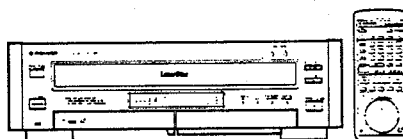


Service Manual

 **PIONEER**
The future of sound and vision.



ORDER NO.
ARP1999

CD CDV LD PLAYER

CLD-3080

- This manual is applicable to the KU/CA type.
- As to the circuit descriptions, please refer to the CLD-3070 (ARP1702) service guide.

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan

PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.

PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada

PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium

PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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FJ APR. 1990 Printed

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.

1. SAFETY INFORMATION

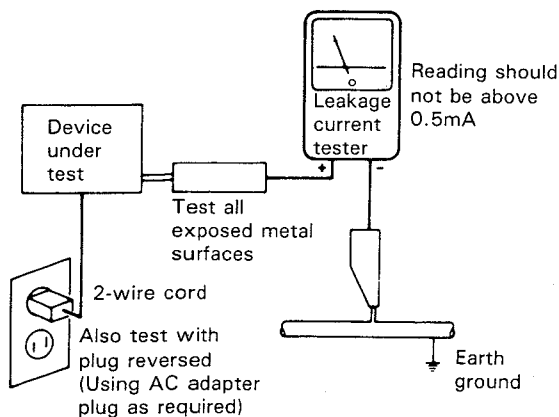
(FOR USA MODEL ONLY)

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 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



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 Δ on the schematics and on the parts list in this Service Manual.

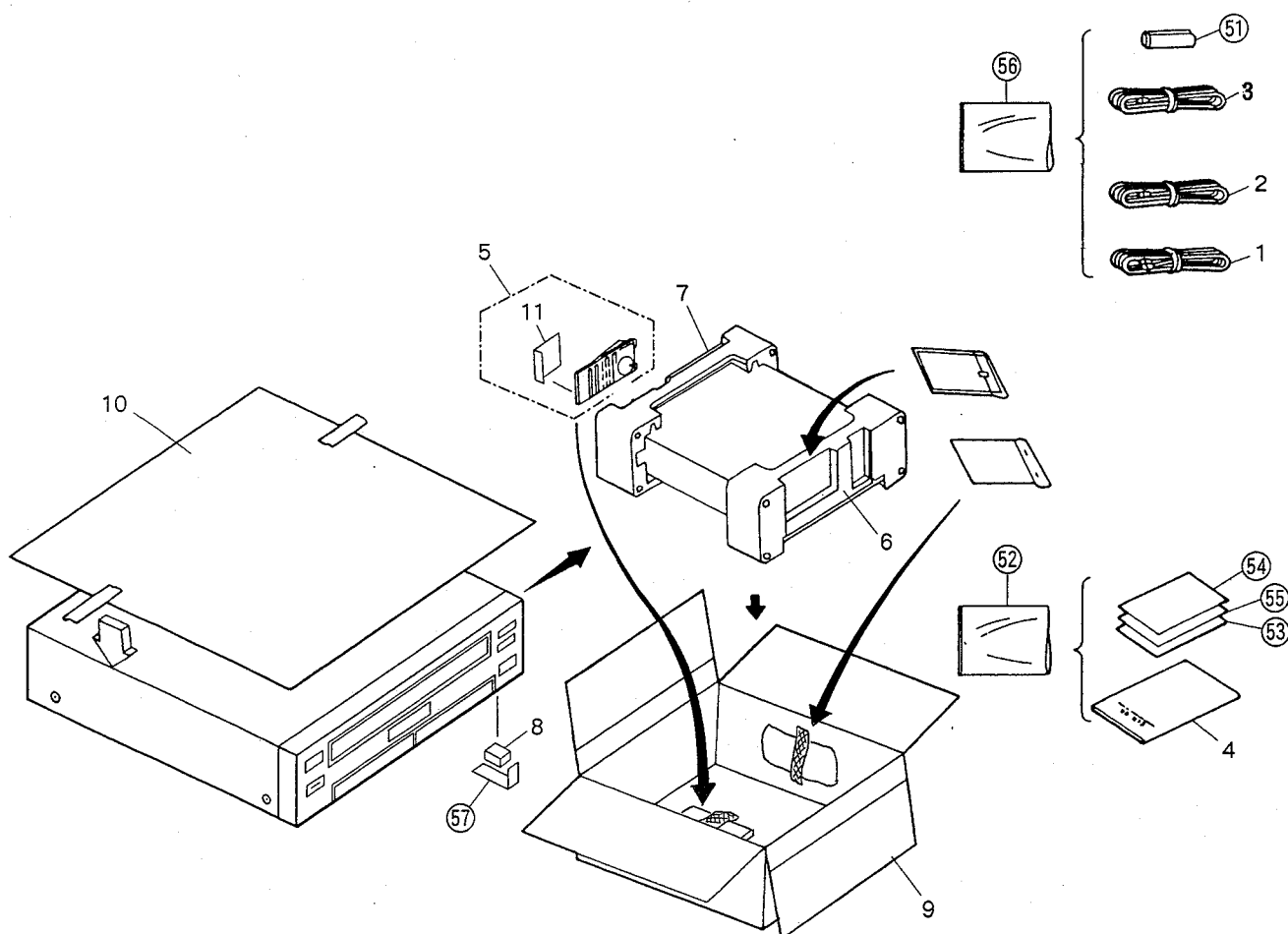
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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. PACKING

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	VDE-055	Audio cord		51		Battery
	2	VDE-056	Video cable		52		Polyethylene bag
	3	DDE1040	4P mini DIN cable		53		Caution card
	4	VRB1031	Operating instructions (English)		54		Caution 220V
					55		Caution card (UC)
	5	VXX1351	Remote control unit		56		Polyethylene bag
	6	VHA1056	Pad (F)		57		Tape
	7	VHA1057	Pad (R)				
	8	VHC1006	Spacer				
	9	VHG1091	Packing case				
	10	VHL1012	Mirror mat				
	11	VNK1364	Battery cover				



3. EXPLODED VIEWS AND PARTS LIST

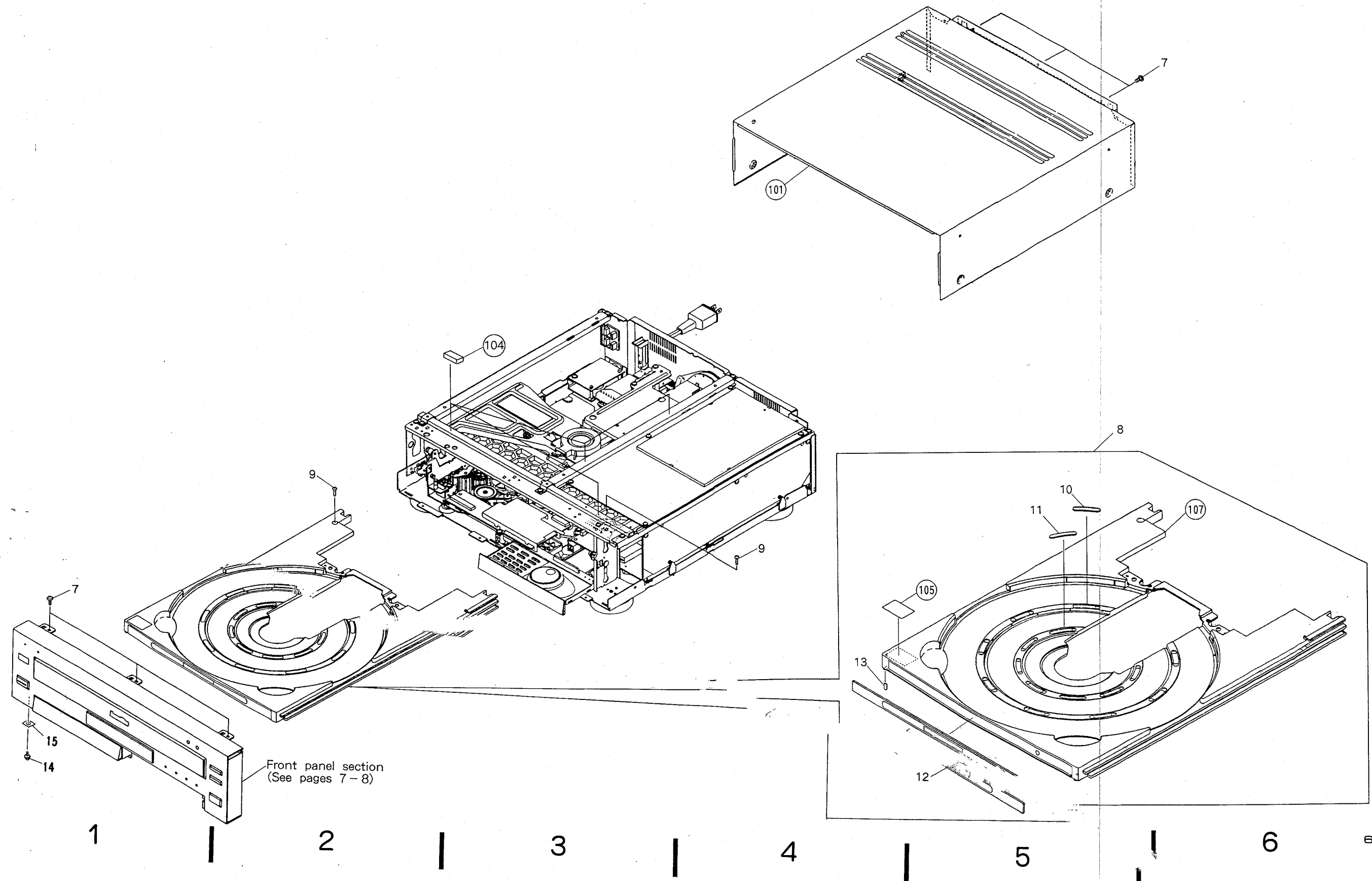
NOTES :

- Parts without part number cannot 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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

3.1 EXTERIOR SECTION

Parts List of Exterior Section

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1		. . . . .		101		Bonnet
	2		. . . . .		102		. . . . .
	3		. . . . .		103		. . . . .
	4		. . . . .		104		Rubber cushion
	5		. . . . .		105		Carry label
	6		. . . . .		106		. . . . .
	7	IBZ30P060FCC	Screw		107		Carry assembly
	8	VXX1360	Carry assembly-S				
	9	IPZ30P100FMC	Stopper screw				
	10	VEC1191	Disc pad (L)				
	11	VEC1192	Disc pad (S)				
	12	VEB1060	Carry rubber				
	13	VEB1119	Stopper rubber				
	14	IBZ30P080FCC	Screw				
	15	VBE1005	Nail washer				



3.2 FRONT PANEL SECTION

A

B

C

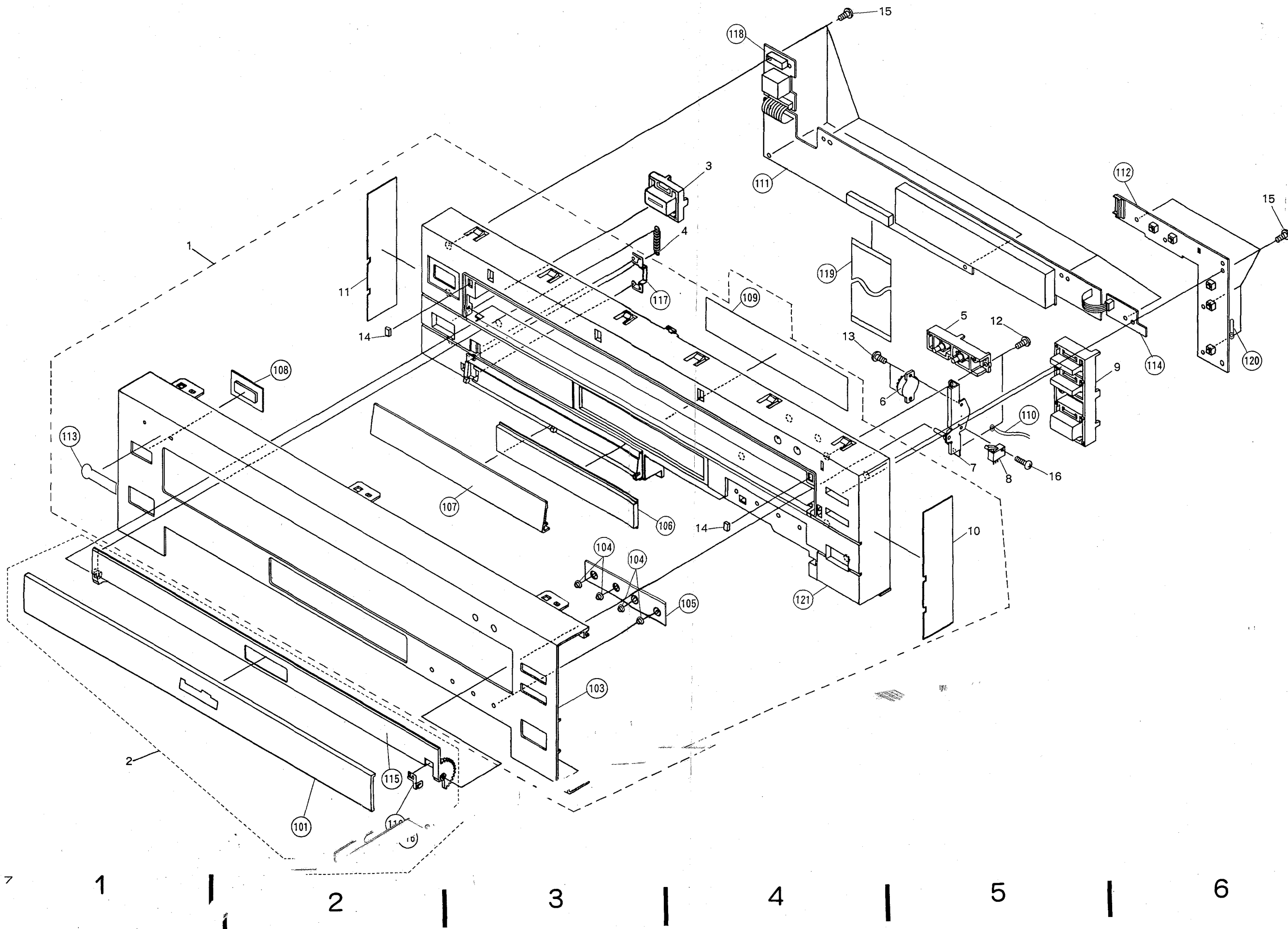
D

A

B

C

D



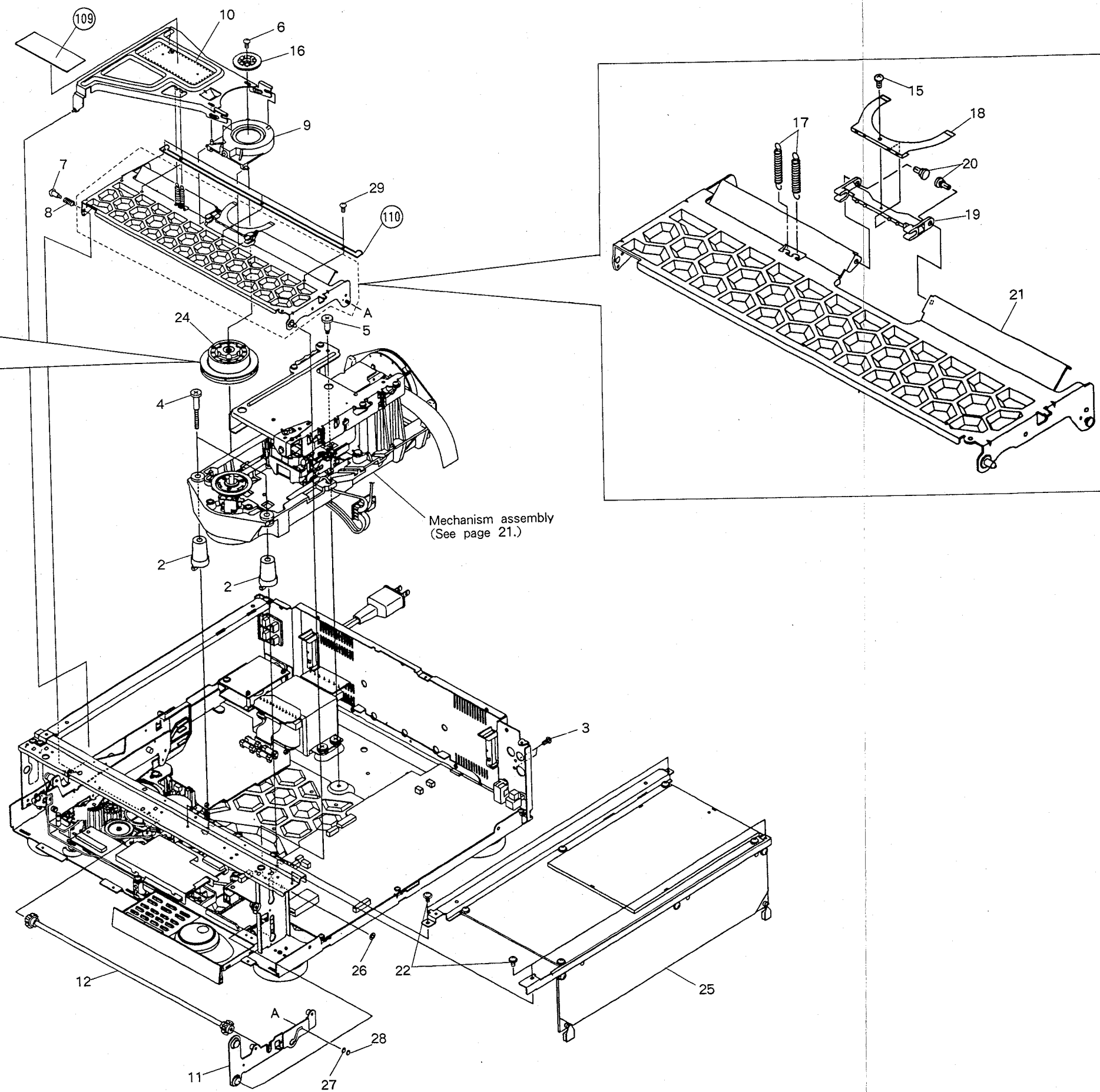
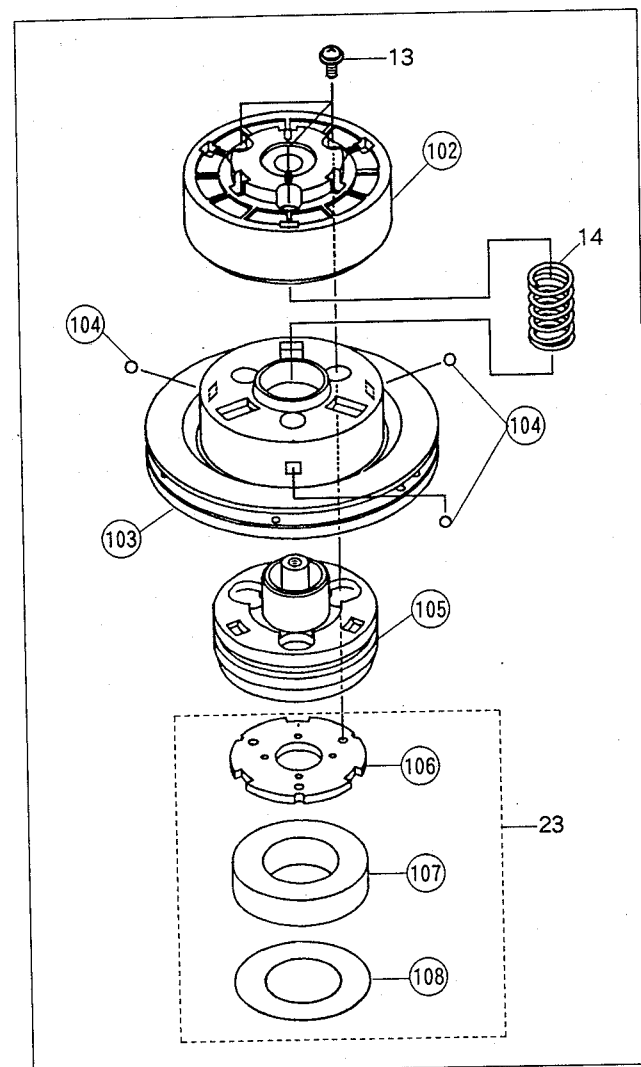
Parts List of Front panel Section

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	VXX1437	Front panel assembly-S		101		Door aluminum assembly
	2	VXX1325	Front door assembly-S		102		• • • • •
	3	VNK1334	Power button		103		Front aluminum assembly
	4	VBH1100	Door spring		104		Escutcheon L
	5	VXA1359	Side key assembly		105		LED lens
	6	VXA1053	Dumper assembly		106		FL panel
	7	VXA1341	Dumper board assembly		107		Under aluminum
	8	VSK1014	Slide switch (S1)		108		Sensor window
			(DOOR SW)		109		FL filter
	9	VNK1336	Function key		110		Earth lug assembly
	10	VEC1368	Side plate R		111		VFDB assembly
	11	VEC1367	Side plate L		112		KEYB assembly
	12	PBZ30P080FCU	Screw		113		Name plate
	13	PMZ20P040FCU	Screw		114		LEDB assembly
	14	VEB1106	Door rubber		115		Door holder assembly
	15	BPZ30P080FCU	Screw		116		Door earth
	16	PMZ20P060FMC	Screw		117		Under earth
					118		IRAB assembly
					119		Van card
					120		Cord holder
					121		Front panel

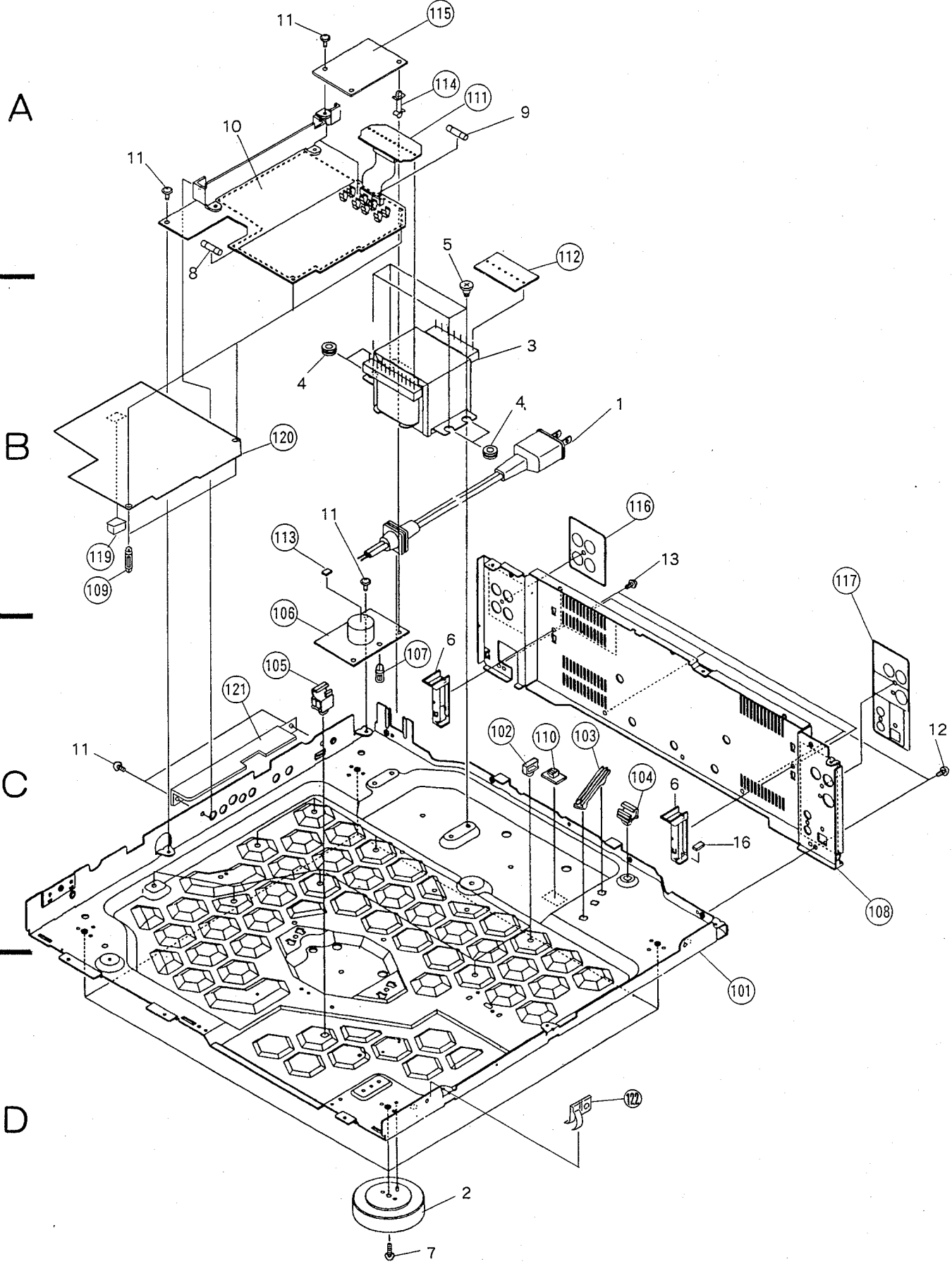
3.3 CLAMPER SECTION

Parts List of Clamper Section

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1		• • • • •		101		• • • • •
	2	VNL1237	Mechanism support		102		Clamper cover
	3	BPZ30P080FCU	Screw		103		Disc clamper assembly
	4	VBA1010	Floating screw A		104		Steel ball
	5	VBA1013	Floating screw B		105		Centering hab (B)
	6	PMB30P080FCU	Screw		106		Yoke plate (B)
	7	VBA1016	Screw (S)		107		Magnet
	8	VBH1093	Arm spring		108		Gap sheet
	9	VXA1344	Clamper holder assembly		109		Rubber cushion
	10	VXA1415	Clamper arm (B) assembly		110		Arm reinforcement
	11	VXA1326	Roller plate (R) assembly				
	12	VXA1329	Synchro gear assembly				
	13	AMZ20P040FMC	Screw				
	14	VBH1097	Centering spring (B)				
	15	BPZ20P040FZK	Screw				
	16	VNL1223	Clamper head				
	17	VBH1099	Arm spring				
	18	VNE1361	Plate spring				
	19	VNL1246	Parallel link				
	20	VEC1302	Plastic rivet				
	21	VXA1424	Clamper arm (A) assembly				
	22	IBZ30P060FCC	Screw				
	23	VXX1333	Magnet assembly-S				
	24	VXX1334	Clamper assembly-S				
●	25	VWS1069	HDTV assembly				
	26	WT34D060D050	Washer				
	27	WA32N080W050	Washer				
	28	WT26D047D025	Washer				
	29	BBZ26P060FMC	Screw				



3.4 BASE SECTION



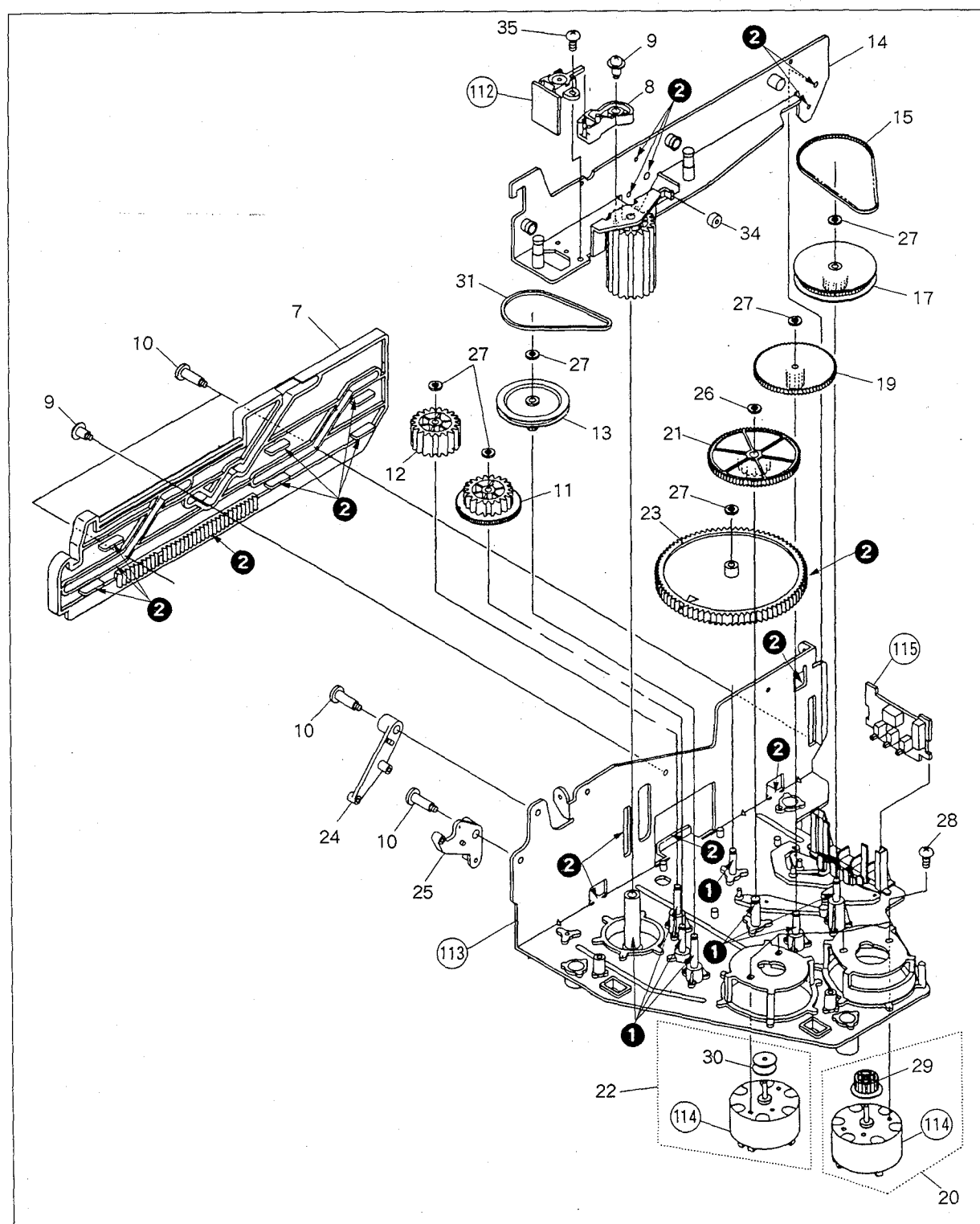
Parts List of Base section

Mark	No.	Part No.	Description
△	1	VDG1039	AC power cord
△	2	VXA1337	Insulator assembly
△	3	VTT1074	Power transformer (AC110V, 120V, 220V, 240V)
	4	VEB1100	Transformer rubber
	5	VBA1011	Transformer screw
	6	VNL1202	Tray stopper
	7	IBZ30P150FCC	Screw
△	8	VEK-018	Fuse (FU1,FU2) (3A)
△	9	VEK-022	Fuse (FU3,FU4) (2A)
●	10	VWR1051	SYPS assembly
	11	IBZ30P060FCC	Screw
	12	BBT30P060FCC	Screw
	13	IPZ30P080FCU	Screw
	14		.....
	15		.....
	16	VEB1033	Door dump rubber
	101		Under base
	102		Wire clip
	103		PCB support
	104		P plate holder
	105		PCB hinge
	106		LSFB assembly
	107		PCB support
	108		Rear panel
	109		PCB support
	110		Wire clamp (A)
	111		TRSS assembly
	112		TRSF assembly
	113		Filter cushion
	114		PC support
	115		LSSB assembly
	116		Label (L)
	117		Label (R)
	118		.....
	119		Spacer
	120		Transformer sheet
	121		Shield plate
	122		Earth Clip

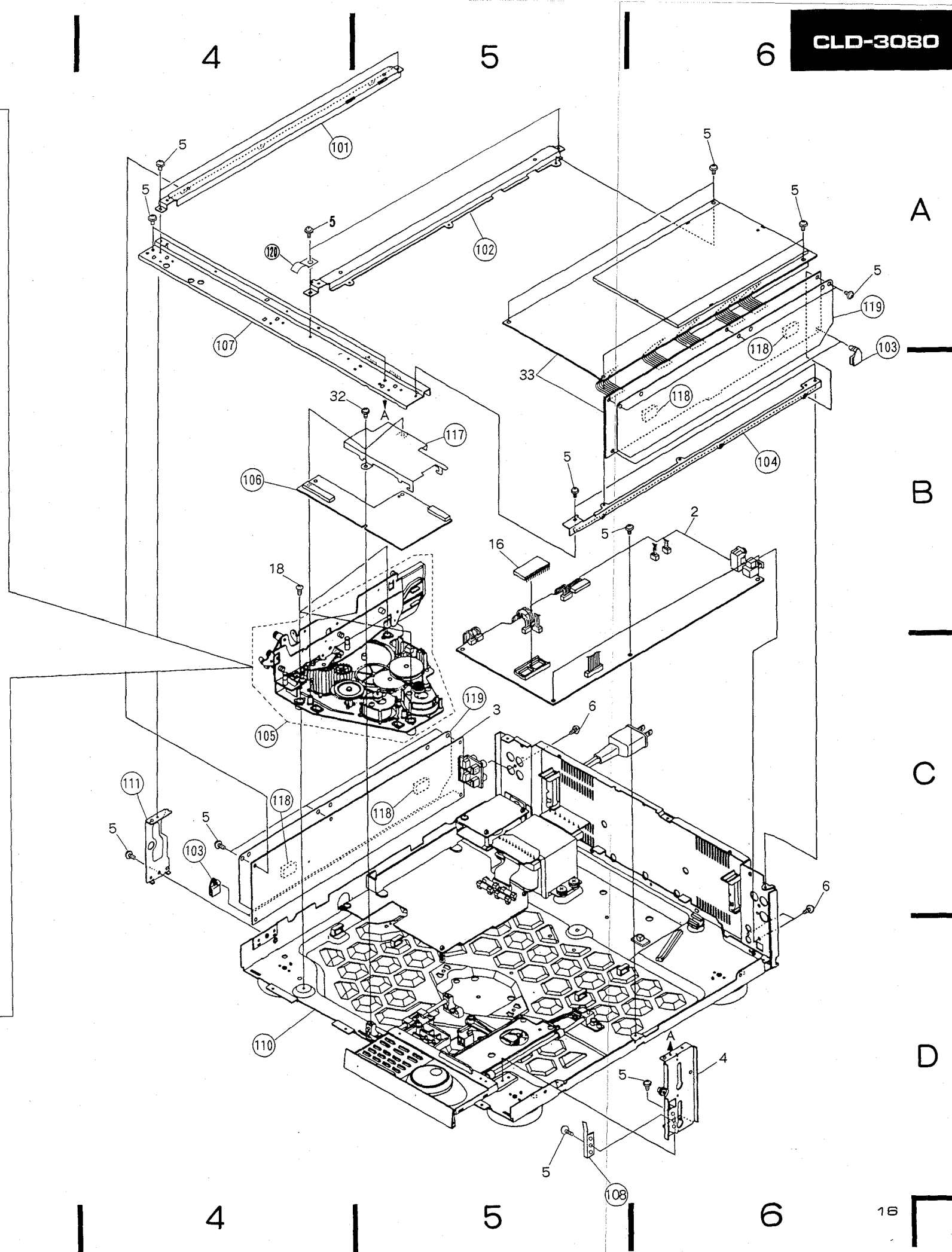
3.5 LOADING SECTION

Parts List of Loading section

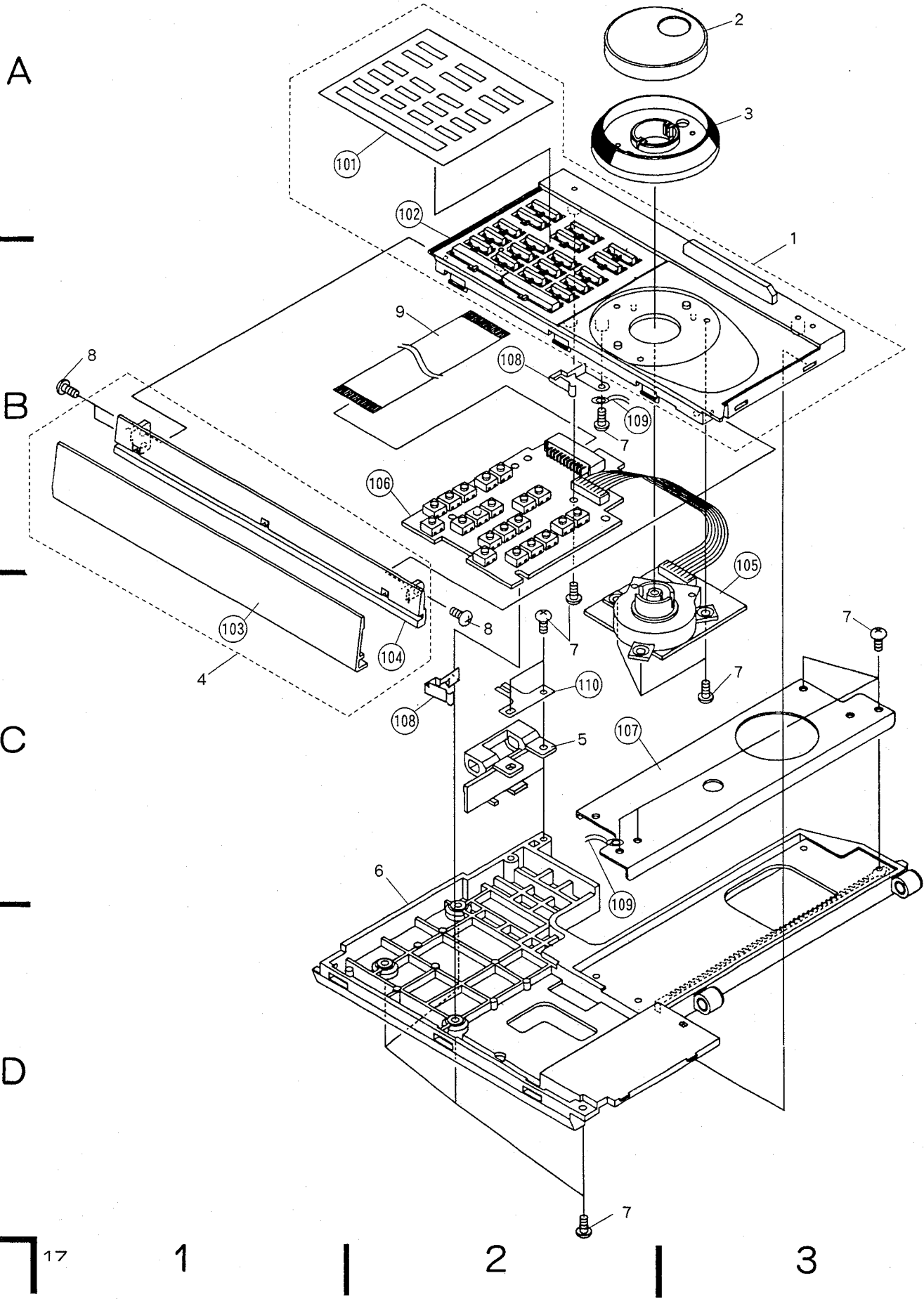
Mark	No.	Part No.	Description
	1		.....
●	2	VWS1068	MAIN assembly
●	3	VWV1118	AUDB assembly
	4	VXA1417	Stay (R) assembly
	5	IBZ30P060FCC	Screw
	6	BPZ30P080FCU	Screw
	7	VNL1231	Slide cam
	8	VNL1239	SW lever
	9	VBA1008	Screw (B)
	10	VBA1014	Screw (C)
	11	VNL1229	Gear (B)
	12	VNL1230	Follow gear
	13	VNL1249	Gear pulley
	14	VXA1420	Roller plate (L) assembly
	15	VEB1069	Synchro belt
	16	VYW1480	One time P ROM-S (IC205)
	17	VXA1263	Timing pulley assembly
	18	BBZ30P080FCC	Screw
	19	VNL1280	Gear (D)
	20	VXX1324	Loading motor V assembly-S
	21	VNL1141	Gear (A)
	22	VXX1328	Loading motor H assembly-S
	23	VNL1228	Cam gear
	24	VNL1290	Lock arm
	25	VNL1247	Lever OC
	26	WT34D060D025	Washer
	27	WT26D047D025	Washer
	28	BMZ26P040FCU	Screw
	29	VNL1148	Motor pulley
	30	VLL1176	Motor pulley
	31	PEB1013	Belt
	32	IPZ30P080FCU	Screw
●	33	VWS1069	HDTV assembly
	34	VEB1091	Stop ring
	35	BMZ26P040FMC	Screw
	36		.....
	101		Angle (L)
	102		Center angle
	103		PCB holder
	104		PCB holder
	105		Loading assembly
	106		FFCB assembly
	107		Front angle
	108		Carry guide
	109		.....
	110		Under base
	111		Side stay (L)
	112		LHSB assembly
	113		Loading base assembly
	114		Carriage motor
	115		LVS assembly
	116		.....
	117		Blind plate
	118		Insulation cushion
	119		Insulation sheet
	120		Earth plate



- ① : Apply the grease (G-501).
② : Apply the froil (G-397).



3.6 POCKET ASSEMBLY



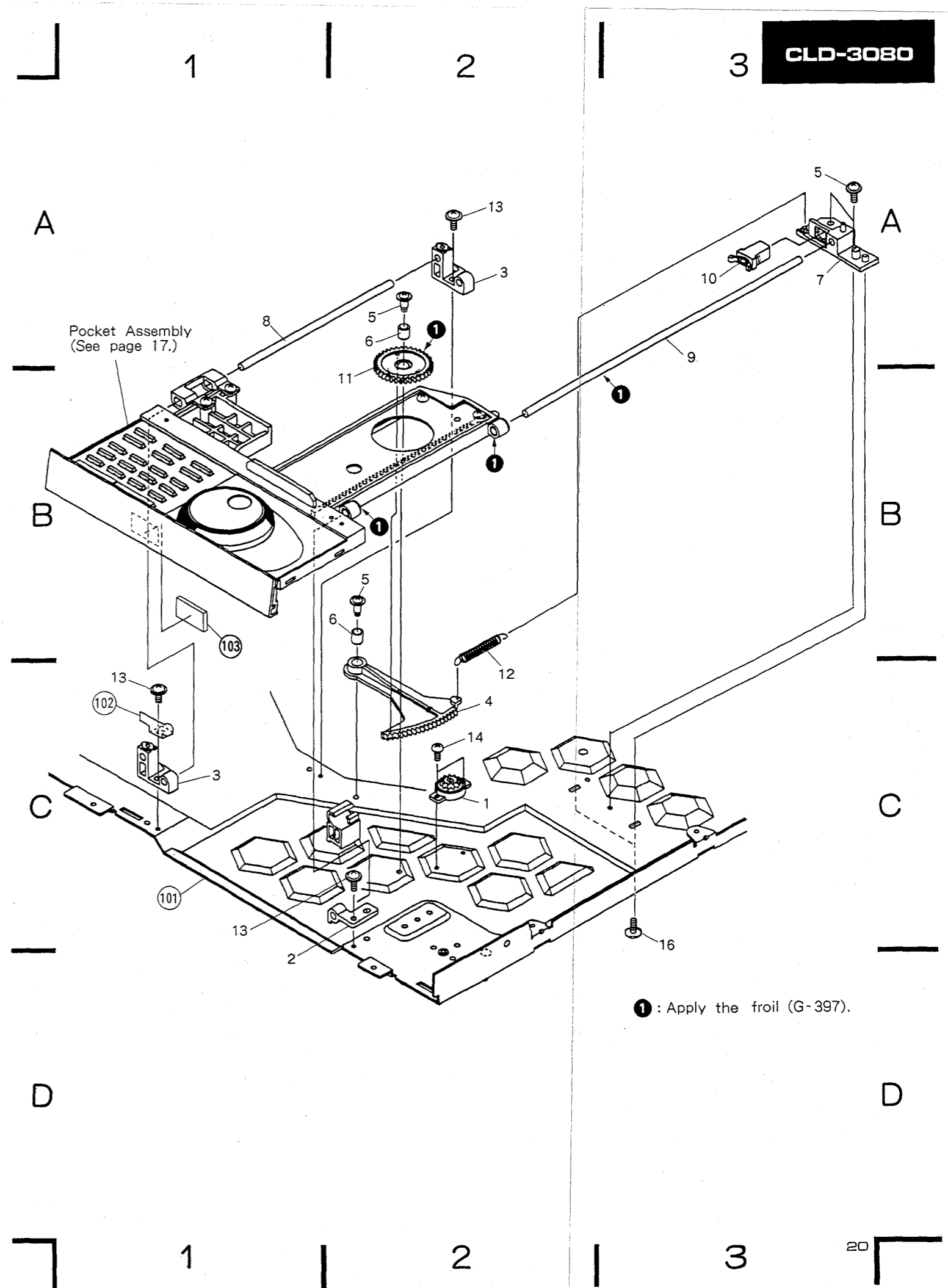
Parts List of Pocket Assembly

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	VXX1387	Pocket panel assembly-S		101		Pocket name plate
	2	VNK1341	Jog dial		102		Pocket panel
	3	VNK1342	Shuttle ring		103		Slide aluminum
	4	VXX1321	Panel base assembly-S		104		Panel base S
	5	VNK1340	Shaft holder B		105		JOGB assembly
	6	VXA1421	Slide base assembly		106		SWTB assembly
	7	BPZ26P080FZK	Screw		107		Reinforcement plate
	8	BPZ26P060FZK	Screw		108		Slide earth
	9	VDA1209	Van card		109		Earth lug assembly
					110		Shaft holder earth

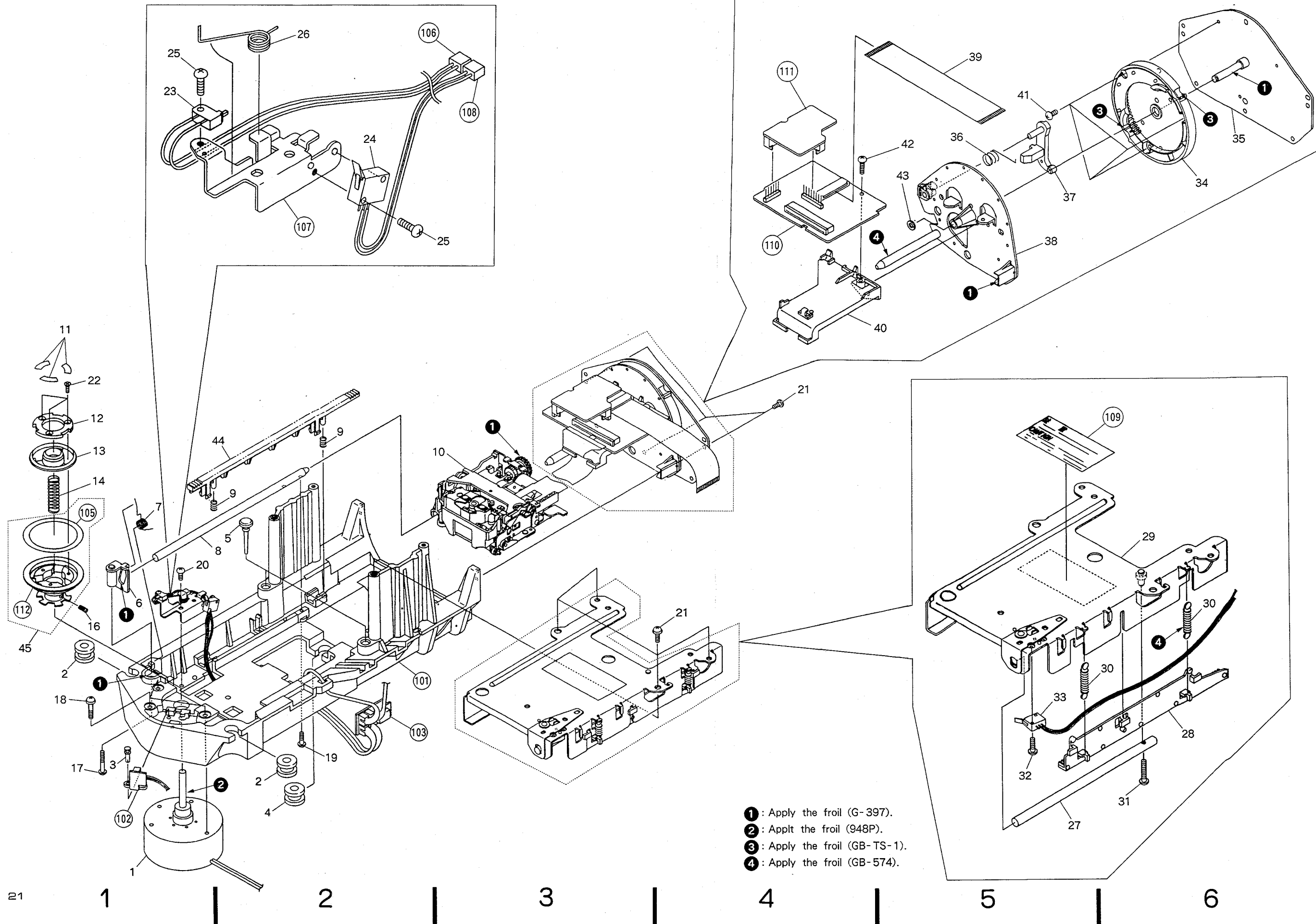
3.7 PERIPHERY OF THE POCKET ASSEMBLY

Parts List of Periphery of the Pocket Assembly

Mark	No.	Part No.	Description
	1	VXA1053	Damper assembly
	2	VNL1244	Shaft holder B
	3	VNL1245	Shaft holder C
	4	VNL1241	Fan-shaped arm
	5	VBA1016	Screw (S)
	6	VLL1219	Collar A
	7	VNL1243	Shaft holder A
	8	VLL1206	Shaft L
	9	VLL1207	Shaft R
	10	VXA1365	Slide latch assembly
	11	VNL1240	Gear R
	12	VBH1101	Panel spring
	13	IBZ30P060FCC	Screw
	14	PMZ20P040FCU	Screw
	15	.....	.....
	16	IPZ30P080FCU	Screw
101			Under base
102			Shaft earth
103			Earth spacer



3.8 MECHANISM ASSEMBLY



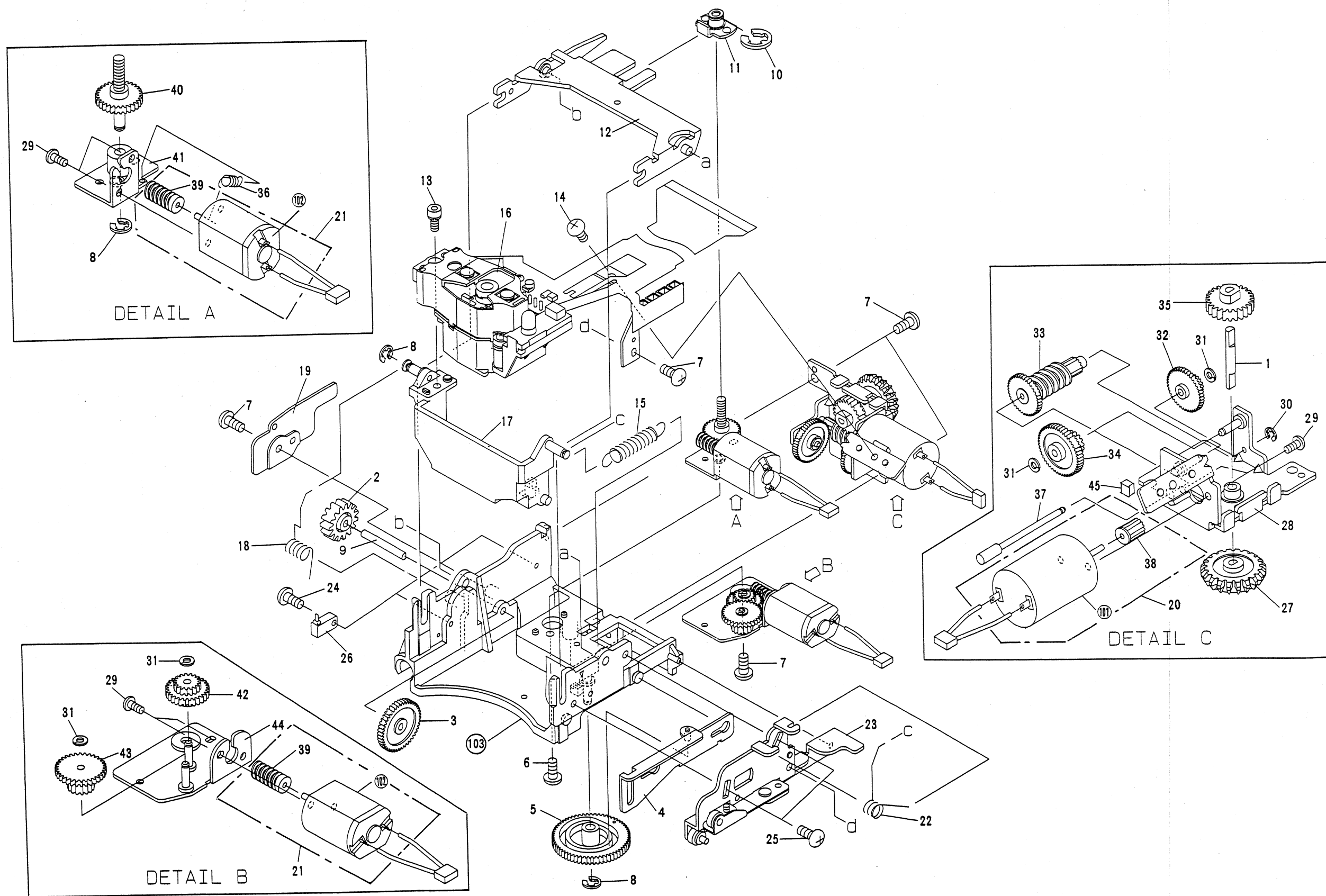
Parts List of Mechanism Assembly

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	VXM1035	Spindle motor		101		Mechanism shassis (Lower)
	2	VEB1095	Floating rubber A		102		FGSB assembly
	3	VEC1298	Plastic rivet		103		CNNB assembly
	4	VEB1099	Floating rubber B		104		• • • • •
	5	VEB1094	Damper		105		Rubber sheet
	6	VXA1345	Holder assembly		106		Housing assembly
	7	VBH1098	Holder spring A		107		SW holder
	8	VLL1202	Carriage shaft (Lower)		108		Housing assembly
	9	VBH1057	Rack spring (Lower)		109		Caution label
●	10	VWT1054	Carriage assembly		110		PREB assembly
	11	VEC1332	Sheet		111		PRET assembly
	12	VNE1360	Yoke plate A		112		Turn table assembly
	13	VNT1020	Centering hab (A)				
	14	VBH1024	Centering spring				
	15		• • • • •				
	16	ZMD30H050FBT	Screw				
	17	BMZ30P160FCU	Screw				
	18	PMB30P200FCU	Screw				
	19	PMZ26P120FMC	Screw				
	20	BPZ30P100FCU	Screw				
	21	IPZ30P100FCU	Screw				
	22	CBZ30P080FMC	Screw				
	23	VSK1009	Slide switch (CD INSIDE)				
	24	VSK1003	Slide switch (CDV, LD A INSIDE)				
	25	PMZ20P070FCU	Screw				
	26	VBH1104	Holder spring B				
	27	VLL1201	Carriage shaft (Upper)				
	28	VNL1153	Rack gear (Upper)				
	29	VXA1334	Mechanism shassis assembly (Upper)				
	30	VBH1058	Rack spring (Upper)				
	31	PMZ20P160FMC	Screw				
	32	PMZ20P080FMC	Screw				
	33	VSK1003	Slide switch (LD B INSIDE)				
	34	VXA1335	Internal gear assembly				
	35	VXA1333	G plate assembly				
	36	VBH1072	Lever spring				
	37	VNL1234	Lock lever				
	38	VXA1332	R plate assembly				
	39	VDA1207	Flexible cable (FFC)				
	40	VNL1235	Harness guide				
	41	BBZ26P060FCC	Screw				
	42	BBZ30P140FCC	Screw				
	43	WT36D072D050	Washer				
	44	VNL1238	Rack gear (Lower)				
	45	VXX1323	Turn table assembly-S				

3.9 CARRIAGE ASSEMBLY (VWT1054)

Parts List of Carriage Assembly

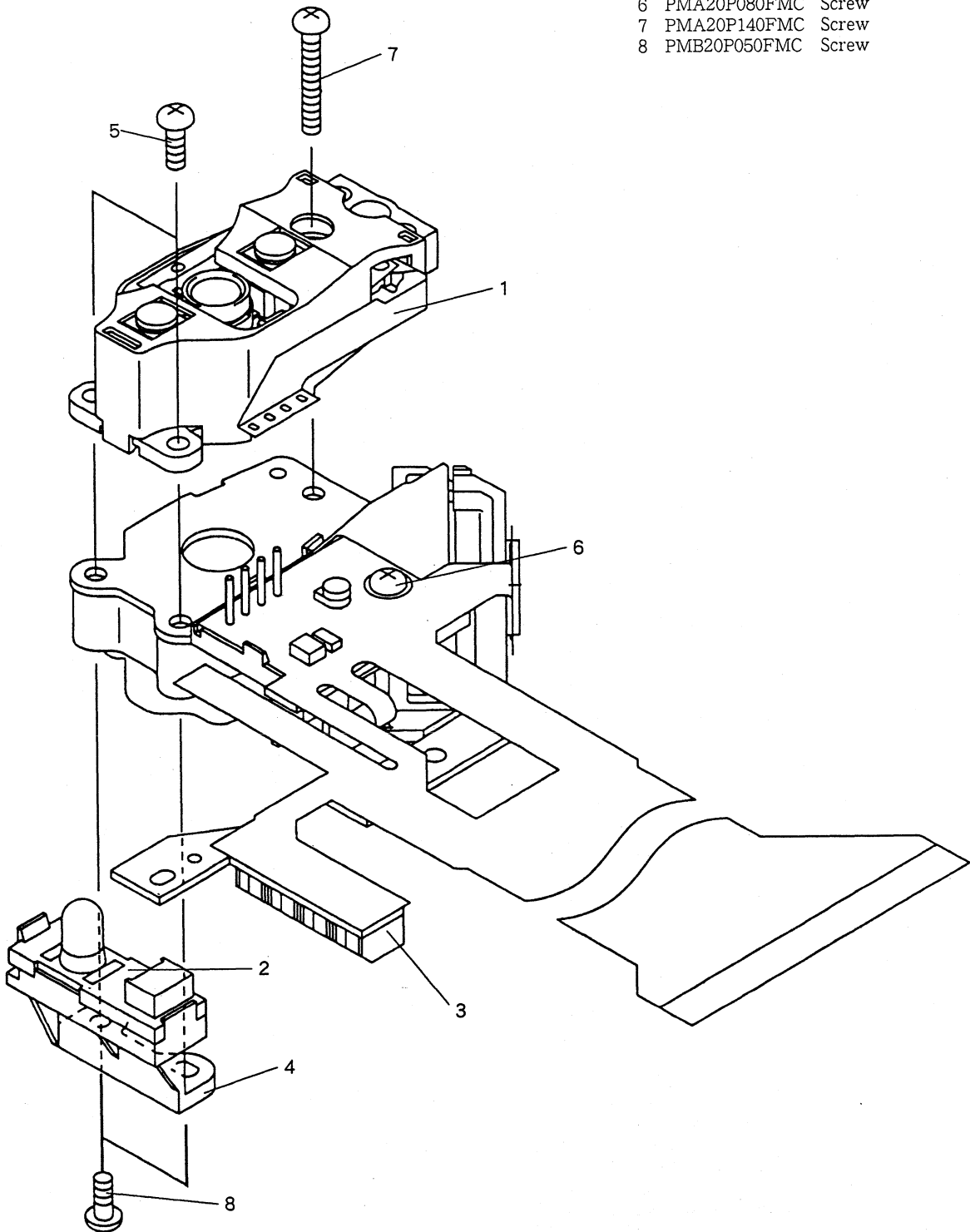
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	VLL1152	SL shaft (B)		101		Slider motor
	2	VNL1158	SL gear (F)		102		Tilt motor
	3	VNL1253	SL gear (E)		103		Carriage
	4	VXA1243	Slide plate assembly				
	5	VNL1166	TL cam gear				
	6	PMA26P050FMC	Screw				
	7	BBZ26P050FCC	Screw				
	8	YE20FUC	E ring				
	9	VLL1270	SL shaft (C)				
	10	YE40FUC	Stop ring				
	11	VXA1259	AF plate assembly				
	12	VXA1246	AF arm assembly				
	13	VLL1107	Bolt 2.6 × 6				
	14	PBZ26P040FCC	Screw				
	15	VBH1063	Tilt spring				
	16	VWY1019	Pickup assembly				
	17	VXA1336	PU holder assembly				
	18	VBH1061	AF spring (L)				
	19	VNE1284	AF stopper				
	20	VXX1329	Slider motor assembly-S				
	21	VXX1227	Tilt (Height) motor assembly-S				
	22	VBH1088	AF spring (R)				
	23	VXA1331	TAN base assembly				
	24	PBZ20P070FCC	Screw				
	25	PMB26P050FCU	Screw				
	26	VSK1009	Slide switch (S5) (HEIGHT UP, DOWN)				
	27	VNL1163	SL gear (H)				
	28	VXA1241	SL base assembly				
	29	JGZ20P022FMC	Screw				
	30	YE12FUC	Stop ring				
	31	WT17D034D050	Washer				
	32	VNL1251	SL gear (B)				
	33	VNL1137	SL gear (C)				
	34	VNL1252	SL gear (D)				
	35	VNL1159	SL gear (G)				
	36	VBH1122	M spring				
	37	VLL1151	SL shaft (A)				
	38	VNL1250	SL gear (A)				
	39	VNL1138	AF worm				
	40	VXA1244	AF gear assembly				
	41	VXA1245	AF holder assembly				
	42	VNL1164	TL gear (A)				
	43	VNL1165	TL gear (B)				
	44	VXA1242	TL base assembly				
	45	VEB1108	Dump rubber				



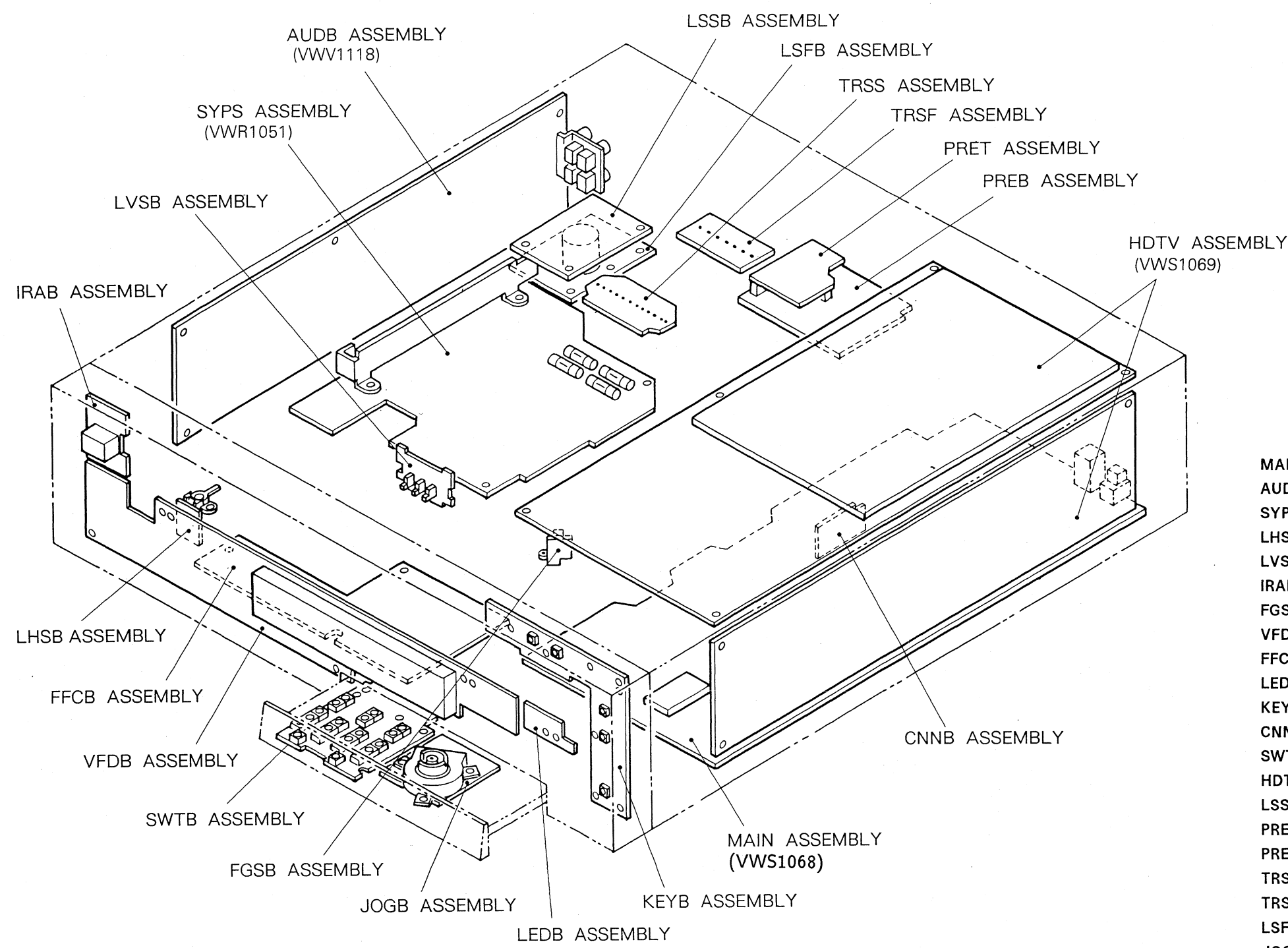
3.10 PICKUP ASSEMBLY (VWY1019)

Parts List of Pickup Assembly

Mark	No.	Part No.	Description
	1	VXX1241	Actuator assembly
	2	VEX1018	Sensor assembly
	3	VXX1332	Pre pickup assembly
	4	VNH1020	Sensor stay
	5	PMA20P060FMC	Screw
	6	PMA20P080FMC	Screw
	7	PMA20P140FMC	Screw
	8	PMB20P050FMC	Screw



4. P. C. BOARDS LOCATION



- MAIN : MAIN BOARD
- AUDB : AUDIO BOARD
- SYPS : SYSTEM POWER SUPPLY
- LHSB : LOADING HORIZONTAL SWITCH BOARD
- LVSB : LOADING VERTICAL SWITCH BOARD
- IRAB : INFRARED AMPLIFIER BOARD
- FGSB : FG SWITCH BOARD
- VFDB : VF DISPLAY BOARD
- FFCB : FLEXIBLE FLAT CABLE BOARD
- LEDB : LED BOARD
- KEYB : KEY BOARD
- CNNB : CONNECTOR BOARD
- SWTB : SWITCH BOARD
- HDTV : HIGH-BRED CIRCUIT OF DIGITAL TBC AND VIDEO
- LSSB : LINE SURGE SHIELD BOARD
- PREB : PRE AMPLIFIER BOTTOM BOARD
- PRET : PRE AMPLIFIER TOP BOARD
- TRSF : TRANSFORMER PRIMARY BOARD
- TRSS : TRANSFORMER SECONDARY BOARD
- LSFB : LINE SURGE FILTER BOARD
- JOGB : JOG BOARD

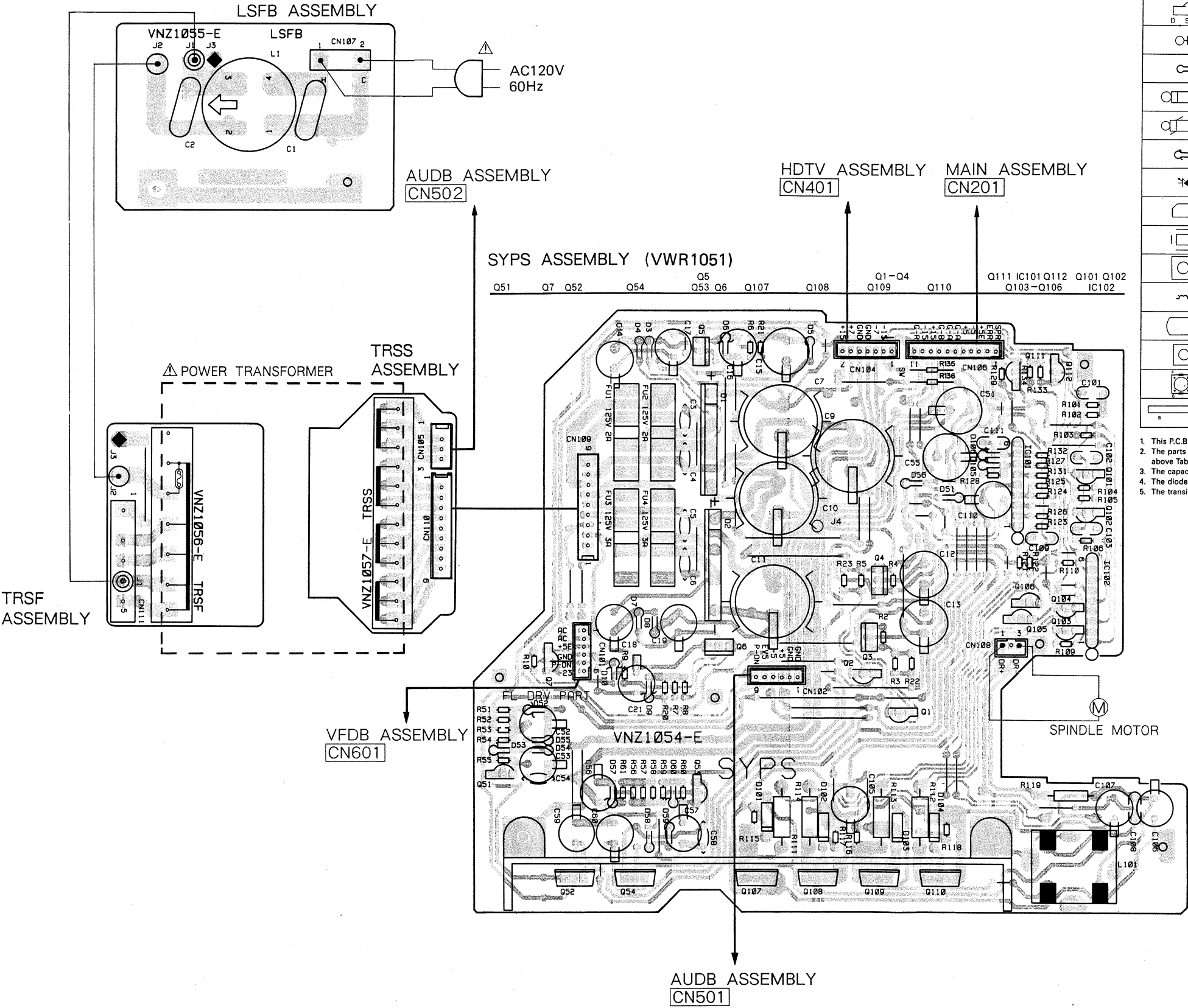
5.2 LSFB, TRSF, TRSS, SYPS ASSEMBLIES

A

B

C

D



P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
		Diode			Styrol capacitor
		Zenner diode			Electrolytic capacitor (Non polarized)
		LED			Electrolytic capacitor (Noiseless)
		Varactor			Electrolytic capacitor (Polarized)
		Tact switch			Power capacitor
		Inductor			Semi-fixed resistor
		Coil			Resistor array
		Transformer			Resistor
		Filter			Resonator
					Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with shows negative terminal.
4. The diode marked with shows cathode side.
5. The transistor terminal marked with shows emitter.

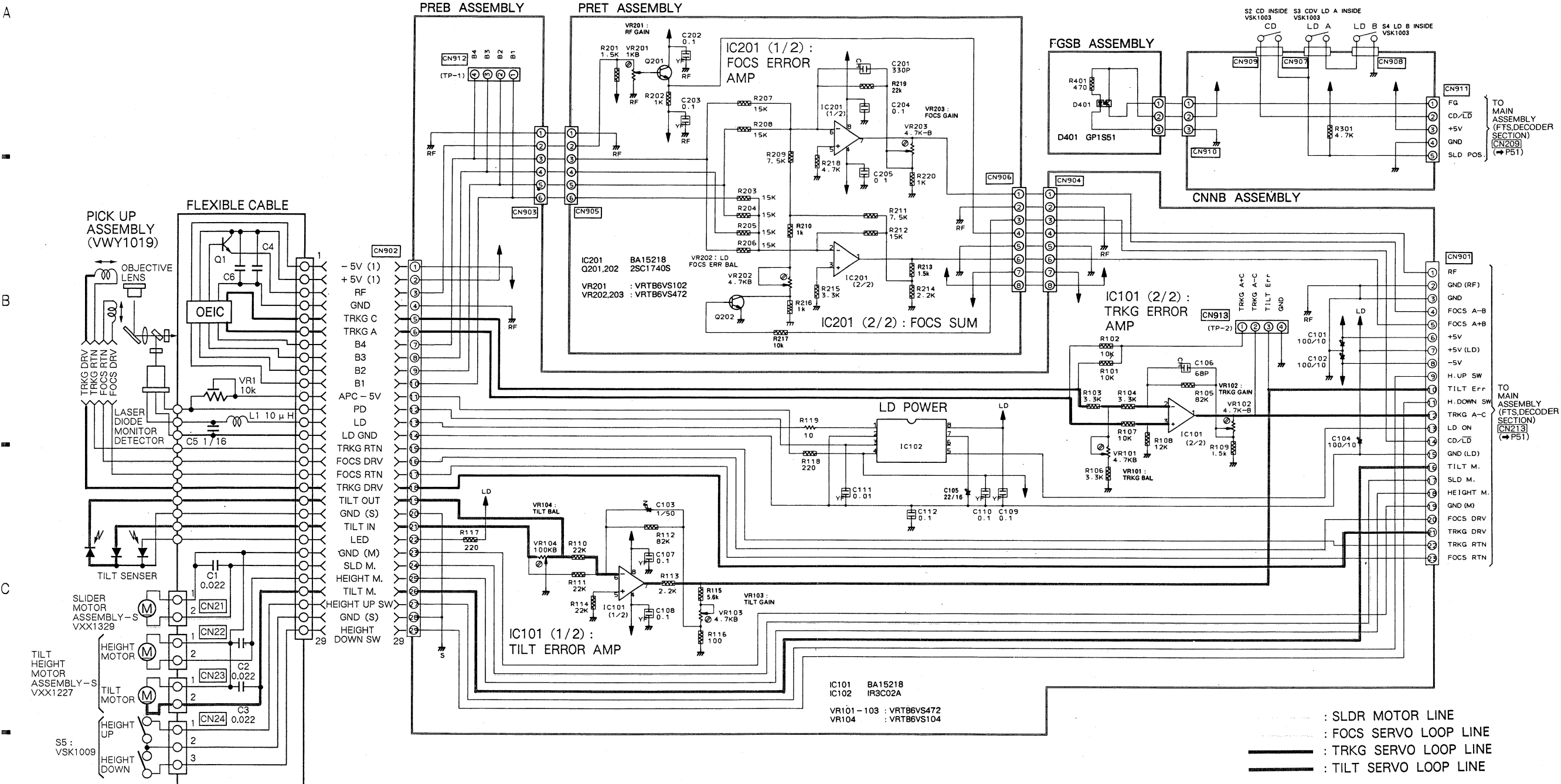
A

B

C

D



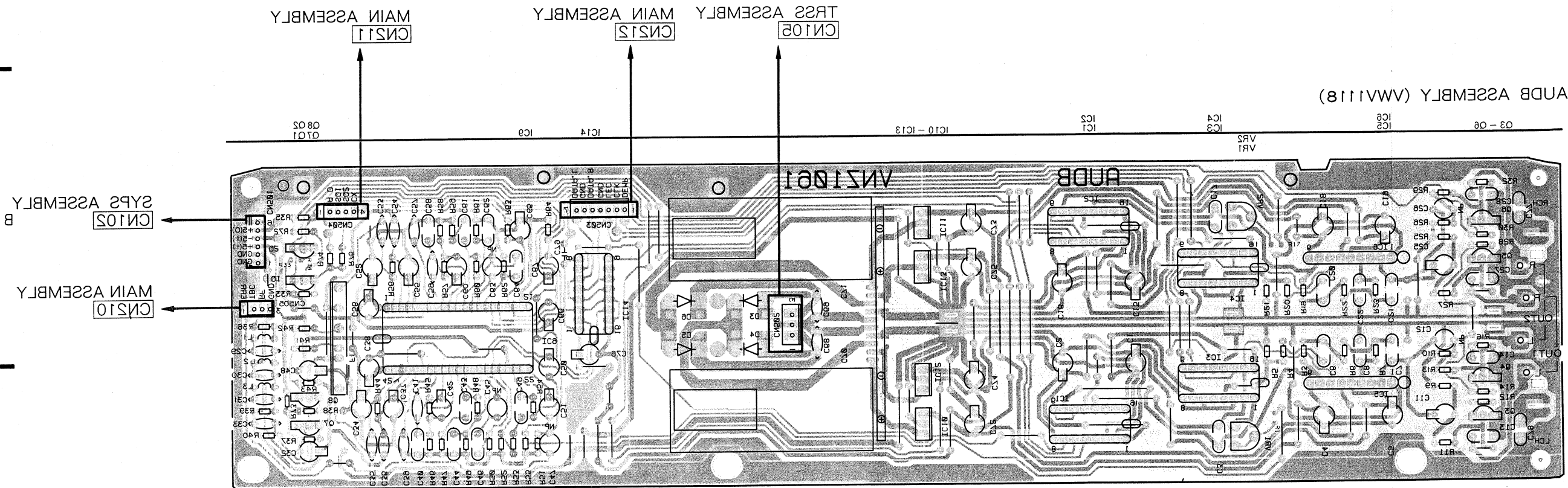




2



This P. C. B. connection diagram is viewed from the foil side.



A



AUDB ASSEMBLY (VWV.1118)

— : RF SIGNAL LINE
 — : DIGITAL AUDIO SIGNAL LINE
 - - - : ANALOG AUDIO SIGNAL LINE
 - - - : AUDIO SIGNAL LINE

IC1, IC2: D/A CONVERTER

07,08: BUFFER AMP.

IC9: AUDIO DEMODULATOR & CX NOISE REDUCTION

IC1,2 AD1860N-K
 IC3,4 BU4053B
 IC5,6 NJM5532SD
 IC9 PA0034A
 IC10 M5F78M12L
 IC11 M5F78M12L
 IC12 M5F78M12L
 IC13 M5F78M12L
 IC14 HD74HC153P
 Q1 UN4112
 Q2 2SA933S
 Q3-6 2SD2144S
 Q7 2SC2786
 Q8 2SC1740S
 D3-6 1SR35-100AVL

VR1,2 : VRTB6VS222
 R11,27 : VCN1006

TO SYPS ASSEMBLY
 CN102
 (P38)

TO TRSS ASSEMBLY
 CN105
 (P37)





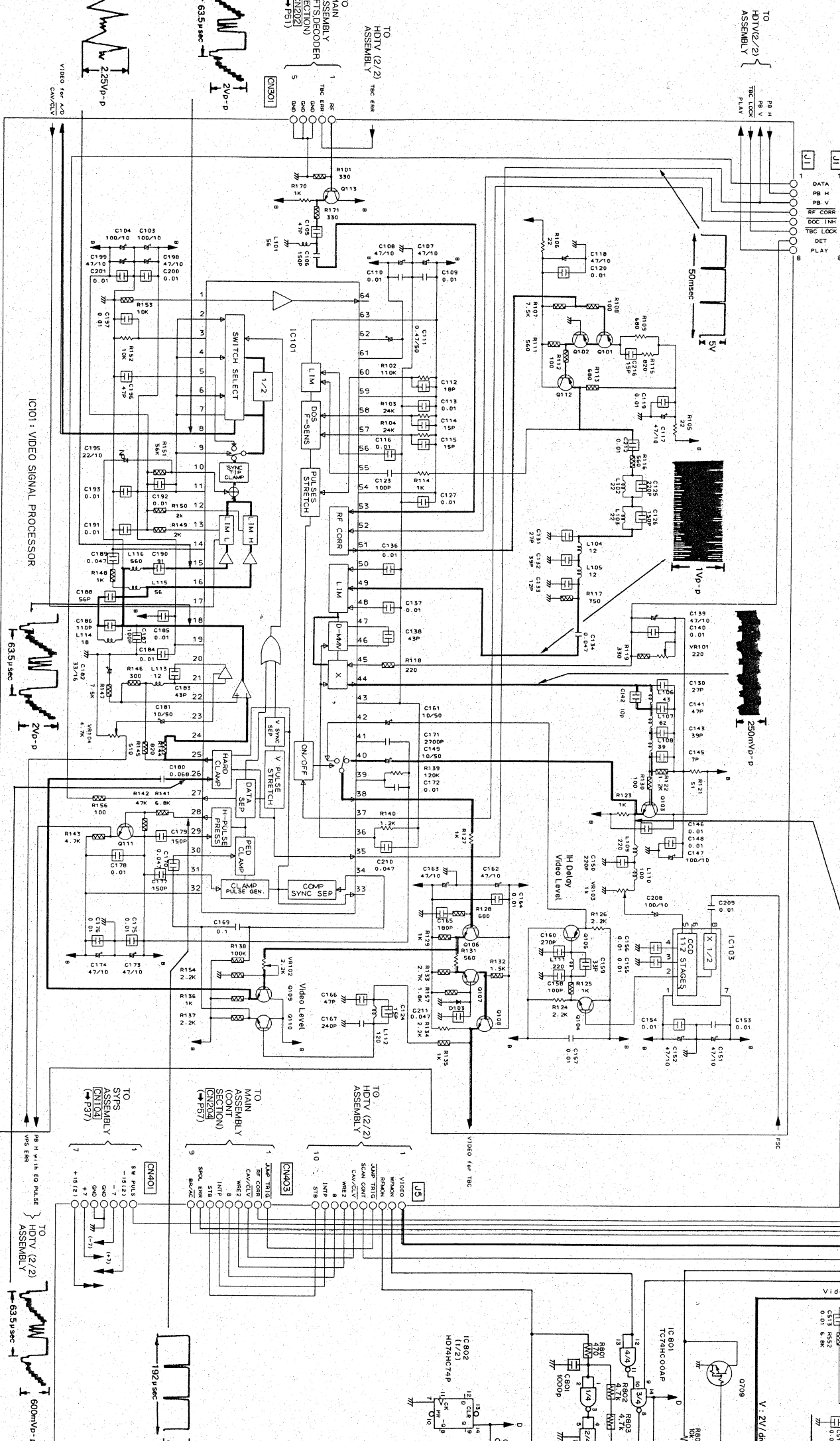
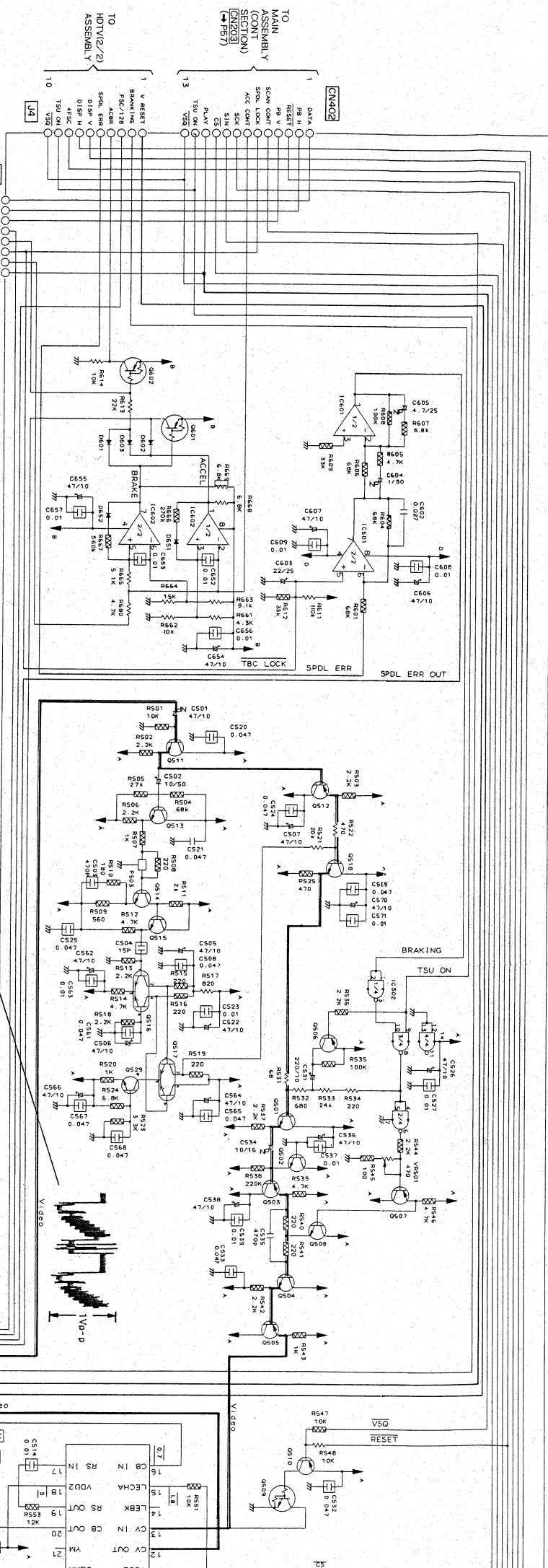
4.

MAIN ASSEMBLY (VWS1068) (CONT SECTION)

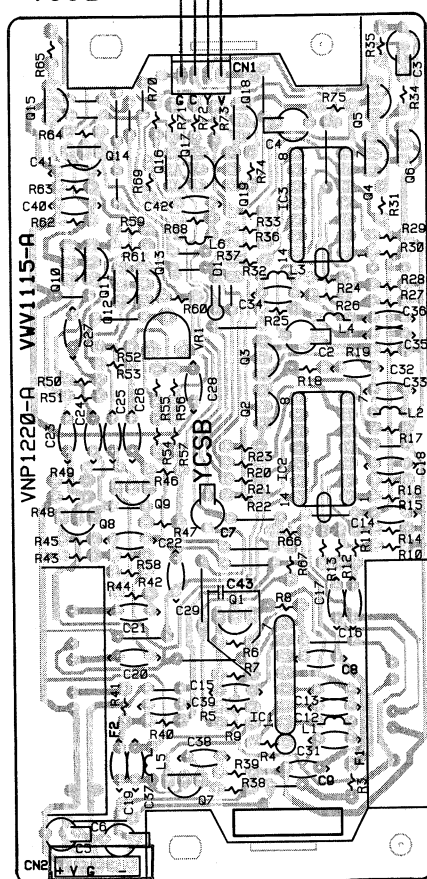


5.7 HDTV (1/2), YCSB ASSEMBLIES

HDTV (1/2) ASSEMBLY (VWS1069)



HDTV ASSEMBLY (VWS1069)



Q15 Q18 Q5
Q4 Q6
Q16 Q17 Q19
IC3

Q10	Q11		
	Q12	Q13	

VR1

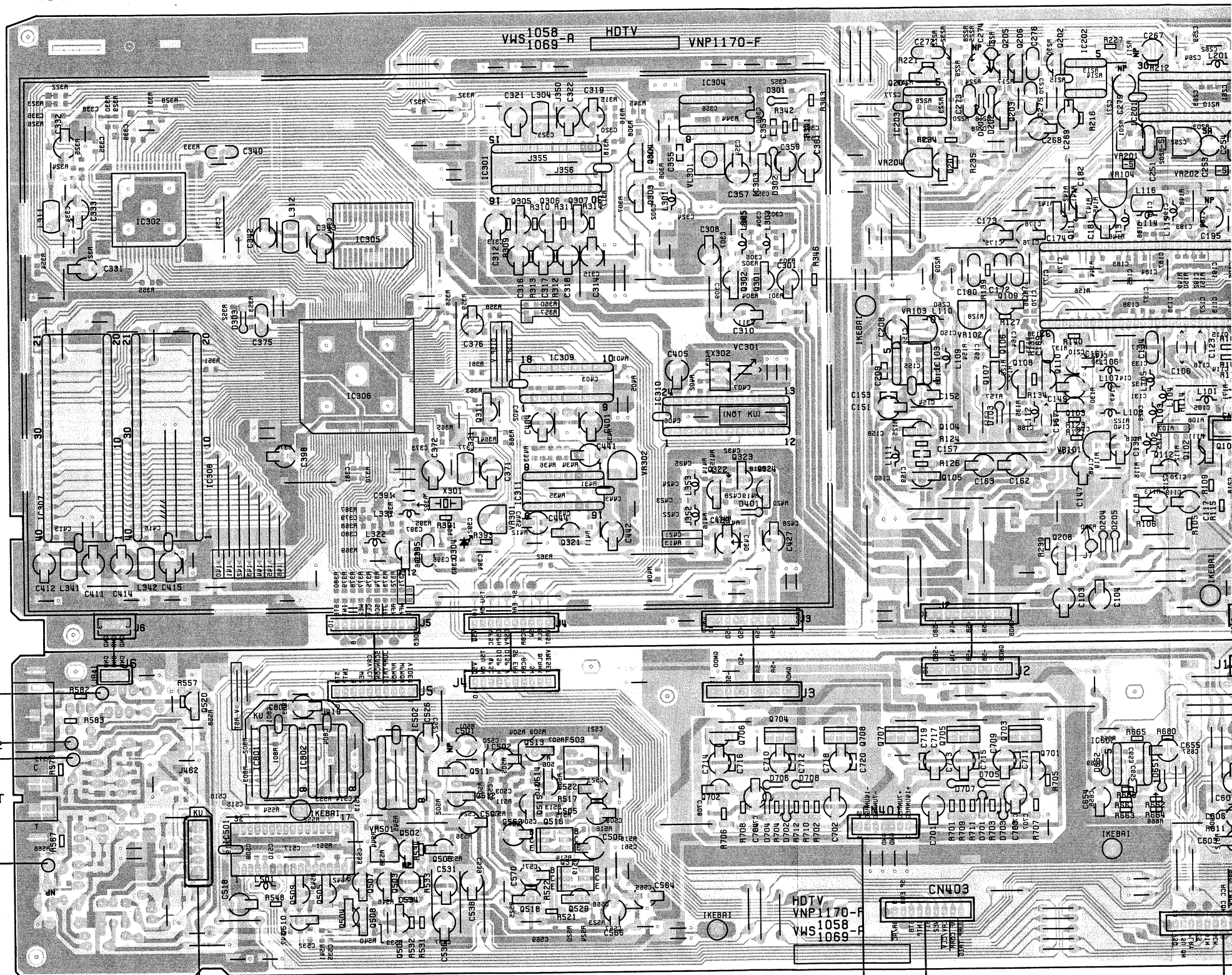
IC 2

Q8 Q

Q1

IC1

Q7



VIDEO OUT

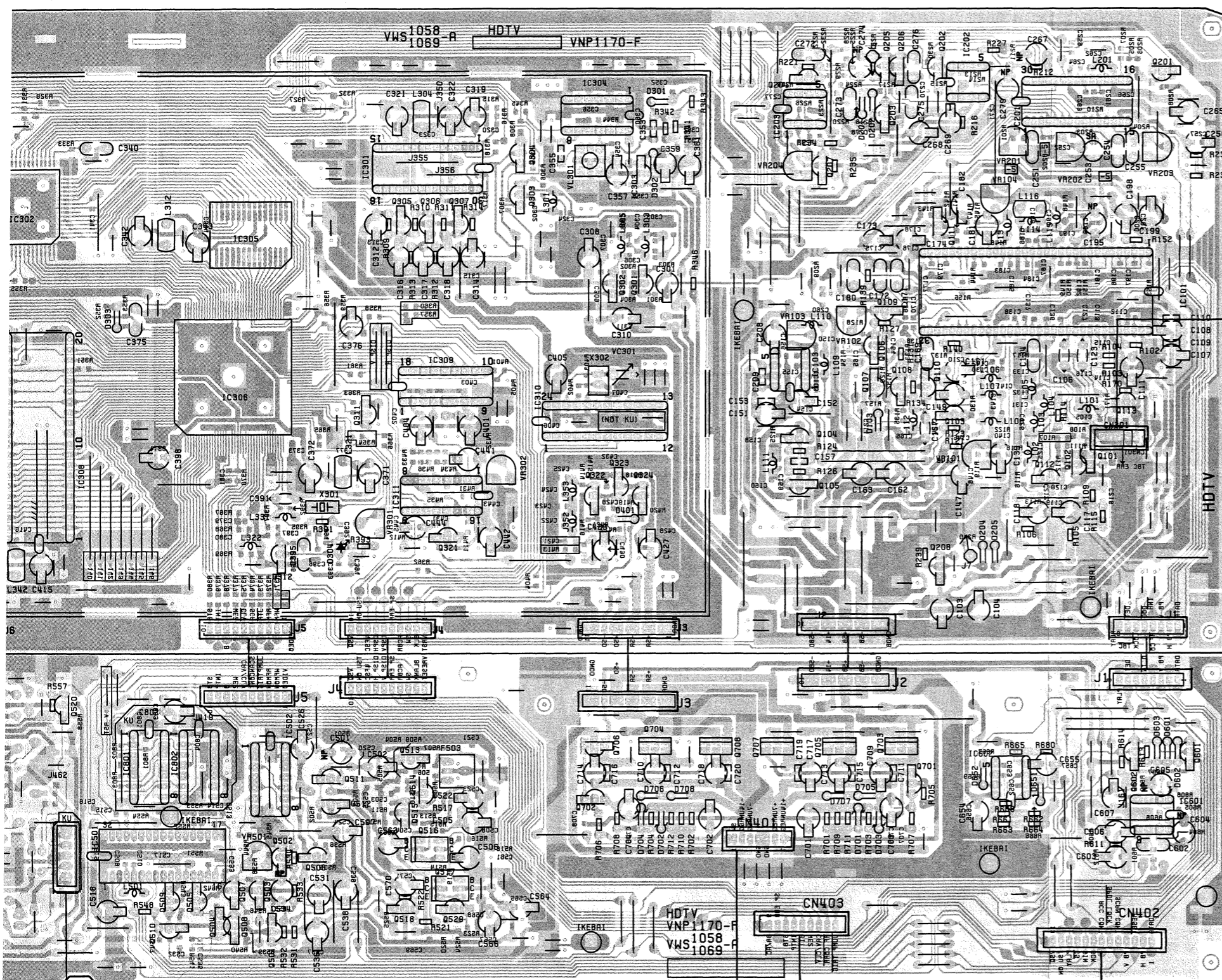
S-VIDEO OUT

SYPS
ASSEMBLY
CN104

MAIN ASSEMBLY CN204

MAIN AS:
CN203

:MBLY (VWS1069)



SYPS

CN104

MAIN ASSEMBLY CN204

MAIN ASSEMBLY

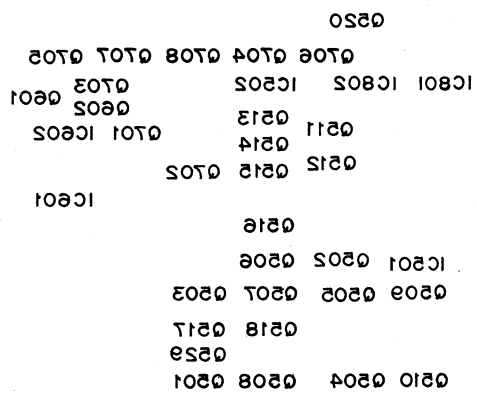
CN203

		Q204	Q206	Q202	Q201	
		Q204	IC202			
				IC201		
VR201		IC304	IC203			
VR202		Q304				
VR203						
	IC301	IC303	Q207			
VR204		Q303				
VR104	IC302	IC305	Q305	Q306	Q307	Q111

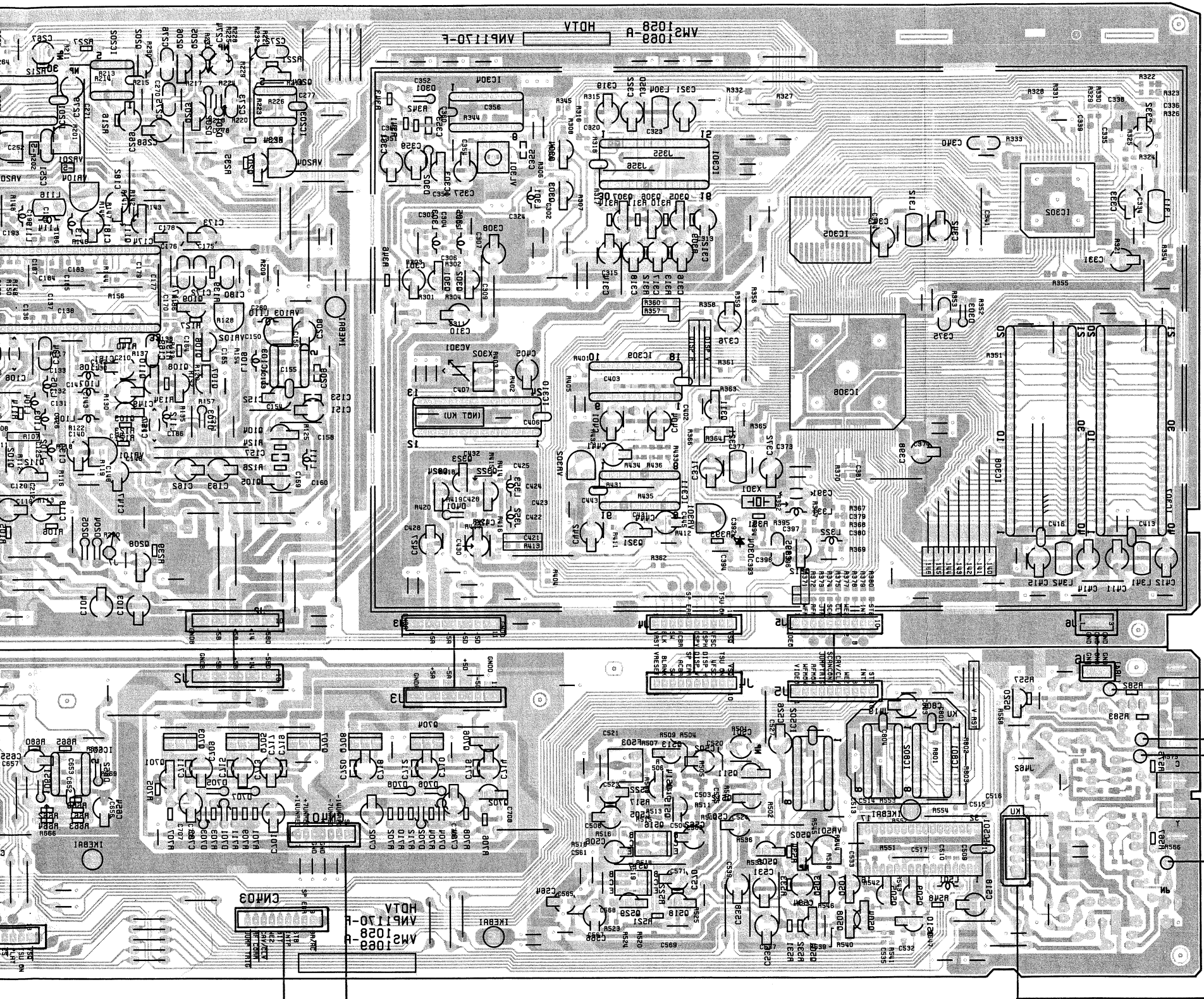
		Q302 Q301	IC101
VR102	→	MAIN ASSEMBLY	Q109
VR103		CN202	
VC301		IC306 IC309 IC103 Q106	Q110 Q107 Q108
		IC306 Q311 IC310	Q113 Q103
VR101		IC307 IC308	Q104
VR302			Q102 Q101
			Q323 Q105
		IC311 Q322 Q324	Q112
VR301			
		Q312	
		Q321	
			Q208

				Q520	
				Q706	Q704
				Q708	Q707
				Q705	
	IC801	IC802	IC502		Q703
					Q602
		Q511	Q513		Q601
			Q514		Q701
		Q512	Q515	Q702	IC602
					IC601
			Q516		
VR501	IC501	Q502	Q506		
	Q509	Q505	Q507	Q503	
			Q518	Q517	
				Q529	
	Q510	Q504	Q508	Q501	

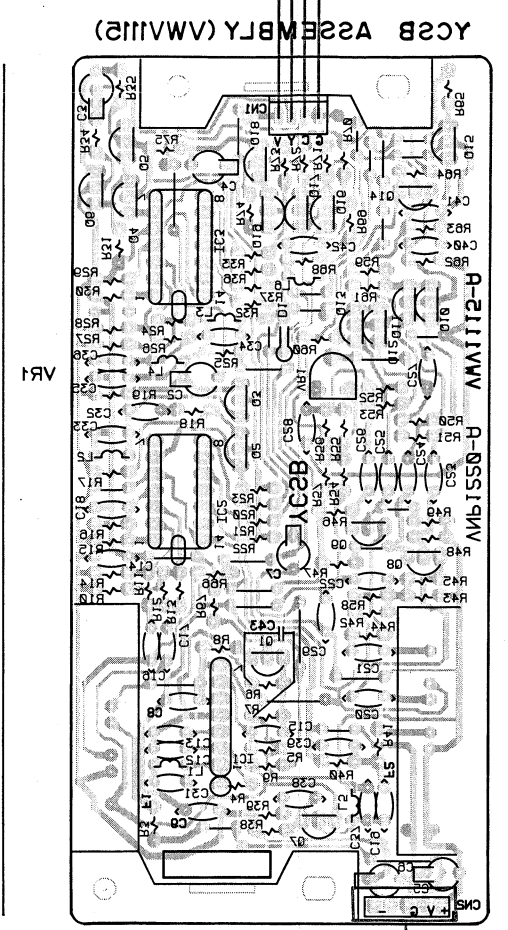
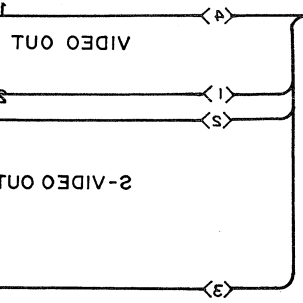
D



This P.C.B. connection diagram is viewed from the foil side.

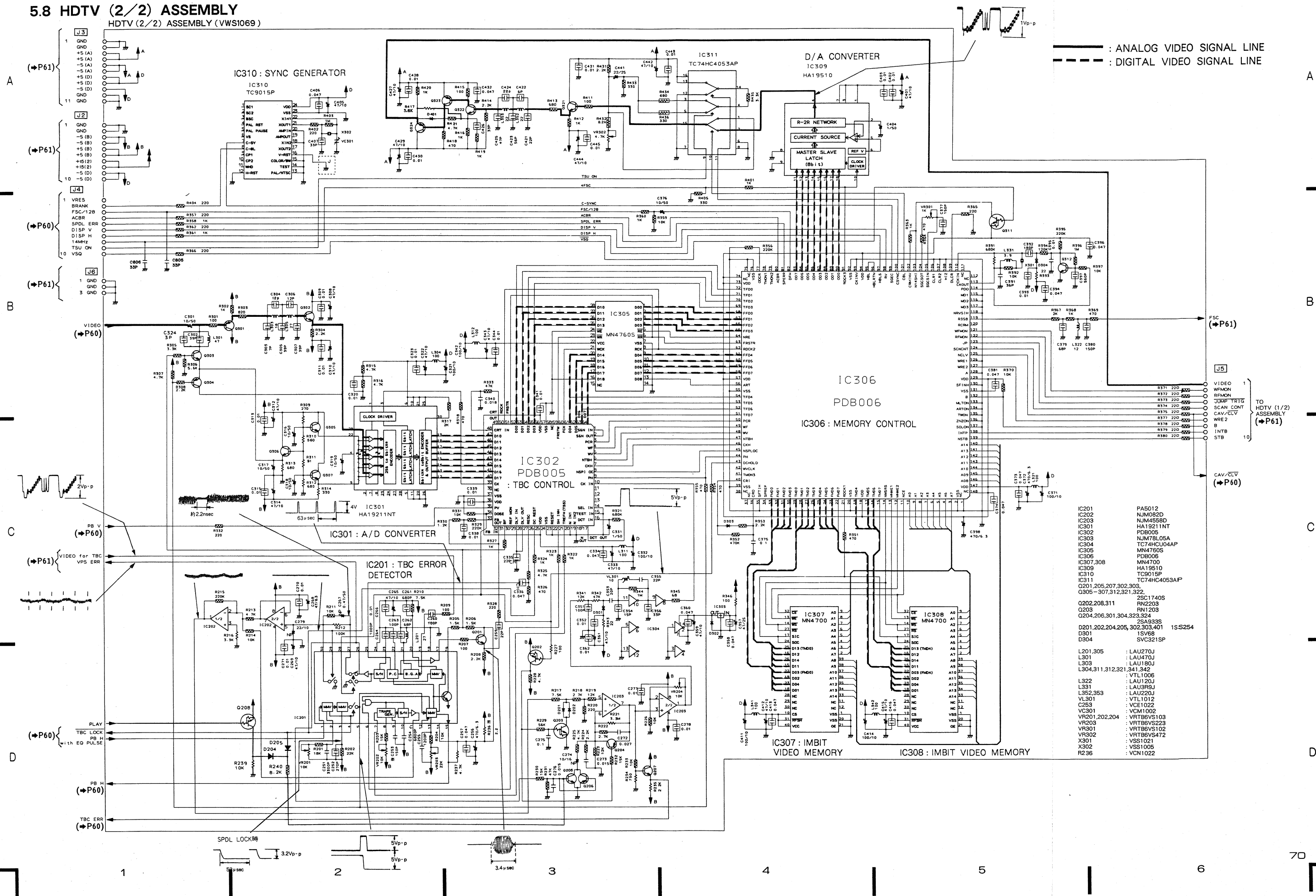


HDVA ASSEMBLY (VM21099)



5.8 HDTV (2/2) ASSEMBLY

HDTV (2/2) ASSEMBLY (VWS1069)







6. ELECTRICAL PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- 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 RD1/4PS 561J

47k Ω → 47 × 10³ → 473 RD1/4PS 473J

0.5 Ω → 0R5 RN2H 0R5K

1 Ω → 010 RS1P 010K

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

5.62k Ω → 562 × 10¹ → 5621 RN1/4SR 5621F

Miscellaneous Parts

Mark	Symbol & Description	Part No.
	PRET assembly	
⊙	MAIN assembly	VWS1068
	VFDB assembly	
⊙	SYPS assembly	VWR1051
⊙	HDTV assembly	VWS1069
	LSFB assembly	
⊙	AUDB assembly	VWV1118
	FFCB assembly	
	CNNB assembly	
	PREB assembly	
	FGSB assembly	
	LEDB assembly	
	IRAB assembly	
	KEYB assembly	
	SWTB assembly	
	JOGB assembly	
	TRSF assembly	
	TRSS assembly	
	LHSB assembly	
	LVSB assembly	
⊙	YCSB assembly	VWV1115
	IC205 Onetime P ROM-S (Install in the MAIN assembly)	VYW1480
Δ	FU1, FU2 Fuse (3A)	VEK-018
Δ	FU3, FU4 Fuse (2A)	VEK-022
	S1 Slide switch (DOOR SW)	VSK1014
	S3, S4 Slide switch (CDV/LD A INSIDE, LD B INSIDE)	VSK1003
	S2, S5 Slide switch (CD INSIDE, HEIGHT UP, DOWN)	VSK1009
Δ	AC power cord	VDG1039
Δ	Power transformer (AC 120V)	VTT1074
	Remote control unit	VXX1351

Mark	Symbol & Description	Part No.
	Pickup assembly	VWY1019
	Flexible cable (FFC)	VDA1207
	Spindle motor	VXM1035
	Tilt (Height) motor assembly-S	VXX1227
	Slider motor assembly-S	VXX1329
	Loading motor V assembly-S	VXX1324
	Loading motor H assembly-S	VXX1328

PRET Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC201	BA15218
	Q201, Q202	2SC1740S

CAPACITORS

Mark	Symbol & Description	Part No.
	C201	CCSQSL331J50
	C202 - C205	CKSQYF104Z25

RESISTORS

Mark	Symbol & Description	Part No.
	VR201 Semi-fixed (1kΩ)	VRTB6VS102
	VR202, VR203 Semi-fixed (4.7kΩ)	VRTB6VS472
	Other resistors	RS1/10S□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN905 6P connector	VKN1082
	CN906 8P connector	VKN1083

◎ MAIN Assembly (VWS1068)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC201,IC307	BA15218
	IC101,IC105,IC301,IC304	BA15218N
	IC302	BU4053B
	IC109,IC202	BU74HC00
	IC208	BU74HC02
	IC207	CXD1095Q
	IC204	HD63B03YP
	IC309	IR2339
	IC308	LA6500
	IC303,IC306	LA6510
	IC104,IC206	LC3517BL-15
	IC103	LC7863K
	IC102,IC305	NJU4053BD
	IC203	PD0011A
	IC107	PD0036
	IC210,IC211	TA7291P
	IC209	TC74HC30AP
	IC108,IC110	TC74HC74AP
	IC106	YM3613B
	Q205,Q301,Q303,Q305,Q312,Q314,Q320	UN4112
	Q324	DTA124ES
	Q201,Q207,Q304,Q307,Q308,Q313,Q318,Q319,Q321,Q322	UN4212
	Q204,Q310,Q311,Q317	UN4215
	Q102,Q107,Q110,Q306,Q315	2SA933S
	Q101,Q103,Q105,Q106,Q108,Q109,Q202,Q203,Q309,Q316	2SC1740S
	Q206	2SC2786
	Q302	2SK184
	D102	FC54M
	D203	HZS6.2NB2
	D204	HZS8.2NB2
	D101	KV1225YBR
	D105,D205,D206,D301 - D316	1SS254

COILS

Mark	Symbol & Description	Part No.
	L101,L103	LAU151K
	L102	LAU181J
	L108,L301,L302	LAU220J
	L201	LAU221J
	L105	LAU5R6J
	L106,L107,L109,L110,L111	LFA220J
	VL101 Variable coil	VTL-275

CAPACITORS

Mark	Symbol & Description	Part No.
	C109,C111	CCSQCH101J50
	C102	CCSQCH121J50
	C207	CCSQCH220J50
	C110,C146	CCSQCH270J50
	C202,C203	CCSQCH330J50

Mark	Symbol & Description	Part No.
	C333 - C335,C346	CCSQCH470J50
	C105	CCSQCH560J50
	C108,C112	CCSQCH680J50
	C157	CCSQSL471J50
	C123,C312	CCSQSL331J50
	C145	CCSQSL391J50
	C103	CCSQSL561J50
	C125	CCSQUJ330J50
	C126	CCSQUJ221J50
	C205	CEAL101M6R3
	C308	CEANPR47M50
	C316	CEANP100M16
	C134	CEANP2R2M50
	C201,C337	CEANP220M10
	C130	CEANP470M10
	C120,C314	CEAS010M50
	C121,C122,C131,C132,C135,C136	CEAS100M50
	C143,C151,C158 - C160,C209,C214	CEAS101M10
	C144	CEAS220M50
	C104,C115	CEASR47M50
	C107,C113	CEAS4R7M50
	C311,C330,C331,C340,C341	CEHAQ470M25
	C216,C310	CEAS470M25
	C215	CEAS471M6R3
	C139,C141,C307,C313,C332,C348,C349,C353	CFTXA104J50
	C347	CEAS2R2M50
	C323	CFTXA124J50
	C321,C324	CFTXA184J50
	C128	CFTXA224J50
	C137,C140	CFTXA471J50
	C305,C336	CFTXA473J50
	C329	CFTXA334J50
	C328	CFTXA683J50
	C219	CGCYX473M25
	C117	CKCYF103Z50
	C101,C118,C119	CKCYF223Z50
	C210,C213	CKPUYF223Z25
	C204	CKSQYF103Z50
	C161 - C165,C167,C168,C206,C208,C211,C212,C217,C218,C301 - C304,C325,C326,C338,C339,C345,C350	CKSQYF104Z25
	C315	CQMA122J50
	C114,C344	CQMA222J50
	C124,C127,C129,C342	CQMA223J50
	C343	CQMA332J50
	C306	CQMA333J50
	C106	CQMA392J50
	C322,C327,C354	CQMA472J50
	C320	CQMA682J50
	C309 (22 μ /10)	VCH1067
	VC201 Ceramic trimmer (45p)	VCM-003

RESISTORS

Mark	Symbol & Description	Part No.
	VR101 Semi-fixed (22k Ω)	VRTB6VS223
	R223 Resistor array	RA11T103J
	R323,R359	RD1/2PMF□□□J
	R162,R201 - R215,R224,R236, R237,R305,R309,R318,R322,R325, R334,R335,R339,R344,R350,R368, R371,R379,R401,R402,R413,R424	RD1/6PM□□□J
	Other resistors	RS1/10S□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN209 5P wafer	VKN1087
	CN213 23P flexible cable (FFC)	VKN1088
	JA101 Optical digital module	GP1F32T
	X201 Ceramic resonator (8MHz)	KBR-8.0M
	X101 Crystal resonator (16MHz)	VSS1004
	28P IC socket	VKH1001
	2P mini jack	VKN1034

VFDB Assembly**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC102	IR9393
	IC101	PDG048A
	IC103	PST529C
	Q101 - Q104	UN4212
	Q105	2SC2458
	D103,D104	VEL1003
	D101,D102	1SS254

SWITCH

Mark	Symbol & Description	Part No.
	S101 Tact switch (POWER)	VSC-010

COILS

Mark	Symbol & Description	Part No.
	L101,L102 Ferrite bead	VTH1026

CAPACITORS

Mark	Symbol & Description	Part No.
	C105	CEJA100M35
	C101,C103	CEJA470M6R3
	C106	CKPUYB102K50
	C102,C104,C107 - C109	CKPUYY103N16

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/6PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN602 28P connector	VKN1016
	V101 Fluorescent indicator tube	VAW1011
	X101 Ceramic resonator	VSS1014

◎ SYPS Assembly (VWR1051)**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
△	IC105 IC PROTECTOR	ICP-N20
	IC101	NJM4558S
	IC102	NJM4560SD
	Q1,Q111	UN4112
	Q2,Q7	UN4212
	Q53,Q102,Q104,Q106	2SA933S
	Q4,Q6	2SB1185
	Q54,Q107,Q109	2SB1375
	Q51,Q101,Q103,Q105,Q112	2SC1740S
	Q5,Q52,Q108,Q110	2SD2012
	Q3	2SD1762
	D1	RBA-406B
	D2	D3SBA20
	D9	MTZJ20A
	D105,D106	HZS4B2
	D53,D60	HZS5.1NB1
	D6	HZS5.6NB2
	D10	MTZJ27C
	D52,D57	HZS7.5NB3
	D3,D4,D7,D8,D51,D56	1SR139-100
	D5,D54,D55,D58,D59	1SS254
	D101 - D104	10DF1

COIL

Mark	Symbol & Description	Part No.
	L101	VTL1008

CAPACITORS

Mark	Symbol & Description	Part No.
	C17,C59,C60,C106,C107	CEAS100M50
	C18,C19	CEAS101M50
	C10,C11	CEAS222M25
	C16,C52,C53,C56,C57	CEAS470M10
	C13,C21,C55	CEAS470M25
	C14	CEAS102M16
	C105,C110	CEAS470M50
	C12,C15,C51	CEAS471M25
	C9	CEAS472M16
	C101	CFTXA471J50
	C108	CFTXA103J50
	C102,C103	CFTXA223J50
	C109	CFTXA473J50
	C3 - C6,C54,C58	CKPUYF103Z25
	C111	CQMA332J50
	C7 (10000/16)	VCH1055

RESISTORS

Mark	Symbol & Description	Part No.
	R115 - R118 (47 Ω)	DCN1003
	R3,R22,	RD1/2PM□□□J
	R121 - R126	RN1/6PQ□□□□F
	R119	RS2LMFR51J
	R111 - R114	RS2PMF221J
	Other resistors	RD1/6PM□□□J

◎ HDTV Assembly (VWS1069)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC802	HD74HC74P
	IC301	HA19211NT
	IC309	HA19510
	IC602	IR9393
	IC307,IC308	MN4700
	IC305	MN4760S
	IC501	M50552-132SP
	IC202	NJM082D
	IC203,IC601	NJM4558D
	IC303	NJM78L05A
	IC101	PA5010
	IC201	PA5012
	IC302	PDB005
	IC306	PDB006
	IC103	PM0001
	IC304	TC74HCU04AP
	IC502,IC801	TC74HC00AP
	IC311	TC74HC4053AP
	IC310	TC9015P
	Q202,Q208,Q311,Q601,Q602	RN2203
	Q203,Q509	RN1203
	Q709	DTC124ES
	Q101,Q102,Q105,Q112,Q204,Q206, Q301,Q304,Q323,Q324,Q503, Q505 - Q507,Q510,Q512,Q702	2SA933S
	Q706	2SB1238X
	Q704,Q708	2SB1375
	Q103,Q104,Q106 - Q111,Q113, Q201,Q205,Q207,Q302,Q303, Q305 - Q307,Q312,Q321,Q322, Q501,Q502,Q504,Q508,Q511, Q513 - Q515,Q518,Q520,Q529,Q701	2SC1740S
	Q516,Q517	2SC3064
	Q703,Q705,Q707	2SD2012
	D703,D704	HZS5C1
	D701,D702	HZS8.2NB2
	D304	SVC321SP
	D103,D201,D202,D204,D205,D302, D303,D401,D501,D502,D601 - D603, D651,D652,D705 - D708	1SS254
	D301	1SV68

COILS AND FILTERS

Mark	Symbol & Description	Part No.
	L110	LAU101J
	L104,L105,L113,L322,L501	LAU120J
	L112	LAU121J
	L114,L303	LAU180J
	L102,L103,L352,L353	LAU220J
	L109,L111	LAU221J
	L201,L305	LAU270J
	L331	LAU3R9J
	L107	LAU620J
	L106	LAU430J

Mark	Symbol & Description	Part No.
	L108	LAU390J
	L301	LAU470J
	L101,L115	LAU560J
	L116	LRA561K
	L304,L311,L312,L321,L341,L342 Coil (100 μ H)	VTL1006
	VL301 Valiable coil	VTL1012
	F501 COMB filter	VTF1032
	F502 3.58MHz B. P. F.	VTF1038
	F503 3.58MHz TRAP	VTF1039

CAPACITORS

Mark	Symbol & Description	Part No.
	C123	CCCCH101J50
	C106	CCCCH151J50
	C391	CCCCH360J50
	C167	CCCSL241J50
	C353	CCPUCH200J50
	C805,C806	CCDCH330J50
	C324	CCSQCH030C50
	C355	CCPUUJ220J50
	C422	CCSQCH060D50
	C145,C303	CCSQCH070D50
	C142	CCSQCH100D50
	C158,C187,C260,C263,C351,C530	CCSQCH101J50
	C186	CCSQCH111J50
	C133,C304,C306	CCSQCH120J50
	C114,C115,C124,C216,C354,C504	CCSQCH150J50
	C126,C177,C179,C377,C380	CCSQCH151J50
	C112	CCSQCH180J50
	C165,C392	CCSQCH181J50
	C259,C335,C421,C424	CCSQCH220J50
	C125,C150	CCSQCH221J50
	C130,C131	CCSQCH270J50
	C160,C252,C516	CCSQCH271J50
	C159,C356,C407,C426,C509,C510	CCSQCH330J50
	C132,C143,C302,C305,C307	CCSQCH390J50
	C138,C183	CCSQCH430J50
	C105,C141,C166,C196,C425	CCSQCH470J50
	C188,C423	CCSQCH560J50
	C262,C379	CCSQCH680J50
	C190	CCSQCH910J50
	C503,C535	CCSQSL471J50
	C397	CCSQSL561J50
	C261	CCSQSL681J50
	C149,C161,C181	CEAL100M16
	C371	CEAL101M6R3
	C182	CEAL330M10
	C268,C269	CEAL470M6R3
	C604	CEANP010M50
	C267	CEANPR47M50
	C274,C534	CEANP100M16
	C195,C279	CEANP220M10
	C605	CEANP4R7M25

Mark	Symbol & Description	Part No.
	C501	CEANP470M10
	C111	CEASR47M50
	C331, C404	CEAS010M50
	C301, C316 - C319, C376, C502, C552 - C554	CEAS100M50
	C103, C104, C147, C208, C321, C332, C342, C411, C414, C703, C704	CEAS101M10
	C441, C603	CEAS220M25
	C531	CEAS221M10
	C701, C702	CEAS221M25
	C107, C108, C117, C118, C139, C151, C152, C162, C163, C173, C174, C198, C199, C265, C308, C310, C312, C314, C322, C333, C343, C359, C361, C401, C405, C412, C415, C427, C429, C442, C444, C505 - C507, C518, C522, C526, C536, C538, C562, C564, C566, C570, C606, C607, C654, C655, C709, C710, C713, C714, C717, C718, C802	CEAS470M10
	C357	CEAS470M25
	C256, C372, C398	CEAS471M6R3
	C169, C275, C375	CFTXA104J50
	C602	CFTXA273J50
	C340	CFTXA183J50
	C180	CFTXA683J50
	C109, C110, C153, C157, C209, C711, C712, C715, C716, C719, C720	CKPUYY103N16
	C264, C801	CKSQYB102K50
	C113, C116, C119, C120, C127, C136, C137, C140, C146, C148	CKSQYF103Z50
	C154 - C156, C164, C175, C176, C178, C184, C185, C191 - C193, C197, C200, C201, C212, C266, C270, C271, C277, C278, C309, C311, C313, C315, C320, C323, C338, C339, C352, C362, C393, C402, C403, C428, C430, C431, C443, C445, C513, C514, C517, C519, C523, C527, C537, C539, C563, C571, C576, C608, C609, C652, C653, C656, C657, C705, C706	
	C170, C189, C210, C211, C257, C334, C336, C341, C344, C358, C360, C373, C374, C381, C394, C396, C406, C413, C416, C432, C508, C515, C520, C521, C524, C525, C532, C533, C561, C565, C567 - C569, C707, C708, C803, C804	CKSQYF473Z25
	C172, C395	CQMA103J50
	C255	CQMA122J50
	C273, C276	CQMA153J50
	C171	CQMA272J50
	C272	CQMA273J50

Mark	Symbol & Description	Part No.
	C251	CQMA332J50
	C134	CQMA473J50
	C254	CQMA682J50
	C253 (150P)	VCE1022
	VC301 Ceramic trimmer (45p)	VCM1002

RESISTORS

Mark	Symbol & Description	Part No.
	VR103, VR301 Semi-fixed (1k Ω)	VRTB6VS102
	VR201, VR202, VR204	VRTB6VS103
	Semi-fixed (10k Ω)	
	VR101 Semi-fixed (220 Ω)	VRTB6VS221
	VR102 Semi-fixed (2.2k Ω)	VRTB6VS222
	VR203 Semi-fixed (22k Ω)	VRTB6VS223
	VR501 Semi-fixed (470 Ω)	VRTB6VS471
	VR302 Semi-fixed (4.7k Ω)	VRTB6VS472
	VR104 Semi-fixed (4.7k Ω)	VRTG6VS472
	R102 - R104, R139, R140, R152, R531 - R534, R661 - R664	RN1/6PQ□□□□F
	R105, R106, R109, R114, R115, R121, R123, R124, R126, R127, R131, R134, R170, R212, R216, R221, R227, R234, R235, R237, R239, R309 - R314, R341 - R343, R346, R391, R393, R517, R521, R522, R548, R557, R567, R576, R580 - R583, R611, R613, R614, R665, R668, R680, R701 - R712, R804	RD1/6PM□□□□J
	R236 (2.2 Ω /1/6W)	VCN1022
	Other resistors	RS1/10S□□□□J

OTHERS

Mark	Symbol & Description	Part No.
	X302 Crystal resonator	VSS1005
	X301 Crystal resonator	VSS1021
	DL501 380ns delay line	VTN1001
	2P pin jack	VKB1009
	4P mini DIN socket	VKN1072

LSFB Assembly

COIL

Mark	Symbol & Description	Part No.
Δ	L1 Line filter	VTL-157

CAPACITORS

Mark	Symbol & Description	Part No.
Δ	C1, C2 (0.01 μ /AC250V)	RCG-009

◎ AUDB Assembly (VWV1118)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1,IC2	AD1860N-K
	IC3,IC4	BU4053B
	IC14	HD74HC153P
	IC12	M5F78M06L
	IC10	M5F78M12L
	IC13	M5F79M06L
	IC11	M5F79M12L
	IC5,IC6	NJM5532SD
	IC9	PA0034A
	Q1	UN4112
	Q2	2SA933S
	Q8	2SC1740S
	Q7	2SC2786
	Q3 - Q6	2SD2144S
	D3 - D6	1SR35-100AVL

COILS AND FILTER

Mark	Symbol & Description	Part No.
	L2	LAU270J
	L1,L3	LAU560J
	F1 BPF (2.30, 2.81MHz)	RTF1084

CAPACITORS

Mark	Symbol & Description	Part No.
	C41,C59	CCCCH560J50
	C29,C31	CCCCH910J50
	C30	CCCSL221J50
	C57	CCCSL271J50
	C39	CCCSL301J50
	C12,C26,C45,C63	CEANP220M10
	C47	CEANP330M16
	C66	CEASR47M50
	C32,C50,C76	CEAS100M50
	C38,C56	CEAS101M10
	C4,C5,C18,C19	CEAS101M25
	C11,C25,C42,C51,C60,C67	CEAS220M50
	C34,C37,C48,C52,C55	CEAS221M6R3
	C65	CEAS4R7M50
	C49	CFTXA104J50
	C14,C28	CFTXA471J50
	C70,C71	CEAS222M25
	C79	CKPUYB102K50
	C33	CKCYF103Z50
	C35,C36,C53,C54	CKCYF223Z50
	C46,C64	CQMA393J50
	C43,C44,C61,C62	CQMA472J50
	C40,C58	CQMA682J50
	C3,C8,C13,C17,C22,C27 (470p)	CQSA471J50
	C6,C20 (22000p)	CQMA223J50
	C7,C21 (1000p)	CQSA102J50
	C68,C69 (10000p)	CQMA103J50
	C1,C2,C15,C16,C72 - C75	CEAS331M25
	(330μ/25)	
	C4,C5,C18,C19 (100μ/25)	CEAS101M25

RESISTORS

Mark	Symbol & Description	Part No.
	VR1,VR2 Semi-fixed (2.2kΩ)	VRTB6VS222
	R11,R27 (330Ω/0.5W)	VCN1006
	R1,R17,R33,R34	RS1/10S□□□J
	R3 - R7,R9,R19 - R23,R25	RDR1/4PM□□□J
	Other resistors	RD1/6PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	JA1 4P pin jack	VKB1015

FFCB Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q301	2SC1740S
	D301 - D306	1SS254

CAPACITORS

Mark	Symbol & Description	Part No.
	C301 Capacitor array (100p × 8)	VCG1016
	C302 Capacitor array (100p × 4)	VCG1017
	C303	CKPUYB101K50

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/6PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN612 28P connector	VKN1015
	CN611 17P connector	VKN1084

CNNB Assembly

RESISTOR

Mark	Symbol & Description	Part No.
	R301	RS1/10S472J

OTHERS

Mark	Symbol & Description	Part No.
	CN911 5P connector	VKN1086

PREB Assembly**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC101	BA15218
	IC102	IR3C02A

CAPACITORS

Mark	Symbol & Description	Part No.
	C106	CCSQCH680J50
	C104	CEAS101M10
	C105	CEAL220M16
	C103	CEJANP010M50
	C101,C102	CEJA101M10
	C111	CKSQYF103Z50
	C107 - C110,C112	CKSQYF104Z25

RESISTORS

Mark	Symbol & Description	Part No.
	VR104 Semi-fixed (100k Ω)	VRTB6VS104
	VR101 - VR103	VRTB6VS472
	Semi-fixed (4.7k Ω)	
	R119	RD1/4PM100J
	Other resistors	RS1/10S□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN902 29P connector	VKN1025
	CN901 23P connector	VKN1079
	CN903 6P wafer	VKN1080
	CN904 8P wafer	VKN1081

FGSB Assembly**SEMICONDUCTOR**

Mark	Symbol & Description	Part No.
	D401	GP1S51

RESISTOR

Mark	Symbol & Description	Part No.
	R401	RS1/10S471J

LEDB Assembly**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	D201,D202	VEL1003

IRAB Assembly**OTHERS**

Mark	Symbol & Description	Part No.
	Remote control sensor	GP1U50X

KEYB Assembly**SWITCHES**

Mark	Symbol & Description	Part No.
	S301 - S305 Tact switch (SIDE A, SIDE B, PLAY/STILL, STOP, OPEN/CLOSE)	VSC-010


SWTB Assembly**SWITCHES**

Mark	Symbol & Description	Part No.
	S101 - S118 Tact switch (FILE, LIST, AUTO-PGM EDITING, DISPLAY OFF, D-EXT, INTRO SCAN, 1-9, 0, +10, MEMORY (◀◀, ▶▶) SKIP)	VSC-010
	S119,S120	VSC-012

OTHERS

Mark	Symbol & Description	Part No.
	CN603 17P connector	VKN1085

JOGB Assembly**SWITCHE**

Mark	Symbol & Description	Part No.
	S201 Rotary encoder (REV  FWD)	VSD1006

TRSF Assembly

There is not supplied parts in this assembly.

TRSS Assembly

There is not supplied parts in this assembly.

LHSB Assembly**SWITCH**

Mark	Symbol & Description	Part No.
	Leaf switch (Position detect switch of H. direction)	VSK1011

LVSB Assembly**SWITCH**

Mark	Symbol & Description	Part No.
	Push switch (Position detect switch of V. direction)	PSH1008

◎ YCSB Assembly (VWV1115)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC2, IC3	MC1496P
	IC1	TA7302P
	Q1, Q6, Q16, Q18	2SA933S
	Q17	SC1674
	Q2 — Q5, Q7 — Q15, Q19	2SC1740S
	D1	1SS254

COILS AND FILTERS

Mark	Symbol & Description	Part No.
	L5 Axial inductor	LAU100J
	L2 Axial inductor	LAU120J
	L4 Axial inductor	LAU150J
	L6 Axial inductor	LAU180J
	L1, L3 Axial inductor	LAU470J
	F1, F2 COMB filter	VTF1032

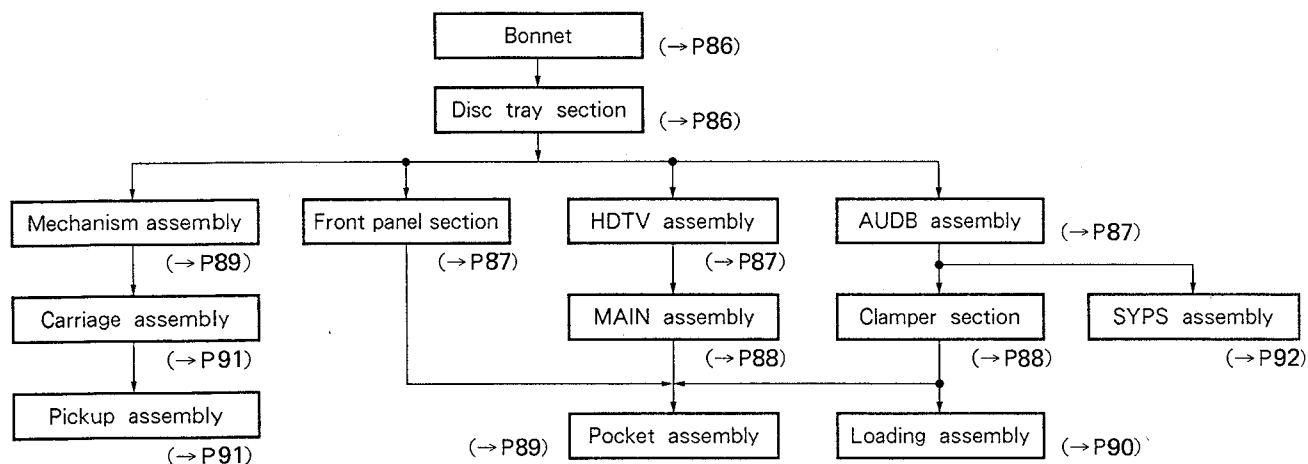
CAPACITORS

Mark	Symbol & Description	Part No.
	C34	CCCCH390J50
	C31, C39	CCPUCH150J50
	C35	CCPUSL270J50
	C38, C40, C41	CCPUSL470J50
	C36	CCPUSL680J50
	C7	CEAS101M10
	C3, C4	CEAS101M16
	C2	CEAS220M16
	C5, C6	CEAS471M10
	C42	CKPUYB101K50
	C43	CGDYX473M25
	C33	CKPUYB151K50
	C32, C37	CKPUYB181K50
	C8, C9, C12 — C29	CKPUYY103N16

RESISTORS

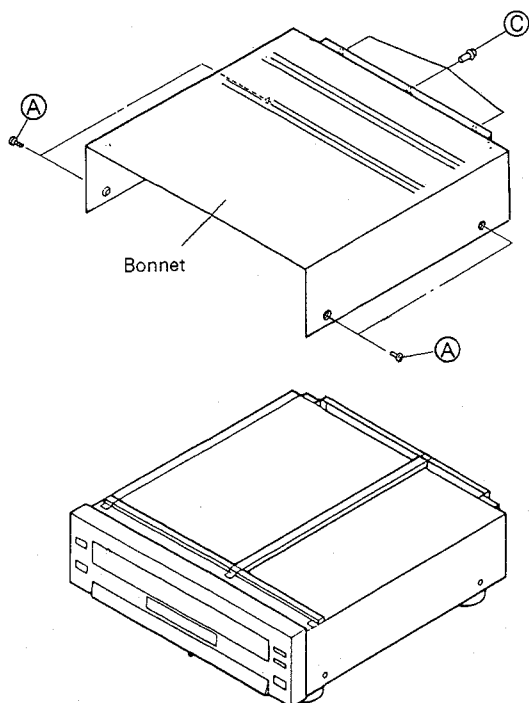
Mark	Symbol & Description	Part No.
	VR1 Semi-fixed (2.2kΩ)	VRTB6VS222
	Other resistors	RD1/6PM□□□J

7. DISASSEMBLY



1. Bonnet

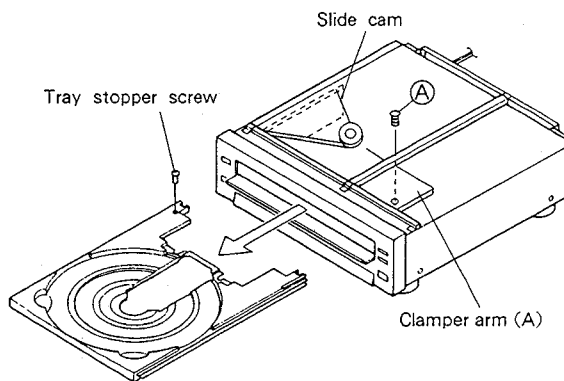
- ① Remove three screws ③ at the rear of the bonnet.
- ② Remove four screws ① from the both side of the bonnet.



2. Disc tray

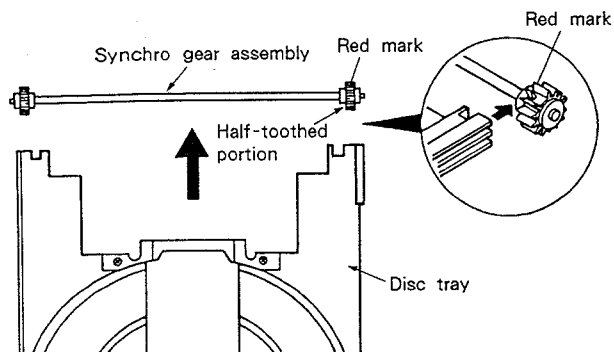
Note : The bonnet should be removed first.

- ① Push the slide cam with your hand toward the front until it stops. (Have the unit's front door open.)
- ② Remove the tray stopper screw and the screw ① located on the right front side of the clamper arm (A).
- ③ Pull the tray straight out.



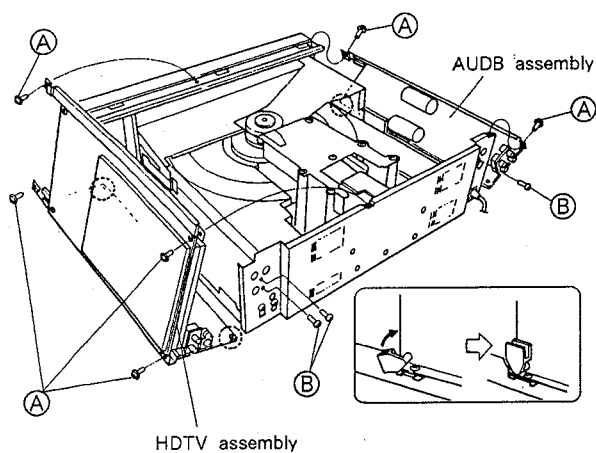
—How to install the disc tray—

To install the disc tray, align the synchro-gear assembly with the disc tray so that the one-tooth missing portion (red mark) of the gear is one tooth under the vertical position as illustrated below. Then, push the tray straight in.



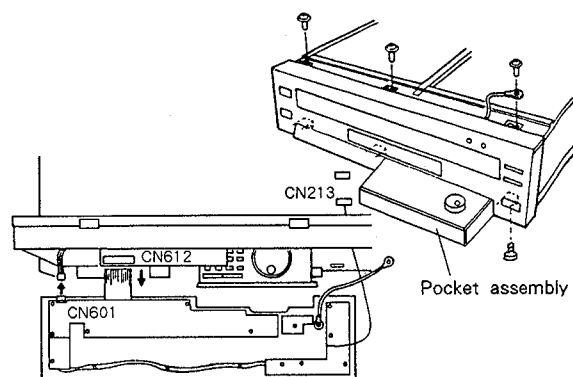
3. HDTV and AUDB assembly

- ① Remove the six screws (A) from the reinforced bridge.
- ② Remove the three screws (B) of the audio output terminals from the rear.



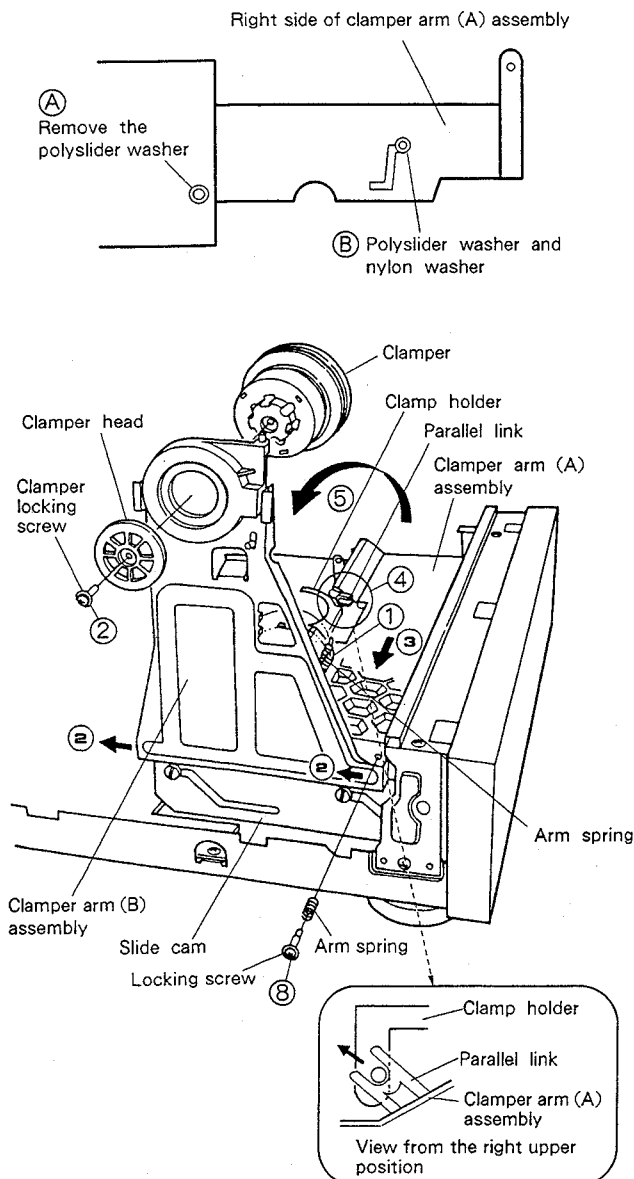
4. Front panel

- ① Pull out the pocket assembly to the front.
- ② Remove the three screws from the upper side of the front panel and one screw from the lower side.
- ③ Remove the CN612 from the FFCB assembly.
- ④ Remove the CN601 from the VFDB assembly.
- ⑤ Remove the CN213 from the MAIN assembly.



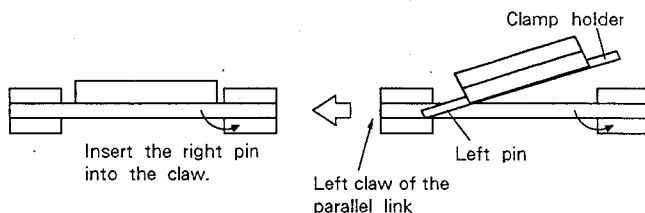
5. Clamper arm (B) and (A) assemblies

- ① Remove the two clamp springs.
- ② Unscrew the clamper locking screw, and remove the clamper.
- ③ Remove the AUDB assembly.
- ④ While pulling the notch located at the right side of the clamper holder toward you, detach the clamper holder from the parallel link.
- ⑤ Raise the clamper arm (B) assembly in the direction of the arrow.
- ⑥ Remove the HDTV assembly. (→P86)
- ⑦ Remove the carriage assembly. (→P91)
- ⑧ Remove the washer (A), washer (B) and nylon washer from the right side of the clamper arm (A) assembly, and the locking screw and the arm spring from the left side.



Clamper section mounting

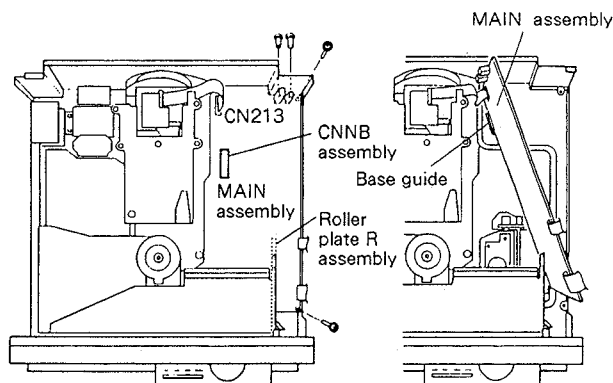
- ① Insert the left pin of the clamper holder into the left claw of the parallel link.
- ② Insert the right pin of the clamper holder into the right claw in the same way.



6. MAIN Assembly

Note: The bonnet and the clamper arms (A) and (B) should be removed first.

- ① Remove the roller plate R assembly.
- ② Remove the four screws from the MAIN assembly.
- ③ Disconnect the flexible cable which connects the PREB and MAIN assemblies. (CN213)
- ④ Remove the CNNB assembly.
- ⑤ Disconnect all the connectors from the MAIN assembly.



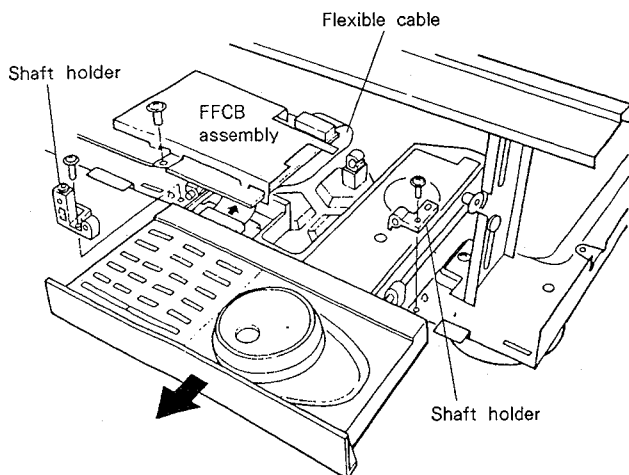
How to remove the MAIN assembly Diagnosis of the MAIN assembly

Diagnosis of the MAIN assembly

Note: The bonnet, HDTV assembly and the carriage assembly should be removed first.

- ① Remove the five screws.
- ② Disconnect the flexible cable which connects the PREB and MAIN assemblies.
- ③ Unfasten the harness bind of the CN205.
- ④ Slide the printed circuit board to the right and lift it on the right side.
- ⑤ Replace and connect the flexible cable which is removed in step ②.
- ⑥ Install the printed circuit board into the base guide and raise the board.

7. Pocket assembly

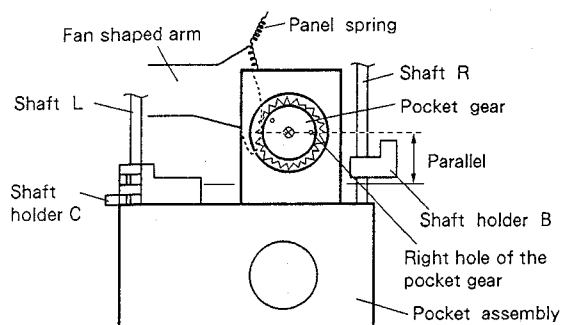


Note : The bonnet, front panel and HDTV assembly should be removed first.

- ① Remove the two screws from the FFCB assembly and dislocate the printed circuit board to the inner position.
- ② Remove the two screws located on your side from the shaft holders, and remove both shaft holders.
- ③ Disconnect the flexible cable which connects the pocket assembly and the FFCB assembly.
- ④ Unhook the panel spring.
- ⑤ Ungear the pocket assembly by dislocating it toward the right, and pull it out slowly toward you.

- How to install the pocket assembly -

- ① Install the shafts R and L to the shaft holders B and C respectively, first on the right side and then the left side.
- ② Align the Fan shaped arm and a hole of the pocket gear by pushing the pocket toward the right side to avoid grinding the gear teeth against the arm.
- ③ Set the right hole of the pocket gear in the horizontal position and let the slide pocket gear engage with the Fan shaped arm gear. (This is the pocket assembly open position.)
- ④ Fix shaft holders B and C with the locking screws and washers.
- ⑤ Hook the panel spring.

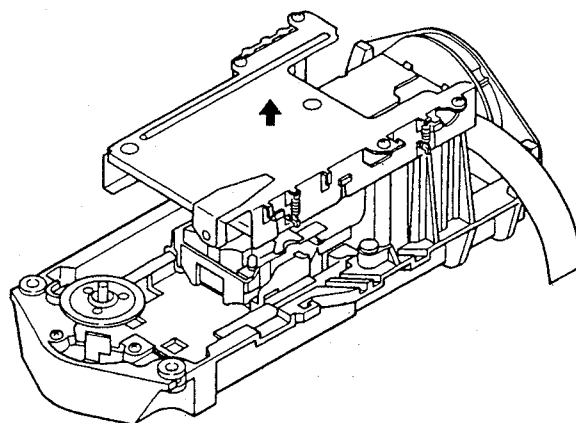
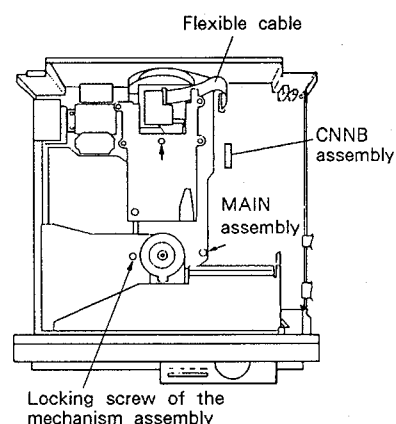


8. Mechanism assembly

Note : The bonnet should be removed first.

- ① Remove the upper side of the HDTV assembly.
- ② Remove the disc tray. (→P80)
- ③ Remove the CN108 from the SYPS assembly, and also remove the CNNB assembly and the flexible cable from the MAIN assembly.
- ④ Remove the three locking screws from the mechanism assembly. Pull out the mechanism assembly by lifting its rear side.

Note : Completely remove the two front locking screws from the mechanism assembly.



9. Loading assembly

(Remove the loading assembly only when the motor is replaced. Gears can be removed from the top.)

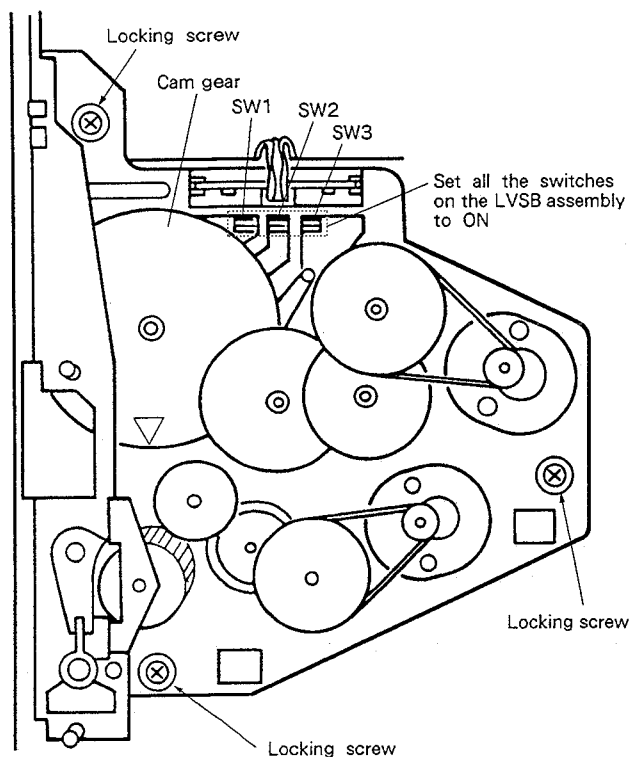
- How to install the cam gear -

Set all the switches on the LVSB assembly to ON and install the cam gear with the ▽ mark pointing to the front.

	SW1 V POS 0	SW2 V POS 1	SW3 V POS 2
Side A playback position	0	0	0
Side B clamp position	0	0	1
Door open position	1	0	1
Side B→Side A	1	1	0
Carry up	1	1	1

1 = ON 0 = OFF

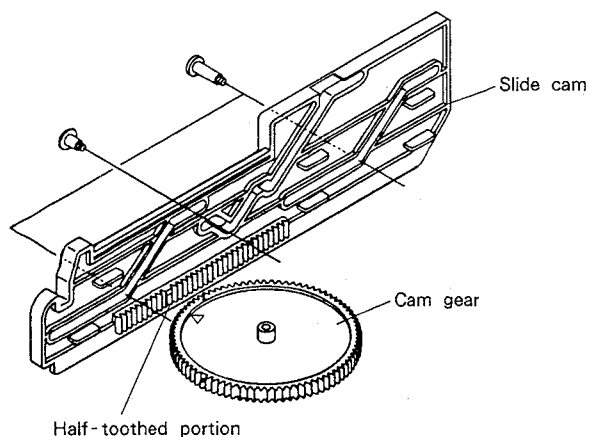
Table :Switch position and the status of the unit
(SW1 to 3 are named in this manual for convenience.)



How to instal the cam gear

- How to install the slide cam -

- ① Align the ▽ mark of the cam gear and the half-toothed gear of the slide cam.
- ② Fix the slide cam with the locking screw.
- ③ Fully pull out the slide cam in the front direction and fix the roller plate (L) to the slide cam with two screws.



Alignment of the cam gear and the slide cam

10. Carriage assembly

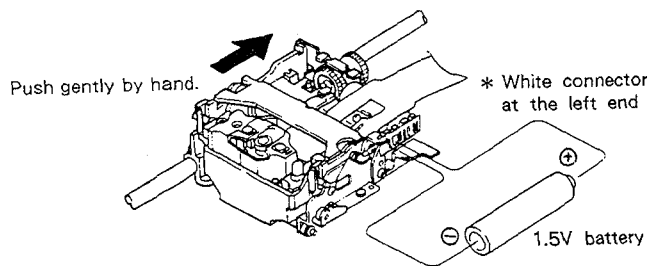
Note 1 : In this section, the R plate, G plate and the internal gear assembly are together called the "turn plate".

Note 2 : The mechanism assembly should be removed first.

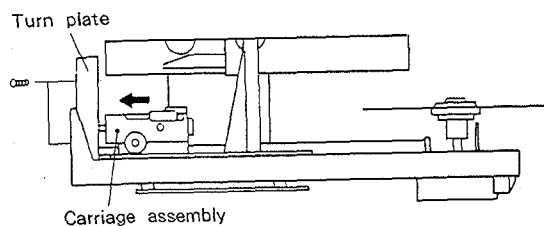
- ① Move the carriage assembly toward the shaft of the turn plate.

- How to move the carriage assembly -

Move the carriage assembly by pushing its end near the slider shaft gently by hand, or by connecting a 1.5V battery to the slider motor connector.

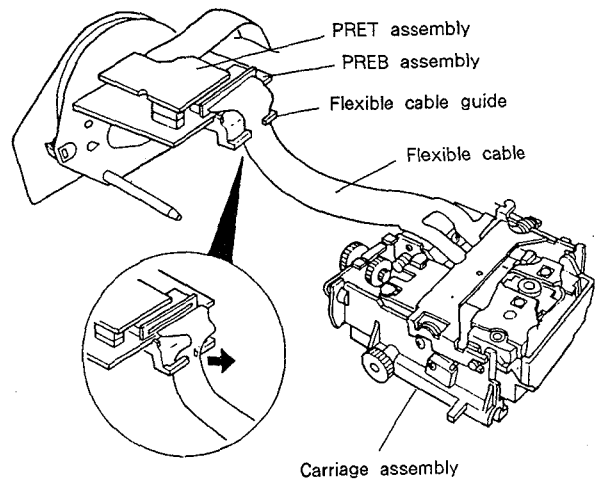


Move the carriage assembly



Carriage assembly turn position

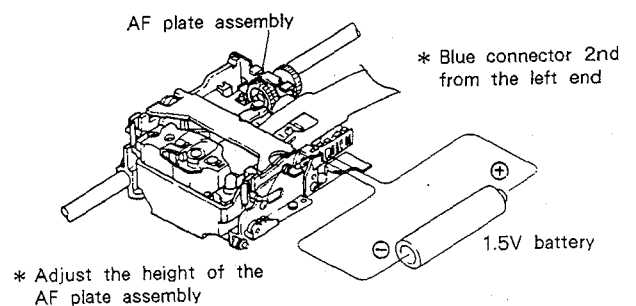
- ② Disconnect the flexible cable which connects the PREB and MAIN assemblies from the CN901 of the PREB assembly
- ③ Disconnect the flexible cable which connects the pickup assembly and the PREB assembly from the PREB assembly.
- ④ Remove the three screws from behind the turn plate assembly.
- ⑤ Remove the carriage assembly together with the turn plate from the mechanism assembly.
- ⑥ Remove the carriage assembly from the turn plate.
- ⑦ Disengage the flexible cable from the flexible cable guide on the back of the PREB assembly. Take care not to expose the unit to static electricity.



11. Pickup assembly

Note : The carriage assembly should be removed first.

- ① Check that the AF plate assembly is in the middle or bottom position of the shaft of the AF gear assembly. If not, connect the battery to the AF motor connectors to make the shaft of the AF gear assembly rotate until the AF plate assembly comes to the middle or bottom of the shaft.
- ② Remove the height springs on both sides on the height side.
- ③ Remove the AF stopper locking screw.
- ④ Remove the E-ring for holding pins from the pickup holder assembly.
- ⑤ Remove the E-ring from the AF plate assembly.
- ⑥ While slightly lifting the AF arm on the AF gear assembly side, slide the AF arm and remove it.
- ⑦ Remove the two pickup connector locking screws.
- ⑧ Remove all four connectors from the connector board on the flexible cable.
- ⑨ Remove the pickup locking screw.



12. Tilt motor

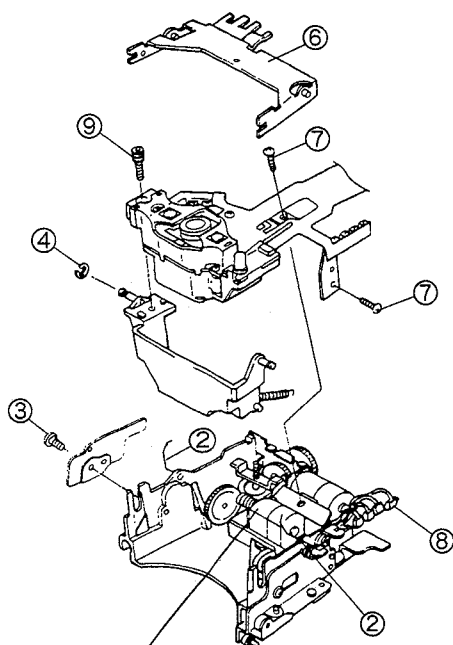
Note: The carriage assembly should be removed first.

- ① Disconnect the tilt motor connector.
- ② Remove the screw fixing the tilt motor assembly -S and the carriage assembly from the bottom of the carriage assembly.

13. Height motor

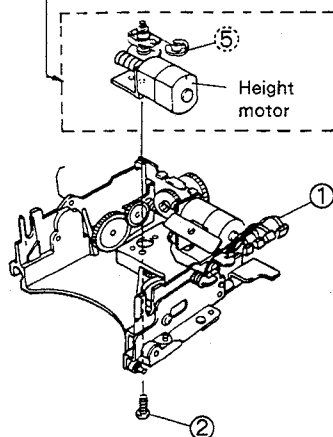
Note: The pickup and tilt motor assemblies should be removed first.

- ① Disconnect the height motor connector.
- ② Remove one screw which attaches the height motor assembly and the carriage assembly.

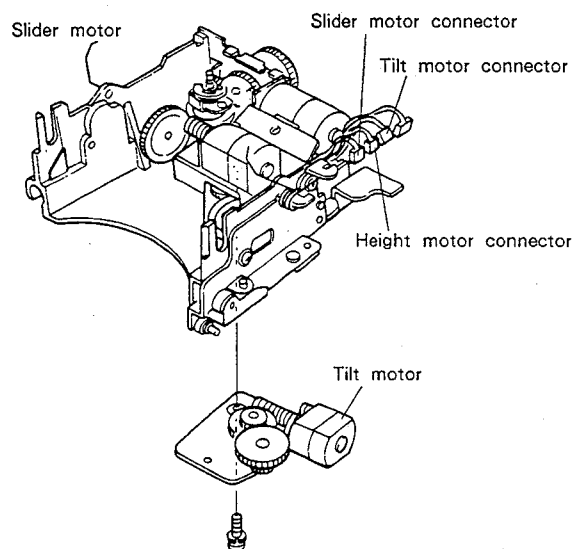


Note: The circled numbers in the figures correspond to those of the removing procedures.

11. How to remove the pickup assembly



13. How to remove the height motor



12. How to remove the tilt motor

14. How to remove the slider motor

14. Slider motor

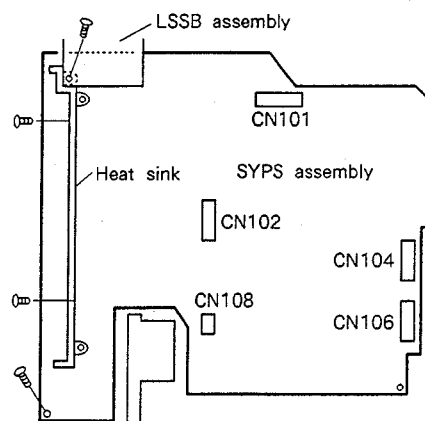
Note: The pickup assembly, AF motor assembly and the tilt motor assembly should be removed first.

- ① Disconnect the slider motor connector.
- ② Remove the harness wrapped around the slider base.
- ③ Remove the two screws fixing the slider motor.

15. SYPS assembly

- ① Remove the three screws fixing the heat sink and the screw fixing the PC board.
- ② Remove the LSSB assembly.
- ③ Remove the board hook from the back of the bottom plate.
- ④ Disconnect the CN102 and CN108 from the SYPS assembly.
- ⑤ Pull out the SYPS assembly by slightly lifting it on the left side and sliding it.

Note: After step ⑤, if the PC board is turned over and the connectors are engaged, checking of the SYPS assembly from the pattern side is possible.



8. ADJUSTMENT

8.1 TEST MODE

8.1.1 ENTRY

There are two ways a and b to enter test mode.

- Push remote control code ESC (5F) + TEST (5E).
- Open the door and turn the power on. (This is not possible when an LD has been in.) This operation is not necessary when the door has been open by the carry, or during opening, ejecting and loading of a disc.

8.1.2 CLEAR

There are two ways a and b to clear test mode.

- $\boxed{CX} + \boxed{9}$
- Power OFF

Notes :

- In the Test Mode, lifting the clamper or ejecting the disc is impossible as they would be dangerous. However, if there is no disc on the tray, ejecting is possible.
- Be careful of the clamper as it will rise up when changing the play mode from side B to side A.
- In the Test Mode, the initial search function can be released with the Clear key.
- When an LD disc is placed on the tray in the Test Mode, the power will be switched off about 20 seconds after the POWER button is pressed to OFF.
- Search with the image remains on the screen and side-change with the image remains on the screen will not be executed during test mode, and search and side-change with blue back screen will be done instead.
- Playback of side B does not take place after finishing playback of side A in test mode. Side B can be played back by pressing side B key.

8.1.3 FUNCTION

After the Test Mode is activated, the following functions will be engaged by pressing a combination of the \boxed{CX} key and a numeric key.

$\boxed{CX} + \boxed{0}$: The FL display and LEDs light, and the ROM version will be displayed on the screen of the monitor TV.

(Because AC power of the FL (fluorescent) tube is turned on and off by the drive output of the DISPLAY OFF LED, the FL tube and DISPLAY OFF LED cannot be lit simultaneously.)

$\boxed{CX} + \boxed{1}$: Error rate measurement. Either an LD or CD will be measured for 15 seconds, then the result will be displayed on the screen of the monitor TV.

$\boxed{CX} + \boxed{2}$: Alternately opens and closes the tracking servo. (Toggle switch)

$\boxed{CX} + \boxed{3}$: Alternates the CX (noise reduction) circuit between CX default and default. (Toggle switch)

$\boxed{CX} + \boxed{4}$: Turns the tilt OFF forcibly.

$\boxed{CX} + \boxed{5}$: Sets the tilt to the normal position.

$\boxed{CX} + \boxed{6}$: 3.0MHz oscillation (toggle switch) of the PD0011 : Output from PORT 3.

$\boxed{CX} + \boxed{7}$:

$\boxed{CX} + \boxed{8}$: Clears the external RAM. (The RAM is not cleared when these keys are pressed, but the contents of the RAM will be cleared the next time the power is turned ON.)

$\boxed{CX} + \boxed{9}$: Releases the Test Mode.

Other test mode functions

● Open setup :

The unit will be set up with tracking and tilt off when the unit is set to test mode during stop mode, then playback is started.

● Manual operation of the slider and height :

During stop mode, the slider can be manually moved and the height can be manually changed up and down.
Forward : Moving the slider to the outer part.

Reverse : Moving the slider to the inner part.

Note : The remote control unit of CLD-3380 has not forward and reverse keys, use the other remote control unit if necessary.

Shuttle FWD : Height up

Shuttle REV : Height down

● Side B setup :

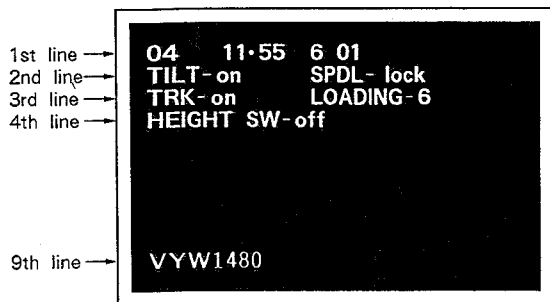
Side B is set up without sensing side A when test mode is entered with the tray out with B key being pressed.

● Focus check :

Setup of an LD can be executed without disc sensing when the playback key is pressed. During LD setup, the unit will wait a maximum of 9 seconds for the focus to be locked. Therefore, this function can be used to check the focus system in case disc sensing is not accomplished even with a disc inside.

8.1.4 Display

In the Test Mode, the statuses of switches and other data are displayed on the screen of the monitor TV.



TV monitor display

[1st line]

04 11:55 6 01
 (Chapter Frame/ Time) |
 (IMODE: Major modes such as
 "SETUP", "PLAY" and "SEARCH")
 0: PARK
 2: OPEN
 4: SETUP
 6: PLAY
 8: SEARCH

(SMODE: Minor modes in each mode)

[2nd line]

TILT-on SPDL-lock
 (off) (unlock)

[3rd line]

TRK-on LOADING-6 (0~7)
 (off)

[4th line]

HEIGHT SW-on
 (off)

[9th line]

Two indications are displayed on the ninth line.

a. Error rate indication

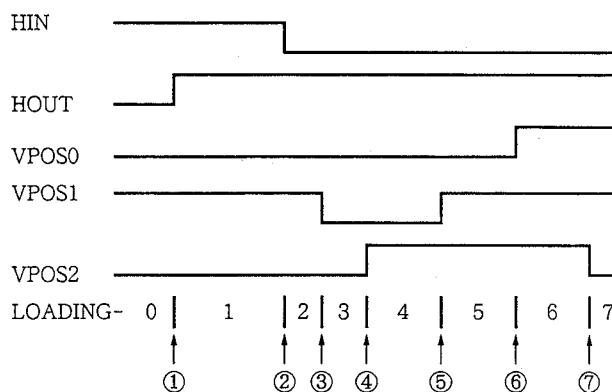
000 0384

b. Rom version indication (VYW1480 89_____)

- When the Test Mode is activated while opening the door with the Power switch ON, the "b" indication will appear, in the same way when activated by pressing the **[CX] + [0]** key

* Because SPDL-lock/unlock on the second line is displayed as a result of monitoring SPDL LOCK, "unlock" is always displayed during playback of a CD.

* "LOADING-" on the third line indicates the loading position.



- ① Tray out position
- ② Tray in position
- ③ Door open position
- ④ Tray up position (Position during LD stop mode)
- ⑤ Reversing position from side B to side A
- ⑥ Side A clamp position
- ⑦ Side B clamp position

8.1.5 Explanation of the microcomputer software

(1) During loading
IMODE = 0

SMODE

00	Initializing	
0F	The unit starts pulling the carry in. Height-down until the HEIGHT switch is set to ON. (UP = 0, DOWN = 1)	No timeout
10	Height-up for 1.5 seconds. (UP = 1, DOWN = 0)	
11	The unit waits until the carry is pulled in and side A is clamped.	Timeout: 8seconds → Eject
07	The slider moves to the LD sensing position. Then LD focus is set to ON.	
08	When the focus is locked within 1.9 seconds, the unit will be set in LD setup mode. (IMODE = 4, SMODE = 0) In other cases, LD focus is set to OFF.	
07	The slider moves to the CD sensing position. Then LD focus is set to ON.	No timeout
08	When the focus is locked within 1.9 seconds, the unit will be set in CD setup mode. (IMODE = 4, SMODE = 0) In other cases, LD focus is set to OFF.	
0B	Waiting for eject.	

Height-down and up at SMODE 0F and 10 are executed only after the power is turned on. Normally, immediately after beginning to pull the carry in at 0F, the unit jumps to SMODE 11 and enters side A clamp wait mode.

(2) During playback of side A to side B and during playback of side B to side A
IMODE = 0

SMODE

00	Initializing	
01	Height-down until the HEIGHT switch is set to ON. The slider starts moving toward the inside of side B (side A), 1.5 seconds after the start of height-down.	No timeout
02	The unit waits for the spindle to stop	No timeout
03	The unit starts changing the clasper positions. The unit waits for the slider to complete its movement in the direction toward the inside of side B (side A)	No timeout
04	Height-up for 1.5 seconds. The unit waits for the clasper to complete its change of position. The unit jumps to SMODE 09 except during playback of side B on an 8-inch disc.	Timeout: 8seconds → Stop
07	LD focus is set to ON.	
08	The unit waits after returning to the inside of side A when the focus is not locked within 1.9 seconds.	
09	The unit will be set in LD setup mode. (IMODE = 4, SMODE = 0)	

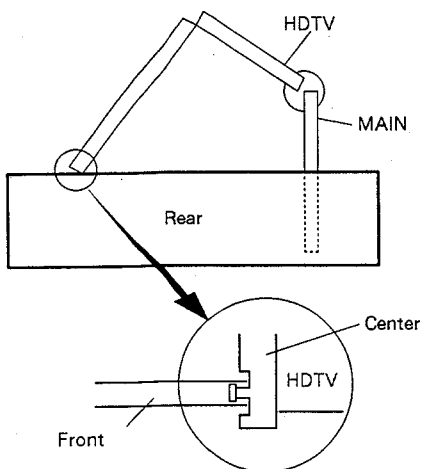
(3) During the transition from playback of side B to stop, or during eject.
IMODE = 0

SMODE

00	Initializing.	
01	Height-down until the HEIGHT switch is set to ON. The slider starts moving toward the inside of side A, 1.5 seconds after the start of height-down.	No timeout
02	The unit waits for the spindle to stop.	No timeout
03	The unit starts changing the clasper positions. The unit waits for the slider to complete its movement in the direction toward the inside of side A.	No timeout
04	Height-up for 1.5 seconds. The unit waits for the clasper to complete its change of position.	Timeout 8seconds
0A	The carry is up to the park position.	No timeout
0D	The unit waits for command or enters OPEN mode. (IMODE = 2, SMODE = 0)	

3) Condition of the unit when adjusting

During the adjustment, set the unit as follows. Remove the bonnet and disc tray. Place the MAIN assembly against the base guide. Place the HDTV assembly against the front angle and rear panel.

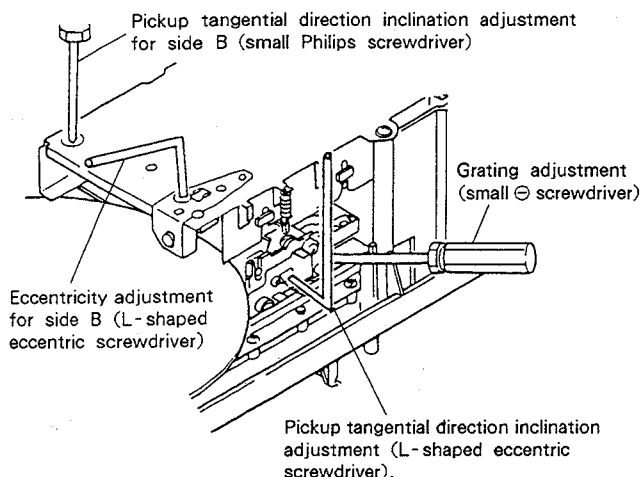


4) Precautions when reversing the carriage assembly

- The carriage assembly cannot be reversed unless it is advanced by playing a disc.
- If the power switch is turned OFF with the carriage assembly reversed, the backup power supply functions to resume the forward status of the carriage assembly.

5) Where to insert the screwdriver when adjusting the pickup assembly

– Carriage assembly in forward state –



6) Test disc

The LD test disc used for mechanical adjustment and PREB assembly adjustment may either be the GGV1002 or 8-inch F2. The frame numbers given in the text are for the GGV1002 while those enclosed in parentheses are for the F2.

The LD test disc used for electrical adjustments can be either N series or F series. The frame numbers given in the text are for the N series while those enclosed in parentheses are for the F series.

7) Abbreviation in the text indicate the following

FOCS	=	Focus
TRKG	=	Tracking
SPDL	=	Spindle
SLDR	=	Slider
TAN	=	Tangential

8) Replacement of IC205 program PROM-S (VYW1480) on the MAIN assembly (CONT section)

In the test mode, pressing the key combination **CX** + **8** on the remote control clears the external RAM. (Refer to "8.1 Test Mode".)

9) Numbers given in connection diagram correspond to those in the text covering the adjustment procedure.

10) Frame numbers are not displayed on the monitor TV, please read the FL display.

8.4 MECHANICAL ADJUSTMENT

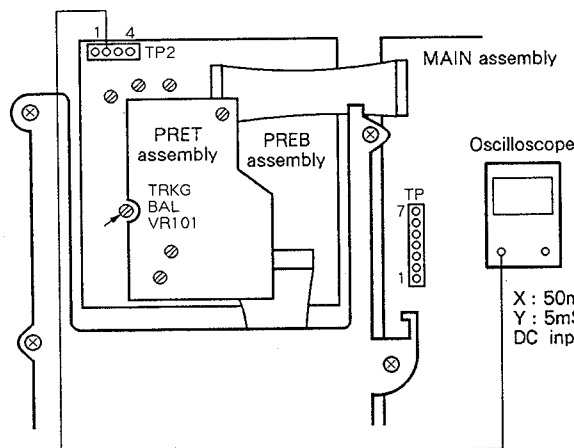
1. Coarse Grating and Tracking (TRKG) Balance Adjustment

Mechanical Adjustment

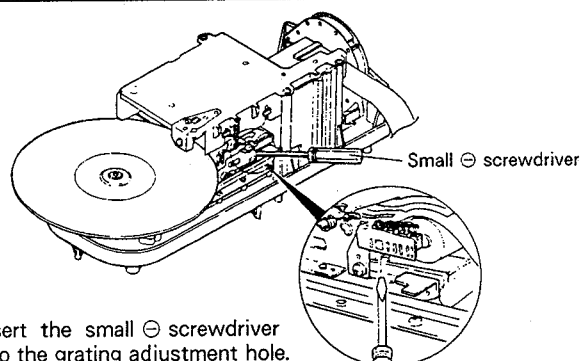
- Purpose : To adjust the laser beam which is divided into three by the grating to the optimum position on the track. Set the TRKG servo offset voltage to 0 V.
- When not properly adjusted : Disc playback will be impossible. During play, tracks may be skipped.

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Measuring instruments and jigs : ● Measuring point : ● Test disc and player mode ● Positions to be adjusted | <ul style="list-style-type: none"> ● Small ⊖ screwdriver (flat blade) ● Oscilloscope ● PREB assembly TP2-2 (TRKG error) ● 8-inch LD test disc GGV1002... #6,500 (F2... #300) ● Still mode ● Test Mode (TRKG servo : Open) ● The carriage assembly should be in the forward state. ● Grating ● PREB assembly VR101 (TRKG balance) |
|--|--|

Connection diagram



5. Connect an oscilloscope to TP2-2 in the PREB assembly.



6. Insert the small ⊖ screwdriver into the grating adjustment hole.

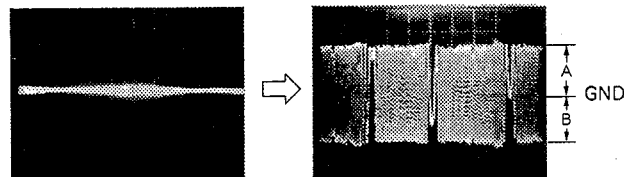


Photo 1 On-track position Photo 2 Maximum amplitude
A = B

Adjustment Procedure

< Coarse Grating Adjustment >

1. Play the LD test disc.
2. Press the DISPLAY key to display the frame # (No.) on the TV screen.
3. Move the pickup to frame #6,500 (#300) by scanning or searching.
4. Open the TRKG servo. (See page 87)
5. Connect an oscilloscope to TP2-2 in the PREB assembly and observe the waveform.
6. Insert the small ⊖ screwdriver into the grating adjustment hole. Turning the grating will allow you to vary the amplitude of the TRKG error waveform. Find the position where the waveform amplitude becomes minimum with a smooth envelope. (Photo 1) (This indicates that the 3-way split laser beams are directed onto the track. This is called the "on-track" position.)

7. Slowly turn the grating counterclockwise from the on track position until the waveform amplitude becomes maximum. (Photo 2)
8. Close the TRKG servo and check that a normal picture is displayed on the TV screen.

< TRKG Balance Adjustment >

1. Align the oscilloscope GND so that it comes to the center of the oscilloscope screen.
2. Adjust VR101 in the PREB assembly so that the positive and negative amplitude of the TRKG error waveform become equal. (Photo 2)

2. Crosstalk Adjustment

(1) Pickup Tangential Direction Angle Adjustment and Tilt Servo Balance Adjustment

(Pickup TRKG direction angle adjustment)

Mechanical Adjustment

● Purpose : To adjust the pickup tangential direction angle so as to minimize crosstalk.

● When not properly adjusted : Noticeable crosstalk will appear.

● Measuring instruments and jigs :

● Measuring point :

● Test disc and player mode

● Positions to be adjusted

● TV monitor ● L-shaped eccentric screwdriver (GGV-129) ● Oscilloscope

● Crosstalk on the screen

● 8-inch LD test disc GGV1002...#115 (F2...#104) ● Still mode

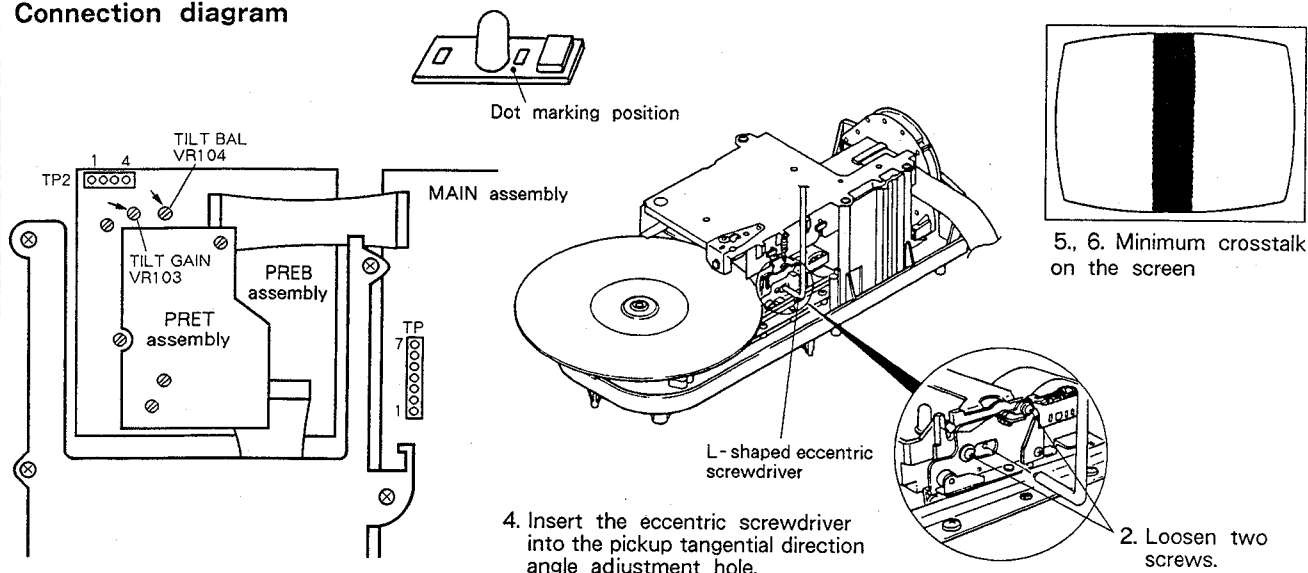
● Test Mode (TRKG servo : Open/Close)

● The carriage assembly should be in the forward state.

● Pickup tangential direction angle adjustment screw

● PREB assembly VR103 (TILT gain) and VR104 (TILT balance).

Connection diagram



Adjustment Procedure

1. Check the color of the dot marked on the top of the tilt sensor, at the side of the post.
Some players have red and blue dots. According to the color of the dot, adjust the PREB assembly VR103 as follows :
Red dot : Turn VR103 fully counterclockwise.
Blue dot : Turn VR103 fully clockwise.
No dot : Set VR103 to the center position.

—Pickup Tangential Direction Angle Adjustment—

2. Loosen the two locking screws shown in the figure.
3. Play the 8-inch LD test disc, and search frame #115 (#104).
4. Insert the eccentric screwdriver into the pickup tangential direction angle adjustment hole.
5. While watching the TV monitor screen, adjust the pickup tangential direction angle adjustment screw so that the crosstalk on the TV screen becomes minimum.

—Tilt Servo Balance Adjustment—

(Pickup TRKG Direction Angle Adjustment)

6. In the condition in 5, adjust VR104 in the PREB assembly so that the crosstalk on the TV screen becomes minimum or the left and right halves become equal. (Turn VR104 to alter the tilt of the pickup assembly TRKG direction.)
7. If there is still noticeable crosstalk on the TV screen, repeat adjustment steps 5 and 6.
8. After adjustment is complete, tighten the two locking screws.

Note : When the pickup tangential angle is changed in the side A play mode, be sure to perform "3. Spindle Motor Centering Check", "9. Centering Adjustment for Side B Play" and "10. Pickup Tangential Direction Angle Adjustment for Side B Play".

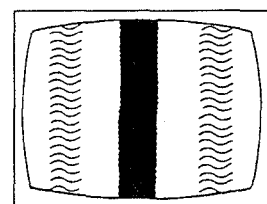
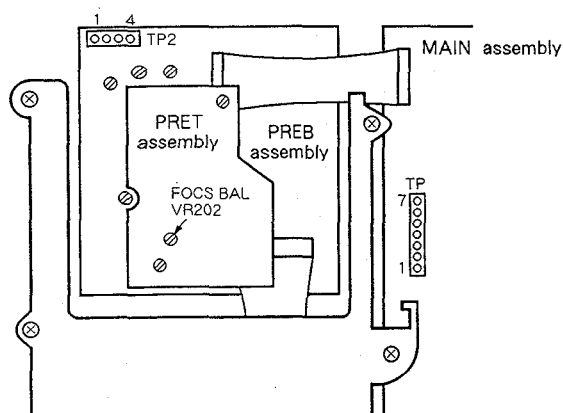
(2) LD FOCS Error Balance Adjustment

Mechanical Adjustment

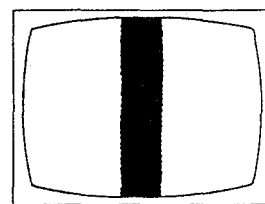
- Purpose : To ensure that the FOCS servo maintains the objective lens at the optimum distance from the disc surface.
- When not properly adjusted : Crosstalk will be generated.

- | | |
|--|---|
| <ul style="list-style-type: none"> ● Measuring instruments and jigs : ● Measuring point : ● Test disc and player mode ● Positions to be adjusted | <ul style="list-style-type: none"> ● TV monitor ● Video signal output terminal ● 8-inch LD test disc GGV1002...#115 (F2...#104) ● Still mode ● The carriage assembly should be in the forward state. ● PRET assembly VR202 (FOCS balance) |
|--|---|

Connection diagram



Crosstalk generated on the screen



Minimum crosstalk

2. Adjust VR202 in the PRET assembly for minimum crosstalk.

2. Adjust so that the crosstalk on the screen is minimum.

Adjustment Procedure

1. Play the 8-inch LD test disc and search frame #115 (#104).
2. Adjust VR202 in the PRET assembly so that the crosstalk on the left and right sides on the TV screen is minimized.

If adjustment of VR202 fails to reduce crosstalk to an allowable level, perform "(1) Pickup Tangential Direction Angle Adjustment and Tilt Servo Balance Adjustment".

3. Spindle Motor Centering Check

Mechanical Adjustment

- Purpose : To check that the center of the spindle motor is on the orbit of the laser beam.

- Measuring instruments and jigs :

- Measuring point :
- Test disc and player mode

- Positions to be adjusted

- Oscilloscope

- PREB assembly TP2-2 (TRKG error) and TP2-1 (TRKG sum)
- 8-inch LD test disc GGV1002...#100 and #22,000 (#100 and #22,000 with a commercially available "karaoke" LD disc)
- Play mode ● CD test disc (YEDS-7) ● Test Mode (TRKG servo : Open)
- The carriage assembly should be in the forward state.
- Check the Lissajous figure

Connection diagram

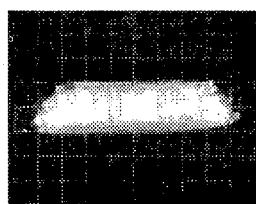
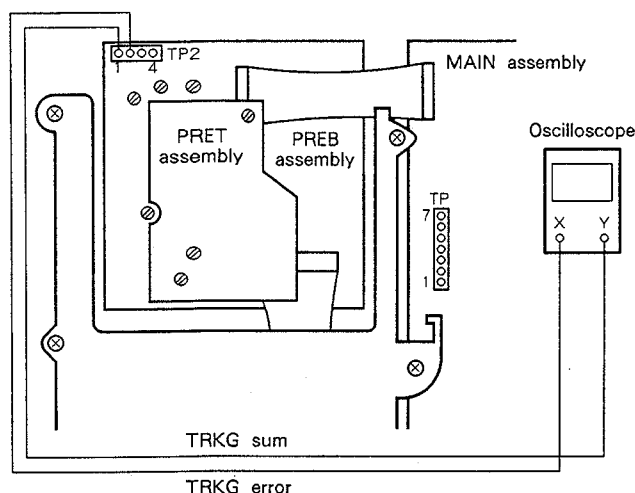


Photo 3

X : 20mV/div, AC input
Y : 20mV/div (1:1), AC input
X - Y mode

Lissajous figure of the inner track of the disc (CD)

Check that $Y = Y'$

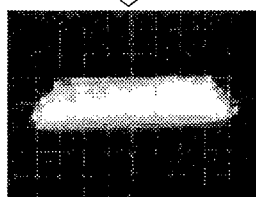


Photo 4

Lissajous figure of the outer track of the disc (CD)

5. The Y-axis of the Lissajous figure should be the same for the inner and the outer tracks.

Note : LD test disc F2 is not suitable for this adjustment because the recorded portion with a track pitch of $1.52\mu\text{m}$ is present only around inner tracks #1 to #500.

Checking Procedure

1. Play the 8-inch LD test disc.
2. Move the pickup to frame #22,000 by scanning or searching, then open the TRKG servo.
3. Connect TP2-2 in the PREB assembly to the X-input (CH-1) of the oscilloscope and TP2-1 to the Y-input (CH-2).
Set the oscilloscope to the X-Y mode and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal.
4. Write down the Y-axis amplitudes of the Lissajous figures. (Photo 3)
5. Close the TRKG servo and search frame #100, then open the TRKG servo again to observe the Lissajous figure.

At this time, check that the Y-axis amplitude of the Lissajous figure is the same as that noted in step 4. (Photo 4)

6. Remove the 8-inch LD test disc from the player, then load the CD test disc and repeat the checking procedures steps 1 to 5. However, it is not necessary to specify the inner or outer track positions of the disc. If the Y-axis amplitude of the Lissajous figure is different for the inner and outer tracks, perform "4. Spindle Motor Centering Adjustment".

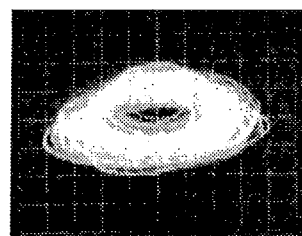


Photo 5 Lissajous figure when not properly adjusted

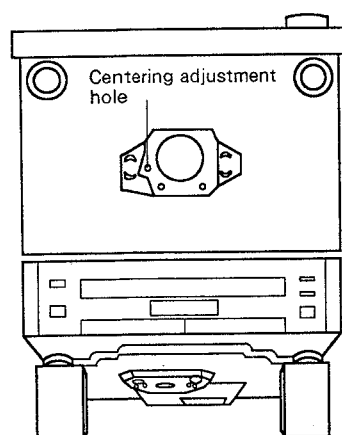
4. Spindle Motor Centering Adjustment

Mechanical Adjustment

- Purpose : To adjust so that the center of the spindle motor is on the orbit of the laser beam.
- When not properly adjusted : Track skips, or searching takes too long.

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Measuring instruments and jigs : ● Measuring point : ● Test disc and player mode ● Positions to be adjusted | <ul style="list-style-type: none"> ● L-shaped eccentric screwdriver (GGV-129) ● PREB assembly TP2-2 (TRKG error) and TP2-1 (TRKG sum) ● 8-inch LD test disc GGV1002...#100 and #22,000 (Or a commercially available "karaoke" LD disc) ● Play mode ● Test Mode (TRKG servo : Open/Close) ● CD test disc (YEDS-7) ● The carriage assembly should be in the forward state. ● Spindle motor centering adjustment hole |
|--|--|

Connection diagram



7. Adjust the centering adjustment hole.

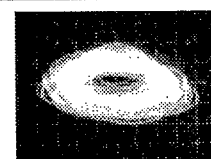
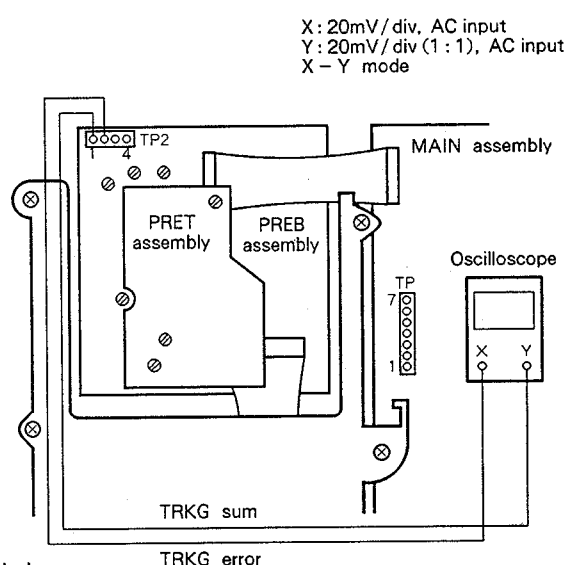


Photo 6

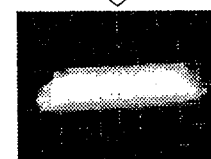


Photo 7



Photo 8

7. Lissajous figure.

Adjustment Procedure

Note: For the same reasons given in the "Note" in section 8.4.3, the LD test disc F2 is not suitable for this adjustment.

1. Connect TP2-2 in the PREB assembly to the X-input (CH-1) of the oscilloscope and TP2-1 to the Y-input (CH-2).
2. Play the 8-inch LD test disc and search frame #22,000.
3. Open the TRKG servo and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal.
4. Fine-adjust the grating so that the Y-axis amplitude of the Lissajous figure is minimized. (Photo 7)
5. Close the TRKG servo and search frame #100.
6. Open the TRKG servo again and observe the Lissajous figure and write the values down. (Photo 6)

7. Insert the L-shaped eccentric screwdriver into the adjusting hole from the left bottom of the unit, and turn slowly so that the Y-axis amplitude of the Lissajous figure is reduced. After the Y-axis amplitude of the Lissajous figure is minimized, turn the adjusting screw further until the amplitude becomes the same shape as that observed in procedure 7. (Photos 6 - 8)
8. Close the TRKG servo, and move the pickup assembly to the outer track of the disc (#22,000), then perform the adjustments in steps 4 to 6 again.
9. Re-open the TRKG servo and observe the Lissajous figure to check that the Y-axis amplitude is minimum. (Photo 7) If the Y-axis amplitude of the Lissajous figure is larger than specified, repeat the adjustment procedures from steps 5 to 8.
10. After adjustment is complete, perform the adjustment in "3. Spindle Motor Centering Check" item 6.

5. Fine Grating Adjustment

Mechanical Adjustment

- Purpose : To fine adjust the grating so that the two tracking beams for the TRKG servo are projected in the optimum positions on the tracks being played. Set the TRKG servo loop offset voltage to 0V.
- When not properly adjusted : During play, tracks may be skipped.

● Measuring instruments and jigs :

● Measuring point :

● Test disc and player mode

● Positions to be adjusted

● Oscilloscope ● Small \ominus screwdriver

● PREB assembly TP2-2 (TRKG error) and TP2-1 (TRKG sum)

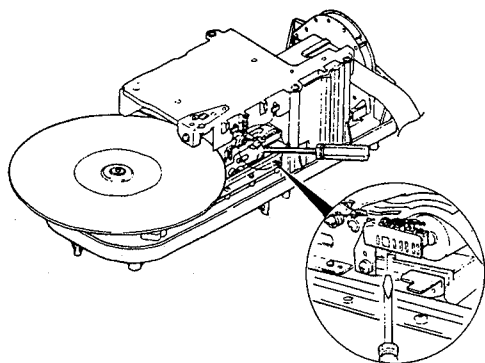
● 8-inch LD test disc GGV1002...#6,500 (F2...#300)

● Still mode ● Test Mode (TRKG servo : Open)

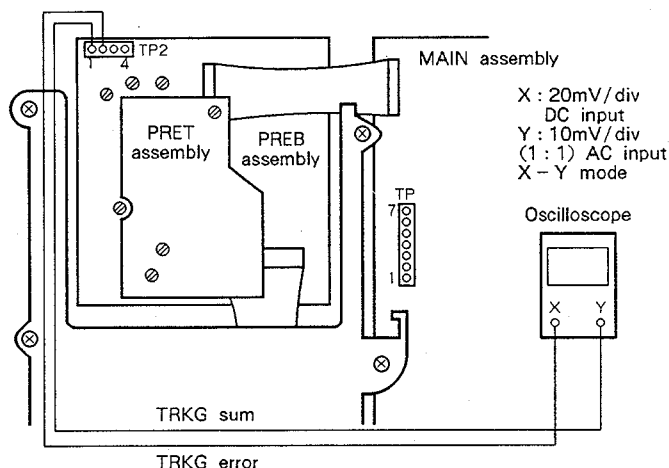
● The carriage assembly should be in the forward state.

● Grating

Connection diagram



3. Insert the small \ominus screwdriver into the grating adjustment hole to fine adjust it.



Adjustment Procedure

1. Play the LD test disc and search frame #6,500 (#300), then open the TRKG servo.

2. Connect TP2-2 in the PREB assembly to the X-input (CH-1) of the oscilloscope and TP2-1 to the Y-input (CH2)

Set the oscilloscope to the X-Y mode and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal.

3. Insert the small \ominus screwdriver into the grating adjustment hole, and fine-adjust the grating so that the Y-axis amplitude of the Lissajous figures is minimized. (Photo 9)

If the grating is turned too much and the optimum position can no longer be found, repeat the "1. Coarse Grating Adjustment".

4. Select the oscilloscope's X-input (CH-1) and check that the positive and negative amplitudes of the TRKG error signal are equal. (Photo 10)

If they are not, repeat the "1. Tracking Balance Adjustment".

5. Close the TRKG servo and check that the picture (image) on the TV screen is normal.

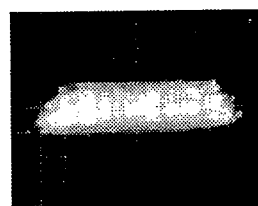


Photo 9
Fine grating adjustment

Minimum

3. Y-axis amplitude of Lissajous figure becomes minimum.

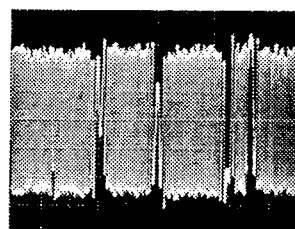


Photo 10
TRKG balance adjustment

GND

A = B

6. RF Gain Adjustment

Mechanical Adjustment

● Purpose : To adjust the RF signal amplitude to the optimum value.

● When not properly adjusted : Dropout occurs frequently.

● Measuring instruments and jigs :

● Measuring point :

● Test disc and player mode

● Positions to be adjusted

● Oscilloscope

● Main assembly TP1 (RF signal)

● 8-inch LD test disc GGV1002...#15,000 (F2...#15,000)

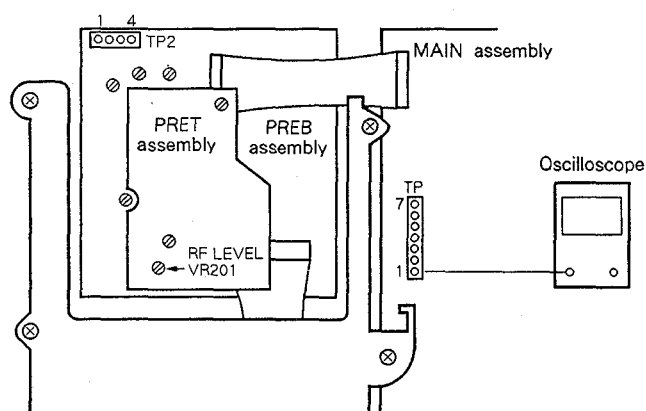
● Still mode

● Test Mode (TRKG servo : Close)

● The carriage assembly should be in the forward state.

● PRET assembly VR201 (RF gain)

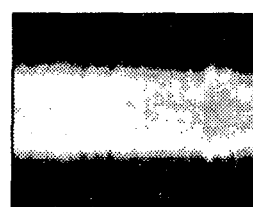
Connection diagram



2. Connect MAIN assembly TP1 to an oscilloscope.

Adjustment Procedure

1. Play the LD test disc and search frame #15,000 (#15,000).
2. Connect an oscilloscope to MAIN assembly TP1 (RF signal) and observe the RF signal.
3. Adjust PRET assembly VR201 so that the amplitude of the RF signal becomes $300\text{ mV} \pm 50\text{ mV}$. (Photo 11)



$300\text{ mV} \pm 50\text{ mV}$

10mV/div
5mS/div
AC input

Photo 11 RF signal

7. FOCS Servo Loop Gain Adjustment

Mechanical Adjustment

● Purpose : To set the loop gain of the FOCS servo to the optimum value.

● When not properly adjusted : Performance deteriorates.

● Measuring instruments and jigs :

● Measuring point :

● Test disc and player mode

● Positions to be adjusted

● Oscilloscope ● AF oscillator ● Resistor (100k ohms)

● MAIN assembly TP5 (FOCS error) and TP6 (FOCS gain)

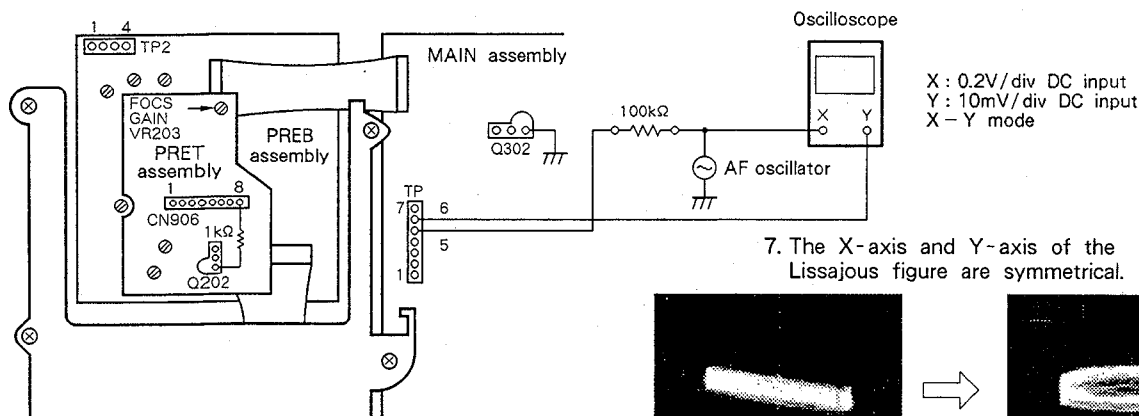
● 8-inch LD test disc GGV1002...#15,000 (F2...#15,000) ● Still mode

● TRKG servo : Close ● The FOCS motor protection circuit is disabled.

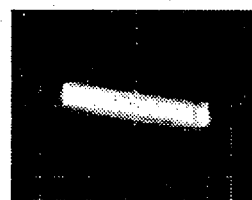
● The carriage assembly should be in the forward state.

● PRET assembly VR203

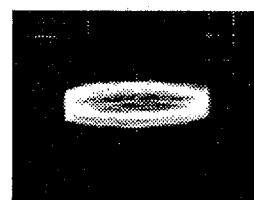
Connection diagram



1. Ground the gate of MAIN assembly Q302.
2. Connect MAIN assembly TP5, resistor, AF oscillator and the oscilloscope as shown.



Adjustment not complete



Properly adjusted

Photo 12

Adjustment Procedure

1. Connect the base of Q202 in the PRET assembly to GND to inhibit the operation of the CN906 pin 8.
2. Ground the Q302 gate of the MAIN assembly to stop the function of the focus motor protection circuit.
3. Connect MAIN assembly TP5 to the oscilloscope's X-input (CH-1) via the resistor and AF oscillator, and TP6 to the Y-input (CH-2), as shown in the above diagram.
4. Set the AF oscillator output to 1.6 kHz/6 Vp-p for GGV1002, or 1.8 kHz/6 Vp-p for F2, according to the test disc used.
5. Play the 8-inch LD test disc and search frame #15,000 (#15,000).
6. Set the oscilloscope to the X-Y mode and observe the Lissajous figure.
7. Adjust VR203 in the PRET assembly so that the Lissajous figure is symmetrical on both the X-axis and Y-axis of the oscilloscope. (Photo 12)

8. Release the grounding from Q302 in the MAIN assembly.

Note : If the AF oscillator output does not exceed 6Vp-p, reduce the value of the resistor (100k ohms) in the above diagram, for easier observation of the Lissajous figure. (not below 33k ohms)

8. TRKG Servo Loop Gain Adjustment

Mechanical Adjustment

● Purpose : To set the loop gain of the TRKG servo to the optimum value.

● When not properly adjusted : Performance deteriorates

● Measuring instruments and jigs :

● Measuring point :

● Test disc and player mode

● Positions to be adjusted

● Oscilloscope ● Resistor (100k ohms) ● AF oscillator

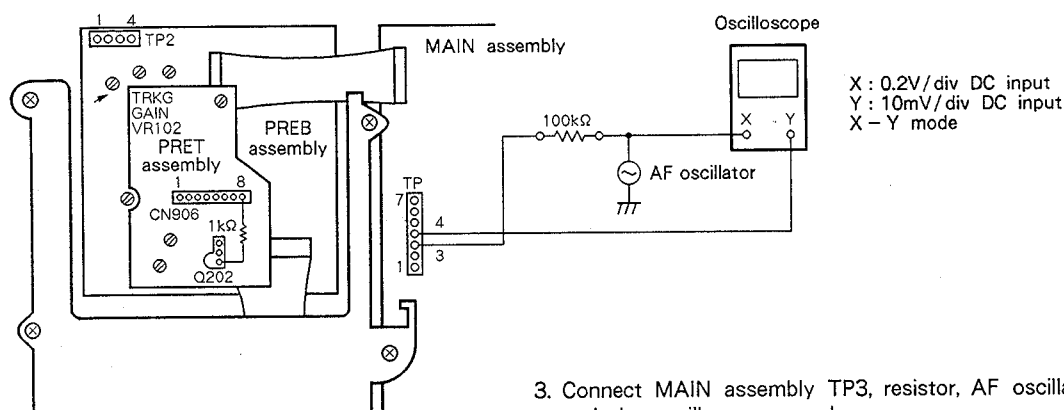
● MAIN assembly TP3 (TRKG error) and TP4 (TRKG gain)

● 8-inch LD test disc GGV1002...#15,000 (F2...#15,000) ● Still mode

● TRKG servo : Close ● The carriage assembly should be in the forward state.

● PREB assembly VR102

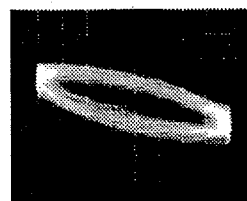
Connection diagram



Adjustment Procedure

1. Connect the base of the PRET assembly Q202 to GND to inhibit the operation of the CN906 pin 8.
2. Play the LD test disc and search frame #15,000 (#15,000).
3. Connect MAIN assembly TP3 to the oscilloscope's X-input (CH-1) via the resistor and AF oscillator, and TP4 to the Y-input (CH-2), as shown in the above diagram.
4. Set the AF oscillator output to 3.4kHz/6Vp-p for GGV1002, or 2.7kHz/6Vp-p for F2, according to the test disc used.
5. Set the oscilloscope to the X-Y mode and observe the Lissajous figure.
6. Adjust VR102 in the PREB assembly so that the Lissajous figure is symmetrical on both the X-axis and Y-axis of the oscilloscope. (Photo 13)

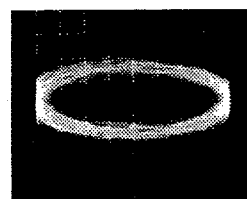
Note: If the AF oscillator output does not exceed 6Vp-p, reduce the value of the resistor (100k ohms) in the above diagram, for easier observation of the Lissajous figure. (not below 33k ohms)



6. The X-axis and Y-axis of the Lissajous figure are symmetrical.



Adjustment not complete



Properly adjusted

Photo 13

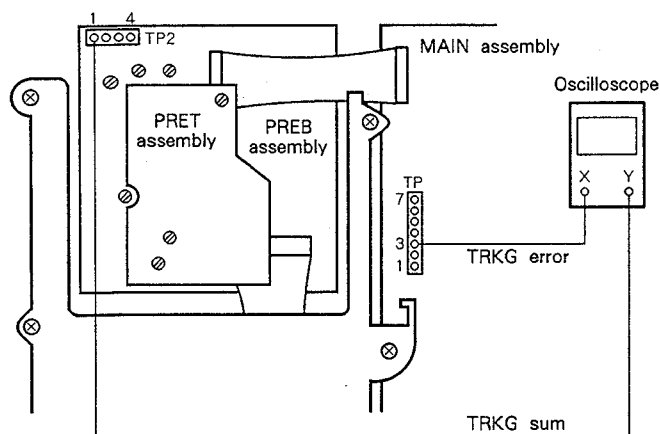
9. Centering Adjustment for Side B Play

Mechanical Adjustment

- Purpose : To set the center of the spindle motor on the path of the laser beam when playing the side B of the disc.
- When not properly adjusted : Tracks skipped, longer searching time or searching is impossible when playing side B of the disc.

- | | |
|--|---|
| <ul style="list-style-type: none"> ● Measuring instruments and jigs : ● Measuring point : ● Test disc and player mode ● Positions to be adjusted | <ul style="list-style-type: none"> ● L-shaped eccentric screwdriver (GGV-129) ● Oscilloscope ● MAIN assembly TP3 (TRKG error), PREB assembly TP2-1 (TRKG sum) ● 8-inch LD test disc GGV1002...#100 (F2...#300) ● Play mode ● The carriage assembly should be in the reverse state. ● Test mode (TRKG servo : Open/Close) ● Centering adjustment hole for side B |
|--|---|

Connection diagram



X : 20mV/div DC input
Y : 10mV/div DC input
X - Y mode

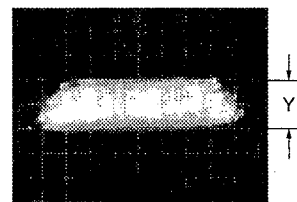


Photo 14

4. Centering adjustment for side B play.

4. Properly adjusted (X : maximum).

Adjustment Procedure

1. Turn the LD test disc upside-down (change from side A to side B).
2. Set the oscilloscope to the X-Y mode, and connect MAIN assembly TP3 (TRKG error) to the oscilloscope's X-input (CH-1) and PREB assembly TP2-1 (TRKG sum) to the Y-input (CH-2).
3. Play the LD test disc and search frame #100 (#300), then open the tracking servo.

Note: If the center is too eccentric on side B of the disc, since searching will be impossible on side B, open the TRKG servo when the carriage assembly moves to the side B play position and searches around frame #100.

4. While observing the Lissajous figure on the oscilloscope, insert the eccentric screwdriver into the centering adjustment hole for side B and adjust it so that the X-axis amplitude of the Lissajous figure is minimized (on-track position). Then turn the eccentric screwdriver clockwise further until the X-axis amplitude of the Lissajous figure becomes maximum. (Photo 14)

Note: When "2(1) Tangential Direction Angle Adjustment" is performed with the pickup in the forward state, perform "10. Pickup Tangential Direction Angle Adjustment for Side B Play" and "11. Fine Centering Adjustment for Side B play".

10. Pickup Tangential Direction Angle Adjustment for Side B Play

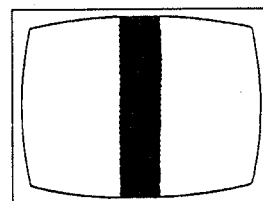
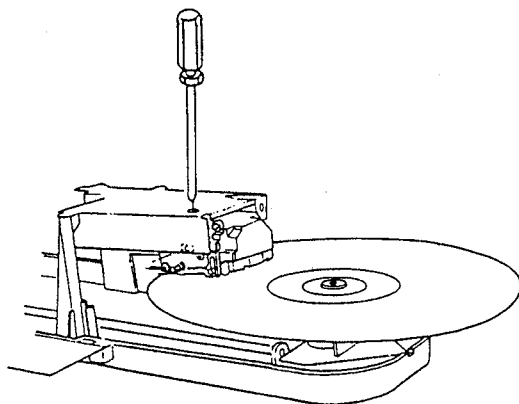
Mechanical Adjustment

- Purpose : To adjust the crosstalk to become minimum in the tangential direction angle of the pickup assembly when playing side B of the disc.
- When not properly adjusted : Crosstalk is significant.

- Measuring instruments and jigs :
- Measuring point :
- Test disc and player mode
- Positions to be adjusted

- TV monitor
- Small Philips screwdriver (cross-bladed)
- Monitor screen
- 8-inch LD test disc GGV1002...#115 (F2...#104)
- Still mode
- The carriage assembly should be in the reverse state.
- Pickup tangential direction angle adjustment screw

Connection diagram



2. Minimum crosstalk

Adjustment Procedure

1. Play the LD test disc and search frame #115 (#104).
2. Check if crosstalk appears on the screen of the TV monitor, and adjust the pickup tangential direction angle adjustment screw so that the crosstalk is minimized.
3. After steps 1 and 2 have been completed, perform "9. Centering Adjustment for Side B Play" again.

Note : When the pickup tangential direction angle for side B play is varied by this adjustment, the center of the disc for side B may be shifted slightly. As a countermeasure, perform the centering adjustment again.

11. Fine Centering Adjustment for Side B Play

Mechanical Adjustment

- Purpose : To set the center of the spindle motor on the track of the laser beam when playing the side B of the disc.
- When not properly adjusted : Tracks skipped when playing side B of the disc.

- Measuring instruments and jigs :
- Measuring point :
- Test disc and player mode
- Positions to be adjusted

- Oscilloscope
- L-Shaped eccentric screwdriver (GGV-129)
- MAIN assembly TP3 (TRKG error), PREB assembly TP2-1 (TRKG sum)
- 8-inch LD test disc GGV1002... #100 (F2... #300)
- Test mode (TRKG servo: Open)
- Play mode
- The carriage assembly should be in the reverse state.
- Centering adjustment hole for side B

Connection diagram

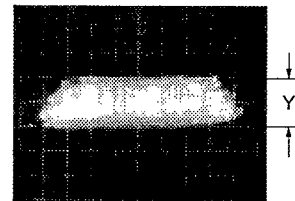
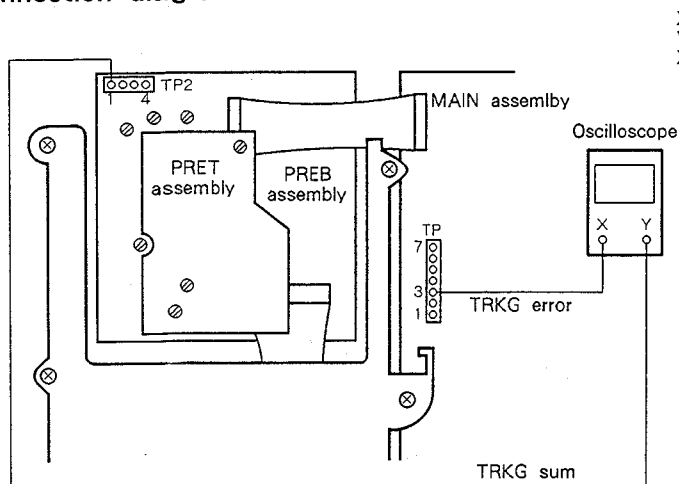


Photo 15

4. Fine centering adjustment for side B play.

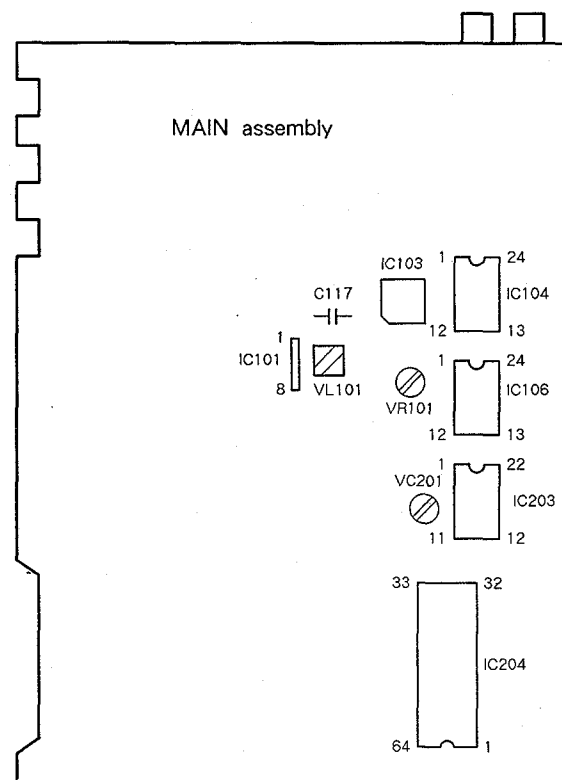
4. X-axis of Lissajous figure maximum.

Adjustment Procedure

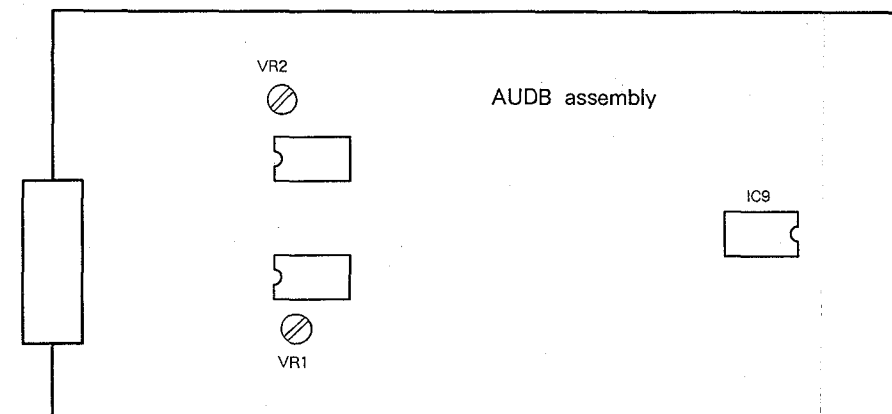
1. Set the oscilloscope to the X-Y mode, and connect MAIN assembly TP3 (TRKG error) to the oscilloscope's X-input (CH-1) and PREB assembly TP2-1 (TRKG sum) to the Y-input (CH-2).
2. Play the LD test disc and search frame #100 (#300).
3. Open the TRKG servo.
4. While observing the Lissajous figure on the oscilloscope, insert the eccentric screwdriver into the centering adjustment hole for side B and adjust it so that the X-axis amplitude of the Lissajous figure becomes maximum. (Phot 15)

8.5 ELECTRICAL ADJUSTMENT

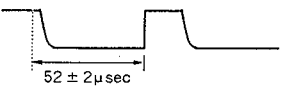

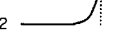
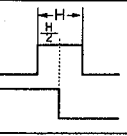
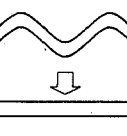
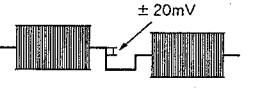
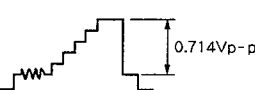
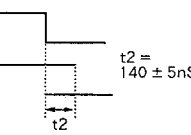
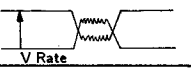
Assembly	Adjustment Name	Adjustment Point	Measurement Point	Adjustment Description	Condition for Adjustment	Oscilloscope	Remarks
MAIN assembly							
1	Decoder Clock Adjustment	VC201	IC203 Pin 3	Adjust VC201 so that the frequency at the pin 3 of IC203 becomes $3\text{ MHz} \pm 0.1\text{ MHz}$. (See page 87.)	3MHz oscillation mode of the test mode	Frequency counter	
2	LDD VCXO Freerunning Frequency Adjustment	VR101	IC106 Pin 23	Adjust VR101 so that the frequency at the pin 23 of IC106 becomes $8.6436\text{ MHz} \pm 400\text{ Hz}$.	LDD disc playback	Frequency counter	
3	LDD PLL Freerunning Frequency Adjustment	VL101	IC101 Pin 1 Lead wire of C117 near the IC103	Connect a $0.01\mu\text{F}$ capacitor to the lead wire of C117 near the IC103. Ground another lead wire of capacitor. Playback an LDD disc, and adjust VL101 so that the voltage of the lead wire of C117 near the IC103 and that of pin 1 of IC101 are identical.	LDD disc playback	Oscilloscope	
AUSB Assembly							
4	Audio Output Level Adjustment	VR1 (VR2)		Search for frame #18,901 (#18,901) (1 kHz 100%) of the test disc and set the CX noise reduction system to OFF. Adjust the VR1 (VR2) so that the output level of the audio output terminal L (R) becomes $500\text{ mVrms} \pm 20\%$.	GGV1002...#18,901, playback	Digital voltmeter	



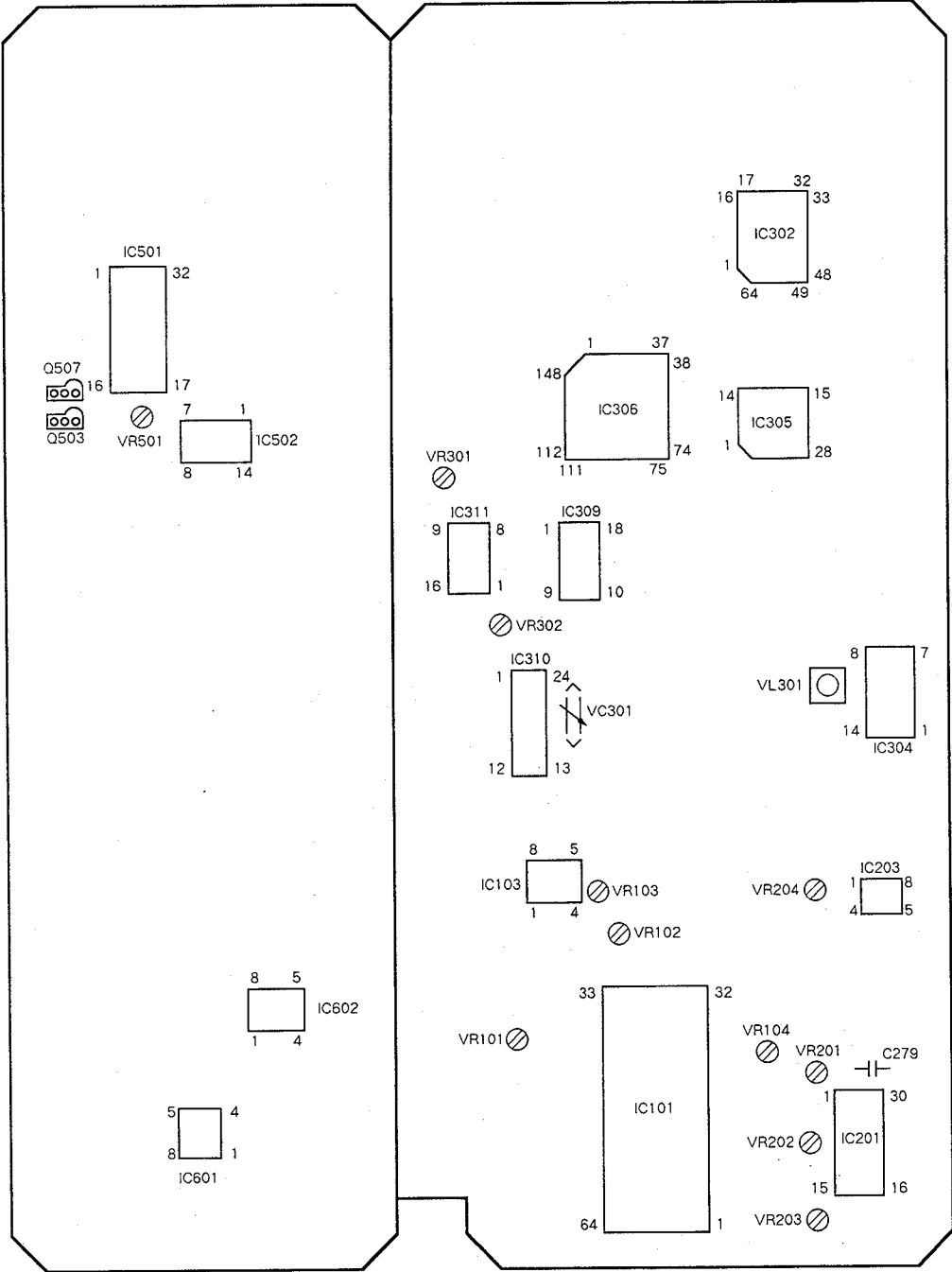
● ADJUSTMENT POINT



● ADJUSTMENT POINT

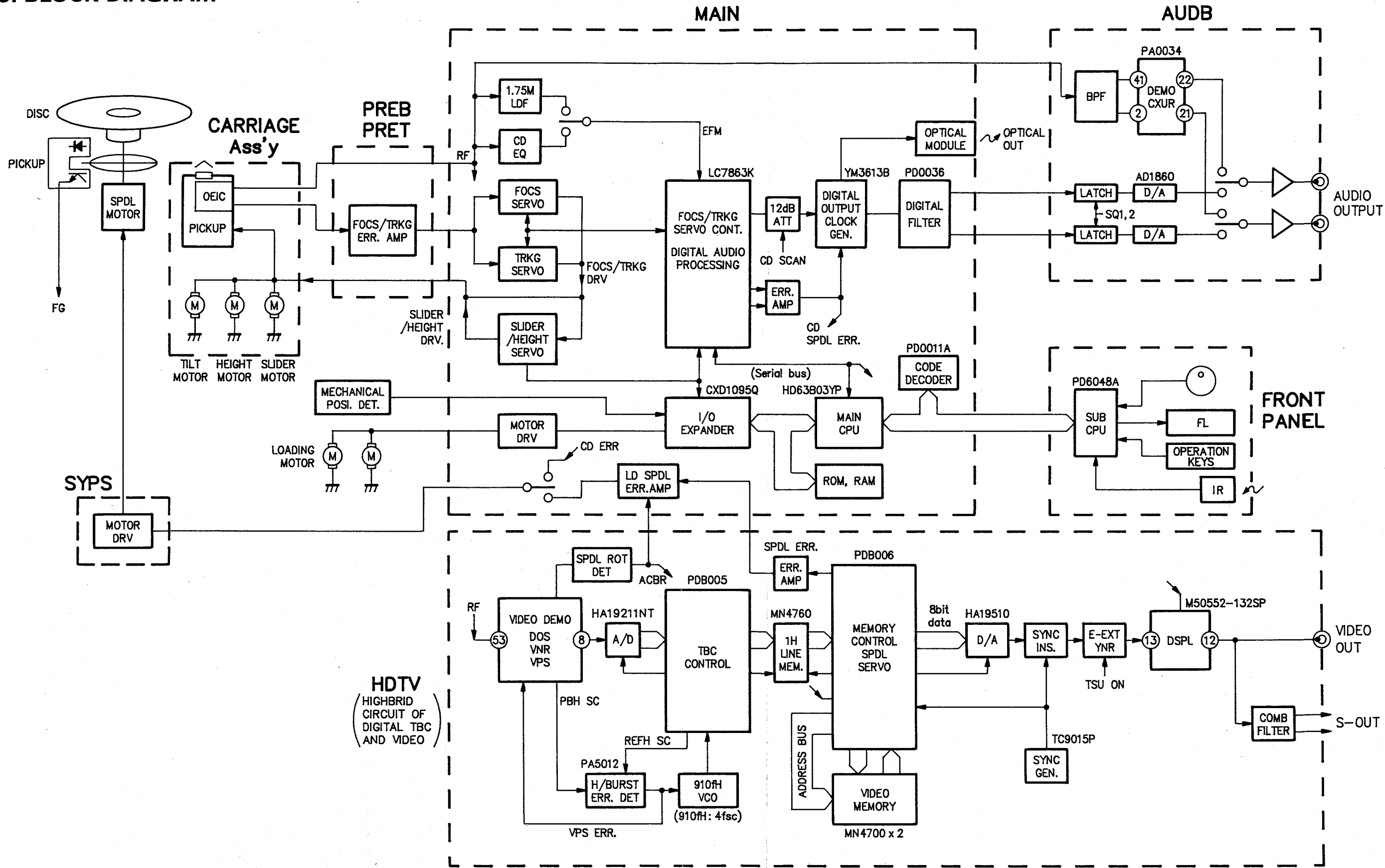
Assembly Adjustment Name		Adjustment point	Measurement Point	Adjustment Description	Condition for Adjustment	Oscilloscope	Remarks
HDTV assembly							
1	Master Clock Adjustment	VC301	IC302 Pin 2	Adjust VC301 so that the frequency at the pin 2 of IC302 in the HDTV assembly becomes $3.579545 \text{ MHz} \pm 200 \text{ Hz}$ just after the power of the player is turned on.	POWER ON	Frequency counter	
2	Half H Rejection Adjustment	VR201	IC201 Pin 3	Adjust VR201 so that the pulse width at the pin 3 of IC201 in the HDTV assembly becomes $52 \pm 2 \mu\text{sec}$.	LD disc playback	X : 2V/div Y : $10 \mu\text{sec}/\text{div}$	
3	Burst Gate Timing Adjustment	VR203	IC101 Pin 26 IC201 Pin 16	Adjust VR203 so that the rising edge of the pulse at pin 16 of IC201 and the first wave of the video burst signal at pin 26 of IC101 becomes same timing.	LD disc playback		CH1  IC101 Pin 26 CH2  IC201 Pin 16
4	VCO offset Adjustment	VL301	IC203 Pin 1	Adjust VL301 so that the DC level at the pin 1 of IC203 becomes $0 \pm 100 \text{ mV}$.	LD disc playback		$0 \pm 100 \text{ mV}$
5	Detection Level Adjustment	VR101	IC602 Pin 6 IC602 Pin 5	Adjust VR101 so that the voltage at the pin 5 of IC602 is equal to the voltage at pin 6 plus $218 \text{ mV} \pm 20 \text{ mV}$.	LD test disc #4,801 (#5,401), playback		Pin 5 voltage = Pin 6 voltage + $218 \text{ mV} \pm 20 \text{ mV}$
6	Trapezoid incrimation Adjustment	VR202	IC302 Pin 1 IC201 Pin 5	Adjust VR202 so that the falling edge of the pulse at pin 5 (PB-H) of IC201 is in the center of the H duration at pin 1 of IC302 when C279 is short-circuited.	Memory : WRITE side PLL LOCK DC reset mode		
7	PLL Gain Adjustment	VR204	Audio output terminal (Lch, Rch)	* Adjust VR204 so that the amplitude of a signal supplied from the audio output terminal and the difference in level between L and R are minimum when frame #2,701 (#2,701) of the LD test disc which is decentered is played back. * To have the disc decentered, adhere a piece of vinyl tape on the center hole of the disc.	Have the test disc decentered by adhering a piece of vinyl tape on the center hole of the test disc. #2,701 (#2,701), playback	10mV/div 5msec/div	
8	Sync DC Level Adjustment	VR302	Video output terminal	Adjust VR302 so that the difference in pedestal level becomes $0 \pm 20 \text{ mV}$, by monitoring the V-rate of the signal supplied from the video output terminal with an oscilloscope.	#2,701 (#2,701), playback	200mV/div $500 \mu\text{sec}/\text{div}$ V rate	
9	Video Level Adjustment	VR102	Video output terminal	Adjust VR102 so that the amplitude from the pedestal level to the white level becomes $0.714 \text{ Vp-p} \pm 5\%$, by monitoring the video signal on the oscilloscope.	#19,801 (#19,801) STILL	50mV/div 50mV/div	
10	1H Delay Video Level Adjustment	VR103	IC101 Pin 40 Pin 42	Adjust VR103 so that the amplitude between the sync chip and the white peak of video signal output from pins 40 and 42 of IC101 to the same level.	#19,801 (#19,801) STILL	50mV/div 50mV/div	
11	VPS Error Level Adjustment	VR104	TV monitor screen	Adjust VR104 so that color shading in a magenta picture is minimized.	#7,201 (#26,101) STILL		
12	140nsec Adjustment	VR301	IC311 Pin 11 IC310 Pin 7	By monitoring the waveforms at pin 11 of IC311 and pin 7 of IC310, adjust VR301 so that t_2 in the figure becomes $140 \text{ nsec} \pm 5 \text{ nsec}$ against the falling edge of the signal output from pin 11 of IC311.	#7,201 (#6,301) STILL		
13	D-EXT Adjustment	VR501		Adjust VR501 so that the base level of Q507 and the sync pedestal level of Q503 to the same level in D-EXT mode.	LD disc playback D-EXT mode		
YCSB assembly							
14		VR1	CH1: D1 Anode CH2: D1 Cathode	Adjust VR1 so that the DC voltage level between the Anode and the Cathode of D1 become $+0.4 \pm 0.1 \text{ V}$.	#5401 STILL	V Rate	D1 Cathode  D1 Anode

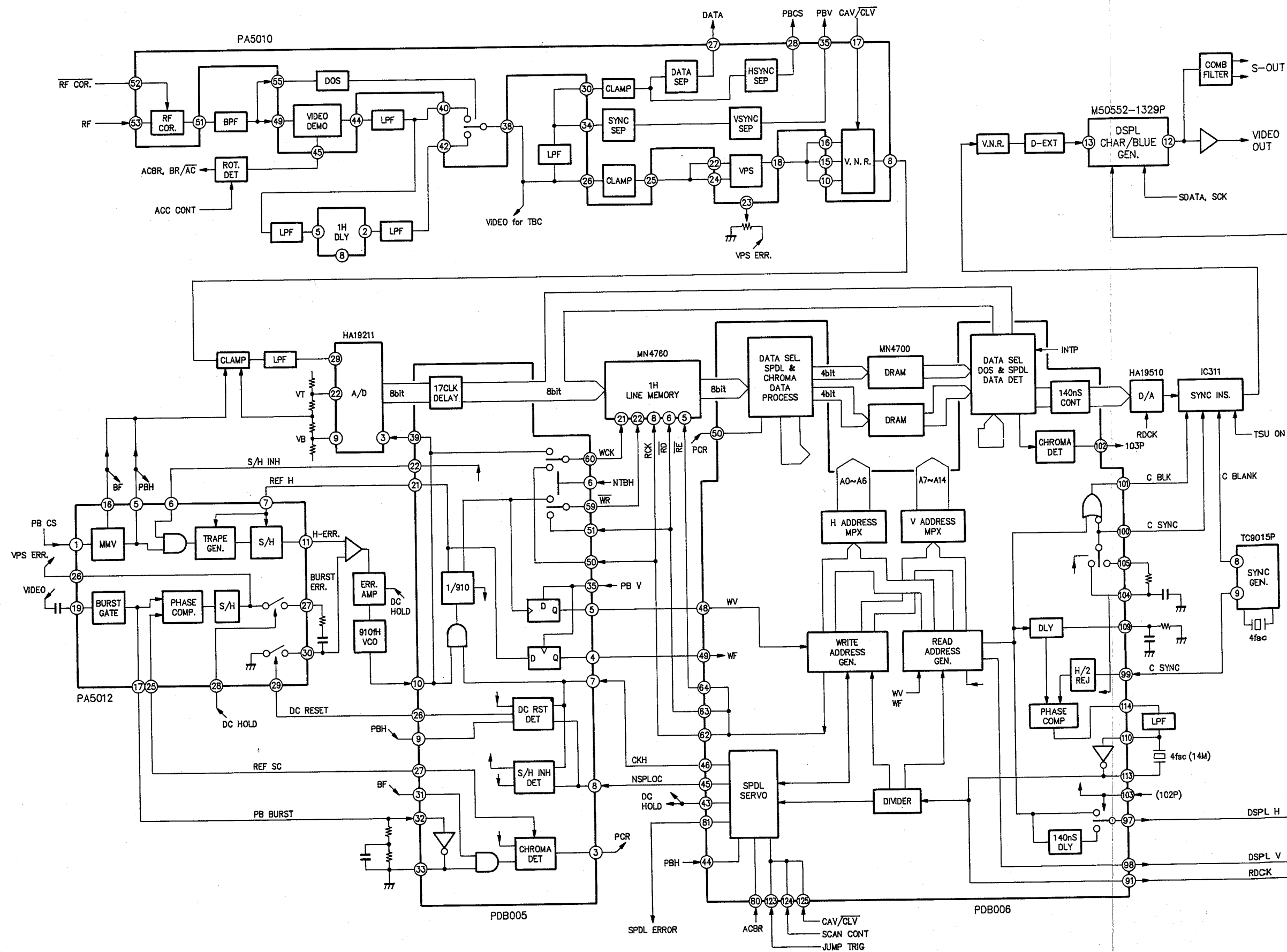
HDTV assembly



● ADJUSTMENT POINT

9. BLOCK DIAGRAM

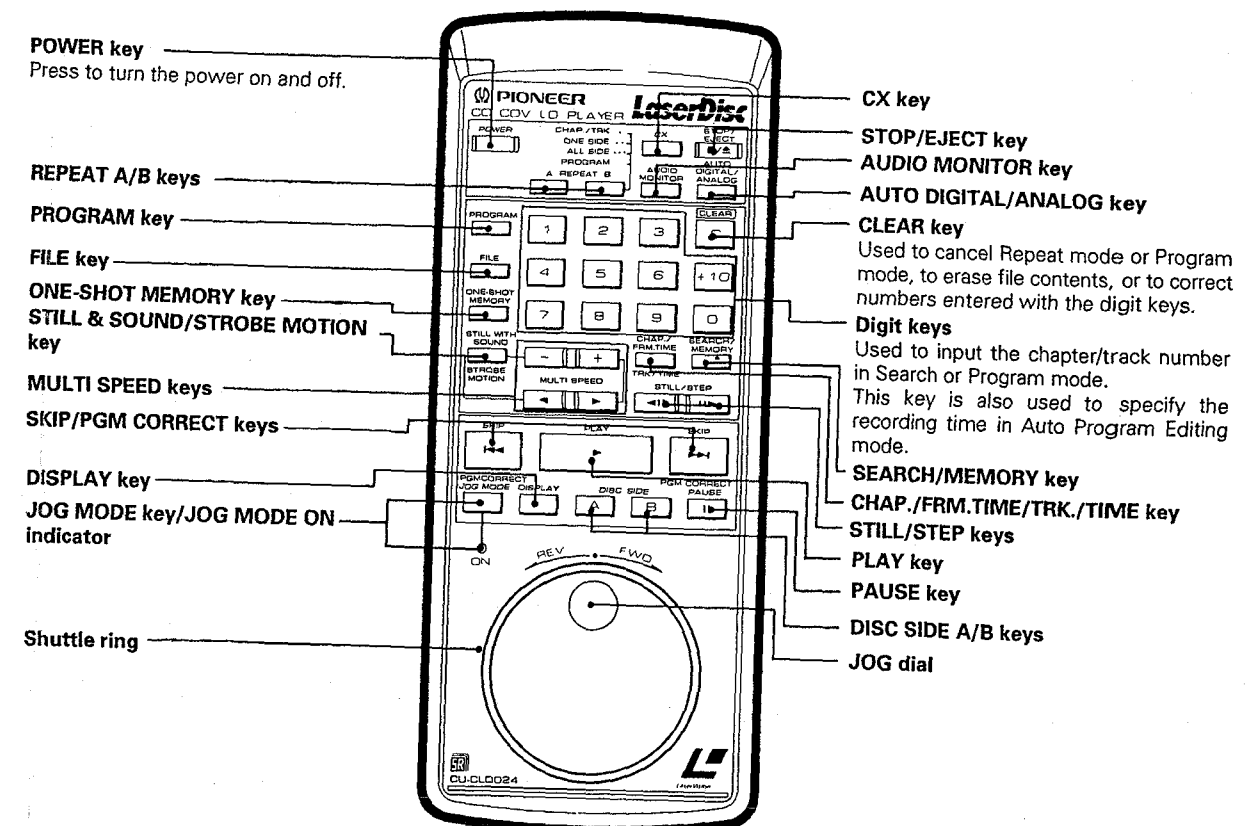




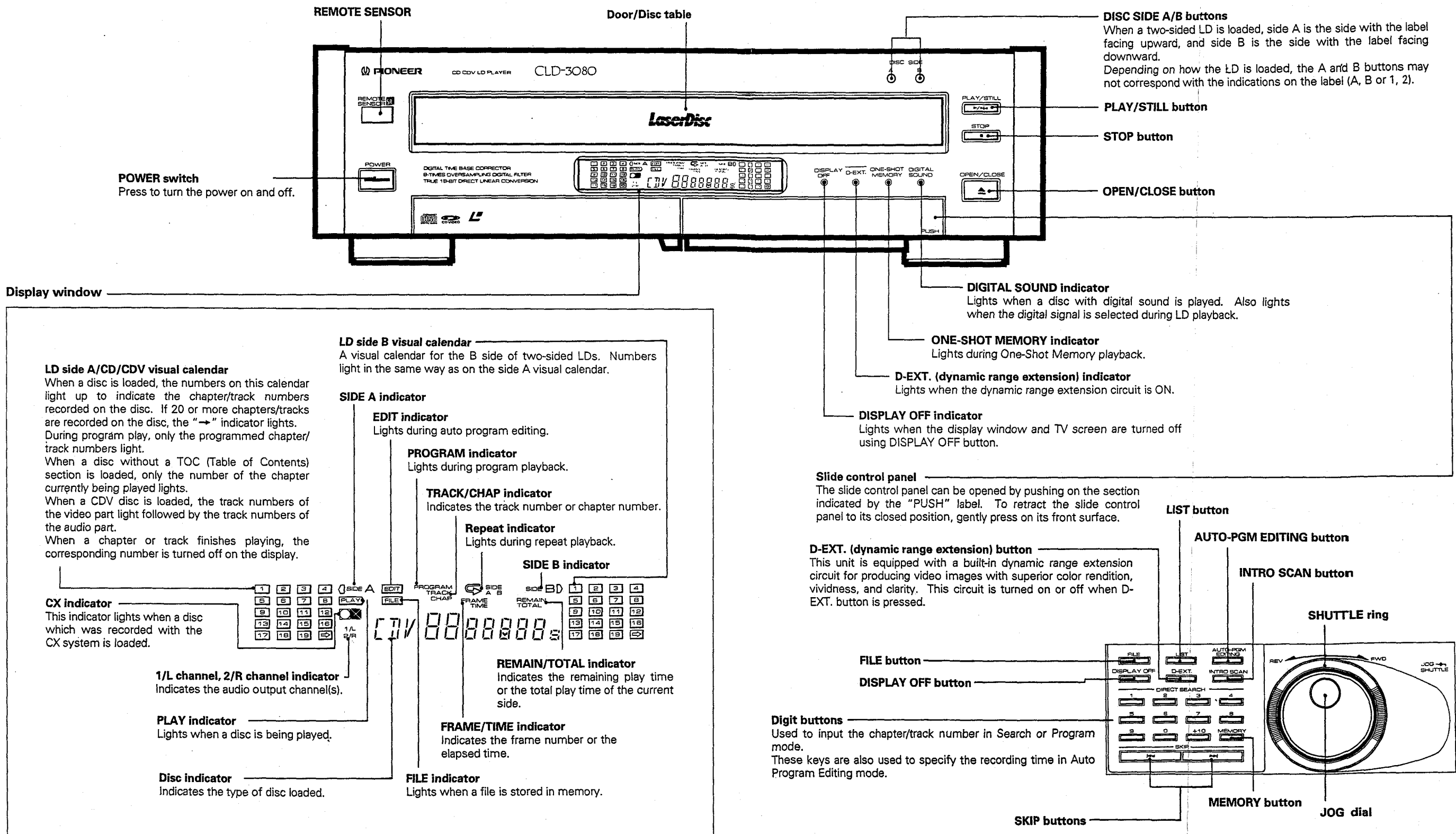
10. PANEL FACILITIES

● REMOTE CONTROL UNIT

Remote control keys with the same names or marks as buttons on the front panel of the player control the same operations as the corresponding front panel buttons.



● FRONT PANEL



11. SPECIFICATIONS

1. General
System LaserVision Disc system and Compact Disc digital audio system
Laser Semiconductor laser wavelength 780 nm
Power requirements AC 110V/120V/220V/240V (Switchable), 50/60 Hz
Power consumption 43W
Weight 13.3 kg (29 lbs 5 oz)
Dimensions 445 (W) x 438 (D) x 132 (H) mm
17-15/16 (W) x 17-1/4 (D) x 5-3/16 (H) in
Operating temperature +5°C ~ +35°C (41°F - 95°F)
Operating humidity 5% ~ 90%
(There should be no condensation of moisture.)

2. Disc
LaserVision Discs
*Maximum playing times
12-inch standard play disc 1 hour/both sides
12-inch extended play disc 2 hours/both sides
8-inch standard play disc 28 min/both sides
14 min/one side
8-inch extended play disc 40 min/both sides
20 min/one side
Spindle motor speed
Standard play disc 1,800 rpm
Extended play disc 1,800 rpm (inner circumference)
to 600 rpm (outer circumference)
(For a 12-inch disc)

Compact Discs
DISC Diameter: 5-inch, 3-inch, Thickness: 1.2 mm
Rotation direction (pickup side) Counterclockwise
Liner speed 1.2 ~ 1.4m/sec
*Maximum playing time
60 min. or more: 5-inch discs
20 min. or more: 3-inch discs
(For stereo playback)

Compact Discs with Video
Disc Diameter: 5-inch, Thickness: 1.2 mm
Rotation direction (pickup side) Counterclockwise
Liner speed Audio portion: 1.2 ~ 1.4m/sec
Video portion: 11 ~ 12m/sec
Maximum playing time Video portion: 5 min. (CLV)
Audio portion: 20 min. (Digital)

* Actual playback time differs for each disc.

3. Video characteristics
Format NTSC specifications
Video output
Level 1 Vp-p nominal, sync. negative, terminated
Impedance 75 unbalanced
Jack RCA jack

4. S-Video output
Y (luminance) - Output level 1 Vp-p (75 Ω)
C (color) - Output level 286 mVp-p (75 Ω)
Jack S-VIDEO jack

5. Other Terminals
Control input/output Both miniature jacks
Optical digital output Optical digital jack

6. Accessories
Remote control unit (CU-CLD024) 1
Size "AAA" (IEC R03) dry cell batteries 2
Video cord 1
Audio cord 1
Screws 4
(used when removing the side wood panels.)
Operating instructions 1

7. Audio characteristics
Output level
During analog audio output 200 mVrms
(1 kHz, 40%)
During digital audio output 200 mVrms
(1 kHz, -20 dB)
Jacks Both RCA jacks
Number of channels 2

Digital Audio Characteristics

Frequency response	4 Hz - 20 kHz (±0.2dB) (EIAJ)
SN ratio	108 dB (EIAJ)
Dynamic range	99 dB (EIAJ)
Channel separation	102 (EIAJ)
Total harmonic distortion	0.003% (EIAJ)
Wow and flutter	Limit of measurement (0.001% W. PEAK) or less (EIAJ)

8. Player Functions
● Display ON/OFF
● Visual Calender Display
● Dynamic Range Extension
● File
● File List
● Intro Scan
● Auto Program Edit
● Last Memory

9. Functions
Remote control unit operations (CU-CLD024)

	Function	Standard play Disc (CAV)	Extended play Disc (CLV)	Compact Disc with Video	Compact Disc
Basic Functions	Two-side play	YES	YES	NO	NO
	Single-side play	YES	YES	YES	YES
	Pause	YES	YES	YES	YES
	Stop	YES	YES	YES	YES
Search	Fast forward and reverse (Jog dial/Shuttle ring)	YES	YES	YES	YES
	Chapter/Track skip	YES	YES	YES	YES
	Direct chapter/Track number search	YES	YES	YES	YES
	Frame number search	YES	NO	NO	NO
	Time number search	NO	YES	YES	YES
Program	Chapter/Track program play	YES	YES	YES	YES
	Picture window program	YES	YES	NO	NO
	One-shot program	YES	YES	NO	NO
	Program correction	YES	YES	YES	YES
Repeat	Repeat between 2 points	YES	YES	YES	YES
	Memory repeat	YES	YES	YES	YES
	Chapter/Track repeat	YES	YES	YES	YES
	One-side repeat	YES	YES	YES	YES
	Two-side repeat	YES	YES	NO	NO
	Program repeat	YES	YES	YES	YES
Trick play	Still/Step	YES	YES	YES*1	NO
	Multi-speed (Forward/reverse 9-level variable)	YES	YES	YES*1	NO
	Sill with Sound	YES	YES	YES*1	NO
	Strobe motion	YES	YES	YES*1	NO
	Jog dial/Shuttle ring	YES	YES	YES	YES
Time display	Elapsed time display	YES*2	YES	YES	YES
	Remaining track time display	NO	NO	YES	YES
	Remaining total time display	YES*2	YES*2	YES	YES
	Total number of selections, total time display	YES*2	YES*2	YES	YES
Others	CX system ON/OFF	YES*3	YES*3	—	—
	AUTO DIGITAL/ANALOG switch	YES*4	YES*4	—	—
	One-shot memory	YES	YES	YES*1	NO
	Audio channel selection (Stereo, 1/L, 2/R)	YES	YES	YES	YES

*1 Only video part
*2 Only discs with TOC
*3 Valid for analog sound playing a disc with the ☒ mark.
*4 Can only be used with discs with digital sound tracks.

NOTE:
The specifications and design of this product are subject to change without notice, due to improvement.