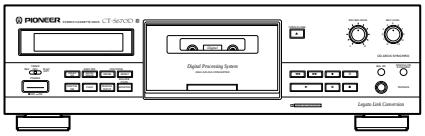
Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
RRV1955

STEREO CASSETTE DECK
CT-S670D

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

Type	Model	Power Requirement	Remarks
	CT-S670D		
HYXJ	○	AC220–230V	

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V . Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 501 Orchard Road, #10-00 Lane Crawford Place, Singapore 0923

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1. SAFETY INFORMATION

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

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

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

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

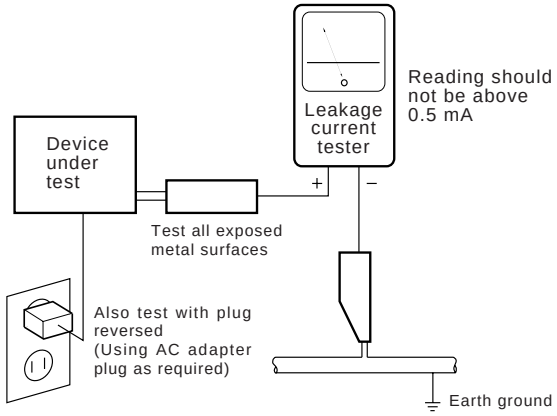
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

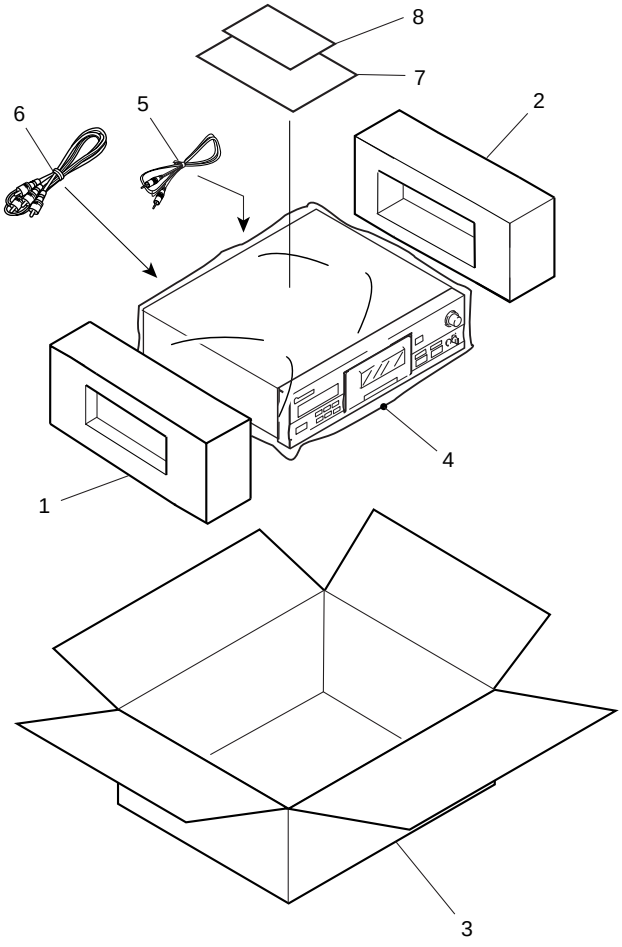
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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

2. EXPLODED VIEWS AND PARTS LIST

NOTES :
- *Parts marked by "* NSP *" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ 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.*
- *Screw adjacent to ▼ mark on the product are used for disassembly.*

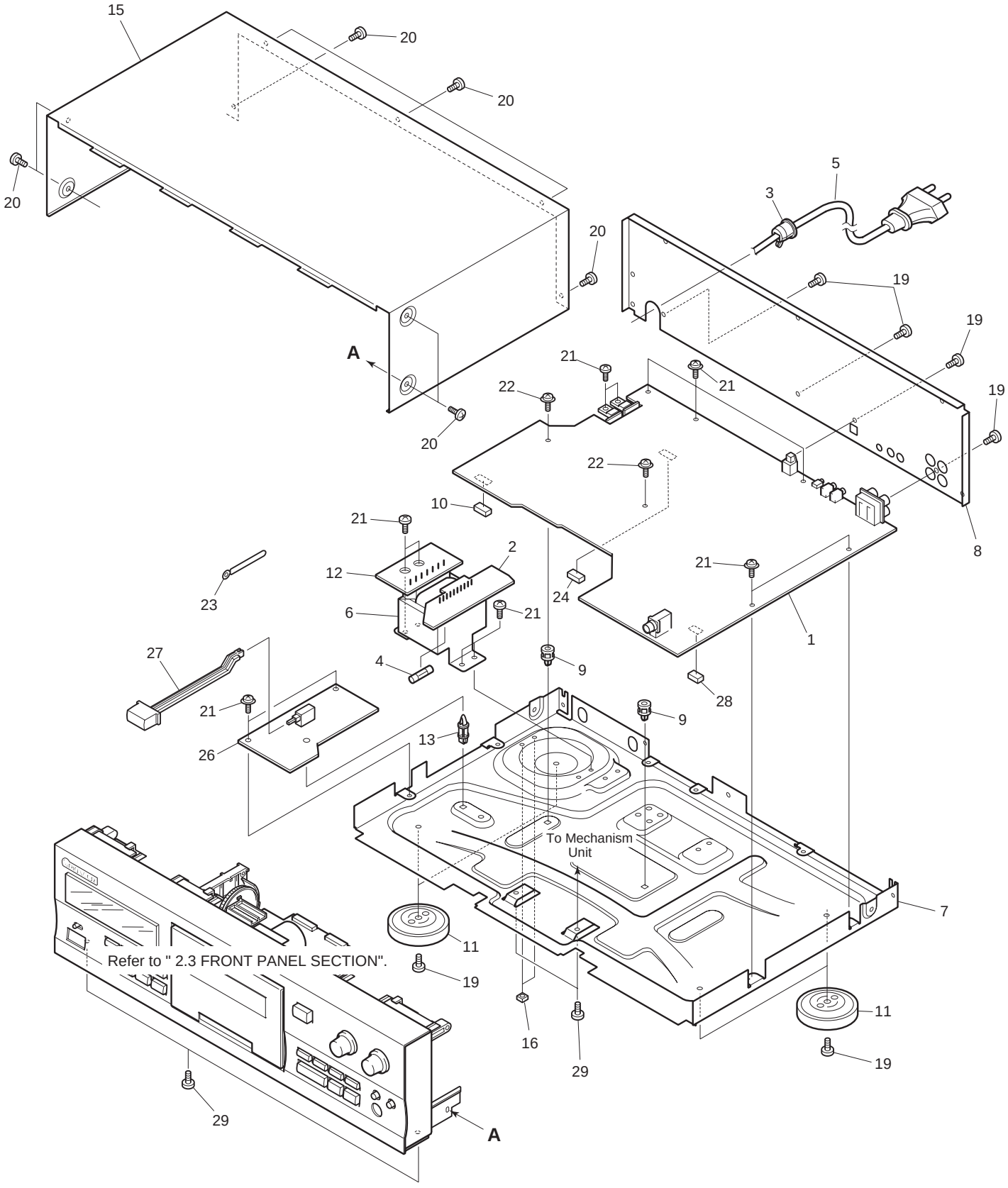
2.1 PACKING



PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Pad (L)	RHA1213
	2	Pad (R)	RHA1212
	3	Packing Case	RHG1871
	4	Sheet (750 × 600 × 0.5)	Z23-007
	5	CD • DECK SYNCHRO Control Code	RDE1044
	6	Connection Code with Pin Plugs (Audio Cord: L= 1.0 m)	RDE1036
	7	Operating Instructions (English/French/German/Italian/ Dutch/Swedish/Spanish/ Portuguese)	RRE1161
NSP	8	Warranty Card	ARY7009

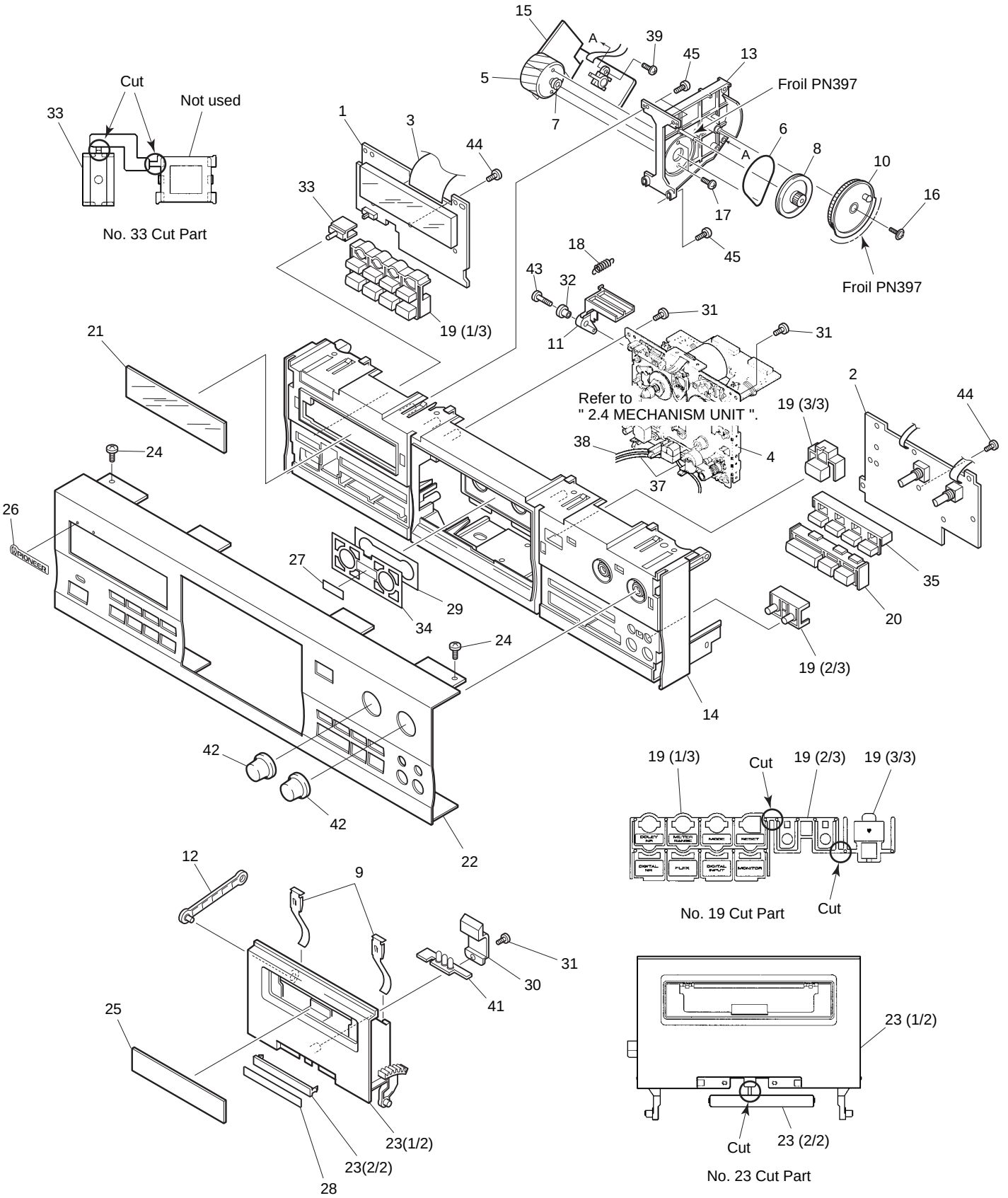
2.2 EXTERIOR


15
20
20
20
20
5
3
19
19
19
19
A
21
21
22
22
10
21
2
12
6
21
23
24
21
1
8
27
4
9
28
21
26
13
9
To Mechanism
Unit
7
11
Refer to " 2.3 FRONT PANEL SECTION".
19
16
29
11
19
29
A

EXTERIOR PARTS LIST

Mark	No.	Description	Part No.
	1	MAIN UNIT	RWZ4279
NSP	2	TRN 2 UNIT	RWZ4281
⚠	3	Strain Relief	CM–22B
⚠	4	Fuse (FU801: T1.25A)	AEK1055
⚠	5	AC Power Cord	PDG1058
⚠	6	Power Transformer (AC220–230V)	RTT1345
NSP	7	Main Chassis	RNB1132
	8	Rear Panel	RNA2199
NSP	9	PCB Spacer	PNY–404
NSP	10	FL Spacer	PEB1033
	11	Insulator	PNW2766
NSP	12	TRANS 1 PCB	RNZ3294
NSP	13	PCB Holder	AEC–703
	14	……	
	15	Bonnet	REA1276
	16	Disc Guard	REC1305
	17	……	
	18	……	
	19	Screw	BBZ30P080FCC
	20	Screw	BBZ30P080FZK
	21	Screw	BBZ30P060FCC
	22	Screw	IBZ30P150FCC
NSP	23	Binder	ZCA–T18S
NSP	24	Spacer	REC1319
NSP	25	……	
NSP	26	PWSW UNIT	RWZ4280
	27	Power Button	RAC2193
NSP	28	FL Spacer	PEB1137
	29	Screw	BBT30P080FCC

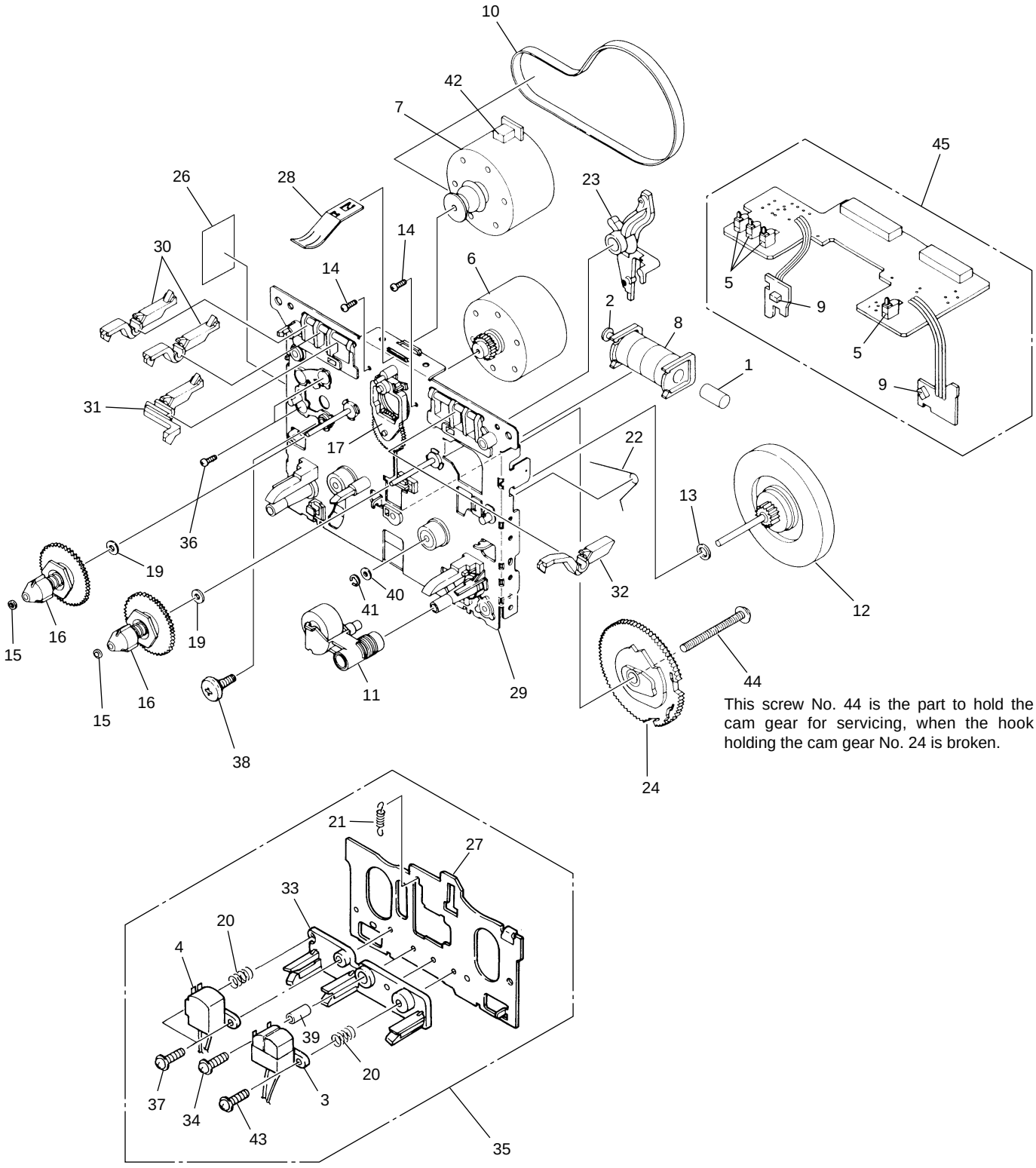
2.3 FRONT PANEL SECTION



FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FL UNIT	RWX1146
	2	OPSW UNIT	RWX1142
	3	FFC 33P (60V)	RDD1400
	4	Mechanism Unit	RYM1271
	5	DC Motor/0.75W	PXM1010
	6	Rubber Belt	PEB1127
	7	Motor Pulley	PNW1634
	8	Pulley Gear	RNK1517
	9	Spring	RBK1004
	10	Arm Gear	RNK2304
	11	SW Lever	RNK1897
	12	Joint Arm	RNK2243
	13	Loading Base Assy 2	RXA1750
	14	Panel Stay	RNT1247
NSP	15	POCM UNIT	RWZ4282
	16	Screw	IPZ20P080FMC
	17	Screw	BMZ26P040FMC
	18	Spring	RBH1008
	19	Function Button B	RAC2191
	20	Play Button B	RAC2204
	21	FL Lens	RAH2846
	22	Front Panel	RAH2848
	23	Door Pocket	RAH2843
	24	Screw	BBT30P080FCC
	25	Door Lens	RAH2782
	26	Name Plate	AAM7004
	27	Indicating Panel	REE–113
	28	Door Plate	RAH2850
	29	Stabilizer B	REB1085
	30	Digi Lens	RAC2200
	31	Screw	BBZ30P060FCC
	32	Eject Collar	RLA1303
	33	Slide Knob	RAC2203
	34	Stabilizer Panel	RAH1483
	35	Manual Button	RAC2195
	36	…….	
	37	Connector Assy 3P	RKP1673
	38	Connector Assy 2P	RKP1681
	39	Screw	BBZ26P060FMC
	40	…….	
NSP	41	LED UNIT	RWX1143
	42	VOL Knob	RAC2197
	43	Screw	BBZ26P100FMC
	44	Screw	BBZ30P080FZK
	45	Screw	BBZ30P100FMC

2.4 MECHANISM UNIT SECTION



This screw No. 44 is the part to hold the cam gear for servicing, when the hook holding the cam gear No. 24 is broken.

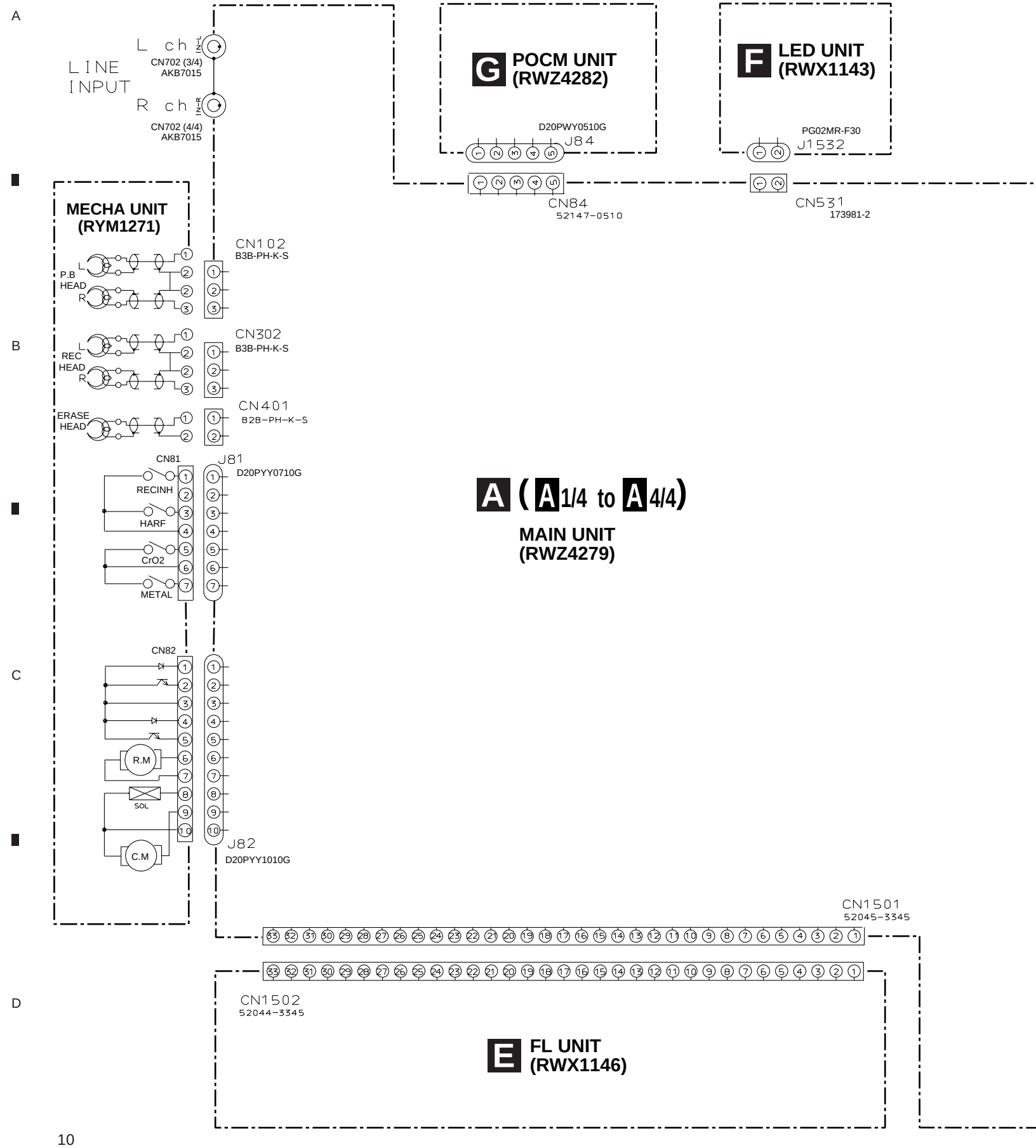
MECHANISM UNIT SECTION PARTS LIST

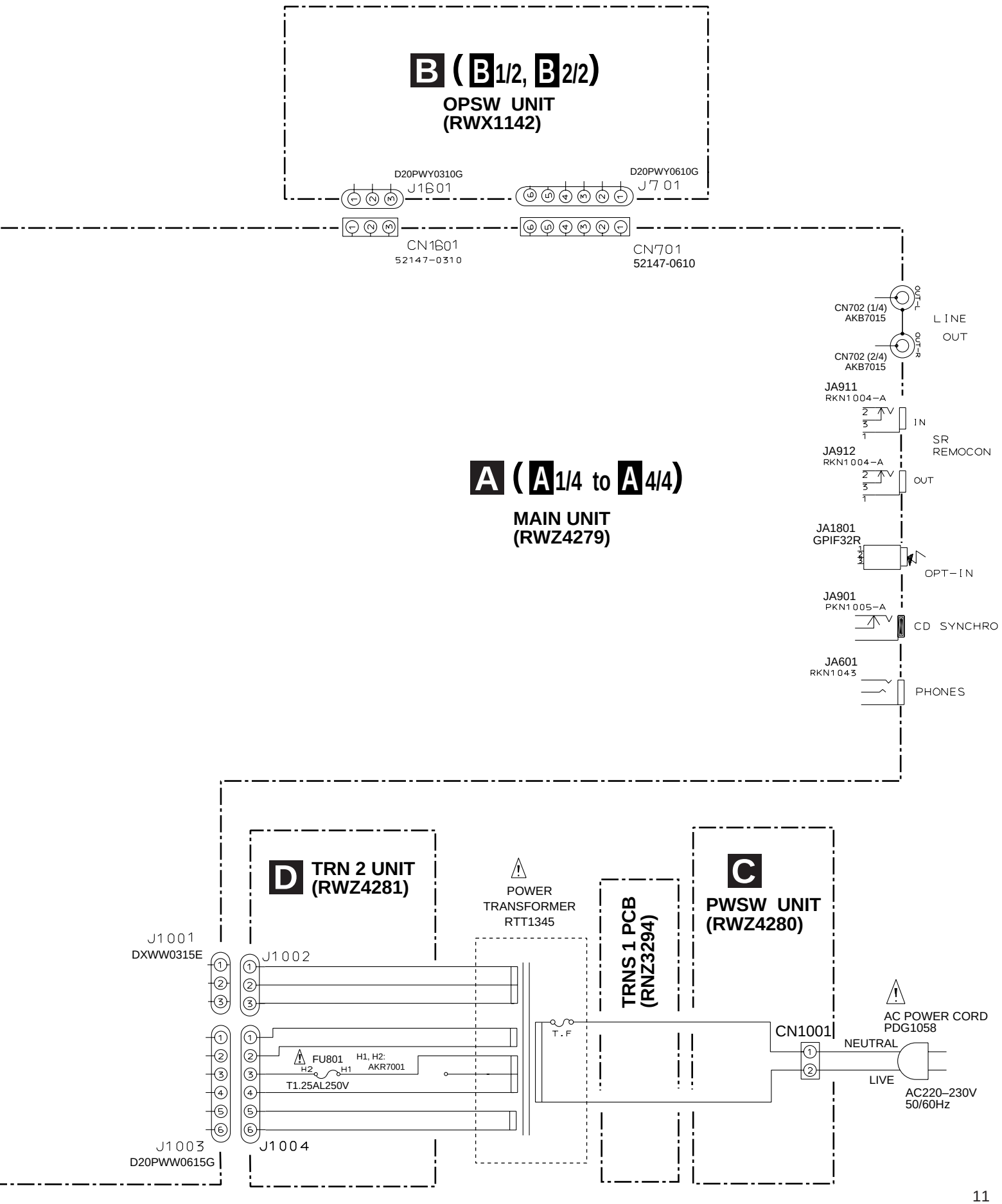
Mark	No.	Description	Part No.
	1	FIXED CORE	RLA1130
	2	PLUNGER	RLA1132
	3	HEAD (R/P)	RPB1047
	4	HEAD (E)	RPB1060
	5	PUSH SW	RSG1018
	6	MTR REEL BLK	RXM1057
	7	MTR MAIN BLK	RXM1058
	8	SOLENOID BLK	RXP1010
	9	PHOTO-TRANSISTOR	SPI33534FG
	10	MAIN BELT	REB1163
	11	PINCH ROLLER ASSY	RXA1183
	12	FLYWHEEL ASSY	RXA1772
	13	WASHER	WA26D045D025
	14	SCREW 2.6 × 6.4 ZN	RBA1076
	15	WASHER	RBF–057
	16	REEL BASE BLK	RXA1184
	17	IDLER BLK	RXA1248
	18	…….	
	19	WASHER 2.1 × 0.25T	RBF1038
	20	AZIMUTH SPRING	RBH1076
	21	HAED BASE SPRING	RBL1003
	22	SLIDE SPRING	RBH1239
	23	PLAY ARM	RNK1525
	24	CAM GEAR (3R)	RNK1672
	25	…….	
NSP	26	SPACER	REC1319
	27	HEAD BASE	RNE1390
	28	SPRING CASSETTE	RBK1048
	29	CHASSIS BASE BLK	RXA1557
	30	DETECTOR LEVER (REC)	RNK1527
	31	METAL DETECTOR LEVER (L)	RNK1529
	32	DETECTOR LEVER (P)	RNK1543
	33	HEAD SPACER	RNK2106
	34	SCREW	PMZ20P080FMC
	35	PLATE HD BLK	RXA1488
	36	SCREW	PMA26P050FMC
	37	F LOOK SCREW M2 × 10	RBH1031
	38	SCREW	RBA1101
	39	SPACER	RLA1275
	40	WASHER	WA26D047D050
	41	WASHER	YE15FUC
	42	HOLDER CUSHION (L)	RED1027
	43	F LOOK SCREW 2 × 8	RBA1102
	44	SCREW TT2 × 15	RBA1068
	45	PCB CONTROL BLK	RXA1771

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

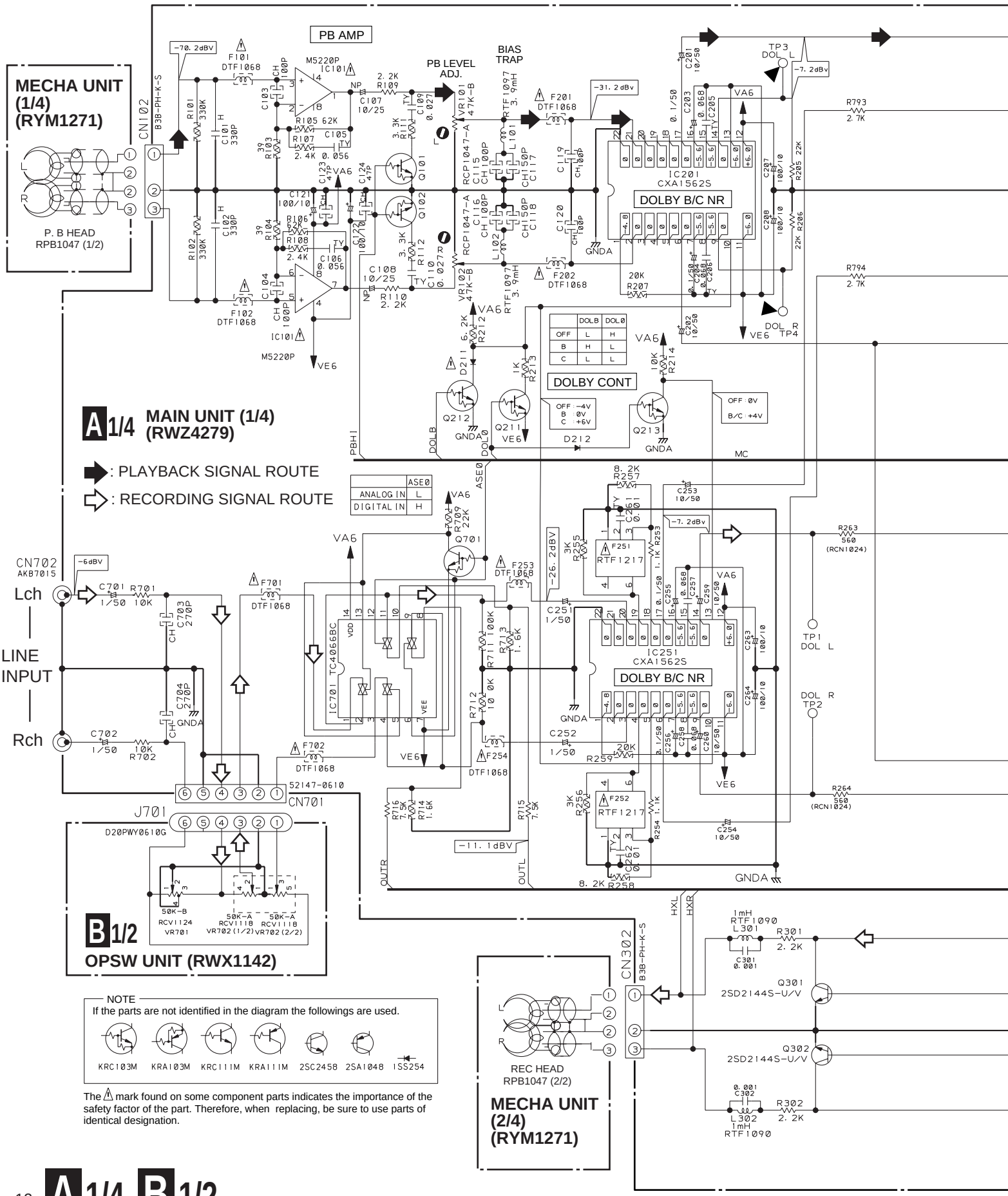
3. SCHEMATIC DIAGRAM

3.1 OVERALL SCHEMATIC DIAGRAM




B (B1/2, B2/2)
OPSW UNIT
(RWX1142)
D20PWY0310G
J1B01
D20PWY0610G
J701
CN1B01
52147-0310
CN701
52147-0610
CN702 (1/4)
AKB7015
OUT-L
LINE
OUT
CN702 (2/4)
AKB7015
OUT-R
JA911
RKN1004-A
IN
SR
REMOCON
JA912
RKN1004-A
OUT
A (A1/4 to A4/4)
MAIN UNIT
(RWZ4279)
JA1801
GPIF32R
OPT-IN
JA901
PKN1005-A
CD SYNCHRO
JA601
RKN1043
PHONES
D TRN 2 UNIT
(RWZ4281)
POWER
TRANSFORMER
RTT1345
TRNS 1 PCB
(RNZ3294)
C
PWSW UNIT
(RWZ4280)
J1001
DXWW0315E
J1002
FU801
H1, H2:
AKR7001
H2
H1
T1.25AL250V
T.F
CN1001
AC POWER CORD
PDG1058
NEUTRAL
LIVE
AC220–230V
50/60Hz
J1003
D20PWW0615G
J1004

3.2 MAIN UNIT (1/4) AND OPSW UNIT (1/2)

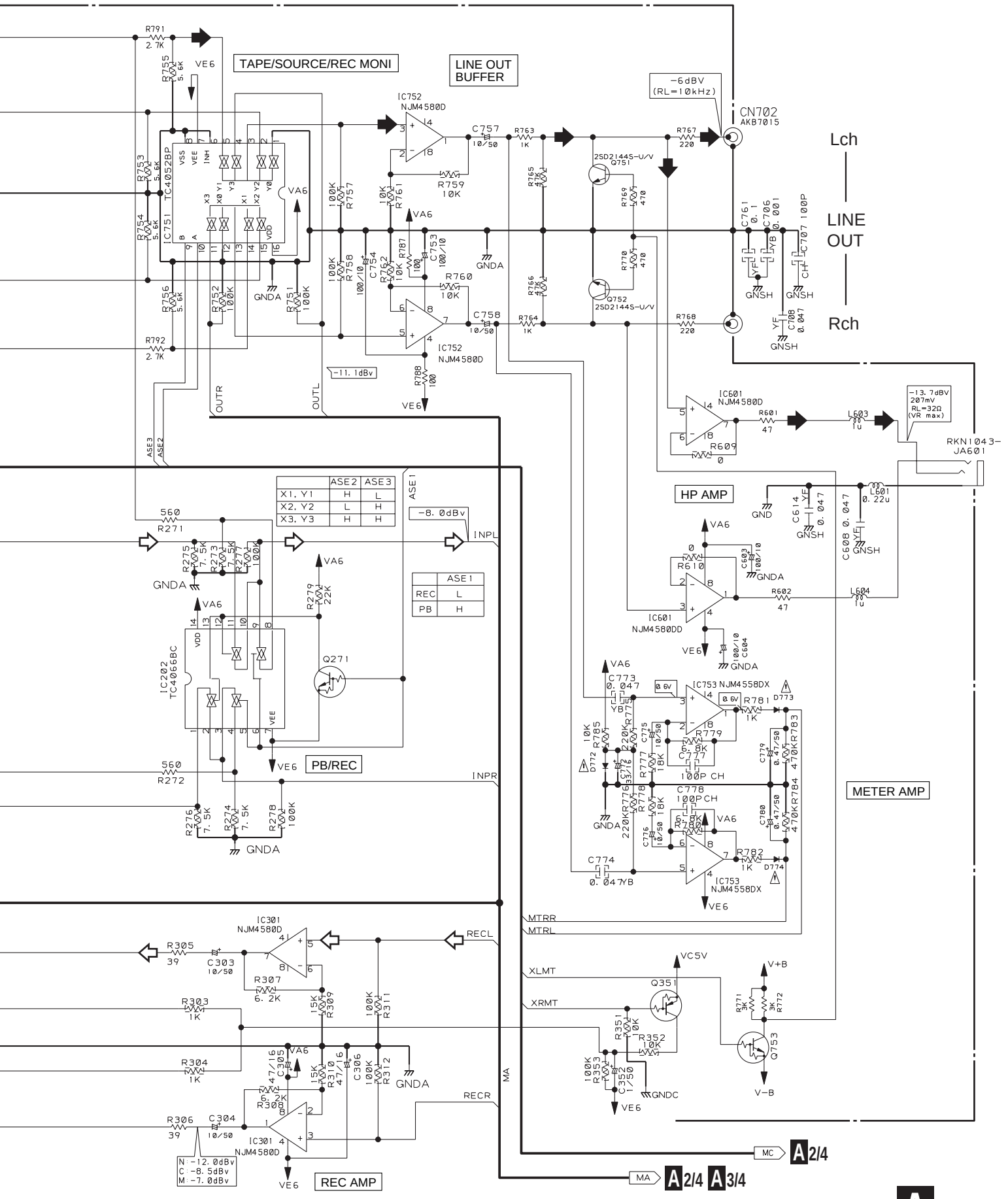


NOTE

If the parts are not identified in the diagram the followings are used.

KRC103M KRA103M KRC111M KRA111M 2SC2458 2SA1048 1SS254

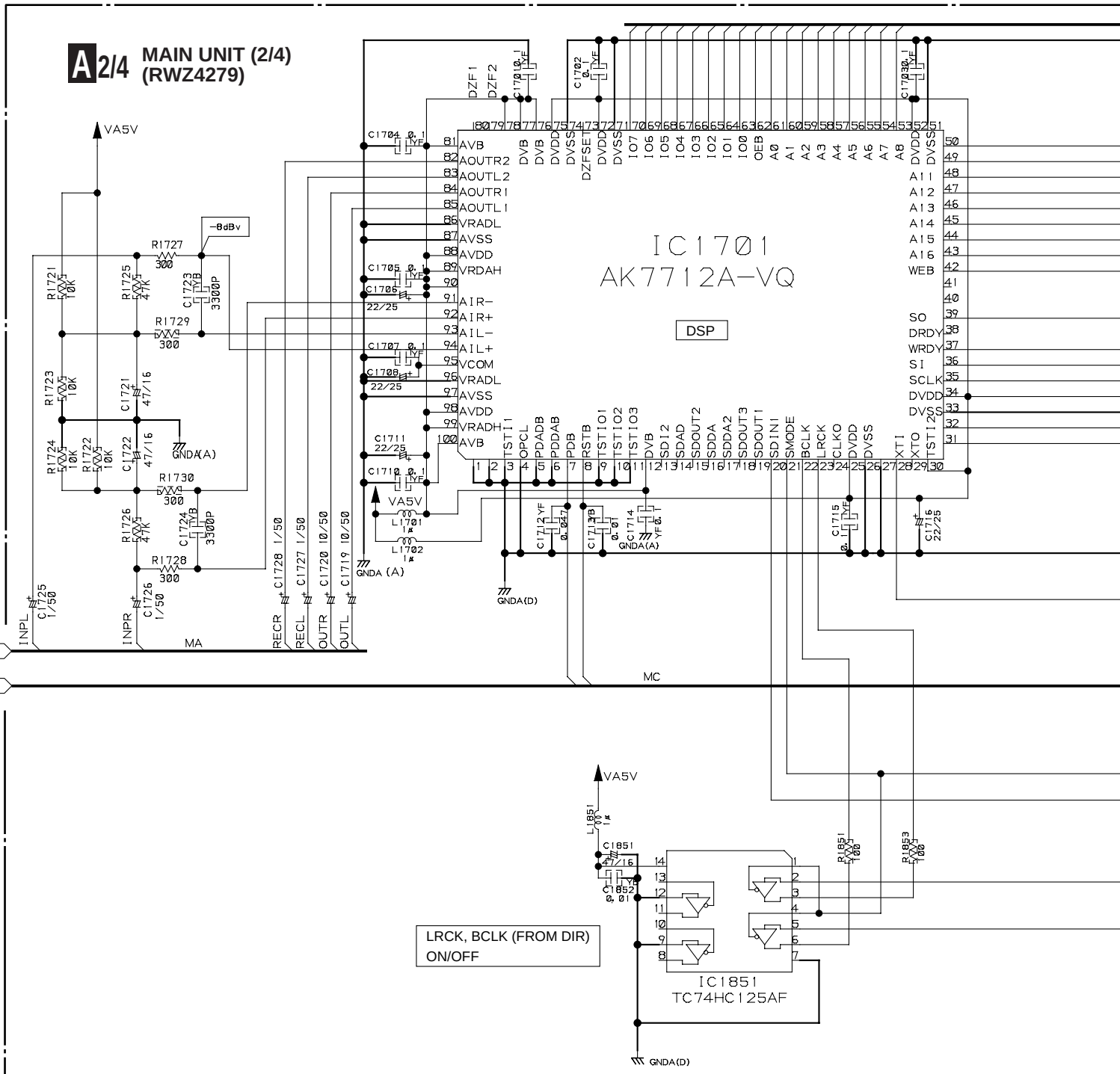
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



	ASE2	ASE3
X1, Y1	H	L
X2, Y2	L	H
X3, Y3	H	H

	ASE1
REC	L
PB	H

3.3 MAIN UNIT (2/4)

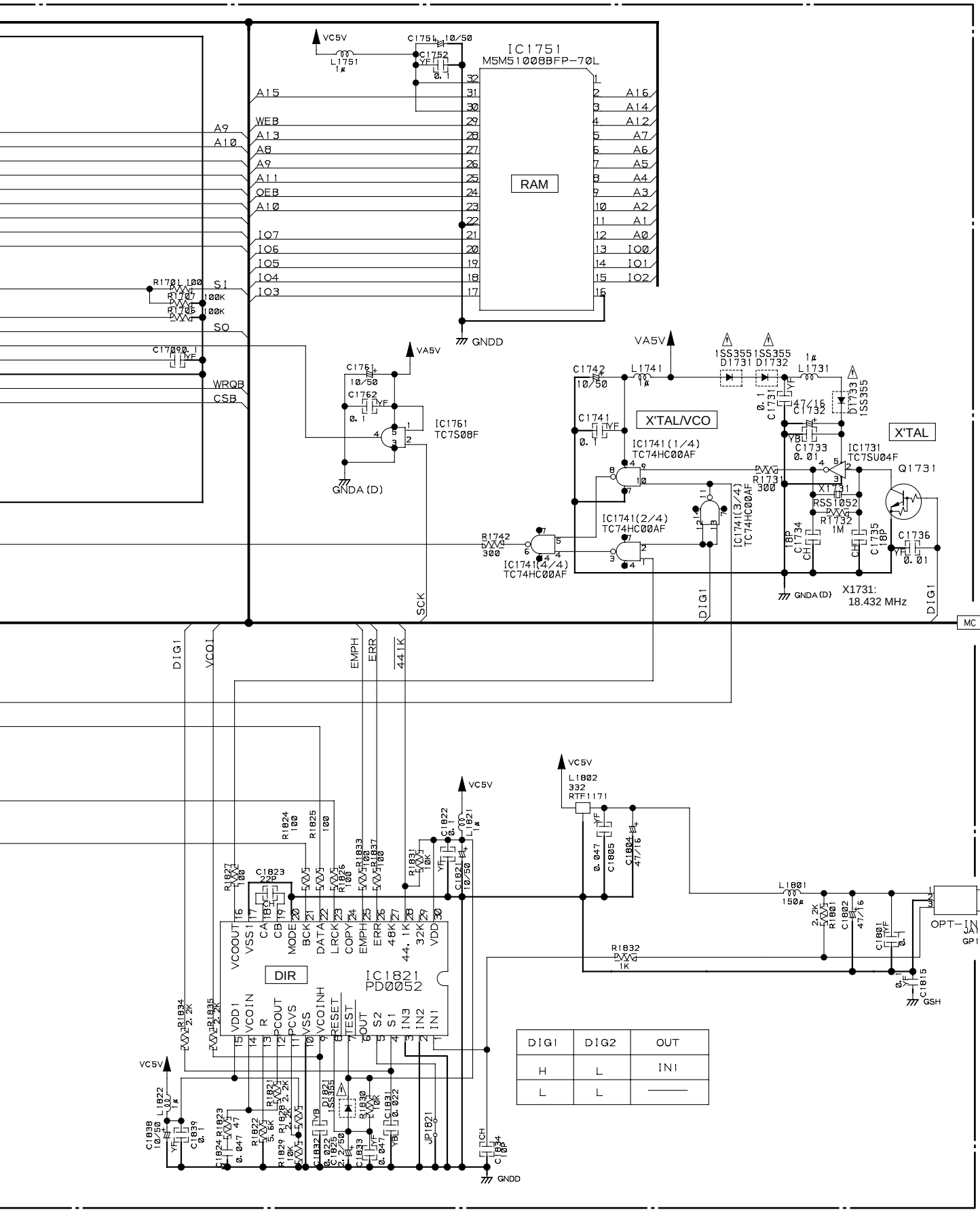


NOTE

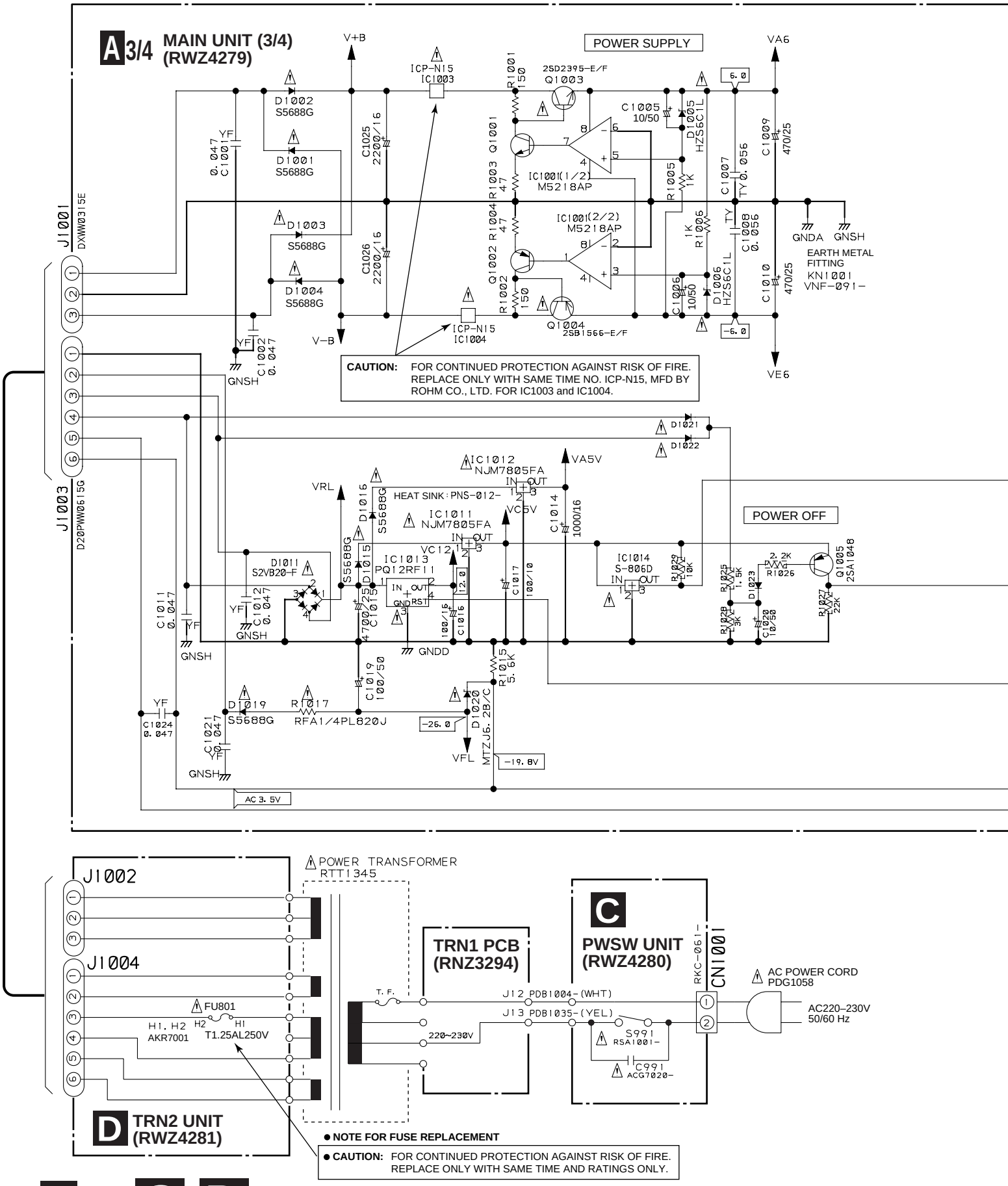
If the parts are not identified in the diagram the followings are used.

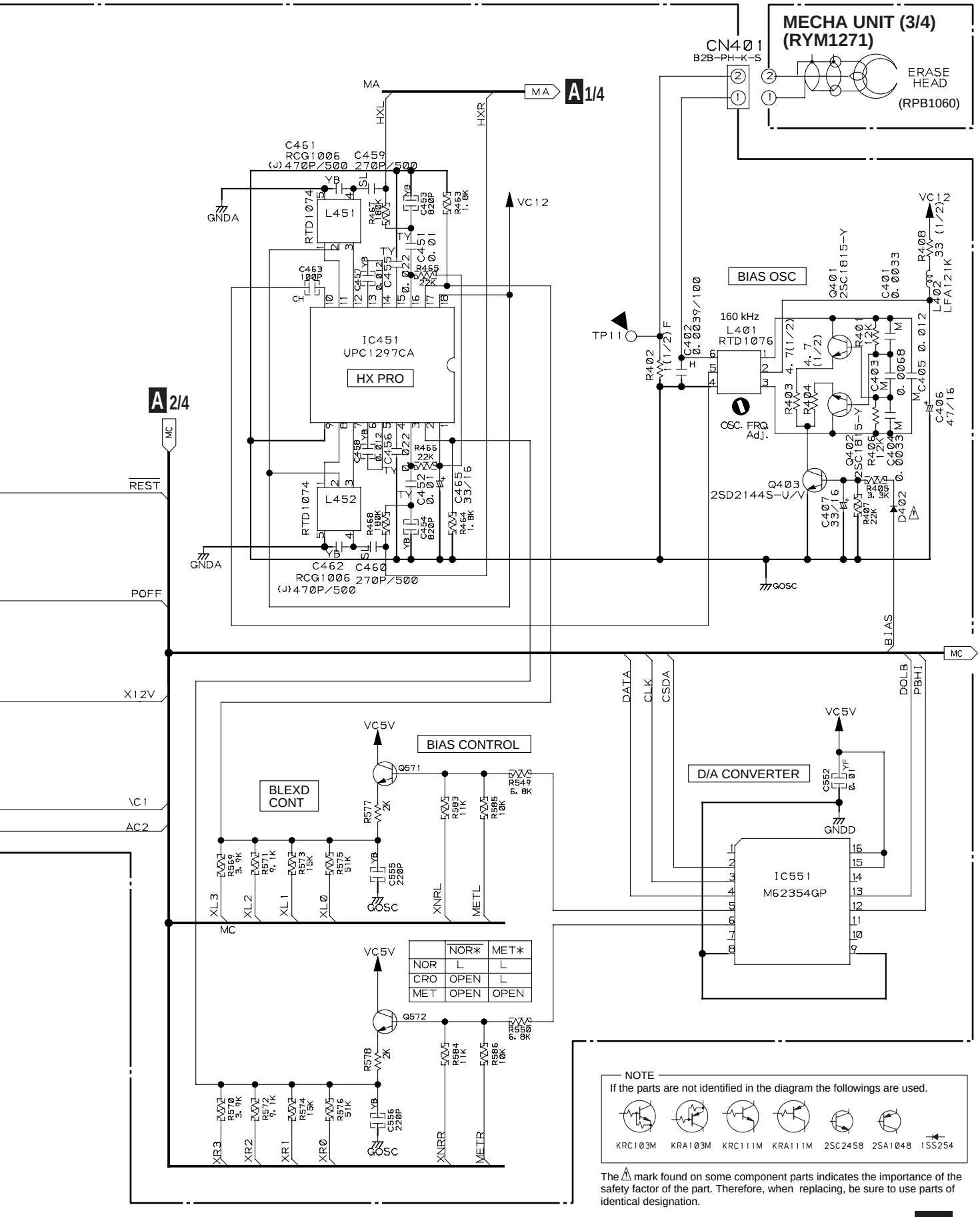
KRC103M KRA103M KRC111M KRA111M 2SC2458 2SA1048 1SS254

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.

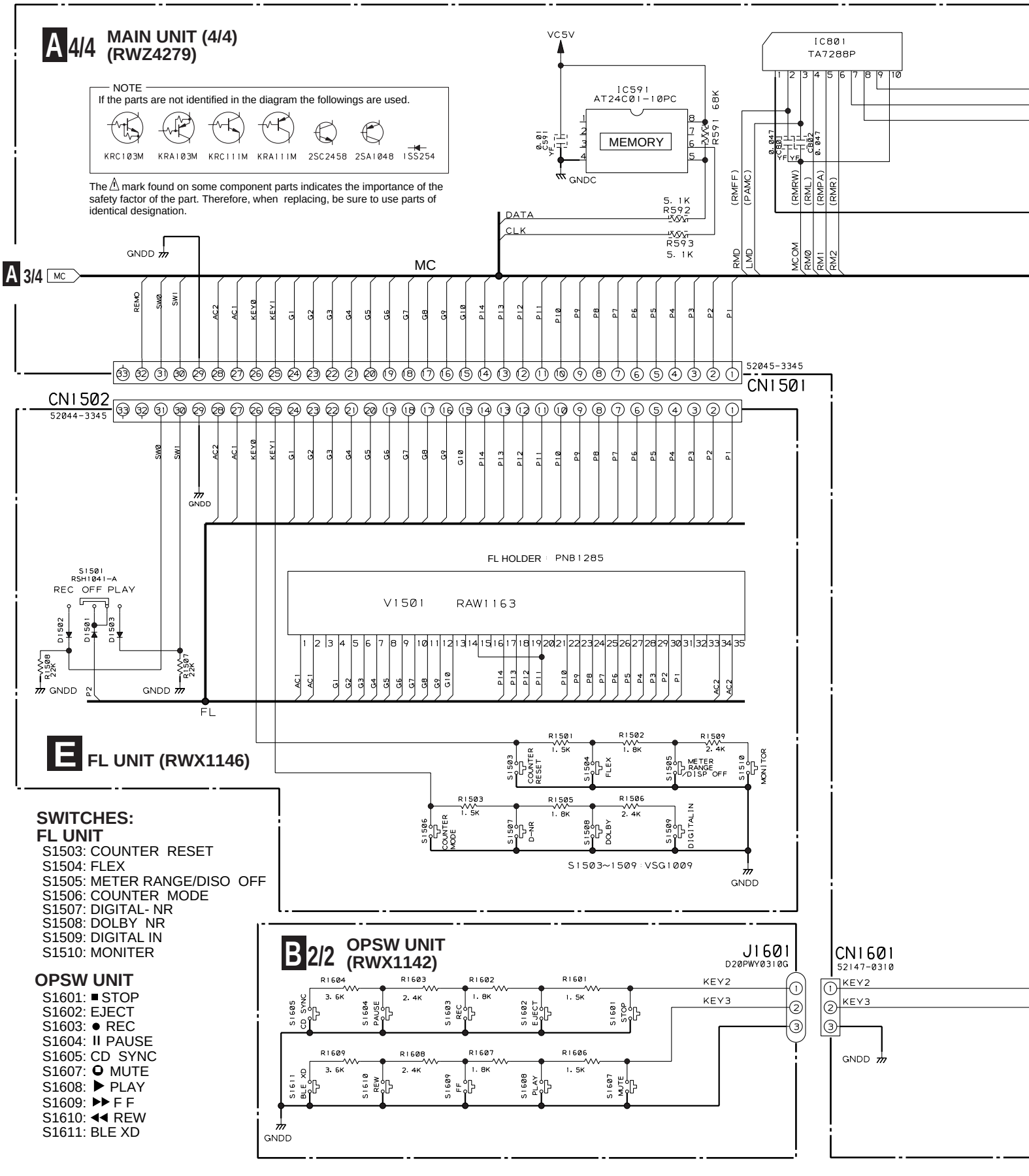

IC1751
M5M51008BFP-70L
RAM
VC5V
GNDD
IC1761
TC7S08F
GNDA (D)
VA5V
X'TAL/VCO
X'TAL
IC1741(1/4)
TC74HC00AF
IC1741(2/4)
TC74HC00AF
IC1741(3/4)
TC74HC00AF
IC1741(4/4)
TC74HC00AF
IC1731
TC7SU04F
Q1731
X1731:
18.432 MHz
SI
SO
SCK
WRQB
CSB
DIG1
VCOI
EMPH
ERR
441K
MC
A 3/4
DIR
IC1821
PD0052
OPT-IN
JA1801
GP1F32R
GSH
DIG1
DIG2
OUT
H
L
IN1
L
L
—

3.4 MAIN UNIT(3/4), PWSW UNIT AND TRN2 UNIT




MECHA UNIT (3/4)
(RYM1271)
CN401
B2B-PH-K-S
ERASE HEAD
(RPB1060)
MA
A 1/4
HXL
HXR
C461
RCG1006 (J)470P/500
C459 270P/500
YB
SL
GNDA
RTD1074
L451
R457 180K
C453 820P
R463 1.8K
TY
C451 0.01
C455 0.022
R465 22K
C453 100P
CH
IC451
UPC1297CA
HX PRO
VC12
BIAS OSC
Q401 2SC1815-Y
C401 0.0033
R408 33 (1/2)
L402 LFA121K
160 kHz
L401
RTD1076
TP11
C402 0.0039/100
R402 1 (1/2)F
R401 4.7 (1/2)
R403 4.7 (1/2)
R404
C403
C405 0.012
C406 47/16
OSC. FRQ. Adj.
Q402 2SC1815-Y
R405 12K
C404 0.0033
Q403 2SD2144S-U/V
R406 3.3K
C407 33/16
R407 22K
D402
GOSC
A 2/4
MC
REST
POFF
X12V
\C1
AC2
C462 RCG1006 (J)470P/500
C460 270P/500
C458 0.012
C456 0.022
R466 22K
C452 0.01
C465 33/16
R468 180K
C454 820P
R464 1.8K
BIAS
A 4/4
DATA
CLK
CSDA
DOLB
PBHI
BIAS CONTROL
BLEXD CONT
Q571
R549 6.8K
R577 2K
R583 11K
R589 10K
R569 3.9K
R571 9.1K
R573 15K
R575 51K
C555 220P
XL3
XL2
XL1
XL0
XNRL
METL
VC5V
D/A CONVERTER
C552 0.01
GNDD
IC551
M62354GP
NOR* MET*
NOR L L
CRO OPEN L
MET OPEN OPEN
Q572
R550 6.8K
R578 2K
R584 11K
R586 10K
R570 3.9K
R572 9.1K
R574 15K
R576 51K
C556 220P
XR3
XR2
XR1
XR0
XNRR
METR
NOTE
If the parts are not identified in the diagram the followings are used.
KRC103M
KRA103M
KRC111M
KRA111M
2SC2458
2SA1048
1SS254
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.

3.5 MAIN UNIT (4/4), OPSW UNIT (2/2), FL UNIT, LED UNIT AND POCM UNIT



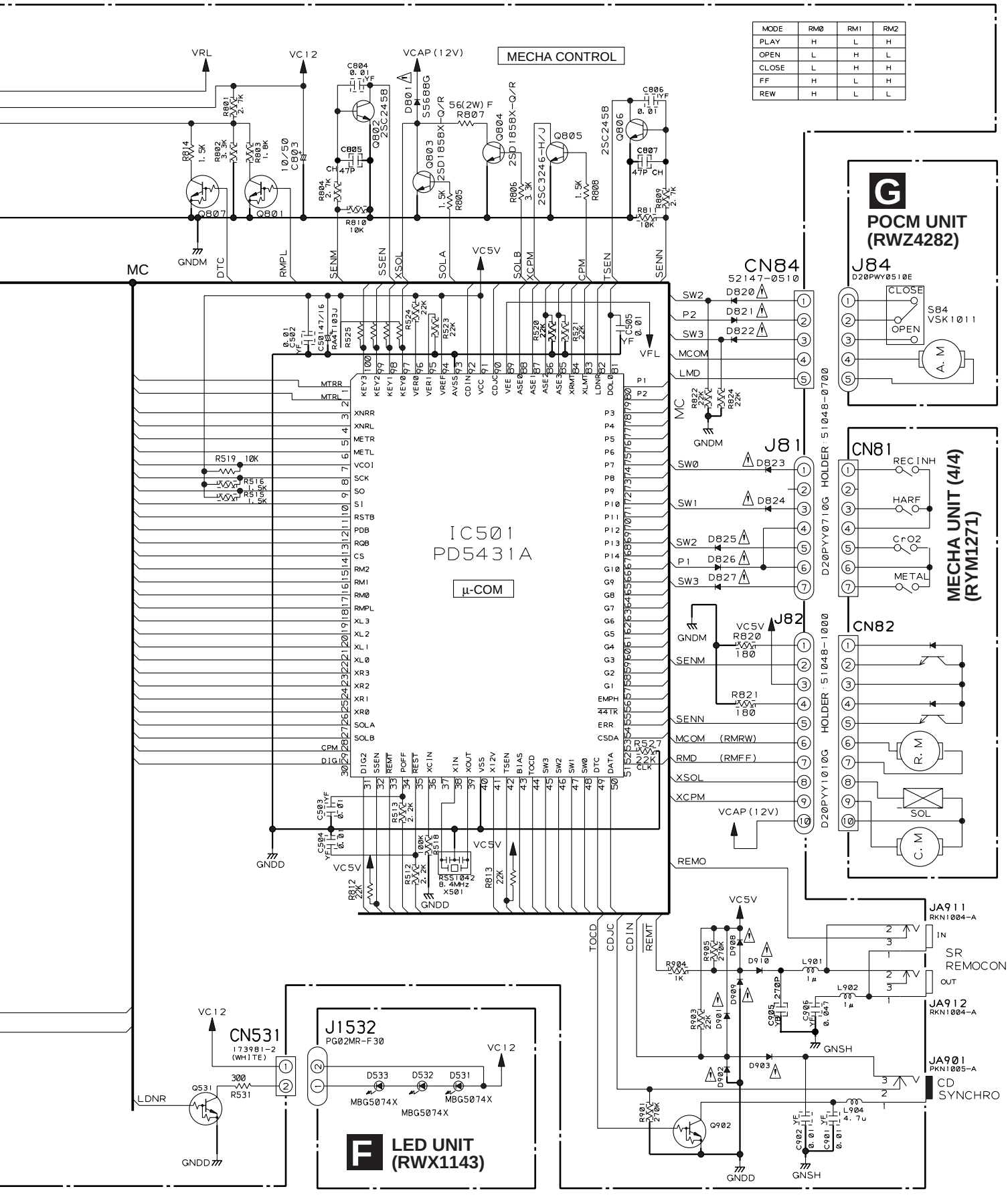
SWITCHES:

FL UNIT

S1503: COUNTER RESET
S1504: FLEX
S1505: METER RANGE/DISO OFF
S1506: COUNTER MODE
S1507: DIGITAL- NR
S1508: DOLBY NR
S1509: DIGITAL IN
S1510: MONITER

OPSW UNIT

S1601: ■ STOP
S1602: EJECT
S1603: ● REC
S1604: II PAUSE
S1605: CD SYNC
S1607: MUTE
S1608: ▶ PLAY
S1609: ▶▶ F F
S1610: ◀◀ REW
S1611: BLE XD


MECHA CONTROL
MODE RM0 RM1 RM2
PLAY H L H
OPEN L H L
CLOSE L H H
FF H L H
REW H L L
MC
IC501
PD5431A
μ-COM
CN84
52147-0510
J84
D20PWY0510E
S84
VSK1011
CLOSE
OPEN
A. M
POCM UNIT
(RWZ4282)
J81
D20PYY0710G HOLDER: 51048-0700
J82
D20PYY1010G HOLDER: 51048-1000
CN81
CN82
RECINH
HARF
CrO2
METAL
R. M
SOL
C. M
MECHA UNIT (4/4)
(RYM1271)
CN531
173981-2
(WHITE)
J1532
PG02MR-F30
LED UNIT
(RWX1143)
JA911
RKN1004-A
IN
SR
REMOCON
OUT
JA912
RKN1004-A
JA901
PKN1005-A
CD
SYNCHRO
VRL
VC12
VCAP(12V)
VC5V
GNDM
GNDD
GNSH
VFL
REMO

4. PCB CONNECTION DIAGRAM

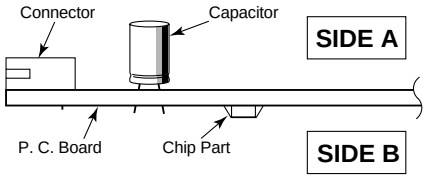
NOTE FOR PCB DIAGRAMS:

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

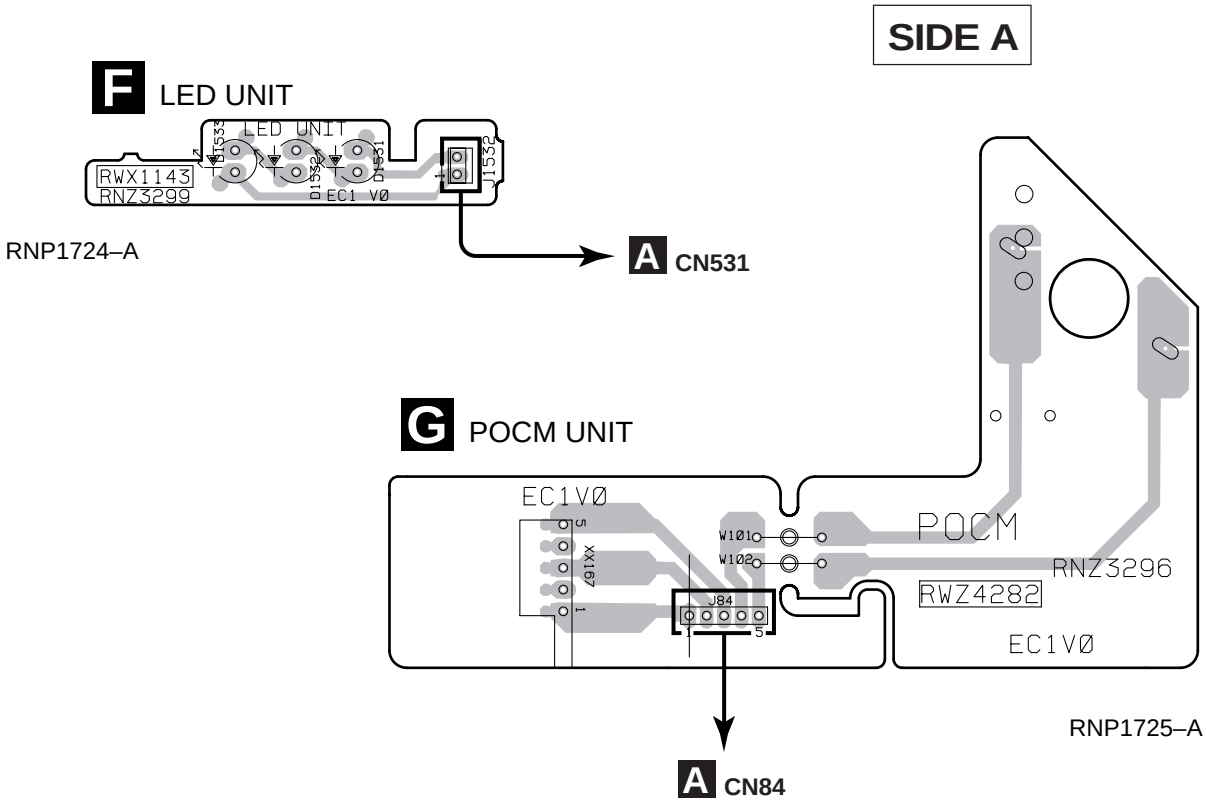
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Resistor array
		3-terminal regulator

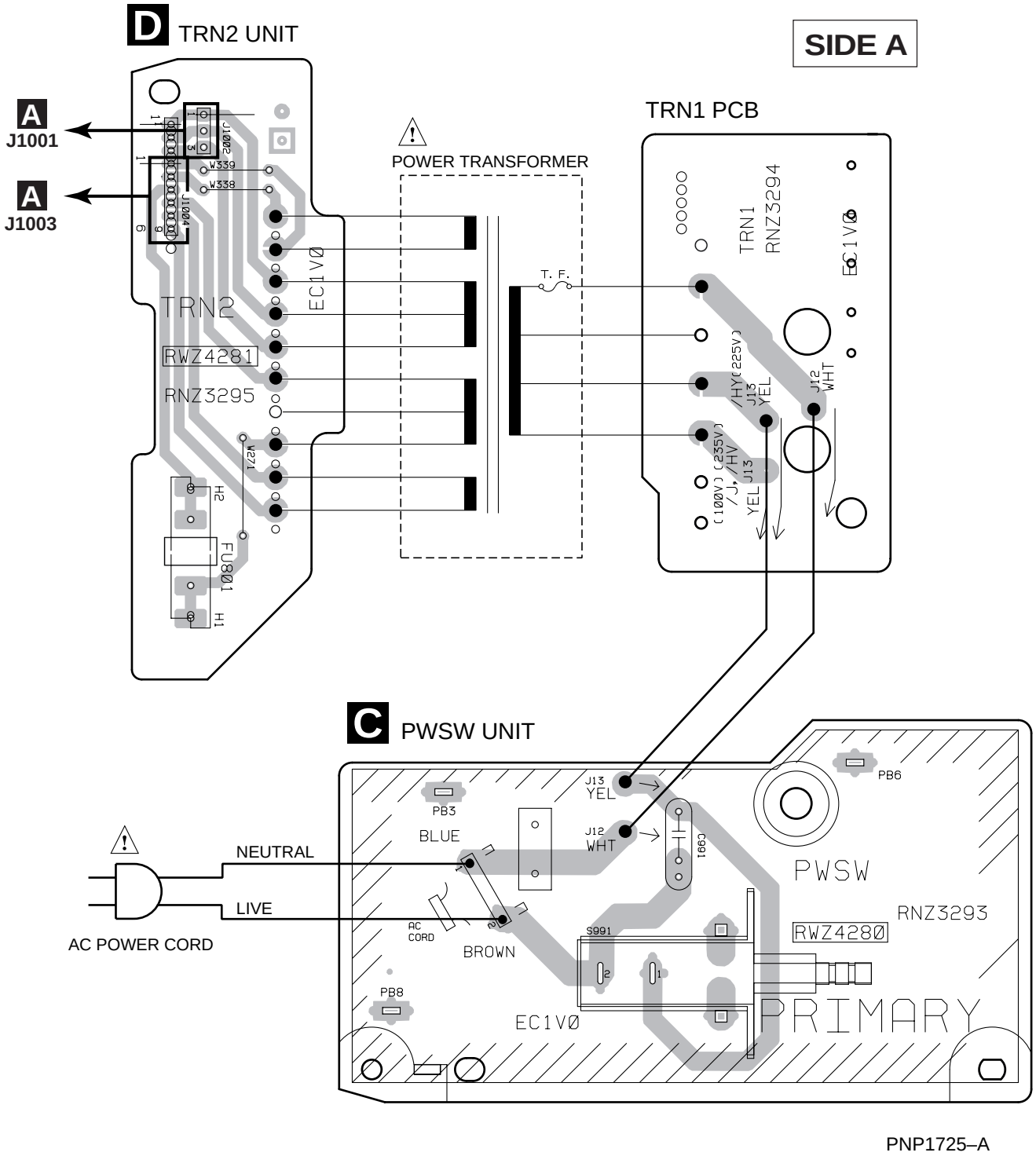
3. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. Viewpoint of PCB diagrams



4.1 LED UNIT AND POCM UNIT

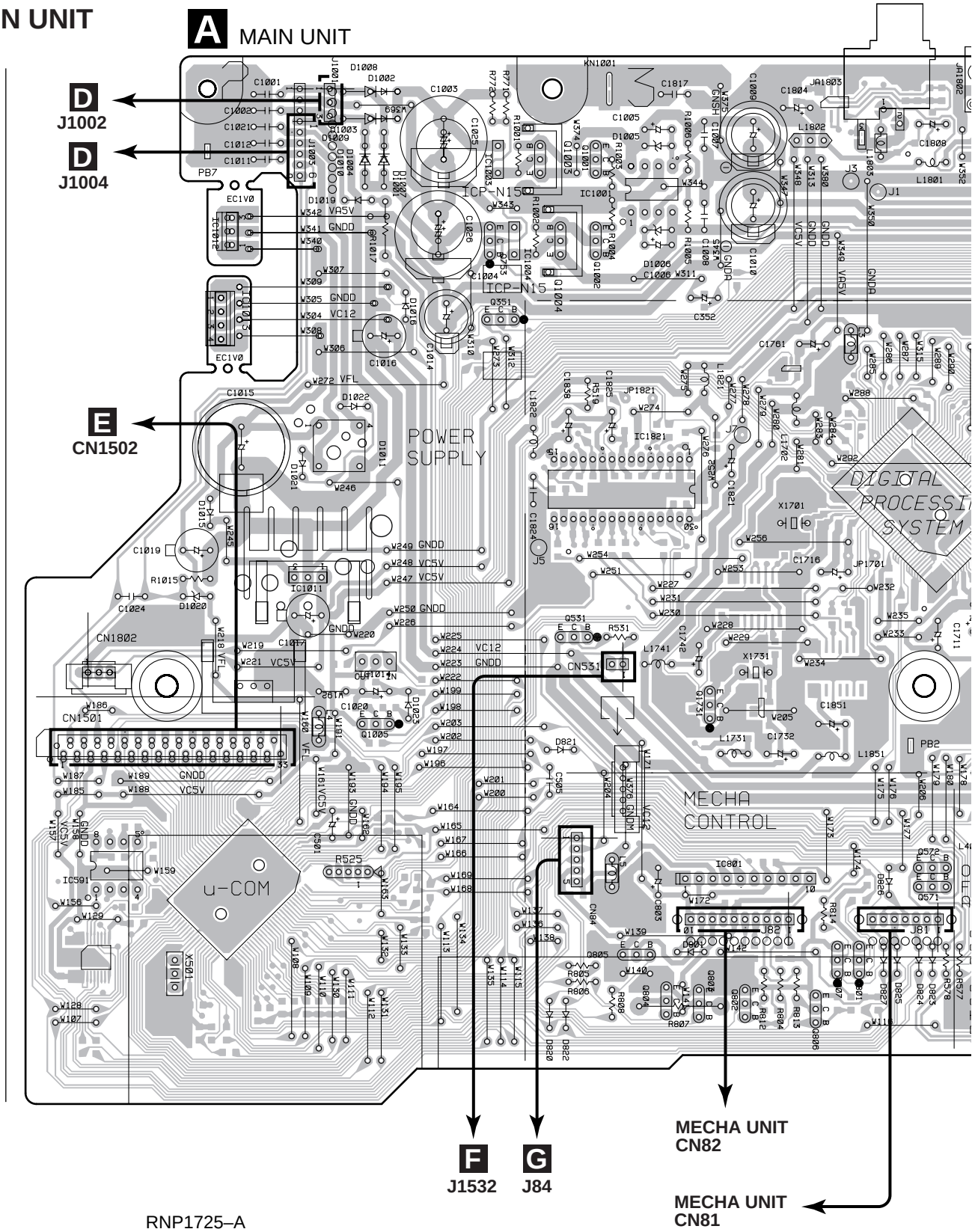


4.2 PWSW UNIT, TRN2 UNIT AND TRN1 PCB



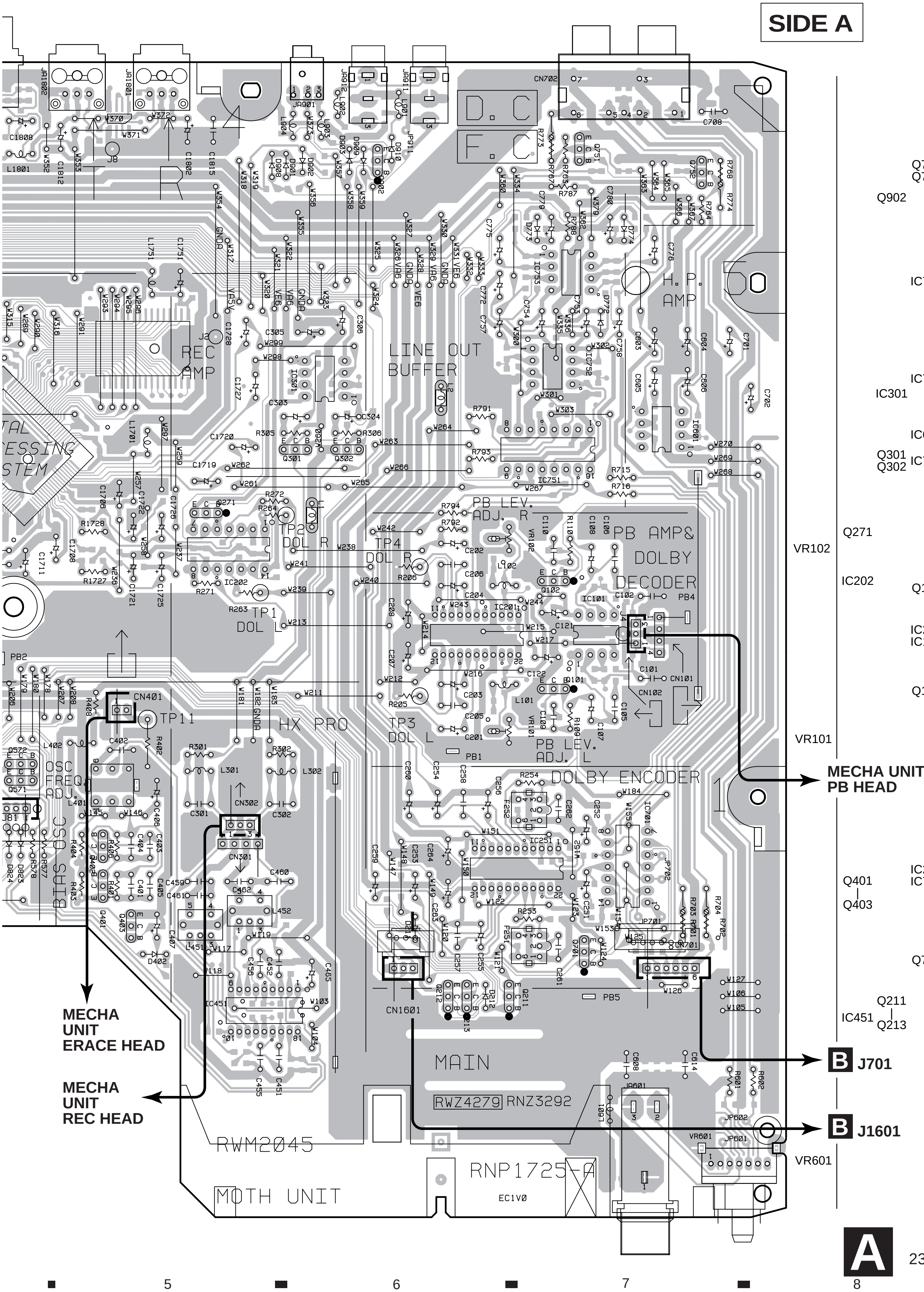
PNP1725–A

4.3 MAIN UNIT

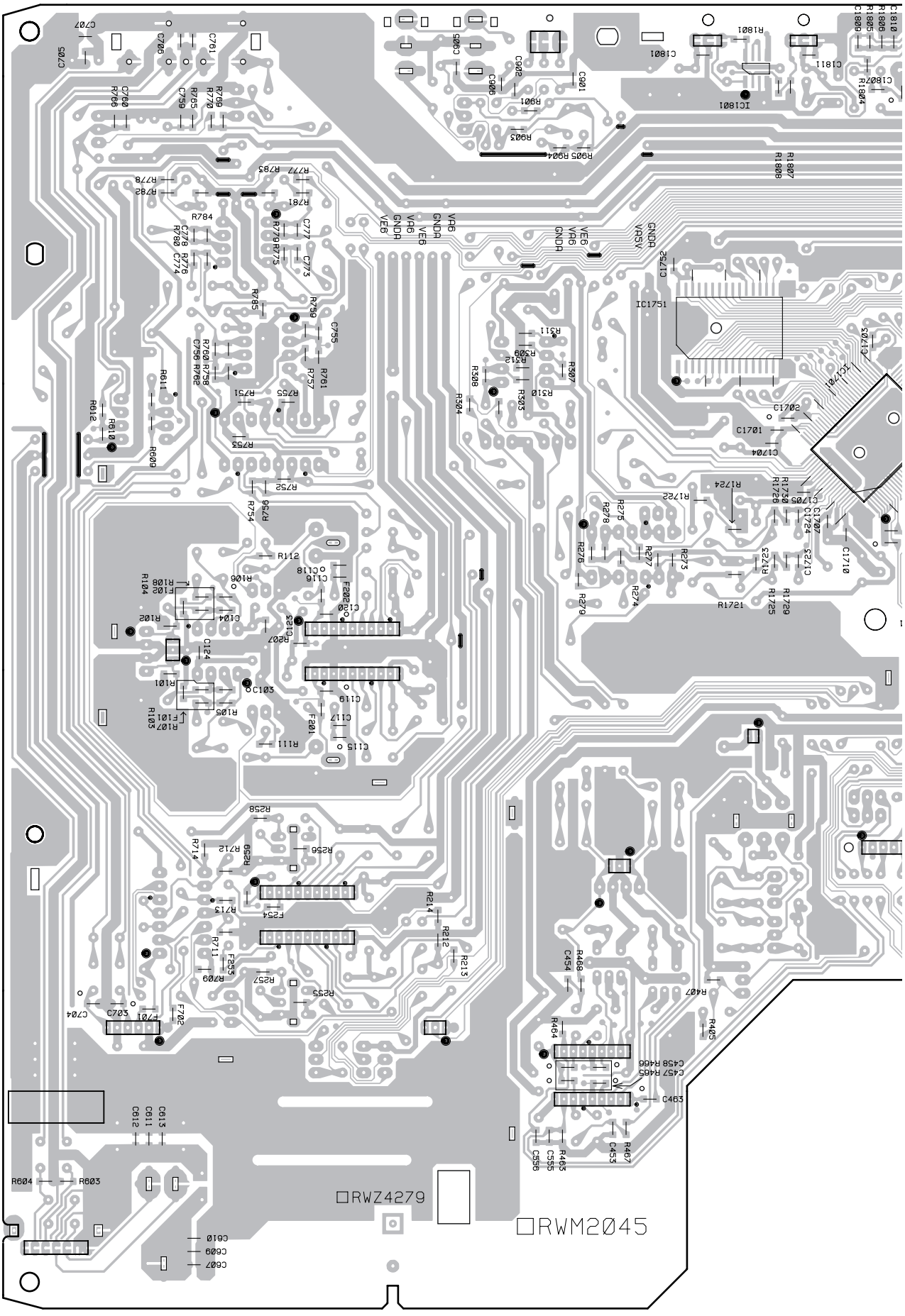


RNP1725–A

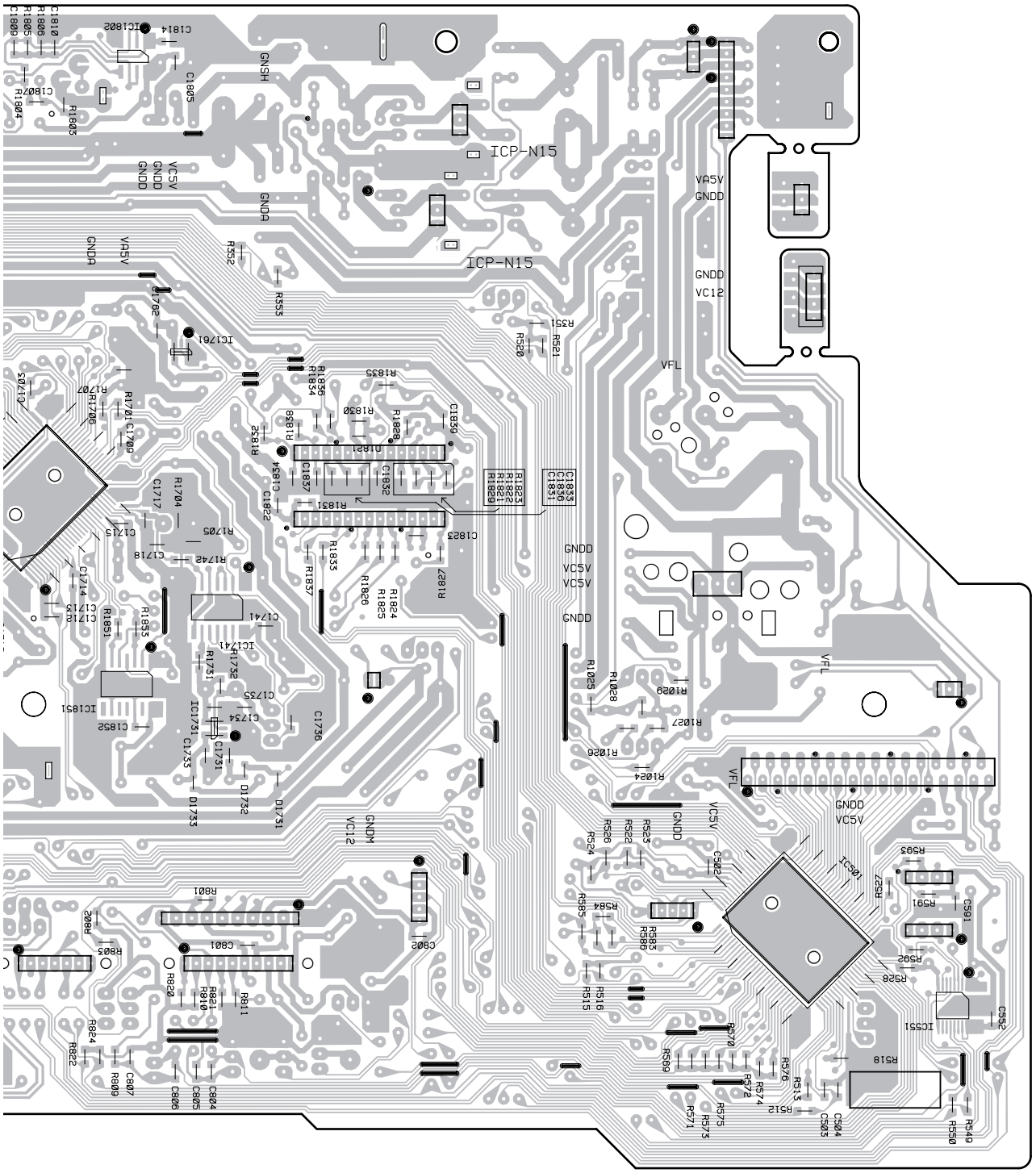
SIDE A


MECHA UNIT
PB HEAD
MECHA UNIT
ERACE HEAD
MECHA UNIT
REC HEAD
B J701
B J1601
LINE OUT
BUFFER
REC
AMP
H. P.
AMP
PB AMP&
DOLBY
DECODER
DOLBY ENCODER
HX PRO
PB LEV.
ADJ. R
PB LEV.
ADJ. L
OSC
FREQ.
ADJ.
BIAS OSC
MAIN
RWZ4279 RNZ3292
RWM2045
RNP1725-A
MOTH UNIT
EC1V0
A
B
C
D
Q751
Q752
Q902
IC753
IC752
IC301
IC601
Q301
Q302
IC751
Q271
VR102
IC202
Q102
IC201
IC101
Q101
VR101
Q401
|
Q403
IC251
IC701
Q701
IC451
Q211
|
Q213
VR601

A MAIN UNIT



SIDE B

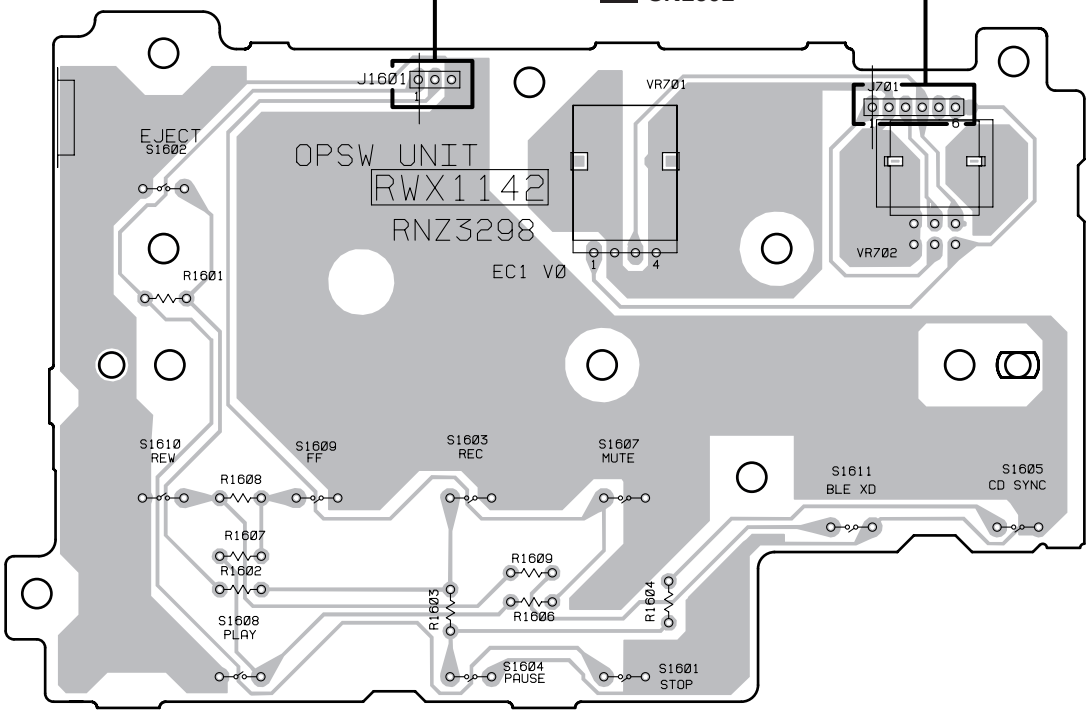


RNP1725–A

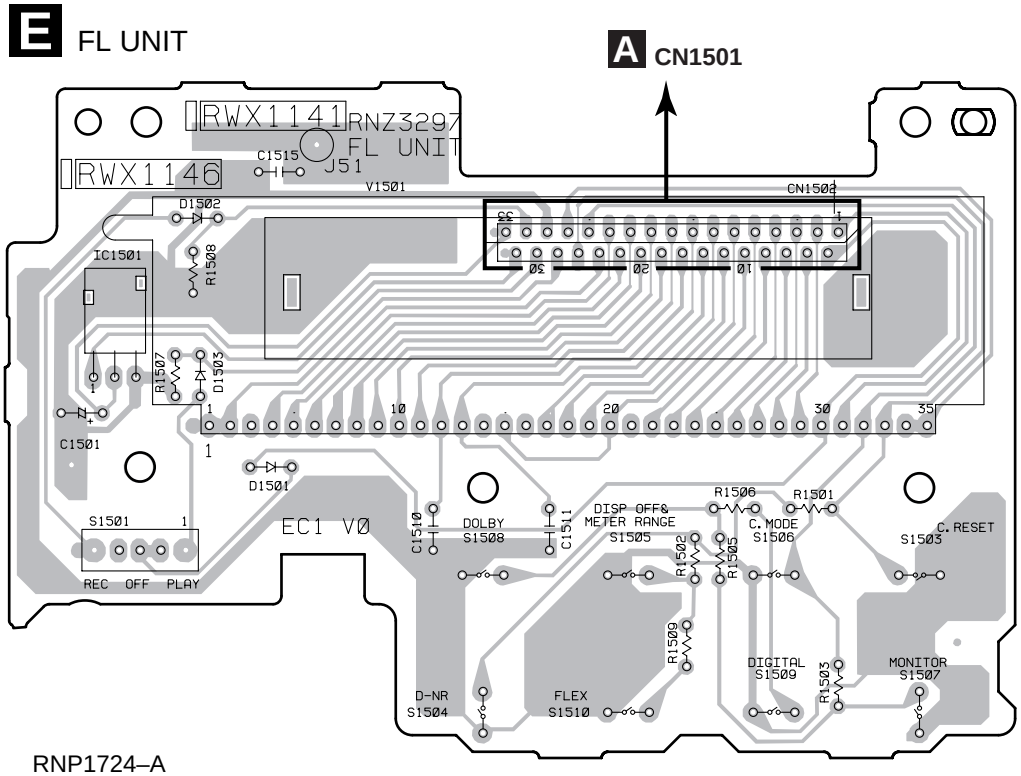
4.4 OPSW UNIT AND FL UNIT

SIDE A

B OPSW UNIT



E FL UNIT



RNP1724–A

5. 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.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

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

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

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

LIST OF PCB ASSEMBLIES

Mark	No.	Description	Part No.
NSP		MOTHER UNIT	RWM2045
		├ MAIN UNIT	RWZ4279
NSP		├ PWSW UNIT	RWZ4280
NSP		├ TRN 2 UNIT	RWZ4281
NSP		└ POCM UNIT	RWZ4282
NSP		SUB UNIT	RWM2049
		├ FL UNIT	RWX1146
		├ OPSW UNIT	RWX1142
NSP		└ LED UNIT	RWX1143

A MAIN UNIT

SEMICONDUCTORS

Mark	No.	Part No.
	IC1701	AK7712A-VQ
	IC591	AT24C01-10PC
	IC201, IC251	CXA1562S
⚠	IC1003, IC1004	ICP-N15
	IC1001	M5218AP
⚠	IC101	M5220P
	IC1751	M5M51008BFP-70L
	IC551	M62354GP
	IC753	NJM4558DX
	IC301, IC601, IC752	NJM4580D
⚠	IC1011, IC1012	NJM7805FA
	IC1821	PD0052
	IC501	PD5431A
⚠	IC1013	PQ12RF11
⚠	IC1014	S-806D
	IC801	TA7288P
	IC751	TC4052BP
	IC202, IC701	TC4066BP
	IC1741	TC74HC00AF
	IC1851	TC74HC125AF
	IC1761	TC7S08F
	IC1731	TC7SU04F
	IC451	UPC1297CA
	Q1002, Q1005	2SA1048
⚠	Q1004	2SB1566
	Q401, Q402	2SC1815
	Q1001, Q571, Q572, Q802, Q806	2SC2458
	Q805	2SC3246
	Q803, Q804	2SD1858X
	Q301, Q302, Q403, Q751, Q752	2SD2144S
⚠	Q1003	2SD2395
	Q351	KRA103M
	Q101, Q102, Q1731, Q211–Q213	KRC103M
	Q271, Q531, Q701, Q753, Q801	KRC103M
	Q807, Q902	KRC103M
⚠	D1021, D1022	1SS254
	D1023	1SS254
⚠	D211, D212, D402	1SS254
⚠	D772–D774, D820–D827	1SS254
⚠	D901–D903, D908–D910	1SS254
⚠	D1731–D1733, D1821	1SS355
⚠	D1005, D1006	HZS6C1L
	D1020	MTZJ6.2B
⚠	D1011	S2VB20
⚠	D1001–D1004, D1015, D1016	S5688G
	D1019	S5688G
⚠	D801	S5688G

COILS AND FILTERS

Mark	No.	Part No.
⚠	F101, F102, F201, F202	DTF1068
⚠	F253, F254, F701, F702	DTF1068
	L603, L604	LAU1R0J
	L901, L902	LAU1R0K
	L904	LAU4R7J
	L601	LAUR22J
	L402	LFA121K
	L1801	LFA151K
	L1701, L1702, L1731, L1741, L1751	LFA1R0K
	L1821, L1822, L1851	LFA1R0K
	X501 (8.389 MHz)	RSS1042
	X1731 (18.432 MHz)	RSS1052
	L451, L452 (160 kHz)	RTD1074
	L401 (OSC COIL F=160 kHz)	RTD1076
	L301, L302 (1 mH)	RTF1090
	L101, L102 (3.9 mH)	RTF1097
	L1802 (EMI FILTER)	RTF1171
⚠	F251, F252 (MPX FILTER)	RTF1217

Mark	No.	Description	Part No.
CAPACITORS			
	C459, C460		CCCSL271K2H
	C1834		CCSQCH100D50
	C103, C104, C115, C116		CCSQCH101J50
	C119, C120, C463, C707		CCSQCH101J50
	C777, C778		CCSQCH101J50
	C117, C118		CCSQCH151J50
	C1734, C1735		CCSQCH180J50
	C1823		CCSQCH220J50
	C703, C704, C905		CCSQCH271J50
	C123, C124, C805, C807		CCSQCH470J50
	C1020, C1742, C1751, C1761		CEAT100M50
	C775, C776, C803		CEAT100M50
	C1017, C121, C122, C207, C208		CEAT101M10
	C263, C264, C603, C604		CEAT101M10
	C1016		CEAT101M16
	C1019		CEAT101M50
	C352		CEAT1R0M50
	C1825		CEAT2R2M50
	C407, C465, C772		CEAT330M16
	C1721, C1722, C1732, C1802, C1804		CEAT470M16
	C1821, C1838, C1851, C305, C306		CEAT470M16
	C406, C501		CEAT470M16
	C1015		CEAT472M25
	C203, C204, C255, C256		CEATR10M50
	C779, C780		CEATR47M50
	C1005, C1006, C1719, C1720		CEBA100M50
	C201, C202, C253, C254		CEBA100M50
	C259, C260, C303, C304		CEBA100M50
	C757, C758		CEBA100M50
	C1725–C1728, C251, C252		CEBA1R0M50
	C701, C702		CEBA1R0M50
	C1025, C1026		CEBA222M16
	C1009, C1010		CEBA471M25
	C107, C108		CEYANP100M25
	C261, C262, C451, C452		CFTYA103J50
	C455, C456		CFTYA223J50
	C109, C110		CFTYA273J50
	C1007, C1008, C105, C106		CFTYA563J50
	C205, C206, C257, C258		CFTYA683J50
	C1815		CGCYF104Z25
	C505		CKCYF103Z50
	C1001, C1002, C1011, C1012, C1021		CKCYF473Z50
	C1024, C608, C614, C708		CKCYF473Z50
	C706		CKSQYB102K50
	C1713, C1733, C1736, C1852		CKSQYB103K50
	C502–C504, C552, C591, C804		CKSQYB103K50
	C806, C901, C902		CKSQYB103K50
	C457, C458		CKSQYB123K50
	C555, C556		CKSQYB221K50
	C1831, C1832,		CKSQYB223K50
	C1723, C1724		CKSQYB332K50
	C773, C774		CKSQYB473K50
	C453, C454		CKSQYB821K50
	C1701–C1705, C1707, C1709, C1710		CKSQYF104Z25
	C1714, C1715, C1731, C1741, C1752		CKSQYF104Z25
	C1762, C1801, C1822, C1839, C761		CKSQYF104Z25
	C1712, C1805, C1833, C801, C802		CKSQYF473Z50
	C906		CKSQYF473Z50
	C101, C102		CQHA331J2A
	C402		CQHA392J2A
	C301, C302		CQMA102J50
	C405		CQMA123J50
	C401, C404		CQMA332J50
	C1824		CQMA473J50
	C403		CQMA682J50
	C1014 (1000 μF/16V)		PCH1122
	C461, C462 (470 pF/500V)		RCG1006
	C753, C754 (100 μF/10V)		RCH1133
	C1706, C1708, C1711, C1716 (22 μF/25V)		VCH1083
RESISTORS			
	R525		RA4T103J
	R205, R206		RCN1023
	R263, R264		RCN1024
	R402		RD1/2LMF1R0J
	R408		RD1/2VM330J
	R403, R404		RD1/2VM4R7J
	R787, R788		RD1/4PU101J
	R1005, R1006, R763, R764		RD1/4PU102J
	R519, R701, R702		RD1/4PU103J
	R253, R254		RD1/4PU112J
	R401, R406		RD1/4PU123J
	R1001, R1002		RD1/4PU151J
	R805, R808, R814		RD1/4PU152J
	R577, R578		RD1/4PU202J
	R767, R768		RD1/4PU221J
	R109, R110, R301, R302		RD1/4PU222J
	R812, R813		RD1/4PU223J
	R791–R794, R804		RD1/4PU272J
	R1727, R1728, R531		RD1/4PU301J
	R771, R772		RD1/4PU302J
	R806		RD1/4PU332J
	R305, R306		RD1/4PU390J
	R1003, R1004, R601, R602		RD1/4PU470J
	R271, R272		RD1/4PU561J
	R1015		RD1/4PU562J
	R715, R716		RD1/4PU752J
	R1017		RFA1/4PL820J
	VR101, VR102 (47 kΩ)		RCP1047
	R807		RS2LMF560J
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN531	MT CONNECTOR 2P	173981-2
	CN701	6P JUMPER CONNECTOR	52147-0610
	CN84	5P JUMPER CONNECTOR	52147-0510
	CN1601	3P JUMPER CONNECTOR	52147-0310
	CN1501	33P FFC CONNECTOR	52045-3345
	CN401	KR CONNECTOR 2P	B2B-PH-K-S
	JA1801	OPTICAL LINK IN	GP1F32R
	CN702	4P PIN JACK	AKB7015
	JA601	HEADPHONE JACK	RKN1043
	J81	2m/m PITCH WIRE 7P	D20PYY0710G

Mark	No.	Description	Part No.
	JA911, JA912	REMOTO JACK	RKN1004
	CN102, CN302	SP CONNECTOR	B3B-PH-K-S
	JA901	MINI JACK	PKN1005
	J1003	2m/m PITCH WIRE 6P	D20PWW0615G
	J1001	PARALLEL CORD	DXWW0315E
	J82	2m/m JUMPER WIRE 10P	D20PYY1010G
		GROUND PLATE	VNF-091
		PCB BINDER	VEF1040
		7P CABLE HOLDER	51048-0700
		10P CABLE HOLDER	51048-1000

C PWSW UNIT

SWITCH

Mark	No.	Description	Part No.
⚠	S991		RSA1001

CAPACITOR

Mark	No.	Description	Part No.
⚠	C991 (10000pF/250V)		ACG7020

OTHERS

Mark	No.	Description	Part No.
		TERMINAL	RKC-061
		PCB BINDER	VEF1040

E FL UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1501–D1503		1SS254

SWITCHES

Mark	No.	Description	Part No.
	S1501 (SLIDE SW)		RSH1041
	S1503–S1510		VSG1009

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/4PU□□□J

OTHERS

Mark	No.	Description	Part No.
	CN1502	33P FFC CONNECTOR	52044-3345
	V1501	FL TUBE	RAW1163

B OPSW UNIT

SWITCHES

Mark	No.	Description	Part No.
	S1601–S1605, S1607–S1611		VSG1009

RESISTORS

Mark	No.	Description	Part No.
	VR702 (50 kΩ–A)		RCV1118
	VR701 (50 kΩ–B)		RCV1124
	Other Resistors		RD1/4PU□□□J

OTHERS

Mark	No.	Description	Part No.
	J1601	3P JUMPER WIRE	D20PWY0310G
	J701	2m/m JUMPER WIRE	D20PWY0610G

F LED UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1531–D1533 (PURE GREEN)		MBG5074X

OTHER

Mark	No.	Description	Part No.
	J1532	CONNECTOR ASSY	PG02MR-F30

D TRN 2 UNIT

OTHERS

Mark	No.	Description	Part No.
	H1, H2	FUSE CLIP	AKR7001

G POCM UNIT

OTHERS

Mark	No.	Description	Part No.
		REAF SW	VSK1011
	J84	2m/m PITCH WIRE	D20PWY0510G

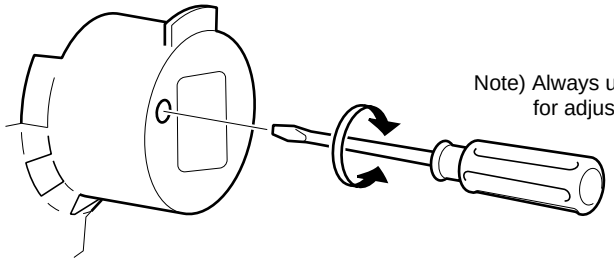
6. ADJUSTMENT

● Adjustment points and Measurement points are shown in Fig. 6–5.

6.1 MECHANICAL ADJUSTMENT

■ Tape Speed Adjustment

Mode	Test Tape	Adjusting Point	Specifications/Ratings (Playback Frequency)	Remarks
PLAY	NCT-111 (3kHz)	Capstan Motor	3000Hz ± 5Hz	



Note) Always use a ceramic screwdriver for adjustment.

6.2 ELECTRICAL ADJUSTMENT

Adjustment Conditions

(1) The mechanical adjustments must be completed first.
(2) The head must be cleaned and demagnetized.
(3) Turn the power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
(4) The reference signal is 0 dBV = 1 Vrms.
(5) Connect a10 kΩ load resistance to the OUTPUT terminals.
(6) Unless otherwise specified, the switches listed below are left in the positions indicated.
DOLBY NR : OFF
DIGITAL NR : OFF

Test Tape

STD–331E : Playback adjustment (See Fig. 6–1)
STD–632 : NORMAL blank tape
STD–622 : CrO2 blank tape
STD–611 : METAL blank tape

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

List of Adjustments

■ Playback Section
(1) Head Azimuth Adjustment
(2) Playback Level Adjustment

■ Recording Section
(1) Bias Oscillator Adjustment
(2) Recording Bias and Recording Level Automatic Adjustment

NOTE: This unit has an automatic tape selection feature.

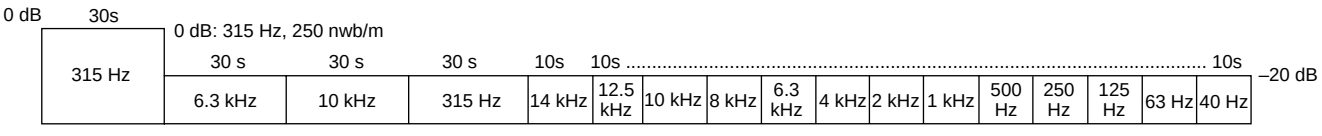


Fig. 6–1 Constants of the Test Tape STD–331E

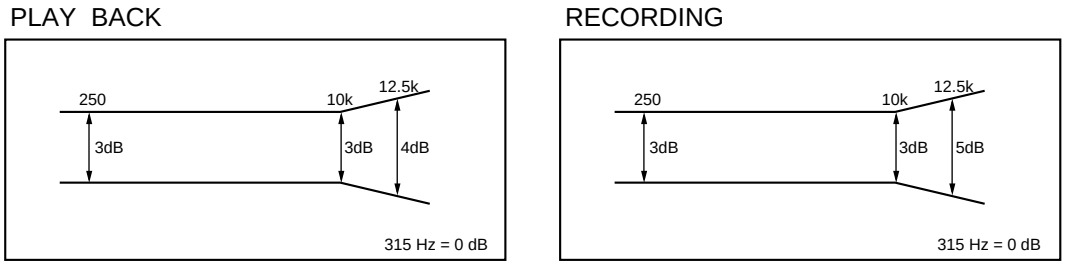


Fig. 6–2 Frequency Response Zone

6.2.1 Playback Section

(1) Head Azimuth Adjustment

● Turn VR101 and VR102 to mechanical center position.

No.	Mode	Input Signal / Test Tape	Adjustment Location	Measurement Location	Adjustment Value	Remarks
1	PLAY	Play the 10 kHz/–20 dB section of STD–331E test tape	Head azimuth adjustment screw (Fig. 6–3)	LINE OUT (L/R ch)	Maximum playback signal level	Lock the screw with silicon bond after completing adjustment.

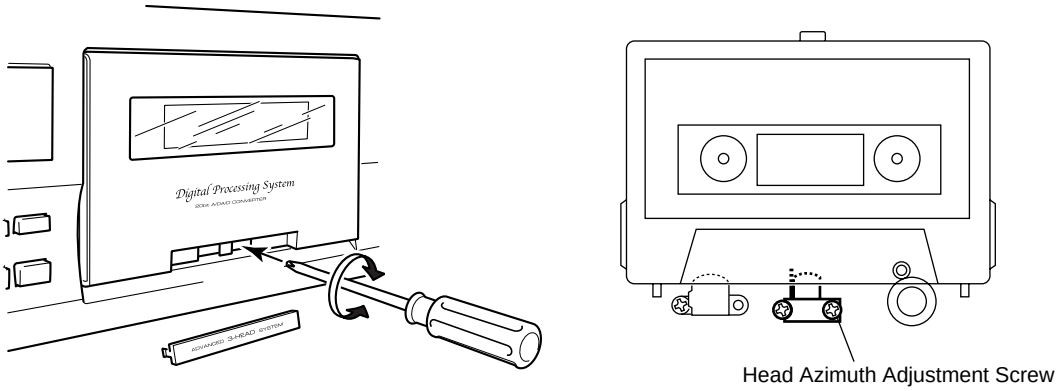


Fig. 6–3 Head Azimuth Adjustment

(2) Playback Level Adjustment

● This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input Signal / Test Tape	Adjustment Location		Measurement Location	Adjustment Value	Remarks
1	PLAY	Play the 315 Hz/ 0 dB section of STD–331E test tape	L ch	VR101	TP3 (L ch) TP4 (R ch) (MAIN Unit)	–6.7 dBV	
			R ch	VR102			

6.2.2 Recording Section

(1) Bias Oscillation Frequency Adjustment

No.	Mode	Input Signal / Test Tape	Adjustment Location	Measurement Location	Adjustment Value	Remarks
1	REC	Load the STD–611 test tape with no input signal.	L401	TP11	160 kHz ± 1 kHz	

(2) Recording Bias and Recording Level Automatic Adjustment

① Press the MODE key, RESET key and the PAUSE key together to enter the into test mode.

⇩

② Press the MODE key, PAUSE key and the MUTE key together to clear all memory data. At this time, “CLR” is displayed on the counter.

⇩

③ Press the STOP key to set the level (MS) display to “10” (mechanism operation check mode).

⇩

④ Press the XD FLAT key to set the level (MS) display to “80” (automatic adjustment mode).

⇩

⑤ When the test tape (STD–632) is inserted and the REC key is pressed, “B” flashes on the counter and bias adjustment is started. When adjustment is completed correctly, “B” will light steadily, and then “R” will flash and adjustment of the recording level will start. When the adjustment is completed correctly, “BR” will light to indicate that the adjustment has been completed correctly. When at the time “B” lights, this indicates a bias adjustment error, and when “R” lights, this indicates a recording level adjustment error. At the time of an error, the adjustment value is not written to the memory.

Adjustment error: The following causes can be considered.
- Recording is not being done.
- The adjustment tape is damaged seriously.
- There is no adjustment data. The tape is near the tape end.
- Circuit trouble (defective contact etc.)

⇩

⑥ When the STOP key is pressed, automatic adjustment mode is cancelled, the level (MS) display becomes “10” (mechanism operation check mode), and “TUNE” is displayed on the counter.

⇩

⑦ Press the RESET key to leave test mode.

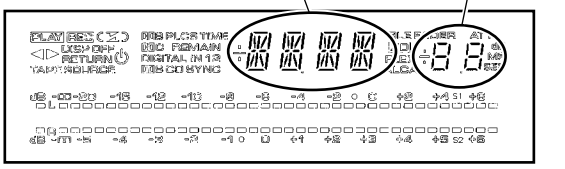


Fig. 6–4 FL Display Position

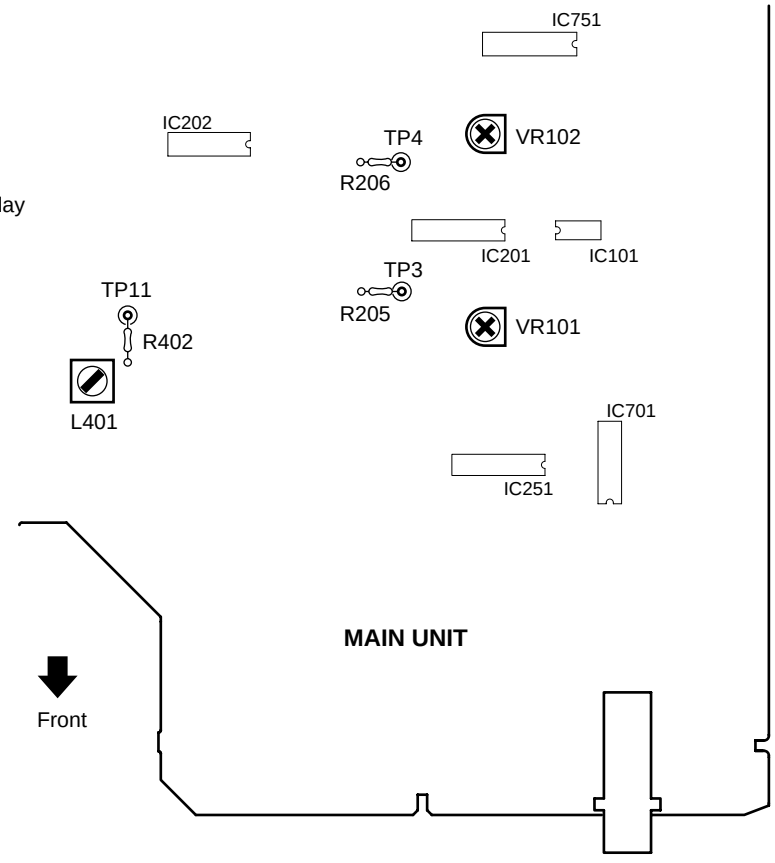


Fig. 6–5 Adjustment and Measurement Points

7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

■ PD5431A (IC501: MAIN UNIT)

● System Control Micro-computer

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

● Pin Function

No.	Name	I/O	Description
1	MTRR	I	Level meter R ch input
2	MTRL	I	Level meter L ch input
3	XNRR	O	NORMAL Tape Recording: "L"
4	XNRL	O	NORMAL Tape Recording: "L"
5	METR	O	METAL Tape Recording: "H"
6	METL	O	METAL Tape Recording: "H"
7	VCOI	O	DIR VCO oscillation control Stop: "H"
8	SCK	O	Clock output to DSP
9	SO	O	Data output to DSP
10	SI	I	Data input from DSP
11	RSTB	O	Reset output to DSP
12	PDB	O	Power down output to DSP
13	RQB	O	Request output to DSP
14	CSB	O	DSP chip select
15	RM2	O	Motor driver control terminal 2
16	RM1	O	Motor driver control terminal 1
17	RM0	O	Motor driver control terminal 0
18	RMPL	O	Reel motor torque control terminal
19	XL3	I/O	BLE · XD BIAS control terminal 3 (L ch)
20	XL2	I/O	BLE · XD BIAS control terminal 2 (L ch)
21	XL1	I/O	BLE · XD BIAS control terminal 1 (L ch)
22	XL0	I/O	BLE · XD BIAS control terminal 0 (L ch)
23	XR3	I/O	BLE · XD BIAS control terminal 3 (R ch)
24	XR2	I/O	BLE · XD BIAS control terminal 2 (R ch)
25	XR1	I/O	BLE · XD BIAS control terminal 1 (R ch)
26	XR0	I/O	BLE · XD BIAS control terminal 0 (R ch)
27	SOLA	O	Solenoid control terminal A

No.	Name	I/O	Description
28	SOLB	O	Solenoid control terminal B
29	CPM	O	Capstan motor control terminal
30	DIG1	O	Digital input select terminal 1
31	DIG2	O	Digital input select terminal 2
32	SSEN	I	Supply side sensing input terminal
33	REMT	I	Remote control input terminal
34	POFF	I	Power off input terminal
35	REST	I	Reset input terminal
36	XCIN	I	Sub clock input terminal
37	XCOUT	O	Sub clock output terminal
38	XIN	I	Clock input terminal
39	XOUT	O	Clock output terminal
40	VSS	I	GND
41	X12V	O	VC12V control terminal "H": 12V ON
42	TSEN	I	Take up side sensing input terminal
43	BIAS	O	Bias control terminal "H": Bias ON
44	TOCD	O	CD SYNCHRO control terminal
45 | 48	SW3 | SW0	I	Switch input terminal 3 | Switch input terminal 0
49	RMPS	O	PLAY torque SLOW terminal (Used at DTC)
50	DAT	I/O	EEPROM/DAC data input/output terminal
51	CLK	O	EEPROM/DAC clock input/output terminal
52	NC	I	OPEN
53	CSDA	O	DAC chip select terminal
54	ERR	I	DIR error input terminal
55	441k	I	f=44.1 input terminal
56	EMPH	I	Emphasis input terminal

PD5431A

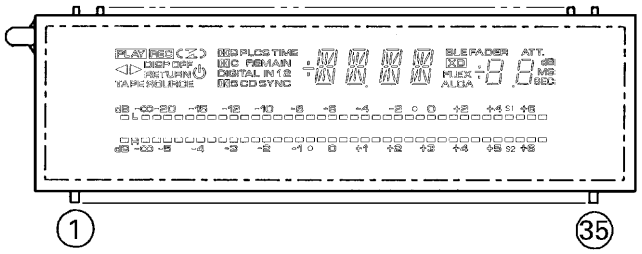
No.	Name	I/O	Description
57	G1	FL	FL grid terminal 1
58	G2	FL	FL grid terminal 2
59	G3	FL	FL grid terminal 3
60	G4	FL	FL grid terminal 4
61	G5	FL	FL grid terminal 5
62	G6	FL	FL grid terminal 6
63	G7	FL	FL grid terminal 7
64	G8	FL	FL grid terminal 8
65	G9	FL	FL grid terminal 9
66	G10	FL	FL grid terminal 10
67	P14	FL	FL segment terminal 14
68	P13	FL	FL segment terminal 13
69	P12	FL	FL segment terminal 12
70	P11	FL	FL segment terminal 11
71	P10	FL	FL segment terminal 10
72	P9	FL	FL segment terminal 9
73	P8	FL	FL segment terminal 8
74	P7	FL	FL segment terminal 7
75	P6	FL	FL segment terminal 6
76	P5	FL	FL segment terminal 5
77	P4	FL	FL segment terminal 4
78	P3	FL	FL segment terminal 3
79	P2	FL	FL segment terminal 2
80	P1	FL	FL segment terminal 1
81	DOL0	O	DOLBY IC terminal “H”: DOLBY OFF
82	LDNR	O	D-NR LED control terminal
83	XLMT	O	LINE MUTE terminal “H”: MUTE OFF
84	XRMT	O	REC MUTE terminal “H”: MUTE OFF
85	ASE3	O	Analog switch control terminal 3
86	ASE2	O	Analog switch control terminal 2
87	ASE1	O	Analog switch control terminal 1
88	ASE0	O	Analog switch control terminal 0
89	VEE	I	Power supply terminal (built-in pull-down resistor)
90	CDJC	I	CD SYNCHRO JACK detection terminal
91	VCC	I	POWER SUPPLY
92	CDIN	I	CD SYNCHRO input terminal
93	AVSS	I	GND (built-in A/D converter)
94	VREF	I	Power supply (built-in A/D converter)
95	VER1	AD	Switching version for destination 1
96	VER0	AD	Switching version for destination 0
97	KEY0	AD	Key input terminal 0 (AD)
98	KEY1	AD	Key input terminal 1 (AD)
99	KEY2	AD	Key input terminal 2 (AD)
100	KEY3	AD	Key input terminal 3 (AD)

7.1.2 DISPLAY

■ RAW1163 (V1501: FL UNIT)

● FL Tube

● Pin Assignment

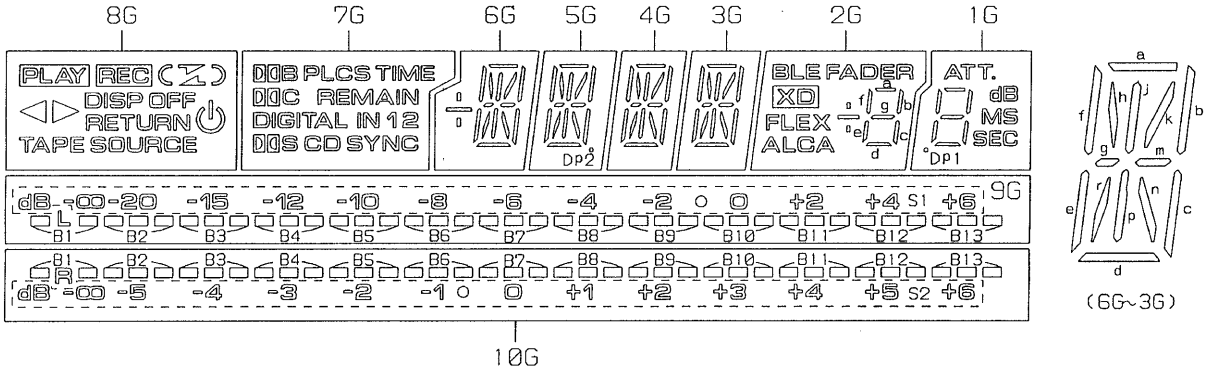


Note 1) F1, F2..... Filament
2) NP .....No Pin
3) NC ..... No Connection
4) DL ..... Datum Line
5) 1G–10G.... Grid

● Pin Connection

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CONNECTION	F1	F1	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10GNC	P16	P15	P14	P13	P12	P11	NC	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NC	NP	F2	F2

● Grid Assignment



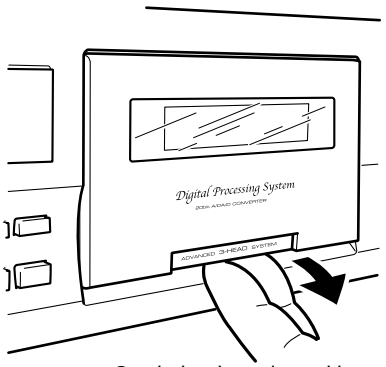
● Anode Connection

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B1	B1	PLAY	DB	a	a	a	a	a	a
P2	B2	B2	REC	C	b	b	b	b	b	b
P3	B3	B3	▷	S	f	f	f	f	f	f
P4	B4	B4	◁	PLCS	g	g	g	g	g	g
P5	B5	B5	☽	TIME	m	m	m	m	c	c
P6	B6	B6	Z	REMAIN	c	c	c	c	e	e
P7	B7	B7	C	DIGITAL	e	e	e	e	d	d
P8	B8	B8	DISP OFF	IN	d	d	d	d	▫	Dp1
P9	B9	B9	RETURN	1	j	j	j	j	—	ATT.
P10	B10	B10	⏻	2	p	p	p	p	BLE	MS
P11	B11	B11	TAPE	CD	k	k	k	k	XD	dB
P12	B12	B12	SOURCE	SYNC	n	n	n	n	FADER	SEC
P13	B13	B13	—	—	▫	Dp2	r	r	FLEX	—
P14	S2	S1	—	—	—	h	h	h	ALCA	—
P15	—	—	—	—	r	r	—	—	—	—
P16	—	—	—	—	h	—	—	—	—	—

7.2 DIAGNOSIS

7.2.1 DISASSEMBLY

■ Removing the Door Plate



Catch the door plate with your fingers and pull it to the front.

7.2.2 TEST MODE

(1) Entering the Test Mode

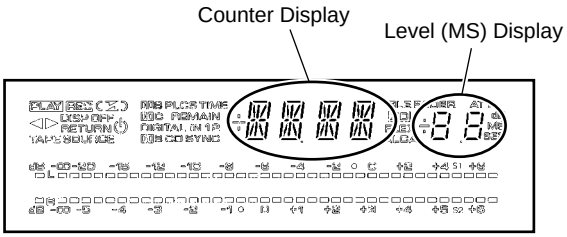
While mechanism is stop, press the MODE key, RESET key and PAUSE key together to enter the test mode.

(2) Exiting the Test Mode

Press the RESET key.

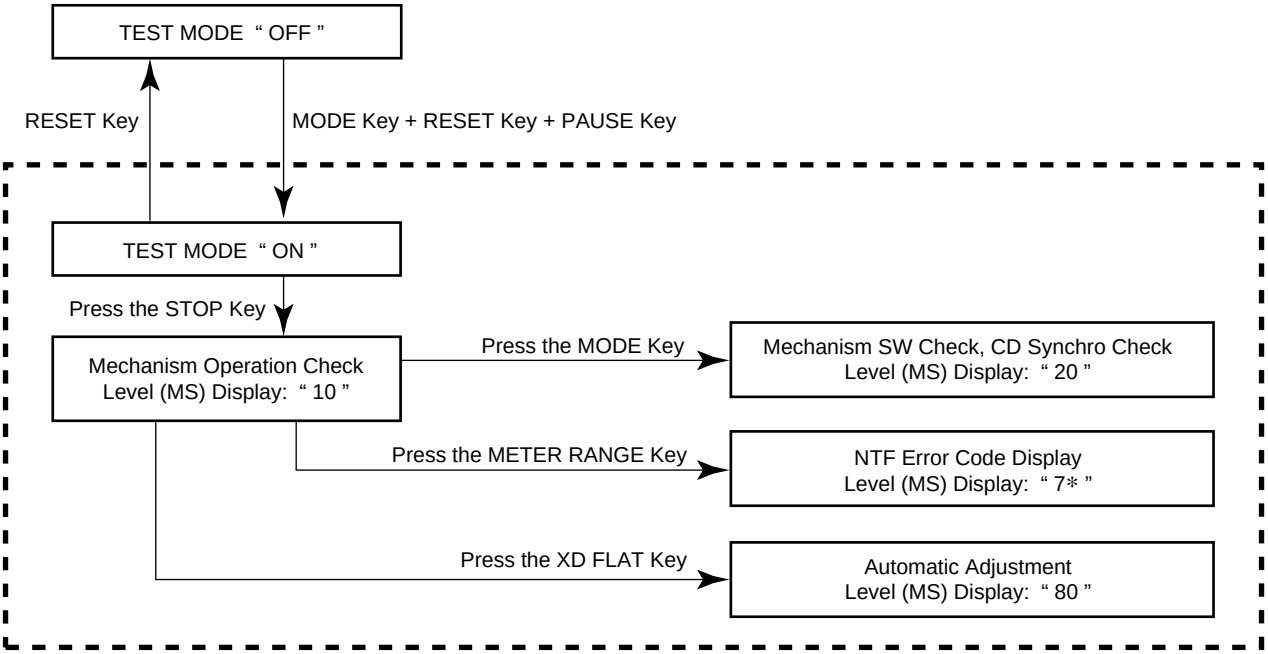
(3) Main Test Mode Items

- Mechanism Operation Check
- Mechanism SW Check, CD Synchro Check
- Automatic Adjustment
- NTF Error Code Display



Counter Display and Level (MS) Display

(4) Shifting to Test Mode State



(5) Mechanism Operation Check

■ Operations specifications

Input Key	FL Display	Adjustment and Check
STOP	10	The Mechanism operates without the cassette half in this mode.

(6) Mechanism SW Check, CD Synchro Check

■ Entering the check mode

When the mechanism operation check mode, press the MODE key.

■ Exiting the check mode

When the STOP key is pressed, mechanism operation check mode is set.

■ Operations specifications

Input Key	FL Display	Adjustment and Check
MODE	20	◆ Cassette Half SW Check When there is a cassette half, counter shows “H” at the second digit from the left. ◆ Accidental Erasure detection SW Check FWD recordable: “ ► ” lights up ◆ Timer SW Check TIMER REC : REC indicator lights up OFF : TIMER PLAY : PLAY indicator lights up ◆ Tape Type Check When there is a tape, display is made at the first digit from the left on the counter. NORMAL TAPE : “ n ” CrO2 TAPE : “ C ” METAL TAPE : “ M ”
DIGITAL/CD SYNCHRO	CD SYNC	◆ CD Synchro Check When the cord whose input and output are short- circuited is connected, and the DIGITAL/CD SYNCHRO key is pressed, " CD SYNC " display lights up.

(7) Automatic Adjustment

For details, refer to “ 6. ADJUSTMENT ”.

■ Entering the check mode

When the mechanism operation check mode, press the XD FLAT key.

■ Exiting the check mode

When the STOP key is pressed, mechanism operation check mode is set.

■ Operations specifications

Input Key	FL Display	Adjustment and Check
		① Memory data will be cleared when the MODE key, PAUSE key and MUTE key are pressed together.
STOP	10	② Enter the mechanism operation check mode
XD FLAT	80	③ Enter the automatic adjustment mode
REC		④ Execute adjustment of recording bias and recording level. End of adjustment : “ BR ” lights up Bias adjustment error : “ B ” lights up Recording level adjustment error : “ R ” lights up
STOP	TUNE	⑤ Exiting the automatic adjustment mode: “ TUNE ” lights up

(8) NTF Error Code Check Mode

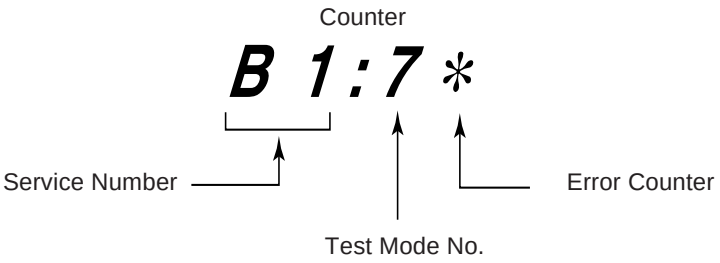
■ Entering the check mode

In mechanism operation check mode, press the METER RANGE key to set the level (MS) display to " 7* ".
When the METER RANGE key is pressed again, the error code for the previous error is displayed (max. 3 errors).

■ Exiting the check mode

- When the STOP key is pressed, mechanism operation check mode is set.
- When repair has been completed, reset the recorded reeor. (Press the MODE key and RESET key together.)

■ Check mode display



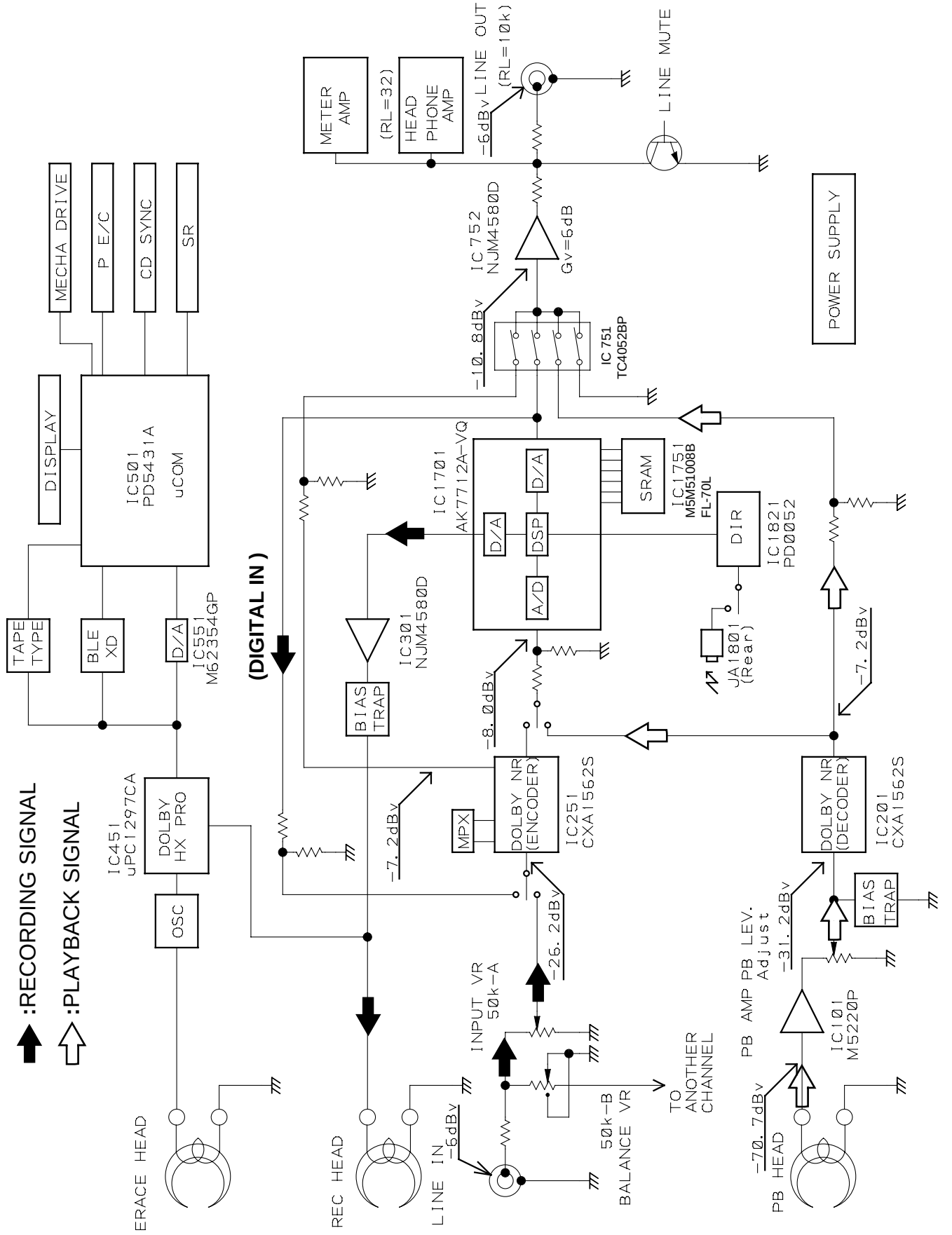
■ NTF Error display

Error Location	Service No.	Occurrence Condition	Cause
BLE	B1	The takeup-side reel base has stopped during BLE operation.	● The tape end has been reached. ● The reel motor has stopped. ● The capstan motor has stopped.
	B2	No signal has been recorded on the tape during BLE operation.	● The used tape differs widely from the caracteristics of the standard tape. ● The internal oscillator is not oscillating. ● Defect of compensation circuit parts, defective contact, etc.
Loading	L1	During OPEN/CLOSE operation, the loading mechanism has not reached the target position.	● The tape has not been set correctly. ● Entry of foreign objects etc.
Mechanism	M1	The takeup-side reel base has stopped and the supply-side reel base is operating.	● The reel motor has stopped. ● The tape has become wound to the capstan because of static electricity.
Digital	D1	The digital input 1 does not receive a digital input signal of fs = 44.1 kHz.	
	D2	The digital input 2 does not receive a digital input signal of fs = 44.1 kHz.	

■ Resetting the error code

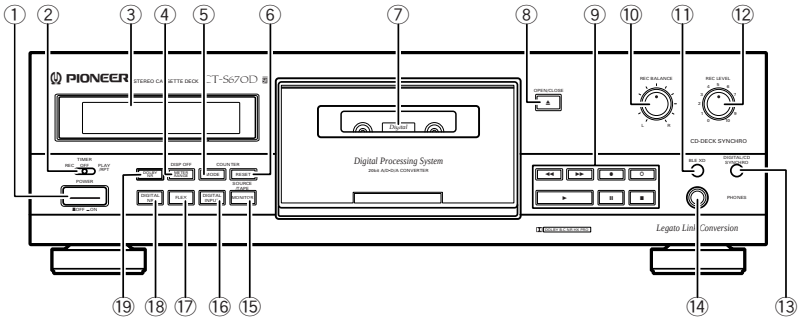
To reset, press the MODE key and MUTE key together.

7.3 BLOCK DIAGRAM



8. PANEL FACILITIES AND SPECIFICATIONS

■ PANEL FACILITIES



① **POWER switch**

② **TIMER switch (TIMER REC, OFF, PLAY/RPT)**

REC : Set to this position to perform timer recording.
OFF : Set to this position under ordinary conditions (when not using the timer or repeat functions).
PLAY/RPT : Set to this position to perform timer playback or repeat playback.

③ **Function display**

④ **Display OFF/METER RANGE button (DISP OFF/METER RANGE)**

⑤ **Counter mode button (TIME/COUNT)**

⑥ **Counter reset button (RESET)**

⑦ **Digital indicator**

Lights while the Digital NR is ON.

⑧ **OPEN/CLOSE button (⏏)**

⑨ **Operation buttons**

■ : Stop
► : Play
◄◄ : Rewind/music search
►► : Fast forward/music search
O : Recording mute
II : Pause
● : Recording

⑩ **Recording Balance control (REC BALANCE)**

⑪ **BLE XD button**

⑫ **Recording Level control (REC LEVEL)**

⑬ **DIGITAL/CD SYNCHRO button**

⑭ **Headphones jack (PHONES)**

⑮ **MONITOR button**

⑯ **DIGITAL INPUT button**

⑰ **FLEX button**

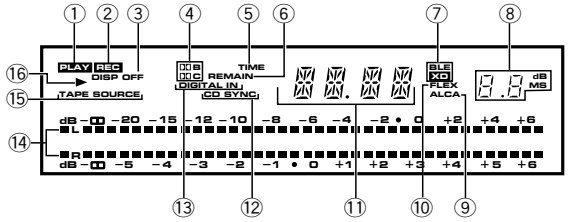
⑱ **DIGITAL NR button**

⑲ **DOLBY* NR button (OFF/B/C)**

*

- *Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.*
- *"DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.*

FUNCTION DISPLAY



① **PLAY indicator**

This lights during the play and play pause modes and flashes during the music search mode.

② **REC indicator**

This lights during the recording and recording pause modes and flashes during the recording mute mode.

③ **Display off indicator (DISP OFF)**

Lights when the display off function is selected.

④ **DOLBY NR B/C indicator**

⑤ **TIME COUNT mode**

Lights up in the time counter mode.

⑥ **REMAIN mode**

Lights up in the remain counter mode.

⑦ **AUTO BLE XD indicator**

The display is as follows during the BLE XD system operation:
Flashing : Adjustments being performed
Lit : Adjustments completed

⑧ **Peak level (MS) indicator**

⑨ **ALCA SYSTEM indicator**

Lights when the ALCA system is used.

⑩ **FLEX indicator**

This indicator lights when the FLEX button is pressed.

⑪ **Counter indicator**

⑫ **DIGITAL/CD SYNCHRO indicator (DIGITAL/CD SYNCHRO)**

This indicator lights steadily when the CD SYNC button is pressed and the operation starts.

⑬ **DIGITAL IN indicator**

This indicator lights when the DIGITAL IN button is pressed.

⑭ **Level meter**

Holds peak for about 1.3 seconds.
The "●" mark beside the 0 dB mark indicates the Dolby NR system standard level.

⑮ **TAPE/SOURCE indicator**

⑯ **PLAY indicator**

This lights during the play and recording modes and flashes during the pause mode.

■ SPECIFICATIONS

System ..... 4-track, 2-channel stereo
Heads ..... Combined Hard permalloy recording/
Hard Permalloy playback head x 1
"Ferrite" erasing head x 1
Motor ..... DC servo capstan motor x 1
DC servo reel motor x 1
DC servo motor x 1
Wow and Flutter ..... No more than 0.05% (WRMS, JIS)
No more than ±0.14% (DIN)
Fast Winding Time ..... Approximately 90 seconds (C-60 tape)
Frequency Response
–20 dB recording:
TYPE IV (Metal) tape ..... 20 to 21,000 Hz ±6dB
TYPE II (High/CrO_2) tape ..... 20 to 20,000 Hz ±6dB
TYPE I (Normal) tape ..... 20 to 20,000 Hz ±6dB
Signal-to-Noise Ratio ..... More than 60 dB
Digital-NR ON (Dolby-NR OFF) ..... More than 82 dB
Digital-NR ON (Dolby-NR B or C type ON) ..... More than 90 dB
(TYPE I tape, 3rd distortion 3%, IEC, DIN AUDIO)
Harmonic Distortion ..... No more than 0.6%
(at -4dB: 160 nwb/m)
Input ..... RCA pin-jack x 2
LINE (INPUT) ..... 100 mV (Input impedance 23 kΩ)
Output
LINE (OUTPUT) ..... 0.5 V (Output impedance 1.2 kΩ)
Headphones ..... 1.33 mW (Load impedance 32 Ω)

Miscellaneous

Power Requirements ..... AC 220-230 V, 50/60 Hz
Power Consumption ..... 23 W
Dimensions ..... 420(W) x 128(H) x 277(D) mm
Weight (without package) 4.5kg

Subfunctions

- DOLBY HX PRO system
- DOLBY B/C type NR systems
- Music search up to ±15 selections
- DIGITAL/CD•DECK SYNCHRO recording capability
- Peak level meter with peak-hold function
- Automatic space recording mute
- Automatic tape selector
- 3-mode electronic 4-digit tape counter (TAPE/TIME/REMAIN)
- Headphone jack
- DIGITAL FLEX system (Frequency Level Expander)
- DIGITAL SUPER AUTO BLE XD system
- LAST MEMORY
- DIGITAL NR
- Legato Link Conversion
- Power Eject
- DIGITAL SYNCHRO recording capability
- MPX filter (Interlocks with DOLBY NR)
- TIMER Recording/Playback start
- Display off
- Repeat playback

Accessories

Operating instructions 1
Connection cord with pin plugs 2
CD•DECK SYNCHRO control cord 1
Warranty card 1

NOTE:

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

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.