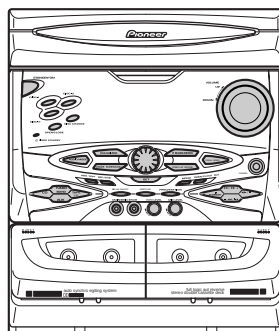


Service Manual

Pioneer



ORDER NO.
RRV2364

STEREO CD/VCD CASSETTE DECK RECEIVER

XR-VS90SW

XR-VS90

XR-VS70SW

XR-VS70

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

Type	Model				Power Requirement	The voltage can be converted by the following method.
	XR-VS90SW	XR-VS90	XR-VS70SW	XR-VS70		
DBDXJ	○	—	○	—	AC110-127V/220-230V/240V	With the voltage selector
DLXJ/NC	—	○	—	○	AC110-127V/220-230V/240V	With the voltage selector
DXJN/NC	—	○	—	○	AC110-127V/220-230V/240V	With the voltage selector

CONTENTS

1. SAFETY INFORMATION	2
2. EXPLODED VIEWS AND PARTS LIST	3
3. BLOCKDIAGRAM AND SCHEMATIC DIAGRAM	22
4. PCB CONNECTION DIAGRAM	42
5. PCB PARTS LIST	56
6. ADJUSTMENT	64

7. GENERAL INFORMATION	74
7.1 DIAGNOSIS	74
7.1.1 DISASSEMBLY	74
7.2 PARTS	77
7.2.1 IC	77
7.2.2 DISPLAY	79
8. PANEL FACILITIES AND SPECIFICATIONS	81

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
 ©PIONEER CORPORATION 2000

T - IZK AUG. 2000 Printed in Japan

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 ! —

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.

A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

— LASER DIODE CHARACTERISTICS —

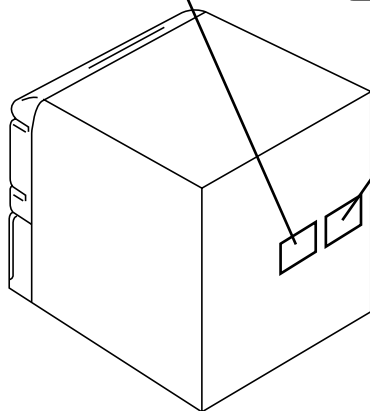
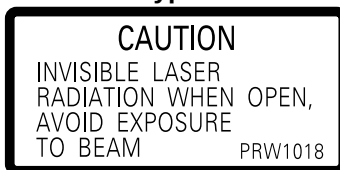
MAXIMUM OUTPUT POWER: 5 mW
WAVELENGTH: 780 nm to 785 nm

LABEL CHECK (For DLXJ/NC Type)

Printed on the Rear Panel



DLXJ/NC Type



— Additional Laser Caution —

1. Laser Interlock Mechanism

The position of the switch (S9501) for detecting loading state is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S9501) is pressed physically.

Thus, the interlock will no longer function if the switch (S9501) is released physically and deliberately.

The interlock also does not function in the test mode *. Laser diode oscillation will continue, if pin 62 of LA9240ML (IC1101) on the \$M SERVO VCD Assy mounted on the \$M MECHANISM VCD is connected to GND, or else the terminals of Q1101 are shorted to each other (fault condition).

2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

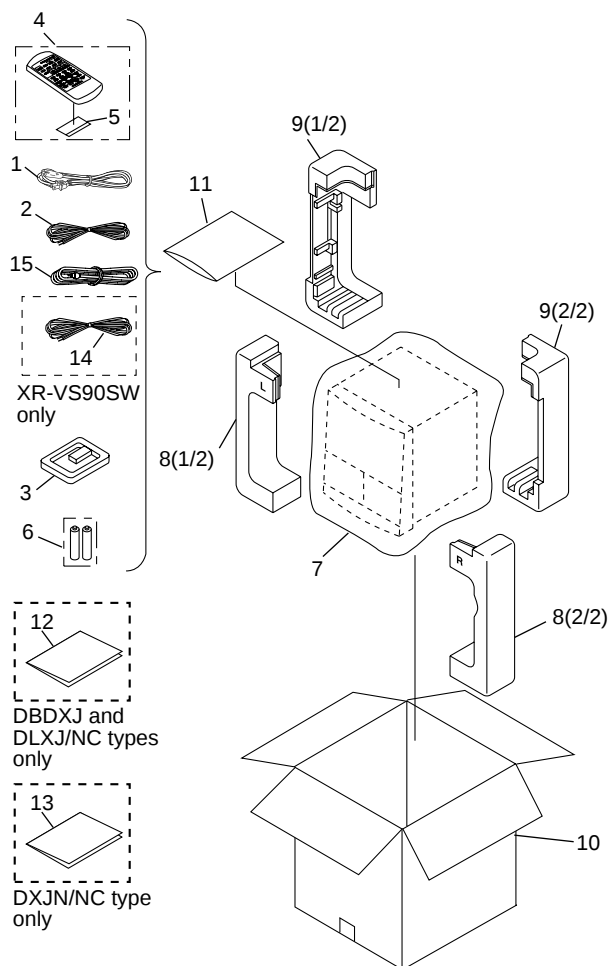
* : Refer to page 73.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" and ⊗ can not be supplied.

- The △ 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.
- Screws adjacent to ▼ mark on the product are used for disassembly.

2.1 PACKING



(1) PACKING PARTS LIST

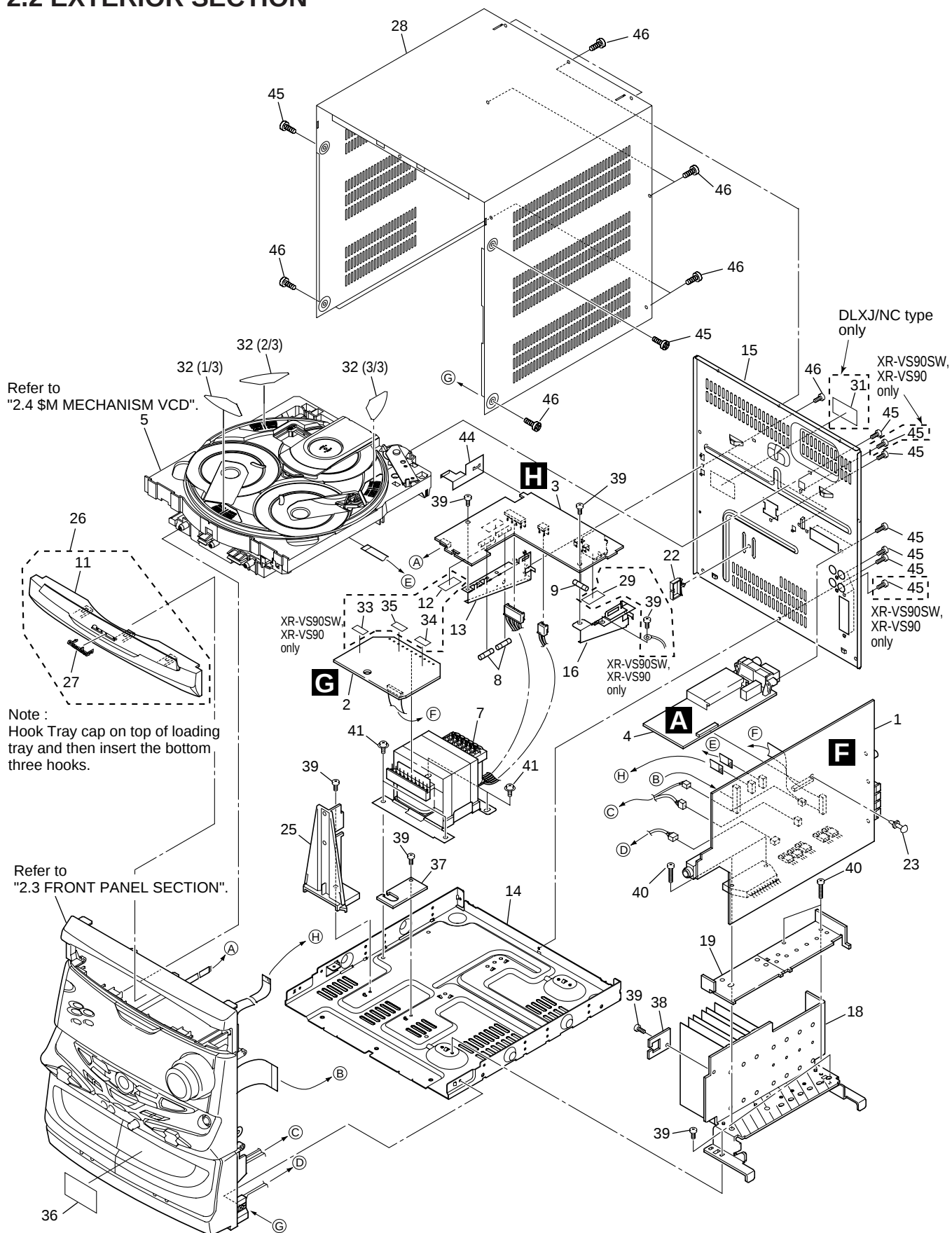
Mark	No.	Description	Part No.
△	1	Power Cord	See Contrast table (2)
	2	FM Antenna	ADH7004
	3	AM Loop Antenna	XTB3001
	4	Remote Control Unit	XZN3107
	5	Battery Cover	XZN3104
NSP	6	Dry Cell Battery (R6P, AA)	VEM-013
	7	Packing Sheet	AHG7053
	8	Front Pad	XHA3018
	9	Rear Pad	XHA3019
	10	Packing Case	See Contrast table (2)
NSP	11	Polyethylene Bag (0.03 × 230 × 340)	Z21-038
	12	Operating Instructions (English/Chinese/Spanish)	See Contrast table (2)
	13	Operating Instructions (Thai)	See Contrast table (2)
	14	AM wire Antenna	See Contrast table (2)
	15	Video Cord (L=1.5m/Yellow)	VDE1034

(2) CONTRAST TABLE

XR-VS90SW/DBDXJ, XR-VS90/DLXJ/NC, DXJN/NC, XR-VS70SW/DBDXJ, XR-VS70/DLXJ/NC and DXJN/NC are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.						Remarks
			XR-VS90SW	XR-VS90		XR-VS70SW	XR-VS70		
			/DBDXJ	/DLXJ/NC	/DXJN/NC	/DBDXJ	/DLXJ/NC	/DXJN/NC	
△	1	Power Cord	ADG1158	ADG1154	ADG1154	ADG1158	ADG1154	ADG1154	
	10	Packing Case	XHD3132	XHD3133	XHD3134	XHD3124	XHD3125	XHD3126	
	12	Operating Instructions (English/Chinese/Spanish)	XRE3034	XRE3034	Not used	XRE3034	XRE3034	Not used	
	13	Operating Instructions (Thai)	Not used	Not used	XRC3024	Not used	Not used	XRC3024	
	14	AM wire Antenna	AHD7006	Not used	Not used	AHD7006	Not used	Not used	

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

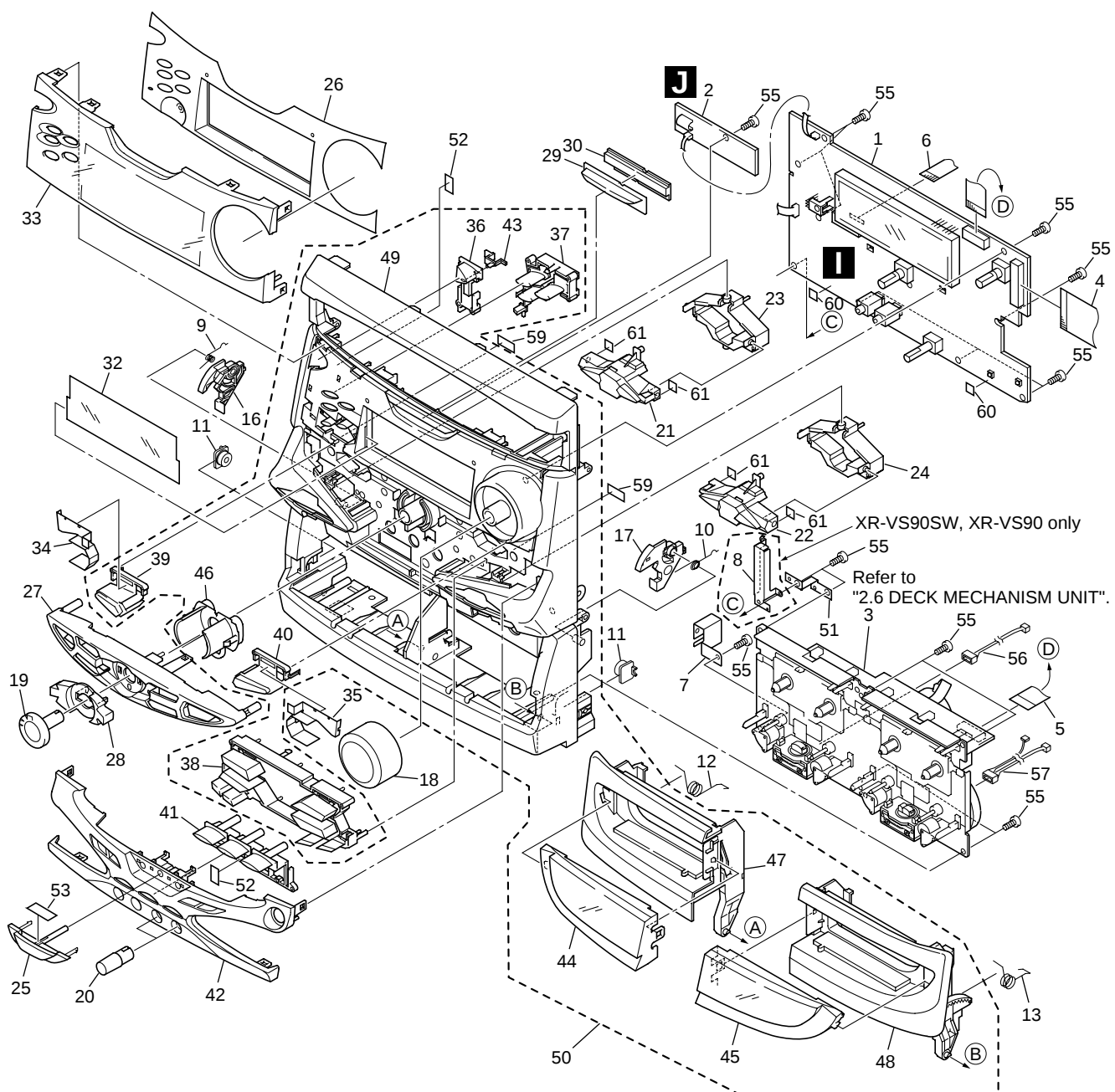
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
⊗	1	AF Assy	See Contrast table (2)	NSP	26	Tray Cap Assy	XXG3046
	2	SECONDARY Assy	See Contrast table (2)		27	Pioneer Badge	XAM3001
	3	PRIMARY Assy	XWZ3291		28	Bonnet Case	XZN3098
	4	FM/AM TUNER Module	See Contrast table (2)	NSP	29	Fuse Card	See Contrast table (2)
NSP	5	\$M MECHANISM VCD	See Contrast table (2)		30		
	6				31	Caution Label	See Contrast table (2)
△	7	Power Transformer (T1)	See Contrast table (2)		32	Disc Label	XAX3127
△	8	Fuse (FU2, FU3)	See Contrast table (2)		33	ICP Label	See Contrast table (2)
△	9	Fuse (FU1)	See Contrast table (2)		34	ICP Label	See Contrast table (2)
	10	Spacer	XEC3014		35	ICP Label	See Contrast table (2)
	11	Tray Cap S	XAK3156	NSP	36	Getter	See Contrast table (2)
	12	Fuse Card	See Contrast table (2)	NSP	37	DO NOT THROW Assy	
	13	PCB Bracket	ANG7263	NSP	38	CABLE HOLDER Assy	
NSP	14	Chassis	XNA3006		39	Screw	BBZ30P080FMC
	15	Rear Panel	See Contrast table (2)		40	Screw	BBZ30P180FMC
	16	PCB Bracket	XNG3006		41	Screw	ASZ40P060FMC
	17	Binder	ZCA-SKB90BK		42	Screw	BPZ30P080FMC
	18	Heat Sink	See Contrast table (2)		43	Screw	VBZ30P080FZK
	19	Sub Heat Sink B	XNH3012		44	Barrier	XEC3013
	20				45	Screw	BPZ30P100FZK
	21				46	Screw	VBT30P080FZK
	22	Wire Clip A	XEC3003				
	23	Card Spacer	XEC3008				
	24						
	25	SEC Holder A	See Contrast table (2)				

(2) CONTRAST TABLE

XR-VS90SW/DBDXJ, XR-VS90/DLXJ/NC, DXJN/NC, XR-VS70SW/DBDXJ, XR-VS70/DLXJ/NC and DXJN/NC are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.						Remarks
			XR-VS90SW	XR-VS90		XR-VS70SW	XR-VS70		
			/DBDXJ	/DLXJ/NC	/DXJN/NC	/DBDXJ	/DLXJ/NC	/DXJN/NC	
⊗	1	AF Assy	XWZ3313	XWZ3313	XWZ3313	XWZ3300	XWZ3300	XWZ3300	
	2	SECONDARY Assy	XWZ3304	XWZ3304	XWZ3304	XWZ3289	XWZ3289	XWZ3289	
	4	FM/AM TUNER Module	AXQ7062	AXQ7065	AXQ7065	AXQ7062	AXQ7065	AXQ7065	
	5	\$M MECHANISM VCD	XXA3017	XXA3017	XXA3017	XXA3016	XXA3016	XXA3016	
	7	Power Transformer (T1)	XTS3037	XTS3037	XTS3037	XTS3036	XTS3036	XTS3036	
△	8	Fuse (FU2, FU3)	AEK1059	AEK1059	AEK1059	AEK1057	AEK1057	AEK1057	
		(T3.15A)	(T3.15A)	(T3.15A)	(T2A)	(T2A)	(T2A)		
△	9	Fuse (FU1)	AEK1061	AEK1061	AEK1061	AEK1060	AEK1060	AEK1060	
		(T5A)	(T5A)	(T5A)	(T4A)	(T4A)	(T4A)		
12	Fuse Card	AAX7493	AAX7493	AAX7493	Not used	Not used	Not used		
	15	Rear Panel	XNC3062	XNC3062	XNC3062	XNC3057	XNC3057	XNC3057	
	18	Heat Sink	XNH3010	XNH3010	XNH3010	XNH3009	XNH3009	XNH3009	
	25	SEC Holder A	XMR3033	XMR3033	XMR3033	XMR3034	XMR3034	XMR3034	
	29	Fuse Card	AAX7098	AAX7098	AAX7098	Not used	Not used	Not used	
	31	Caution Label	Not used	PRW1018	Not used	Not used	PRW1018	Not used	
NSP	33	ICP Label	XAX3121	XAX3121	XAX3121	Not used	Not used	Not used	
	34	ICP Label	XAX3153	XAX3153	XAX3153	Not used	Not used	Not used	
	35	ICP Label	XAX3158	XAX3158	XAX3158	Not used	Not used	Not used	
	36	Getter	XAX3173	XAX3173	XAX3173	XAX3168	XAX3168	XAX3168	

2.3 FRONT PANEL SECTION



(1) FRONT PANEL SECTION PARTS LIST

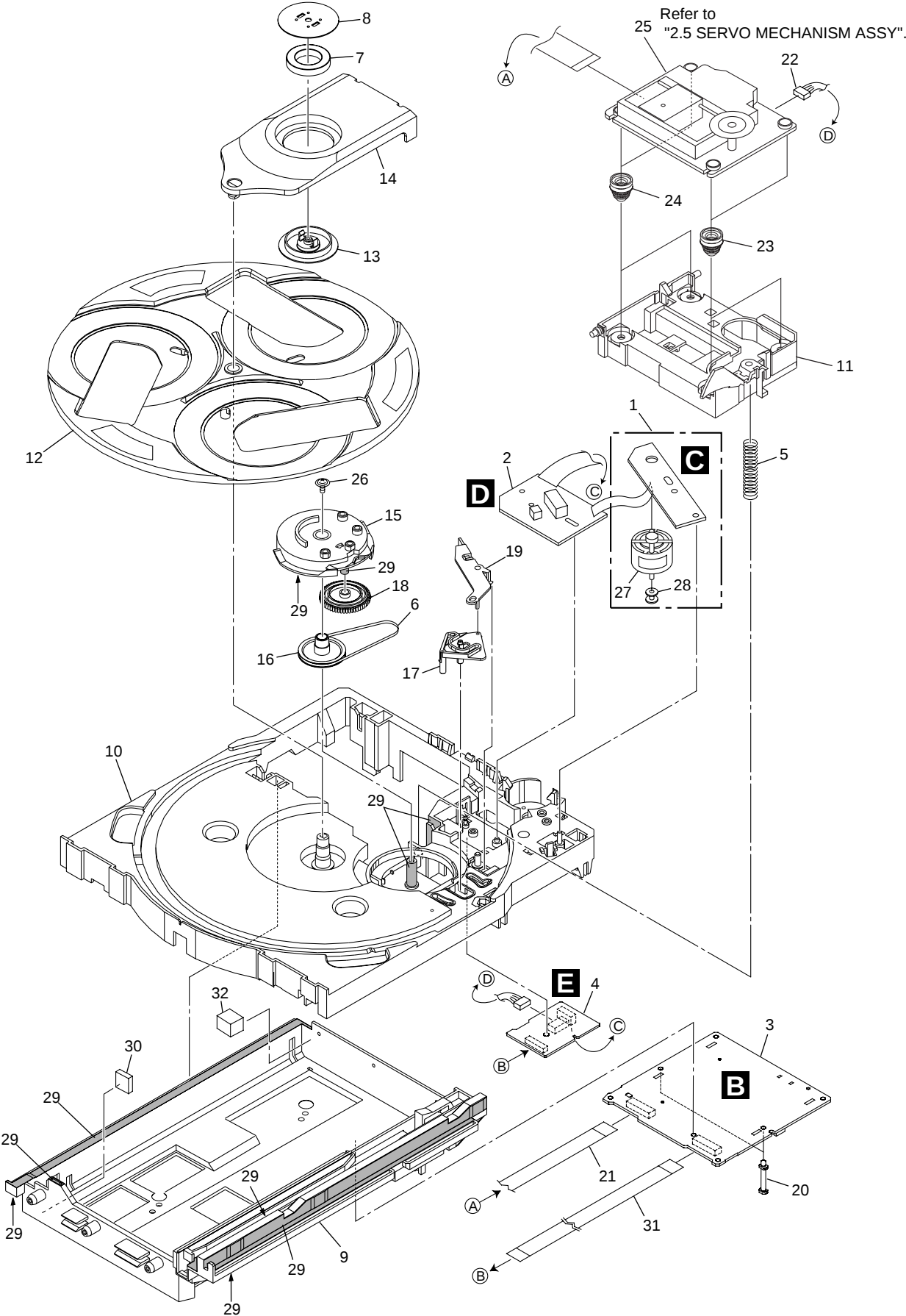
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
⊗	1	DISPLAY Assy	See Contrast table (2)		30	LT Conductor S	XAK3155
⊗	2	BLUE LED Assy	XWZ3292		31	•••••	
	3	Deck Mechanism Unit	See Contrast table (2)		32	FL Filter	XAK3162
	4	Flexible Cable 27P	XDD3041		33	FL Cover	XAK3163
	5	Flexible Cable 15P	See Contrast table (2)		34	Cover Sheet L	XAK3184
	5	Flexible Cable 13P	See Contrast table (2)		35	Cover Sheet R	XAK3185
	6	Flexible Cable 05P	XDD3042		36	Power Button	XAD3043
	7	GND Plate B	XNG3031		37	CD Button	XAD3045
	8	GND Plate C	See Contrast table (2)		38	SC Button	XAD3060
	9	Ratch Spring_L	ABH7130		39	SC Button L	XAD3047
	10	Ratch Spring_R	ABH7131		40	SC Button R	XAD3049
	11	Damper Assy	XXA3025		41	DOLBY Button	XAD3054
	12	Door Spring_L	XBH3010		42	Sub Panel S	See Contrast table (2)
	13	Door Spring_R	XBH3011		43	ST Lens S	XAK3151
	14	•••••			44	Deck Lens L S	XAK3159
	15	•••••			45	Deck Lens R S	XAK3160
	16	Ratch Mold_L	XMR3001		46	JOG Conductor	XAK3165
	17	Ratch Mold_R	XMR3002		47	Deck Door_L	See Contrast table (2)
	18	Volume Knob	XAA3013		48	Deck Door_R	See Contrast table (2)
	19	JOG Knob	XAA3015		49	Front Panel	XMB3026
	20	MIC Knob	XAB3007	NSP	50	Front Panel Assy	See Contrast table (2)
	21	FUNC Button L	See Contrast table (2)		51	GND Plate A	See Contrast table (2)
	22	FUNC Button R	See Contrast table (2)		52	Spacer	XEB3012
	23	FUNC Frame L	XAD3052		53	Spacer	XEB3013
	24	FUNC Frame R	XAD3053		54	•••••	
	25	CD ENT Button	XAD3055		55	Screw	BPZ30P080FMC
	26	Display Panel	See Contrast table (2)		56	Connector Assy 3P	See Contrast table (2)
	27	EQ Panel S	See Contrast table (2)		57	Connector Assy 5P	XDE3038
	28	JOG Lens S	XAK3152		58	•••••	
	29	V Lens S	XAK3153		59	Cushion Spacer	XEB3015
					60	Cushion Spacer	XEB3016
					61	Cushion Spacer	XEB3017

(2) CONTRAST TABLE

XR-VS90SW/DBDXJ, XR-VS90/DLXJ/NC, DXJN/NC, XR-VS70SW/DBDXJ, XR-VS70/DLXJ/NC and DXJN/NC are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.						Remarks
			XR-VS90SW	XR-VS90		XR-VS70SW	XR-VS70		
			/DBDXJ	/DLXJ/NC	/DXJN/NC	/DBDXJ	/DLXJ/NC	/DXJN/NC	
⊗	1	DISPLAY Assy	XWZ3315	XWZ3314	XWZ3314	XWZ3302	XWZ3301	XWZ3301	
	3	Deck Mechanism Unit	XYM3012	XYM3012	XYM3012	XYM3011	XYM3011	XYM3011	
	5	Flexible Cable 15P	XDD3050	XDD3050	XDD3050	Not used	Not used	Not used	
	5	Flexible Cable 13P	Not used	Not used	Not used	XDD3040	XDD3040	XDD3040	
	8	GND Plate C	XNG3047	XNG3047	XNG3047	Not used	Not used	Not used	
	21	FUNC Button L	XAD3050	XAD3050	XAD3050	XAD3078	XAD3078	XAD3078	
	22	FUNC Button R	XAD3051	XAD3051	XAD3051	XAD3079	XAD3079	XAD3079	
	26	Display Panel	XAK3133	XAK3133	XAK3133	XAK3129	XAK3129	XAK3129	
	27	EQ Panel S	XAK3150	XAK3150	XAK3150	XAK3149	XAK3149	XAK3149	
	42	Sub Panel S	XAK3145	XAK3145	XAK3145	XAK3141	XAK3141	XAK3141	
	47	Deck Door_L	XAN3022	XAN3022	XAN3022	XAN3021	XAN3021	XAN3021	
	48	Deck Door_R	XAN3026	XAN3026	XAN3026	XAN3025	XAN3025	XAN3025	
	50	Front Panel Assy	XXG3065	XXG3065	XXG3065	XXG3062	XXG3062	XXG3062	
	51	GND Plate A	Not used	Not used	Not used	XNG3030	XNG3030	XNG3030	
	56	Connector Assy 3P	XDE3037	XDE3037	XDE3037	XDE3036	XDE3036	XDE3036	
	NSP								

2.4 \$M MECHANISM VCD



(1) \$M MECHANISM VCD PARTS LIST

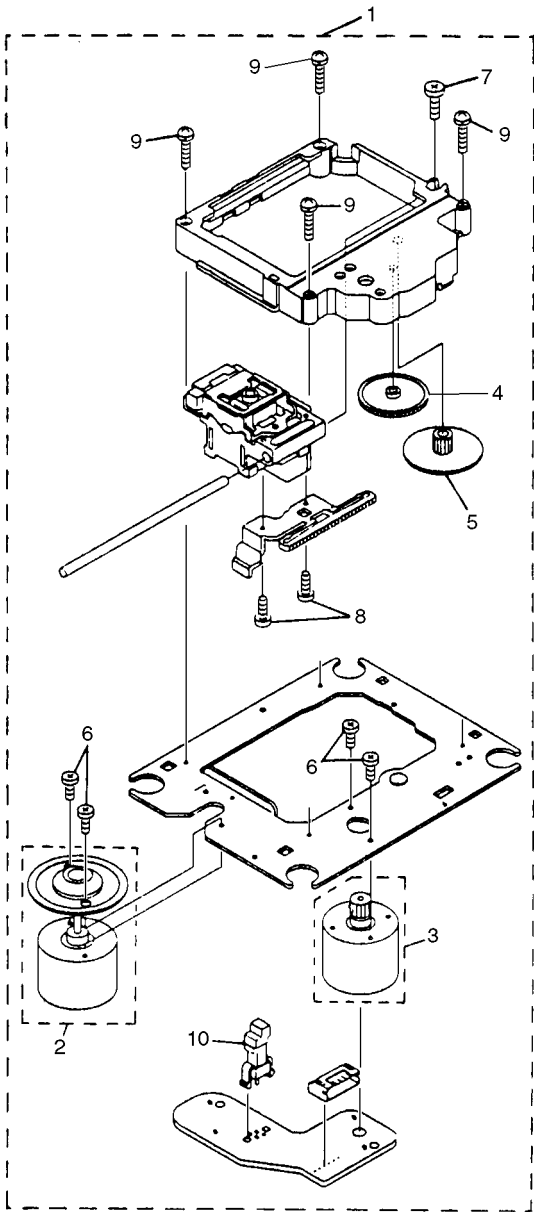
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	MOTOR Assy	XWZ3080		16	Gear Pulley	ANW7094
	2	SW Assy	XWZ3081		17	Lock Lever	ANW7095
	3	\$M SERVO VCD Assy	See Contrast table (2)		18	Planet Gear	ANW7096
	4	TRADE Assy	XWZ3082		19	Actuator	ANW7097
	5	Servo Spring	ABH7126		20	Mini Card Spacer	AEC7143
	6	Belt	AEB7072		21	15P Flexible Cable/30V	XDD3007
	7	Clamp Magnet	AMF7001		22	Connector Assy (6P)	ADE7010
	8	Yoke	ANB7216		23	Float Rubber A	AEB7063
	9	Mecha Base	XNW3011		24	Float Rubber B	AEB7066
	10	Loading Tray	XNW3002		25	Servo Mechanism Assy	XXA3015
	11	Servo Base	XNW3012		26	Screw	IPZ30P080FMC
	12	Rotary Tray	ANW7113		27	Carriage Motor	VXM1033
	13	Clamper	ANW7091		28	Motor Pulley	PNW1634
	14	Clamper Holder	XNW3004		29	Ha Narl	GEM1016
	15	Main Cam	ANW7093		30	Cushion Rubber	XEB3005
					31	13P Flexible Cable/30V	XDD3008

(2) CONTRAST TABLE

\$M MECHANISM VCD (XXA3017) and (XXA3016) are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			XXA3017 (XR-VS90SW, XR-VS90)	XXA3016 (XR-VS70SW, XR-VS70)	
	3	\$M SERVO VCD Assy	XWX3018	XWX3017	

2.5 SERVO MECHANISM ASSY



● SERVO MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.
	1	Servo Mechanism Assy	XXA3015
	2	Spindle Motor Assy	AEA7009
	3	Sled Motor Assy	AEA7010
	4	Gear A	AEA7013
	5	Gear B	AEA7014
	6	Screw	AEA7015
	7	Screw	AEA7016
	8	Screw	AEA7017
	9	Screw	AEA7018
	10	Leaf Switch	AEA7011

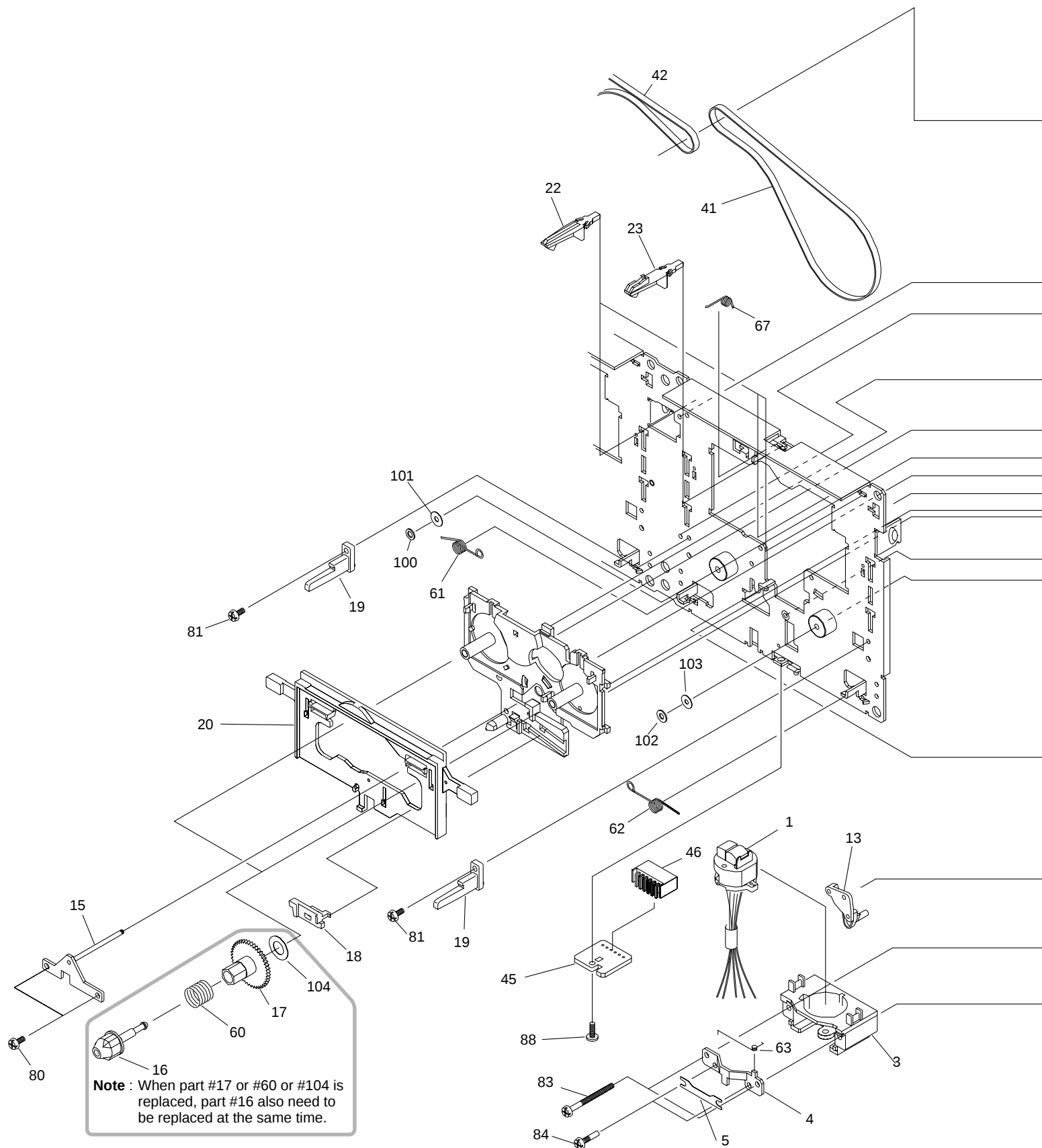
2.6 DECK MECHANISM UNIT

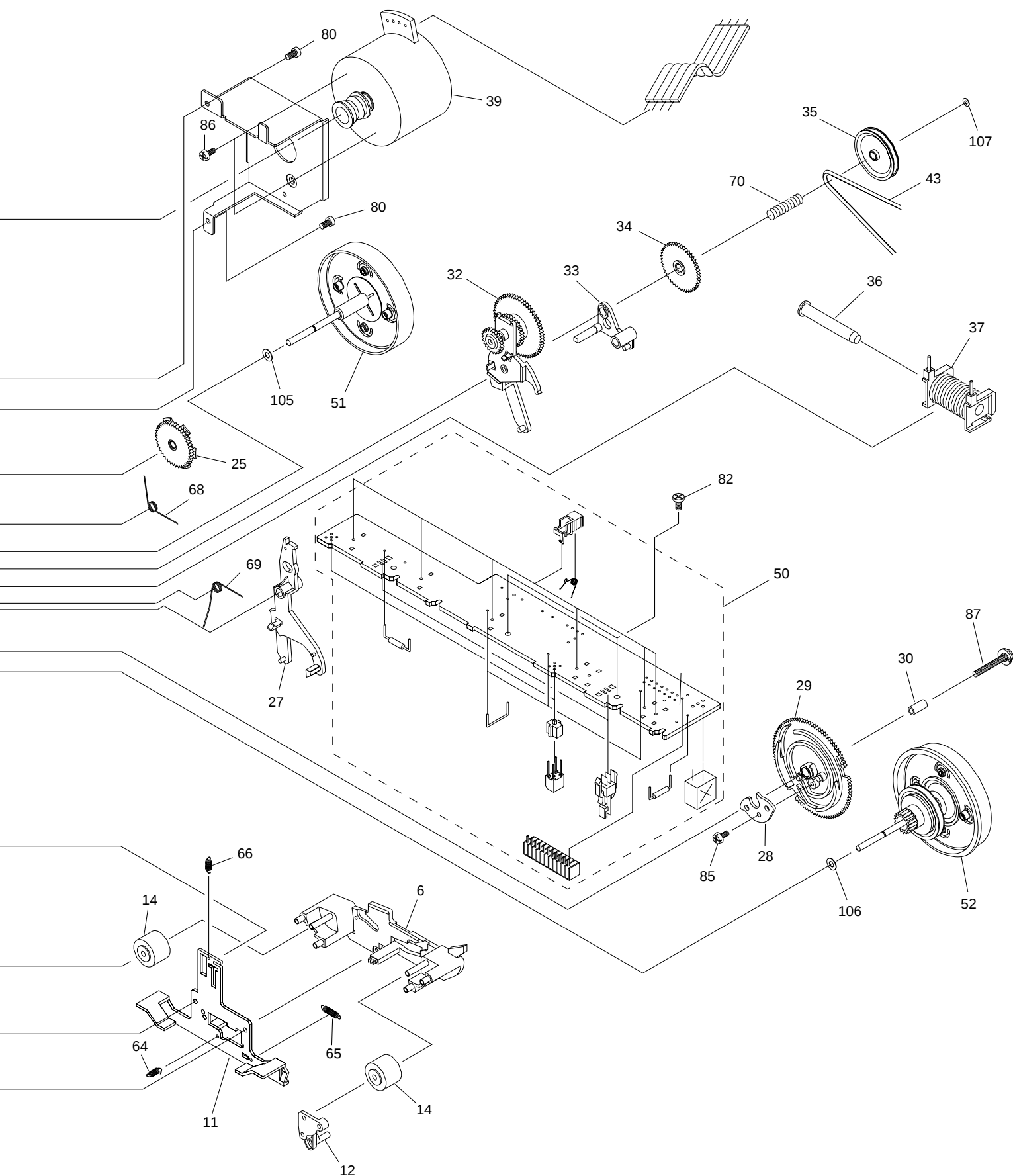
2.6.1 XYM3012

● DECK MECHANISM UNIT (XYM3012) PARTS LIST

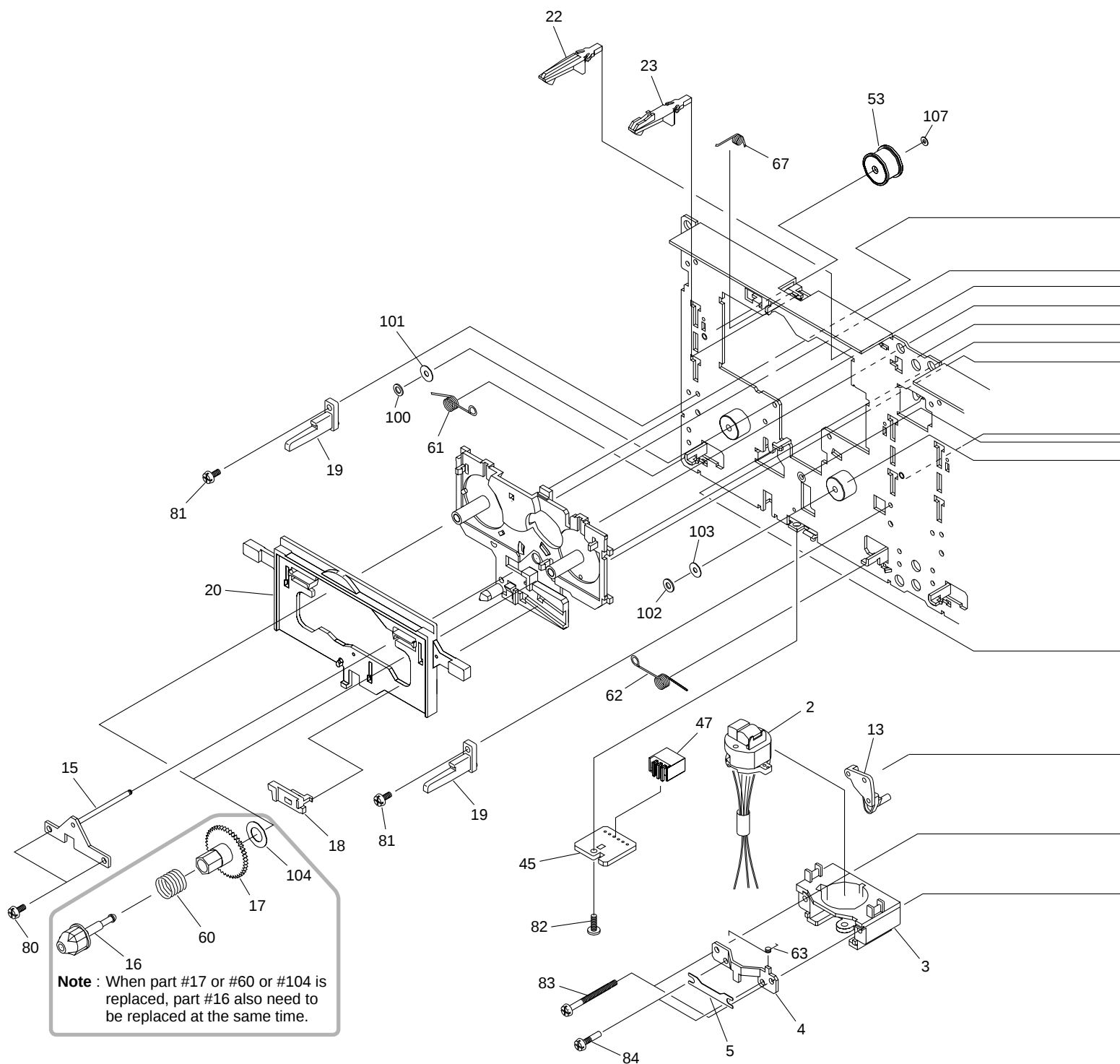
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Assy'y HD Holder	50-093-4373		60	Spring	01-081-4601
	2	Assy'y HD Holder	50-093-4104		61	Spring	01-082-4652
	3	Frame HD	50-219-3024		62	Spring	01-082-4651
	4	Plate AZ	50-119-4046		63	Spring	01-082-4650
	5	Spring AZ	50-160-4108		64	Spring	01-080-4649
	6	Lever HD	50-259-3342		65	Spring	01-080-4607
	11	Chassis HD	50-112-3045		66	Spring	01-080-4635
	12	Cap Pinch R	50-219-4033		67	Spring	01-082-4654
	13	Cap Pinch L	50-219-4034		68	Spring	01-082-4598
	14	Roller Pinch	50-027-41054		69	Spring	01-082-4597
	15	Ass'y Plate D	50-219-4311		70	Spring	01-081-4657
	16	Cap Reel	50-228-4020		80	Screw	GSE10A2003
	17	Gear Reel	50-222-4006		81	Screw	GSE20A2005
	18	Lever ST	50-259-4041		82	Screw	GSE10A2004
	19	Guide C	50-219-4014		83	Screw	GSD10A2018
	20	Lever Brake	50-259-3251		84	Screw	03-300-4056
	22	Arm SW	50-239-4027		85	Screw	GSL10A1704
	23	Arm CS	50-239-4026		86	Screw	GSP10A2603
	25	Ass'y Cover	50-093-4063		87	Screw	GSP11A2012
	26	Ass'y Flywheel LA	50-093-3366		88	Screw	GSE20A2004
	27	Arm Trigger	50-268-3016		100	Washer	GWN21X040040
	28	Arm Cam	50-139-4292		101	Washer	GWM19X055035S
	29	Gear Cam	50-221-3009		102	Washer	GWM19S035035
	30	Coller	03-300-4455		103	Washer	GWM17S050035S
	31	Ass'y Flywheel RA	50-093-3360		104	Washer	GWM48X075010
	32	Ass'y Clutch	50-093-4069		105	Washer	GWP23X040020
	33	Arm UD A	50-239-4017		106	Washer	GWP21X045020
	34	Gear UD	50-222-4007		107	Washer	GWP12X030040S
	35	Pulley D	50-223-4254				
	36	Plunger	03-300-4442				
	37	Ass'y Bobbin	50-093-4125				
	39	Ass'y Motor	50-093-4316				
	41	Belt BR	02-084-4205				
	42	Belt AR	02-084-4203				
	43	Belt FR	02-083-4188				
	45	PCB HD	50-070-4057				
	46	Housing	S5BPHKS				
	47	Housing	S3BPHKS				
	48	Pulley IDL	50-223-4023				
	50	Ass'y PCB	50-093-4363				
	51	Ass'y Flywheel L	50-093-3367				
	52	Ass'y Flywheel RB	50-093-3361				
	53	Pulley	33-229-4264				

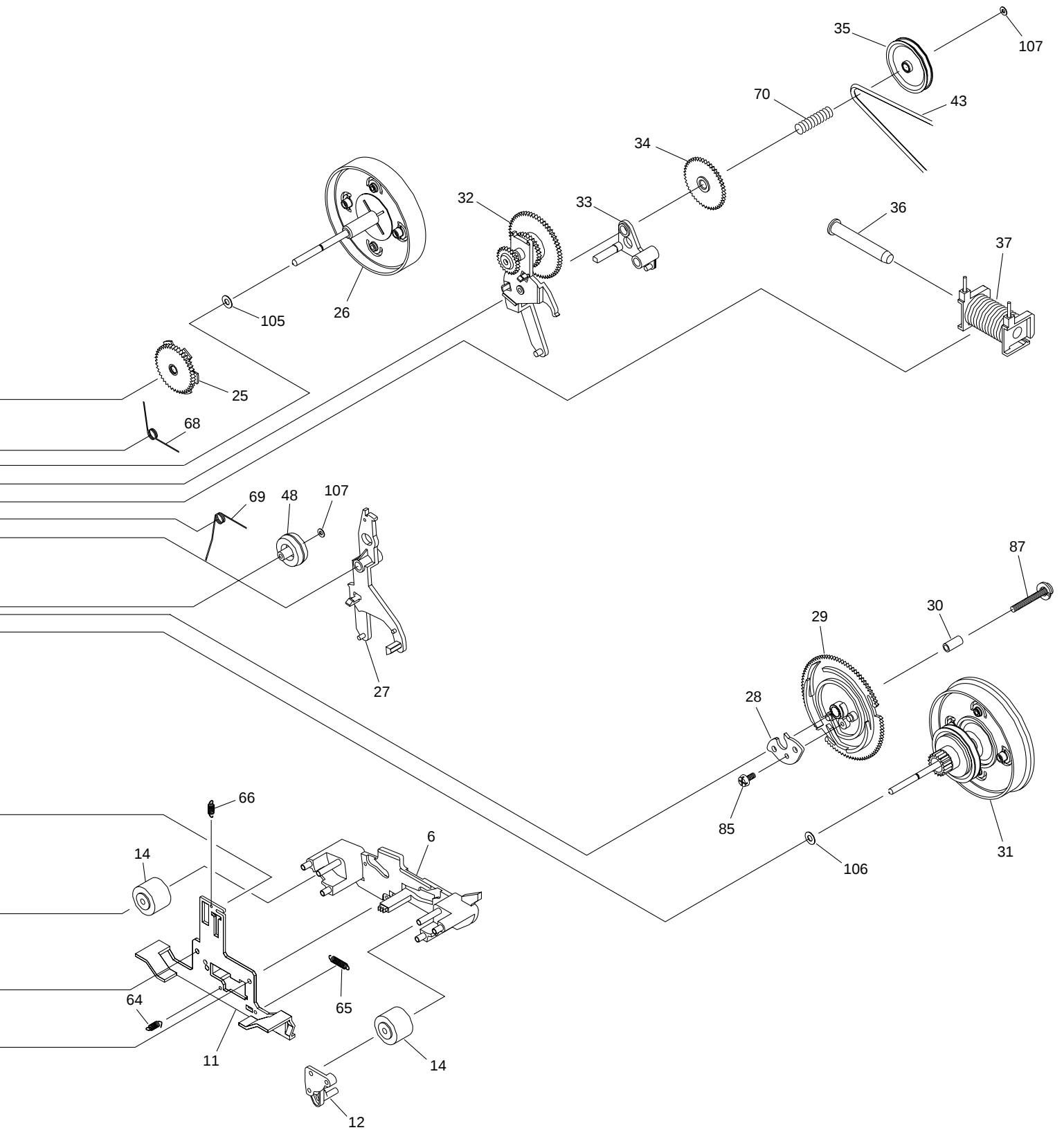
• DECK MECHANISM UNIT (1/2)





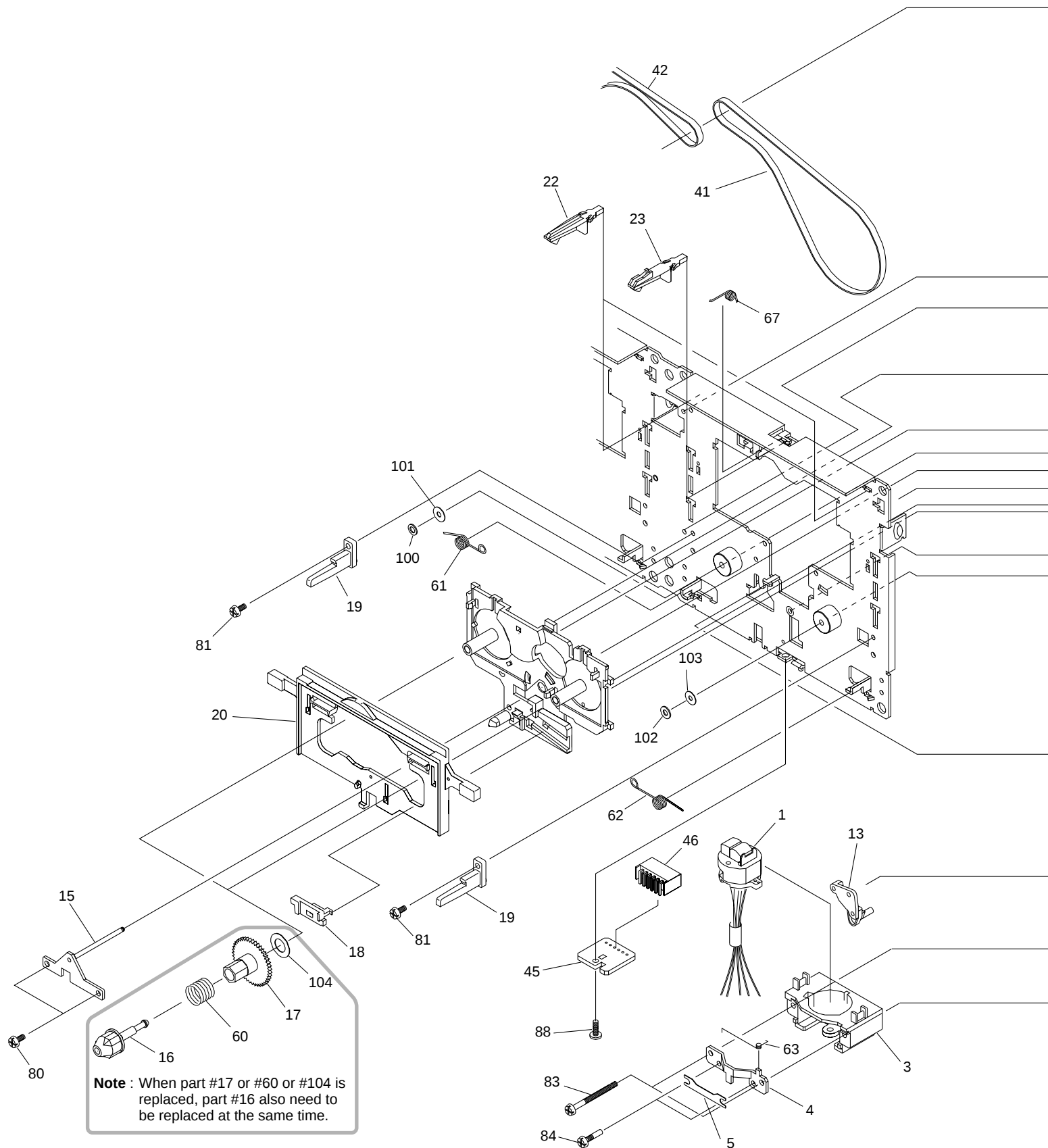
• DECK MECHANISM UNIT (2/2)



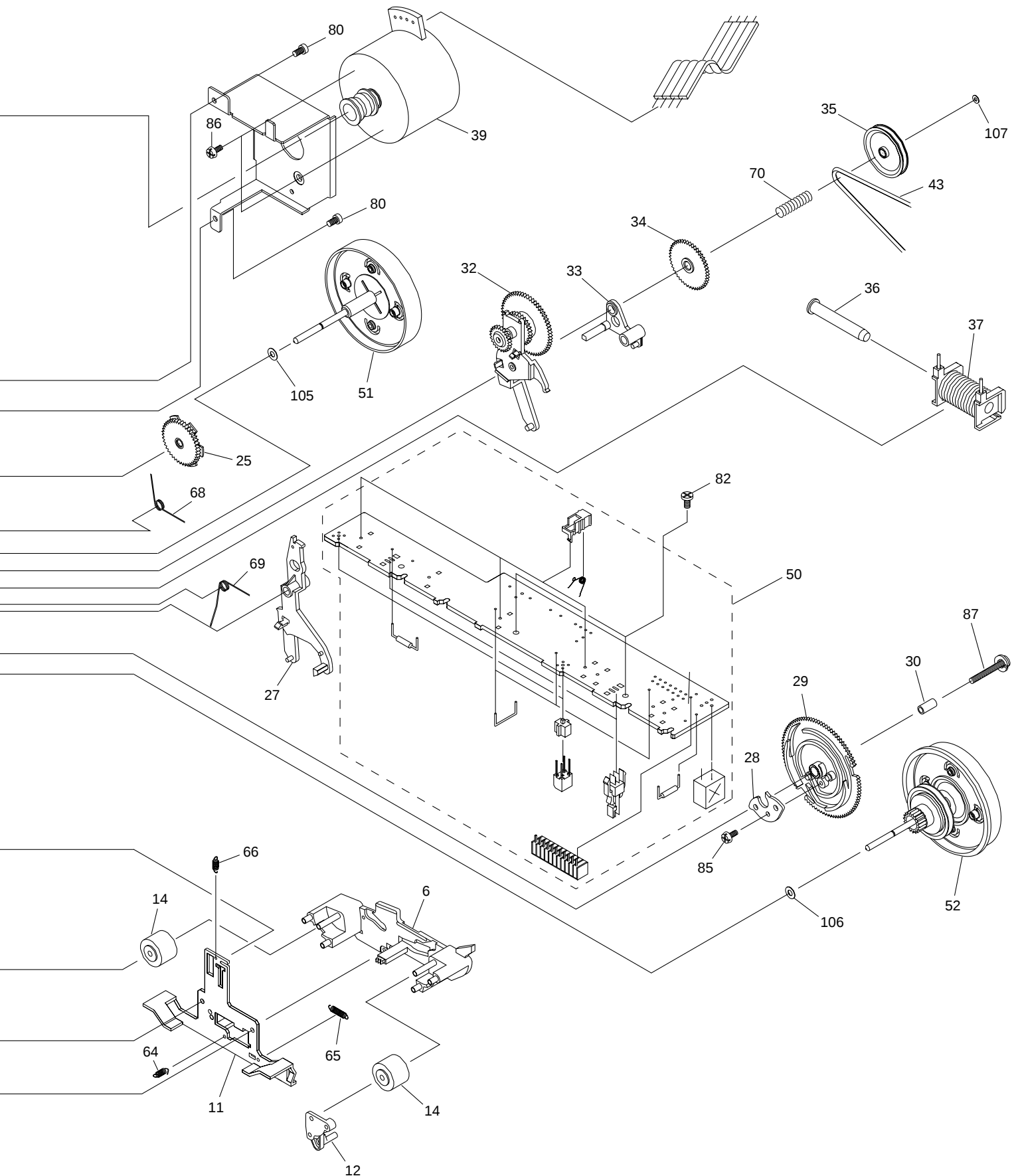


2.6.2 XYM3011

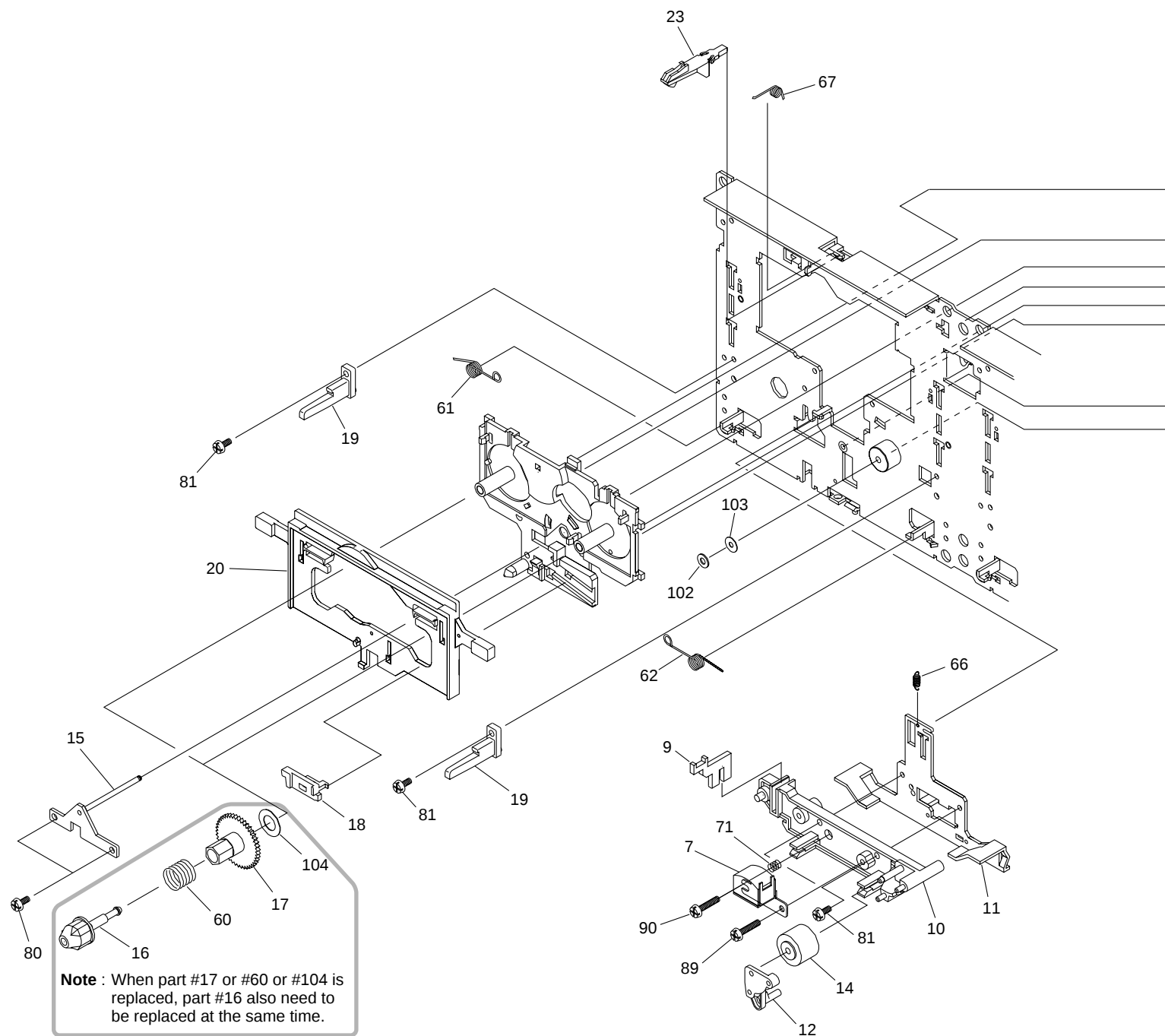
• DECK MECHANISM UNIT (1/2)

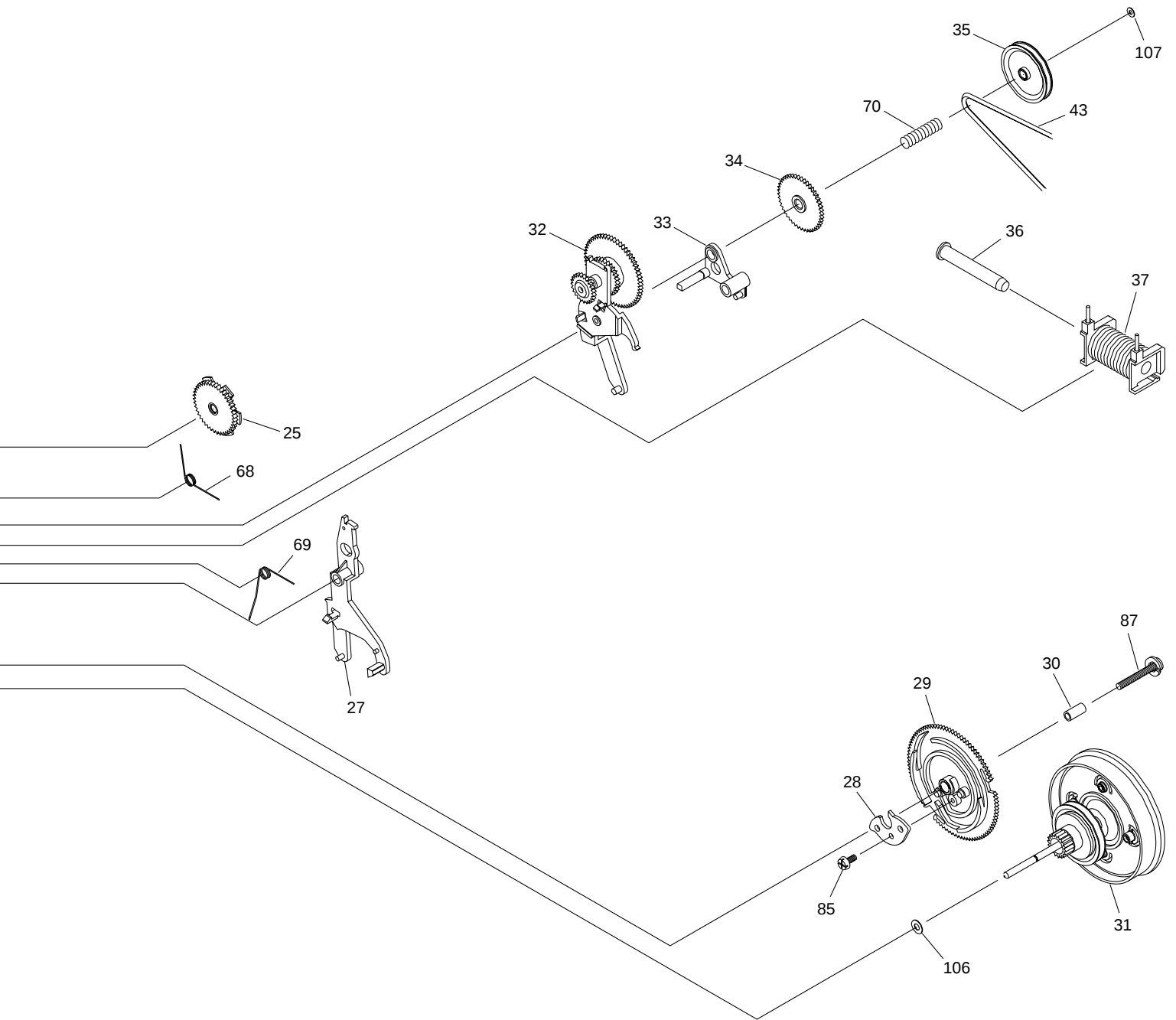


XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70



• DECK MECHANISM UNIT (2/2)





XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

● DECK MECHANISM UNIT (XYM3011) PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Assy'y HD Holder	50-093-4373		60	Spring	01-081-4601
	3	Frame HD	50-219-3024		61	Spring	01-082-4652
	4	Plate AZ	50-119-4046		62	Spring	01-082-4651
	5	Spring AZ	50-160-4108		63	Spring	01-082-4650
	6	Lever HD	50-259-3342		64	Spring	01-080-4649
	7	R/P Head	TC881CB067B		65	Spring	01-080-4607
	9	Guide Tape	50-219-4038		66	Spring	01-080-4635
	10	Plate HD	50-093-3036		67	Spring	01-082-4654
	11	Chassis HD	50-112-3045		68	Spring	01-082-4598
	12	Cap Pinch R	50-219-4033		69	Spring	01-082-4597
	13	Cap Pinch L	50-219-4034		70	Spring	01-081-4657
	14	Roller Pinch	50-027-41054		71	Spring	01-081-4605
	15	Ass'y Plate D	50-219-4311		80	Screw	GSE10A2003
	16	Cap Reel	50-228-4020		81	Screw	GSE20A2005
	17	Gear Reel	50-222-4006		82	Screw	GSE10A2004
	18	Lever ST	50-259-4041		83	Screw	GSD10A2018
	19	Guide C	50-219-4014		84	Screw	03-300-4056
	20	Lever Brake	50-259-3251		85	Screw	GSL10A1704
	22	Arm SW	50-239-4027		86	Screw	GSP10A2603
	23	Arm CS	50-239-4026		87	Screw	GSP11A2012
	25	Ass'y Cover	50-093-4063		88	Screw	GSE20A2004
	27	Arm Trigger	50-268-3016		89	Screw	GSL20A2005
	28	Arm Cam	50-139-4292		90	Screw	03-300-4127
	29	Gear Cam	50-221-3009		100	Washer	GWN21X040040
	30	Coller	03-300-4455		101	Washer	GWM19X055035S
	31	Ass'y Flywheel RA	50-093-3360		102	Washer	GWM19S035035
	32	Ass'y Clutch	50-093-4069		103	Washer	GWM17S050035S
	33	Arm UD A	50-239-4017		104	Washer	GWM48X075010
	34	Gear UD	50-222-4007		105	Washer	GWP23X040020
	35	Pulley D	50-223-4254		106	Washer	GWP21X045020
	36	Plunger	03-300-4442		107	Washer	GWP12X030040S
	37	Ass'y Bobbin	50-093-4125				
	39	Ass'y Motor	50-093-4316				
	41	Belt BR	02-084-4205				
	42	Belt AF	02-084-4202				
	43	Belt FR	02-083-4188				
	45	PCB HD	50-070-4057				
	46	Housing	S5BPHKS				
	50	Ass'y PCB	50-093-4057				
	51	Ass'y Flywheel L	50-093-3315				
	52	Ass'y Flywheel RB	50-093-3361				

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

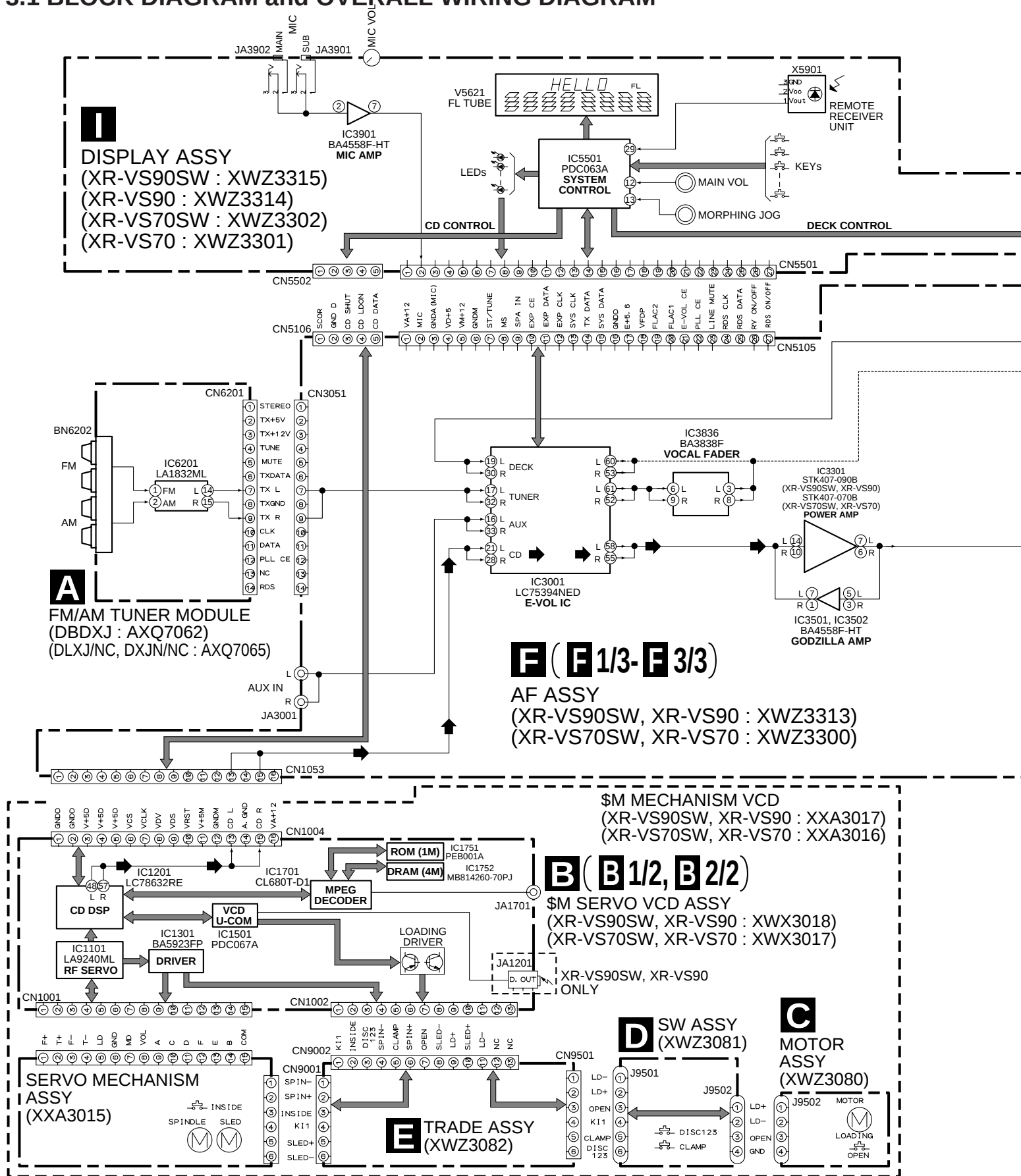
3.1 BLOCK DIAGRAM AND OVERALL WIRING DIAGRAM

A

B

C

D



XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

SIGNAL ROUTE

(AM)
 : AM SIGNAL ROUTE

(FM)
 : FM SIGNAL ROUTE

(TA)
 : TUNER AUDIO SIGNAL ROUTE

Notes

1. RESISTORS

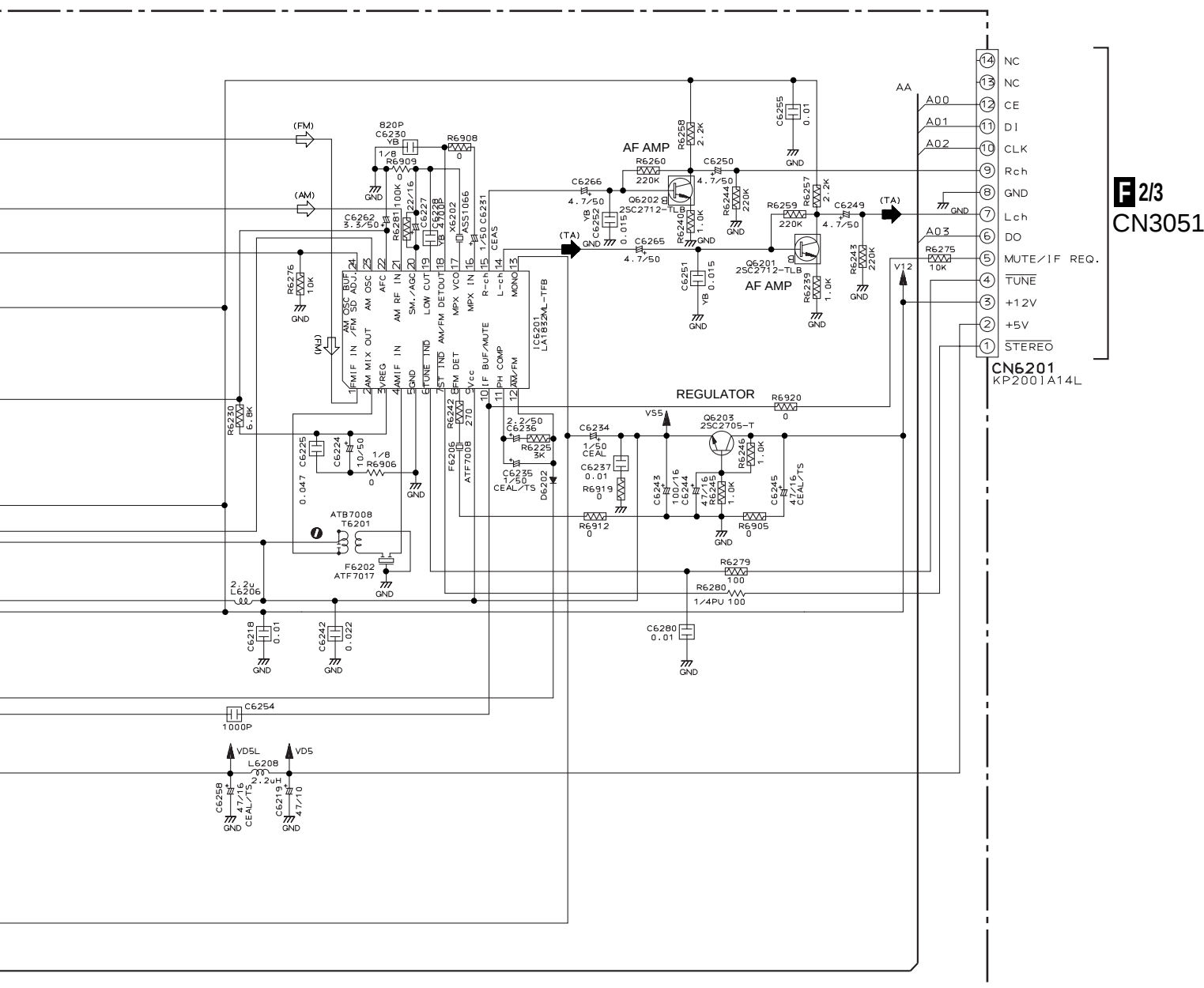
Indicated in Ω , 1/10W $\pm$ 5% Tolerance unless otherwise noted K:K Ω , M:M Ω .

2. CAPACITORS

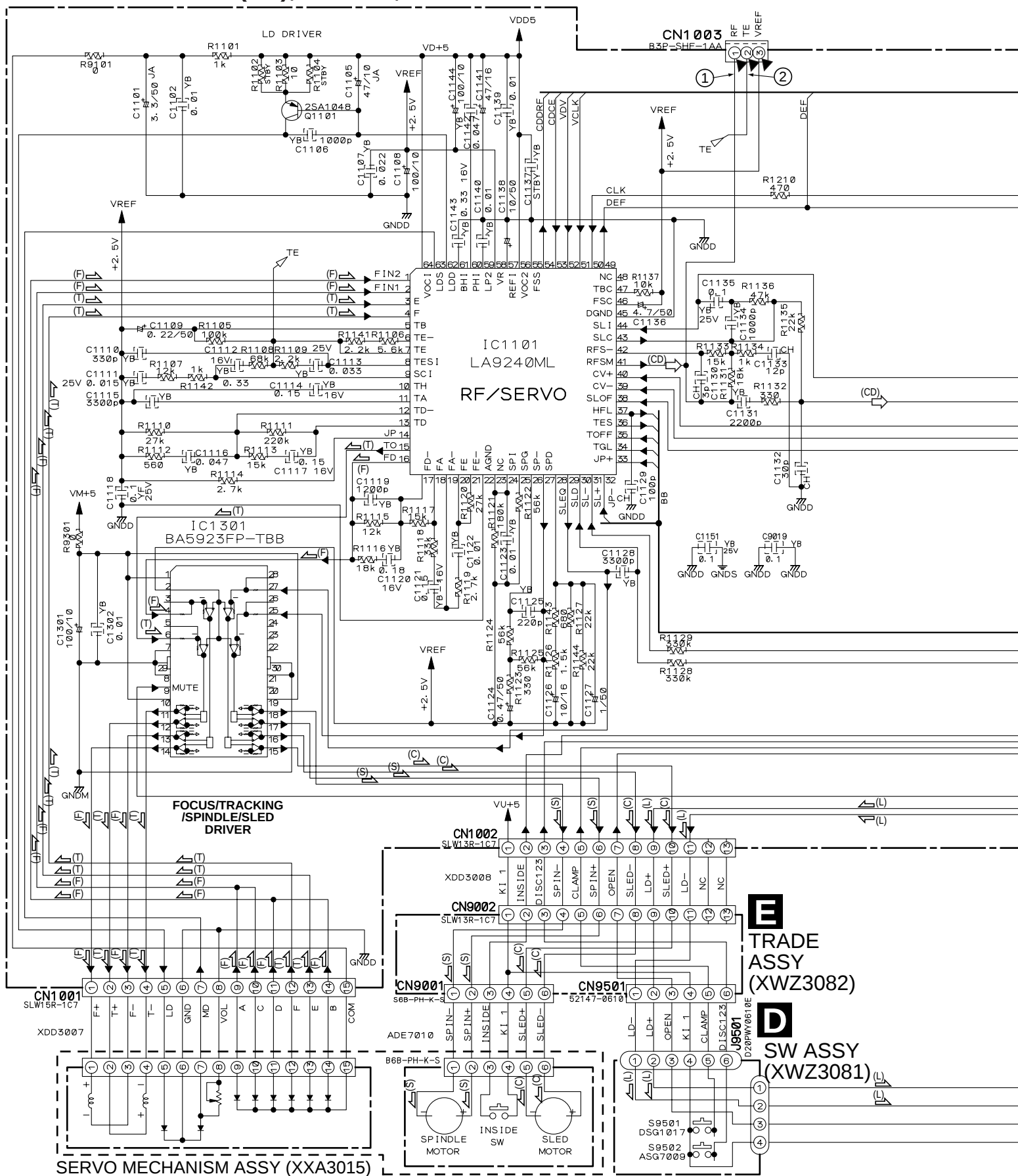
Indicated in Capacity (μ F)/VOLTAGE (V) unless otherwise noted P:PF.

3. DIODES

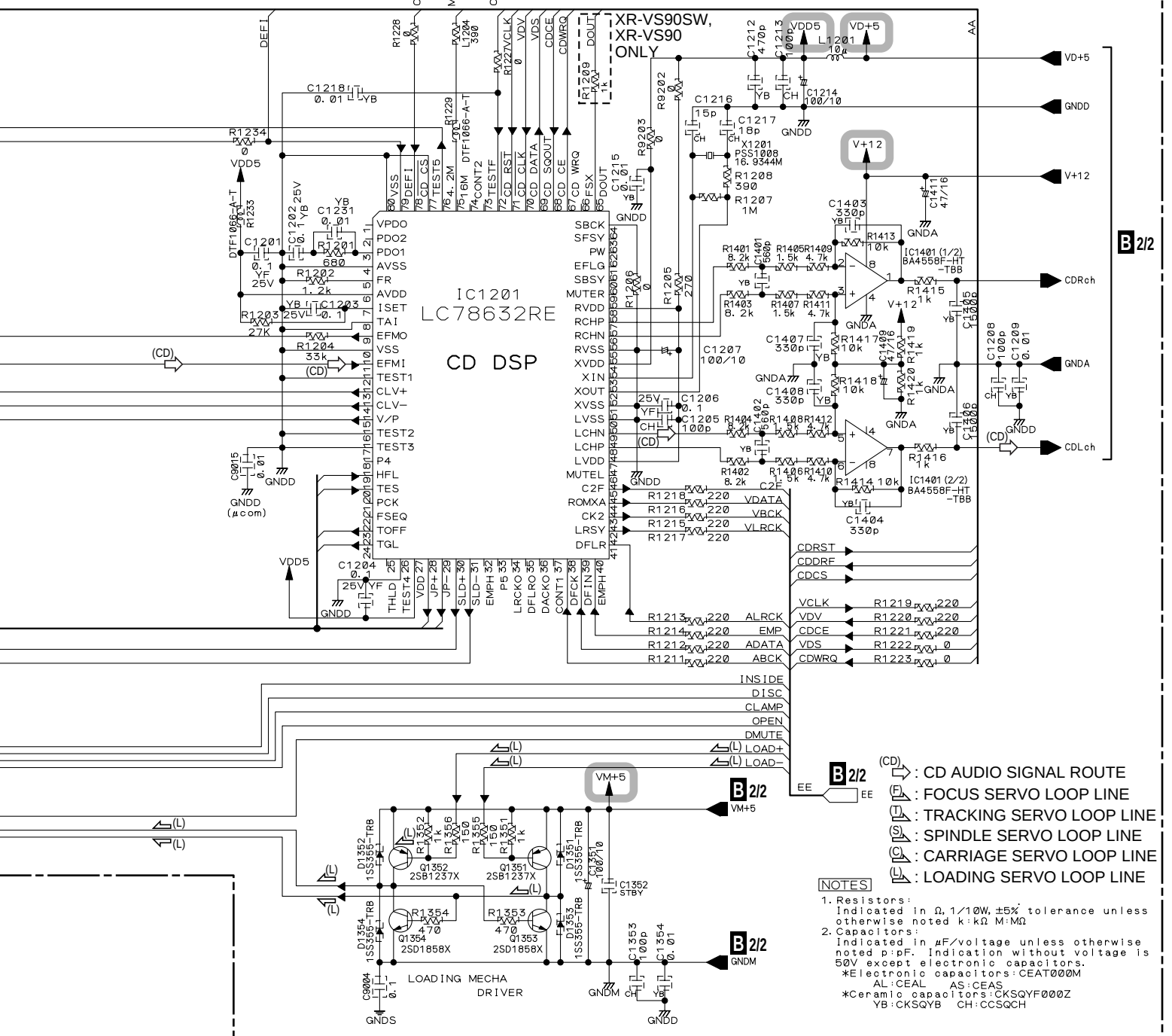
No mark diode is 1SS254.



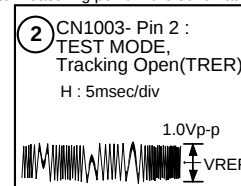
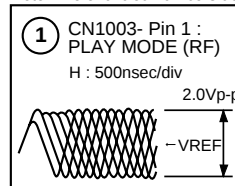
3.4 \$M SERVO VCD (1/2), MOTOR, SW and TRADE ASSYS



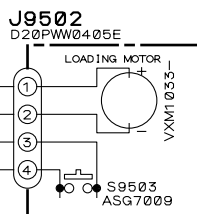
B 1/2 \$M SERVO VCD ASSY
(XR-VS90SW, XR-VS90 : XWX3018)
(XR-VS70SW, XR-VS70 : XWX3017)



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



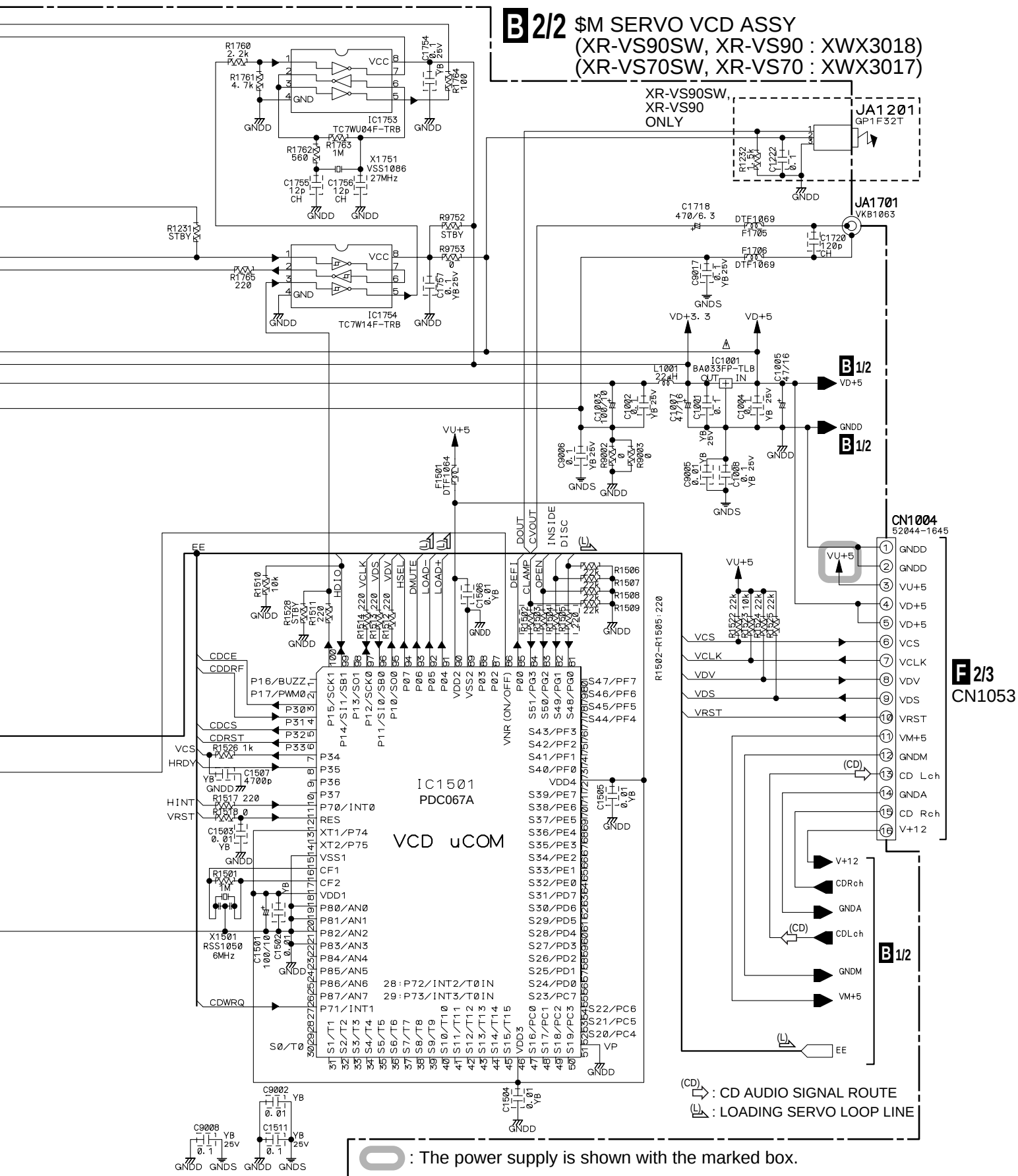
VREF: CN1003- Pin 3



C : The power supply is shown with the marked box.

C MOTOR ASSY
(XWZ3080)

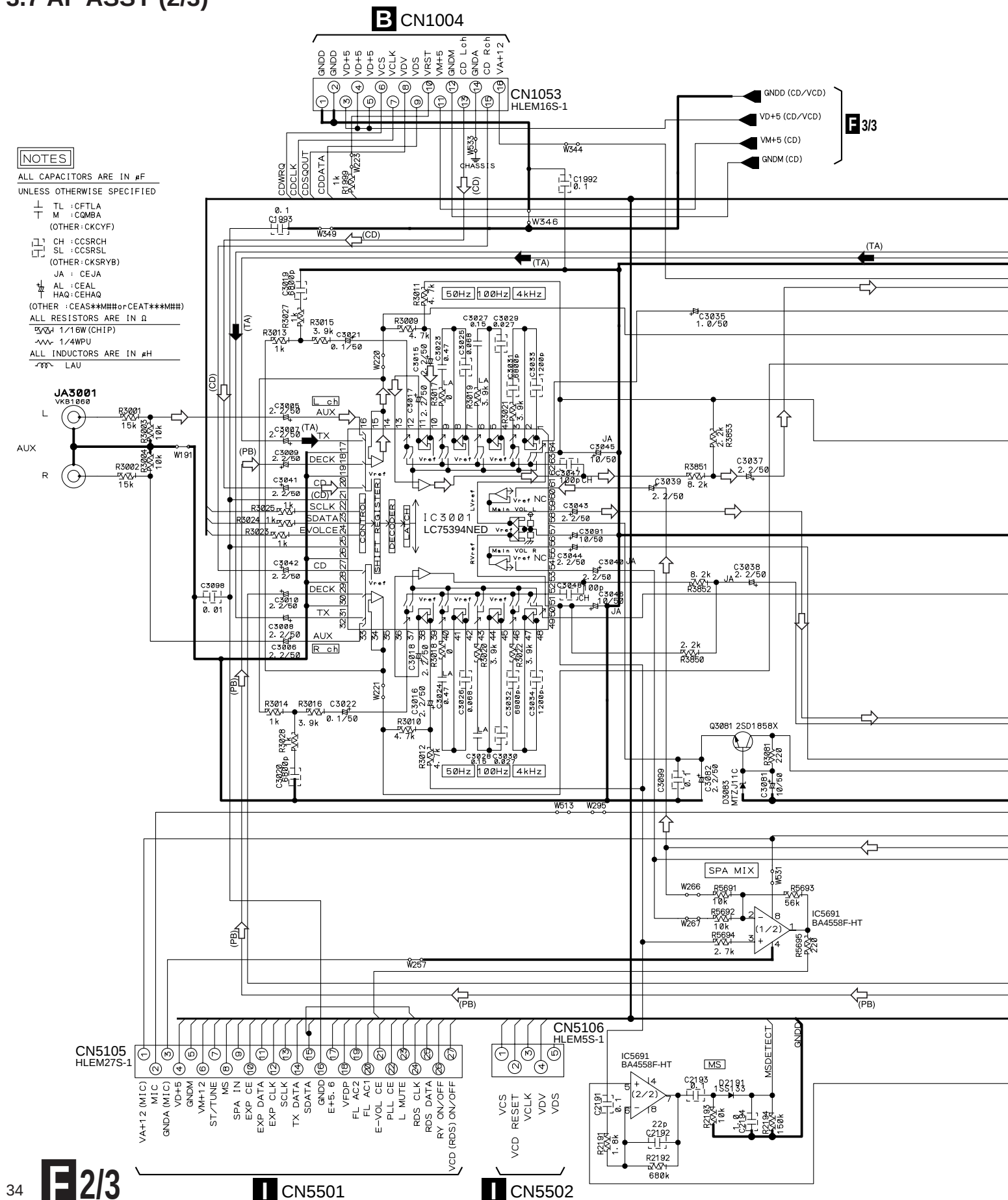
B2/2 \$M SERVO VCD ASSY
(XR-VS90SW, XR-VS90 : XWX3018)
(XR-VS70SW, XR-VS70 : XWX3017)

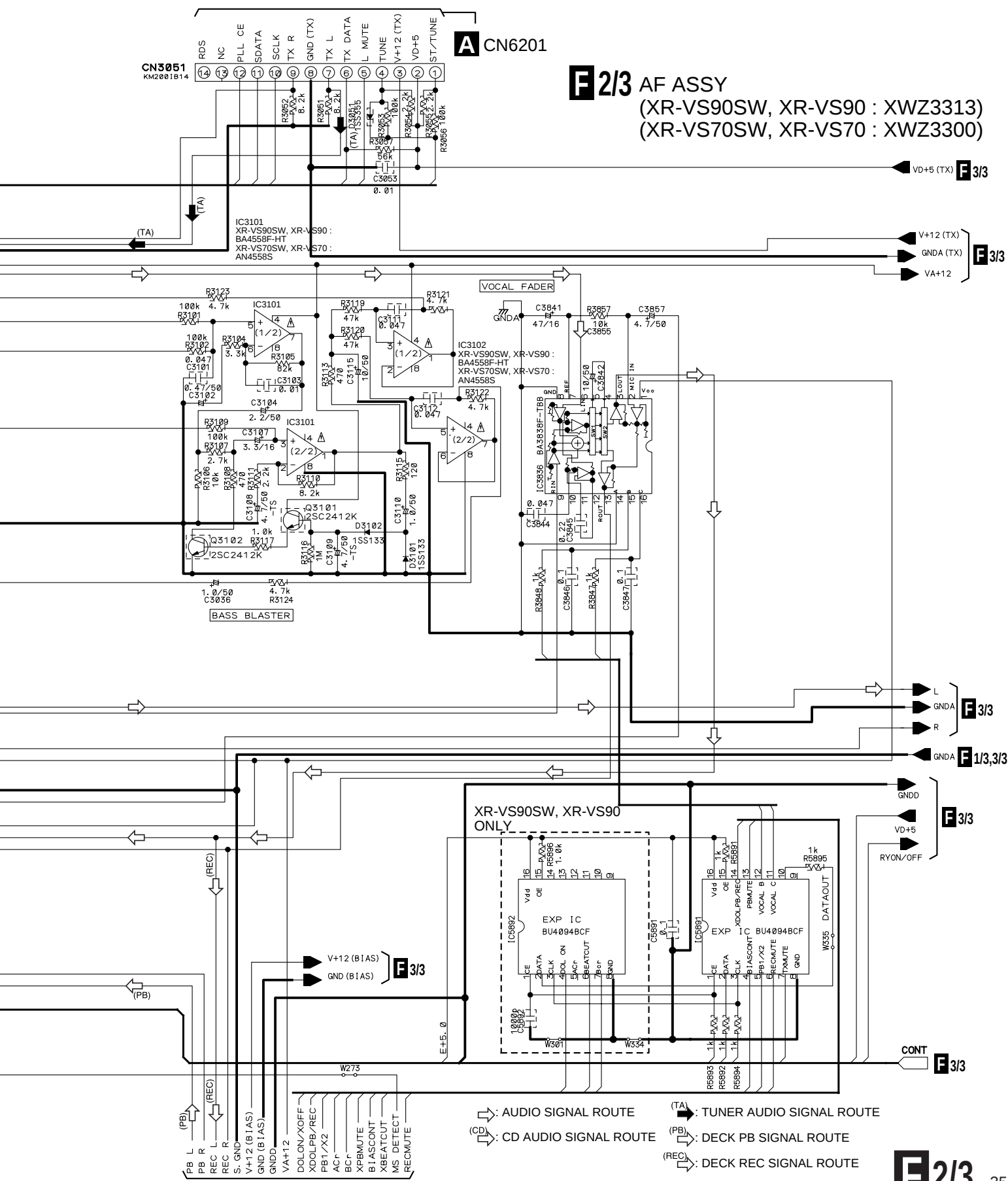


: The power supply is shown with the marked box.



3.7 AF ASSY (2/3)





8

3.9 PRIMARY ASSY

NOTES

ALL CAPACITORS ARE IN μF
 UNLESS OTHERWISE SPECIFIED
 TL : CFTLA
 M : CQMB A
 (OTHER : CKCYF)
 CH : CCSRCH
 YF : CKSRYF
 SL : CCSRSL
 (OTHER : CKSRYB)
 AL : CEAL
 HAQ : CEHAQ
 (OTHER : CEAS**M##orCEAT**M##)
 ALL RESISTORS ARE IN Ω
 1/16W (CHIP)
 1/4WPU
 ALL INDUCTORS ARE IN μH
 LAU
 NO MARK DIODE
 1SS133

POWER TRANSFORMER
 XR-VS90SW, XR-VS90 : XTS3037
 XR-VS70SW, XR-VS70 : XTS3036

G

CN2
 B4P7-VH

CN1
 B2P3-VH

ASR7018

J81

POWER ON/OFF

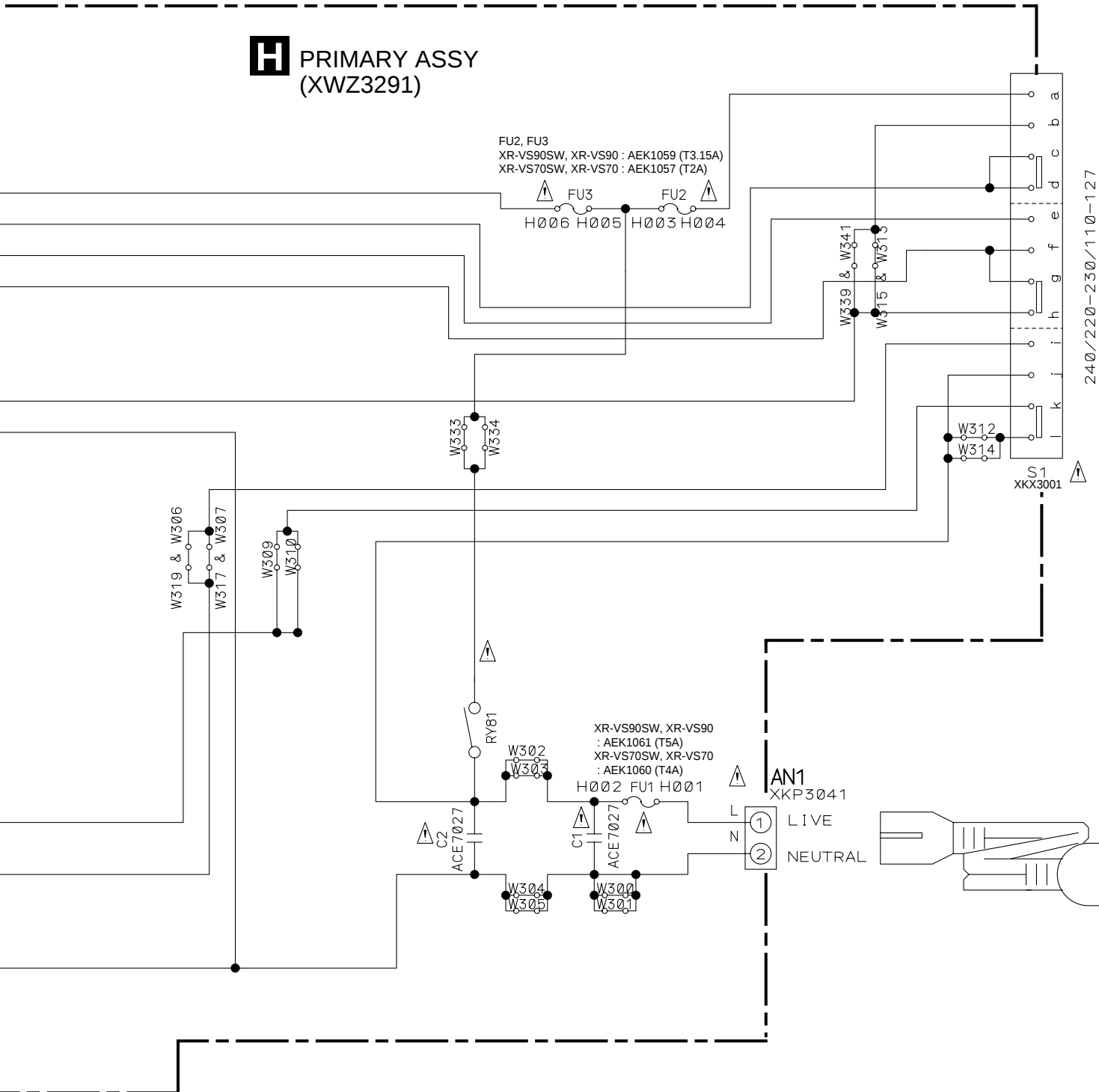
CN81
 52151-0410
 (SBRK04R-4)

T2
 XTT3004

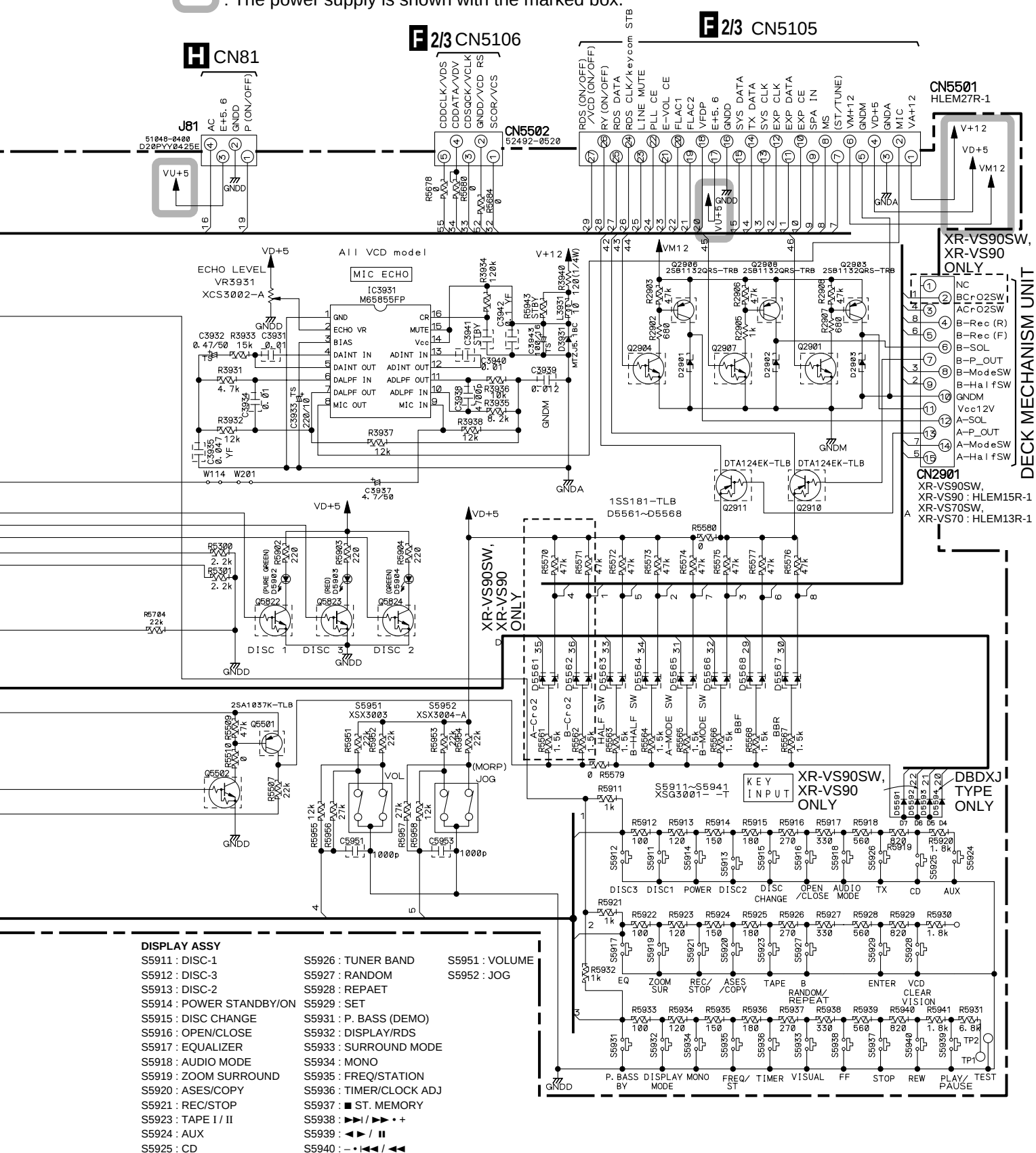
• NOTE FOR FUSE REPLACEMENT

CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS ONLY.

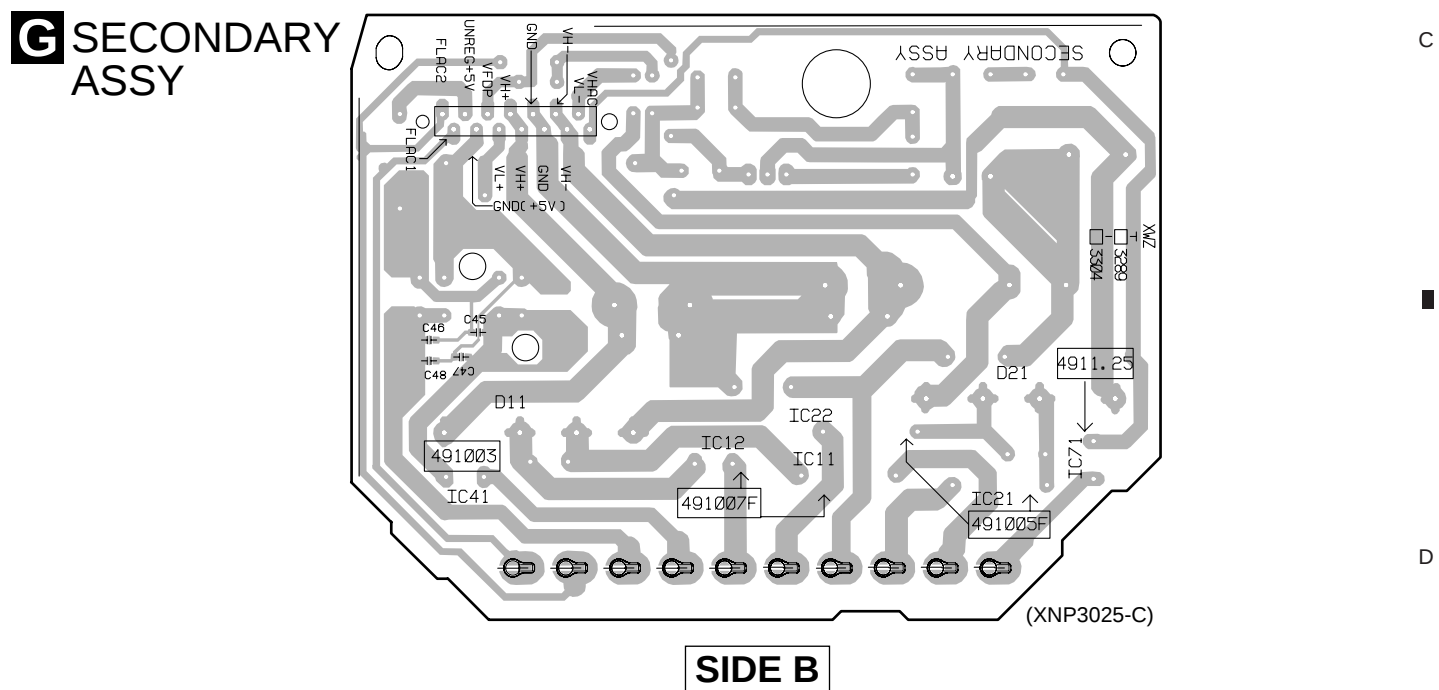
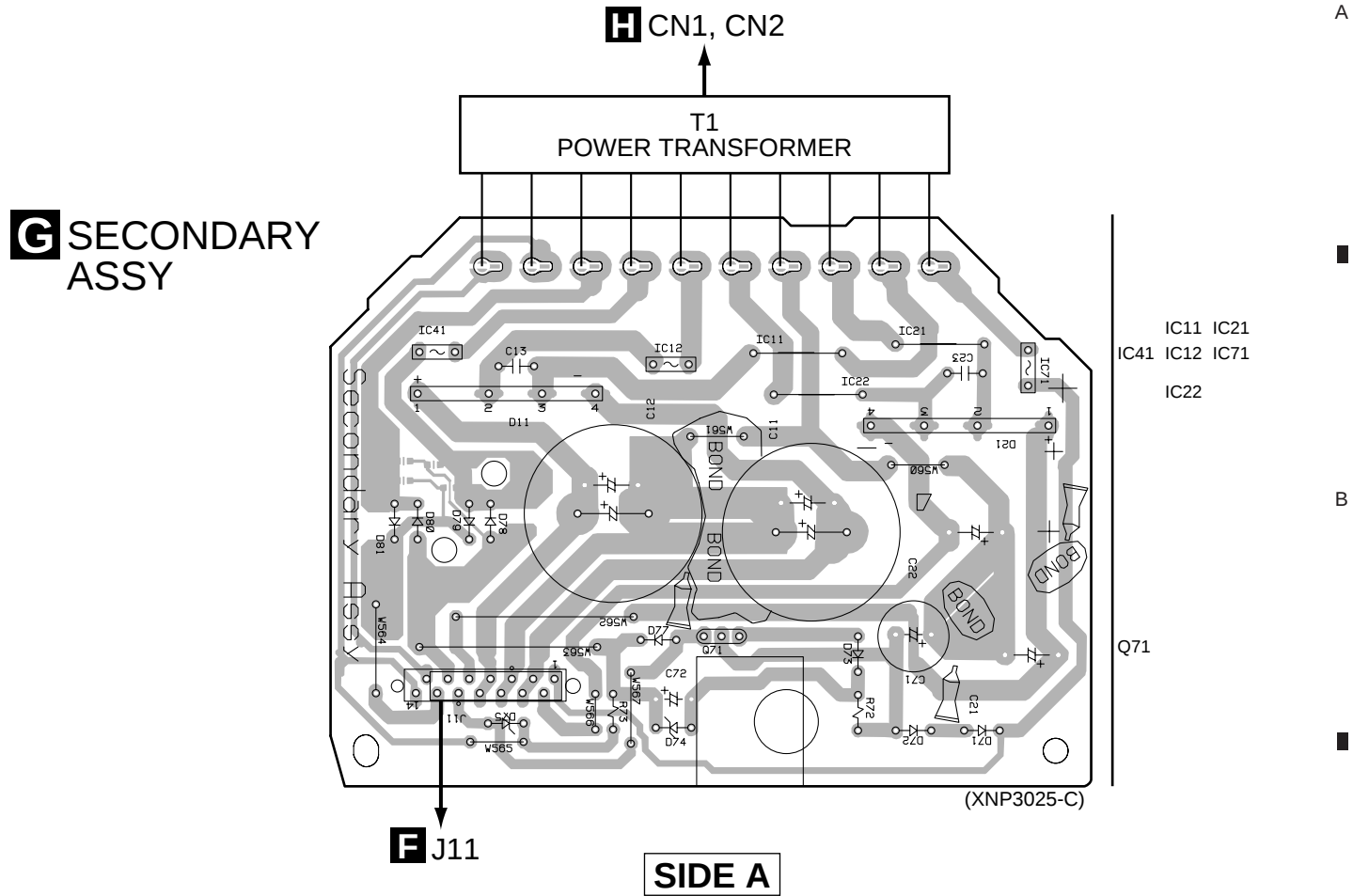
H PRIMARY ASSY
(XWZ3291)



: The power supply is shown with the marked box.

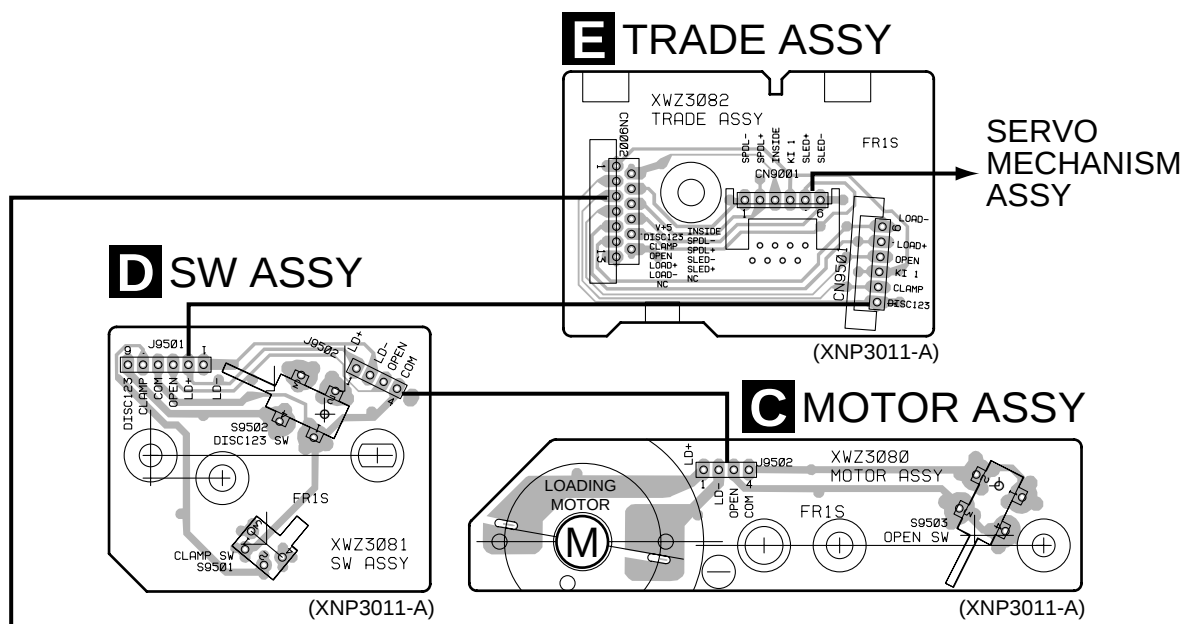


4.2 SECONDARY ASSY



4.3 \$M SERVO VCD, MOTOR, SW and TRADE ASSYS

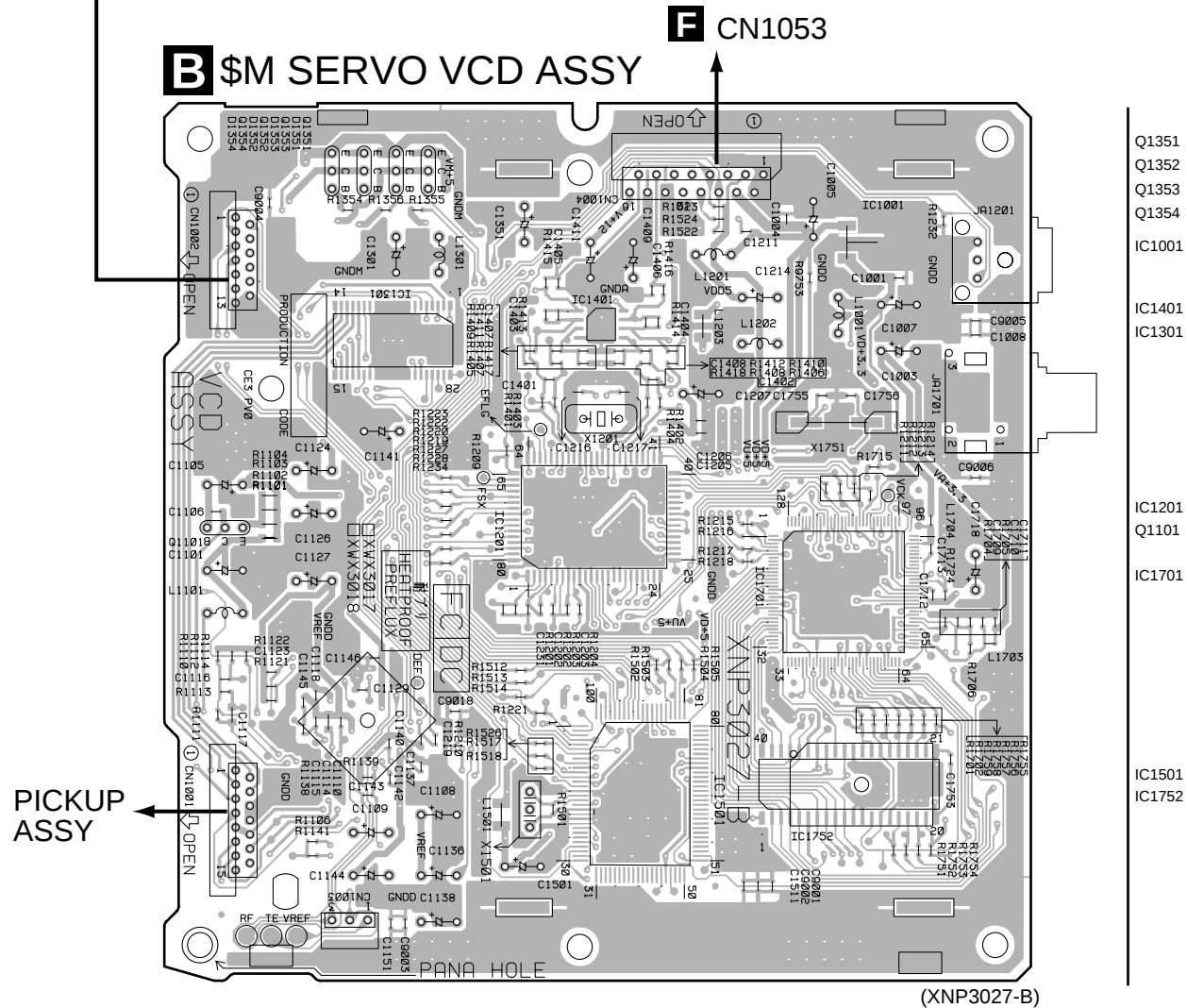
A



B

C

D



SIDE A

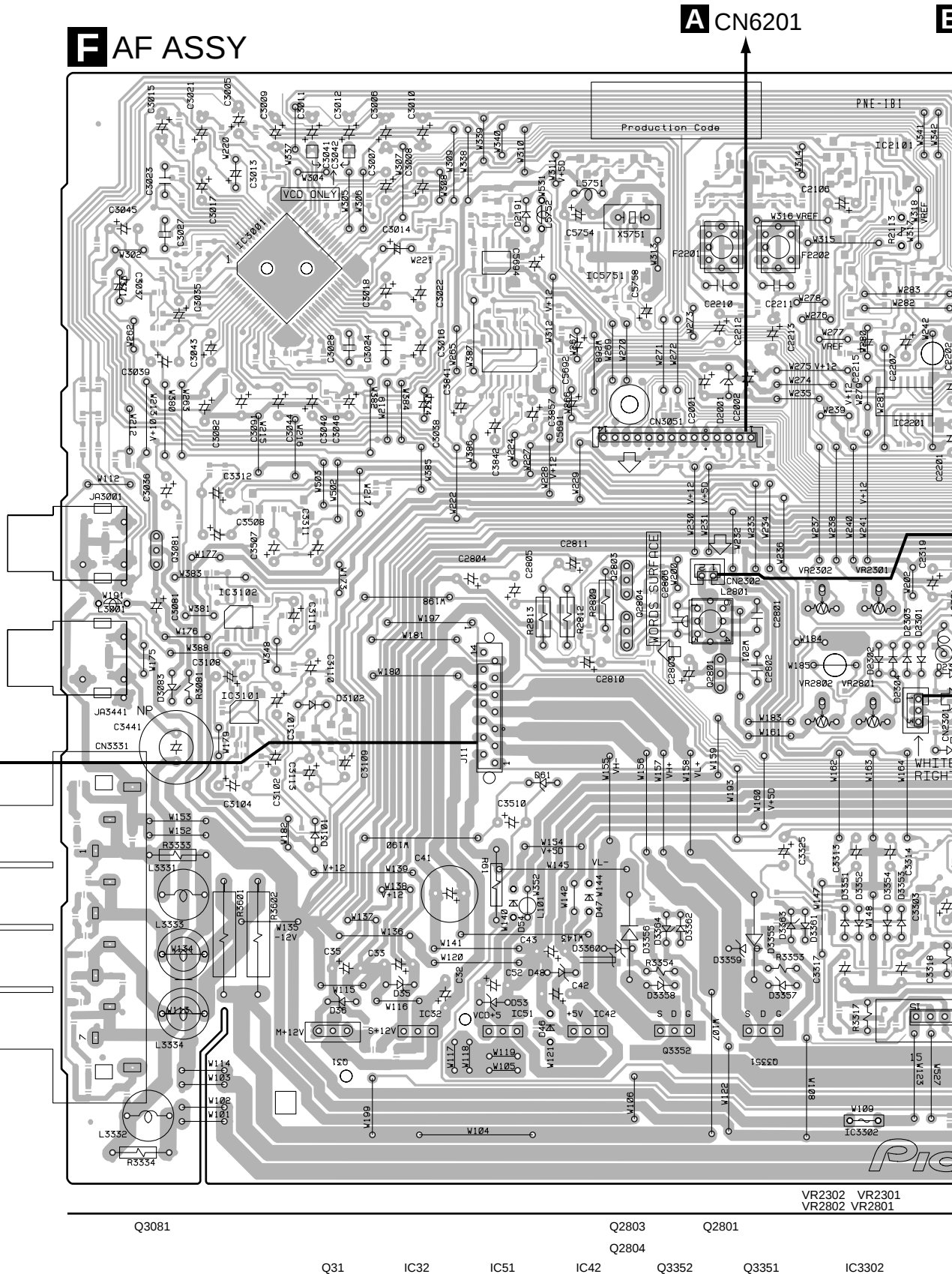
C

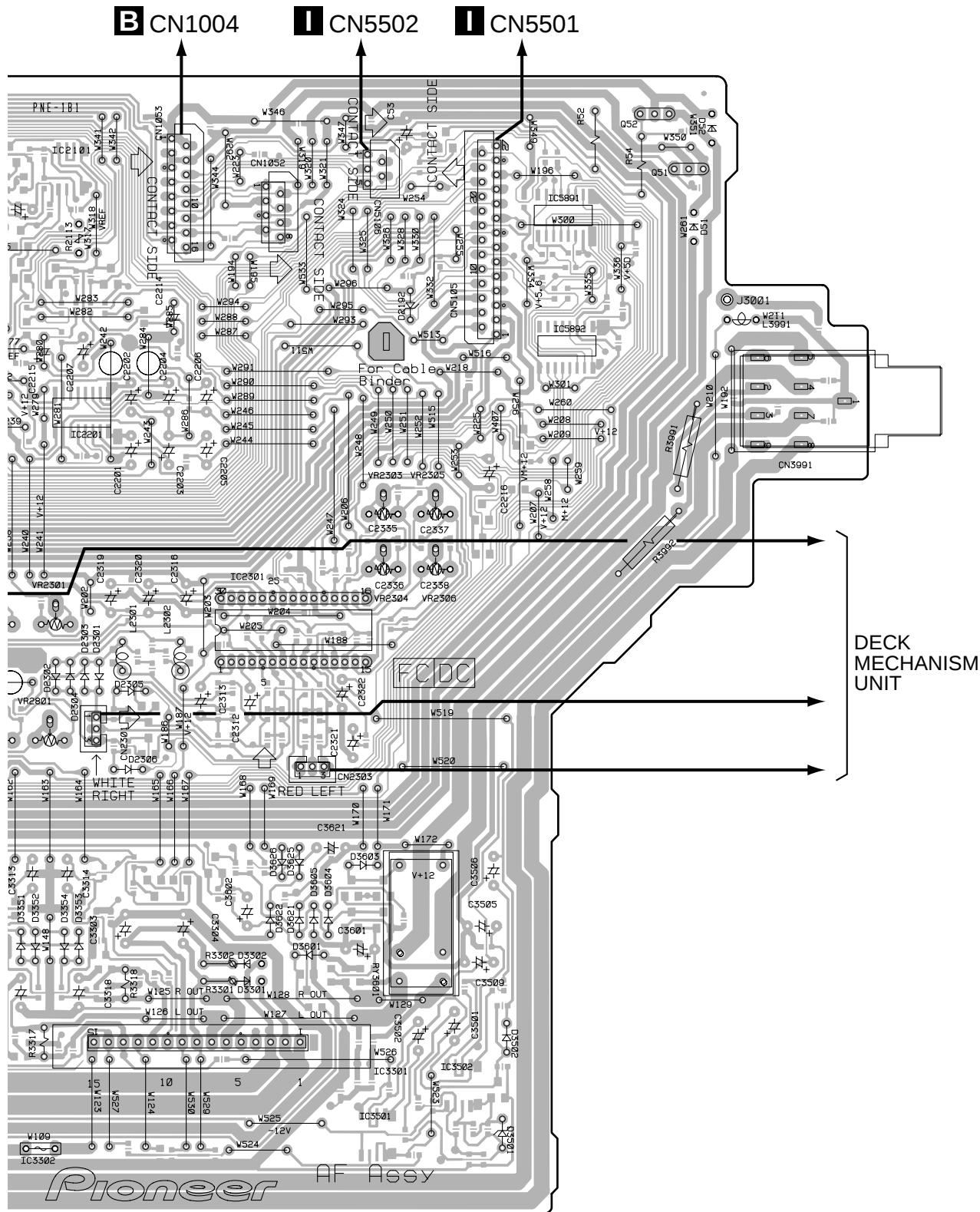


IC1101
IC1751

SIDE B

4.4 AF ASSY





02 VR2301 VR2303 VR2305
02 VR2801 VR2304 VR2306 (XNP3025-C)

IC3302 IC3301 IC3301 Q52 Q51

SIDE A

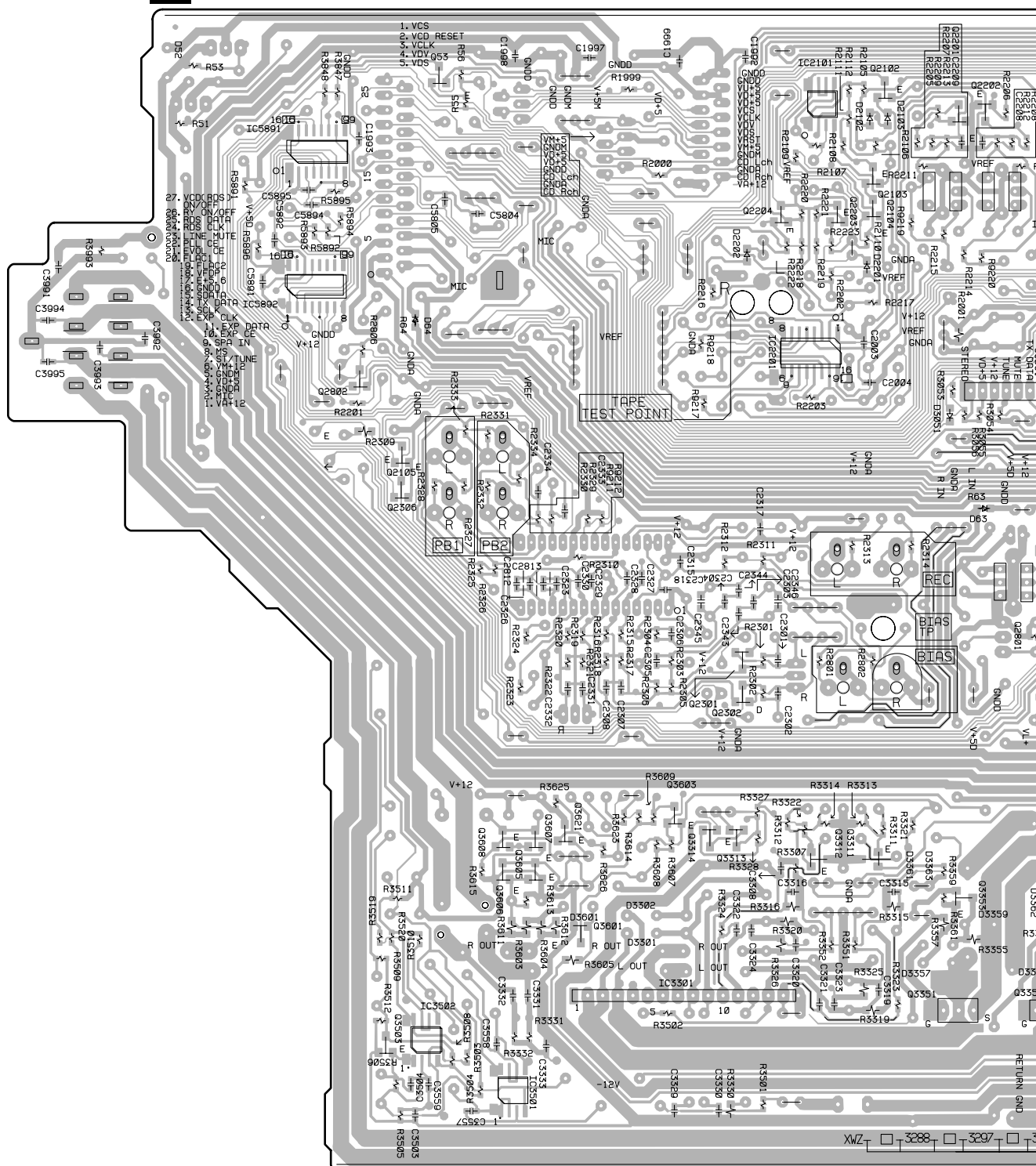
A

FAF ASSY

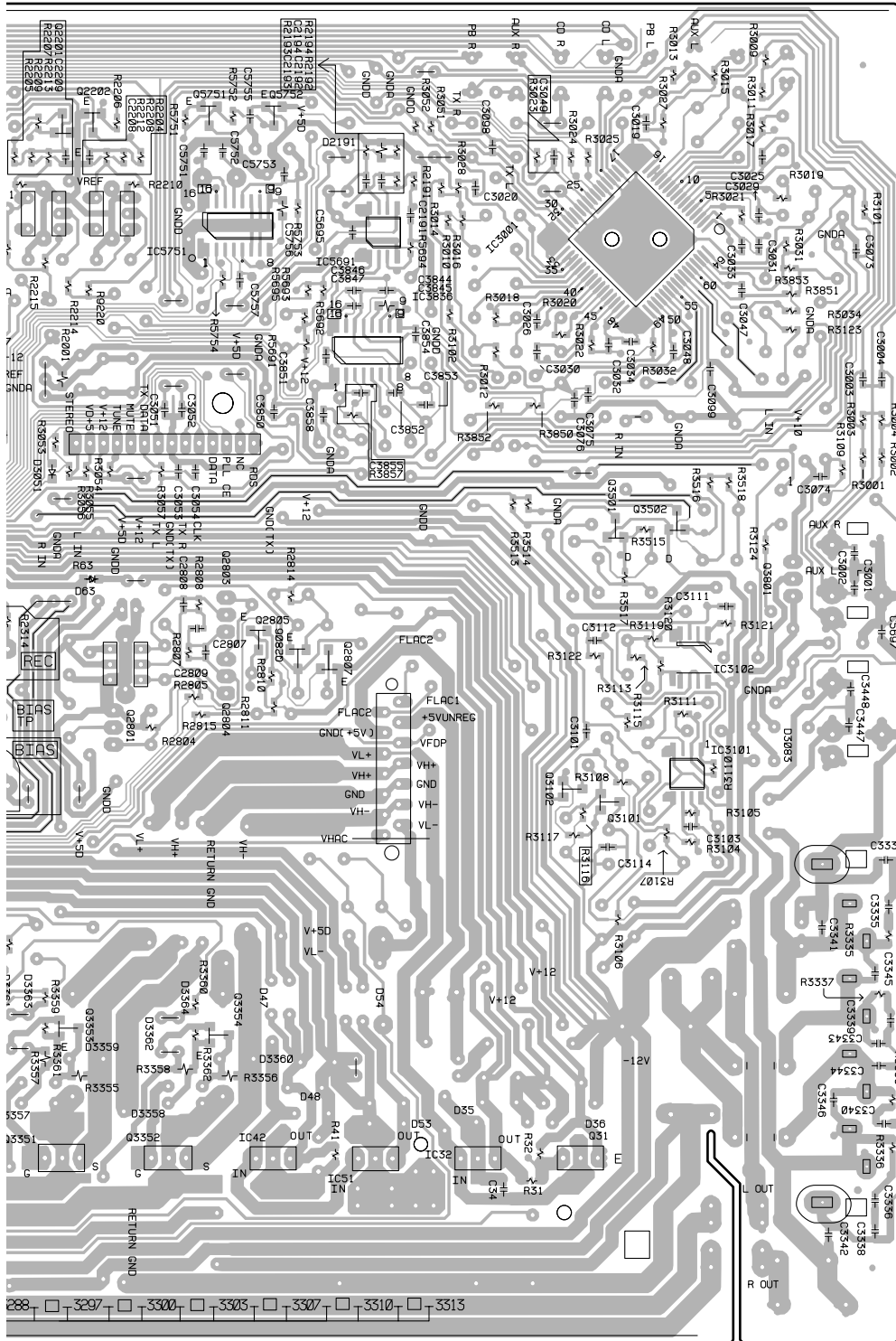
B

C

D



IC5891 Q53 IC2101 Q2102-Q2104 Q2202
IC5892 Q2802 Q2204 Q2203 Q3311 Q3353
Q2105 Q3601 Q3603 Q2301 Q3351
Q2306 Q3605-Q3608 IC3501 Q3312 Q3313
Q3503 IC3502 IC3301 Q3314



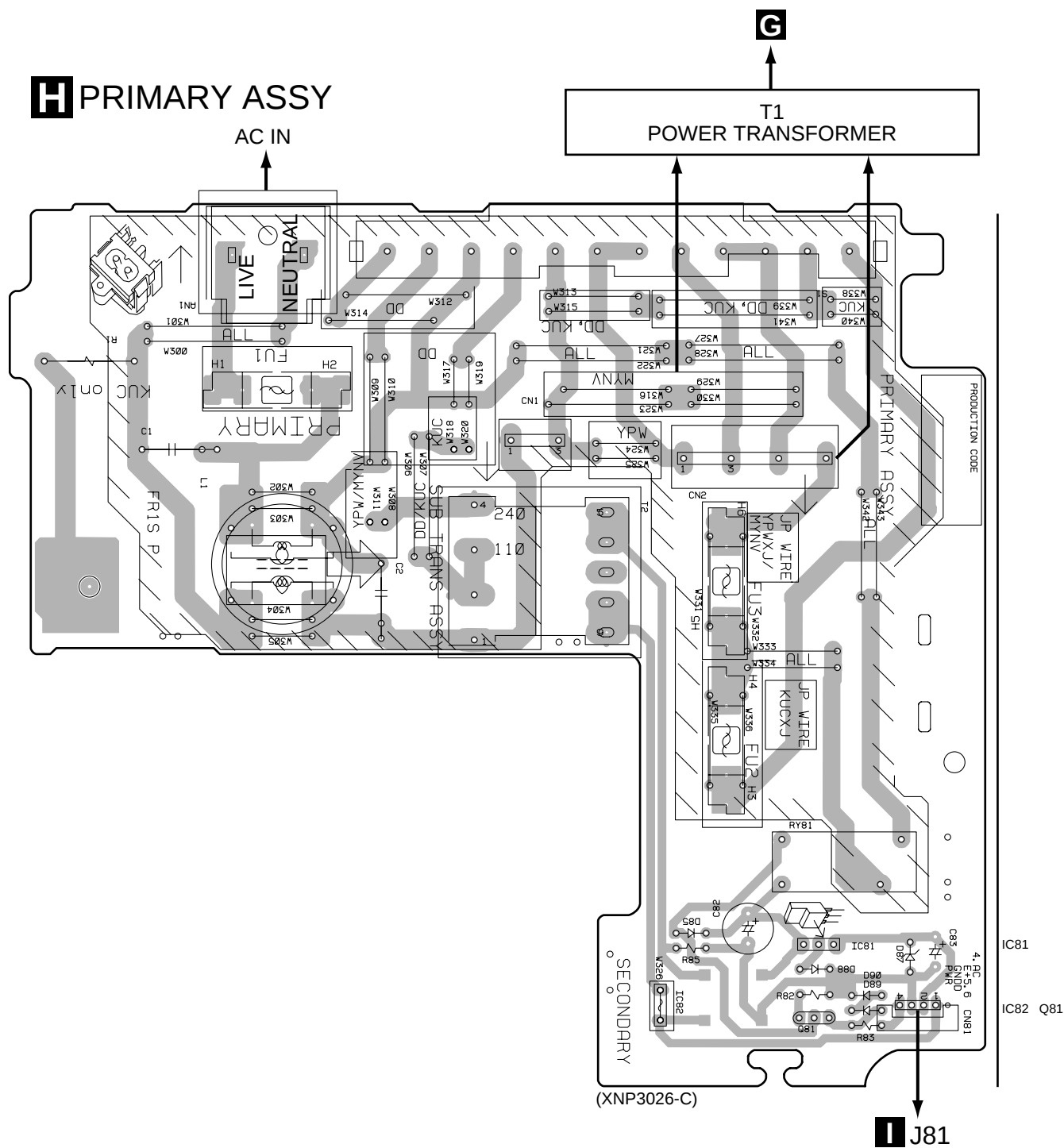
(XNP3025-C)

SIDE B

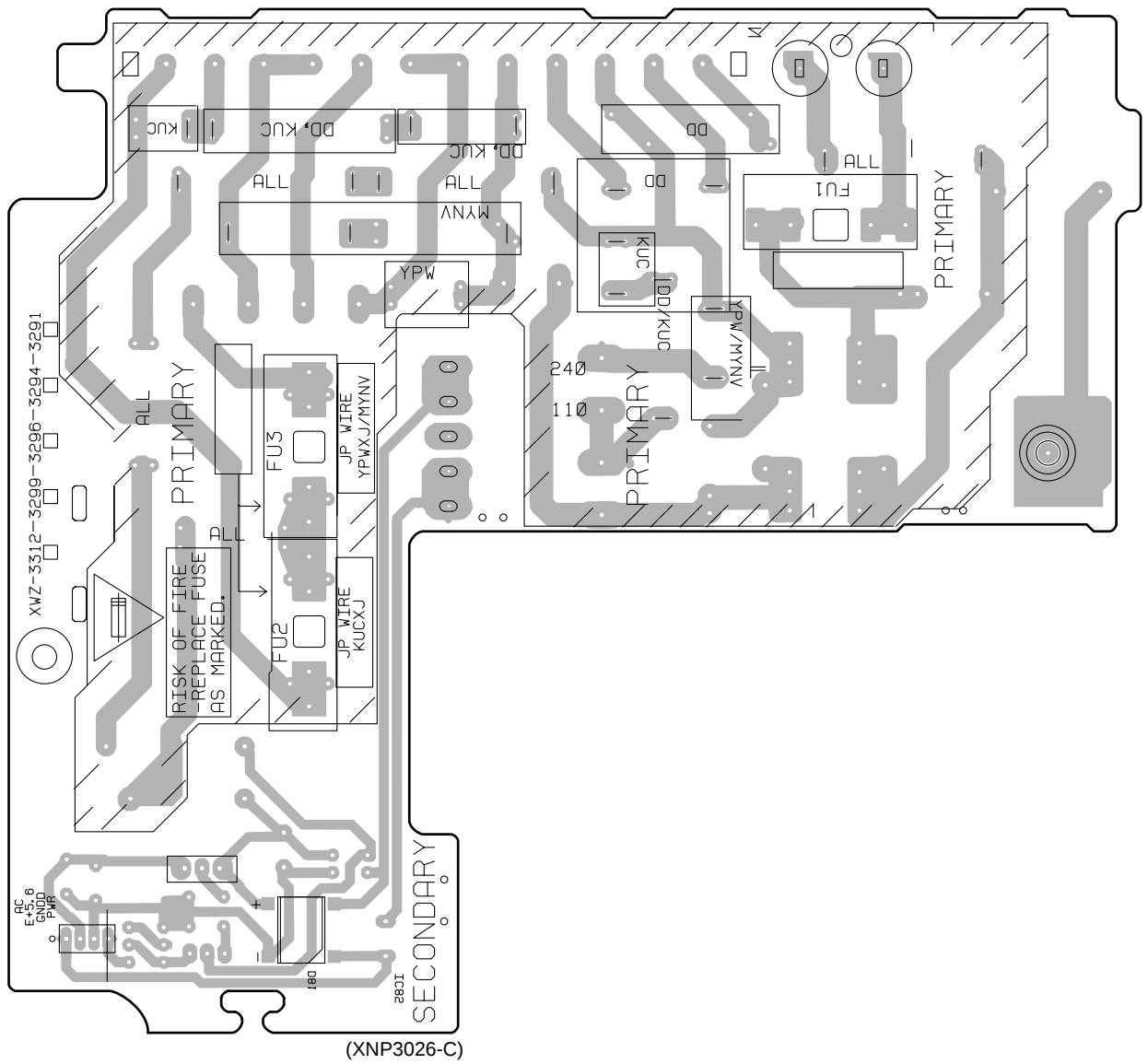
04 Q2202 Q5751 Q5752 IC3001
Q3353 IC5751 Q3501 Q3502
Q3351 Q3354 Q2804-Q2807 IC42 IC51 IC32 Q3102 Q3101 IC3102
Q3352 IC42 IC51 IC32 Q31 Q3101 IC3101

4.5 PRIMARY ASSY

H PRIMARY ASSY

**SIDE A**

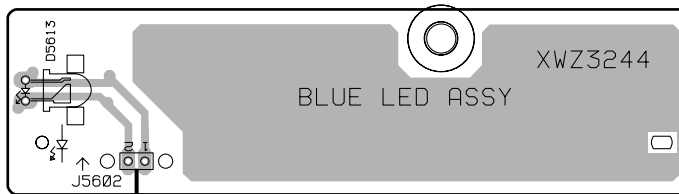
H PRIMARY ASSY



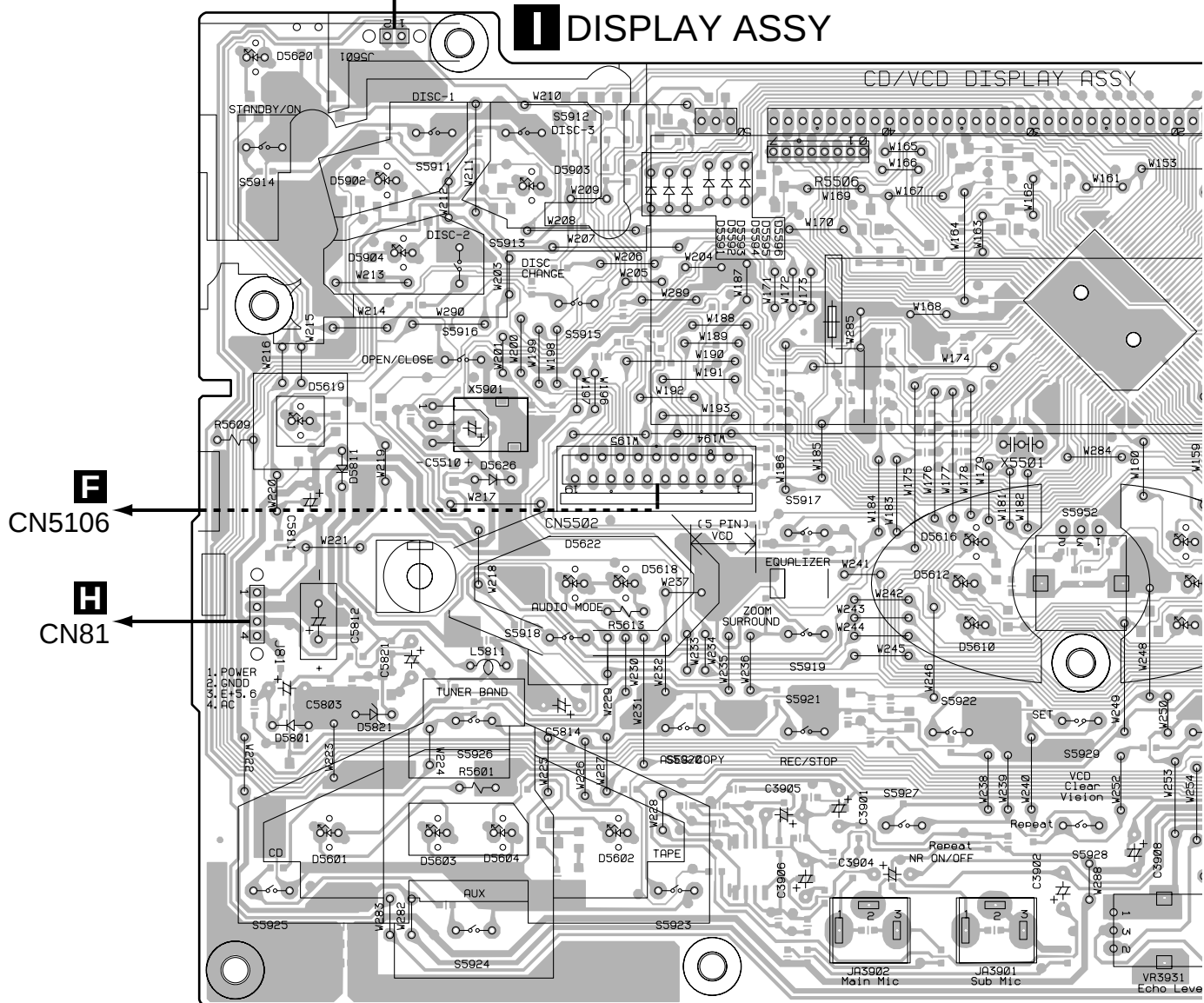
SIDE B

4.6 DISPLAY and BLUE LED ASSYS

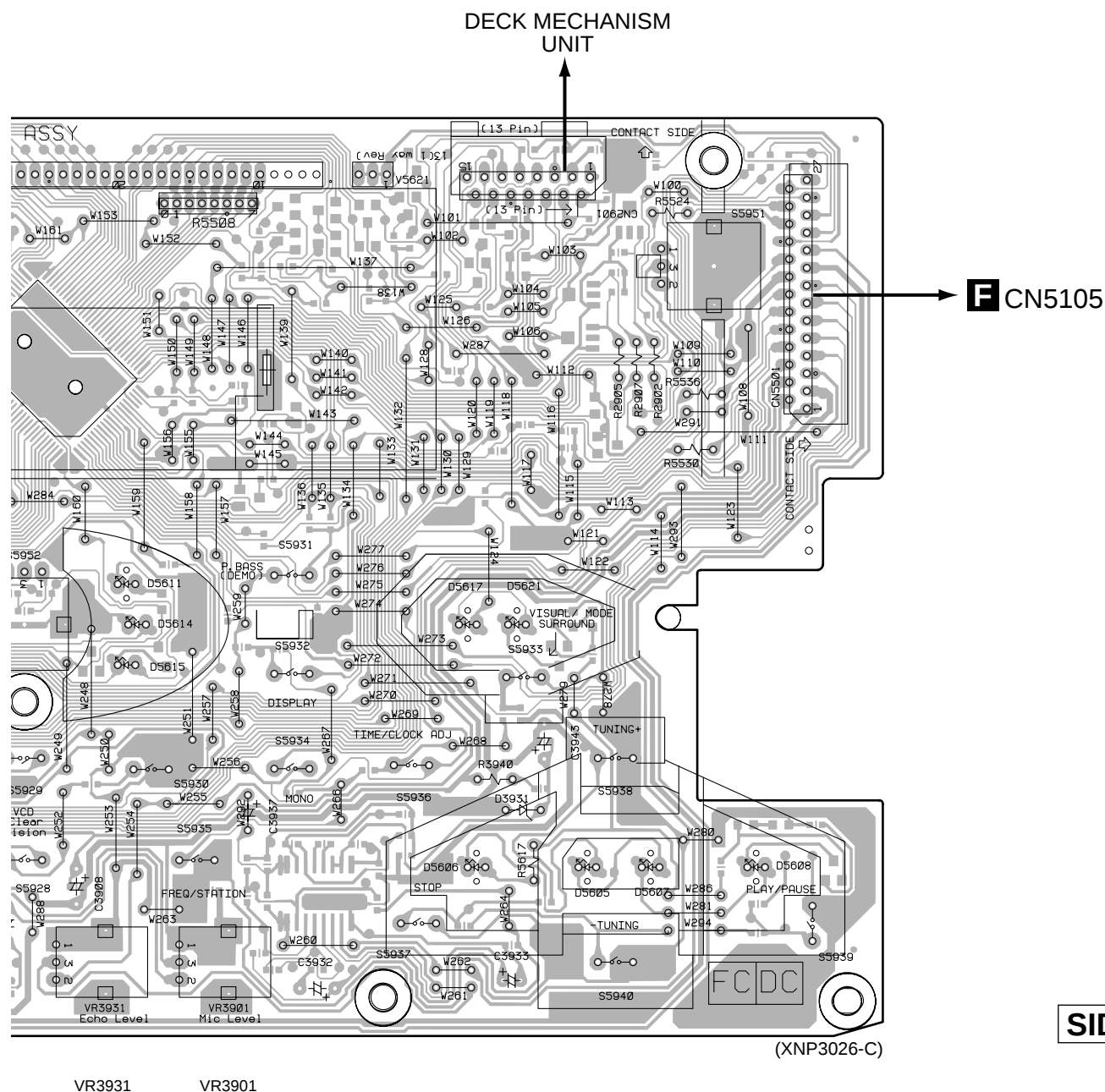
J BLUE LED ASSY



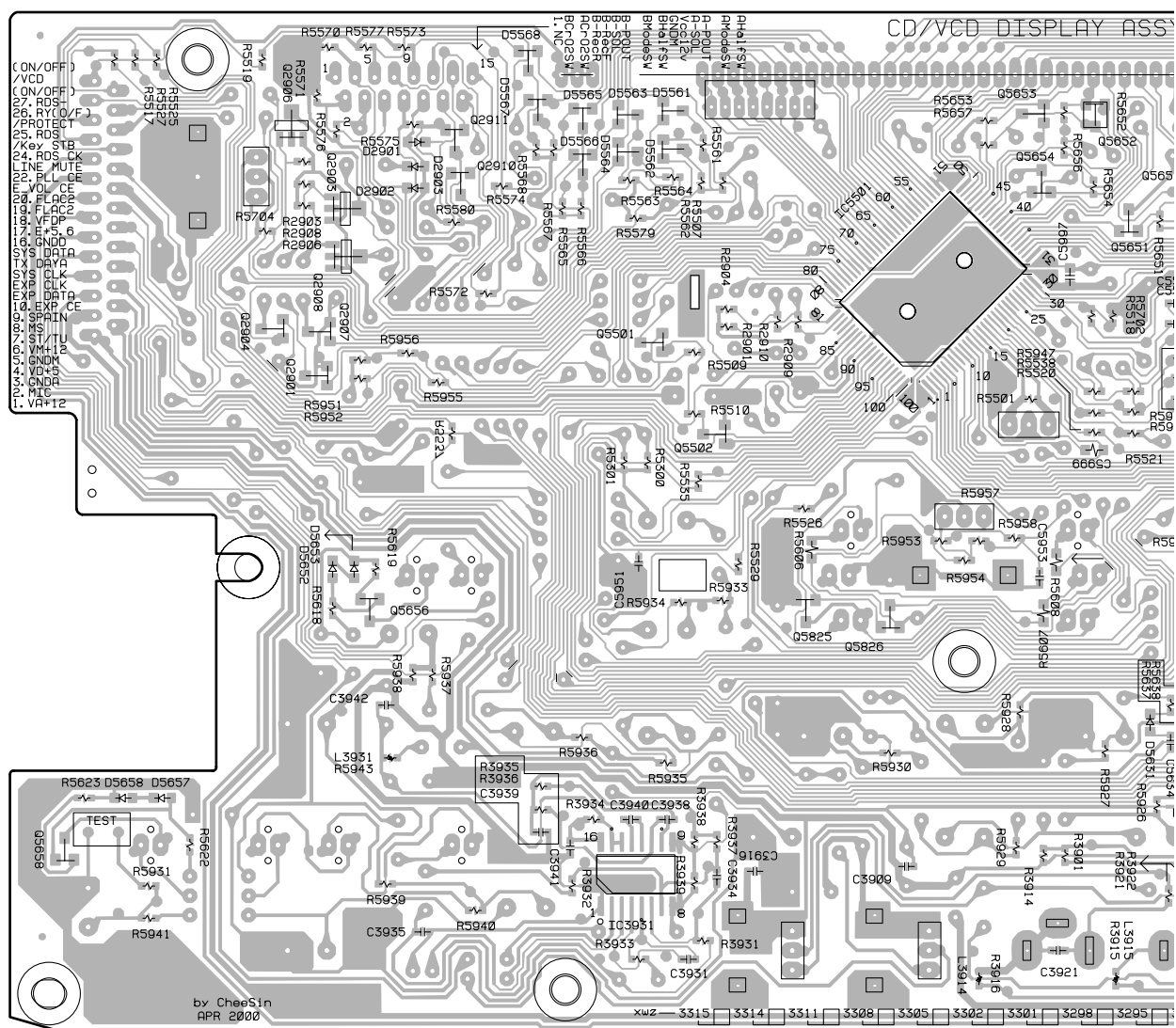
I DISPLAY ASSY



VR3931



1 DISPLAY ASSY

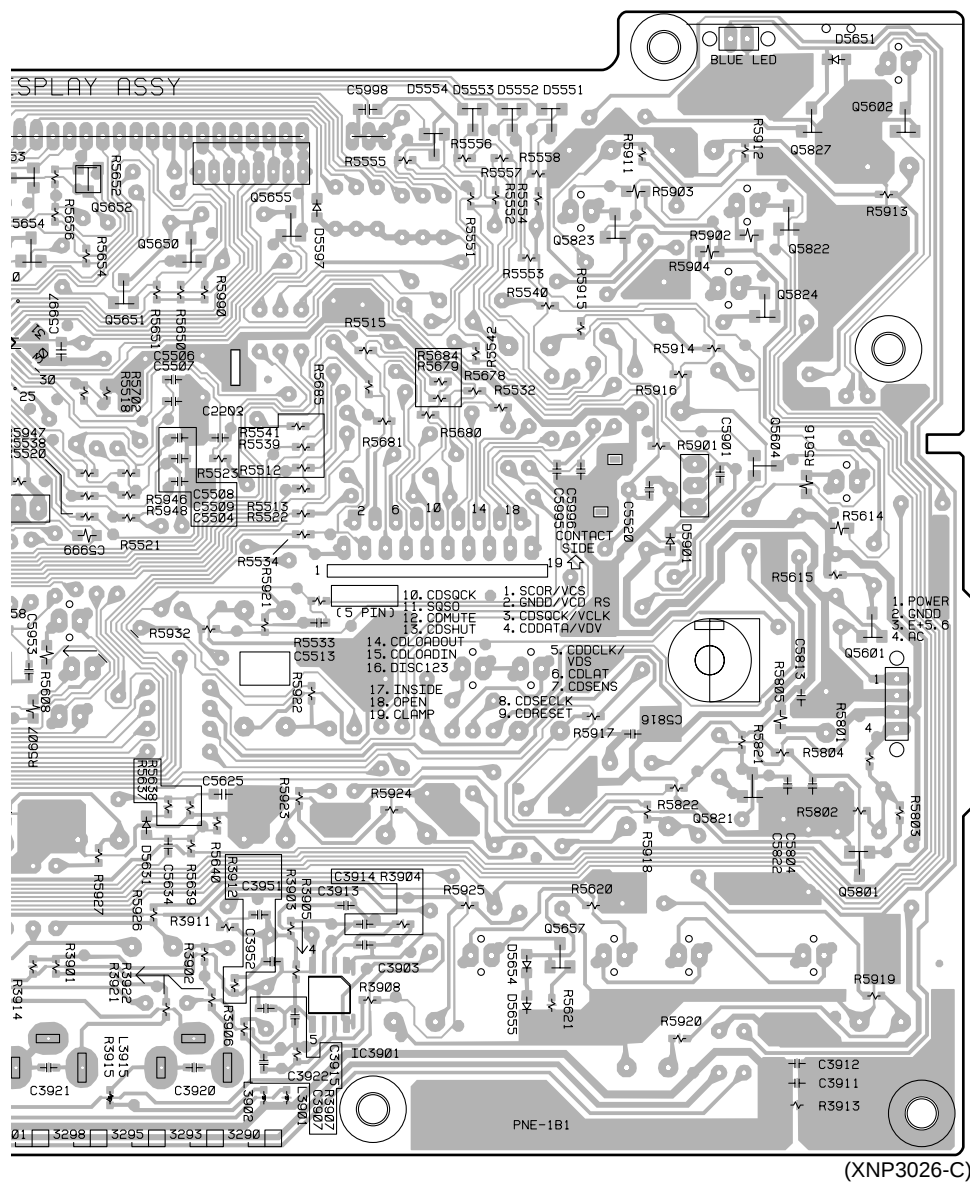


	Q2906	Q2911				IC5501	Q5650-Q5655
	Q2904	Q2903	Q2910	Q5501			
Q5658		Q2908		IC3931	Q5502	Q5825	Q5826
	Q2907						
	Q5556						

XWZ3244

BLUE LED ASSY

PNE-1B1



SIDE B

5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" and ⊗ can not be supplied.

●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 → 56 × 10¹ → 561 RD1/4PU 5 6 1 J
 47k Ω → 47 × 10³ → 473 RD1/4PU 4 7 3 J
 0.5 Ω → R50 RN2H R 5 0 K
 1 Ω → 1R0 RS1P 1 R 0 K

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

5.62k Ω → 562 × 10¹ → 5621 RN1/4PC 5 6 2 1 F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.						Remarks
		XR-VS90SW	XR-VS90		XR-VS70SW	XR-VS70		
		/DBDXJ	/DLXJ/NC	/DXJN/NC	/DBDXJ	/DLXJ/NC	/DXJN/NC	
NSP NSP NSP	FM/AM TUNER MODULE	AXQ7062	AXQ7065	AXQ7065	AXQ7062	AXQ7065	AXQ7065	
	\$M MECHANISM VCD	XXA3017	XXA3017	XXA3017	XXA3016	XXA3016	XXA3016	
	\$M SERVO VCD ASSY	XWX3018	XWX3018	XWX3018	XWX3017	XWX3017	XWX3017	
	\$M MECHA PCB ASSY	XWX3004	XWX3004	XWX3004	XWX3004	XWX3004	XWX3004	
	└ MOTOR ASSY	XWZ3080	XWZ3080	XWZ3080	XWZ3080	XWZ3080	XWZ3080	
	└ SW ASSY	XWZ3081	XWZ3081	XWZ3081	XWZ3081	XWZ3081	XWZ3081	
	└ TRADE ASSY	XWZ3082	XWZ3082	XWZ3082	XWZ3082	XWZ3082	XWZ3082	
⊗	MAIN ASSY	XWM3164	XWM3164	XWM3164	XWM3153	XWM3153	XWM3153	
	└ AF ASSY	XWZ3313	XWZ3313	XWZ3313	XWZ3300	XWZ3300	XWZ3300	
	└ SECONDARY ASSY	XWZ3304	XWZ3304	XWZ3304	XWZ3289	XWZ3289	XWZ3289	
⊗ ⊗ ⊗	COMPLEX ASSY	XWM3170	XWM3169	XWM3169	XWM3160	XWM3159	XWM3159	
	└ PRIMARY ASSY	XWZ3291	XWZ3291	XWZ3291	XWZ3291	XWZ3291	XWZ3291	
	└ DISPLAY ASSY	XWZ3315	XWZ3314	XWZ3314	XWZ3302	XWZ3301	XWZ3301	
	└ BLUE LED ASSY	XWZ3292	XWZ3292	XWZ3292	XWZ3292	XWZ3292	XWZ3292	

A \$M SERVO VCD ASSY

XWX3018 and XWX3017 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWX3018	XWX3017	
	C1222	CKSRYB104K16	Not used	
	R1209	RS1/16S102J	Not used	
	R1232	RS1/16S152J	Not used	
	JA1201 OPTICAL LINK OUT	GP1F32T	Not used	

G SECONDARY ASSY

XWZ3304 and XWZ3289 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		XWZ3304	XWZ3289	
Δ	IC11	AEK7068 (10A)	AEK7047 (7A)	
Δ	IC12	AEK7022 (10A)	AEK7021 (7A)	
Δ	IC21, IC22	AEK7047 (7A)	AEK7046 (5A)	
Δ	C11, C12	XCH3001 (4700μF/71V)	ACH7071 (2200μF/63V)	

I DISPLAY ASSY

XWZ3315, XWZ3314, XWZ3302 and XWZ3301 are constructed the same except for the following :

Mark	Symbol and Description	Part No.				Remarks
		XWZ3315	XWZ3314	XWZ3302	XWZ3301	
	Q5656-Q5658 D5561, D5562 D5593 D5594 D5601-D5608, D5617, D5621	2SC2412K 1SS181 1SS133 1SS133 SLP6118C51H	2SC2412K 1SS181 1SS133 Not used SLP6118C51H	Not used Not used Not used 1SS133 Not used	Not used Not used Not used Not used Not used	
	D5618, D5622 D5652-D5655, D5657, D5658 R5561, R5562 R5570, R5571 R5601, R5613, R5617	SLP3118C51H 1SS355 RS1/16S152J RS1/16S473J RD1/4PU560J	SLP3118C51H 1SS355 RS1/16S152J RS1/16S473J RD1/4PU560J	Not used Not used Not used Not used Not used	Not used Not used Not used Not used Not used	
	R5618, R5620, R5622 R5619, R5621, R5623 CN2901 FFC CONNECTOR 15P (13P)	RS1/16S222J RS1/16S330J HLEM15R-1	RS1/16S222J RS1/16S330J HLEM15R-1	Not used Not used HLEM13R-1	Not used Not used HLEM13R-1	

PCB PARTS LIST FOR XR-VS90SW/DBDXJ UNLESS OTHERWISE NOTED

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
AA FM/AM TUNER MODULE (AXQ7062)				CAPACITORS			
SEMICONDUCTORS				C6208		CCSQCH100D50	
	IC6201	LA1832ML		C6212, C6274, C6275, C6408		CCSQCH101J50	
	IC6202	LC72131MD		C6412		CCSQCH102J50	
	Q6402	2SC2223		C6221, C6222, C6416		CCSQCH150J50	
	Q6203	2SC2705		C6271		CCSQCH200J50	
	Q6201, Q6202	2SC2712		C6415		CCSQCH330J50	
	Q6214, Q6403	2SC2714		C6401, C6419		CCSQCH5R0C50	
	Q6304, Q6306	2SD2114K		C6304		CCSQCH7R0D50	
	Q6404	2SK302		C6407		CCSQCK1R0C50	
	Q6401	3SK194		C6320, C6410		CCSQCK2R0C50	
	Q6301-Q6303	DTA124EK		C6413		CCSQPH220J50	
	Q6204	DTA124ES		C6414		CCSQPH8R0D50	
	Q6205	DTC124EK		C6405		CCSQTH180J50	
	D6202, D6303-D6308, D6310-D6312	1SS254		C6234, C6235		CEAL1R0M50	
	D6314, D6315	1SS254		C6245		CEAL470M16	
	D6302, D6309	1SS85		C6224		CEAS100M50	
	D6401, D6402	1T363		C6243		CEAS101M16	
	D6313	KV1561A-2		C6231		CEAS1R0M50	
				C6227		CEAS220M16	
				C6236		CEAS2R2M50	
COILS AND FILTERS				C6216		CEAS330M16	
	L6303	SW2 ANTENNA TRANS.	ATA7001	C6262		CEAS3R3M50	
	L6304	SW2 OSC COIL	ATA7002	C6219		CEAS470M10	
	L6404	FM COIL	ATC1003	C6244		CEAS470M16	
	L6401	FM RF COIL	ATC1020	C6249, C6250, C6265, C6266		CEAS4R7M50	
	L6402	FM RF COIL	ATC1021	C6258		CEJA470M16	
	F6204	FM CERAMIC FILTER	ATF-107	C6215		CFTLA103J50	
	F6203	FM CERAMIC FILTER	ATF-119	C6214		CFTLA224J50	
	F6401	FM BAND PASS FILTER	ATF-155	C6211, C6254, C6403, C6406		CKSQYB102K50	
	F6206	FM CERAMIC DISCL.	ATF7008	C6201, C6205, C6210, C6213, C6237		CKSQYB103K50	
	F6202	AM CERAMIC FILTER	ATF7017	C6276, C6278, C6280, C6281, C6302		CKSQYB103K50	
	L6206, L6208, L6403	LAU2R2J		C6308, C6312, C6314, C6318, C6319		CKSQYB103K50	
	L6301, L6302	LTA393J		C6402, C6409, C6417, C6418		CKSQYB103K50	
TRANSFORMERS				C6251, C6252		CKSQYB153K50	
	T6201	ATB7008		C6303		CKSQYB222K50	
	T6401	ATE7002					

XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

Mark	No.	Description	Part No.
	C6203,C6259,C6301,C6305,C6306		CKSQYB223K50
	C6311,C6315		CKSQYB223K50
	C6228		CKSQYB472K50
	C6209		CKSQYB473K50
	C6310		CKSQYB562K50
	C6230		CKSQYB821K50
	C6218,C6223,C6255		CKSQYF103Z50
	C6316		CKSQYF105Z16
	C6220,C6226,C6242,C6256		CKSQYF223Z50
	C6225		CKSQYF473Z50

RESISTORS

R6280	RD1/4PU101J
R6311,R6318,R6413,R6416,R6418	RS1/8S0R0J
R6906,R6909	RS1/8S0R0J
R6304	RS1/8S103J
R6401	RS1/8S470J
VR6201 (22kΩ)	RCP1046
Other Resistors	RS1/10S□□□□J

OTHERS

BN6202	4P ANTENNA TERMINAL	AKE7051
X6202	CERAMIC RESONATOR	ASS1066
	(456kHz)	
X6201	CRYSTAL RESONATOR	ASS1093
	(7.2000MHz)	
CN6201	14P SOCKET	KP200IA14L
	AM RF TUNING BLOCK	AXX7039
	AM RF TUNING BLOCK	AXX7040

AB FM/AM TUNER MODULE (AXQ7065)

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	1T378A

COILS AND FILTERS

L6404	FM COIL	ATC1003
L6401	FM RF COIL	ATC1020
L6402	FM RF COIL	ATC1021
F6204	FM CERAMIC FILTER	ATF-107
F6203	FM CERAMIC FILTER	ATF-119
F6401	FM BAND PASS FILTER	ATF-155
F6206	FM CERAMIC DISCLI.	ATF7008
F6202	AM CERAMIC FILTER	ATF7011
L6206,L6208,L6403		LAU2R2J

TRANSFORMERS

T6201	ATB7008
T6401	ATE7002

Mark	No.	Description	Part No.
CAPACITORS			
	C6208		CCSQCH100D50
	C6212,C6274,C6275,C6408		CCSQCH101J50
	C6412		CCSQCH102J50
	C6221,C6222,C6416		CCSQCH150J50
	C6271		CCSQCH200J50
	C6415		CCSQCH330J50
	C6406		CCSQCH331J50
	C6401,C6419		CCSQCH5R0C50
	C6407		CCSQCK1R0C50
	C6410		CCSQCK2R0C50

C6413	CCSQRH180J50
C6414	CCSQRH8R0D50
C6405	CCSQTH150J50
C6234,C6235	CEAL1R0M50
C6245	CEAL470M16

C6224	CEAT100M50
C6243	CEAT101M16
C6231	CEAT1R0M50
C6227	CEAT220M25
C6214,C6236	CEAT2R2M50

C6262	CEAT3R3M50
C6219	CEAT470M10
C6244	CEAT470M16
C6249,C6250,C6265,C6266	CEAT4R7M50
C6258	CEJA470M16

C6215	CFTLA103J50
C6211,C6254,C6403,C6417	CKSQYB102K50
C6201,C6205,C6210,C6237,C6276	CKSQYB103K50
C6278,C6280,C6281,C6402,C6409	CKSQYB103K50
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 (10kΩ)	PCP1029
Other Resistors	RS1/10S□□□□J

OTHERS

BN6202	4P ANTENNA TERMINAL	AKE7051
X6202	CERAMIC RESONATOR	ASS1066
	(456kHz)	
X6201	CRYSTAL RESONATOR	ASS1093
	(7.2000MHz)	
CN6201	14P SOCKET	KP200IA14L
	MW RF TUNING BLOCK	AXX7041

B \$M SERVO VCD ASSY

SEMICONDUCTORS

△	IC1001	BA033FP
	IC1401	BA4558F-HT
	IC1301	BA5923FP
	IC1701	CL680T-D1
	IC1101	LA9240ML

Mark	No.	Description	Part No.
	IC1201		LC78632RE
	IC1752		MB814260-70PJ
	IC1501		PDC067A
	IC1751		PEB001A
	IC1754		TC7W14F
	IC1753		TC7WU04F
	Q1101		2SA1048
	Q1351,Q1352		2SB1237X
	Q1740		2SC2412K
	Q1353,Q1354		2SD1858X
	D1351-D1354		1SS355

COILS AND FILTERS

F1201	CHIP BEAD	DTF1066
F1202	CHIP BEAD	DTF1067
L1702		LCTB1R8K2125
L1701		LCTB2R7K2125
L1201		LFA100J
L1001		LFA220J
L1599	CHIP BEAD	VTL1073
L1705,L1706	CHIP BEAD	VTL1081

CAPACITORS

C1132	CCSQCH300J50
C1129,C1205,C1208,C1213,C1353	CCSRCH101J50
C1706,C1722	CCSRCH101J50
C1133,C1755,C1756	CCSRCH120J50
C1720	CCSRCH121J50
C1216	CCSRCH150J50
C1708	CCSRCH151J50
C1217	CCSRCH180J50
C1705	CCSRCH271J50
C1715,C1717	CCSRCH470J50
C1130	CCSRCJ3R0C50
C1138	CEAT100M50
C1003,C1108,C1144,C1207,C1214	CEAT101M10
C1301,C1351,C1501	CEAT101M10
C1127	CEAT1R0M50
C1005,C1007,C1126,C1141,C1409	CEAT470M16
C1411	CEAT470M16
C1718	CEAT471M6R3
C1136	CEAT4R7M50
C1109	CEATR22M50
C1124	CEATR47M50
C1101	CEJA3R3M50
C1105	CEJA470M10
C1114,C1117,C1120,C1121	CKSQYB154K16
C1112,C1143	CKSQYB334K16
C1106,C1119,C1134	CKSRYB102K50
C1102,C1122,C1123,C1139,C1140	CKSRYB103K50
C1209,C1215,C1218,C1231,C1302	CKSRYB103K50
C1354,C1502-C1506,C1703,C9002	CKSRYB103K50
C9005,C9013,C9015	CKSRYB103K50
C1001,C1002,C1004,C1008,C1135	CKSRYB104K16
C1151,C1202,C1203,C1222,C1511	CKSRYB104K16
C1701,C1702,C1704,C1710-C1714	CKSRYB104K16
C1716,C1751-C1754,C1757,C9004	CKSRYB104K16
C9006,C9008,C9017,C9019	CKSRYB104K16
C1405,C1406	CKSRYB152K50
C1111	CKSRYB153K25
C1707	CKSRYB182K50
C1125	CKSRYB221K50
C1131	CKSRYB222K50

Mark	No.	Description	Part No.
	C1107		CKSRYB223K50
	C1110,C1403,C1404,C1407,C1408		CKSRYB331K50
	C1115,C1128		CKSRYB332K50
	C1113		CKSRYB333K16
	C1212		CKSRYB471K50
	C1507		CKSRYB472K50
	C1116,C1142		CKSRYB473K16
	C1401,C1402		CKSRYB561K50
	C1118,C1201,C1204,C1206		CKSRYF104Z25

RESISTORS

R1103	RS1/10S100J
R1704	RS1/16S2001F
Other Resistors	RS1/16S□□□J

OTHERS

X1201	CRYSTAL RESONATOR (16.9344MHz)	PSS1008
X1501	CERAMIC RESONATOR (6MHz)	RSS1050
X1751	CHIP CRYSTAL (27MHz)	VSS1086
CN1004	16P FFC CONNECTOR	52044-1645
CN1003	3P TOP POST	B3P-SHF-1AA
JA1201	OPTICAL LINK OUT	GP1F32T
CN1002	FFC CONNECTOR 13P	SLW13R-1C7
CN1001	FFC CONNECTOR 15P	SLW15R-1C7
JA1701	1P PIN JACK	VKB1063

C MOTOR ASSY SWITCH

S9503	ASG7009
-------	---------

OTHERS

J9502	JUMPER WIRE 4P	D20PWW0405E
	MOTOR PULLEY	PNW1634
	CARRIAGE MOTOR (LOADING)	VXM1033

D SW ASSY SWITCHES

S9502	ASG7009
S9501	DSG1017

OTHERS

J9501	JUMPER WIRE 6P	D20PWY0610E
-------	----------------	-------------

E TRADE ASSY OTHERS

CN9501	6P JUMPER CONNECTOR	52147-0610
CN9001	KR CONNECTOR	S6B-PH-K-S
CN9002	FFC CONNECTOR 13P	SLW13R-1C7

XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

Mark	No.	Description	Part No.
F	AF ASSY (XWZ3313)		
SEMICONDUCTORS			
△	IC3501,IC3502		AN4558S
	IC3836		BA3838F
△	IC2101,IC3101,IC3102		BA4558F-HT
	IC5691		BA4558F-HT
	IC5891,IC5892		BU4094BCF
	IC2201		HA12136AF
	IC2301		HA12211NT
	IC3001		LC75394NED
△	IC42,IC51		NJM7805FA
△	IC32		NJM7812FA
	IC3301		STK407-090B
	Q3354,Q3601,Q3621		2SA1037K
	Q2806		2SB1197K
△	Q51		2SB1237X
	Q52		2SB1237X
	Q2803,Q2804		2SC1815
	Q2801		2SC2240
	Q2102,Q2201,Q2202,Q3101,Q3102		2SC2412K
	Q3353,Q3603,Q3605-Q3608,Q53		2SC2412K
	Q3081		2SD1858X
△	Q31		2SD2012
	Q2203,Q2204,Q2805,Q3311,Q3312		2SD2114K
	Q2301,Q2302,Q3501,Q3502		2SK368
	Q3313,Q3503		DTA124EK
	Q2104,Q2105,Q3314		DTC124EK
△	Q2103,Q2306,Q2802,Q2807		DTC143EK
△	Q3352		IRF540A
△	Q3351		IRF9540A
△	D3301,D3302		1SR139-100
	D2191,D2301-D2306,D3101,D3102		1SS133
	D3351-D3354,D3361,D3362,D3601		1SS133
	D3603,D3604,D3621,D3622		1SS133
	D3625,D3626		1SS133
	D2102,D2103,D2201,D2202,D3051		1SS355
△	D3355,D3356		20E2-FC
	D3083		MTZJ11C
	D61		MTZJ12C
	D35,D36		MTZJ15C
	D3359,D3360		MTZJ18B
	D3363,D3364		MTZJ39C
	D2001		MTZJ6.2A
	D48,D53		MTZJ6.8C
	D3357,D3358		MTZJ7.5C

COILS AND FILTERS

L3331,L3332	AF CHOKE COIL	ATH-133
L2801	OSC COIL	ATX7002
L2301,L2302		LTA822J
L101	FERRITE BEAD	VTH1024
F2201,F2202	MPX FILTER	XTF3002
L3991	AXIAL INDUCTOR	XTL3001

RELAY

RY3601	ASR7008
--------	---------

Mark	No.	Description	Part No.
CAPACITORS			
	C2301,C2302	CCSRCH100D50	
	C3047,C3048	CCSRCH101J50	
	C2192	CCSRCH220J50	
	C3319,C3320	CCSRCJ3R0C50	
	C3311,C3312,C3507,C3508	CEANL1R0M50	
	C3317,C3318	CEANP220M35	
	C3621	CEANP2R2M2A	
	C3313,C3314	CEANP2R2M50	
	C3441	CEANP330M2A	
	C2207,C2803,C2810,C3045,C3081	CEAT100M50	
	C3091,C3115,C32,C33,C35	CEAT100M50	
	C3602,C3842,C43,C52	CEAT100M50	
	C5691,C5692	CEAT100M50	
	C2002,C2316	CEAT101M16	
	C3303,C3304	CEAT101M50	
	C2312,C2313,C3035,C3036,C3110	CEAT1R0M50	
	C3506	CEAT1R0M50	
	C2106,C2214,C2215,C2321,C2322	CEAT220M50	
	C53	CEAT220M50	
	C2001,C3601	CEAT221M16	
△	C41	CEAT222M25	
	C2201,C2202,C2205,C2206	CEAT2R2M50	
	C2212,C2213,C2319,C2320	CEAT2R2M50	
	C3005-C3010,C3015-C3018,C3037	CEAT2R2M50	
	C3039,C3041-C3044,C3082,C3104	CEAT2R2M50	
	C2804,C2805	CEAT330M16	
	C3107	CEAT3R3M50	
	C3841	CEAT470M16	
	C3501,C3502,C3509,C3510	CEAT470M25	
	C3108,C3109,C3857	CEAT4R7M50	
	C3021,C3022	CEATR10M50	
	C2203,C2204	CEATR22M50	
	C3102,C3325	CEATR47M50	
	C3046	CEJA100M50	
	C3038,C3040	CEJA2R2M50	
	C3027,C3028	CFTLA154J50	
	C3023,C3024	CFTLA474J50	
	C2802	CKCYB681K2H	
	C2194	CKSQYB105K10	
	C3845	CKSQYB224K16	
	C5892	CKSRYB102K50	
	C2315,C2317,C2318,C3053,C3098	CKSRYB103K50	
	C3103	CKSRYB103K50	
	C1992,C1993,C2191,C2193,C3099	CKSRYB104K16	
	C3846,C3847,C5891	CKSRYB104K16	
	C3033,C3034	CKSRYB122K50	
	C2208,C2209	CKSRYB152K50	
	C3315,C3316	CKSRYB222K50	
	C2323,C2326	CKSRYB223K50	
	C2812,C2813	CKSRYB272K50	
	C3029,C3030	CKSRYB273K16	
	C2808,C2809	CKSRYB332K50	
	C2333,C2334	CKSRYB392K50	
	C2807	CKSRYB472K50	
	C3101,C3111,C3112,C3844	CKSRYB473K16	
	C2303,C2304,C2343,C2344	CKSRYB561K50	
	C3019,C3020,C3031,C3032	CKSRYB682K50	
	C3503,C3504	CKSRYB682K50	
	C3025,C3026	CKSRYB683K16	
	C2307,C2308,C2331,C2332	CKSRYB821K50	

XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	C3331-C3333		CKSRYF104Z25		Q3354,Q3601,Q3621		2SA1037K
	C2801		CQHA822J2A		Q51,Q52		2SB1237X
	C2210,C2211		CQMBA103J50		Q2803,Q2804		2SC1815
	C2806		CQMBA223J50		Q3101,Q3102,Q3353,Q3603		2SC2412K
					Q3605-Q3608,Q53		2SC2412K
RESISTORS							
	R2813		RD1/2LMF471J	△	Q3081		2SD1858X
	R2809		RD1/2LMF4R7J		Q31		2SD2012
	R2812		RD1/2LMF680J		Q2805,Q3311,Q3312		2SD2114K
	R54		RD1/2PM101J		Q2301,Q2302,Q3501,Q3502		2SK368
	R52		RD1/2PM221J		Q3313,Q3503		DTA124EK
	R3333,R3334		RD1/4LMF100J		Q3314		DTC124EK
	R3353,R3354		RD1/4PU101J	△	Q2306		DTC143EK
	R3081		RD1/4PU221J	△	Q3351		IRFI9Z34G
	R3317,R3318		RD1/4PU823J	△	Q3352		IRFIZ34G
	R3605		RS1/10S103J	△	D3301,D3302		1SR139-100
	R3357,R3358		RS1/10S153J	△	D2191		1SS133
	R2309		RS1/10S222J		D2301-D2306		1SS133
	R3330,R3611,R3612		RS1/10S223J	△	D3101,D3102		1SS133
	R2001		RS1/10S471J		D3351-D3354,D3361,D3362,D3601		1SS133
	R3319,R3320		RS1/10S561J		D3603,D3604,D3621,D3622		1SS133
	R3355,R3356		RS1/10S563J		D3625,D3626		1SS133
	R3315,R3316,R3603,R3604		RS1/10S823J	△	D2201,D2202,D3051		1SS355
△	R61		RS1LMF821J		D3355,D3356		20E2-FC
	R3991,R3992		RS2LMF331J		D3083		MTZJ11C
	R3601,R3602		RS3LMFR22J		D61		MTZJ12C
	VR2303-VR2306 (10kΩ)		VCP1156		D35,D36		MTZJ15C
	VR2301,VR2302 (100kΩ)		VCP1162		D3359,D3360		MTZJ18B
	VR2801,VR2802 (220kΩ)		VCP1164		D3363,D3364		MTZJ39C
	Other Resistors		RS1/16S□□□□		D2001		MTZJ6.2A
					D48,D53		MTZJ6.8C
OTHERS					D3357,D3358		MTZJ7.5C
	14P CABLE HOLDER		51063-1405	COILS			
CN2302	KR CONNECTOR		B2B-PH-K-S		L3331,L3332	AF CHOKE COIL	ATH-133
CN2303	KR CONNECTOR		B3B-PH-K-R		L2801	OSC COIL	ATX7002
CN2301	KR CONNECTOR		B3B-PH-K-S		L2301,L2302		LTA822J
J11	JUMPER WIRE		D15A14-450-2651		L3991	AXIAL INDUCTOR	XTL3001
CN1053	16P FFC CONNECTOR		HLEM16S-1	RELAY			
CN5105	27P FFC CONNECTOR		HLEM27S-1		RY3601		ASR7008
CN5106	5P FFC CONNECTOR		HLEM5S-1	CAPACITORS			
CN3051	14P PLUG		KM200IB14		C2335-C2338		CCCCH270J50
	PCB BINDER		VEF1040		C2301,C2302		CCSRCH100D50
JA3001,JA3441	2P PIN JACK		VKB1060				
CN3331	8P SPEAKER TERMINAL		XKE3004				
JA3991	HEADPHONE JACK		XKN3004				

F AF ASSY (XWZ3300)

SEMICONDUCTORS

△	IC3501,IC3502	AN4558S
△	IC3836	BA3838F
△	IC2101,IC3101,IC3102	BA4558F-HT
	IC5691	BA4558F-HT
	IC5891	BU4094BCF
	IC2301	HA12211NT
	IC3001	LC75394NED
△	IC42,IC51	NJM7805FA
△	IC32	NJM7812FA
△	IC3301	STK407-070B

Mark	No.	Description	Part No.
	Q3354,Q3601,Q3621 Q51,Q52 Q2803,Q2804 Q3101,Q3102,Q3353,Q3603 Q3605-Q3608,Q53		2SA1037K 2SB1237X 2SC1815 2SC2412K 2SC2412K
△	Q3081 Q31 Q2805,Q3311,Q3312 Q2301,Q2302,Q3501,Q3502 Q3313,Q3503		2SD1858X 2SD2012 2SD2114K 2SK368 DTA124EK
	Q3314 Q2306		DTC124EK DTC143EK
△	Q3351		IRFI9Z34G
△	Q3352		IRFIZ34G
△	D3301,D3302		1SR139-100
△	D2191		1SS133
	D2301-D2306		1SS133
△	D3101,D3102		1SS133
	D3351-D3354,D3361,D3362,D3601 D3603,D3604,D3621,D3622		1SS133 1SS133
	D3625,D3626 D2201,D2202,D3051		1SS133 1SS355
△	D3355,D3356 D3083 D61		20E2-FC MTZJ11C MTZJ12C
	D35,D36 D3359,D3360 D3363,D3364 D2001 D48,D53		MTZJ15C MTZJ18B MTZJ39C MTZJ6.2A MTZJ6.8C
	D3357,D3358		MTZJ7.5C
COILS			
	L3331,L3332 AF CHOKE COIL		ATH-133
	L2801 OSC COIL		ATX7002
	L2301,L2302		LTA822J
	L3991 AXIAL INDUCTOR		XTL3001
RELAY			
	RY3601		ASR7008
CAPACITORS			
	C2335-C2338		CCCCCH270J50
	C2301,C2302		CCSRCH100D50
	C3047,C3048		CCSRCH101J50
	C2192		CCSRCH220J50
	C3319,C3320		CCSRCJ3R0C50
	C3311,C3312,C3507,C3508		CEANL1R0M50
	C3317,C3318		CEANP220M35
	C3621		CEANP2R2M2A
△	C3313,C3314		CEANP2R2M50
	C3441		CEANP330M2A
	C2810,C3045,C3081,C3091,C3115		CEAT100M50
	C32,C33,C35,C3602,C3842		CEAT100M50
	C43,C52,C5691,C5692		CEAT100M50
	C2002,C2316		CEAT101M16
	C3303,C3304		CEAT101M50
	C2312,C2313,C3035,C3036,C3110 C3506		CEAT1R0M50 CEAT1R0M50
	C2214,C2215,C2321,C2322,C53		CEAT220M50
	C2001,C3601		CEAT221M16
△	C41		CEAT222M25

XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

Mark	No.	Description	Part No.
	C2212,C2213,C2319,C2320		CEAT2R2M50
	C3005-C3010,C3015-C3018,C3037		CEAT2R2M50
	C3039,C3041-C3044,C3082,C3104		CEAT2R2M50
	C2804,C2805		CEAT330M16
	C2351,C2352,C3107		CEAT3R3M50
	C3841		CEAT470M16
	C3501,C3502,C3509,C3510		CEAT470M25
	C3108,C3109,C3857		CEAT4R7M50
	C3021,C3022		CEATR10M50
	C3102,C3325		CEATR47M50
	C3046		CEJA100M50
	C3038,C3040		CEJA2R2M50
	C3027,C3028		CFTLA154J50
	C3023,C3024		CFTLA474J50
	C2194		CKSQYB105K10
	C3845		CKSQYB224K16
	C2315,C2317,C2318,C3053,C3098		CKSRYB103K50
	C3103		CKSRYB103K50
	C1992,C1993,C2191,C2193,C3099		CKSRYB104K16
	C3846,C3847,C5891		CKSRYB104K16
	C3033,C3034		CKSRYB122K50
	C3315,C3316		CKSRYB222K50
	C2323,C2326		CKSRYB223K50
	C2812,C2813		CKSRYB272K50
	C3029,C3030		CKSRYB273K16
	C2808,C2809		CKSRYB332K50
	C2333,C2334		CKSRYB392K50
	C2807		CKSRYB472K50
	C3101,C3111,C3112,C3844		CKSRYB473K16
	C2303,C2304,C2343,C2344		CKSRYB561K50
	C3019,C3020,C3031,C3032		CKSRYB682K50
	C3503,C3504		CKSRYB682K50
	C3025,C3026		CKSRYB683K16
	C2307,C2308,C2331,C2332		CKSRYB821K50
	C3331-C3333		CKSRYF104Z25
	C2801		CQHA822J2A
	C2806		CQMBA223J50

RESISTORS

	R2812	RD1/2LMF470J
	R2809	RD1/2LMF4R7J
	R54	RD1/2PM101J
	R52	RD1/2PM221J
	R3333,R3334	RD1/4LMF100J
	R3353,R3354	RD1/4PU101J
	R2113	RD1/4PU103J
	R3081	RD1/4PU221J
	R2351,R2352	RD1/4PU473J
	R3317,R3318	RD1/4PU823J
	R3605	RS1/10S103J
	R3357,R3358	RS1/10S153J
	R2309	RS1/10S222J
	R3330,R3611,R3612	RS1/10S223J
	R2001	RS1/10S471J
	R3319,R3320	RS1/10S561J
	R3355,R3356	RS1/10S563J
	R3315,R3316,R3603,R3604	RS1/10S823J
	R61	RS1LMF821J
△	R3991,R3992	RS2LMF331J
	R3601,R3602	RS3LMFR22J
	VR2802 (100kΩ)	VCP1162
	Other Resistors	RS1/16S□□□J

Mark	No.	Description	Part No.
OTHERS			
		14P CABLE HOLDER	51063-1405
	CN3331	4P SPEAKER TERMINAL	AKE7018
	CN2302	KR CONNECTOR	B2B-PH-K-S
	CN2303	KR CONNECTOR	B3B-PH-K-R
	CN2301	KR CONNECTOR	B3B-PH-K-S
	J11	JUMPER WIRE	D15A14-450-2651
	CN1053	16P FFC CONNECTOR	HLEM16S-1
	CN5105	27P FFC CONNECTOR	HLEM27S-1
	CN5106	5P FFC CONNECTOR	HLEM5S-1
	CN3051	14P PLUG	KM200IB14
		PCB BINDER	VEF1040
	JA3001,JA3441	2P PIN JACK	VKB1060
	JA3991	HEADPHONE JACK	XKN3004

SECONDARY ASSY SEMICONDUCTORS

IC71 (1.25A)	AEK7010
IC41 (3A)	AEK7015
IC12 (10A)	AEK7022
IC21,IC22 (7A)	AEK7047
IC11 (10A)	AEK7068
Q71	2SA965
D73	1SS133
D11,D21	G5SBA20L
D74	MTZJ33C
D75	MTZJ8.2B
D71,D72,D78-D81	S5688G

CAPACITORS

C72	CEAT220M50
C71	CEAT221M63
C21,C22	CEAT332M50
C13	CQMA223K2E
C11,C12	XCH3001

RESISTORS

All Resistors	RD1/4PU□□□J
---------------	-------------

OTHERS

14P CABLE HOLDER	51063-1405
------------------	------------

PRIMARY ASSY SEMICONDUCTORS

△ IC81	NJM7805FA
Q81	2SD1859X
D85,D88-D90	1SS133
△ D81	S1WB(A)60SD

TRANSFORMER

△ T2	XTT3004
------	---------

SWITCH AND RELAY

△ S1	XKX3001
△ RY81	ASR7018

Mark	No.	Description	Part No.
CAPACITORS			
△	C1,C2 (0.01μF)		ACE7027
	C83		CEAT100M50
△	C82		CEAT102M25
RESISTORS			
	All Resistors		RD1/4PU□□□J
OTHERS			
	H1-H6	FUSE CLIP	AKR7001
△	CN1	2P VH CONNECTOR	B2P3-VH
	CN2	4P VH CONNECTOR	B4P7-VH
△	AN1	1P AC INLET	XKP3041

I DISPLAY ASSY SEMICONDUCTORS

IC3901	BA4558F-HT
IC3931	M65855FP
IC5501	PDC063A
Q5501	2SA1037K
Q2903,Q2906,Q2908	2SB1132
Q5602,Q5656-Q5658,Q5801	2SC2412K
Q2910,Q2911,Q5826	DTA124EK
Q5601	DTC124EK
Q2901,Q2904,Q2907,Q5502,Q5604	DTC143EK
Q5650-Q5655,Q5821-Q5825,Q5827	DTC143EK
D5591,D5593,D5594,D5626,D5811	1SS133
D5561-D5568	1SS181
D2901-D2903,D5631,D5652-D5655	1SS355
D5657,D5658,D5901	1SS355
D3931	MTZJ5.1B
D5610,D5611,D5615,D5616,D5618	SLP3118C51H
D5622,D5904	SLP3118C51H
D5601-D5608,D5612,D5614,D5617	SLP6118C51H
D5621	SLP6118C51H
D5902	SLP7118C51H
D5619,D5620,D5903	SLP9118C51H
D5651	UDZS5.6B

COILS

L3901,L3902	LCTB100K1608
L3931	LCTB100K2125
L3914,L3915	CHIP SOLID INDUCTOR
L5811	AXIAL INDUCTOR
	VTL1145
	XTL3004

SWITCHES

S5911-S5921,S5923-S5929	XSG3001
S5931-S5940	XSG3001
S5951	XSX3003
S5952	XSX3004

CAPACITORS

C5812 (0.047F/5.5V)	ACH1246
C3903	CCSRCH331J50
C5821	CEAL100M16
C3943	CEJA101M16
C5803	CEJA1R0M50
C3901,C3902,C3904,C3906	CEJA2R2M50
C3905,C5510,C5811,C5814	CEJA470M16
C3937	CEJA4R7M50
C3932	CEJAR47M50
C3933	CEJQ220M10

Mark	No.	Description	Part No.
	C5997,C5998		CKSQYB104K25
	C5999		CKSQYB105K10
	C5625		CKSQYF224Z25
	C5804,C5951,C5953		CKSRYB102K50
	C3911,C3931,C3934,C3940		CKSRYB103K50
	C5816		CKSRYB104K16
	C3939		CKSRYB123K50
	C5506		CKSRYB471K50
	C3907,C3938,C5503,C5504,C5509		CKSRYB472K50
	C3935,C5507,C5508		CKSRYB473K16
	C3942,C5634,C5901		CKSRYF104Z25
	C5813,C5822		CKSRYF473Z50

RESISTORS

R5506,R5508	RA7T104J
R2905,R5524,R5536	RD1/4PU102J
R3940	RD1/4PU121J
R5530	RD1/4PU221J
R5609	RD1/4PU391J
R5601,R5613,R5617	RD1/4PU560J
R2902,R2907	RD1/4PU681J
R5805	RS1/10S101J
R5902-R5904	RS1/10S221J
R5614,R5616	RS1/10S471J
R5606-R5608	RS1/10S620J
VR3901,VR3931 (10k-x1)	XCS3002
Other Resistors	RS1/16S□□□J

OTHERS

X5501	CERAMIC RESONATOR (10MHz)	DSS1048
	2P CABLE HOLDER	51048-0200
	4P CABLE HOLDER	51048-0400
CN5502	FFC CONNECTOR 5P	52492-0520
JA3901,JA3902		AKN7004
	REMOTE CONTROL JACK	
J5601	JUMPER WIRE 2P	D20PYY0210E
J81	JUMPER WIRE 4P	D20PYY0425E
5901	REMOTE RECEIVER UNIT	GP1U28X
CN2901	FFC CONNECTOR 15P	HLEM15R-1
CN5501	FFC CONNECTOR 27P	HLEM27R-1
5621	FL HOLDER	VNF1096
V5621	FL TUBE	XAV3009

J BLUE LED ASSY SEMICONDUCTOR

D5613	E1L4E-7B(123)
-------	---------------

OTHERS

2P CABLE HOLDER	51048-0200
LED HOLDER	XAK3154

6. ADJUSTMENT

6.1 TUNER SECTION

■ FM Tuner Section

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

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

Note:
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.

■ AM Tuner Section

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

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

Note (*1) : For the area using 10kHz step, frequency should be 1000kHz.

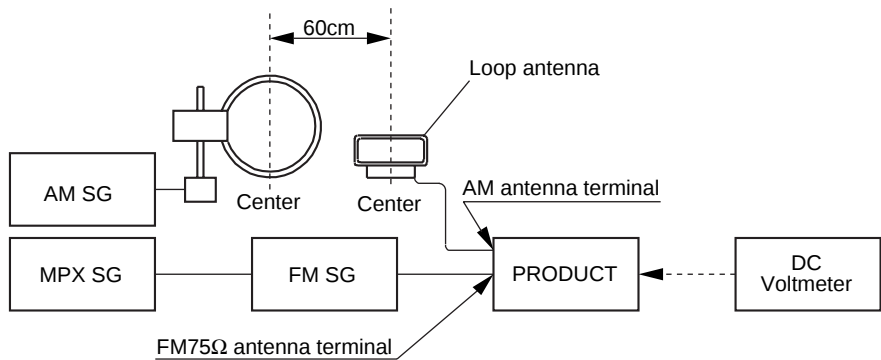


Fig.1 AM and FM Adjustment Wiring Diagram

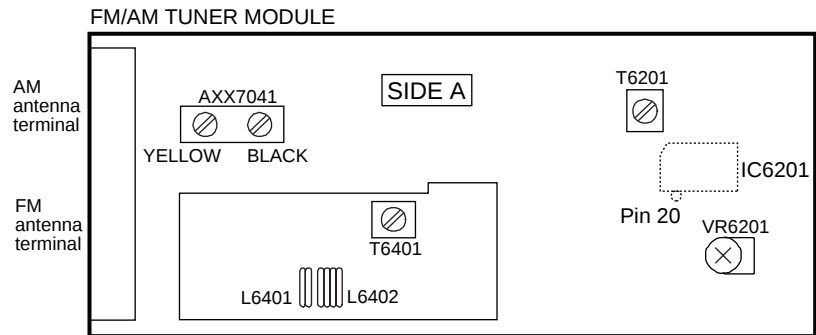


Fig.2 Adjustment Point

■ AM Tuner SW Section (XR-VS90SW and XR-VS70SW only)

- Set the mode selector to SW2.
- Connect the wiring as shown in Fig. 3.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dB μ V/m)			
1	AM Front End Sensitivity	14	25 to 35	14 MHz	L6303	Adjust so that the DC voltage between the IC6201 - pin 20 and GND becomes at maximum level.

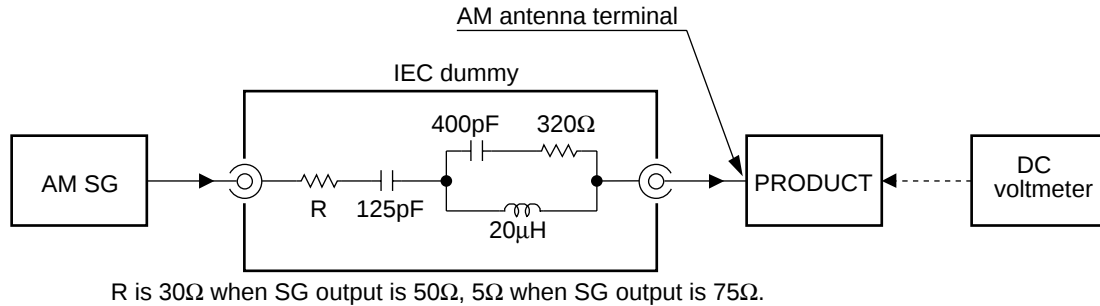


Fig. 3 SW Adjustment Wiring Diagram

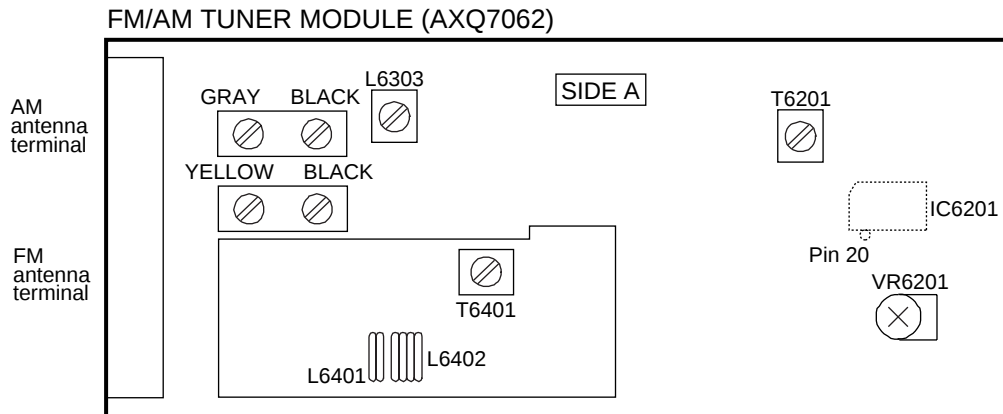


Fig. 4 Adjustment Point

6.2 CASSETTE DECK SECTION

6.2.1 For XR-VS90SW and XR-VS90

• Adjustment points and test points are shown in Fig. 5, Fig. 7 and Fig. 9.

■ Mechanical Adjustment

• Test tape : NCT-111 (3kHz, 30min).

1. Tape Speed Adjustment

No.	Mode	Test Tape	Adjusting Points	Measurement Points	Adjustment Procedure	Remarks
1	Deck I PLAY	NCT-111 (Playback : 3kHz)	ADJ. VR on CASSETTE MECHA (Fig. 5)	TAPE TEST POINT (Rch) (AF Assy)	Press the PLAY SW and adjust so that the reading becomes $3000\text{Hz} \pm 20\text{Hz}$. Confirm that wow & flutter level is below 0.3% (in the reverse direction, confirm that the reading is within $3000\text{Hz} \pm 60\text{Hz}$).	

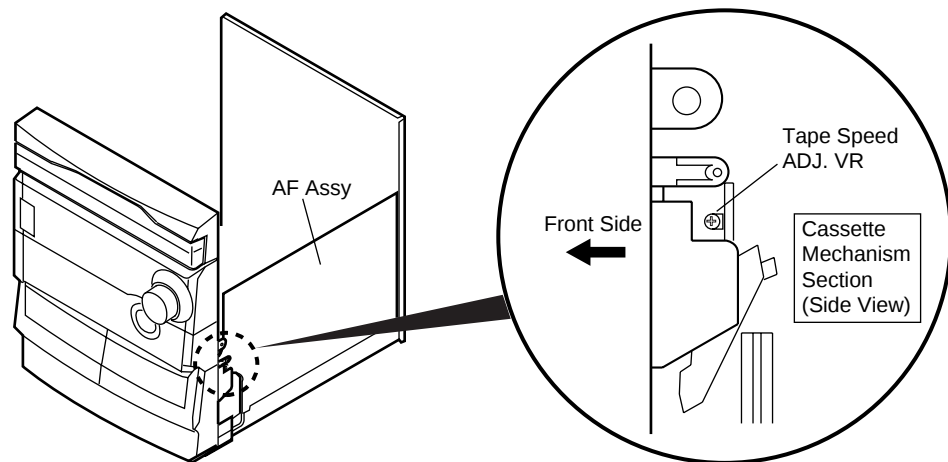


Fig. 5 Tape Speed ADJ. Point

■ 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 check
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) Bias Oscillation Frequency Adjustment
- (2) Recording Bias Adjustment
- (3) Recording Level Adjustment.
- (4) ALC Operation Check

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

*Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.*

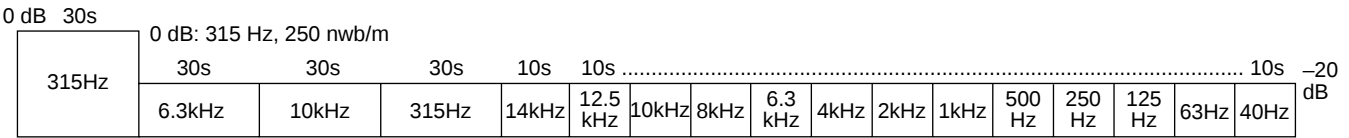


Fig. 6 STD-331E Test Tape

■ Playback Adjustment

(1) Head Azimuth Adjustment

• 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 test tape (Playback: 10kHz, -20dB)	Deck I	Head azimuth adjustment screw (Fig. 7)	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 test tape (Playback: 315Hz, 0dB)	Deck I	VR2303 (L ch) VR2304 (R ch)	TAPE TEST POINT (L, Rch) (AF Assy)	- 3.7dBV	
			Deck II	VR2305 (L ch) VR2306 (R ch)			

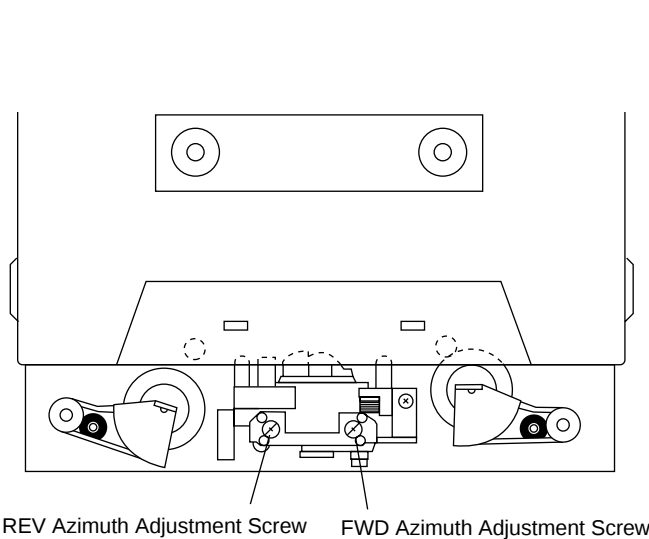


Fig. 7 Head Azimuth Adjustment Screw

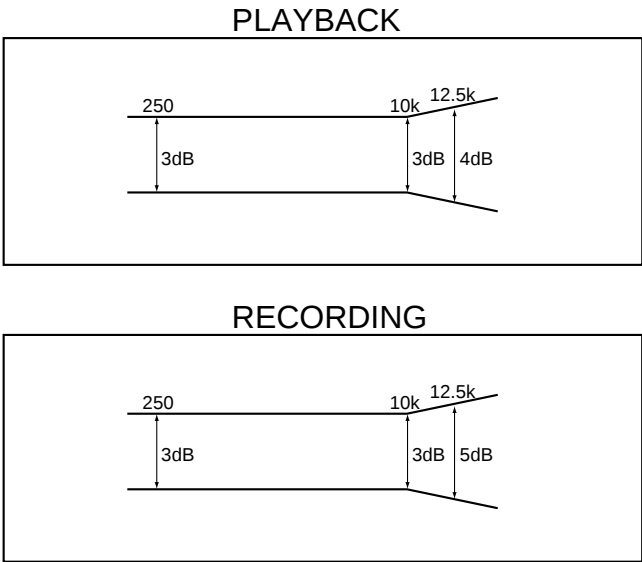


Fig. 8 Frequency Characteristics

■ Recording Adjustment

(1) Bias Oscillation Frequency Adjustment

Step	Mode	Input Signal/Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Load the STD-632 test tape and set the recording mode.	Deck I	_____	_____	Oscillation frequency to be 105.0kHz $\pm$ 2kHz.	If the REC/STOP button for four seconds while the power is in STAND BY mode, the frequency will decrease 2 to 3 kHz.
			Deck II	L2801 (AF Assy)	Between ① point Fig. 9 and GND		

(2) Recording Bias Adjustment

• Since this adjustment affects recording bias, prevent distortion from increasing due to underbias.

Step	Mode	Input Signal/Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Input a 315 Hz signal to the AUX terminal and set the input selector to AUX.	Deck I	_____	TAPE TEST POINT (L, Rch) (AF Assy)	– 23.7 dBV	
			Deck II	Input signal level			
2	REC → PLAY	Load the 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 $\pm$ 0.5 dB from that of the 315Hz signal.	
			Deck II	VR2801 (L ch) VR2802 (R ch)			

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

(3) Recording Level Adjustment

Step	Mode	Input Signal/Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Input a 315 Hz signal to the AUX terminal and set the input selector to AUX.	Deck I	Input signal level	TAPE TEST POINT (L, Rch) (AF Assy)	– 7.7 dBV	
			Deck II				
2	REC → PLAY	Load the 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 315 Hz signal becomes – 7.7 dBV.	
			Deck II	VR2301 (L ch) VR2302 (R ch)			

(4) ALC Operation Check

Step	Mode	Input Signal/Test Tape	Adjusting Points	Measurement Points	Adjustment Value	Remarks
1	REC/ PAUSE	Input a 315 Hz signal to the AUX terminal and set the input selector to AUX.	Input signal level	TAPE TEST POINT (L, Rch) (AF Assy)	– 8.2 dBV	
2			Set to a level + 10dB above the input level at step 1.		Confirm that the reading is – 2.2 $\pm$ 2.5 dBV.	

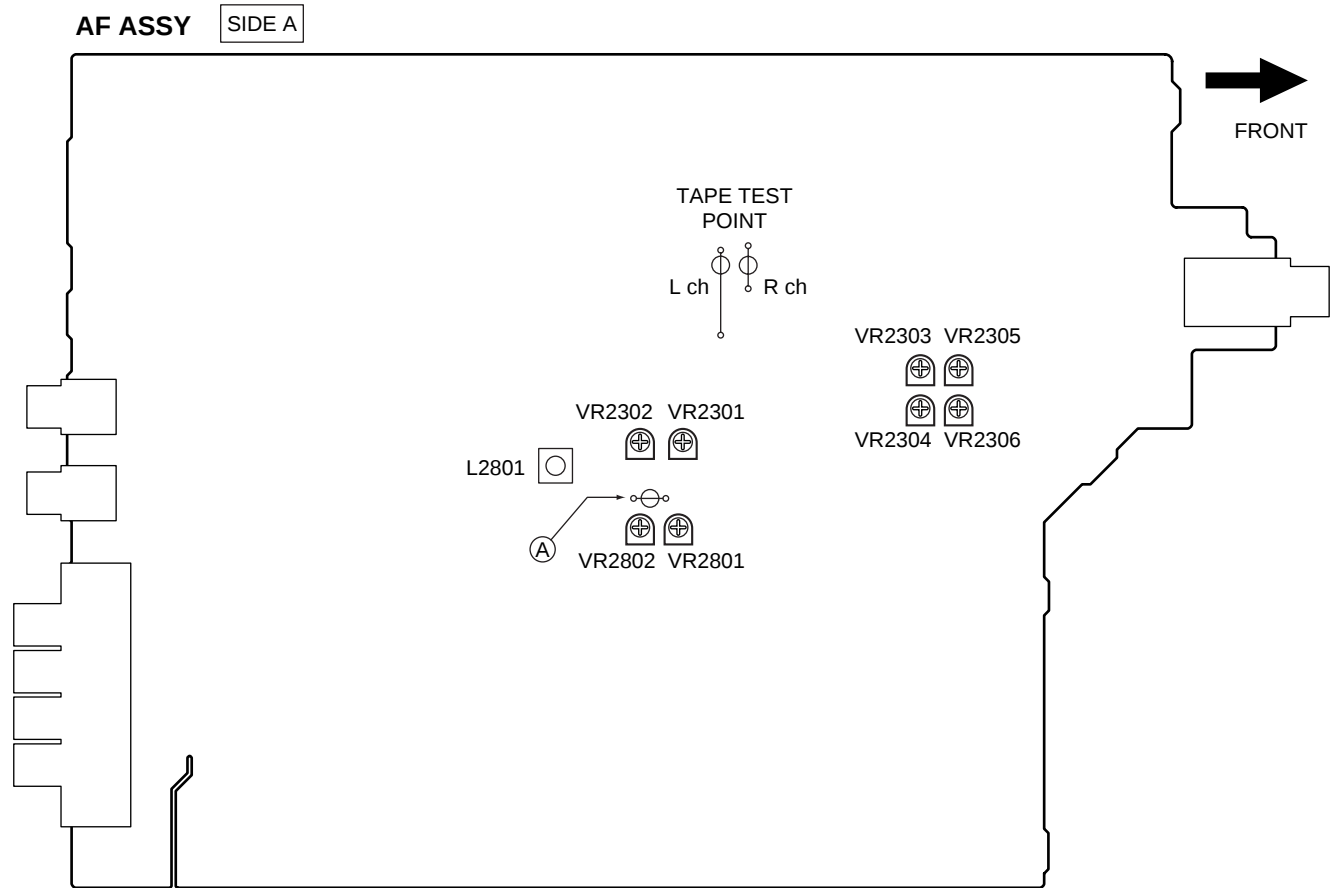


Fig. 9 Adjustment and Measurement Points

6.2.2 For XR-VS70SW and XR-VS70

• Adjustment points and test points are shown in Fig. 10, Fig. 12 and Fig. 13.

Mechanical Adjustment

• Test tape : NCT-111 (3kHz, 30min).

1. Tape Speed Adjustment

No.	Mode	Test Tape	Adjusting Points	Measurement Points	Adjustment Procedure	Remarks
1	Deck I PLAY	NCT-111 (Playback : 3kHz)	ADJ. VR on CASSETTE MECHA (Fig. 10)	TAPE TEST POINT (Rch) (AF Assy)	Press the PLAY SW and adjust so that the reading becomes 3000Hz ± 20Hz. Confirm that wow & flutter level is below 0.3% (in the reverse direction, confirm that the reading is within 3000Hz ± 60Hz).	

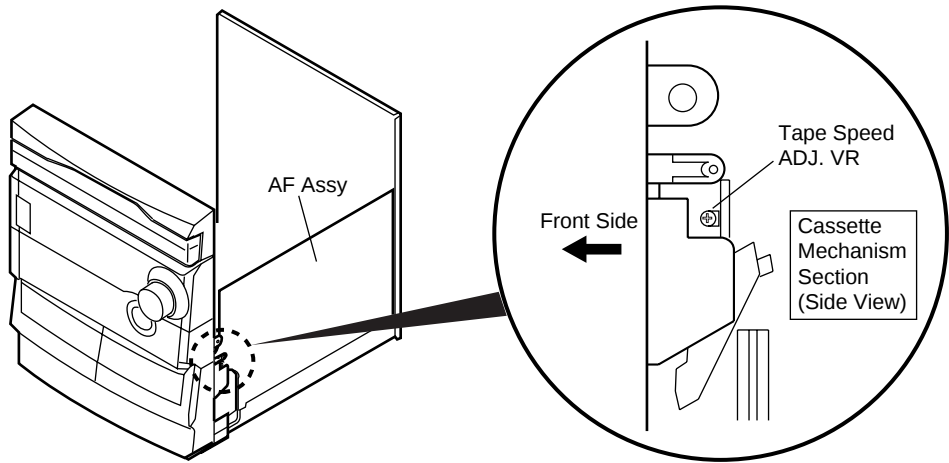


Fig. 10 Tape Speed ADJ. Point

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 check
STD-632 : Normal blank tape
- (5) Provide yourself with the following measuring devices:
 - AC voltmeter (Noisemeter : filter off)
 - AC millivoltmeter
 - Low-frequency oscillator
 - Attenuator
 - Oscilloscope
- (6) Adjust both right and left channels unless otherwise specified.

- (7) 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.
- (8) Always follow the indicated adjustment order.
Otherwise, a complete adjustment may not be achieved.

Playback Adjustment (Decks I and II)

- (1) Head Azimuth Adjustment

Recording Adjustment (Deck II)

- (1) Bias Oscillation Frequency Adjustment
- (2) Recording Bias Adjustment

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

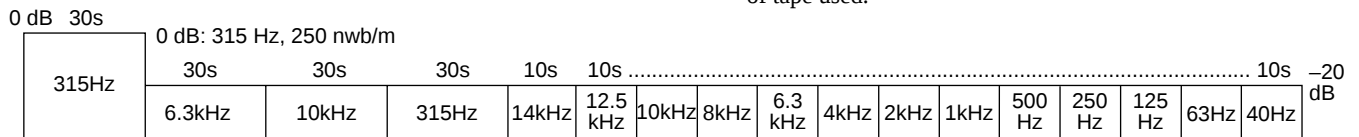


Fig. 11 STD-331E Test Tape

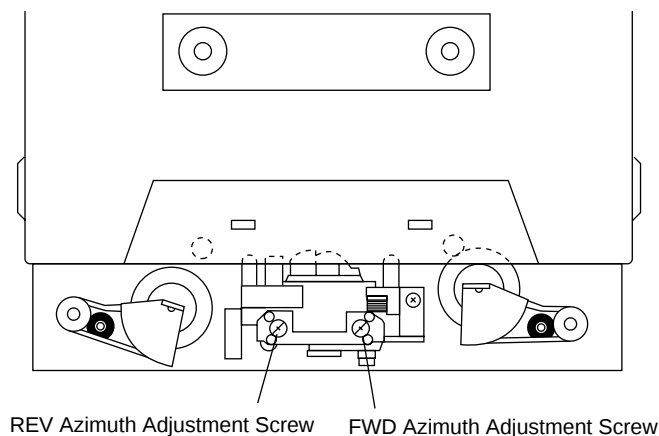


Fig. 12 Head Azimuth Adjustment Screw

■ Playback Adjustment

(1) Head Azimuth Adjustment

- 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 test tape (Playback: 10kHz, −20dB)	Deck I	Head azimuth adjustment screw (Fig. 12)	TAPE TEST POINT (L, Rch) (AF Assy)	Max. playback signal level	After adjustment, apply silicon bond to the head azimuth adjustment screw.
			Deck II				

■ Recording Adjustment

(1) Bias Oscillation Frequency Adjustment

Step	Mode	Input Signal/ Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Load the STD-632 test tape and set the recording mode.	Deck I	_____	_____	Oscillation frequency to be 105.0kHz ± 2kHz.	
			Deck II	L2801 (AF Assy)	Between ① point Fig. 13 and GND		

(2) Recording Bias Adjustment

- Since this adjustment affects recording bias, prevent distortion from increasing due to underbias.

Step	Mode	Input Signal/Test Tape	Adjusting Points		Measurement Points	Adjustment Value	Remarks
1	REC	Load the STD-632 test tape and record (No signal)	Deck II	VR2802 (AF Assy)	BIAS TP POINT (AF Assy)	24V to 27V	
2	REC → PLAY	Load the STD-632 test tape. Record the 315Hz and 10kHz signals at −25dBV input level (check ② point) and playback.	Deck I	_____	TAPE TEST POINT (L, Rch) (AF Assy)	Repeat adjustment until playback level of the 10kHz signal is within 0 ± 1.0dB from that of the 315Hz signal.	
			Deck II	VR2802 (AF Assy)			

Note : No connecting to BIAS TP POINT at Step 2 REC → PLAY.

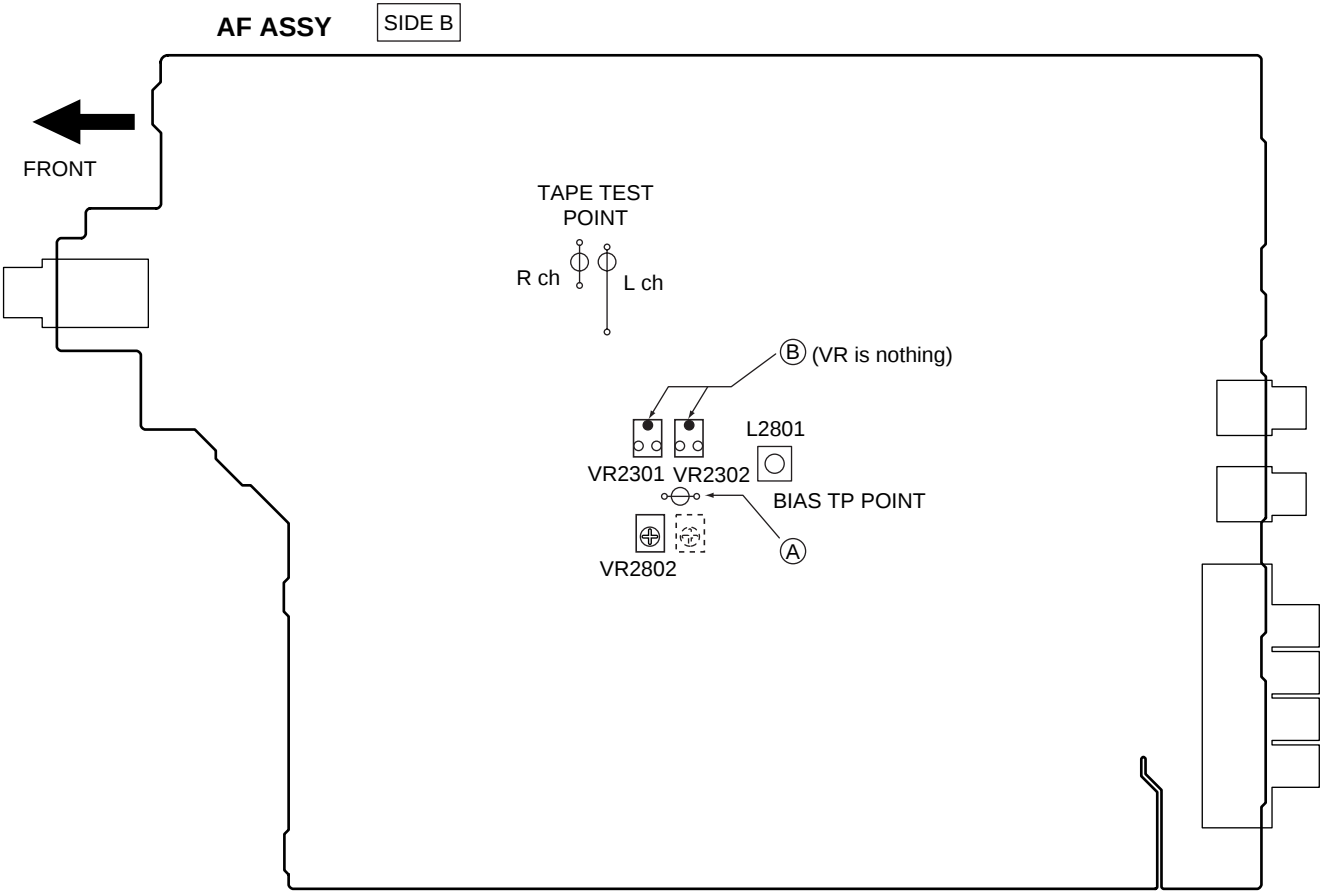


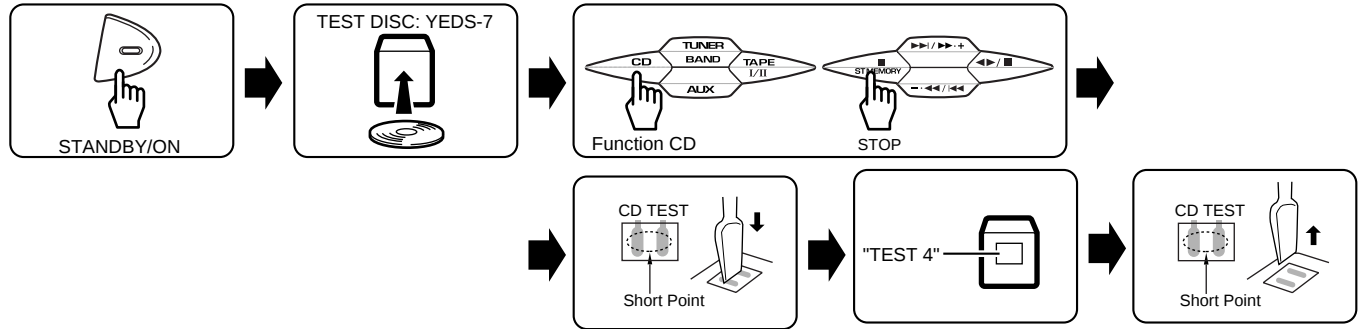
Fig. 13 Adjustment and Measurement Points

6.3 TEST MODE

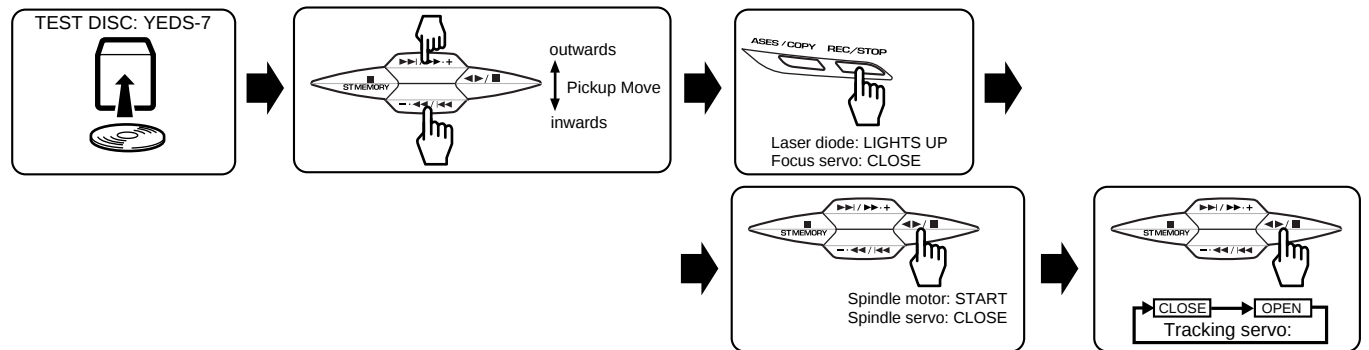
NOTE: There is no information to be shown in this CD adjustment.

■ How to Start/Cancel Test Mode

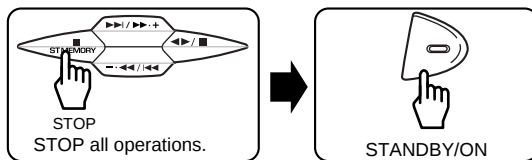
TEST MODE : ON



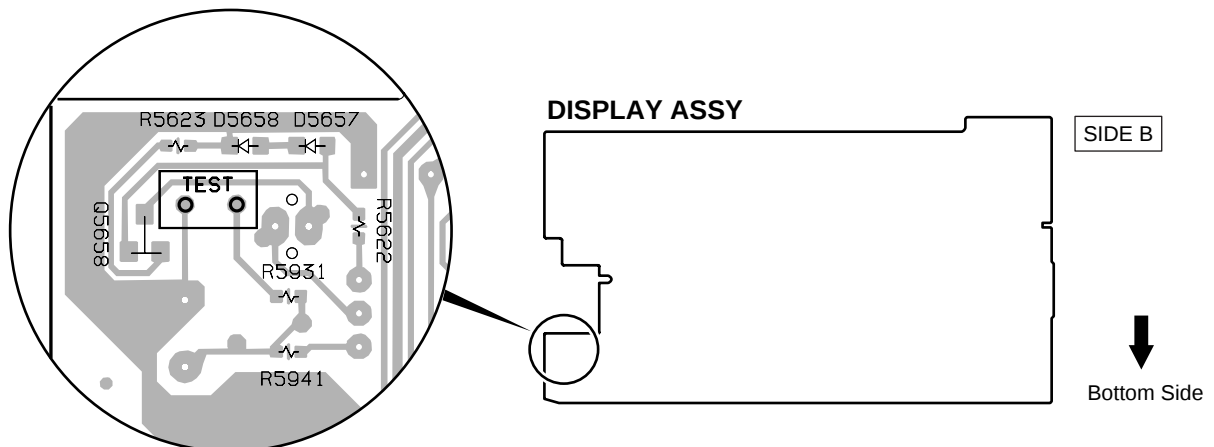
TEST MODE : PLAY



TEST MODE : STOP CANCEL



■ Test Point



7. GENERAL INFORMATION

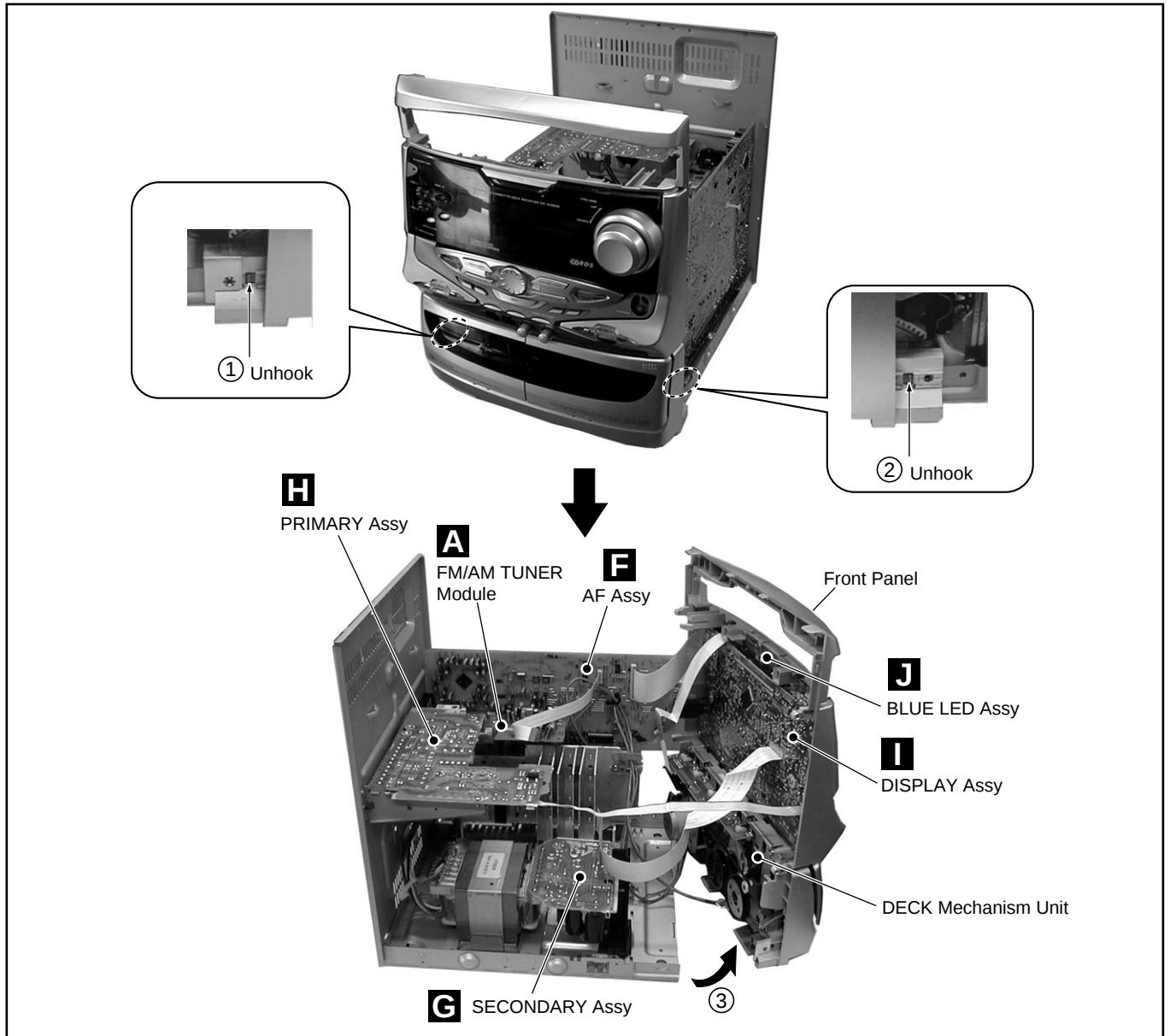
7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

■ \$M MECHANISM CD-2

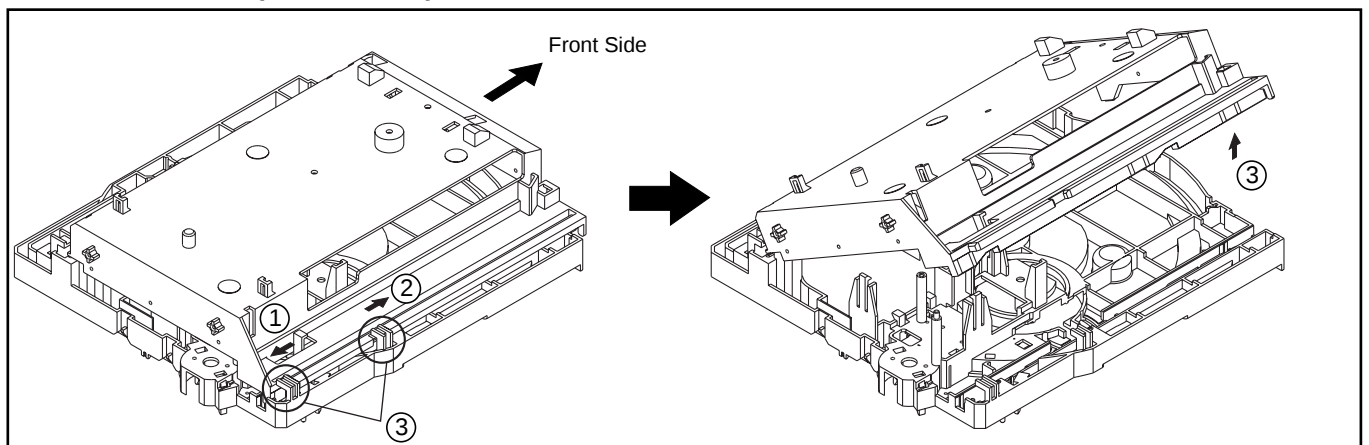


FRONT PANEL

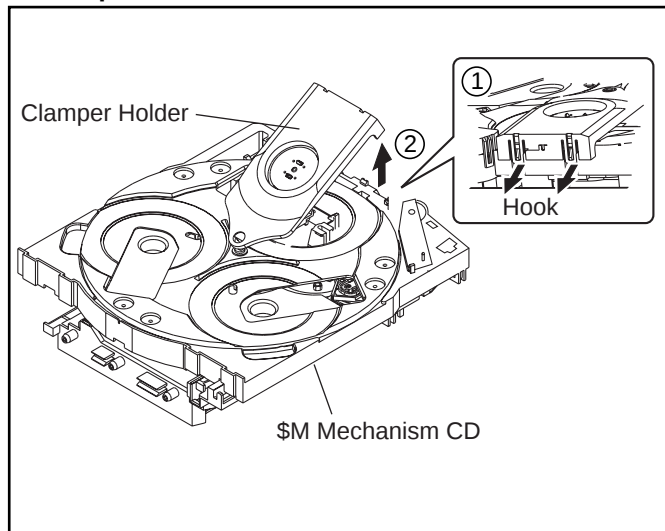


\$M MECHANISM CD-2 ADDITIONAL TO JOB

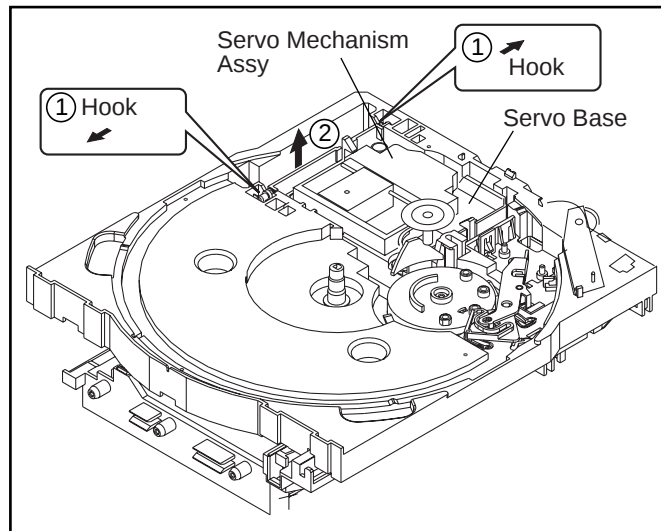
● Mechanism Base (Bottom View)



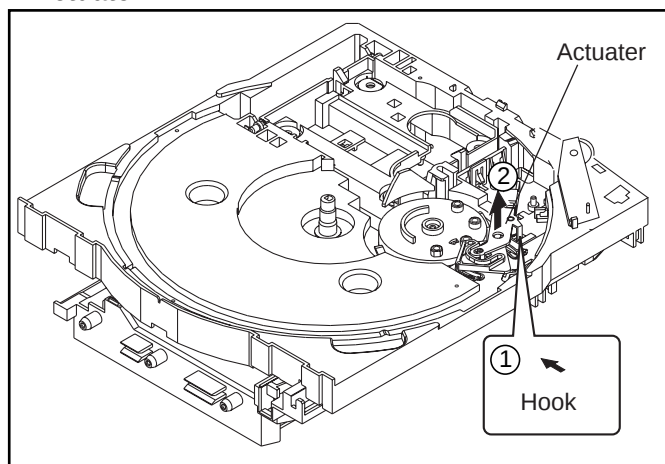
● Clamper Holder



● Servo Base

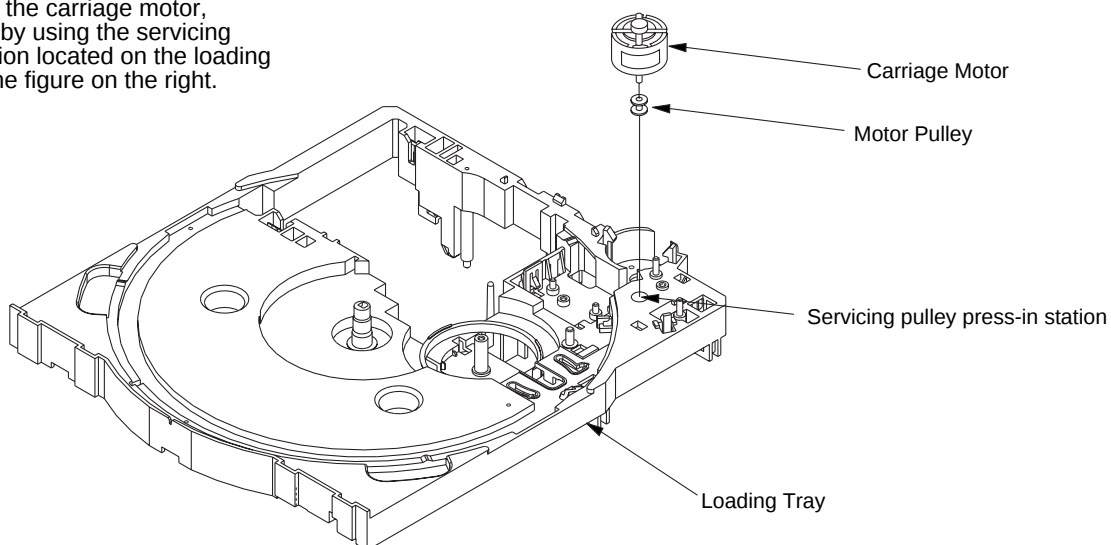


● Actuator



■ FITTING THE PULLEY INTO THE CARRIAGE MOTOR

For replacement of the carriage motor, fit the motor pulley by using the servicing pulley press-in station located on the loading tray, as shown in the figure on the right.



7.2 PARTS

7.2.1 IC

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

■ PDC063A (DISPLAY ASSY : IC5501)

- System Control Microcomputer IC

● Pin Function

No.	Pin Name	I/O	Function
1	CD RESET	O	Reset output for CD decoder
2	CD SE CLK	O	Clock output for CD decoder SENS data
3	CD SENS	I	CD SENS input
4	CD LAT	O	Latch output for CD decoder data
5	CD DCLK	O	Clock output for CD decoder data
6	CD DATA	O	CD decoder data output
7	A/V mode LED	O	Audio/Visual mode LED output
8	TIMER LED	O	TIMER LED output
9	RY ON/OFF	O	RELAY ON/OFF
10	BLUE LED	O	BLUE LED output
11	XRESET	I	CPU reset input
12	VOL JOG	I	Volume JOG input
13	MORF JOG	I	Sound morphing JOG input
14	VSS	–	Ground
15	CF1	I	
16	CF2	O	
17	VDD	–	Power supply
18	KEY1	I	Key input 1 (A/D)
19	KEY2		Key input 2 (A/D)
20	KEY3		Key input 3 (A/D)
21	MS	I	Deck MS input
22	ST/TUNE	I	Tuner STEREO/TUNE input
23	SPE-IN	I	Spectrum analyzer signal input
24	–	–	
25	CD MUTE	O	CD mute output (pull-up)
26	AC	I	AC pulse interrupt input
27	SCOR	I	CD SCOR interrupt input
28	RDS CLK	I	Tuner RDS clock interrupt input
29	REMOCON	I	Remote control interrupt input
30	G1	O	Grid output
31	G2		
32	G3		
33	G4		
34	G5		
35	G6		
36	G7		
37	G8		
38	G9		
39	G10		
40	G11		
41	G12		
42	G13		
43	G14		
44	G15		
45	S1	O	Segment 1 output
46	VDD	–	Power supply
47	S2/D5597	I/O	Segment 2 output/SW7 input
48	S3/D5598		Segment 3 output/SW6 input
49	S4/D5595		Segment 4 output/SW5 input
50	S5/D5594		Segment 5 output/SW4 input

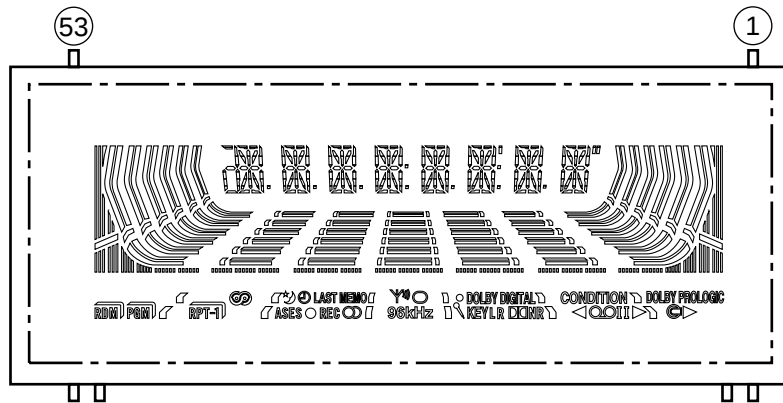
XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

No.	Pin Name	I/O	Function
51	VFDP	–	
52	S6/D5593	I/O	Segment 6 output/SW3 input
53	S7/D5592		Segment 7 output/SW2 input
54	S8/D5591		Segment 8 output/SW1 input
55	S9	O	Segment 9 output
56	S10/CLAMP	I/O	Segment 10 output/CD CLAMP SW input
57	S11/OPEN		Segment 11 output/CD OPEN SW input
58	S12/INSIDE		Segment 12 output/CD INSIDE SW input
59	S13/CDISC123		Segment 13 output/CD DISC 123 SW input
60	S14/ARF		Segment 14 output/DECK ARF SW input
61	S15/ARR		Segment 15 output/DECK ARR SW input
62	S16/MODE1		Segment 16 output/DECK MODE SW1 input
63	S17/MODE2		Segment 17 output/DECK MODE SW2 input
64	S18/HALF1		Segment 18 output/DECK HALF SW1 input
65	S19/HALF2		Segment 19 output/DECK HALF SW2 input
66	S20/CrO2_1		Segment 20 output/DECK CrO2 SW1 input
67	S21/CrO2_2		Segment 21 output/DECK CrO2 SW2 input
68	S22	O	Segment 22 output
69	S23		Segment 23 output
70	S24		Segment 24 output
71	RDSDATA	I	Tuner RDS data input
72	VDD	–	Power supply
73	SOL2	O	DECK solenoid output 2
74	SOL1		DECK solenoid output 1
75	MOTOR	O	DECK motor output
76	CD LOAD IN	I	CD loading motor input (pull-down)
77	CD LOAD OUT	O	CD loading motor output (pull-down)
78	LED DISC3	O	DISC 3 LED output
79	LED DISC2		DISC 2 LED output
80	LED DISC1		DISC 1 LED output
81	REEL1	I	DECK reel pulse input 1
82	REEL2		DECK reel pulse input 2
83	–	–	
84	RDS MUTE	O	Mute output of Tuner RDS (pull-down)
85	PLL CE	O	Chip enable output of Tuner PLL
86	EVOL CE	O	Chip enable output of electronic volume IC
87	POWER	O	Power output
88	LINE MUTE	O	Line mute output
89	VSS	–	Ground
90	VDD	–	Power supply
91	EXP CLK	O	Clock output for EXP IC
92	EXP DATA	O	Data output for EXP IC
93	EXP CE	O	Chip enable output of EXP IC (BU4094BCF)
94	SCAN ON	O	Outputs for SW reading
95	CD SHUT	O	Crystal ON/OFF of the CD decoder
96	SQSO	I	CD subcode data input
97	CD SQCK	O	Clock output for CD subcode data
98	SYSDATA	O	Data output of the Tuner PLL data/electronic volume IC
99	TXDATA	I	Tuner data input
100	SYSCLK	O	Clock output of the Tuner PLL data/electronic volume IC

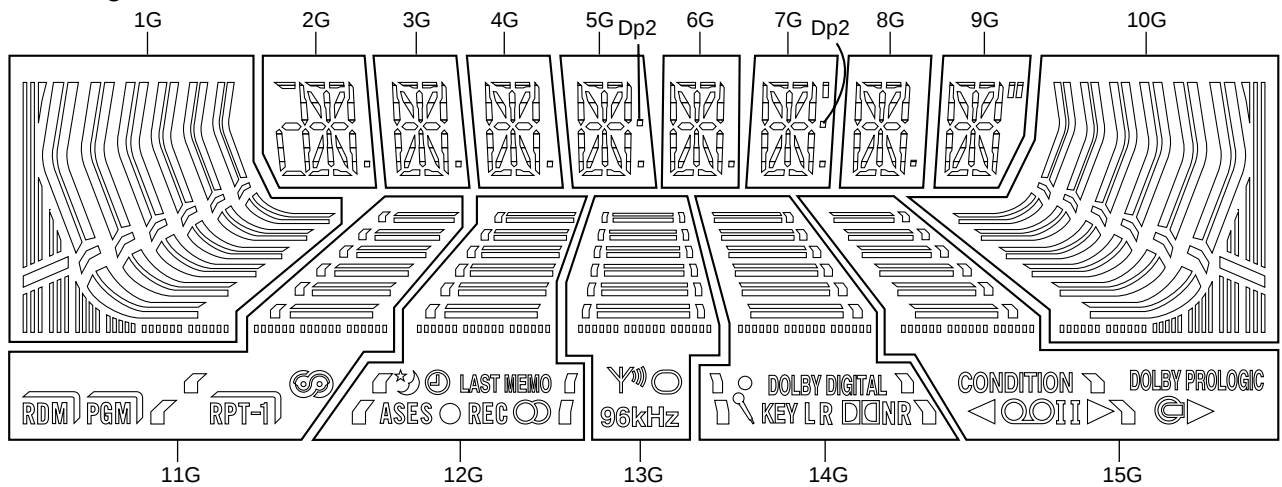
7.2.2 DISPLAY

■ XAV3009 (DISPLAY ASSY :V5621)

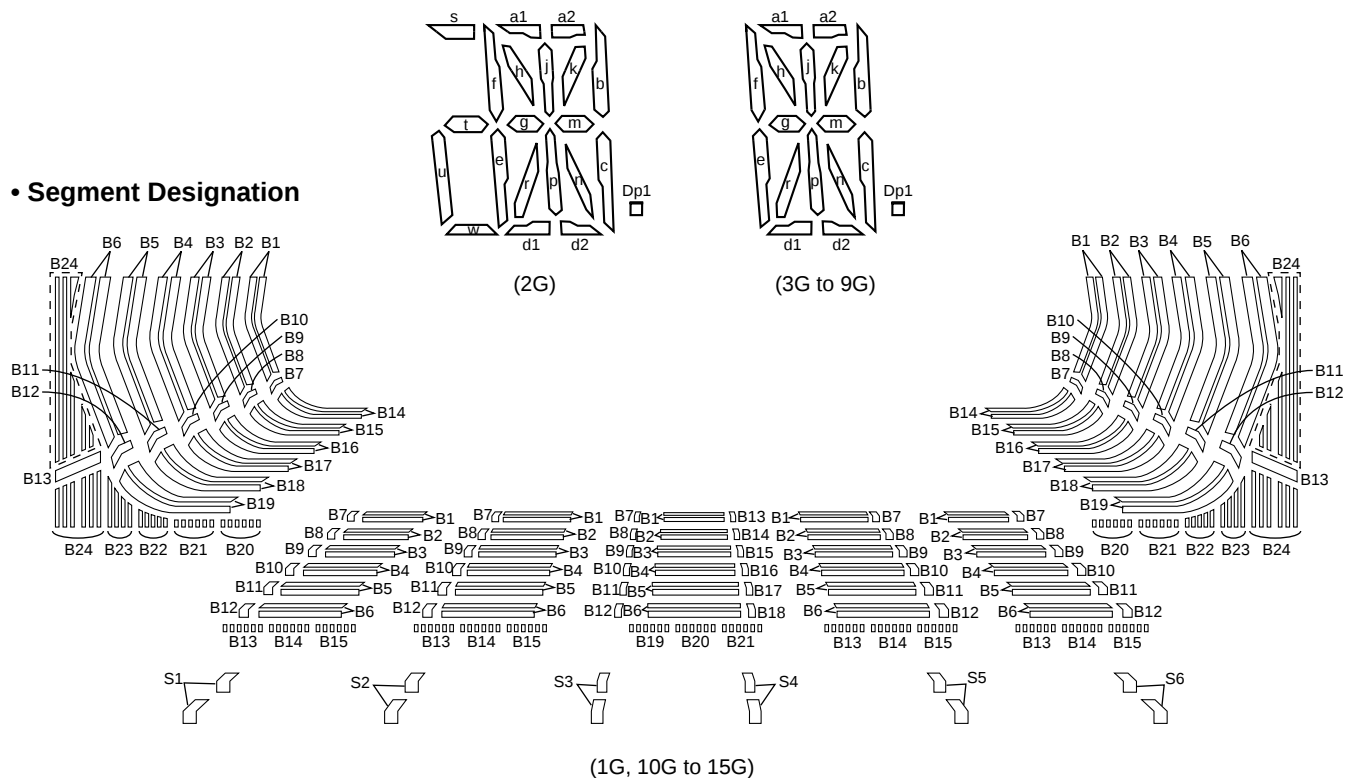
- FL Display
- Pin Assignment



• Grid Assignment



• Segment Designation



XR-VS90SW, XR-VS90, XR-VS70SW, XR-VS70

• Pin Connection

Pin No.	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
Connection	F2	F2	F2	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	P1	P2	P3	P4	P5	P6	P7
Pin No.	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
Connection	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	NX	NX	NX	NX	NP	NP	F1	F1	F1	

NOTE 1) F1, F2..... Filament
 2) NP..... No pin
 3) NX..... No extend pin
 4) DL..... Datum Line
 5) 1G to 15G..... Grid
 6) Field of vision is a minimum of 29° from the lower side.

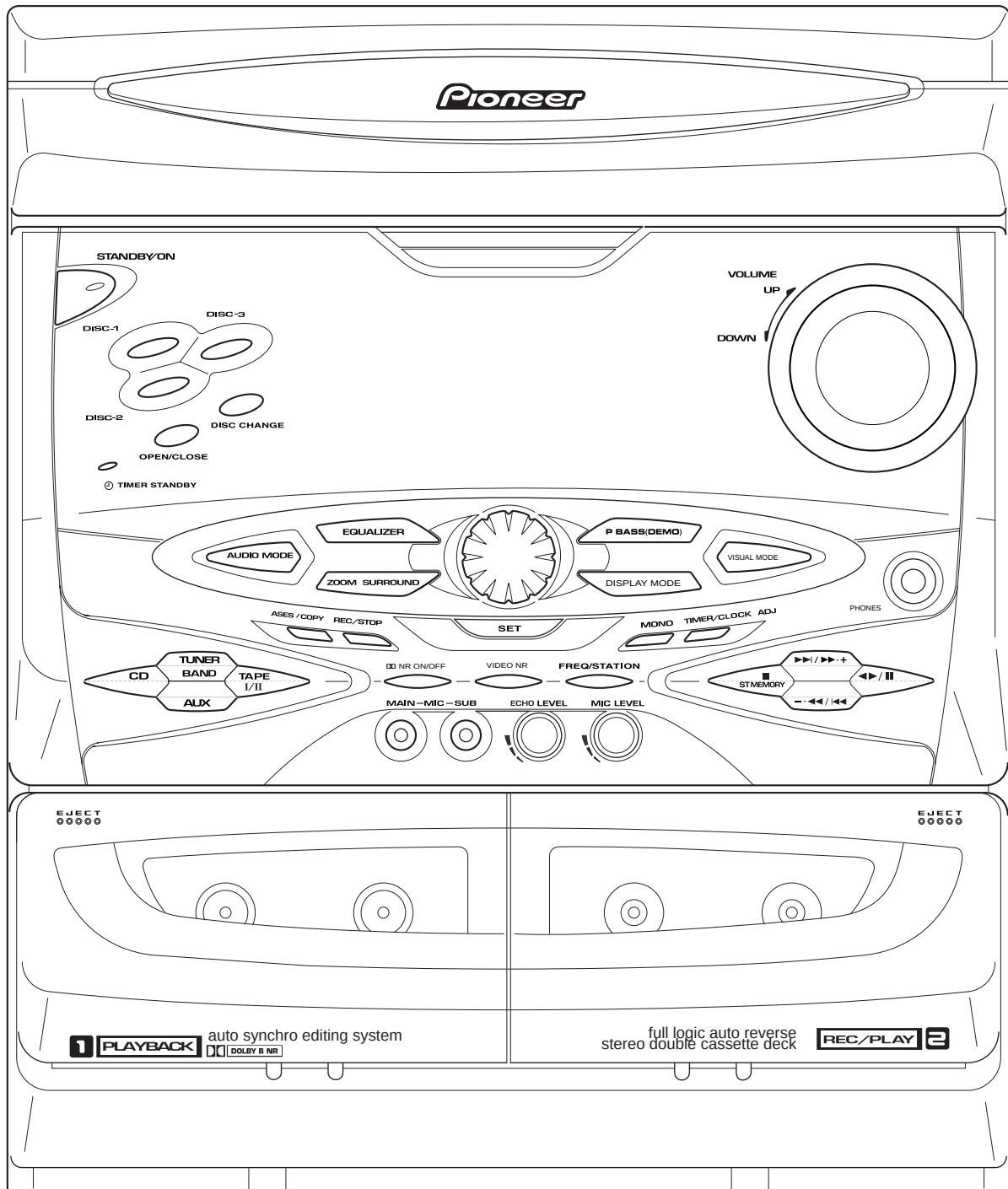
• Anode Connection

	1G	2G	3G,4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G
P1	B24	—	—	—	—	—	—	—	B24	RDM	S2	96kHz	S4	▷ (RIGHT)
P2	B23	a1	a1	a1	a1	a1	a1	a1	B23		ASES			
P3	B22	a2	a2	a2	a2	a2	a2	a2	B22	PGM			KEY	S6
P4	B21	h	h	h	h	h	h	h	B21		REC	B21	L	▷ (LEFT)
P5	B19	j	j	j	j	j	j	j	B19	RPT	S3	B19	R	
P6	B17	k	k	k	k	k	k	k	B17			B17	DOLBY PROLOGIC	DOLBY PROLOGIC
P7	B15	b	b	b	b	b	b	b	B15	B15	B15	B15	B15	B15
P8	B14	f	f	f	f	f	f	f	B14	B14	B14	B14	B14	B14
P9	B13	g	g	g	g	g	g	g	B13	B13	B13	B13	B13	B13
P10	B6	m	m	m	m	m	m	m	B6	B6	B6	B6	B6	B6
P11	B11	c	c	c	c	c	c	c	B11	B11	B11	B11	B11	B11
P12	B10	e	e	e	e	e	e	e	B10	B10	B10	B10	B10	B10
P13	B4	r	r	r	r	r	r	r	B4	B4	B4	B4	B4	B4
P14	B9	p	p	p	p	p	p	p	B9	B9	B9	B9	B9	B9
P15	B8	n	n	n	n	n	n	n	B8	B8	B8	B8	B8	B8
P16	B2	d1	d1	d1	d1	d1	d1	d1	B2	B2	B2	B2	B2	B2
P17	B3	d2	d2	d2	d2	d2	d2	d2	B3	B3	B3	B3	B3	B3
P18	B12	dp1	dp1	dp1	dp1	dp1	dp1	—	B12	B12	B12	B12	B12	B12
P19	B18	—	—	dp2	—	dp2	—	—	B18	-1		B18	DOLBY DIGITAL	◁
P20	B20	—	—	—	—		—		B20	S1		B20		I
P21	B16	s	—	—	—	—	—	—	B16		LAST MEMO	B16	S5	CONDITION
P22	B5	t	—	—	—	—	—	—	B5	B5	B5	B5	B5	B5
P23	B1	u	—	—	—	—	—	—	B1	B1	B1	B1	B1	B1
P24	B7	w	—	—	—	—	—	—	B7	B7	B7	B7	B7	B7

8. PANEL FACILITIES AND SPECIFICATIONS

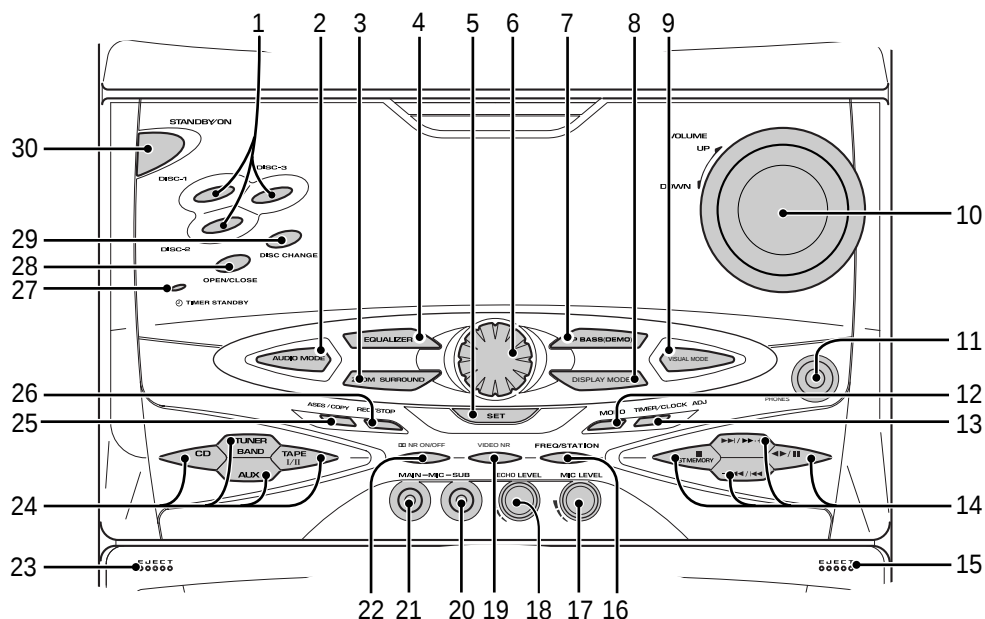
8.1 PANEL FACILITIES

■ Front Panel



Front panel

The illustration on this page shows the XR-VS90/ XR-VS90SW. Not all features are available on the XR-VS70/ XR-VS70SW.

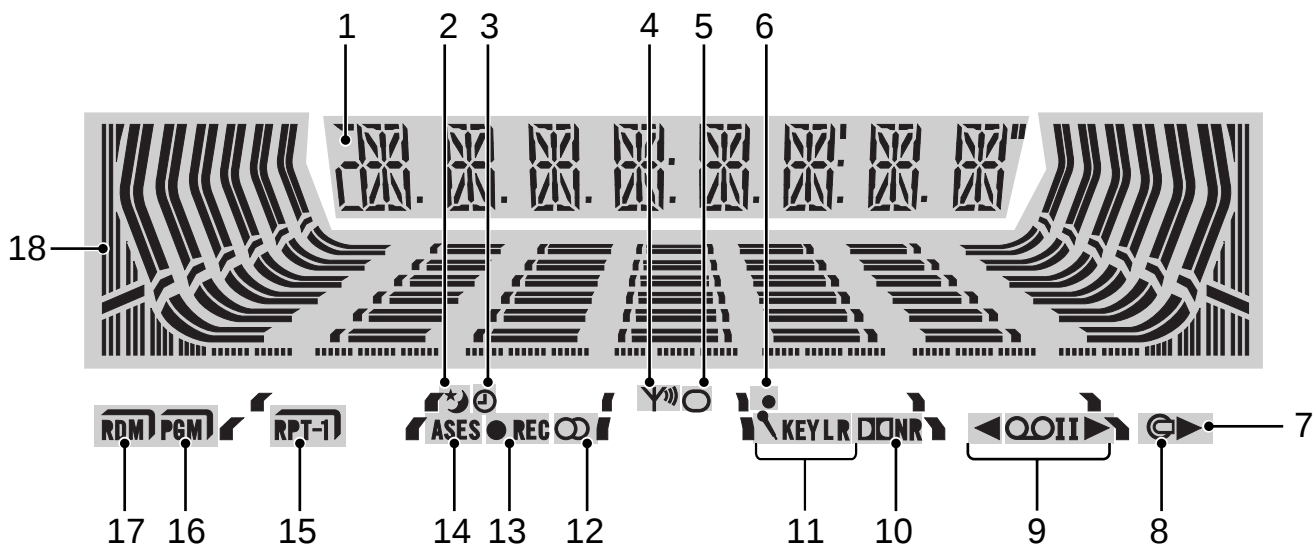


- | | |
|---|--|
| <p>1 DISC-1/2/3</p> <p>2 AUDIO MODE</p> <p>3 ZOOM SURROUND</p> <p>4 EQUALIZER</p> <p>5 SET—Use to enter timer/clock settings, or user sound settings.</p> <p>6 JOG dial—Use to morph between sound settings, and when setting the clock or timer.</p> <p>7 P.BASS (DEMO)</p> <p>8 DISPLAY MODE</p> <p>9 VISUAL MODE</p> <p>10 VOLUME UP/DOWN—Use to adjust the overall volume.</p> <p>11 PHONES jack (Headphones)—Plug in a pair of headphones to this jack.</p> <p>12 MONO</p> <p>13 TIMER / CLOCK ADJ</p> <p>14 Playback/tuning controls</p> <p>■ ST. MEMORY</p> <p>▶▶/▶▶▶▶+</p> <p>←←◀◀/◀◀◀</p> <p>◀◀/ </p> <p>15 EJECT (tape II)—Press to open the cassette door of deck II.</p> | <p>16 FREQ / STATION</p> <p>17 MIC LEVEL</p> <p>18 ECHO LEVEL</p> <p>19 VIDEO NR</p> <p>20 MIC SUB</p> <p>21 MIC MAIN</p> <p>22 NR ON/OFF (XR-VS90/ XR-VS90SW) REPEAT (XR-VS70/ XR-VS70SW)</p> <p>23 EJECT (tape I)—Press to open the cassette door of deck I.</p> <p>24 Function select buttons</p> <p>CD</p> <p>TUNER/BAND</p> <p>AUX</p> <p>TAPE I/II</p> <p>25 ASES / COPY</p> <p>26 REC / STOP</p> <p>27 TIMER STANDBY indicator</p> <p>28 OPEN/CLOSE</p> <p>29 DISC CHANGE</p> <p>30 STANDBY/ON and standby indicator—Press to switch the unit between standby and on. Indicator lights in standby.</p> |
|---|--|

* Manufactured under licence from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

Display

The illustration on this page shows the XR-VS90/ XR-VS90SW. Not all features are available on the XR-VS70/ XR-VS70SW.



- 1 Character display
- 2 Lights when the sleep timer has been set.
- 3 Lights when either the record timer or the wake up timer has been set.
- 4 Lights during broadcast station reception.
- 5 Lights when the tuner is set to mono FM mode.
- 6 Lights when in beat cut 2 mode.
- 7 Lights when a CD/Video CD is playing.
- 8 Lights when the system is in CD/Video CD mode.
- 9 ◀ and ▶ – Indicates the current tape play/record direction.
 ◯◯ I or II – Indicates the current tape deck, I or II.
- 10 Lights when Dolby Noise Reduction is switched on.
- 11 🎤 – Lights when in one of the karaoke modes.
 KEY – Lights when the pitch of the karaoke track playing has been changed.
 L R – Indicates which channels of the karaoke track you're hearing.
- 12 Lights when the tuner is receiving a stereo FM broadcast in auto stereo mode.
- 13 Lights when recording to tape.
- 14 Lights during automatic recording of a CD.
- 15 Highlights during repeat play mode.
- 16 Highlights during program playback mode.
- 17 Highlights during random playback mode.
- 18 Sound morphing / Sound level display

Remote control

To learn about the function of a particular button, look up the name of the button in the following alphabetical list (buttons marked with symbols appear first).



Press to switch the system on or into standby.

■ (Stop)

◀▶ (Play/pause/reverse)

◀◀ (Reverse scan/fast rewind/radio tuning)

▶▶ (Forward scan/fast forward/radio tuning)

– ◀◀ (Reverse track skip/music search/preset station select)

▶▶ + (Forward track skip/music search/preset station select)

>10

Use to select numbers over 10 (press this button, then input the number using the other number buttons).

10/0

Use as zero or 10 when entering numbers (for track numbers and station presets).

1–9

Number buttons (for track numbers and station presets).

A AUDIO/VISUAL

AUX

C CD

CLEAR

Press to clear the most recently programmed track.

D DIGEST (SHIFT & 6)

DISC-1/2/3

DISC CHANGE

DISPLAY (SHIFT & >10)

J JOG

Use to morph between sound settings, and when setting the clock or timer.

K KARAOKE

KEY CONTROL

L LAST MEMO (SHIFT & 5)

M MONO (SHIFT & 7)

MORPHING

MUTE

N NEXT +

O OPEN/CLOSE

P PLAYBACK CONTROL (SHIFT & 10/0)

PREVIOUS –

PROGRAM

R RANDOM (SHIFT & 9)

REPEAT (SHIFT & 8)

RETURN

S SELECT

SHIFT

Use to access secondary functions on the remote control.

SLEEP (SHIFT & 4)

SLOW ▶▶ (SHIFT & STEP II▶▶)

STEP II▶▶

T TAPE I/II

TIME SEARCH

TUNER/BAND

TV ⏻

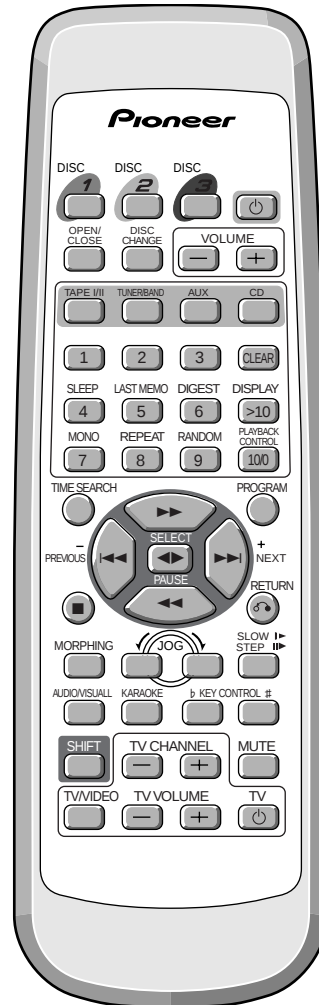
TV CHANNEL +/-

TV VOLUME +/-

TV/VIDEO

V VOLUME +/-

Use to adjust the overall volume level.



8.2 SPECIFICATIONS

Amplifier section

Continuous Power Output

RMS (1 kHz, T.H.D. 10%, 6 Ω)

XR-VS90/ XR-VS90SW
Front, Rear R, L (RMS) 140 W per channel

XR-VS70/ XR-VS70SW
Front, Rear R, L (RMS) 100 W per channel

Peak Music Power Output

XR-VS90/ XR-VS90SW 3500 W

XR-VS70/ XR-VS70SW 2500 W

CD section

Type . Video CD system and Compact Disc digital audio system

Wow and Flutter Limit of measurement
(± 0.001 % W.PEAK) or less (EIAJ)

Cassette deck section

Systems 4 track, 2-channel stereo

Heads Recording/playback head x 1
Playback head x 1
Erase head x 1

Motor DC servo motor x 1

Tape types TYPE I (Normal) tape (XR-VS70/ XR-VS70SW)
TYPE I (Normal)/TYPE II (HIGH/CrO2) tape

(XR-VS90/ XR-VS90SW)

FM tuner section

Frequency Range 87.5 MHz to 108 MHz

Antenna input 75 Ω unbalances

AM tuner section

Frequency Range 531 kHz to 1,602 kHz

Antenna input Loop antenna

Miscellaneous

Power Requirements

..... AC 110-127 V/220-230 V/240 V (switchable), 50/60 Hz

Power Consumption

XR-VS90 175 W

XR-VS90SW 830 W

XR-VS70 140 W

XR-VS70SW 580 W

Power Consumption in Standby mode 1 W

Dimensions 270 (W) x 320 (D) x 339 (D) mm

Weight (without package)

XR-VS90/ XR-VS90SW 8.8 kg

XR-VS70/ XR-VS70SW 8.3 kg

Accessories

Operating instructions 1

Remote control unit 1

Size AA/R6P dry cell batteries 2

FM antenna 1

AM loop antenna 1

AM wire antenna 1

Power Cord 1

Video Cord 1

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

Accessories

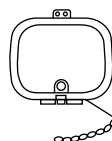
- ① Remote Control Unit $\times$ 1
(XZN3107)



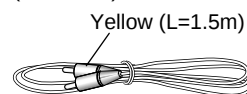
- ② FM Antenna $\times$ 1
(ADH7004)



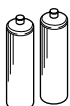
- ③ AM Loop Antenna $\times$ 1
(XTB3001)



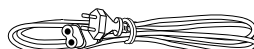
- ⑥ Video Cord $\times$ 1
(VDE1034)



- ④ AA/R6P
Dry Cell Batteries $\times$ 2
(VEM-013)



- ⑤ Power Cord $\times$ 1
(ADG1158: DBDXJ type)
(ADG1154: DLXJ/NC
and DXJN/NC types)



- ⑦ AM wire Antenna $\times$ 1
(AHD7006: DBDXJ type only)

