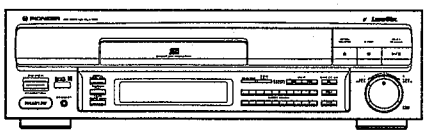
PIONEER®
The Art of Entertainment

Service Manual



ORDER NO.
ARP2465

CD CDV LD PLAYER

CLD-S201
CLD-S250

CLD-S201 AND CLD-S250 HAVE THE FOLLOWING:

Type	Model		Power Requirement	Remarks
	CLD–S201	CLD–S250		
KUC	○	–	AC120V only	
KUC/CA	○	–	AC120V only	
SD	–	○	AC110V, 120–127V, 220V, 240V (switchable)	

- **This manual is applicable to the following: CLD–S201/KUC and KUC/CA; CLD–S250/SD.**
- **For CLD-S201/KUC/CA and CLD–S250/SD, refer to page 59.**
- **For the circuit and mechanism descriptions, refer to the service manual ARP2528 for CLD-S201 and CLD–S250.**

CONTENTS

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AO MAY. 1992 Printed in Japan

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

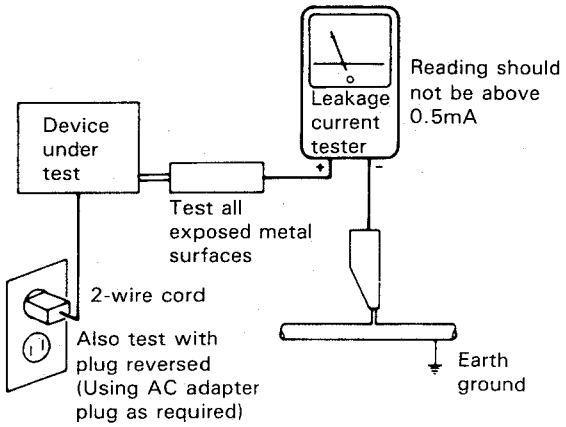
(FOR USA MODEL ONLY)

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

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

2. EXPLODED VIEWS, PACKING AND PARTS LIST

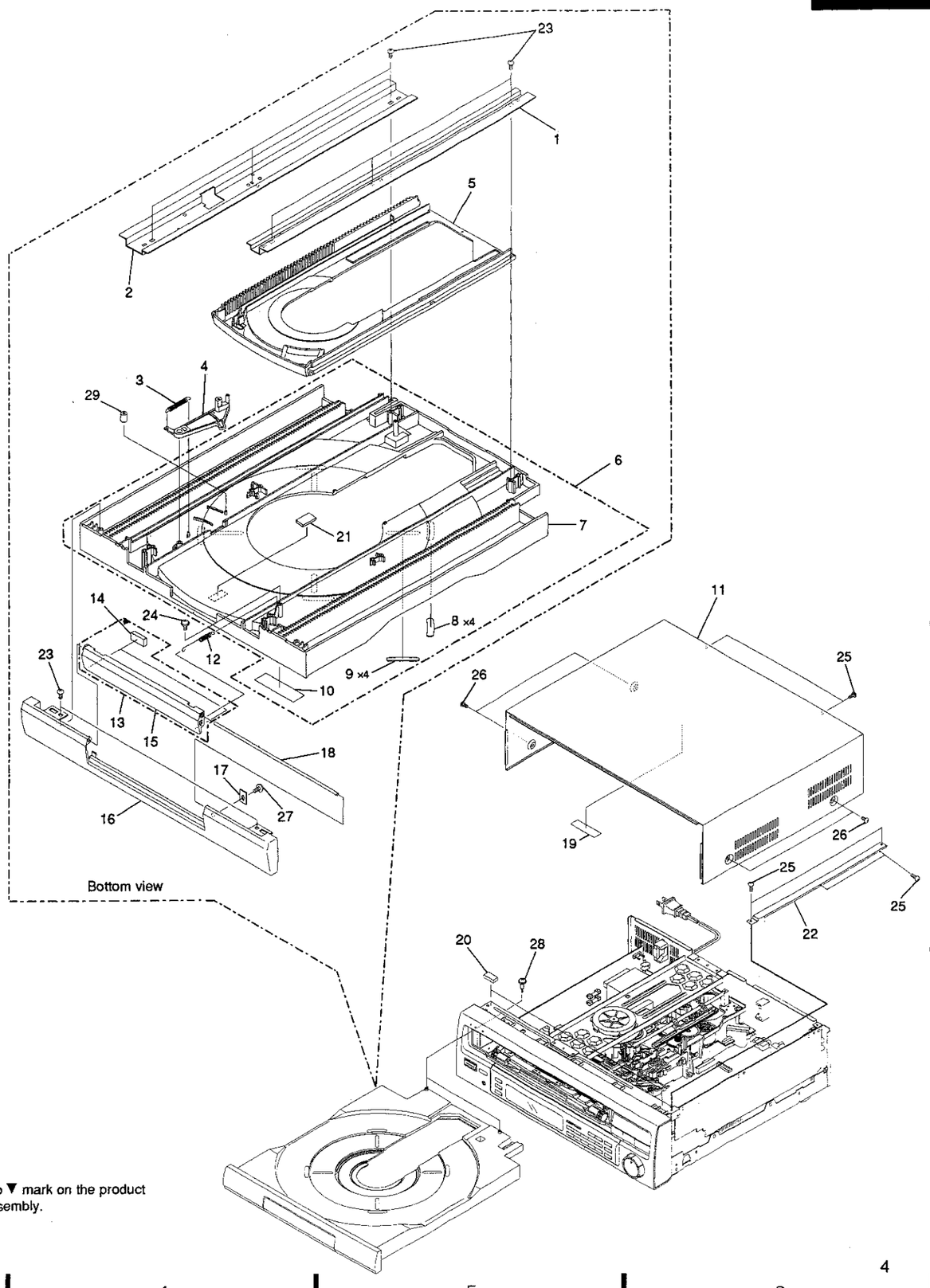
NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

(1) EXTERIOR SECTION

Parts List

Mark	No.	Description	Part No.
	1	Guide plate (L)	VNE1805
	2	Guide plate (R)	VNE1806
	3	Lock plate spring	VBH1188
	4	Lock plate	VNL1513
	5	CD tray	VNK1992
	6	Tray ASS'Y S	VXX1729
NSP	7	LD tray	VNK1991
	8	Disc pad	VEC1191
	9	Disc pad (C)	VEC1380
NSP	10	Lable (plastic)	VRW1274
	11	Bonnet case S	VXX1726
	12	Door spring	VBH1202
	13	CD door ASS'Y S	VXX1728
	14	Cushion	VEC1578
NSP	15	CD door	VNK2033
	16	Tray panel	VNK2032
	17	Door holder	VNE1812
	18	Door shaft	VLL1441
NSP	19	65 lable	ORW1069
NSP	20	Spacer	VEC1585
NSP	21	Damp cushion	VEC1110
NSP	22	PCB holder	VNE1830
	23	Screw	BPZ30P060FCU
	24	Screw	IPZ26P060FMC
	25	Screw	BBZ30P080FCC
	26	Screw	BCZ40P060FZK
	27	Screw	IPZ20P050FMC
	28	Screw	VBA1032
	29	Tray rubber	VEB1091

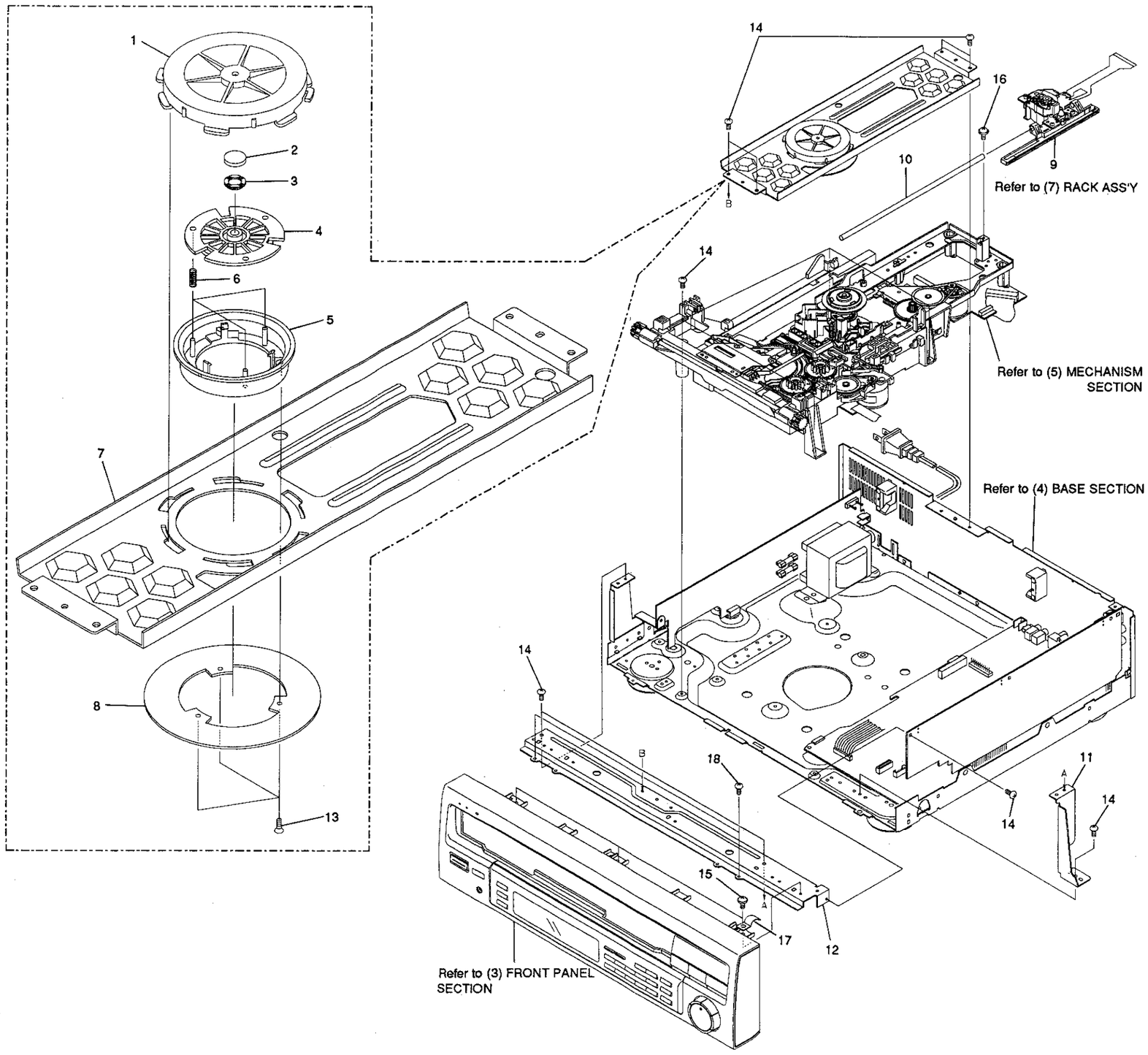


NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

(2) TOP VIEW SECTION

Parts List

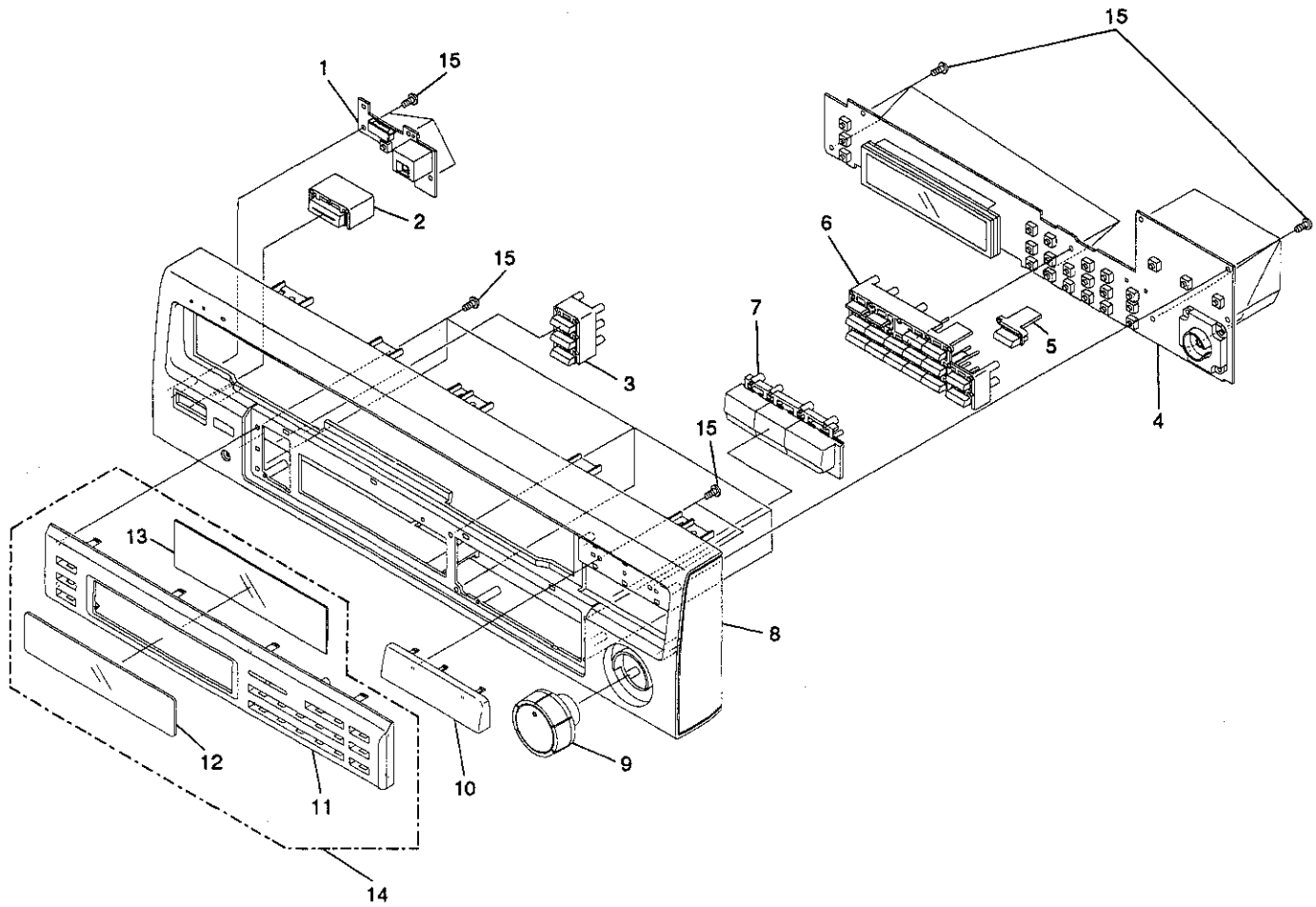
Mark	No.	Description	Part No.
	1	Clamper holder	VNL1514
	2	Rubber sheat	VEB1114
	3	Thrust holder	VNL1289
	4	Clamper head	VNL1516
	5	Clamper	VNL1515
	6	Clamp spring	VBH1192
	7	Clamper arm	VNE1804
	8	Stabilizer	VNE1807
NSP	9	Rack ASS'Y	VWT1080
	10	Slider shaft	VLL1434
NSP	11	Side stay (R)	VNE1810
NSP	12	Front angle	VNE1808
	13	Screw	CPZ20P050FMC
	14	Screw	BBZ30P080FCC
	15	Screw	IBZ30P060FCC
	16	Screw	IPZ30P060FMC
NSP	17	Earth plate	VNE1518
	18	Screw	PCZ30P060FMC



(3) FRONT PANEL SECTION

Parts List

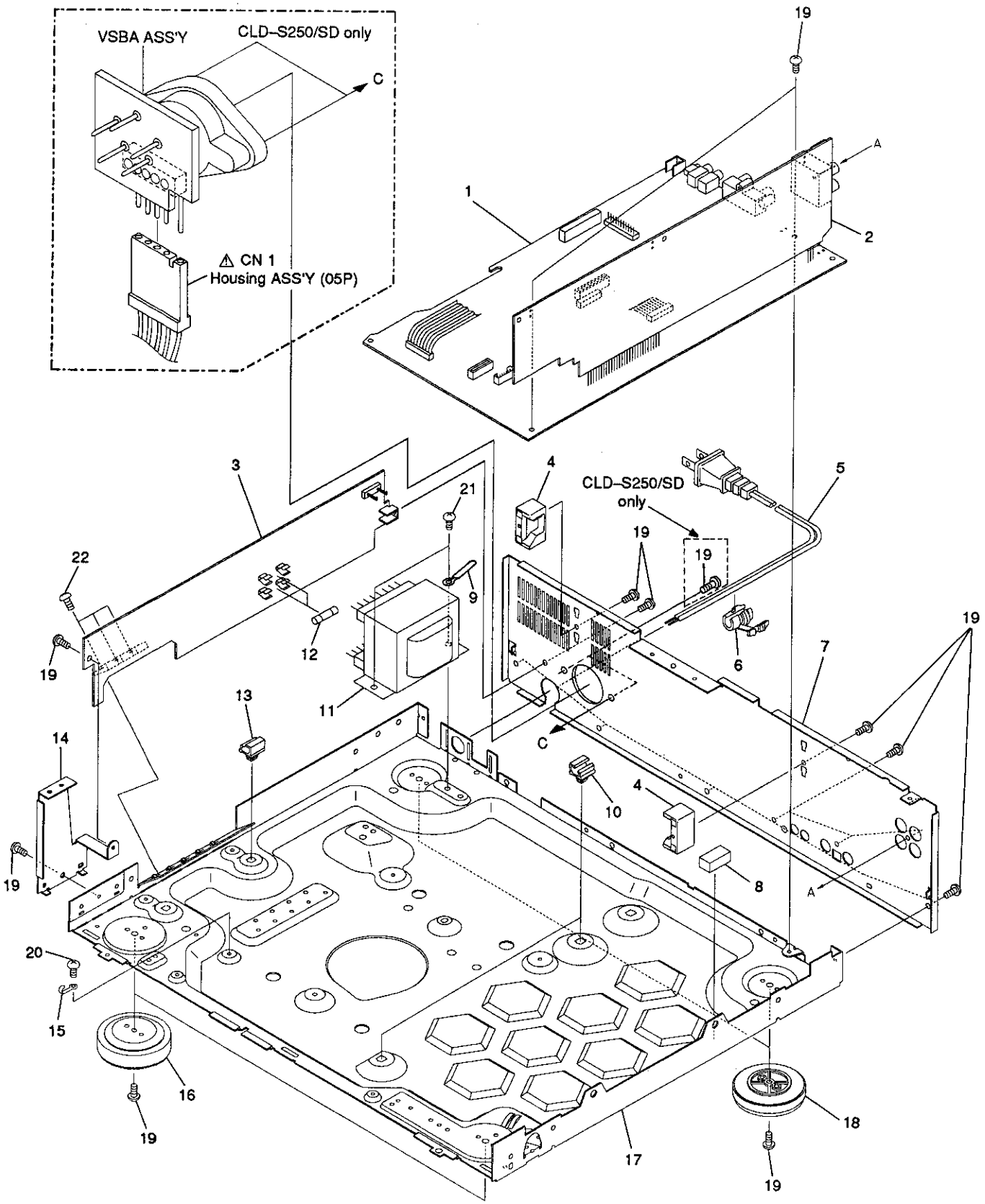
Mark	No.	Description	Part No.
NSP	1	PSWB ASS'Y	VWG1315
	2	PW button	VNK2002
	3	Mode key	VNK2037
NSP	4	FLKY ASS'Y	VWG1314
	5	CD button	VNK2038
	6	10key	VNK2036
	7	Main key	VNK2035
	8	Front panel ASS'Y	VXA1845
	9	Shuttle knob	VNK2039
	10	Sub panel	VNK2034
NSP	11	Center panel	VNK2031
	12	FL lens	VEC1568
	13	FL filter	VNK1659
	14	Center panel ASS'Y S	VXX1727
	15	Screw	BPZ26P060FCU



(4) BASE SECTION

Parts List

Mark	No.	Description	Part No.
NSP	1	MAIN ASS'Y	VWX1102
NSP	2	AUDIO ASS'Y	VWX1103
⊙	3	SYPS ASS'Y	VWR1122
	4	Tray stopper	VNL1519
⚠	5	AC power cord	PDG1015
⚠	6	Cord stopper	CM–22C
NSP	7	Rear panel	VNA1256
	8	PCB cushion	VEC1573
NSP	9	Cord clamper	VNF–005
NSP	10	PCB holder	VEC1174
⚠	11	Power transformer	VTT1110
⚠	12	Fuse (3A/125V)	VEK–018
NSP	13	P.plate holder	PNY–405
NSP	14	Side stay (L)	VNE1809
	15	Cord clamper	VNF–069
	16	Insulator	PNW1912
NSP	17	Base ASS'Y	VNA1255
	18	Insulator ASS'Y	VXA1881
	19	Screw	BBZ30P080FCC
	20	Screw	BBZ30P040FMC
	21	Screw	BCZ40P060FZK
	22	Screw	BCZ30P080FMC


VSBA ASS'Y
CLD-S250/SD only
C
⚠ CN 1
Housing ASS'Y (05P)
CLD-S250/SD only
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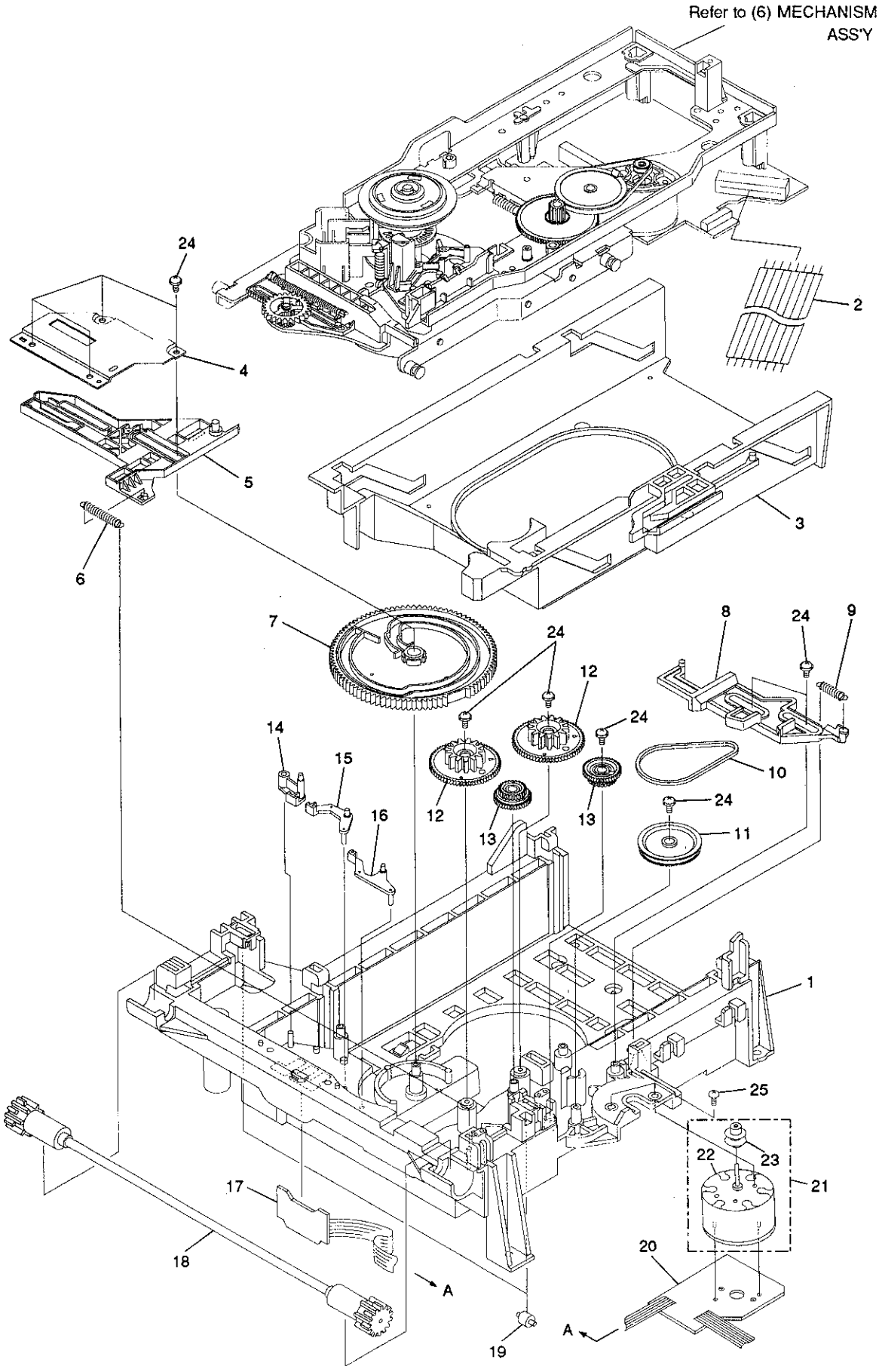
(5) MECHANISM SECTION

Parts List

Mark	No.	Description	Part No.
	1	Mechanism base	VNK1990
	2	Flexible cable	VDA1409
	3	Clamp cam	VNL1500
	4	Shaft holder	VNE1817
	5	Cam plate	VNL1511
	6	CAS spring	VBH1190
	7	Cam gear	VNL1507
	8	CD plate	VNL1512
	9	CDP spring	VBH1191
	10	Rubber belt	VEB1184
	11	Gear pulley	VNL1510
	12	Twin gear	VNL1508
	13	Center gear	VNL1509
	14	L-SW lever	VNL1504
	15	C-SW lever	VNL1505
	16	R-SW lever	VNL1506
NSP	17	LOSB ASS'Y	VWG1307
	18	Synchro gear ASS'Y	VXA1822
	19	Roller	VNL1042
NSP	20	LOMB ASS'Y	VWG1308
	21	Loading motor ASS'Y	VXX1712
NSP	22	Slider motor	VXM1033
	23	Motor pulley	PNW1643
	24	Screw	Z39–019
	25	Screw	BMZ26P040FMC


Refer to (6) MECHANISM ASS'Y
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(6) MECHANISM ASS'Y

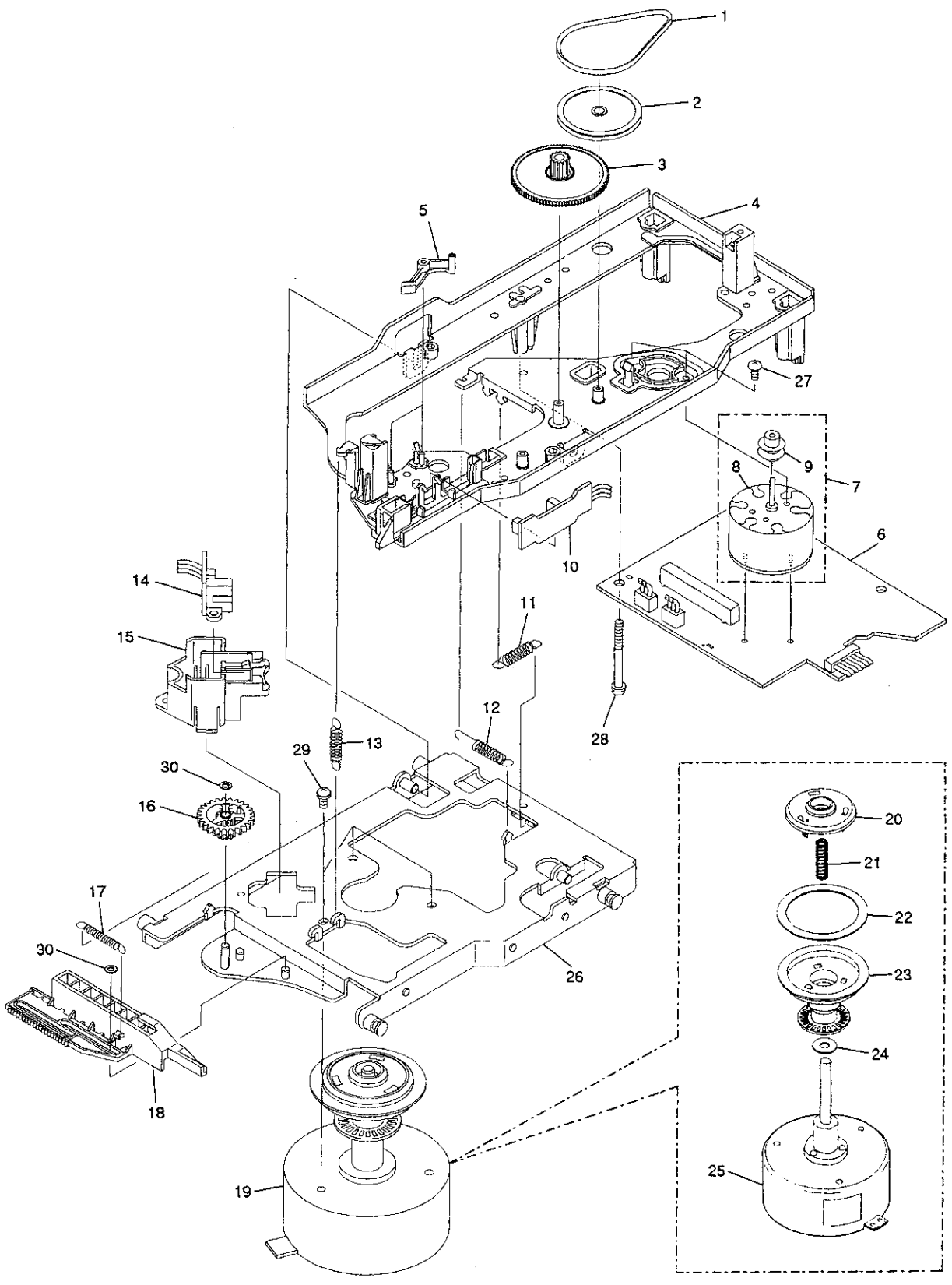
Parts List

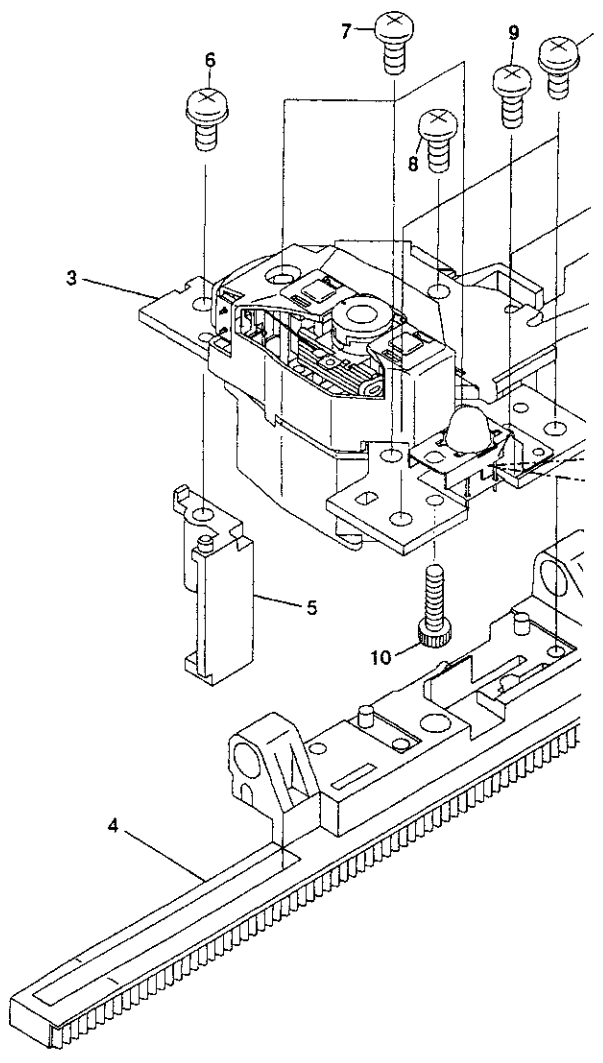
Mark	No.	Description	Part No.
	1	CA belt	VEB1077
	2	CA pulley	VNL1496
	3	CA gear	VNL1497
	4	Tilt base	VNL1499
	5	CA-SW lever	VNL1498
NSP	6	CAMB ASS'Y	VWG1306
	7	CRG motor ASS'Y	VXX1261
NSP	8	Slider motor	VXM1033
	9	CA pulley (1)	VNL1197
NSP	10	PKSB ASS'Y	VWG1305
	11	Radial spring	VBH1201
	12	Thrust spring	VBH1200
	13	Tilt tension	VBH1187
NSP	14	FG ASS'Y	VWG1304
	15	FG base	VNL1503
	16	Y gear	VNL1501
	17	Tilt cam spring	VBH1189
	18	Tilt cam	VNL1502
	19	Spindle motor ASS'Y	VXA1825
	20	Centering hab	VNL1174
	21	Centering spring	VBH1083
NSP	22	Rubber sheet	VEB1103
NSP	23	Turn table ASS'Y	VXA1283
NSP	24	Oil stopper	VBF1002
NSP	25	Spindle motor	VXM1050
	26	Motor base	VNE1803
	27	Screw	BMZ26P040FMC
	28	Screw	ABZ30P300FMC
	29	Screw	PMA30P050FMC
	30	Washer	WT26D060D025

(7) RACK ASS'Y

Parts List

Mark	No.	Description	Part No.
NSP	1	Sensor stay	VBK1036
NSP	2	Tilt sensor	SG–302
NSP	3	Pick up ASS'Y	VWY1030
	4	Rack	VNL1495
	5	Tan. base	VNL1494
	6	Screw	PBB26P080FMC
	7	Screw	PMA20P060FMC
	8	Screw	PMA20P080FMC
	9	Screw	PMH20P040FMC
	10	Screw	SMZ20H100FZK





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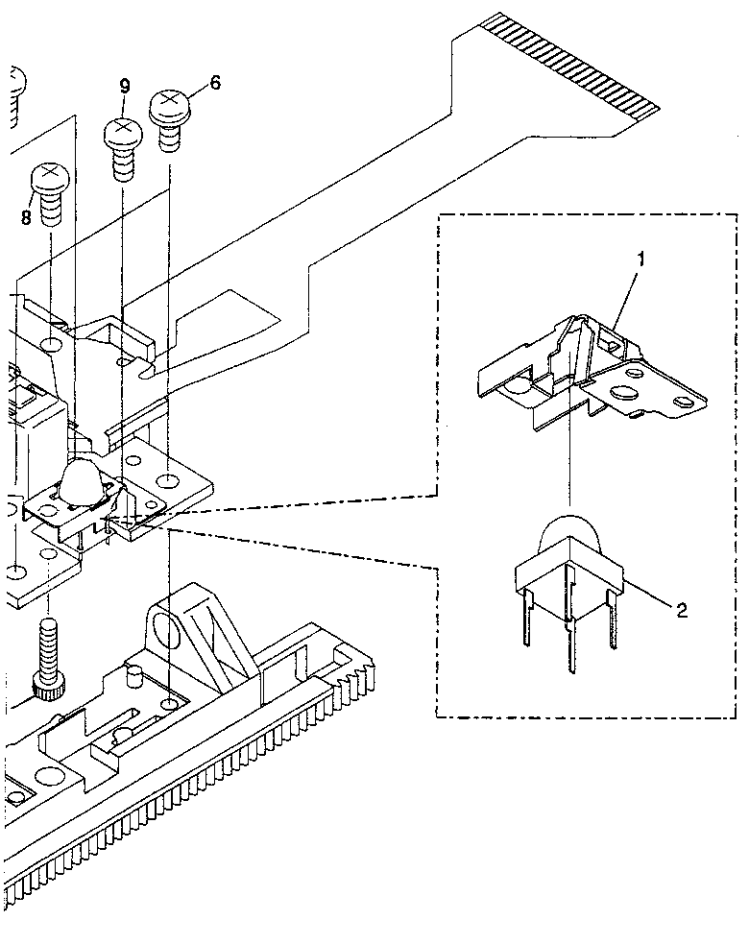
<1036
:302
Y1030
L1495
L1494

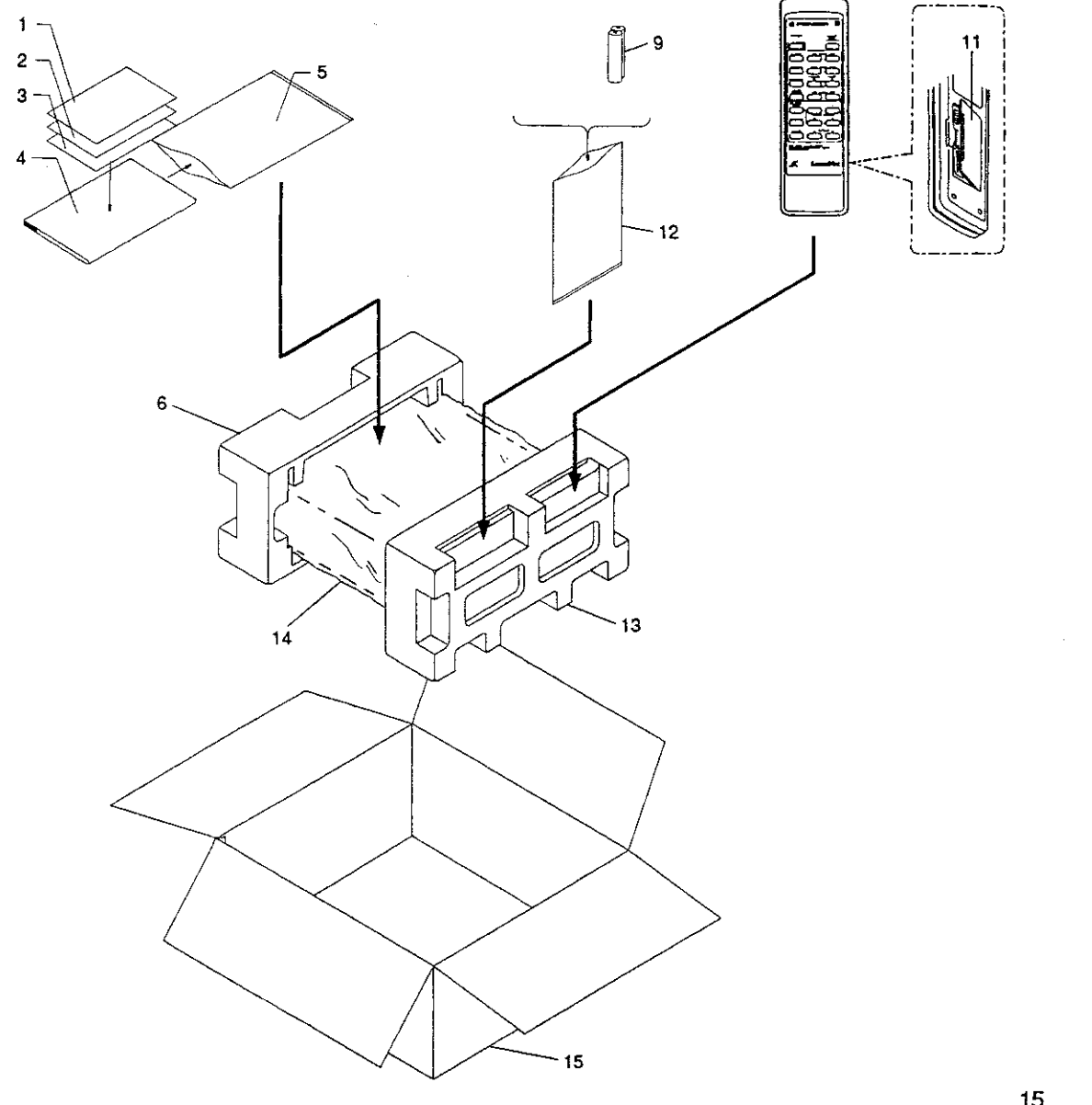
326P080FMC
A20P060FMC
A20P080FMC
H20P040FMC
Z20H100FZK

(8) PACKING

Parts List

Mark	No.	Description	Part No.
NSP	1	Warranty card	ARY1044
NSP	2	Caution card (UC)	VRM1026
NSP	3	Caution card	VRR1009
	4	Operating Instructions (English)	VRB1066
NSP	5	Vinyl bag	VHL–014
	6	Pad (R)	VHA1106
	7	Cord with plug	VDE–055
	8	Cord with plug	VDE–056
NSP	9	Battery (R03, AAA)	VEM–022
	10	Remote control unit (CU–CLD067)	VXX1732
	11	Battery cover	PZN1010
NSP	12	Vinyl bag	Z21–029
	13	Pad (F)	VHA1105
	14	Mirror mat sheet	VHL1006
	15	Packing case	VHG1207

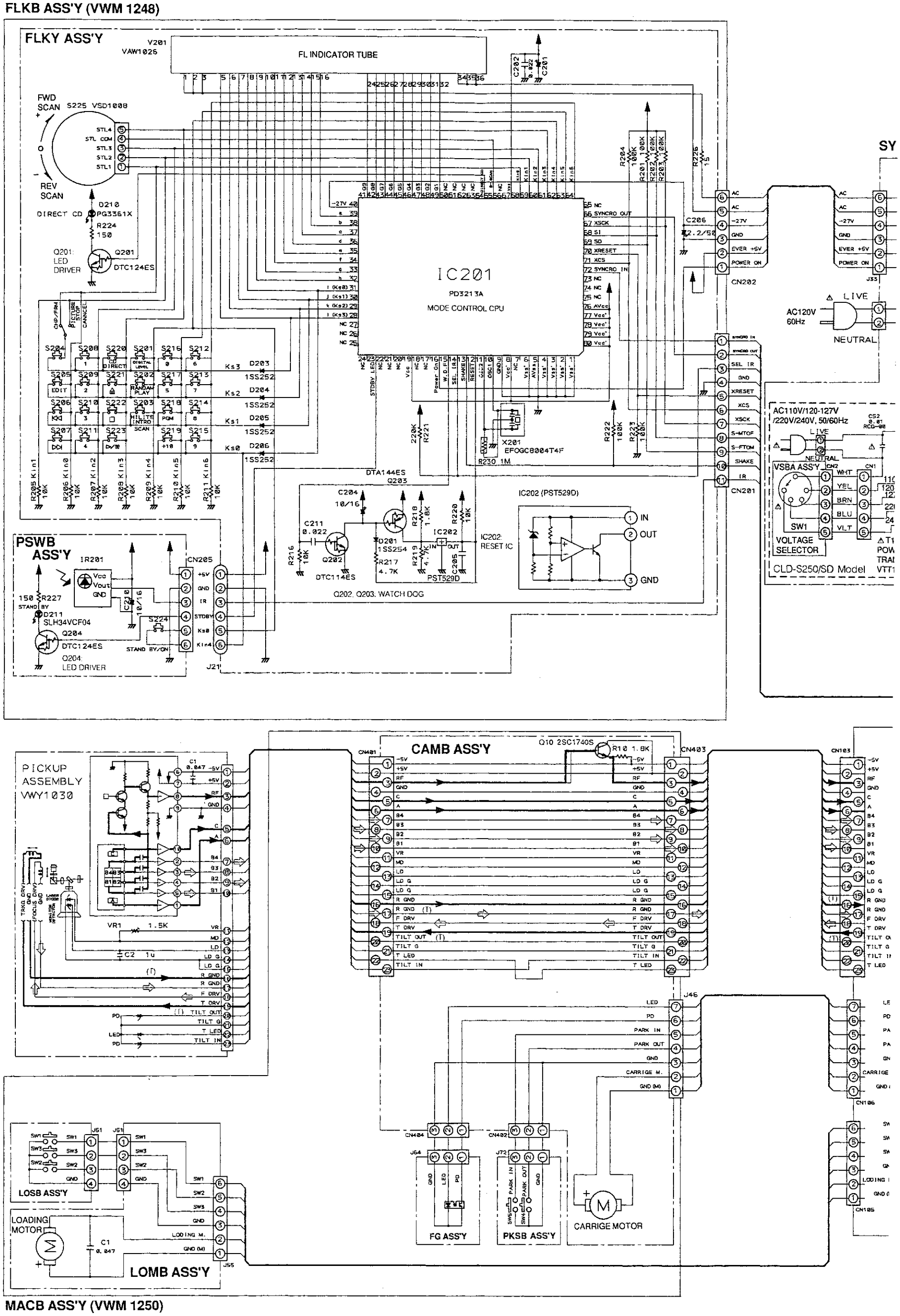




3. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

3.1 FLKY, PSWB, SYPS, CAMB, LOSB, LOMB, FG, PKSB ASSEMBLIES AND OVERALL WIRING DIAGRAM

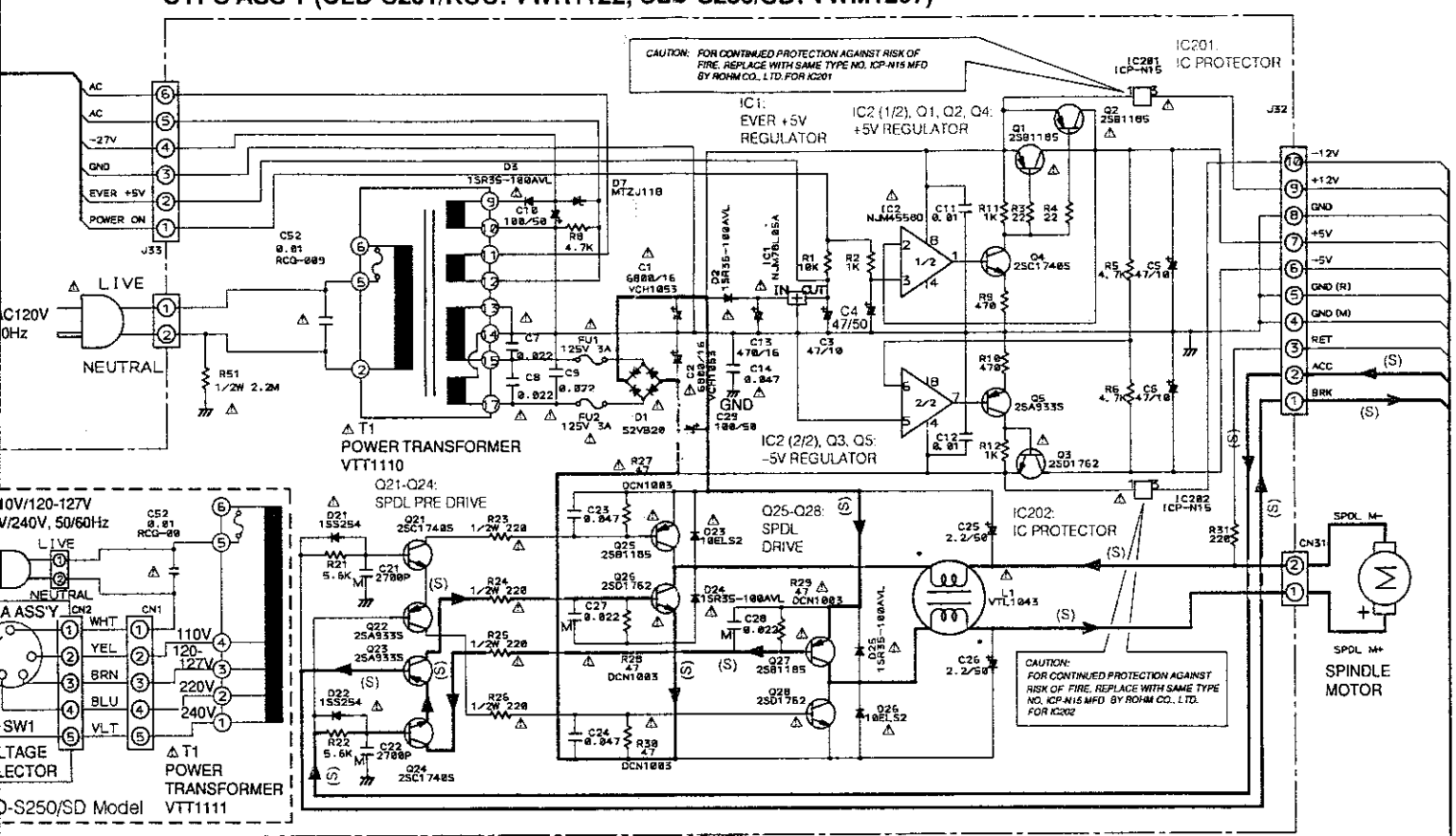
FLKB ASS'Y (VWM 1248)



MACB ASS'Y (VWM 1250)

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

SYPS ASS'Y (CLD-S201/KUC: VWR1122, CLD-S250/SD: VWM1267)



: RF Signal Line
(S) : SPDL Servo Loop Line
(T) : TRKG Servo Loop Line
⇦ : FCUS Servo Loop Line

1. RESISTORS:
Indicated in Ω, 1/4W, 1/6W, 1/8W and 1/10W, ± 5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ± 1%, (G); ± 2%, (K); ± 10%, (M); ± 20% tolerance.

2. CAPACITORS:
Indicated in capacity (μF) /voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
▭ ;DC voltage (V) at play state.
⇦mA ;DC current at play state.
;Value in ( ) is DC current at stop state.

4. OTHERS:
▶(Red): Measurement point
➡: Signal route.
⊘: Adjusting point.
The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHS

FLKY ASS'Y
- S201:DIGITAL LEVEL
- S202:RANDOM PLAY
- S203:HILITE INTRO SCAN
- S204:CHP/TIME
- S205:EDIT
- S206:⏮
- S207:⏭
- S208:1
- S209:2
- S210:3
- S211:4
- S212:6
- S213:7
- S214:8
- S215:9
- S216:0
- S217:5
- S218:PGM
- S219:+10
- S220:CD DIRECT
- S221:▲
- S222:■
- S223:▶/❚❚
- S225:ROTARY ENCODER

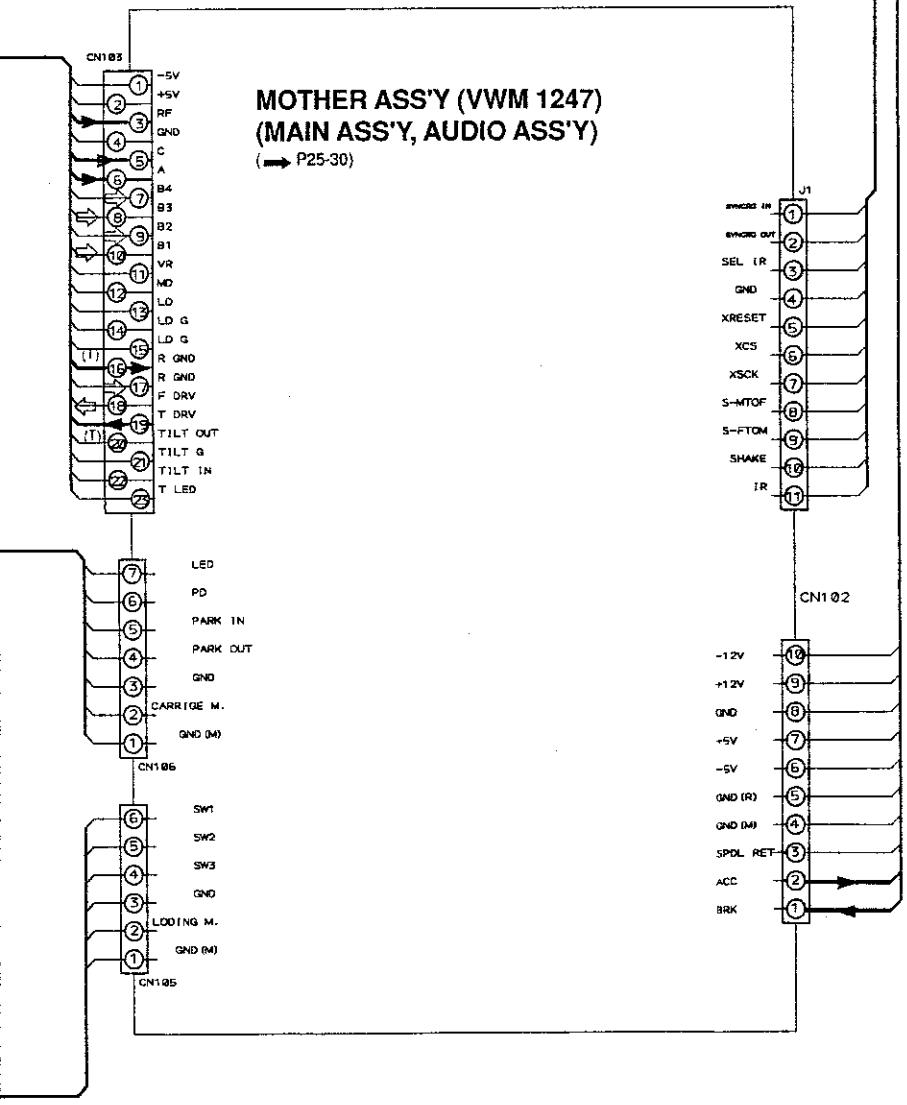
PSWB ASS'Y
- S224:STANDBY/ON

PKSB ASS'Y
- S4 :PARK OUT
- S5 :PARK IN

LOSB ASS'Y
- S1 :TILT, LOADING 1
- S2 :TILT, LOADING 2
- S3 :TILT, LOADING 3

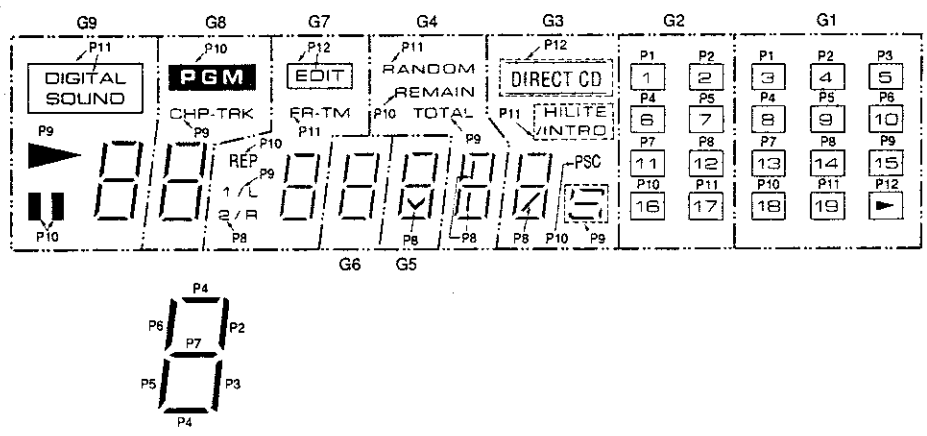
MOTHER ASS'Y (VWM 1247) (MAIN ASS'Y, AUDIO ASS'Y)

(➡ P25-30)



FL Display (V201: VAW 1026)

- ANODE GRID ASSIGNMENT



- ANODE GRID ASSIGNMENT & PIN ASSIGNMENT

	G9	G8	G7	G6	G5	G4	G3	G2	G1
P1	P1	P1	P1	P1	P1	P1	P1	1	3
P2	P2	P2	P2	P2	P2	P2	P2	2	4
P3	P3	P3	P3	P3	P3	P3	P3		5
P4	P4	P4	P4	P4	P4	P4	P4	6	8
P5	P5	P5	P5	P5	P5	P5	P5	7	9
P6	P6	P6	P6	P6	P6	P6	P6		10
P7	P7	P7	P7	P7	P7	P7	P7	11	13
P8			2/R		∨	!	/	12	14
P9	▶	CHP-TRK	1/L			TOTAL			15
P10	❚❚	PGM	REP			REMAIN	PSC	16	18
P11	DIGITAL SOUND		FR-TM			RANDOM	HILITE /INTRO	17	19
P12			EDIT				DIRECT CD		▶

- PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Assignment	F	F	F	NP	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	NP

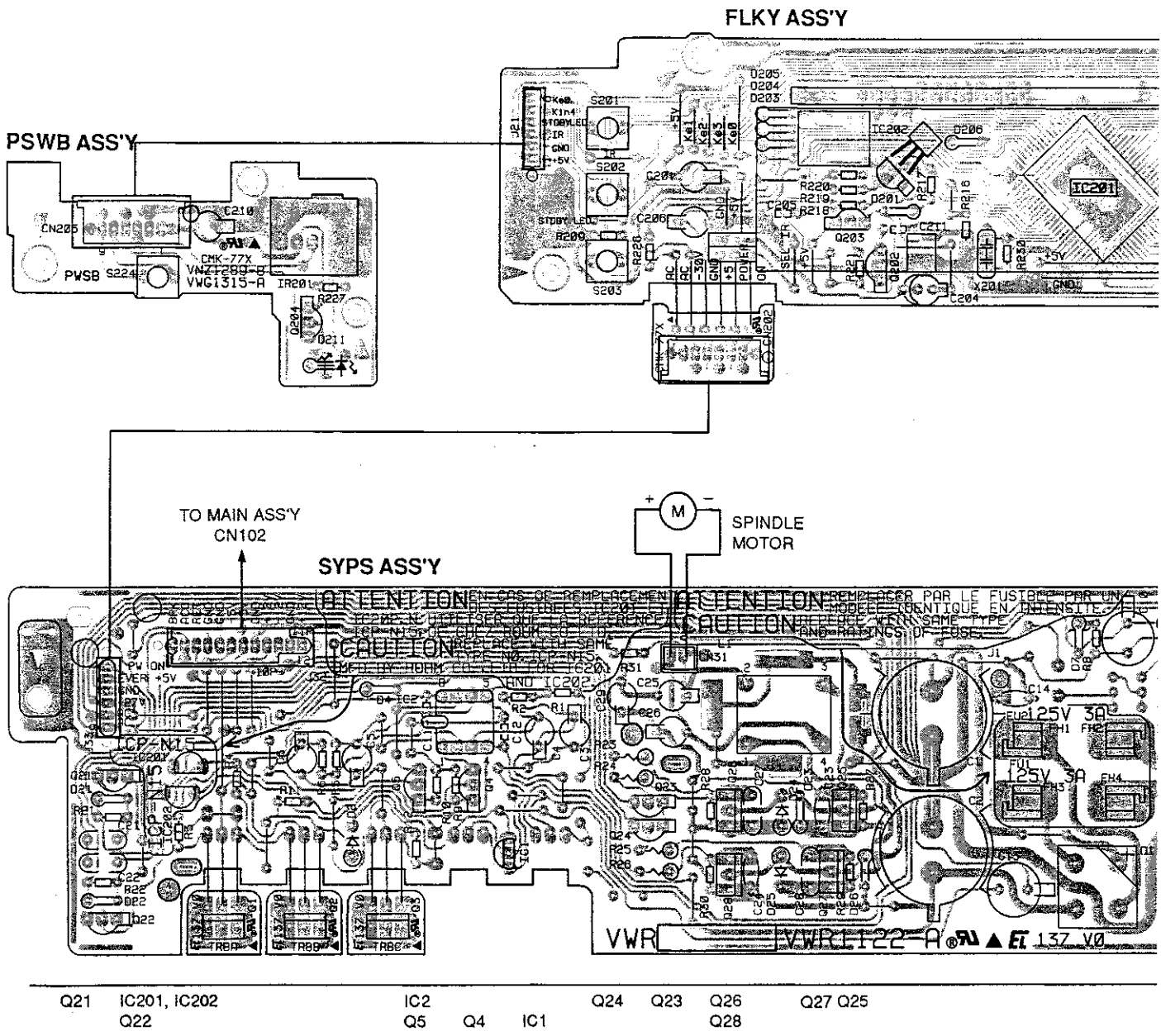
Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Assignment	NP	NP	NP	NP	NP	G9	G8	G7	G6	G5	G4	G3	G2	G1	NP	F	F	F

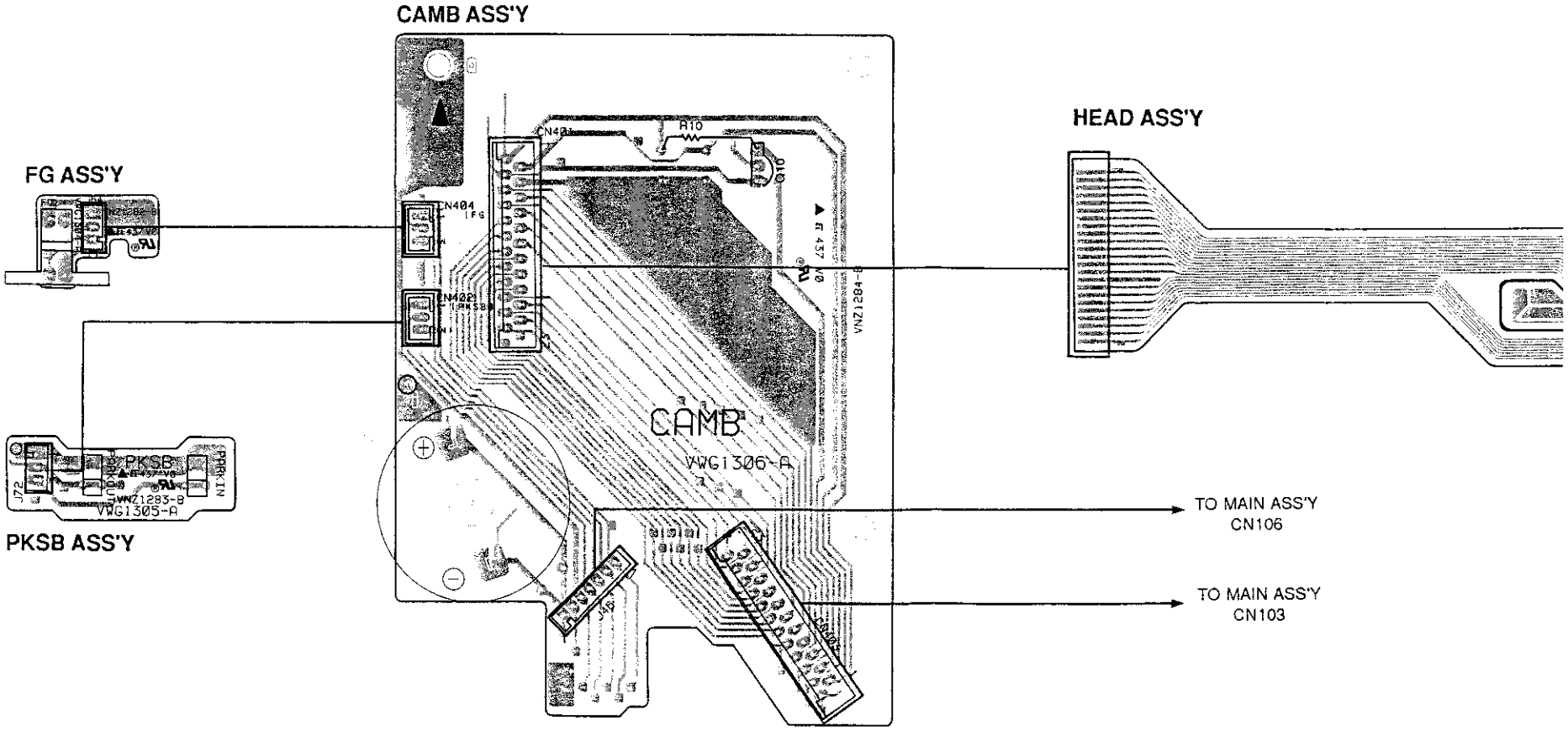
F: Filament G1~G9: Grid P1~P12: Anode NP: No pin

Q203 IC202 Q202

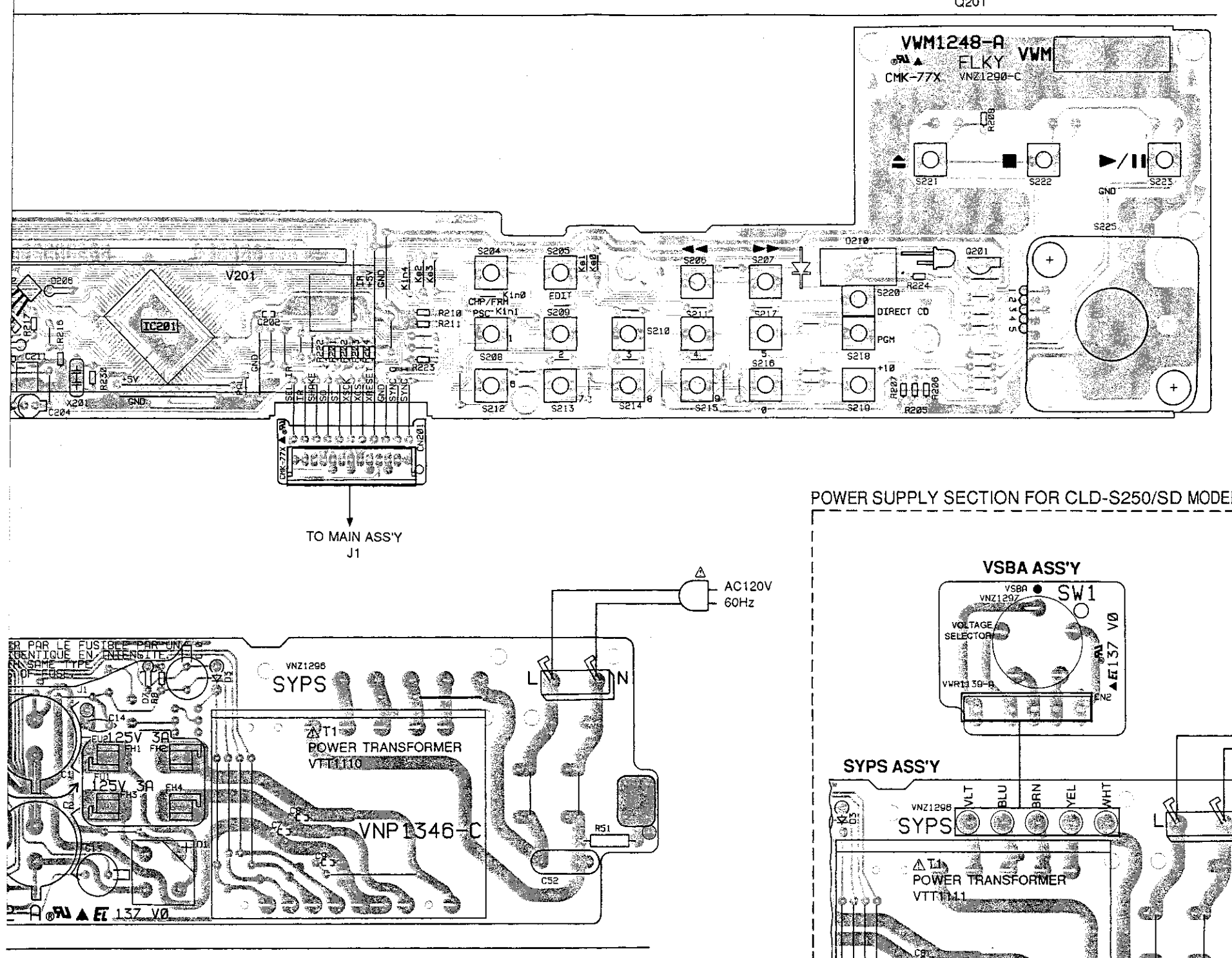
P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
					Styrol capacitor
		Diode			Electrolytic capacitor (Non polarized)
					Electrolytic capacitor (Nonseless)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

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

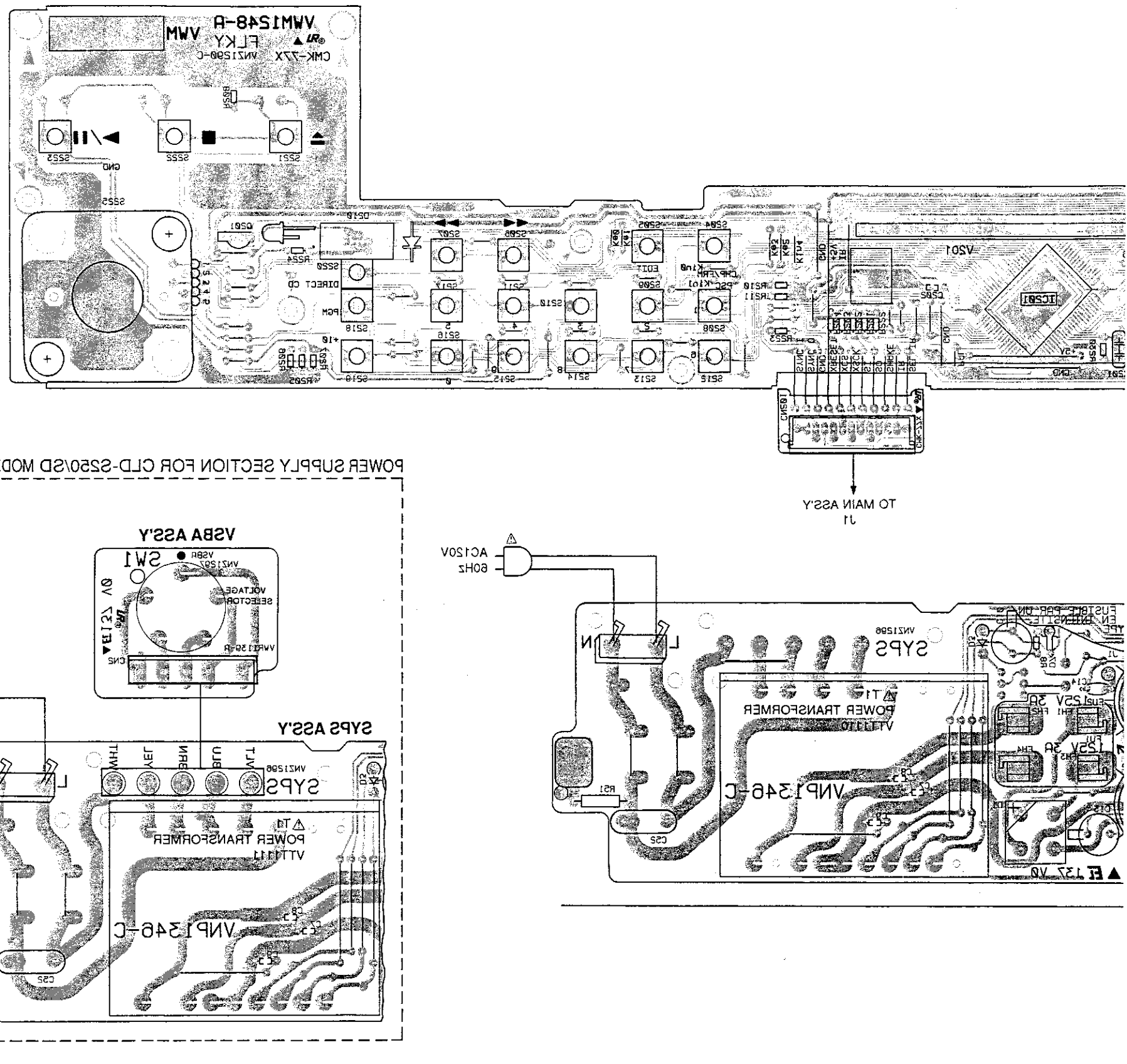




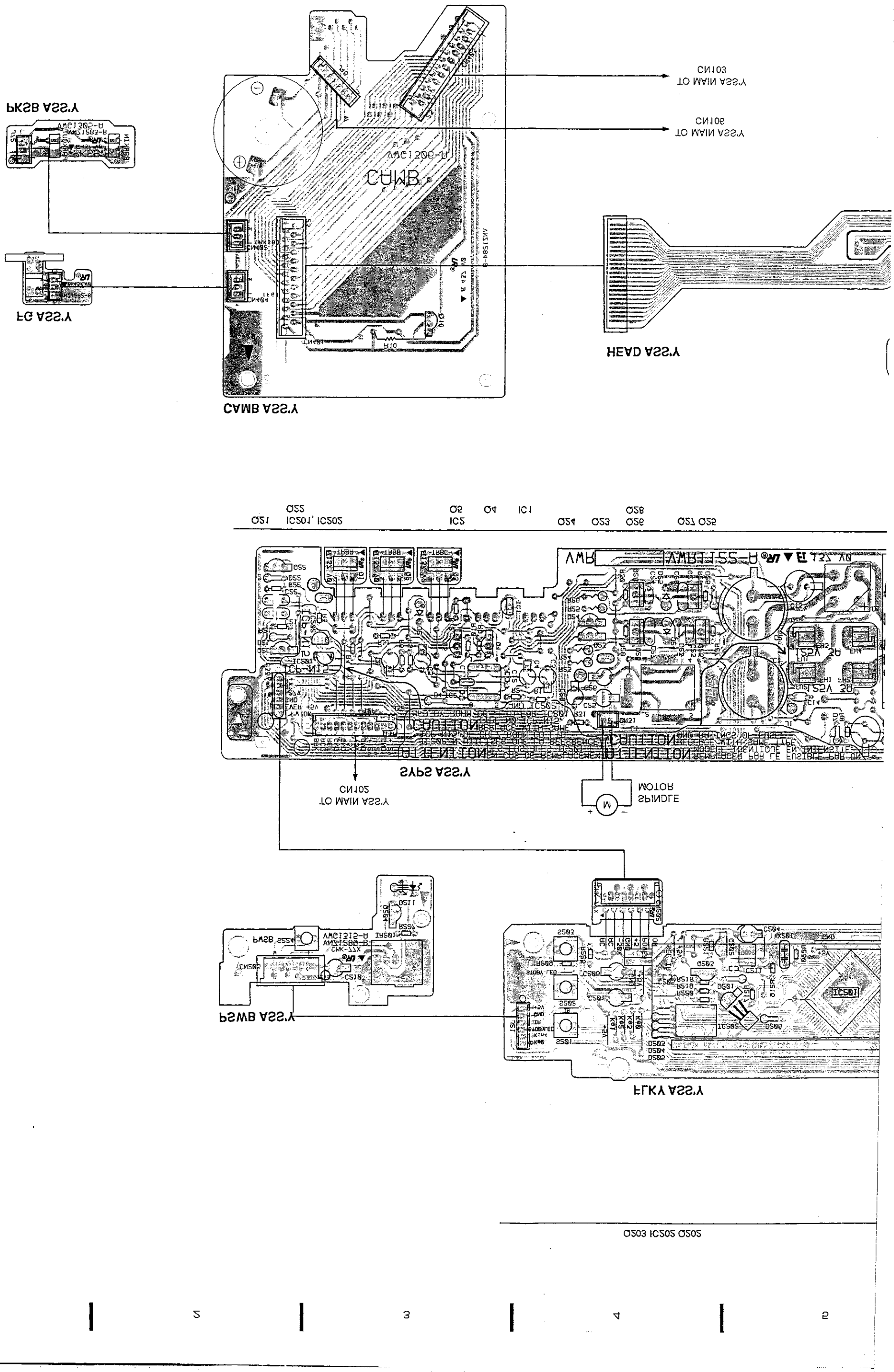
This PCB connection diagram is viewed



nnection diagram is viewed from parts mounted side.



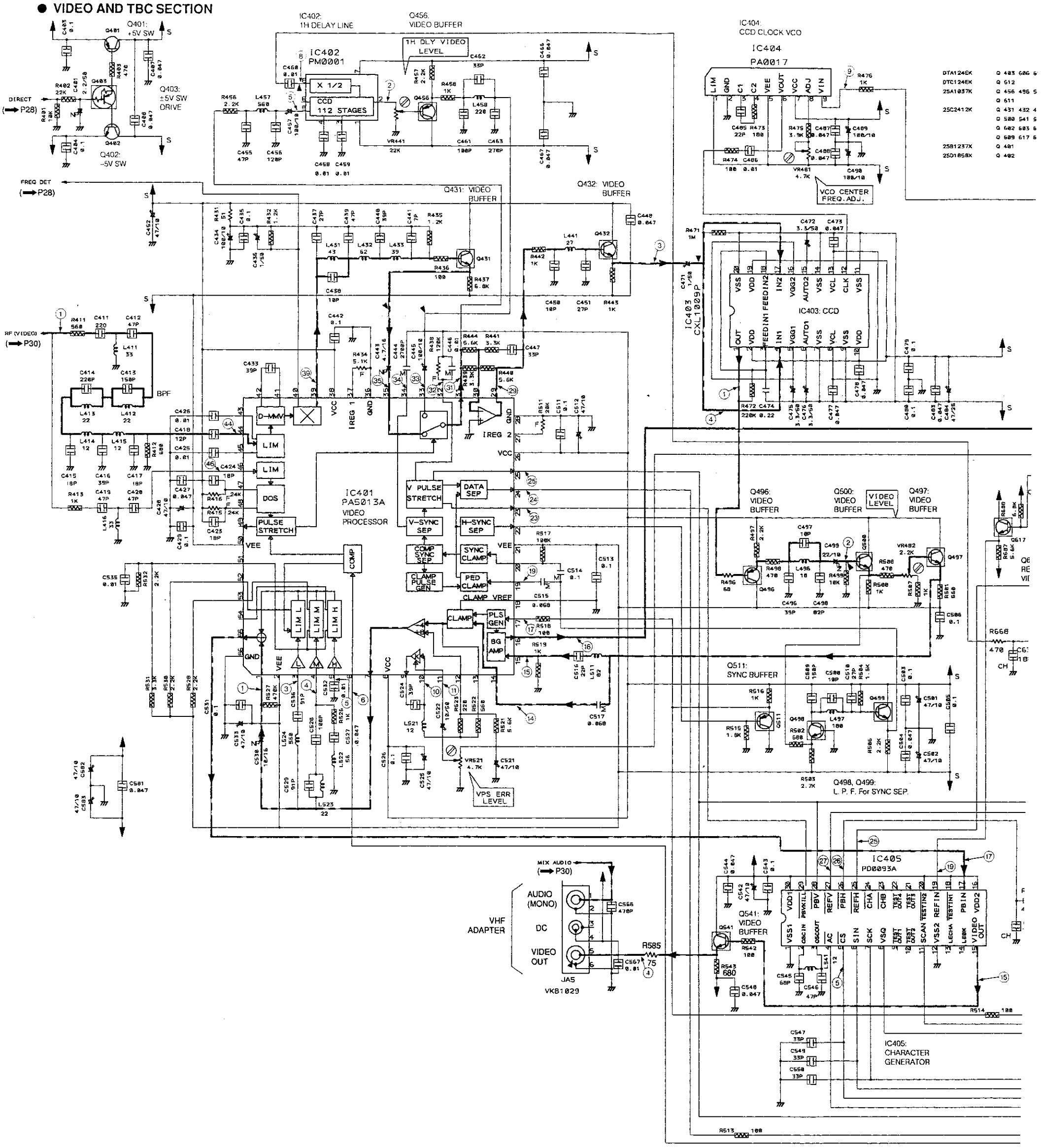
This PCB connection diagram is viewed from



gram is viewed from the foil side.

3.2 MAIN ASS'Y (1/2)

● VIDEO AND TBC SECTION



DTA124EK	Q 483 686 610 559
DTC124EK	Q 612
2SA1037K	Q 456 496 511 688
	Q 611
2SC2412K	Q 431 432 497 498 499
	Q 500 541 583 681
	Q 602 603 684 605 607
	Q 609 617 620
2SB1237X	Q 481
2SD1858X	Q 482

: RF Signal Line
: Video Signal Line
(S) : SPDL Servo Loop Line

IC602 (2/2):
CCD ERROR AMP

CCD ERR (→P30)

Q607, Q608:
V REF. GEN.

Q602:
TBC GAIN SWITCHING

Q603, Q604:
TRAPE
WAVEFORMER

Q605, Q606:
TBC ERROR
DET

Q601:
VPS ERR
BUFFER

Q497:
VIDEO
BUFFER

Q617:
REFERENCE
VIDEO BUFFER

LOGIC BLOCK

SYNC SIGNAL GEN
REF H GEN
REF SC GEN
PBH TIMING GEN
LOCK DETECTOR

PFC

SPINDLE DRIVE LOGIC

SERIAL–PARALEL DECORDER

IC601
PM3002
TBC SERVO &
SYNC GEN

BOTH SW 10&11 CLOSE AT CDV

CD ACTIVE

COLOR CONTROLE

(BURST) LOOP

(H LOOP)

(TBC LOOP)

(SPDL) LOOP

Q612:
CD/LD
SPDL LOOP
SWITCHING

Q611:
CD/LD
SPDL LOOP
SWITCHING

CD (→P28)
ACCONT (→P28)
SPDL RTN (→P28)
MDP (→P30)
GPWM (→P28)
VCXO DRV (→P30)

VC901
VCM-008
MASTER
CLOCK ADJ

VSS1026

Q610:
BUFFER

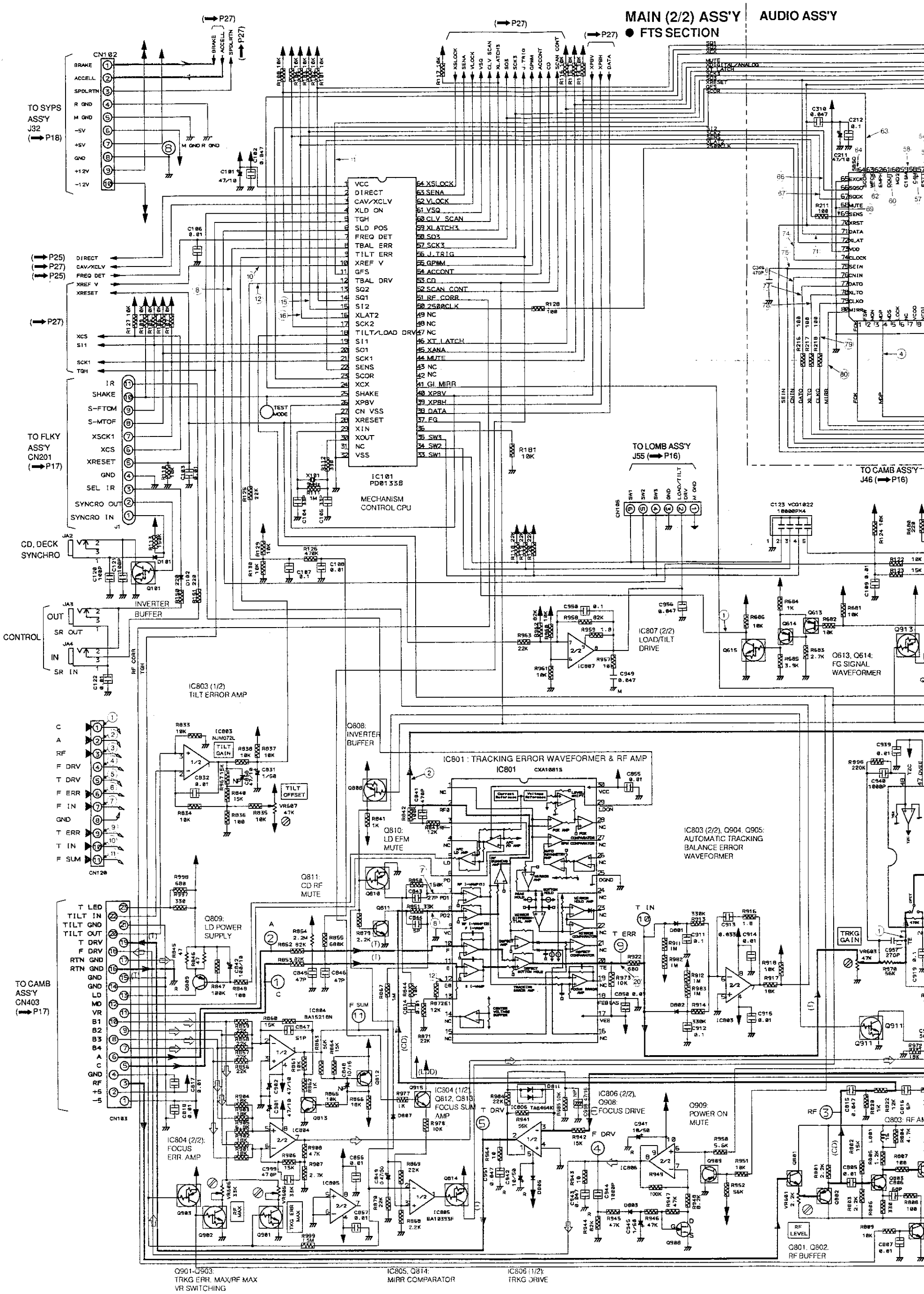
Q609:
VCXO SW

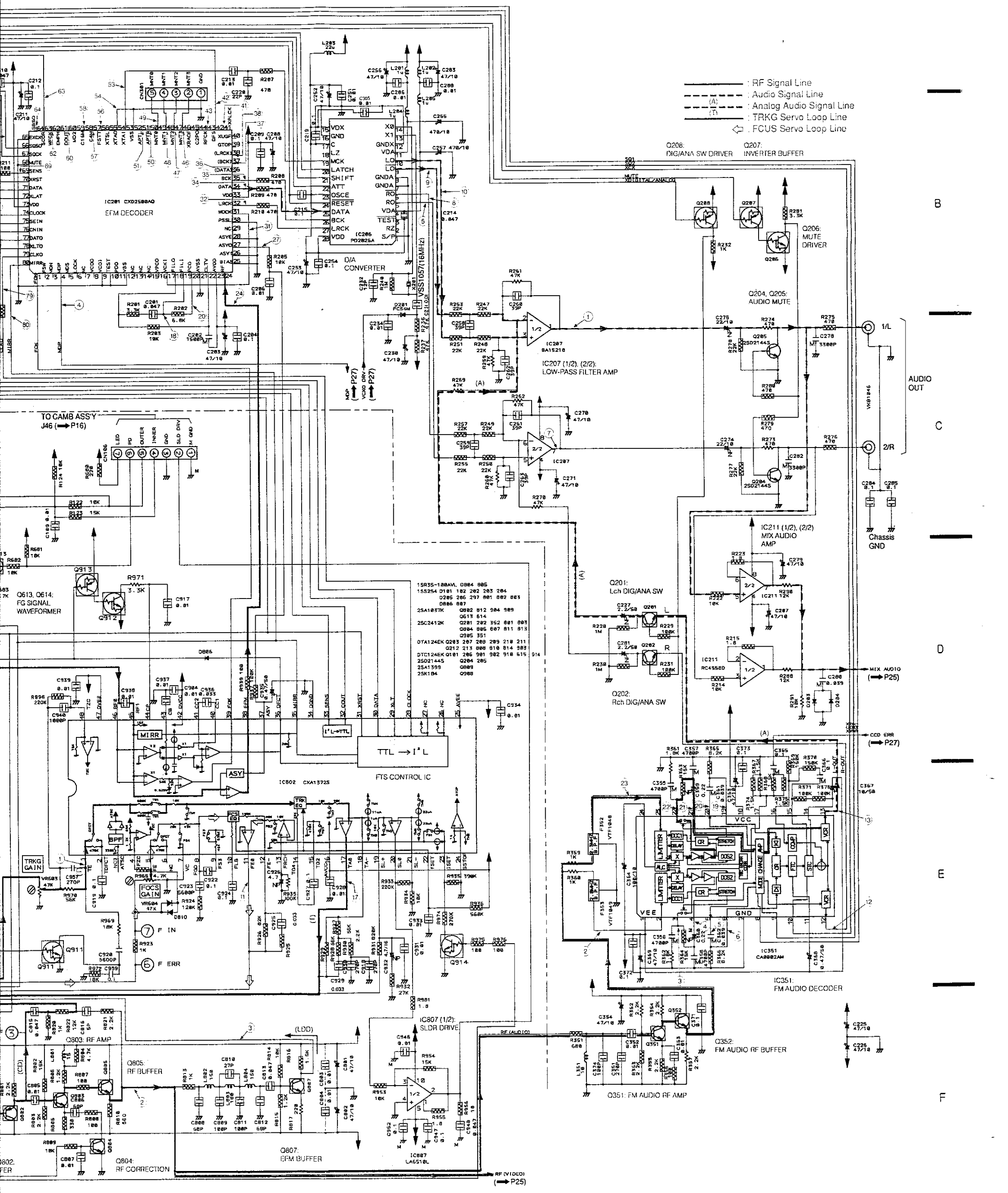
IC602 (1/2):
VCXO ERROR
AMP

IC405:
CHARACTER
GENERATOR

(→P28)

3.3 MAIN ASS'Y (2/2) AND AUDIO ASS'Y




: RF Signal Line
: Audio Signal Line
: Analog Audio Signal Line
: TRKG Servo Loop Line
: FCUS Servo Loop Line
IC201 CXD2500AQ
EFM DECODER
D/A CONVERTER
IC206 PD2825A
IC207 (1/2), (2/2): LOW-PASS FILTER AMP
IC207 BA15218
Q208: DIG/ANA SW DRIVER
Q207: INVERTER BUFFER
Q206: MUTE DRIVER
Q204, Q205: AUDIO MUTE
AUDIO OUT
1/L
2/R
Chassis GND
IC211 (1/2), (2/2) MIX AUDIO AMP
IC211 RC4558D
MIX AUDIO (⟶P25)
Q201: Lch DIG/ANA SW
Q202: Rch DIG/ANA SW
TO CAMB ASS'Y J46 (⟶P16)
Q613, Q614: FG SIGNAL WAVEFORMER
Q803: RF AMP
Q805: RF BUFFER
Q804: RF CORRECTION
Q807: EFM BUFFER
IC802 CXA1372S
FTS CONTROL IC
IC807 (1/2): SLDR DRIVE
IC807 LA6510L
TRKG GAIN
FOCS GAIN
F IN
F ERR
IC351 CA0002AM
IC351: FM AUDIO DECODER
Q352: FM AUDIO RF BUFFER
Q351: FM AUDIO RF AMP
RF (AUDIO)
RF (VIDEO) (⟶P25)
CCD ERR (⟶P27)
MDP (⟶P27)
VCKO DRV (⟶P27)
1SR35-100AVL D804 805
1SS254 D101 102 202 203 204 D205 206 297 801 802 803 D806 807
2SA1037K Q802 812 904 909 Q613 614
2SC2412K Q201 202 352 801 803 Q804 805 807 811 813 Q905 351
DTA124EK Q203 207 208 209 210 211 Q212 213 808 810 814 903
DTC124EK Q101 206 901 902 910 915 914
2SD2144S Q204 205
2SA1399 Q809
2SK184 Q968

WAVEFORMS AND VOLTAGES
VIDEO AND TBC SECTION

Note: (No.) in the table correspond to the pin number.

IC401 (PA5013A)

① 2Vp-p, 63.5μS
⑯ 1Vp-p, 63.5μS
㉝ approx. 450mVp-p
③ 2Vp-p
⑰ 4Vp-p, 63.5μS
㉞ 2.5Vp-p, 17.5mS
④ 1.5Vp-p, 63.5μS
⑲ 2.5Vp-p, 63.5μS
㉟ 500mVp-p
⑤ 1.5Vp-p, 63.5μS
㉓ 5Vp-p, 63.5μS
㊴ approx. 1.2Vp-p
⑥ 2Vp-p, 17.5mS
㉔ 4Vp-p, 17.5mS
㊹ 300mVp-p, Range H:2mS/div
⑩ 500mVp-p
㉕ 5Vp-p, 17.5mS
㊻ 1Vp-p, Range H:2mS/div
⑪ 1V/div 2mS/div
㉘ 1.25Vp-p
⑭ 600mVp-p
㉛ 700mVp-p
⑮ 200mVp-p
㉜ 4Vp-p, 17.5mS

IC402 (PM0001)

② approx. 1Vp-p
⑤ 450mVp-p
⑧ 0.3μS, 450mVp-p

IC403 (CXL1009P)

① 1.25Vp-p
㉕ 5Vp-p, 63.5μS
④ 1.25Vp-p
㉖ 5Vp-p, 63.5μS

IC404 (PA0017)

⑨ approx. 300mVp-p

IC405 (PD0093A)

⑤ 4Vp-p, 17.5mS
⑮ 2Vp-p
⑰ 2Vp-p
⑲ 1.1Vp-p
㉗ 5Vp-p, 17.5mS

IC601 (PM3002)

⑩ 5Vp-p, 63.5μS
⑲ 300mVp-p
㉔ 5Vp-p
㉕ 3Vp-p
㉜ H: 20mS/Div. 5Vp-p, DC mode
㊹ 4Vp-p
㊶ 5Vp-p, 22.5μS
㊷ 100mV, 0V
㊸ 5Vp-p
㊺ 5Vp-p

Others Point

① RF (Between R411 and R413) Range H:2mS/div, approx. 2Vp-p
② Lead wire of C499 1.25Vp-p
③ Q432 Emitter 1.25Vp-p
④ VIDEO OUT terminal (75Ω terminated) 1.0Vp-p
⑤ Q601 Emitter 300mVp-p

FTS AND AUDIO SECTION

Note: (No.) in the table correspond to the pin number.

IC101 (PD0133B)

⑧ H: 5mS/Div. 2Vp-p, OV, DC mode
⑩ H: 10mS/Div. 5Vp-p, OV, DC mode
⑪ H: 10mS/Div. 5Vp-p, OV, DC mode
⑫ H: 0.5mS/Div. 2.3Vp-p, OV, DC mode
⑮ H: 10mS/Div. 5Vp-p, OV, DC mode
⑯ H: 2mS/Div. 4.7Vp-p, OV, DC mode

IC201 (CXD2500AQ)

④ H: 10μS/Div. 2.7Vp-p, OV, DC mode
⑱ 0.8Vp-p, 2.8μs
⑳ H: 5μS/Div. 3.5Vpp, OV, DC mode
㉔ 1Vp-p
㉗ 4.8Vp-p, 0.23μs
㉛ 4.8Vp-p, 11.2μs
㉞ 5μs, 4.8Vp-p
㊱ 3.6μs, 4.8Vp-p
㊲ 1.5μs, 4.8Vp-p
㊳ 22μs, 4.8Vp-p
㊶ 0.23μs, 4.8Vp-p
㊷ 4.8Vp-p, 23μs
㊸ 17μs, 4.8Vp-p
㊻ 17μs, 4.8Vp-p
㊼ 17μs, 4.8Vp-p
㊽ 140μs, 4.8Vp-p
㊾ 4.8Vp-p
㊿ 22.5μs, 4.8Vp-p
(51) 22.5μs, 4.8Vp-p
(53) 60μs, 4.8Vp-p
(54) H: 50nS/Div. 2.7Vp-p, OV, DC mode
(56) 90μs, 4.8Vp-p
(57) 240ns, 4.8Vp-p
(58) 60ns, 4.8Vp-p
(60) 0.2μs, 5Vp-p
(62) 68μs, 5Vp-p
(63) 14μs, 5Vp-p
(64) 13.5μs, 5Vp-p
(66) 16μs, 5Vp-p
(67) 1.6μs, 5Vp-p
(69) 16μs, 5Vp-p
(71) 5Vp-p, 16μs
(74) 1.6μs, 5Vp-p
(75) H: 0.5mS/Div. 5Vp-p, OV, DC mode
(76) H: 10mS/Div. 5Vp-p, OV, DC mode
(77) H: 0.5mS/Div. 5Vp-p, OV, DC mode
(78) H: 0.5mS/Div. 5Vp-p, OV, DC mode
(79) H: 5μS/Div. OV, DC mode
(80) H: 5mS/Div. 5Vp-p, OV, DC mode

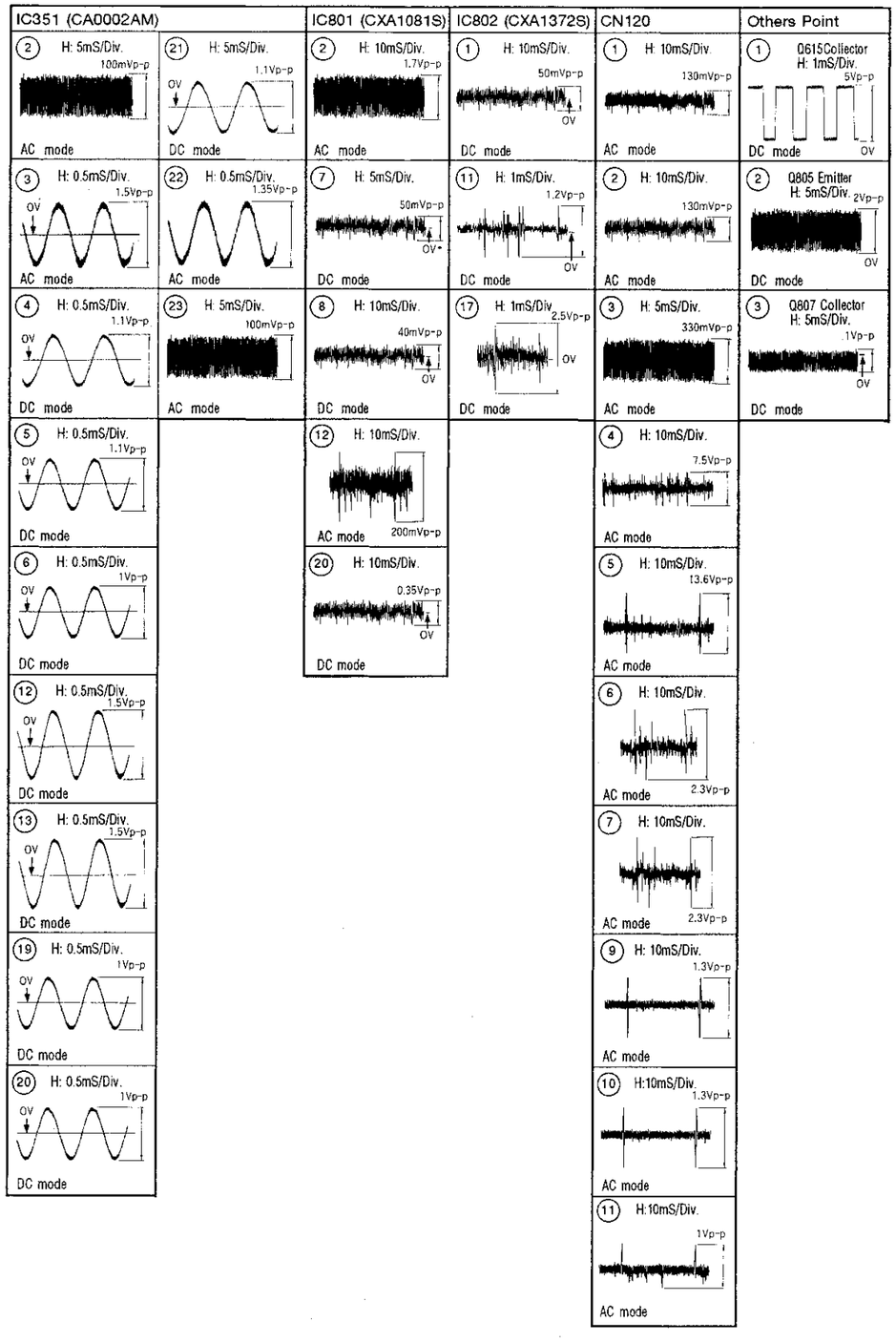
IC206 (PD2026A)

(5), (10) H: 0.5mS/Div. 4Vp-p, OV, DC mode
(6), (9) H: 0.5mS/Div. 4Vp-p, OV, DC mode

IC207 (BA15218)

(1), (7) H: 0.5mS/Div. 6Vp-p, OV, DC mode

Note: (No.) in the table correspond to the pin number.



Note: Waveforms and voltages are at the PLAY mode.
IC201 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	4.8	15	0	29	0	43	*	57	*	61	*
2	0	16	4.8	30	0	44	0	58	*	72	5
3	0	17	0	31	*	45	4.8	59	5	73	5
4	*	18	*	32	*	46	*	60	*	74	*
5	0	19	2.4	33	4.8	47	*	61	5	75	*
6	4.8	20	*	34	*	48	*	62	*	76	*
7	—	21	0	35	*	49	*	63	*	77	*
8	4.8	22	2.3	36	*	50	*	64	*	78	*
9	0	23	4.8	37	*	51	*	65	0	79	*
10	0	24	*	38	*	52	0	66	*	80	*
11	0	25	0	39	0	53	*	67	*		
12	0	26	0	40	4.8	54	*	68	0		
13	0	27	*	41	*	55	0	69	*		
14	0	28	0	42	*	56	*	70	5		

*: Refer to waveforms

Note: Waveforms and voltages are at the PLAY mode.
IC351 (CA0002AM)

Pin No.	Voltage	Pin No.	Voltage
1	−5	13	*
2	*	14	−0.6
3	*	15	−0.6
4	*	16	0
5	*	17	0
6	*	18	+5
7	0	19	*
8	0	20	*
9	0	21	*
10	+5	22	*
11	+2	23	*
12	*	24	−2.2

*: Refer to waveform

This PCB connection diagram is viewed from parts mounted side.

AUDIO ASS'Y

AUDIO OUT
- 1/L
- 2/L

MAIN ASS'Y

VHF ADAPTER
- VIDEO OUT
- DC
- AUDIO (MONO)

CONTROL
- IN
- OUT

CD, DECK SYNCHRO

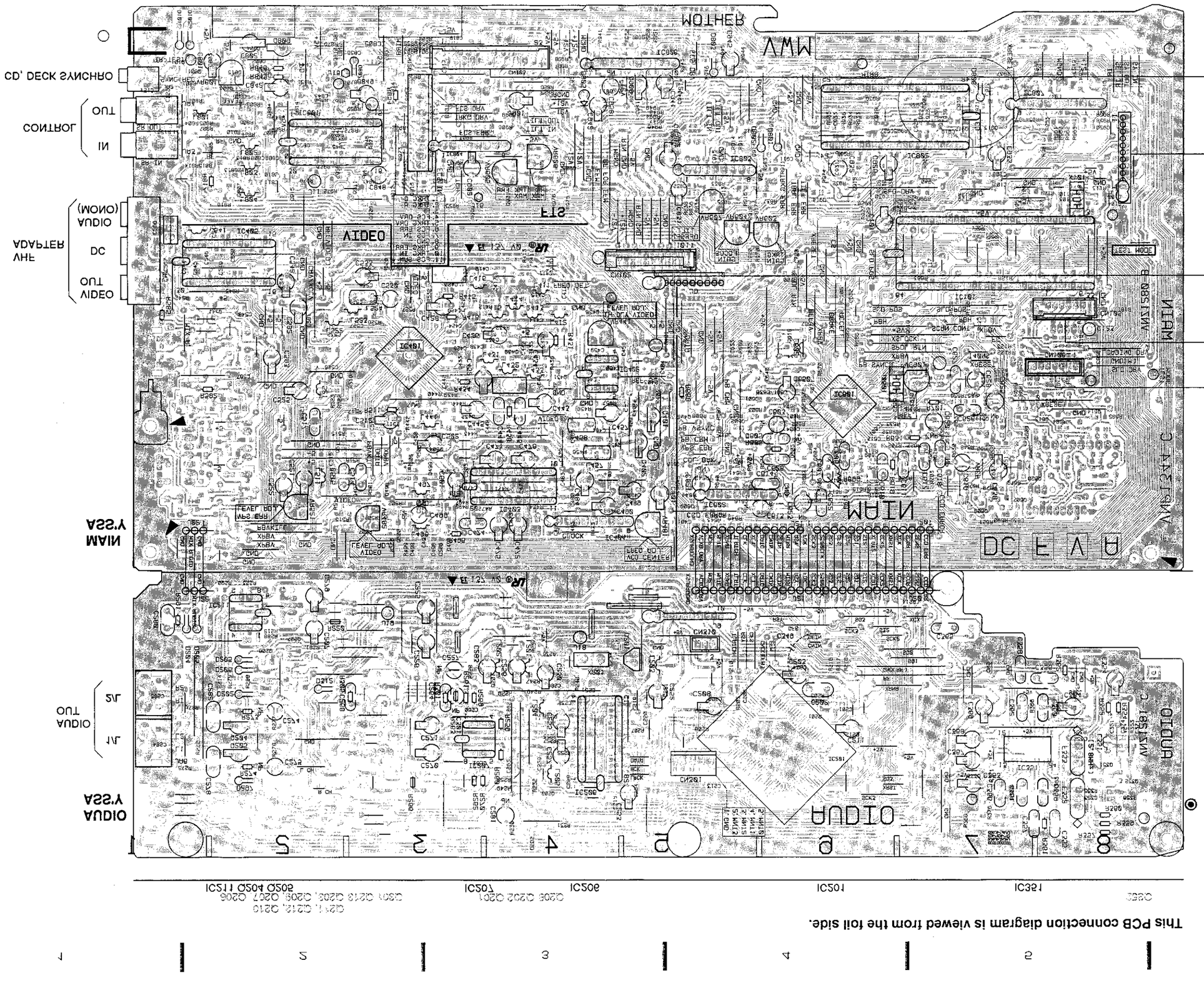
TO CAMB ASS'Y J46

TO LOMB ASS'Y J55

TO SYPS ASS'Y J32

TO FLKY ASS'Y CN201

TO CAMB ASS'Y CN403



This PCB connection diagram is viewed from the foil side.

4. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *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%).

560Ω → 56 × 10¹ → 561 ..... RD1/8PM 5 6 1 J
47kΩ → 47 × 10³ → 473 ..... RD1/4PS 4 7 3 J
0.5Ω → 0R5 ..... RN2H 0 R 5 K
1Ω → 010 ..... RS1P 0 1 0 K

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

5.62kΩ → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
◉		MOTHER ASS'Y	VWM1247
NSP		├ MAIN ASS'Y	VWX1102
NSP		└ AUDIO ASS'Y	VWX1103
◉		FLKB ASS'Y	VWM1248
NSP		├ FLKY ASS'Y	VWG1314
NSP		└ PSWB ASS'Y	VWG1315
◉		SYPS ASS'Y	VWR1122
◉		MACB ASS'Y	VWM1250
NSP		├ FG ASS'Y	VWG1304
NSP		├ PKSB ASS'Y	VWG1305
NSP		├ CAMB ASS'Y	VWG1306
NSP		├ LOSB ASS'Y	VWG1307
NSP		└ LOMB ASS'Y	VWG1308
MAIN ASS'Y			
SEMICONDUCTORS			
	IC101	MECHANISM CONT. MCU	PD0133B
	IC401	VIDEO IC	PA5013A
	IC402	CCD DELAY LINE	PM0001
	IC403	IC	CXL1009P
	IC404	IC	PA0017
	IC405	CHARACTER GENE IC	PD0093A
	IC601	TBC IC	PM3002
	IC602	IC	BA15218N
	IC801	PRE AMP IC	CXA1081S
	IC802	SERVO IC	CXA1372S
	IC803	OP AMP IC	NJM072L
	IC804	IC	BA15218N
	IC805	COMPARATOR	BA10393F
	IC806	POWER OP AMP	TA8464K
	IC807	POWER OP AMP	LA6510L
	Q101	DIGITAL TRANSISTOR	DTC124EK
	Q401	TRANSISTOR	2SB1237X
	Q402	TRANSISTOR	2SD1858X
	Q403	DIGITAL TRANSISTOR	DTA124EK
	Q431,432	CHIP TRANSISTOR	2SC2412K
	Q456,496	CHIP TRANSISTOR	2SA1037K
	Q497-500	CHIP TRANSISTOR	2SC2412K
	Q511	CHIP TRANSISTOR	2SA1037K
	Q541	CHIP TRANSISTOR	2SC2412K
	Q560	DIGITAL TRANSISTOR	DTC124EK
	Q601-603	CHIP TRANSISTOR	2SC2412K
	Q604,605	CHIP TRANSISTOR	2SC2412K
	Q606	DIGITAL TRANSISTOR	DTA124EK
	Q607	CHIP TRANSISTOR	2SC2412K
	Q608	CHIP TRANSISTOR	2SA1037K
	Q609	CHIP TRANSISTOR	2SC2412K
	Q610	DIGITAL TRANSISTOR	DTA124EK
	Q611	CHIP TRANSISTOR	2SA1037K
	Q612	DIGITAL TRANSISTOR	DTC124EK
	Q613,614	CHIP TRANSISTOR	2SA1037K
	Q615	DIGITAL TRANSISTOR	DTC124EK
	Q617,620	CHIP TRANSISTOR	2SC2412K
	Q801	CHIP TRANSISTOR	2SC2412K
	Q802	CHIP TRANSISTOR	2SA1037K
	Q803-805	CHIP TRANSISTOR	2SC2412K
	Q807	CHIP TRANSISTOR	2SC2412K
	Q808	DIGITAL TRANSISTOR	DTA124EK
	Q809	TRANSISTOR	2SA1399
	Q810	DIGITAL TRANSISTOR	DTA124EK
	Q811	CHIP TRANSISTOR	2SC2412K
	Q812	CHIP TRANSISTOR	2SA1037K
	Q813	CHIP TRANSISTOR	2SC2412K
	Q814,901	DIGITAL TRANSISTOR	DTA124EK
	Q902,903	DIGITAL TRANSISTOR	DTC124EK
	Q908	N-FET	2SK184
	Q909	CHIP TRANSISTOR	2SA1037K
	Q911,912	DIGITAL TRANSISTOR	DTC124EK
	Q913	DIGITAL TRANSISTOR	DTA124EK
	Q914	DIGITAL TRANSISTOR	DTC124EK
	Q915	CHIP TRANSISTOR	2SC2412K
	D101,102	DIODE	1SS254
	D801-803	DIODE	1SS254
	D805	DIODE	1SR35-100AVL
	D806,807	DIODE	1SS254
	D810,811	DIODE	DA204K
COILS			
	L411	AXIAL INDUCTOR	LAU330J
	L412,413	AXIAL INDUCTOR	LAU220J
	L414,415	AXIAL INDUCTOR	LAU120J
	L416	AXIAL INDUCTOR	LAU330J
	L431	AXIAL INDUCTOR	LAU430J
	L432	AXIAL INDUCTOR	LAU620J
	L433	AXIAL INDUCTOR	LAU390J
	L441	AXIAL INDUCTOR	LAU270J
	L457	RADIAL INDUCTOR	LFA561J
	L458	RADIAL INDUCTOR	LFA221J
	L496	AXIAL INDUCTOR	LAU180J
	L497	AXIAL INDUCTOR	LAU181J
	L511	AXIAL INDUCTOR	LAU820J
	L521	AXIAL INDUCTOR	LAU120J
	L522	AXIAL INDUCTOR	LAU560J

Mark	No.	Description	Part No.
	L523	AXIAL INDUCTOR	LAU220J
	L524	RADIAL INDUCTOR	LFA561J
	L541	AXIAL INDUCTOR	LAU120J
	L801	AXIAL INDUCTOR	LAU150J
	L802	AXIAL INDUCTOR	LAU151J
	L803	AXIAL INDUCTOR	LAU181J
	L804	AXIAL INDUCTOR	LAU151J

CAPACITORS

	C101	ELECTR. CAPACITOR	CEAS470M10
	C102	CERAMIC CAPACITOR	CKSQYF473Z25
	C103	CHIP CAPACITOR	CKSQYF103Z50
	C104,105	CHIP CAPACITOR	CCSQCH330J50
	C106	CHIP CAPACITOR	CKSQYF103Z50
	C107	CERAMIC CAPACITOR	CKSQYF104Z25
	C108,109	CHIP CAPACITOR	CKSQYF103Z50
	C120,121	CHIP CAPACITOR	CCSQCH101J50
	C122	CHIP CAPACITOR	CKSQYF103Z50
	C123	CAPACITOR ARRAY	VCG1022
	C401	ELECTR. CAPACITOR	CEANP2R2M50
	C403,404	CERAMIC CAPACITOR	CKSQYF104Z25
	C407,408	CERAMIC CAPACITOR	CKSQYF473Z25
	C411	CHIP CAPACITOR	CCSQCH221J50
	C412	CHIP CAPACITOR	CCSQCH470J50
	C413	CHIP CAPACITOR	CCSQCH151J50
	C414	CHIP CERAMIC	CCSQCH221J50
	C415,417	CHIP CAPACITOR	CCSQCH180J50
	C416	CHIP CAPACITOR	CCSQCH390J50
	C418	CHIP CAPACITOR	CCSQCH120J50
	C419,420	CHIP CAPACITOR	CCSQCH470J50
	C423,424	CHIP CAPACITOR	CCSQCH180J50
	C425,426	CHIP CAPACITOR	CKSQYF103Z50
	C427	CERAMIC CAPACITOR	CKSQYF473Z25
	C428	ELECTR. CAPACITOR	CEAS470M10
	C429	CERAMIC CAPACITOR	CKSQYF104Z25
	C433	CHIP CAPACITOR	CCSQCH390J50
	C434	ELECTR. CAPACITOR	CEAS101M10
	C435	CERAMIC CAPACITOR	CKSQYF104Z25
	C436	ELECTR. CAPACITOR	CEAS010M50
	C437	CHIP CAPACITOR	CCSQCH270J50
	C438	CHIP CAPACITOR	CCSQCH100D50
	C439	CHIP CAPACITOR	CCSQCH470J50
	C440	CHIP CAPACITOR	CCSQCH390J50
	C441	CHIP CAPACITOR	CCSQCH070D50
	C442	CERAMIC CAPACITOR	CKSQYF104Z25
	C443	ELECTR. CAPACITOR	CEJANP4R7M16
	C444	MYLAR FILM CAPACITOR	CQMA272J50
	C445	ELECTR. CAPACITOR	CEAS101M10
	C446	MYLAR FILM CAPACITOR	CQMA103J50
	C447	CHIP CAPACITOR	CCSQCH330J50
	C448	CERAMIC CAPACITOR	CKSQYF473Z25
	C450	CHIP CAPACITOR	CCSQCH100D50
	C451	CHIP CAPACITOR	CCSQCH270J50
	C452	ELECTR. CAPACITOR	CEAS470M10
	C455	CHIP CAPACITOR	CCSQCH470J50
	C456	CHIP CAPACITOR	CCSQCH121J50
	C457	ELECTR. CAPACITOR	CEAS101M10
	C458-460	CHIP CAPACITOR	CKSQYF103Z50
	C461	CHIP CAPACITOR	CCSQCH101J50
	C462	CHIP CAPACITOR	CCSQCH330J50
	C463	CHIP CERAMIC CAPACITOR	CCSQCH271J50
	C466,467	CERAMIC CAPACITOR	CKSQYF473Z25
	C471	ELECTR. CAPACITOR	CEAS010M50
	C472	ELECTR. CAPACITOR	CEAS3R3M50

Mark	No.	Description	Part No.
	C473	CERAMIC CAPACITOR	CKSQYF473Z25
	C474	AUDIO FILM CAPACITOR	CFTXA224J50
	C475,476	ELECTR. CAPACITOR	CEAS3R3M50
	C477,478	CERAMIC CAPACITOR	CKSQYF473Z25
	C479,480	CERAMIC CAPACITOR	CKSQYF104Z25
	C483	CERAMIC CAPACITOR	CKSQYF473Z25
	C484	ELECTR. CAPACITOR	CEAS470M25
	C485	CHIP CERAMIC CAPACITOR	CCSQCH220J50
	C486	CHIP CAPACITOR	CKSQYF103Z50
	C487,488	CERAMIC CAPACITOR	CKSQYF473Z25
	C489,490	ELECTR. CAPACITOR	CEAS101M10
	C496	CHIP CAPACITOR	CCSQCH390J50
	C497	CHIP CAPACITOR	CCSQCH100D50
	C498	CHIP CAPACITOR	CCSQCH820J50
	C499	ELECTR. CAPACITOR	CEANP220M10
	C500	CHIP CAPACITOR	CCSQCH100D50
	C501,502	ELECTR. CAPACITOR	CEAS470M10
	C503	CERAMIC CAPACITOR	CKSQYF104Z25
	C504	CERAMIC CAPACITOR	CKSQYF473Z25
	C505,506	CERAMIC CAPACITOR	CKSQYF104Z25
	C509	CHIP CAPACITOR	CCSQCH151J50
	C510	CHIP CAPACITOR	CCSQCH270J50
	C511	CERAMIC CAPACITOR	CKSQYF104Z25
	C512	ELECTR. CAPACITOR	CEAS470M10
	C513	CERAMIC CAPACITOR	CKSQYF104Z25
	C514	AUDIO FILM CAPACITOR	CFTXA104J50
	C515	AUDIO FILM CAPACITOR	CFTXA683J50
	C516	CHIP CERAMIC CAPACITOR	CCSQCH220J50
	C517	AUDIO FILM CAPACITOR	CFTXA683J50
	C521	ELECTR. CAPACITOR	CEAS470M10
	C522	ELECTR. CAPACITOR	CEHAQ100M50
	C524	CHIP CAPACITOR	CCSQCH390J50
	C525	ELECTR. CAPACITOR	CEAS470M10
	C526	CERAMIC CAPACITOR	CKSQYF104Z25
	C527	CERAMIC CAPACITOR	CKSQYF473Z25
	C528	CHIP CAPACITOR	CCSQCH101J50
	C529	CHIP CAPACITOR	CCSQCH910J50
	C530	ELECTR. CAPACITOR	CEANP100M16
	C531	CERAMIC CAPACITOR	CKSQYF104Z25
	C532	CHIP CAPACITOR	CKSQYF103Z50
	C533	ELECTR. CAPACITOR	CEAS470M10
	C535	CHIP CAPACITOR	CKSQYF103Z50
	C536	CHIP CAPACITOR	CCSQCH910J50
	C542	ELECTR. CAPACITOR	CEAS470M10
	C543	CERAMIC CAPACITOR	CKSQYF104Z25
	C544	CERAMIC CAPACITOR	CKSQYF473Z25
	C545	CHIP CAPACITOR	CCSQCH680J50
	C546	CHIP CAPACITOR	CCSQCH470J50
	C547	CHIP CAPACITOR	CCSQCH330J50
	C548	CERAMIC CAPACITOR	CKSQYF473Z25
	C549,550	CHIP CAPACITOR	CCSQCH330J50
	C566	CHIP CERAMIC CAPACITOR	CCSQCH471J50
	C567	CHIP CAPACITOR	CKSQYF103Z50
	C581	CERAMIC CAPACITOR	CKSQYF473Z25
	C582,583	ELECTR. CAPACITOR	CEAS470M10
	C601	CERAMIC CAPACITOR	CKSQYF473Z25
	C602	CHIP CAPACITOR	CCSQCH101J50
	C603	ELECTR. CAPACITOR	CEANP010M50
	C604	CHIP CAPACITOR	CKSQYF103Z50
	C605,606	AUDIO FILM CAPACITOR	CFTXA102J50
	C607	MYLAR FILM CAPACITOR	CQMA102J50
	C608	AUDIO FILM CAPACITOR	CFTXA152J50
	C609	CHIP CAPACITOR	CCSQCH330J50
	C610	MYLAR FILM CAPACITOR	CQMA223J50
	C611	MYLAR FILM CAPACITOR	CQMA272J50

Mark	No.	Description	Part No.
	C612	CHIP CAPACITOR	CCSQCH180J50
	C613	ELECTR. CAPACITOR	CEANP220M10
	C614	AUDIO FILM CAPACITOR	CFTXA332J50
	C615,616	CHIP CAPACITOR	CKSQYF103Z50
	C617	AUDIO FILM CAPACITOR	CQMA563J50
	C618	MYLAR FILM CAPACITOR	CQMA103J50
	C619	ELECTR. CAPACITOR	CEANP2R2M50
	C620,621	ELECTR. CAPACITOR	CEANP220M10
	C623	ELECTR. CAPACITOR	CEANP220M10
	C625	ELECTR. CAPACITOR	CEJANP4R7M16
	C626	AUDIO FILM CAPACITOR	CFTXA332J50
	C627	MYLAR FILM CAPACITOR	CQMA222J50
	C628	ELECTR. CAPACITOR	CEJANP4R7M16
	C629	CERAMIC CAPACITOR	CKSQYF473Z25
	C630,631	CHIP CAPACITOR	CCSQCH180J50
	C632	CHIP CAPACITOR	CCSQCH101J50
	C633-635	CHIP CAPACITOR	CCSQCH180J50
	C636,637	CHIP CAPACITOR	CKSQYF103Z50
	C638	ELECTR. CAPACITOR	CEAS470M10
	C639	CHIP CAPACITOR	CKSQYF103Z50
	C650	ELECTR. CAPACITOR	CEAS471M6R3
	C700	CHIP CAPACITOR	CKSQYF103Z50
	C801,802	ELECTR. CAPACITOR	CEAS470M10
	C803-805	CHIP CAPACITOR	CKSQYF103Z50
	C806	CHIP CAPACITOR	CCSQCH680J50
	C807	CHIP CAPACITOR	CKSQYF103Z50
	C808	CHIP CAPACITOR	CCSQCH680J50
	C809	CHIP CAPACITOR	CCSQCH101J50
	C810	CHIP CAPACITOR	CCSQCH270J50
	C811	CHIP CAPACITOR	CCSQCH101J50
	C812	CHIP CAPACITOR	CCSQCH680J50
	C813	CERAMIC CAPACITOR	CKSQYF473Z25
	C814	CHIP CAPACITOR	CKSQYF103Z50
	C815	CERAMIC CAPACITOR	CKSQYF473Z25
	C816	CHIP CAPACITOR	CCSQCH050C50
	C817,818	CHIP CAPACITOR	CKSQYF103Z50
	C831	ELECTR. CAPACITOR	CEAS010M50
	C832	CHIP CAPACITOR	CKSQYF103Z50
	C841	CHIP CERAMIC CAPACITOR	CCSQCH471J50
	C842	ELECTR. CAPACITOR	CEAS101M10
	C843	CHIP CAPACITOR	CCSQCH270J50
	C844	CHIP CAPACITOR	CCSQCH050C50
	C845,846	CHIP CAPACITOR	CCSQCH470J50
	C847	CERAMIC CAPACITOR	CCSQCH510J50
	C848	ELECTR. CAPACITOR	CEANP100M16
	C849	ELECTR. CAPACITOR	CEJAR47M50
	C850,855	CHIP CAPACITOR	CKSQYF103Z50
	C856,857	CHIP CAPACITOR	CKSQYF103Z50
	C858	ELECTR. CAPACITOR	CEANP470M10
	C901,902	ELECTR. CAPACITOR	CEAS470M10
	C904	CHIP CAPACITOR	CKSQYF103Z50
	C911,912	CERAMIC CAPACITOR	CKSQYF104Z25
	C913	CERAMIC CAPACITOR	CKSQYB333K25
	C914,915	CHIP CAPACITOR	CKSQYF103Z50
	C917	CHIP CAPACITOR	CKSQYF103Z50
	C918	CHIP CERAMIC CAPACITOR	CCSQCH271J50
	C919	CERAMIC CAPACITOR	CKSQYF104Z25
	C922	CERAMIC CAPACITOR	CKSQYF104Z25
	C923,920	CERAMIC CAPACITOR	CKSQYB562K50
	C924	CERAMIC CAPACITOR	CKSQYF104Z25
	C925	CERAMIC CAPACITOR	CKSQYB333K25
	C926	ELECTR. CAPACITOR	CEJANP4R7M16
	C927	CERAMIC CAPACITOR	CKSQYF104Z25
	C928	CHIP CAPACITOR	CKSQYF103Z50
	C929	CERAMIC CAPACITOR	CKSQYB333K25

Mark	No.	Description	Part No.
	C930	CHIP CERAMIC CAPACITOR	CCSQCH271J50
	C931	CHIP CAPACITOR	CKSQYF103Z50
	C932	ELECTR. CAPACITOR	CEJANP4R7M16
	C933,934	CHIP CAPACITOR	CKSQYF103Z50
	C935	ELECTR. CAPACITOR	CEJAR47M50
	C936	CERAMIC CAPACITOR	CKSQYB333K25
	C937-939	CHIP CAPACITOR	CKSQYF103Z50
	C940	CHIP CAPACITOR	CKSQYB102K50
	C941,942	ELECTR. CAPACITOR	CEHAQ100M50
	C943	CERAMIC CAPACITOR	CKSQYF473Z25
	C944	CHIP CAPACITOR	CKSQYB102K50
	C945	ELECTR. CAPACITOR	CEAS010M50
	C946	CHIP CAPACITOR	CKSQYF103Z50
	C947	CERAMIC CAPACITOR	CKSQYF104Z25
	C948,949	CERAMIC CAPACITOR	CKSQYF473Z25
	C950	CERAMIC CAPACITOR	CKSQYF104Z25
	C951	CERAMIC CAPACITOR	CKSQYF473Z25
	C952	CERAMIC CAPACITOR	CKSQYF104Z25
	C956	CERAMIC CAPACITOR	CKSQYF473Z25
	C957	CHIP CERAMIC CAPACITOR	CCSQCH271J50
	C958	CAPACITOR (47/10)	VCH1115
	C959	CERAMIC CAPACITOR	CKSQYF104Z25
	C999	CHIP CERAMIC CAPACITOR	CCSQCH471J50
	VC901	VARIABLE CAPACITOR (20PF)	VCM-008

RESISTORS

R415,416	METALFILM RESISTOR	RN1/6PQ2402F
R431	CARBON FILM RESISTOR	RD1/6PM510J
R434	METALFILM RESISTOR	RN1/6PQ5101F
R438	METALFILM RESISTOR	RN1/6PQ1203F
R496	CARBON FILM RESISTOR	RD1/6PM680J
R511	METALFILM RESISTOR	RN1/6PQ2002F
R585	CARBON FILM RESISTOR	RD1/6PM750J
R605	CARBON FILM RESISTOR	RD1/6PM221J
R619,631	CARBON FILM RESISTOR	RD1/6PM225J
R668	CARBON FILM RESISTOR	RD1/6PM471J
R699	CARBON FILM RESISTOR	RD1/6PM825J
R701	CARBON FILM RESISTOR	RD1/6PM824J
R817	CARBON FILM RESISTOR	RD1/6PM221J
R845,846	CARBON FILM RESISTOR	RD1/6PM470J
R854	CARBON FILM RESISTOR	RD1/6PM225J
	OTHER RESISTORS	RS1/10S □□□ J
VR441	VR	VRTB6VS223
VR481	VR	VRTB6VS472
VR482	VR	VRTB6VS222
VR521	VR	VRTB6VS472
VR601	VR	VRTB6VS222
VR603,604	VR	VRTB6VS473
VR605,606	VR	VRTB6VS333
VR607	VR	VRTB6VS473

OTHERS

CN103	CONNECTOR(23P)	HLEM23S-1
JA2	JACK	PKN1005
JA3,4	JACK/12V	PKN1004
JA5	JACK	VKB1029
X101	CERAMIC RESONATOR (9MHz)	VSS1040
X601	CRYSTAL RESONATOR	VSS1026
	SCREW TERMINAL	VNE1841

Mark	No.	Description	Part No.
AUDIO ASS'Y			
SEMICONDUCTORS			
	IC201	EFM DEMODULATION IC	CXD2500AQ
	IC206	D/A CONVERTER,IC	PD2026A
	IC207	OP-AMP IC	BA15218
	IC211	OP-AMP IC	RC4558D
	IC351	AUDIO IC	CA0002AM
	Q201,202	CHIP TRANSISTOR	2SC2412K
	Q204,205	TRANSISTOR	2SD2144S
	Q206	DIGITAL TRANSISTOR	DTC124EK
	Q207,208	DIGITAL TRANSISTOR	DTA124EK
	Q351,352	CHIP TRANSISTOR	2SC2412K
	D201	VARI-CAP	FC54M
	D203,204	DIODE	1SS254
COILS AND FILTERS			
	L201,202	AXIAL INDUCTOR	LAU010K
	L203	AXIAL INDUCTOR	LAU220J
	L204,205	AXIAL INDUCTOR	LAU010K
	L351	AXIAL INDUCTOR	LAU100J
	F352	SIF(2.30MHZ)	VTF1048
	F353	SIF(2.80MHZ)	VTF1049
CAPACITORS			
	C201	CERAMIC CAPACITOR	CKSQYF473Z25
	C202	AUDIO FILM CAPACITOR	CFTXA152J50
	C203	ELECTR. CAPACITOR	CEAS470M10
	C204	CERAMIC CAPACITOR	CKSQYF104Z25
	C206	CHIP CAPACITOR	CKSQYF103Z50
	C207,208	ELECTR. CAPACITOR	CEAS470M10
	C209	CERAMIC CAPACITOR	CKSQYF104Z25
	C211	ELECTR. CAPACITOR	CEAS470M10
	C212	CERAMIC CAPACITOR	CKSQYF104Z25
	C213	CHIP CAPACITOR	CKSQYF103Z50
	C214	CERAMIC CAPACITOR	CKSQYF473Z25
	C215,219	CERAMIC CAPACITOR	CKSQYF104Z25
	C220	CHIP CERAMIC CAPACITOR	CCSQCH220J50
	C225,226	ELECTR. CAPACITOR	CEAS470M10
	C227	ELECTR. CAPACITOR	CEANP2R2M50
	C230	ELECTR. CAPACITOR	CEAS470M10
	C231	CHIP CAPACITOR	CKSQYF103Z50
	C232	CHIP CAPACITOR	CCSQCH120J50
	C234,251	CHIP CAPACITOR	CKSQYF103Z50
	C252,253	ELECTR. CAPACITOR	CEAS470M10
	C254	CERAMIC CAPACITOR	CKSQYF104Z25
	C255	ELECTR. CAPACITOR	CEAS471M6R3
	C256	ELECTR. CAPACITOR	CEAS470M10
	C257	ELECTR. CAPACITOR	CEAS471M6R3
	C258-263	CHIP CAPACITOR	CCSQCH390J50
	C270,271	ELECTR. CAPACITOR	CEAS470M10
	C274,275	ELECTR. CAPACITOR	CEANP220M10
	C278	AUDIO FILM CAPACITOR	CFTXA332J50
	C279	ELECTR. CAPACITOR	CEAS470M10
	C280	AUDIO FILM CAPACITOR	CFTXA393J50
	C281	ELECTR. CAPACITOR	CEANP2R2M50
	C282	AUDIO FILM CAPACITOR	CFTXA332J50
	C283	ELECTR. CAPACITOR	CEAS470M10
	C284,285	CERAMIC CAPACITOR	CKSQYF104Z25
	C286,288	CHIP CAPACITOR	CKSQYF103Z50
	C305	CERAMIC CAPACITOR	CKSQYF104Z25
	C310	CERAMIC CAPACITOR	CKSQYF473Z25
	C349	CERAMIC CAPACITOR	CKPUYB471K50
	C351	CHIP CERAMIC CAPACITOR	CCSQCH271J50
	C352,353	CHIP CAPACITOR	CKSQYF103Z50
	C354	ELECTR. CAPACITOR	CEAS470M10
	C355-358	MYLAR FILM CAPACITOR	CQMA472J50
	C359,360	AUDIO FILM CAPACITOR	CFTXA224J50
	C361,362	AUDIO FILM CAPACITOR	CFTXA393J50
	C363	ELECTR. CAPACITOR	CEAS470M10
	C364	ELECTR. CAPACITOR	CEAS101M10
	C365,366	AUDIO FILM CAPACITOR	CFTXA104J50
	C367	ELECTR. CAPACITOR	CEAS100M50
	C368	ELECTR. CAPACITOR	CEJAR47M50
	C369	ELECTR. CAPACITOR	CEAS470M10
	C371-373	CERAMIC CAPACITOR	CKSQYF104Z25
	C374	CHIP CAPACITOR	CCSQCH101J50
RESITORS			
	R259-262	CARBON FILM RESISTOR	RD1/6PM473J
	R269,270	CARBON FILM RESISTOR	RD1/6PM473J
	R273,274	CARBON FILM RESISTOR	RD1/6PM471J
	R291	CARBON FILM RESISTOR	RD1/6PM103J
	R352,354	CARBON FILM RESISTOR	RD1/6PM222J
	R357	CARBON FILM RESISTOR	RD1/6PM222J
	R359,360	CARBON FILM RESISTOR	RD1/6PM102J
	R361,362	CARBON FILM RESISTOR	RD1/6PM182J
		OTHER RESISTORS	RS1/10S □□□ J
OTHERS			
	CN301	CONNECTOR(5P)	B5P-SHF-1AA
	JA6	JACK	VKB1050
	X201	CRYSTAL RESONATOR (16MHz)	VSS1057
		SCREW TERMINAL	VNE1841
FLKY ASS'Y			
SEMICONDUCTORS			
	IC201	MODE CONTROL MCU	PD3213A
	IC202	RESET IC	PST529D
	Q201	TRANSISTOR	DTC124ES
	Q202	TRANSISTOR	DTC114EL
	Q203	TRANSISTOR	DTA144EL
	D201	DIODE	1SS254
	D203-206	DIODE	1SS252
	D210	LED	PG3361X
SWITCHS			
	S201	SWITCH (DIGITAL LEVEL)	RSG1030
	S202	SWITCH(RANDOM PLAY)	RSG1030
	S203	SWITCH (HILITE INTRO SCAN)	RSG1030
	S204	SWITCH(CHP/TIME)	RSG1030
	S205	SWITCH(EDIT)	RSG1030
	S206	SWITCH(⏮)	RSG1030
	S207	SWITCH(⏭)	RSG1030
	S208	SWITCH(1)	RSG1030
	S209	SWITCH(2)	RSG1030
	S210	SWITCH(3)	RSG1030
	S211	SWITCH(4)	RSG1030
	S212	SWITCH(6)	RSG1030
	S213	SWITCH(7)	RSG1030
	S214	SWITCH(8)	RSG1030
	S215	SWITCH(9)	RSG1030
	S216	SWITCH(0)	RSG1030
	S217	SWITCH(5)	RSG1030
	S218	SWITCH(PGM)	RSG1030
	S219	SWITCH(+10)	RSG1030
	S220	SWITCH(CD DIRECT)	RSG1030
	S221	SWITCH(⏏)	RSG1030
	S222	SWITCH(■)	RSG1030
	S223	SWITCH(▶ / ⏸)	RSG1030
	S225	SWITCH (ROTARY ENCODER)	VSD1008

Mark	No.	Description	Part No.
CAPACITORS			
	C201	ELECTR. CAPACITOR	CEAL101M6R3
	C202	CERAMIC CAPACITOR	CKPUYF223Z25
	C204	ELECTR. CAPACITOR	CEAL100M16
	C205	CERAMIC CAPACITOR	CKPUYF103Z25
	C206	ELECTR. CAPACITOR	CEAL2R2M50
	C211	CERAMIC CAPACITOR	CKPUYF223Z25
RESISTORS			
		ALL RESISTORS	RD1/6PM □□□ J
OTHERS			
	V201	FL INDICATOR TUBE	VAW1026
	X201	CERAMIC RESONATOR	EFOGC8004T4
		FL SPACER	VEB1125
		LED HOLDER	VNL1522
PSWB ASS'Y			
SEMICONDUCTORS			
	Q204	TRANSISTOR	DTC124ES
	D211	LED	SLH34VCF04
SWITCH			
	S224	SWITCH (STANDBY/ON)	RSG1030
CAPACITOR			
	C210	ELECTR. CAPACITOR	CEAS100M16
RESISTOR			
	R227	CARBON FILM RESISTOR	RD1/6PM151J
OTHER			
		REMOTE SENSOR	GP1U58X
SYPS ASS'Y			
SEMICONDUCTORS			
⚠	IC1	REGULATOR IC	NJM78L05A
⚠	IC2	LINEAR IC	NJM4558D
⚠	IC201,202	IC PROTECTOR	ICP-N15
⚠	Q1,2	TRANSISTOR	2SB1185
⚠	Q3	TRANSISTOR	2SD1762
	Q4	TRANSISTOR	2SC1740S
	Q5	TRANSISTOR	2SA933S
	Q21	TRANSISTOR	2SC1740S
	Q22,23	TRANSISTOR	2SA933S
	Q24	TRANSISTOR	2SC1740S
⚠	Q25	TRANSISTOR	2SB1185
⚠	Q26	TRANSISTOR	2SD1762
⚠	Q27	TRANSISTOR	2SB1185
⚠	Q28	TRANSISTOR	2SD1762
⚠	D1	BRIDGE STACK	S2VB20
⚠	D2,3	DIODE	1SR35-100AVL
	D7	ZENER DIODE	MTZJ11B
⚠	D21,22	DIODE	1SS254
⚠	D23	DIODE	10ELS2
⚠	D24,25	DIODE	1SR35-100AVL
⚠	D26	DIODE	10ELS2
COIL			
⚠	L1	SPDL CHOKE COIL	VTL1043

Mark	No.	Description	Part No.
CAPACITORS			
⚠	C1,2	ELECTR. CAPACITOR (6800μ/16V)	VCH1053
	C3	ELECTR. CAPACITOR	CEAS470M10
	C4	ELECTR. CAPACITOR	CEAS470M10
	C5	ELECTR. CAPACITOR	CEAS470M10
	C6	ELECTR. CAPACITOR	CEAS470M10
⚠	C7-9	CERAMIC CAPACITOR	CKPUYF223Z25
	C10	ELECTR. CAPACITOR	CEAS101M50
	C11,12	CERAMIC CAPACITOR	CKPUYF103Z25
	C13	ELECTR. CAPACITOR	CEAS471M16
⚠	C14	CERAMIC CAPACITOR	CGCYX473M25
	C21,22	MYLAR FILM CAPACITOR	CQMA272J50
	C23,24	CERAMIC CAPACITOR	CGCYX473M25
	C25,26	ELECTR. CAPACITOR	CEAS2R2M50
	C27,28	MYLAR FILM CAPACITOR	CQMA223J50
	C29	ELECTR. CAPACITOR	CEAS101M50
⚠	C52	CERAMIC CAPACITOR (0.01μF)	RCG-009
RESISTORS			
⚠	R23-26	CARBON FILM RESISTOR	RD1/2VM221J
⚠	R27-30	RESISTOR(47 ohms)	DCN1003
⚠	R51	CARBON FILM RESISTOR	RD1/2PM225J
		OTHER RESISTORS	RD1/6PM □□□ J
OTHERS			
⚠	J32	LEAD WIRE(10P)	VDA1410
⚠	J33	LEAD WIRE(6P)	D20PDY0620G
⚠		PCB BINDER	VEF1040
⚠		FUSE HOLDER	VKR1001
⚠		P.S. TERMINAL	VKC-019
⚠		SCREW TERMINAL	VNE1841
⚠		PCB, SYPS	VNP1346
FG ASS'Y			
SEMICONDUCTOR			
	D1	PHOTO INTERRUPTER	GP1S51
PKSB ASS'Y			
SWITCHS			
	S4	PUSH SWITCH	DSG1015
	S5	PUSH SWITCH	DSG1015
CAMB ASS'Y			
SEMICONDUCTOR			
	Q10		2SC1740S
RESISTOR			
	R10		RD1/6PM182J
OTHERS			
	CN401	CONNECTOR(23P)	VKN1073
	CN403	CONNECTOR	HLEM23R-1
LOSB ASS'Y			
SWITCHS			
	S1-S3	PUSH SWITCH	DSG1015
LOMB ASS'Y			
CAPACITOR			
	C1	CERAMIC CAPACITOR	CGCYX473M25

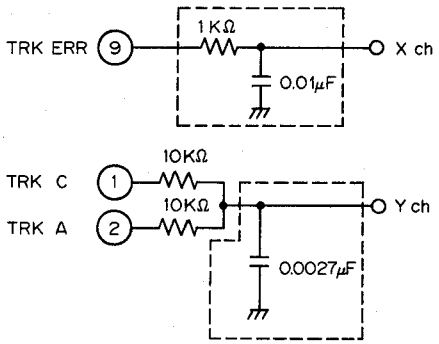
5. ADJUSTMENTS

5.1 PRELIMINARIES

● JIGS FOR ADJUSTMENT

- CD test disc (STD–901 or STD–902)
- LD test disc (GGV1003)
- (–) Screwdriver (medium)
- (–) Screwdriver (small)
- Hexagonal wrench driver (straight type, size: 3 mm)
- Resistors (10 kΩ × 2, 47 kΩ)
- Dual-trace oscilloscope (with delay)
- AF oscillator
- Frequency counter
- Digital voltmeter
- TV monitor
- Low-pass filter

Use the low-pass filters below in the coarse centering adjustment 2. and fine centering adjustment 6. when the S/N of the waveform is hard to observe.



● RACK ASSEMBLY DURING CENTERING ADJUSTMENT

The S-IN position (without hitting the mechanism stopper) of the rack assembly during centering adjustment is indicated below.

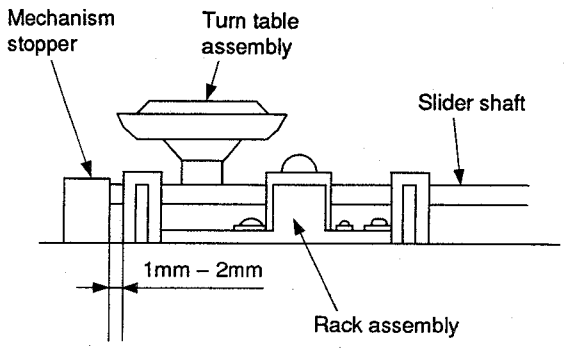


Fig. 1 Right side view

● ADJUSTMENT LOCATIONS

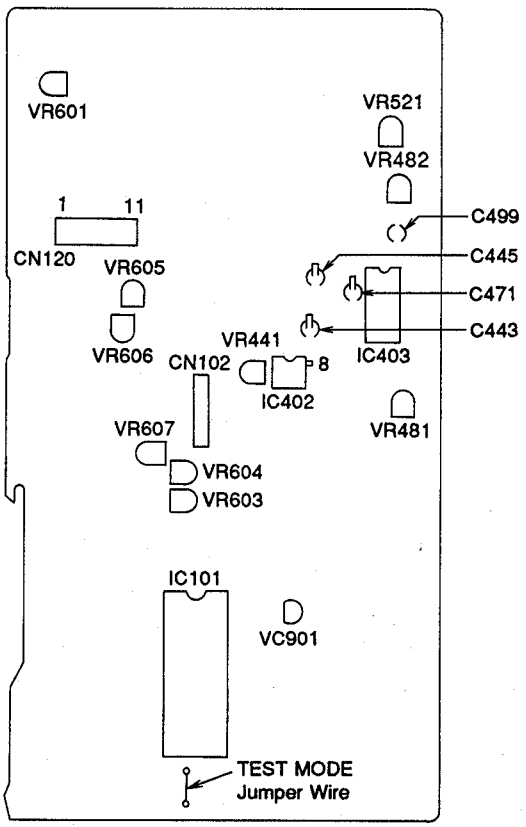
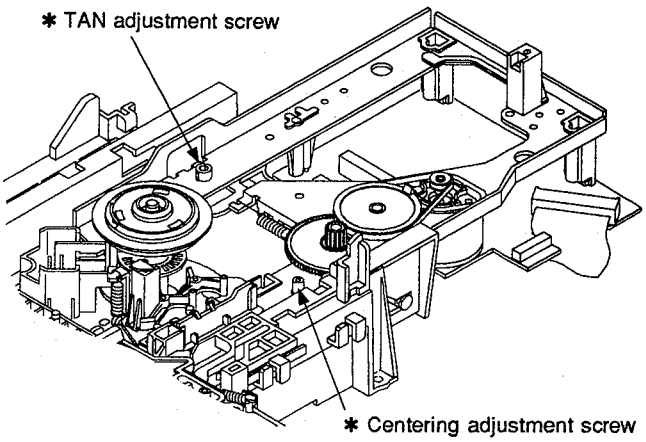


Fig. 2 MAIN assembly section



✱ : As the adjustment range of both the TAN and centering adjustment screws is only ±90° from the center, do not turn the screws beyond this range.

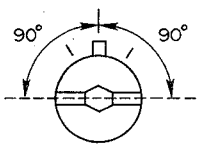


Fig. 3 TILT base section

● TEST MODE

1) Activating the Test Mode
   1. While power is ON, connect the Test mode jumper wire (Fig. 2) to the GND for about one second.
   2. After checking whether the FL display device is fully lit, disconnect the Test mode jumper wire from GND.

2) Canceling the Test Mode
   1. Turn the power OFF.

● Key operation in the Test mode

Player Status	Key Operation	Function	Remarks
Tray Open	⏮ / ⏭ SKIP (Refer to Note 1)	⏮ : Shifts the tray in the closed direction and also raises the turn table while pressing the key. ⏭ : Shifts the tray in the open direction and also lowers the turn table while pressing the key.	
Tray Open	▶ PLAY	Clamps	
Clamp	▶ PLAY	Turns the disc through TRK Servo Open	TRK– OFF
TRK Servo Open	▶ PLAY	TRK Servo Close	TRK– ON
TILT Neutral	+ MULTI-SPEED	TILT Servo Close	T–□: ON
TILT ON	– MULTI-SPEED	TILT Neutral	T–□: N
TILT Neutral or ON	⏮ / ⏭ SKIP	Setting TILT Servo to OFF, can force TILT to move.	T–1 to T–E
Clamp	◀◀ / ▶▶ SCAN	Can force the slider to move	S – LD S – CDV S – CD S – IN
Play	❚❚ PAUSE	Still	
Play	■ STOP	Stop	
Stop	▲ OPEN	Open	
Play	[+10] ⇩ [0] to [9] ⇩ [▶ PLAY]	Sets to SEARCH Lead Address Input mode. Designates the SEARCH lead address through keys 0 to 9. Press the CLEAR [C] key if the designated address is incorrect. Searches the designated address upon pressing the PLAY key.	

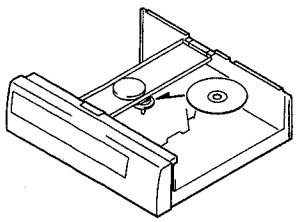
Note 1 : Press SKIP (⏮ / ⏭) Keys after the tray is set to open state by pressing Open (▲) key. Because, in tray open state, pressing PLAY (▶) key causes it to set to TILT control state and SKIP (⏮ / ⏭) keys can not function properly.

● PLAYER OPERATION IN THE TEST MODE

Operate the player by selecting a test mode function with the keys on the player or on the remote control unit.

- CD PLAYBACK

① Place the CD disc on the turn table.



② Press the PLAY (▶) key once.
(Twin gear starts to move.)

③ Push the cam plate (Fig. 4) in the direction of the arrow and wait until the CD disc is clamped.

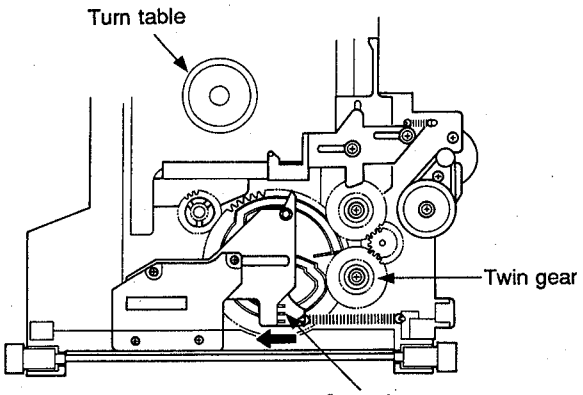
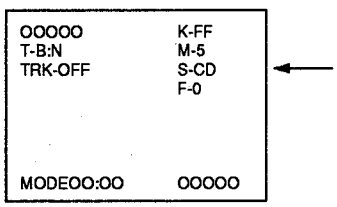


Fig. 4

④ Press the ◀◀ or ▶▶ keys to appear "S-CD" on the TV screen display.

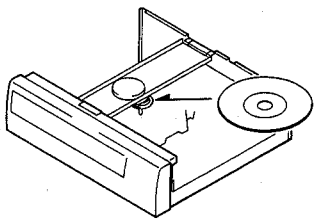


TV screen display

⑤ Press the PLAY (▶) key twice, disc will be normally playbacked.

- LD PLAYBACK

① Place the LD disc on the turn table.

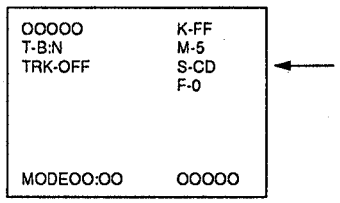


② Press the PLAY (▶) key once. (Twin gear starts to move.)

③ Press the SKIP REV (⏮) key to raise the turn table (spindle motor section) while pressing the cam plate (Fig. 4) in the direction of the arrow. Raise it to the position where the LD disc can be easily placed on the turn table.
If the turn table is raised too high, lower it with the SKIP FWD (⏭) key.

④ Place the LD disc on the turn table and press the PLAY (▶) key once to clamp the disc.

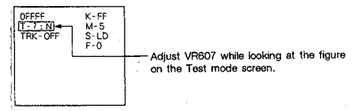
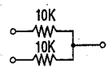
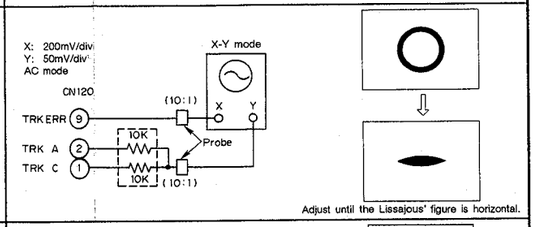
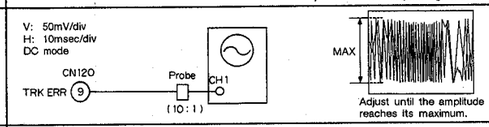
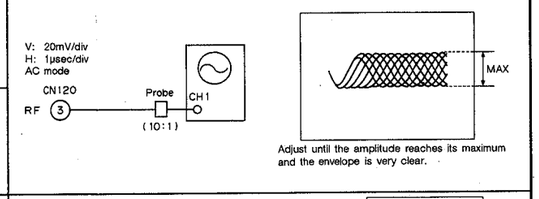
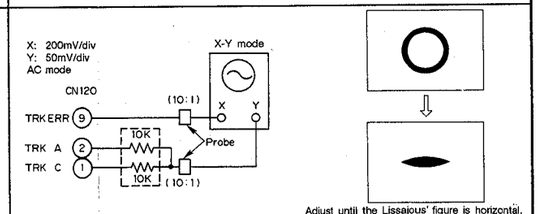
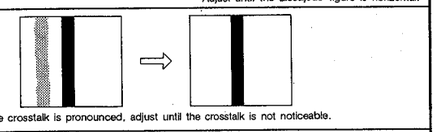
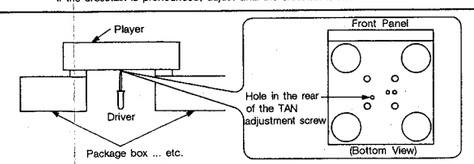
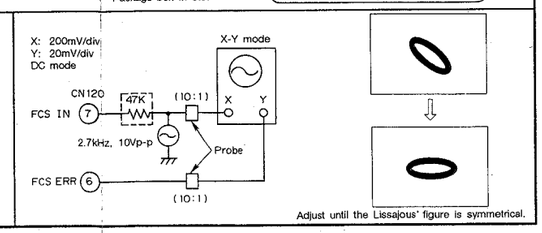
⑤ Press the ◀◀ or ▶▶ keys to appear "S-LD" on the TV screen display.

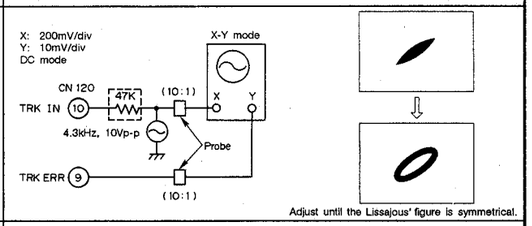
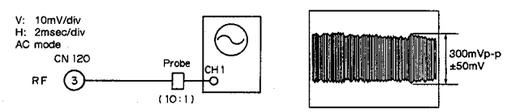
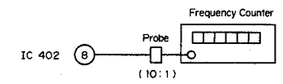
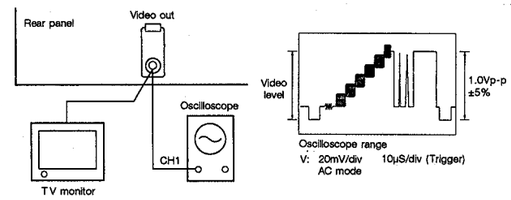
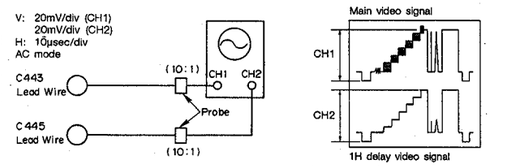
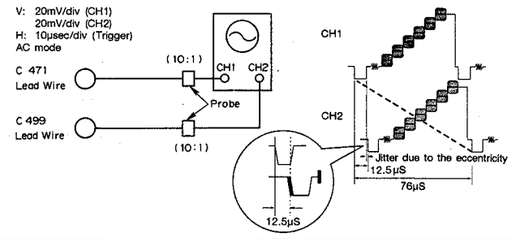
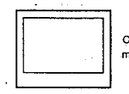
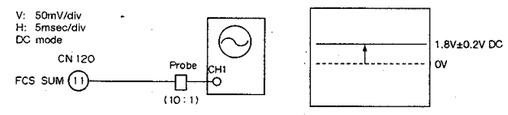


TV screen display

⑥ Press the PLAY (▶) key twice, disc will be normally playbacked.

5.2 ADJUSTMENT TABLE

	Ajustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
1	Tilt Offset Check and Adjustment	MAIN assembly VR607	TV monitor	Tilt indication on Test mode screen	• Power ON • Test mode • Disc not installed	1. Check if the tilt indication on the Test mode screen is at T–6 to T–8. 2. If the tilt indication is not at T–6 to T–8, adjust VR607 until the tilt indication reaches T–6 to T–8.	
2	Coarse centering adjustment	Tilt base Centering adjustment screw	• Oscilloscope • STD–901 or STD–902 • MIX resistor 	CN120 X: ⑨ Pin (TRK ERR) Y: ① + ② Pin (TRK SUM)	• Test mode TRK Servo Open Tilt servo ON • Innermost track of STD–901 or STD–902 which does not come in contact with the mechanical stopper.	1. Move the slider until it does not come in contact with the mechanical stopper at the slider position indication S–IN. 2. Observe TRK ERR (Xch) and TRK SUM (Ych) at the X–Y mode during TRK Servo Open. 3. Turn the centering adjustment screw until the Lissajous' figure is horizontal.	
3	FCS balance adjustment (1) TRK ERR MAX	MAIN assembly VR605	• Oscilloscope • STD–901 or STD–902	CN120 ⑨ Pin (TRK ERR)	• Test mode TRK Servo Open Tilt servo ON • Inner track of STD–901 or STD–902	1. Observe TRK ERR at CH1 of the oscilloscope during TRK Servo Open. 2. Adjust VR605 until the amplitude of the waveform reaches its maximum.	
4	FCS balance adjustment (2) RF MAX	MAIN assembly VR606	• Oscilloscope • STD–901 or STD–902	CN120 ③ Pin (RF)	• Test mode TRK Servo Close Tilt servo ON • Inner track of	1. Close the TRK Servo and observe RF at CH1 of the oscilloscope. 2. Adjust VR606 until the amplitude of the waveform reaches its maximum and the envelope is very clear.	
5	Tangential direction angle adjustment	Tilt base TAN adjustment screw	• Oscilloscope • STD–901 or STD–902	CN120 ③ Pin (RF)	• Test mode TRK Servo Close Tilt servo ON • Inner track of STD–901 or STD–902	1. Observe RF at CH1 of the oscilloscope during TRK Servo Close. 2. Adjust the TAN adjustment screw until the amplitude of the waveform reaches its maximum and the envelope is very clear.	
6	Fine centering adjustment	Tilt base Centering adjustment screw	• Oscilloscope • STD–901 or STD–902	CN120 X: ⑨ Pin (TR ERR) Y: ① + ② Pin (TRK SUM)	• Test mode TRK Servo Open Tilt servo ON • Innermost track of STD–901 or STD–902 which does not come in contact with the mechanical stopper.	Perform fine centering adjustment by following the same procedure as in "Coarse centering adjustment" (2).	
7	Crosstalk check and Tilt offset adjustment	MAIN assembly VR607	• TV monitor • GGV1003	Crosstalk check screen	• Test mode TRK Servo Close Tilt servo ON • GGV1003 #115 STILL	1. Search for address 115 of GGV1003 and still the address. 2. Check the crosstalk. If the crosstalk is pronounced, adjust VR607 until the crosstalk is not noticeable.	
	When the crosstalk is still noticeable in spite of the adjustment in (7), use a hexagonal wrench driver (straight type, size: 3 mm) to adjust the TAN adjustment screw on the bottom side of the player through the GGV1003 # 115 STILL screen. Afterwards, perform the adjustment procedures from (6).						
8	FCS Servo loop gain adjustment	MAIN assembly VR604	• Oscilloscope • GGV1003 • AF Oscillator • Resistor (47 kΩ)	CN120 X: ⑦ Pin (FCS IN) Y: ⑥ Pin (FCS ERR)	• Test mode TRK Servo Close Tilt servo ON • GGV1003 # 15,000 STILL	1. Search for address 15,000 of GGV1003 and still the address. 2. Xch: Connect the resistor (47 kΩ) to the channel and connect to FCS IN. Ych: Connect to FCS ERR. 3. Connect the AF oscillator between Xch and the 47 kΩ resistor, and adjust VR604 until the Lissajous' figure is symmetrical.	

	Ajustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
9	TRK Servo loop gain adjustment	MAIN assembly VR603	• Oscilloscope • GGV1003 • AF Oscillator • Resistor (47 kΩ)	CN120 X: ⑩ Pin (TRK IN) Y: ⑨ Pin (TRK ERR)	• Test mode Stop mode or TRK Servo Close Tilt servo ON • GGV1003 #15,000 STILL	1. Xch: Connect the 47 kΩ resistor to channel and connect to TRK IN. Ych: Connect to TRK ERR. 2. Connect the AF oscillator between Xch and the 47kΩ resistor and note the tilt angle against the horizon with the disc in the stopped state. 3. Search for address 15,000 of GGV1003 and still the address. 4. Set the disc in PLAY mode (TRK servo closed, TILT on). Adjust VR603 so that the tilt angle of the waveform will be the same as the tilt angle noted in step 3.	
10	RF level adjustment	MAIN assembly VR601	• Oscilloscope • GGV1003	CN120 ③ Pin (RF)	• Test mode TRK Servo Close Tilt servo ON • GGV1003 #15,000 STILL	1. Search for address 15,000 of GGV1003 and still the address. Observe RF at CH1 of the oscilloscope. 2. Adjust VR601 until the RF amplitude is 300 mV ±50 mV p-p.	
11	REF-H adjustment	VC901	Frequency counter	IC 402 (PM0001) ⑧ Pin	• Power ON • Stop mode	Adjust FSC (3.579545 MHz) by ±10 Hz.	
12	Video level adjustment	VR482	• TV monitor • Oscilloscope • GGV1003	Video output terminal	• Normal mode • GGV1003 #19,900 STILL	Connect a 75Ω resistor to the VIDEO output terminal (possibly by connecting to the monitor) and adjust until the sync chip to 100% white level is 1 Vp-p ±5% at the composite TEST signal.	
13	IH DLY video level adjustment	VR441	• Oscilloscope • GGV1003	CH1: C443 lead wire CH2: C445 lead wire	• Normal mode • GGV1003 #19,900 STILL	Adjust until the sync chip to 100% white level at the composite TEST signal is the same as in CH1 and CH2.	
14	VCO center frequency adjustment	VR481	• Oscilloscope • GGV1003	CH1: C471 lead wire CH2: C499 lead wire	• Normal mode • GGV1003 # 5,100 STILL	Place a trigger in CH1 and adjust until the center of the CH2 video signal jitter is 76 μsec (1H + 12.5 μsec) ±2 μsec compared to the CH1 video signal.	
15	VPS error level adjustment	VR521	• TV monitor • GGV1003	TV monitor	• Normal mode • GGV1003 #8,000 STILL (Magenta screen)	Adjust until the color irregularity on the magenta screen is minimized.	
16	FCS SUM level check	—	• Oscilloscope • GGV1003	CN120 ⑪ Pin (FCS SUM)	• Normal mode • GGV1003 PLAY	+1.8 V, ±0.2 V DC at the CN120 ⑪ pin	

6. IC INFORMATION

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

● IC101 (PD0133B)

MECHANISM CONTROL IC

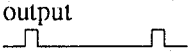
No.	Pin name	I/O	Function
1	VCC	–	Power supply connection pin. Set to 5 V ±10%.
2	DIRECT	O	CD DIRECT video system power OFF signal output pin "H" = video system power OFF, "L" = ON
3	CAV/XCLV	O	CAV/CLV switching signal output pin "H" = CAV, "L" = CLV Connected to Pin 6 of PA5013A and used as a VIDEO NR switching signal.
4	XLD ON	O	Laser video ON/OFF switching signal output L: ON, H: OFF
5	TGH	O	Tracking operation control signal output pin The control signal supports ON/OFF of the tracking servo-mechanism operation. "H" = OFF, "L" = ON
6	SLDR POS	I	Pick-up position detection switch input pin (analog signal) Divides the resistance among the switches, reads the value of the A/D input, and detects the position.
7	FREQ DET	I	RF detection signal input pin (analog signal) Inputs the A/D conversion of the RF detection output and is used in the spindle luff servo-mechanism. Voltage and frequency are proportional.
8	TBAL ERR	I	Tracking balance error signal input pin (analog signal) Signal is A/D converted and is input as the tracking offset control.
9	TILT ERR	I	Tilt sensor output signal input pin (analog signal) Inputs (0 to 5 V) the tilt sensor output amplified to a 40 to 50 dB signal. The signal is A/D converted and is input as the tilt sensor control. Controls the tilt motor until the signal is 2.5 V.
10	XREF-V	I	Clear scan reference V-SYNC signal input pin
11	GFS	I	CD (EFM signal) frame lock signal input pin Connected to Pin 12 of the EFM decoder IC: CXD2500AQ. "H" = Lock, "L" = Unlock GFS is an abbreviation for Good Frame Sync.
12	TBAL DRV	O	Tracking offset control signal output pin Outputs the tracking offset after PWM and is used in auto tracking offset. Cycle: 910 µsec; 3-value control H, L, Z.
13	SQ2	O	Analog audio switching signal output pin 2/R Squelch: H
14	SQ1	O	Analog audio switching signal output pin 1/L Squelch: H When in digital audio mode, the signal is output through the control of the EFM decoder IC: CXD2500AQ.
15	SI2	I	EFM decoder IC: CXD2500AQ subcode input pin Reads the subcodes of SCK2 and the signal.
16	XLAT2	O	EFM decoder IC: CXD2500AQ control latch signal output pin Sends the control command using SO3 and 2500CLK.
17	SCK2	O	EFM decoder IC: CXD2500AQ subcode read clock signal output pin Sets the clock to 96 and reads the subcode.

No.	Pin name	I/O	Function
18	TILT/ LOAD DRV	O	Loading and tilt control signal output pin Outputs the tilt drive after PWM and is used in loading and tilt servo-mechanism.
19	S-FTOM	I	Input pin of data from the mode control IC Serial Used with the data signal to the carriage generating IC.
20	S-MTOF	O	Serial data output to the mode control IC Serial
21	SCK1	I/O	Clock for serial communication with the mode control IC In the input mode except during serial communication with the mode control IC Used with the clock signal to the carriage generating IC
22	SENS	I	SENS signal input pin All of the following signals from 2500 are switched and are output to the signal: SEIN, FZC, A.S, TZC, XBUSY, FOK, GFS, COMP, COUT, and OV64.
23	SCOR	I	Subcode SYNC signal input pin Inputs the subcode signal from the EFM decoder IC: CXD2500AQ when the signal is "H." Supervises the disc playback depending on the presence of the signal.
24	XCX	O	Analog audio CX noise reduction switching signal output pin ON: L, OFF: H
25	SHAKE	I/O	Pin of hand shake signal for data communication with the mode control IC This pin is a bi-directional data path which sends the data transfer timing through the I/O mode switching of the respective microcomputers.
26	XPBV	I	LD/CDV playback V-SYNC signal input pin IC basically operates in sync hronization (rising and leading edges) with the signal. Setting the signal as standard in the special CAV playback mode, generates jump timing. "L"= V-SYNC ongoing
27	CN VSS	–	GND for A/D conversion
28	XRESET	I	Reset signal input pin "L" = Reset, "H" = Cancel reset
29	XTAL IN	I	9 MHz clock generation input pin
30	XTAL OUT	O	9 MHz clock generation output pin
31	N. C.	O	Not used
32	VSS	–	GND
33	SW1	I	Loading/tilt position detection switch input pin
34	SW2	I	Loading/tilt position detection switch input pin
35	SW3	I	Loading/tilt position detection switch input pin
36	N.C.	I	Not used Processing needed when used for input
37	FG	I	Spindle motor-FG signal input pin 24 pulses per signal Divided into thirds and used inside the microcomputer.
38	DATA	I	Input pin for Philips code decoder in the mechanism controller
39	XPBH	I	Playback H-SYNC input for Philips code decoder
40	XPBV	I	Playback V-SYNC input for Philips code decoder

No.	Pin name	I/O	Function
41	GI. MIRR	O	False MIRR signal output pin to jump 1 track for LD.
42	N.C.	–	Not used
43	N.C.	–	Not used
44	MUTE	O	Audio system audio mute control output pin "H" = MUTE ON, "L" = MUTE OFF
45	XANA	O	Digital/analog audio switching signal output pin "H" = digital, "L" = analog Signals output by the line out and headphone are switched by the signal.
46	XT LATCH	O	DAC & Digital PD2026 serial control latch signal output pin
47	N.C.	–	Not used
48	N.C.	–	Not used
49	N.C.	–	Not used
50	2500CLK	O	2500 command clock signal output pin The commands for 2500 are the following: 2500CLK; SO3 and XLAT2.
51	RFCORR	O	RF correction switching signal output pin "H" = gain up. Increases gain (#8000 to #8100) within the CAV.
52	SCAN CONT	O	TBC control signal output pin H: multi-track jump ongoing, L: others
53	CD	O	CD/LD switching signal output pin H: CD, CDV-A, L: LD, CDV-V
54	ACC CONT	O	Spindle acceleration signal output pin H= acceleration, L= deceleration, Z= CD, stop, and play
55	GPWM	O	Spindle gain switching duty pulse signal output pin CLV inner circumference: L, outer circumference: H, CAV: L, CDV: H
56	J.TRIG	O	Track jump signal output pin Used for single track jump H: start of track, L: others, Width of "H": approx. 20 µsec
57	SCK3	O	Serial 3 clock signal output pin Reads the leading edge "H" = within 2 µsec, "L" = within 20 µsec
58	SO3	O	Serial 3 data signal output pin With the serial signal as the common signal, divides the signals into three types of latch signals (XLAT3, XLAT2, and XT LATCH). LSB first
59	XLATCH3	O	Spindle servo-mechanism IC latch signal output pin
60	CLV SCAN	O	CLV V-SYNC scan mode signal output pin
61	VSQ	O	Video output switching signal output pin "H" = squelch, "L" = playback video
62	VLOCK	I	V-SYNC lock detection signal input pin. Is used in CLV clear scan and is set to "H" for a period of time if the REF-V is in phase with PBV.
63	SENA	O	Shift enable signal output pin. Is used in CLV clear scan. Thinning out H, is set to "H" while REF-V approaches PBV.
64	XSLOCK	I	Spindle lock signal input pin L: lock, H: unlock

● IC201 (PD3213A)

MODE CONTROL IC

Pin	Pin name	Signal name	I/O	Function
1	P04/AN4	NC	I	Not used
2	P05/AN5	NC	I	Not used
3	P06/AN6	NC	I	Not used
4	P07/AN7	NC	I	Not used
5	AVss	AVss	–	Connected to standard power supply (Vss) for A/D conversion
6	TEST	TEST	I	Test pin Connected to Vss
7	X2	X2	O	Subclock Release
8	X1	X1	I	Subclock Connected to Vcc
9	Vss	Vss	–	Ground
10	OSC1	OSC1	I	System clock Connects 8 MHz ceramic lock
11	OSC2	OSC2	O	System clock Connects 8 MHz ceramic lock
12	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$	I	Reset
13	P10/IRQ0	SHAKE	I/O	Communication timing clock with mechanism control
14	P11/ $\overline{\text{IRP1}}$	SEL IR	I	Remote control signal (including SR)
15	P12/ $\overline{\text{IRQ2}}$	W.D.F	O	For watchdog timer Pulse output 
16	P13/ $\overline{\text{IRQ3}}$	POWER On	O	Power ON  Power OFF
17	P14/IRQ4	NC	O	Not used
18	P15/ $\overline{\text{IRQ5}}$	NC	O	Not used
19	P16/EVENT	NC	I	Not used
20	P33/FS27	NC	O	Not used
21	P32/FS26	NC	O	Not used
22	P31/FS25	NC	O	Not used
23	P30/FS24	STANBY LED	O	Standby LED drive output
24	P47/FS23	NC	O	Not used
25	P46/FS22	NC	O	Not used
26	P45/FS21	NC	O	Not used

Pin	Pin name	Signal name	I/O	Function
27	P44/FS20	NC	O	Not used
28	P43/FS19	seg 1 / KS3	O	FL segment l output and key scan 3 output
29	P42/FS18	seg k / KS2	O	FL segment k output and key scan 2 output
30	P41/FS17	seg j / KS1	O	FL segment j output and key scan 1 output
31	P40/FS16	seg i / KS0	O	FL segment i output and key scan 0 output
32	P50/FS15	seg h	O	FL segment h output
33	P51/FS14	seg g	O	FL segment g output
34	P52/FS13	seg f	O	FL segment f output
35	P53/FS12	seg e	O	FL segment e output
36	P54/FS11	seg d	O	FL segment d output
37	P55/FS10	seg c	O	FL segment c output
38	P56/FS9	seg b	O	FL segment b output
39	P57/FS8	seg a	O	FL segment a output
40	P17/Vdisp	-30V	–	FL drive power supply
41	P60/FD0/FS7	G9	O	FL grid 9 output
42	P61/FD1/FS6	G8	O	FL grid 8 output
43	P62/FD2/FS5	G7	O	FL grid 7 output
44	P63/FD3/FS4	G6	O	FL grid 6 output
45	P64/FD4/FS3	G5	O	FL grid 5 output
46	P65/FD5/FS2	G4	O	FL grid 4 output
47	P66/FD6/FS1	G3	O	FL grid 3 output
48	P67/FD7/FS0	G2	O	FL grid 2 output
49	P70/FD8	G1	O	FL grid 1 output
50	P71/FD9	NC	O	Not used
51	P72/FD10	NC	O	Not used
52	P73/FD11	NC	O	Not used
53	P74/FD12	NC	O	Not used
54	P75/FD13	D.CD LED	O	DIRECT CD LED drive output
55	P76/FD14	S-SCAN	I/O	SHUTTER SCAN output
56	P77/FS15	NC	O	Not used
57	Vcc	Vcc	–	Power supply
58	P80	KIN0	I	Key input 0
59	P81	KIN1	I	Key input 1
60	P82	KIN2	I	Key input 2
61	P83	KIN3	I	Key input 3
62	P84	KIN4	I	Key input 4

Pin	Pin name	Signal name	I/O	Function
63	P85	KIN5	I	Key input 5
64	P86	KIN6	I	Key input 6
65	P87	NC	–	Not used
66	P90/PWM	SYNCRO OUT	O	SYNCHRO REC output
67	P91/SCK1	XSCK	I/O	Communication clock with mechanism control/OSD
68	P92/SI1	SI	I	Receive data from mechanism control
69	P93/SO1	SO	O	Send data to mechanism control/OSD
70	P94/SCK2	XRESET	O	RESET output from other than mechanism control/OSD
71	P95/SI2/CS	XCS	O	OSD chip select
72	P96/SO2	SYNCRO IN	I	SYNCHRO REC input
73	P97/UD	NC	O	Not used
74	PA0	NC	O	Not used
75	PA1	NC	O	Not used
76	AVcc	AVcc	–	Connection to Vcc of standard power supply for A/D conversion
77	P00/AN0	NC	O	Not used
78	P01/AN1	NC	O	Not used
79	P02/AN2	NC	O	Not used
80	P03/AN3	NC	O	Not used

● IC351 (CA0002AM)

AUDIO IC

No.	Pin name	Function
1	VEE	Power supply pin
2	VINR	FM signal input pin
3	DOCR	Drop-out correction switch output pin
4	SWIR	Mode switching amplifier input pin
5	SWOR	Mode switching amplifier output pin
6	CXINR	CX control signal input pin
7	GND	GND pin
8	L	Mode switching pin (L)
9	R	Mode switching pin (R)
10	CX	CX control pin
11	FTC	FTC capacitor connection pin
12	ROUT	R channel output pin
13	LOUT	L channel output pin
14	STC2	STC pin (2)
15	STC1	STC pin (1)
16	CONP	Compensator pin
17	TBC	TBC error signal input pin
18	VCC	Power supply pin
19	CXINL	CX control signal input pin
20	SWOL	Mode switching amplifier output pin
21	SWIL	Mode switching amplifier input pin
22	DOCL	Drop-out correction switch output pin
23	VINL	FM signal input pin
24	ALC	ALC capacitor pin

● IC802 (CXA1372S)

FTS CONTROL

No.	Pin name	I/O	Function	No.	Pin name	I/O	Function
1	TE	I	Tracking error input	27	LOCK	I	Sled protection circuit is worked at "L". (with 47kohms pull-up resistor)
2	TDFCT		Capacitor connect pin for time constant at the defect.	28	CLK		Serial data transfer clock input from the CPU. (Pull-up resistor is nothing.)
3	ATSC		Window comparator input for ATSC detection.	29	XLT		Latch input from the CPU. (Pull-up resistor is nothing.)
4	FZC		Focus and zerocross comparator input.	30	DATA		Serial data input from the CPU. (Pull-up resistor is nothing.)
5	FE		Focus error input.	31	XRST		Reset input (reset at "L"). (Pull-up resistor is nothing.)
6	FDFCT		Capacitor connect pin for time-constant at the defect.	32	C.OUT	O	Signal output for count the track
7	VC		Center voltage input. (GND at two power supply, (Vcc+GND) /2 at single power supply)	33	SENS		FZC, AS, TZC and SSTOP outputs from the CPU.
8	FGD		Connect a capacitor between FGD (pin 8) and ATSC (pin 3) when high-pass gain of focus servo is dropped.	34	D GND	—	Digital GND
9	FS3		Switching the high-frequency gain of the focus servo by ON/OFF of FS3.	35	MIRR	O	MIRR comparator output. (DC voltage : connect 10kohms load resistor)
10	FLB		Time constant connect pin for boosts low of focus servo.	36	DFCT		DEFECT comparator output. (DC voltage : connect 10kohms load resistor)
11	FEO	O	Focus drive output	37	ASY	I	Auto asymmetrical control input
12	FE-	I	Inverting input of focus amplifier	38	EFM	O	EFM comparator output. (DC voltage : connect 10kohms load resistor)
13	SRCH		Time constant connect pin for making the focus search waveform.	39	FOK		Focus OK comparator output. (DC voltage : connect 10kohms load resistor)
14	TGU		Time constant connect pin for switching the tracking high-frequency gain.	40	CC1	I	DEFECT bottom hold output
15	TG2			41	CC2	O	Input pin so that DEFECT bottom hold output signal is input by coupling capacitor.
16	AVCC	—	Analog + 5V power supply	42	DVCC	—	Digital + 5V power supply
17	TAO	O	Tracking drive output	43	CB	I	Capacitor connect pin for the DEFECT bottom hold.
18	TA -	I	Inverting input of tracking amplifier.	44	CP		Capacitor connect pin for the MIRR hold. Non-inverting input of the MIRR comparator.
19	SL +		Non-inverting input of sled amplifier.	45	RFI		Input terminal so that RF summing amplifier output signal is input by coupling capacitor.
20	SLO	O	Sled drive output	46	RFO	O	RF summing amplifier output.Check point of the eye pattern.
21	SL-	I	Inverting input of sled amplifier	47	DVEE	—	Digital − 5V power supply
22	FSET		Pin for peak setting of phase compensation of the focus tracking.	48	TZC	I	Tracking zerocross comparator input.
23	ISET		Current flows for set the height of focus search, track jump and sled kick.				
24	SSTOP		Pin for detect ON/OFF signal of the limit switch for detecting inner side of the disc.				
25	AVEE	—	Analog − 5V power supply				
26	DIRC	I	Use at one track jump. (With 47kohms pull-up resistor)				

7. FOR CLD-S201/KUC /CA AND CLD-S250/SD

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

7.1 CONTRAST OF MISCELLANEOUS PARTS

CLD-S201/KUC/CA, CLD-S250/SD and CLD-S201/KUC have the same construction except for the following:

Mark	Symbol & Description	Parts No.			Remarks
		CLD-S201/KUC	CLD-S201/KUC/CA	CLD-S250/SD	
◉	SYPS ASS'Y	VWR1122	VWR1122	- - - - - - - -	
◉	PWSB ASS'Y	- - - - - - - -	- - - - - - - -	VWM1267	
NSP	SYPS ASS'Y	- - - - - - - -	- - - - - - - -	VWR1128	
NSP	VSBA ASS'Y	- - - - - - - -	- - - - - - - -	VWR1139	
	Front panel ASS'Y	VXA1845	VXA1845	VXA1858	
NSP	Rear panel	VNA1256	VNA1256	VNA1271	
⚠	Cord stopper	CM-22C	CM-22C	CM-22B	
⚠	AC power cord	PDG1015	PDG1015	PDG1013	
⚠	Power transformer (AC 120V)	VTT1110	VTT1110	- - - - - - - -	
⚠	Power transformer (AC 110/120-127/220/240V)	- - - - - - - -	- - - - - - - -	VTT1111	
	Packing case	VHG1207	VHG1207	VHG1223	
NSP	Warranty card	ARY1044	ARY1044	ARW1020	
NSP	65 label	ORW1069	ORW1069	- - - - - - - -	
	Operating instructions (French)	- - - - - - - -	VRC1012	- - - - - - - -	
	Operating instructions (Chinese)	- - - - - - - -	- - - - - - - -	VRC1009	
	Operating instructions (Spanish)	- - - - - - - -	- - - - - - - -	VRK1004	

LIST OF ASSEMBLIES

PWSB ASS'Y
- SYPS ASS'Y
- VSBA ASS'Y

SYPS ASS'Y

SYPS ASS'Y (VWR1128) and SYPS ASS'Y (VWR1122) have the same construction except for the following:

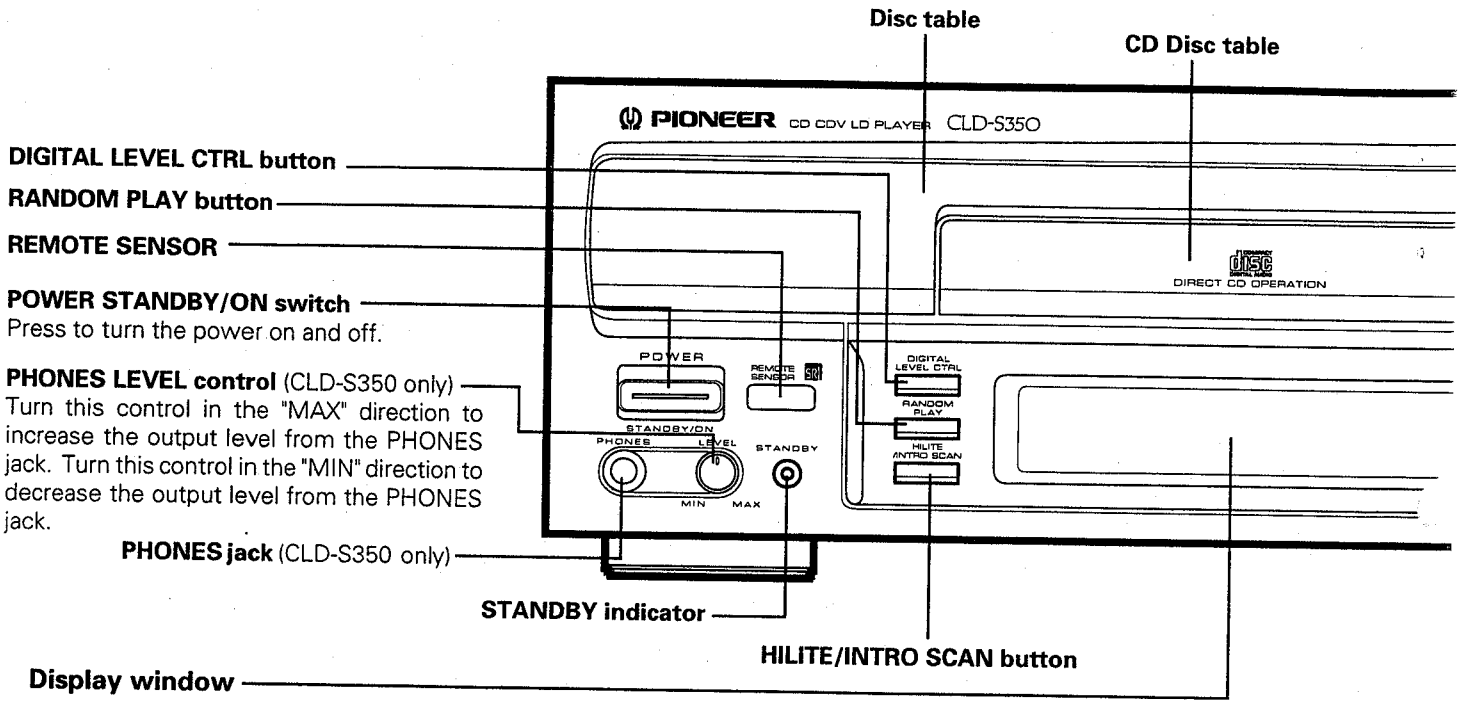
Mark	Symbol & Description	Parts No.		Remarks
		VWR1122	VWR1128	
⚠	R51	RD1/2PM225J	- - - - - - - -	
	Screw terminal	VNE1841	- - - - - - - -	
⚠	CN1 Housing ASS'Y (05P)	- - - - - - - -	VKP1953	

7.2 PCB PARTS LIST

VSBA ASS'Y

Mark	No.	Description	Parts No.
⚠	SW1	Switch (voltage selector)	VSB1007

8. PANEL FACILITIES



CHP-TRK indicator
Indicates the CHP (chapter) number or TRK (track) number.

DIGITAL SOUND indicator
Lights when the disc being played has a digital sound signal.
With LD discs, this indicator lights when the digital sound signal is selected.

► PLAY indicator
Lights during play.
Blinks during search.

II PAUSE indicator
Lights when the player is in pause mode.

REP indicator
Lights during repeat play.

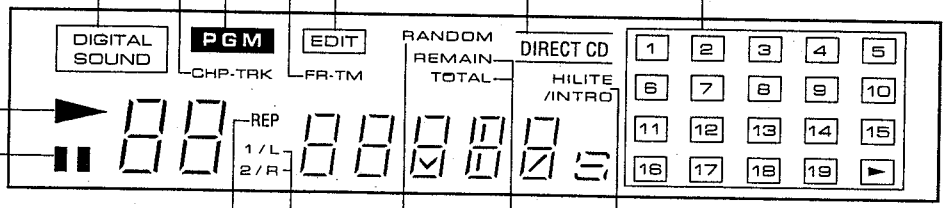
PGM indicator
Lights during program play.

FR/TM indicator
Indicates the FR (frame) number or TM (time).

EDIT indicator
Lights when editing is performed.

DIRECT CD indicator

Visual calendar
When a disc is loaded, all of the chapter/track numbers recorded on the disc light up on the display. If the disc contains more than 19 chapters/tracks, the ► indicator lights.
During program play, only the programmed chapter/track numbers light.
When a disc without a TOC section is played, only the selection number being played lights.
When a CDV disc is loaded, the track numbers of the video part light followed by the track numbers of the audio part.
After a chapter/track is finished playing, the corresponding number goes out.

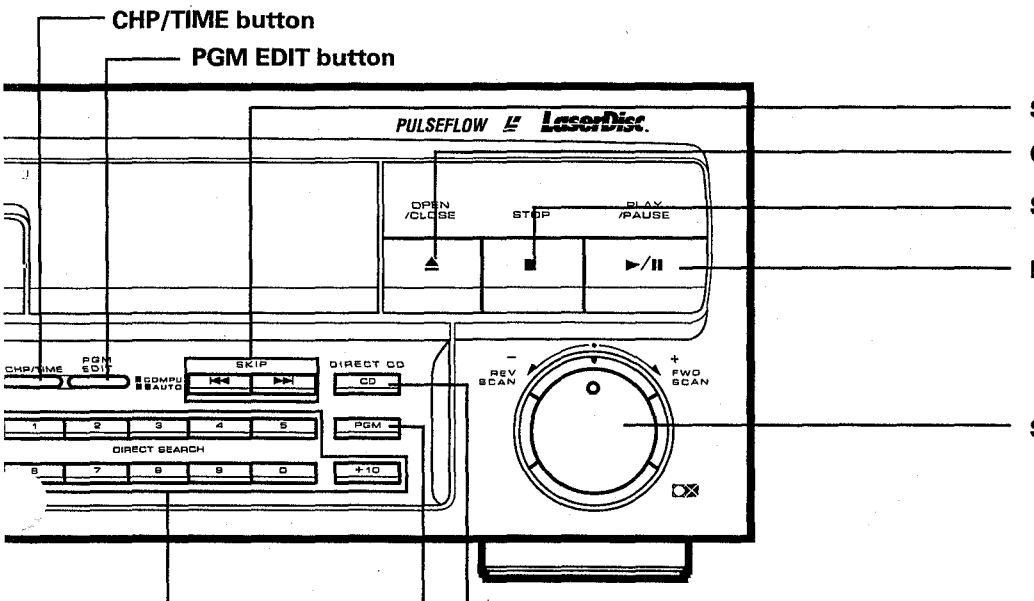


RANDOM indicator
Lights during random play.

1/L, 2/R indicator
Indicates the audio output channel.

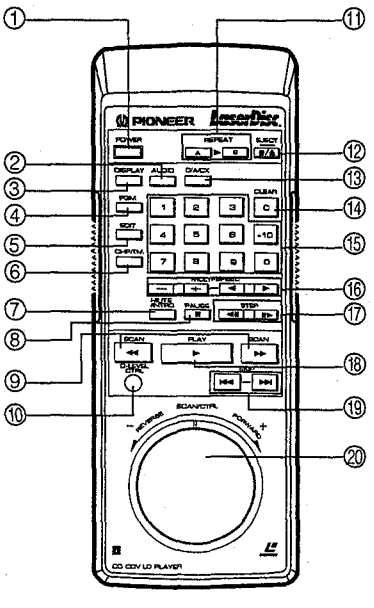
HILITE/INTRO indicator
Lights during Hi Lite Scan or Intro Scan mode.

REMAIN/TOTAL indicator
Indicates the REMAIN TIME (remaining play time) or TOTAL TIME (total play time).

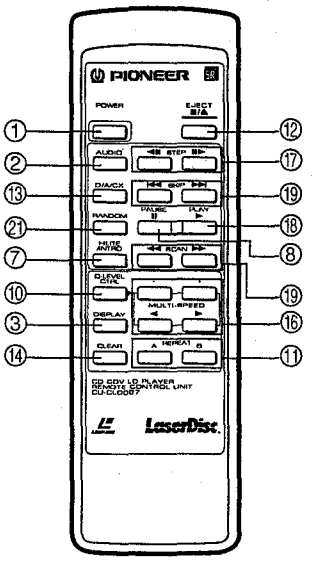


(The illustration shows CLD-S350.)

CLD-S350



CLD-S250/CLD-S201

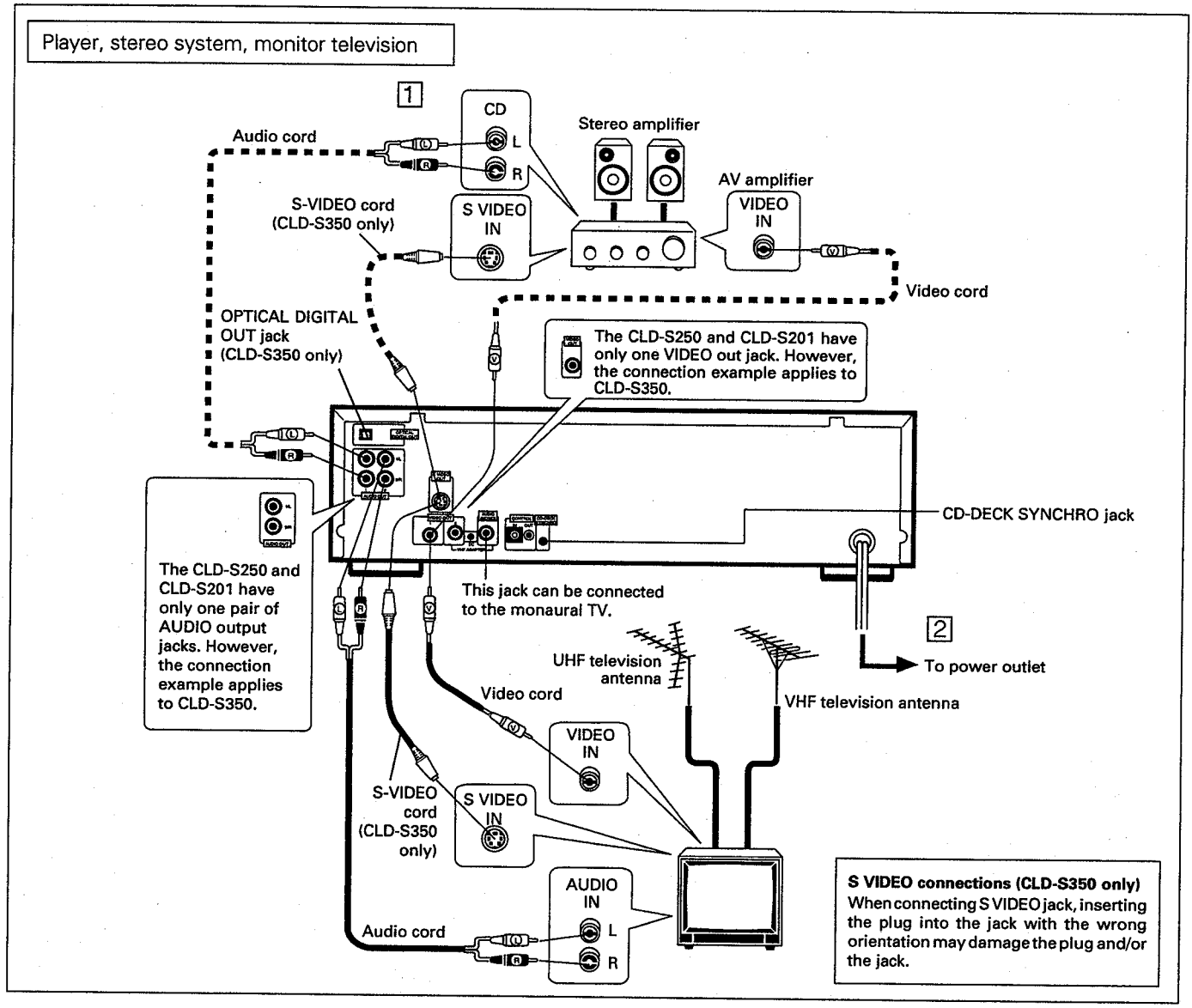


Remote control buttons with the same names or marks as buttons on the front panel of the player control the same operations as the corresponding front panel buttons.

① **POWER button**
Press to turn the power on and off.
② **AUDIO button**
③ **DISPLAY button**
④ **PGM button**
⑤ **EDIT button**
⑥ **CHP/TM button**
⑦ **HILITE/INTRO button**
⑧ **PAUSE button**
⑨ **SCAN buttons**
⑩ **D-LEVEL CTRL button**
⑪ **REPEAT A/B buttons**
⑫ **EJECT button**
⑬ **D/A/CX button**
⑭ **CLEAR button**
Used to clear the repeat mode, program mode, random play mode or hi-lite scan/intro scan mode. This button is also for use in correcting input digits.
⑮ **Digit buttons**
⑯ **MULTI-SPEED buttons**
⑰ **STEP buttons**
⑱ **PLAY button**
⑲ **SKIP buttons**
⑳ **Scan control**
㉑ **RANDOM button**

9. CONNECTIONS

USING TELEVISION WITH AUDIO AND VIDEO JACKS



- Connect the VIDEO OUT jack of the player to the video input jack of the monitor television.
- Connect the AUDIO OUT jacks to the stereo amplifier AUX, CD, LD, VDP or other jacks, except the PHONO input jacks. The television speakers can also be used by connecting the television audio input jacks and the player AUDIO OUT jacks. However, connection to a stereo amplifier is recommended to obtain superior audio playback quality for Compact Discs and LaserDiscs. Do not change the television antenna and VCR connections.
- Connect the power cord to an AC wall outlet.
- Combined system control is possible when a Pioneer television and audio/video stereo receiver are connected.
- When making connections to stereo amplifier equipped with a built-in D/A converter and an optical digital jack, refer to the connection instructions (CLD-S350 only).

CD-DECK synchro function

If you have a Pioneer cassette deck provided with the CD-Deck synchro function, connect the CD-DECK SYNCHRO jacks of the player and cassette deck. With this function, synchro recording can be carried out between player and deck.

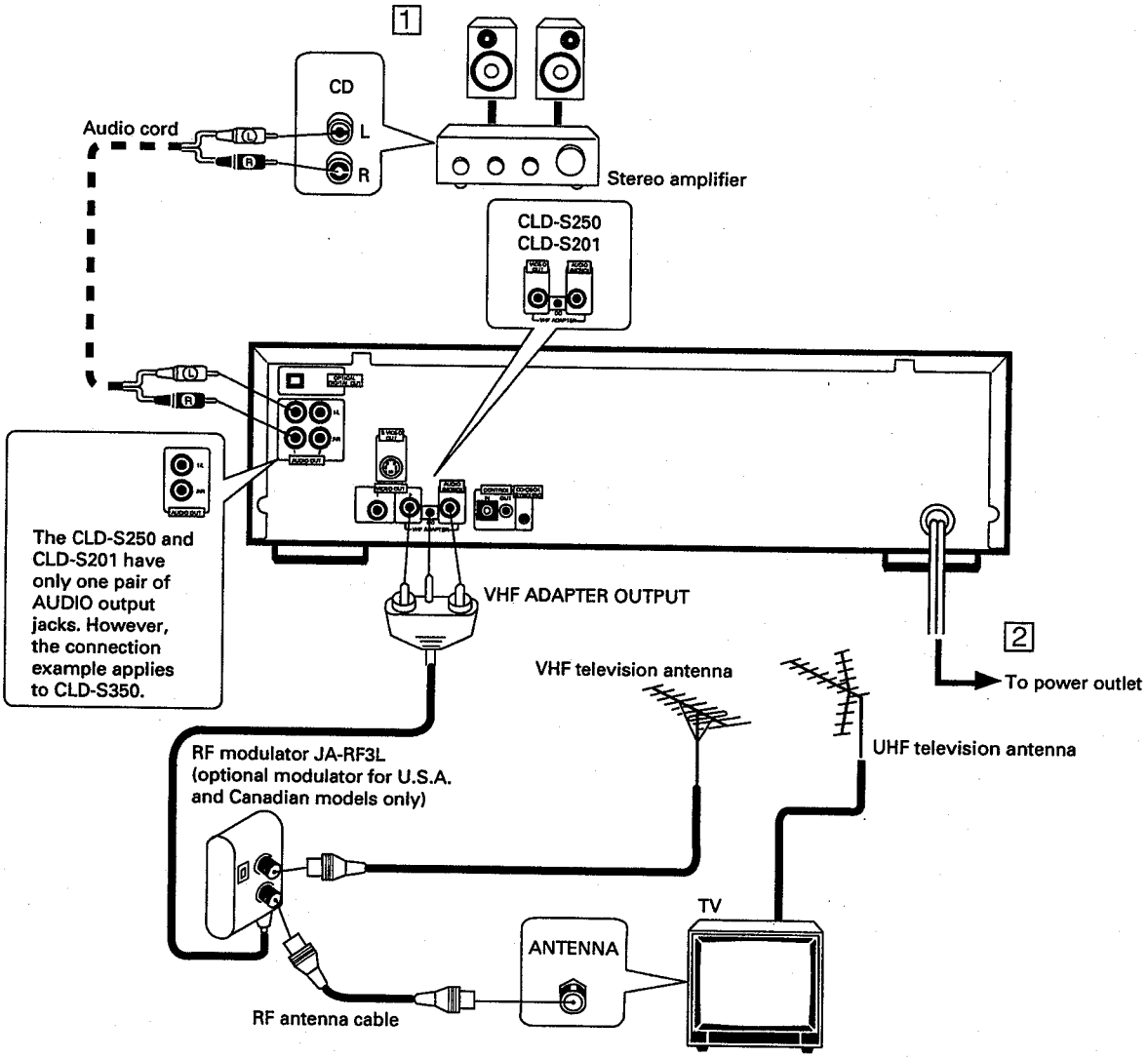
- With CD as well as CDV and LD, the CD-Deck synchro recording can be carried out.
- For details on connections and operation, refer to the instruction manual supplied with the cassette deck.

USING TELEVISION WITHOUT AUDIO AND VIDEO JACKS (WITH RF MODULATOR JA-RF3L)

Player, regular television, stereo system

The numbers are explained on the next page. Make the connections in this order.

- To watch a TV broadcast, turn off the power of this player.
- When the power of this player is turned on, LD playback can be seen on the screen.



1. Detach the VHF antenna cable from the VHF antenna terminal of your TV set, and connect the cable to the VHF IN terminal of the RF modulator JA-RF3L (optional modulator for U.S.A. and Canadian models only).
2. Connect the VHF OUT terminal of the RF modulator to the VHF antenna terminal of your TV set with the supplied RF cable.
3. Connect the socket (3-pin) of the RF modulator to the VHF ADAPTER OUTPUT jacks.

NOTE:

Push the plug in firmly. If the plug is not properly inserted, it may result in snow or noise on the screen.

When the sound from a LaserDisc or Compact Disc is output from a television speaker it becomes monaural sound. (This is the same as stereo television).

NOTES:

- *Stripe patterns may appear when a LaserDisc is played on a television. Move the antenna cable away from the power cord to avoid this.*
- *Be sure to turn off the power of this player when you watch a TV broadcast.*
- *With some televisions, when CD is played in Direct CD mode, no sound will be heard. Therefore, when using television speakers, turn off DIRECT CD.*

10. SPECIFICATIONS

1. General

System ..... LaserVision Disc system and Compact Disc digital audio system
Laser ..... Semiconductor laser wavelength 780 nm
Power requirements
U.S. and Canadian models ..... AC 120V, 60 Hz
Multi-voltage model ..... AC 110V/120-127V/220V/240V (Switchable), 50/60 Hz
Power consumption
CLD-S350 ..... 41 W
CLD-S250/CLD-S201 ..... 39 W
Weight
CLD-S350 ..... 7.4 kg (16 lbs 5 oz)
CLD-S250 ..... 7.3 kg (16 lbs 1 oz)
CLD-S201 ..... 7.2 kg (15 lbs 14 oz)
Dimensions ..... 420 (W) x 390 (D) x 122 (H) mm
16-9/16 (W) x 15-3/8 (D) x 4-13/16 (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
Linear speed ..... 1.2 ~ 1.4m/sec
*Maximum playing time
74 min. 5-inch discs
20 min. 3-inch discs
(For stereo playback)

Compact Discs with Video

Disc ..... Diameter: 5-inch, Thickness: 1.2 mm
Rotation direction (pickup side) ..... Counterclockwise
Linear 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 (CLD-S350: two pairs, CLD-S250/CLD-S201: one pair)

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

4. S-Video output (CLD-S350 only)

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

5. Audio characteristics (CLD-S350: two pairs, CLD-S250/CLD-S201: one pair)

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
SN ratio	(CLD-S350) 112 dB (EIAJ) (CLD-S250/CLD-S201) 102 dB (EIAJ)
Dynamic range	(CLD-S350) 98 dB (EIAJ) (CLD-S250/CLD-S201) 96 dB (EIAJ)
Total harmonic distortion	(CLD-S350) 0.0025% (EIAJ) (CLD-S250/CLD-S201) 0.003% (EIAJ)
Wow and flutter	Limit of measurement (EIAJ)

6. Other Terminals

Control input/output ..... Both miniature jacks
CD-DECK synchro ..... Miniature jack
VHF adapter output (Video/Audio) ..... Both RCA jacks with DC jack
Optical digital output (CLD-S350 only) ..... Optical digital jack

7. Accessories

Remote control unit 1
Size "AAA" (IEC R03) dry cell batteries 2
Video cord 1
Audio cord 1
Operating instructions 1
Warranty card 1

8. Functions

Remote control unit operations

	Function	Standard play Disc (CAV)	Extended play Disc (CLV)	Compact Disc with Video	Compact Disc
Basic Functions	Single-side play	YES	YES	YES	YES
	Pause	YES	YES	YES	YES
	Stop	YES	YES	YES	YES
Search	Fast forward (forward and reverse)	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
	Absolute time search	NO	NO	NO	YES
Program	Chapter/Track program play	YES	YES	YES	YES
	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
	Program repeat	YES	YES	YES	YES
	Random repeat	YES*1	YES*1	YES	YES
	Program random repeat	YES	YES	YES	YES
Trick play	Still/Step	YES	NO	NO	NO
	Multi-speed (Forward/reverse 9-level variable)	YES	NO	NO	NO
Time display	Elapsed time display	NO	YES	YES	YES
	Absolute time display	YES*1	NO	NO	YES
	Remaining track time display	NO	NO	YES	YES
	Remaining total time display	YES*1	YES*1	YES	YES
	Total number of selections, total time display	YES*1	YES*1	YES	YES
Others	Hi-Lite scan	NO	NO	YES*4	YES
	Intro scan	YES	YES	YES*5	NO
	Digital level control	YES*3	YES*3	YES	YES
	CX system ON/OFF	YES*2	YES*2	—	—
	AUTO DIGITAL/ANALOG switch	YES*3	YES*3	—	—
	Audio channel selection (Stereo, 1/L, 2/R)	YES	YES	YES	YES

*1 Only discs with TOC

*2 Valid for analog sound playing a disc with the CX mark.

*3 Can only be used with discs with digital sound tracks.

*4 Audio part only

*5 Video part only

NOTE:

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

PLAYER FUNCTIONS

- Display, Visual Calendar Display
- Intro Scan, Hi-Lite Scan, Direct CD, Digital Level Control, Random Playback, Program Random Playback and Compu Program/Auto Program Edit
- Digital Sound for LaserVision Discs
- Last Memory