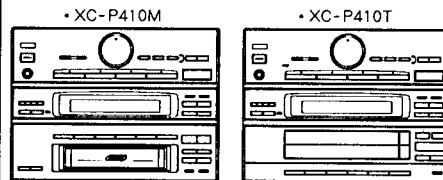


Service Manual



ORDER NO.
ARP2175

MULTI CD RECEIVER

XC-P410M

TWIN CD RECEIVER

XC-P410T

XC-P410M AND XC-P410T HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	XC-P410M	XC-P410T		
KU	○	—	AC120V only	
KC	○	—	AC120V only	
HE	○	○	AC220V, 240V (switchable) *	
HB	○	○	AC220V, 240V (switchable) *	
HEWZI	○	○	AC220V, 240V (switchable) *	
YPW	—	○	AC240V only	
SD	—	○	AC110V, 120V-127V, 220V, 240V (switchable)	

* Change the position of the jumper wire of the MAIN unit.

- This manual is applicable to the XC-P410M/KU, KC, HE, HB, HEWZI, XC-P410T/HE, HB, HEWZI, YPW and SD types.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

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

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

1. SAFETY INFORMATION

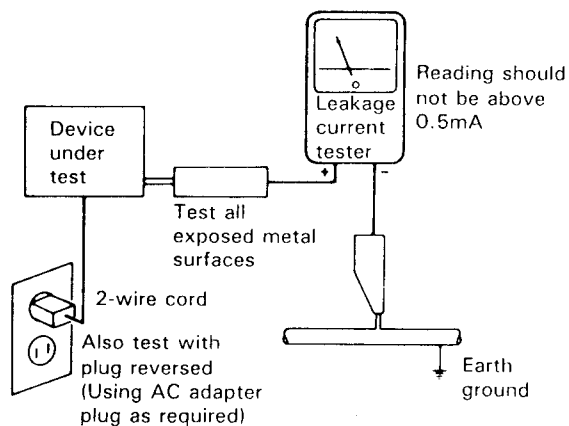
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

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

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

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

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSATEILYLLE. ALÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.



LASER
Kuva 1
Lasersateilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.



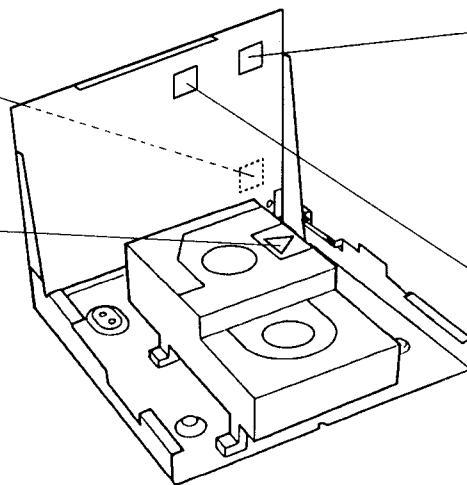
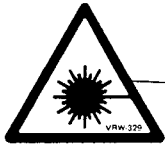
LASER
Picture 1
Warning sign for laser radiation

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF HIGHER CLASS THAN 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

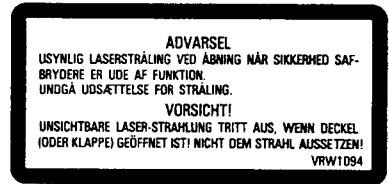
HE, HB and HEWZI models



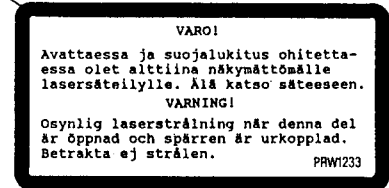
HB model



HE and HEWZI models



HE model



XC-P410M type

Additional Laser Caution

1. Laser Interlock Mechanism
The ON/OFF (ON: low level/OFF: high level) status of the LPS1 (S601) and LPS2 (S602) switches for detecting the loading state is detected by the system microprocessor, and the design prevents laser diode oscillation when both switches LPS1 and LPS2 are not ON (low level) (clamped state). Thus, interlock will no longer function if switches LPS1 (S601) and LPS2 (S602) are deliberately shorted. Also, in the test mode **, the interlock mechanism does not operate too. Laser diode oscillation will continue if pin 2 and pin 3 of CXA1471S (IC401) are connected to ground or pin 20 is connected to high level (ON) or the terminals of Q401 are shorted to each other (fault condition).
2. When the cover is opened with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

XC-P410T type

Additional Laser Caution

1. Laser Interlock Mechanism
The ON/OFF (ON: low level/OFF: high level) status of the U (S601) and L (S603) switches for detecting the disc clamp state is detected by the system microprocessor, and the design prevents laser diode oscillation when both switches U and L are OFF (high level). Thus, interlock will no longer function if switches U (S601) and L (S603) are deliberately shorted. Laser diode oscillation will continue if pin 2 and pin 3 of CXA1471S (IC401) are connected to ground or pin 20 is connected to high level (ON) or the terminals of Q401 are shorted to each other (fault condition).
2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

* : See page 84.

2. EXPLODED VIEWS AND PARTS LIST

2.1 XC – P410M

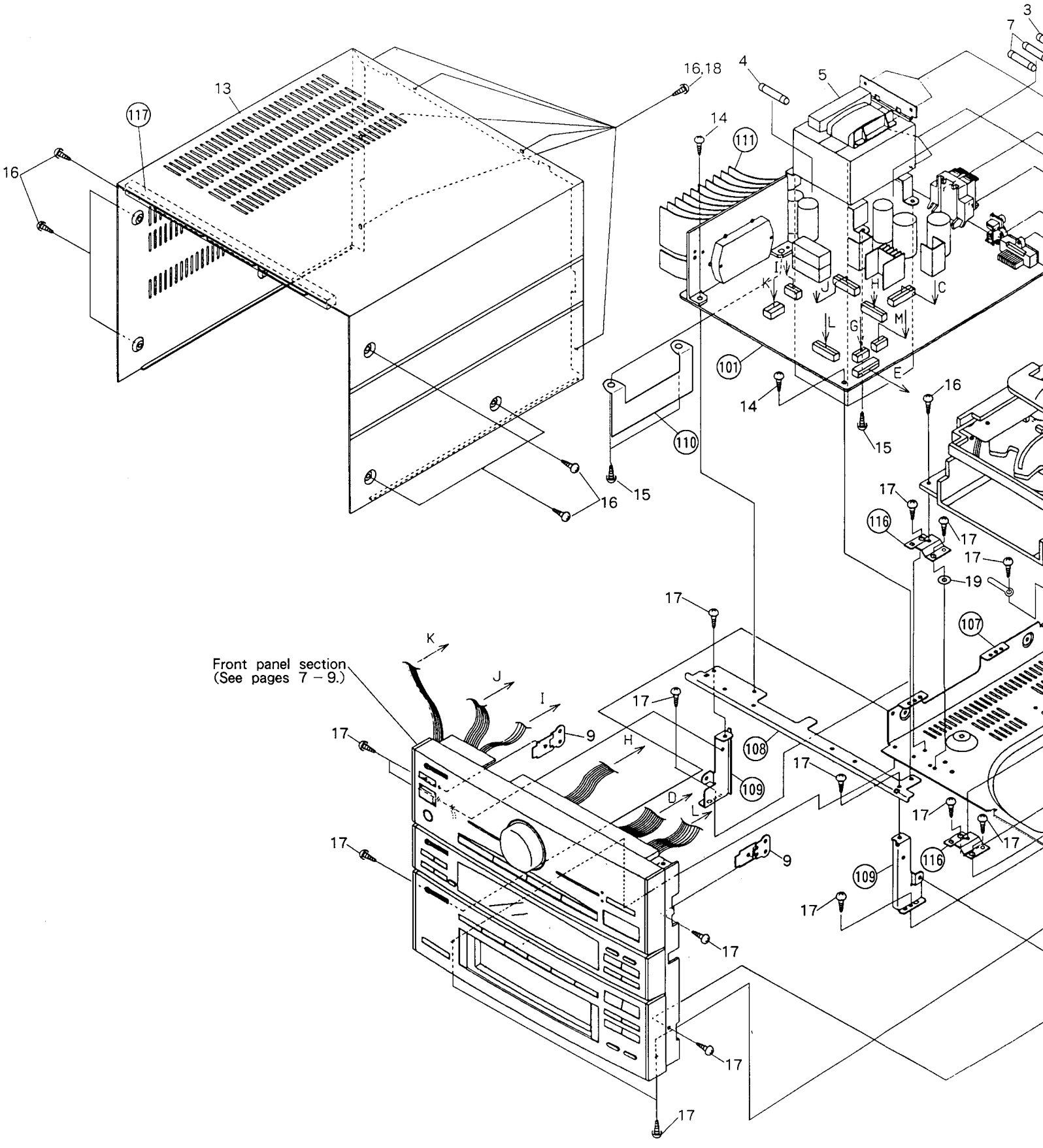
NOTES :

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

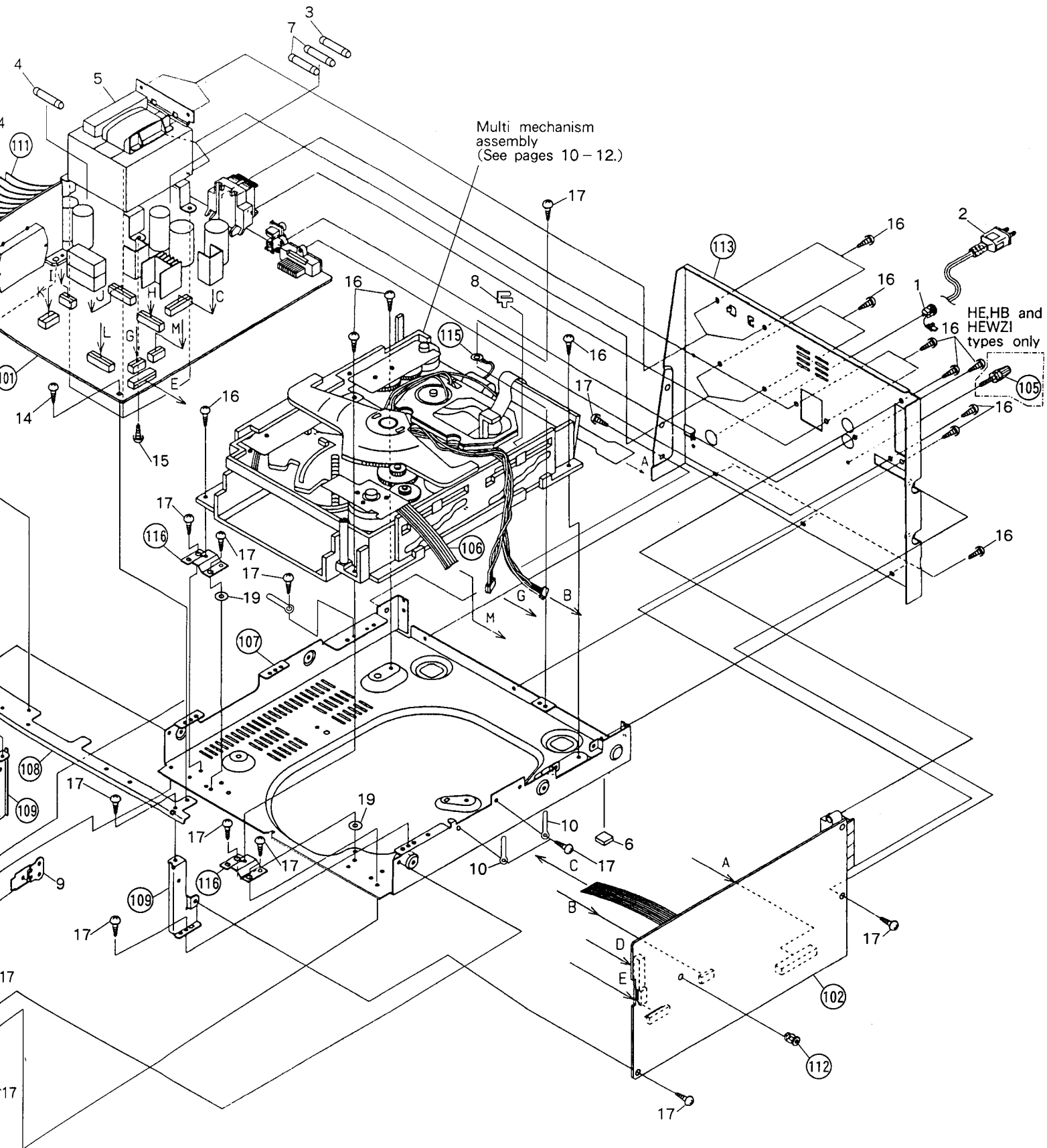
2.1.1 Exterior

Parts List

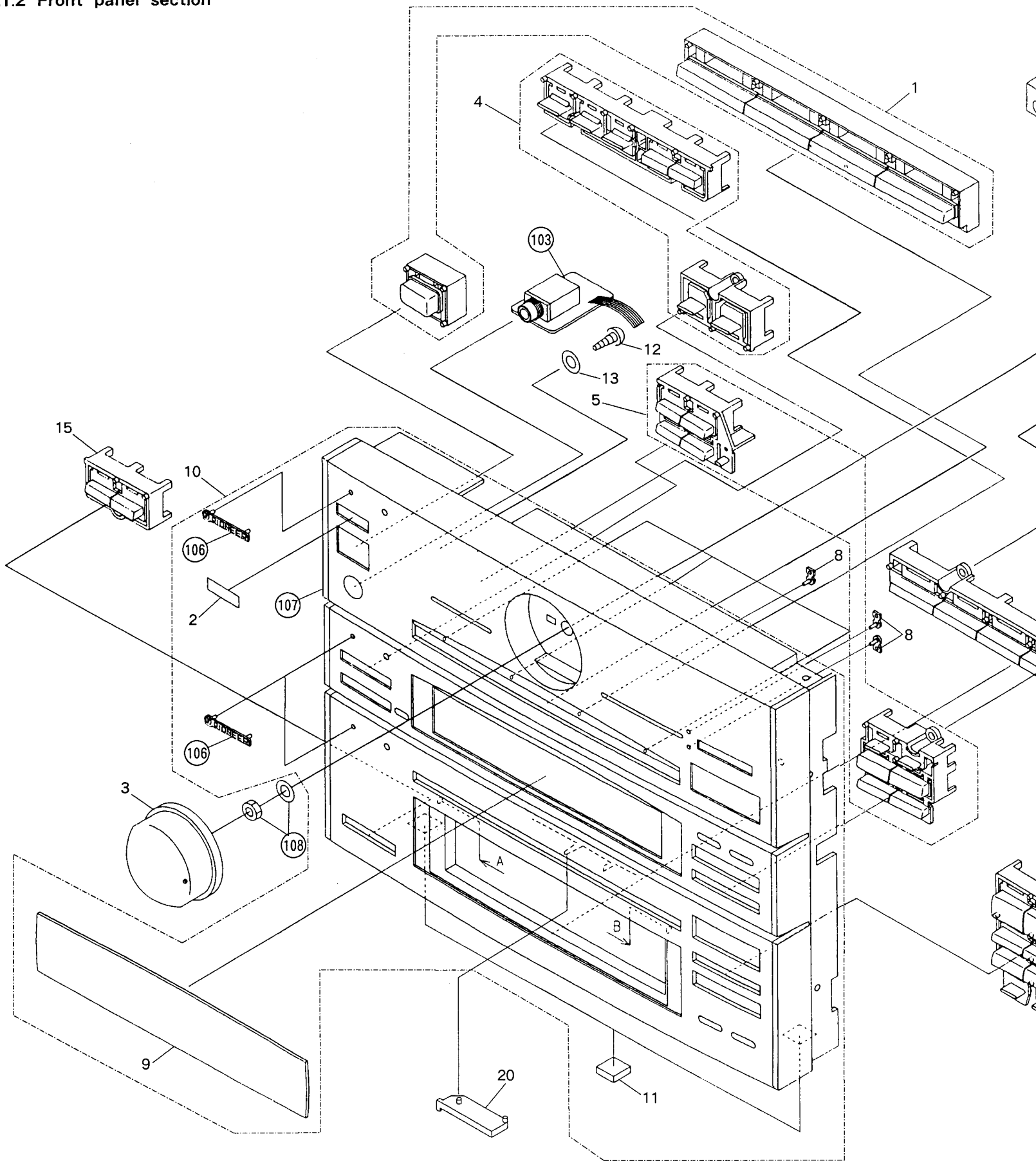
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
Δ	1	CM-22B	Strain relief (HE,HB and HEWZI types only)		11		• • • • •
Δ	1	CM-22C	Strain relief (KU and KC types only)		12		• • • • •
Δ	2	PDG1003	AC power cord (HE and HEWZI types only)		13	RXX1353	Bonnet
Δ	2	PDG1036	AC power cord (HB type only)		14	BBZ30P100FMC	Screw
Δ	2	PDG1015	AC power cord (KU and KC types only)		15	BBZ30P080FMC	Screw
Δ	3	REK-102	Fuse (FU103) (T1.6A) (HE,HB and HEWZI types only)		16	BBZ30P080FZK	Screw
Δ	3	REK-081	Fuse (FU103) (2A) (KU and KC types only)		17	BBZ30P060FMC	Screw
Δ	4	REK-099	Fuse (FU104) (T800mA) (HE,HB and HEWZI types only)		18	BBZ30T080FZK	Screw (HB type only)
Δ	4	REK-081	Fuse (FU104) (2A) (KU and KC types only)		19	WA40F080M050	Washer
Δ	5	RTT1148	Power transformer (AC220,240V) (HE,HB and HEWZI types only)		101		MAIN unit
Δ	5	RTT1151	Power transformer (AC120V) (KU type only)		102		CDTX unit
Δ	5	RTT1149	Power transformer (AC120V) (KC type only)		103		• • • • •
	6	REB1004	Stopper		104		• • • • •
Δ	7	REK-100	Fuse (FU101,102) (T1A) (HE,HB and HEWZI types only)		105		Terminal (GND) (HE,HB and HEWZI types only)
Δ	7	REK-073	Fuse (FU101,102) (1.25A) (KU and KC types only)		106		2mm pitch connector (J203)
	8	REC1088	Flexible stopper M		107		Chassis
	9	RNE1085	Stay T		108		Stay
	10	RNH-184	Cord stopper		109		Angle
					110		Bracket
					111		Heat sink
					112		PC support B
					113		Rear panel
					114		• • • • •
					115		Earth lead unit
					116		Mechanism support base
					117		Cushion

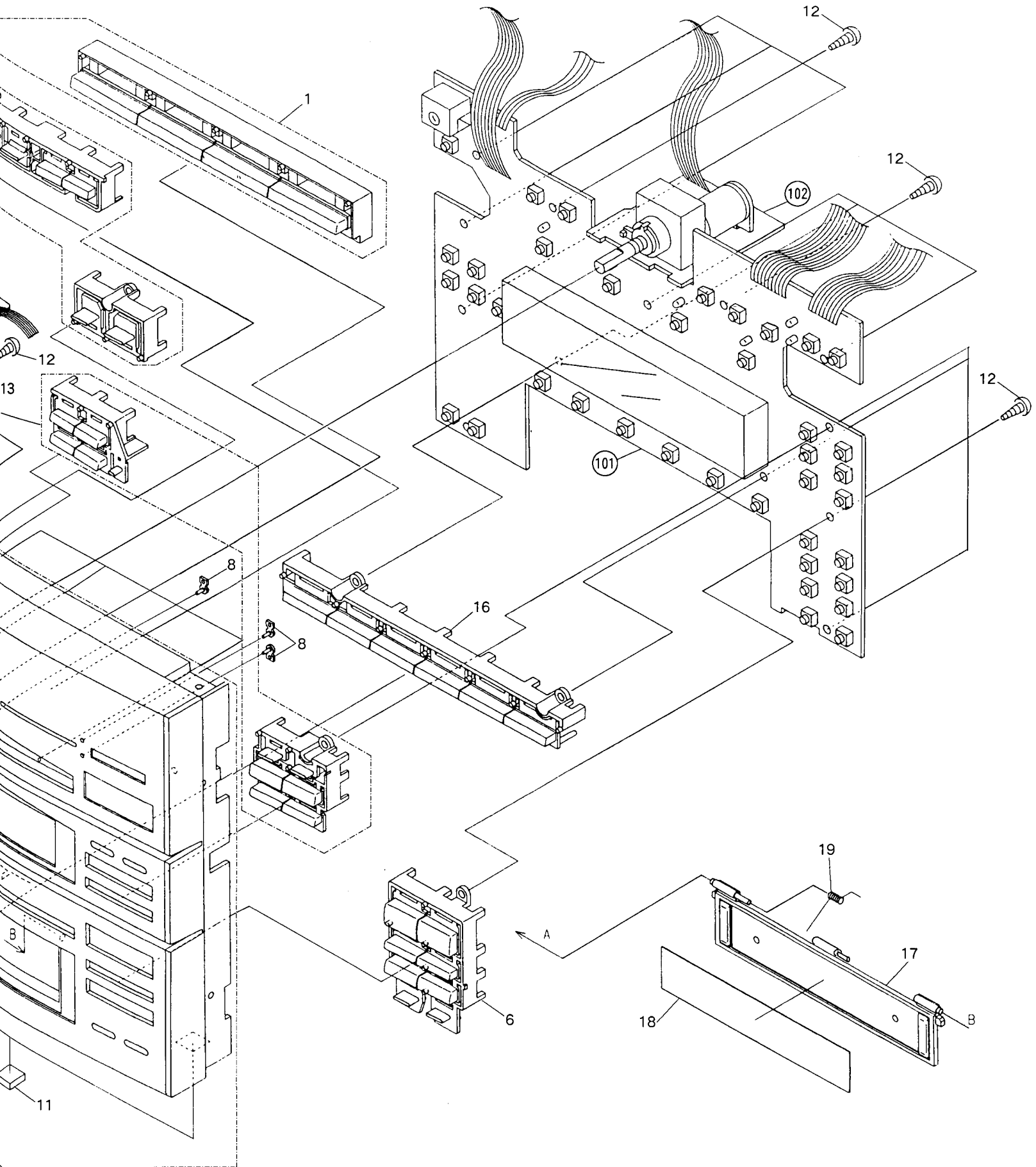


Front panel section
(See pages 7 - 9.)



2.1.2 Front panel section





Parts List

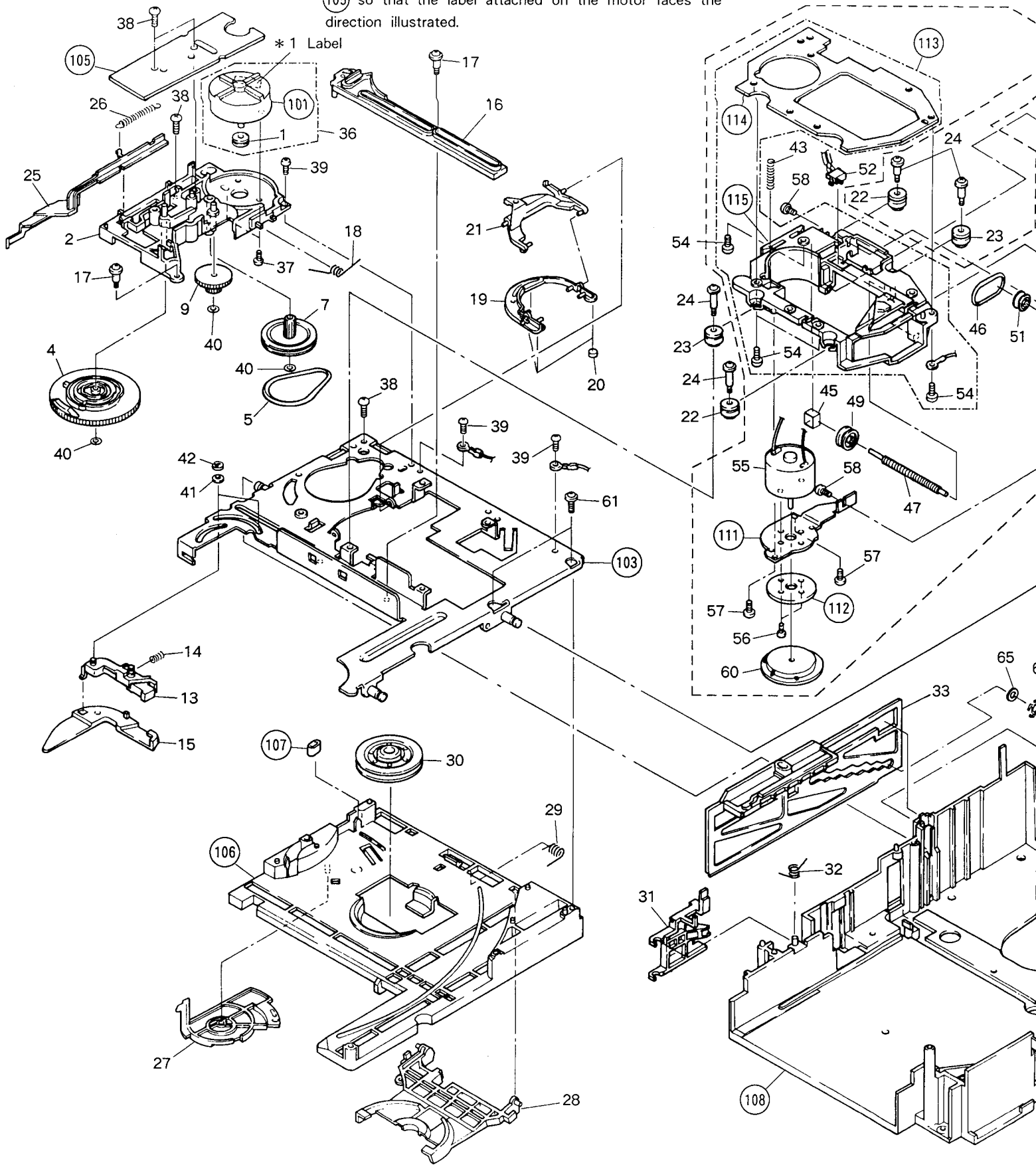
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	AAD1963	Function button (HE,HB and HEWZI types only)		101		FRNT unit
	1	AAD1966	Function button (KU and KC types only)		102		MVOL unit
	2	AAK2010	Remotecontrolwindow filter		103		H.PHONE unit
	3	RAC1566	VR knob		104		• • • • •
	4	RAC1580	Function knob A		105		• • • • •
	5	RAC1581	Function knob B		106		PIONEER badge
	6	RAC1584	Play knob M		107		Front panel
	7		• • • • •		108		Attachment of MVOL unit
	8	RNK1591	Indicator lens				
	9	RAH1805	FL panel				
	10	RXX1356	Front panel assembly-S				
	11	REB1004	Stopper				
	12	BBZ26P100FMC	Screw				
	13	WA30F150M080	Washer				
	14		• • • • •				
	15	RAC1582	Random knob				
	16	RAC1583	Disc knob				
	17	RNK1692	Door				
	18	RAH1800	Door name plate				
	19	PBH1022	Door spring				
	20	RNK1734	Door stopper				

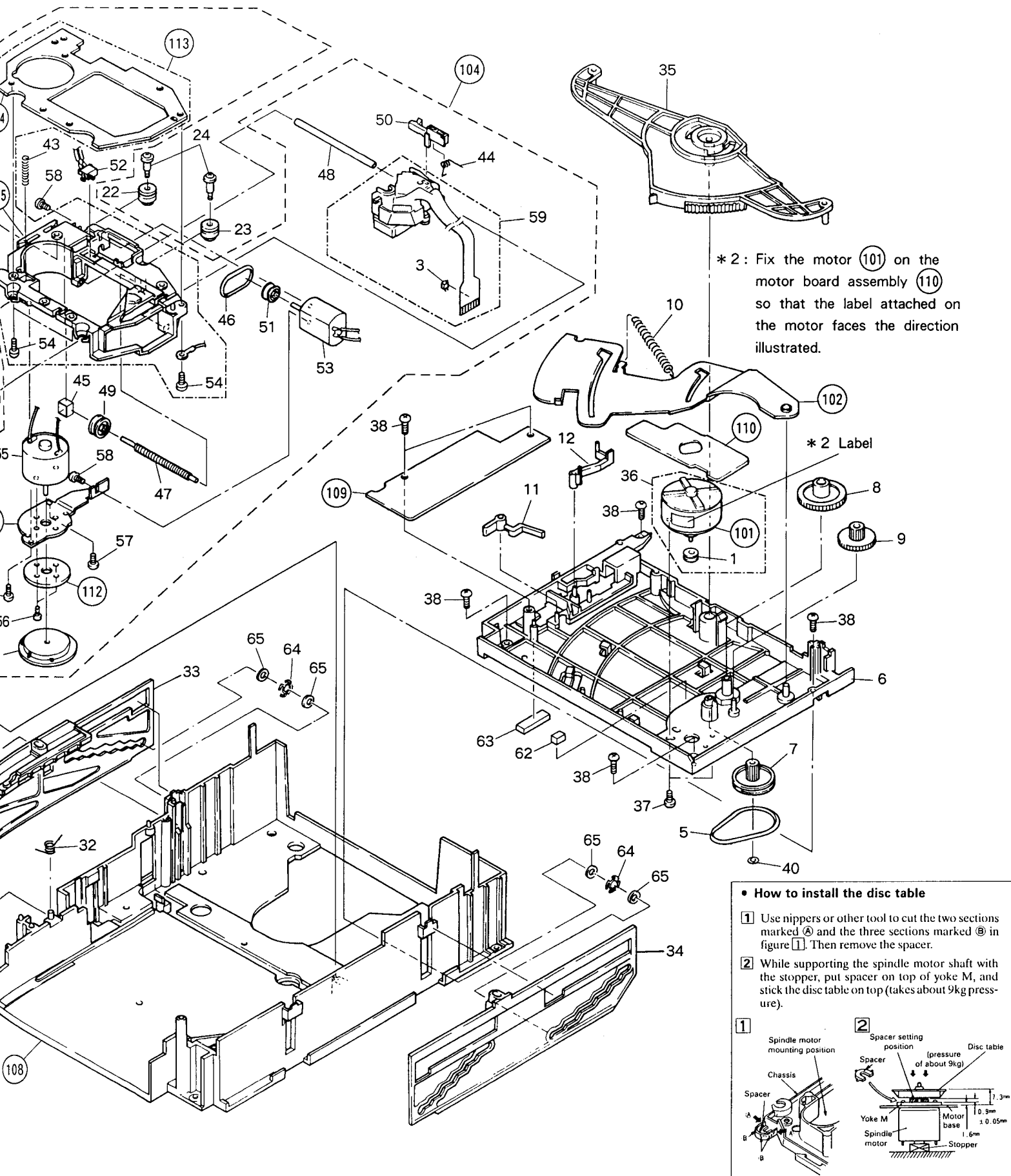
2.1.3 Multi mechanism assembly

Parts List

<u>Mark</u>	<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Mark</u>	<u>No.</u>	<u>Part No.</u>	<u>Description</u>
	1	PNW1634	Motor pulley		46	PEB1072	Belt
	2	PNW1929	Gear holder		47	PLA1003	Drive screw
	3	PCP1008	Semi-fixed resistor (VR1)		48	PLA1071	Guide bar
	4	PNW1923	Cam gear		49	PNW1066	Pulley
	5	PEB1138	Belt		50	PNW1605	Half nut
	6	PNW1914	Top guide		51	
	7	PNW1918	Gear pulley		52	DSG1014	Push switch (INSIDE)
	8	PNW1919	Gear S		53	PXM1013	D.C.motor (CARRIAGE)
	9	PNW1920	Gear L		54	PBZ30P080FMC	Screw
	10	PBH1107	Eject spring		55	PEA1028	D.C.motor assembly (with oil) (SPINDLE)
	11	PNW1927	Switch lever		56	JFZ20P040FMC	Screw
	12	PNW1931	Seven bar		57	BPZ20P080FZK	Screw
	13	PNW1933	Sub rotary lever		58	PMZ20P030FMC	Screw
	14	PBH1111	Sub rotary lever spring		59	PEA1030	Pickup assembly
	15	PNW1932	Rotary lever		60	PEA1035	Disc table assembly
	16	PNW1930	Drive plate		61	IPZ30P080FMC	Screw
	17	PBA-112	Motor screw		62	PEB1178	Rubber spacer
	18	PBH1110	Holder lever spring		63	PEB1179	Rubber spacer
	19	PNW1924	Disc holder		64	PBK1093	Silent ring
	20	PED1001	Cushion A		65	WA62D130D025	Washer
	21	PNW1925	Holder lever		101		Motor
	22	PEB1014	Float rubber		102		Eject lever
	23	PEB1132	Float rubber		103		Upper chassis
	24	PBA1055	Float screw		104		Servo mechanism assembly M
	25	PNW1934	Release lever		105		Mechanism board assembly
	26	PBH1106	Release spring		106		Sub chassis
	27	PNW1922	Clamper cam		107		Rubber tube
	28	PNW1921	Clamper holder		108		Main chassis
	29	PBH1109	Clamper spring		109		Select board assembly
	30	PNW1857	Clamper		110		Motor board assembly
	31	PNW1917	Lock lever		111		Motor base
	32	PBH1108	Lock spring		112		Yoke M
	33	PNW1915	Stair L		113		Mechanism base assembly T
	34	PNW1916	Stair R		114		Mechanism base
	35	PNW1926	Synchronize lever		115		Mechanism chassis
	36	PEA1130	Motor assembly (LOADING, DISC SELECT)				
	37	PMZ26P040FMC	Screw				
	38	PFZ30P080FMC	Screw				
	39	BBZ30P060FMC	Screw				
	40	WT26D047D025	Washer				
	41	WA31D054D025	Washer				
	42	Z39-010	E ring				
	43	PBH1009	Earth spring				
	44	PBH1084	Drive spring				
	45	PBK1057	Plate spring				

* 1 : Fix the motor (101) on the mechanism board assembly (105) so that the label attached on the motor faces the direction illustrated.





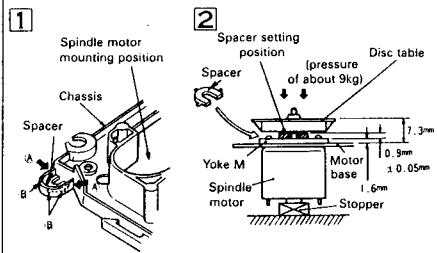
* 2: Fix the motor (101) on the motor board assembly (110) so that the label attached on the motor faces the direction illustrated.

* 2 Label

• How to install the disc table

1 Use nippers or other tool to cut the two sections marked (A) and the three sections marked (B) in figure 1. Then remove the spacer.

2 While supporting the spindle motor shaft with the stopper, put spacer on top of yoke M, and stick the disc table on top (takes about 9kg pressure).



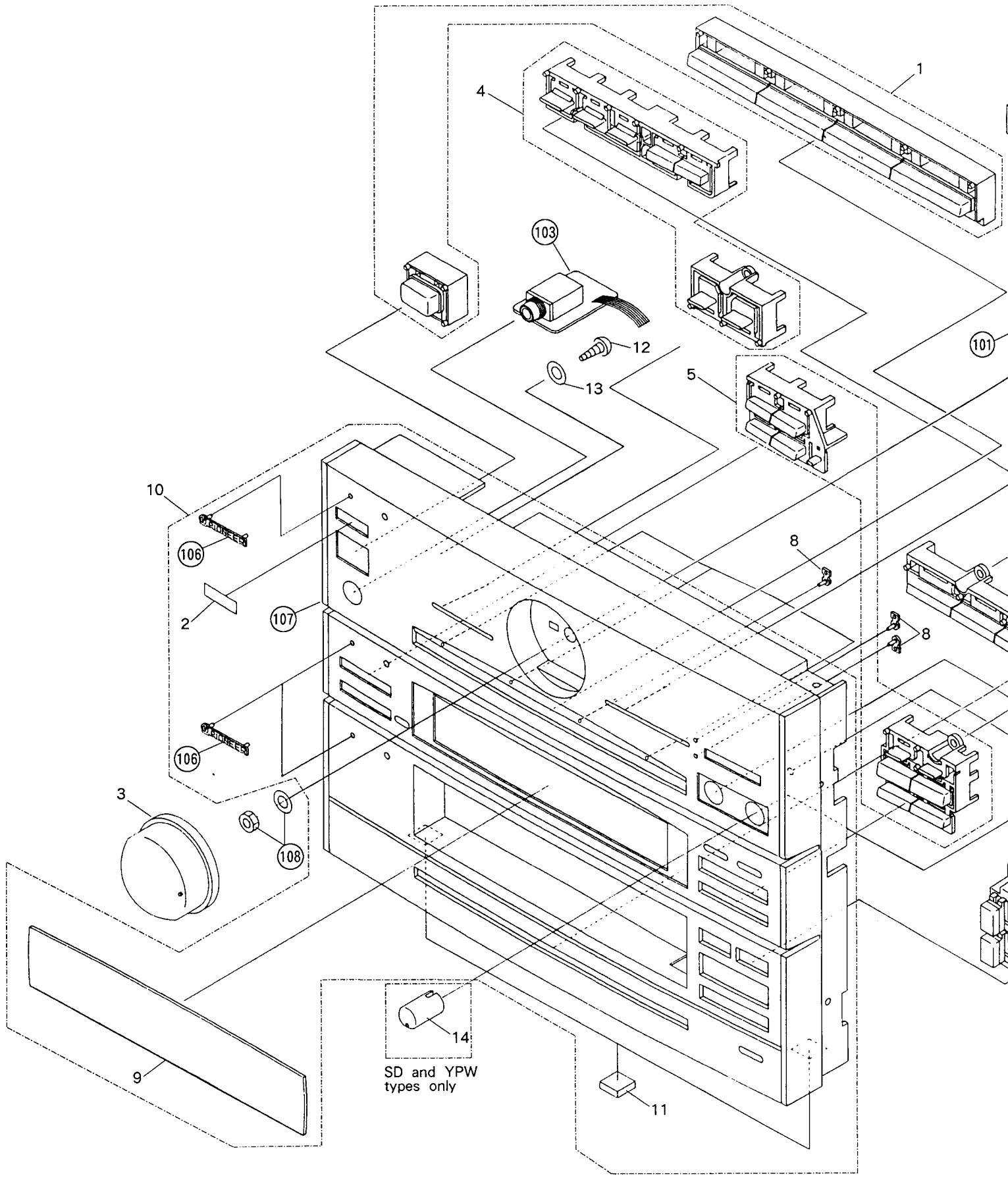
Parts List

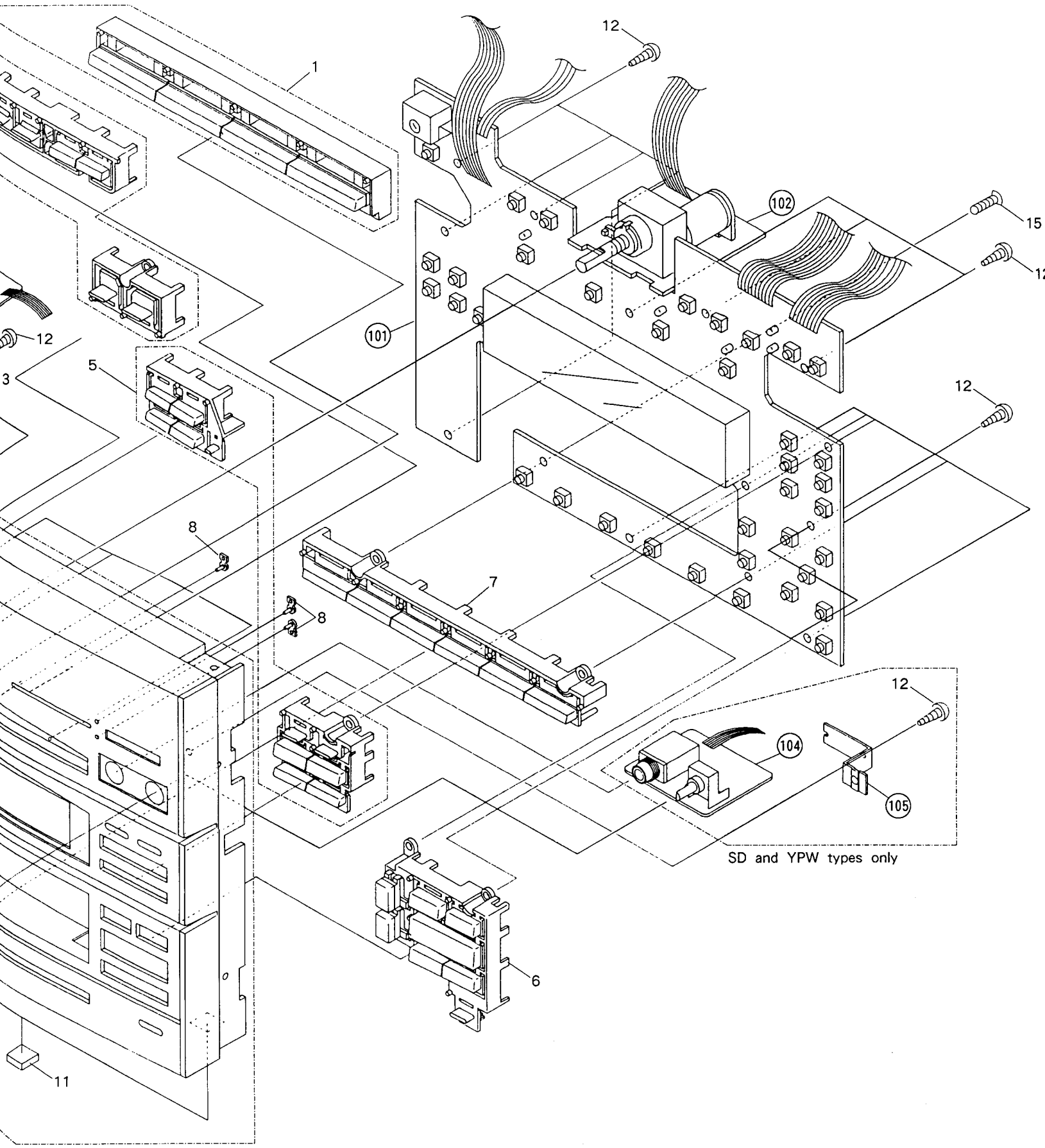
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
△	1	CM-22B	Strain relief		101		MAIN unit
△	2	PDG1003	AC power cord (HE and HEWZI types only)		102		CDTX unit
△	2	PDG1036	AC power cord (HB type only)		103		FCON unit
					104		MCON unit
					105		Terminal (GND) (HE,HB and HEWZI types only)
△	2	PDG1013	AC power cord (SD type only)		106		2mm pitch connector (J203)
△	2	PDG1006	AC power cord (YPW type only)		107		Chassis
△	3	REK-102	Fuse (FU103) (T1.6A)		108		Stay
					109		Angle
					110		Bracket
△	4	REK-099	Fuse (FU104) (T800mA) (HE,HB,HEWZI and YPW types only)		111		Heat sink
					112		PC support B
△	4	REK-102	Fuse (FU104) (T1.6A) (SD type only)		113		Rear panel
					114		Spacer
					115		Cushion
△	5	RTT1148	Power transformer (AC220,240V) (HE,HB,HEWZI and YPW types only)				
△	5	RTT1150	Power transformer (AC110,120-127,220,240V) (SD type only)				
	6	REB1004	Stopper				
△	7	REK-100	Fuse (FU101,102) (T1A)				
	8	REC1085	Flexible stopper T				
	9	RNE1085	Stay T				
	10	RNH-184	Cord stopper				
	11	PNW1945	Tray name plate 1				
	12	PNW1946	Tray name plate 2				
	13	RXX1353	Bonnet				
	14	BBZ30P100FMC	Screw				
	15	BBZ30P080FMC	Screw				
	16	BBZ30P080FZK	Screw				
	17	BBZ30P060FMC	Screw				
△	18	PSB1002	Voltage selector (SD type only)				
	19	BBZ30T080FZK	Screw (HB type only)				

2.2.2 Front panel section

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	AAD1963	Function button (HE,HB and HEWZI types only)		101		FRNT unit
	1	AAD1966	Function button (SD and YPW types only)		102		MVOL unit
	2	AAK2010	Remote control window filter		103		H.PHONE unit
	3	RAC1566	VR knob		104		MIC unit (SD and YPW types only)
	4	RAC1580	Function knob A		105		Jack holder (SD and YPW types only)
	5	RAC1581	Function knob B		106		PIONEER badge
	6	RAC1585	Play knob T		107		Front panel
	7	RAC1586	Stop knob		108		Attachment of MVOL unit
	8	RNK1591	Indicator lens				
	9	RAH1805	FL panel				
	10	RXX1357	Front panel assembly-S (HE,HB and HEWZI types only)				
	10	RXX1354	Front panel assembly-S (SD and YPW types only)				
	11	REB1004	Stopper				
	12	BBZ26P100FMC	Screw				
	13	WA30F150M080	Washer				
	14	AAB1219	Knob (SD and YPW types only)				
	15	CPZ26P100FZK	Screw				





3

4

5

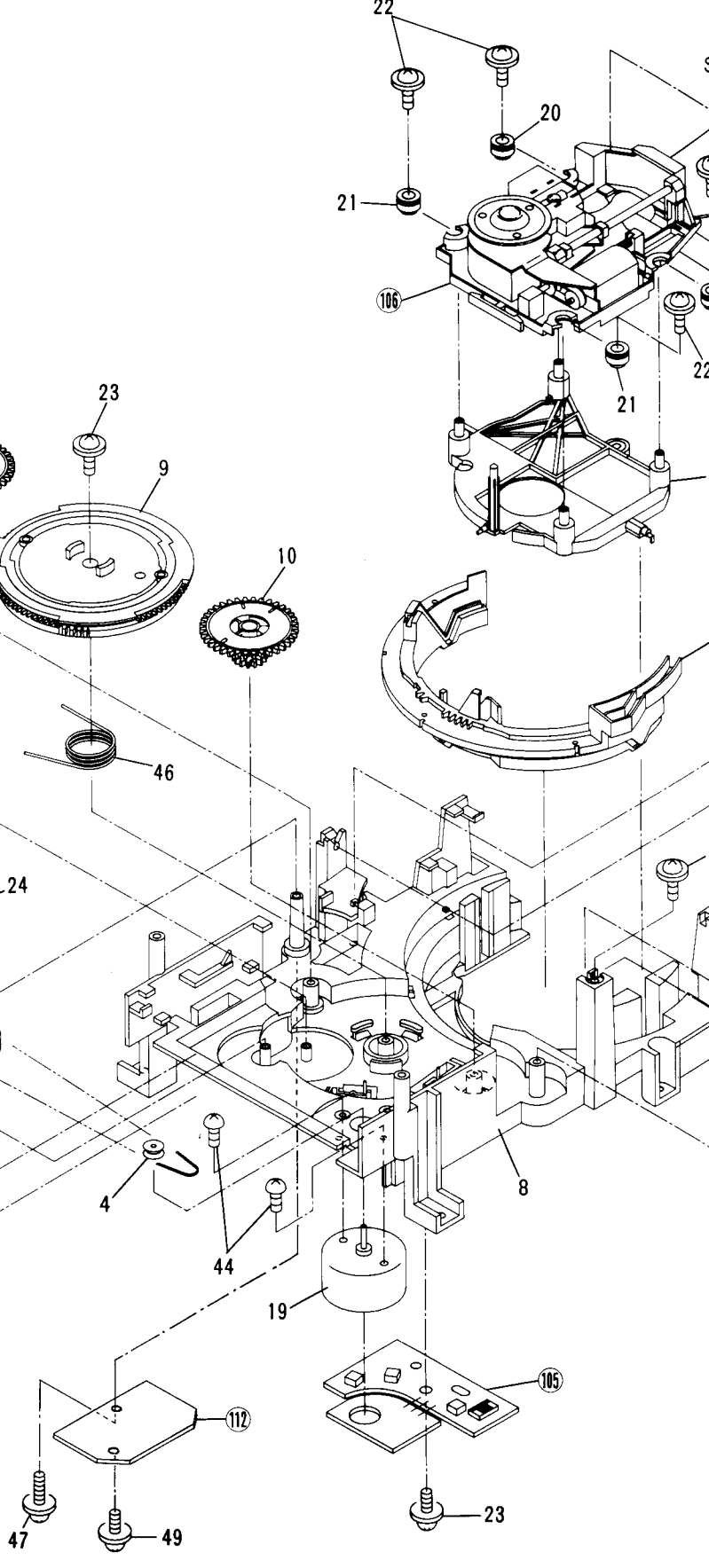
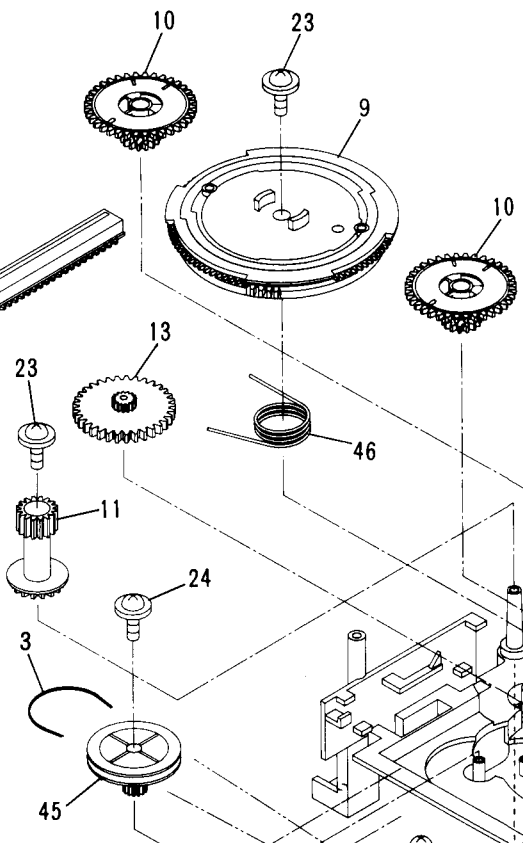
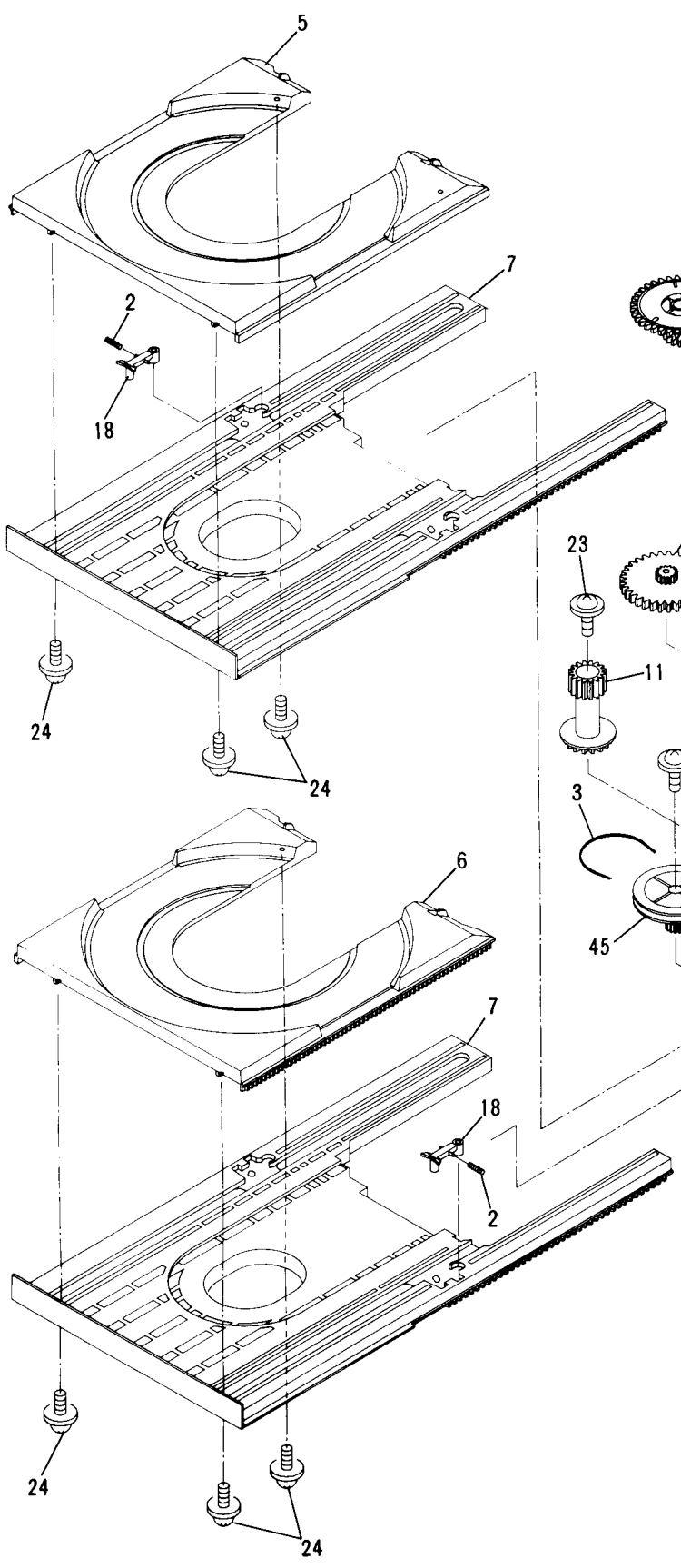
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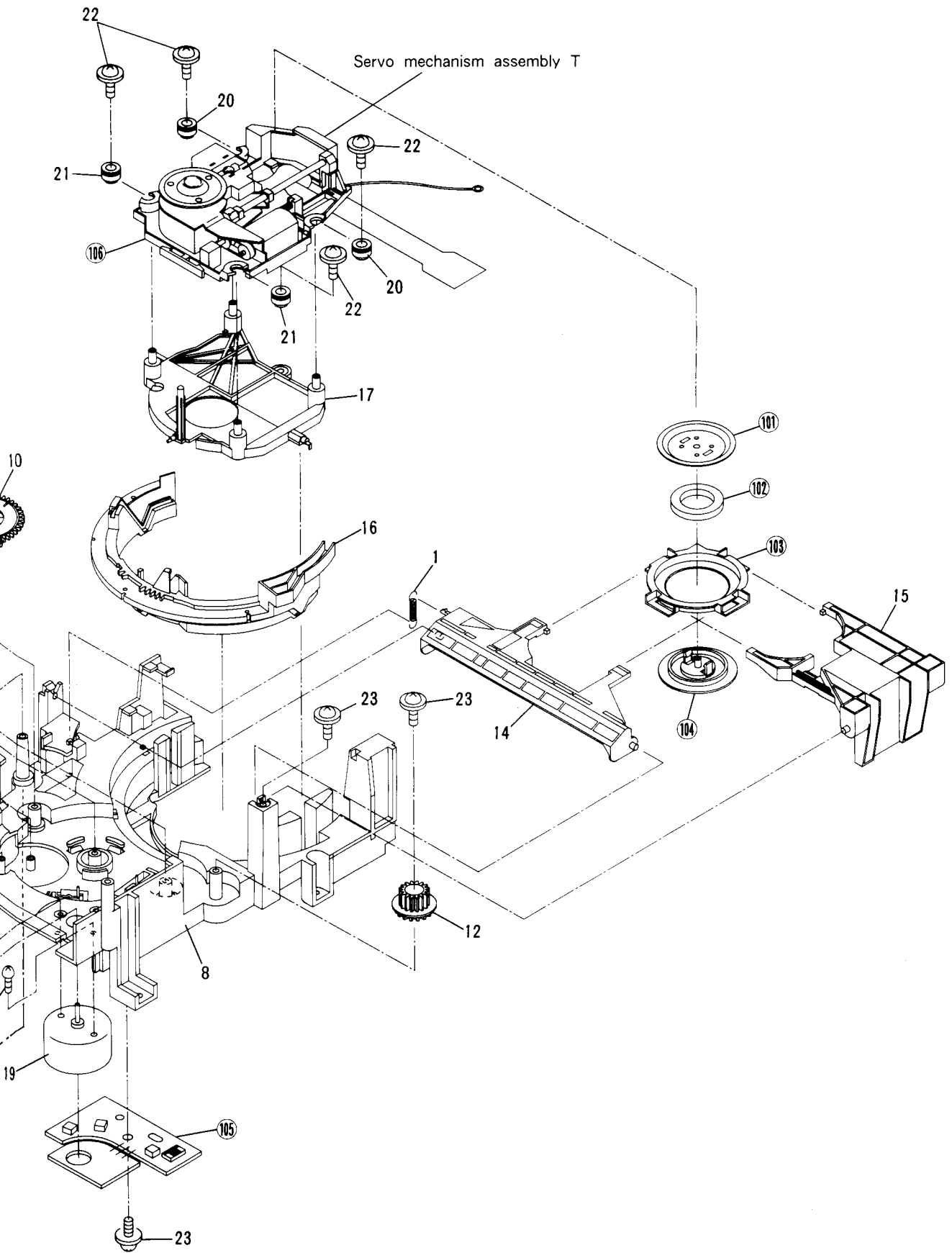
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5

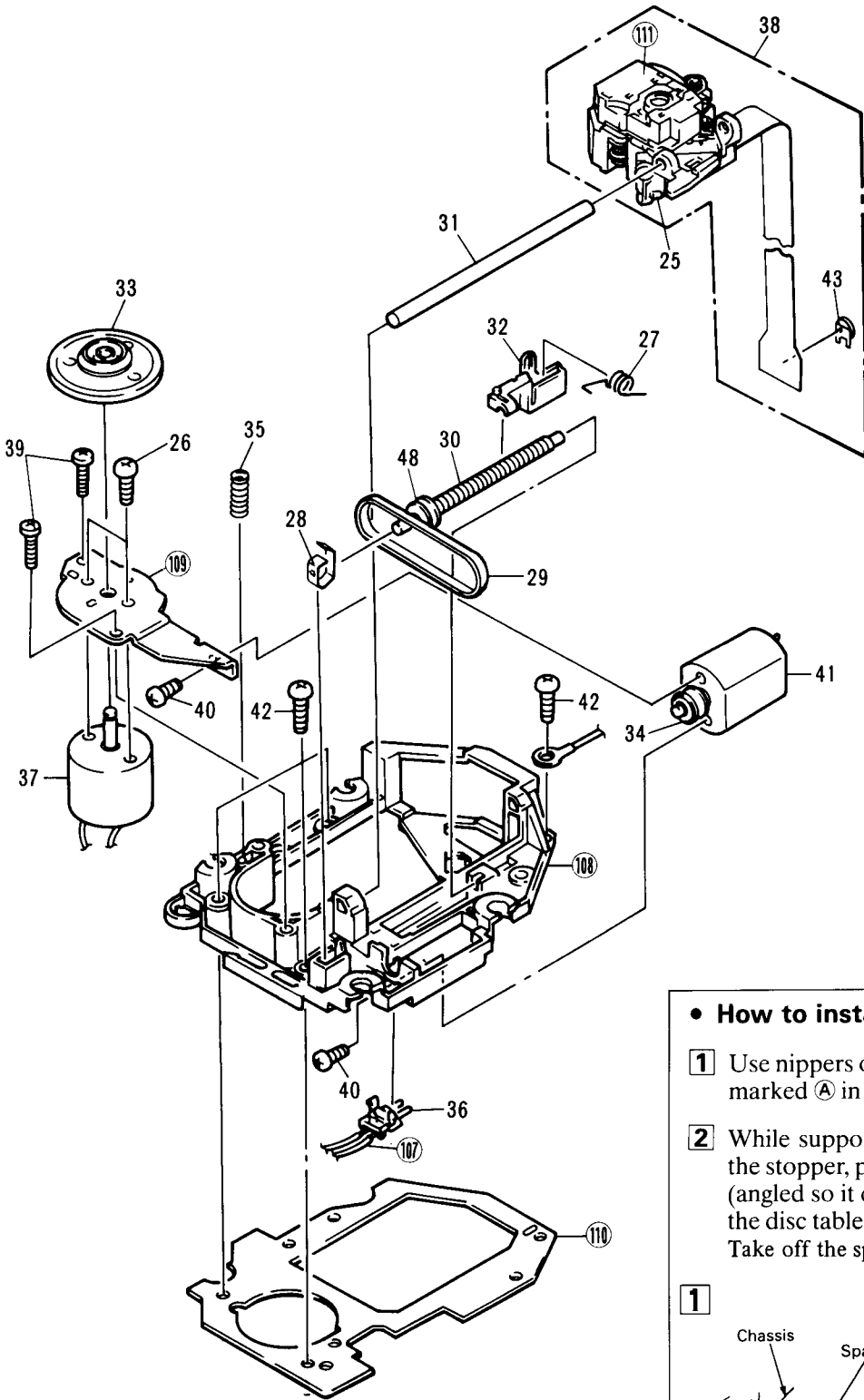
6

by mechanism assembly





• Servo mechanism assembly T



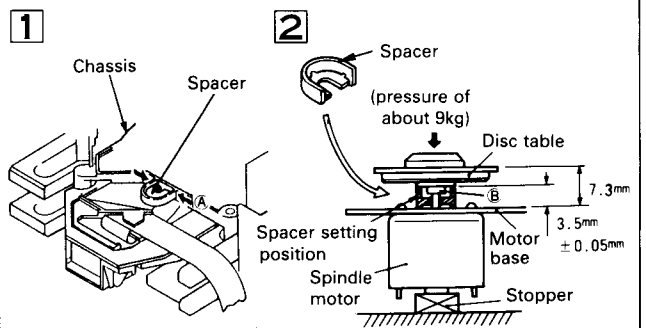
A

B

C

• How to install the disc table

- 1 Use nippers or other tool to cut the two sections marked A in figure 1. Then remove the spacer.
- 2 While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section B), and stick the disc table on top (takes about 9kg pressure). Take off the spacer.



D

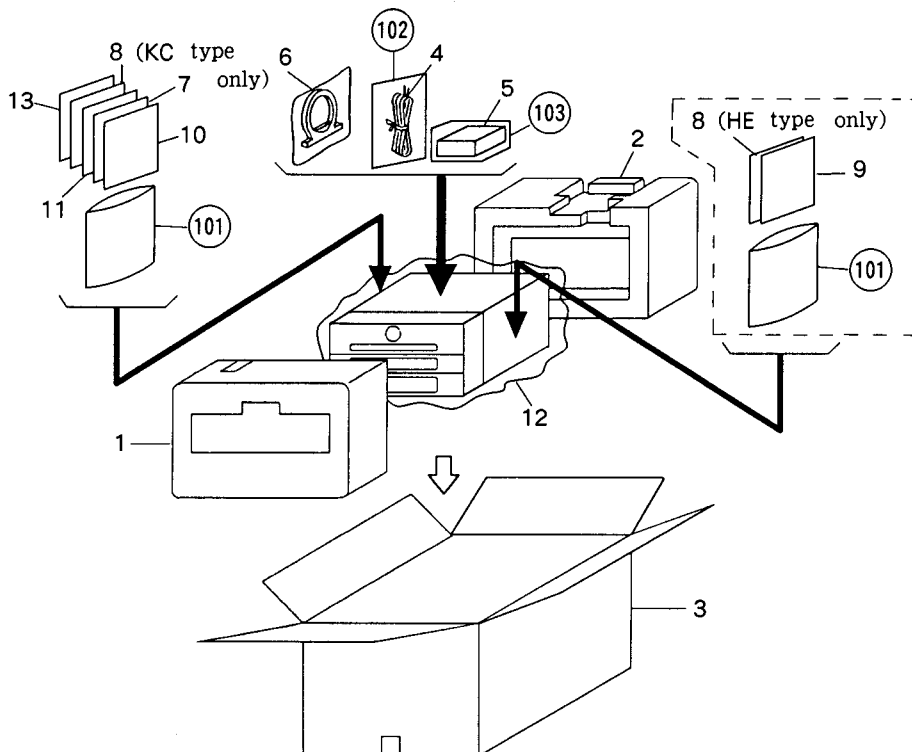
Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	PBH1103	Clamp spring		101		Yoke
	2	PBH1104	Lever spring		102		Magnet
	3	PEB1106	Belt		103		Clamper holder
	4	PNW1634	Motor pulley		104		Clamper S
	5	PNW1986	Tray 1		105		Mechanism board assembly
	6	PNW1987	Tray 2		106		Servo mechanism assembly T
	7	PNW1985	Sub tray		107		Connector assembly (6P)
	8	PNW1842	Loading base		108		Mechanism chassis
	9	PNW1843	Main cam		109		Motor base
	10	PNW1844	Follow gear		110		Mechanism base
	11	PNW1845	Gear 1		111		Actuator cover
	12	PNW1846	Gear 2		112		Sub panel base
	13	PNW1847	Idler gear				
	14	PNW1850	Clamper arm U				
	15	PNW1851	Clamper arm B				
	16	PNW1852	Clamp cam				
	17	PNW1853	Float base				
	18	PNW1854	Lock lever				
	19	PXM1010	D.C.Motor (DISC SELECT)				
	20	PEB1014	Floating rubber				
	21	PEB1132	Floating rubber				
	22	PBA1048	Screw				
	23	IPZ30P080FMC	Screw				
	24	IPZ20P080FMC	Screw				
	25	CKSYF105Z16	Chip capacitor (C1001)				
	26	JFZ20P025FMC	Screw				
	27	PBH1084	Drive spring				
	28	PBK1057	Plate spring				
	29	PEB1072	Belt				
	30	PLA1003	Drive screw				
	31	PLA1071	Guide bar				
	32	PNW1605	Half nut				
	33	PNW1608	Disc table				
	34	PNW1634	Motor pulley				
	35	PBH1009	Earth spring				
	36	DSG1014	Push switch (INSIDE)				
	37	PEA1028	D.C.motor assembly (with oil) (SPINDLE)				
	38	PEA1030	Pickup assembly				
	39	BPZ20P080FZK	Screw				
	40	PMZ20P030FMC	Screw				
	41	PXM1013	D.C.motor (CARRIAGE)				
	42	PBZ30P080FMC	Screw				
	43	PCP1008	Semi-fixed resistor (VR1)				
	44	PMZ26P040FMC	Screw				
	45	PNW1848	Gear pulley				
	46	PBH1105	Push spring				
	47	IPZ30P200FMC	Screw				
	48	PNW1066	Pulley				
	49	IPZ30P120FMC	Screw				

3. PACKING

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	RHA1062	Pad F (XC-P410M type)	8	RRD1101		Operating instructions (French)
	1	RHA1066	Pad F (XC-P410T type)				(XC-P410M/KC,HE and XC-P410T/HE types)
	2	RHA1063	Pad R	9	RRD1102		Operating instructions (Swedish/ Spanish/ Portuguese)
	3	RHG1252	Packing case (XC-P410M/HE,HB and HEWZI types)				(XC-P410M/HE and XC-P410T/HE types)
	3	RHG1253	Packing case (XC-P410M/KU and KC types)	10	RRD1103		Operating instructions (German/Italian/Dutch)
	3	RHG1231	Packing case (XC-P410T type)				(XC-P410M/HE,HEWZI, XC-P410T/HE and HEWZI types)
	4	ADH1005	FM antenna (XC-P410M/KU,KC, XC-P410T SD and YPW types)	11	RRD1111		Operating instructions (Spanish)
	4	ADH1002	FM antenna assembly (XC-P410M/HE,HB,HEWZI, XC-P410T HE,HB and HEWZI types)				(XC-P410T/SD type)
	5	PXA1308	Magazine assembly (XC-P410M type)	12	RHC1021		Packing sheet
	6	RTB1001	Loop antenna assembly	13	RRR1002		Operating instructions (XC-P410T type)
	7	RRB1089	Operating instructions (English) (XC-P410M/KU,KC,HE and HB types)	101			Polyethylene bag
				102			Polyethylene bag
				103			Polyethylene bag
	7	RRB1090	Operating instructions (English) (XC-P410T/HE,HB,SD and YPW types)				



4. SCHEMATIC DIAGRAMS


1. RESISTORS :


Indicated in Ω , 1/4W, 1/6W and 1/8W, $\pm 5\%$ tolerance unless otherwise noted k ; k Ω , M ; M Ω , (F) ; $\pm 1\%$, (G) ; $\pm 2\%$, (K) ; $\pm 10\%$, (M) ; $\pm 20\%$ 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.

5. SWITCHES : (The underlined indicates the switch position)

● XC-P410M

LOADING BOARD ASSEMBLY

S601 : LPS (1)

S602 : LPS (2)

SELECT BOARD ASSEMBLY

S603 : MZS (1)

S604 : MZS (2)

S605 : DCHM

S606 : DCNT

FRNT UNIT

S601 : HI-LITE SCAN

S602 : RANDOM

S603 : STOP

S604 : FREQ/ST.

S605 : BAND

S606 : TUNER (DOWN)

S607 : HALL

S608 : MODE

S609 : B.G.M.

S610 : WAKE UP  TIMER

S611 : REC  TIMER

S612 : REPEAT

S614 : PAUSE

S615 : AM-NR/FM-MONO

S616 : MEMORY (AUTO PRESET)

S617 : TUNER (UP)


S618 : DISCO


S619 : SFC CLEAR

S620 : PHONO (HE,HB and HEWZI types)

S620 : VIDEO (KU and KC types)

S621 : DISPLAY

S623 :  SEARCH

S624 :  SEARCH

S625 : PLAY

S626 : DISC 1

S627 : DISC 2

S628 : DISC 3

S629 : TUNER

S630 : CD

S631 : POWER

S632 : TIMER SET


S635 : PROGRAM

S636 : EJECT

S638 : DISC 4

S639 : DISC 5

S640 : TAPE

S641 : MEMORY  SMART OPERATION

S642 : START/SET  SMART OPERATION

S643 : CLOCK ADJ.

S644 : DISC 6

4. OTHERS :

 ; Signal route.

 ; Adjusting point.

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

※ marked capacitors and resistors have parts numbers.

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

● XC-P410T

MECHANISM BOARD ASSEMBLY

S601 : TRY (1)

S602 : TSEL

S603 : TRY (2)

CDTX UNIT

S301 : CHNNEL STEP (SD type only)

FRNT UNIT

S601 : HI-LITE SCAN

S602 : RANDOM

S603 : STOP

S604 : FREQ/ST.

S605 : BAND


S606 : TUNER (DOWN)

S607 : HALL

S608 : MODE

S609 : B.G.M.

S610 : WAKE UP  TIMER

S611 : REC  TIMER

S612 : REPEAT

S613 : AUTO EJECT

S614 : PAUSE

S615 : AM-NR/FM-MONO

S616 : MEMORY (AUTO PRESET)

S617 : TUNER (UP)


S618 : DISC


S619 : SFC CLEAR

S620 : PHONO (HE,HB and HEWZI types)

S620 : VIDEO (SD and YPW types)

S621 : DISPLAY

S623 :  SEARCH

S624 :  SEARCH

S625 : PLAY

S626 : DISC 1

S627 : DISC 2

S629 : TUNER

S630 : CD

S631 : POWER


S632 : TIMER SET

S635 : PROGRAM

S636 : OPEN/CLOSE (DISC 1)

S637 : OPEN/CLOSE (DISC 2)

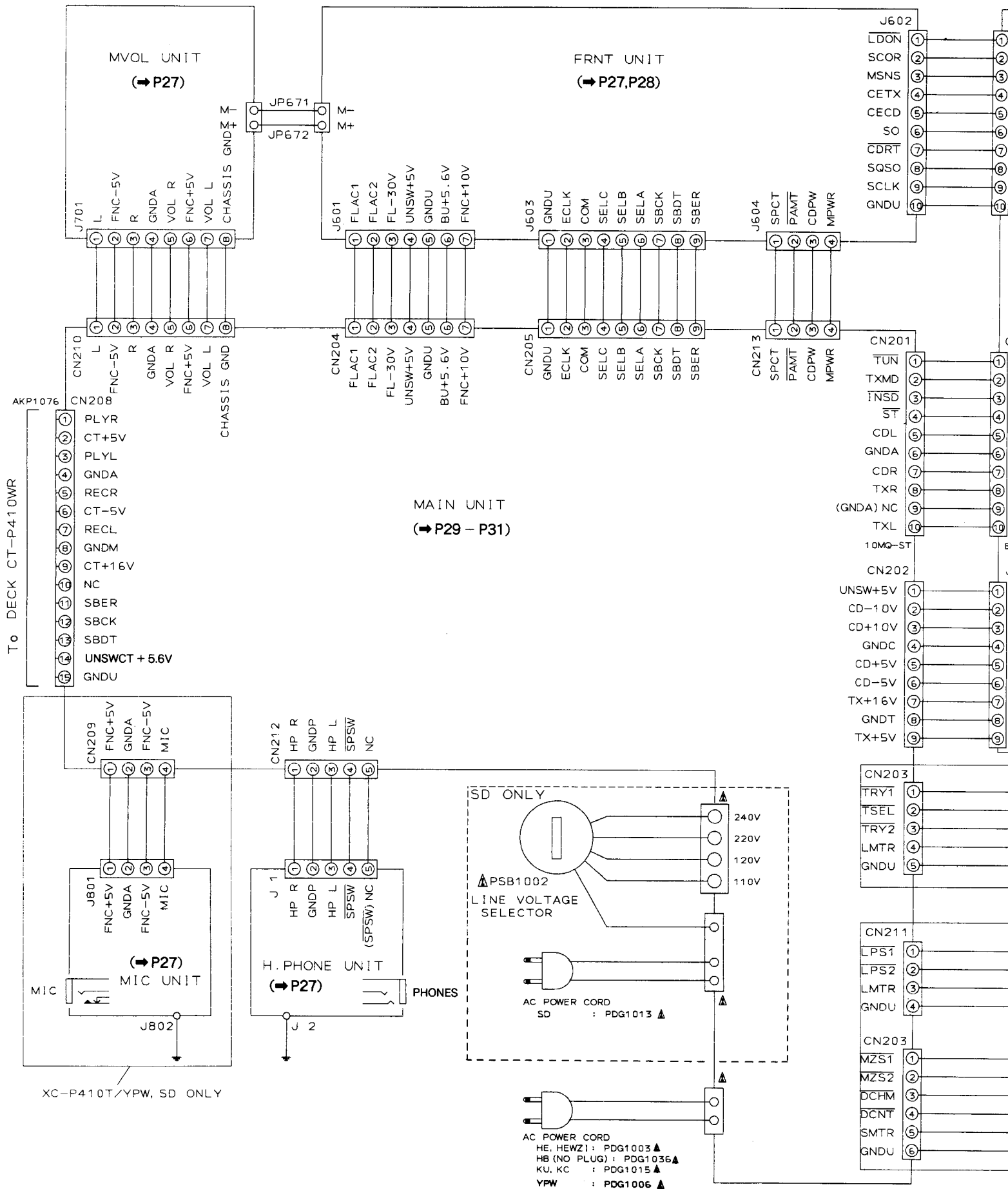
S640 : TAPE

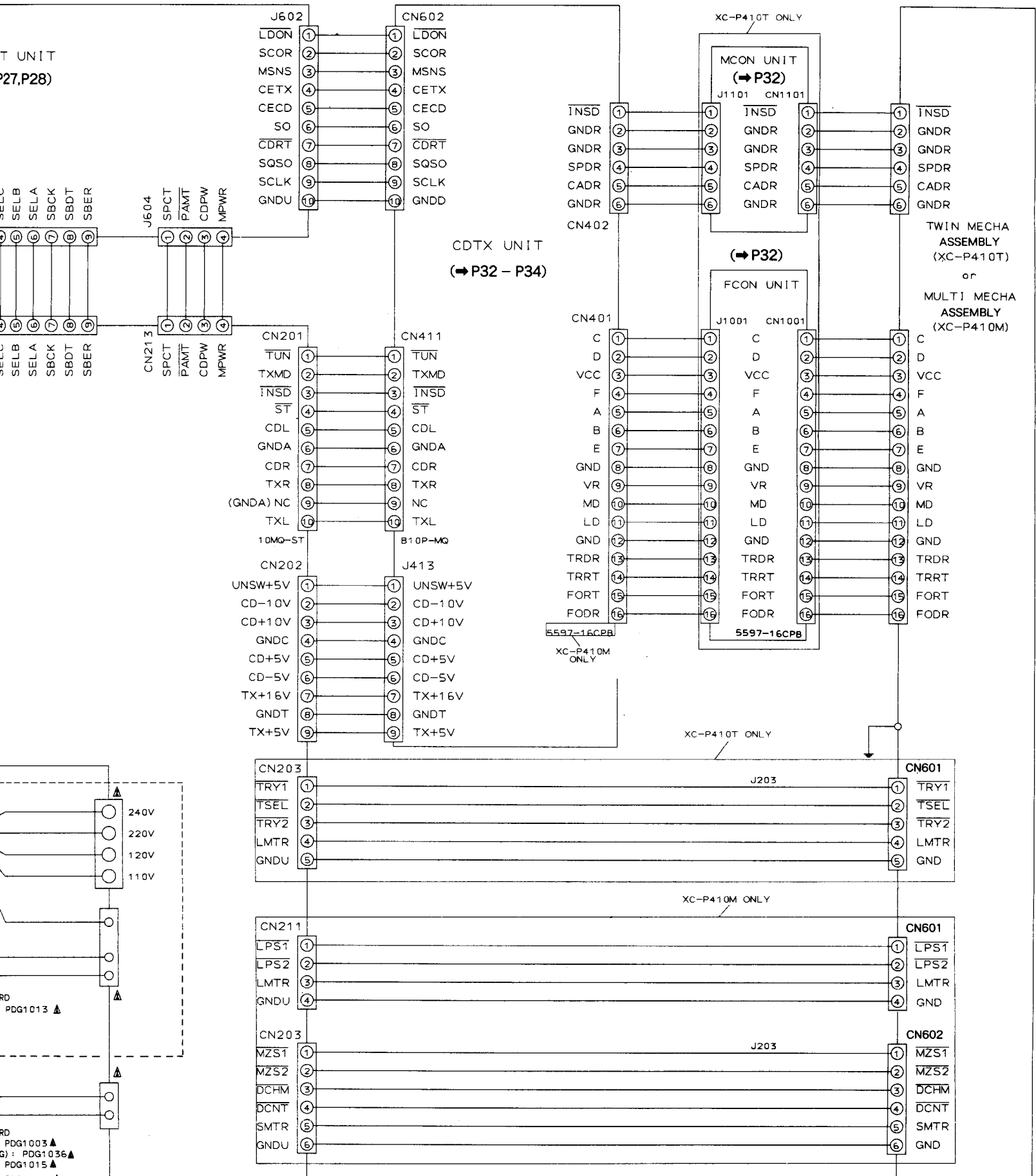
S641 : MEMORY  SMART OPERATION

S642 : START/SET  SMART OPERATION

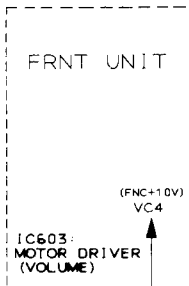
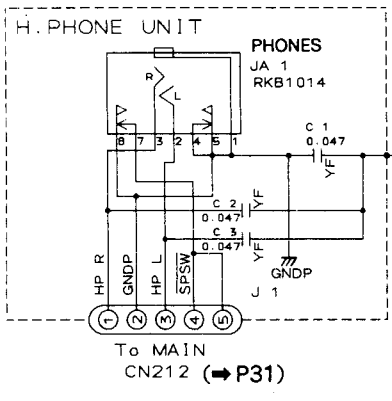
S643 : CLOCK ADJ.

OVERALL WIRING DIAGRAM



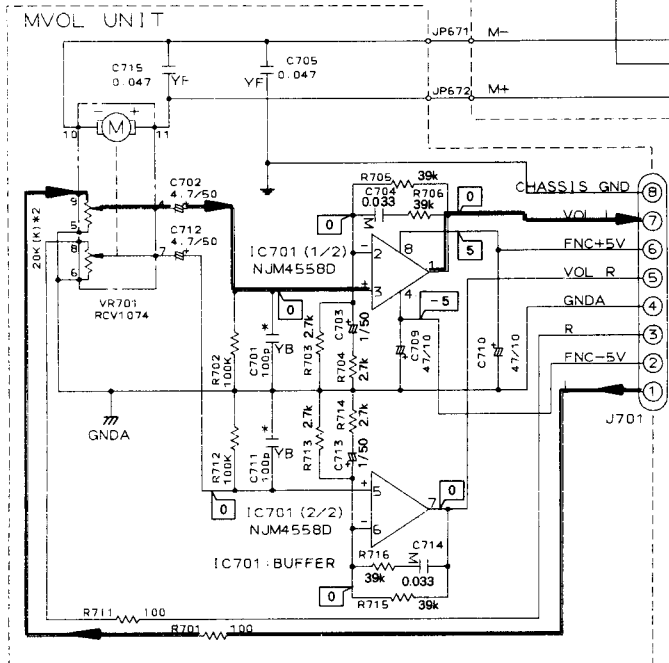


H.PHONE, MVOL, FRNT AND MIC UNITS



MODE	VUP VIN2	VDWN VIN1	M+ OUT2	M- OUT1
(STOP)	0	0	H-imp	H-imp
V. UP	1	0	H	L
V. DWN	0	1	L	H
BRAKE	1	1	L	L

IC603
TA8409S

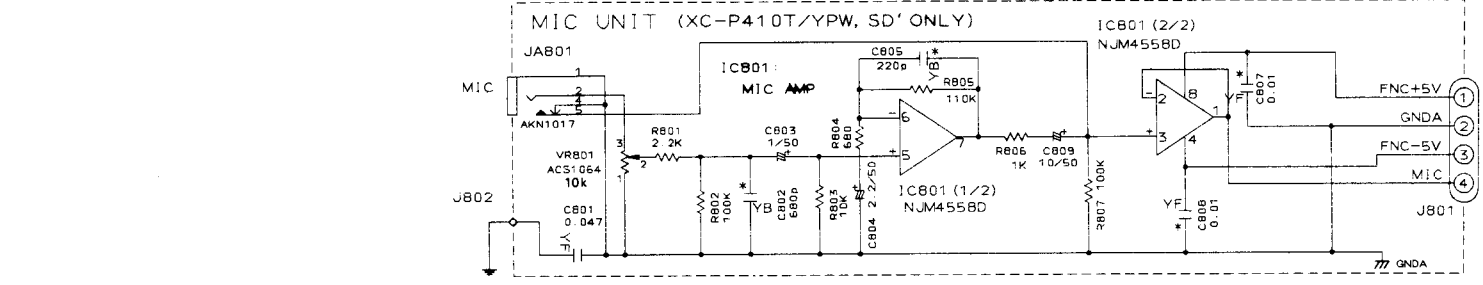
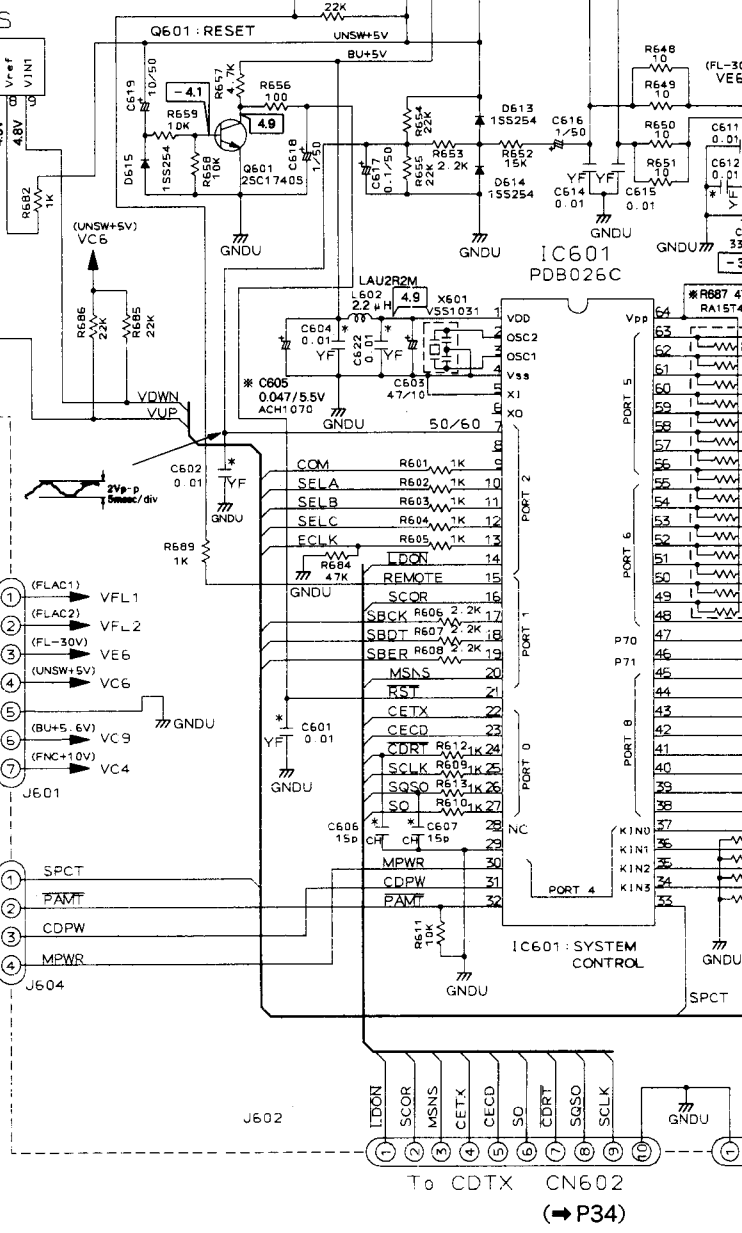
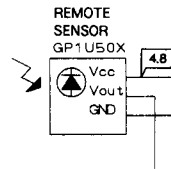


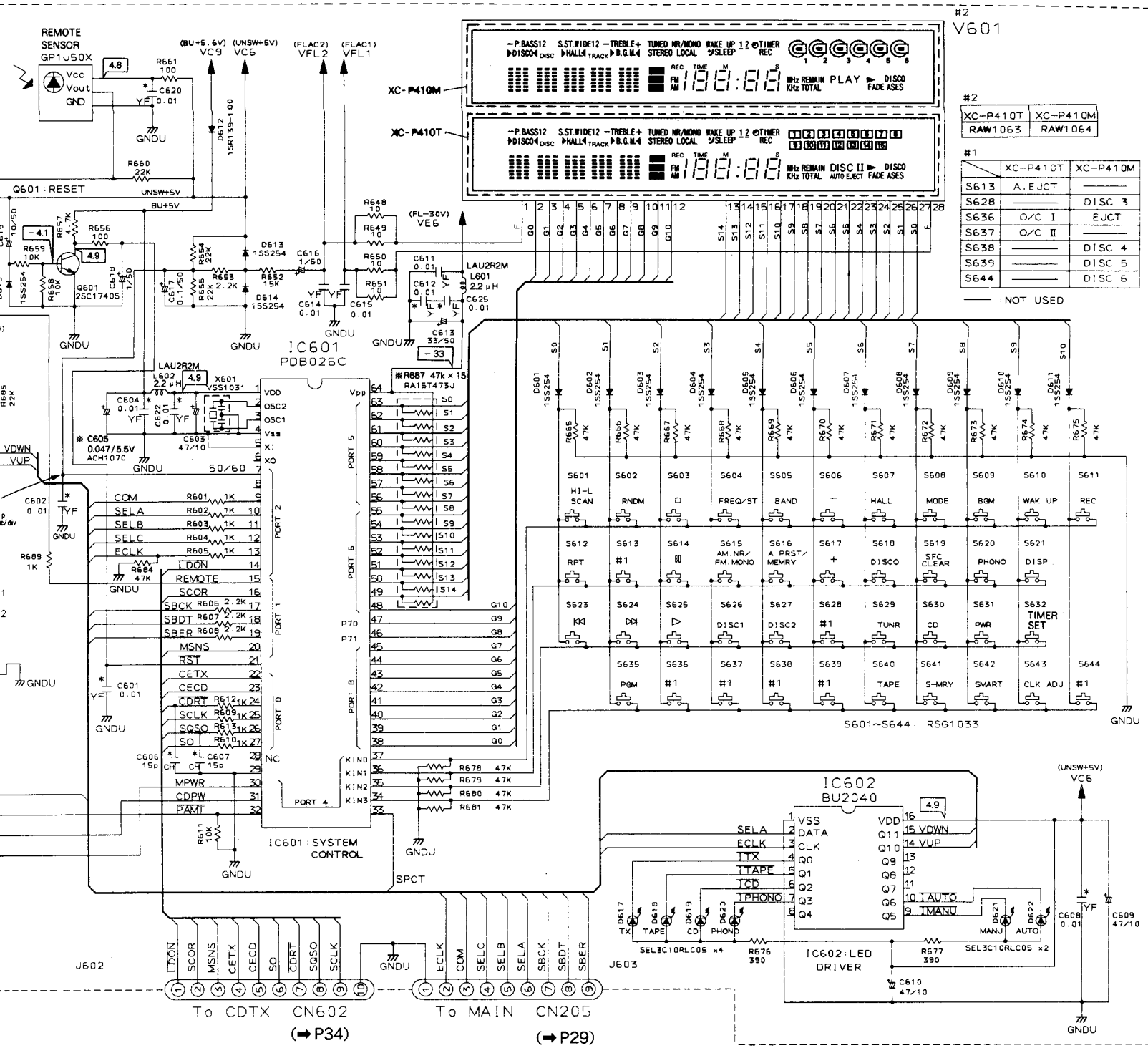
— AUDIO SIGNAL

To MAIN
CN210
(→ P29)

To MAIN
CN204
(→ P30)

To MAIN
CN213
(→ P30)





V601

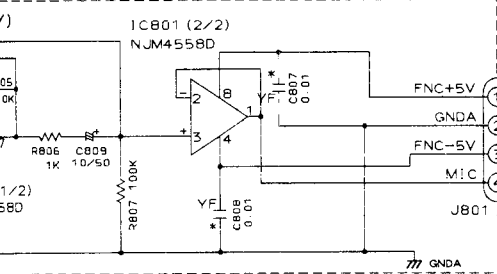
#2

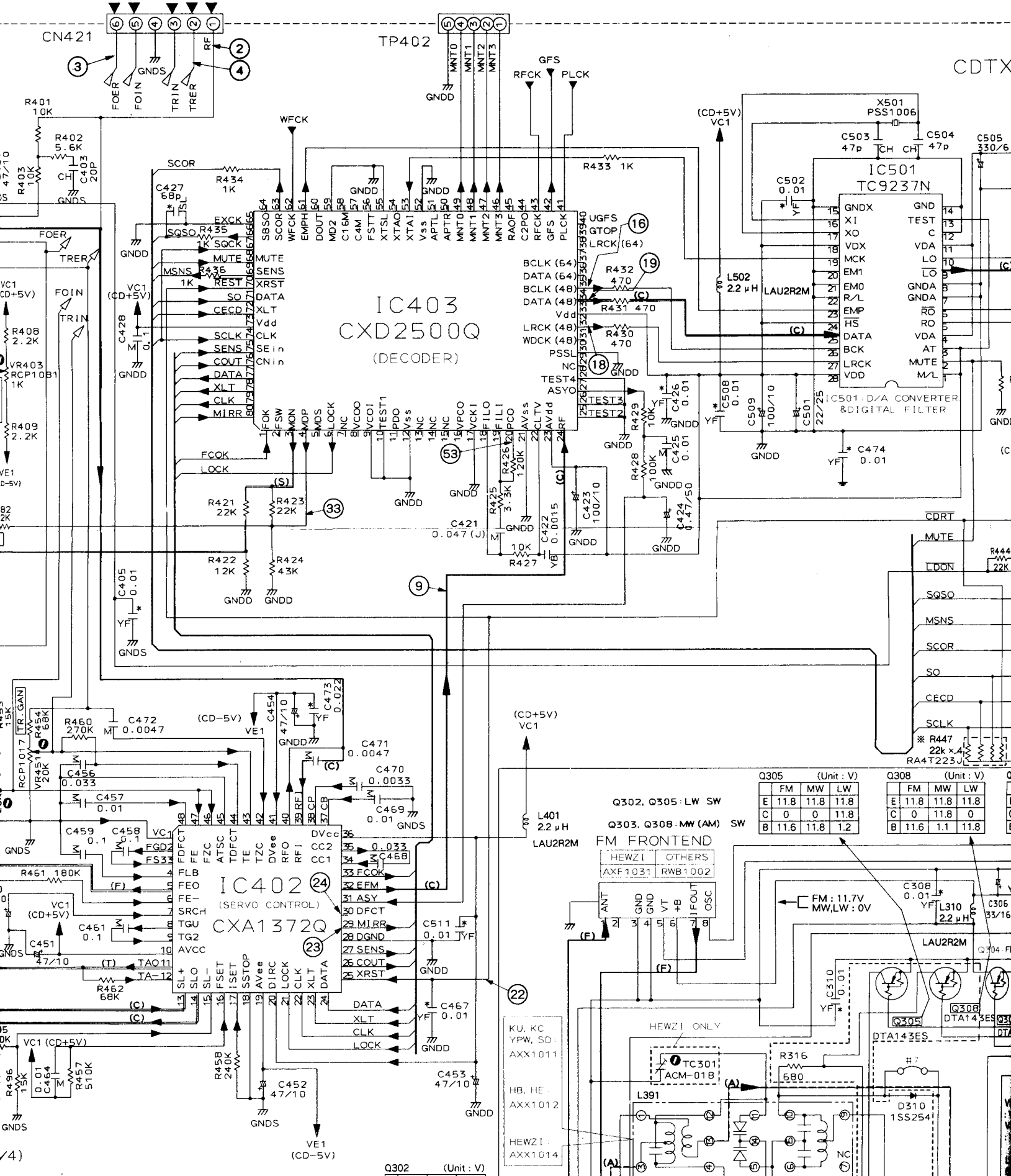
XC-P410T	XC-P410M
RAW1063	RAW1064

#1

	XC-P410T	XC-P410M
S613	A. E.UCT	
S628		DISC 3
S636	O/C I	EJCT
S637	O/C II	
S638		DISC 4
S639		DISC 5
S644		DISC 6

— NOT USED





IC403
CXD2500Q
(DECODER)

IC402
CXA1372Q
(SERVO CONTROL)

IC501
TC9237N
D/A CONVERTER & DIGITAL FILTER

FM FRONTEND
HEWZ1: AXF1031
OTHERS: RWB1002

Q302, Q305: LW SW

	FM	MW	LW
E	11.8	11.8	11.8
C	0	0	11.8
B	11.6	11.8	1.2

Q308 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

Q302 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	0	11.8
B	11.6	11.8	1.2

KU, KC
YPW, SD:
AXX1011

HB, HE
AXX1012

HEWZ1:
AXX1014

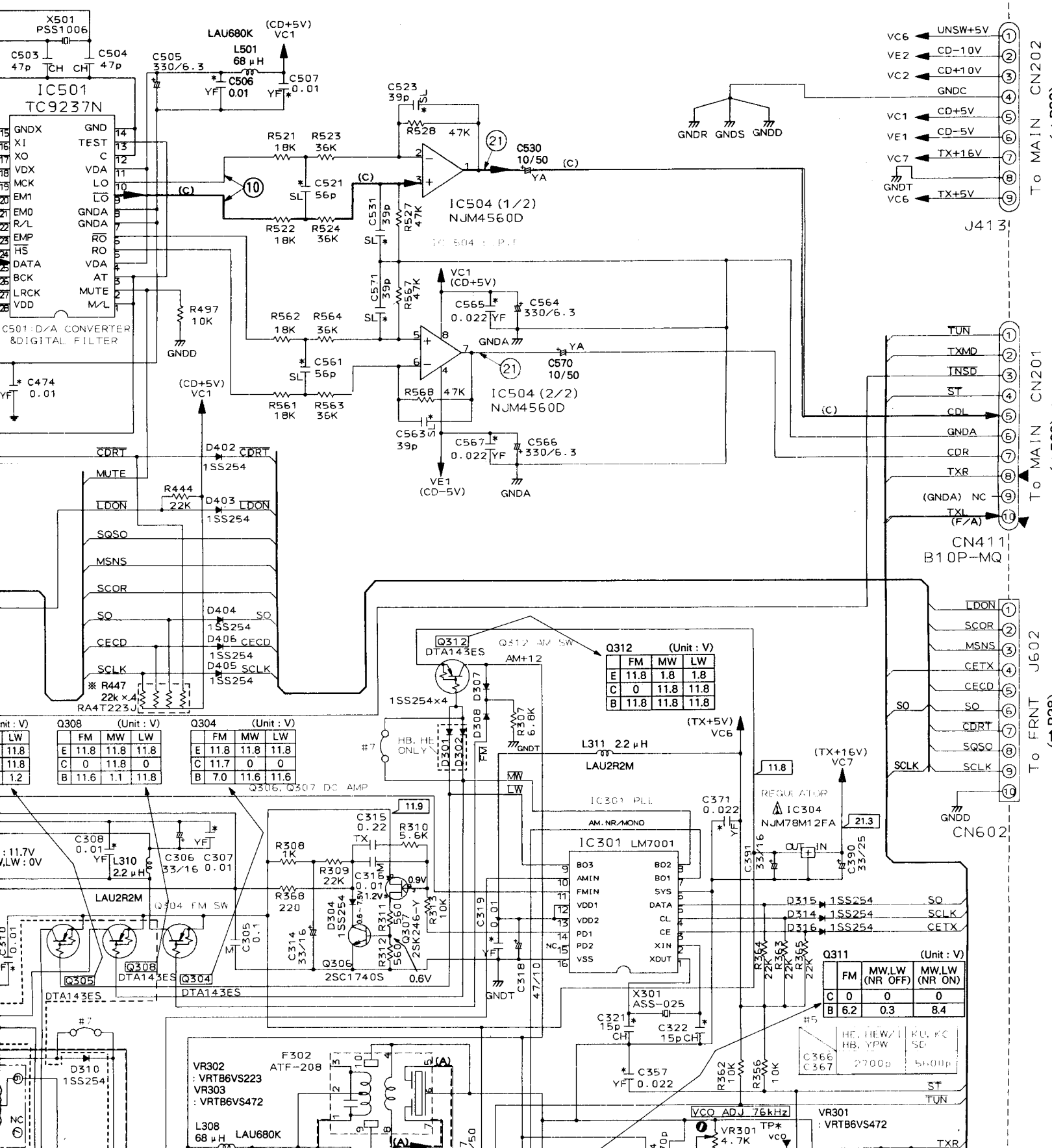
HEWZ1 ONLY

TC301
ACM-018

DIA143ES

D310
1SS254

CDTX UNIT



- VC6 ← UNSW+5V (1)
- VE2 ← CD-10V (2)
- VC2 ← CD+10V (3)
- GNDC (4)
- VC1 ← CD+5V (5)
- VE1 ← CD-5V (6)
- VC7 ← TX+16V (7)
- GNDD ← TX+5V (8)
- VC6 ← TX+5V (9)

- TUN (1)
- TXMD (2)
- TNSD (3)
- ST (4)
- CDL (5)
- GNDA (6)
- CDR (7)
- TXR (8)
- (GNDA) NC (9)
- TXL (F/A) (10)

- LDON (1)
- SCOR (2)
- MSNS (3)
- CETX (4)
- CECD (5)
- SO (6)
- CDRT (7)
- SQSO (8)
- SCLK (9)

Q312 (Unit: V)			
	FM	MW	LW
E	11.8	1.8	1.8
C	0	11.8	11.8
B	11.8	11.8	11.8

Q308 (Unit: V)			
	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

Q304 (Unit: V)			
	FM	MW	LW
E	11.8	11.8	11.8
C	11.7	0	0
B	7.0	11.6	11.6

Q311 (Unit: V)			
	FM	MW/LW (NR OFF)	MW/LW (NR ON)
C	0	0	0
B	6.2	0.3	8.4

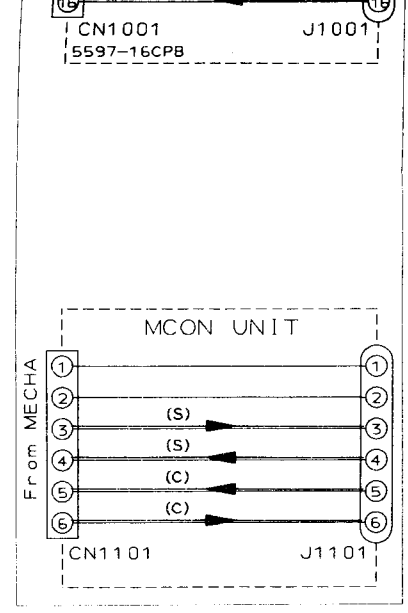
REGULATOR			
	IN	OUT	VC7
11.8			
21.3			

HE. HEW/L HB. YPW			
	RU. KC	SO	
C366	2700p	5000p	
C367			

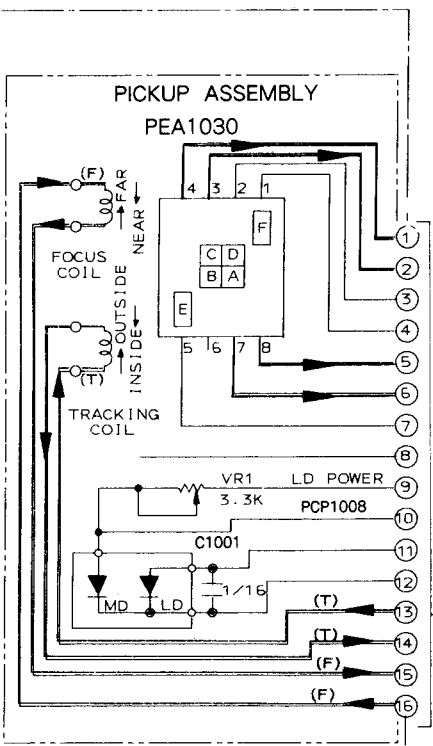
To MAIN CN202 (→ P20)

To MAIN CN201 (→ P20)

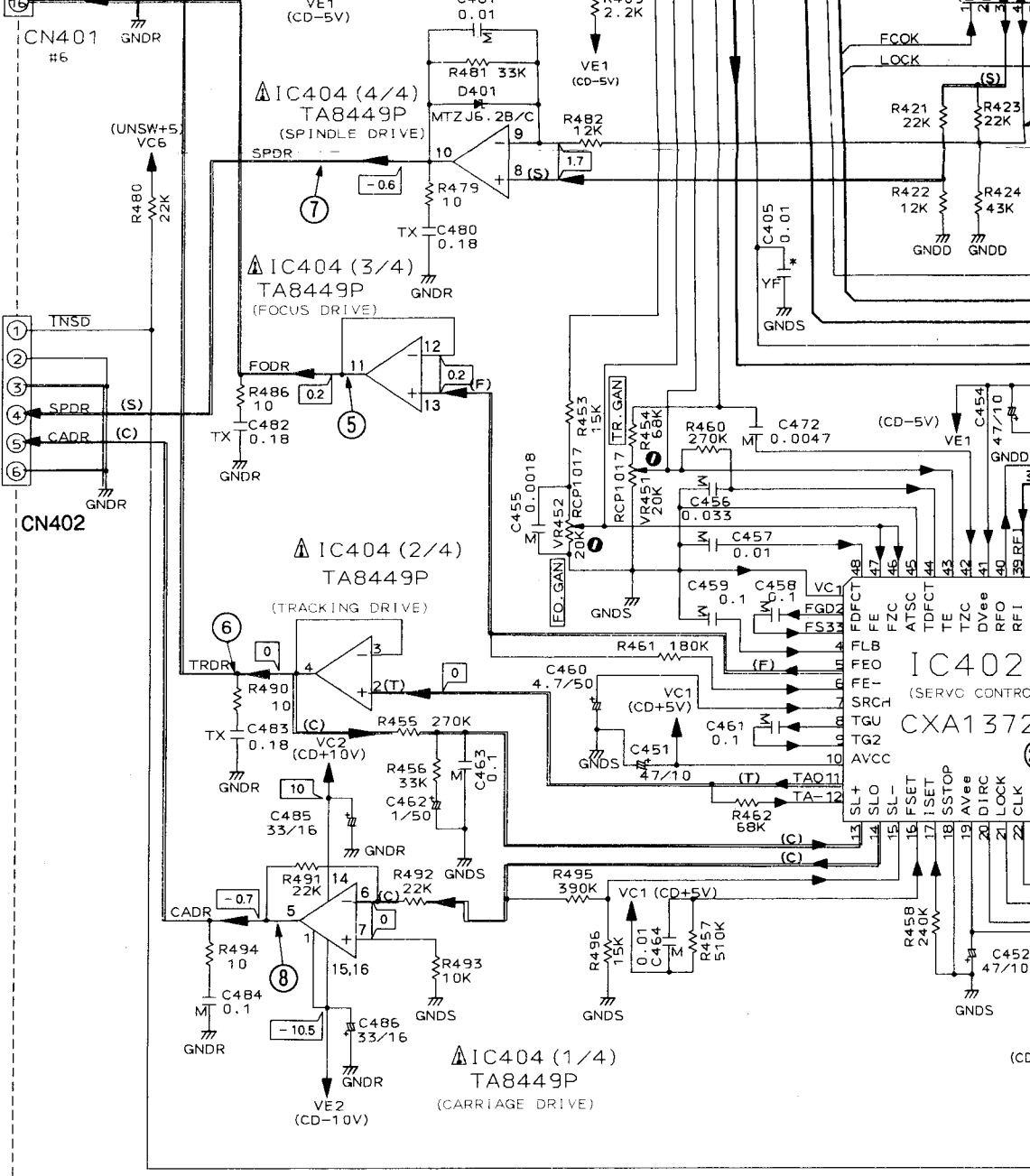
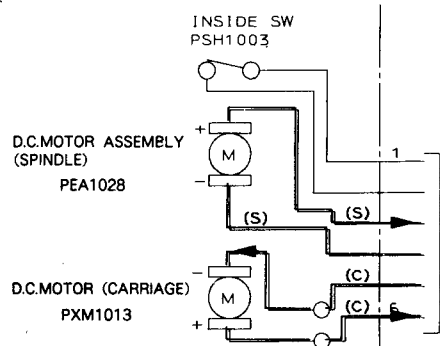
To FRNT J602 (→ P28)



#6	XC-P410M	XC-P410T
CN431	5597-16CPB	NON SUPPLY



SERVO MECHANISM ASSEMBLY



XC-P410T To FCON UNIT (CN1001)
 XC-P410M To CCTX UNIT (CN401)

- (C) : CD SIGNAL
- (F) : FM SIGNAL
- (A) : AM SIGNAL
- (F/A) : TUNER SIGNAL
- (S) : SPINDLE MOTOR SIGNAL
- (F) : FOCUS SERVO SIGNAL
- (T) : TRACKING SERVO SIGNAL
- (C) : CARRIAGE SERVO SIGNAL

IC301 (LM7001) (Unit : V)

Pin No.	MODE		
	FM	MW	LW
1	1.3	1.3	1.3
2	1.6	1.6	1.6
3	0.5	0.5	0.5
4	4.9	4.9	4.9
5	0.7	0.7	0.7
6	0	0	0
7	0.3(6.2)	0.3(8.3)	0.3(8.3)
8	11.8	1.1	11.8
9	11.8	11.8	1.2
10	0	0	0
11	2.8	2.8	2.8
12	4.9	4.9	4.9
13	4.9	4.9	4.9
14	0.8	0.8	0.8
15	-	-	-
16	0	0	0

Note: Voltages of () indicate at turn the AM-NR/MONO switch to ON (at TUNED).

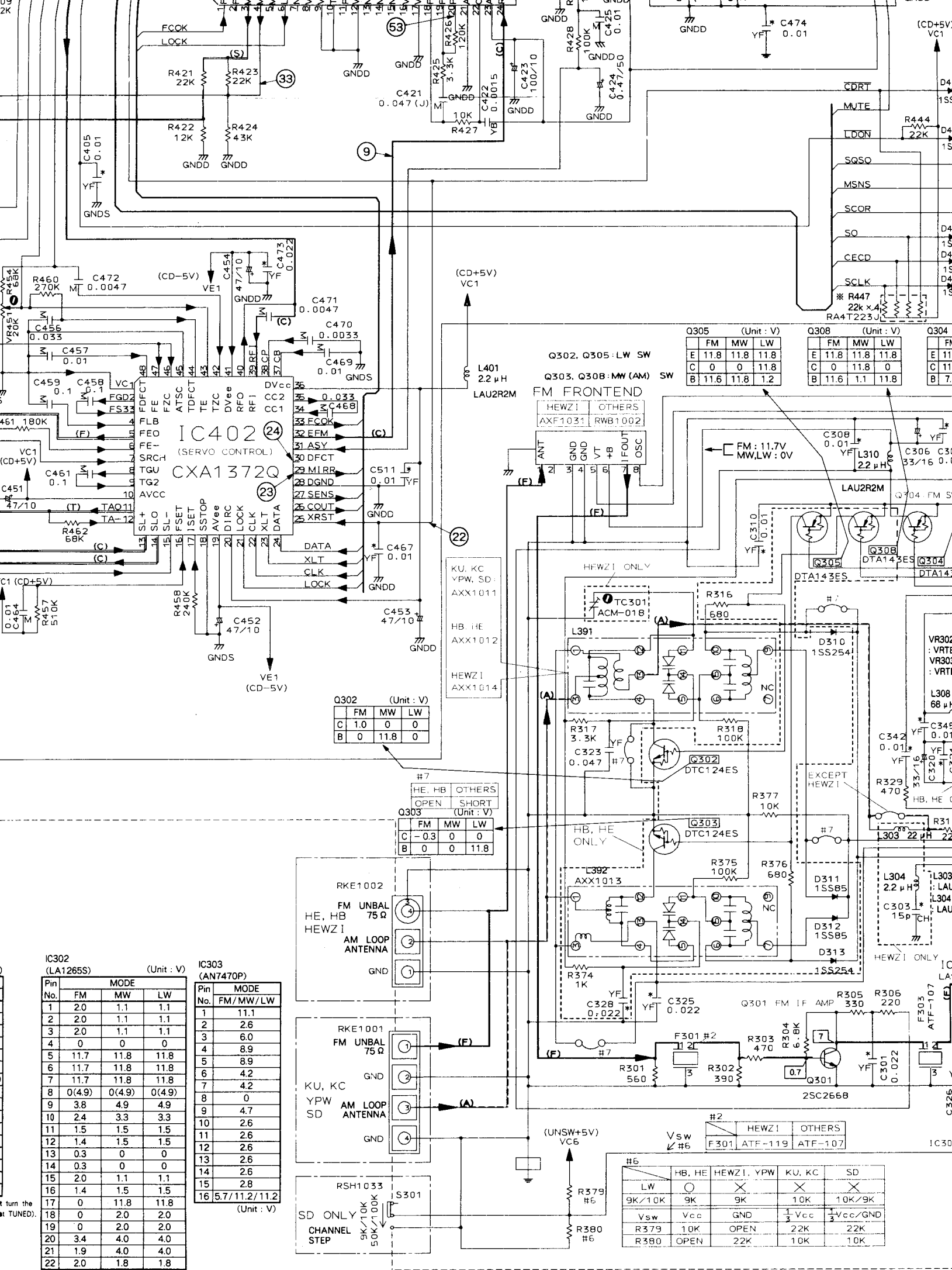
IC302 (LA1265S) (Unit : V)

Pin No.	MODE		
	FM	MW	LW
1	2.0	1.1	1.1
2	2.0	1.1	1.1
3	2.0	1.1	1.1
4	0	0	0
5	11.7	11.8	11.8
6	11.7	11.8	11.8
7	11.7	11.8	11.8
8	0(4.9)	0(4.9)	0(4.9)
9	3.8	4.9	4.9
10	2.4	3.3	3.3
11	1.5	1.5	1.5
12	1.4	1.5	1.5
13	0.3	0	0
14	0.3	0	0
15	2.0	1.1	1.1
16	1.4	1.5	1.5
17	0	11.8	11.8
18	0	2.0	2.0
19	0	2.0	2.0
20	3.4	4.0	4.0
21	1.9	4.0	4.0
22	2.0	1.8	1.8

Note: Voltages of () indicate at not tuned.

IC402 (SERVO CONTROL) CXA1372





IC402 (SERVO CONTROL)
CXA1372Q

FM FRONTEND

IC302 (LA1265S) (Unit: V)

Pin No.	MODE		
	FM	MW	LW
1	2.0	1.1	1.1
2	2.0	1.1	1.1
3	2.0	1.1	1.1
4	0	0	0
5	11.7	11.8	11.8
6	11.7	11.8	11.8
7	11.7	11.8	11.8
8	0(4.9)	0(4.9)	0(4.9)
9	3.8	4.9	4.9
10	2.4	3.3	3.3
11	1.5	1.5	1.5
12	1.4	1.5	1.5
13	0.3	0	0
14	0.3	0	0
15	2.0	1.1	1.1
16	1.4	1.5	1.5
17	0	11.8	11.8
18	0	2.0	2.0
19	0	2.0	2.0
20	3.4	4.0	4.0
21	1.9	4.0	4.0
22	2.0	1.8	1.8

IC303 (AN7470P) (Unit: V)

Pin No.	MODE		
	FM	MW	LW
1	11.1		
2	2.6		
3	6.0		
4	8.9		
5	8.9		
6	4.2		
7	4.2		
8	0		
9	4.7		
10	2.6		
11	2.6		
12	2.6		
13	2.6		
14	2.6		
15	2.8		
16	5.7/11.2/11.2		

Q302 (Unit: V)

	FM	MW	LW
C	1.0	0	0
B	0	11.8	0

Q303 (Unit: V)

	FM	MW	LW
C	-0.3	0	0
B	0	0	11.8

Q305 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	0	11.8
B	11.6	11.8	1.2

Q308 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

Q304 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

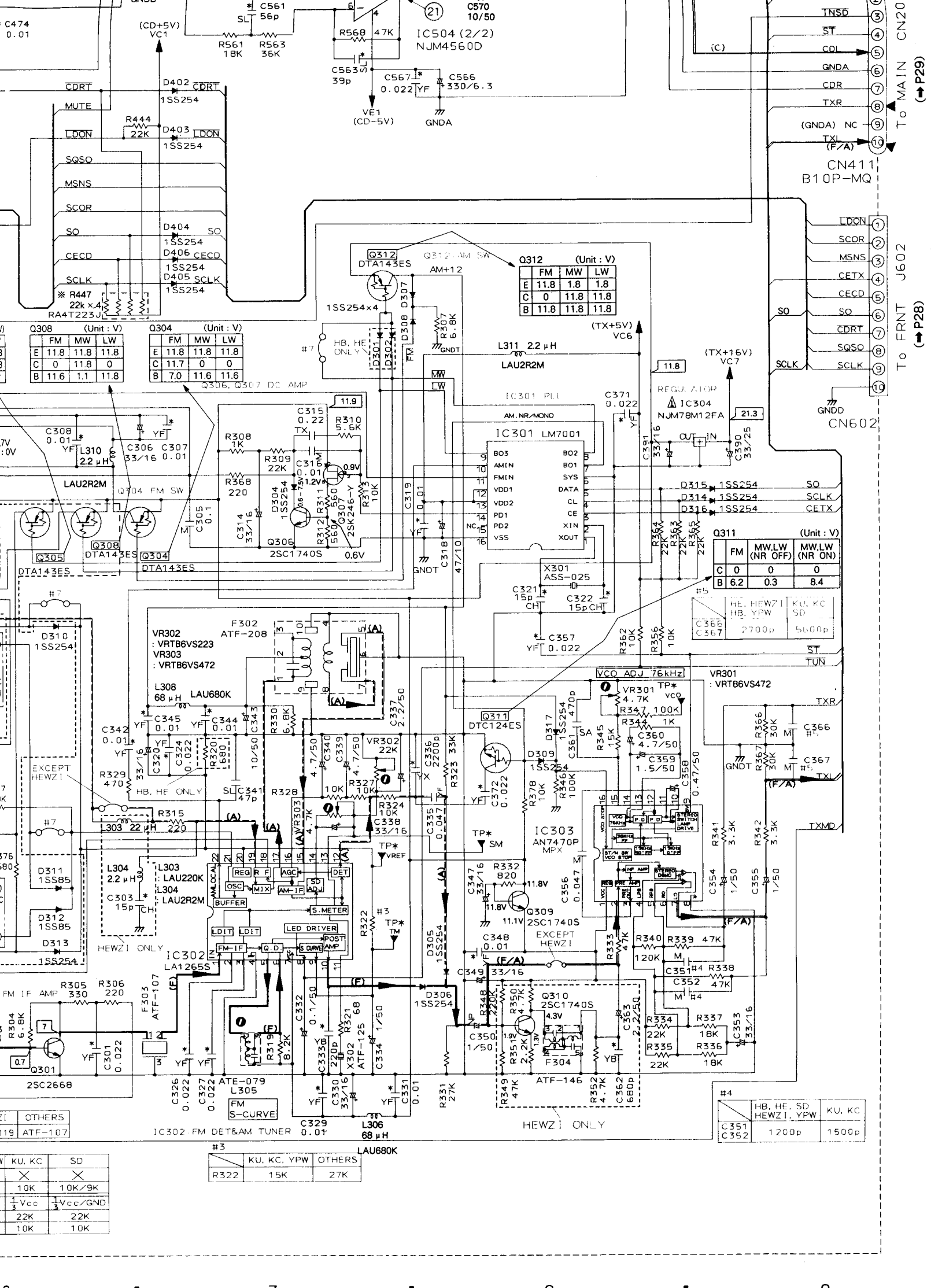
#2 (Unit: V)

	HEWZ1	OTHERS
F301	ATF-119	ATF-107

#6 (Unit: V)

	HB, HE	HEWZ1	YPW	KU, KC	SD
LW	9K/10K	9K	9K	10K	10K/9K
Vsw	Vcc	GND	1/3 Vcc	1/3 Vcc/GND	
R379	10K	OPEN	22K	22K	
R380	OPEN	22K	10K	10K	

Note: Voltages of () indicate at not tuned.



C474
0.01

(CD+5V)
VC1

IC504 (2/2)
NJM4560D

TNSD
ST
CDL
GNDA
CDR
TXR
(GNDA) NC
TXL (F/A)

To MAIN CN20
(→ P29)

CN411
B10P-MQ

L30N
SCOR
MSNS
CETX
CECD
SO
CDRT
SQSO
SCLK

To FRNT J602
(→ P28)

CN602

Q308 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

Q304 (Unit: V)

	FM	MW	LW
E	11.8	11.8	11.8
C	11.7	0	0
B	7.0	11.6	11.6

Q312 (Unit: V)

	FM	MW	LW
E	11.8	1.8	1.8
C	0	11.8	11.8
B	11.8	11.8	11.8

Q311 (Unit: V)

	FM	MW/LW (NR OFF)	MW/LW (NR ON)
C	0	0	0
B	6.2	0.3	8.4

C366	HE, HEWZ1 HB, YPW	KU, KC SD
C367	2700p	5000p

C351	HE, HE, SD HEWZ1, YPW	KU, KC
C352	1200p	1500p

W	KU, KC	SD
X	10K	10K/9K
1/3 Vcc	22K	22K
10K	10K	10K

#3

	KU, KC, YPW	OTHERS
R322	15K	27K

IC302 FM DET&AM TUNER

LAU680K

HEWZ1 ONLY

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

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EXCEPT HEWZ1

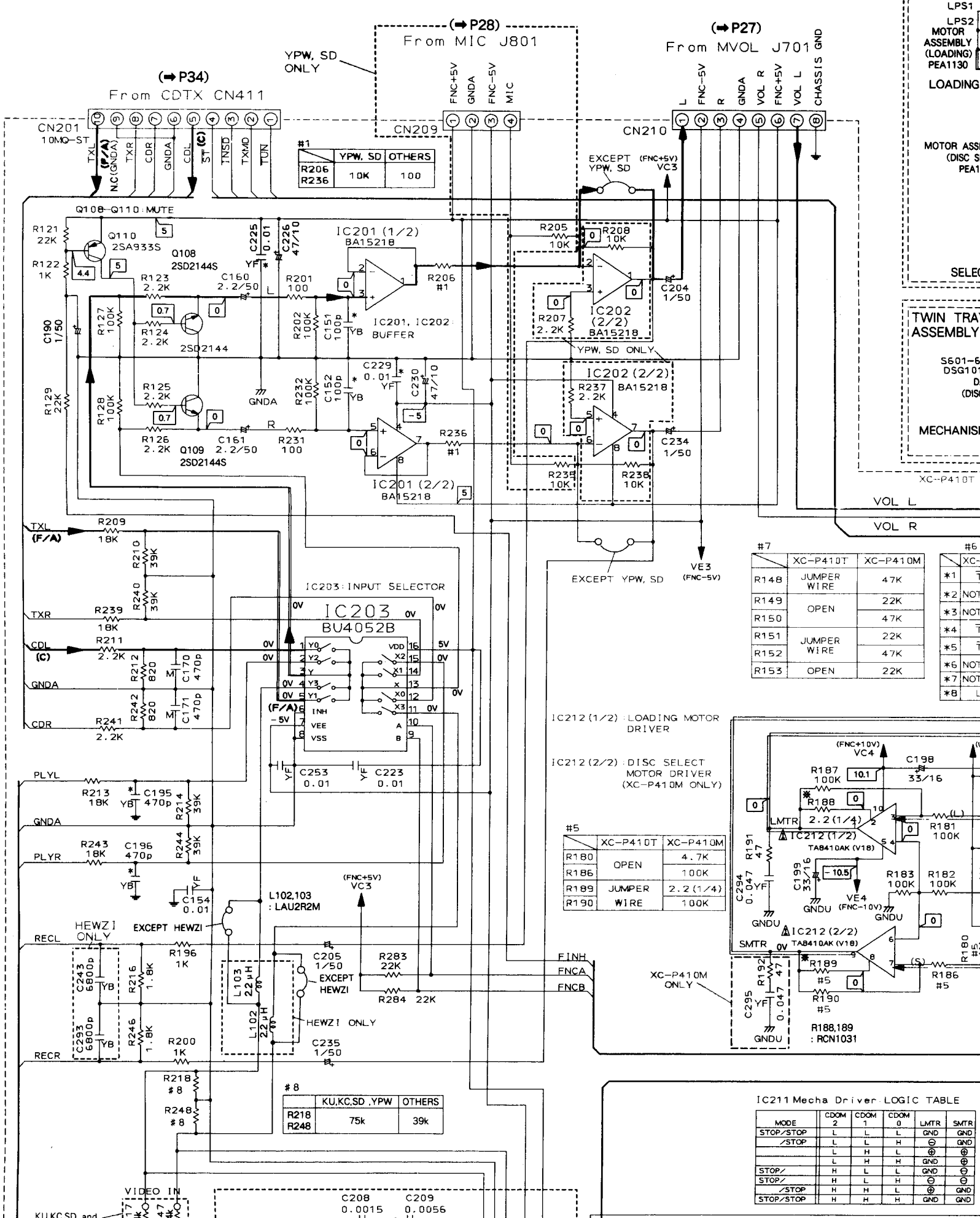
EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

EXCEPT HEWZ1

4.3 MAIN UNIT, MULTI MECHANISM AND TWIN TRAY MECHANISM ASSEMBLIES



#1

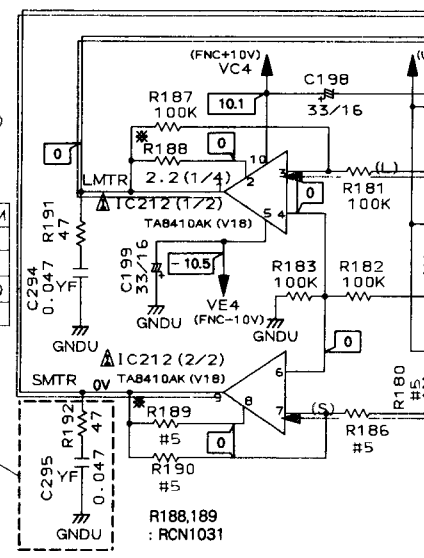
R206	YPW, SD	OTHERS
R236	10K	100

#7

	XC-P410T	XC-P410M	XC-P410D
R148	JUMPER WIRE	47K	*1 TSP
R149	OPEN	22K	*2 NOT U
R150	OPEN	47K	*3 NOT U
R151	JUMPER WIRE	22K	*4 TR
R152	WIRE	47K	*5 TR
R153	OPEN	22K	*6 NOT U
			*7 NOT U
			*8 LM

#5

	XC-P410T	XC-P410M
R180	OPEN	4.7K
R186	OPEN	100K
R189	JUMPER WIRE	2.2 (1/4)
R190	WIRE	100K

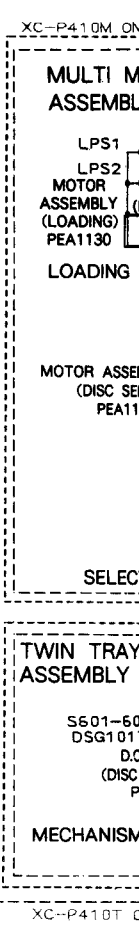


IC211 Mecha Driver-LOGIC TABLE

MODE	CDOM 2	CDOM 1	CDOM 0	LMTR	SMTR
STOP/STOP	L	L	L	GND	GND
/STOP	L	L	L	⊗	GND
	L	H	L	⊗	GND
	L	H	H	⊗	GND
STOP/	H	L	L	⊗	GND
STOP/	H	L	H	⊗	GND
/STOP	H	H	L	⊗	GND
STOP/STOP	H	H	H	GND	GND

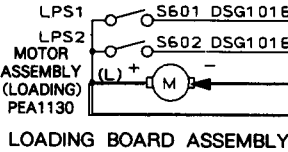
#8

R218	KU,KC,SD, YPW	OTHERS
R248	75k	39k



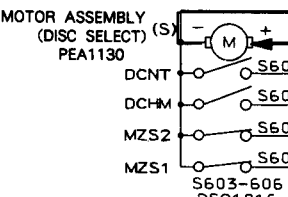
XC-P410M ONLY

MULTI MECHANISM ASSEMBLY



CN601 CN211

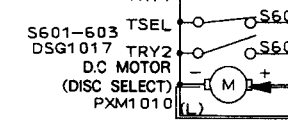
LOADING BOARD ASSEMBLY



CN602 CN203

SELECT BOARD ASSEMBLY

TWIN TRAY MECHANISM ASSEMBLY



CN601 CN203

MECHANISM BOARD ASSEMBLY

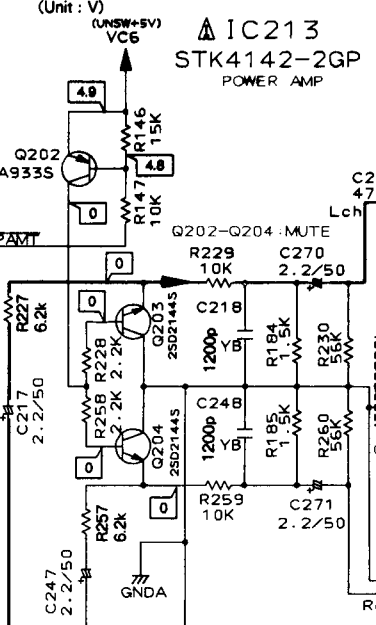
XC-P410T ONLY

Pin	Voltage	Pin	Voltage
1	0	10	0
2	0	11	33.2
3	0	12	31.8
4	-27.9	13	0
5	-1.3	14	-33.3
6	0	15	-1.3
7	-32.5	16	0
8	-33.2	17	0
9	-33.3	18	0

(Unit: V)

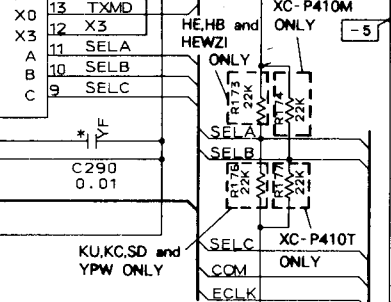
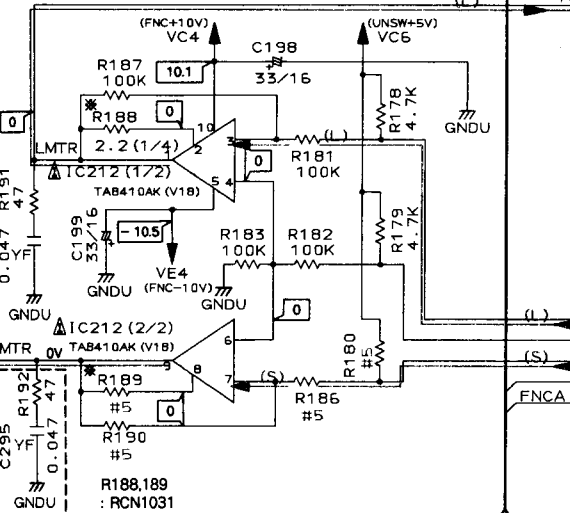
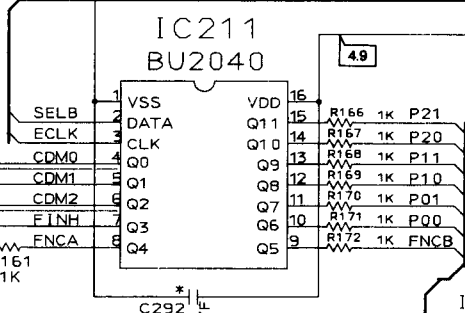
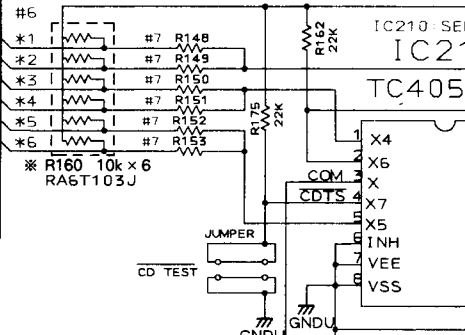
Type	Pin9	Pin11
HB	-33.4	33.3
HEHEWZ1	-33.3	33.2
YPW	-32.8	32.7
SD(240V)	-34.4	34.3

(Unit: V)



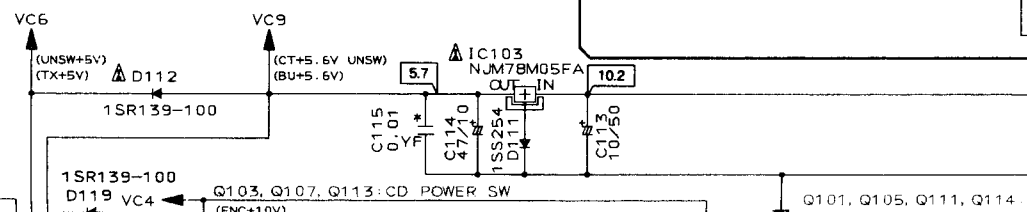
#7	XC-P410T	XC-P410M
R148	JUMPER WIRE	47K
R149	OPEN	22K
R150	OPEN	47K
R151	JUMPER WIRE	22K
R152	JUMPER WIRE	47K
R153	OPEN	22K

#6	XC-P410T	XC-P410M
*1	TSEL	DCHM
*2	NOT USED	DCNT
*3	NOT USED	LPS1
*4	TRY2	LPS2
*5	TRY1	MZS1
*6	NOT USED	MZS2
*7	NOT USED	SMTR
*8	LMTR	LMTR



FUNCTION	X0, Y0	B	A	INH
CD	X0, Y0	L	L	L (FIXED)
TUNER	X1, Y1	L	L	L (FIXED)
TAPE	X2, Y2	H	H	L (FIXED)
PHONO/VIDEO	X3, Y3	H	H	L (FIXED)

MODE	CDOM 2	CDOM 1	CDOM 0	LMTR	SMTR
STOP/STOP	L	L	L	GND	GND
/STOP	L	L	H	GND	GND
/STOP	L	H	H	GND	GND
/STOP	H	H	L	GND	GND
STOP/STOP	H	L	L	GND	GND
/STOP	H	L	H	GND	GND
/STOP	H	H	L	GND	GND
STOP/STOP	H	H	H	GND	GND

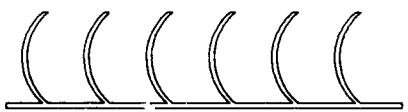


IC213
STK4142-2GP

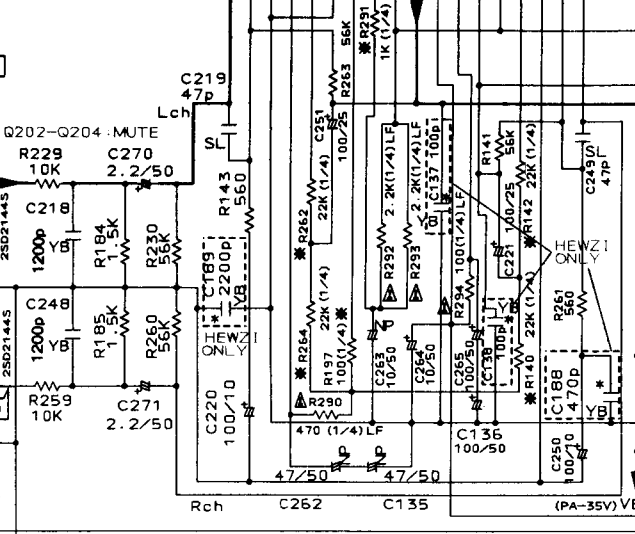
Type	Pin9	Pin11
HB	- 33.4	33.3
HE, HEWZI	- 33.3	33.2
YPW	- 32.8	32.7
KU.KC	- 32.8	32.7
SD(240V)	- 34.4	34.3

(Unit: V)

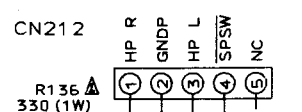
MAIN UNIT



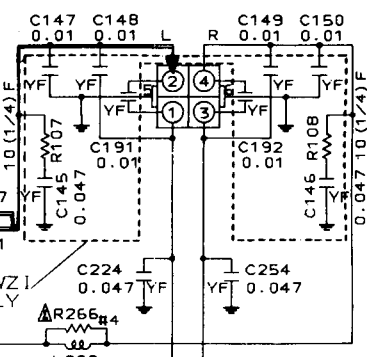
IC213
STK4142-2GP
POWER AMP



(P27)
From H. PHONE J 1



SPEAKERS
JA201 RKE1003

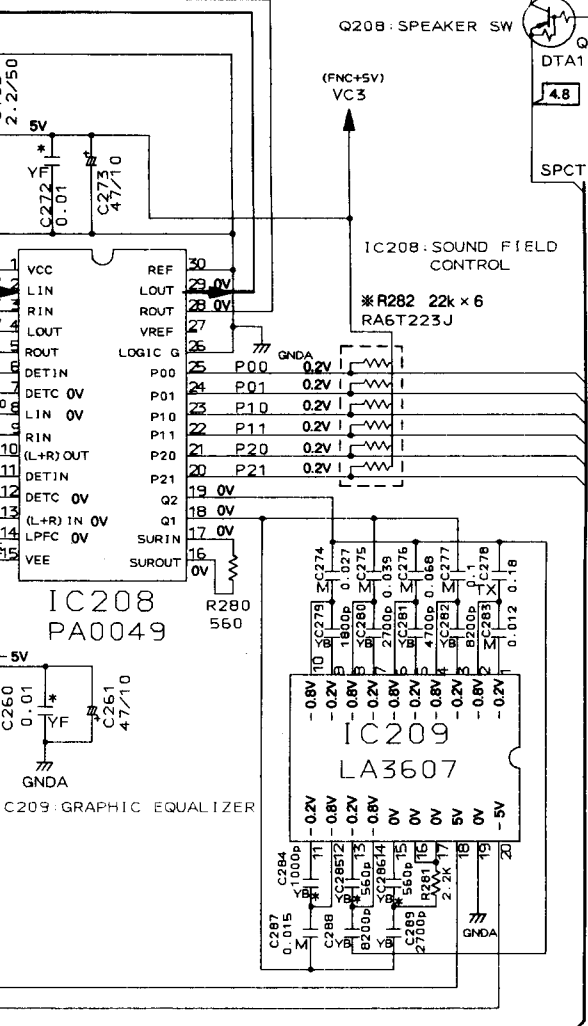
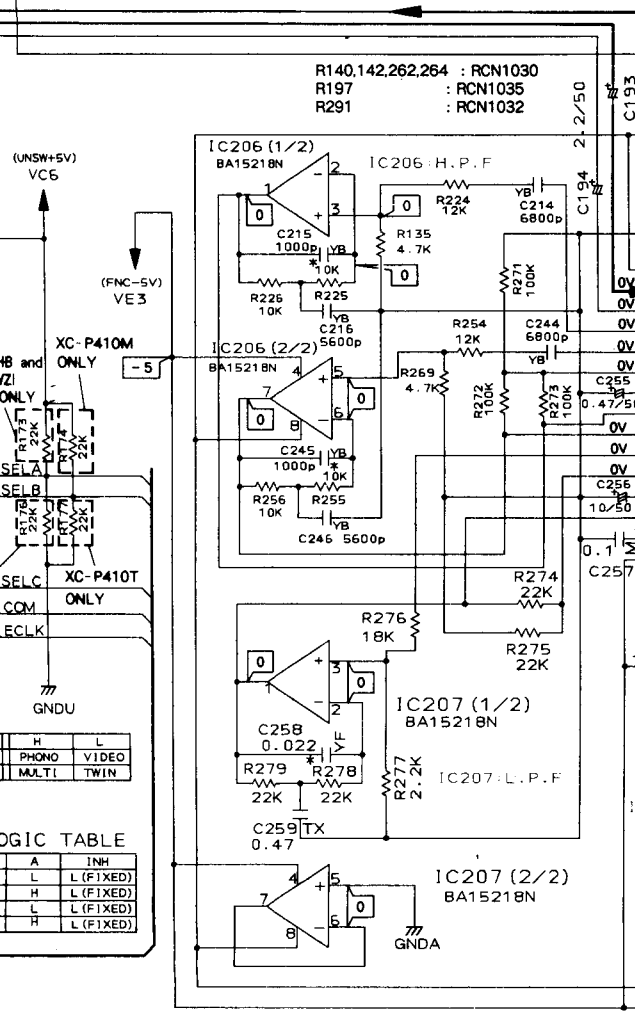


#3

	HEWZI	OTHERS
L201	ATH-059	ATH-133
L202		

#4

	HEWZI	OTHERS
R137	100	10
R266	(1/4)	(1/4)



LOGIC TABLE

	H	L
PHONO		
MULTI		
TWIN		

LOGIC TABLE

A	INH
L	L (FIXED)
H	L (FIXED)
L	L (FIXED)
H	L (FIXED)

SFC (IC208)

A. TREBLE	P01	P00
BOOST	H	L
FLAT	L	-
CUT	H	H

P. BASS	P11	P10
BOOST2	H	L
BOOST1	L	M
FLAT	L	L
CUT	H	H

ST. WIDE	P21	P20
S. STEREO	H	L
WIDE2	H	L
WIDE1	L	H
OFF	L	L

FUSE

HB, HE, HEWZI, YPW

FU101	REK-100 (T1.0A)
FU102	REK-100 (T1.0A)
FU103	REK-102 (T1.6A)
FU104	REK-099 (T800mA)

KU.KC

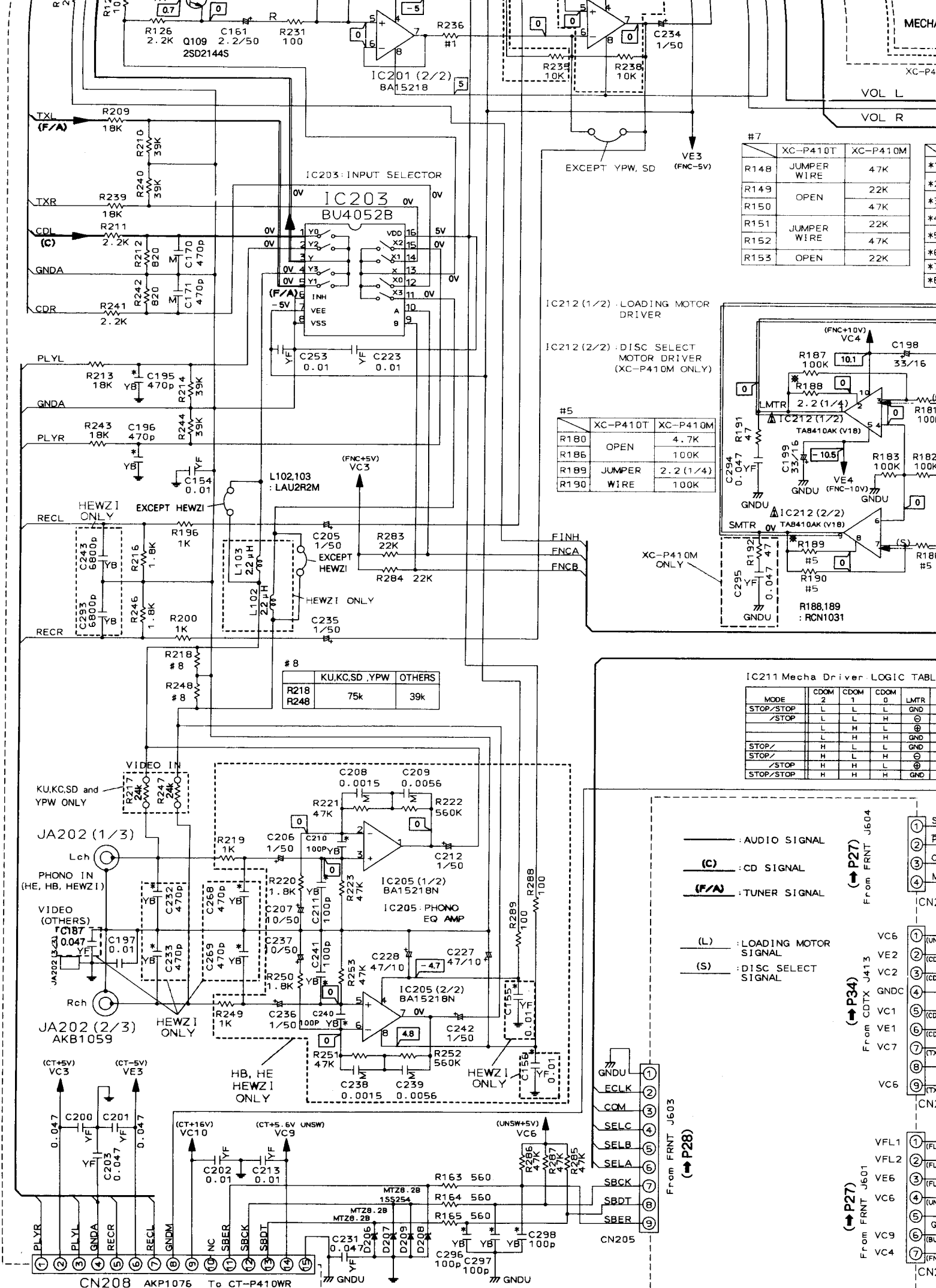
FU101	REK-073 (1.25A)
FU102	REK-073 (1.25A)
FU103	REK-081 (2.0A)
FU104	REK-081 (2.0A)

SD

FU101	REK-100 (T1.0A)
FU102	REK-100 (T1.0A)
FU103	REK-102 (T1.6A)
FU104	REK-102 (T1.6A)

POWER TRANSFORMER
KU: RTT1151

Q1, Q105, Q111, Q114
MAIN POWER SW



#7

	XC-P410T	XC-P410M	
R148	JUMPER WIRE	4.7K	#1
R149	OPEN	22K	#2
R150	OPEN	47K	#3
R151	JUMPER WIRE	22K	#4
R152	OPEN	47K	#5
R153	OPEN	22K	#6
			#7
			#8

#5

	XC-P410T	XC-P410M
R180	OPEN	4.7K
R186	OPEN	100K
R189	JUMPER	2.2 (1/4)
R190	WIRE	100K

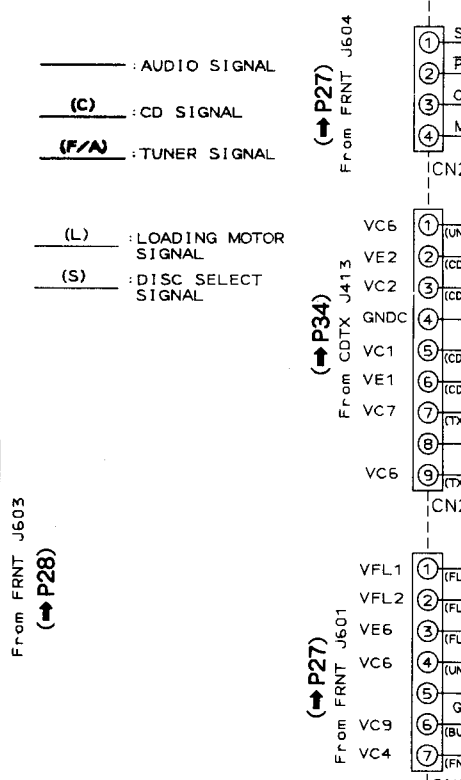
#8

	KU,KC,SD ,YPW	OTHERS
R218	75k	39k
R248		

IC211 Mecha Driver LOGIC TABLE

MODE	CDOM 2	CDOM 1	CDOM 0	LMTR	S
STOP/STOP	L	L	L	GND	⊕
/STOP	L	L	H	GND	⊕
	L	H	L	GND	⊕
	L	H	H	GND	⊕
STOP/	H	L	L	GND	⊕
STOP/	H	L	H	GND	⊕
/STOP	H	H	L	GND	⊕
STOP/STOP	H	H	H	GND	⊕

- (F/A) : AUDIO SIGNAL
- (C) : CD SIGNAL
- (F/A) : TUNER SIGNAL
- (L) : LOADING MOTOR SIGNAL
- (S) : DISC SELECT SIGNAL



CN208 AKP1076 To CT-P410WR

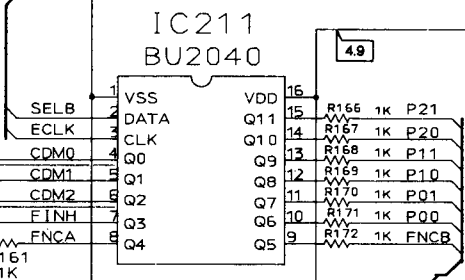
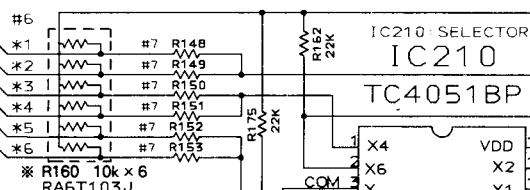
MECHANISM BOARD ASSEMBLY

XC-P410T ONLY

VOL L
VOL R

#7	XC-P410T	XC-P410M
R148	JUMPER WIRE	47K
R149	OPEN	22K
R150	OPEN	47K
R151	JUMPER WIRE	22K
R152	JUMPER WIRE	47K
R153	OPEN	22K

#6	XC-P410T	XC-P410M
*1	TSEL	DCFM
*2	NOT USED	DCNT
*3	NOT USED	LPS1
*4	TRY2	LPS2
*5	TRY1	MZS1
*6	NOT USED	MZS2
*7	NOT USED	SMTR
*8	LMTR	LMTR



SELECT MODE	INPUT	H	L
PHONO/VIDEO IN	SELA	PHONO	VIDEO
MULTI/TWIN	SELB	MULTI	TWIN

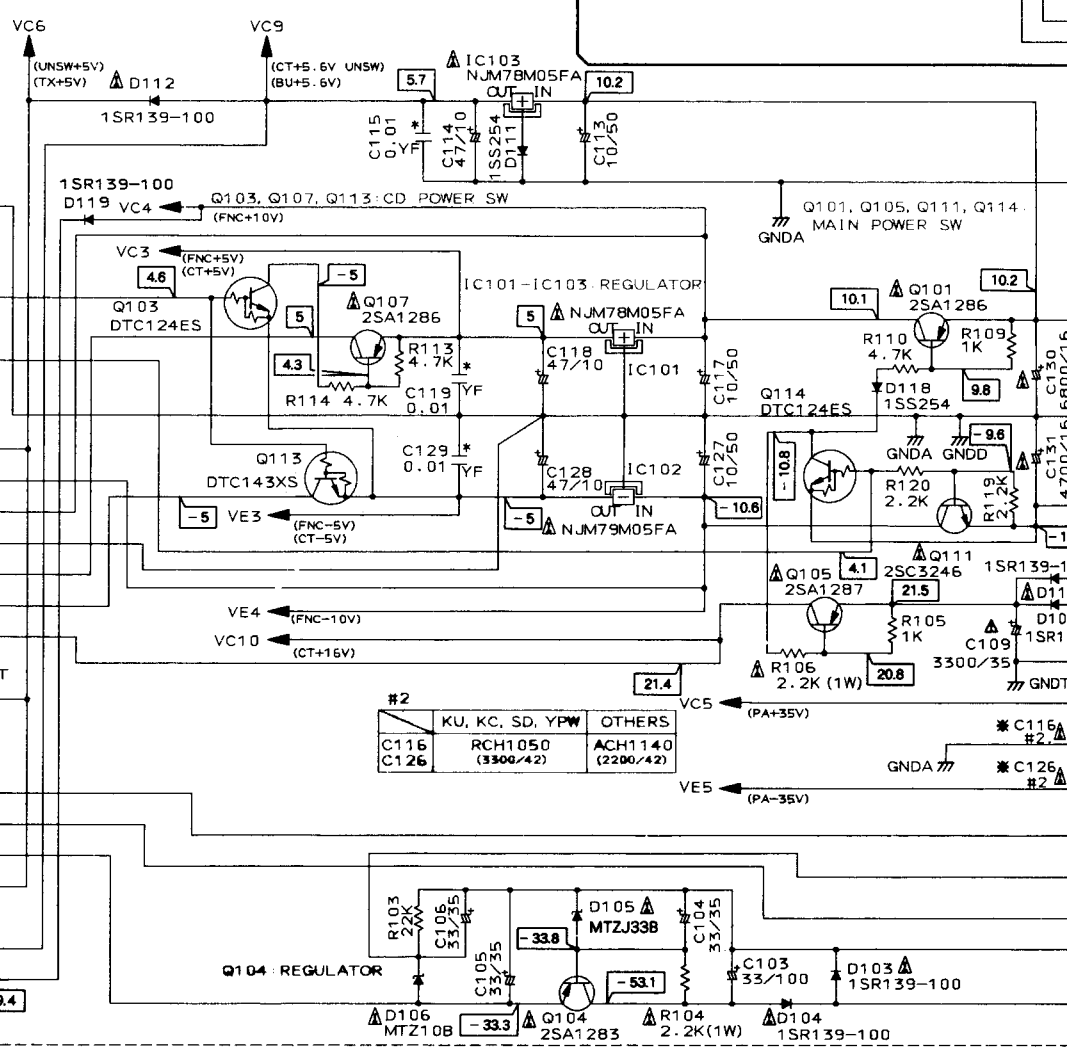
FUNCTION	B	A	INH
CD	X0, Y0	L	L (FIXED)
TUNER	X1, Y1	L	L (FIXED)
TAPE	X2, Y2	H	L (FIXED)
PHONO/VIDEO	X3, Y3	H	L (FIXED)

IC211 Mecha Driver LOGIC TABLE

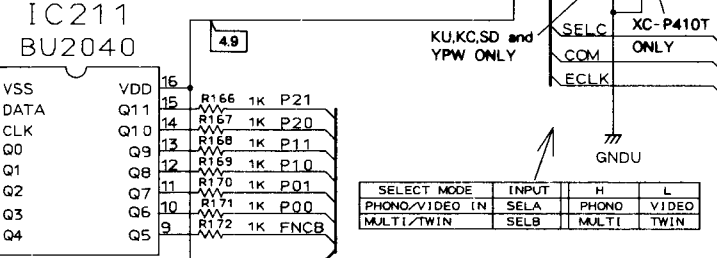
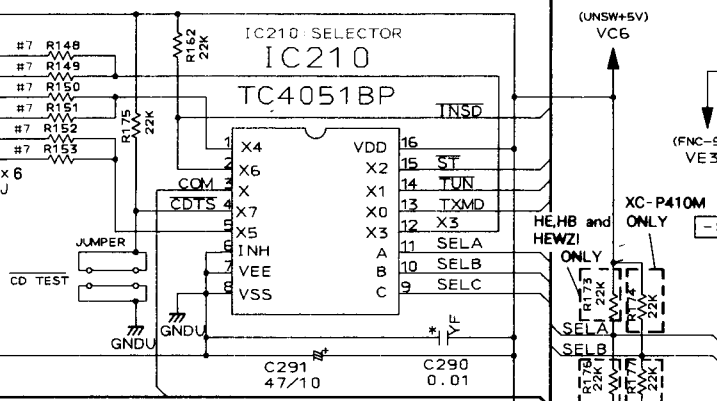
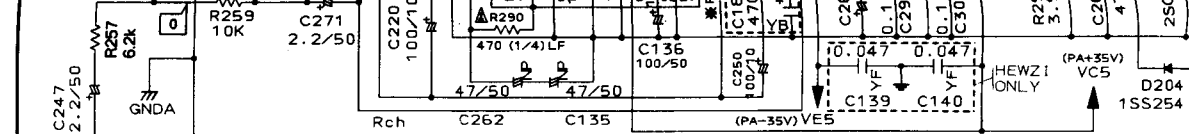
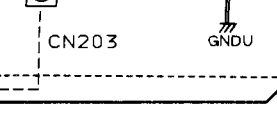
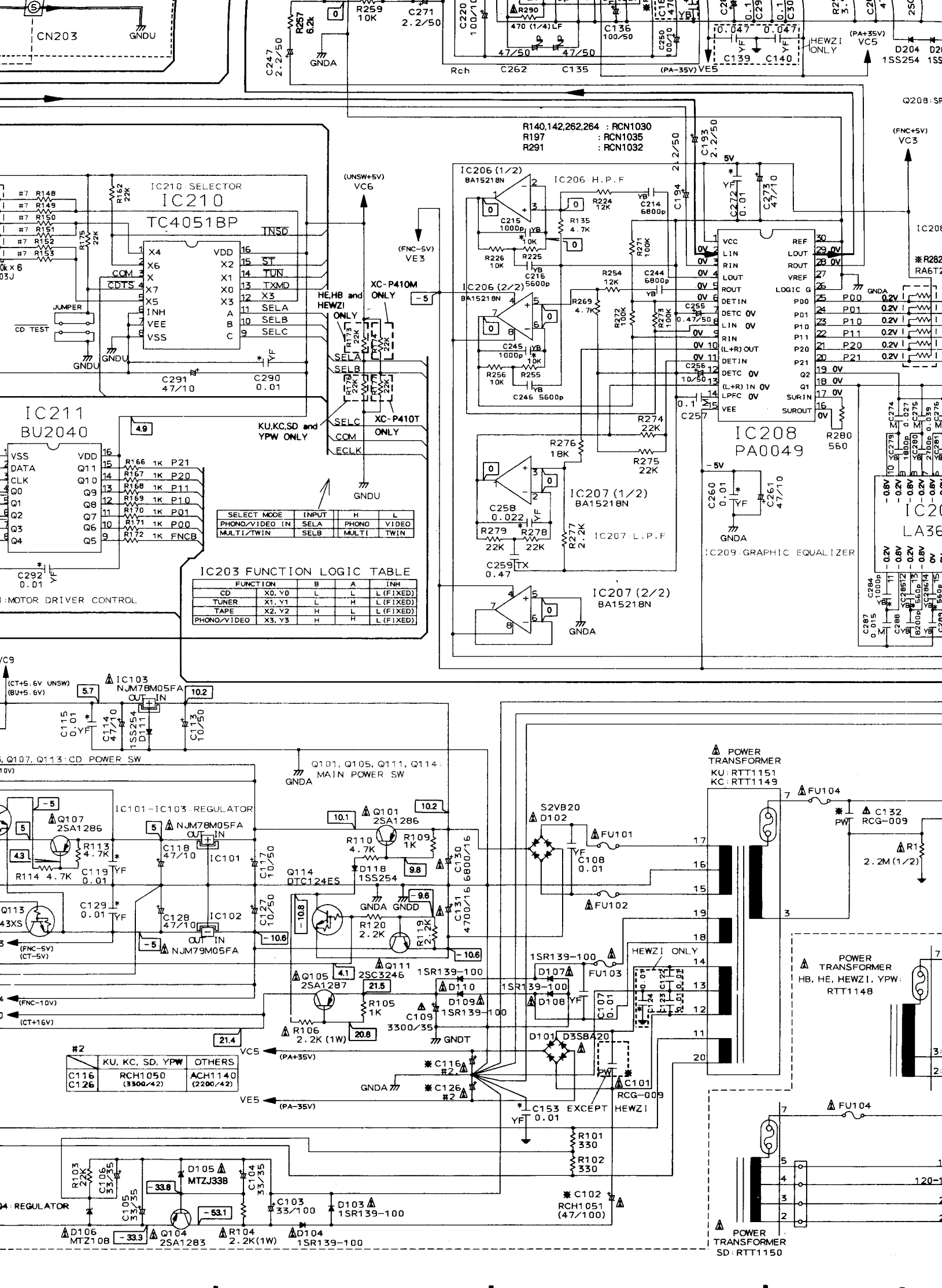
MODE	CDOM 2	CDOM 1	CDOM 0	LMTR	SMTR
STOP/STOP	L	L	L	GND	GND
/STOP	L	L	H	GND	GND
	L	H	L	GND	GND
STOP/	H	H	H	GND	GND
STOP/	H	L	H	GND	GND
/STOP	H	L	L	GND	GND
STOP/STOP	H	H	H	GND	GND

- (A) : AUDIO SIGNAL
- (C) : CD SIGNAL
- (F/A) : TUNER SIGNAL
- (L) : LOADING MOTOR SIGNAL
- (S) : DISC SELECT SIGNAL

- (P27) From FRNT J604
- (P34) From CDTX J413
- (P28) From FRNT J603
- (P29) From FRNT J601

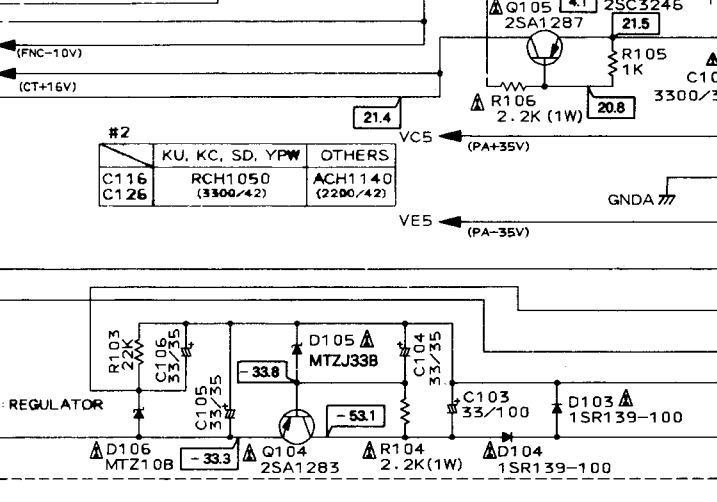
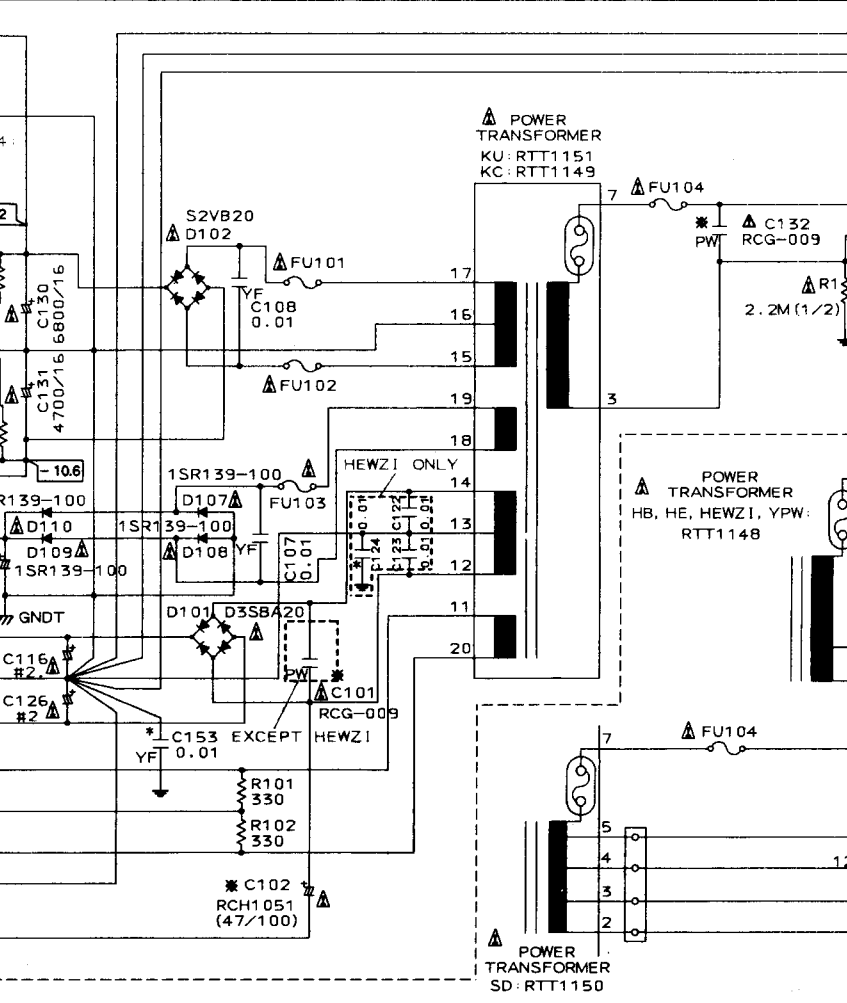
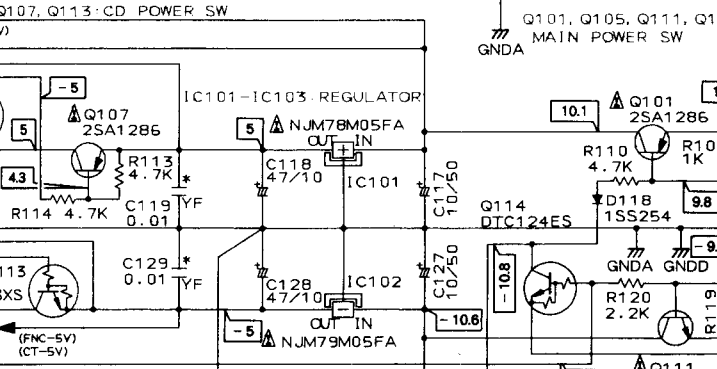
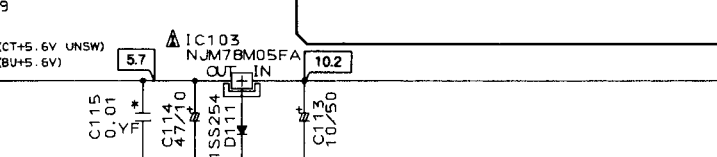
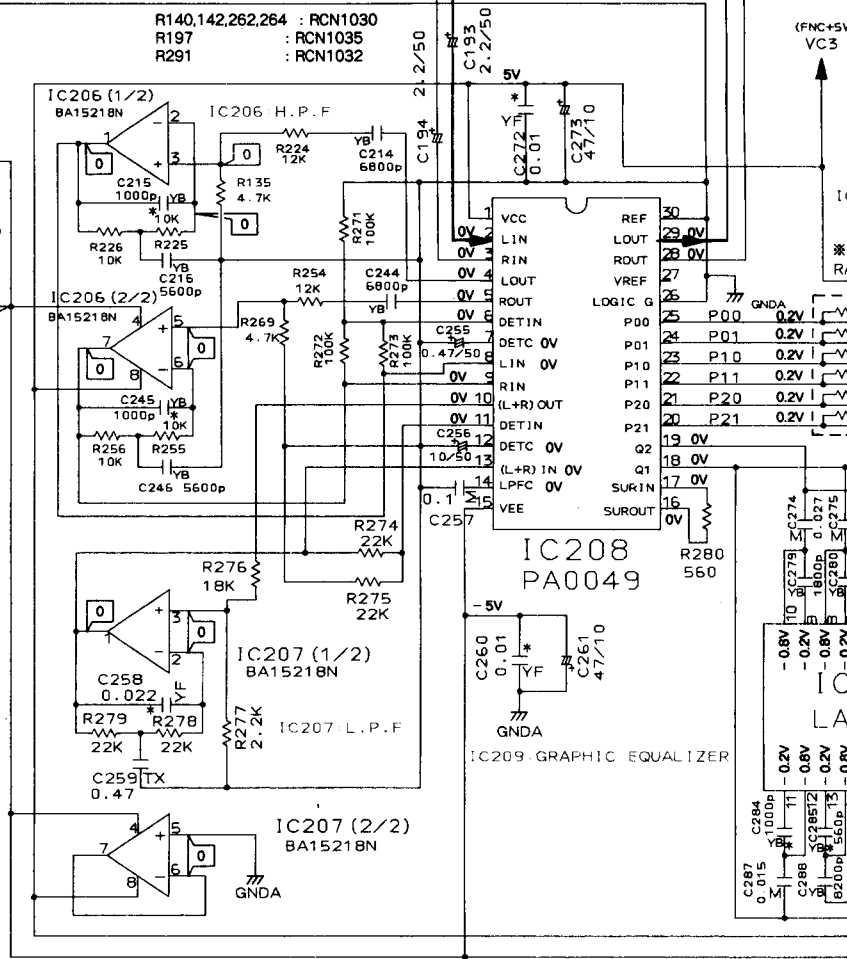


#2	KU, KC, SD, YPW	OTHERS
C116	RCH1050 (3300/42)	ACH1140 (2200/42)
C126		



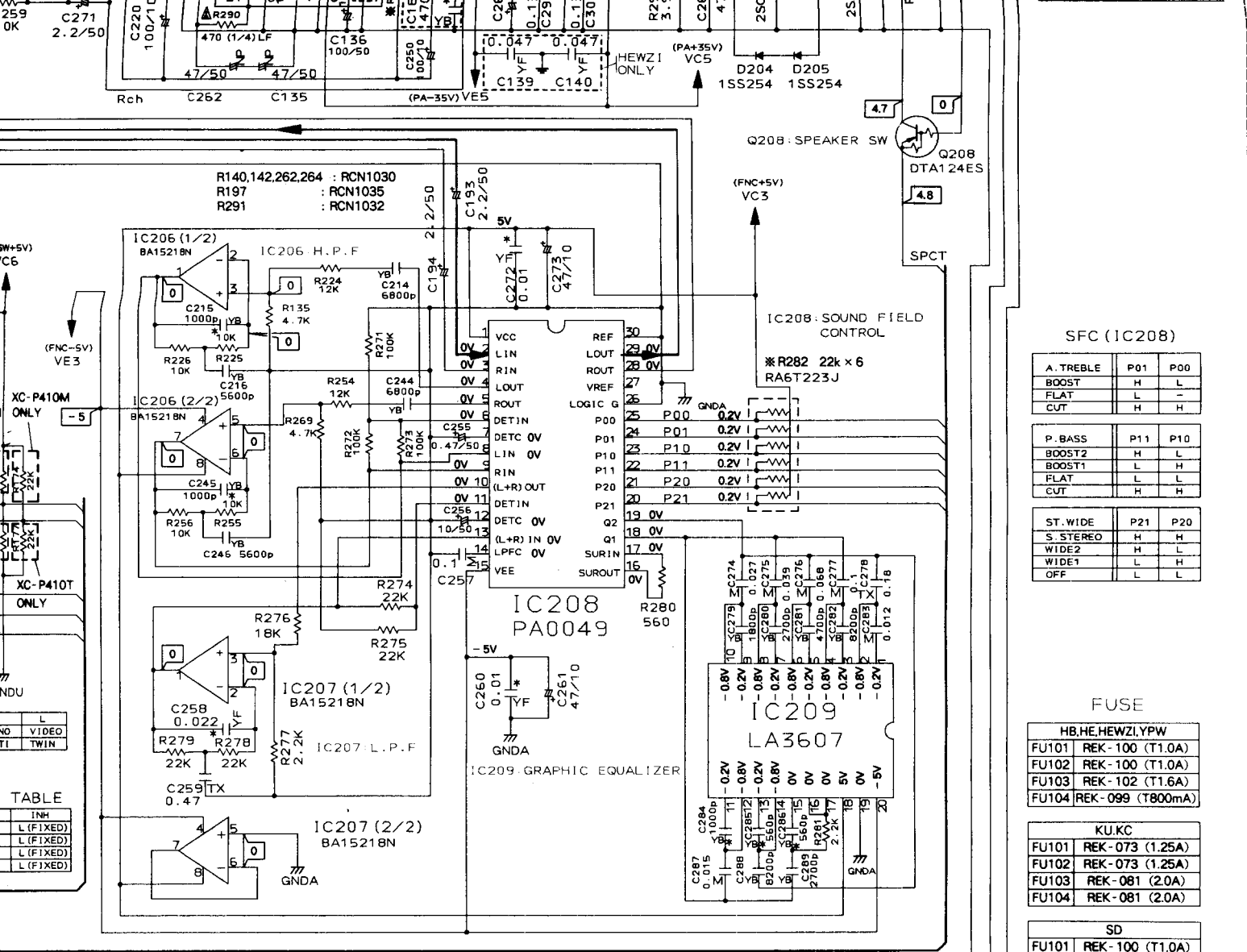
IC203 FUNCTION LOGIC TABLE

FUNCTION	B	A	INH
CD	X0, Y0	L	L (FIXED)
TUNER	X1, Y1	L	L (FIXED)
TAPE	X2, Y2	H	L (FIXED)
PHONO/VIDEO	X3, Y3	H	L (FIXED)



Component List

#	KU, KC, SD, YPW	OTHERS
C116	RCH1050 (3300/42)	ACH1140 (2200/42)
C126		



SFC (IC208)

A. TREBLE	P01	P00
BOOST	H	L
FLAT	L	-
CUT	H	H

P. BASS	P11	P10
BOOST2	H	L
BOOST1	L	H
FLAT	L	L
CUT	H	H

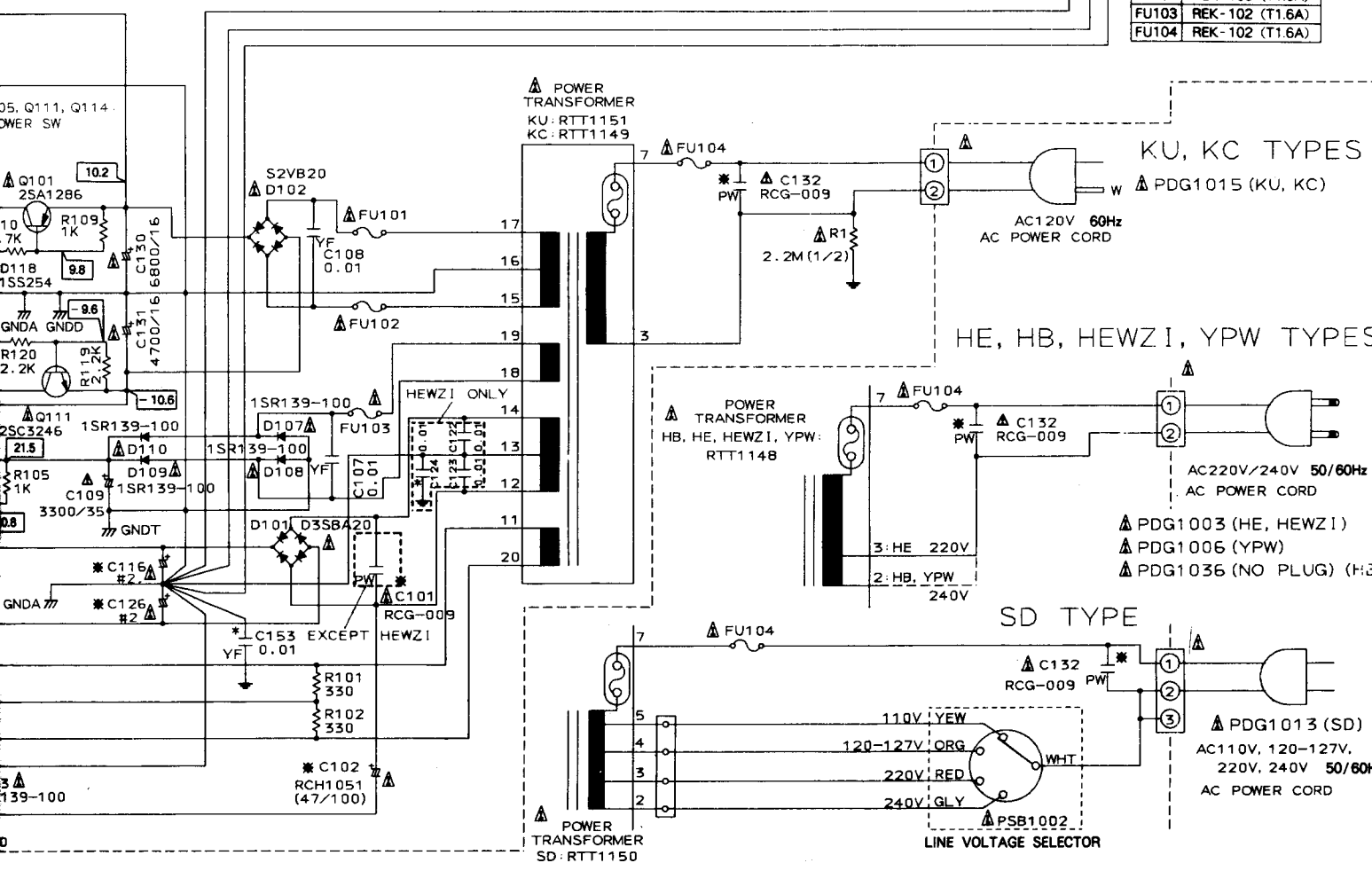
ST. WIDE	P21	P20
S. STEREO	H	H
WIDE2	L	L
WIDE1	H	H
OFF	L	L

FUSE

HB, HE, HEWZI, YPW	
FU101	REK-100 (T1.0A)
FU102	REK-100 (T1.0A)
FU103	REK-102 (T1.6A)
FU104	REK-099 (T800mA)

KU, KC	
FU101	REK-073 (1.25A)
FU102	REK-073 (1.25A)
FU103	REK-081 (2.0A)
FU104	REK-081 (2.0A)

SD	
FU101	REK-100 (T1.0A)
FU102	REK-100 (T1.0A)
FU103	REK-102 (T1.6A)
FU104	REK-102 (T1.6A)

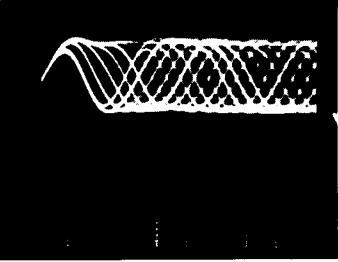
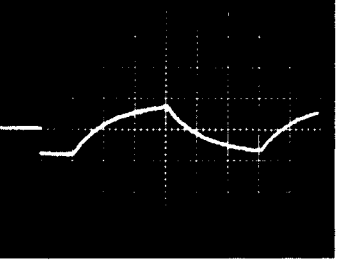
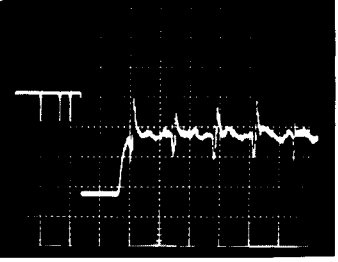

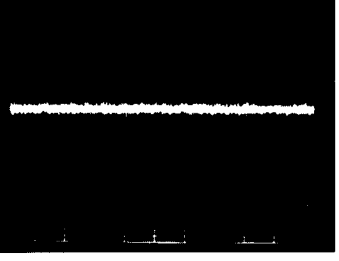
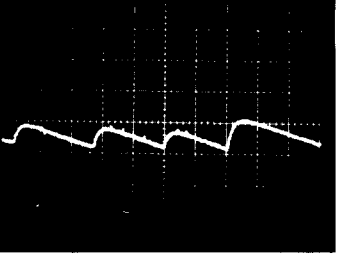
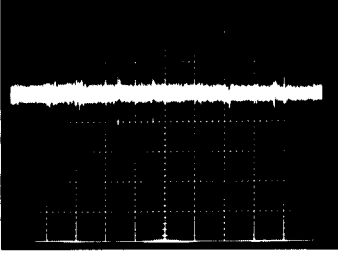
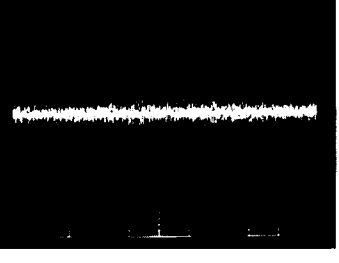
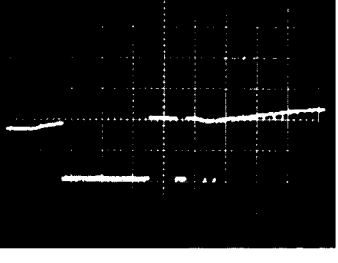
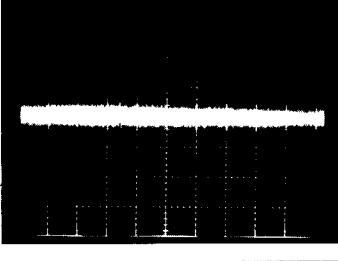
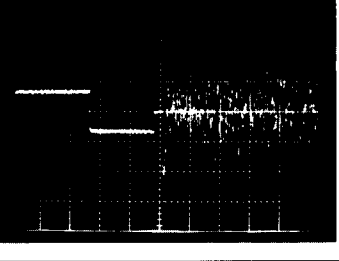
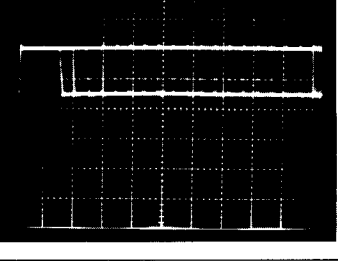
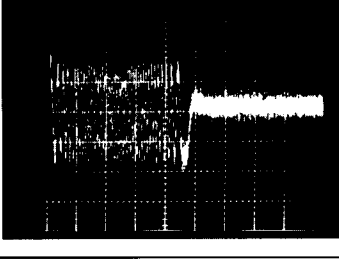
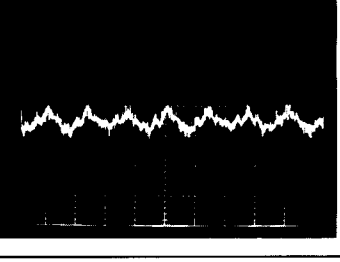
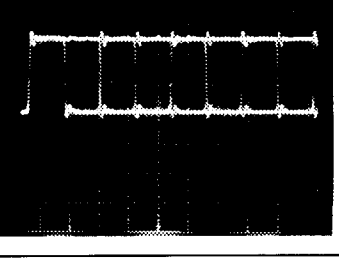


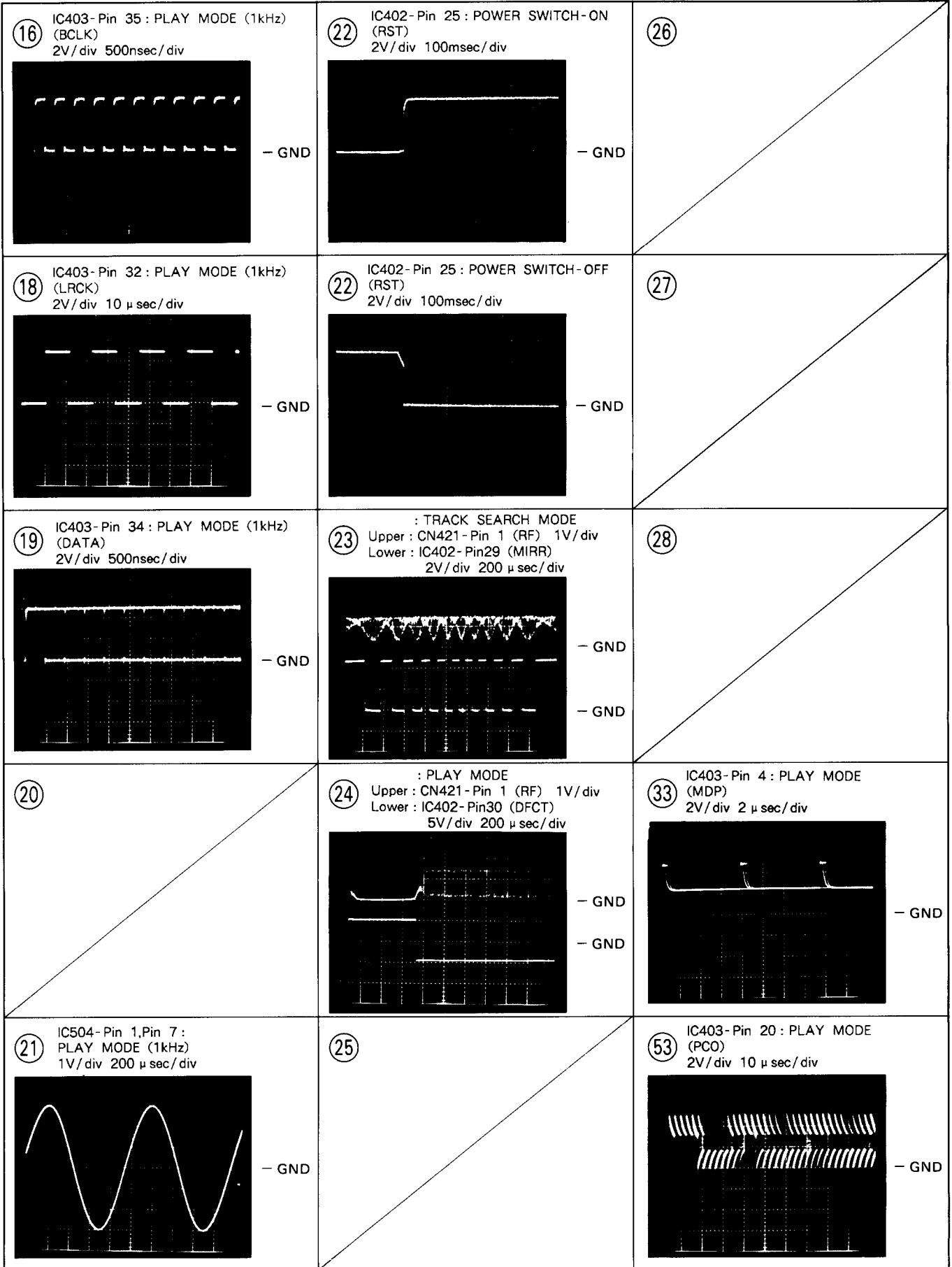
Wave Forms

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

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

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

<p>② CN421 - Pin 1 : PLAY MODE (RF) 500mV/div 500nsec/div</p>  <p>- GND</p>	<p>⑤ IC404 - Pin 11 : FOCUS-IN (* 2) MODE (FODR) 1V/div 200msec/div</p>  <p>- GND</p>	<p>⑦ IC404 - Pin 10 : TRACK SEARCH MODE (SPDR) 2V/div 50msec/div</p>  <p>- GND</p>
<p>② CN421 - Pin 1 : TRACK SEARCH MODE (RF) 500mV/div 200 μ sec/div</p>  <p>- GND</p>	<p>⑤ IC404 - Pin 11 : PLAY MODE (FODR) 1V/div 1msec/div</p>  <p>- GND</p>	<p>⑧ IC404 - Pin 5 : PLAY MODE (CADR) 1V/div 2S/div</p>  <p>- GND</p>
<p>③ CN421 - Pin 6 : PLAY MODE (FOER) 100mV/div 10msec/div</p>  <p>- GND</p>	<p>⑥ IC404 - Pin 4 : PLAY MODE (TRDR) 500mV/div 1msec/div</p>  <p>- GND</p>	<p>⑧ IC404 - Pin 5 : TRACK SEARCH MODE (CADR) 2V/div 200msec/div</p>  <p>- GND</p>
<p>④ CN421 - Pin 2 : PLAY MODE (TRER) 1V/div 10msec/div</p>  <p>- GND</p>	<p>⑥ IC404 - Pin 4 : 50T-JUMP (* 1) MODE (TRDR) 500mV/div 1msec/div</p>  <p>- GND</p>	<p>⑨ IC402 - Pin 32 : PLAY MODE (EFM) 2V/div 500nsec/div</p>  <p>- GND</p>
<p>④ CN421 - Pin 2 : 50T-JUMP (* 1) MODE (TRER) 1V/div 1msec/div</p>  <p>- GND</p>	<p>⑦ IC404 - Pin 10 : PLAY MODE (SPDR) 1V/div 50msec/div</p>  <p>- GND</p>	<p>⑩ IC501 - Pin 9, Pin 10 : PLAY MODE (1kHz) (D/A OUT) 2V/div 0.1 μ sec/div</p>  <p>- GND</p>



A

B

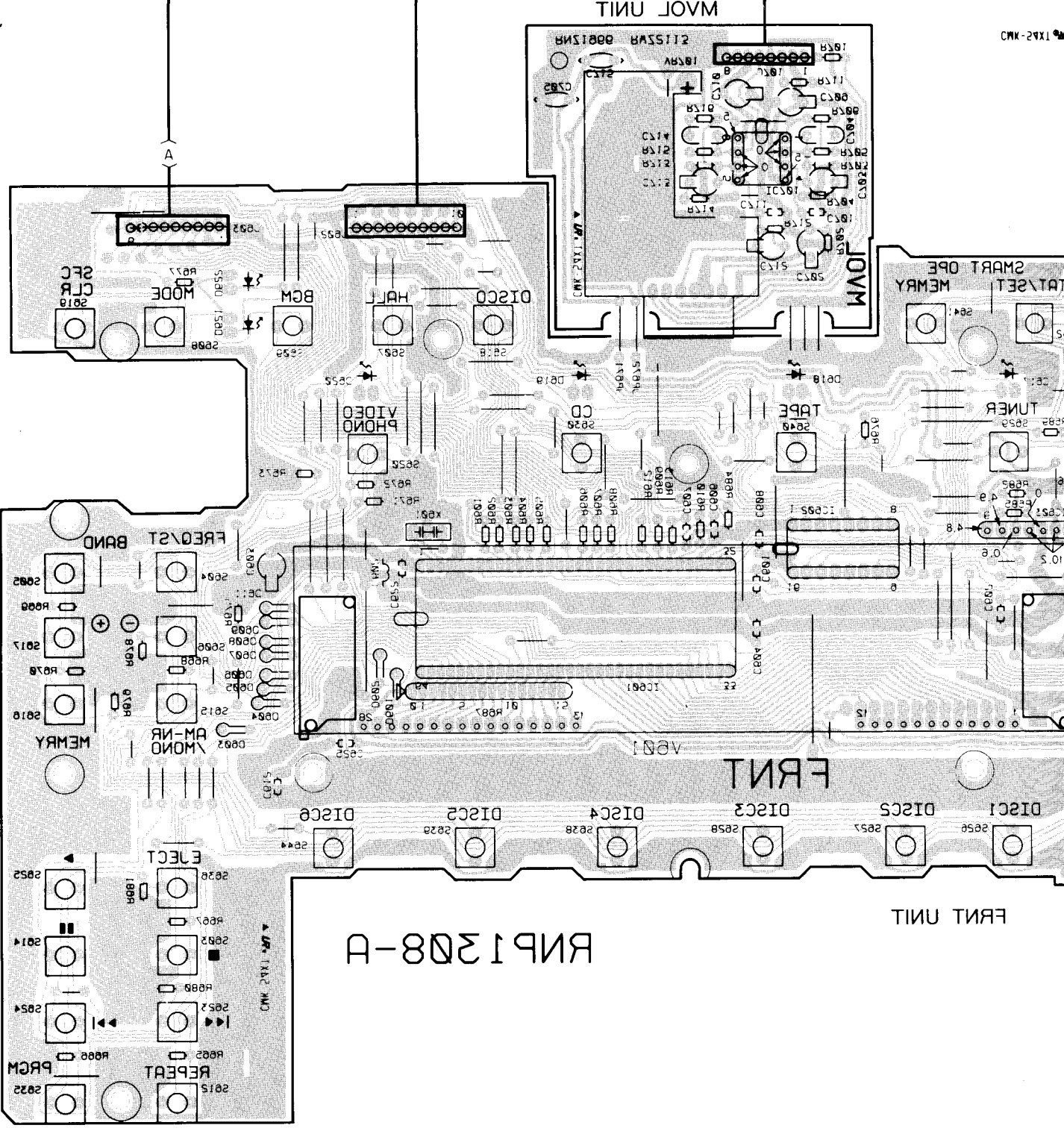
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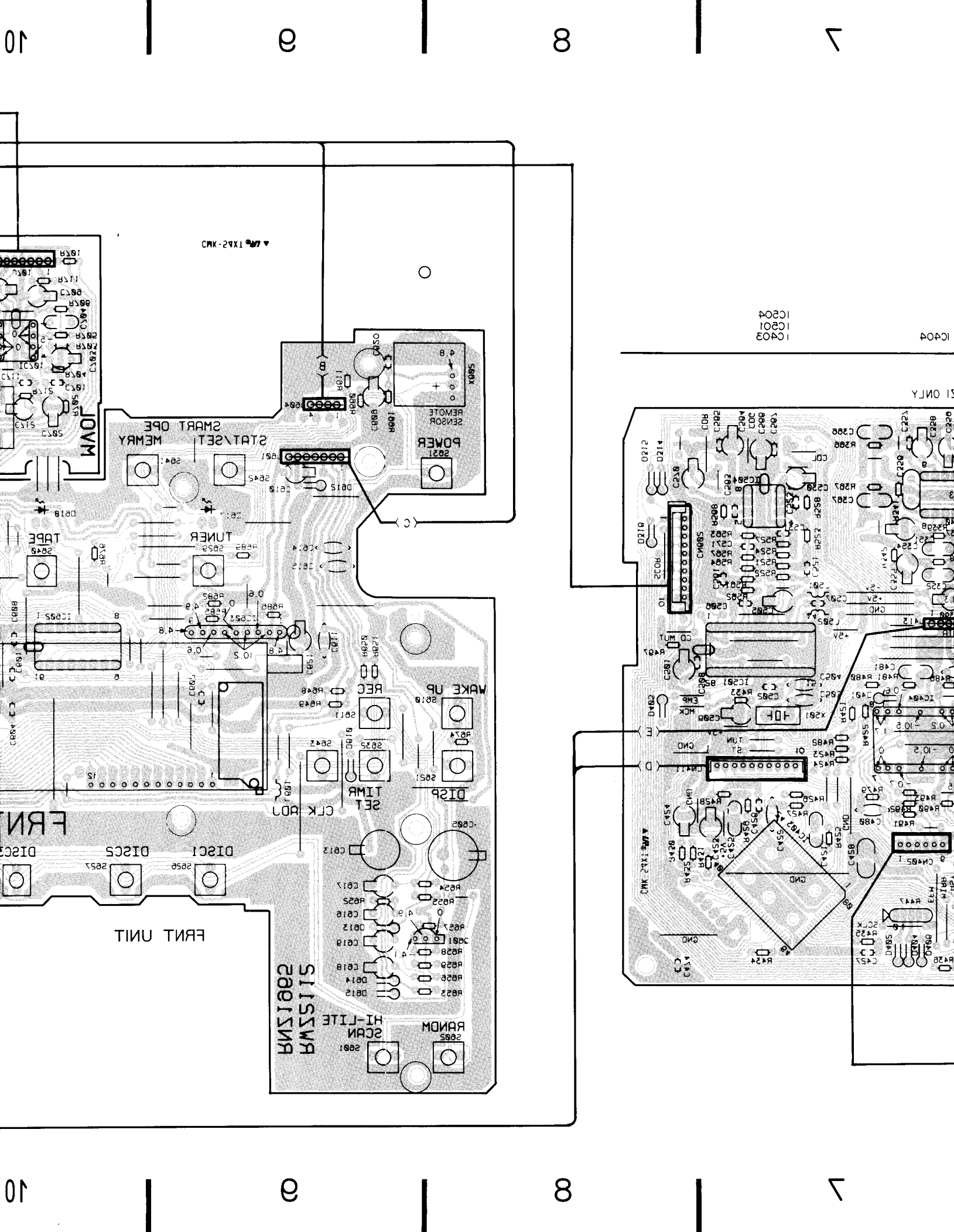
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1C403
1C501
1C504

1C404

ONLY

FRNT UNIT

DISC1
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DISC3
DISC4
DISC5
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DISC99
DISC100

RANDOM
SCAN
HI-LITE
2885

DISP
SET
TIMER
WAKE UP
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2900

REC
LED
POWER
REMOTE
SENSOR
OSD
IOP
R424
R425
R426
R427
R428
R429
R430
R431
R432
R433
R434
R435
R436
R437
R438
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R496
R497
R498
R499
R500

TUNER
STAT/SET MEMORY
SMART OPE
JOWM

D210
D211
D212
D213
D214
D215
D216
D217
D218
D219
D220
D221
D222
D223
D224
D225
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D238
D239
D240

CMK-2TX1-MK

CMK-2TX1-MK

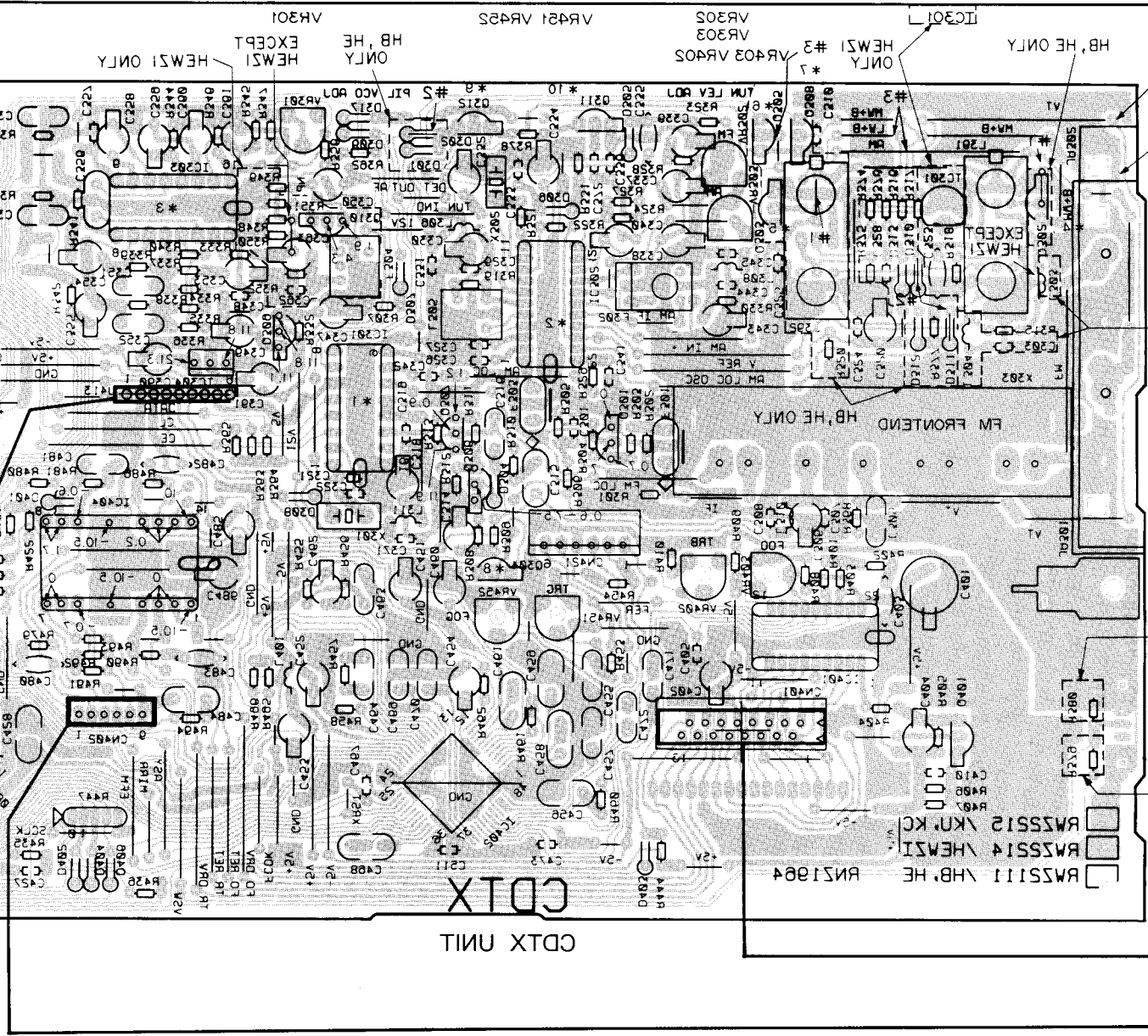
OPEN
SHORT
SHORT
OTHERS

0401 HB, HE ONLY
IC301

IC401 IC302
0301 0300 0301
0311 IC305 0315
0304 IC405

IC301
0301 0300 0301
0311 IC305 0315
0304 IC405

IC403
IC301
IC204



CDTX UNIT

BR5511 HB, HE
BR5514 HEW1
BR5512 KN, KC

FM FRONTEND HB, HE ONLY

HB, HE ONLY

HEW1 #3
VR403 VR405
VR303

HEW1 ONLY
HEW1 EXCEPT
VR403 VR405
VR301

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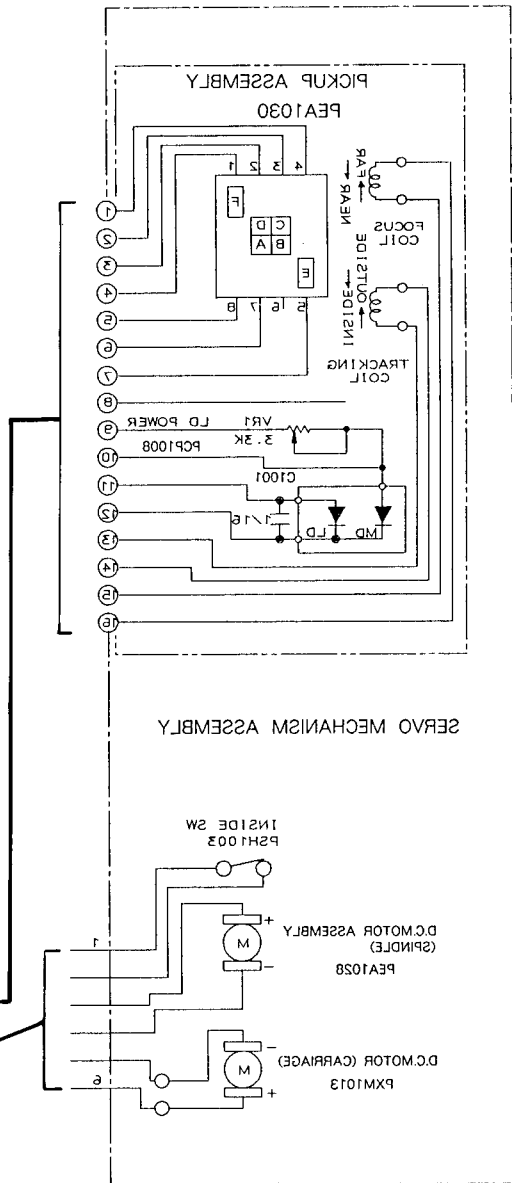
6

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

2. P.C. BOARDS CONNECTION DIAGRAM

2.1 XC-P410M type



* 3
IC303 (ANATOP)

Pin No.	MODE
1	FM\MW\LW
2	5.0
3	6.0
4	8.0
5	8.0
6	4.5
7	4.5
8	0
9	4.7
10	5.0
11	5.0
12	5.0
13	5.0
14	5.0
15	5.0
16	5.0
17	5.0
18	5.0
19	5.0
20	5.0
21	5.0
22	5.0

(Unit: V)

* 2
IC302 (LA2522)

Pin No.	MODE
1	FM
2	5.0
3	5.0
4	0
5	11.7
6	11.8
7	11.7
8	0(4.0)
9	3.8
10	2.4
11	1.2
12	1.4
13	0
14	0
15	5.0
16	1.4
17	0
18	5.0
19	5.0
20	4.0
21	4.0
22	5.0

(Unit: V)

* 1
IC301 (LM1001)

Pin No.	MODE
1	FM
2	1.8
3	0.5
4	4.9
5	0.7
6	0
7	0(3.8)
8	11.8
9	11.8
10	0
11	5.8
12	4.9
13	4.9
14	0.8
15	-
16	0

(Unit: V)

Note: Voltages of () indicate at turn the AM-NR/MONO switch to ON (at TUNED).

* 4
IC305

Pin No.	MODE
C	1.0
B	11.8

(Unit: V)

* 5
IC303

Pin No.	MODE
C	0.3
B	0

(Unit: V)

* 8
IC312

Pin No.	MODE
E	11.8
C	0
B	11.8

(Unit: V)

* 8
IC304

Pin No.	MODE
E	11.8
C	11.7
B	7.0

(Unit: V)

* 7
IC308

Pin No.	MODE
E	11.8
C	0
B	11.8

(Unit: V)

* 6
IC302

Pin No.	MODE
E	11.8
C	0
B	11.8

(Unit: V)

* 10
IC311

Pin No.	MODE
C	0
B	0.3

(Unit: V)

A
B
C
D

HE
01

HE
01

3

2

1

XC-P410M

3

2

1

40

5. P.C.BOARDS CONNECTION DIAGRAM

5.1 XC-P410M type

* 1
IC301
(LM7001) (Unit : V)

Pin No.	MODE		
	FM	MW	LW
1	1.3	1.3	1.3
2	1.6	1.6	1.6
3	0.5	0.5	0.5
4	4.9	4.9	4.9
5	0.7	0.7	0.7
6	0	0	0
7	0.3(6.2)	0.3(8.3)	0.3(8.3)
8	11.8	1.1	11.8
9	11.8	11.8	1.2
10	0	0	0
11	2.8	2.8	2.8
12	4.9	4.9	4.9
13	4.9	4.9	4.9
14	0.8	0.8	0.8
15	-	-	-
16	0	0	0

Note: Voltages of () indicate at turn the AM-NR/MONO switch to ON (at TUNED).

* 2
IC302
(LA1265S) (Unit : V)

Pin No.	MODE		
	FM	MW	LW
1	2.0	1.1	1.1
2	2.0	1.1	1.1
3	2.0	1.1	1.1
4	0	0	0
5	11.7	11.8	11.8
6	11.7	11.8	11.8
7	11.7	11.8	11.8
8	0(4.9)	0(4.9)	0(4.9)
9	3.8	4.9	4.9
10	2.4	3.3	3.3
11	1.5	1.5	1.5
12	1.4	1.5	1.5
13	0.3	0	0
14	0.3	0	0
15	2.0	1.1	1.1
16	1.4	1.5	1.5
17	0	11.8	11.8
18	0	2.0	2.0
19	0	2.0	2.0
20	3.4	4.0	4.0
21	1.9	4.0	4.0
22	2.0	1.8	1.8

Note: Voltages of () indicate at not tuned.

* 3
IC303
(AN7470P)

Pin No.	MODE
	FM/MW/LW
1	11.1
2	2.6
3	6.0
4	8.9
5	8.9
6	4.2
7	4.2
8	0
9	4.7
10	2.6
11	2.6
12	2.6
13	2.6
14	2.6
15	2.8
16	5.7/11.2/11.2

(Unit : V)

* 4
Q302 (Unit : V)

	FM	MW	LW
C	1.0	0	0
B	0	11.8	0

* 5
Q303 (Unit : V)

	FM	MW	LW
C	-0.3	0	0
B	0	0	11.8

* 6
Q305 (Unit : V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	0	11.8
B	11.6	11.8	1.2

* 7
Q308 (Unit : V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

* 8
Q304 (Unit : V)

	FM	MW	LW
E	11.8	11.8	11.8
C	11.7	0	0
B	7.0	11.6	11.6

* 9
Q312 (Unit : V)

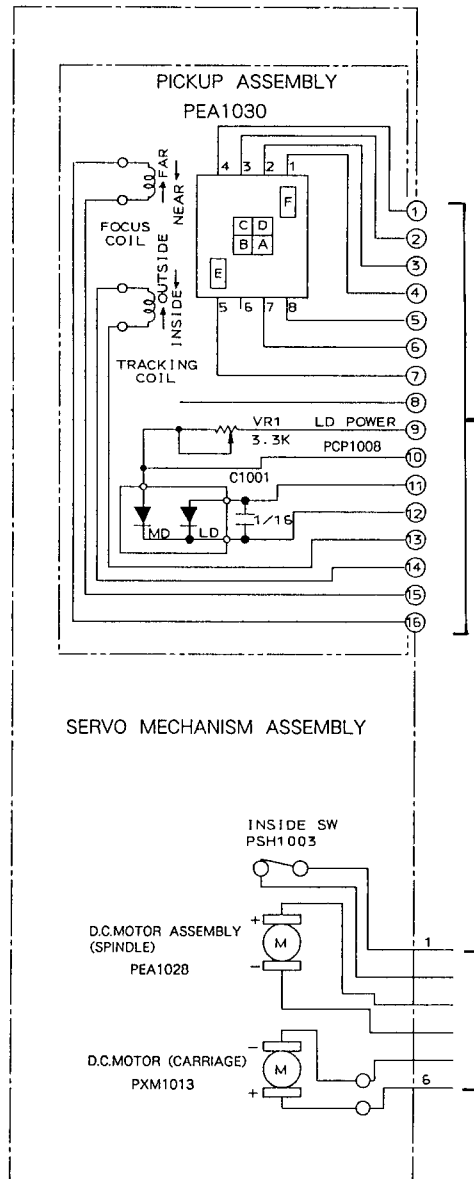
	FM	MW	LW
E	11.8	1.8	1.8
C	0	11.8	11.8
B	11.8	11.8	11.8

* 10
Q311 (Unit : V)

	FM	MW/LW (NR OFF)	MW/LW (NR ON)
C	0	0	0
B	6.2	0.3	8.4

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

- This P.C.B. connection diagram is viewed from the parts mounted side.
- 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.
- The capacitor terminal marked with shows negative terminal.
- The diode marked with shows cathode side.
- The transistor terminal marked with shows emitter.



	HB, HE	OTHERS
#1	OPEN	SHORT
#2	DIODE	SHORT
#3	SHORT	OPEN

HB, HE ONLY

HB, HE ONLY

HEWZI ONLY

[Q302]

[Q308 Q305]
[Q303]

Q311 IC302 Q312
Q301 Q307 IC301
Q306 Q304 IC402

Q401

IC401

[Q303]

Q304 IC402

[IC301]

VR302 VR303
VR403 VR402

VR451 VR452

KU, KC

HB, HE ONLY

HEWZI #3 ONLY

HB, HE ONLY

FM UNBAL 75 Ω

HEWZI ONLY

AM LOOP ANTENNA

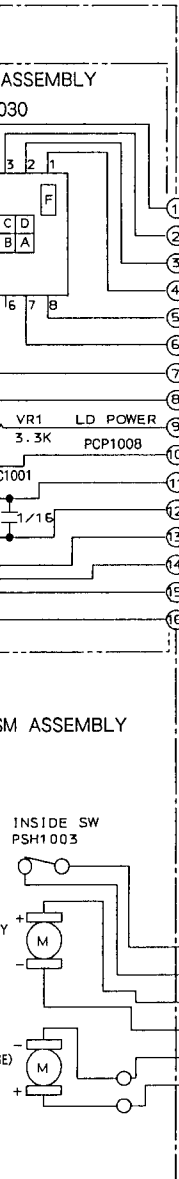
FM FRONTEND HB, HE ONLY

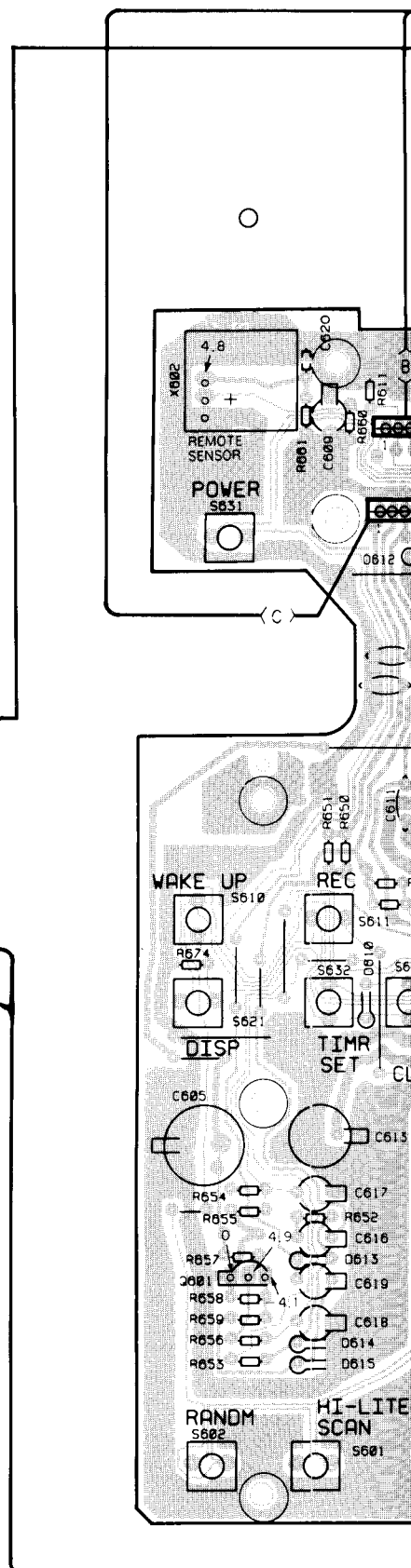
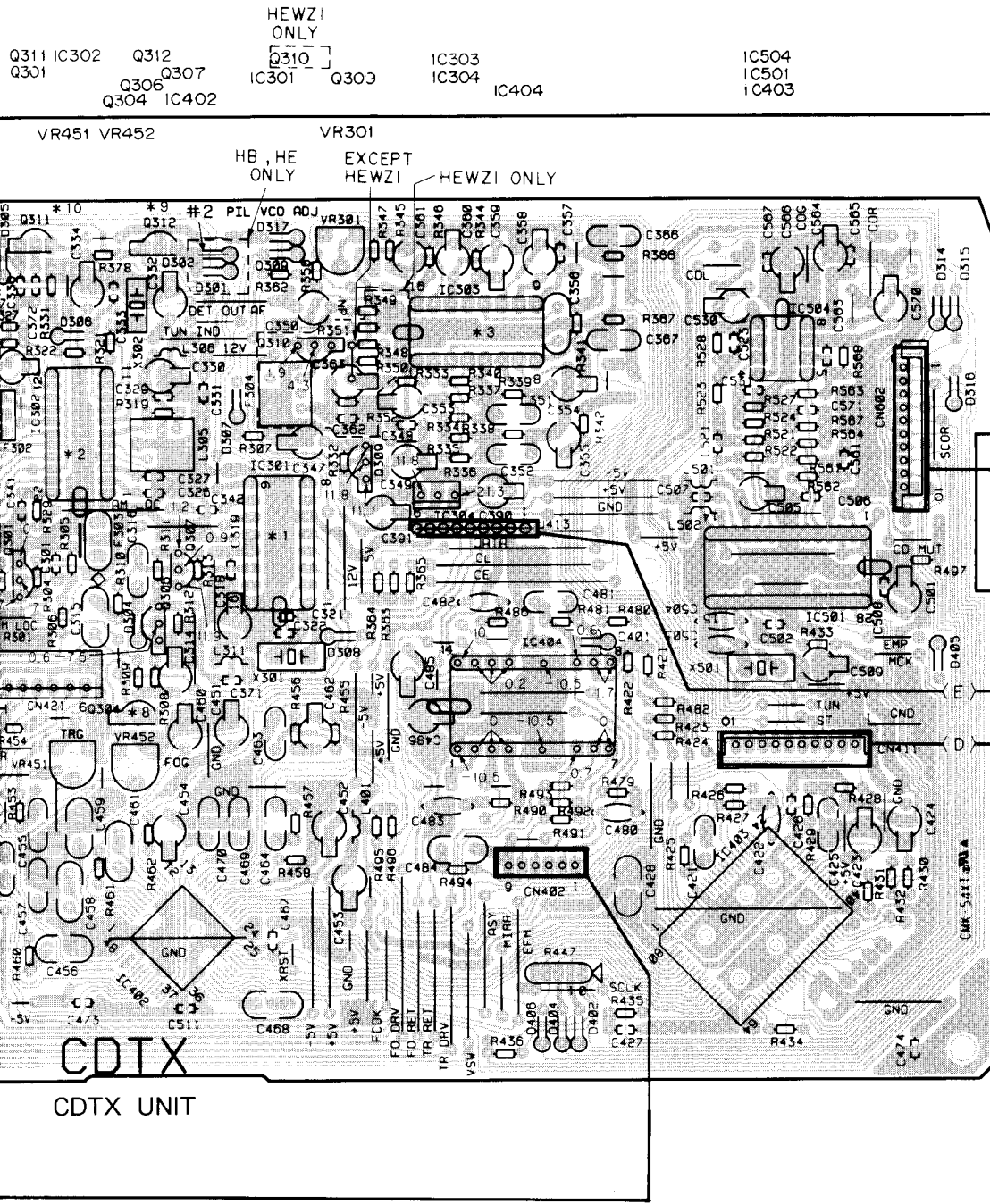
HB, HE	OTHERS
OPEN	USED

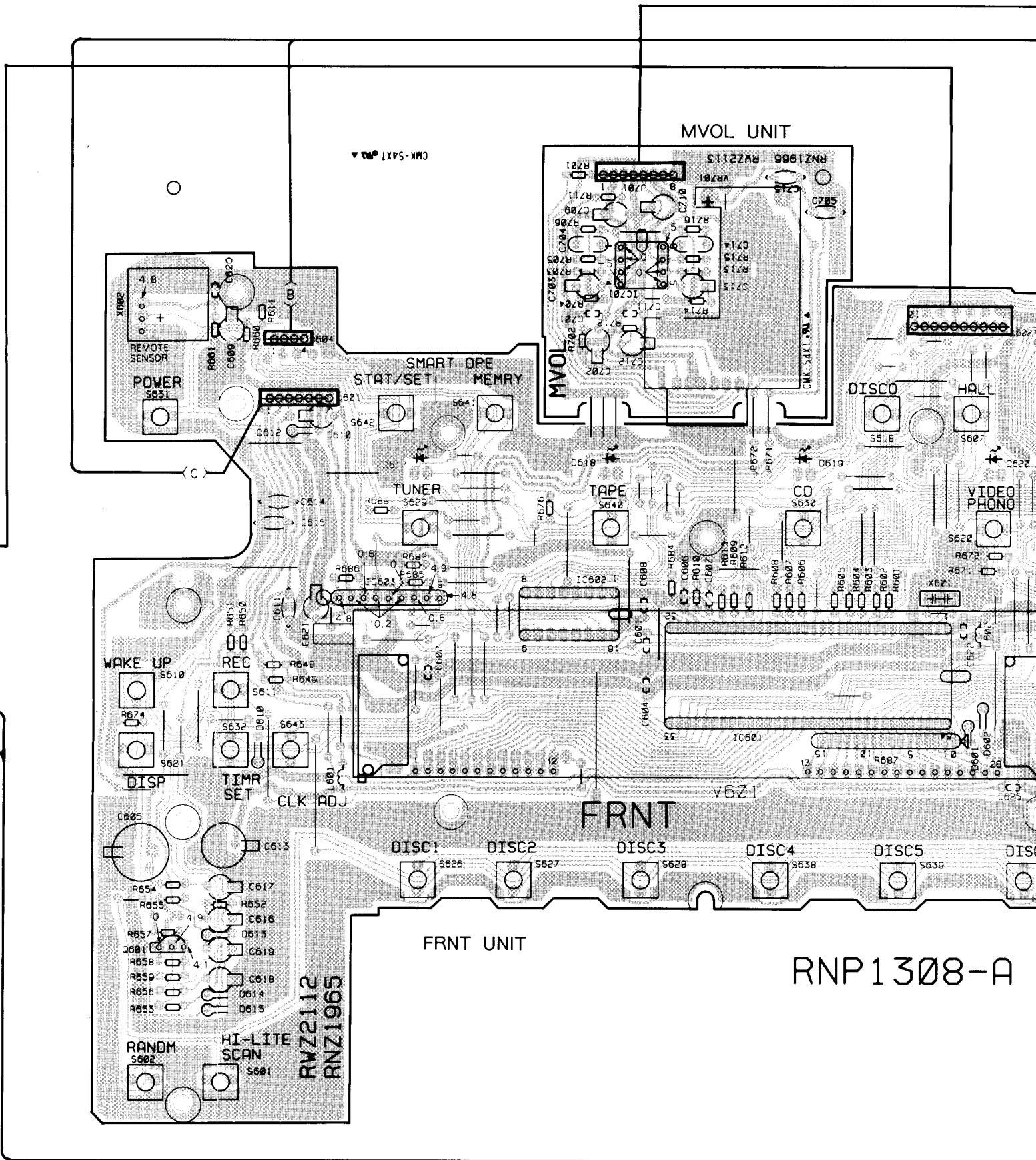
HEWZI	OTHERS
OPEN	USED

- RWZ2215 / KU, KC
- RWZ2214 / HEWZI
- RWZ2111 / HB, HE RNZ1964

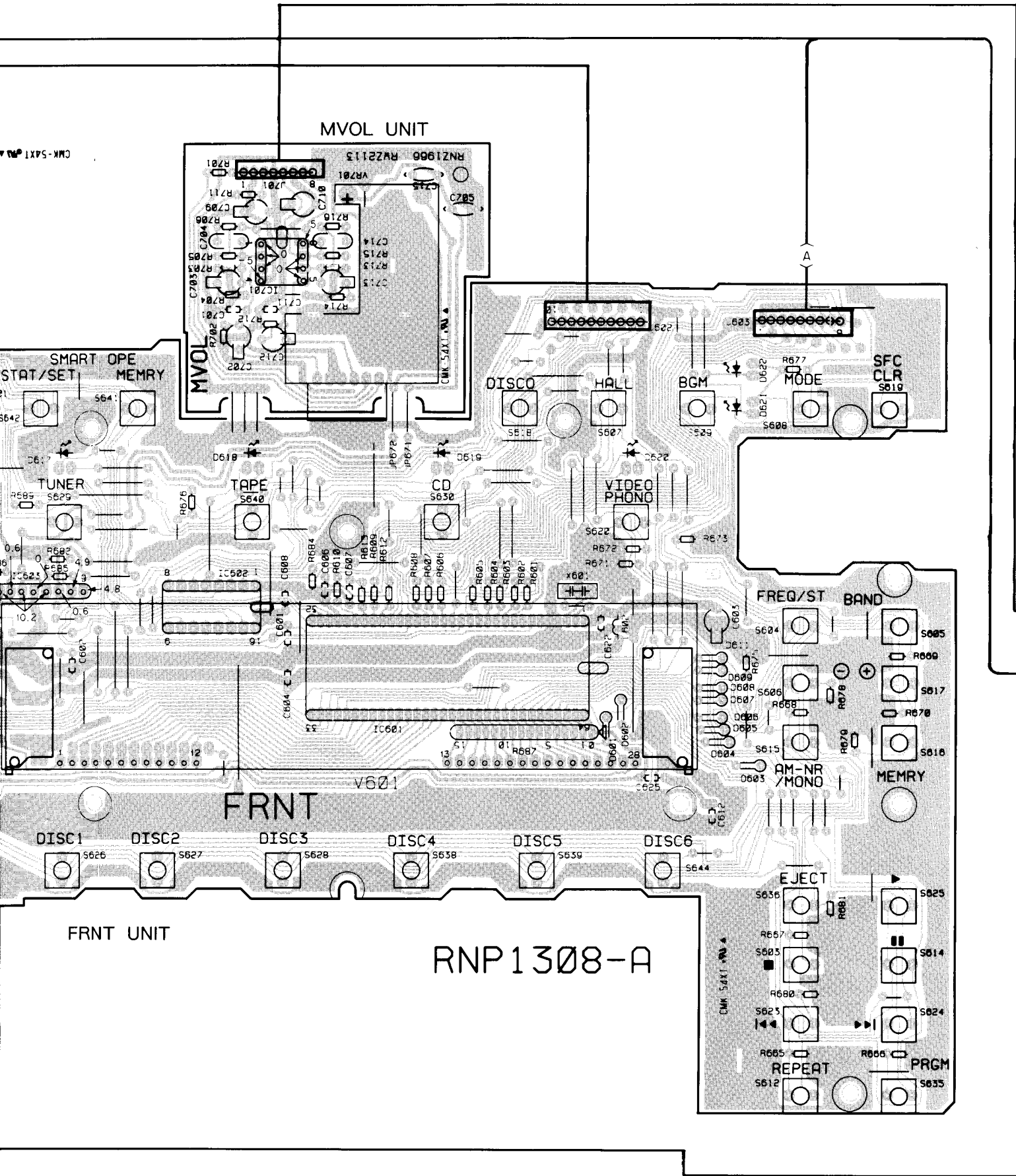
CDTX
CDTX UNIT







RNP1308-A



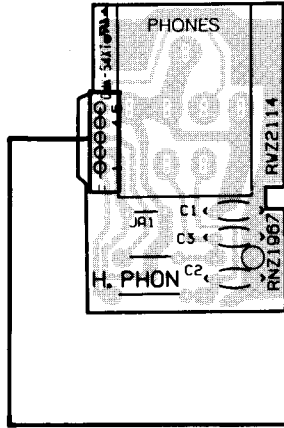
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MAIN UNIT (KU,KC TYPES)

H.PHONE UNIT



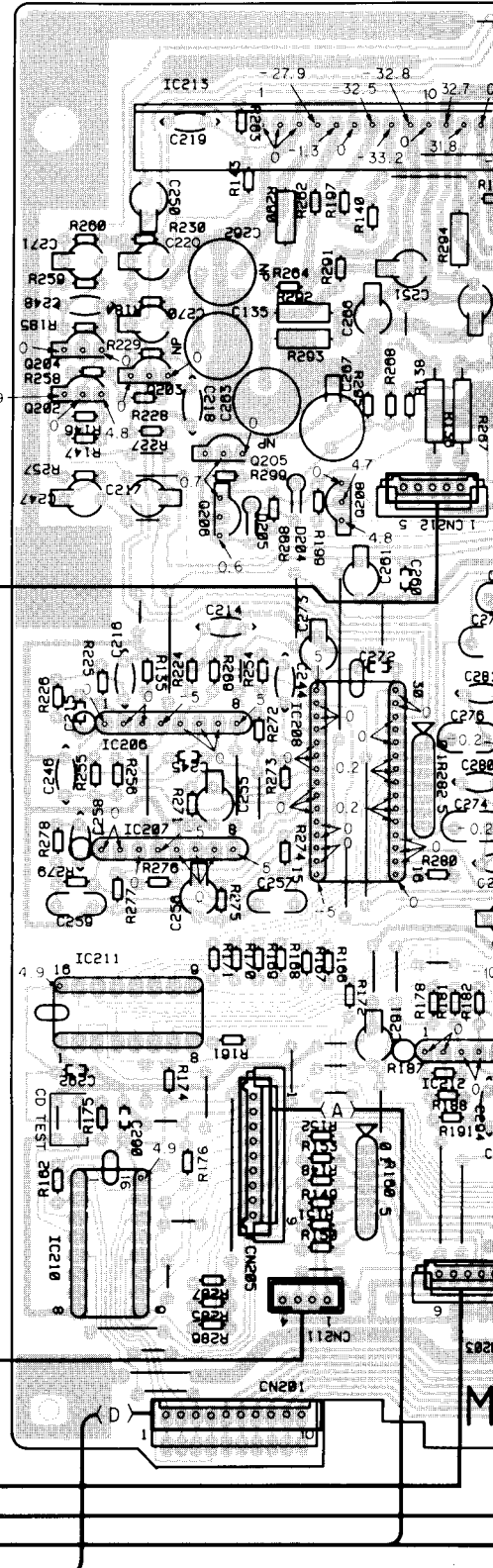
IC213

Q204
Q203
Q202
Q205
Q207
Q208 Q111
Q206 Q104

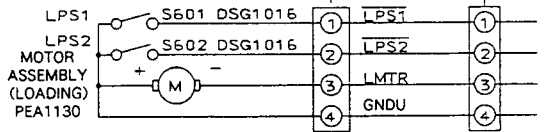
Q114
IC102
Q101
Q103
Q113

IC206
IC209
IC208
IC101
IC207
Q107
IC103

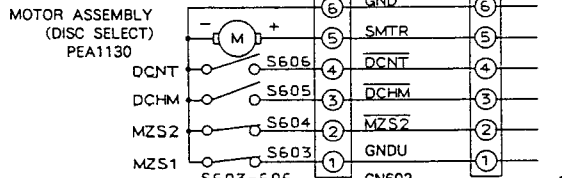
Q105
IC211
IC212
IC201
IC210
Q109
IC203
Q108
Q110



MULTI MECHANISM ASSEMBLY



LOADING BOARD ASSEMBLY



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C

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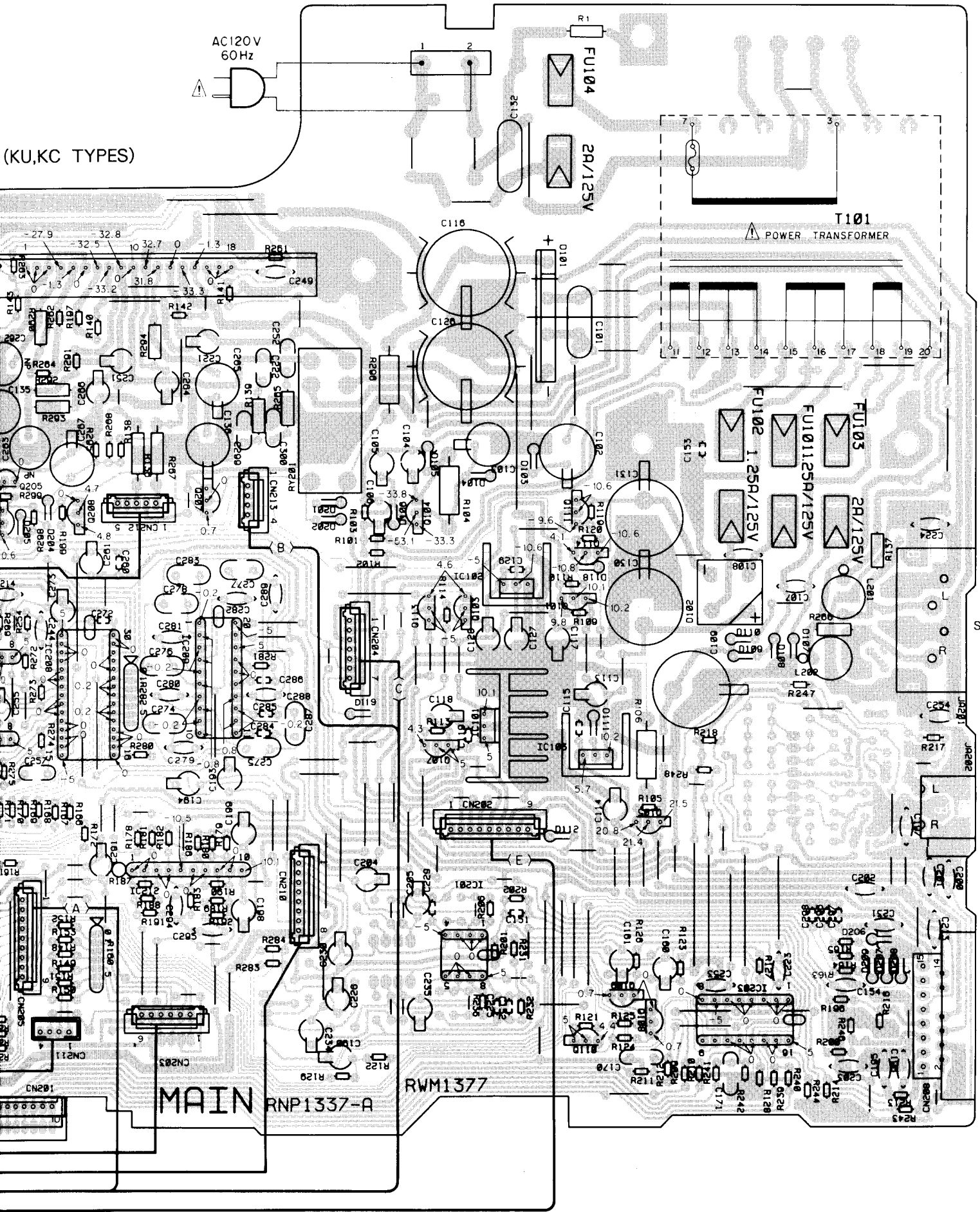
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(KU,KC TYPES)



4

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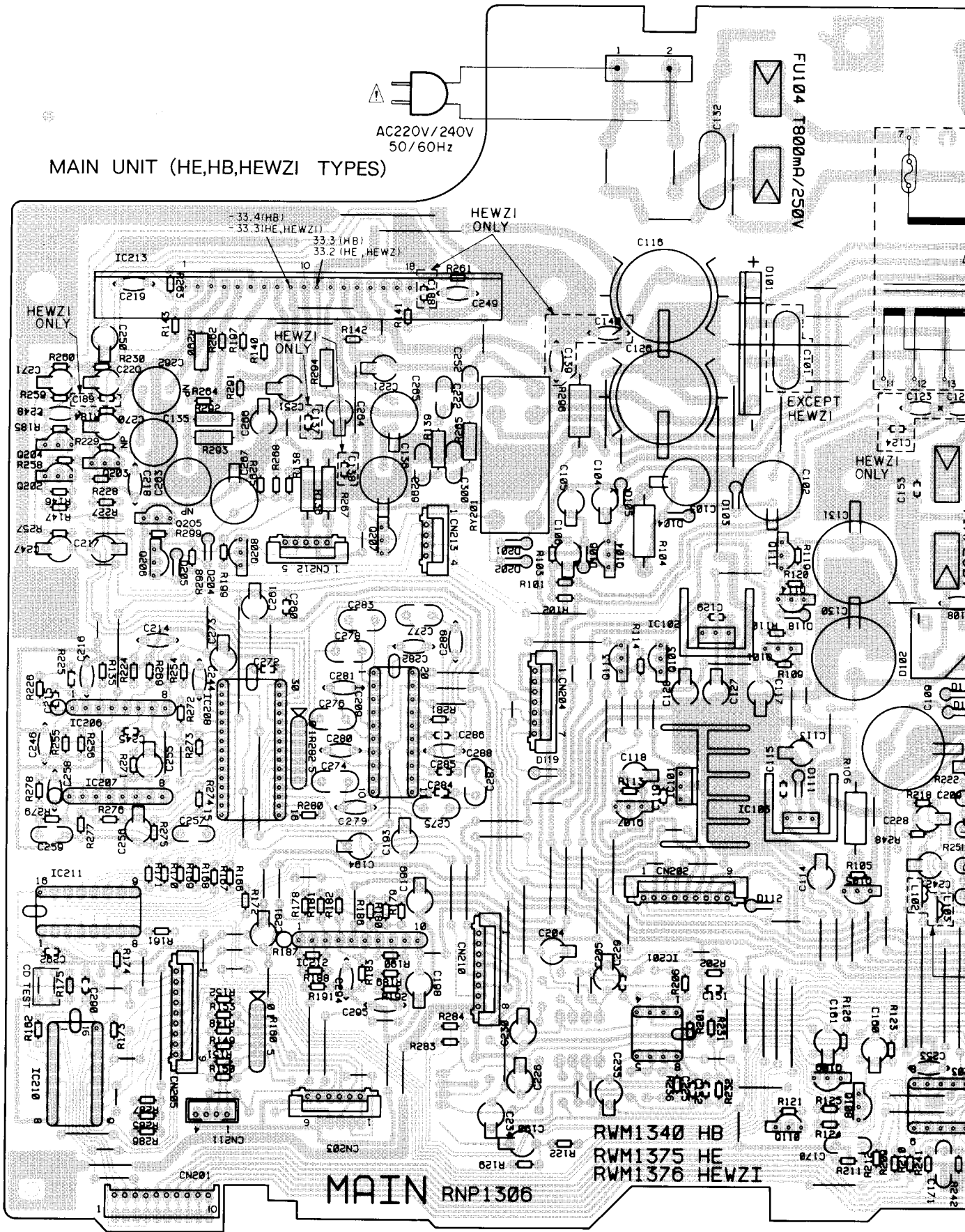
6

MAIN UNIT (HE,HB,HEWZI TYPES)

AC220V/240V
50/60Hz

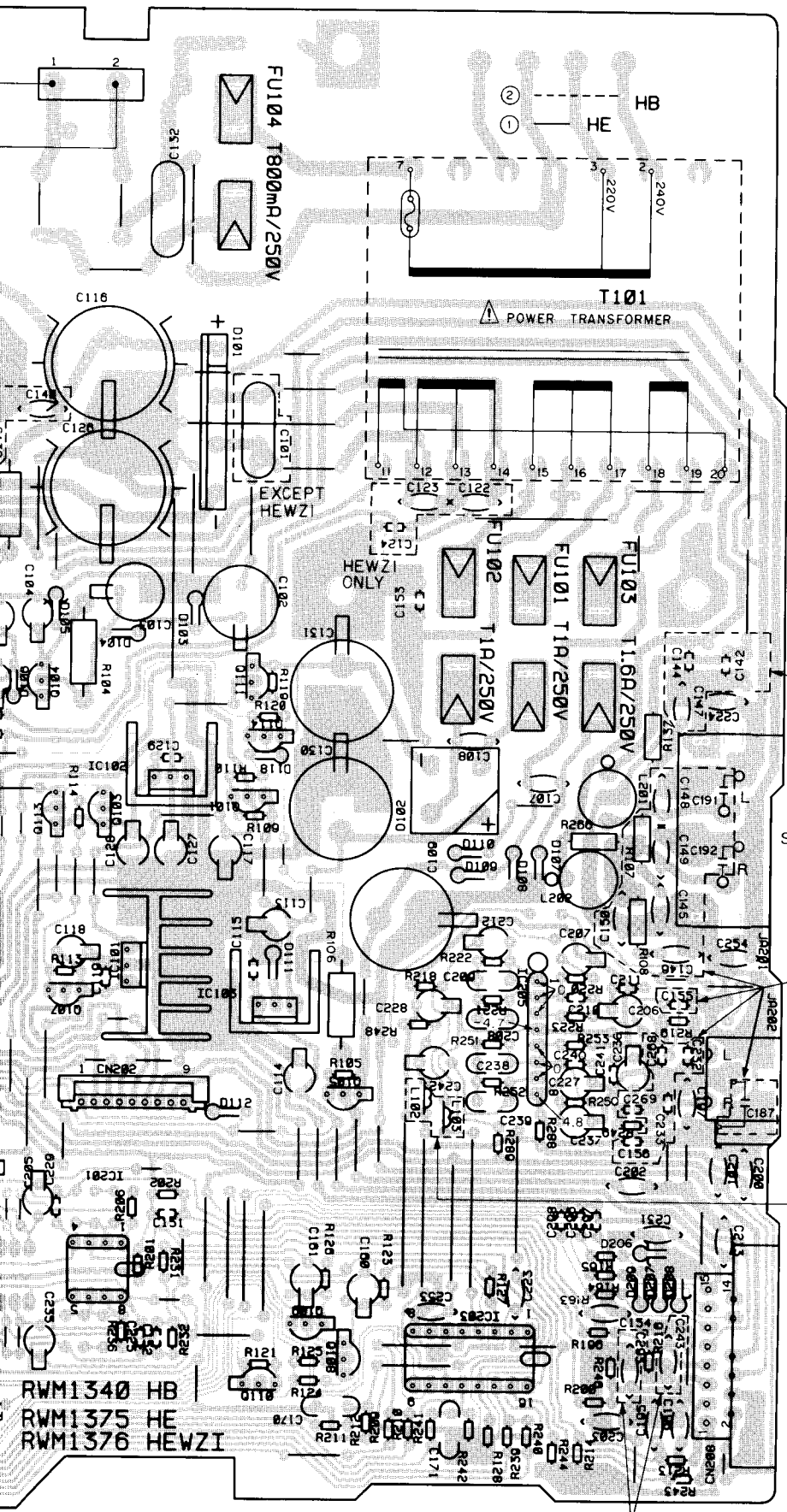
FU104 T800mA/250V

- IC213
- Q204
- Q203
- Q202
- Q205
- Q207
- Q208 Q111
- Q206 Q104
- Q114
- IC102
- Q101
- Q103
- Q113
- IC206
- IC209
- IC208
- IC101
- IC207
- Q107
- IC103
- IC205
- Q105
- IC211
- IC212
- IC201
- IC210
- Q109
- IC203
- Q108
- Q110



MAIN RNP1300

RWM1340 HB
RWM1375 HE
RWM1376 HEWZI



LINE VOLTAGE SELECTION FOR HE, HB, AND HEWZI TYPES

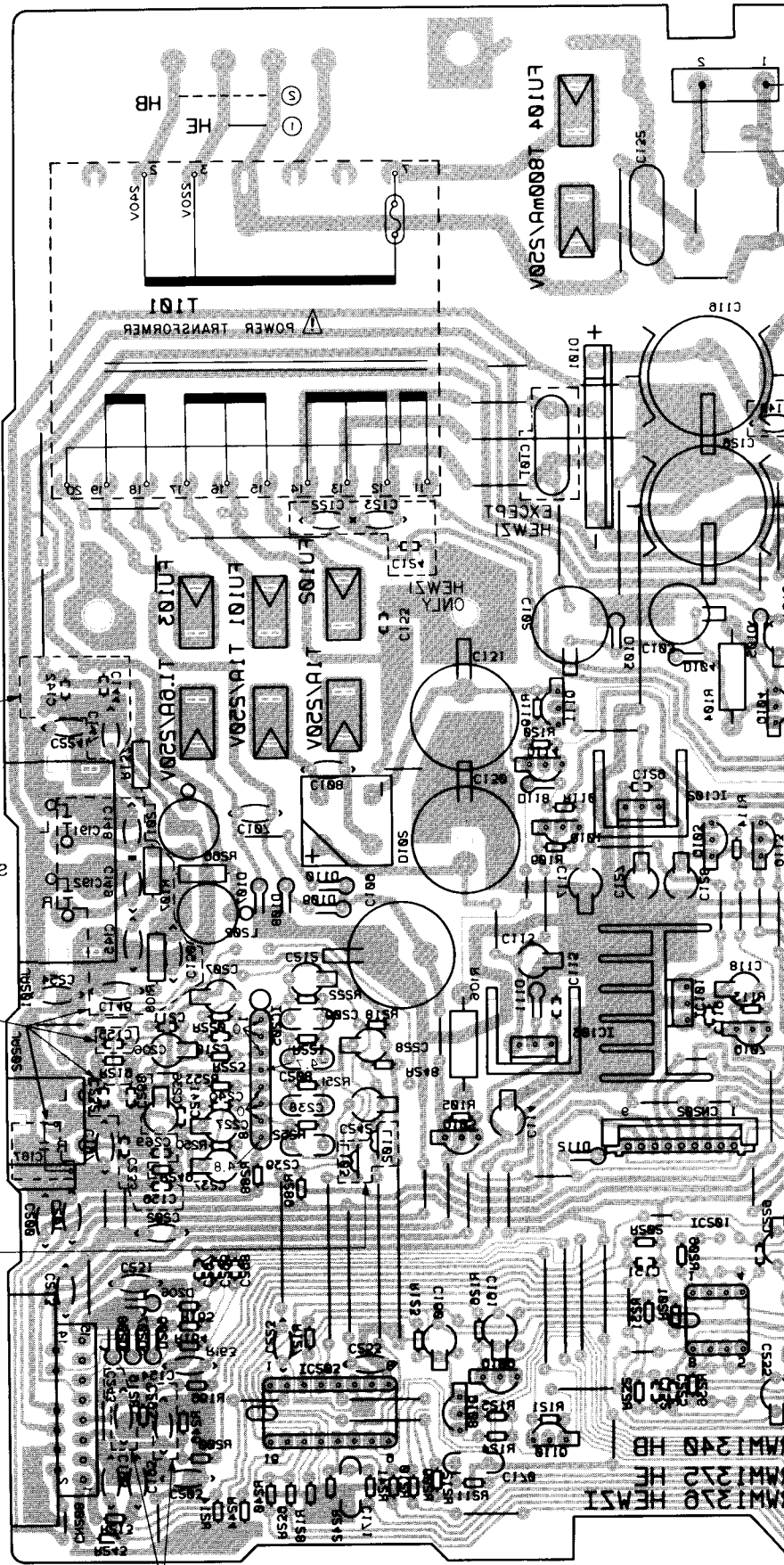
- Line voltage can be changed with the following steps:
1. Disconnect the AC power cord.
 2. Remove the top cover.
 3. Change the position of the jumper wire as follows (Refer to the MAIN unit).

Voltage	Jumper wire position
220V	①
240V	②

4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

HEWZI	HB, HE
L102, 103 USED	JUMPER WIRE



LINE VOLTAGE SELECTION FOR HE, HB, AND HEWZI TYPES

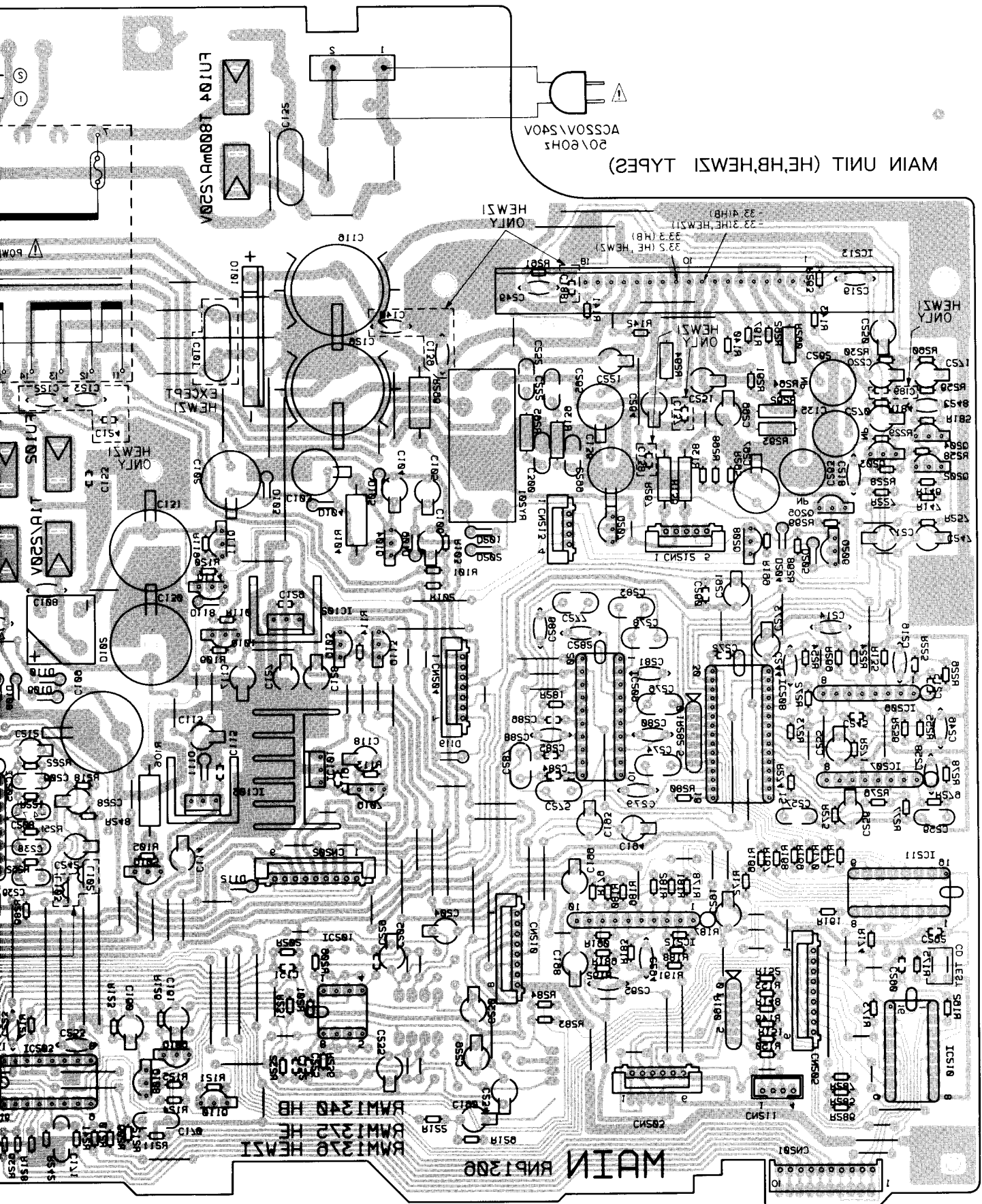
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the jumper wire as follows (Refer to the MAIN unit).

Voltage	Jumper wire position
220V	①
240V	②

4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AA-X-193
240V label	AA-X-192

USED WIRE	HEWZI HB, HE
L103, 103 JUMPER	HEWZI



- 0110
- 0108
- IC503
- 0109
- IC510
- IC501
- IC515
- IC511
- 0102
- IC502
- 0103
- IC507
- IC101
- IC508
- IC509
- IC506
- 0112
- 0103
- 0101
- IC105
- 0114
- 0506
- 0504
- 0505
- 0503
- 0504
- IC513

MAIN UNIT (HE,HB,HEWS1 TYPES)

MAIN RHP1300

RMW1320 HEWS1
RMW1325 HE
RMW1340 HB

20V 60Hz
ACSS0V/540V

AC10V 60Hz

POWER TRANSFORMER
T101

SAV152A
SAV152A
SAV152A
SAV152A
SAV152A
SAV152A

SPEAKERS

VIDEO

TAPE DECK

EU104
EU104

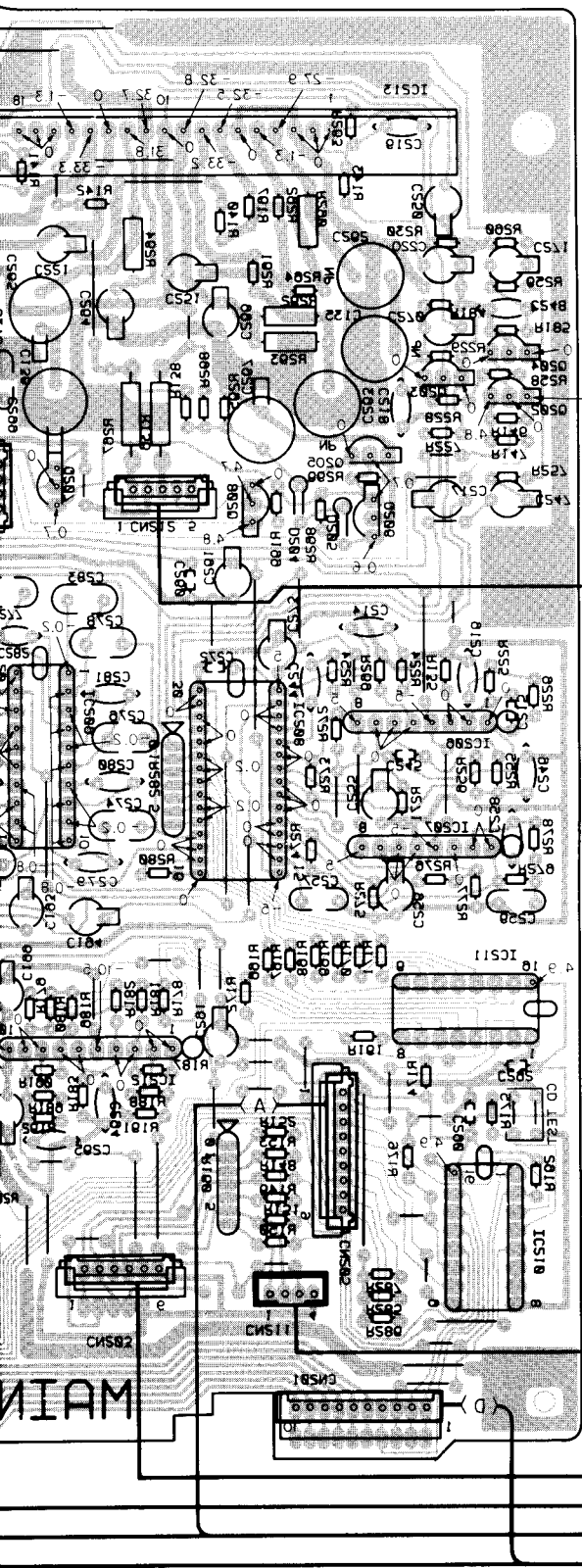
BMW127

MAIN
RHP137-A

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

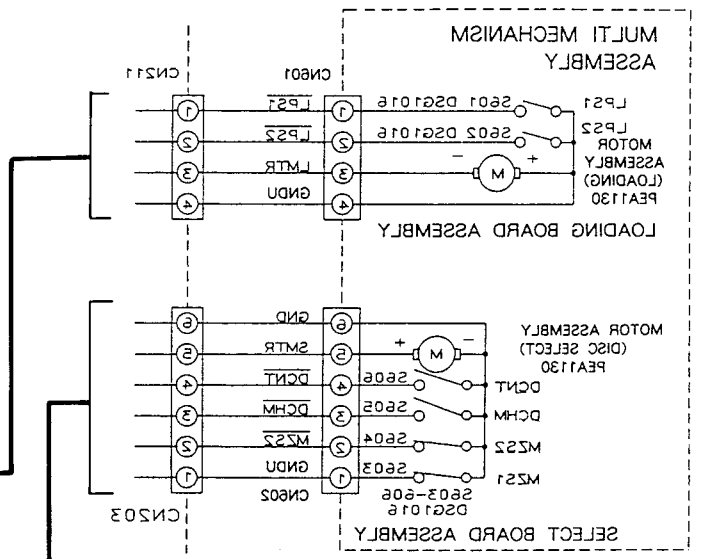
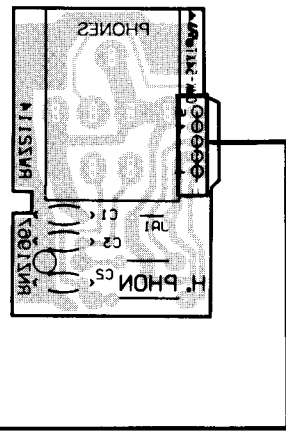
CS1A
E0H

MAIN UNIT (KUKC TYPES)



- IC513
- 0504
- 0503
- 0505
- 0502
- 0501
- 0508 0111
- 0506 0104
- 0114
- IC105
- 0101
- 0103
- 0113
- IC508
- IC508
- IC508
- IC101
- 0101
- IC507
- IC103
- 0103
- 0107
- IC509
- 0102
- IC511
- IC515
- IC501
- IC510
- 0108
- IC503
- 0108
- 0110

H.PHONE UNIT

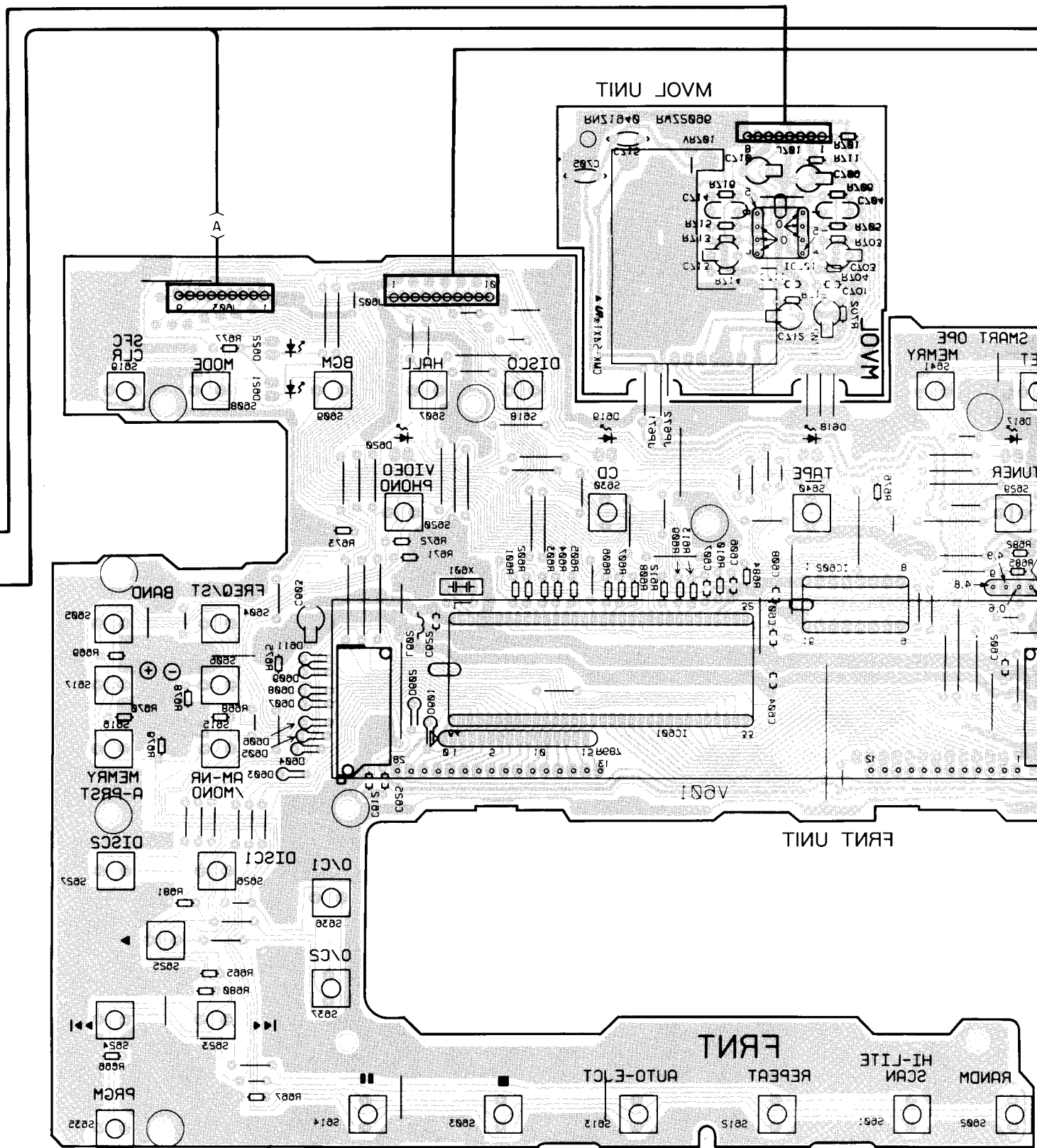


4

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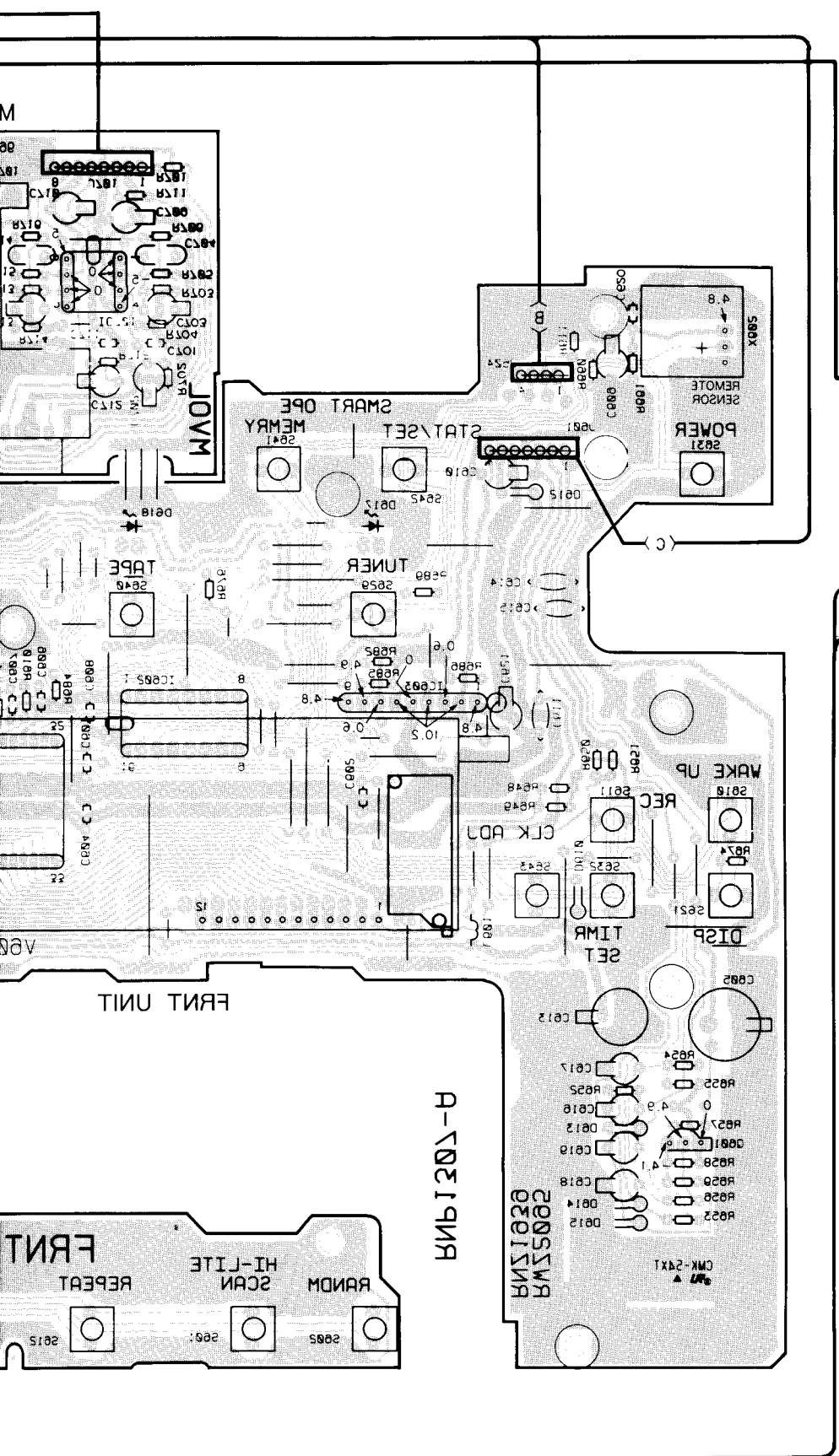
2

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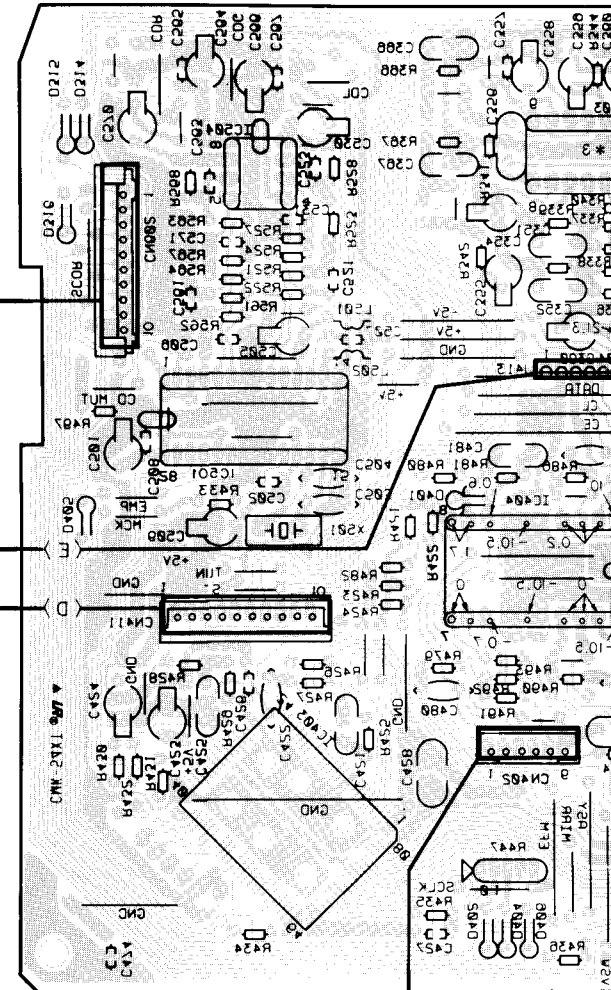
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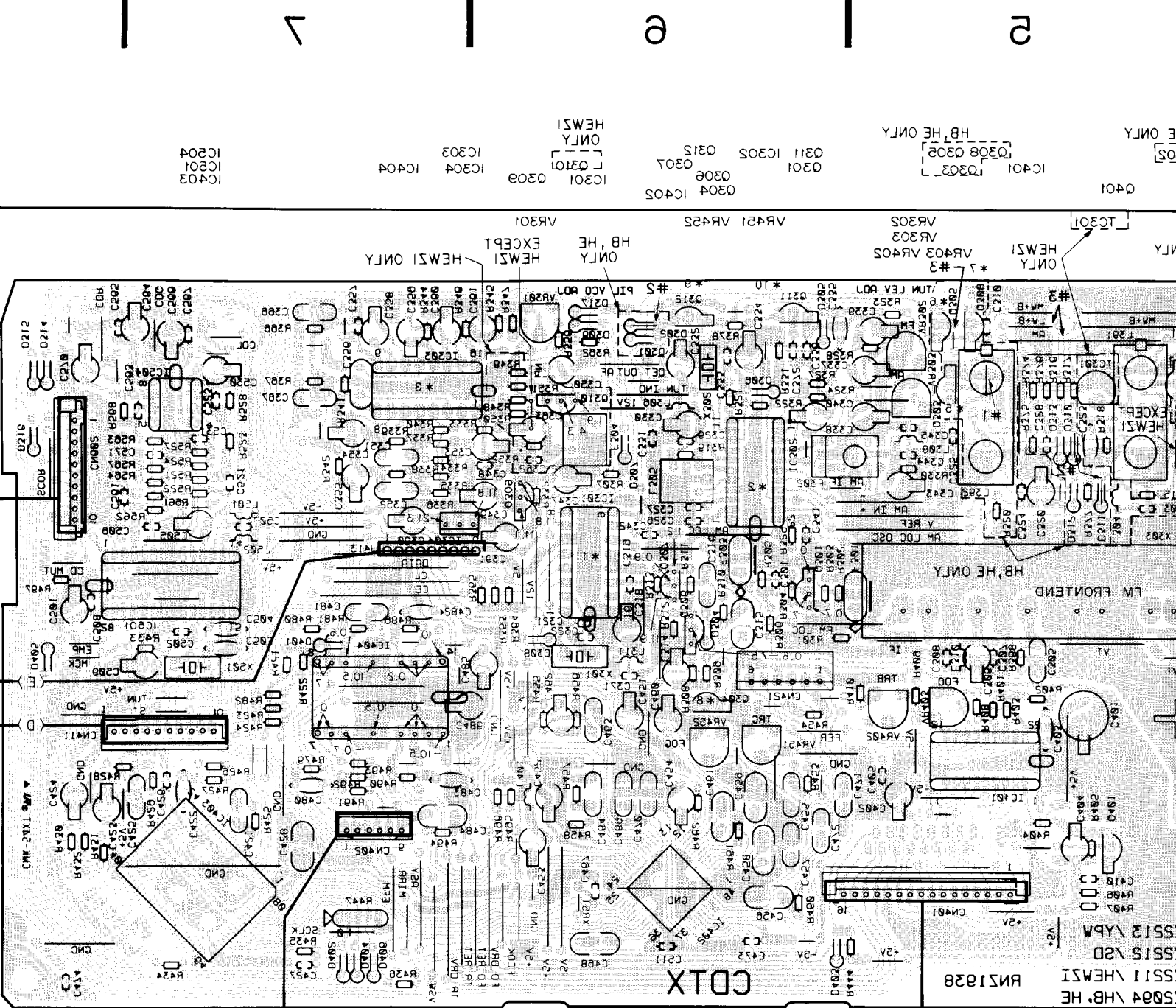
3



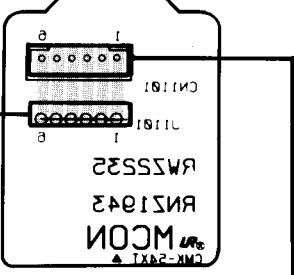
IC404
IC403
IC501
IC504

FRNT UNIT ONLY

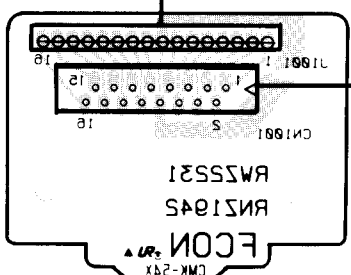




CDTX UNIT



MCON UNIT



FCON UNIT

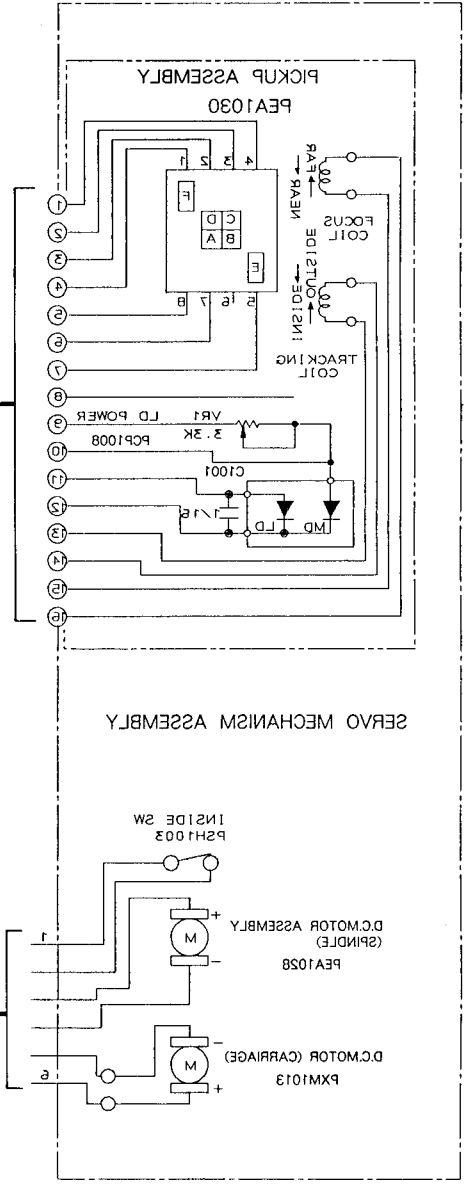
IC401 IC301 IC201 IC101
 0304 0305 0306 0307
 0301 0302 0303 0304 0305 0306 0307
 0401 0402 0403 0404 0405 0406 0407
 HB HE ONLY
 HEWZI ONLY
 HB HE EXCEPT
 VR401 VR402 VR403 VR404 VR405 VR406 VR407

No	MODE
1	FM\MM\LV
2	2.8
3	2.8
4	2.8
5	2.8
6	2.8
7	2.8
8	2.8
9	2.8
10	2.8
11	2.8
12	2.8
13	2.8
14	2.8
15	2.8
16	2.8

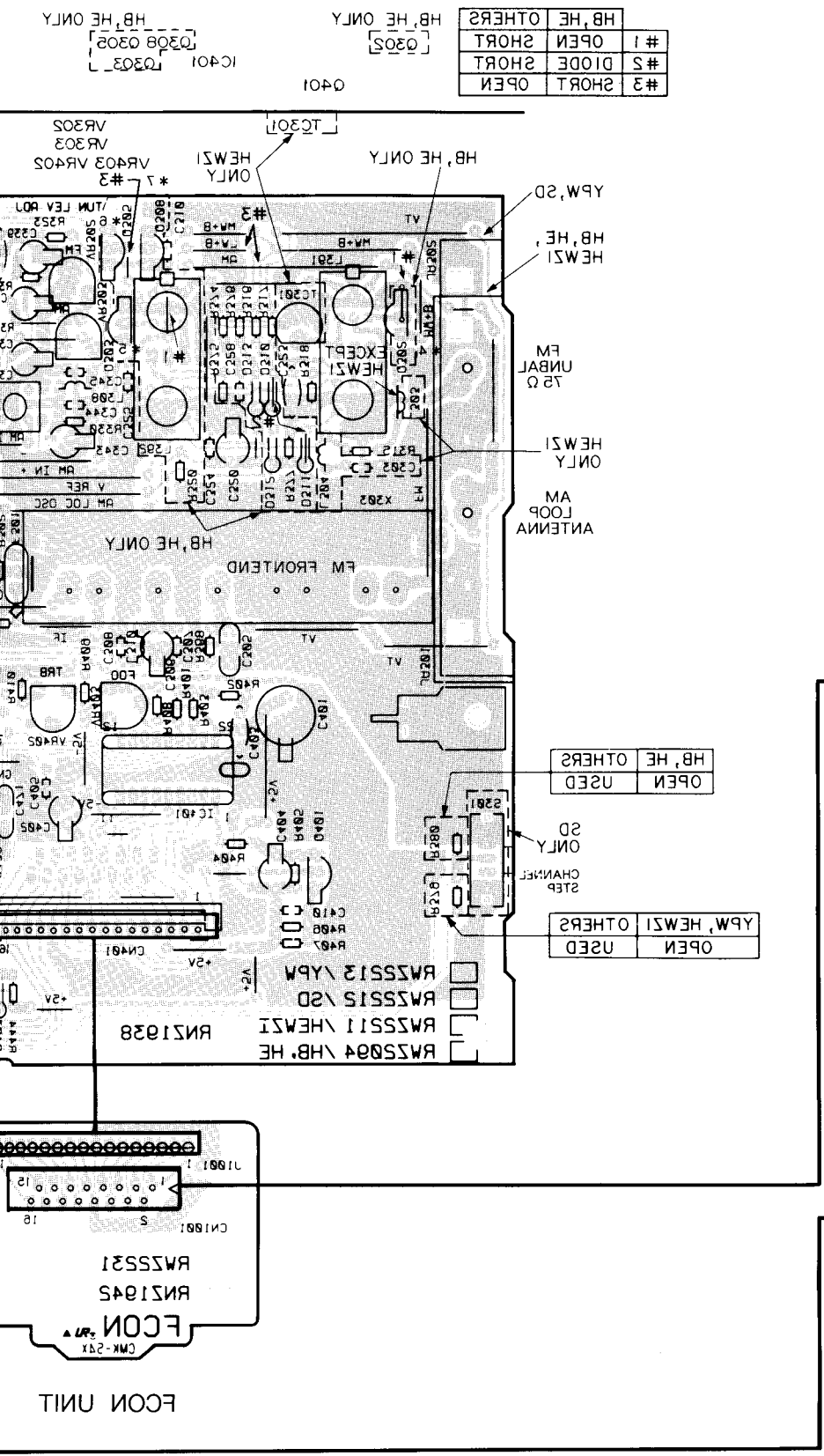
(Unit: V)

LV	int: V
11.8	
0	
11.8	

* 3
IC303
(AN1470P)



#1	OPEN	SHORT
#2	DIODE	SHORT
#3	SHORT	OPEN
HB, HE OTHERS		



OPEN	USED
HB, HE OTHERS	

OPEN	USED
YPW, HEW1	OTHERS

FCN UNIT

This P. C. B. connection di

* 1
IC301 (L74001) (Unit: V)

Pin No.	MODE	
	FM	WM
1	1.3	1.3
2	1.6	1.6
3	0.2	0.2
4	4.9	4.9
5	0.7	0.7
6	0	0
7	1.1	1.1
8	0.3(0.3)	0.3(0.3)
9	1.8	1.8
10	0	0
11	2.8	2.8
12	4.9	4.9
13	4.9	4.9
14	0.8	0.8
15	-	-
16	0	0

Note: Voltages of () indicates at mut tune.
M - NR/MONO switch to ON (at TUNED).

* 2
IC302 (LA1282) (Unit: V)

Pin No.	MODE	
	FM	WM
1	2.0	1.1
2	2.0	1.1
3	2.0	1.1
4	0	0
5	1.7	1.8
6	1.7	1.8
7	1.7	1.8
8	0.4(0)	0.4(0)
9	3.8	4.9
10	2.4	3.3
11	1.2	1.2
12	1.4	1.2
13	0.3	0
14	0.3	0
15	2.0	1.1
16	1.4	1.2
17	0	1.8
18	0	2.0
19	0	2.0
20	3.4	4.0
21	1.9	4.0
22	2.0	1.8

Note: Voltages of () indicates at mut tune.

* 4
IC305 (Unit: V)

Pin No.	MODE	
	FM	WM
B	0	1.8
C	1.0	0

* 5
IC303 (Unit: V)

Pin No.	MODE	
	FM	WM
B	0	0
C	0.3	0

* 10
IC311 (Unit: V)

Pin No.	MODE	
	FM	WM
B	1.8	1.8
C	0	1.8

* 8
IC302 (Unit: V)

Pin No.	MODE	
	FM	WM
B	1.8	1.8
C	0	1.8

* 7
IC308 (Unit: V)

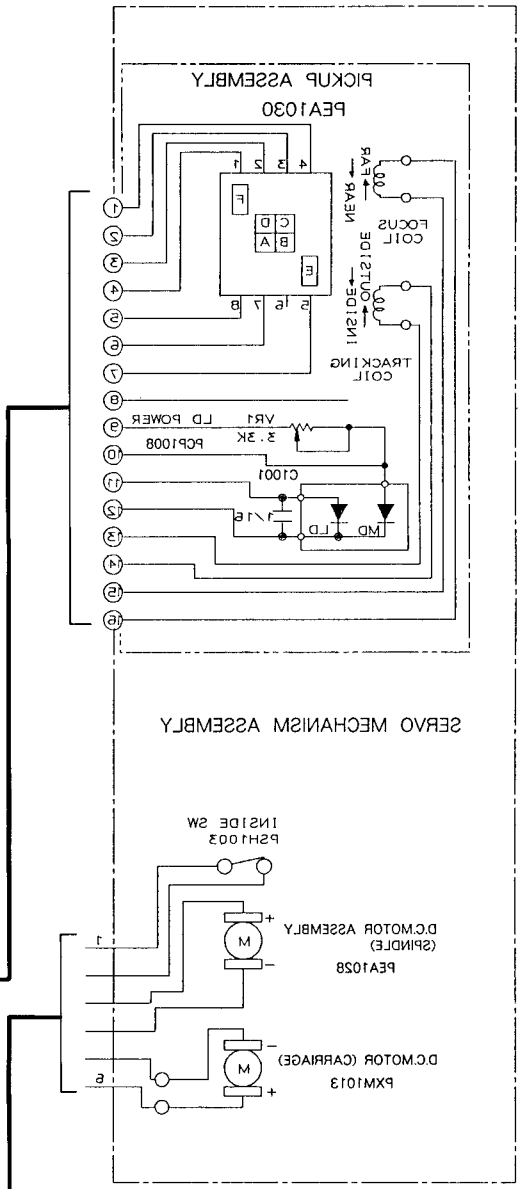
Pin No.	MODE	
	FM	WM
B	1.8	1.1
C	0	1.8

* 8
IC304 (Unit: V)

Pin No.	MODE	
	FM	WM
B	2.0	1.8
C	1.7	0

* 3
IC303 (AN1470P) (Unit: V)

Pin No.	MODE	
	FM	WM
1	1.1	1.1
2	6.0	6.0
3	8.9	8.9
4	8.9	8.9
5	4.5	4.5
6	4.5	4.5
7	0	0
8	4.7	4.7
9	2.8	2.8
10	2.8	2.8
11	2.8	2.8
12	2.8	2.8
13	2.8	2.8
14	2.8	2.8
15	2.8	2.8
16	1.1	1.1



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

A

B

C

D

5.2 XC-P410T type

* 1
IC301
(LM7001) (Unit : V)

Pin No.	MODE		
	FM	MW	LW
1	1.3	1.3	1.3
2	1.6	1.6	1.6
3	0.5	0.5	0.5
4	4.9	4.9	4.9
5	0.7	0.7	0.7
6	0	0	0
7	0.3(6.2)	0.3(8.3)	0.3(8.3)
8	11.8	1.1	11.8
9	11.8	11.8	1.2
10	0	0	0
11	2.8	2.8	2.8
12	4.9	4.9	4.9
13	4.9	4.9	4.9
14	0.8	0.8	0.8
15	-	-	-
16	0	0	0

Note: Voltages of () indicate at turn the AM · NR/MONO switch to ON (at TUNED).

* 2
IC302
(LA1265S) (Unit : V)

Pin No.	MODE		
	FM	MW	LW
1	2.0	1.1	1.1
2	2.0	1.1	1.1
3	2.0	1.1	1.1
4	0	0	0
5	11.7	11.8	11.8
6	11.7	11.8	11.8
7	11.7	11.8	11.8
8	0(4.9)	0(4.9)	0(4.9)
9	3.8	4.9	4.9
10	2.4	3.3	3.3
11	1.5	1.5	1.5
12	1.4	1.5	1.5
13	0.3	0	0
14	0.3	0	0
15	2.0	1.1	1.1
16	1.4	1.5	1.5
17	0	11.8	11.8
18	0	2.0	2.0
19	0	2.0	2.0
20	3.4	4.0	4.0
21	1.9	4.0	4.0
22	2.0	1.8	1.8

Note: Voltages of () indicate at not tuned.

* 3
IC303
(AN7470P) (Unit : V)

Pin No.	MODE
	FM/MW/LW
1	11.1
2	2.6
3	6.0
4	8.9
5	8.9
6	4.2
7	4.2
8	0
9	4.7
10	2.6
11	2.6
12	2.6
13	2.6
14	2.6
15	2.8
16	5.7/11.2/11.2

(Unit : V)

* 4
Q302 (Unit : V)

	FM	MW	LW
C	1.0	0	0
B	0	11.8	0

* 5
Q303 (Unit : V)

	FM	MW	LW
C	-0.3	0	0
B	0	0	11.8

* 6
Q305 (Unit : V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	0	11.8
B	11.6	11.8	1.2

* 7
Q308 (Unit : V)

	FM	MW	LW
E	11.8	11.8	11.8
C	0	11.8	0
B	11.6	1.1	11.8

* 8
Q304 (Unit : V)

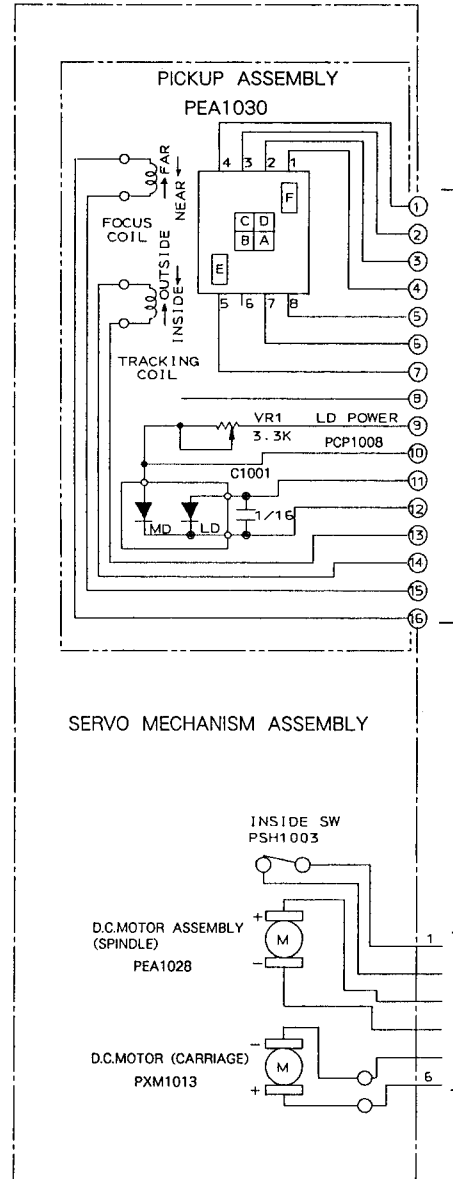
	FM	MW	LW
E	11.8	11.8	11.8
C	11.7	0	0
B	7.0	11.6	11.6

* 9
Q312 (Unit : V)

	FM	MW	LW
E	11.8	1.8	1.8
C	0	11.8	11.8
B	11.8	11.8	11.8

* 10
Q311 (Unit : V)

	FM	MW/LW (NR OFF)	MW/LW (NR ON)
C	0	0	0
B	6.2	0.3	8.4



HB, H
OPEN

YPW, HEW
OPEN

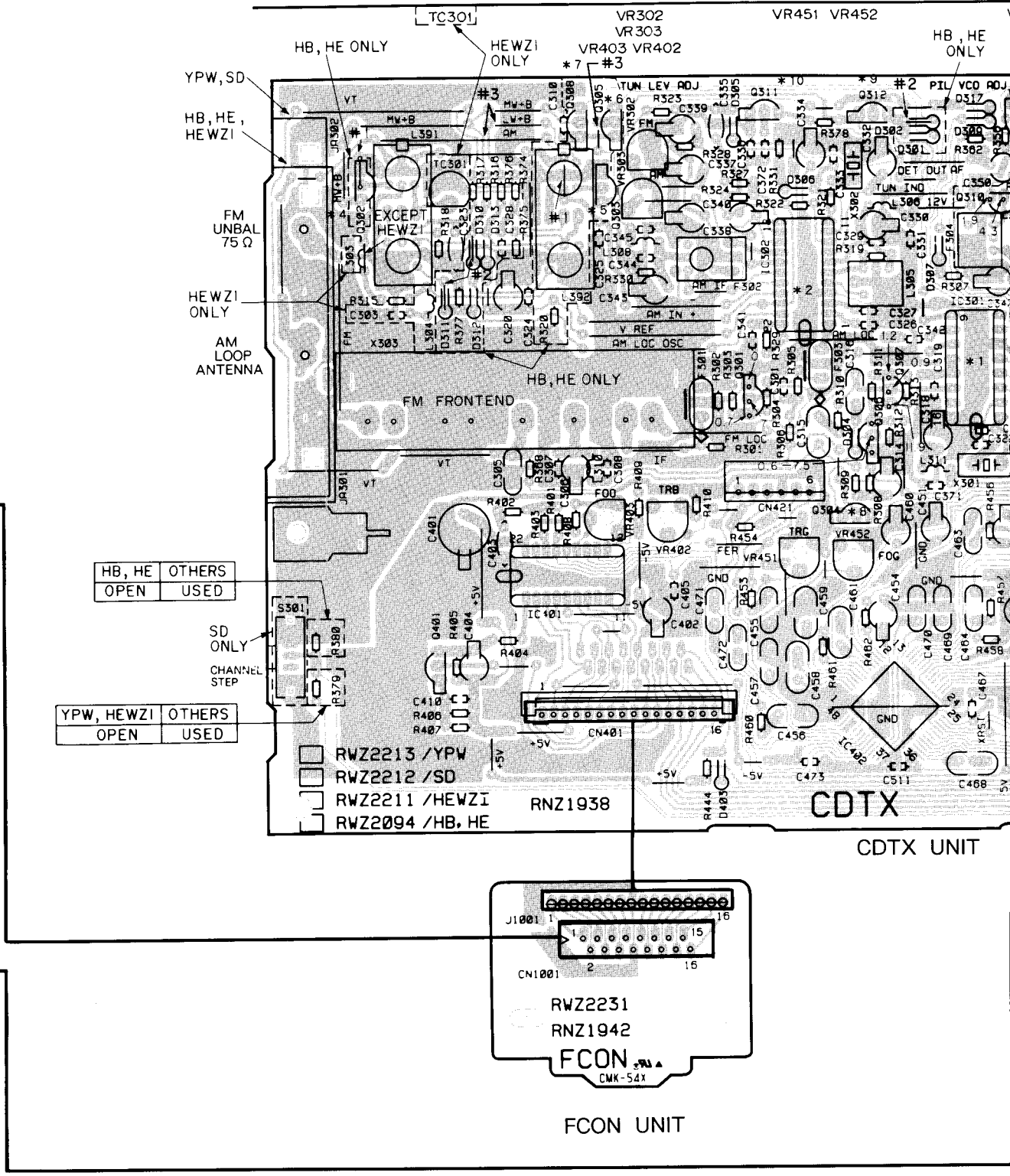
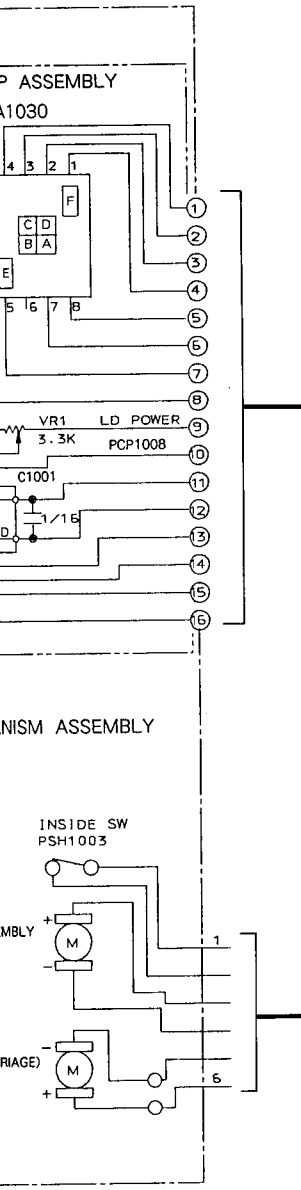
	HB, HE	OTHERS
#1	OPEN	SHORT
#2	DIODE	SHORT
#3	SHORT	OPEN

HB, HE ONLY
[Q302]

HB, HE ONLY
[Q308 Q305]
[Q303]

Q311 IC302 Q312
Q301 Q307
Q306
Q304 IC402

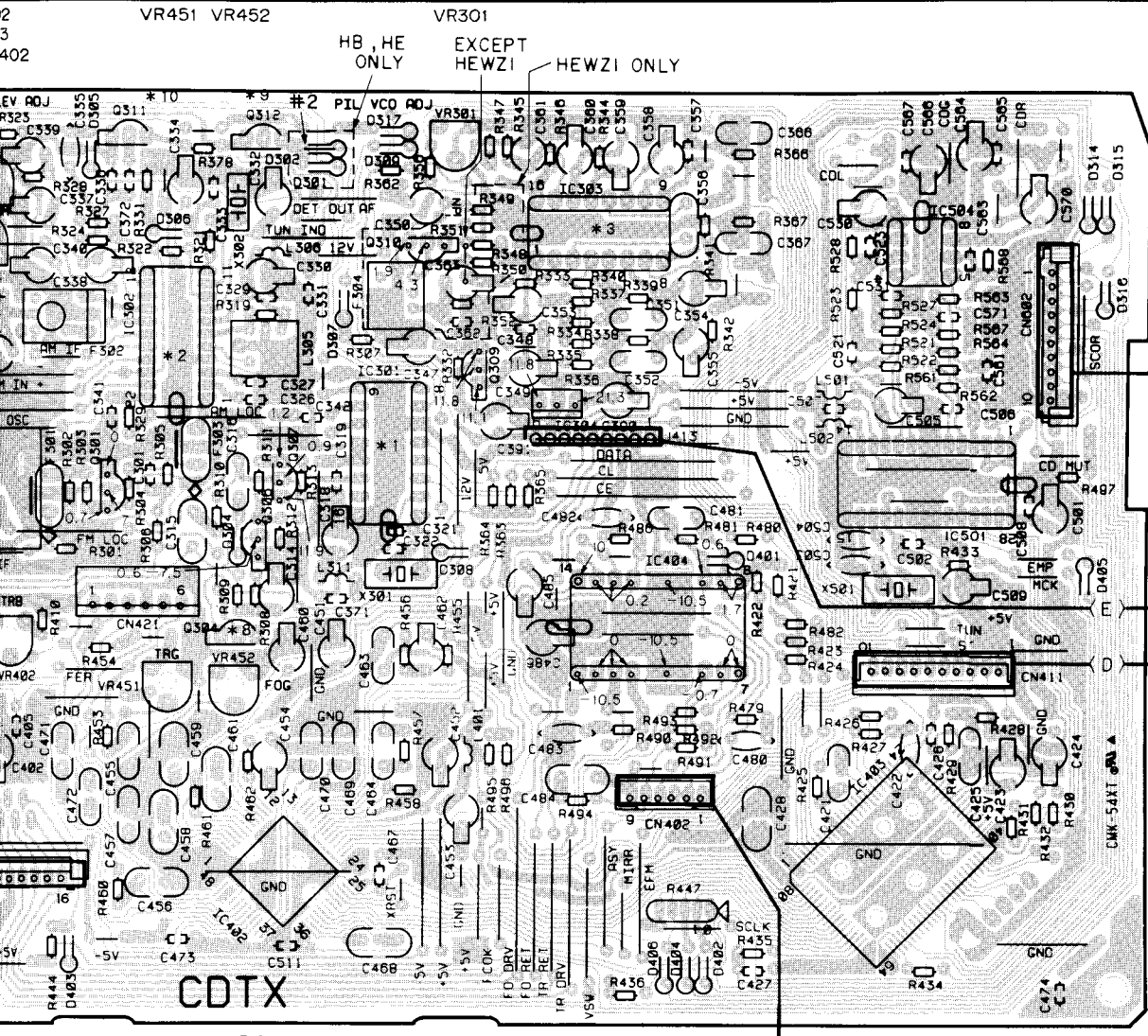
HEWZI ONLY
[Q310]
IC301



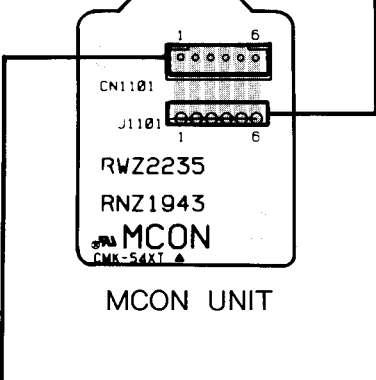
HB, HE	OTHERS
OPEN	USED

Y PW, HEWZI	OTHERS
OPEN	USED

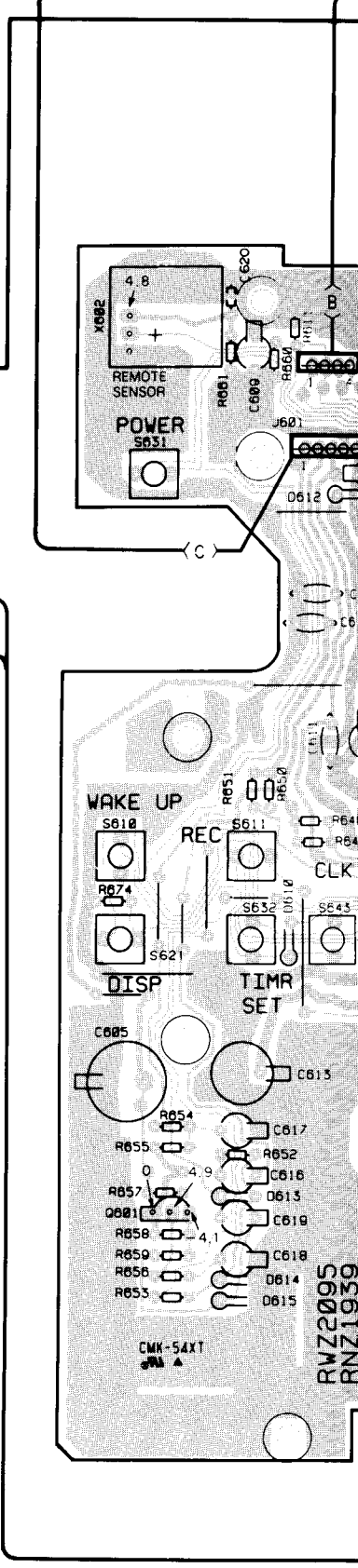
HEWZI ONLY
 [Q310]
 Q311 IC302 Q312 IC303 IC504
 Q301 Q307 IC304 IC404 IC501
 Q306 Q309 IC403 IC404 IC403
 Q304 IC402

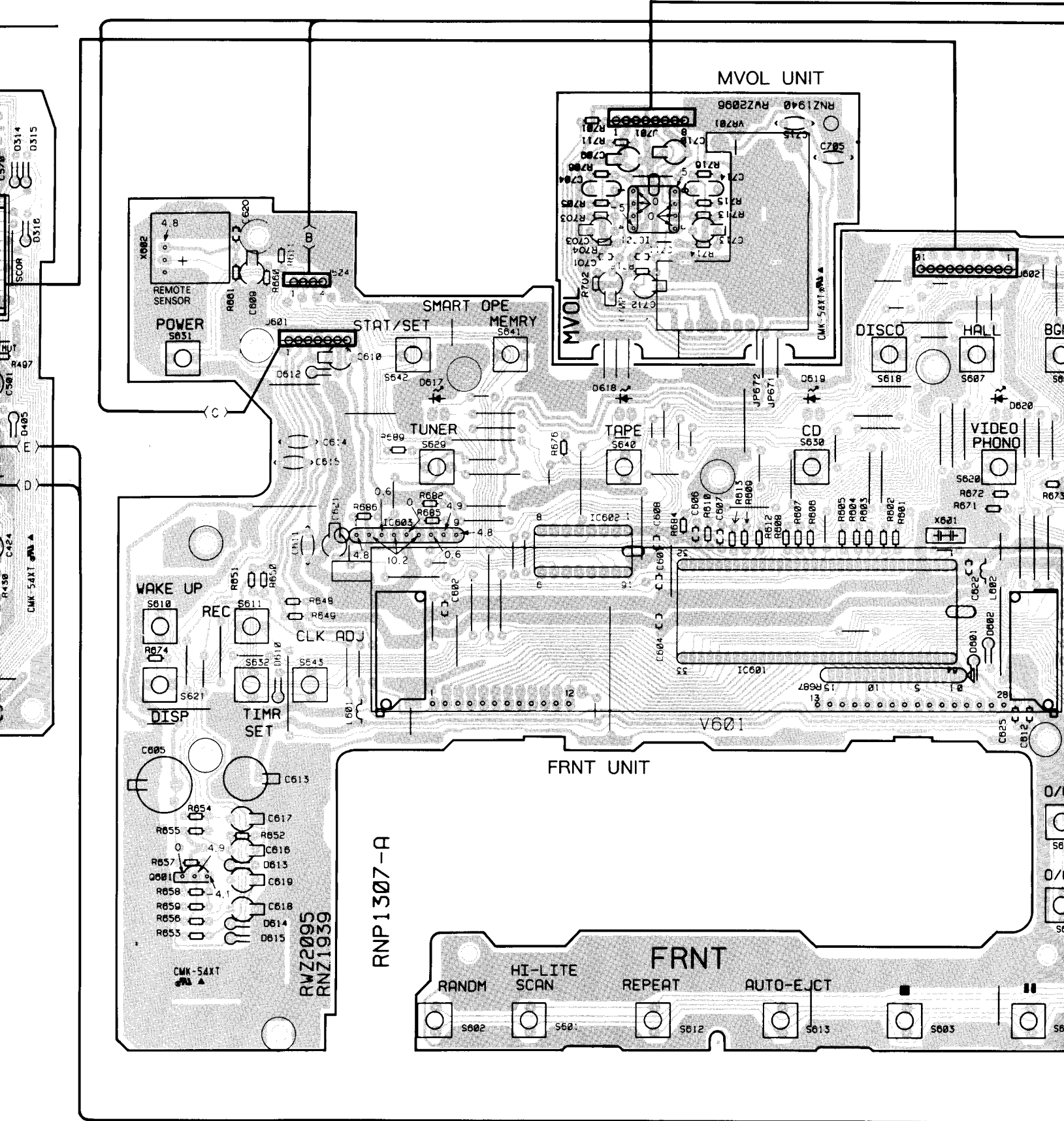


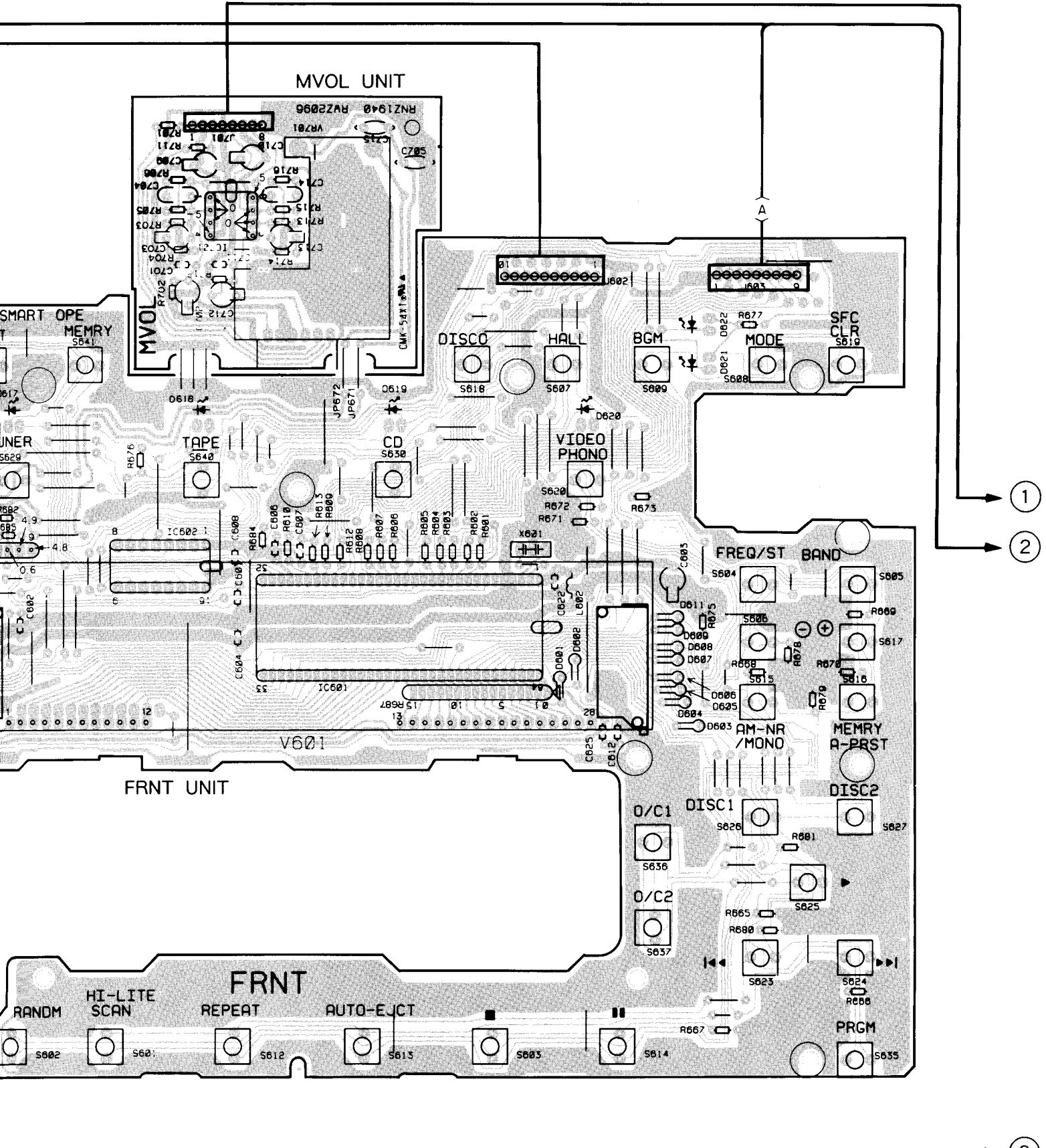
CDTX UNIT



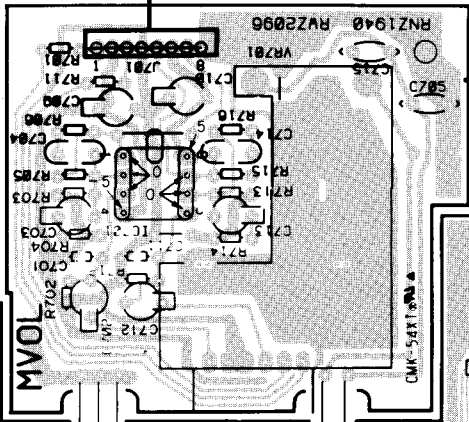
MCON UNIT







MVOL UNIT



FRNT UNIT

FRNT

1
2

3

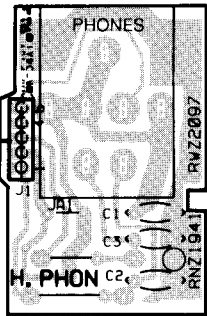
1

2

3

MAIN UNIT (HE,HB,HEWZI TYPES)

H. PHONE UNIT



IC213
Q204
Q203
Q202
Q205
Q207
Q208 Q111
Q206 Q104

Q114

IC102

Q101

Q103

Q113

IC206

IC209

IC208

IC101

IC207

Q107

IC103

IC205

Q105

IC211

IC212

IC201

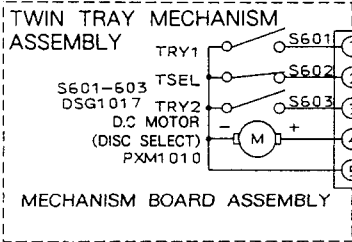
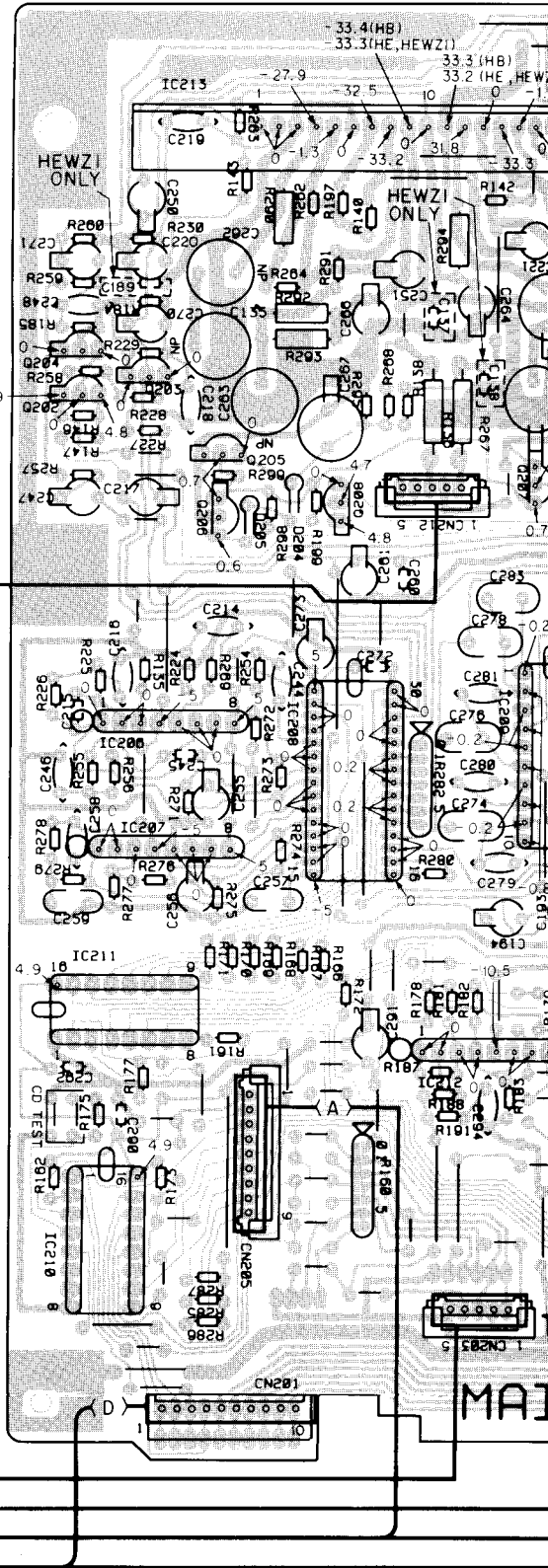
IC210

Q109

IC203

Q108

Q110



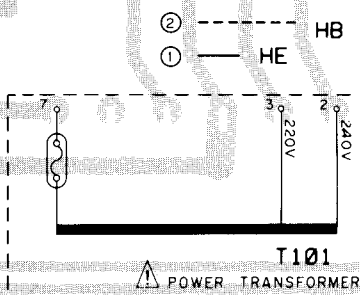
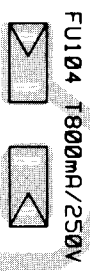
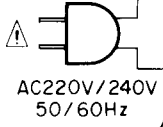
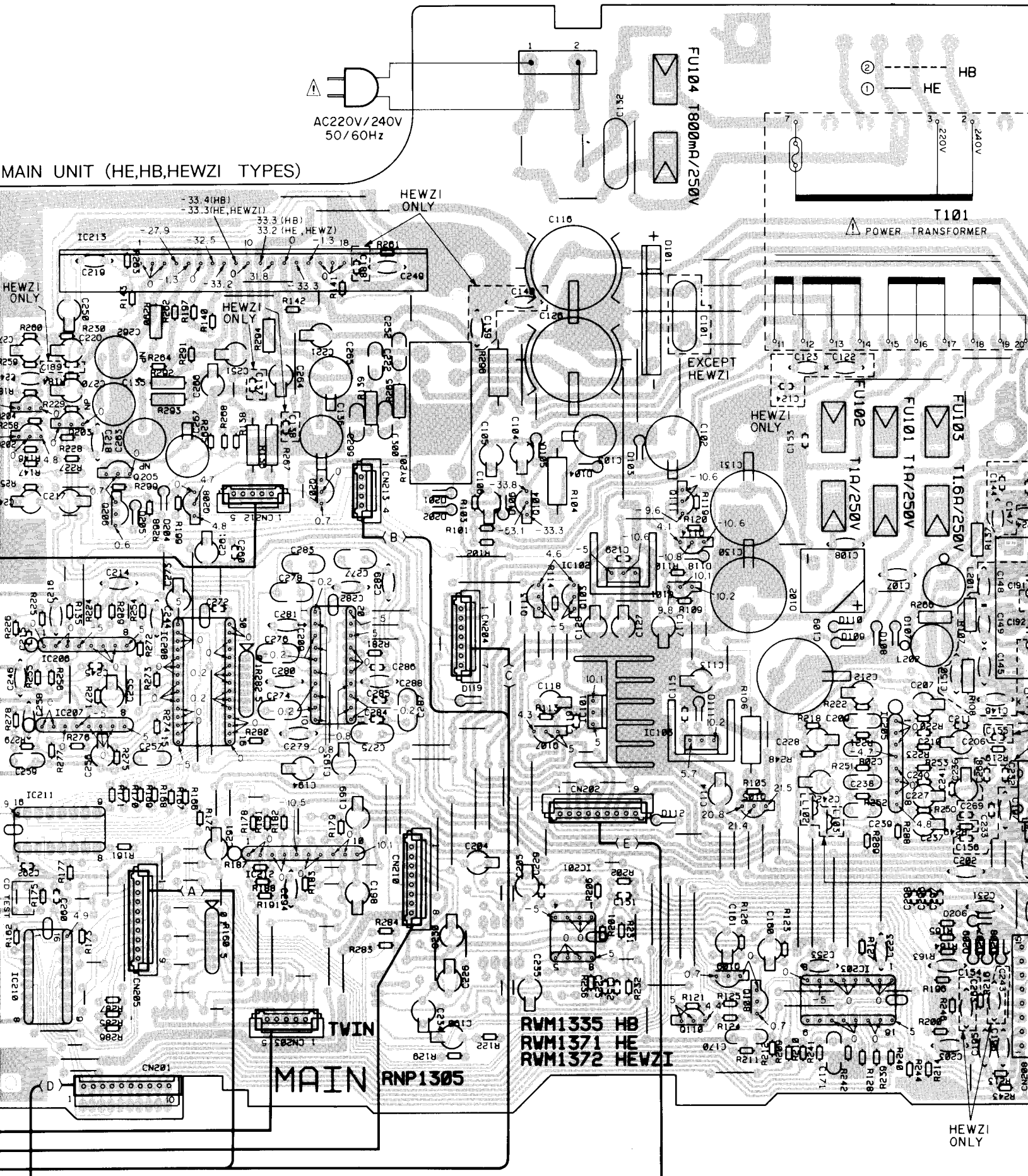
1

2

3

4

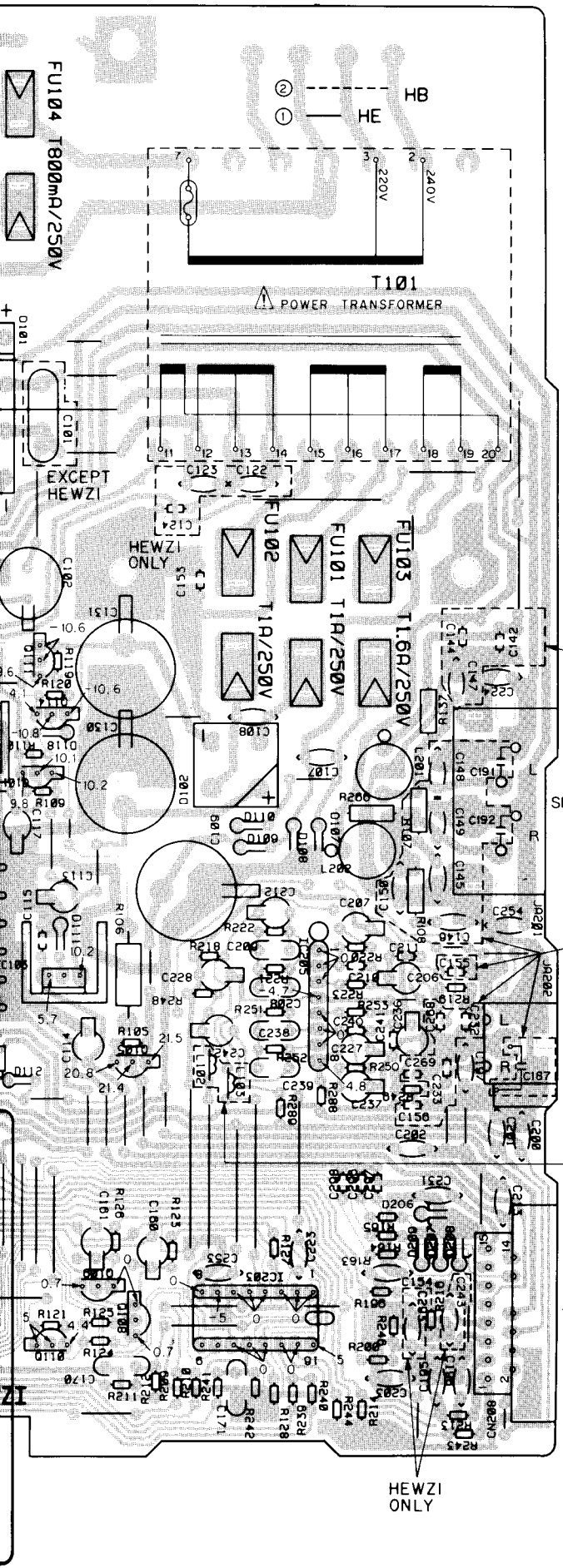
MAIN UNIT (HE,HB,HEWZI TYPES)



RVM1335 HB
RVM1371 HE
RVM1372 HEWZI

RNP1305
MAIN

HEWZI ONLY



LINE VOLTAGE SELECTION FOR HE, HB, AND HEWZI TYPES

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the jumper wire as follows (Refer to the MAIN unit).

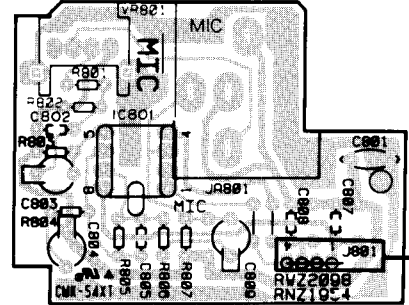
Voltage	Jumper wire position
220V	①
240V	②

4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

HEWZI	HB, HE
L102, 103	JUMPER WIRE
USED	

MIC UNIT (SD,YPW TYPES ONLY)



- IC213
- Q204
- Q203
- Q202
- Q205
- Q207
- Q208 Q111
- Q206 Q104
- Q114
- IC102
- Q101
- Q103
- Q113
- IC206
- IC209
- IC208
- IC101
- IC207
- Q107
- IC103
- Q105
- IC211
- IC212
- IC201
- IC202
- IC210
- Q109
- IC203
- Q108
- Q110

CTION FOR HE, HB, AND

ged with the following steps.
wer cord.

f the jumper wire as follows
nit).

①
②

label on the rear panel.

- No.
- 193
- 192

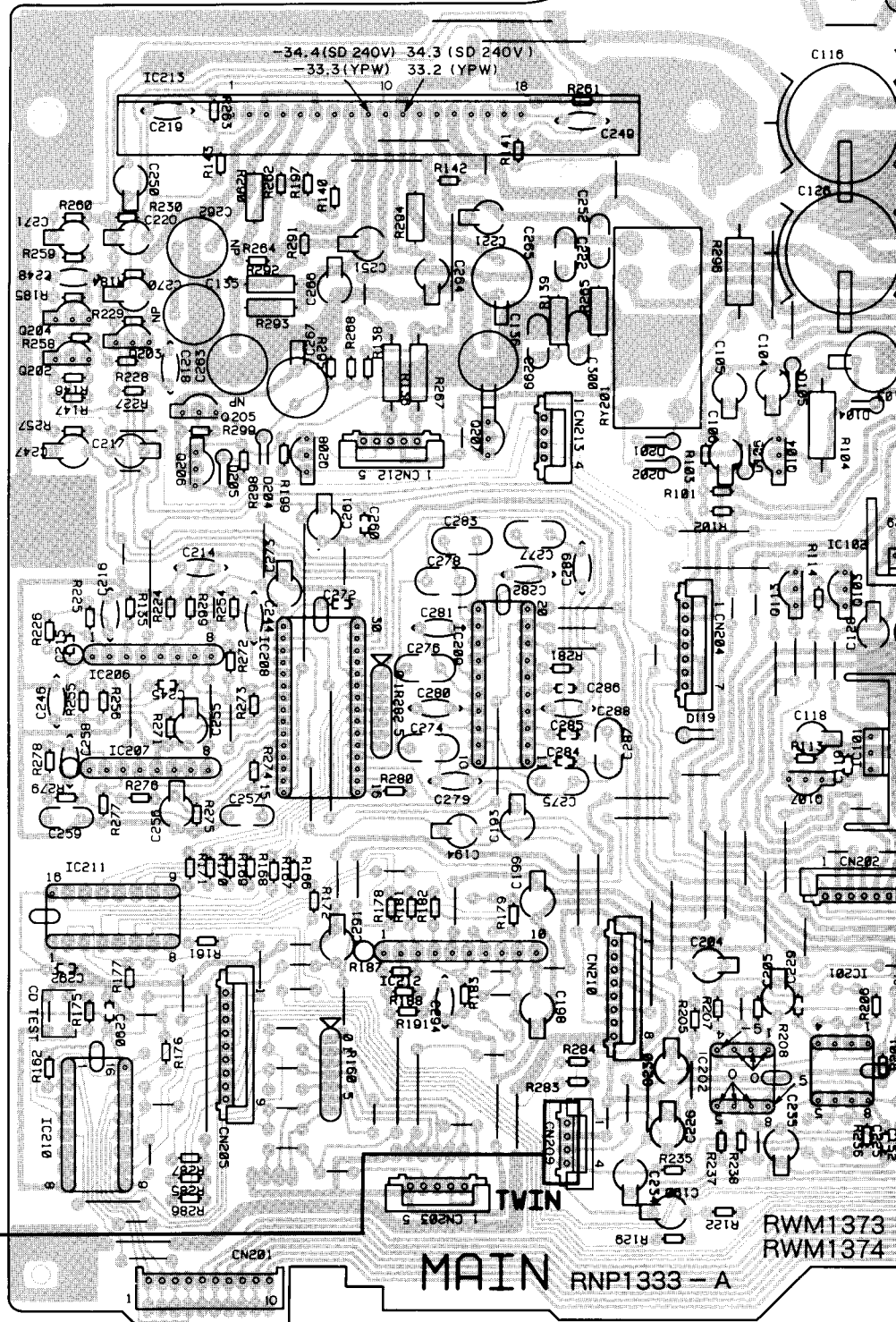
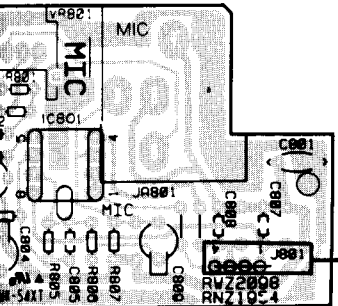
(SD TYPE)
AC110V, 120 - 127V,
220V, 240V
50/60Hz

(YPW TYPE)
AC220V, 240V
50/60Hz

MAIN UNIT (SD, YPW TYPES)

- IC213
- Q204
- Q203
- Q202
- Q205
- Q207
- Q208 Q111
- Q206 Q104
- Q114
- IC102
- Q101
- Q103
- Q113
- IC206
- IC209
- IC208
- IC101
- IC207
- Q107
- IC103
- Q105
- IC211
- IC212
- IC201
- IC202
- IC210
- Q109
- IC203
- Q108
- Q110

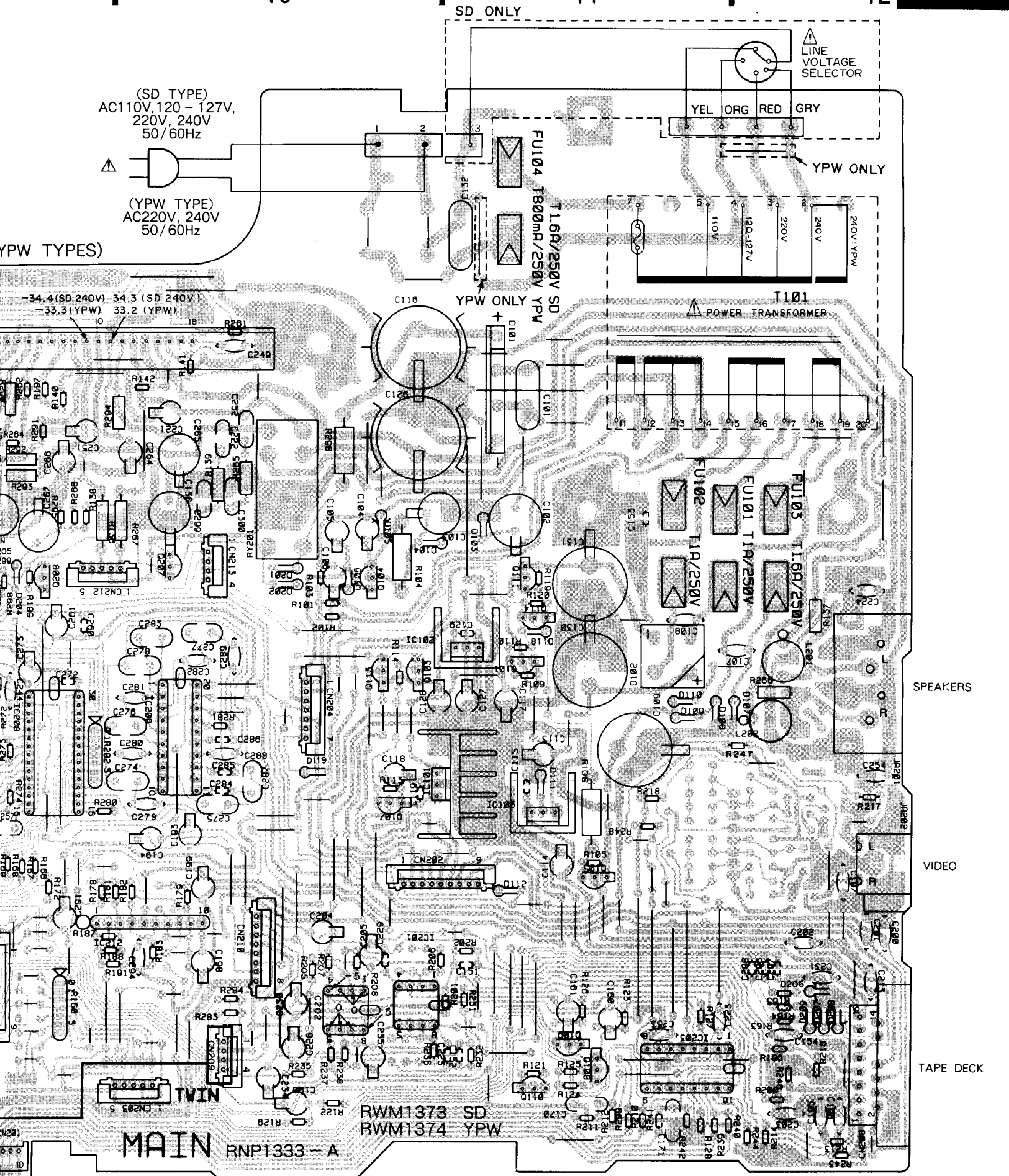
C UNIT (SD, YPW TYPES ONLY)



10

11

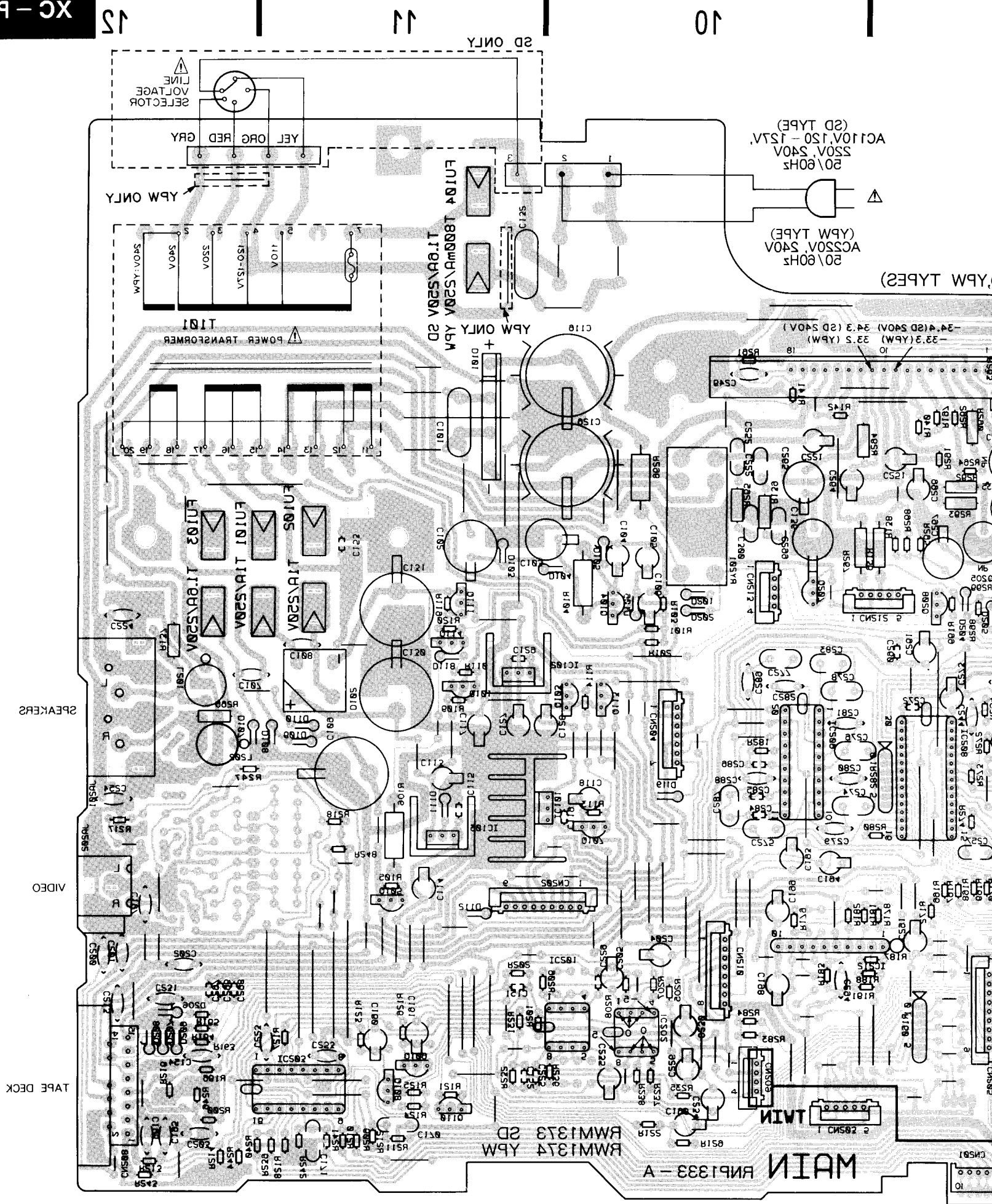
12



10

11

12



TAP DECK

VIDEO

SPEAKERS

YPW ONLY

2D ONLY

MAIN RNP133 - A

RWMI374 YPW

RWMI373 2D

POWER TRANSFORMER

SELECTOR VOLTAGE

YEL ORG RED GRAY

YPW ONLY

2D ONLY

TWIN

TAP

VIDEO

SPEAKERS

TAP DECK

VOLTAGE SELECTION FOR HE, HB, AND I TYPES

oltage can be changed with the following steps.
connect the AC power cord.
ove the top cover.
nge the position of the jumper wire as follows
ter to the MAIN unit).

Voltage	Jumper wire position
230V	①
240V	②

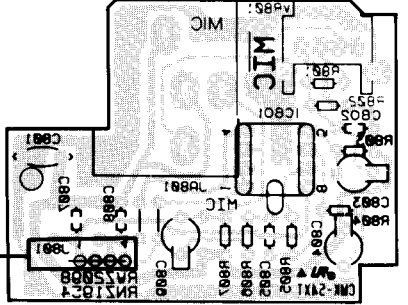
Make the line voltage label on the rear panel.

Description	Part No.
230V label	AAx-193
240V label	AAx-192

Make the line voltage label on the rear panel.

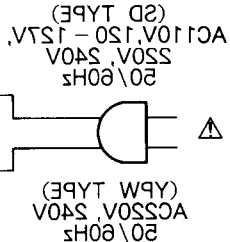
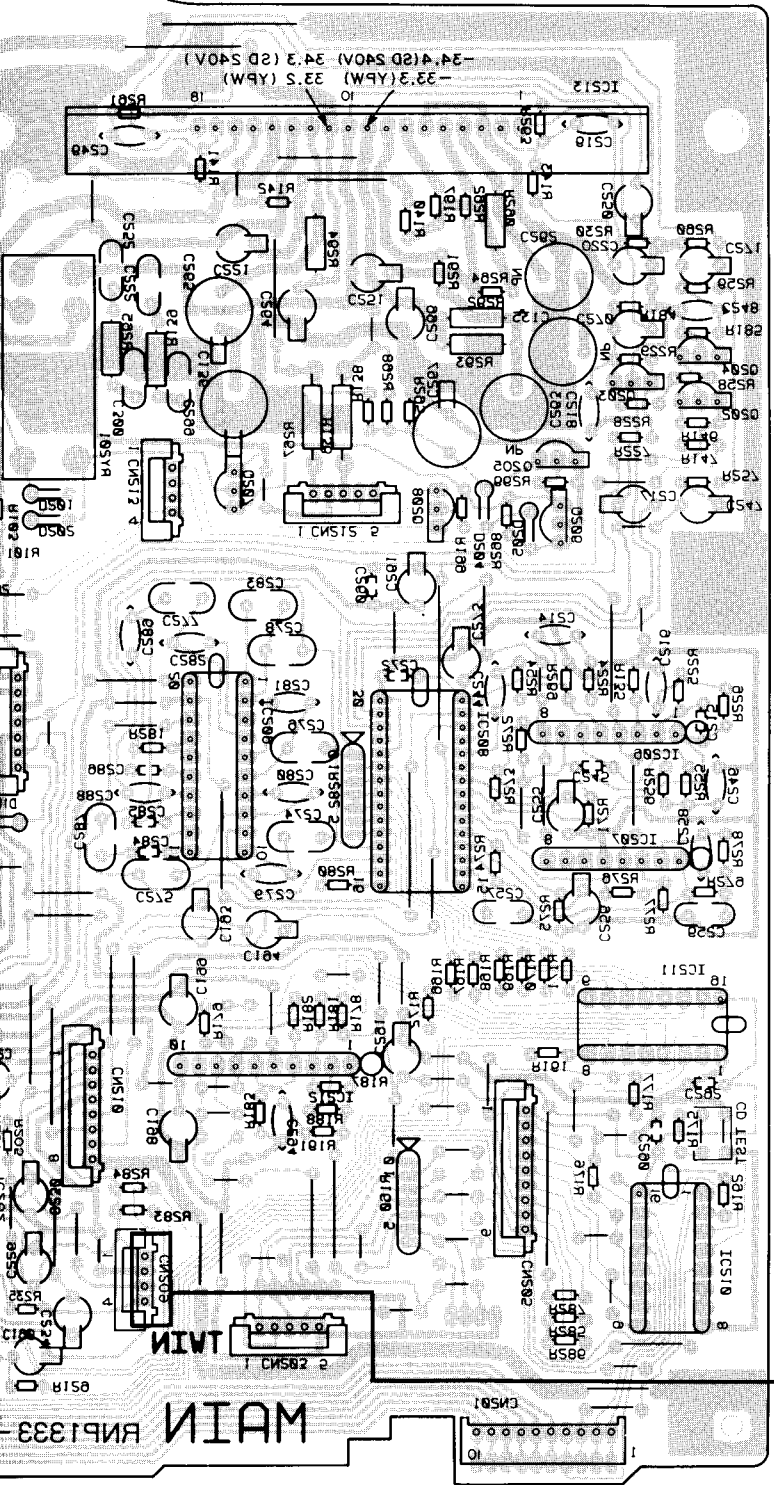
WIRE NUMBER	HE, HB
010	
011	
012	
013	
014	
015	
016	
017	
018	
019	
020	
021	
022	
023	
024	
025	
026	
027	
028	
029	
030	
031	
032	
033	
034	
035	
036	
037	
038	
039	
040	
041	
042	
043	
044	
045	
046	
047	
048	
049	
050	
051	
052	
053	
054	
055	
056	
057	
058	
059	
060	
061	
062	
063	
064	
065	
066	
067	
068	
069	
070	
071	
072	
073	
074	
075	
076	
077	
078	
079	
080	
081	
082	
083	
084	
085	
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087	
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091	
092	
093	
094	
095	
096	
097	
098	
099	
100	

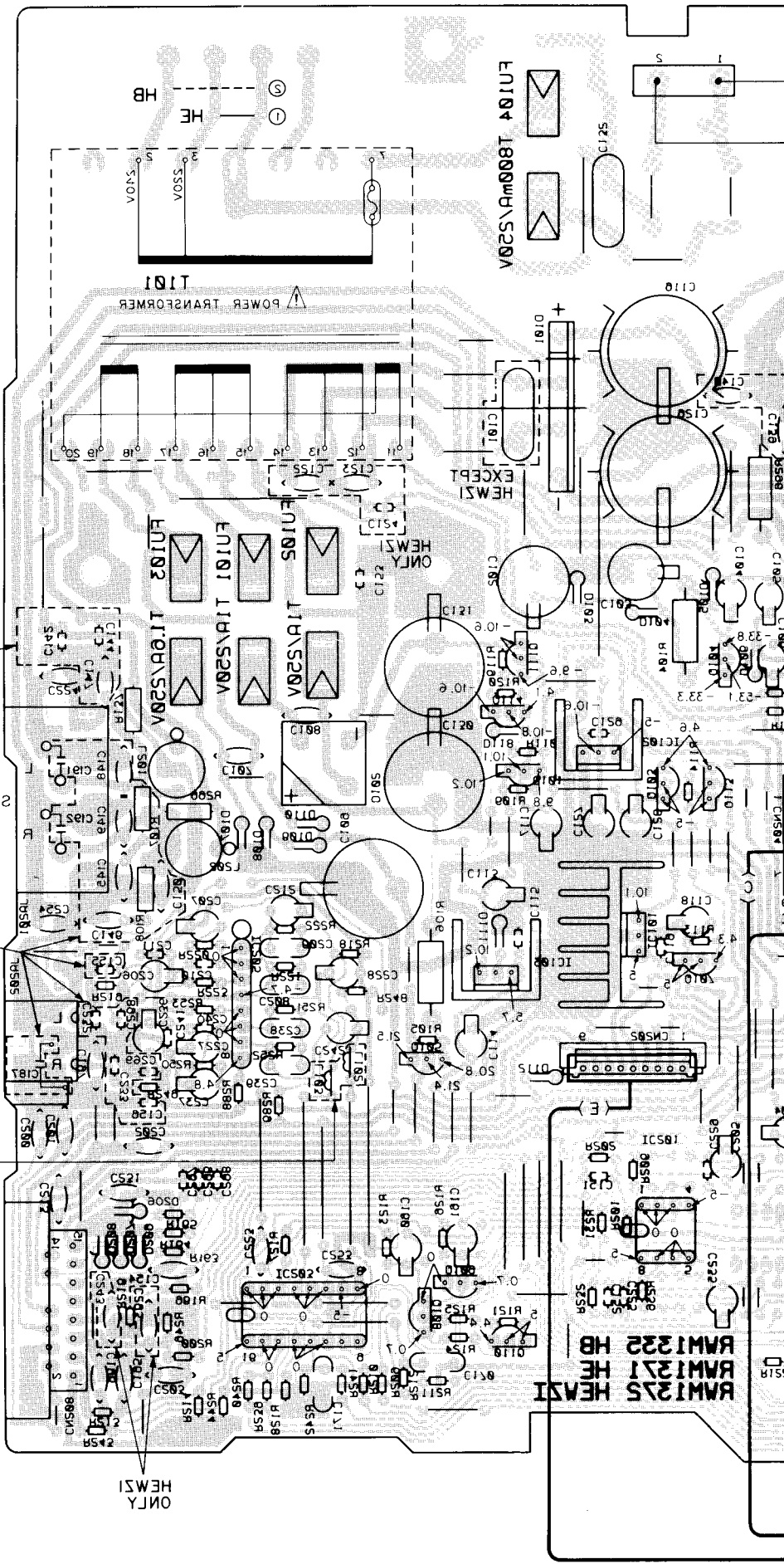
MIC UNIT (2D,YPW TYPES ONLY)



- IC513
- Q504
- Q503
- Q505
- Q508
- Q507
- Q508 Q111
- Q506 Q104
- Q114
- IC105
- Q101
- Q103
- Q113
- IC508
- IC508
- IC508
- IC508
- IC101
- IC507
- Q107
- IC103
- Q102
- Q109
- IC511
- IC515
- IC501
- IC505
- IC510
- Q108
- IC503
- Q108
- Q110

MAIN UNIT (2D,YPW TYPES)





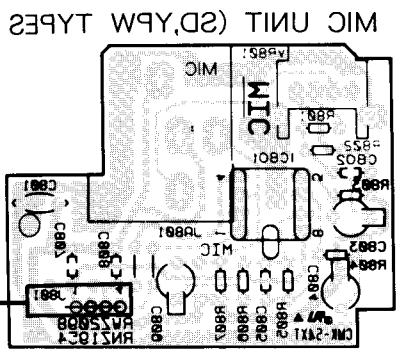
Voltage	Jumper wire position
220V	①
240V	②

Description	Part No.
220V label	AA-193
240V label	AA-192

4. Stick the line voltage label on the rear panel.

- (Refer to the MAIN unit.)
3. Change the position of the jumper wire as follows
 2. Remove the top cover.
 1. Disconnect the AC power cord.
- The line voltage can be changed with the following steps.

HEWZI TYPES LINE VOLTAGE SELECTION FOR HE, HB, AND

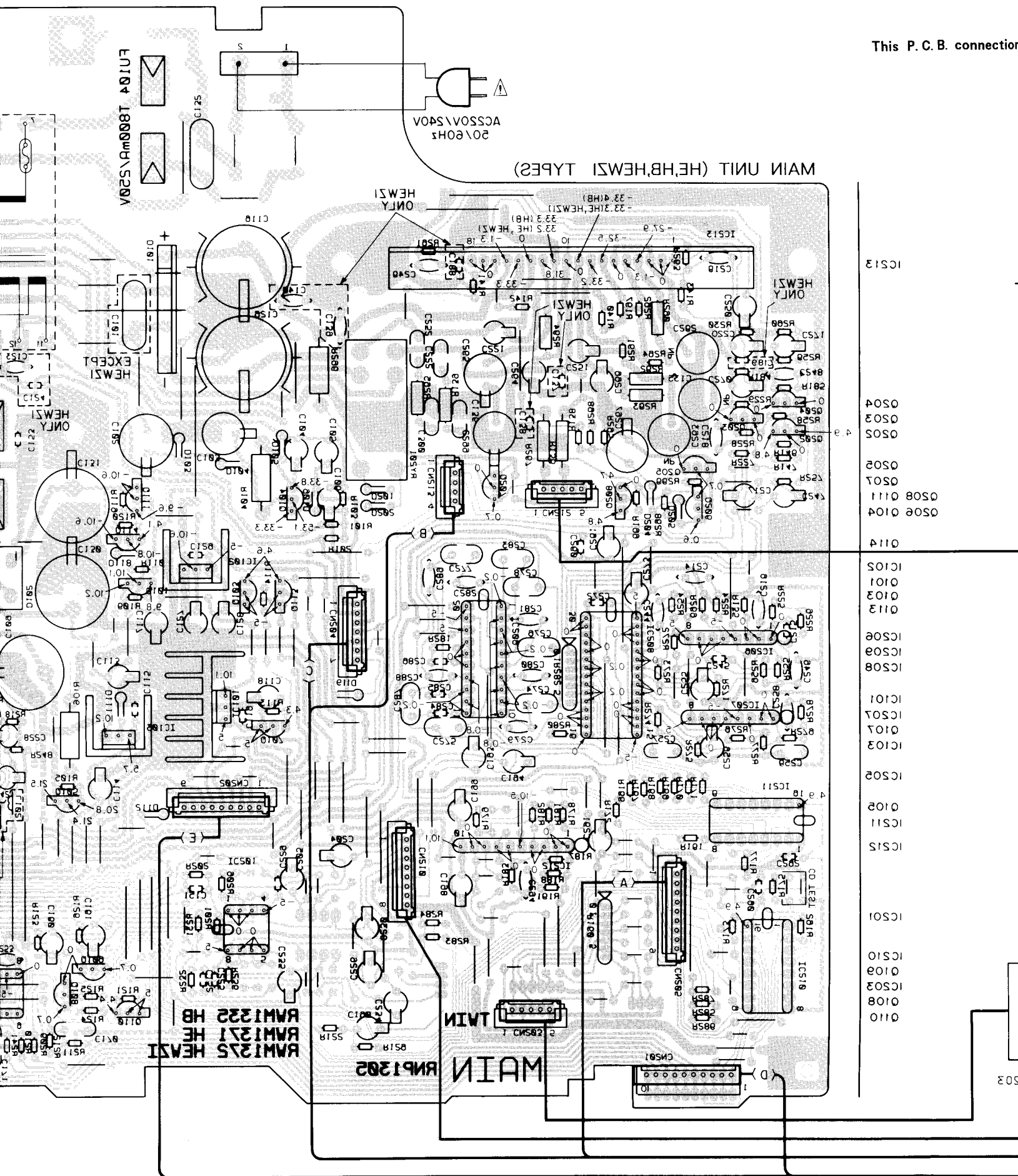


USED WIRE	HEWZI	HE, HB
L103, 103	HEWZI	HE, HB

TAPES DECK

RAM125 HEWZI
RAM121 HE
RAM122 HB

This P. C. B. connection



3

4

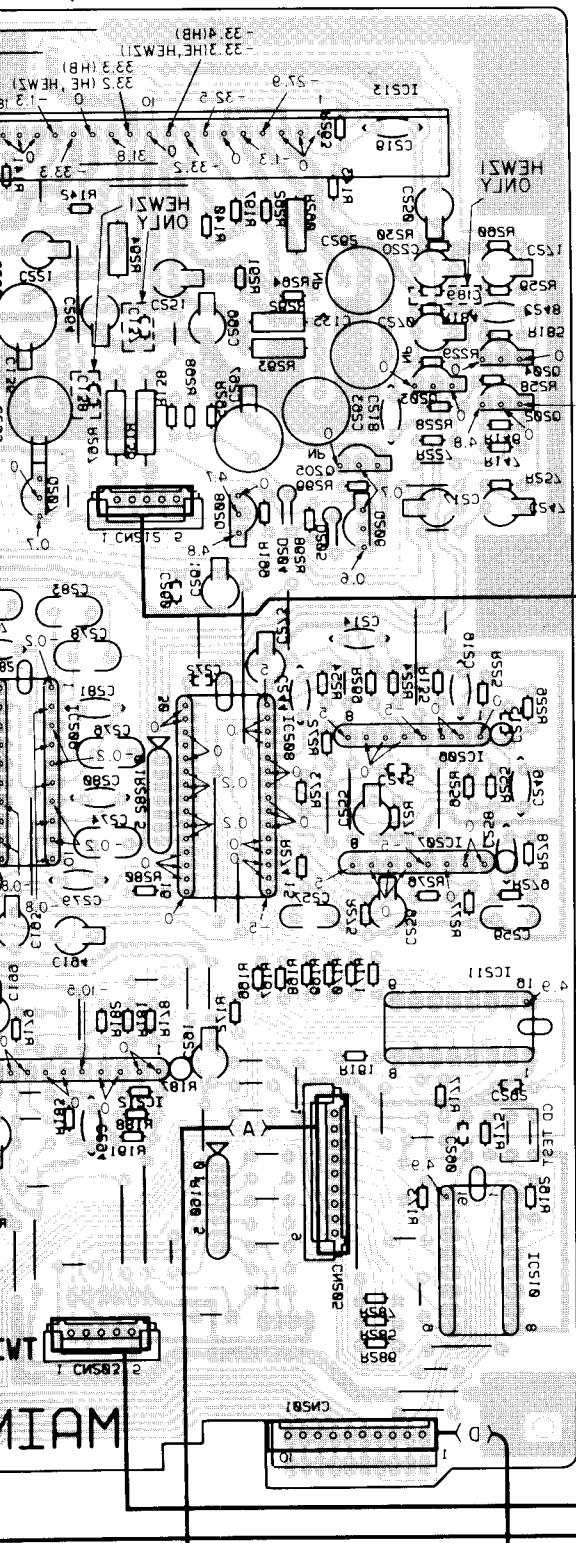
3

4

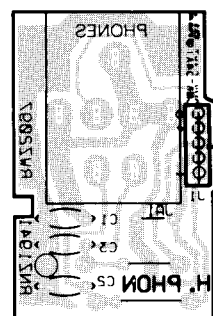
This P.C.B. connection diagram is viewed from the foil side.

20
ACCSA

MAIN UNIT (HE,H,B,HEWZ1 TYPES)

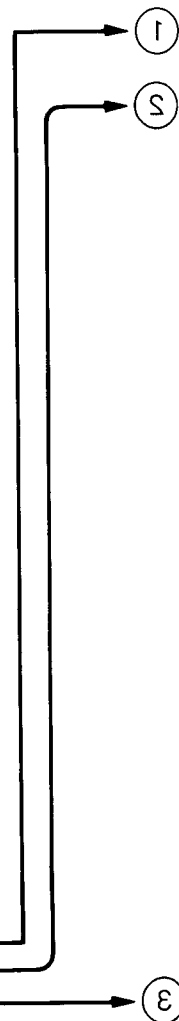
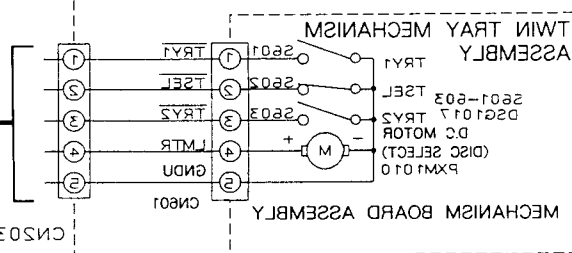


H.PHONE UNIT



- IC513
- 0504
- 0503
- 0505
- 0502
- 0507
- 0508 0111
- 0506 0104
- 0114

- IC105
- 0101
- 0103
- 0113
- IC508
- IC508
- IC508
- IC101
- IC507
- 0107
- IC103
- IC502
- 0102
- IC511
- IC515
- IC501
- IC510
- 0108
- IC503
- 0108
- 0110



6. P. C. B's PARTS LIST

6.1 XC-P410M

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 Ω → 56 × 10¹ → 561..... RD1/4PS 561J

47k Ω → 47 × 10³ → 473..... RD1/4PS 473J

0.5 Ω → 0R5 RN2H 0R5K

1 Ω → 010 RS1P 010K

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

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

Mark	NO	Description	Part NO.
------	----	-------------	----------

LOADING BOARD ASSEMBLY

SWITCHES

	S601, 602	PUSH SWITCH (LPS (1,2))	DSG1016
--	-----------	----------------------------	---------

SELECT BOARD ASSEMBLY

SWITCHES

	S603-606	PUSH SWITCH (MZS (1,2),DCHM,DCNT)	DSG1016
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MOTOR BOARD ASSEMBLY

There is not supplied parts in this unit.

MAIN UNIT

SEMICONDUCTORS

Δ	IC101	REGULATOR IC	NJM78M05FA
Δ	IC102	REGULATOR IC	NJM79M05FA
Δ	IC103	REGULATOR IC	NJM78M05FA
	IC201	OP-AMP IC	BA15218
	IC203	LOGIC IC	BU4052B
(#5)	IC205	IC	BA15218N
	IC206, 207	IC	BA15218N
	IC208		PA0049
	IC209	GEQ IC	LA3607
	IC210	LOGIC IC	TC4051BP
	IC211	LOGIC IC	BU2040
Δ	IC212		TA8410AK(V18)
Δ	IC213	AUDIO IC	STK4142-2GP
Δ	Q101	TRANSISTOR	2SA1286
	Q103	TRANSISTOR	DTC124ES
Δ	Q104	TRANSISTOR	2SA1283
Δ	Q105	TRANSISTOR	2SA1287
Δ	Q107	TRANSISTOR	2SA1286
	Q108, 109	TRANSISTOR	2SD2144S
	Q110	TRANSISTOR	2SA933S

Mark	NO	Description	Part NO.
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Δ	Q111	TRANSISTOR	2SC3246
	Q113	DIGITAL TRANSISTOR	DTC143XS
	Q114	TRANSISTOR	DTC124ES
	Q202	TRANSISTOR	2SA933S
	Q203, 204	TRANSISTOR	2SD2144S
	Q205	TRANSISTOR	2SC1740S
	Q206	TRANSISTOR	2SA933S
Δ	Q207	TRANSISTOR	2SC1741AS
	Q208	TRANSISTOR	DTA124ES
Δ	D101		D3SBA20
Δ	D102		S2VB20
Δ	D103, 104	DIODE	1SR139-100
Δ	D105	ZENER DIODE	MTZJ33B
Δ	D106	ZENER DIODE	MTZ10B
Δ	D107-110	DIODE	1SR139-100
	D111	DIODE	1SS254
Δ	D112	DIODE	1SR139-100
	D118	DIODE	1SS254
	D119	DIODE	1SR139-100
	D201, 202	DIODE	1SS254
	D204, 205	DIODE	1SS254
	D206-208	ZENER DIODE	MTZ8. 2B
	D209	DIODE	1SS254

RELAY

Δ	RY201	RELAY	ASR1005
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COILS

(#3)	L102, 103	AXIAL INDUCTOR	LAU2R2M
(#4)	L201, 202	COIL	ATH-133
(#3)	L201, 202	COIL	ATH-059

CAPACITORS

(#4) Δ	C101	CAPACITOR (CERAMIC) (0. 01 μF)	RCG-009
Δ	C102	ELECTROLYTIC CAPACIT (47/100)	RCH1051
	C103	ELECTROLYTIC CAPACIT	CEAS330M100

Note : (# 1) HE and HB types	(# 3) HEWZI type	(# 5) HE,HB and HEWZI types
(# 2) KU and KC types	(# 4) HE,HB,KU and KC types	

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	C104-106	ELECTROLYTIC CAPACIT	CEAS330M35		C200, 201	CERAMIC CAPACITOR	CKCYF473Z50
	C107, 108	CERAMIC CAPACITOR	CKCYF103Z250		C202	CERAMIC CAPACITOR	CKCYF103Z50
△	C109	ELECTR. CAPACITOR	CEAS332M35		C203	CERAMIC CAPACITOR	CKCYF473Z50
	C113	ELECTR. CAPACITOR	CEAS100M50		C204, 205	ELECTR. CAPACITOR	CEAS010M50
	C114	ELECTR. CAPACITOR	CEAS470M10	(#5)	C206	ELECTR. CAPACITOR	CEAS010M50
	C115	CERAMIC CAPACITOR	CKPUYF103Z225	(#5)	C207	ELECTR. CAPACITOR	CEAS100M50
(#5) △	C116	ELECTROLYTIC CAPACIT (2200/42)	ACH1140	(#5)	C208	MYLOR FILM CAPACITOR	CQMA152J50
(#2) △	C116	ELECTROLYTIC CAPACIT (3300/42)	RCH1050	(#5)	C209	MYLOR FILM CAPACITOR	CQMA562J50
	C117	ELECTR. CAPACITOR	CEAS100M50	(#5)	C210, 211	AXIAL CAPACITOR	CKPUYB101K50
	C118	ELECTR. CAPACITOR	CEAS470M10	(#5)	C212	ELECTR. CAPACITOR	CEAS010M50
	C119	CERAMIC CAPACITOR	CKPUYF103Z225		C213	CERAMIC CAPACITOR	CKCYF103Z50
(#3)	C122, 123	CERAMIC CAPACITOR	CKCYF103Z50		C214	CERAMIC CAPACITOR	CKCYB682K50
(#3)	C124	CERAMIC CAPACITOR	CKPUYF103Z225		C215	CERAMIC CAPACITOR	CKPUYB102K50
	C126	ELECTROLYTIC CAPACIT (2200/42)	ACH1140		C216	CERAMIC CAPACITOR	CKCYB562K50
(#2) △	C126	ELECTROLYTIC CAPACIT (3300/42)	RCH1050		C217	ELECTR. CAPACITOR	CEAS2R2M50
	C127	ELECTR. CAPACITOR	CEAS100M50		C218	CERAMIC CAPACITOR	CKCYB122K50
	C128	ELECTR. CAPACITOR	CEAS470M10		C219	CERAMIC CAPACITOR	CCCSL470J50
	C129	CERAMIC CAPACITOR	CKPUYF103Z225		C220	ELECTR. CAPACITOR	CEAS101M10
△	C130	ELECTROLYTIC CAPACIT	CEAS682M16	(#4)	C221	ELECTR. CAPACITOR	CEAS101M25
△	C131	ELECTROLYTIC CAPACIT	CEAS472M16	(#3)	C222	MYLOR FILM CAPACITOR	CQMA104K50
△	C132	CAPACITOR (CERAMIC) (0. 01 μF)	RCG-009		C223	CERAMIC CAPACITOR	CKCYF103Z50
	C135	ELECTROLYTIC CAPACIT	CEANP470M50		C224	CERAMIC CAPACITOR	CKCYF473Z50
	C136	ELECTR. CAPACITOR	CEAS101M50		C224	CERAMIC CAPACITOR	CKDYF473Z50
(#3)	C137, 138	AXIAL CAPACITOR	CKPUYB101K50		C225	CERAMIC CAPACITOR	CKPUYF103Z225
(#3)	C139, 140	CERAMIC CAPACITOR	CKCYF473Z50		C226	ELECTR. CAPACITOR	CEAS470M10
(#3)	C142	AXIAL CAPACITOR	CKPUYB101K50	(#5)	C227, 228	ELECTR. CAPACITOR	CEAS470M10
	C144	AXIAL CAPACITOR	CKPUYB101K50		C229	CERAMIC CAPACITOR	CKPUYF103Z225
(#3)	C145, 146	CERAMIC CAPACITOR	CKCYF473Z50		C230	ELECTR. CAPACITOR	CEAS470M10
(#3)	C147-150	CERAMIC CAPACITOR	CKDYF103Z50	(#3)	C231	CERAMIC CAPACITOR	CKCYF473Z50
	C151, 152	AXIAL CAPACITOR	CKPUYB101K50		C232, 233	AXIAL CAPACITOR	CKPUYB471K50
	C153	CERAMIC CAPACITOR	CKPUYF103Z225		C234, 235	ELECTR. CAPACITOR	CEAS010M50
(#4)	C154	CERAMIC CAPACITOR	CKCYF103Z50	(#5)	C236	ELECTR. CAPACITOR	CEAS010M50
(#3)	C154	CERAMIC CAPACITOR	CKDYF103Z50	(#5)	C237	ELECTR. CAPACITOR	CEAS100M50
(#3)	C155, 156	CERAMIC CAPACITOR	CKPUYF103Z225	(#5)	C238	MYLOR FILM CAPACITOR	CQMA152J50
	C160, 161	ELECTR. CAPACITOR	CEAS2R2M50	(#5)	C239	MYLOR FILM CAPACITOR	CQMA562J50
	C170, 171	MYLOR FILM CAPACITOR	CQMA471K50	(#5)	C240, 241	AXIAL CAPACITOR	CKPUYB101K50
(#3)	C187	CERAMIC CAPACITOR	CKDYF473Z50	(#5)	C242	ELECTR. CAPACITOR	CEAS010M50
(#3)	C188	AXIAL CAPACITOR	CKPUYB471K50	(#3)	C243	CERAMIC CAPACITOR	CKDYB682K50
(#3)	C189	CERAMIC CAPACITOR	CKPUYX222M16		C244	CERAMIC CAPACITOR	CKCYB682K50
	C190	ELECTR. CAPACITOR	CEAS010M50		C245	CERAMIC CAPACITOR	CKPUYB102K50
(#3)	C191, 192	CERAMIC CAPACITOR	CKDYF103Z50		C246	CERAMIC CAPACITOR	CKCYB562K50
	C193, 194	ELECTR. CAPACITOR	CEAS2R2M50		C247	ELECTR. CAPACITOR	CEAS2R2M50
	C195, 196	AXIAL CAPACITOR	CKPUYB471K50		C248	CERAMIC CAPACITOR	CKCYB122K50
(#4)	C197	CERAMIC CAPACITOR	CKCYF103Z50		C249	CERAMIC CAPACITOR	CCCSL470J50
(#3)	C197	CERAMIC CAPACITOR	CKDYF103Z50	(#4)	C250	ELECTR. CAPACITOR	CEAS101M10
	C198, 199	ELECTR. CAPACITOR	CEAS330M16	(#3)	C251	ELECTR. CAPACITOR	CEAS101M25
					C252	MYLOR FILM CAPACITOR	CQMA104K50
					C253	CERAMIC CAPACITOR	CKCYF103Z50
					C254	CERAMIC CAPACITOR	CKCYF473Z50
					C254	CERAMIC CAPACITOR	CKDYF473Z50
					C255	ELECTR. CAPACITOR	CEASR47M50
					C256	ELECTR. CAPACITOR	CEAS100M50
					C257	MYLOR FILM CAPACITOR	CQMA104K50
					C258	CERAMIC CAPACITOR	CKPUYF223Z25
					C259	AUDIO FILM CAPACITOR	CFTXA474J50

Note : (# 1) HE and HB types
 (# 2) KU and KC types

(# 3) HEWZI type
 (# 4) HE,HB,KU and KC types

(# 5) HE,HB and HEWZI types

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	C260	CERAMIC CAPACITOR	CKPUYF103Z25	(#5)	R218	CARBON FILM RESISTOR	RD1/6PM393J
	C261	ELECTR. CAPACITOR	CEAS470M10	(#5)	R219	CARBON FILM RESISTOR	RD1/6PM102J
	C262	ELECTROLYTIC CAPACIT	CEANP470M50	(#5)	R220	CARBON FILM RESISTOR	RD1/6PM182J
	C263	ELECTR. CAPACITOR	CEANP100M50	(#5)	R221	CARBON FILM RESISTOR	RD1/6PM473J
	C264	ELECTR. CAPACITOR	CEAS100M50	(#5)	R222	CARBON FILM RESISTOR	RD1/6PM564J
	C265	ELECTR. CAPACITOR	CEAS101M50	(#5)	R223	CARBON FILM RESISTOR	RD1/6PM473J
	C266	ELECTR. CAPACITOR	CEAS100M50	(#2)	R247	CARBON FILM RESISTOR	RD1/6PM243J
	C267	ELECTROLYTIC CAPACIT	CEAS471M6R3	(#2)	R248	CARBON FILM RESISTOR	RD1/6PM753J
(#3)	C268, 269	AXIAL CAPACITOR	CKPUYB471K50	(#5)	R248	CARBON FILM RESISTOR	RD1/6PM393J
	C270, 271	ELECTR. CAPACITOR	CEAS2R2M50	(#5)	R249	CARBON FILM RESISTOR	RD1/6PM102J
	C272	CERAMIC CAPACITOR	CKPUYF103Z25	(#5)	R250	CARBON FILM RESISTOR	RD1/6PM182J
	C273	ELECTR. CAPACITOR	CEAS470M10	(#5)	R251	CARBON FILM RESISTOR	RD1/6PM473J
	C274	MYLOR FILM CAPACITOR	CQMA273K50	(#5)	R252	CARBON FILM RESISTOR	RD1/6PM564J
	C275	MYLOR FILM CAPACITOR	CQMA393K50	(#5)	R253	CARBON FILM RESISTOR	RD1/6PM473J
	C276	MYLOR FILM CAPACITOR	CQMA683K50		R262, 264	(22K)	RCN1030
	C277	MYLOR FILM CAPACITOR	CQMA104K50	△	R265	CARBON FILM RESISTOR	RD1/4PMF100J
	C278	AUDIO FILM CAPACITOR	CFTXA184J50	(#4)△	R266	CARBON FILM RESISTOR	RD1/4LF100J
	C279	CERAMIC CAPACITOR	CKCYB182K50	(#3)△	R266	CARBON FILM RESISTOR	RD1/4LF101J
	C280	CERAMIC CAPACITOR	CKCYB272K50	△	R267	METAL OXIDE RESISTOR	RS1PMF331J
	C281	CERAMIC CAPACITOR	CKCYB472K50		R282	RESISTOR ARRAY (22K)	RA6T223J
	C282	CERAMIC CAPACITOR	CKCYB822K50	(#5)	R288, 289	CARBON FILM RESISTOR	RD1/6PM101J
	C283	MYLOR FILM CAPACITOR	CQMA123K50	△	R290	CARBON FILM RESISTOR	RD1/4LF471J
	C284	CERAMIC CAPACITOR	CKPUYB102K50		R291	(1K)	RCN1032
	C285, 286	AXIAL CAPACITOR	CKPUYB561K50	△	R292, 293	CARBON FILM RESISTOR	RD1/4LF222J
	C287	MYLOR FILM CAPACITOR	CQMA153K50	△	R294	CARBON FILM RESISTOR	RD1/4LF101J
	C288	CERAMIC CAPACITOR	CKCYB822K50	△	R296	METAL OXIDE RESISTOR	RS2LF681J
	C289	CERAMIC CAPACITOR	CKCYB272K50		Other resistors		RD1/6PM □□□ J
	C290	CERAMIC CAPACITOR	CKPUYF103Z25	OTHERS			
	C291	ELECTR. CAPACITOR	CEAS470M10		JA201	SPEAKER TERMINAL 4-P (SPEAKERS)	RKE1003
	C292	CERAMIC CAPACITOR	CKPUYF103Z25		CN201		10MQ-ST
(#3)	C293	CERAMIC CAPACITOR	CKDYB682K50		CN208	SOCKET(15P) (TAPE DECK)	AKP1076
	C294, 295	CERAMIC CAPACITOR	CKCYF473Z50		JA202	PIN JACK(2P) (VIDEO)	AKB1059
	C296-298	AXIAL CAPACITOR	CKPUYB101K50				
	C299, 300	MYLOR FILM CAPACITOR	CQMA104K50				
RESISTORS				CDTX UNIT			
(#2)	R1	CARBON FILM RESISTOR	RD1/2PM225J	SEMICONDUCTORS			
△	R104, 106		RS1LF222J		IC301	PLL IC	LM7001
(#3)	R107, 108	CARBON FILM RESISTOR	RD1/4PMF100J		IC302	AM/FM IC	LA1265S
△	R136	METAL OXIDE RESISTOR	RS1PMF331J		IC303	MPX IC	AN7470P
(#4)△	R137	CARBON FILM RESISTOR	RD1/4LF100J	△	IC304	REGULATOR IC	NJM78M12FA
(#3)△	R137	CARBON FILM RESISTOR	RD1/4LF101J		IC401	PRE AMP IC	CXA1471S
△	R139	CARBON FILM RESISTOR	RD1/4PMF100J		IC402	SERVO IC	CXA1372Q
	R140, 142	(22K)	RCN1030		IC403	EFM DEMODULATION IC	CXD2500Q
	R160	RESISTOR ARRAY (10K)	RA6T103J	△	IC404	I. C. (BIPOLAR)	TA8449P
(#5)	R173	CARBON FILM RESISTOR	RD1/6PM223J		IC501		TC9237N
(#2)	R176	CARBON FILM RESISTOR	RD1/6PM223J		IC504	OP-AMP IC	NJM4560D
	R188, 189	(22Ω)	RCN1031		Q301	TRANSISTOR	2SC2668
	R197	(100Ω)	RCN1035	(#1)	Q302, 303	TRANSISTOR	DTC124ES
(#2)	R217	CARBON FILM RESISTOR	RD1/6PM243J		Q304	TRANSISTOR	DTA143ES
(#2)	R218	CARBON FILM RESISTOR	RD1/6PM753J	(#1)	Q305	TRANSISTOR	DTA143ES
					Q306	TRANSISTOR	2SC1740S

Note : (# 1) HE and HB types (# 3) HEWZI type (# 5) HE,HB and HEWZI types
 (# 2) KU and KC types (# 4) HE,HB,KU and KC types

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	Q307	N-FET	2SK246		C337	ELECTR. CAPACITOR	CEAS2R2M50
(#1)	Q308	TRANSISTOR	DTA143ES		C338	ELECTR. CAPACITOR	CEAS330M16
	Q309	TRANSISTOR	2SC1740S		C339, 340	ELECTR. CAPACITOR	CEAS4R7M50
(#3)	Q310	TRANSISTOR	2SC1740S		C341	CERAMIC CAPACITOR	CCCSL470J50
	Q311	TRANSISTOR	DTC124ES		C342	CERAMIC CAPACITOR	CKPUYF103Z25
	Q312	TRANSISTOR	DTA143ES		C343	ELECTR. CAPACITOR	CEAS100M50
	Q401	TRANSISTOR	2SA854S		C344, 345	CERAMIC CAPACITOR	CKPUYF103Z25
(#1)	D301, 302	DIODE	1SS254		C347	ELECTR. CAPACITOR	CEAS330M16
	D304-309	DIODE	1SS254		C348	CERAMIC CAPACITOR	CKPUYF103Z25
(#1)	D310	DIODE	1SS254		C349	ELECTR. CAPACITOR	CEAS330M16
(#1)	D311, 312	DIODE	1SS85		C350	ELECTR. CAPACITOR	CEANP010M50
(#1)	D313	DIODE	1SS254	(#5)	C351, 352	MYLOR FILM CAPACITOR	CQMA122K50
	D314-317	DIODE	1SS254	(#2)	C351, 352	MYLOR FILM CAPACITOR	CQMA152K50
	D401	ZENNER DIODE	MTZJ6. 2B/C		C353	ELECTR. CAPACITOR	CEAS330M16
	D402-406	DIODE	1SS254		C354, 355	ELECTR. CAPACITOR	CEAS010M50
COILS AND FILTERS					C356	MYLOR FILM CAPACITOR	CQMA473K50
(#3)	L303	AXIAL INDUCTOR	LAU220K		C357	CERAMIC CAPACITOR	CKPUYF223Z25
(#3)	L304	AXIAL INDUCTOR	LAU2R2M		C358	ELECTR. CAPACITOR	CEASR47M50
	L305	COIL	ATE-079		C359	ELECTR. CAPACITOR	CEAS1R5M50
	L306, 308	AXIAL INDUCTOR	LAU680K		C360	ELECTR. CAPACITOR	CEAS4R7M50
	L310, 311	AXIAL INDUCTOR	LAU2R2M		C361	PL. STYRENE CAPACITOR	CQSA471J50
	L401	AXIAL INDUCTOR	LAU2R2M	(#3)	C362	AXIAL CAPACITOR	CKPUYB681K50
	L501	AXIAL INDUCTOR	LAU680K	(#3)	C363	ELECTR. CAPACITOR	CEAS2R2M50
	L502	AXIAL INDUCTOR	LAU2R2M	(#5)	C366, 367	MYLOR FILM CAPACITOR	CQMA272K50
(#4)	F301	CERAMIC FILTER	ATF-107		C366, 367	MYLOR FILM CAPACITOR	CQMA562K50
(#3)	F301	CERAMIC FILTER	ATF-119	(#2)	C371, 372	CERAMIC CAPACITOR	CKPUYF223Z25
	F302	CERAMIC FILTER	ATF-208		C390	ELECTR. CAPACITOR	CEAS330M25
	F303	CERAMIC FILTER	ATF-107		C391	ELECTR. CAPACITOR	CEAS330M16
(#3)	F304	CERAMIC FILTER	ATF-146		C401, 402	ELECTR. CAPACITOR	CEAS470M10
CAPACITORS					C403	CERAMIC CAPACITOR	CCCCH200J50
(#3)	TC301	CERAMIC TRIMMER	ACM-018		C404	ELECTR. CAPACITOR	CEAS470M10
	C301	CERAMIC CAPACITOR	CKPUYF223Z25		C405, 410	CERAMIC CAPACITOR	CKPUYF103Z25
(#3)	C303	AXIAL CERAMIC C.	CCPUCH150J50		C421	MYLOR FILM CAPACITOR	CQMA473J50
	C305	MYLOR FILM CAPACITOR	CQMA104K50		C422	CERAMIC CAPACITOR	CKCYB152K50
	C306	ELECTR. CAPACITOR	CEAS330M16		C423	ELECTR. CAPACITOR	CEAS101M10
	C307, 308	CERAMIC CAPACITOR	CKPUYF103Z25		C424	ELECTR. CAPACITOR	CEASR47M50
	C310	CERAMIC CAPACITOR	CKPUYF103Z25		C425	MYLOR FILM CAPACITOR	CQMA103K50
	C314	ELECTR. CAPACITOR	CEAS330M16		C426	CERAMIC CAPACITOR	CKPUYF103Z25
	C315	AUDIO FILM CAPACITOR	CFTXA224J50		C427	AXIAL CERAMIC C.	CCPUS1.680J50
	C316	MYLOR FILM CAPACITOR	CQMA103K50		C428	MYLOR FILM CAPACITOR	CQMA104K50
	C318	ELECTR. CAPACITOR	CEAS470M10		C451-454	ELECTR. CAPACITOR	CEAS470M10
	C319	CERAMIC CAPACITOR	CKPUYF103Z25		C455	MYLOR FILM CAPACITOR	CQMA182K50
	C320	ELECTR. CAPACITOR	CEAS330M16		C456	MYLOR FILM CAPACITOR	CQMA333K50
	C321, 322	AXIAL CERAMIC C.	CCPUCH150J50		C457	MYLOR FILM CAPACITOR	CQMA103K50
	C323	CERAMIC CAPACITOR	CKCYF473Z50		C458, 459	MYLOR FILM CAPACITOR	CQMA104K50
	C324-327	CERAMIC CAPACITOR	CKPUYF223Z25		C460	ELECTR. CAPACITOR	CEAS4R7M50
(#1)	C328	CERAMIC CAPACITOR	CKPUYF223Z25		C461	MYLOR FILM CAPACITOR	CQMA104K50
	C329	CERAMIC CAPACITOR	CKPUYF103Z25		C462	ELECTR. CAPACITOR	CEAS010M50
	C330	ELECTR. CAPACITOR	CEAS330M16		C463	MYLOR FILM CAPACITOR	CQMA104K50
	C331	CERAMIC CAPACITOR	CKPUYF103Z25		C464	MYLOR FILM CAPACITOR	CQMA103K50
	C332	ELECTROLYTIC CAPACIT	CEASR10M50		C467	CERAMIC CAPACITOR	CKPUYF103Z25
	C333	AXIAL CAPACITOR	CKPUYB221K50		C468	MYLOR FILM CAPACITOR	CQMA333K50
	C334	ELECTR. CAPACITOR	CEAS010M50		C469	MYLOR FILM CAPACITOR	CQMA103K50
	C335	CERAMIC CAPACITOR	CKCYF473Z50		C470	MYLOR FILM CAPACITOR	CQMA332K50
	C336	CERAMIC CAPACITOR	CKPUYX222M16				

Note : (# 1) HE and HB types (# 3) HEWZI type (# 5) HE,HB and HEWZI types
 (# 2) KU and KC types (# 4) HE,HB,KU and KC types

Mark	No.	Description	Part No.
	C471, 472	MYLOR FILM CAPACITOR	CQMA472K50
	C473	CERAMIC CAPACITOR	CKPUYF223Z25
	C474	CERAMIC CAPACITOR	CKPUYF103Z25
	C480	AUDIO FILM CAPACITOR	CFTXA184J50
	C481	MYLOR FILM CAPACITOR	CQMA103K50
	C482, 483	AUDIO FILM CAPACITOR	CFTXA184J50
	C484	MYLOR FILM CAPACITOR	CQMA104K50
	C485, 486	ELECTR. CAPACITOR	CEAS330M16
	C501	ELECTR. CAPACITOR	CEAS220M25
	C502	CERAMIC CAPACITOR	CKPUYF103Z25
	C503, 504	CERAMIC CAPACITOR	CCDCH470J50
	C505	ELECTROLYTIC CAPACIT	CEAS331M6R3
	C506-508	CERAMIC CAPACITOR	CKPUYF103Z25
	C509	ELECTR. CAPACITOR	CEAS101M10
	C511	CERAMIC CAPACITOR	CKPUYF103Z25
	C521	AXIAL CERAMIC C.	CCPUSL560J50
	C523	AXIAL CERAMIC C	CCPUSL390J50
	C530	ELECTROLYTIC CAPACIT	CEYA100M50
	C531	AXIAL CERAMIC C	CCPUSL390J50
	C561	AXIAL CERAMIC C.	CCPUSL560J50
	C563	AXIAL CERAMIC C	CCPUSL390J50
	C564	ELECTROLYTIC CAPACIT	CEAS331M6R3
	C565	CERAMIC CAPACITOR	CKPUYF223Z25
	C566	ELECTROLYTIC CAPACIT	CEAS331M6R3
	C567	CERAMIC CAPACITOR	CKPUYF223Z25
	C570	ELECTROLYTIC CAPACIT	CEYA100M50
	C571	AXIAL CERAMIC C	CCPUSL390J50

RESISTORS

	VR301	VR(4.7K)	VRTB6VS472
	VR302	VR(22K)	VRTB6VS223
	VR303	VR (4.7K)	VRTB6VS472
	VR402	VARIABLE RESISTOR (20k)	RCP1017
	VR403	VARIABLE RESISTOR(1k)	RCP1081
	VR451, 452	VARIABLE RESISTOR(20k)	RCP1017
(#1)	R316	CARBON FILM RESISTOR	RD1/6PM681J
(#1)	R320	CARBON FILM RESISTOR	RD1/6PM681J
(#5)	R322	CARBON FILM RESISTOR	RD1/6PM273J
(#2)	R322	CARBON FILM RESISTOR	RD1/6PM153J
(#3)	R348	CARBON FILM RESISTOR	RD1/6PM224J
(#3)	R349	CARBON FILM RESISTOR	RD1/6PM473J
(#3)	R350	CARBON FILM RESISTOR	RD1/6PM472J
(#3)	R351	CARBON FILM RESISTOR	RD1/6PM222J
(#3)	R352	CARBON FILM RESISTOR	RD1/6PM472J
(#1)	R374	CARBON FILM RESISTOR	RD1/6PM102J
(#1)	R375	CARBON FILM RESISTOR	RD1/6PM104J
(#1)	R376	CARBON FILM RESISTOR	RD1/6PM681J
(#1)	R377	CARBON FILM RESISTOR	RD1/6PM103J
(#1)	R379	CARBON FILM RESISTOR	RD1/6PM103J
(#2)	R379	CARBON FILM RESISTOR	RD1/6PM223J
(#3)	R380	CARBON FILM RESISTOR	RD1/6PM223J
(#2)	R380	CARBON FILM RESISTOR	RD1/6PM103J
(#1)	R381	CARBON FILM RESISTOR	RD1/6PM472J
	R447	RESISTOR ARRAY (22K)	RA4T223J
	Other resistors		RD1/6PM□□□J

Mark	No.	Description	Part No.
OTHERS			
	X301	CRYSTAL RESONATOR	ASS-025
	X302	CERAMIC FILTER	ATF-125
	X501	XTAL RES (OSC)	PSS1006
	CN401		5597-16CPB
	CN411		B10P-MQ-B

(#1)		AM RF TUNING BLOCK	AXX1012
(#1)		AM RF TUNING BLOCK	AXX1013
(#2)		AM RF TUNING BLOCK	AXX1011
(#3)		AM RF TUNING BLOCK	AXX1014
(#5)		ANTENNA TERMINAL	RKE1002
(#2)		ANTENNA TERMINAL 4P	RKE1001
(#4)		FM FRONT END	RWB1002
(#3)		FM FRONT END	AXF1031

FRNT UNIT

SEMICONDUCTORS

	IC601		PDB026C
	IC602	LOGIC IC	BU2040
	IC603	MECHANISM DRIVER IC	TA8409S
	Q601	TRANSISTOR	2SC1740S
	D601-611	DIODE	1SS254
	D612	DIODE	1SR139-100
	D613-615	DIODE	1SS254
	D617-622		SEL3C10RLC05

SWITCHES

	S601-612	SWITCH	RSG1033
	(HI-LITE SCAN, RANDOM, STOP, FREQ/ST., BAND, TUNER(DOWN), HALL, MODE, B. G. M., TIMER(WAKE UP, REC), REPEAT)		
	S614-621	SWITCH	RSG1033
	(PAUSE, AM-NR/FM-MONO, MEMORY(AUTO PRESET), TUNER(UP), DISCO, SFC CLEAR, PHONO(#5) VIDEO(#2), DISPLAY)		
	S623-632	SWITCH	RSG1033
	(SEARCH(◀▶▶▶), PLAY, DISC1, DISC2, DISC3, TUNER, CD, POWER, TIMER SET)		
	S635, 636	SWITCH	RSG1033
	(PROGRAM, EJECT)		
	S638-644	SWITCH	RSG1033
	(DISC4, DISC5, TAPE, SMART OPERATION (MEMORY, START/SET), CLOCK ADJ., DISC6)		

COILS

	L601, 602	AXIAL INDUCTOR	LAU2R2M
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CAPACITORS

	C601, 602	CERAMIC CAPACITOR	CKPUYF103Z25
	C603	ELECTR. CAPACITOR	CEAS470M10
	C604	CERAMIC CAPACITOR	CKPUYF103Z25
	C605	CEA (47000/5.5V)	ACH1070
	C606, 607	AXIAL CERAMIC C.	CCPUCH150J50

Note : (# 1) HE and HB types (# 2) KU and KC types (# 3) HEWZI type (# 4) HE,HB,KU and KC types (# 5) HE,HB and HEWZI types

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	C608	CERAMIC CAPACITOR	CKPUYF103Z25				
	C609, 610	ELECTR. CAPACITOR	CEAS470M10				
	C611	CERAMIC CAPACITOR	CKCYF103Z50				
	C612	CERAMIC CAPACITOR	CKPUYF103Z25				
	C613	ELECTR. CAPACITOR	CEAS330M50				
	C614, 615	CERAMIC CAPACITOR	CKCYF103Z50				
	C616	ELECTR. CAPACITOR	CEAS010M50				
	C617	ELECTROLYTIC CAPACIT	CEASR10M50				
	C618	ELECTR. CAPACITOR	CEAS010M50				
	C619	ELECTR. CAPACITOR	CEAS100M50				
	C620	CERAMIC CAPACITOR	CKPUYF103Z25				
	C621	ELECTR. CAPACITOR	CEAS330M16				
	C622, 625	CERAMIC CAPACITOR	CKPUYF103Z25				

RESISTORS

R687	RESISTOR ARRAY (47K)	RA15T473J
Other resistors		RD1/6PM□□□J

OTHERS

V601	FLUORESCENT INDICATO	RAW1064
X601	CERAMIC RESONATOR	VSS1031
	REMOTE SENSOR	GP1U50X

MVOL UNIT

SEMICONDUCTOR

IC701	LINEAR IC	NJM4558D
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CAPACITORS

C701	AXIAL CAPACITOR	CKPUYB101K50
C702	ELECTR. CAPACITOR	CEAS4R7M50
C703	ELECTR. CAPACITOR	CEAS010M50
C704	MYLOR FILM CAPACITOR	CQMA333K50
C705	CERAMIC CAPACITOR	CKCYF473Z50
C709, 710	ELECTR. CAPACITOR	CEAS470M10
C711	AXIAL CAPACITOR	CKPUYB101K50
C712	ELECTR. CAPACITOR	CEAS4R7M50
C713	ELECTR. CAPACITOR	CEAS010M50
C714	MYLOR FILM CAPACITOR	CQMA333K50
C715	CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

VR701	VARIABLE RESISTOR (VOLUME)	RCV1074
Other resistors		RD1/6PM□□□J

H.PHONE UNIT

CAPACITORS

C1-3	CERAMIC CAPACITOR	CKCYF473Z50
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OTHERS

JA1	HEADPHONE JACK (PHONES)	RKB1014
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Note : (# 1) HE and HB types	(# 3) HEWZI type	(# 5) HE,HB and HEWZI types
(# 2) KU and KC types	(# 4) HE,HB,KU and KC types	

6.2 XC-P410T

Mark NO Description Part NO.

MECHANISM BOARD ASSEMBLY

SWITCHES

S601-603 PUSH SWITCH DSG1017
(TRY(1), TSEL, TRY(2))

MAIN UNIT

SEMICONDUCTORS

△	IC101	REGULATOR IC	NJM78M05FA
△	IC102	REGULATOR IC	NJM79M05FA
△	IC103	REGULATOR IC	NJM78M05FA
	IC201	OP-AMP IC	BA15218
(#6)	IC202	OP-AMP IC	BA15218
	IC203	LOGIC IC	BU4052B
(#5)	IC205	IC	BA15218N
	IC206, 207	IC	BA15218N
	IC208	SOUND PROCESSOR IC	PA0049
	IC209	GEQ IC	LA3607
	IC210	LOGIC IC	TC4051BP
	IC211	LOGIC IC	BU2040
△	IC212		TA8410AK(V18)
△	IC213	AUDIO IC	STK4142-2GP
△	Q101	TRANSISTOR	2SA1286
	Q103	TRANSISTOR	DTC124ES
△	Q104	TRANSISTOR	2SA1283
△	Q105	TRANSISTOR	2SA1287
△	Q107	TRANSISTOR	2SA1286
	Q108, 109	TRANSISTOR	2SD2144S
	Q110	TRANSISTOR	2SA933S
△	Q111	TRANSISTOR	2SC3246
	Q113	DIGITAL TRANSISTOR	DTC143XS
	Q114	TRANSISTOR	DTC124ES
	Q202	TRANSISTOR	2SA933S
	Q203, 204	TRANSISTOR	2SD2144S
	Q205	TRANSISTOR	2SC1740S
	Q206	TRANSISTOR	2SA933S
△	Q207	TRANSISTOR	2SC1741AS
	Q208	TRANSISTOR	DTA124ES
△	D101		D3SBA20
△	D102		S2VB20
△	D103, 104	DIODE	1SR139-100
△	D105	ZENER DIODE	MTZJ33B
△	D106	ZENER DIODE	MTZ10B
△	D107-110	DIODE	1SR139-100
	D111	DIODE	1SS254
△	D112	DIODE	1SR139-100
	D118	DIODE	1SS254
	D119	DIODE	1SR139-100

Mark NO Description Part NO.

D201, 202	DIODE	1SS254
D204, 205	DIODE	1SS254
D206-208	ZENER DIODE	MTZ8. 2B
D209	DIODE	1SS254

RELAY

△ RY201 RELAY ASR1005

COILS

(#2)	L102, 103	AXIAL INDUCTOR	LAU2R2M
(#8)	L201, 202	COIL	ATH-133
(#2)	L201, 202	COIL	ATH-059

CAPACITORS

(#8)△	C101	CAPACITOR (CERAMIC) (0. 01 μF)	RCG-009
△	C102	ELECTROLYTIC CAPACIT (47/100)	RCH1051
	C103	ELECTROLYTIC CAPACIT	CEAS330M100
	C104-106	ELECTROLYTIC CAPACIT	CEAS330M35
	C107, 108	CERAMIC CAPACITOR	CKCYF103Z50
	C109	ELECTR. CAPACITOR	CEAS332M35
	C113	ELECTR. CAPACITOR	CEAS100M50
	C114	ELECTR. CAPACITOR	CEAS470M10
	C115	CERAMIC CAPACITOR	CKPUYF103Z25
(#5)	C116	ELECTROLYTIC CAPACIT (2200/42)	ACH1140
(#6)	C116	ELECTROLYTIC CAPACIT (3300/42)	RCH1050
	C117	ELECTR. CAPACITOR	CEAS100M50
	C118	ELECTR. CAPACITOR	CEAS470M10
	C119	CERAMIC CAPACITOR	CKPUYF103Z25
(#2)	C122, 123	CERAMIC CAPACITOR	CKCYF103Z50
(#2)	C124	CERAMIC CAPACITOR	CKPUYF103Z25
(#5)	C126	ELECTROLYTIC CAPACIT (2200/42)	ACH1140
(#6)	C126	ELECTROLYTIC CAPACIT (3300/42)	RCH1050
	C127	ELECTR. CAPACITOR	CEAS100M50
	C128	ELECTR. CAPACITOR	CEAS470M10
	C129	CERAMIC CAPACITOR	CKPUYF103Z25
△	C130	ELECTROLYTIC CAPACIT	CEAS682M16
△	C131	ELECTROLYTIC CAPACIT	CEAS472M16
△	C132	CAPACITOR (CERAMIC) (0. 01 μF)	RCG-009
	C135	ELECTROLYTIC CAPACIT	CEANP470M50
	C136	ELECTR. CAPACITOR	CEAS101M50
(#2)	C137, 138	AXIAL CAPACITOR	CKPUYB101K50
(#2)	C139, 140	CERAMIC CAPACITOR	CKCYF473Z50
(#2)	C142	AXIAL CAPACITOR	CKPUYB101K50

Note : (# 1) HE and HB types (# 4) YPW type (# 7) HE,HB,HEWZI and YPW types
 (# 2) HEWZI type (# 5) HE,HB and HEWZI types (# 8) HE,HB,SD and YPW types
 (# 3) SD type (# 6) SD and YPW types (# 9) HE,HB,HEWZI and SD types

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
(#2)	C144	AXIAL CAPACITOR	CKPUYB101K50		C234, 235	ELECTR. CAPACITOR	CEAS010M50
(#2)	C145, 146	CERAMIC CAPACITOR	CKCYF473Z50	(#5)	C236	ELECTR. CAPACITOR	CEAS010M50
(#2)	C147-150	CERAMIC CAPACITOR	CKDYF103Z50	(#5)	C237	ELECTR. CAPACITOR	CEAS100M50
	C151, 152	AXIAL CAPACITOR	CKPUYB101K50	(#5)	C238	MYLOR FILM CAPACITOR	CQMA152J50
	C153	CERAMIC CAPACITOR	CKPUYF103Z25	(#5)	C239	MYLOR FILM CAPACITOR	CQMA562J50
(#8)	C154	CERAMIC CAPACITOR	CKCYF103Z50	(#5)	C240, 241	AXIAL CAPACITOR	CKPUYB101K50
(#2)	C154	CERAMIC CAPACITOR	CKDYF103Z50	(#5)	C242	ELECTR. CAPACITOR	CEAS010M50
(#2)	C155, 156	AXIAL CAPACITOR	CKPUYF103Z25	(#2)	C243	CERAMIC CAPACITOR	CKDYB682K50
	C160, 161	ELECTR. CAPACITOR	CEAS2R2M50		C244	CERAMIC CAPACITOR	CKCYB682K50
	C170, 171	MYLOR FILM CAPACITOR	CQMA471K50		C245	CERAMIC CAPACITOR	CKPUYB102K50
(#2)	C187	CERAMIC CAPACITOR	CKDYF473Z50		C246	CERAMIC CAPACITOR	CKCYB562K50
(#2)	C188	AXIAL CAPACITOR	CKPUYB471K50		C247	ELECTR. CAPACITOR	CEAS2R2M50
(#2)	C189	CERAMIC CAPACITOR	CKPUYX222M16		C248	CERAMIC CAPACITOR	CKCYB122K50
	C190	ELECTR. CAPACITOR	CEAS010M50		C249	CERAMIC CAPACITOR	CCCSL470J50
(#2)	C191, 192	CERAMIC CAPACITOR	CKDYF103Z50		C250	ELECTR. CAPACITOR	CEAS101M10
	C193, 194	ELECTR. CAPACITOR	CEAS2R2M50		C251	ELECTR. CAPACITOR	CEAS101M25
	C195, 196	AXIAL CAPACITOR	CKPUYB471K50		C252	MYLOR FILM CAPACITOR	CQMA104K50
(#8)	C197	CERAMIC CAPACITOR	CKCYF103Z50		C253	CERAMIC CAPACITOR	CKCYF103Z50
(#2)	C197	CERAMIC CAPACITOR	CKDYF103Z50	(#8)	C254	CERAMIC CAPACITOR	CKCYF473Z50
	C198, 199	ELECTR. CAPACITOR	CEAS330M16	(#2)	C254	CERAMIC CAPACITOR	CKDYF473Z50
	C200, 201	CERAMIC CAPACITOR	CKCYF473Z50		C255	ELECTR. CAPACITOR	CEASR47M50
	C202	CERAMIC CAPACITOR	CKCYF103Z50		C256	ELECTR. CAPACITOR	CEAS100M50
	C203	CERAMIC CAPACITOR	CKCYF473Z50		C257	MYLOR FILM CAPACITOR	CQMA104K50
	C204, 205	ELECTR. CAPACITOR	CEAS010M50		C258	CERAMIC CAPACITOR	CKPUYF223Z25
(#5)	C206	ELECTR. CAPACITOR	CEAS010M50		C259	AUDIO FILM CAPACITOR	CFTXA474J50
(#5)	C207	ELECTR. CAPACITOR	CEAS100M50		C260	CERAMIC CAPACITOR	CKPUYF103Z25
(#5)	C208	MYLOR FILM CAPACITOR	CQMA152J50		C261	ELECTR. CAPACITOR	CEAS470M10
(#5)	C209	MYLOR FILM CAPACITOR	CQMA562J50		C262	ELECTROLYTIC CAPACIT	CEANP470M50
(#5)	C210, 211	AXIAL CAPACITOR	CKPUYB101K50		C263	ELECTR. CAPACITOR	CEANP100M50
(#5)	C212	ELECTR. CAPACITOR	CEAS010M50		C264	ELECTR. CAPACITOR	CEAS100M50
	C213	CERAMIC CAPACITOR	CKCYF103Z50		C265	ELECTR. CAPACITOR	CEAS101M50
	C214	CERAMIC CAPACITOR	CKCYB682K50		C266	ELECTR. CAPACITOR	CEAS100M50
	C215	CERAMIC CAPACITOR	CKPUYB102K50		C267	ELECTROLYTIC CAPACIT	CEAS471M6R3
	C216	CERAMIC CAPACITOR	CKCYB562K50	(#2)	C268, 269	AXIAL CAPACITOR	CKPUYB471K50
	C217	ELECTR. CAPACITOR	CEAS2R2M50		C270, 271	ELECTR. CAPACITOR	CEAS2R2M50
	C218	CERAMIC CAPACITOR	CKCYB122K50		C272	CERAMIC CAPACITOR	CKPUYF103Z25
	C219	CERAMIC CAPACITOR	CCCSL470J50		C273	ELECTR. CAPACITOR	CEAS470M10
	C220	ELECTR. CAPACITOR	CEAS101M10		C274	MYLOR FILM CAPACITOR	CQMA273K50
	C221	ELECTR. CAPACITOR	CEAS101M25		C275	MYLOR FILM CAPACITOR	CQMA393K50
	C222	MYLOR FILM CAPACITOR	CQMA104K50		C276	MYLOR FILM CAPACITOR	CQMA683K50
	C223	CERAMIC CAPACITOR	CKCYF103Z50		C277	MYLOR FILM CAPACITOR	CQMA104K50
(#8)	C224	CERAMIC CAPACITOR	CKCYF473Z50		C278	AUDIO FILM CAPACITOR	CFTXA184J50
(#2)	C224	CERAMIC CAPACITOR	CKDYF473Z50		C279	CERAMIC CAPACITOR	CKCYB182K50
	C225	CERAMIC CAPACITOR	CKPUYF103Z25		C280	CERAMIC CAPACITOR	CKCYB272K50
	C226	ELECTR. CAPACITOR	CEAS470M10		C281	CERAMIC CAPACITOR	CKCYB472K50
(#5)	C227, 228	ELECTR. CAPACITOR	CEAS470M10		C282	CERAMIC CAPACITOR	CKCYB822K50
	C229	CERAMIC CAPACITOR	CKPUYF103Z25		C283	MYLOR FILM CAPACITOR	CQMA123K50
	C230	ELECTR. CAPACITOR	CEAS470M10		C284	CERAMIC CAPACITOR	CKPUYB102K50
	C231	CERAMIC CAPACITOR	CKCYF473Z50		C285, 286	AXIAL CAPACITOR	CKPUYB561K50
(#2)	C232, 233	AXIAL CAPACITOR	CKPUYB471K50		C287	MYLOR FILM CAPACITOR	CQMA153K50

Note : (# 1) HE and HB types	(# 4) YPW type	(# 7) HE,HB,HEWZI and YPW types
(# 2) HEWZI type	(# 5) HE,HB and HEWZI types	(# 8) HE,HB,SD and YPW types
(# 3) SD type	(# 6) SD and YPW types	(# 9) HE,HB,HEWZI and SD types

Mark	No.	Description	Part No.
	C288	CERAMIC CAPACITOR	CKCYB822K50
	C289	CERAMIC CAPACITOR	CKCYB272K50
	C290	CERAMIC CAPACITOR	CKPUYF103Z25
	C291	ELECTR. CAPACITOR	CEAS470M10
	C292	CERAMIC CAPACITOR	CKPUYF103Z25
(#2)	C293	CERAMIC CAPACITOR	CKDYB682K50
	C294	CERAMIC CAPACITOR	CKCYF473Z50
	C296-298	AXIAL CAPACITOR	CKPUYB101K50
	C299, 300	MYLOR FILM CAPACITOR	CQMA104K50

RESISTORS

	△ R104, 106		RS1LF222J
(#2)	R107, 108	CARBON FILM RESISTOR	RD1/4PMF100J
	△ R136	METAL OXIDE RESISTOR	RS1PMF331J
(#8) △	R137	CARBON FILM RESISTOR	RD1/4LF100J
(#2) △	R137	CARBON FILM RESISTOR	RD1/4LF101J
	△ R139	CARBON FILM RESISTOR	RD1/4PMF100J
	R140, 142	(22k)	RCN1030
	R160	RESISTOR ARRAY (10K)	RA6T103J
(#5)	R173	CARBON FILM RESISTOR	RD1/6PM223J
(#6)	R176	CARBON FILM RESISTOR	RD1/6PM223J
	R188	(2.2Ω)	RCN1031
	R197	(100Ω)	RCN1035
(#6)	R205, 206	CARBON FILM RESISTOR	RD1/6PM103J
(#5)	R206	CARBON FILM RESISTOR	RD1/6PM101J
(#6)	R207	CARBON FILM RESISTOR	RD1/6PM222J
(#6)	R208	CARBON FILM RESISTOR	RD1/6PM103J
(#6)	R217	CARBON FILM RESISTOR	RD1/6PM243J
(#6)	R218	CARBON FILM RESISTOR	RD1/6PM753J
(#5)	R218	CARBON FILM RESISTOR	RD1/6PM393J
(#5)	R219	CARBON FILM RESISTOR	RD1/6PM102J
(#5)	R220	CARBON FILM RESISTOR	RD1/6PM182J
(#5)	R221	CARBON FILM RESISTOR	RD1/6PM473J
(#5)	R222	CARBON FILM RESISTOR	RD1/6PM564J
(#5)	R223	CARBON FILM RESISTOR	RD1/6PM473J
(#6)	R235, 236	CARBON FILM RESISTOR	RD1/6PM103J
(#5)	R236	CARBON FILM RESISTOR	RD1/6PM101J
(#6)	R237	CARBON FILM RESISTOR	RD1/6PM222J
(#6)	R238	CARBON FILM RESISTOR	RD1/6PM103J
(#6)	R247	CARBON FILM RESISTOR	RD1/6PM243J
(#6)	R248	CARBON FILM RESISTOR	RD1/6PM753J
(#5)	R248	CARBON FILM RESISTOR	RD1/6PM393J
(#5)	R249	CARBON FILM RESISTOR	RD1/6PM102J
(#5)	R250	CARBON FILM RESISTOR	RD1/6PM182J
(#5)	R251	CARBON FILM RESISTOR	RD1/6PM473J
(#5)	R252	CARBON FILM RESISTOR	RD1/6PM564J
(#5)	R253	CARBON FILM RESISTOR	RD1/6PM473J
	R262, 264	(22k)	RCN1030
	△ R265	CARBON FILM RESISTOR	RD1/4PMF100J
(#8) △	R266	CARBON FILM RESISTOR	RD1/4LF100J
(#2) △	R266	CARBON FILM RESISTOR	RD1/4LF101J

Mark	No.	Description	Part No.
	△ R267	METAL OXIDE RESISTOR	RS1PMF331J
	R282	RESISTOR ARRAY (22K)	RA6T223J
(#5)	R288, 289	CARBON FILM RESISTOR	RD1/6PM101J
	△ R290	CARBON FILM RESISTOR	RD1/4LF471J
	R291	(1k)	RCN1032
	△ R292, 293	CARBON FILM RESISTOR	RD1/4LF222J
	△ R294	CARBON FILM RESISTOR	RD1/4LF101J
	△ R296	METAL OXIDE RESISTOR	RS2LF681J
	Other resistors		RD1/6PM□□□J

OTHERS

	CN201		10MQ-ST
	CN208	SOCKET (15P) (TAPE DECK)	AKP1076
	JA201	SPEAKER TERMINAL 4-P (SPEAKERS)	RKE1003
	JA202	PIN JACK (2P) (PHONO IN(#5) VIDEO(#6))	AKB1059

CDTX UNIT

SEMICONDUCTORS

	IC301	PLL IC	LM7001
	IC302	AM/FM IC	LA1265S
	IC303	MPX IC	AN7470P
	△ IC304	REGULATOR IC	NJM78M12FA
	IC401	PRE AMP IC	CXA1471S
	IC402	SERVO IC	CXA1372Q
	IC403	EFM DEMODULATION IC	CXD2500Q
	△ IC404	I. C. (BIPOLAR)	TA8449P
	IC501		TC9237N
	IC504	OP-AMP IC	NJM4560D
	Q301	TRANSISTOR	2SC2668
(#1)	Q302, 303	TRANSISTOR	DTC124ES
	Q304	TRANSISTOR	DTA143ES
(#1)	Q305	TRANSISTOR	DTA143ES
	Q306	TRANSISTOR	2SC1740S
	Q307	N-FET	2SK246
(#1)	Q308	TRANSISTOR	DTA143ES
	Q309	TRANSISTOR	2SC1740S
(#2)	Q310	TRANSISTOR	2SC1740S
	Q311	TRANSISTOR	DTC124ES
	Q312	TRANSISTOR	DTA143ES
	Q401	TRANSISTOR	2SA854S
(#1)	D301, 302	DIODE	1SS254
	D304-309	DIODE	1SS254
(#1)	D310	DIODE	1SS254
(#1)	D311, 312	DIODE	1SS85
(#1)	D313	DIODE	1SS254
	D314-317	DIODE	1SS254
	D401	ZENNER DIODE	MTZJ6.2B/C
	D402-406	DIODE	1SS254

Note : (# 1) HE and HB types (# 4) YPW type (# 7) HE,HB,HEWZI and YPW types
 (# 2) HEWZI type (# 5) HE,HB and HEWZI types (# 8) HE,HB,SD and YPW types
 (# 3) SD type (# 6) SD and YPW types (# 9) HE,HB,HEWZI and SD types

Mark No. Description Part No.

SWITCH

(#3)	S301	SLIDE SWITCH (CHANNEL STEP)	RSH1033
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COILS AND FILTERS

(#2)	L303	AXIAL INDUCTOR	LAU220K
(#2)	L304	AXIAL INDUCTOR	LAU2R2K
	L305	COIL	ATE-079
	L306, 308	AXIAL INDUCTOR	LAU680K
	L310, 311	AXIAL INDUCTOR	LAU2R2M
	L401	AXIAL INDUCTOR	LAU2R2M
	L501	AXIAL INDUCTOR	LAU680K
	L502	AXIAL INDUCTOR	LAU2R2M
(#8)	F301	CERAMIC FILTER	ATF-107
(#2)	F301	CERAMIC FILTER	ATF-119
	F302	CERAMIC FILTER	ATF-208
	F303	CERAMIC FILTER	ATF-107
(#2)	F304	CERAMIC FILTER	ATF-146

CAPACITORS

(#2)	TC301	CERAMIC TRIMMER	ACM-018
	C301	CERAMIC CAPACITOR	CKPUYF223Z25
(#2)	C303	AXIAL CERAMIC C.	CCPUCH150J50
	C305	MYLOR FILM CAPACITOR	CQMA104K50
	C306	ELECTR. CAPACITOR	CEAS330M16
	C307, 308	CERAMIC CAPACITOR	CKPUYF103Z25
	C310	CERAMIC CAPACITOR	CKPUYF103Z25
	C314	ELECTR. CAPACITOR	CEAS330M16
	C315	AUDIO FILM CAPACITOR	CFTXA224J50
	C316	MYLOR FILM CAPACITOR	CQMA103K50
	C318	ELECTR. CAPACITOR	CEAS470M10
	C319	CERAMIC CAPACITOR	CKPUYF103Z25
	C320	ELECTR. CAPACITOR	CEAS330M16
	C321, 322	AXIAL CERAMIC C.	CCPUCH150J50
	C323	CERAMIC CAPACITOR	CKCYF473Z50
	C324-327	CERAMIC CAPACITOR	CKPUYF223Z25
(#1)	C328	CERAMIC CAPACITOR	CKPUYF223Z25
	C329	CERAMIC CAPACITOR	CKPUYF103Z25
	C330	ELECTR. CAPACITOR	CEAS330M16
	C331	CERAMIC CAPACITOR	CKPUYF103Z25
	C332	ELECTROLYTIC CAPACIT	CEASR10M50
	C333	AXIAL CAPACITOR	CKPUYB221K50
	C334	ELECTR. CAPACITOR	CEAS010M50
	C335	CERAMIC CAPACITOR	CKCYF473Z50
	C336	CERAMIC CAPACITOR	CKPUYX222M16
	C337	ELECTR. CAPACITOR	CEAS2R2M50
	C338	ELECTR. CAPACITOR	CEAS330M16
	C339, 340	ELECTR. CAPACITOR	CEAS4R7M50
	C341	CERAMIC CAPACITOR	CCCSL470J50
	C342	CERAMIC CAPACITOR	CKPUYF103Z25

Mark No. Description Part No.

	C343	ELECTR. CAPACITOR	CEAS100M50
	C344, 345	CERAMIC CAPACITOR	CKPUYF103Z25
	C347	ELECTR. CAPACITOR	CEAS330M16
	C348	CERAMIC CAPACITOR	CKPUYF103Z25
	C349	ELECTR. CAPACITOR	CEAS330M16
	C350	ELECTR. CAPACITOR	CEANP010M50
	C351, 352	MYLOR FILM CAPACITOR	CQMA122K50
	C353	ELECTR. CAPACITOR	CEAS330M16
	C354, 355	ELECTR. CAPACITOR	CEAS010M50
	C356	MYLOR FILM CAPACITOR	CQMA473K50
	C357	CERAMIC CAPACITOR	CKPUYF223Z25
	C358	ELECTR. CAPACITOR	CEASR47M50
	C359	ELECTROLYTIC CAPACIT	CEAS1R5M50
	C360	ELECTR. CAPACITOR	CEAS4R7M50
	C361	PL. STYRENE CAPACITOR	CQSA471J50
(#2)	C362	AXIAL CAPACITOR	CKPUYB681K50
(#2)	C363	ELECTR. CAPACITOR	CEAS2R2M50
(#7)	C366, 367	MYLOR FILM CAPACITOR	CQMA272K50
(#3)	C366, 367	MYLOR FILM CAPACITOR	CQMA562K50
	C371, 372	CERAMIC CAPACITOR	CKPUYF223Z25
	C390	ELECTR. CAPACITOR	CEAS330M25
	C391	ELECTR. CAPACITOR	CEAS330M16
	C401, 402	ELECTR. CAPACITOR	CEAS470M10
	C403	CERAMIC CAPACITOR	CCCCH200J50
	C404	ELECTR. CAPACITOR	CEAS470M10
	C405, 410	CERAMIC CAPACITOR	CKPUYF103Z25
	C421	MYLOR FILM CAPACITOR	CQMA473J50
	C422	CERAMIC CAPACITOR	CKCYB152K50
	C423	ELECTR. CAPACITOR	CEAS101M10
	C424	ELECTR. CAPACITOR	CEASR47M50
	C425	MYLOR FILM CAPACITOR	CQMA103K50
	C426	CERAMIC CAPACITOR	CKPUYF103Z25
	C427	AXIAL CERAMIC C.	CCPUSL680J50
	C428	MYLOR FILM CAPACITOR	CQMA104K50
	C451-454	ELECTR. CAPACITOR	CEAS470M10
	C455	MYLOR FILM CAPACITOR	CQMA182K50
	C456	MYLOR FILM CAPACITOR	CQMA333K50
	C457	MYLOR FILM CAPACITOR	CQMA103K50
	C458, 459	MYLOR FILM CAPACITOR	CQMA104K50
	C460	ELECTR. CAPACITOR	CEAS4R7M50
	C461	MYLOR FILM CAPACITOR	CQMA104K50
	C462	ELECTR. CAPACITOR	CEAS010M50
	C463	MYLOR FILM CAPACITOR	CQMA104K50
	C464	MYLOR FILM CAPACITOR	CQMA103K50
	C467	CERAMIC CAPACITOR	CKPUYF103Z25
	C468	MYLOR FILM CAPACITOR	CQMA333K50
	C469	MYLOR FILM CAPACITOR	CQMA103K50
	C470	MYLOR FILM CAPACITOR	CQMA332K50
	C471, 472	MYLOR FILM CAPACITOR	CQMA472K50
	C473	CERAMIC CAPACITOR	CKPUYF223Z25

Note : (# 1) HE and HB types (# 4) YPW type (# 7) HE,HB,HEWZI and YPW types
 (# 2) HEWZI type (# 5) HE,HB and HEWZI types (# 8) HE,HB,SD and YPW types
 (# 3) SD type (# 6) SD and YPW types (# 9) HE,HB,HEWZI and SD types

Mark	No.	Description	Part No.
	C474	CERAMIC CAPACITOR	CKPUYF103Z25
	C480	AUDIO FILM CAPACITOR	CFTXA184J50
	C481	MYLOR FILM CAPACITOR	CQMA103K50
	C482, 483	AUDIO FILM CAPACITOR	CFTXA184J50
	C484	MYLOR FILM CAPACITOR	CQMA104K50
	C485, 486	ELECTR. CAPACITOR	CEAS330M16
	C501	ELECTR. CAPACITOR	CEAS220M25
	C502	CERAMIC CAPACITOR	CKPUYF103Z25
	C503, 504	CERAMIC CAPACITOR	CCDCH470J50
	C505	ELECTROLYTIC CAPACIT	CEAS331M6R3
	C506-508	CERAMIC CAPACITOR	CKPUYF103Z25
	C509	ELECTR. CAPACITOR	CEAS101M10
	C511	CERAMIC CAPACITOR	CKPUYF103Z25
	C521	AXIAL CERAMIC C.	CCPUSL560J50
	C523	AXIAL CERAMIC C	CCPUSL390J50
	C530	ELECTROLYTIC CAPACIT	CEYA100M50
	C531	AXIAL CERAMIC C	CCPUSL390J50
	C561	AXIAL CERAMIC C.	CCPUSL560J50
	C563	AXIAL CERAMIC C	CCPUSL390J50
	C564	ELECTROLYTIC CAPACIT	CEAS331M6R3
	C565	CERAMIC CAPACITOR	CKPUYF223Z25
	C566	ELECTROLYTIC CAPACIT	CEAS331M6R3
	C567	CERAMIC CAPACITOR	CKPUYF223Z25
	C570	ELECTROLYTIC CAPACIT	CEYA100M50
	C571	AXIAL CERAMIC C	CCPUSL390J50

RESISTORS

	VR301	VR (4.7k)	VRTB6VS472
	VR302	VR (22k)	VRTB6VS223
	VR303	VR (4.7k)	VRTB6VS472
	VR402	VARIABLE RESISTOR(20k)	RCP1017
	VR403	VARIABLE RESISTOR(1k)	RCP1081
	VR451, 452	VARIABLE RESISTOR(20k)	RCP1017
(#9)	R322	CARBON FILM RESISTOR	RD1/6PM273J
(#4)	R322	CARBON FILM RESISTOR	RD1/6PM153J
	R447	RESISTOR ARRAY (22K)	RA4T223J
	Other resistors		RD1/6PM□□□J

OTHERS

	X301	CRYSTAL RESONATOR	ASS-025
	X302	CERAMIC FILTER	ATF-125
	X501	XTAL RES (OSC)	PSS1006
(#1)		AM RF TUNING BLOCK	AXX1012
(#1)		AM RF TUNING BLOCK	AXX1013
(#2)		AM RF TUNING BLOCK	AXX1014
(#6)		AM RF TUNING BLOCK	AXX1011
(#5)		ANTENNA TERMINAL	RKE1002
(#6)		ANTENNA TERMINAL 4P	RKE1001
(#2)		FM FRONT END	AXF1031
(#8)		FM FRONT END	RWB1002
	CN411		BIOP-MQ-B

Mark	No.	Description	Part No.
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FRNT UNIT

SEMICONDUCTORS

	IC601	MAIN CPU	PDB026C
	IC602	LOGIC IC	BU2040
	IC603	MECHANISM DRIVER IC	TA8409S
	Q601	TRANSISTOR	2SC1740S
	D601-611	DIODE	1SS254
	D612	DIODE	1SR139-100
	D613-615	DIODE	1SS254
	D617-622		SEL3C10RLC05

SWITCHES

	S601-621	SWITCH	RSG1033
	(HI-LITE SCAN, RANDOM, STOP, FREQ/ST., BAND, TUNER (DOWN), HALL, MODE, B. G. M., TIMER (WAKE UP, REC), REPEAT, AUTO EJECT, PAUSE, AM-NR/FM-MONO, MEMORY (AUTO PRESET), TUNER (UP), DISCO, SFC CLEAR, PHONO (#5) VIDEO (#6), DISPLAY)		
	S623-627	SWITCH	RSG1033
	(SEARCH (◀▶▶▶), PLAY, DISC1,) DISC2		
	S629-632	SWITCH	RSG1033
	(TUNER, CD, POWER, TIMER SET)		
	S635-637	SWITCH	RSG1033
	(PROGRAM, OPEN/CLOSE (DISC1,) OPEN/CLOSE (DISC2))		
	S640-643	SWITCH	RSG1033
	(TAPE, SMART OPERATION (MEMORY,) START/SET), CLOCK ADJ.)		

COILS

	L601, 602	AXIAL INDUCTOR	LAU2R2M
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CAPACITORS

	C601, 602	CERAMIC CAPACITOR	CKPUYF103Z25
	C603	ELECTR. CAPACITOR	CEAS470M10
	C604	CERAMIC CAPACITOR	CKPUYF103Z25
	C605	CEA (47000/5.5V)	ACH1070
	C606, 607	AXIAL CERAMIC C.	CCPUCH150J50
	C608	CERAMIC CAPACITOR	CKPUYF103Z25
	C609, 610	ELECTR. CAPACITOR	CEAS470M10
	C611	CERAMIC CAPACITOR	CKCYF103Z50
	C612	CERAMIC CAPACITOR	CKPUYF103Z25
	C613	ELECTR. CAPACITOR	CEAS330M50
	C614, 615	CERAMIC CAPACITOR	CKCYF103Z50
	C616	ELECTR. CAPACITOR	CEAS010M50
	C617	ELECTROLYTIC CAPACIT	CEASR10M50
	C618	ELECTR. CAPACITOR	CEAS010M50
	C619	ELECTR. CAPACITOR	CEAS100M50
	C620	CERAMIC CAPACITOR	CKPUYF103Z25
	C621	ELECTR. CAPACITOR	CEAS330M16
	C622, 625	CERAMIC CAPACITOR	CKPUYF103Z25

Note : (# 1) HE and HB types (# 2) HEWZI type (# 3) SD type (# 4) YPW type (# 5) HE, HB and HEWZI types (# 6) SD and YPW types (# 7) HE, HB, HEWZI and YPW types (# 8) HE, HB, SD and YPW types (# 9) HE, HB, HEWZI and SD types

Mark	No.	Description	Part No.
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RESISTORS

R687		RESISTOR ARRAY (47K)	RA15T473J
		Other resistors	RD1/6PM□□□J

OTHERS

V601		FLUORESCENT INDICATO	RAW1063
X601		CERAMIC RESONATOR	VSS1031
		REMOTE SENSOR	GPIU50X

MVOL UNIT

SEMICONDUCTOR

IC701		LINEAR IC	NJM4558D
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CAPACITORS

C701		AXIAL CAPACITOR	CKPUYB101K50
C702		ELECTR. CAPACITOR	CEAS4R7M50
C703		ELECTR. CAPACITOR	CEAS010M50
C704		MYLOR FILM CAPACITOR	CQMA333K50
C705		CERAMIC CAPACITOR	CKCYF473Z50

C709, 710		ELECTR. CAPACITOR	CEAS470M10
C711		AXIAL CAPACITOR	CKPUYB101K50
C712		ELECTR. CAPACITOR	CEAS4R7M50
C713		ELECTR. CAPACITOR	CEAS010M50
C714		MYLOR FILM CAPACITOR	CQMA333K50
C715		CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

VR701		VARIABLE RESISTOR	RCV1074
		Other resistors	RD1/6PM□□□J

H.PHONE UNIT

CAPACITORS

CI-3		CERAMIC CAPACITOR	CKCYF473Z50
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OTHERS

JA1		HEADPHONE JACK (PHONES)	RKB1014
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(#6)

MIC UNIT

SEMICONDUCTOR

IC801		LINEAR IC	NJM4558D
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CAPACITORS

C801		CERAMIC CAPACITOR	CKCYF473Z50
C802		AXIAL CAPACITOR	CKPUYB681K50
C803		ELECTR. CAPACITOR	CEAS010M50
C804		ELECTR. CAPACITOR	CEAS2R2M50
C805		AXIAL CAPACITOR	CKPUYB221K50

C807, 808		CERAMIC CAPACITOR	CKPUYF103Z25
C809		ELECTR. CAPACITOR	CEAS100M50

Mark	No.	Description	Part No.
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RESISTORS

VR801		VARIABLE (10K-X1)	ACS1064
		Other resistors	RD1/6PM□□□J

OTHERS

		JACK(MIC)	AKN1017
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FCON UNIT

OTHERS

CN1001			5597-16CPB
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MCON UNIT

There is not supplied parts in this unit.

Note : (# 1) HE and HB types
 (# 2) HEWZI type
 (# 3) SD type

(# 4) YPW type
 (# 5) HE,HB and HEWZI types
 (# 6) SD and YPW types

(# 7) HE,HB,HEWZI and YPW types
 (# 8) HE,HB,SD and YPW types
 (# 9) HE,HB,HEWZI and SD types

7. DISASSEMBLY OF CD SECTION

1. Remove the bonnet.
2. Remove nine screws ① and a binder to remove the front panel and FCON unit as shown in Fig.7-1.

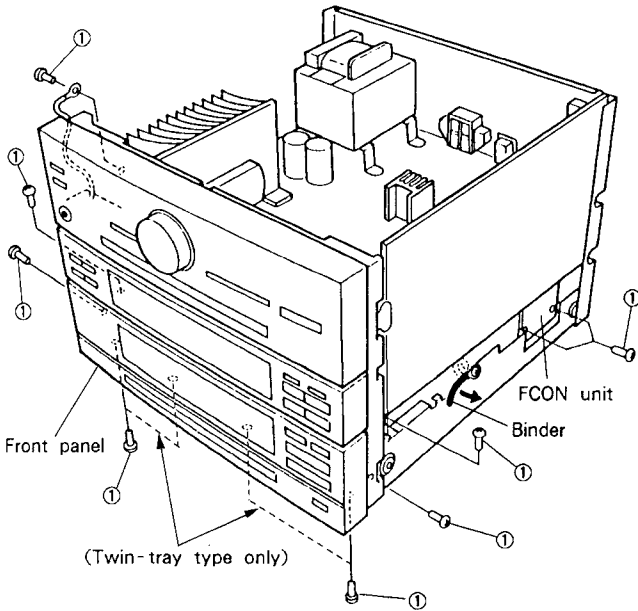


Fig. 7-1

3. Remove four screws ② and a binder to remove the rear panel from the chassis as shown in Fig. 7-2.

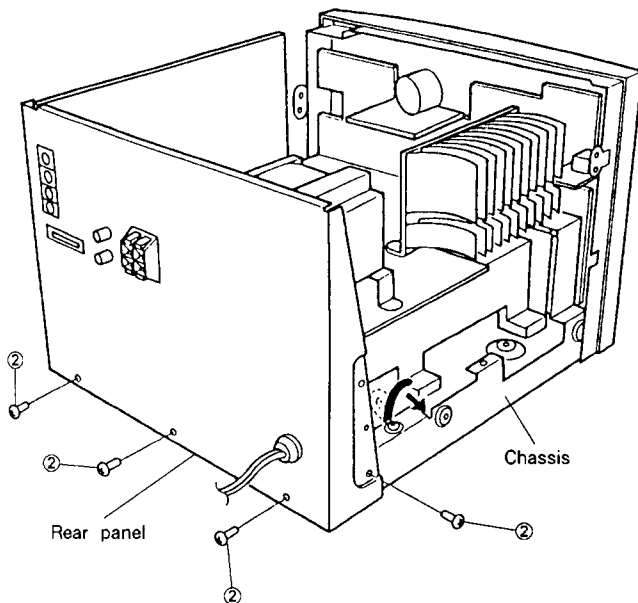


Fig. 7-2

4. Repair and examination will be easier when the MAIN unit is tilted to the right, as shown in Fig. 7-3.

Then, reset the chassis with the mechanical unit to the horizontal state.

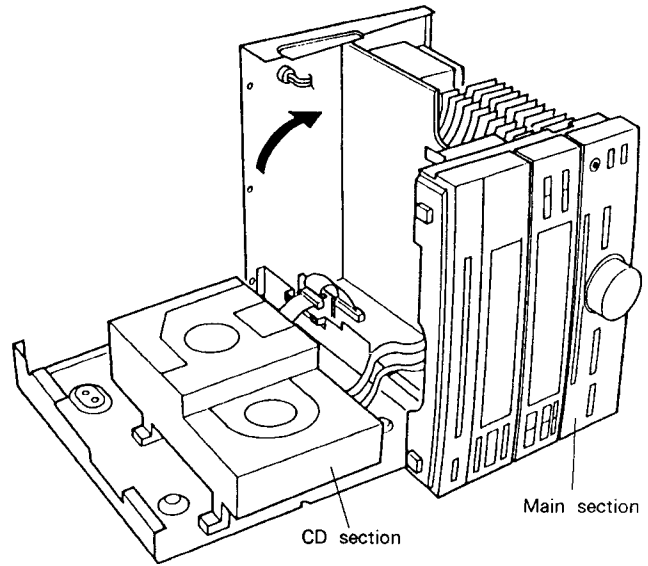


Fig. 7-3

Note ; For the XC-P410T (twin-tray type), open the tray and remove the tray name plate before removing the front panel.

8. ADJUSTMENTS

8.1 CD SECTION ADJUSTMENT

1. Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

1-1 Adjustment items/verification items and order

Step	Item	Test point	Adjustment location
1	Focus offset adjustment	CN421, Pin 6 (FCS. ERR)	VR403 (FCS. OFS)
2	Grating adjustment	CN421, Pin 2 (TRK. ERR)	Grating adjustment slit
3	Tracking error balance adjustment	CN421, Pin 2 (TRK. ERR)	VR402 (TRK. BAL)
4	Pickup radial/tangential direction tilt adjustment	CN421, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
5	RF level adjustment	CN421, Pin 1 (RF)	VR1 (RF level)
6	Focus servo loop gain adjustment	CN421, Pin 5 (FCS. IN) CN421, Pin 6 (FCS. ERR)	VR452 (FCS. GAN)
7	Tracking servo loop gain adjustment	CN421, Pin 3 (TRK. IN) CN421, Pin 2 (TRK. ERR)	VR451 (TRK. GAN)
8	Focus error signal verification	CN421, Pin 6 (FCS. ERR)	—————

● Abbreviation table

FCS. ERR :Focus Error
 FCS. OFS :Focus Offset
 TRK. ERR :Tracking Error
 TRK. BAL :Tracking Balance
 FCS. IN :Focus In
 TRK. IN :Tracking In

1-2 Measuring instruments and tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. 12-cm disc (with at least about 70 minutes of recording) (Twin-tray CD type only)
5. Low-pass filter (39 k Ω + 0.001 μ F)
6. Resistor (100 k Ω)
7. Hexagonal wrench (M3 mm) (not used for Multi-play CD type)
8. Standard tools

1-3 Test point and adjustment variable resistor positions

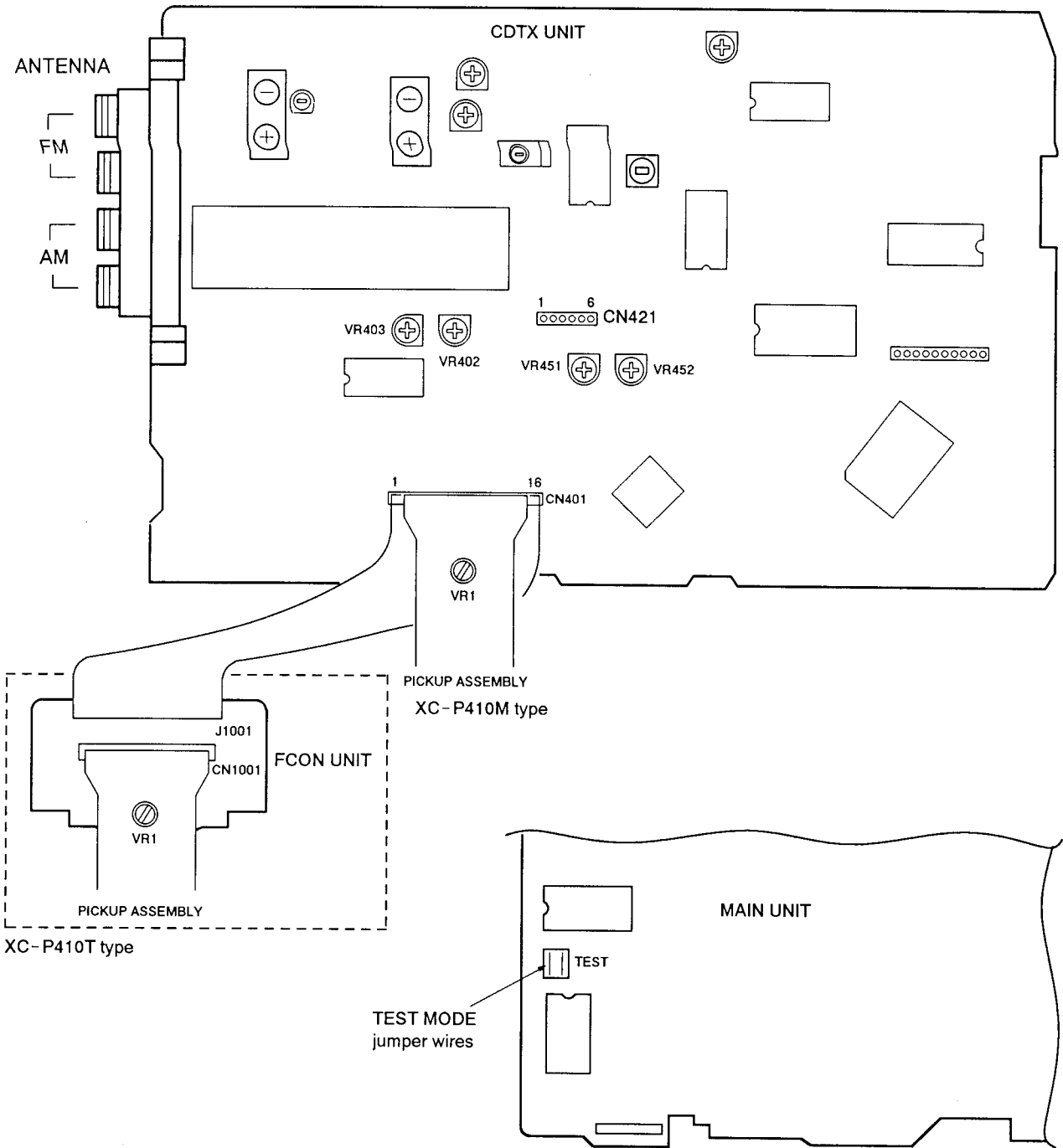


Figure 1 Adjustment Locations

1-4 Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

1-5 Test mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

1. Turn on the power switch.
2. Short the test mode jumper wires. (See Figure 1.)

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. The letter "T" appears on the left end of the FL display block.

[Release from test mode]

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Turn off the power switch on the front panel.

[Operations of the keys in test mode]

Code	Key name	Function in test mode	Explanation
	PROGRAM	Focus servo close	<p>For Twin-tray CD type only, Disc Tray 1 is moved to the play position. For Multi-play CD type only, RANDOM laser diode is lit up and the focus actuator is lowered (*1), then raised slowly (*2) and the focus servo is closed at the point where the objective lens is focused on the disc.</p> <p>With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo.</p> <p>If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled down (*3), then the actuator is raised and lowered twice (*4) and returned to its original position.</p> <p>Note: For Multi-play CD type, the operations are reversed this way.</p> <p>*1:The focus actuator is lifted up. *2:Lowered slowly *3:Pulled up *4:Lowered and raised twice</p>
▷	PLAY	Spindle servo ON	<p>Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop.</p> <p>Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed.</p> <p>If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.</p>
	HI – LITE SCAN	Outward movement by 10,000 tracks	<p>By pressing this key when the pickup has been moved to the inner rim of a disc and the focus and spindle servo are in the proper closed-loop condition, the pickup moves outwards by approx. 10,000 tracks (in case of a 12-cm disc, the center position between the outer and inner rims).</p>

Code	Key name	Function in test mode	Explanation
□□	PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel. If the elapsed time is not displayed or not counted correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.
⏮	TRACK REV	Carriage reverse (inwards)	Moves the pickup position toward the inner periphery of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the pickup does not automatically stop at the mechanical end point in test mode, be careful with this operation.
⏭	TRACK FWD	Carriage forward (outwards)	Moves the pickup position toward the outer periphery of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the pickup does not automatically stop at the mechanical end point in test mode, be careful with this operation.
□	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
△ *1 OPEN/ CLOSE	OPEN/CLOSE (DISC 1)	Disc tray open/close	Opens/closes the disc tray. This key is a toggle key and open/close tray alternately.
	EJECT	CD magazine eject	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position. Even if the CD magazine is mounted again, the pickup remains where it is.

Note 1: In test mode, the REP segment in the center of the FL display block lights when the pickup reaches the inner rim (the inside switch is set to ON).

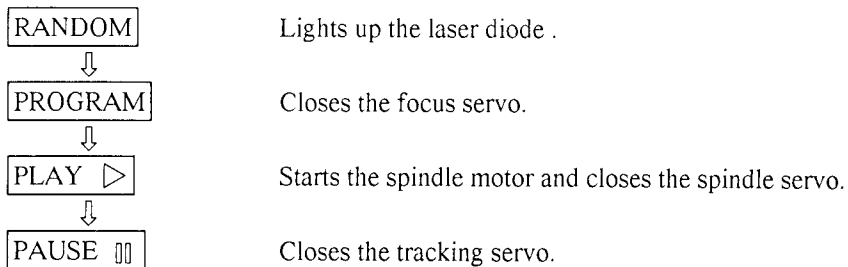
Note 2: When inserting the magazine, disc 1 of the magazine is loaded automatically.
(Multi-play CD type only)

*1: For Multi-play CD type only.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the correct order to close the servos.

Here is the key operation sequence for playing back a disc in test mode.



Wait at least 2-3 seconds between each of these operations.

1. Focus offset adjustment

● Objective	Sets the DC offset for the focus error amp.		
● Symptom when out of adjustment	The player does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to CN421, Pin 6 (FCS. ERR)	● Player state	Test mode, stopped (just the Power switch on)
	[Settings] 5 mV/division 10 ms/division DC mode	● Adjustment location	VR403 (FCS. OFS)
		● Disc	None needed

[Procedure]

Adjust VR403 (FCS. OFS) so that the DC voltage at CN421, Pin 6 (FCS. ERR) is $\left\{ \begin{array}{l} \text{XC-P410T: } -50 \pm 50 \text{ mV} \\ \text{XC-P410M: } -150 \pm 50 \text{ mV.} \end{array} \right.$

2. Grating adjustment

<ul style="list-style-type: none"> ● Objective ● Symptom when out of adjustment 	<p>To align the tracking error generation laser beam spots to the optimum angle on the track.</p> <p>Play does not start, track search is impossible, tracks are skipped.</p>		
<ul style="list-style-type: none"> ● Measurement instrument connections 	<p>Connect the oscilloscope to CN421, Pin 2 (TRK. ERR) via a low pass filter. (See Figure 2)</p> <p>[Settings] 50 mV/division 5 ms/division DC mode</p>	<ul style="list-style-type: none"> ● Player state ● Adjustment location ● Disc 	<p>Test mode, focus and spindle servos closed and tracking servo open</p> <p>Pickup grating adjustment slit</p> <p>For Twin-tray CD type, use the 12-cm disc. (YEDS-7 can not be used.) For Multi-play CD type, use the YEDS-7 test disc.</p>

[Procedure]

1. Move the pickup to the outer edge of the disc with the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key so that the grating adjustment slit is at the outer edge of the disc where it can be adjusted.

Note: For Multi-play CD type, use the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key to move the pickup to halfway across the disc (R=35 mm).

2. Press the PROGRAM key after pressing the RANDOM key, then the PLAY \triangleright key in that order to close the focus servo then the spindle servo.
3. Insert an ordinary screwdriver into the grating adjustment slit and adjust the grating to find the null point. For more details, see the next page.
4. If you slowly turn the screwdriver counterclockwise (clockwise for Multi-play CD type) from the null point, the amplitude of the wave gradually increases, then if you continue turning the screwdriver, the amplitude of the wave becomes smaller again. Turn the screwdriver counterclockwise (clockwise for Multi-play CD type) from the null point and set the grating to the first point where the wave amplitude reaches its maximum.

Reference : Figure 3 shows the relation between the angle of the tracking beam with the track and the waveform.

Note : The amplitude of the tracking error signal is about 3 Vp-p (when a 39 k Ω + 0.001 μ F low pass filter is used). If this amplitude is extremely small (2 Vp-p or less), the objective lens or the pickup malfunction may be the cause. If the difference between the amplitude of the error signal at the innermost edge and outermost edge of the disc is more than 10%, the grating is not adjusted to the optimum point, so adjust it again.

5. Return the pickup to more or less midway across the disc with the TRACK REV $\triangleleft\triangleleft$ key, press the PAUSE $\square\square$ key and check that the track number and elapsed time are displayed on the front panel. If they are not displayed at this time or the elapsed time changes irregularly, check the null point and adjust grating again.

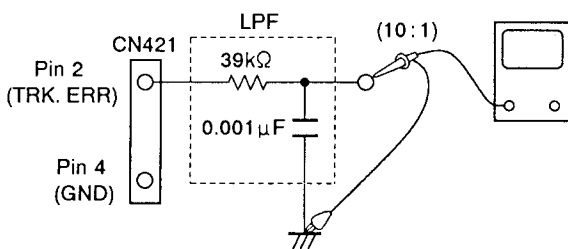
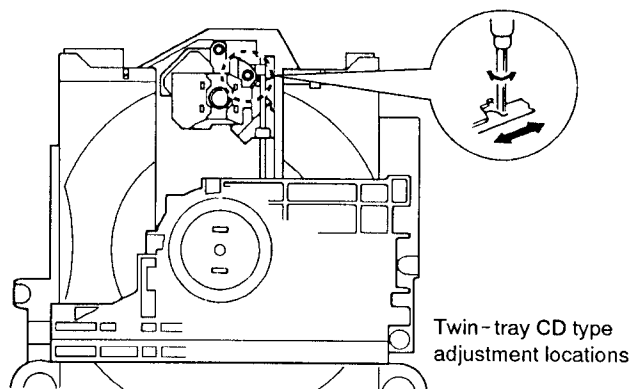
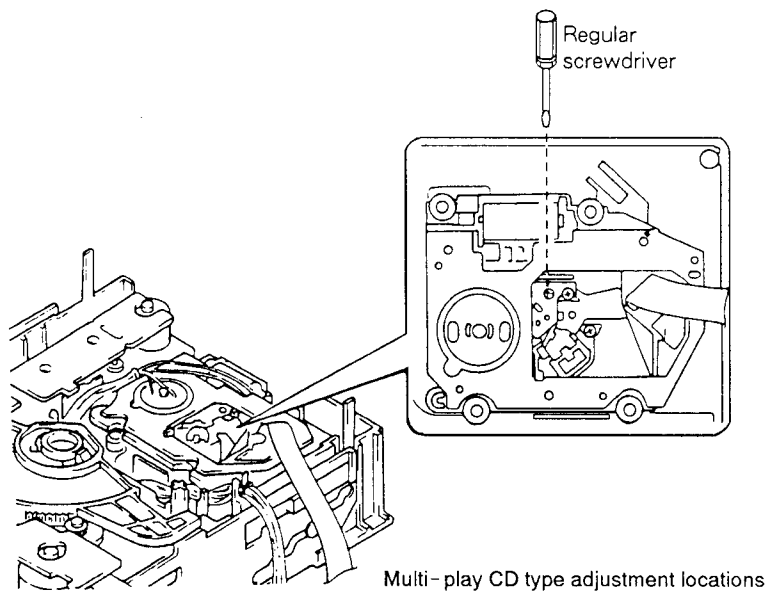


Figure 2





[How to find the null point]

When you insert the regular screwdriver into the slit for the grating adjustment and change the grating angle, the amplitude of the tracking error signal at CN421, Pin 2 changes. Within the range for the grating, there are five or six locations where the amplitude of the wave reaches a minimum. Of these five or six locations, there is only one at which the envelope of the waveform is smooth. This location is where the three laser beams divided by the grating are all right above the same track. (See Figure 3.)

This point is called the null point. When adjusting the grating, this null point is found and used as the reference position.

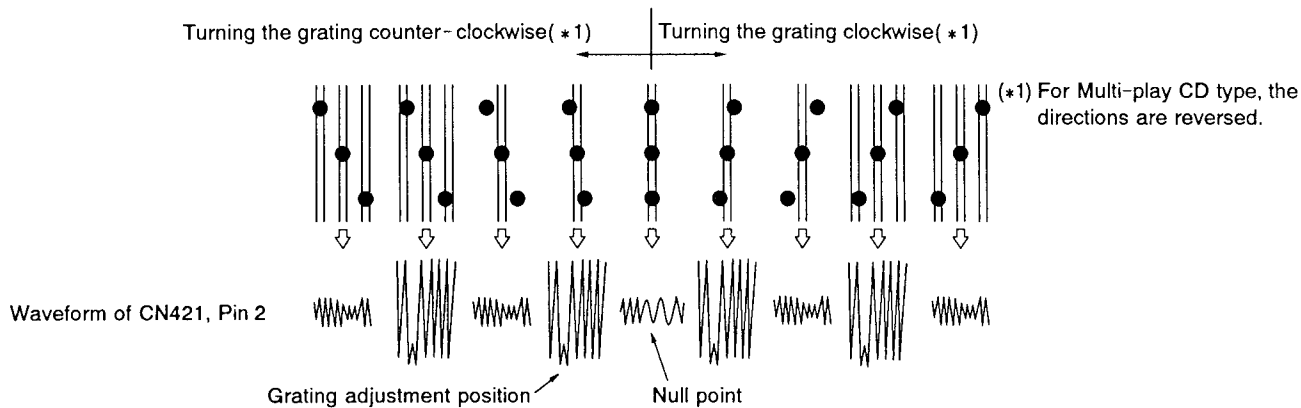
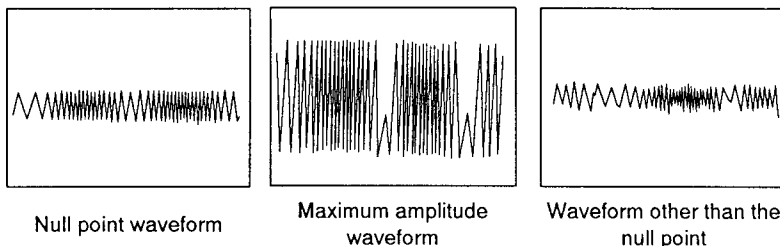


Figure 3

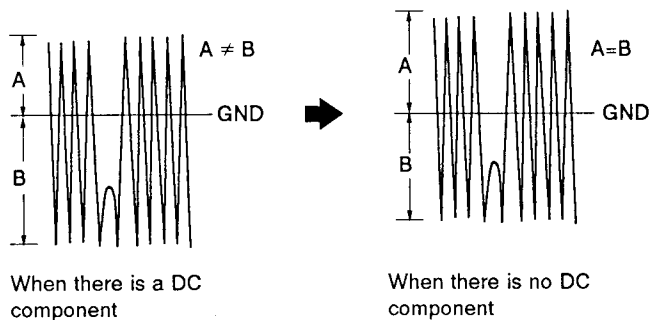


3. Tracking error balance adjustment

● Objective	To correct for the variation in the sensitivity of the tracking photodiode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to CN421, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open VR402 (TRK. BAL) YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key.
2. Press the PROGRAM key after pressing the RANDOM key, then the PLAY \triangleright key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Adjust VR402 (TRK. BAL) so that the positive amplitude and negative amplitude of the tracking error signal at CN421, Pin 2 (TRK. ERR) are the same (in other words, so that there is no DC component).



4. Pickup radial/tangential tilt adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken; some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to CN421, Pin 1 (RF). [Settings] 20 mV/division 200 ns/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play Pickup radial tilt adjustment screw and tangential tilt adjustment screw For Twin-tray CD type, use the 12-cm disc. (YEDS-7 can not be used.) For Multi-play CD type, use the YEDS-7 test disc.

[Procedure]

1. Move the pickup to the outer edge of the disc with the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key so that the radial/tangential tilt screws can be adjusted.

Note: For Multi-play CD type, use the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key to move the pickup to halfway across the disc (R=35 mm).

Press the PROGRAM key after pressing the RANDOM key, the PLAY \triangleright key, then the PAUSE $\square\square$ key in that order to close the focus servo then the spindle servo and put the player into play mode.

2. First, adjust the radial tilt adjustment screw with an M 3-mm hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly. For Multi-play CD type, use a Phillips screwdriver.
3. Next, adjust the tangential tilt adjustment screw with an M 3-mm hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 5). For Multi-play CD type, use a Phillips screwdriver.
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.

Note: Radial and tangential mean the directions relative to the disc shown in Figure 4.

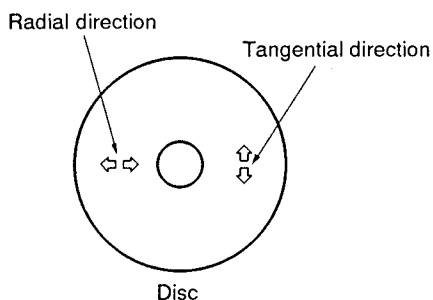
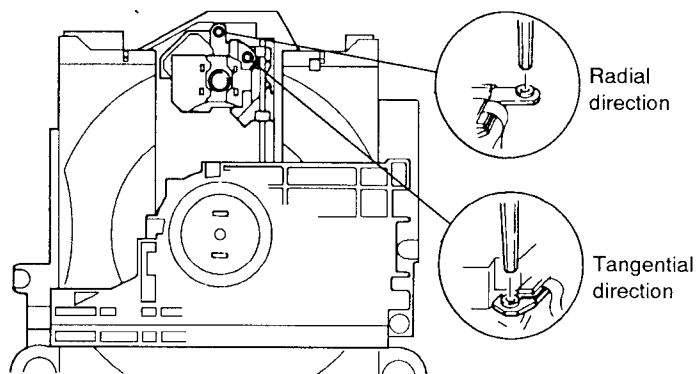


Figure 4



Twin-tray CD type adjustment locations

2. Grating adjustment

● Objective	To align the tracking error generation laser beam spots to the optimum angle on the track.		
● Symptom when out of adjustment	Play does not start, track search is impossible, tracks are skipped.		
● Measurement instrument connections	Connect the oscilloscope to CN421, Pin 2 (TRK. ERR) via a low pass filter. (See Figure 2)	● Player state	Test mode, focus and spindle servos closed and tracking servo open
	[Settings] 50 mV/division 5 ms/division DC mode	● Adjustment location	Pickup grating adjustment slit
		● Disc	For Twin-tray CD type, use the 12-cm disc. (YEDS-7 can not be used.) For Multi-play CD type, use the YEDS-7 test disc.

[Procedure]

1. Move the pickup to the outer edge of the disc with the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key so that the grating adjustment slit is at the outer edge of the disc where it can be adjusted.

Note: For Multi-play CD type, use the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key to move the pickup to halfway across the disc (R=35 mm).

2. Press the PROGRAM key after pressing the RANDOM key, then the PLAY \triangleright key in that order to close the focus servo then the spindle servo.
3. Insert an ordinary screwdriver into the grating adjustment slit and adjust the grating to find the null point. For more details, see the next page.
4. If you slowly turn the screwdriver counterclockwise (clockwise for Multi-play CD type) from the null point, the amplitude of the wave gradually increases, then if you continue turning the screwdriver, the amplitude of the wave becomes smaller again. Turn the screwdriver counterclockwise (clockwise for Multi-play CD type) from the null point and set the grating to the first point where the wave amplitude reaches its maximum.

Reference : Figure 3 shows the relation between the angle of the tracking beam with the track and the waveform.

Note : The amplitude of the tracking error signal is about 3 V_{p-p} (when a 39 k Ω + 0.001 μ F low pass filter is used). If this amplitude is extremely small (2 V_{p-p} or less), the objective lens or the pickup malfunction may be the cause. If the difference between the amplitude of the error signal at the innermost edge and outermost edge of the disc is more than 10%, the grating is not adjusted to the optimum point, so adjust it again.

5. Return the pickup to more or less midway across the disc with the TRACK REV $\triangleleft\triangleleft$ key, press the PAUSE $\square\square$ key and check that the track number and elapsed time are displayed on the front panel. If they are not displayed at this time or the elapsed time changes irregularly, check the null point and adjust grating again.

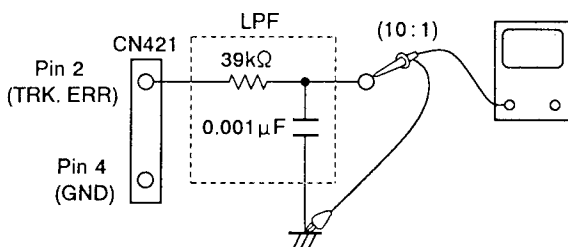
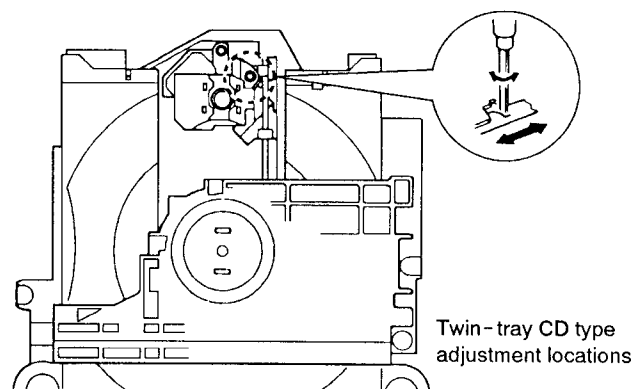
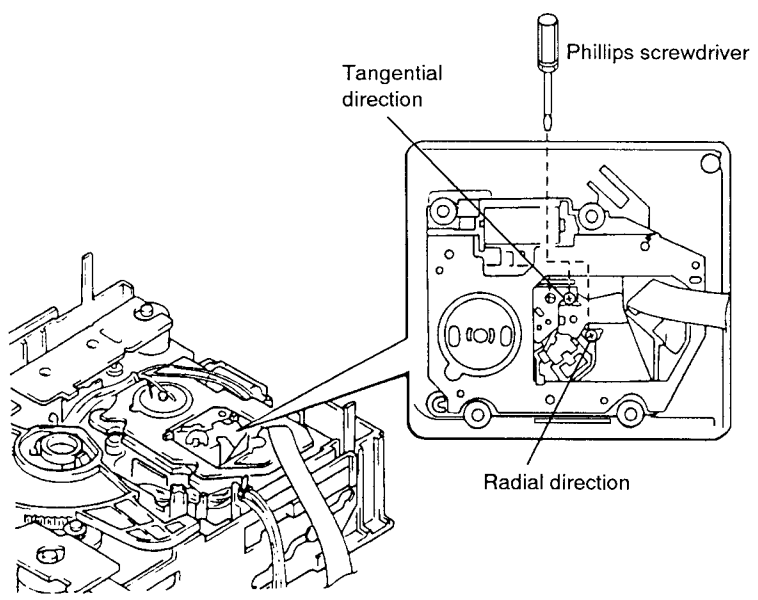


Figure 2





Multi-play CD type adjustment locations

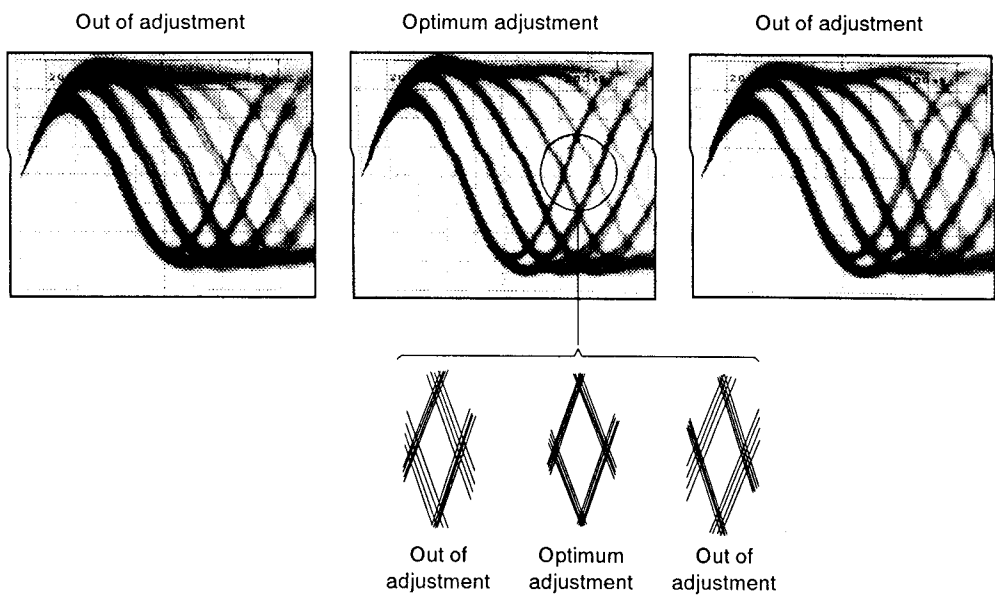


Figure 5 Eye pattern

5. RF level adjustment

● Objective	To optimize the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to CN421, Pin 1 (RF).	● Player state	Test mode, play
	[Settings] 50 mV/division 10 ms/division AC mode	● Adjustment location	VR1 (laser power)
		● Disc	YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the TRACK FWD $\triangleright|$ or TRACK REV $|<<$ key, then press the PROGRAM key after pressing the RANDOM key, then the PLAY \triangleright key in that order to close the respective servos and put the player into play mode.
2. Adjust VR1 (laser power) so that the RF signal amplitude is $1.2\text{V}_{\text{p-p}} \pm 0.1\text{V}$.

6. Focus servo loop gain adjustment

● Objective	To optimize the focus servo loop gain.		
● Symptom when out of adjustment	Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 6. [Settings] CH1 CH2 20 mV/division 5 mV/division X - Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR452 (FCS. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the TRACK FWD $\triangleright\triangleright$ or TRACK REV $\triangleleft\triangleleft$ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key after pressing the RANDOM key, the PLAY \triangleright key, then the PAUSE $\square\square$ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR452 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

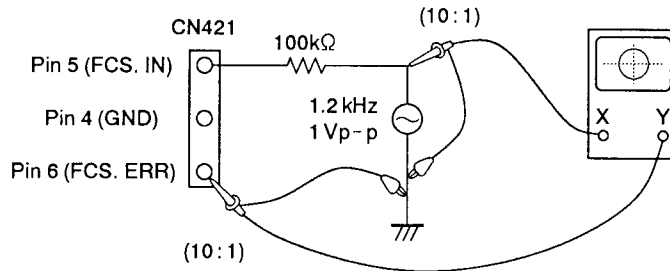
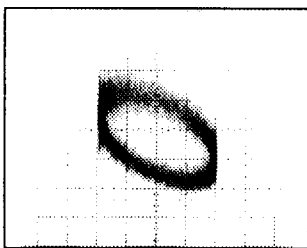
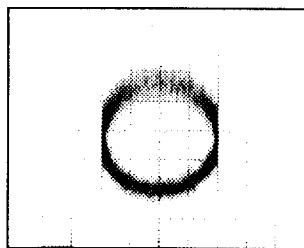


Figure 6

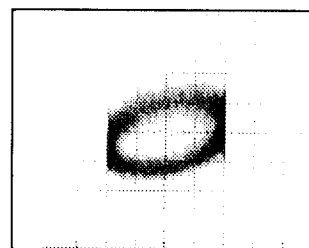
Focus Gain Adjustment



Higher gain



Optimum gain



Lower gain

7. Tracking servo loop gain adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 7.	● Player state	Test mode, play
	[Settings] CHI CH2 50 mV/division 50 mV/division X-Y mode	● Adjustment location	VR451 (TRK. GAN)
		● Disc	YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the TRACK FWD $\triangleright \triangleright$ or TRACK REV $\triangleleft \triangleleft$ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key after pressing the RANDOM key, the PLAY \triangleright key, then the PAUSE $\square \square$ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR451 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

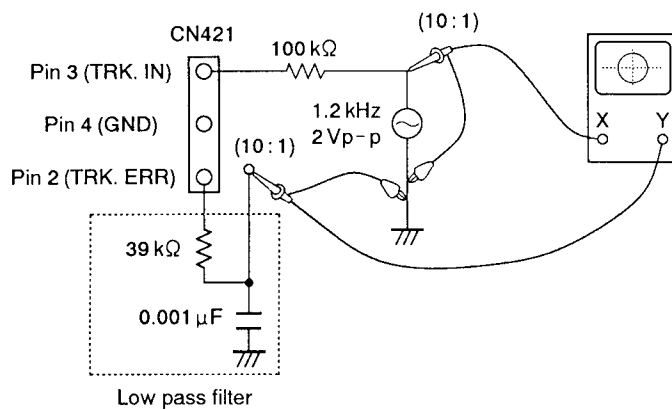
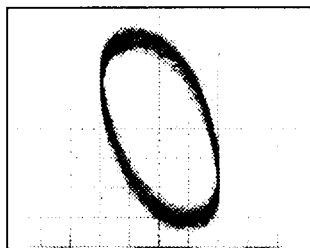
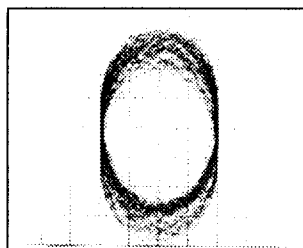


Figure 7

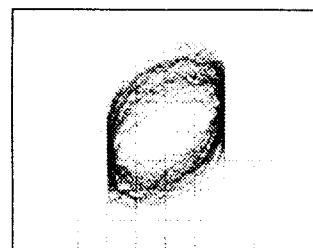
Tracking Gain Adjustment



Higher gain



Optimum gain



Lower gain

8. Focus error signal (focus S curve) verification

● Objective	To judge whether the pickup is ok or not by observing the focus error signal. The pickup is judged from the amplitude of the tracking error signal (as discussed in the section on adjusting the tracking error balance) and the waveform for the focus error signal.		
● Symptom when out of adjustment			
● Measurement instrument connections	Connect the oscilloscope to CN421, Pin 6 (FCS. ERR). [Settings] 100 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, stop None YEDS-7

[Procedure]

1. Connect CN421 Pin 5 to ground.
2. Mount the disc.
3. While watching the oscilloscope screen, press the PROGRAM key after pressing the RANDOM key and observe the waveform in Figure 8 for a moment. Verify that the amplitude is at least 2.5 V_{p-p} and that the positive and negative amplitudes are about equal. Since the waveform is only output for a moment when the PROGRAM key is pressed, press this key over and over until you have checked the waveform.

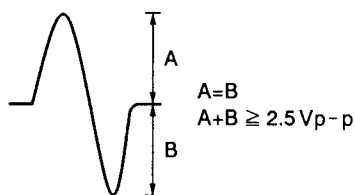


Figure 8

[Judging the pickup]

Do not judge the pickup until all the adjustment have been made correctly. In the following cases, there may be something wrong with the pickup.

1. The tracking error signal amplitude is extremely small (less than 2 V_{p-p}).
2. The focus error signal amplitude is extremely small (less than 2.5 V_{p-p}).
3. The positive and negative amplitudes of the focus error signal are extremely asymmetrical (2 : 1 ratio or more).
4. The RF signal is too small (less than 0.8 V_{p-p}) and even if VR1 is adjusted (laser power), the RF signal can not be brought up to the standard level.

8.2 TUNER SECTION ADJUSTMENT

● Adjustment points are as shown in Fig. 8-3.

8.2.1 FM tuner section

● Make the wire connections as shown in Fig. 8-1.

● Press the BAND key to set FM mode.

Step No.	FM SG (1kHz, ± 75 kHz dev.)		XC-P410M, XC-P410T Reception Frequency Display	Adjustment	
	Frequency (MHz)	Level (dB μ)		Adjustment Location	Specification
1	98.0	60	98.0MHz	L305	Adjust so that the voltage between VREF and TM terminals in the CDTX unit becomes $0V \pm 100mV$.
2	98.0	60	98.0MHz	—	Confirm that the level of TX-L (CN411-10) and TX-R (CN411-8) are $0dBV \pm 3.0 dB$.
3	98.0	15	98.0MHz	VR302	Adjust so that the antenna input level becomes $15dB\mu$ and TUNED IND. lights up.
4	98.0	12	98.0MHz	—	Confirm that the distortion factor of TX-L (CN411-10) is within 3%.
5	98.0	60(No modulation)	98.0MHz	VR301	Adjust the frequency of VCO terminal in the CDTX unit to $76kHz \pm 200Hz$. (*2)
6	98.0	80 (*1)	98.0MHz	—	Confirm that the distortion factors of TX-L (CN411-10) and TX-R (CN411-8) are less than 2.0%.
7	98.0	80 (*1)	98.0MHz	—	Confirm that the separations of TX-L (CN411-10) and TX-R (CN411-8) are more than 25dB.
8	98.0	Variable (*1)	98.0MHz	—	Confirm that the STEREO indicator lights up and goes out when the FM SG level is gradually increased.
9	98.0	80 (*1)	98.0MHz	—	Press the FM-MONO switch on the front panel and confirm that the mode becomes monaural.

(*1) Stereo Modulation: Main $1kHz L + R \pm 68.25kHz dev$, Pilot $19kHz \pm 6.75kHz dev$.

(*2) Adjust at $76.2kHz \pm 300Hz$ when it is within 2 minutes after power-on.

8.2.2 AM tuner section

● For the KU, KC, SD and YPW types, perform the adjustment in steps 4 through 6 and 8.

● Make the wire connections as shown in Fig. 8-2.

● Press the BAND key to set AM mode.

● For the HE and HB types, perform the adjustment in steps 4 through 8.

● For the HEWZI type, perform the adjustment in steps 1 through 6 and 8.

Step No.	AM SG (400Hz, 30% modulation)		XC-P410M, XC-P410T Reception Frequency Display	Adjustment	
	Frequency (kHz)	Level (dB μ)		Adjustment Location	Specification
1	603	30	603kHz	Ⓐ side of MW block TC301	Adjust the voltage of SM terminal to the maximum.
	1395		1395kHz		
2	Repeat step 1 until voltage becomes the maximum.				
3	603	30	603kHz	F302	Adjust the voltage of SM terminal to the maximum.
4	(1000: KU only) 999	30	(1000kHz: KU only) 999kHz	VR303	Adjust so that the antenna input level becomes $30dB\mu$ and TUNED IND. lights up.
5	(1000: KU only) 999	74	(1000kHz: KU only) 999kHz	—	Confirm that the levels of TX-L (CN411-10) and TX-R (CN411-8) are $-14.5dBV \pm 4dB$.
6	(1000: KU only) 999	Variable	(1000kHz: KU only) 999kHz	—	Confirm that the antenna input level of $-10dB$ of the rated output becomes more than $24dB\mu V$.
7	254	74	254kHz	—	Confirm that the antenna input level of $-10dB$ of the rated output becomes more than $30dB\mu V$.
8	999(*3)	74	999kHz	—	Confirm that the output level is $-2dB$ dB when the AM-NR switch position is changed from OFF to ON.

(*3) Adjust with AM SG modulated by 30% at 1kHz.

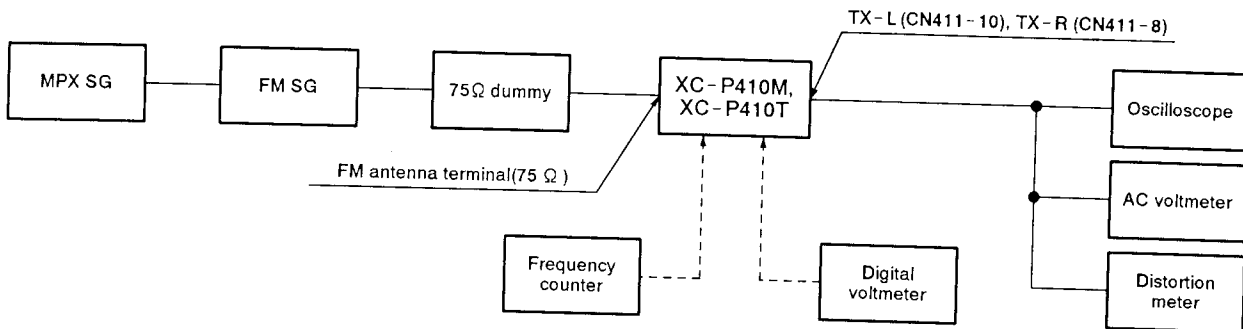


Fig. 8-1 FM adjustment connection diagram

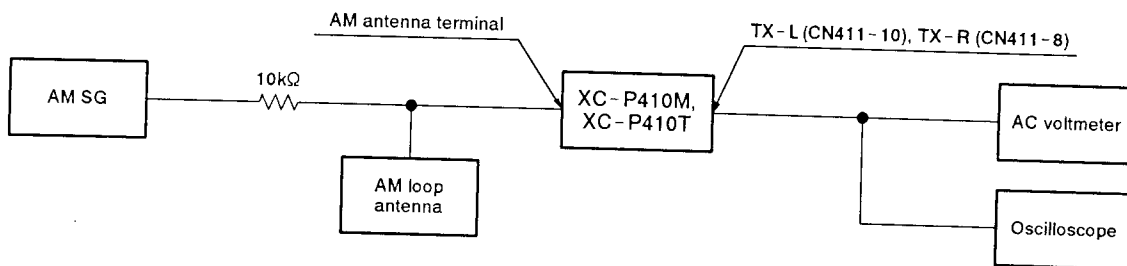


Fig. 8-2 AM adjustment connection diagram

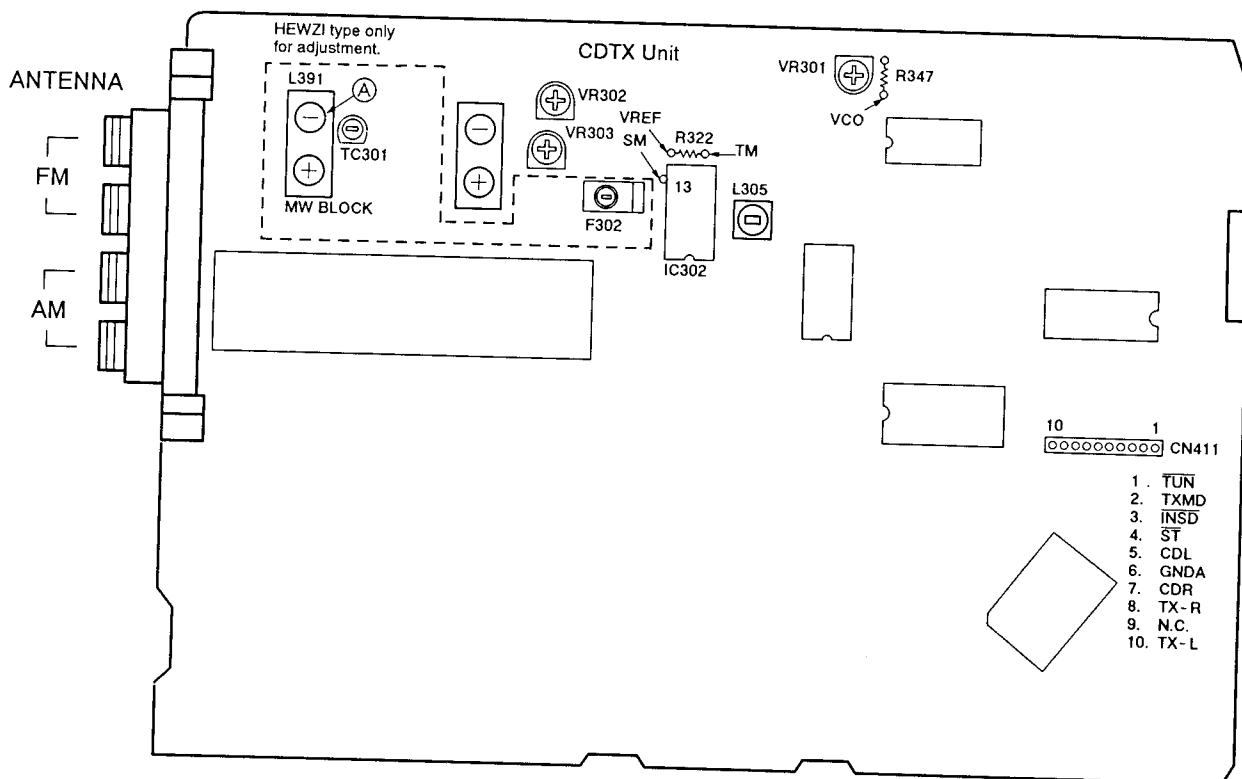


Fig. 8-3 Adjustment points

8. RÉGLAGES

8.1 RÉGLAGE DU SECTION CD

1. Méthodes de réglage

Si le lecteur CD est mal réglé, il risque de ne plus fonctionner normalement, voire ne plus fonctionner du tout, même si le capteur et la circuiterie en présentent aucune anomalie. Par conséquent, ajuster le lecteur correctement en suivant les démarches de réglage.

1-1 Points de réglage/Point et ordre de vérification

Etape	Point	Point d'essai	Emplacement du réglage
1	Réglage du décalage de la mise au point	CN421, Broche 6 (FCS. ERR)	VR403 (FCS. OFS)
2	Réglage du réseau de diffraction	CN421, Broche 2 (TRK. ERR)	Fente de réglage du réseau de diffraction
3	Réglage d'équilibrage d'erreur d'alignement	CN421, Broche 2 (TRK. ERR)	VR402 (TRK. BAL)
4	Réglage d'inclinaison radiale/tangentielle du capteur	CN421, Broche 1 (RF)	Vis de réglage d'inclinaison radiale, vis de réglage d'inclinaison tangentielle
5	Réglage du niveau RF	CN421, Broche 1 (RF)	VR1 (RF level)
6	Réglage de gain de boucle asservie de la mise au point	CN421, Broche 5 (FCS. IN) CN421, Broche 6 (FCS. ERR)	VR452 (FCS. GAN)
7	Réglage de gain de boucle asservie de l'alignement	CN421, Broche 3 (TRK. IN) CN421, Broche 2 (TRK. ERR)	VR451 (TRK. GAN)
8	Vérification du signal d'erreur de la mise au point	CN421, Broche 6 (FCS. ERR)	_____

● Tableau des abréviations

FCS. ERR	:Erreur de mise au point
FCS. OFS	:Décalage de mise au point
TRK. ERR	:Erreur d'alignement
TRK. BAL	:Équilibrage d'erreur d'alignement
FCS. IN	:Mise au point correcte
TRK. IN	:Alignement correct

1-2 Instruments de mesure et outils

- Oscilloscope cathodique à deux faisceaux (sonde 10 : 1)
- Oscillateur de basse fréquence
- Disque d'essai (YEDS- 7)
- Disque de 12-cm (avec au moins 70 minutes d'enregistrement) (Dans le cas d'un lecteur à double plateau)
- Filtre passe-bas ($39 \text{ k}\Omega + 0.001 \mu\text{F}$)
- Résistance ($100 \text{ k}\Omega$)
- Clé hexagonale (M3 mm) (inutile pour le lecteur multidisques)
- Outils conventionnels

1-3 Point d'essai et positions de réglage de la résistance variable

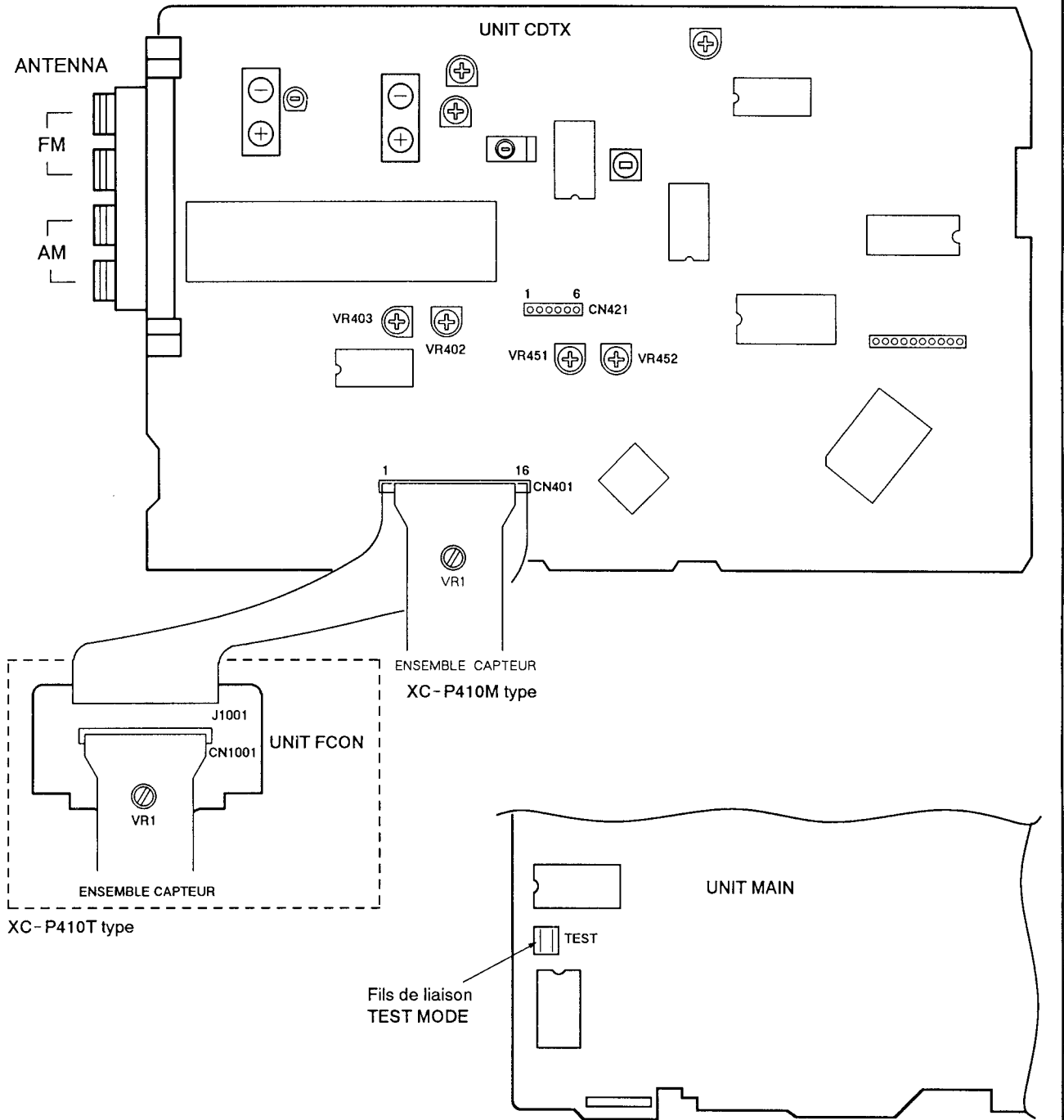


Figure 1 Emplacement des réglages

1-4 Remarques

1. Utiliser une sonde 10:1 pour l'oscilloscope.
2. Toutes les positions (réglages) des boutons de l'oscilloscope, dans les démarches de réglage, sont conçues pour l'usage d'une sonde 10:1.

1-5 Mode d'essai

Ces modèles sont munis d'un mode d'essai, de façon que les réglages requis à la réparation puissent être effectués aisément. Quand ces modèles sont en mode d'essai, les touches du panneau avant ne fonctionnent pas comme à l'ordinaire. Les réglages et les vérifications peuvent s'effectuer par l'enclenchement de ces touches, à conditions de suivre les démarches requises. Dans le cas de ces modèles, tous les réglages sont réalisés en mode d'essai.

[Mise en mode d'essai]

Voici la manière de mettre le modèle en mode d'essai.

1. Commuter l'interrupteur d'alimentation sur marche.
2. Court-circuiter les fils de liaison du mode d'essai. (Voir Figure 1.)

Quand le mode d'essai est correctement réglé, l'affichage est différent de celui qui apparaît généralement à la mise sous tension. La lettre "T" apparaît sur le bas gauche du bloc d'affichage FL.






[Pour sortir du mode d'essai]

Voici la procédure pour sortir du mode d'essai.

1. Appuyer sur la touche STOP pour arrêter toutes les opérations.
2. Sur le panneau avant, commuter l'interrupteur d'alimentation sur arrêt.

[Fonctionnement des touches en mode d'essai]

Code	Nom de la touche	Fonction en mode d'essai	Explications
	PROGRAM	Fermeture du circuit asservi de la mise au point	<p>Dans le cas d'un lecteur à double plateau, el se place en mode de lecture. Dans le cas d'un lecteur multidisque uniquement, la diode laser RANDOM s'allume et l'actuateur de la mise au point s'abaisse (*1), puis se relève lentement (*2) et le circuit servo de la mise au point se ferme au point où la lentille de l'objectif se focalise sur le disque.</p> <p>Quand l'appareil est dans cet état, si l'on fait légèrement tourner à la main le disque arrêté, le bruit produit par le circuit servo de la mise au point sera audible.</p> <p>Si ce bruit est perçu, le circuit servo de la mise au point fonctionne correctement. Si cette touche est enclenchée et qu'aucun disque n'est installé, la diode laser s'allume, l'actuateur de la mise au point s'abaisse (*3), se relève, puis s'abaisse une deuxième fois (*4) et enfin, revient à sa position de départ.</p> <p>Remarque : Dans le cas d'un lecteur multidisque, les opérations sont inversées de cette manière.</p> <p>*1:L'actuateur de la mise au point se relève. *2:S'abaisse lentement. *3:Se soulève. *4:S'abaisse et se soulève une deuxième fois.</p>
▷	PLAY	Asservissement de rotation en service	<p>Démarré le moteur de rotation dans le sens des aiguilles d'une montre, quand la rotation du disque atteint la vitesse prescrite (environ 500 tours/min à la circonférence interne) et place le circuit servo de rotation dans une boucle fermée.</p> <p>Attention. Si cette touche est enfoncée et qu'un disque n'est pas installé, le moteur de rotation va tourner à la vitesse maximum.</p> <p>Si le circuit servo de la mise au point ne passe pas comme prévu dans une boucle fermée ou que la diode laser brille dans le miroir à la périphérie externe du disque, le même symptôme se produit.</p>
	HI-LITE SCAN	Déplacement vers la périphérie externe à 10,000 pistes	<p>En appuyant sur cette touche lorsque le capteur a été déplacé vers la périphérie interne du disque et le circuit servo de mise au point et d'alignement travaille en boucle fermée, le capteur se déplace vers l'extérieur à environ 10,000 pistes, (dans le cas d'un disque de 12 pouces, la position centrale entre la périphérie externe et interne.)</p>

Code	Nom de la touche	Fonction en mode d'essai	Explications
	PAUSE	Ouverture/Fermeture du circuit servo de l'alignement	Le fait d'appuyer sur cette touche quand le circuit servo de la mise au point et de la rotation fonctionnent correctement en boucles fermées, place le circuit servo de l'alignement dans une boucle fermée, fait apparaître, sur le panneau avant, le numéro de la piste en cours de lecture et la durée écoulée, puis sort le signal de lecture. Si la durée écoulée n'est pas affichée ou n'est pas correctement calculée, ou si la reproduction sonore est anormale, il se peut que la diode laser s'active dans la section dépourvue de signaux enregistrés, au bord externe du disque, qu'un ajustement quelconque soit dérégulé, ou qu'un autre problème se manifeste. Cette touche est de type à bascule, et ouvre/ferme alternativement le circuit servo de l'alignement. Cette touche est inopérante si un disque n'est pas installé.
	TRACK REV	Inversion du chariot (vers l'intérieur)	Déplace le capteur vers la périphérie interne du disque. Quand cette touche est enclenchée et que le circuit servo de l'alignement travaille en boucle fermée, celui-ci change automatiquement dans une boucle ouverte. Comme le capteur ne s'arrête pas automatiquement au point de fin mécanique du mode d'essai, effectuer cette démarche avec précaution.
	TRACK FWD	Inversion du chariot (vers l'extérieur)	Déplace le capteur vers la périphérie externe du disque. Quand cette touche est enclenchée et que le circuit servo de l'alignement travaille en boucle fermée, celui-ci change automatiquement dans une boucle ouverte. Comme le capteur ne s'arrête pas automatiquement au point de fin mécanique du mode d'essai, effectuer cette démarche avec précaution.
	STOP	Arrêt	Initialiser et la rotation du disque s'arrête. Le capteur et le disque ne bougent pas lorsque cette touche est enclenchée.
 *1 OPEN/ CLOSE	OPEN/CLOSE (DISC 1)	Ouverture/Fermeture du plateau à disque	Ouvre/Ferme le plateau à disque. Cette touche est de type à bascule et ouvre/ferme alternativement le plateau.
	EJECT	Ejection du magasin à disques	Range le disque n°1 dans le magasin à disques, puis éjecte celui-ci. Cependant, bien que le magasin soit éjecté, le capteur ne revient pas sur sa position de départ. Même si le magasin à disques est réinstallé, la position du capteur reste inchangée.

Remarque 1: En mode d'essai, le segment **REF** au centre du bloc d'affichage FL s'allume lorsque la tête de lecture atteint la périphérie interne (le commutateur interne est positionné sur ON).

Remarque 2: Lors de l'insertion du magasin, le disque 1 est chargé automatiquement.

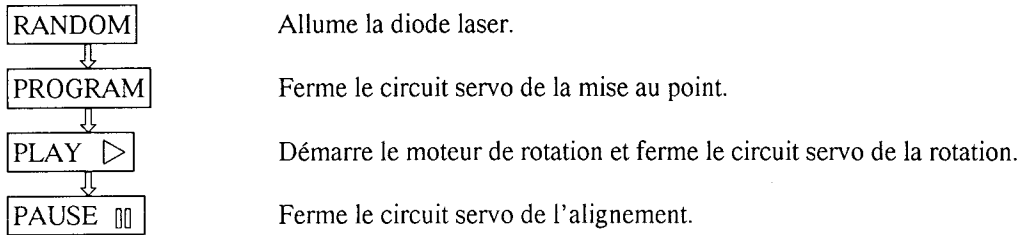
(Dans le cas d'un lecteur multidisques uniquement)

*1: Pour le cas d'un lecteur multidisques uniquement.

[Lecture de disque en mode d'essai]

En mode d'essai, comme les circuits servo fonctionnent de manière indépendante, la lecture d'un disque exige que les touches soient enclenchées dans l'ordre prescrit, afin de fermer les circuits servo.

Voici l'ordre d'enclenchement des touches pour reproduire un disque en mode d'essai.



Attendre 2 à 3 secondes entre chaque opération.

1. Réglage du décalage de la mise au point

● Objectif	Règle le décalage CC de l'amplificateur d'erreur de mise au point.		
● Symptôme quand déréglé	Le lecteur ne procède plus à la mise au point et le signal RF n'est pas clair.		
● Raccordement des instruments de mesure	Raccorder l'oscilloscope à CN421, broche 6 (FCS. ERR).	● Etat du lecteur	Mode d'essai, arrêté (juste l'interrupteur d'alimentation commuté sur marche)
	[Réglages] 5 mV/division 10 ms/division mode CC	● Emplacement du réglage	VR403(FCS. OFS)
		● Disque	Aucun requis

[Marche à suivre]

Ajuster VR403 (FCS. OFS) de façon que la tension à CN421 broche 6 (FCS. ERR) soit

XC-P410T	:- 50 ± 50 mV.
XC-P410M	:- 150 ± 50 mV.

2. Réglage du réseau de diffraction

● Objectif	Pour aligner les points du rayon laser producteur d'erreur d'alignement sur l'angle optimum de la piste.		
● Symptôme quand déréglé	La lecture ne commence pas, la recherche de piste est impossible, les pistes sont sautées.		
● Raccordement des instruments de mesure	Raccorder l'oscilloscope à CN421, broche 2 (TRK. ERR) via un filtre passe-bas. (Voir Figure 2)	● Etat du lecteur	Mode d'essai, circuits servo de la mise au point et de la rotation fermés, circuit servo de l'alignement ouvert.
	[Réglages] 50 mV/division 5 ms/division mode CC	● Emplacement du réglage	Fente de réglage du réseau de diffraction du capteur.
		● Disque	Dans le cas d'un lecteur à double plateau, utiliser le disque de 12 cm. (il est impossible d'employer le disque YEDS-7). Pour un lecteur multidisques, utiliser le disque d'essai YEDS-7.

[Marche à suivre]

- Déplacer le capteur sur le bord externe du disque par la touche TRACK FWD ▷▷ ou la touche TRACK REV ◀◀, de façon que la fente de réglage du réseau de diffraction se situe sur bord extérieur du disque, où elle peut être réglée.

Remarque : Dans le cas d'un lecteur multidisque, utiliser la touche TRACK FWD ▷▷ ou la touche TRACK REV ◀◀ pour déplacer le capteur à mi-chemin sur le disque (R=35 mm).

- Appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM, puis sur la touche PLAY ▷, dans cet ordre, pour fermer le circuit servo de la mise au point, puis celui de la rotation.
- Insérer un tournevis ordinaire dans le réseau de diffraction pour trouver le point zéro. Pour plus de détails, voir page suivante.
- Si l'on tourne lentement le tournevis dans le sens contraire des aiguilles d'une montre (dans le sens des aiguilles d'une montre pour un lecteur multidisque) à partir du point zéro, l'amplitude de l'onde augmente graduellement et si l'on continue à tourner le tournevis, l'amplitude de l'onde diminue de nouveau. Tourner le tournevis dans le sens contraire des aiguilles d'une montre (sens des aiguilles d'une montre pour un lecteur multidisque) à partir du point zéro et régler le réseau de diffraction au premier point où l'amplitude de l'onde atteint son maximum.

Référence : La Figure 3 illustre la relation entre l'angle du faisceau de l'alignement et la piste et la forme d'onde.

Remarque : L'amplitude du signal d'erreur d'alignement se situe aux environs de 3 Vc-c (quand un filtre passe-bas de $39\text{ k}\Omega \pm 0,001\ \mu\text{F}$ est utilisé). Si cette amplitude est extrêmement petite (2 Vc-c ou moins), il peut s'ensuivre un mauvais fonctionnement de la lentille d'objectif ou du capteur. Si la différence entre l'amplitude du signal d'erreur au bord le plus intérieur et au bord le plus extérieur du disque est supérieure à 10%, ceci signifie que le réseau de diffraction n'est pas réglé à son point optimum. Dans ce cas, recommencer le réglage.

- Replacer le capteur plus ou moins à mi-chemin sur le disque par la tuche TRACK REV ◀◀, appuyer sur la touche PAUSE ◻◻ et vérifier que le numéro de piste et la durée écoulée sont affichés sur le panneau avant. Si ces paramètres n'apparaissent pas ce moment, ou que la durée écoulée change de manière irrégulière, vérifier le point zéro et recommencer le réglage du réseau de diffraction.

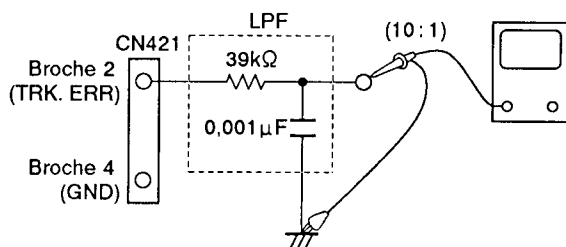
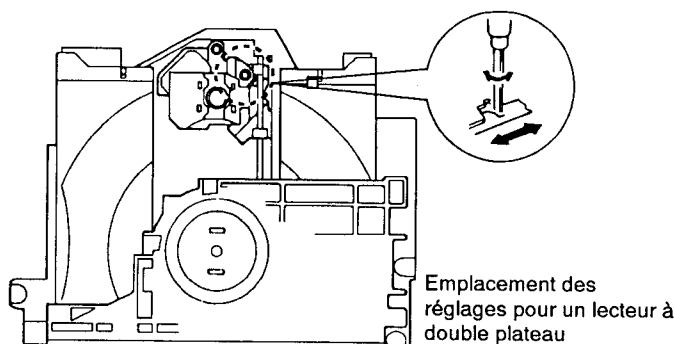
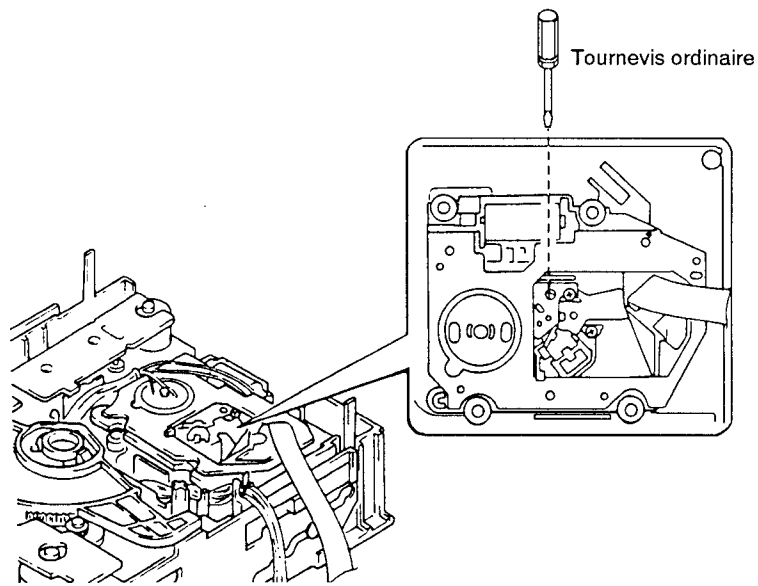


Figure 2





Emplacement des réglages pour un lecteur multidisque

[Repérage du point zéro]

Quand le tournevis est introduit dans la fente de réglage du réseau de diffraction et que l'angle du réseau de diffraction est modifié, l'amplitude du signal d'erreur d'alignement à CN421, broche 2, change. Dans les limites de la plage du réseau de diffraction, il existe six emplacements où l'amplitude de l'onde atteint le minimum. Mais l'enveloppe de la forme d'onde n'est régulière qu'à un seul de ces emplacements. Ce point se situe à l'endroit où les trois rayons laser, divisés par le réseau de diffraction, se situent exactement sur la même piste (voir Figure 3). Ce point s'appelle le point zéro. Lors du réglage du réseau de diffraction, ce point zéro est repéré et utilisé comme position de référence.

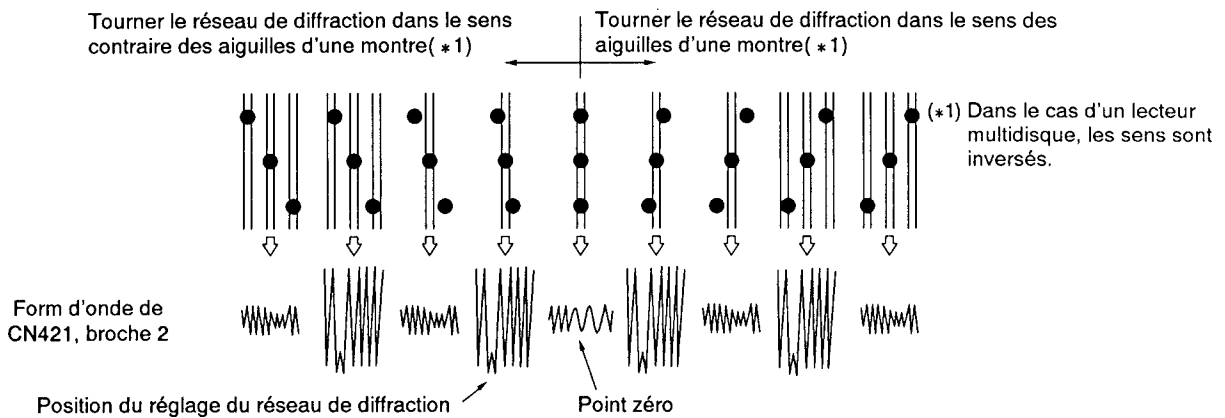
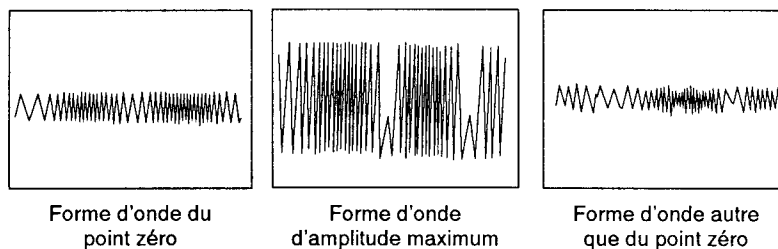


Figure 3

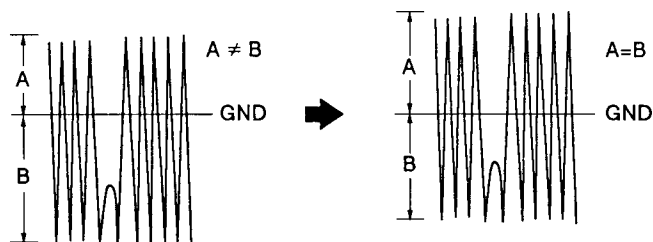


3. Réglage d'équilibrage d'erreur d'alignement

● Objectif	Pour corriger la variation de sensibilité de la photodiode d'alignement.		
● Symptôme quand dérégulé	La lecture ne commence pas, la recherche de piste est impossible.		
● Raccordement des instruments de mesure	Raccorder l'oscilloscope à CN421, broche 2 (TRK. ERR). Cette connexion peut être faite par l'intermédiaire d'un filtre passe-bas.	● Etat du lecteur	Mode d'essai, circuits servo de la mise au point et de la rotation fermés, circuit servo de l'alignement ouvert.
	[Réglages] 50 mV/division 5 ms/division mode CC	● Emplacement du réglage	VR402(TRK. BAL)
		● Disque	YEDS-7

[Marche à suivre]

1. Déplacer le capteur à mi-chemin sur le disque (R=35 mm) par la touche TRACK FWD $\triangleright\triangleright$ ou la touche TRACK REV $\triangleleft\triangleleft$.
2. Appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM, puis sur la touche PLAY \triangleright , dans cet ordre, pour fermer le circuit servo de la mise au point, puis celui de la rotation.
3. Aligner la ligne lumineuse (masse) au centre de l'écran de l'oscilloscope et placer celui-ci en mode CC.
4. Ajuster VR402 (TRK. BAL) de façon que l'amplitude positive et l'amplitude négative du signal d'erreur d'alignement à CN421, broche 2 (TRK. ERR) soient identiques (c'est-à-dire, qu'il n'y ait aucun composant CC).



S'il y a un composant CC

S'il n'y a pas de composant CC

4. Réglage d'inclinaison radiale/tangentielle du capteur

● Objectif	Pour régler l'angle du capteur par rapport au disque, de façon que les rayons laser frappent vericalement le disque et permettre ainsi la lecture optimum des signaux RF.		
● Symptôme quand déréglé	Son interrompu ; certains disques peuvent être lus et pas d'autres.		
● Raccordement des instruments de mesure	Raccorder l'oscilloscope à CN421, broche 1 (RF). [Réglages] 20 mV/division 200 ns/division mode CA	● Etat du lecteur ● Emplacement du réglage ● Disque	Mode d'essai, lecture Vis de réglage d'inclinaison radiale. Vis de réglage d'inclinaison tangentielle. Dans le cas d'un lecteur à double plateau, utiliser le disque de 12 cm. (il est impossible d'employer le disque YEDS-7). Dans le cas d'un lecteur multidisque, utiliser le disque d'essai YEDS-7.

[Marche à suivre]

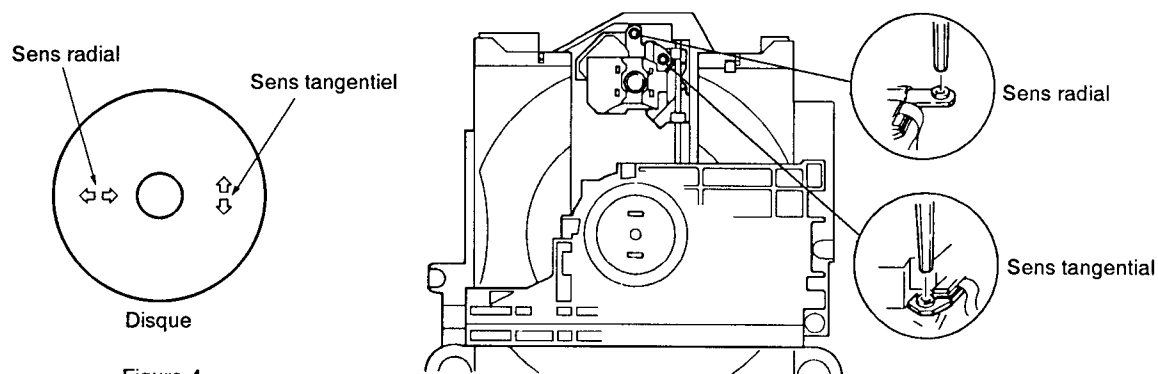
1. Déplacer le capteur sur le bord externe du disque par la touche TRACK FWD ▷▷ ou la touche TRACK REV ◀◀, de façon que les vis de réglage d'inclinaison radiale et tangentielle puissent être réglées.

Remarque: Dans le cas d'un lecteur multidisque, utiliser la touche TRACK FWD ▷▷ ou la touche TRACK REV ◀◀ pour déplacer le capteur à mi-chemin sur le disque (R=35 mm).

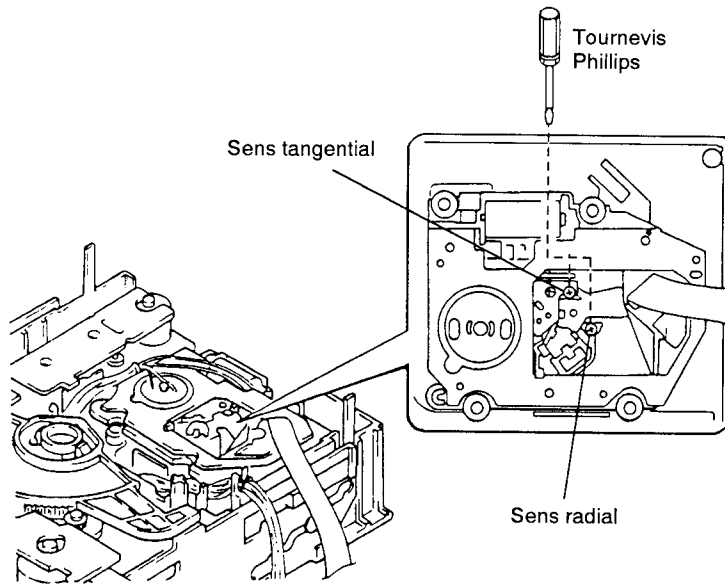
Appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM, PLAY ▷ et PAUSE ◻◻ dans cet ordre, afin de fermer le circuit servo de la mise au point, puis celui de la rotation et placer le lecteur en mode de lecture.

2. D'abord, ajuster la vis d'inclinaison radiale à l'aide d'une clé hexagonale M de 3 mm, de façon que le motif en oeil (c'est-à-dire, le diamant au centre du signal RF) soit le plus clairement visible. Dans le cas d'un lecteur multidisque, utiliser un tournevis Phillips.
3. Ensuite, ajuster la vis d'inclinaison tangentielle à l'aide d'une clé hexagonale M de 3 mm, de façon que le motif en oeil (c'est-à-dire, le diamant au centre du signal RF) soit le plus clairement visible (Figure 5). Dans le cas d'un lecteur multidisque, utiliser un tournevis Phillips.
4. Ajuster de nouveau la vis d'inclinaison radiale et la vis d'inclinaison tangentielle de façon que le motif en oeil soit le plus clairement visible. Le cas échéant, régler les deux vis de façon que le motif en oeil soit le plus clairement visible.

Remarque: "Radial" et "tangentiel" se rapportent aux sens par rapport au disque illustré à la Figure 4.



Emplacements des réglages pour un lecteur à double plateau



Emplacements des réglages pour un lecteur multidisque

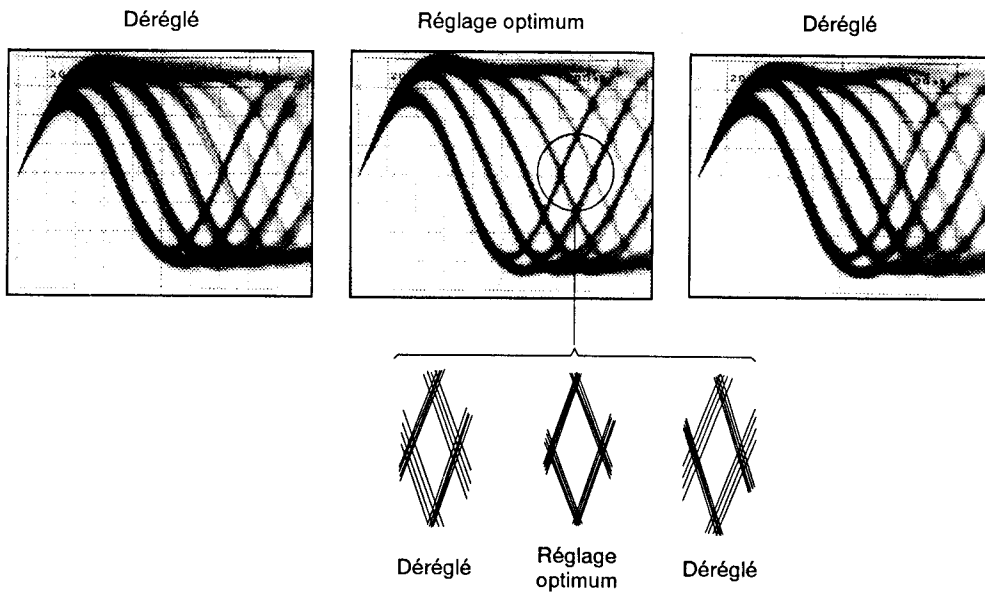


Figure 5 Motif en oeil

5. Réglage du niveau RF (niveau RF)

● Objectif	Pour optimiser l'amplitude du signal RF de lecture		
● Symptôme quand déréglé	Pas de lecture ni de recherche		
● Raccordement des instruments de mesure	Raccorder l'oscilloscope à CN421, broche 1 (RF).	● Etat du lecteur	Mode d'essai, lecture
	[Réglages] 50 mV/division 10 ms/division mode CA	● Emplacement du réglage	VR1 (alimentation du laser)
		● Disque	YEDS-7

[Marche à suivre]

1. Placer le capteur à mi-chemin sur le disque (R=35 mm) à l'aide de la touche TRACK FWD ▷▷ ou la touche TRACK REV ◀◀.
 Ensuite, appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM, puis sur la touche PLAY ▷, dans cet ordre, pour fermer les circuits servo respectifs et mettre le lecteur en mode de lecteur.
2. Ajuster VR1 (alimentation du laser) de façon que l'amplitude du signal RF atteigne $1,2 V_{c-c} \pm 0,1 V$

6. Réglage de gain de boucle asservie de la mise au point

● Objectif	Pour optimiser le gain de la boucle d'asservissement de la mise au point.		
● Symptôme quand déréglé	La lecture ne commence pas ou l'actuateur de la mise au point est parasité.		
● Raccordement des instruments de mesure	Voir Figure 6.	● Etat du lecteur	Mode d'essai, lecture
	[Réglages] GAN. 1 GAN. 2 20 mV/division 5mV/division mode X-Y	● Emplacement du réglage	VR452 (FCS. GAN)
		● Disque	YEDS-7

[Marche à suivre]

1. Régler la sortie du générateur AF sur 1,2 kHz et 1 Vc-c.
2. Appuyer sur la touche TRACK FWD $\triangleright\triangleright$ ou la touche TRACK REV $\triangleleft\triangleleft$ pour placer le capteur à mi-chemin sur le disque (R=35 mm). Ensuite, appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM, la touche PLAY \triangleright , puis sur la touche PAUSE $\square\square$, dans cet ordre, pour fermer les circuits servo respectifs et placer le lecteur en mode de lecture.
3. Ajuster VR452 (FCS. GAN) de façon que la forme d'onde de Lissajous soit symétrique aux alentours de l'axe X et l'axe Y.

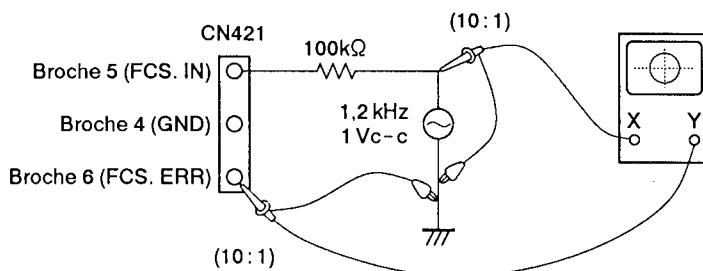
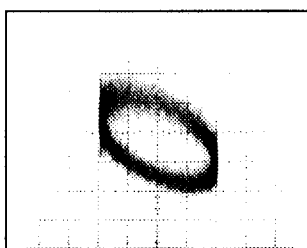
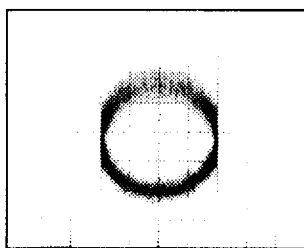


Figure 6

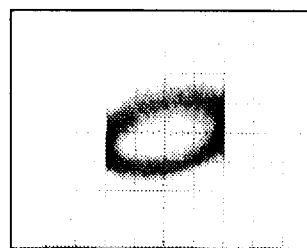
Réglage de gain de mise au point



Gain supérieur



Gain optimum



Gain inférieur

7. Réglage de gain de boucle asservie de l'alignement

● Objectif	Pour optimiser gain de la boucle d'asservissement de l'alignement.			
● Symptôme quand déréglé	La lecture ne commence pas, l'actuateur est parasité pendant la recherche, ou des pistes sont sautées.			
● Raccordement des instruments de mesure	Voir Figure 7.		● Etat du lecteur	Mode d'essai, lecture
	[Réglages] GAN. 1 50 mV/division mode X-Y	GAN. 2 50 mV/division	● Emplacement du réglage	VR451 (TRK. GAN)
			● Disque	YEDS-7

[Marche à suivre]

1. Régler la sortie du générateur AF sur 1,2 kHz et 2 Vc-c.
2. Appuyer sur la touche TRACK FWD $\triangleright \triangleright$ ou la touche TRACK REV $\triangleleft \triangleleft$ pour placer le capteur à mi-chemin sur le disque (R=35 mm). Ensuite, appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM, la touche PLAY \triangleright , puis sur la touche PAUSE \square , dans cet ordre, pour fermer les circuits servo respectifs et placer le lecteur en mode de lecture.
3. Ajuster VR451 (TRK. GAN) de façon que la forme d'onde de Lissajous soit symétrique aux alentours de l'axe X et l'axe Y.

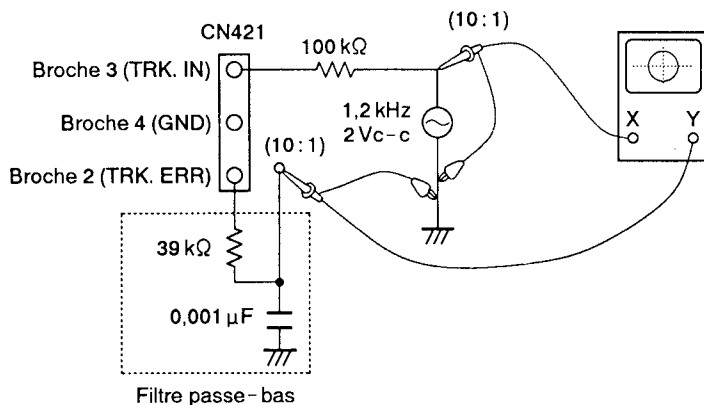
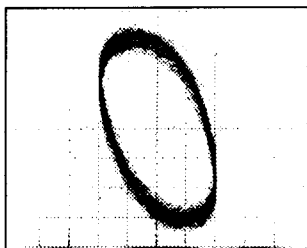
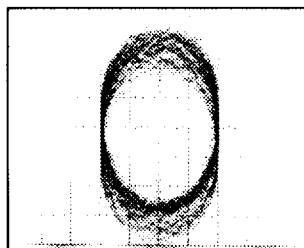


Figure 7

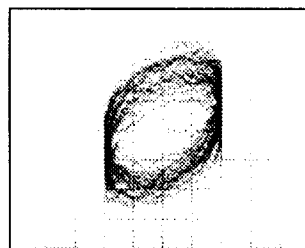
Réglage de gain d'alignement



Gain supérieur



Gain optimum



Gain inférieur

8. Vérification du signal d'erreur de la mise au point

<ul style="list-style-type: none"> ● Objectif 	Pour juger si le capteur est bon ou pas, en observant le signal d'erreur de la mise au point. L'état du capteur s'évalue à partir de l'amplitude du signal d'erreur d'alignement (comme décrit dans le paragraphe relatif à l'équilibrage d'erreur d'alignement), ainsi qu'à partir de la forme d'onde du signal d'erreur de mise au point.		
<ul style="list-style-type: none"> ● Symptôme quand déréglé 			
<ul style="list-style-type: none"> ● Raccordement des instruments de mesure 	Raccorder l'oscilloscope à CN421, broche 6 (FCS. ERR). [Réglages] 100 mV/division 5 ms/division mode CC	<ul style="list-style-type: none"> ● Etat du lecteur ● Emplacement du réglage ● Disque 	Mode de test, arrêt Aucun YEDS-7

[Marche à suivre]

1. Raccorder CN421, broche 5 à la masse.
2. Installer le disque.
3. Tout en regardant l'écran de l'oscilloscope, appuyer sur la touche PROGRAM après l'enfoncement de la touche RANDOM et observer la forme d'onde de la Figure 8, pendant quelques instants. Vérifier que l'amplitude atteint au moins 2,5 Vc-c et que les amplitudes positive et négative soient égales. Comme la forme ne sort que pour un moment, quand la touche PROGRAM est enclenchée, appuyer sur à plusieurs reprises sur cette touche, jusqu'à ce que la forme d'onde ait été vérifiée.

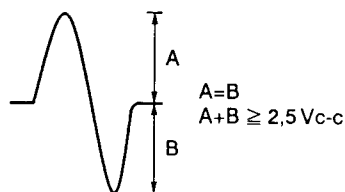


Figure 8

[Evaluation du capteur]

Ne pas tenter d'évaluer l'état du capteur tant que tous les réglages ne sont pas corrects. Les cas suivants témoignent de l'anomalie du capteur.

1. L'amplitude du signal d'erreur d'alignement est extrêmement petite (inférieure à 2 Vc-c).
2. L'amplitude du signal d'erreur de mise au point est extrêmement petite (inférieure à 2,5 Vc-c).
3. Les amplitudes positive et négative du signal d'erreur de mise au point sont extrêmement asymétriques (taux 2:1 ou plus).
4. Le signal RF est trop petit (inférieur à 0,8 Vc-c) et même si VR1 (alimentation du laser) est ajustée, le signal RF ne peut être élevé au niveau standard.

8.2 RÉGLAGE DU SÉCTION TUNER

● Les emplacements du réglage sont illustrés à la Fig. 8-3.

8.2.1 Section du tuner FM

● Précéder aux connexions comme illustré à la Fig. 8-1.

● Presser la touche BAND pour régler sur le mode FM.

Etape N°	FM SG (1kHz ± 75kHz déviat)		XC-P410M, XC-P410T affichage de fréquence de réception	Réglage	
	Fréquence (MHz)	Niveau (dB μ)		Lieu de réglage	Caractéristiques
1	98.0	60	98.0MHz	L305	Régler de façon à ce que la tension entre les bornes VREF et TM de l'unité CDTX est 0V ± 100mV.
2	98.0	60	98.0MHz	—	Vérifier que les niveaux de TX-L (CN411-10) et TX-R (CN411-8) sont 0dBV ± 3.0dB.
3	98.0	15	98.0MHz	VR302	Régler de sorte que le niveau d'entrée de l'antenne soit 15dB μ et TUNED IN s'allume.
4	98.0	12	98.0MHz	—	Vérifier que le facteur de distorsion de TX-L (CN411-10) est dans 3%.
5	98.0	60(Pas de modulation)	98.0MHz	VR301	Régler la fréquence de la borne VCO de l'unité CDTX sur 76kHz ± 200Hz. (*2)
6	98.0	80 (*1)	98.0MHz	—	Vérifier que les niveaux de TX-L (CN411-10) et TX-R (CN411-8) sont moins de 2.0%.
7	98.0	80 (*1)	98.0MHz	—	Vérifier que les séparations de TX-L (CN411-10) et TX-R (CN411-8) sont plus de 25dB.
8	98.0	Variable (*1)	98.0MHz	—	Vérifier que les indicateur STEREO s'allument et s'éteignent quand le niveau FM SG est augmenté graduellement.
9	98.0	80 (*1)	98.0MHz	—	Enfoncer l'interrupteur FM-MONO sur le panneau avant et vérifier que le mode devient monaural.

(*1) Modulation stéréo: Principale 1kHz G + D • ± 68.25kHz de déviation, Pilote 19kHz ± 6.75kHz de déviation.

(*2) Régler sur 76,2kHz ± 300Hz quand il est dans 2 minutes après que l'appareil est mis sous tension.

8.2.2 Section du tuner AM

● Pour le types KU, KC, SD et YPW, procéder le réglage des étapes 4 à 6 et 8.

● Procéder aux connexions comme illustré à la Fig.8-2.

● Presser la touche BAND pour régler sur le mode AM.

● Pour le types HE et HB, procéder le réglage des étapes de 4 à 8.

● Pour le type HEWZI, procéder le réglage des étapes de 1 à 6 et 8.

Etape N°	AM SG (400Hz, modulation 30%)		XC-P410M, XC-P410T affichage de fréquence de réception	Réglage	
	Fréquence (kHz)	Niveau (dB μ)		Lieu de réglage	Caractéristiques
1	603	30	603kHz	Ⓐ côté du bloc MW TC301	Régler la tension de la borne SM sur le maximum.
	1395		1395kHz		
2	Répéter l'étape 1 jusqu'à ce que la tension devient le maximum.				
3	603	30	603kHz	F302	Régler la tension de la borne SM sur le maximum.
4	(1000: Uniquement du KU) 999	30	(1000kHz: Uniquement du KU) 999kHz	VR303	Régler de sorte que le niveau d'entrée de l'antenne soit 30dB μ et TUNED IN s'allume.
5	(1000: Uniquement du KU) 999	74	(1000kHz: Uniquement du KU) 999kHz	—	Vérifier que les niveaux de TX-L (CN411-10) et TX-R (CN411-8) sont - 14.5dBV ± 4dB.
6	(1000: Uniquement du KU) 999	Variable	(1000kHz: Uniquement du KU) 999kHz	—	Vérifier que le niveau d'entrée d'antenne de -10dB de la sortie nominale devient plus de 24dB μ V.
7	254	74	254kHz	—	Vérifier que le niveau d'entrée d'antenne de -10dB de la sortie nominale devient plus de 30dB μ V.
8	999(*3)	74	999kHz	—	Vérifier que le niveau de sortie soit - 2dB μ dB lorsque la position du commutateur AM-NR est modifiée de OFF à ON.

(*3) Régler avec AM SG modulé à 30% sur 1kHz.

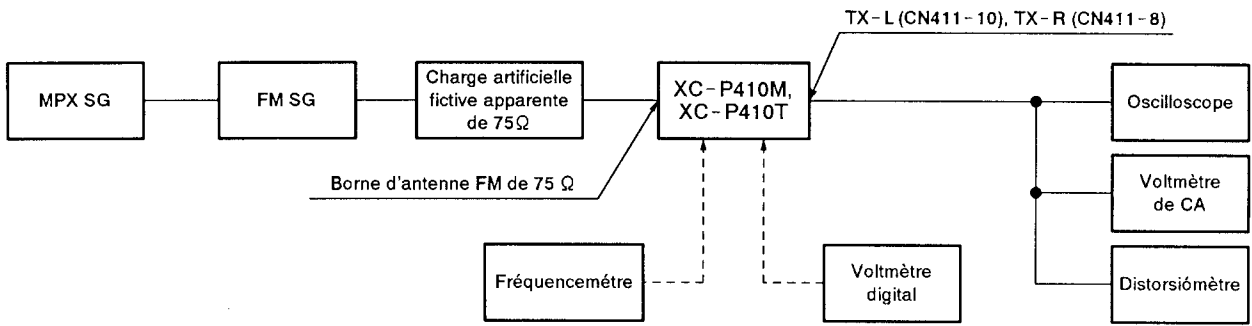


Fig. 8-1 Diagramme de connexions de réglage FM

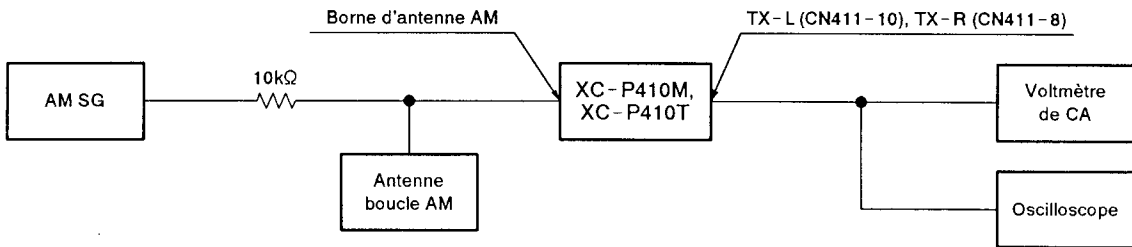


Fig. 8-2 Diagramme de connexions de réglage AM

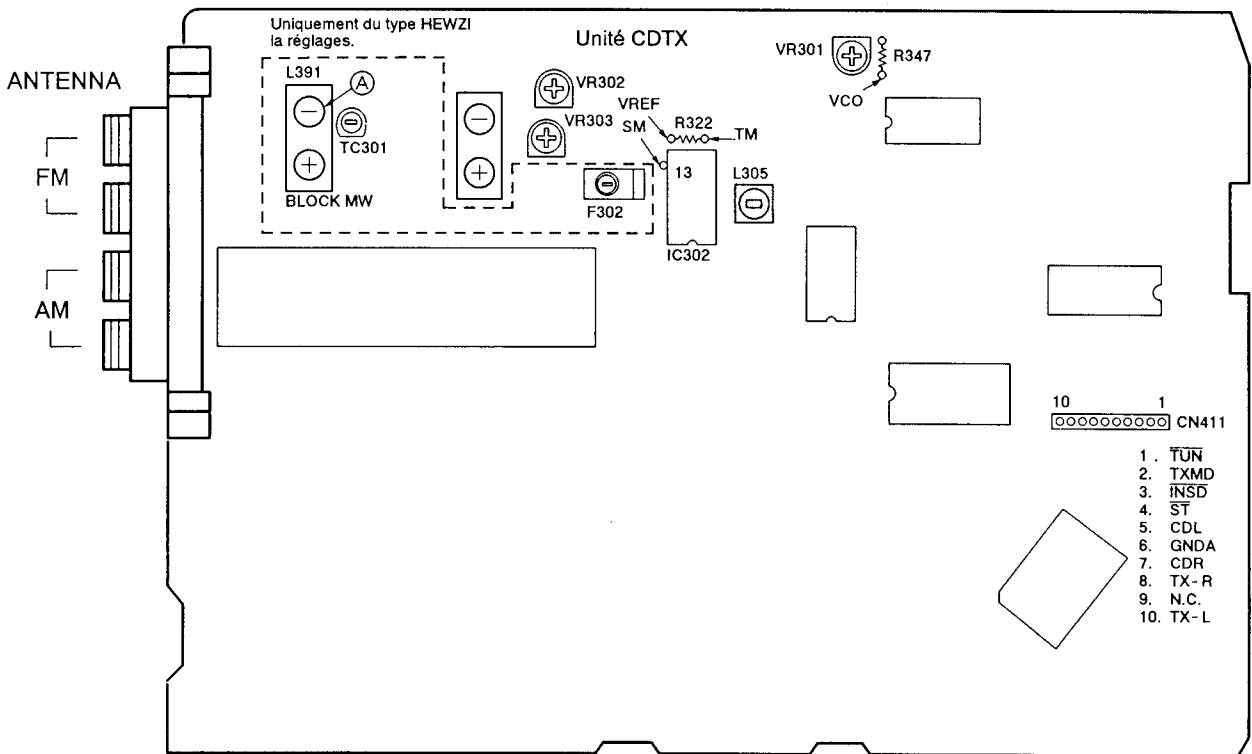


Fig. 8-3 Point de réglage

8. AJUSTES

8.1 AJUSTE DEL SECCIÓN DE CD

1. Métodos de ajuste

Si un reproductor de discos compactos se ajusta incorrecta o inadecuadamente, puede funcionar mal o no trabajar incluso aunque no exista ningún problema en el captor ni en los circuitos. Ajuste correctamente siguiendo el procedimiento de ajuste.

1-1 Ítemes de ajuste/verificación y orden

Paso	Ítem	Punto de prueba	Lugar de ajuste
1	Ajuste del descentramiento de enfoque	CN421, Patilla 6 (FCS. ERR)	VR403 (FCS. OFS)
2	Ajuste de retícula	CN421, Patilla 2 (TRK. ERR)	Ranura de ajuste de retícula
3	Ajuste del equilibrio de ajuste de seguimiento	CN421, Patilla 2 (TRK. ERR)	VR402 (TRK. BAL)
4	Ajuste de la inclinación en sentido radial / tangencial del captor	CN421, Patilla 1 (RF)	Tornillo de ajuste de la inclinación radial. Tornillo de ajuste de la inclinación tangencial
5	Ajuste del nivel de RF	CN421, Patilla 1 (RF)	VR1 (Nivel de RF)
6	Ajuste de la ganancia del bucle del servo de enfoque	CN421, Patilla 5 (FCS. IN) CN421, Patilla 6 (FCS. ERR)	VR452 (FCS. GAN)
7	Ajuste de la ganancia del bucle del servo de seguimiento	CN421, Patilla 3 (TRK. IN) CN421, Patilla 2 (TRK. ERR)	VR451 (TRK. GAN)
8	Verificación de la señal de error de enfoque	CN421, Patilla 6 (FCS. ERR)	_____

● Tabla de abreviaturas

FCS. ERR	:Error de enfoque
FCS. OFS	:Descentramiento de enfoque
TRK. ERR	:Error de seguimiento
TRK. BAL	:Equilibrio de seguimiento
FCS. IN	:Entrada de enfoque
TRK. IN	:Entrada de seguimiento

1-2 Instrumentos y herramientas de medición

- Osciloscopio de doble traza (Sonda de 10:1)
- Oscilador de baja frecuencia
- Disco de prueba (YEDS-7)
- Disco de 12 cm (con 70 minutos de grabación por lo menos)
(Para un tipo de doble bandeja de disco compacto solamente)
- Filtro de paso bajo (39 kΩ + 0,001 μ F)
- Resistor (100 kΩ)
- Llave hexagonal (M 3 mm)(no se emplea para el tipo de reproducción múltiple de disco compacto)
- Herramientas estándar

1-3 Ubicación de los puntos de prueba y los resistores variables de ajuste

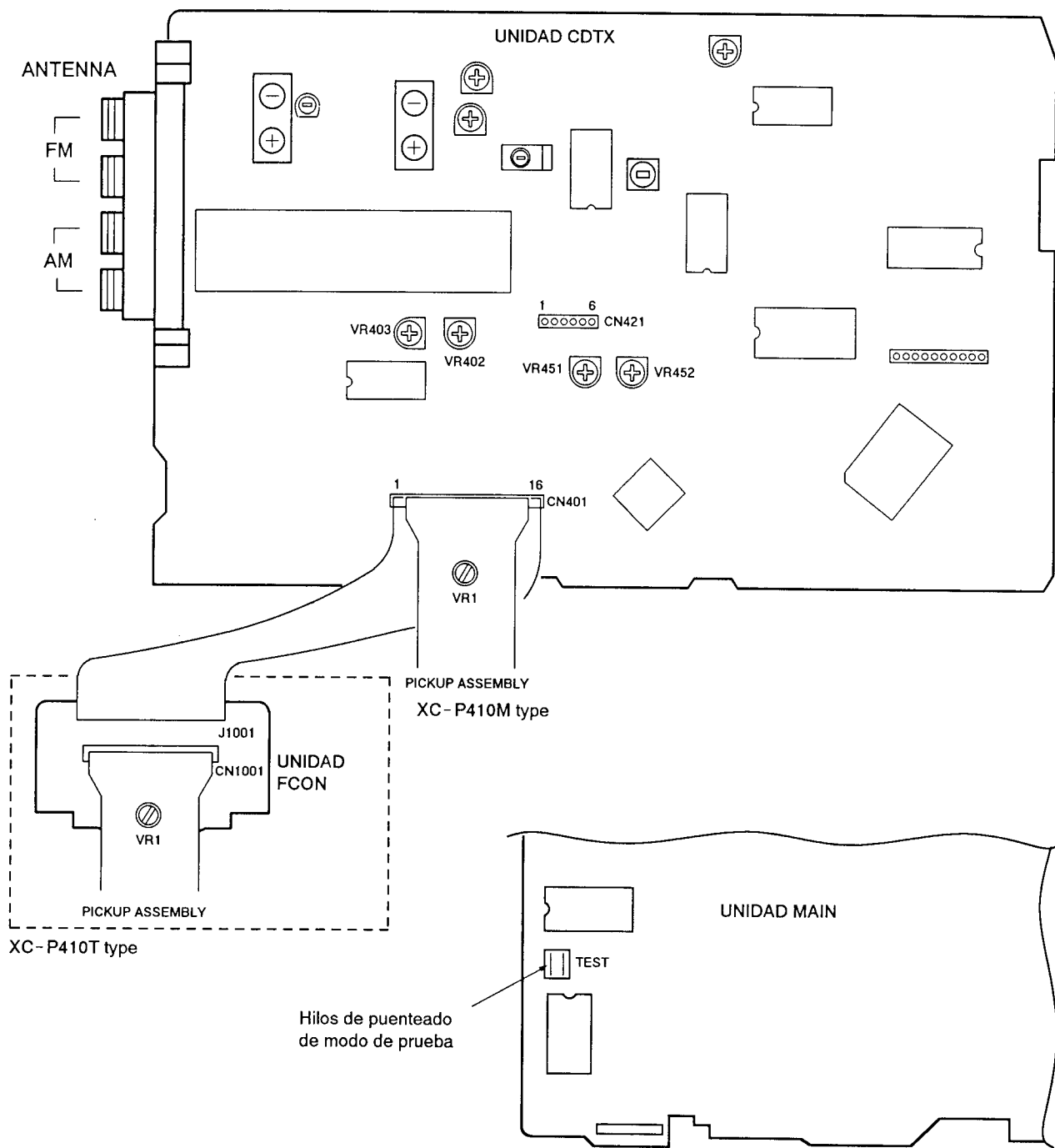


Figura 1 Lugares de ajuste

1-4 Notas

1. Emplee una sonda de 10:1 para el osciloscopio.
2. Todas las posiciones de los mandos (ajustes) para el osciloscopio de los procedimientos de ajuste son para cuando se emplee la sonda de 10:1.

1-5 Modo de prueba

Estos modelos poseen un modo de prueba que permite realizar fácilmente los ajustes y las comprobaciones requeridos para el servicio. Cuando estos modelos estén en el modo de prueba, las teclas del panel frontal trabajarán de forma diferente a la normal. Los ajustes y las comprobaciones podrán realizarse accionando estas teclas de acuerdo con el procedimiento correcto. Para estos modelos, todos los ajustes se realizarán en el modo de prueba.

[Puesta de estos modelos en el modo de prueba]

A continuación se indica cómo poner estos modelos en el modo de prueba.

1. Ponga en ON el interruptor de alimentación.
2. Cortocircuite los hilos de puenteado de modo de prueba. (Consulte la figura 1.)

Cuando haya ajustado correctamente el modo de prueba, la visualización será diferente a la obtenida normalmente al conectar la alimentación. La letra "T" se aparece el cabo izquierdo del bloque de exhibición de FL.






[Desactivación del modo de prueba]

A continuación se indica el procedimiento para desactivar el modo de prueba.

1. Presione la tecla STOP y cese todas las operaciones.
2. Ponga en OFF el interruptor de alimentación del panel frontal.

[Operaciones de teclas en el modo de prueba]

Código	Nombre de la tecla	Función en el modo de prueba	Explicación
	PROGRAM	Cierre del servo de enfoque	<p>Para un tipo de doble bandeja de disco compacto solamente, ésta se moverá hasta la posición de reproducción. Para un tipo de reproducción múltiple de disco compacto solamente, el diodo láser RANDOM se encenderá y el actuador de enfoque descenderá (*1), después se elevará lentamente (*2), y el servo de enfoque se cerrará en el punto en el que el objetivo se enfoque sobre el disco.</p> <p>Con el reproductor en este estado, si gira ligeramente con la mano el disco parado, podrá oír el sonido del servo de enfoque.</p> <p>Si puede oír este sonido, el servo de enfoque estará funcionando correctamente. Si presiona esta tecla sin disco montado, el diodo láser se encenderá, el actuador de enfoque se verá empujado hacia abajo (*3), y después se levantará y descenderá dos veces (*4), y volverá a su posición original.</p> <p>Nota : Para un tipo de reproducción múltiple de disco compacto, las operaciones serán inversas a éstas.</p> <p>*1:El actuador de enfoque se eleva *2:Desciende lentamente *3:Se ve empujado hacia arriba *4:Desciende y se eleva dos veces</p>
▷	PLAY	Activación del servo del eje	<p>Pondrá en marcha el motor del eje haciéndolo girar hacia la derecha y después la rotación del disco alcanzará la velocidad prescrita (unas 500 rpm en la periferia interior), y pondrá el servo del eje en un bucle cerrado.</p> <p>Tenga cuidado. Si presiona esta tecla cuando no haya disco montado, el motor del eje girará a la velocidad máxima.</p> <p>Si el servo de enfoque no pasa correctamente a un bucle cerrado, o si el haz láser incide en la sección del espejo en el la periferia del disco, ocurrirá el mismo síntoma.</p>
	HI-LITE SCAN	Movimiento hacia exterior por 10,000 pistas	<p>Presionando esta tecla cuando el captador se ha movido hacia la periferia interior del disco y además el foco y el servo del eje están en el estado adecuado del lazo cerrado, el captador se mueve hacia el exterior por aproximadamente 10,000 pistas (en el caso de un disco de 12 pulgadas, la posición central entre las periferias exterior e interior.)</p>

Código	Nombre de la tecla	Función en el modo de prueba	Explicación
	PAUSE	Apertura/cierre del servo de seguimiento	Si presiona esta tecla cuando el servo de enfoque y el servo del eje están funcionando correctamente en bucles cerrados, el servo de seguimiento se pondrá en bucle cerrado, en el panel frontal se visualizarán el número de canción que esté reproduciéndose y el tiempo transcurrido, y se producirá la salida de la señal de reproducción. Si el tiempo transcurrido no se visualiza o no se cuenta correctamente, o si el sonido no se reproduce correctamente, es posible que el rayo láserico esté incidiendo en la sección sin sonido grabado en el borde exterior del disco, o que exista algún otro problema. Esta tecla es basculante de acción alternativa, Esta tecla no funcionará cuando no haya disco montado.
	TRACK REV	Retroceso del carro (hacia adentro)	Moverá la posición del captor hacia el diámetro interior del disco. Si presiona esta tecla con el servo de seguimiento en bucle cerrado, dicho bucle pasará automáticamente a bucle abierto. Como el captor no se para automáticamente en el punto final mecánico en el modo de prueba, tenga cuidado cuando realice esta operación.
	TRACK FWD	Avance del carro (hacia afuera)	Moverá la posición del captor hacia la periferia del disco. Si presiona esta tecla con el servo de seguimiento en bucle cerrado, dicho bucle pasará automáticamente a bucle abierto. Como el captor no se para automáticamente en el punto final mecánico en el modo de prueba, tenga cuidado cuando realice esta operación.
	STOP	Parada	Inicializa y se para la rotación del disco. El captor y el disco permanecen donde están cuando se presiona esta tecla.
 *1 OPEN/ CLOSE	OPEN/CLOSE (DISC 1)	Apertura/cierre de la bandeja del disco	Abrirá/cerrará la bandeja del disco. Esta tecla es basculante de acción alternativa y abre/cierra la bandeja alternativamente.
 Para un tipo de reproducción múltiple de disco compacto		
	EJECT	Expulsión del cargador de discos compactos	Almacenará el disco 1 en el cargador de discos compactos, y después expulsará dicho cargador. Sin embargo, aunque el cargador de discos compactos sea expulsado, el captor no volverá a su posición de reposo. Aunque vuelva a montar el cargador de discos compactos, el captor permanecerá donde estaba.

Nota 1 : En el modo de prueba, el segmento **REP** en el centro del bloque de exhibición se ilumina cuando el captador llega a la periferia interior (el interruptor interior se pone en ON).

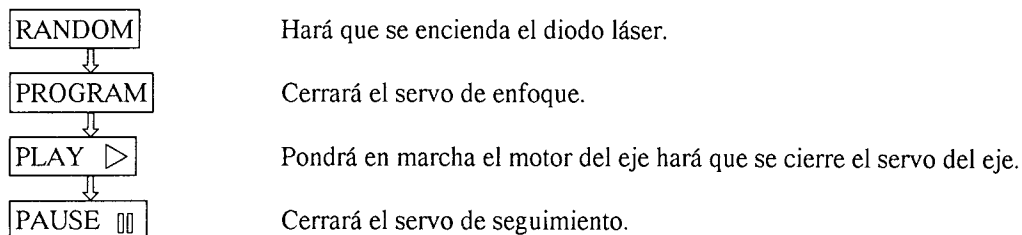
Nota 2 : Cuando inserte el cargador, el disco 1 del mismo se cargará automáticamente.
(Para un tipo de reproducción múltiple de disco compacto solamente.)

*1 : Para un tipo de reproducción múltiple de disco compacto solamente.

[Cómo reproducir un disco en el modo de prueba]

En el modo de prueba, como los servos funcionan independientemente, la reproducción de un disco requiere el que usted emplee las teclas en el orden correcto para cerrar los servos.

A continuación se indica la secuencia de operación de teclas para reproducir un disco en el modo de prueba.



Espere de 2 a 3 segundos por lo menos entre cada una de estas operaciones.

1. Ajuste del descentramiento del enfoque

● Objetivo	Ajuste de la tensión de CC para el amplificador de error de enfoque.		
● Síntomas en caso de desajuste	El reproductor no enfoca y la señal de RF contiene perturbaciones.		
● Conexión de los instrumentos de medición	Conecte el osciloscopio a CN421, patilla 6 (FCS. ERR)	● Estado del reproductor	Mode de prueba, parado (con el interruptor de alimentación en ON)
	[Ajustes] 5 mV/división 10 ms/división mode de CC	● Lugar de ajuste	VR403 (FCS. OFS)
		● Disco	No es necesario

[Procedimiento]

Ajuste VR403 (FCS. OFS) de forma que la tensión de CC de CN421, patilla 6 (FCS. ERR) sea de

{ XC-P410T : -50 ± 50 mV
 XC-P410M: -150 ± 50 mV.

2. Ajuste de retícula

● Objetivo	Alineación de los puntos del haz láser de generación de error de seguimiento al ángulo óptimo en la pista.		
● Síntomas en caso de desajuste	La reproducción no se inicia, la búsqueda de canciones es imposible, las pistas se saltan.		
● Conexión de los instrumentos de medición	Conecte el osciloscopio a CN421, patilla 2 (TRK. ERR) a través de un filtro de paso bajo. (Consulte la figura 2)	● Estado del reproductor	Modo de prueba, servos de enfoque y del eje cerrados, y servo de seguimiento abierto.
	[Ajustes] 50 mV/división 5 ms/división modo de CC	● Lugar de ajuste ● Disco	Ranura de ajuste de retícula del captor Para un tipo de doble bandeja de disco compacto, emplee el disco de 12 cm. (El disco YEDS-7 no podrá emplearse.) Para un tipo de reproducción múltiple de disco compacto, emplee el disco de prueba YEDS-7.

[Procedimiento]

1. Mueva el captor hasta el borde exterior del disco con la tecla TRACK FWD ▷▷| o la tecla TRACK REV |◀◀ de forma que la ranura de ajuste de la retícula quede en el borde exterior del disco, donde puede ajustarse.

Nota: Para un reproductor de reproducción múltiple de disco compacto, emplee la tecla TRACK FWD ▷▷| o la tecla TRACK REV |◀◀ a fin de mover el captor hasta la mitad del disco (R=35 mm).

2. Presione la tecla PROGRAM después de presione la tecla RANDOM, y después la tecla PLAY ▷, por este orden, a fin de cerrar el servo de enfoque y después el servo del eje.
3. Inserte un destornillador normal en la ranura de ajuste de la retícula y ajuste la retícula hasta encontrar el punto nulo. Para más detalles, consulte la página siguiente.
4. Si gira lentamente el destornillador hacia la izquierda (hacia la derecha para un tipo de reproducción múltiple de disco compacto desde el punto nulo, la amplitud de la onda aumentará gradualmente. Después, si continúa girando el destornillador, la amplitud de la onda se volverá otra vez más pequeña. Gire el destornillador hacia la izquierda (hacia la derecha para un tipo de reproducción la amplitud de la onda alcance su valor máximo.

Referencia : En la figura 3 se muestra la relación entre el ángulo del haz de seguimiento con la pista y la forma de onda.

Nota : La amplitud de la señal de error de seguimiento será de aproximadamente 3 Vp-p (cuando se emplee un filtro de paso bajo de 39 kΩ, 0,001 μF). Si la amplitud está extremadamente pequeña (2 Vp-p ó menos), la causa será el funcionamiento malo en el lente objetivo o en el captador. Si la diferencia entre la amplitud de la señal de error en el borde interior y exterior del disco es superior al 10%, la retícula no estará ajustada al punto óptimo, por lo que tendrá que volver a ajustarla.

5. Devuelva el captor hasta la mitad más o menos del disco con la tecla TRACK REV |◀◀, presione la tecla PAUSE ||, y vuelva a comprobar si en el panel frontal se visualizan el número de canción y el tiempo transcurrido. Si no se visualizan esta vez, o si el tiempo transcurrido cambia irregularmente, vuelva a comprobar el punto nulo y ajuste otra vez la retícula.

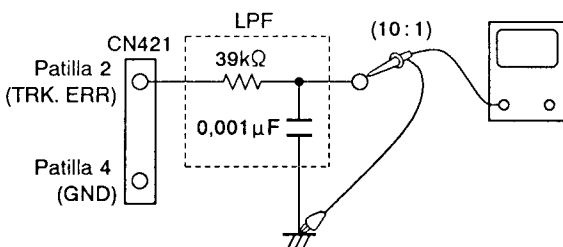
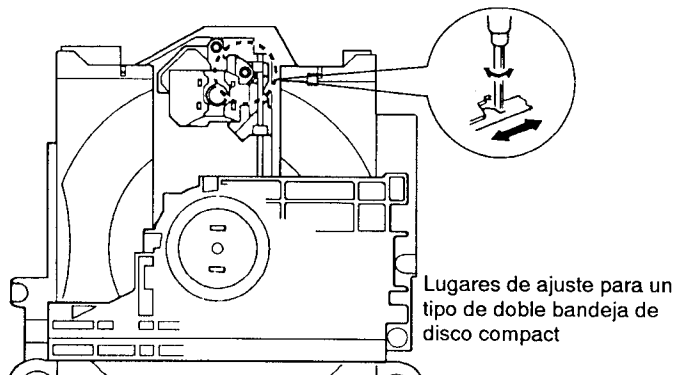
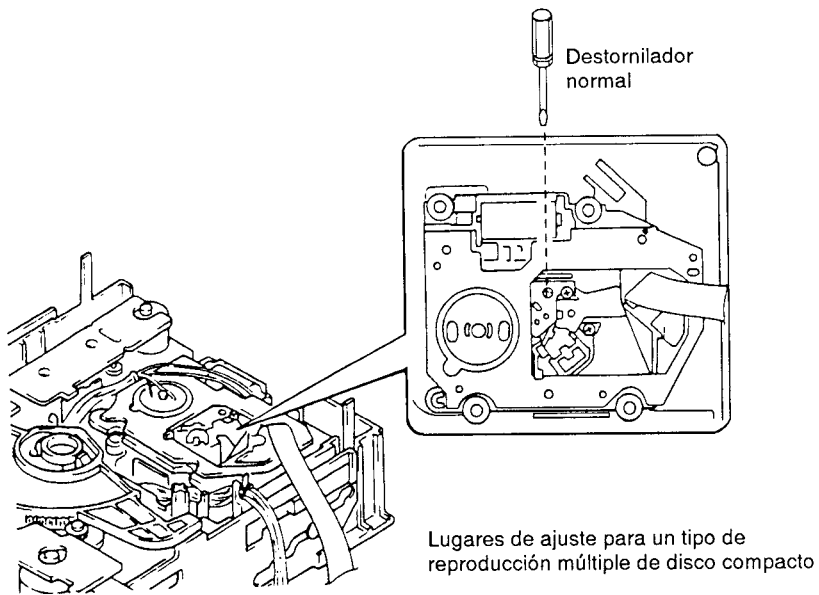


Figura 2





[Cómo encontrar el punto nulo]

Cuando inserte el destornillador normal en la ranura para el ajuste de la retícula y cambie el ángulo de la misma. La amplitud de la señal de error de seguimiento de CN421, patilla 2, cambiará. Dentro del margen para la retícula existen cinco o seis lugares en los que la amplitud alcanza el valor mínimo. De estos cinco o seis lugares, solamente hay uno en el que la envolvente de la forma de onda es uniforme. Este lugar es donde los tres haces lásericos divididos por la retícula se encuentran exactamente sobre la misma pista. (Consulte la figura 3.) Este punto se denomina punto nulo. Cuando ajuste la retícula, este punto se encontrará y empleará como posición de referencia.

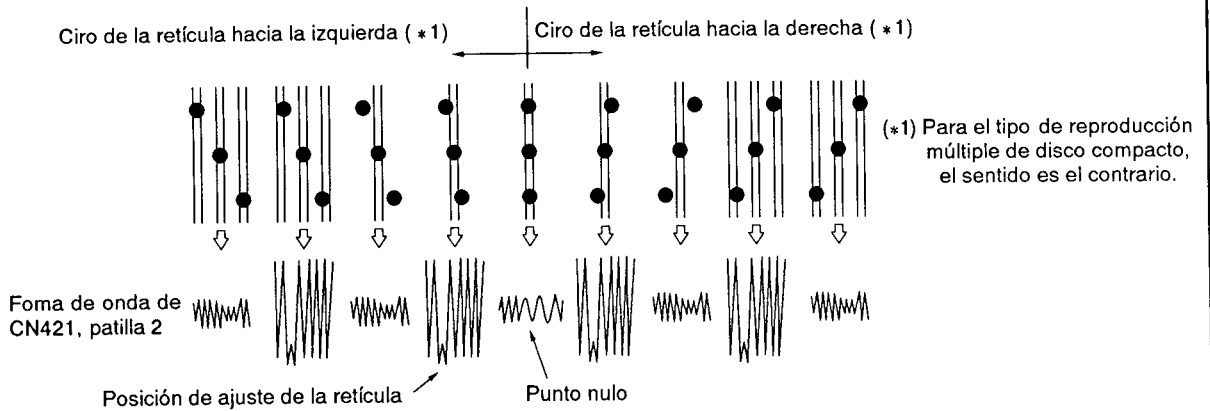
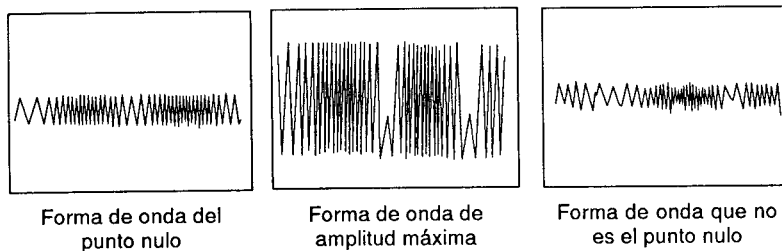


Figura 3

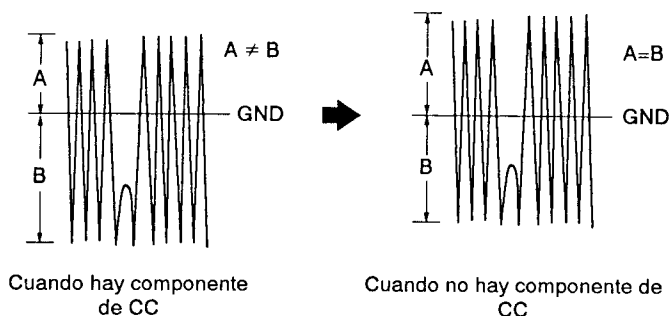


3. Ajuste del equilibrio de error de seguimiento

● Objetivo	Corrección de la variación de la sensibilidad del fotodiodo de seguimiento.		
● Síntomas en caso de desajuste	La reproducción no se inicia o la búsqueda de canciones es imposible.		
● Conexión de los instrumentos de medición	Conecte el osciloscopio a CN421, patilla 2 (TRK. ERR). Esta conexión puede realizarse a través de un filtro de paso bajo	● Estado del reproductor	Modo de prueba, servos de enfoque y del eje cerrados, y servo de seguimiento abierto
	[Ajustes] 50 mV/división 5 ms/división modo de CC	● Lugar de ajuste	VR402 (TRK. BAL)
		● Disco	YEDS-7

[Procedimiento]

1. Mueva el captor hasta la mitad del disco (R=35 mm) con la tecla TRACK FWD ▷▷ o la tecla TRACK REV ◁◁.
2. Presione la tecla PROGRAM después de presione la tecla RANDOM, y después la tecla PLAY ▷, por este orden, a fin de cerrar el servo de enfoque y después el servo del eje.
3. Haga coincidir la línea brillante (masa) del centro de la pantalla del osciloscopio y ponga éste en el modo de CC.
4. Ajuste VR402 (TRK. BAL) de forma que a amplitud positiva y la negativa de la señal de error de seguimiento de CN421 patilla 2 (TRK. ERR) sean iguales (en otras palabras, de forma que no haya componente de CC).



4. Ajuste de la inclinación en sentido radial / tangencial del captor

<ul style="list-style-type: none"> ● Objetivo 	Ajustar el ángulo del captor en relación con el disco de forma que los haces lásericos incidan perpendicularmente sobre el mismo a fin de poder leer con la mayor exactitud las señales de RF.		
<ul style="list-style-type: none"> ● Síntomas en caso de desajuste 	Sonido quebrado, algunos discos pueden reproducirse pero otros no.		
<ul style="list-style-type: none"> ● Conexión de los instrumentos de medición 	Conecte el osciloscopio a CN421, patilla 1 (RF). [Ajustes] 20 mV/división 200 ns/división mode de CA	<ul style="list-style-type: none"> ● Estado del reproductor ● Lugar de ajuste ● Disco 	Modo de prueba, reproducción Tornillo de ajuste de la inclinación radial y tornillo de ajuste de la inclinación tangencial Para un tipo de doble bandeja de disco compacto, emplee el disco de 12cm.(El disco YEDS-7 no podrá emplearse.) Para un tipo de reproducción múltiple de disco compacto, emplee el disco de prueba YEDS-7.

[Procedimiento]

1. Mueva el captor hasta el borde exterior del disco con la tecla TRACK FWD ▷▷ o la tecla TRACK REV ◁◁ de forma que puedan ajustarse los tornillos de inclinación radial/tangencial.

Nota: para un tipo de reproducción múltiple de disco compacto, emplee la tecla TRACK FWD ▷▷ o la tecla TRACK REV ◁◁ a fin de mover el captor hasta la mitad del disco (R=35 mm)

Presione la tecla PROGRAM después de presione la tecla RANDOM, la tecla PLAY ▷, y después la tecla PAUSE ◻◻, por este orden, a fin de cerrar el servo de enfoque, después el servo del eje, y por último para poner el reproductor en el modo de reproducción.

2. En primer lugar, gire el tornillo de ajuste de inclinación radial con una llave hexagonal M 3 mm hasta que el patrón ocular (la forma de diamante del centro de la señal de RF) pueda verse con la mayor claridad. Para un tipo de reproducción múltiple de disco compacto, emplee un destornillador Phillips.
3. A continuación, ajuste el tornillo de ajuste de inclinación tangencial con una llave hexagonal M 3 mm hasta que el patrón ocular (la forma de diamante del centro de la señal de RF) pueda verse con la mayor claridad (figura 5). Para un tipo de reproducción múltiple de disco compacto, emplee un destornillador Phillips.
4. Vuelva a girar el tornillo de ajuste de inclinación radial y el tornillo de inclinación tangencial hasta que el patrón ocular pueda verse con la mayor claridad. Si es necesario, ajuste alternativamente los dos tornillos hasta que el patrón ocular pueda verse con la mayor claridad.

Nota: Radial y tangencial significan las direcciones en relación con el disco mostrado en la figura 4.

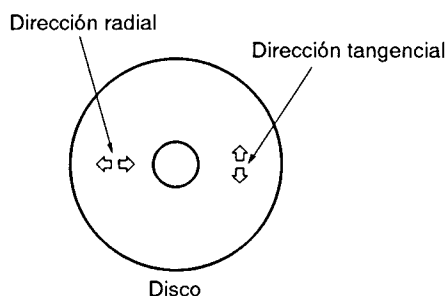
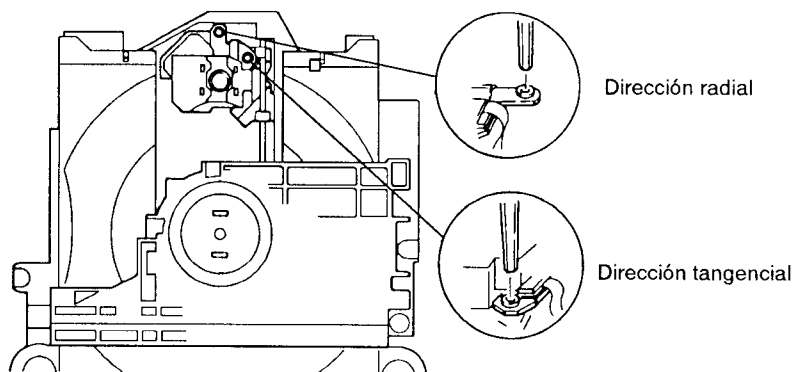
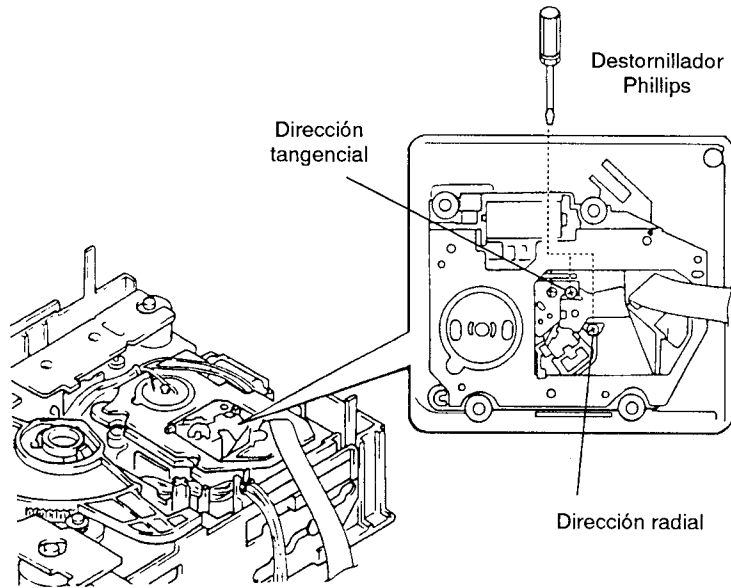


Figura 4



Lugares de ajuste del tipo de doble bandeja de disco compact



Lugares de ajuste para el tipo de reproducción múltiple de disco compacto

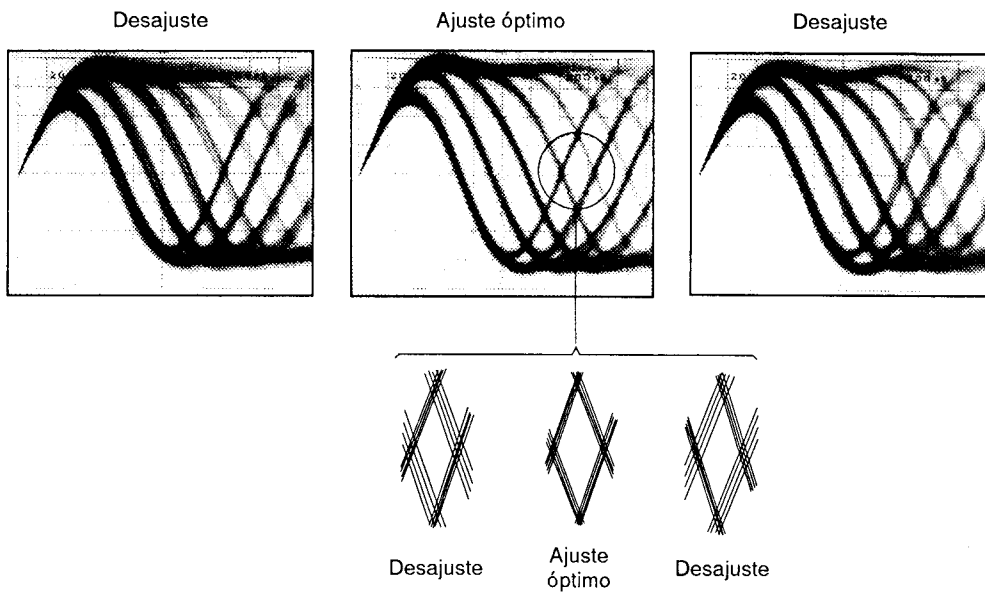


Figura 5 Patron optico

5. Ajuste del nivel de RF

● Objetivo	Optimización de la amplitud de la señal de RF de reproducción.		
● Síntomas en caso de desajuste	La reproducción no se inicia o la búsqueda de canciones es imposible.		
● Conexión de los instrumentos de medición	Conecte el osciloscopio a CN421, patilla 1 (RF).	● Estado del reproductor	Modo de prueba, reproducción
	[Ajustes] 50 mV/división 10 ms/división modo de CA	● Lugar de ajuste	VR1 (potencia de láser)
		● Disco	YEDS-7

[Procedimiento]

1. Mueva el captor hasta la mitad del disco (R=35 mm) con la tecla TRACK FWD ▷▷ o la tecla TRACK REV ◀◀, presione la tecla PROGRAM después de presione la tecla RANDOM, después la tecla PLAY ▷, por este orden a fin de cerrar los servos respectivos, y ponga el reproductor en el mode de reproducción.
2. Ajuste VR1 (potencia de láser) de forma que la amplitud de la señal de RF sea de $1,2 V_{p-p} \pm 0,1 V$.

6. Ajuste de la ganancia del bucle del servo de enfoque

● Objetivo	Optimización de la ganancia del bucle del servo de enfoque.		
● Síntomas en caso de desajuste	La reproducción no se inicia o el actuador de enfoque produce ruido.		
● Conexión de los instrumentos de medición	Consulte la figura 6. [Ajustes] CH1 20 mV/división modo X-Y CH2 5mV/división	● Estado del reproductor ● Lugar de ajuste ● Disco	Modo de prueba, reproducción VR452 (FCS. GAN) YEDS-7

[Procedimiento]

1. Ajuste la salida del generador de AF a 1,2 kHz y 1 Vp-p.
2. Presione la tecla TRACK FWD ▷▷ o la tecla TRACK REV ◁◁ para mover el captor hasta la mitad del disco (R=35 mm), y después presione la tecla PROGRAM después de presione la tecla RANDOM, la tecla PLAY ▷, y después la tecla PAUSE ◻◻, por este orden, a fin de cerrar los servos correspondientes y poner el reproductor en el modo de reproducción.
3. Ajuste VR452 (FCS. GAN) hasta que la forma de onda de Lissajous sea simétrica alrededor del eje X y el eje Y.

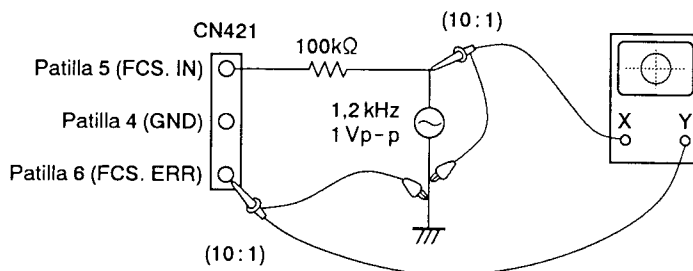
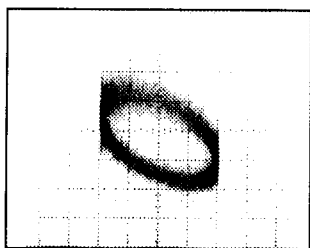
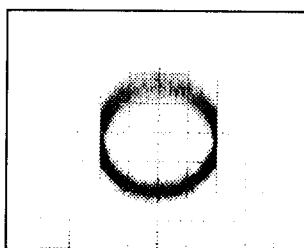


Figura 6

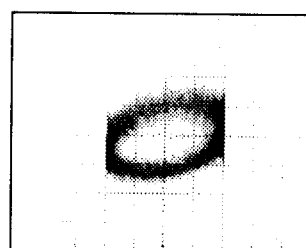
Ajuste de la ganancia de enfoque



Ganancia superior



Ganancia óptima



Ganancia inferior

7. Ajuste de la ganancia del bucle del servo de seguimiento

● Objetivo	Optimización de la ganancia del bucle del servo de seguimiento.		
● Síntomas en caso de desajuste	La reproducción no se inicia, el actuador de enfoque produce ruido, o se saltan pistas.		
● Conexión de los instrumentos de medición	Consulte la figura 7.	● Estado del reproductor	Modo de prueba, reproducción
	[Ajustes] CH1 CH2 50 mV/división 50 mV/división modo X-Y	● Lugar de ajuste	VR451 (TRK. GAN)
		● Disco	YEDS-7

[Procedimiento]

1. Ajuste la salida del generador de AF a 1,2 kHz y 2 Vp-p.
2. Presione la tecla TRACK FWD $\triangleright \triangleright$ o la tecla TRACK REV $\triangleleft \triangleleft$ para mover el captor hasta la mitad del disco (R=35 mm), y después presione la tecla PROGRAM después de presione la tecla RANDOM, la tecla PLAY \triangleright , y la tecla PAUSE \square , por este orden, a fin de cerrar los servos respectivos y poner el reproductor en el modo de reproducción.
3. Ajuste VR451 (TRK. GAN) hasta que la forma de onda de Lissajous sea simétrica alrededor del eje X y el eje Y.

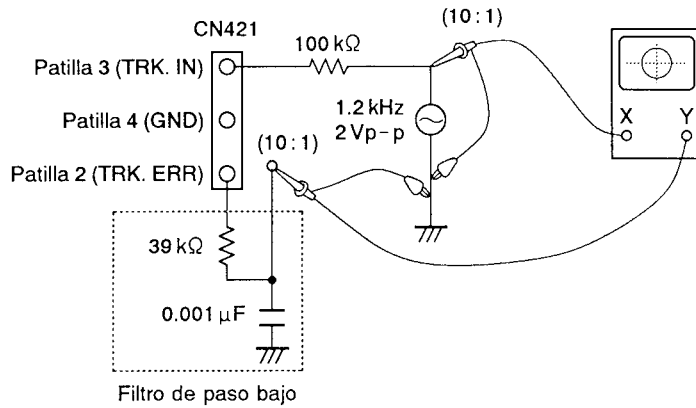
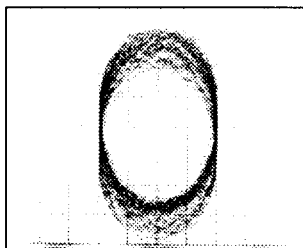


Figura 7

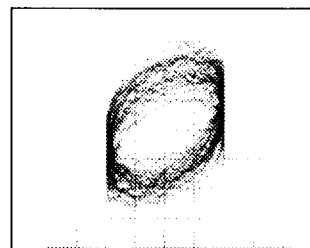
Ajuste de la ganancia de seguimiento



Ganancia superior



Ganancia óptima



Ganancia inferior

8. Verificación de la señal de error de enfoque (curva S de enfoque)

<ul style="list-style-type: none"> ● Objetivo 	<p>Juzgar si el captor está bien o no observando la señal de error de enfoque. El captor se juzga por la amplitud de la señal de error de seguimiento (como se ha indicado en la sección sobre el ajuste del equilibrio de error de seguimiento) y la forma de onda de la señal de error de enfoque.</p>		
<ul style="list-style-type: none"> ● Síntomas en caso de desajuste 			
<ul style="list-style-type: none"> ● Conexión de los instrumentos de medición 	<p>Conecte el osciloscopio a CN421, patilla 6 (FCS. ERR).</p> <p>[Ajustes] 100 mV/división 5 ms/división modo de CC</p>	<ul style="list-style-type: none"> ● Estado del reproductor ● Lugar de ajuste ● Disco 	<p>Modo de prueba, parada</p> <p>Ninguno</p> <p>YEDS-7</p>

[Precedimiento]

1. Conecte CN421, patilla 5, a masa.
2. Coloque el disco.
3. Contemplando la pantalla del osciloscopio, presione la tecla PROGRAM después de presione la tecla RANDOM y observe durante un momento la forma de onda de la figura 8. Verifique si la amplitud es de 2,5 V_{p-p} por lo menos y si la amplitud de las partes positiva y negativa son iguales. Como la forma de onda solamente sale durante un momento cuando se presiona la tecla PROGRAM, presione una y otra vez esta tecla hasta que logre comprobar la forma de onda.

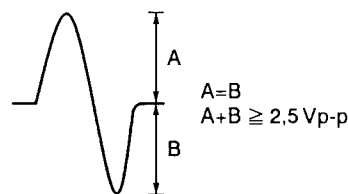


Figura 8

[Juicio sobre el captor]

No juzgue el captor hasta haber finalizado correctamente todos los ajustes. En los casos siguientes es posible que haya algo erróneo en el captor.

1. La amplitud de la señal de error de seguimiento es extremadamente pequeña (menos de 2 V_{p-p}).
2. La amplitud de la señal de error de enfoque es extremadamente pequeña (menos de 2,5 V_{p-p}).
3. Las amplitudes de las partes positiva y negativa de la señal de error de enfoque son extremadamente asimétricas (relación de 2:1 o superior).
4. La señal de RF es demasiado pequeña (menos de 0,8 V_{p-p}) y aunque se ajuste VR1 (potencia de láser), la señal de RF no puede aumentarse hasta el nivel estándar.

8.2 AJUSTE SECCIÓN DEL SINTONIZADOR

● Los puntos de ajuste se muestran en la Fig. 8-3.

8.2.1 Sección del sintonizador de FM

● Realice las conexiones mostradas en la Fig. 8-1.

● Presionar la tecla BAND para ajustar al modo FM.

Paso N°	FM SG (1kHz, ±75kHz de desviación)		XC-P410M, XC-P410T Indicación de la frecuencia recibida	Ajuste	
	Frecuencia (MHz)	Nivel (dBμ)		Posición de ajuste	Especificaciones
1	98.0	60	98.0MHz	L305	Ajuste de forma que el voltage entre los terminales REF y TM en la unidad CDTX sea 0V ± 100mV.
2	98.0	60	98.0MHz	—	Compruebe si el nivel de TX-L (CN411-10) y TX-R (CN411-8) es 0dBV ± 3.0dB.
3	98.0	15	98.0MHz	VR302	Ajuste para que el nivel de entrada de antena esté 15dBμ y el indicador TUNED IND. se ilumine.
4	98.0	12	98.0MHz	—	Compruebe si el factor de distorsión de TX-L (CN411-10) es inferior a 3%.
5	98.0	60(Sin modulación)	98.0MHz	VR301	Ajuste la frecuencia del terminal de VCO en la unidad CDTX a 76kHz ± 200Hz. (*2)
6	98.0	80 (*1)	98.0MHz	—	Compruebe si los niveles de TX-L (CN411-10) y TX-R (CN411-8) son inferiores a 2,0%.
7	98.0	80 (*1)	98.0MHz	—	Compruebe si las separaciones de TX-L (CN411-10) y TX-R (CN411-8) son superiores a 25dB.
8	98.0	Variable (*1)	98.0MHz	—	Compruebe si los indicadores STEREO se encienden y se apagan a medida que el nivel de FM SG se aumenta gradualmente.
9	98.0	80 (*1)	98.0MHz	—	Presione el interruptor FM-MONO situado en el panel frontal, y compruebe si el modo se vuelve monoaural.

(*1)Modulación en estéreo: Principal 1kHz canales izquierdo + derecho ± 68.25kHz de desviación.
Piloto 19kHz ± 6.75kHz de desviación.

(*2)Después de haber conectado la alimentación, si no se han transcurrido 2 minutos, ajuste a 76,2kHz ± 300Hz.

8.2.2 Sección del sintonizador de AM

● Para el tipos KU, KC, SD y YPW, realice el ajuste de los pasos 4 a 6 y 8.

● Realice las conexiones mostradas en la Fig. 8-2.

● Presionar la tecla BAND para ajustar al modo AM.

● Para el tipos HE y HB, realice el ajuste de los pasos 4 a 8.

● Para el tipo HEWZI, realice el ajuste de los pasos 1 a 6 y 8.

Paso N°	AM SG (400Hz, 30% de modulación)		XC-P410M, XC-P410T Indicación de la frecuencia recibida	Ajuste	
	Frecuencia (kHz)	Nivel (dBμ)		Posición de ajuste	Especificaciones
1	603	30	603kHz	Ⓐ lado del bloque de MW, TC301	Ajuste el voltage del terminal de SM a su máximo.
	1395		1395kHz		
2	Repita el paso 1 hasta que alcance el voltaje máximo.				
3	603	30	603kHz	F302	Ajuste el voltage del terminal de SM a su máximo.
4	(1000: Solamente del KU) 999	30	(1000kHz: Solamente del KU) 999kHz	VR303	Ajuste para que el nivel de entrada de antena esté 30dBμ y el indicador TUNED IND. se ilumine.
5	(1000: Solamente del KU) 999	74	(1000kHz: Solamente del KU) 999kHz	—	Compruebe si el nivel de TX-L (CN411-10) y TX-R (CN411-8) es -14,5dBV ± 4dB.
6	(1000: Solamente del KU) 999	Variable	(1000kHz: Solamente del KU) 999kHz	—	Compruebe si el nivel de entrada de la antena que es de -10dB menos que la salida nominal se vuelve superior a 24dBμV.
7	254	74	254kHz	—	Compruebe si el nivel de entrada de la antena que es de -10dB menos que la salida nominal se vuelve superior a 30dBμV.
8	999(*3)	74	999kHz	—	Compruebe que el nivel de salida de esté -2dB ± 1dB cuando la posición del interruptor AM-NR se cambia desde Off a ON.

(*3)Ajuste con la señal de AM modulada por 30% a 1kHz.

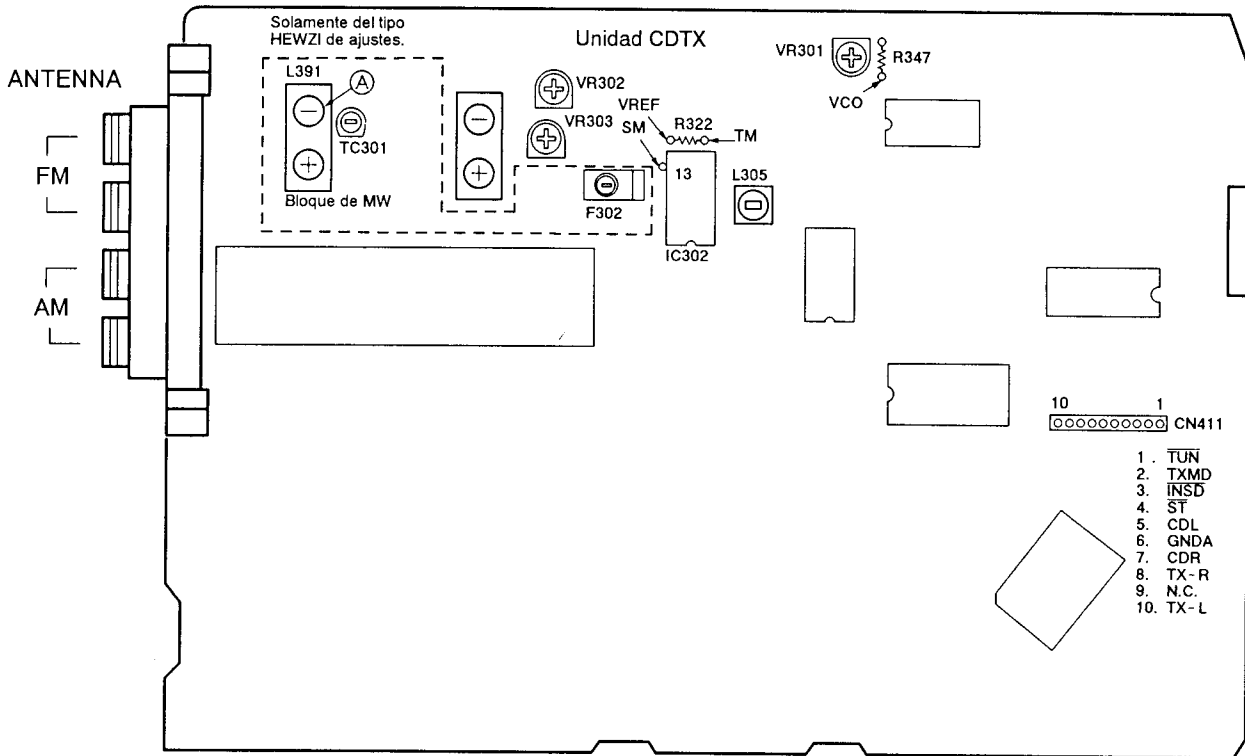
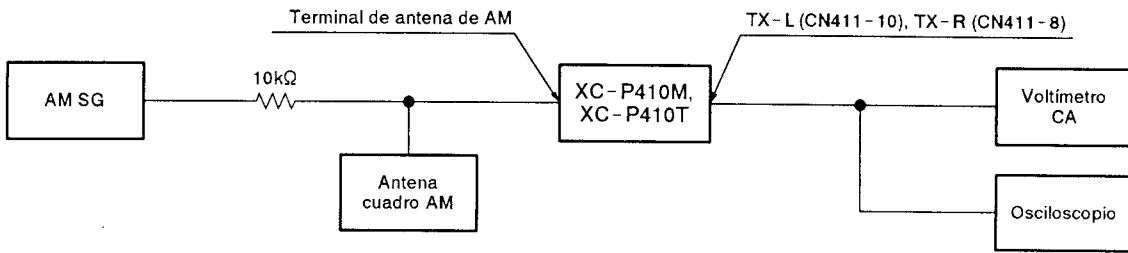
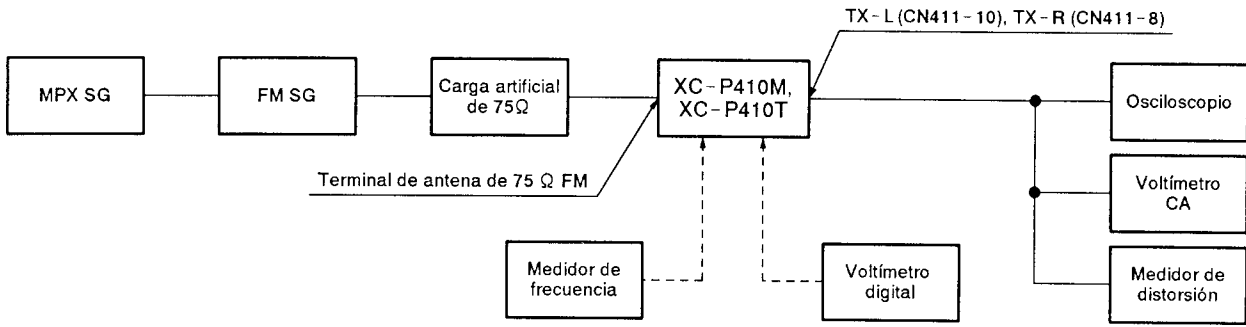


Fig. 8-3 Punto de ajuste

9. IC INFORMATION

■ PDB026C (IC601)

System control microcomputer

•The PDB026C has the following functions.

1. key input
2. FL indication
3. Controls of AMP, TUNER and CD sections.
4. DECK remote control signal transfer to the DECK microcomputer by the system bus communication.

● Pin Function

No.	Pin Name	I/O	Function	Active	
1	VDD	-	+5V power supply	-	
2	OSC2	O	Connect the ceramic oscillator (8.00MHz).	-	
3	OSC1	I		-	
4	Vss	-	Ground	-	
5	XI	I	Not used (Ground)	-	
6	XO	O	Not used (N.C.)	-	
7	50/60	I	AC 50/60Hz input	-	
8	P26		Not used (N.C.)	-	
9	COM		Analog signal input from the expansion input port.	-	
10	SELA	O	SELA, SELB, SELC : Port selection of the expansion input port (IC210)	H	
11	SELB		SELA, SELB : Serial data to the expansion output port		
12	SELC		SELA, SELB : Mode switching input at reset (SELA : H → PHONO, L → VIDEO SELB : H → MULTI, L → TWIN)		
13	ECLK		Serial clock (To the expansion output port IC602 and IC211).		H
14	LDON		Switching of the laser diode output (H : OFF, L : ON)		L
15	REMOTE	I	Remote control signal input	-	
16	SCOR		Sub-code sync. S0 + S1	-	
17	SBCK	O	system bus, serial clock	H/L	
18	SBDT		System bus, serial data		
19	SBER		System bus, communication permission/request		
20	MSNS	I	Operating state signal input of IC403 (CXD2500Q).	-	
21	RST		Reset input of microcomputer.	L	
22	CETX	O	Chip enable output to IC301 (LM7001).	H	
23	CECD		Chip enable output to IC403 (CXD2500Q).		
24	CDRT		Reset output to IC403.	L	
25	SCLK		Serial clock output to IC301 and IC403.	H	
26	SQSO	I	Serial data input from IC403.		
27	SO	O	Serial data output to IC301 and IC403.	-	
28	SYNC		Not used (N.C.)		
29	CM	I	Not used (Ground)	-	
30	MPWR	O	Switch the system power ON/OFF. (H : ON, L : OFF)	H	

No.	Pin Name	I/O	Function	Active
31	CDPW	O	Switch the CD +5V and CD -5V. (H : ON, L : OFF)	H
32	$\overline{\text{PAMT}}$		Switch the MUTE. (H : Release the MUTE, L : MUTE)	L
33	SPCT		Switch the speaker relay. (H : Speaker ON, L : Speaker OFF)	H
34	KIN3	I	Key scan matrix input	H
35	KIN2			
36	KIN1			
37	KIN0			
38	G0	O	FL grid output	H
39	G1			
40	G2			
41	G3			
42	G4			
43	G5			
44	G6			
45	G7			
46	G8			
47	G9			
48	G10			
49	S14	O	FL segment output S0 to S10 are key scan output.	H
50	S13			
51	S12			
52	S11			
53	S10			
54	S9			
55	S8			
56	S7			
57	S6			
58	S5			
59	S4			
60	S3			
61	S2			
62	S1			
63	S0			
64	Vpp	-	Apply FL - 30V to internal pull-down resistor of the FL grid drive pin.	-

■ BU2040 (IC602)

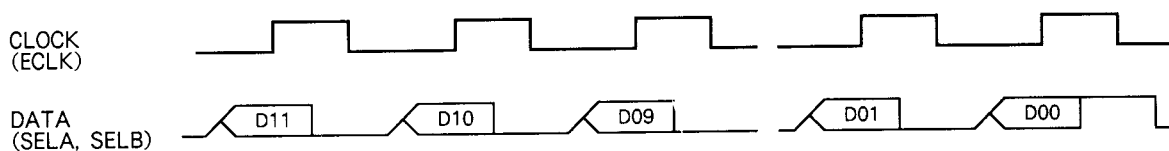
Expansion output

● Pin Function

No.	Pin Name	I/O	Function	Active
1	Vss	-	Ground	-
2	DATA	I	Serial data input to IC601 (PDB026C) pin 10 (SELA).	-
3	CLK		Serial clock input to IC601 pin 13 (ECLK).	-
4	ITX (Q0)	O	TUNER indicator control (H : light goes off, L : Light up)	L
5	ITAPE (Q1)		TAPE indicator control (H : light goes off, L : Light up)	
6	ICD (Q2)		CD indicator control (H : light goes off, L : Light up)	
7	IPHONO (Q3)		PHONO indicator control (H : light goes off, L : Light up)	
8	(Q4)		Not used (N.C.)	-
9	IMANU (Q5)		SFC MANUAL indicator control (H : light goes off, L : Light up)	L
10	IAUTO (Q6)		SFC PRESET indicator control (H : light goes off, L : Light up)	-
11	(Q7)		Not used (N.C.)	-
12	(Q8)		Not used (N.C.)	-
13	(Q9)		Not used (N.C.)	-
14	VUP (Q10)	O	VOLUME motor control to IC603. CW : VUP (H), VDWN (L) CCW : VUP (L), VDWN (H) Stop : VUP (L), VDWN (L)	H/L
15	VDWN (Q11)			
16	VDD	-	+5V power supply	-

● Timing chart of the BU2040 (IC602 and IC211)

Perform the serial/parallel conversion of 12 bit.



- Perform the DATA (SELA or SELB) reading at the rising edge of the CLOCK (ECLK). If the DATA is "H" at the falling edge of the CLOCK, Contents of the shift register transfer to the latch circuit.

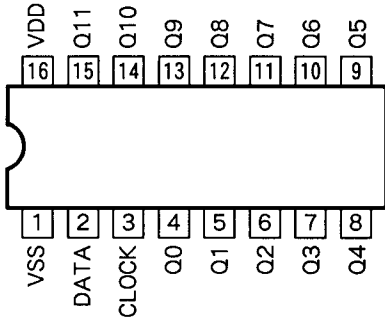
■ BU2040 (IC211)

Expansion output

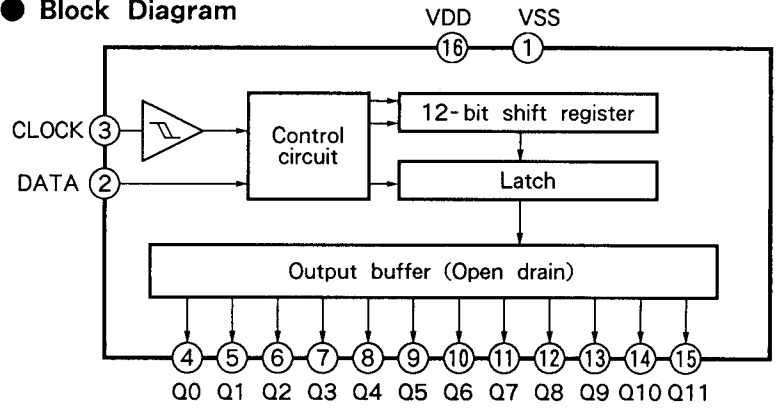
● Pin Function

No.	Pin Name	I/O	Function	Active
1	Vss	-	Ground	-
2	DATA	I	Serial data input to IC601 (PDB026C) pin 11 (SELB).	-
3	CLK		Serial clock input to IC601 pin 13 (ECLK).	-
4	CDMO (Q0)	O	CD mechanical drive control (loading and select motor control)	H/L
5	CDM1 (Q1)			
6	CDM2 (Q2)		Function MUTE	H
7	FINH (Q3)			
8	FNCA (Q4)		Function selection	To IC203 (BU4052B)
9	FNCB (Q5)			
10	P00 (Q6)		A. TREBLE EQ. selection	To IC208 (PA0049)
11	P01 (Q7)			
12	P10 (Q8)		P. BASS EQ. selection	H/L
13	P11 (Q9)			
14	P20 (Q10)	Simulated stereo and stereo wide selections	H/L	
15	P21 (Q11)			
16	VDD	-	+5V power supply	-

● Pin Arrangement



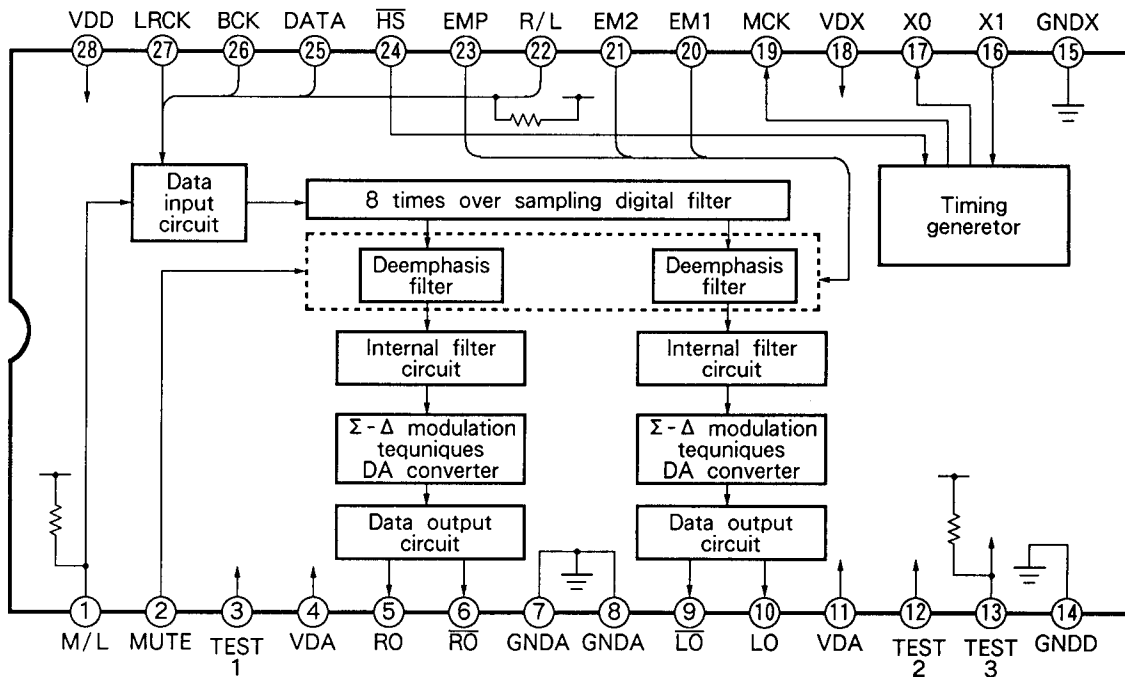
● Block Diagram



■ TC9237N (IC501)

Σ - Δ modulation tequiqes DA converter with digital filter

● Block Diagram



■ CXA1372Q (IC402)

Serevo IC

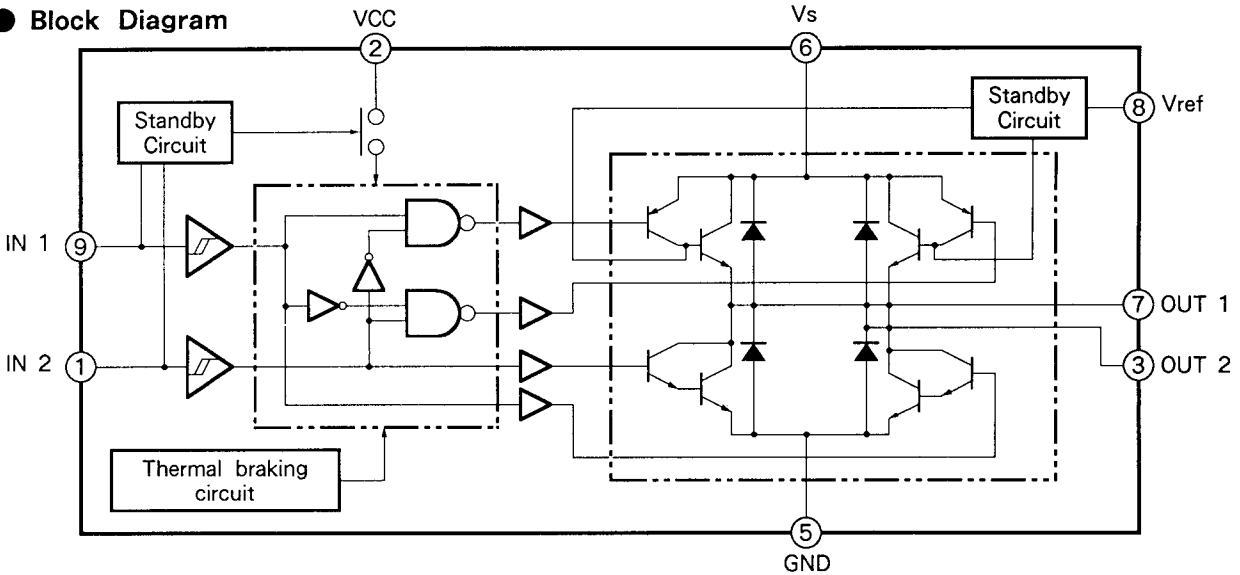
● Pin Functions

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

■ TA8409S (IC603)

Full bridge driver for DC motor

● Block Diagram



● Truth Table

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	MOTOR
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

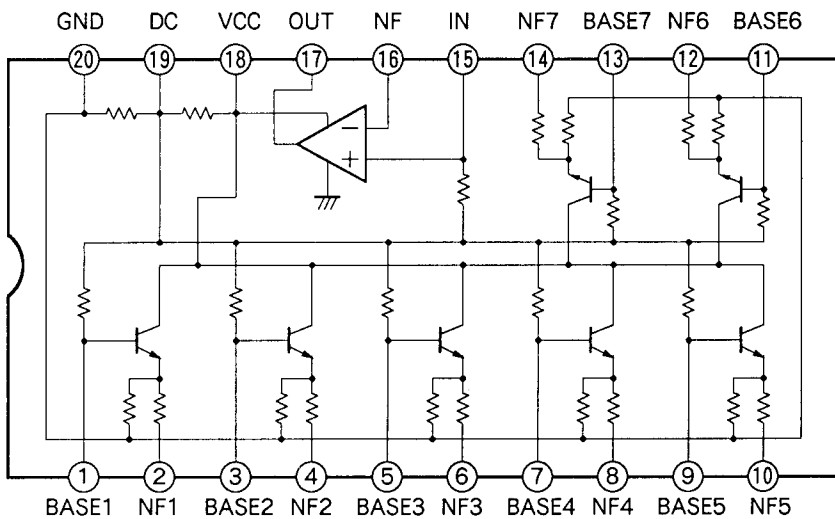
∞ : High Impedance

Note : "H" active input

■ LA3607 (IC209)

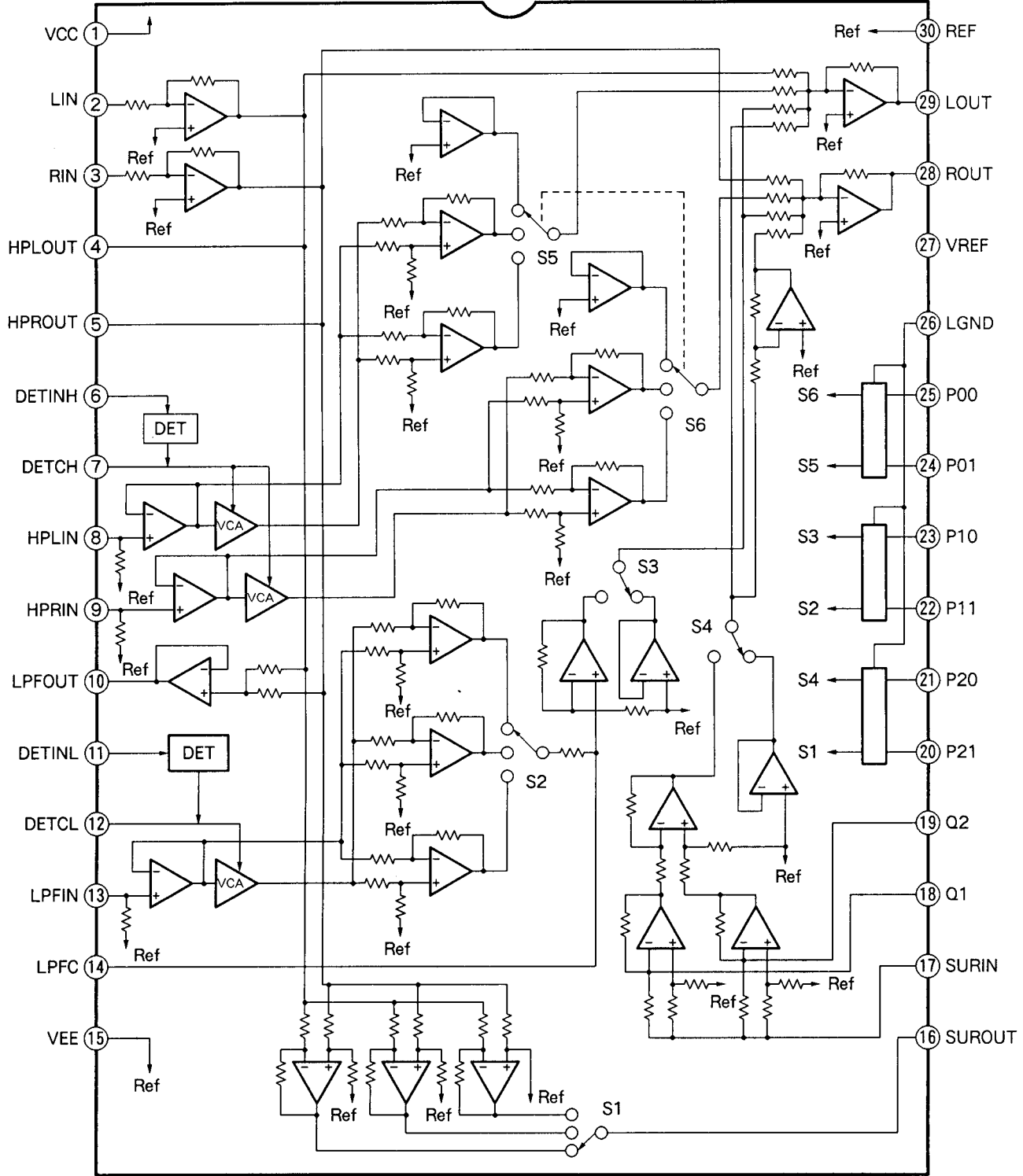
7-Bands graphic equalizer

● Block Diagram



■ PA0049 (IC208)

● Block Diagram



● **Pin Function**

No.	Pin Name	Function	No.	Pin Name	Function
1	VCC	Power supply	16	SUROUT	Output for surround level adjustment
2	LIN	L ch input	17	SURIN	Input for surround level adjustment
3	RIN	R ch input	18	Q1	Filter pin 1 for surround
4	HPLOUT	Output for L ch high-pass filter	19	Q2	Filter pin 2 for surround
5	HPROUT	Output for R ch high-pass filter	20	P21	Mode switching 1
6	DETINH	High-pass detector input	21	P20	Mode switching 2
7	DETC	Connect a capacitor for high-pass detector.	22	P11	Mode switching 3
8	HPLIN	L ch high-pass input	23	P10	Mode switching 4
9	HPRIN	R ch high-pass input	24	P01	Mode switching 5
10	LPFOUT	Output for low-pass filter	25	P00	Mode switching 6
11	DETINL	Low-pass detector input	26	LGND	Reference voltage for logic
12	DETC	Connect a capacitor for low-pass detector.	27	VREF	Internal reference power supply
13	LPFIN	Low-pass filter input	28	ROUT	R ch output
14	LPFC	Connect a capacitor for noise decrease.	29	LOUT	L ch output
15	VEE	Power supply	30	REF	Reference voltage input

● **Mechanical SW Operation of the XC-P410M**
(Multi-play CD type)

- Logic of MZS1, MZS2, DCNT, DCHM, LPS1 and LPS2 signals.

	MZS1 signal		MZS2 signal
No magazine	H	Single magazine	H
Magazine exist	L	Six magazines	L

	DCNT signal		DCHM signal
Loading possible position	L	Home	L
Others	H	Others	H

	LPS1 signal	LPS2 signal
EJECT	H	L
HOME	H	H
LOADING	L	H
CLAMP	L	L

- Logic of INSD signal

	INSD signal
INSIDE	L
Others	H

● **Mechanical SW Operation of the XC-P410T**
(Twin-tray CD type)

- Logic of TRY1, TSEL and TRY2 signals

	Tray		Microcomputer input signal		
	Tray 1	Tray 2	TRY1	TSEL	TRY2
Mechanical Position	OPEN	PLAY	L	H	L
	OPEN/CLOSE	PLAY	H	H	L
	CLOSE	PLAY	H	L	L
	CHANGE	CHANGE	H	L	H
	CHANGE	CHANGE	H	H	H
	PLAY	CLOSE	L	H	H
	PLAY	CLOSE/OPEN	L	L	H
	PLAY	OPEN	L	L	L

- Logic of INSD signal

	INSD signal
INSIDE	L
Others	H

9.1 CPU INTERFACE OF THE TUNER SECTION

Tuner control in this unit is performed transferring the serial data from the system control microcomputer PDB026C (IC601) to the PLL frequency synthesizer LM7001 (IC301).

The serial data is 24 bit construction and is transferred in sequence from the LSB of data, sending DATA, CL and CE signals.

Frequency synthesizer LM7001, CL is effected when CE is "H", and receives the DATA when CL is set to "H" from "L", and 24 bit data which is transferred renew to the internal data when CE is set to "L" from "H".

Connections of the serial interface and the timing chart are shown in Fig.9-1 and Fig.9-2.

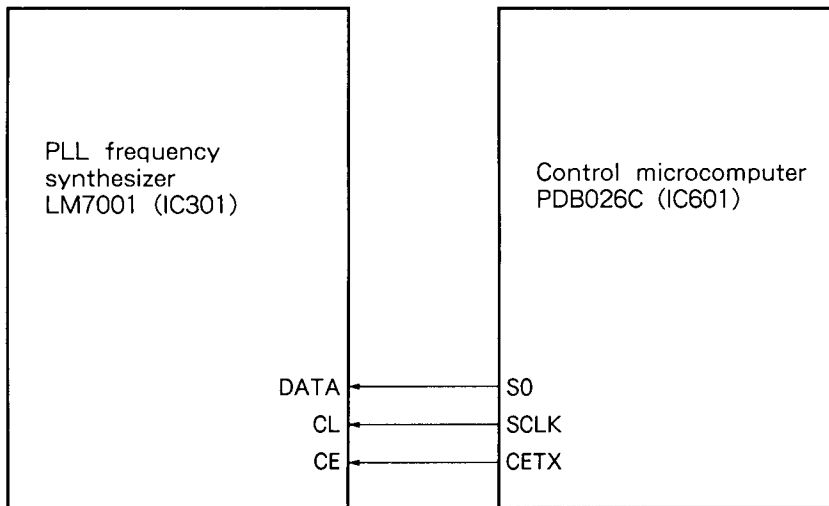


Fig.9-1

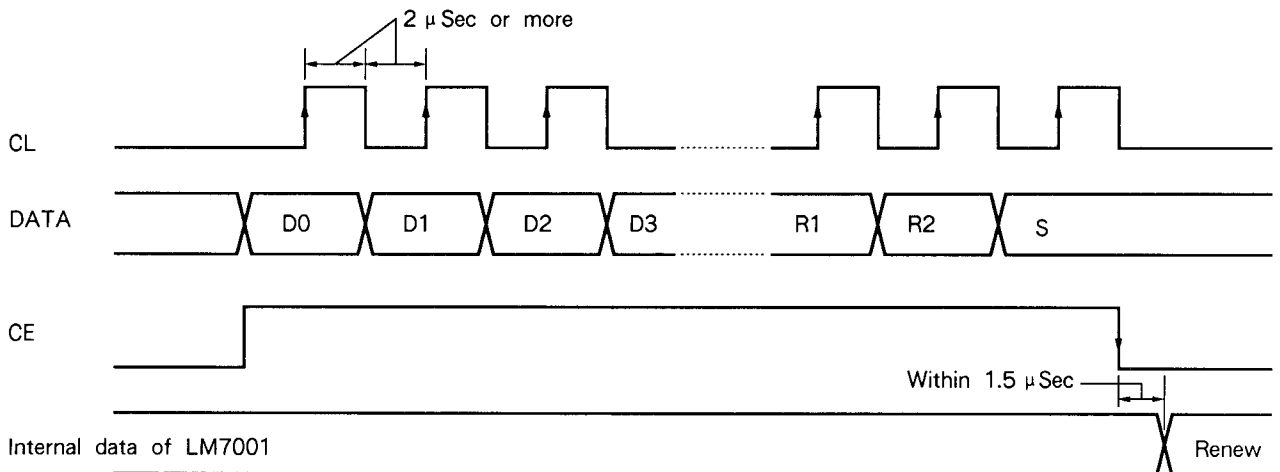


Fig.9-2

9.2 CPU INTERFACE OF THE CD SECTION

Servo control in this unit is performed transferring the serial data from the CPU (system control micro-computer) PDB026C (IC601) to the DSP CXD2500Q (IC403).

The serial data is transferred to the SSP CXA1372Q (IC402) via CXD2500Q. The connections of serial interface is shown in Fig. 9-3.

The serial data consists of 4-through 16-bit data and 4-bit address and is transferred in sequence from the LSB of data, sending DATA, CLK and XLAT signals. Also, a SENS signal is supplied to CPU from SSP and DSP, showing the various servo statuses. The timing chart of serial interface is shown in Fig. 9-4.

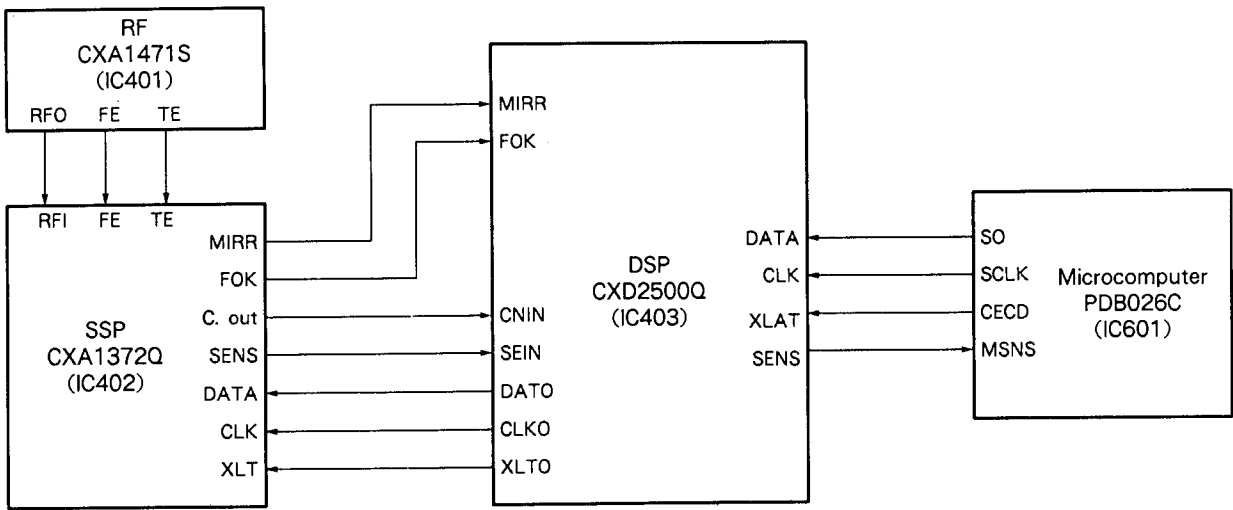


Fig. 9 - 3

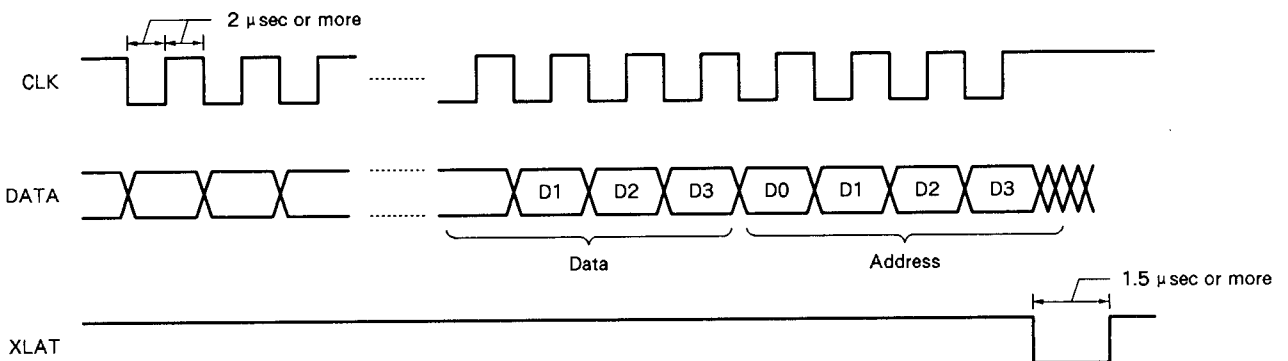
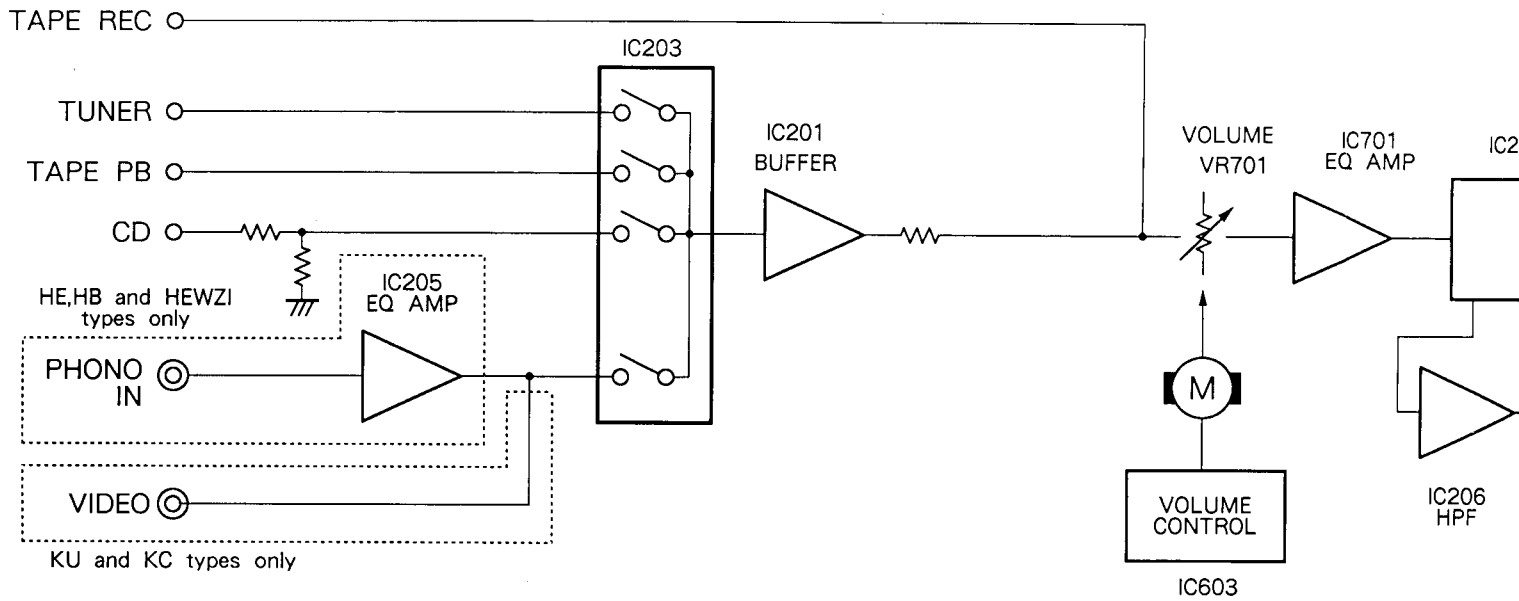


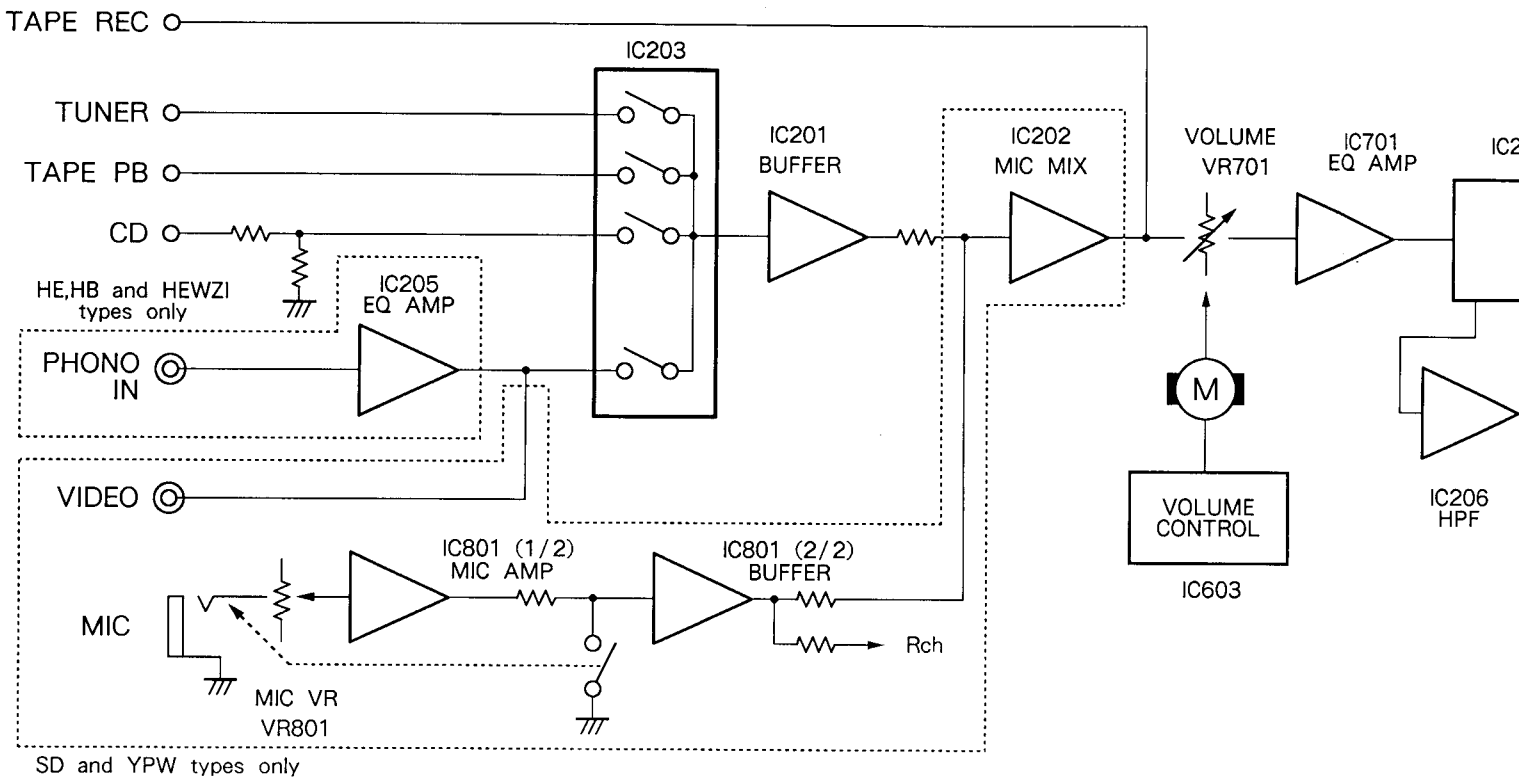
Fig. 9 - 4

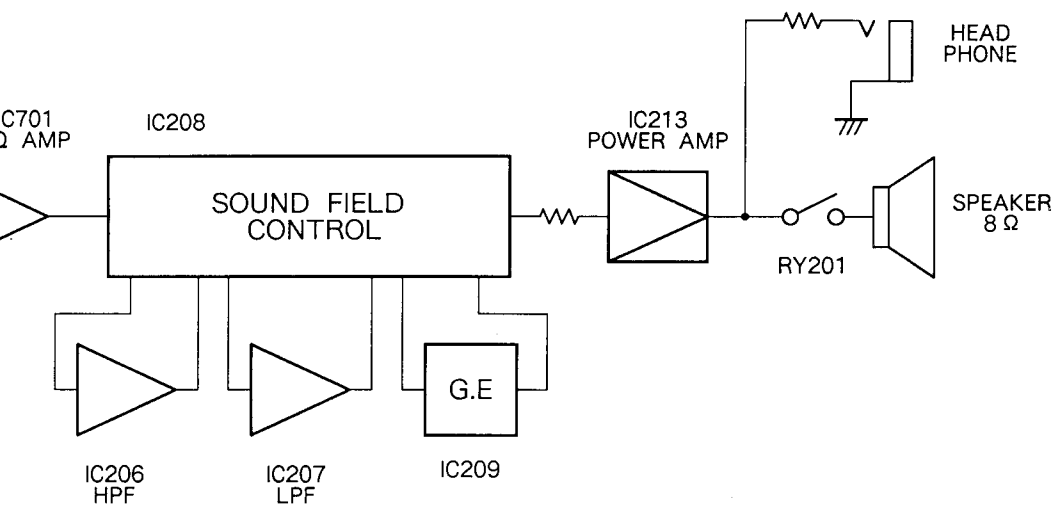
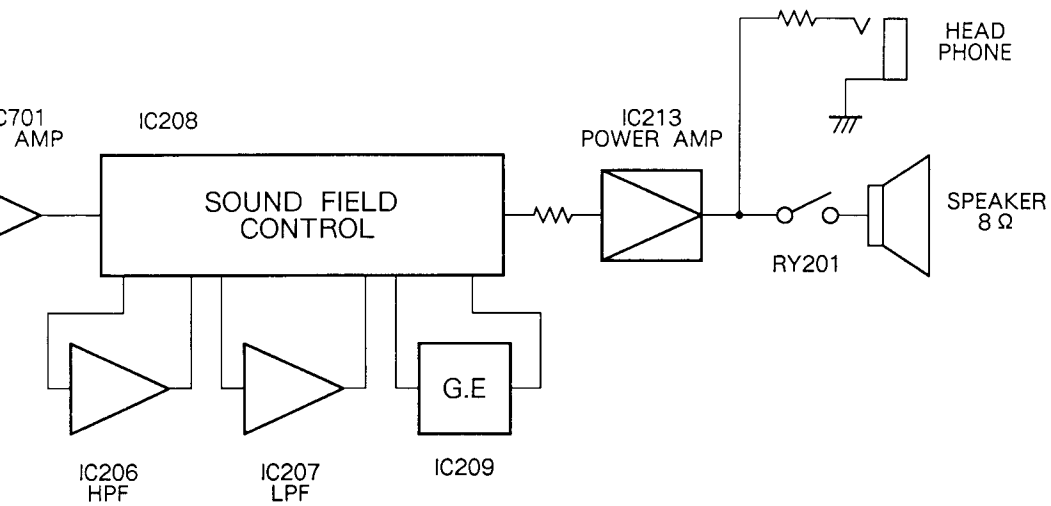
10. BLOCK DIAGRAM

● XC-P410M TYPE (L ch)



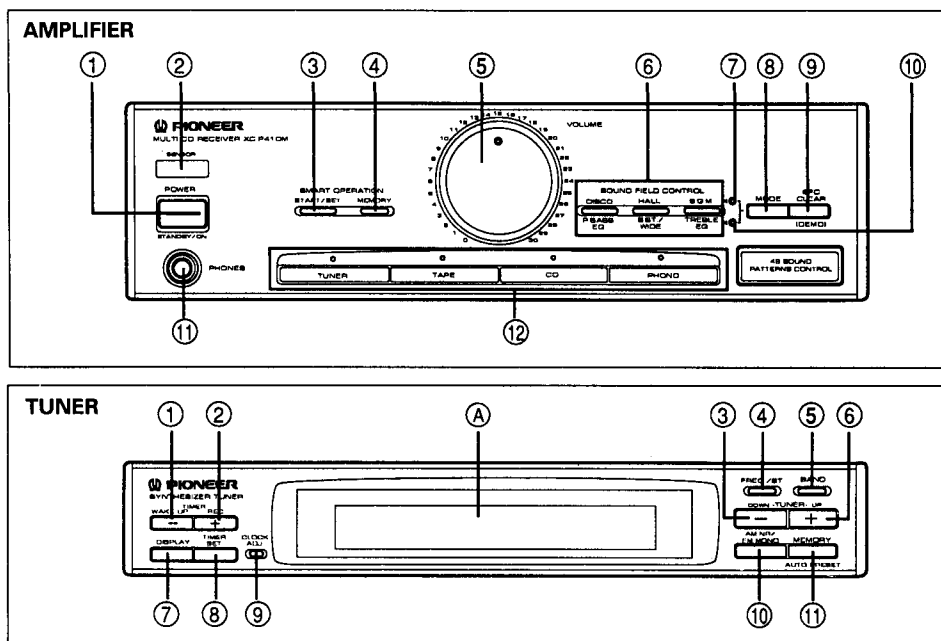
● XC-P410T TYPE (L ch)





11. PANEL FACILITIES

11.1 XC-P410M



AMPLIFIER

- ① **POWER STANDBY/ON switch**
Press to turn the power on and off (STANDBY).
- ② **Remote sensor window (SENSOR)**
- ③ **SMART OPERATION START/SET button**
- ④ **SMART OPERATION MEMORY button**
- ⑤ **VOLUME control**
- ⑥ **SOUND FIELD CONTROL buttons**
(DISCO/P.BASS EQ, HALL/S.ST./WIDE, B.G.M./TREBLE EQ)
- ⑦ **Preset mode indicator**
- ⑧ **MODE button**
- ⑨ **SFC CLEAR/DEMO button**
- ⑩ **Manual mode indicator**
- ⑪ **Headphones jack (PHONES)**
- ⑫ **Function buttons/indicators**
European and U.K. models:
(TUNER/TAPE/CD/PHONO)
U.S. and Canadian models:
(TUNER/TAPE/CD/VIDEO)

Auto Function

This model is equipped with "Auto Function" operation, so when the switch for CD PLAY, RANDOM, HI-LITE SCAN, DISC NUMBER, PLAY (tape), BAND or TUNER UP/DOWN (+/-) is pressed, the function switches automatically. Use the PHONO function button to select the component connected to the PHONO jacks, since Auto Function is not effective for this.

NOTE:

The function cannot be switched during recording. (Auto Function does not operate either.)

TUNER

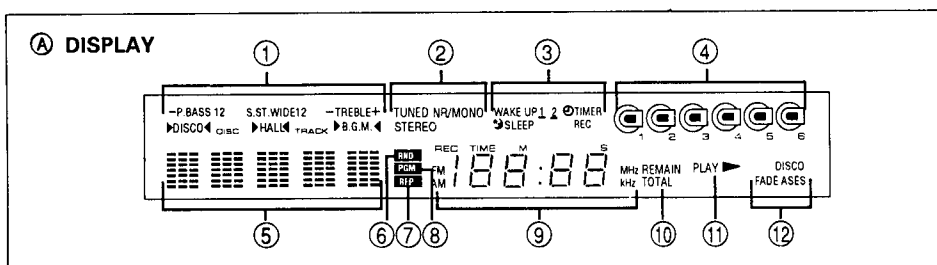
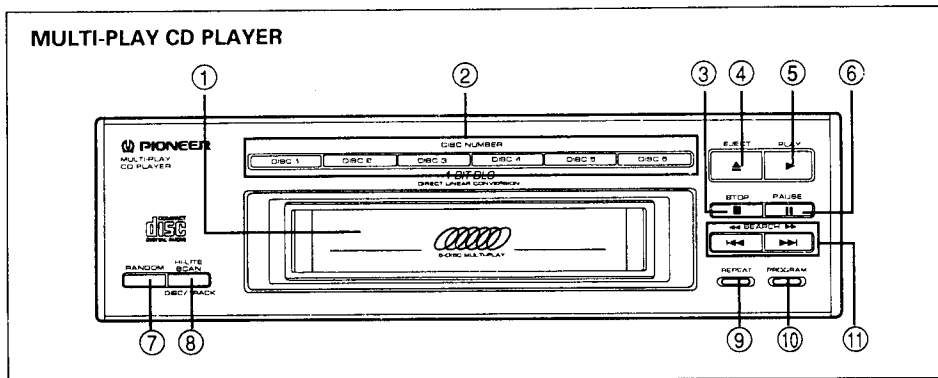
- ① **TIMER WAKE UP/- button**
- ② **TIMER REC/+ button**
- A **Display**
- ③ **TUNER DOWN/- button**
- ④ **FREQ./ST. button**
- ⑤ **BAND button**
- ⑥ **TUNER UP/+ button**
- ⑦ **DISPLAY button**
- ⑧ **TIMER SET button**
- ⑨ **CLOCK ADJ. button**
- ⑩ **AM-NR/FM-MONO button**
- ⑪ **MEMORY/AUTO PRESET button**

Demo Function

To enter the demo mode, press DEMO when power is off. The unit performs the SMART OPERATION (page 12) and automatically switches the preset setting of the SOUND FIELD CONTROL. During demo mode, function buttons and PLAY button can be used, so you can enjoy desired program source. For example, to listen to CD with demo function, load a CD into the player before carried out demo function.

To cancel demo mode:

Press POWER STANDBY/ON switch, MODE button, SFC CLEAR/DEMO button or one of the SOUND FIELD CONTROL buttons.



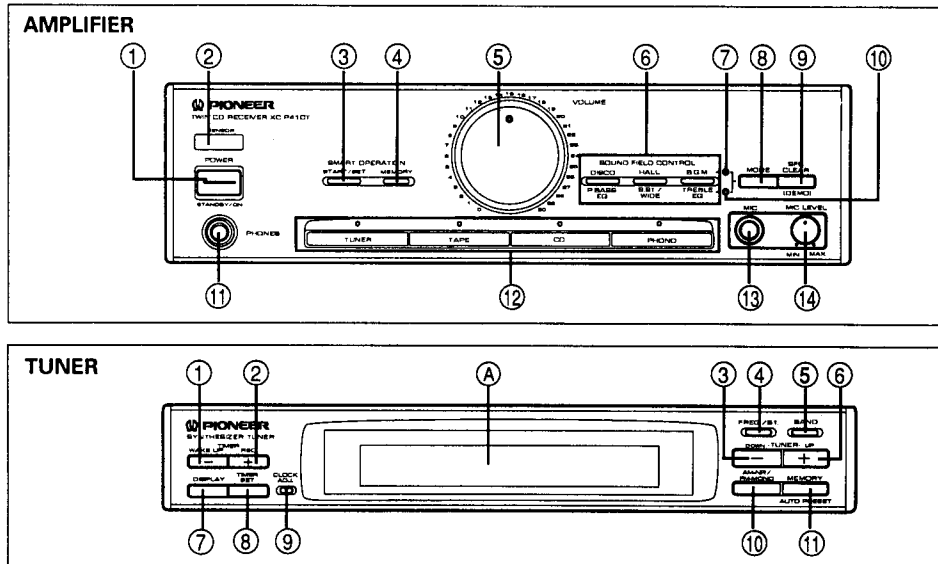
MULTI-PLAY CD PLAYER

- ① Magazine insertion slot
- ② DISC NUMBER buttons (DISC 1 - DISC 6)
- ③ STOP button (■)
- ④ EJECT button (▲)
- ⑤ PLAY button (▶)
- ⑥ PAUSE button (||)
- ⑦ RANDOM button
- ⑧ HI-LITE SCAN DISC/TRACK button
- ⑨ REPEAT button
- ⑩ PROGRAM button
- ⑪ SEARCH buttons (◀◀/▶▶, ◀▶/▶▶)

A DISPLAY

- ① Sound field control indicators
Display SOUND FIELD CONTROL settings.
- ② Tuner indicators
Indicate the tuning mode.
- ③ Timer indicators
Display timer settings.
- ④ Disc number indicators
- ⑤ Function display
Displays the selected function. In the TUNER mode, this displays the station No., and when playing a CD it displays the disc No. and track No.
- ⑥ Random indicator
- ⑦ Repeat indicator
- ⑧ Program indicator
- ⑨ Frequency/Time display
In TUNER mode, frequency is displayed. In any other mode it displays the time.
- ⑩ REMAIN/TOTAL indicator
In CD mode, "REMAIN" shows the remaining play time and "TOTAL" shows the total play time.
- ⑪ PLAY ▶ indicator
- ⑫ ASES (Auto Synchro Editing System) indicators
Lights when A.S.E.S. is performed.

11.2 XC-P410T

**AMPLIFIER**

- ① **POWER STANDBY/ON switch**
Press to turn the power on and off (STANDBY).
- ② **Remote sensor window (SENSOR)**
- ③ **SMART OPERATION START/SET button**
- ④ **SMART OPERATION MEMORY button**
- ⑤ **VOLUME control**
- ⑥ **SOUND FIELD CONTROL buttons**
(DISCO/P.BASS EQ, HALL/S.ST./WIDE, B.G.M./TREBLE EQ)
- ⑦ **Preset mode indicator**
- ⑧ **MODE button**
- ⑨ **SFC CLEAR/DEMO button**
- ⑩ **Manual mode indicator**
- ⑪ **Headphones jack (PHONES)**
- ⑫ **Function buttons/indicators**
European and U.K. models:
(TUNER/TAPE/CD/PHONO)
Except for European and U.K. models:
(TUNER/TAPE/CD/VIDEO)
- ⑬ **Microphone jack (MIC)** (Except for European and U.K. models)
- ⑭ **MIC LEVEL control** (Except for European and U.K. models)

Auto Function

This model is equipped with "Auto Function" operation, so when the switch for CD PLAY, RANDOM, HI-LITE SCAN, DISC SELECT, PLAY (tape), BAND or TUNER UP/DOWN (+/-) is pressed, the function switches automatically. Use the VIDEO function button to select the component connected to the VIDEO jacks, since Auto Function is not effective for this.

NOTE:

The function cannot be switched during recording. (Auto Function does not operate either.)

TUNER

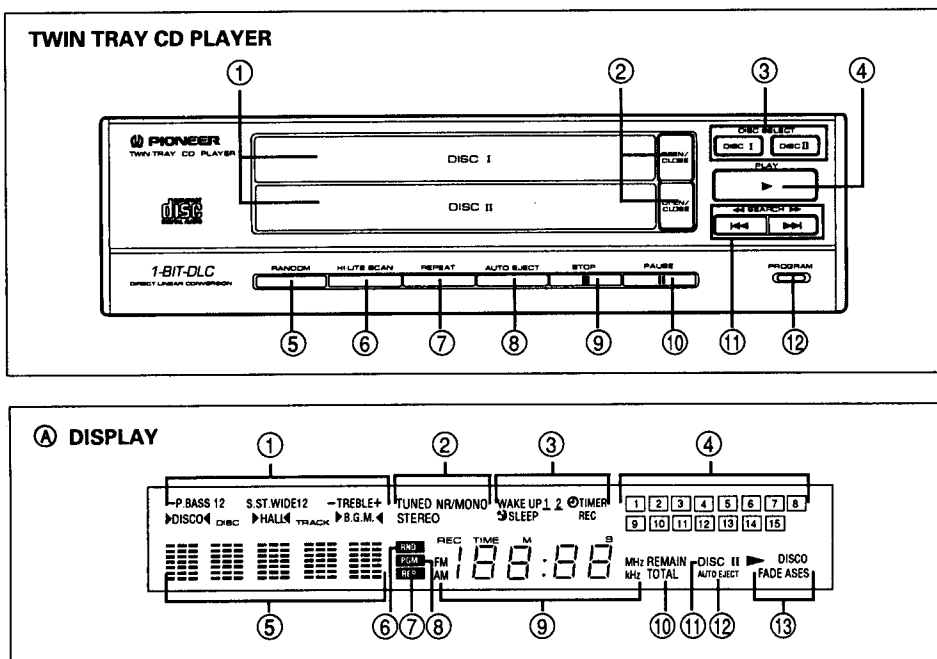
- ① **TIMER WAKE UP/- button**
- ② **TIMER REC/+ button**
- Ⓐ **Display**
- ③ **TUNER DOWN/- button**
- ④ **FREQ./ST. button**
- ⑤ **BAND button**
- ⑥ **TUNER UP/+ button**
- ⑦ **DISPLAY button**
- ⑧ **TIMER SET button**
- ⑨ **CLOCK ADJ. button**
- ⑩ **AM-NR/FM-MONO button**
- ⑪ **MEMORY/AUTO PRESET button**

Demo Function

To enter the demo mode, press DEMO when power is off. The unit performs the SMART OPERATION (page 12) and automatically switches the preset setting of the SOUND FIELD CONTROL. During demo mode, function buttons and PLAY button can be used, so you can enjoy desired program source. For example, to listen to CD with demo function, load a CD into the player before carried out demo function.

To cancel demo mode:

Press POWER STANDBY/ON switch, MODE button, SFC CLEAR/DEMO button or one of the SOUND FIELD CONTROL buttons.



TWIN TRAY CD PLAYER

- ① Disc tray (DISC I, DISC II)
- ② OPEN/CLOSE buttons
- ③ DISC SELECT buttons (DISC I, DISC II)
- ④ PLAY button (▶)
- ⑤ RANDOM button
- ⑥ HI-LITE SCAN button
- ⑦ REPEAT button
- ⑧ AUTO EJECT button
- ⑨ STOP button (■)
- ⑩ PAUSE button (||)
- ⑪ SEARCH buttons (◀◀/▶▶, ◀◀/▶▶)
- ⑫ PROGRAM button

A DISPLAY

- ① Sound field control indicators
Display SOUND FIELD CONTROL settings.
- ② Tuner indicators
Indicate the tuning mode.
- ③ Timer indicators
Display timer settings.
- ④ Music calendar
- ⑤ Function display
Displays the selected function. In the TUNER mode, this displays the station No., and when playing a CD it displays the disc No. and track No.
- ⑥ Random indicator
- ⑦ Repeat indicator
- ⑧ Program indicator
- ⑨ Frequency/Time display
In TUNER mode, frequency is displayed. In any other mode it displays the time.
- ⑩ REMAIN/TOTAL indicator
In CD mode, "REMAIN" shows the remaining play time and "TOTAL" shows the total play time.
- ⑪ DISC I/DISC II play ▶ indicator
- ⑫ AUTO EJECT indicator
- ⑬ ASES (Auto Synchro Editing System) indicators.
Lights when A.S.E.S. is performed.

12. SPECIFICATIONS

12.2 XC-P410M

STEREO MULTI CD RECEIVER:XC-P410M

Amplifier section

[U.S. model]

Continuous Average Power Output is 25 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more than 0.9 % total harmonic distortion.**

[Canadian model]

Continuous Average Power Output is 22 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more than 0.9 % total harmonic distortion.**

Music Power (DIN) 41 W + 41 W
 Continuous Power Output (DIN) 25 W + 25W
 (1 kHz, T.H.D. 1%, 8 Ω)

Continuous Power Output (RMS)
 U.S. model 32W + 32 W
 European, U.K. and Canadian models 31 W + 31 W
 (1 kHz, T.H.D. 5%, 8 Ω)

Frequency Response (VIDEO)** 10 Hz to 50 kHz ±3dB
 Signal-to-Noise Ratio
 (DIN, Continuous Power/50 mW) PHONO: 70 dB/60 dB
 Total Harmonic Distortion
 (1 kHz, 12.5 W, 8 ohms) No more than 0.2%
 Signal-to-Noise Ratio (IHF, short circuited, A network)
 VIDEO 70 dB
 Input (Sensitivity/Impedance) VIDEO: 150 mV/50 kΩ

FM/AM tuner section

FM Tuner Section

Frequency Range 87.5 MHz to 108 MHz
 Usable Sensitivity Mono: 12.8 dBf, IHF
 (1.2 μV/75 ohms)
 Sensitivity (DIN) Mono S/N 26 dB: 1.0 μV/75 Ω
 Stereo S/N 46 dB: 50.0 μV/75 Ω
 Signal-to-Noise Ratio (IHF, 85 dBf Input) Mono: 77 dB
 Stereo: 73 dB
 Signal-to-Noise Ratio (DIN) Mono: 66 dB
 Stereo: 60 dB
 Distortion Stereo: 0.5 % (1kHz)
 Antenna Input 75 ohms unbalanced

MW (AM) Tuner Section

Frequency Range
 With 10 kHz step 530 kHz to 1,700 kHz
 With 9 kHz step 531 kHz to 1,602 kHz
 Sensitivity (IHF, Loop antenna) 350 μV/m
 Antenna Loop Antenna

LW Tuner Section (For LW equipped models only)

Frequency Range 153 kHz to 281 kHz
 Sensitivity (IHF, Loop antenna) 1500 μV/m
 Antenna Loop Antenna

CD Section

Type Compact disc digital audio system
 Frequency Response 2 Hz to 20 kHz
 Signal to Noise ratio 96 dB or more (EIAJ)
 Dynamic Range 90 dB or more (EIAJ)
 Wow and Flutter Limit of measurement
 (±0.001% W.PEAK) or less (EIAJ)

General

Operating temperature +5°C to +35°C (+41°F to +95°F)

Miscellaneous


Power Requirements
 U.K. model a.c. 240 Volts ~, 50/60 Hz
 European model a.c. 220 Volts ~, 50/60 Hz
 U.S. and Canadian models AC 120V, 60 Hz
 Power Consumption
 European and U.K. models 160 W
 U.S. and Canadian models 80 W
 Dimensions
 U.S. and Canadian models ... 260 (W) x 194 (H) x 309 (D) mm
 10-4/16 (W) x 7-10/16 (H) x 12-3/16 (D) in
 European and U.K. models .. 260 (W) x 194 (H) x 312 (D) mm
 10-4/16 (W) x 7-10/16 (H) x 12-5/16 (D) in
 Weight (without package) 5.8 kg (2 lbs 10 oz)

Accessories

Operating Instructions 1
 Remote Control Unit 1
 Dry Cell Batteries (AAA/R03) 2
 FM T-type Antenna 1
 AM Loop Antenna 1
 6-compact disc magazine 1

NOTE:

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

The Magazine Type Multi-Play CD Players with  mark and the Magazines with the same mark are compatible for 5-inch (12cm) discs.

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.
 ** Measured by audio spectrum analyzer.

12.2 XC - P410T

STEREO TWIN CD RECEIVER:XC-P410T**Amplifier section**

Continuous Average Power Output is 22 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more than 0.9 % total harmonic distortion.**

Music Power (DIN)	41 W + 41 W
Continuous Power Output (DIN)	25 W + 25W
	(1 kHz, T.H.D. 1%, 8 Ω)
Continuous Power Output (RMS)	31 W + 31 W
	(1 kHz, T.H.D. 5%, 8 Ω)
Peak Music Power	210 W
Frequency Response (VIDEO)**	10 Hz to 50 kHz ±3dB
Signal-to-Noise Ratio	
(DIN, Continuous Power/50 mW)	PHONO: 70 dB/60 dB
Total Harmonic Distortion	
(1 kHz, 12.5 W, 8 ohms)	No more than 0.2%
Signal-to-Noise Ratio (IHF, short circuited, A network)	
VIDEO	70 dB
Input (Sensitivity/Impedance)	VIDEO: 150 mV/50 kΩ

FM/AM tuner section**FM Tuner Section**

Frequency Range	87.5 MHz to 108 MHz
Usable Sensitivity (1.2 μV/75 ohms)	Mono: 12.8 dBf, IHF
Sensitivity (DIN)	Mono S/N 26 dB: 1.0 μV/75 Ω
	Stereo S/N 46 dB: 50.0 μV/75 Ω
Signal-to-Noise Ratio (IHF, 85 dBf Input)	Mono: 77 dB
	Stereo: 73 dB
Signal-to-Noise Ratio (DIN)	Mono: 66 dB
	Stereo: 60 dB
Distortion	Stereo: 0.5 % (1kHz)
Antenna Input	75 ohms unbalanced

MW (AM) Tuner Section

Frequency Range	
With 10 kHz step	530 kHz to 1,700 kHz
With 9 kHz step	531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna)	350 μV/m
Antenna	Loop Antenna

LW Tuner Section (For LW equipped models only)

Frequency Range	153 kHz to 281 kHz
Sensitivity (IHF, Loop antenna)	1500 μV/m
Antenna	Loop Antenna

CD Section

Type	Compact disc digital audio system
Frequency Response	2 Hz to 20 kHz
Signal to Noise ratio	96 dB or more (EIAJ)
Dynamic Range	90 dB or more (EIAJ)
Wow and Flutter	Limit of measurement
	(±0.001% W.PEAK) or less (EIAJ)

General

Operating temperature	+5°C to +35°C (+41°F to +95°F)
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Miscellaneous**Power Requirements**

European model	a.c. 220 Volts ~, 50/60 Hz
U.K. and Australian model	a.c. 240 Volts ~, 50/60 Hz
Multi-voltage models	AC 110V/120V - 127V/220V/240V
	(switchable), 50/60 Hz

Power Consumption	160 W
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Dimensions

Except for European and U.K. models	260 (W) x 194 (H) x 309 (D) mm
	10-4/16 (W) x 7-10/16 (H) x 12-3/16 (D) in
European and U.K. models	260 (W) x 194 (H) x 312 (D) mm
	10-4/16 (W) x 7-10/16 (H) x 12-5/16 (D) in

Weight (without package)	5.4 kg (2 lbs 7 oz)
--------------------------------	---------------------

Accessories

Operating Instructions	1
Remote Control Unit	1
Dry Cell Batteries (AAA/R03)	2
FM T-type Antenna	1
AM Loop Antenna	1

NOTE:

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

- * Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.
- ** Measured by audio spectrum analyzer.