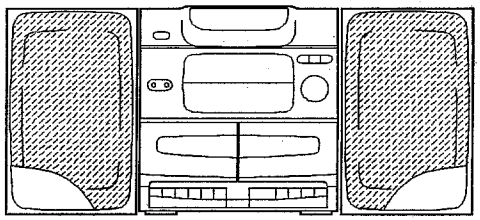
aiwa

aiwa SERVICE

CA-DW300
CA-DW400

SERVICE MANUAL



CD CARRY COMPONENT SYSTEM

- BASIC TAPE MECHANISM:TN-21ZSW-1604
- BASIC CD MECHANISM:3ZG2-B1N
- TYPE:EE.EEZ.EZ.V.LH.HR.U.G(400)
- TYPE:EEZ.EZ.LH.HR.K(300)

REVISION PUBLISHING

● This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-955-105-40T).

S/M Code No. 09-957-105-60T

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SPECIFICATIONS

Tuner section

<U model>

FM	87.5–108.0 MHz Antenna: FM antenna
AM	530–1,710 kHz Antenna: Ferrite bar antenna

<LH model>

MW	530–1,710 kHz Antenna: Ferrite bar antenna
SW	3.9–12.1 MHz Antenna: FM/SW antenna
FM	87.5–108.0 MHz Antenna: FM/SW antenna

<HR model>

MW	530-1,605 kHz Antenna: Ferrite bar antenna
SW	3.9-12.1 MHz Antenna: FM/SW antenna
FM	87.5-108.0 MHz Antenna: FM/SW antenna

<K, EE, EZ, G models>

FM	87.5–108.0 MHz Antenna: FM antenna
MW	530–1,605 kHz Antenna: Ferrite bar antenna
LW	150–285 kHz Antenna: Ferrite bar antenna

<V model>

FM	65.0–108.0 MHz Antenna: FM antenna
MW	530–1,605 kHz Antenna: Ferrite bar antenna
LW	150–285 kHz Antenna: Ferrite bar antenna

Amplifier section

Power output	<U, LH, HR models> 4 W + 4 W (4 ohms, EIAJ DC) **FTC rule** 3.5 Watts per channel, Min. RMS at 4 ohms, from 200 Hz to 20,000 Hz, with no more than 10 % distortion <K model> K, EE, EZ models: 5 W + 5 W (DIN MUSIC POWER) 4 W + 4 W (10% T.H.D./4Ω DC) 3 W + 3 W (DIN 1% Rated power) G model: 3.6 W + 3.6 W (DIN 10%) 4 W + 4 W (4 Ω, EIAJ DC) <V model> 5 W + 5 W (DIN MUSIC POWER) 3 W + 3 W (DIN 1% Rated power)
Power requirements	DC 12 V using eight R20 (size D) batteries U model: AC 120 V, 60 Hz LH, HR models: AC 110-120 V/220-240 V selectable, 50/60 Hz K, EE, EZ, V models: AC 230 V, 50 Hz G model: AC 230-240 V, 50 Hz
Power consumption	U model: 20 W EXCEPT U: 24 W

CD player section

Disc	Compact disc
Scanning method	Non-contact optical scanner (semiconductor laser application)
Laser	Semiconductor laser λ =780 nm
Rotation speed	Approx. 500–200 rpm/CLV
Error correction	Cross Interleave, Reed Solomon code
Number of channels	2 channels
D/A conversion	16-bit linear

Cassette deck section

Track format	4 tracks, 2 channels
Frequency response	Normal tape: 50–12,000 Hz (EIAJ)
Recording system	AC bias
Erasure system	Magnet erase
Motor	DC motor × 1
Heads	Deck 1: Recording/playback head (1) Erasure head (1) Deck 2: Playback head (1)

Common section

Dimensions (W × H × D)	260 × 281 × 232 mm (10 1/4 × 11 1/8 × 9 1/4 in.)
Weight	3.6 kg (7.9 lbs) (not including batteries)

Speaker

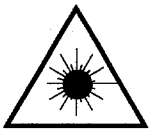
Cabinet type	2-way bass reflex type
Speaker	100 mm (4 in.) cone type woofer 27 mm (1 1/8 in.) ceramic type tweeter
Impedance	4 ohms
Allowable max. Input	6 W
Dimensions (W × H × D)	175 × 277 × 201 mm × 2 (7 × 11 × 8 in.)
Weight	1.2 kg (2.6 lbs) × 2

- Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

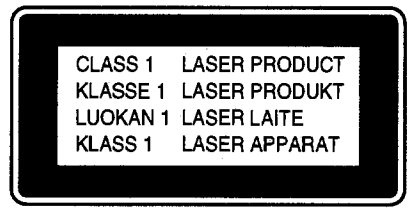
VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

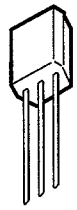


■ ACCESSORIES ／ PACKAGE LIST

DESCRIPTION で判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	S4-400-891-000		INSTRUCTION MANUAL<3K,3EZ,3EEZ>
1	S4-400-802-000		INSTRUCTION MANUAL<4U,4LH>
1	S4-400-901-000		INSTRUCTION MANUAL<3HR>
1	S4-400-881-000		INSTRUCTION MANUAL<4HR>
1	S4-400-851-000		INSTRUCTION MANUAL<4V>
1	S4-401-031-000		INSTRUCTION MANUAL<3LH>
1	S4-400-872-000		INSTRUCTION MANUAL<4EEZ,4EZ,4EE,4G>
1	S4-400-701-000		INSTRUCTION MANUAL<4LH>
1	S4-400-801-000		INSTRUCTION MANUAL<4U>
⚠ 2	S1-400-122-000		CORD,POWER AC<EXCEPT 4U,3K,4HR,4G>
⚠ 2	S1-400-123-000		CORD,POWER AC<4HR>
⚠ 2	S1-400-342-000		CORD,POWER AC<4G>
⚠ 2	S1-400-241-000		CORD,POWER AC SET<3K>
⚠ 2	S1-400-221-000		CORD,POWER AC SET<4U>
3	SR-CDW-400-000		RC,RC-DW400<4U,4LH,4EEZ,4EZ,4EE,4HR,4V>

TRANSISTOR ILLUSTRATION



E C B

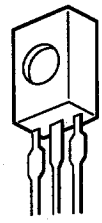
2SA933
DTA144TS
DTC124XS

E B C

2SA952
2SA1015
2SA1296
2SB1010
2SC2878

E C B

8550C
9011G
9014C
9015C



E C B

2SC2497

ELECTRICAL MAIN PARTS LIST

DESCRIPTION で判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-017-539-010		IC,TA2031F
	87-002-408-010		IC,TC9236F
	87-002-644-010		IC,TDA1311
	87-002-258-010		IC,AN8377N
	87-001-176-010		IC,TA8102P
⚠	87-001-196-010		IC,ICP-N10
	S8-381-890-000		IC,TA8189N
	S1-007-220-000		IC,AN7205
	S1-003-220-000		IC,KA2264
	S1-007-310-000		IC,KA22471
	S0-510-303-600		IC,BA3822LS
	87-027-666-080		IC,BU4052BC
	87-017-564-010		IC,LC7533
	87-001-206-010		IC,S-81250HG
	S1-010-710-000		IC,TA8207K
	87-070-149-010		IC,TMP47C620F-N774
	87-070-083-010		IC,GP1U281X<EXCEPT 3K,3EZ,3EEZ,3LH,3HR>
TRANSISTOR			
	87-026-291-080		TR,DTC124XS
	89-112-965-010		TR,2SA1296GR
	89-109-522-080		TR,2SA952K
	89-109-332-010		TR,2SA933S-S
	87-026-219-080		TR,DTA144TS
	S2-SC2-878-000		TR,2SC2878B
	S2-901-5C1-000		TR,9015C
	S2-901-1G1-000		TR,9011G
	S2-2SC-249-770		TR,2SC2497
	SB-101-0QZ-000		TR,2SB1010Q
	S2-855-0C1-000		TR,8550C
	S2-901-4C6-000		TR,9014C
	89-110-153-410		TR,2SA1015GR
DIODE			
	87-020-465-010		DIODE,1SS133
	82-135-799-010		DIODE,IN4148
	S3-IN4-001-100		DIODE,IN4001
	S3-IN6-0P1-000		DIODE,IN60P
	S3-SD1-161-000		DIODE,SD116
	S3-Z51-V10-000		ZENER,5.1V-1/2W
	S3-Z91-V70-000		ZENER,9.1V-1/2W
	S3-Z62-V80-000		ZENER,6.2V-1/2W
	S3-Z01-2V1-000		ZENER,12V-1/2W
	S3-FR2-021-000		DIODE,FR202
MAIN C.B			
AFT1	S6-005-710-000		IFT,171-603
AFT2	S6-005-710-000		IFT,171-603
C103	87-010-412-080		CAP,E 10-25V
C104	87-016-044-040		CAP,E 100-16V
C105	87-010-035-010		CAP,E 2.2-50V
C107	87-010-891-010		CAP,E 47-10V
C111	87-010-551-010		CAP,E 33-10V
C112	87-015-694-010		CAP,E 0.47-50V
C113	87-016-073-080		CAP,E 1-50V
C115	87-016-073-080		CAP,E 1-50V
C122	87-010-551-010		CAP,E 33-10V
C129	87-015-694-010		CAP,E 0.47-50V
C130	87-015-718-010		CAP,E 47-16V
C132	87-016-073-080		CAP,E 1-50V
C133	87-015-718-010		CAP,E 47-16V
C134	87-016-073-080		CAP,E 1-50V
C135	87-016-073-080		CAP,E 1-50V
C136	87-016-073-080		CAP,E 1-50V
C143	87-010-264-010		CAP,E 100-10V
C146	87-010-908-010		CAP,E 220-10V
C150	87-015-995-010		CAP,E 4.7-50V
C214	87-010-548-010		CAP,E 220-16V
C226	87-010-908-010		CAP,E 220-10V
C229	87-010-412-080		CAP,E 10-25V
C231	87-010-137-010		CAP,E 22-16V
C232	87-015-692-010		CAP,E 0.22-50V
C233	87-015-995-010		CAP,E 4.7-50V
C234	87-016-073-080		CAP,E 1-50V
C239	87-010-264-010		CAP,E 100-10V
C240	87-016-073-080		CAP,E 1-50V
C241	87-015-692-010		CAP,E 0.22-50V
C242	87-015-692-010		CAP,E 0.22-50V
C303	87-016-073-080		CAP,E 1-50V
C306	87-016-073-080		CAP,E 1-50V
C307	87-010-412-080		CAP,E 10-25V
C308	87-010-908-010		CAP,E 220-10V
C330	87-010-891-010		CAP,E 47-10V
C331	87-016-073-080		CAP,E 1-50V
C333	87-010-891-010		CAP,E 47-10V
C334	87-016-073-080		CAP,E 1-50V
C335	87-010-490-010		CAP,E 0.1-50V
C338	87-010-908-010		CAP,E 220-10V
C339	87-016-073-080		CAP,E 1-50V
C343	87-010-405-010		CAP,E 10-50V
C344	87-010-653-010		CAP,E 47-25V
C346	87-015-718-010		CAP,E 47-16V
C348	87-010-653-010		CAP,E 47-25V
C349	87-010-653-010		CAP,E 47-25V
C350	87-010-653-010		CAP,E 47-25V
C351	87-015-718-010		CAP,E 47-16V
C352	87-010-236-010		CAP,E 1000-10V
C354	87-010-236-010		CAP,E 1000-10V
C355	87-010-379-010		CAP,E 22-10V
C357	87-016-073-080		CAP,E 1-50V
C358	87-010-379-010		CAP,E 22-10V
C359	87-016-073-080		CAP,E 1-50V
C360	87-016-073-080		CAP,E 1-50V
C361	87-015-995-010		CAP,E 4.7-50V
C362	87-010-405-010		CAP,E 10-50V
C364	87-010-908-010		CAP,E 220-10V
C365	87-010-908-010		CAP,E 220-10V
C367	87-015-995-010		CAP,E 4.7-50V
C368	87-015-995-010		CAP,E 4.7-50V
C369	87-015-995-010		CAP,E 4.7-50V
C375	87-016-073-080		CAP,E 1-50V
C376	87-016-073-080		CAP,E 1-50V
C377	87-010-264-010		CAP,E 100-10V
C378	87-015-694-010		CAP,E 0.47-50V
C379	87-016-073-080		CAP,E 1-50V
C382	87-016-073-080		CAP,E 1-50V
C385	87-016-073-080		CAP,E 1-50V
IFC201	S2-900-081-000		CER,FIL FM 10.7MHZ
IFT1	S6-009-310-000		IFT,FM 7MM
IFT2	S6-009-210-000		IFT,FM 7MM
IFT101	S6-009-71A-000		COIL,OSC AC BIAS
JK402	S2-3B0-211-000		JACK,HP 3.5MM
JK403	S2-3B0-211-000		JACK,HP 3.5MM
JK404	S3-004-962-000		TERMINAL PUSH 4P
L101	S2-600-371-000		INDUCTOR,33MH
L104	S2-600-371-000		INDUCTOR,33MH
L201	S7-A00-130-000		COIL,FM 4.5-4.5
L202	S7-A00-130-000		COIL,FM 4.5-4.5<4U>
L202	S2-600-311-000		INDUCTOR,15UH<4LH,4HR,3LH,3HR>
L203	S7-A00-100-000		COIL,FM 4.5-3.5<EXCEPT 4V>
L203	S7-A00-130-000		COIL,FM 4.5-4.5<4V>
L204	S7-A00-100-000		COIL,FM 4.5-3.5<4V>
L204	S7-A00-080-000		COIL,FM 5-2.5<4U,4LH,4HR,3LH,3HR>
L204	S7-A00-210-000		COIL,FM 7-3.5 <3K,3EZ,3EEZ,4EEZ,4EZ,4EE,4G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
L206	S6-010-210-000		COIL,OSC AM<4LH,4HR,3LH,3HR>
L206	S6-010-710-000		COIL,OSC LW<EXCEPT 4U,4LH,4HR,3LH,3HR>
L207	S6-010-210-000		COIL,OSC AM<EXCEPT 4U,4LH,4HR,3LH,3HR>
L207	S6-009-610-000		COIL,OSC AM<4U>
L207	S6-010-110-000		COIL,OSC SW 7MM(GRN)<4LH,4HR,3LH,3HR>
L208	S7-B00-380-000		COIL,ANT AM<4LH,4HR,3LH,3HR>
L208	S7-C00-111-000		COIL,ANT LW<EXCEPT 4U,4LH,4HR,3LH,3HR>
L209	S7-B00-380-000		COIL,ANT AM<EXCEPT 4U,4LH,4HR,3LH,3HR>
L210	S6-010-310-000		COIL,ANT SW 10MM<4LH,4HR,3LH,3HR>
PVC1	S2-300-261-000		P.V.C.PG-2220T8<EXCEPT 4U,4V>
PVC1	S2-300-351-000		PVC,L2S-22DNT<4V>
PVC1	S2-300-271-000		PVC,WF-2220T8-A28401<4U>
RF101	87-029-124-010		RES,FUSING 2.2-1/4W<EXCEPT 4U>
SW201	S8-024-510-000		SW,SLIDE 4P2T<4U>
SW201	S8-024-210-000		SW,SLIDE 8P3T<EXCEPT 4U>
SW202	S8-024-410-000		SW,SLIDE 2P2T<4U,4LH,4HR,3LH,3HR>
SW202	S8-013-010-000		SW,SS23E01G9 2P3T<EXCEPT 4U,4LH,4HR,3LH,3HR>
VR201	SR-V10-340-000		SFR,10K

FRONT C.B

C401	87-016-285-080		CAP,E 47-10V
C403	87-016-285-080		CAP,E 47-10V
C407	87-016-073-080		CAP,E 1-50V
D204	S2-800-011-000		LED,3MM(RED)
D403	S2-800-011-000		LED,3MM(RED)
D404	S2-800-011-000		LED,3MM(RED)
D409	S2-800-011-000		LED,3MM(RED)
D410	S2-800-011-000		LED,3MM(RED)
L401	87-005-204-010		COIL,47UH
L402	87-005-204-010		COIL,47UH
L403	87-005-204-010		COIL,47UH
LCD401	S2-700-751-000		DISPLAY LCD
S401	S8-014-310-000		SW,PUSH TACT
S402	S8-014-310-000		SW,PUSH TACT
S403	S8-011-710-000		SWITCH,1P1T
S404	S8-011-710-000		SWITCH,1P1T
S405	S8-011-710-000		SWITCH,1P1T
S406	S8-011-710-000		SWITCH,1P1T
S407	S8-011-710-000		SWITCH,1P1T
S408	S8-011-710-000		SWITCH,1P1T
S409	S8-011-710-000		SWITCH,1P1T
S410	S8-011-710-000		SWITCH,1P1T
S411	S8-011-710-000		SWITCH,1P1T
S412	S8-011-710-000		SWITCH,1P1T
X401	S2-900-631-000		CER,RESO 4.0MHZ
X402	S2-101-011-000		X'TAL 32.768KHz

CD C.B

C1	87-010-038-010		CAP,E 22-25V
C6	87-010-908-010		CAP,E 220-10V
C9	87-015-694-010		CAP,E 0.47-50V
C10	87-010-264-010		CAP,E 100-10V
C11	87-016-073-080		CAP,E 1-50V
C12	87-010-908-010		CAP,E 220-10V
C15	87-010-680-010		CAP,E 33-16V
C16	87-015-697-010		CAP,E 3.3-50V
C17	87-016-285-080		CAP,E 47-10V
C24	87-010-908-010		CAP,E 220-10V
C25	87-016-459-080		CAP,E 470-10V
C27	87-010-236-010		CAP,E 1000-10V
C35	87-010-264-010		CAP,E 100-10V
C38	87-010-264-010		CAP,E 100-10V
C44	87-010-908-010		CAP,E 220-10V
C50	87-016-459-080		CAP,E 470-10V
C52	87-016-073-080		CAP,E 1-50V
C60	87-010-480-080		CAP,E 220-16V
C901	87-010-412-080		CAP,E 10-25V
C902	87-010-412-080		CAP,E 10-25V
CON3	S1-2P6-000-800		CONN,ASSY 6P 110MM
L2	87-005-456-080		COIL,100UH
SFR2	SR-V10-480-000		SFR,100K
SFR2	SR-V47-270-000		SFR,4.7K
SW8	S8-013-410-000		SW,LEAF
VR3	SR-V10-480-000		SFR,100K
X1	S2-900-311-000		CER,RESO16.93MHZ

GEQ C.B

C310	87-016-073-080		CAP,E 1-50V
C311	87-010-492-040		CAP,E 0.33-50V
C318	87-015-995-010		CAP,E 4.7-50V
C324	87-015-995-010		CAP,E 4.7-50V
C325	87-016-073-080		CAP,E 1-50V
C326	87-010-492-040		CAP,E 0.33-50V
C329	87-010-480-080		CAP,E 220-16V
VR301	S1-501-271-000		VR,SLIDE 50KB
VR302	S1-500-851-000		VR,SLIDE 50KB-2
VR303	S1-500-851-000		VR,SLIDE 50KB-2
VR304	S1-500-851-000		VR,SLIDE 50KB-2
VR305	S1-500-851-000		VR,SLIDE 50KB-2
VR306	S1-500-851-000		VR,SLIDE 50KB-2

SW C.B

SW101	S8-020-010-000		SW,PUSH

POWER C.B

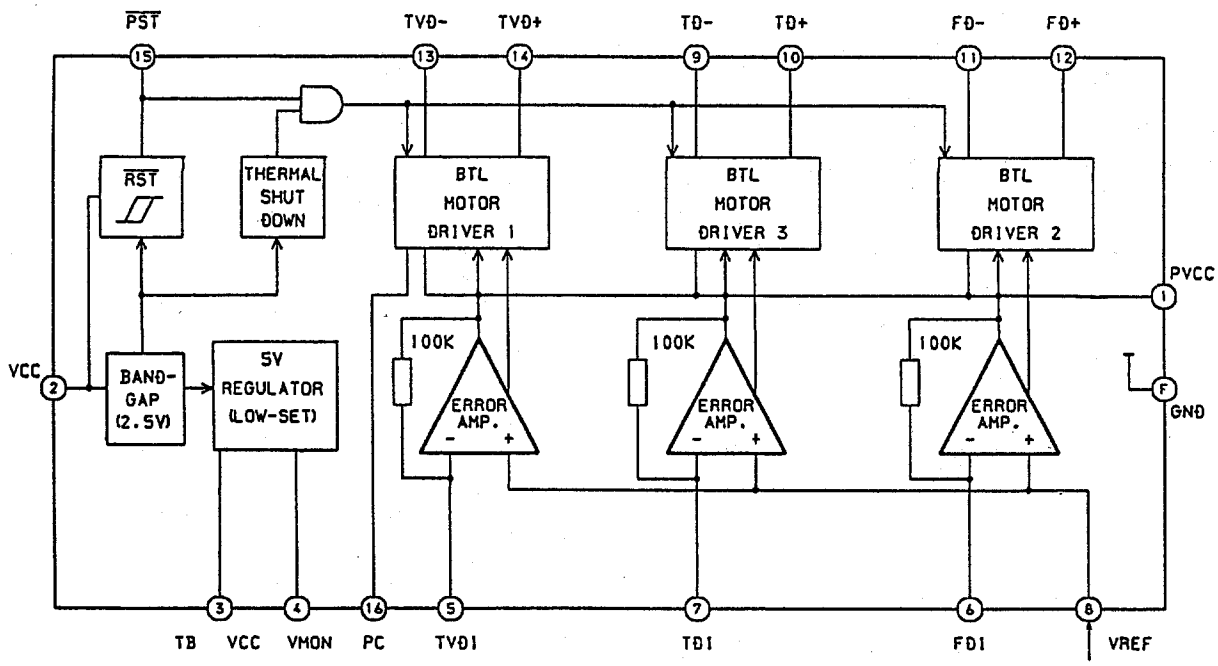
C458	87-016-475-090		CAP,E 3300-25V
⚠F401	S4-001-510-000		FUSE,3.15A-250V<4U>
⚠F401	S4-001-610-000		FUSE,3.15A-250V<EXCEPT 4U>

DRIVE C.B

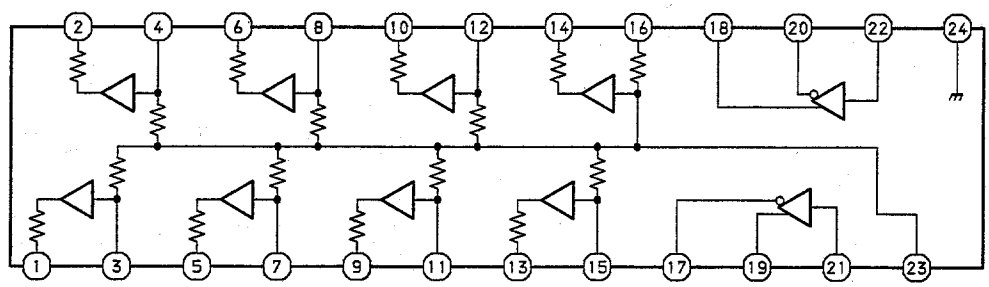
M1	87-045-362-019		MOT,MDN4RA3FTAS1
M2	87-045-363-019		MOT,MDN4RA3ETA1
SW1	87-036-340-019		SW,LEAF LSA-1121

IC BLOCK DIAGRAM

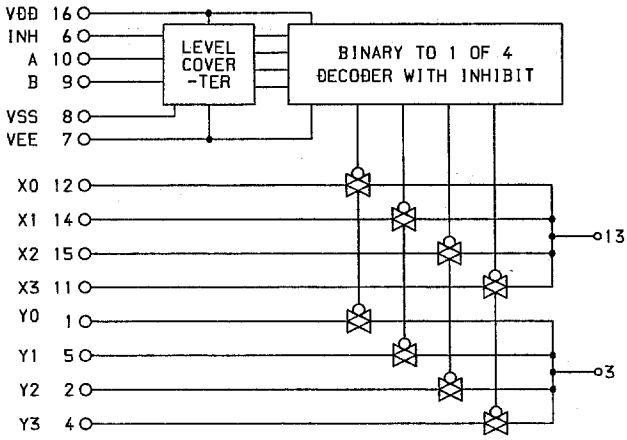
IC, AN8377N

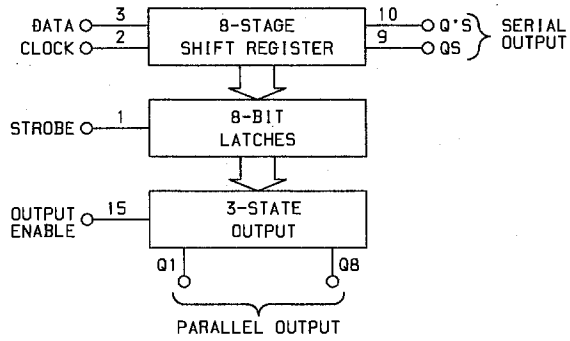


IC, BA3822LS



IC, BU4052BC

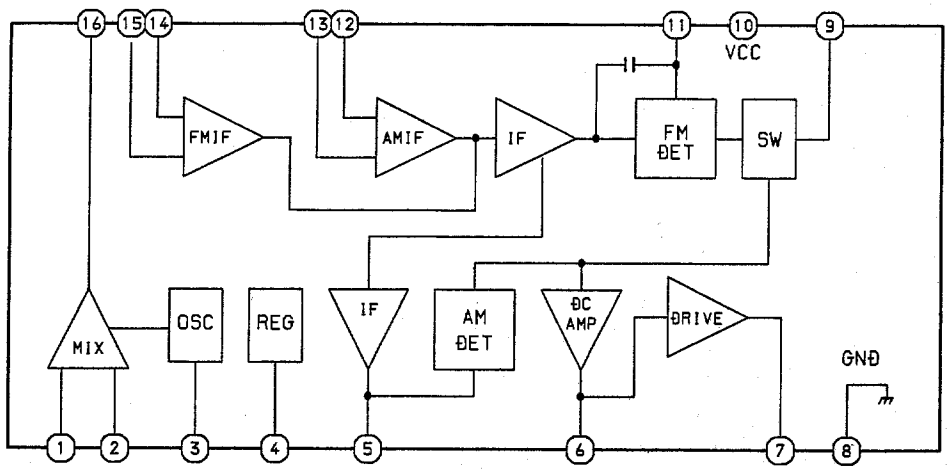




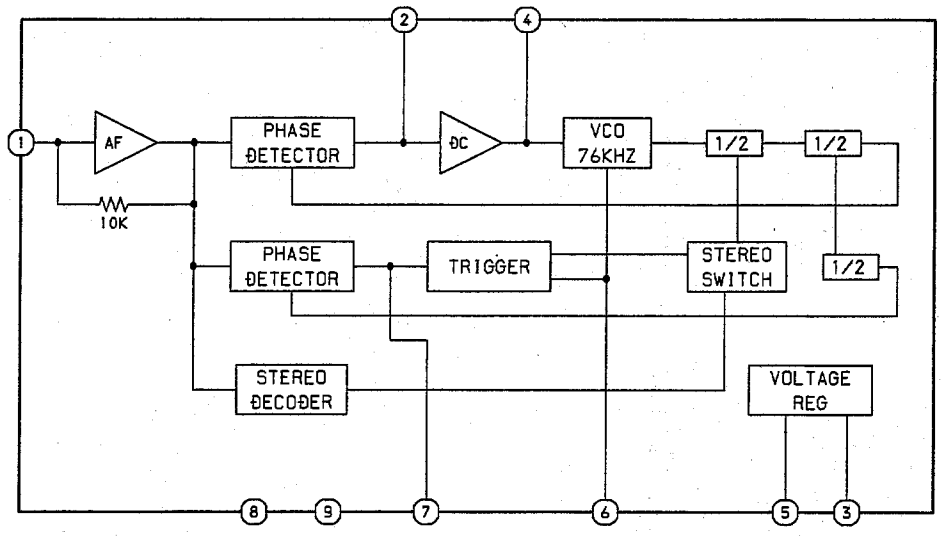
TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

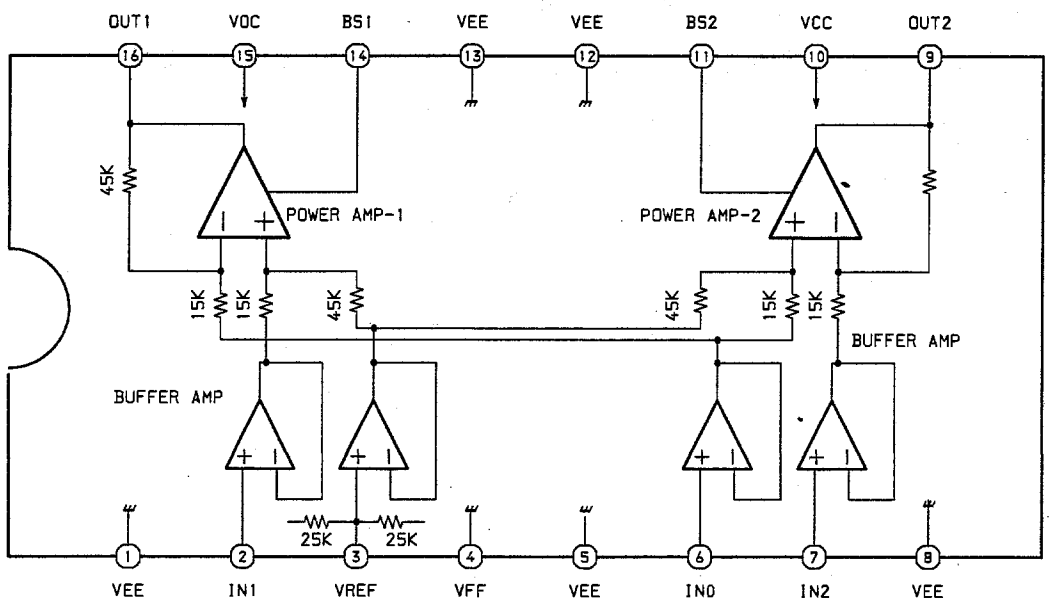
IC, KA22471



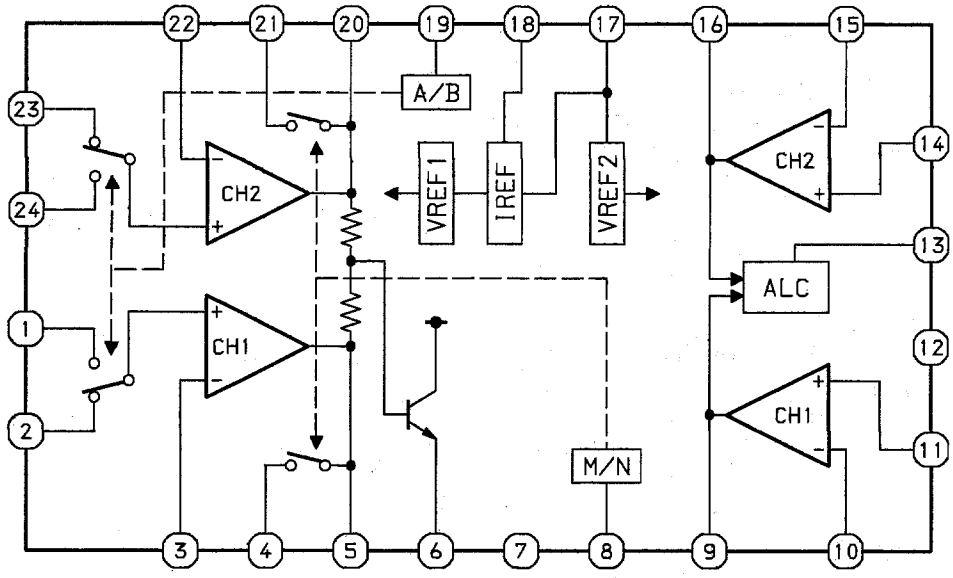
IC, KA2264



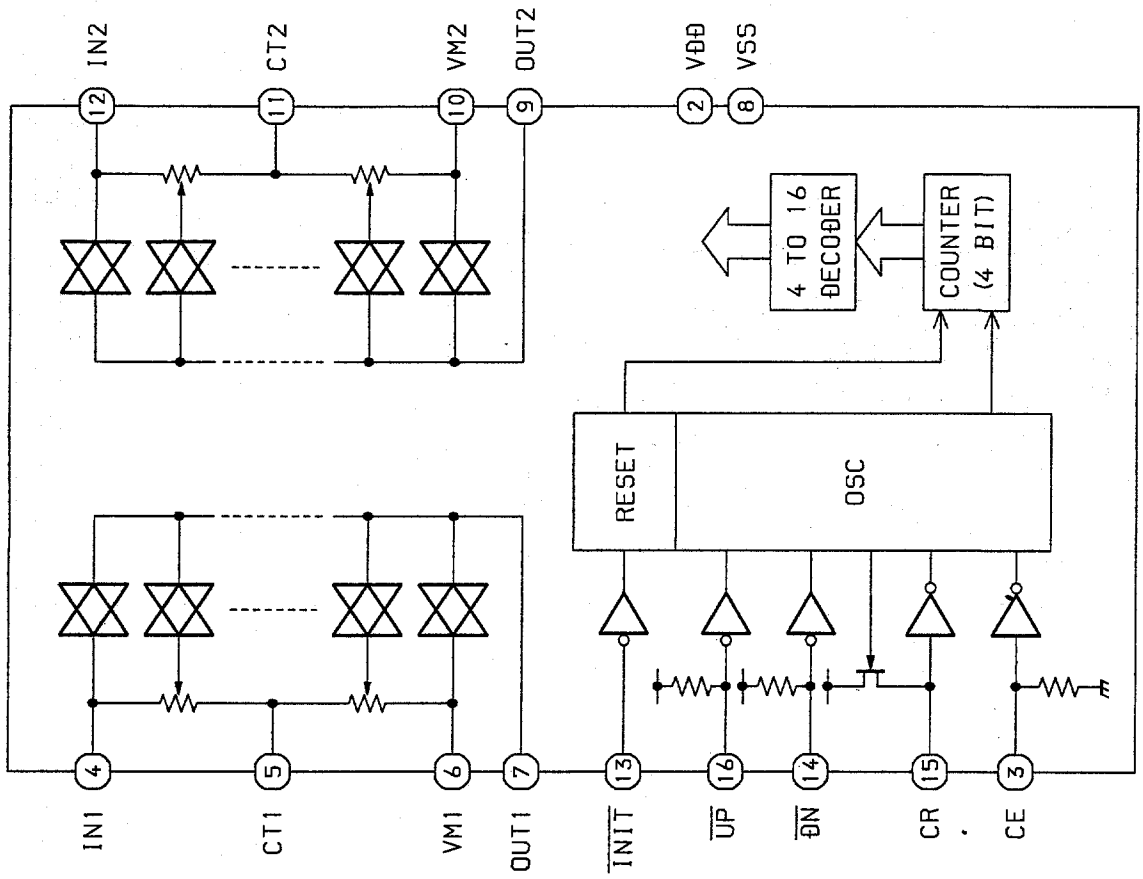
IC, TA8102P

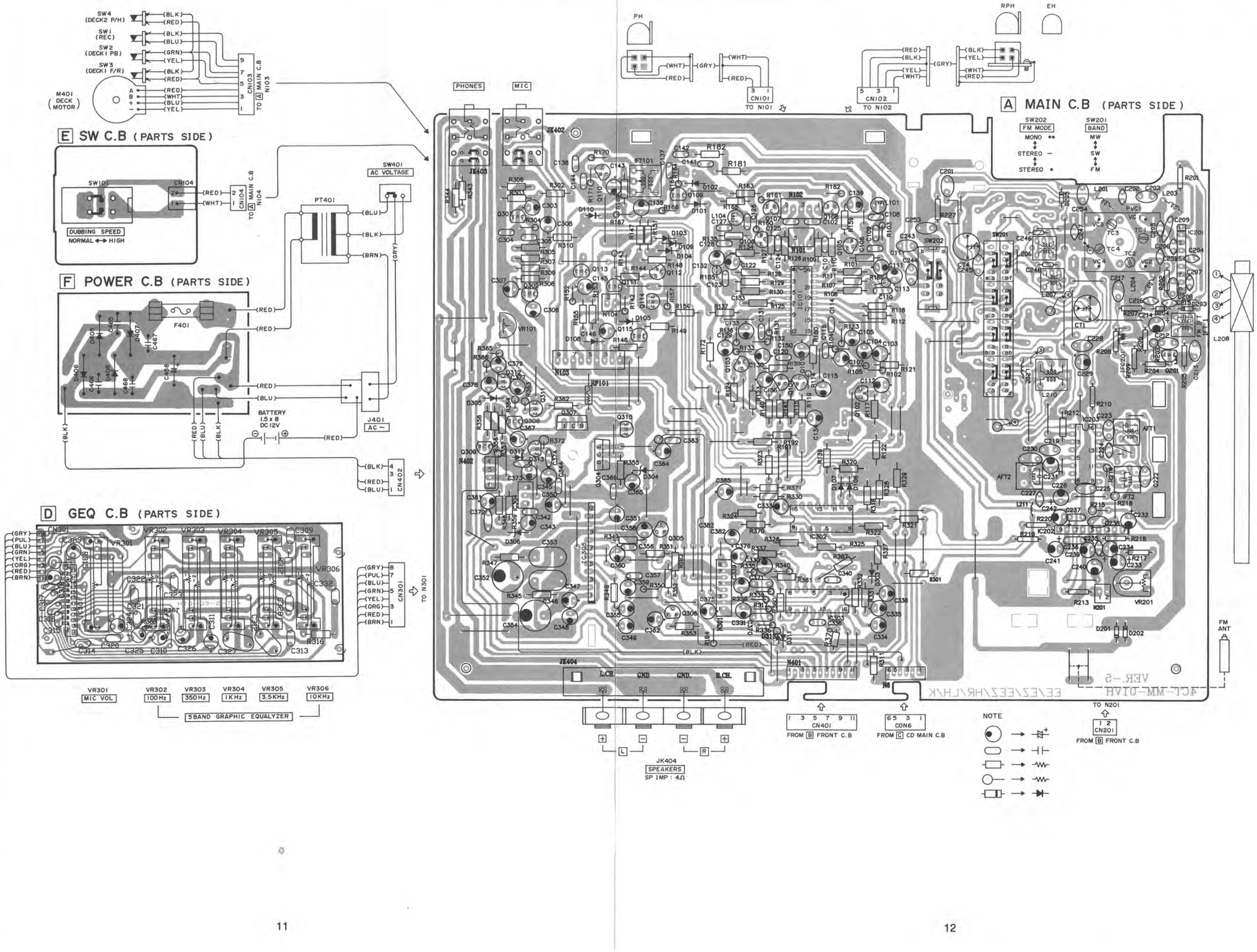


IC, TA8189N

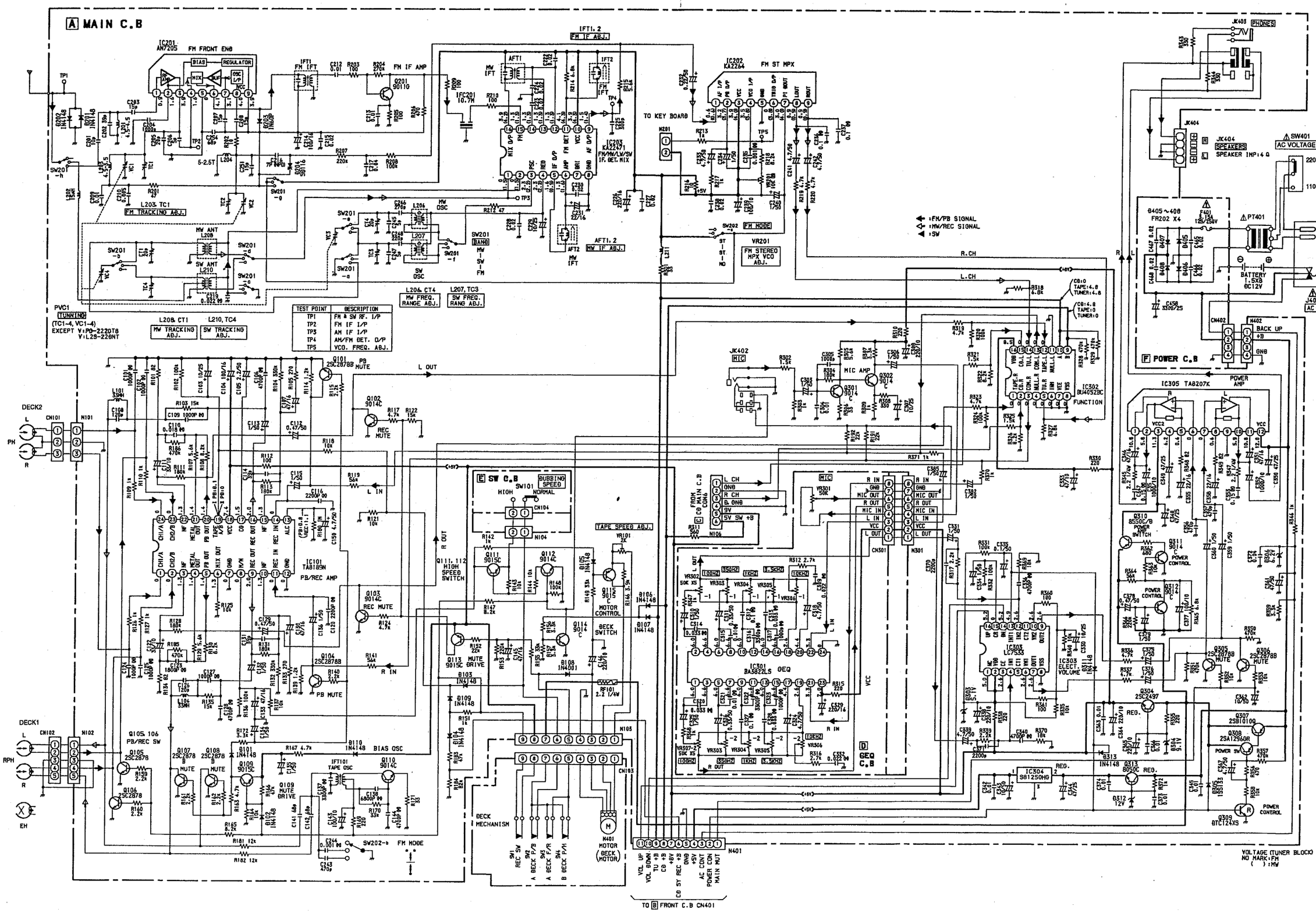


IC, LC7533

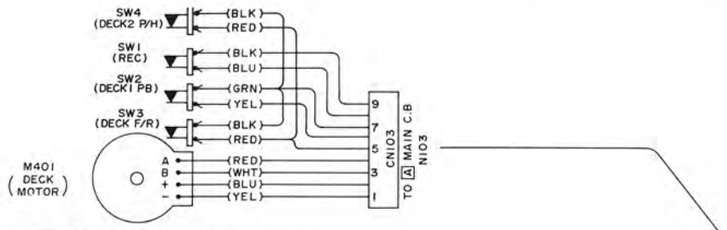



SW4 (DECK2 P/H)
SW1 (REC)
SW2 (DECK1 PB)
SW3 (DECK1 F/R)
M401 DECK MOTOR
CN103
TO A MAIN C.B NI03
E SW C.B (PARTS SIDE)
SW101
CN104
DUBBING SPEED
NORMAL ↔ HIGH
SW401 AC VOLTAGE
PT401
F POWER C.B (PARTS SIDE)
F401
BATTERY 1.5 x 8 DC 12V
J401 AC ~
CN402
D GEQ C.B (PARTS SIDE)
CN301
VR301 MIC VOL
VR302 100Hz
VR303 350Hz
VR304 1KHz
VR305 3.5KHz
VR306 10KHz
5BAND GRAPHIC EQUALIZER
CN301
TO N301
PHONES
MIC
PH
RPH
EH
CN101
TO N101
CN102
TO N102
A MAIN C.B (PARTS SIDE)
SW202 FM MODE
MONO
STEREO
STEREO
SW201 BAND
MW
SW
FM
JK402
JK403
JK404
L.CH.
GND
GND.
R.CH.
SPEAKERS
SP IMP : 4Ω
CN401
FROM B FRONT C.B
CON6
FROM C CD MAIN C.B
CN201
FROM B FRONT C.B
TO N201
FM ANT
NOTE

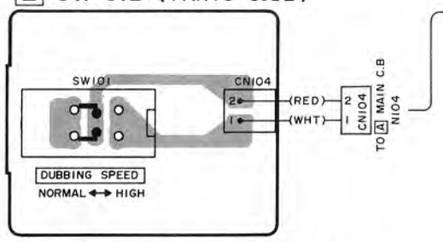
SCHEMATIC DIAGRAM-1 (MAIN: LH, HR)



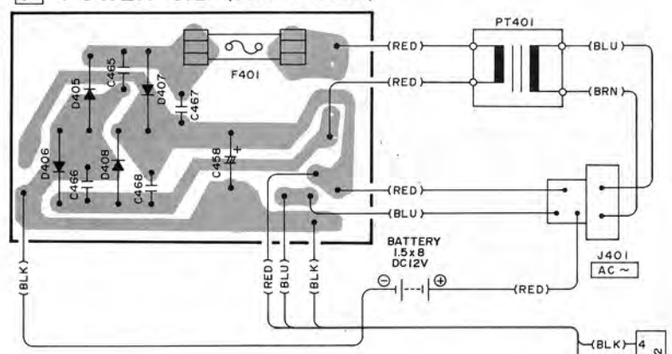
WIRING-2 (MAIN: DW400 U)



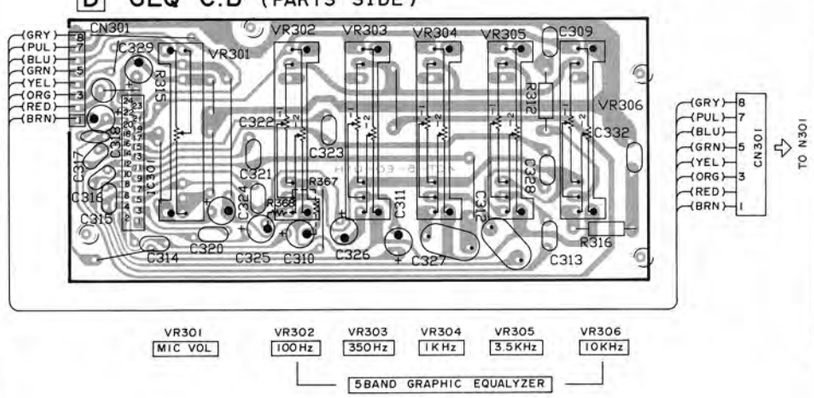
E SW C.B (PARTS SIDE)

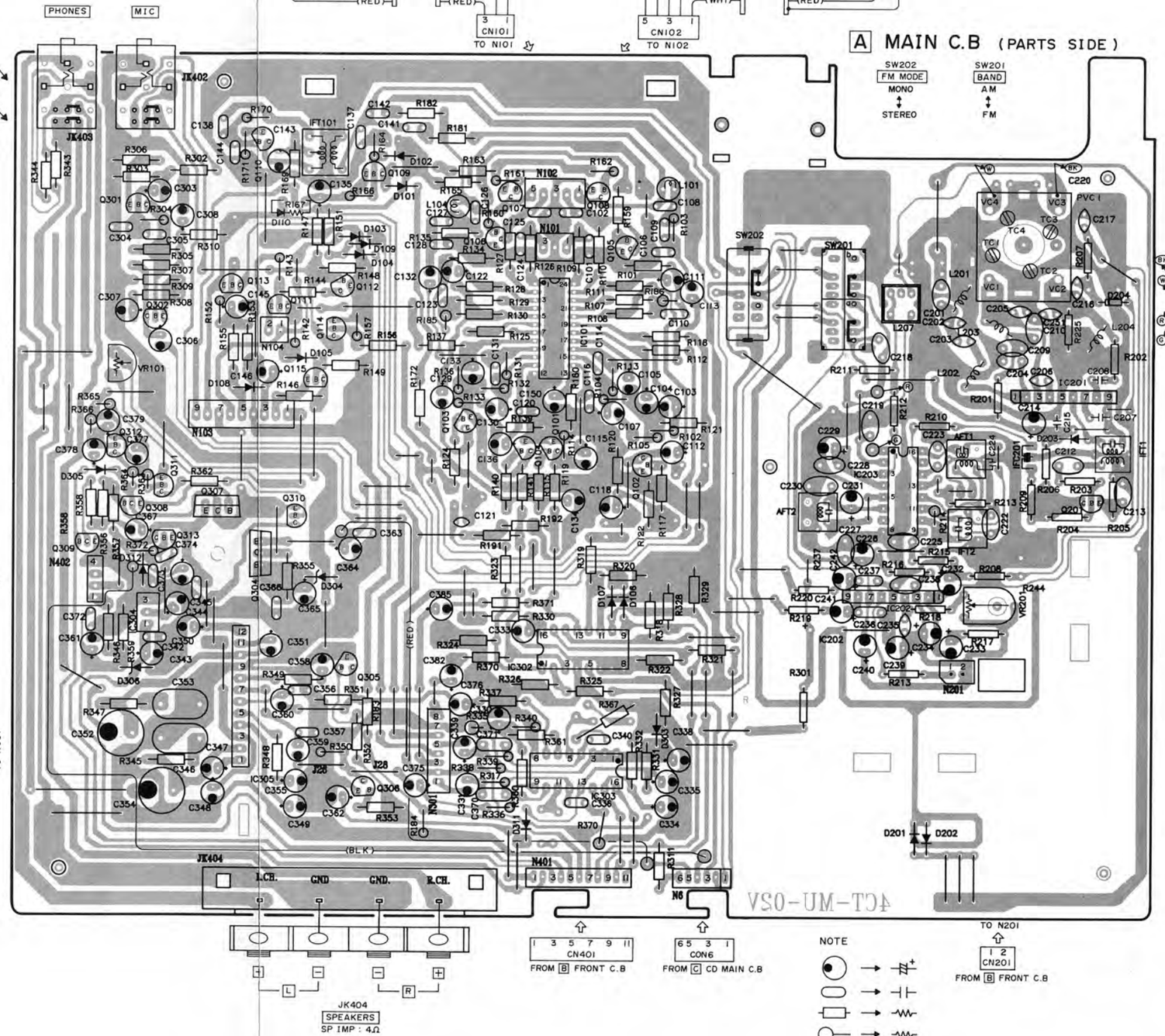


F POWER C.B (PARTS SIDE)

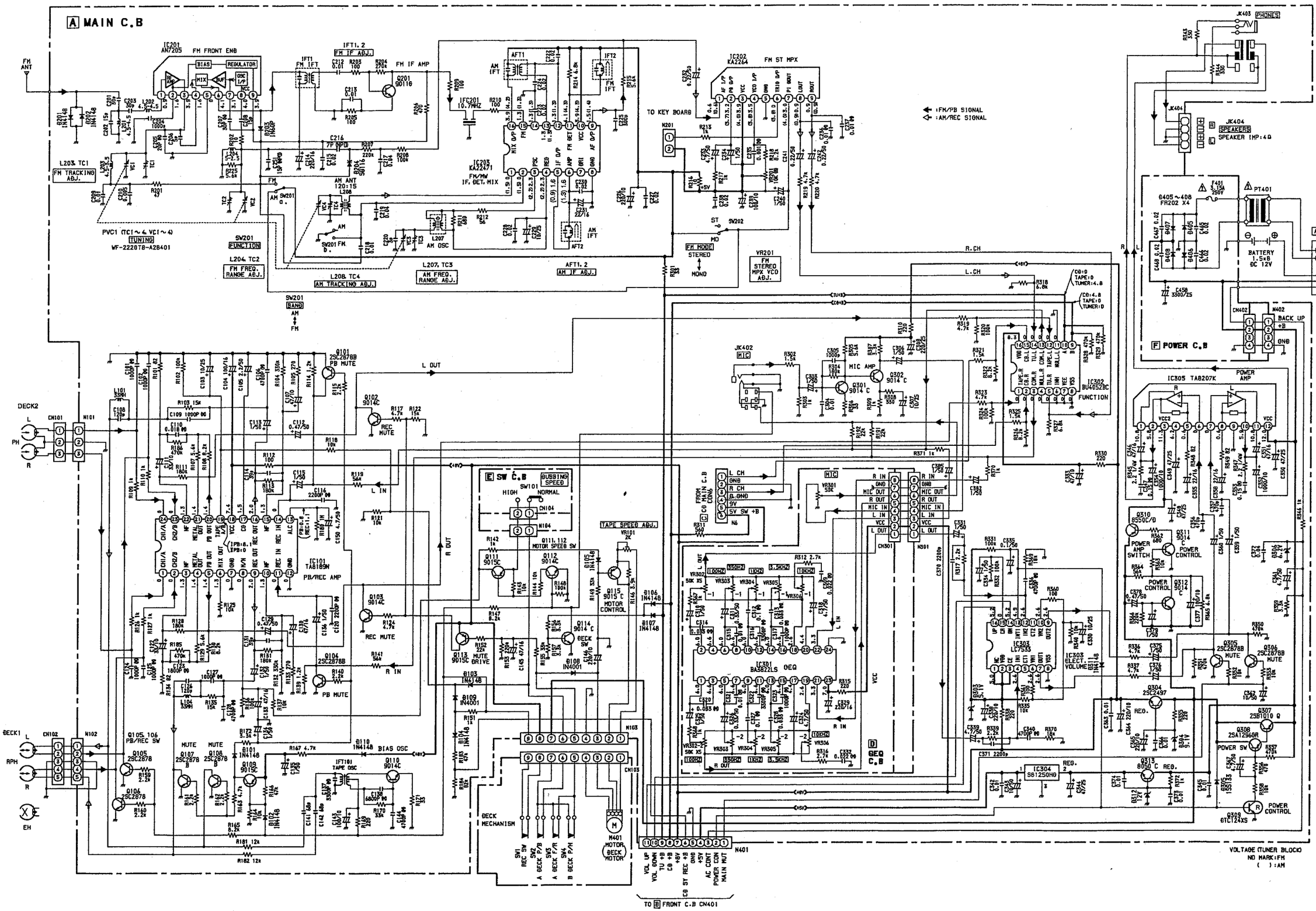


D GEQ C.B (PARTS SIDE)

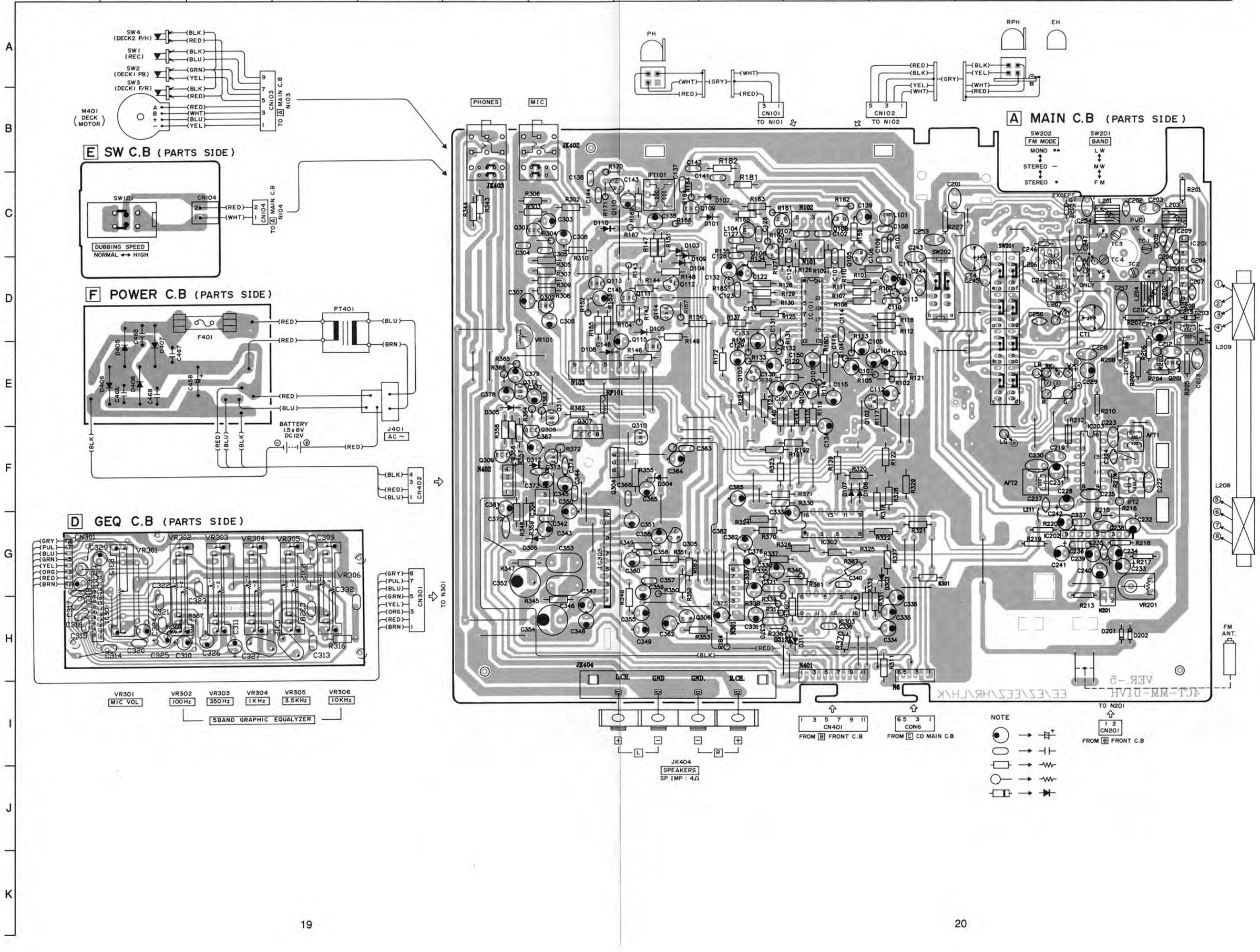




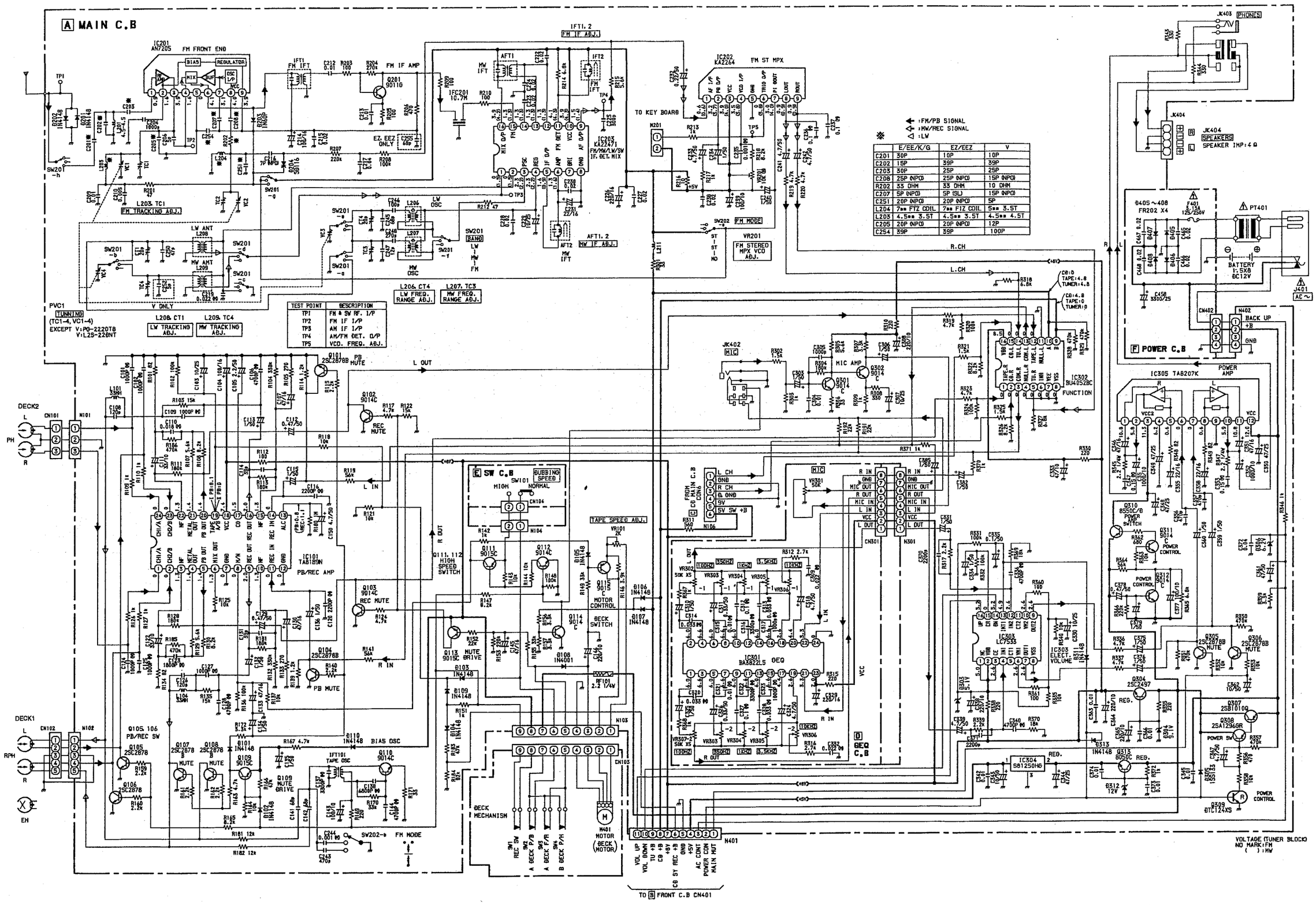
SCHEMATIC DIAGRAM-2 (MAIN: DW400 U)

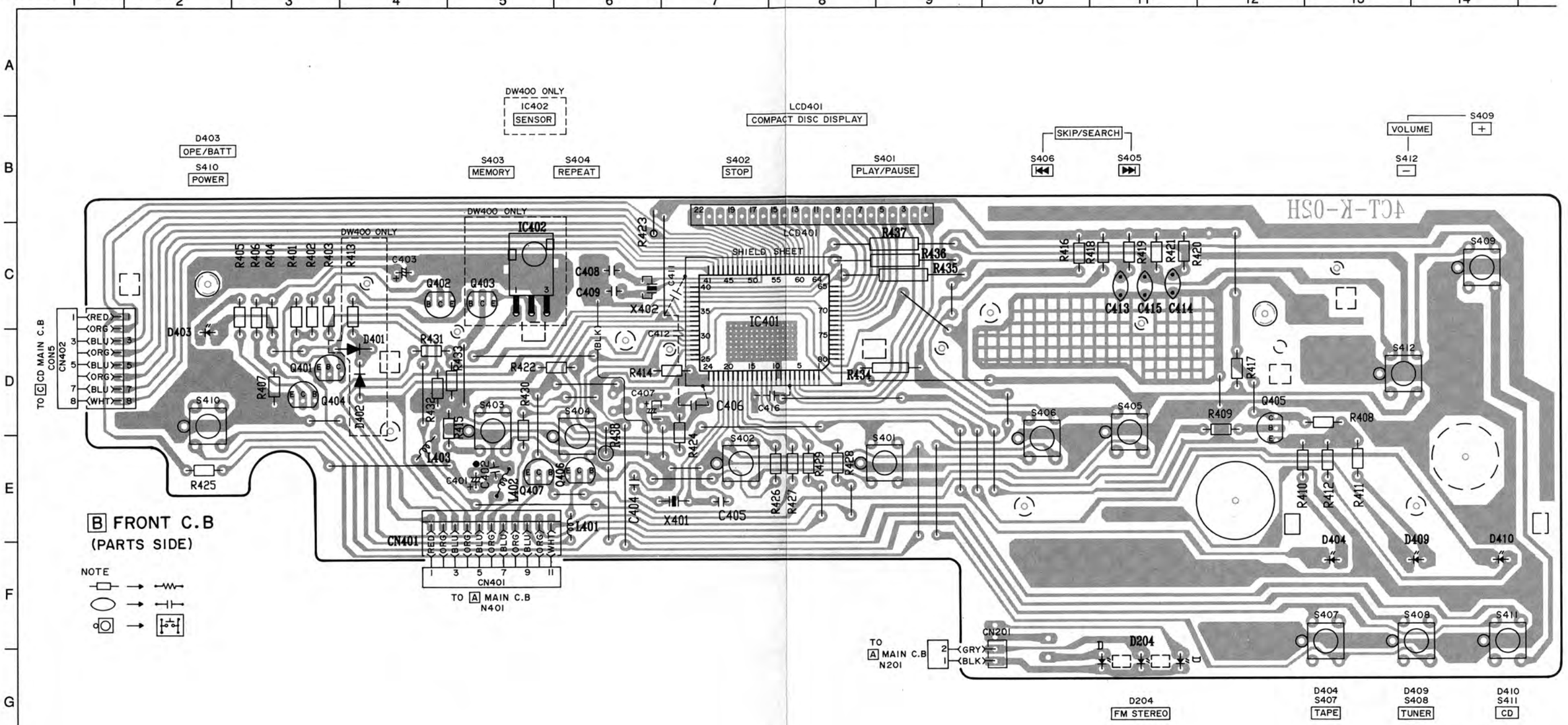


WIRING-3 (MAIN: EXCEPT LH, HR, U)



SCHEMATIC DIAGRAM-3 (MAIN: EXCEPT LH, HR, U)





B FRONT C.B
(PARTS SIDE)

NOTE

SCHEMATIC DIAGRAM-4 (FRONT)

容量を下げると BATT 時 LEDが チラつく　　大 くため 消燈時間 11°7-0K後約1秒

B FRONT C.B

Q401 9015C　+B SWITCH　R401 47k　R402 330
Q402 DTC124XS POWER CONTROL　R403 47k
D401 1N4148　SENSOR IC402 GP1U281X (VDD GND OUT)
R404 1.2k　C403 47/10
D403 TLR124 (OPE/BATT)　R405 1.5k
Q404 2SC2878B LED DRIVER　R406 39k　R407 3.3k　C410 0.068(M)
R408 22k　Q405 9014C LED DRIVER　R409 10k
D404 TLR124 (TAPE)　R410 1.5k
D409 TLR124 (TUNER)　R411 1.5k
D410 TLR124 (CD)　R412 1.5k
R432 1k　C401 47/10　C402 0.01　+5V　+8V
Q403 2SC2878 REMOTE SW　R413 10k　D402 1N4148　DW400 ONLY
X401 4MHz　C404 22p　C405 22p
C411 0.01　C412 680p
R414 10k　R415 10k　R416 10k　R417 10k
R434 1k

IC401 TMP47C620F-N774 μ CON
HOLD RESULT XOUT XIN TEST P23 P22 P21 P20 VSS P13 P12 P11 P10 VLC N.C COM4 COM3 COM2 COM1 SEG31 SEG30 SEG29 SEG28
K00 K01 K02 K03 R00 R01 R02 R03 VDD R90 R91 R92 R40 R41 R42 R43
SEG27 SEG26 SEG25 SEG24 SEG23 SEG22 SEG21 SEG20 SEG19 SEG18 SEG17 SEG16 SEG15 SEG14 SEG13 SEG12
R50 R51 R52 R53 R60 R61 R62 R63 R70 R71 R72 R73 SEG0 SEG1 SEG2 SEG3 SEG4 SEG5 SEG6 SEG7 SEG8 SEG9 SEG10 SEG11

R422 10k　R438 39k
R418 470k　R419 470k　R420 470k　R421 470k
PLAY/PUASE S401　STOP S402　MEMORY S403　REPEAT S404
S405　S406　TAPE S407　TUNER S408
VOL + S409　POWER S410　CD S411　VOL - S412
C413 0.001　C414 0.001　C415 0.001
R435 1k　R436 1k　R437 1k
C406 0.1　C407 1/50
R433 56k　R423 100k　R424 100k　R425 100k
C416 0.01
R426 4.7k　R427 4.7k　TU+B SW　Q406 2SA1015GR　Q407 2SA1015GR
R428 4.7k　R429 4.7k　CD+B SW　R430 1k　L403 47μH　R431 4.7k
L401 47μH　L402 47μH
X402 32.768KHz　C408 18p　C409 18p

LCD401 BU5690AZ-1
MEMORY PEPEAT 1 ALL

FM STEREO　D204 TLR124　CN201　TO A MAIN C.B N201

CN401 (1 10 9 8 7 6 5 4 3 2 1)
VOL UP / VOL DOWN / TU +B / CD +B / +8V / CD SY REC +B / GND / +5V / AC CONT / POWER CONT / MAIN MUT
TO A MAIN C.B N401

CN402 (8 7 6 5 4 3 2 1)
BUS0 / BUS1 / BUS2 / BUS3 / DA/CO / BUCK / PUINNER / DOOR
TO C CD MAIN C.B CON5

PICK UP ASSY

PIN1

PIN2

SW8 (DOOR SW)

RED

WHT

CON4

G CD MOTOR C.B

SW1 (INSIDE LIMIT SWITCH)

PIN3

M2

SW1

M1

M2 (SLED MOTOR)

M1 (SPINDLE MOTOR)

C CD MAIN C.B

CDM-7

CON3

CON2

CON1

IC1

IC2

IC3

IC4

IC5

IC8

SFR1

SFR2

SFR3

TP (VREF)

TP (TB)

TP(FB)

TP1

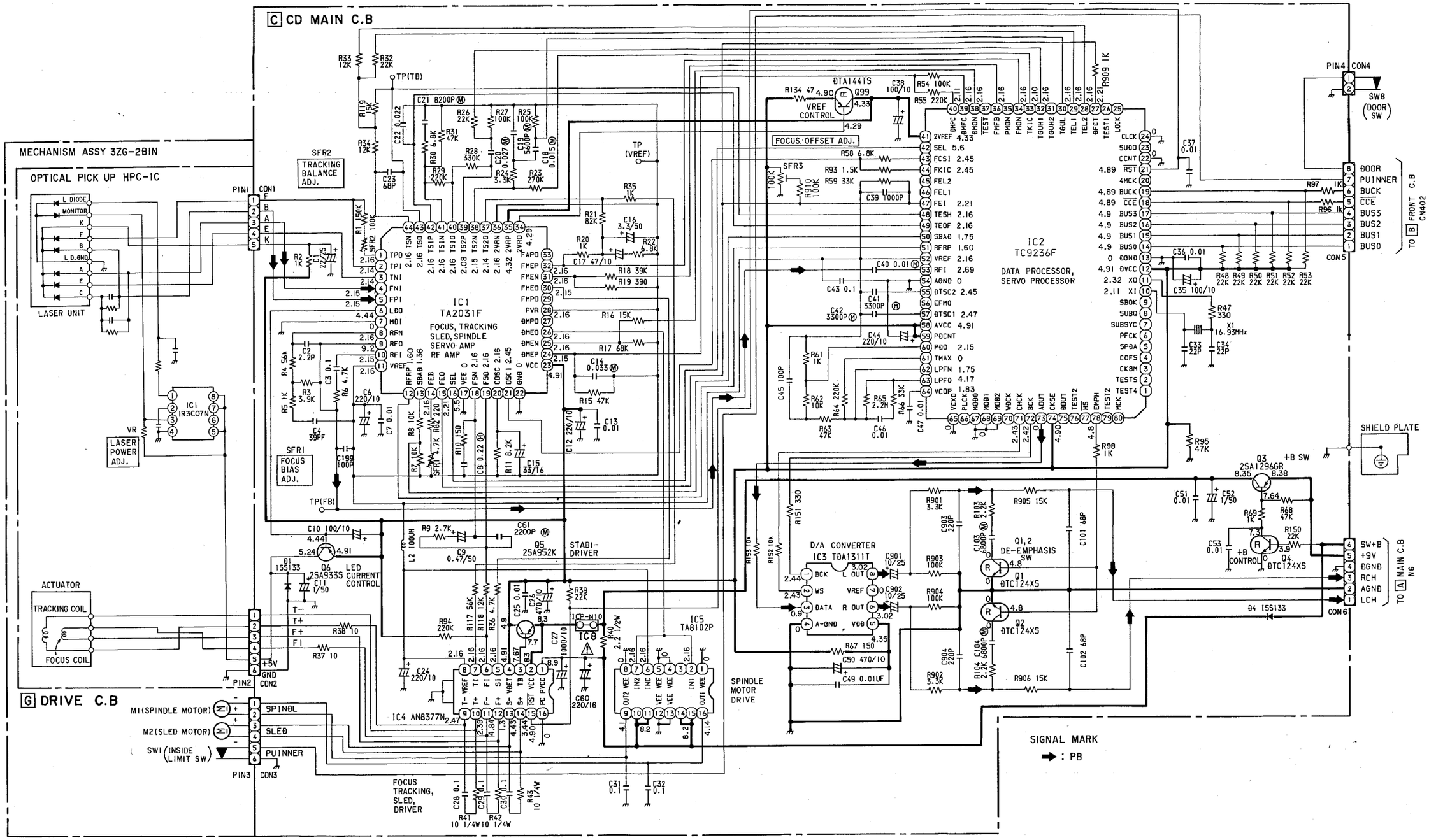
CON6

TO A MAIN C.B N6

CN402

TO B FRONT C.B

SCHEMATIC DIAGRAM-5 (CD)



IC DESCRIPTION

IC, TMP47C620F-N774

Pin No.	Pin name	I/O	Description
1	SEG 28	O	Not used.
2	SEG 29	O	Not used.
3	SEG 30	O	Not used.
4	SEG 31	O	Not used.
5	COM 1	O	Common output terminal for LCD.
6	COM 2	O	Common output terminal for LCD.
7	COM 3	O	Common output terminal for LCD.
8	COM 4	O	Not used.
9	N. C	—	Connected to GND.
10	VLC	I	LCD drive voltage setting. Normal: VSS level (GND).
11	P10	O	CD LED (ON="L")
12	P11	O	RADIO LED (ON="L")
13	P12	O	TAPE LED (ON="L")
14	P13	O	Not used.
15	VSS	—	GND.
16	P20	O	Volume up control signal output.
17	P21	O	Volume down control signal output.
18	P22	O	Function select signal (TUNER) output.
19	P23	O	Function select signal (CD) output.
20	TEST	—	Connected to GND.
21	XIN	I	4MHz clock oscillation input.
22	XOUT	O	4MHz clock oscillation output.
23	$\overline{\text{RESET}}$	I	Reset signal input ("L" when reset).
24	HOLD ($\overline{\text{KEO}}$)	I	Hold signal input (+5V).
25	K00	I	Key matrix.
26	K01	I	Key matrix.
27	K02	I	Key matrix.
28	K03	I	Key matrix.
29	R80 ($\overline{\text{INT2}}$)	I	Remote control input.
30	R81 (T2)	I	AC CONT (AC=H, DC=L)
31	R82 (INT1)	I	REC=H
32	R83	O	Not used.
33	VDD	—	Power supply terminal.
34	R90 (SI)	O	POWER ON=L
35	R91 (SO)	O	MUTE ON=H
36	R92 ($\overline{\text{SCK}}$)	O	Not used.
37	R40 (HT2)	O	Key matrix.
38	R41 (HT1)	O	Key matrix.
39	R42 ($\overline{\text{PULSE}}$)	O	Key matrix.
40	R43	O	Key matrix.
41	R50	I/O	Send/receive bus line to/from CD processor.

Pin No.	Pin name	I/O	Description
42	R51	I/O	Send/receive bus line to/from CD processor.
43	R52	I/O	Send/receive bus line to/from CD processor.
44	R53	I/O	Send/receive bus line to/from CD processor.
45	R60	I/O	Command and data processing control I/O.
46	R61	O	Command and data send/receive clock output.
47	R62	I	Detects that the pickup is positioned at the most internal cylinder.
48	R63	I	CD door OPEN/CLOSE detection. close=L
49	R70	I	Not used.
50	R71 ($\overline{\text{WTO}}$)	I	Not used.
51	R72 (XIN)	I	Clock oscillation for display.
52	R73 (XOUT)	O	Clock oscillation for display.
53～65	SEG 0～SEG 12	O	Segment output terminal for LCD.
66	SEG 13	O	Not used.
67～72	SEG 14～SEG 19	O	Segment output terminal for LCD.
73～80	SEG 20～SEG 28	O	Not used.

IC, TA2031F-3

Pin No.	Pin name	I/O	Description
1	TPO	O	Sub beam I-V amplifier (TP AMP) output
2	TPI	I	Sub beam I-V amplifier (TP AMP) input
3	TNI	I	Sub beam I-V amplifier (TN AMP) input
4	FNI	I	Main beam I-V amplifier (FN AMP) input
5	FPI	I	Main beam I-V amplifier (FP AMP) input
6	LDO	O	Laser diode amp (LD AMP) output
7	MDI	I	Monitor photo diode amp (MD AMP) input
8	RFN	I	RF amp (RF AMP) inverted input
9	RFO	O	RF amp (RF AMP) output
10	RFI	I	Input to RF ripple signal generator
11	VREF	O	Reference voltage output (+2.1 V)
12	RFRP	O	RF ripple signal output
13	SBAD	O	Disc error detected signal output
14	FEB	I	Input from the focus error balance adjustment
15	FEO	O	Focus error amp (FE AMP) output
16	SEL	I	Analog switch control signal input
17	VEE	—	Ground pin (GND)
18	FSN	I	Focus output amp (FS AMP) inverted input
19	FSO	O	Focus output amp (FS AMP) output
20	COSC	O	External capacitor to the focus search signal generator is connected
21	OSCI	I	Control signal input to the built-in current source of the focus search signal generation
22	GND	—	GND
23	VCC	—	Power supply pin (+5 V)
24	DMEP	I	Disc motor amp (DM AMP) positive phase input
25	DMEN	I	Disc motor amp (DM AMP) inverted phase input
26	DMEO	O	Disc motor amp (DM AMP) output
27	DMPO	O	Disc motor drive amplifier (DM AMP) output
28	PVR	I	Reference voltage input to drive amplifier
29	FMPO	O	Feed Motor Amplifier (FMP AMP) output
30	FMEO	O	Feed Motor Drive Amplifier (FMP AMP) output
31	FMEN	I	Feed motor amp (FM AMP) inverted phase input
32	FMEP	I	Feed motor amp (FM AMP) positive phase input
33	FAPO	O	Focus actuator drive amplifier (FAP AMP) output
34	2VRO	O	2V REF amplifier (2V REF AMP) output
35	2VRP	I	2V REF amplifier (2V REF AMP) positive phase input
36	2VRN	I	2V REF amplifier (2V REF AMP) inverted phase input
37	TS2O	O	Tracking servo amp 2 (TS2 AMP) output
38	TS2N	I	Tracking servo amp 2 (TS2 AMP) inverted polarity input
39	TS2P	I	Tracking servo amp 2 (TS2 AMP) positive phase input
40	TS1O	O	Tracking servo amp 1 (TS1 AMP) output
41	TS1N	I	Tracking servo amp 1 (TS1 AMP) inverted phase input

Pin No.	Pin name	I/O	Description
42	TS1P	I	Tracking servo amp 1 (TS1 AMP) positive phase input
43	TSO	O	Tracking output amp 1(TS AMP) output
44	TSN	I	Tracking servo amp (TS AMP) inverted phase input

IC, TC9236F

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{TEST4}}$	I	Test terminal. Normally "H" or open. (Not used.)
2	$\overline{\text{TEST5}}$	I	Test terminal. Normally "H" or open. (Not used.)
3	CK8M	O	8M clock output terminal. (Not used.)
4	COFS	O	Correction sytem frame frequency signal output terminal. 7.35 kHz (Not used.)
5	SPDA	O	Processor status signal output terminal. Correction/discrimination data, memory buffer capacity, etc. (Not used.)
6	PFCK	O	Playback system frame frequency signal output terminal. 7.35 kHz (Not used.)
7	SUBSYC	O	Subcode sync signal output terminal. (Not used.)
8	SUBQ	O	Subcode Q data output terminal. (Not used.)
9	SBOK	O	Subcode Q data CRC check data output terminal. OK when "H". (Not used.)
10	XI	I	Crystal oscillator connection terminal.
11	XO	O	
12	DVCC	—	Digital power voltage terminal. (+5 V)
13	DGND	—	Digital GND terminal.
14 〜 17	BUS0 〜 BUS3	I/O	Command and data send/receive I/O terminal.
18	$\overline{\text{CCE}}$	I	Chip enable signal input terminal for command and data send/recieve. Bus line active when "L".
19	BUCK	I	Command and data send/receive clock input terminal.
20	4MCK	O	4M clock output terminal. 4.2366 MHz (Not used.)
21	$\overline{\text{RST}}$	I	Reset input terminal. Internal system reset when "L".
22	CCNT	I	Subcode Q data control bit update inhibition signal input terminal. Update inhibitted when "H". (GND)
23	SUBO	O	Subcode P - W output terminal. (Not used.)
24	CLCK	I	Subcode P - W data read-out clock input terminal.
25	LOCK	O	Lock status output terminal. "L" when sync pattern siganal in EFM signal is not detected within 17 ms in runaway detection. (Not used.)
26	$\overline{\text{TEST1}}$	I	Test terminal. Normally "H" or open. (Not used.)
27	DFCT	O	Defect detection signal output terminal. VREF when a defect signal is detected: Normally HiZ. (Not used.)
28	TEL2	O	Tracking gain adjustment analog switch output terminal. VREF or HiZ.
29	TEL1		
30	TGUL	O	Analog switch output terminal for switching the low range phase compensator of the tracking servo loop. HiZ (gain up) when shock signal is detected; VREF when gain up.
31	TGUH2	O	Analog switch output terminal for switching the middle and high range phase compensator of the tracking servo loop. HiZ (gain up) when shock signal is detected; normally VREF. TGUH1 is used when playing back in normal mode; TGUH2 when playing back in high speed mode. (Pin ㉛ is not used.)
32	TGUH1		
33	TKIC	O	Tracking actuator kick signal output terminal. Kicked to an external cylinder when "H"; an internal cylinder when "L".
34	FMON	O	Feed servo ON/OFF analog switch output terminal. (Pin ㉟ is not used.)
35	$\overline{\text{FMON}}$		

Feed servo	FMON	$\overline{\text{FMON}}$
ON	HiZ	VREF
OFF	VREF	HiZ

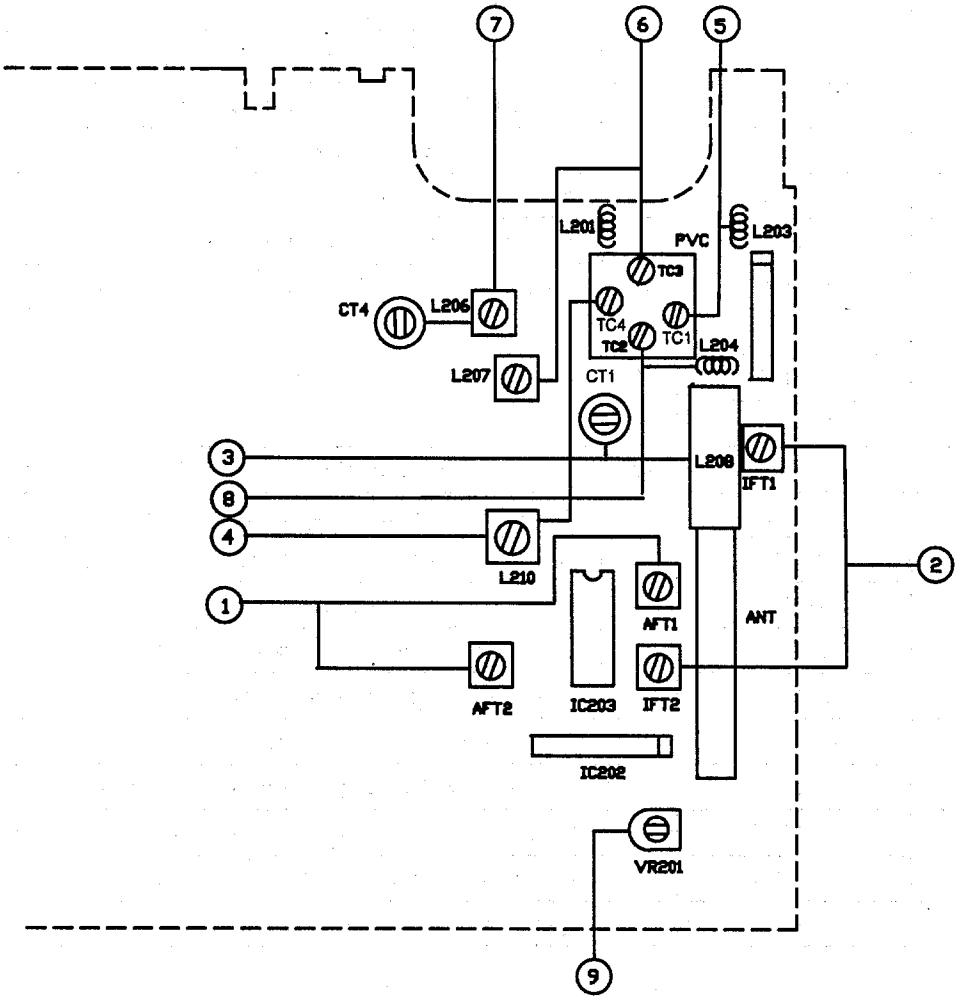
<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>36</td><td>FMFB</td><td>O</td><td>Feed motor FWD/BWD operation control signal output terminal.
Feeds to an external cylinder when "H"; feeds to an internal cylinder when "L".</td></tr>
<tr><td>37</td><td>$\overline{\text{TEST}}$</td><td>I</td><td>Test terminal. Normally "H" or open. (Not used.)</td></tr>
<tr><td>38</td><td>DMON</td><td>O</td><td>Analog switch output terminal for switching the gain of the disk motor drive</td></tr>
<tr><td>39</td><td>DMFC</td><td>O</td><td>Disk motor CLV servo AFC signal output terminal.
<table>
<tr><th>Command</th><th>DMFC output</th><th>Operation</th></tr>
<tr><td>DMFK</td><td>H</td><td>Motor accelerated</td></tr>
<tr><td>DNSV</td><td>PWM</td><td>CLV servo ON</td></tr>
<tr><td>DMBK</td><td>L</td><td>Motor decelerated</td></tr>
<tr><td>DMOFF</td><td>VREF</td><td>CLV servo OFF</td></tr>
</table></td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disk motor CLV servo APC signal output terminal.</td></tr>
<tr><td>41</td><td>2VREF</td><td>I</td><td>Two times reference voltage input terminal. (VREF x 2)</td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode indication signal output terminal.
<table>
<tr><th>SEL</th><th>LD ON/OFF</th><th>Focus servo</th><th>Operation mode</th></tr>
<tr><td>L</td><td>OFF</td><td>ON</td><td>LD OFF</td></tr>
<tr><td>HiZ</td><td>ON</td><td>OFF</td><td>Focus search</td></tr>
<tr><td>H</td><td>ON</td><td>ON</td><td>Normal PLAY etc.,
(Focus servo ON: FOK)</td></tr>
</table></td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output terminal in focus search mode.
<table>
<tr><th>Command</th><th>FKIC output</th><th>Operation</th></tr>
<tr><td>FGASR</td><td>H</td><td>Lens distant from disk</td></tr>
<tr><td>FGSS</td><td>L</td><td>Lens near disk</td></tr>
<tr><td>Others</td><td>HiZ</td><td>than focus search</td></tr>
</table></td></tr>
<tr><td>44</td><td>FKIC</td><td>O</td><td>Focus actuator drive signal output terminal in focus gain adjustment mode.
(Not used.)
<table>
<tr><th>Command</th><th>FKIC output</th><th>Operation</th></tr>
<tr><td>FGASR</td><td>H</td><td>Lens distant from disk</td></tr>
<tr><td>FGSS</td><td>L</td><td>Lens near disk</td></tr>
<tr><td>Other</td><td>HiZ</td><td>Other than focus gain adjustment</td></tr>
</table></td></tr>
<tr><td>45</td><td>FEL2</td><td rowspan="2">O</td><td rowspan="2">Focus gain adustment analog switch output termianal. (Not used.)</td></tr>
<tr><td>46</td><td>FEL1</td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td>Focus error signal input terminal.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td>Analog switch input terminal for sample-holding of the tracking error signal.</td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td>Analog switch input terminal for tracking servo ON/OFF. VFEF when tracking servo is OFF.</td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td>Sub-beam add signal input terminal.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td>RF ripple signal input terminal.</td></tr>
<tr><td>52</td><td>VREF</td><td>I</td><td>Reference voltage input terminal. (+2.2 V)</td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td>RF signal input terminal.</td></tr>
<tr><td>54</td><td>AGND</td><td>—</td><td>Analog GND terminal.</td></tr>
<tr><td>55</td><td>DTSC2</td><td>O</td><td>EFM signal negative-phase output terminal for data slice control.</td></tr>
<tr><td>56</td><td>EFMO</td><td>O</td><td>EFM signal monitor output terminal. (Not used.)</td></tr>
<tr><td>57</td><td>DTSC1</td><td>O</td><td>EFM signal positive-phase output terminal for data slice control.</td></tr>
<tr><td>58</td><td>AVCC</td><td>—</td><td>Analog power voltage terminal. (+5 V)</td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td>PDO output control terminal. PDO output is involuntarily set to HiZ when "L".</td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td>Output terminal for phase difference signal between EFM and PLCK signals.</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>61</td><td>TMAX</td><td>O</td><td>TMAX signal output terminal. HiZ in system clock.
<table>
<tr><th>TMAX cycle</th><th>TMAX output</th></tr>
<tr><td>Longer than specified cycle</td><td>L</td></tr>
<tr><td>Shorter than specified cycle</td><td>L</td></tr>
<tr><td>Specified cycle</td><td>HiZ</td></tr>
</table></td></tr>
<tr><td>62</td><td>LPFN</td><td>I</td><td>LPF amplifier negative-phase input terminal for PLL.</td></tr>
<tr><td>63</td><td>LPFO</td><td>O</td><td>LPF amplifier output terminal for PLL.</td></tr>
<tr><td>64</td><td>VCOF</td><td>I</td><td>VCO filter terminal.</td></tr>
<tr><td>65</td><td>VCOX</td><td>I</td><td>External VCO clock input terminal. (GND)</td></tr>
<tr><td>66</td><td>PLCK</td><td>O</td><td>Playback data read clock output terminal. (Not used.)</td></tr>
<tr><td>67</td><td>MOD0</td><td rowspan="3">I</td><td rowspan="3">Internal operation mode setting input terminal. (GND)</td></tr>
<tr><td>68</td><td>MOD1</td></tr>
<tr><td>68</td><td>MOD2</td></tr>
<tr><td>70</td><td>WDCK</td><td>O</td><td>Word clock output terminal. Normally 88.2 kHz. (Not used.)</td></tr>
<tr><td>71</td><td>CHCK</td><td>O</td><td>Channel clock output terminal. Normally 44.1 kHz.</td></tr>
<tr><td>72</td><td>BCK</td><td>O</td><td>Bit clock output terminal. Normally 1.4112 MHz.</td></tr>
<tr><td>73</td><td>AOUT</td><td>O</td><td>Audio data output terminal.</td></tr>
<tr><td>74</td><td>CKSE</td><td>I</td><td>Internal clock selection terminal. (+5 V)</td></tr>
<tr><td>75</td><td>DOUT</td><td>O</td><td>Digital OUT output terminal. (Not used.)</td></tr>
<tr><td>76</td><td>$\overline{\text{TEST2}}$</td><td>I</td><td>Test terminal. Normally "H" or open. (Not used.)</td></tr>
<tr><td>77</td><td>$\overline{\text{HS}}$</td><td>O</td><td>High-speed monitor output terminal. High-speed mode when "L". (Not used.)</td></tr>
<tr><td>78</td><td>EMPH</td><td>O</td><td>Emphasis ON/OFF indication signal output terminal. Emphasis ON when "H".</td></tr>
<tr><td>79</td><td>$\overline{\text{TEST3}}$</td><td>I</td><td>Test terminal. Normally "H" or open. (Not used.)</td></tr>
<tr><td>80</td><td>MCK</td><td>O</td><td>Master clock output terminal. (Not used.)</td></tr>
</table>

ELECTRICAL ADJUSTMENT

(TUNER SECTION)

LH, HR MODELS:



<TUNER SECTION>

1. AM IF Adjustment
   AFT1,AFT2 . . . . . .455KHz

2. FM IF Adjustment
   IFT1,IFT2 . . . . . 10.7MHz

3. MW Tracking Adjustment
   L208 . . . . . 600KHz
   CT3 . . . . . .1400KHz

4. SW Tracking Adjustment
   L210 . . . . . .4MHz
   TC4 . . . . . 12MHz

5. FM Tracking Adjustment
   L203 . . . . . 90MHz
   TC1 . . . .106MHz

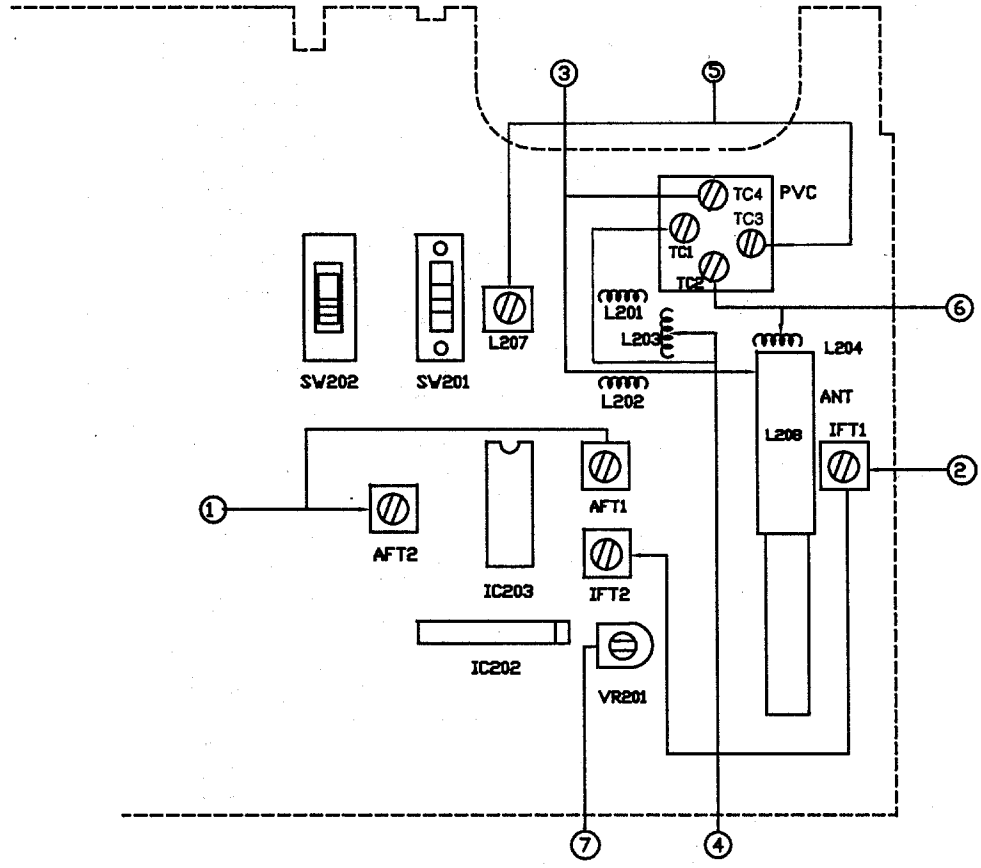
6. SW Frequency Range Adjustment
   L207 . . . . . HR: 3.8MHz
   LH: 3.8MHz
   TC3 . . . . . 12.5MHz

7. MW Frequency Range Adjustment
   L206 . . . . . HR: 515KHz
   LH: 517KHz
   CT4. . . . . .HR: 1650KHz
   LH: 1750KHz

8. FM Frequency Range Adjustment
   L204 . . . . . 87MHz
   TC2 . . . . . .109MHz

9. FM Stereo MPX VCO Adjustment
   VR201 . . . . . 76KHz

U MODEL:



<TUNER SECTION>

1. AM IF Adjustment
   AFT1,AFT2 . . . . . .455KHz

2. FM IF Adjustment
   IFT1,IFT2 . . . . . 10.7MHz

3. AM Tracking Adjustment
   L208 . . . . . 600KHz
   TC4 . . . . . .1400KHz

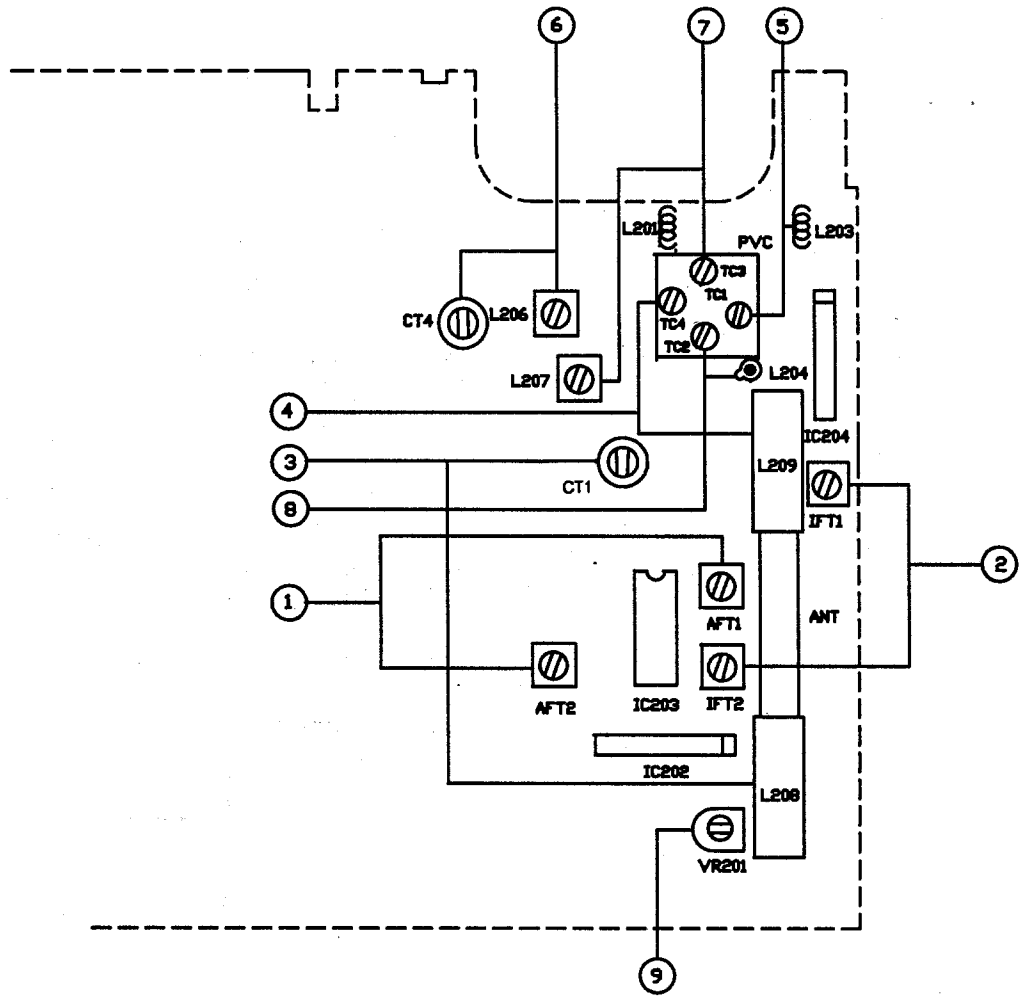
4. FM Tracking Adjustment
   L203 . . . . . .90MHz
   TC1 . . . . . .106MHz

5. AM Frequency Range Adjustment
   L207 . . . . . 517KHz
   TC3 . . . . . 1750KHz

6. FM Frequency Range Adjustment
   L204 . . . . . 87MHz
   TC2 . . . . . .109MHz

7. FM Stereo MPX VCO Adjustment
   VR201 . . . . . 76KHz

EE, K, G MODELS:



<TUNER SECTION>

1. AM IF Adjustment
   AFT1,AFT2 . . . . . .465KHz

2. FM IF Adjustment
   IFT1,IFT2 . . . . . 10.7MHz

3. LW Tracking Adjustment
   L208 . . . . . 160KHz
   CT1 . . . . . .270KHz

4. MW Tracking Adjustment
   L209 . . . . . .600KHz
   TC4 . . . . . 1400KHz

5. FM Tracking Adjustment
   L203. . . . . .90MHz
   TC1 . . . . . .106MHz

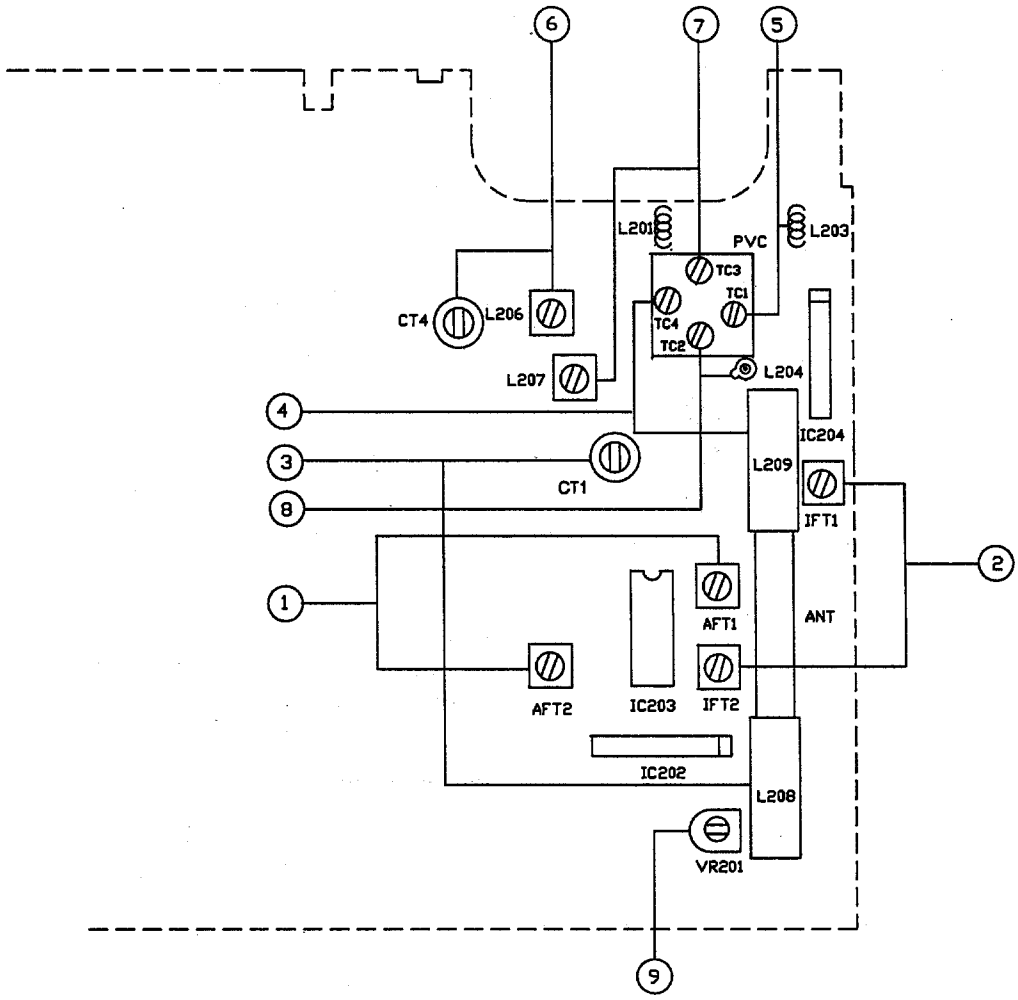
6. LW Frequency Range Adjustment
   L206 . . . . . 145KHz
   CT4 . . . . . .295KHz

7. MW Frequency Range Adjustment
   L207 . . . . . 515KHz
   TC3. . . . . 1635KHz

8. FM Frequency Range Adjustment
   L204 . . . . . 87.4MHz
   TC2 . . . . . 108.3MHz

9. FM Stereo MPX VCO Adjustment
   VR201 . . . . . 76KHz

V MODEL:



<TUNER SECTION>

1. AM IF Adjustment
   AFT1,AFT2 . . . . . .465KHz

2. FM IF Adjustment
   IFT1,IFT2 . . . . . 10.7MHz

3. LW Tracking Adjustment
   L208 . . . . . 160KHz
   CT1 . . . . . .270KHz

4. MW Tracking Adjustment
   L209 . . . . . .600KHz
   TC4 . . . . . 1400KHz

5. FM Tracking Adjustment
   L203. . . . . 65MHz
   TC1 . . . . . .108MHz

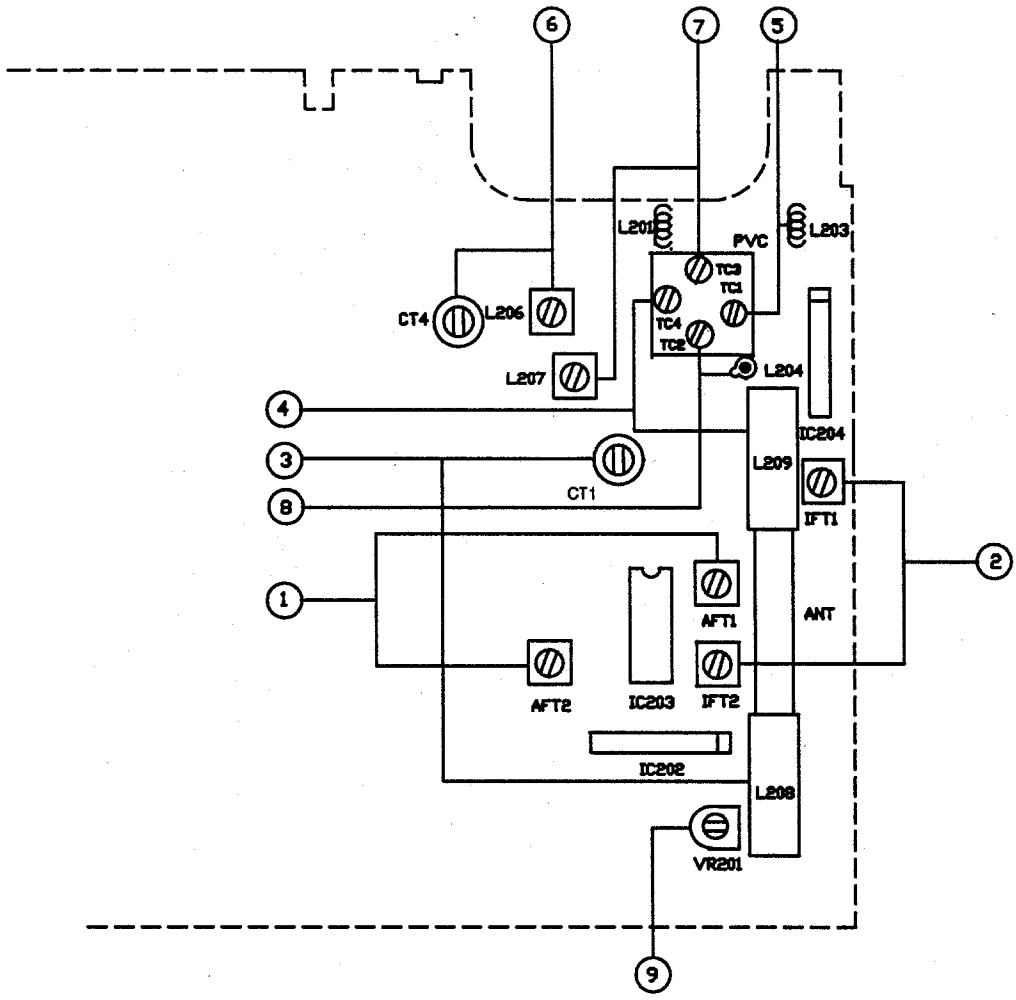
6. LW Frequency Range Adjustment
   L206 . . . . . 145KHz
   CT4 . . . . . .295KHz

7. MW Frequency Range Adjustment
   L207 . . . . . 515KHz
   TC3. . . . . 1635KHz

8. FM Frequency Range Adjustment
   L204 . . . . . 64MHz
   TC2 . . . . . .109MHz

9. FM Stereo MPX VCO Adjustment
   VR201 . . . . . 76KHz

EEZ, EZ MODELS:



<TUNER SECTION>

1. AM IF Adjustment
   AFT1,AFT2 . . . . . .465KHz

2. FM IF Adjustment
   IFT1,IFT2 . . . . . 10.7MHz

3. LW Tracking Adjustment
   L208 . . . . . 160KHz
   CT3 . . . . . .270KHz

4. MW Tracking Adjustment
   L209 . . . . . .600KHz
   TC4 . . . . . 1400KHz

5. FM Tracking Adjustment
   L203. . . . . .90MHz
   TC1 . . . . . .106MHz

6. LW Frequency Range Adjustment
   L206 . . . . . 145KHz
   CT4 . . . . . .295KHz

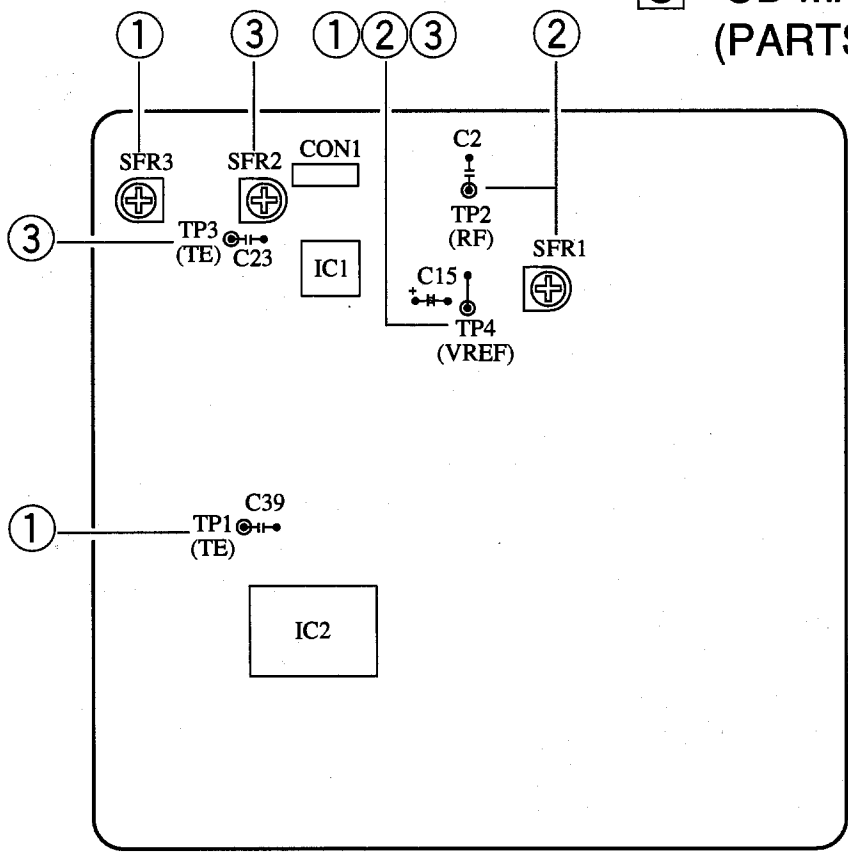
7. MW Frequency Range Adjustment
   L207 . . . . . 515KHz
   TC3. . . . . 1635KHz

8. FM Frequency Range Adjustment
   L204 . . . . . 87MHz
   TC2. . . . . 108.5MHZ +/- 0.5MHZ

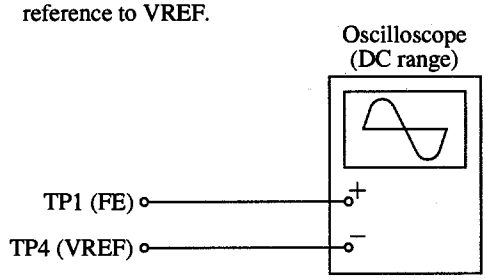
9. FM Stereo MPX VCO Adjustment
   VR201 . . . . . 76KHz

(CD SECTION)

C CD MAIN C.B (PARTS SIDE)

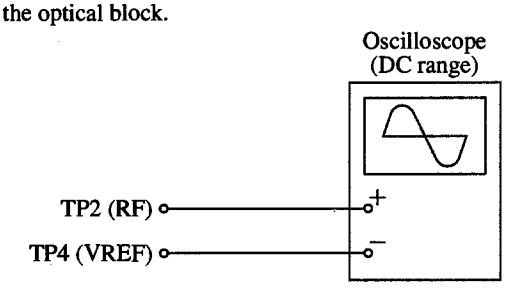


1. Focus offset Adjustment
   ① Connect an oscilloscope between test points TP1 (FE) and TP4 (VREF).
   ② Turn on the main power to the CD player.
   ③ Adjust SFR3 so that the offset level is ± 0 mV with reference to VREF.

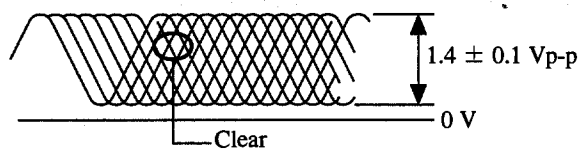


Note: • Connect a probe (10: 1) of the oscilloscope to a test point.

2. Focus Bias Adjustment
   Make the focus bias adjustment when replacing and repairing the optical block.

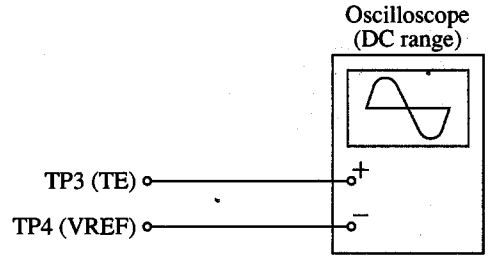


① Connect an oscilloscope to test points TP2 (RF) and TP4 (VREF).
② Turn on the power switch.
③ Insert test disc TCD-782 (YEDS-18) and play back the second composition.
④ Adjust SFR1 so that the level of RF wave to be maximum and clear.

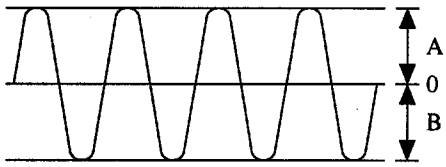


VOLT/DIV: 50mV
TIME/DIV: 0.5µS

3. Tracking Balance Adjustment



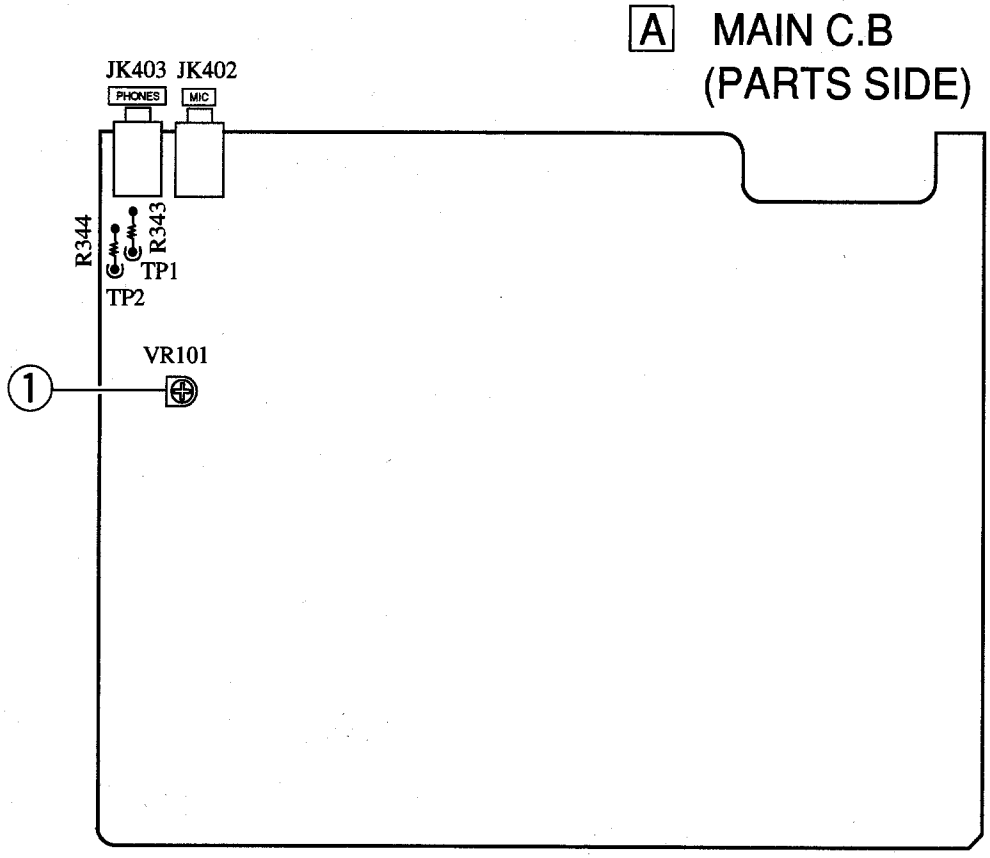
① Connect an oscilloscope to test points TP3 (TE) and TP4 (VREF).
② Turn on the power switch.
③ Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
④ Turn the SFR3 fully clockwise.
⑤ Adjust SFR2 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

(DECK SECTION)



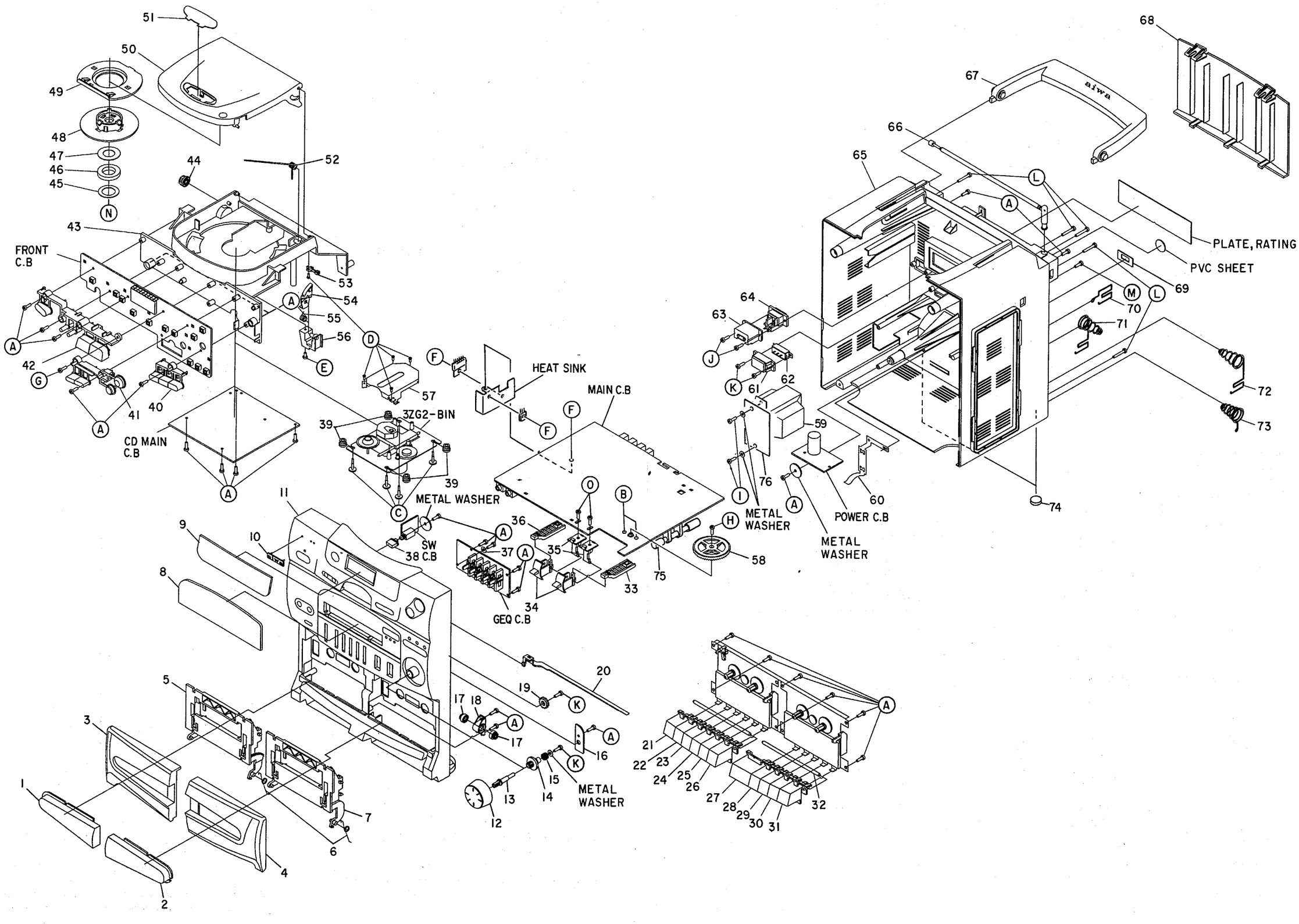
1. Tape Speed Adjustment
   Condition:
   - Test tape: TTA-100 (TTA-111S)
   - Test point: TP1, 2
   - Adjustment location: VR101

   Method: Play back the test tape and adjust so that the frequency counter reads 3kHz.

2. Azimuth Adjustment
   Condition:
   - Test tape: TTA-320 (TTA-113B, TTC-152)
   - Test point: TP1, 2
   - Adjustment location: Azimuth adjustment screw.

   Method: Play back the test tape and adjust so that the waveform on the oscilloscope is maximum.

MECHANICAL EXPLODED VIEW 1 / 2



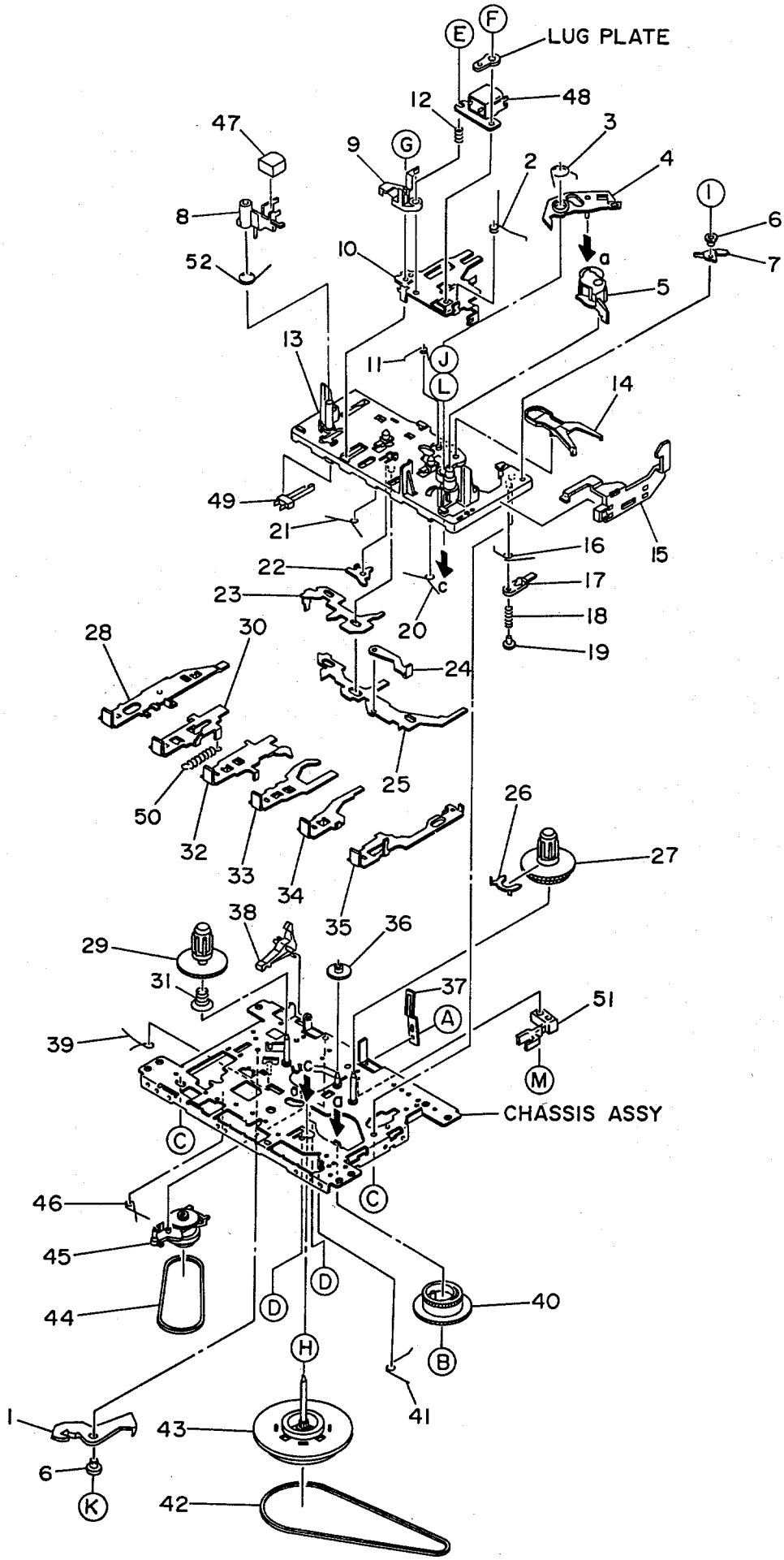
MECHANICAL PARTS LIST 1／2

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	S1-029-240-101		LENS,DOOR CASS(L)
2	S1-029-250-101		LENS,DOOR CASS(R)
3	S1-029-260-101		DOOR,CASS(L)
4	S1-029-270-101		DOOR,CASS(R)
5	S1-029-280-101		BRKT,DOOR CASS(L)BLK
6	S2-009-620-101		SPR,DOOR CASS
7	S1-029-290-101		BRKT,DOOR CASS(R)BLK
8	S1-029-230-101		LENS,DIAL<4U>
8	S1-029-230-401		LENS,DIAL<EXCEPT 4U,4LH,4HR,3LH,3HR>
8	S1-029-230-201		LENS,DIAL<4LH,3LH>
8	S1-029-230-301		LENS,DIAL<4HR,3HR>
9	S1-029-220-101		LENS,DISPLAY<EXCEPT 3K,3EZ,3EEZ,3LH,3HR>
9	S1-029-220-201		LENS,DISPLAY<3K,3EZ,3EEZ,3LH,3HR>
10	S1-023-360-101		BADGE AIWA
11	S1-029-030-302		CAB,FRONT<4LH,4HR>
11	S1-029-030-602		CAB,FRONT<3K,3EZ,3EEZ>
11	S1-029-030-502		CAB,FRONT<4EEZ,4EZ,4EE,4V,4G>
11	S1-029-030-402		CAB,FRONT<3LH,3HR>
11	S1-029-030-101		CAB,FRONT<4U>
12	S1-029-090-101		KNOB,TUNING
13	S1-029-360-101		SHAFT,TUN(BLK)
14	S1-029-370-101		GEAR,TUNING(BLK)
15	S2-009-970-101		SPR,COIL GEAR TUNING
16	S1-029-590-101		COVER,POINTER
17	S1-023-140-101		GEAR,DAMP(BLK)
18	S1-023-030-101		DAMPING GEAR HOUS(BLK)
19	S1-029-390-101		GEAR,IDLER
20	S1-029-400-101		DIAL,POINTER
21	S1-029-210-101		KEY,REC
22	S1-029-110-101		KEY,PLAY(L)
23	S1-029-150-101		KEY,REW(L)
24	S1-029-130-101		KEY,FF(L)
25	S1-029-170-101		KEY,S/E(L)
26	S1-029-190-101		KEY,POUSE(L)
27	S1-029-120-101		KEY,PLAY(R)
28	S1-029-160-101		KEY,REW(R)
29	S1-029-140-101		KET,FF(R)
30	S1-029-180-101		KEY,S/E(R)
31	S1-029-200-101		KEY,PAUSE(R)
32	S2-009-640-101		SHAFT,KEY CASS
33	S1-029-350-101		ADAPTOR,SW(BLK)
34	S1-029-330-101		KNOB,BAND
35	S1-029-340-101		BRKT,KNOB BAND
36	S1-030-320-101		SW,ADAPTOR(BLK)
37	87-078-044-010		FW,3.2-8-0.8
38	S1-029-100-101		KNOB,SPEED HIGH
39	S3-004-152-000		CUSHION CD
40	S1-029-070-101		KNOB,FUNCTION
41	S1-029-060-101		KNOB,VR/CD
42	S1-029-050-101		KNOB,POWER/CD
43	S1-028-970-101		BRKT,CD(BLK)
44	S1-027-550-101		GEAR,DOOR CD(BLK)
45	S1-016-882-000		COVER,MAGNET
46	S2-005-131-000		MAGNET,DOOR CD
47	S2-009-650-201		MAGENT,PLATE

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
48	S1-024-150-102		CHUCK,CD(BLK)<4U>
48	S1-030-280-101		CHUCK,CD(BLK)<EXCEPT 4U>
49	S1-028-980-101		HLDR,CHUCK CD(BLK)
50	S1-028-960-101		DOOR,CD(BLK)
51	S1-029-550-101		LENS,DOOR CD
52	S2-009-540-101		SPR,DOOR CD
53	S8-013-410-000		SW,LEAF(SW8)
54	S1-027-430-102		LOCKER,DOOR CD
55	S2-009-210-101		SPR,LOCKER
56	S1-027-420-102		HLDR,LOCKER
57	S2-005-492-000		COVER,CD(BLK)
58	S1-029-380-101		GEAR,VC(BLK)
⚠ 59	S9-029-310-000		PT,EI-57(PT401)<4G>
⚠ 59	S9-028-910-000		PT,EI-57 (PT401)<3K,3EZ,3EEZ,4EEZ,4EZ,4EE,4V>
⚠ 59	S9-028-310-000		PT,EI-57(PT401)<4LH,4HR,3LH,3HR>
⚠ 59	S9-028-010-000		PT,ET-57(PT401)<4U>
60	S2-009-550-101		PLATE,SPR ANT
61	S1-031-020-101		COVER,SWITCH VOLTAGE<4LH,4HR,3LH,3HR>
⚠ 62	S8-024-310-000		SW,SLIDE 1P1T(SW401)<4LH,4HR,3LH,3HR>
63	S1-023-450-101		COVER,AC SOCKET
⚠ 64	S2-3C0-041-000		AC,SOCKET(J401)<4U>
⚠ 64	S2-3C0-007-100		SOCKET AC(J401)<EXCEPT 4U>
65	S1-029-040-101		CAB,REAR
66	SA-N00-291-000		ANT,ROD
67	S1-029-020-101		HANDLE
68	S1-029-320-101		DOOR,BAT
69	S1-016-851-000		PLATE SELECTOR VOLTAGE <EXCEPT 4LH,4HR,3LH,3HR>
69	S1-030-910-301		PLATE,SELECTOR VOLTAGE<4LH,4HR,3LH,3HR>
70	S2-009-690-101		SPR,BAT(+)
71	S2-009-680-101		SPR,BAT(+/-)
72	S2-009-610-101		SPK,BAT(+/-)
73	S2-008-320-101		SPR,BAT(-)
74	S1-013-601-000		FOOT,RUBBER(11.7-1.6)
75	S1-800-051-000		BAR,FERRITE 10-100<EXCEPT 4U,4LH,4EE,4HR>
75	S1-800-031-000		BAR,FERRITE 10-80<4U,4LH,4HR,3LH,3HR>
76	S2-009-980-101		COVER,SHIELD
A	87-751-096-410		VT2+3-10
B	87-233-072-010		KH/MS 2.6-L5MM
C	SC-D00-040-100		SCREW,CD 2.6-L17MM
D	87-351-551-310		VT2+2-5
E	87-348-094-010		PH/TS 3-L6MM
F	87-342-094-410		UT2+3-L6MM
G	87-357-097-210		VT2+3-12
H	87-067-189-010		U+2.6-L8MM
I	SB-T00-070-500		UT2+3.5-L12MM
J	87-353-076-210		VT2+2.6-12MM
K	87-751-074-410		VT2+2.6-8MM
L	87-751-102-410		VT2+3-20
M	87-342-099-410		UT2+3-L15MM
N	87-253-033-210		BH/MS 2-L4MM
O	87-342-073-210		VT2+2.6-6MM
	S1-015-171-000		COVER,SWITCH POWER<4LH,4HR,3LH,3HR>

TAPE MECHANISM EXPLODED VIEW 1 / 2

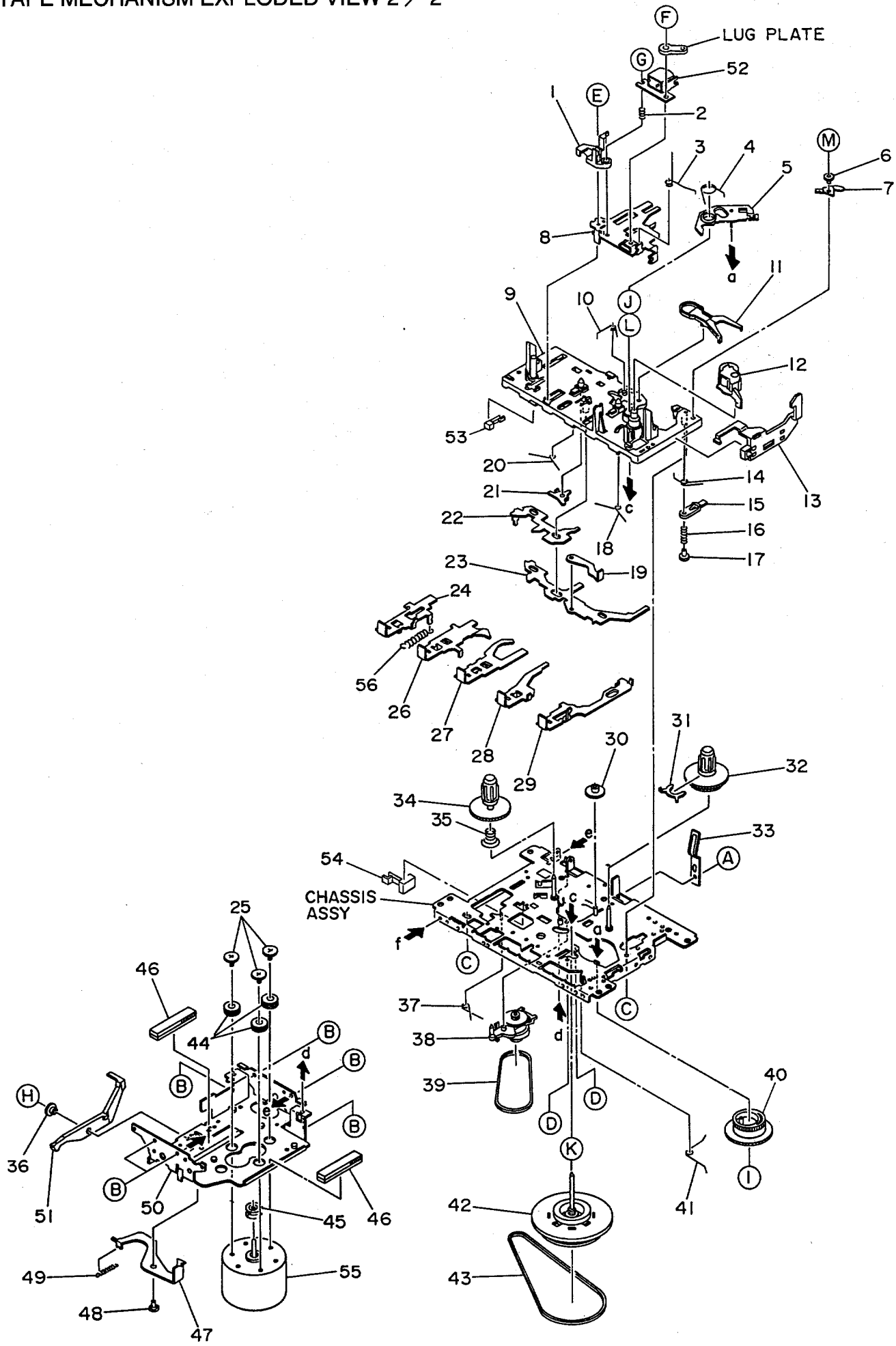


TAPE MECHANISM PARTS LIST 1 ／ 2

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	S1-921-020-010		REC ARM
2	S1-921-030-090		PANEL P SPRING
3	S1-921-260-050		GEAR PLATE SPRING
4	S1-921-265-010		GEAR PLATE ASSY
5	S1-921-043-090		PINCH ROLLER ARM ASY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-050		MG ARM
9	S1-921-030-4A0		HEAD BASE
10	S1-921-030-110		HEAD PANEL
11	S1-921-141-8A0		M CONTROL SPRING
12	S1-821-030-070		AZIMUTH SPRING
13	S1-921-143-010		BASE ASSY
14	S1-921-260-040		SENSING LEVER
15	S1-921-130-020		EJECT SLIDE LEVER
16	S1-921-140-130		P CONTROL SPRING
17	S1-921-140-820		PAUSE LEVER(F)
18	S1-921-140-120		PAUSE LEVER SPRING
19	S1-921-140-110		PAUSE STOPPER
20	S1-921-140-150		BUTTON LEVER SPRING(B)
21	S1-921-140-140		BUTTON LEVER SPRING(A)
22	S1-921-140-200		PR STOPPER
23	S1-921-140-090		SWITCH ACTUATOR
24	S1-821-011-590		E KICK LEVER
25	S1-921-140-080		PUSH BUTTON ACTUATOR
26	S1-921-050-060		SENSER
27	S1-921-053-030		TAKE UP REEL ASSY
28	S1-921-140-220		REC BUTTON LEVER
29	S1-921-053-040		SUPPLY REEL ASSY
30	S1-921-140-230		PLAY BUTTON LEVER
31	S1-821-100-990		BACK TENSION SPRING
32	S1-921-140-240		REW BUTTON LEVER
33	S1-921-140-250		FF BUTTON LEVER
34	S1-921-140-260		STOP BUTTON LEVER
35	S1-921-140-610		PAUSE BUTTON LEVER
36	S1-821-100-700		FF GEAR
37	S1-829-100-010		PACK SPRING
38	S1-821-100-690		RECORD SAFETY LEVER
39	S1-921-140-210		REC BUTTON LEVER SPRING
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-090-240		MAIN BELT
43	S1-921-093-030		FLYWHEEL ASSY
44	S1-921-070-030		RF BELT
45	S1-921-073-080		RF CLUTCH ASSY
46	S1-921-140-170		P.S.LEVER SPRING
47	S6-209-100-100		E HEAD PH-K380-MS1
48	S6-201-010-750		R.P.HEAD RP-7442BS
49	S6-401-011-490		LEAF SW MSW-1541T
50	S1-821-010-500		PLAY BUTTON LEVER SPRING
51	S6-401-010-380		LEAF SW MSW-1275
52	S1-921-030-100		MG ARM SPRING
A	S9-P33-200-320		DEL TITE SCREWM2-3
B	S9-422-000-000		P WASHER CUT 12-3.8-0.3
C	S9-679-000-000		P TAP SCREW M2-5
D	S9-999-180-090		TAP SCREW M2-4.5
E	S9-922-000-000		AZIMUTH SCREW M2-8
F	S9-115-000-000		+ BIND SCREW M2-3
G	S9-004-000-000		SCREW M2-6
H	S9-982-000-000		P WASHER 2-3.5-0.4
I	S9-999-200-410		P TAP SCREW M2-3
J	S9-999-030-130		P WASHER CUT 1.45-3.8-0.
K	S9-180-000-000		C TAP SCREW M2-4
L	S9-999-000-030		P WASHER2.1-4-0.13
M	S9-181-000-000		C TAP SCREW M2-5

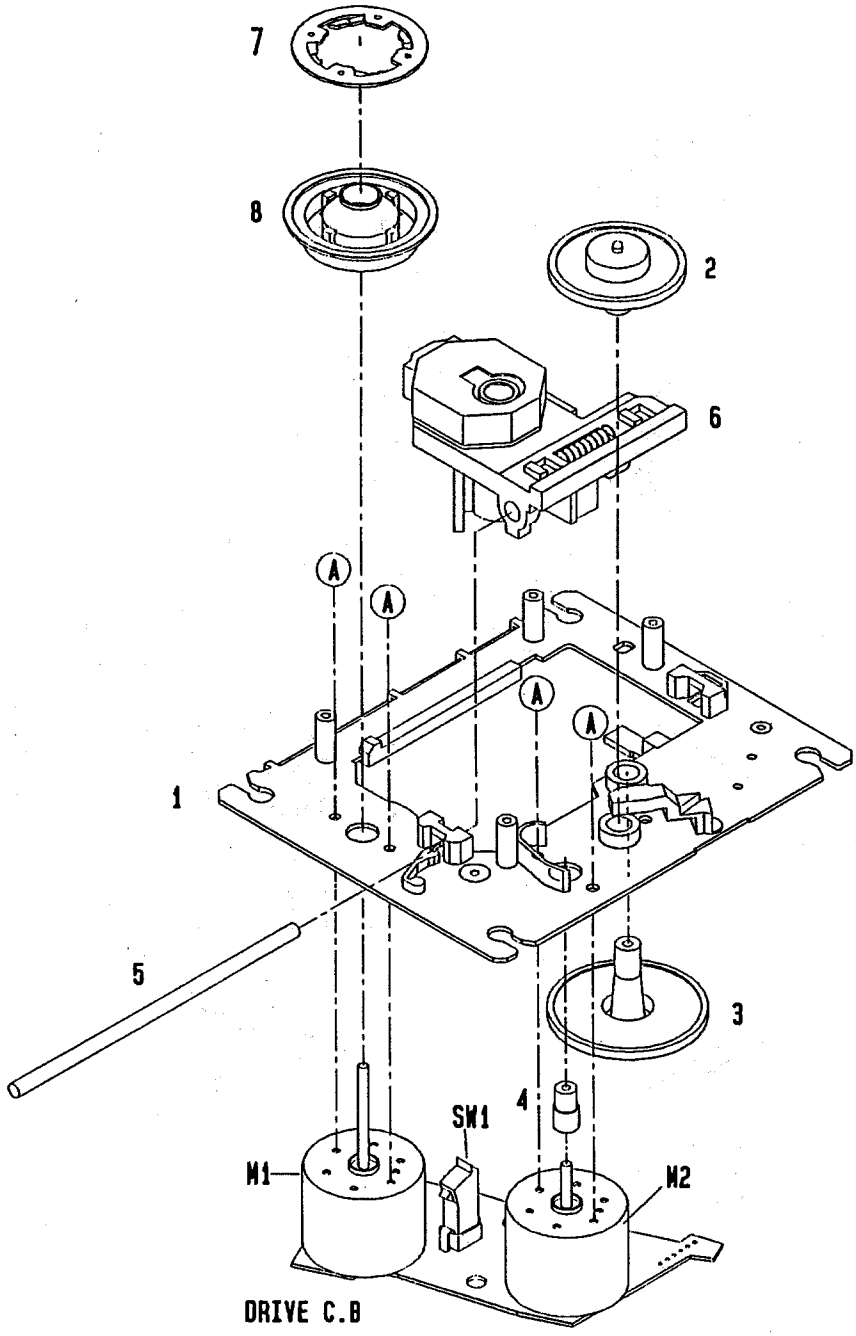
TAPE MECHANISM EXPLODED VIEW 2 / 2



TAPE MECHANISM PARTS LIST 2／2

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	S1-921-030-4A0		HEAD BASE
2	S1-821-030-070		AZIMUTH SPRING
3	S1-921-030-090		PANEL P SPRING
4	S1-921-260-050		GEAR PLATE SPRING
5	S1-921-265-010		GEAR PLATE ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-110		HEAD PANEL
9	S1-921-143-010		BASE ASSY
10	S1-921-141-8A0		M CONTROL SPRING
11	S1-921-260-040		SENSING LEVER
12	S1-921-043-090		PINCH ROLLER ARM ASY
13	S1-921-130-020		EJECT SLIDE LEVER
14	S1-921-140-130		P CONTROL SPRING
15	S1-921-140-820		PAUSE LEVER(F)
16	S1-921-140-120		PAUSE LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER
18	S1-921-140-150		BUTTON LEVER SPRING(B)
19	S1-821-011-590		E KICK LEVER
20	S1-921-140-140		BUTTON LEVER SPRING(A)
21	S1-921-140-200		PR STOPPER
22	S1-921-140-090		SWITCH ACTUATOR
23	S1-921-140-080		PUSH BUTTON ACTUATOR
24	S1-921-140-230		PLAY BUTTON LEVER
25	S1-821-120-020		MOTOR COLLER SCREW
26	S1-921-140-240		REW BUTTON LEVER
27	S1-921-140-250		FF BUTTON LEVER
28	S1-921-140-260		STOP BUTTON LEVER
29	S1-921-140-610		PAUSE BUTTON LEVER
30	S1-821-100-700		FF GEAR
31	S1-921-050-060		SENSER
32	S1-921-053-030		TAKE UP REEL ASSY
33	S1-829-100-010		PACK SPRING
34	S1-921-053-040		SUPPLY REEL ASSY
35	S1-821-100-990		BACK TENSION SPRING
36	S1-821-120-650		COLLER B
37	S1-921-140-170		P.S.LEVER SPRING
38	S1-921-073-080		RF CLUTCH ASSY
39	S1-921-070-030		RF BELT
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-093-040		FLYWHEEL ASSY
43	S1-921-090-240		MAIN BELT
44	S1-820-130-060		MOTOR RUBBER
45	S1-921-120-130		MOTOR PULLEY
46	S1-921-120-120		ANTI VIBR FELT MAT
47	S1-821-120-680		P KICK LEVER (A)
48	S1-821-120-230		PK COLLER SCREW A
49	S1-821-120-250		P KICK LEVER SPRING
50	S1-921-120-110		MOTOR BRACKET
51	S1-921-120-090		P KICK LEVER
52	S6-201-010-750		R.P.HEAD RP-7442BS
53	S6-401-011-490		LEAF SW MSW-1541T
54	S6-401-011-610		LEAF SW MSW-17820MVEI
55	S6-002-030-290		MOTOR EG530YD-2BH
56	S1-821-010-500		PLAY BUTTON LEVER SPRING
A	S9-P33-200-320		DEL TITE SCREWM2-3
B	S9-180-000-000		C TAP SCREW M2-4
C	S9-679-000-000		P TAP SCREW M2-5
D	S9-999-180-090		TAP SCREW M2-4.5
E	S9-004-000-000		SCREW M2-6
F	S9-115-000-000		+ BIND SCREW M2-3
G	S9-922-000-000		AZIMUTH SCREW M2-8
H	S9-182-000-000		C TAP SCREW M2-6
I	S9-422-000-000		P WASHER CUT 12-3.8-0.3
J	S9-999-030-130		P WASHER CUT 1.45-3.8-0.
K	S9-982-000-000		P WASHER 2-3.5-0.4
L	S9-999-000-030		P WASHER2.1-4-0.13
M	S9-999-200-410		P TAP SCREW M2-3

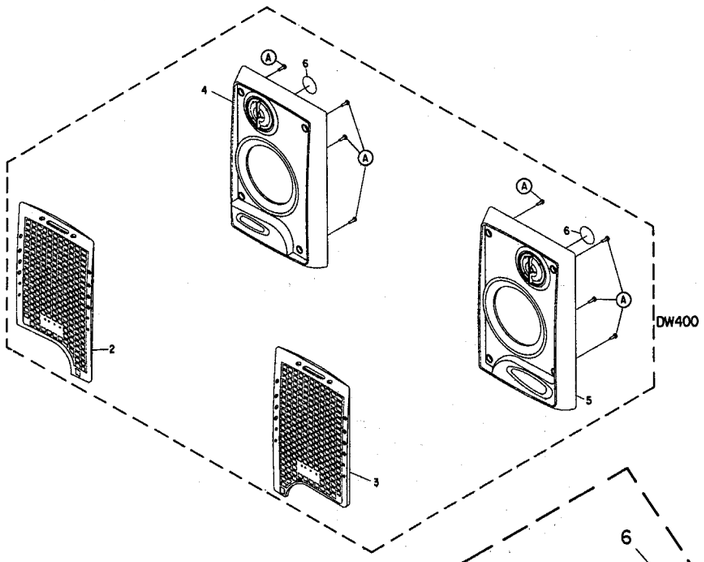
CD MECHANISM EXPLODED VIEW 1 / 1

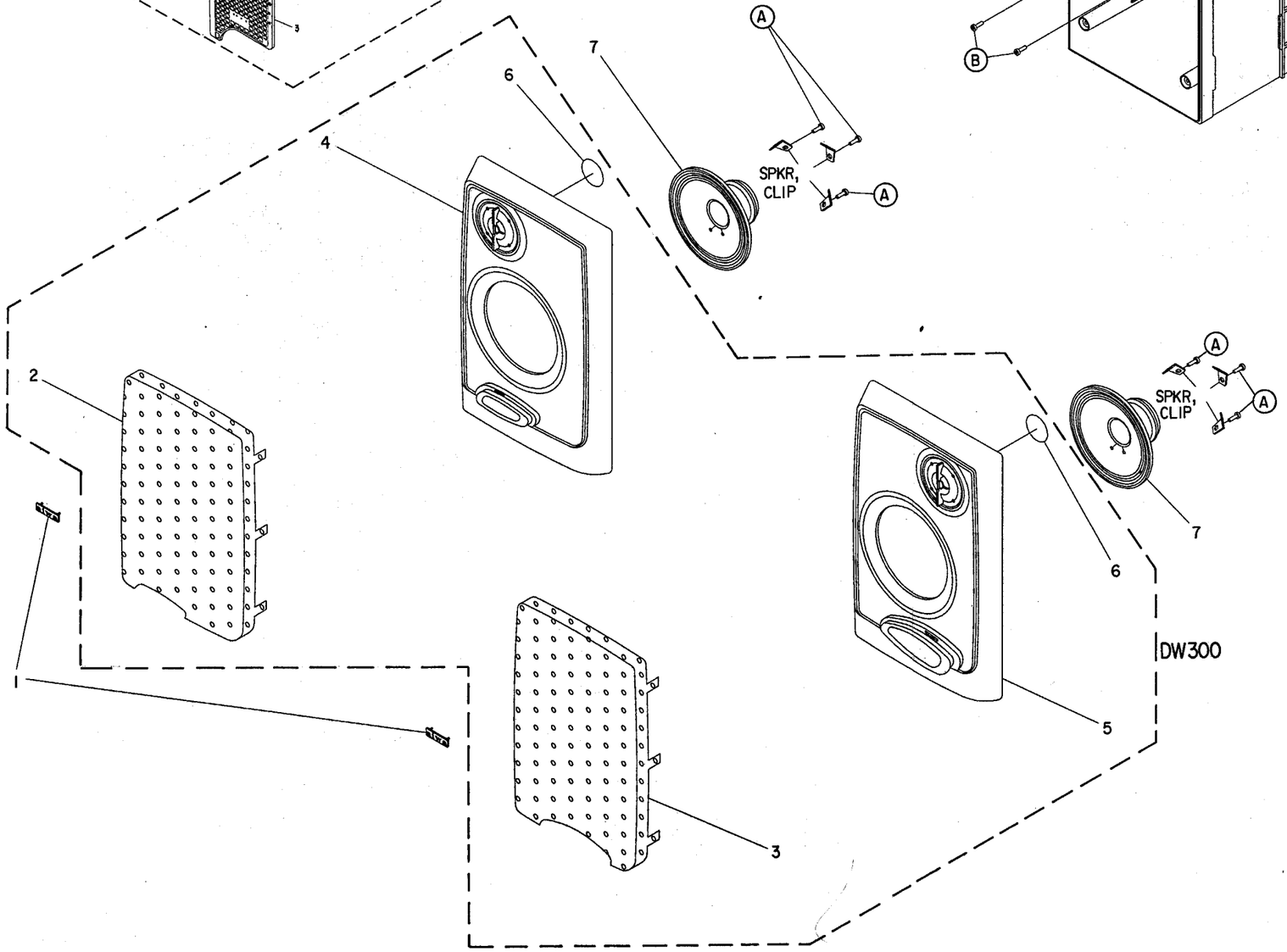


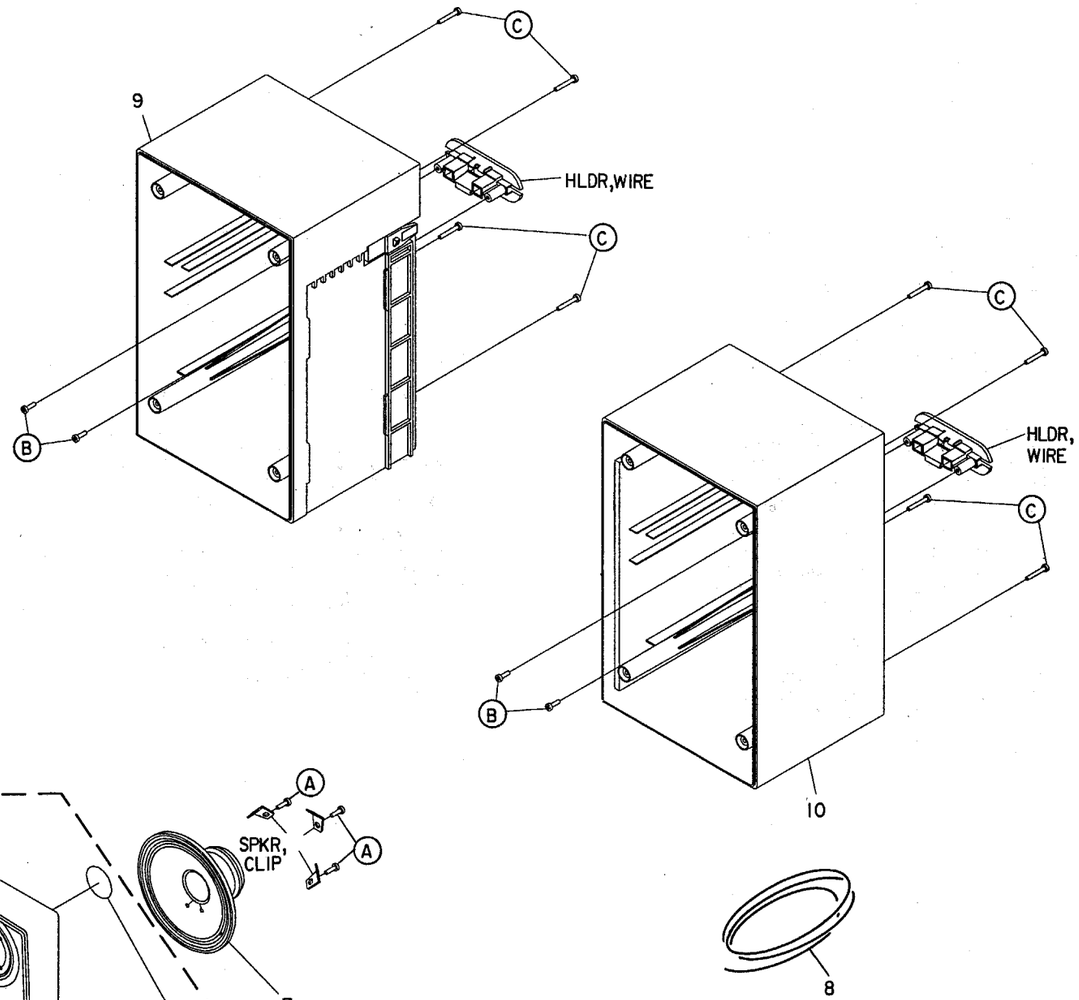
CD MECHANISM PARTS LIST 1 / 1

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-ZG2-202-01K		O-SERT S ASSY, S
2	83-ZG2-204-01K		GEAR, A
3	83-ZG2-205-01K		GEAR, B
4	83-ZG2-206-01K		GEAR, MOTOR
5	83-ZG2-207-019		SHAFT, SLIDE
6	87-026-625-010		PICK UP UNIT, HPC-1C
7	83-ZG2-214-01K		PLATE, TABLE 2
8	83-ZG2-216-01K		TURN TABLE, B
A	87-261-032-219		SCREW V + 2 - 3

MECHANICAL EXPLODED VIEW 2 / 2







MECHANICAL PARTS LIST 2／2

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	S1-023-360-101		BADGE AIWA
2	S2-009-570-101		GRIL,SPEK(L)<3K,3EZ,3EEZ,3LH,3HR>
2	S1-029-440-101		SPKR,CLOTH NET FRONT(L)<EXCEPT 3K,3EZ,3EEZ,3LH,3HR>
3	S2-009-630-101		GRIL,SPKR(R)<3K,3EZ,3EEZ,3LH,3HR>
3	S1-029-450-101		SPKR,CLOTH NET FRONT(R)<EXCEPT 3K,3EZ,3EEZ,3LH,3HR>
4	S1-029-500-101		PANEL,BOX SPKR(L)<EXCEPT 3K,3EZ,3EEZ,3LH,3HR>
4	S1-029-420-101		PANEL,BOX SPKR(L)<3K,3EZ,3EEZ,3LH,3HR>
5	S1-029-510-101		PANEL,BOX SPKR(R)<EXCEPT 3K,3EZ,3EEZ,3LH,3HR>
5	S1-029-430-101		PANEL,BOX SPKR(R)<3K,3EZ,3EEZ,3LH,3HR>
6	S5-625-800-000		CER,BUZZER 27MM
7	S1-700-421-000		SPKR,4-4W(BLK)
8	S1-1B1-764-L00		SPKR,WIRE
9	S1-029-460-101		REAR,BOX SPKR(L)
10	S1-029-470-101		REAR,BOX SPKR(R)
A	87-751-096-410		VT2+3-10
B	87-761-096-410		VFT2+3-10MM
C	87-751-102-410		VT2+3-20

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

サービス技術ニュース	
番号	連絡内容
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アイワ株式会社
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