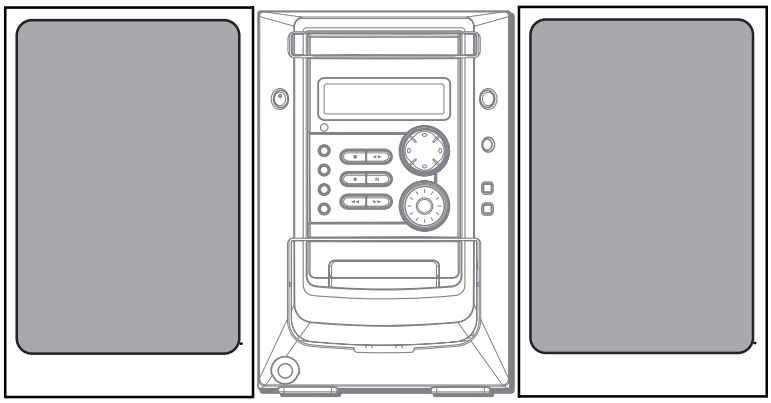
aiwa SERVICE

XR-M171 U
XR-M191 U,LH



SERVICE MANUAL

COMPACT DISC STEREO SYSTEM

BASIC CD MECHANISM : 3ZG-3 E2NC
BASIC TAPE MECHANISM: BZM-1 AR2NC

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
XR–M171	CX–LM171	SX–LM171	RC–AAT11
XR–M191	CX–LM191	SX–LM191	

- This Service Manual is the “Revision Publishing” and replace “Simple Manual” XR-M171/191<U,LH>, (S/M Code No. 09-012-443-6T1).

aiwa

S/M Code No. 09-013-443-6R1

REVISION DATA

SPECIFICATIONS

TUNER

FM tuning range:	87.5 MHz to 108 MHz
FM usable sensitivity(IHF):	13.2 dBf
FM antenna terminals:	75 ohms (unbalanced)
AM tuning range:	530 kHz to 1710 kHz (10 kHz step) 531 kHz to 1602 kHz (9 kHz step)
AM usable sensitivity:	350 μV/m
AM antenna:	Loop antenna

AMPLIFIER

XR-M171	
Power output:	8 W + 8 W (50 Hz - 20 kHz, THD less than 1%, 16 ohms) 10 W + 10 W (1 kHz, THD less than 10%, 16 ohms)
Total harmonic distortion:	0.2% (6 W, 1 kHz, 16 ohms, DIN AUDIO)
XR-M191<U>	
Power output:	12 W + 12 W (50 Hz - 20 kHz, THD less than 1%, 8 ohms) 15 W + 15 W (1 kHz, THD less than 10%, 8 ohms)
Total harmonic distortion:	0.2% (8 W, 1 kHz, 8 ohms, DIN AUDIO)
XR-M191<LH>	
Power output:	Rated: 12 W + 12 W (1 kHz, THD less than 1%, 8 ohms) Reference: 15 W + 15 W (1 kHz, THD less than 10%, 8 ohms)
Total harmonic distortion:	0.2% (8 W, 1 kHz, 8 ohms, DIN AUDIO)
Input:	VIDEO/AUX: 0.4 V
Output:	SUB WOOFER: 500 mV SPEAKERS: 16 ohms or more<171> 8 ohms or more<191> PHONES: 32 ohms or more

CASSETTE DECK

Track format:	4 tracks, 2 channels stereo
Frequency response:	50 Hz - 15 kHz
Recording system:	AC bias
Heads:	Recording/playback x 1, erase x 1

CD PLAYER

Laser:	Semiconductor laser (λ = 780 nm)
D/A converter:	1 bit dual
Signal-to-noise ratio:	75 dB (1 kHz, 0 dB)
Harmonic distortion:	0.2 % (1 kHz, 0 dB)

SPEAKERS SX-LM171 (only for XR-M171)

Speaker system:	2 way, bass reflex
Speaker units:	Woofer: 120 mm (4.7 in.) cone Tweeter: 20 mm (0.78 in.) cone
Impedance:	16 ohms
Dimensions (W x H x D):	144 x 255 x 204 mm (5.7 x 10 x 8 in.)
Weight:	1.0 kg (2 lbs 3 oz)

SPEAKERS SX-LM191 (only for XR-M191)

Speaker system:	2 way, bass reflex
Speaker units:	Woofer: 120 mm (4.7 in.) cone Tweeter: 20 mm (0.78 in.) cone
Impedance:	8 ohms
Dimensions (W x H x D):	144 x 255 x 204 mm (5.7 x 10 x 8 in.)
Weight:	1.5 kg (3 lbs 5 oz)

GENERAL

Power requirements:	120 V AC, 60 Hz<U> 120 V/220 - 230 V/240 V AC (Switchable), 50 Hz/60Hz<LH>
Power consumption:	35 W<171>, 45 W<191>
Power consumption in standby mode:	With ECO mode on: 1.0 W With ECO mode off: 10 W
Dimensions (W x H x D):	167 x 255 x 240 mm (6.5 x 10 x 9.5 in.)
Weight:	3.5 kg (7 lbs 12 oz)

• Design and specifications are subject to change without notice.

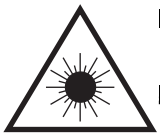
ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CL9-901-010		IB,U (ESF)-C<191U>
1	8B-CL9-906-010		IB,LH (ESP)-C<191LH>
1	8B-CLW-901-010		IB,U (ESF)-C<171U>
2	87-043-115-010		FEEDER-ANT,FM
3	87-A90-054-010		ANT,LOOP AM-CON C
4	8A-CLB-961-210		RC UNIT,RC-AAT11
⚠ 5	87-A91-017-010		PLUG,CONVERSION JT-0476<LH>

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 saataa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

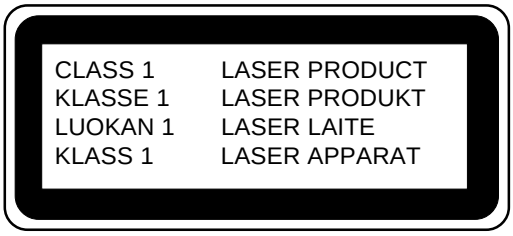
VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

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

ATTENTION
L'utillisation 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.



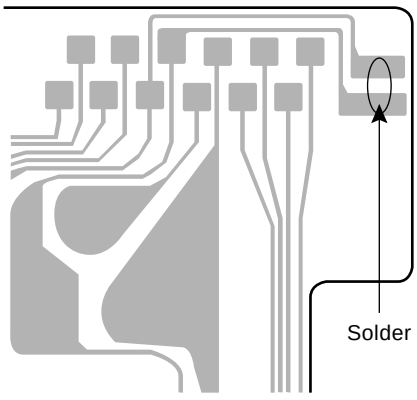
Precaution to replace Optical block

(KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.

PICK-UP ASSY PWB



ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	87-A20-446-010		C-IC,LA9241ML
	87-A21-319-010		C-IC,LC78622NE
	87-A20-157-010		IC,TA2092N
	87-001-536-010		IC,NJM78M05FA
	87-001-982-010		IC,TA7291S
	8B-CL9-631-010		C-IC,LC866548A
	87-A21-419-040		C-IC,NJM14558MD-TE2
	87-A21-831-010		IC,SPS-422-1-F1
	87-A21-893-040		C-IC,NJM14558V-TE2
	87-A21-520-040		C-IC,M61509FP
	87-A21-695-010		IC,LA1845L
	87-A21-928-010		IC,LC72131D-N
TRANSISTOR			
	87-A30-466-040		C-TR,DTA144TKA
	87-A30-436-040		C-TR,DTC144TKA
	89-109-521-080		TR,2SA952K
	89-318-155-080		TR,2SC1815GR
	87-026-610-080		TR,KTC3198GR
	87-026-609-080		TR,KTA1266GR
	89-327-125-080		CHIP TR,2SC2712GR
	87-A30-196-080		TR,2SC4115SRS
	87-A30-515-080		TR,2SA1979O/Y
	89-111-625-080		C-TR,2SA1162GR
	89-213-702-010		TR,2SB1370E
	87-A30-455-040		C-TR,DTA144EKA
	87-A30-256-010		TR,2SD1933
	87-A30-255-010		TR,2SB1342
	87-026-219-080		C-TR,DTA144ES (0.3W)
	87-026-245-080		C-TR,DTC114ES
	89-112-965-080		TR,2SA1296GR
	87-A30-087-080		C-FET,2SK2158
	87-A30-387-040		C-TR,DTA124EUA
	87-A30-074-080		C-TR,RT1P 141C
	87-A30-234-080		TR,CSC4115BC
	89-327-143-080		C-TR,2SC2714O
	87-A30-489-080		C-TR,KRA107S
	89-503-602-080		C-FET,2SK360E
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-270-080		C-DIODE,MC2838
	87-A40-454-080		DIODE,1N5393 GW
	87-A40-748-080		ZENER,UZ5.6BSA
	87-A40-553-080		DIODE,1N4003 LES
	87-070-345-080		DIODE,IN4148
	87-A40-781-080		ZENER,UZ36BSA
	87-A40-764-080		ZENER,UZ10BSC
	87-017-024-040		C-DIODE,DA204K
	87-020-027-080		CHIP-DIODE 1SS184
	87-A40-739-080		ZENER,UZ2.7BSA
	87-017-149-080		AENER,HAS6A2L
MAIN C.B			
C101	87-A12-442-000		CAP,E 3300-25 M 85 IV LELON
C102	87-012-286-080		C-CAP,U 0.01-25
C104	87-A12-381-000		CAP,E 2200-25 M 85 IV LELON
C105	87-A10-039-080		C-CAP,U 470P-50 J CH
C106	87-010-408-080		CAP, ELECT 47-50V
C107	87-010-384-080		CAP, ELECT 100-25V
C108	87-010-381-080		CAP, ELECT 330-16V
C109	87-010-260-080		CAP, ELECT 47-25V
C110	87-010-260-080		CAP, ELECT 47-25V
C111	87-010-247-080		CAP, ELECT 100-50V
C112	87-010-263-080		CAP, ELECT 100-10V
C113	87-010-403-080		CAP, ELECT 3.3-50V
C114	87-010-374-080		CAP, ELECT 47-10V
C115	87-A11-007-080		CAP,M 0.047-50 J DE
C116	87-A11-007-080		CAP,M 0.047-50 J DE
C122	87-010-260-080		CAP, ELECT 47-25V
C123	87-010-260-080		CAP, ELECT 47-25V
C131	87-A12-317-080		C-CAP,U 0.1-50 Z F
C132	87-A12-317-080		C-CAP,U 0.1-50 Z F
C133	87-012-286-080		C-CAP,U 0.01-25
C151	87-010-759-080		C-CAP,U, 0.1-25F
C200	87-012-286-080		C-CAP,U 0.01-25<191LH>
C201	87-012-286-080		C-CAP,U 0.01-25<191LH>
C207	87-010-546-080		CAP, ELECT 0.33-50V
C208	87-010-546-080		CAP, ELECT 0.33-50V
C209	87-012-282-080		CAP, U 4700P-50
C210	87-012-282-080		CAP, U 4700P-50
C211	87-010-403-080		CAP, ELECT 3.3-50V
C212	87-010-403-080		CAP, ELECT 3.3-50V
C213	87-010-260-080		CAP, ELECT 47-25V
C214	87-010-260-080		CAP, ELECT 47-25V
C217	87-010-959-080		CHIP CAP,U 0.056-16F
C218	87-010-959-080		CHIP CAP,U 0.056-16F
C219	87-010-759-080		C-CAP,U, 0.1-25F
C220	87-010-759-080		C-CAP,U, 0.1-25F
C227	87-010-260-080		CAP, ELECT 47-25V
C229	87-012-199-080		C-CAP,U 220P-50
C230	87-012-199-080		C-CAP,U 220P-50
C261	87-012-286-080		C-CAP,U 0.01-25
C273	87-010-759-080		C-CAP,U, 0.1-25F<191LH>
C303	87-A10-915-080		C-CAP,U 1000P-25 J CH
C304	87-A10-915-080		C-CAP,U 1000P-25 J CH
C305	87-010-246-080		CAP, ELECT 47-35V
C307	87-010-263-080		CAP, ELECT 100-10V
C308	87-010-263-080		CAP, ELECT 100-10V
C313	87-012-280-080		C-CAP,U 3300P-50
C314	87-012-280-080		C-CAP,U 3300P-50
C315	87-010-374-080		CAP, ELECT 47-10V
C317	87-010-546-080		CAP, ELECT 0.33-50V
C318	87-010-546-080		CAP, ELECT 0.33-50V
C340	87-012-199-080		C-CAP,U 220P-50
C361	87-010-374-080		CAP, ELECT 47-10V
C362	87-010-401-080		CAP, ELECT 1-50V
C401	87-010-401-080		CAP, ELECT 1-50V
C402	87-010-401-080		CAP, ELECT 1-50V
C403	87-012-193-080		C-CAP,U 82P-50 CH
C404	87-012-193-080		C-CAP,U 82P-50 CH
C405	87-012-284-080		C-CAP,U 6800P-50
C406	87-012-284-080		C-CAP,U 6800P-50
C407	87-010-784-080		C-CAP,U 0.012-25 B
C408	87-010-784-080		C-CAP,U 0.012-25 B
C451	87-010-787-080		C-CAP,U 0.022-25
C452	87-010-248-080		CAP, ELECT 220-10V
C453	87-012-279-080		C-CAP,U 2700P-50 B
C454	87-012-279-080		C-CAP,U 2700P-50 B
C455	87-012-279-080		C-CAP,U 2700P-50 B
C456	87-012-286-080		C-CAP,U 0.01-25
C458	87-012-274-080		CHIP CAP,U 1000P-50B
C459	87-012-271-080		C-CAP,U 560P-50
C461	87-012-269-080		C-CAP,U 390P-50 B
C462	87-012-269-080		C-CAP,U 390P-50 B
C601	87-012-276-080		CAP,CHIP U 1500P K B
C602	87-012-276-080		CAP,CHIP U 1500P K B
C609	87-012-287-080		C-CAP,U 0.015-25 F
C610	87-010-785-080		C-CAP,U 0.015-25 K B
C611	87-010-545-080		CAP, ELECT 0.22-50V
C612	87-010-545-080		CAP, ELECT 0.22-50V
C613	87-010-545-080		CAP, ELECT 0.22-50V
C614	87-010-545-080		CAP, ELECT 0.22-50V
C615	87-012-172-080		CAPACITOR CHIP U 10P CH

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C616	87-010-408-080		CAP, ELECT 47-50V
C617	87-010-408-080		CAP, ELECT 47-50V
C619	87-010-401-080		CAP, ELECT 1-50V
C620	87-010-401-080		CAP, ELECT 1-50V
C627	87-012-286-080		C-CAP,U 0.01-25
C628	87-012-286-080		C-CAP,U 0.01-25
C635	87-012-274-080		CHIP CAP,U 1000P-50B<191LH>
C663	87-010-759-080		C-CAP,U, 0.1-25F
C697	87-012-286-080		C-CAP,U 0.01-25
C698	87-012-286-080		C-CAP,U 0.01-25
C915	87-012-336-080		CAP,CHIP U 3300P SL
C916	87-012-336-080		CAP,CHIP U 3300P SL
CN202	87-099-719-010		CONN,30P H BLK TYK-B(X)
CN351	87-A60-624-010		CONN,7P V 2MM JMT
CN702	87-099-570-010		CONN,13P V TUC-P13P-B1
CNA101	8A-NF8-655-010		CONN ASSY,7P TID-A(150)
FB401	83-XM1-617-080		C-COIL,BK2125HM601
FB402	83-XM1-617-080		C-COIL,BK2125HM601
FB601	87-A90-896-080		F-BEAD, 035600STY7
FB603	87-A90-896-080		F-BEAD, 035600STY7
FB606	83-XM1-617-080		C-COIL,BK2125HM601
J231	87-A60-420-010		JACK,3.5 ST (MSC)
J241	87-A60-217-010		TERMINAL,SPKR 4P
J601	87-A60-881-010		JACK,PIN 2P MSP 242V05 PBSN
J603	87-099-801-010		JACK,PIN 1P BLK W/O SW
L201	87-A50-610-010		COIL,1UH K(MDEC)
L202	87-A50-610-010		COIL,1UH K(MDEC)
L451	87-007-342-010		COIL,OSC 85KHZ BIAS
PN101	87-A90-460-010		HLDR,WIRE 2.5-7P
R223	87-A00-258-080		RES,M/F 0.22-1W J
R224	87-A00-258-080		RES,M/F 0.22-1W J
R249	87-A00-258-080		RES,M/F 0.22-1W J
R250	87-A00-258-080		RES,M/F 0.22-1W J

FRONT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C102	87-012-278-080		C-CAP,U 2200P-50 B
C103	87-010-264-040		CAP,E 100-10 5L
C106	87-010-263-040		CAP,E 100-10
C302	87-012-286-080		C-CAP,U 0.01-25
C304	87-010-405-040		CAP,E 10-50
C307	87-010-421-040		CAP,E 4.7-50 5L
C308	87-010-421-040		CAP,E 4.7-50 5L
C309	87-010-787-080		C-CAP,U 0.022-25
C314	87-010-370-040		CAP,E 330-6.3 SME
C315	87-A10-025-080		C-CAP,U 0.22-16 Z F
C317	87-010-787-080		C-CAP,U 0.022-25
C329	87-010-787-080		C-CAP,U 0.022-25
C330	87-A11-084-080		CAP,TC U 68P-50 J CH
C331	87-018-149-080		CAP,TC U 15P-50 CH
C333	87-015-694-040		CAP,E 0.47-50
C335	87-018-113-080		CAP,TC U 33P-50V
C338	87-012-286-080		C-CAP,U 0.01-25
C339	87-012-286-080		C-CAP,U 0.01-25
C340	87-012-286-080		C-CAP,U 0.01-25
C420	87-010-759-080		C-CAP,U, 0.1-25F
C421	87-012-188-080		C-CAP,U 47P-50 CH
C422	87-012-286-080		C-CAP,U 0.01-25
C423	87-010-403-040		CAP,E 3.3-50 SME
CN4	87-099-032-010		CONN,15P H BLK 6216
CN301	87-099-720-010		CONN,30P BLK TYK-B(P)
CN302	87-A60-079-010		CONN,08P H 9604S-08F
FFC302	88-908-151-210		FF-CABLE,8P 1.25-150MM
FFC4	88-915-231-110		FF-CABLE,15P 1.25 230MM
FL301	8A-CL9-684-010		FL,HNA-11SS 29T
LED301	87-A40-229-040		LED,SLR-342VR TB7 RED
LED302	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED303	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED304	87-A40-619-040		LED,SLR-56PT-T31-W GRN
LED305	87-A40-619-040		LED,SLR-56PT-T31-W GRN
PR301	87-A91-957-080		FUSE,630MA 125V F 20N<191U,171U>
PR301	87-026-689-080		PROTECTOR,1A 491SERIES 60V<191LH>
S301	87-A90-164-080		SW,TACT SKQNAB(N)
S302	87-A90-164-080		SW,TACT SKQNAB(N)
S303	87-A90-164-080		SW,TACT SKQNAB(N)
S304	87-A90-164-080		SW,TACT SKQNAB(N)
S305	87-A90-164-080		SW,TACT SKQNAB(N)
S306	87-A90-164-080		SW,TACT SKQNAB(N)
S307	87-A90-164-080		SW,TACT SKQNAB(N)
S308	87-A90-164-080		SW,TACT SKQNAB(N)
S309	87-A90-164-080		SW,TACT SKQNAB(N)
S310	87-A90-164-080		SW,TACT SKQNAB(N)
S311	87-A90-164-080		SW,TACT SKQNAB(N)
S312	87-A90-164-080		SW,TACT SKQNAB(N)
S313	87-A90-164-080		SW,TACT SKQNAB(N)
S314	87-A90-164-080		SW,TACT SKQNAB(N)
S315	87-A90-164-080		SW,TACT SKQNAB(N)
S316	87-A90-164-080		SW,TACT SKQNAB(N)
S317	87-A90-164-080		SW,TACT SKQNAB(N)
S318	87-A90-164-080		SW,TACT SKQNAB(N)
S320	87-A90-164-080		SW,TACT SKQNAB(N)
S351	87-A91-690-010		SW,RTRY JOG RE0121PVB25FINB
X301	87-A70-070-080		VIB,CER 5.76MHZ CRHF

CD C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C1	87-010-403-080		CAP, ELECT 3.3-50V
C2	87-012-286-080		C-CAP,U 0.01-25
C3	87-010-263-080		CAP, ELECT 100-10V
C4	87-010-248-080		CAP, ELECT 220-10V
C5	87-012-286-080		C-CAP,U 0.01-25
C6	87-010-374-080		CAP, ELECT 47-10V
C7	87-012-274-080		CHIP CAP,U 1000P-50B
C8	87-010-787-080		C-CAP,U 0.022-25
C9	87-010-263-080		CAP, ELECT 100-10V
C10	87-010-263-080		CAP, ELECT 100-10V
C12	87-010-401-080		CAP, ELECT 1-50V
C13	87-012-286-080		C-CAP,U 0.01-25
C14	87-010-405-080		CAP, ELECT 10-50V
C16	87-010-545-080		CAP, ELECT 0.22-50V
C17	87-012-274-080		CHIP CAP,U 1000P-50B
C18	87-010-785-080		C-CAP,U 0.015-25 K B
C20	87-010-788-080		C-CAP,U 0.033-25
C22	87-012-276-080		C-CAP,U 1500P
C23	87-010-757-080		C-CAP,U 0.047-25F
C29	87-012-282-080		C-CAP,U 4700P-50
C30	87-012-199-080		C-CAP,U 220P
C31	87-010-545-080		CAP, ELECT 0.22-50V
C32	87-010-374-080		CAP, ELECT 47-10V
C33	87-010-401-080		CAP, ELECT 1-50V
C34	87-012-278-080		C-CAP,U 2200P-50 B
C35	87-012-286-080		C-CAP,U 0.01-25
C36	87-010-374-080		CAP, ELECT 47-10V
C37	87-010-404-080		CAP, ELECT 4.7-50V
C38	87-010-759-080		C-CAP,U, 0.1-25F
C39	87-012-274-080		CHIP CAP,U 1000P-50B
C40	87-012-162-080		C-CAP,U 1P-50 CK
C42	87-012-172-080		CAPACITOR CHIP U 10P CH
C43	87-018-174-080		CAP, TC U 18P
C45	87-010-759-080		C-CAP,U, 0.1-25F
C46	87-010-759-080		C-CAP,U, 0.1-25F
C47	87-010-759-080		C-CAP,U, 0.1-25F
C48	87-012-182-080		C-CAP,U 27P-50 CH
C50	87-A10-039-080		C-CAP,U 470P-50 J CH
C51	87-A12-309-080		C-CAP,U 680P-50 J CH
C57	89-654-255-080		CAP,TC 33P-50 J CH UP125
C58	89-654-255-080		CAP,TC 33P-50 J CH UP125
C59	87-010-263-080		CAP, ELECT 100-10V
C60	87-010-759-080		C-CAP,U, 0.1-25F
C61	87-010-759-080		C-CAP,U, 0.1-25F

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C62	87-010-370-080		CAP,E 330-6.3 SME
C65	87-010-404-080		CAP, ELECT 4.7-50V
C66	87-010-759-080		C-CAP,U, 0.1-25F
C67	87-010-263-080		CAP, ELECT 100-10V
C75	87-012-286-080		C-CAP,U 0.01-25
C76	87-A10-102-080		CAP,E 1000-10 REA
C77	87-010-263-080		CAP, ELECT 100-10V
C78	87-012-286-080		C-CAP,U 0.01-25
C79	87-012-286-080		C-CAP,U 0.01-25
C80	87-010-112-080		CAP, ELECT 100-16V
C81	87-010-405-080		CAP, ELECT 10-50V
C82	87-010-405-080		CAP, ELECT 10-50V
C83	87-012-277-080		C-CAP,U 1800P-50 B
C84	87-012-277-080		C-CAP,U 1800P-50 B
C90	87-012-286-080		C-CAP,U 0.01-25
C91	87-010-405-080		CAP, ELECT 10-50V
C92	87-010-387-080		CAP,E 470-25 SME
C93	87-012-286-080		C-CAP,U 0.01-25
C94	87-012-286-080		C-CAP,U 0.01-25
C95	87-012-286-080		C-CAP,U 0.01-25
C96	87-010-221-080		CAP, ELECT 470-10V
C97	87-012-286-080		C-CAP,U 0.01-25
C98	87-012-197-080		C-CAP,U 150P-50 CH
C100	87-012-278-080		C-CAP,U 2200P-50 B
C101	87-012-195-080		C-CAP,U 100P-50CH
C102	87-012-195-080		C-CAP,U 100P-50CH
C103	87-012-195-080		C-CAP,U 100P-50CH
C104	87-012-195-080		C-CAP,U 100P-50CH
C105	87-012-195-080		C-CAP,U 100P-50CH
C110	87-010-759-080		C-CAP,U, 0.1-25F
C162	87-012-274-080		CHIP CAP,U 1000P-50B
CN1	87-A60-424-010		CONN,16P V TOC-B
CN3	87-A60-131-010		CONN,6P V FE
CN4	87-099-032-010		CONN,15P H BLK 6216
CN6	87-A60-153-010		CONN,5P H FE
FFC1	88-CL4-704-010		FF-CABLE, 16P 1.0
FFC3	88-906-131-110		FF-CABLE,6P 1.25
FFC6	88-905-231-110		FF-CABLE, 5P 1.25 230MM
R70	87-029-019-090		RES,FUSE 2.2-1/2W J
R73	87-029-361-090		RES,FUSE 3.3-1/2W J
R85	87-022-284-080		C-RES,U 68K-1/16W F
R86	87-022-284-080		C-RES,U 68K-1/16W F
R87	87-022-284-080		C-RES,U 68K 1-16W F
R88	87-022-284-080		C-RES,U 68K 1-16W F
R107	87-022-243-080		CHIP RES,U 15K-1/16W F
R108	87-022-243-080		CHIP RES,U 15K-1/16W F
R109	87-022-243-080		CHIP RES,U 15K-1/16W F
R110	87-022-243-080		CHIP RES,U 15K-1/16W F
X1	87-A70-046-010		VIB,XTAL 16.934MHZ
PT C.B			
C101	87-010-387-080		CAP,E 470-25 SME
CN101	87-A61-109-010		CONN,7P V TID-A
⚠ F101	87-035-454-010		FUSE,1.6A 250V T 218<191LH>
⚠ FC101	87-033-213-080		FUSE CLAMP, PFC5000<191LH>
⚠ FC102	87-033-213-080		FUSE CLAMP, PFC5000<191LH>
⚠ PT101	8B-CL9-644-010		PT,LH<191LH>
⚠ PT101	8B-CL9-642-010		PT,U<191U,171U>
⚠ PT102	8B-NF9-663-010		PT,SUB BNF H (TAM)<191LH>
⚠ PT102	8B-NF9-661-010		PT,SUB BNF U (TAM)<191U,171U>
⚠ RY102	87-A91-281-010		RELAY,AC DC12V OSA-SS-212DM5<191LH>
⚠ RY102	87-A90-976-010		RELAY,AC12V SDT-S-112LMR<191U,171U>
⚠ SW101	87-A90-234-010		SW,SL 1-2-2 SWS2201<191LH>
⚠ T101	87-A60-317-010		TERMINAL, 1P MSC
⚠ T102	87-A60-317-010		TERMINAL, 1P MSC
TUNER C.B			
C772	87-012-286-080		C-CAP,U 0.01-25 K B
C784	87-012-286-080		C-CAP,U 0.01-25 K B
C785	87-012-286-080		C-CAP,U 0.01-25 K B
C786	87-010-787-080		C-CAP,U 0.022-25 K B
C788	87-012-167-080		C-CAP,U 5P-50 CH
C789	87-010-787-080		C-CAP,U 0.022-25 K B
C790	87-010-787-080		C-CAP,U 0.022-25 K B
C791	87-010-831-080		C-CAP,U,0.1-16F
C792	87-012-286-080		C-CAP,U 0.01-25 K B
C793	87-A11-056-080		C-CAP,U 1-10 Z F
C795	87-012-286-080		C-CAP,U 0.01-25 K B
C799	87-010-982-040		CAP,E 33-25 GAS
C801	87-A11-056-080		C-CAP,U 1-10 Z F
C802	87-010-829-080		CAP, U 0.047-16
C804	87-010-555-040		CAP,E 100-10 GAS
C807	87-A10-463-080		C-CAP,U,0.47-10 Z F
C808	87-A11-056-080		C-CAP,U 1-10 Z F
C809	87-A11-056-080		C-CAP,U 1-10 Z F
C810	87-010-831-080		C-CAP,U,0.1-16F
C814	87-012-286-080		C-CAP,U 0.01-25 K B
C815	87-A10-463-080		C-CAP,U,0.47-10 Z F
C816	87-A10-463-080		C-CAP,U,0.47-10 Z F
C821	87-A11-063-080		C-CAP,S 4.7-10 Z F
C823	87-012-273-080		C-CAP,U 820P-50 K B
C824	87-A11-063-080		C-CAP,S 4.7-10 Z F
C825	87-A11-317-080		C-CAP,U 0.068U-16 K B
C831	87-010-552-040		CAP,E 22-16 GAS
C836	87-012-286-080		C-CAP,U 0.01-25 K B
C842	87-012-286-080		C-CAP,U 0.01-25 K B
C844	87-012-286-080		C-CAP,U 0.01-25 K B
C850	87-A11-056-080		C-CAP,U 1-10 Z F
C851	87-012-286-080		C-CAP,U 0.01-25 K B
C852	87-012-286-080		C-CAP,U 0.01-25 K B
C853	87-012-286-080		C-CAP,U 0.01-25 K B
C858	87-010-831-080		C-CAP,U 0.1-16 Z F
C860	87-012-286-080		C-CAP,U 0.01-25 K B
C902	87-012-167-080		C-CAP,U 5P-50 C CH
C908	87-012-176-080		C-CAP,U 15P-50 J CH
C909	87-012-274-080		C-CAP,U 1000P-50 K B
C911	87-012-170-080		C-CAP,U 8P-50 D CH
C912	87-012-195-080		C-CAP,U 100P-50CH
C913	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C914	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C915	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C918	87-012-164-080		C-CAP,U 2P-50 C CH
C920	87-012-180-080		C-CAP,U 22P-50 J CH
C921	87-012-186-080		C-CAP,U 39P-50 J CH
C922	87-012-174-080		CAP CHIP CERA SS 12P CHJ
C923	87-012-270-080		C-CAP,U 470P-50 K B
C924	87-012-174-080		C-CAP,U 12P-50 J CH
C927	87-012-195-080		C-CAP,U 100P-50CH
C961	87-012-170-080		C-CAP,U 8P-50 D CH
C963	87-010-831-080		C-CAP,U,0.1-16F
C971	87-010-381-080		CAP, ELECT 330-16V
C972	87-A11-063-080		C-CAP,S 4.7-10 Z F
C973	87-012-286-080		C-CAP,U 0.01-25 K B
C974	87-012-286-080		C-CAP,U 0.01-25 K B
C976	87-010-831-080		C-CAP,U,0.1-16F
C979	87-012-195-080		C-CAP,U 100P-50CH
C981	87-010-553-040		CAP,E 47-16 GAS
C982	87-010-831-080		C-CAP,U,0.1-16F
C983	87-A11-132-080		CAP,TC U 0.01-50 K B
C984	87-012-286-080		C-CAP,U 0.01-25 K B
C985	87-012-195-080		C-CAP,U 100P-50CH
C987	87-012-286-080		C-CAP,U 0.01-25 K B
C990	87-012-195-080		C-CAP,U 100P-50CH
C991	87-012-176-080		C-CAP,U 15P-50
C992	87-012-176-080		C-CAP,U 15P-50
C993	87-012-274-080		CHIP CAP,U 1000P-50B
C994	87-012-195-080		C-CAP,U 100P-50CH
C995	87-012-274-080		CHIP CAP,U 1000P-50B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C996	87-012-195-080		C-CAP,U 100P-50CH
C997	87-010-831-080		C-CAP,U,0.1-16F
C998	87-010-553-040		CAP,E 47-16 GAS
C999	87-012-286-080		C-CAP,U 0.01-25 K B
CF831	87-008-261-010		FLTR,CF SFE10.7MA5
CF832	87-008-261-010		FLTR,CF SFE10.7MA5
CN991	87-A60-700-010		CONN,13P H GRY TUC-P13X-C1
D902	87-A40-916-040		C-VARI-CAP,HVC202A
D903	87-A40-916-040		C-VARI-CAP,HVC202A
J832	87-A61-535-010		TERMINAL,ANT 2P HSP-302V
J940	87-A60-633-010		CONN,2P H 2.5MM JMT
L801	87-A50-694-010		COIL,FM-DET 2 (COILS)
L802	87-A91-551-010		FLTR,PCFJZH-450 L(TOK)
L811	87-005-847-080		COIL,2.2UH CECS
L832	87-005-847-080		COIL,2.2UH CECS
L903	88-ZA1-602-110		COIL,FM-RF-U2 2G
L904	88-ZA1-601-010		COIL,FM-RF-U1 2G
L906	87-005-847-080		COIL,2.2UH CECS
L907	8A-NEC-611-010		COIL,FM OSC U 2G
L908	88-ZA1-624-010		COIL,FM IFT 7-6.2 (COILS)
L951	8A-NF8-667-010		COIL,AM PACK 4(TOK)
R790	87-012-286-080		CAP, U 0.01-25
R902	87-012-166-080		C-CAP,U 4P-50 C CH
X991	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

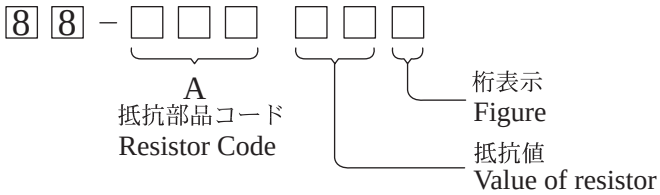
DRIVE C.B

CON3	87-A60-086-010		CONN,6P H 6216
M20	87-045-358-010		MOT,RF-310TA 43
M21	87-045-356-010		MOT,RF-310TA 30
SW1	87-A90-042-010		SW,LEAF MSW-17310MVP0

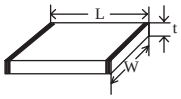
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
LOAD C.B			
CON6	87-099-210-010		CONN,5P 6216 H
M1	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
SW1	87-036-110-010		PUSH SWITCH
SW2	87-036-110-010		PUSH SWITCH
DECK C.B			
CN1	87-A60-079-010		CONN,08P H 9604S-08F
M1	87-A91-825-010		MOT,M09Y/Z
SOL2	82-ZM3-628-010		SOL ASSY,23 SO
SW1	87-036-110-010		SW,MICRO SPPB62
SW2	87-036-110-010		SW,MICRO SPPB62
SW4	87-036-110-010		SW,MICRO SPPB62
SW5	87-036-110-010		SW,MICRO SPPB62
HEAD C.B			
	85-ZM3-602-010		PWB,FLEX A
CON351	88-CL4-701-010		CONN ASSY,7P RPEH

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



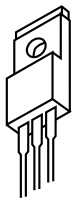
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

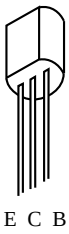
TRANSISTOR ILLUSTRATION

CSC4115BC
KTA1266GR
KTC3198GR

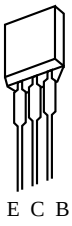
2SA1979O/Y
2SC1815GR



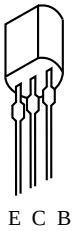
2SB1342
2SB1370E
2SD1933



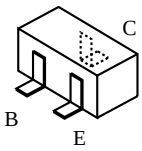
2SA952K



2SC4115SRS



2SA1296GR



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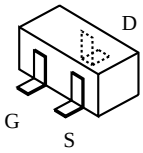
2SA1235F
2SC2712GR
2SC2714O
DTA124EUA
DTA144EKA
DTA114ES
DTA144TKA
DTC114ES
DTC144TKA
KRA107S
RT1P141C



2SK2158
2SK360E

A MAIN C.B

TO TUNER C.B CN991

TO FRONT C.B CN301

TO PT C.B CN101 (CNA101)

TO HEAD C.B CN351

J601 VIDEO/AUX

J603 SUB WOOFER

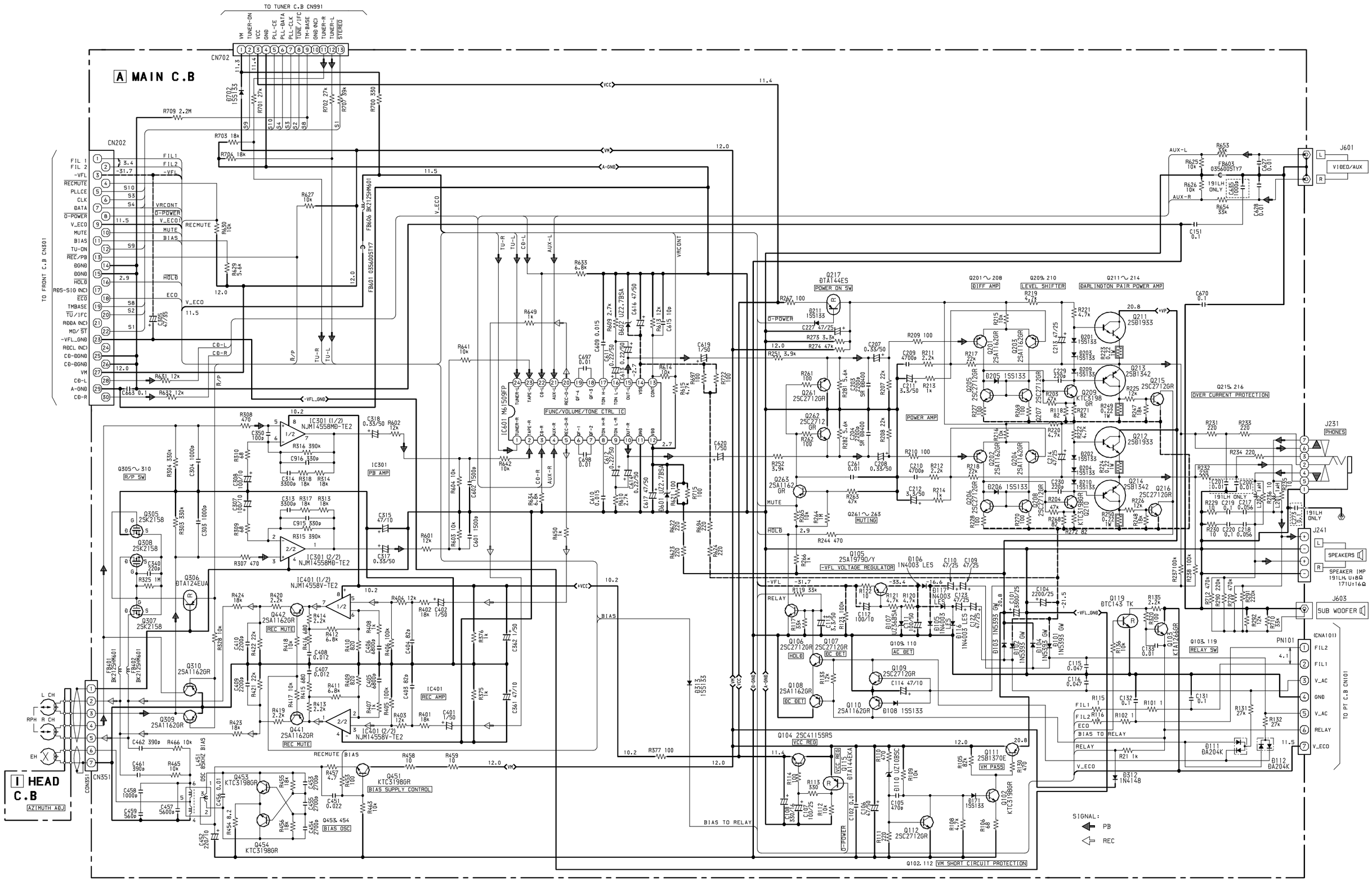
J241 SPEAKERS

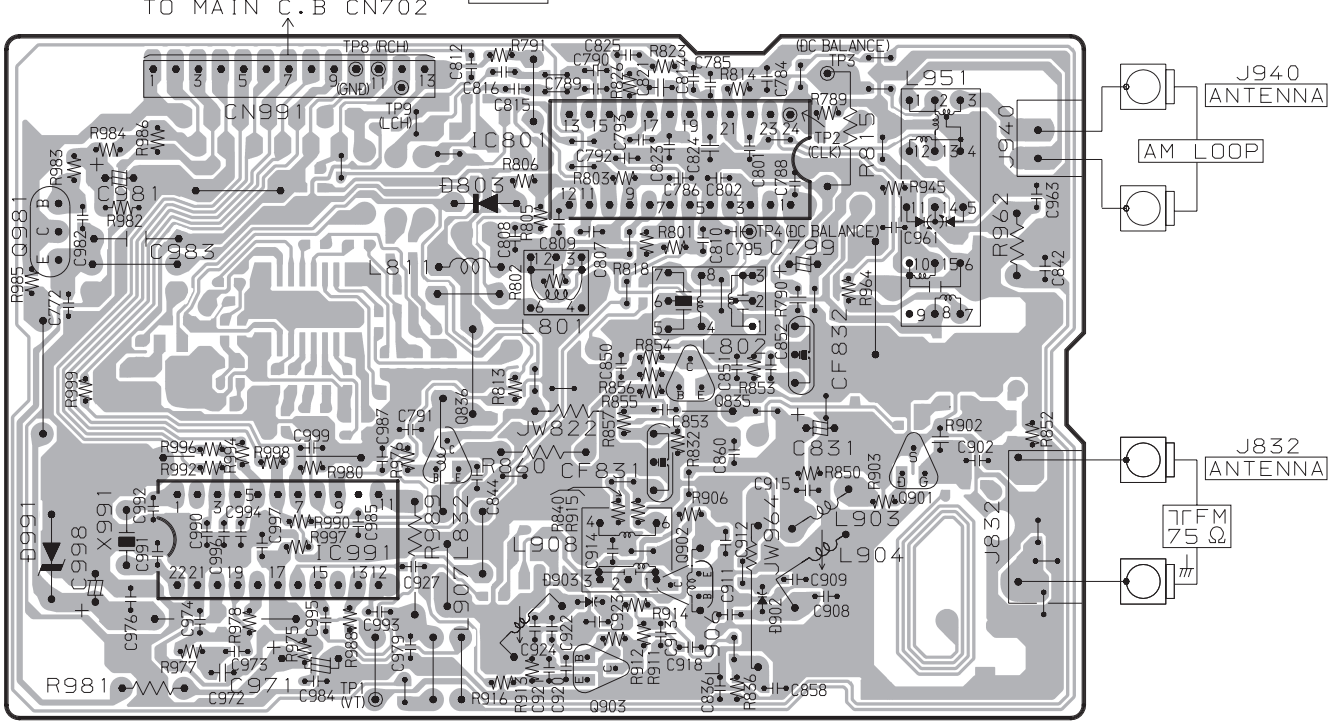
SPEAKER IMP:
191LH, U:8Ω
171U:16Ω

J231 PHONES

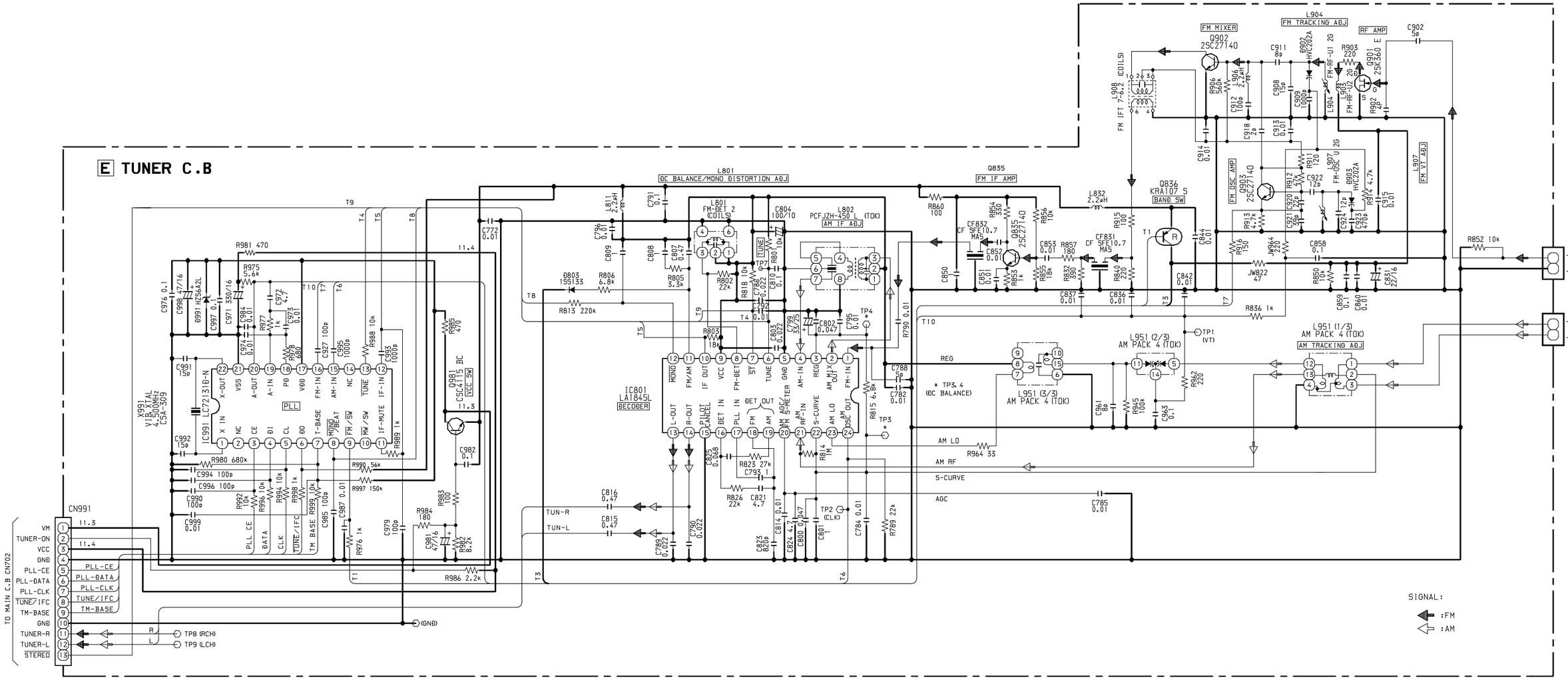
191LH ONLY

SCHEMATIC DIAGRAM – 1 (MAIN)

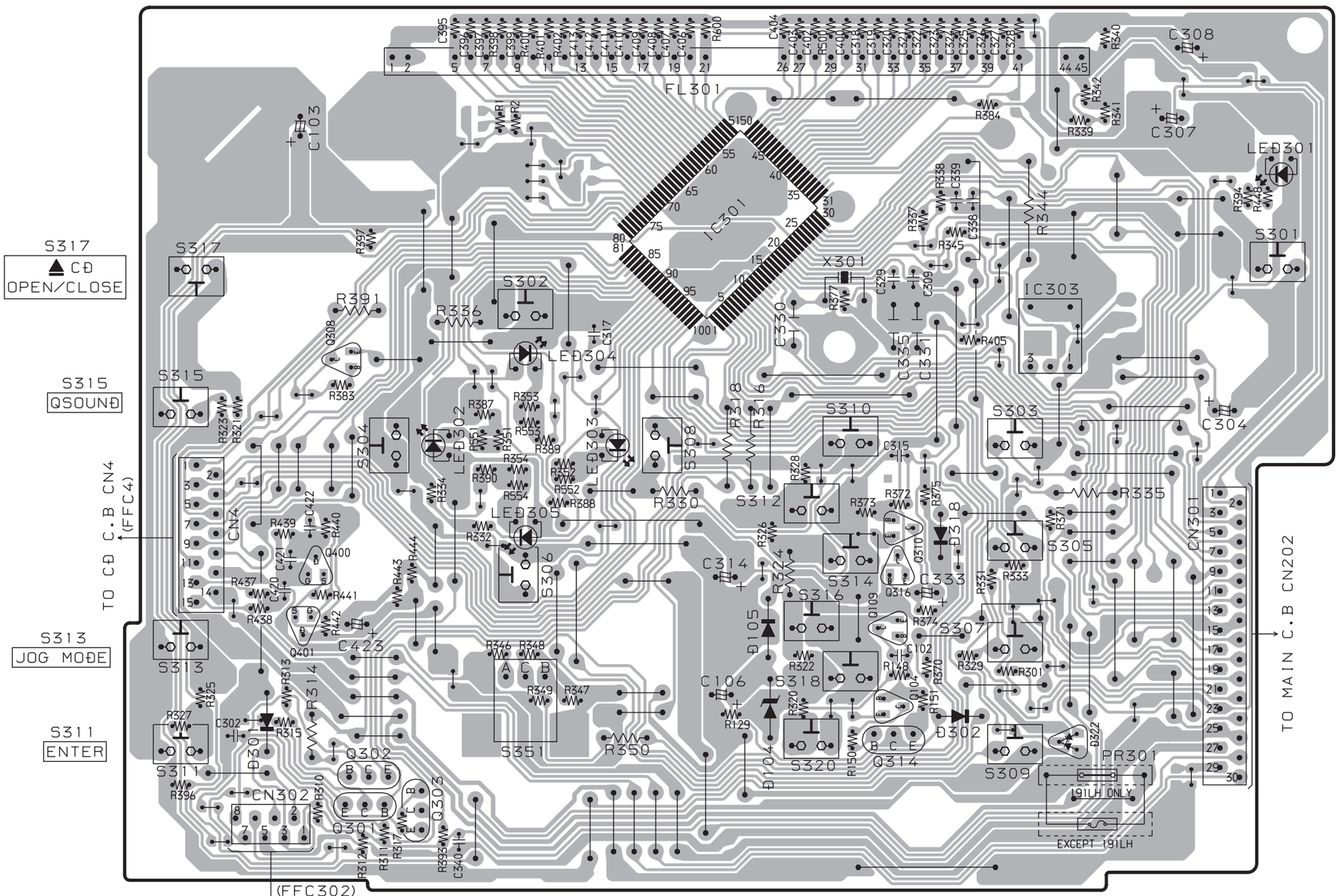



E TUNER C.B
TO MAIN C.B CN702
CN991
IC801
IC991
L951
J940
ANTENNA
AM LOOP
J832
ANTENNA
FM 75 Ω
TP8 (RCH)
TP9 (LCH)
TP1 (VT)
TP2 (CLK)
TP3
TP4 (DC BALANCE)
(DC BALANCE)
(GND)

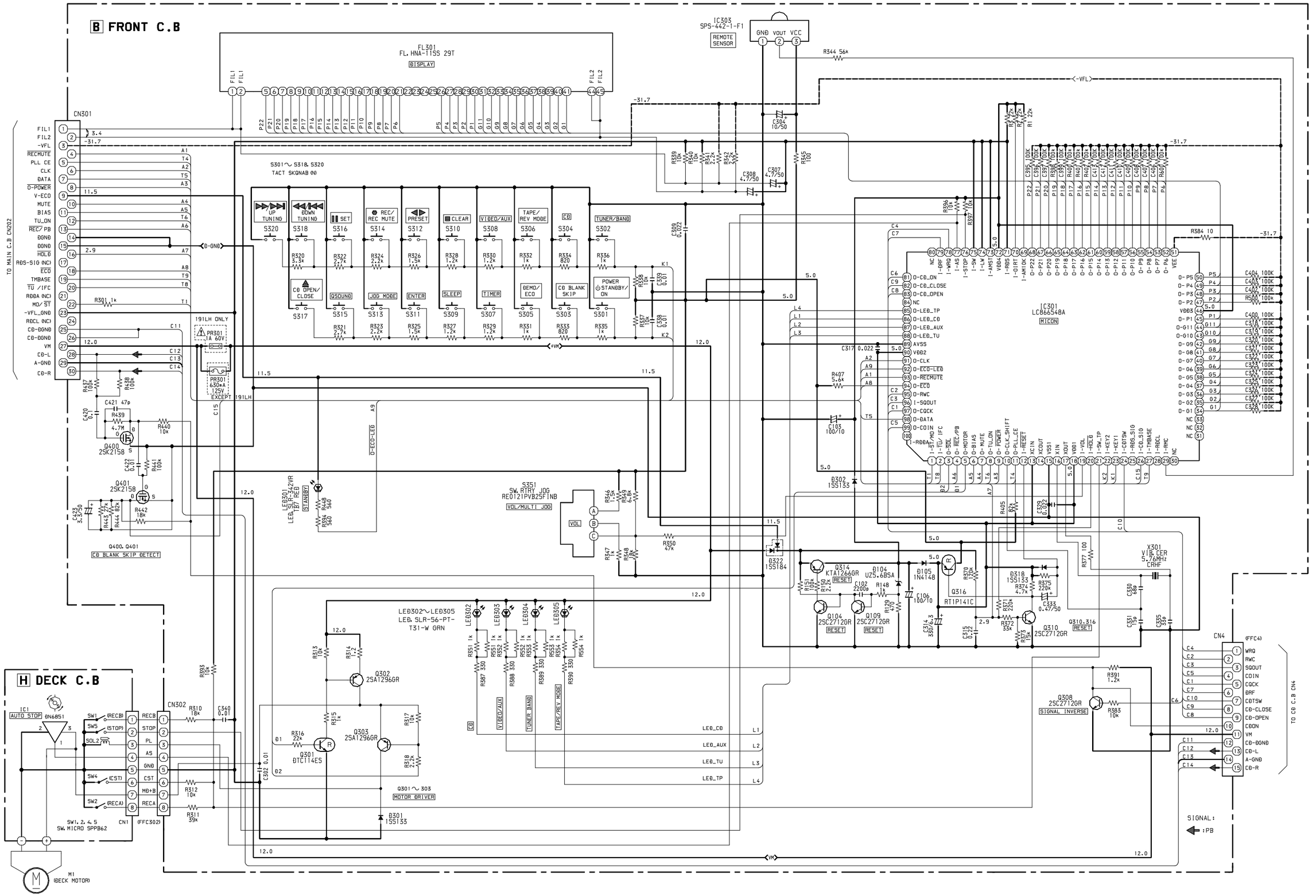
SCHEMATIC DIAGRAM – 2 (TUNER)

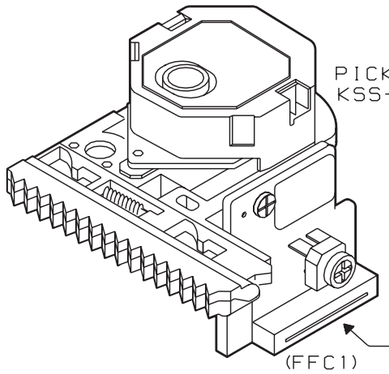


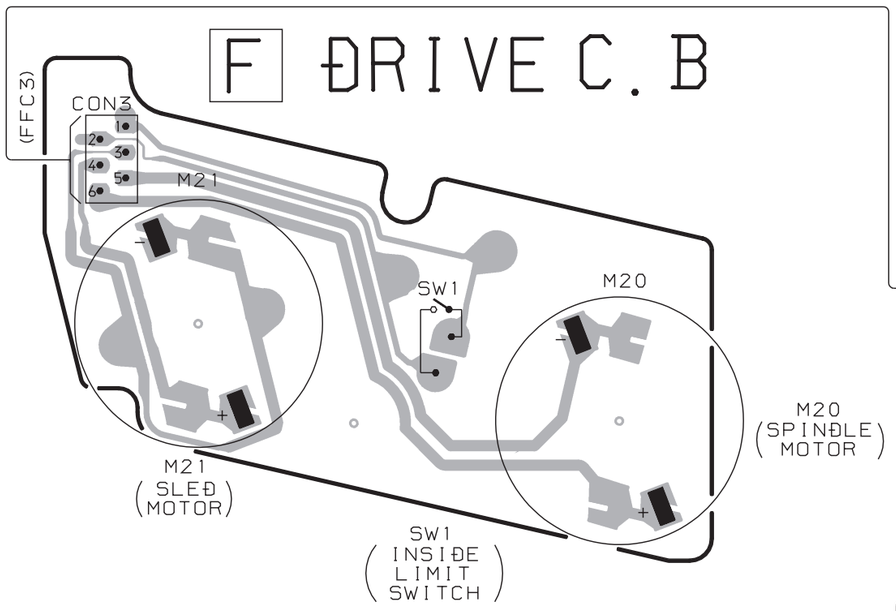
B FRONT C.B

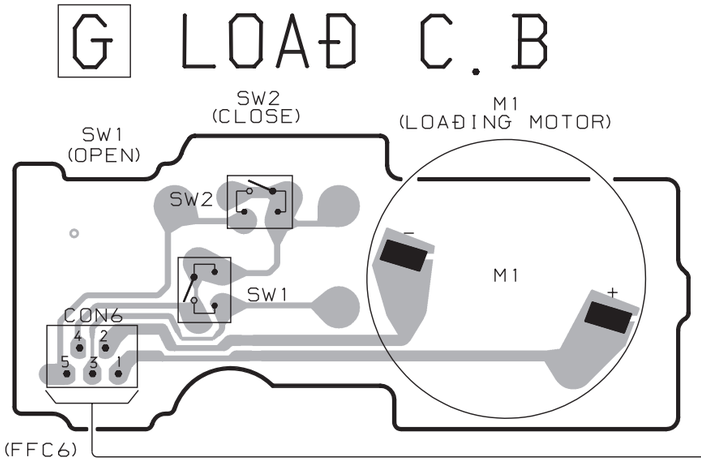

FL301
ĐISPLAY
FL301
IC301
X301
IC303
S301
POWER
⏻STANĐBY/ON
LEĐ301
STANĐBY
IC303
REMOTE
SENSOR
S317
▲CĐ
OPEN/CLOSE
S315
QSOUNĐ
S313
JOG MOĐE
S311
ENTER
TO CĐ C.B CN4
(FFC4)
(FFC302)
TO ĐECK C.B CN1
TO MAIN C.B CN202
CN301
CN302
CN4
S304,
LEĐ302
CĐ
S302,
LEĐ304
TUNER/BANĐ
S308,
LEĐ303
VIĐEO/AUX
S312
◀▶PRESET
S310
■ CLEAR
S303
CĐ BLANK SKIP
S306,
LEĐ305
TAPE/REV MOĐE
S316
❚❚SET
S314
● REC/REC MUTE
S305
ĐEMO/ECO
S351
VOL/MULTI JOG
S320
UP TUNING
▶▶/▶▶|
S318
ĐOWN TUNING
|◀◀/◀◀
S307
TIMER
S309
SLEEP
191LH ONLY
EXCEPT 191LH

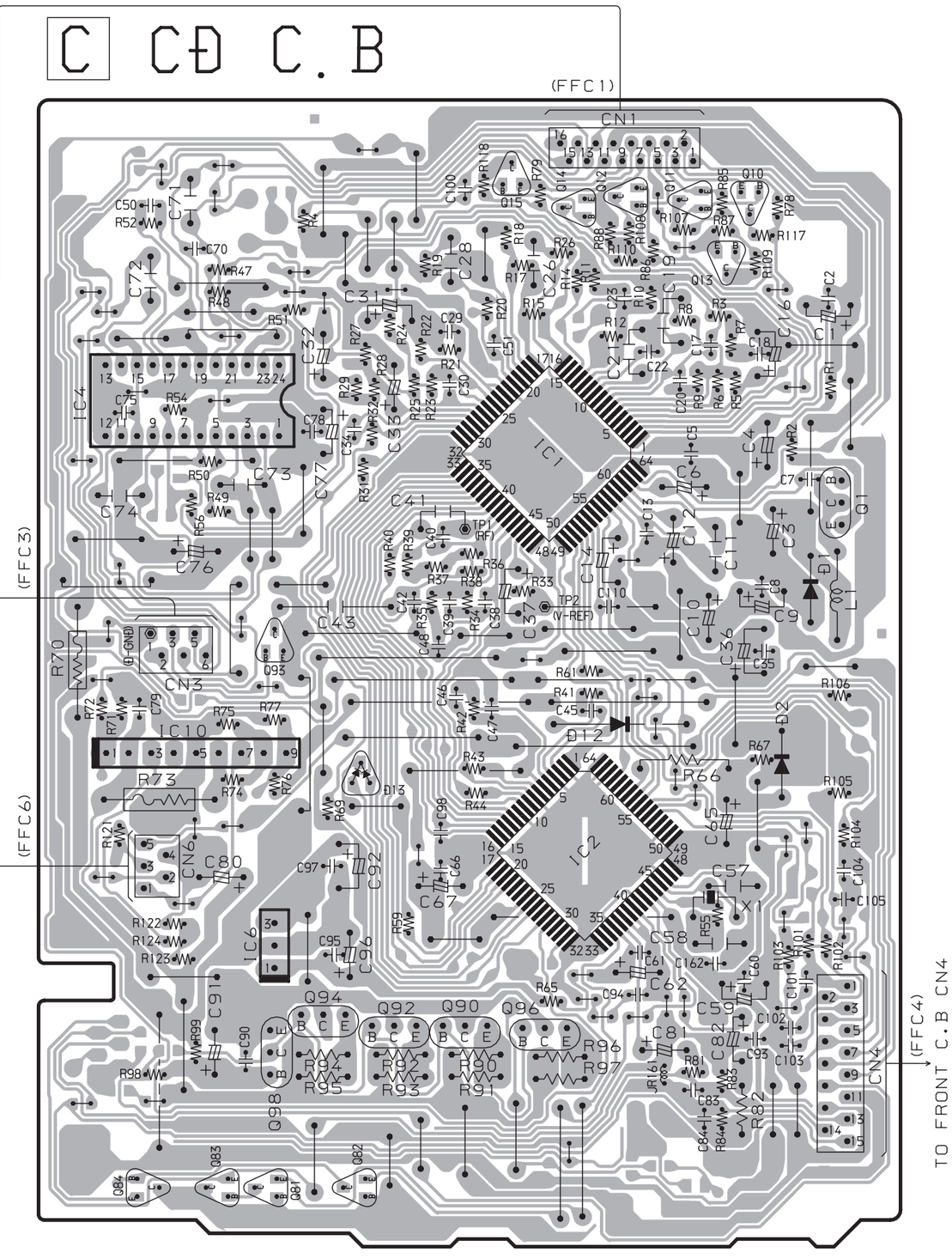
SCHEMATIC DIAGRAM – 3 (FRONT / DECK)



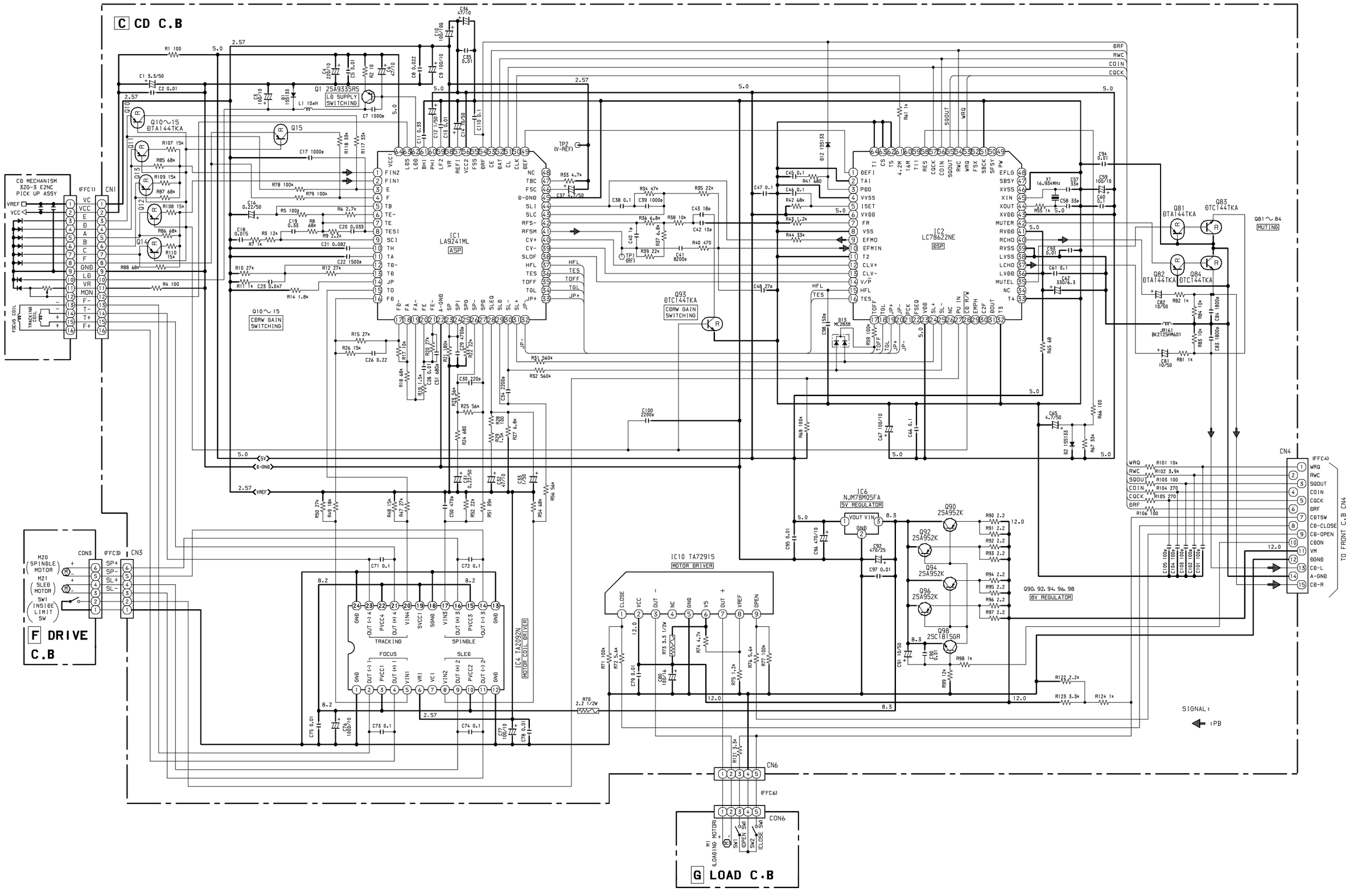

PICK UP ASSY
KSS-213F
(FFC1)

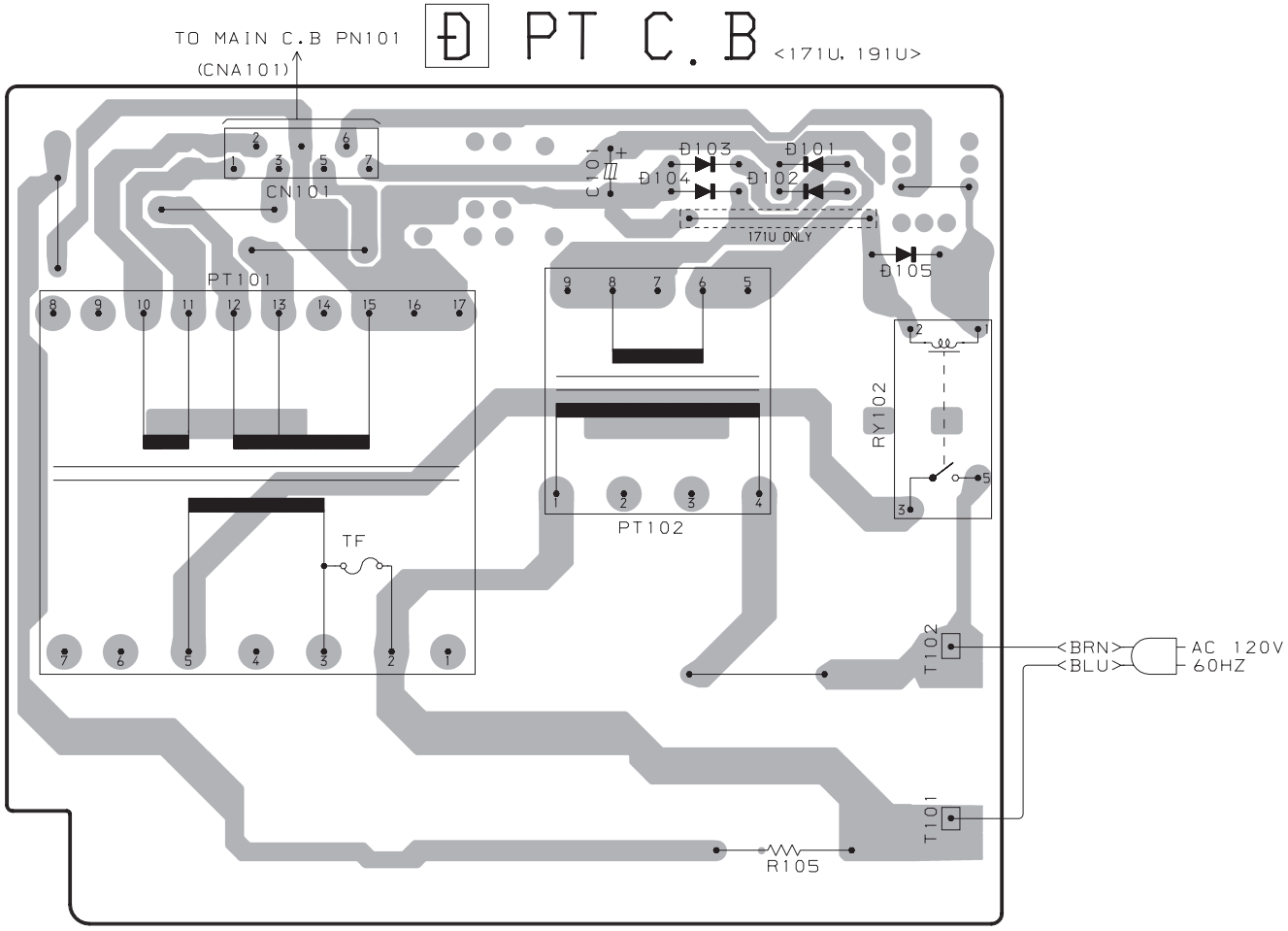

F DRIVE C.B
(FFC3)
CON3
M21
SW1
M20
M20
(SPINDLE
MOTOR)
M21
(SLED
MOTOR)
SW1
(INSIDE
LIMIT
SWITCH)


G LOAD C.B
SW2
(CLOSE)
M1
(LOADING MOTOR)
SW1
(OPEN)
SW2
SW1
M1
CON6
(FFC6)

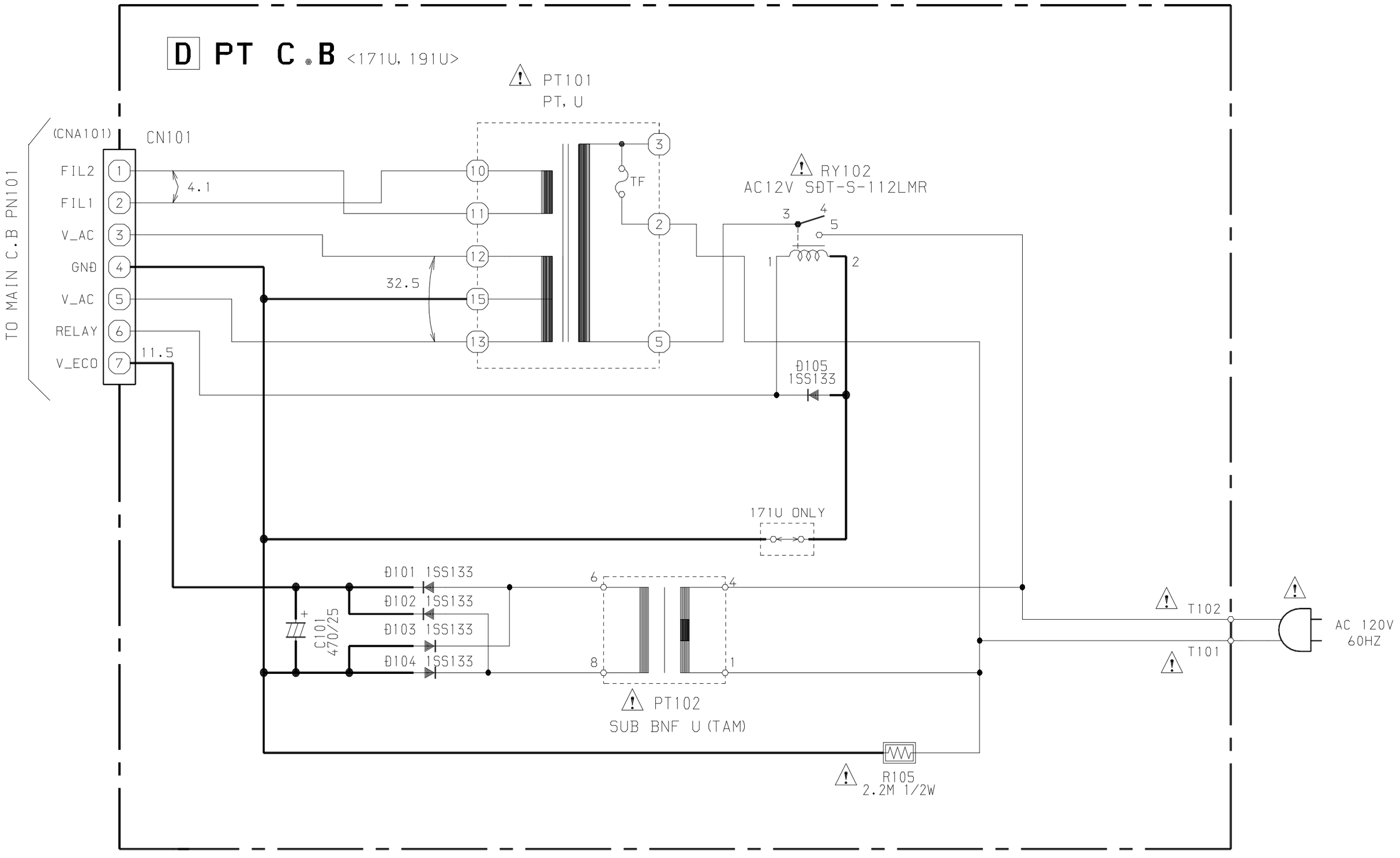

C CD C.B
(FFC1)
CN1
(FFC3)
CN3
(FFC6)
CN6
IC1
IC2
IC4
IC6
IC10
TO FRONT C.B CN4
(FFC4)
CN4

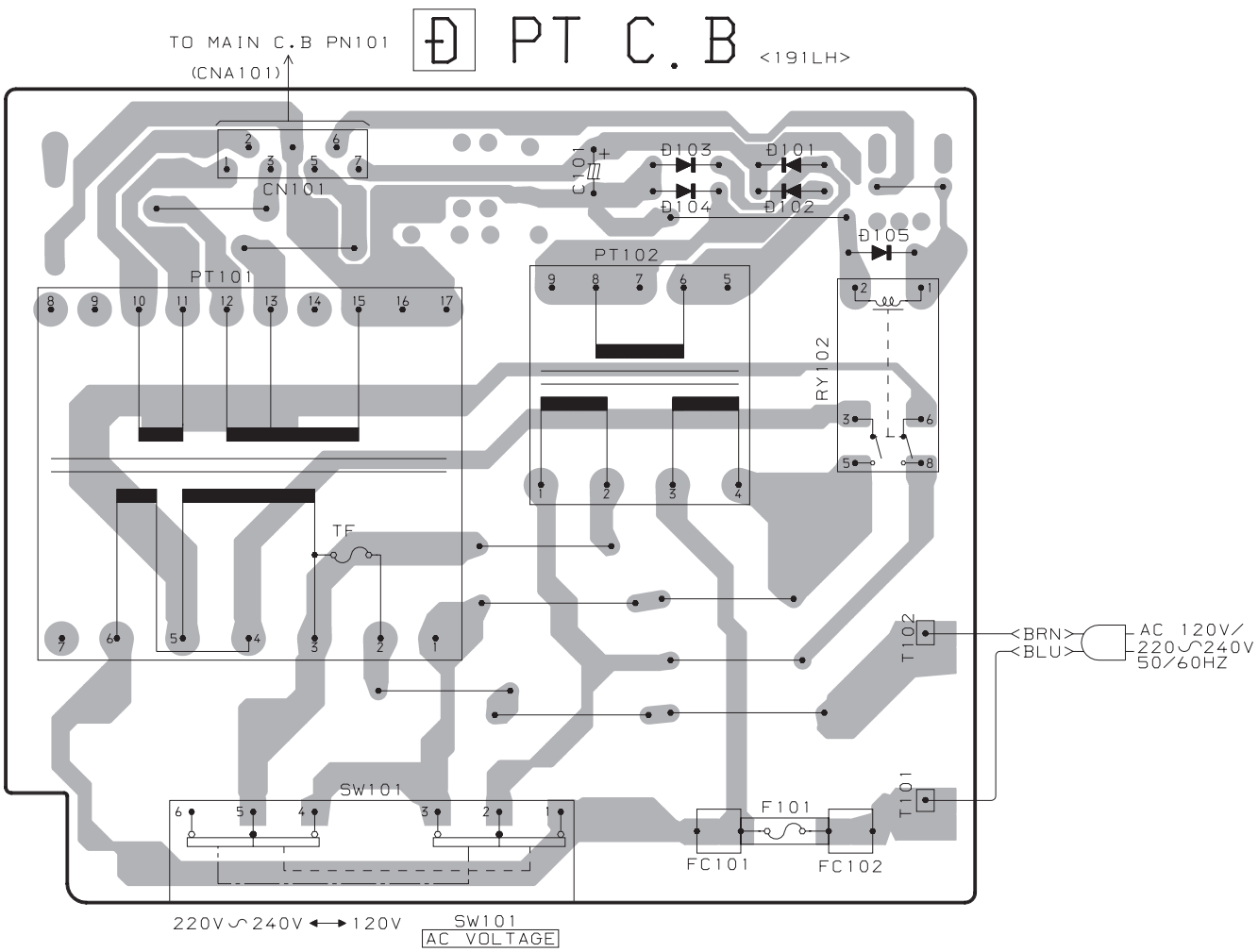
SCHEMATIC DIAGRAM – 4 (CD / DRIVE / LOAD)



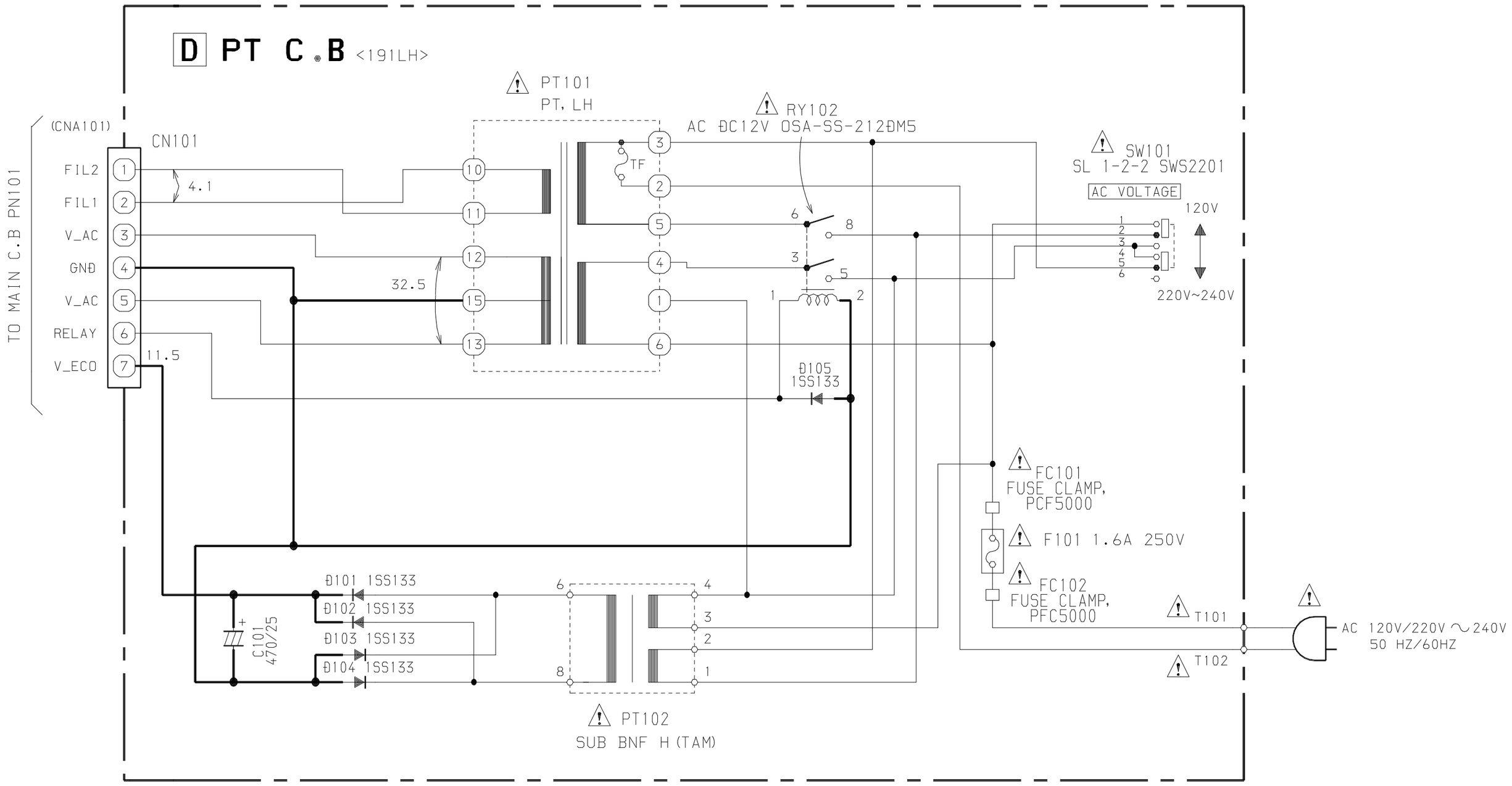

TO MAIN C.B PN101
(CNA101)
Đ PT C.B <171U. 191U>
CN101
C101
Đ103
Đ101
Đ104
Đ102
171U ONLY
Đ105
PT101
PT102
RY102
TF
T102
T101
R105
BRN
BLU
AC 120V
60HZ

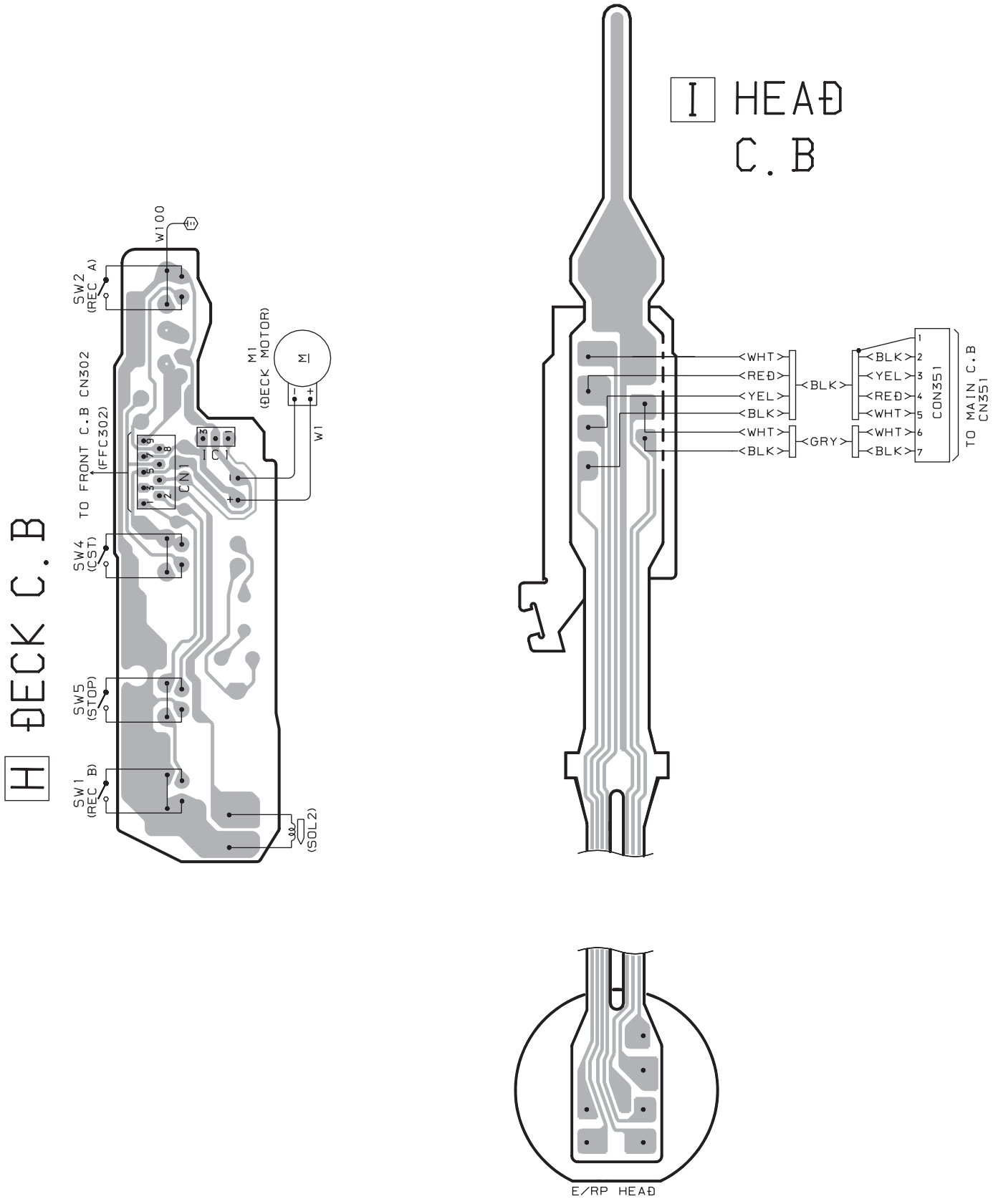
SCHEMATIC DIAGRAM – 5 (PT: U)




TO MAIN C.B PN101
(CNA101)
PT C.B
<191LH>
CN101
PT101
PT102
C101
Đ103
Đ101
Đ104
Đ102
Đ105
RY102
TF
SW101
F101
FC101
FC102
T102
T101
BRN
BLU
AC 120V/
220~240V
50/60HZ
220V~240V ↔ 120V
SW101
AC VOLTAGE

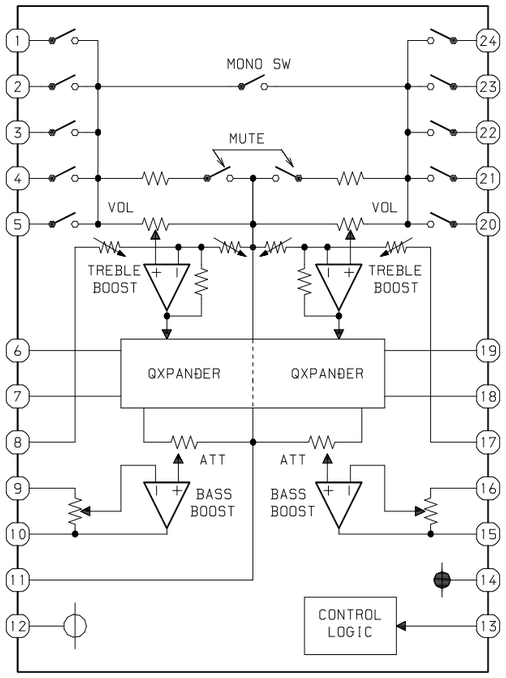
SCHEMATIC DIAGRAM – 6 (PT: LH)



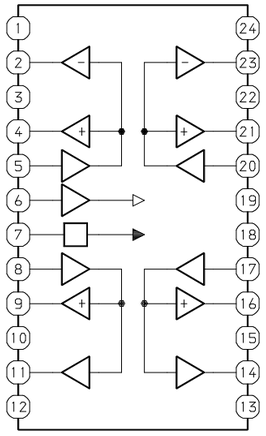

H DECK C.B
W100
SW2 (REC A)
M1 (DECK MOTOR)
M
W1
TO FRONT C.B CN302 (FFC302)
IC1
CN1
SW4 (CST)
SW5 (STOP)
SW1 (REC B)
SOL2
I HEAD C.B
WHT
RED
YEL
BLK
WHT
BLK
BLK
GRY
BLK
YEL
RED
WHT
WHT
BLK
CON351
TO MAIN C.B CN351
E/RP HEAD

IC BLOCK DIAGRAM

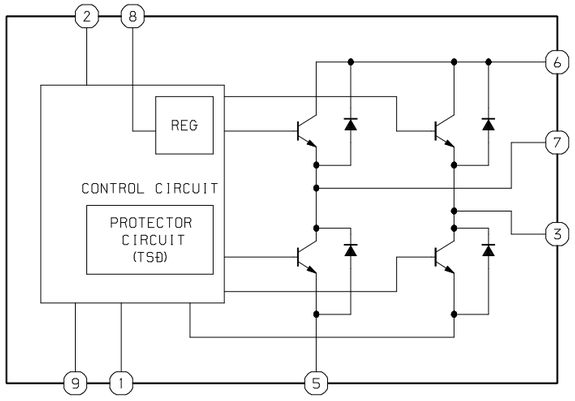
IC, M61509FP



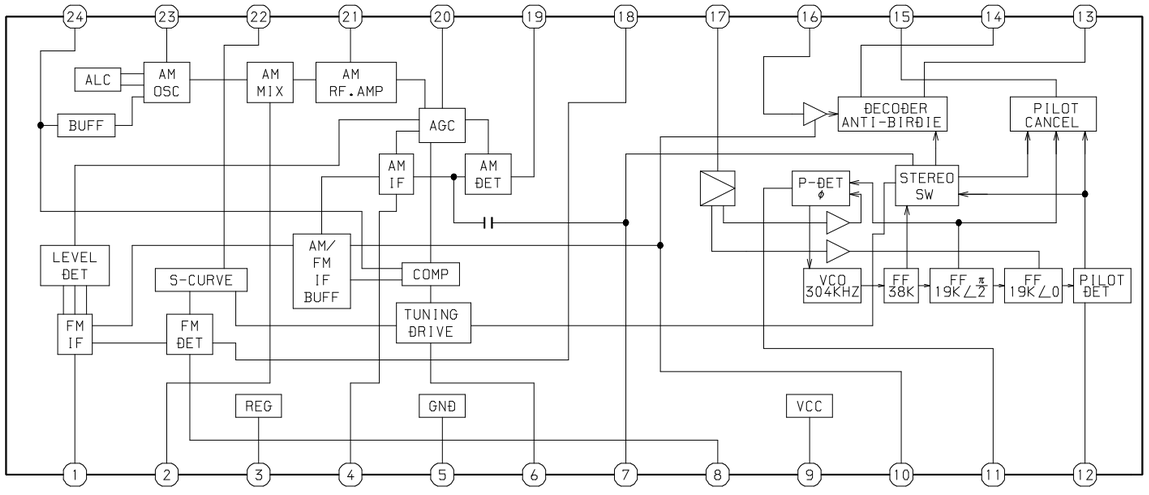
IC, TA2092N



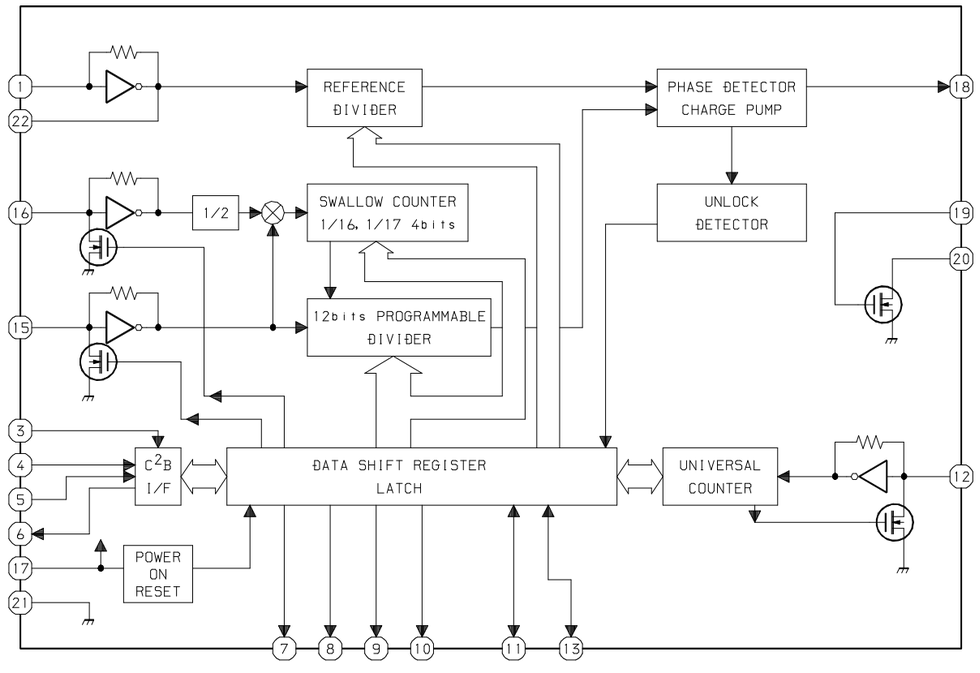
IC, TA7291S



IC, LA1845L

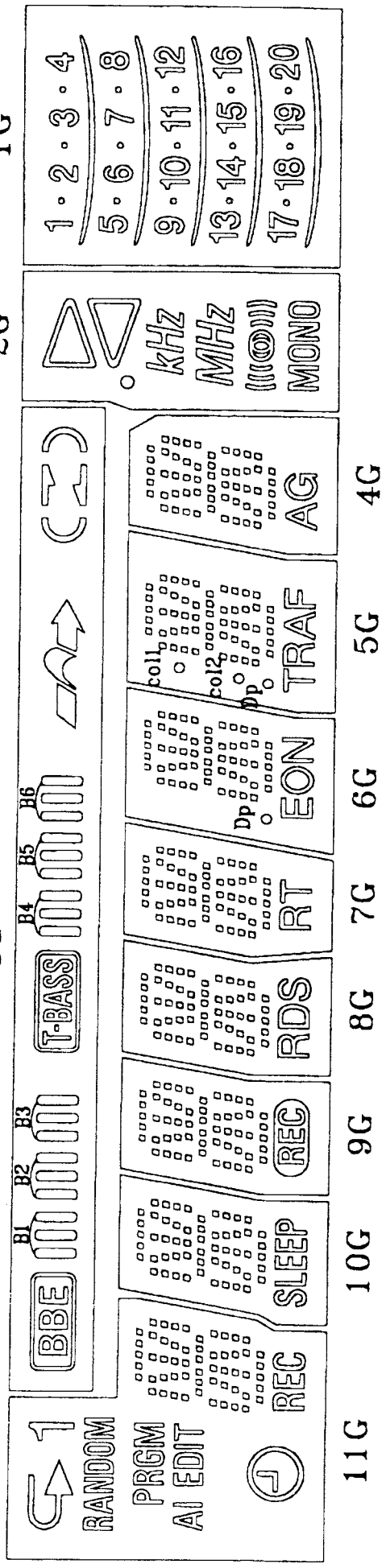


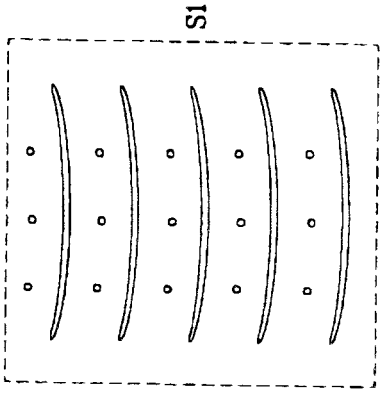
IC, LC72131D-N



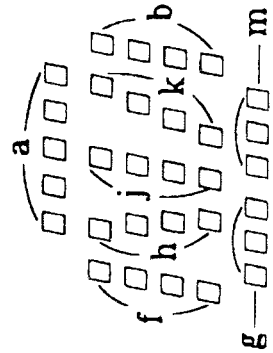
FL (HNA-11SS 29T) GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT





(1G)



(4G – 11G)

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	REC	SLEEP	(REC)	RDS	RT	EON	TRAF	AG	BBE	MONO	20
P2	d	d	d	d	d	d	d	d	B1	((( )))	19
P3	n	n	n	n	n	n	n	n	B2	MHz	18
P4	p	p	p	p	p	p	p	p	B3	kHz	17
P5	r	r	r	r	r	r	r	r	T-BASS	○	16
P6	e	e	e	e	e	e	e	e	B4	◁	15
P7	c	c	c	c	c	c	c	c	B5	▷	14
P8	g	g	g	g	g	g	g	g	B6	–	13
P9	m	m	m	m	m	m	m	m		–	12
P10	f	f	f	f	f	f	f	f	☾	–	11
P11	b	b	b	b	b	b	b	b		–	10
P12	k	k	k	k	k	k	k	k	☽	–	9
P13	j	j	j	j	j	j	j	j	–	–	8
P14	h	h	h	h	h	h	h	h	–	–	7
P15	a	a	a	a	a	a	a	a	–	–	6
P16	RANDOM	–	–	–	–	–	col1	–	–	–	5
P17	◷	–	–	–	–	–	col2	–	–	–	4
P18	1	–	–	–	–	Dp	Dp	–	–	–	3
P19	PRGM	–	–	–	–	–	–	–	–	–	2
P20	AI	–	–	–	–	–	–	–	–	–	1
P21	EDIT	–	–	–	–	–	–	–	–	–	S1
P22	↵	–	–	–	–	–	–	–	–	–	–

IC DESCRIPTION

IC, LC866548A

Pin No.	Pin Name	I/O	Description
1	I-$\overline{ST}$/MO	I	Tuner stereo input.
2	I-$\overline{TU}$/IFC	I	Tuner TUNE IFC input.
3	O-$\overline{SOL}$	O	Deck solenoid $\overline{ON}$/OFF output.
4	O-$\overline{REC}$/PB	O	Deck record/playback select output.
5	O-MOTOR	O	Deck motor ON/$\overline{OFF}$ control output.
6	O-BIAS	O	Record 85 kHz oscillaor $\overline{ON/OFF}$ output.
7	O-MUTE	O	Mute output.
8	O-TU_ON	O	Tuner mode on output.
9	O-$\overline{POWER}$	O	Power $\overline{ON}$/OFF control output.
10	O-CLK_SHIFT	O	Micon clock shift output.
11	O-PLL_CE	O	PLL chip enable output.
12	I-$\overline{RESET}$	I	Micon reset input.
13	XCIN	I	Connected to VDD1.
14	XCOUT	O	Not used.
15	VSS1	-	Digital GND.
16	XIN	I	5.76 MHz Ceralock.
17	XOUT	O	
18	VDD1	-	Power supply.
19	I-VOL	I	Rotary encoder volume A/D input.
20	I-$\overline{HOLD}$	I	System hold input A/D input.
21	I-SW_TP	I	Cassette detect switch A/D input.
22	I-KEY2	I	Key2 A/D input.
23	I-KEY1	I	Key1 A/D input.
24	I-CDTSW	I	CD tray switch A/D input.
25	I-RDS_SIG	I	RDS tuning level input. (Not used)
26	I-CD_SIG	I	CD music level input.
27	I-TMBASE	I	Time base clock base (8 Hz) input.
28	I-RDCL	I	RDS clock input. (Not used)
29	I-RMC	I	Remote control data input.
30 ~ 33	NC	-	Not connected.
34 ~ 44	O-G1 ~ G11	O	FL grid G1 ~ G11 output.
45	O-P1	O	FL port P1 output.
46	VDD3	-	Power supply.
47 ~ 50	O-P2 ~ P5	O	FL port P2 ~ P5 output.
51	VEE	-	Power supply.
52 ~ 68	O-P6 ~ P22	O	FL port P6 ~ P22 output.
69	I-AM10K	I	AM10K detect input. (Not used)
59	I-OIRT	I	OIRT detect input. (Not used)
60	I-RDS	I	RDS detect input. (Not used)
61	VDD4	-	Power supply.
62	I-AMST	I	AM stereo detect input. (Not used)

Pin No.	Pin Name	I/O	Description
74	I-LW	I	LW detect input. (Not used)
75	I-SW	I	SW detect input. (Not used)
76	I-STOP	I	Deck stop signal input.
77	I-AS	I	Auto stop signal input.
78	I-WRQ	I	CD WRQ input.
79	I-DRF	I	CD DRF input.
80	NC	-	Not connected.
81	O-CD_ON	O	CD ON/$\overline{\text{OFF}}$ control output.
82	O-CD_CLOSE	O	CD tray close output.
83	O-CD_OPEN	O	CD tray open output.
84	NC	-	Not connected.
85	O-LED_TP	O	Tape function LED ON/$\overline{\text{OFF}}$ output.
86	O-LED_CD	O	CD function LED ON/$\overline{\text{OFF}}$ output.
87	O-LED_AUX	O	Aux function LED ON/$\overline{\text{OFF}}$ output.
88	O-LED_TU	O	Tuner functon LED ON/$\overline{\text{OFF}}$ output.
89	AVSS	-	Connected to GND.
90	VDD2	-	Power supply.
91	O-CLK	O	Common serial clock output.
92	O-$\overline{\text{ECO\_LED}}$	O	Economical mode LED $\overline{\text{ON}}$/OFF output.
93	O-$\overline{\text{RECMUTE}}$	O	Record mute output.
94	O-$\overline{\text{ECO}}$	O	Economical mode ON/OFF output.
95	O-RWC	O	CD control data output.
96	I-SQOUT	I	CD SQOUT input.
97	O-CQCK	O	CD clock output.
98	O-DATA	O	Line out mute output.
99	O-COIN	O	Command to CD DSP output.
100	I-RDDA	I	RDS data input. (Not used)

IC, LA9241ML

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Connects to the pickup's photo diode; adding this pin to pin FIN1 generates RF signal, and subtracting it generates FE signal.
2	FIN1	I	Connects to the pickup's photo diode.
3	E	I	Connects to the pickup's photo diode; subtracting this pin from pin F generates TE signal.
4	F	I	Connects to the pickup's photo diode.
5	TB	I	Input for DC component of TE signal.
6	TE–	I	Connects to the resistor between this pin and TE pin for setting the gain of TE signal.
7	TE	O	Output for TE signal.
8	TESI	I	Input for TES (Track Error Sense) comparator, TE signal is band-passed and inputted.
9	SCI	I	Input for shock detection.
10	TH	I	For setting tracking gain time constant.
11	TA	O	TA amplifier output pin.
12	TD–	I	For constructing tracking phase compensation constant between TD and VR pins.
13	TD	O	For setting tracking phase compensation.
14	JP	I	For setting the amplifier of tracking jump signal (kick pulse).
15	TO	O	Output for tracking control signal.
16	FD	O	Output for focusing control signal.
17	FD–	I	For constructing focusing phase compensation constant between FD and FA pins.
18	FA	O	For constructing focusing phase compensation constant between FD– and FA– pins.
19	FA–	I	For constructing focusing phase compensation constant between FA and FE pins.
20	FE	O	Output for FE signal.
21	FE–	I	Connects to the gain-setting resistor of FE signal between this pin and FE pin.
22	A-GND	–	GND for analog signals.
23	SP	O	Single end output of CV+ and CV– pin input signal.
24	SPI		
25	SPG	I	Connects to the gain-setting resistor during spindle 12cm mode.
26	SP–	I	Connects to spindle phase compensation constant together with SPD pin.
27	SPD	O	Output for spindle control signal.
28	SLEQ	I	Connects to sled phase compensation constant.
29	SLD	O	Output for sled control signal.
30	SL–	I	Input for sled-sending signal from microcontroller.
31	SL+	I	Input for sled-sending signal.
32	JP–	I	Input for tracking-jump signal from DSP.
33	JP+		
34	TGL	I	Input for tracking gain control signal from DSP; gain is low if TGL = "H".
35	TOFF	I	Input for tracking off control signal from DSP; off if TOFF = "H".
36	TES	O	Outputs TES signal to DSP.
37	HFL	O	HIGH FREQUENCY LEVEL; used to determine whether the main beam is on a pit or on a mirror.
38	SLOF	I	Input for sled servo off control.

Pin No.	Pin Name	I/O	Description
39	CV–	I	Input for CLV error signal from DSP.
40	CV+		
41	RFSM	O	Output for RF.
42	RFS–	O	For setting RF gain and 3T compensation constant together with RFSM.
43	SLC	O	SLICE LEVEL CONTROL; output for controlling the data slice level of DSP with RF waveform.
44	SLI	I	Input for controlling the data slice level of DSP.
45	D-GND	–	GND for digital system.
46	FSC	O	Output pin for focus search smoothing capacitor.
47	TBC	I	(Tracking Balance Control) EF balance variable range setting pin.
48	NC	–	Not connected.
49	DEF	O	Output for disk defect detection.
50	CLK	I	Standard clock input; DSP's 4.23MHz is inputted.
51	CL	I	Clock input for microcontroller command.
52	DAT	I	Data input for microcontroller command.
53	CE	I	Chip-enable input for microcontroller command.
54	DRF	O	Detect RF; output for RF level detection.
55	FSS	I	(Focus Search Mode) = search/+search against reference voltage switching pin. (Not used)
56	VCC2	–	VCC pin for servo and digital systems.
57	REFI	I	For connecting pass capacitor to reference voltage.
58	VR	O	Reference voltage output.
59	LF2	–	For setting disk defect-detection time constant.
60	PHI	–	Connects to capacitor for RF signal peak hold.
61	BHI	–	Connects to capacitor for RF signal bottom hold.
62	LDD	O	Output for APC circuit.
63	LDS	I	Input for APC circuit.
64	VCC1	–	VCC pin for RF system.

IC, LC78622NE

Pin No.	Pin Name	I/O	Description
1	DEFI	I	Defect detection signal (DEF) input.
2	TAI	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
3	PDO	O	External VCO control phase comparator output.
4	VVSS	–	Internal VCO ground. Must be connected to 0V.
5	ISET	O	PDO output current adjustment resistor connection.
6	VVDD	–	Internal VCO power supply.
7	FR	–	VCO frequency range adjustment.
8	VSS	–	Digital system ground. Must be connected to 0V.
9	EFMO	O	Slice level control; EFM signal output.
10	EFMIN	I	Slice level control; EFM signal input.
11	T2	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
12	CLV+	O	Disc motor control output. Three-value ouput is also possible when specified by microprocessor command.
13	CLV–		
14	V/$\overline{P}$	O	Rough servo/phase control automatic switching monitor output. Outputs a high level during rough servo and a low level during phase control.
15	HFL	I	Track detection signal input. This is a Schmitt input.
16	TES	I	Tracking error signal input. This is a Schmitt input.
17	TOFF	O	Tracking off output.
18	TGL	O	Tracking gain switching output. Increase the gain when low.
19	JP+	O	Track jump output. Three-value output is also possible when specified by microprocessor command.
20	JP–		
21	PCK	O	EFM data playback clock monitor. Outputs 4.3218 MHz when the phase is locked. (Not used)
22	FSEQ	O	Synchronization signal detection ouput. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. (Not used)
23	VDD	–	Digital system power supply.
24	SL+	O	Serial data command sled signal output terminal from microprocessor.
25	SL–		
26	NC	–	Not used.
27	PU IN	I	CD pickup inside limit switch.
28	$\overline{\text{CD R/W}}$	O	CD R/W gain $\overline{\text{ON}}$/OFF signal.
29	EMPH	O	De-emphasis monitor pin. A high level indicates playback of a de-emphasis disk. (Not used)
30	C2F	O	C2 flag output. (Not used)
31	DOUT	O	Digital output (EIAJ format). (Not used)
32	T3	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
33	T4		
34	NC	–	Not connected.
35	MUTEL	O	Left channel one-bit D/A converter mute output.
36	LVDD	–	Left channel one-bit D/A converter power supply.

Pin No.	Pin Name	I/O	Description
37	LCHO	O	Left channel one-bit D/A converter output.
38	LVSS	–	Left channel one-bit D/A converter ground. (Must be connected to 0V)
39	RVSS	–	Right channel one-bit D/A converter ground. (Must be connected to 0V)
40	RCHO	O	Right channel one-bit D/A converter output.
41	RVDD	–	Right channel one-bit D/A converter power supply.
42	MUTER	O	Right channel one-bit D/A converter mute ouput.
43	XVDD	–	Crystal oscillator power supply.
44	XOUT	O	Connections for a 16.934MHz crystal oscillator element.
45	XIN	I	
46	XVSS	–	Crystal oscillator ground. Must be connected to 0V.
47	SBSY	O	Subcode block synchronization signal output. (Not used)
48	EFLG	O	C1, C2 single and double error correction monitor pin. (Not used)
49	PW	O	Subcode P, Q, R, S, T, U, V and W output. (Not used)
50	SFSY	O	Subcode frame synchronization signal output. This signal falls when the subcode are in the standby state. (Not used)
51	SBCK	I	Subcode readout clock input. This is a Schmitt input. (Must be connected to 0V when unused)
52	FSX	O	Output for the 7.35 kHz synchronization signal divided from the crystal oscillator. (Not used)
53	WRQ	O	Subcode Q output standby output.
54	RWC	I	Readwrite control input. This is a Schmitt input.
55	SQOUT	O	Subcode Q output.
56	COIN	I	Command input from the control microprocessor.
57	CQCK	I	Input for both the command input acquisition clock and the SQOUT pin subcode readout clock input. This is a Schmitt input.
58	$\overline{\text{RES}}$	I	Chip reset pin. (This pin must be set low briefly after power is first applied)
59	T11	O	Test output. Leave open. (Normally outputs a low level). (Not used)
60	16M	O	16.9344 MHz output. (Not used)
61	4.2M	O	4.2336 MHz output.
62	T5	I	Test input. A pull-down resistor is built in. (Must be connected to 0V)
63	$\overline{\text{CS}}$	I	Chip select input. A pull-down resistor is built in. Must be connected to 0V if not controlled.
64	T1	I	Test input. No pull-down resistor. (Must be connected to 0V)

ADJUSTMENT <TUNER / DECK>

< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP2 (CLK)
   Method : Set to AM 1710 kHz and check that the test point is 2160 kHz ± 45 Hz.

2. AM VT Check
   Settings : • Test point : TP1 (VT)
   Method : Set to AM 1710 kHz and check that the test point is less than 8.5 V. Then set to AM 530 kHz and check that the test point is more than 0.6 V.

3. AM Tracking Adjustment
   Settings : • Test point : TP8 (Rch), TP9 (Lch)
   • Adjustment location : L951(1/3)
   Method : Set to AM 1000 kHz and adjust L951(1/3) so that the test point becomes maximum.

4. AM IF Adjustment
   Settings : • Test point : TP8 (Rch), TP9 (Lch)
   • Adjustment location : L802
   L802 ..... 450 kHz

5. FM VT Adjustment
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L907
   Method : Set to FM 108.0 MHz and adjust the L907 so that the test point is 7.00 V ± 0.05 V.

6. FM VT Check
   Settings : • Test point : TP1 (VT)
   Method : Set to FM 87.5 MHz check that the test point is more than 0.5 V.

7. FM Tracking Adjustment
   Settings : • Test point : TP8 (Rch), TP9 (Lch)
   • Adjustment location: L904
   Method : Set to FM 98.0 MHz and adjust L904 so that the test point becomes maximum and distortion to minmum.

8. FM Tracking Check
   Settings : • Test point : TP8 (Rch), TP9 (Lch)
   Method : Set to FM 98.0 MHz and check that the test point is less than 9 dBµV.

9. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3, TP4 (DC Balance)
   TP8 (LCH), TP9 (RCH)
   (Mono Distortion)
   • Adjustment location : L801
   • Input level : 60 dBµV
   Method : Set to FM 98.0 MHz and adjust L801 so that the voltage between TP3 and TP4 becomes 0 V ± 500 mV with minimum distortion.

10. Output Level Check
    <AM>
    Settings : • Test point : TP8 (Rch), TP9 (Lch)
    • Input level : 74 dBµV
    Method : Set to AM1000 kHz and check that the test point is 55 mV ± 3 dB.

    <FM>
    Settings : • Test point : TP8 (Rch), TP9 (Lch)
    • Input level : 60 dBµV
    Method : Set to FM 98.0MHz and check that the test point is 270 mV ± 3 dB.

11. FM Separation Check
    Settings : • Test point : TP8 (Rch), TP9 (Lch)
    • Input level : 60 dBµV
    Method : Set to FM 98.0 MHz and check that the separation more than 25 dB.

< DECK SECTION >

1. Tape Speed Check
   Settings : • Test tape : TTA–100
   • Test point : SP OUT
   Method : Play back the test tape and check the test point is 3000 Hz ± 5 Hz (FWD) and FWD speed ± 45 Hz (REV).

2. Head Azimuth Adjustment
   Settings : • Test tape : TTA–330
   • Test point : SP OUT
   • Adjustment location : Head azimuth adjustment screw
   Method : Play back (FWD) the 8 kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on REV PLAY mode.

3. PB Frequency Response Check
   Settings : • Test tape : TTA–320
   • Test point : SP OUT
   Method : Play back the 315 Hz and 10 kHz signals of the test tape and check that the output ratio of the 10 kHz signal with respect to that of the 315 Hz signal is -3 dB ± 3 dB.

4. REC/PB Frequency Response Check
   Settings : • Test tape : TTA–602
   • Test point : SP OUT
   • Input signal : 8 kHz/1 kHz (-20 VU / 0dB)
   Method : Apply a 1 kHz signal and REC mode. Record and play back the 1 kHz signals and check that the output is -2 dB ± 3 dB.

CD TEST MODE

1. How to Activate CD Test Mode

While pressing the CD function button, insert the AC plug to the outlet.
All FL display will light up.

2. How to Cancel CD Test Mode

Exit the CD test mode by any of the following procedures.

- Press the function button (except the CD function button.)
- Press the power button.
- Disconnect the AC plug.

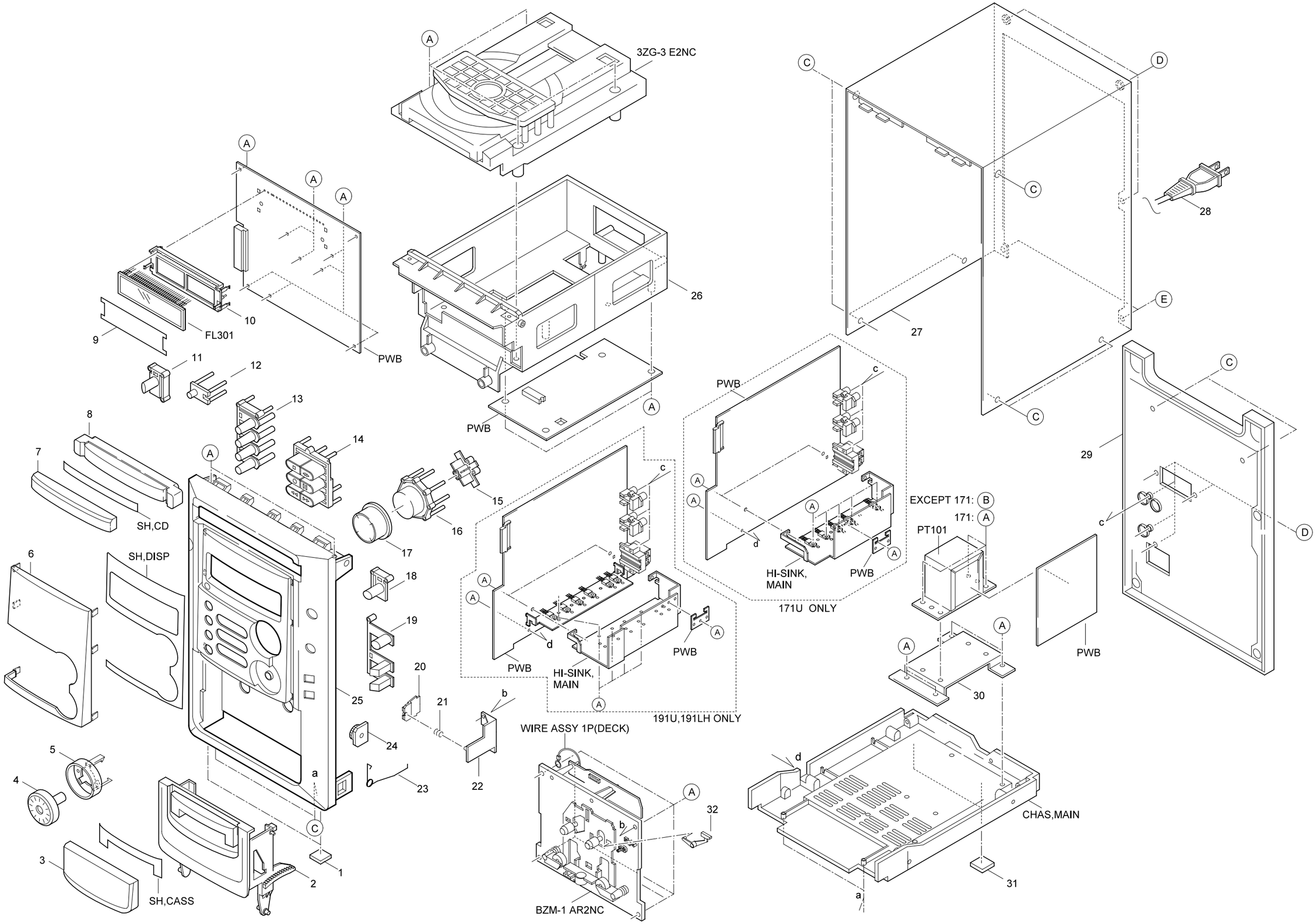
3. CD Test Mode functions

No	Mode	Operation	FL Display	Operation	Checking item
1	Start mode		All lit		• FL item • Microprocessor
2	Search mode (without DISC)	PLAY button	Normal	• Laser diode illuminated under normal circum stances • Continuous focus search *1 • Continuous spindle motor kick	• APC circuit • Laser current • Focus search waveform • Focus error waveform (DRF are not monitored in the search mode
3	Play mode	PLAY button	Normal	• Normal playback • If TOC cannot be read, focus search is continued	• Each servo circuit • DRF
4	Sled mode	FF button		• Pickup move to the innermost track *2	• Sled circuit • Mechanism • Pickup
		RWD button		• Pickup moves to the outermost track *2	

*1: The driver IC heats up and the protection circuit starts working when the focus search is continued for 10 minutes or longer. There can be a case that operations cannot be performed correctly.
In such a case, turn off the main power. After cooling down the machine, restart the machine.

*2: Be careful not to damage the gear because the sled motor rotates while the FF or RWD button is being pressed even if the pick-up is located in the innermost track or the outermost track.

MECHANICAL EXPLODED VIEW 1 / 1



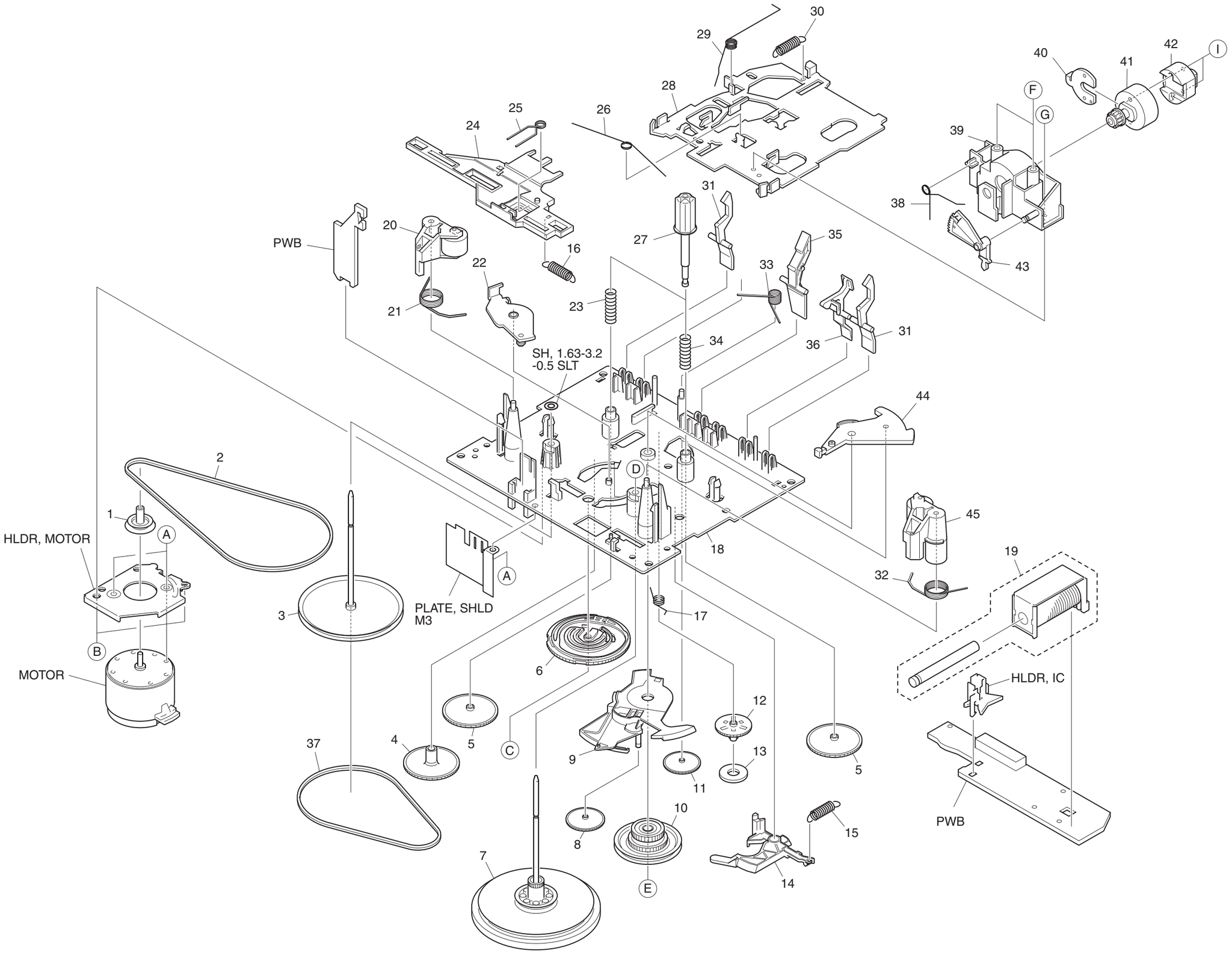
MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-CL4-215-010		CUSH,FOOT FR
2	8B-CL9-046-010		BOX,CASS M191
3	8B-CL9-052-010		WINDOW,CASS
4	8B-CL9-080-010		KNOB,RTRY VOLUME
5	8B-CL9-077-010		RING,VOLUME
6	8B-CL9-051-010		WINDOW,DISP
7	8B-CL9-032-010		WINDOW,CD
8	8B-CL9-031-010		PANEL,CD
9	8A-MA6-203-010		PLATE,FL
10	82-NF7-210-110		GUIDE,FL(*)
11	8B-CL9-060-010		KEY ASSY,POWER
12	8B-CL9-088-010		LENS,REMOTE-C
13	8B-CL9-064-010		KEY,DEMO
14	8B-CL9-065-010		KEY,CONTROL
15	8B-CL9-201-010		GUIDE,FUNC
16	8B-CL9-066-010		KEY ASSY,FUNC
17	8B-CL9-076-010		RING,FUNC
18	8B-CL9-062-010		KEY,OPEN
19	8B-CL9-063-010		KEY,Q-SOUND
20	82-NF5-229-010		PLATE,LOCK
21	86-NF9-224-010		SPR-C,LOCK
22	87-NF4-217-110		HLDR,LOCK 2
23	88-CL4-220-010		SPR-T,CASS
24	87-NF8-220-010		DMPR,150
25	8B-CL9-001-010		CABI,FRONT
26	8B-CL9-204-010		HLDR,CD
27	8B-CL9-026-010		CABI,TOP
⚠ 28	87-A80-092-010		AC CORD ASSY,E BLK SUN FAI<LH>
⚠ 28	87-A80-110-010		AC CORD ASSY,U SPT-2W<U>
29	8B-CL9-012-010		PANEL,REAR LHSC<LH>
29	8B-CL9-011-010		PANEL,REAR USC<U>
30	8A-CL9-211-110		HLDR,TRANS
31	88-CL4-216-010		CUSH,FOOT REAR
32	82-ZM1-264-010		LVR,EJECT R
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-581-170-410		UIT+4-8
C	87-B10-231-010		QT1+3-12 SILVER CR
D	87-B10-230-010		BVT2+3-10 W/O SLOT SILVER CR
E	87-B10-250-010		BVT2+3-12 W/O SLOT CR SILVER

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray

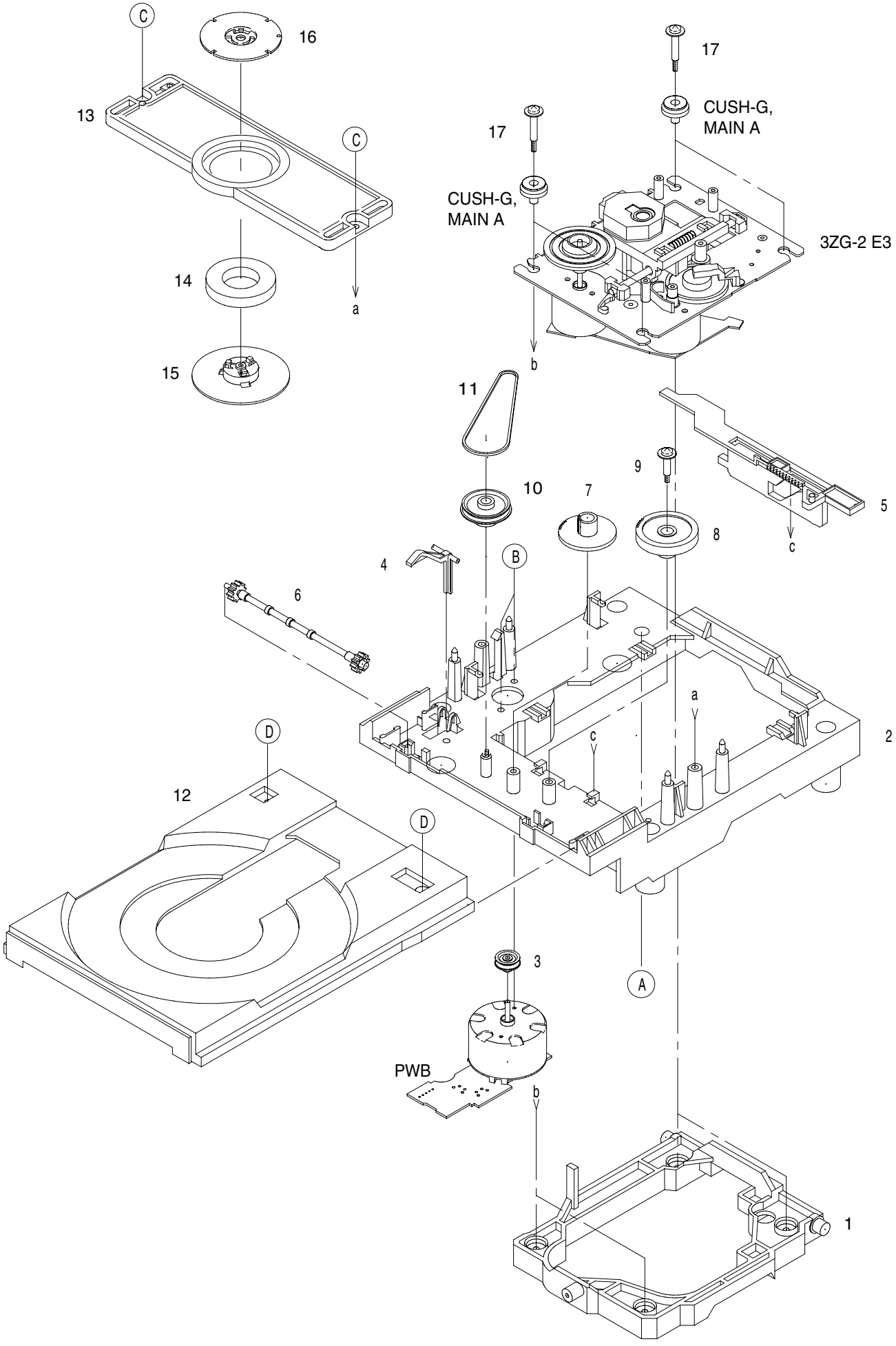
TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-ZM1-271-010		PULLEY,MOT ZZM-1
2	82-ZM1-354-010		BELT,SBU MAIN2 EPDM
3	82-ZM1-234-310		FLY-WHL ASSY,L
4	82-ZM1-226-010		GEAR,REW
5	82-ZM1-216-510		GEAR,REEL
6	82-ZM1-221-310		GEAR,CAM(*)
7	82-ZM1-237-610		FLY-WHL ASSY,R
8	82-ZM1-225-210		GEAR,FR
9	82-ZM1-224-410		LVR,FR
10	82-ZM3-333-310		SLIP DISK ASSY 2
11	82-ZM1-223-010		GEAR,PLAY
12	82-ZM1-220-210		GEAR,IDLER
13	82-ZM3-616-010		RING MAGNET 4
14	82-ZM1-227-310		LVR,TRIG
15	82-ZM1-305-210		SPR-E,TRIG 2
16	82-ZM1-255-310		SPR-E,LVR DIR
17	82-ZM1-322-010		SPR-T,FR 60
18	82-ZM1-358-110		CHAS ASSY,FPC
19	82-ZM3-628-010		SOL ASSY,23 SO
20	82-ZM1-363-010		LEVER,ASSY PINCH LD
21	82-ZM1-258-210		SPR-T,PINCH L
22	82-ZM1-333-210		PLATE,LINK2
23	82-ZM1-244-510		SPR-C,BT
24	82-ZM1-266-310		LVR,DIR
25	82-ZM1-214-010		SPR-T,DIR
26	82-ZM1-269-210		SPR-T,BRG
27	82-ZM1-217-410		REEL TABLE
28	82-ZM1-206-910		CHAS,HEAD
29	82-ZM1-219-110		SPR-T,LINK
30	82-ZM1-218-010		SPR-E,HB
31	82-ZM1-240-110		LVR,REC(*)
32	82-ZM1-259-310		SPR-T,PINCH R
33	82-ZM1-257-010		SPR-T,CAS
34	82-ZM1-285-410		SPR-C,BT L
35	82-ZM1-242-010		LVR,CAS
36	82-ZM1-243-010		LVR,STOP
37	82-ZM1-338-110		BELT,FR 4
38	82-ZM3-353-010		SPR-T,HEAD 2
39	82-ZM1-207-910		GUIDE,TAPE
40	82-ZM1-314-110		PLATE,HEAD
41	82-ZM1-208-310		HLDR,HEAD
42	87-A92-146-010		HEAD,RPH HADKH5665A FPC
43	82-ZM1-210-110		GEAR,H T
44	82-ZM1-222-310		LVR,PLAY(*)
45	82-ZM1-362-010		LEVER,ASSY PINCH RD
A	87-251-070-410		U+2.6-3
B	87-741-073-410		UT2+2.6-6 GLD
C	87-B10-008-010		W-P,2.08-8-0.4-SLIP
D	80-ZM6-243-010		SH 1.75-3.6-0.5 SLT
E	82-ZM3-334-010		PW 2.16-6-0.4
F	86-ZM4-206-110		S-SCREW,AZIMUTH L
G	85-ZM3-202-010		S-SCREW,TG
H	82-ZM3-222-010		S-SCREW,SHILD PLATE
I	80-ZM6-207-010		V+1.6-7

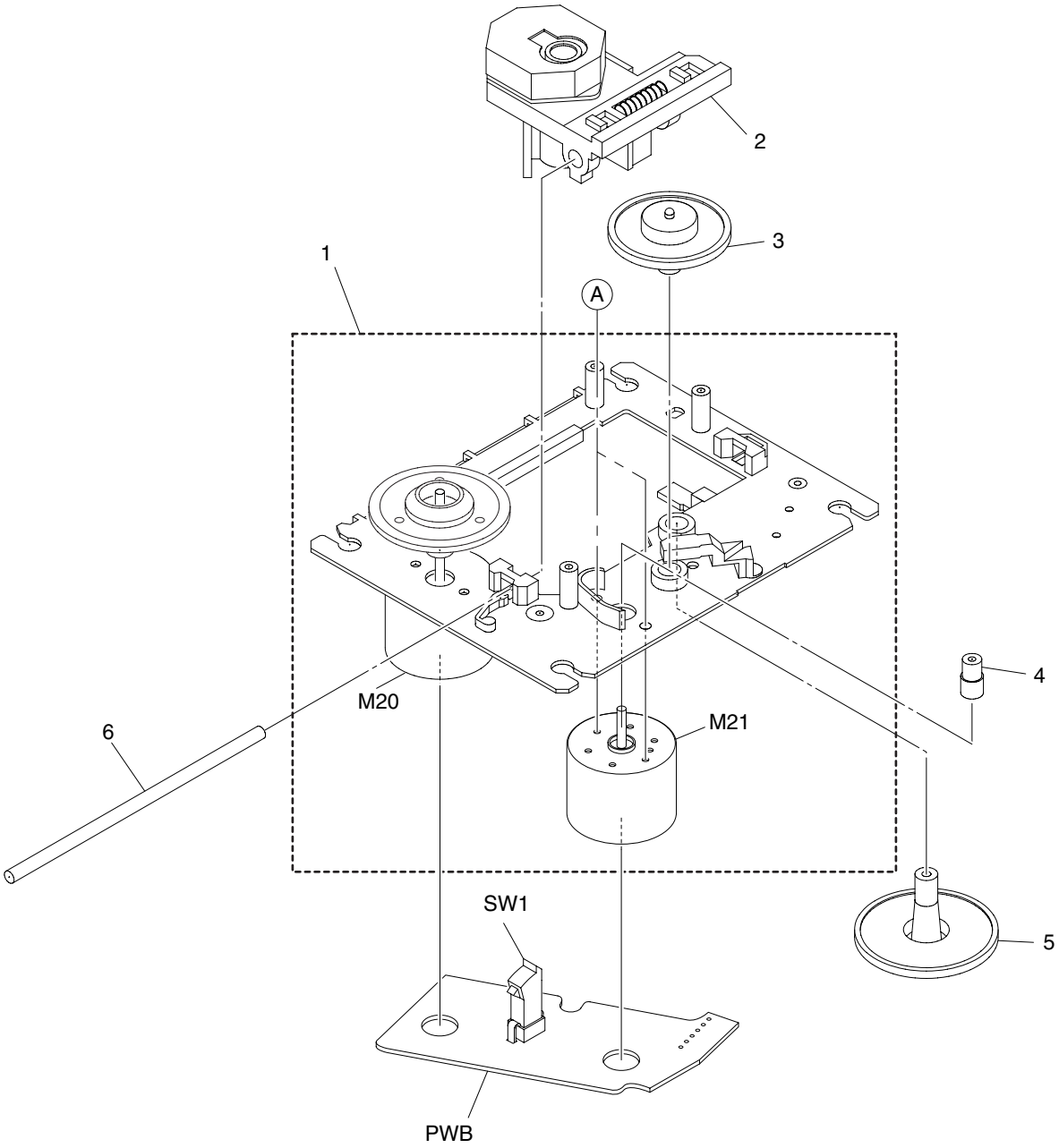
CD MECHANISM EXPLODED VIEW 1 / 2



CD MECHANISM PARTS LIST 1 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG3-224-510		HLDR M2
2	83-ZG3-228-610		CHAS,L6
3	83-ZG3-208-010		PULLEY,MOTOR
4	83-ZG3-213-010		LVR,SW
5	83-ZG3-209-610		CAM,SLIDE
6	83-ZG3-207-010		GEAR,TRAY
7	83-ZG3-204-210		GEAR,C
8	83-ZG3-205-010		GEAR,D
9	83-ZG3-217-010		S-SCREW,GEAR D
10	83-ZG3-220-210		GEAR,PULLEY 2
11	83-ZG3-214-010		BELT,L
12	83-ZG3-229-410		TRAY,CD 2
13	83-ZG3-210-110		HLDR,CHUCK
14	83-ZG3-602-010		RING,MAG
15	83-ZG3-212-010		CAP,DISC
16	83-ZG3-211-010		PLATE,DISC
17	81-ZG1-254-010		S-SCREW,MECH HLDR
A	87-067-945-110		VFT2+3-12(F10)
B	87-251-071-410		U+2.6-4
C	87-512-074-210		SCREW, 2+2.6-8
D	87-352-075-210		VT2+2.6-10

CD MECHANISM EXPLOVED VIEW 2 / 2



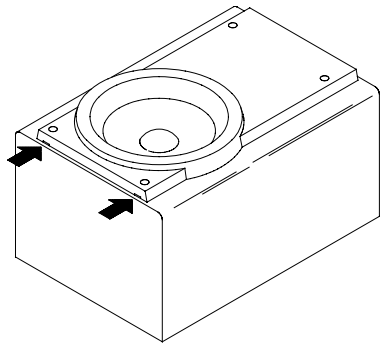
CD MECHANISM PARTS LIST 2 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-262-010		CHAS ASSY,E3
2	87-A90-836-010		PICKUP,KSS-213F
3	83-ZG2-235-010		GEAR,A3
4	83-ZG2-236-010		GEAR,MOTOR 3
5	83-ZG2-205-310		GEAR,B
6	83-ZG2-253-010		SHAFT,SLIDE 5
A	87-261-032-210		V+2-3

GENERAL SPEAKER DISASSEMBLY INSTRUCTIONS (FOR REFERENCE)

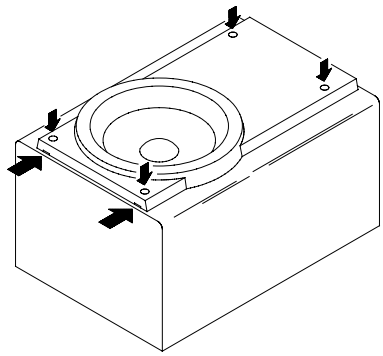
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



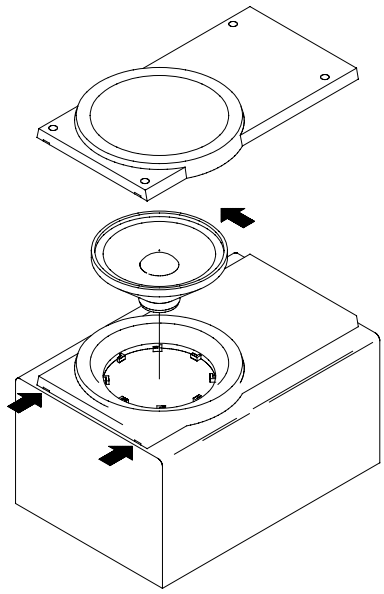
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

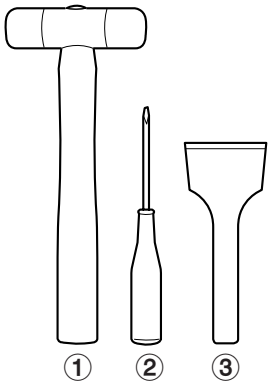


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

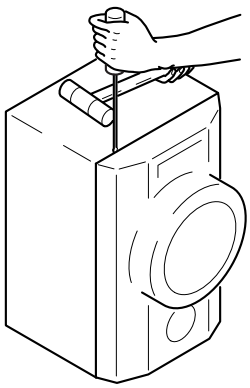


Fig-1

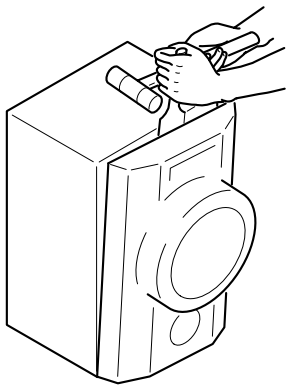


Fig-2

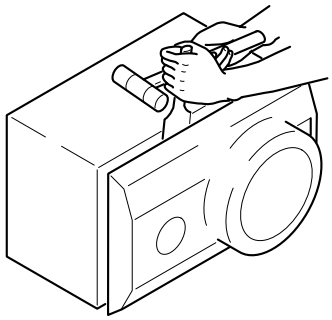


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST (SX-LM191<YJMN>)

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CP9-002-010		PANEL,FR
2	8B-CP9-003-010		RING,TW
3	8B-CP9-004-010		GRILLE,FRAME ASSY
4	8A-CL9-163-010		SPKR, CERAMIC
5	8A-CL9-164-010		CORD, SP

SPEAKER PARTS LIST (SX-LM171<YJSN>)

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CPW-001-010		CABI,FR
2	8B-CPW-002-010		CABI,REAR
3	8B-CPW-003-010		GRILLE,FRAME ASSY L
4	8A-CL9-164-010		CORD, SP
5	8A-CL9-163-010		SPKR, CERAMIC
6	8B-CPW-602-010		SPKR, 110 160HMS

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