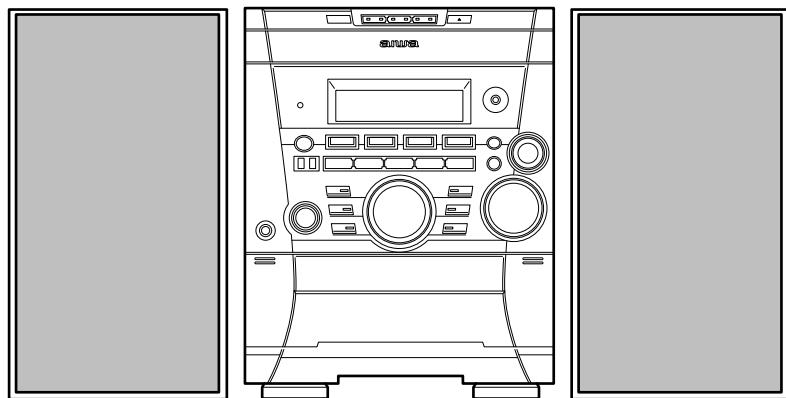




**NSX-TR77**

U(S)



# SERVICE MANUAL

CD STEREO SYSTEM

BASIC TAPE MECHANISM : ZZM-3 YPR3NC  
BASIC CD MECHANISM : BZG-2 ZD5GNC2

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
NSX-TR77	CX-SNTR77	SX-SNTR77	RC-CAS02

**aiwa**

S/M Code No. 09-029-361-6N1



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## SPECIFICATIONS -1/1

### MAIN UNIT CX-NTR77 (U)

#### TUNER

FM tuning range	87.5 MHz to 108 MHz
FM usable sensitivity (IHF)	13.2 dBf
FM antenna terminal	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 $\mu$ V/m
AM antenna	Loop antenna

#### AMPLIFIER

Power output	120 W + 120 W (40 Hz - 20 kHz, THD less than 1 %, 6 ohms)
	150 W + 150 W (1 kHz, THD less than 10 %, 6 ohms)
Total harmonic distortion	0.08 % (75 W, 1 kHz, 6 ohms, DIN AUDIO)
Input	VIDEO/AUX: 700 mV
Outputs	SPEAKERS: 6 ohms or more 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	DECK 1: playback x 1 DECK 2: recording/playback x 1, erase x 1

#### CD PLAYER

Laser	Semiconductor laser ( $\lambda = 780$ nm)
D/A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)

### GENERAL

Power requirements	120 V AC, 60 Hz
Power consumption	130 W
Power consumption in standby mode	With ECO mode on: 0.6 W With ECO mode off: 25 W
Dimensions (W x H x D)	260 x 324 x 391 mm (10 1/4 x 12 7/8 x 15 1/2 in.)
Weight	8.7 kg (19 lbs 3 oz)

### FRONT SPEAKERS SX-NTR77

Speaker system	3 way, bass reflex
Speaker units	Woofer: 120 mm (4 3/4 in.) cone x 3 Tweeter: 60 mm (2 3/8 in.) cone Super tweeter: 20 mm (13/16 in.) ceramic
Impedance	6 ohms
Dimensions (W x H x D)	275 x 370 x 297 mm (10 7/8 x 14 5/8 x 11 3/4 in.)
Weight	5.1 kg (11 lbs 4 oz)

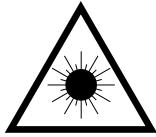
Specifications and external appearance are subject to change without notice.

# PROTECTION OF EYES FROM LASER BEAM DURING SERVICING -1/1

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 Käytäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittäville näkymättömälle lasersäteilylle.

## VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig 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

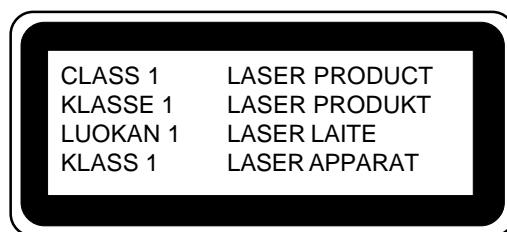
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

## ADVARSEL

Usynlig laserståling ved åbning, når sikkerhedsafbrydere er 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.



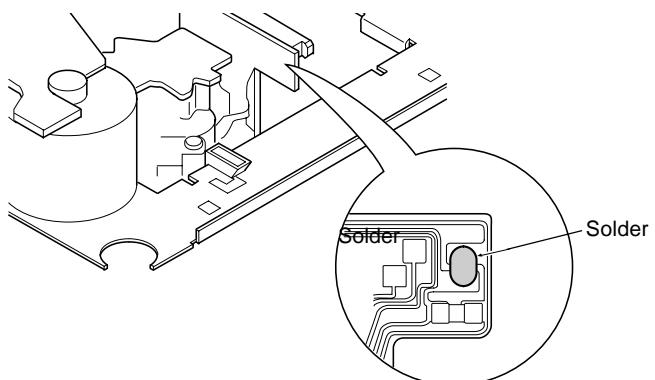
## Precaution to replace Optical block

### (KSM-213RSCM)

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.

CD PICK-UP Assy PWB



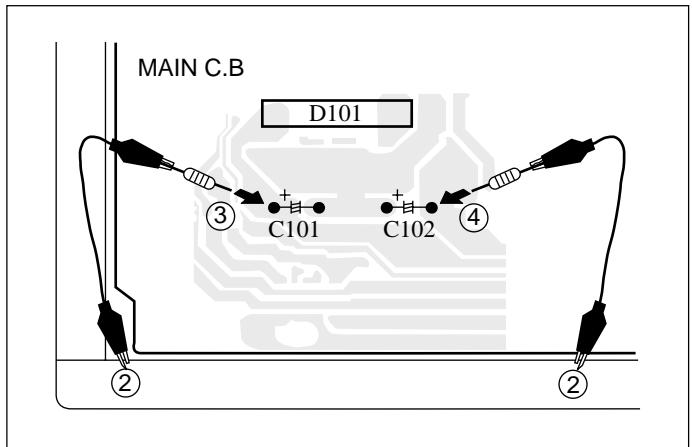
## NOTE ON BEFORE STARTING REPAIR -1/2

### 1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, secondary defect can occur. In order to prevent the secondary trouble, perform the following measures before starting repair work.

#### Discharge procedure

- ① Remove the AC power cord.
- ② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
- ③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
- ④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
- ⑤ Check that voltage across C101 and C102 has decreased to 1 V or less using a multimeter or an oscilloscope.



Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor ( $\Omega$ )	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitors on schematic diagram before starting the discharging work.

### 2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

#### 2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly.

When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.

When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- Good or no good judgement of the MICROCOMPUTER

- ① Turn on the AC main power.
- ② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
- ③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

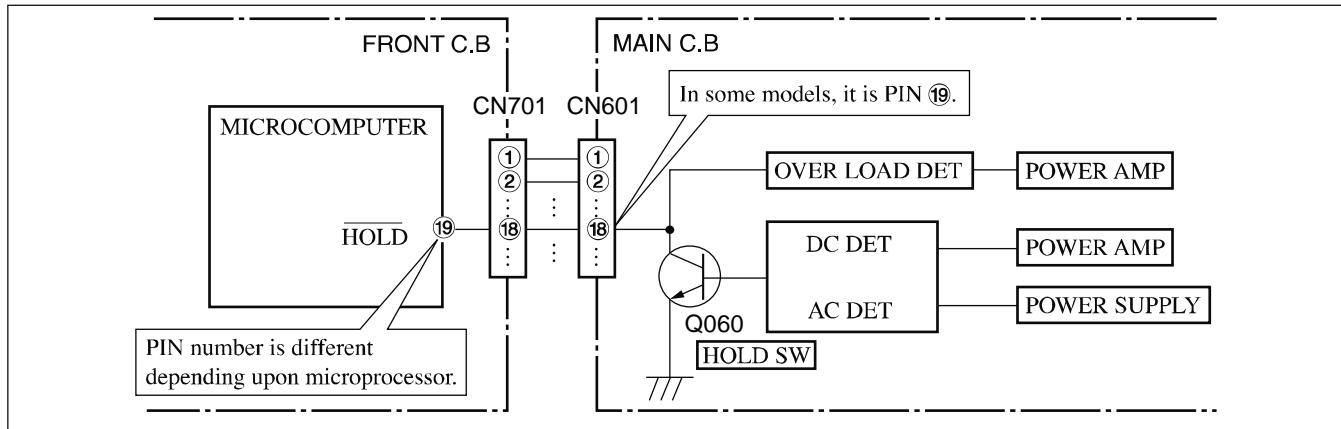


Fig-2-1

## NOTE ON BEFORE STARTING REPAIR -2/2

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

### 2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.

When the above described phenomenon occurs, it can lead to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

- ① Remove the AC power cord.

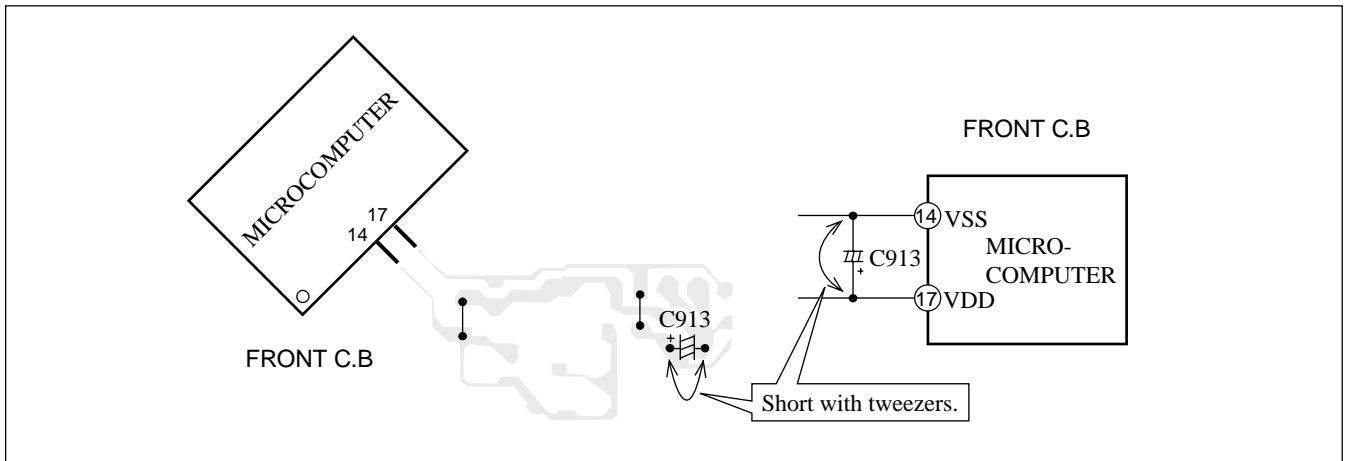


Fig-2-2

- ② Short both ends of the electrolytic capacitor C913 that is connected to VDD of the MICROCOMPUTER with tweezers.
- ③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q060) and electrolytic capacitor (C913) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

### 2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

# ACCESSORIES PARTS LIST -1/1

! =  SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					CX-SNTR77 USTC
O	AS1001	8C-NFT-903-010	IB,U (ESF) BF	NSX-TR77	a
O	AS1002	8C-NF5-701-010	RC UNIT,RC-CAS02	ALPS	a
O	AS1003	87-006-225-110	ANT,LOOP ANT	NC2	a
O	AS1004	87-A92-345-110	ANT, WIRE FM(SEMI-ST)		a
X	AS1007	87-B50-053-010	WARR-CARD,USA	CUST/AV,VISUAL	a
X	AS1008	87-B40-034-010	LBL,USA	1-800	a
X	AS1009	87-B40-085-010	BAG,PV	0.04-200-350 PL	a

# ELECTRICAL PARTS LIST - 1/16

! = SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
FRONT	O C	0108	87-010-785-080	C-CAP, U 0.015-25 K B GRM	CX-SNTR77 USTC
FRONT	O C	0153	87-010-787-080	C-CAP, U 0.022-25 K B GRM	a
FRONT	O C	0154	87-010-246-040	CAP, E 47-35 M 11L SME	a
FRONT	O C	0155	87-010-404-040	CAP, E 4.7-50 M 11L SME	a
FRONT	O C	0156	87-010-404-040	CAP, E 4.7-50 M 11L SME	a
FRONT	O C	0201	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
FRONT	O C	0202	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
FRONT	O C	0203	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
FRONT	O C	0204	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
FRONT	O C	0301	87-012-278-080	C-CAP, U 2200P-50 K B GRM	a
FRONT	O C	0351	87-A10-353-080	C-CAP, U 0.22-10 K B	a
FRONT	O C	0383	87-A12-319-080	C-CAP, U 0.1-25 K B	a
FRONT	O C	0384	87-A12-319-080	C-CAP, U 0.1-25 K B	a
FRONT	O C	0385	87-A12-319-080	C-CAP, U 0.1-25 K B	a
FRONT	O C	0386	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
FRONT	O C	0387	87-A12-319-080	C-CAP, U 0.1-25 K B	a
FRONT	O C	0601	87-010-260-040	CAP, E 47-25 M 11L SME	a
FRONT	O C	0911	87-012-274-080	C-CAP, U 1000P-50 K B GRM	a
FRONT	O C	0912	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
FRONT	O C	0913	87-010-248-040	CAP, E 220-10 M 11L SME	a
FRONT	O C	0915	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	CX-SNTR77 USTC
FRONT	O C	0916	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
FRONT	O C	0917	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
FRONT	O C	0919	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
FRONT	O C	0920	87-010-829-080	C-CAP, U 0.047-16 Z F CM/CB	a
FRONT	O C	0921	87-012-282-080	C-CAP, U 4700P-50 K B GRM	a
FRONT	O C	0951	87-012-176-080	C-CAP, U 15P-50 J CH GRM	a
FRONT	O C	0952	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
FRONT	O C	0953	87-012-145-080	C-CAP, S 270P-50 J CH GRM	a
FRONT	O C	0954	87-012-184-080	C-CAP, U 33P-50 J CH GRM	a
FRONT	O C	0955	87-012-184-080	C-CAP, U 33P-50 J CH GRM	a
FRONT	O C	0961	87-010-406-040	CAP, E 22-50 M 11L SME	a
FRONT	O C	0963	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
FRONT	O CN	0104	87-099-013-010	CONN, 11P V BLK 6216	a
FRONT	O CN	0201	87-099-199-010	CONN, 6P H BLK 6216	a
FRONT	O CN	0301	87-099-030-010	CONN, 13P H BLK 6216	a
FRONT	O CN	0701	87-099-720-010	CONN, 30P BLK TYK-B(P)	a
FRONT	O CN	0731	87-099-196-010	CONN, 8P V BLK 6216	a
FRONT	S D	0104	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0301	87-A40-748-080	ZENER, UZ5.6BSA	a
FRONT	S D	0302	87-020-465-080	DIODE, 1SS133	CX-SNTR77 USTC
FRONT	S D	0305	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0306	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0381	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0382	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0383	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0384	87-020-465-080	DIODE, 1SS133	a
FRONT	S D	0385	87-A40-802-080	ZENER, UZ5.1BSC	a
FRONT	S D	0601	87-A40-269-040	C-DIODE, MC2836	a
FRONT	O FL	0901	8C-NFT-601-010	FL, CNF-T BJ890GNK	a
FRONT	S IC	0381	87-A21-023-040	C-IC, BA3835F	a
FRONT	S IC	0601	87-A21-021-040	C-IC, BU2099FV	a
FRONT	S IC	0901	8C-NFT-602-030	C-IC, LC876764A-50J3	a
FRONT	S IC	0961	87-A21-831-010	IC, SPS-442-1-F1	a
FRONT	O JR	0601	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O JR	0617	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O JR	0619	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	X JW	0937	88-121-101-080	RES, 100-1/8W J	a
FRONT	O L	0951	8C-NFT-603-010	COIL, CLK9.43MHZ POT	a
FRONT	O LED0201	87-A40-317-080	LED, SLR-342VCT31 RED	a	
FRONT	S Q	0102	87-A30-076-040	C-TR, ZSC3052F	CX-SNTR77 USTC
FRONT	S Q	0103	87-A30-538-040	C-TR, SRA2202S	a
FRONT	S Q	0301	87-A30-494-080	TR, 2SA1980G	a
FRONT	S Q	0302	87-A30-076-040	C-TR, 2SC3052F	a
FRONT	S Q	0303	87-A30-076-040	C-TR, 2SC3052F	a
FRONT	S Q	0601	87-A30-495-080	TR, 2SA1981Y	a
FRONT	S Q	0602	87-A30-495-080	TR, 2SA1981Y	a
FRONT	S Q	0603	89-112-965-080	TR, 2SA1296GR	a
FRONT	S Q	0901	87-A30-538-040	C-TR, SRA2202S	a
FRONT	O R	0109	88-108-224-080	C-RES, U 220K-1/16W J	a
FRONT	O R	0110	88-108-153-080	C-RES, U 15K-1/16W J	a
FRONT	X R	0111	88-108-333-080	C-RES, U 33K-1/16W J	a
FRONT	X R	0112	88-108-184-080	C-RES, U 180K-1/16W J	a
FRONT	O R	0114	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	X R	0115	88-108-183-080	C-RES, U 18K-1/16W J	a
FRONT	X R	0116	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0150	88-128-332-080	C-RES, 3.3K-1/8W J	a
FRONT	X R	0151	88-100-000-010	JUMPER WIRE, PLATING	a
FRONT	X R	0152	88-100-000-010	JUMPER WIRE, PLATING	a
FRONT	X R	0153	88-118-821-080	C-RES, S 820-1/10W J	a

# ELECTRICAL PARTS LIST - 2/16

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
FRONT	X R	0154	88-118-821-080	C-RES, S 820-1/10W J	CX-SNTR77 USTC
FRONT	X R	0155	88-128-332-080	C-RES, 3.3K-1/8W J	a
FRONT	X R	0159	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0160	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0161	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0162	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0163	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0164	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0165	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0166	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0206	88-130-561-080	RES, 560-1/4W J	a
FRONT	X R	0207	88-130-561-080	RES, 560-1/4W J	a
FRONT	X R	0208	88-121-182-080	RES, 1.8K-1/8W J	a
FRONT	X R	0211	88-130-561-080	RES, 560-1/4W J	a
FRONT	X R	0212	88-130-561-080	RES, 560-1/4W J	a
FRONT	O R	0213	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0215	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0216	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0218	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	X R	0301	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0302	88-108-472-080	C-RES, U 4.7K-1/16W J	CX-SNTR77 USTC
FRONT	O R	0303	88-108-153-080	C-RES, U 15K-1/16W J	a
FRONT	O R	0304	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	X R	0306	88-108-471-080	C-RES, U 470-1/16W J	a
FRONT	O R	0321	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0341	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0351	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0352	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	X R	0353	88-108-821-080	C-RES, U 820-1/16W J	a
FRONT	X R	0354	88-108-122-080	C-RES, U 1.2K-1/16W J	a
FRONT	X R	0360	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	O R	0361	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	X R	0380	88-108-393-080	C-RES, U 39K-1/16W J	a
FRONT	X R	0384	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0386	88-108-273-080	C-RES, U 27K-1/16W J	a
FRONT	X R	0387	88-108-273-080	C-RES, U 27K-1/16W J	a
FRONT	X R	0388	88-108-273-080	C-RES, U 27K-1/16W J	a
FRONT	X R	0390	88-121-391-080	RES, 390-1/8W J	a
FRONT	X R	0391	88-108-472-080	C-RES, U 4.7K-1/16W J	a
FRONT	X R	0392	88-108-472-080	C-RES, U 4.7K-1/16W J	a
FRONT	X R	0393	88-108-472-080	C-RES, U 4.7K-1/16W J	a
FRONT	X R	0394	88-108-472-080	C-RES, U 4.7K-1/16W J	a
FRONT	O R	0397	88-108-223-080	C-RES, U 22K-1/16W J	a
FRONT	X R	0420	88-108-000-080	C-JUMPER, U	a
FRONT	O R	0601	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	X R	0602	88-108-222-080	C-RES, U 2.2K-1/16W J	a
FRONT	O R	0603	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	X R	0604	88-108-222-080	C-RES, U 2.2K-1/16W J	a
FRONT	O R	0605	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0606	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	X R	0607	88-108-000-080	C-JUMPER, U	a
FRONT	O R	0611	88-108-473-080	C-RES, U 47K-1/16W J	a
FRONT	O R	0612	88-108-473-080	C-RES, U 47K-1/16W J	a
FRONT	O R	0613	88-108-473-080	C-RES, U 47K-1/16W J	a
FRONT	O R	0614	88-108-473-080	C-RES, U 47K-1/16W J	a
FRONT	O R	0615	88-108-473-080	C-RES, U 47K-1/16W J	a
FRONT	O R	0616	88-108-473-080	C-RES, U 47K-1/16W J	a
FRONT	O R	0618	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0620	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0704	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0705	88-108-102-080	C-RES, U 1K-1/16W J	CX-SNTR77 USTC
FRONT	O R	0706	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0707	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0708	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0709	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0710	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0711	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0712	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	X R	0716	88-108-472-080	C-RES, U 4.7K-1/16W J	a
FRONT	X R	0719	88-121-100-080	RES, 10-1/8W J	a
FRONT	O R	0721	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0730	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0732	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0733	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0734	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0735	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0740	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	O R	0741	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0742	88-108-102-080	C-RES, U 1K-1/16W J	a
FRONT	X R	0743	88-108-474-080	C-RES, U 470K-1/16W J	a

# ELECTRICAL PARTS LIST - 3/16

! = SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
FRONT	X R	0749	88-108-474-080	C-RES, U 470K-1/16W J	CX-SNTR77 USTC
FRONT	X R	0901	88-108-685-080	C-RES, U 6.8M-1/16W J	a
FRONT	O R	0903	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	O R	0906	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	X R	0907	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0908	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0909	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0910	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0911	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0912	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0913	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0914	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0915	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0916	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0921	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0922	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0923	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0924	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0925	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0926	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0927	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0928	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0929	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0930	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0931	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0932	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0933	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0934	88-108-683-080	C-RES, U 68K-1/16W J	a
FRONT	X R	0935	88-108-683-080	C-RES, U 68K-1/16W J	a
FRONT	X R	0937	88-121-102-080	RES, 1K-1/8W J	a
FRONT	X R	0940	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0946	88-108-000-080	C-JUMPER, U	a
FRONT	X R	0947	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0948	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0949	88-108-000-080	C-JUMPER, U	a
FRONT	O R	0951	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0961	88-108-101-080	C-RES, U 100-1/16W J	a
FRONT	O R	0963	88-108-563-080	C-RES, U 56K-1/16W J	a
FRONT	X R	0964	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0965	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0966	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0967	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0968	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	O R	0969	88-108-103-080	C-RES, U 10K-1/16W J	a
FRONT	X R	0970	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0971	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0972	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0973	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0974	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0975	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0976	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0977	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0978	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0979	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0980	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0982	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0983	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0984	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0985	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0986	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0987	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0988	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0989	88-108-104-080	C-RES, U 100K-1/16W J	a
FRONT	X R	0999	88-108-104-080	C-RES, U 100K-1/16W J	a
HP	O CNA0201	8C-NFT-604-010	CONN ASSY, 5P V CNF-T		a
HP	O J	0201	87-A61-546-010	JACK, 3.5 BLAK ST W/SW HST3000	a
HP	X R	0205	88-128-392-080	C-RES, 3.9K-1/8W J	a
HP	X R	0206	88-128-392-080	C-RES, 3.9K-1/8W J	a
HP	X R	0243	88-140-221-080	RES, 220-1/2W J	a
HP	X R	0244	88-140-221-080	RES, 220-1/2W J	a
HP	X R	0245	88-140-221-080	RES, 220-1/2W J	a
HP	X R	0246	88-140-221-080	RES, 220-1/2W J	a
HP	X R	0265	88-128-222-080	C-RES, 2.2K-1/8W J	a
HP	X R	0266	88-128-222-080	C-RES, 2.2K-1/8W J	a
KEY	O C	0302	87-012-274-080	C-CAP, U 100P-50 K B GRM	a
KEY	O C	0303	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0304	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0305	87-012-274-080	C-CAP, U 100P-50 K B GRM	a
KEY	O C	0306	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0307	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a

# ELECTRICAL PARTS LIST - 4/16

! = SAFETY PARTS  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
KEY	O C	0308	87-012-274-080	C-CAP, U 1000P-50 K B GRM	CX-SNTR77 USTC
KEY	O C	0309	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0310	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0311	87-012-274-080	C-CAP, U 1000P-50 K B GRM	a
KEY	O C	0312	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0317	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0318	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
KEY	O C	0319	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0320	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O C	0321	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
KEY	O CN	0302	87-099-015-010	CONN, 13P V BLK 6216	a
KEY	O LED0205	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0206	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0207	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0208	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0209	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0210	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0211	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0212	87-A40-317-080	LED, SLR-342VCT31 RED	a	
KEY	O LED0216	87-A40-589-040	LED, SLR-56VCT31 RED	a	
KEY	O LED0217	87-A40-589-040	LED, SLR-56VCT31 RED	CX-SNTR77 USTC	
KEY	O LED0218	87-A40-589-040	LED, SLR-56VCT31 RED	a	
KEY	O LED0219	87-A40-589-040	LED, SLR-56VCT31 RED	a	
KEY	O LED0220	87-A40-589-040	LED, SLR-56VCT31 RED	a	
KEY	O LED0221	87-A40-589-040	LED, SLR-56VCT31 RED	a	
KEY	X R	0307	88-108-683-080	C-RES, U 68K-1/16W J	a
KEY	O R	0308	88-108-153-080	C-RES, U 15K-1/16W J	a
KEY	X R	0309	88-108-683-080	C-RES, U 68K-1/16W J	a
KEY	O R	0310	88-108-153-080	C-RES, U 15K-1/16W J	a
KEY	X R	0311	88-108-683-080	C-RES, U 68K-1/16W J	a
KEY	O R	0312	88-108-153-080	C-RES, U 15K-1/16W J	a
KEY	X R	0313	88-108-683-080	C-RES, U 68K-1/16W J	a
KEY	O R	0314	88-108-153-080	C-RES, U 15K-1/16W J	a
KEY	X R	0316	88-108-184-080	C-RES, U 180K-1/16W J	a
KEY	O R	0317	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	X R	0318	88-108-184-080	C-RES, U 180K-1/16W J	a
KEY	O R	0319	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	X R	0322	88-121-102-080	RES, 1K-1/8W J	a
KEY	X R	0323	88-108-821-080	C-RES, U 820-1/16W J	a
KEY	X R	0324	88-121-102-080	RES, 1K-1/8W J	a
KEY	X R	0325	88-108-122-080	C-RES, U 1.2K-1/16W J	CX-SNTR77 USTC
KEY	X R	0326	88-108-122-080	C-RES, U 1.2K-1/16W J	a
KEY	X R	0327	88-108-182-080	C-RES, U 1.8K-1/16W J	a
KEY	X R	0328	88-108-182-080	C-RES, U 1.8K-1/16W J	a
KEY	O R	0329	88-108-272-080	C-RES, U 2.7K-1/16W J	a
KEY	O R	0330	88-108-332-080	C-RES, U 3.3K-1/16W J	a
KEY	X R	0331	88-108-472-080	C-RES, U 4.7K-1/16W J	a
KEY	X R	0332	88-108-682-080	C-RES, U 6.8K-1/16W J	a
KEY	O R	0333	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	X R	0334	88-108-184-080	C-RES, U 180K-1/16W J	a
KEY	O R	0335	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	X R	0336	88-108-184-080	C-RES, U 180K-1/16W J	a
KEY	O R	0337	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	O R	0342	88-108-102-080	C-RES, U 1K-1/16W J	a
KEY	X R	0343	88-121-821-080	RES, 820-1/8W J	a
KEY	O R	0344	88-108-102-080	C-RES, U 1K-1/16W J	a
KEY	X R	0345	88-108-122-080	C-RES, U 1.2K-1/16W J	a
KEY	X R	0346	88-108-122-080	C-RES, U 1.2K-1/16W J	a
KEY	X R	0347	88-108-182-080	C-RES, U 1.8K-1/16W J	a
KEY	X R	0348	88-121-103-080	RES, 10K-1/8W J	a
KEY	O R	0349	88-108-103-080	C-RES, U 10K-1/16W J	CX-SNTR77 USTC
KEY	O R	0350	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	O R	0362	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	O R	0363	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	O R	0364	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	O R	0365	88-108-103-080	C-RES, U 10K-1/16W J	a
KEY	X R	0366	88-118-102-080	C-RES, S 1K-1/10W J	a
KEY	X R	0367	88-118-102-080	C-RES, S 1K-1/10W J	a
KEY	X R	0368	88-118-102-080	C-RES, S 1K-1/10W J	a
KEY	X R	0369	88-118-102-080	C-RES, S 1K-1/10W J	a
KEY	X R	0370	88-118-102-080	C-RES, S 1K-1/10W J	a
KEY	X R	0371	88-118-102-080	C-RES, S 1K-1/10W J	a
KEY	X R	0372	88-121-101-080	RES, 100-1/8W J	a
KEY	O S	0321	87-A90-095-080	SW, TACT EVQ11G04M	a
KEY	O S	0322	87-A90-095-080	SW, TACT EVQ11G04M	a
KEY	O S	0323	87-A90-095-080	SW, TACT EVQ11G04M	a
KEY	O S	0324	87-A90-095-080	SW, TACT EVQ11G04M	a
KEY	O S	0325	87-A90-095-080	SW, TACT EVQ11G04M	a
KEY	O S	0326	87-A90-095-080	SW, TACT EVQ11G04M	a
KEY	O S	0327	87-A90-095-080	SW, TACT EVQ11G04M	a

# ELECTRICAL PARTS LIST - 5/16

! = SAFTY PARTS  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
KEY	O S	0328	87-A90-095-080	SW, TACT	CX-SNTR77 EVQ11G04M USTC
KEY	O S	0329	87-A90-095-080	SW, TACT	a
KEY	O S	0330	87-A90-095-080	SW, TACT	a
KEY	O S	0331	87-A90-095-080	SW, TACT	a
KEY	O S	0332	87-A90-095-080	SW, TACT	a
KEY	O S	0333	87-A90-095-080	SW, TACT	a
KEY	O S	0341	87-A90-095-080	SW, TACT	a
KEY	O S	0342	87-A90-095-080	SW, TACT	a
KEY	O S	0343	87-A90-095-080	SW, TACT	a
KEY	O S	0344	87-A90-095-080	SW, TACT	a
KEY	O S	0345	87-A90-095-080	SW, TACT	a
KEY	O S	0346	87-A90-095-080	SW, TACT	a
KEY	O S	0347	87-A90-095-080	SW, TACT	a
KEY	O S	0360	87-A92-249-010	SW, RTRY	a
KEY	O S	0361	87-A92-359-010	SW, RTRY	a
KEY	O S	0362	87-A92-359-010	SW, RTRY	a
KEY	O S	0363	87-A92-273-110	SW, RTRY	a
LED	O CN	0202	87-099-194-010	CONN, 6P V BLK	a
LED	S IC	0301	87-070-289-040	C-IC, BU2092F	a
LED	O LED0202	87-A40-317-080	LED, SLR-342VCT31	RED	a
LED	O LED0203	87-A40-317-080	LED, SLR-342VCT31	RED	a
LED	O LED0204	87-A40-317-080	LED, SLR-342VCT31	RED	a
LED	O LED0213	87-A40-317-080	LED, SLR-342VCT31	RED	a
LED	O LED0214	87-A40-317-080	LED, SLR-342VCT31	RED	a
LED	O LED0215	87-A40-317-080	LED, SLR-342VCT31	RED	a
LED	X R	0201	88-121-821-080	RES, 820-1/8W J	a
LED	X R	0202	88-121-821-080	RES, 820-1/8W J	a
LED	X R	0203	88-121-821-080	RES, 820-1/8W J	a
LED	X R	0355	88-108-122-080	C-RES, U 1.2K-1/16W J	a
LED	X R	0356	88-108-122-080	C-RES, U 1.2K-1/16W J	a
LED	X R	0357	88-108-182-080	C-RES, U 1.8K-1/16W J	a
LED	X R	0358	88-108-182-080	C-RES, U 1.8K-1/16W J	a
LED	X R	0359	88-108-273-080	C-RES, U 27K-1/16W J	a
LED	O S	0355	87-A90-095-080	SW, TACT	a
LED	O S	0356	87-A90-095-080	SW, TACT	a
LED	O S	0357	87-A90-095-080	SW, TACT	a
LED	O S	0358	87-A90-095-080	SW, TACT	a
LED	O S	0359	87-A90-095-080	SW, TACT	a
MAIN	O C	0003	87-A12-317-080	C-CAP, U 0.1-50 Z F	a
MAIN	O C	0004	87-A12-317-080	C-CAP, U 0.1-50 Z F	a
MAIN	O C	0005	87-A12-317-080	C-CAP, U 0.1-50 Z F	a
MAIN	O C	0006	87-A12-317-080	C-CAP, U 0.1-50 Z F	a
MAIN	O C	0009	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0010	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0011	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0012	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0013	87-012-282-080	C-CAP, U 4700P-50 K B GRM	a
MAIN	O C	0014	87-010-260-080	CAP, E 47-25 M 11L SME	a
MAIN	O C	0015	87-010-263-080	CAP, E 100-10 M 11L SME	a
MAIN	O C	0016	87-012-282-080	C-CAP, U 4700P-50 K B GRM	a
MAIN	O C	0019	87-A12-875-000	CAP, E 3300-65 M 85 IV	a
MAIN	O C	0020	87-A12-875-000	CAP, E 3300-65 M 85 IV	a
MAIN	O C	0021	87-A12-830-000	CAP, E 4700-35 M 85 GS	a
MAIN	O C	0022	87-A12-830-000	CAP, E 4700-35 M 85 GS	a
MAIN	O C	0031	87-010-263-080	CAP, E 100-10 M 11L SME	a
MAIN	O C	0034	87-010-260-080	CAP, E 47-25 M 11L SME	a
MAIN	O C	0035	87-010-404-080	CAP, E 4.7-50 M 11L SME	a
MAIN	O C	0036	87-010-260-080	CAP, E 47-25 M 11L SME	a
MAIN	O C	0060	87-010-403-080	CAP, E 3.3-50 M 11L SME	a
MAIN	O C	0061	87-010-260-080	CAP, E 47-25 M 11L SME	a
MATIN	O C	0083	87-010-235-080	CAP, E 470-16 M SME	CX-SNTR77 USTC
MATIN	O C	0097	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0101	87-012-278-080	C-CAP, U 2200P-50 K B GRM	a
MAIN	O C	0102	87-012-278-080	C-CAP, U 2200P-50 K B GRM	a
MAIN	O C	0103	87-010-545-080	CAP, E 0.22-50 M 11L SME	a
MAIN	O C	0104	87-010-545-080	CAP, E 0.22-50 M 11L SME	a
MAIN	O C	0105	87-012-280-080	C-CAP, U 3300P-50 K B GRM	a
MAIN	O C	0106	87-012-280-080	C-CAP, U 3300P-50 K B GRM	a
MAIN	O C	0107	87-010-405-080	CAP, E 10-50 M 11L SME	a
MAIN	O C	0108	87-010-405-080	CAP, E 10-50 M 11L SME	a
MAIN	O C	0111	87-010-392-080	CAP, E 33-35 M 11L SME	a
MAIN	O C	0112	87-010-392-080	CAP, E 33-35 M 11L SME	a
MAIN	O C	0113	87-A10-596-080	C-CAP, S 100P-100 J CH	a
MAIN	O C	0114	87-A10-596-080	C-CAP, S 100P-100 J CH	a
MAIN	O C	0117	87-A12-317-080	C-CAP, U 0.1-50 Z F	a
MAIN	O C	0118	87-A12-317-080	C-CAP, U 0.1-50 Z F	a
MAIN	O C	0119	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0120	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0121	87-010-401-080	CAP, E 1-50 M 11L SME	a
MAIN	O C	0122	87-010-401-080	CAP, E 1-50 M 11L SME	a

# ELECTRICAL PARTS LIST - 6/16

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	O C	0123	87-010-177-080	C-CAP,S 820P-50 J SL C2012	CX-SNTR77 USTC
MAIN	O C	0124	87-010-177-080	C-CAP,S 820P-50 J SL C2012	a
MAIN	O C	0125	87-A10-596-080	C-CAP,S 100P-100 J CH	a
MAIN	O C	0126	87-A10-596-080	C-CAP,S 100P-100 J CH	a
MAIN	O C	0133	87-012-282-080	C-CAP,U 4700P-50 K B GRM	a
MAIN	O C	0140	87-012-278-080	C-CAP,U 2200P-50 K B GRM	a
MAIN	O C	0186	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0187	87-A12-890-080	CAP,E 10-63 VR	a
MAIN	O C	0188	87-A12-890-080	CAP,E 10-63 VR	a
MAIN	O C	0193	87-012-273-080	C-CAP,U 820P-50 K B GRM	a
MAIN	O C	0194	87-012-273-080	C-CAP,U 820P-50 K B GRM	a
MAIN	O C	0225	87-A12-317-080	C-CAP,U 0.1-50 Z F	a
MAIN	O C	0226	87-A12-317-080	C-CAP,U 0.1-50 Z F	a
MAIN	O C	0227	87-A12-317-080	C-CAP,U 0.1-50 Z F	a
MAIN	O C	0228	87-A12-317-080	C-CAP,U 0.1-50 Z F	a
MAIN	O C	0301	87-012-275-080	C-CAP,U 1200P-50 K B GRM	a
MAIN	O C	0302	87-012-275-080	C-CAP,U 1200P-50 K B GRM	a
MAIN	O C	0303	87-012-275-080	C-CAP,U 1200P-50 K B GRM	a
MAIN	O C	0304	87-012-275-080	C-CAP,U 1200P-50 K B GRM	a
MAIN	O C	0305	87-012-270-080	C-CAP,U 470P-50 K B GRM	a
MAIN	O C	0306	87-012-274-080	C-CAP,U 1000P-50 K B GRM	CX-SNTR77 USTC
MAIN	O C	0363	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0451	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0452	87-010-406-080	CAP,E 22-50 M 11L SME	a
MAIN	O C	0453	87-012-279-080	C-CAP,U 2700P-50 K B GRM	a
MAIN	O C	0454	87-012-279-080	C-CAP,U 2700P-50 K B GRM	a
MAIN	O C	0455	87-012-279-080	C-CAP,U 2700P-50 K B GRM	a
MAIN	O C	0456	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a
MAIN	O C	0457	87-A12-361-080	CAP,M 5600P-100 J CP	a
MAIN	O C	0458	87-012-278-080	C-CAP,U 2200P-50 K B GRM	a
MAIN	O C	0459	87-012-271-080	C-CAP,U 560P-50 K B GRM	a
MAIN	O C	0460	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0461	87-012-158-080	C-CAP,S 390P-50 J CH GRM	a
MAIN	O C	0462	87-012-158-080	C-CAP,S 390P-50 J CH GRM	a
MAIN	O C	0463	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0464	87-012-278-080	C-CAP,U 2200P-50 K B GRM	a
MAIN	O C	0601	87-012-188-080	C-CAP,U 47P-50 J CH GRM	a
MAIN	O C	0602	87-012-188-080	C-CAP,U 47P-50 J CH GRM	a
MAIN	O C	0603	87-010-263-080	CAP,E 100-10 M 11L SME	a
MAIN	O C	0604	87-010-263-080	CAP,E 100-10 M 11L SME	a
MAIN	X C	0605	88-700-740-810	CAP,M 6800P-50 J	CX-SNTR77 USTC
MAIN	X C	0606	88-700-740-810	CAP,M 6800P-50 J	a
MAIN	O C	0607	87-012-270-080	C-CAP,U 470P-50 K B GRM	a
MAIN	O C	0608	87-012-270-080	C-CAP,U 470P-50 K B GRM	a
MAIN	O C	0609	87-010-401-080	CAP,E 1-50 M 11L SME	a
MAIN	O C	0610	87-010-401-080	CAP,E 1-50 M 11L SME	a
MAIN	O C	0611	87-012-273-080	C-CAP,U 820P-50 K B GRM	a
MAIN	O C	0612	87-012-273-080	C-CAP,U 820P-50 K B GRM	a
MAIN	X C	0613	88-700-610-810	CAP,M 1000P-50 J	a
MAIN	X C	0614	88-700-610-810	CAP,M 1000P-50 J	a
MAIN	X C	0615	88-700-610-810	CAP,M 1000P-50 J	a
MAIN	X C	0616	88-700-610-810	CAP,M 1000P-50 J	a
MAIN	X C	0617	88-700-810-810	CAP,M 0.01-50 J	a
MAIN	X C	0618	88-700-810-810	CAP,M 0.01-50 J	a
MAIN	X C	0619	88-700-810-810	CAP,M 0.01-50 J	a
MAIN	X C	0620	88-700-810-810	CAP,M 0.01-50 J	a
MAIN	O C	0631	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
MAIN	O C	0632	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
MAIN	O C	0633	87-012-284-080	C-CAP,U 6800P-50 K B GRM	a
MAIN	O C	0634	87-012-284-080	C-CAP,U 6800P-50 K B GRM	a
MAIN	O C	0635	87-012-286-080	C-CAP,U 0.01-25 K B GRM	CX-SNTR77 USTC
MAIN	O C	0636	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a
MAIN	O C	0637	87-012-278-080	C-CAP,U 2200P-50 K B GRM	a
MAIN	O C	0638	87-012-278-080	C-CAP,U 2200P-50 K B GRM	a
MAIN	O C	0641	87-010-401-080	CAP,E 1-50 M 11L SME	a
MAIN	O C	0642	87-010-401-080	CAP,E 1-50 M 11L SME	a
MAIN	O C	0651	87-010-248-080	CAP,E 220-10 M 11L SME	a
MAIN	O C	0652	87-010-260-080	CAP,E 47-25 M 11L SME	a
MAIN	X C	0655	88-700-970-810	CAP,M 0.082-50 J	a
MAIN	X C	0656	88-700-970-810	CAP,M 0.082-50 J	a
MAIN	X C	0657	88-710-399-810	CAP,M 0.68-50 J TFL ECQV	a
MAIN	X C	0658	88-710-399-810	CAP,M 0.68-50 J TFL ECQV	a
MAIN	X C	0659	88-710-399-810	CAP,M 0.68-50 J TFL ECQV	a
MAIN	X C	0660	88-710-399-810	CAP,M 0.68-50 J TFL ECQV	a
MAIN	O C	0663	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0664	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
MAIN	O C	0665	87-010-404-080	CAP,E 4.7-50 M 11L SME	a
MAIN	O C	0666	87-010-404-080	CAP,E 4.7-50 M 11L SME	a
MAIN	O C	0677	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a
MAIN	O C	0771	87-010-263-080	CAP,E 100-10 M 11L SME	a

# ELECTRICAL PARTS LIST - 7/16

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	O C	0772	87-012-286-080	C-CAP, U 0.01-25 K B GRM	CX-SNTR77 USTC
MAIN	X C	0781	88-108-000-080	C-JUMPER, U	a
MAIN	O C	0782	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0783	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0784	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0785	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0786	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0788	87-012-167-080	C-CAP, U 5P-50 C CH GRM	a
MAIN	O C	0789	87-A13-065-080	C-CAP, U 0.027-25 J B	a
MAIN	O C	0790	87-A13-065-080	C-CAP, U 0.027-25 J B	a
MAIN	O C	0791	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0792	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0793	87-010-404-080	CAP, E 4.7-50 M 11L SME	a
MAIN	O C	0795	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0796	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0797	87-010-405-080	CAP, E 10-50 M 11L SME	a
MAIN	O C	0798	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0799	87-010-265-080	CAP, E 33-16 M 11L SME	a
MAIN	O C	0800	87-010-829-080	C-CAP, U 0.047-16 Z F CM/CB	a
MAIN	O C	0801	87-010-403-080	CAP, E 3.3-50 M 11L SME	a
MAIN	O C	0802	87-010-829-080	C-CAP, U 0.047-16 Z F CM/CB	CX-SNTR77 USTC
MAIN	O C	0803	87-010-787-080	C-CAP, U 0.022-25 K B GRM	a
MAIN	O C	0804	87-010-263-080	CAP, E 100-10 M 11L SME	a
MAIN	O C	0807	87-010-400-080	CAP, E 0.47-50 M 11L SME	a
MAIN	O C	0808	87-010-401-080	CAP, E 1-50 M 11L SME	a
MAIN	O C	0809	87-010-401-080	CAP, E 1-50 M 11L SME	a
MAIN	O C	0810	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0814	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0815	87-010-400-080	CAP, E 0.47-50 M 11L SME	a
MAIN	O C	0816	87-010-400-080	CAP, E 0.47-50 M 11L SME	a
MAIN	O C	0821	87-010-405-080	CAP, E 10-50 M 11L SME	a
MAIN	X C	0822	88-108-000-080	C-JUMPER, U	a
MAIN	O C	0823	87-010-177-080	C-CAP, S 820P-50 J SL C2012	a
MAIN	O C	0824	87-010-404-080	CAP, E 4.7-50 M 11L SME	a
MAIN	O C	0825	87-010-596-080	C-CAP, S 0.047-16 K R C2012	a
MAIN	O C	0842	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	X C	0843	88-108-000-080	C-JUMPER, U	a
MAIN	O C	0844	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	X C	0845	88-108-000-080	C-JUMPER, U	a
MAIN	X C	0846	88-108-000-080	C-JUMPER, U	a
MAIN	X C	0847	88-108-000-080	C-JUMPER, U	CX-SNTR77 USTC
MAIN	X C	0848	88-108-000-080	C-JUMPER, U	a
MAIN	X C	0849	88-108-000-080	C-JUMPER, U	a
MAIN	O C	0850	87-010-260-080	CAP, E 47-25 M 11L SME	a
MAIN	O C	0851	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0852	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0853	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0860	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0901	87-012-169-080	C-CAP, U 7P-50 D CH GRM	a
MAIN	X C	0906	88-108-000-080	C-JUMPER, U	a
MAIN	O C	0908	87-012-162-080	C-CAP, U 1P-50 C CH GRM	a
MAIN	O C	0909	87-A10-915-080	C-CAP, U 100P-25 J CH	a
MAIN	O C	0911	87-012-167-080	C-CAP, U 5P-50 C CH GRM	a
MAIN	O C	0912	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
MAIN	O C	0914	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0915	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0917	87-012-164-080	C-CAP, U 2P-50 C CH GRM	a
MAIN	O C	0920	87-012-180-080	C-CAP, U 22P-50 J CH GRM	a
MAIN	O C	0921	87-012-186-080	C-CAP, U 39P-50 J CH GRM	a
MAIN	O C	0922	87-012-174-080	C-CAP, U 12P-50 J CH GRM	a
MAIN	O C	0923	87-A10-039-080	C-CAP, U 470P-50 J CH	CX-SNTR77 USTC
MAIN	O C	0924	87-012-162-080	C-CAP, U 1P-50 C CH GRM	a
MAIN	O C	0926	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
MAIN	O C	0928	87-012-176-080	C-CAP, U 15P-50 J CH GRM	a
MAIN	O C	0931	87-A12-319-080	C-CAP, U 0.1-25 K B	a
MAIN	X C	0940	88-108-000-080	C-JUMPER, U	a
MAIN	O C	0959	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0960	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0961	87-012-169-080	C-CAP, U 7P-50 D CH GRM	a
MAIN	O C	0962	87-010-401-080	CAP, E 1-50 M 11L SME	a
MAIN	O C	0963	87-A12-319-080	C-CAP, U 0.1-25 K B	a
MAIN	O C	0971	87-010-381-080	CAP, E 330-16 M SME	a
MAIN	O C	0972	87-010-404-080	CAP, E 4.7-50 M 11L SME	a
MAIN	O C	0973	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0974	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0979	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
MAIN	O C	0981	87-010-260-080	CAP, E 47-25 M 11L SME	a
MAIN	O C	0982	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0983	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O C	0984	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a

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MAIN	O C	0987	87-012-286-080	C-CAP, U 0.01-25 K B GRM	CX-SNTR77 USTC
MAIN	O C	0991	87-012-176-080	C-CAP, U 15P-50 J CH GRM	a
MAIN	O C	0992	87-012-176-080	C-CAP, U 15P-50 J CH GRM	a
MAIN	O C	0993	87-012-274-080	C-CAP, U 1000P-50 K B GRM	a
MAIN	O C	0995	87-012-274-080	C-CAP, U 1000P-50 K B GRM	a
MAIN	O C	0997	87-010-759-080	C-CAP, U 0.1-25 Z F CM/CB	a
MAIN	O C	0998	87-010-260-080	CAP, E 47-25 M 11L SME	a
MAIN	O C	0999	87-A11-155-080	CAP, TC U 0.01-16 Z F	a
MAIN	O CF	0831	87-008-261-010	FLTR, CF SFE10.7MA5	a
MAIN	O CF	0832	87-008-261-010	FLTR, CF SFE10.7MA5	a
MAIN	X CLP0301	87-A60-884-010	PIN, DIA1 COATING-SHS	a	
MAIN	X CLP0601	87-A60-884-010	PIN, DIA1 COATING-SHS	a	
MAIN	X CLP0602	87-A60-884-010	PIN, DIA1 COATING-SHS	a	
MAIN	O CN	0101	87-009-195-010	CONN, 5P V WHT EH	a
MAIN	O CN	0301	87-A60-620-010	CONN, 3P V 2MM JMT	a
MAIN	O CN	0302	87-A60-625-010	CONN, 8P V 2MM JMT	a
MAIN	O CN	0601	87-099-719-010	CONN, 30P H BLK TYK-B(X)	a
MAIN	O CN	0602	87-A60-131-010	CONN, 6P V FE	a
MAIN	S D	0009	87-A40-839-090	DIODE, G5SBA60L-6088	a
MAIN	S D	0010	87-A40-839-090	DIODE, G5SBA60L-6088	a
MAIN	S D	0011	87-A40-270-040	C-DIODE, MC2838	CX-SNTR77 USTC
MAIN	S D	0012	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0013	87-A40-764-080	ZENER, UZ10BSC	a
MAIN	S D	0029	87-A40-775-080	ZENER, UZ27BSB	a
MAIN	S D	0033	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0041	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0042	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0060	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0063	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0064	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0076	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0077	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0101	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0103	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0104	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0105	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0106	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0107	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0108	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0109	87-A40-488-080	DIODE, ISS244	a
MAIN	S D	0110	87-A40-488-080	DIODE, ISS244	CX-SNTR77 USTC
MAIN	S D	0150	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0160	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0185	87-A40-370-090	DIODE, RK46-P20	a
MAIN	S D	0186	87-A40-370-090	DIODE, RK46-P20	a
MAIN	S D	0187	87-A40-747-080	ZENER, UZ5.1BSB	a
MAIN	S D	0188	87-A40-749-080	ZENER, UZ5.6BSB	a
MAIN	S D	0189	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0190	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0191	87-A40-764-080	ZENER, UZ10BSC	a
MAIN	S D	0192	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0193	87-020-465-080	DIODE, ISS133	a
MAIN	X D	0194	88-100-000-010	JUMPER WIRE, PLATING	a
MAIN	S D	0201	87-020-465-080	DIODE, ISS133	a
MAIN	S D	0280	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0281	87-A40-270-040	C-DIODE, MC2838	a
MAIN	S D	0301	87-A40-269-040	C-DIODE, MC2836	a
MAIN	S D	0661	87-A40-745-080	ZENER, UZ4.7BSA	a
MAIN	S D	0662	87-A40-745-080	ZENER, UZ4.7BSA	a
MAIN	X D	0801	88-100-000-010	JUMPER WIRE, PLATING	a
MAIN	S D	0803	87-020-465-080	DIODE, ISS133	CX-SNTR77 USTC
MAIN	O D	0902	87-A40-916-040	C-VARI-CAP, HVC202A	a
MAIN	O D	0903	87-A40-916-040	C-VARI-CAP, HVC202A	a
MAIN	X D	0944	88-100-000-010	JUMPER WIRE, PLATING	a
MAIN	O D	0951	87-A40-799-040	C-VARI-CAP, KV1610S	a
MAIN	S D	0991	87-017-149-080	ZENER, HZS6A2L	a
MAIN	S D	0994	87-020-465-080	DIODE, ISS133	a
MAIN	X FB	0601	88-108-000-080	C-JUMPER, U	a
MAIN	X FB	0602	88-108-000-080	C-JUMPER, U	a
MAIN	X FB	0603	88-100-000-010	JUMPER WIRE, PLATING	a
MAIN	S IC	0001	87-A21-364-010	IC, NJM7806FA(A)	a
MAIN	S IC	0601	87-A22-235-040	C-IC, M61518FP	a
MAIN	S IC	0602	87-017-022-080	C-IC, NJM2068M-D (T1)	a
MAIN	S IC	0801	87-A22-060-010	IC, LA1845N-A	a
MAIN	S IC	0991	87-A21-928-010	IC, LC72131D-N	a
MAIN	O J	0203	87-A61-820-010	TERMINAL, SP 4P MSC (V0)	a
MAIN	O J	0602	87-A60-881-010	JACK, PIN 2P MSP 242V05 PBSN	a
MAIN	X J	0831	87-A60-202-010	TERMINAL, ANT 4P MSP-154V-02	a
MAIN	X JR	0835	88-108-561-080	C-RES, U 560-1/16W J	a
MAIN	O L	0201	87-A50-610-010	COIL, 1UH K (MDEC)	a

# ELECTRICAL PARTS LIST - 9/16

! = SAFETY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	O L	0202	87-A50-610-010	COIL, 1UH K (MDEC)	CX-SNTR77 USTC
MAIN	O L	0451	87-007-342-010	COIL, OSC 85KHZ BIAS	a
MAIN	O L	0801	87-A50-608-010	COIL, FM DET-N (TOK)	a
MAIN	O L	0802	87-A91-551-010	FLTR, PCFJZH-450 L (TOK)	a
MAIN	O L	0811	87-005-847-080	COIL, 2.2UH K CECS	a
MAIN	O L	0832	87-005-847-080	COIL, 2.2UH K CECS	a
MAIN	O L	0901	87-A50-110-010	COIL, FM BPF EX	a
MAIN	O L	0903	86-ZA1-624-010	COIL, FM RF-1	a
MAIN	O L	0904	86-ZA1-622-010	COIL, FM ANT/RF-U	a
MAIN	O L	0906	87-005-847-080	COIL, 2.2UH K CECS	a
MAIN	O L	0907	86-ZA1-627-010	COIL, FM OSC-U	a
MAIN	O L	0908	88-ZA1-624-010	COIL, FM IFT 7-6.2 (COILS)	a
MAIN	O L	0952	87-A50-752-010	COIL, MW ANT (2B)	a
MAIN	O L	0953	87-A50-753-010	COIL, MW OSC (2B)	a
MAIN	! O PT	0001	8C-NFT-607-010	PT, U CNF-T	a
MAIN	S Q	0001	87-A30-494-080	TR, 2SA1980G	a
MAIN	S Q	0002	87-A30-494-080	TR, 2SA1980G	a
MAIN	S Q	0003	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0004	87-A30-494-080	TR, 2SA1980G	a
MAIN	S Q	0009	87-A30-494-080	TR, 2SA1980G	a
MAIN	S Q	0010	87-A30-076-040	C-TR, 2SC3052F	CX-SNTR77 USTC
MAIN	S Q	0011	89-213-702-010	TR, 2SB1370E	a
MAIN	S Q	0012	87-A30-630-080	TR, 2SC5343GL	a
MAIN	S Q	0013	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0014	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0015	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0060	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0061	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0062	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0063	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0064	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0101	87-A30-675-040	C-TR, 2SD1306NE07TL	a
MAIN	S Q	0102	87-A30-675-040	C-TR, 2SD1306NE07TL	a
MAIN	S Q	0103	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0104	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0105	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0106	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0107	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0108	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0109	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0110	87-A30-076-040	C-TR, 2SC3052F	CX-SNTR77 USTC
MAIN	S Q	0111	87-A30-672-080	TR, 2N5551C	a
MAIN	S Q	0112	87-A30-672-080	TR, 2N5551C	a
MAIN	S Q	0113	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0114	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0115	87-A30-670-040	C-TR, SBT5551	a
MAIN	S Q	0116	87-A30-670-040	C-TR, SBT5551	a
MAIN	S Q	0121	87-A30-672-080	TR, 2N5551C	a
MAIN	S Q	0122	87-A30-672-080	TR, 2N5551C	a
MAIN	S Q	0123	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0124	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0126	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0127	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0128	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0130	87-A30-670-040	C-TR, SBT5551	a
MAIN	S Q	0131	87-A30-098-010	TR, FP1016	a
MAIN	S Q	0132	87-A30-098-010	TR, FP1016	a
MAIN	S Q	0133	87-A30-097-010	TR, FN1016	a
MAIN	S Q	0134	87-A30-097-010	TR, FN1016	a
MAIN	S Q	0183	87-A30-186-010	FET, 2SK3053	a
MAIN	S Q	0184	87-A30-186-010	FET, 2SK3053	CX-SNTR77 USTC
MAIN	S Q	0185	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0186	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0187	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0235	87-A30-075-040	C-TR, 2SA1235F	a
MAIN	S Q	0280	87-A30-538-040	C-TR, SRA2202S	a
MAIN	S Q	0281	87-A30-669-040	C-TR, SBT5401	a
MAIN	S Q	0301	87-A30-091-080	FET, 2SJ460	a
MAIN	S Q	0302	87-A30-091-080	FET, 2SJ460	a
MAIN	S Q	0303	87-A30-090-080	FET, 2SK2541	a
MAIN	S Q	0304	87-A30-090-080	FET, 2SK2541	a
MAIN	S Q	0305	87-A30-091-080	FET, 2SJ460	a
MAIN	S Q	0306	87-A30-091-080	FET, 2SJ460	a
MAIN	S Q	0307	87-A30-090-080	FET, 2SK2541	a
MAIN	S Q	0308	87-A30-090-080	FET, 2SK2541	a
MAIN	S Q	0309	87-A30-090-080	FET, 2SK2541	a
MAIN	S Q	0451	87-A30-630-080	TR, 2SC5343GL	a
MAIN	S Q	0452	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0453	89-333-317-880	TR, 2SC3331(T/U)	a
MAIN	S Q	0454	89-333-317-880	TR, 2SC3331(T/U)	a

# ELECTRICAL PARTS LIST - 10/16

! = SAFTY PARTS  
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All components used on this model at the production line are shown in this service manual.

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	S Q	0601	87-A30-538-040	C-TR, SRA2202S	CX-SNTR77 USTC
MAIN	S Q	0835	87-A30-521-080	C-TR, 2SC5345SF/S (O)	a
MAIN	S Q	0836	87-A30-677-040	C-TR, SRA2207S	a
MAIN	S Q	0901	89-503-602-080	C-FET, 2SK360E	a
MAIN	S Q	0902	87-A30-664-080	C-TR, 2SC2620B	a
MAIN	S Q	0904	87-A30-699-040	C-TR, 2SC5477-T22	a
MAIN	S Q	0981	87-A30-494-080	TR, 2SA1980G	a
MAIN	S Q	0982	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	S Q	0983	87-A30-076-040	C-TR, 2SC3052F	a
MAIN	X R	0003	88-128-109-080	C-RES, 1-1/8W J	a
MAIN	X R	0004	88-128-109-080	C-RES, 1-1/8W J	a
MAIN	X R	0007	88-128-109-080	C-RES, 1-1/8W J	a
MAIN	X R	0008	88-128-109-080	C-RES, 1-1/8W J	a
MAIN	X R	0009	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	X R	0010	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	X R	0011	88-118-472-080	C-RES, S 4.7K-1/10W J	a
MAIN	X R	0012	88-118-472-080	C-RES, S 4.7K-1/10W J	a
MAIN	X R	0013	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0014	88-118-100-080	C-RES, S 10-1/10W J	a
MAIN	X R	0015	88-108-104-080	C-RES, U 100K-1/16W J	a
MAIN	X R	0020	88-128-129-080	C-RES, 1.2-1/8W J	CX-SNTR77 USTC
MAIN	X R	0021	88-128-129-080	C-RES, 1.2-1/8W J	a
MAIN	O R	0022	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0023	88-118-101-080	C-RES, S 100-1/10W J	a
MAIN	O R	0024	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0026	88-118-472-080	C-RES, S 4.7K-1/10W J	a
MAIN	X R	0027	88-118-472-080	C-RES, S 4.7K-1/10W J	a
MAIN	X R	0028	88-108-221-080	C-RES, U 220-1/16W J	a
MAIN	O R	0029	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	X R	0030	88-129-000-080	CHIP JUMPER	a
MAIN	X R	0031	88-108-154-080	C-RES, U 150K-1/16W J	a
MAIN	X R	0032	88-118-472-080	C-RES, S 4.7K-1/10W J	a
MAIN	O R	0033	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0035	88-108-123-080	C-RES, U 12K-1/16W J	a
MAIN	X R	0037	88-128-182-080	C-RES, 1.8K-1/8W J	a
MAIN	X R	0038	88-128-182-080	C-RES, 1.8K-1/8W J	a
MAIN	X R	0041	88-100-000-010	JUMPER WIRE, PLATING	a
MAIN	X R	0042	88-129-000-080	CHIP JUMPER	a
MAIN	X R	0043	88-129-000-080	CHIP JUMPER	a
MAIN	X R	0044	88-128-271-080	C-RES, 270-1/8W J	a
MAIN	X R	0045	88-128-331-080	C-RES, 330-1/8W J	CX-SNTR77 USTC
MAIN	X R	0046	88-121-271-080	RES, 270-1/8W J	a
MAIN	X R	0047	88-128-331-080	C-RES, 330-1/8W J	a
MAIN	X R	0048	88-128-221-080	C-RES, 220-1/8W J	a
MAIN	X R	0049	88-121-221-080	RES, 220-1/8W J	a
MAIN	O R	0050	88-108-153-080	C-RES, U 15K-1/16W J	a
MAIN	O R	0051	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0052	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0053	88-108-683-080	C-RES, U 68K-1/16W J	a
MAIN	O R	0054	88-108-562-080	C-RES, U 5.6K-1/16W J	a
MAIN	X R	0055	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0056	88-118-680-080	C-RES, S 68-1/10W J	a
MAIN	X R	0057	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	O R	0058	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0059	88-108-221-080	C-RES, U 220-1/16W J	a
MAIN	X R	0060	88-108-471-080	C-RES, U 470-1/16W J	a
MAIN	O R	0061	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0062	88-108-223-080	C-RES, U 22K-1/16W J	a
MAIN	O R	0063	88-108-223-080	C-RES, U 22K-1/16W J	a
MAIN	O R	0064	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0065	88-108-123-080	C-RES, U 12K-1/16W J	CX-SNTR77 USTC
MAIN	X R	0066	88-108-104-080	C-RES, U 100K-1/16W J	a
MAIN	O R	0067	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0068	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0069	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	X R	0070	88-128-393-080	C-RES, 39K-1/8W J	a
MAIN	X R	0071	88-128-393-080	C-RES, 39K-1/8W J	a
MAIN	X R	0072	88-128-393-080	C-RES, 39K-1/8W J	a
MAIN	X R	0073	88-128-393-080	C-RES, 39K-1/8W J	a
MAIN	X R	0082	88-128-682-080	C-RES, 6.8K-1/8W J	a
MAIN	X R	0083	88-128-682-080	C-RES, 6.8K-1/8W J	a
MAIN	X R	0084	88-128-682-080	C-RES, 6.8K-1/8W J	a
MAIN	X R	0085	88-128-682-080	C-RES, 6.8K-1/8W J	a
MAIN	O R	0091	88-108-823-080	C-RES, U 82K-1/16W J	a
MAIN	X R	0092	88-108-393-080	C-RES, U 39K-1/16W J	a
MAIN	O R	0093	88-108-153-080	C-RES, U 15K-1/16W J	a
MAIN	O R	0094	88-108-823-080	C-RES, U 82K-1/16W J	a
MAIN	X R	0095	88-108-393-080	C-RES, U 39K-1/16W J	a
MAIN	O R	0096	88-108-153-080	C-RES, U 15K-1/16W J	a
MAIN	O R	0103	88-108-473-080	C-RES, U 47K-1/16W J	a

# ELECTRICAL PARTS LIST - 11/16

! = SAFTY PARTS  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	O R	0104	88-108-473-080	C-RES, U 47K-1/16W J	CX-SNTR77 USTC
MAIN	X R	0105	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	X R	0106	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	O R	0107	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	O R	0108	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	X R	0109	88-118-332-080	C-RES, S 3.3K-1/10W J	a
MAIN	X R	0110	88-118-332-080	C-RES, S 3.3K-1/10W J	a
MAIN	X R	0111	88-118-102-080	C-RES, S 1K-1/10W J	a
MAIN	X R	0112	88-118-102-080	C-RES, S 1K-1/10W J	a
MAIN	X R	0113	88-118-273-080	C-RES, S 27K-1/10W J	a
MAIN	X R	0114	88-118-273-080	C-RES, S 27K-1/10W J	a
MAIN	X R	0115	88-128-222-080	C-RES, 2.2K-1/8W J	a
MAIN	X R	0116	88-128-222-080	C-RES, 2.2K-1/8W J	a
MAIN	O R	0117	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0118	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0119	88-118-101-080	C-RES, S 100-1/10W J	a
MAIN	X R	0120	88-118-101-080	C-RES, S 100-1/10W J	a
MAIN	X R	0121	88-118-101-080	C-RES, S 100-1/10W J	a
MAIN	X R	0122	88-118-101-080	C-RES, S 100-1/10W J	a
MAIN	X R	0123	88-128-222-080	C-RES, 2.2K-1/8W J	a
MAIN	X R	0124	88-128-222-080	C-RES, 2.2K-1/8W J	a
MAIN	X R	0125	88-128-102-080	C-RES, 1K-1/8W J	a
MAIN	X R	0126	88-128-102-080	C-RES, 1K-1/8W J	a
MAIN	X R	0127	88-118-390-080	C-RES, S 39-1/10W J	a
MAIN	X R	0128	88-118-390-080	C-RES, S 39-1/10W J	a
MAIN	O R	0129	87-A00-262-080	RES, M/F 0.15-2W J	a
MAIN	O R	0130	87-A00-262-080	RES, M/F 0.15-2W J	a
MAIN	O R	0131	87-A00-262-080	RES, M/F 0.15-2W J	a
MAIN	O R	0132	87-A00-262-080	RES, M/F 0.15-2W J	a
MAIN	X R	0133	88-108-152-080	C-RES, U 1.5K-1/16W J	a
MAIN	X R	0134	88-108-152-080	C-RES, U 1.5K-1/16W J	a
MAIN	X R	0135	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0136	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	O R	0137	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	O R	0138	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	X R	0141	88-118-102-080	C-RES, S 1K-1/10W J	a
MAIN	X R	0142	88-118-102-080	C-RES, S 1K-1/10W J	a
MAIN	X R	0143	88-108-392-080	C-RES, U 3.9K-1/16W J	a
MAIN	X R	0144	88-108-392-080	C-RES, U 3.9K-1/16W J	a
MAIN	O R	0151	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	O R	0152	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	X R	0153	88-118-390-080	C-RES, S 39-1/10W J	a
MAIN	X R	0154	88-118-390-080	C-RES, S 39-1/10W J	a
MAIN	X R	0155	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0156	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0157	88-121-472-080	RES, 4.7K-1/8W J	a
MAIN	X R	0158	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	O R	0159	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0160	88-118-103-080	C-RES, S 10K-1/10W J	a
MAIN	X R	0161	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0162	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0163	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0164	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0165	88-108-152-080	C-RES, U 1.5K-1/16W J	a
MAIN	X R	0166	88-108-152-080	C-RES, U 1.5K-1/16W J	a
MAIN	O R	0167	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0168	88-118-473-080	C-RES, S 47K-1/10W J	a
MAIN	X R	0171	88-118-222-080	C-RES, S 2.2K-1/10W J	a
MAIN	X R	0172	88-118-222-080	C-RES, S 2.2K-1/10W J	a
MAIN	X R	0173	88-118-182-080	C-RES, S 1.8K-1/10W J	a
MAIN	X R	0174	88-118-182-080	C-RES, S 1.8K-1/10W J	a
MAIN	X R	0175	88-118-331-080	C-RES, S 330-1/10W J	a
MAIN	X R	0176	88-118-331-080	C-RES, S 330-1/10W J	a
MAIN	X R	0178	88-118-103-080	C-RES, S 10K-1/10W J	a
MAIN	O R	0179	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0180	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0181	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0182	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0183	88-128-392-080	C-RES, S 3.9K-1/8W J	a
MAIN	X R	0184	88-121-102-080	RES, 1K-1/8W J	a
MAIN	O R	0185	88-108-332-080	C-RES, U 3.3K-1/16W J	a
MAIN	X R	0186	88-118-102-080	C-RES, S 1K-1/10W J	a
MAIN	X R	0187	88-118-103-080	C-RES, S 10K-1/10W J	a
MAIN	X R	0188	88-118-222-080	C-RES, S 2.2K-1/10W J	a
MAIN	X R	0189	88-128-392-080	C-RES, S 3.9K-1/8W J	a
MAIN	X R	0190	88-128-392-080	C-RES, S 3.9K-1/8W J	a
MAIN	X R	0192	88-128-392-080	C-RES, S 3.9K-1/8W J	a
MAIN	O R	0193	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0194	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0195	88-108-473-080	C-RES, U 47K-1/16W J	a

# ELECTRICAL PARTS LIST - 12/16

! = SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.  
However, please note that not all components will be available as spare parts for after-sales service.  
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	O R	0196	88-108-473-080	C-RES, U 47K-1/16W J	CX-SNTR77 USTC
MAIN	O R	0197	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	O R	0198	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	X R	0199	88-121-225-080	RES, 2.2M-1/8W J	a
MAIN	X R	0204	88-128-392-080	C-RES, 3.9K-1/8W J	a
MAIN	X R	0207	88-128-392-080	C-RES, 3.9K-1/8W J	a
MAIN	X R	0208	88-128-392-080	C-RES, 3.9K-1/8W J	a
MAIN	X R	0217	88-108-683-080	C-RES, U 68K-1/16W J	a
MAIN	X R	0218	88-108-105-080	C-RES, U 1M-1/16W J	a
MAIN	O R	0219	88-108-153-080	C-RES, U 15K-1/16W J	a
MAIN	X R	0220	88-118-154-080	C-RES, S 150K-1/10W J	a
MAIN	X R	0221	88-128-180-080	C-RES, 18-1/8W J	a
MAIN	X R	0222	88-128-180-080	C-RES, 18-1/8W J	a
MAIN	X R	0223	88-128-180-080	C-RES, 18-1/8W J	a
MAIN	X R	0227	88-108-471-080	C-RES, U 470-1/16W J	a
MAIN	X R	0228	88-108-471-080	C-RES, U 470-1/16W J	a
MAIN	X R	0247	88-130-100-080	RES, 10-1/4W J	a
MAIN	X R	0248	88-130-100-080	RES, 10-1/4W J	a
MAIN	X R	0249	88-128-100-080	C-RES, 10-1/8W J	a
MAIN	X R	0250	88-128-100-080	C-RES, 10-1/8W J	a
MAIN	X R	0280	88-128-473-080	C-RES, 47K-1/8W J	CX-SNTR77 USTC
MAIN	X R	0281	88-108-152-080	C-RES, U 1.5K-1/16W J	a
MAIN	O R	0282	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0283	88-108-224-080	C-RES, U 220K-1/16W J	a
MAIN	O R	0284	88-108-224-080	C-RES, U 220K-1/16W J	a
MAIN	X R	0285	88-108-333-080	C-RES, U 33K-1/16W J	a
MAIN	O R	0286	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	O R	0287	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	X R	0301	88-108-393-080	C-RES, U 39K-1/16W J	a
MAIN	X R	0302	88-108-393-080	C-RES, U 39K-1/16W J	a
MAIN	O R	0303	88-108-823-080	C-RES, U 82K-1/16W J	a
MAIN	O R	0304	88-108-823-080	C-RES, U 82K-1/16W J	a
MAIN	O R	0305	88-108-224-080	C-RES, U 220K-1/16W J	a
MAIN	X R	0451	88-121-222-080	RES, 2.2K-1/8W J	a
MAIN	X R	0453	88-118-472-080	C-RES, S 4.7K-1/10W J	a
MAIN	X R	0454	88-121-829-080	RES, 8.2-1/8W J	a
MAIN	X R	0455	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0456	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0457	88-108-104-080	C-RES, U 100K-1/16W J	a
MAIN	O R	0458	88-108-563-080	C-RES, U 56K-1/16W J	a
MAIN	X R	0459	88-118-472-080	C-RES, S 4.7K-1/10W J	CX-SNTR77 USTC
MAIN	X R	0460	88-108-229-080	C-RES, U 2.2-1/16W J	a
MAIN	O R	0463	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0464	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0601	88-108-680-080	C-RES, U 68-1/16W J	a
MAIN	X R	0602	88-108-680-080	C-RES, U 68-1/16W J	a
MAIN	X R	0603	88-108-394-080	C-RES, U 390K-1/16W J	a
MAIN	X R	0604	88-108-394-080	C-RES, U 390K-1/16W J	a
MAIN	X R	0605	88-108-122-080	C-RES, U 1.2K-1/16W J	a
MAIN	X R	0606	88-108-122-080	C-RES, U 1.2K-1/16W J	a
MAIN	X R	0607	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0608	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0609	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0610	88-121-472-080	RES, 4.7K-1/8W J	a
MAIN	X R	0611	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0612	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0613	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0614	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0615	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	X R	0616	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	X R	0617	88-121-822-080	RES, 8.2K-1/8W J	CX-SNTR77 USTC
MAIN	X R	0618	88-121-822-080	RES, 8.2K-1/8W J	a
MAIN	O R	0619	88-108-153-080	C-RES, U 15K-1/16W J	a
MAIN	O R	0620	88-108-153-080	C-RES, U 15K-1/16W J	a
MAIN	O R	0621	88-108-332-080	C-RES, U 3.3K-1/16W J	a
MAIN	O R	0622	88-108-332-080	C-RES, U 3.3K-1/16W J	a
MAIN	X R	0623	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0624	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	O R	0625	88-108-332-080	C-RES, U 3.3K-1/16W J	a
MAIN	O R	0626	88-108-332-080	C-RES, U 3.3K-1/16W J	a
MAIN	X R	0627	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0628	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	O R	0629	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0630	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0631	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0632	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	O R	0633	88-108-272-080	C-RES, U 2.7K-1/16W J	a
MAIN	O R	0634	88-108-272-080	C-RES, U 2.7K-1/16W J	a
MAIN	O R	0635	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0636	88-108-102-080	C-RES, U 1K-1/16W J	a

# ELECTRICAL PARTS LIST - 13/16

! = SAFTY PARTS  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	X R	0637	88-108-331-080	C-RES, U 330-1/16W J	CX-SNTR77 USTC
MAIN	X R	0638	88-108-331-080	C-RES, U 330-1/16W J	a
MAIN	X R	0639	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0640	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0641	88-121-223-080	RES, 22K-1/8W J	a
MAIN	X R	0642	88-108-222-080	C-RES, U 2.2K-1/16W J	a
MAIN	X R	0643	88-108-104-080	C-RES, U 100K-1/16W J	a
MAIN	X R	0644	88-108-104-080	C-RES, U 100K-1/16W J	a
MAIN	O R	0651	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	O R	0652	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	X R	0653	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0654	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	X R	0655	88-108-471-080	C-RES, U 470-1/16W J	a
MAIN	X R	0656	88-108-471-080	C-RES, U 470-1/16W J	a
MAIN	O R	0657	88-108-823-080	C-RES, U 82K-1/16W J	a
MAIN	O R	0658	88-108-823-080	C-RES, U 82K-1/16W J	a
MAIN	X R	0661	88-108-392-080	C-RES, U 3.9K-1/16W J	a
MAIN	X R	0662	88-108-392-080	C-RES, U 3.9K-1/16W J	a
MAIN	X R	0669	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	X R	0670	88-108-273-080	C-RES, U 27K-1/16W J	a
MAIN	O R	0672	88-108-103-080	C-RES, U 10K-1/16W J	CX-SNTR77 USTC
MAIN	X R	0673	88-108-182-080	C-RES, U 1.8K-1/16W J	a
MAIN	O R	0674	88-108-123-080	C-RES, U 12K-1/16W J	a
MAIN	O R	0677	88-108-223-080	C-RES, U 22K-1/16W J	a
MAIN	X R	0678	88-128-223-080	C-RES, 22K-1/8W J	a
MAIN	O R	0789	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	O R	0790	87-012-286-080	C-CAP, U 0.01-25 K B GRM	a
MAIN	O R	0791	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0793	88-108-000-080	C-JUMPER, U	a
MAIN	X R	0795	88-108-000-080	C-JUMPER, U	a
MAIN	O R	0801	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0802	88-108-223-080	C-RES, U 22K-1/16W J	a
MAIN	X R	0803	88-128-183-080	C-RES, 18K-1/8W J	a
MAIN	X R	0804	88-108-000-080	C-JUMPER, U	a
MAIN	O R	0805	88-108-332-080	C-RES, U 3.3K-1/16W J	a
MAIN	X R	0806	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	O R	0809	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0810	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0811	88-108-000-080	C-JUMPER, U	a
MAIN	X R	0812	88-108-000-080	C-JUMPER, U	a
MAIN	O R	0813	88-108-224-080	C-RES, U 220K-1/16W J	CX-SNTR77 USTC
MAIN	X R	0814	88-108-105-080	C-RES, U 1M-1/16W J	a
MAIN	X R	0815	88-121-682-080	RES, 6.8K-1/8W J	a
MAIN	O R	0818	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0821	88-108-000-080	C-JUMPER, U	a
MAIN	X R	0823	88-108-333-080	C-RES, U 33K-1/16W J	a
MAIN	O R	0826	88-108-223-080	C-RES, U 22K-1/16W J	a
MAIN	X R	0832	88-108-391-080	C-RES, U 390-1/16W J	a
MAIN	X R	0840	88-108-221-080	C-RES, U 220-1/16W J	a
MAIN	O R	0850	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0851	88-108-000-080	C-JUMPER, U	a
MAIN	O R	0852	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0853	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0854	88-108-331-080	C-RES, U 330-1/16W J	a
MAIN	X R	0855	88-108-183-080	C-RES, U 18K-1/16W J	a
MAIN	O R	0856	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0857	88-108-181-080	C-RES, U 180-1/16W J	a
MAIN	O R	0858	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	O R	0860	88-108-101-080	C-RES, U 100-1/16W J	a
MAIN	O R	0902	87-012-162-080	C-CAP, U 1P-50 C CH GRM	a
MAIN	X R	0903	88-108-221-080	C-RES, U 220-1/16W J	CX-SNTR77 USTC
MAIN	O R	0904	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	O R	0905	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0906	88-108-564-080	C-RES, U 560K-1/16W J	a
MAIN	X R	0908	88-108-000-080	C-JUMPER, U	a
MAIN	X R	0911	88-108-121-080	C-RES, U 120-1/16W J	a
MAIN	O R	0912	88-108-473-080	C-RES, U 47K-1/16W J	a
MAIN	X R	0913	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0914	88-108-472-080	C-RES, U 4.7K-1/16W J	a
MAIN	X R	0918	88-108-000-080	C-JUMPER, U	a
MAIN	X R	0945	88-108-104-080	C-RES, U 100K-1/16W J	a
MAIN	X R	0962	88-121-102-080	RES, 1K-1/8W J	a
MAIN	X R	0963	88-108-330-080	C-RES, U 33-1/16W J	a
MAIN	O R	0968	88-108-822-080	C-RES, U 8.2K-1/16W J	a
MAIN	O R	0975	88-108-562-080	C-RES, U 5.6K-1/16W J	a
MAIN	O R	0976	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0977	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0978	88-108-681-080	C-RES, U 680-1/16W J	a
MAIN	O R	0979	88-108-123-080	C-RES, U 12K-1/16W J	a
MAIN	X R	0980	88-108-684-080	C-RES, U 680K-1/16W J	a

# ELECTRICAL PARTS LIST - 14/16

! = SAFTY PARTS  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
MAIN	X R	0981	88-121-471-080	RES, 470-1/8W J	CX-SNTR77 USTC
MAIN	X R	0982	88-108-682-080	C-RES, U 6.8K-1/16W J	a
MAIN	X R	0983	88-108-392-080	C-RES, U 3.9K-1/16W J	a
MAIN	O R	0984	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	X R	0985	88-121-471-080	RES, 470-1/8W J	a
MAIN	X R	0986	88-121-221-080	RES, 220-1/8W J	a
MAIN	X R	0987	88-121-472-080	RES, 4.7K-1/8W J	a
MAIN	O R	0988	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0989	88-121-102-080	RES, 1K-1/8W J	a
MAIN	O R	0990	88-108-563-080	C-RES, U 56K-1/16W J	a
MAIN	O R	0991	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
MAIN	O R	0992	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0993	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
MAIN	O R	0994	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	O R	0995	87-012-195-080	C-CAP, U 100P-50 J CH GRM	a
MAIN	O R	0996	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	X R	0997	88-108-154-080	C-RES, U 150K-1/16W J	a
MAIN	O R	0998	88-108-102-080	C-RES, U 1K-1/16W J	a
MAIN	O R	0999	88-108-103-080	C-RES, U 10K-1/16W J	a
MAIN	! O RY	0202	87-A91-686-010	RELAY, G5PA-28(OMRON)	a
MAIN	O SFR0451	87-A90-432-080	SFR, 30K H NVZ6TLTA	CX-SNTR77 USTC	
MAIN	O SFR0452	87-A90-432-080	SFR, 30K H NVZ6TLTA	a	
MAIN	X SH 0301	8C-NF5-221-010	PLATE, SHLD DECK M	a	
MAIN	X SH 0901	8B-ZA3-619-010	SHLD-CASE, BZA-3 EZ	a	
MAIN	O TH 0101	87-A91-042-080	C-THMS, 100K 55001	a	
MAIN	O TH 0102	87-A91-042-080	C-THMS, 100K 55001	a	
MAIN	! X W 0001	87-A80-110-010	AC CORD ASSY, U SPT-2W	a	
MAIN	O W 0099	8B-NFJ-620-010	F-CABLE, 9P 2.5 280MM	a	
MAIN	O WH 0001	87-A90-510-010	HLDR, WIRE 2.5-9P	a	
MAIN	O X 0992	87-A70-306-010	VIB, XTAL 4.500MHZ CSA-309ST	a	
POWER	O C 0085	87-A12-310-080	C-CAP, U 0.01-50 K B	a	
POWER	S D 0082	87-A40-270-040	C-DIODE, MC2838	a	
POWER	S D 0083	87-A40-269-040	C-DIODE, MC2836	a	
POWER	X F 0081	88-100-000-010	JUMPER WIRE, PLATING	a	
POWER	! O PT 0081	8B-MA6-671-010	PT, SUB BMA U (VRK)	a	
POWER	O R 0097	87-A01-010-080	RES, SD 2.2M-1/2W J RCR50+	a	
POWER	! O RY 0081	87-A91-418-010	RELAY, AC 12V G5PA-1-M	a	
POWER	O T 0081	87-A60-317-010	TERMINAL, 1P MSC	a	
POWER	O T 0082	87-A60-317-010	TERMINAL, 1P MSC	a	
POWER	O WH 0081	87-A90-510-010	HLDR, WIRE 2.5-9P	a	

# ELECTRICAL PARTS LIST<ZZM-3>15/16

! =  SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

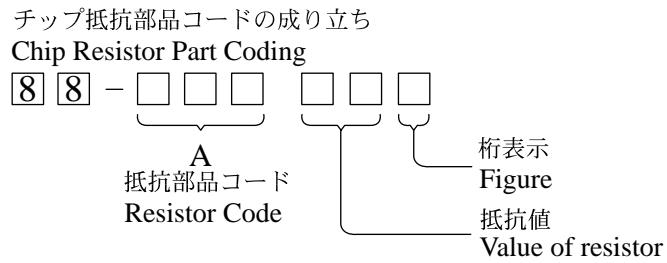
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
DECK	O	CN 1	87-A61-462-010	CONN, 11P H D125 SRA	Z ZM-3 YPR3NC
DECK	X	CRD1	86-ZM3-604-210	RBN-CORD, 4P-75	a
DECK	S	IC 1	87-A21-269-010	IC, EW732	a
DECK	S	IC 2	87-A21-269-010	IC, EW732	a
DECK	X	R 1	88-121-392-080	RES, 3.9K-1/8W J	a
DECK	O	SFR1	87-024-581-010	SFR, 3.3K H KVSF637A	a
DECK	O	SOL1	82-ZM3-621-210	SOL ASSY, 27 KO	a
DECK	O	SOL2	82-ZM3-621-210	SOL ASSY, 27 KO	a
DECK	O	SW 1	87-036-109-010	SW, MICRO SPPB61	a
DECK	O	SW 2	87-036-109-010	SW, MICRO SPPB61	a
DECK	O	SW 3	87-036-109-010	SW, MICRO SPPB61	a
DECK	O	SW 4	87-036-109-010	SW, MICRO SPPB61	a
DECK	O	SW 5	87-036-109-010	SW, MICRO SPPB61	a

- Regarding connectors, they are not stocked as they are not the initial order items.  
The connectors are available after they are supplied from connector manufacturers upon the order is received.

## ○チップ抵抗部品コード／CHIP RESISTOR PART CODE

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)			抵抗コード Resistor Code : A
				外形／Form	L	W	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35
1/16W	1608	± 5%	CJ		1.6	0.8	0.45
1/10W	2125	± 5%	CJ		2	1.25	0.45
1/8W	3216	± 5%	CJ		3.2	1.6	0.55

# TRANSISTOR ILLUSTRATION -1/1



B C E

FN1016  
FP1016



E C B

2SA1296GR



E C B

2SA1980G  
2SA1981Y  
2SC3331(T/U)



E C B

2SC5343GL



E C B

2N5551C



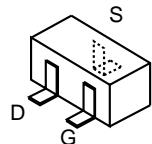
G D S

2SK3053  
2SB1370E

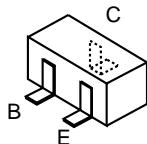


S D G

2SJ460  
2SK2541



2SK360E



C  
B  
E

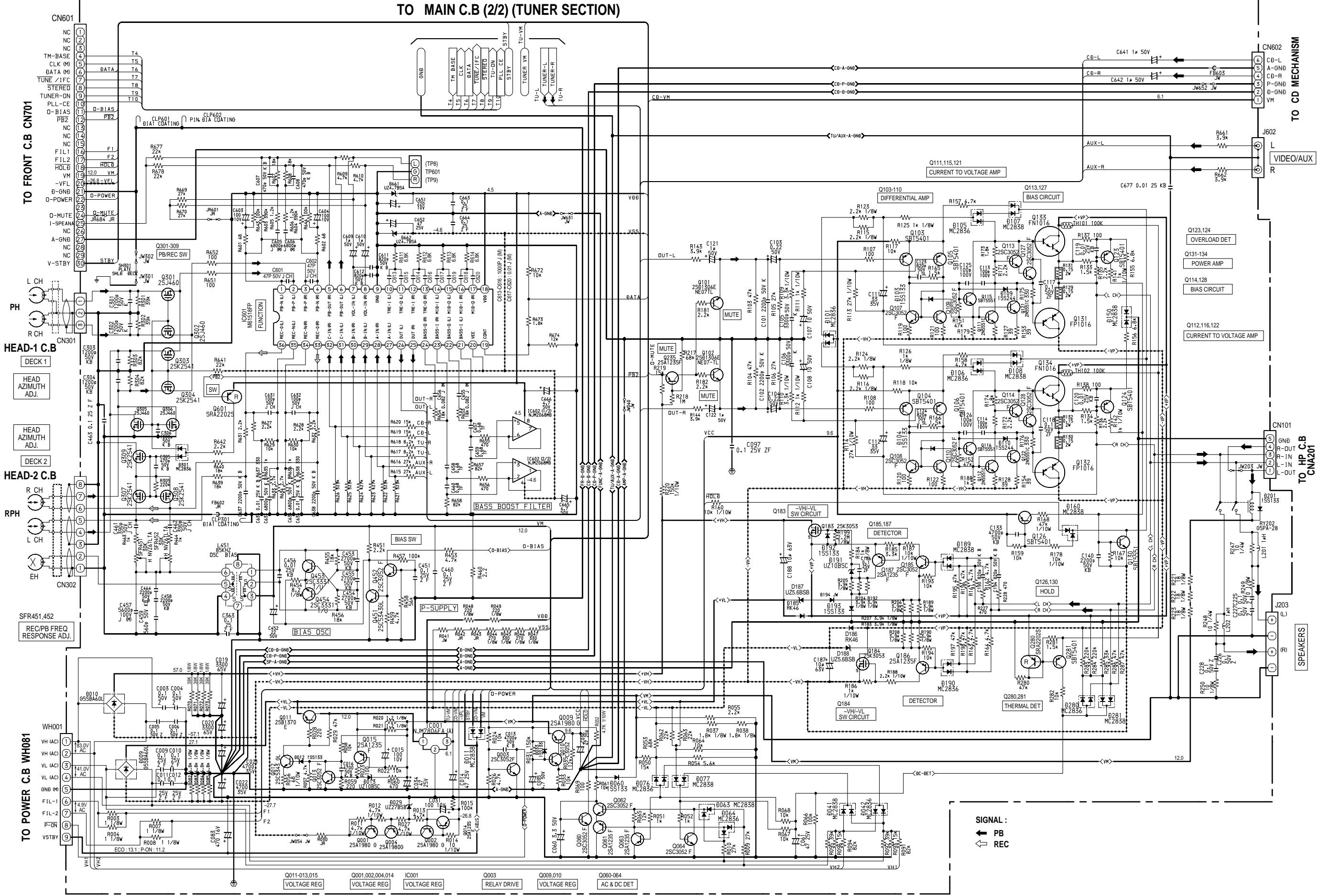
2SA1235F      SBT5401  
2SC2620B      SBT5551  
2SC3052F      SRA2202S  
2SC5477-T22    SRA2207S  
2SC5345SF/S(O)  
2SD1306NE07TL

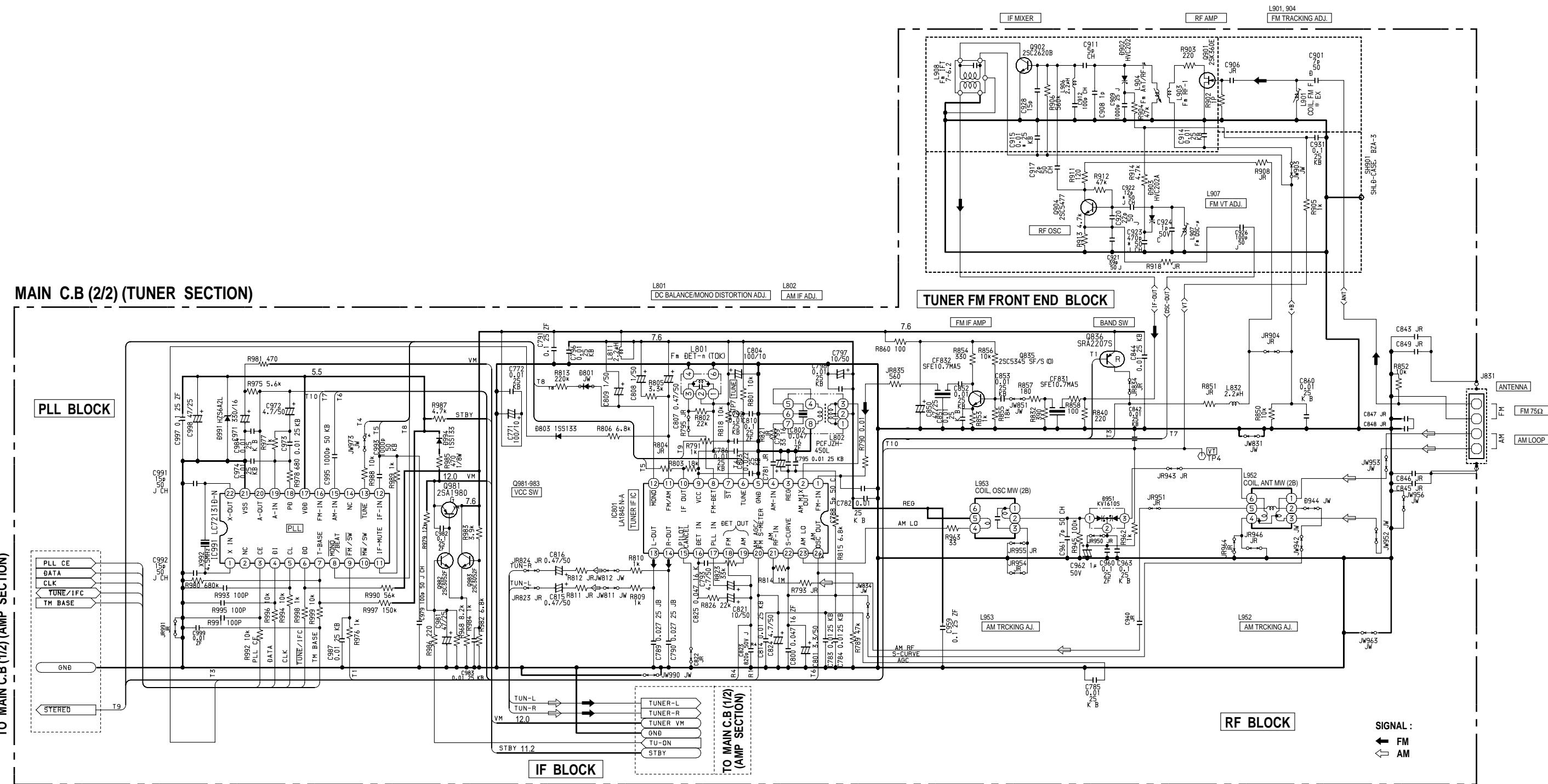
SCHEMATIC DIAGRAM - 1/5 (MAIN C.B -1/2, AMP SECTION)

## **TR77\_MAIN C.B (1/2) (AMP SECTION)\_U**

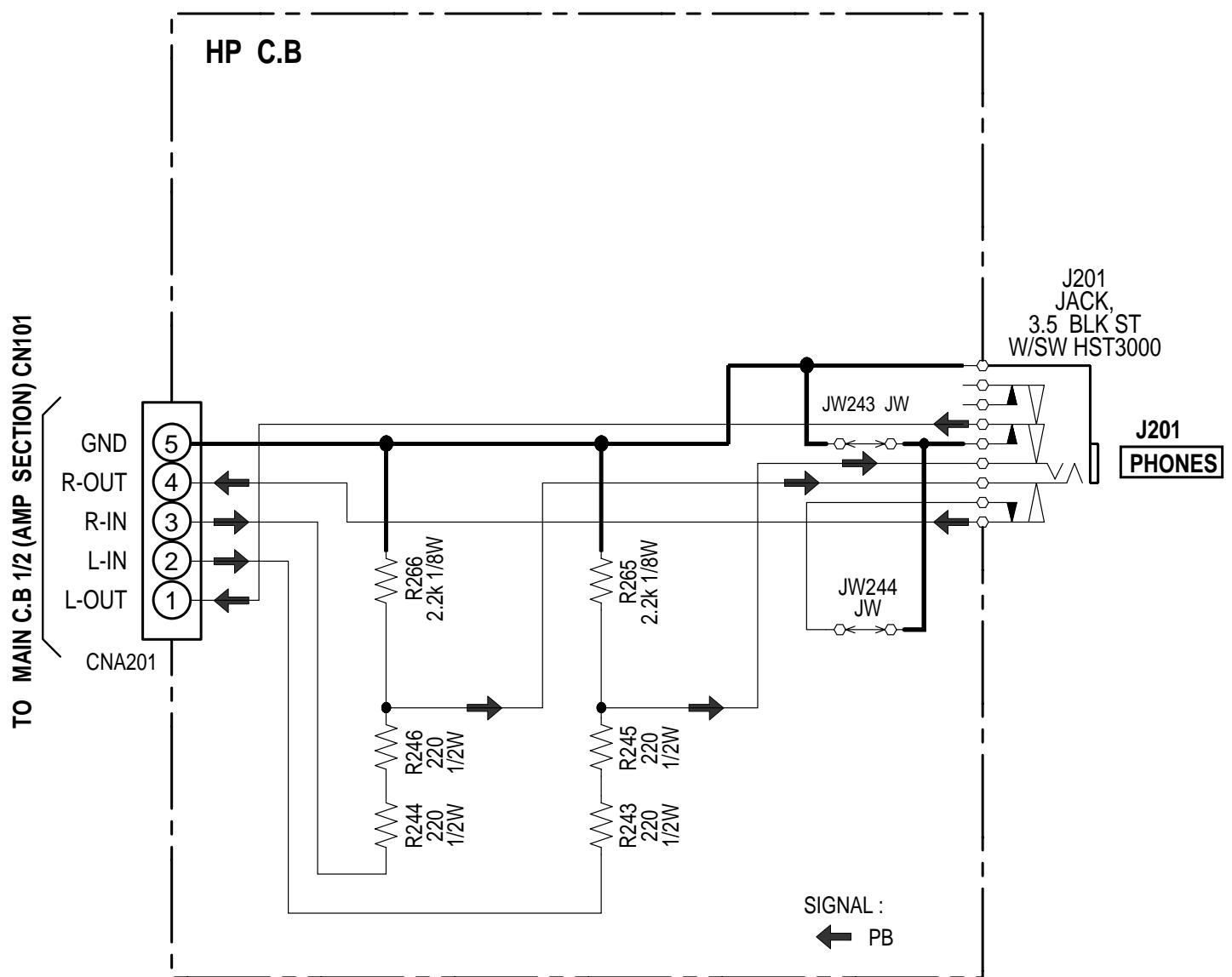
## MAIN C.B (1/2) (AMP SECTION)

TO MAIN C.B (2/2) (TUNER SECTION)



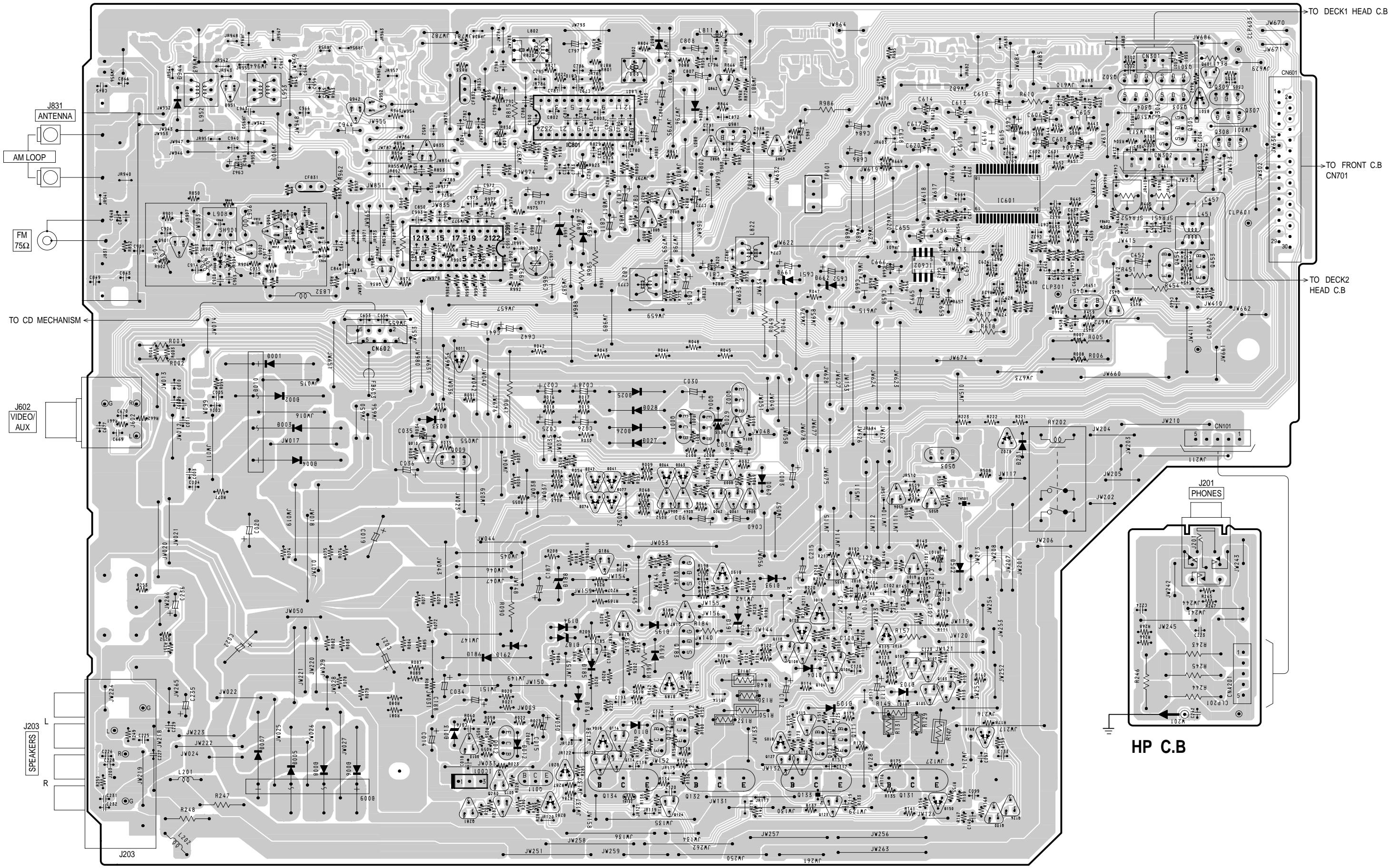


SCHEMATIC DIAGRAM - 3/5 (HP C.B)

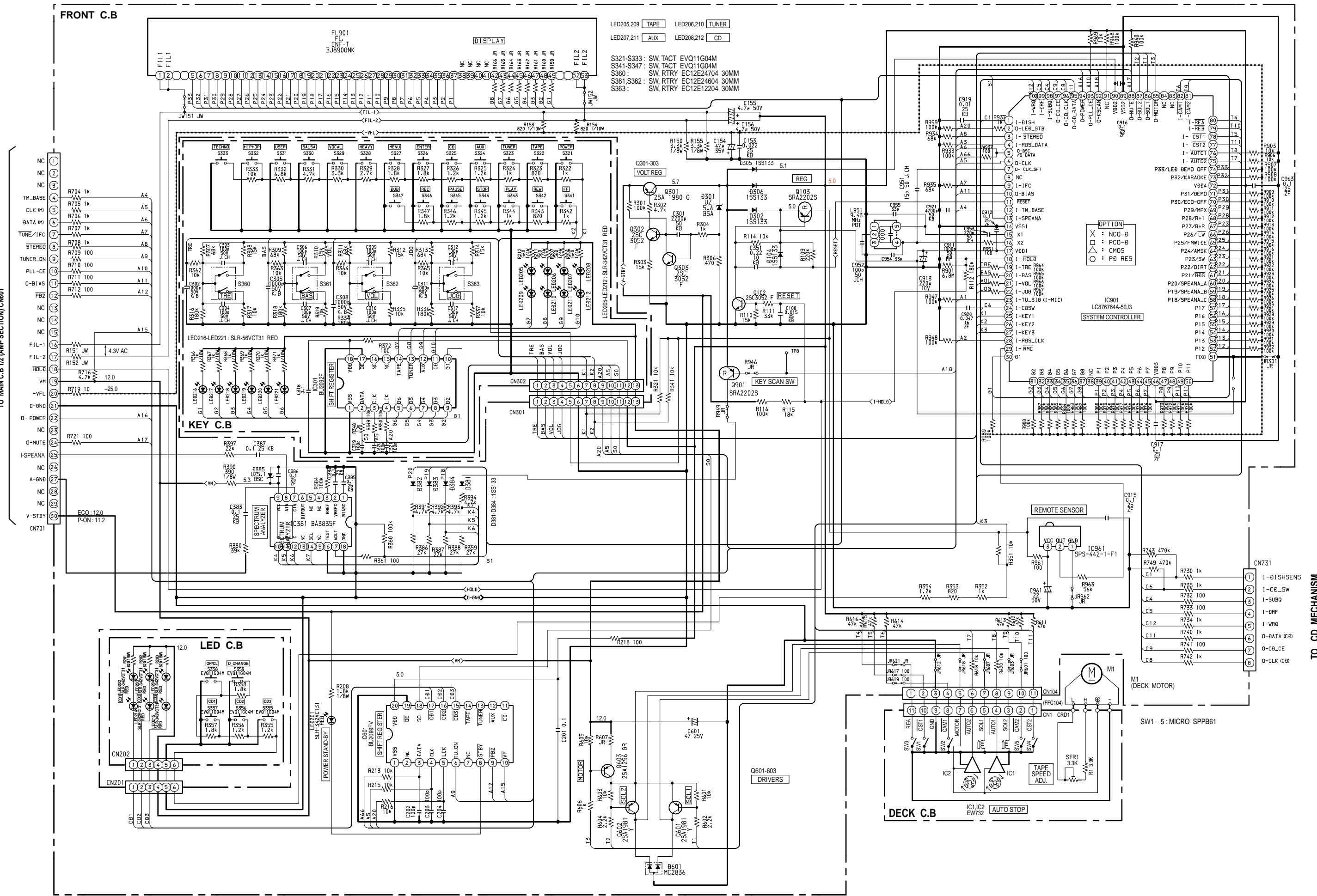


32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

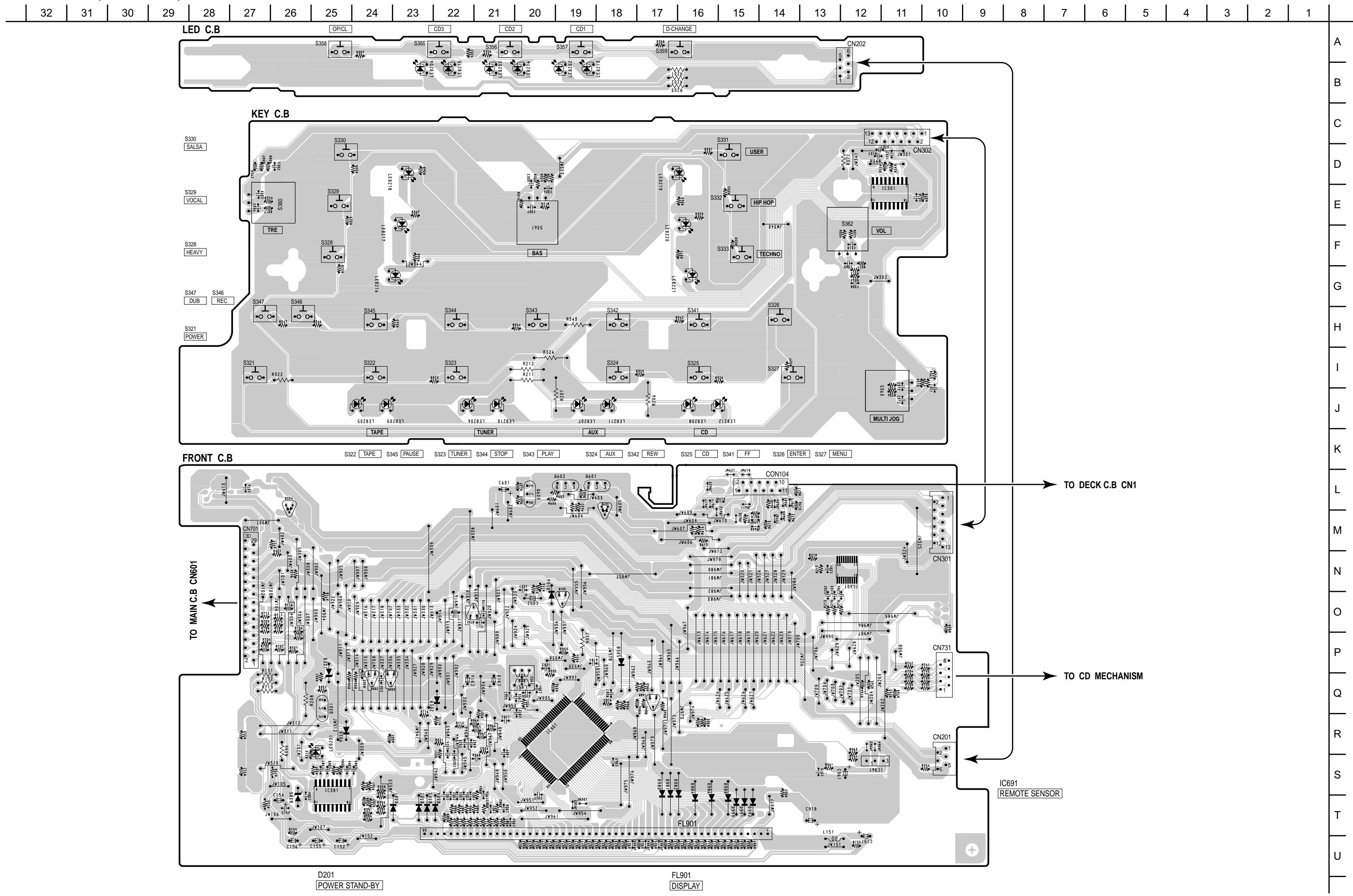
**MAIN C.B**



## SCHEMATIC DIAGRAM - 4/5 (FRONT C.B/DECK C.B)



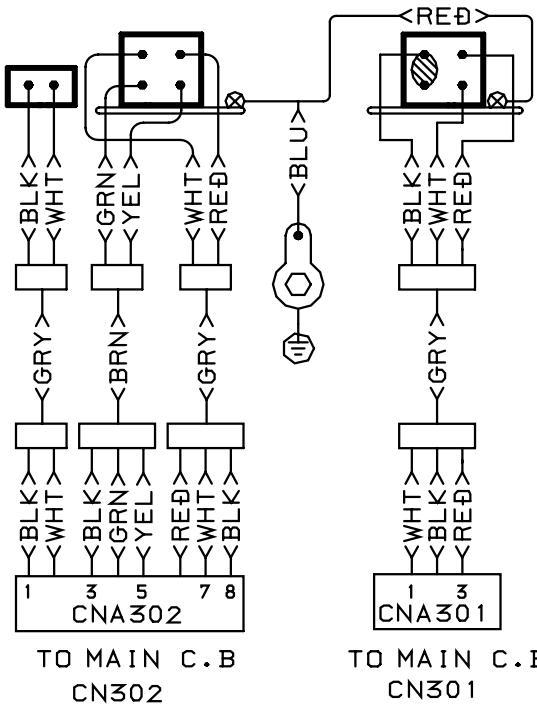
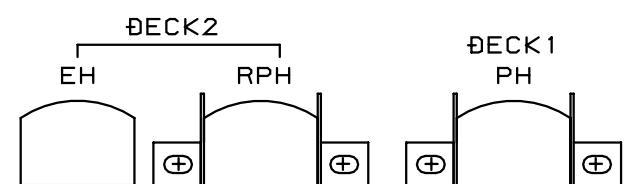
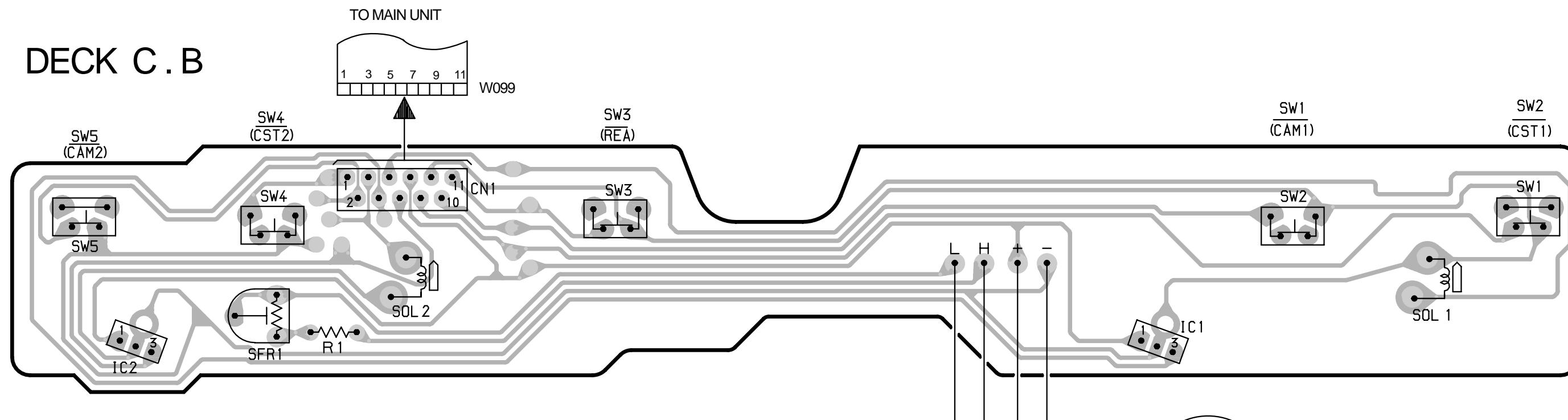
## WIRING - 2/4 (FRONT C.B)



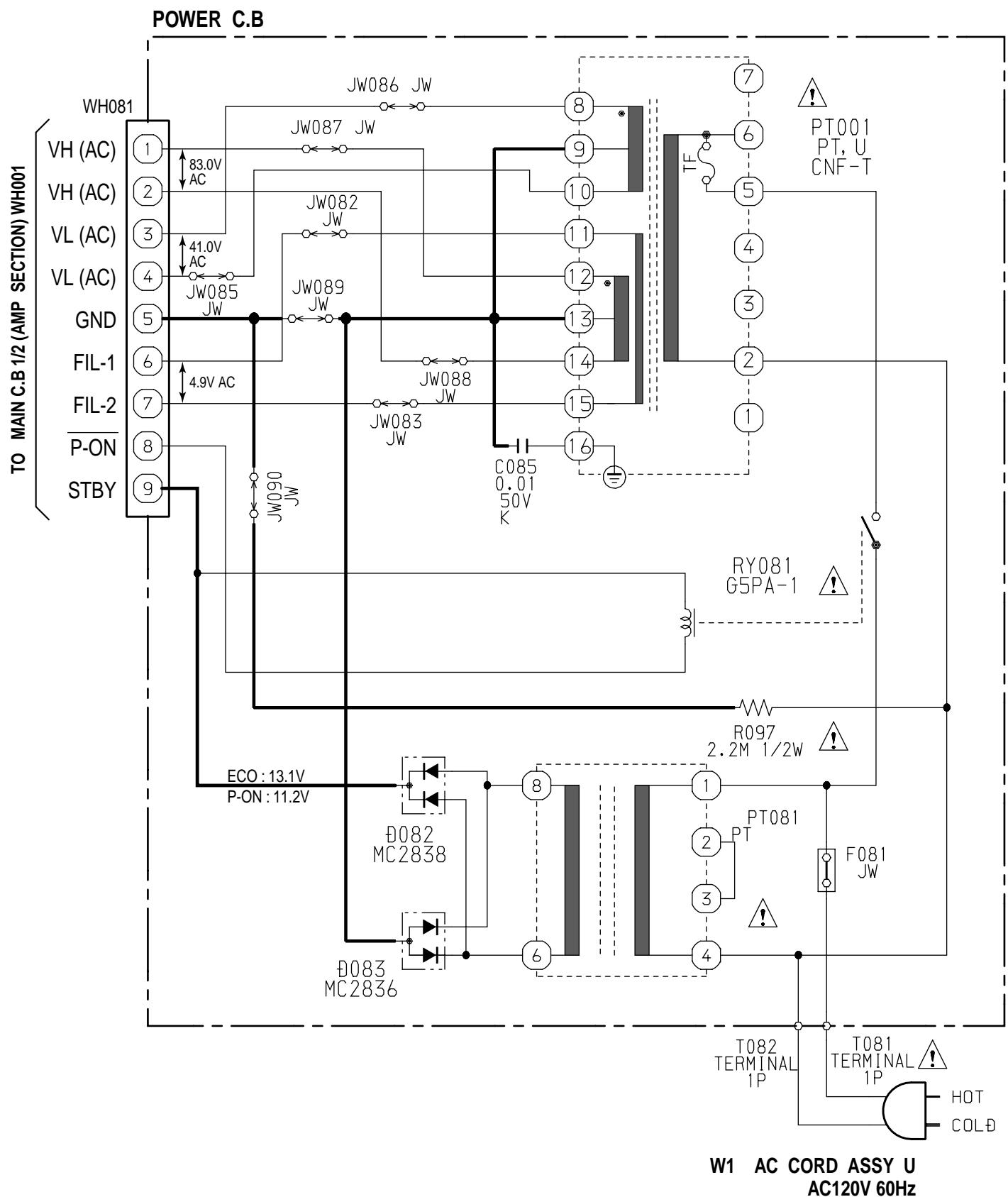
WIRING - 3/4 (DECK C.B)

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

DECK C . B



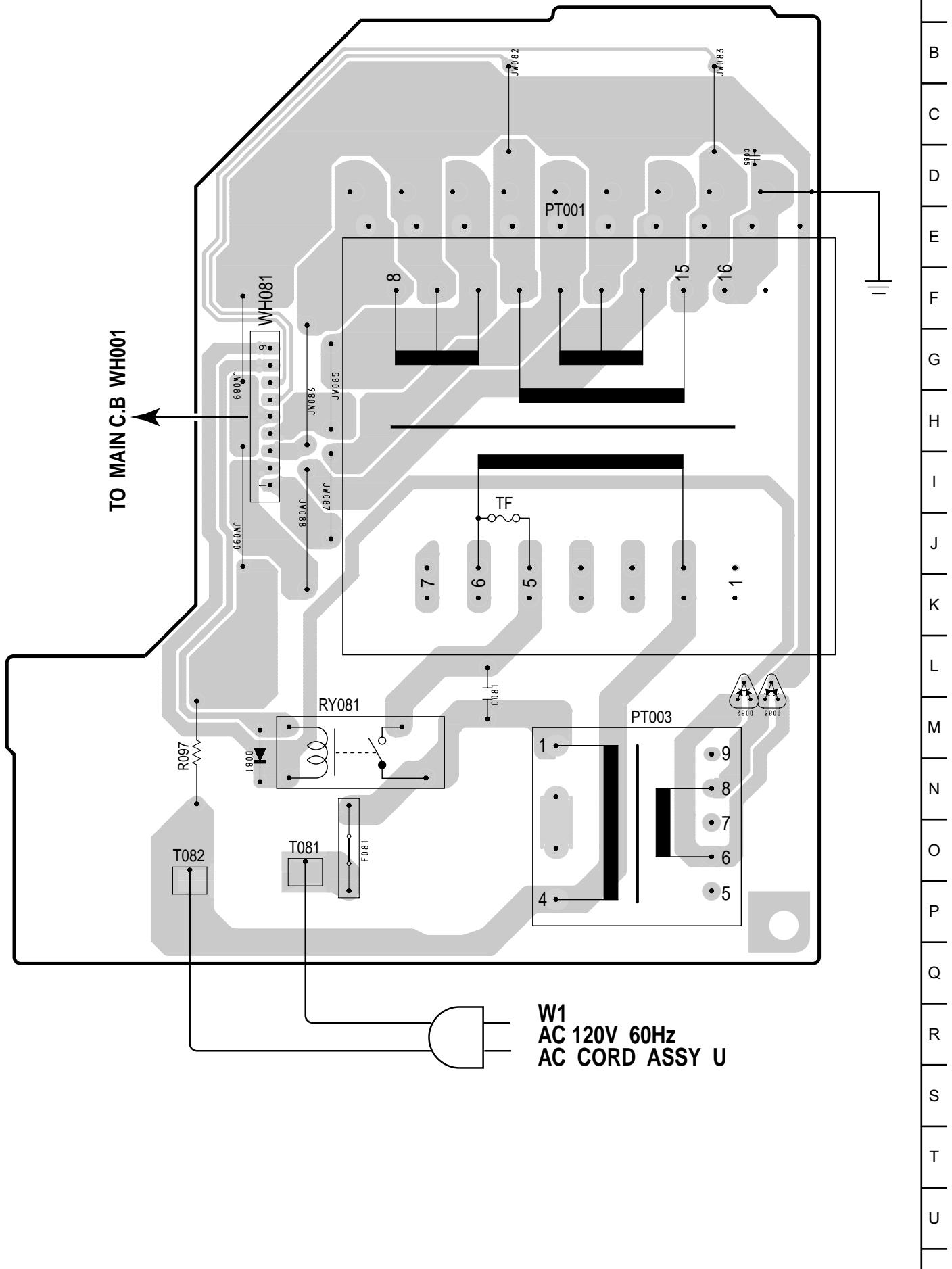
SCHEMATIC DIAGRAM - 5/5 (POWER C.B)



WIRING - 4/4 (POWER C.B)

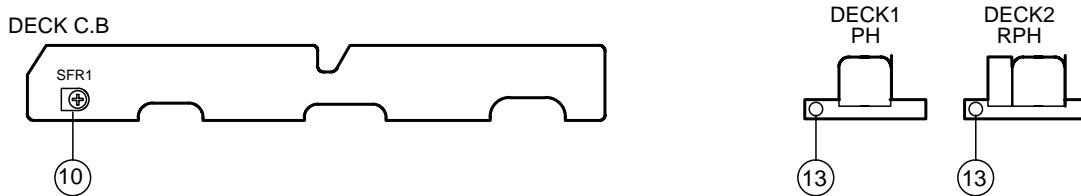
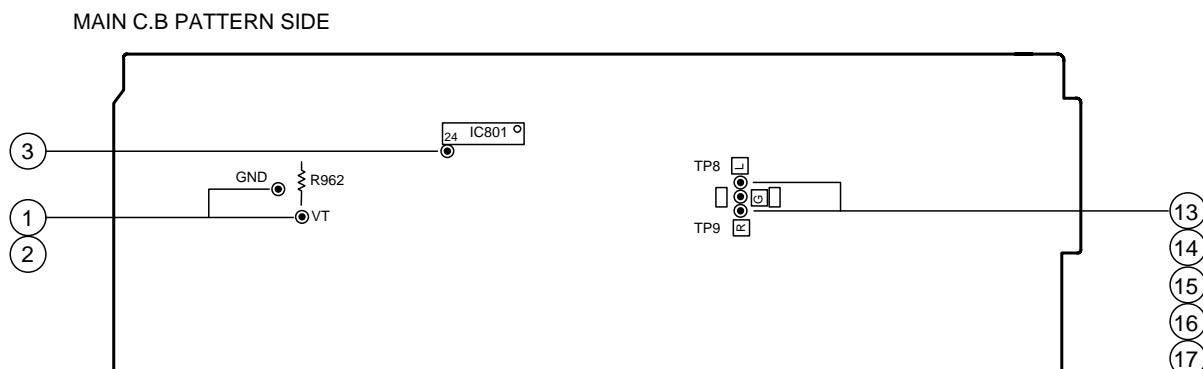
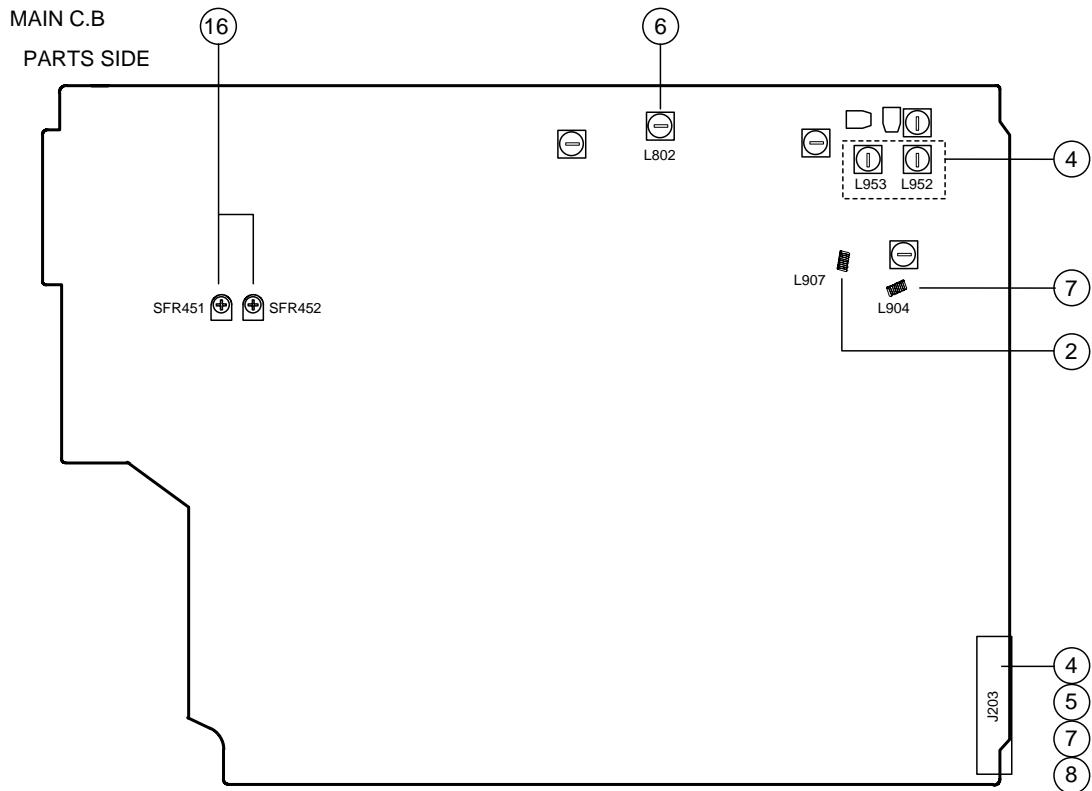
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

POWER C.B



# ELECTRICAL ADJUSTMENT -1/7

## ADJUSTMENT (TUNER/DECK)



## ELECTRICAL ADJUSTMENT -2/7

<TUNER Adjustment>

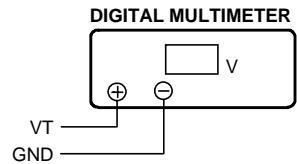
### 1. VT Check (AM)

Requirements

- Measuring instrument: Digital multimeter

Test points: VT, GND

- 1) Connect the digital multimeter between VT and GND.
- 2) Set the function to AM, and tune the receiving frequency of the unit at 1,710 kHz.
- 3) Check that the digital multimeter ranges under 9 V.
- 4) Tune the receiving frequency of the unit at 530 kHz.
- 5) Check that the digital multimeter ranges above 0.5 V.



### 2. VT Adjustment and Check (FM)

Requirements: Same as the above.

- Adjustment point: L907

- 1) Connect the digital multimeter between VT and GND.
- 2) Set the function to FM, and tune the receiving frequency of the unit at 108.0 MHz.
- 3) Adjust L907 so that the digital multimeter ranges at  $7.0 \pm 0.1$  V.
- 4) Tune the receiving frequency of the unit at 87.5 MHz.
- 5) Check that the digital multimeter ranges under 1.5 V.

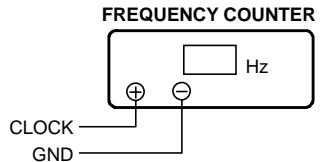
### 3. CLOCK Check (AM)

Requirements

- Measuring instrument: Frequency counter

Test point: CLOCK (IC801 24PIN), GND

- 1) Connect the frequency counter between CLOCK and GND.
- 2) Set the function to AM, and tune the receiving frequency of the unit at 1,710 kHz.
- 3) Check that the frequency counter ranges at  $2,160$  kHz  $\pm 45$  Hz.



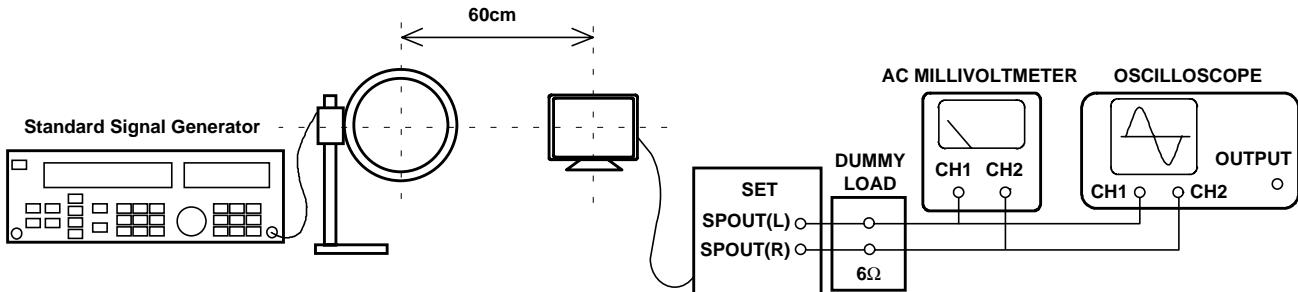
## ELECTRICAL ADJUSTMENT -3/7

### <AM Adjustment>

Make the following preparations for AM adjustment.

#### Preparations

- Standard Signal Generator (S.S.G.) / Loop antenna / Oscilloscope / Millivoltmeter / Dummy resistance ( $6\Omega$ )
  - 1) Connect the unit and measuring instruments as shown in the diagram below
  - 2) Position the loop antenna connected to S.S.G. and the one connected to the unit 60 cm apart.



### 4. Tracking Adjustment

Requirements: As instructed in preparations.

- Adjustment point: L952 / L953
  - 1) Set S.S.G. to AM; carrier of 1,000 kHz with 30% modulation, and source at 1 kHz, position output at maximum.
  - 2) Tune the receiving frequency of the unit at AM 1,000 kHz.
  - 3) While monitoring the waveform at 1kHz through the oscilloscope, lower the output level of S.S.G. maximum (till a certain degree of noise is monitored).
  - 4) Adjust L952 so that the millivoltmeter points maximum.
  - 5) Set S.S.G. to AM; carrier of 600 kHz with 30% modulation, and source at 1 kHz.
  - 6) Tune the receiving frequency of the unit at AM 600 kHz.
  - 7) Adjust L953 so that the millivoltmeter points maximum.
  - 8) Repeat above steps 1) to 7) 2 to 3 times.

### 5. Auto-Stop Check

Requirements: As instructed in preparations.

- 1) Set S.S.G. to AM; carrier of 1,000 kHz with 30% modulation, source at 1 kHz, and output of 74 dBuV.
- 2) Apply the tuning search function, and check that the unit automatically stops at AM 1,000 kHz.

### 6. IF Adjustment

Requirements: As instructed in preparations.

- Adjustment point: L802
  - 1) Set S.S.G. to AM; carrier of 1,000 kHz with 30% modulation, and source at 1 kHz, position output at maximum.
  - 2) Tune the receiving frequency of the unit at AM 1,000 kHz.
  - 3) While monitoring the waveform at 1 kHz through the oscilloscope, lower the output level of S.S.G. maximum (till a certain degree of noise is monitored).
  - 4) Adjust L802 so that the millivoltmeter points maximum.

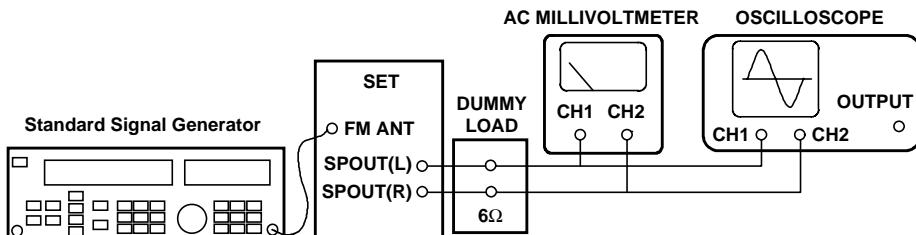
## ELECTRICAL ADJUSTMENT -4/7

### <FM Adjustment>

Make the following preparations for FM adjustment.

#### Preparations

- Standard Signal Generator (S.S.G.) / Loop antenna / Oscilloscope / Millivoltmeter / Dummy resistance ( $6\Omega$ )
  - 1) Connect the unit and measuring instruments as shown in the diagram below.
  - 2) Connect the output of S.S.G. to the antenna input of the unit.



### 7. Tracking Adjustment

Requirements: As instructed in preparations.

- Adjustment point: L904
  - 1) Set S.S.G. to FM; carrier of 87.5 MHz with 75 kHz modulation, and source at 1 kHz, position output at maximum.
  - 2) Tune the receiving frequency of the unit at FM 87.5 MHz.
  - 3) While monitoring the waveform at 1kHz through the oscilloscope, lower the output level of S.S.G. maximum (till a certain degree of noise is monitored).
  - 4) Adjust L904 so that the millivoltmeter points maximum.

### 8. Separation Check

Requirements: As instructed in preparations.

- 1) Set S.S.G. to FM; carrier of 98 MHz with 67.5 kHz modulation, source at 1 kHz, and output at 74 dBuV.
- 2) Switch S.S.G. to PILOT ON, and set PILOT at 7.5 kHz.
- 3) Tune the receiving frequency of the unit at FM 98 MHz.
- 4) Allow the output of S.S.G. only from Lch, and check that the difference between Lch and Rch is 22 dB or above.
- 5) Apply the above check to Rch.

### 9. Auto-Stop Check

Requirements: As instructed in preparations.

- 1) Set S.S.G. to FM; carrier of 98 MHz with 75 kHz modulation, source at 1kHz, and output at 35 dBuV or less.
- 2) Apply the tuning search function, and check that the unit automatically stops at FM 98 MHz.

# ELECTRICAL ADJUSTMENT -5/7

## <DECK Section>

Make the following preparations for DECK section adjustment.

### Preparations

Measuring Equipment: Audio Signal Generator / Attenuator / Wow and Flutter Meter (Frequency Counter) / Oscilloscope / Millivoltmeter / Dummy resistance ( $6\Omega$ )

Test Tape: TTA-100 / TTA-300 (or TTA-310, 320) / TTA-200 / TTAA602(or equivalent recording and Playback Test Tapes)

## 10. Tape Speed Adjustment (DECK 2)

### Requirements

- Measuring instrument: Wow and flutter meter (frequency counter)

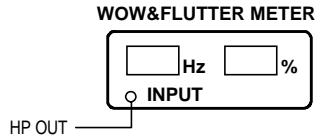
Test tape: TTA-100 (3 kHz)

Test point: HP OUT

Adjustment point: SFR1

1) Connect the wow and flutter meter to HP OUT of the unit.

2) Insert the test tape (TTA-100) to DECK 2. Play back the middle part of the tape, and adjust SFR1 so that the level  $3,000 \text{ Hz} \pm 5 \text{ Hz}$  is monitored.



## 11. Tape Speed Check (DECK 1)

Requirements: Same as the above, 10.

1) Insert the test tape (TTA-100) to DECK 1. Play back the middle part of the tape, and check that the level is ranged within  $\pm 55 \text{ Hz}$  as compared to the speed monitored for DECK 2.

## 12. Wow and Flutter Check (DECK 1 and DECK 2)

Requirements: Same as the above, 10.

1) Connect the wow and flutter meter to HP OUT of the unit.

2) Set the wow and flutter to JIS for INDICATOR and to W RMS (WTD) for mode.

3) Play back the middle part of the test tape (TTA-100), and check that the level ranges under 0.25%.

## 13. Head Azimuth Adjustment (DECK 1 and DECK 2)

### Requirements

- Measuring instrument: Oscilloscope

Test tape: TTA-300 (10 kHz)

Test point: TP8 (Lch), TP9 (Rch)

Adjustment point: Head azimuth adjustment screw

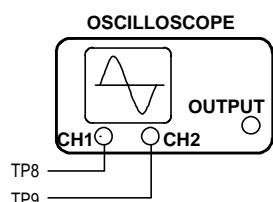
1) Connect the probe CH1 of the oscilloscope to TP8 (Lch) and CH2 to TP9 (Rch).

2) Set V mode of the oscilloscope to ADD.

3) Insert the test tape (TTA-300) to DECK 1. Forward and play back the middle part of the tape, and adjust the head azimuth adjustment screw so that the waveform achieves its maximum level when 10 kHz is played.

4) After adjustment, secure the screw with glue (1600 B).

5) Apply the above steps 3) and 4) to DECK 2.



## 14. Playback Frequency Check (DECK 1 and DECK 2)

### Requirements

- Measuring instrument: Millivoltmeter

Test tape: TTA-300 (315 Hz / 10 kHz)

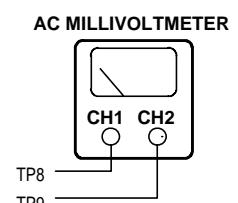
Test point: TP8 (Lch), TP9 (Rch)

1) Connect CH1 of the millivoltmeter to TP8 (Lch) and CH2 to TP9 (Rch).

2) Insert the test tape (TTA-300) to DECK 1, and play back 315 Hz and 10 kHz.

3) Check that the level of 10 kHz is ranged within  $0 \pm 3 \text{ dB}$  compared to the output level of 315 Hz as a reference.

4) Apply the above steps 2) and 3) to DECK 2.



## ELECTRICAL ADJUSTMENT -6/7

### 15. Playback Sensitivity Check (DECK 1 and DECK 2)

#### Requirements

- Measuring instrument: Millivoltmeter  
Test tape: TTA-200 (400 kHz)  
Test points: TP8 (Lch), TP9 (Rch)
  - 1) Connect CH1 of the millivoltmeter to TP8 (Lch) and CH2 to TP9 (Rch).
  - 2) Insert the test tape (TTA-200) to DECK 1 and play back.
  - 3) Check that the output level is ranged within  $140 \text{ mV} \pm 3 \text{ dB}$ .
  - 4) Apply the above steps, 2) and 3) to DECK 2.

### 16. Record/Playback Frequency Response Adjustment (DECK 2)

#### Requirements

- Measuring instrument: Millivoltmeter, Audio signal oscillator (low frequency oscillator), Attenuator

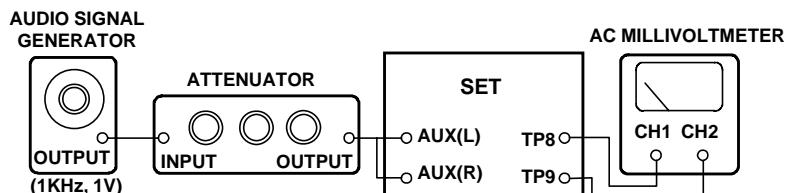
Test tape: TTA-602 (NORMAL)

Test points: TP8 (Lch), TP9 (Rch)

Input point: AUX (1 kHz / 8 kHz)

Adjustment points: SFR451 (Lch), SFR452 (Rch)

- 1) Connect CH1 of the millivoltmeter to TP8 (Lch) and CH2 to TP9 (Rch).
- 2) Connect the output of the oscillator to the attenuator, and then the attenuator to AUX of the unit.
- 3) Insert the test tape (TTA-602) to DECK 2, and record 1 kHz signal from AUX.
- 4) Adjust the attenuator so that the output levels at TP8 and TP9 are ranged at 10 mV
- 5) Record 1 kHz and 8 kHz alternatively.
- 6) Play back the tape. Adjust SFR451 (Lch) / SFR452 (Rch) so that the playback output level of 8 kHz is ranged within  $0 \pm 1 \text{ dB}$  compared to the playback output level of 1 kHz as reference.



### 17. Record/Playback Sensitivity Check (DECK 2)

#### Requirements

- Measuring instrument: Same as the above, 16

Test tape: TTA-602 (NORMAL)

Test point: TP8 (Lch), TP9 (Rch)

Input point: AUX (1 kHz)

1) Insert the test tape (TTA-602) to DECK 2, and record 1 kHz signal from AUX.

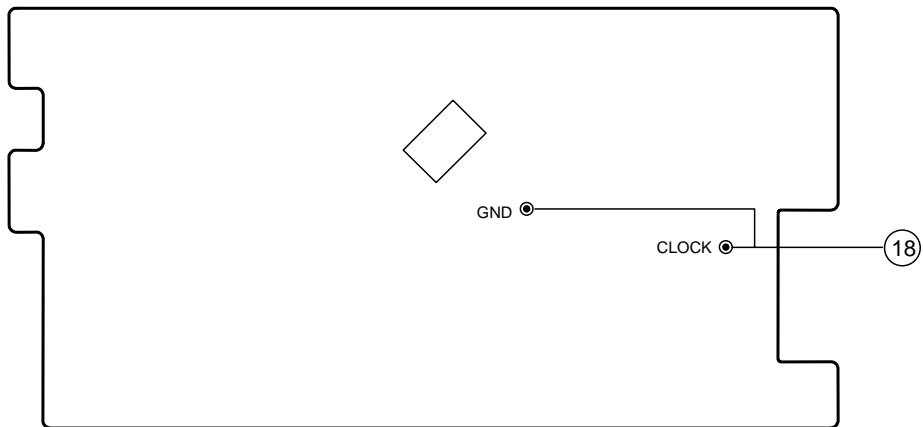
2) Adjust the attenuator so that the output levels at TP8 and TP9 are 100 mV.

3) Play back 1kHz, and check that the output level is ranged within  $0 \text{ dB} \pm 2.5 \text{ dB}$  compared to the recording output level.

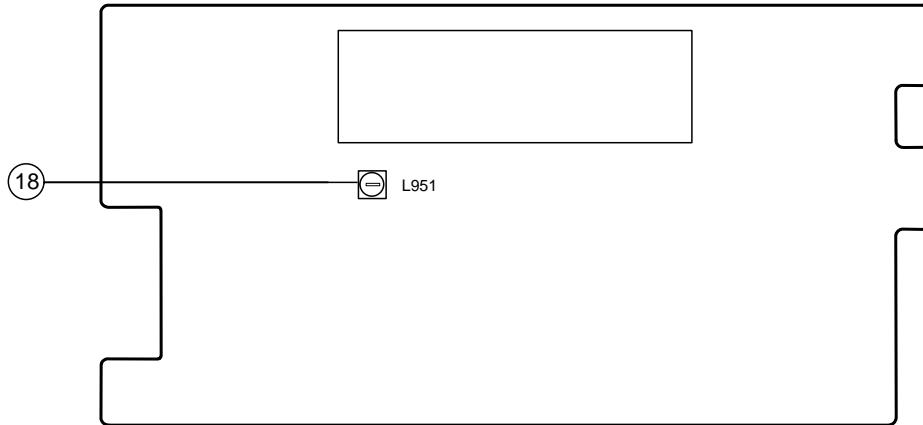
## ELECTRICAL ADJUSTMENT -7/7

<FRONT Section>

FRONT C.B PATTERN SIDE



FRONT C.B PARTS SIDE



### 18. Clock Adjustment

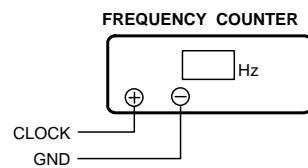
#### Requirements

- Measuring instrument: Frequency counter

Test point: CLOCK, GND

Adjustment point: L951

- 1) While pressing the FF and POWER button, insert the AC plug to the outlet.
- 2) Adjust L951 so that the frequency counter indicates the frequency level within  $436.473 \pm 0.436$  Hz.



# CD TEST MODE -1/1

## CD TEST MODE

### 1. Starting CD Test Mode

While pressing and holding down the CD FUNCTION button, insert the AC plug to outlet.  
When test mode starts, the message, CD TEST appears on the display.

### 2. Exiting CD Test Mode

Press the POWER button or other FUNCTION button or remove the AC plug from outlet.

### 3. Function of CD Test Mode

No	Mode	Function Key	Display	Movement	Check
1	Start Mode		All lit.	FL all lit.	FL check Microcomputer check
2	Search Mode	STOP button	READING	LD constantly lit. Focus search continuous movement *1, 2 Spindle motor continuous kick	APC circuit check Laser current electricity measurement Focus search waveform check Focus error waveform check (DRF is ignored during search mode.)
3	Play Mode	PLAY button	Normal	Normal playback If TOC READ is unavailable, focus search is continued.	Each servo circuit check DRF check DRF waveform check (approx. 1.5Vp-p)
4	Traverse Mode	PAUSE button	Normal	Tracking servo OFF/ON OFF and ON is repeated by every press of the PAUSE button.	Tracking balance check
5	Sled Mode	FF button	CD TEST	PU moves to the innermost position. *3 At the same time, lens is kicked toward inner position.	Sled circuit check Tracking circuit check
		RWD button	CD TEST	PU moves to the outermost position. *3 At the same time, lens is kicked toward outer position.	Mechanism movement check PU check
6	Spindle Mode	●REC/ REC MUTE button	All lit.	When the button is pressed at the first time, spindle motor rotates forward (at rough speed). At the second press, rotation is reversed. At the third press, rotation stops.	Spindle circuit check Spindle motor check

\* 1 When Focus Search operates continuously more than 10 minutes, the protection circuit is activated due to heat generation of the driver IC.

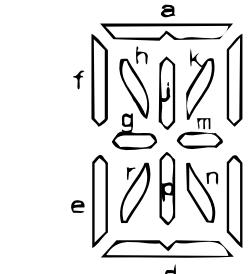
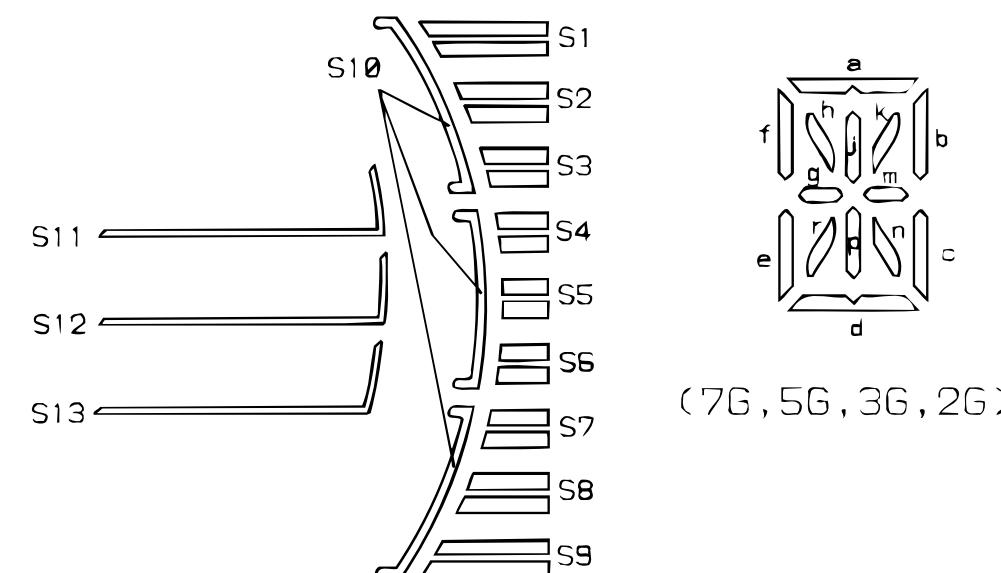
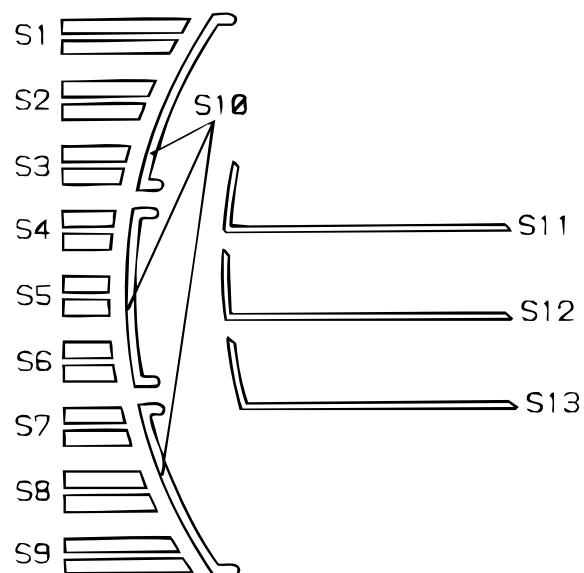
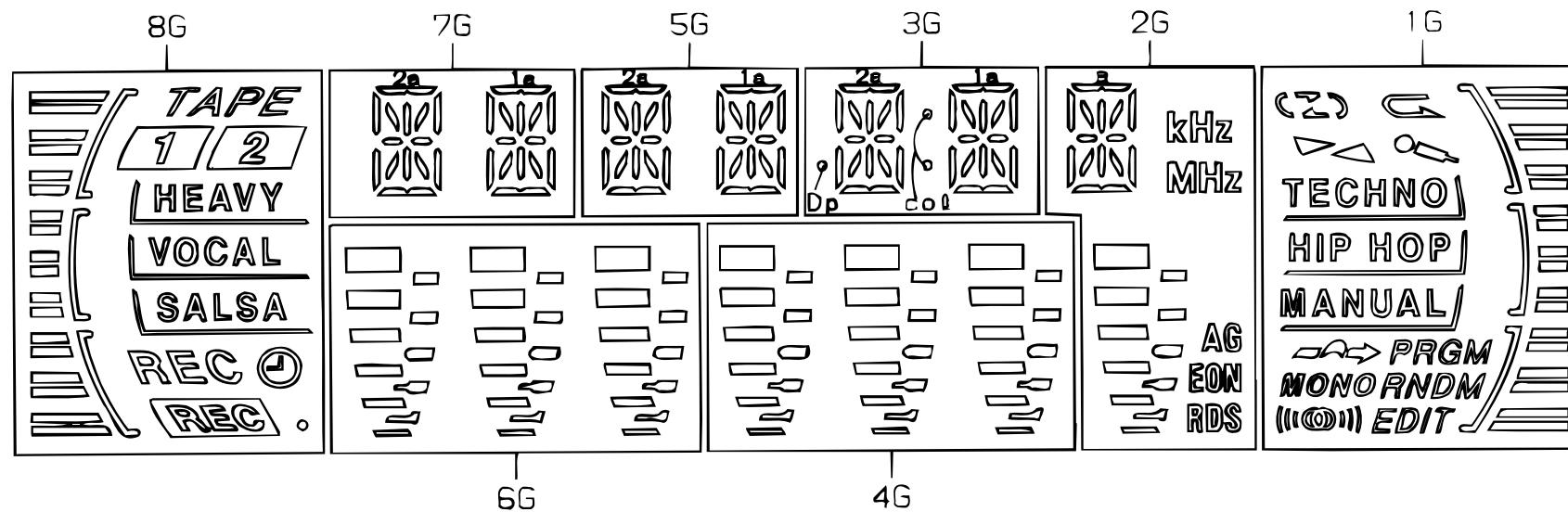
In this case, turn off the power, wait for approximately 10 minutes so that heat is released, and then restart.

\* 2 When the Focus Search fails three times, the gain is switched for CD-RW at the fourth time.

\* 3 Be careful not to damage the gear because the sled motor rotates while the FF or RWD button is being pressed even if the pickup is located in the innermost track or the outermost track.

FL DISPLAY -1/2 (CNF-T BJ890GNK)

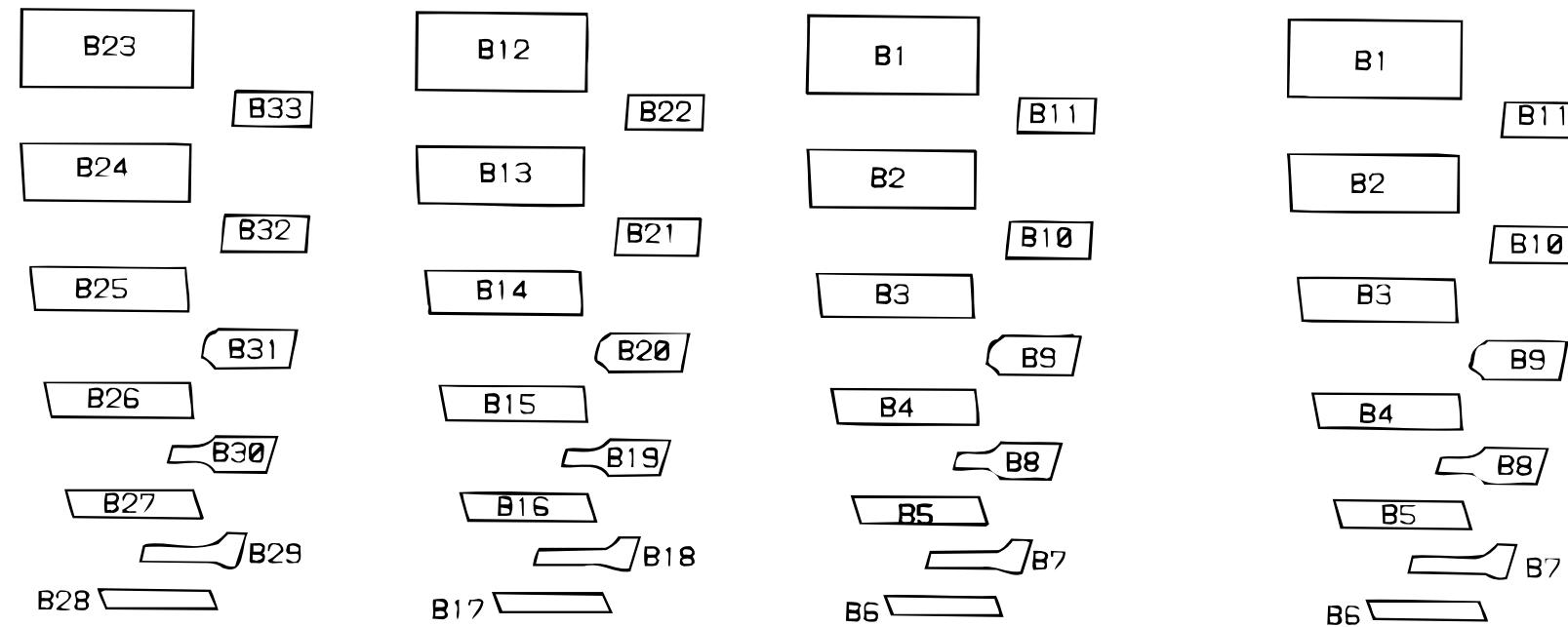
GRID ASSIGNMENT



(7G, 5G, 3G, 2G)

(8G, 1G)

SEGMENT DESIGNATION



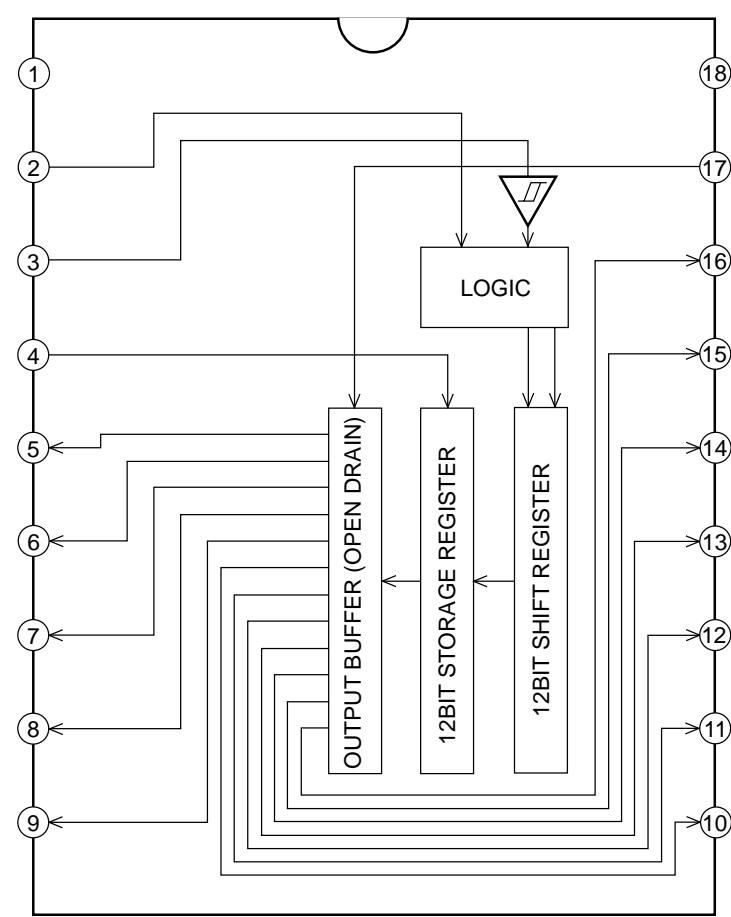
## ANODE CONNECTION

	8G	7G	6G	5G	4G	3G	2G	1G
P1	S1	1a	B28	1a	B28	1a	a	S1
P2	S2	1h	B17	1h	B17	1h	h	S2
P3	S3	1j	B6	1j	B6	1j	j	S3
P4	S4	1k	B29	1k	B29	1k	k	S4
P5	S5	1b	B18	1b	B18	1b	b	S5
P6	S6	1f	B7	1f	B7	1f	f	S6
P7	S7	1m	B27	1m	B27	1m	m	S7
P8	S8	1g	B16	1g	B16	1g	g	S8
P9	S9	1c	B5	1c	B5	1c	c	S9
P10	S10	1e	B30	1e	B30	1e	e	S10
P11	TAPE	1r	B19	1r	B19	1r	r	⌚
P12	1/	1p	B8	1p	B8	1p	p	˨
P13	2/	1n	B26	1n	B26	1n	n	⟳
P14	HEAVY	1d	B15	1d	B15	1d	d	📎
P15	S11	2a	B4	2a	B4	2a	kHz	📐
P16	VOCAL	2h	B31	2h	B31	2h	MHz	📐
P17	S12	2j	B20	2j	B20	2j	AG	ଓ
P18	SALSA	2k	B9	2k	B9	2k	EON	TECHN
P19	S13	2b	B25	2b	B25	2b	RDS	S11
P20	REC	2f	B14	2f	B14	2f	B1	HIP HO
P21	⌚	2m	B3	2m	B3	2m	B11	S12
P22	REC	2g	B32	2g	B32	2g	B2	MANUA
P23	○	2c	B21	2c	B21	2c	B10	S13
P24	-	2e	B10	2e	B10	2e	B3	ଡାକ୍
P25	-	2r	B24	2r	B24	2r	B9	PRGM
P26	-	2p	B13	2p	B13	2p	B4	MONO
P27	-	2n	B2	2n	B2	2n	B8	RNDM
P28	-	2d	B33	2d	B33	2d	B5	(WODI)
P29	-	-	B22	-	B22	col1	B7	EDIT
P30	-	-	B11	-	B11	col2	B6	-
P31	-	-	B23	-	B23	Dp	-	-
P32	-	-	B12	-	B12	-	-	-
P33	-	-	B1	-	B1	-	-	-

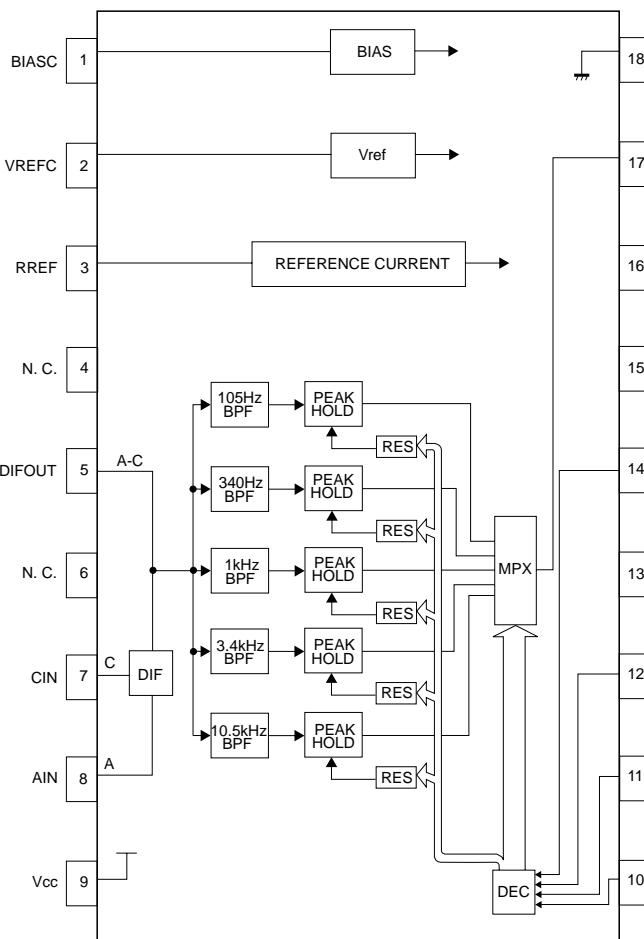
## PIN CONNECTION

# IC BLOCK DIAGRAM -1/1

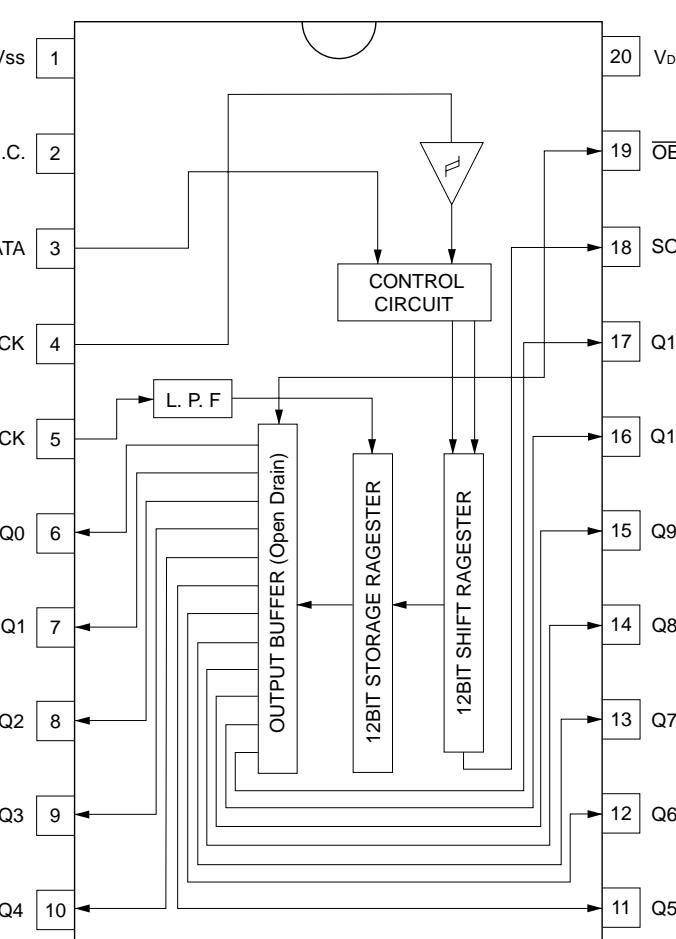
IC, BU2092F



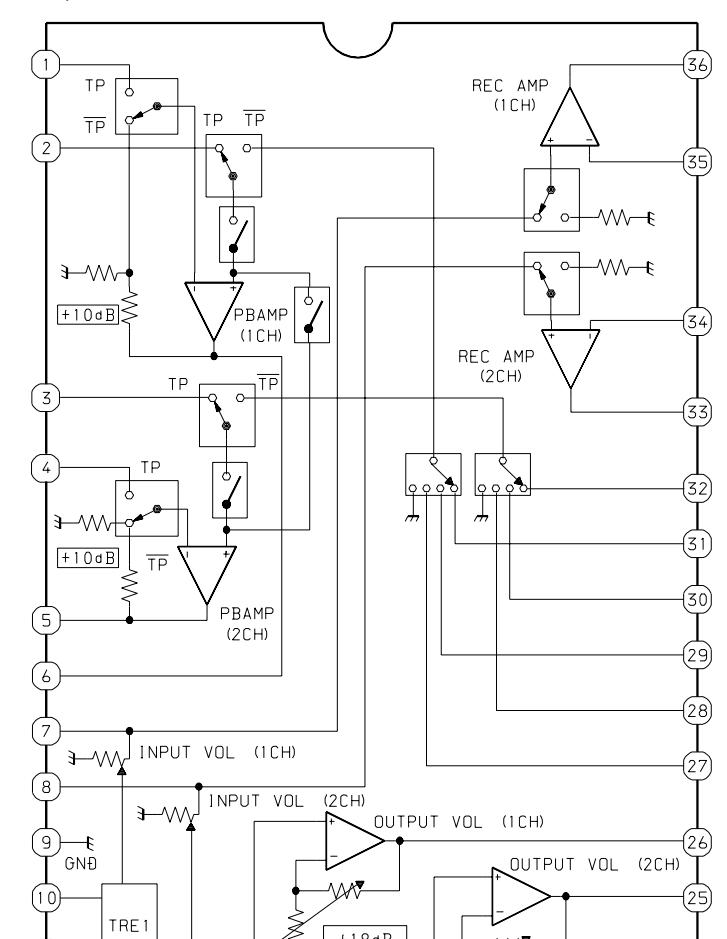
IC, BA3835F



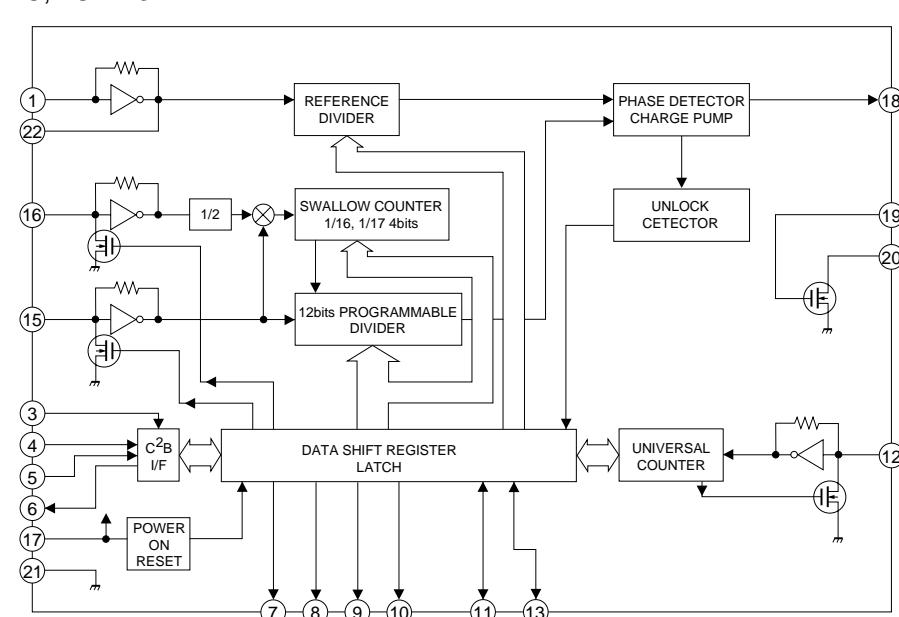
IC, BU2099FV



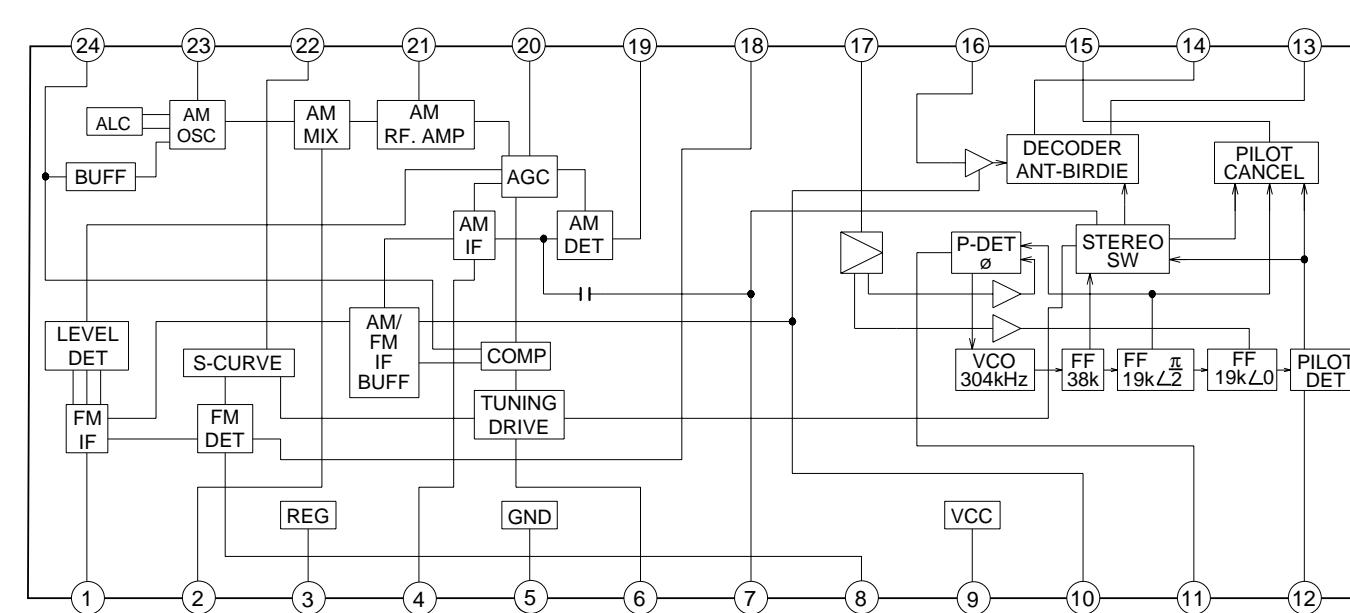
IC, M61518FP



IC, LC72131D-N



IC, LA1845N-A



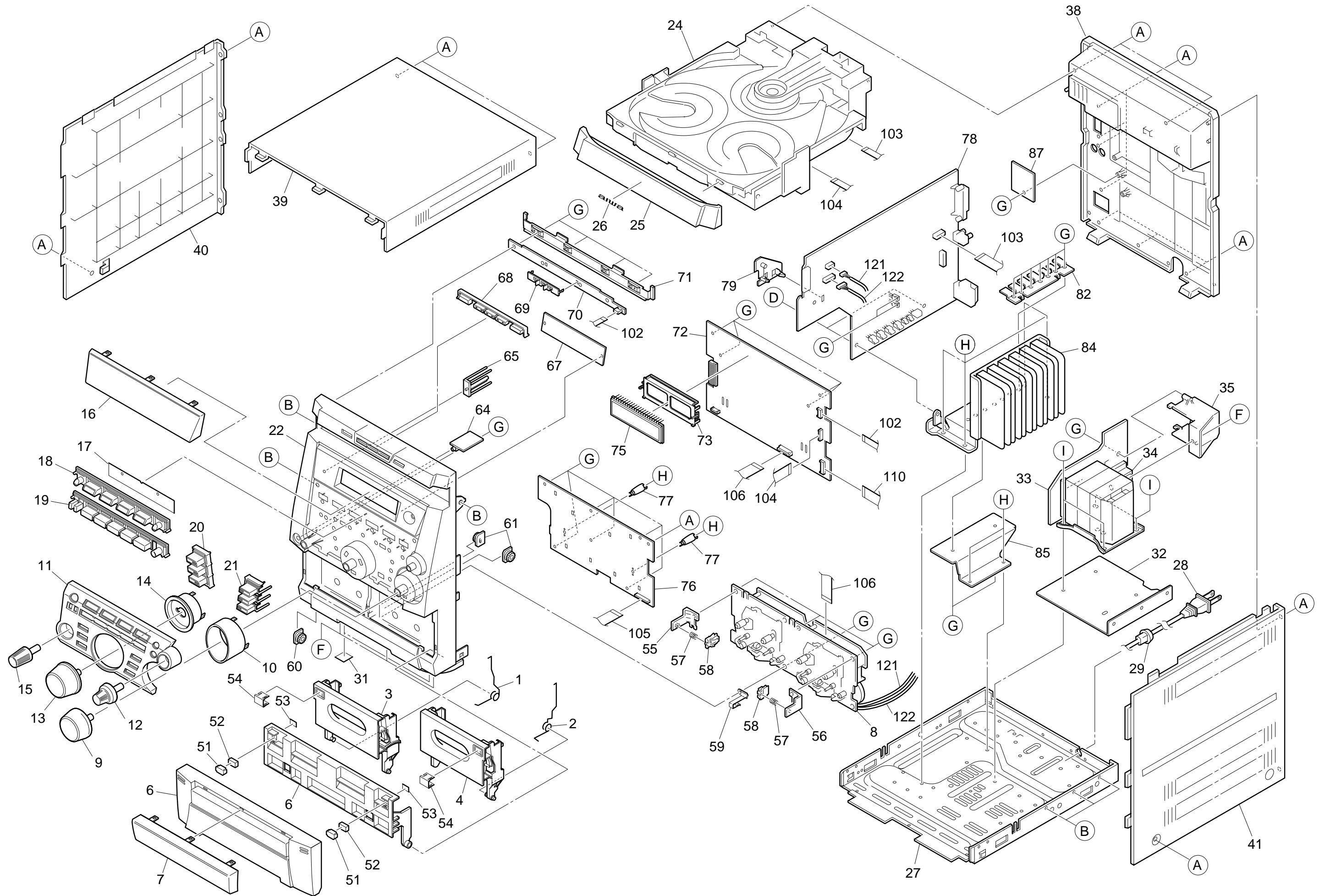
# IC DESCRIPTION -1/1 (LC876764A-50J3) -1/2

Pin No.	Pin Name	I/O	Description
1	I-DISH	I	CD turntable photo sensor input.
2	O-LED_STB	O	STB output for BU2092.
3	I-STEREO	I	TUNER stereo input.
4	I-RDS_DATA	-	Not connected.
5	O-DSC/O-DATA	O	FRONT • MAIN IC data output.
6	O-CLK	O	FRONT • MAIN IC clock output.
7	O-CLK_SFT	O	MICON clock shift output.
8	NC	-	Not connected.
9	I-IFC	I	TUNER IF count serial data input.
10	O-BIAS	O	DECK BIAS output.
11	RESET	-	System reset input.
12	I-TM_BASE	I	Reference clock input for timer watch.
13	I-SPEANA	I	Input spectrum analyzer data input.
14	VSS1	-	GND
15	X1	I	9.43MHz oscillator circuit.
16	X2	O	9.43MHz oscillator circuit.
17	VDD1	-	VDD
18	I-HOLD	I	Power failure detected input.
19	I-TRE	I	Rotary encoder TREBLE input.
20	I-BAS	I	Rotary encoder BASS input.
21	I-VOL	I	Rotary encoder VOLUME input.
22	I-JOG	I	Rotary encoder JOG input.
23	I-TU_SIG (MIC)	-	Not connected.
24	I-CDSW	I	CD mechanical switch A/D converter input.
25	I-KEY1	I	KEY1 input.
26	I-KEY2	I	KEY2 input.
27	I-KEY3	I	KEY3 input.
28	I-RDS_CLK	-	Not connected.
29	I-RMC	-I	System remote control signal input.
30 ~ 37	G1 ~ G8	O	FL grid output G1 ~ G8.
38	NC	-	Not connected.
39 ~ 45	P1 ~ P7	O	FL segment output G1 ~ G7.
46	VDD3	-	VDD
47 ~ 50	P8 ~ P11	O	FL segment output G8 ~ G11.
51	FIX0	-	GND
52 ~ 57	P12 ~ P17	O	FL segment output G12 ~ G17.
58	P18/SPEANA_C	O	FL segment output G18/SPEANA IC C output.
59	P19/SPEANA_B	O	FL segment output G19/SPEANA IC B output.
60	P20/SPEANA_A	O	FL segment output G20/SPEANA IC A output.
61	P21/RDS	O	FL segment output G21.
62	P22/OIRT	O	FL segment output G22.
63	P23/SW	O	FL segment output G23.

# IC DESCRIPTION -1/1 (LC876764A-50J3) -2/2

Pin No.	Pin Name	I/O	Description
64	P24/AM9K	I/O	FL segment output G24/AM9K diode input.
65	P25/FMWIDE	O	FL segment output G25.
66	P26/LW	O	FL segment output G26.
67	P27/R+R	I/O	FL segment output G27/R+R diode input.
68	P28/R+1	I/O	FL segment output G28/R+1 diode input.
69	P29/MPX	I/O	FL segment output G29/MPX diode input.
70	P30/ECO-OFF	I/O	FL segment output G30/ECO OFF diode input.
71	P31/DEMO	I/O	FL segment output G31/DEMO diode input.
72	VDD4	-	VDD
73	P32/KARAOKE	I/O	FL segment output G32/KARAOKE diode input.
74	P33/LED DEMO OFF	I/O	FL segment output G33/LED DEMO OFF detected diode input.
75	I-AUTO2	I	DECK2 auto stop signal input.
76	I-AUTO1	I	DECK1 auto stop signal input.
77	I-CST2	I	DECK2 cassette detect switch data input.
78	I-CST1	I	DECK1 cassette detect switch data input.
79	I-REB	I	DECK2 B side REC enable switch data input.
80	I-REA	I	DECK2 A side REC enable switch data input.
81	I-CAM2	I	DECK2 CAM switch data input.
82	I-CAM1	I	DECK1 CAM switch data input.
83	NC	-	Not connected.
84	NC	-	Not connected.
85	O-MOTOR	O	DECK motor ON/OFF output.
86	O-SOL1	O	DECK1 solenoid output.
87	O-SOL2	O	DECK2 solenoid output.
88	O-MUTE	O	Amp mute ON/OFF output.
89	VSS2	-	GND
90	VDD2	-	VDD
91	NC	-	Not connected.
92	O-KSCAN	O	Key scan timing output.
93	O-PLL_CE	O	TUNER PLL IC chip enable output.
94	O-POWER	O	System power supply ON/OFF output.
95	O-CD_DATA	O	CD data output.
96	O-CD_CLK	O	CD clock output .
97	O-CD_CE	O	CD chip enable output.
98	I-SUBQ	I	CD SUBQ data input.
99	I-DRF	I	CD focus on detect data input.
100	I-WRQ	I	CD interruption signal input.

MECHANICAL EXPLODED VIEW -1/1



# MECHANICAL MAIN PARTS LIST -1/2

! = SAFETY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					CX-SNTR77 USTC
O MC1001	8A-NF8-281-010	SPR-T,EJECT 1			a
O MC1002	8A-NF8-282-010	SPR-T,EJECT 2			a
O MC1003	8C-NFR-002-010	BOX,CASS 1			a
O MC1004	8C-NFR-003-010	BOX,CASS 2			a
O MC1005	8C-NFR-004-010	BOX,DOOR			a
O MC1006	8C-NFT-009-010	PANEL,DOOR 1+1			a
O MC1007	8C-NFR-006-010	WINDOW,CASS			a
X MC1008	M8-ZZM-39E-070	ZZM-3 YPR3NC			a
O MC1009	8C-NFR-014-010	KNOB,RTRY VOL			a
O MC1010	8C-NFT-004-010	RING,VOL			a
O MC1011	8C-NFT-011-010	PANEL,FR 1+1			a
O MC1012	8C-NFT-014-010	KNOB,RTRY JOG			a
O MC1013	8C-NFR-016-010	KNOB,RTRY BASS			a
O MC1014	8C-NFT-013-010	PANEL,BASS			a
O MC1015	8C-NFT-015-010	KNOB,RTRY TRE			a
O MC1016	8C-NFT-003-010	WINDOW,DISPLAY U			a
X MC1017	8C-NFR-038-010	SH,FUN			a
O MC1018	8C-NFR-032-010	KEY,ASSY POWER			a
X MC1018a	8C-NFR-011-010	KEY,POWER			a
X MC1018b	8C-NFR-019-010	REFLECTOR,FUN			a
					CX-SNTR77 USTC
O MC1019	8C-NFT-010-010	KEY,OPERATION 1+1			a
O MC1020	8C-NFR-046-110	KEY ASSY,GEQ L			a
X MC1020a	8C-NFR-022-110	KEY,GEQ L			a
X MC1020b	8C-NFR-033-110	REFLECTOR,GEQ L			a
O MC1021	8C-NFR-047-110	KEY ASSY,GEQ R			a
X MC1021a	8C-NFR-023-110	KEY,GEQ R			a
X MC1021b	8C-NFR-034-110	REFLECTOR,GEQ R			a
O MC1022	8C-NFT-012-010	CABI,FR U			a
X MC1024	M8-BZG-29S-070	BZG-2 ZD5GNC2			a
O MC1025	8C-NFT-002-010	PANEL,TRAY			a
O MC1026	87-B00-002-010	BADGE,AIWA 30 ABS SIL			a
X MC1027	8C-NFT-201-010	CHAS,MAIN CC 85-58			a
! O MC1028	87-A80-110-010	AC CORD ASSY,U SPT-2W			a
O MC1029	87-A91-422-010	BUSHING,AC CORD(U)			a
X MC1031	86-NFZ-205-010	CUSH, 12.5-15.5-2 (NP)			a
X MC1032	8C-NFT-206-010	PLATE,PT 85C			a
X MC1033	8C-NFT-632-010	PWB,PT U/LH CNF-T			a
! O MC1034	8C-NFT-607-010	PT,U CNF-T			a
O MC1035	8B-NF1-203-010	HLDL,PWB PT			a
O MC1038	8C-NFT-001-010	CABI,REAR USC			a
					CX-SNTR77 USTC
O MC1039	8C-NFT-008-010	PANEL,TOP V-2			a
O MC1040	8C-NFT-006-010	PANEL,LEFT V-2			a
O MC1041	8C-NFT-007-010	PANEL,RIGHT V-2			a
O MC1051	8C-NFR-224-010	COVER,MAGNET			a
O MC1052	8C-NFR-222-010	MAGNET,BOX 11-6-4			a
X MC1053	8C-NFR-225-010	SH, 12.5-17.5-0.07 W/ADH			a
O MC1054	8C-NFR-223-010	PLATE,BOX			a
O MC1055	87-NF4-216-010	HLDL,LOCK 1			a
O MC1056	87-NF4-217-110	HLDL,LOCK 2			a
O MC1057	86-NF9-224-010	SPR-C,LOCK			a
O MC1058	82-NF5-229-010	PLATE,LOCK (*)			a
X MC1059	8C-NFR-210-010	PLATE,EARTH MECHA			a
O MC1060	8Z-NF6-210-010	DMPR,150 N			a
O MC1061	8A-NF8-209-010	OIL-DMPR,120			a
X MC1064	8C-NFT-633-010	PWB,HP U/LH CNF-T			a
O MC1065	8C-NFR-020-010	REFLECTOR,ECO			a
X MC1067	8C-NFT-005-010	SH,FL BLACK			a
O MC1068	8C-NFR-026-010	KEY,ASSY CD			a
X MC1068a	8C-NFR-012-010	KEY,CD			a
X MC1068b	8C-NFR-018-010	REFLECTOR,CD			a
					CX-SNTR77 USTC
O MC1069	8C-NFR-201-010	GUIDE,CD			a
X MC1070	8C-NFR-614-010	PWB,FR CD-LED NFR			.
X MC1070	8C-NFT-623-010	PWB,LED CNF-T			a
X MC1072	8C-NFT-622-010	PWB,KEY CNF-T			a
O MC1073	8B-NF9-207-010	GUIDE,FL 90.2-20			a
O MC1075	8C-NFT-601-010	FL,CNF-T BJ890GNK			a
X MC1076	8C-NFT-621-010	PWB,FR CNF-T			a
X MC1077	8C-NFR-203-010	HLDL,PWB FR			a
X MC1078	8C-NFT-631-010	PWB,MAIN U/LH CNF-T			a
O MC1079	8A-NF8-206-010	HLDL,PWB M			a
					CX-SNTR77 USTC
X MC1081	8C-NFT-207-010	HT-SINK,FET C			a
X MC1082	8C-NFT-202-010	HLDL,TR 7C			a
X MC1084	8C-NFT-203-010	HT-SINK,ASSY160-6 C			a
X MC1084a	8C-NFT-204-010	HT-SINK,MAIN C			a
X MC1084b	8C-NFT-205-010	HT-SINK,FIN160 C			a
X MC1085	8C-NFT-208-010	HT-SINK,SUB C			a
X MC1086	8C-NFT-636-010	PWB,HLDL WIRE U/LH CNF-T			a
O MC1102	88-906-201-110	FF-CABLE, 6P 1.25			a
O MC1103	88-906-121-110	FF-CABLE,6P			a
O MC1104	88-908-301-110	FF-CABLE,8P 1.25 300MM			a

## MECHANICAL MAIN PARTS LIST -2/2

! =  SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

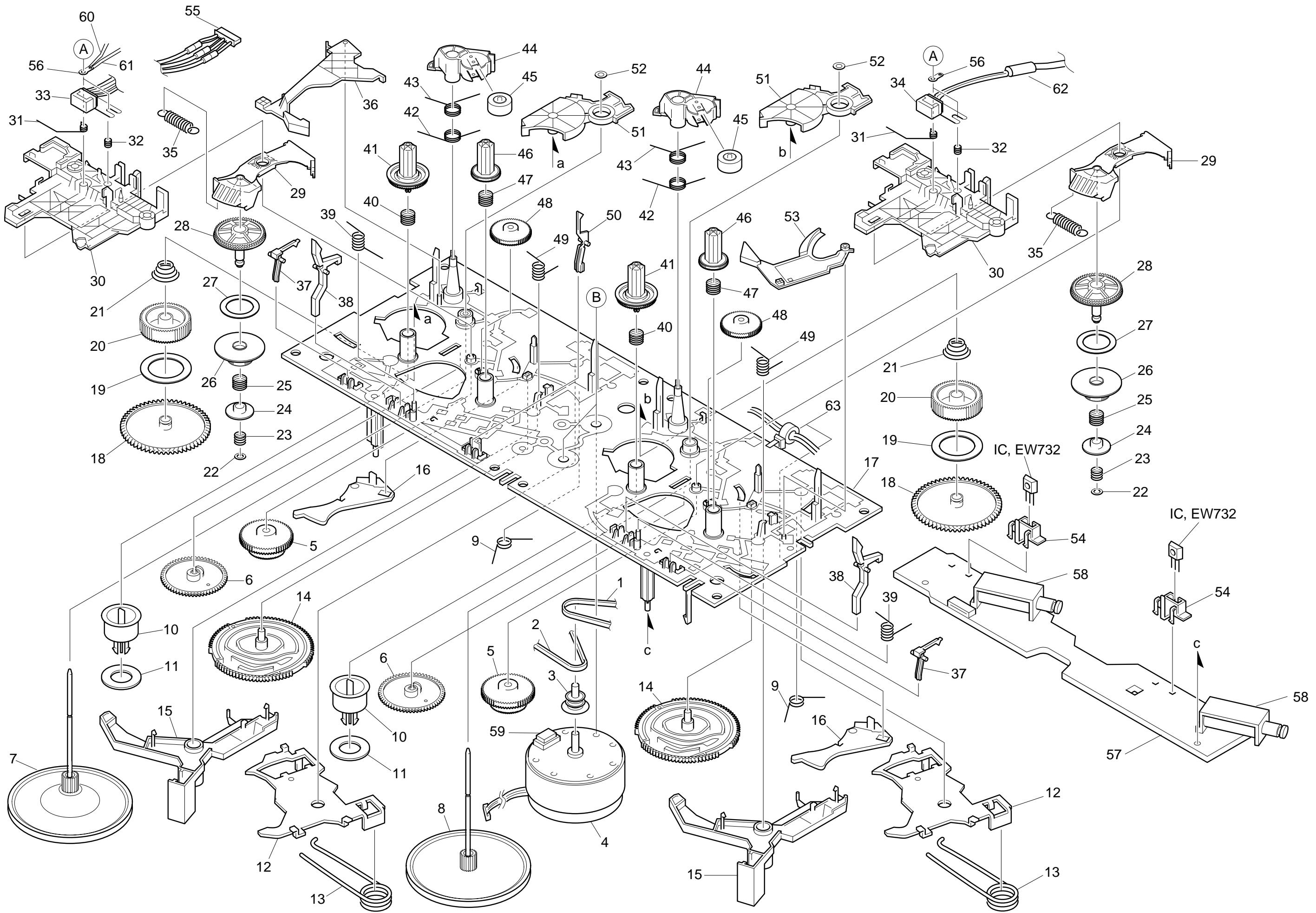
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					CX-SNTR77 USTC
O MC1105		88-913-101-110	FF-CABLE,13P 1.25 100MM		a
O MC1106		88-911-101-110	FF-CABLE,11P 1.25 100MM		a
O MC1A		87-067-641-010	UTT2+3-8 W/O SLOT BLK		a
O MC1B		87-721-096-410	QT2+3-10 W/O SLOT		a
O MC1C		87-078-199-010	S-SCREW, ITC4+10 R		a
O MC1D		87-NF4-224-010	S-SCREW, IT3B+3-8 CU		a
O MC1E		87-B10-315-010	BVIT3B+3-8 R W/O		a
O MC1G		87-067-703-010	BVT2+3-10 W/O SLOT		a
O MC1G		87-067-703-010	BVT2+3-10 W/O SLOT		a
O MC1H		87-067-581-010	BVT2+3-15 W/O SLOT		a
O MC1J		87-B10-091-010	UTT2+3-10 W/O SLOT BLK		a
O MC1K		88-AR1-217-010	S-SCREW,BFT2+3-8		a

## COLOR NAME TABLE -1/1

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
HM	Metallic Gray	NH	Champagne Gold	M	Wood Pattern

TAPE MECHANISM EXPLODED VIEW -1/1 <ZZM-3>



# TAPE MECHANISM PARTS LIST -1/2 <ZZM-3>

! = SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.  
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Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					ZZM-3 YPR3NC
O	ST1001	8Z-ZM3-227-210	BELT, MAIN M3	a	
O	ST1002	8Z-ZM3-235-110	BELT, MAIN L	a	
O	ST1003	8Z-ZM1-235-010	PULLEY, MOT	a	
O	ST1004	87-A92-321-010	MOT, SHU2L 60	a	
O	ST1005	8Z-ZM1-232-010	GEAR, IDL FF/REW	a	
O	ST1006	8Z-ZM3-229-010	GEAR, IDL M3	a	
O	ST1007	8Z-ZM3-256-010	FLY-WHL ASSY, M3 R	a	
X	ST1007a	8Z-ZM2-211-310	FLY-WHL, ZZM-2	a	
X	ST1007b	8Z-ZM3-242-110	SHAFT, CAP M3	a	
O	ST1008	8Z-ZM3-255-010	FLY-WHL ASSY, M3 L	a	
X	ST1008a	8Z-ZM3-228-210	FLY-WHL, M3	a	
X	ST1008b	8Z-ZM3-242-110	SHAFT, CAP M3	a	
O	ST1009	8Z-ZM3-231-310	SPR-T, TRIG	a	
O	ST1010	8Z-ZM3-213-110	CLR, MG	a	
O	ST1011	8Z-ZM3-616-010	RING MAGNET 4	a	
O	ST1012	8Z-ZM3-243-110	LEVER ASSY, HD UP	a	
X	ST1012a	8Z-ZM3-207-010	LEVER, HD UP	a	
X	ST1012b	8Z-ZM3-241-110	SHAFT, HD UP	a	
O	ST1013	8Z-ZM3-238-110	SPR-T, HD UP	a	
O	ST1014	8Z-ZM3-219-310	GEAR, CAM M3	a	
					ZZM-3 YPR3NC
O	ST1015	8Z-ZM3-206-010	LEVER, TRIG	a	
O	ST1016	8Z-ZM3-209-010	LEVER, CAM FR	a	
O	ST1017	8Z-ZM3-203-310	CHAS ASSY, M3	a	
X	ST1017a	8Z-ZM1-268-010	BRG, METAL	a	
X	ST1017b	8Z-ZM3-201-310	CHAS ASSY, OUT-SERT M3	a	
X	ST1017c	8Z-ZM3-202-010	CHAS, M3	a	
O	ST1018	8Z-ZM1-228-010	GEAR, SLIP T-UP B	a	
O	ST1019	8Z-ZM1-265-010	FELT, T-UP	a	
O	ST1020	8Z-ZM1-227-010	GEAR, SLIP T-UP A	a	
O	ST1021	8Z-ZM1-251-310	SPR-C, T-UP SLIP	a	
O	ST1022	8Z-ZM1-275-010	W-L, 1.47-4-0.25	a	
O	ST1023	8Z-ZM1-257-210	SPR-C, F/R	a	
O	ST1024	8Z-ZM1-236-010	CLR, SLIP FF/REW	a	
O	ST1025	8Z-ZM3-261-010	SPR-C, FR M3 C	a	
O	ST1026	8Z-ZM3-250-010	GEAR, SLIP F/R A M3	a	
O	ST1027	8Z-ZM1-269-010	FELT, FF/REW 2	a	
O	ST1028	8Z-ZM1-238-110	GEAR, SLIP FF/REW B 2	a	
O	ST1029	8Z-ZM3-220-110	LEVER, FR M3	a	
O	ST1030	8Z-ZM3-205-110	LEVER, PLAY M3	a	
O	ST1031	8Z-ZM3-262-010	SPR-T, BRG M3 C	a	
					ZZM-3 YPR3NC
O	ST1032	84-ZM2-227-310	SPR-C, AZIMUTH	a	
O	ST1033	87-A92-195-010	HEAD, RPH HASVH5507A	a	
O	ST1034	87-A92-198-010	HEAD, PH HASVH2504A	a	
O	ST1035	8Z-ZM3-263-010	SPR-E, FR C	a	
O	ST1036	8Z-ZM3-211-110	LEVER, EJECT R	a	
O	ST1037	8Z-ZM3-225-110	LEVER, STOP	a	
O	ST1038	8Z-ZM3-221-210	LEVER, CAS	a	
O	ST1039	8Z-ZM3-234-310	SPR-T, LVR CAS	a	
O	ST1040	8Z-ZM3-223-310	SPR-C, REEL R M3	a	
O	ST1041	8Z-ZM1-225-110	GEAR, REEL R	a	
O	ST1042	8Z-ZM3-264-010	SPR-T, T-UP M3 C	a	
O	ST1043	8Z-ZM3-252-010	SPR-T, PINCH 2	a	
O	ST1044	8Z-ZM3-215-110	LEVER, PINCH M3	a	
O	ST1045	8Z-ZM1-261-110	ROLLER ASSY, PINCH	a	
X	ST1045a	8Z-ZM1-263-010	ROLLER, PINCH	a	
X	ST1045b	8Z-ZM1-262-010	CLR, ROLLER	a	
O	ST1046	8Z-ZM1-226-010	GEAR, REEL L	a	
O	ST1047	8Z-ZM3-222-210	SPR-C, REEL L M3	a	
O	ST1048	8Z-ZM3-251-010	GEAR, IDL REW M3	a	
O	ST1049	8Z-ZM3-236-310	SPR-T, PLAY M3	a	
					ZZM-3 YPR3NC
O	ST1050	82-ZM1-240-110	LVR, REC	a	
O	ST1051	8Z-ZM3-216-310	LEVER, T-UP M3	a	
O	ST1052	87-B10-301-010	W-L, 1.63-3.2-0.5 SLIT	a	
O	ST1053	8Z-ZM3-212-010	LEVER, EJECT L	a	
O	ST1054	8Z-ZM3-214-010	HLDR, IC	a	
O	ST1055	86-ZM3-605-110	CONN ASSY, 8P -RPB	a	
X	ST1056	87-450-411-010	LUG TERMINAL PLATE, LB 1		a
X	ST1057	8Z-ZM3-604-010	PWB, MAIN C	a	
O	ST1058	82-ZM3-621-210	SOL ASSY, 27 KO	a	
X	ST1058a	82-ZM3-622-010	HLDR, BOBBIN SOL KO	a	
X	ST1058b	82-ZM3-623-010	YOKE, SOL KO	a	
X	ST1058c	82-ZM3-624-010	SHAFT, CORE SOL KO	a	
X	ST1058d	82-ZM3-625-010	SHAFT, PLUNGER SOL KO	a	
X	ST1058e	82-ZM3-626-010	TERMINAL, SOL KO	a	
X	ST1059	8Z-ZM3-224-210	SH, BELT M3	a	
X	ST1060	89-936-100-110	WIRE, UBX6-10-3	a	
X	ST1061	89-937-220-110	WIRE, UBT-22-3	a	
O	ST1062	86-ZM3-604-210	CONN ASSY, 3P -PB	a	
O	ST1063	87-A90-193-010	HLDR, CV100 (B)	a	
O	ST1063	84-ZM2-252-010	S-SCREW, AZI-2-6.4 C	a	

# TAPE MECHANISM PARTS LIST -2/2 <ZZM-3>

! =  SAFTY PARTS

C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

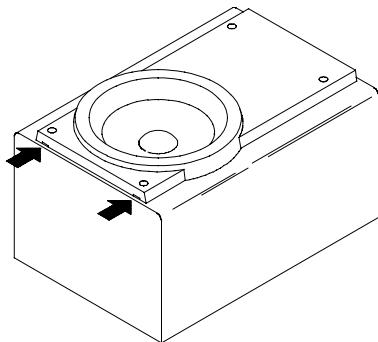
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
	O	ST1B	8Z-ZM3-245-110	V+2.6 ZZM-3	ZZM-3 YPR3NC a

# GENERAL SPEAKER DISASSEMBLY INSTRUCTIONS (FOR REFERENCE) -1/1

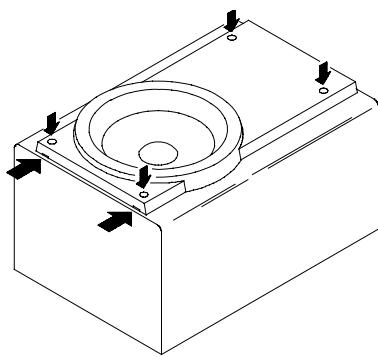
## Type.1

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.



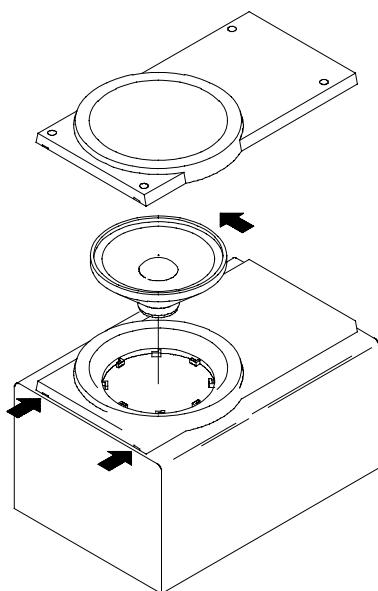
## Type.2

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.

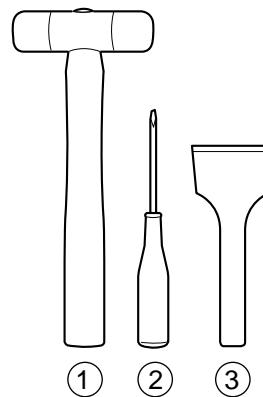


## Type.3

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.

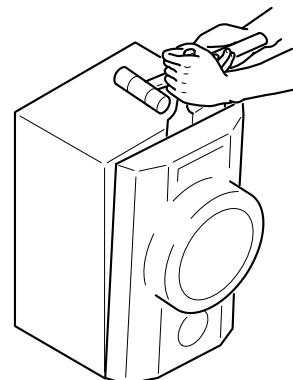
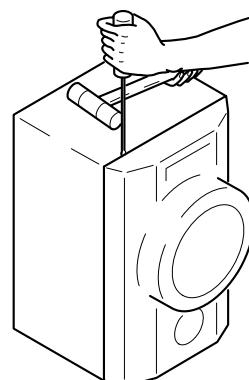


Fig-1

Fig-2

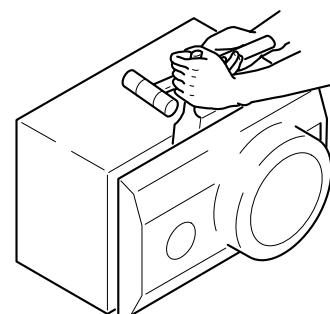


Fig-3

## 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 -1/1 <SX-SNTR77>

! = SAFTY PARTS  
C = Components marked

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However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					SX-SNTR77 YSTN
O	SP1001	88-NSK-610-010	SPKR, CERAMIC ASSY	a	
O	SP1002	8A-NSJ-006-110	BADGE, AIWA S35	a	
O	SP1003	8B-NSH-612-010	CORD, SPKR	a	
O	SP1004	8B-NSK-604-010	SPKR, T 60	a	
O	SP1005	8C-NST-604-010	SPKR, W 120	a	
O	SP1006	8C-NST-602-010	SPKR, SW 120	a	
O	SP1007	8C-NST-001-010	PANEL, FR	a	
X	SP1008	8C-NST-002-010	PANEL, BA	a	
O	SP1009	8C-NST-003-010	PLATE, NAME	a	
O	SP1010	8C-NST-008-010	PROTECTOR, W	a	
X	SP1011	8Z-NS3-026-010	CORD, BUSH L	a	
O	SP1012	8C-NST-007-010	HLDR, TW	a	
O	SP1013	8C-NST-004-010	RING, W	a	
O	SP1014	8C-NST-005-010	RING, TW	a	
O	SP1015	8C-NST-006-010	RING, PIEZO	a	

## OTHER PARTS LIST -1/2

! =  SAFTY PARTS  
C = Components marked

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					CX-SNTR77 USTC
	X	87-B40-447-010	SH, 28-10-0.35 W/ADH		a
	X	87-B40-098-010	BAG, PV 0.025-650-750 PL		a
	X	93-704-337-010	SH, FOAMED-MAT 0.31-800-500		a
	X	84-711-909-010	LBL DATE CODE		a
	X	87-B40-282-010	LBL, BAR-CODE AU 35X8		a
	X	8A-NF8-972-010	LBL, POP ENG		a
	X	8C-NFT-851-010	CUSHION, FRONT C		a
	X	8C-NFT-852-010	CUSHION, REAR C		a
	X	8B-NF1-214-010	SH, FFC		a
	X	8C-NFT-970-010	LBL, POP U		a

## OTHER PARTS LIST -2/2 <TAPE MECHANISM ZZM-3>

! =  SAFTY PARTS  
C = Components marked

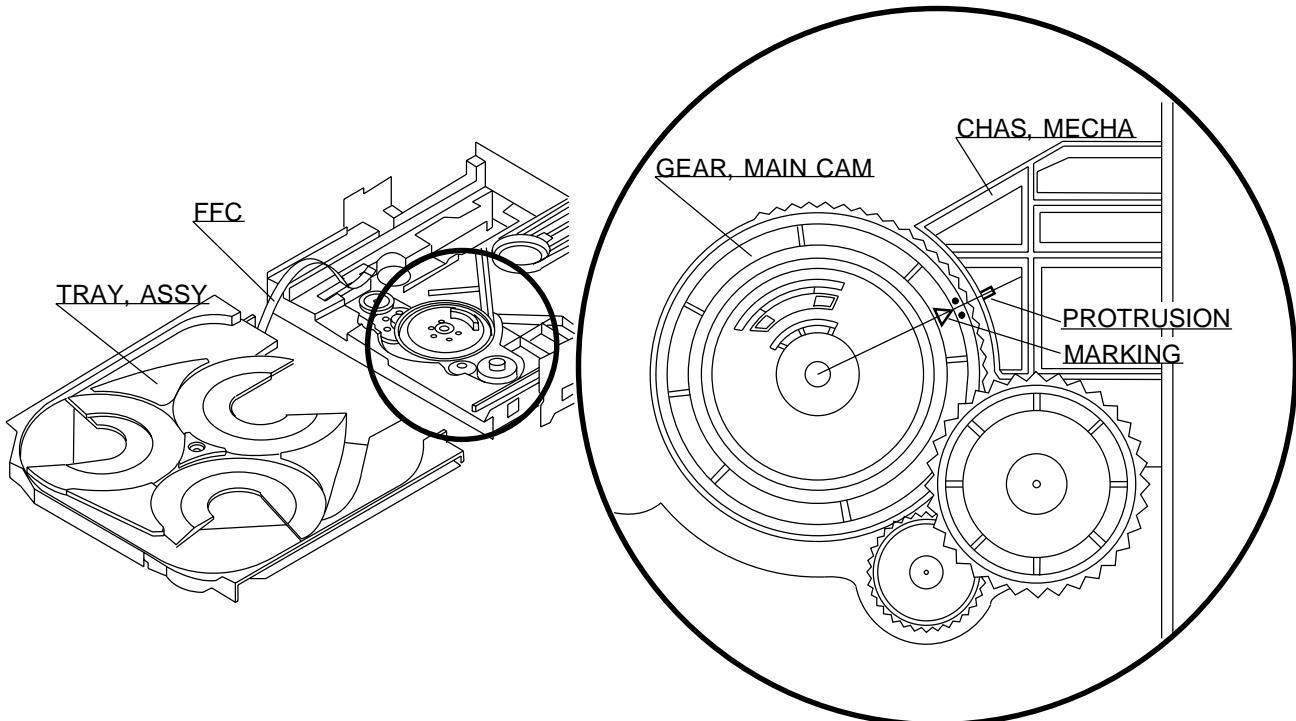
All components used on this model at the production line are shown in this service manual.  
However, please note that not all components will be available as spare parts for after-sales service.  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
	X		82-ZM3-987-010	BAG, PV 0.04-300-210	ZZM-3 YPR3NC a

## How to Adjust the Rotating Phase of the Gear, Main Cam

- 1) Pull out the FFC from the CD MAIN C.B, and then remove the TRAY, ASSY.
- 2) Set the GEAR, MAIN CAM so that the marking on it is positioned at the protrusion of the CHAS, MECHA as shown in the drawing below.
- 3) Reassemble the TRAY,ASSY and insert the FFC back to the CD MAIN C.B.

NOTE : If the phase alignment of the GEAR, MAIN CAM is not correctly performed, it will not work properly.



# ELECTRICAL PARTS LIST -1/4 (CD C.B -1/3)

! =  $\triangle$  SAFTY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
3CD	O C	0001	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	BZG-2 ZD5GNC2
3CD	O C	0002	87-010-263-080	CAP,E 100-10 M 11L SME	a
3CD	O C	0003	87-A10-915-080	C-CAP,U 1000P-25 J CH	a
3CD	O C	0004	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0005	87-010-263-080	CAP,E 100-10 M 11L SME	a
3CD	O C	0006	87-010-405-080	CAP,E 10-50 M 11L SME	a
3CD	O C	0101	87-A10-504-080	C-CAP,U 0.047-16 K B	a
3CD	O C	0102	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0103	87-012-188-080	C-CAP,U 47P-50 J CH GRM	a
3CD	O C	0104	87-012-282-080	C-CAP,U 4700P-50 K B GRM	a
3CD	O C	0105	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0106	87-010-263-080	CAP,E 100-10 M 11L SME	a
3CD	O C	0107	87-010-263-040	CAP,E 100-10 M 11L SME	a
3CD	O C	0108	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0109	87-010-263-040	CAP,E 100-10 M 11L SME	a
3CD	O C	0110	87-010-405-040	CAP,E 10-50 M 11L SME	a
3CD	O C	0111	87-010-401-080	CAP,E 1-50 M 11L SME	a
3CD	O C	0114	87-012-188-080	C-CAP,U 47P-50 J CH GRM	a
3CD	O C	0115	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0116	87-010-263-040	CAP,E 100-10 M 11L SME	a
3CD	O C	0117	87-010-263-080	CAP,E 100-10 M 11L SME	a
3CD	O C	0118	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0121	87-010-263-080	CAP,E 100-10 M 11L SME	a
3CD	O C	0122	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0123	87-012-176-080	C-CAP,U 15P-50 J CH	a
3CD	O C	0124	87-012-176-080	C-CAP,U 15P-50 J CH	a
3CD	O C	0126	87-010-403-080	CAP,E 3.3-50 M 11L SME	a
3CD	O C	0127	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0128	87-A10-504-080	C-CAP,U 0.047-16 K B	a
3CD	O C	0129	87-010-403-040	CAP,E 3.3-50 M 11L SME	a
3CD	O C	0130	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0131	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0132	87-010-263-040	CAP,E 100-10 M 11L SME	a
3CD	O C	0133	87-010-112-080	CAP,E 100-16 M 11L SME	a
3CD	O C	0134	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0135	87-010-260-080	CAP,E 47-25 M 11L SME	a
3CD	O C	0136	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	X C	0137	88-108-000-080	C-JUMPER,U	a
3CD	O C	0138	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0160	87-A12-319-080	C-CAP,U 0.1-25 K B	a
3CD	O C	0161	87-A10-904-080	C-CAP,U 1-6.3 K B	a
3CD	O C	0203	87-010-235-080	CAP,E 470-16 M SME	a
3CD	O C	0204	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0205	87-010-263-040	CAP,E 100-10 M 11L SME	a
3CD	O C	0208	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0212	87-010-405-040	CAP,E 10-50 M 11L SME	a
3CD	O C	0213	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0214	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0304	87-010-759-080	C-CAP,U 0.1-25 Z F CM/CB	a
3CD	O C	0305	87-A10-915-080	C-CAP,U 1000P-25 J CH	a
3CD	O C	0401	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
3CD	O C	0402	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
3CD	O C	0403	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
3CD	O C	0404	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
3CD	O C	0405	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a
3CD	O CN	0001	87-A60-429-010	CONN,16P H TOC-A	a
3CD	O CN	002	87-A60-130-010	CONN,5P V FE	a
3CD	O CN	0301	87-A60-154-010	CONN,6P H FE	a
3CD	O CN	0401	87-099-201-010	CONN,8P H BLK 6216	a
3CD	O CNA0203	84-ZG1-648-010	CONN ASSY, 6P	a	
3CD	S D	0101	87-A40-003-080	ZENER,MTZJ4.3A	a
3CD	S D	0102	87-070-136-080	ZENER,MTZJ5.1B	a
3CD	S D	0103	87-A40-270-080	C-DIODE,MC2838	a
3CD	S IC	0101	87-A22-242-030	C-IC,LC78646E	a
3CD	S IC	0201	87-A21-414-010	IC,BA5927S	a
3CD	X JR	0101	88-108-000-080	C-JUMPER,U	a
3CD	X JR	0121	88-129-000-080	CHIP JUMPER	a
3CD	X JR	0401	88-129-000-080	CHIP JUMPER	a
3CD	X JR	0402	88-129-000-080	CHIP JUMPER	a
3CD	X JR	0403	88-108-000-080	C-JUMPER,U	a
3CD	O M	0001	87-A91-982-010	MOT,M25E-4 2054	a
3CD	O M	0201	87-045-305-010	MOT,RF-500TB	a
3CD	S Q	0001	87-A30-494-080	TR,2SA1980G	a
3CD	S Q	0101	87-A30-612-080	TR,2SC5343Y	a
3CD	S Q	0102	87-A30-073-080	C-TR,RTIN 141C	a
3CD	S Q	0210	87-A30-515-080	TR,2SA19790/Y	a
3CD	X R	0001	88-108-333-080	C-RES,U 33K-1/16W J	a
3CD	O R	0002	88-108-153-080	C-RES,U 15K-1/16W J	a
3CD	O R	0003	88-108-153-080	C-RES,U 15K-1/16W J	a
3CD	O R	0004	88-108-153-080	C-RES,U 15K-1/16W J	a

# ELECTRICAL PARTS LIST -2/4 (CD C.B -2/3)

! = SAFETY PARTS  
C = Components marked

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
3CD	O R	0005	88-108-153-080	C-RES,U 15K-1/16W J	BZG-2 ZD5GNC2
3CD	X R	0006	88-108-333-080	C-RES,U 33K-1/16W J	a
3CD	X R	0007	88-108-181-080	C-RES,U 180-1/16W J	a
3CD	X R	0008	88-108-339-080	C-RES,U 3.3-1/16W J	a
3CD	X R	0010	88-129-000-080	CHIP JUMPER	a
3CD	O R	0101	88-108-103-080	C-RES,U 10K-1/16W J	a
3CD	X R	0102	88-108-273-080	C-RES,U 27K-1/16W J	a
3CD	X R	0103	88-108-331-080	C-RES,U 330-1/16W J	a
3CD	O R	0104	87-012-284-080	C-CAP,U 6800P-50 K B GRM	a
3CD	X R	0105	88-108-000-080	C-JUMPER,U	a
3CD	O R	0106	87-012-274-080	C-CAP,U 1000P-50 K B GRM	a
3CD	X R	0107	88-108-000-080	C-JUMPER,U	a
3CD	X R	0108	88-108-000-080	C-JUMPER,U	a
3CD	O R	0110	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	X R	0111	88-108-470-080	C-RES,U 47-1/16W J	a
3CD	O R	0112	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0113	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0114	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0115	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0116	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0117	88-108-102-080	C-RES,U 1K-1/16W J	BZG-2 ZD5GNC2
3CD	O R	0118	88-108-224-080	C-RES,U 220K-1/16W J	a
3CD	X R	0119	88-108-681-080	C-RES,U 680-1/16W J	a
3CD	X R	0120	88-108-681-080	C-RES,U 680-1/16W J	a
3CD	O R	0121	88-108-123-080	C-RES,U 12K-1/16W J	a
3CD	X R	0122	88-108-122-080	C-RES,U 1.2K-1/16W J	a
3CD	X R	0123	88-108-221-080	C-RES,U 220-1/16W J	a
3CD	X R	0124	88-108-221-080	C-RES,U 220-1/16W J	a
3CD	X R	0125	88-108-331-080	C-RES,U 330-1/16W J	a
3CD	O R	0126	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	X R	0127	88-108-100-080	C-RES,U 10-1/16W J	a
3CD	X R	0128	88-100-000-010	JUMPER WIRE, PLATING	a
3CD	X R	0129	88-129-000-080	CHIP JUMPER	a
3CD	O R	0130	88-108-103-080	C-RES,U 10K-1/16W J	a
3CD	O R	0131	88-108-473-080	C-RES,U 47K-1/16W J	a
3CD	X R	0132	88-108-470-080	C-RES,U 47-1/16W J	a
3CD	X R	0133	88-108-221-080	C-RES,U 220-1/16W J	a
3CD	X R	0134	88-108-221-080	C-RES,U 220-1/16W J	a
3CD	O R	0137	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0138	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	O R	0151	88-108-101-080	C-RES,U 100-1/16W J	BZG-2 ZD5GNC2
3CD	O R	0152	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0160	88-108-103-080	C-RES,U 10K-1/16W J	a
3CD	X R	0161	88-121-153-080	RES,15K-1/8W J	a
3CD	O R	0203	88-108-473-080	C-RES,U 47K-1/16W J	a
3CD	X R	0209	88-108-472-080	C-RES,U 4.7K-1/16W J	a
3CD	X R	0212	88-108-182-080	C-RES,U 1.8K-1/16W J	a
3CD	X R	0213	88-108-392-080	C-RES,U 3.9K-1/16W J	a
3CD	X R	0216	88-108-273-080	C-RES,U 27K-1/16W J	a
3CD	X R	0219	88-108-273-080	C-RES,U 27K-1/16W J	a
3CD	O R	0220	88-108-103-080	C-RES,U 10K-1/16W J	a
3CD	O R	0221	88-108-822-080	C-RES,U 8.2K-1/16W J	a
3CD	O R	0222	88-108-562-080	C-RES,U 5.6K-1/16W J	a
3CD	O R	0223	88-108-562-080	C-RES,U 5.6K-1/16W J	a
3CD	O R	0225	88-108-123-080	C-RES,U 12K-1/16W J	a
3CD	O R	0226	88-108-123-080	C-RES,U 12K-1/16W J	a
3CD	O R	0227	88-108-123-080	C-RES,U 12K-1/16W J	a
3CD	O R	0228	88-108-103-080	C-RES,U 10K-1/16W J	a
3CD	X R	0229	88-118-689-080	C-RES,S 6.8-1/10W J	a
3CD	X R	0230	88-118-689-080	C-RES,S 6.8-1/10W J	a
3CD	O R	0231	88-108-101-080	C-RES,U 100-1/16W J	BZG-2 ZD5GNC2
3CD	X R	0233	88-121-820-080	RES,82-1/8W J	a
3CD	O R	0234	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0401	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0402	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0403	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0404	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0405	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0406	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0407	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0408	88-108-101-080	C-RES,U 100-1/16W J	a
3CD	O R	0415	88-108-102-080	C-RES,U 1K-1/16W J	a
3CD	X R	0416	88-121-821-080	RES,820-1/8W J	a
3CD	O R	0417	88-108-562-080	C-RES,U 5.6K-1/16W J	a
3CD	O S	0401	87-036-109-010	SW,MICRO SPPB61	a
3CD	O S	0402	87-036-109-010	SW,MICRO SPPB61	a
3CD	O W	0001	8B-ZG2-601-010	FF-CABLE,16P 1.0 115MM	a
3CD	O W	0002	8B-ZG2-602-010	FF-CABLE,5P 1.25 185MM	a
3CD	O X	0101	87-A70-046-010	VIB,XTAL 16.934MHZ	a
T.T	O C	0401	87-A11-148-080	CAP,TC U 0.1-50 Z F	a

# ELECTRICAL PARTS LIST -3/4 (CD C.B -3/3, T-T C.B -1/1)

! =  SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
T.T	O	CN 0401	86-NFZ-675-010	CONN,5P H 6216-11H	BZG-2 ZD5GNC2
T.T	O	PS 0401	87-A90-156-010	SNSR,SG-240	a
T.T	X	R 0408	88-121-561-080	RES,560-1/8W J	a
T.T	X	R 0409	88-121-273-080	RES,27K-1/8W J	a

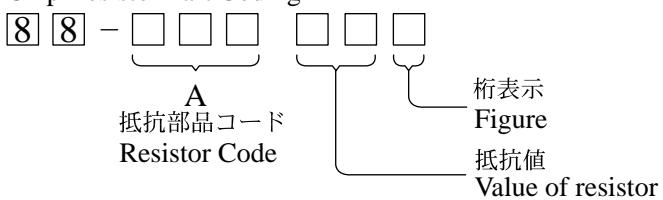
## ELECTRICAL PARTS LIST-4/4

- Regarding connectors, they are not stocked as they are not the initial order items.  
The connectors are available after they are supplied from connector manufacturers upon the order is received.

○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

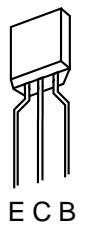
Chip Resistor Part Coding



チップ抵抗  
Chip resistor

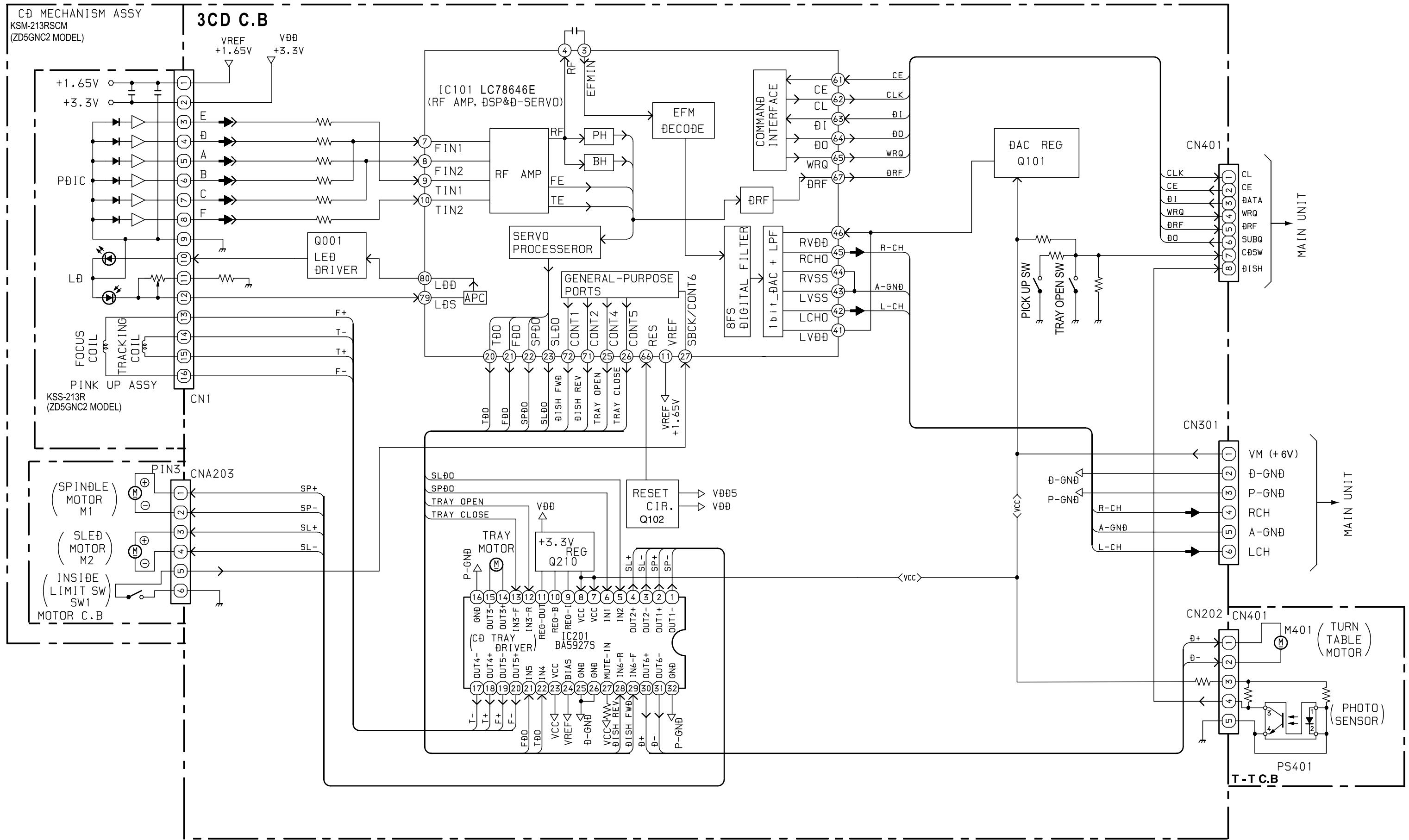
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)			抵抗コード Resistor Code : A
				外形／Form	L	W	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35 104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45 108
1/10W	2125	± 5%	CJ		2	1.25	0.45 118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55 128

## TRANSISTOR ILLUSTRATION-1/1



RT1N 141C 2SA19790/Y  
2SC5343Y  
2SA1980G

## BLOCK DIAGRAM-1/1



SIGNAL ➡: DIGITAL AUDIO  
➡ : ANALOG AUDIO

# 3CD C.B

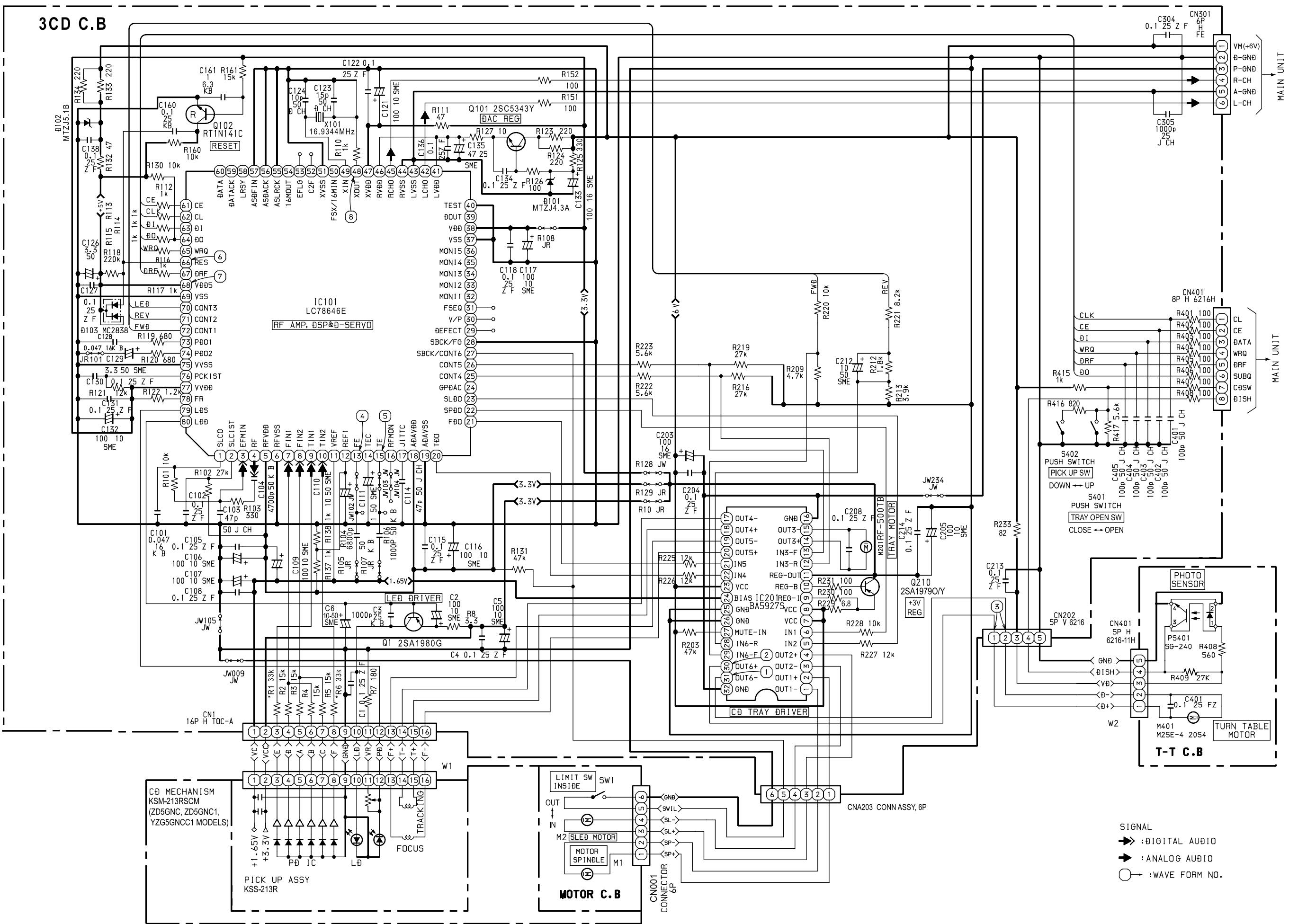
KSM-213RSCM  
(ZĐ5GNC2 MODEL)

KSM-213RSCM  
(ZĐ5GNC2 MODEL)

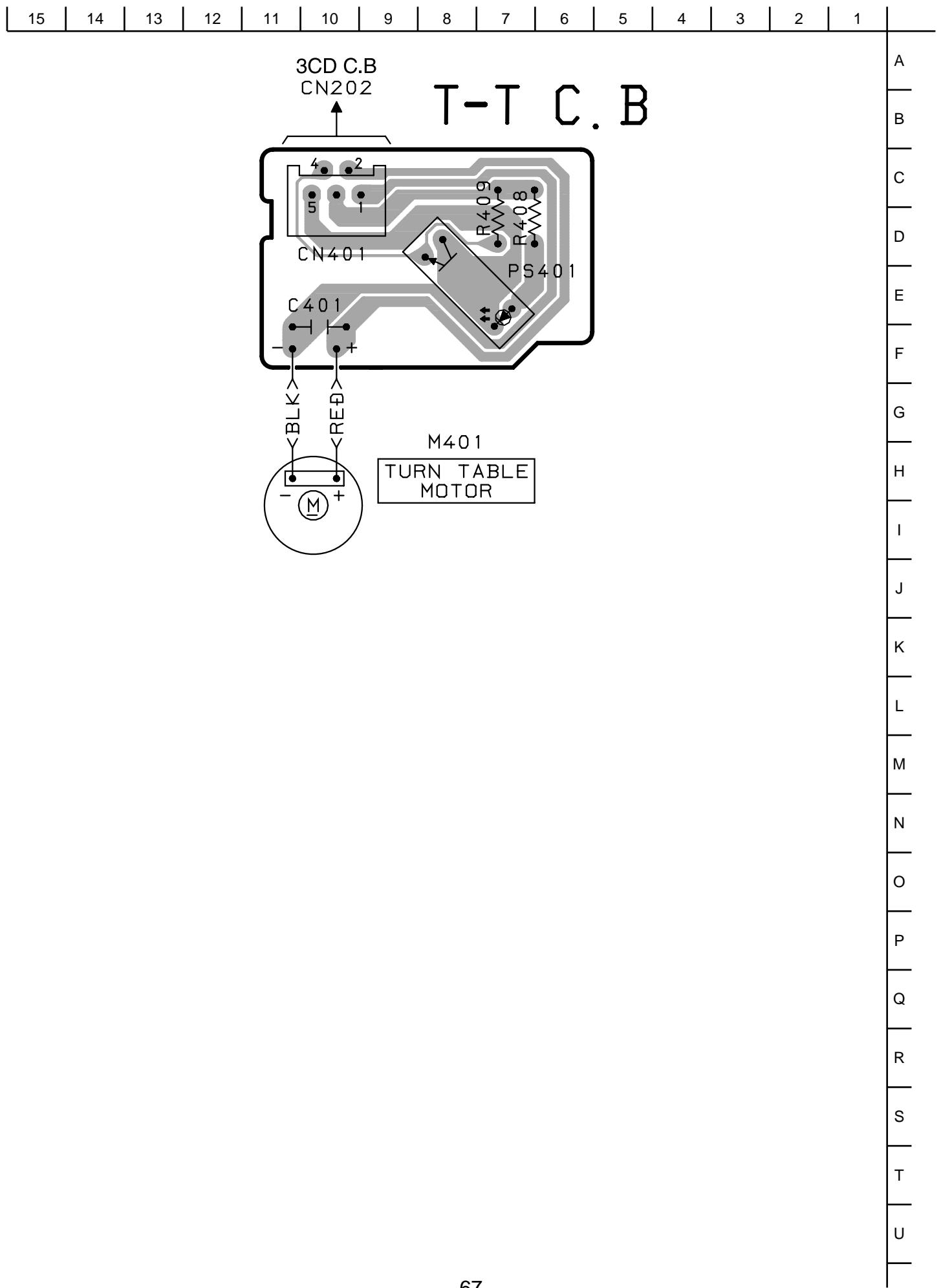
PICK UP ASSY

T-T C.  
CN401

## SCHEMATIC DIAGRAM-1/1



WIRING-2/2 (T-T)

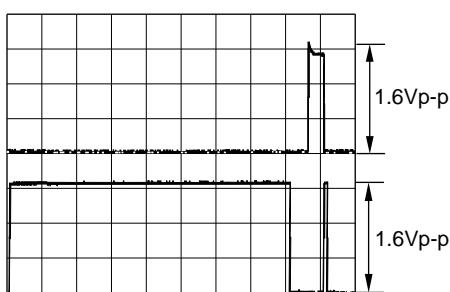


## WAVE FORM

(1) IC201 ⑬ (OUT6-)

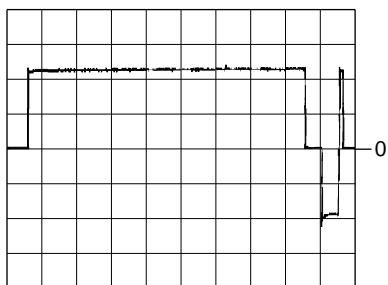
VOLT/DIV: 500mV  
TIME/DIV: 200mS

(2) IC201 ⑭ (OUT6+)



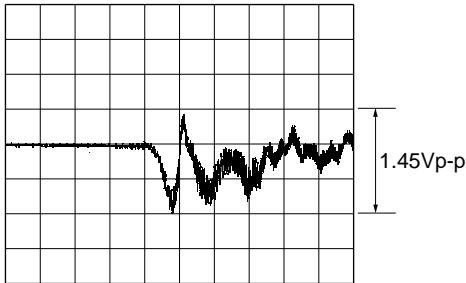
(3) Between CN202 ① and ②  
(② Pin: 0 Level)

VOLT/DIV: 1V  
TIME/DIV: 200mS



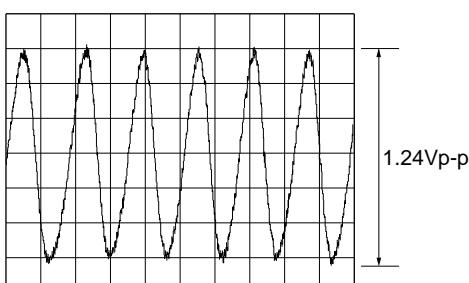
(4) IC101 ⑬ (FE)

VOLT/DIV: 500mV  
TIME/DIV: 5mS



(5) IC101 ⑯ (TE)

VOLT/DIV: 200mV  
TIME/DIV: 200μS

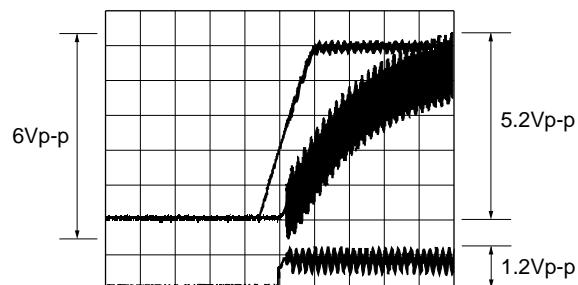


(6) IC101 ⑯ (RES)

VOLT/DIV: 1V  
TIME/DIV: 10mS

(7) IC101 ⑯ (VDD5)

(POWER ON)



(6) IC101 ⑯ (RES)

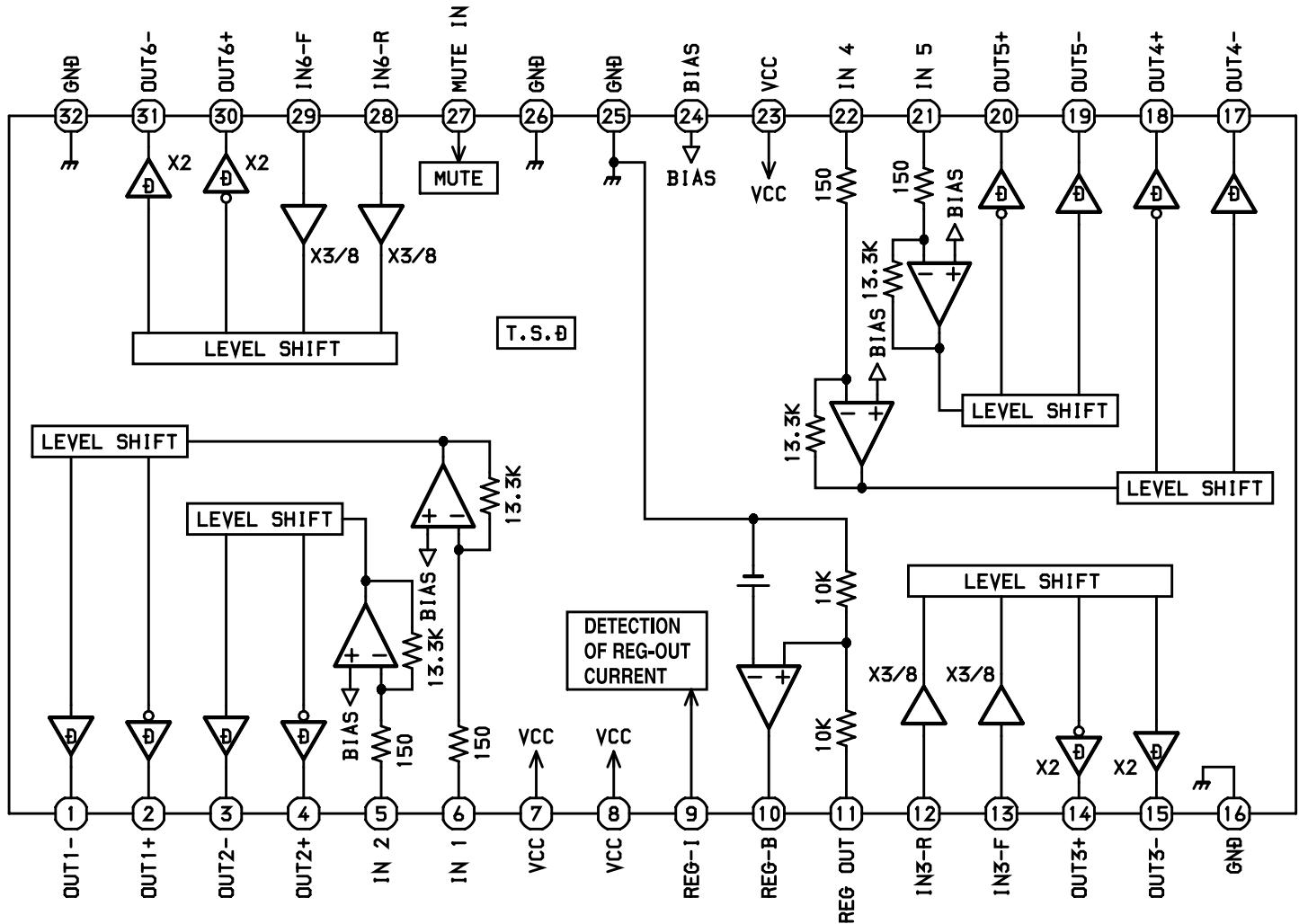
VOLT/DIV: 1V  
TIME/DIV: 10mS

(7) IC101 ⑯ (VDD5)

(POWER OFF)



IC BLOCK DIAGRAM  
IC, BA5927S



# IC DESCRIPTION (LC78646)-1/3

Pin No.	Pin Name	I/O	Description	
1	SLCO	O	Slice level control	Control output.
2	SLCIST	I		SLCO output current adjustment resistor connection pin.
3	EFMIN	I		RF signal input pin.
4	RF	O	RF monitor pin.	
5	RFVDD	ó	RF power supply pin.	
6	RFVSS	ó	RF ground pin. Must be connected to 0V.	
7	FIN1	I	A+C signal input pin.	
8	FIN2	I	B+D signal input pin.	
9	TIN1	I	E signal input pin.	
10	TIN2	I	F signal input pin.	
11	VREF	O	VREF voltage output pin.	
12	REFI	I	Reference voltage output setting pin.	
13	EF	O	FE signal monitor pin.	
14	TEC	O	TE signal LPF capacitor connection pin.	
15	TE	O	TE signal monitor pin.	
16	RFMON	O	RF internal signal monitor pin.	
17	JITTC	O	Jitter detection capacitor connection pin.	
18	ADAVDD	ó	Servo A/D, D/A supply pin.	
19	ADAVSS	ó	Servo A/D, D/A ground pin. Must be connected to 0V.	
20	TDO	O	Tracking control output pin. D/A output.	
21	FDO	O	Focus control output pin. D/A output.	
22	SPDO	O	Spindle control output pin. D/A output.	
23	SLDO	O	Thread control output pin. D/A output.	
24	GPDAC	O	Servo D/A general-purpose output pin. (Not connected)	
25, 26	CONT4, 5	I/O	General-purpose input/output pin 4, 5.	Controlled by commands from the microprocessor.
27	SBCK/CONT6	I/O	General-purpose input/output pin 6, or subcode read clock input pin.	Any of these that are unused must be either set up as input pin ports and connected to 0V, or set up as output pin ports and left open.
28	SBCK/FG	I	Subcode read clock input pin/FG signal input pin/external emphasis setting pin. Set to command -pin function. Must be connected to 0V.	
29	DEFECT	O	Defect pin. (Not connected)	
30	V/P	O	Rouge servo/phase control automatic switching monitor output pin. “H” for rough servo and “L” for phase servo. (Not connected)	
31	FSEQ	O	Synchronization signal detection output pin. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. (Not connected)	
32-36	MONI1-5	O	Internal signal monitor pin 1-5. (Not connected)	
37	VSS	ó	Digital ground pin. Must be connected to 0V.	
38	VDD	ó	Digital power supply pin.	
39	DOUT	O	Digital OUT output pin. (Not connected)	
40	TEST	I	Test input pin. Must be connected to 0V.	

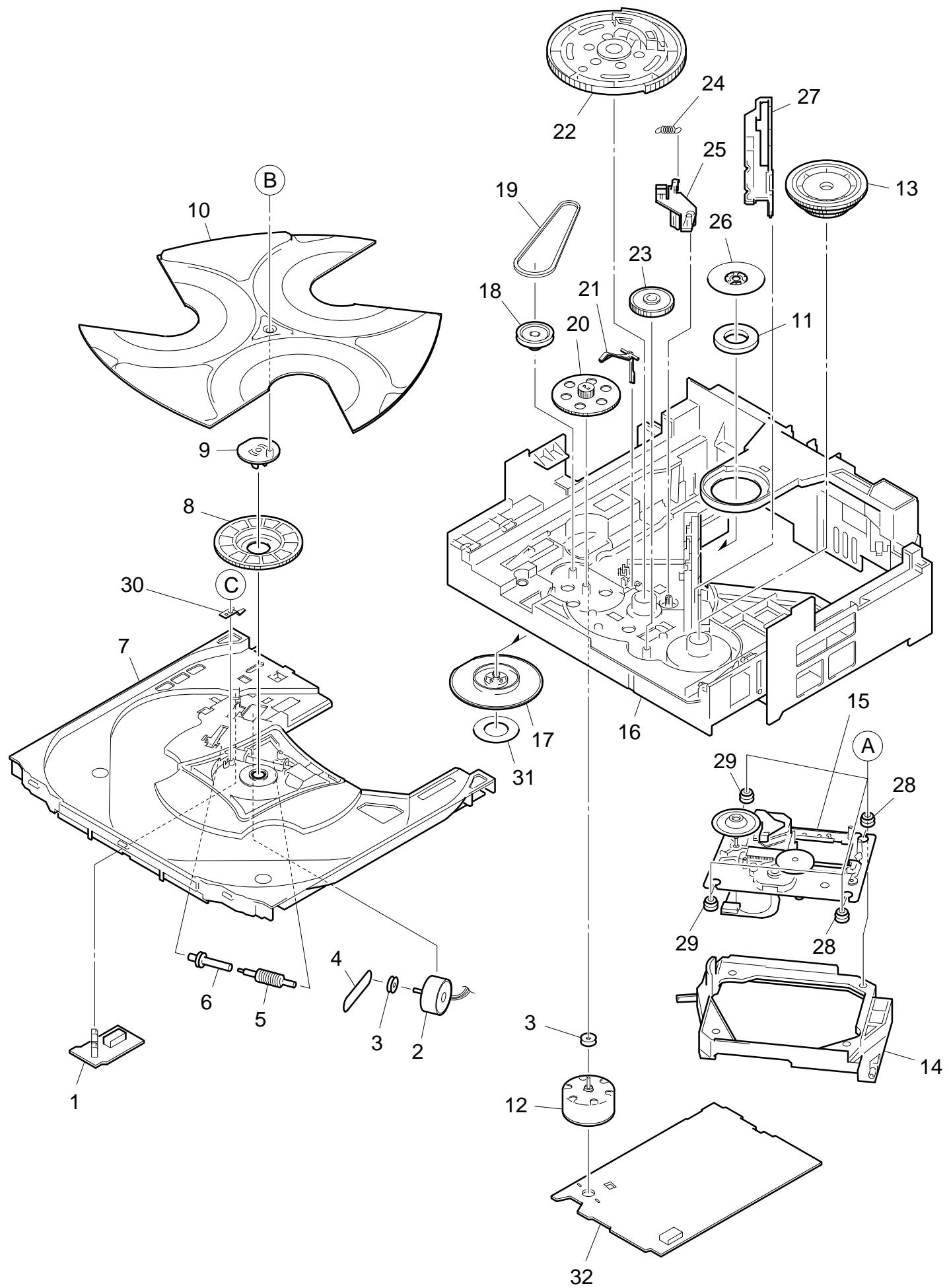
# IC DESCRIPTION (LC78646)-2/3

Pin No.	Pin Name	I/O	Description	
41	LVDD	6	L channel D/A converter	Lchannel power supply pin.
42	LCHO	O		L channel output pin.
43	LVSS	6		L channel ground pin. Must be connected to 0V.
44	RVSS	6	R channel D/A converter	R channel ground pin. Must be connected to 0V.
45	RCHO	O		R channel output pin.
46	RVDD	6		R channel power supply pin.
47	XVDD	6	Crystal oscillator	Crystal oscillator power supply pin.
48	XOUT	O		Connection for a 33.8688MHz crystal oscillator pin.
49	XIN	I		
50	FSX/16MIN	I/O	7.35kHz synchronization signal output pin. DF, DAC external clock input pin. (Not connected)	
51	XVSS	6	Crystal oscillator	Crystal oscillator ground pin. Must be connected to 0V.
52	C2F	O	C2 flag output pin. (Not connected)	
53	EFLG	O	C1, C2 error correction monitor pin. (Not connected)	
54	16MOUT	O	16.9344MHz output pin. (Not connected)	
55	ASLRCK	I	Antishock mode	L/R clock input pin. Must be connected to 0V when unused.
56	ASDACK	I		Bit clock input pin. Must be connected to 0V when unused.
57	ASDFIN	I		L/R channel data input pin. Must be connected to 0V when unused.
58	LRSY	O	Digital data output	L/R clock output pin. (Not connected)
59	DATACK	O		Bit clock output pin. (Not connected)
60	DATA	O		L/R channel data output pin. (Not connected)
61	CE	I	Microprocessor interface	Chip enable signal input pin.
62	CL	I		Data transfer clock input pin.
63	DI	I		Data input pin.
64	DO	O		Data output pin. (Nch open drain output)
65	WRQ	O		Interruption signal output pin.
66	RES	I	Reset input pin. This pin must be set low briefly after power is first applied.	
67	DRF	O	Focus ON detect pin.	
68	VDD5	6	Microprocessor interface power supply pin.	
69	VSS	6	Digital ground pin. Must be connected to 0V.	
70	CONT3	I/O	General-purpose output pin 3. (Not connected)	Controlled by commands from the microprocessor .  Must be set as an input pin and connected to 0V or set as an output pin and left open when unused.
71, 72	CONT2, 1	I/O	General-purpose output pin 2, 1.	

## IC DESCRIPTION (LC78646)-3/3

Pin No.	Pin Name	I/O	Description	
73, 74	PD01, 2	O	PLL	Phase comparison output pin 1, 2 to control built-in VCO.
75	VVSS	ó		Built -in VCO GND pin. Must always be connected to 0V.
76	PCKIST	I		Resistor connection pin to set current for PD01 and 02 outputs.
77	VVDD	ó		Built-in VCO power supply pin.
78	FR	I		Resistor connection pin to set the frequency range of built-in VCO.
79	LDS	I	Laser power detection signal input pin.	
80	LDL	O	Laser power control signal output pin.	

CD MECHANISM EXPLODED VIEW <BZG-2>



# CD MECHANISM PARTS LIST <BZG-2>

! = SAFTY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.  
However, please note that not all components will be available as spare parts for after-sales service.  
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL
					BZG-2 ZD5GNC2
X	SC1001	8B-ZG2-606-010	PWB, T-T		a
O	SC1002	87-A91-982-010	MOT, M25E-4	2054	a
O	SC1003	84-ZG1-267-010	PULLEY, LOAD MO	8	a
O	SC1004	8B-ZG2-256-010	BELT, SQ1-97.7-U		a
O	SC1005	8B-ZG2-241-110	GEAR, WORM		a
O	SC1006	8B-ZG2-236-010	PULLEY, WORM		a
O	SC1007	8B-ZG2-003-010	TRAY, 2K GRA		a
O	SC1008	84-ZG1-269-010	GEAR, MAIN TT	4	a
O	SC1009	84-ZG1-288-010	LEVER, TT NAT		a
O	SC1010	8B-ZG2-004-010	TURN TABLE, 2K GRA		a
O	SC1011	83-ZG3-604-010	RING, MAG	2	a
O	SC1012	87-045-305-010	MOT, RF-500TB		a
O	SC1013	8B-ZG2-226-010	GEAR, TRAY		a
O	SC1014	8B-ZG2-260-010	HLDL, MECHA RSCM		a
O	SC1015	M8-CZK-390-070	KSM-213RSCM		a
O	SC1016	8B-ZG2-201-210	CHAS, MECHA		a
O	SC1017	84-ZG1-291-210	HLDL, MAGNET	4 NAT	a
O	SC1018	84-ZG1-271-010	PULLEY, RELAY	8	a
O	SC1019	84-ZG1-209-010	BELT, SQ1.8-117.7		a
O	SC1020	84-ZG1-206-110	GEAR RELAY		a
					BZG-2 ZD5GNC2
O	SC1021	83-ZG3-213-010	LVR, SW		a
O	SC1022	8B-ZG2-221-010	GEAR, MAIN CAM		a
O	SC1023	8B-ZG2-231-010	GEAR, TRAY RELAY		a
O	SC1024	84-ZG1-211-010	SPR-E, CAM S		a
O	SC1025	8B-ZG2-216-110	LEVER, CAM		a
O	SC1026	81-ZG1-255-110	PLATE, MAGNET MK2		a
O	SC1027	8B-ZG2-211-010	PLATE, MECHA CAM		a
O	SC1028	8A-ZG1-204-010	CUSHION, CD880BRN		a
X	SC1029	8A-ZG1-202-010	CUSHION, CD880		a
O	SC1030	8B-ZG2-251-010	SPR-P, PULLEY 2K		a
O	SC1031	8A-ZG1-214-110	SH, 25-40-0.5 PC		a
X	SC1032	A8-CZA-297-070	CZA-2 ZD5NC2		a
O	SC1A	8B-ZG2-261-010	S-SCREW, DAMPER RSCM		a
O	SC1B	87-B10-331-010	VF+3-6 BLK		a
O	SC1C	87-067-584-010	BVT2+3-6 W/O SLOT		a

## COLOR NAME TABLE

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
HM	Metallic Gray	NH	Champagne Gold	M	Wood Pattern



アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111

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912204