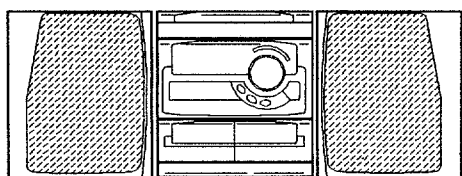


# aiwa



## NSX-S22 NSX-A22



COMPACT DISC STEREO  
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 6ZM-3 PR1NM
- BASIC CD MECHANISM : 4ZG-1 Z1DNM

- TYPE: U(A22), LH(S22)

| SYSTEM          | CD-CASSEIVER | SPEAKER | REMOTE<br>CONTROLLER |
|-----------------|--------------|---------|----------------------|
| NSX-S22<br>(LH) | CX-NS22      | SX-NS22 | RC-6AS14             |
| NSX-A22<br>(U)  | CX-NA22      | SX-NA22 | RC-6AS14             |

- If requiring information about the CD mechanism, see service manual of 4ZG-1.  
(S/M Code No. 09-974-187-50T)

# SPECIFICATIONS

## <FM Tuner section>

Tuning range  
Antenna terminals

87.5 MHz to 108 MHz  
Wire antenna

## <AM Tuner section>

Tuning range

531 kHz to 1602 kHz (9 kHz step)  
530 kHz to 1710 kHz (10 kHz step)

Usable sensitivity  
Antenna

350  $\mu$ V/m  
Loop antenna

## <Amplifier section>

Power output

U :  
20 W + 20 W  
(50 Hz ~ 20 kHz, THD less than  
1%, 6 ohms)  
LH :  
40 W + 40 W  
(1kHz, THD 10%, 6 ohms)

Total harmonic distortion

U :  
0.2 % (10 W, 1 kHz, 6 ohms, DIN  
AUDIO)

LH :  
0.2 % (20 W, 1 kHz, 6 ohms, DIN  
AUDIO)

Inputs  
Outputs

VIDEO/AUX : 400 mV  
SPEAKERS: accept speakers of  
6 ohms or more  
PHONES (stereo jack) : accepts  
headphones of 32 ohms or more

## <Cassette deck section>

Track format  
Frequency response  
Recording system  
Heads

4 tracks, 2 channels stereo  
50 Hz - 10000 Hz  
AC bias  
Deck 1 : Playback head x1  
Deck 2 : Recording/playback head  
x1, erase head x 1

## <Compact disc player section>

Laser  
D-A converter  
Signal-to-noise ratio  
Harmonic distortion  
Wow and flutter

Semiconductor laser ( $\lambda = 780$  nm)  
1 bit dual  
85 dB (1 kHz, 0 dB)  
0.05 % (1 kHz, 0 dB)  
Unmeasurable

## <Speaker system SX-NA22<U>, SX-NS22<LH>>

Cabinet type

2 way, bass reflex (magnetic  
shielded type)

Speakers

Woofer :  
120 mm ( $4\frac{3}{4}$  in.) cone type  
Tweeter :  
10 mm ( $1\frac{3}{32}$  in.) ceramic type

Impedance

6 ohms

Output sound pressure level

87 dB/W/m

Dimensions (W x H x D)

240 x 304 x 250 mm  
( $9\frac{1}{2}$  x 12 x  $9\frac{7}{8}$  in.)  
2.7 kg (5 lbs 15 oz)

Weight

## <General>

Power requirements

U : 120 V, AC 60 Hz  
LH : 120 V/220 - 240 V AC,  
switchable 50/60 Hz

Power consumption

U : 53 W  
LH : 92 W

Dimensions of main unit  
(W x H x D)

260 x 308.3 x 350 mm  
( $10\frac{1}{4}$  x  $12\frac{1}{4}$  x  $13\frac{7}{8}$  in.)

Weight of main unit

U : 4.8 kg (10 lbs 9 oz)  
LH : 5.8 Kg

• Design and specifications are subject to change without  
notice.

# PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

## WARNING!!

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



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

## VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

## VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, 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

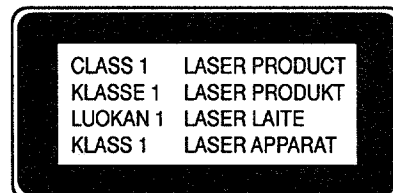
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

## ADVARSEL!

Usynlig laserstråling 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.



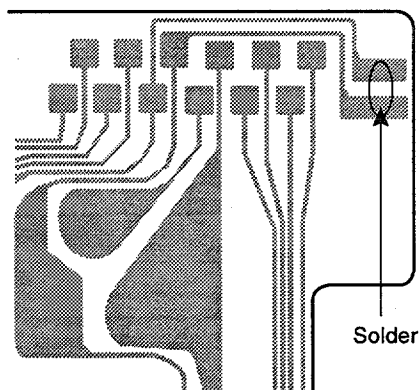
## Precaution to replace Optical block

### (KSS – 213B)

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

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

PICK-UP Assy P.C.B



# ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO.   | PART NO.       | KANRI NO. | DESCRIPTION              | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION            |
|------------|----------------|-----------|--------------------------|----------|----------------|-----------|------------------------|
| IC         |                |           |                          | C203     | 87-018-199-080 |           | CAP, CER 3300P<U>      |
|            | 87-NF8-610-010 |           | C-IC,UPD78044HGF-026-3B9 | C203     | 87-018-202-080 |           | CAP.CERAM.6800PF<LH>   |
|            | 87-NF8-619-010 |           | IC,SPS-442-1-A           | C204     | 87-018-199-080 |           | CAP, CER 3300P<U>      |
|            | 86-NF2-642-010 |           | IC,NJM4558LD             | C204     | 87-018-202-080 |           | CAP.CERAM.6800PF<LH>   |
|            | 87-017-804-010 |           | IC,BU4052BCP             | C207     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            | 87-NF8-612-010 |           | IC,M62420SPL             | C208     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            | 87-NF8-618-010 |           | IC,LC72131D(L)           | C211     | 87-010-374-080 |           | CAP, ELECT 47-10V      |
|            | 87-NF8-617-010 |           | IC,LA1836(L)             | C212     | 87-010-374-080 |           | CAP, ELECT 47-10V      |
|            | 87-020-454-010 |           | IC,DN6851                | C213     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            |                |           |                          | C214     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
| TRANSISTOR |                |           |                          | C219     | 87-010-544-080 |           | CAP, ELECT 0.1-50V     |
|            | 89-333-317-080 |           | TR,2SC3331 (0.5W)        | C220     | 87-010-544-080 |           | CAP, ELECT 0.1-50V     |
|            | 89-213-702-010 |           | TR,2SB1370 (1.8W)        | C227     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            | 86-NF2-658-080 |           | TR,2SC2785F              | C229     | 87-018-113-080 |           | CAP, TC-U 33P-50 J SL  |
|            | 89-420-052-38G |           | TR,2SD2005R(Q/R)<U>      | C230     | 87-018-113-080 |           | CAP, TC-U 33P-50 J SL  |
|            | 87-A30-083-080 |           | TR,CSD1489B              | C301     | 87-018-195-080 |           | CAP, CER 1200P-16V     |
|            | 87-026-245-010 |           | TR,DTC114ES              | C302     | 87-018-195-080 |           | CAP, CER 1200P-16V     |
|            | 89-113-187-080 |           | TR,2SA1318TU             | C303     | 87-010-263-080 |           | CAP, ELECT 100-10V     |
|            | 89-109-521-080 |           | TR,2SA952 (0.6W)         | C304     | 87-010-263-080 |           | CAP, ELECT 100-10V     |
|            | 87-A30-084-080 |           | TR,CSB1058B              | C309     | 87-010-546-080 |           | CAP, ELECT 0.33-50V    |
|            | 86-NF2-656-080 |           | TR,2SA1175F              | C310     | 87-010-546-080 |           | CAP, ELECT 0.33-50V    |
|            | 86-NF2-648-080 |           | TR,DTA143ESA             | C311     | 87-018-130-080 |           | CAP,TC-U 820P-50 B     |
|            | 87-A30-112-080 |           | TR,C2N5551               | C312     | 87-018-130-080 |           | CAP,TC-U 820P-50 B     |
|            | 87-A30-109-010 |           | TR,2SD2495               | C314     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            | 87-A30-108-010 |           | TR,2SB1626               | C351     | 87-018-131-080 |           | CAP, CER 1000P-50V     |
|            | 87-A30-047-080 |           | TR,CSD655E               | C352     | 87-018-131-080 |           | CAP, CER 1000P-50V     |
|            | 86-NF2-650-080 |           | TR,DTA144WSA             | C353     | 87-010-263-080 |           | CAP, ELECT 100-10V     |
|            | 86-NF2-647-080 |           | TR,DTC144ESA             | C354     | 87-010-263-080 |           | CAP, ELECT 100-10V     |
|            | 86-NF2-649-080 |           | TR,DTC143XSA             | C360     | 87-010-370-080 |           | CAP,E 330-6.3 SME      |
|            | 86-NF2-645-080 |           | TR,DTA114YSA             | C401     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
|            | 87-A30-092-080 |           | FET,2SK439E/F            | C402     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
|            | 89-305-352-380 |           | TR,2SC535(B/C)           | C403     | 87-018-118-080 |           | CAP,TC-U 82P-50 B      |
|            | 86-NF2-657-080 |           | TR,2SC19230              | C404     | 87-018-118-080 |           | CAP,TC-U 82P-50 B      |
|            | 87-026-463-080 |           | TR,2SA933SRS             | C452     | 87-010-385-080 |           | CAP, ELECT 220-25V     |
|            |                |           |                          | C458     | 87-018-131-080 |           | CAP, CER 1000P-50V     |
| DIODE      |                |           |                          | C459     | 87-018-128-080 |           | CAP, CERA-SOL SS 560P  |
|            | 87-070-178-090 |           | DIODE,1N5402-BD54        | C461     | 87-018-126-080 |           | CAP,TC-U 390P-50 B     |
|            | 87-070-274-080 |           | DIODE,1N4003 SEM         | C462     | 87-018-126-080 |           | CAP,TC-U 390P-50 B     |
|            | 87-A40-236-080 |           | ZENER,MTZJ24D            | C505     | 87-010-545-080 |           | CAP, ELECT 0.22-50V    |
|            | 87-A40-246-080 |           | DIODE,1N4148 T-72        | C506     | 87-010-545-080 |           | CAP, ELECT 0.22-50V    |
|            | 87-017-933-080 |           | ZENER,MTZJ10D            | C510     | 87-010-405-080 |           | CAP, ELECT 10-50V      |
|            | 87-017-932-080 |           | ZENER,MTZJ6.2B           | C511     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            | 87-A40-235-080 |           | ZENER,MTZJ9.1C           | C512     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
|            | 87-A40-234-080 |           | ZENER,MTZJ5.6A           | C513     | 87-010-221-080 |           | CAP, ELECT 470-10V     |
|            | 87-017-437-080 |           | DIODE,1N4148M            | C515     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
|            | 87-A40-226-080 |           | VARI-CAP,SVC251SPA       | C516     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
|            |                |           |                          | C517     | 87-018-134-080 |           | CAPACITOR,TC-U 0.01-16 |
|            |                |           |                          | C518     | 87-018-134-080 |           | CAPACITOR,TC-U 0.01-16 |
|            |                |           |                          | C701     | 87-010-404-080 |           | CAP, ELECT 4.7-50V     |
|            |                |           |                          | C711     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
| MAIN C.B   |                |           |                          | C712     | 87-010-112-080 |           | CAP, ELECT 100-16V     |
| C102       | 87-A10-520-090 |           | CAP,E 3300-35 M SMG<U>   | C722     | 87-018-149-080 |           | CAP,TC-U 15P-50 CH     |
| C102       | 87-016-055-090 |           | CAP,E 3300-42 HI-R<LH>   | C728     | 87-010-248-080 |           | CAP, ELECT 220-10V     |
| C103       | 87-016-051-090 |           | CAP,E 2200-35 SMG<U>     | C733     | 87-018-148-080 |           | CAP,TC-U 12P-50 CH     |
| C103       | 87-010-484-010 |           | CAP,E 2200-50<LH>        | C741     | 87-010-546-080 |           | CAP, ELECT 0.33-50V    |
| C105       | 87-018-127-080 |           | CAP, CER 470P-50V        | C742     | 87-010-546-080 |           | CAP, ELECT 0.33-50V    |
| C106       | 87-010-408-080 |           | CAP, ELECT 47-50V        | C771     | 87-010-405-080 |           | CAP, ELECT 10-50V      |
| C107       | 87-010-384-080 |           | CAP, ELECT 100-25V       | C773     | 87-018-208-080 |           | CAP 0.047-50F          |
| C108       | 87-010-381-080 |           | CAP, ELECT 330-16V       | C774     | 87-010-263-080 |           | CAP, ELECT 100-10V     |
| C109       | 87-010-383-080 |           | CAP, ELECT 33-25V<LH>    | C775     | 87-010-405-080 |           | CAP, ELECT 10-50V      |
| C109       | 87-010-260-080 |           | CAP, ELECT 47-25V<U>     | C777     | 87-010-400-080 |           | CAP, ELECT 0.47-50V    |
| C110       | 87-010-383-080 |           | CAP, ELECT 33-25V<LH>    | C778     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
| C110       | 87-010-260-080 |           | CAP, ELECT 47-25V<U>     | C779     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
| C111       | 87-010-247-080 |           | CAP, ELECT 100-50V       | C791     | 87-010-401-080 |           | CAP, ELECT 1-50V       |
| C112       | 87-010-263-080 |           | CAP, ELECT 100-10V       | C792     | 87-018-196-080 |           | CAP,TC-U 1500P-16X     |
| C113       | 87-010-403-080 |           | CAP, ELECT 3.3-50V       | C794     | 87-010-260-080 |           | CAP, ELECT 47-25V      |
| C114       | 87-010-374-080 |           | CAP, ELECT 47-10V        | C796     | 87-010-403-080 |           | CAP, ELECT 3.3-50V     |
| C118       | 87-018-134-080 |           | CAPACITOR,TC-U 0.01-16   | C799     | 87-010-405-080 |           | CAP, ELECT 10-50V      |
| C201       | 87-010-401-080 |           | CAP, ELECT 1-50V         | C801     | 87-018-102-080 |           | CAP,TC-U 6.8P-50 SL    |
| C202       | 87-010-401-080 |           | CAP, ELECT 1-50V         | C806     | 87-018-101-080 |           | CAP,TC-U 5.6P-50 SL    |

| REF.NO.   | PART NO.       | KANRI NO. | DESCRIPTION                     | REF.NO.  | PART NO.       | KANRI NO. | DESCRIPTION             |
|-----------|----------------|-----------|---------------------------------|----------|----------------|-----------|-------------------------|
| C807      | 87-018-102-080 |           | CAP,TC-U 6.8P-50 SL             | S304     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C808      | 87-018-098-080 |           | CAP,TC-U 3.3P-50 SL             | S305     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C809      | 87-018-119-080 |           | CAP, CER 100P-50V               | S306     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C811      | 87-018-107-080 |           | CAP,TC-U 18P-50 SL              | S307     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C815      | 87-018-134-080 |           | CAPACITOR,TC-U 0.01-16          | S308     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C821      | 87-018-105-080 |           | CAP,TC-U 12P-50 SL              | S309     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C822      | 87-018-111-080 |           | CAP, CERA-SOL SS 27P            | S310     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C823      | 87-018-111-080 |           | CAP, CERA-SOL SS 27P            | S311     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C824      | 87-018-109-080 |           | CAP, CER 22P-50V                | S312     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C903      | 87-010-401-080 |           | CAP, ELECT 1-50V                | S313     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| C942      | 87-018-104-080 |           | CAP,TC-U 10P-50 SL              | S314     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| CF801     | 87-008-261-010 |           | FILTER, SFE10.7MA5-A            | S315     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| J201      | 87-A60-024-010 |           | JACK 6.3BLK W/S WKM             | S316     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| J202      | 87-A60-238-010 |           | TERMINAL,SP 4P (MSC)            | S317     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| J203      | 87-A60-354-010 |           | JACK,PIN 2P MSP -242V-05        | S318     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| L451      | 86-NFZ-696-010 |           | COIL,OSC 85KHZ BIAS             | S319     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| L741      | 87-A50-015-010 |           | COIL,FM DET(TOK)                | S320     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| L742      | 87-A90-245-010 |           | FLTR,CFAZH-450 (TOK)            | S321     | 87-A90-095-080 |           | SW,TACT EVQ11G04M       |
| L750      | 87-005-165-080 |           | COIL 1UH (H,E)                  | SW201    | 87-NF8-616-010 |           | SW,RTRY REB161(W/O NUT) |
| L801      | 87-A50-110-010 |           | COIL,FM BPF EX                  | W103     | 86-NFZ-637-010 |           | FF-CABLE, 13P CD        |
| L802      | 87-006-244-010 |           | COIL,RF FM 3-1/2T,L4            | W104     | 88-911-091-110 |           | FF-CABLE,11P 1.25       |
| L803      | 87-006-246-010 |           | COIL,RF FM 3-1/2T,L4            | X201     | 87-A70-075-080 |           | VIB,CER 4.19MHZ CRHF    |
| L804      | 86-NFZ-694-080 |           | COIL,2.2UH K CECS               |          |                |           |                         |
| L805      | 87-A50-111-110 |           | COIL,FM OSC EX                  |          |                |           |                         |
| L806      | 86-ZA1-604-110 |           | IFT,FM IFT 7-6.2                | AC2 C.B  |                |           |                         |
| L807      | 86-NFZ-694-080 |           | COIL,2.2UH K CECS               |          |                |           |                         |
| L901      | 86-NFZ-634-110 |           | COIL,AM PACK 4(TOK)             | AC1 C.B  |                |           |                         |
| △ PR202   | 87-026-690-080 |           | FUSE,5A 125V 251<U>             | △ F101   | 87-035-413-010 |           | FUSE T 1.6A 250V UL<U>  |
| △ PR202   | 87-026-681-080 |           | PROTECTOR,5A 491 SERIES 60V<LH> | △ F101   | 87-035-366-010 |           | FUSE, 2.5A 250V<LH>     |
| △ PR401   | 87-A90-246-080 |           | PROTECTOR,0.25A 60 V<LH>        | △ FC1    | 87-A90-505-080 |           | FUSE CLAMP,TP00351-51   |
| R223      | 87-A00-258-080 |           | RES,M/F 0.22-1W J               | △ FC2    | 87-A90-505-080 |           | FUSE CLAMP,TP00351-51   |
| R224      | 87-A00-258-080 |           | RES,M/F 0.22-1W J               | △ PT101  | 87-NF8-605-010 |           | PT,7NF-8LH<LH>          |
| SFR451    | 87-A90-432-080 |           | SFR,30K H NVZ6TLTA              |          |                |           |                         |
| SFR452    | 87-A90-432-080 |           | SFR,30K H NVZ6TLTA              | △ PT101  | 87-NF8-604-010 |           | PT,7NF-8U<U>            |
| SFR722    | 87-A90-500-080 |           | SFR,10K H NVZ6TLTA              | △ SW101  | 87-A90-234-010 |           | SW,SL 1-2-2 SW2201<LH>  |
| W101      | 83-NE2-618-110 |           | F-CABEL,5P-2.5                  | △ T1     | 87-A60-317-010 |           | TERMINAL, 1P MSC        |
| W102      | 88-906-171-110 |           | FF-CABLE,6P 1.25                | △ T2     | 87-A60-317-010 |           | TERMINAL, 1P MSC        |
| X703      | 87-A70-044-010 |           | VIB, CER CMU2-456A15            |          |                |           |                         |
| X721      | 86-NFZ-651-010 |           | VIB,XTAL 4.500MHZ CSA-309       | DECK C.B |                |           |                         |
| FRONT C.B |                |           |                                 | CON301   | 86-ZM3-604-019 |           | CON ASSY,3P-PB          |
| C101      | 87-018-205-080 |           | CAP, CERA-SOL 0.022             | CON351   | 86-ZM3-605-019 |           | CON ASSY,8P-RPB         |
| C203      | 87-010-405-040 |           | CAP,E 10-50                     | CON502   | 87-099-753-019 |           | CONN,11P H 9604         |
| C204      | 87-016-513-040 |           | CAP,E 47-35 7L                  | SFR1     | 87-024-581-089 |           | SFR,3.3K DIA 6H         |
| C205      | 87-018-208-080 |           | CAP 0.047-50F                   | SOL1     | 82-ZM1-618-010 |           | SOL ASSY, 27            |
| C206      | 87-018-205-080 |           | CAP, CERA-SOL 0.022             | SOL2     | 82-ZM1-618-010 |           | SOL ASSY, 27            |
| C207      | 87-010-544-040 |           | CAP,E 0.1-50 SME                | SW1      | 87-A90-248-010 |           | SW, MICRO ESE11SH2CXQ   |
| C208      | 87-010-263-040 |           | CAP,E 100-10                    | SW2      | 87-A90-248-010 |           | SW, MICRO ESE11SH2CXQ   |
| C209      | 87-018-205-080 |           | CAP, CERA-SOL 0.022             | SW3      | 87-A90-248-010 |           | SW, MICRO ESE11SH2CXQ   |
| C210      | 87-018-208-080 |           | CAP 0.047-50F                   | SW4      | 87-A90-248-010 |           | SW, MICRO ESE11SH2CXQ   |
| C211      | 87-010-562-040 |           | CAP,E 220-10 5L                 | SW5      | 87-A90-248-010 |           | SW, MICRO ESE11SH2CXQ   |
| C212      | 87-018-208-080 |           | CAP 0.047-50F                   | W1       | 82-ZM3-601-019 |           | RBN-CORD,4P-75          |
| C213      | 87-010-494-040 |           | CAP,E 1-50 5L SRE               |          |                |           |                         |
| C215      | 87-018-149-080 |           | CAP,TC-U 15P-50 CH              |          |                |           |                         |
| C216      | 87-018-115-080 |           | CAP, CER 47P-50V                |          |                |           |                         |
| C217      | 87-018-113-080 |           | CAP, CER 33P-50V                |          |                |           |                         |
| C218      | 87-018-205-080 |           | CAP, CERA-SOL 0.022             |          |                |           |                         |
| C220      | 87-018-127-080 |           | CAP, CER 470P-50V               |          |                |           |                         |
| C221      | 87-018-205-080 |           | CAP, CERA-SOL 0.022             |          |                |           |                         |
| C225      | 87-018-205-080 |           | CAP,TC-U 0.022-25 ZF            |          |                |           |                         |
| C226      | 87-018-134-080 |           | CAPACITOR,TC-U 0.01-16          |          |                |           |                         |
| C301      | 87-010-421-040 |           | CAP,E 4.7-50 5L                 |          |                |           |                         |
| C302      | 87-010-404-040 |           | CAP,E 4.7-50 SME                |          |                |           |                         |
| C304      | 87-010-421-040 |           | CAP,E 4.7-50 5L                 |          |                |           |                         |
| C305      | 87-010-404-040 |           | CAP,E 4.7-50 SME                |          |                |           |                         |
| FL301     | 82-NF7-631-010 |           | FL 7BT-185GK                    |          |                |           |                         |
| S301      | 87-A90-095-080 |           | SW,TACT EVQ11G04M               |          |                |           |                         |
| S302      | 87-A90-095-080 |           | SW,TACT EVQ11G04M               |          |                |           |                         |
| S303      | 87-A90-095-080 |           | SW,TACT EVQ11G04M               |          |                |           |                         |

# TRANSISTOR ILLUSTRATION



ECB

2SC535  
2SC19230



ECB

CSD655E  
CSD1489B  
CSB1058B  
2SA952  
C2N5551



GSD

2SK439



ECB

|           |           |
|-----------|-----------|
| 2SA933S   | DTA144WSA |
| 2SC2785F  | DTC144ESA |
| DTC114ES  | DTA114YSA |
| 2SA1175F  | DTC143XSA |
| DTA143ESA |           |



BCE

2SB1370



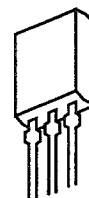
BCE

2SB1626  
2SD2495



ECB

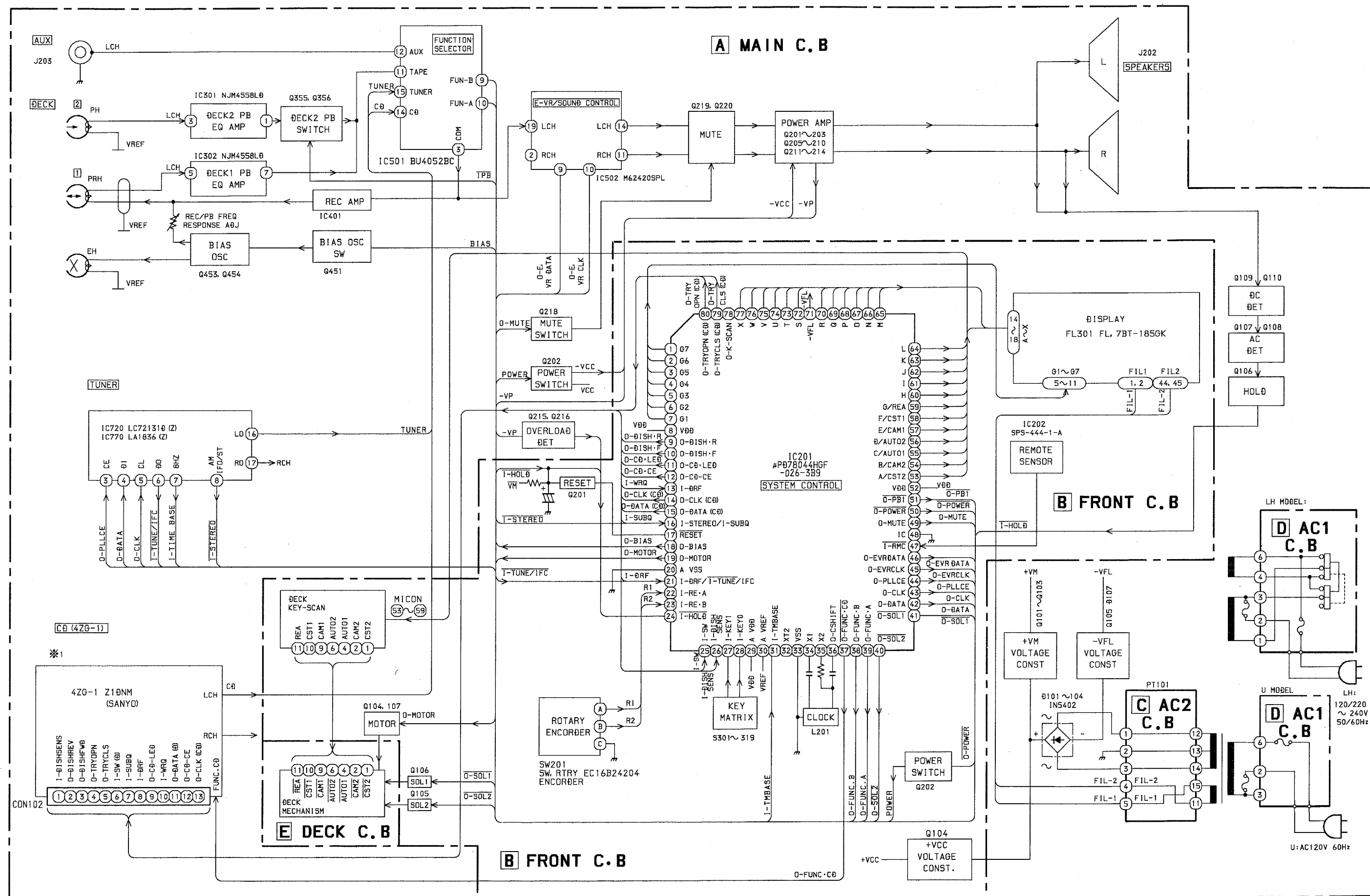
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2SA1318

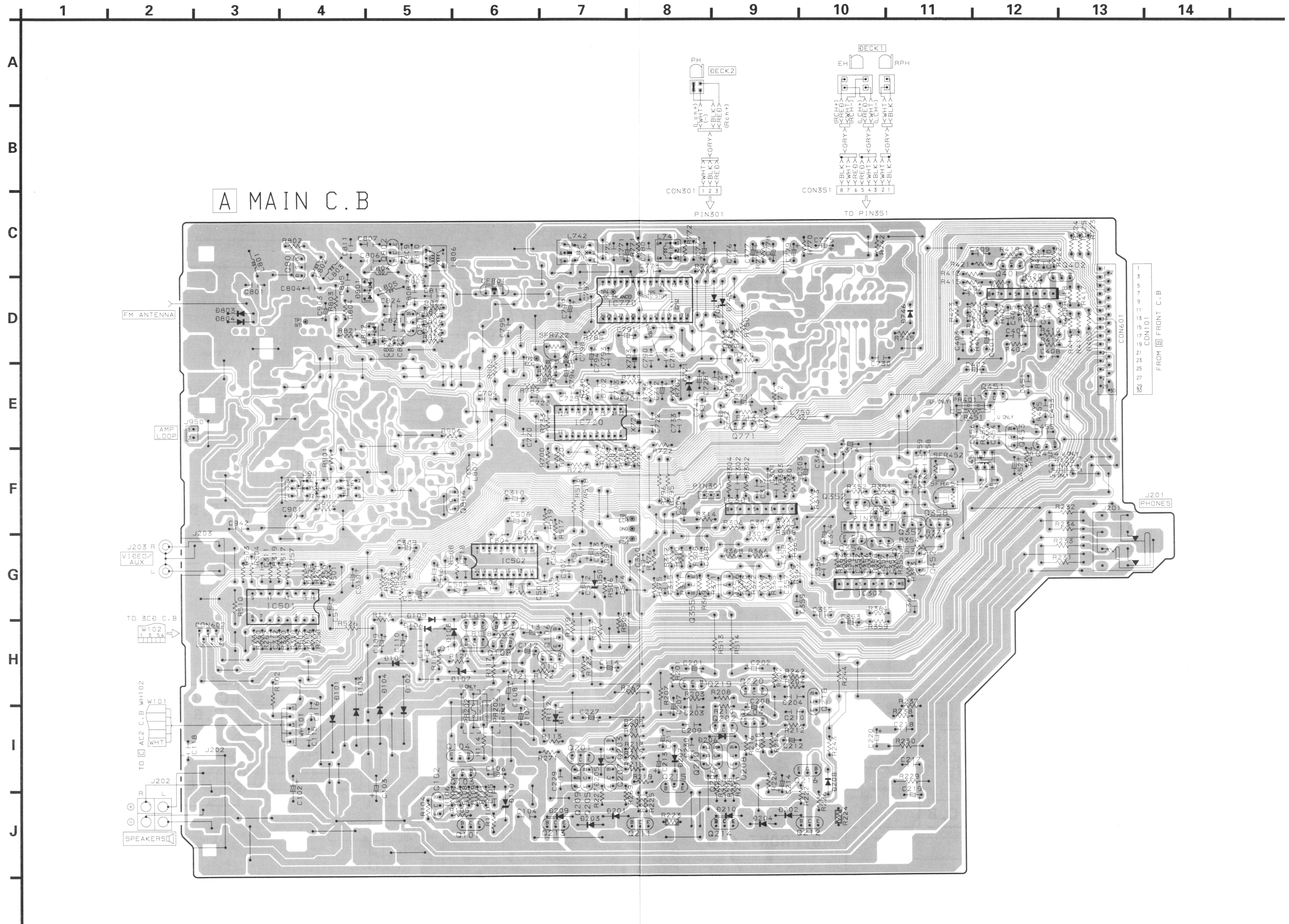


ECB

2SD2005

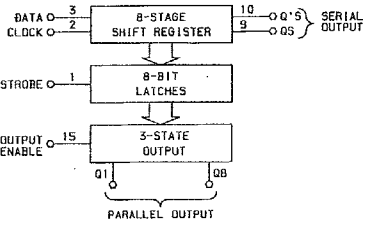
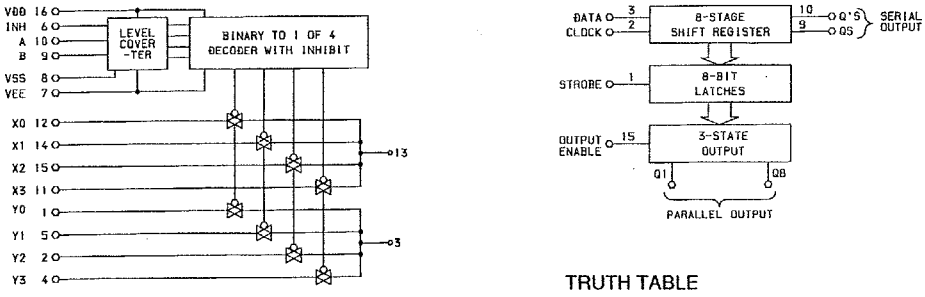
# BLOCK DIAGRAM (MAIN / FRONT)







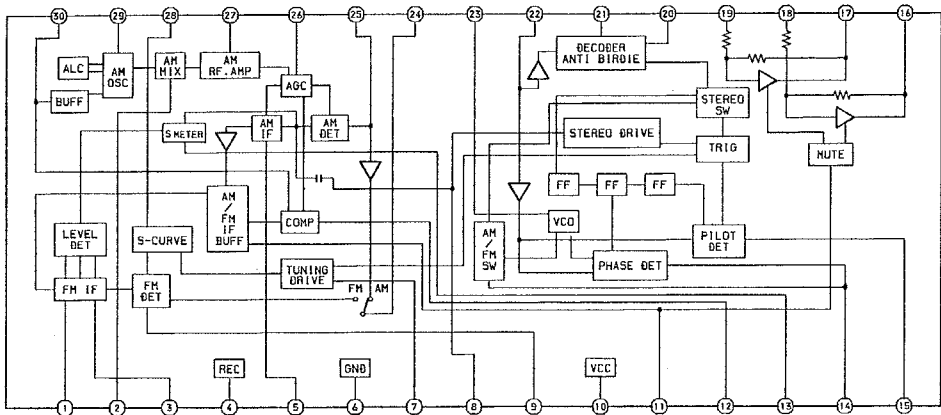
IC BLOCK DIAGRAM  
IC, BU4052BCP



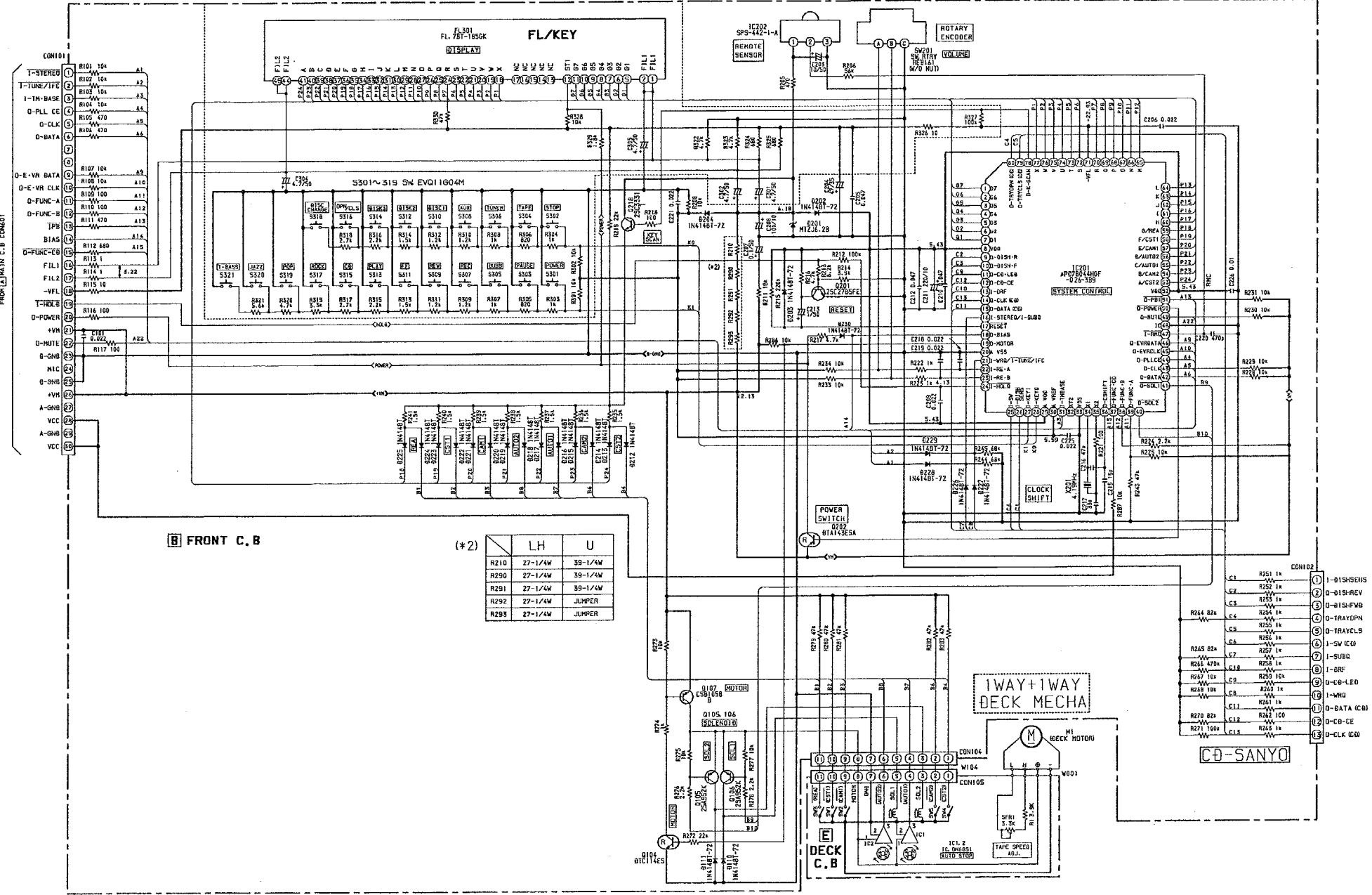
TRUTH TABLE

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

IC, LA1836

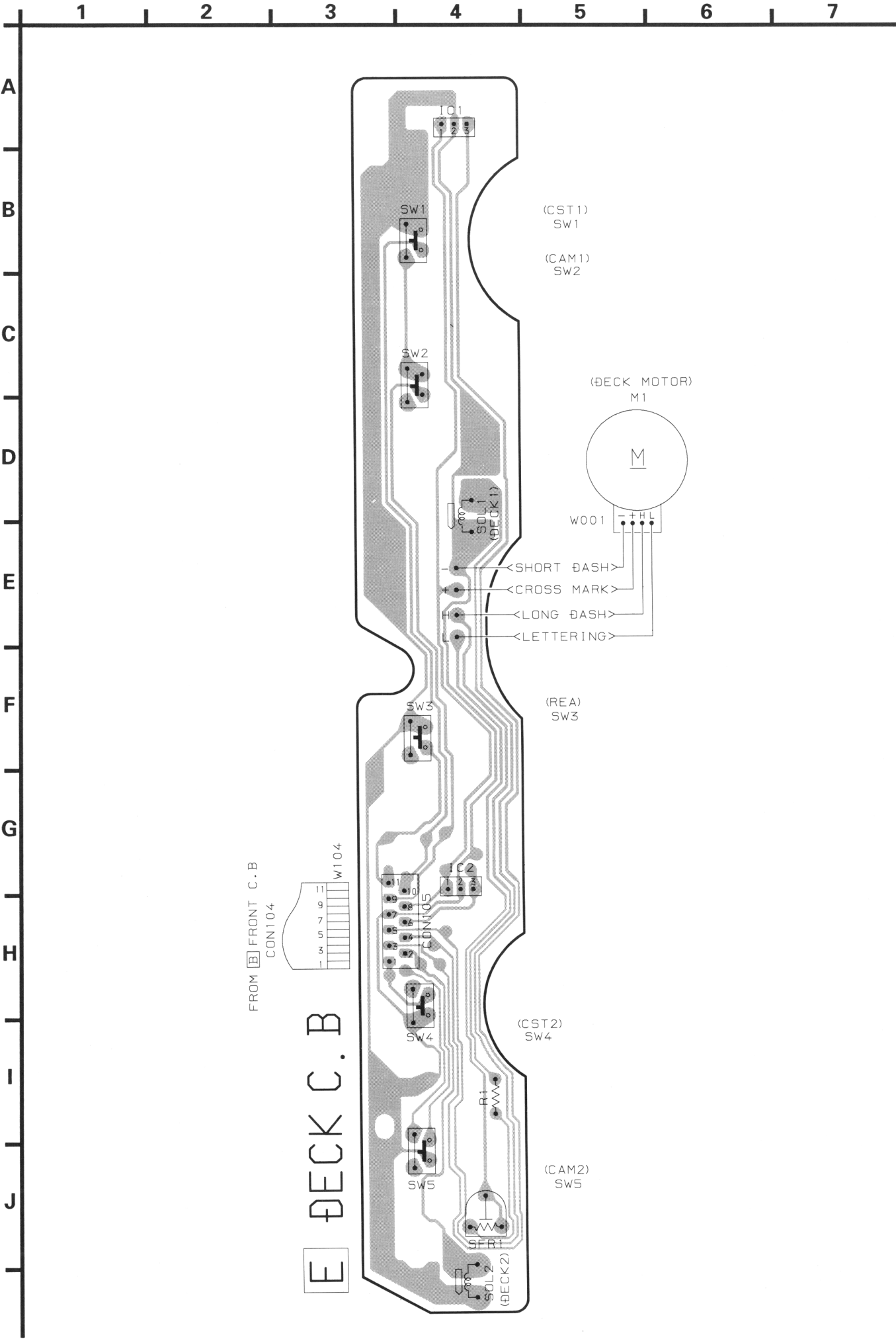


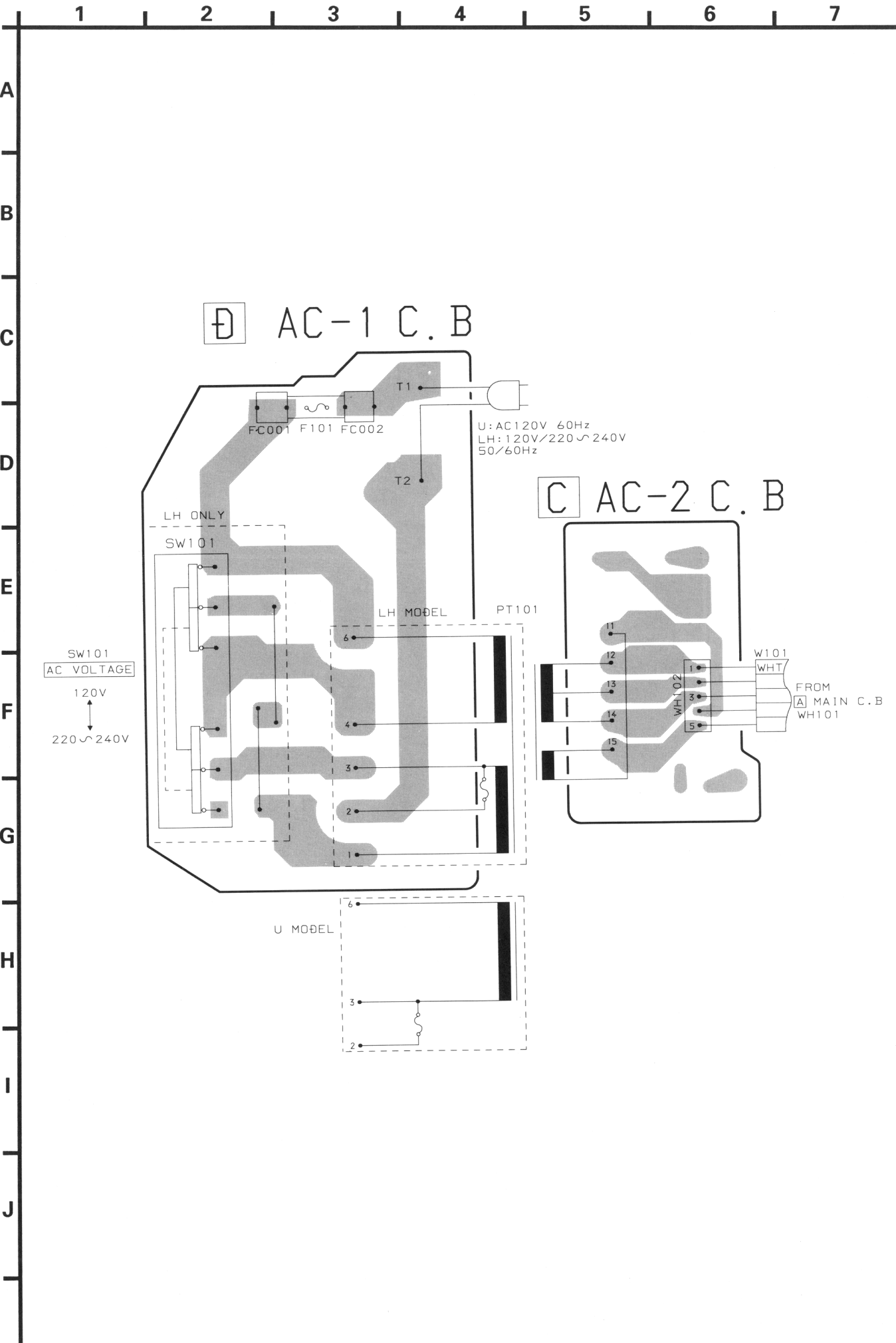
SCHEMATIC DIAGRAM - 2(FRONT)





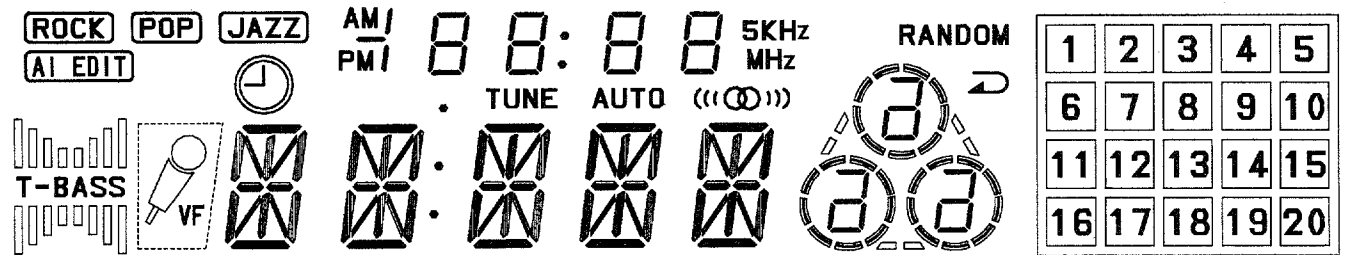
WIRING - 3 (DECK)



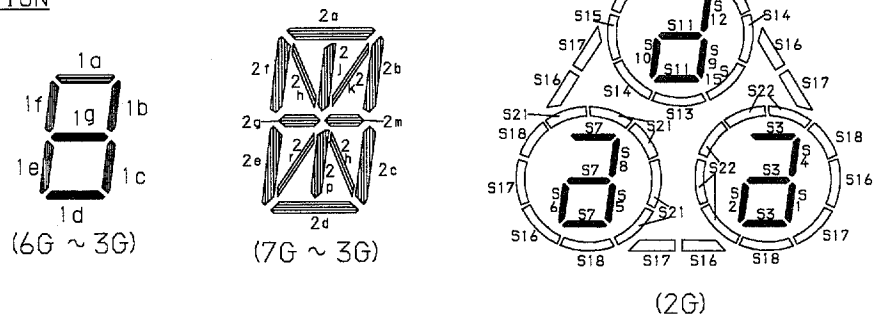


# FL (7BT - 185GK) GRID ASSIGNMENT & ANODE CONNECTION

## GRID ASSIGNMENT



## SEGMENT DESIGNATION



## ANODE CONNECTION

|     | 7G      | 6G     | 5G     | 4G     | 3G       | 2G     | 1G |
|-----|---------|--------|--------|--------|----------|--------|----|
| P1  | 2d      | 2d     | 2d     | 2d     | 2d       | S1     | 20 |
| P2  | 2j, 2p  | 2j, 2p | 2j, 2p | 2j, 2p | 2j, 2p   | S2     | 19 |
| P3  | 2n      | 2n     | 2n     | 2n     | 2n       | S3     | 18 |
| P4  | 2r      | 2r     | 2r     | 2r     | 2r       | S4     | 17 |
| P5  | 2c      | 2c     | 2c     | 2c     | 2c       | S5     | 16 |
| P6  | 2e      | 2e     | 2e     | 2e     | 2e       | S6     | 15 |
| P7  | 2m      | 2m     | 2m     | 2m     | 2m       | S7     | 14 |
| P8  | 2g      | 2g     | 2g     | 2g     | 2g       | S8     | 13 |
| P9  | 2f      | 2f     | 2f     | 2f     | 2f       | S9     | 12 |
| P10 | 2b      | 2b     | 2b     | 2b     | 2b       | S10    | 11 |
| P11 | 2k      | 2k     | 2k     | 2k     | 2k       | S11    | 10 |
| P12 | 2h      | 2h     | 2h     | 2h     | 2h       | S12    | 9  |
| P13 | 2a      | 2a     | 2a     | 2a     | 2a       | S13    | 8  |
| P14 | VF      | .      | TUNE   | AUTO   | (((( ))) | S14    | 7  |
| P15 | AI EDIT | o      | o (T)  | —      | MHz      | S15    | 6  |
| P16 | AI EDIT | —      | o (L)  | —      | KHz      | S16    | 5  |
| P17 | PM      | —      | —      | —      | 5        | S17    | 4  |
| P18 | PM      | 1d     | 1d     | 1d     | 1d       | S18    | 3  |
| P19 | —       | 1e     | 1e     | 1e     | 1e       | —      | 2  |
| P20 | /       | 1c     | 1c     | 1c     | 1c       | —      | 1  |
| P21 | AM      | 1g     | 1g     | 1g     | 1g       | S21    | —  |
| P22 | (JAZZ)  | 1f     | 1f     | 1f     | 1f       | S22    | —  |
| P23 | (POP)   | 1b     | 1b     | 1b     | 1b       | —      | —  |
| P24 | (ROCK)  | 1a     | 1a     | 1a     | 1a       | RANDOM | —  |
| P25 | —       | —      | —      | —      | —        | —      | —  |

7-BT-185GK  
ANODE CONNECTION

# IC DESCRIPTION

IC,  $\mu$ PD78044HGF-026-3B9

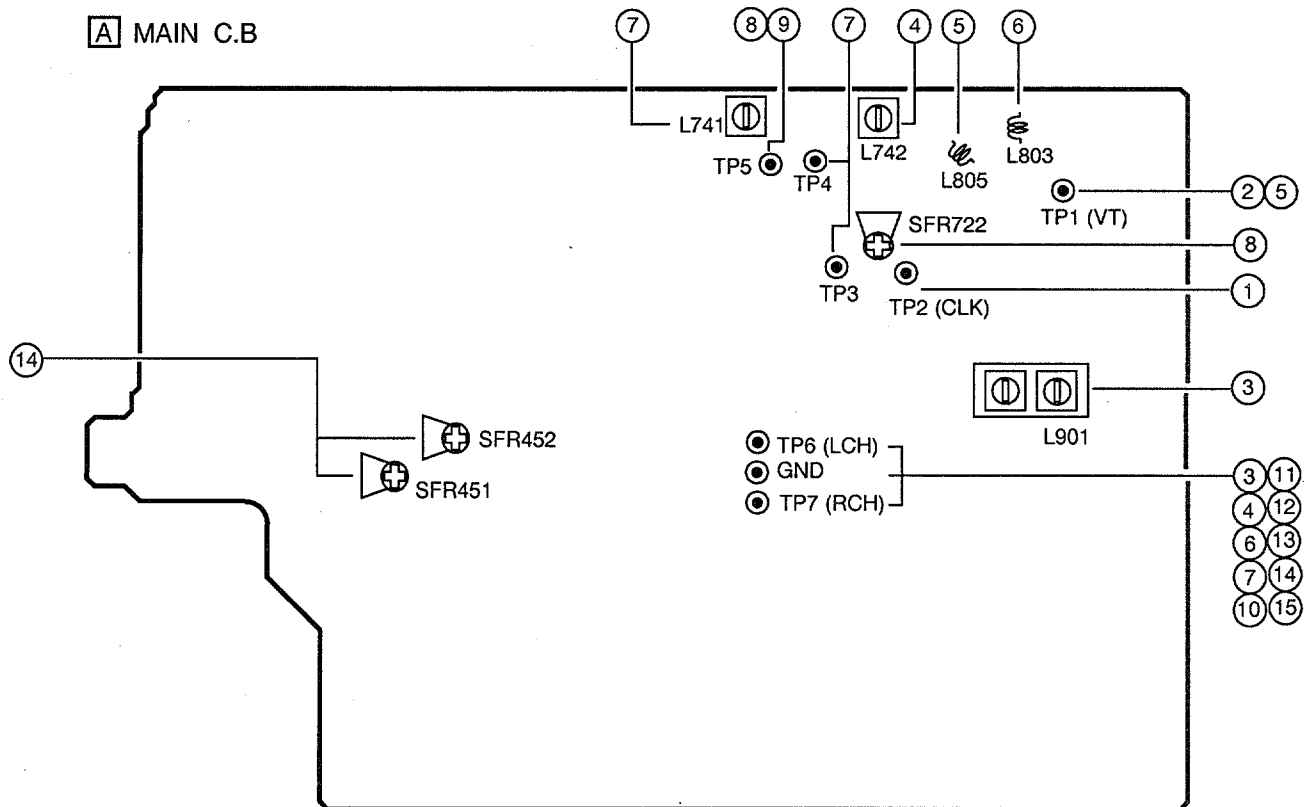
| Pin No. | Pin Name                                         | I/O | Description                                                                                                                                                                                                                                      |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
|---------|--------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------|-------|----|------|---------|---|---|---|---|---------|---|---|---|---|
| 1~7     | G7~G1                                            | O   | FL grid output.                                                                                                                                                                                                                                  |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 8       | VDD                                              | -   | Power supply input.                                                                                                                                                                                                                              |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 9       | O-DISH-R                                         | O   | CD turntable reverse rotation output.                                                                                                                                                                                                            |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 10      | O-DISH-F                                         | O   | CD turntable forward rotation output.                                                                                                                                                                                                            |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 11      | O-CD-LED                                         | O   | CD flash window LED ON/ $\overline{\text{OFF}}$ output.                                                                                                                                                                                          |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 12      | O-CDCE(CD)                                       | O   | CDCE output.                                                                                                                                                                                                                                     |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 13      | I-DRF                                            | I   | DRF input.                                                                                                                                                                                                                                       |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 14      | O-CLK(CD)                                        | O   | CLK output.                                                                                                                                                                                                                                      |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 15      | O-DATA(CD)                                       | O   | DATA output.                                                                                                                                                                                                                                     |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 16      | I-SUBQ(CD) /<br>I-STEREO                         | I   | SUB-Q input / Tuner stereo input.                                                                                                                                                                                                                |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 17      | $\overline{\text{RESET}}$                        | -   | Reset input.                                                                                                                                                                                                                                     |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 18      | O-BIAS                                           | O   | DECK bias control ON/ $\overline{\text{OFF}}$ output.                                                                                                                                                                                            |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 19      | O-MOTOR                                          | O   | DECK motor ON/ $\overline{\text{OFF}}$ output.                                                                                                                                                                                                   |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 20      | A VSS                                            | -   | GND.                                                                                                                                                                                                                                             |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 21      | I-WRQ (CD) /<br>$\overline{\text{I-TUNE}}$ / IFC | I   | CD-WRQ input / Tuner.SD input / IF data input.                                                                                                                                                                                                   |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 22      | I-RE.A                                           | I   | Rotary-encoder A input.                                                                                                                                                                                                                          |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 23      | I-RE.B                                           | I   | Rotary-encoder B input.                                                                                                                                                                                                                          |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 24      | $\overline{\text{I-HOLD}}$                       | I   | Hold AD input.                                                                                                                                                                                                                                   |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 25      | I-CDSW (AD)                                      | I   | CD mecha SW AD input.                                                                                                                                                                                                                            |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 26      | I-DISH SENS (AD)                                 | I   | CD turntable photo sensor A/D converter input.                                                                                                                                                                                                   |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 27,28   | I-KEY0,1(AD)                                     | I   | Key0, 1 input. (A/D)                                                                                                                                                                                                                             |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 29      | A VDD                                            | -   | Power supply input.                                                                                                                                                                                                                              |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 30      | A VREF                                           | -   | Reference voltage. (+5V)                                                                                                                                                                                                                         |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 31      | I-TMBASE                                         | I   | Reference clock input for timer watch.                                                                                                                                                                                                           |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 32      | XT2                                              | -   | Not used.                                                                                                                                                                                                                                        |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 33      | VSS                                              | -   | GND.                                                                                                                                                                                                                                             |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 34,35   | X1,X2                                            | I/O | 511.47Hz oscillator circuit.                                                                                                                                                                                                                     |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 36      | O-CSHIFT                                         | O   | Micon clock shift output. (active high)                                                                                                                                                                                                          |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 37      | $\overline{\text{O-FUNC.CD}}$                    | O   | Power supply for CD. Output $\overline{\text{ON/OFF}}$ .                                                                                                                                                                                         |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 38      | O-FUNC-B                                         | O   | Function switch output.<br><table><tr><td></td><td>AUX</td><td>TUNER</td><td>CD</td><td>TAPE</td></tr><tr><td>O-FUNCA</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>O-FUNCB</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table> |    | AUX  | TUNER | CD | TAPE | O-FUNCA | 0 | 0 | 1 | 1 | O-FUNCB | 0 | 1 | 0 | 1 |
|         | AUX                                              |     | TUNER                                                                                                                                                                                                                                            | CD | TAPE |       |    |      |         |   |   |   |   |         |   |   |   |   |
| O-FUNCA | 0                                                |     | 0                                                                                                                                                                                                                                                | 1  | 1    |       |    |      |         |   |   |   |   |         |   |   |   |   |
| O-FUNCB | 0                                                | 1   | 0                                                                                                                                                                                                                                                | 1  |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 39      | O-FUNC-A                                         |     |                                                                                                                                                                                                                                                  |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 40      | $\overline{\text{O-SOL2}}$                       | O   | DECK SOL2 $\overline{\text{ON/OFF}}$ output.                                                                                                                                                                                                     |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 41      | $\overline{\text{O-SOL1}}$                       | O   | DECK SOL1 $\overline{\text{ON/OFF}}$ output.                                                                                                                                                                                                     |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 42      | O-DATA                                           | O   | PLL IC data output.                                                                                                                                                                                                                              |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 43      | O-CLK                                            | O   | PLL IC clock output.                                                                                                                                                                                                                             |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 44      | O-PLLCE                                          | O   | PLL IC chip enable.                                                                                                                                                                                                                              |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |
| 45      | O-EVRCLK                                         | O   | Electrical volume clock output.                                                                                                                                                                                                                  |    |      |       |    |      |         |   |   |   |   |         |   |   |   |   |

| Pin No. | Pin Name                     | I/O | Description                                                        |
|---------|------------------------------|-----|--------------------------------------------------------------------|
| 46      | O-EVRDATA                    | O   | Electrical volume data output.                                     |
| 47      | I- $\overline{\text{RMC}}$   | I   | System remote control signal input.                                |
| 48      | IC                           | -   | Connected to GND.                                                  |
| 49      | O-MUTE                       | O   | System mute output.                                                |
| 50      | O- $\overline{\text{POWER}}$ | O   | System power supply $\overline{\text{ON}}$ /OFF output.            |
| 51      | O- $\overline{\text{PBI}}$   | O   | Playback Deck 1 and 2 switch output. "L" = Deck 1.                 |
| 52      | VDD                          | -   | Power supply input.                                                |
| 53      | A/CST2                       | O   | FL segment output P24/DECK ( $\overline{\text{CST2}}$ ) sw input.  |
| 54      | B/CAM2                       | O   | FL segment output P23/DECK ( $\overline{\text{CAM2}}$ ) sw input.  |
| 55      | C/AUTO1                      | O   | FL segment output P22/DECK ( $\overline{\text{AUTO1}}$ ) sw input. |
| 56      | D/AUTO2                      | O   | FL segment output P21/DECK ( $\overline{\text{AUTO2}}$ ) sw input. |
| 57      | E/CAM1                       | O   | FL segment output P20/DECK ( $\overline{\text{CAM1}}$ ) sw input.  |
| 58      | F/CST1                       | O   | FL segment output P19/DECK ( $\overline{\text{CST1}}$ ) sw input.  |
| 59      | G/REA                        | O   | FL segment output P18/DECK ( $\overline{\text{REA}}$ ) sw input.   |
| 60~70   | H~R                          | O   | FL segment output P17~P7                                           |
| 71      | -VFL                         | -   | Power for FL display.                                              |
| 72~77   | S~X                          | O   | FL segment output P6~P1.                                           |
| 78      | O-K-SCAN                     | O   | Key scan output .                                                  |
| 79      | O-TRYCLS (CD)                | O   | CD tray close data ouput.                                          |
| 80      | O-TRYOPN (CD)                | O   | CD tray open data output.                                          |

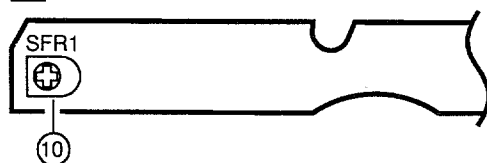
IC, LC72131

| Pin No. | Pin Name    | I/O    | Description                                                                                                                                                                                                                                                                                                                        |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
|---------|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|----|--|--------|--|--|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|
| 1       | XIN         | I/O    | A crystal oscillator (7.2MHz) is connected between these pins.                                                                                                                                                                                                                                                                     |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 22      | XOUT        |        |                                                                                                                                                                                                                                                                                                                                    |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 2       | NC          | –      | Not used.                                                                                                                                                                                                                                                                                                                          |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 3       | CE          | I      | To enable the IC. Active "H".                                                                                                                                                                                                                                                                                                      |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 4       | DI          | I      | Digital data input from CPU (μPD78044HGF-026-3B9) when relevant key is operated. Active "H".                                                                                                                                                                                                                                       |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 5       | CLK         | I      | To clock in the data DI.                                                                                                                                                                                                                                                                                                           |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 6       | DO          | O      | Digital data output to CPU (μPD78044HGF-026-3B9).                                                                                                                                                                                                                                                                                  |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 7       | TM-BASE     | O      | Outputs a reference clock signal (8Hz) for the clock.                                                                                                                                                                                                                                                                              |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 8       | MONO / BEAT | O      | Outputs "H" when MONO / BEAT is switched.                                                                                                                                                                                                                                                                                          |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 9       | FM / AM     | O      | Output "L" or "H" as follows: <table><tr><td colspan="2">2 BAND</td><td colspan="3">3 BAND</td><td colspan="3">3 BAND</td></tr><tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr><tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr></table>  | 2 BAND |        | 3 BAND |    |  | 3 BAND |  |  | AM | FM | LW | MW | FM | MW | SW | FM | H | L | H | H | L | H | L | L |
| 2 BAND  |             | 3 BAND |                                                                                                                                                                                                                                                                                                                                    |        | 3 BAND |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| AM      | FM          | LW     | MW                                                                                                                                                                                                                                                                                                                                 | FM     | MW     | SW     | FM |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| H       | L           | H      | H                                                                                                                                                                                                                                                                                                                                  | L      | H      | L      | L  |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 10      | MW          | O      | Outputs "L" or "H" as follows: <table><tr><td colspan="2">2 BAND</td><td colspan="3">3 BAND</td><td colspan="3">3 BAND</td></tr><tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr><tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr></table> | 2 BAND |        | 3 BAND |    |  | 3 BAND |  |  | AM | FM | LW | MW | FM | MW | SW | FM | L | L | H | L | L | L | H | L |
| 2 BAND  |             | 3 BAND |                                                                                                                                                                                                                                                                                                                                    |        | 3 BAND |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| AM      | FM          | LW     | MW                                                                                                                                                                                                                                                                                                                                 | FM     | MW     | SW     | FM |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| L       | L           | H      | L                                                                                                                                                                                                                                                                                                                                  | L      | L      | H      | L  |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 11      | IF-MUTE     | O      | To control internal counter.                                                                                                                                                                                                                                                                                                       |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 12      | IFIN        | I      | General purpose counter input.                                                                                                                                                                                                                                                                                                     |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 13      | TUNE        | I      | Receives "L" when station is tuned.                                                                                                                                                                                                                                                                                                |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 14      | NC          | –      | Not used.                                                                                                                                                                                                                                                                                                                          |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 15      | A MIN       | I      | Receives the AM local oscillator frequency signal.                                                                                                                                                                                                                                                                                 |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 16      | F MIN       | I      | Receives the FM local oscillator frequency signal.                                                                                                                                                                                                                                                                                 |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 17      | VDD         | –      | Supply power to IC (+5V).                                                                                                                                                                                                                                                                                                          |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 18      | PD          | O      | PLL charge pump output.                                                                                                                                                                                                                                                                                                            |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 19      | AIN         | I      | The MOS transistor for PLL active low pass filter.                                                                                                                                                                                                                                                                                 |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 20      | AOUT        | O      |                                                                                                                                                                                                                                                                                                                                    |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |
| 21      | VSS         | –      | Ground.                                                                                                                                                                                                                                                                                                                            |        |        |        |    |  |        |  |  |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |

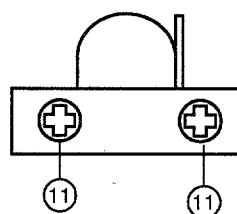
## ADJUSTMENT <TUNER / DECK>



### E DECK C.B



### DECK-1 P, DECK-2 R / P



## < TUNER SECTION >

- 1. Clock Frequency Check**  
 Settings : • Test point : TP2  
 Method : Set to AM 1710kHz and check that the test point is  $2160\text{kHz} \pm 0.08\text{kHz}$ .
- 2. AM VT Check**  
 Settings : • Test point : TP1 (VT)  
 Method : Set to MW 1710kHz and check that the test point is  $6.2\text{V} \pm 1.0\text{V}$ .
- 3. AM Tracking Adjustment**  
 Settings : • Test point : TP6, TP7  
 • Adjustment location : L901  
 Method : Set to AM 1000kHz and adjust L901 so that the test point becomes maximum.
- 4. AM IF Adjustment**  
 Settings : • Test point : TP6, TP7  
 • Adjustment location : L742.....450kHz
- 5. FM VT Adjustment**  
 Settings : • Test point : TP1 (VT)  
 • Adjustment location : L805  
 Method : Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 1.0V (87.5MHz) and adjust L805 so that the test point becomes  $7.0\text{V} \pm 0.05\text{V}$  (108.0MHz).
- 6. FM Tracking Adjustment**  
 Settings : • Test point : TP6, TP7  
 • Adjustment location : L803 ..... 87.5MHz  
 Method : The level at 87.5MHz is adjusted by L803 so that the test point is  $0 \pm 6\text{dB}$  (87.5MHz) and  $4\text{dB} \pm 6\text{dB}$  (108.0MHz).

7. DC Balance / Mono Distortion Adjustment  
Settings : • Test point : TP3, TP4 (DC balance)  
              : TP6, TP7 (Distortion)

- Adjustment location : L741
- Input level : 54dB

Method : Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes  $0V \pm 0.04V$ .

Next, check that the distortion is less than 3%.

8. Auto Stop Level Adjustment

- Settings : • Test point : TP5  
              • Adjustment location : SFR722  
              • Input level : 54dB

Method : Set to FM 98.0 MHz and adjust voltage low (about 0.1V) by SFR722. After that voltage high (about 7.0V) by 2dB down.

9. Auto Stop Level Check

AM

- Settings : • Test point : TP5  
              • Input level : 54dB

Method : Set to AM 1000kHz and check that the test point is  $58 +10/-15dB$ .

FM

- Settings : • Test point : TP5  
              • Input level : 54dB

Method : Set to FM 98.0MHz and check that the test point is  $20 dB \pm 10 dB$ .

## < DECK SECTION >

10. Tape Speed Adjustment

- Settings : • Test tape : TTA-410  
              • Test point : TP6, TP7  
              • Adjustment location : SFR1

Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz  $\pm 5Hz$ .

11. Head Azimuth Adjustment

- Settings : • Test tape : TTA-410  
              • Test point : TP6, TP7  
              • Adjustment location : Head azimuth adjustment screw

Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD and REV PLAY mode.

12. PB Frequency Response Check (DECK 1, DECK 2)

- Settings : • Test tape : TTA-410  
              • Test point : TP6, TP7

Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is  $0 \pm 5dB$

13. PB Sensitivity Check (DECK 1, DECK 2)

- Settings : • Test tape : TTA-200  
              • Test point : TP6, TP7

Method : Play back the test tape and check that the output level of the test point is  $150mV \pm 3.0dB$ .

14. REC/PB Frequency Response Adjustment

- Settings : • Test tape : TTA-602  
              • Test point : TP6, TP7  
              • Input signal : 1kHz / 10kHz (LINE IN)  
              • Adjustment location : SFR451 (Lch)  
                                          SFR452 (Rch)

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 11mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 12mV ( $+1.0dB$ )  $\pm 0.5dB$  with respect to that of the 1kHz signal.

15. REC/PB Sensitivity Check

- Settings : • Test tape : TTA-602  
              • Test point : TP6, TP7  
              • Input signal : 1kHz (LINE IN)

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 11mV. Record and play back the 1kHz signals and check that the output is 10mV ( $-1.0dB$ )  $\pm 2.5dB$ .

# PRACTICAL SERVICE FIGURE

## <TUNER SECTION>

### <FM SECTION>

|                                 |                                                                                             |
|---------------------------------|---------------------------------------------------------------------------------------------|
| IHF Sensitivity :<br>(THD 3%)   | 3dB $\pm$ 6dB<br>[at 87.5MHz]<br>2dB $\pm$ 6dB<br>[98.0MHz]<br>2dB +8/-4dB<br>[at 108.0MHz] |
| S/N 50dB Quieting sensitivity : | Less than 35dB<br>[at 87.5 / 98.0 / 108.0MHz]                                               |
| Signal to noise ratio :         | More than 60dB (STEREO)<br>More than 70dB (MONO)<br>[at 98.0MHz]                            |
| Distortion :                    | Less than 2.0% (STEREO)<br>Less than 1.3% (MONO)<br>[at 98.0MHz]                            |
| Auto stop level :               | 20dB +10/-15dB [at 98.0MHz]                                                                 |
| Stereo separation :             | More than 28dB<br>[at 98.0MHz]                                                              |
| Intermediate frequency :        | 10.7MHz                                                                                     |

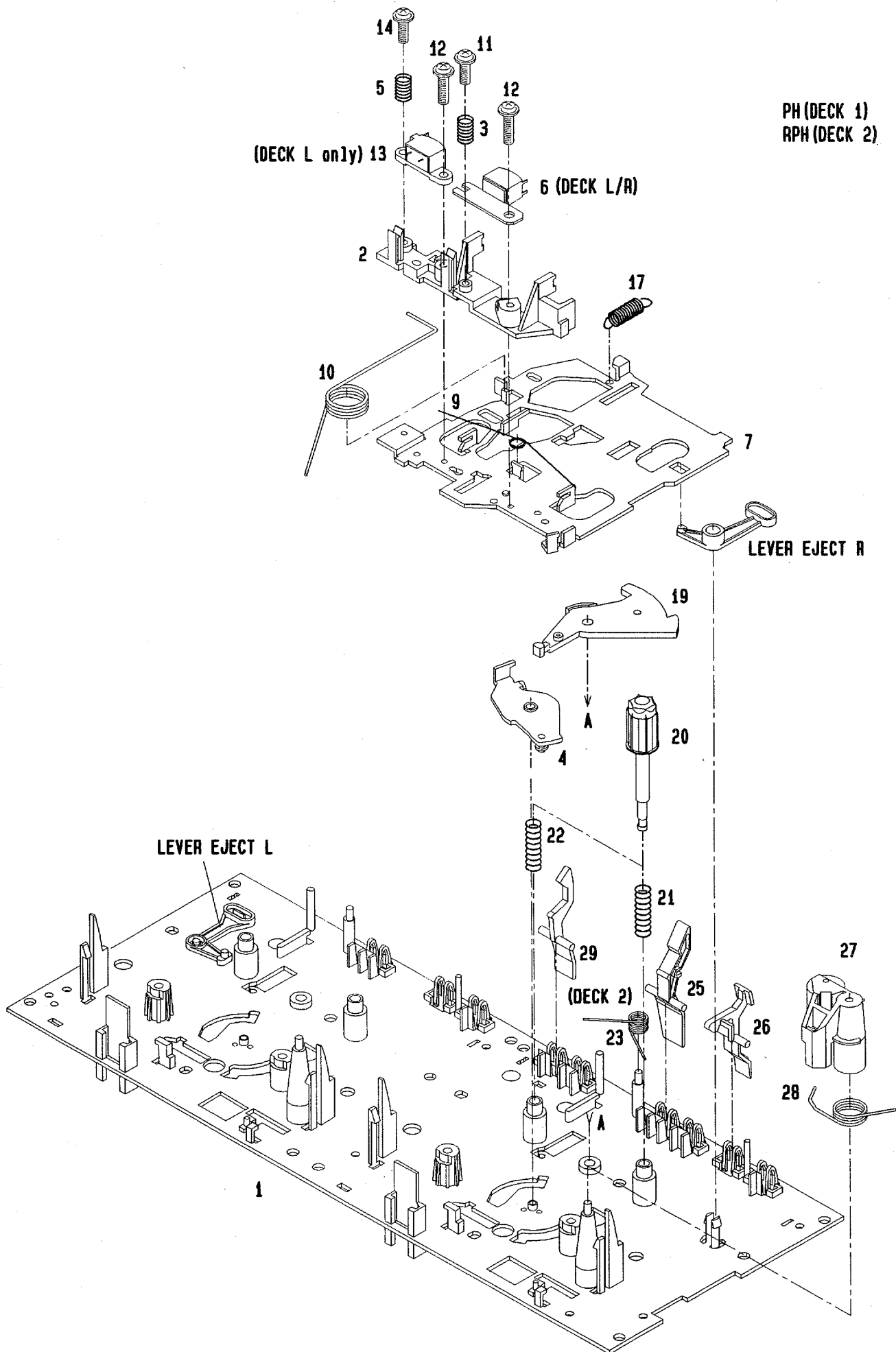
### <AM(MW) SECTION>

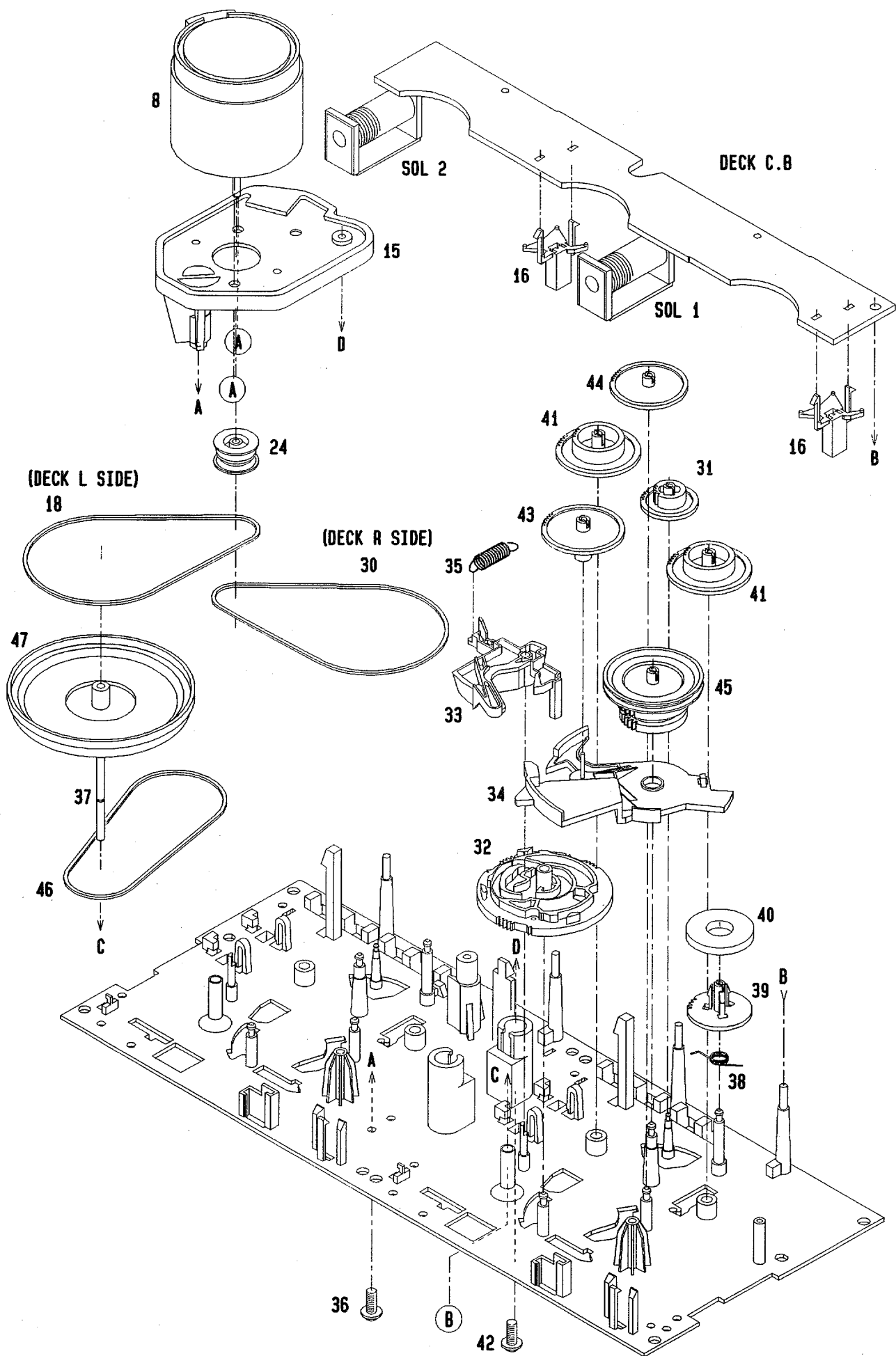
|                              |                                                            |
|------------------------------|------------------------------------------------------------|
| Sensitivity :<br>(S/N 20 dB) | 52 ~ 64dB<br>[at 600kHz]<br>46 ~ 58dB<br>[at 1000/1400kHz] |
| Signal to noise ratio :      | More than 30dB<br>[at 1000kHz]                             |
| Distortion :                 | Less than 1.5%<br>[at 1000kHz]                             |
| Auto stop level :            | 58dB +10/-5dB<br>[at 1000kHz]                              |
| Intermediate frequency :     | 450kHz                                                     |

## <DECK SECTION>

|                        |                                          |
|------------------------|------------------------------------------|
| Tape speed :           | 3000Hz $\pm$ 45Hz                        |
| Wow & flutter :        | Less than 0.25%<br>(W.R.M.S)             |
| Take-up torque :       | 30 ~ 55g-cm<br>(FWD, REV)                |
| F.F & REW torque :     | 75 ~ 180g-cm                             |
| Back tension :         | 2 ~ 7g-cm<br>(FWD, REV)                  |
| PB output level :      | 2.8V $\pm$ 3dB<br>(SP OUT 2V)            |
| REC/PB output level :  | 2.0V $\pm$ 3.5dB<br>(SP OUT 2V, 0VU)     |
| Distortion (REC/PB) :  | Less than 2.0%<br>(NORM, 0VU)            |
| Noise level (PB) :     | Less than 25mV<br>(NORM, SP OUT 2V)      |
| Noise level (REC/PB) : | Less than 30mV<br>(NORM, SP OUT 2V, 0VU) |
| Crosstalk :            | More than 55dB<br>(1kHz)                 |
| Channel separation :   | More than 35dB<br>(1kHz)                 |
| Erasing ratio :        | More than 55dB<br>(at 125Hz, 10VU)       |
| Test tape :            | TTA-602 (NORMAL)                         |

# TAPE MECHANISM EXPLODED VIEW 1 / 1

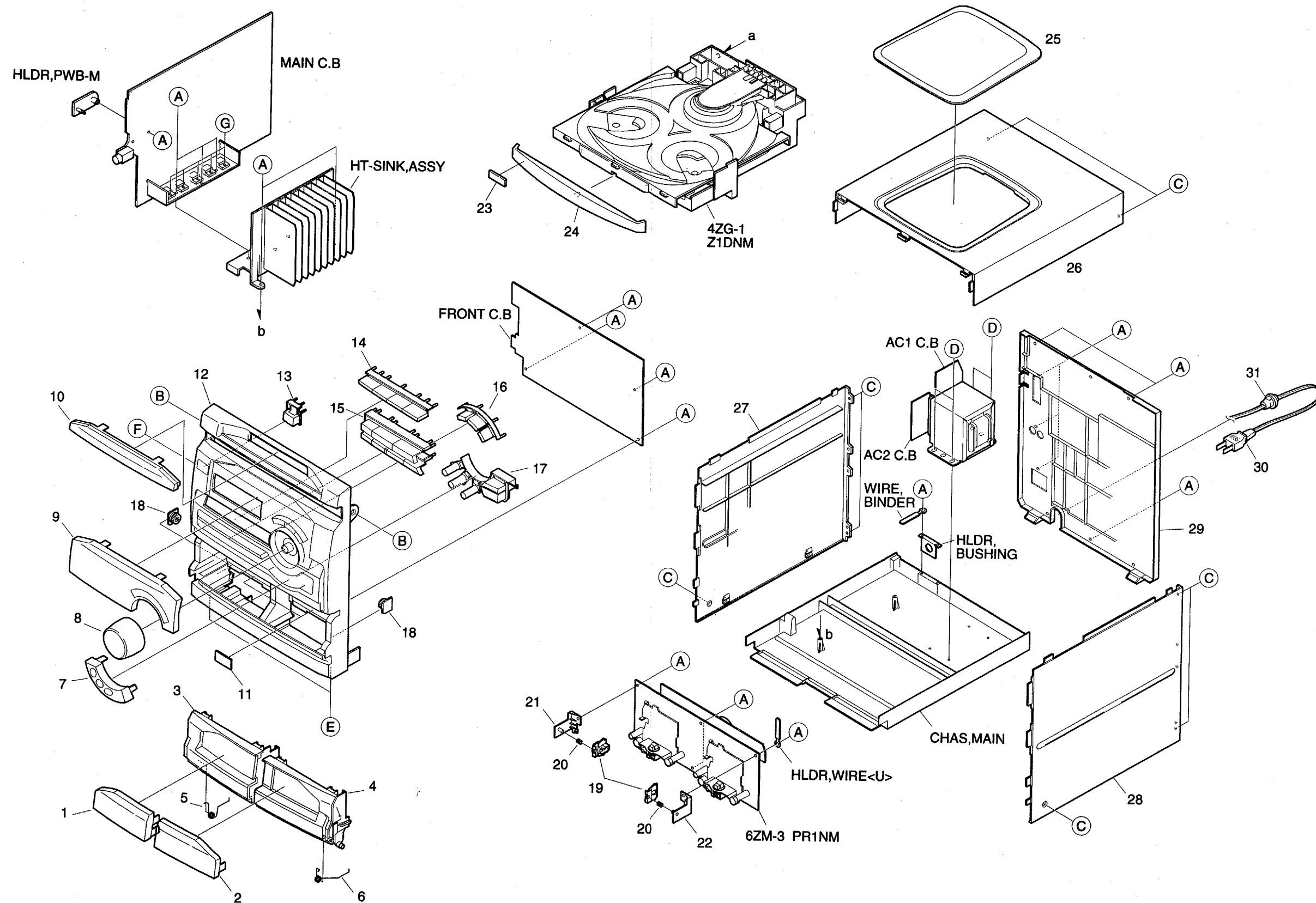




# TAPE MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION      | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION          |
|----------|----------------|-----------|------------------|----------|----------------|-----------|----------------------|
| 1        | 86-ZM3-212-010 |           | CHAS ASSY,SS     | 26       | 82-ZM1-243-019 |           | LVR,STOP             |
| 2        | 86-ZM3-202-010 |           | BASE,HEAD S      | 27       | 82-ZM1-344-119 |           | LVR ASSY,PINCH       |
| 3        | 86-ZM3-205-010 |           | SPR-C,RPH S      | 28       | 86-ZM3-204-010 |           | SPR-T,PINCHDS        |
| 4        | 82-ZM1-333-210 |           | PLATE,LINK 2     | 29       | 82-ZM1-240-119 |           | LVR,REC (DECK 2)     |
| 5        | 86-ZM3-206-010 |           | SPR-C,EH S       | 30       | 82-ZM3-328-110 |           | BELT,SBU P2          |
| 6        | 87-A90-403-019 |           | HEAD,RPH MS15R   | 31       | 82-ZM1-223-010 |           | GEAR,PLAY            |
| 7        | 86-ZM3-201-010 |           | CHAS,HEAD S      | 32       | 82-ZM3-305-019 |           | GEAR,CAM M2          |
| 8        | 87-045-347-019 |           | MOT,SHU2L 70(M1) | 33       | 82-ZM1-227-319 |           | LVR,TRIG             |
| 9        | 82-ZM1-269-219 |           | SPR-T,BRG        | 34       | 82-ZM3-306-110 |           | LVR,FR M2            |
| 10       | 82-ZM3-323-119 |           | SPR-T,LINK       | 35       | 82-ZM1-265-119 |           | SPR-E,TRIG           |
| 11       | 86-ZM3-209-010 |           | S-SCREW,ASIMUTHS | 36       | 85-ZM3-203-019 |           | S-SCREW MOTOR M3     |
| 12       | 86-ZM3-207-010 |           | S-SCREW,RPH      | 37       | 82-ZM1-236-019 |           | CAPSTAN N 2-41.5     |
| 13       | 87-A90-404-019 |           | HEAD,EH LE15B    | 37       | 82-ZM1-239-019 |           | CAPSTAN N 2.2-41.7   |
| 14       | 86-ZM3-208-010 |           | S-SCREW,EH       | 38       | 82-ZM1-322-019 |           | SPR-T,FR60           |
| 15       | 86-ZM3-203-010 |           | HLDR,MOTS        | 39       | 82-ZM1-220-219 |           | GEAR,IDLER           |
| 16       | 82-ZM1-245-210 |           | HLDR,IC          | 40       | 82-ZM3-616-019 |           | RING MAGNET 4        |
| 17       | 82-ZM1-218-019 |           | SPR-E,HB         | 41       | 82-ZM1-216-319 |           | GEAR,REEL            |
| 18       | 82-ZM3-329-210 |           | BELT,SBU R2      | 42       | 85-ZM3-213-010 |           | S-SCREW,HLDR,MOT 3   |
| 19       | 82-ZM1-222-219 |           | LVR,PLAY         | 43       | 82-ZM1-225-219 |           | GEAR,FR              |
| 20       | 82-ZM1-217-419 |           | REEL TABLE       | 44       | 82-ZM1-226-019 |           | GEAR,REW             |
| 21       | 82-ZM1-244-519 |           | SPR-C,BT         | 45       | 82-ZM3-333-210 |           | SLIP DISK ASSY 2     |
| 22       | 82-ZM1-285-410 |           | SPR-C,BT L       | 46       | 82-ZM1-338-010 |           | BELT FR4             |
| 23       | 82-ZM1-257-019 |           | SPR-T,CAS        | 47       | 82-ZM1-349-019 |           | FLY-WHL RW (DECK L)  |
| 24       | 82-ZM3-221-010 |           | PULLEY,MOT 2M    | 47       | 82-ZM3-331-019 |           | FLY-WHL R2W (DECK R) |
| 25       | 82-ZM1-242-019 |           | LVR,CAS          | A        | 87-251-071-417 |           | U+2.6-4              |
|          |                |           |                  | B        | 80-ZM6-243-019 |           | SH,1.75-3.6-0.5 SLT  |



# MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION         | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                 |
|----------|----------------|-----------|---------------------|----------|----------------|-----------|-----------------------------|
| 1        | 87-NF8-014-010 |           | WINDOW,CASS 1       | 23       | 82-NE6-067-010 |           | BADGE,AIWA 30N              |
| 2        | 87-NF8-015-010 |           | WINDOW,CASS 2       | 24       | 87-NF8-018-010 |           | PANEL,TRAY                  |
| 3        | 87-NF8-003-010 |           | BOX,CASS 1<A22U>    | 25       | 86-NF2-001-010 |           | WINDOW,TOP                  |
| 3        | 87-NF8-025-010 |           | BOX,CASS 1H<S22LH>  | 26       | 87-NF8-045-010 |           | PANEL,TOP ST<S22LH>         |
| 4        | 87-NF8-004-010 |           | BOX,CASS 2<A22U>    | 26       | 87-NF8-050-010 |           | PANEL,TOP STU<A22U>         |
| 4        | 87-NF8-026-010 |           | BOX,CASS 2H<S22LH>  | 27       | 87-NF8-042-010 |           | PANEL,LEFT 2 ST<S22LH>      |
| 5        | 82-NF5-218-010 |           | SPR-T,EJECT 1 (SIN) | 27       | 87-NF8-047-010 |           | PANEL,LEFT 2 STU<A22U>      |
| 6        | 82-NF5-219-010 |           | SPR-T,EJECT 2 (SIN) | 28       | 87-NF8-044-010 |           | PANEL,RIGHT 2 ST<S22LH>     |
| 7        | 87-NF8-019-010 |           | PANEL,CD            | 28       | 87-NF8-049-010 |           | PANEL,RIGHT 2 STU<A22U>     |
| 8        | 87-NF8-012-010 |           | KNOB,RTRY VOL       | 29       | 87-NF8-032-010 |           | CABI,REAR LHSTNM<S22LH>     |
| 9        | 87-NF8-013-010 |           | WINDOW,DISPLAY      | 29       | 87-NF8-002-010 |           | CABI,REAR USTNM<A22U>       |
| 10       | 87-NF8-016-010 |           | WINDOW,CD           | 30       | 87-050-053-010 |           | AC CORD ASSY,U-2<A22U>      |
| 11       | 81-532-080-010 |           | LABEL, CASS. COMPT  | 30       | 87-050-079-010 |           | AC-CORD ASSY,E<S22LH>       |
| 12       | 87-NF8-022-010 |           | CABI,FR LH<S22LH>   | 31       | 87-085-185-010 |           | BUSHING, AC CORD (E)<S22LH> |
| 12       | 87-NF8-001-010 |           | CABI,FR U<A22U>     | 31       | 87-085-189-010 |           | BUSHING, CORD (U)<A22U>     |
| 13       | 87-NF8-005-010 |           | KEY,POWER           | A        | 87-067-703-010 |           | TAPPING SCREW, BVT2+3-10    |
| 14       | 87-NF8-008-010 |           | KEY,FUN             | B        | 87-721-097-410 |           | QT2+3-12 GLD                |
| 15       | 87-NF8-010-010 |           | KEY,OPE             | C        | 87-B10-091-010 |           | UTT2+3-10 W/O BLK           |
| 16       | 87-NF8-007-010 |           | KEY,GEO             | D        | 87-741-172-410 |           | UT2+4-12 W/O SLOT           |
| 17       | 87-NF8-006-010 |           | KEY,CD              | E        | 87-067-758-010 |           | BVT2+3-12 W/O SLOT          |
| 18       | 87-063-165-010 |           | OIL-DMPR 150        | F        | 87-723-096-410 |           | QT2+3-10 W/O SLOT           |
| 19       | 82-NF5-229-010 |           | PLATE,LOCK          | G        | 87-067-579-010 |           | TAPPING SCREW, BVT2+3-8     |
| 20       | 82-NF5-228-010 |           | SPR-C,LOCK          |          |                |           |                             |
| 21       | 87-NF4-216-010 |           | HLDR,LOCK 1         |          |                |           |                             |
| 22       | 87-NF4-217-010 |           | HLDR,LOCK 2         |          |                |           |                             |

# SPRING APPLICATION POSITION

82-ZM1-257-019  
SPR-T, CAS

82-ZM1-218-019  
SPR-E, HB

82-ZM1-285-310  
SPR-C, BT L

82-ZM1-244-410  
SPR-C, BT

82-ZM3-323-119  
SPR-T, LINK

86-ZM3-204-010  
SPR-T, PINCH DS

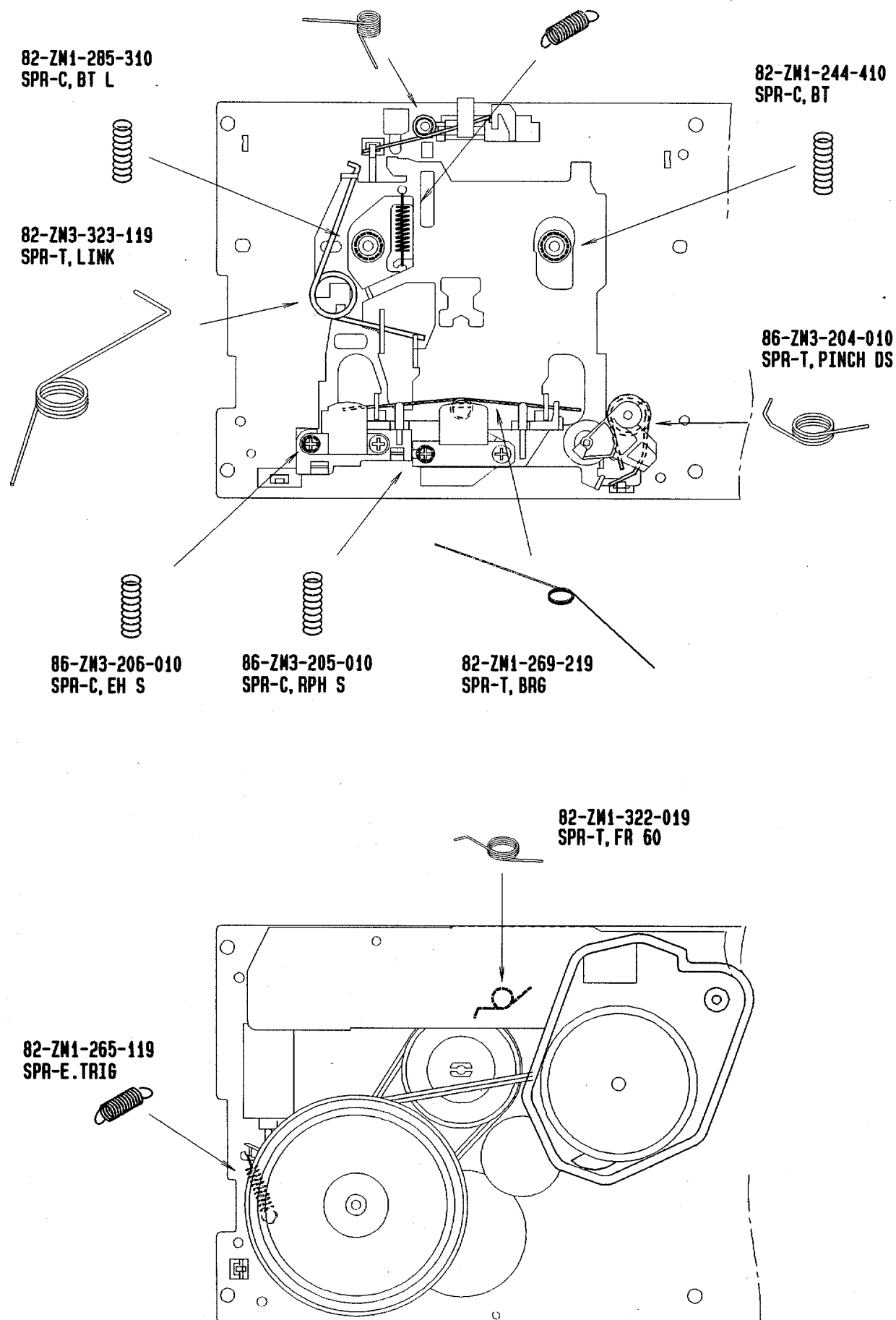
86-ZM3-206-010  
SPR-C, EH S

86-ZM3-205-010  
SPR-C, RPH S

82-ZM1-269-219  
SPR-T, BRG

82-ZM1-322-019  
SPR-T, FR 60

82-ZM1-265-119  
SPR-E, TRIG

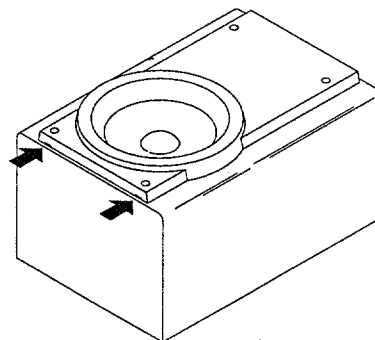


## SPEAKER DISASSEMBLY INSTRUCTIONS

### Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

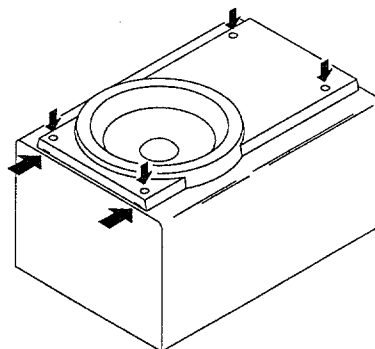
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



### Type.2

グリルフレームを外し、4個のゴムキャップをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

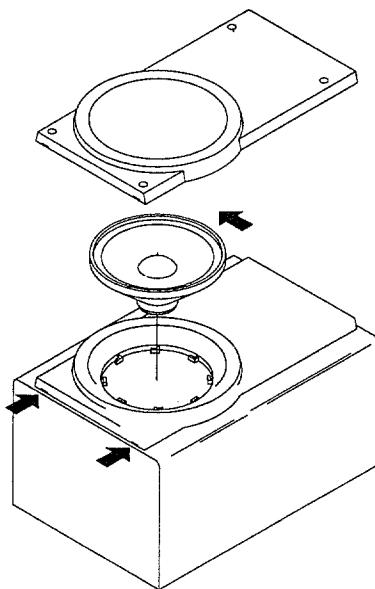
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then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



### Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

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.



## SPEAKER PARTS LIST 1 / 1 (SX-NS22 <YL>, SX-NA22 <YU>)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO.       | KANRI<br>NO. | DESCRIPTION   |
|----------|----------------|--------------|---------------|
| 1        | 87-NSH-001-019 |              | PANEL, FR R   |
| 2        | 87-NSH-002-019 |              | PANEL, FR L   |
| 3        | 87-NSH-005-019 |              | NET           |
| 4        | 87-NS7-611-019 |              | CORD, SPKR    |
| 5        | 87-NSJ-602-019 |              | SPKR, 120     |
| 6        | 86-NSZ-602-019 |              | SPKR, CERA 14 |

## ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO.       | KANRI<br>NO. | DESCRIPTION                     |
|----------|----------------|--------------|---------------------------------|
| 1        | 87-NF8-902-010 |              | IB, LH(ES)M<LH>                 |
| 1        | 87-NF8-903-010 |              | IB, U(ESF)M<U>                  |
| 2        | 86-NFZ-638-010 |              | RC UNIT, 6AS14                  |
| 3        | 87-A90-054-010 |              | ANT, LOOP AM-CON C              |
| △ 4      | 87-A90-312-010 |              | PLUG, CONVERSION WTN-1157R1<LH> |

# REFERENCE NAME LIST

## ELECTRICAL SECTION

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

## MECHANICAL SECTION

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

| サービス技術ニュース |      |
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| G- -       |      |
| G- -       |      |
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Printed in Singapore